

***TX300P-1800***

***TX300P-1800 MkII***

**Maintenance manual**

MAINTENANCE MANUAL > Introduction					Rev.
Model	Tx300P	Issued	2020.03.17	Revised	Remark
<b>I. Introduction</b>					<b>3.3</b>

## ■ Outline

This document provides a service engineer with the information required for installation of Tx300P-1800, Tx300P-1800 MkII inkjet printers.

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## ■ Documents related to this unit

Documents other than this document which describe the Tx300P-1800, Tx300P-1800 MkII are listed below. Refer to these as required.

- Operation Manual
- Mechanical Drawing
- Installation guide
- Accessories List

# Maintenance Manual Contents

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# Operating Principle

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Basic Operation**

**1.2  
Maintenance Function**

**1.3  
Ink System**

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## 1.1.1 Suction fan rotation detection function (only for MkII)

3.1

### ■ Outline

This function is for preventing heat generation and ignition of the Vacuum Fan.

The rotation speed of the Vacuum Fan is monitored, and if an abnormality (low rotation speed) is detected, the Vacuum Fan is forcibly stopped.

### ■ Function

If any one of the four Vacuum Fans is judged to be abnormal, all Vacuum Fans are forcibly stopped and an error is displayed.

If an error occurs during a remote screen, interrupt printing and display the local screen.

If the error occurs during other printing (such as a test printing), printing is stopped.

### ■ Item to adjust

- Adjustment of threshold value for the rotation speed reduction

The threshold value of the speed reduction can be reduced by a parameter so that the rotation speed reduction due to the temporary malfunction is not determined to be abnormal.

The threshold value is adjusted to the ratio of operation parameter No. 315 "FanErrmrgn" [x10%] with respect to the threshold value in the operation mode (weak, standard, strong) of the Vacuum Fan.

Parameter	Default	Range	Unit
Operation parameter No.315 "FanErrmrgn"	10	1 to 10	[x10%]

The table below shows the threshold value of the rotation speed reduction in each operation mode.

Operation mode	Value of the speed reduction [unit:pps]
weak	50 x [Operation parameter No.315 "FanErrmrgn"]/10
standard	75 x [Operation parameter No.315 "FanErrmrgn"]/10
strong	100 x [Operation parameter No.315 "FanErrmrgn"]/10

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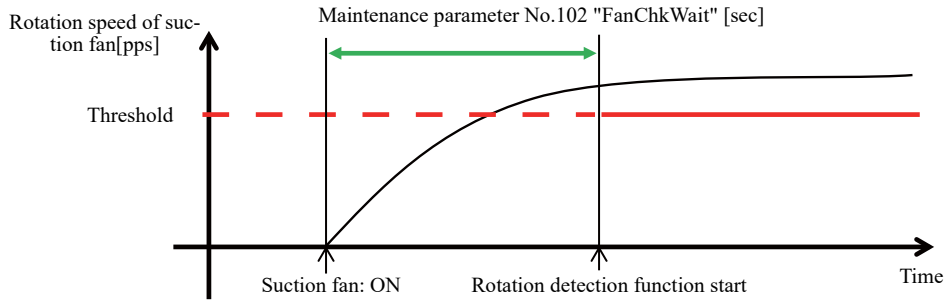
# 1.1.1 Suction fan rotation detection function (only for MkII)

## □ The waiting time from turning on the Vacuum Fan to starting the rotation detection function

The waiting time from turning on the Vacuum Fan to starting the rotation detection function can be changed using a parameter.

After turning on the Vacuum Fan, start the rotation detection function after the maintenance parameter No.102 "FanChkWait" [seconds] elapses.

Parameter	Default	Range	Unit
Operation parameter No.102 "FanChkWait"	4	4 to 40	[seconds]



## □ Continuous time for detecting the speed decrease judged as abnormal

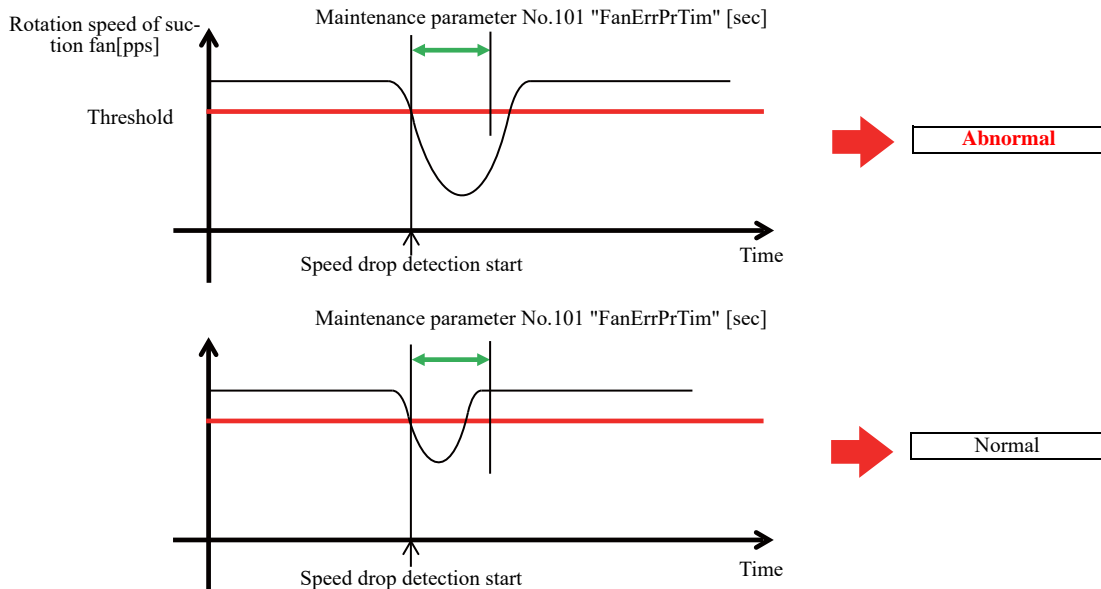
The rotational speed reduction due to temporary malfunction is not determined to be abnormal, but the continuous speed reduction is determined to be abnormal.

This continuous detection time can be changed by a parameter.

If a speed drop is detected continuously during maintenance para No. 101 "FanErrPrTim" [seconds], it is judged as abnormal.

Parameter	Default	Range	Unit
maintenance parameter No.101 "FanErrPrTim"	5	0 to 255	[seconds]

\* If the value is set to 0, it is determined that an abnormality has occurred if the speed reduction is detected even once.



These parameters are adjustment functions for preventing erroneous detection. If the judgment is made too loose, actual abnormalities cannot be detected and it may lead to the ignition or smoking of the vacuum fan. Normally, operate with the default value.

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# Operating Principle

**1.1**  
**Basic Operation**

**1.2**  
**Maintenance Function**

**1.3**  
**Ink System**

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# Operating Principle

**1.1**  
**Basic Operation**

**1.2**  
**Maintenance Function**

**1.3**  
**Ink System**

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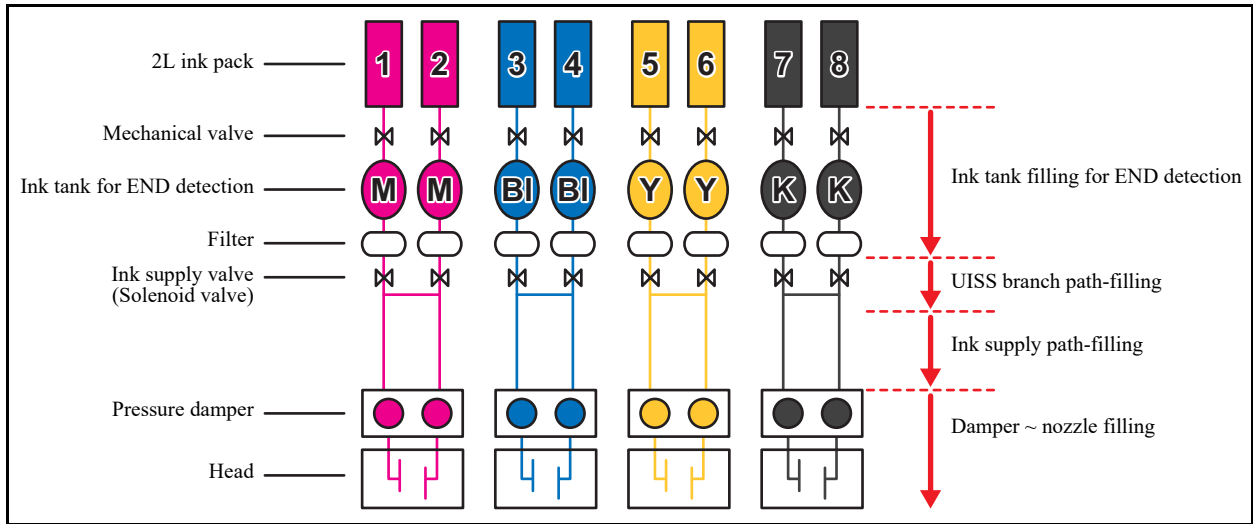
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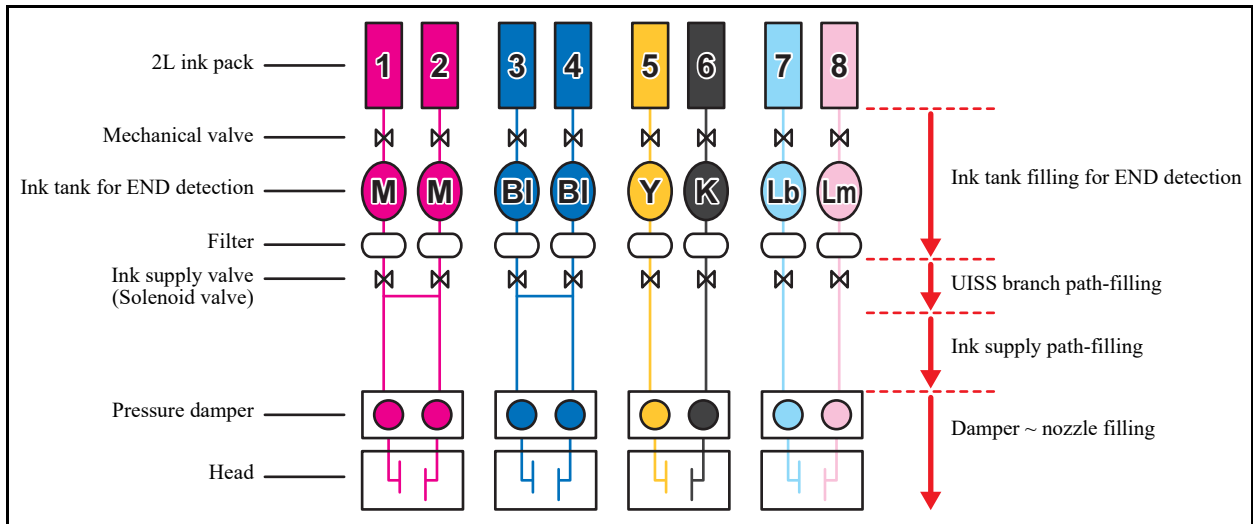
# 1.3.1 Configuration

## ■ Ink Supply Path Diagrammatic Illustration

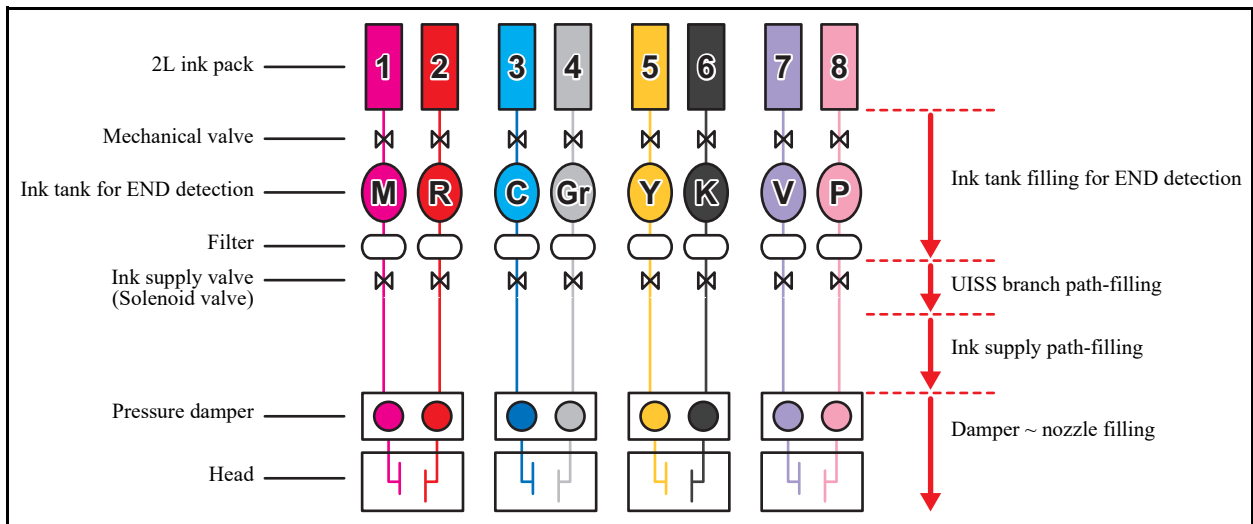
□ Sb420/Sb421 (when filling 4-color ink set)



□ Sb420/Sb421 (when filling 6-color ink set)



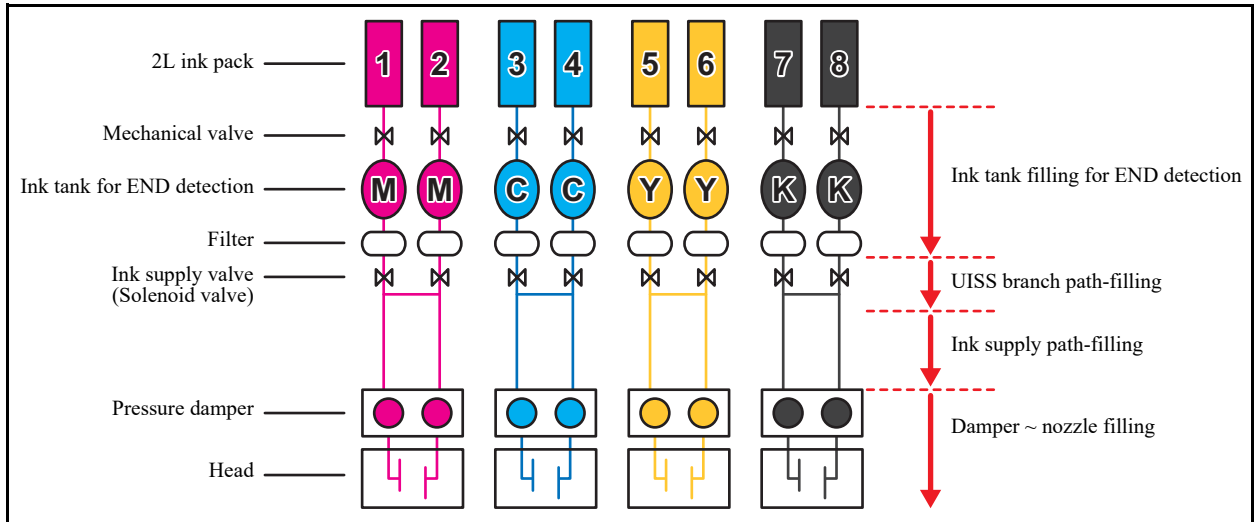
□ Dd400 (When filling 8-color ink set)



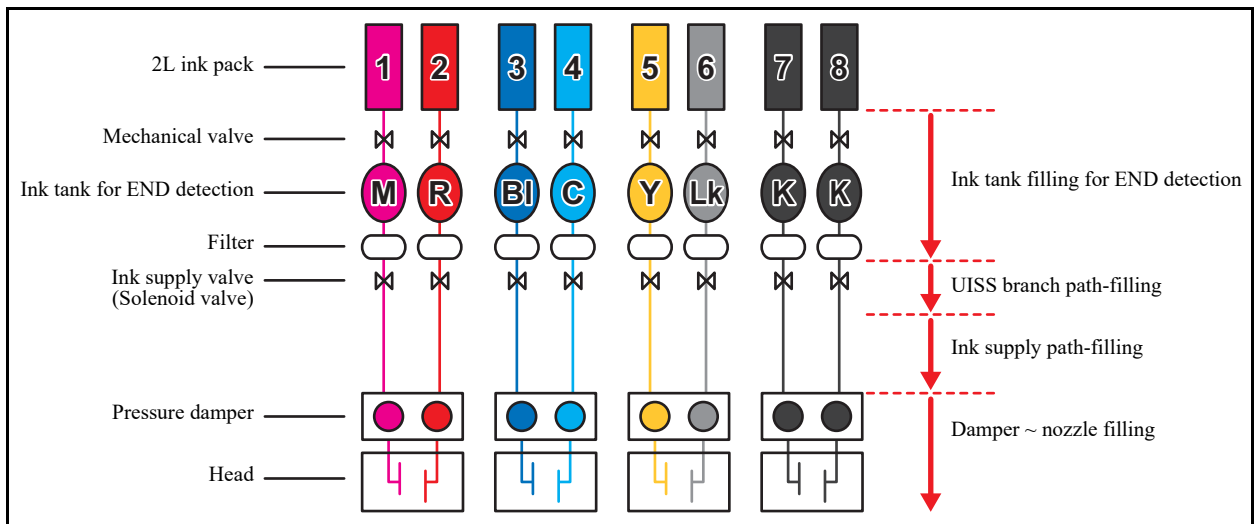
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# 1.3.1 Configuration

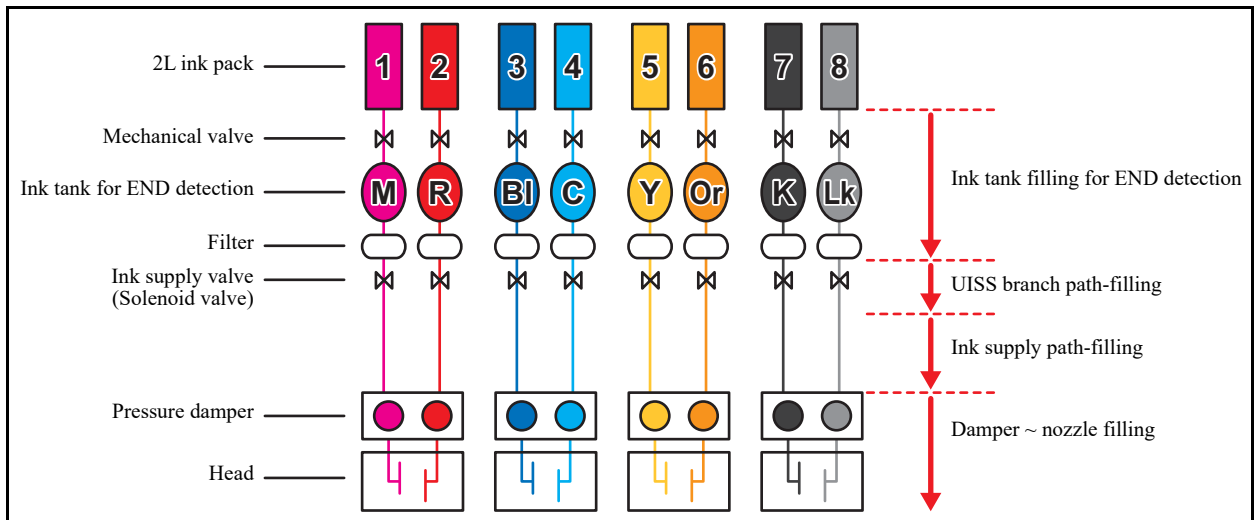
□ TP400 (When filling 4-color ink set)



□ TP400 (When filling with 7-color ink set)



□ Rc400/Rc500 / Ac400 (When filling 8-color ink set)



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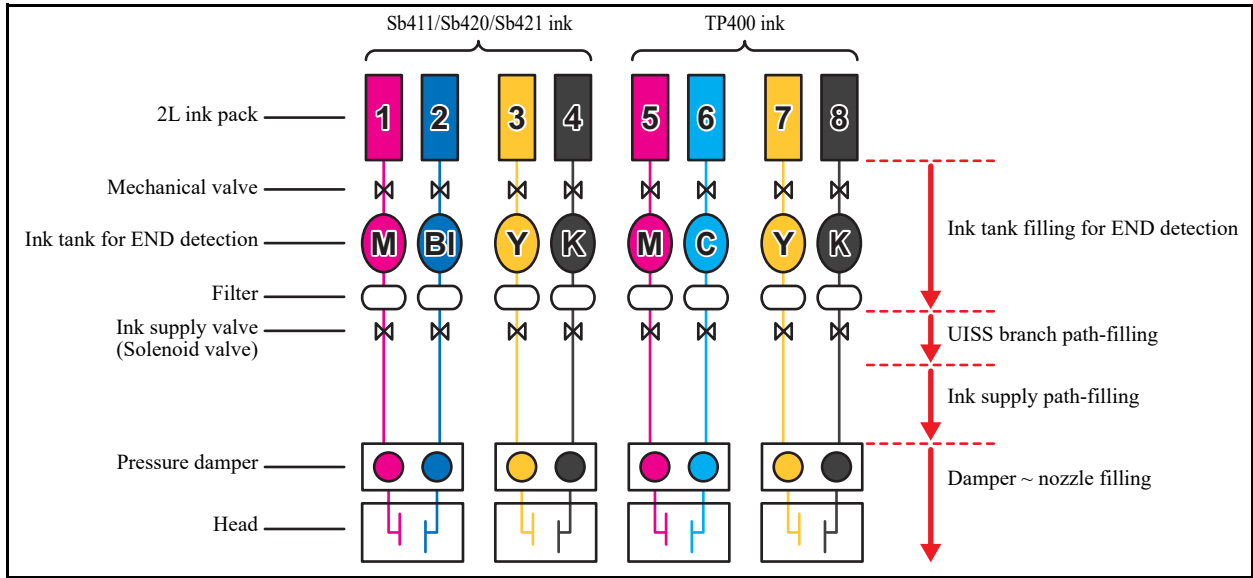
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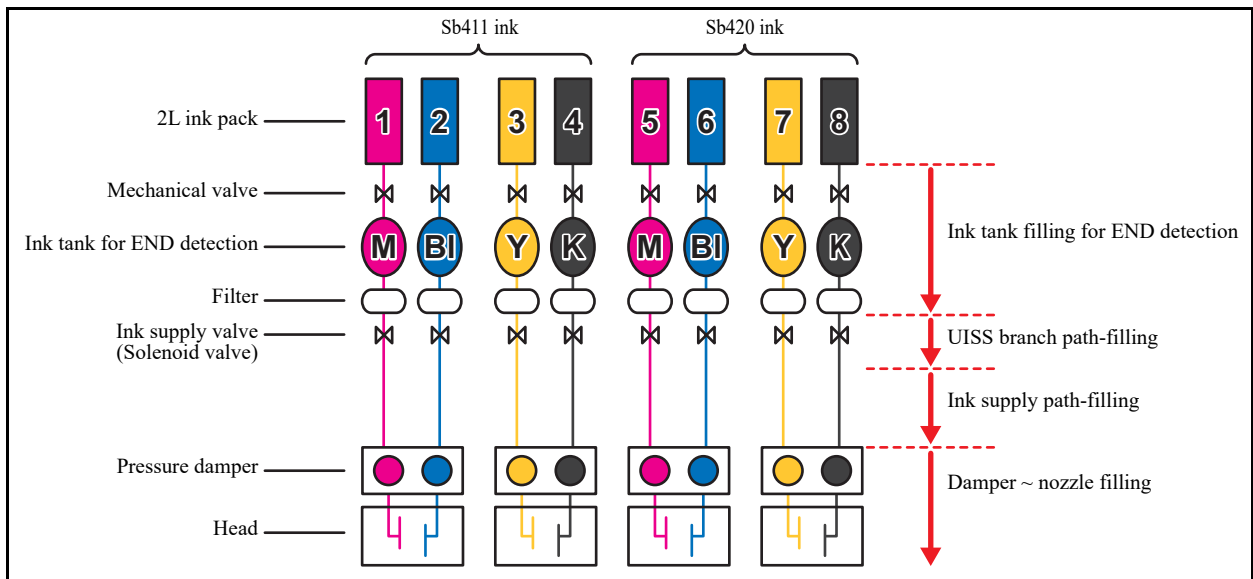
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# 1.3.1 Configuration

□ Sb411+TP400 (only for MkII) / Sb420+TP400/Sb421+TP400 (When filling with 4+4-color ink set)



□ Sb411+Sb420 (only for MkII) (When filling with 4+4-color ink set)



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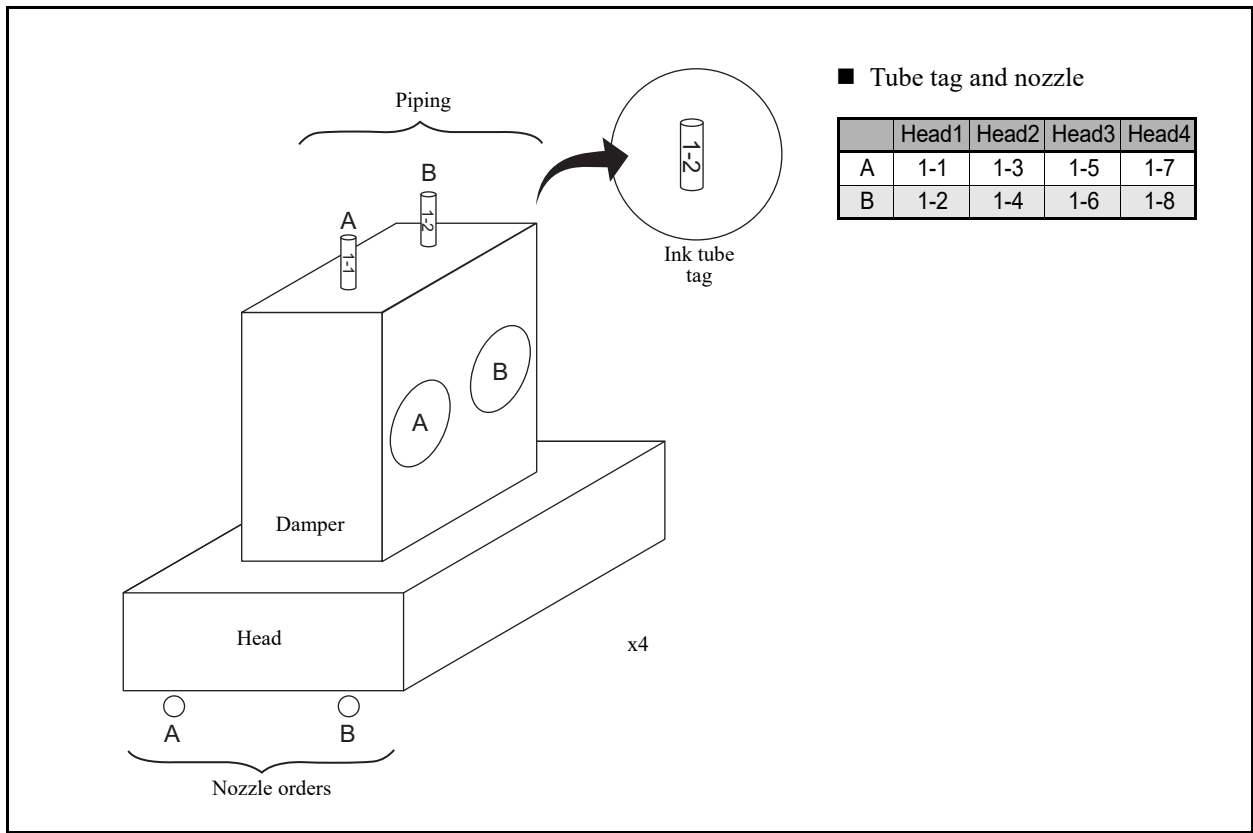
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# 1.3.1 Configuration

## ■ 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 " <a href="#">1.3.2 Ink System Error Monitoring</a> ".
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 " <a href="#">1.3.3 Supply Cartridge Control and Selection</a> ".
3	Updating of cartridge LED status	Updates the LED status depending on the status of ink supply and errors. For details, see " <a href="#">1.3.4 Cartridge LED Control</a> ".
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 " <a href="#">1.3.5 Supply Valve Control</a> ".

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## 1.3.1 Configuration

### ■ Ink system configuration

No.	Item	Description
1	When filling 4-color ink set M and Bl ink when filling 6-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	Except M and Bl ink when filling 6-color ink set when filling 7-color ink set When filling 8-color ink set when filling 4+4-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 ink IC 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, LED is used to allow the user to visually check the cartridge state. Blue color lights in control. Red color lights in error.</li> <li>◆ Since all 6-color (except M and Bl ink), 7-color, 8-color and 4+4-color ink set cartridges are control cartridges, Green color lights on for cartridges where there is no error.</li> </ul>

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## 1.3.2 Ink System Error Monitoring

### ■ 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 LED (blue) lights up to indicate that the supply cartridge is now being controlled.</li> <li>♦ The LED (red) 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 LED (blue) 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 6-color (except M and Bl ink), 7-color, 8-color and 4+4-color ink set cartridges are control cartridges, 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	
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	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 is impossible</li> </ul>
8	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>
9	Expiration:2 MONTH	×	×	○	Two months have passed since the expiration date of the ink.
10	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>
11	!Replace a WIPER	○	○	○	The wiper operation count has exceeded the number which requires the replacement of the wiper.
12	Expiration	○	○	○	Ink expiration has been reached.

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

\*2 ○: Executable X: Inexecutable

## 1.3.2 Ink System Error Monitoring

### ■ 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		
			Initial filling	Print	Cleaning
1	Cartridge near end	Remaining ink is detected with ink tank.	×	○	×
2	Cartridge ink end	Displayed when use of a certain amount of ink is detected after the near end detection.	×	×	×
3	WRONG CARTRIDGE	Occurs when the amount of consumed ink exceeds nearly double (4L) the ink pack capacity but the ink end is not displayed yet.	×	×	×

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## 1.3.3 Supply Cartridge Control and Selection

### ■ Supply cartridge control

No.	Item	Description
1	For the 4-color ink set M and Bl ink for the 6-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 IC warning</li> <li>• When the ink IC is removed</li> </ul> </li> </ul>
2	Except M and Bl ink for the 6-color ink set For the 7-color ink set For the 8-color ink set For the 4+4-color ink set	<ul style="list-style-type: none"> <li>◆ Since there is 1 ink cartridge per supply system, all cartridges are supply cartridges.</li> </ul>

### ■ Cartridge status indicated by LEDs

LED	Status	Explanation
Blue	Lit	Supply cartridge
Red	Blink	Errors related to PIC, namely, Expiration:2MONTH
	Lit	<ul style="list-style-type: none"> <li>◆ NO CARTRIDGE</li> <li>◆ INK END</li> <li>◆ WRONG INK IC</li> </ul> Errors related to PIC, namely, NON-ORIGINAL INK, WRONG INK IC, Kind of INK, Color of INK, WRONG CARTRIDGE
Yellow or Red	Lit	INK NEAR END, Expiration:1MONTH
	Blink	

### ■ 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

1.3

### □ 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	○	X
3	Cartridge ink end	X	X
4	No cartridge	X	X
5	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	Cartridge 2			
	Normal cartridge	Cartridge near end	Cartridge ink end	No cartridge Ink IC* <sup>1</sup>
Normal cartridge	○	○	○	○
Cartridge near end	○	△	△	△
Cartridge ink end	○	△	X	X
No cartridge	○	△	X	X
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

○: 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

Control cartridge \ Sub cartridge	Sub cartridge			
	Normal cartridge	Cartridge near end	Cartridge ink end	No cartridge Ink IC* <sup>1</sup>
Normal cartridge	△	○	-	-
Cartridge near end	-	△	-	-
Cartridge ink end	○	○	-	-
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).

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## 1.3.4 Cartridge LED Control

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

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

LED color		Cartridge status
Blue	Not lit	No cartridge has been selected as the supply cartridge
	Blinking	–
	Lit	◆ A cartridge has been selected as the supply cartridge
Red	Not lit	The cartridge is normal
	Blinking	An error has occurred (Blinking signifies that one of the following errors has occurred) ◆ Ink IC (Two month has passed since the expiration date of the ink)
	Lit	An error has occurred (Lighting signifies that one of the following errors has occurred) ◆ Cartridge ink end ◆ No cartridge ◆ Ink IC*1
Yellow	Lit	◆ Cartridge near end ◆ One month has passed since the expiration date of the ink

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

### ■ LED operation pattern

Event	For the 4-color ink set M and Bl ink for the 6-color ink set		Except for left case
	Cartridge 1	Cartridge 2	Cartridge 1
	LED condition	LED condition	LED condition
Online supply start ◆ Both cartridges free from problems ◆ Cartridge 1 is the control cartridge.	Blue light	–	Blue light
Cartridge 1 ◆ Cartridge near end	Blue and Orange alternately light	–	Blue and Orange alternately light
Cartridge 1 ◆ Cartridge ink end ◆ Cartridge 2 is the control cartridge.	Red light	Blue light	Red light
Cartridge 2 ◆ Cartridge near end	Red light	Blue and Orange alternately light	
Cartridge 1 ◆ Removed for replacement	Red light	Blue and Orange alternately light	Red light
Cartridge 1 ◆ A normal cartridge has been set	–	Blue and Orange alternately light	Blue light
Cartridge 2 ◆ Cartridge ink end ◆ Cartridge 1 is the control cartridge.	Blue light	Red light	
Online printing has been completed ◆ All valves closed	Blue light	Red light	Blue light

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## 1.3.5 Supply Valve Control

### ■ 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 an system error		CLOSE
At power-off		CLOSE

## 1.3.6 Monitoring of the Amount of Remaining Ink

3.1

### ■ 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.

Motion		Ink consumption per one cartridge [ml]							
		(Sb420/ Sb421) 4-color	(Sb420/ Sb421) 6-color	(Dd400) 8-color	(TP400) 4-color	(TP400) 7-color	(Rc400) 8-color	(Rc500) 8-color	(Ac400) 8-color
SOFT cleaning		0.4	0.2	0.2	0.4	0.2	0.2	0.2	0.2
NORMAL cleaning		2.4	1.2	1.2	2.5	1.3	1.2	1.2	1.3
HARD cleaning		6.0	3.0	2.9	5.8	2.9	2.9	3.3	3.1
Maintenance Filling up		34	17	16	32	16	16	16	17
Initial Filling (No replacement)	Main suction	58	58	45	58	58	50	46	50
	Cobble filling	52	52	–	52	–	–	–	–

Motion		Ink consumption per one cartridge [ml]	
		Sb420+TP400/Sb421+TP400	
		(Sb420/Sb421) 4-color	(TP400) 4-color
SOFT cleaning		0.2	0.2
NORMAL cleaning		1.2	1.3
HARD cleaning		3.0	2.9
Maintenance Filling up		17	16
Initial Filling (No replacement)	Main suction	58	58
	Cobble filling	–	–

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## 1.3.6 Monitoring of the Amount of Remaining Ink

3.1

\*Tx300P-1800MkII dedicated Ink Set

Motion	Ink consumption per one cartridge [ml]			
	Sb411+TP400		Sb411+Sb420	
	(Sb411) 4-color	(TP400) 4-color	(Sb411) 4-color	(Sb420) 4-color
SOFT cleaning	0.4	0.4	0.4	0.4
NORMAL cleaning	1.4	1.4	1.4	1.4
HARD cleaning	3.4	3.1	3.4	3.1
Maintenance Filling up	16	15.8	16	16.3
Initial Filling (No replacement)	Main suction	53	54.2	53
	Cobble filling	–	–	–

### ■ 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>

## 1.3.7 Ink Suction and Discharge Control

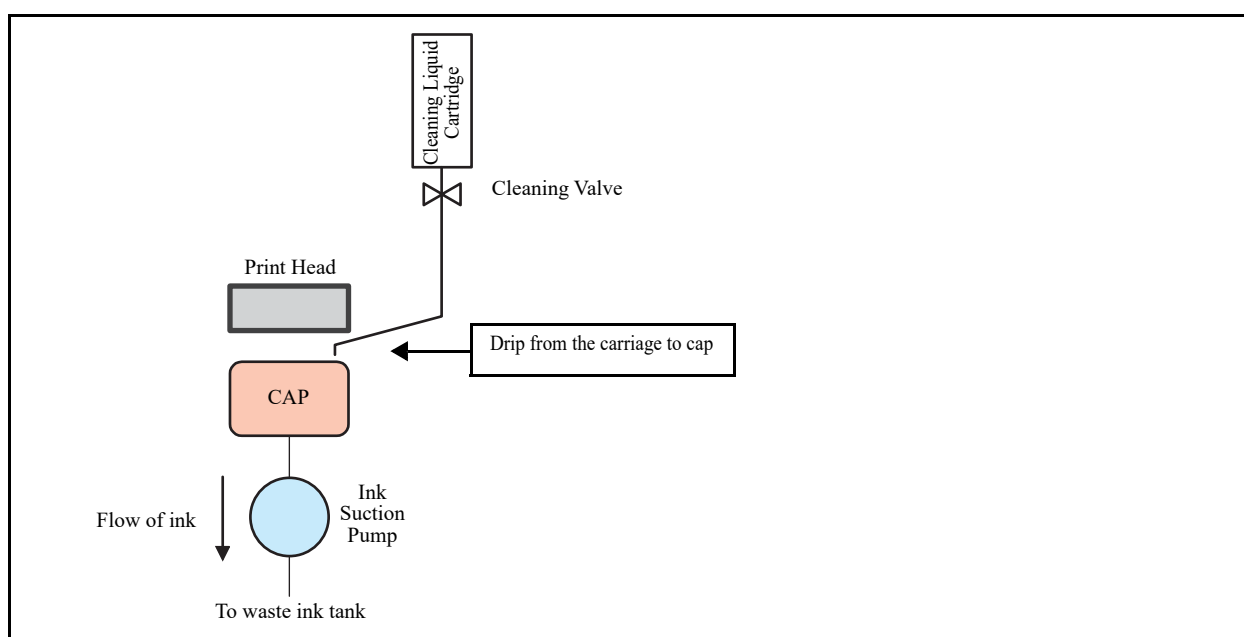
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### ■ Outline of Control

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. In order to prevent the solidification of ink drainage path within the tube to the waste ink tank from the cap, equip a function to automatically wash (wash pump tubes).
4. From on-board cleaning solution cartridge, pour the cleaning solution in the cap to wash. Operate periodically at power OFF / ON.

### ■ System configuration

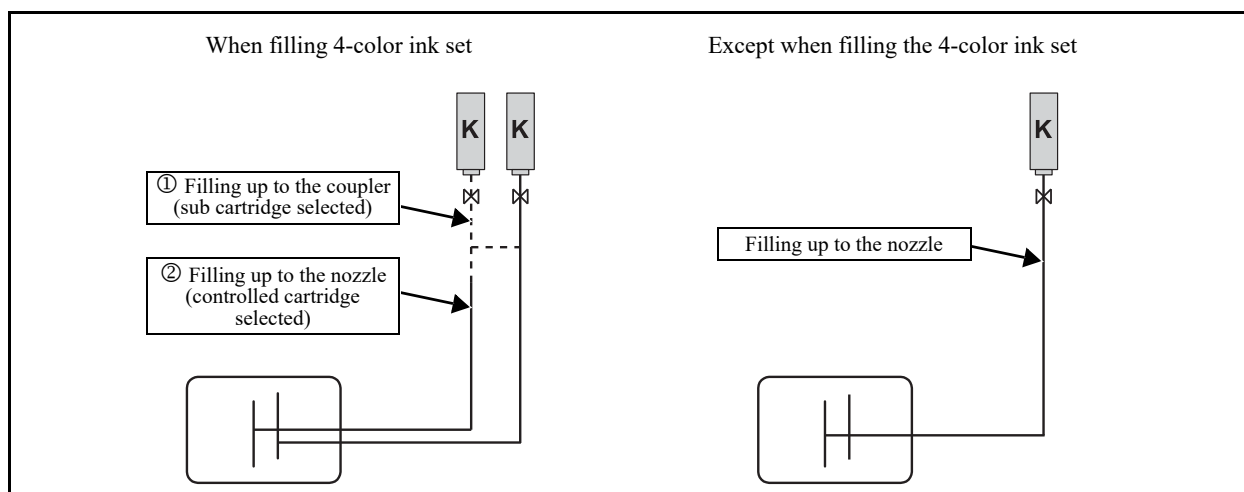
The system configuration of the ink suction and discharge mechanism is as shown below.



### ■ 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.



## 1.3.8 Initial Filling

3.1

### ■ Operation sequence for initial filling

The sequence of initial ink filling is shown below:

No.	Item	Description
1	Selection of ink type	Select automatically with inserted IC tip.
2	Selection of number of colors (ink set)	Select a set value shown below. Setting value: Sb420/Sb421 4-Color (M M Bl Bl Y Y K K), 6-Color (M M Bl Bl Y K Lb Lm) Dd400 8-Color (M R C Gr Y K V P) TP400 4-Color (M M C C Y Y K K) 7-Color (M R Bl C Y Lk K K) Rc400/Rc500/Ac400 8-Color (M R Bl C Y Or K Lk) Sb411+TP400 (only for MkII) /Sb420+TP400/Sb421+TP400 4+4-Color (M Bl Y K + M C Y K) Sb411+Sb420 (only for MkII) 4+4 Color (Transfer) (M Bl Y K + M Bl Y K)
3	Ink filling	Fill the ink in the order of head 1, 3 then head 2, 4. Insert the ink cartridge in accordance with the head to be filled.  When filling the 4-color ink set or M and Bl ink of the 6-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)  Other than above: 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.
4	Filling maintenance cleaning solution	Filling of the cleaning solution route



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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# 1.3.9 Switching ink type



- The ink set can not be changed.
- Ink type that can be switched: Sb420→Sb421, Sb420+TP400→Sb421+TP400  
 Ink type that can not be switched: Sb421→Sb420, Sb421+TP400→Sb420+TP400

## ■ Operation sequence for switching ink type

No.	Item	Description
1		Displayed only when filled with Sb420/Sb420+TP400 inks.
2		Remove the ink IC and ink pack of Sb420/Sb420+TP 400.
3		Set the ink IC and ink pack of Sb421/Sb421+TP400. Color order can not be changed.
4		Press [ENTER] to switces to Sb421/Sb421+TP400.
5		Select the head that needs filling and fill the ink.

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Maintenance manual > Operating Principle > Ink System > Initial Filling							Rev.
Model	Tx300P	Issued	2017.04.14	Revised	F/W ver.	1.00	Remark
<b>1.3.10 Initial Filling</b>							1.0



If ink leakage occurs, turn the power off and disconnect the power cable.

