

# ***JV34-260***

## **MAINTENANCE MANUAL**

# Maintenance Manual Change Tracking

Date	2013.11.13	Manual Ver.	1.2	Remark	
Index	Status	Rev.	Changes		
4.2.6	Revised	R.1.1	inner end of the pinch roller -> edge of the media ("Supplement Version 1.1A" is added.)		
5.2.6	Revised	R.1.2	List was revised		
5.2.7	Revised	R.1.1	List was revised		

Date	2011.06.30	Manual Ver.	1.1	Remark	
Index	Status	Rev.	Changes		
1.3.1	Revised	R.1.1	Added the description of except for the 4-color inkset		
1.3.2	Revised	R.1.1	Added the description of except for the 4-color inkset		
1.3.3	Revised	R.1.1	Added the description of except for the 4-color inkset		
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1.3.9	Revised	R.1.1	Added the description of except for the 4-color inkset		
4.2.1	Revised	R.1.1	Step1, Step5, Step9: Picture is changed		
4.2.2	Revised	R.1.1	Step1, Step5, Step9: Picture is changed		
4.2.3	Revised	R.1.1	Step1, Step2, Step6: Picture is changed		
4.2.4	Revised	R.1.1	Step2: Hint is changed		
4.2.5	Revised	R.1.1	Pattern is changed		
4.2.9	Revised	R.1.1	Step5: Added		
4.2.18	Revised	R.1.1	Changed the "Contents of registration" Added the illustration		
4.2.18	Added	R.1.0	Page is added		
5.1.1	Revised	R.1.1	Added the description of except for the 4-color inkset		
5.1.2	Revised	R.1.1	Added the description of except for the 4-color inkset		
5.1.3	Revised	R.1.1	Added the description of except for the 4-color inkset		
5.1.4	Revised	R.1.1	Added the description of except for the 4-color inkset		
5.2.6	Revised	R.1.1	Added the description of except for the 4-color inkset		
5.2.7	Revised	R.1.1	Added the description of except for the 4-color inkset		
6.2.2	Revised	R.1.1	Step1, 11: Operation is changed Step10: Important is added		
6.2.3	Revised	R.1.1	Step15: Important is added		
6.2.5	Revised	R.1.1	Step5: Picture is changed		
6.2.9	Added	R.1.0	Added the section		
6.2.10	Added	R.1.0	Added the section		
7.1.2	Revised	R.1.1	"illegal IPT xxx" "Prg Err TK=xxx ASSRT"are added ERROR10: added ERROR202: Cause is changed		
8.4.1	Revised	R.1.1	#CAPPING: Operation is changed #MANUALhead WASH: Move to page2 #DAMPER DISCHG: Operation is chaged		

Date	2011.02.15	Manual Ver.	1.00	Remark	
Status	Index	Rev.	Changes		
Released			New issued		

MAINTENANCE MANUAL > Maintenance Manual Contents							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver.	3.00	Remark
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Operating Principle		
1.1 Basic Operation	1.2 Maintenance Function	1.3 Ink System

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MAINTENANCE MANUAL > Operating Principle > Basic Operation > Main Switch Power ON							Rev.
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<b>1.1.1 Main Switch Power ON</b>							<b>1.0</b>

## ■ Indication on LCD

① Display at main switch power ON	② Version information display	③ Version information display (during the service mode)
BOOT	JV34-260 V*. **	JV34-260 V*. **.0 B*. **P*. **H*. **
		B: Boot, P: PDC, H: HDC

## ■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Initial setting of CPU and H/W		①
2	Display at main switch power ON	1. [Boot] is displayed.	
3	SD-RAM check	1. Check the read / write of SD-RAM • In the malfunction, [ERROR02 MAIN RAM] is displayed and the system goes down.	
4	F-ROM check	1. Check the hash value of F-ROM. • In the malfunction of boot system area, [ERROR01 MAIN ROM] is displayed and the system goes down. • In the malfunction of the main system area, F/W update mode starts.	
5	Voltage check	1. Check the power supply voltage on the main PCB assy. • In the malfunction, [ERROR03 POWER **V] is displayed and the system goes down.	
6	FPGA setting	1. Execute the configuration of PDC and HDC. • In the malfunction, [ERROR09 FPGA ERROR] is displayed and the system goes down. • When the fuse F13 of the main PCB assy is blown, the system shuts down, displaying [ERROR205 42V HEAD VOLTAGE].	
7	Machine configuration		
	7-1 Checks on the HDC connection	1. Check the configuration results about HDC. • HDC connection has not been completed, [ERROR09 HDC ERROR] is displayed and the system goes down.	② ③
	7-2 Checks on the print head connection	1. Check the connection status of the print head. • In the malfunction, [ERROR07 HEAD] or [ERROR07 VOLTAGE] is displayed and the system goes down.	
	7-3 Checks on the print head memory	1. Check the contents of the memory PCB assy of the print head. • In the malfunction, [ERROR200 HEAD MEMORY] is displayed and the system goes down.	
	7-4 Checks on PRAM	1. Check the PRAM size. 512 MB is needed as its size. • If the size is zero or insufficient, [ERROR203 SDRAM SIZE] is displayed and the system goes down.	② ③
8	Version information display	1. Machine model name and main body firmware version are displayed. 2. "Revision" and "Boot/PDC/HDC version" are also displayed during the service mode. 3. Special key function is workable during the version information is being displayed.	
9	Parameter check	1. During the initial start-up process after the upgrading of the F/W version, initialize the following parameters. • Maintenance • INKSYSTEM • INKInfor. • INKSEQUENCE • INKTYPE • SERVO • TEST 2. Carry out the check sum of the parameter region. • In the malfunction, [ERROR04 F-ROM] is displayed and the system goes down.	② ③
10	Initial operation of the machine	1. See "1.1.3 Initial Machine Operation".	

MAINTENANCE MANUAL > Operating Principle > Basic Operation > Sub Switch Power ON							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver.	1.00	Remark
<b>1.1.2 Sub Switch Power ON</b>							<b>1.0</b>

## ■ Indication on LCD

① Display at sub switch power ON	② Version information display	③ Version information display (during the service mode)
PLEASE WAIT	JV34-260 V*,**	JV34-260 V*,**.0 B*,**P*,**H**,** B: Boot, P: PDC, H: HDC

## ■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Initial setting of CPU and H/W		
2	Display at sub switch power ON	1. [PLEASE WAIT] is displayed.	①
3	Voltage check	1. Check the power supply voltage on the main PCB assy. • In the malfunction, [ERROR03 POWER **V] is displayed and the system goes down.	
4	FPGA setting	1. Execute the configuration of PDC and HDC. • In the malfunction, [ERROR09 FPGA ERROR] is displayed and the system goes down. • When the fuse F13 of the main PCB assy is blown, the system shuts down, displaying [ERROR205 42V HEAD VOLTAGE].	
5	Version information display	1. Machine model name and main body firmware version are displayed. 2. “Revision” and “Boot/PDC/HDC version” are also displayed during the service mode. 3. Special key function is workable during the version information is being displayed. (Except firmware update)	② ③
6	Initial operation of the machine	1. See " <a href="#">1.1.3 Initial Machine Operation</a> ".	

MAINTENANCE MANUAL > Operating Principle > Basic Operation > Initial Machine Operation							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver.	1.00	Remark
<b>1.1.3 Initial Machine Operation</b>							<b>1.0</b>

## ■ Indication on LCD



## ■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Detection of a station origin	1. Drive the wiper motor to detect the station origin. • When it cannot be detected, [ERROR46 WIPER] is displayed and the system goes down. • If an error occurs during the service mode, try the operation again by pressing the key [ENTER]. Pressing the key [FUNCTION] is also workable.	①
2	Detection of the Y origin	1. Drive the Y-axis motor to detect the Y origin. • When it cannot be detected, [ERROR51 Y-ORIGIN] is displayed and the system goes down.	
3	Capping	1. Move the head carriage back to the Y origin and carry out capping.	

## 1.1.4 Detection of a Media Width

1.0

### ■ Indication on LCD

① A display during the media detection

DETECTING MEDIA NOW  
PLEASE WAIT

1

### ■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Media right end detection	Detect the right end of the media (media sensor) after the carriage moves to the media detection position.	①
2	Media left end detection	<div>1. Detect the left end of the media (media sensor) after the carriage moves.</div> <div>2. Calculate the media width (linear encoder) after the distance between the left end and right end is measured.</div> <div> *Execute the linear encoder test when the carriage moves for media width detection. If a malfunction occurs, printing cannot be executed. (ERROR8)</div> <div> [ERROR8 Detailed Information] Direction: The ± of the linear encoder counter is reversed Count: Linear encoder count number error Sensor: Count not possible</div> <div> *If the media width cannot be detected, it is ERROR50. (Cancelled by Lever UP)</div> <div> Move the carriage back to the Y origin and turn the cap ON.</div> <div> *Media detection executes automatic distance accuracy adjustment.</div>	
3	Media length input	If MEDIA RESIDUAL for the maintenance function is ON and the media tail end is not detected, input the media length. Set value: 1-500 m (unit: 1m)	

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The operation for detecting a media width will be discontinued, if the clamp lever is placed on the UP position during the operation.

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## ■ Indication on LCD



## ■ Processing sequence

### □ Processing during sub-power OFF

Step	Processing	Description	Indication on LCD
1	Hardware resources OFF	1. Turn off the heater, dry fan, exhaust fan, and vacuum fan. 2. Turn off the output of the COM waveform.	①
2	Turning off solenoids	1. Turn off the cartridge valve solenoid.	
3	Saving parameters	1. Save parameter values of system parameter, running parameter, etc. 2. Update head ID and Print head memory.	
4	Motor OFF	1. Turn off servo and drive motor power.	
5	Sub-power LED blinking	1. Indicates sub-power off by sub-power LED blinking.	
6	Power OFF		

### □ Processing during main-power OFF

Step	Processing	Description
1	Saving parameters	1. Save the running parameter values.



In service mode, the buzzer sounds when the parameter values have been stored successfully.



- Turn off sub-power to implement the sleeve operation for the prevention of the clogged ink during power OFF.
- When turning off main power, turn off sub-power first and then main power.



Operating Principle		
1.1 Basic Operation	1.2 Maintenance Function	1.3 Ink System

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■ Indication on LCD

① Display during maintenance


ST.MAINTENANCE  
COMPLETED :ent

② Display during initial operation

PLEASE WAIT

■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Start	1. Taking the cap off 2. After moving the print head carriage to the maintenance location, the wiper moves to the wiping location and the servo motor is turned off.	
2	Maintenance	1. The unit does not operate during maintenance. 2. Waiting for the end of maintenance is displayed. It is terminated by [ENTER].	①
3	End	1. After the wiper moves to its origin, move the print head carriage, then perform the initial machine operation. See "1.1.3 Initial Machine Operation".	②



Out of “Service mode”, a warning beep sounds at an interval of 30 seconds during carriage out operation to prevent the nozzle surface and the inside of the cap from getting dry.

## ■ Indication on LCD

① Display during maintenance

ST.MAINTENANCE  
COMPLETED :ent

② Display during initial operation

PLEASE WAIT

## ■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Start	1. Taking the cap off 2. After moving the print head carriage to the maintenance location, the wiper moves to the wiping location and the servo motor is turned off.	
2	Maintenance	1. The unit does not operate during maintenance. 2. Waiting for the end of maintenance is displayed. It is terminated by [ENTER].	①
3	End	1. After the wiper moves to its origin, move the print head carriage, then perform the initial machine operation. See "1.1.3 Initial Machine Operation".	①

- After completion of this operation, clear the executed wiping count, one of the running parameters.
- Out of "Service mode", a warning beep sounds at an interval of 30 seconds during carriage out operation to prevent the nozzle surface and the inside of the cap from getting dry.

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■ Indication on LCD

① Display during maintenance	② Display during maintenance	③ Display during maintenance	④ Display during initial operation
WIPER CLEANING COMPLETED(NEXT) :ent	Fill the liquid. COMPLETED(NEXT) :ent	ST.MAINTENANCE LEAVING TIME : 1min	PLEASE WAIT

■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Start	1. Taking the cap off 2. After moving the print head carriage to the maintenance location, the wiper moves to the wiping location and the servo motor is turned off. 3. Locking the pump tube.	
2	Maintenance (Wiper)	1. The unit does not operate during maintenance. 2. Waiting for the end of maintenance is displayed. (Waiting for [ENTER] input)	①
3	Maintenance (Nozzle wash)	1. Turning the wiper off 2. Lock the pump tube and display the message. (Waiting for [ENTER] input) 3. Using a dropper, infuse the cap with washing liquid. 4. Input the waiting time. (Waiting for [ENTER] input) Setting value : 1 - 99 min. (unit: 1 min.) 5. After moving the print head carriage and performing “Initial machine operation (1.1.3)”, wait for the set time to elapse.	② ③
4	End	1. Executing cleaning 2. End	

	Out of “Service mode”, a warning beep sounds at an interval of 30 seconds during carriage out operation to prevent the nozzle surface and the inside of the cap from getting dry.
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■ Indication on LCD

① Display during maintenance


② Display during initial operation

CR.MAINTENANCE  
COMPLETED :ent

PLEASE WAIT

■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Start	1. Taking the cap off 2. After moving the print head carriage to the maintenance location, the wiper moves to the wiping location and the servo motor is turned off.	
2	Maintenance	1. The unit does not operate during maintenance. 2. Waiting for the end of maintenance is displayed. It is terminated by [ENTER].	①
3	End	1. After moving the print head carriage, perform initial machine operation. See "1.1.3 Initial Machine Operation".	②



Out of “Service mode”, a warning beep sounds at an interval of 30 seconds during carriage out operation to prevent the nozzle surface and the inside of the cap from getting dry.

MAINTENANCE MANUAL > Operating Principle > Maintenance Function > FILL UP INK									Rev.
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1.2.5 FILL UP INK									1.0

■ Indication on LCD

① Display during maintenance	② Display during maintenance
<div>HD.MAINTENANCE</div> <div>FILL UP INK :ent</div>	<div>FILLING UP</div> <div>00:00</div>

■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Start	1. When a waste ink tank warning occurs, the warning message is displayed. • For details, see " <a href="#">1.2.8 Waste Ink Tank Warning</a> ".	
2	Filling	1. Opening the cartridge valve and starting the ink suction motor. 2. The filling operation is to be discontinued if a warning about the ink cartridge is detected. 3. The cartridge with less amount of remaining ink is used first. (Only for the 4-color ink set)	① ②
3	End	1. Stopping the pump motor.	

## ■ Indication on LCD

① Display during maintenance Remove:InkCartridges MMCCYYKK	② Display during maintenance * DISCHARGE * 00:00	③ Display during maintenance Set:WashingCartridges 12345678	④ Display during maintenance * ABSORPTION * 00:00
⑤ Display during maintenance Remove:Cartridges 12345678	⑥ Display during maintenance SELECT: END< >Re-WASH	⑦ Display during maintenance Maint.WashLiquid END < >DISCHARGE	⑧ Display during maintenance Remove:Maint.Wash

## ■ Processing sequence

Step	Processing	Description	Indication on LCD
1	Ink discharging	<ol style="list-style-type: none"> <li>Remove the ink cartridges (from all the slots). (*Monitored with cartridge sensors)</li> <li>Open the cartridge valve and drive the ink suction pump motor to discharge ink.</li> <li>When a waste ink tank warning occurs, the warning message is displayed. • For details, see "<a href="#">1.2.8 Waste Ink Tank Warning</a>".</li> </ol>	① ②
2	Cleaning	<ol style="list-style-type: none"> <li>Insert washing liquid cartridges (into all the slots). (*Monitored with cartridge sensors)</li> <li>Cleaning the inside of the tubes. • Opening the cartridge valve and starting the ink suction pump motor When a waste ink tank warning occurs, the warning message is displayed. (For details, see "<a href="#">1.2.8 Waste Ink Tank Warning</a>".)</li> <li>Performing head vibration operation (starting the Y-axis motor).</li> </ol>	③ ④
3	Discharging of washing liquid	<ol style="list-style-type: none"> <li>Remove the washing liquid cartridges (from all the slots). (*Monitored with cartridge sensors)</li> <li>Open the cartridge valve and drive the ink suction pump motor to discharge washing liquid.</li> <li>When a waste ink tank warning occurs, the warning message is displayed. • For details, see "<a href="#">1.2.8 Waste Ink Tank Warning</a>".</li> </ol>	⑤ ②
4	Repeating	<ol style="list-style-type: none"> <li>Executing 2 to 3 again.</li> </ol>	
5	Operation selection	<ol style="list-style-type: none"> <li>Select processing as below. [ ▶ ] Re-WASH : Step 3 → 4 are executed again [ ◀ ] END : to next step.</li> </ol>	⑥
6	Whether to discharge maintenance washing liquid	<ol style="list-style-type: none"> <li>Select processing as below. [ ▶ ] DISCHARGE : to next step. [ ◀ ] END : to Step 8 (End)</li> </ol>	⑦
7	Maintenance washing liquid discharge	<ol style="list-style-type: none"> <li>Discharge maintenance washing liquid. • For details, see "<a href="#">1.2.7 Maintenance Washing Liquid Filling and Discharge</a>".</li> </ol>	⑧
8	End	<ol style="list-style-type: none"> <li>(Once the ink discharge operation of this cleaning function is executed, the heads will be empty of ink.)</li> </ol>	



The washing liquid cartridge does not incorporate an IC chip.  
Therefore, IC chip read error is recognized to be normal.

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## 1.2.7 Maintenance Washing Liquid Filling and Discharge

1.0

### ■ Indication on LCD

① Display during maintenance	② Display during maintenance	③ Display during maintenance	④ Display during maintenance
MaintWashLiquid CARTRIDGE : none	MaintWashLiquid FILLING UP START :ent	MaintWashLiquid There is a CARTRIDGE	MaintWashLiquid DISCHARGE START :ent

### ■ Washing liquid filling sequence

Step	Processing	Description	Indication on LCD
1	Start	1. Insert washing liquid cartridges. • Filling will not be executed if a warning about the washing liquid cartridge is displayed. (Monitored with washing liquid cartridge sensors) • When a waste ink tank warning occurs, the warning message is displayed. (For details, see " <a href="#">1.2.8 Waste Ink Tank Warning</a> ".)	①
2	Filling	1. Run the pump. 2. Opening the cartridge valve. (until washing liquid fills the wiper cleaning valve) 3. Close the cartridge valve. 4. Stopping the pump.	②

### ■ Washing liquid discharge sequence

Step	Processing	Description	Indication on LCD
1	Start	1. Remove the washing liquid cartridges from the machine. • When a waste ink tank warning occurs, the warning message is displayed. (For details, see " <a href="#">1.2.8 Waste Ink Tank Warning</a> ".)	③
2	Discharge	1. Run the pump. 2. Opening the cartridge valve. (until washing liquid fills the wiper cleaning valve) 3. Close the cartridge valve. 4. Stopping the pump.	④



Only the service mode is selectable.

### ■ Indication on LCD

① Warning display in local mode	② Display when near full is reached	③ Display when full is reached
<div>&lt;LOCAL. 1&gt;    [#01]</div> <div>!WASTE TANK</div>	<div>Confirm a waste tank</div> <div>Continue&lt; &gt;Exchange</div>	<div>Confirm a waste tank</div> <div>Exchange :    ent</div>

### ■ Outline

The counter in the machine monitors the amount of discharged ink. Depending on the status, the message is displayed on LCD to urge you to replace the waste ink tank before operations involving suction (cleaning, filling, and discharge).

### ■ Explanation of situation

No.	Status	Description	Indication on LCD
1	[!WASTE TANK] is displayed locally.	<ol style="list-style-type: none"> <li>Is displayed when the counter in the machine reaches full or more.</li> <li>When it is displayed, sleep and routine operations (REFRESH, PUMP TUBE WASH, CLEANING) are not performed.</li> <li>When you cancel the warning message, be sure to replace the waste ink tank before executing [MAINTENANCE] -&gt; [InkTankReplace].</li> <li>The operation in “3” clears the counter in the machine.</li> </ol>	①
2	Waste ink tank reaches near full.	<ol style="list-style-type: none"> <li>If you select “Continue”, the present operation is continued. The warning message is displayed again during the next suction operation.</li> <li>If “REPLACE” is selected, the present operation is continued. The counter value in the firmware is cleared.</li> </ol>	②
3	Waste ink tank reaches full.	<ol style="list-style-type: none"> <li>Replace the waste ink tank or dispose of ink.</li> <li>The present operation is continued by depressing [ENTER] key. The counter value in the machine is cleared.</li> </ol>	③



- If you select “REPLACE” in the operation as above when the waste ink tank is near full or full, be sure to replace the waste ink tank or dispose of ink.  
If you continue to use the waste ink tank without replacing it, the waste ink may overflow before the confirmation message is displayed.
- The waste ink discharged when [NOZZLE WASH], [PUMP TUBE WASH] or [COSTODY WASH] of [ST.MAINTENANCE] is performed is not cumulatively counted in this unit.  
Before and after these operations, be sure to check the status of the waste ink tank.

Operating Principle		
1.1 Basic Operation	1.2 Maintenance Function	1.3 Ink System

**1**

**2**

**3**

**4**

**5**

**6**

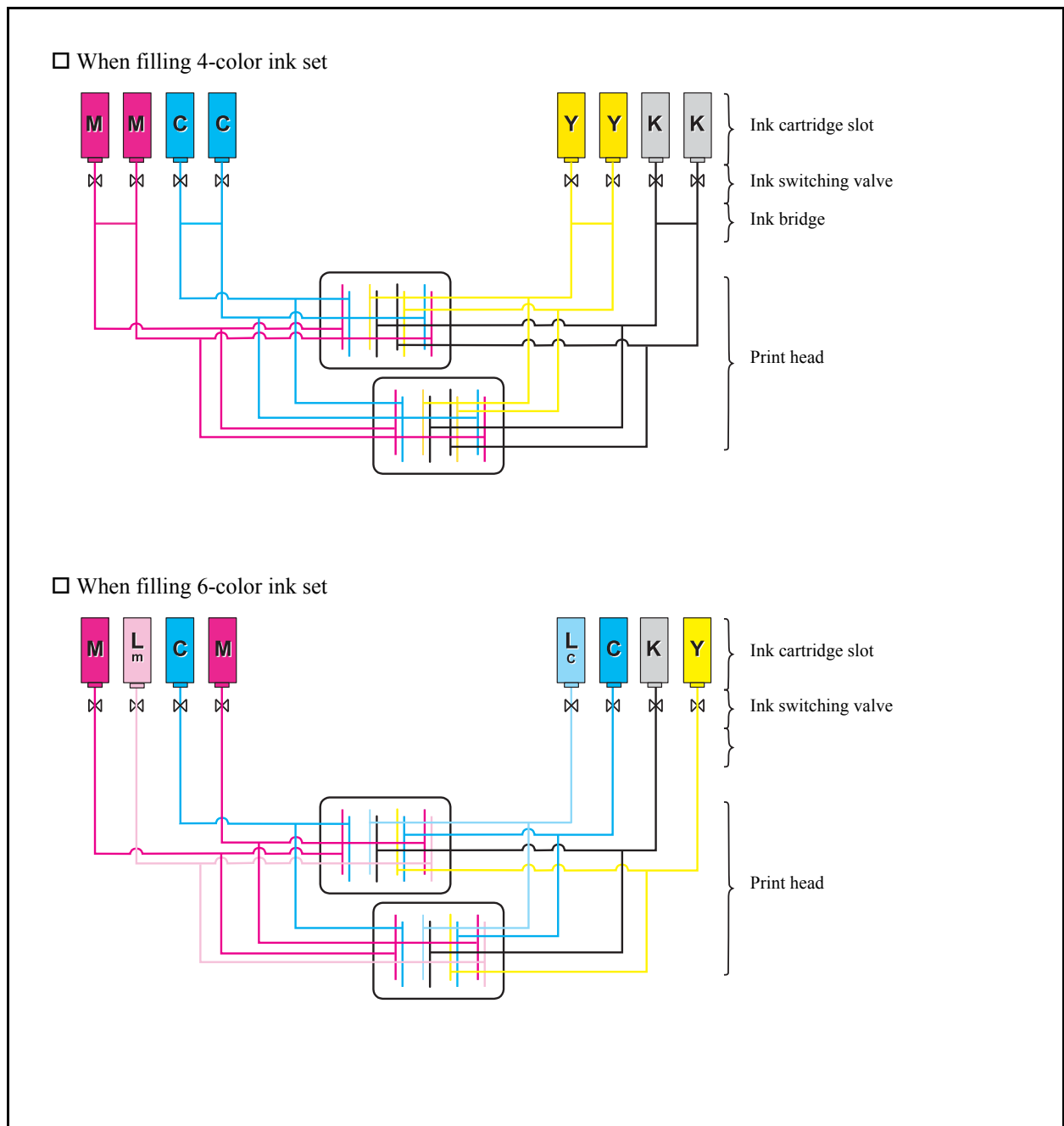
**7**

**8**

■ Ink Supply Path Diagrammatic Illustration

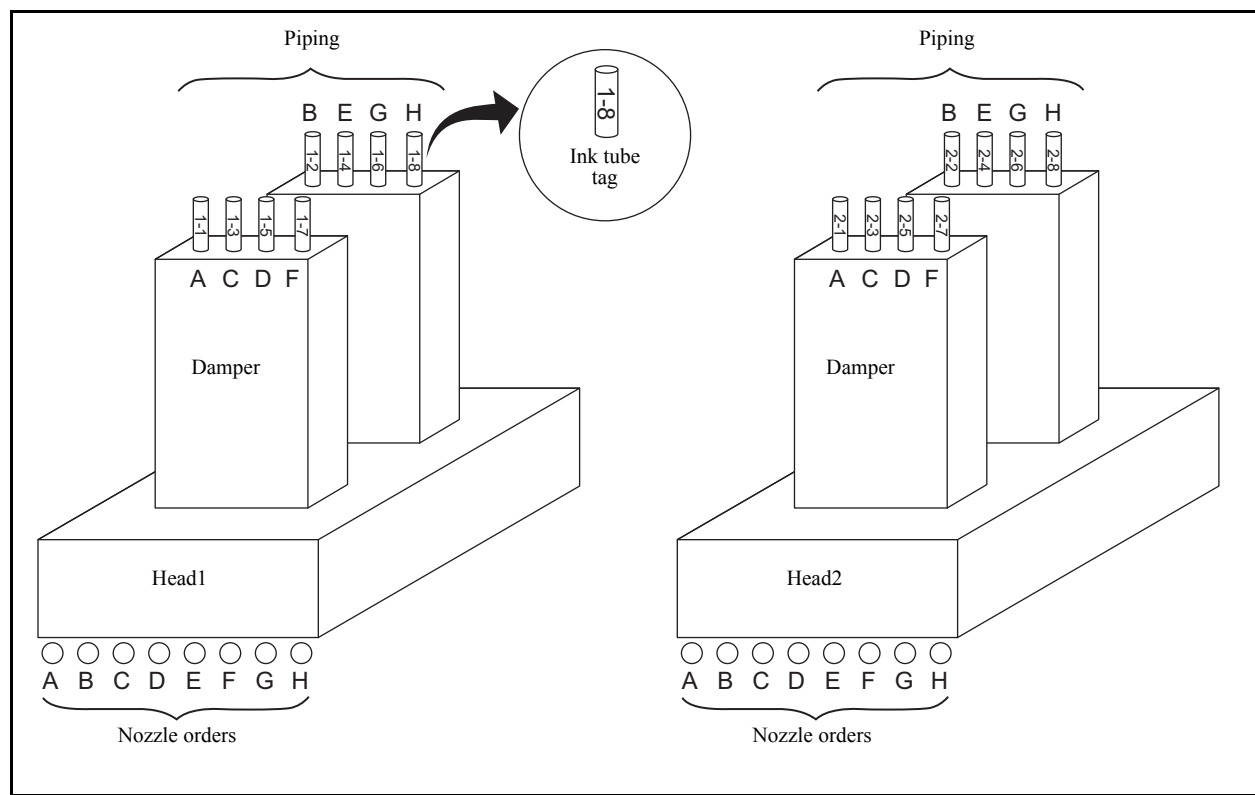


When Sublimation ink is used, put Bl on C, and put Lbl on Lc below.



1
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■ Relationship between piping and nozzle orders



### ■ Flow of the ink supply control

No.	Item	Description
1	Monitoring of cartridge error	Monitors a cartridge error when ink is supplied. For details, see "1.3.2 Ink System Error Monitoring".
2	Control and selection of supply cartridge	Checks the status of the ink cartridge and selects the cartridge (for the 4-color ink set). For details, see "1.3.3 Supply Cartridge Control and Selection".
3	Updating of cartridge LED status	Updates the LED status depending on the status of ink supply and errors. For details, see "1.3.4 Cartridge LED Control".
4	Open/close supply valves	Open/close the ink supply valves depending on the control and selection of the ink supply cartridge. For details, see "1.3.5 Supply Valve Control".

### ■ Ink system configuration

No.	Item	Description
1	When filling 4-color ink set	<ul style="list-style-type: none"> <li>Two paths of the same color are linked shortly after the cartridge valves.</li> <li>Normally the valve of 1 cartridge per color is opened by toggle switching, supplying ink to a 2-nozzle row.</li> <li>Thereafter, the cartridge on the side with the open valve is referred to as the control cartridge, while the other is referred to as the sub cartridge.</li> <li>Longer consecutive drawing time than conventional products and replacement of cartridges during the drawing are allowed by toggle switching of 2 cartridges for 1 supply path.</li> </ul>
2	When filling any ink set other than 4- color ink set (6-color ink set)	<ul style="list-style-type: none"> <li>1 cartridge is connected to a 1-nozzle row. No toggle is switched and all cartridges are control cartridges.</li> <li>Since 1 cartridge is assigned to 1 path, it cannot be replaced during printing.</li> </ul>
3	Ink supply system	<ul style="list-style-type: none"> <li>The ink filling method uses a suction system with a roller pump, and a pressure damper with a self-sealing valve.</li> <li>Ink is supplied with a siphon during printing.</li> <li>The damper sealing valve opens to supply ink when the discharge pressure drops, and the sealing valve closes when the damper ink chamber is filled.</li> <li>The sealing valve reduces the ink path pressure that reaches the head meniscus during the carriage motion.</li> </ul>
4	Replacing ink cartridge	<ul style="list-style-type: none"> <li>The warning message is displayed if the cartridge is not installed even after a lapse of 10 minutes to prevent the supply system from getting dry.</li> </ul>
5	Ink supply valve	<ul style="list-style-type: none"> <li>For each cartridge, a supply valve is provided to supply ink by opening it.</li> <li>The supply valve is normally closed and is opened only when ink supply is required.</li> <li>Ink supply is executed during discharge operation (for printing or flushing) and suction operation (for cleaning or filling). The supply valve for any cartridge that has developed an error does not open, thus does not allow ink supply.</li> </ul>
6	Ink cartridge LED	<ul style="list-style-type: none"> <li>For each cartridge, two LEDs (green: control LED; red: error LED) are used to allow the user to visually check the cartridge state.</li> <li>Since all 8 cartridges are control cartridges except when 4-color ink set is used, the green LED is on for cartridges where there is no error.</li> </ul>
7	Ink use-up cleaning (Only for the 4-color ink set)	<ul style="list-style-type: none"> <li>For cleaning, the machine switches the supply valve to the cartridge that has displayed [INK NEAR END] or [INK END] to use the cartridge with the smaller amount of residual ink first.</li> </ul>

## 1.3.2 Ink System Error Monitoring

1.1

### ■ Monitoring of cartridge error

No.	Item	Description
1	Cartridge error check	<ul style="list-style-type: none"> <li>♦ A cartridge error is periodically checked (every 30 ms).</li> <li>♦ Select the supply cartridge in taking into account the error status and the amount of remaining ink.</li> </ul>
2	LED control when an error occurs	<ul style="list-style-type: none"> <li>♦ The green LED lights up to indicate that the supply cartridge is now being controlled.</li> <li>♦ The red LED lights up or blinks to indicate that the cartridge must or should be replaced.</li> </ul>
3	Supply valve control when an error occurs	<ul style="list-style-type: none"> <li>♦ The valve for the cartridge where the green LED is lit opens when the instruction to open the valve is issued.</li> <li>♦ When an error occurs in a supply cartridge while the valve is open (during printing or cleaning), the valve switches to the other cartridge which can supply ink, if any, to continue machine operation. If a supply cartridge is removed, printing or cleaning will be stopped and the machine will return to LOCAL mode.</li> </ul>



Since all 8 cartridges are control cartridges except when the 4-color ink set is used, printing or cleaning is stopped when an error occurs and the machine returns to LOCAL mode.

### ■ Monitoring of ink system error

The ink system are checked for any error periodically (every 30 ms), and machine operation is limited according to the error, if detected. The table below shows the possible errors and the limitations on machine operation.

Priority	Ink system error	Execution status when an error occurs*2				Description of the error
		CL/ filling	Printing	Head wash	Pump cleaning	
1	Initial filling is not executed	×	×	×	×	Initial filling has not been executed.
2	INK END error	×	×	○	○	Errors occurred in both cartridges and printing & suction operation can not be executed.
3	INK NEAR END error	×	○	○	○	<ul style="list-style-type: none"> <li>♦ Errors occurred in both cartridges and suction operation can not be executed.</li> <li>♦ Machine returns to LOCAL mode every completion of printing one file.</li> </ul>
4	Waste Ink Tank	×	×	×	×	When the amount of waste ink counted by the firmware increases to a certain amount after it displays near full.
5	NO CARTRIDGE	×	×	×	×	No cartridge has been installed.
6	Ink IC*1	×	×	×	×	<ul style="list-style-type: none"> <li>♦ An error related to the cartridge IC has occurred.</li> <li>♦ Ink supply is impossible.</li> </ul>
7	INK REMAIN ZERO (Only for the 4-color ink set)	×	×	×	○	<ul style="list-style-type: none"> <li>♦ Ink in the cartridge is used up.</li> <li>♦ Ink supply is impossible.</li> </ul>
8	Cartridge ink end	×	×	○	○	<ul style="list-style-type: none"> <li>♦ Ink in the cartridge has been used to the end level, with a predetermined small amount of ink remaining.</li> <li>♦ Ink supply is impossible. (CL can be used)</li> </ul>
9	Cartridge near end	○	○	○	○	<ul style="list-style-type: none"> <li>♦ The Near End sensor has detected the nearly ink end status.</li> <li>♦ The cartridge can be used for printing or cleaning.</li> </ul>
10	Expiration:2 MONTH	×	×	×	×	Two months have passed since the expiration date of the ink.
11	Expiration:1 MONTH	○	○	○	○	<ul style="list-style-type: none"> <li>♦ One month has passed since the expiration date of the ink.</li> <li>♦ Machine returns to LOCAL mode every completion of printing one file.</li> </ul>
12	Notification of nozzle cleaning execution	○	○	○	○	Prompts the user to follow the nozzle cleaning procedure.
13	!Replace a WIPER	○	○	○	○	The wiper operation count has exceeded the number which requires the replacement of the wiper.
14	!WashLiquidCart.NONE	○	○	○	×	No washing liquid cartridge has been installed.
15	!WRONG WASH CART.	○	○	○	×	Trouble with the ink washing liquid cartridge
16	!Wash Liquid END	○	○	○	×	The washing liquid cartridge is empty.



Priority	Ink system error	Execution status when an error occurs*2				Description of the error
		CL/ filling	Printing	Head wash	Pump cleaning	
17	Expiration	○	○	○	○	Ink expiration has been reached.
18	!WASTE TANK	×	○	×	×	Waste ink tank is almost full. (counted by firmware)

\*1 Ink IC: NON-ORIGINAL INK, WRONG INK IC, Kind of INK, Color of INK, WRONG CARTRIDGE,  
Expiration:2MONTH

\*2 ○: Executable    ×: Inexecutable

#### ■ Errors related to the amount of remaining ink

- Calculate the number of ink shots by printing and flushing or the amount of ink sucked by cleaning and filling, and then the amount of consumed ink by subtraction of remaining ink.
- When the amount of remaining ink is updated, it is written into the ink IC chip.
- A cartridge error is issued according to the amount of remaining ink.

No.	Item	Description	
		Error detect timing	Limitations after error detection
1	Cartridge near end	The amount of remaining ink is detected on the near end detect PCB assy. The specified value of each cartridge is as follows: ◆ 220 cc cartridge: 20 cc ◆ 440 cc cartridge: 40 cc	Initial filling is not allowed, but printing and cleaning are allowed.
2	Cartridge ink end	Displayed when use of a certain amount of ink is detected after the near end detection.	Neither printing nor initial filling is allowed, but cleaning is allowed.
3	INK REMAIN ZERO (Only for the 4-color ink set)	◆ Displayed when the amount of remaining ink is detected to be 0 cc after the ink end detection. ◆ This error may be displayed only after completion of ink use-up cleaning.	None of printing, initial filling and cleaning is allowed.
4	WRONG CARTRIDGE	Occurs when the amount of consumed ink exceeds nearly double (220 cc cartridge: 400 cc, 440 cartridge: 800 cc or more) the ink cartridge capacity but the ink end is not displayed yet.	None of printing, initial filling and cleaning is allowed.

## 1.3.3 Supply Cartridge Control and Selection

1.1

### ■ Supply cartridge control

No.	Item	Description
1	For the 4-color ink set	<ul style="list-style-type: none"> <li>♦ The machine uses two ink cartridges for 1 supply system and can mount 8 cartridges in total.</li> <li>♦ 1 supply cartridge is assigned to 1 supply system. The cartridge with less amount of remaining ink is used first by toggle switching.</li> <li>♦ Switching between cartridges for ink supply occurs under any of the following conditions: <ul style="list-style-type: none"> <li>• “INK END” during printing</li> <li>• “INK NEAR END” during filling</li> <li>• Ink IC warning</li> <li>• When the cartridge is removed</li> <li>• When executing Ink use-up cleaning</li> </ul> </li> </ul>
2	Except for the 4-color ink set (filling 6-color ink set)	♦ Since there is 1 ink cartridge per supply system, all 8 cartridges are supply cartridges.

### ■ Cartridge status indicated by LEDs

LED	Status	Explanation
Green	Lit	Supply cartridge
Red	Blink	INK END, INK NEAR END, Expiration:1MONTH
	Lit	<ul style="list-style-type: none"> <li>♦ NO CARTRIDGE</li> <li>♦ WRONG INK IC Errors related to PIC, namely, NON-ORIGINAL INK, WRONG INK IC, Kind of INK, Color of INK, WRONG CARTRIDGE and Expiration:2MONTH</li> <li>♦ INK REMAIN ZERO A cartridge having no remaining ink after execution of ink use-up cleaning (only in 4-color use).</li> </ul>

### ■ Selection and determination of the supply cartridge for the 4-color ink set

#### ☐ supply cartridge switching selection timing

- At power-on
- When an error occurs in the currently selected cartridge
- When a cartridge with higher priority than the currently selected cartridge is inserted
- Switching is not executed during printing or cleaning but executed when the machine has returned to LOCAL mode.

#### ☐ When there is more than one effective cartridge for 1-ink supply path

Priority	Cartridge status
1	The cartridge having the smaller amount of remaining ink is selected.
2	If there is no distinction at “1”, the cartridge closer to the expiration date is selected.
3	If there is no distinction at “1” and “2”, the cartridge in the smaller slot number is selected.

## 1.3.3 Supply Cartridge Control and Selection

1.1

□ When one cartridge for 1-supply path has an error

- The machine selects the other cartridge if available.
- The conditions for cartridge selection vary depending on the error type and ink supply timing.  
The table below shows the conditions for cartridge selection.

No.	Cartridge status	Discharge operation* <sup>2</sup>	Suction operation* <sup>2</sup>
1	Normal cartridge	○	○
2	Cartridge near end	○	△
3	Cartridge ink end	X	△
4	Residual quantity 0 cartridge	X	X
5	No cartridge	X	X
6	Ink IC* <sup>1</sup>	X	X

\*1 Ink IC: NON-ORIGINAL INK, WRONG INK IC, Kind of INK, Color of INK, WRONG CARTRIDGE, Expiration:2MONTH

\*2 ○: Available for ink supply. X: Not available for ink supply.  
△: Available for ink supply when the other cartridge is normal.

□ Availability of ink supply

Cartridge 1 \ Cartridge 2	Normal cartridge	Cartridge near end	Cartridge ink end	Residual quantity 0 cartridge	No cartridge Ink IC* <sup>1</sup>
Normal cartridge	○	○	○	○	○
Cartridge near end	○	△	△	△	△
Cartridge ink end	○	△	X	X	X
Residual quantity 0 cartridge	○	△	X	X	X
No cartridge	○	△	X	X	X
Ink IC* <sup>1</sup>	○	△	X	X	X

\*1 Ink IC: NON-ORIGINAL INK, WRONG INK IC, Kind of INK, Color of INK, WRONG CARTRIDGE, Expiration:2MONTH.

○: Both discharge and suction are allowed. X: Neither discharge nor suction is allowed (Ink end error).  
△: Discharge is allowed but suction not allowed (Ink near end error).

□ Conditions for changing the supply cartridge

Sub cartridge \ Control cartridge	Normal cartridge	Cartridge near end	Cartridge ink end	Residual quantity 0 cartridge	No cartridge Ink IC* <sup>1</sup>
Normal cartridge	△	○	—	—	—
Cartridge near end	—	△	—	—	—

Sub cartridge Control cartridge	Normal cartridge	Cartridge near end	Cartridge ink end	Residual quantity 0 cartridge	No cartridge Ink IC* <sup>1</sup>
Cartridge ink end	○	○	—	—	—
Residual quantity 0 cartridge	○	○	—	—	—
No cartridge	○	○	—	—	—
Ink IC* <sup>1</sup>	○	○	—	—	—

\*1 Ink IC: NON-ORIGINAL INK, WRONG INK IC, Kind of INK, Color of INK, WRONG CARTRIDGE,  
Expiration:2MONTH

○: Switched.      —: Not switched.

△: Switched according to priority (No operation by the condition as above during cleaning).

■ Condition of each cartridge LED indicated by its lighting and blinking

The two LEDs light up or blink to indicate the condition of the cartridge and help the user determine the time for replacing the cartridge.

LED		Cartridge status
Control LED (Green)	Not lit	No cartridge has been selected as the supply cartridge
	Blinking	–
	Lit	<ul style="list-style-type: none"> <li>♦ A cartridge has been selected as the supply cartridge (All cartridge LEDs are Lit for any other than the 4-color ink set except when an error occurs.)</li> <li>♦ Ink use-up cleaning is now being performed</li> </ul> For details, see "1.3.7 Use-up Cleaning".
Error LED (Red)	Not lit	The cartridge is normal
	Blinking	An error has occurred (Blinking signifies that one of the following errors has occurred) <ul style="list-style-type: none"> <li>♦ Cartridge near end</li> <li>♦ Cartridge ink end</li> <li>♦ One month has passed since the expiration date of the ink</li> </ul>
	Lit	An error has occurred (Lighting signifies that one of the following errors has occurred) <ul style="list-style-type: none"> <li>♦ Residual quantity 0 cartridge</li> <li>♦ No cartridge</li> <li>♦ Ink IC*1</li> </ul>

\*1 Ink IC: NON-ORIGINAL INK, WRONG INK IC, Kind of INK, Color of INK, WRONG CARTRIDGE, Expiration:2MONTH

■ LED operation pattern

Event	For the 4-color ink set				Except for the 4-color ink set	
	Cartridge 1		Cartridge 2		Cartridge 1	
	Control LED	Error LED	Control LED	Error LED	Control LED	Error LED
Online supply start ♦ Both cartridges free from problems ♦ Cartridge 1 is the control cartridge.	Lit	–	–	–	Lit	–
Cartridge 1 ♦ Cartridge near end	Lit	Blink	–	–	Lit	Blink
Cartridge 1 ♦ Cartridge ink end ♦ Cartridge 2 is the control cartridge.	–	Blink	Lit	–	–	Blink
Cartridge 2 ♦ Cartridge near end	–	Blink	Lit	Blink		
Cartridge 1 ♦ Removed for replacement	–	Lit	Lit	Blink	–	Lit
Cartridge 1 ♦ A normal cartridge has been set	–	–	Lit	Blink	Lit	–
Cartridge 2 ♦ Cartridge ink end ♦ Cartridge 1 is the control cartridge.	Lit	–	–	Blink		
Online printing has been completed ♦ All valves closed	Lit	–	–	Blink	Lit	–

## ■ Cartridge switching operation

Event		For the 4-color ink set		Except for the 4-color ink set
		Cartridge 1 valve	Cartridge 2 valve	Cartridge 1 valve
1	Online supply start ♦ Both cartridges free from problems ♦ Cartridge 1 is the control cartridge.	OPEN	CLOSE	OPEN
2	Cartridge 1 ♦ Cartridge near end	No change	No change	No change
3	Cartridge 1 ♦ Cartridge ink end ♦ Cartridge 2 is the control cartridge.	CLOSE	OPEN	CLOSE
4	Cartridge 2 ♦ Cartridge near end	No change	No change	
5	Cartridge 1 ♦ Removed for replacement	No change	No change	CLOSE
6	Cartridge 1 ♦ A normal cartridge has been set	CLOSE	OPEN	OPEN
7	Cartridge 2 Cartridge ink end Cartridge 1 is the control cartridge.	OPEN	CLOSE	
8	Online printing has been completed ♦ All valves closed	CLOSE	CLOSE	CLOSE

## ■ Timing to open/close the supply valve

The supply valves are usually closed and opened only when ink supply is required.  
Timing to open/close the supply valves is shown below:

Timing to open/close the supply valves		Instruction to open/ close the supply valve
Flushing	Before execution	OPEN
	After execution	CLOSE
Cleaning or filling	Before execution	OPEN
	After execution	CLOSE
Head wash	Before execution	OPEN
	After execution	CLOSE
Before printing operation		OPEN
Before capping operation		CLOSE
When changing the supply cartridge during ink supply		OPEN/CLOSE
At the occurrence of a system error		CLOSE
At power-off		CLOSE

## 1.3.6 Monitoring of the Amount of Remaining Ink

1.0

### ■ Outline

- The amount of remaining cartridge ink is calculated in such a way that the amount of ink consumed for the following operations is calculated by subtraction of remaining ink.
  - Number of ink shots by printing and flushing
  - Amount of ink suction by cleaning and filling
- When the amount of remaining ink is updated, it is written into the ink IC chip.
- A cartridge error is issued according to the amount of remaining ink.

### ■ Calculation of the amount of consumed ink

- Ink discharging during printing and flushing
  - The amount of ink consumed by ink discharging is calculated by counting the number of ink shots.
  - This machine counts ink shots for each row of nozzles and performs calculation by taking account of dot sizes (small, middle and large).
- Ink suction during cleaning and filling

The table below shows the amount of ink consumed for various ink suction operations. (For the 4-color ink set)

Motion	Ink consumption through one supply path [cc]
SOFT cleaning	0.7
NORMAL cleaning	2.5
HARD cleaning	9

### ■ Updating of the amount of remaining ink

The amount of remaining ink will be updated and written onto the ink IC chip at the timing shown below.

No.	Timing for updating	Execution conditions
1	At pre-capping operation	<ul style="list-style-type: none"> <li>◆ Ink has been used for printing or flushing.</li> <li>◆ At capping chiefly after completion of printing.</li> </ul>
2	At completion of cleaning and filling operation	<ul style="list-style-type: none"> <li>◆ Ink has been used for cleaning and filling.</li> <li>◆ The amount of ink remaining in the cartridge used for the suction will be updated.</li> </ul>
3	When any of the following events has occurred during printing, cleaning or filling: <ul style="list-style-type: none"> <li>◆ Cover OPEN</li> <li>◆ Lever UP</li> <li>◆ Media end</li> </ul>	<ul style="list-style-type: none"> <li>◆ Updated by the amount of ink consumed before the occurrence of any of the events shown at left.</li> </ul>
4	When any of the following errors has occurred during printing: <ul style="list-style-type: none"> <li>◆ Cartridge near end</li> <li>◆ Cartridge ink end</li> <li>◆ Cartridge error</li> </ul>	<ul style="list-style-type: none"> <li>◆ Updated just after occurrence of the error, not waiting for writing at the capping pre-operation.</li> <li>◆ Updated before replacing the cartridge during printing.</li> </ul>



MAINTENANCE MANUAL > Operating Principle > Ink System > Use-up Cleaning							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver.	1.00	Remark
<b>1.3.7 Use-up Cleaning</b>							<b>1.0</b>

■ As for Use-up cleaning

- This function is available only for the 4-color ink set.
- This function is intended to use the remaining ink in the cartridge where “cartridge near end” or “cartridge ink end” occurs during cleaning with higher priority and prevent the ink of the normal cartridge from being consumed.
- When one cartridge is a normal one at the start of cleaning, ink is sucked from the cartridge with residual ink first and then switching to the normal cartridge takes place to continue cleaning.
- When the residual ink is used up (software counter), “INK REMAIN ZERO” error is displayed, disabling the cartridge.



Ink use-up cleaning control is only effective in NORMAL cleaning mode. It cannot be executed in any other cleaning mode or at initial filling.

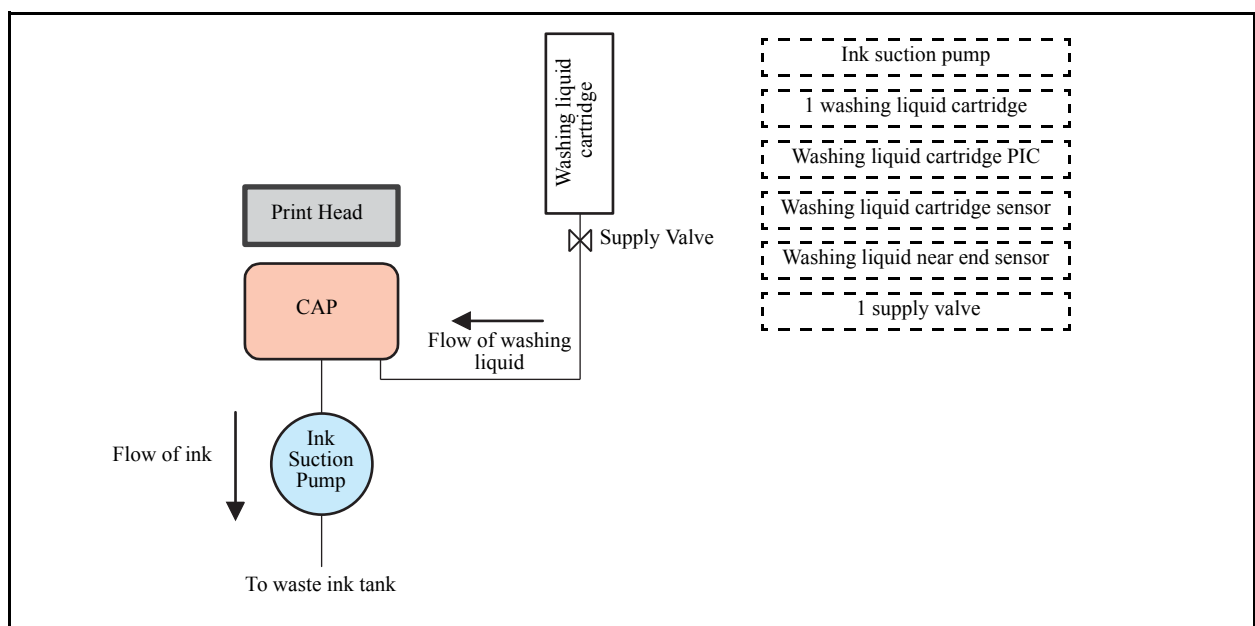
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### ■ Outline of Control

1. The ink suction and discharge mechanism is driven by roller pumps (ink suction pumps).
2. The amount of ink discharged to the waste ink tank is counted by the firmware, and warnings are issued depending on the level. They are displayed in sequences involving ink suction and discharge, or locally.
3. The machine is equipped with an automatic cleaning mechanism (pump tube cleaning) to prevent ink solidification in the waste ink tube connecting the inside of the cap to the waste ink tank.
4. Cleaning is performed by drawing washing liquid from the washing liquid cartridge to the cap using the siphon principle. It is performed periodically when power is turned on/off.

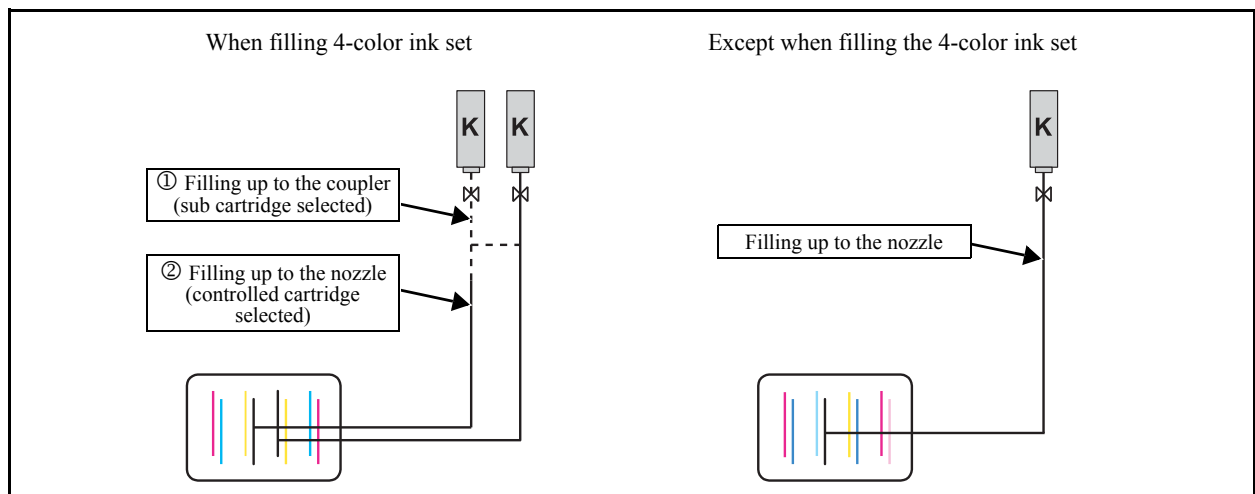
### ■ System configuration

The system configuration of the ink suction and discharge mechanism is as shown below.



### ■ Outline flow

In initial filling for the 4-color ink set, to eject air completely from the ink paths, the suction is divided into 2 stages, (①) filling up to the coupler, and (②) filling up to the nozzle. Each uses the sub cartridge and control cartridge.



### ■ Operation sequence for initial filling

The sequence of initial ink filling is shown below:

No.	Item	Description
1	Selection of ink type (ink type)	Select a set value shown below. Setting value: SS21 Sol
2	Selection of number of colors (ink set)	Select a set value shown below. Setting value: 4-Color (MMCCYYKK), 6-Color (MmCMcCKY),
3	Preparing to fill the pre-fill up solution	Discharge the transportation liquid remaining in the ink path.
4	Filling of pre-fill up solution	Insert a pre-fill up solution cartridge in all slots to be sucked (all 8 cartridges). ♦ Suction will not be performed if a warning about any pre-fill up solution cartridge is displayed. (The pre-fill up solution cartridges do not incorporate an IC chip. Therefore, IC chip read error is recognized to be normal.) ♦ When a waste ink tank warning occurs, the warning message is displayed.
5	Discharging of the pre-fill up solution	Discharge the pre-fill up solution.
6	Ink filling	Insert the ink cartridges into all the slots and start ink filling.  When filling the 4-color ink set: 1. Fill ink up to the coupler. Within the same supply system, open the carriage valves in the order of even columns → odd columns, and fill the ink up to the coupler. 2. Fill ink up to the damper (head)  Except when filling the 4-color ink set: 1. Open all of the cartridge valves and fill the ink up to the damper (head). • Filling will not be executed if a warning about the ink cartridge is displayed. • When a waste ink tank warning occurs, the warning message is displayed. • If a cartridge warning is displayed after completion of filling ink up to the coupler and before completion of filling ink up to the damper (head), switching between the cartridges will take place and filling will be continued. (Only for filling the 4-color ink set) Filling will be discontinued if one supply system becomes unable to supply ink.
7	Washing liquid filling	♦ Fill the pump tube cleaning system with the dedicated washing liquid. ♦ Make sure that the washing liquid cartridge has been inserted into the slot, and then start supplying the solution. ♦ Filling will not be executed if a warning about the washing liquid cartridge is displayed. ♦ When a waste ink tank warning occurs, the warning message is displayed.



If filling any other than the 4-color ink set when this unit is installed, you have to change the coupler before initial filling .

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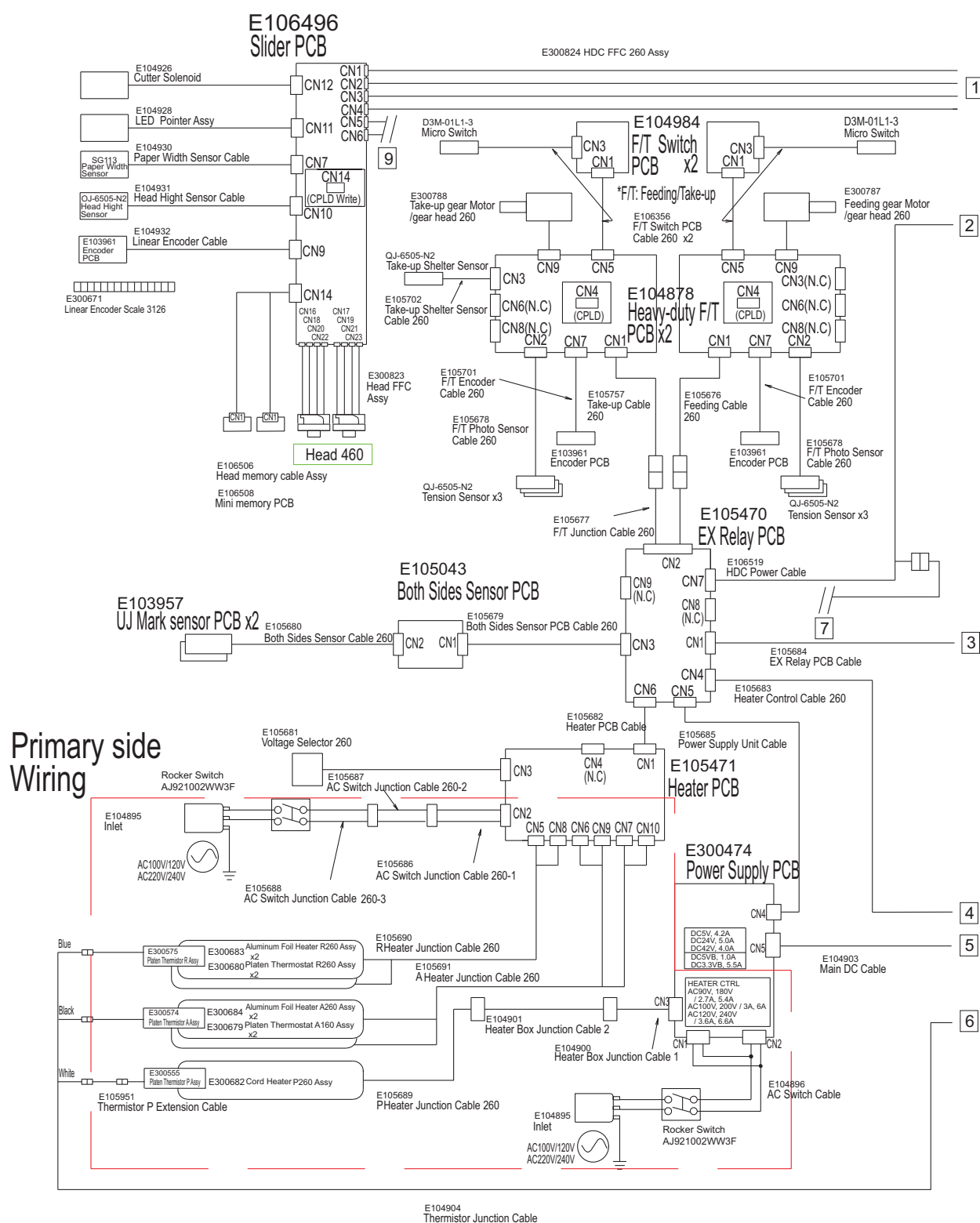
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## Electrical Parts

**2.1**  
**Block Diagram**

**2.2**  
**Operation Explanation**

**2.3**  
**Circuit Board Specifications**



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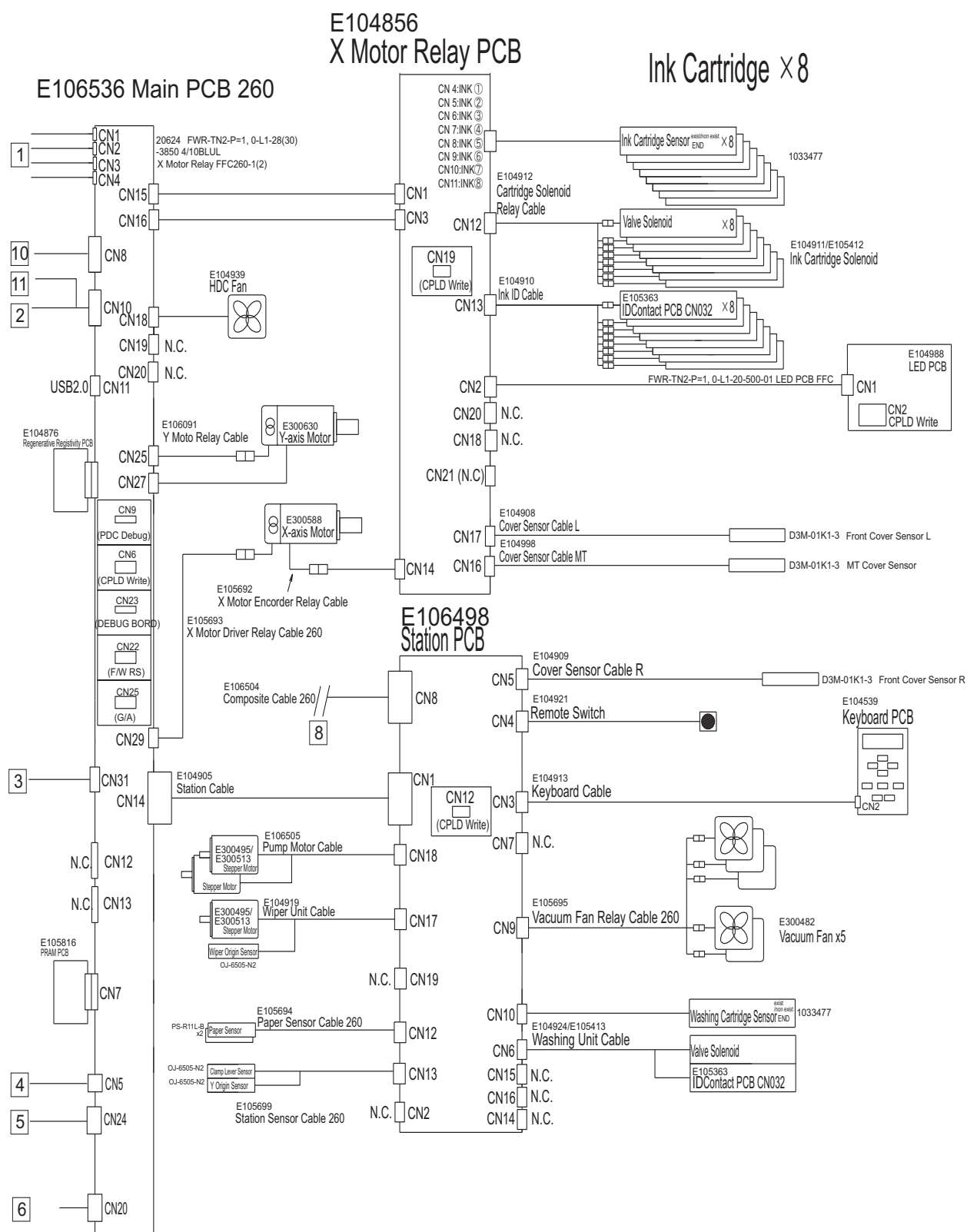
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## 2.1.1 Connection Diagram Inside the Main Body

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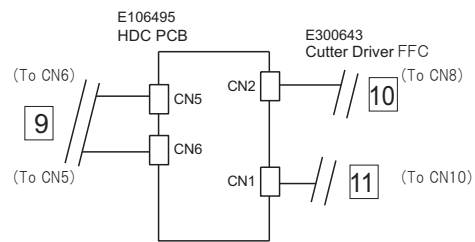
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## 2.1.1 Connection Diagram Inside the Main Body

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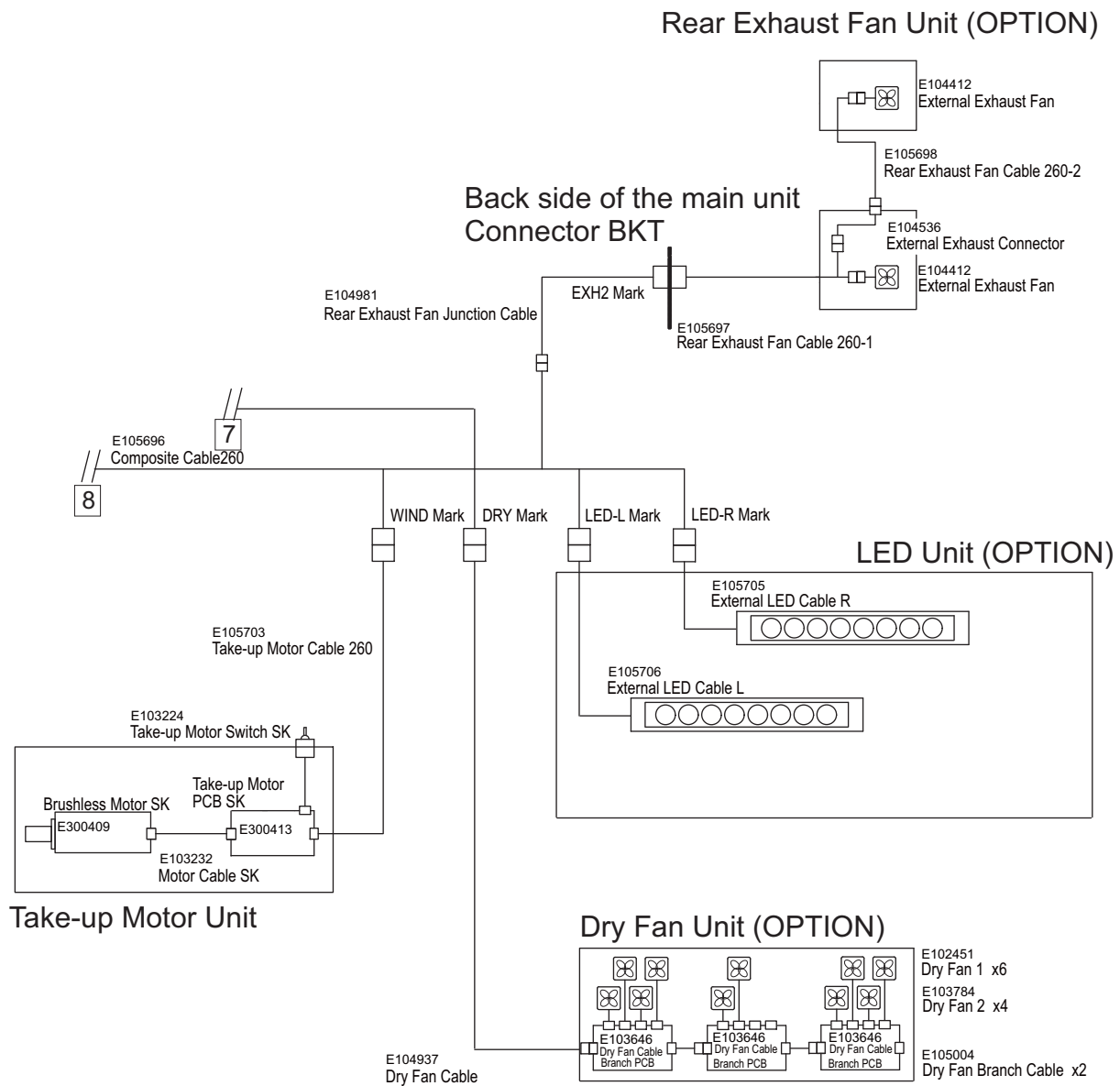
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## 2.1.2 Connection Diagram Outside the Main Body

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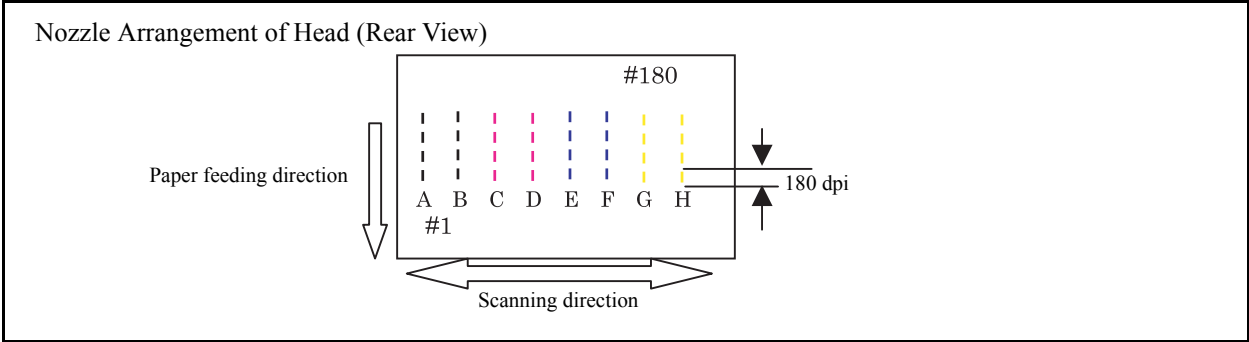
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## Electrical Parts

**2.1**  
**Block Diagram**

**2.2**  
**Operation Explanation**

**2.3**  
**Circuit Board Specifications**



- Outline

  - The print head carriage of this machine has two head with 180 nozzles (180 dpi) x 8 rows.
  - Ink is ejected from the ink chamber by vibrating the piezoelectric elements of the heads.  
For this vibration waveform, the machine uses variable waveform which can permit 4-step expressions (L, M, S and none).
  - The head1 is connected to the main PCB assy in the electrical box, and it is driven by a drive signal (COM waveform) applied to the piezo of one nozzle row for each of the eight rows of nozzles.  
The head2 is connected to the HDC PCB assy.  
FPGA (HDC) is mounted on the main PCB assy and HDC PCB. The FPGA (HDC) applies the COM waveform in synchronization with the scale interval of the linear encoder scale and simultaneously sends the nozzle data to the head.  
In addition, the COM waveform is automatically corrected based on the registered head ID. It is also corrected based on the ID registered in the head memory, other information, and the ambient air temperature detected. (In case the head ID is not registered correctly, no ink may be ejected.)
  - The main PCB assy has FPGA (PDC), which takes charge of image processing and controls the SDRAM picture memory (PRAM).  
PRAM is mounted on PRAM PCB assy and the PRAM PCB assy has a capacity of 512MB. Of the data output from the host PC, the command part is analyzed by the CPU and the image part is transferred to the memory. The PRAM is a ring memory and when data for one scanning session has been accumulated, the heads start scanning. One scanning session creates images only in 360 dpi (4-colors) in the X direction. Therefore, the machine completes the image in the targeted resolution while feeding the media by a required distance.
  - This model is equipped with many I/Os such as step motors and sensors. If all of them were connected directly to the main PCB assy, routing the wiring and replacing the PCB would be difficult. To avoid this, a station PCB assy, X-axis motor relay PCB assy and head slider PCB assy are connected with the main PCB assy in series, reducing the number of signals exchanged. The signals are processed by the FPGA (IOC) mounted on the main PCB assy.

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## Electrical Parts

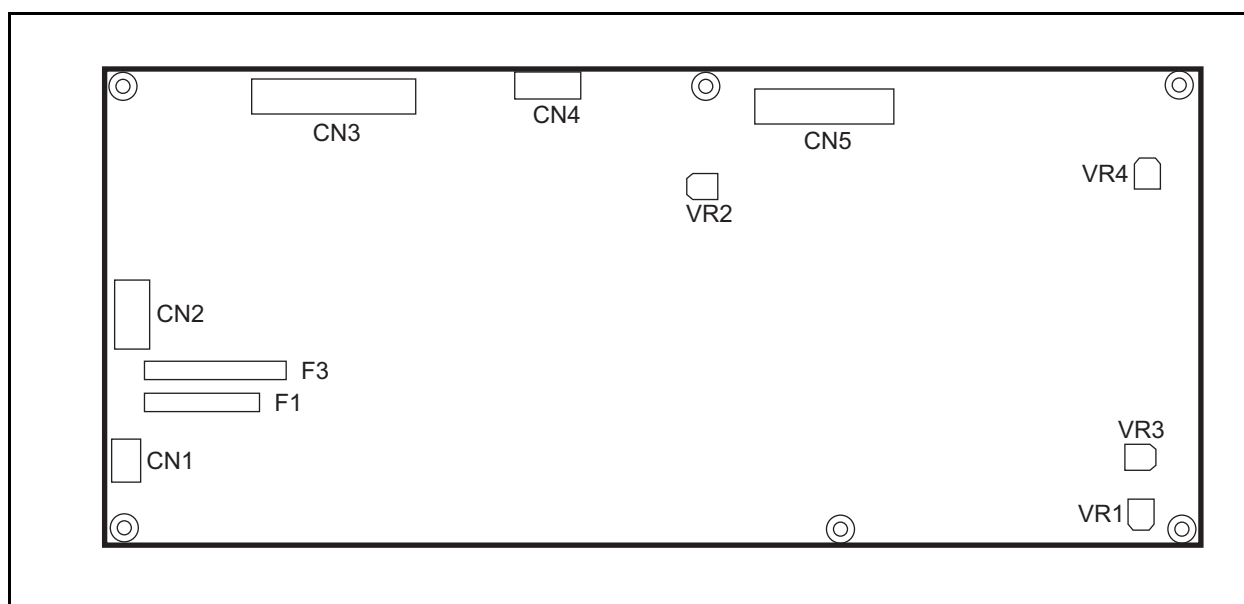
**2.1**  
**Block Diagram**

**2.2**  
**Operation Explanation**

**2.3**  
**Circuit Board Specifications**

## 2.3.1 Power Supply PCB Assy

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### ■ Outline

Board name: Power Supply PCB Assy

This PCB provides all the electrical power for controlling and driving functions.

### ■ Input and output of the power source

Input	AC100-120V, AC220-240, 50/60Hz
Output	+3.3SBV, 5.5A +5SBV, 1.0A +5V, 4.2A +24V, 5.0A +42V, 4.0A

### ■ Connector specification

- CN1 AC input connector  
Model number (JST): B2P3-VH (LF) (SN)

Pin	Terminal name	Kinds
1	AC-L	AC input supply
2	(NC)	(NC)
3	AC-N	AC input supply

- CN2 AC HEAT input connector  
Model number (JST): B03P-VL \*Media heater power input

Pin	Terminal name	Kinds
1	AC-L	AC input supply
2	(NC)	(NC)
3	AC-N	AC input supply

### ■ Fuse rating

F1	T6.3AH/ 250V	φ5x20 mm	Input line to DC output circuit
F3	T15AH/ 250V	φ6.3x30 mm	Input line to heater

## 2.3.1 Power Supply PCB Assy

1.0

- CN3 Heater connector  
Model number

It is connected to the media heaters (Print)

The element connection of the media heater is switched automatically according to the input voltage.

AC100-120V: Parallel connection

AC220-240V: Serial connection

Pin	Terminal name	Kinds	Pin	Terminal name	Kinds
1	HEAT3-1A	HEATER	12	HEAT3-1B	HEATER
2	HEAT3-2A	HEATER	13	HEAT3-2B	HEATER
3	HEAT3-3A	HEATER	14	HEAT3-3B	HEATER
4	HEAT3-4A	HEATER	15	HEAT3-4B	HEATER
5	HEAT3-THA	THERMAL	16	HEAT3-THB	THERMAL
6	HEAT2-1A	HEATER	17	HEAT2-1B	HEATER
7	HEAT2-2A	HEATER	18	HEAT2-2B	HEATER
8	HEAT2-THA	THERMAL	19	HEAT2-THB	THERMAL
9	HEAT1-1A	HEATER	20	HEAT1-1B	HEATER
10	HEAT1-2A	HEATER	21	HEAT1-2B	HEATER
11	HEAT1-THA	THERMAL	22	HEAT1-THB	THERMAL

- CN4 HEAT ON/OFF  
Model number (MOLEX): B6B-XH-A (LF) (SN)

Pin	Terminal name	Kinds
1	HEAT1 ON	SIGNAL
2	0V	GND
3	HEAT2 ON	SIGNAL
4	0V	GND
5	HEAT3 ON	SIGNAL
6	0V	GND

- CN5 DC output connector  
Model number (MOLEX): 5566-18A

Pin	Terminal name	Kinds	Pin	Terminal name	Kinds
1	+42V	DC power source	10	+42V	DC power source
2	+24V	DC power source	11	+24V	DC power source
3	0V	GND	12	0V	GND
4	0V	GND	13	0V	GND
5	+5V	DC power source	14	+5V	DC power source
6	+5SBV	DC power source	15	R/C (ON/OFF)	DC power source
7	+3.3SBV	DC power source	16	+3.3SBV	DC power source
8	0V	GND	17	0V	GND
9	0V	GND	18	0V	GND

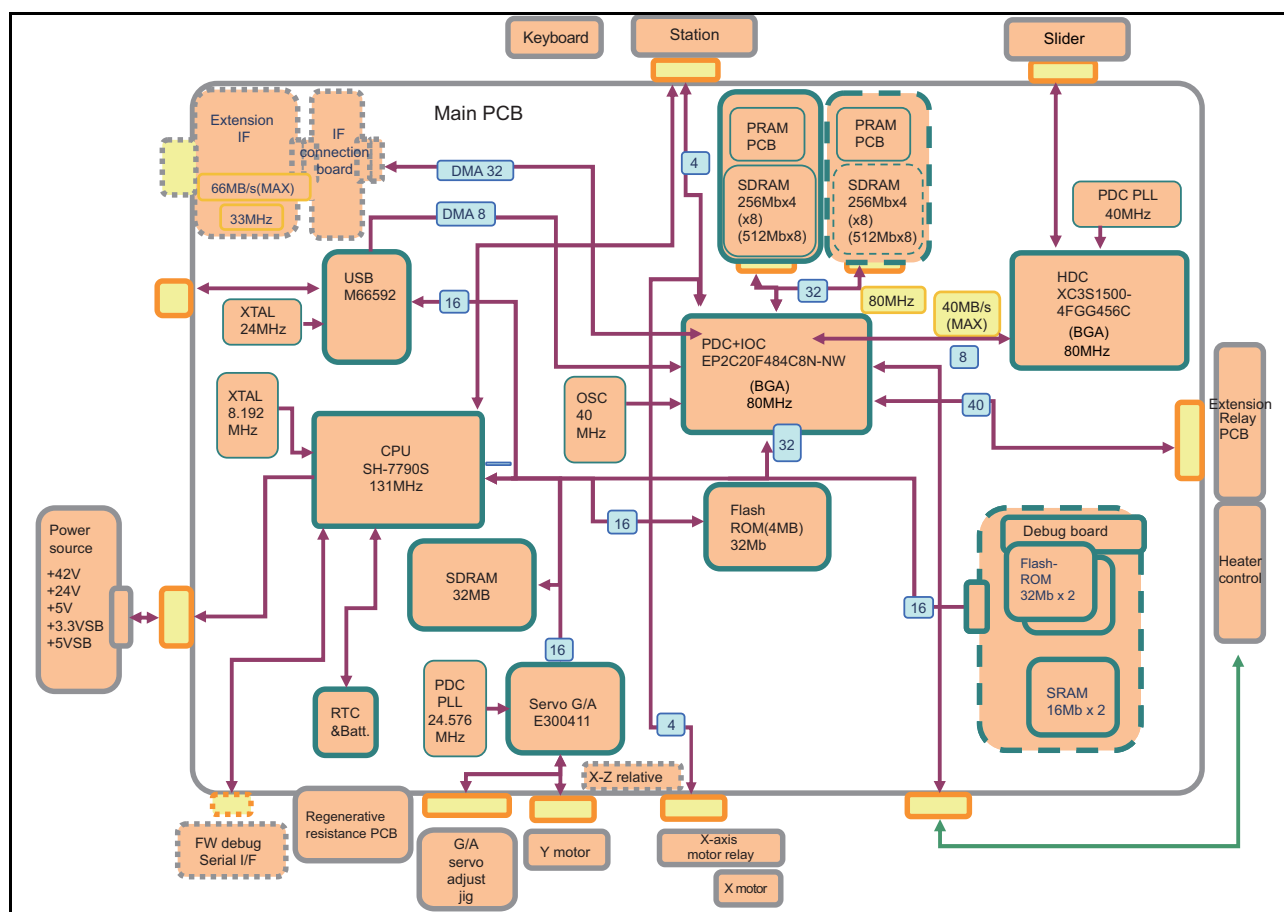
Note: GND and FG are directly processed in the power supply (pattern).

### ■ Volume specification

Voltage	No	Adjustable range	Kinds
+3.3SBV	VR1	3.28 – 3.32	During standby or for main control
+5SBV	VR2	4.98 – 5.02	
+5V	VR4	4.98 – 5.02	For I/O control
+24V	—	—	
+42V	VR3	41.0 – 41.2	For discharge or motor drive

## 2.3.2 Main PCB Assy

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### ■ Outline

Board name: Main PCB Assy

The CPU used is SH-3 (RISC, 133MHz) made by Hitachi.

A program for the CPU is written in flash memory. Version up of this program is easily executed on site through I/F. The version up is carried out by downloading the program to PRAM through CPU and then by writing it in the flash memory.

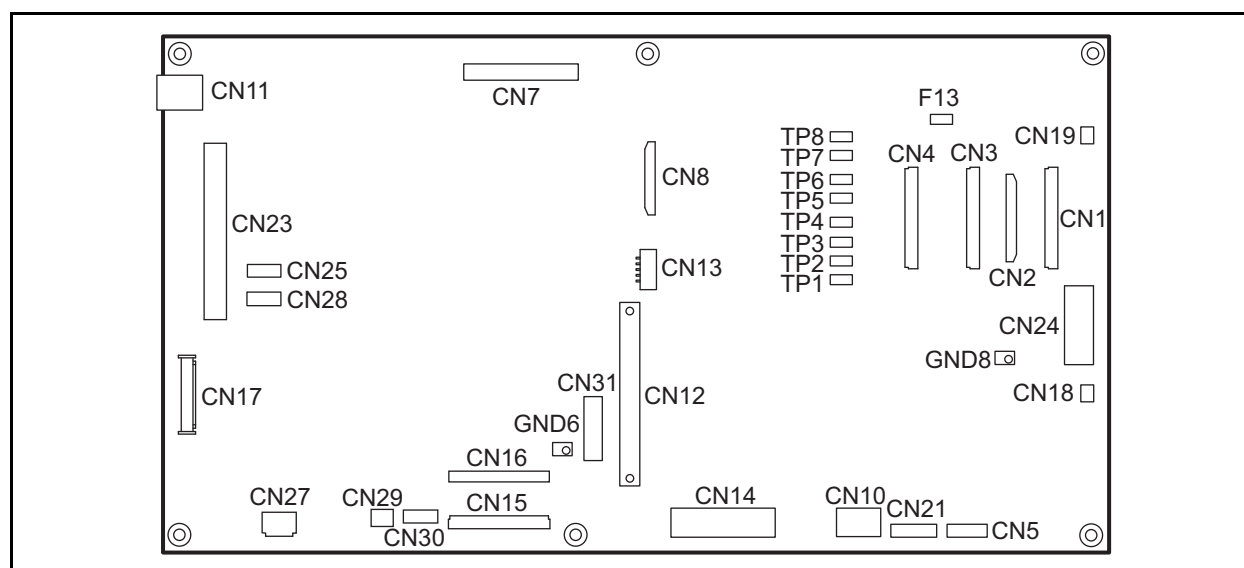
When received data is read from I/F, the CPU writes the data in PRAM through PDC. Then the data, after being subjected to required processes by PDC-CTR, is transmitted to the HDC.

Receiving the data, the HDC creates head driving COM signals and nozzle data, and then transmits each data to the slider PCB assy via HDC FFC cable.

The main PCB assy also has X, Y-axis motor driving circuit and other I/O control circuits.

## 2.3.2 Main PCB Assy

1.0



### List of connectors

CN No	Pin	Connected to:	Remarks
CN1	30	Slider PCB Assy	Head, IO signal
CN2	50	Slider PCB Assy	Head signal
CN3	30	Slider PCB Assy	Power source
CN4	30	Slider PCB Assy	COM drive
CN5	6	Extension Relay PCB Assy	Heater control
CN6	6	AUX.	Not installed
CN7	80	PRAM PCB Assy	
CN8	50	HDC PDB Assy	Control
CN9	6	AUX.	Not installed
CN10	8	Extension Relay PCB Assy, LED Unit, Dry FAN, HDC PCB Assy	Power source
CN11	4	USB I/F	USB2.0
CN12	80	AUX.	Extension IF PCB Assy
CN13	5	AUX.	Extension IF PCB Assy
CN14	40	Station PCB Assy	
CN15	30	X-axis Motor Relay PCB Assy	
CN16	28	X-axis Motor Relay PCB Assy	
CN17	10	Regenerative Resistivity PCB Assy	
CN18	2	HDC Fan	
CN19	2	AUX.	Not installed
CN20	3	AUX.	Not installed
CN21	7	Thermistor	Media heater temperature detection
CN22	4	Serial Debug Monitor	AUX.
CN23	100	Debug Board	FW program writing
CN24	18	Power Supply PCB Assy	
CN25	5	Y-axis Motor Encoder	
CN26	8	G/A Debug Monitor	AUX.
CN27	2	Y-axis Motor	
CN28	4	AUX.	Not installed
CN29	2	X-axis Motor	
CN30	4	AUX.	Not installed
CN31	40	Extension Relay PCB Assy	

MAINTENANCE MANUAL > Electrical Parts > Circuit Board Specifications > Main PCB Assy								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver.	1.00	Remark
<b>2.3.2 Main PCB Assy</b>								<b>1.0</b>

■ Test point

Terminal name	Purpose
GND2, 6	GND
TP1-8	COM voltage (1-8)

■ Fuse rating

F13	0.375A/ 125V	42 V power supply for heads
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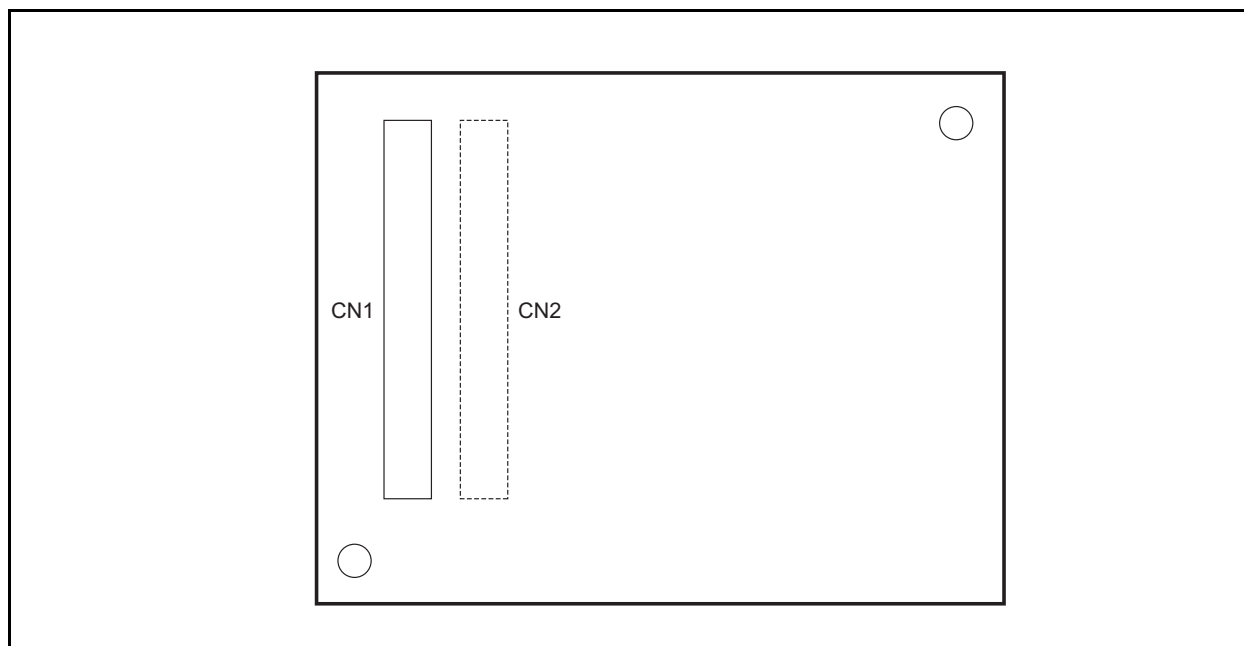
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## 2.3.3 PRAM PCB Assy

1.0



### ■ Outline

Board name: 512 MB PRAM PCB Assy

Located on the main PCB Assy inside the electrical box.  
512 MB picture memory is mounted.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	80	Main PCB Assy	
CN2	80	AUX.	

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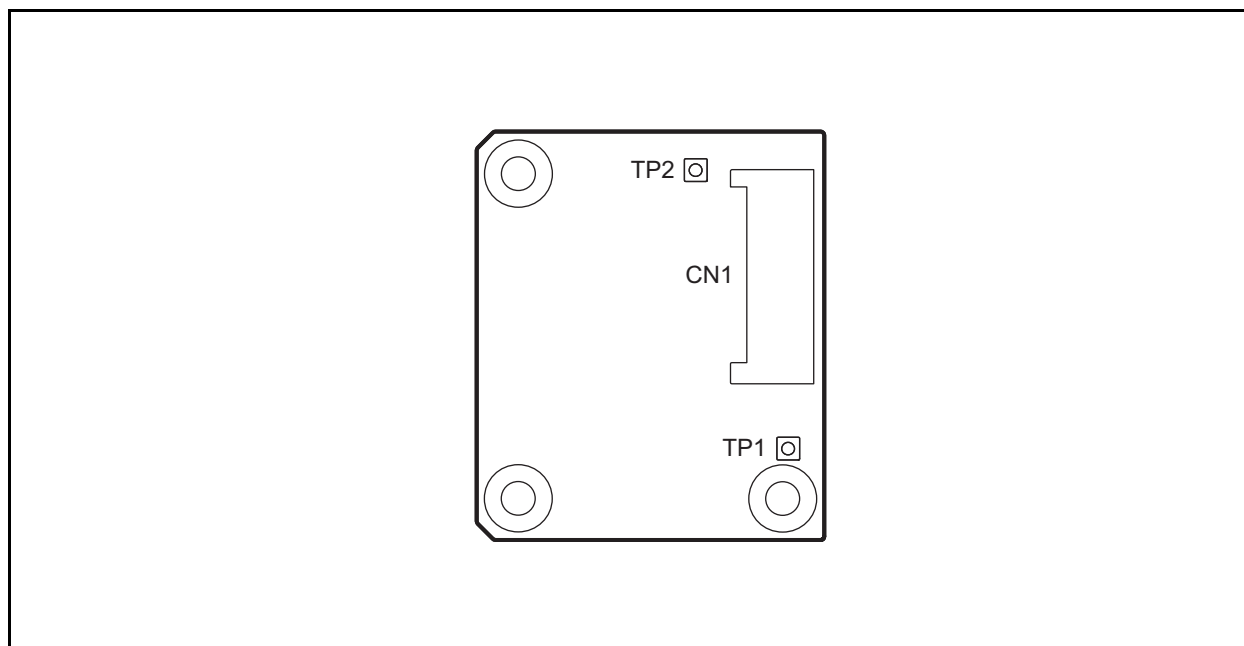
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## 2.3.4 Regenerative Resistivity PCB Assy

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### ■ Outline

Board name: Regenerative Resistivity PCB Assy

Located on the main PCB Assy inside the electrical box.

Controls counter electromotive voltage by supplying the electrical power to the motor via this PCB.

### ■ List of connectors

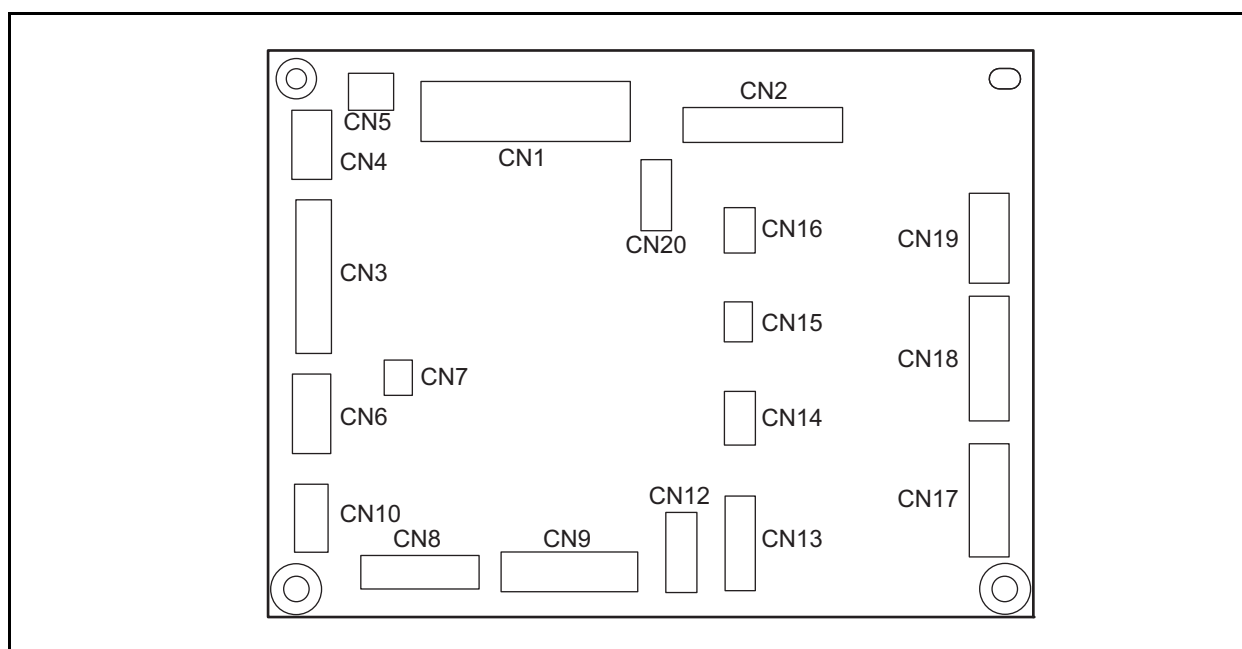
CN No	Pin	Connected to:	Remarks
CN1	10	Main PCB Assy	Power supply to the X and Y-axis motors

### ■ Test point

Terminal name	Purpose
TP1	+42V
TP2	Power supply voltage of the motor

## 2.3.5 Station PCB Assy

1.0



### ■ Outline

Board name: Station PCB Assy

Located on the side panel inside the right cover.

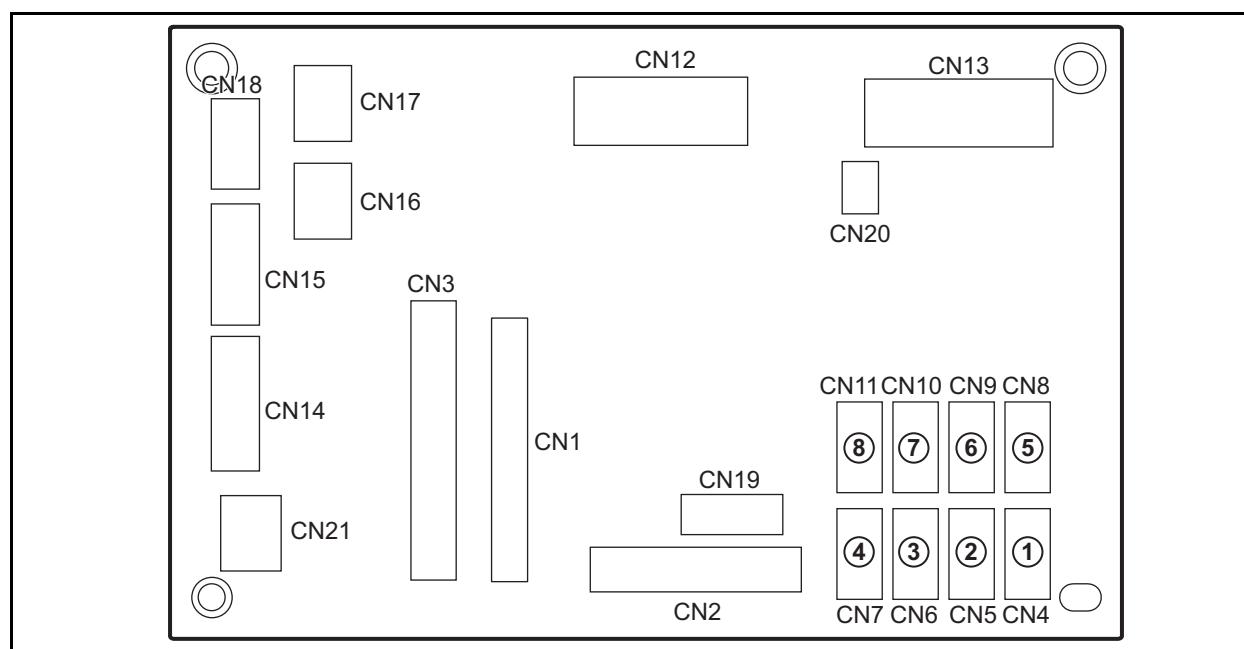
The pump motor, vacuum fan, paper sensor, Y-origin sensor and other main body control I/Os are connected to this PCB.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	40	Main PCB Assy	
CN2	20	AUX.	Not installed
CN3	24	Keyboard	
CN4	4	Sleep Switch	
CN5	2	AUX.	
CN6	4	Washing Cartridge, ID Contact PCB CN032 Assy	
CN7	2	P Head Lock Solenoid	
CN8	18	External Unit Output	Take-up, Exhaust Fan, Dry Fan, LED Unit
CN9	10	Vacuum Fan	
CN10	4	Washing Cartridge Sensor	
CN11	-	Not used	
CN12	7	Paper Sensor	
CN13	9	Clamp Sensor, Y-origin Sensor	
CN14	4	AUX.	
CN15	3	AUX.	
CN16	3	AUX.	
CN17	8	Wiper Unit	Wiper Motor, Wiper-origin
CN18	9	Pump Motor	
CN19	6	AUX.	

## 2.3.6 X-axis Motor Relay PCB Assy

1.0



### ■ Outline

Board name: X-axis Motor Relay PCB Assy

Located on the back of the ink cartridge unit inside the left cover.

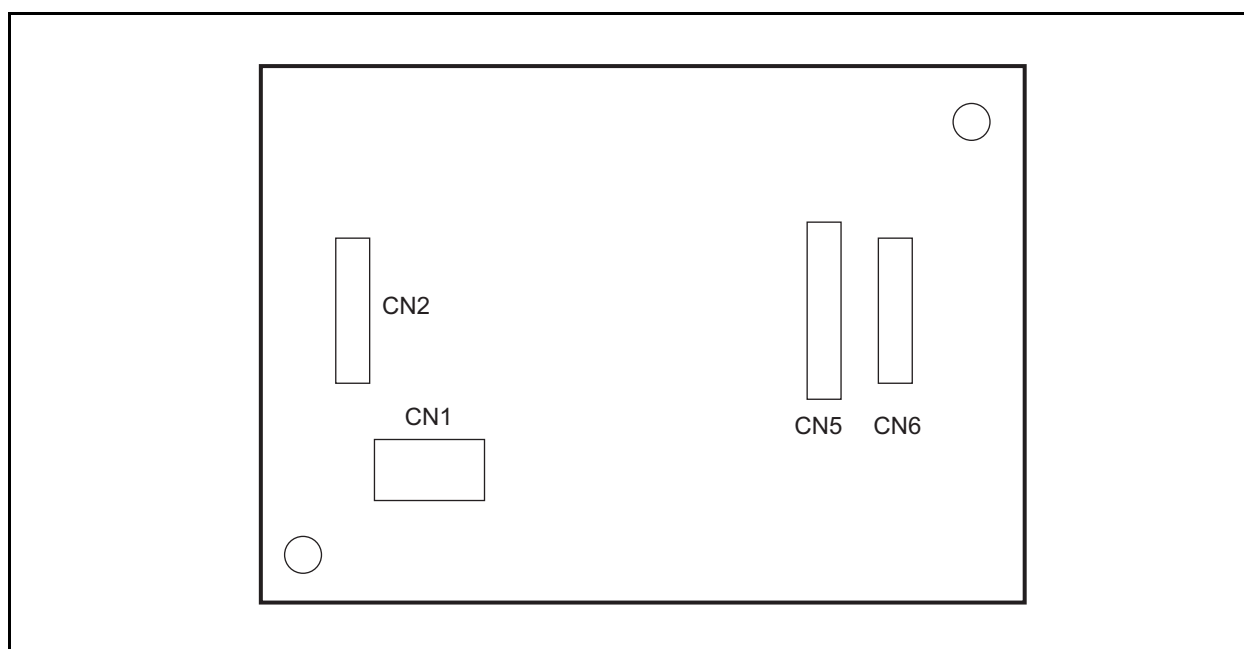
The solenoids of the 8 ink cartridges, ID, ink near end sensor, cartridge sensor, LED PCB Assy, cover sensor, maintenance cover sensor, etc. are connected to it.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	28	Main PCB Assy	
CN2	20	LED PCB Assy	
CN3	30	Main PCB Assy	
CN4	4	Ink Cartridge 1	
CN5	4	Ink Cartridge 2	
CN6	4	Ink Cartridge 3	
CN7	4	Ink Cartridge 4	
CN8	4	Ink Cartridge 5	
CN9	4	Ink Cartridge 6	
CN10	4	Ink Cartridge 7	
CN11	4	Ink Cartridge 8	
CN12	16	Ink Solenoid (1-8)	
CN13	18	Ink ID (1-8)	
CN14	6	X-axis Motor Encoder	
CN15	5	Not equipped	AUX.
CN16	2	AUX.	
CN17	2	AUX.	
CN18	3	AUX.	AUX.
CN19	6	Not equipped	AUX.
CN20	2	AUX.	AUX.
CN21	2	AUX.	

## 2.3.7 HDC PCB Assy

1.0



### ■ Outline

Board name: HDC PCB Assy

This controls the second head.

Receives data from PDC of the main PCB, creates COM signal for head driving and nozzle data and transfers them to the slider PCB.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	30	Main PCB Assy	Power supply
CN2	50	Main PCB Assy	Control
CN3	30	-	For debug
CN4	30	-	AUX.
CN5	35	Slider PCB Assy	Com driving
CN6	31	Slider PCB Assy	Head signal
CN7	4	-	AUX.

### ■ Test point

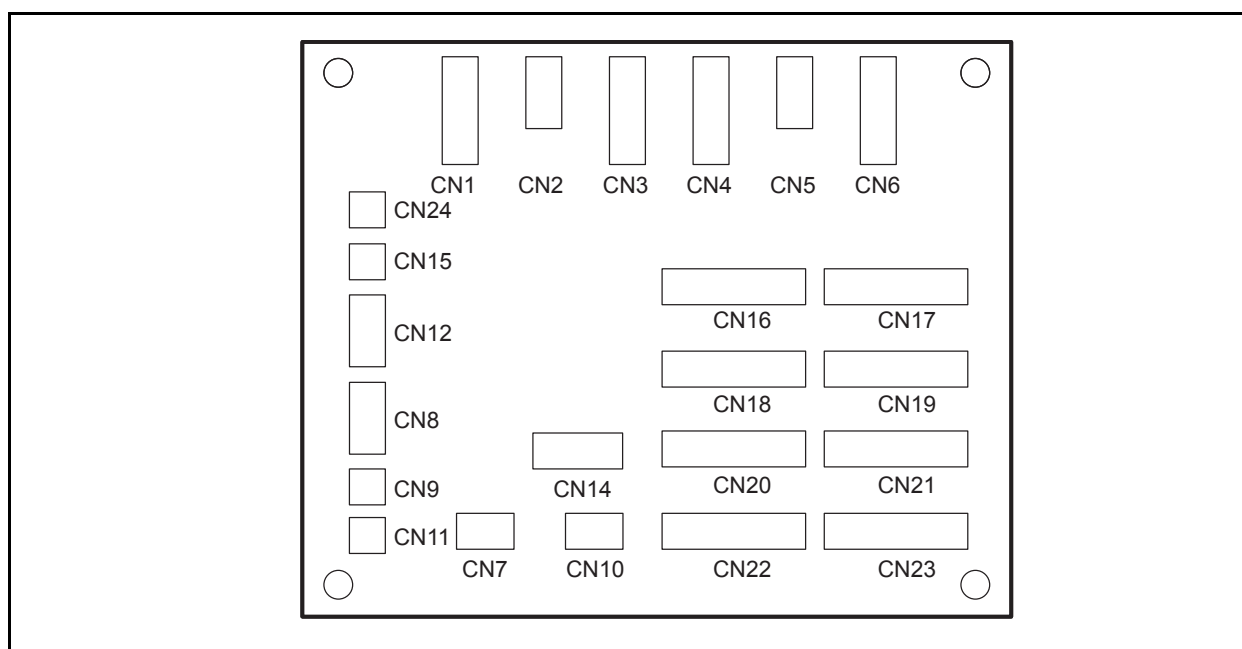
Terminal name	Purpose
GND1	GND
TP1-TP8	COM voltage (1-8)

### ■ Fuse rating

F3	0.375A/125V	Head 42V at source
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## 2.3.8 Slider PCB Assy

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### ■ Outline

Board name: Slider PCB Assy

Located on the top of the print part slider.

FFC from main PCB Assy is connected to this PCB to relay signals to print head. In addition, the encoder PCB Assy, head height sensor, etc. are connected to this PCB.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	30	Main PCB Assy	IO control
CN2	50	Main PCB Assy	Head control(Head1)
CN3	30	Main PCB Assy	Power source
CN4	30	Main PCB Assy	COM waveform(Head1)
CN5	50	HDC PCB Assy	Head control(Head2)
CN6	30	HDC PCB Assy	COM waveform(Head2)
CN7	4	Paper width sensor	
CN8	6	-	AUX.
CN9	3	Head Height Sensor	
CN10	5	Encoder PCB Assy	
CN11	2	LED pointer	
CN12	3	Cutter	
CN13	6	-	For debug
CN14	12	Mini memory PCB Assy	Head memory
CN15	2	-	AUX.
CN16	29	Print Head1	Front-CN3
CN17	29	Print Head2	Front-CN3
CN18	29	Print Head1	Front-CN4
CN19	29	Print Head2	Front-CN4
CN20	29	Print Head1	Front-CN4
CN21	29	Print Head2	Front-CN4
CN22	29	Print Head1	Front-CN3
CN23	29	Print Head2	Front-CN3

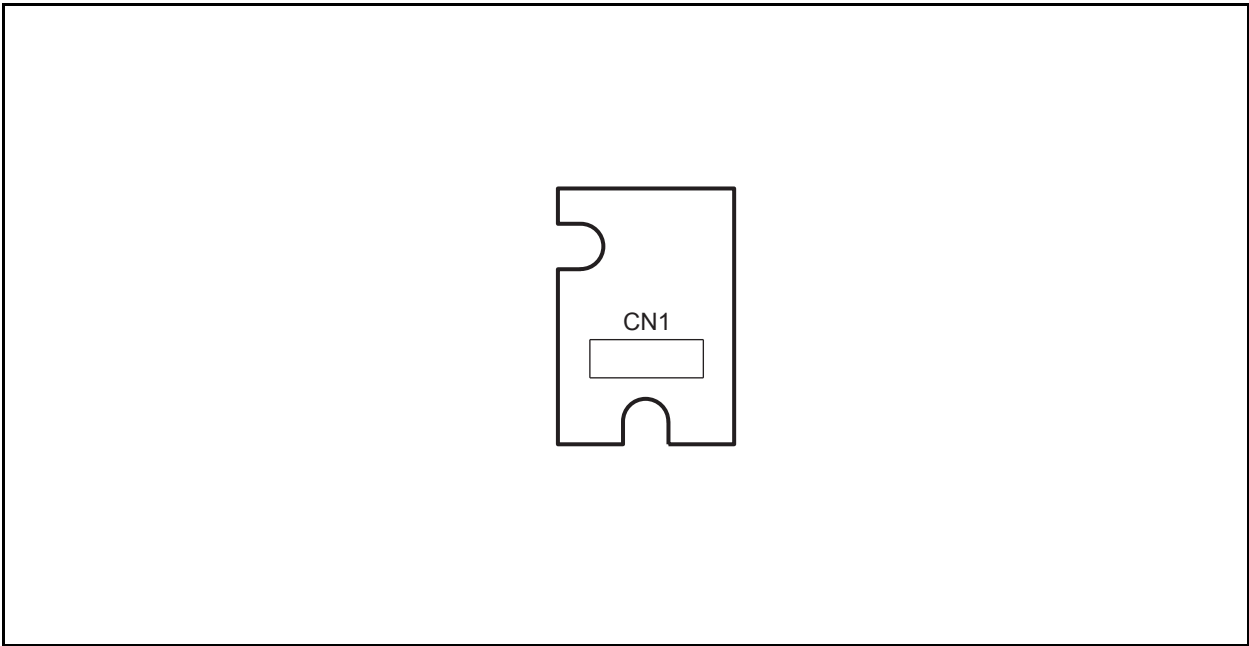
MAINTENANCE MANUAL > Electrical Parts > Circuit Board Specifications > Slider PCB Assy								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver.	1.00	Remark
<b>2.3.8 Slider PCB Assy</b>								<b>1.0</b>

CN No	Pin	Connected to:	Remarks
CN24	2	-	AUX.

■ Test point

Terminal name	Purpose
GND1	GND
TP1-TP8	COM voltage (1-8)

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■ Outline

Board name: Mini Memory PCB Assy

Stores Head ID information. (Head memory)

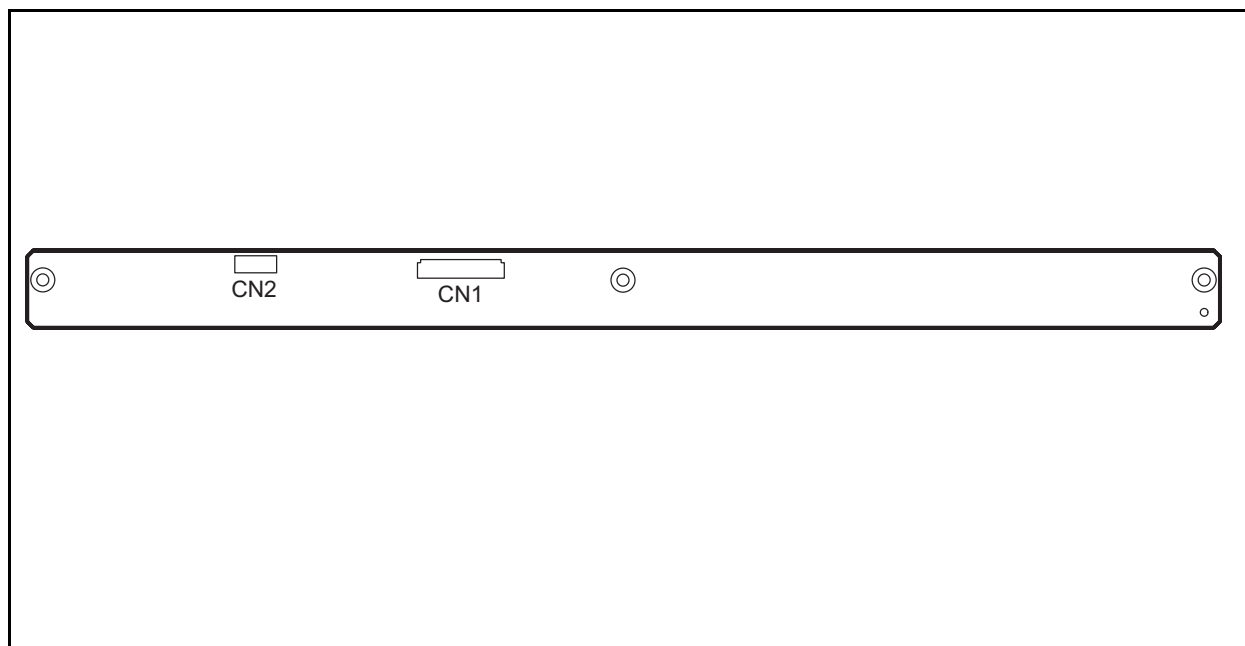
■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	6	Slider PCB Assy	



## 2.3.10 LED PCB Assy

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### ■ Outline

Board name: LED PCB Assy

Located at the front of the ink cartridge unit inside the left cover.

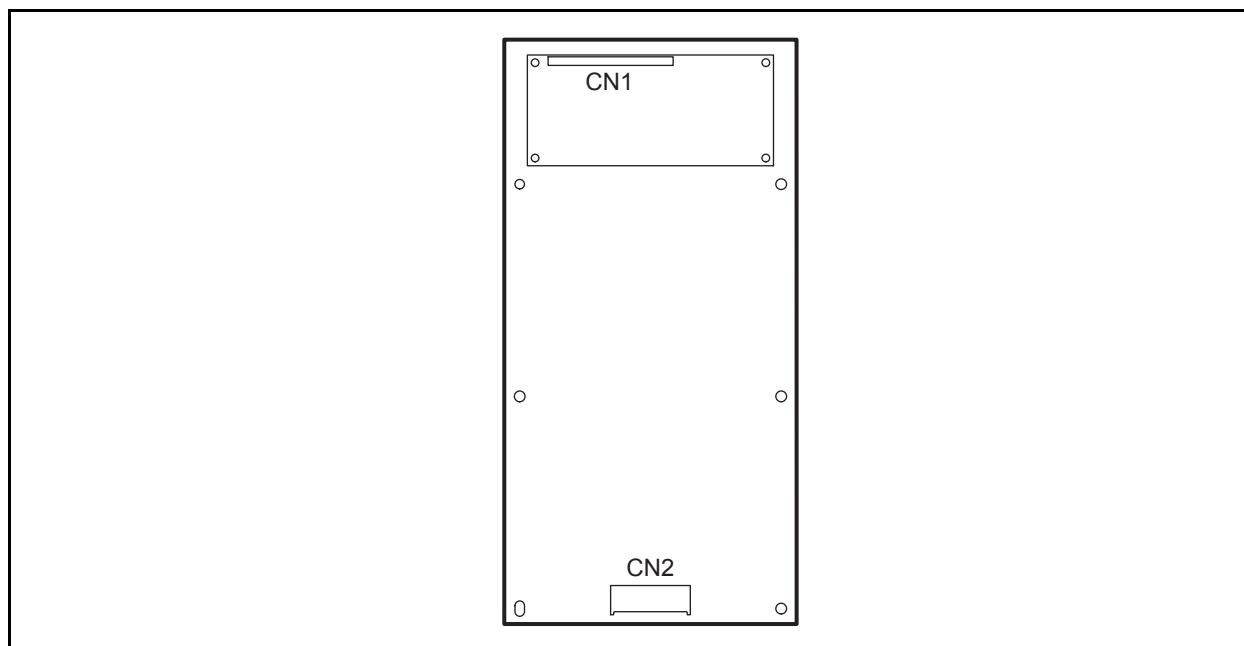
The FFC from the X-axis relay PCB Assy is connected to this PCB. The LEDs (green, red) corresponding to each slot of the cartridge is displayed on the LED PCB Assy.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	20	X-axis Motor Relay PCB Assy	
CN2	6	None	AUX.

## 2.3.11 Keyboard PCB Assy

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### ■ Outline

Board name: Keyboard PCB Assy

Has LCD with 2 lines of 20 characters and key switches. It is connected to the station PCB Assy with a keyboard cable.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	16	LCD PCB Assy	Control
CN2	24	Station PCB Assy	

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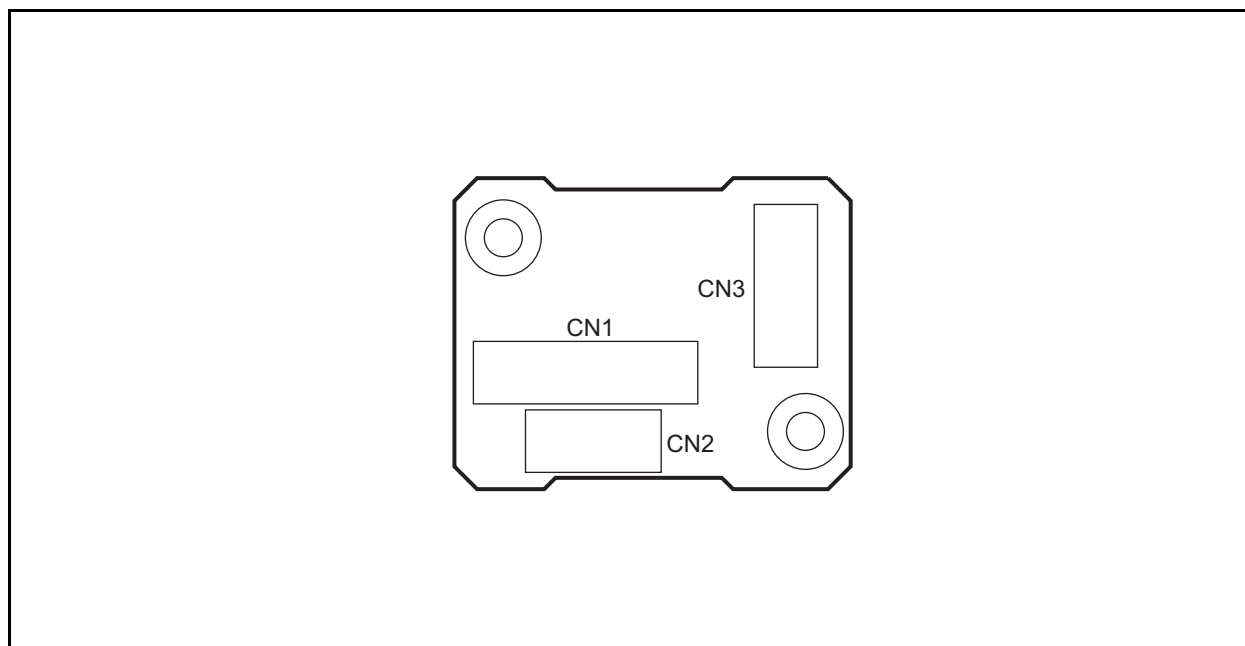
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## 2.3.12 Take-up PCB Assy



### ■ Outline

Board name: Take-up PCB SK Assy

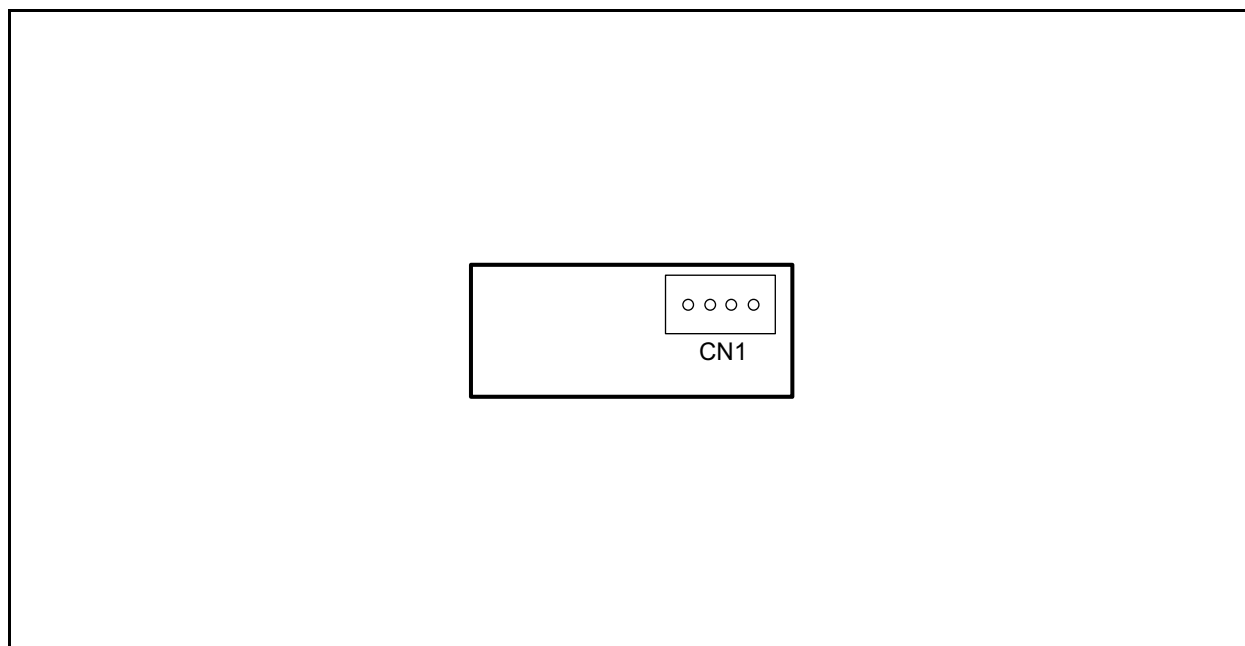
This PCB is connected to the station PCB Assy via external connector, which can be attached or removed by users. It is used inside the take-up motor unit, as a junction between the station PCB Assy and take-up motor.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	9	External Connector Cable (Station PCB Assy)	Power source
CN2	5	Start, direction changing switch	
CN3	6	Take-up Motor	

## 2.3.13 Encoder PCB Assy

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### ■ Outline

Board name: Encoder PCB Assy

One is used on the back side of the slider for the linear scale.

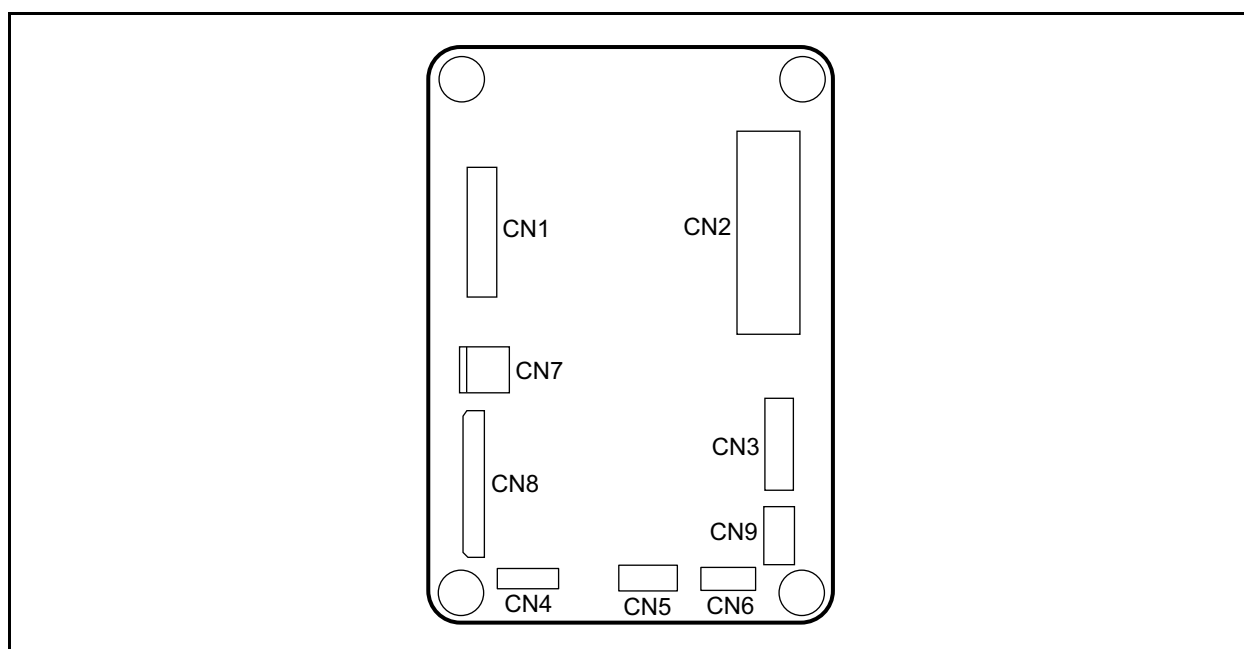
One is used as an angle sensor for the feeding device/heavy-duty take-up device.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	5	Slider PCB Assy	For linear scale
		Heavy-duty Feeding/take-up PCB Assy	For feeding device/heavy-duty take-up device

## 2.3.14 Extension Relay PCB Assy

1.0



### ■ Outline

Board name: Extension Relay PCB Assy

This is located on the main PCB Assy inside the electrical box.

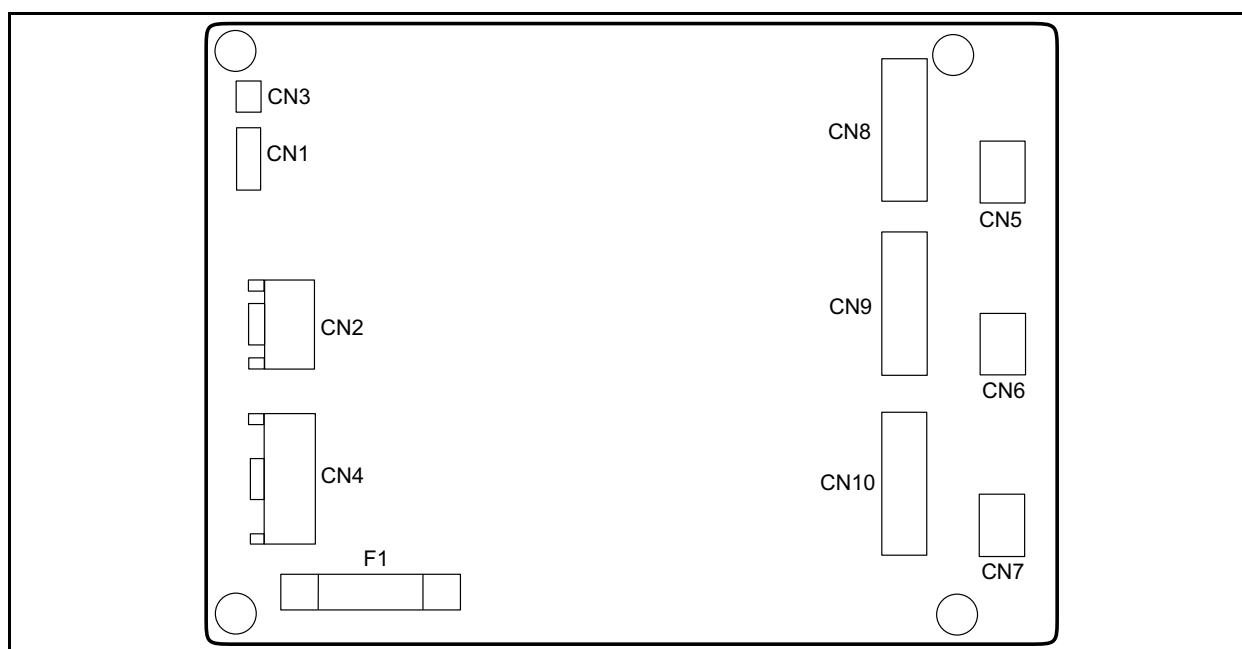
Signals from the feeding/heavy-duty take-up, heater control, and double-sided sensor are relayed.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	40	Main PCB Assy	
CN2	30	Heavy-duty Feeding/take-up PCB	Feeding, Heavy-duty take-up
CN3	14	Double-Sided Sensor PCB	Double-sided sensor
CN4	6	Main PCB Assy	Heater control
CN5	4	Power unit PCB	Print heater control
CN6	5	Heater PCB	Pre/Post heater control
CN7	2	Main PCB Assy	Power source
CN8	40	AUX.	
CN9	4	AUX.	

## 2.3.15 Heater PCB

1.0



### ■ Outline

Board name: Heater PCB Assy

This is located on the back of the maintenance portion of H PCB cover.  
AC power is relayed to the pre/post heater.

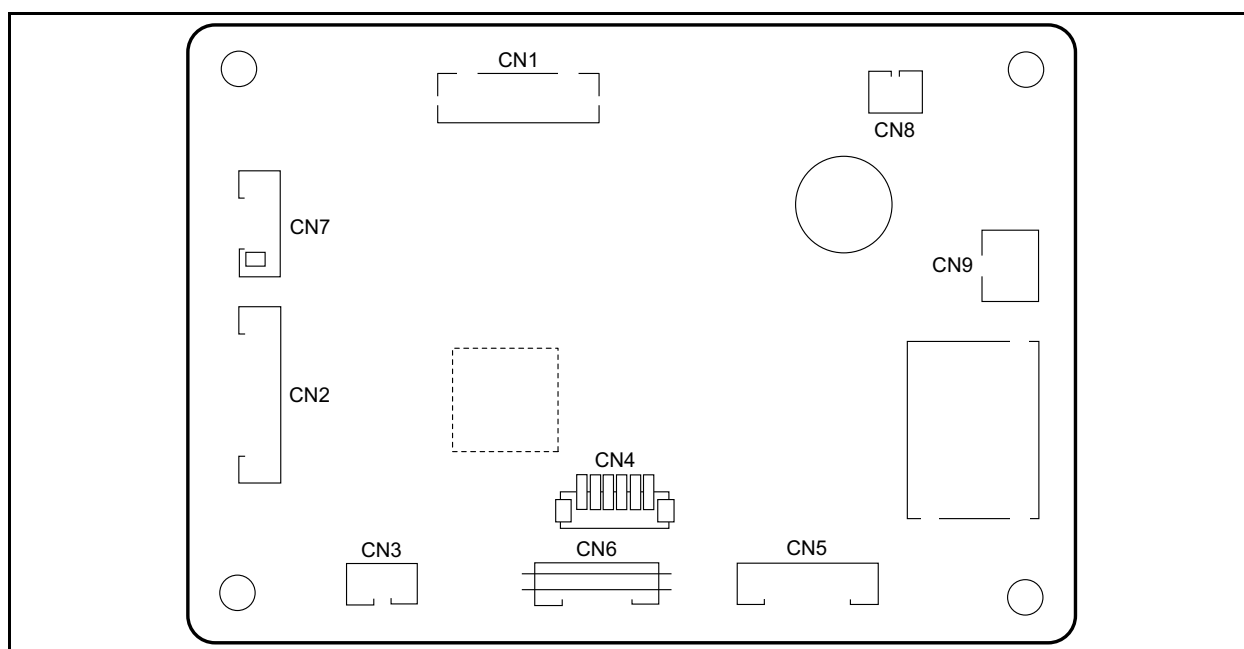
### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	5	Extension Relay PCB	Heater control
CN2	2	Power switch	
CN3	2	Changeover switch	100V/200V Changeover switch
CN4	3	AUX.	
CN5	3	Thermostat (For pre)	Color: Blue (Even numberPinremoval)
CN6	3	Thermostat (For post)	Color: White (Even numberPinremoval)
CN7	3	Thermostat (For post)	Color: Red (Even numberPinremoval)
CN8	7	Preheater	Color: Blue (Even numberPinremoval)
CN9	7	Post heater	Color: White (Even numberPinremoval)
CN10	7	Post heater	Color: Red (Even numberPinremoval)

### ■ Fuse rating

F1	12AH/250V	Input line to heater
----	-----------	----------------------

## 2.3.16 Heavy-duty Feeding/take-up PCB



### ■ Outline

Board name: Heavy-duty Feeding/Take-up PCB Assy

One is installed for the feeding device/heavy-duty take-up device.

Motor and sensors are connected to this PCB, and executes controls by serial communication with the main PCB.

A DIP switch is installed on the PCB, and the setting is according to the following.

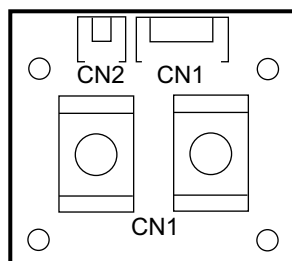
Used by the feeding device. ....DIP switch OFF

Used by the heavy-duty take-up device.....DIP switch ON

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	16	Extension Relay PCB	
CN2	9	Tension sensor	
CN3	3	Evacuation sensor	Only used by heavy-duty take-up device
CN4	6	Debug connector	JTAG
CN5	7	Feeding/take-up switch PCB	
CN6	6	AUX.	
CN7	5	Encoder	
CN8	2	AUX.	
CN9	2	DCMotor	

## 2.3.17 Feeding/take-up switch PCB



### ■ Outline

Board name: Feeding/take-up switch PCB assy

One is installed for the feeding device/heavy-duty take-up device.

It is possible to switch the motor rotation direction and between AUTO/MANUAL using these two switches.

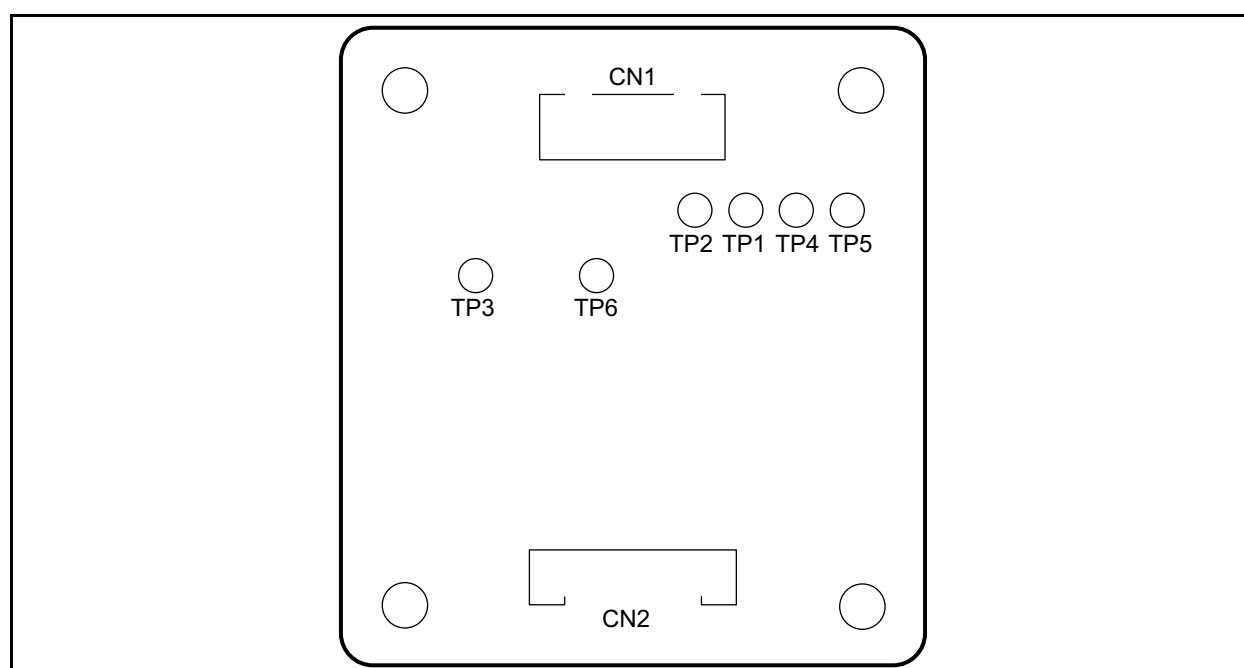
### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	7	Heavy-duty Feeding/take-up PCB Assy	
CN2	3	Cover sensor	



## 2.3.18 Double-Sided Sensor PCB

1.0



### ■ Outline

Board name: Double-Sided Sensor PCB Assy

This is located on the double-sided sensor PCB BKT in the electrical box.  
This controls the double-sided sensor.

### ■ List of connectors

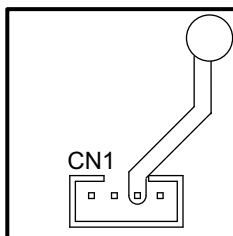
CN No	Pin	Connected to:	Remarks
CN1	14	Extension Relay PCB	
CN2	8	UJ Mark sensor PCB	

### ■ Test point

Terminal name	Purpose
TP1-6	Sensor output

## 2.3.19 Mark Sensor PCB

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### ■ Outline

Board name: UJ Mark Sensor PCB Assy

Two of these are installed on the rear platen, including the sensor for straight line detection.

### ■ List of connectors

CN No	Pin	Connected to:	Remarks
CN1	4	Double-Sided Sensor PCB	

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## **Workflow**

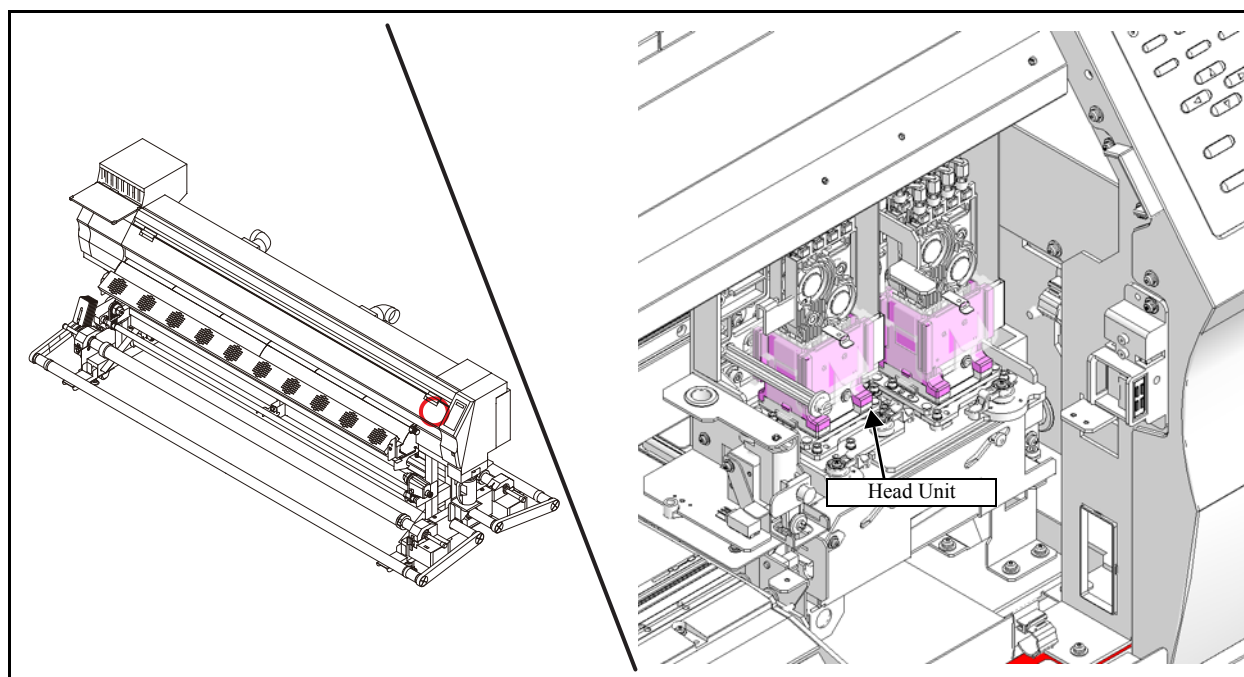
**3.1**  
**Ink Related Parts**

**3.2**  
**Driving Parts**

**3.3**  
**Electrical Parts**

## 3.1.1 Replacement of the Head Unit

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### ■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the front cover, P cover U and P cover L.	6.1.1
Printing Head Unit Assy	2. <input type="checkbox"/> Preparation of the new head and cleaning of its inside	Fill the head with the water-based transportation liquid (S-46) before shipment from the factory. If ink is charged while the head is in original state (the S-46 is inside the head), it reacts chemically with the solvent ink, with a precipitate being formed. Therefore, until a new head is installed, it is necessary to clean the head with the washing liquid (MS washing liquid) used exclusively when replacing the S head.	6.2.1
	3. <input type="checkbox"/> Removal of the head.	Remove the damper before removing the disused head.	6.2.3
	4. <input type="checkbox"/> Mounting of the head.	Mount the new head which has been cleaned.	6.2.3
	5. <input type="checkbox"/> Check of the head ID	Check the head ID and enter it manually when necessary. (Normally, manual entry is not necessary because writing is carried out automatically.)	4.2.10
Ink	6. <input type="checkbox"/> Ink charge into the head	Fill the head with ink and carry out test plotting. Check for any nozzle outs or flight deflection of ink droplets.	
Check	7. <input type="checkbox"/> Head slant adjustment	Mechanically adjust the replaced head.	4.2.1
	8. <input type="checkbox"/> Correction of dot position (Press the key [ADJUST])	Adjust dot locations.	4.2.4
	9. <input type="checkbox"/> Correction of dot position (Press the key [MAINTENANCE])	Make adjustment by (pressing the key) [DROP.POScorrect] of "user mode".	
Covers	10. <input type="checkbox"/> Mounting of the covers.	Mount the covers that have been removed.	6.1.1

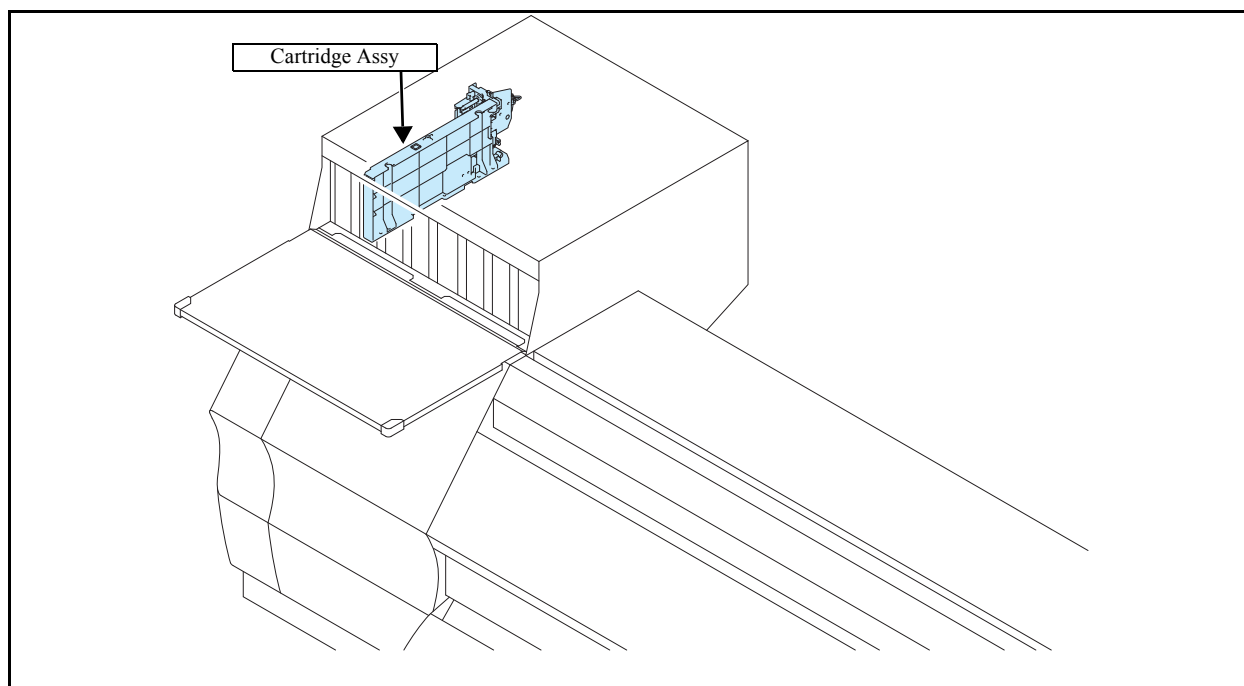


Be sure to wear protective glasses and working gloves during the operation.

Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

## 3.1.2 Replacement of the Cartridge Assy

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### ■ List of replacement procedures

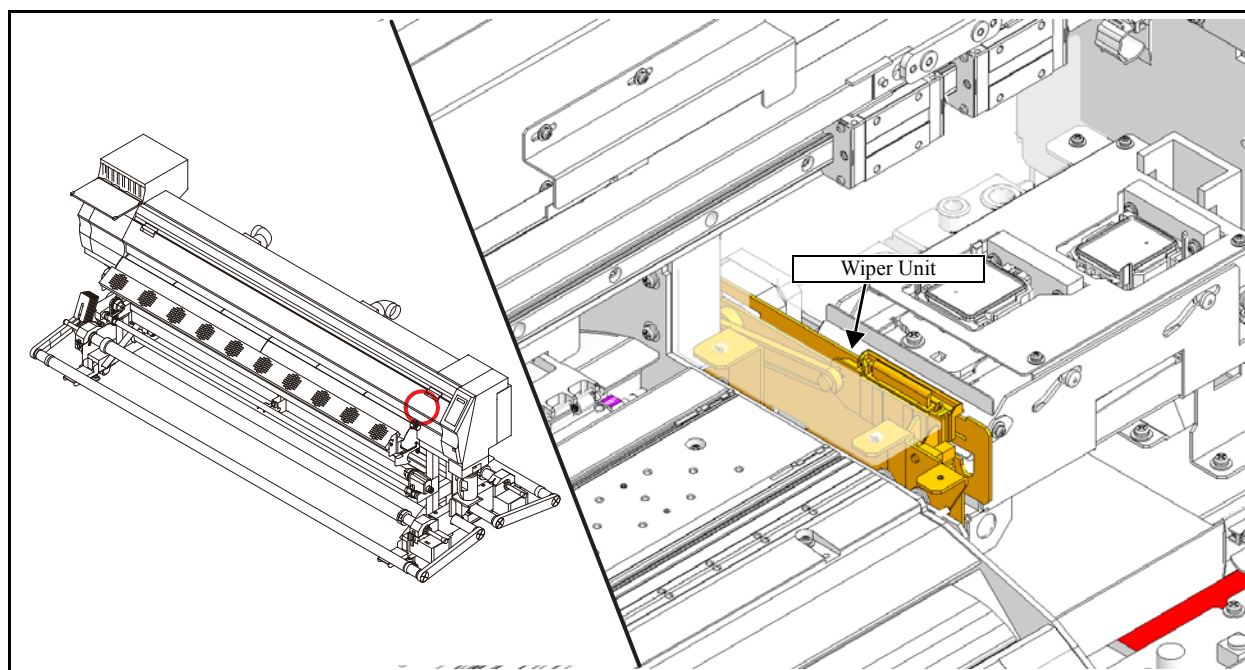
Item		Work operation	Description	Ref.
Covers	1. <input type="checkbox"/>	Removal of covers, etc.	Remove the ICU cover, cartridge holder B and cartridge base U.	6.1.1
Ink	2. <input type="checkbox"/>	Ink discharge	Discharge ink by executing [#ADJUST] – [HEAD WASH].	4.2.11
Cartridge Assy	3. <input type="checkbox"/>	Removal of the joint.	Remove the joint from corresponding cartridge. Take care not to spill ink.	
	4. <input type="checkbox"/>	Removal of the cartridge.	Disconnect the cables of corresponding cartridges from the connector to remove the cartridges.	
	5. <input type="checkbox"/>	Mounting of the cartridge.	Mount the cartridge.	
	6. <input type="checkbox"/>	Mounting of the joint.	Mount the joint which has been removed.	
Check	7. <input type="checkbox"/>	Check on the sensors	Check whether the exist/non-exist sensor, the near end sensor and the contact PCB assy of corresponding cartridges function normally, by conducting ink cartridge test. It is preferable to conduct a check by actually using cartridges.	5.1.15
Ink	8. <input type="checkbox"/>	Ink filling	Fill up the ink channels with ink. Check for any nozzle outs by conducting a test plotting.	
Covers	9. <input type="checkbox"/>	Mounting of the covers.	Mount the covers that have been removed.	6.1.1



Be sure to wear protective glasses and working gloves during the operation.

Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

### 3.1.3 Replacement of the Wiper Unit



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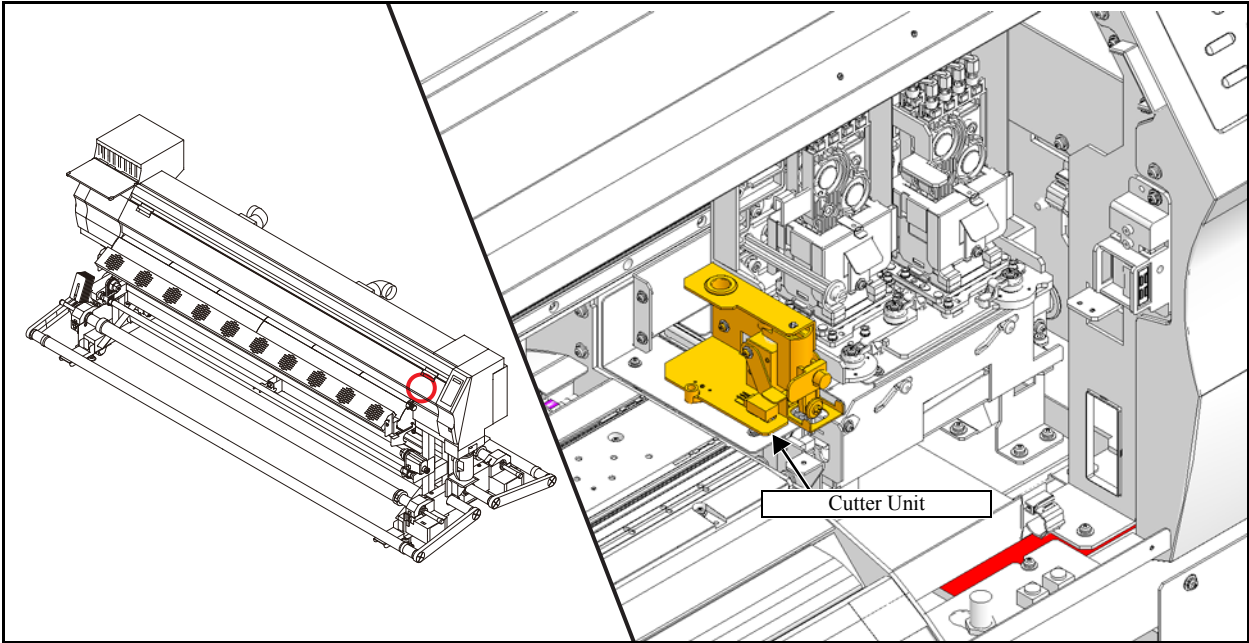
#### ■ List of replacement procedures

Item		Work operation	Description	Ref.
Covers	1. <input type="checkbox"/>	Removal of covers, etc.	Remove the station cover U34 and right station cover.	6.1.1
Wiper Unit	2. <input type="checkbox"/>	Removal of the wiper unit.	Remove the wiper unit.	6.3.6
	3. <input type="checkbox"/>	Mounting of the wiper unit	Mount the wiper unit. Check whether the wiper moves smoothly while the clearance between the motor pedestal and the wiper drive link is set at 0.5 mm.	6.3.6 4.3.6
	4. <input type="checkbox"/>	Adjustment of wiper height	Make adjustment so that, while head height is set low, wiper units are kept parallel and wiper is in contact with the tip of the nozzle by 1.5 mm. Confirm that wiping operation is possible even when the head height is set high.	4.3.3
Adjustment	5. <input type="checkbox"/>	Capping adjustment	Carry out [CAPPING] adjustment to confirm that each center of the wiper and the head is aligned.	4.2.9
Check	6. <input type="checkbox"/>	Cleaning operation	Check whether each assembly and adjustment has been carried out properly by conducting [WIPER CLEANING] operation.	
Covers	7. <input type="checkbox"/>	Mounting of the covers.	Mount the covers that have been removed.	6.1.1



Be sure to wear protective glasses and working gloves during the operation.

Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.



■ List of replacement procedures

Item	Work operation		Description	Ref.
Covers	1. <input type="checkbox"/>	Removal of covers, etc.	Remove the front cover, P cover U, P cover L, C cover, and Y cover F.	6.1.1
	2. <input type="checkbox"/>	Remove the cutter unit.	Remove the cutter unit.	6.2.8
Cutter Unit LED Pointer	3. <input type="checkbox"/>	Mounting of the cutter unit.	Mount the cutter unit.	6.2.8
	4. <input type="checkbox"/>	Removal of the LED pointer.	Remove the LED pointer.	
	5. <input type="checkbox"/>	Mounting of the LED pointer.	Mount the LED pointer.	
Covers	6. <input type="checkbox"/>	Mounting of the covers.	Mount the covers that have been removed.	6.1.1

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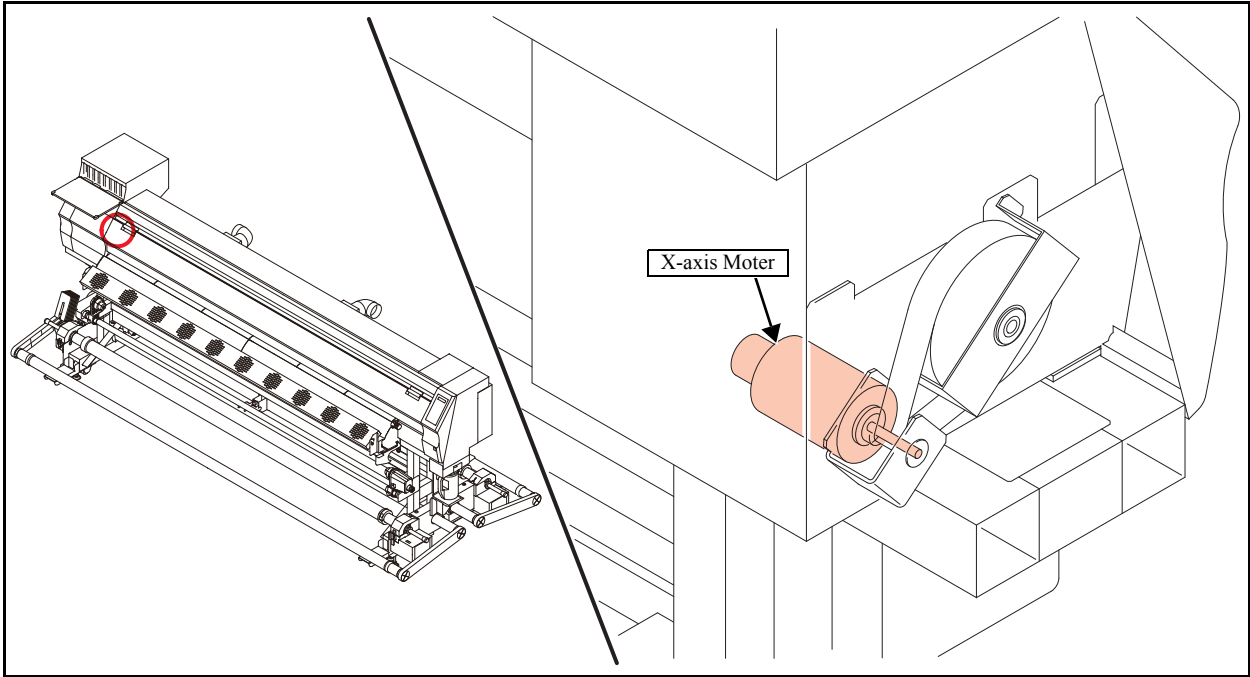
## Workflow

**3.1**  
**Ink Related Parts**

**3.2**  
**Driving Parts**

**3.3**  
**Electrical Parts**





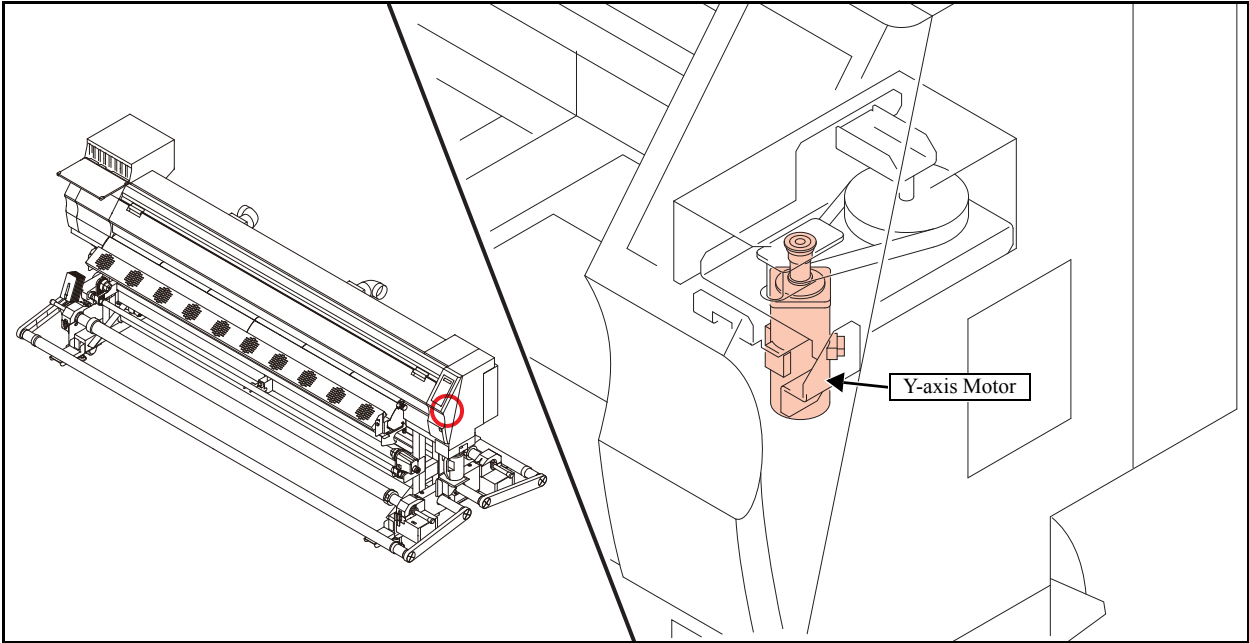
■ List of replacement procedures

Item		Work operation	Description	Ref.
Covers	1. <input type="checkbox"/>	Removal of covers, etc.	Remove the maintenance cover L and left cover.	6.1.1
X-axis Motor	2. <input type="checkbox"/>	Removal of the X-axis motor.	Remove the X-axis motor.	6.3.1
	3. <input type="checkbox"/>	Mounting of the X-axis motor.	Mount the X-axis motor.	
Adjustment	4. <input type="checkbox"/>	Adjustment of the belt tension	Adjust the tension of the belt.	4.2.14
	5. <input type="checkbox"/>	Adjustment of the motor current	If a hunting noise occurs while the motor is being driven, adjust the X-axis motor current.	
Covers	6. <input type="checkbox"/>	Mounting of the covers.	Mount the covers that have been removed.	6.1.1



Be sure to wear protective glasses and working gloves during the operation.  
Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

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■ List of replacement procedures

Item	Work operation		Description	Ref.
Covers	1. <input type="checkbox"/>	Removal of covers, etc.	Remove the KB cover, right cover, and D BKT cover.	6.1.1
Y-axis Motor	2. <input type="checkbox"/>	Removal of the Y-axis motor	Remove the Y-axis motor.	6.3.2
	3. <input type="checkbox"/>	Mounting of the Y-axis motor.	Mount the Y-axis motor.	
Adjustment	4. <input type="checkbox"/>	Adjustment of the motor current	If a hunting noise occurs while the motor is being driven, adjust the Y-axis motor current.	4.2.14
Covers	5. <input type="checkbox"/>	Mounting of the covers.	Mount the covers that have been removed.	6.1.1



Be sure to wear protective glasses and working gloves during the operation.  
Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

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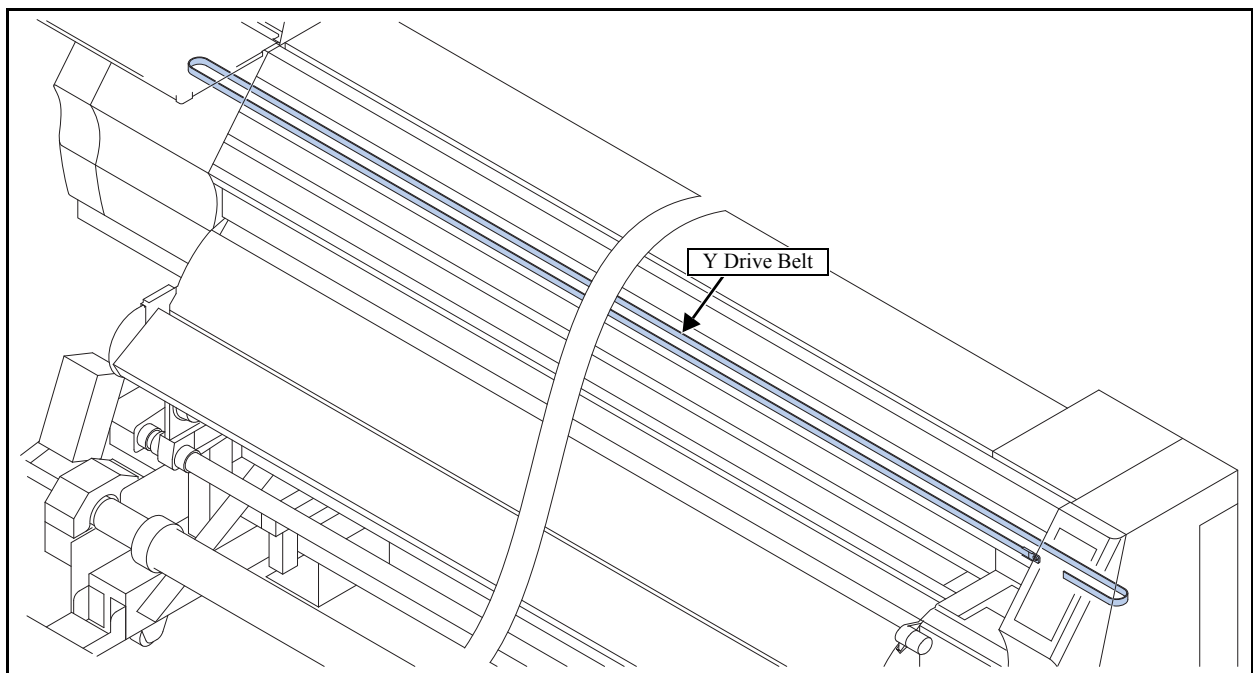
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■ List of replacement procedures

Item	Work operation		Description	Ref.
Covers	1. <input type="checkbox"/>	Removal of covers, etc.	Remove the front cover, Y cover F, and head cover.	6.1.1
Y Drive Belt	2. <input type="checkbox"/>	Removal of the Y drive belt.	Remove the Y drive belt.	6.3.4
	3. <input type="checkbox"/>	Mounting of the Y drive belt.	Mount the Y drive belt.	
Covers	4. <input type="checkbox"/>	Mounting of the covers.	Mount the covers that have been removed.	6.1.1



Be sure to wear protective glasses and working gloves during the operation.  
Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

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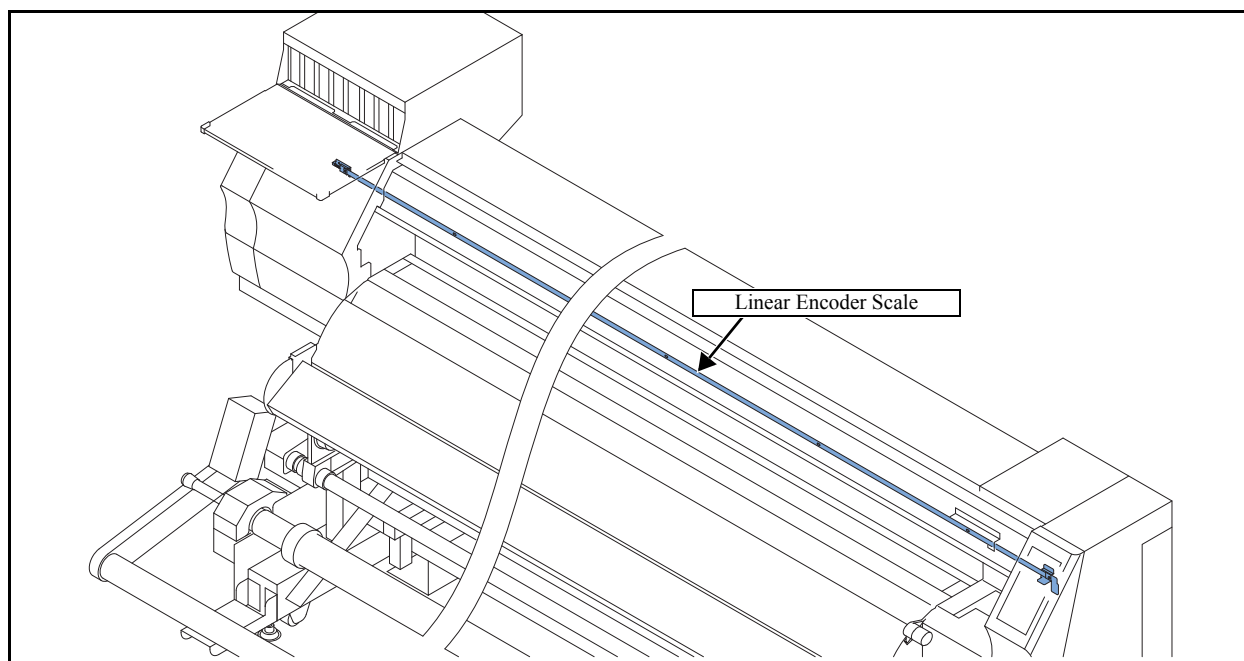
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## 3.2.4 Replacement of the Linear Encoder Scale

1.0



### ■ List of replacement procedures

Item	Work operation		Description	Ref.
Covers	1. <input type="checkbox"/>	Removal of covers, etc.	Remove the front cover, Y cover F, maintenance cover, and head cover.	6.1.1
Linear Encoder Scale	2. <input type="checkbox"/>	Removal of the linear encoder scale.	Remove the linear encoder scale.	6.3.5
	3. <input type="checkbox"/>	Removal of the protective film	Peel off the protective film from the encoder.	
	4. <input type="checkbox"/>	Mounting of the linear encoder scale.	Mount the linear encoder scale. Pay attention to the location of the encoder PCB Assy.	
Check	5. <input type="checkbox"/>	Encoder check	Carry out the encoder check to confirm it functions normally.	4.3.4 5.1.30
Covers	6. <input type="checkbox"/>	Mounting of the covers.	Mount the covers that have been removed.	6.1.1



Be sure to wear protective glasses and working gloves during the operation.

Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

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## Workflow

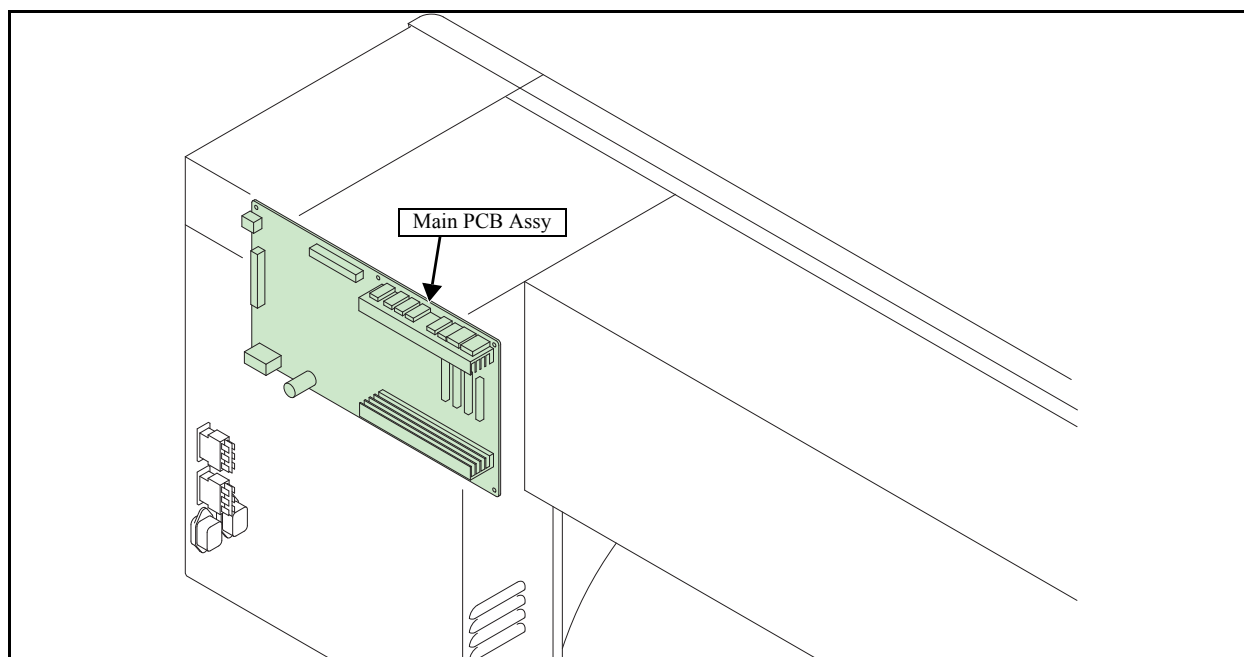
**3.1**  
**Ink Related Parts**

**3.2**  
**Driving Parts**

**3.3**  
**Electrical Parts**

## 3.3.1 Replacement of the Main PCB Assy

1.0



### ■ List of replacement procedures

Item	Work operation		Description	Ref.
Advance preparation	1. <input type="checkbox"/>	Parameter upload	Before the printed-circuit board is replaced, upload its parameter to the PC.	
Covers	2. <input type="checkbox"/>	Removal of covers, etc.	Remove the electrical box cover.	6.1.1
Main PCB Assy	3. <input type="checkbox"/>	Removal of the main PCB assy.	Remove the main PCB assy.	6.4.2
	4. <input type="checkbox"/>	Mounting of the main PCB assy.	Mount the main PCB assy.	
Check	5. <input type="checkbox"/>	Parameter download	Download the parameters which were uploaded in operation "1".	
	6. <input type="checkbox"/>	Adjustment of the motor current	Adjust motor current in case a hunting noise occurs.	4.2.14
Covers	7. <input type="checkbox"/>	Mounting of the covers.	Mount the covers that have been removed.	6.1.1

Adjustment Items		
4.1 Operation Matrix	4.2 Adjustment Function	4.3 Mechanical Adjustment

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## 4.1.1 Matrix of Operations and Adjustments

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When dealing with malfunctions, see “Troubleshooting”.

Adjustment Items	Uploading of Parameters	Downloading of Parameters	Adjustment of the motor current (4.2.14)	Cutter blade position adjustment (4.3.1)	Adjustment of output voltage	Sensor test (5.1.15)	Slant adjustment (4.2.1)	Drop position adjustment (4.2.4)	Adjustment of Capping	Registration of part replacement (4.2.18)	Adjustment of the wiper height (4.3.3)
Work contents											
Firmware update*1, *2											
Cutter assy removal or replacement				①							
Head PCB assy replacement											
Main PCB replacement	①*1	②	③								
X-axis motor assy removal or replacement			①								
Y-axis motor assy removal or replacement			①								
Power supply unit					①						
Head removal or replacement							①	②			
Cap replacement									①	②	
Pump replacement										①	
Damper										①	
Cutter blade removal or replacement				①							
Wiper assy removal or replacement											①

\*1 Be sure to make adjustment before replacing the main PCB assy.

\*2 See “Chapter4, Technical Information” of “Service Documents”.

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## **Adjustment Items**

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**4.1**  
**Operation Matrix**

**4.2**  
**Adjustment Function**

**4.3**  
**Mechanical Adjustment**

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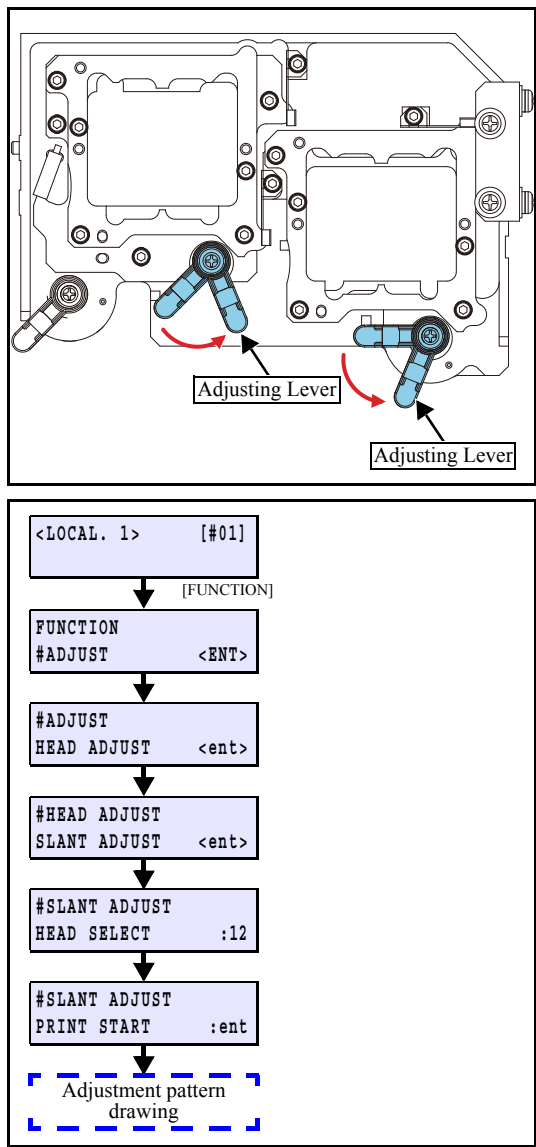
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# Function

Makes mechanical adjustment of print head slant while checking the pattern. Make this adjustment when replacing the head.

# Procedure

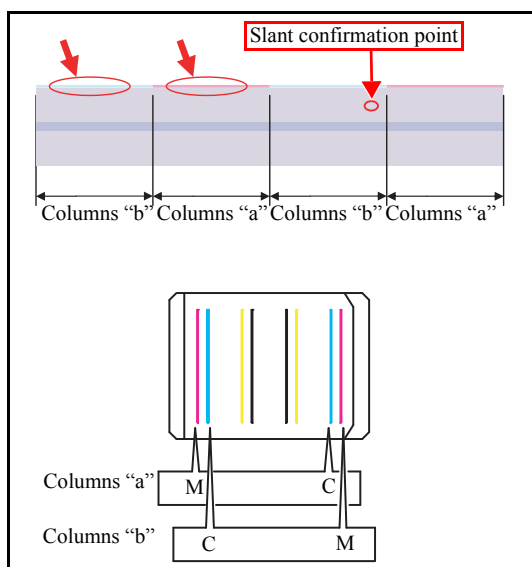


1. Move the adjusting lever to the right until the adjusting cam hits it.
2. Select [SLANT ADJUST] from the operation menu to execute adjustment pattern drawing.
3. Move the head over the platen using the JOG key.

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## 4.2.1 [HEAD ADJUST] SLANT ADJUST

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4. Carry out the slant adjustment through the following procedures.

As shown in the diagram on the left, patterns of columns "a" and columns "b" are printed alternately at a pitch width of approximately 100 mm. The discrimination between columns "a" and columns "b" is performed by the magenta and cyan strips (indicated by the thick red arrows in the diagram on the left) printed over the respective patterns at the top of head 1. These strips indicate that magenta is column "a" and cyan is column "b".



Overlap of dots between the heads is 10 dots.

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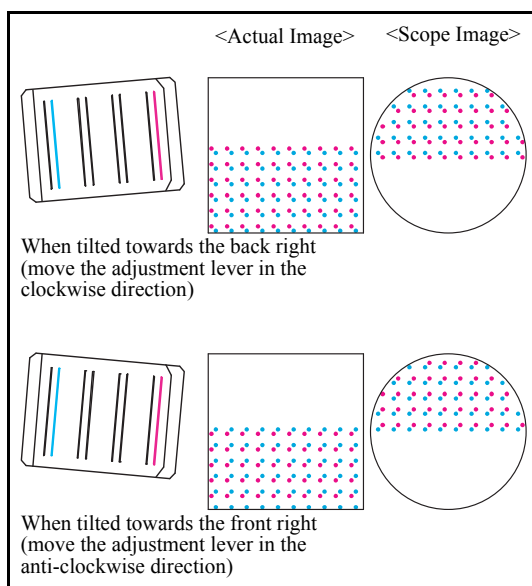
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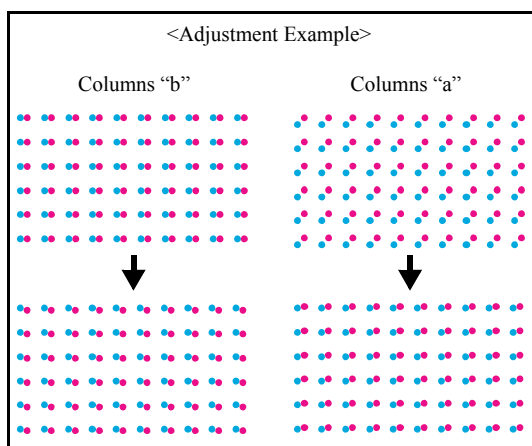
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① Check the slant of each column.

For the columns "b", the relationship between the points of impact and the slant of the head is as shown in the diagram on the left.

For the columns "a", the pattern is reversed.

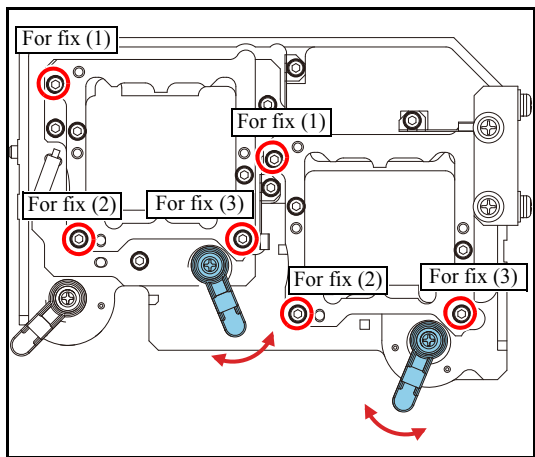


② Perform an averaging adjustment.

The standard color for each column is M for columns "a" and C for columns "b".

Move the adjustment lever and adjust the slant.

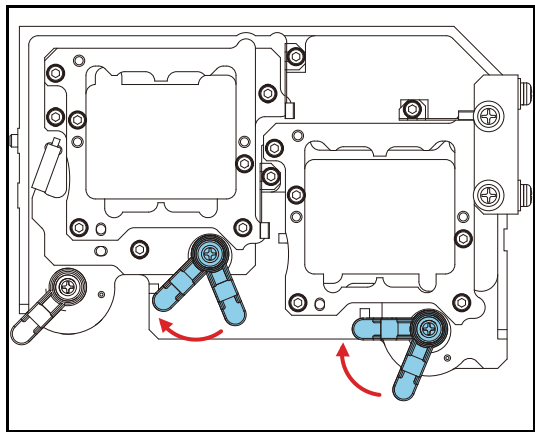
In the diagram on the left, the columns "b" are aligned while the columns "a" are misaligned. In this case, move "b" columns slightly so that the degrees of scattering of "a" and "b" columns are equal. (=Intermediate adjustment)



- Loosen the screws (x3) for fixing.
- Referring to the Step 4, move the adjusting lever to adjust the slant of the head.
- Fix the screws (x3)

Fix the screws after adjustment in the order of (1), (2) and (3).

- Repeat the procedures in the Step 2 to 7 until you can adjust.



- Move the adjusting lever to the left edge.

## 4.2.2 [HEAD ADJUST] STAGGER ADJUST

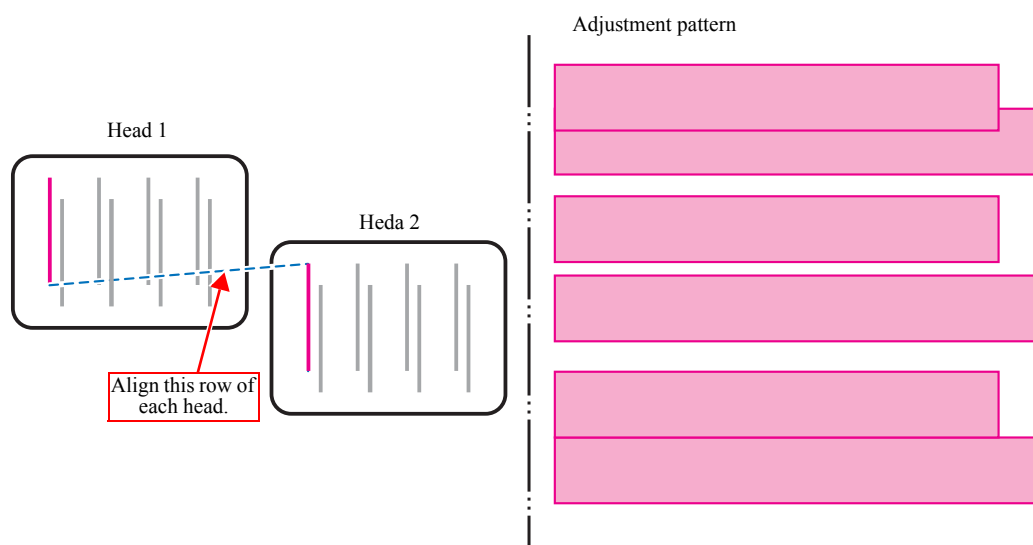
1.1

### ■ Function

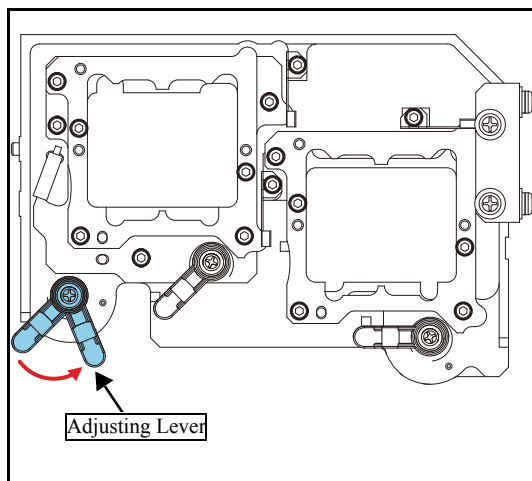


- It is necessary to perform SLANT adjustment before STAGGER adjustment.
- After adjusting the stagger, adjust the slant.

A pattern for mechanical adjustment of positional deviation of each head is drawn.  
Move the head height to the position of 2.0 mm print gap, and select a head to draw the adjusting pattern.  
The pattern is drawn in only A (Magenta) row of each head.