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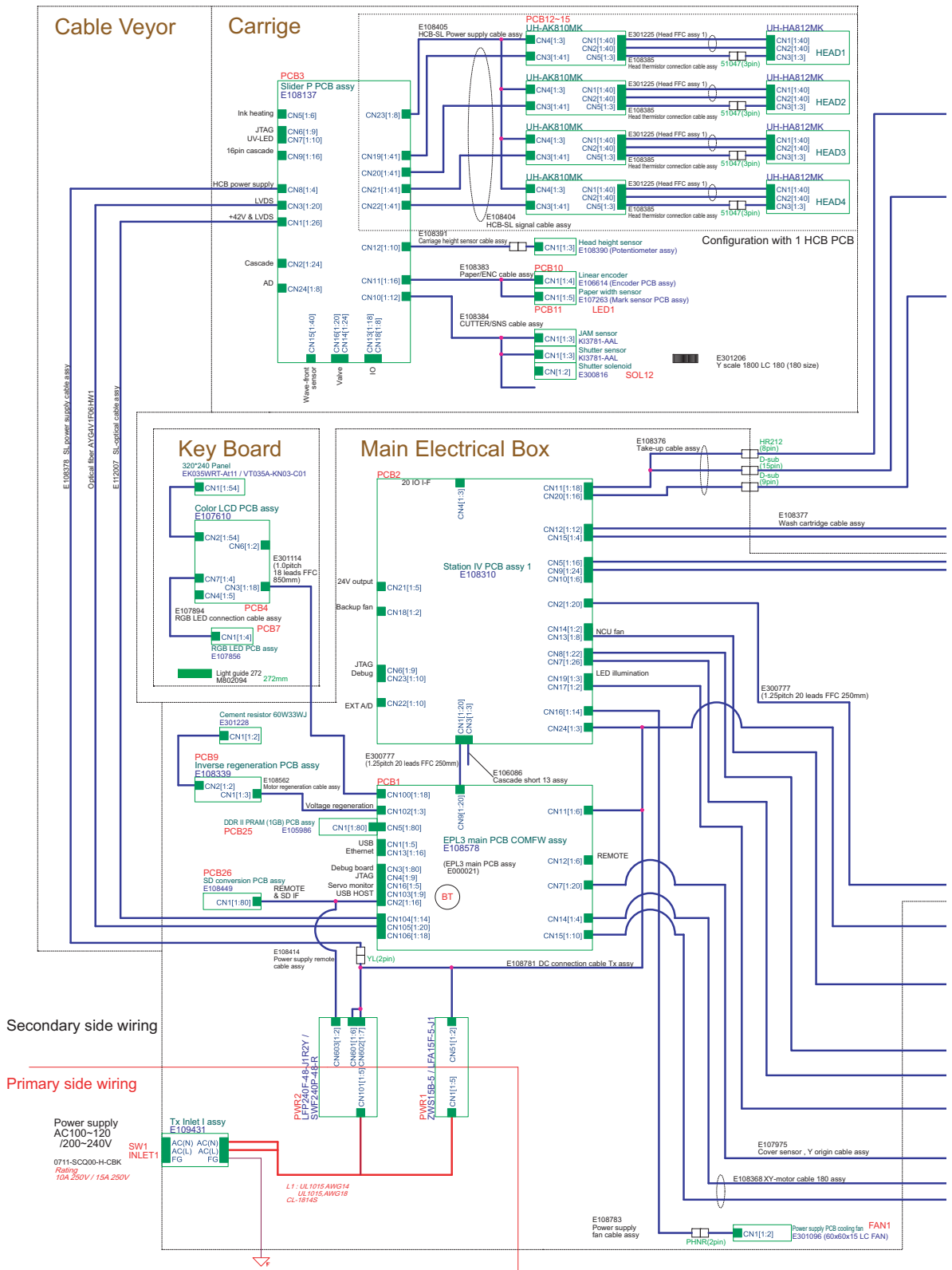
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<b>Electrical Parts</b>		
<b>2.1</b> <b>Block Diagram</b>	<b>2.2</b> <b>Operation Explanation</b>	<b>2.3</b> <b>Circuit Board Specifications</b>

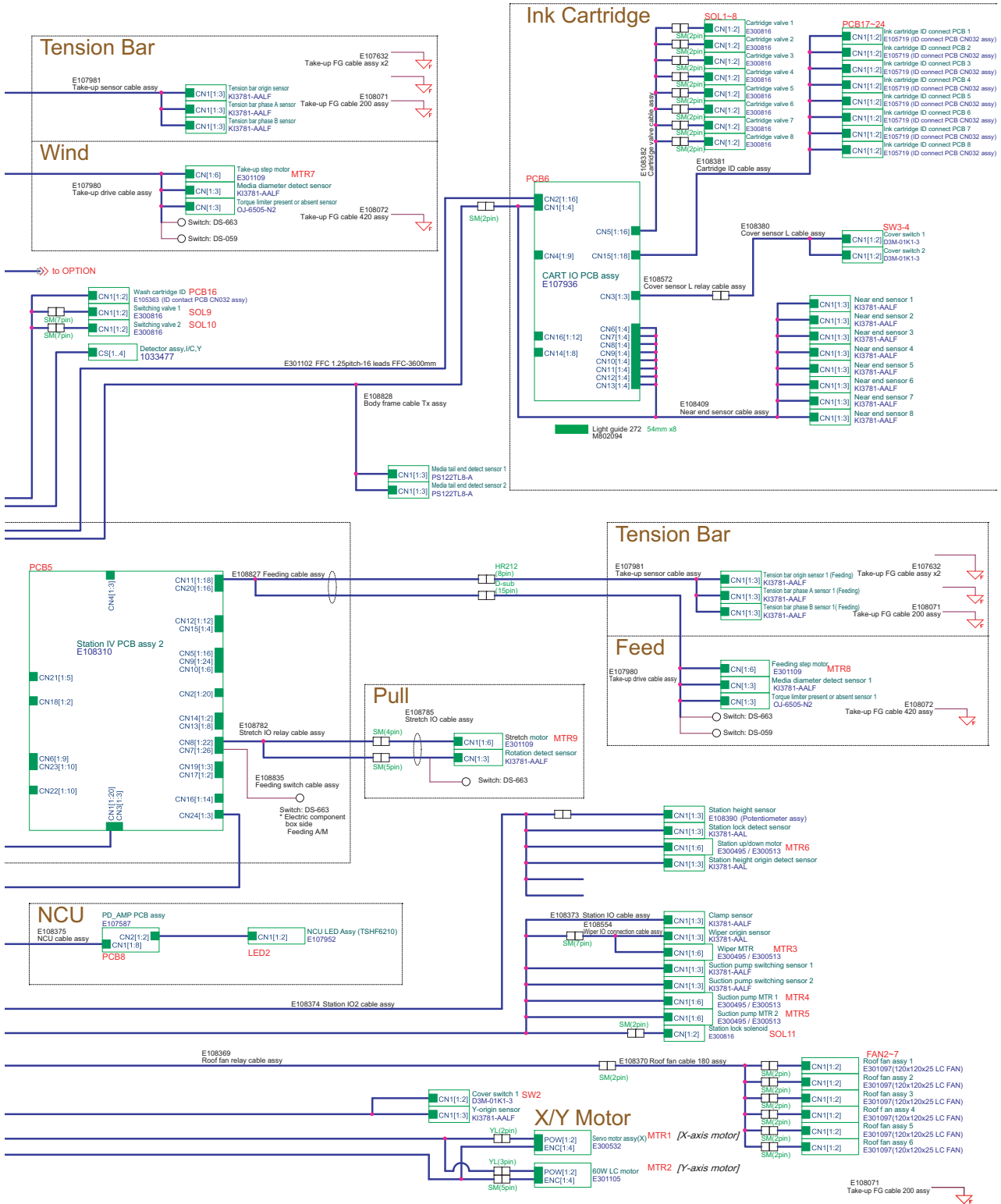
# 2.1.1 Connection Diagram Inside the Main Body

■ Tx300P-1800 inside connection diagram (to use HCB PCB)



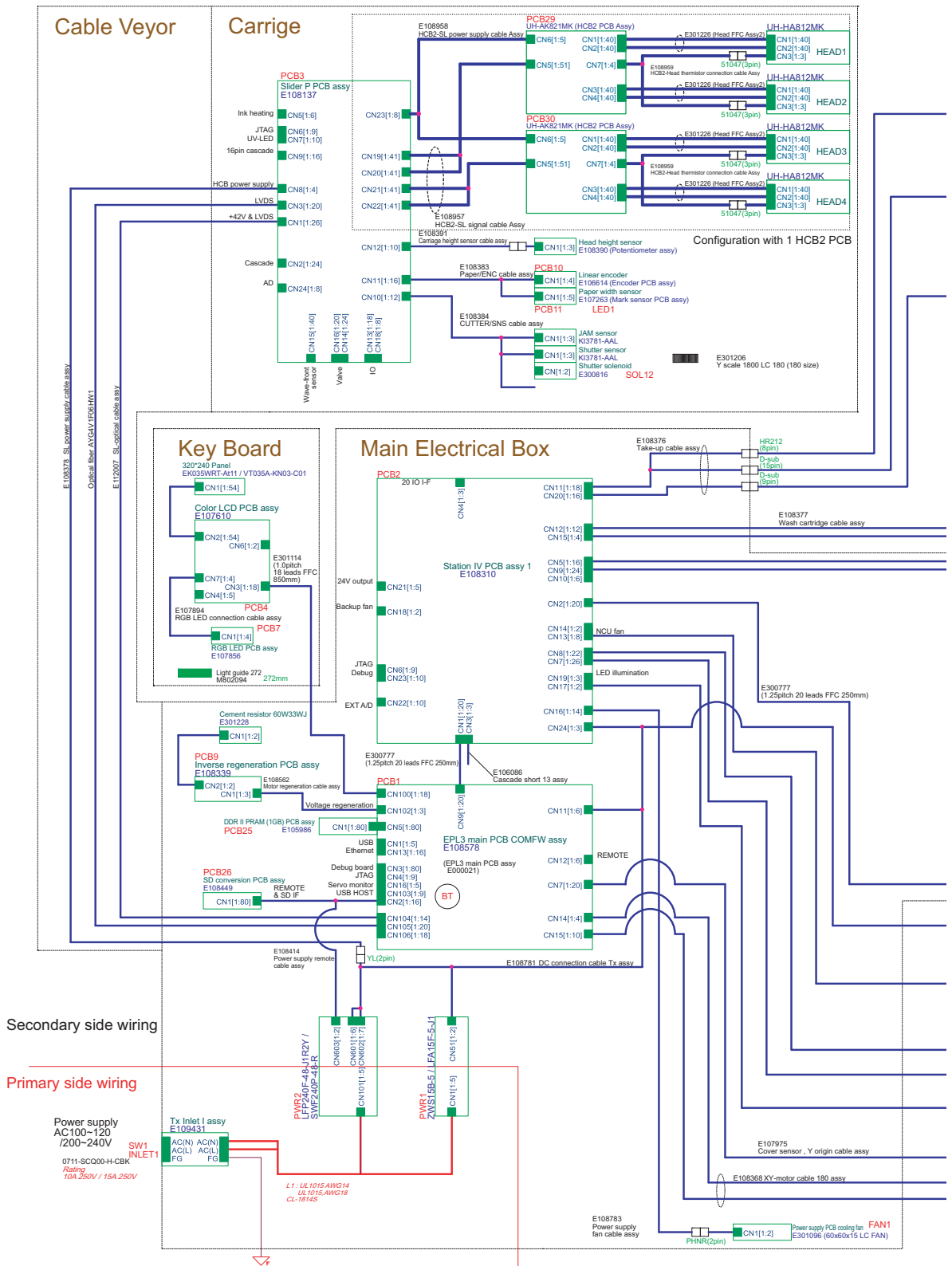
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# 2.1.1 Connection Diagram Inside the Main Body



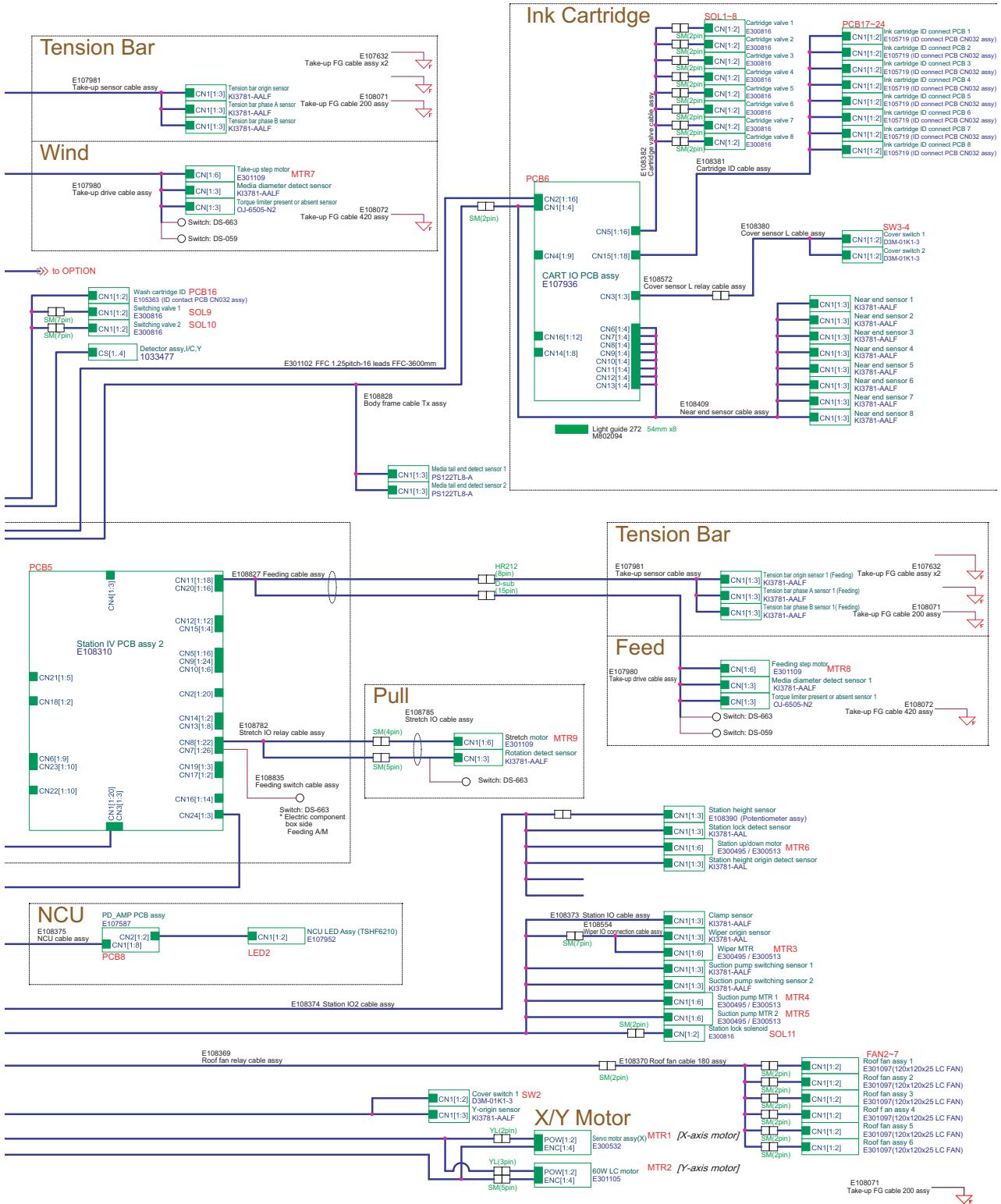
# 2.1.1 Connection Diagram Inside the Main Body

■ Tx300P-1800 inside connection diagram (to use HCB2 PCB)



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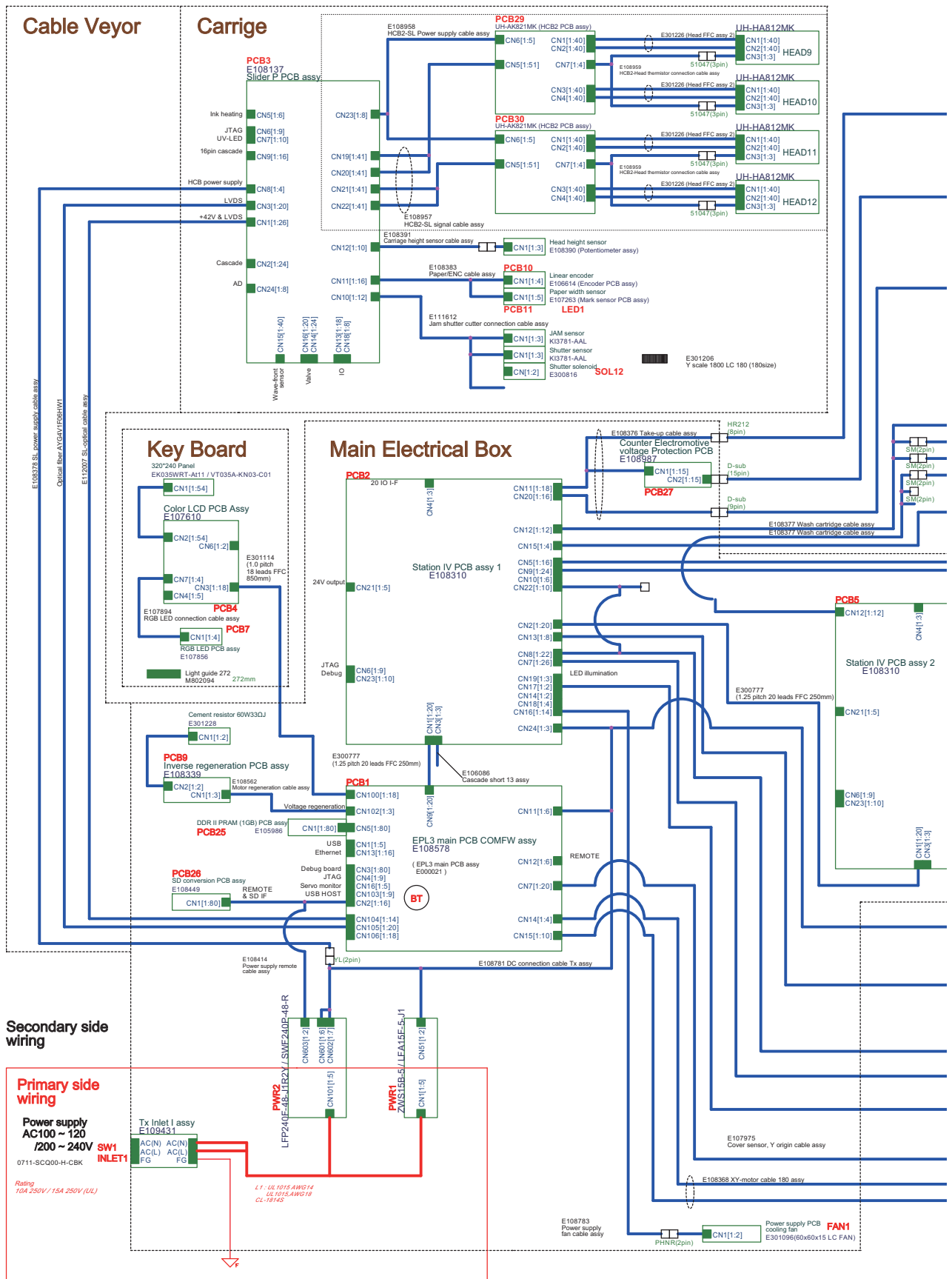
# 2.1.1 Connection Diagram Inside the Main Body



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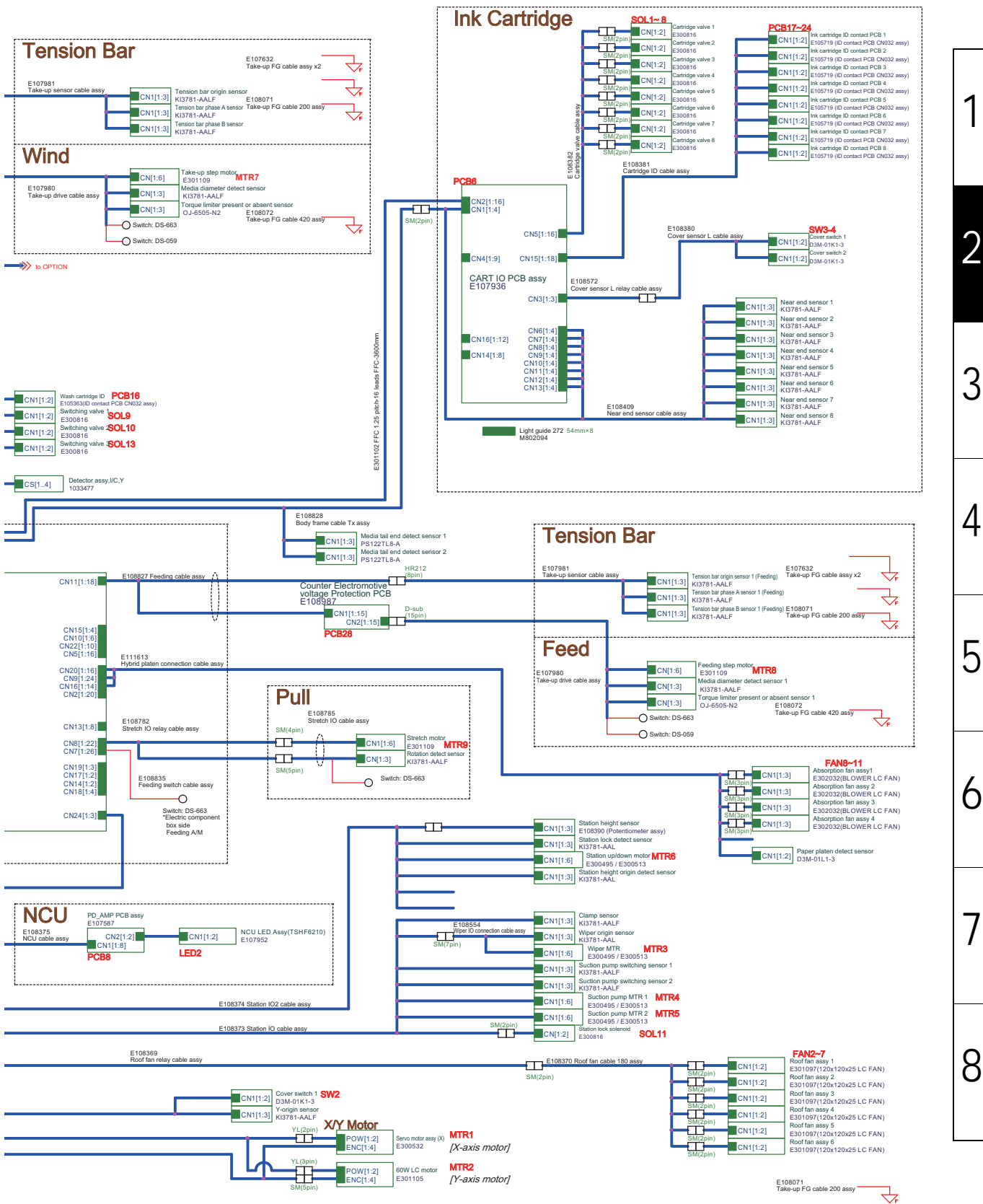
# 2.1.1 Connection Diagram Inside the Main Body

## Tx300P-1800MkII inside connection diagram



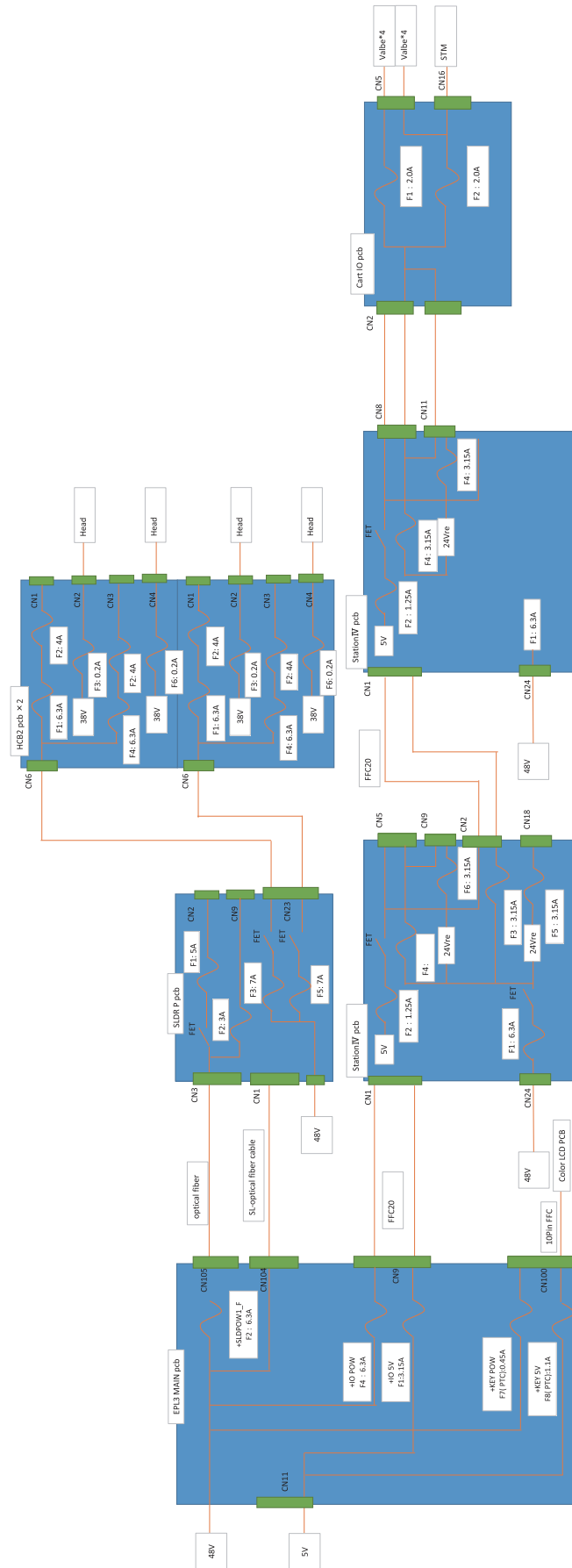
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# 2.1.1 Connection Diagram Inside the Main Body



## 2.1.2 Fuse Check

### ■ Fuse Connection Diagram



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## 2.1.2 Fuse Check

### ■ Procedure when the fuse is blown

1) Refer the following fuse connection diagram. Check if there is any adhesion of ink or cleaning solution to the PCB or cable that is connected to the blown fuse, and check whether there is incorrect cable connection. → If there is abnormal, replace the parts.

2) Replace the PCB of the blown fuse.

3) By the tester measure the resistance between the fuse and GND after the replacement.

If the resistance is 0 to several  $\Omega$ , it will be determined to be short forward the fuse.

1.Remove a sensor, motor, head, and cable, etc that are connected to PCB.

2.Check it for a short again, if it is not short circuited, connect the removed parts one by one.

3.Repeat above 2. and replace the parts where the short was confirmed.

4.If a short circuit persists even after removing the sensor and motor related, replace the PCB.

5.Make sure that the short is gone, and turn on the power.

It has not been short, or if you can not confirm the short, carry out the following.

1.If fuse is blown after the power is turned on, exchange the removed parts.

2.If the fuse is blown again, it is judged that there is a short circuit in another part. Repeat from 1).

### ■ The error list when the fuse is blown (Refer to [\[7.1.4 List of SYSTEM HALT\]](#))

PCB	LCD
Main PCB	SYSTEM HALT(*) 115: PCB MAIN-F1
	SYSTEM HALT(*) 12d: PCB MAIN-F4
	SYSTEM HALT(*) 1bf: PCB MAIN-F2/F3
	SYSTEM HALT(*)1c0:PCB MAIN F5/F6
Slider P PCB	SYSTEM HALT(*)1c7: PCB SLDRP-F1
	SYSTEM HALT(*)1c8: PCB SLDRP-F2
	SYSTEM HALT(*)1c9: PCB SLDRP-F8
Station IV PCB	SYSTEM HALT(*)1d2: PCB STA4-1-F1
	SYSTEM HALT(*)1d3: PCB STA4-1-F2
	SYSTEM HALT(*)1d5: PCB STA4-1-F4
	SYSTEM HALT(*)1d6: PCB STA4-1-F5
	SYSTEM HALT(*)1d7: PCB STA4-1-F6

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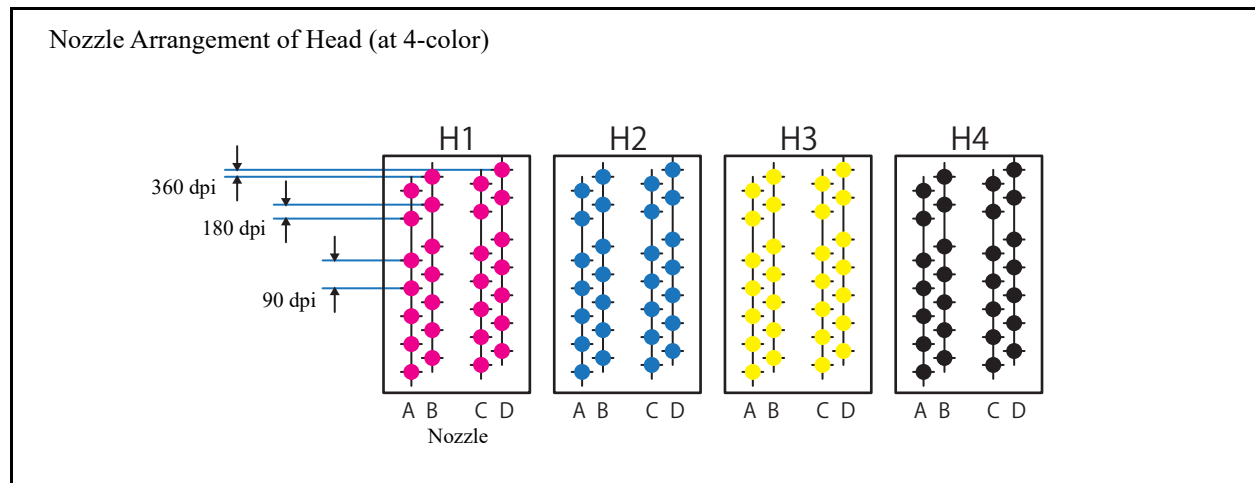
# Electrical Parts

**2.1**  
**Block Diagram**

**2.2**  
**Operation Explanation**

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

## 2.2.1 Operation Explanation



### ■ Outline

- The print head carriage has four heads with 200 nozzles (90 dpi) x 4 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).
- Station IV PCB Assy controls the class IO (motor, sensors, thermistors, etc.) mounted on the machine.
- Slider P PCB Assy synchronizes with the scale interval of the linear scale, and transmits an ejection timing signal to the HCB PCB Assy.
- HCB board Assy adds the COM signal in accordance with this timing signal, and at the same time transfers the nozzle data to the head.

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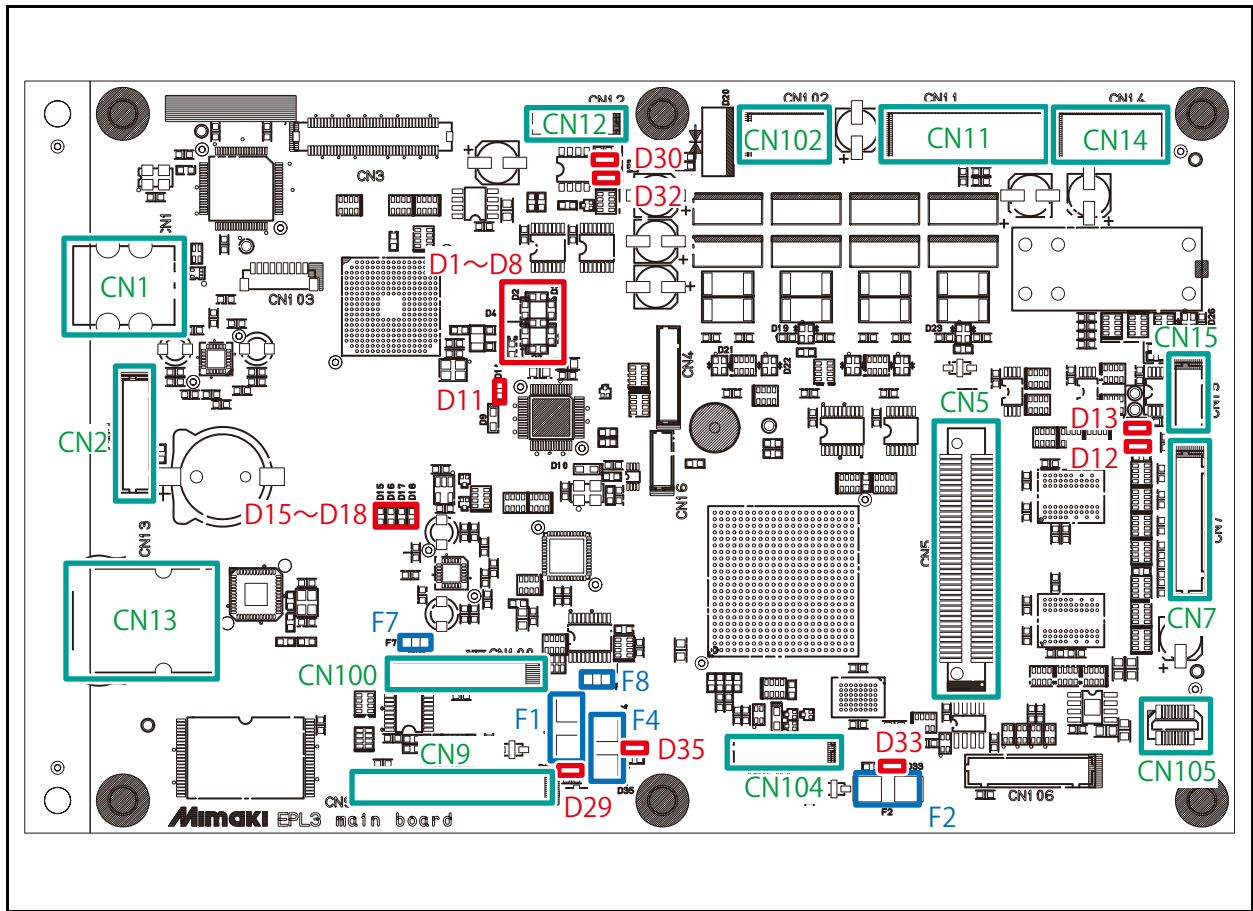
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<b>Electrical Parts</b>		
<b>2.1</b> <b>Block Diagram</b>	<b>2.2</b> <b>Operation Explanation</b>	<b>2.3</b> <b>Circuit Board Specifications</b>

## 2.3.1 EPL3 Main PCB COM FW Assy



### ■ Outline

Board name: EPL3 Main PCB Assy COM FW Assy. (E108578)

Location: In electrical BOX

#### □ Main specifications

Equipped with a CPU and supports data transmission from a computer via USB and a mail function using Ethernet.

Also controls the X and Y motors, processes image data, and controls the IO board.

### ■ List of connectors

No.	Pin	Intended use	AC/DC	Remarks
CN1	4	USB	DC	
CN2	16	Power control, UART, SD memory control	DC	
CN5	80	For expansion memory PCB	DC	
CN7	20	Y origin sensor, cover switch, others	DC	
CN9	20	IO PCB IF	DC	
CN11	6	Power input	DC	
CN12	6	Power supply control	DC	
CN13	12	Ethernet	DC	
CN14	4	Motor power	DC	
CN15	10	Motor encoder	DC	
CN16	5	For debugging	DC	
CN100	18	Color LCD IF	DC	
CN102	3	For counter-electromotive regeneration PCB connection	DC	

## 2.3.1 EPL3 Main PCB COM FW Assy

No.	Pin	Intended use	AC/DC	Remarks
CN103	9	For debugging	DC	
CN104	14	Slider system IF connection	DC	
CN105	20	Slider system IF connection (optical fiber cable)	DC	
CN106	18	Slider system IF connection	DC	

### ■ Fuse rating

No	Type	Intended use	Rate	Check LED	Remarks
F1	04533.15	For IO PCB (+IO5V)	3.15A	D29	
F2	045306.3	For slider system (+48V)	6.3A	D33	
F4	045306.3	For IO PCB (+48V)	6.3A	D35	
F7		Color LCD PCB (+48V)	0.45A		PTC fuse
F8		Color LCD PCB (+5V)	1.10A		PTC fuse

### ■ LED

No	Intended use	Remarks
D1-D8	CPU status display LED	
D11	CPLD written display LED	
D12	Y origin sensor display LED	
D13	Spare sensor display LED	
D15-D18	FPGA debug LED	
D29	IO PCB power supply (+ IO5V) confirmation LED	+IO5V
D30	+ 5V power supply input validation LED	+5VB
D32	+48V power input confirmation LED	+V1
D33	Slider system (+ 48V) confirmation LED	+SLDPOW1_F
D35	IO PCB (+ 48V) confirmation LED	+IO POW

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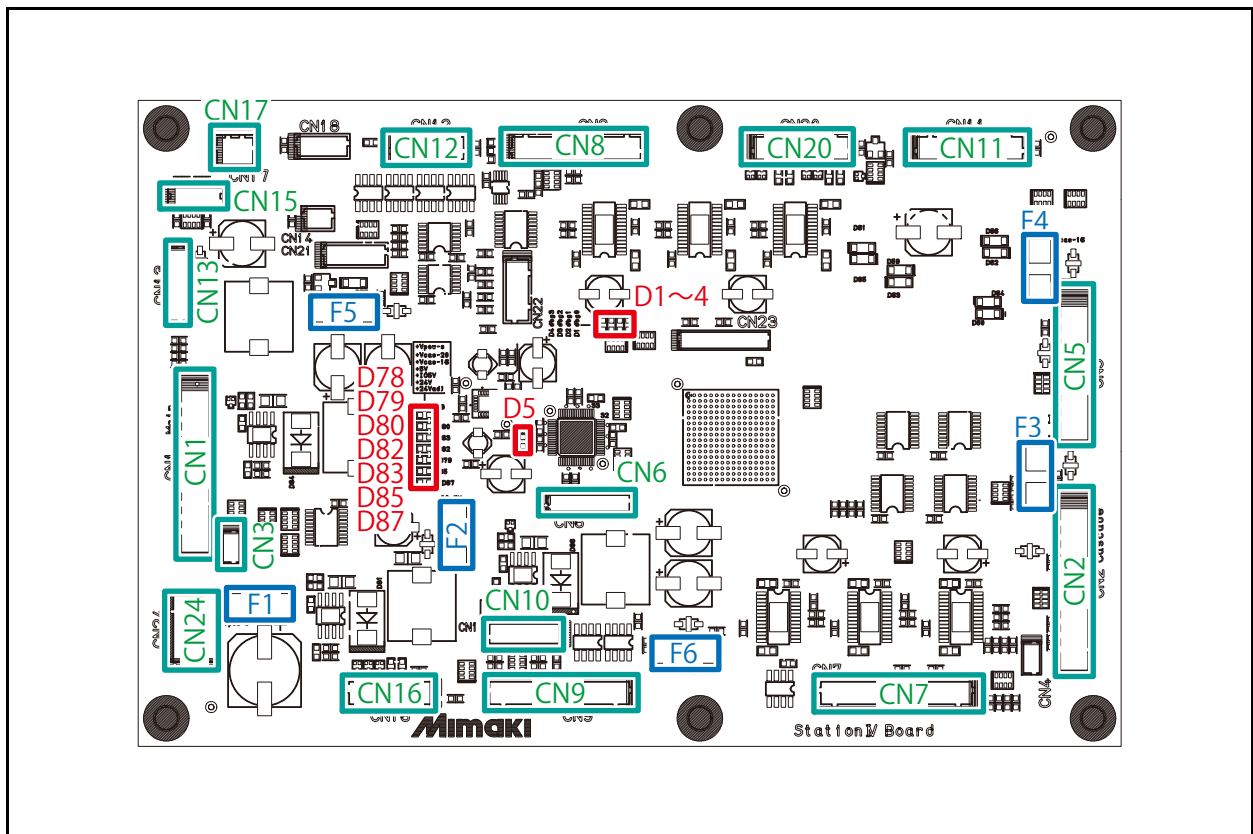
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## 2.3.2 STATION IV PCB Assy.



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■ **Outline**

Board name: Station PCB Assy (E108310)

Location: In electrical BOX

□ Main specification

To control IO on the machine except IO's around ink.

This machine has two of this.

(Refer to "6.4.2 STATION IV PCB Assy" for the arrangement of the first and second PCBs.)

■ **List of connectors**

No	Pin	Intended use	AC/DC	Remarks
CN1	14	IO PCB IF (connect to main PCB)	DC	
CN2	9	IO PCB IF (connect to lower PCB)	DC	
CN3	30	Cover Sensor (jumper)	DC	First: E106086 connection 2nd: No connection
CN4	3	Cover sensor	DC	
CN5	30	IO PCB IF	DC	First: CART IO PCB connection 2nd: No connection
CN6	30	For debugging	DC	
CN7	30	Clamp sensor, wiper origin sensor, pump origin sensor, wiper motor, suction pump motor, feeding motor operation switch	DC	
CN8	30	Station height sensor, station origin sensor, station lock sensor, suction pump motor, friction roller unit motor control	DC	
CN9	10	Auxiliary power supply, suction fan, media sensor	DC	2nd: E111613 connection (only for MkII)
CN10	12	Heater thermistor	DC	
CN11	16	Take-up / feeding motor control, tension bar control	DC	

**2.3.2 STATION IV PCB Assy.**

No	Pin	Intended use	AC/DC	Remarks
CN12	8	Cleaning ink IC, switching valve	DC	2nd: E108377 connection (only for MkII)
CN13	12	NCU control	DC	
CN15	29	Cleaning cartridge existence, the near-end	DC	
CN16	29	AC PCB control	DC	2nd: E111613 connection (only for MkII)
CN17	2	Ceiling fan	DC	
CN18	2	Reserved (FAN, Lighting)	DC	
CN20	29	IO PCB IF (connect to main PCB)	DC	2nd: E111613 connection (only for MkII)
CN21	5	Reserved (IO output)	DC	
CN22	10	Reserved (AD input)	DC	
CN23	10	For debugging	DC	
CN24	3	Power input (+48V)	DC	

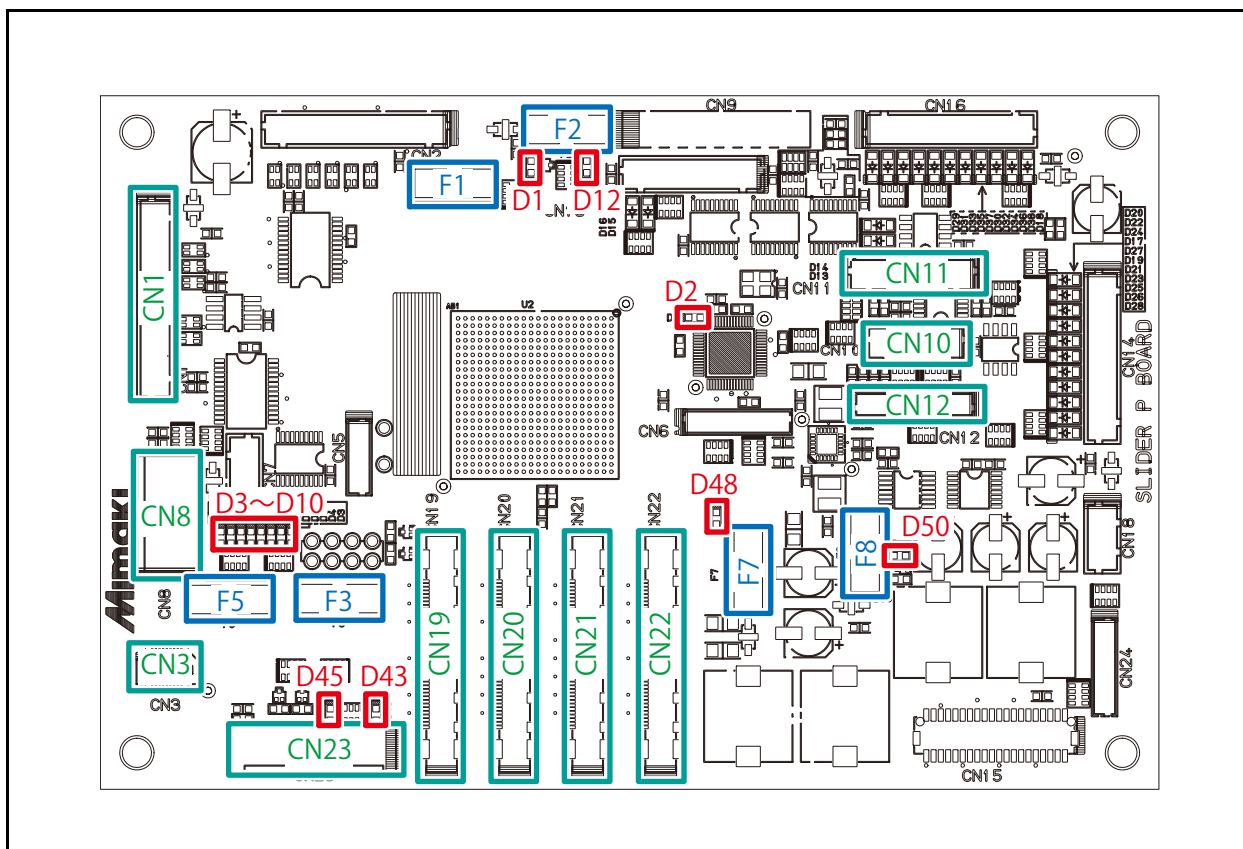
**■ Fuse rating**

No	Type	Intended use	Rate	Check LED	Remarks
F1	045306.3	+48V Power input	6.3A	D78	
F2	04531.25	IO (+IO5V)	1.25A	D79	
F3	04533.15	Cascade PCB (+48V)	3.15A	D80	First: station IV PCB connection 2nd: no cascade PCB
F4	04533.15	IO PCB (+48V)	3.15A	D83	First: CART IO PCB connection 2nd: no IO PCB
F5	04533.15	IO PCB (+24V)	3.15A	D85	
F6	04533.15	IO PCB (+24Vadj)	3.15A	D87	

**■ LED**

No	Intended use	Remarks
D1-D4	FPGA debug LED	
D5	CPLD written display LED	
D78	+48V power input confirmation LED	+Vpow-s
D79	IO PCB (+IO5V) confirmation LED	+IO5V
D80	Cascade PCB (+48V) confirmation LED	+Vcas-20
D82	IC in PCB (+48V) confirmation LED	+5V
D83	IO PCB (+48V) confirmation LED	+Vcas-16
D85	IO PCB(+24V) confirmation LED	+24V
D87	IO PCB(+24Vadj) confirmation LED	+24Vdj

## 2.3.3 SLIDER P PCB Assy.



### ■ Outline

Board name: Slider P PCB Assy (E108137)

Location: Top of carriage

#### □ Main specifications

HEAD Control PCB control, control IO on the carriage.

### ■ List of connectors

No	Pin	Intended use	AC/DC	Remarks
CN1	26	Slider system IF connection (connect to the main PCB)	DC	
CN2	24	Slider system IF connection (connect to the lower PCB)	DC	
CN3	20	Slider system IF connection (optical fiber cable)	DC	
CN5	6	Reserved (Ink heating unit)	DC	
CN6	9	For debugging	DC	
CN7	10	IO PCB IF	DC	
CN8	4	HEAD Control PCB power input (48V)	DC	
CN9	16	IO PCB IF	DC	
CN10	12	Paper width sensor, LED pointer, linear encoder input	DC	Tx300P: E108384 connection Tx300P MkII: E111612 connection
CN11	16	Shutter sensor, jam sensor, shutter solenoid	DC	
CN12	10	Head height sensor	DC	
CN13	18	Reserved (IO)	DC	
CN14	24	Reserved (IO)	DC	
CN15	40	Reserved (IO)	DC	
CN16	20	Reserved (IO)	DC	
CN18	8	Reserved (IO)	DC	

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## 2.3.3 SLIDER P PCB Assy.

No	Pin	Intended use	AC/DC	Remarks
CN19	41	HEAD Control PCB IF (Head1)	DC	
CN20	41	HEAD Control PCB IF (Head2)	DC	
CN21	41	HEAD Control PCB IF (Head3)	DC	
CN22	41	HEAD Control PCB IF (Head4)	DC	
CN23	8	HEAD Control PCB power supply	DC	
CN24	8	Reserved (AD input)	DC	

### ■ Fuse rating

No	Type	Intended use	Rate	Check LED	Remarks
F1	0454005.	Cascade PCB (+48V)	5A	D1	no cascade PCB
F2	0453003.	IO PCB (-48V)	3A	D12	no IO PCB
F3	0453007.	HEAD Control PCB (Head1, 2)	7A	D43	
F5	0453007.	HEAD Control PCB (Head3, 4)	7A	D45	
F7	0453003.	IC, IO in PCB (+5V)	3A	D48	
F8	0453003.	IO PCB (+24V)	3A	D50	

### ■ LED

No	Intended use	Remarks
D1	Cascade PCB (+48V) confirmation LED	
D2	CPLD written display LED	
D3-D10	FPGA debug LED	
D12	IO PCB (+48V) confirmation LED	
D43	HEAD Control PCB (Head1, 2) confirmation LED	
D45	HEAD Control PCB (Head3, 4) confirmation LED	
D48	IC in PCB (+5V) confirmation LED	+5V
D50	IO PCB (+24V) confirmation LED	+24V

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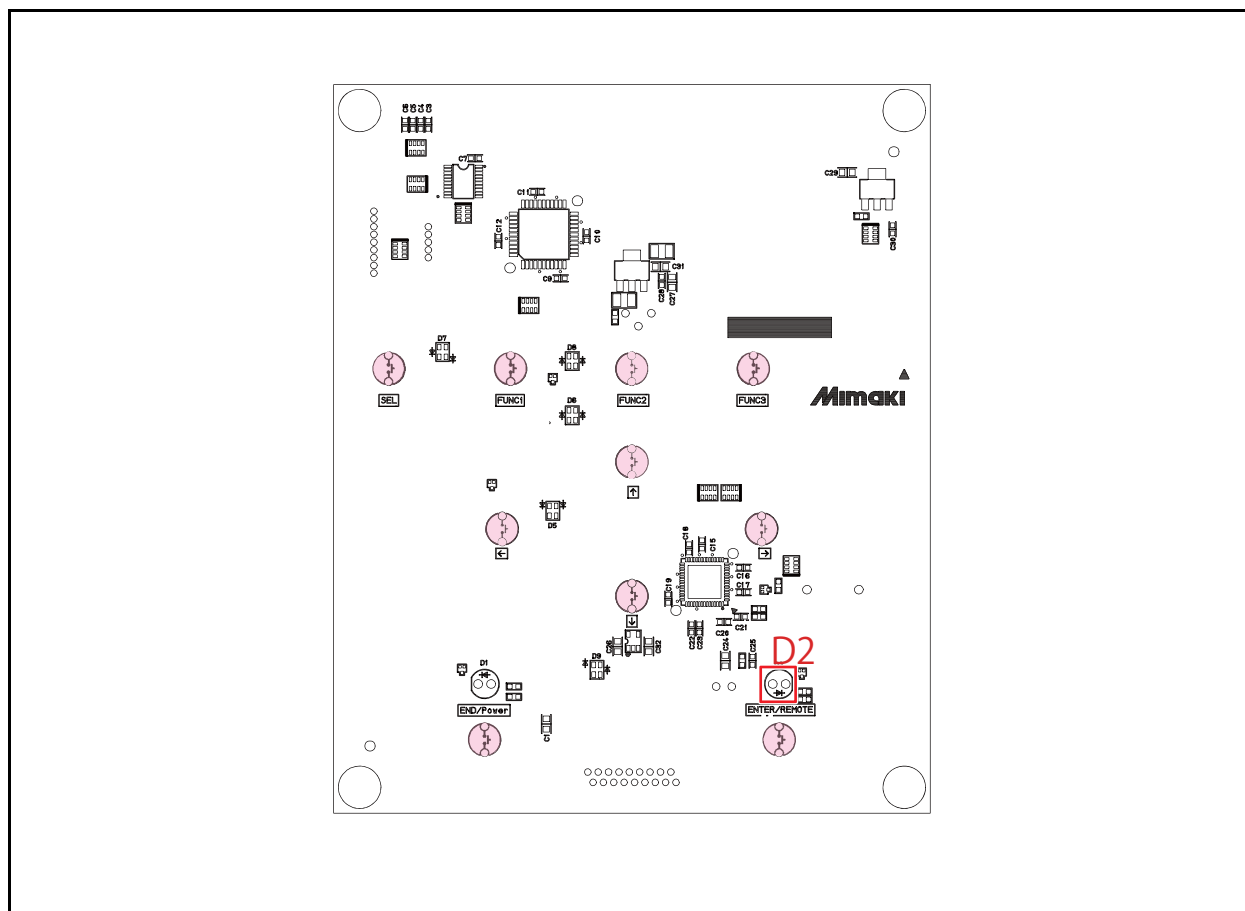
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## 2.3.4 Color LCD PCB Assy.