### ■ Procedure



1. Move the adjusting lever to the right until the adjusting cam hits it.

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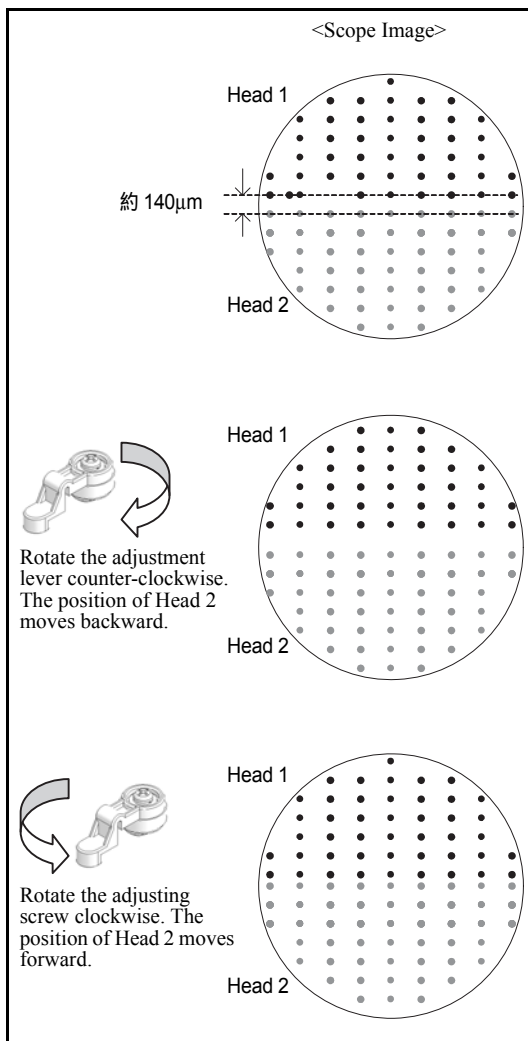
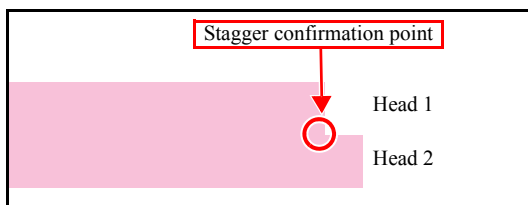
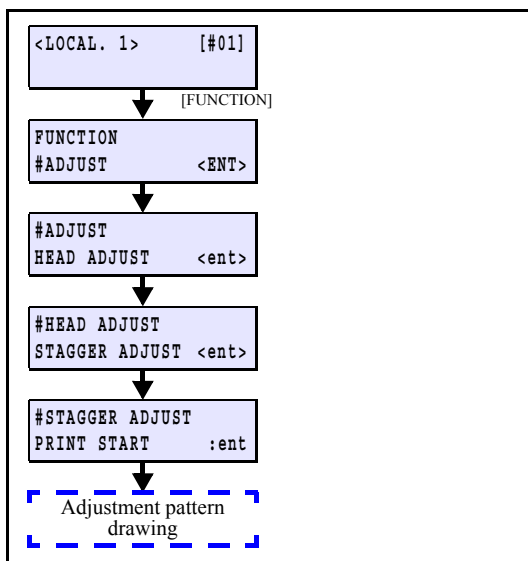
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## 4.2.2 [HEAD ADJUST] STAGGER ADJUST

1.1



2. Select [STAGGER ADJUST] from the operation menu to execute adjustment pattern drawing.

3. Move the head over the platen using the JOG key.

4. Carry out the stagger adjustment through the following procedures.

There is a gap at the right end of pattern on the joint of each head. Adjust it using this gap.

Check the stagger of each column.

Check that the distance between the Head 1 and 2 is about 140μm.



There is no overlap of dots between the heads.

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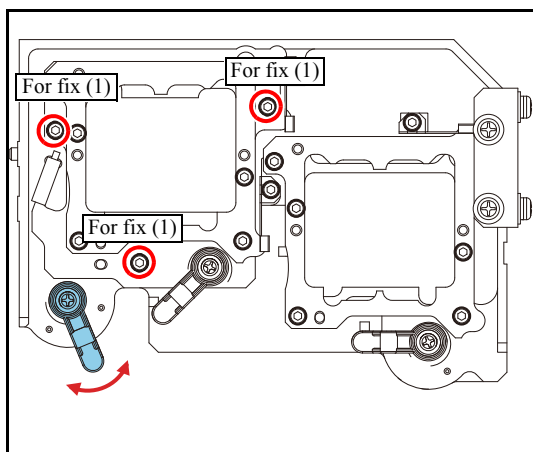
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## 4.2.2 [HEAD ADJUST] STAGGER ADJUST

1.1



5. Loosen the screws (x3) for fixing.

6. Referring to the Step 4, move the adjusting lever to adjust the stagger of the head.

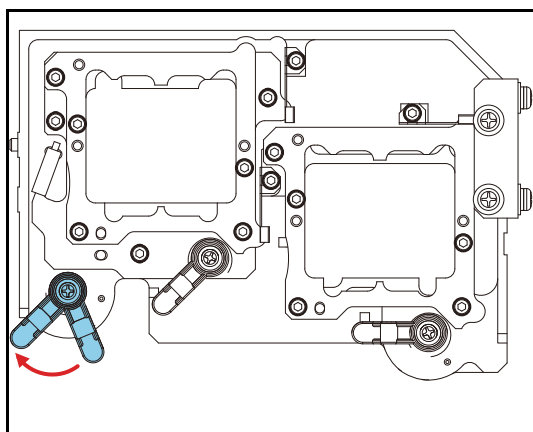
7. Fix the screws (x3)



Fix the screws after adjustment in the order of (1), (2) and (3).

8. Repeat the procedures in the Step 2 to 7 until you can adjust.

9. Move the adjusting lever to the left edge.



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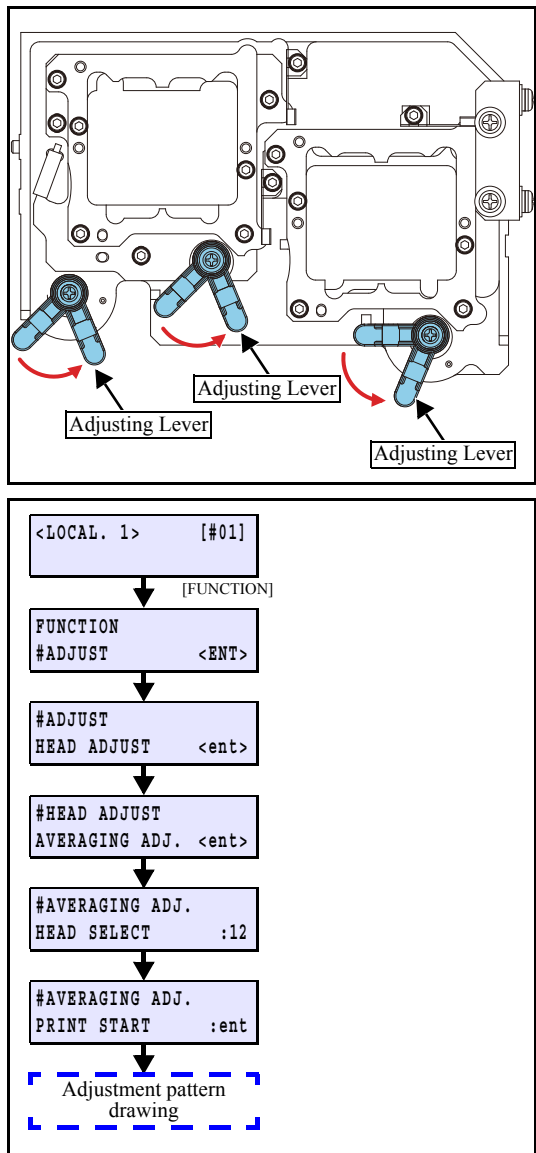
7

8

■ Function

You can perform SLANT adjustment and STAGGER adjustment at the same time.

■ Common Procedure



1. Move the adjusting lever to the right until the adjusting cam hits it.
2. Select [AVERAGING ADJ.] from the operation menu to execute adjustment pattern drawing.
3. Move the head over the platen using the JOG key.

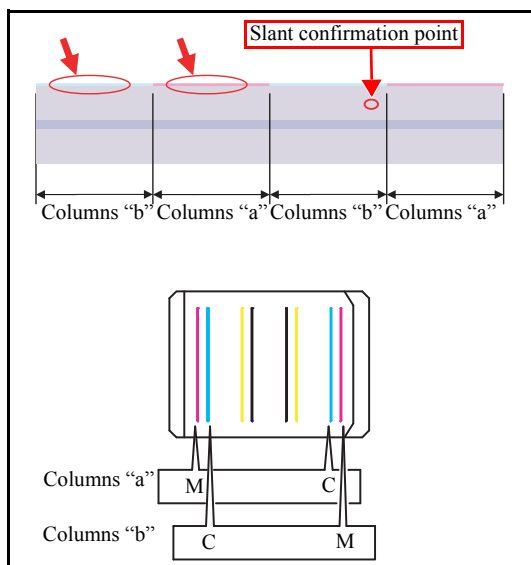
1
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## 4.2.3 [HEAD ADJUST] AVERAGING ADJUST

1.1

### ■ Slant Adjustment



1. Carry out the slant adjustment through the following procedures.

As shown in the diagram on the left, patterns of columns "a" and columns "b" are printed alternately at a pitch width of approximately 100 mm. The discrimination between columns "a" and columns "b" is performed by the magenta and cyan strips (indicated by the thick red arrows in the diagram on the left) printed over the respective patterns at the top of head 1. These strips indicate that magenta is column "a" and cyan is column "b".



Overlap of dots between the heads is 4 dots.

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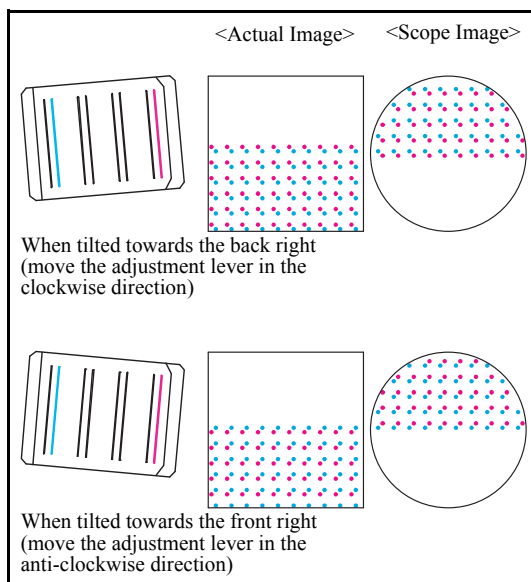
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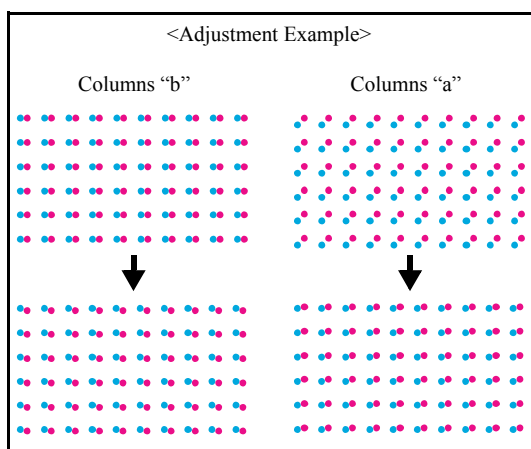
8



- ① Check the slant of each column.

For the columns "b", the relationship between the points of impact and the slant of the head is as shown in the diagram on the left.

For the columns "a", the pattern is reversed.



- ② Perform an averaging adjustment.

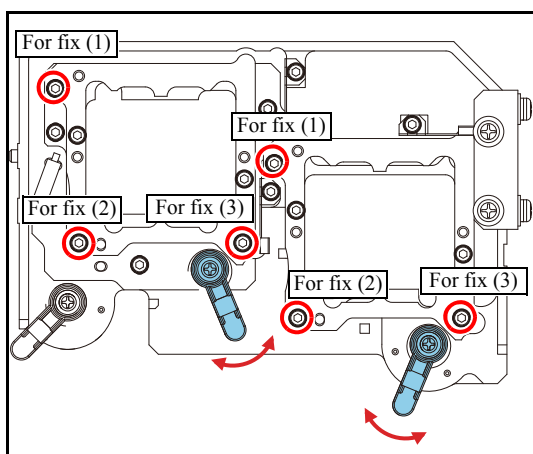
The standard color for each column is M for columns "a" and C for columns "b".

Move the adjustment lever and adjust the slant.

In the diagram on the left, the columns "b" are aligned while the columns "a" are misaligned. In this case, move "b" columns slightly so that the degrees of scattering of "a" and "b" columns are equal. (=Intermediate adjustment)

## 4.2.3 [HEAD ADJUST] AVERAGING ADJUST

1.1



2. Loosen the screws (x3) for fixing.

3. Referring to the Step 1, move the adjusting lever to adjust the slant of the head.

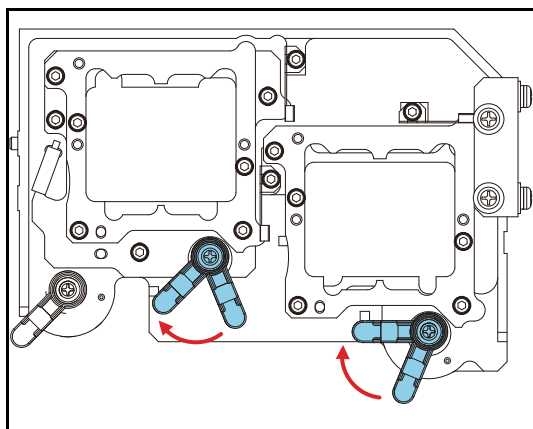
4. Fix the screws (x3)



Fix the screws after adjustment in the order of (1), (2) and (3).

5. Repeat the common procedure 2 and the slant adjustment procedures 1 to 4 until you can adjust.

6. Move the adjusting lever to the left edge.



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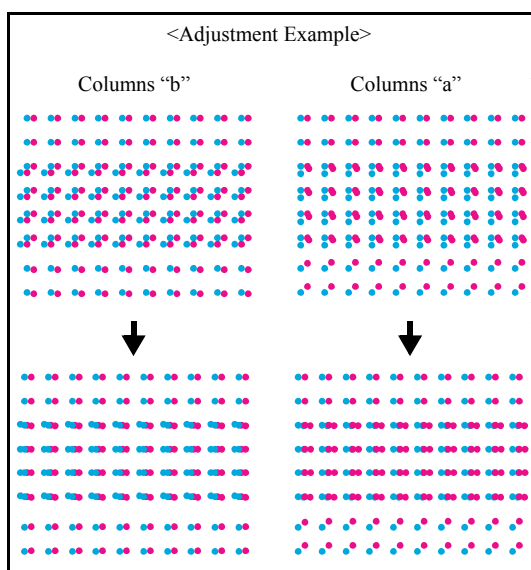
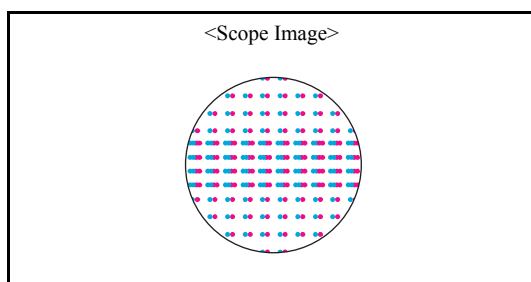
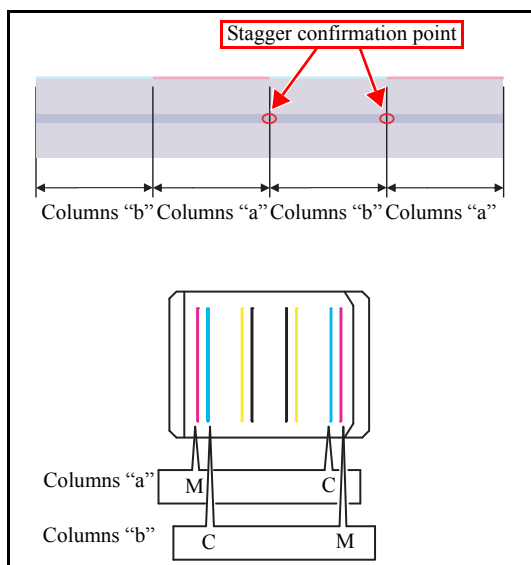
## 4.2.3 [HEAD ADJUST] AVERAGING ADJUST

1.1

### ■ Stagger Adjustment



- It is necessary to perform SLANT adjustment before STAGGER adjustment.
- After adjusting the stagger, adjust the slant.



1. Carry out the slant adjustment through the following procedures.

As shown in the diagram on the left, patterns of columns "a" and columns "b" are printed alternately at a pitch width of approximately 100 mm. The discrimination between columns "a" and columns "b" is performed by the magenta and cyan strips (indicated by the thick red arrows in the diagram on the left) printed over the respective patterns at the top of head 1. These strips indicate that magenta is column "a" and cyan is column "b".



Overlap of dots between the heads is 4 dots.

- ① Check the stagger of each column.

Adjust it so that 4 nozzles each for both edges of the head to be adjusted may be overlapped in alignment in the X direction.

- ② Perform an averaging adjustment.

Adjust it so that 4 nozzles each for both edges of column "a" and column "b" may be overlapped on average in the X direction.

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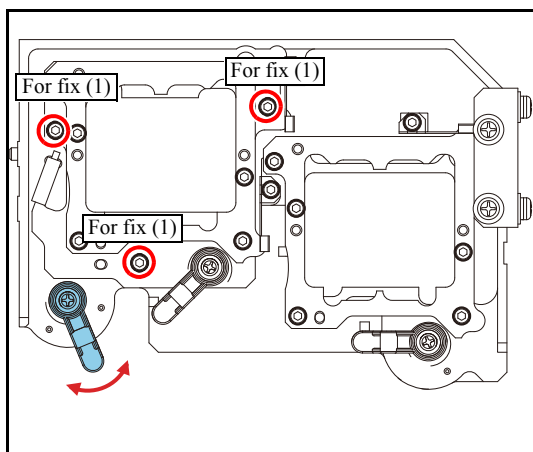
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## 4.2.3 [HEAD ADJUST] AVERAGING ADJUST

1.1



2. Loosen the screws (x3) for fixing.

3. Referring to the Step 1, move the adjusting lever to adjust the stagger of the head.

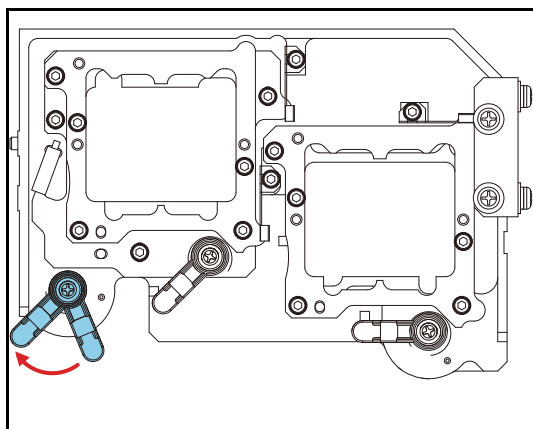
4. Fix the screws (x3)



Fix the screws after adjustment in the order of (1), (2) and (3).

5. Repeat the common procedure 2 and the stagger adjustment procedures 1 to 4 until you can adjust.

6. Move the adjusting lever to the left edge.



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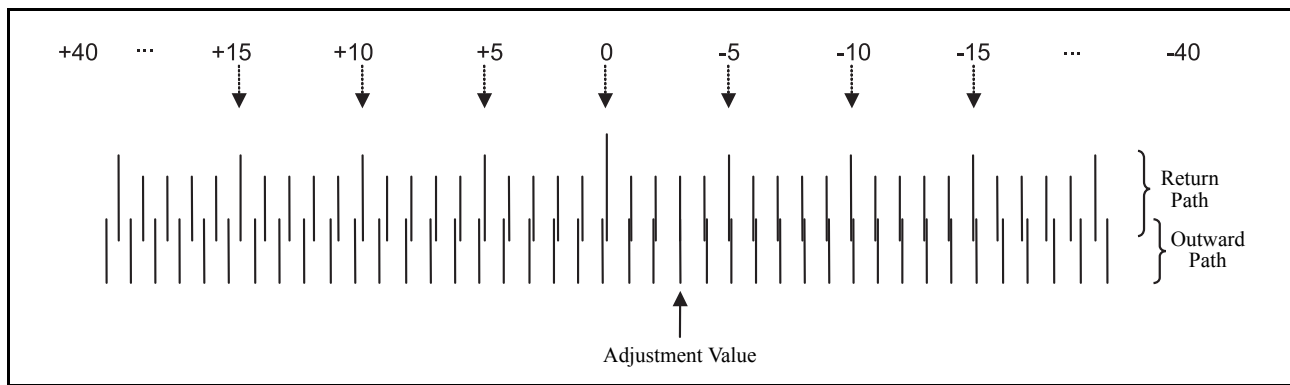
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Function

Adjusts the location of impact points during to-and-from movement of printing operation. Provides a baseline value for user compensation value.  
Is used when modifying ink type or making strict adjustment during installation.



Procedure

<LOCAL. 1>    [#01]

[FUNCTION]

FUNCTION

#ADJUST    <ENT>

#ADJUST

HEAD ADJUST    <ent>

#HEAD ADJUST

DROP.POS ADJUST <ent>

#DROP POS.    MODE

SELECT:HiSPEED    SCAN

:Normal-SCAN

#DROP POS.    HsLg

SELECT    :DRAFT

:FINE

: DRAFT2

:FINE2

1. Select “DROP POS.” from the operation menu.

IMPORTANT

Make sure to check the [HEAD HEIGHT]. Head height is adjusted at [Thin] before shipment. Since only an alternative adjustment value is prepared, the baseline is also adjusted at [Thick] by adjusting at [Thick].

2. Select a scan speed to be used as a standard.

Selection item: Normal/HiSPEED    (\* Initial setting: HiSPEED)

Lightbulb

Make adjustment only for “Normal-SCAN”. The same adjusted value is applied to both scan speeds. Therefore, there is no need of making adjustment for each speed.

[▲]/[▼]: Switches scan speed.

[ENTER]: Finalizes (To Next)

3. Select a resolution to be used as a standard.

Selection item: DRAFT (540 dpi)/ FINE (720 dpi)

DRAFT2 (540 dpi)/ FINE2 (720 dpi)

[▲]/[▼]: Switches Resolution.

[ENTER]: Finalizes (To Next)

IMPORTANT

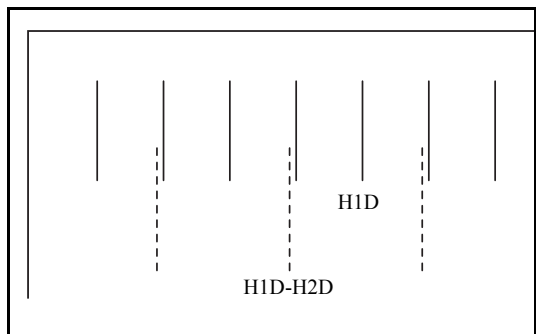
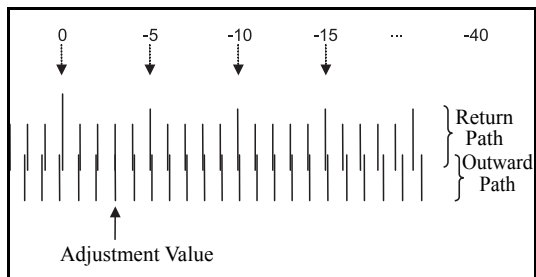
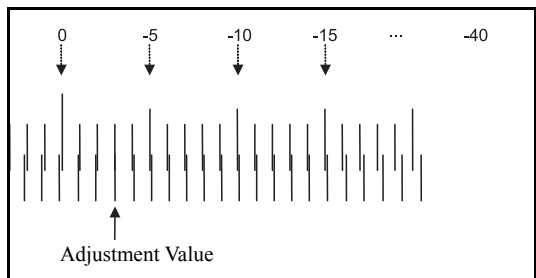
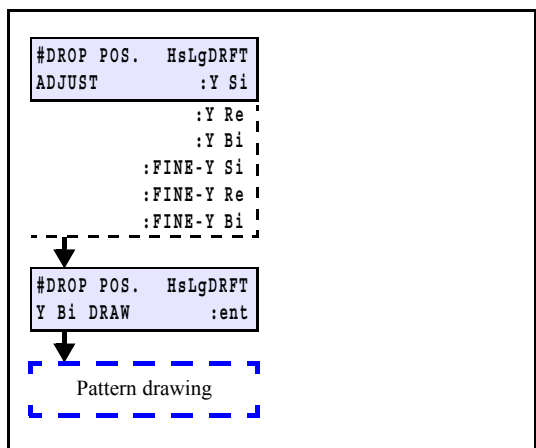
Adjusts all of DRAFT, FINE, DRAFT2, and FINE2.

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4.2.4

R.1.1

P.1



4. Carry out printing in order of [FINE-Y Si], [FINE-Y Re] and [FINE-Y Bi].

After correcting the dot position of head 1 and 2 for FINE-Y Si and FINE-Y Re, adjust Si and Re using head 1 only for Fine-Y Bi.

[▲]/[▼]: Switches

5. Check the pattern.

#### ■ Y Si, Y Re

Adjusting patterns of Head 1-2 is drawn successively.

Input the adjusting value of the D row of each head based on the D row of the head 1.

(Use only the D row of each head for patterns)

Adjusting item: Head1-2,

Adjusting value: -50.0~ 50.0 dot (unit: 0.1 dot)



- Even during the pattern drawing, the cap-in movement will come in, which is not the completion of pattern, therefore you have to be careful.
- When opening the cover etc., do it after confirming the drawing of a pattern of Head1-2 has been completed.

#### ■ Y Bi

Input the impact position adjusting values of forwarding and returning way.

Use only the D row of the head 1 for pattern drawing.

Adjusting item: Head1-1

Adjusting value: -50.0~50.0 dot (unit: 0.1 dot)

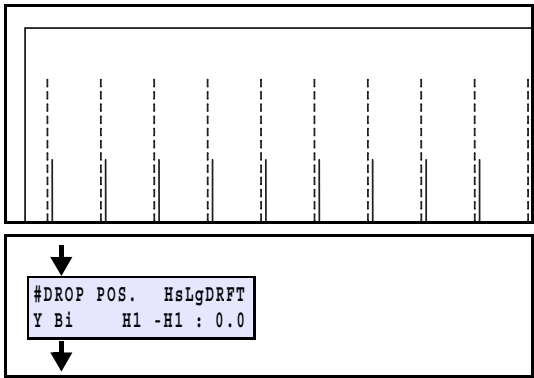
#### ■ FINE Y Si, FINE Y Re

Input the adjusting value of the D row of each head based on the D row of the head 1.

Use only the D row of each head for pattern drawing.

Adjusting item: Head1-2


Adjusting value: -50.0~50.0 dot (unit: 0.1 dot)



■ FINE-Y Bi

Use only the D row of the head 1 for pattern drawing.  
 Adjusting item: Head1-1  
 Adjusting value: -50.0~50.0 dot (unit: 0.1 dot)

6. Enter the adjustment value.


 When this adjustment has been made, previously adjusted value of [DROP.POScorrect] is cleared.

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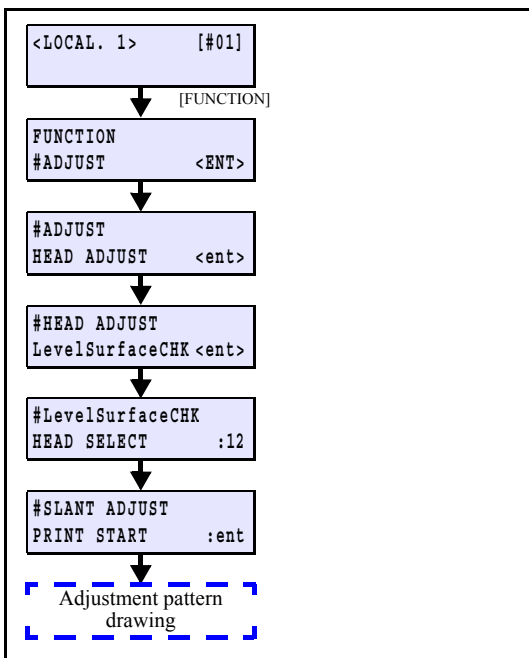
## 4.2.5 [HEAD ADJUST] LevelSurfaceCHK

1.1

### ■ Function

Draw a pattern to check the horizontal status of the head.

### ■ Procedure



1. Select [LevelSurfaceCHK] from the operation menu to execute adjustment pattern drawing.
2. Move the head over the platen using the JOG key.

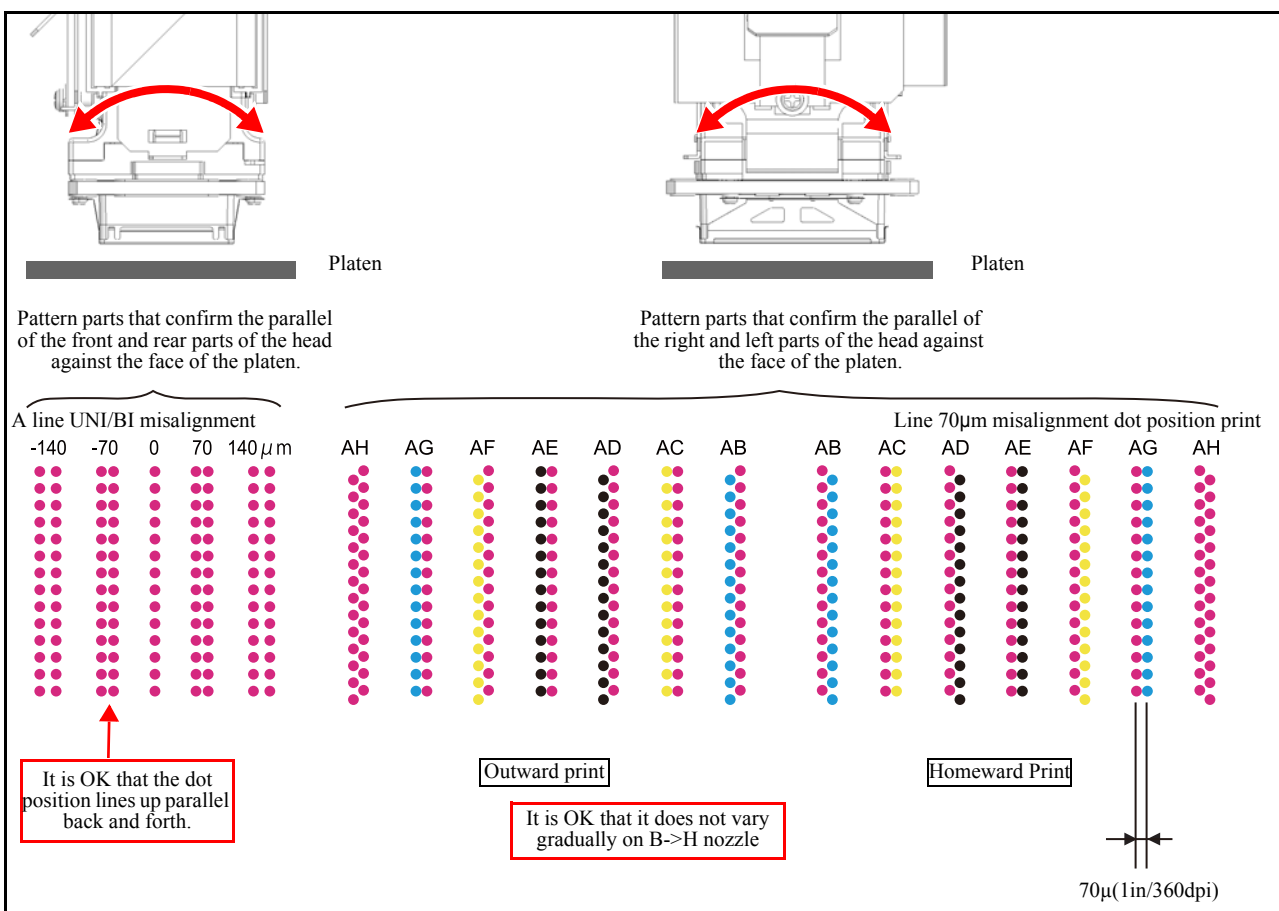
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### ■ Explanation of pattern



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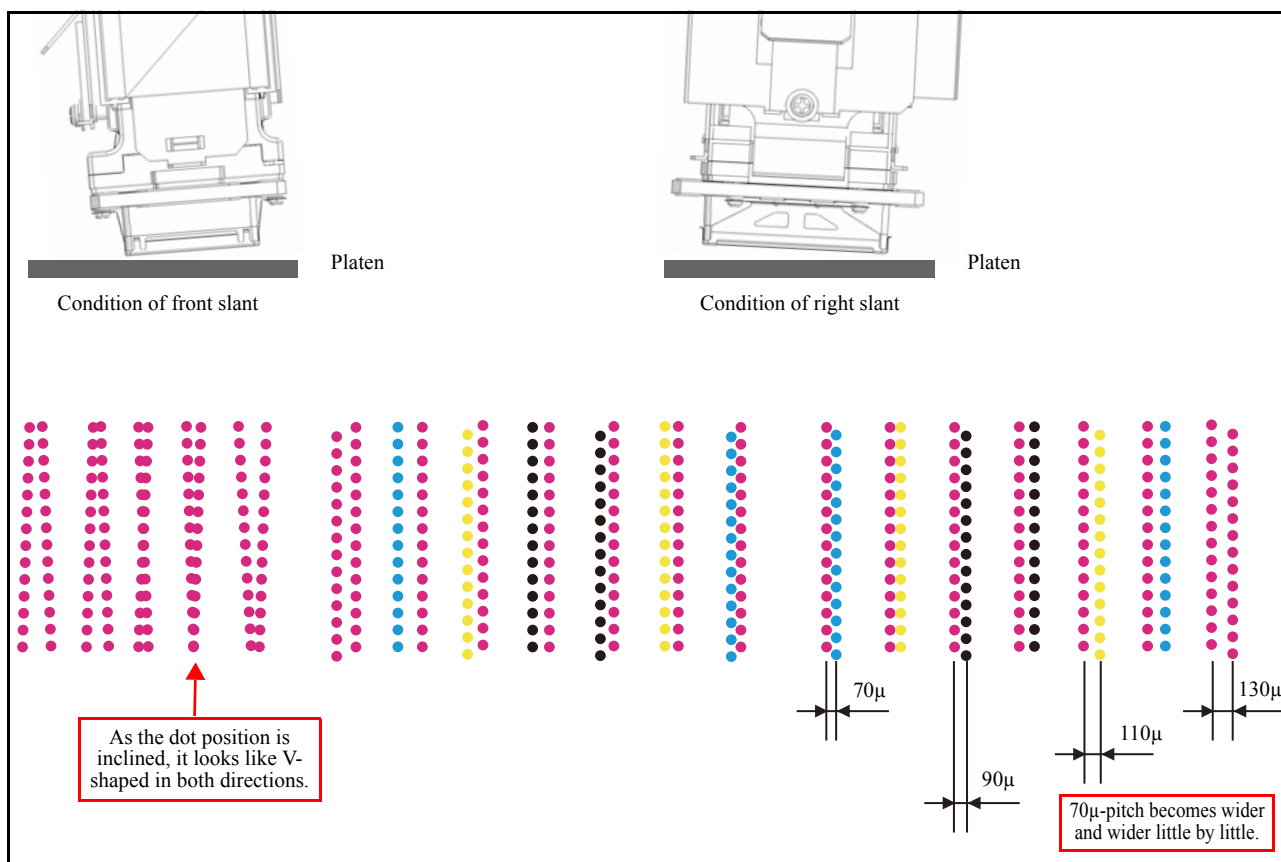
8



## 4.2.5 [HEAD ADJUST] LevelSurfaceCHK

1.1

### ■ The dot position that the head against the platen is inclined



In the case of front slant and left slant, each direction of dot position misalignment become opposite.

## 4.2.6 EDGE ADJUST

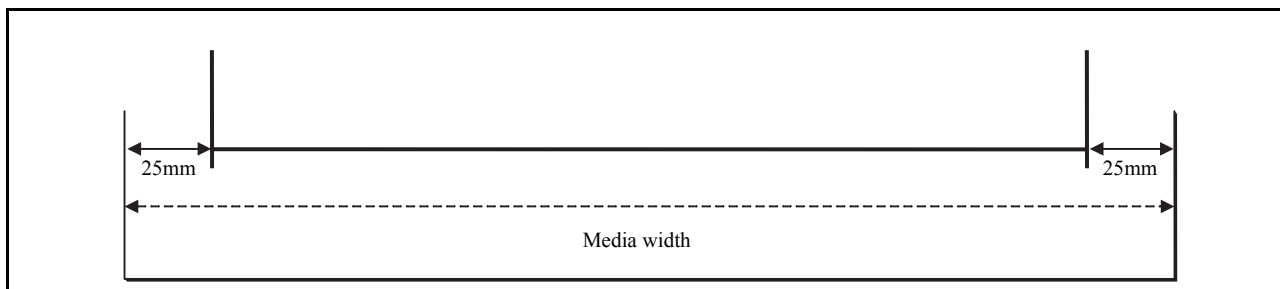
1.1

### ■ Function

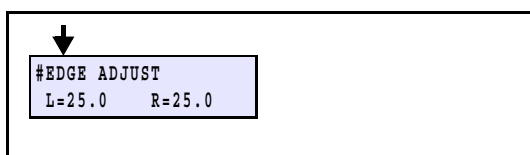
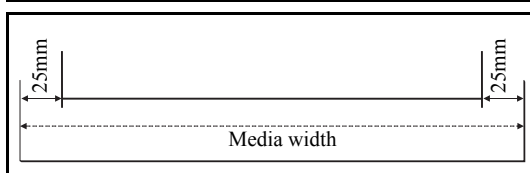
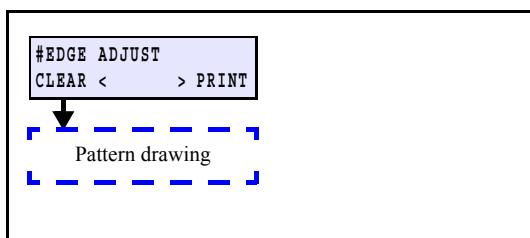
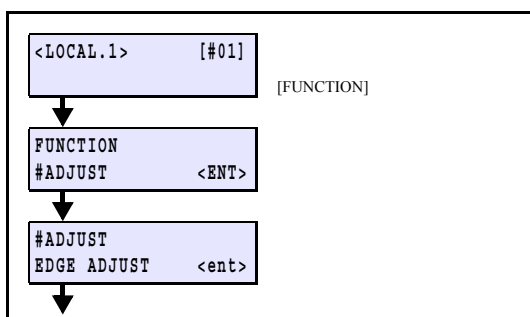
Adjust the width of the each dead space of the right and left ends of the media.

Enter the actual measurement from the media edge to the pattern to the adjustment value. If the unit was changed to inch, adjust by converting it to inch.

Is used when the system parameter has been initialized or the (plot areas at both ends) are not in the right place.



### ■ Procedure



1. Select [EDGE ADJUST] from the operation menu.

2. Draw an adjustment pattern.

[◀]: Set adjust values of L and R to default (25.0 mm).

[▶]: Execute media width detection to draw an adjustment pattern.

[▲]: To the screen for adjustment (Without drawing)

3. Check the adjustment pattern.

4. Enter the adjustment value.

For adjustment, input actual values obtained by measuring from the **edge of the media** to the pattern.

Adjusting value: 0.0 to 45.0 mm (unit: 0.1 mm)

(Use the inside of pinch roller as a positive (+). The backlash of the pinch roller may produce an error of approx. ± 0.5 mm.)

[▲]/[▼]: Changes adjustment values.

[END]: Cancellation of input



- The set value is saved in the system parameter No.2 R GRIP and No.3 L GRIP as "current parameter value + (25 mm - input value)".

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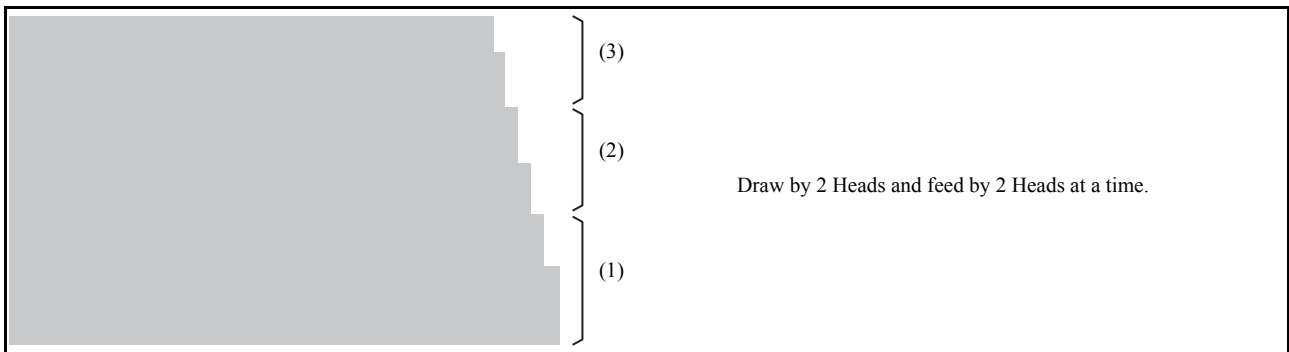
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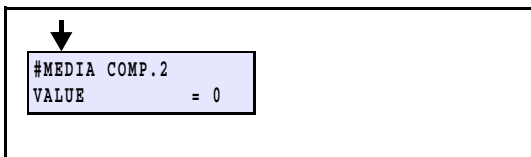
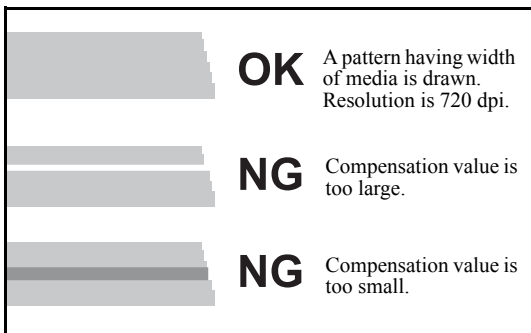
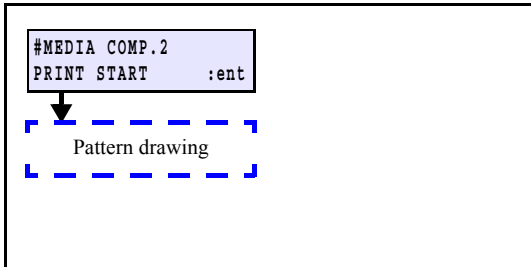
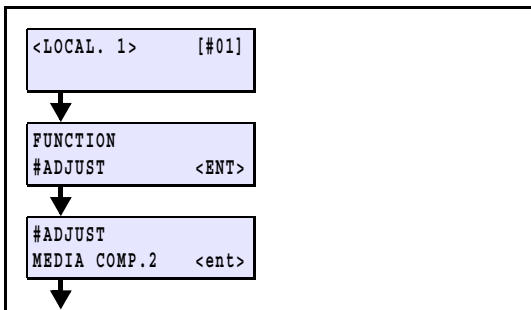
8

### ■ Function

Compensates basic feeding amount of media. (Provides a baseline value for user compensation value.)  
Is used to adjust the media feed amount when the parameter has been initialized or user compensation value is too large.



### ■ Procedure



1. Select [MEDIA COMP.2] from the operation menu.

2. Draw an adjustment pattern.

[ENTER]: Executes drawing.

[▶]: To the screen for adjustment  
(Without drawing)

[END]: Completes drawing and inputs compensation value.



Patterns are plotted repeatedly.  
(Click [END] to end plotting.)

3. Check the adjustment pattern.

4. Enter the compensation value.

Compensation value: -500 to 500

[▲]/[▼]: Changes adjustment values.

[END]: Cancellation of input



In actual feeding amount compensation, compensation value for each media set in the SETUP function are added to this compensation value.

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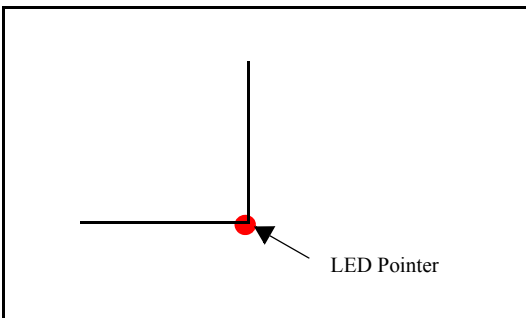
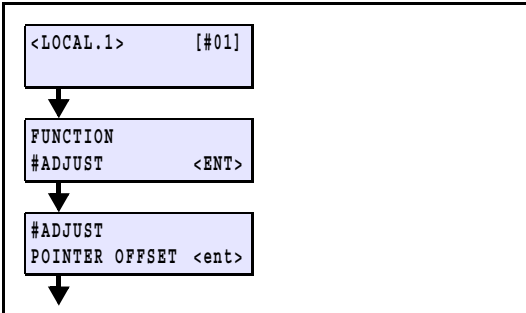
8

## 4.2.8 POINTER OFFSET

### ■ Function

Print the adjustment pattern and adjust the location of the LED pointer and print origin (Nozzle A Column).

### ■ Procedure



1. Select [POINTER OFFSET] from the operation menu.

2. Make necessary adjustments.

[ENTER]: Starts drawing.

After drawing is completed

[▲], [▼], [◀], [▶] : LED pointer movement

Align the LED pointer to the pattern position shown on the left (intersection of the straight lines).

[ENTER]: Settings

[END]: Cancellation of input

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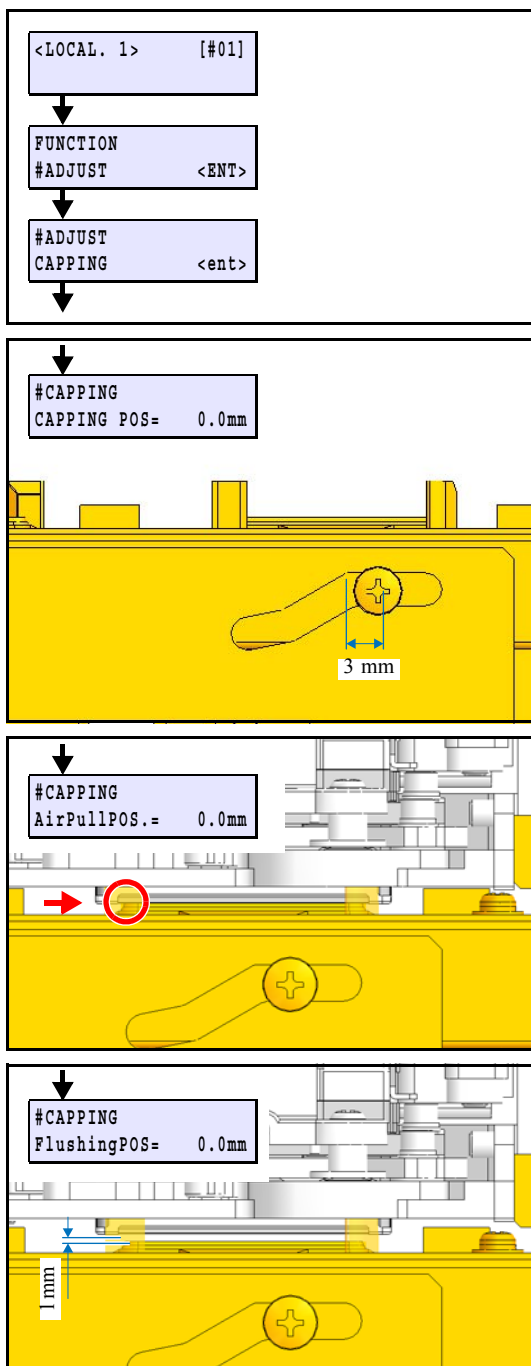
7

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## ■ Outline

Adjusts the location for capping and wiper. Adjusted value is saved in the system parameter.  
Basically, it is not necessary to make adjustment even when cap (and the like) has been replaced.

## ■ Adjustment procedure



1. Select [CAPPING] from the operation menu.

2. Make adjustment so that the cap slider is located at 3 mm to the right from the uppermost point it has reached on the cap base.

[◀]/[▶]: Horizontally shifts the cap.  
[ENTER]: Finalizes (To Next)

3. Make adjustment so that the head is located exactly at the point where the head is in contact with rubber portion (left end) of the cap head.

[▲]/[▼]: Shifts the cap.  
[ENTER]: Finalizes (To Next)

4. Make adjustment so that the clearance between the head and left end of the cap is set at 1 mm.

[◀]/[▶]: Shifts the cap.  
[ENTER]: Finalizes (To Next)

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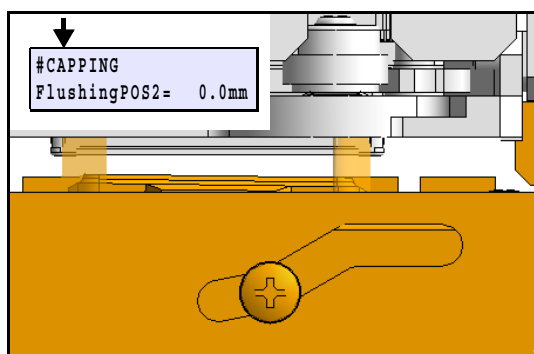
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## 4.2.9 CAPPING

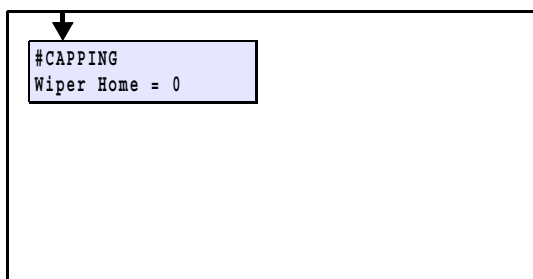
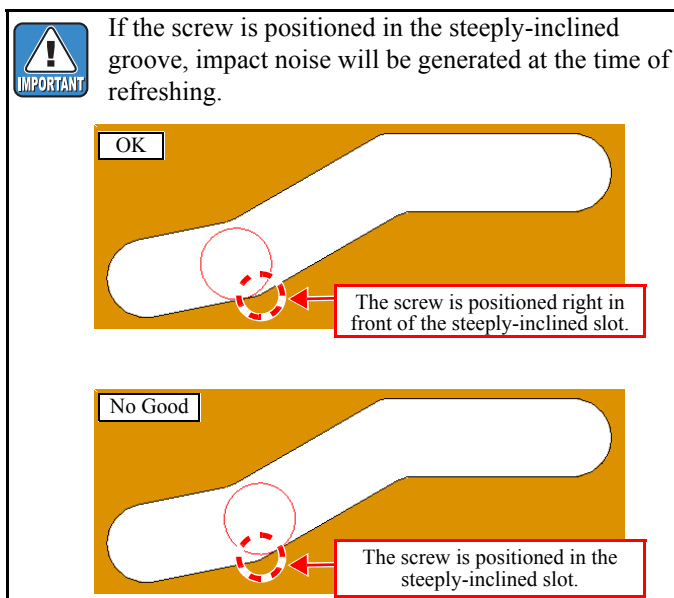
1.1



5. Position the screw right in front of the steeply-inclined slot.

[◀]/[▶]: Shifts the cap.

[ENTER]: Finalizes (To Next)

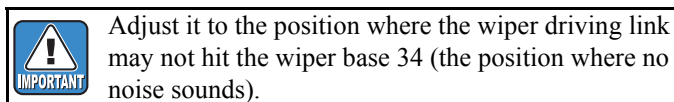


6. Adjust the wiper waiting position.

After the wiper moves, press the [FUNCTION] key to check the adjustment value.

[▲]/[▼]: Horizontally shifts the wiper.

[ENTER]: Finalizes



7. Make adjustment so that each center of the wiper and the head coincides.

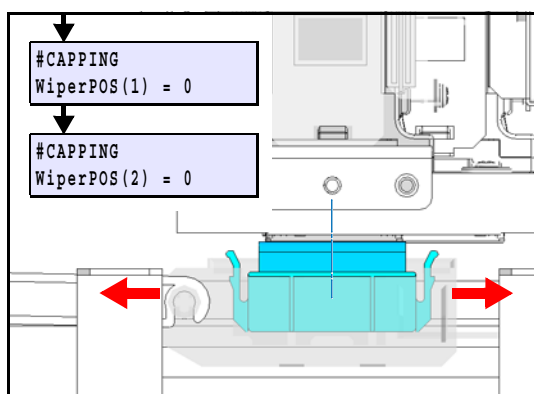
After the wiper moves, press the [FUNCTION] key to check the adjustment value.

Adjust the 2nd head in the same way.

[▲]/[▼]: Horizontally shifts the wiper.

[ENTER]: Finalizes

[END]: Completes



## Function

Head ID input is normally executed by the machine automatically.  
The head memory PCB assy is mounted on the head unit assy, and the ID information is written in the mini memory PCB assy.



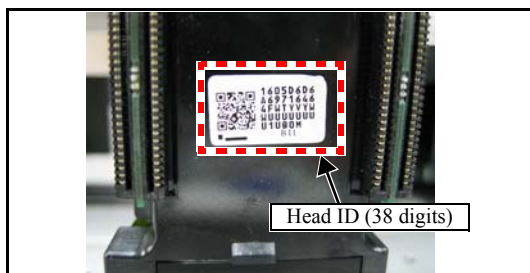
Head ID is for compensating differences of discharge amount of ink among each head. A label on which a compensation value (ID: in 24 digits) is written is attached on a head at the factory shipment. This head ID is stored in the machine using the parameters so that print quality is consistent.



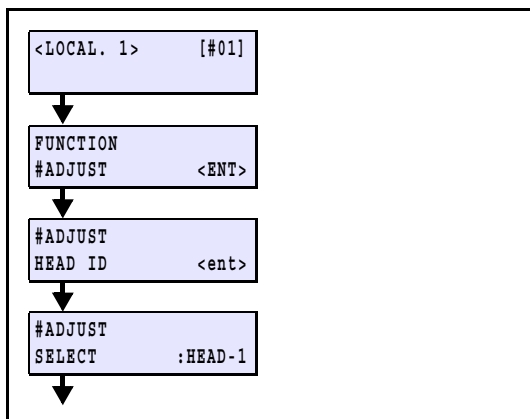
Manual input of the ID information is required in the following cases.

- In a case that the ID information is not stored in the mini memory PCB assy:  
[HEAD ID Un input] is displayed on the panel (at power on)
- Pay attention when replacing PCB, because even if the head ID is not identical to the ID information in the memory PCB assy (a PCB of another head is placed, for example), the error is not displayed on the panel.  
Manual input of ID is recommended if there is a doubt on the agreement between the ID of a head and the ID information in the memory PCB assy.

## Procedure (In case of manual input)



1. Prepare a head ID.



2. Select [HEAD ID] from the operation menu.

3. Select the head to which you enter the head ID.

4. Enter the head ID.  
[ENTER]: Determines and saves.



If the ID, which has been input, is incorrect, operation error (ERROR 30) is displayed.

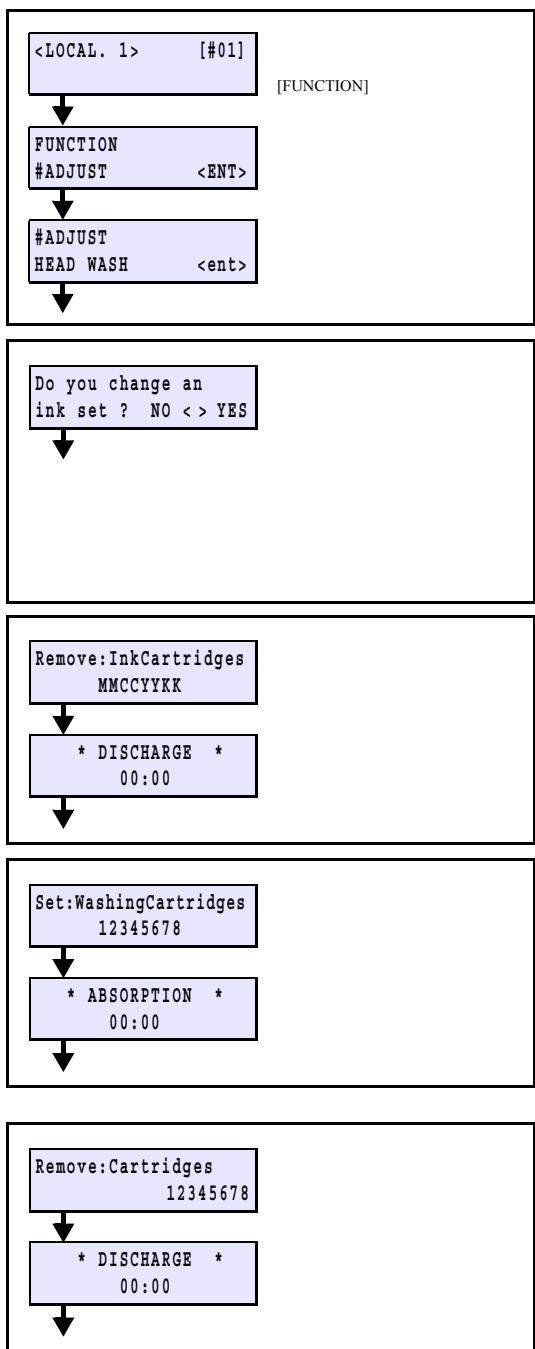
## Function

Cleans the ink channels inside the head, damper and tube.  
 When modifying ink type or ink set, empties the ink out of the channel and cleans the inside using the washing liquid.



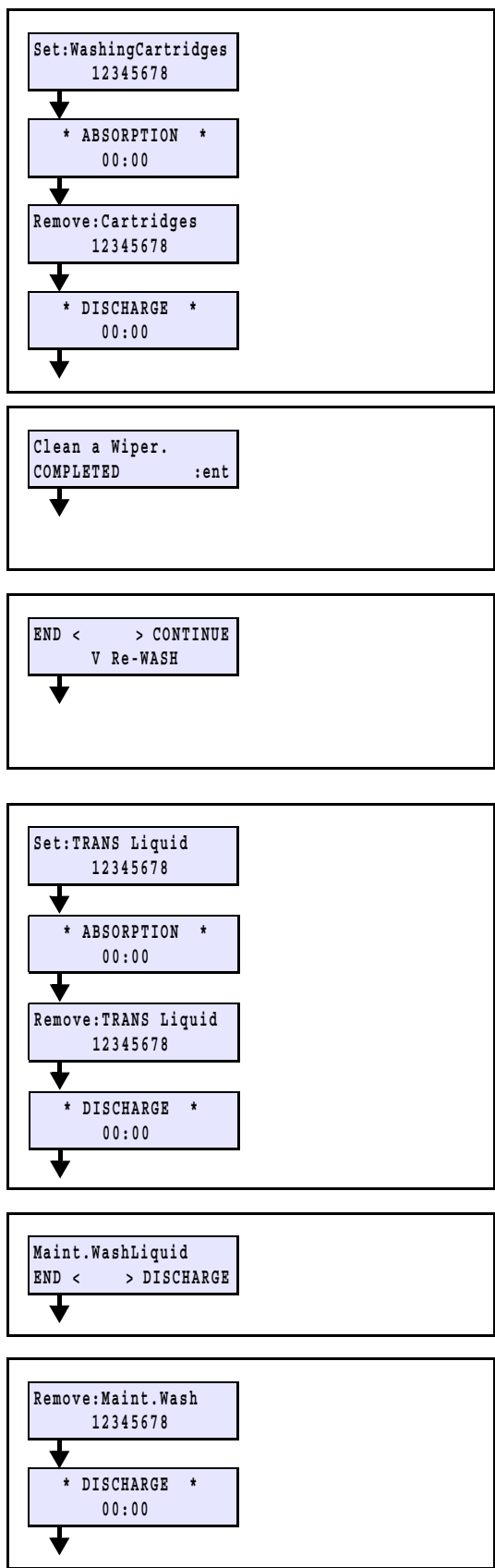
- During the cleaning sequence, the cartridge sensor in the machine monitors the insertion and removal of each cartridge. When the sensor detects the cartridge specified on the screen (or when the sensor detects no cartridge), the machine automatically carries out absorbing and discharging operations (The ink suction pump motor is activated). Note that the washing liquid cartridge will be recognized as normal even when the cartridge sensor fails to read IC chip information, because the cartridge is not equipped with the IC chip.
- As non-filling state remains after the completion of cleaning, the Initial Filling or filling of corresponding head is required.

## Procedure



1. Select [HEAD WASH] from the operation menu.
2. During the initial filling after cleaning the head, select “Yes” if you change the ink set.  
 (The ink set can be changed only at the factory shipment, because change of the coupler is also needed.)  
 [ ◀ ]: Head wash (normal)  
 [ ▶ ]: Head wash that accompanies ink-set change.
3. Remove all the ink cartridges and then discharge the ink inside.  
 Carry out the discharge after the confirmation of display when a waste ink tank warning occurs.
4. Insert the washing-liquid cartridges into all the slots, clean the inside of the tube, and then carry out head vibration.
5. Remove all the washing-liquid cartridges and then discharge the liquid inside.





6. Clean inside the ink channels using washing liquid one more time.
7. “Cap OFF” is carried out automatically and the print head  
carriages move to the maintenance position. Then “Wiper ON”  
is carried out automatically and the wipers are cleaned.  
  
[ENTER]: To the next operation
8. Select the next operation.  
  
[◀]: To the screen displaying the next operation  
selection. (Step 10.)  
[▶]: Filling of the transportation liquid  
(Only at the factory shipment)  
[▼]: Additional cleaning
9. Clean inside the ink channels using washing liquid.
10. Select the next operation.  
  
[◀]: Head-wash completed (in this sequence)  
[▶]: Discharge of the maintenance washing liquid  
(To the next operation)
11. Remove the maintenance washing liquid cartridges and  
discharge the liquid inside.
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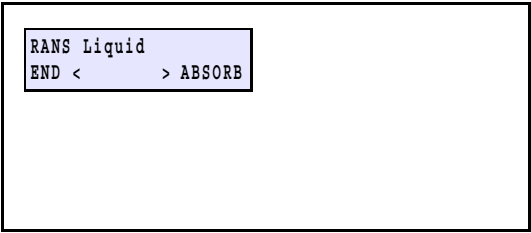
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12. Select [END] to end the operation.
- [ ◀ ]: Head-wash completed (in this sequence)
  - [ ▶ ]: Discharge of the maintenance washing liquid (Only at factory shipment)

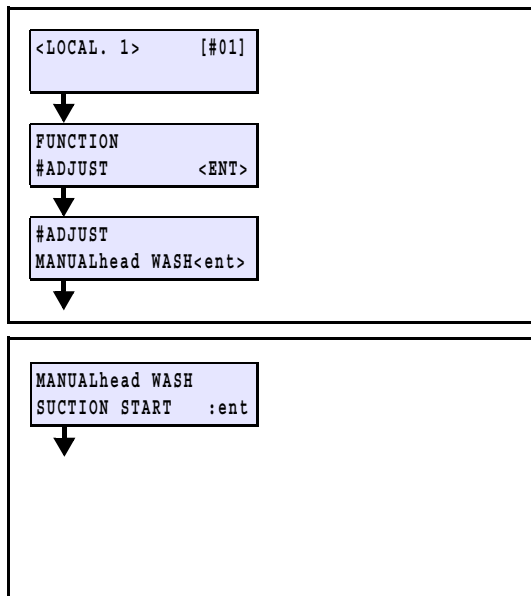
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MAINTENANCE MANUAL > Adjustment Items > Adjustment Function > MANUALhead WASH							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver.	1.00	Remark
<b>4.2.12 MANUALhead WASH</b>							<b>1.0</b>

## ■ Function

This is for removing the cap and executing suction when head cleaning is executed using a syringe (such as after head replacement).

## ■ Procedure



1. Select [MANUALhead WASH] from the operation menu.

2. Cap OFF

3. Press [ENTER] to execute suction (operates the corresponding pump motor). Filling will not be executed if a waste ink tank warning is displayed.

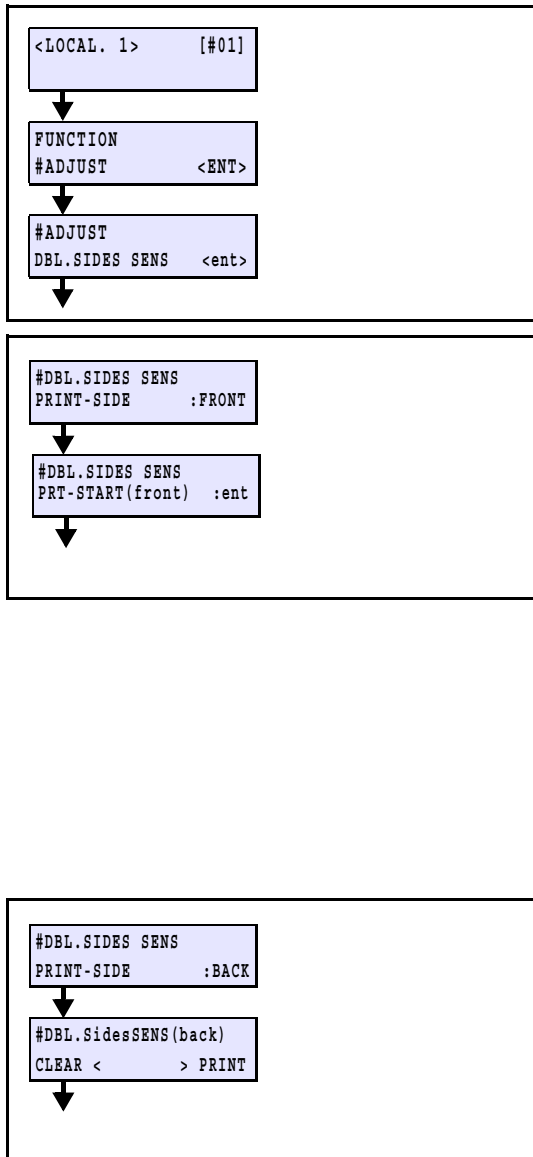
4. Select [END] to end the operation.

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## ■ Function

This is for adjusting the print starting position in the X direction (feeding direction) for the front and back sides of a media.  
Adjust the back side of a media print starting position to the front side.

## ■ Procedure



1. Select [DBL.SIDES SENS] from the operation menu.
2. Select [FRONT] as print side and print the pattern of the front side.  
  

[▲]/[▼]: Switches the print side

[ENTER]: Finalizes (To Next)
3. After completion of the pattern printing, hold up the clamp lever and set the media reversed.  
Right-align the media and set the printed pattern over the double-sided sensor, and hold down the clamp lever.
4. Press [END] several times and switch to local mode to detect the media.
5. Select [BACK] as print side and print the pattern of the back side.  
To set adjusted value to default (0.0mm), press [◀].  
  

[▲]/[▼]: Switches the print side

[▶]: Executes (pattern printing of the back side)

[ENTER]: Finalizes (To Next)
6. After the printed pattern is fed and comes to be on the LED light unit, check whether the patterns of the front and back sides are aligned.  
If the patterns of the front and back sides are misaligned, go to the following procedure.

#DBL.SidesSENS(back)  
VALUE = 10.0mm

↓

: -10.0 to 10.0

<Adjustment Example>

BACK

FRONT

Enter the adjusted value so that the back and front sides overlap

Enter the minus value  
When the difference is 1mm  
: Enter -1mm

Enter the plus value  
When the difference is 1mm  
: Enter +1mm

7. If the patterns are misaligned, enter the difference between the back and front side patterns as compensation values through the following adjustment example.

[▲]/[▼]: Enters compensation values

You should enter the compensation values that is calculated at the right end of the pattern.  
(This is because the right side difference of the pattern may differ from the left side depending on the media installtion and such.)

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4.2.13R.1.0P.2

### ■ Function

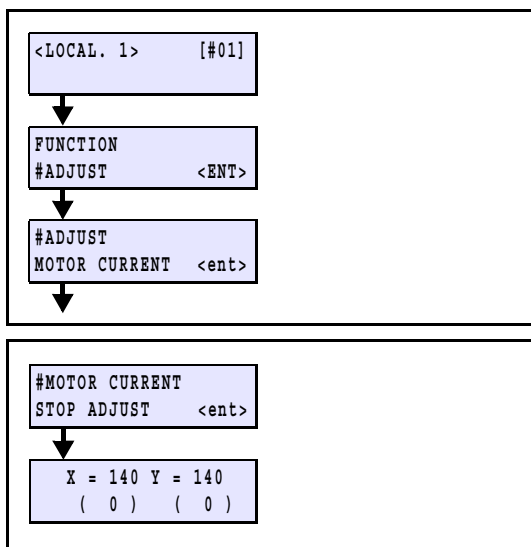
If hunting occurs or a hunting noise is heard when the X-axis motor and/or Y-axis motor are driven after replacing the main PCB assy, adjust the supply current to minimize the hunting.

Carries out the supply current adjustment while the cutter head is connected. The adjusted value is stored in the control system parameters.

Adjustment items are as follows.

- |                 |   |
|-----------------|---|
| STOP ADJUST     | : Adjustment during the resting state               |
| X MOVING ADJUST | : Adjustment during the X motor is being activated. |
| Y MOVING ADJUST | : Adjustment during the Y motor is being activated. |

### ■ Procedures for STOP ADJUST

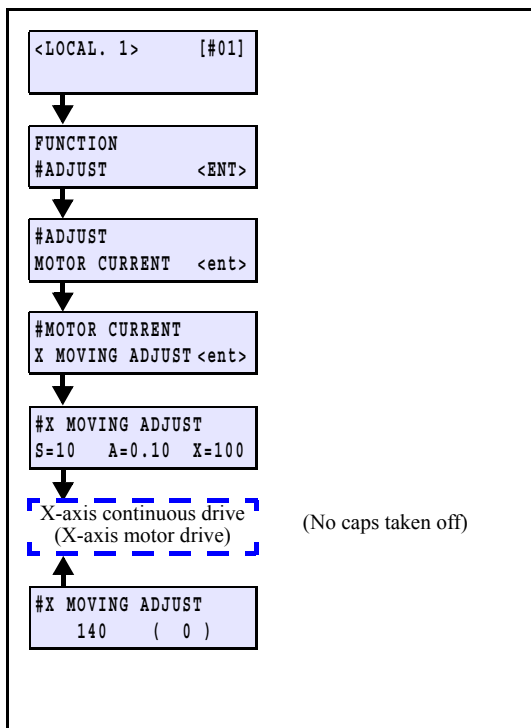


1. Select [MOTOR CURRENT] from the operation menu.

2. Carry out the [STOP ADJUST] and adjust the current value so that the hunting noises at the X and Y-axis motors are as minimized as possible.

[ ◀ ]/[ ▶ ]: Motor changeover  
 [ ▲ ]/[ ▼ ]: Modification of D/A value  
 [ENTER]: Executes  
 [END]: Returns

### ■ Procedures for X MOVING ADJUST



1. Select [MOTOR CURRENT] -> [X MOVING ADJUST] from the operation menu.

[ ▲ ]/[ ▼ ]: Changes items  
 [ENTER]: Finalizes (To the next compensation screen)

2. Input the following test conditions and execute the function.

Speed (S):        5 to 10 mm/s  
 Acceleration (A):0.2 G  
 Length (X):        About 50 to 100 mm

3. Adjust the value so that the hunting sound during the X motor running is minimized.

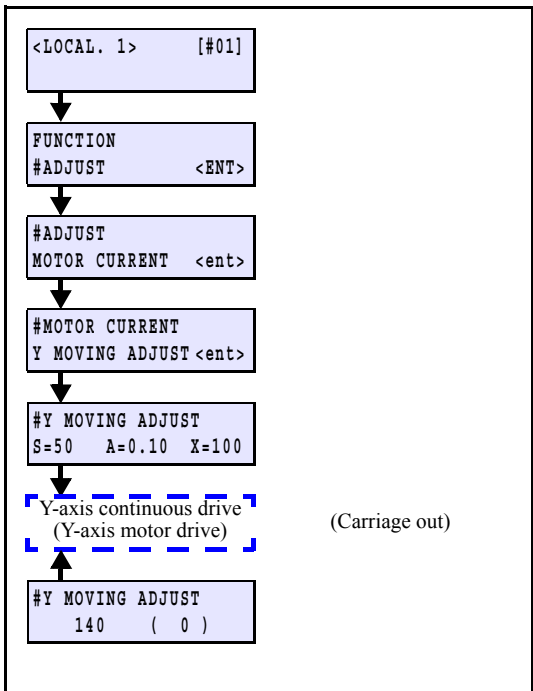
Check the hunting sound of the X motor at rear left.

\*Enter a value from 130 to 160. (Input scope is 0 to 255)

4. Press [END] several times to complete the X-axis motor current adjustment.

[ ▲ ]/[ ▼ ]: Changes the value  
 [ ◀ ]/[ ▶ ]: Moves  
 [ENTER]: Executes  
 [END]: Returns

■ Procedures for Y MOVING ADJUST



1. Select [MOTOR CURRENT] -> [Y MOVING ADJUST] from the operation menu.

[▲]/[▼]: Changes items  
[ENTER]: Finalizes (To the next compensation screen)


2. Input the following test conditions and execute the function.

Speed (S): 5 to 10 mm/s  
Acceleration (A): 1.0 G  
Length (X): About 50 to 100 mm

3. Adjust the value so that the hunting sound during the Y motor running is minimized.  
Check the hunting sound of the Y motor at right side.

4. Press [END] several times to complete the Y-axis motor current adjustment.

[▲]/[▼]: Changes the value  
[◀]/[▶]: Moves  
[ENTER]: Executes  
[END]: Returns

 To check the hunting sound, return to LOCAL mode by pressing [END] and operate a JOG key.

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## 4.2.15 SERIAL No.

1.0

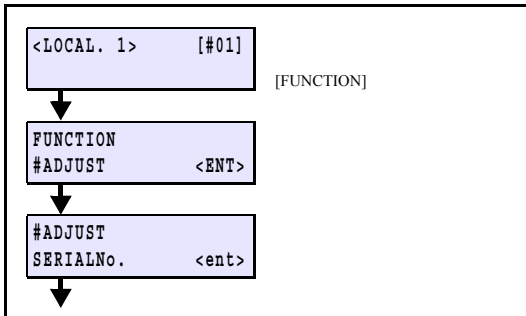
### ■ Function

Confirms and sets the serial number. 8 characters of alphabet and numeral (0-9, A-Z) can be input.

Because the serial number is input before shipment, field entry is impossible.

Reenter the parameter only if it has been initialized.

### ■ Procedure



1. Select [SERIAL No.] from the operation menu.

2. Enter (Confirm) the serial number.

[▲]/[▼]: Change the numerals.

[◀]/[▶]: Moves the cursor

(When the cursor is in the left or the right end,  
key input does not work.)

[ENTER]: Finalizes

[END]: Cancellation of input



If the serial number has been set, it cannot be changed.

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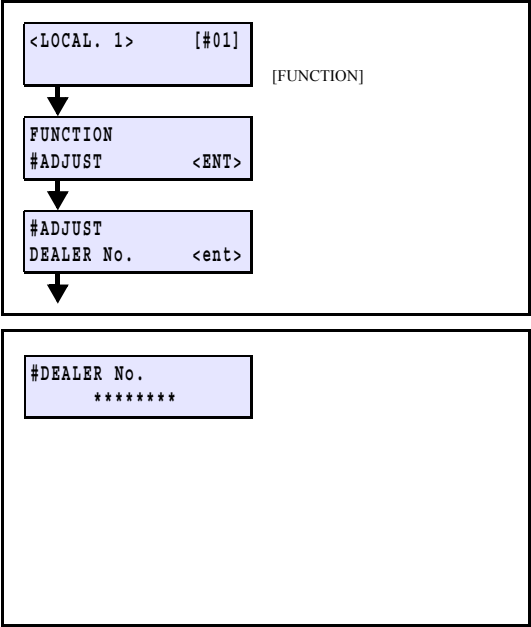
8



■ Function

Confirms and sets the dealer number.  
8 characters of alphabet and numeral (0-9, A-Z) can be input.

■ Procedure



1. Select [DEALER No.] from the operation menu.
2. Enter (Confirm) the dealer number.
- [▲]/[▼]: Change the numerals.
- [◀]/[▶]: Moves the cursor  
(When the cursor is in the left or the right end,  
key input does not work.)
- [ENTER]: Finalizes
- [END]: Cancellation of input

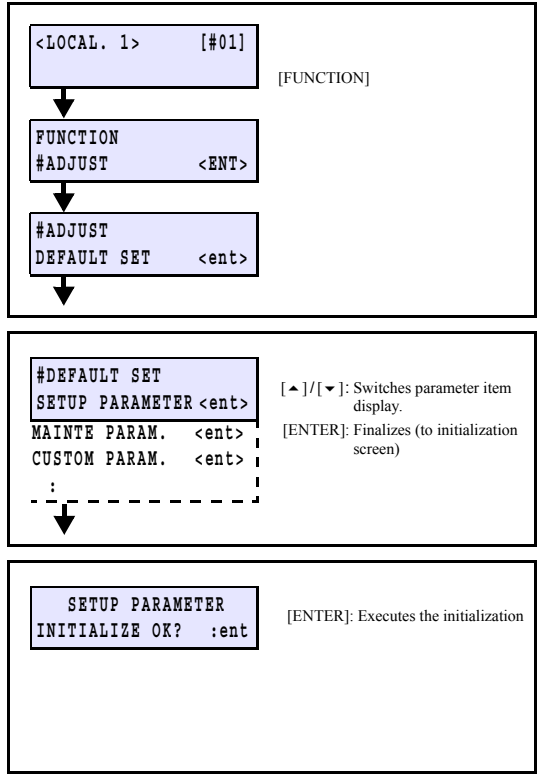
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# Function

Sets the selected parameters to the initial values.


No.	Item	Operation	Remarks
1	SETUP PARAMETER	1. Initialize the user operation setting value. 2. Sets user No. to 1. 3. Initialize the language to be used. 4. Initialize the user dot position compensation value. 5. Sets to maintenance close.	Always selectable
2	MAINTENANCEparameter	Initialize the parameter in question.	
3	CUSTOMIZE PARAMETER	Initialize the parameter in question.	
4	RUNNING PARAMETER	Initialize the parameter in question.	
5	EXCHANGE PARAMETER	Initialize the parameter in question.	
6	INK-SYSTEM PARAMETER	Initialize the parameter in question.	

# Procedure



### ■ Function

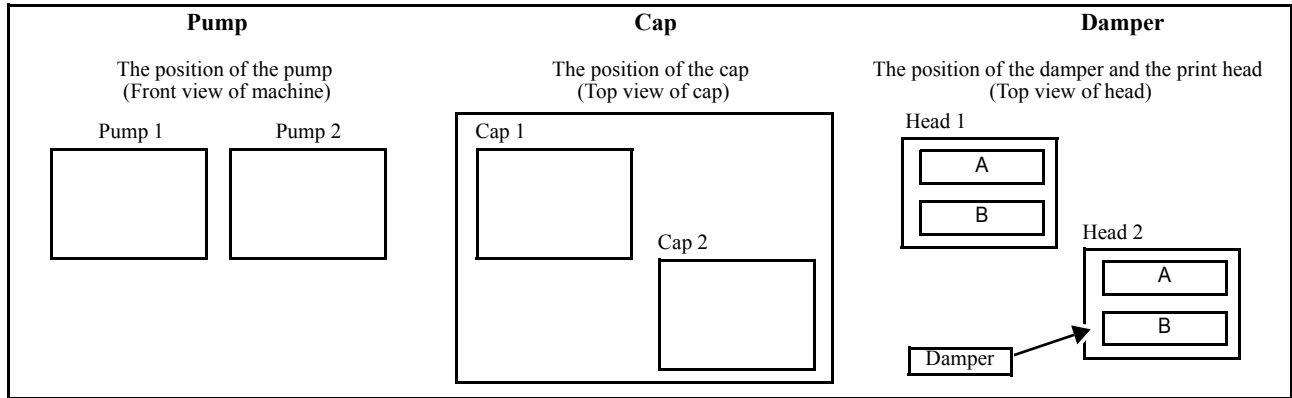
Displays the replacement history of the following parts/unit or registers replacement date thereof.



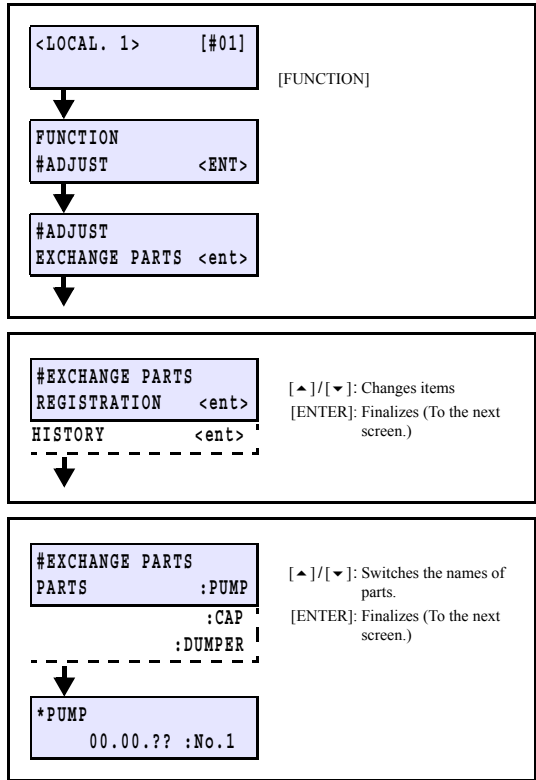
These items are used as standards for determining the part replacement period.  
When a part in question is replaced, never forget to register the replacement date.

### ■ Parts subject to the replacement

Type	Contents of registration
PUMP	Enter the date and the pump No.
CAP	Enter the date and the cap No.
DAMPER	Enter the date, head No, and the damper No.



### ■ Registration procedure



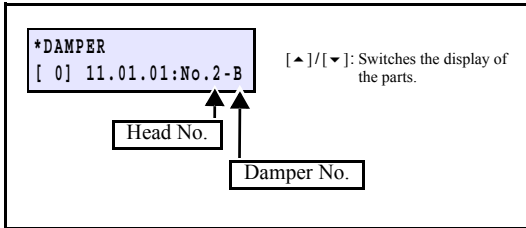
1. Select [REPLACE PARTS] from the operation menu.

2. Select [REGISTRATION].

3. Select the parts replaced and register the date and the part number referring to the list shown above.

## 4.2.18 REPLACE PARTS

### ■ Example of displaying the part-replacement history



To see the part-replacement history, select [HISTORY] in Step 2 and make the appropriate part displayed.

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## Adjustment Items

**4**

<b>4.1</b> <b>Operation Matrix</b>	<b>4.2</b> <b>Adjustment Function</b>	<b>4.3</b> <b>Mechanical Adjustment</b>
---------------------------------------	--	--

**5**

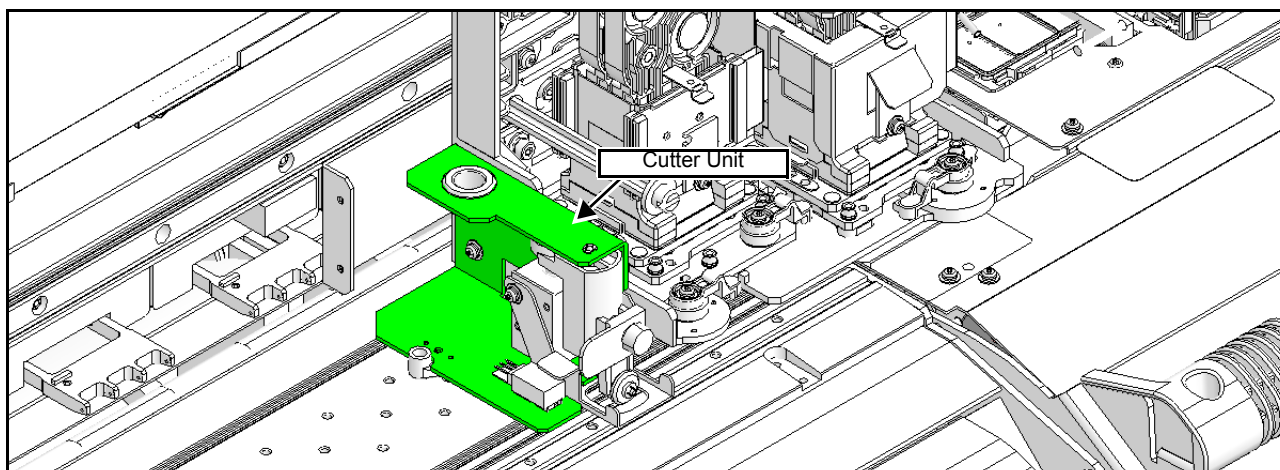
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## 4.3.1 Adjustment of the Mounting Location for the Cutter

1.0



### ■ Function

Adjust the cutter location in the back-and-forth direction by moving the cutter unit back and forth while visually checking the location.



If the jig is not available, it is possible to use an alternative with a cutter unit height of 7.0 mm.

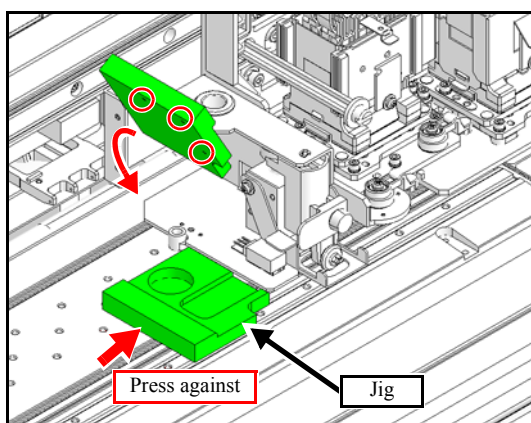
### ■ Procedure

1. Use the cutter unit screws (x3) to temporarily fix the unit. Tighten the screws just enough to support the unit.
2. Push down the clamp lever.



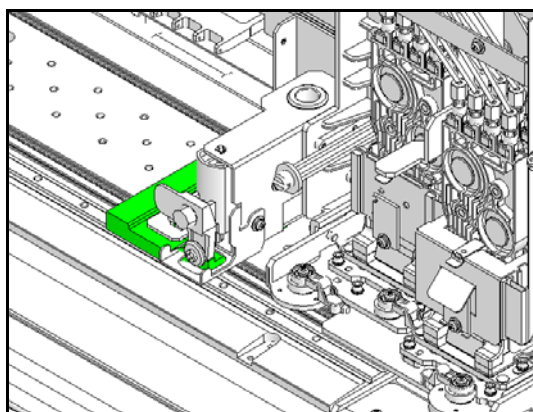
Be sure to make the adjustment while the clamp lever is lowered. The head initial height should be set in the L range.

3. Set the jig on the platen. Set the bin (x3) on the bottom of the jig to the platen media plate front and back fitting.
4. Attach the jig to the head. Slide the jig toward the head until it attaches (stopping position).



## 4.3.1 Adjustment of the Mounting Location for the Cutter

1.0



5. Align the front and back of the cutter unit. Lower the cutter blade until it fits into the fitting, and then determine the front and back position of the unit and fix it using the screws.



The fitting area is wider than the actual cutter blade. Therefore, alignment should be made within that area.



If the jig is not available, press the cutter blade assy down to the platen surface and adjust it until it fits the platen.

6. Move the head unit manually and push down the cutter blade assy at each right, center and left end on the platen, to check back-front positioning.



On rare occasions, the blade comes out of the slot because of assembly errors or fluctuation in part accuracies. In such a case, adjust again to the back-front optimum position where the blade is always in whole slot on the platen.

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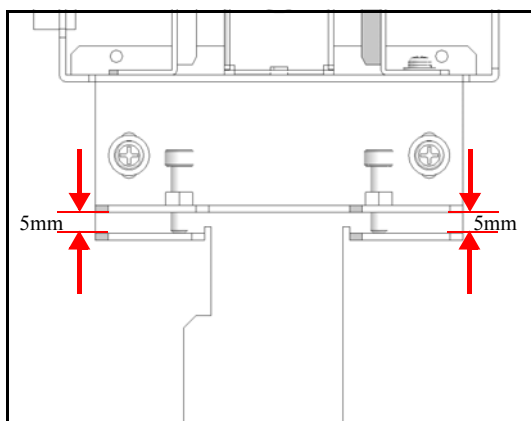
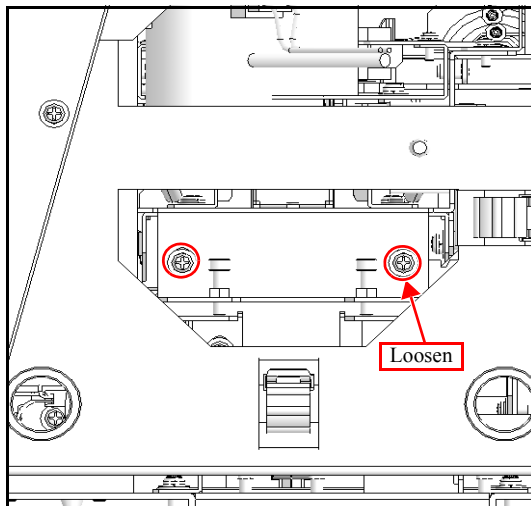
## 4.3.2 Adjustment of the Station Height

1.0

### ■ Outline

Adjust the height of the station.

### ■ Procedure



1. Remove the following covers.

• Right cover 260

2. Loosen the two screws used for station-base adjustment.

3. Loosen the hexagon socket head screws and make an adjustment to set their thickness gauge at 5 mm, then tighten the nuts.

4. Tighten up two loosened screws used for station-base adjustment and fix them at 5 mm in thickness gauge.

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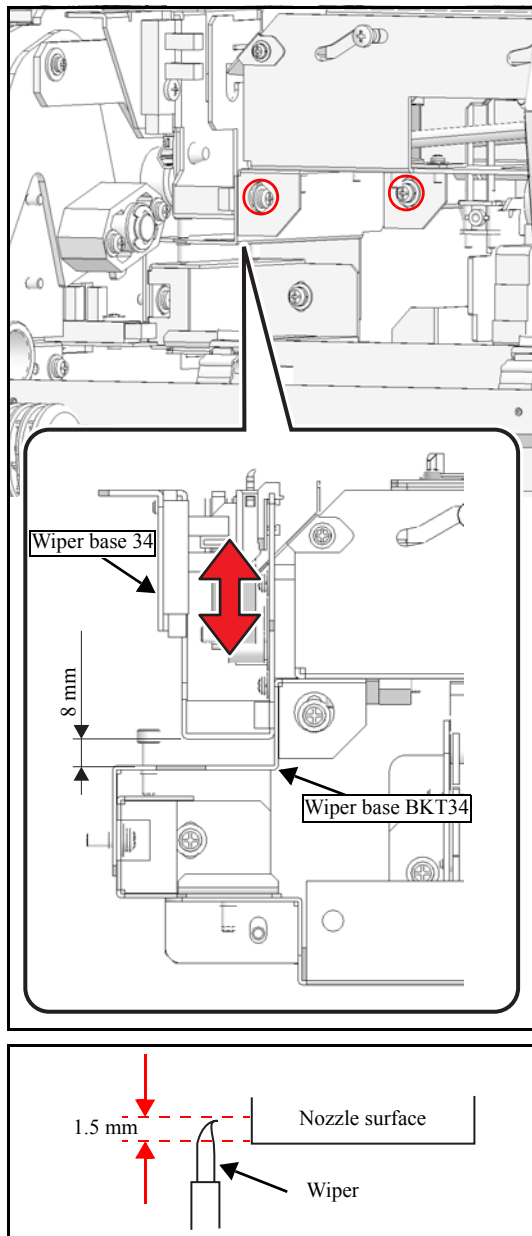
## 4.3.3 Adjustment of the Wiper Height

1.0

### ■ Outline

Adjust the height of the wiper.

### ■ Procedure



1. Loosen the wiper height adjusting screws (x2), and temporarily adjust the screws until the thickness gauge is 8 mm.
2. Loosen the screw and the miniature clamp lever on the P cover U front, and then tighten the screws while holding the height adjustment lever in the lowest position to fix the head in place.