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■ Outline

Board name: Color LCD PCB Assy (E107610)

Location: Operation panel

□ Main specifications

Equipped with color 320 x240 dot LCD and the key SW's. Used to operate the printer.

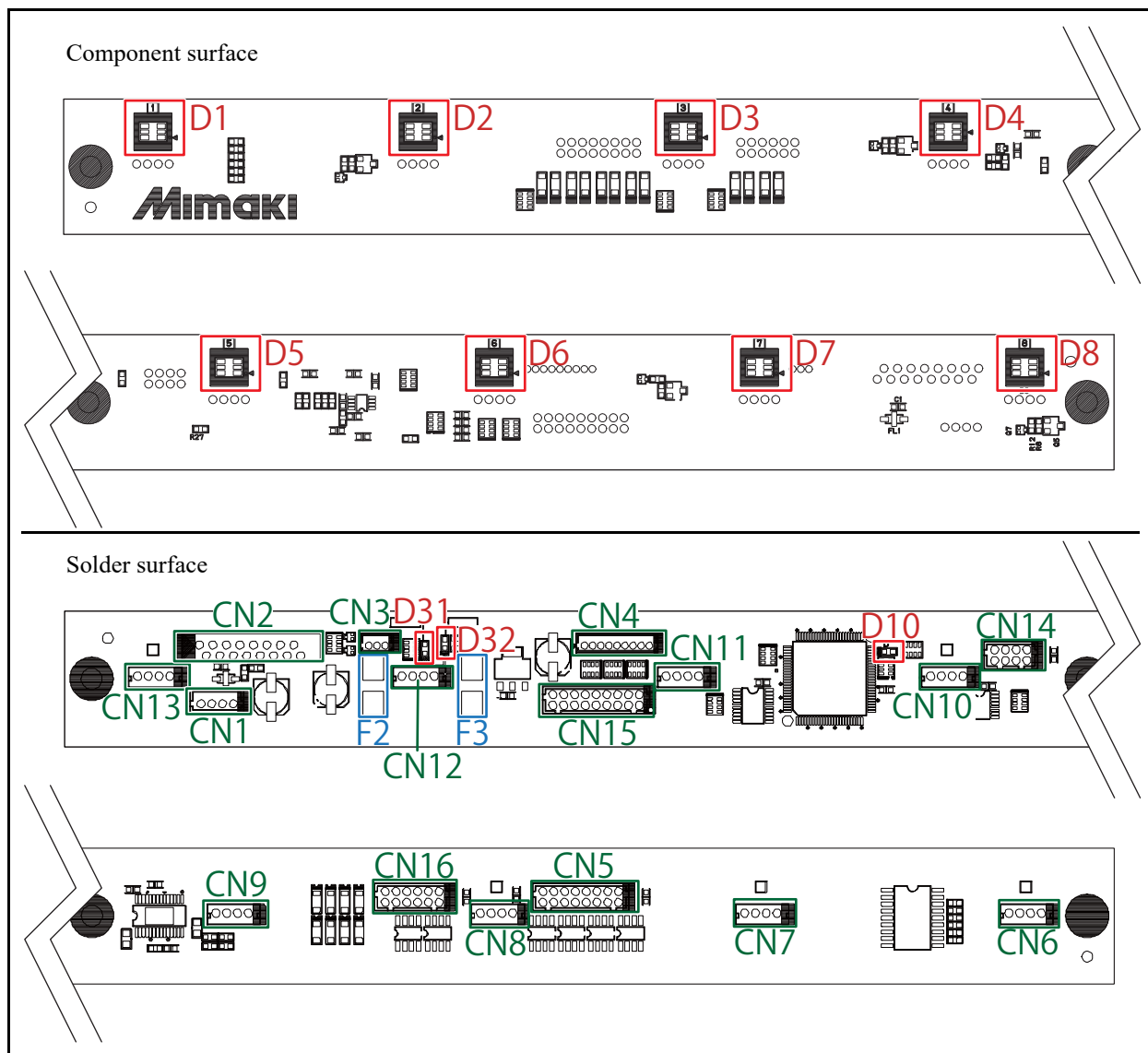
■ List of connectors

No	Pin	Intended use	AC/DC	Remarks
CN1		For debugging	DC	
CN2	54	Color LCD	DC	
CN3	18	Color LCD IF (connect to main PCB)	DC	
CN6	2	(Cover sensor)	DC	
CN7	4	RGB LED PCB connection	DC	

■ List of connectors

No.	Intended use	Remarks
D1	END/POWER key LED	Green (not mounted)
D2	ENTER key LED	Blue

## 2.3.5 CART IO PCB Assy.



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■ **Outline**

Board name: CART IO PCB Assy (E107936)

Location: In front of ink unit

□ **Main specifications**

Control the ink valves, displays the LED corresponding to each slot.

■ **List of connectors**

No.	Pin	Intended use	AC/DC	Remarks
CN1	4	Power supply	DC	
CN2	16	IO PCB IF (connect to station IV PCB)	DC	
CN3	3	Cover Sensor	DC	
CN5	16	Ink valve control	DC	
CN6	4	Near end sensor	DC	Ink 1
CN7	4	Near end sensor	DC	Ink 2
CN8	4	Near end sensor	DC	Ink 3
CN9	4	Near end sensor	DC	Ink 4
CN10	4	Near end sensor	DC	Ink 5

## 2.3.5 CART IO PCB Assy.

No.	Pin	Intended use	AC/DC	Remarks
CN11	4	Near end sensor	DC	Ink 6
CN12	4	Near end sensor	DC	Ink 7
CN13	4	Near end sensor	DC	Ink 8
CN14	8	Option	DC	
CN15	18	Ink IC control	DC	
CN16	12	Reserved	DC	

### ■ Fuse rating

No	Type	Intended use	Rate	Check LED	Remarks
F2	0453002.	IO output 1	2A	D31	
F3	0453002.	IO output 2	2A	D32	

### ■ LED

No	Intended use	Remarks
D1-D8	Ink cartridge status display LED	
D10	CPLD written display LED	
D31	IO output 1 confirmation LED	+48V_1
D32	IO output 2 confirmation LED	+48V_2

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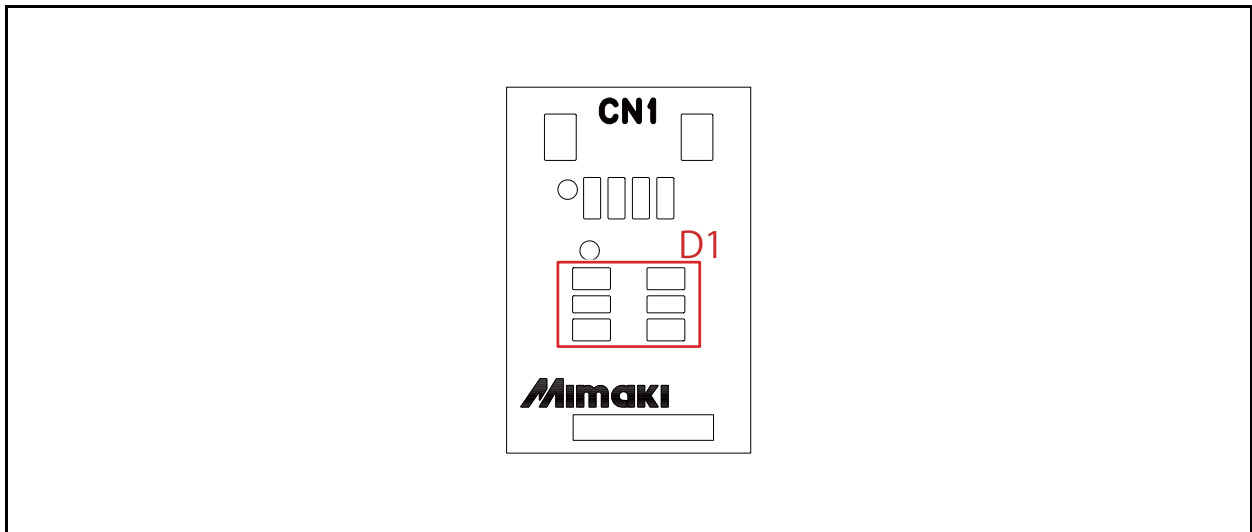
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## 2.3.6 RGB LED PCB Assy



### ■ Outline

Board name: RGB LED PCB Assy (E107856)

Location: Operation panel

- Main specifications

Has LED which display the status under the keyboard.

### ■ List of connectors

No	Pin	Intended use	AC/DC	Remarks
CN1	4	Color LCD PCB	DC	

### ■ LED

No.	Intended use	Remarks
D1	Display status of printer	

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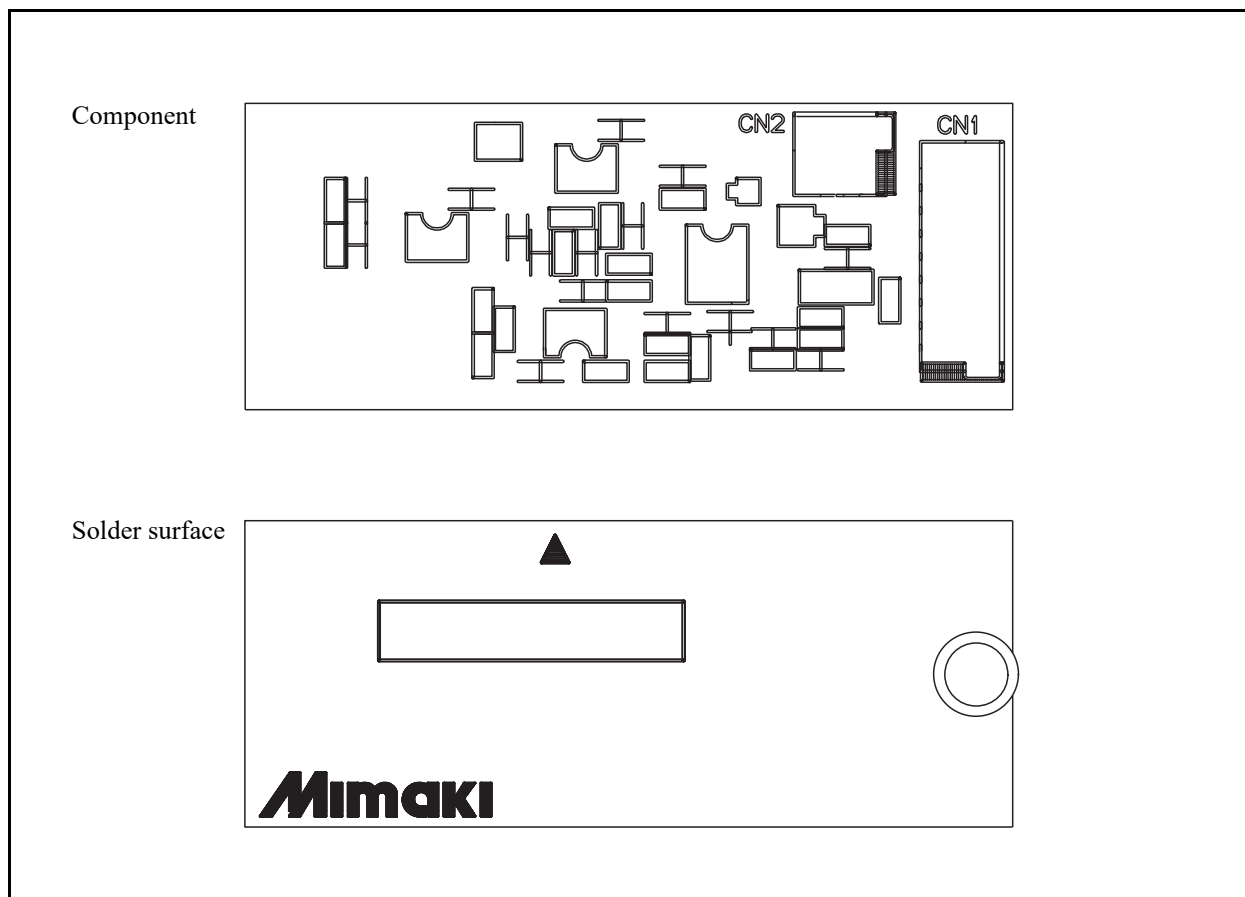
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## 2.3.7 PD AMP PCB Assy.



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### ■ Outline

Board name: PD AMP PCB Assy. (E107587)

Location: In NCU

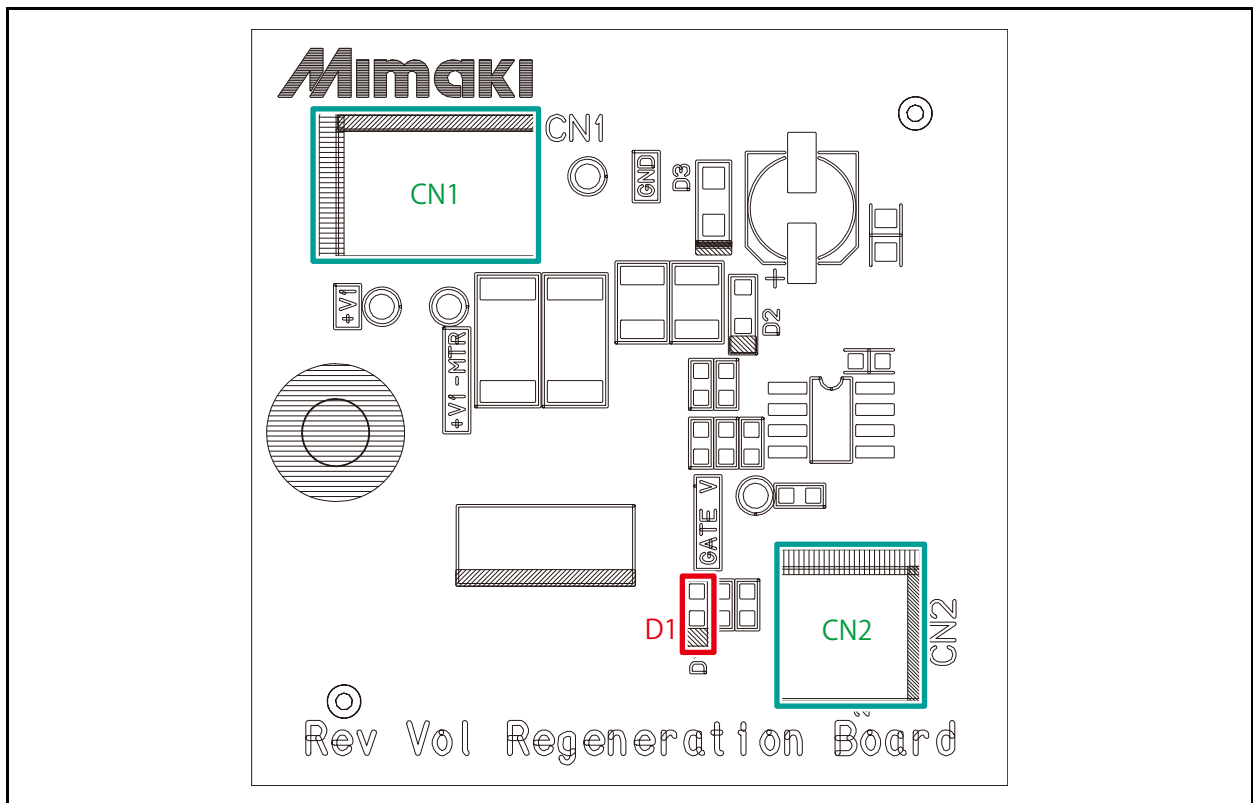
- Main specifications

Sensor PCB of the NCU.

### ■ List of connectors

No.	Pin	Intended use	AC/DC	Remarks
CN1	8	IO PCB IF (connect to Station IV PCB)	DC	
CN2	2	Connect the LED Assy. (E107952 NCU LED Assy.)	DC	

## 2.3.8 Counter-electromotive Regenerative PCB Assy



### ■ Outline

Board name: Counter-electromotive regenerative PCB Assy (E108339)

Location: In electrical BOX

- Main specifications

Prevent the power supply voltage rise by the motor back EMF (electromotive force).

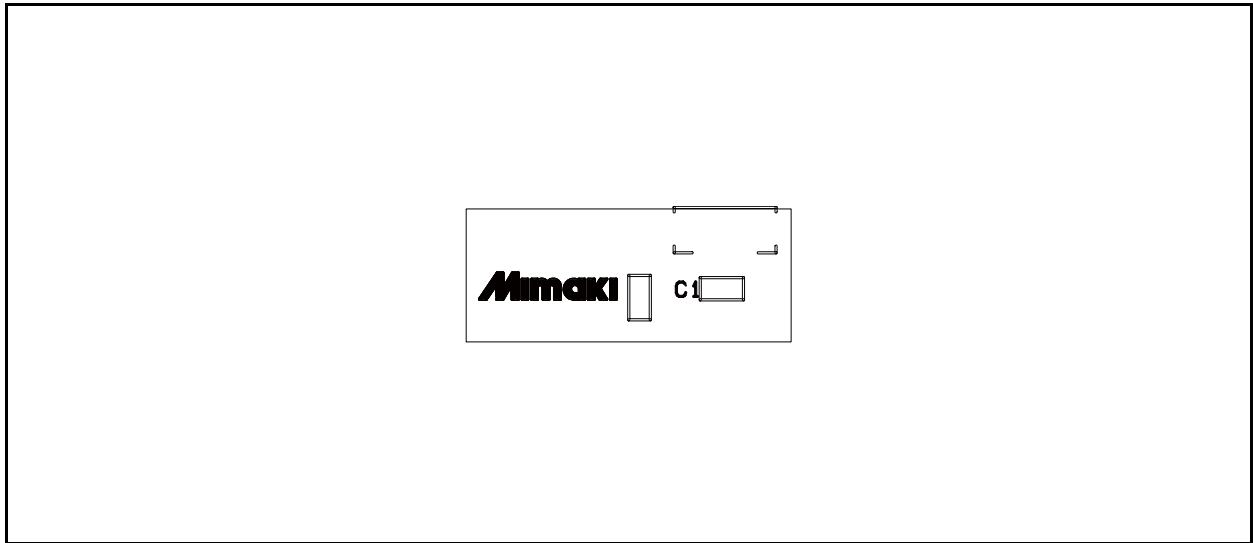
### ■ List of connectors

No.	Pin	Intended use	AC/DC	Remark
CN1	3	Connect to the motor drive power	DC	
CN2	2	Connect to the regenerative resistor	DC	

### ■ LED

No	Intended use	Remarks
D1	Lighting while power regeneration	

## 2.3.9 Encoder PCB Assy



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### ■ Outline

Boar name: Encoder PCB Assy (E106614)

Location: Carriage

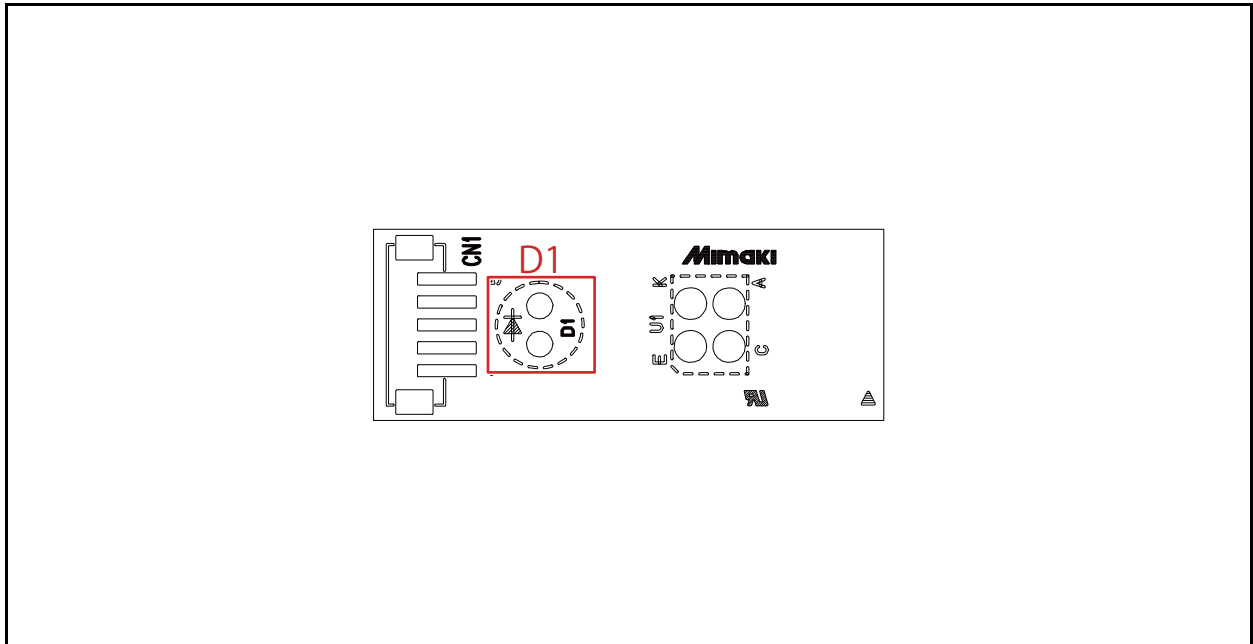
- Main specifications

This PCB is encoder sensor PCB of linear scale.

### ■ List of connectors

No	Pin	Intended use	AC/DC	Remarks
CN1	4	Slider P PCB	DC	

## 2.3.10 Mark Sensor PCB



### ■ Outline

Board name: Mark sensor PCB Assy (E107263)

Location: Carriage

- Main specifications

Paper width sensor and LED pointer are mounted.

### ■ List of connectors

No	Pin	Intended use	AC/DC	Remarks
CN1	5	Slider P PCB	DC	

### ■ LED

No.	Intended use	Remarks
D1	LED pointer	

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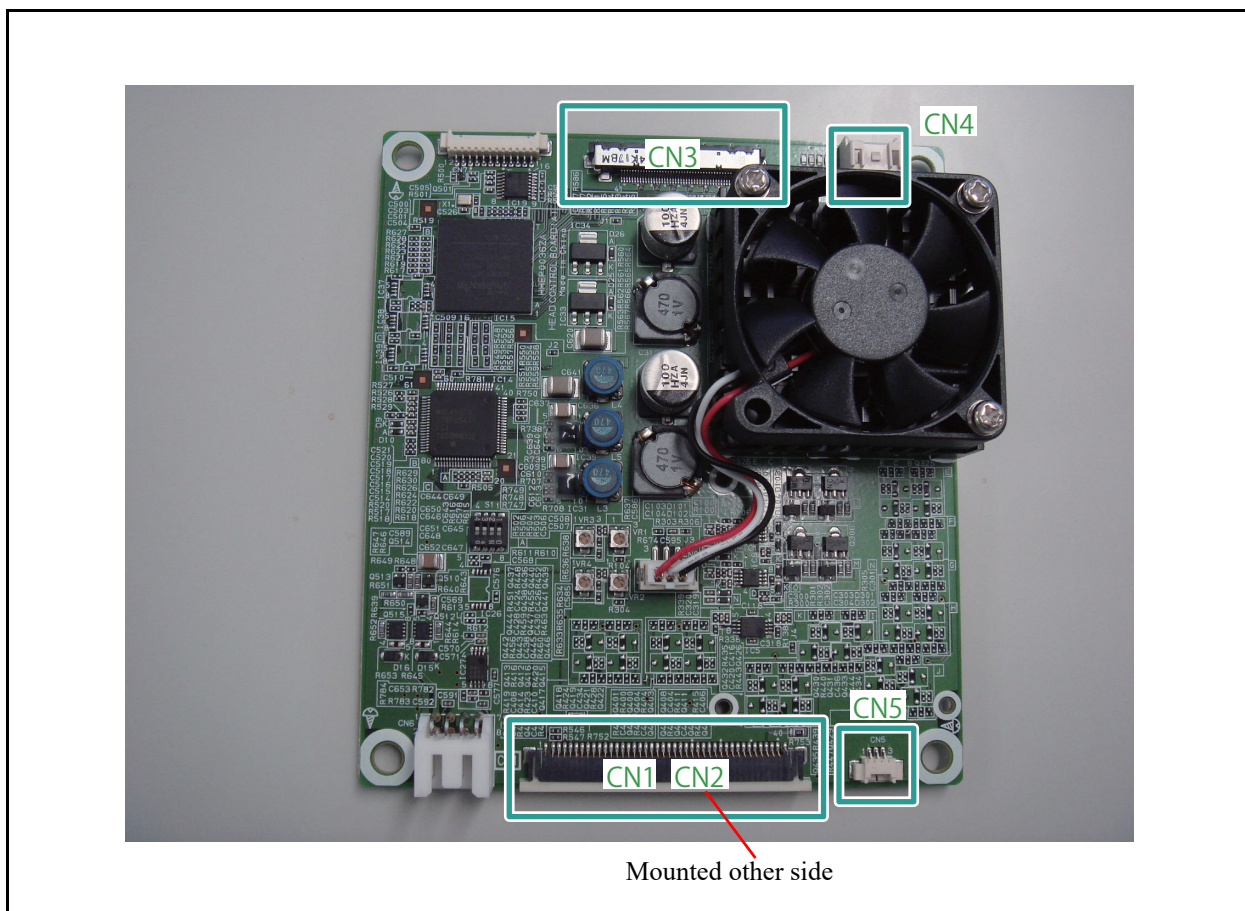
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## 2.3.11 HCB PCB Assy



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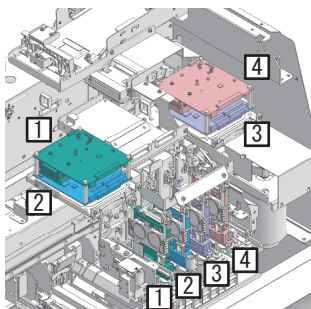
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■ Outline

Board name: HCB PCB (UH-AK810MK)

Location: Equipped with four on the carriage top

Correspondence between the head and the HCB PCB



- Main specifications
- Control of the head

■ List of connectors (First sheet)

No.	Pin	Intended use	AC/DC	Remarks
CN1	40	Connect head 1	DC	
CN2	40	Connect head 1	DC	
CN3	41	Top PCB IF	DC	Connect to slider P PCB
CN4	3	Power input	DC	Connect to slider P PCB
CN5	3	Head thermistor	DC	
CN6		For the head heater	DC	Not used in TS/Tx300P

## 2.3.11 HCB PCB Assy

### ■ List of connectors (2nd. sheet)

No.	Pin	Intended use	AC/DC	Remarks
CN1	40	Connect head 2	DC	
CN2	40	Connect head 2	DC	
CN3	41	Top PCB IF	DC	Connect to slider P PCB
CN4	3	Power input	DC	Connect to slider P PCB
CN5	3	Head thermistor	DC	
CN6		For the head heater	DC	Not used in TS/Tx300P

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### ■ List of connectors (3rd. sheet)

No.	Pin	Intended use	AC/DC	Remarks
CN1	40	Connect head 3	DC	
CN2	40	Connect head 3	DC	
CN3	41	Top PCB IF	DC	Connect to slider P PCB
CN4	3	Power input	DC	Connect to slider P PCB
CN5	3	Head thermistor	DC	
CN6		For the head heater	DC	Not used in TS/Tx300P

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### ■ List of connectors (4th. sheet)

No.	Pin	Intended use	AC/DC	Remarks
CN1	40	Connect head 4	DC	
CN2	40	Connect head 4	DC	
CN3	41	Top PCB IF	DC	Connect to slider P PCB
CN4	3	Power input	DC	Connect to slider P PCB
CN5	3	Head thermistor	DC	
CN6		For the head heater	DC	Not used in TS/Tx300P

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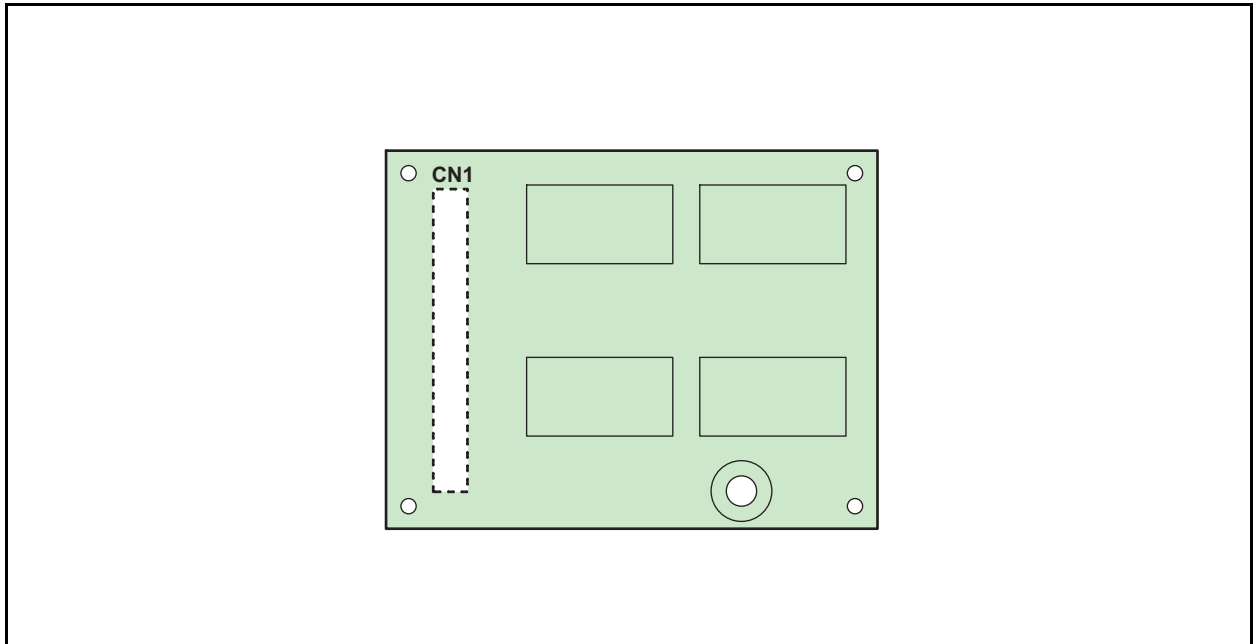
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## 2.3.12 DDR II PRAM (1GB) PCB Assy.



### ■ Outline

Board name: DDR II PRAM(1GB) PCB Assy (E105986)

Location: In electrical BOX

- Main specifications

Memory PCB for the print data

### ■ List of connectors

No	Pin	Intended use	AC/DC	Remarks
CN1	80	Connect main PCB	DC	

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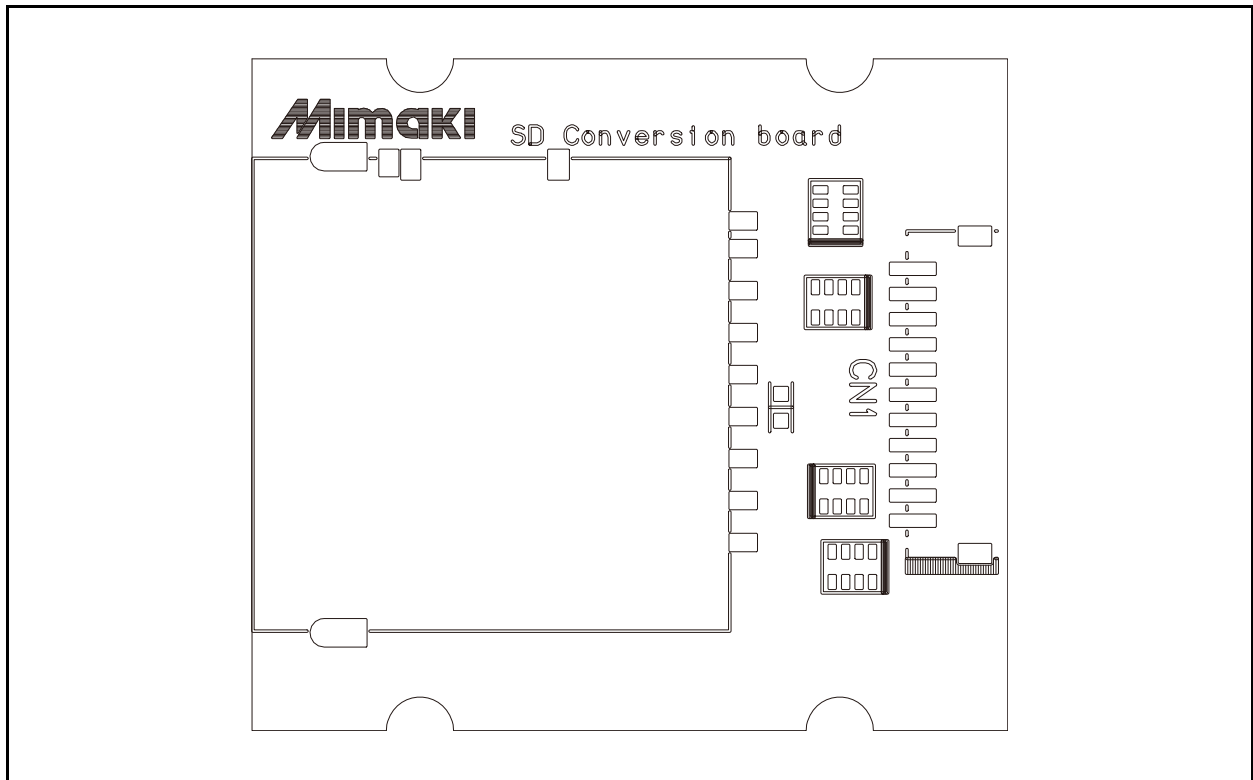
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## 2.3.13 SD Conversion PCB Assy.



### ■ Outline

Board name: SD Converter PCB Assy (E108449)

Location: In electrical BOX

- Main specifications

SD card slot is implemented.

### ■ List of connectors

No	Pin	Intended use	AC/DC	Remarks
CN1	11	Connect main PCB	DC	

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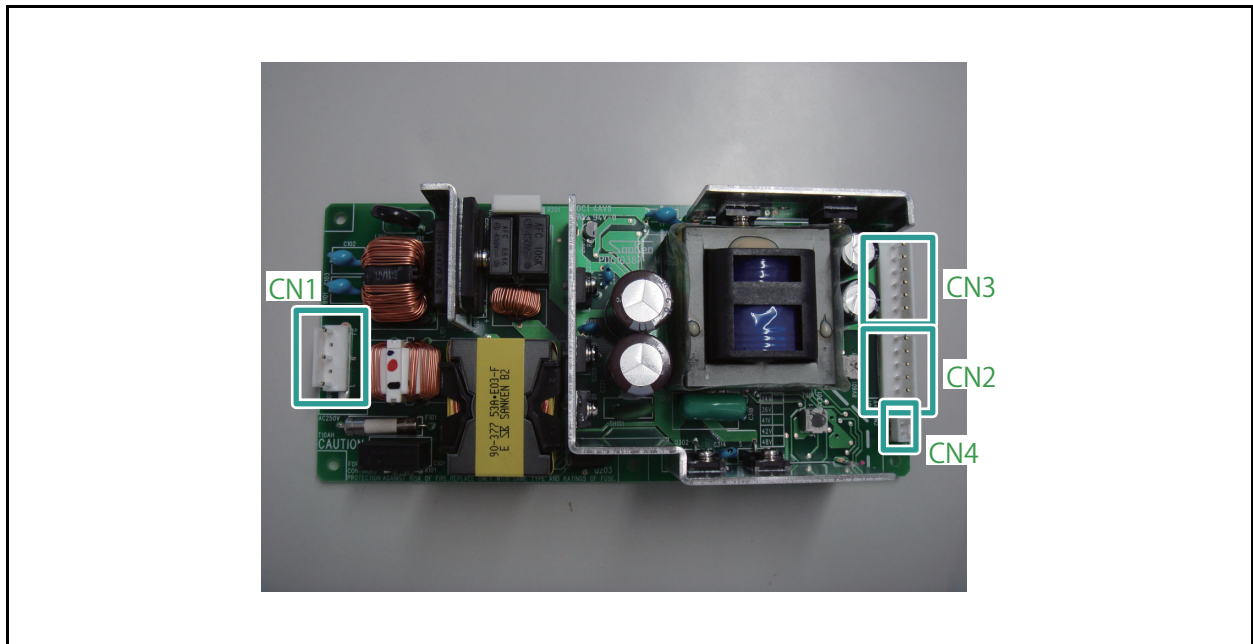
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## 2.3.14 240W48V Power Supply Assy.



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### ■ Outline

Board name: 240W48V Power supply Assy. (LFP240F-48-J1R2YD48 / SWF240P-48-R)

Location: In electrical BOX

- Main specifications

Power supply for internal circuit (DC48V).

### ■ List of connectors

No.		Pin	Intended use	Remarks
*1	*2			
CN1	CN101	5		AC input
CN2	CN601	6		
CN3	CN602	7		
CN4	CN603	2		

\*1.LFP240F-48-J1R2YD48

\*2.SWF240P-48-R

\*For the details of connecting destinations, refer to the block diagram.

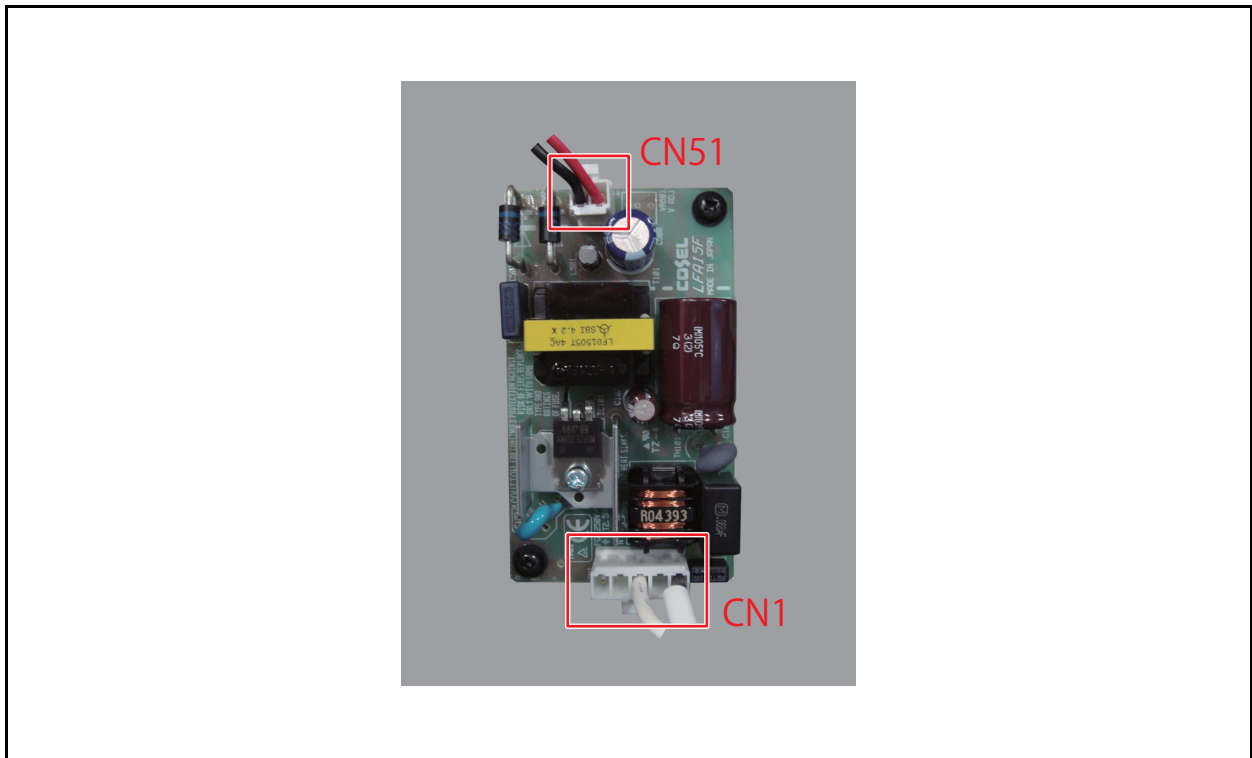
### ■ Power supply confirmation points

No.	Pin No.	Intended use	Remarks
CN1	1	AC input "L"	
	3	AC input "N"	
CN2	CN601	DC output 48V "+"	
CN3	CN602	DC output 48V "-"	
CN4	CN603	1,2 REMOTE CONTROL	



Do not touch the Volume.

## 2.3.15 15W5V Power Supply Assy.



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■ **Outline**

Board name: 15W5V Power supply Assy. (ZWS15B-5 / LFA15F-5-J1)

Location: in the electric BOX

- Main specifications

Supplies the internal DC5V power supply.

■ **List of connectors**

No.		Pin	Intended use	Remarks
*1	*2			
CN1	CN1	5		AC input
CN51	CN2	2		

\*1.LFP240F-48-J1R2YD48

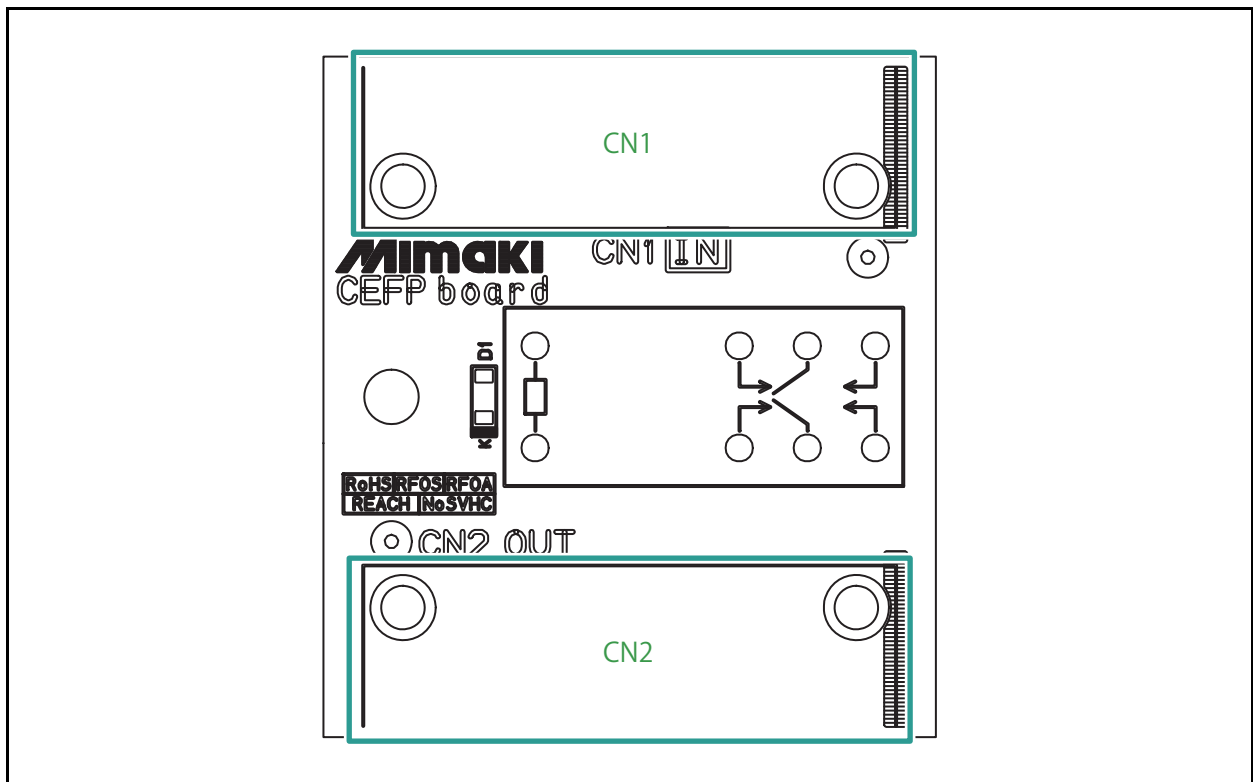
\*2.SWF240P-48-R

\*For the details of connecting destinations, refer to the block diagram.

■ **Power supply confirmation points**

No.	Pin No.	Intended use	Remarks
CN1	1	AC input "L"	
	3	AC input "N"	
CN51	1	DC output 5V "-"	
	2	DC output 5V "+"	

## 2.3.16 Counter Electromotive voltage Protection PCB Assy.



### ■ Outline

Board name: Counter electromotive voltage protection PCB Assy (E108987)

Location: In electrical BOX

#### □ Main specifications

This PCB is protect the rise in power supply voltage by the counter electromotive voltage.

Tis machine has two of this.

### ■ List of connectors

No	Pin	Intended use	AC/DC	Remarks
CN1	15	Connect the control side of Take-up / feeding motor.	DC	
CN2	15	Connect the Take-up / feeding motor side.	DC	

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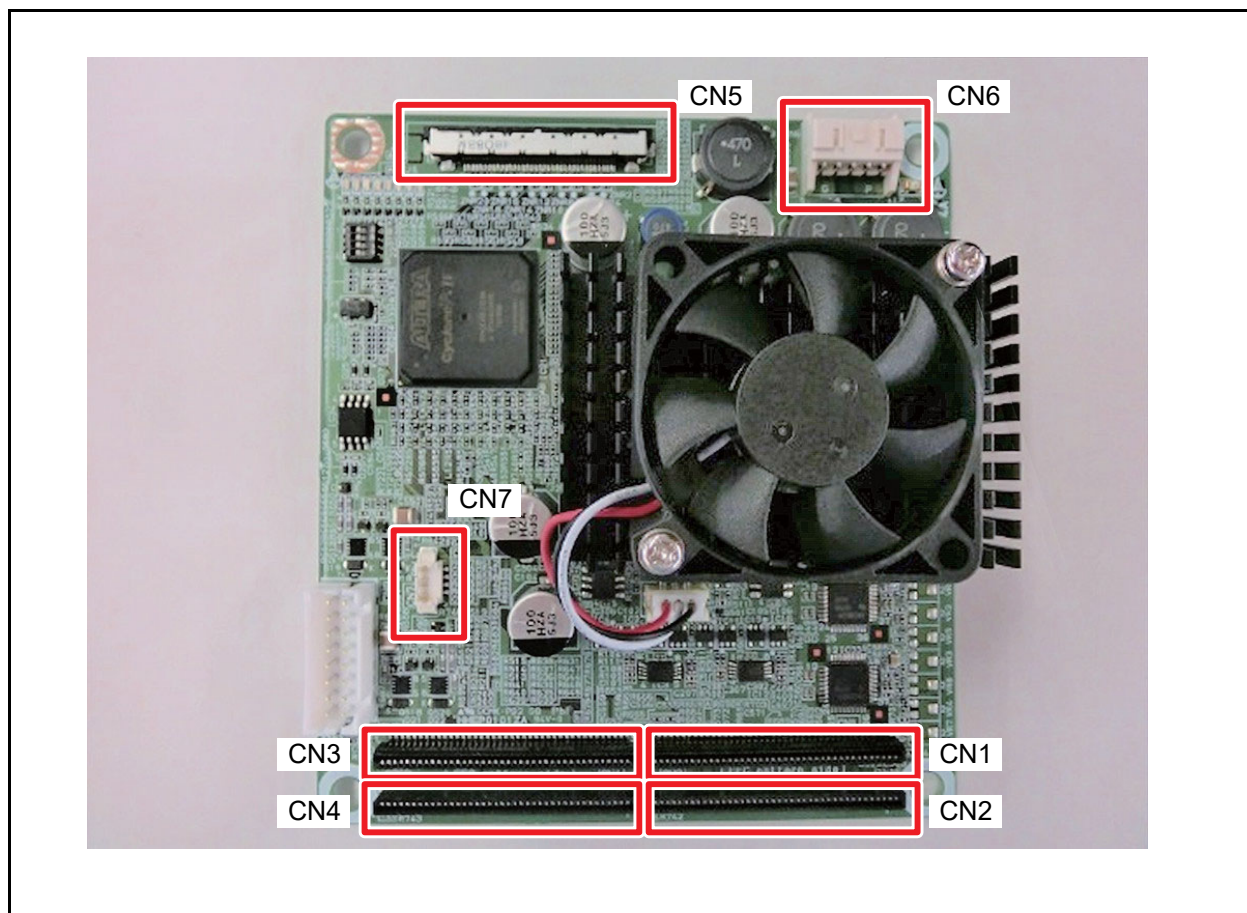
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## 2.3.17 HCB2 PCB



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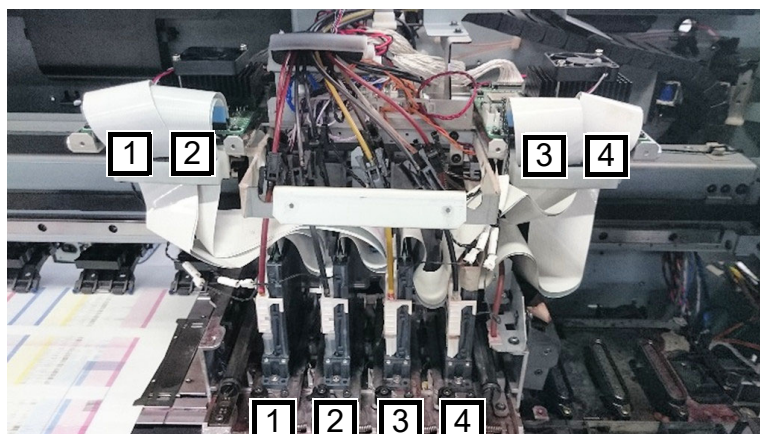
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■ Outline

Board name: HCB2 PCB (UH-AK812MK)

Location: One each sheet is mounted on the carriage right and left.

Correspondence between the head and the HCB PCB



□ Main specifications

Control of the head

## 2.3.17 HCB2 PCB

### ■ List of connectors (Head 1-2)

No	Pin	Intended use	AC/DC	Remarks
CN1	40	Connect head 1	DC	
CN2	40	Connect head 1	DC	
CN3	40	Connect head 2	DC	
CN4	40	Connect head 2	DC	
CN5	41	Top PCB IF	DC	Connect to slider P PCB
CN6	3	Power input	DC	Connect to slider P PCB
CN7	3	Head thermistor	DC	
CN8		For the head heater	DC	Not used in TS/Tx300P

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### ■ List of connectors (Head 3-4)

No	Pin	Intended use	AC/DC	Remarks
CN1	40	Connect head 3	DC	
CN2	40	Connect head 3	DC	
CN3	40	Connect head 4	DC	
CN4	40	Connect head 4	DC	
CN5	41	Top PCB IF	DC	Connect to slider P PCB
CN6	3	Power input	DC	Connect to slider P PCB
CN7	3	Head thermistor	DC	
CN8		For the head heater	DC	Not used in TS/Tx300P

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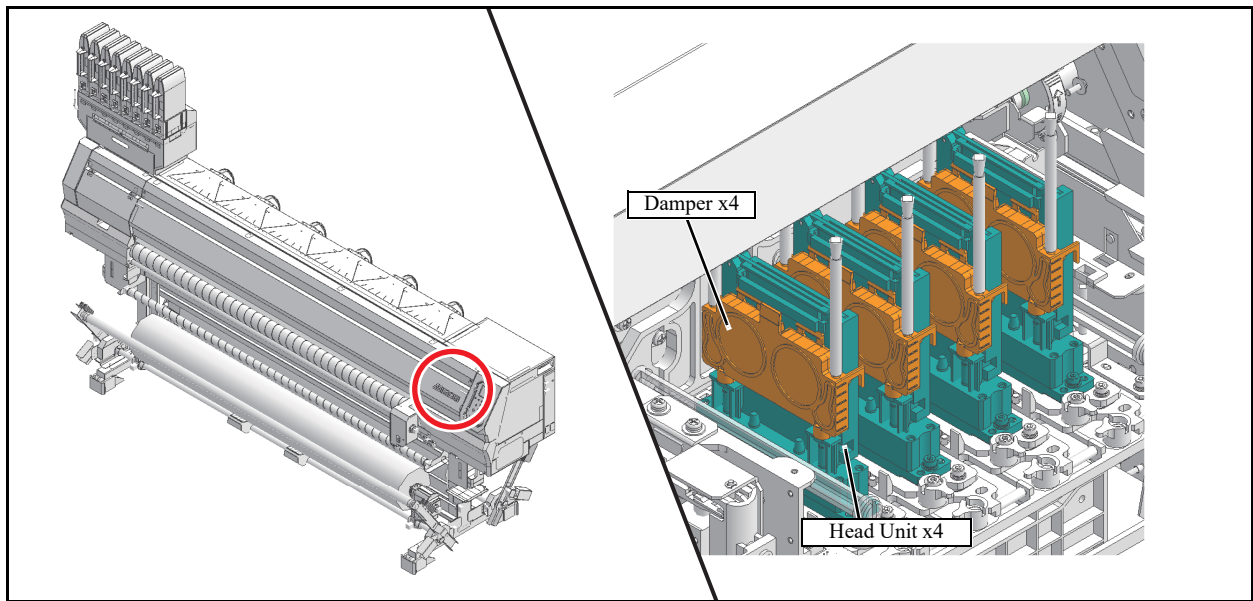
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<b>Workflow</b>		
<b>3.1 Ink Related Parts</b>	<b>3.2 Driving Parts</b>	<b>3.3 Electrical Parts</b>

### 3.1.1 Replacement of the Head Unit



■ List of replacement procedures

Item	Work operation	Description	Ref.
Power supply	1. <input type="checkbox"/> Turn the main power off	Turn the main power off.	
Ink	2. <input type="checkbox"/> Ink discharge	Discharge ink with [#ADJUST][HEAD WASH][DIS-CHARG]	
Covers	3. <input type="checkbox"/> Removal of covers, etc.	Remove the front cover L, M and carriage cover.	6.1.1
Printing Head Unit Assy	4. <input type="checkbox"/> Cleaning of the replacement head	Select [#ADJUST] > [HEAD WASH] > [HEAD]	3.1.1
	5. <input type="checkbox"/> Removal of the head.	Remove the disused head with the damper.	6.2.1
	6. <input type="checkbox"/> Mounting of the head.	Mount the new head. * In case of solvent ink machine: mount the new head after cleaning inside of the head unit with MS cleaning liquid (SPC-0294).	
	7. <input type="checkbox"/> Check of the head ID	(Normally, manual entry is not necessary because writing is carried out automatically.)	4.2.12
Power supply	8. <input type="checkbox"/> Turn the main power on	Turn the main power on.	
Head	9. <input type="checkbox"/> Head alone cleaning	Select [#ADJUST] > [HEAD WASH] > [HEAD]	3.1.1
Ink	10. <input type="checkbox"/> Ink charge into the head	Fill the head with ink with [#ADJUST] > [FILL UP INK]. Carry out test plotting, and then check for any nozzle outs or flight deflection of ink droplets.	4.2.20
Check	11. <input type="checkbox"/> Head rank adjustment	Adjust the ink dropping position of L, M, S dot in Y direction. Per form [#ADJUST] > [Head Rank] > [Adjust Pattern] > [Length].	4.2.13
	12. <input type="checkbox"/> Head slant adjustment	Mechanically adjust the replaced head.	4.2.2
	13. <input type="checkbox"/> Correction of dot position (Press the key [#ADJUST])	Adjust dot locations.	4.2.4
	14. <input type="checkbox"/> Correction of dot position (Press the key [MAINTENANCE])	Make adjustment by (pressing the key) [DROP.POScorrect] of "user mode".	
Covers	15. <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.
- Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

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# 3.1.1 Replacement of the Head Unit

## ■ Head replacement procedure

Use the following procedure to replace the head when inspecting for failure, etc.

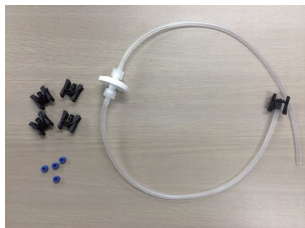


Pay careful attention to the following when replacing the head.

1. Be sure to attach a test pattern. The head and test pattern should match exactly.  
If the same No. head is replaced continuously due to recurring failure, write the serial number of the head on the test pattern to clearly identify the relationship between the failed head and the test pattern.
2. Indicate the areas of concern (causes for replacement) on the test pattern with checkmarks or by circling them.
3. Be sure to attach the parameter and log.

### □ Items to prepare

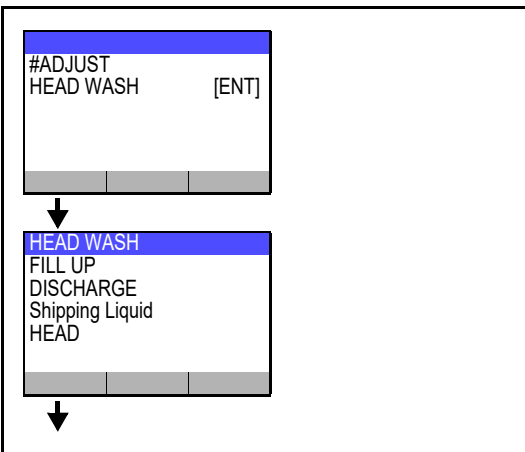
- C-ML003-Z-K1 Cleaning solution 03 maintenance kit or C-FL003-Z-BB-1 Cleaning solution 03 2L bottle
- MP-M017211 Head cleaning jig packing Assy.



### □ Head alone cleaning Procedure

Washing is carried out by dividing into one nozzle row (one damper room) at a time, two times.

1. Select [#ADJUST] > [HEAD WASH] > [HEAD]



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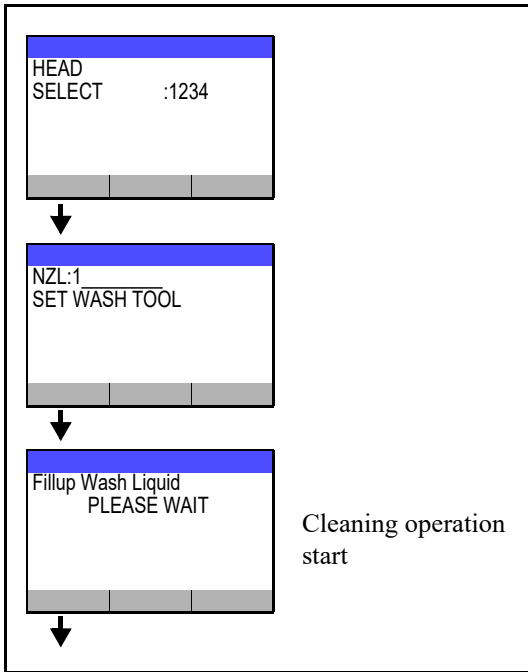
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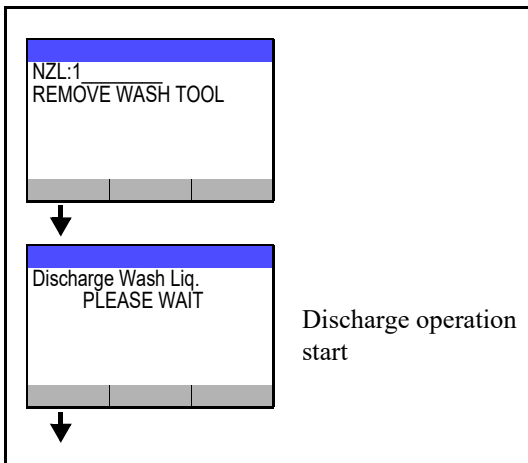
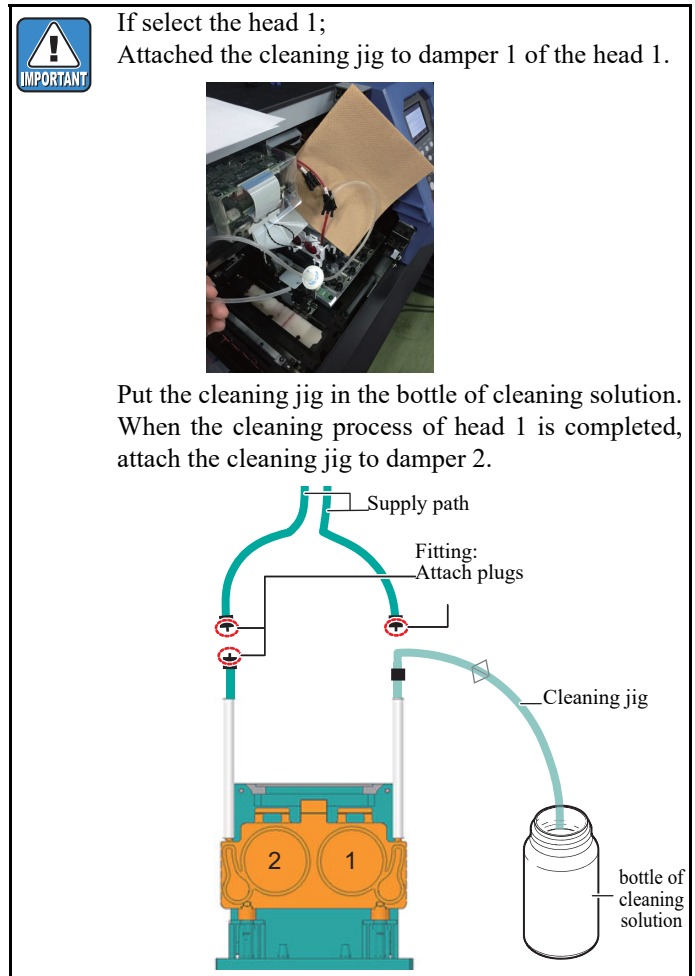
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# 3.1.1 Replacement of the Head Unit



2. Choose the head for cleaning.



3. Removed the cleaning jig from the bottle of cleaning solution.

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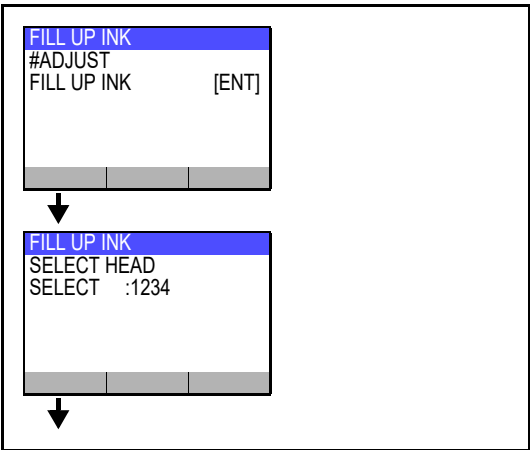
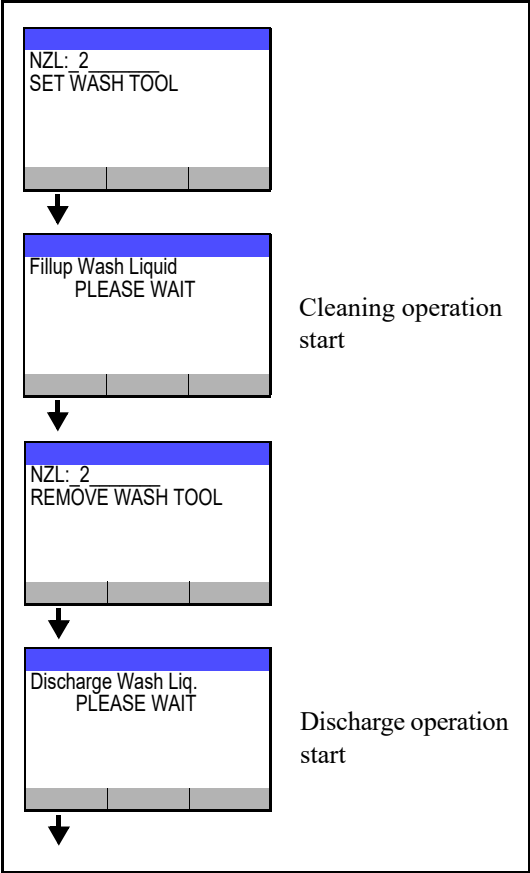
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# 3.1.1 Replacement of the Head Unit



4. Repeat with even side of the damper.

5. Select [#ADJUST] > [FILL UP INK].

6. Hereinafter, with reference to 4.2.20 FILL UP INK, perform filling.

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## 3.1.1 Replacement of the Head Unit

□ About Head FFC Assy.

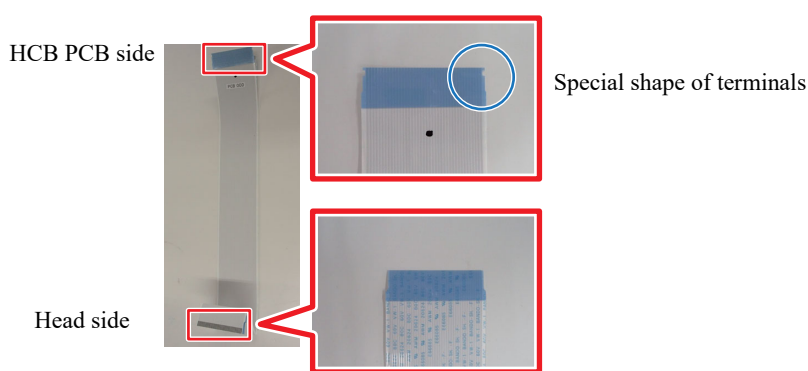


At the head unit replacement, if the head FFC is damaged or dirty, then exchange the head FFC. Two types of head FFC Assy are set as a part in this machine. it is necessary to select the FFC to match the mounted HCB PCB Assy.

### 1) MP-E301225 Head FFCAssy1

- Corresponding to the HCB PCB Assy.
- The FFC PCB terminals are special shapes.
- There is Head FFC Assy1 for a replacement in the electrical BOX.

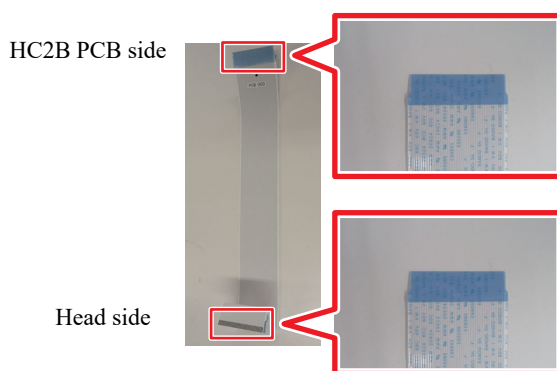
FFCAssy1



### 2) MP-E301226 Head FFCAssy2

- Corresponding to the HCB2 PCB Assy.
- FFC terminal shape is the same at both ends.
- The maintenance head Assy is included within FFC Assy2.

FFCAssy2



When inserting the FFC to FFC connector, be careful in the direction of the FFC. Also do not insert in oblique angle.

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## 3.1.1 Replacement of the Head Unit

Packing procedure

1. Pack the head that is being replaced in the packaging in which the replacement head was packaged.
  
2. Place the test pattern inside the outer packaging together with the head being replaced.
  
3. Write the following information on the outside of the box.
  - 1).Model
  - 2).Unit
  - 3).Type of ink used
  - 4).Color that failed
  - 5).Head No
  
4. Describe in the head return sheet (refer to next page).

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## 3.1.1 Replacement of the Head Unit

### □ Requirement information

List the following information as much as possible.

### Defective Head Information

Damaged date					
Reported date		Reported by :			
Dealer					
Head info.	Head.serial.No.				
	Position.No..of.a.defective.head.	1	2	3	4
	Position No. of a defective head				
Machine info.	Model	Tx300P			
	Machine No. / FW version	/ FW Ver.			
	Changed ink kind and ink color set	No / Yes (                   ->                   )			
	RIP.	RLP. Ver.                   /                   Other RIP			
	Resolution				
Ink info	Kind of ink	Sb420, Sb421, TP400, Db400, Rc400, Rc500, Ac400, Sb411+TP400 (MkIIのみ), Sb420+TP400, Sb421+TP400, Sb411+TP400 (MkIIのみ), (                   )			
	Defective ink color	K, BL, M, Y, Lbl, Lm, C, R, Gr, V, P, Or, Lk			
	Ink Lot No.				
Media Info.	Kind of media				
Environment	Head gap				
	Temperature and humidity			°C	%
	Dust ( Yes: its kind)	No / Yes (                   )			
	Used specific chemicals around the machine ( Yes : Kind)	No / Yes (Kind:                   )			
	Remarks (Another information)				
The states of problem detections	Did a media jam occur?	Yes /		No	
	Did the problem occur after changing a media?	Yes /		No	
	The date of the previous head replacement (Head of the same position)				
	An unused period was more than a week.	No /		Yes (    days)	
	Did the machine is used without covers?	Yes /		No	
	User adjusted the head individually. ( Head voltage / Change of waveform)	No / Yes ( Contents of adjustment:                   )			
	The states of nozzle drop out	Random / Specified / Plenty			
Restorative work info.	Did you perform the following works before head replacement?	(Please check to the below.)			
	Leak check	<input type="checkbox"/>			
	Cleaning	<input type="checkbox"/>			
	Ink filling	<input type="checkbox"/>			
Pressure feeding of cleaning solution	<input type="checkbox"/>				
Request and suggestion (Operation or procedure)	Warranty <input type="checkbox"/> ( Please fill in a check mark if you require a warranty. )				
Check for accessories	<input type="checkbox"/> Defective head <input type="checkbox"/> Test print <input type="checkbox"/> Sample of defective print				
	<input type="checkbox"/> The data of problem detections (Backup data)				

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## 3.1.1 Replacement of the Head Unit

□ Items to be included

1.Used heads (failed heads)

All ink should be discharged from the head, and the head should be wrapped in aluminum foil to block light.

2.Test pattern (to confirm nozzle conditions)

3.Sample to check for missing nozzle (deliverable)

If it can be provided by the user

4.Data where trouble occurred (backup file, etc.)

1).Suggestions for work improvements, treatment methods, etc.

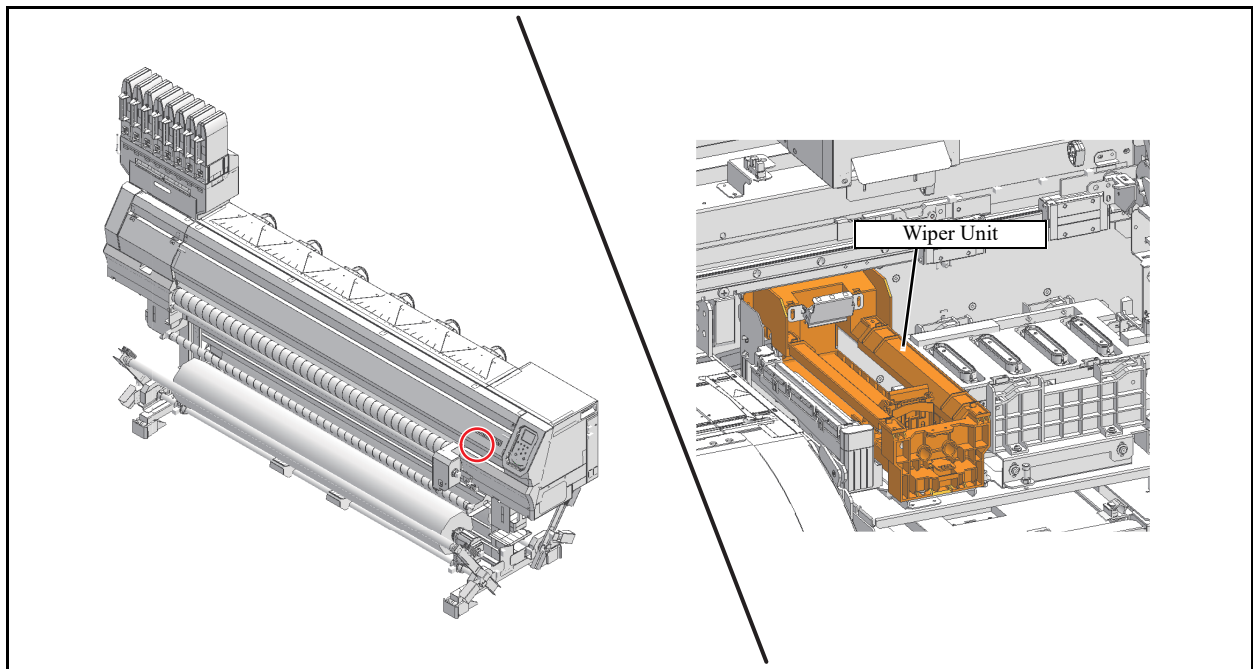
2).Required in particular for color changes when printing starts, and when delay in discharge occurs (because it could be caused by data)

If it can be provided by the user

5.Parameter, log

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### 3.1.2 Replacement of the Wiper Unit



■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Front cover L, M, Under cover R.	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 4.3.8
	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 1.0 mm.	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.	4.2.8
Check	6. <input type="checkbox"/> Cleaning operation	Check whether each assembly and adjustment has been carried out properly by 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.



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

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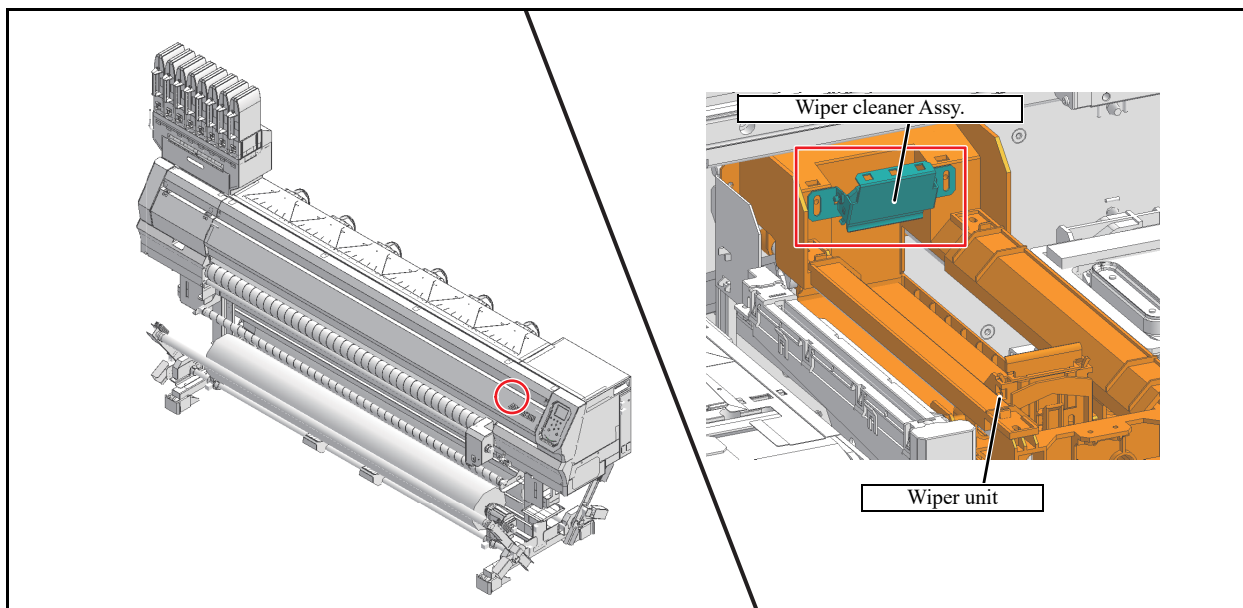
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### 3.1.3 Replacement of the Wiper Cleaner Assy.



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■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Front cover L, M.	6.1.1
Wiper Cleaner Assy.	2. <input type="checkbox"/> Removal of the wiper cleaner assy.	Remove the Wiper cleaner assy.	6.3.7
	3. <input type="checkbox"/> Mounting of the wiper cleaner assy.	Mount the Wiper cleaner assy.	
Adjustment	4. <input type="checkbox"/> Wiper position	Fix the wipers so that the upper and lower wiper rubbers overlap by about 1 mm at the right edge.	6.1.1
Check	5. <input type="checkbox"/> Cleaning operation	Check whether each assembly and adjustment has been carried out properly by wiper cleaning operation.	
Covers	6. <input type="checkbox"/> Mounting of the covers.	Mount the covers that have been removed.	6.1.1

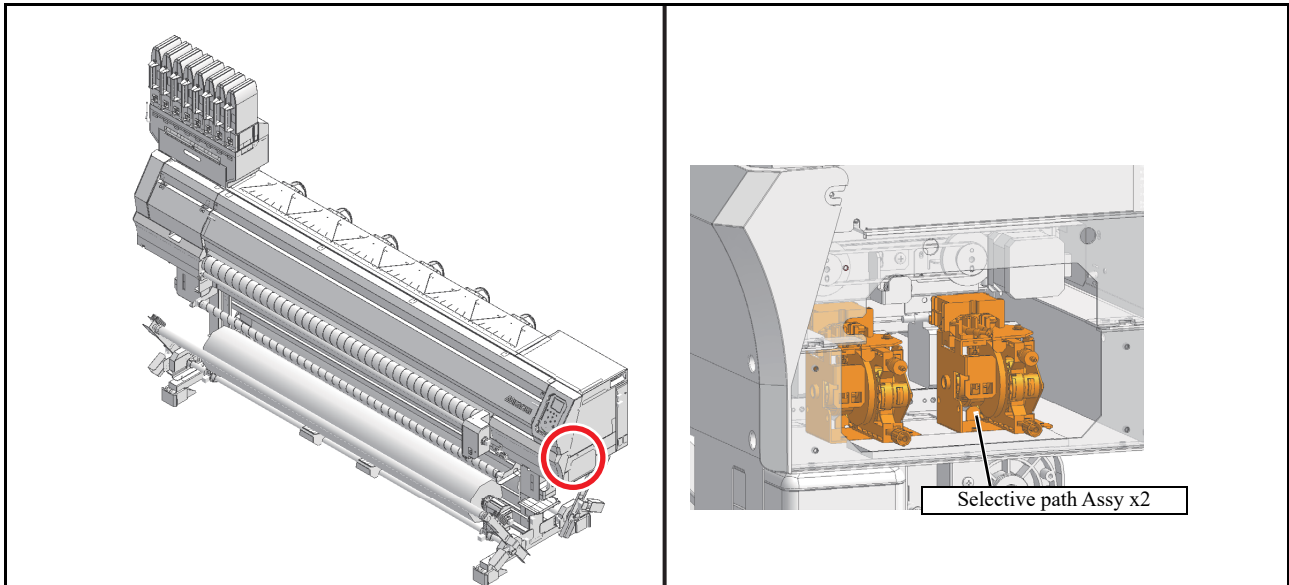


Be sure to wear protective glasses and working gloves during the operation. Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.



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

### 3.1.4 Replacement of the Selective path Assy.



■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Under cover R, cover R and cover R2.	6.1.1
Selective path Assy.	2. <input type="checkbox"/> Removal of the Selective path Assy.	Remove the Selective path Assy.	6.2.5
	3. <input type="checkbox"/> Mounting of the Selective path Assy.	Mount the Selective path Assy. Remove the attached absorber.	
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.



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

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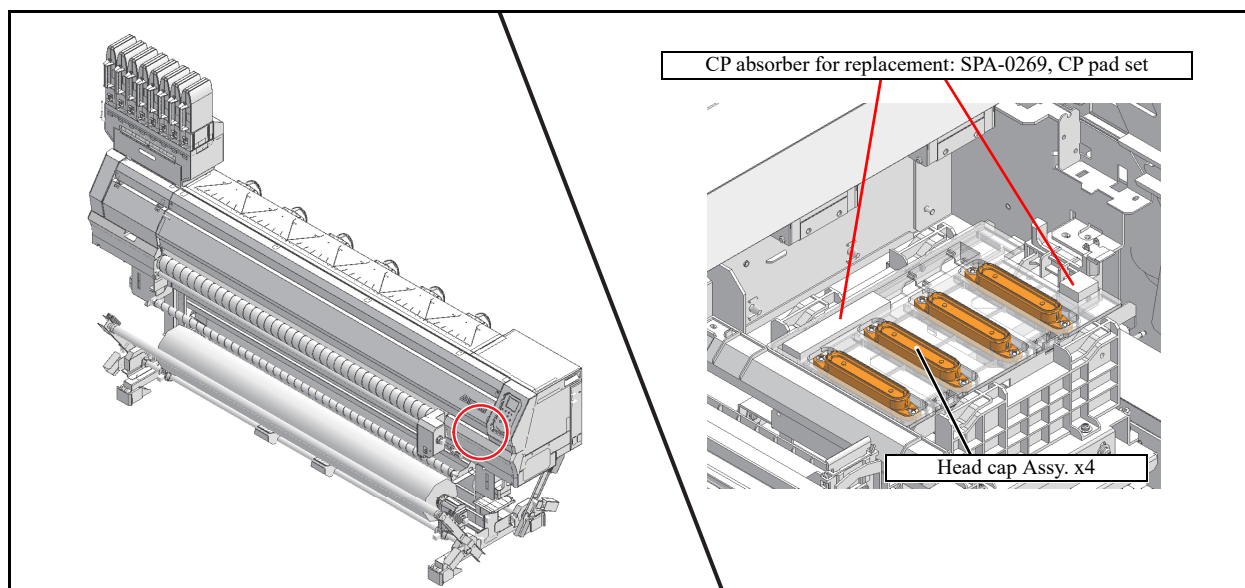
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### 3.1.5 Replacement of the Head Cap Assy.



■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Front cover M, L and under cover R.	6.1.1
Cap Assy	2. <input type="checkbox"/> Removal of the Cap Assy.	Remove the Cap Assy.	6.2.9
	3. <input type="checkbox"/> Mounting of the Cap Assy.	Attach the Cap Assy while pushing it toward you.	6.2.9
	4. <input type="checkbox"/> Adjustment of Capping	Carry out "CAPPING" (by using the key) [# ADJUST]. CAPPING POS: 2 mm to the right from the uppermost position of the cap slider. AirPullPOS.: Adjust the cap when its uppermost part touches the head surface.  FlushingPOS: 1 mm down from the AirPullPOS.	4.2.8
Check	5. <input type="checkbox"/> Cleaning operation	Check whether each assembly and adjustment has been carried out properly.	
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.



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

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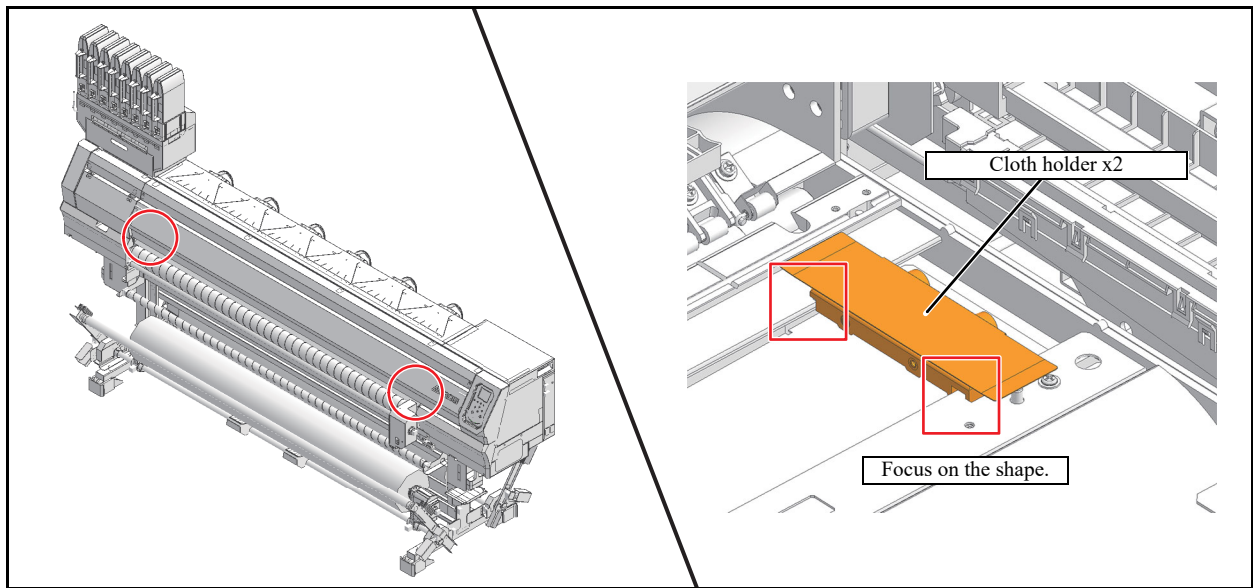
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### 3.1.6 Replacement of the Cloth holder



■ List of replacement procedures

Item	Work operation	Description	Ref.
Cloth holder	1. <input type="checkbox"/> Remove the cloth holder.	Remove the cloth holder.	6.2.12
	2. <input type="checkbox"/> Replace the cloth holder spacer.	Replace 4 cloth holder spacers with new ones.	
	3. <input type="checkbox"/> Mounting of the cloth holder.	Mount the cloth holder. For replacement media plate: SPA-0278 Media plate	



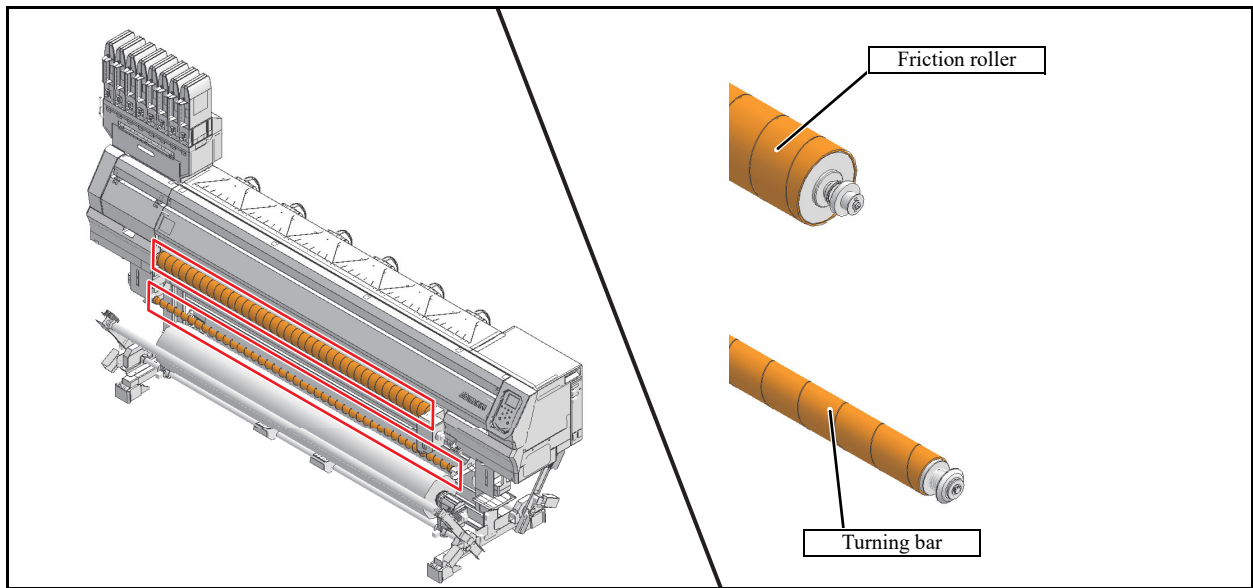
Be sure to wear protective glasses and working gloves during the operation. Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.



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

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### 3.1.7 Replacement of Rubber tape of Friction roller, Turning bar



■ List of replacement procedures

Item	Work operation	Description	Ref.
Friction roller/ turning bar	1. <input type="checkbox"/> Peel off the tape at both ends	Peel off the tape at both ends.	
	2. <input type="checkbox"/> Remove the rubber tape	Remove the rubber tape.	6.2.9
	3. <input type="checkbox"/> Paste rubber tape	Fix the one side of the rubber tape with acetate tape. Wind so that there is no gap. Fix the winding end with acetate tape.	6.2.9
Confirm	4. <input type="checkbox"/> Check the rubber tape	Confirm visually no punch in the rubber tape.	



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

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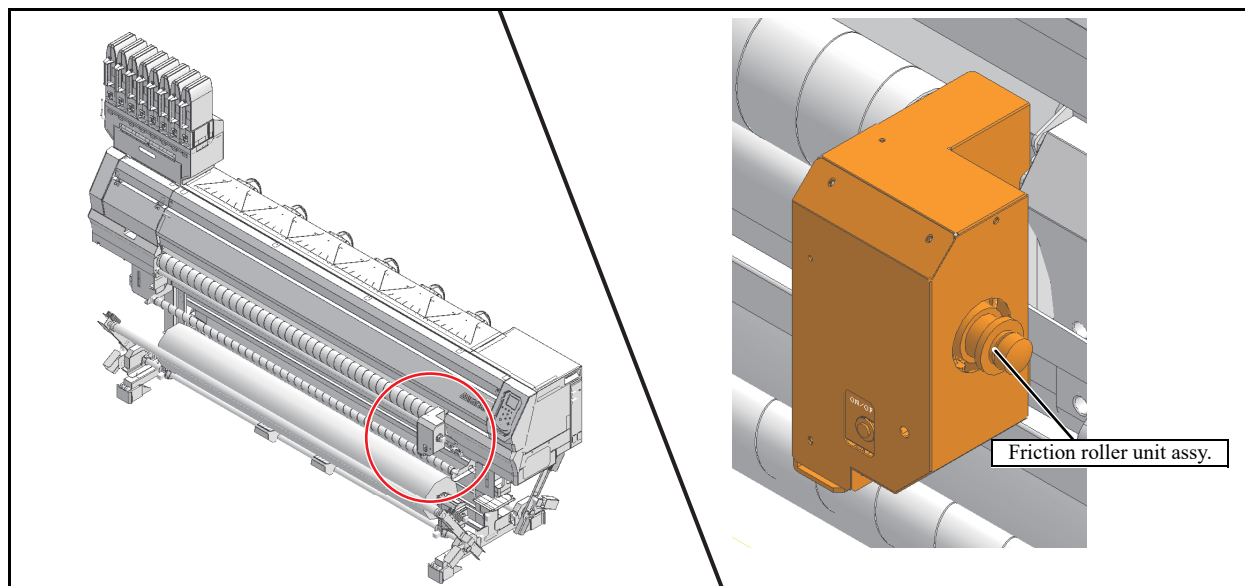
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### 3.1.8 Replacement of the Friction roller Unit Assy.



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■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the friction roller unit front cover and side cover.	6.1.1
Friction roller unit	2. <input type="checkbox"/> Removal of the friction roller unit assy.	Remove the friction roller unit assy.	6.2.9
	3. <input type="checkbox"/> Mounting of the friction roller unit assy.	Mount the friction roller unit assy	
Covers	4. <input type="checkbox"/> Mounting of the covers.	Mount the covers that have been removed.	6.1.1

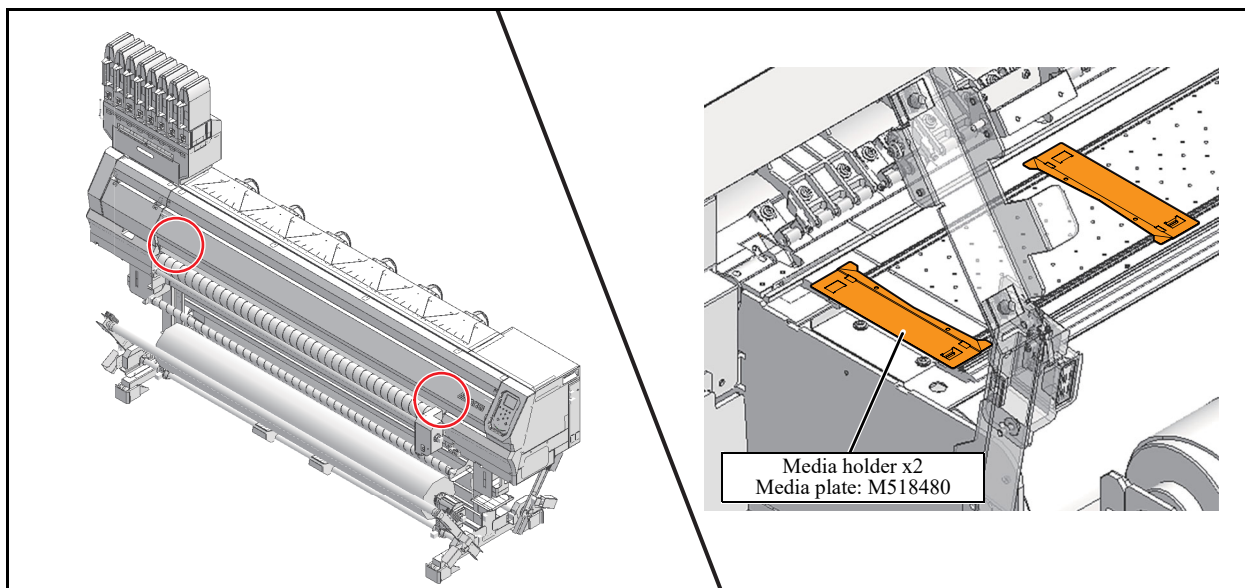


Be sure to wear protective glasses and working gloves during the operation. Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.



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

### 3.1.9 Replacement of the Media holder (only for MkII)



■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Front cover M, L, and Front under cover T.	6.1.1
Media holder	2. <input type="checkbox"/> Remove the media holder.	Remove the media holder.	6.2.13
	3. <input type="checkbox"/> Mounting of the media holder.	Mount the media holder.	
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.