3. Move the wiper base 34, and adjust the wiper so that there is approximately 1.5 mm from the nozzle surface.

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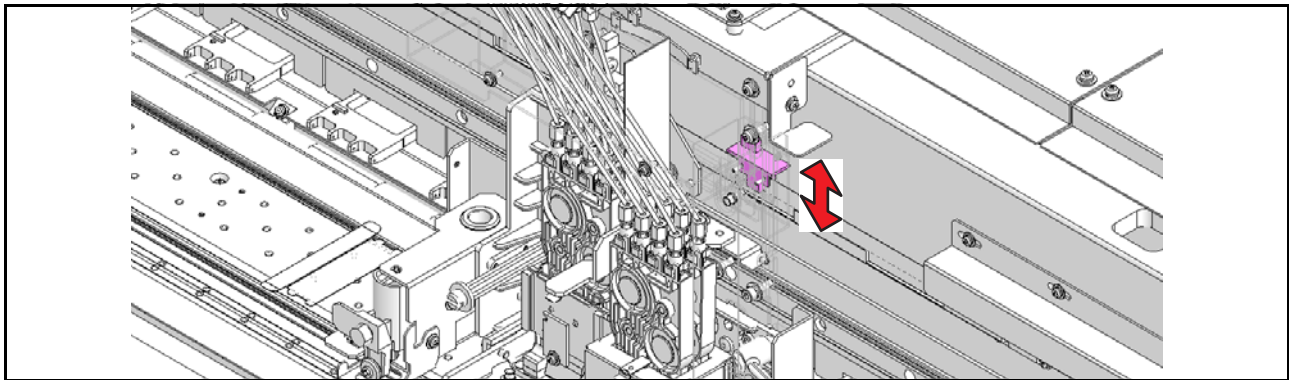
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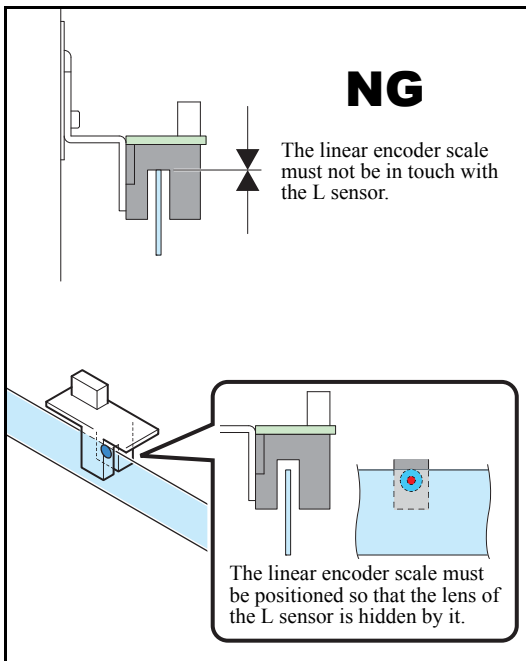
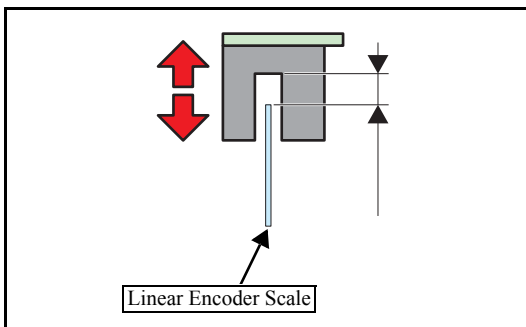
## 4.3.4 Positioning of the Encoder Sensor



### ■ Outline

Adjust the position of the encoder sensor.

### ■ Procedure



1. Loosen the screws on the L sensor BKT.

Refer to "6.4.16 Encoder PCB Assy" for details concerning its assembly and disassembly.

2. Adjust the height of the encoder PCB Assy and fix it with screws.

3. Check the following two items when moving the print head carriage manually from the right end to the left end on the main body.

- The upper part of the linear encoder scale is not in touch with the L sensor.
- The exposed lens of the L sensor is not over the height of the linear encoder scale.



After fixing the L sensor BKT, check whether no abnormality is found by conducting the following [#TEST].

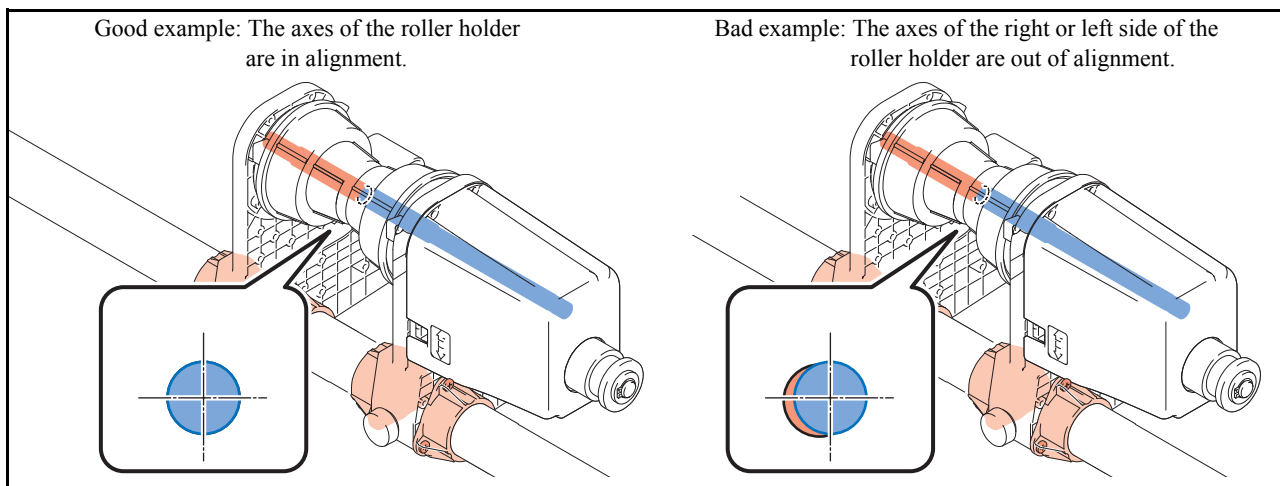
- 5.1.30 LINEAR ENCODER

## 4.3.5 Centering of the Roll Holder

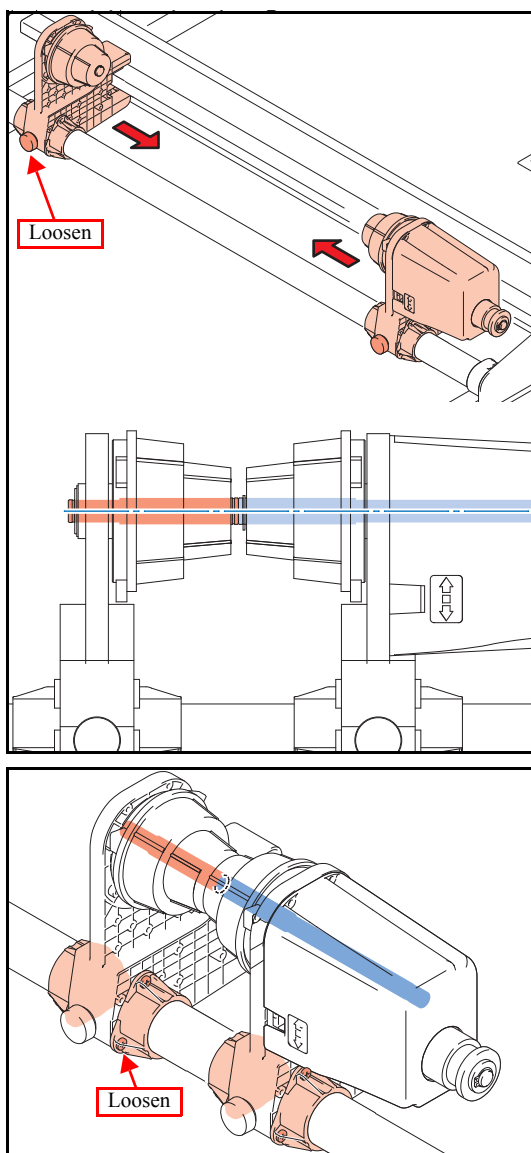
1.0

### ■ Outline

Carry out centering so that the axes of roller holder (axis of both feeding side and take-up side) are aligned, by positioning them face-to-face.



### ■ Adjustment procedure



1. Carry out centering so that the axes of roll holder are aligned by positioning the feeding side and the take-up side face-to-face.

2. In case their axes are not aligned, make adjustment after loosening the screws of the bushing.
3. After the both axes have been aligned, tighten up screws and check for any misalignment of axis at the right, left and central part of the main body.

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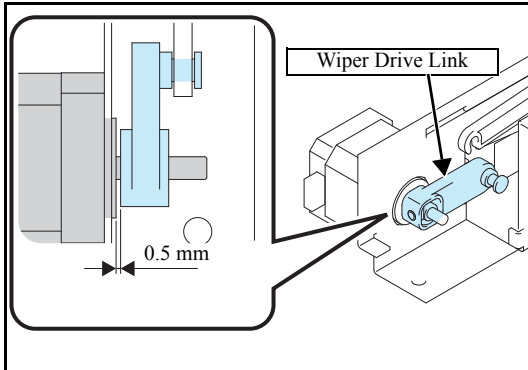
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## 4.3.6 Positioning of the Wiper Drive Link

### ■ Outline

Adjust the position of the wiper drive link.

### ■ Procedure



1. After setting the clearance between the motor base and the wiper drive link at 0.5 mm, check whether the wiper moves smoothly.

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**Test Items**

**5.1  
Test Function**

**5.2  
Other Test**

MAINTENANCE MANUAL > Test Items > Test Function > [CHECK PATTERN] Density Pattern									Rev.
Model	JV34-260	Issued	2011.02.15	Revised	2011.06.30	F/W ver	1.00	Remark	
5.1.1 [CHECK PATTERN] Density Pattern									1.1

■ Operation Procedures

Step	Item	Description																														
1	Resolution selection	360x360, 540x720, 540x900, 540x1080, 720x540, 720x720, 720x1080, 720x1440, 1440x1440																														
2	Scan direction selection	Bi-D, Uni-D																														
3	Pass No. selection	<table> <tr> <th>Resolution</th><th>Passes (4-color)</th><th>Passes (6-color)</th></tr> <tr> <td>360x360:</td><td>1, 2, 4, 8</td><td>2, 4, 8, 16</td></tr> <tr> <td>540x720:</td><td>2, 4, 8, 16</td><td>4, 8, 16, 32</td></tr> <tr> <td>540x900:</td><td>5, 10, 20, 40</td><td>5, 10, 20, 40</td></tr> <tr> <td>540x1080:</td><td>3, 6, 12, 24</td><td>6, 12, 24, 48</td></tr> <tr> <td>720x540:</td><td>3, 6, 12, 24</td><td>3, 6, 12, 24</td></tr> <tr> <td>720x720:</td><td>2, 4, 8, 16</td><td>4, 8, 16, 32</td></tr> <tr> <td>720x1080:</td><td>3, 6, 12, 24</td><td>6, 12, 24, 48</td></tr> <tr> <td>720x1440:</td><td>4, 8, 16, 32</td><td>8, 16, 32, 64</td></tr> <tr> <td>1440x1440:</td><td>8, 16, 32</td><td>16, 32, 64</td></tr> </table>	Resolution	Passes (4-color)	Passes (6-color)	360x360:	1, 2, 4, 8	2, 4, 8, 16	540x720:	2, 4, 8, 16	4, 8, 16, 32	540x900:	5, 10, 20, 40	5, 10, 20, 40	540x1080:	3, 6, 12, 24	6, 12, 24, 48	720x540:	3, 6, 12, 24	3, 6, 12, 24	720x720:	2, 4, 8, 16	4, 8, 16, 32	720x1080:	3, 6, 12, 24	6, 12, 24, 48	720x1440:	4, 8, 16, 32	8, 16, 32, 64	1440x1440:	8, 16, 32	16, 32, 64
Resolution	Passes (4-color)	Passes (6-color)																														
360x360:	1, 2, 4, 8	2, 4, 8, 16																														
540x720:	2, 4, 8, 16	4, 8, 16, 32																														
540x900:	5, 10, 20, 40	5, 10, 20, 40																														
540x1080:	3, 6, 12, 24	6, 12, 24, 48																														
720x540:	3, 6, 12, 24	3, 6, 12, 24																														
720x720:	2, 4, 8, 16	4, 8, 16, 32																														
720x1080:	3, 6, 12, 24	6, 12, 24, 48																														
720x1440:	4, 8, 16, 32	8, 16, 32, 64																														
1440x1440:	8, 16, 32	16, 32, 64																														
4	Drawing size selection	X size: 10 mm – paper length (unit: 10 mm)    * Roll paper: 500000 mm Y size: 10 mm – paper width (unit: 10 mm)																														
5	Drawing color selection	4 colors: M, C, Y, K (M, B, Y, K with Sublimation5 ink) 6 colors: M, C, Y, K, Lc, Lm (M, B, Y, K, b, m with Sublimation5 ink)																														
6	Start of drawing (Waiting for key input)	[ENTER]: Starts drawing. [TEST]: Executes test drawing. [(JOG)]: Sets JOG operation mode. (Press [ENTER] to start drawing with the current position as the origin.) [REMOTE]: Switches between high speed scanning ON and OFF. [END]: Completes drawing.																														

■ Operation Procedures

Step	Item	Description																														
1	Resolution selection	360x360, 540x720, 540x900, 540x1080, 720x540, 720x720, 720x1080, 720x1440, 1440x1440																														
2	Scan direction selection	Bi-D, Uni-D																														
3	Pass No. selection	<table> <tr> <th>Resolution</th><th>Passes (4-color)</th><th>Passes (6-color)</th></tr> <tr> <td>360x360:</td><td>1, 2, 4, 8</td><td>2, 4, 8, 16</td></tr> <tr> <td>540x720:</td><td>2, 4, 8, 16</td><td>4, 8, 16, 32</td></tr> <tr> <td>540x900:</td><td>5, 10, 20, 40</td><td>5, 10, 20, 40</td></tr> <tr> <td>540x1080:</td><td>3, 6, 12, 24</td><td>6, 12, 24, 48</td></tr> <tr> <td>720x540:</td><td>3, 6, 12, 24</td><td>3, 6, 12, 24</td></tr> <tr> <td>720x720:</td><td>2, 4, 8, 16</td><td>4, 8, 16, 32</td></tr> <tr> <td>720x1080:</td><td>3, 6, 12, 24</td><td>6, 12, 24, 48</td></tr> <tr> <td>720x1440:</td><td>4, 8, 16, 32</td><td>8, 16, 32, 64</td></tr> <tr> <td>1440x1440:</td><td>8, 16, 32</td><td>16, 32, 64</td></tr> </table>	Resolution	Passes (4-color)	Passes (6-color)	360x360:	1, 2, 4, 8	2, 4, 8, 16	540x720:	2, 4, 8, 16	4, 8, 16, 32	540x900:	5, 10, 20, 40	5, 10, 20, 40	540x1080:	3, 6, 12, 24	6, 12, 24, 48	720x540:	3, 6, 12, 24	3, 6, 12, 24	720x720:	2, 4, 8, 16	4, 8, 16, 32	720x1080:	3, 6, 12, 24	6, 12, 24, 48	720x1440:	4, 8, 16, 32	8, 16, 32, 64	1440x1440:	8, 16, 32	16, 32, 64
Resolution	Passes (4-color)	Passes (6-color)																														
360x360:	1, 2, 4, 8	2, 4, 8, 16																														
540x720:	2, 4, 8, 16	4, 8, 16, 32																														
540x900:	5, 10, 20, 40	5, 10, 20, 40																														
540x1080:	3, 6, 12, 24	6, 12, 24, 48																														
720x540:	3, 6, 12, 24	3, 6, 12, 24																														
720x720:	2, 4, 8, 16	4, 8, 16, 32																														
720x1080:	3, 6, 12, 24	6, 12, 24, 48																														
720x1440:	4, 8, 16, 32	8, 16, 32, 64																														
1440x1440:	8, 16, 32	16, 32, 64																														
4	Drawing size selection	X size: 10 mm – paper length (unit: 10 mm) * Roll paper: 500000 mm Y size: 10 mm – paper width (unit: 10 mm)																														
5	Drawing color selection	4 colors: M, C, Y, K (M, B, Y, K with Sublimation5 ink) 6 colors: M, C, Y, K, Lc, Lm (M, B, Y, K, b, m with Sublimation5 ink)																														
6	Start of drawing (Waiting for key input)	[ENTER]: Starts drawing. [TEST]: Executes test drawing. [(JOG)]: Sets JOG operation mode. (Press [ENTER] to start drawing with the current position as the origin.) [REMOTE]: Switches between high speed scanning ON and OFF. [END]: Completes drawing.																														

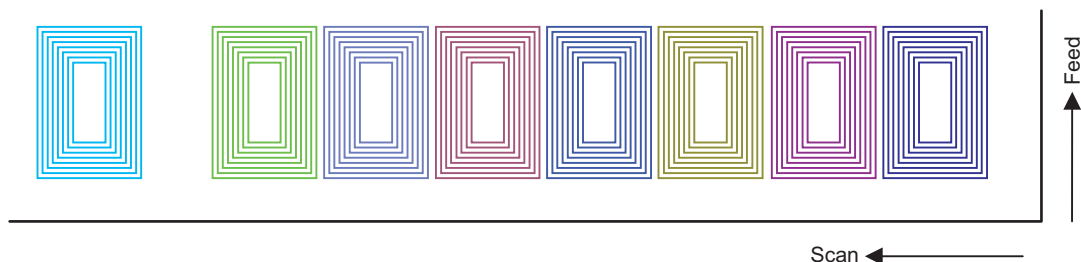
■ Operation Procedures

Step	Item	Description																														
1	Density selection	ALL, 100%, 50%, 25%, 12.5%, 6.25%																														
2	Resolution selection	360x360, 540x720, 540x900, 540x1080, 720x540, 720x 720, 720x1080, 720x1440, 1440x1440																														
3	Scan direction selection	Bi-D, Uni-D																														
4	Pass No. selection	<table> <tr> <th>Resolution</th><th>Passes (4-color)</th><th>Passes (6-color)</th></tr> <tr> <td>360x360:</td><td>1, 2, 4, 8</td><td>2, 4, 8, 16</td></tr> <tr> <td>540x720:</td><td>2, 4, 8, 16</td><td>4, 8, 16, 32</td></tr> <tr> <td>540x900:</td><td>5, 10, 20, 40</td><td>5, 10, 20, 40</td></tr> <tr> <td>540x1080:</td><td>3, 6, 12, 24</td><td>6, 12, 24, 48</td></tr> <tr> <td>720x540:</td><td>3, 6, 12, 24</td><td>3, 6, 12, 24</td></tr> <tr> <td>720x720:</td><td>2, 4, 8, 16</td><td>4, 8, 16, 32</td></tr> <tr> <td>720x1080:</td><td>3, 6, 12, 24</td><td>6, 12, 24, 48</td></tr> <tr> <td>720x1440:</td><td>4, 8, 16, 32</td><td>8, 16, 32, 64</td></tr> <tr> <td>1440x1440:</td><td>8, 16, 32</td><td>16, 32, 64</td></tr> </table>	Resolution	Passes (4-color)	Passes (6-color)	360x360:	1, 2, 4, 8	2, 4, 8, 16	540x720:	2, 4, 8, 16	4, 8, 16, 32	540x900:	5, 10, 20, 40	5, 10, 20, 40	540x1080:	3, 6, 12, 24	6, 12, 24, 48	720x540:	3, 6, 12, 24	3, 6, 12, 24	720x720:	2, 4, 8, 16	4, 8, 16, 32	720x1080:	3, 6, 12, 24	6, 12, 24, 48	720x1440:	4, 8, 16, 32	8, 16, 32, 64	1440x1440:	8, 16, 32	16, 32, 64
Resolution	Passes (4-color)	Passes (6-color)																														
360x360:	1, 2, 4, 8	2, 4, 8, 16																														
540x720:	2, 4, 8, 16	4, 8, 16, 32																														
540x900:	5, 10, 20, 40	5, 10, 20, 40																														
540x1080:	3, 6, 12, 24	6, 12, 24, 48																														
720x540:	3, 6, 12, 24	3, 6, 12, 24																														
720x720:	2, 4, 8, 16	4, 8, 16, 32																														
720x1080:	3, 6, 12, 24	6, 12, 24, 48																														
720x1440:	4, 8, 16, 32	8, 16, 32, 64																														
1440x1440:	8, 16, 32	16, 32, 64																														
5	Drawing size selection	X size: 10 mm – paper length (unit: 10 mm) * Roll paper: 500000 mm																														
		Y size: 10 mm – paper width (unit: 10 mm)																														
6	Start of drawing (Waiting for key input)	[ENTER]: Starts drawing. [TEST]: Executes test drawing. [(JOG)]: Sets JOG operation mode. (Press [ENTER] to start drawing with the current position as the origin.) [REMOTE]: Switches between high speed scanning ON and OFF. [END]: Completes drawing.																														



## ■ Drawing pattern

<Example of DROP.POS CHK pattern printing>



## ■ Operation Procedures

Step	Item	Description																														
1	Resolution selection	360x360, 540x720, 540x900, 540x1080, 720x540, 720x720, 720x1080, 720x1440, 1440x1440																														
2	Scan direction selection	Bi-D, Uni-D																														
3	Pass No. selection	<table border="1"> <thead> <tr> <th>Resolution</th><th>Passes (4-color)</th><th>Passes (6-color)</th></tr> </thead> <tbody> <tr> <td>360x360:</td><td>1,2,4,8</td><td>2,4,8,16</td></tr> <tr> <td>540x720:</td><td>2,4,8,16</td><td>4,8,16,32</td></tr> <tr> <td>540x900:</td><td>5,10,20,40</td><td>5,10,20,40</td></tr> <tr> <td>540x1080:</td><td>3,6,12,24</td><td>6,12,24,48</td></tr> <tr> <td>720x540:</td><td>3,6,12,24</td><td>3,6,12,24</td></tr> <tr> <td>720x720:</td><td>2,4,8,16</td><td>4,8,16,32</td></tr> <tr> <td>720x1080:</td><td>3,6,12,24</td><td>6,12,24,48</td></tr> <tr> <td>720x1440:</td><td>4,8,16,32</td><td>8,16,32,64</td></tr> <tr> <td>1440x1440:</td><td>8,16,32</td><td>16,32,64</td></tr> </tbody> </table>	Resolution	Passes (4-color)	Passes (6-color)	360x360:	1,2,4,8	2,4,8,16	540x720:	2,4,8,16	4,8,16,32	540x900:	5,10,20,40	5,10,20,40	540x1080:	3,6,12,24	6,12,24,48	720x540:	3,6,12,24	3,6,12,24	720x720:	2,4,8,16	4,8,16,32	720x1080:	3,6,12,24	6,12,24,48	720x1440:	4,8,16,32	8,16,32,64	1440x1440:	8,16,32	16,32,64
Resolution	Passes (4-color)	Passes (6-color)																														
360x360:	1,2,4,8	2,4,8,16																														
540x720:	2,4,8,16	4,8,16,32																														
540x900:	5,10,20,40	5,10,20,40																														
540x1080:	3,6,12,24	6,12,24,48																														
720x540:	3,6,12,24	3,6,12,24																														
720x720:	2,4,8,16	4,8,16,32																														
720x1080:	3,6,12,24	6,12,24,48																														
720x1440:	4,8,16,32	8,16,32,64																														
1440x1440:	8,16,32	16,32,64																														
4	Drawing size selection	X size: 10 mm – paper length (unit: 10 mm) * Roll paper: 500000 mm Y size: 10 mm – paper width (unit: 10 mm)																														
5	Start of drawing (Waiting for key input)	[ENTER]: Starts drawing. [TEST]: Executes test drawing. [(JOG)]: Sets JOG operation mode. (Press [ENTER] to start drawing with the current position as the origin.) [REMOTE]: Switches between high speed scanning ON and OFF. [END]: Completes drawing.																														

MAINTENANCE MANUAL > Test Items > Test Function > ALL PATTERN								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark
<b>5.1.5 ALL PATTERN</b>								<b>1.0</b>

■ **Function**

The following check patterns are drawn in the block.

Check pattern	Reference page
Slant adjusting pattern	<a href="#">4.2.1</a>
Y-impact position adjusting pattern (DRAFT, FINE, DRAFT2, FINE2: Four patterns in total)	<a href="#">4.2.4</a>

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## ■ Function

Operation test of X-axis motor is executed.

## ■ Operation Procedures

Step	Item	Description	Remarks
1	Speed designation	[▲], [▼] : Selects speed. Set value: 1 – 500 mm/s (unit: 1 mm/s)	[◀], [▶]: Selection of item 2 – 4
2	Acceleration designation	[▲], [▼] : Selects acceleration. Set value: 0.01 – 2.00 G (unit: 0.01 G)	
3	Moving amount designation	[▲], [▼] : Selects moving amount. Set value: 1 mm – paper length (width) (unit: 1 mm) When media is not detected: 1 mm-500000 mm	
4	Test start	[ENTER]: Repeats reciprocating motion in the X direction with designated conditions.	
5	End	[END] : Returns to the motion starting position and executes capping to end the test.	



During the test, heater temperature control is allowed. (When [HEATER] key is effective)

## ■ Function

Operation test of Y-axis motor is executed.

## ■ Operation Procedures

Step	Item	Description	Remarks
1	Speed designation	[▲], [▼] : Selects speed. Set value: 1 – 1500 mm/s (unit: 1 mm/s)	[◀], [▶]: Selection of item 2 – 4
2	Acceleration designation	[▲], [▼] : Selects acceleration. Set value: 0.05 – 2.00 G (unit: 0.05 G)	
3	Moving amount designation	[▲], [▼] : Selects moving amount. Set value: 1 mm – paper length (width) (unit: 1 mm) When media is not detected: 1 mm-Mechanical limit size	
4	Cap OFF		(Only after media detection)
5	Test start	[ENTER]: Repeats reciprocating motion in the Y direction with designated conditions.	
6	End	[END] : Returns to the motion starting position and executes capping to end the test.	



During the test, heater temperature control is allowed. (When [HEATER] key is effective)

## ■ Function

Operation test of XY-axis motor is executed.

## ■ Operation Procedures

Step	Item	Description	Remarks
1	X speed designation	[▲], [▼] : Selects speed. Set value: 1 – 500 mm/s (unit: 1 mm/s)	[◀], [▶] : Selection of items 1 – 3  [ENTER]: Transits to the Y direction setting (5 –).
2	X acceleration designation	[▲], [▼] : Selects acceleration. Set value: 0.01 – 2.00 G (unit: 0.01 G)	
3	X moving amount designation	[▲], [▼] : Selects moving amount. Set value: 1 mm – paper length (unit: 1 mm) When media is not detected: 1 mm – 2500 mm Press [ENTER] to start Y-axis motor setting.	
4	Y speed designation	[▲], [▼] : Selects speed. Set value: 1 – 1500 mm/s (unit: 1 mm/s)	[◀], [▶] : Selection of items 4 – 6  [ENTER]: Transits to the following step.  [END]: Transits to the X direction setting (2 –).
5	Y acceleration designation	[▲], [▼] : Selects acceleration. Set value: 0.05 – 2.00 G (unit: 0.05G)	
6	Y moving amount designation	[▲], [▼] : Selects moving amount. Set value: 1 mm – paper width (unit: 1 mm) When media is not detected: 1 mm – Mechanical limit size	
7	Cap OFF		Only after media detection
8	Test start	[ENTER]: Repeats the following motion with the designated conditions. (During the motion, No. of Y reciprocation is displayed.) a) Moves by Y designated distance. b) Moves by X designated distance, and moves to Y starting position.	
9	End	[END] :Returns to the motion starting position and executes capping to end the test.	



During the test, heater temperature control is allowed. (When [HEATER] key is effective)

MAINTENANCE MANUAL > Test Items > Test Function > [MOTOR TEST] WIPER MOTOR							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.9 [MOTOR TEST] WIPER MOTOR</b>							<b>1.0</b>

## ■ Function

Operation test of wiper motor is executed.

## ■ Operation Procedures

Step	Item	Description	Remarks
1	Driving speed designation	[▲], [▼] : Selects driving speed of the motor. Set value: 100 – 4000 pps (unit: 100 pps)	[◀], [▶] : Selection of items 1 – 3
2	WAIT designation	[▲], [▼] : Designates operation interval. Set value: 0 – 60 sec. (unit: 1 sec.)	
3	Count designation	[▲], [▼] : Designates No. of operation. Set value: CONTINUE, 1 – 1000 count (unit: 1 count)	
4	Test start	[ENTER]: Drives the motor with designated conditions. When CONTINUE is selected from the count setting, press [END] to finish the test.	
5	End	Return the wiper to the original position.	

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MAINTENANCE MANUAL > Test Items > Test Function > [MOTOR TEST] PUMP MOTOR							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.10 [MOTOR TEST] PUMP MOTOR</b>							<b>1.0</b>

## ■ Function

Operation test of pump motor is executed.

## ■ Operation Procedures

Step	Item	Description	Remarks
1	Pump selection	[◀], [▶] : Selects pump by moving the cursor. [▲], [▼] : Selects operation.	[◀], [▶] : Selection of items 1 – 3
2	Rotation direction designation	[▲], [▼] : Selects pump rotation direction. Set value: FORWARD, REVERSE	
3	Driving speed designation	[▲], [▼] : Selects driving speed. Set value: 100 – 4000 pps (unit: 100 pps)	
4	Carriage /Motor state selection	[FUNCTION]: Carriage/motor state at test selection menu is displayed. <Carriage> IN: Executes at cap position. OUT: Executes after carriage out. <MOTOR> ON: Executes with Y-axis motor ON. OFF: Executes with Y-axis motor OFF.	
5	Test start	[ENTER]: Removes the cap and moves the carriage to maintenance position. Drives the pump motor with designated conditions. [END]: Ends the test.	During operation, open/ close the cartridge valve with [FUNCTION].
6	End	Test is completed.	



Note that executing (FORWARD) while the cap is on causes vacuum suction.

MAINTENANCE MANUAL > Test Items > Test Function > [MOTOR TEST] TAKE-UP MOTOR							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.11 [MOTOR TEST] TAKE-UP MOTOR</b>							<b>1.0</b>

#### ■ Function

Operation test of take-up motor is executed.

#### ■ Operation Procedures

Step	Item	Description	Remarks
1	Test start	[ENTER]: Drives take-up motor. (SW of winding device enables switching of winding direction or operation stop)	
2	Test end	[END]:Completes the test.	

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MAINTENANCE MANUAL > Test Items > Test Function > [HEATER TEST] TEMPERATURE									Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark	
5.1.12 [HEATER TEST] TEMPERATURE									1.0

■ **Function**

Temperature tests of the media heater are executed.

■ **Operation Procedures**

Step	Item	Description	Remarks
1	Temperature setting	Sets temperature of Pre, Print, and Post Heater to control the heater. Set value (Celsius): OFF, 20 – 50 °C (unit: 1°C) Set value (Fahrenheit): OFF, 68 – 122°F (Because conversion is used, the unit is not 1°F)	
2	Temperature display	[ENTER]: Returns to temperature setting.	

	● Temperature is displayed with a unit selected in the [UNIT SETUP] of the [MACHINE SETUP] function.
	● A/D conversion value is also displayed.


MAINTENANCE MANUAL > Test Items > Test Function > [HEATER TEST] SSR								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark
<b>5.1.13 [HEATER TEST] SSR</b>								<b>1.0</b>

#### ■ Function

ON/OFF test of heater is executed.

#### ■ Operation Procedures

Step	Item	Description	Remarks
1	ON/OFF setting	Designates ON/OFF of Pre, Print and Post Heater.	Temperature is not controlled.
2	ON/OFF display	[FUNCTION]:Returns to setting screen.	

	● Temperature is displayed with a unit selected in the [UNIT SETUP] of the [MACHINE SETUP] function.
	● A/D conversion value is also displayed.

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MAINTENANCE MANUAL > Test Items > Test Function > ACTION TEST									Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark	
5.1.14 ACTION TEST									1.0

## ■ Function

Checks the operation of movable parts alone of the machine.

## ■ List of test items

Item	Description
VACUUM FAN	Description: Operation test of vacuum fan motor. Set value: L.L, LOW, MID, HIGH, OFF
DRY FAN & DEOD. FAN	Description: Optional operation test of dry/exhaust fan motor. (option) Set value: ON, OFF
Y-CUTTER	Description: Operation test of media cutter. Set value: UP, DOWN [FUNCTION]: Sets operation interval of Y-cutter. [▲], [▼]: Sets operation interval. Set value: 0 – 7200 sec (unit: 1 sec) [ENTER]: Repeats UP and Down at the set interval. Number count is displayed during the execution.
LED POINTER	Description: Operation test of LED pointer. Set value: ON, OFF
HDC FAN	Description: Operation test of HDC fan. Set value: ON, OFF

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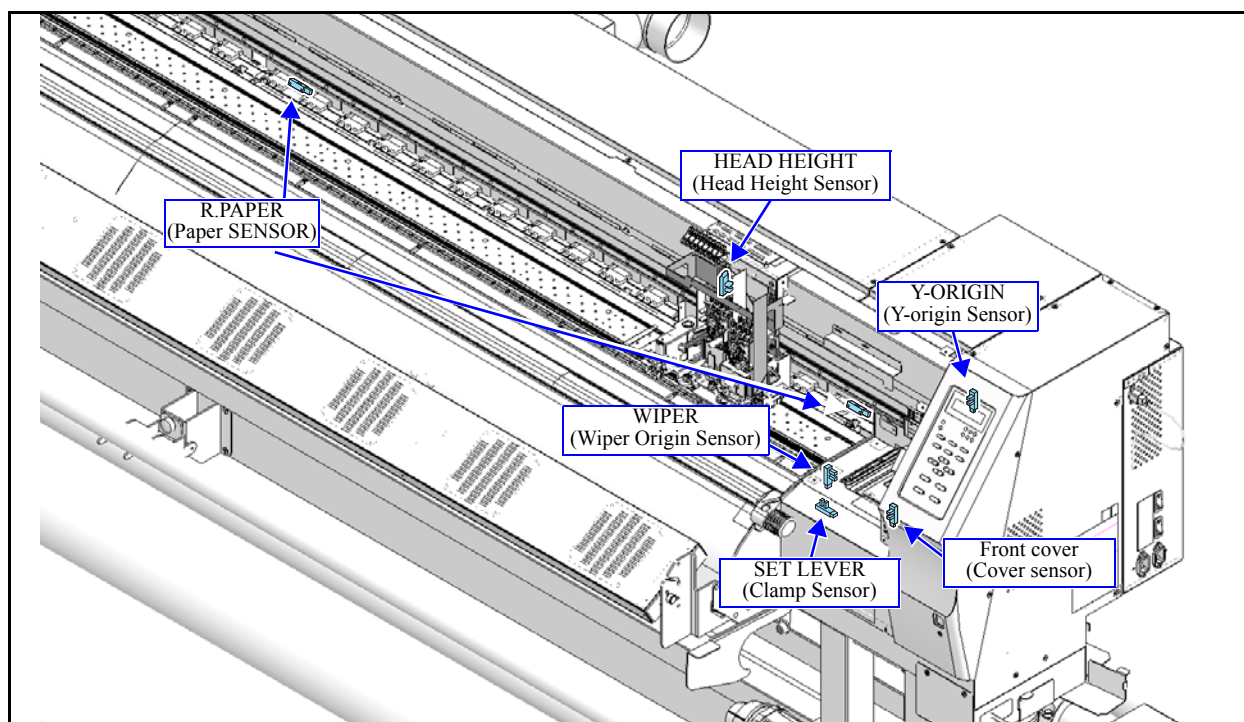
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## 5.1.15 SENSOR TEST

### ■ Purpose

To check if the each sensor of the instruments machine functions normally.



### ■ Function

Various sensors are tested. Before starting the test, the servomotor and stepping motor are turned off. After finishing the test, initial movement of original position detection is executed.

### ■ List of sensor test

No.	Item	Description	LCD display
1	SET LEVER	State display of clamp lever sensor	ON/OFF
2	R.PAPER	State display of rear paper sensor (L/R)	ON/OFF
3	Y-ORIGIN	State display of Y origin sensor	ON/OFF
4	WIPER	State display of wiper sensor	ON/OFF
5	Front cover	State display of the cover sensor (Front and maintenance LR)	
6	HEAD HEIGHT	State display of head height sensor	ON/OFF
7	Main PCB ID	Judgment of main PCB	800 and more
8	Head Voltage(1)	Judgment of the voltage of Head 1 If it is 800 and below, the voltage may drop or fuse may be melt down due to the head defect.	800 and more
9	Head Voltage(2)	Judgment of the voltage of Head 2 If it is 800 and below, the voltage may drop or fuse may be melt down due to the head defect.	800 and more

MAINTENANCE MANUAL > Test Items > Test Function > OPTION										Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark		1.0
5.1.16 OPTION										1.0

■ **Function**

Connection of all optional devices is checked.  
“OFF” is displayed when not connected, and “ON” is displayed when the respective device is connected in the correct location.

■ **List of options**

LCD display	Options
REEL	Take-up device
EXH.	Exhaust fan
DRY	Dry fan



Since the shape of all the connectors is the same, they can be connected to any optional devices.  
However, if they are connected to the wrong devices, the devices will not work.

MAINTENANCE MANUAL > Test Items > Test Function > FEED & TAKE-UP										Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark		
5.1.17 FEED & TAKE-UP										1.0

■ **Function**

The heavy feeding and take-up devices are tested.

■ **List of FEED & TAKE-UP tests**

Item	Description
Operating test	Operation test for the heavy feeding and take-up motors ### (@@@) ###: Motor operation state ON and OFF @@@: Switches the rotation direction between CW and CCW [FUNCTION]: Switches between the feeding and take-up display
SENSOR TEST	Various device sensors are tested. Sensor LCD indication Feeding cover: OPEN/CLOSE Take-up cover: OPEN/CLOSE Feeding switch: CCW/CW, AUTO/MANUAL Take-up switch: CCW/CW, AUTO/MANUAL Feeding tension sensor: Loose/-----, Middle/-----, Limit/----- Take-up tension sensor: Loose/-----, Middle/-----, Limit/----- Take-up tension standby: ON/OFF [▲][▼]: Switches the sensor display [FUNCTION]: Switches between the feeding and take-up display
Angle encoder	The angle encoder for the heavy feeding and take-up devices is tested. 0x**** :Angle encoder value [FUNCTION] :Switches between the feeding and take-up display

MAINTENANCE MANUAL > Test Items > Test Function > Double-Sided Sensor							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.18 Double-Sided Sensor</b>							<b>1.0</b>

■ **Function**

Double-sided sensors are tested.

■ **List of double-sided sensors**

Item	Description
Motor Test	<p>1. Specify the threshold. Hi or Lo</p> <p>2. The sensor state is displayed.</p> <p>SNS=###      E=*.**V      ###: Sensor state Th=@@      Luminous: ***%      @@: Threshold                                  ***: Luminosity</p> <p>[▲][▼]: Changes luminosity [◀][▶]: Switches between sensor 1 and sensor 2 display</p>

MAINTENANCE MANUAL > Test Items > Test Function > KEYBOARD LED									Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark	
5.1.19 KEYBOARD LED									1.0

■ **Function**

ON/OFF test of the keyboard LEDs is executed.  
The LEDs are controlled according to the ON/OFF designation.

■ **List of LEDs**

LED	Kinds
HEAT LED	Pre, Print, and Post heat LEDs, Constant LED
ACTIVE LED	ACTIVE LED

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## 5.1.20 Paper Sensor

### ■ Function

The paper sensor is tested.

Remove the cap(move the station to its lowest point), and then display the paper sensor read value.

\*\*\* (@@@,\$\$\$)      @@@: Sensor read value during SLOP-ON  
                               \$\$\$ : Sensor read value during SLOP-OFF  
                               \*\*\* : Difference between @@@ and \$\$\$

The sensor read value is updated regularly (every 150 msec).

[ ◀ ], [ ▶ ] : Moves the head

[ ▲ ], [ ▼ ] : Moves alternately between the media right end position with paper and without paper.

[END] : After the cap is put back on, the paper sensor test is completed.

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MAINTENANCE MANUAL > Test Items > Test Function > KEYBOARD TEST							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.21 KEYBOARD TEST</b>							<b>1.0</b>

■ **Function**

- Panel SW is tested.
- When a panel SW is pressed, name of the SW is displayed on LCD.
- When no key is pressed, “NONE” is displayed.
- When [END] is pressed, “END TEST” is displayed and the keyboard test ends.

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MAINTENANCE MANUAL > Test Items > Test Function > LCD TEST							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.22 LCD TEST</b>							<b>1.0</b>

■ **Function**

Characters are displayed on LCD.

When the LCD Test is started, scrolling of character code of 0x21 – 0xFF in one line is repeated.  
The test is completed by pressing [END].

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MAINTENANCE MANUAL > Test Items > Test Function > TIMER CHECK										Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark		
5.1.23 TIMER CHECK										1.0

■ **Function**

Date and time of the device are confirmed or set.

Past date/time to be input is allowed max. 8 hours back from present time.

Inputting of other date/time becomes an error.

\*Machine setting → Same as the time setting

Set value     : 20YY.MM.DD HH:MM:00

                YY         : 00 ~ 50

                MM         : 01 ~ 12

                DD         : 01 ~ 31

                HH         : 00 ~ 23

                MM         : 00 ~ 59

Returning to the last setting is allowed by pressing [FUNCTION] in the Date, Time Display State (not the Entering State). (However, the time elapsed after the setting change is added.)

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MAINTENANCE MANUAL > Test Items > Test Function > SKEW CHECK							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.24 SKEW CHECK</b>							<b>1.0</b>

■ **Function**

Skewing of media is checked.  
 When media is not detected, an OPERATION ERROR (ERROR30) is displayed.

Feed distance is designated to execute feeding.  
 Feed distance: 1–500 m (unit: 1 m)

During the feeding, remaining of feed distance is displayed with unit of 10 mm.

[END]: Aborts feeding, [ENTER]: Restarts feeding.

■ **Cut jig function**

After the Skew check starts (feed distance is not designated), the following operation starts the cut jig function.  
 [REMOTE] -> [FUNCTION]

The cut jig function repeats media cut → feed in feed distance and number of cut times designated.

Number of cut times is displayed in count down during cut.

Feed distance : 10–10000 mm (unit: 10 mm, Default 500 mm)  
 Number of cut times : 1–1000 count (unit: 1 count, Default 25 count)

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MAINTENANCE MANUAL > Test Items > Test Function > MEMORY CHECK										Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark		
5.1.25 MEMORY CHECK										1.0

## ■ Function

Variety of memory of the device is checked.

The memory check requires the following time. (1 count)

MAIN.SDRAM	: Approx. 42 min.
MAIN.F-ROM	: 1 Sec.
HEAD.EEPROM	: Approx. 22 sec.
32M SDRAM	: Approx. 120 sec.

## ■ List of memory checks

Item	Description
MAIN.SDRAM* <sup>1</sup>	<p>Read/Write check of SDRAM (PRAM).</p> <p>Select insert/not insert of wait time (30sec) between write and read of the data.</p> <p>In the checking, the following process is counted as 1 and is repeated until [END] is input.</p> <ol style="list-style-type: none"> <li>1. Write 00000000h onto all area of SDRAM starting from address 0.</li> <li>2. Read vacant data from address 0 to all area of SDRAM sequentially to confirm that the readings meet the writing data.</li> <li>3. Write FFFFFFFFh onto all area of SDRAM starting from address 0.</li> <li>4. Read vacant data from address 0 to all area of SDRAM sequentially to confirm that the readings meet the writing data.</li> <li>5. Write increment data of 00010203h, 04050607h, ... FCFDFE00h onto all area of SDRAM starting from address 0.</li> <li>6. Read vacant data from address 0 to all area of SDRAM sequentially to confirm that the readings meet the writing data.</li> </ol>
MAIN.F-ROM	<p>Hash check of F-ROM.</p> <p>In the checking, confirm that long word size SUM value from address 0 of F-ROM is 0001F000h*<sup>2</sup>, that is counted as 1, and repeat the process until [END] is input.</p> <p>If the SUM value is not 0001F000h, the check process is discontinued and an error is displayed.</p>
HEAD.EEPROM* <sup>1</sup>	<p>Read/Write check of HEAD.EEPROM.</p> <p>Select a head unit to be checked.</p> <p>Before starting the checking, save contents of EEPROM in S-RAM (head unit parameter area).</p> <p>In the checking, the following process is counted as 1 and is repeated until [END] is input.</p> <ol style="list-style-type: none"> <li>1. Write 00h onto HEAD.EEPROM starting from address 0 to confirm that read value is 00h.</li> <li>2. Write FFh onto HEAD.EEPROM starting from address 0 to confirm that read value is FFh.</li> <li>3. Write increment data of 00h, 01h, 02h, ..., FDh, FEh, 00h, ... onto HEAD.EEPROM starting address 0 to confirm that read value agrees.</li> </ol>
32M SDRAM	<p>Read/Write check of 32M SDRAM.</p> <p>Select insert/not insert of wait time (30sec) between write and read of the data.</p> <p>In the checking, the following process is counted as 1 and is repeated until [END] is input.</p> <ol style="list-style-type: none"> <li>1. Write 00000000h onto all area of SDRAM starting from address 0.</li> <li>2. Read vacant data from address 0 to all area of SDRAM sequentially to confirm that the readings meet the writing data.</li> <li>3. Write FFFFFFFFh onto all area of SDRAM starting from address 0.</li> <li>4. Read vacant data from address 0 to all area of SDRAM sequentially to confirm that the readings meet the writing data.</li> <li>5. Write increment data of 00010203h, 04050607h, ... FCFDFE00h onto all area of SDRAM starting from address 0.</li> <li>6. Read vacant data from address 0 to all area of SDRAM sequentially to confirm that the readings meet the writing data.</li> </ol>

Note: No. of counts is displayed during the check.

\*1: When data does not agree, the check process is discontinued and memory address, write/read data at occurrence of the error are displayed.

\*2: As sector 1 – 10 used by parameter are passed, SUM value is not 0.

MAINTENANCE MANUAL > Test Items > Test Function > [TEMP.CHECK] HEAD TEMP.								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark
<b>5.1.26 [TEMP.CHECK] HEAD TEMP.</b>								<b>1.0</b>

■ Function

Environment temperature of head is displayed (A/D value is also displayed).

A unit selected in the [UNIT SETUP] of the [MACHINE SETUP] is used in the display of head temperature.

1
2
3
4
5
6
7
8

MAINTENANCE MANUAL > Test Items > Test Function > [TEMP.CHECK] NOZZLE TEMP.								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark
<b>5.1.27 [TEMP.CHECK] NOZZLE TEMP.</b>								<b>1.0</b>

■ **Function**

Nozzle temperature error check is executed.

At Normal: OK is displayed.

At error: NG is displayed.

1
2
3
4
5
6
7
8



MAINTENANCE MANUAL > Test Items > Test Function > [TEMP.CHECK] HEAT SINK TEMP.								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		FW ver	1.00	Remark
<b>5.1.28 [TEMP.CHECK] HEAT SINK TEMP.</b>								<b>1.0</b>

■ Function

Temperature of HDC board heat sink is displayed (A/D value is also displayed).

A unit selected in the [UNIT SETUP] of the [MACHINE SETUP] is used in the display of heat sink temperature.

1
2
3
4
5
6
7
8

MAINTENANCE MANUAL > Test Items > Test Function > [TEMP.CHECK] SLIDER TEMP.									Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark	
5.1.29 [TEMP.CHECK] SLIDER TEMP.									1.0

■ Function

Temperature read from the thermistor on the slider PCB assy is displayed (A/D value is also displayed).

1
2
3
4
5
6
7
8

MAINTENANCE MANUAL > Test Items > Test Function > LINEAR ENCODER							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.30 LINEAR ENCODER</b>							<b>1.0</b>

### ■ Function

Linear encoder scale and linear sensor are tested.

Move a carriage by the designated distance (3 reciprocations) to display the difference between linear encoder value and Y-axis motor encoder value. If an error arises during the operation, discontinue the test.

Moving distance: 100 mm – Maximum actual operation limit (unit: 100 mm)

LCD display is as follows: (M\*: Y-axis motor encoder, E\*: linear encoder)

- Moving distance : M=\*\*\*\*.\* E=\*\*\*\*.\* (unit: 0.1 mm)
- Difference in encoder values between before and after moving : Mc=\*\*\*\*.\* Ec=\*\*\*\*.\* (unit: 0.1 mm)
- Encoder values before movement : Ms=\*\*\*\*\* Es=\*\*\*\*\*
- Encoder values after movement : Mm=\*\*\*\*\* Em=\*\*\*\*\*
- Encoder values after having moved by designated distance : Mr=\*\*\*\*\* Er=\*\*\*\*\*



Be careful about the carriage which moves in high speed to execute the scan.

1
2
3
4
5
6
7
8

MAINTENANCE MANUAL > Test Items > Test Function > [INK CARTRIDGE] PACK&END SENSOR							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.31 [INK CARTRIDGE] PACK&amp;END SENSOR</b>							<b>1.0</b>

■ **Function**

The state of the cartridge exist/non-exist sensor and end sensor are displayed.

A slot number on which an error (NO CARTRIDGE, INK NEAR END) is found is displayed.

(Example of LCD display)
 

PACK	1234 5678
END	1234 5678

1
2
3
4
5
6
7
8

MAINTENANCE MANUAL > Test Items > Test Function > [INK CARTRIDGE] CARTRIDGE VALVE								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark
<b>5.1.32 [INK CARTRIDGE] CARTRIDGE VALVE</b>								<b>1.0</b>

■ Function

Open/close of cartridge valve is checked.  
Executes all OPEN/all CLOSE of valves by pressing [FUNCTION] key.

1
2
3
4
5
6
7
8

MAINTENANCE MANUAL > Test Items > Test Function > [INK CARTRIDGE] INK-IC CHECK							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>5.1.33 [INK CARTRIDGE] INK-IC CHECK</b>							<b>1.0</b>

■ Function

Ink cartridge IC is checked.

IC chip data is read and the number of error occurrence at each cartridge is displayed.

1
2
3
4
5
6
7
8

MAINTENANCE MANUAL > Test Items > Test Function > [INK CARTRIDGE] CARTRIDGE LED								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark
<b>5.1.34 [INK CARTRIDGE] CARTRIDGE LED</b>								<b>1.0</b>

■ **Function**

On/Off of cartridge LED is tested.

Use [FUNCTION] to move the cursor in ERROR or ACTIVE status.

1
2
3
4
5
6
7
8

## 5.1.35 [WASH CARTRIDGE] PACK&END SENSOR

### ■ Function

The state of the cartridge exist/non-exist sensor and end sensor are displayed.

(Example of LCD display)

```
#PACK&END SENSOR
PACK :ON      END:OFF
```

1

2

3

4

5

6

7

8



MAINTENANCE MANUAL > Test Items > Test Function > [WASH CARTRIDGE] CARTRIDGE VALVE						
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00
<b>5.1.36 [WASH CARTRIDGE] CARTRIDGE VALVE</b>						

Rev.
1.0

■ Function

Open/close of cartridge valve is checked.

1
2
3
4
5
6
7
8

MAINTENANCE MANUAL > Test Items > Test Function > [WASH CARTRIDGE] IC CHECK								Rev.
Model	JV34-260	Issued	2011.02.15	Revised		FW ver	1.00	Remark
<b>5.1.37 [WASH CARTRIDGE] IC CHECK</b>								<b>1.0</b>

■ **Function**

Maintenance washing liquid cartridge IC is checked.

IC chip data is read and the number of error occurrence is displayed.

<b>1</b>
<b>2</b>
<b>3</b>
<b>4</b>
<b>5</b>
<b>6</b>
<b>7</b>
<b>8</b>

1
2
3
4
5
6
7
8

Test Items	
5.1 Test Function	5.2 Other Test

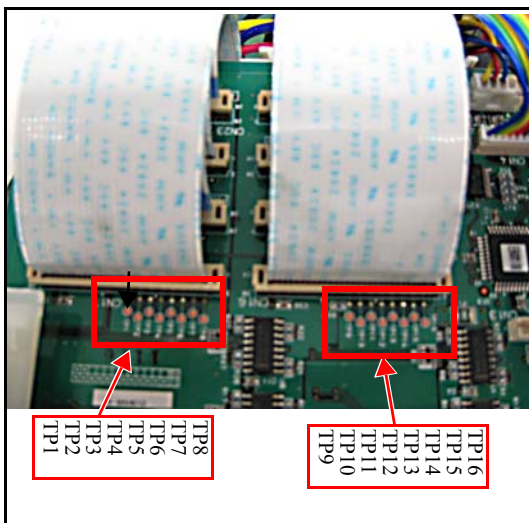
## ■ Outline

Check whether the COM circuit generating part has electrical trouble or not.



After turning off the sub and main power switches in order, unplug the power code.  
 Check if no electric charge is remaining in the PCB.  
 Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"  
 It is very dangerous if sleep mode functions mistakenly during the operation.  
 Moreover, the PCB may be damaged in case electric charge still remains inside.  
 Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.

## ■ Procedure



1. Measure a resistance between the test pin TP1 to TP16 and GND on the slider PCB ASSY to determine the COM circuit condition. Connect the negative terminal of the tester to the GND test pin (GND1) and measure the resistance by getting the positive terminal touch to TP1 to 16.  
 Measured value of each test pin should be in the range of 17K ohms to 18K ohms.



If the machine cannot be turned on, it is highly possibility of impedance anomaly of the COM circuit and short circuit between 42V and GND in the main PCB.  
 If all the measured value of the TP is shown in the abnormal range, compare with the measured value of the normal circuit board since it may be variation of the tester.

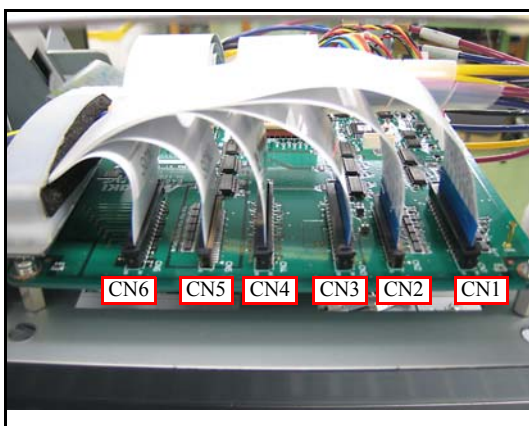
### ■ Outline

Check whether the COM line between the print head and the slider PCB has trouble or not.

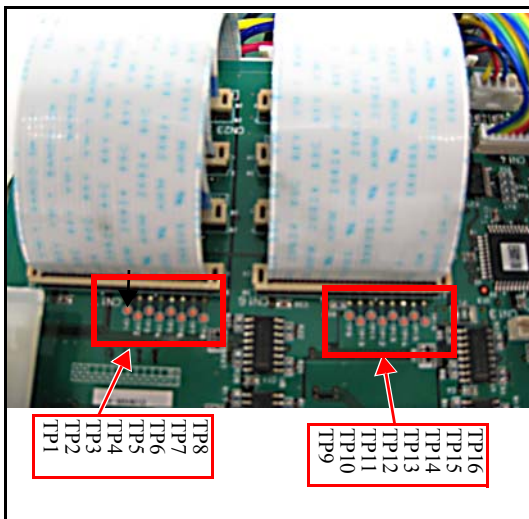


After turning off the sub and main power switches in order, unplug the power code.  
Check if no electric charge is remaining in the PCB.  
Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"  
It is very dangerous if sleep mode functions mistakenly during the operation.  
Moreover, the PCB may be damaged in case electric charge still remains inside.  
Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.

### ■ Procedure



1. Release the locks on both sides of the HDC\_FFC ASSY connected to CN1 to CN6 on the slider PCB ASSY. And then pull out the HDC\_FFC ASSY.



Measure a resistance between the test pin TP1 to 16 and GND on the ink slider PCB to determine the value. Connect the negative terminal of the tester to the GND test pin (TPG 1) and measure the resistance by getting the positive terminal touch to TP1 to 16.

When the result of TP1 to 8 is 10MΩ and more, the head 2 has no defect.

When the result of TM9 to 16 is 10MΩ and more, the head 1 has no defect.



If any of the head COM line defect is found, the print head may be broken. Replace the print heads first. Connecting the normal main PCB without replacing the broken head will break the PCB continuously.

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2

3

4

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8

## 5.2.3 Checking Damage of the Main PCB ASSY

1.0

### ■ Outline

This is the test to check that there is no defect in the COM circuit (for Head 1) and the motor (XY driving) on the main PCB.



After turning off the sub and main power switches in order, unplug the power code.

Check if no electric charge is remaining in the PCB.

Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"

It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.

1

2

3

4

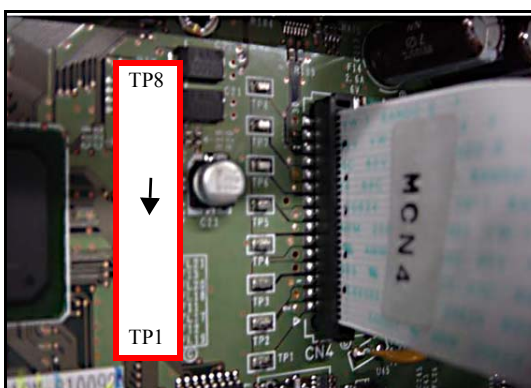
5

6

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8

### ■ Procedure



1. Release the locks on both sides of the connector for HDC\_FFC ASSY connected to CN1 to CN4 on the main PCB ASSY. And then pull out the HDC\_FFC ASSY.

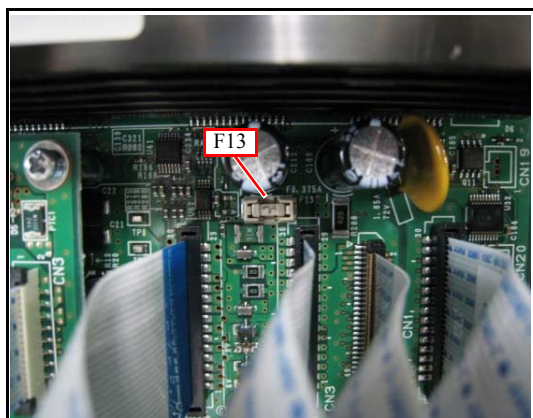
2. In the same manner as the COM circuit check, measure a resistance between the test pin TP1 to TP8 and GND on the main PCB ASSY to determine the COM circuit condition. Connect the negative terminal of the tester to the GND test pin (GND1 to 9) and measure the resistance by getting the positive terminal touch to TP1 to 8.

Measured value of each test pin should be in the range of 17K ohms to 18K ohms.



If the machine cannot be turned on, it is highly possibility of impedance anomaly of the COM circuit and short circuit between 42V and GND in the main PCB.

If all the measured value of the TP is shown in the abnormal range, compare with the measured value of the normal circuit board since it may be variation of the tester.

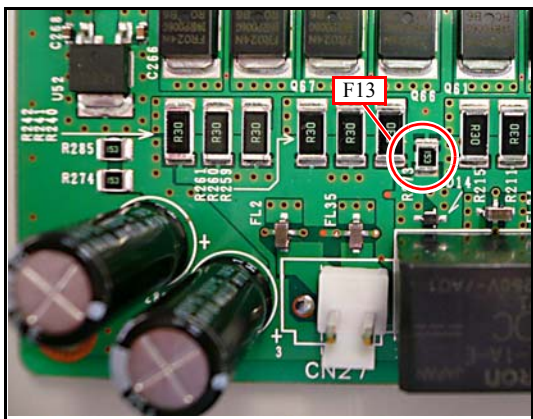


3. Measure the resistance on both ends of F13 (fuse) to check the blown fuse.


Measured value of the fuse should be less than 5 ohms.



If ERROR 205 [42V HEAD VOLTAGE] occurs, F13 (fuse) may be blown.



4. Measure the resistance of R273 both edges on the main PCB to judge whether the motor driving circuit is good or not.
- When the measured result is 14KΩ and more, the motor driving circuit has not defect.



If the power supply cannot be turned on, it is possible that the impedance between the motor driving power (K1+42V) and GND in the main PCB has abnormally dropped.

1
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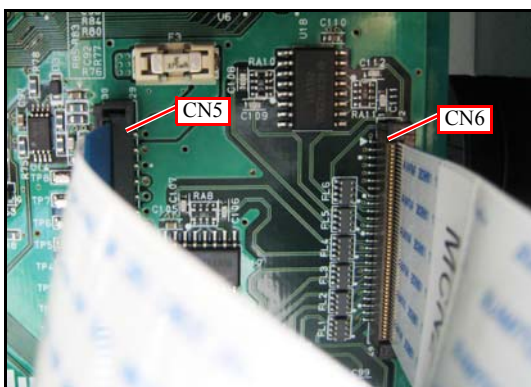
## ■ Outline

Check whether the COM circuit (for Head 2) on the HDC PCB ASSY has trouble or not.



After turning off the sub and main power switches in order, unplug the power code.  
Check if no electric charge is remaining in the PCB.  
Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"  
It is very dangerous if sleep mode functions mistakenly during the operation.  
Moreover, the PCB may be damaged in case electric charge still remains inside.  
Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.

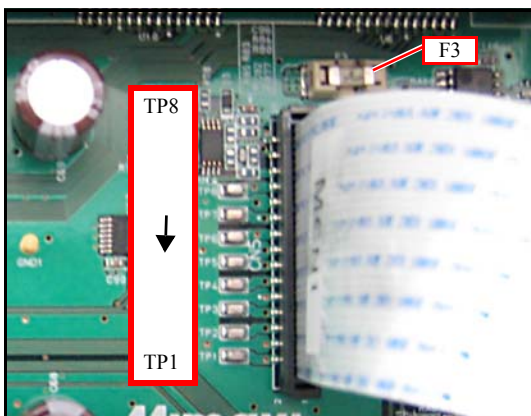
## ■ Procedure



1. Release the locks on both sides of the connector for HDC\_FFC ASSY connected to CN5 and CN6 on the HDC PCB ASSY. And then pull out the HDC\_FFC ASSY.
2. Measure a resistance between the test pin TP1 to TP8 on the HDC PCB ASSY to determine the COM circuit condition. Connect the negative terminal of the tester to the GND test pin and measure the resistance by getting the positive terminal touch to TP1 to 8.  
Measured value of each test pin should be in the range of 17K ohms to 18K ohms.



If the machine cannot be turned on, it is highly possibility of impedance anomaly of the COM circuit and short circuit between 42V and GND in the HDC PCB.  
If all the measured value of the TP is shown in the abnormal range, compare with the measured value of the normal circuit board since it may be variation of the tester.



3. Measure the resistance on both ends of F3 (fuse) to check the blown fuse.  
Measured value of the fuse should be less than 5 ohms.



If ERROR 205 [42V HEAD VOLTAGE] occurs, F3 (fuse) may be blown.



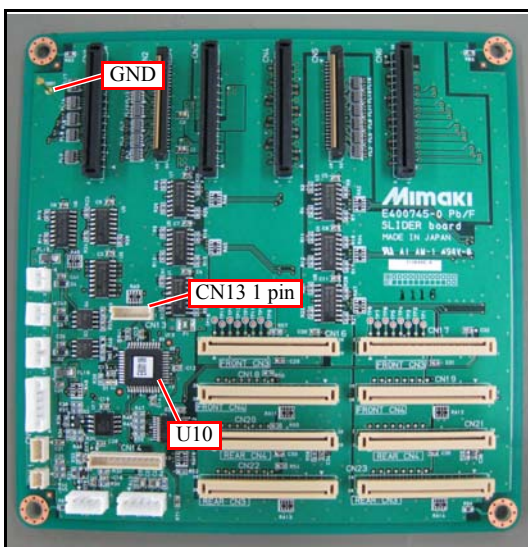
### ■ Outline

Check whether the IC on the slider PCB has electrical trouble or not.



After turning off the sub and main power switches in order, unplug the power code.  
 Check if no electric charge is remaining in the PCB.  
 Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"  
 It is very dangerous if sleep mode functions mistakenly during the operation.  
 Moreover, the PCB may be damaged in case electric charge still remains inside.  
 Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.

### ■ Procedure



1. Remove the six FFCs at CN1 to CN6 on the slider PCB.
2. Measure a resistance between 3.3V pattern and GND pattern on the slider PCB to determine the condition. Connect the negative terminal of the tester to the GND test pin (TPG1) and measure the resistance by getting the positive terminal touch to 1 pin of CN13.  
 Measured value of each test pin should be more than 5K ohms.



If ERROR 200 or ERROR 50 occurs after the print heads replaced, U10 (CPLD, E600108) of the ink slider PCB may be damaged.

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## 5.2.6 Checking Conduction of HDC FFC COM Line

1.2

### ■ Outline

Check whether the HDC FFC COM line has disconnection or poor contact or not.



After turning off the sub and main power switches in order, unplug the power code.

Check if no electric charge is remaining in the PCB.

Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"

It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB Assy. Take care to avoid contact with it.

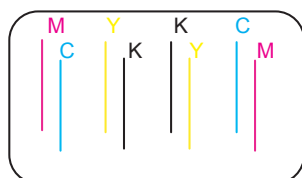
Signal	Test pin on the ink slider PCB	Test pin on the main PCB	Normal conduction	Nozzle line
COM-11	TP9	TP1	Less than 3 ohms	A*
COM-12	TP10	TP2	Less than 3 ohms	B*
COM-13	TP11	TP3	Less than 3 ohms	C*
COM-14	TP12	TP4	Less than 3 ohms	D*
COM-15	TP13	TP5	Less than 3 ohms	E*
COM-16	TP14	TP6	Less than 3 ohms	F*
COM-17	TP15	TP7	Less than 3 ohms	G*
COM-18	TP16	TP8	Less than 3 ohms	H*

\* See below about nozzle lines.

Signal	Test pin on the ink slider PCB	Test pin on the <b>HDC</b> PCB	Normal conduction	Nozzle line
COM-21	TP1	TP1	Less than 3 ohms	A*
COM-22	TP2	TP2	Less than 3 ohms	B*
COM-23	TP3	TP3	Less than 3 ohms	C*
COM-24	TP4	TP4	Less than 3 ohms	D*
COM-25	TP5	TP5	Less than 3 ohms	E*
COM-26	TP6	TP6	Less than 3 ohms	F*
COM-27	TP7	TP7	Less than 3 ohms	G*
COM-28	TP8	TP8	Less than 3 ohms	H*

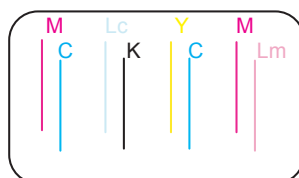
\* See below about nozzle lines.

### ■ 4-color ink set



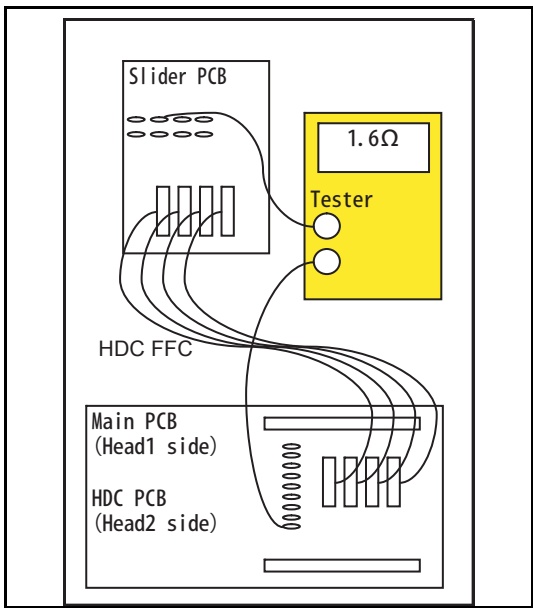
A line C line E line G line  
B line D line F line H line

### ■ 6-color ink set



A line C line E line G line  
B line D line F line H line

■ Procedure



1. Check the conduction of HDC FFC COM line as the figure on the left.



The resistance undergoes a little bit change with the probe location or temperature.

1

2

3

4

5

6

7

8

## 5.2.7 Checking Conduction of HDC FFC Data Line

1.1

### ■ Outline

Check whether the HDC FFC data line has disconnection or poor contact or not.



After turning off the sub and main power switches in order, unplug the power code.

Check if no electric charge is remaining in the PCB.

Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"

It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB Assy. Take care to avoid contact with it.

Data line of print head 1

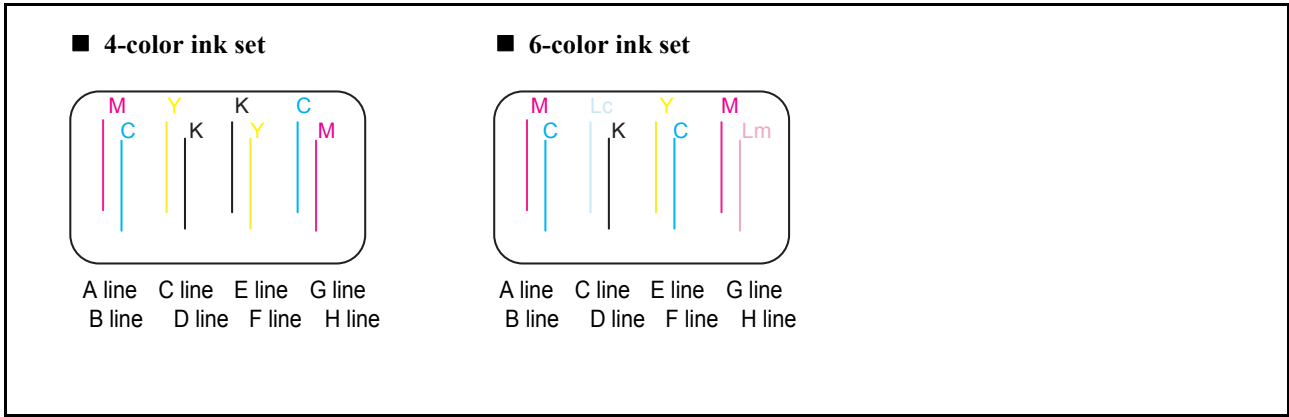
Signal	IC pin on the ink slider PCB	IC pin on the main PCB	Normal conduction	Nozzle line
SID11+	U5-(2)	U46-(2)	Less than 22ohms	A*
SID11-	U5-(1)	U46-(3)	Less than 22ohms	
SID12+	U5-(6)	U46-(6)	Less than 22ohms	B*
SID12-	U5-(7)	U46-(5)	Less than 22ohms	
SID13+	U5-(10)	U46-(10)	Less than 22ohms	C*
SID13-	U5-(9)	U46-(11)	Less than 22ohms	
SID14+	U5-(14)	U46-(14)	Less than 22ohms	D*
SID14-	U5-(15)	U46-(13)	Less than 22ohms	
SID15+	U7-(2)	U47-(2)	Less than 22ohms	E*
SID15-	U7-(1)	U47-(3)	Less than 22ohms	
SID16+	U7-(6)	U47-(6)	Less than 22ohms	F*
SID16-	U7-(7)	U47-(5)	Less than 22ohms	
SID17+	U7-(10)	U47-(10)	Less than 22ohms	G*
SID17-	U7-(9)	U47-(11)	Less than 22ohms	
SID18+	U7-(14)	U47-(14)	Less than 22ohms	H*
SID18-	U7-(15)	U47-(13)	Less than 22ohms	

\*See below about nozzle lines.

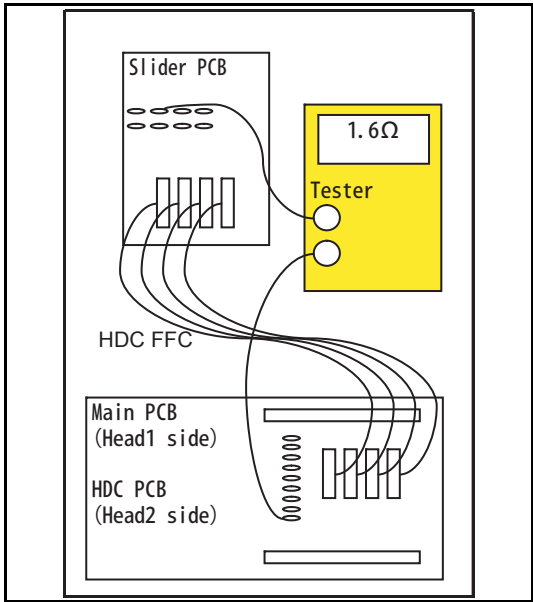
Data line of print head 2

Signal	IC pin on the ink slider PCB	IC pin on the <b>HDC</b> PCB	Normal conduction	Nozzle line
SID21+	U4-(2)	U17-(2)	Less than 22ohms	A*
SID21-	U4-(1)	U17-(3)	Less than 22ohms	
SID22+	U4-(6)	U17-(6)	Less than 22ohms	B*
SID22-	U4-(7)	U17-(5)	Less than 22ohms	
SID23+	U4-(10)	U17-(10)	Less than 22ohms	C*
SID23-	U4-(9)	U17-(11)	Less than 22ohms	
SID24+	U4-(14)	U17-(14)	Less than 22ohms	D*
SID24-	U4-(15)	U17-(13)	Less than 22ohms	
SID25+	U8-(2)	U18-(2)	Less than 22ohms	E*
SID25-	U8-(1)	U18-(3)	Less than 22ohms	
SID26+	U8-(6)	U18-(6)	Less than 22ohms	F*
SID26-	U8-(7)	U18-(5)	Less than 22ohms	
SID27+	U8-(10)	U18-(10)	Less than 22ohms	G*
SID27-	U8-(9)	U18-(11)	Less than 22ohms	
SID28+	U8-(14)	U18-(14)	Less than 22ohms	H*
SID28-	U8-(15)	U18-(13)	Less than 22ohms	

\*See below about nozzle lines.

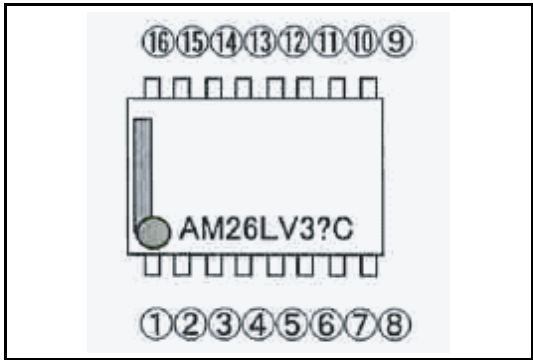


■ Procedure



1. Check the conduction of HDC FFC data line as the figure on the left.

The resistance undergoes a little bit change with the probe location or temperature.



2. See the figure on the left for the IC pin number.  
The mark side is the start of the number.

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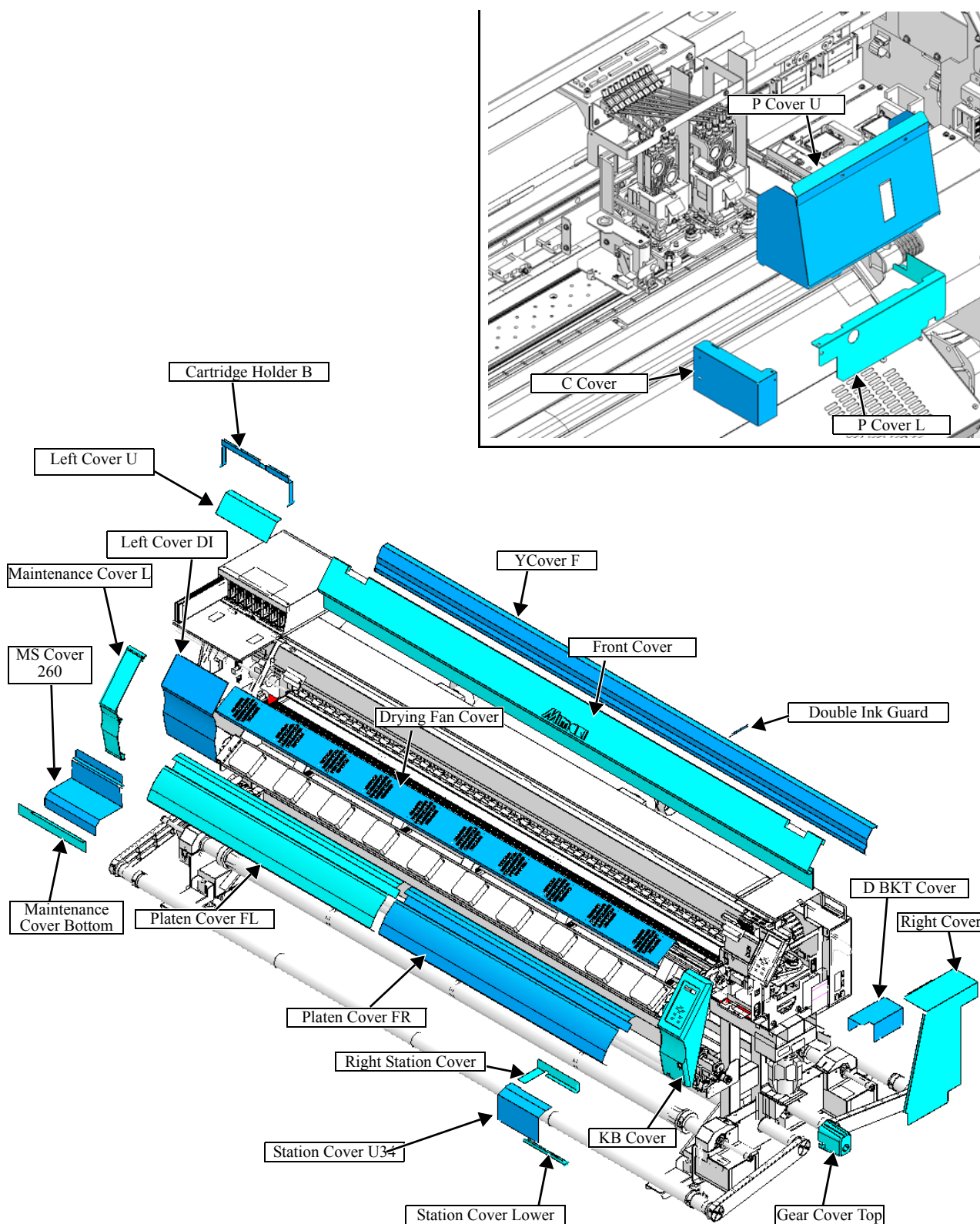
## Disassembly and Reassembly

<b>6.1 Covers</b>	<b>6.2 Ink-related Parts</b>	<b>6.3 Drive System</b>
<b>6.4 Electrical Parts</b>	<b>6.5 Heavy-duty Take-up/Feeding Device</b>	<b>6.6 Sensors</b>

## 6.1.1 Cover Layout

1.0

### Machine Front

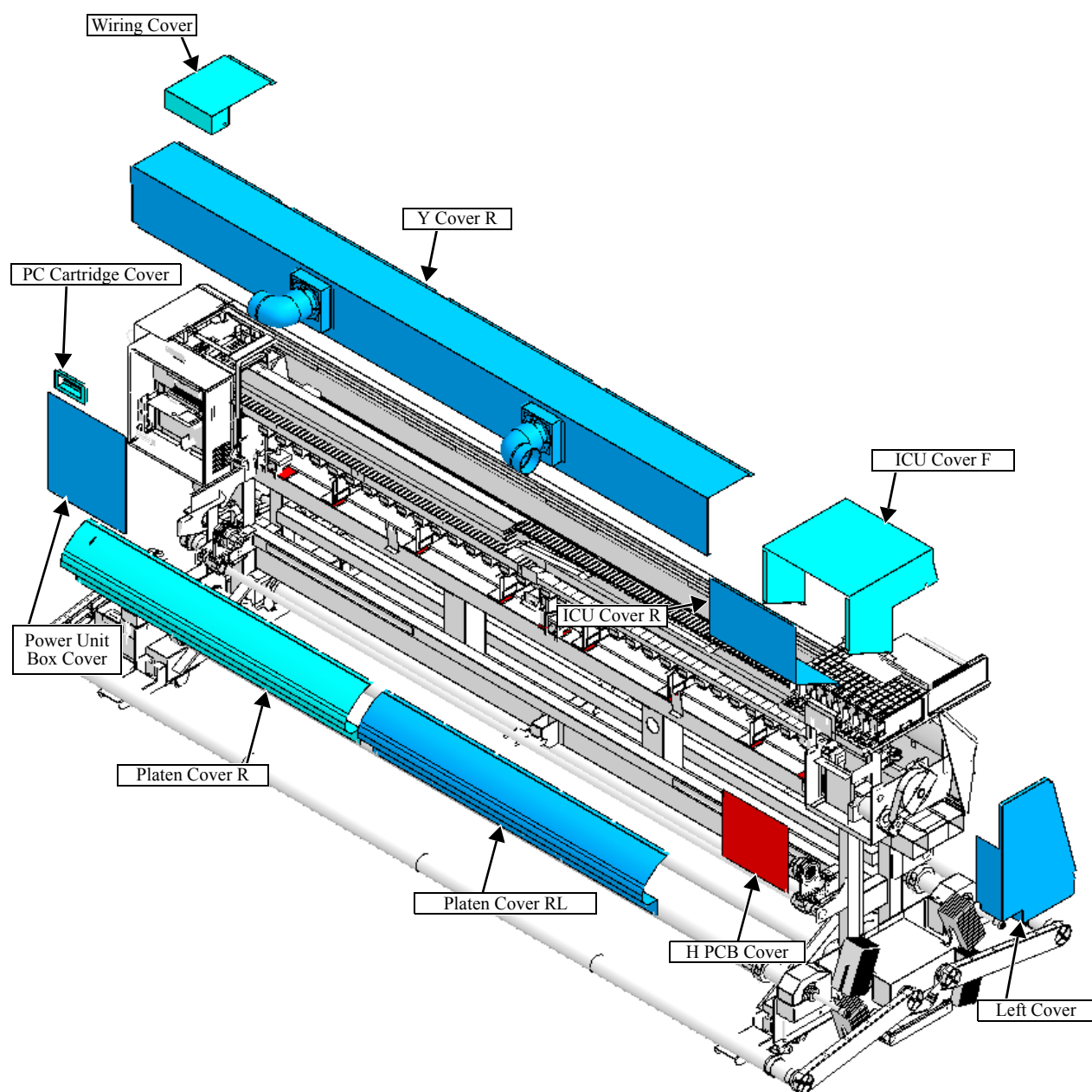




## 6.1.1 Cover Layout

1.0

### Machine Rear



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When fixing the cover, put it inside of the washer of loosened screw and tighten the screw.



#### Good example:

The washer of the screw is outside of the cover.



#### Bad example:

The washer of the screw is inside of the cover.



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## Disassembly and Reassembly

<b>6.1</b> <b>Covers</b>	<b>6.2</b> <b>Ink-related Parts</b>	<b>6.3</b> <b>Drive System</b>
<b>6.4</b> <b>Electrical Parts</b>	<b>6.5</b> <b>Heavy-duty Take-up/Feeding Device</b>	<b>6.6</b> <b>Sensors</b>

## 6.2.1 Cleaning the inside of Head Unit

1.0

### ■ Outline

Since a water-based transportation liquid (S-46) is contained in the head on factory shipment, this will react with the solvent ink to form a precipitate.

Therefore, cleaning the inside of head unit with the washing liquid is necessary before a new head is installed.



Be sure to wear protective glasses and working gloves during the operation.

Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

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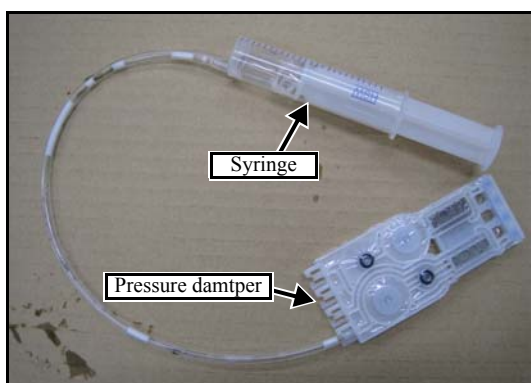
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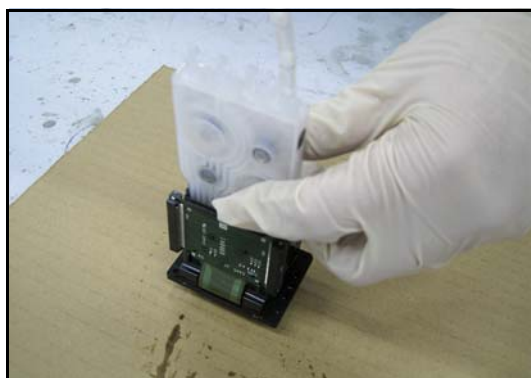
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### ■ Work procedures



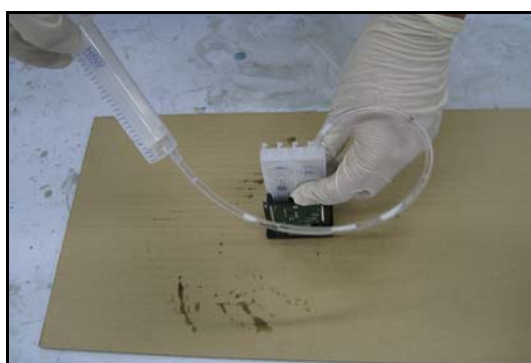
1. Prepare the pressure damper and the syringe.
2. Charge Syringe with 12-16 cc of the washing liquid.



3. Attach the pressure damper to the syringe.
4. Connect the syringe with the upper part of the damper.



Be careful of the washing liquid, dripping when taking out and putting in the damper. Especially, dripping on the FPC connector may damage the head.



5. While opening the valve of the pressure damper, slowly pour the washing liquid.  
Pour 3 to 4 cc of the MS washing liquid into each nozzle line in about 30 seconds.



Pour the washing liquid slowly, or the Head may be damaged.

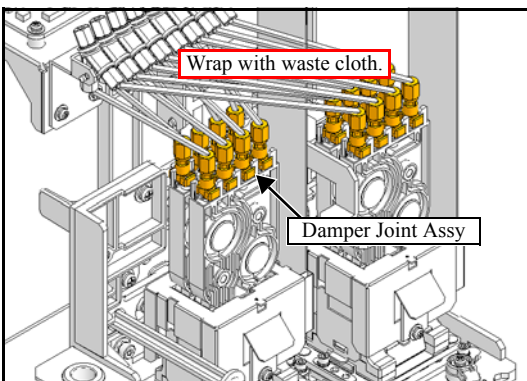
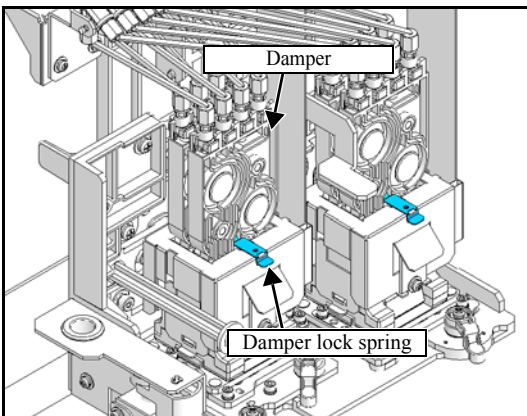
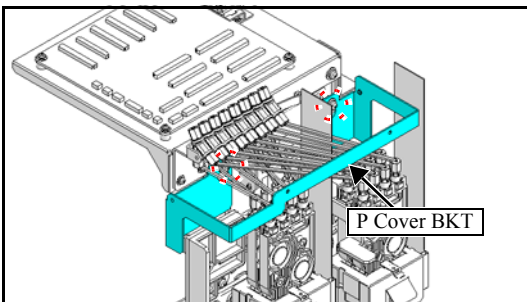
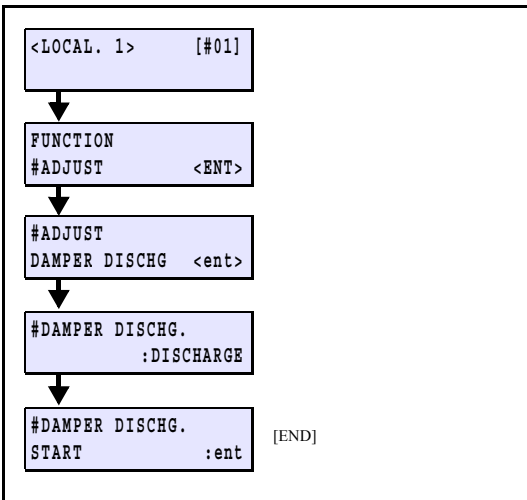
6. Use waste cloth to hold the liquid that spills out of nozzle line.



Do not let the waste cloth contact the nozzle surface. Also, do not rub the nozzle surface. Both may cause discharge failure.

\* Conduct the aboves for every nozzle line (x8).  
(Fill washing liquid in the syringe for every nozzle line x 4.)

## ■ Work procedures



1. Select [DAMPER DISCHG / DISCHARGE] from the operation menu.
2. Check discharging of ink in the damper visually and then press the [END] key.
3. Turning the power off.
4. Move the print head carriage onto the platen to make your work easy.
5. Loosen the screws at two locations on the right and left to remove the **P cover BKT**.
6. Remove the damper lock spring.
 

**IMPORTANT**

  - Do not touch the film of the damper assy.
  - Remove the damper lock spring before removing the damper joint Assy.  
If the damper joint Assy is moved with the damper lock spring, the damper lock spring loses its performance.
7. Remove the damper joint Assy and wrap with waste cloth.
8. Place the waste cloth around the head unit so as not to contaminate the platen.

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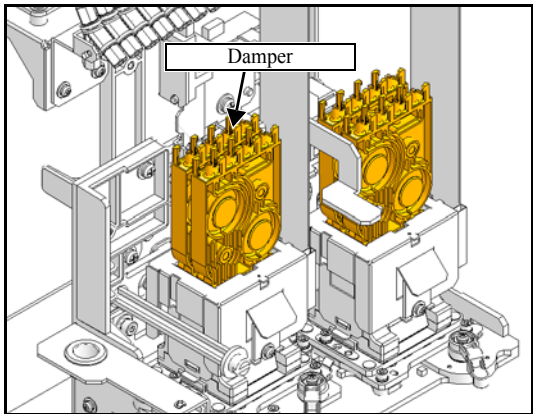
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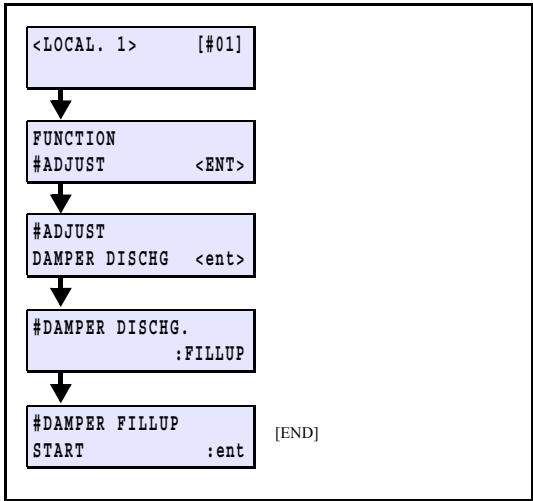


9. Remove the damper.

10. Perform the assembly by reversing the disassembly procedure.



Do not mess up the orders of ink tube tag.  
(Confirm "1.3.1 Configuration" )



11. Perform [DAMPER DISCHG / FILLUP] and fill ink in the damper.

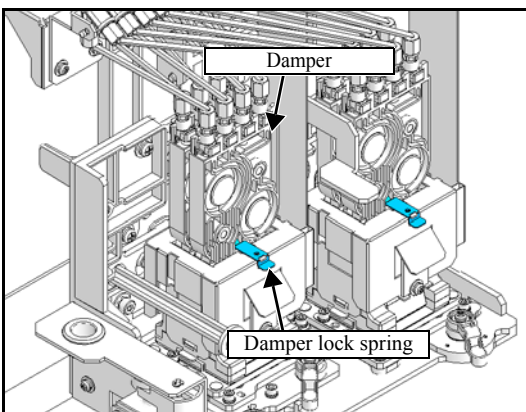
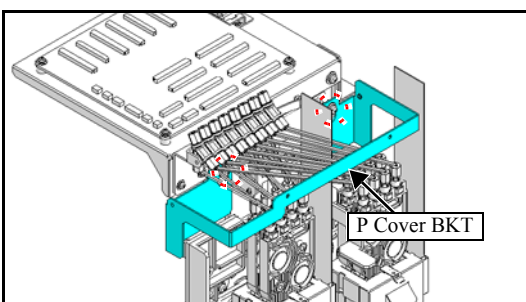
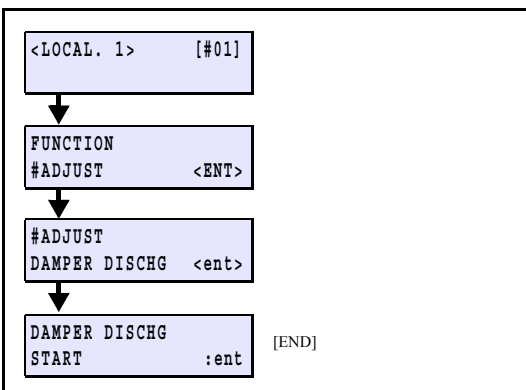
Perform vacuum absorption -> valve release -> normal cleaning automatically.