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

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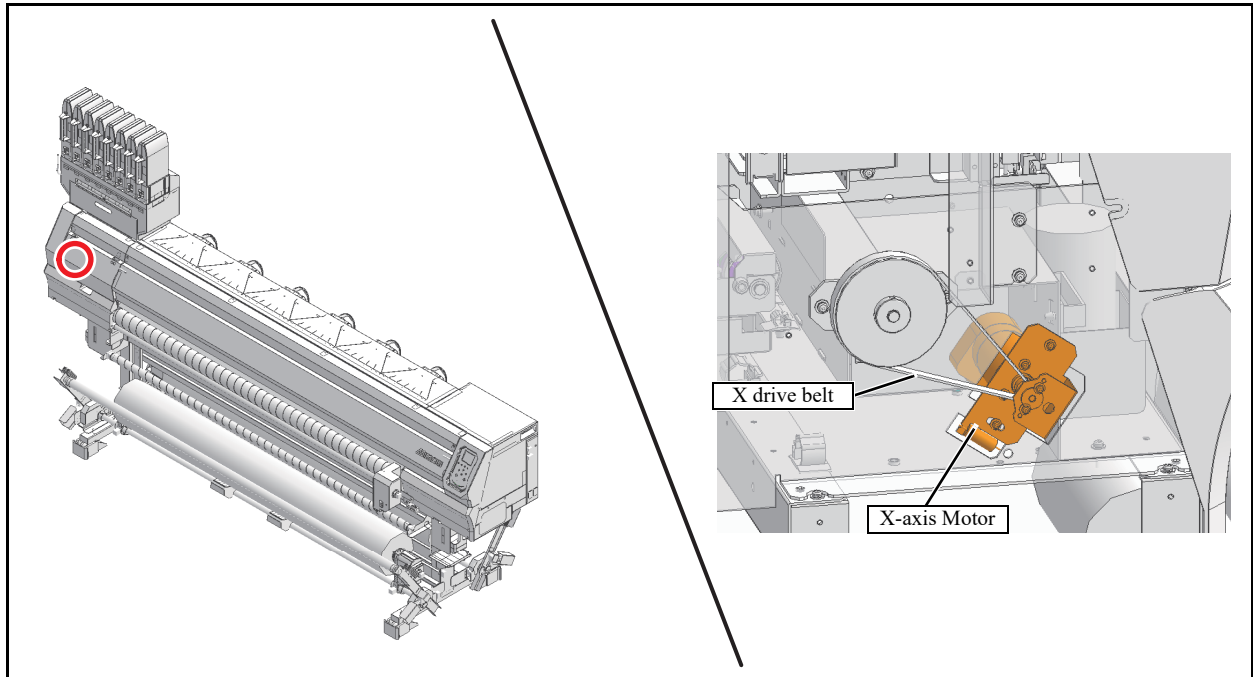
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<b>Workflow</b>		
<b>3.1 Ink Related Parts</b>	<b>3.2 Driving Parts</b>	<b>3.3 Electrical Parts</b>

## 3.2.1 Replacement of the X-axis Motor / X drive belt



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### ■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Cover L.	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.	
Covers	4. <input type="checkbox"/> Mounting of the covers.	Mount the covers that have been removed.	6.1.1

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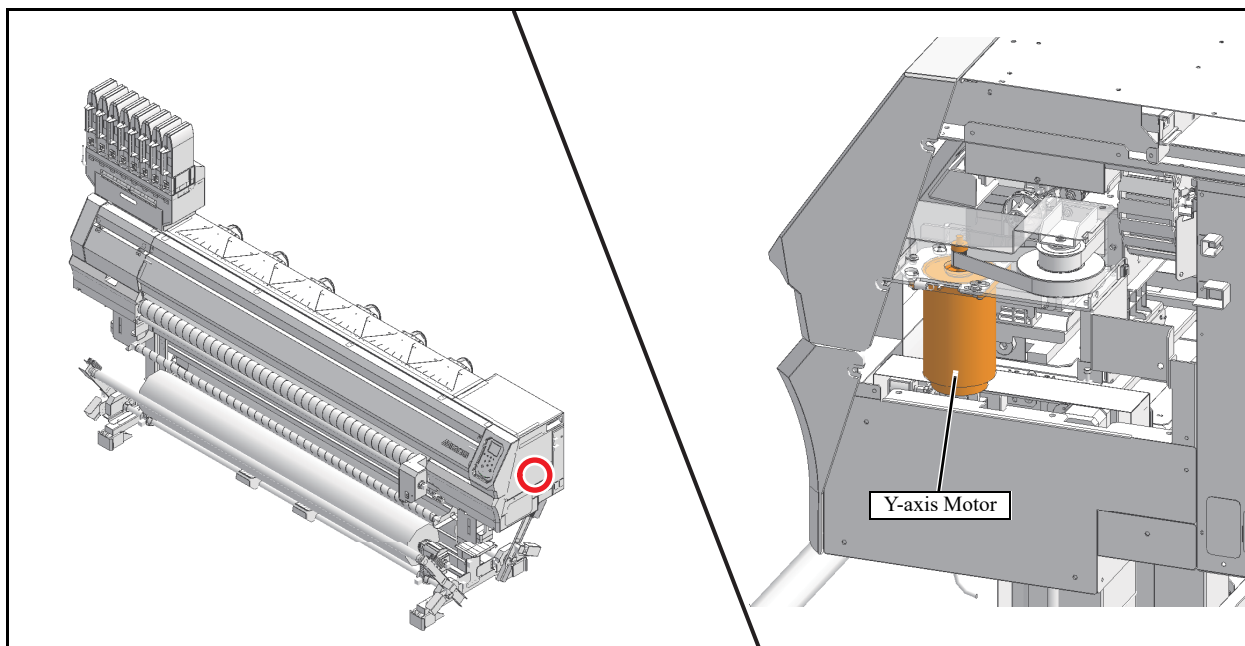
Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

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## 3.2.2 Replacement of the Y-axis Motor



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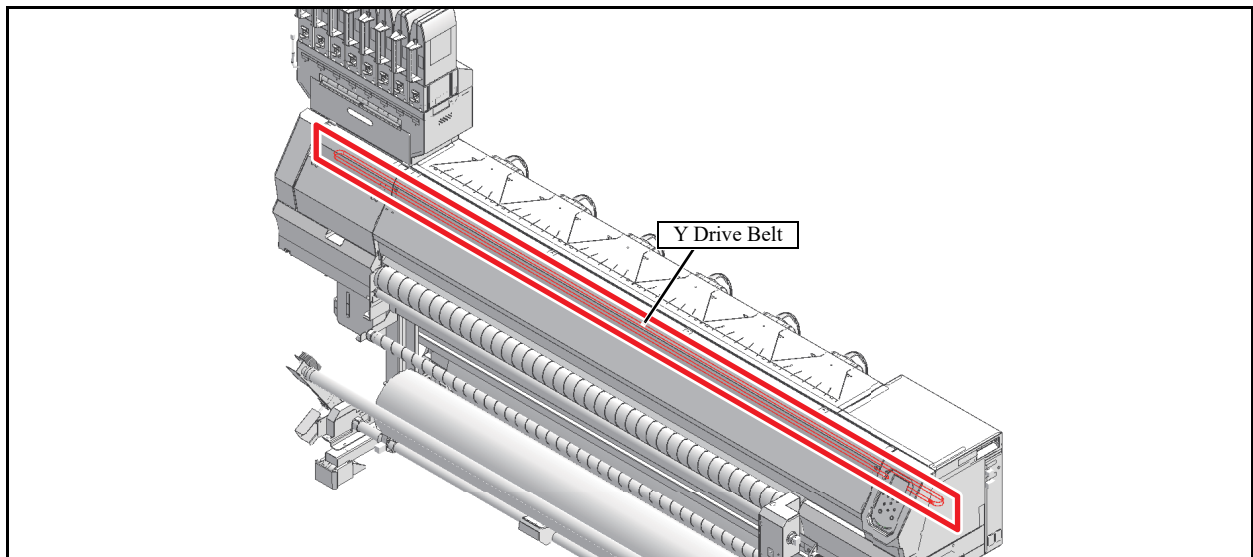
### ■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Cover R.	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.	
Covers	4. <input type="checkbox"/> Mounting of the covers.	Mount the covers that have been removed.	6.1.1



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

### 3.2.3 Replacement of the Y Drive Belt



■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Front cover M, L and carriage 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



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

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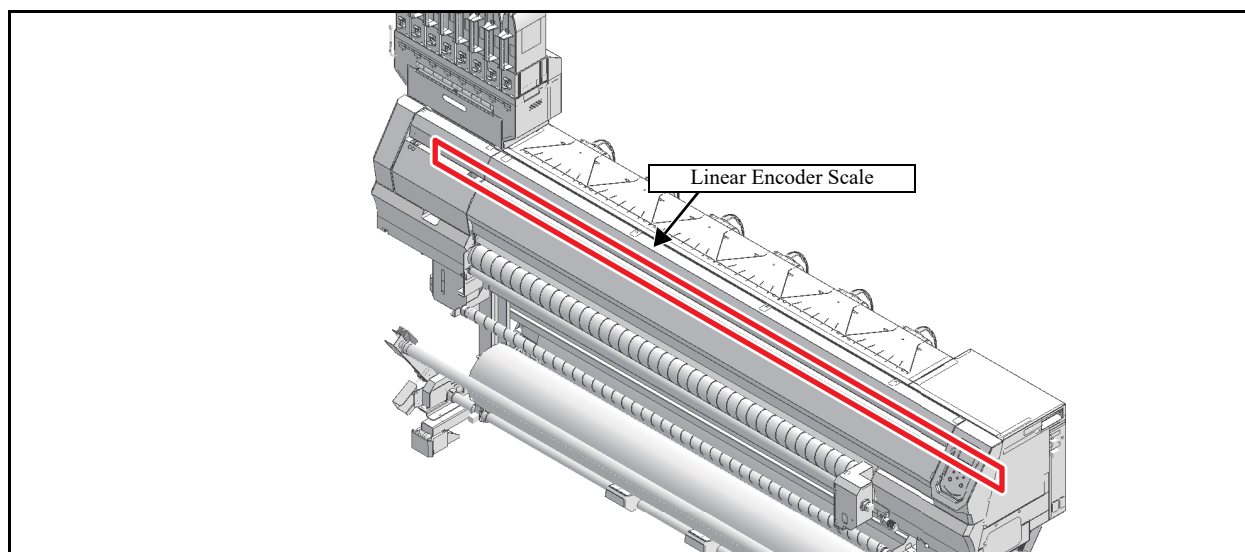
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## 3.2.4 Replacement of the Linear Encoder Scale



### ■ List of replacement procedures

Item	Work operation	Description	Ref.
Covers	1. <input type="checkbox"/> Removal of covers, etc.	Remove the Front cover M, L, Front undercover and carriage 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.	4.3.5 5.1.12
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.



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

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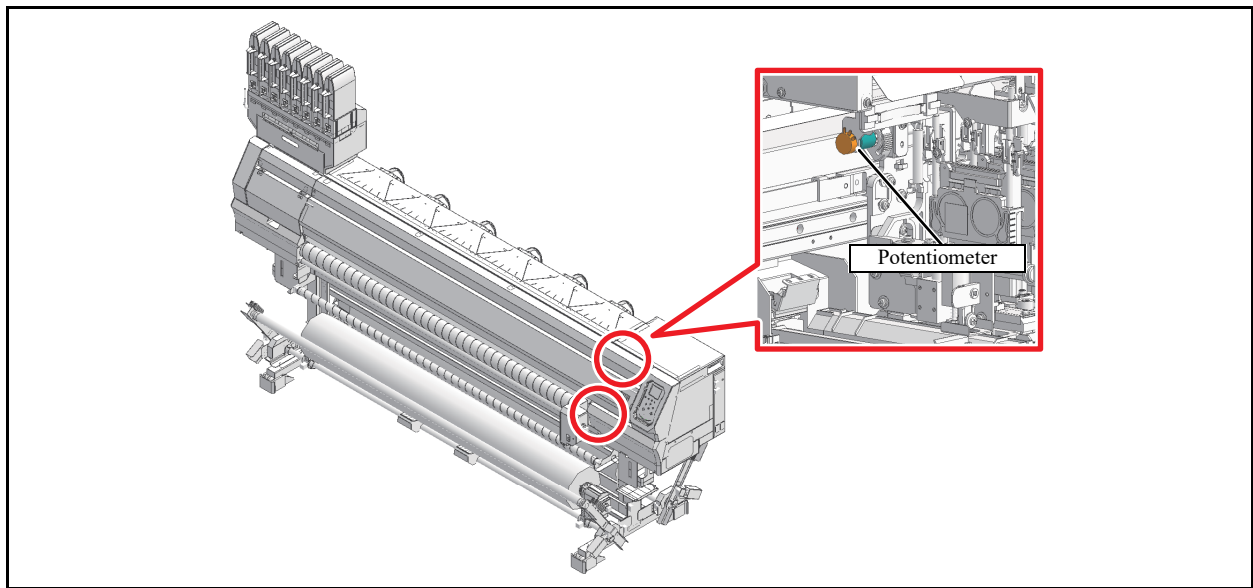
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### 3.2.5 Replacement of the Potentiometer



■ List of replacement procedures

Item	Work operation	Description	Ref.
Adjustment	1. <input type="checkbox"/> Clear of the potentiometer adjustment value.	Clear the adjustment value.	6.5.6
		 If replace without clearing the adjustment value, it is possible that the station and the carriage clash at initial power ON after the replacement.	
Carriage	2. <input type="checkbox"/> Position the carriage to the lowest point.		6.5.6
Covers	3. <input type="checkbox"/> Removal of covers, etc.	Remove the carriage cover.	6.1.1
Potentiometer	4. <input type="checkbox"/> Remove the potentiometer.	Remove the potentiometer.	6.5.6
	5. <input type="checkbox"/> Mounting of the potentiometer.	Mount the potentiometer.	
Adjustment	6. <input type="checkbox"/> Registration of the uppermost point and lowest point		4.2.7
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.

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

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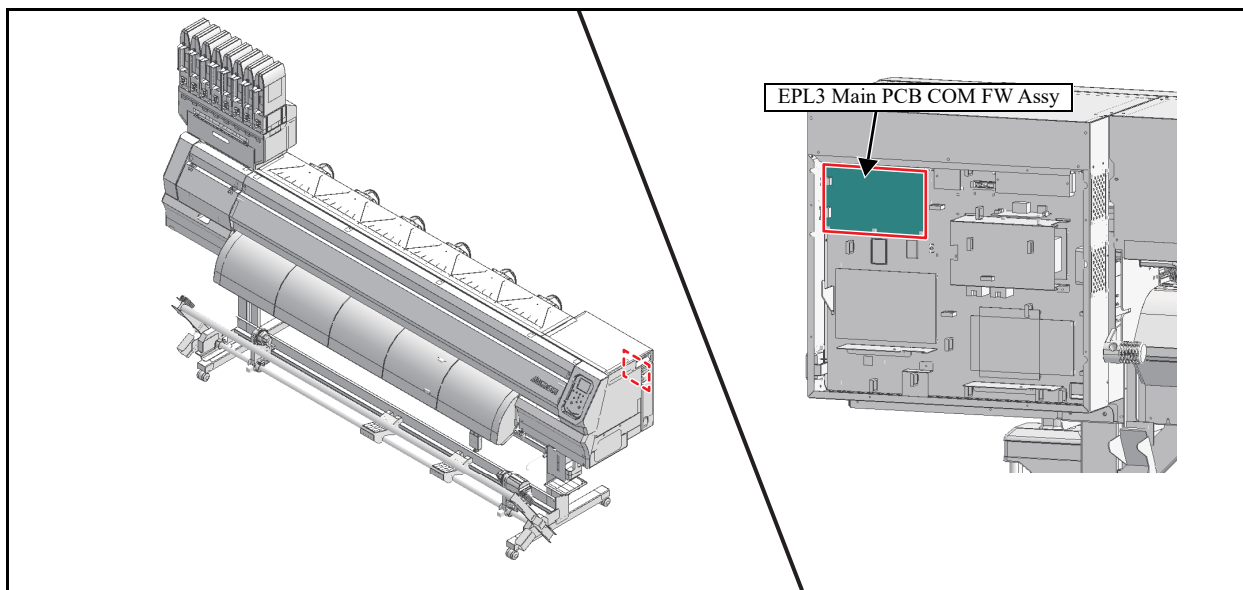
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<b>Workflow</b>		
<b>3.1 Ink Related Parts</b>	<b>3.2 Driving Parts</b>	<b>3.3 Electrical Parts</b>

### 3.3.1 Replacement of the EPL3 Main PCB COM FW Assy



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■ 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
EPL3 Main PCB COM FW Assy	3. <input type="checkbox"/> Removal of the EPL3 main PCB COM FW Assy.	Remove the EPL3 main PCB COM FW Assy.	6.4.1
	4. <input type="checkbox"/> Mounting of the EPL3 main PCB COM FW Assy.	Mount the EPL3 main PCB COM FW Assy.	
Check	5. <input type="checkbox"/> Parameter download	Download the parameters which were uploaded in operation "1".	
Covers	6. <input type="checkbox"/> Mounting of the covers.	Mount the covers that have been removed.	6.1.1



Turn the main power OFF when turning the power OFF.

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# Adjustment Items

**4.1  
Operation Matrix**

**4.2  
Adjustment Function**

**4.3  
Mechanical Adjustment**

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# Adjustment Items

**4.1**  
**Operation Matrix**

**4.2**  
**Adjustment Function**

**4.3**  
**Mechanical Adjustment**

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## 4.2.1 AVERAGING400 ADJUST

### ■ Outline

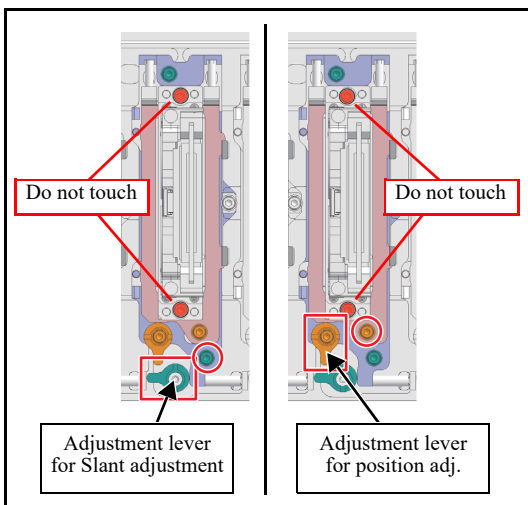
SLANT adjustment and POSITION adjustment (STAGGER adjustment) can be performed at the same time.

Adjust mechanically while checking the pattern. Auxiliary use.

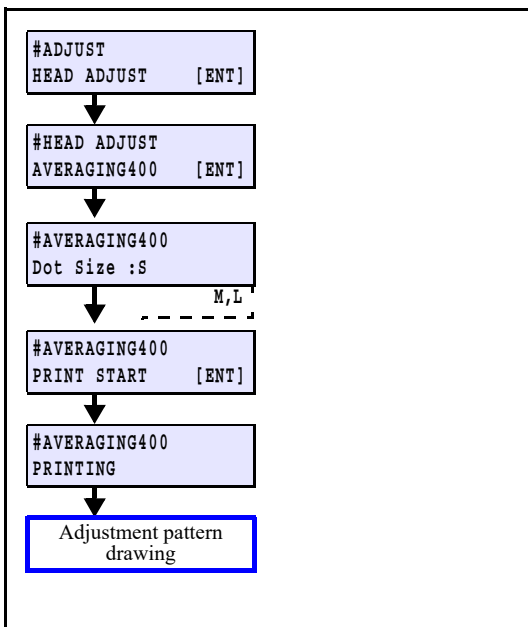


- Set the media on the take-up unit.
- Set the dummy platen (the paper platen in case of Tx300P-1800MkII).  
(Set its at media left, center and right.)  
If not set, the media is lifting and there is a possibility that the media rub the head.
- Carry out “4.2.13 HEAD RANK ADJUST” before adjustment.

### ■ Common Procedure



1. Loosen the screw of the adjustment lever.
2. Move the **adjusting lever** to the right until the adjusting cam hits it.
3. Set the dummy platen (the paper platen in case of Tx300P-1800MkII).  
Set the media on the take-up unit.



4. Select [#ADJUST] > [HEAD ADJUST] > [AVERAGING400]
5. Select “dot size” of the pattern.
6. Press [ENTER] key to execute adjustment pattern drawing.
7. Move the head over the platen using the JOG key.

# 4.2.1 AVERAGING400 ADJUST

## ■ Adjustment procedure for Slant Adjustment

	Head condition	Figure when viewed with a scope
Not tilted		
Tilted to the right		
Tilted to the left		

1. Check the patterns and carryout the adjustment.



Check the patterns at several points such as right, left and center.

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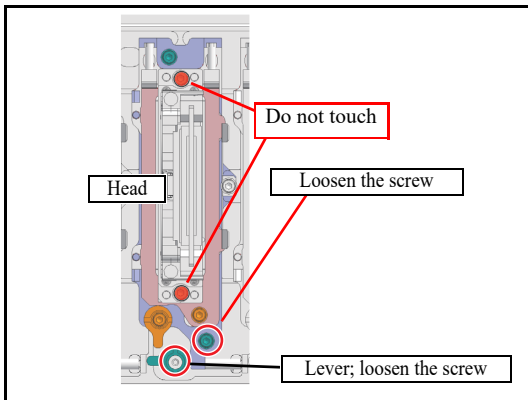
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2. Loosen the screw (x1) fixing the head to be adjusted.

Loosen the screw (x1) of the adjustment lever.

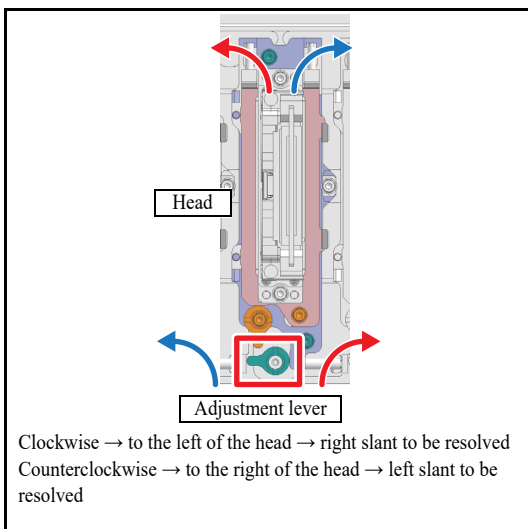


3. Turn the adjustment lever. The head slant to left or right side.



Correcting direction of the adjustment lever as below;

- When the head has slanted to left: turn it counterclockwise (CCW).
- When the head has slanted to right: turn it clockwise (CW).



4. Print the pattern again and examine it.



Repeat the adjustment and check with the pattern until the dots align in the tolerable range.

## 4.2.1 AVERAGING400 ADJUST

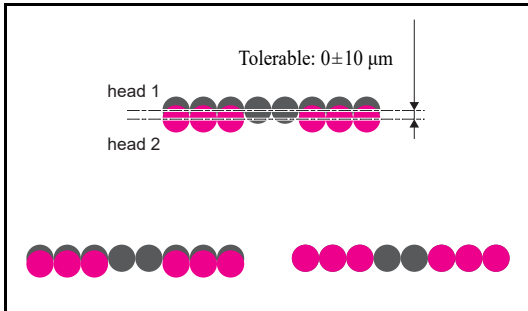
- When finished, tighten the screw (x1) to secure the head.  
Tighten the screw of the adjustment screw.

### ■ Adjustment procedure for Position Adjustment



- It is necessary to adjust slant prior to performing the position adjustment (staggered adjustment).
- After the position adjustment (staggered adjustment), re-check the slant of the head.

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- Check if the gap of pattern is in compliance with the specification.



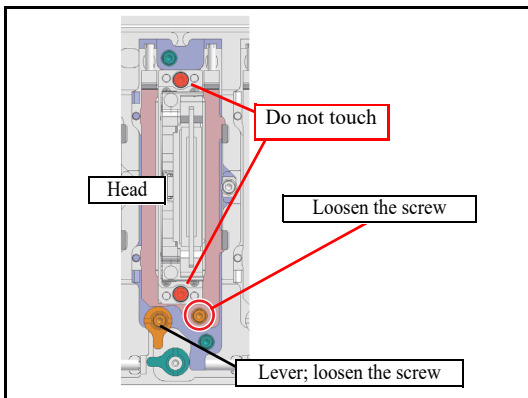
Be careful that head positions of dots seen with a loupe is opposite from the actual position.

2

Tolerable range:  $0 \pm 10 \mu\text{m}$

When the dots are misaligned exceeding the tolerable range, proceed to the following procedure.

3

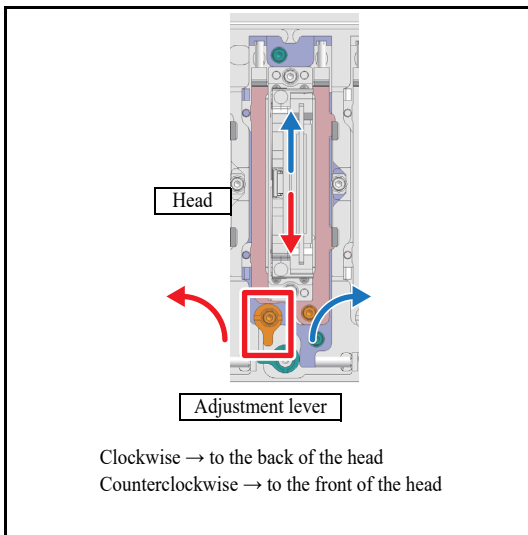


- Loosen the screw (x1) fixing the head to be adjusted.  
Loosen the screw (x1) of the adjustment lever.



Adjust Head2 to 4 on the basis of Head1.

4



- Turn the adjustment lever. The head is moved back and forth.



Moving direction of the head due to the rotating direction of the adjustment lever as follows;

- Clockwise: moves the head backward.
- Counterclockwise: moves the head forward.

5

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- Print the pattern again and examine it.



- Repeat the adjustment and check with the pattern until the dots align in the tolerable range (Tolerable range:  $0 \pm 10 \mu\text{m}$ ).

- After the position adjustment, perform the slant adjustment and position adjustment again and repeat them alternately until the both needs no more adjustment.

7

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- When finished, tighten the screw (x1) to secure the head.  
Tighten the screw of the adjustment screw.



The head unit sometimes does not completely return to the front side. Make sure to push the unit against the end of the front side and then secure it.

## 4.2.2 SLANT ADJUST

### ■ Outline

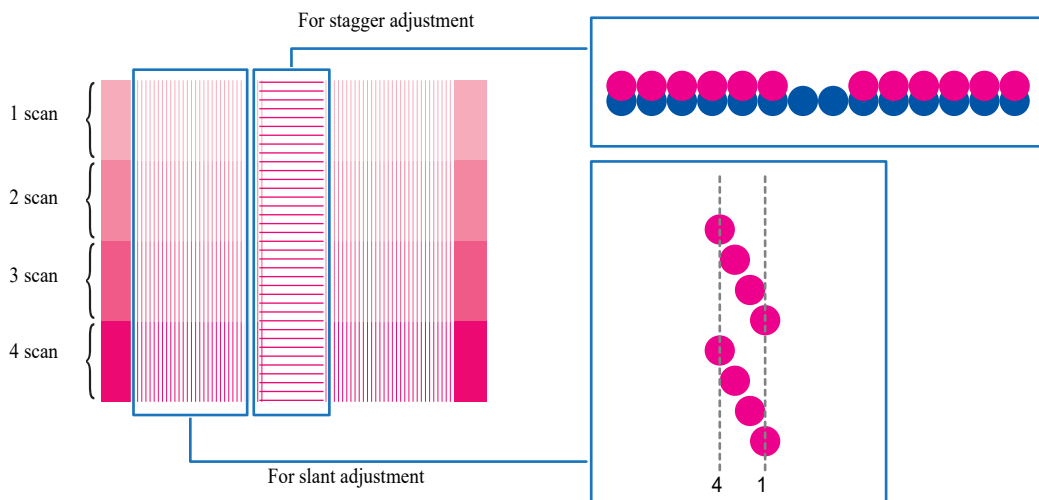
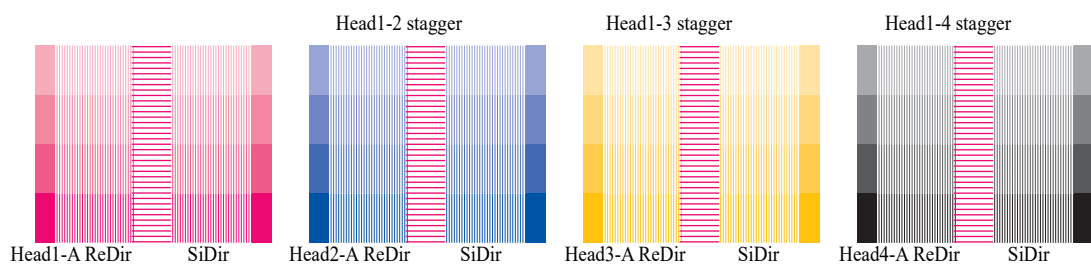
It is possible to perform slant adjustment and the position adjustment (staggered adjustment) at the same time.

While checking the pattern, adjust mechanical. Conduct during the head exchange.



- Set the media on the take-up unit.
- Set the dummy platen (the paper platen in case of Tx300P-1800MkII).  
(Set its at media left, center and right.)  
If not set, the media is lifting and there is a possibility that the media rub the head.
- Carry out “4.2.13 HEAD RANK ADJUST” before adjustment.

□ Adjustment pattern (image)



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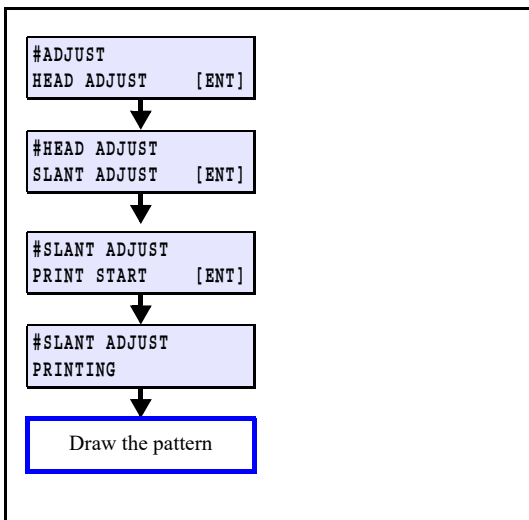
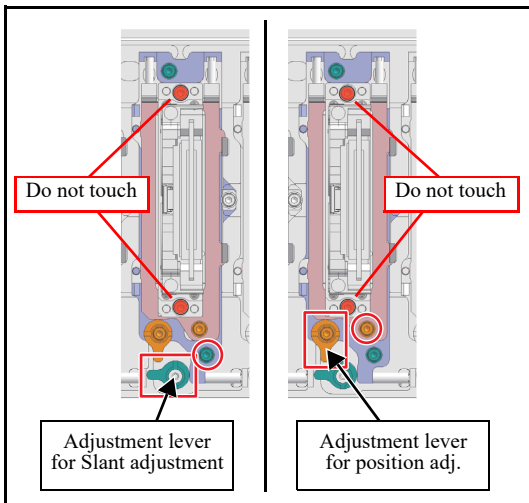
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## 4.2.2 SLANT ADJUST

### ■ Work procedure



1. Set the dummy platen (the paper platen in case of Tx300P-1800MkII).

Set its at media left, center and right.

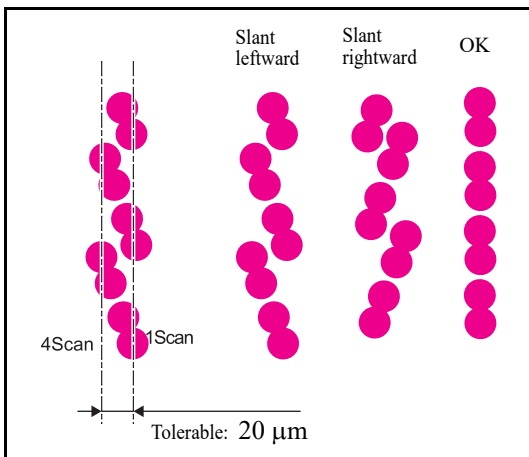
Set the media on the take-up unit.

2. Select [#ADJUST] > [HEAD ADJUST] > [SLANT ADJUST].

3. Press the [ENTER] key to draw the pattern.

4. Move the head onto the platen with JOG key.

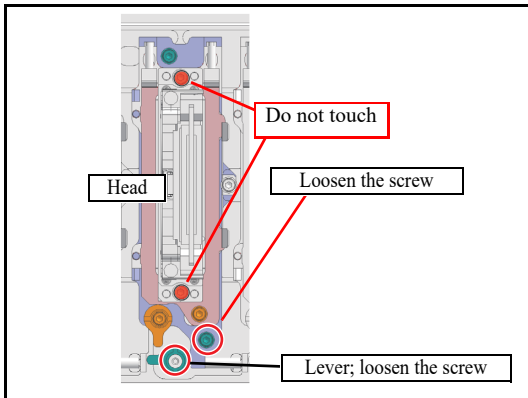
### ■ Adjustment procedure for Slant adjustment



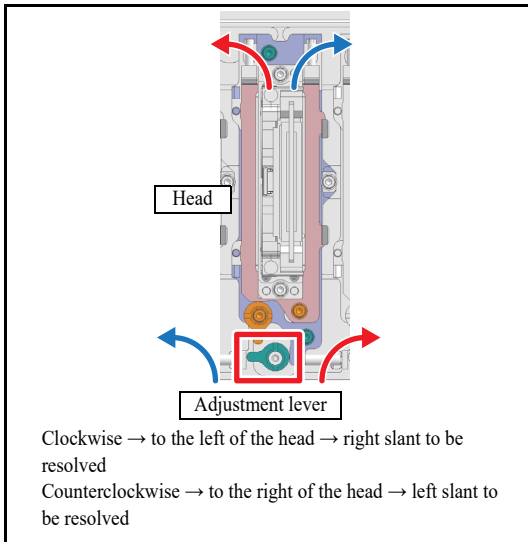
1. Confirm whether quantity of biggest gap by each scan is settled 20 μm. If there is a head whose gap is out of the standard, carry-out the following adjustment.

- After checking the patterns for both directions, adjust the head to the position that is most aligned.
- Make sure to adjust the head so that the alignment meets criteria for both directions. If the alignment does not meet criteria, check the slant angle of the carriage.
- Check the patterns at several points such as right, left and center.

## 4.2.2 SLANT ADJUST



- Loosen the screw (x1) fixing the head to be adjusted.  
Loosen the screw of the adjustment lever.



- Turn the adjustment lever. The head slant to left or right side.



Correcting direction of the adjustment lever as below;

- When the head has slanted to left: turn it counterclockwise (CCW).
- When the head has slanted to right: turn it clockwise (CW).

- Print the pattern again and examine it.



Repeat the adjustment and check with the pattern until the dots align in the tolerable range.

- When finished, tighten the screw (x1) to secure the head.  
Tighten the screw of the adjustment screw.

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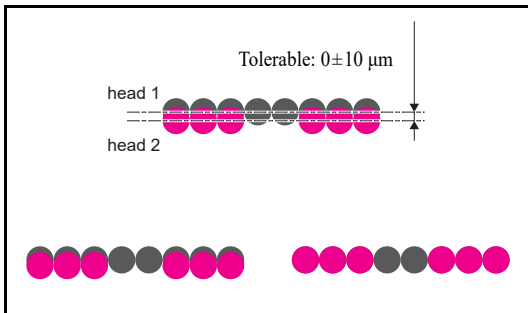
## 4.2.2 SLANT ADJUST

3.0

### ■ Adjustment procedure for position adjustment



- It is necessary to adjust slant prior to performing the position adjustment (staggered adjustment).
- After the position adjustment (staggered adjustment), re-check the slant of the head.



6. Check if the gap of pattern is in compliance with the specification.



Be careful that head positions of dots seen with a loupe is opposite from the actual position.

Tolerable range:  $0 \pm 10 \mu\text{m}$

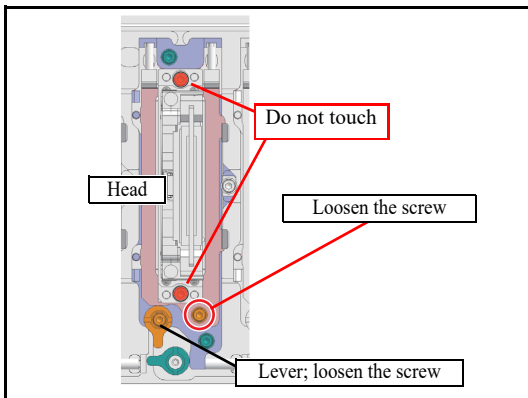
When the dots are misaligned exceeding the tolerable range, proceed to the following procedure.

7. Loosen the screw (x1) fixing the head to be adjusted.

Loosen the screw of the adjustment lever.



Adjust Head2 to 4 on the basis of Head1.



8. Turn the adjustment lever. The head is moved back and forth.



Moving direction of the head due to the rotating direction of the adjustment lever as follows;

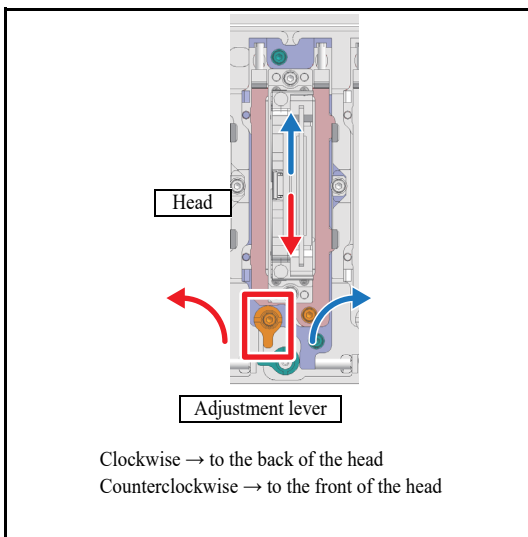
- Clockwise: moves the head backward.
- Counterclockwise: moves the head forward.

9. Print the pattern again and examine it.



● Repeat the adjustment and check with the pattern until the dots align in the tolerable range (Tolerable range:  $0 \pm 10 \mu\text{m}$ ).

- After the position adjustment, perform the slant adjustment and position adjustment again and repeat them alternately until the both needs no more adjustment.



10. When finished, tighten the screw (x1) to secure the head.



The head unit sometimes does not completely return to the front side. Make sure to push the unit against the end of the front side and then secure it.

## 4.2.3 POSITION ADJUST

### ■ Outline

While checking the pattern, adjust the mechanical. Carry out in the case of performing only the front and back adjustment of the head (staggered adjustment).

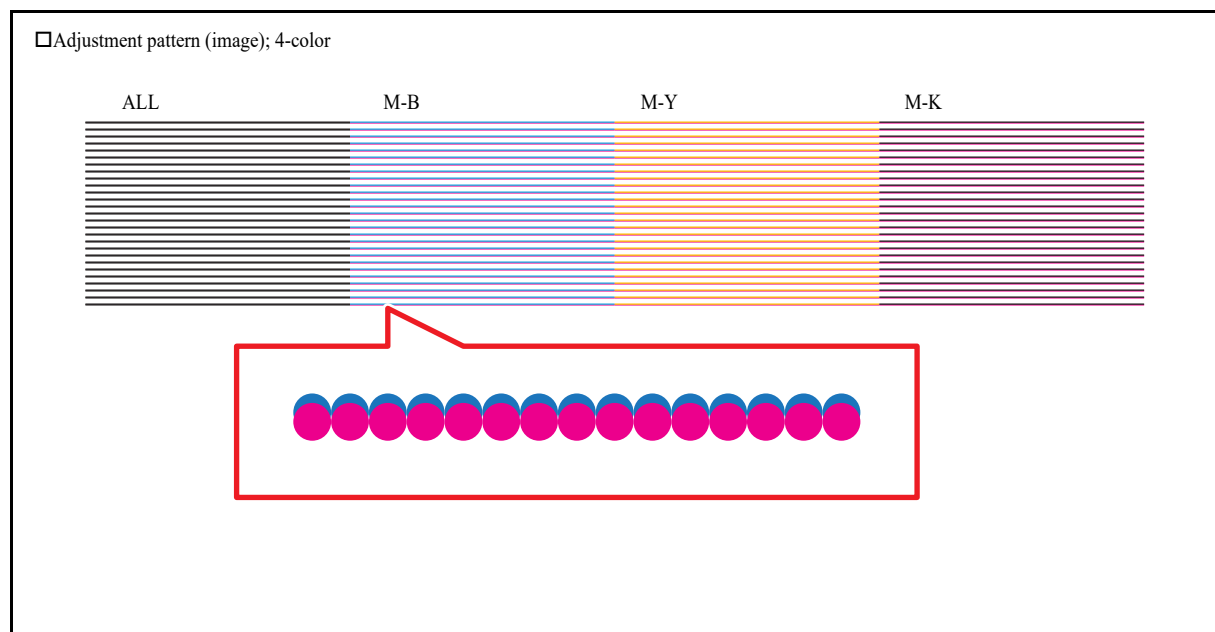


- It is necessary to adjust tilt prior to performing the position adjustment (staggered adjustment).
- After the position adjustment (staggered adjustment), re-check the tilt of the head.

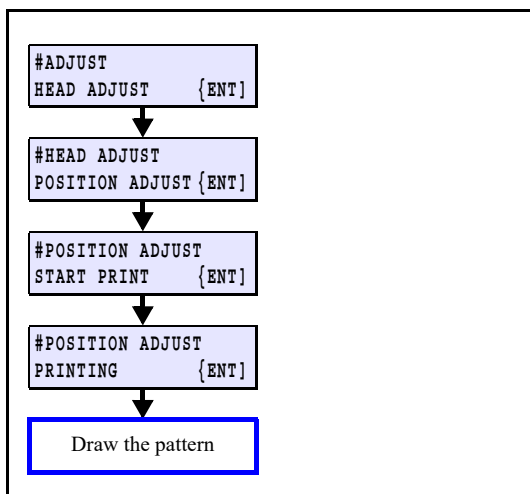


- Set the media on the take-up unit.
- Set the dummy platen (the paper platen in case of Tx300P-1800MkII).  
(Set its at media left, center and right.)

If not set, the media is lifting and there is a possibility that the media rub the head.

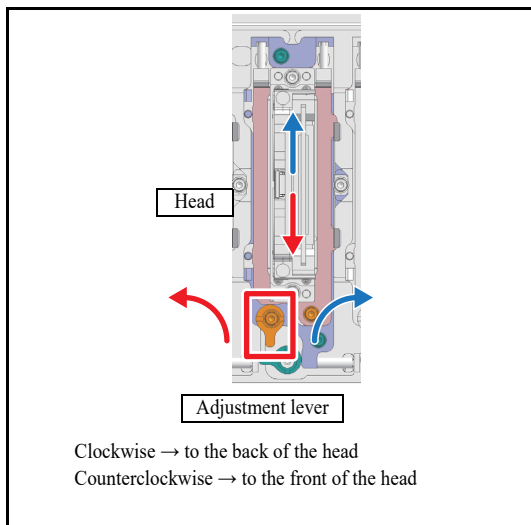
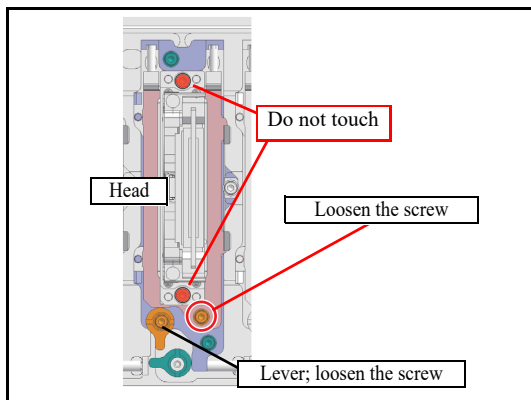
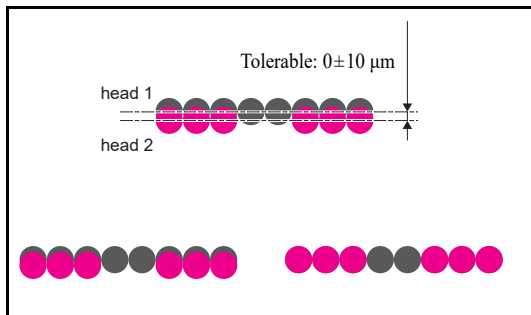


### ■ Work procedure



1. Set the dummy platen (the paper platen in case of Tx300P-1800MkII).  
Set its at media left, center and right.  
Set the media on the take-up unit.
2. Select [#ADJUST] > [HEAD ADJUST] > [POSITION ADJUST].
3. Press the [ENTER] key to draw the pattern.

## 4.2.3 POSITION ADJUST



4. Move the head onto the platen with JOG key.
5. Check if the gap of pattern is in compliance with the specification.



Be careful that head positions of dots seen with a loupe is opposite from the actual position.

Tolerable range:  $0 \pm 10 \mu\text{m}$

When the dots are misaligned exceeding the tolerable range, proceed to the following procedure.

6. Loosen the screw (x1) fixing the head to be adjusted.

Loosen the screw of the adjustment lever.



Adjust Head2 to 4 on the basis of Head1.

7. Turn the adjustment lever. The head is moved back and forth.



Moving direction of the head due to the rotating direction of the adjustment lever as follows;

- Clockwise: moves the head backward.
- Counterclockwise: moves the head forward.

8. Print the pattern again and examine it.



● Repeat the adjustment and check with the pattern until the dots align in the tolerable range (Tolerable range:  $0 \pm 10 \mu\text{m}$ ).

● After the position adjustment, perform the slant adjustment and position adjustment again and repeat them alternately until the both needs no more adjustment.

9. When finished, tighten the screw (x1) to secure the head.



The head unit sometimes does not completely return to the front side. Make sure to push the unit against the end of the front side and then secure it.

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## 4.2.4 PRINT ADJUST


### ■ Outline

Draw the built-in patterns, and compensate the parameter so that the drop positions of other heads are on the same line as the drop position of reference head (Head 1A) in the Y-direction.

### ■ ① [PRINT ADJUST]

Print the pattern of which the landing position can be confirmed by a magnifying glass and adjust.

- Perform adjustment in accordance with the following chart. Carry out [SiDir], [ReDir], and [BiDir] for the items marked with a circle.



Only the modes requiring adjustment for each ink type are displayed.

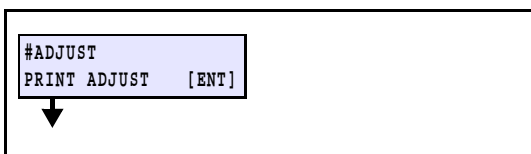
		Ink type							
		Sb420/Sb421	Dd400	TP400	Rc400	Rc500	Ac400	Sb411+TP400*/Sb420+TP400/Sb421+TP400	Sb411+Sb420*
WF1 (Large droplet)	540Std	○	○	–	○	○	○	○	○
	540Hi	○	○	–	○	○	○	○	○
	720Std	–	–	–	○	○	○	–	–
	720Hi	–	–	–	○	○	○	–	–
WF2 (Small droplet)	540Std	–	–	○	–	–	–	○	–
	540Hi	–	–	–	–	–	–	–	–
	720Std	○	○	○	○	–	○	○	○
	720Hi	○	○	○	○	–	○	○	○

\*: Tx300P-1800MkII dedicated Ink Set

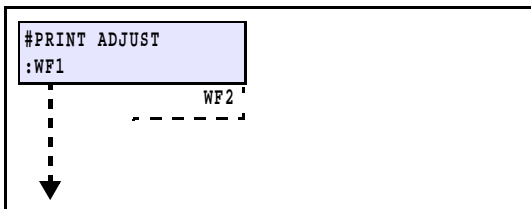
### □ Work Procedures

1. Set the dummy platen (the paper platen in case of Tx300P-1800MkII). (Set its at media left, center and right.)  
Set the media on the take-up unit.