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## 6.2.3 Head Unit

1.0

### ■ Work procedures



1. Select [DAMPER DISCHG] from the operation menu.
2. Check discharging of ink in the damper visually and then press the [END] key.
3. Turning the power off.
4. Pull out the **head FFC assy** and **head memory cable assy** from the **slider PCB assy** through the top where the wiring cover removed.
5. Move the print head carriage onto the platen to make your work easy.
6. Loosen the screws at two locations on the right and left to remove the **P cover BKT**.
7. Remove the damper lock spring.



- Do not touch the film of the damper assy.
- Remove the damper lock spring before removing the damper joint Assy.  
If the damper joint Assy is moved with the damper lock spring, the damper lock spring loses its performance.

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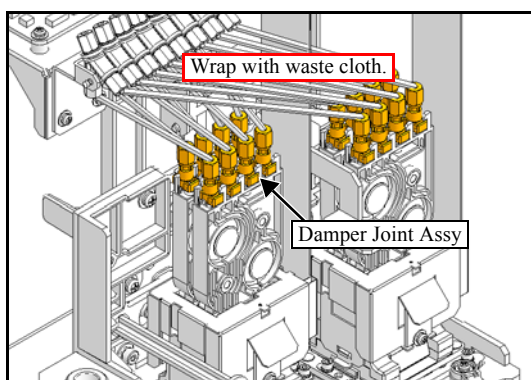
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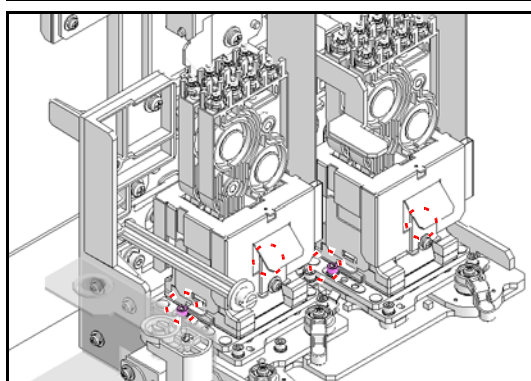
8

## 6.2.3 Head Unit

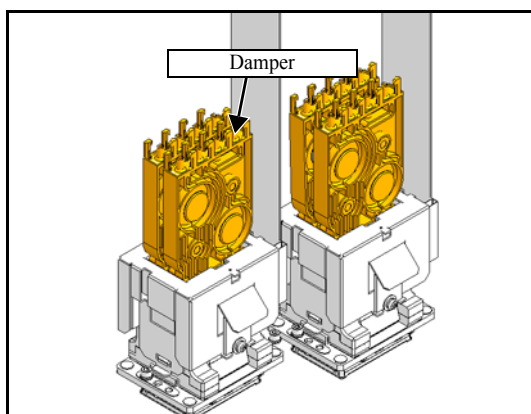


8. Remove the damper joint Assy and wrap with waste cloth.

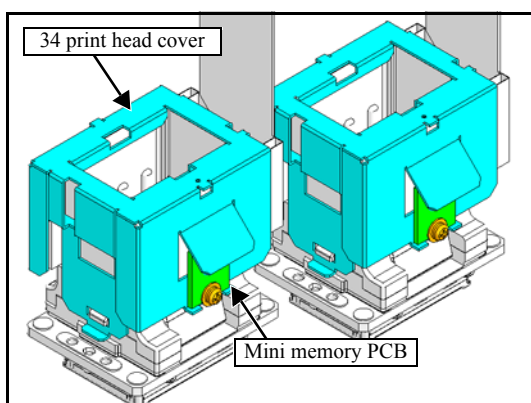
9. Place the waste cloth around the head unit so as not to contaminate the platen.



10. Remove the screws and the head.



11. Remove the damper.



12. Remove the 34 print head cover.

13. Remove the mini memory PCB.

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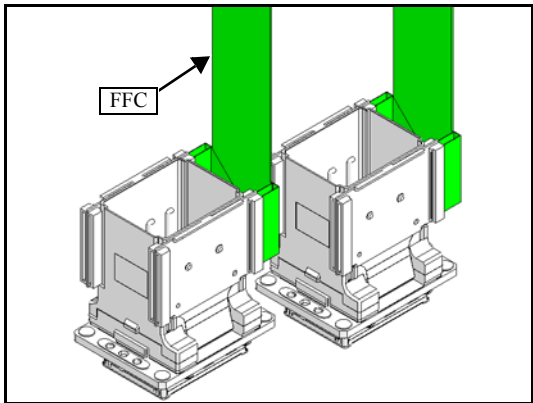
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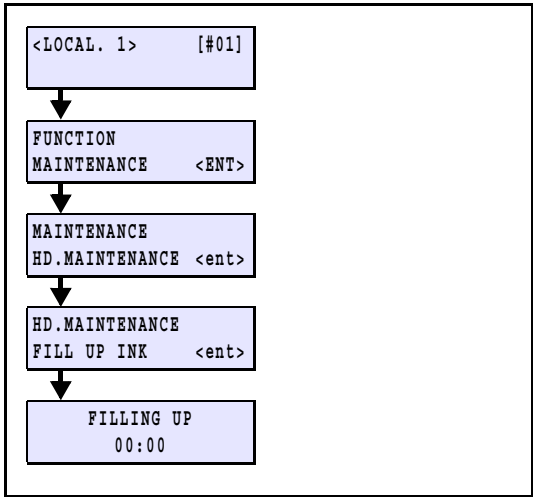


14. Remove the FFC.

15. Perform the assembly by reversing the disassembly procedure.



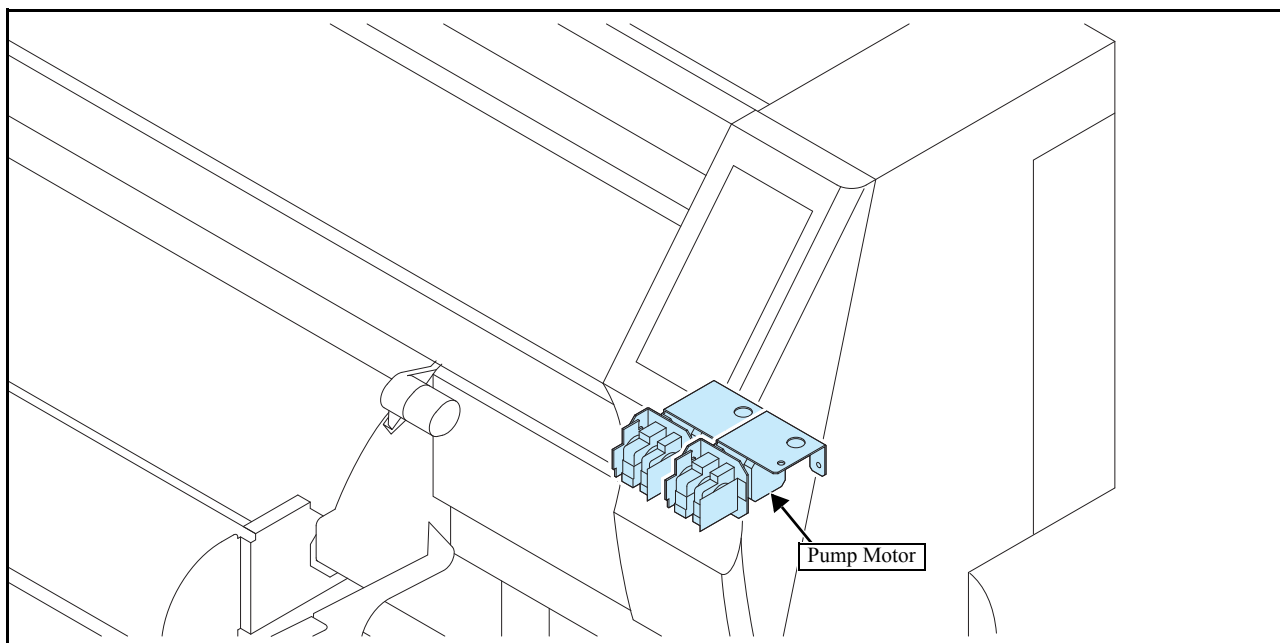
Do not mess up the orders of ink tube tag.  
(Confirm "1.3.1 Configuration" )



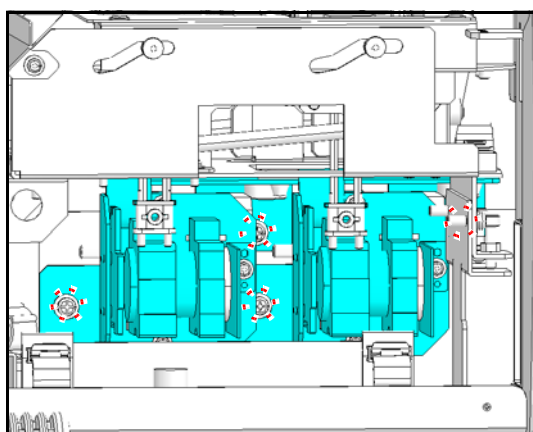
16. Perform [FILL UP INK] and fill ink in the damper.



## 6.2.4 Pump Motor



### ■ Work procedures



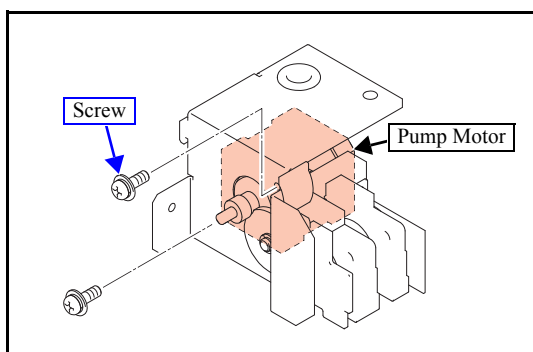
1. Remove the **station cover U34**.
2. Remove the pump tube connected to the cap head.



Take care not to pollute the surroundings with waste ink or washing liquid.

3. Remove the pump motor assy connector and then remove the **pump assy**. (Refer to 6.2.5)

4. Remove the **stepping motor** together with the pump assy.



5. Reverse the disassembly procedure for reassembly.

Protrude the pump tube of the discharge side from tube end by 5 to 9 mm.

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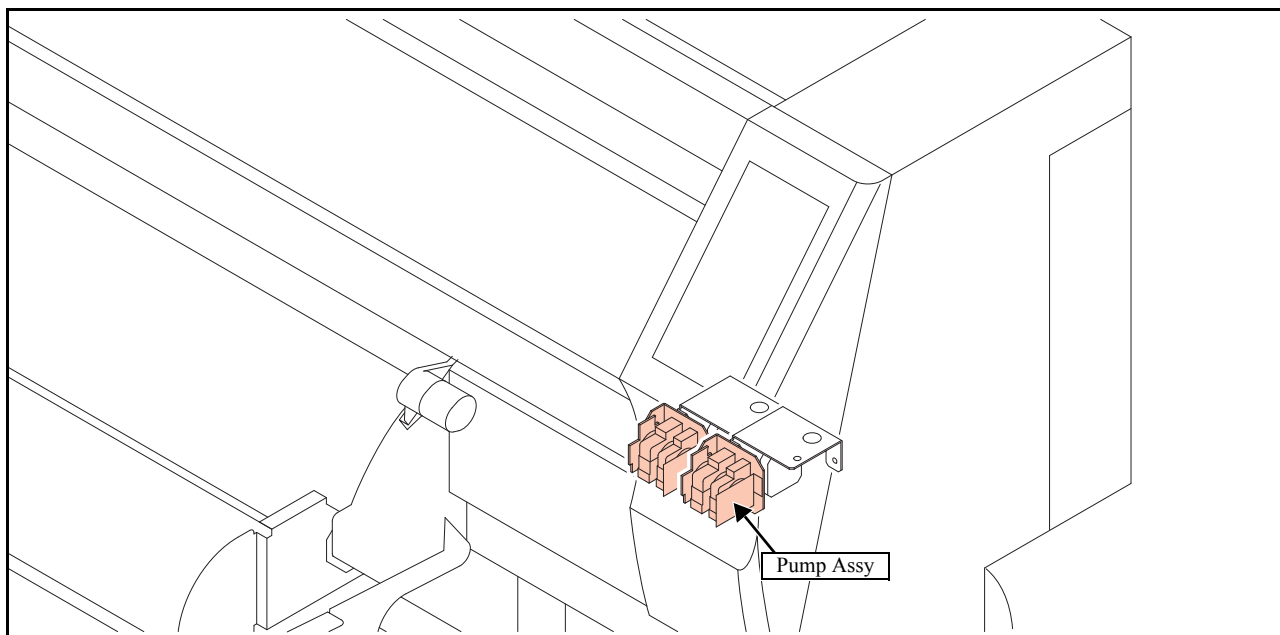
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## 6.2.5 Pump Assy

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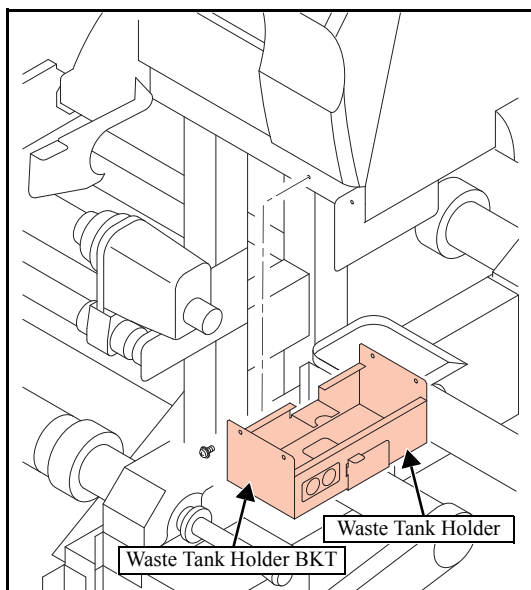
### ■ Work procedures

1. Remove the **station cover U34**.

2. Remove the waste ink tank.

3. Remove the waste tank holder BKT and the waste tank holder.

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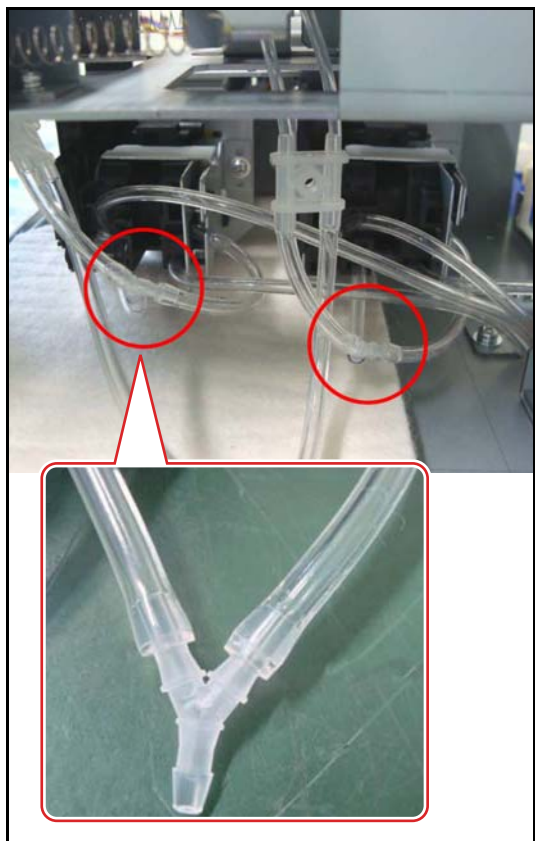
4. Remove the pump tube connected to the CP coupler.



Take care not to pollute the surroundings with waste ink or washing liquid.

8

5. Remove the **pump assy** from the **pump BKT**.



6. Remove the tube from the clamp located at the back bottom surface, and then remove the tube from the upper side of the main body.

7. Reverse the disassembly procedure for reassembly.  
Protrude the pump tube of the discharge side from tube end by 5 to 9 mm.

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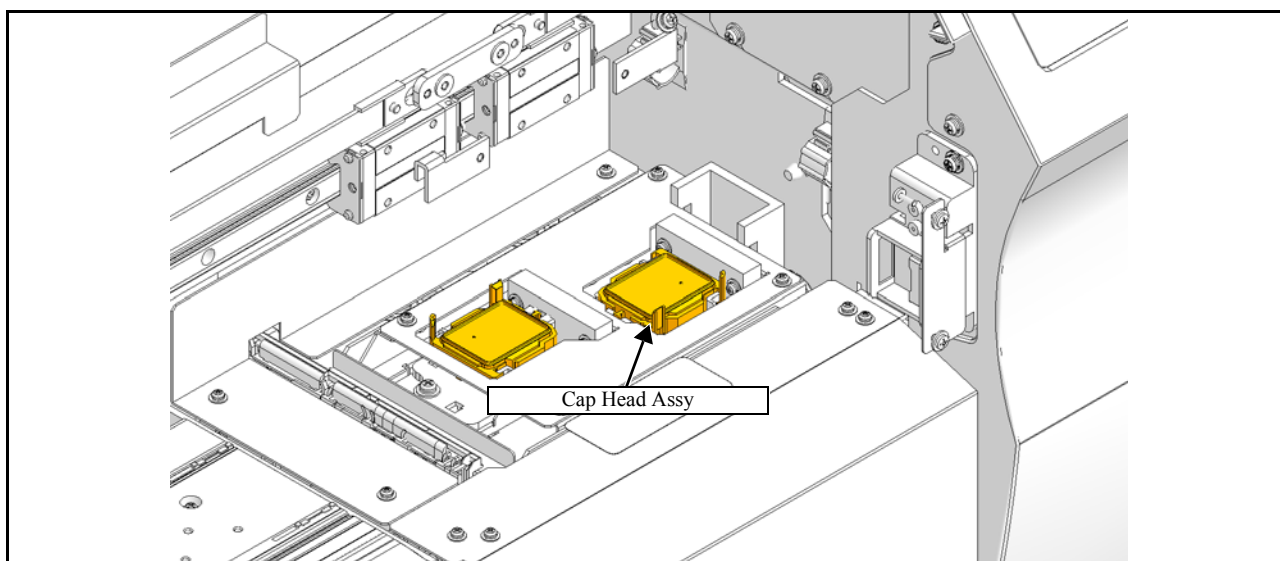
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## 6.2.6 Cap Head Assy

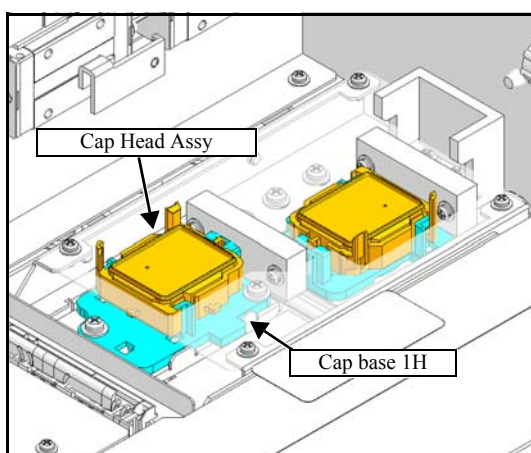
1.0



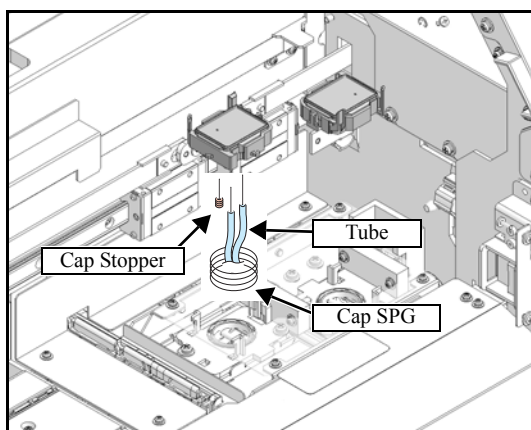
### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



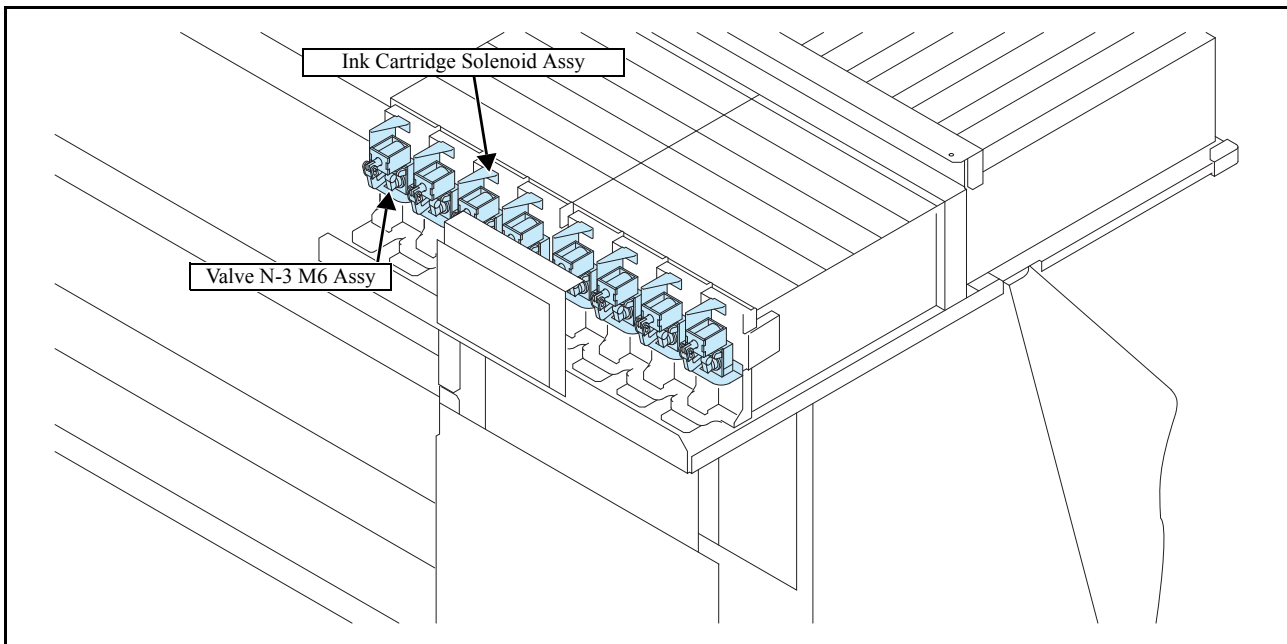
1. Turn off the main power supply of the machine.
2. Manually move the head unit over the platen.
3. While pushing down the **cap head assy**, slide it to the left and remove it from cap base 1H.



4. Remove the tube, **cap SPG** and **cap stopper** from the cap head assy.

5. Reverse the disassembly procedure for reassembly.

## 6.2.7 Valve Assy

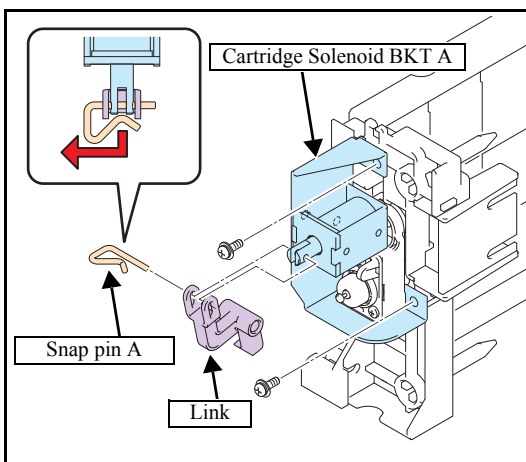


### ■ Work procedures



Be sure to wear protective glasses and working gloves during the operation.

Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.



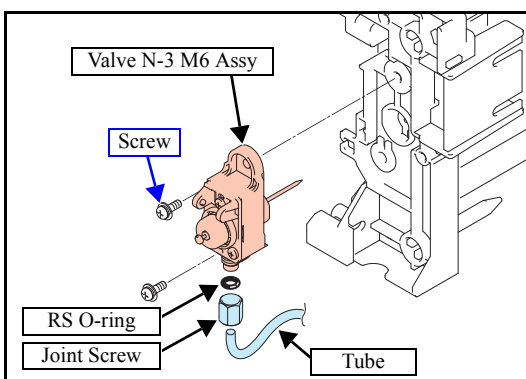
1. Execute [#ADJUST] — [HEAD WASH] to discharge the ink.  
(Refer to 4.2.11)

2. Remove the following covers.

- ICU Cover F
- ICU Cover R

3. Remove **snap pin A** and then the **link**.

4. Remove screws to take off the **cartridge solenoid BKT A** together with the solenoid.



5. Remove the **valve N-3 M6 assy** and loosen the joint screws to remove the tube.

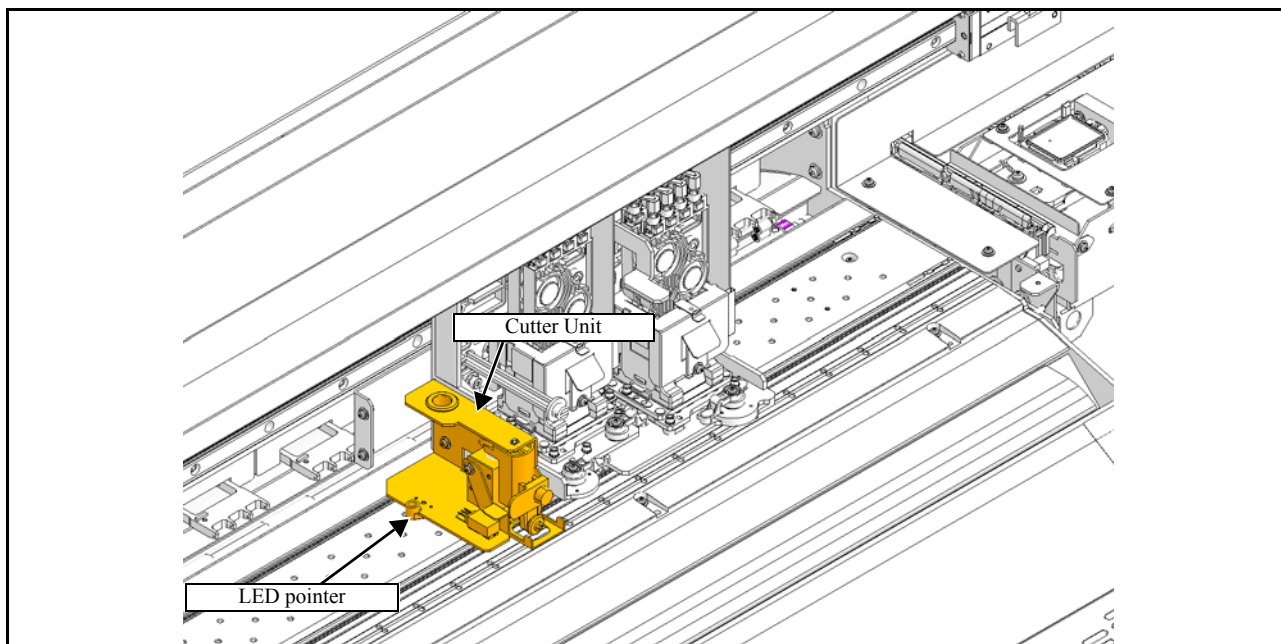


Take care not to contaminate the surroundings with ink. Also, take care not to lose the RS O-ring.

6. Reverse the disassembly procedure for reassembly.

## 6.2.8 Cutter Assy

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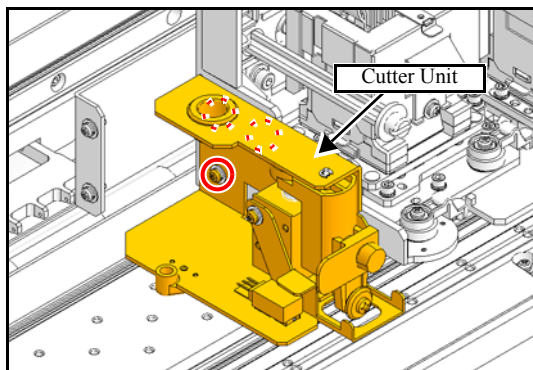
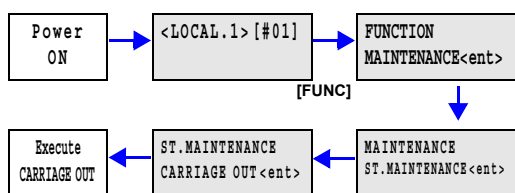
### ■ Outline

This section describes an overview of the work and procedures for replacing the cutter assy (cutter unit + LED pointer).

### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Turn the main power at the right side of the machine ON, and move the head unit on the platen using [MAINTENANCE] — [ST.MAINTENANCE] — [CARRIAGE OUT].

2. Turn the main power OFF.

3. Remove the front cover (4 screws), Y cover F (4 screws), and head cover (2 screws) (Refer to 6.1.1).

4. Loosen the screws (x3) and remove the cutter unit.

5. Remove the connector from the PCB and then remove the LED pointer.

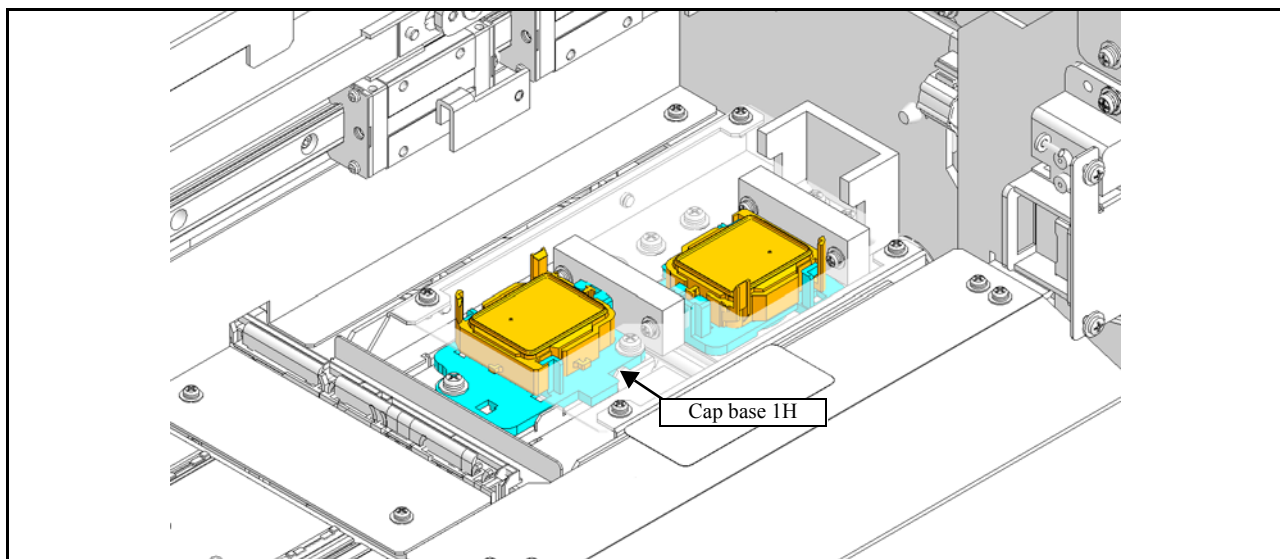
6. Install using the reverse of the disassembly procedure.

7. Refer to 4.3.1 for more information on installation position adjustments.



## 6.2.9 Cap Base

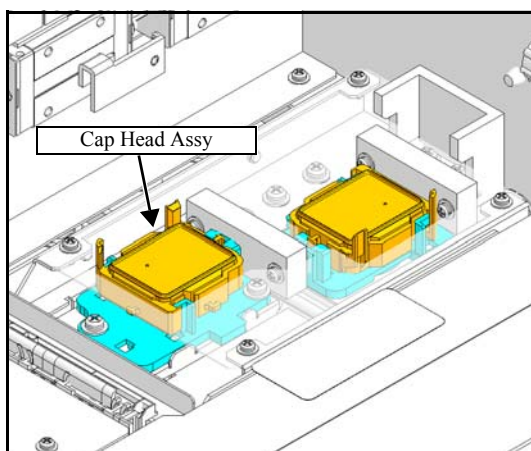
1.0



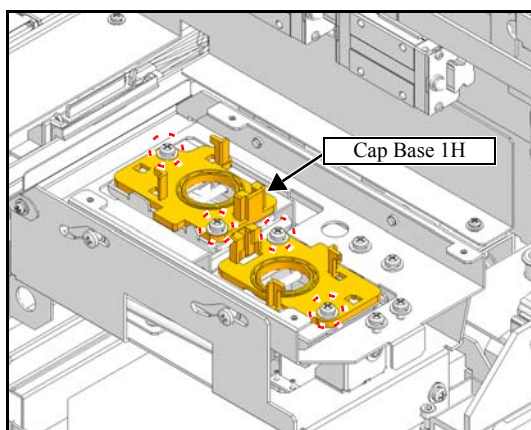
### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



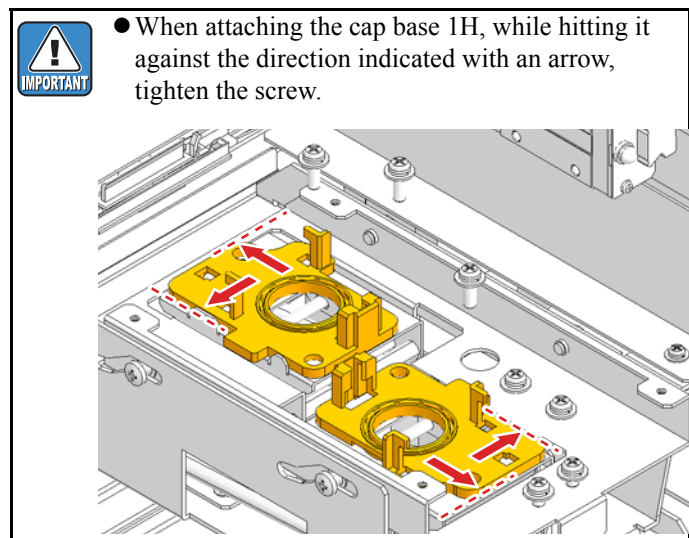
1. Turn off the main power supply of the machine.
2. Manually move the head unit over the platen.
3. Remove the **cap head assy**.
  - "6.2.6 Cap Head Assy"



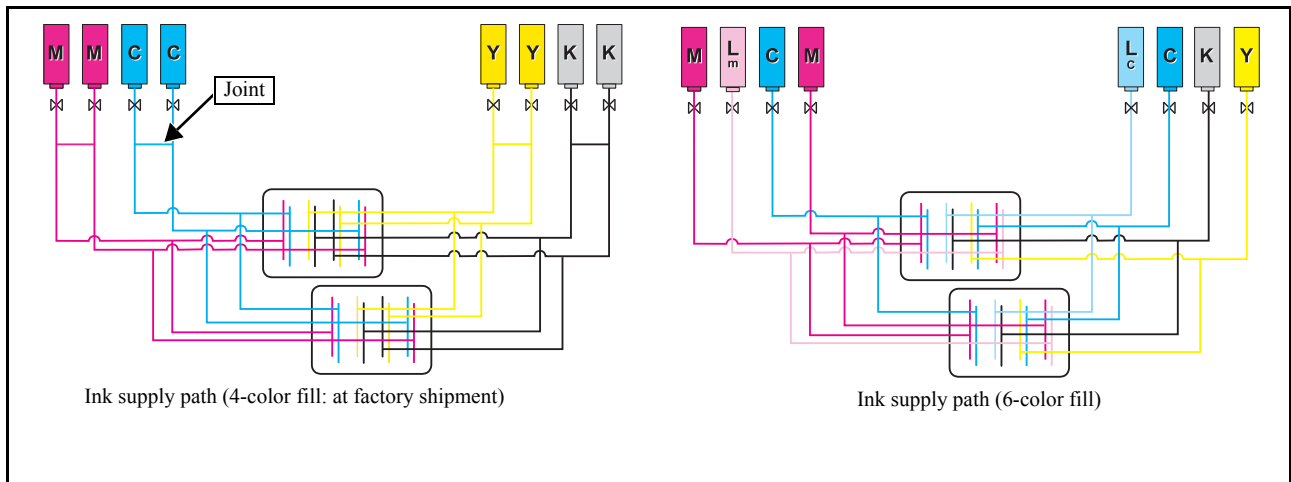
4. Remove the screw, and remove the **cap base 1H**.

MAINTENANCE MANUAL > Disassembly and Reassembly > Ink-related Parts > Cap Base									Rev.
Model	JV34-260	Issued	2011.03.15	Revised		F/W ver	1.00	Remark	
6.2.9 Cap Base									1.0

5. Reverse the disassembly procedure for reassembly.



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- Outline**

It is possible to set the above two ink supply paths for JV34-260.

Four colors are set at factory shipment, but it is possible to change to other colors by coupler opening and closing.

This section describes the procedures to change to six colors.



## 6.2.10 Changing Joint

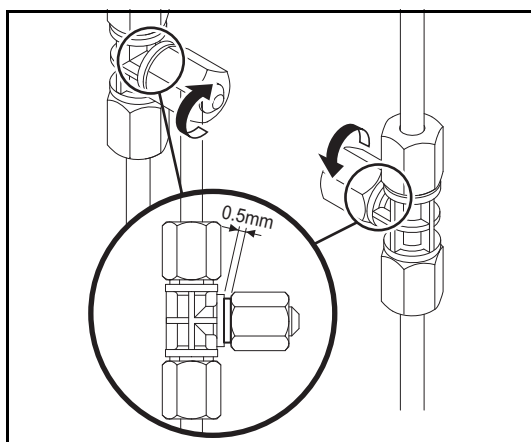
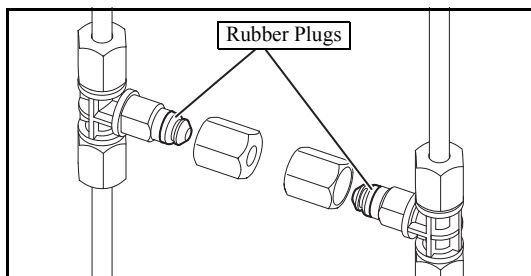
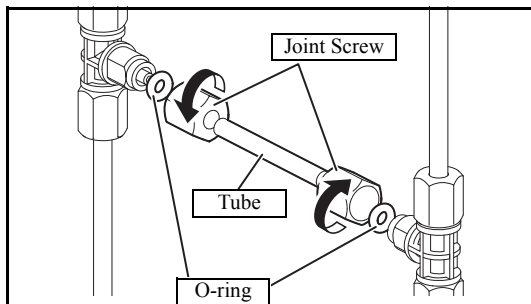
1.0

### ■ Work procedures



Be sure to wear protective glasses and working gloves during the operation.

Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.



1. Execute [#ADJUST] — [HEAD WASH] to discharge the ink.  
(Refer to 4.2.11)

2. Remove the **cartridge cover**.

3. Loosen the **joint screws** and remove the **tube** and **O-rings**.

4. Put on the **rubber plugs** on the coupler.



Make sure that O-ring is not remaining in the joint screws.

5. Tighten the joint screws.

Leave a space of around 0.5 mm between the coupler and screw.



When clamping the joint screws, do not clamp them too much.

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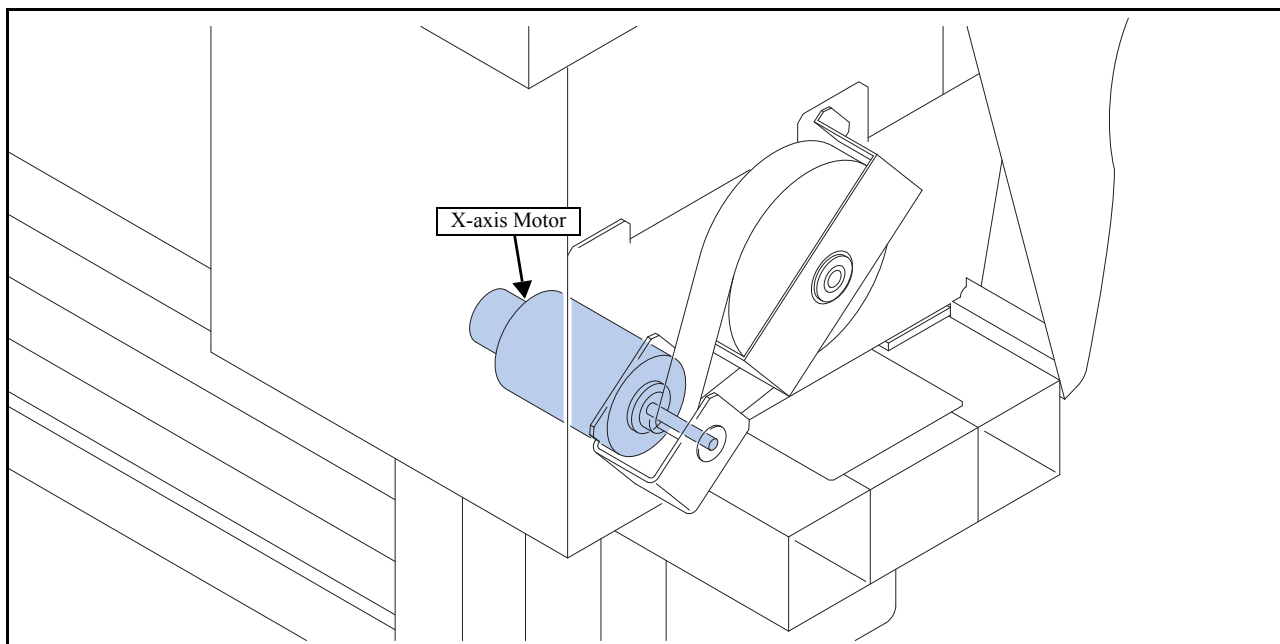
**8**

## Disassembly and Reassembly

<b>6.1</b> <b>Covers</b>	<b>6.2</b> <b>Ink-related Parts</b>	<b>6.3</b> <b>Drive System</b>
<b>6.4</b> <b>Electrical Parts</b>	<b>6.5</b> <b>Heavy-duty Take-up/Feeding Device</b>	<b>6.6</b> <b>Sensors</b>

## 6.3.1 X-axis Motor/Tooth Belt

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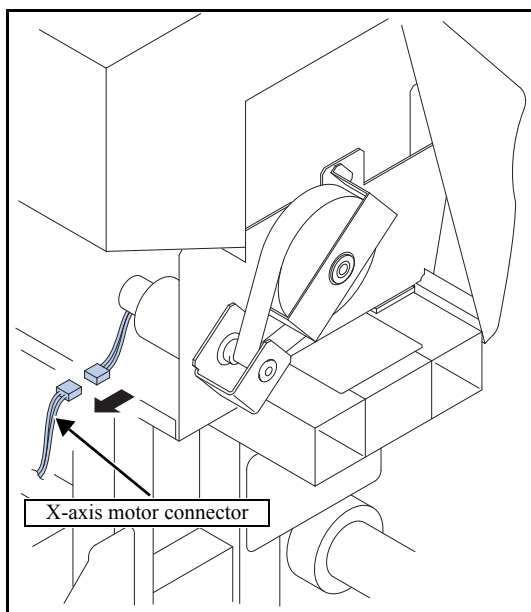
3

### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

4



1. Remove the following covers.

- Maintenance Cover L
- Left Cover

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2. Disconnect the X-axis motor connector.

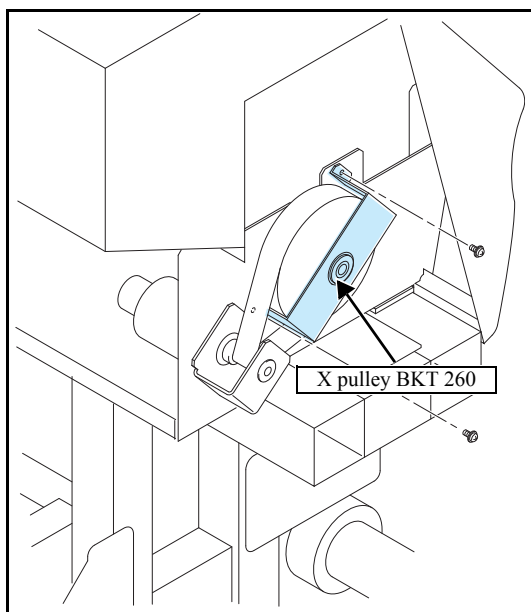
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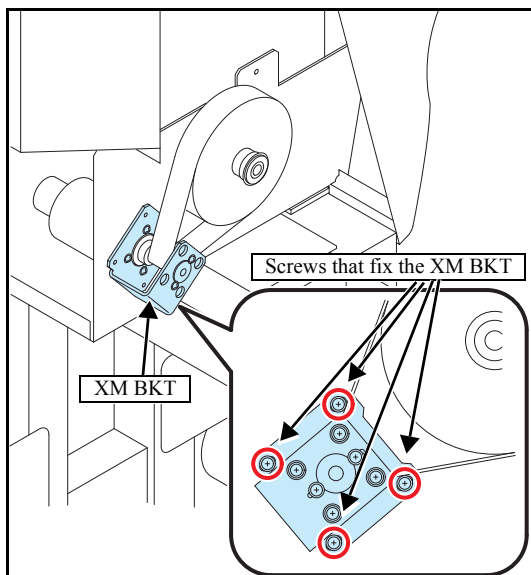
8

## 6.3.1 X-axis Motor/Tooth Belt

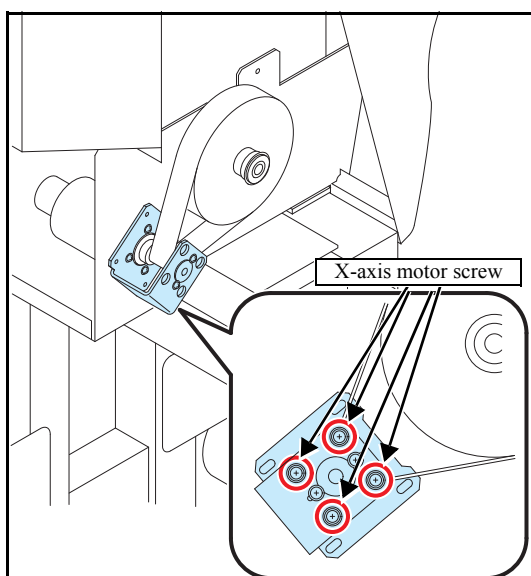
1.0



3. Remove the X pulley BKT 260.



4. Loosen the screws that fix the **XM BKT**.



5. Remove the X-axis motor screw.

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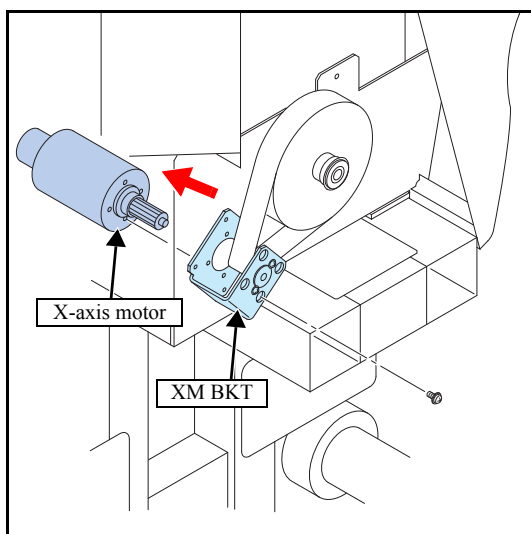
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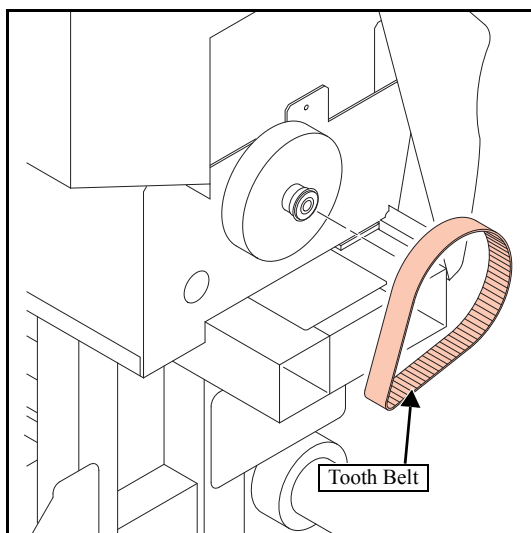
8

## 6.3.1 X-axis Motor/Tooth Belt

1.0



6. Remove the **XM BKT** and X-axis motor from the main body.



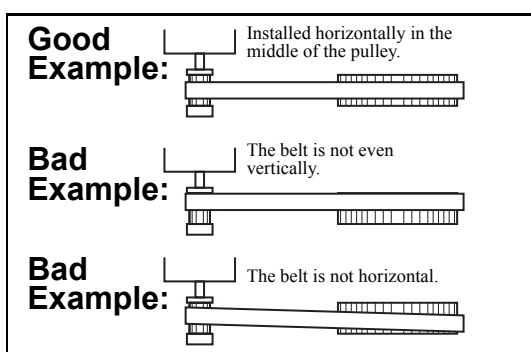
7. Remove the tooth belt.

8. Reverse the disassembly procedure for reassembly.



After mounting the motor, if the hunting sound is heard when the motor drives, make adjustments making reference to the following:

- Adjusting the X-axis motor current (4.2.14)



9. Place the X belt to the X pulley and X motor pulley.

\*Make sure that the belt is placed horizontally in the middle of the X pulley and motor pulley.

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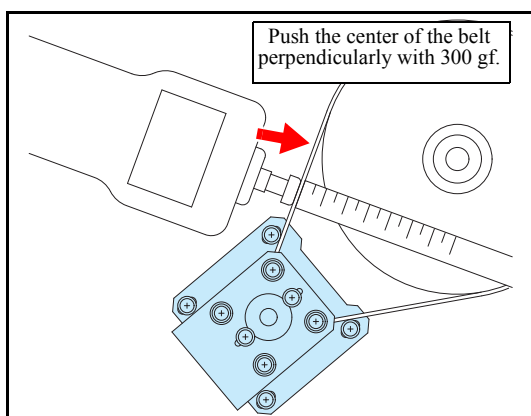
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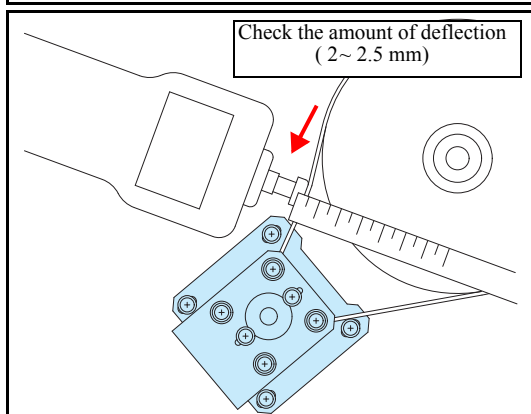
## 6.3.1 X-axis Motor/Tooth Belt

1.0

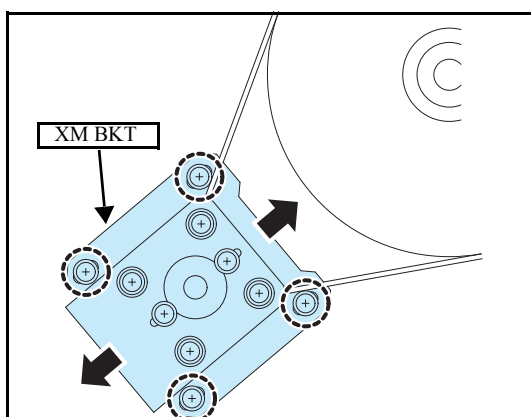


10. – Tension adjustment –

Push the tension gauge with 300 gf perpendicular to the center of the belt between the pulleys.



11. Adjust the XM BKT so that belt deflection is 2 - 2.5 mm.



12. Move the XM BKT to the left or right to the proper value, and then tighten the screws (x4).

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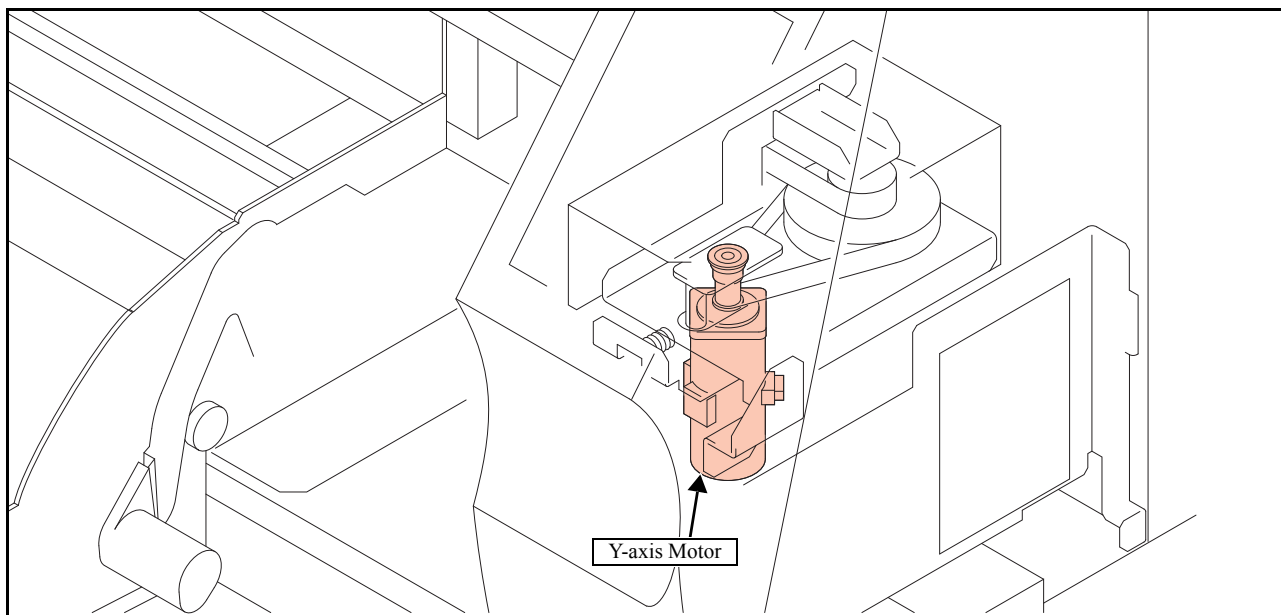
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## 6.3.2 Y-axis Motor

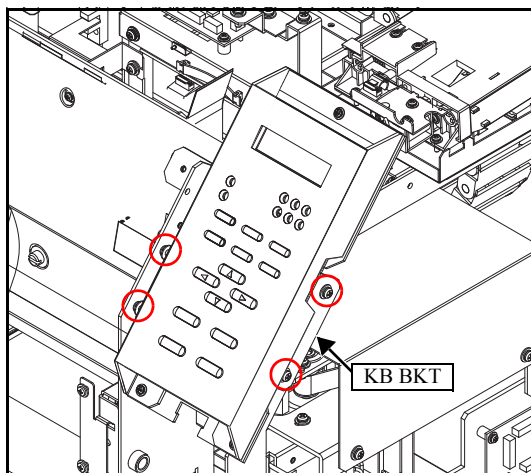
1.0



### ■ Work procedures



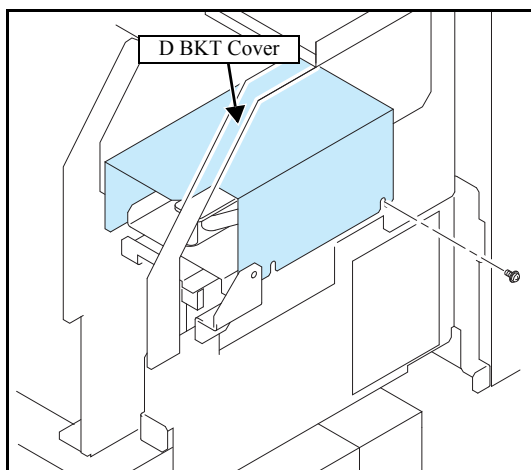
Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the following covers.

- KB Cover
- Right Cover

2. Remove the **KB BKT** screws, disconnect the connector and then remove the **keyboard assy.**



3. Manually move the print head carriage on the platen and remove the **D-BKT cover**.

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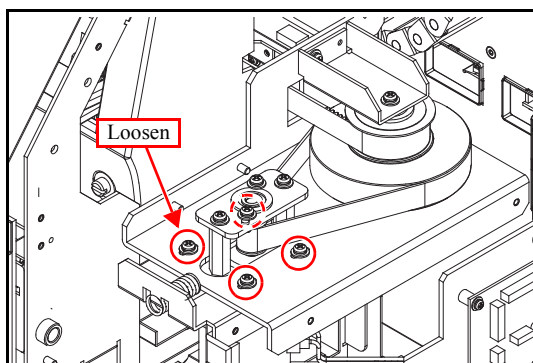
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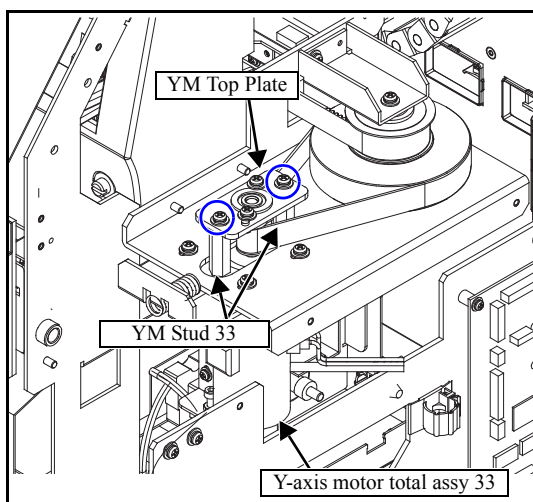
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## 6.3.2 Y-axis Motor

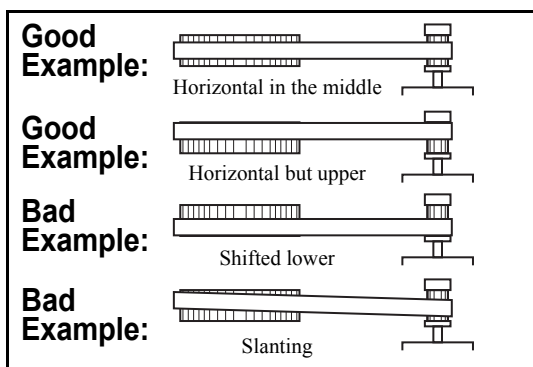
1.0



4. Loosen the screws for fixing the Y-axis motor belt tension, and reduce the tension of the belt.



5. Remove the screws from the top of the Y-axis motor and then remove the **YM top plate**.
6. Remove the **YM stud 33**.
7. Remove the **Y-axis motor total assy 33** while taking care not to drop it.
8. Release the clamps and the cable (directly connected to main PCB assy).



9. Reverse the disassembly procedure for reassembly.



- Mount the Y-axis motor so that the belt is horizontal and centered on the Y drive pulley (upper side is also acceptable).
- After mounting the motor, if the hunting sound is heard when the motor drives, make adjustments making reference to the following:
  - Adjusting the Y-axis motor current (4.2.14)

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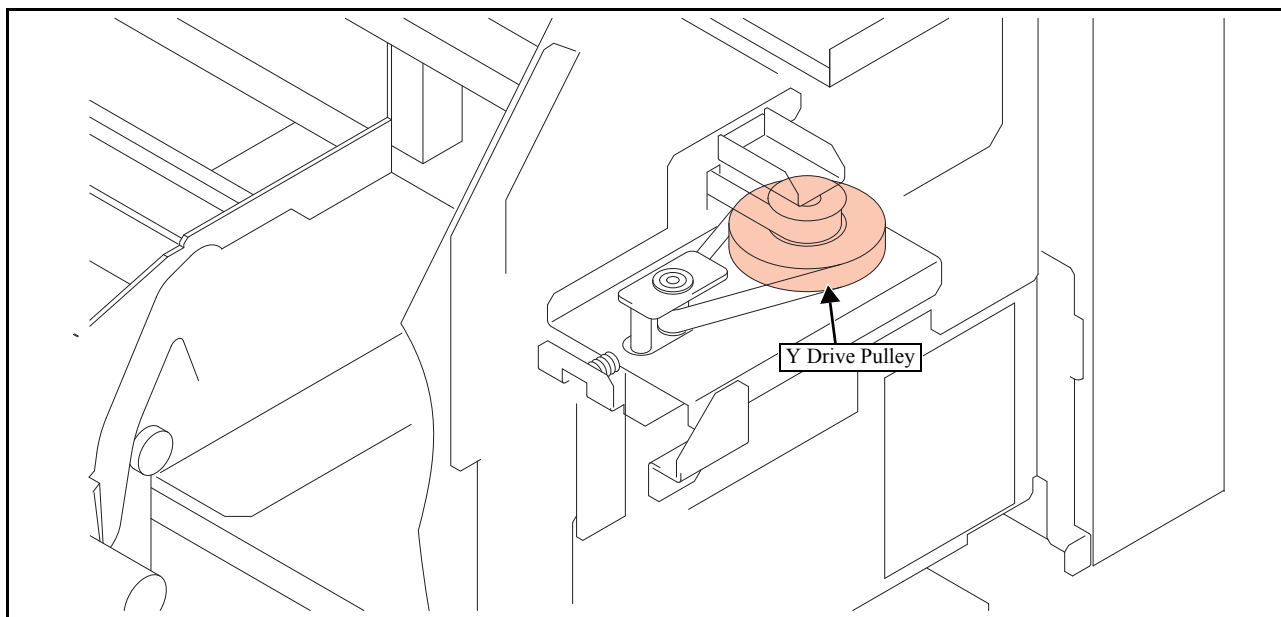
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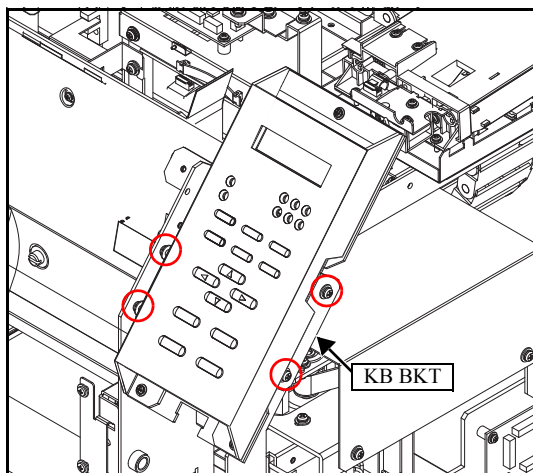
## 6.3.3 Y Drive Pulley



### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the following covers.

- Y cover F
- KB Cover
- Right Cover

2. Remove the **KB BKT** screws, disconnect the connector and then remove the **keyboard assy**.

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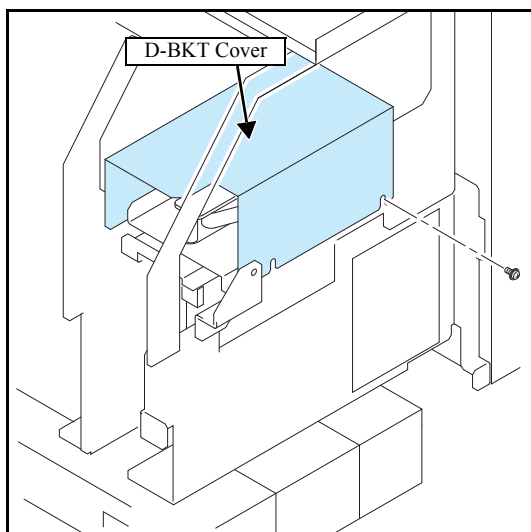
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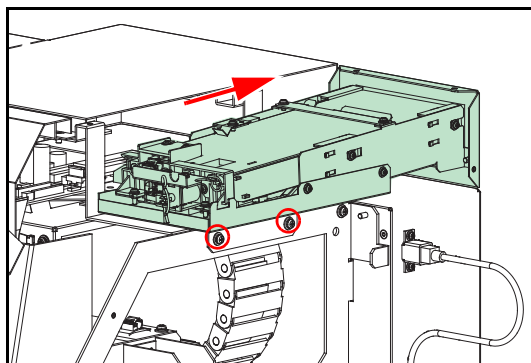
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## 6.3.3 Y Drive Pulley

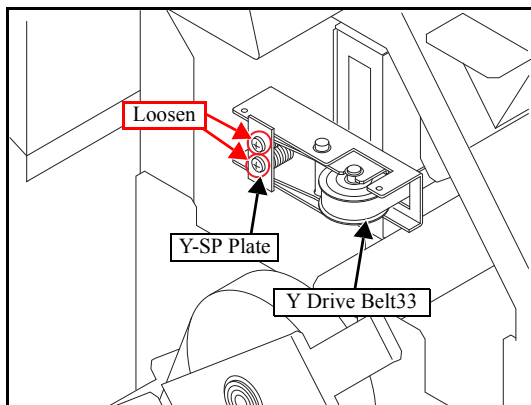
1.0



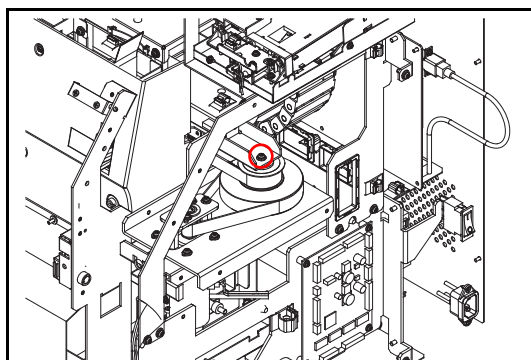
3. Manually move the print head carriage on the platen and remove the **D-BKT** cover.



4. Remove the screws that hold the **washing cartridge** assembly in place, and slide the washing cartridge assembly towards the back.



5. Loosen the screws from the Y-SP plate on the left side of the main body, and release the tension of the Y drive belt.



6. Remove the screw from the top of the Y drive pulley.

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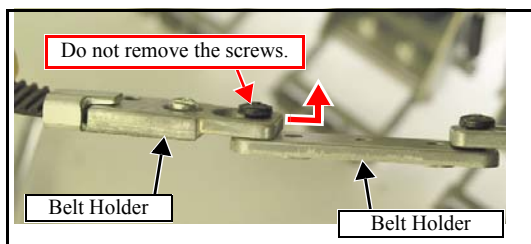
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## 6.3.3 Y Drive Pulley

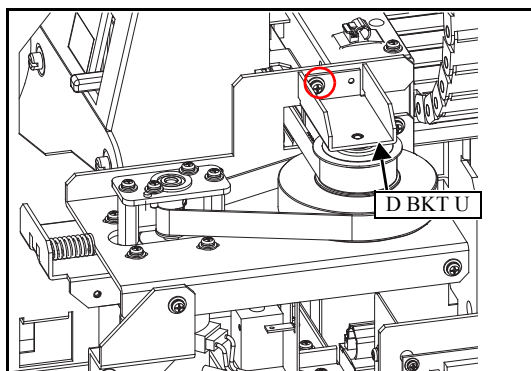
1.0



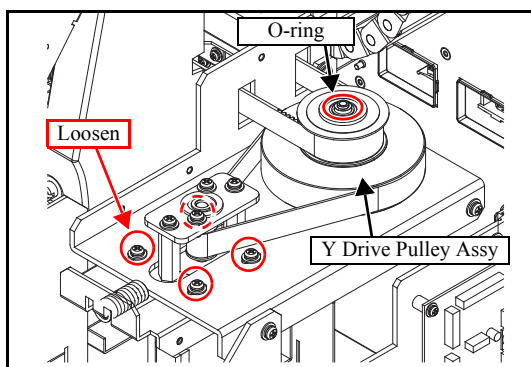
7. Slide out the connection point of the Y drive belt, and remove either the left or right **belt holder** from the **belt holder**.



Do not remove the Y drive belt from the slider.



8. Remove the screw, and detach the **D BKT U** from the Y drive pulley.

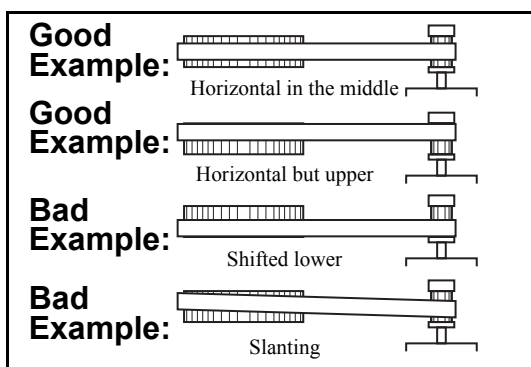


9. Loosen the screws for fixing the Y-axis motor belt tension, and reduce the tension of the belt.

10. Remove the O-ring from the top of the Y drive pulley, and then remove the two belts to detach the Y drive pulley.



Take care not to lose the O-ring.



11. Reverse the disassembly procedure for reassembly.



- Mount the Y-axis motor so that the belt is horizontal and centered on the Y drive pulley (upper side is also acceptable).
- After mounting the motor, if the hunting sound is heard when the motor drives, make adjustments making reference to the following:
  - Adjusting the Y-axis motor current (4.2.14)

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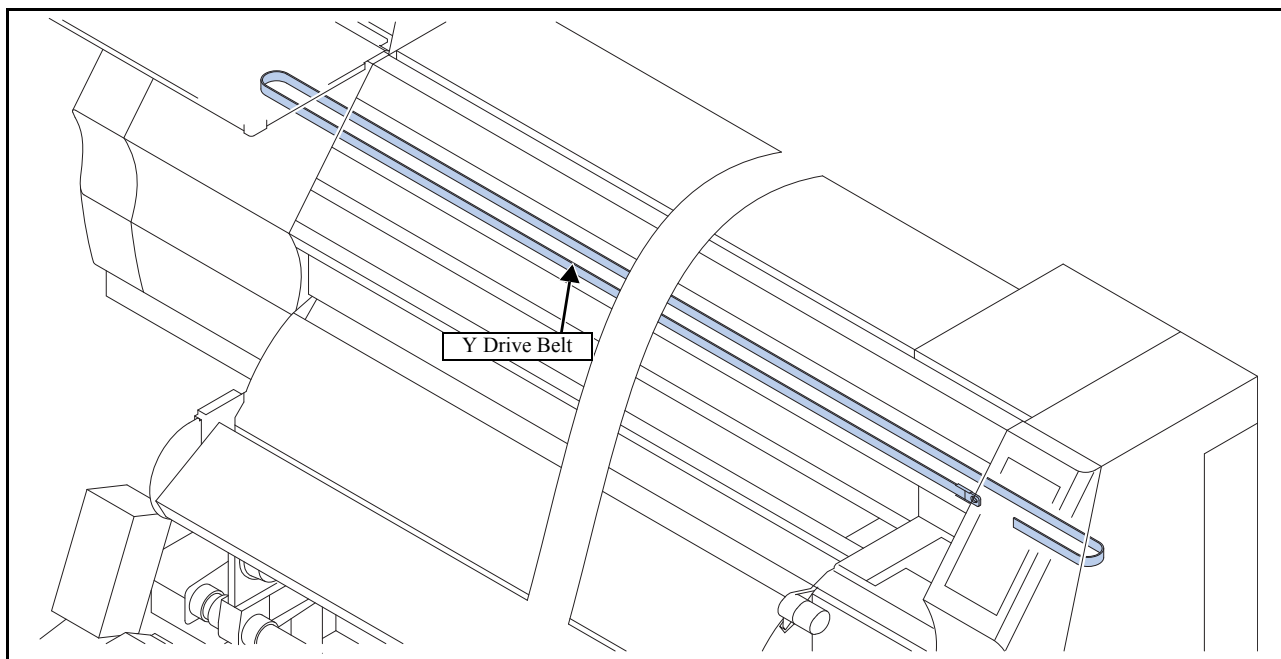
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## 6.3.4 Y Drive Belt



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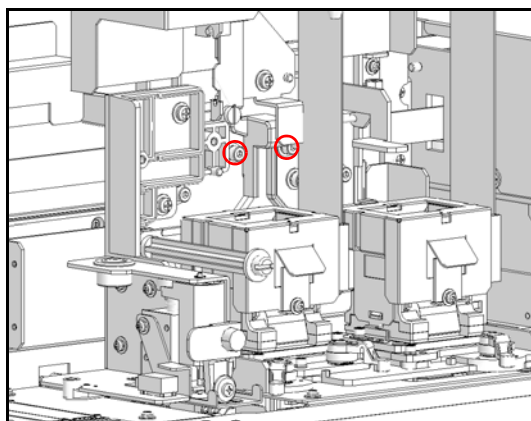
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### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the following covers.

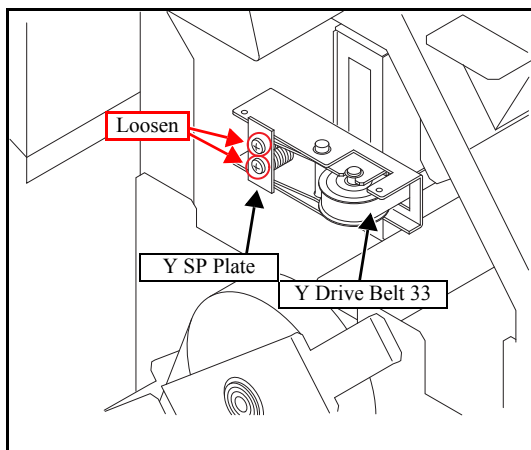
- Front cover
- Y cover F
- P Cover U
- P Cover L
- C Cover

2. Remove the **Damper**.

- "6.2.2 Damper"

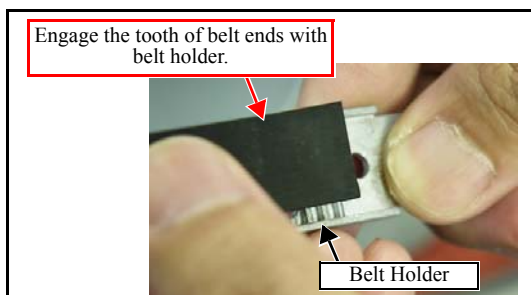
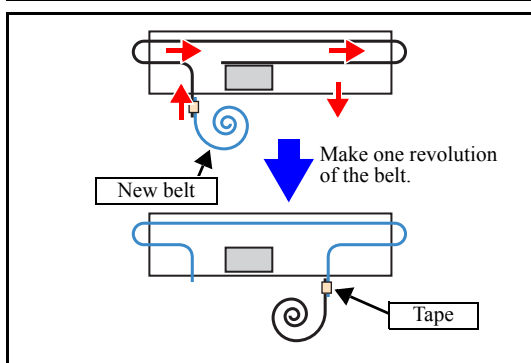
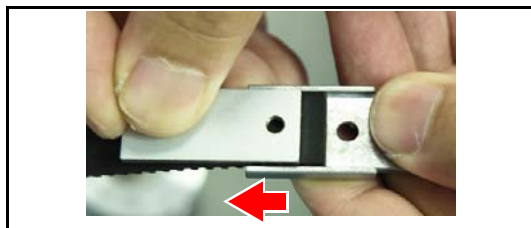
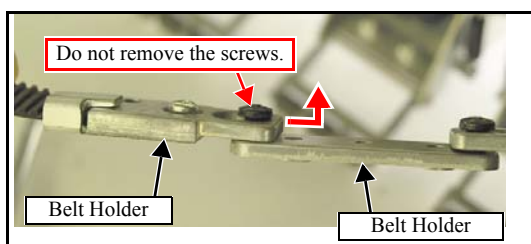
3. Remove the head assy screws and separate them from the belt holder.

4. Loosen the screws from the Y-SP plate on the left side of the main body, and release the tension of the Y drive belt.



## 6.3.4 Y Drive Belt

1.0



5. Slide out the connection point of the Y drive belt, and remove either the left or right **belt holder** from the **belt holder**.

6. Remove the belt holder screws.

7. Pry open the belt holder with a slotted screwdriver or the like, then slide the **belt holder** to detach from the belt.

8. Stick together the ends of the old belt and the new belt using rubber tape or the like, and make one revolution of the belt.

9. Once the belt has made one revolution, remove the joining tape and pass the belt through the rear side of the slider.

10. Align the belt holder and the teeth on the left and right belt ends, and attach the belt holder while engaging the teeth. Then tighten the screw.

11. Connect the left and right belt holders with the belt holder.

12. Attach the belt holder and slider using a screw.

13. Loosen the screws on the Y-SP plate on the left side of the main body, and increase the Y drive belt tension.

14. Reverse the disassembly procedure for the subsequent reassemblies

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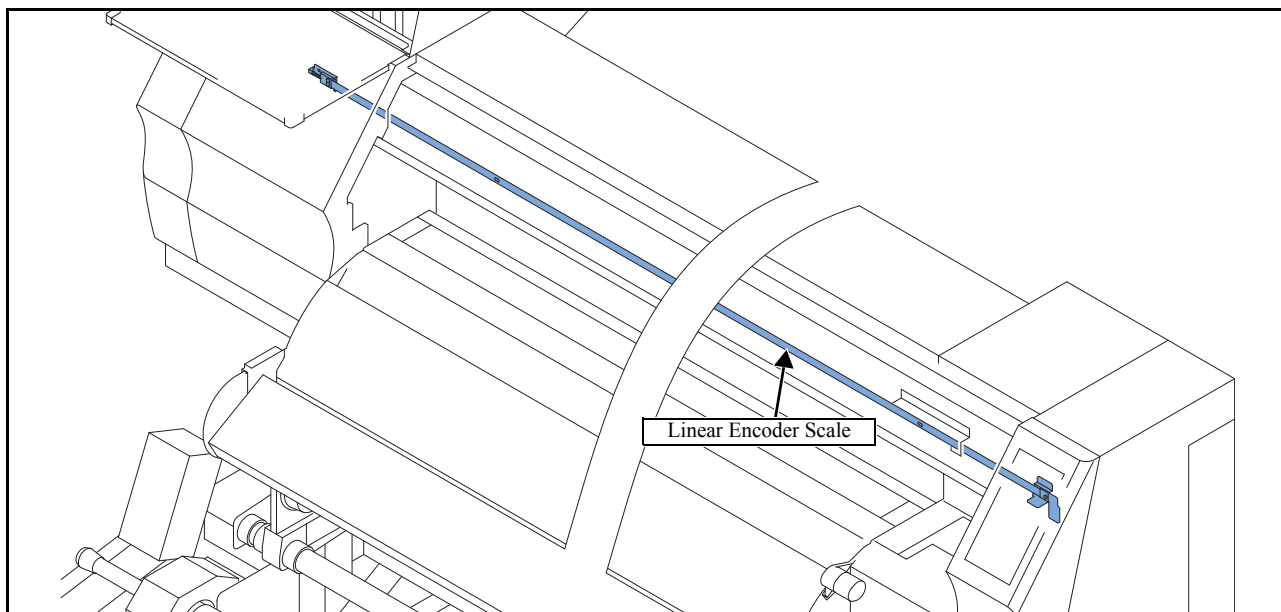
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## 6.3.5 Linear Encoder Scale

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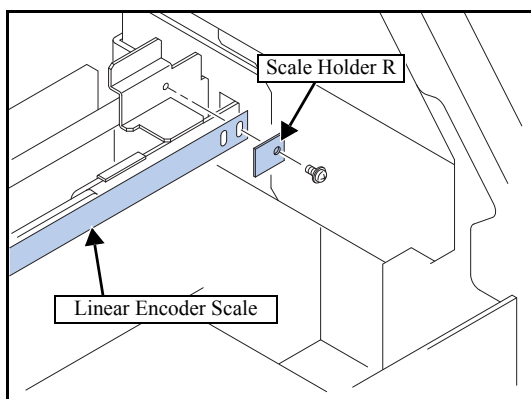


### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

While at work, be sure not to attach fingerprints or oil to the linear encoder scale. Also, pay attention not to break or scratch it. (If contaminated, clean the scale with a neutral detergent.)



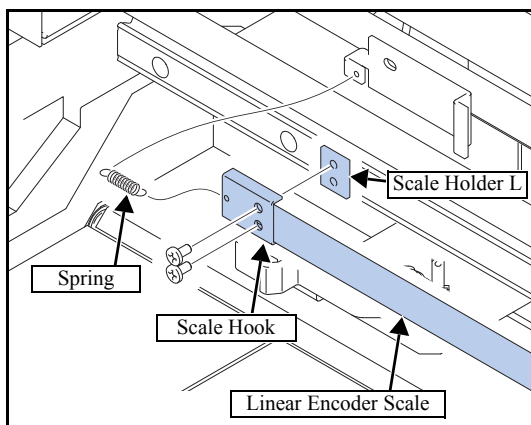
1. Remove the following covers.

- Front cover
- Y cover F
- Maintenance cover

2. Remove the **Encoder PCB Assy**.

- "6.4.16 Encoder PCB Assy"

3. Remove the screws from the right end of the linear encoder scale, and detach the **linear encoder scale**.



4. Remove the screw from the left end of the linear encoder scale, and detach the **linear encoder scale** together with the springs.

5. Remove the **scale hook** and **scale holder L** from the linear encoder scale.

## 6.3.5 Linear Encoder Scale



6. Peel off the left end (the side with two holes) of the protection film on the new linear encoder scale.



While at work, be sure not to attach fingerprints or oil to the linear encoder scale. Also, pay attention not to break or scratch it. (If contaminated, clean the scale with a neutral detergent.)

7. Mount the scale hook on the linear encoder scale so that the surface where the protection film is stuck faces to the Y bar side.



8. Engage the **scale hook** with the **scale base L** through a spring, and mount the **linear encoder scale** while peeling off the protection film.

9. Reverse the disassembly procedure for the subsequent reassemblies.

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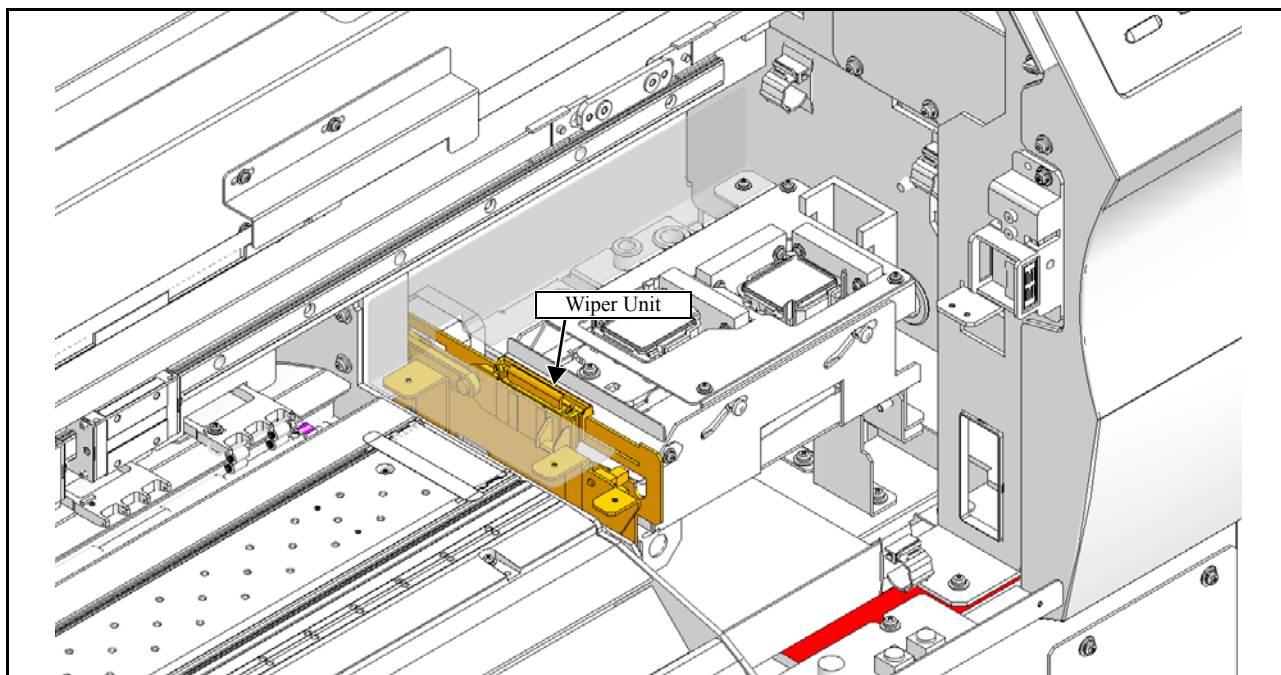
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## 6.3.6 Wiper Unit



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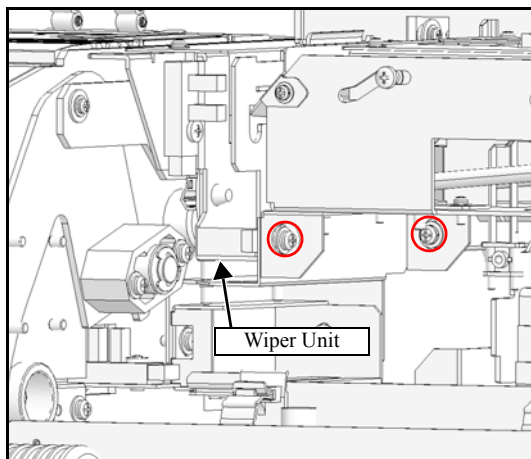
3

### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

4



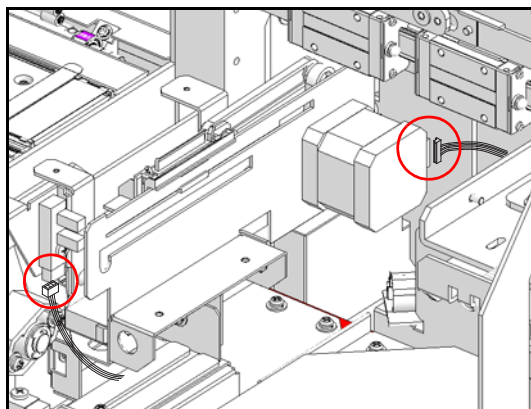
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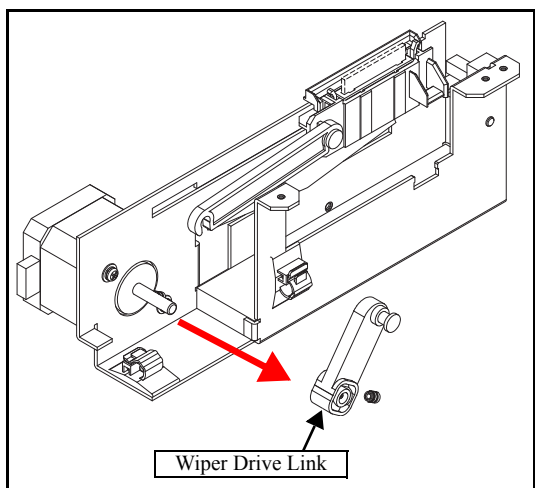
8

1. Remove the following covers.
  - Station Cover Right
  - Station Cover U34
2. Remove the screws, and remove the wiper unit from the base.
3. Release the clamp under the station and disconnect the wiper motor connector.
4. Disconnect the wiper origin sensor connector.





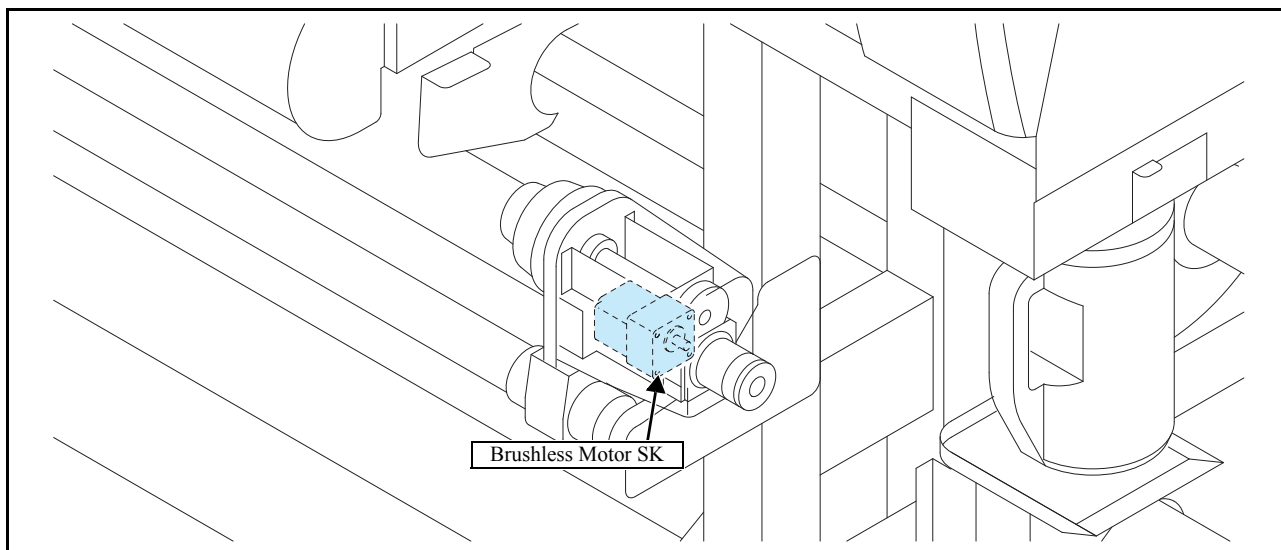
MAINTENANCE MANUAL > Disassembly and Reassembly > Drive System > Wiper Unit									Rev.
Model	JV34-260	Issued	2011.02.15	Revised		F/W ver	1.00	Remark	
6.3.6 Wiper Unit									1.0



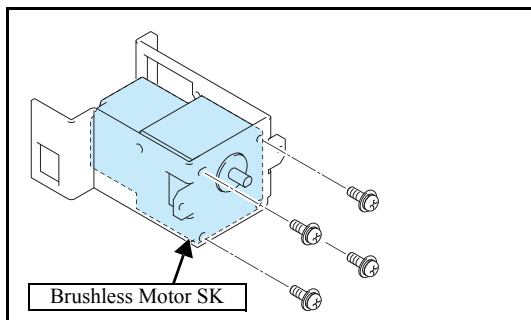
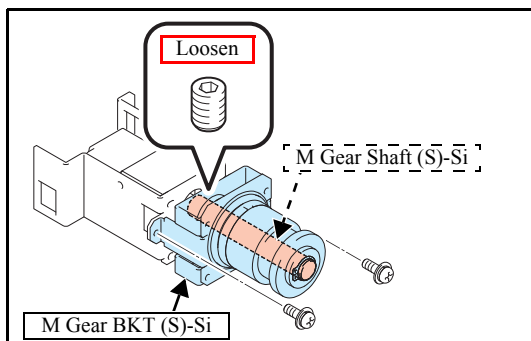
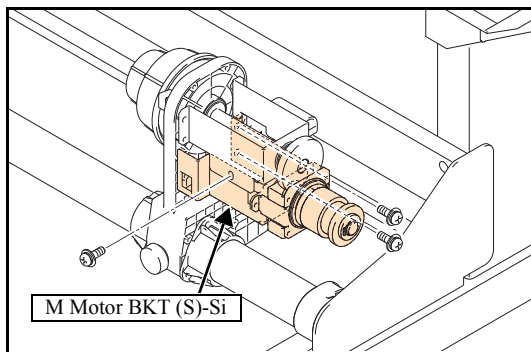
5. When replacing only the motor, remove the wiper drive link and the screws to detach the motor.
- \* The clearance between the motor and base should be 0.5 mm when the motor is replaced.

6. Reverse the disassembly procedure for reassembly.

## 6.3.7 Take-up Motor



### Work procedures



1. Remove the **take-up cover (S)**.
2. Disconnect all connectors on the take-up motor PCB assy.
3. Remove the **M motor BKT (S)-Si** from the **Roll base 2(BR)**.
4. Loosen the fixing screws that connect the motor shaft and M gear shaft (S)-Si and then remove the **M gear BKT (S)-Si**.
5. Remove the screws and then remove the **brushless motor SK**.
6. Reverse the disassembly procedure for reassembly.



When fixing the motor shaft and M gear shaft (S)-Si with fixing screws, be sure to tighten the screws at the plane port of the motor shaft D cut point.

<Good example>



<Bad example>



Fixing Screw  
M Gear shaft  
Motor Shaft

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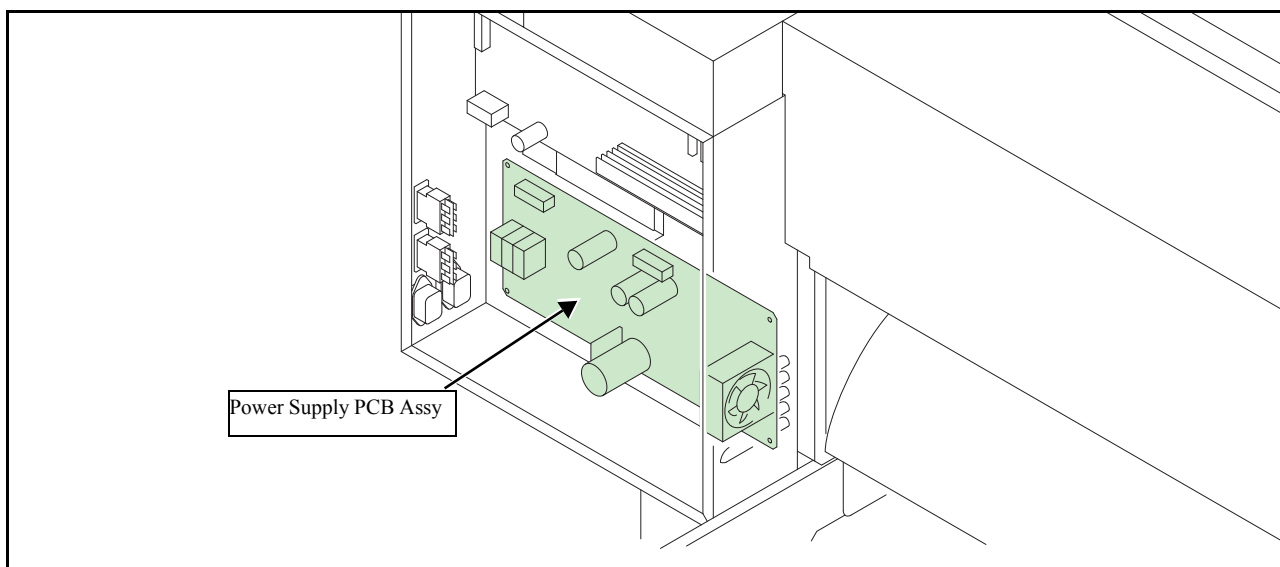
**8**

## Disassembly and Reassembly

<b>6.1</b> <b>Covers</b>	<b>6.2</b> <b>Ink-related Parts</b>	<b>6.3</b> <b>Drive System</b>
<b>6.4</b> <b>Electrical Parts</b>	<b>6.5</b> <b>Heavy-duty Take-up/Feeding Device</b>	<b>6.6</b> <b>Sensors</b>

## 6.4.1 Power Supply PCB Assy

1.0



### ■ Work procedures



After turning off the sub and main power switches, unplug the power cord. Make sure to take 15 minutes before restarting the operation. It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

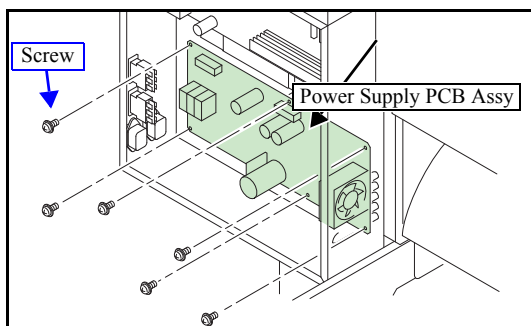
Also, there is a possibility of electric shock because of high power voltage applied to the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.



1. Turn off the main power supply and remove the power plug from the main body.

2. Remove the **power unit box cover**.

3. Disconnect all connectors on PCB.



4. Remove the screws and then remove the **power supply PCB assy**.

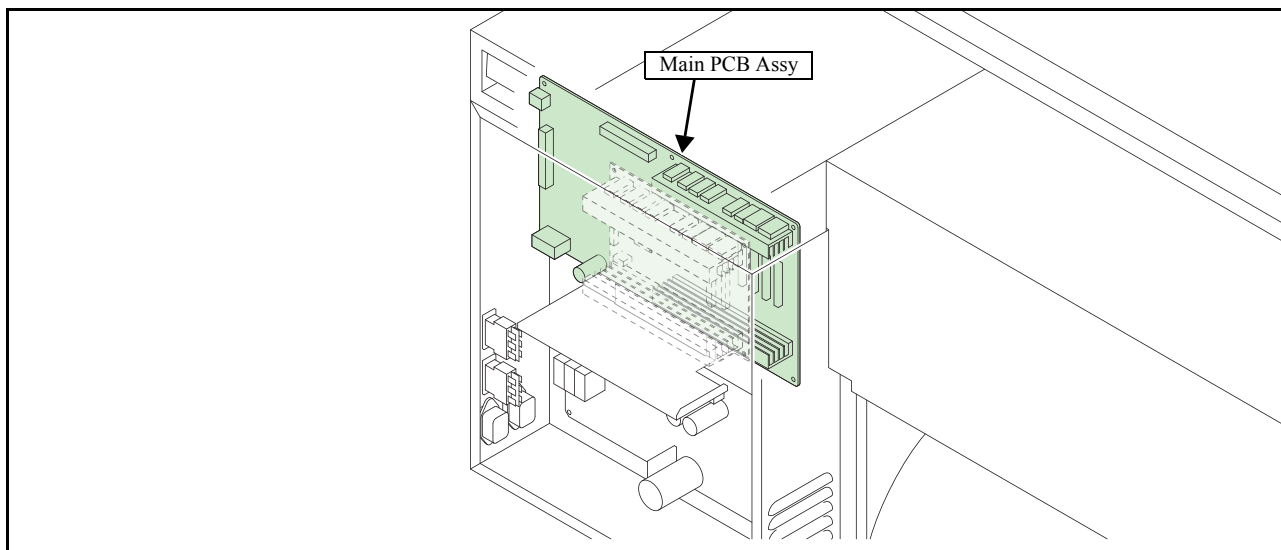
5. Reverse the disassembly procedure for reassembly.



Before mounting the power unit box cover, adjust the voltage of the power supply PCB assy.

## 6.4.2 Main PCB Assy

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### ■ Outline

If main PCB assy has replaced, various parameters must be registered to main PCB assy ROM after the replacement. Considerable time is required to readjust and reconfigure these settings. Therefore, for ease of use and better printing quality, copy (upload) the setting value to a PC before replacement, and write (download) the copied settings onto the main PCB assy from the PC after replacement.



If it is impossible to upload the parameters, conduct Parameter Draw to note the setting values. Then manually register the values after replacing the main PCB assy.

### ■ Work procedures



After turning off the sub and main power switches, unplug the power cord. Make sure to take 15 minutes before restarting the operation. It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also, there is a possibility of electric shock because of high power voltage applied to the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.



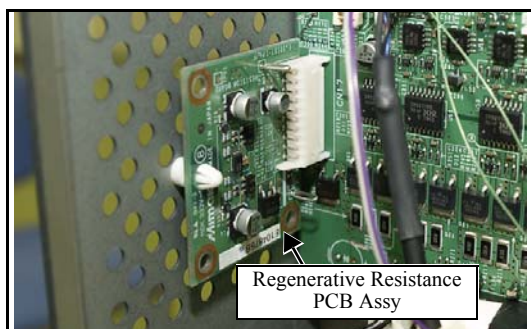
1. Turn off the main power supply and remove the power plug from the main body.

2. Remove the **power unit box cover**.

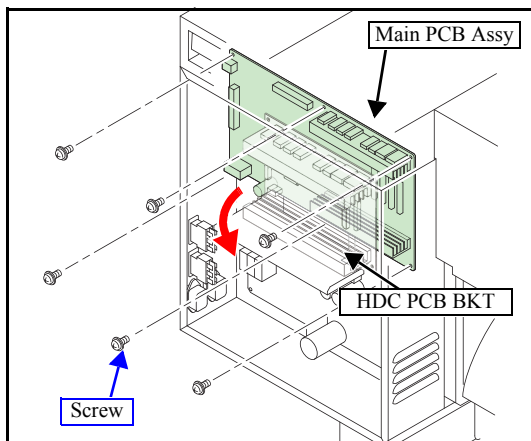
3. Disconnect all connectors on PCB.

## 6.4.2 Main PCB Assy

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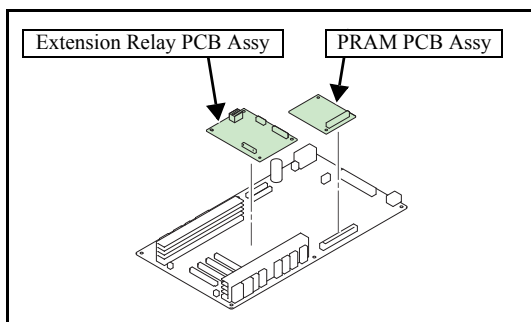


4. Draw the **regenerative resistance PCB assy** out of the main PCB assy.



5. Open the HDC PCB BKT.

6. Remove the screws and then remove the **main PCB assy**.



7. Remove the following PCB from the removed main PCB assy.

- **PRAM PCB Assy**
- **Extension Relay PCB Assy**

8. Reverse the disassembly procedure for reassembly.

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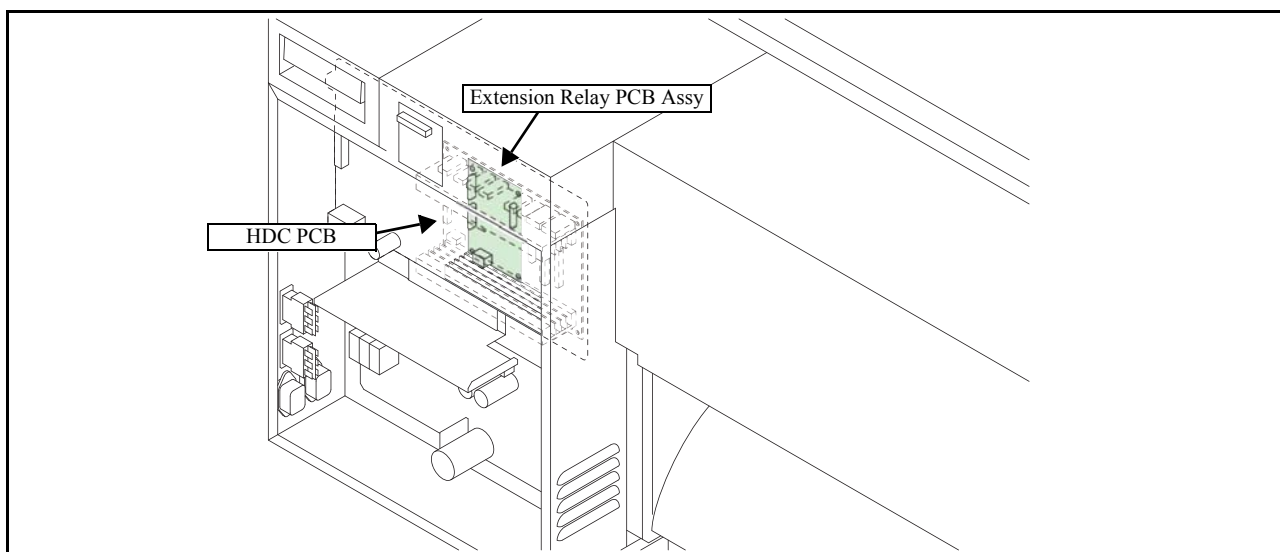
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## 6.4.3 Extension Relay PCB Assy

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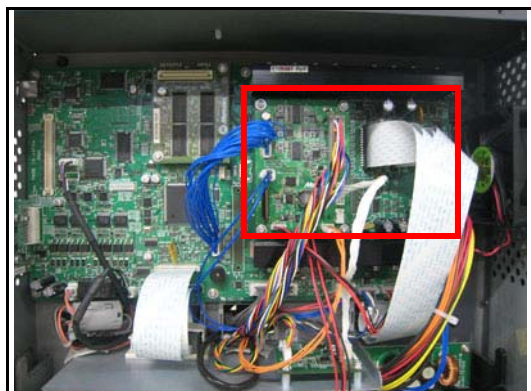
### ■ Work procedures



After turning off the sub and main power switches, unplug the power cord. Make sure to take 15 minutes before restarting the operation. It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also, there is a possibility of electric shock because of high power voltage applied to the high-pressure part of the power supply PCB Assy. Take care to avoid contact with it.



1. Turn off the main power supply and remove the power plug from the main body.

2. Remove the **power unit box cover**.

3. Remove the **Extension relay PCB Assy** from the main PCB Assy.

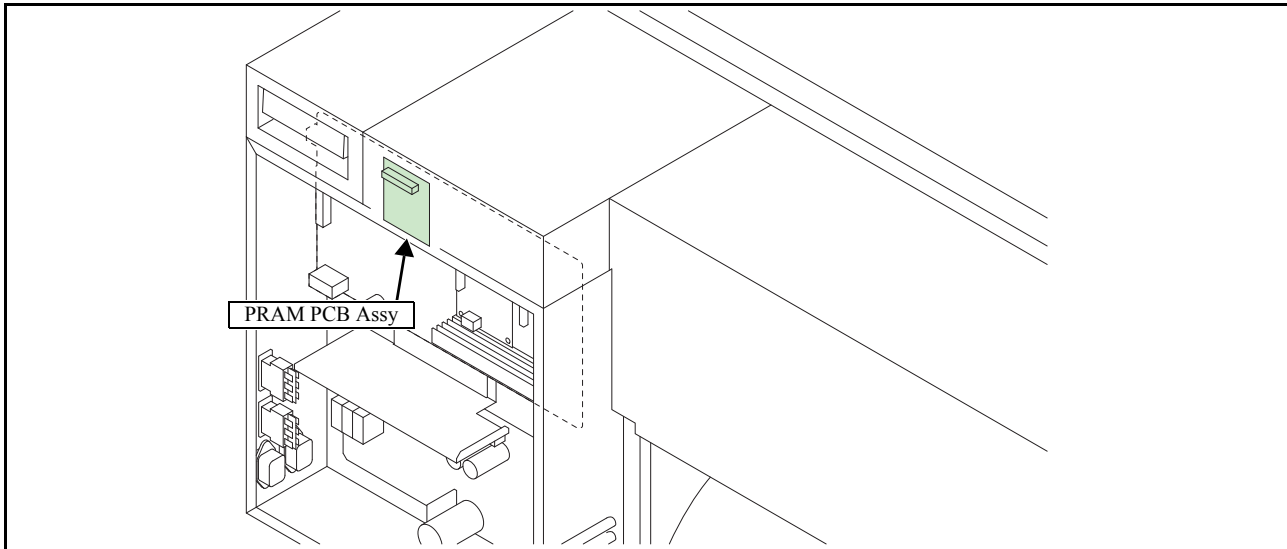


An inter-PCB connector is used to connect the extension relay PCB Assy to main PCB Assy.

4. Reverse the disassembly procedure for reassembly.



## 6.4.4 PRAM PCB Assy



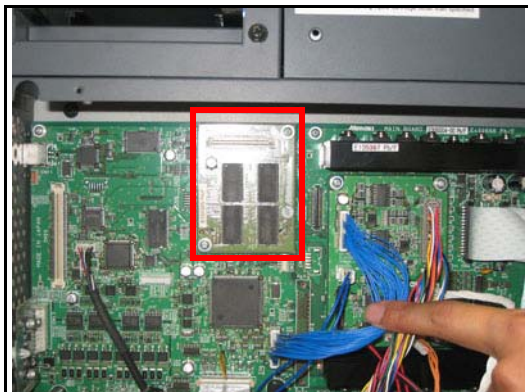
### ■ Work procedures



After turning off the sub and main power switches, unplug the power cord. Make sure to take 15 minutes before restarting the operation. It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also, there is a possibility of electric shock because of high power voltage applied to the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.



1. Turn off the main power supply and remove the power plug from the main body.

2. Remove the **power unit box cover**.

3. Remove **PRAM PCB assy** from the main PCB assy.



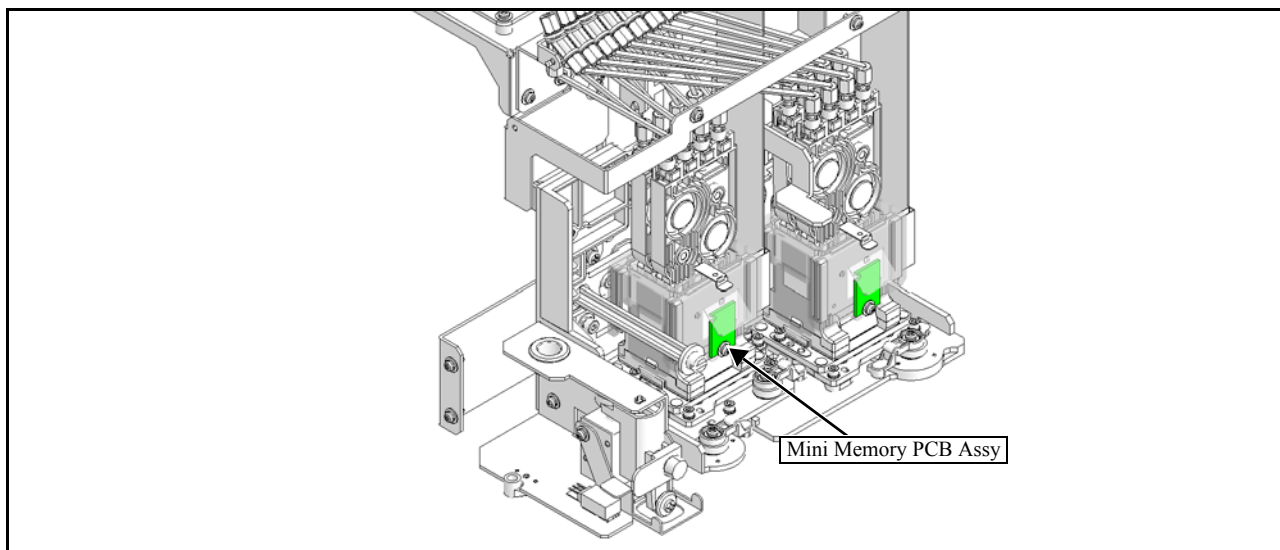
An inter-PCB connector is used to connect the PRAM PCB assy to the main PCB assy.

4. Reverse the disassembly procedure for reassembly.



## 6.4.5 Mini Memory PCB Assy

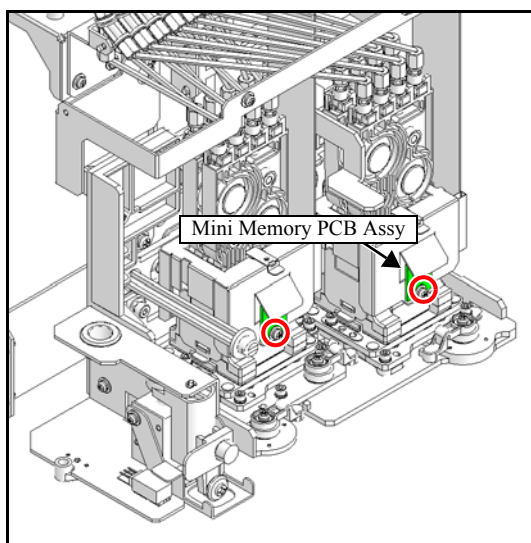
1.0



### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the following covers.

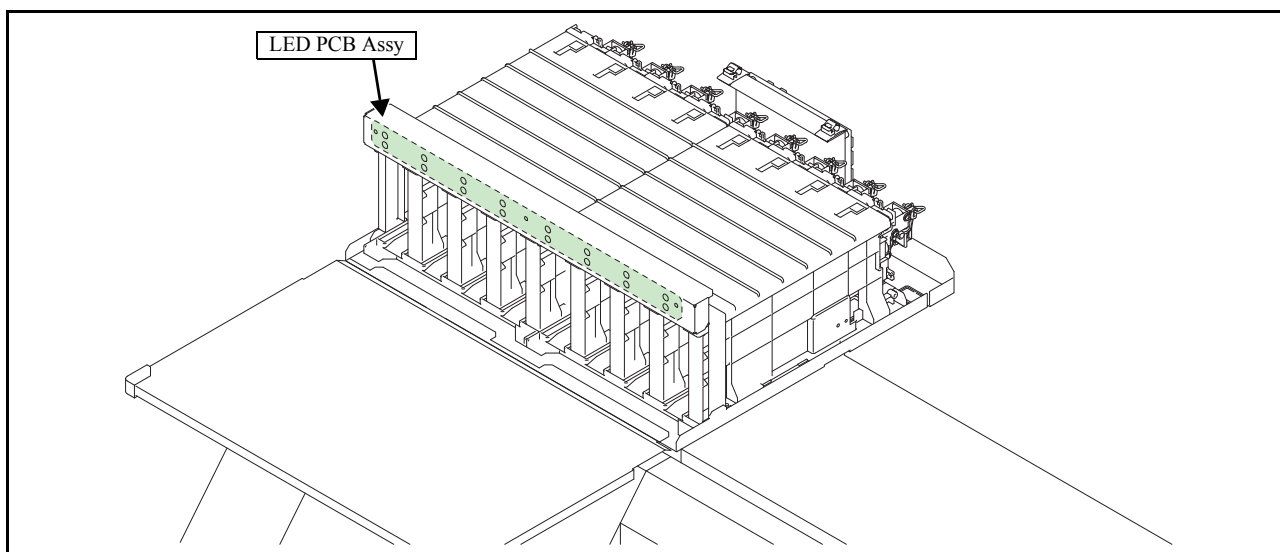
- Front Cover
- P Cover U
- P Cover L
- C Cover

2. Move the head unit on the platen.

3. Remove the screw and the mini memory PCB Assy. Then, remove all cables.

4. Reverse the disassembly procedure for reassembly.

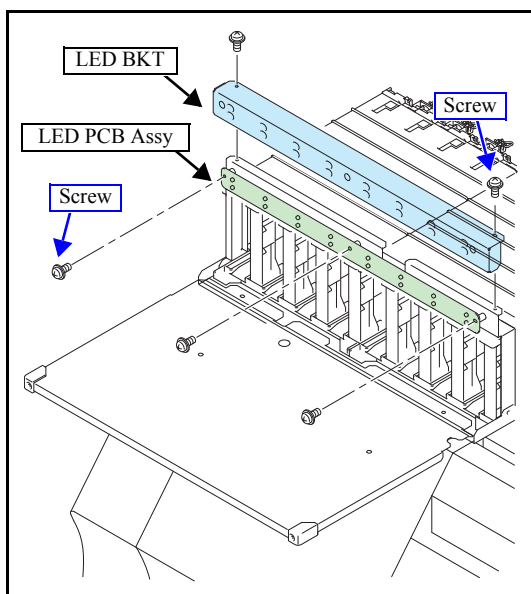
## 6.4.6 LED PCB Assy



### ■ Work procedures



Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the **cartridge cover**.
2. Remove **LED BKT**, remove the screws, and then **LED PCB Assy**.

3. Reverse the disassembly procedure for reassembly.

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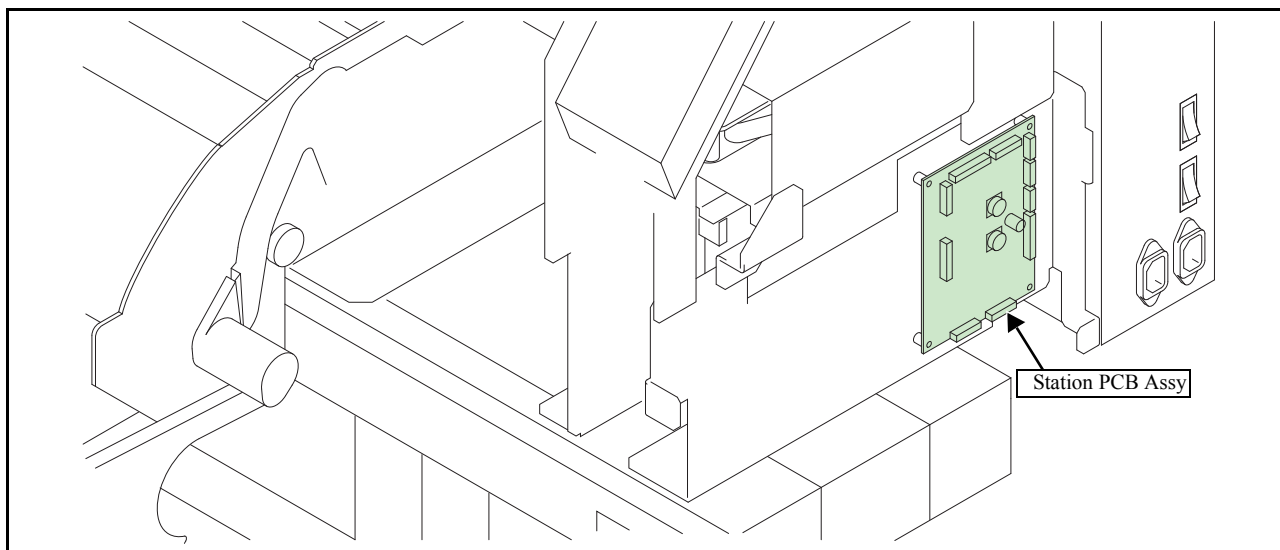
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## 6.4.7 Station PCB Assy



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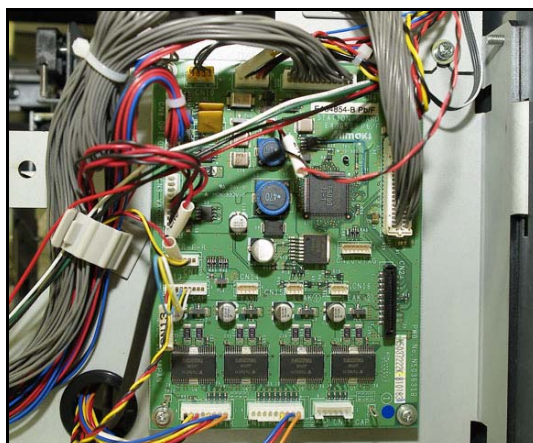
7

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### ■ Work procedures



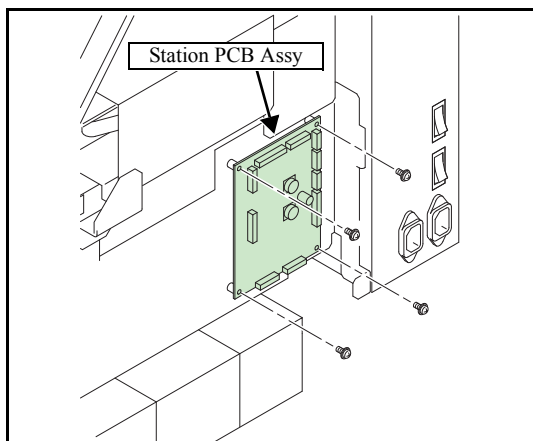
Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the following covers.

- KB Cover
- Right Cover

2. Disconnect all cables from PCB.

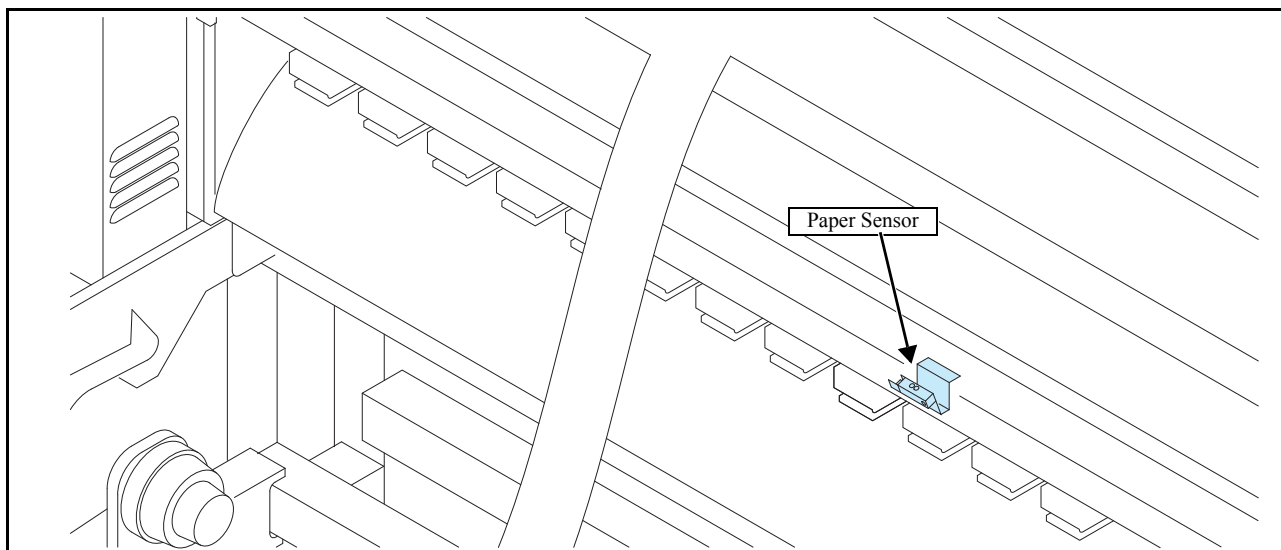


3. Remove the screws and then remove the **station PCB assy**.

4. Reverse the disassembly procedure for reassembly.

## 6.4.8 Paper Sensor

1.0



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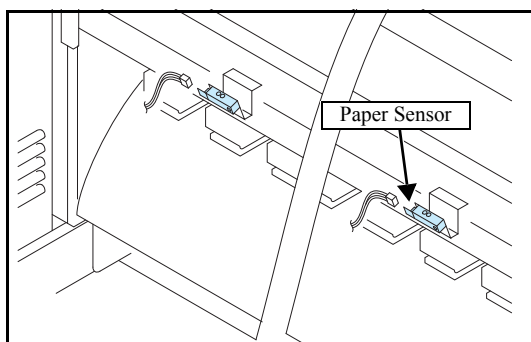
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### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

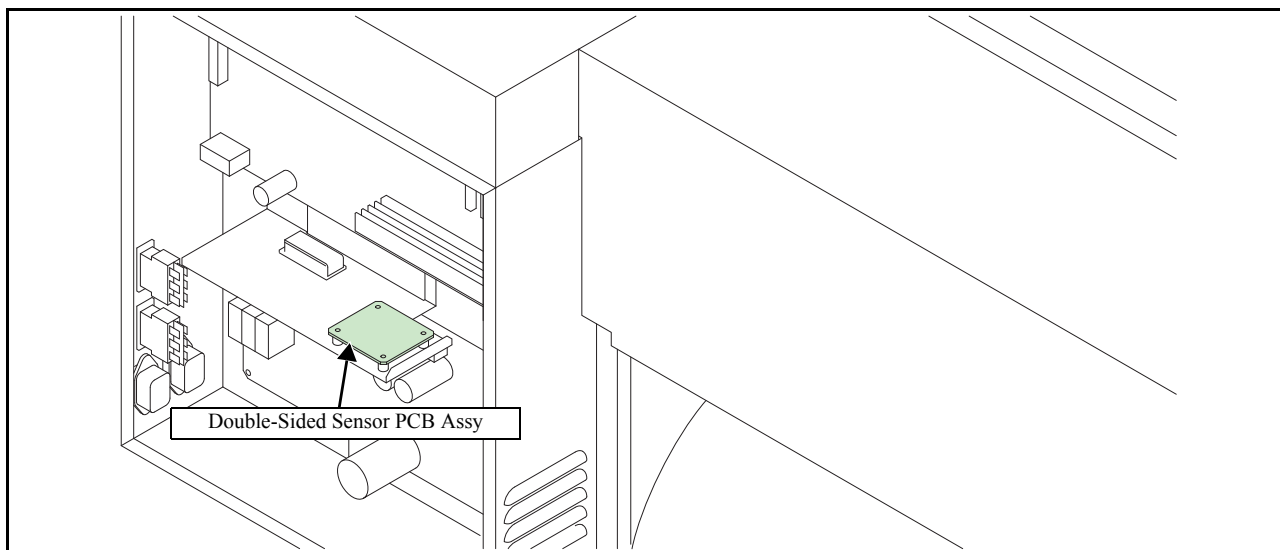


1. Remove the station cover and disconnect the connector (blue) of thermistor.
2. Remove the frame cover C and disconnect the connector (blue cable) of pre-heater. (upper: RR, lower: RL)
3. Remove the platen cover RR and RL.
4. Remove the two **paper sensors** and then disconnect the connector.

5. Reverse the disassembly procedure for reassembly.

## 6.4.9 Double-Sided Sensor PCB Assy

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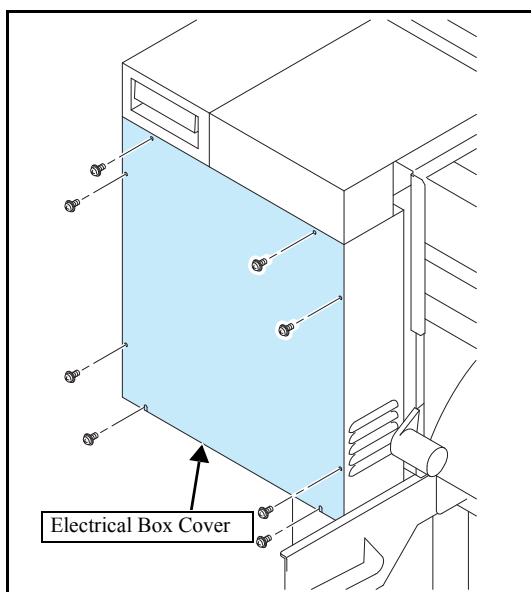
7

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### ■ Work procedures



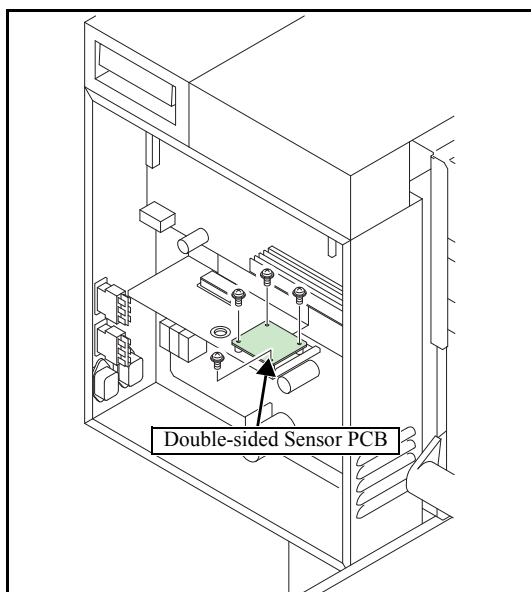
Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the **electrical box cover**.
2. Disconnect all connectors from the PCB.

## 6.4.9 Double-Sided Sensor PCB Assy

1.0



3. Remove the **double-sided sensor PCB**.

4. Reverse the disassembly procedure for reassembly.

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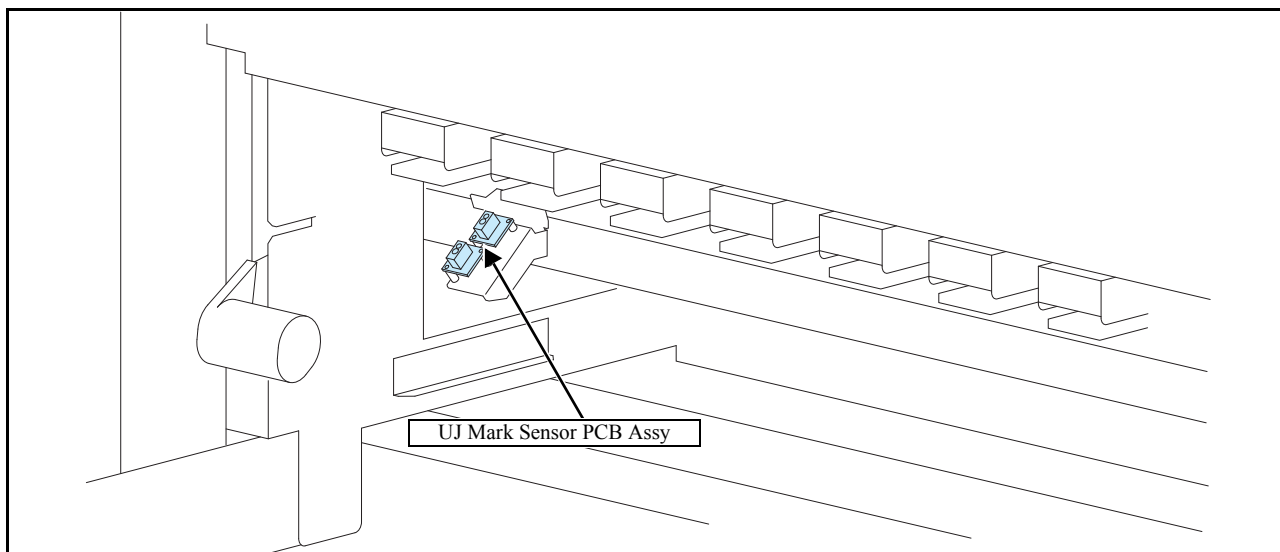
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## 6.4.10 UJ Mark Sensor PCB Assy

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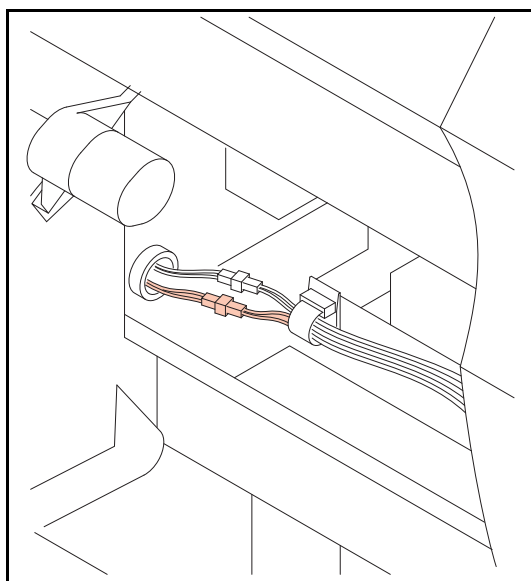
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### ■ Work procedures

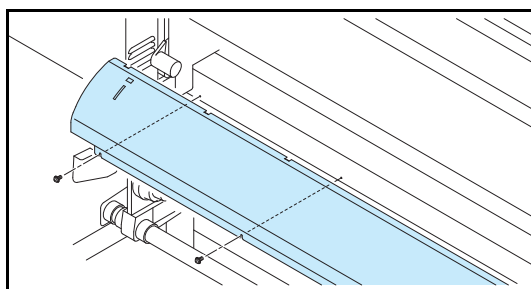


Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the station cover and disconnect the connector (blue) of thermistor.

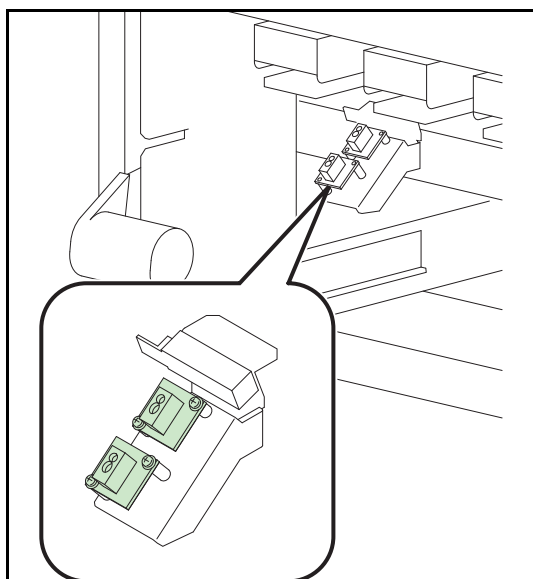
2. Remove the frame cover C and disconnect the connector (upper blue cable) of pre-heater.



3. Remove the platen cover RR.

## 6.4.10 UJ Mark Sensor PCB Assy

1.0



4. Disconnect the connectors and remove the two UJ mark sensor PCBs.

5. Reverse the disassembly procedure for reassembly.



Be careful of the UJ mark sensor PCB assy installation position.

(The R PCB should be installed in the front and the F PCB should be installed in the rear.)

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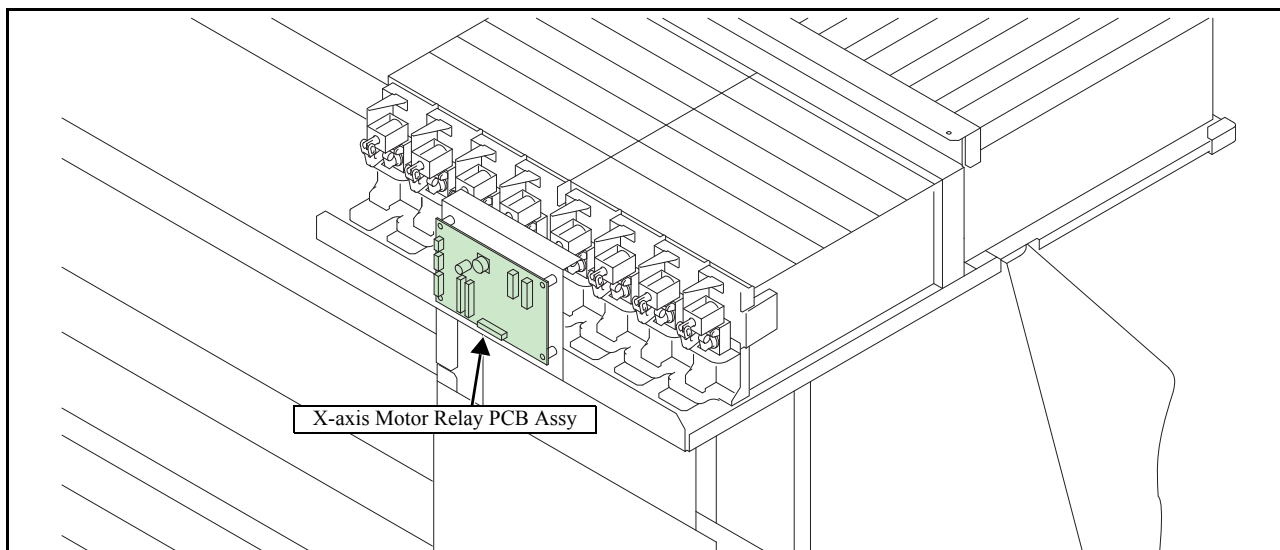
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## 6.4.11 X-axis Motor Relay PCB Assy



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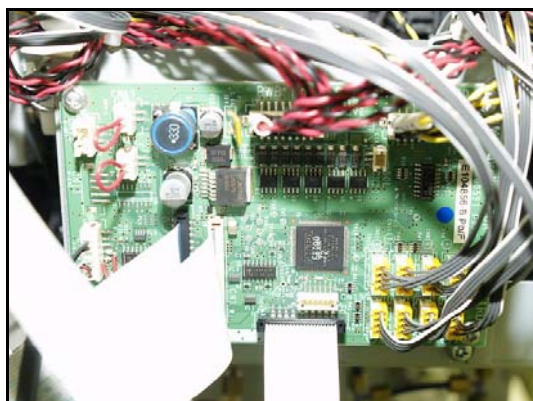
7

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### ■ Work procedures

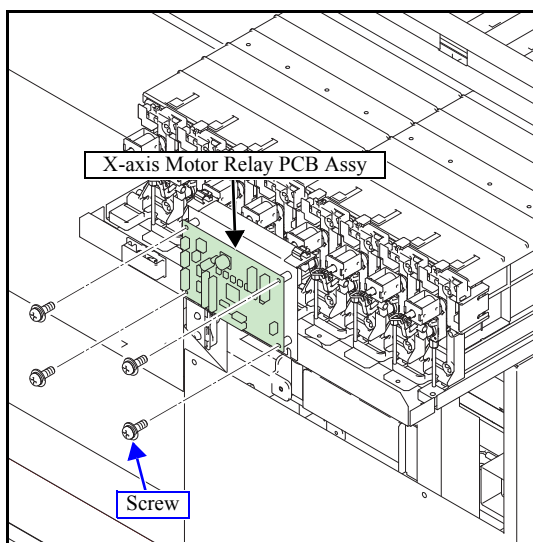


Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the **ICU Cover R**.

2. Disconnect all FFCs and connectors from PCB.

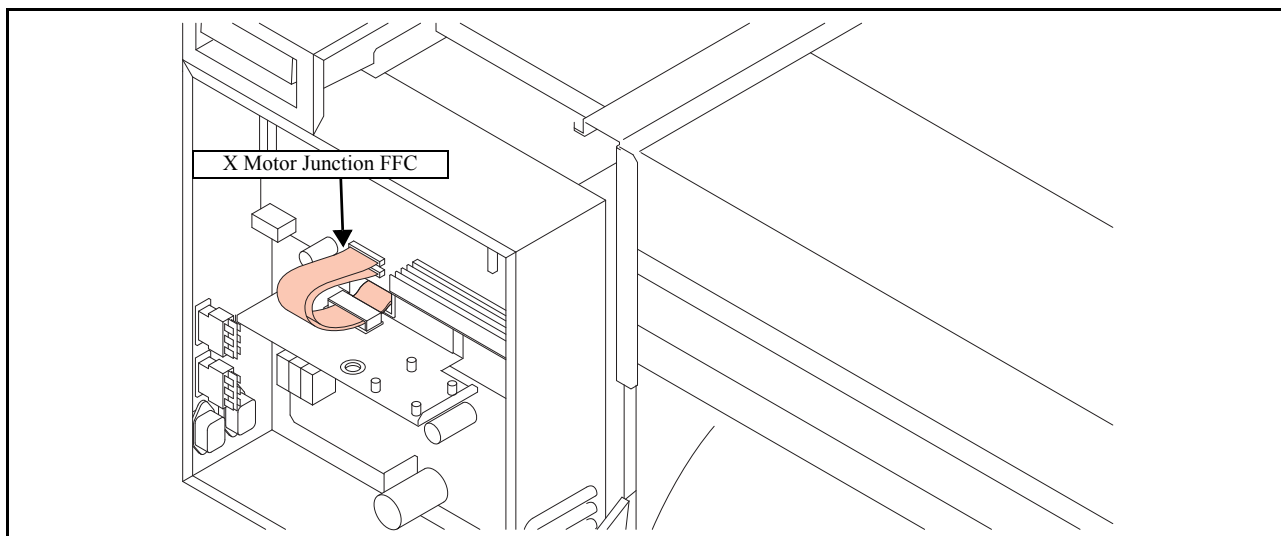


3. Remove the screws and then remove the **X-axis motor relay PCB assy**.

4. Reverse the disassembly procedure for reassembly.

## 6.4.12 X Motor Junction FFC 260 (1) and 260 (2)

1.0



### ■ Work procedures



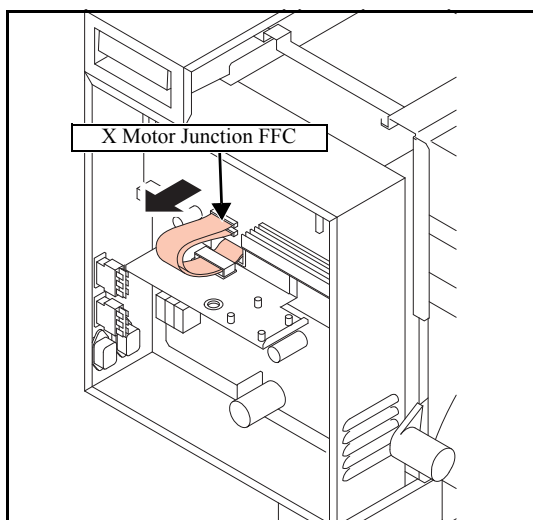
Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.

1. Remove the following covers.

- Y cover R
- ICU cover R
- Wiring cover
- Power unit box cover

2. Remove the block core.

3. Unlock the connector, and pull and remove the X motor junction FFC 260 (1) and 260 (2).



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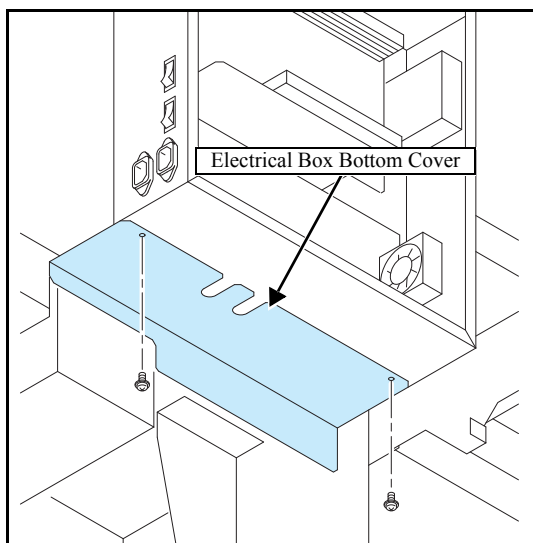
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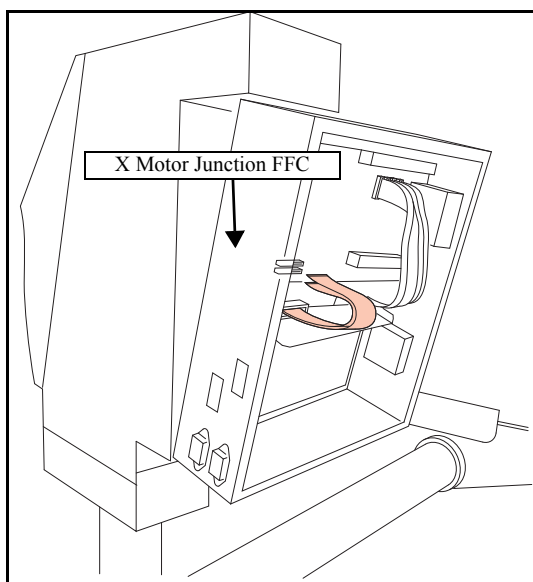
## 6.4.12 X Motor Junction FFC 260 (1) and 260 (2)

1.0



4. Remove the screws attaching the electrical box.

5. Remove the cover and connectors together from the bottom of the electrical box.



6. Tilt the electrical box toward the front, and remove the X motor junction FFC 260 (1) and 260 (2) from the back of the box.

7. Reverse the disassembly procedure for reassembly.

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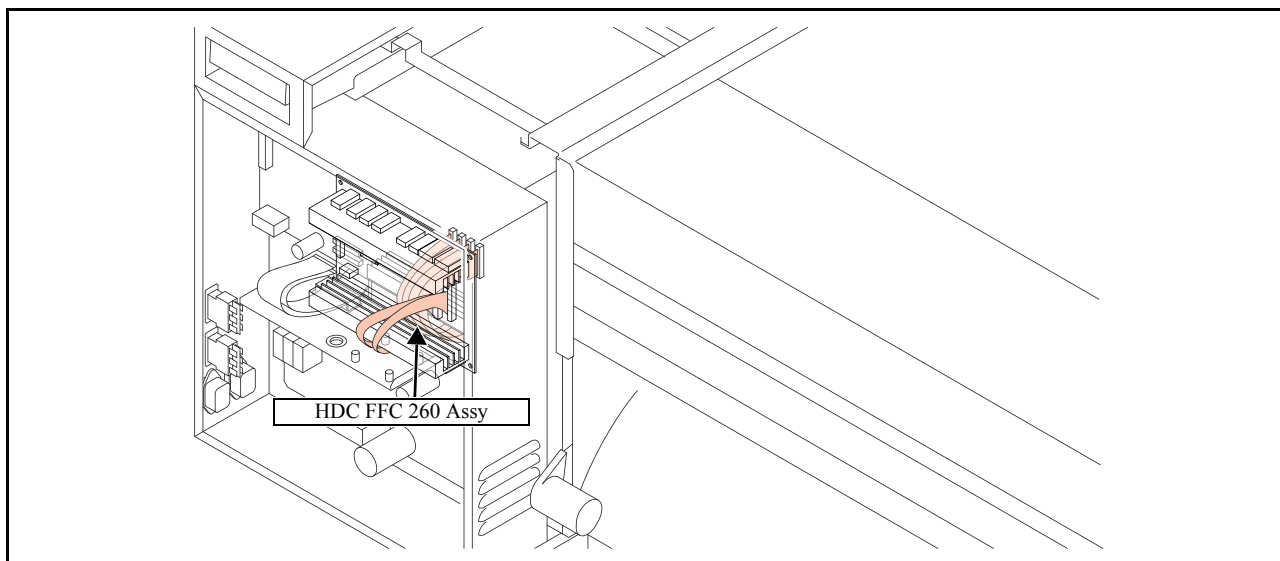
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## 6.4.13 HDC FPC 260 Assy

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### ■ Work procedures

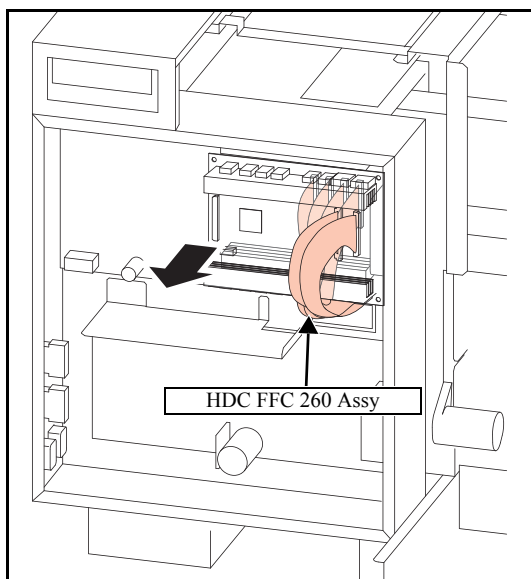


Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.

1. Remove the following covers.

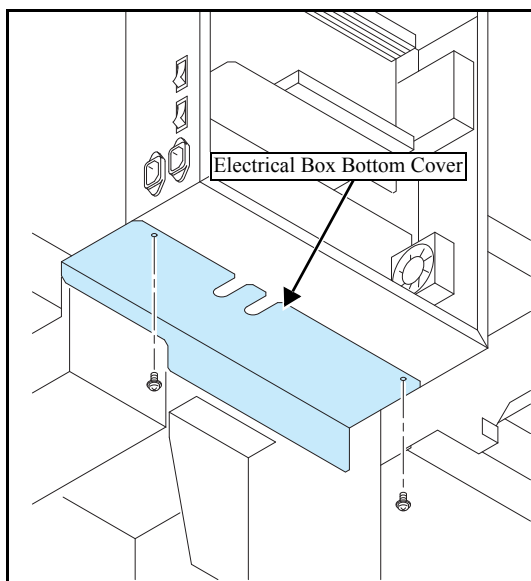
- Y cover R
- Wiring cover
- Power unit box cover

2. Unlock the connector, and pull and remove the six HDC FFC 260 Assy.



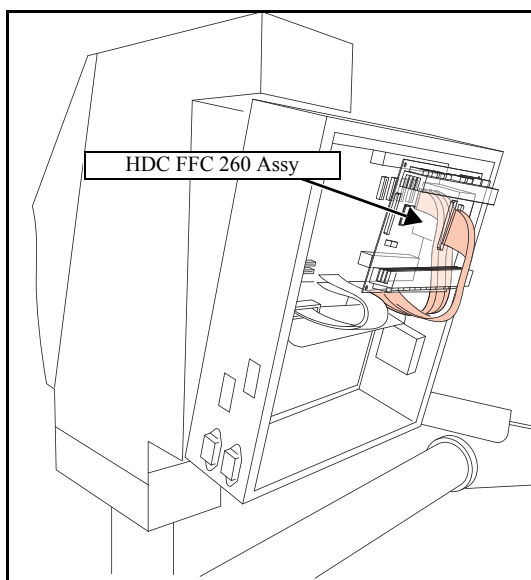
## 6.4.13 HDC FPC 260 Assy

1.0

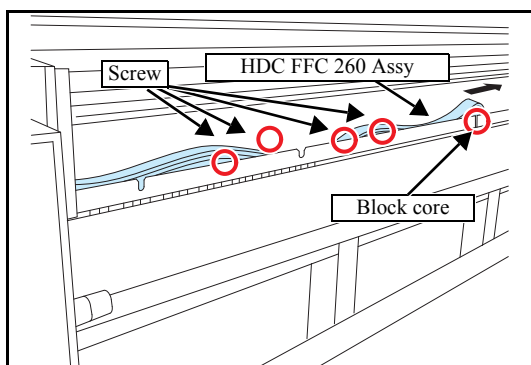


3. Remove the screws attaching the electrical box.

4. Remove the cover and connectors together from the bottom of the electrical box.



5. Tilt the electrical box toward the front, and remove the HDC FFC 260 Assy from the back of the box.



6. Loosen the four FFC fixing metal screws, remove the block core on the center of the main body, and then remove the HDC FFC 260 Assy from the center of the main body.

7. Reverse the disassembly procedure for reassembly.

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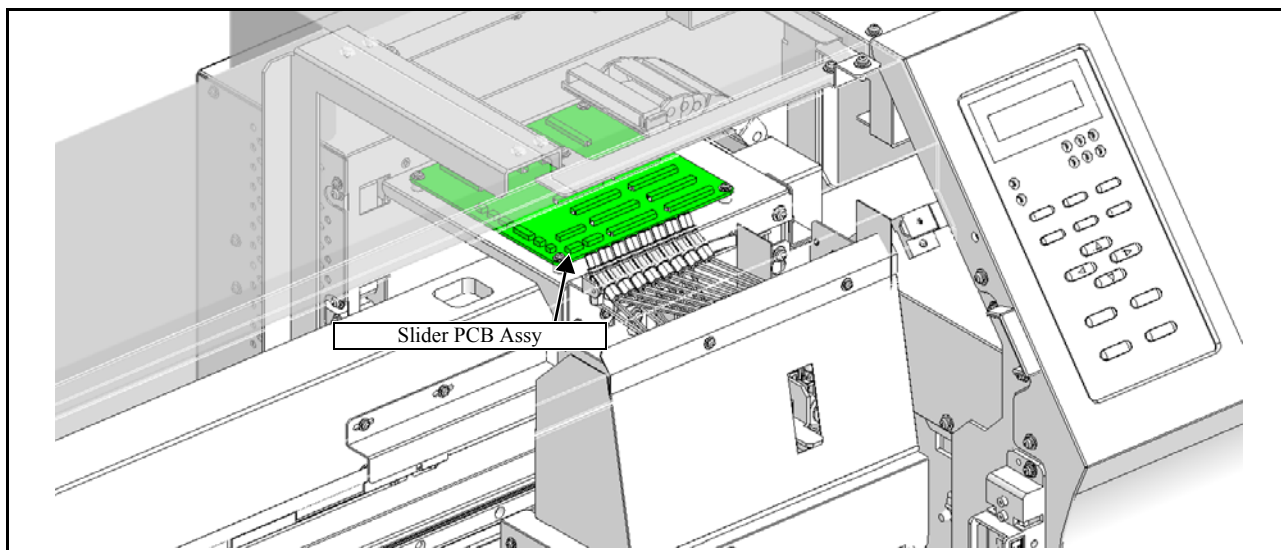
6

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## 6.4.14 Slider PCB Assy

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### ■ Work procedures



Warning

After turning off the sub and main power switches, unplug the power cord. Make sure to take 15 minutes before restarting the operation. It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

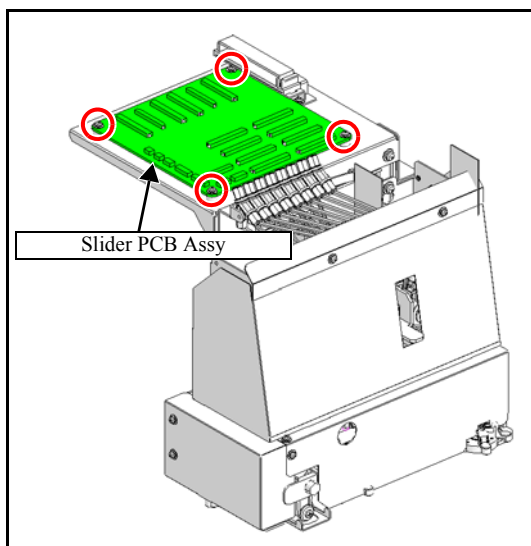
Also, there is a possibility of electric shock because of high power voltage applied to the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.



1. Remove the following covers.

- Front cover
- Y Cover F
- Y Cover R

2. Move the ink carriage onto the station and disconnect all cables from PCB.

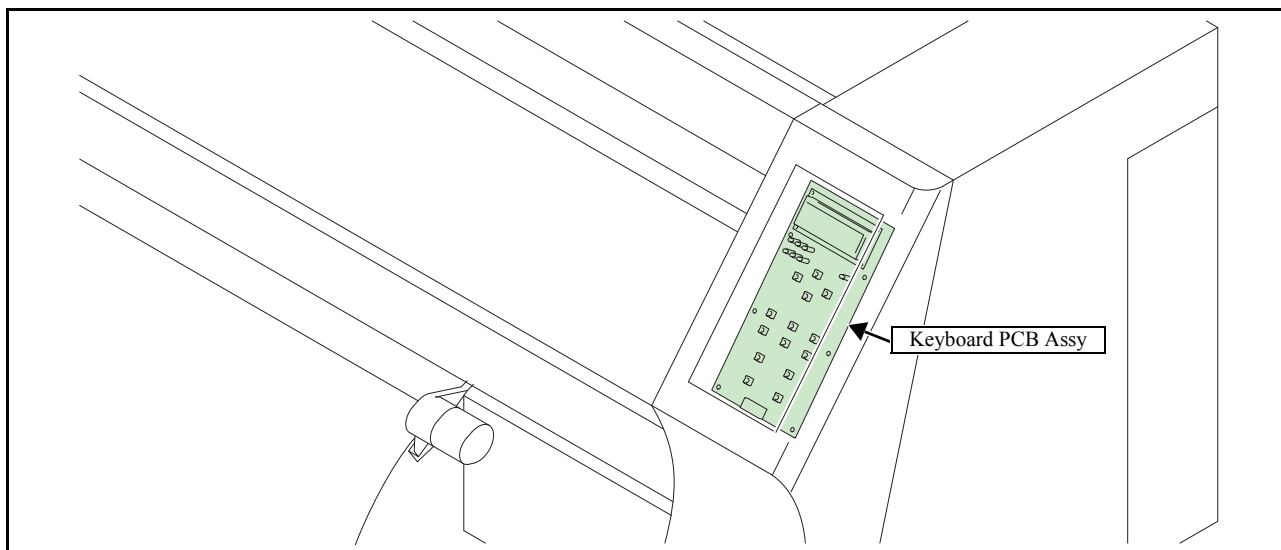


3. Remove the screws and then remove the **slider PCB assy**.

4. Reverse the disassembly procedure for reassembly.

## 6.4.15 Keyboard PCB Assy

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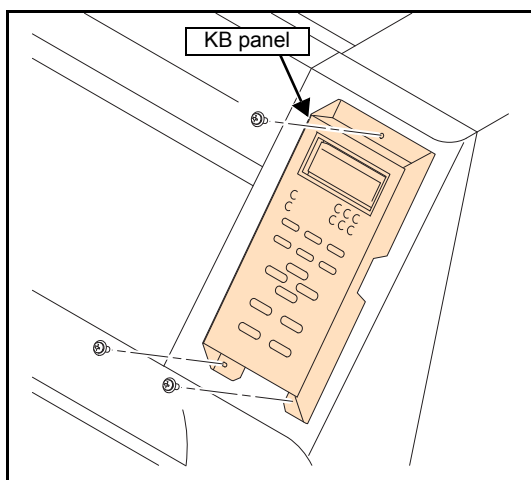
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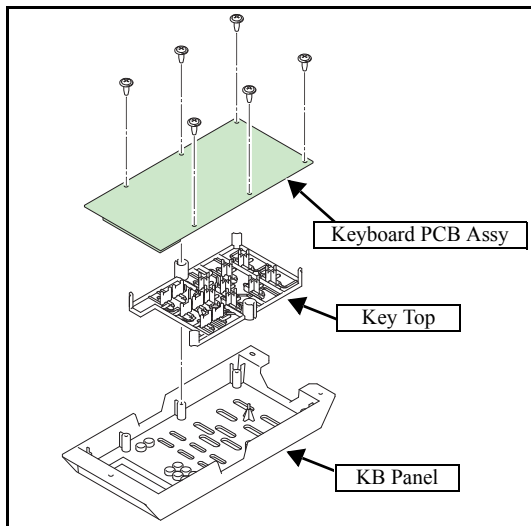
### ■ Work procedures



Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the **KB cover**.
2. Disconnect the cable from PCB, remove the screws, and then remove the KB panel.

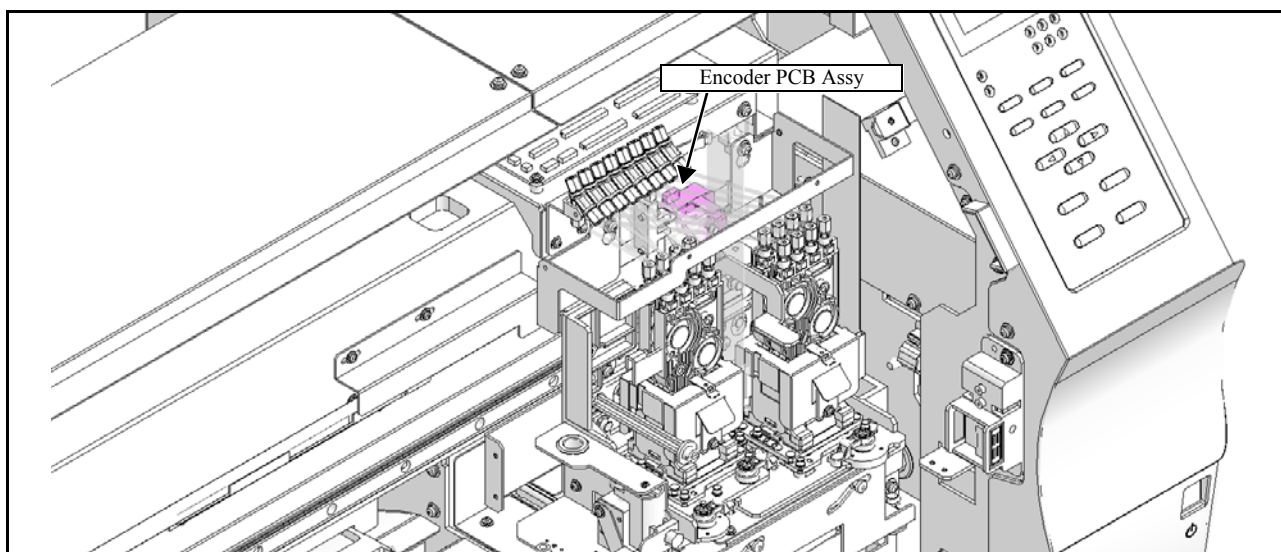


3. Remove the screws and then remove the **keyboard PCB assy**.

4. Reverse the disassembly procedure for reassembly.



## 6.4.16 Encoder PCB Assy



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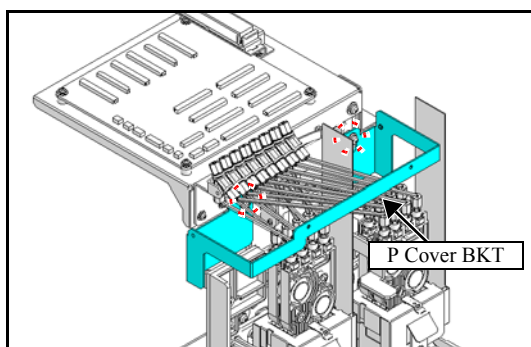
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### ■ Work procedures



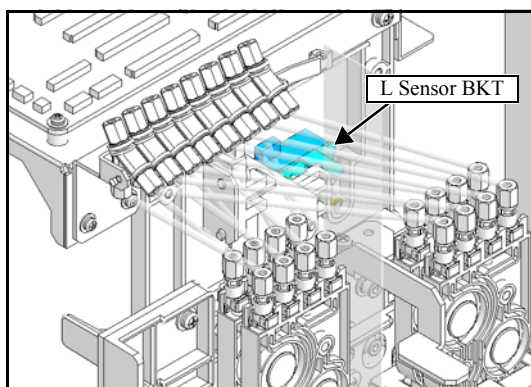
Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.



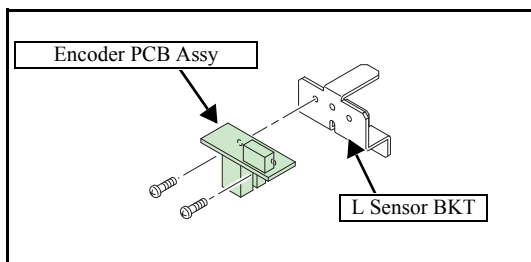
1. Remove the following covers.

- P Cover U
- P Cover L
- C Cover

2. Loosen the screws at two locations on the right and left to remove the **P cover BKT**.



3. Insert a driver through the gap of the damper to loosen the screws, remove the **encoder PCB assy** together with **L sensor BKT**, and then release the connector.

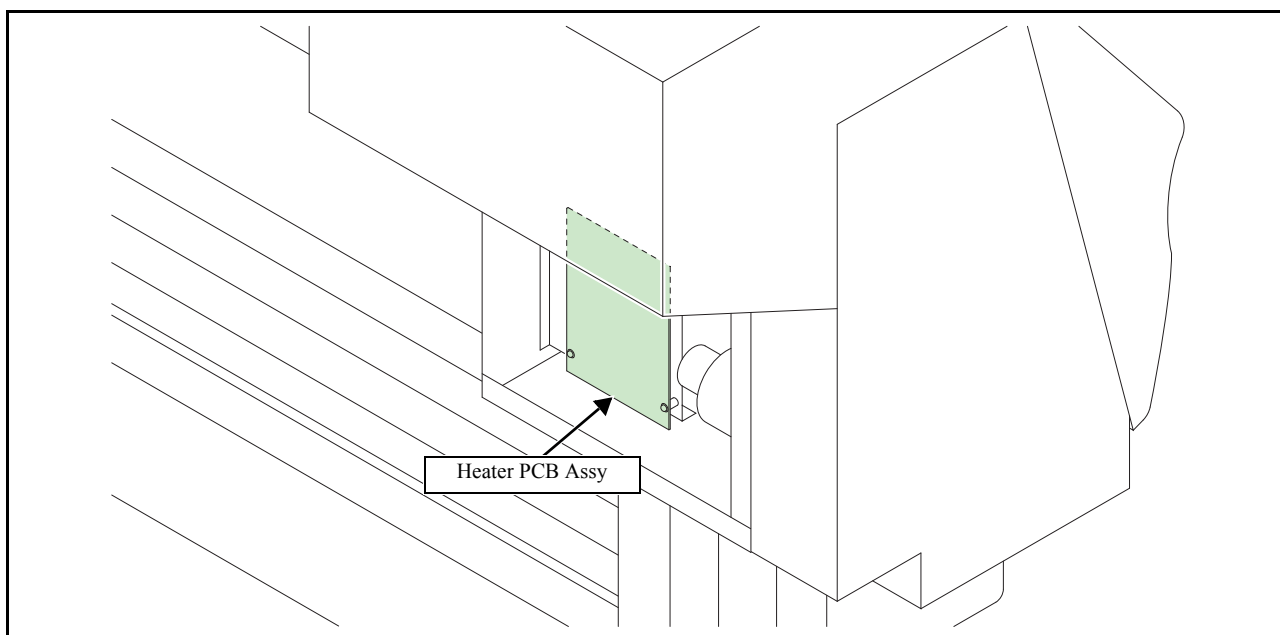


4. Remove the screws and then remove the **encoder PCB assy**.

5. Reverse the disassembly procedure for reassembly.



## 6.4.17 Heater PCB Assy



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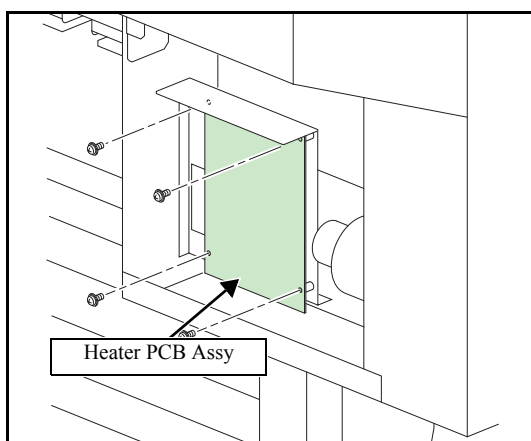
3

### ■ Work procedures



Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.

4



1. Remove the H PCB cover.

2. Disconnect all cables from PCB.

3. Remove the screws and then remove the heater PCB Assy.

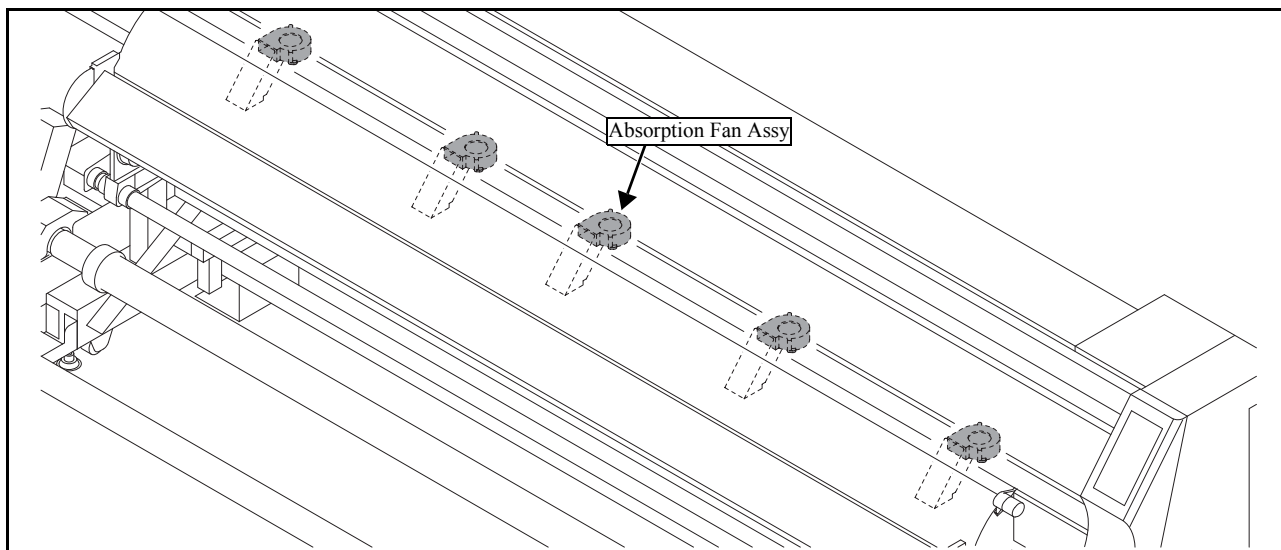
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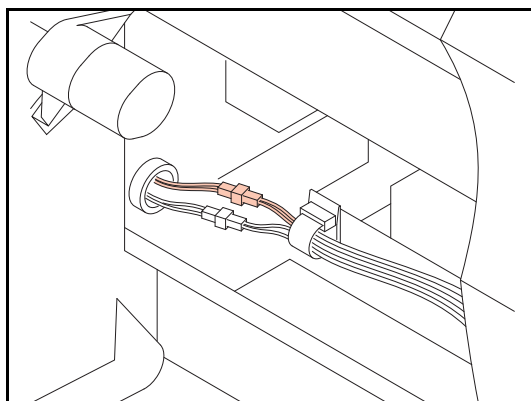
## 6.4.18 Fan Motor



### ■ Work procedures

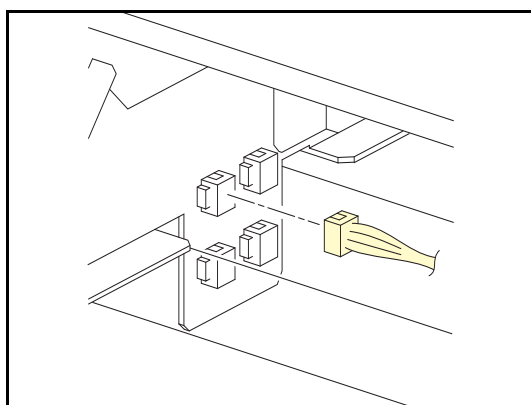


Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the front cover and Y cover F.

2. Remove the station cover and disconnect the connector (black) of thermistor.



3. Remove the frame cover C and disconnect the connector (upper black cable) of post heater.

4. Remove the platen cover FR and FL

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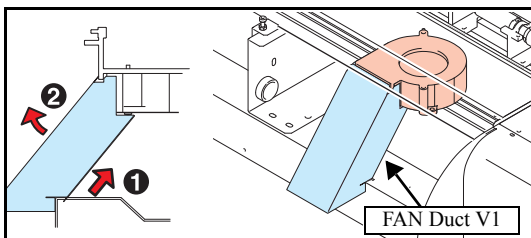
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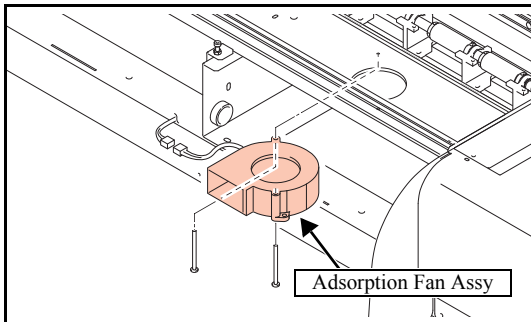
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5. Remove the **FAN duct V1** by lifting it obliquely.

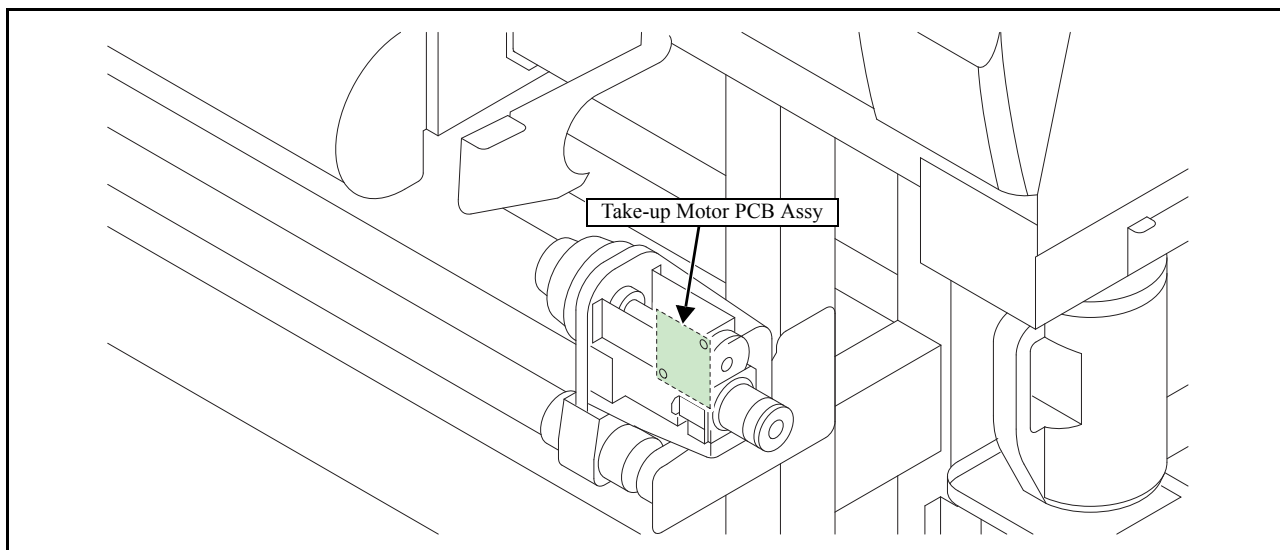


6. Remove the screws with a ratchet or stubby screwdriver, disconnect the connector and remove the **adsorption fan assy**.

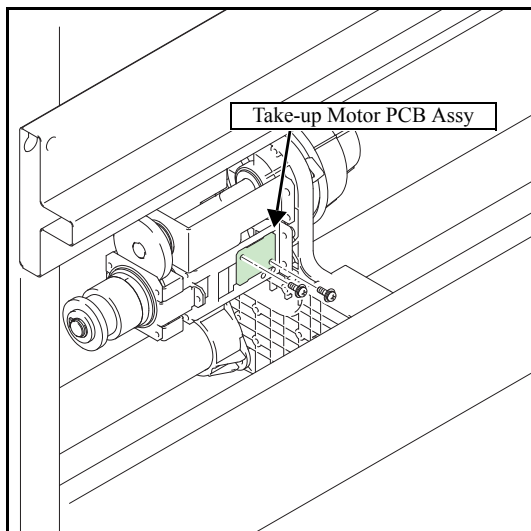
7. Reverse the disassembly procedure for reassembly.

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## 6.4.19 Take-up Motor PCB Assy



### ■ Work procedures



1. Remove the **take-up cover (S)**.
2. Disconnect all connectors and then remove the **take-up motor PCB assy**.

3. Reverse the disassembly procedure for reassembly.

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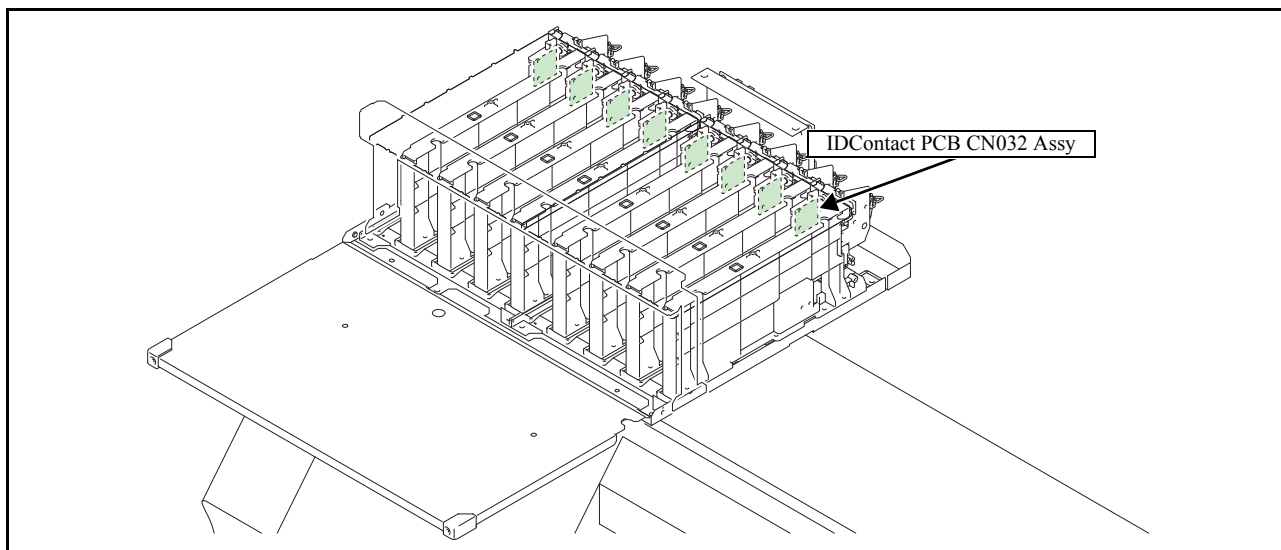
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## 6.4.20 ID Contact PCB CN032 Assy

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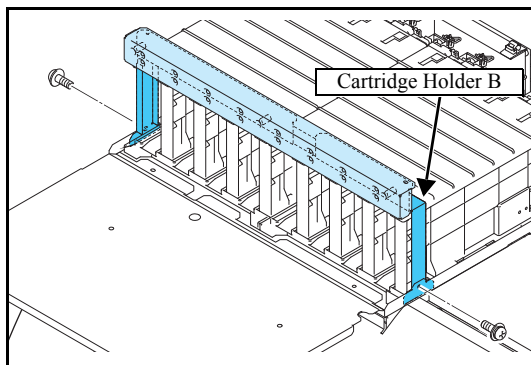
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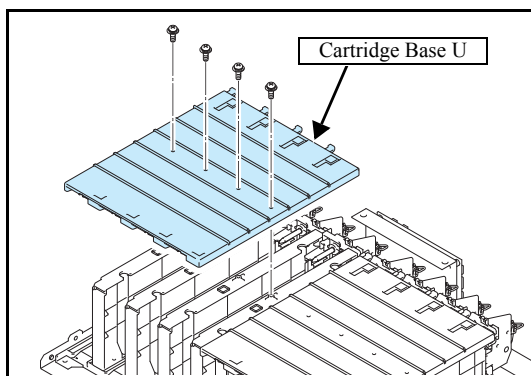
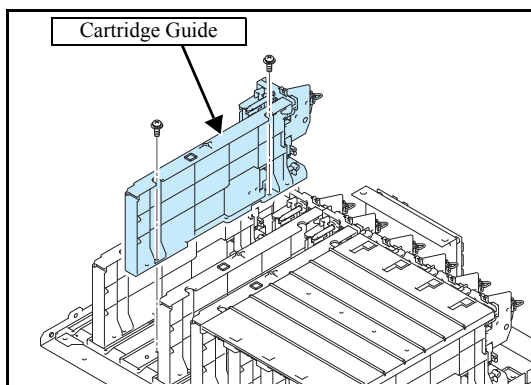
### ■ Work procedures



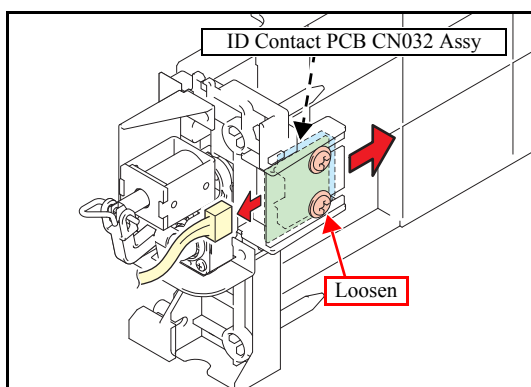
1. Remove the ICU Cover F, R.

2. Remove the **cartridge holder B**.

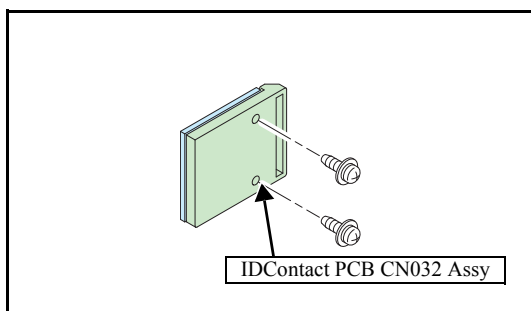

LED PCB FFC is connected. Pay attention to handling.


3. Remove **cartridge base U** related to the right or left side.

4. Remove the relevant **cartridge guide**.

## 6.4.20 ID Contact PCB CN032 Assy



5. Remove the connector and loosen the screws to take off the **ID contact PCB CN032 assy**.



6. Remove the screws and then remove the **ID contact PCB CN032 assy**.

7. Reverse the disassembly procedure for reassembly.

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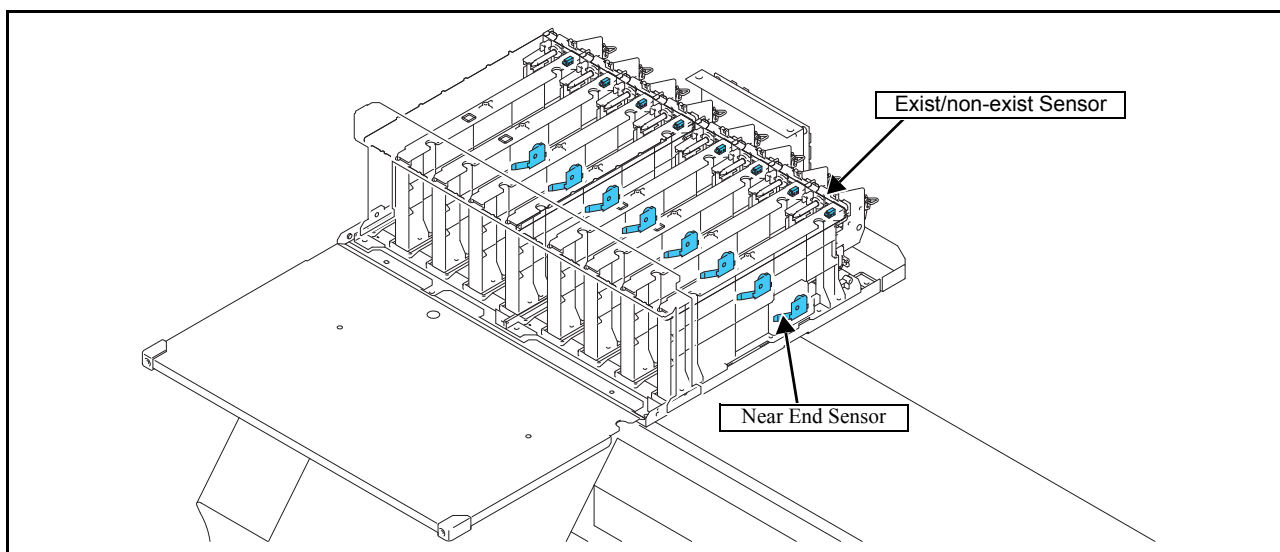
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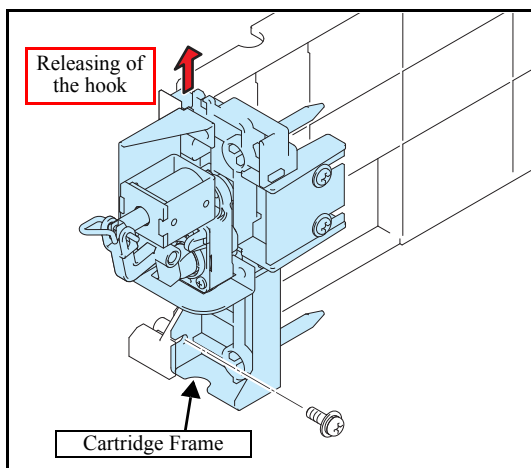
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## 6.4.21 Detector Assy, I/C, Y

1.0



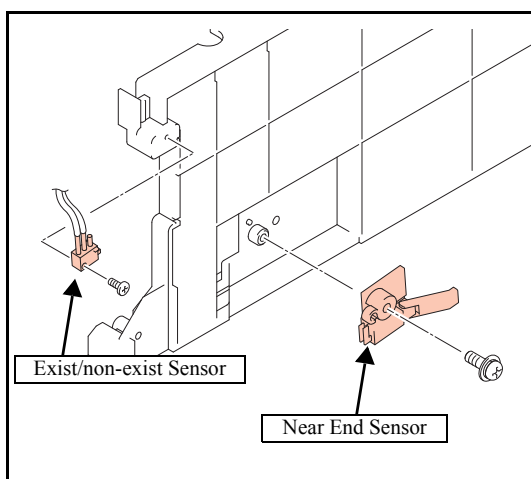
### Work procedures



1. Remove the relevant **cartridge guide**.

- See "6.4.20 ID Contact PCB CN032 Assy".