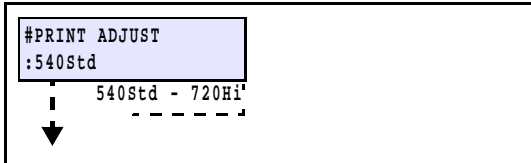
2. Set the media.
3. Select [#ADJUST] > [PRINT ADJUST].



4. Select the waveform.
  - [▲]/[▼]: Switches
  - [ENTER]: Confirms (Next)



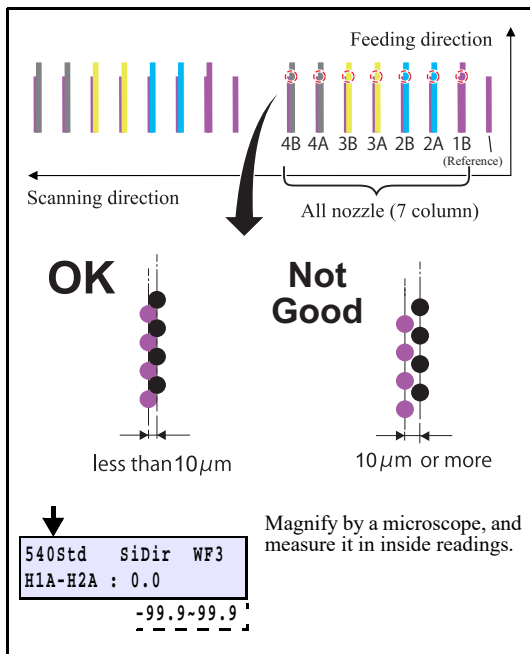
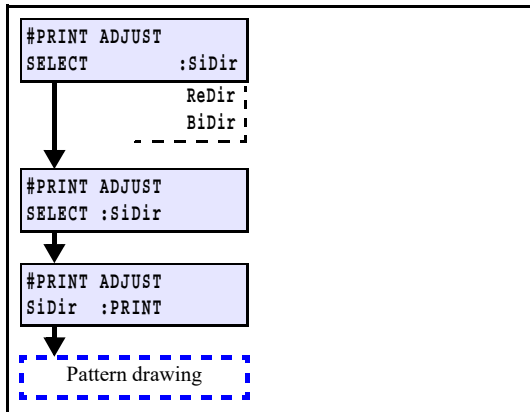
5. Select the Y-resolution and scanning speed.
  - [▲]/[▼]: Y-resolution & Scanning speed change
  - [ENTER]: Confirms (Next)



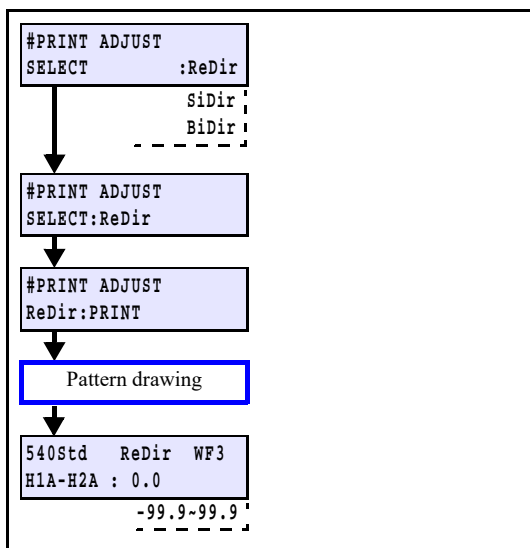
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## 4.2.4 PRINT ADJUST

### □ Forward adjustment



### □ Return adjustment



6. Select “SiDir” on the [SELECT] display.

[▲]/[▼]: Switches

[ENTER]: Confirms (Next)

7. Press the [ENTER] key to draw the pattern.

[ENTER]: To start Pattern drawing

[▶]: To the compensation display (Without drawing)



Adjust all the modes for each ink type in the table on the previous page.

8. Check and compensate the patterns.

Input the adjustment value (the measured value: µm) so that the impact dots of the H2A line is at the same position in the Y-direction, referring to the reference nozzle H1A line.

[▲]/[▼]: Compensating value input (Input unit: 20 µm)

[ENTER]: Confirms (Next)



Input the compensating value, referring to the left figure, if the displacement on the drop position of head applied for the compensation occurs either right or left against the reference head.

9. When compensated, draw and check the patterns again.



Repeat “Drawing -> Checking (Compensating)” until any compensation is not required.

10. On the [SELECT] display, select “ReDir”, and adjust it in the same way as “SiDir”.

[▲]/[▼]: Switches

[ENTER]: Confirms (Next)

11. Press the [ENTER] key to draw the pattern.

[ENTER]: To start Pattern drawing

[▶]: To the compensation display (Without drawing)

12. When compensated, draw and check the patterns again.



Repeat “Drawing -> Checking (Compensating)” until any compensation is not required.

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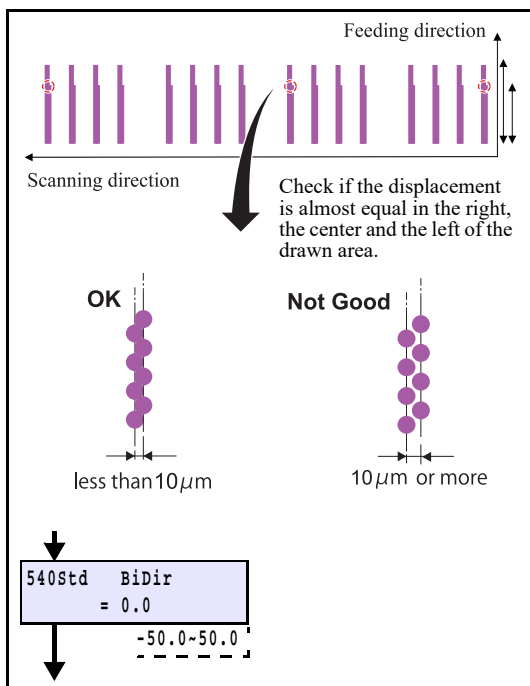
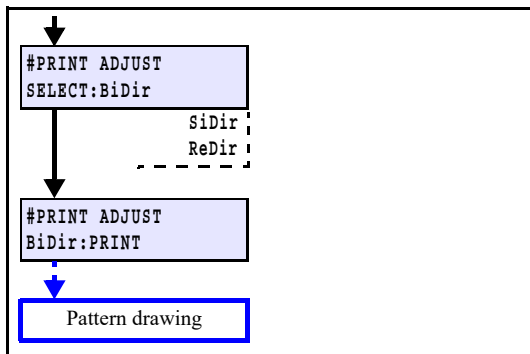
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## 4.2.4 PRINT ADJUST

□ Going and returning adjustment



13. Select “BiDir” on the [SELECT] display.

[▲]/[▼]: Switches

[ENTER]: Confirms (Next)

14. Press the [ENTER] key to draw the pattern.

[ENTER]: To start Pattern drawing

[▶]: To the compensation display (Without drawing)

15. Check and compensate the patterns.

The reference lines are drawn in going, and then the adjustment lines are drawn at the same Y-coordinate positions in returning. The position where the lines above are overlapped on one vertical line is specified as the correct dot position (H1A: M-color fixed)

Confirm that the dots are on the same line.

\* The adjusting procedure is the same although the drawing pattern is different depending on mode.

[▲]/[▼]: Compensating value input (Measured value)

[ENTER]: Confirms



If the displacement is significantly different in the right and left, other reasons are considered.

16. When compensated, draw and check the patterns again.



Repeat “Drawing -> Checking (Compensating)” until any compensation is not required.

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## 4.2.4 PRINT ADJUST

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### ■ ②[PRINT ADJUST(draft)]

Print the pattern of which the landing position can be confirmed by visual observation.

When selecting a head No., a waveform, and a speed desired to adjust, the pattern of each resolution is printed in series.



Only the modes requiring adjustment for each ink type are displayed.

#### □ WF1(Large droplet waveform) pattern resolution

Pattern resolution

		Pattern			
		1	2	3	4
HEAD1	Std	540 Std Bi	720 Std Bi	–	–
	Hi	540 Hi Bi	720 Hi Bi	–	–
HEAD2	Std	540 Std Si	540 Std Re	720 Std Si	720 Std Re
	Hi	540 Hi Si	540 Hi Re	720 Hi Si	720 Hi Re
HEAD3	Std	540 Std Si	540 Std Re	720 Std Si	720 Std Re
	Hi	540 Hi Si	540 Hi Re	720 Hi Si	720 Hi Re
HEAD4	Std	540 Std Si	540 Std Re	720 Std Si	720 Std Re
	Hi	540 Hi Si	540 Hi Re	720 Hi Si	720 Hi Re

Item to adjust in each ink type

		Sb420/Sb421/Dd400 Sb411+Sb420*				TP400				Rc400/Ac400				Rc500				Sb411+TP400*/ Sb420+TP400/Sb421+TP400			
		Pattern				Pattern				Pattern				Pattern							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HEAD1	Std	○	–	–	–	–	–	–	–	○	○	–	–	○	○	–	–	○	○	–	–
	Hi	○	–	–	–	–	–	–	–	○	○	–	–	○	○	–	–	○	○	–	–
HEAD2	Std	○	○	–	–	–	–	–	–	○	○	○	○	○	○	○	○	○	○	–	–
	Hi	○	○	–	–	–	–	–	–	○	○	○	○	○	○	○	○	○	○	–	–
HEAD3	Std	○	○	–	–	–	–	–	–	○	○	○	○	○	○	○	○	○	○	–	–
	Hi	○	○	–	–	–	–	–	–	○	○	○	○	○	○	○	○	○	○	–	–
HEAD4	Std	○	○	–	–	–	–	–	–	○	○	○	○	○	○	○	○	○	○	–	–
	Hi	○	○	–	–	–	–	–	–	○	○	○	○	○	○	○	○	○	○	–	–

\*: Tx300P-1800MkII dedicated Ink Set

#### □ WF2(Small droplet waveform) pattern resolution

Pattern resolution

		Pattern			
		1	2	3	4
HEAD1	Std	540 Std Bi	720 Std Bi	–	–
	Hi	720 Hi Bi	–	–	–
HEAD2	Std	540 Std Si	540 Std Re	720 Std Si	720 Std Re
	Hi	720 Hi Si	720 Hi Re	–	–
HEAD3	Std	540 Std Si	540 Std Re	720 Std Si	720 Std Re
	Hi	720 Hi Si	720 Hi Re	–	–
HEAD4	Std	540 Std Si	540 Std Re	720 Std Si	720 Std Re
	Hi	720 Hi Si	720 Hi Re	–	–

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# 4.2.4 PRINT ADJUST

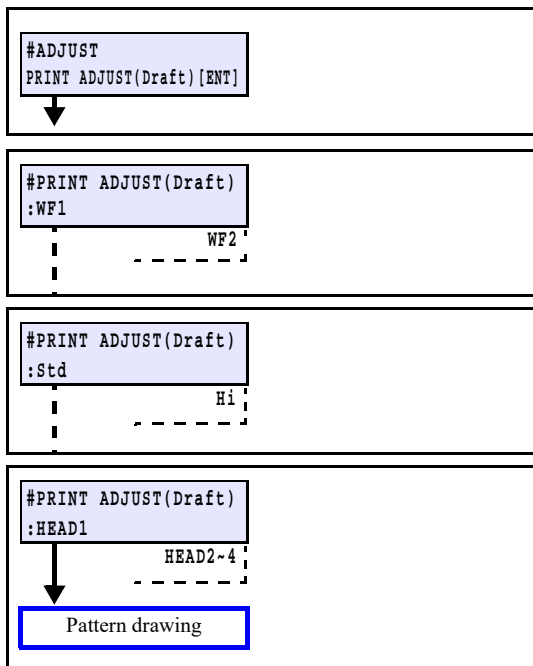
Item to adjust in each ink type

		Sb420/Sb421/Dd400 Sb411+Sb420*				TP400				Rc400/Ac400				Rc500				Sb411+TP400*/Sb420+TP400/ Sb421+TP400			
		Pattern				Pattern				Pattern				Pattern				Pattern			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HEAD1	Std	-	○	-	-	○	○	-	-	-	○	-	-	-	-	-	-	○	○	-	-
	Hi	○	-	-	-	○	-	-	-	○	-	-	-	-	-	-	-	○	-	-	-
HEAD2	Std	-	-	○	○	○	○	○	○	-	-	○	○	-	-	-	-	○	○	○	○
	Hi	○	○	-	-	○	○	-	-	○	○	-	-	-	-	-	-	○	○	-	-
HEAD3	Std	-	-	○	○	○	○	○	○	-	-	○	○	-	-	-	-	○	○	○	○
	Hi	○	○	-	-	○	○	-	-	○	○	-	-	-	-	-	-	○	○	-	-
HEAD4	Std	-	-	○	○	○	○	○	○	-	-	○	○	-	-	-	-	○	○	○	○
	Hi	○	○	-	-	○	○	-	-	○	○	-	-	-	-	-	-	○	○	-	-

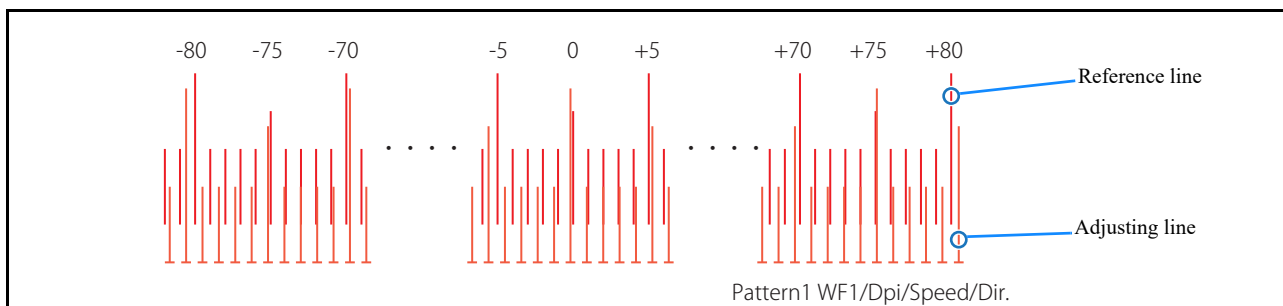
\*: Tx300P-1800MkII dedicated Ink Set

□ Work procedures

1. Set the dummy platen (the paper platen in case of Tx300P-1800MkII). (Set its at media left, center and right.)  
Set the media on the take-up unit.
2. Set the media.
3. Select [#ADJUST] > [PRINT ADJUST(Draft)].



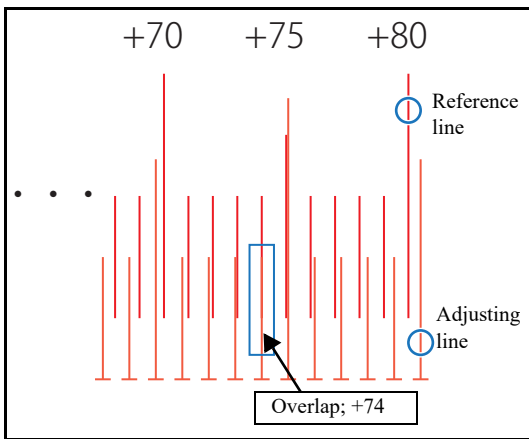
4. Select the waveform.  
[▲]/[▼]: Switches  
[ENTER]: Confirms (Next)
5. Select the speed.  
[▲]/[▼]: Switches  
[ENTER]: Confirms (Next)
6. Select the head.  
[▲]/[▼]: Switches  
[ENTER]: Confirms (Next)
7. Pattern is drawn.



**IMPORTANT** When you run by pressing [FUNC2] at the start of printing, the lower half of the adjustment value is printed in cyan.

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## 4.2.4 PRINT ADJUST



8. Enter the value of which the location adjustment line and the reference line is overlapped with the naked eye.

Example; In the left figure, overlapped the position of +74, enter 74.0.

**IMPORTANT** The adjusted value is stored in the same parameters as [⓪ PRINT ADJUST]. However, since the adjustment coefficient is applied in relation to internal processing, there is a case where the value on the display do not coincide.

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## 4.2.5 REPLACE COUNT

### ■ Outline

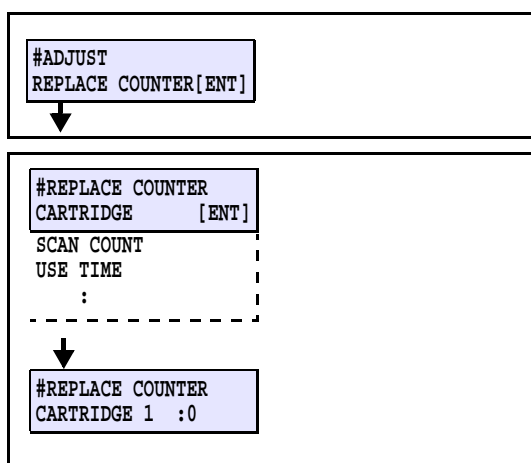
Indicating the following items of machine on the LCD.

#### □ REPLACE COUNTER List of Items

No	Item	Remarks
1	CARTRIDGE	Number of replacements of Cartridge 1~8
2	SCAN COUNT	Number of scans
3	USE TIME	Time of Power ON Unit: [H]
4	WIPING	Number of times wiping is performed* <sup>1</sup>
5	SHOT COUNT	Number of discharging of Head 1~8 Unit: [1,000 times]
6	DRAW LENGTH	Drawing length [m]
7	DRAW AREA	Drawing area [m <sup>2</sup> ]
8	INK PIC	Number of IC chip error detections of Cartridge 1~8
9	PUMP MOTOR	Rotation time of each pump motor Unit: [H]* <sup>1</sup>
10	Xmotor	Rotation time of Xmotor Unit: [H]* <sup>1</sup>
11	Ymotor	Rotation time of Ymotor Unit: [H]* <sup>1</sup>
12	HEADLOG	Head memory information <ul style="list-style-type: none"> <li>• FirstFill: Initial ink filling date</li> <li>• InkChange: Ink change history (2 times)</li> <li>• InkLotNo : AB/CD row filled ink lot No., usage history (2 sets)</li> <li>• InkVer: AB/CD row filled ink version, usage history (2 sets)</li> <li>• InkInfo: AB/CD row ink information update date</li> <li>• SerialNo: Latest installation model (machine serial No.)</li> <li>• WipingCnt: Number of wiping</li> <li>• MainteCnt: Number of maintenance</li> </ul>

\*1. After replacing the part, press the [FUNC2] key while the relevant item is being displayed to reset the cumulative operating time.

### ■ Procedures



1. Select [#ADJUST] > [REPLACE COUNTER].

2. Select the item to be indicated, and then fix it by [ENTER] to indicate it.

[▲]/[▼]: Switch

[ENTER]: Finalizes (to Information indicating display)

[END]: Return

## 4.2.6 DEFAULT SET

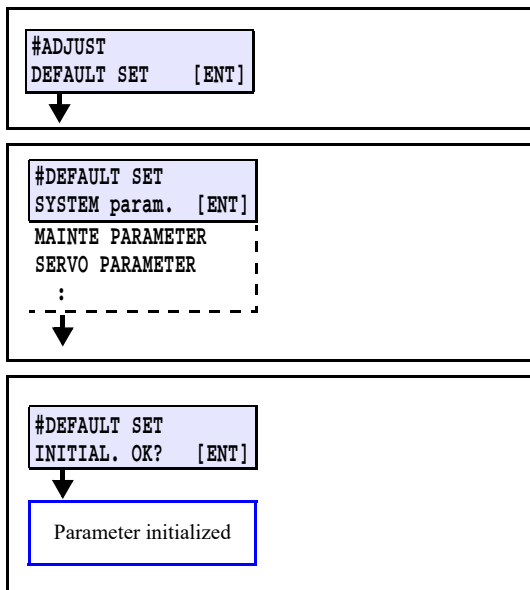
### ■ Function

Returning each parameter to the initial value.

#### □ DEFAULT SET List of Items

No	Item	Operation	Remarks
1	SYSTEM PARAMETER	Initialize the parameter in question.	
2	MAINTE PARAMETER	Initialize the parameter in question.	
3	SERVO PARAMETER	Initialize the parameter in question.	
4	FEED PARAMETER	Initialize the parameter in question.	
5	HEAD PARAMETER	Initialize the parameter in question.	
6	OPE PARAMETER	Initialize the parameter in question.	
7	INK PARAMETER 1	Initialize the parameter in question.	
8	INK PARAMETER 2	Initialize the parameter in question.	
9	DEBUG PARAM	Initialize the parameter in question.	
10	SCAN PARAMETER	Initialize the parameter in question.	
11	NOZLE RECOVERY PARAM	Initialize the parameter in question.	
12	SHIPPING set	Initializing parameters of others than the adjustments.	

### ■ Work Procedures



1. Select [#ADJUST] > [DEFAULT SET].

2. Select the parameter to be initialized, and then fix it by [ENTER].

[▲]/[▼]: Switch

[ENTER]: Confirms (to Confirmation display)

[END]: Return

3. Initialize by [ENTER].

[ENTER]: Execute

[END]: Return

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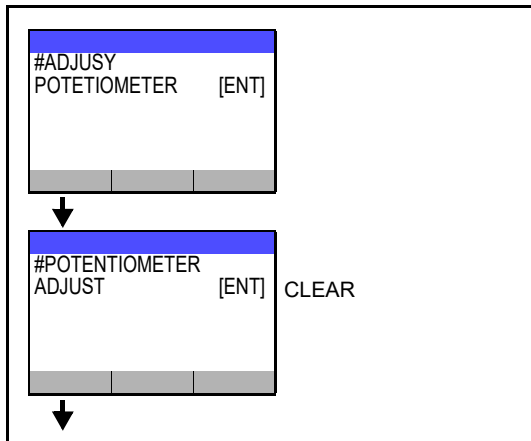
## 4.2.7 POTENTIO METER

### ■ Outline

Register the lowest position and the highest position of the potentiometer in the station and the carriage.

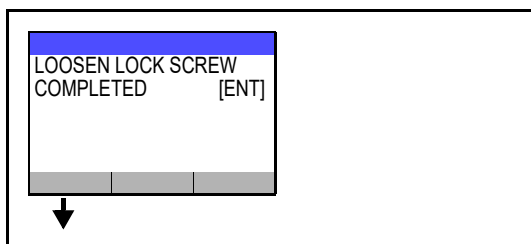
Work for the registered lowest point as the head height 2.0mm and the registered highest point as 7.00mm.

### ■ Work Procedures

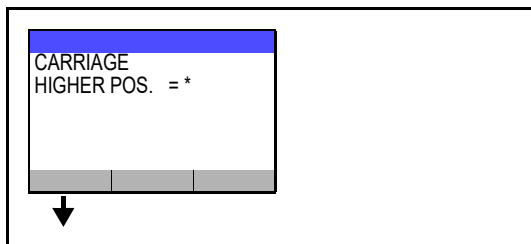


1. Select [#ADJUST] > [POTENTIOMETER].
2. Select "ADJUST".

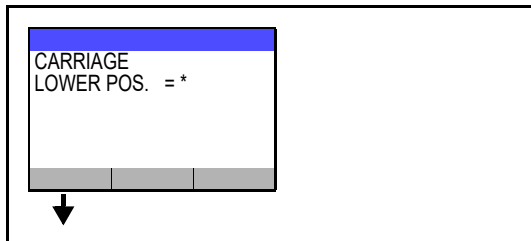
#### □ Registration of the carriage of the potentiometer



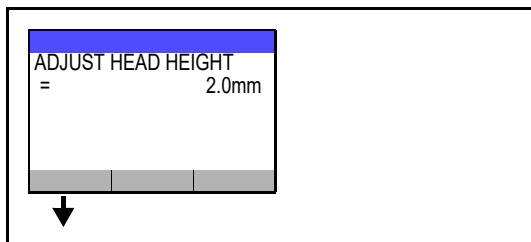
3. Loosen the Head lock screw (x2).  
Press the [ENTER] key.



4. Turn the head height adjustment handle until the displayed value on the screen reaches the maximum position (position mechanically in strike).  
Press the [ENTER] key.



5. Turn the head height adjustment handle until the displayed value on the screen reaches the smallest position (position mechanically in strike).



6. Turn the head adjustment handle and confirm it displays 2.0~7.0mm.
7. Adjust the required head height and press [ENTER] key.

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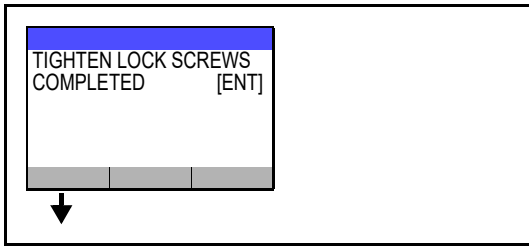
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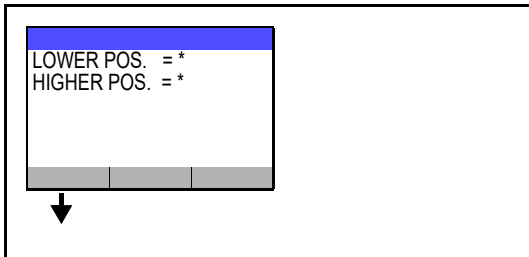
## 4.2.7 POTENTIO METER



Registration of the potentiometer of the station

8. Tighten the head lock screws (x2).

Press the [ENTER] key.



9. Station operates in automatic and detect the lowest point and the highest point.

When the detection operation is completed, displays the detected values

Press [ENTER] key and exit.

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## 4.2.8 CAPPING

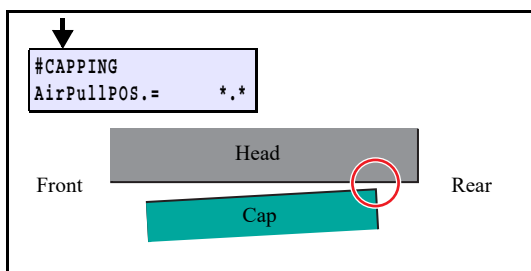
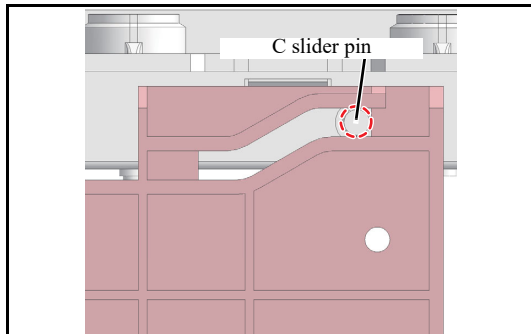
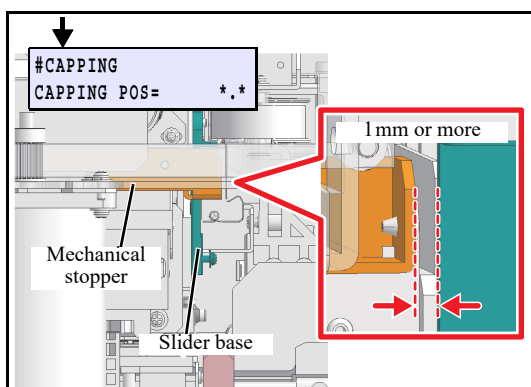
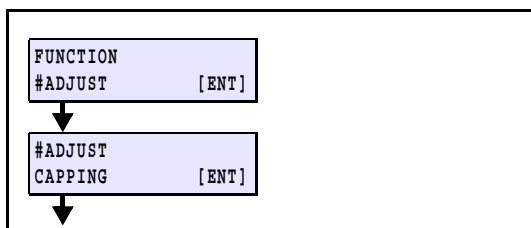
1.1

### ■ Outline

Adjusts the location for capping. 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. Remove the cover R and the under cover R.

2. Select [#ADJUST] > [CAPPING].

3. Check the gap between the slider base and the mechanical stopper is more than 1mm with the thickness gauge.



Insert the thickness gauge from the bottom of the right side motor of the machine.

4. Adjust the pin position of the right side of C slider to be at the position in the left view by pressing [◀]/[▶] key.

[◀]/[▶]: Horizontally shifts the cap.

[ENTER]: Finalizes (To Next)

5. Adjust at the highest point of the cap to touch the head.

[▲]/[▼]: Shifts the cap.

[ENTER]: Finalizes (To Next)

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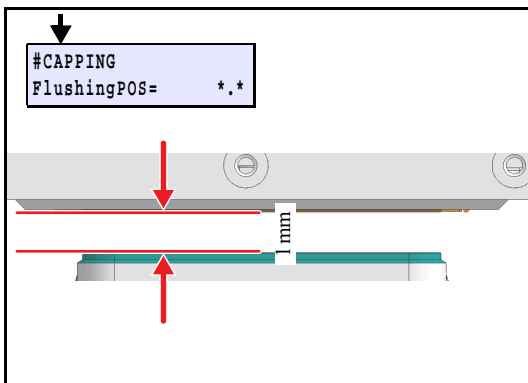
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## 4.2.8 CAPPING



6. Make adjustment so that the clearance between the head and uppermost point of the cap (rear side) is set at 1 mm.

[◀]/[▶]: Shifts the cap.

[ENTER]: Finalizes (To Next)

Stop where the head and the cap uppermost point (rear side) touches. Enter the +1.0 value from the adjustment point.

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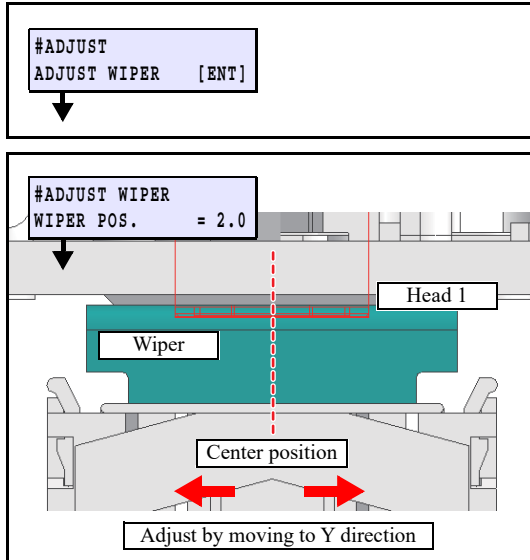
8

## 4.2.9 ADJUST WIPER

### ■ Outline

Adjusts the location for the wiper. Adjusted value is saved in the system parameter.

### ■ Adjustment procedure



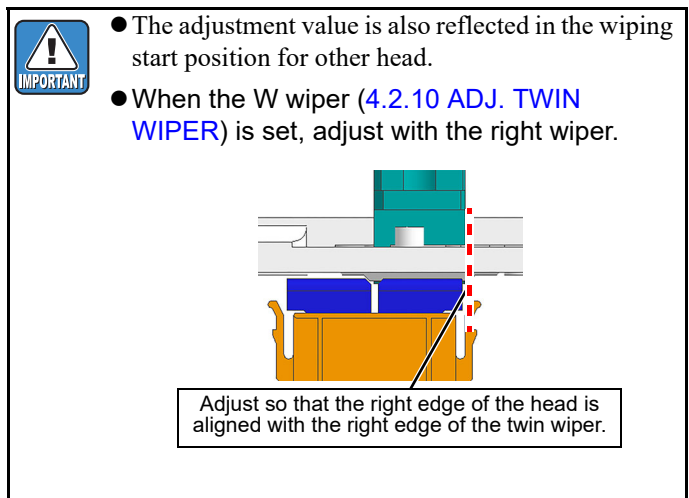
1. Select [#ADJUST] > [ADJUST WIPER].

2. Confirm and adjust the center position of the head and the wiper blade.

[▲]/[▼]: Left/ right direction (Y direction) shifts the head.

[ENTER]: Finalizes

[END]: End



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■ **Outline**

Adjust the twin wiper position. Do this adjustment if switched to the Ink Set using twin wiper.

	<ul style="list-style-type: none"> <li>● Perform twin wiper adjustment only for the Sb411 + TP400 / Sb411 + Sb420 Ink Set of Tx300P-1800 MkII. Twin wiper adjustment is not required for the models and the ink sets other than the above since those operate with a single wiper.</li> <li>● Twin wiper adjustment should be performed after wiper adjustment. (Twin wiper adjustment determines the offset value based on the position set by wiper adjustment)</li> </ul>
---	--

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■ **Procedure to replace wiper**


	As for the procedure to replace a single wiper with a W wiper, refer to “INSTALLATION GUIDE 7.2 Performing the Initial Ink Fill (Work procedure 2 Wiper replacement)”.
---	--

2

OPE param. 259=0 WipTypSw	0: Wiper 2: Twin wiper
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1. Select [#PARAMETER] > [OPE param.].
2. Change the value of OPE parameter No.259 “WipTypSw” from “0” to “2”.


3

	Do not select “1”.
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4

#ADJUST ADJ. TWIN WIPER [ENT]	↓
----------------------------------	---

3. Select [#ADJUST] > [ADJ. TWIN WIPER].


	[ADJ. TWIN WIPER] is displayed when the OPE parameter No.259 “WipTypSw” value is “2”.
---	---

5

#ADJ. TWIN WIPER :HEAD1	↓	HEAD2~4
----------------------------	---	---------

4. Select head.
  - [▲]/[▼]: Switch
  - [ENTER]: Finalizes (To Next)
  - [END]: Return

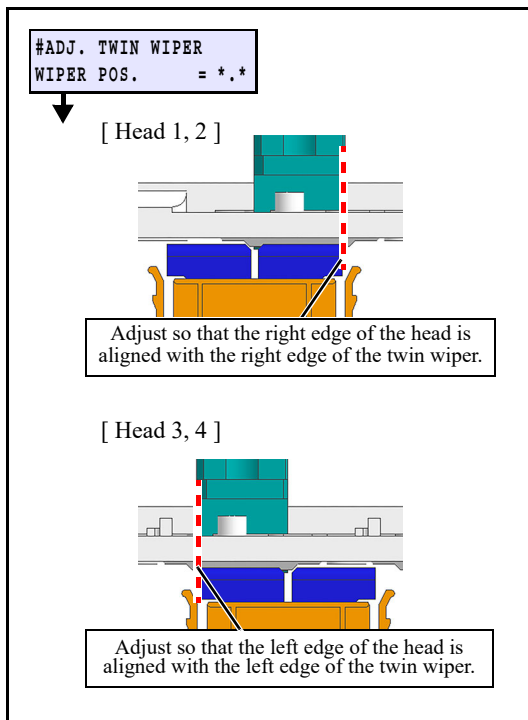
6

	Check and adjust all heads.
---	-----------------------------

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## 4.2.10 ADJ. TWIN WIPER



5. Check and adjust the edge position of the head and Twin wiper blade.

[ ◀ ]/[ ▶ ]: Left / right direction (Y direction) shifts the head.

[SEL]: Wipe the selected head

[ENTER]: Return (adjustment value is saved)

[END]: Return (adjustment value is not saved)



Adjust heads 1 and 2 on the right side of the twin wiper and heads 3 and 4 on the left side of the twin wiper.

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## 4.2.11 HEAD WASH

### ■ Outline

Wash the head, the damper, the ink path in the tube.

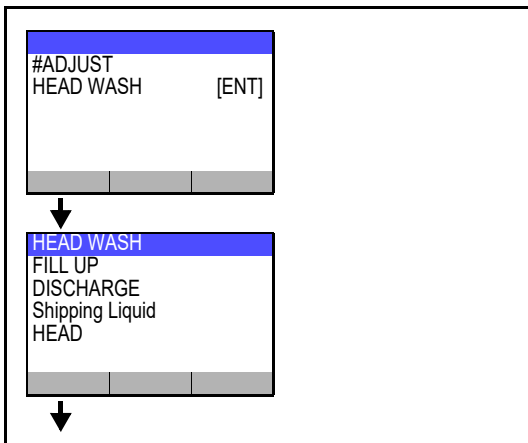
When changing the ink type or ink set, remove the ink path, and wash with a cleaning solution.

As for the usable cleaning liquid and the usable maintenance liquid, use a cleaning liquid compliant with each ink. (Refer to the list)



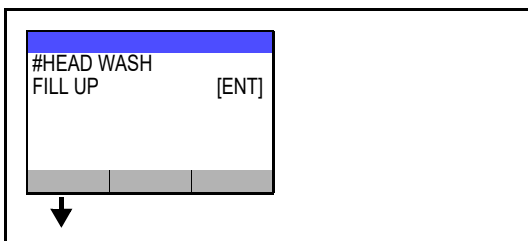
As non-filling state remains after the completion of cleaning, the Initial Filling or filling of corresponding head is required.

### ■ Procedure

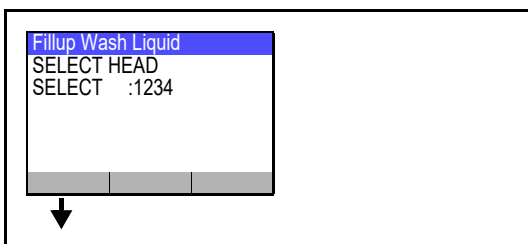


1. Select [#ADJUST] > [HEAD WASH].
2. Select the menu depending on the work.
  - "FILL UP"; to fill the cleaning solution.
  - "DISCHARGE"; to discharge the ink / cleaning solution in the path.
  - "Shipping Liquid"; to fill the shipping liquid

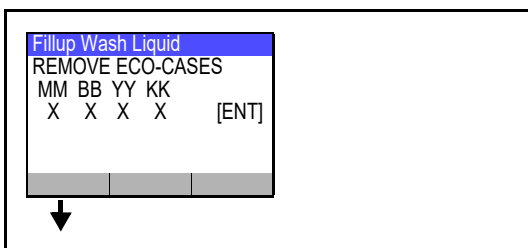
#### □ FILL UP



3. Select "FILL UP".



4. Choose the head to fill the cleaning solution by [◀][▶][▲][▼].



5. Remove the eco-case that are marked with "X".



Since there is no cartridge presence sensor, to disconnect and reconnect the cartridge as directed on the screen.

Press [ENTER] to the next screen.

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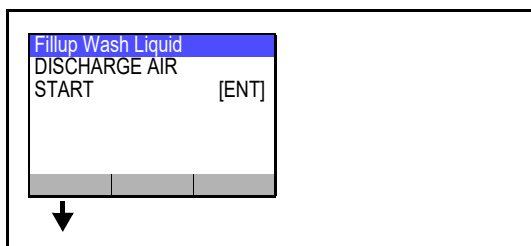
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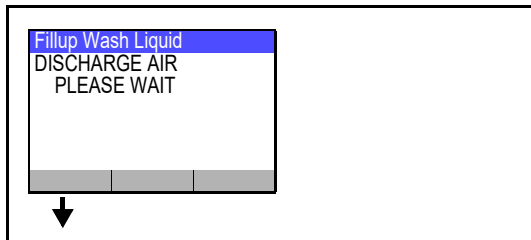
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## 4.2.11 HEAD WASH

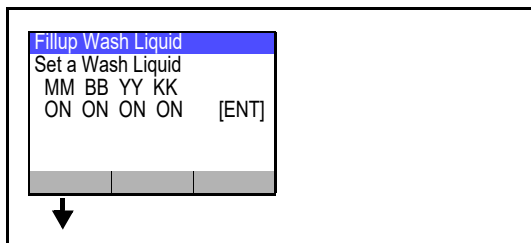


6. Press [ENTER] to the next screen.



7. Executing operation

Suction to discharge the air in the ink tank under the ink pack.  
When operation is completed, move to the next screen.

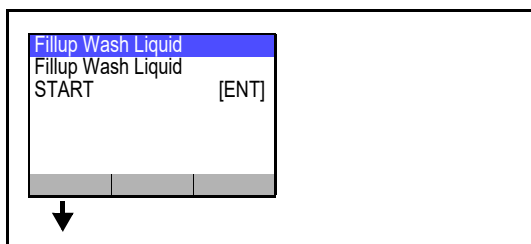


8. Set a cleaning liquid cartridge into a slot that has "ON".

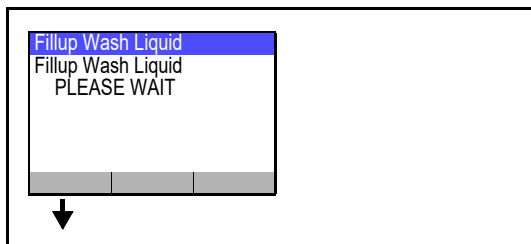


Since there is no cleaning liquid cartridge presence sensor, to disconnect and reconnect the cleaning liquid cartridge as directed on the screen.

Press [ENTER] to the next screen.

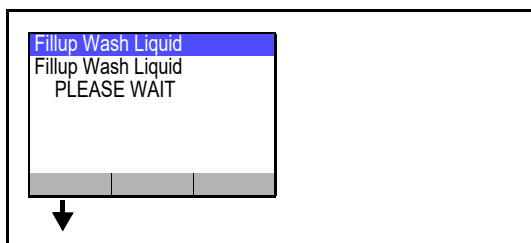


9. Press [ENTER] to the next screen.



10. Executing operation

Fill the cleaning solution to the ink tank.



11. Repeat 5. to 9.

12. Executing operation

Fill the cleaning solution to the head from the ink tank.  
When operation is completed, move to the next screen.

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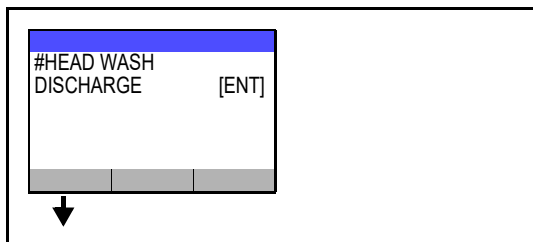
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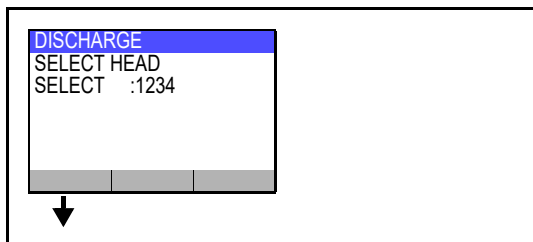
## 4.2.11 HEAD WASH

1.1

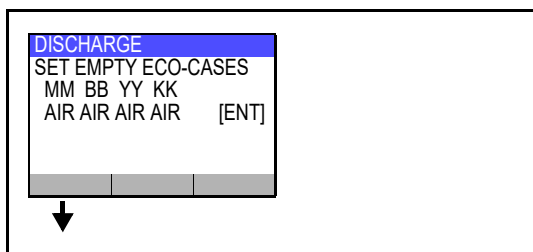
### □ DISCHARGE



13. Select “DISCHARGE”.



14. Choose the head to fill the cleaning solution by [◀][▶][▲][▼].

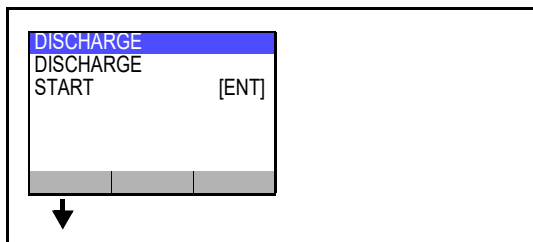


15. Attach the empty eco-case in the slot marked with “AIR”.

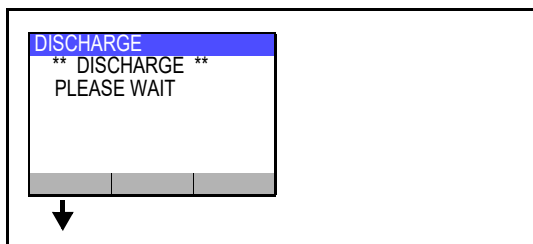


Since there is no eco-case presence sensor, to disconnect and reconnect the eco-case as directed on the screen.

Press [ENTER] to the next screen.



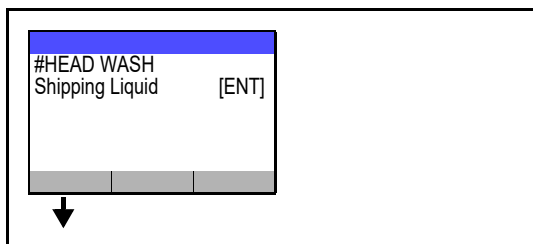
16. Press [ENTER] to the next screen.



17. Executing operation

Discharge the ink / cleaning liquid head from the ink tank.

### □ Shipping Liquid



18. Select “Shipping Liquid”.

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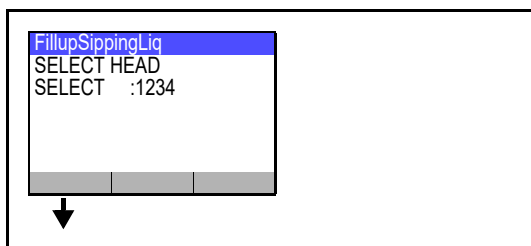
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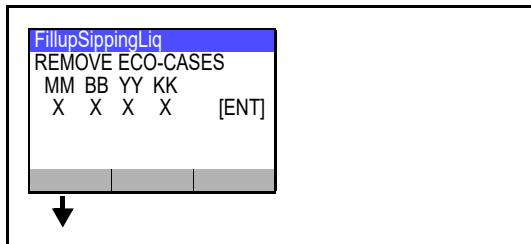
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## 4.2.11 HEAD WASH



19. Choose the heat to fill the shipping liquid by [◀][▶][▲][▼].

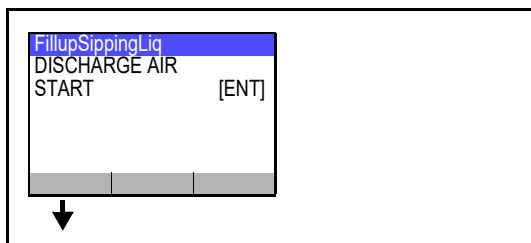


20. Remove the eco-case of color that are marked with "X".

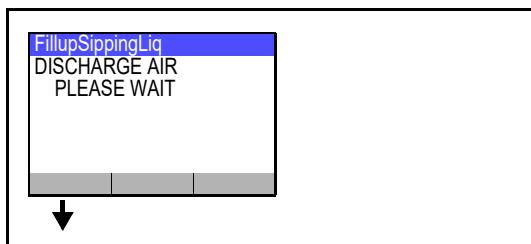


Since there is no eco-case presence sensor, to disconnect and reconnect the eco-case as directed on the screen.

Press [ENTER] to the next screen.



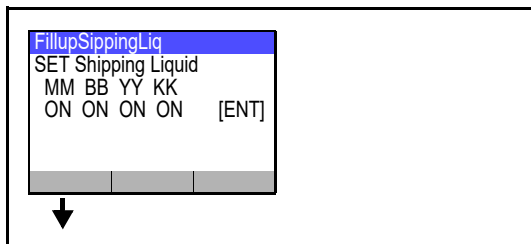
21. Press [ENTER] to the next screen.