2. Remove the screw, release the hook and then remove **cartridge frame**.



3. Remove the **detector assy, I/C, Y** from the cartridge guide.

4. Reverse the disassembly procedure for reassembly.

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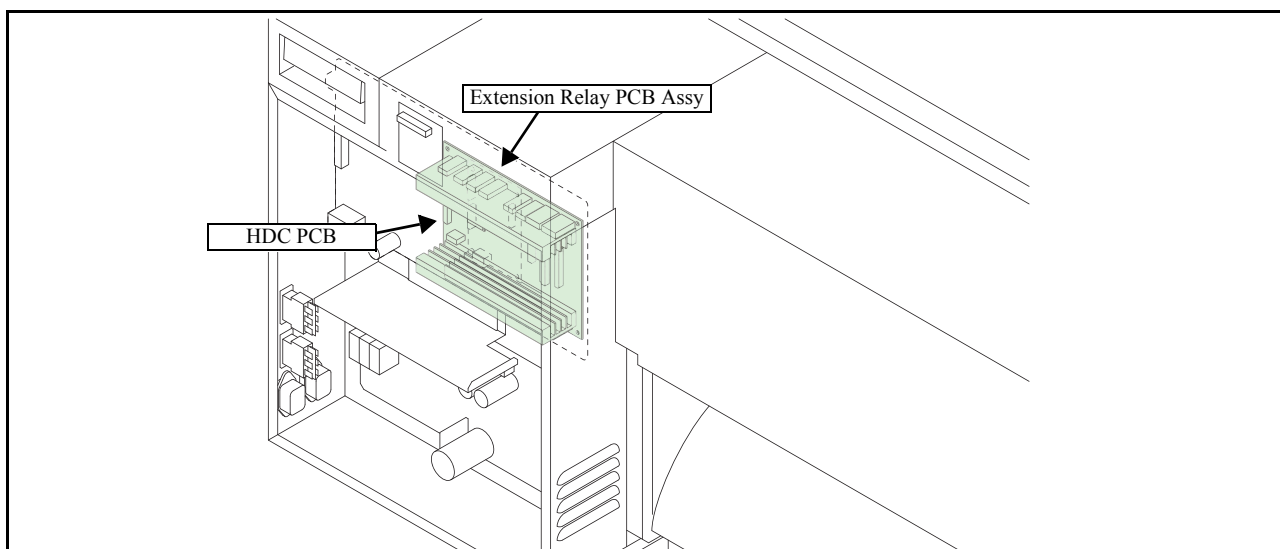
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## 6.4.22 HDC PCB Assy

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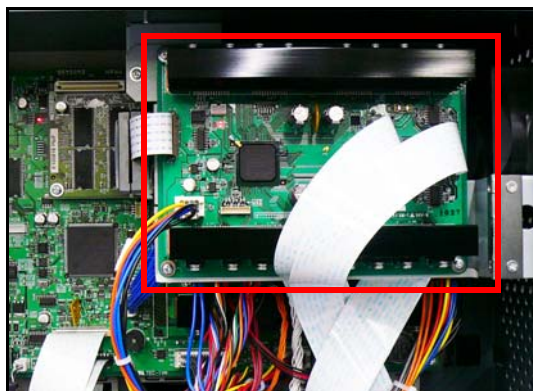
### ■ Work procedures



After turning off the sub and main power switches, unplug the power cord. Make sure to take 15 minutes before restarting the operation. It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also, there is a possibility of electric shock because of high power voltage applied to the high-pressure part of the power supply PCB Assy. Take care to avoid contact with it.



1. Turn off the main power supply and remove the power plug from the main body.

2. Remove the **power unit box cover**.

3. Remove all connectors on the PCB.

4. Remove the **HDC PCB Assy**.

5. Reverse the disassembly procedure for reassembly.



## 6.4.23 Replacement procedure for fuse of the Main PCB

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### ■ Outline

Fuse F13 of the Main PCB may blowout when [Error205 42V HEAD VOLTAGE] occurred.

When fuse F13 has blown out after operate "5.2.3 Checking Damage of the Main PCB ASSY", follow the directions below to replace the fuse.



Precaution: Make sure to follow the flow at "7.2.1 Electrical Troubleshooting" first and then replace the fuse.

1

### ■ Work procedures



After turning off the sub and main power switches in order, unplug the power code.

Check if no electric charge is remaining in the PCB.

Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"

It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.

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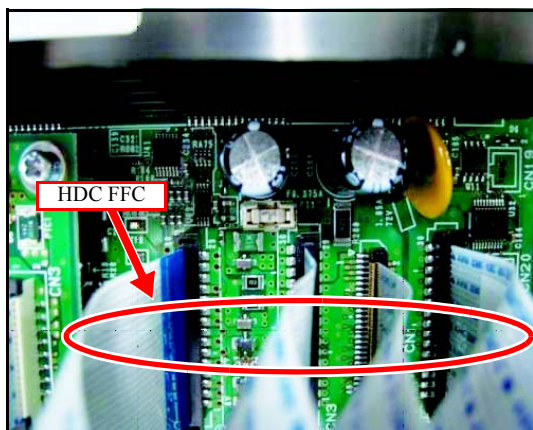
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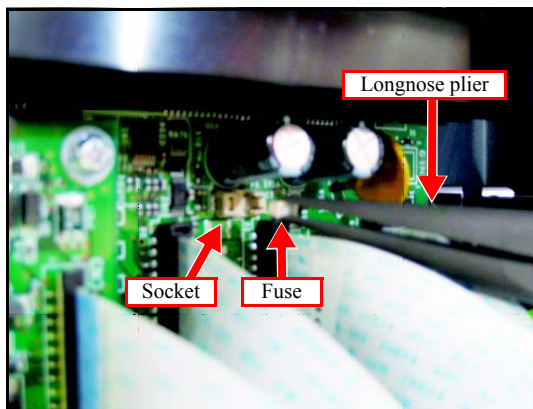
8



1. Remove the **Power Box Cover**.

2. Check if no electric charge is remaining in the PCB.

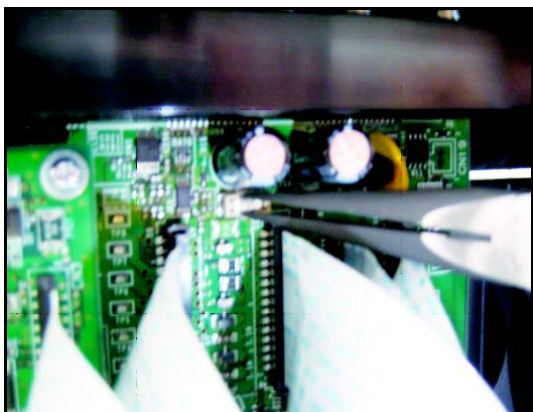
- Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts".




3. Remove the fuse from socket using longnose plier.



Be sure not to remove the fuse too strong.  
Also be careful not to break electric parts or cables around the fuse.



4. Fix the new fuse to the socket using longnose plier.



Check if the fuse is set in proper position of the socket while visual checking and touching with figures.

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## 6.4.24 Replacement procedure for fuse of the HDC PCB

### ■ Outline

Fuse F3 of the HDC PCB may blowout when [Error205 42V HEAD VOLTAGE] occurred.

When fuse F3 has blown out after operate "5.2.4 Checking Damage of the HDC PCB ASSY", follow the directions below to replace the fuse.



Precaution: Make sure to follow the flow at "7.2.1 Electrical Troubleshooting" first and then replace the fuse.

### ■ Work procedures



After turning off the sub and main power switches in order, unplug the power code.

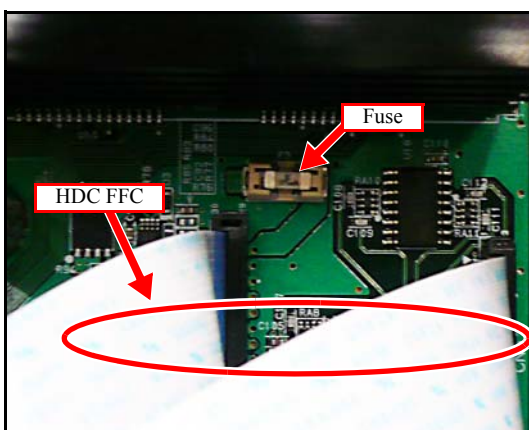
Check if no electric charge is remaining in the PCB.

Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"

It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

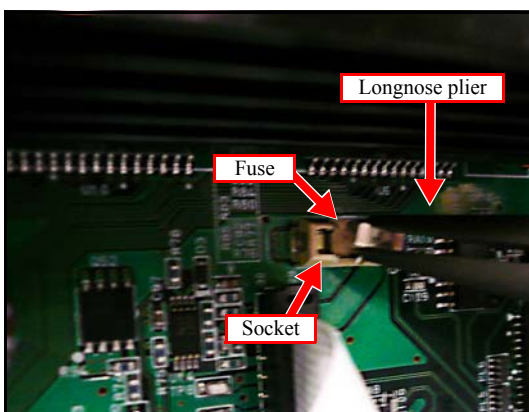
Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.



1. Remove the **Power Box Cover**.

2. Check if no electric charge is remaining in the PCB.

- Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts".



3. Remove the fuse from socket using longnose plier.



Be sure not to remove the fuse too strong.

Also be careful not to break electric parts or cables around the fuse.



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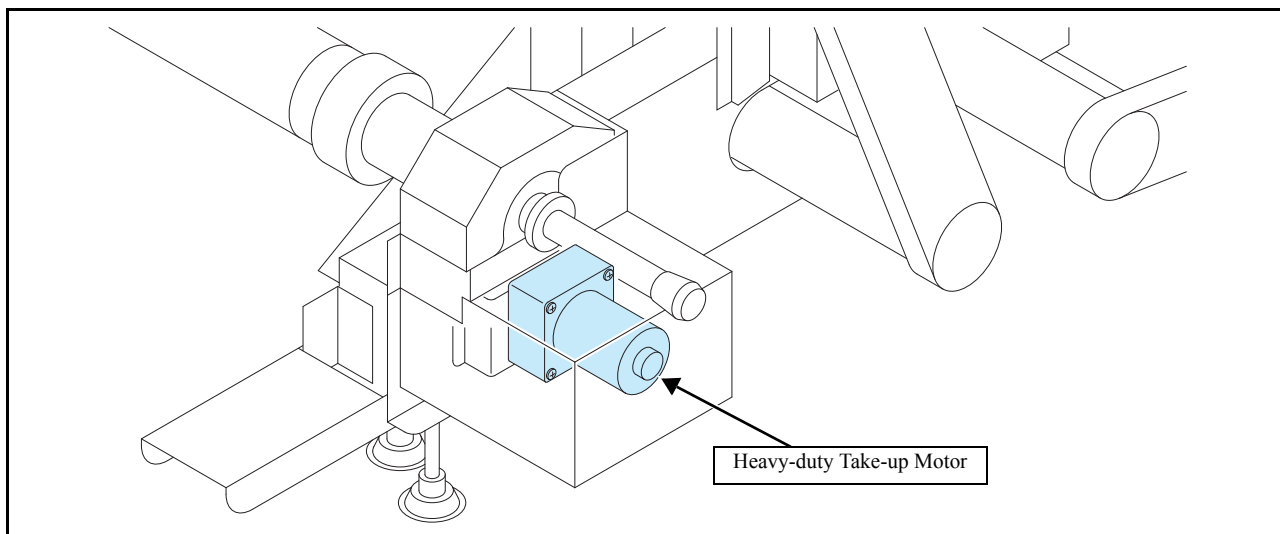
**8**

## Disassembly and Reassembly

<b>6.1</b> <b>Covers</b>	<b>6.2</b> <b>Ink-related Parts</b>	<b>6.3</b> <b>Drive System</b>
<b>6.4</b> <b>Electrical Parts</b>	<b>6.5</b> <b>Heavy-duty Take-up/Feeding Device</b>	<b>6.6</b> <b>Sensors</b>

## 6.5.1 Heavy-duty Take-up Motor

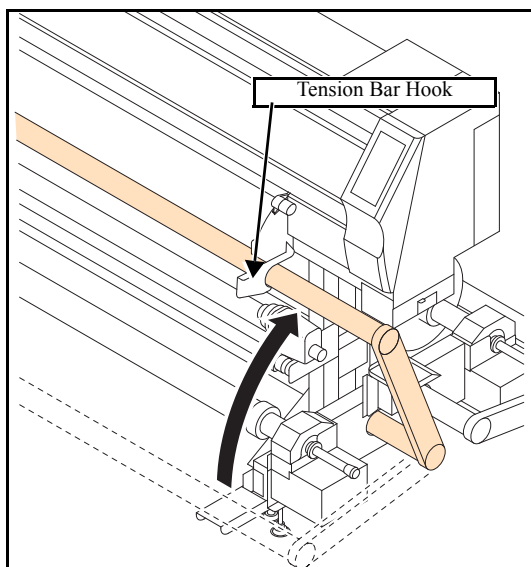
1.0



### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Lift the tension bar up to the top standby position, and attach it with its exclusive hook.

Make sure the hook is fixed to improve workability.

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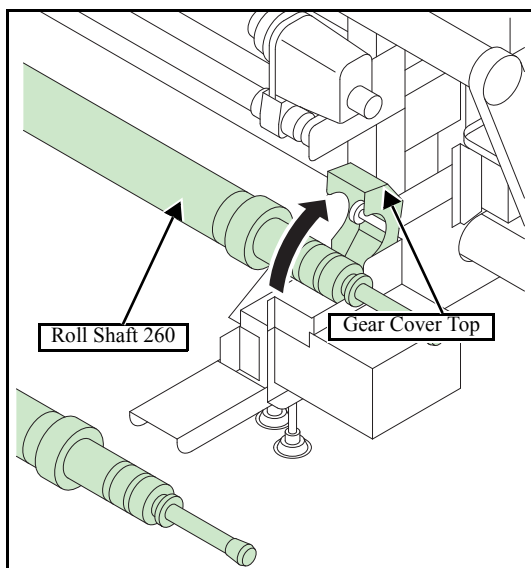
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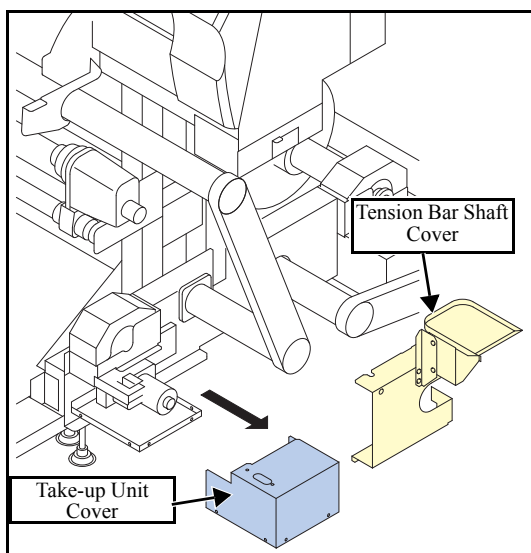
8

## 6.5.1 Heavy-duty Take-up Motor

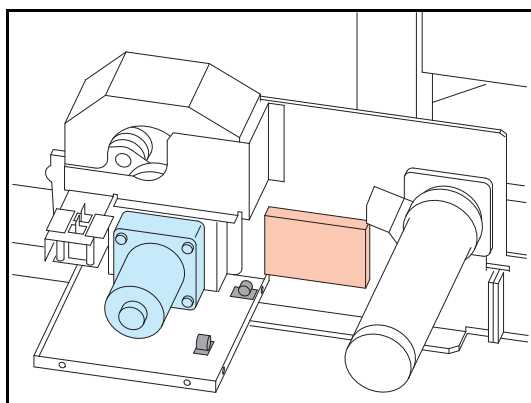
1.0



2. Open the gear cover top, which holds the roll shaft, and then remove the roll shaft.



3. Remove the take-up unit cover and tension bar shaft cover.



4. Remove the motor connector from the heavy-duty feeding/take-up PCB.

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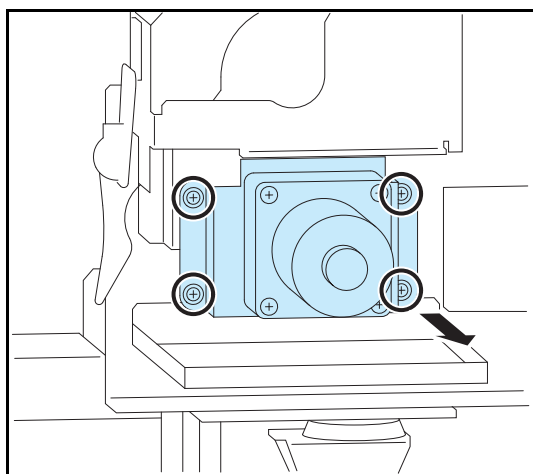
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## 6.5.1 Heavy-duty Take-up Motor

1.0



5. Remove the screws and then remove the take-up motor BKT, gear head, and motor together. (Be careful not to drop the roll shaft center gear.)

6. Reverse the disassembly procedure for reassembly.

\* Be sure to use the same size screw as the one that was removed.

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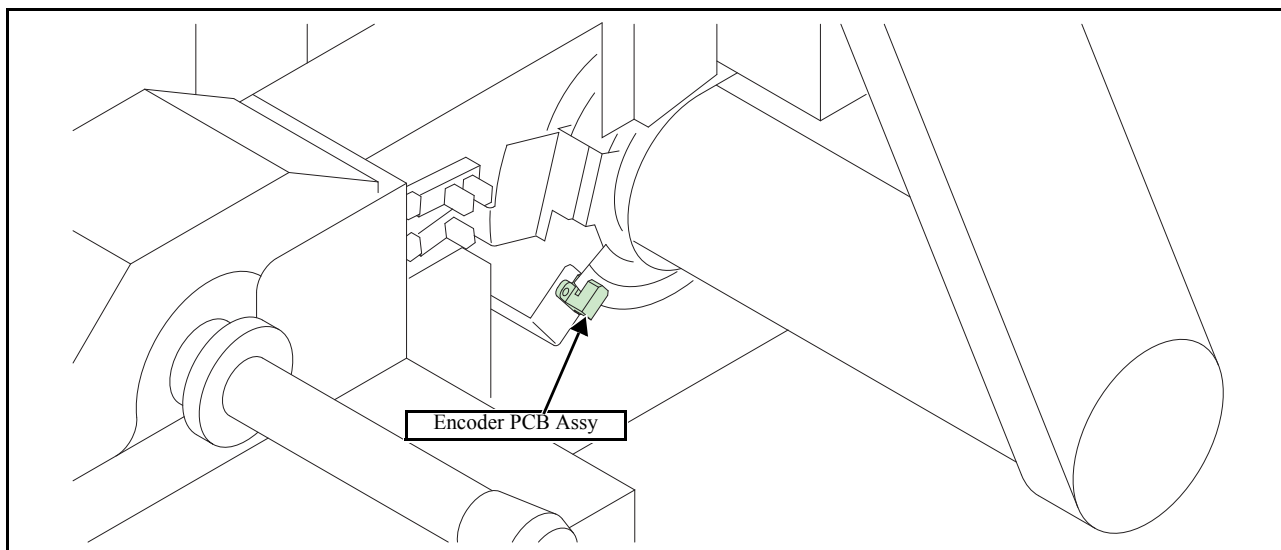
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## 6.5.2 Encoder PCB Assy (Take-up Device Side)

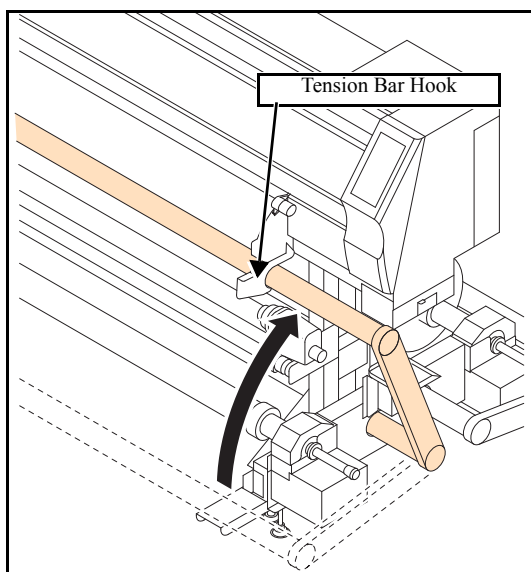
1.0



### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Lift the tension bar up to the top standby position, and attach it with its exclusive hook.

Make sure the hook is fixed to improve workability.

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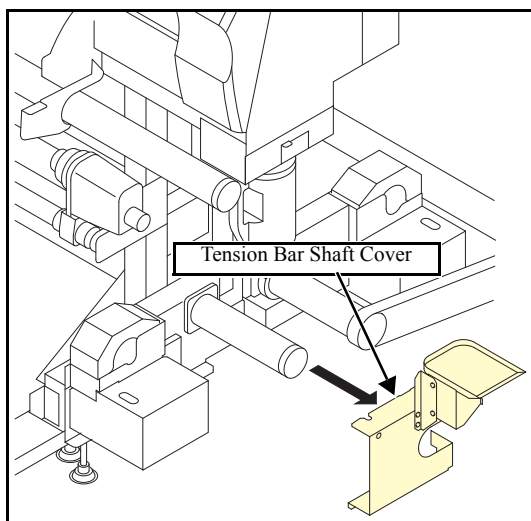
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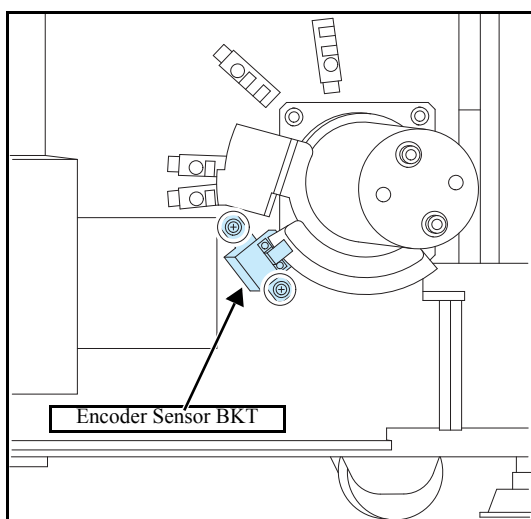
8

## 6.5.2 Encoder PCB Assy (Take-up Device Side)

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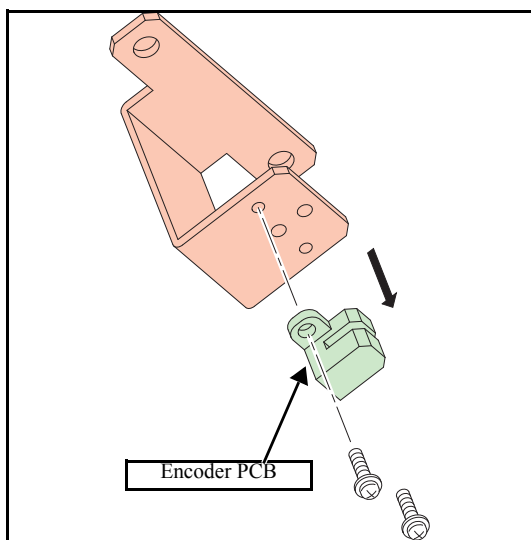


2. Remove the tension bar shaft cover.



3. Remove the encoder sensor BKT, and then remove the harness from the top of the sensor.

When detaching, be careful not to damage the film of the fan-shaped linear encoder sensor.



4. Remove the Encoder PCB.

5. Reverse the disassembly procedure for reassembly.

\* Be sure to use the same size screw as the one that was removed.

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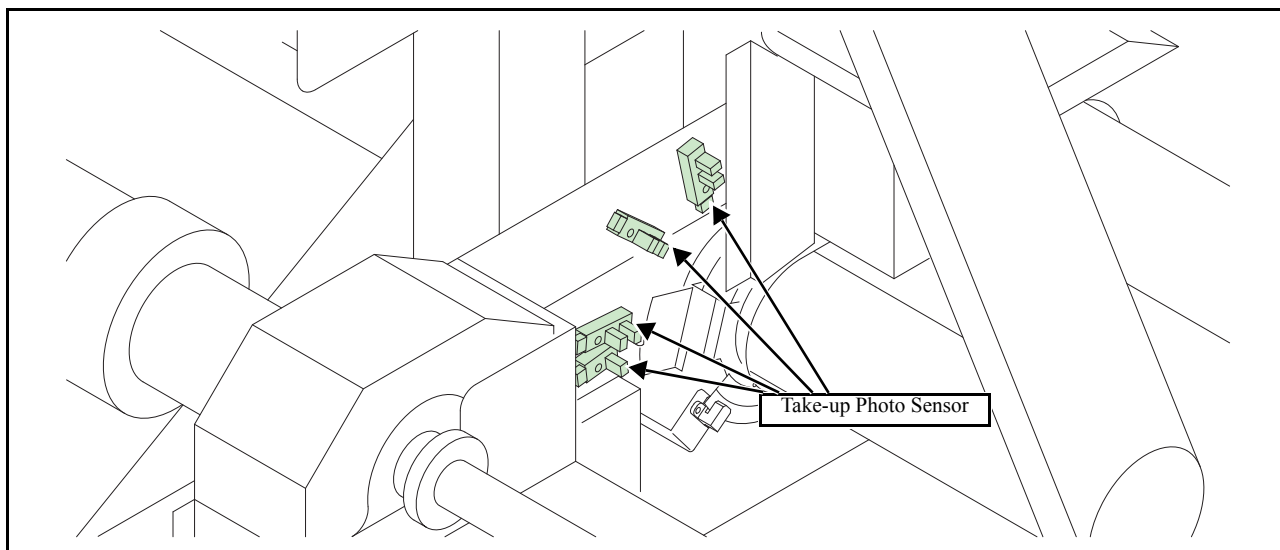
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## 6.5.3 Take-up Photo Sensor (Tension Bar Angle ID Sensor)

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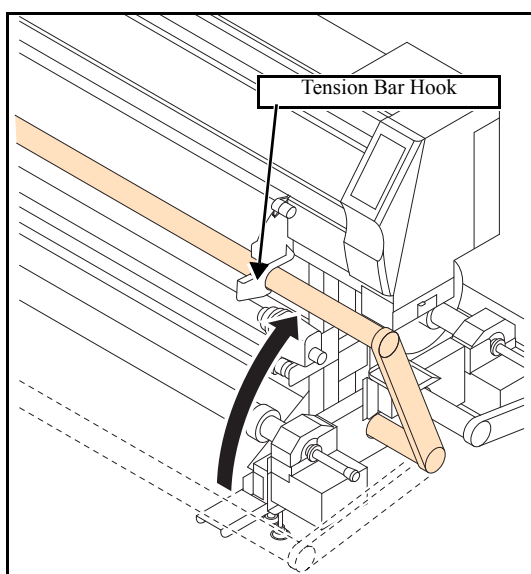
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### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

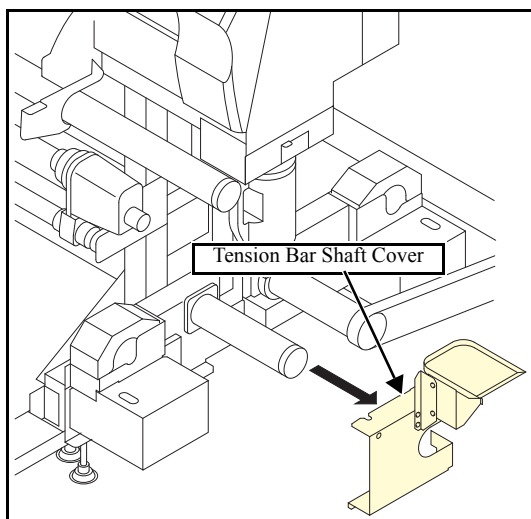


1. Lift the tension bar up to the top standby position, and attach it with its exclusive hook.

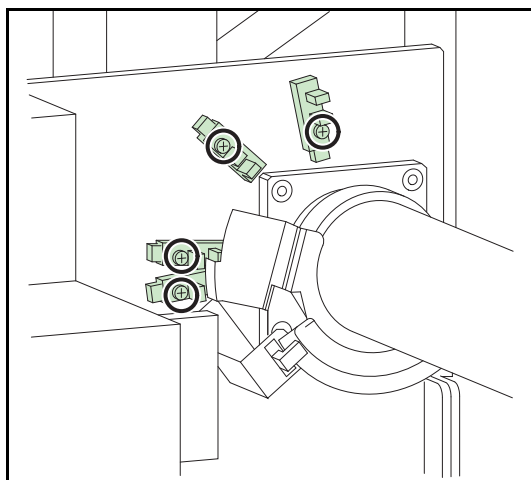
Make sure the hook is fixed to improve workability.

## 6.5.3 Take-up Photo Sensor (Tension Bar Angle ID Sensor)

1.0



2. Remove the tension bar shaft cover.



3. Remove the screws and then remove the sensor.

Remove the harness from the sensor.

Take-up side: 4 are installed

Feeding side: 3 are installed

4. Reverse the disassembly procedure for reassembly.

\* Be sure to use the same size screw as the one that was removed.

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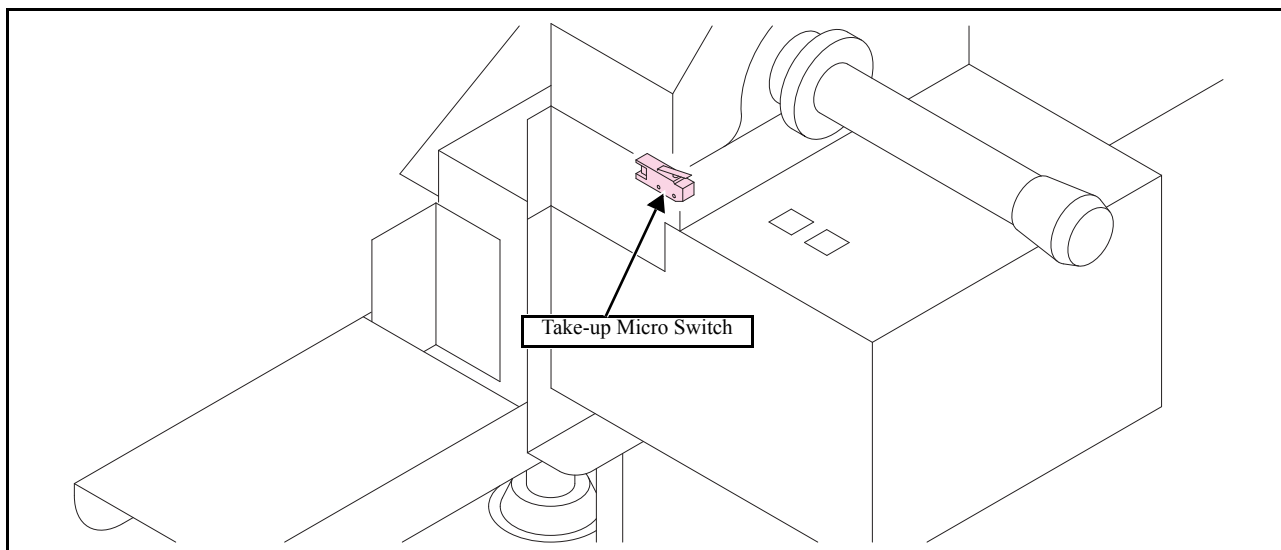
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## 6.5.4 Take-up Micro Switch

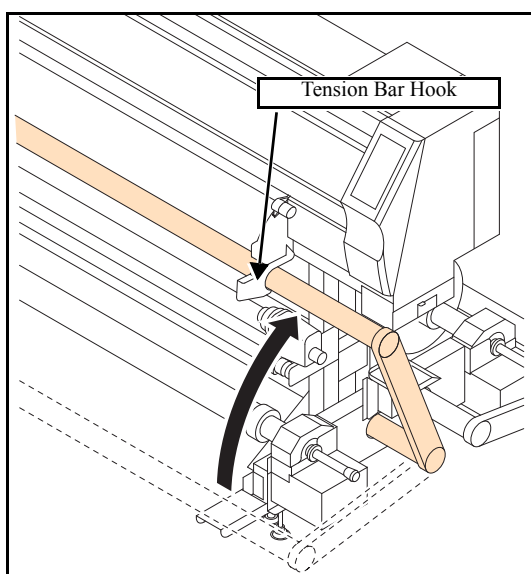
1.0



### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Lift the tension bar up to the top standby position, and attach it with its exclusive hook.

Make sure the hook is fixed to improve workability.

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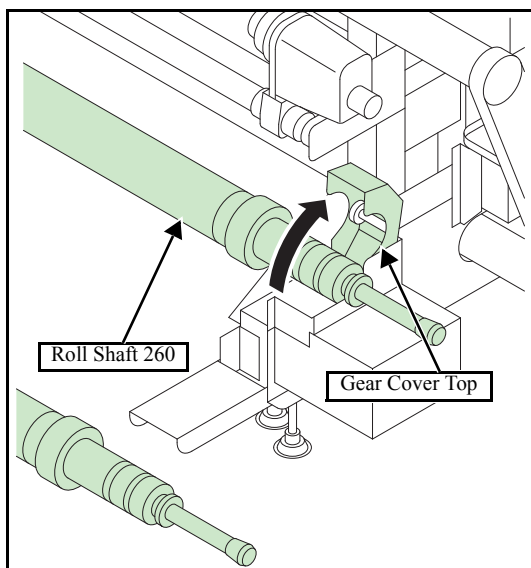
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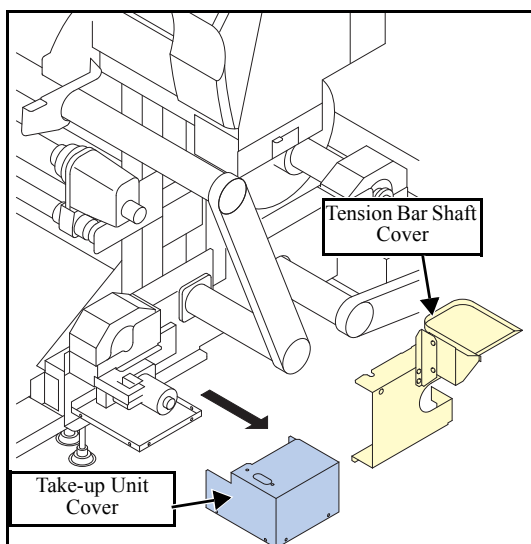
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## 6.5.4 Take-up Micro Switch

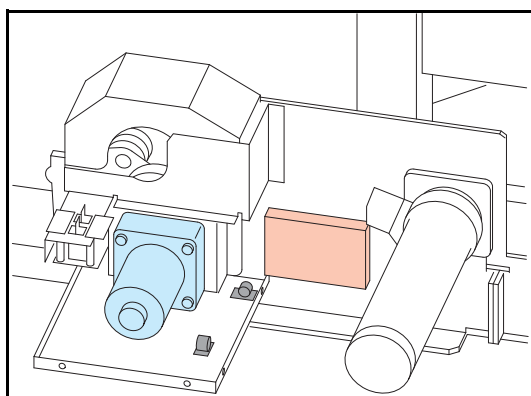
1.0



2. Open the gear cover top, which holds the roll shaft, and then remove the roll shaft.



3. Remove the take-up unit cover and tension bar shaft cover.



4. Remove the connector of the SW PCB assy from the heavy-duty feeding/take-up PCB.

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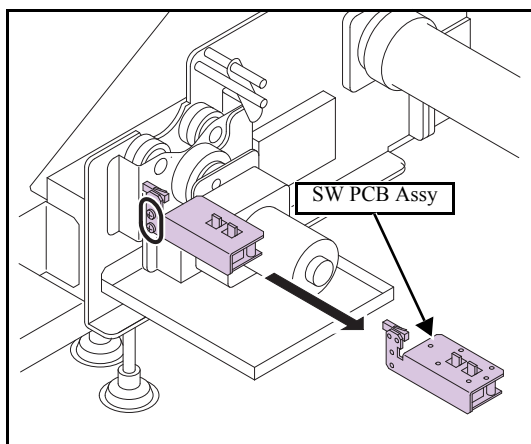
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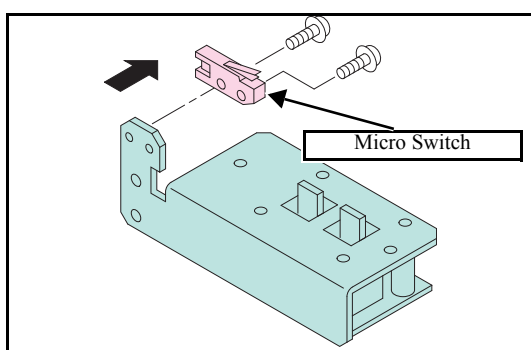
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## 6.5.4 Take-up Micro Switch



5. Remove the micro switch together with the SW PCB assy.



6. Remove the screws and then remove the micro switch from the SW PCB assy.

7. Reverse the disassembly procedure for reassembly.

\* Be sure to use the same size screw as the one that was removed.

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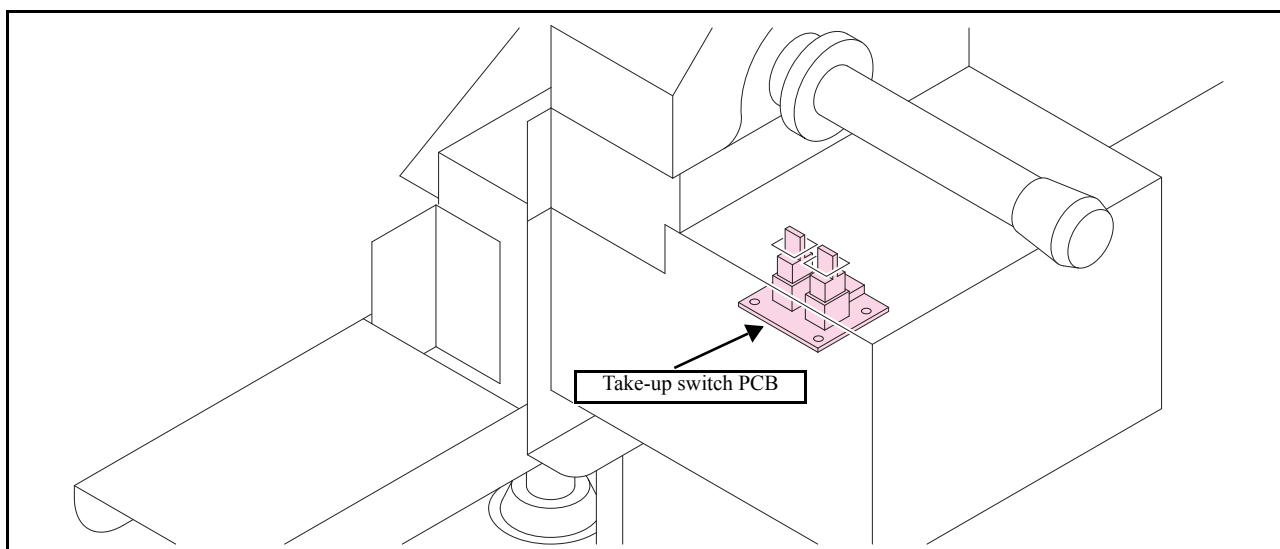
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## 6.5.5 Take-up switch PCB Assy

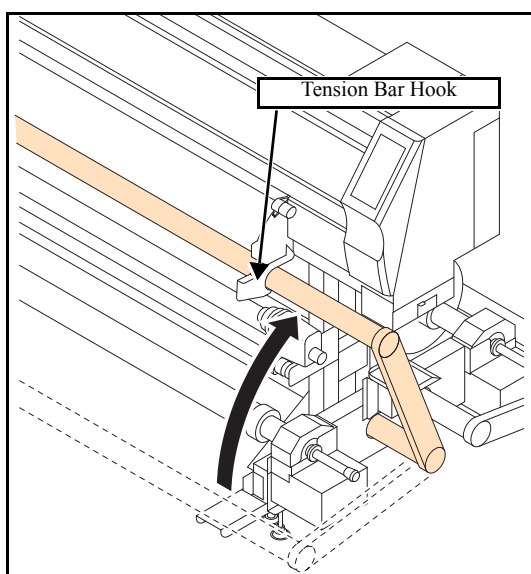
1.0



### ■ Work procedures



Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



1. Lift the tension bar up to the top standby position, and attach it with its exclusive hook.

Make sure the hook is fixed to improve workability.

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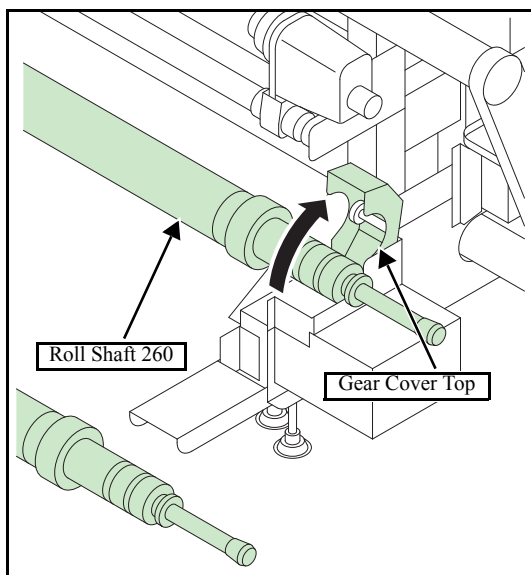
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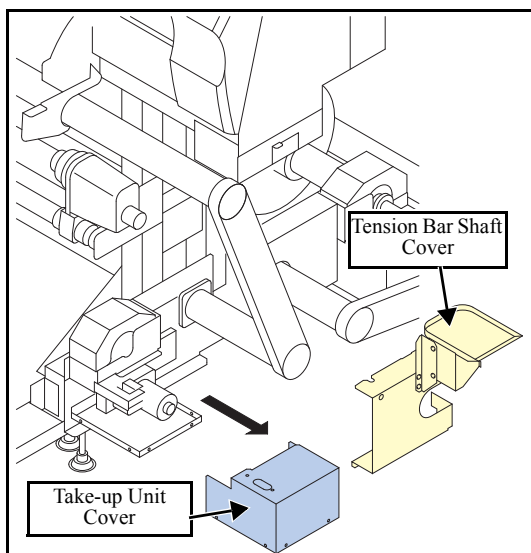


## 6.5.5 Take-up switch PCB Assy

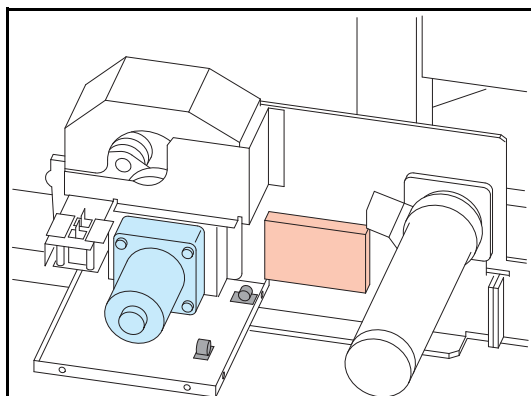
1.0



2. Open the gear cover top, which holds the roll shaft, and then remove the roll shaft.



3. Remove the take-up unit cover and tension bar shaft cover.



4. Remove the connector of the SW PCB Assy from the heavy-duty feeding/take-up PCB.

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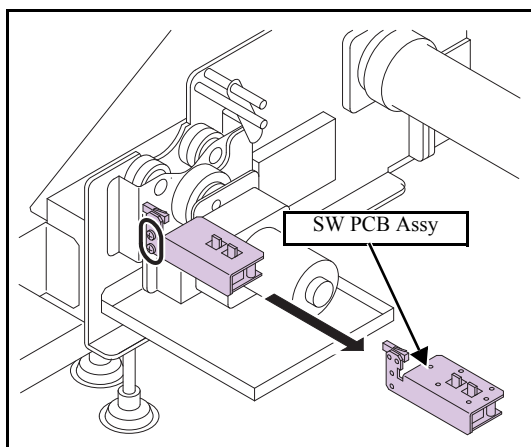
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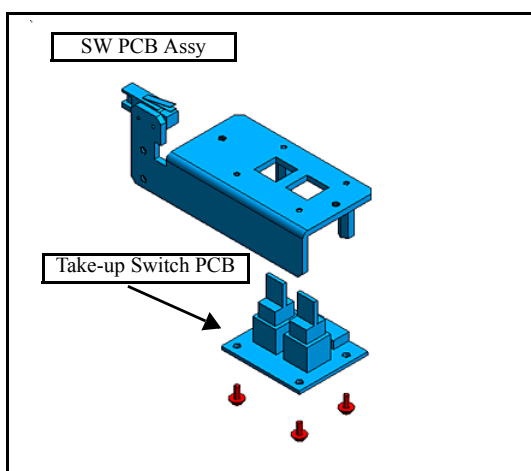
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## 6.5.5 Take-up switch PCB Assy

1.0



5. Remove the SW PCB Assy from the main body.



6. Remove the take-up switch PCB from the SW PCB Assy.

7. Reverse the disassembly procedure for reassembly.

\* Be sure to use the same size screw as the one that was removed.

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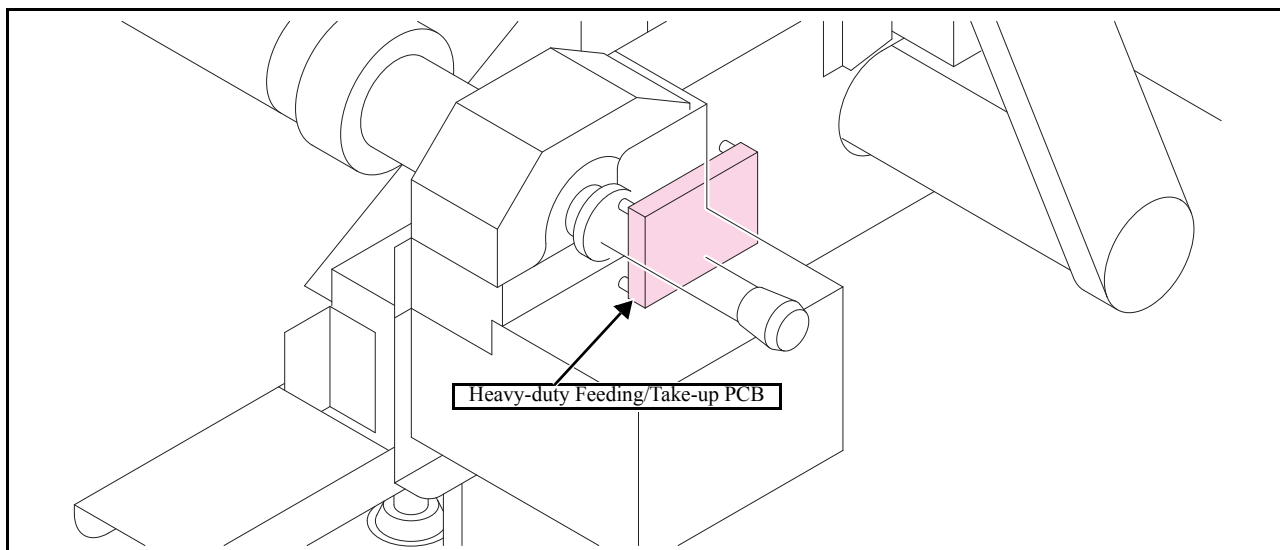
4

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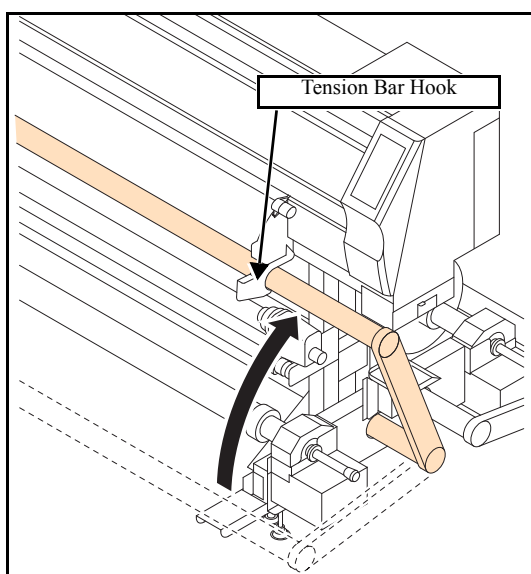
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**6.5.6 Heavy-duty Feeding/Take-up PCB Assy (Take-up Device Side)****1.0****■ Work procedures**

Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



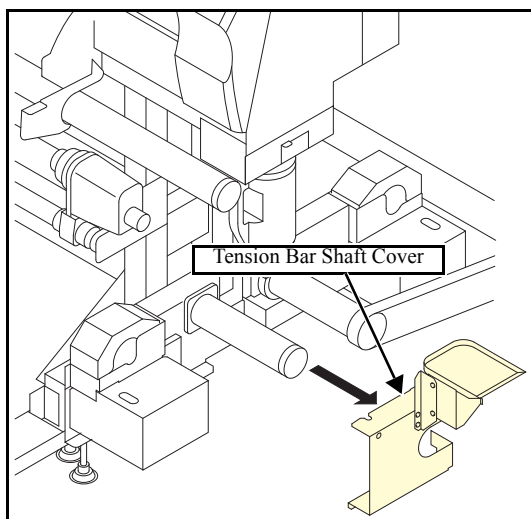
1. Lift the tension bar up to the top standby position, and attach it with its exclusive hook.

Make sure the hook is fixed to improve workability.

**1****2****3****4****5****6****7****8**

## 6.5.6 Heavy-duty Feeding/Take-up PCB Assy (Take-up Device Side)

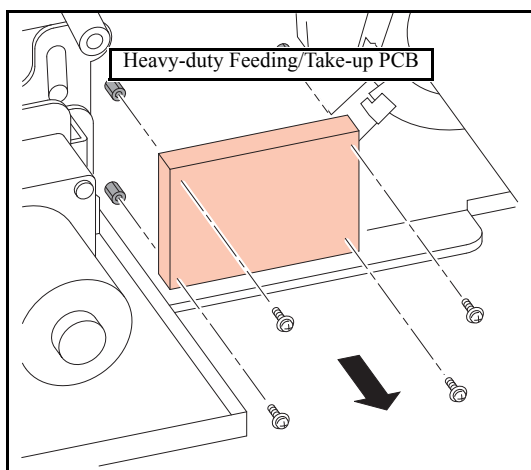
1.0



2. Remove the tension bar shaft cover.



3. Remove all harnesses from the PCB.



4. Remove the screws and then remove the heavy-duty feeding/take-up PCB from the main body.

5. Use the reverse of the disassembly procedure for reassembly.

\* Be sure to use the same size screw as the one that was removed.

6. Make sure that the DIP switch is ON for heavy-duty feeding/take-up PCB Assy.

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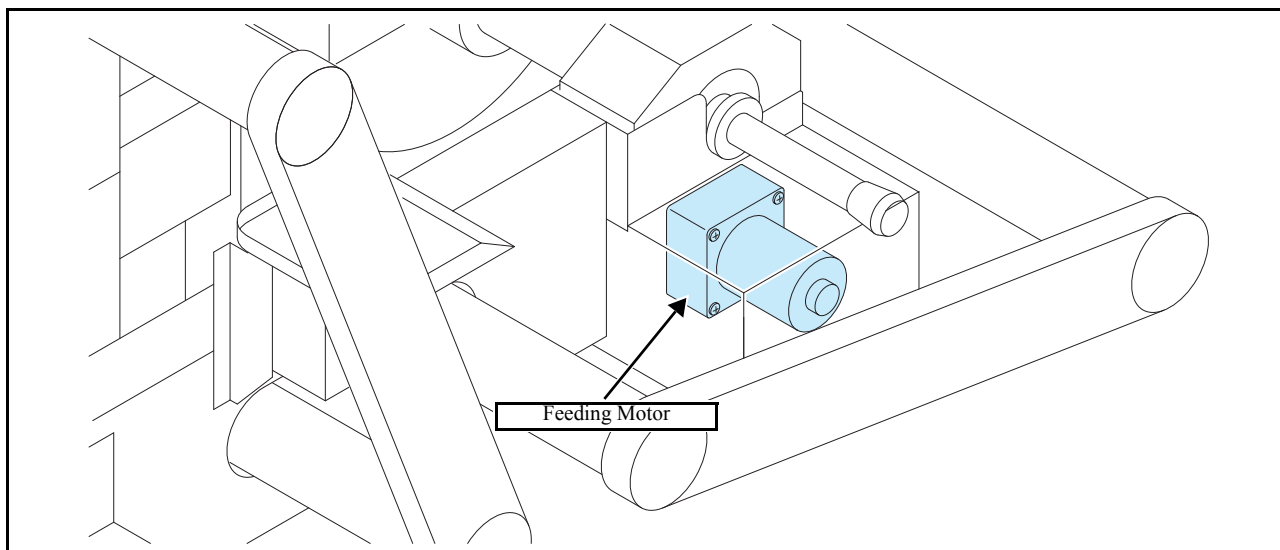
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## 6.5.7 Feeding Motor

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### ■ Work procedures

Removal and mounting are the same as with "6.5.1 Heavy-duty Take-up Motor".

(When replacing maintenance parts, be careful when handling parts that are not common with the take-up portion.)

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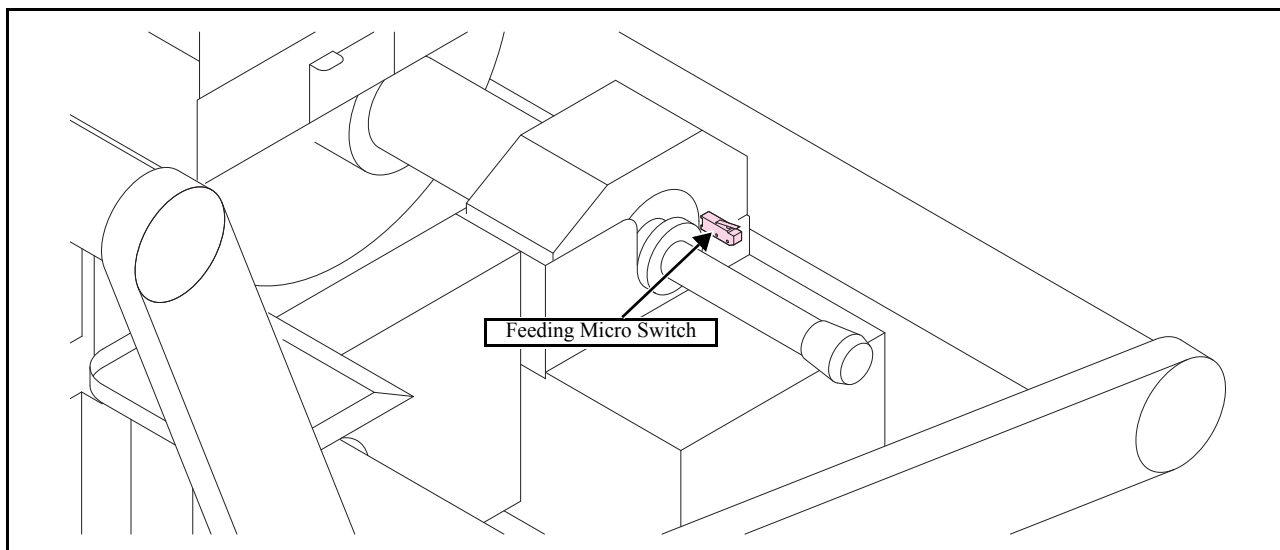
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## 6.5.8 Feeding Micro Switch

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### ■ Work procedures

Removal and mounting are the same as with "6.5.4 Take-up Micro Switch".

(When replacing maintenance parts, be careful when handling parts that are not common with the take-up portion.)

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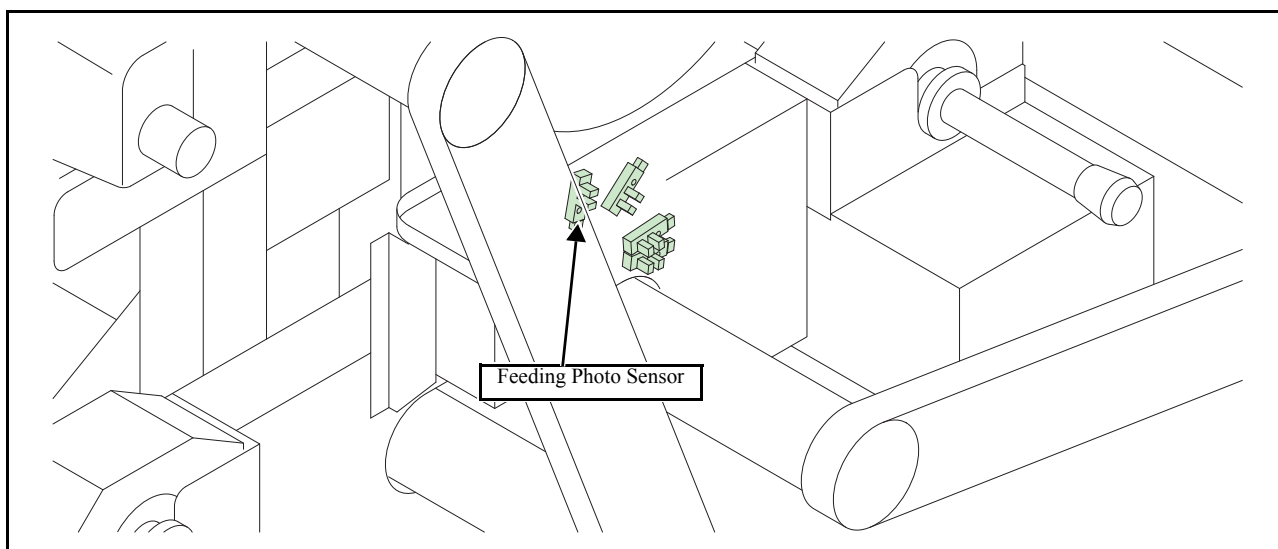
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## 6.5.9 Feeding Photo Sensor

1.0



### ■ Work procedures

Removal and mounting are the same as with "6.5.3 Take-up Photo Sensor (Tension Bar Angle ID Sensor)".

(When replacing maintenance parts, be careful when handling parts that are not common with the take-up portion.)

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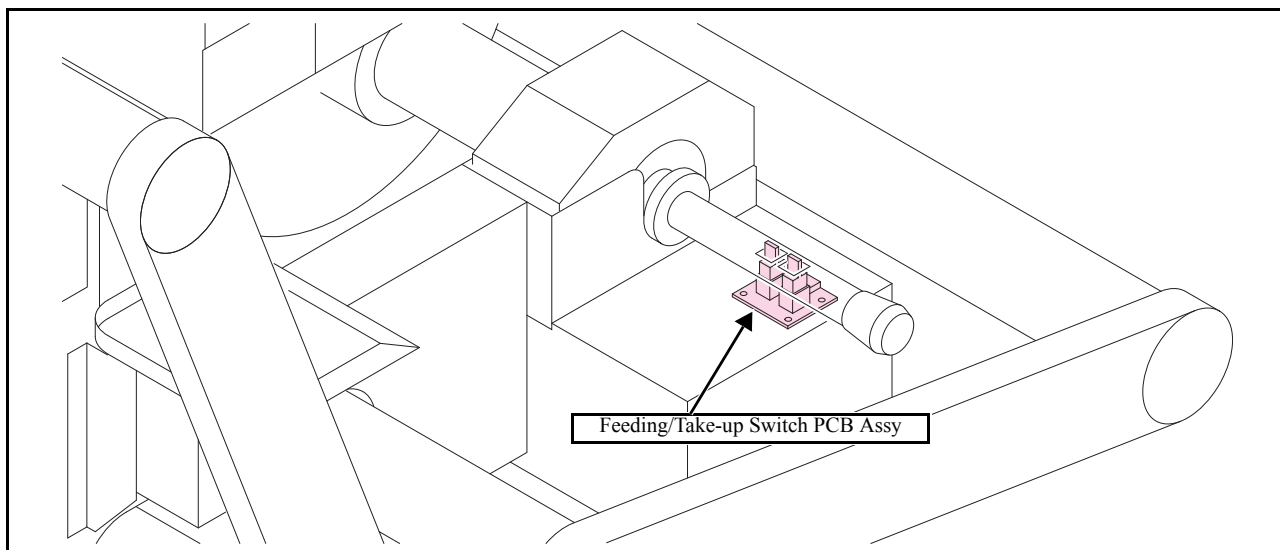
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## 6.5.10 Feeding/Take-up Switch PCB Assy

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### ■ Work procedures

Removal and mounting are the same as with "6.5.5 Take-up switch PCB Assy".

(When replacing maintenance parts, be careful when handling parts that are not common with the take-up portion.)

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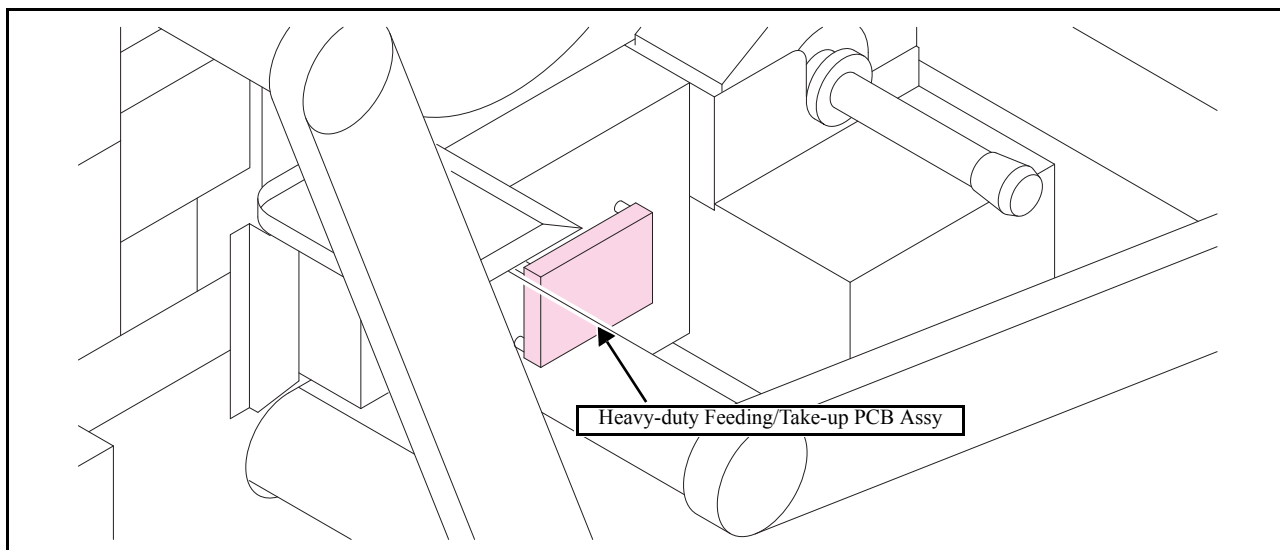
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## 6.5.11 Heavy-duty Feeding/Take-up PCB Assy (Feeding Device Side)

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### ■ Work procedures

Removal and mounting are the same as with "6.5.6 Heavy-duty Feeding/Take-up PCB Assy (Take-up Device Side)".

(When replacing maintenance parts, be careful when handling parts that are not common with the take-up portion.)

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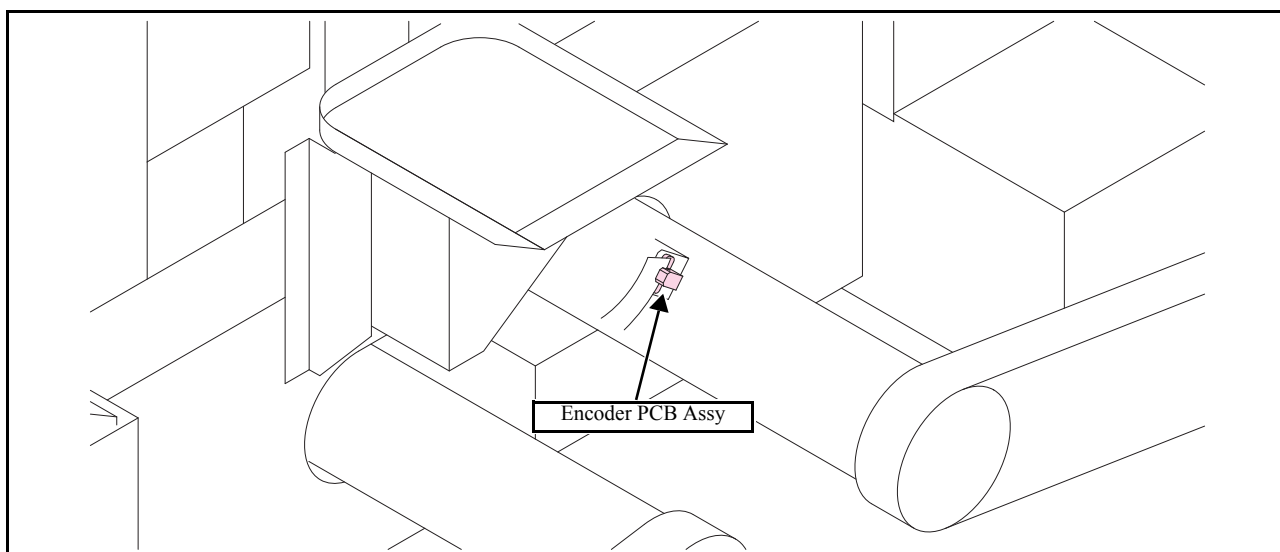
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## 6.5.12 Encoder PCB Assy (Feeding Device Side)

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### ■ Work procedures

Removal and mounting are the same as with "6.5.2 Encoder PCB Assy (Take-up Device Side)".

(When replacing maintenance parts, be careful when handling parts that are not common with the take-up portion.)

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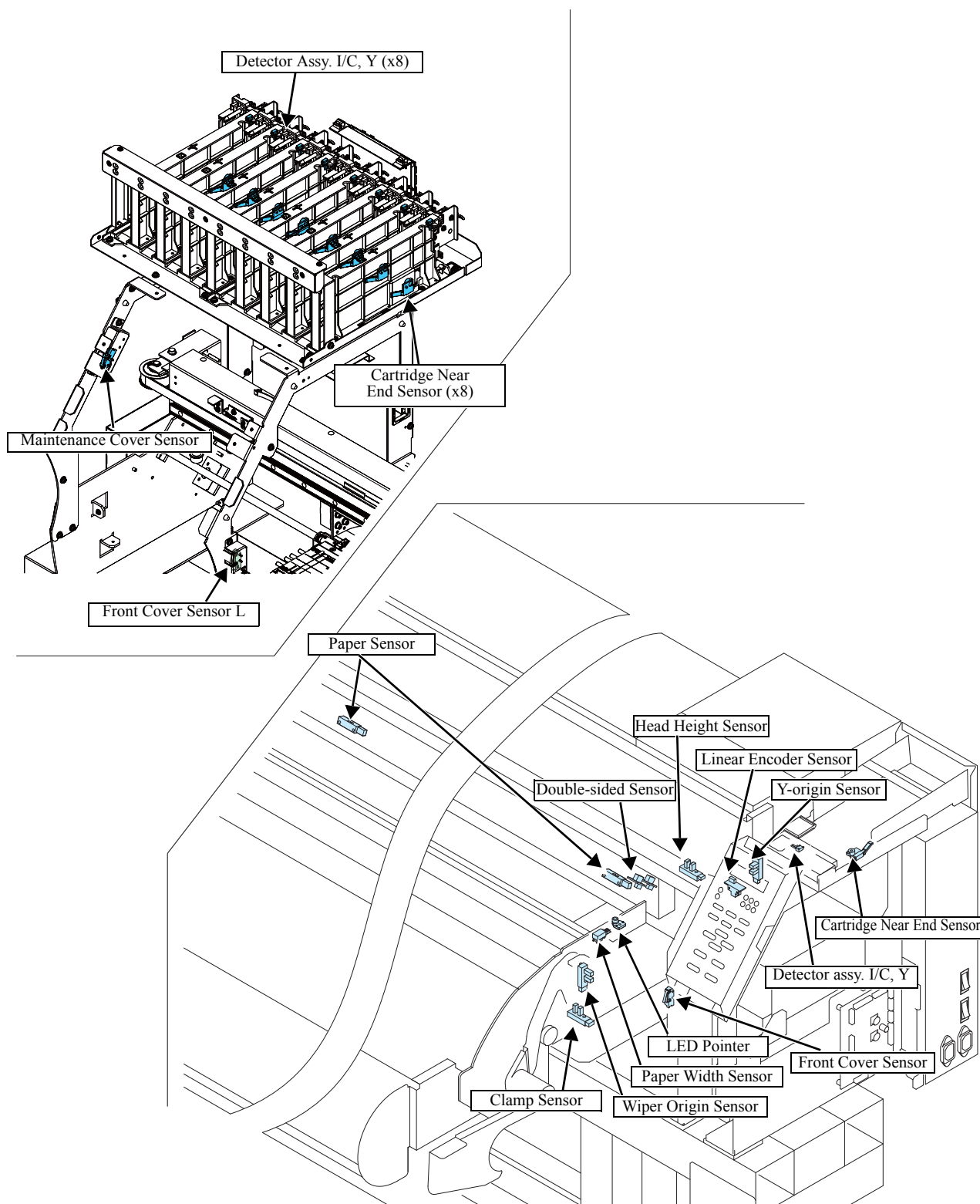
**7**

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## Disassembly and Reassembly

<b>6.1</b> <b>Covers</b>	<b>6.2</b> <b>Ink-related Parts</b>	<b>6.3</b> <b>Drive System</b>
<b>6.4</b> <b>Electrical Parts</b>	<b>6.5</b> <b>Heavy-duty Take-up/Feeding Device</b>	<b>6.6</b> <b>Sensors</b>

## 6.6.1 Sensor Layout



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## **Troubleshooting**

### **7.1**

**Details on Errors and Malfunctions**

### **7.2**

**Detailed Methods of Coping with  
the Malfunctions**

## 7.1.1 Concerning Errors and Malfunctions

1.0

### ■ Outline

This chapter describes the troubleshooting for this machine.

### ■ Rough identification of the source of the trouble

At the beginning of troubleshooting, it is necessary to identify roughly which functions the trouble relates to.

Problems can be roughly classified into those that relate to the machine itself and those that involve the connection between the machine and the host computer.

☐ Problems related to the machine

The cause of the trouble can be identified by executing appropriate functions or using test functions.

☐ Problems related to the connection with the host computer

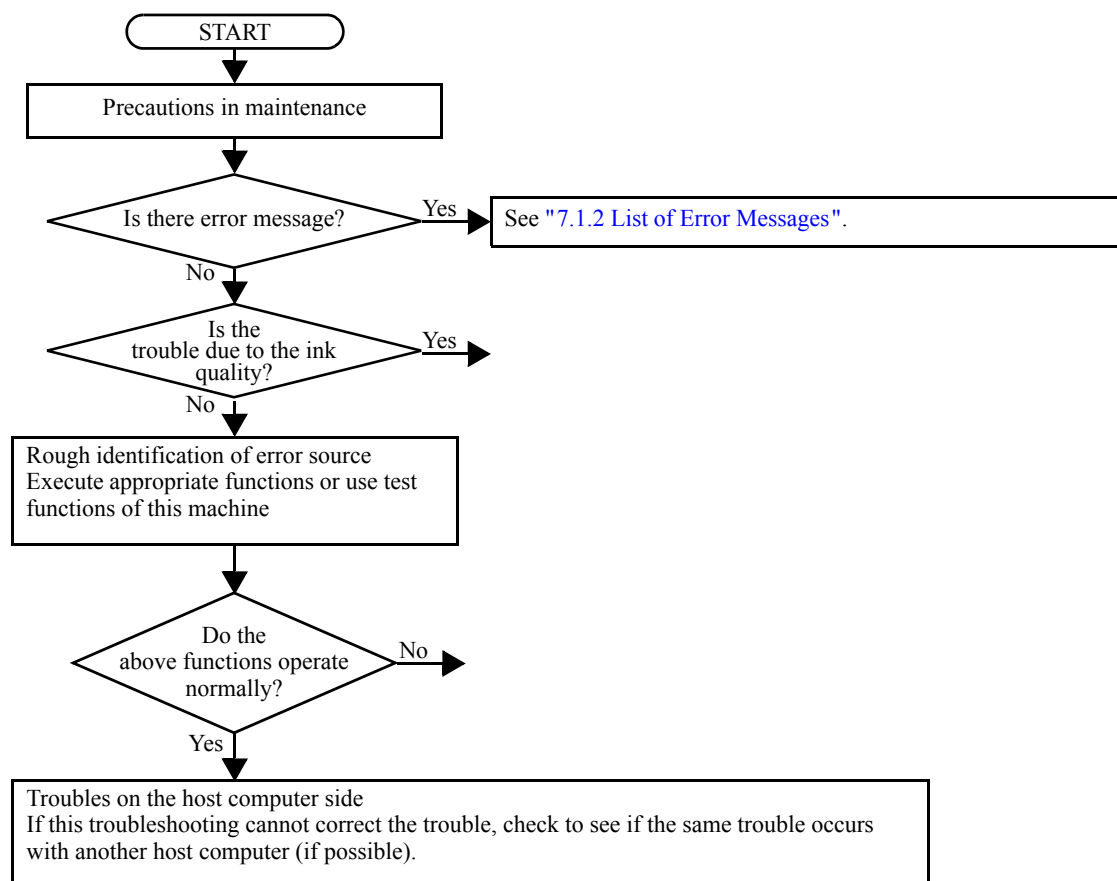
Hardware: Broken wire or faulty contact of cables

Software: Transmission by improper application setting



The standard priority of this machine is the "Host".

Check the settings on the host computer to see if there is any improper parameter setting.



MAINTENANCE MANUAL > Troubleshooting > Details on Errors and Malfunctions > Concerning Errors and Malfunctions							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>7.1.1 Concerning Errors and Malfunctions</b>							<b>1.0</b>

## ■ Checking procedure

This section describes troubleshooting procedures for the problems for which error messages are displayed.

### 1. Identifying the error category

The causes of errors can be classified into the following categories:

- ☐ Handling error on the host computer side
- ☐ Trouble on the host computer side
- ☐ Trouble with the interface cable
- ☐ Machine handling error
- ☐ Machine mechanical trouble
- ☐ Machine hardware trouble
- ☐ Machine firmware trouble

### 2. Initial action

Refer to the error message, and judge whether the trouble lies on the host computer side or on the printer side.

- ☐ Has any of the interface conditions (printer model setting, command, etc.) been changed?
- ☐ Does the trouble occur under specific conditions?
- ☐ Does the same trouble occur repeatedly?

### 3. Failure on the printer side

Take the following steps to repair the printer.

- ☐ Replace the defective part (sensor, etc.) or make the necessary adjustment.
- ☐ Replace the main PCB Assy.

### 4. Repair at the factory

If the error recurs even after the corrective measures specified here are taken, return the machine to the factory of MIMAKI for repair.

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MAINTENANCE MANUAL > Troubleshooting > Details on Errors and Malfunctions > List of Error Messages								Rev.
Model	JV34-260	Issued	2011.02.15	Revised	2011.06.30	F/W ver	1.00	Remark
<b>7.1.2 List of Error Messages</b>								<b>1.1</b>

### ■ List of Error Messages (1/6)

Error No.	Indication on LCD	Cause	Remedy
01	***** ERROR 01 ***** MAIN ROM	An error occurs on the control PCB (ROM)	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
02	***** ERROR 02 ***** MAIN RAM	An error occurs on the control PCB (RAM)	
03	***** ERROR 03 ***** POWER +5V	An error occurs on the control PCB (Power voltage +5V)	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. <a href="#">Power Supply PCB Assy (6.4.1)</a> 2. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
	***** ERROR 03 ***** POWER +24V	An error occurs on the control PCB (Power voltage +24V)	
	***** ERROR 03 ***** POWER +42V	An error occurs on the control PCB (Power voltage +42V)	
04	***** ERROR 04 ***** F-ROM	An error occurs on the control PCB (Parameter ROM)	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. After uploading parameters, initialize all parameters. If the state is not restored, replace the main PCB assy with a new one. <a href="#">(3.3.1)</a>
06	***** ERROR 06 ***** SD-RAM	An error occurs on the control PCB (SDRAM)	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a> 2. <a href="#">PRAM PCB Assy (6.4.4)</a>
07	***** ERROR 07 ***** HEAD (----)	An error was detected in the head connection. (Abnormal temperature was detected.)	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. Reconfirm the head temperature with [#TEST] -> [TEMP.CHECK] -> [NOZZLE TEMP.]. If the abnormality occurs again, carry out the followings. 2. Make sure that corresponding FFC, main FFC are connected in the right way. 3. Replace the head. 4. <a href="#">Slider PCB Assy (6.4.14)</a> 5. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a> 6. <a href="#">HDC PCB Assy (6.4.22)</a>
	***** ERROR 07 ***** VOLTAGE (----)	An error was detected in the head connection. (Abnormal voltage was detected.)	
08	***** ERROR 08 ***** LinearENCODER: SENSOR	An error occurred in detection by the linear encoder. (Counting impossible)	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. Check of the mounting location for the linear encoder scale and encoder PCB assy. 2. <a href="#">Encoder PCB Assy (6.4.16)</a>
	***** ERROR 08 ***** LinearENCODER: DIR.	An error occurred in detection by the linear encoder. (Wrong orientation)	
	***** ERROR 08 ***** LinearENCODER: COUNT	An error occurred in detection by the linear encoder. (Read-out count error)	
09	***** ERROR 09 ***** FPGA ERROR	An error occurs on the control PCB (FPGA PDC)	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a> 2. Replacement of the HDC PCB Assy.
	***** ERROR 09 ***** HDC ERROR (----)	An error occurs on the control PCB (FPGA HDC)	
	***** ERROR 09 ***** FPGA PRAM BUSY	An error occurs on the control PCB (FPGA HDC)	
	illegal IPT xxx xxxxxxxxx	CPU 不正割り込みが発生	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
	Prg Err TK=xxx ASSRT [xxxx] [xxxx] [xxxx]	プログラムエラーを警告	

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## 7.1.2 List of Error Messages

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### ■ List of Error Messages (2/6)

Error No.	Indication on LCD	Cause	Remedy
10	***** ERROR 10 ***** COMMAND ERROR	Other data than commands is received.	1. Clear the data of uncompleted printing. 2. Check the USB cable. (specifications, cable length, etc.) 3. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
	***** ERROR 10 ***** CMD (DBL.Side:FRONT)	An error occurred when the machine cannot print on front side.	Check the machine.
		When ON is set for back side printing, the machine received some data other than back side printing data.	Check the setting of the printing data again.
11	***** ERROR 11 ***** PARAMETER ERROR	Parameter out of the numeral value range is received.	1. Clear the data of uncompleted printing. 2. Check the USB cable. (specifications, cable length, etc.) 3. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
12	***** ERROR 12 ***** MAINTENANCE COMMAND	Other data than commands is received.	(This does not occur during the customer use.) 1. Clear the data of uncompleted printing. 2. Check the USB cable. (specifications, cable length, etc.) 3. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
16	***** ERROR 16 ***** MRL COMMAND	Received data does not follow the command system set in the machine.	Send the data related to the class of commands, using an application corresponding to this machine. 1. Make sure that the transmission data is in MRL-III command system (data ripped for this machine).
25	***** ERROR 25 ***** FULL-SPEED	USB2.0 interface occurred between the host PC and the printer. (Full-Speed Mode connection)	Check whether the host PC is USB2.0 interface-compliant or not. (Though the host PC can be used in either case, use of Hi-Speed Mode connection is recommended.)
30	***** ERROR 30 ***** OPERATION ERROR	Improper operations were performed on the operation panel.	The operation cannot be carried out due to the reason indicated in the second line. Clear the corresponding error and carry out the operation.
34	***** ERROR 34 ***** PRINT DATA REMAIN	Functional settings were changed or an inoperative function was attempted while the machine has already received data and printing of the data has not been completed.	Print all the data received, or clear them all and carry out the operation again from the start. (If uncompleted printing data is remaining, provide an account concerning the operating-condition modification and the inoperative function.)
40	***** ERROR 40 ***** MOTOR ALARM X	Excessive load to the X-motor.	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. Check friction of X (Y) -axis motor. 2. Make sure that the media is not sticking. (X OVER CURRENT) 3. Replace the X (Y)-axis motor. 4. Replace the regenerative resistivity PCB assy. (6.4.2) 5. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
41	***** ERROR 41 ***** MOTOR ALARM Y	Excessive load to the Y-motor.	
42	***** ERROR 42 ***** X OVER CURRENT	Over current error of X-motor is detected.	
43	***** ERROR 43 ***** Y OVER CURRENT	Over current error of Y-motor is detected.	
45	***** ERROR 45 ***** CAPPING : PARAMETER	An error occurred in capping control. (Improper parameter adjusted value)	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. Make sure that the adjusting value of [#ADJUST] -> [CAPPING] is set correctly.

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## 7.1.2 List of Error Messages

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### ■ List of Error Messages (3/6)

Error No.	Indication on LCD	Cause	Remedy
46	***** ERROR 46 ***** WIPER	An error occurred in wiper control.	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. <ol style="list-style-type: none"> <li>1. Check that the wiper sensor functions properly with [#TEST] -&gt; [SENSOR TEST].</li> <li>2. Check that the wiper motor functions properly with [#TEST] -&gt; [MOTOR TEST].</li> <li>3. Check whether the guide rail of the wiper is not clogged with ink. (Does the wiper move smoothly?)</li> <li>4. Replace the wiper sensor.</li> <li>5. Replace the step motor. (6.3.6)</li> <li>6. Replace the station PCB assy. (6.4.7)</li> </ol>
50	***** ERROR 50 ***** MEDIA DETECT	Paper could not be detected.	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. <ol style="list-style-type: none"> <li>1. Make sure that there is enough clearance between the platen and the end of the P rubber.</li> <li>2. Check the sensor value for when there is media and when there is no media using [#TEST] -&gt; [PAPER SENSOR]. If the difference is <math>\pm 50</math>, detection is possible. If the difference is not <math>\pm 50</math>, execute the following.</li> <li>3. Make sure that the rear paper sensor is working correctly using [#TEST] -&gt; [SENSOR TEST] -&gt; [REAR PAPER].</li> <li>4. Clean the rear paper sensor and adjust its mounting position, or replace it.</li> <li>5. Slider PCB Assy (6.4.14)</li> </ol>
51	***** ERROR 51 ***** Y-ORIGIN	Y-origin could not be detected.	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. <ol style="list-style-type: none"> <li>1. Check that the Y-origin sensor functions properly with [#TEST] -&gt; [SENSOR TEST].</li> <li>2. Replace the Y-origin sensor.</li> <li>3. Station PCB Assy (6.4.7)</li> </ol>
64	***** ERROR 64 ***** TAKE-UP VOLTAGE	An abnormal voltage was detected with the heavy-duty take-up device.	Check the connection with the heavy-duty take-up device. If the problem occurs again after confirmation, replace the heavy-duty take-up PCB.
	***** ERROR 64 ***** FEEDING VOLTAGE	An abnormal voltage was detected with the heavy-duty feeding device.	Check the connection with the heavy-duty feeding device. If the problem occurs again after confirmation, replace the heavy-duty feeding PCB.
65	***** ERROR 65 ***** TAKE-UP TENSION BAR	An error occurred with take-up encoder detection (cannot count) (Encoder/sensor error, or media is not set)	Check the media setting. If the error occurs again after confirmation, check and replace the encoder and sensor.
66	***** ERROR 66 ***** FEEDING TENSION BAR	An error occurred with feeding encoder detection (cannot count) (Encoder/sensor error, or media is not set)	

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## 7.1.2 List of Error Messages

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### ■ List of Error Messages (4/6)

Error No.	Indication on LCD	Cause	Remedy
67	***** ERROR 67 ***** TAKE-UP UNIT 00	An error was detected with the heavy-duty take-up device when the machine was turned ON (the unit is not attached, connection terminal error, or sensor error)	Check the connection with the heavy-duty take-up device, the sensor status, and sensor mounting. After checking, if the error recurs, replace the heavy-duty take-up device/ the extension relay PCB/ the main PCB.
	***** ERROR 67 ***** TAKE-UP UNIT 01	It was detected that the heavy-duty take-up device is not connected.	Check the connection with the heavy-duty take-up device. After checking, if the error recurs, replace the heavy-duty take-up device/ the extension relay PCB/ the main PCB.
	***** ERROR 67 ***** TAKE-UP UNIT 02	A connection port error was detected with the heavy-duty take-up device.	Correctly connect the connection with the heavy-duty take-up device. After checking, if the error recurs, replace the heavy-duty take-up device/ the extension relay PCB/ the main PCB.
	***** ERROR 67 ***** TAKE-UP UNIT 04	A sensor error was detected with the heavy-duty take-up device.	Check the heavy-duty take-up device sensor status, and sensor mounting. After checking, if the error recurs, replace the heavy-duty take-up device/ the extension relay PCB/ the main PCB.
	***** ERROR 67 ***** FEEDING UNIT 00	An error was detected with the heavy-duty feeding device when the machine was turned ON (the unit is not attached, connection terminal error, or sensor error)	Check the heavy-duty feeding device sensor status, and sensor mounting. After checking, if the error recurs, replace the heavy-duty take-up device/ the extension relay PCB/ the main PCB.
	***** ERROR 67 ***** FEEDING UNIT 01	It was detected that the heavy-duty feeding device is not connected.	Check the connection with the heavy-duty feeding device. After checking, if the error recurs, replace the heavy-duty take-up device/ the extension relay PCB/ the main PCB.
	***** ERROR 67 ***** FEEDING UNIT 02	A connection port error was detected with the heavy-duty feeding device.	Correctly connect the connection with the heavy-duty feeding device. After checking, if the error recurs, replace the heavy-duty take-up device/ the extension relay PCB/ the main PCB.
	***** ERROR 67 ***** FEEDING UNIT 04	A sensor error was detected with the heavy-duty feeding device.	Check the heavy-duty feeding device sensor status, and sensor mounting. After checking, if the error recurs, replace the heavy-duty take-up device/ the extension relay PCB/ the main PCB.
70	E70 FPGA	FPGA Configuration fails.	(This does not occur during the customer use.) 1. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
71	E71 SD-RAM	Abnormal operation in SD-RAM.	(This does not occur during the customer use.) 1. Make sure that PRAM PCB assy is connected properly. 2. <a href="#">PRAM PCB Assy (6.4.4)</a> 3. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
74	E74 TRANS DATA	Received data is not Version Up file	(This does not occur during the customer use.) 1. Make sure that the ROM file is transmitted.

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## 7.1.2 List of Error Messages

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### ■ List of Error Messages (5/6)

Error No.	Indication on LCD	Cause	Remedy
80	E80 ROM0 ERASE	ROM0 Erase error	(This does not occur during the customer use.) 1. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
81	E81 ROM1 ERASE	ROM1 Erase error	
82	E82 h'*****	ROM0 Write error	
83	E83 h'*****	ROM1 Write error	
84	E84 h'*****	Verify error	
85	E85 ROM HASH	Hash check error	
90	E90 h'*****	ROM Erase error	
92	E92 h'*****	ROM Write error	
95	E95 MODE SHIFT	Transition to the version up mode is not allowed.	
99	E99 VERSION DATA	Wrong version data	
120	**** ERROR 120 **** ENVIRONMENT TEMP (LO)	The ambient temperature is outside of the warranty. (The temperature is too low.)	Adjust the ambient temperature of the machine. (To continue operation without changing the ambient conditions, press the [ENTER].) Operation under the temperature among the guaranteed operation temperature range is recommended.
121	**** ERROR 121 **** ENVIRONMENT TEMP (HI)	The ambient temperature is outside of the warranty. (The temperature is too high.)	
144	**** ERROR 144 **** CARTRIDGE SET!	There are slots where cartridges are not inserted.	Insert cartridges into the slots, since the slots may dry up when left without them inside and the ink may become unusable. Give instruction (to the customers) that, when they leave the slot without cartridge in it, its needle may dry up and becomes unable to absorb the ink.
	ERROR COMMAND		(This does not occur during the customer use.) 1. Check the USB cable. (specifications, cable length, etc.)
	ERROR PARAMETER		(This does not occur during the customer use.) 1. Check that PRM file and parameter data correspond to version of the machine.
	ERROR DATA		(This does not occur during the customer use.) 1. Check the USB cable. (specifications, cable length, etc.)
	ERR PRM.SHORTAGE		(This does not occur during the customer use.) 1. Check that PRM file and parameter data correspond to version of the machine.
200	**** ERROR 200 **** HEAD MEMORY (----)	An error occurred in head unit memory.	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. Check the mini memory cable. 2. Replace the mini memory. 3. <a href="#">Slider PCB Assy (6.4.14)</a> 4. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
202	**** ERROR202 **** DEVICE CONSTRUCTION	Head unconnected. An error occurred in slider PCB.	
203	**** ERROR 203 **** SDRAM SIZE	The machine is not provided with the required size of SD-RAM.	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. <a href="#">PRAM PCB Assy (6.4.4)</a>
205	**** ERROR 205 **** 42V HEAD VOLTAGE(main) **** ERROR 205 **** 42V HEAD VOLTAGE(HDC)	An excessive current flowed in the circuit of the print head, and the fuse was blown.	Refer to <a href="#">7.2.1 Electrical Troubleshooting</a> , and replace the following parts if it has damaged. • Check the head FFC cable. • Replace the head. • <a href="#">Replacement of the Main PCB Assy (3.3.1)</a> • Replace the fuse. (Main PCB F13) • <a href="#">HDC PCB Assy (6.4.22)</a> • Replace the fuse. (HDC PCB F3)

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## 7.1.2 List of Error Messages

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### ■ List of Error Messages (6/6)

Error No.	Indication on LCD	Cause	Remedy
207	**** ERROR 207 **** SLEW RATE	Trouble with COM wave	1. Restart 2. Upload event log 3. Report what it happened to SIGN&GRAPHIC, development department
	**** ERROR 207 **** OVERFLOW		
	**** ERROR 207 **** UNDERFLOW		
208	**** ERROR 208 **** CHECK MAIN PCB ID XX	The device type ID of the main PCB is different. ("XX" is the ID code of the PCB.)	Check the device type ID switch of the main PCB.
211	**** ERROR 211 **** HeaterTEMP(--/--/--)	An abnormal temperature of the media heater was detected.	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a> 2. <a href="#">Power Supply PCB Assy (6.4.1)</a> 3. Replace the relevant platen cover with a new one.
250	**** ERROR 250 **** Y COORDINATES	An error was detected during scanning operation.	Turn off the main power, and turn it on a little later. If such an abnormality recurs, check the uploaded parameter and the status of use, then report them to the Development Division.
251	**** ERROR 251 **** SYSTEM ERROR	System error	Turn off the main power, and turn it on a little later. If the error occurs again, carry out the followings. 1. Check whether no abnormality is found by examining the memories (Main.FROM and 32m SDRAM). 2. In case the error recurs, check the uploaded parameter and the status of use, and then report them to the Development Division.

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MAINTENANCE MANUAL > Troubleshooting > Details on Errors and Malfunctions > List of Warning Messages							Rev.
Model	JV34-260	Issued	2011.02.15	Revised	F/W ver	1.00	Remark
<b>7.1.3 List of Warning Messages</b>							<b>1.0</b>

### ■ List of Warning Messages (1/3)

No.	Indication on LCD	Cause	Remedy
1	Close a cover.	An open cover was detected.	Check the front cover and the maintenance cover. In case the warning is displayed again even when closing these covers, check the followings. 1. Check that the cover sensor works properly with [#TEST] -> [SENSOR TEST]. 2. Make sure that the toggle pushes the lever of the cover sensor firmly. 3. Make sure that the cables are connected properly. 4. Replace the cover sensor.
2	<LOCAL.1> [#01] ** NO MEDIA **	No media was detected.	If the warning is displayed again even when the media is set, check the followings. 1. Check that the paper sensor functions properly with [#TEST] -> [SENSOR TEST]. 2. Make sure that the cables are connected properly. 3. Replace the media sensor.
3	!EXCHANGE BATTERY	Exhaustion of RTC battery was detected.	Replace the battery with a new one having the same model number.
4	<LOCAL.1> [#01] !Replace a WIPER	Time to replace the wiper in the capping station with a new one has come. (The wiping count has reached the specified value.)	Check whether the user replaced the wiper. ([MAINTENANCE] -> [ST.MAINTENANCE])
5	<LOCAL.1> [#01] !CONFIRM TEST PRINT	Sleep refresh or cleaning was not performed when power was kept off for 72 hours or more.	Perform TEST PRINT, and check for omitted nozzles. If nozzles are omitted, perform cleaning. If nozzle missing is serious, execute [ST.MAINTENANCE] -> [NOZZLE WASH] for maintenance.
6	PRE PRT AFT BREAK ***°C ***°C	The media heater is disconnected. (This example shows that preheater is disconnected.)	1. Check that the media heater functions properly with [#TEST] -> [HEATER TEST]. 2. Make sure that the cables are connected properly. 3. Check the power switch (Only for pre/post heater) 4. Make sure that the heater PCB assy (power supply PCB assy)* fuse is not blown. 5. Replace the heater PCB assy (power supply PCB assy)* or replace the main PCB assy.  *The heater PCB assy is for the pre/post heater, and the power supply PCB assy is for the print heater.
7	PRE PRT AFT THERM ***°C ***°C	The thermistor of a media heater is defective. (This example shows that the thermistor of preheater is defective.)	1. Check that the media heater functions properly with [#TEST] -> [HEATER TEST]. 2. Make sure that connection of thermistor is correct. 3. <a href="#">Replacement of the Main PCB Assy (3.3.1)</a>
8	<LOCAL.1> [#01] NEAR END MCYK----	Ink for one supply path has been nearly used up.	Replace the cartridge corresponding to the color displayed. Printing is permitted without replacing the ink cartridge (until INK END is displayed). However, the machine returns to local mode every completion of printing one file.
9	*REMOTE.1* [#01] NEAR END MCYK---		
10	<LOCAL.1> [#01] INK END ----KYCM	Ink for one supply path has been completely used up.	Replace the cartridge corresponding to the color displayed.
11	*REMOTE.1* [#01] INK END ----KYCM		
12	<LOCAL.1> [#01] !CARTRIDGE ----KYCM	Ink for one supply path is not yet set, or unusable ink is being set.	Replace or set the cartridges corresponding to the colors displayed.
13	*REMOTE.1* [#01] !CARTRIDGE ----KYCM		

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## 7.1.3 List of Warning Messages

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### ■ List of Warning Messages (2/3)

No.	Indication on LCD	Cause	Remedy
14	<LOCAL.1> !CAR [#01]	There is a problem with installed ink cartridges. (If this occurs together with any other warning, the display shows [<LOCAL.1> !CAR/WASH] instead of [##*].) * Displayed only when 4-color cartridges are installed.	Check the content of the warning by displaying it using the guidance function.
15	*REMOTE.1* !CAR [#01]		
16	<LOCAL.1> [#01] INK REMAIN K-----!	The ink of the 600 cc package has been completely used up.	Reset the cartridge and set the amount of remaining ink. If the ink that can be used is remaining, the warning is cancelled and the cartridge can be used continuously. If the ink that can be used is not remaining, the warning is not cancelled.
17	INK NEAR END MMCC ----	Ink in the cartridge is running out.	Replace the cartridge generating the warning with a new one. If the problem still cannot be solved, check the followings. 1. Check that the cartridge end sensor works properly with [#TEST] -> [INK CARTRIDGE]. 2. Check the end PCB of the cartridge. 3. Replace the sensor.
18	INK END ---- YYKK	The ink of the ink cartridge has been completely used up.	Replace the cartridge generating the warning with a new one. If the problem still cannot be solved, check the followings. 1. Check the end PCB of the cartridge. 2. Replace the sensor.
19	NON-ORIGINAL INK KKYY ----	The ink cartridge is not MIMAKI genuine.	Replace the cartridge generating the warning with a new one. If the problem still cannot be solved, check the followings. 1. Check whether the process of [#TEST] -> [INK CARTRIDGE] -> [INK-IC CHECK] can be carried out normally. 2. <a href="#">ID Contact PCB CN032 Assy (6.4.20)</a>
20	WRONG INK IC ---- CCMM	The IC chip of the ink cartridge cannot be read normally.	
21	Kind of INK ---- ----	The ink of the ink cartridge is different in type from the ink currently supplied.	Check the ink type of the cartridge generating the warning.
22	Color of INK ---- ----	The ink of the ink cartridge is different in color from the ink currently supplied.	Check the ink color of the cartridge generating the warning.
23	WRONG CARTRIDGE ---- ----	There is trouble with an installed ink cartridge.	Check the cartridge generating the warning.
24	NO CARTRIDGE ---- ----	An ink cartridge has not been installed in the slot.	Install an appropriate ink cartridge in the slot generating the warning. If the problem still cannot be solved, check the followings. 1. Check that the cartridge exist/non-exist sensor functions properly with [#TEST] -> [INK CARTRIDGE]. 2. If it does not work properly, replace the sensor or X-axis motor relay PCB assy with a new one.
25	Expiration ---- ----	The specified expiration date of an ink cartridge has passed.	Replace the cartridge generating the warning with a new one. The ink cartridge may still be used until one month passes after the specified expiration date.
26	Expiration:1MONTH ---- ----	The specified expiration date of an ink cartridge has passed. (One month has passed after the specified expiration date.)	Replace the cartridge generating the warning with a new one. (The red LED blinks.) The ink cartridge may still be used until two months pass after the specified expiration date.
27	Expiration:2MONTH ---- ----	The specified expiration date of an ink cartridge has passed. (Two months have passed after the specified expiration date.)	Replace the cartridge generating the warning with a new one.
28	INK REMAIN ZERO ---- ----	Remaining amount of ink in an ink cartridge is zero.	Replace the cartridge generating the warning with a new one.

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## 7.1.3 List of Warning Messages

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### ■ List of Warning Messages (3/3)

No.	Indication on LCD	Cause	Remedy
29	<LOCAL.1> !WASH [#01] *REMOTE.1* !WASH [#01]	There is a problem with the maintenance washing liquid. •Not set. •Any cartridge other than that for maintenance washing liquid is set. •The maintenance washing liquid has been used up.	Replace the maintenance washing liquid cartridge with a new one.
30	<LOCAL.1> [#01] !WASTE TANK	The waste ink tank is nearly full.	Replace the waste ink tank with a new one. Execute [MAINTENANCE] -> [InkTankReplace].
31	<LOCAL.1> [#01] !Wash Liquid END	Emptied washing liquid cartridge was detected.	Replace the maintenance washing liquid cartridge with a new one. If the problem still cannot be solved, check the followings. 1. Check that the cartridge end sensor works properly with [#TEST] -> [WASH CARTRIDGE]. 2. If it does not work properly, replace the sensor or IO PCB assy with a new one.
32	<LOCAL.1> [#01] !WashLiquidCart.NONE	The washing liquid cartridge has not been installed.	Install the maintenance washing liquid cartridge. If the problem still cannot be solved, check the followings. 1. Check that the cartridge exist/non-exist sensor works properly with [#TEST] -> [WASH CARTRIDGE]. 2. If it does not work properly, replace the sensor or IO PCB assy with a new one.
33	<LOCAL.1> [#01] !WRONG WASH CART.	Trouble with washing liquid cartridge has been detected.	Install the maintenance washing liquid cartridge.
34	** Washing liquid ** ** un-filling up. **	Maintenance washing liquid has not been supplied.	Supply the maintenance washing liquid. (Execute [MAINTENANCE] -> [HD.MAINTENANCE] -> [FILL UP INK].)
35	!TAKE-UP COVER OPEN	The take-up cover is open.	If the problem continues after closing the cover of the heavy-duty take-up device, check the cover sensor of the take-up device. If it does not work properly, replace the sensor or take-up PCB.
36	!FEEDING COVER OPEN	The feeding cover is open.	If the problem continues after closing the cover of the heavy-duty feeding device, check the cover sensor of the feeding device. If it does not work properly, replace the sensor or feeding PCB.
37	!TAKE-UP LIMIT DETECT	A take-up limit has been detected.	Check the heavy-duty take-up device limit sensor and sensor mounting. If the problem occurs again after confirmation, replace the limit sensor or take-up PCB.
38	!FEEDING LIMIT DETECT	A feeding limit has been detected.	Check the heavy-duty feeding device limit sensor and sensor mounting. If the problem occurs again after confirmation, replace the limit sensor or feeding PCB.
39	!TAKE-UP ERROR	Take-up was not executed correctly.	Check the sensors and sensor mounting for the heavy-duty take-up device. If the problems occurs again after confirmation, replace the limit sensor or take-up PCB.
40	!FEEDING ERROR	Feeding was not executed correctly.	Check the sensors and sensor mounting for the heavy-duty feeding device. If the problems occurs again after confirmation, replace the limit sensor or feeding PCB.

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## **Troubleshooting**

**7.1**

**Details on Errors and Malfunctions**

**7.2**

**Detailed Methods of Coping with  
the Malfunctions**

**7**

**8**

## 7.2.1 Electrical Troubleshooting

### ■ Outline

The following errors will be caused by breakage of PCB, and some of them may also break the surrounding PCB by breakage of the head.

This explains the causes and handling for the electrical troubles.

Related troubles :

- Abnormal firing (simultaneously firing of no firing from a certain nozzle line)
- The power would not be turned on
- ERROR 07 HEAD or VOLTAGE
- ERROR 50 MEDIA DETECT or MEDIA POSITION
- ERROR 200 HEAD MEMORY
- ERROR 202 DEVICE CONSTRUCTION
- ERROR 205 42V HEAD VOLTAGE (Only of JV34)
- ERROR 207 SLEW RATE, OVERFLOW, UNDERFLOW



After turning off the sub and main power switches in order, unplug the power code.

Check if no electric charge is remaining in the PCB.

Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"

It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.

### ■ Causes and solutions of the print head breakage

	Cause of head/PCB damage	Countermeasures
1	Disconnection of HDC_FFC	Fix moving part of the HDC FFC (Applied to all machines) Please refer to the documents below for more detail. <ul style="list-style-type: none"> <li>• JV34 Maintenance Manual (5.2.6 Checking Conduction of HDC FFC COM Line)</li> <li>• JV34 Maintenance Manual (5.2.7 Checking Conduction of HDC FFC Data Line)</li> </ul>
2	Disconnection of Head FFC and contact failure by wrong insertion of FFC	When replacing heads, replace the Head FFC ASSY as well. Insert the FFC straight and visually check if they are attached without misalignment. If [ERROR 202 DEVICE CONSTRUCTION] occur, it might be a FFC trouble or head/PCB may be damaged. Please refer to the documents below for troubleshooting. <ul style="list-style-type: none"> <li>• JV34 Service Documents (4.4.1 Handling of FFC)</li> <li>• JV34 Maintenance Manual (7.2.1 Electrical Troubleshooting "Check Flow of the PCB breakage")</li> </ul>
3	COM noise when turn off the machine and trouble of power sequence.	Note: Do not do the followings even if the applied firmware is installed. COM noise can be made and it will cause damage. However, if it is necessary to do the operation mentioned (b), please leave the machine 3 minutes or more before turning on the power. <ul style="list-style-type: none"> <li>(a) Turning off the main power while "BOOT" is showing.</li> <li>(b) Turning off the main power after "F-ROM" error occurred.</li> </ul>

## 7.2.1 Electrical Troubleshooting

1.0

	Cause of head/PCB damage	Countermeasures
4	Static electricity attack	Static electricity may attacks to the slider when the operator touched the slider part to remove the media and when the earth plate floats at media jam and static is impressed from the charged media to the head. Please advice to the customers that discharge by touching the metal part of the machine other than slider before touching the slider or head, and remove the media gently without making static electricity.
5	Replace head associated parts in the condition of electric charge remains.	When replace the head and PCB with electric charge remains in 42V circuit, head and PCB damage may increase. Before replacement, make sure to check if electric charge is not remaining inside of PCB when turning off the power each time. For replacement procedure and precautions, please refer to the attached document "4.4.2 Electric charge checking when replace the head and PCB." Also to shorten the replacement time, resistance has been added to the Main PCB and countermeasure of electric discharge also been added.

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## 7.2.1 Electrical Troubleshooting

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### ■ Check Flow of the PCB breakage



After turning off the sub and main power switches in order, unplug the power code.

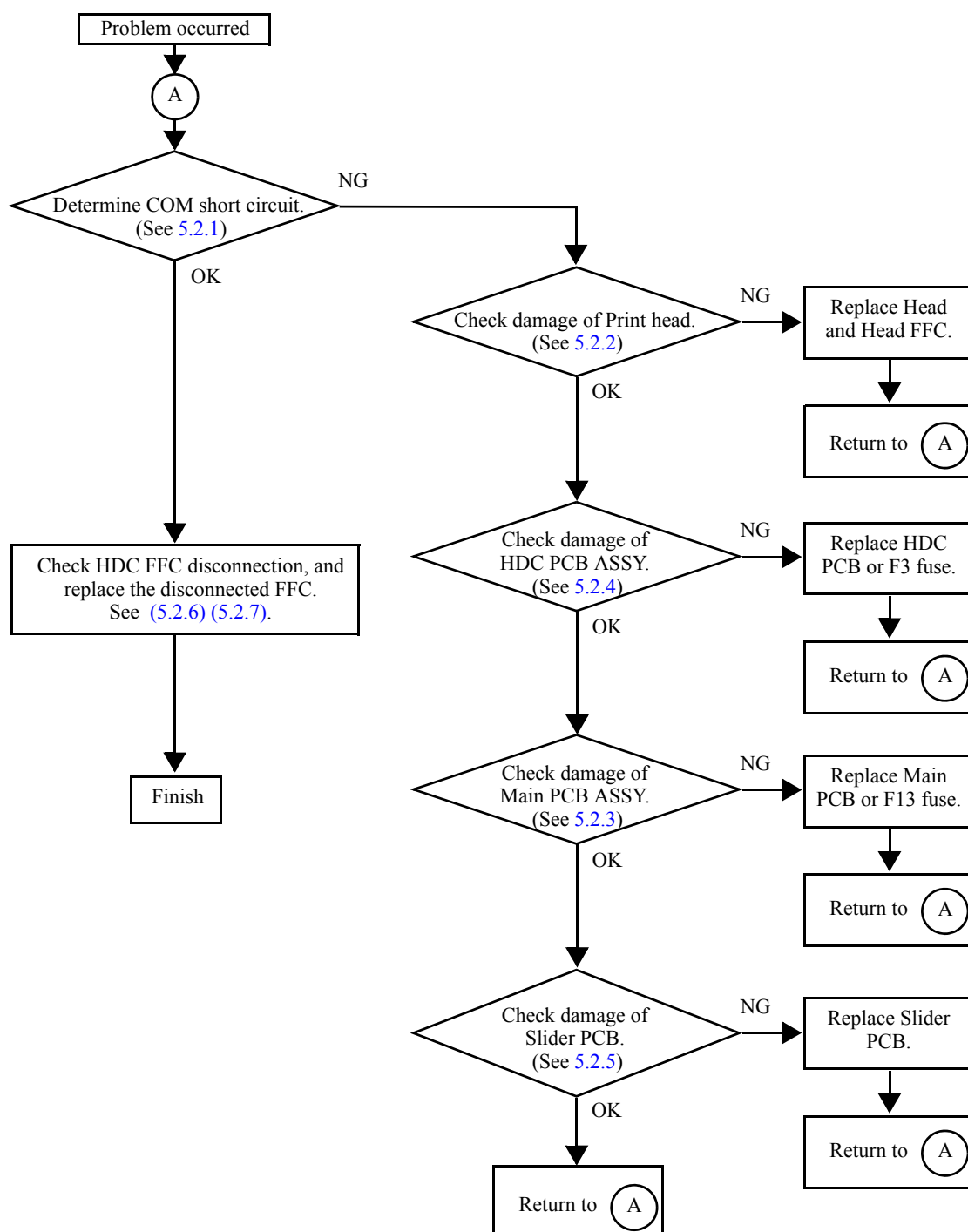
Check if no electric charge is remaining in the PCB.

Refer to the "4.4.2 Electric charge checking when replace the Electrical Parts"

It is very dangerous if sleep mode functions mistakenly during the operation.

Moreover, the PCB may be damaged in case electric charge still remains inside.

Also there is a possibility of electric shock because of high power voltage applied the high-pressure part of the power supply PCB assy. Take care to avoid contact with it.



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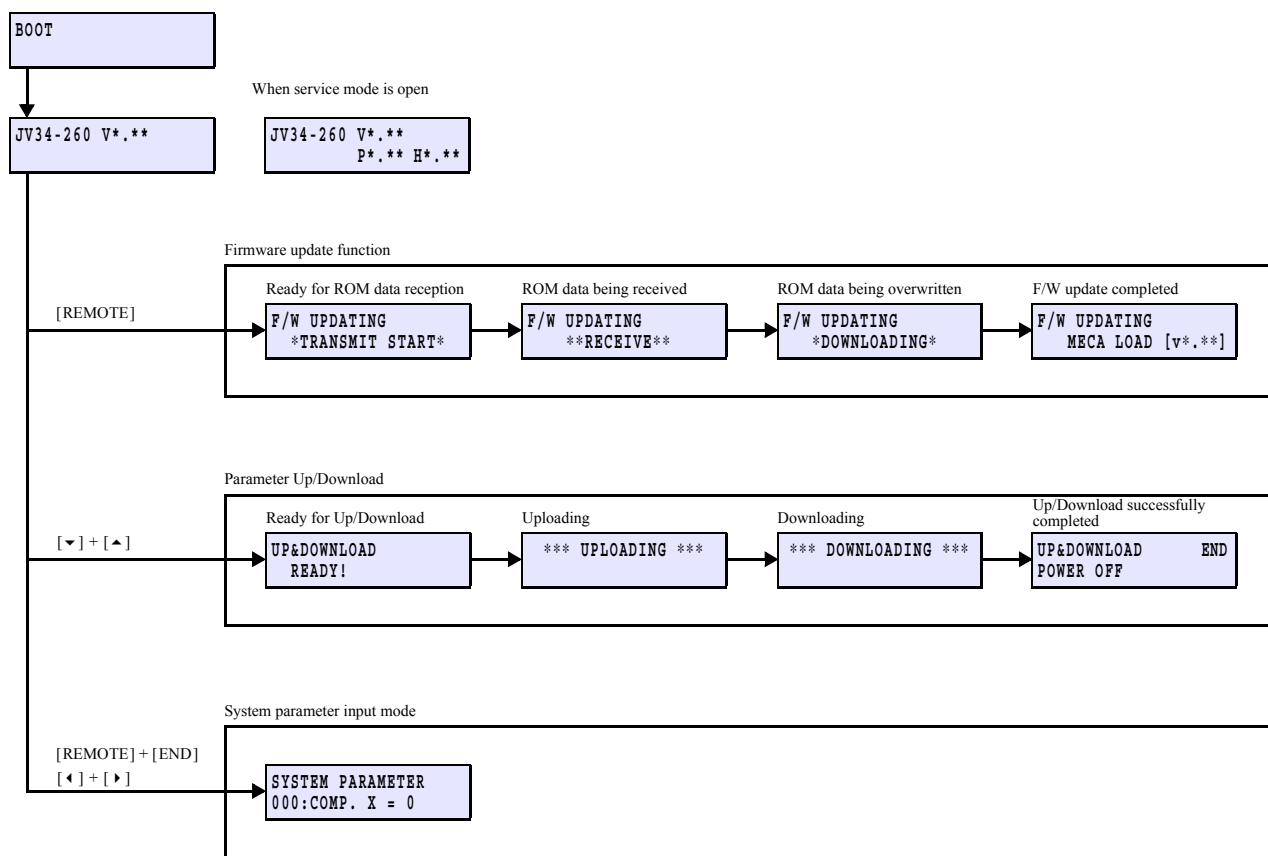
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## Operation Flow

<b>8.1 Basic Operation</b>	<b>8.2 Print Mode</b>	<b>8.3 Common Setting</b>
<b>8.4 Service Mode</b>		



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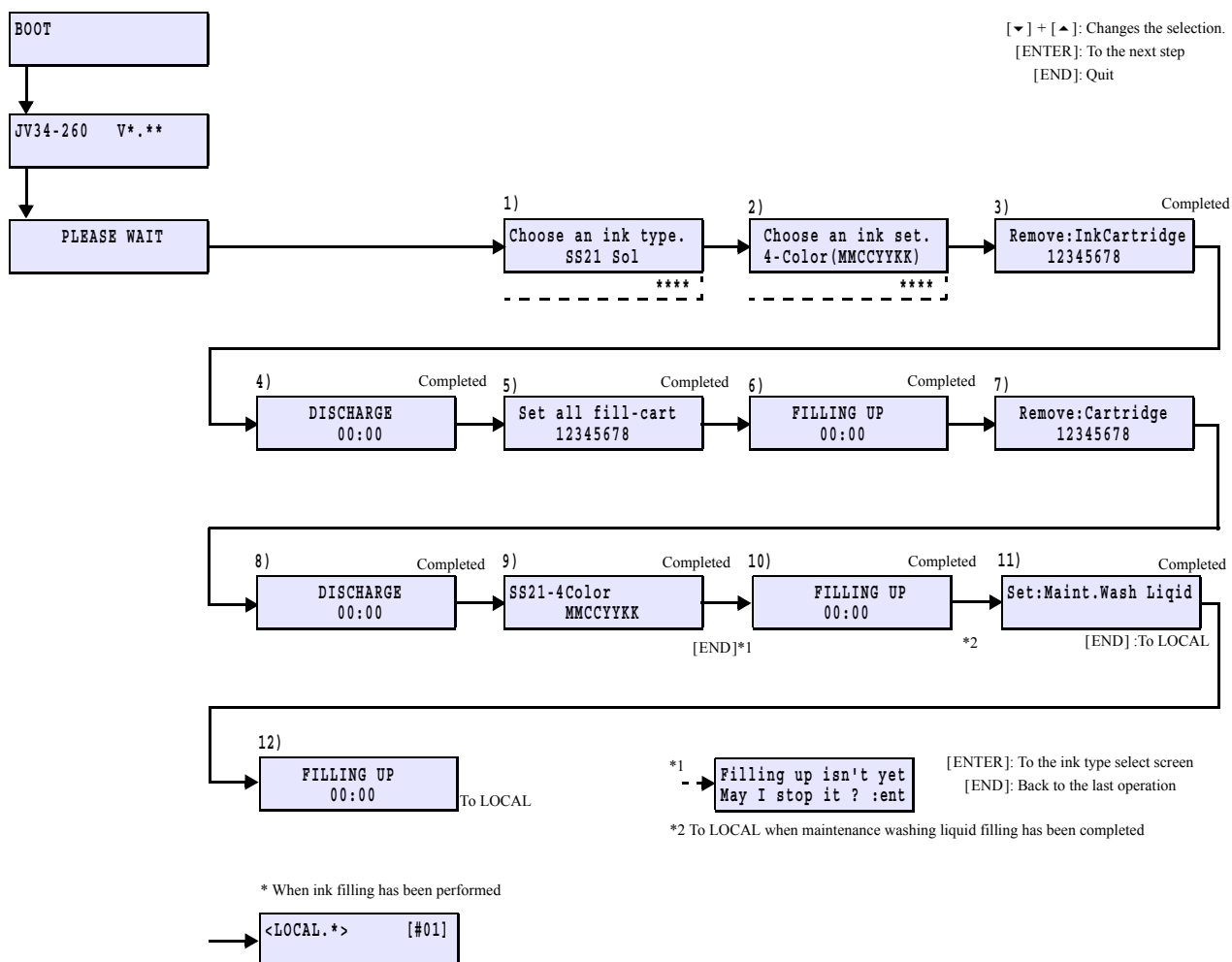
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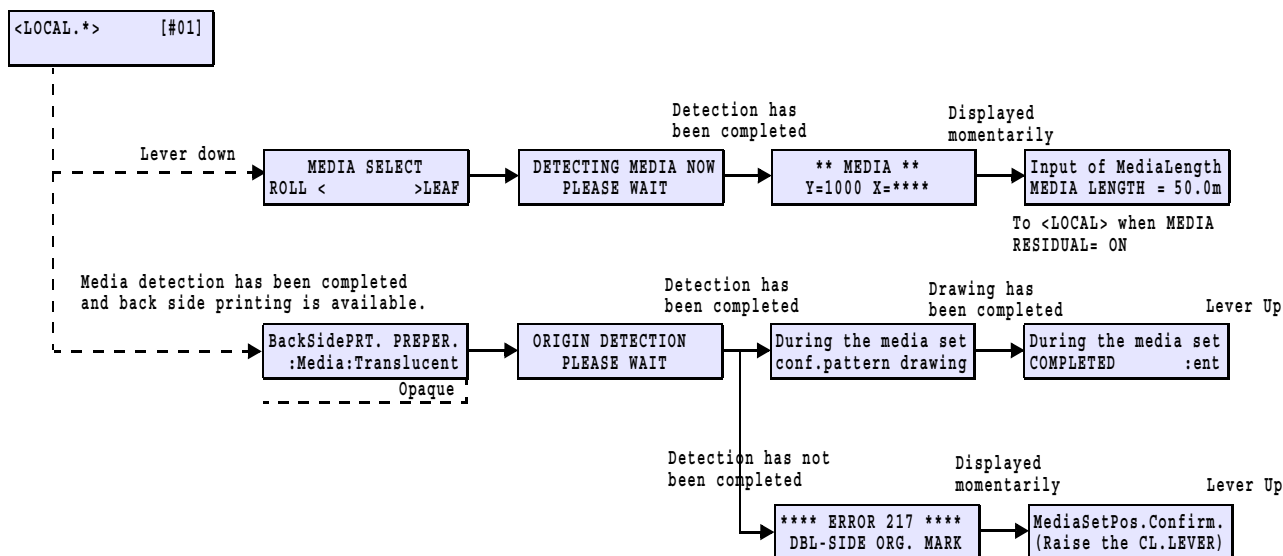
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### 8.1.3 Media Detection



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## Operation Flow

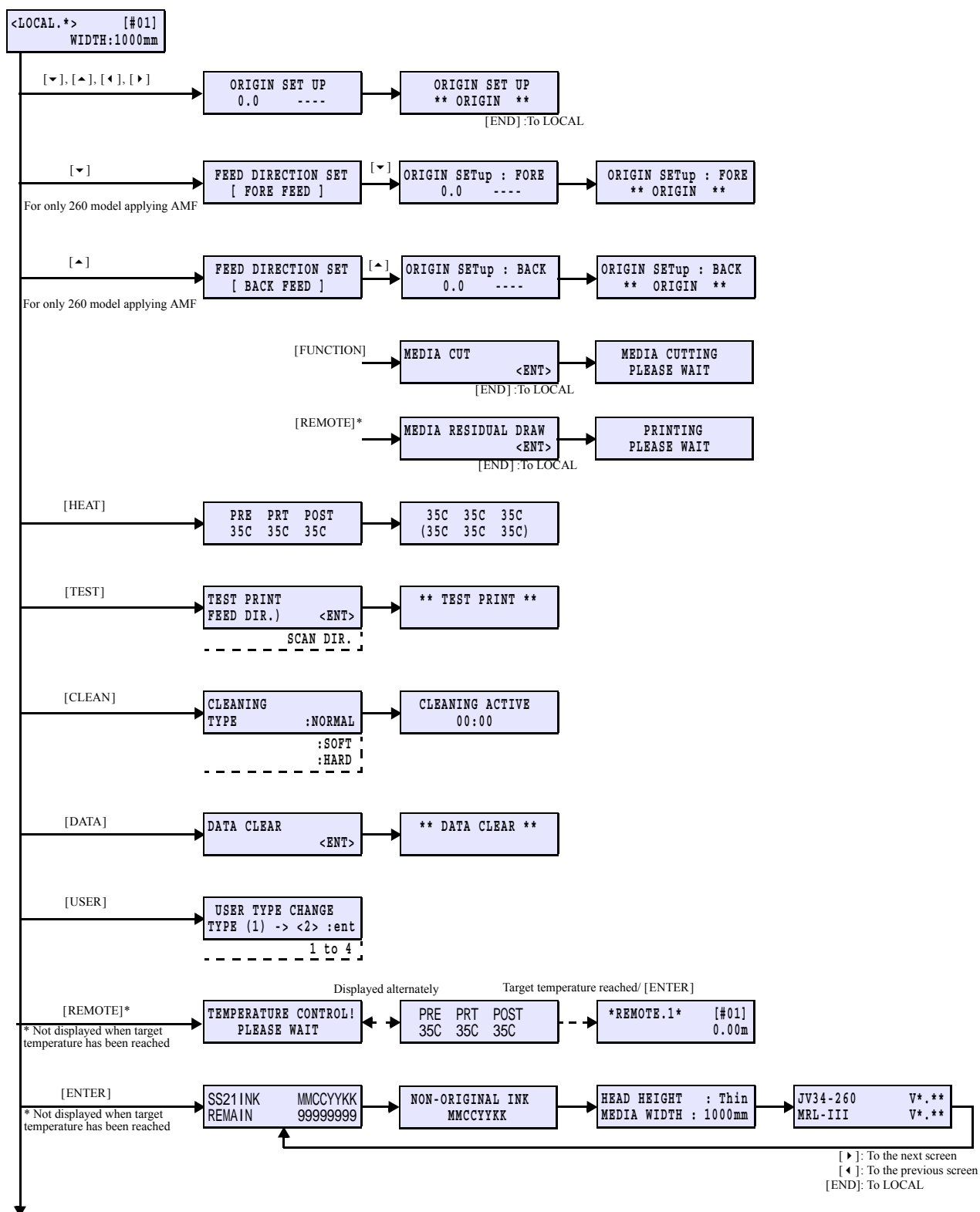
**8.1**  
**Basic Operation**

**8.2**  
**Print Mode**

**8.3**  
**Common Setting**

**8.4**  
**Service Mode**

## 8.2.1 LOCAL / REMOTE



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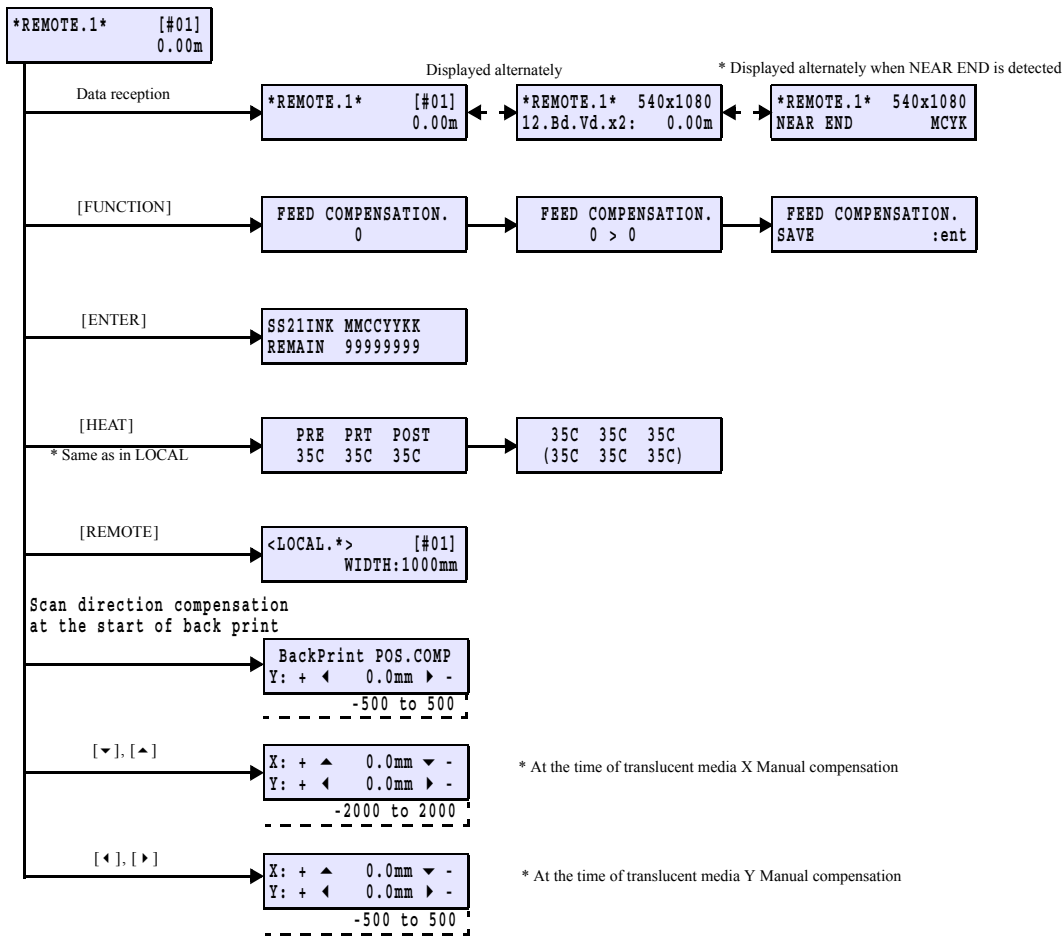
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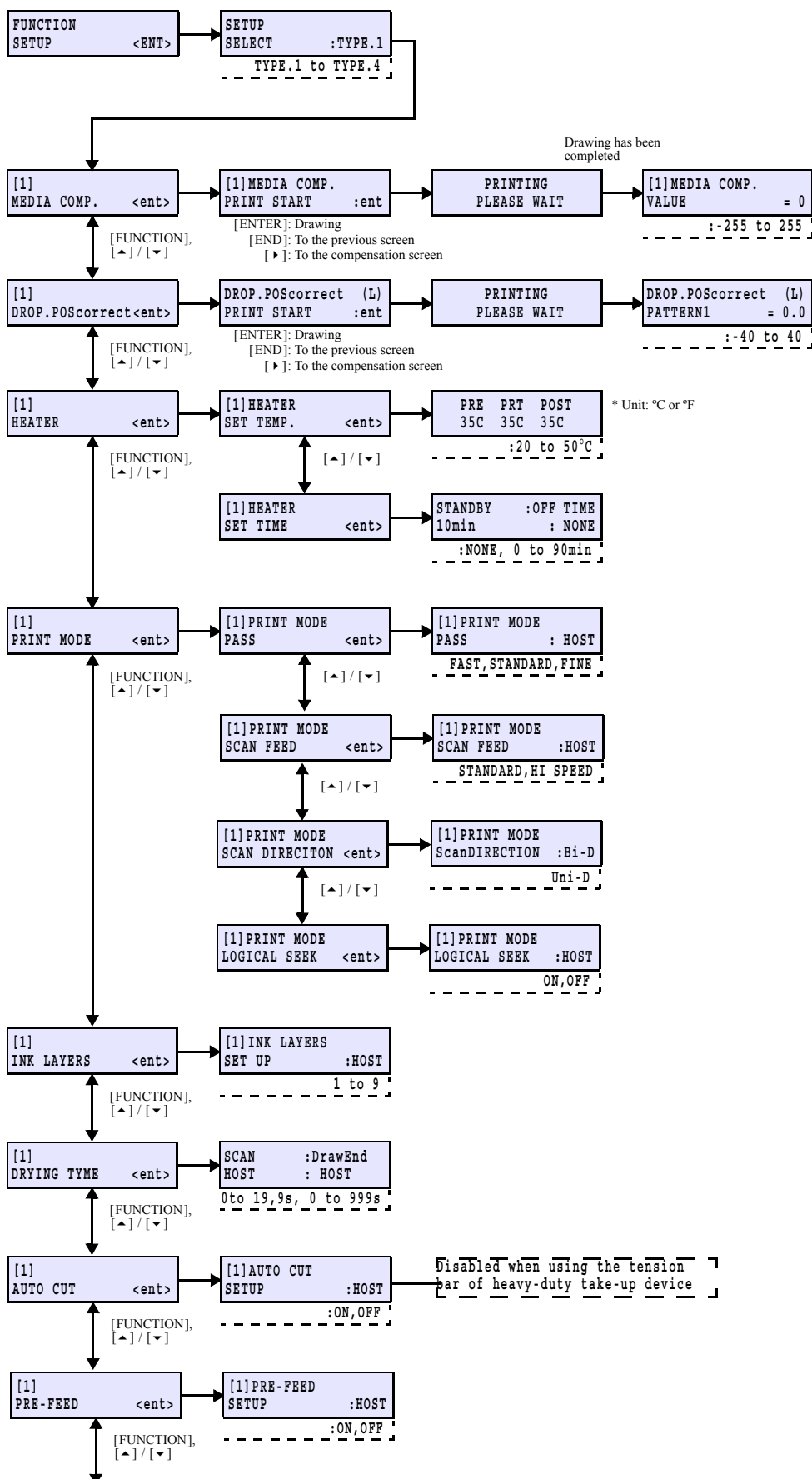
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## 8.2.2 SETUP

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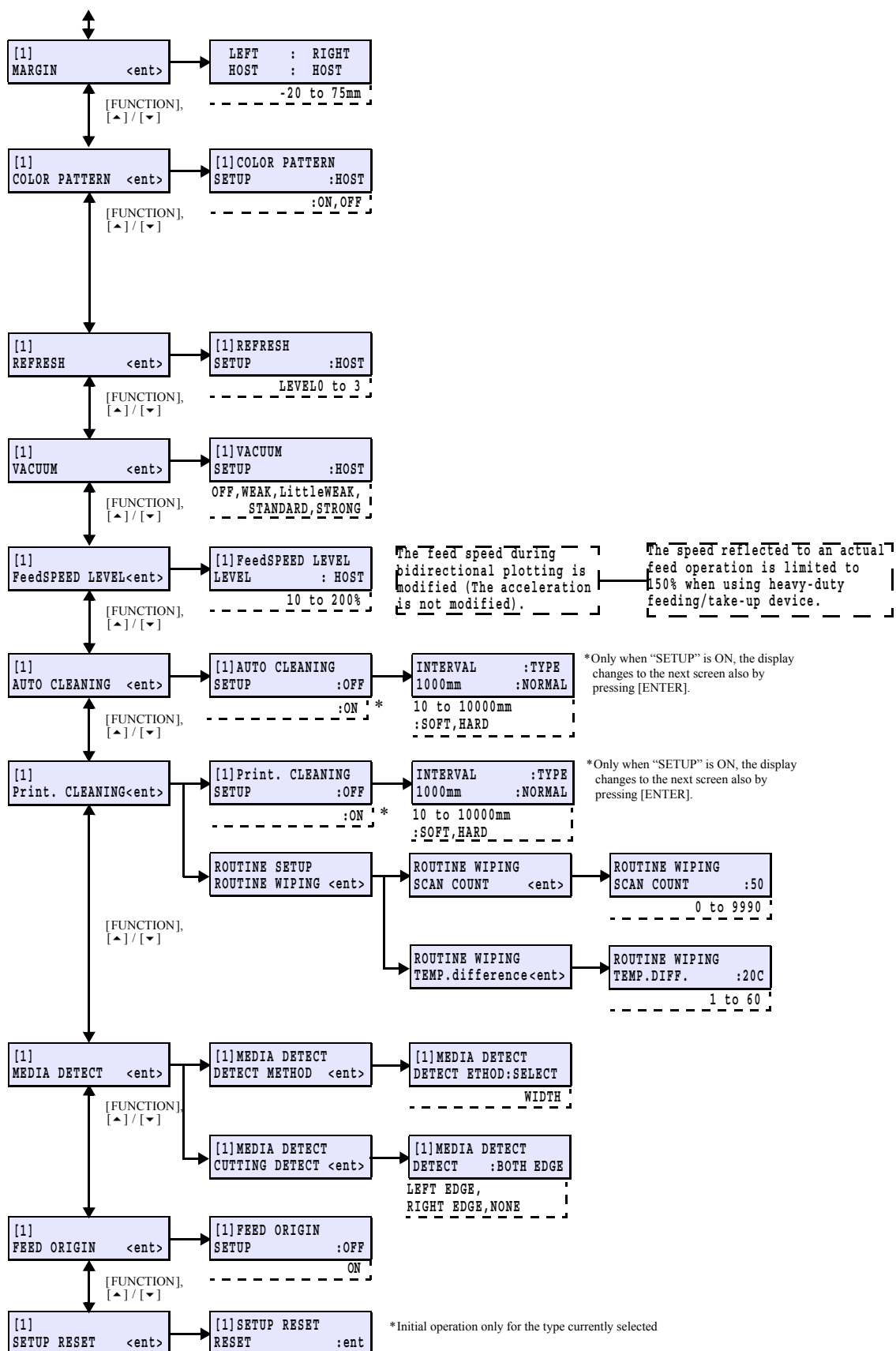
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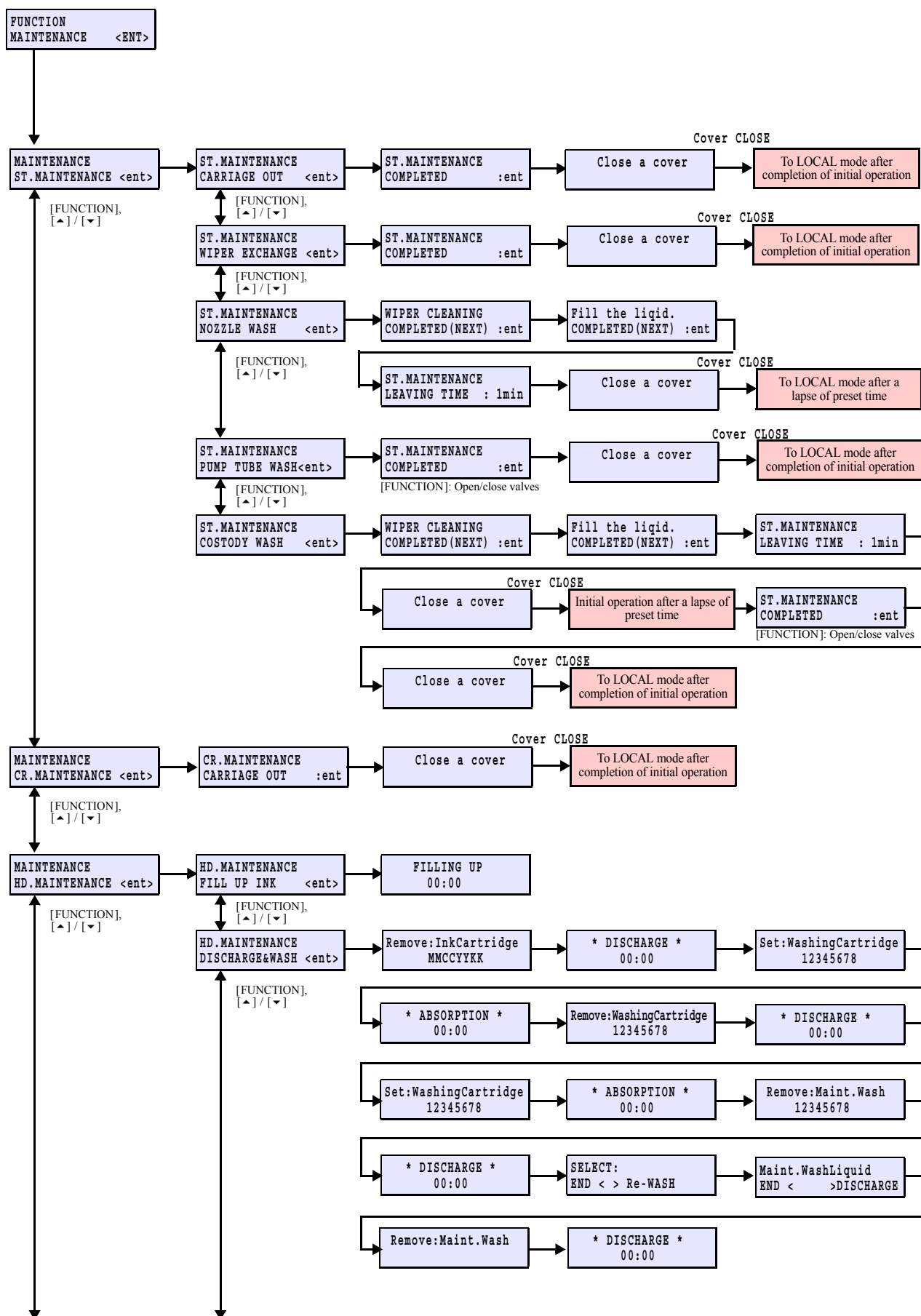
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## 8.2.3 MAINTENANCE



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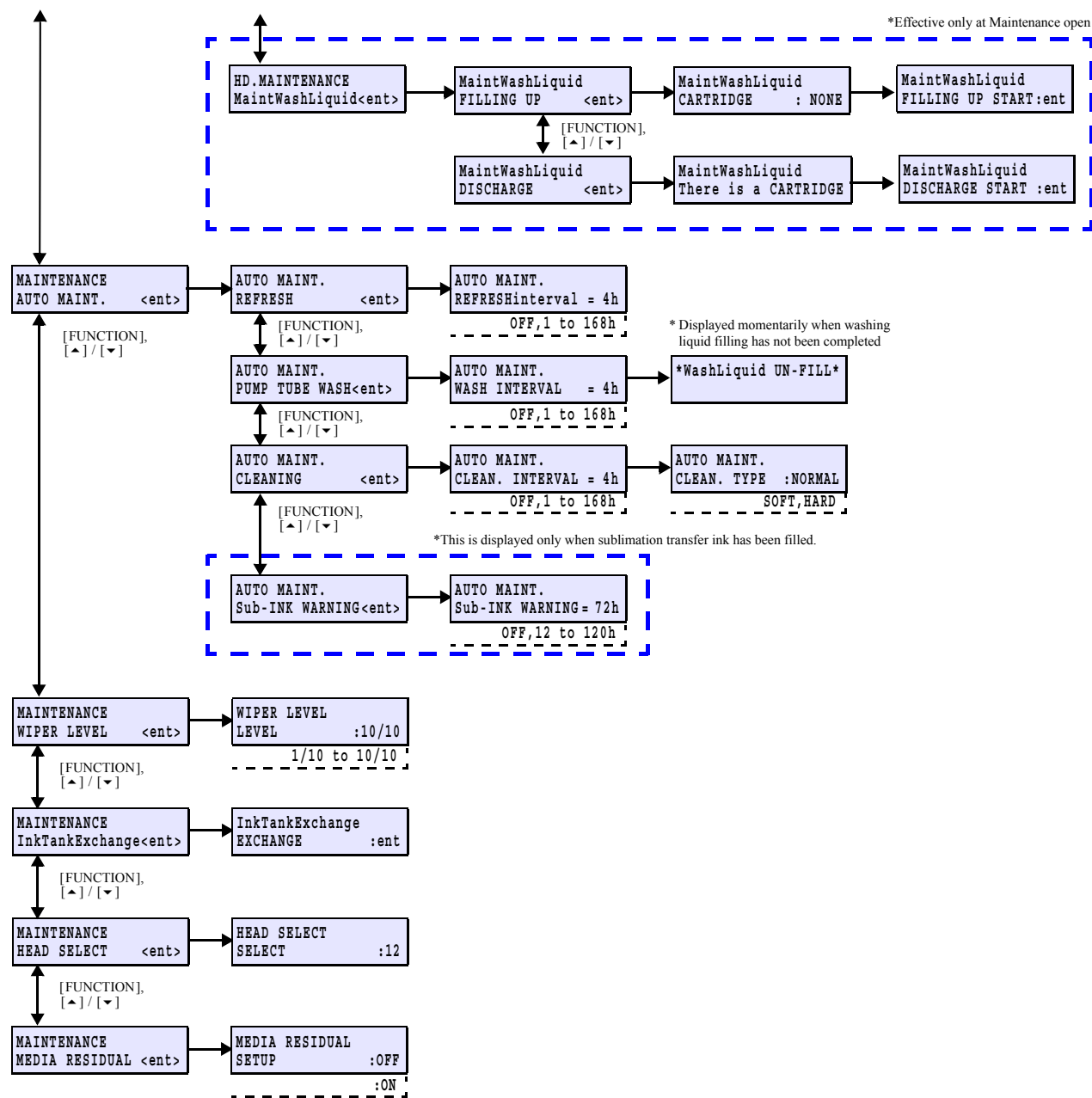
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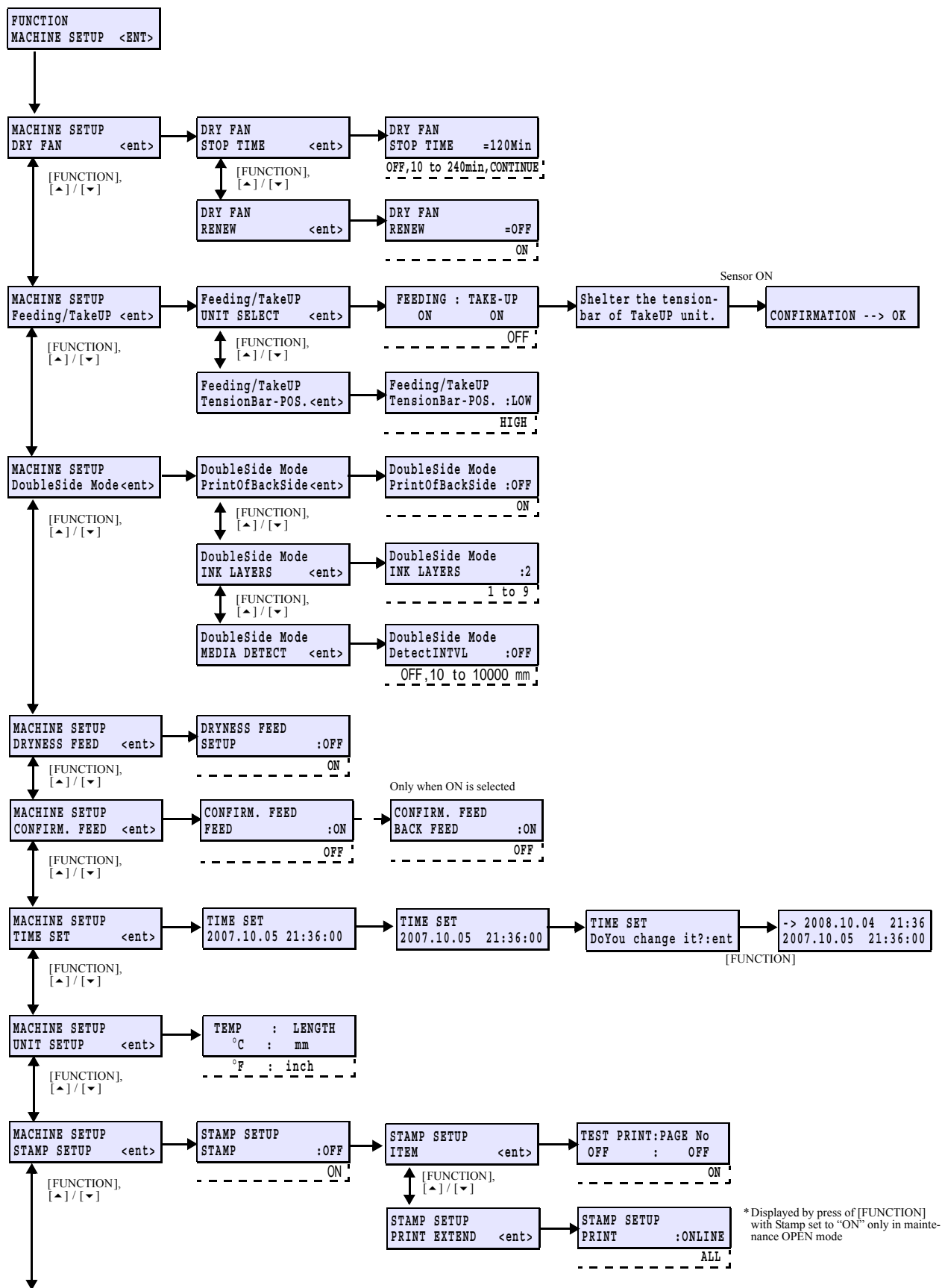
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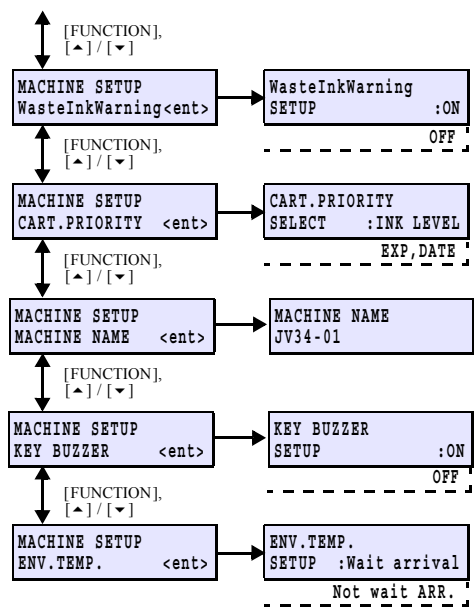
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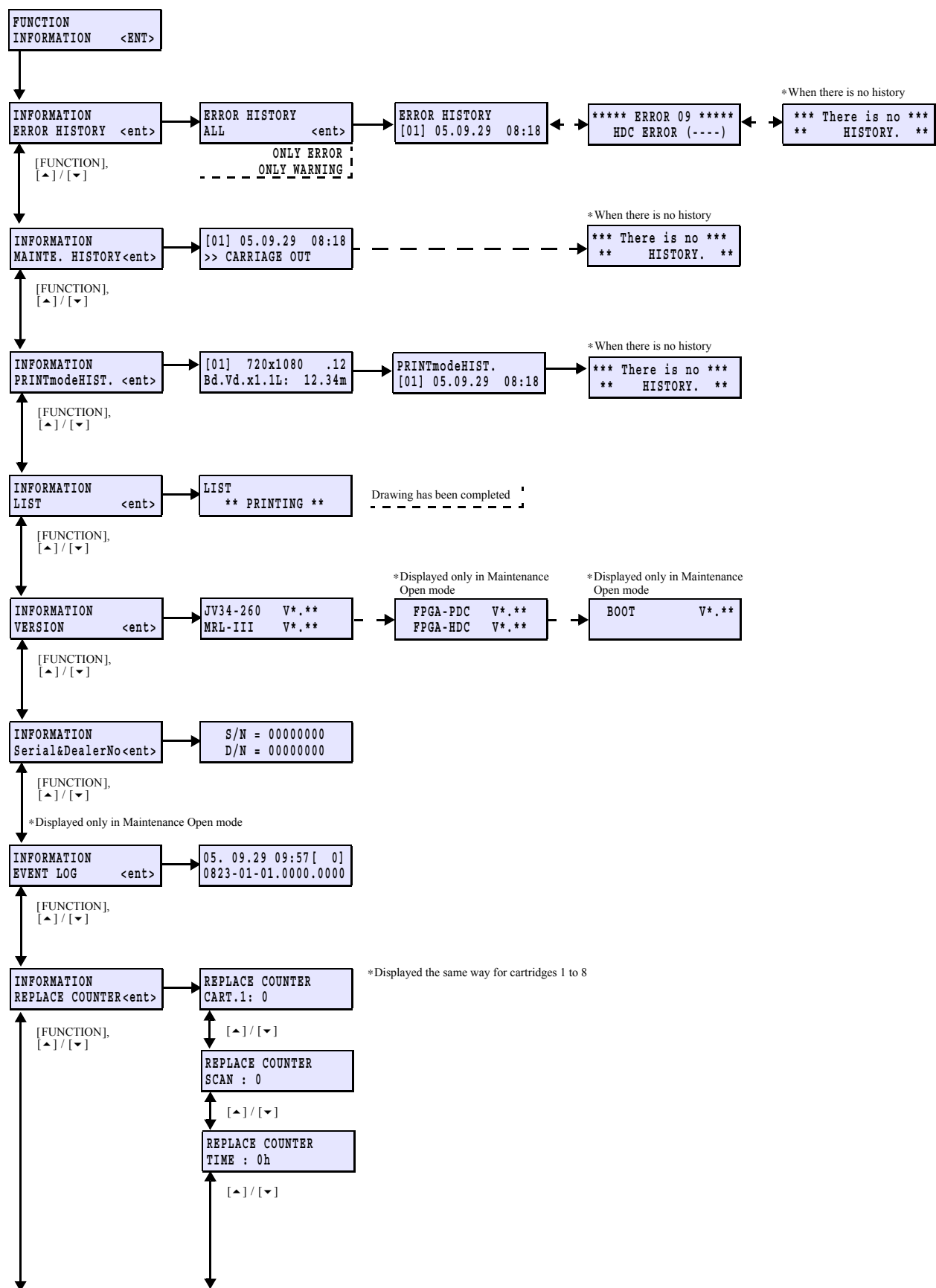
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## Operation Flow

<b>8.1</b> <b>Basic Operation</b>	<b>8.2</b> <b>Print Mode</b>	<b>8.3</b> <b>Common Setting</b>
<b>8.4</b> <b>Service Mode</b>		



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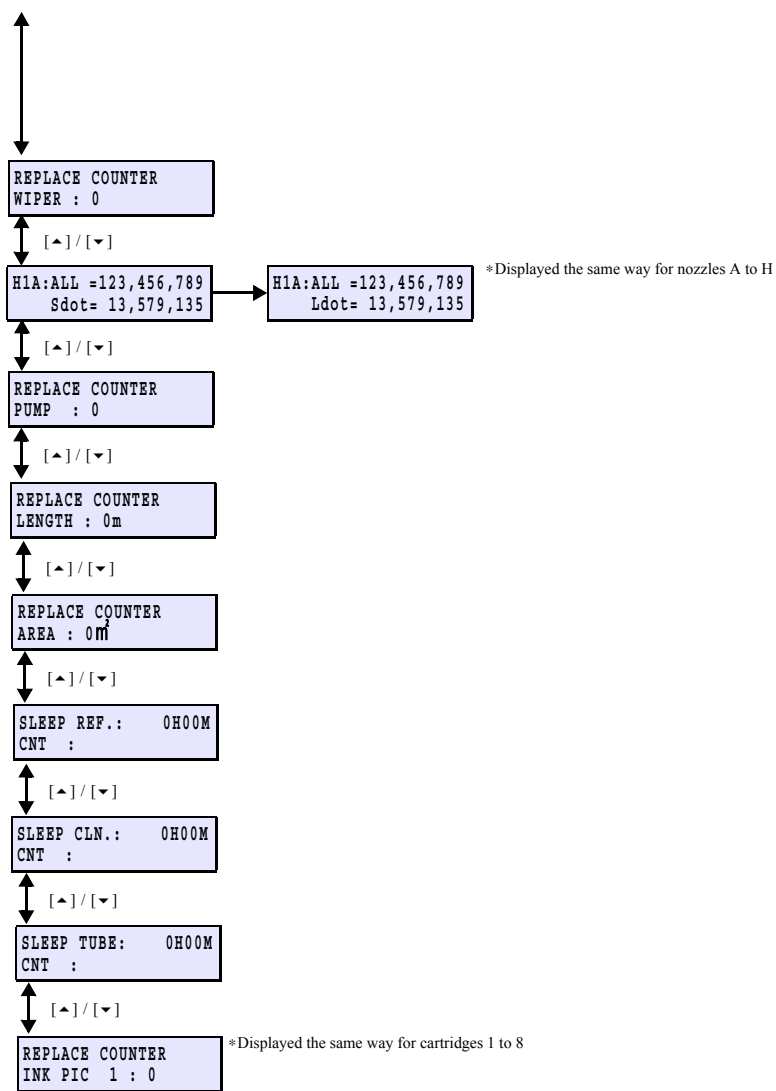
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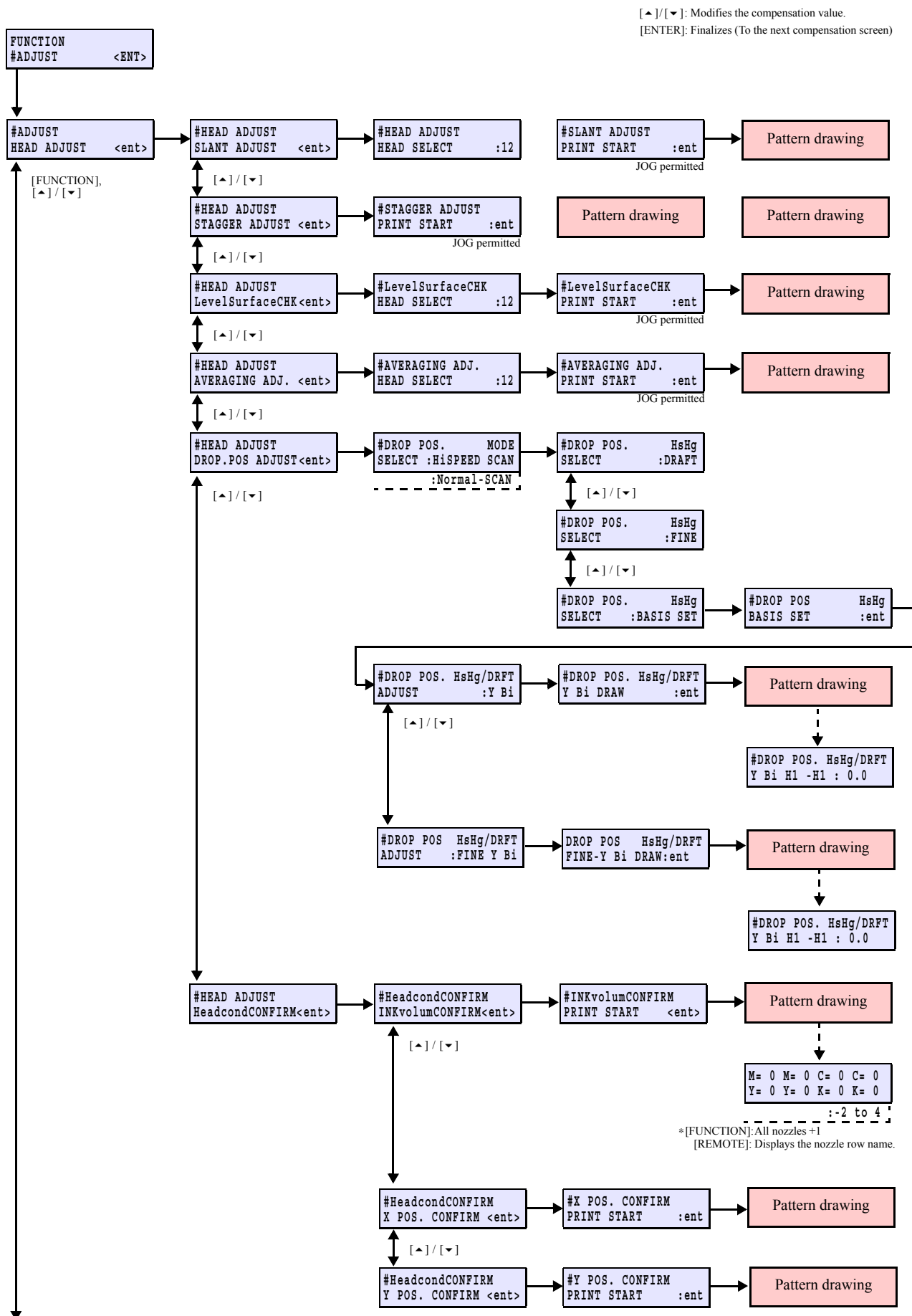
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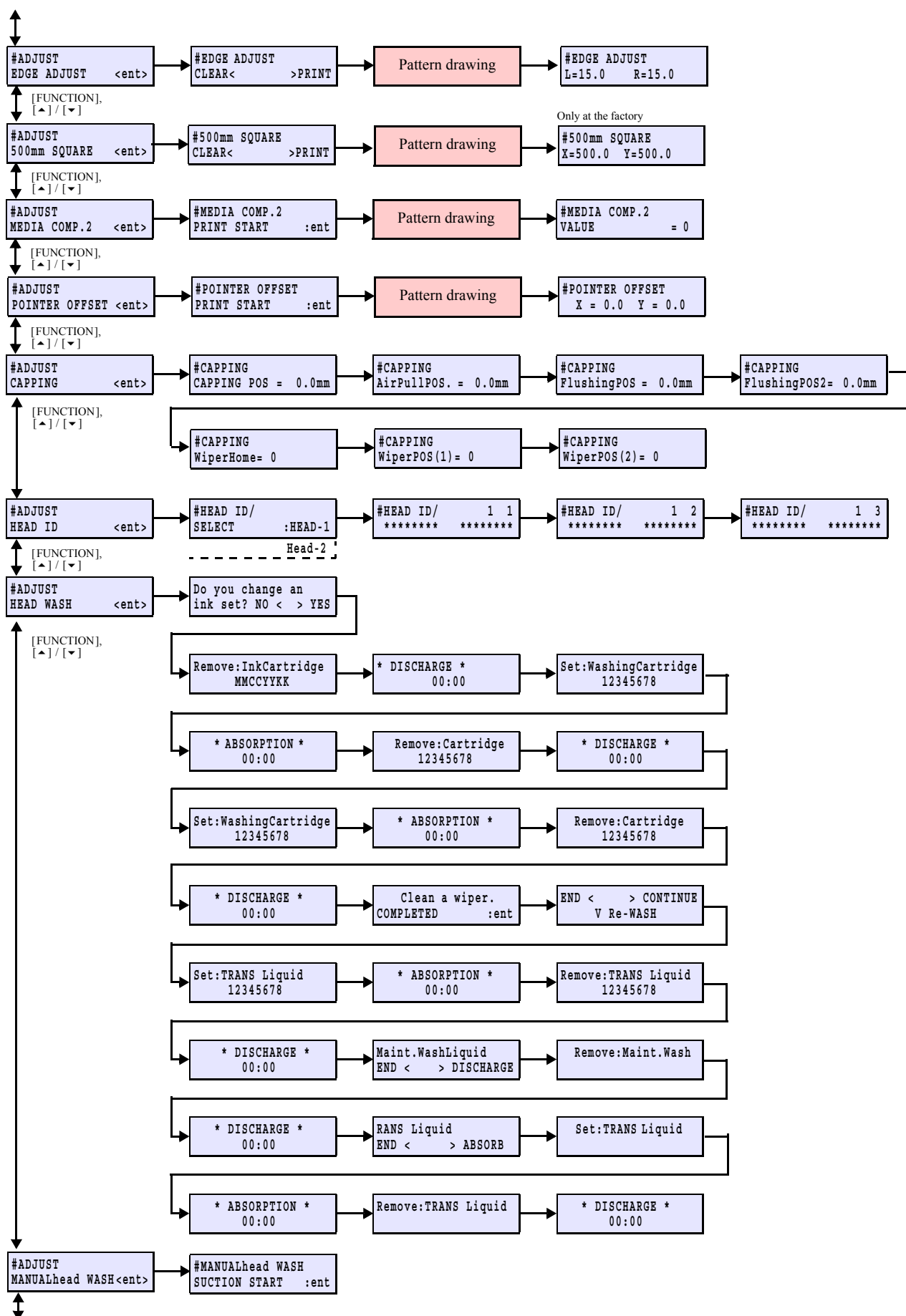
## Operation Flow

<b>8.1</b> <b>Basic Operation</b>	<b>8.2</b> <b>Print Mode</b>	<b>8.3</b> <b>Common Setting</b>
<b>8.4</b> <b>Service Mode</b>		



## 8.4.1 #ADJUST

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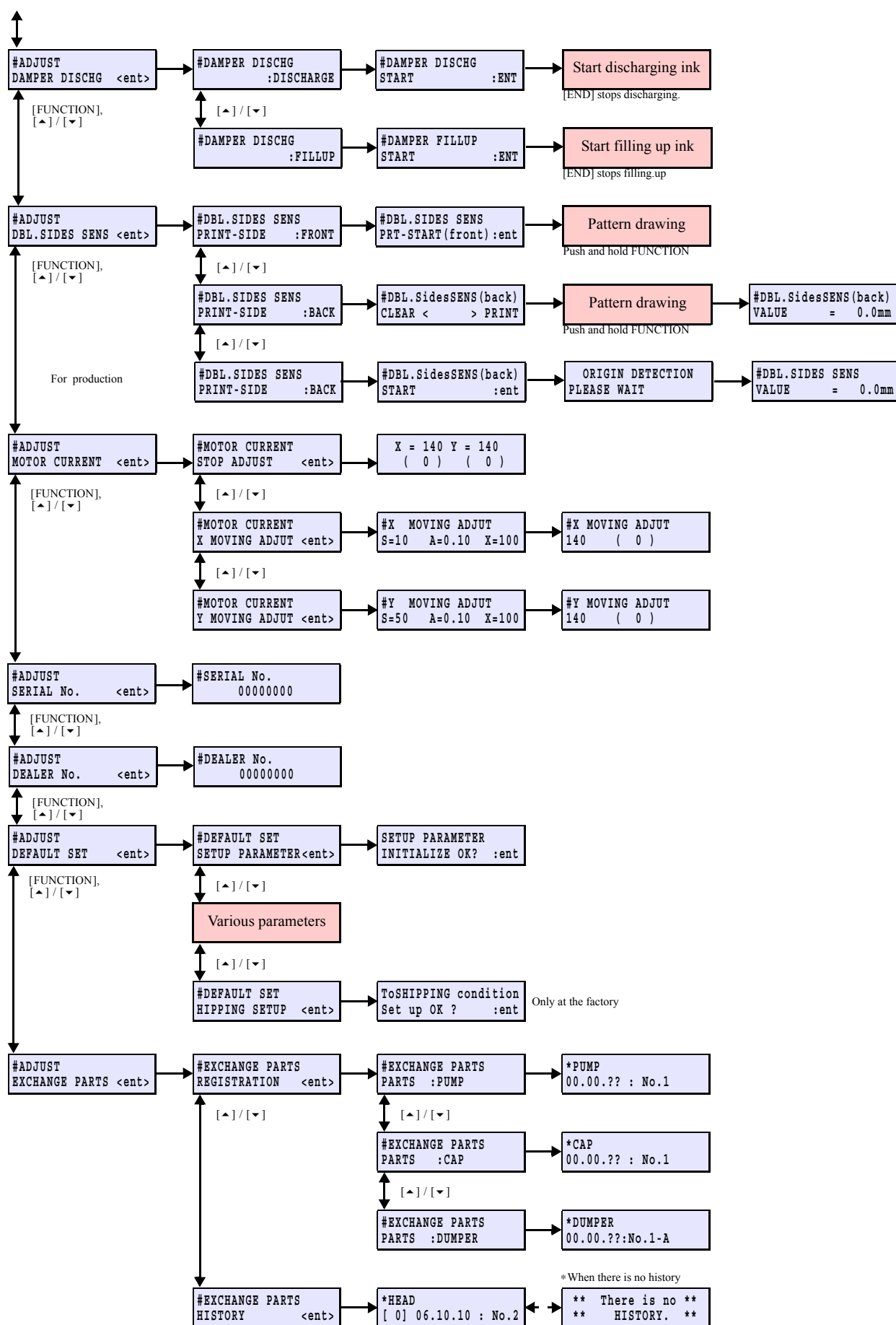
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## 8.4.1 #ADJUST

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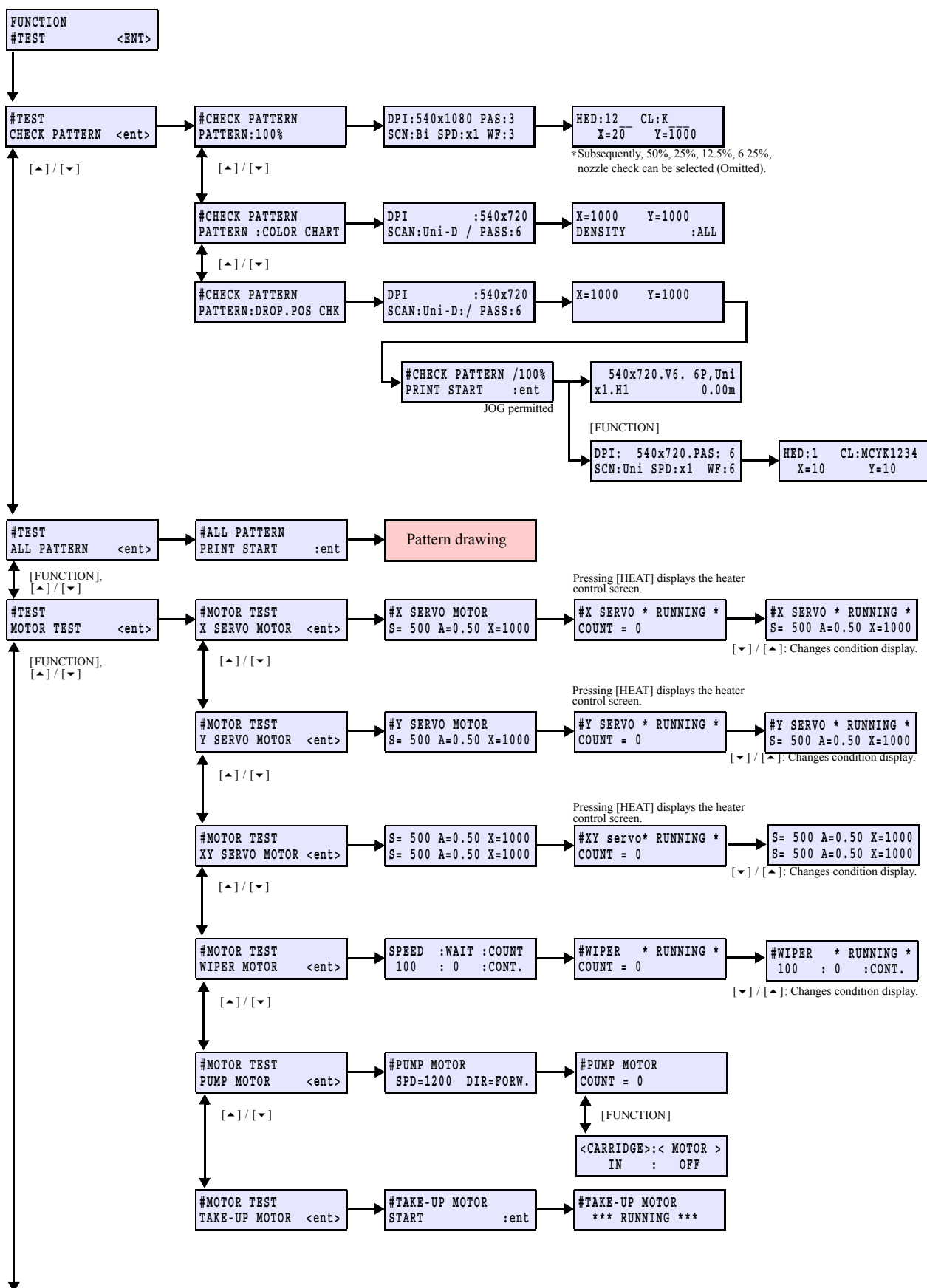


## 8.4.2 #TEST

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[▲]/[▼]: Modifies the compensation value.

[ENTER]: Finalizes (To the next compensation screen)



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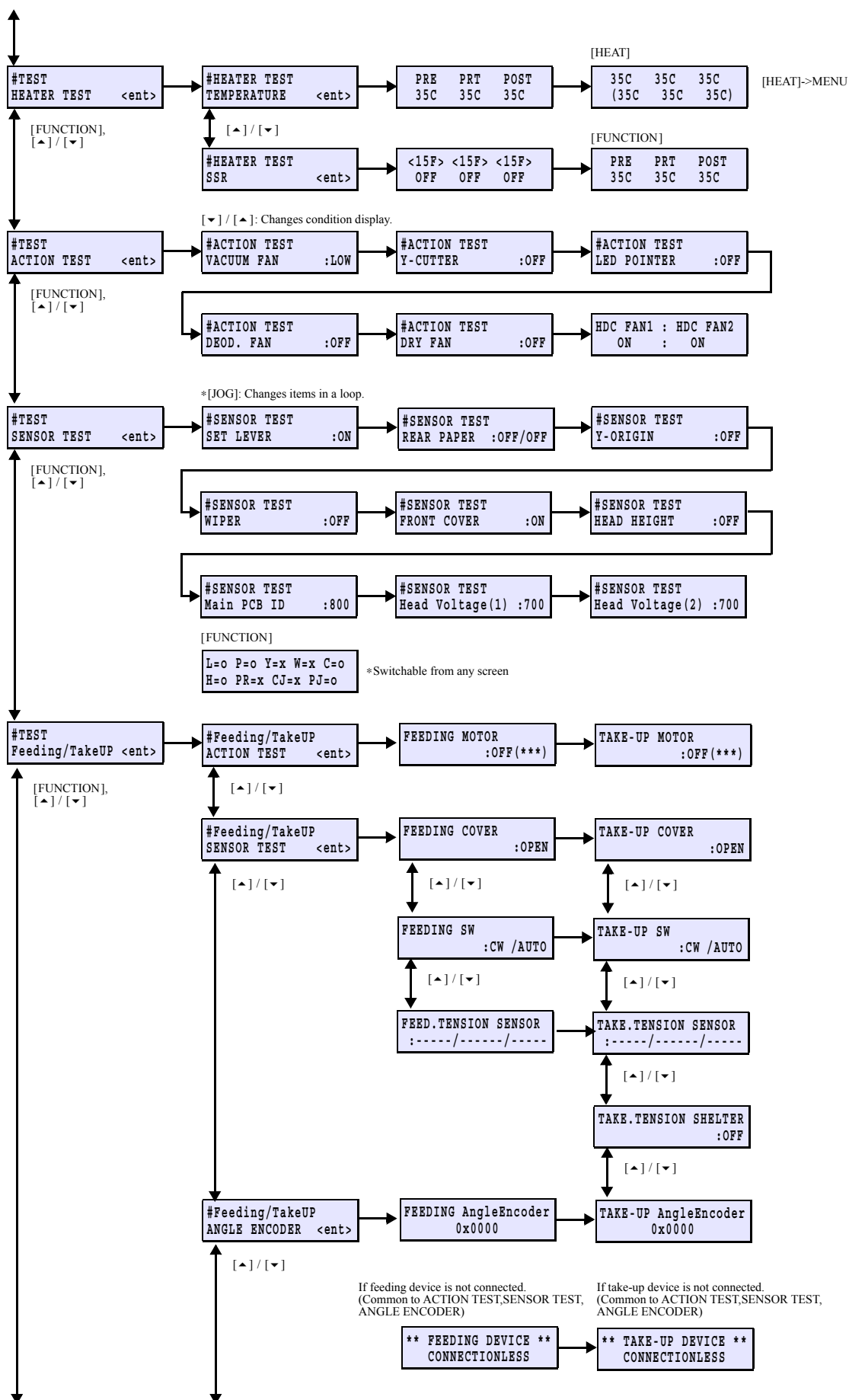
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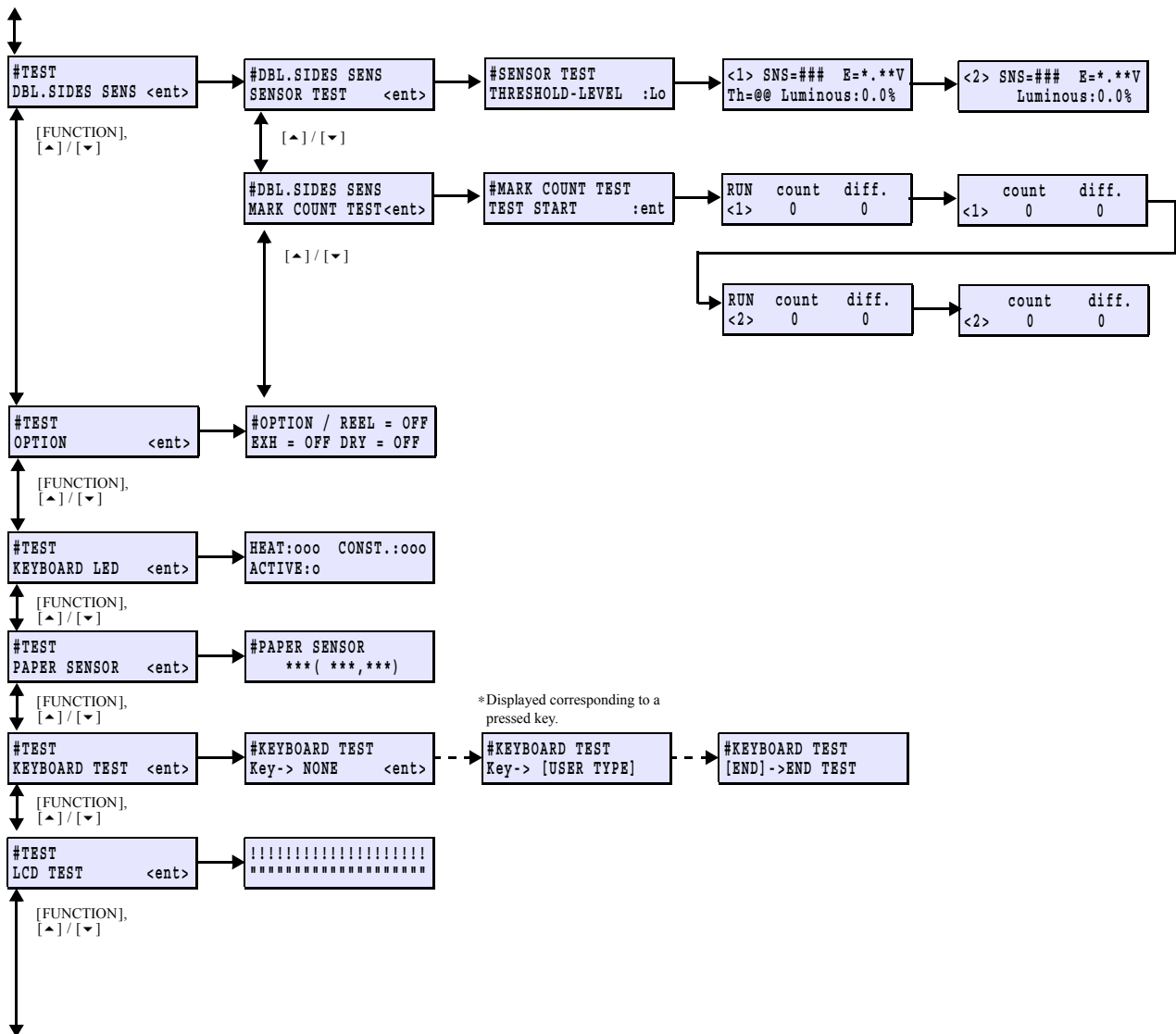
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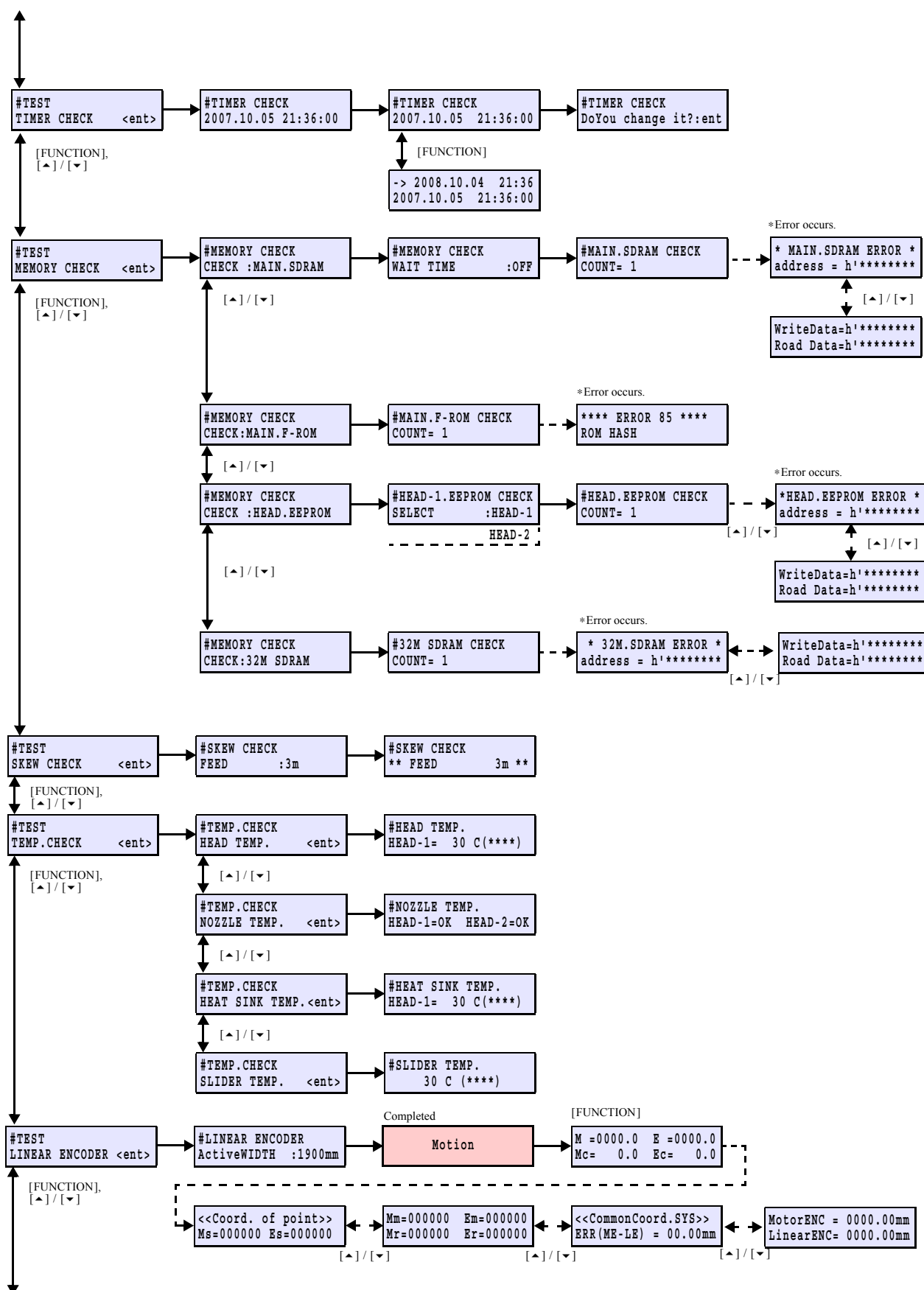




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## 8.4.2 #TEST

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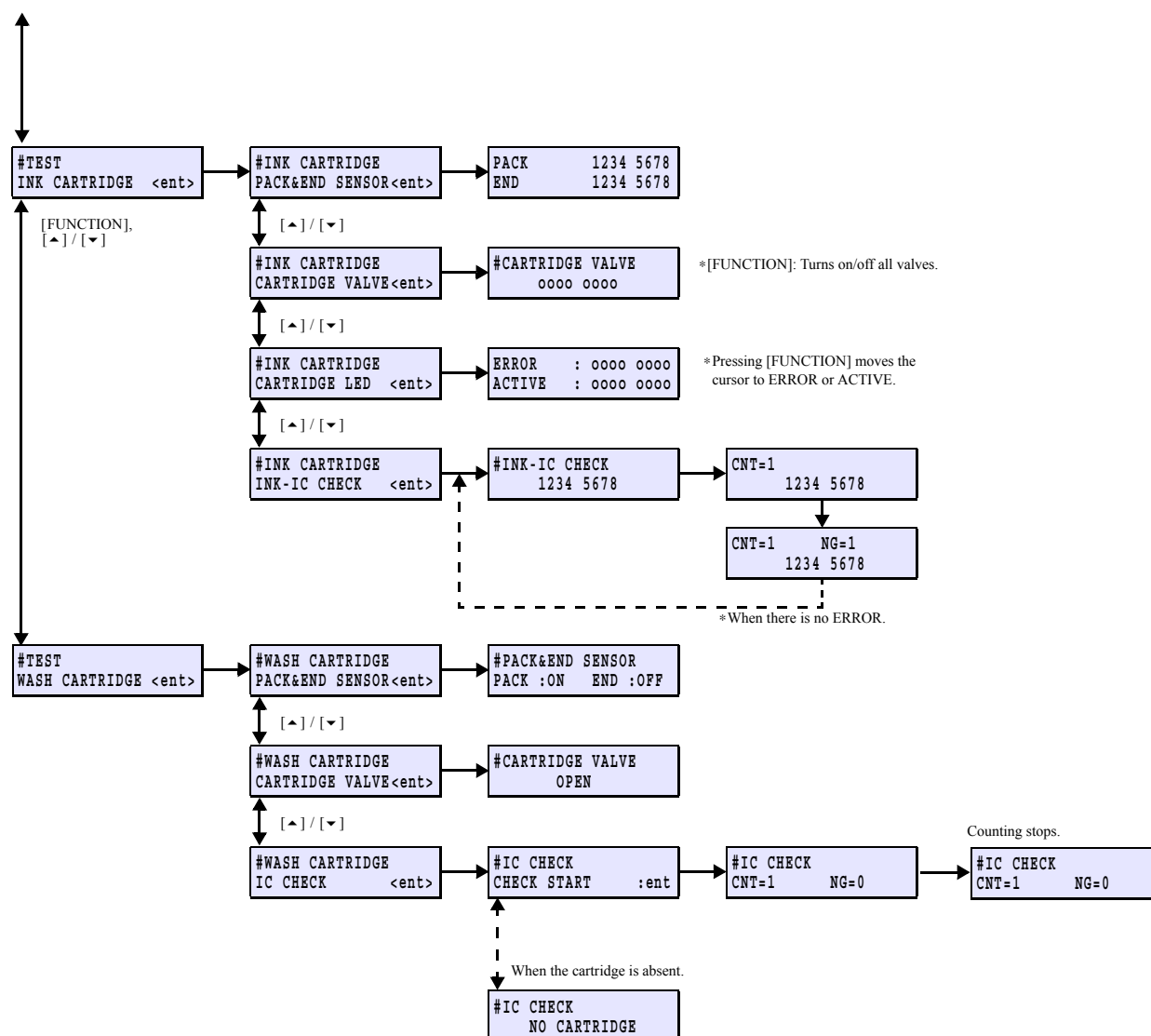
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## 8.4.3 #PARAMETER

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[▲]/[▼]: Modifies the compensation value.

[ENTER]: Finalizes (To the next compensation screen)