22. Executing operation

Suction to discharge the air in the ink tank under the ink pack.

When operation is completed, move to the next screen.

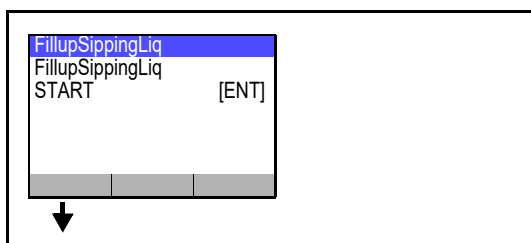


23. Set the shipping liquid cartridge to the slot marked "ON".

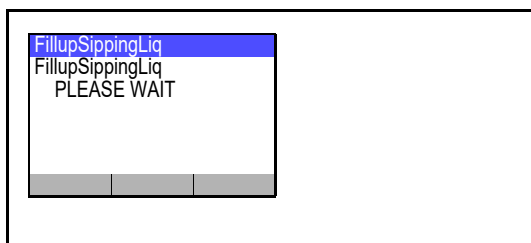


Since there is no shipping liquid cartridge presence sensor, to disconnect and reconnect the shipping liquid cartridge as directed on the screen.

Press [ENTER] to the next screen.



24. Press [ENTER] to the next screen.



25. Executing operation

Fill the cleaning solution to the ink tank.

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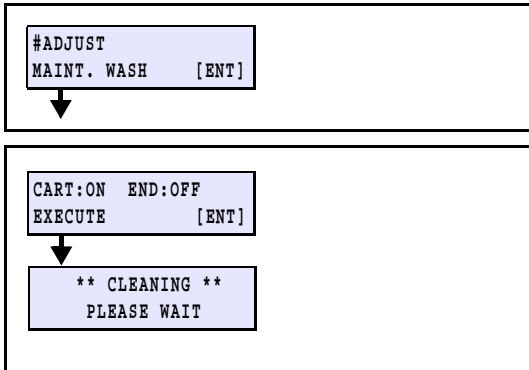
## 4.2.12 MAINT. WASH

### ■ Outline

Fill up washing liquid for the sequence to apply it at station maintenance.

### ■ Procedure

1. When you perform filling, insert the washing liquid cartridge into the washing liquid slot.  
When you discharge, remove it.
2. Select [#ADJUST][MAINT. WASH] from the operation menu.
3. Press the [ENTER] key, and then the valve is released and the pump rotates.



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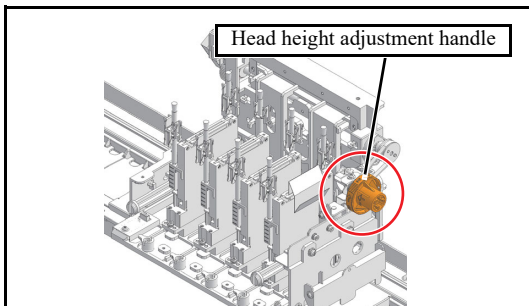
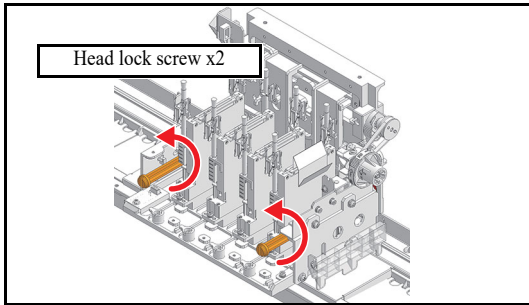
## 4.2.13 HEAD RANK ADJUST

### ■ Outline

Adjustment and confirmation are performed when landing misalignment of each of the L, M, S drops and mist / color unevenness occurred.

### ■ Work procedure

#### □ Head gap adjustment



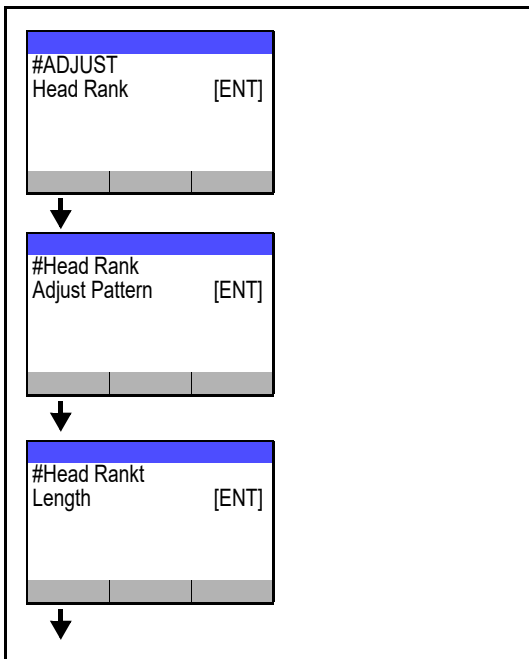
1. Select [MACHINE SETTING] > [HEAD HEIGHT].
2. Loosen the Head lock screw (x2).

3. Turn the head height adjustment handle, adjust the head gap to 4mm.

4. Tighten the Head lock screw (x2).

5. Place a dummy platen (the paper platen in case of Tx300P-1800MkII).  
(Align the platen with the left, center, and right of the media.)  
Set the media to the take-up unit.

#### □ Head rank adjustment (LENGTH pattern)



6. Select [#ADJUST] > [Head Rank] > [Adjust Pattern] > [Length].



It can not proceed further when the head height is not set to 4.0mm. (See step 1.)

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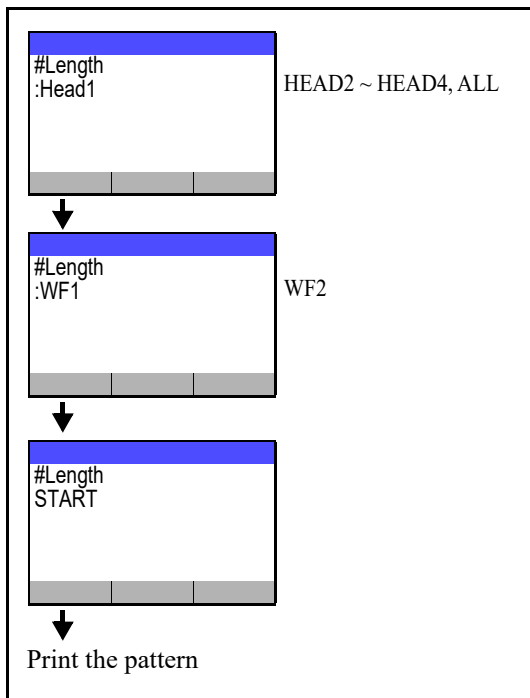
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## 4.2.13 HEAD RANK ADJUST



7. Select head.

- [▼]/[▲]: Switch
- [ENTER]: Confirmed (Next)

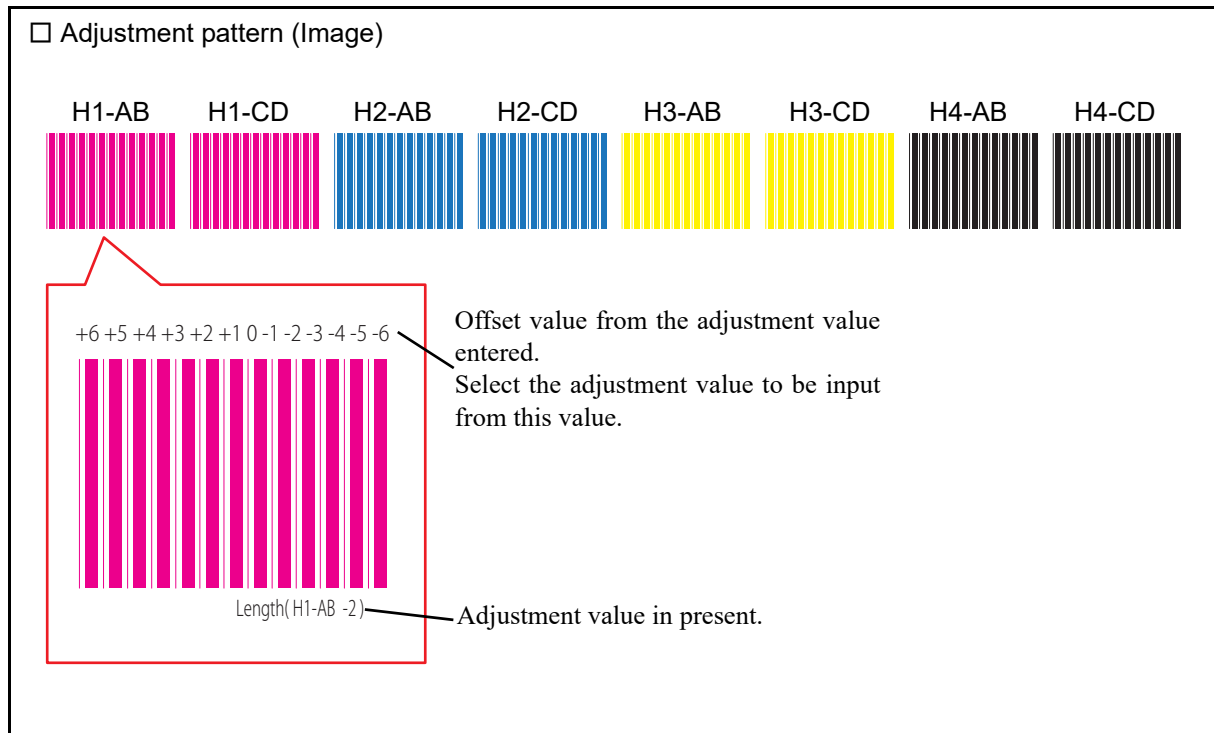
8. Select wave form.

- [▼]/[▲]: Switch
- [ENTER]: Confirmed (Next)

9. Draw the pattern by pressing the [ENTER] key.

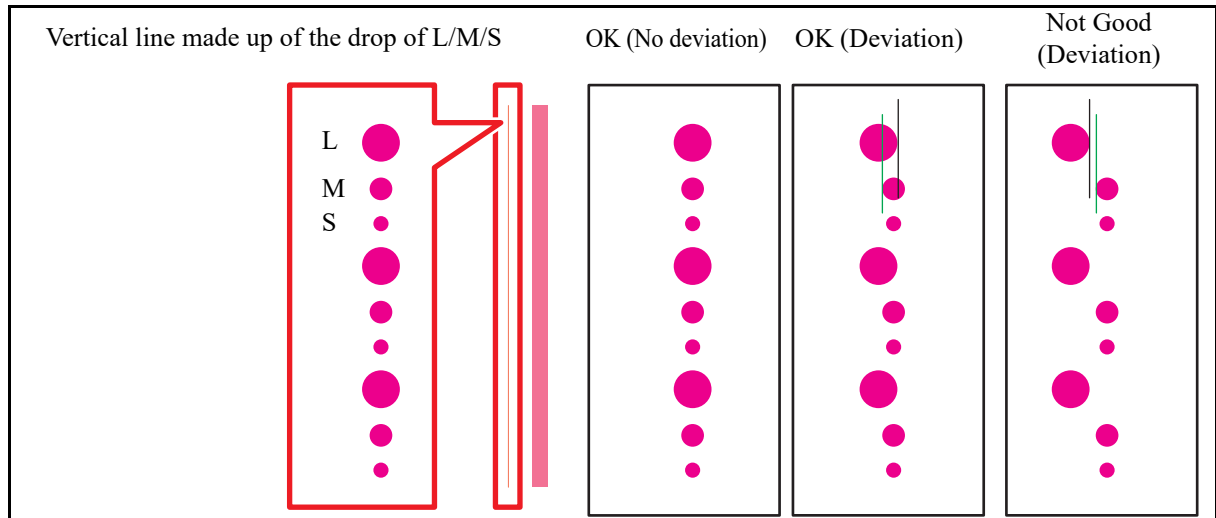
- [▶]: To the correction screen (without drawing)

10. Confirm the pattern.

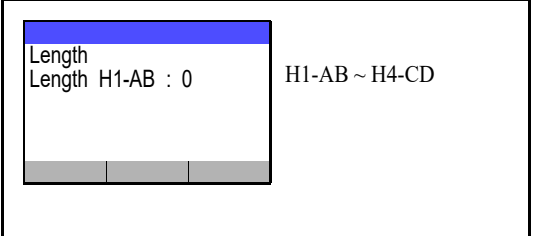


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## 4.2.13 HEAD RANK ADJUST



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- 1) Find the pattern of the smallest deviation of ink landing position for each drop of S,M,L.
- 2) Enter the rank value on the top of the pattern, and confirm with [ENTER] key.  
 [▼]/[▲]: Adjustment value input (input numerically by 1 increment)  
 [ENTER]: Confirmed (Next)

**IMPORTANT** If you exit in the middle of the procedure with [END] key, the set value is not reflected.

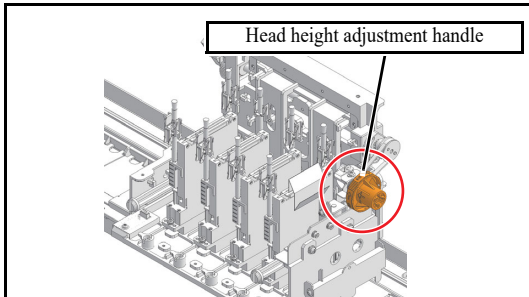
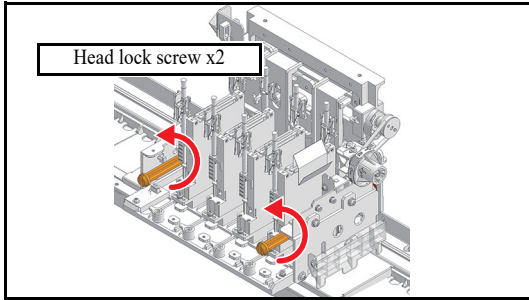
- 3) Find eight points from H1-AB to H4-CD.
11. Select “WF2”, and perform ranking inputs for “Length” in the same manner (Step 8).

- The adjustment in the case where no trouble has occurred is over.
- After that, it becomes adjustment method of AMP correction, when mist· color unevenness occurs.
  - Print monochromatic diagonal lines and check for mist.
  - Enter the AMP value to the mist-free value.

**Caution** ■ Use only when length adjustment / head exchange / MPM etc. are not improved.

## 4.2.13 HEAD RANK ADJUST

□ Head gap adjustment



12. Select [MACHINE SETTING] > [HEAD HEIGHT].
13. Loosen the Head lock screw (x2).

14. Turn the head height adjustment handle, adjust the head gap (head height).

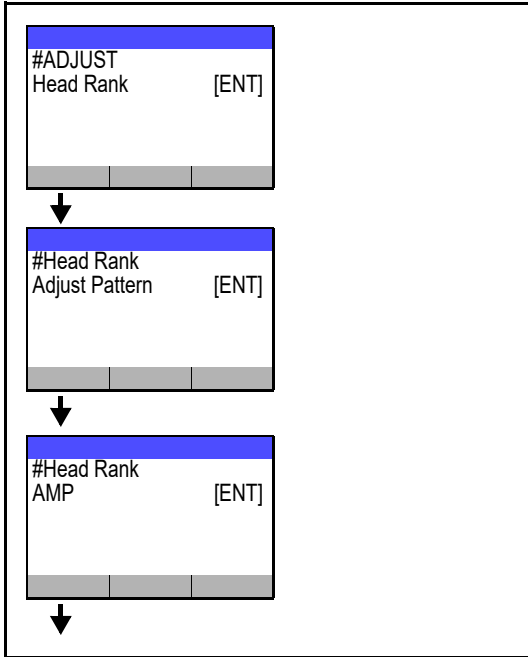
	<p>Depending on the ink type, the head gap value to correct the AMP value is different. (The gap value of Sb411 + TP400 (only for MkII), Sb420 + TP400, Sb421 + TP400, TP400, Rc500 is 3 mm, the other gap value is 4 mm.)</p>
--	--

15. Tighten the Head lock screw (x2).
16. Place a dummy platen (the paper platen in case of Tx300P-1800MkII).  
(Align the platen with the left, center, and right of the media.)  
Set the media to the take-up unit.

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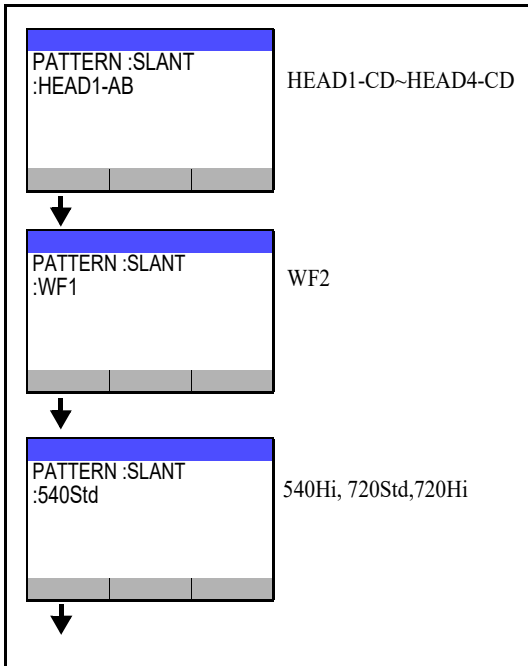
## 4.2.13 HEAD RANK ADJUST

□ Head rank adjustment (AMP pattern)



17. Select [#ADJUST] > [Head Rank] > [Adjust Pattern] > [AMP].

- If you do not adjust the height of the head, you can not proceed.
- Depending on the ink type, the head gap value to correct the AMP value is different. (The gap value of Sb411 + TP400 (only for MkII), Sb420 + TP400, Sb421 + TP400, TP400, Rc500 is 3 mm, the other gap value is 4 mm.



18. Select nozzle.

- [▲]/[▼] : Switch
- [ENTER] : Confirmed (Next)

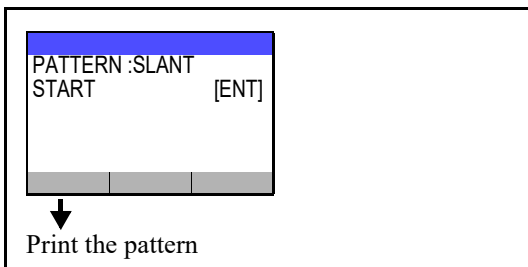
19. Select wave form.

- [▲]/[▼] : Switch
- [ENTER] : Confirmed (Next)

20. Select Y resolution & scan speed.

- [▲]/[▼] : Y Resolution & scan speed switching
- [ENTER] : Confirmed (Next)

- The correction value is one type regardless of Y resolution & scan speed.



21. Press the [ENTER]key to print a pattern.

- [ENTER] : Confirmed (Next)
- [▶] : To the correction screen (no print)

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## 4.2.13 HEAD RANK ADJUST

□ Adjustment pattern (image)

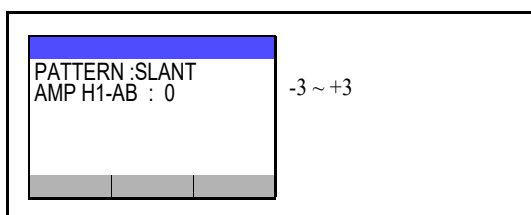
□ Selecting the correction value

In the following cases, set the AMP value to "+2".

- Many mist
- Few mist
- No mist

Size of pattern (length: 205 mm × width: media width, 40 + 40 dots)

To check in the whole media width



22. Check the pattern.

Enter the smallest value without mist.

[▲]/[▼] : Correction value input  
(input with the value of 1)

[ENTER] : Confirmed (Next)

23. In [Step 20](#), confirm that there is no mist at other Y resolution & scan speed.

24. In [Step 19](#), select "WF2" and likewise input the rank of the AMP pattern.

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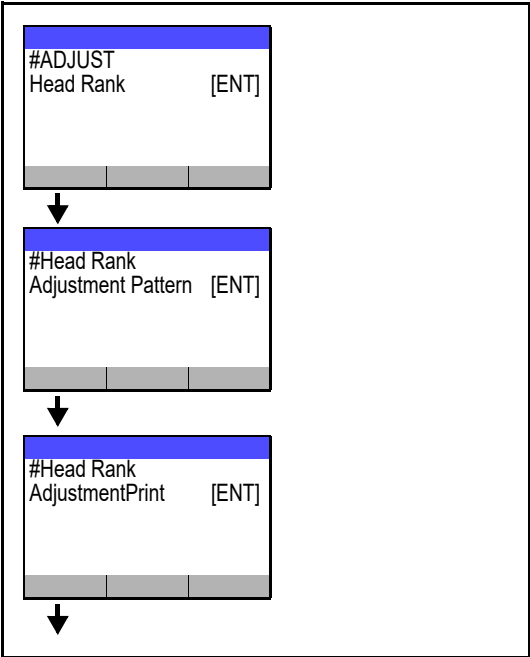
6

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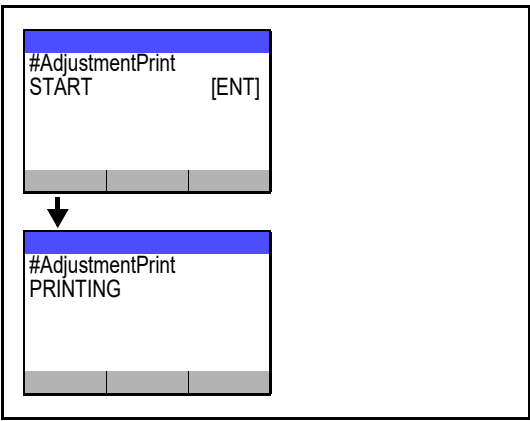
8

# 4.2.13 HEAD RANK ADJUST

□ Head rank adjustment (Correction value print)



1. Select [#ADJUST] > [Head Rank] > [Adjust Pattern] > [AdjustmentPrint].

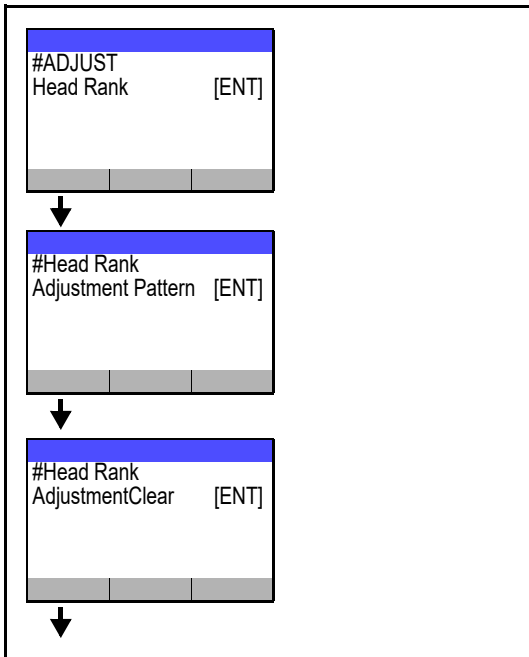


2. Press the [ENTER] to print the entered Length / AMP adjustment value on the list.

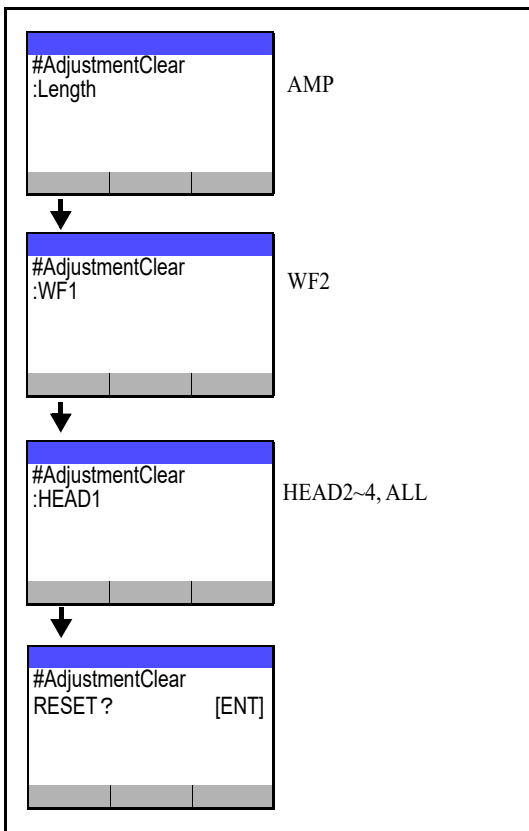
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## 4.2.13 HEAD RANK ADJUST

Head rank adjustment (Clear correction value)



1. [Select [#ADJUST] > [Head Rank] > [Adjust Pattern] > [AdjustmentClear].



2. Select Length or AMP.

[▲]/[▼] : Switch

[ENTER] : Confirmed (Next)

3. Select wave form.

[▲]/[▼] : Switch

[ENTER] : Confirmed (Next)

4. Select head.

[▲]/[▼] : Switch

[ENTER] : Confirmed (Next)

5. Press the [ENTER] to clear the correction value.

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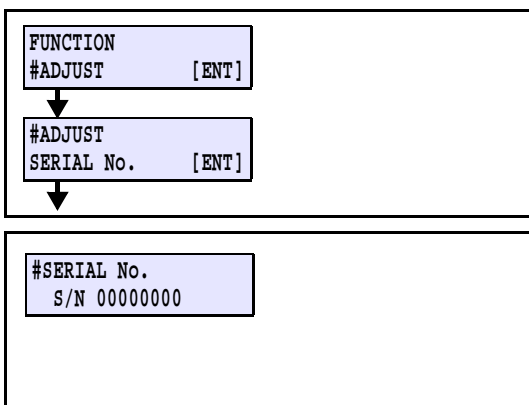
8

■ **Outline**

Confirming and changing of the serial No. of TS300P series.

	Normally, don't change the serial No., which has been registered.
---	---

■ **Work Procedures**



1. Select [#ADJUST] > [SERIAL No.].

2. Confirm the serial No., or change it.

- [◀]/[▶]: To move Cursor
- [▲]/[▼]: To change Value
- [ENTER]: Confirms
- [END]: Return

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## 4.2.15 DEALER No.

### ■ Outline

Check and set the dealer No.

For dealer No., 8-digit alphanumeric characters (0 to 9, A to Z) can be input.

### ■ Procedures

FUNCTION #ADJUST [ENT]
↓
#ADJUST DEALER No. [ENT]
↓

#DEALER No. D/N 1.300000
-----------------------------

1. Select [#ADJUST] > [DEALER No.].

2. Input (check) the dealer No.

[▲]/[▼] : Changing value

[◀]/[▶] : Moving cursor

(When the cursor is at the right end or the left end, even if the key is pressed, it does not move.)

[ENTER] : Confirmation

[END] : Cancel

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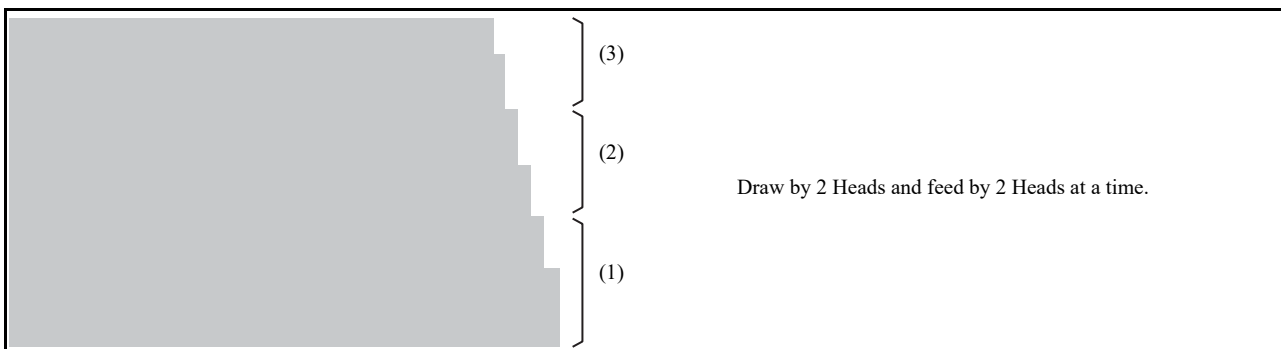
8

## 4.2.16 FEED COMP.2

### ■ Function

Compensates basic feeding amount of media. (Provides a baseline value for user compensation value.)

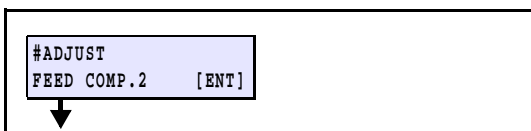
Is used to adjust the media feed amount when the parameter has been initialized or user compensation value is too large.



1

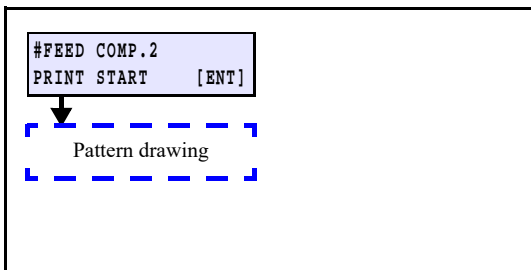
2

### ■ Procedure



1. Select [#ADJUST] > [FEED COMP.2].

3



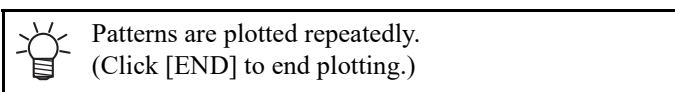
2. Draw an adjustment pattern.

[ENTER]: Executes drawing.

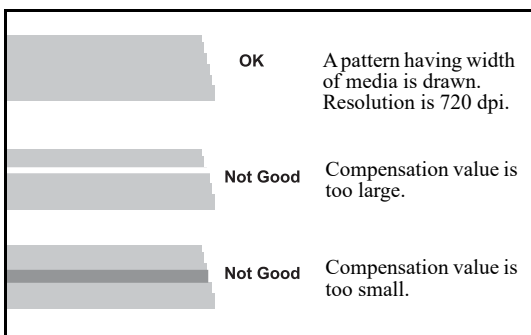
[▶]: To the screen for adjustment (Without drawing)

[END]: Completes drawing and inputs compensation value.

4

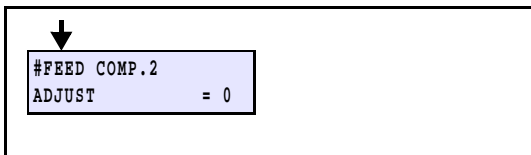


5



3. Check the adjustment pattern.

6



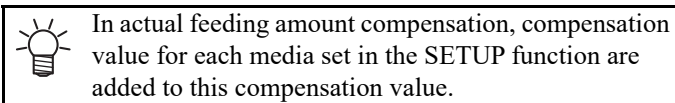
4. Enter the compensation value.

Compensation value: -9999 to 9999

[▲]/[▼]: Changes adjustment values.

[END]: Cancellation of input

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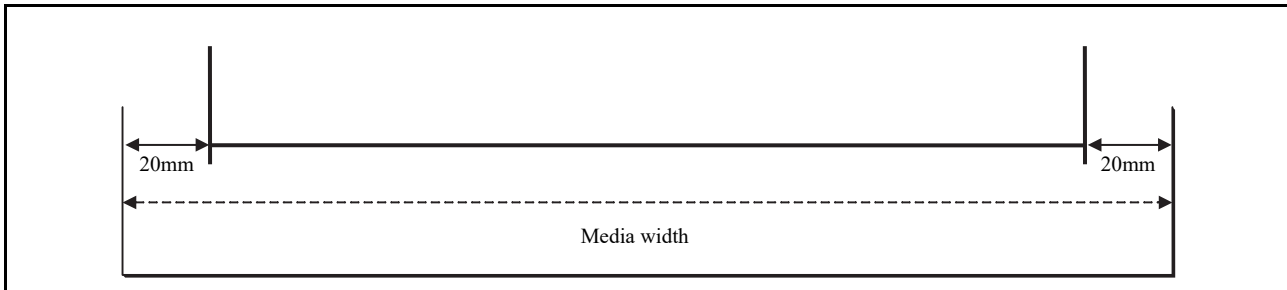
## 4.2.17 EDGE ADJUST

### ■ Function

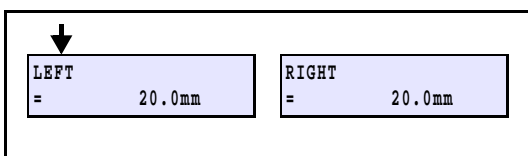
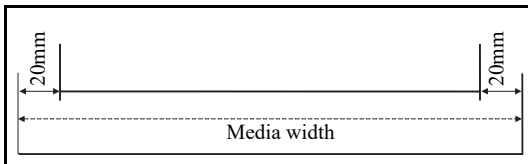
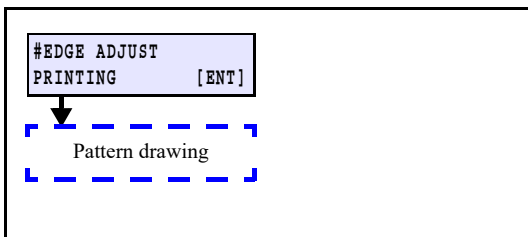
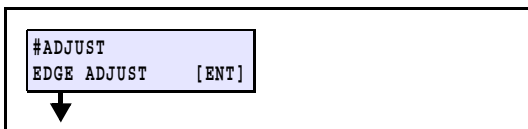
Adjust the width of the each dead space of the right and left ends of the media.

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 [#ADJUST] > [EDGE ADJUST].

2. Draw an adjustment pattern.

[ENTER]: Executes drawing.

[▶]: 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 40.0 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 + (20 mm - input value)".

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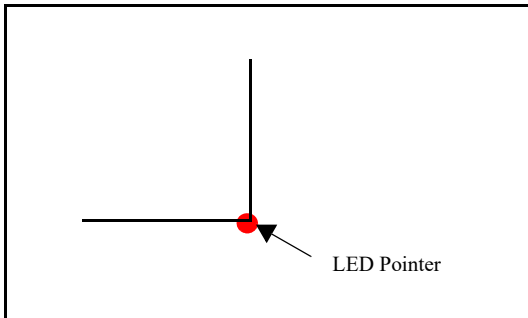
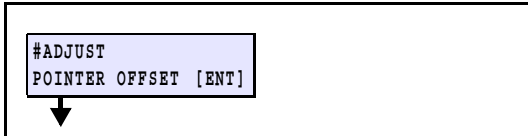
8

## 4.2.18 POINTER OFFSET

### ■ Function

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

### ■ Procedure



1. Select [#ADJUST] > [POINTER OFFSET].

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



This function perform adjusting only once.  
When drawing is performed, readjustment is necessary because adjustment value is reset.

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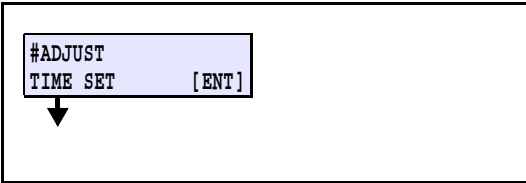
8

## 4.2.19 TIME SET

### ■ Outline

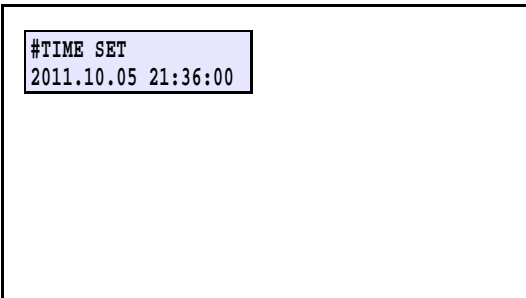
Setting the time.

### ■ Procedures



1. Select [#ADJUST] > [TIME SET].

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2. Set the time.

- [◀]/[▶] : Changing item
- [▲]/[▼] : Changing value
- [ENTER] : Confirmation
- [END] : Cancel

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## 4.2.20 FILL UP INK

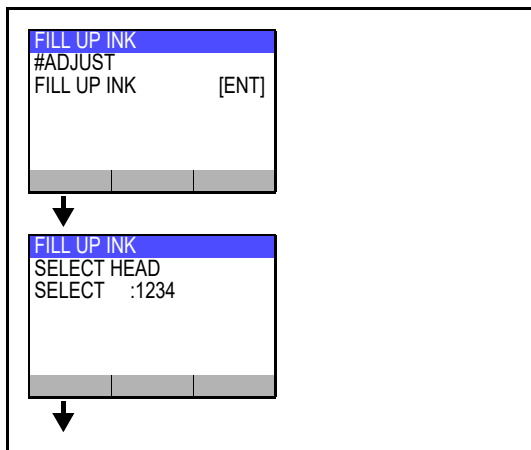
1.1

### ■ Outline

Use at the time of ink filling after head exchange and route emissions.

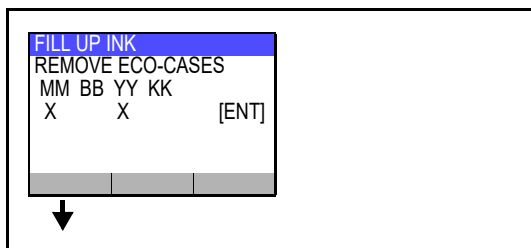
Filling to the head from the ink pack

### ■ Procedure



1. Select [#ADJUST] > [FILL UP INK].

FILL UP to Odd head



2. Choose the head to fill the cleaning solution by [◀][▶][▲][▼].



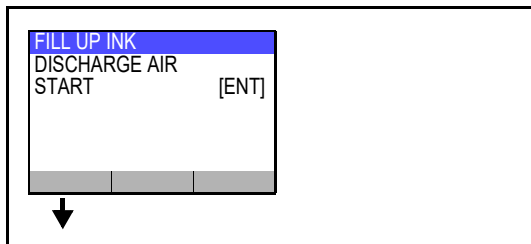
If select multiple heads simultaneously, conduct the filling in the order of odd-head (1,3) → even-head (2,4).

3. Remove the eco-case of color that are marked with “X”.

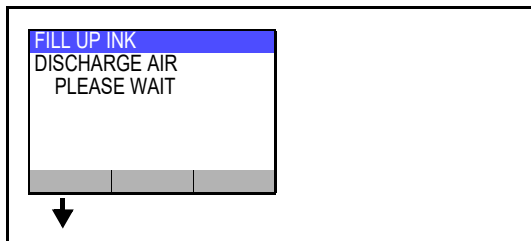


Since there is no eco-case presence sensor, to disconnect and reconnect the eco-case as directed on the screen.

Press [ENTER] to the next screen.



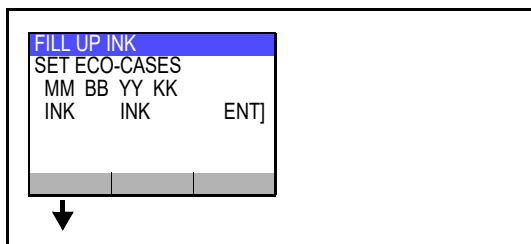
4. Press [ENTER] to the next screen.



5. Executing operation

Suction to discharge the air in the ink tank under the ink pack.

When operation is completed, move to the next screen.



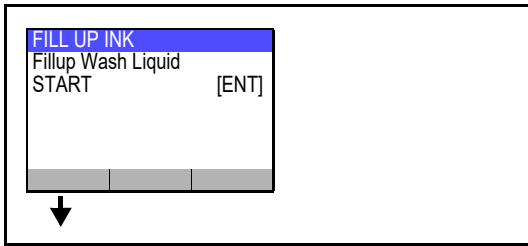
6. Set an ink eco-case into a slot that has “INK”.



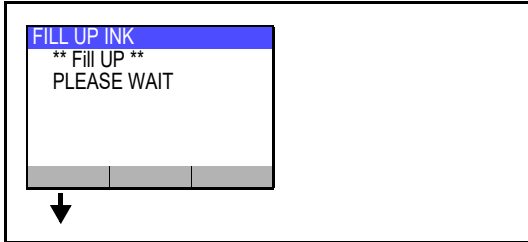
Since there is no eco-case presence sensor, to disconnect and reconnect the eco-case as directed on the screen.

Press [ENTER] to the next screen.

## 4.2.20 FILL UP INK



7. Press [ENTER] to the next screen.

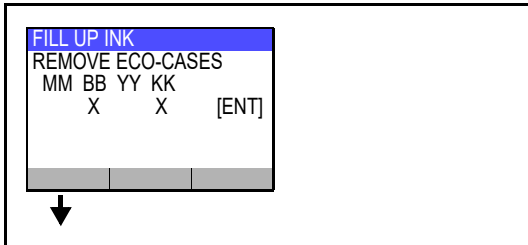


8. Executing operation

Fill the ink to the ink tank.

When the operation is completed, transit to the next screen.

FILL UP to Even head

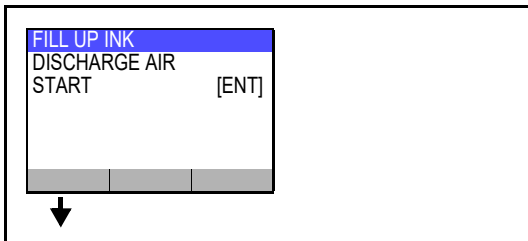


9. Remove the eco-case of color that are marked with "X".

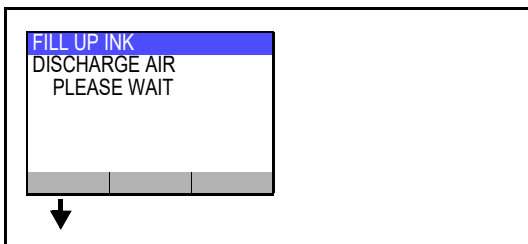


Since there is no eco-case presence sensor, to disconnect and reconnect the eco-case as directed on the screen.

Press [ENTER] to the next screen.



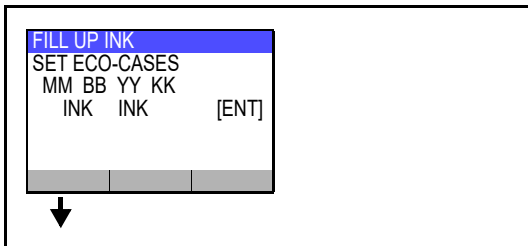
10. Press [ENTER] to the next screen.



11. Executing operation

Suction to discharge the air in the ink tank under the ink pack.

When operation is completed, move to the next screen.



12. Set the ink eco-case to the slot marked "INK".



Since there is no eco-case presence sensor, to disconnect and reconnect the eco-case as directed on the screen.

Press [ENTER] to the next screen.

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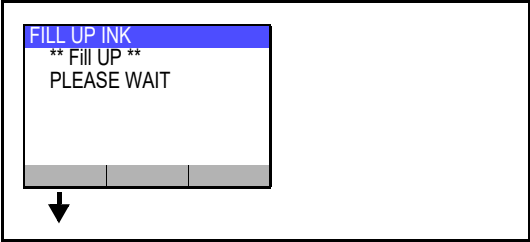
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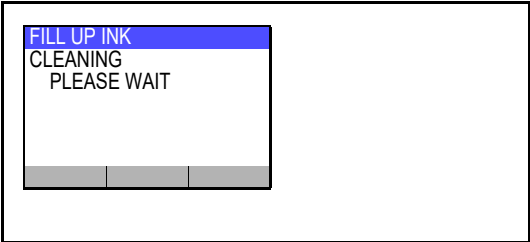
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# 4.2.20 FILL UP INK



13. Executing operation

Fill the ink between the cartridge and the head.



14. Do the hard cleaning.

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Maintenance manual > Adjustment Items > Adjustment Function > ANGLE ADJUST							Rev.	
Model	Tx300P	Issued	2015.10.30	Revised		F/W ver.	1.00	Remark
<b>4.2.21 ANGLE ADJUST</b>								1.0

This section is used for only production.

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## 4.2.22 LAN CONFIG

As this is a function for development, the details are not disclosed.

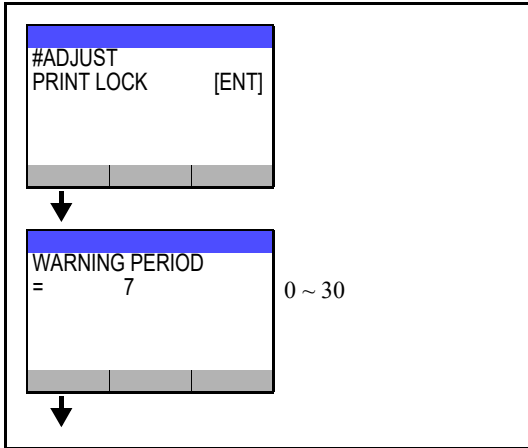
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## 4.2.23 PRINT LOCK

### ■ Outline

If the print lock is enabled, a warning is displayed before the number of days you have set.

### ■ Procedure



1. Select [#ADJUST] > [PRINT LOCK].

2. Set the warning period.

- Initial value: 7 days

- Input range: 1 to 30 days

[ENTER]: Confirmation

[END]: #Return to the adjustment menu



For more information about the print lock, see "[Print Lock maintenance manual](#)".

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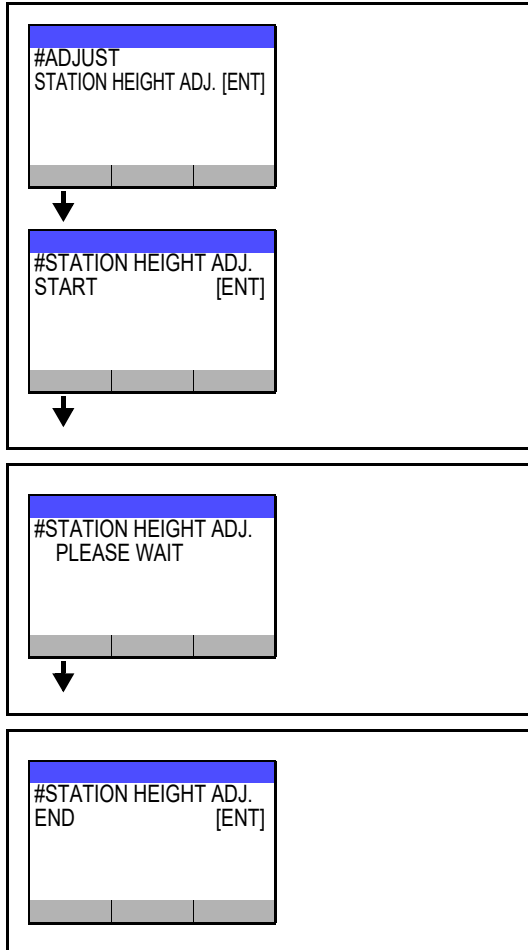
8

## 4.2.24 STATION HEIGHT ADJ.

### ■ Outline

For mechanical adjustment of the station height, stop the station at the lowest point position.

### ■ Procedure



1. Select [#ADJUST] > [STATION HEIGHT ADJ.].

2. Start with [ENTER] key.

[ENTER]: Confirmation

[END]: Return to the # adjustment menu.

3. Carriage is moved to the station maintenance position.

4. Station is moved to the lowest point position.

5. Implement the height adjustment. (Refer to [4.3.2 Adjustment of the Station Height](#))

6. Once the adjustment is complete, press [ENTER] key.



The uppermost and lowest point of the potentiometer are not set, the station is to cap-in as it is of height. Since the carriage and the station are likely to clash, move both to the lowest point position before end.

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# Adjustment Items

**4.1**  
**Operation Matrix**

**4.2**  
**Adjustment Function**

**4.3**  
**Mechanical Adjustment**

4

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## 4.3.1 Adjustment of the Carriage Slant

### ■ Outline

Perform carriage vertical-tilt and slant adjustment for right and left directions.



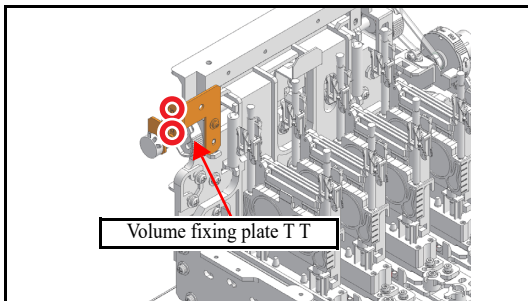
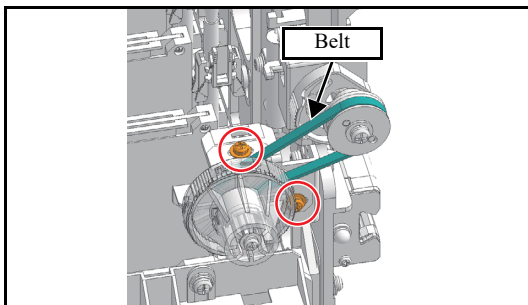
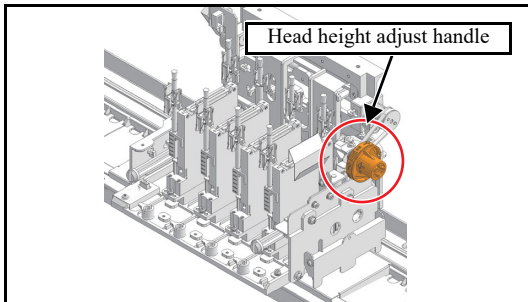
Be sure to work with the main power to ON. In the power OFF state, the machine does not recognize the change.



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.

### ■ Procedures

#### □ Preparations



1. Move the carriage onto the platen. (The position of the second clamp from the right is recommended.)
2. Move the Head height adjust handle to the lowest position.
3. Move the clamp lever downward.



Be sure to perform adjustment with the clamp lever down. (But, do not fix the lever that push it to the lower direction.) In addition, the head initialization height shall be L range setting.

4. Release the screws (x2) of the head height adjustment handle.
5. Release the screws (x2) of the Volume fixing plate TT.

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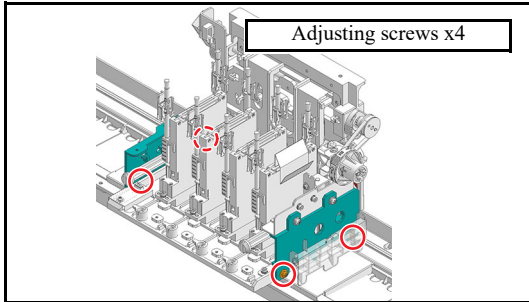
6

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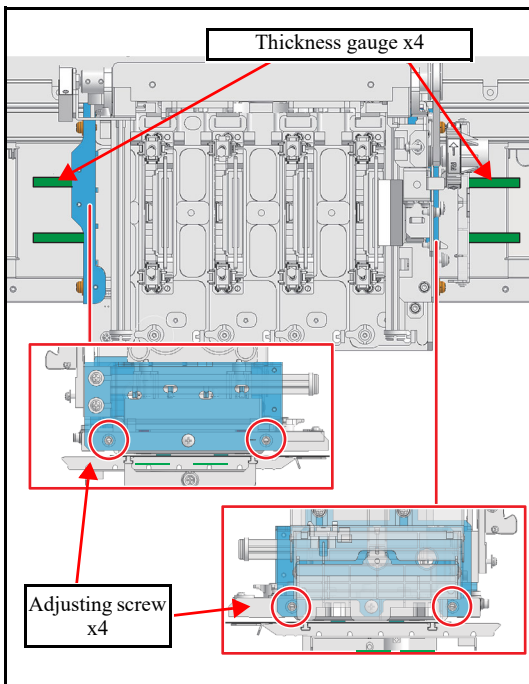
8

## 4.3.1 Adjustment of the Carriage Slant

□ Height for right and left (slant for right and left) adjustment



6. Loosen the adjusting screws (4 places of both sides).



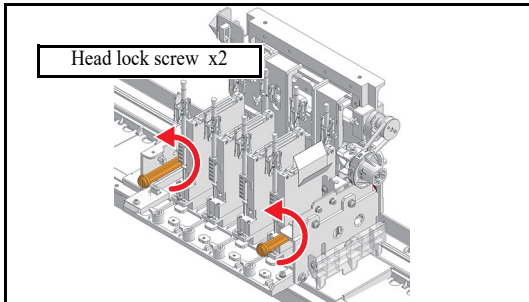
7. Put the thickness gauge between the P head base and the dummy platen (the paper platen in case of Tx300P-1800MkII). (Refer to left figure.)

Fix the carriage by pushing it down and tightening adjusting screws (x4).

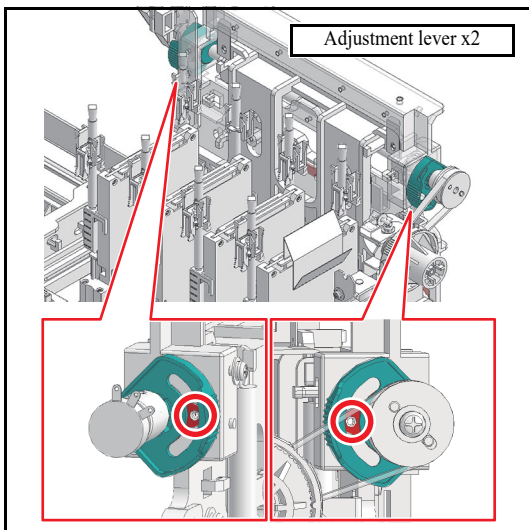
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### 4.3.1 Adjustment of the Carriage Slant

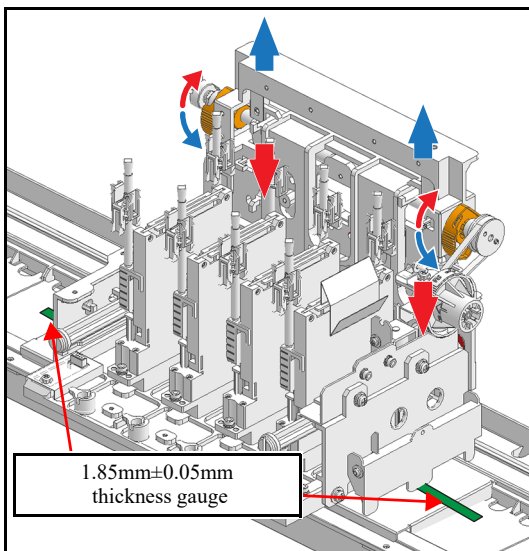
□ Back and forth slant (Vertical-tilt) adjustment



8. Loosen the head lock screw (x2) by half revolution.



9. Loosen the screws of the Adjustment lever (2 screws of both sides).



10. Put the thickness gauge between the head and the dummy platen (the paper platen in case of Tx300P-1800MkII), and then adjust by rotating the adjust lever so that the height of right and left is 1.85mm±0.05mm. (Refer to left figure.)

Rotate to downward, carriage is risen.

Rotate to upward, carriage is lowered.



Adjust this while checking all range height so that there is no difference between the carriage base for right and left.

11. When adjustment has been completed, fully tighten the head lock screws (x2).

12. Tighten the screw of the adjustment lever (x2).

13. Recheck the height for right and left and back/ forth slant.

1) If the height for right and left has changed, perform the procedures in the Step 8 to 10.

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## 4.3.1 Adjustment of the Carriage Slant

2) If the back/ forth slant are found, perform the procedures in the Step 11 and 12.

14. Loosen the screw (x2) of the belt of the head adjustment handle.

15. Loosen the screws (x2) of the volume fixed plate T T.

16. Register potentiometer.

1)Select [#ADJUST] > [POTENTION METER]

2)Adjust the head height handle to the highest (carriage top point position).

3)Press [ENTER] key.

4)Adjust the head height handle to the lowest (carriage is the lowest point position).

5)Press [ENTER] key.

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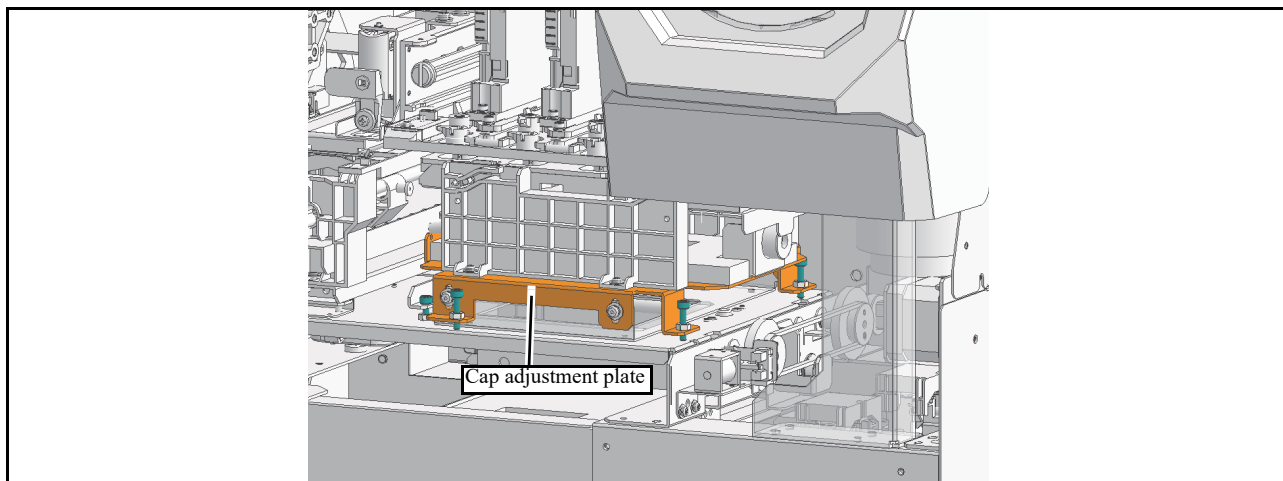
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## 4.3.2 Adjustment of the Station Height



### ■ Outline

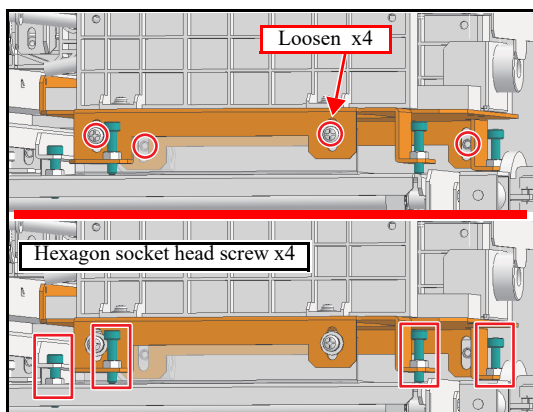
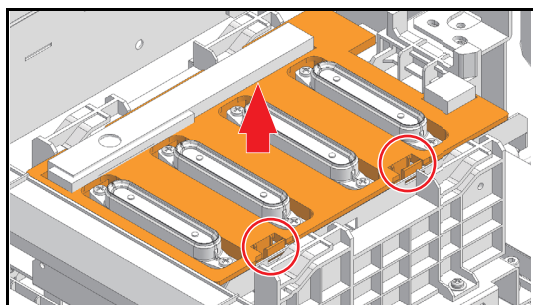
Adjust the height of the station.



- Be sure to work with the main power to ON. In the power OFF state, the machine does not recognize the change.
- Perform adjustment at Head gap (Low).

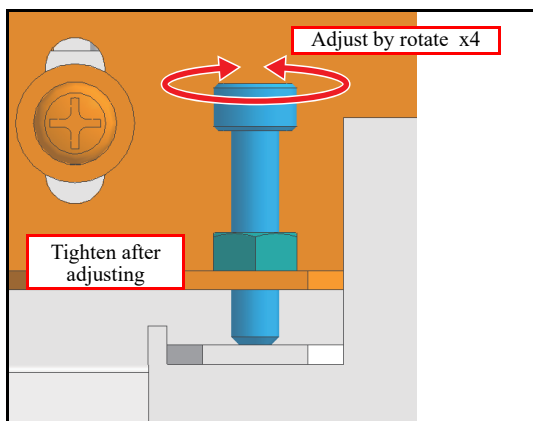
### ■ Procedure

1. Remove the **Cover R**, **Cover R2**, **Undercover R**, and **Cap slider cover**.
2. Confirm the numeric value indicated in [Machine adjust] > [Head gap] is 1.9mm.
3. Select [#ADJUST] > [STATION HEIGHT ADJ.].
4. Remove the **Cap cover**. (stopper x2)



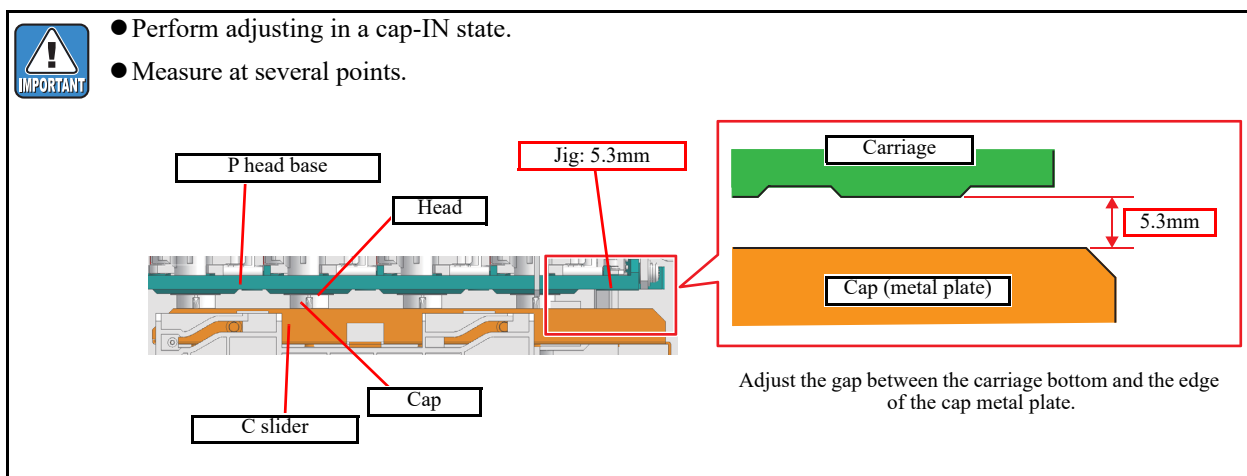
5. Loosen the screws (x4) used for **Cap adjustment plate** adjustment.

## 4.3.2 Adjustment of the Station Height

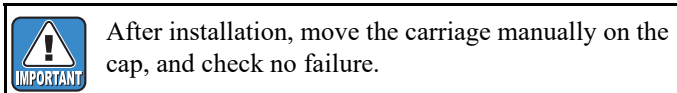


- Loosen the hexagon socket head screws (x4) and make an adjustment to set their dedicated jig at below approximate value, then tighten the nuts.

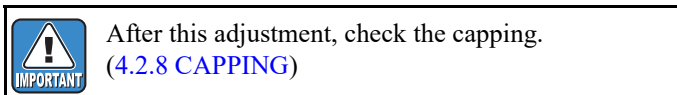
Adjustment value; approximate 5.3 mm



- Tighten up 4 loosened screws used for station base adjustment.
- Attach the cap cover.



- End by pressing [ENTER] key.



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## 4.3.3 Adjustment of the Wiper Height

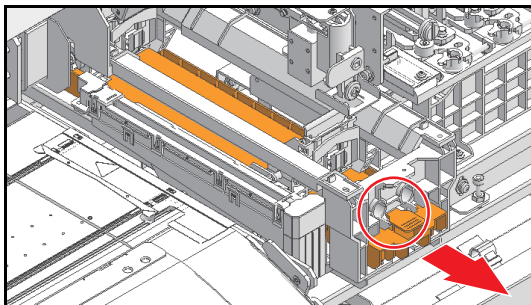
### ■ Outline

Adjust the height of the wiper.

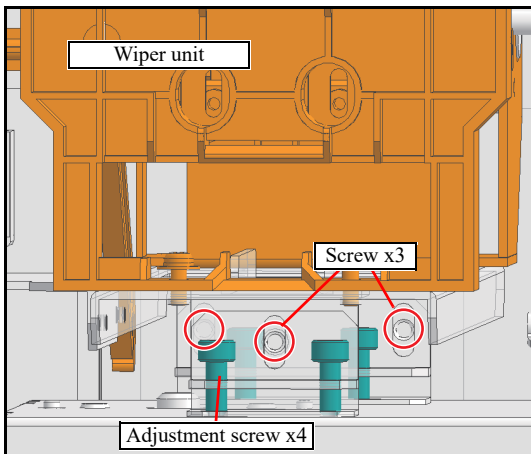


Be sure to work with the main power to ON. In the power OFF state, the machine does not recognize the change.

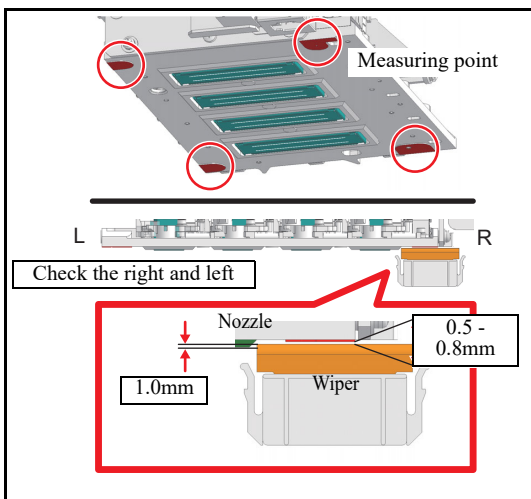
### ■ Procedure



1. Remove the absorber case.



2. Loosen the fixing screws (x3)

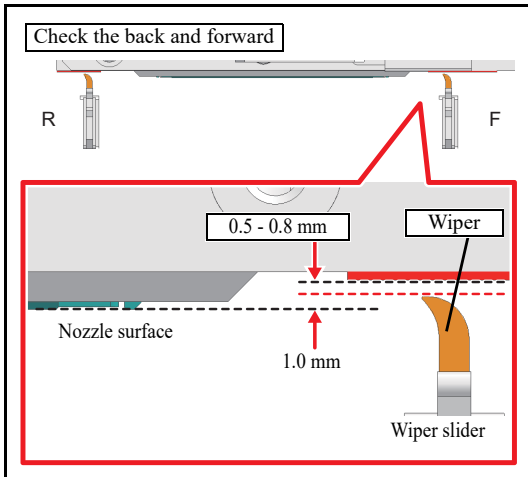


3. Use the adjustment screw (x4) to adjust the distance between the protrusions of the 4 corners of Carriage (standard surface of the carriage base) and the wiper to be in the range of below.

Adjustment value; 0.5 - 0.8 mm

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### 4.3.3 Adjustment of the Wiper Height



4. Move the wiper slider, and confirm the wiper so that there is approximately 1.0 mm (at Gap is Low) from the nozzle surface.



After the adjustment, check the clearance between the NCU unit.

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## 4.3.4 Adjustment of the JAM Sensor Height

### ■ Outline

Adjust the height of the JAM sensor.



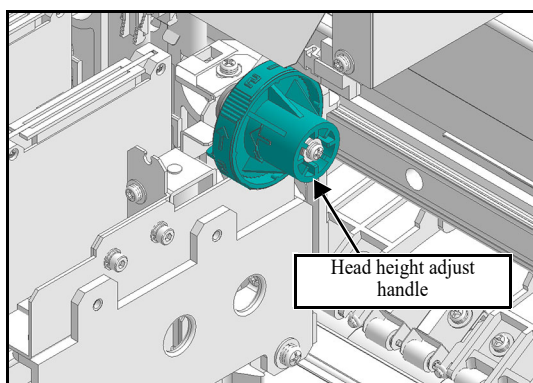
Turn the main power OFF when turning the power OFF.

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### ■ Procedure

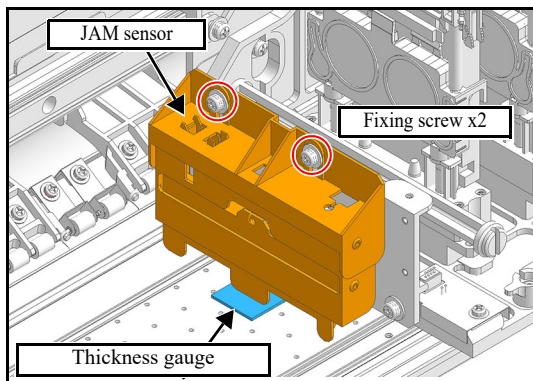
1. Move the carriage onto the dummy platen (the paper platen in case of Tx300P-1800MkII).
2. Move the Head height adjust lever to the lowest position.
3. Move the clamp lever downward.

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Be sure to perform adjustment with the clamp lever down. In addition, the head initialization height shall be L range setting.

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4. Loosen the fixing screw (x2) by one revolution.
5. Put thickness gauge between the jam sensor and the dummy platen (the paper platen in case of Tx300P-1800MkII), and align the height.  
Height adjusting range: 1.7 -1.8mm
6. Tighten the fixing screw.

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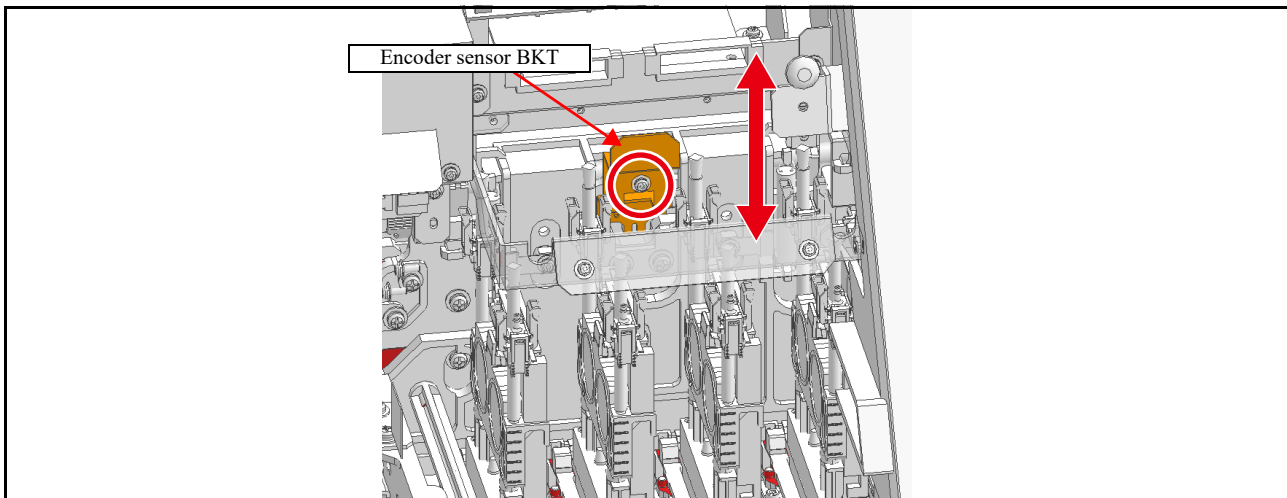
JAM sensor unit is attached on the right side of Carriage in Tx300P-1800 and on the left in Tx300P-1800MkII.

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## 4.3.5 Positioning of the Encoder Sensor



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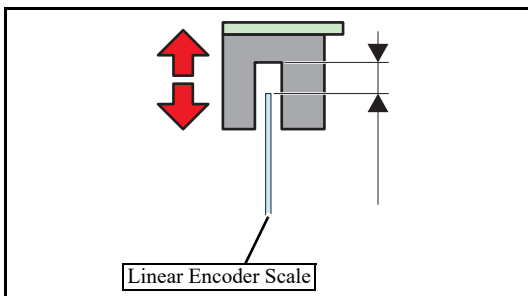
### ■ Outline

Adjust the position of the encoder sensor.



Turn the main power OFF when turning the power OFF.

### ■ Procedure



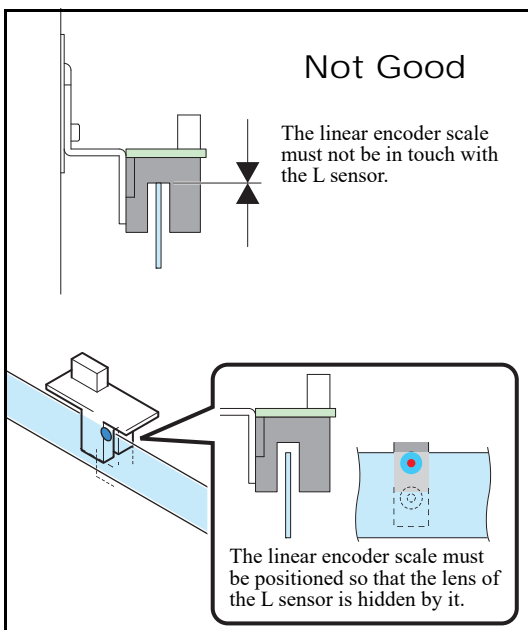
1. Loosen the screws on the L sensor BKT.

Refer to "6.4.6 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].

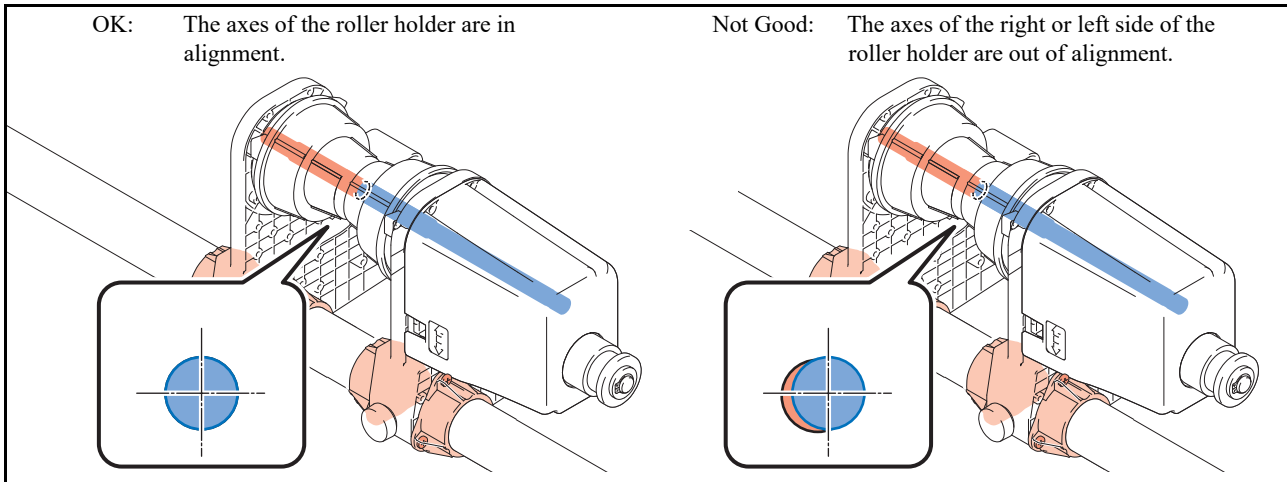
- [5.1.12 CHECK ENCODER](#)

## 4.3.6 Centering of the Roll Holder

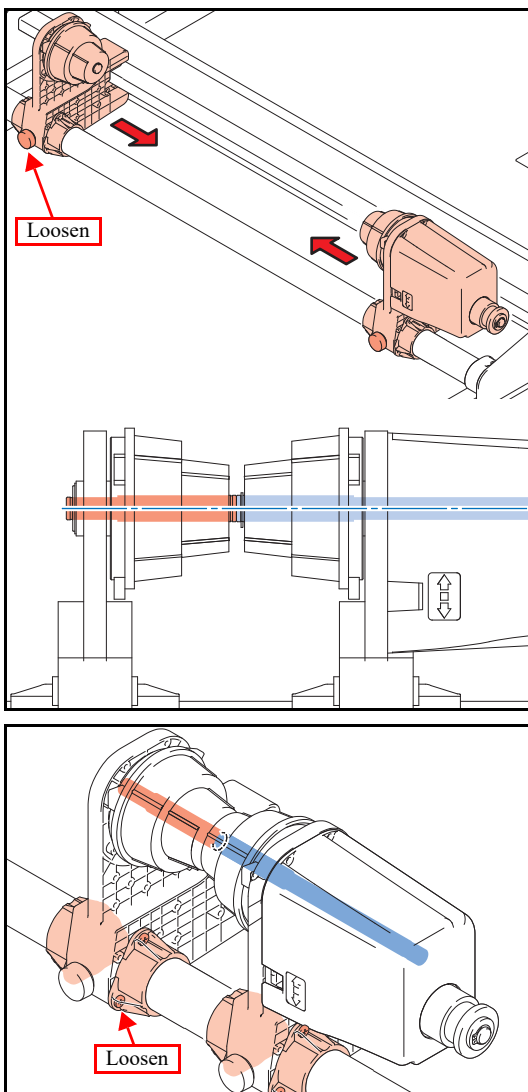
### ■ Outline

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.

Not installed for A model.



### ■ 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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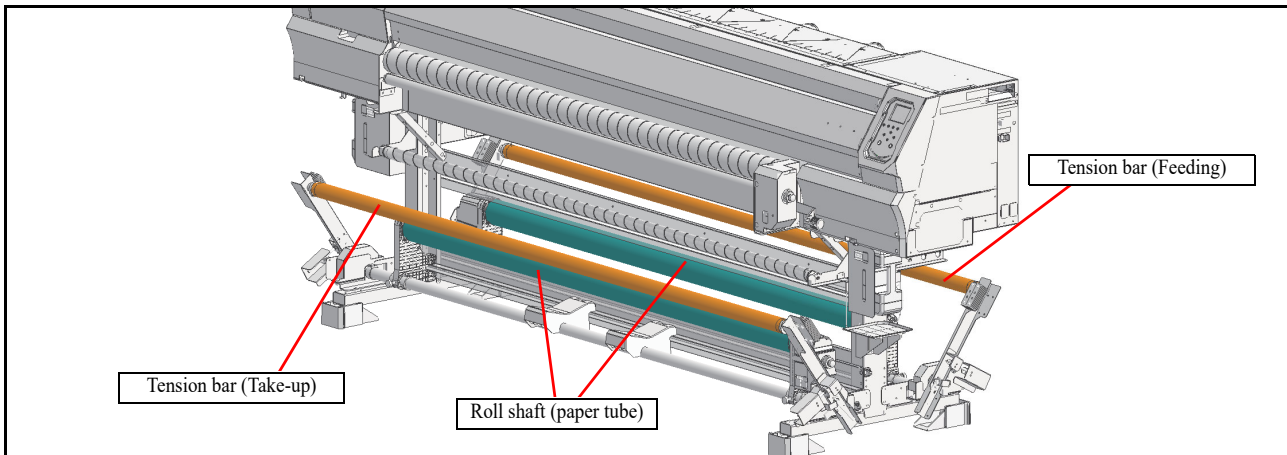
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## 4.3.7 Parallelism adjustment of the Tension Bar

1.1

### ■ Outline

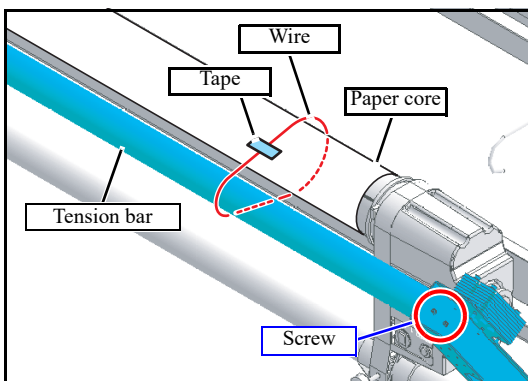
Perform parallelism adjustment between the Tension bar of the AMF unit and the Roll shaft.



After the parallelism adjustment between the Tension bar of the Take-up/Feeding AMF unit and the Roll shaft, measure the distance between the PR shaft and the Roll shaft at the printer's both edges by using an elastic wire. Based on the distance measured at one side, if the other side is misaligned with the standard, adjust it as the Roll shaft is not parallel.

### ■ Work procedure

- Tension bar parallelism adjustment: Confirm the parallelism of the Tension bar and the Roll shaft by measuring the distance of both.



1. Fix the level foot.
2. Wrap a wire with a mark (tape) around the tension bar of take-up side and the roll shaft, and measure the distance between the T bar 1800 and roll shaft.



Apply tension appropriately to the wire.



Be careful not to raise the T bar due to the tension of the wire.

3. In the same way, measure the other side.
4. If the length is different between the right and left, loosen the screws (x4) fixing the tension bar and adjust the position of tension bar.

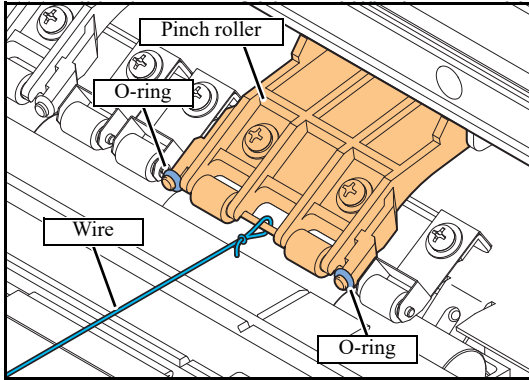


The T bar is installed pressed against the machine side. Move it towards you during adjustment.

5. Take the step 1. ~ 4. at the feeding side as well.

# 4.3.7 Parallelism adjustment of the Tension Bar

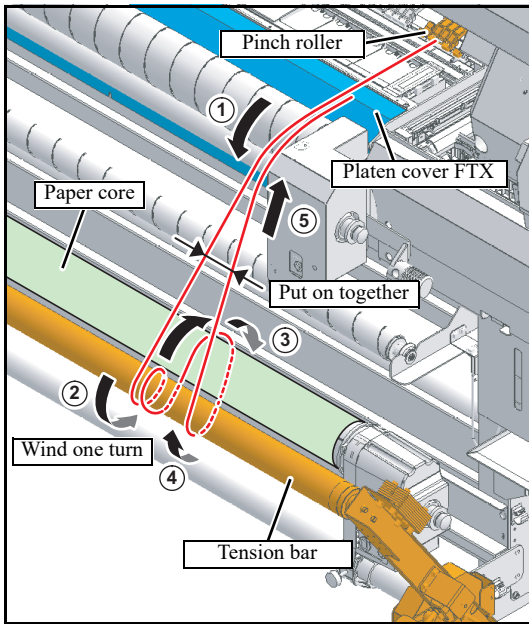
□ Roll shaft parallelism adjustment:



1. Remove the O-ring, and then remove the pinch roller at the center and attach the wire tip with the pinch roller shaft.



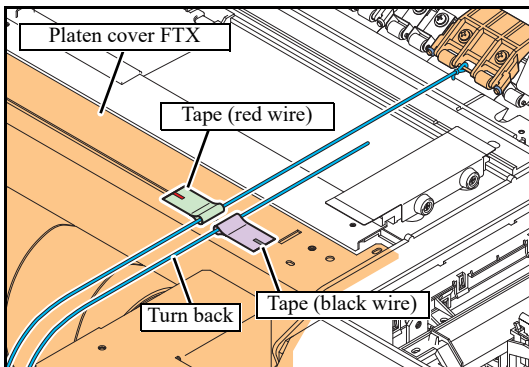
Be careful not to drop the parts in the gap of the device as they are small.



2. Install a paper core to the taking-up unit.

3. Pass a wire as indicated.

Turning back the path and pull wire up over the platen cover FTX.



4. Mark a wire with the tape over the platen cover FTX.

Remove the wire and check the path length for the left side in the same way.



Turning back the same path as the media and check the path length (difference between the black wire and the red wire) for the left side with the right front-basis (difference between the black wire and the red wire = 0).

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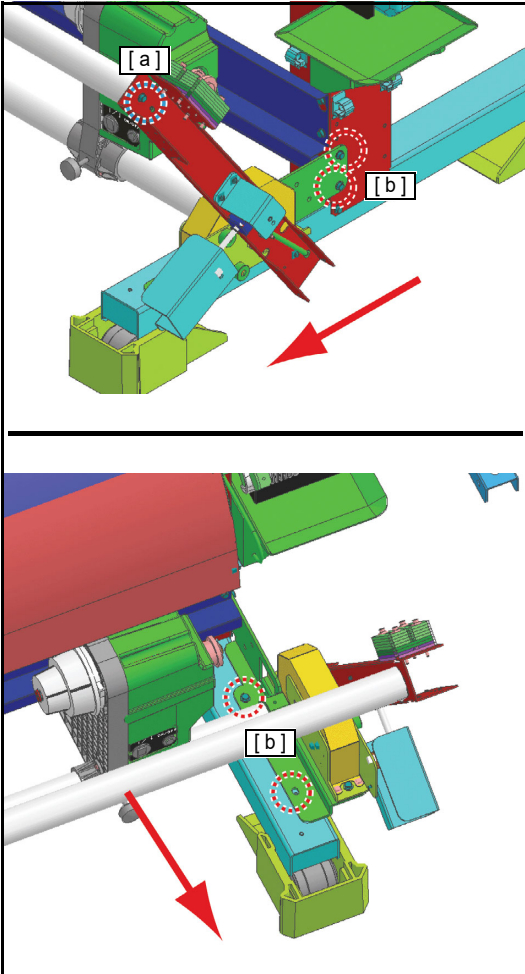
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## 4.3.7 Parallelism adjustment of the Tension Bar

1.1

□ If the left path length is different



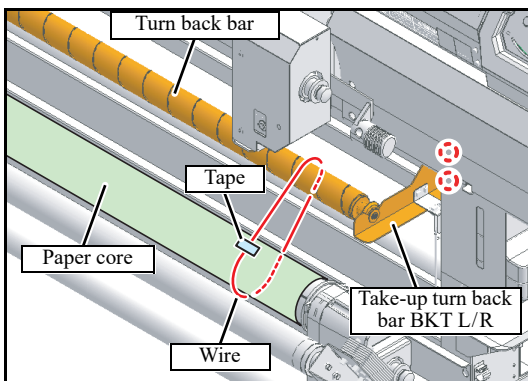
5. If there is a difference between the paper core and the tension bar, loosen the screw of the **[a] part** and adjust it.  
If it is OK between the paper core and the tension bar but there is a difference, loosen the screw of the **[b] part** and adjust by shifting to the direction of the arrow.



The T bar is installed pressed against the machine side. Move it towards you during adjustment.

6. Take the same way at the rear side as well.

□ Confirmation of parallel between Turn back bar and Paper core



1. Wind a wire around the turn back bar and the paper core at the take-up side, and measure the length by sticking a tape.
2. In the same way, measure the left side.
3. If the length is different between the right and left, loosen the screws (x4) fixing the take-up turn back bar BKT L / R and adjust the position of turn back bar.

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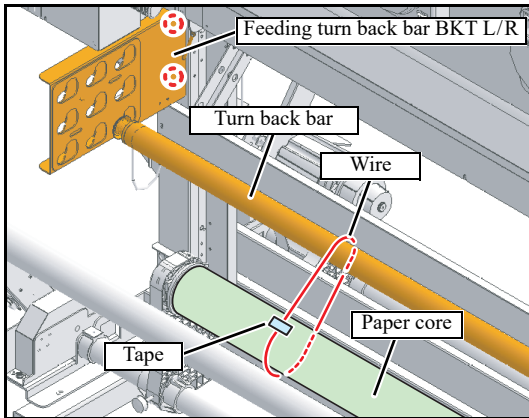
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## 4.3.7 Parallelism adjustment of the Tension Bar



4. Wind a wire around the turn back bar and the paper core at the feeding side, and measure the length by sticking a tape.
5. In the same way, measure the left side.
6. If the length is different between the right and left, loosen the screws (x4) fixing the feeding turn back bar BKT L / R and adjust the position of turn back bar.



When adjusting the turn back bar at the feeding side, set the bar at the position shown in the left figure.

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## 4.3.8 Adjustment of the Cleaning Shutter

### ■ Outline

Verify the operation of Cleaning shutter Assy. Adjust to operate smoothly.



Be sure to work with the main power to ON. In the power OFF state, the machine does not recognize the change.

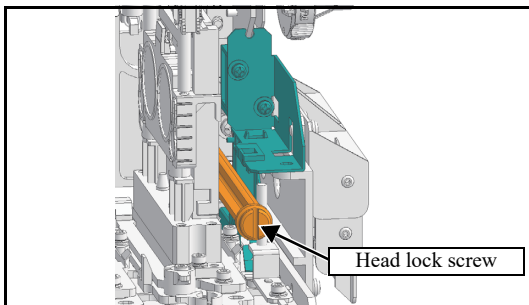


Be sure to wear protective glasses and working gloves during the operation. Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

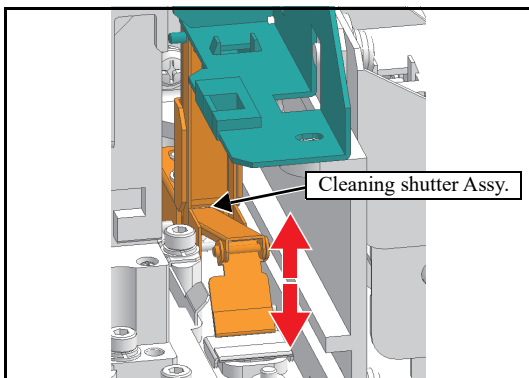
### ■ Adjustment procedure



Subsequent units after #451 have been already adjusted the BKT slope, so the following steps 1 through 3 are not necessary. Perform from step 4.



1. Remove the Head lock screw (right side x1).

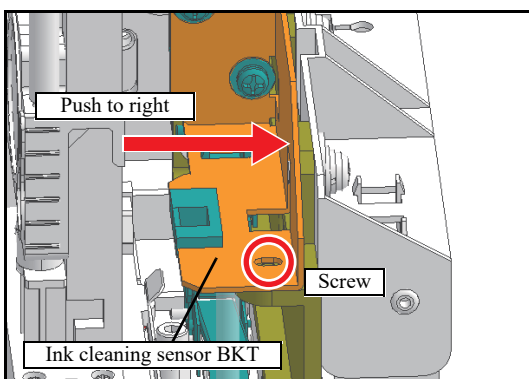


2. Up and down the cleaning shutter Assy. with a finger and confirm that it works smoothly.



There is a case the cleaning shutter Assy. is caught and can not go down.

If there is a problem, perform the following adjustments.



3. Loosen the screw of the Ink cleaning sensor BKT. (x1)

Apply the sheet metal on the right side, and fix by tightening the screws.

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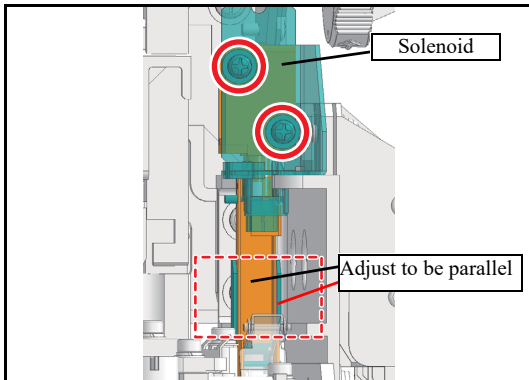
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## 4.3.8 Adjustment of the Cleaning Shutter

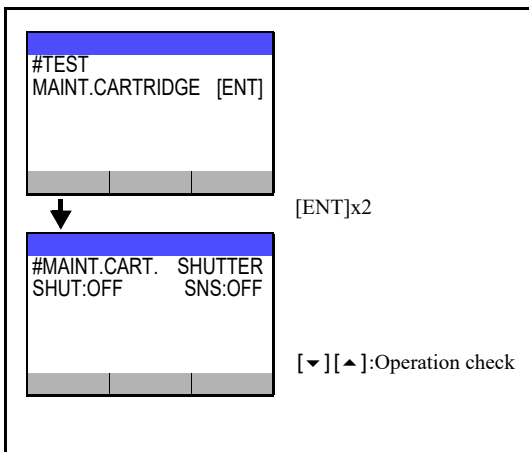


4. Loosen the screws of solenoid. (x2)

Adjust the slope of the link mechanism of cleaning shutter Assy. so as to be parallel, and fix by tightening the screws.

5. Attach and tighten the Head lock screw (right side x1).

### ■ Operation check



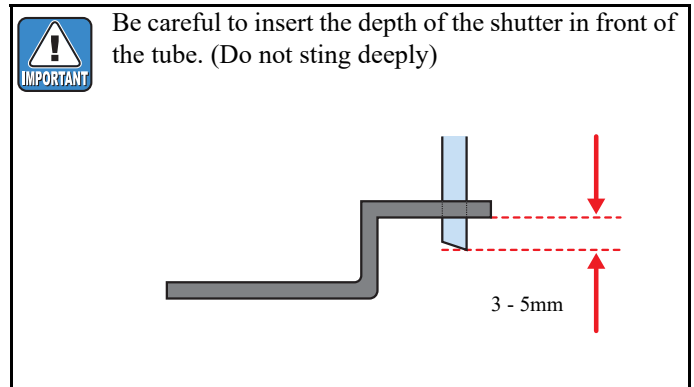
6. Turn the power on.

7. Select [#TEST] [MAINT.CARTRIDGE].

Press the [ENTER] key twice

8. In [SHUTTER] screen, press[▼][▲]key and confirm the shutter operation. (About 10 times)

9. If there is a failure in the operation, perform again step 1 to step 5.



Be careful to insert the depth of the shutter in front of the tube. (Do not sting deeply)

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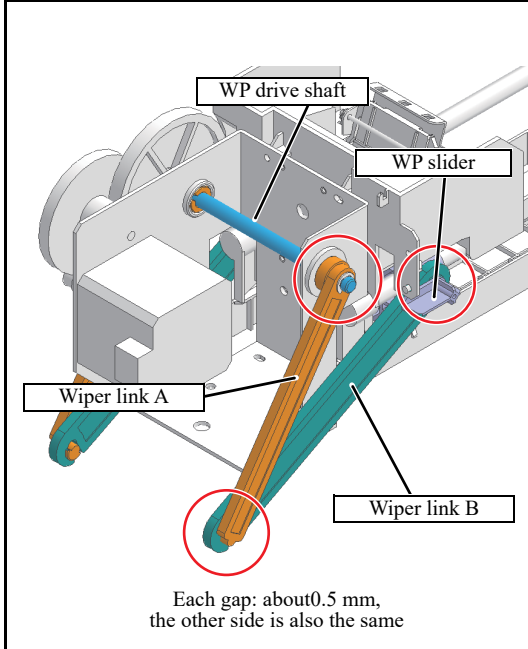
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## 4.3.9 Positioning of the Wiper Drive Link

■ **Outline**

Adjust the position of the wiper drive link.

■ **Procedure**



1. Adjust the each gap among the wiper link A, B, WP slider and wiper drive shaft is about 0.5 mm, and then check whether the wiper moves smoothly.

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## Test Items

**5.1  
Test Function**

**5.2  
Other Test**

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# 5.1.1 CHECK PATTERN

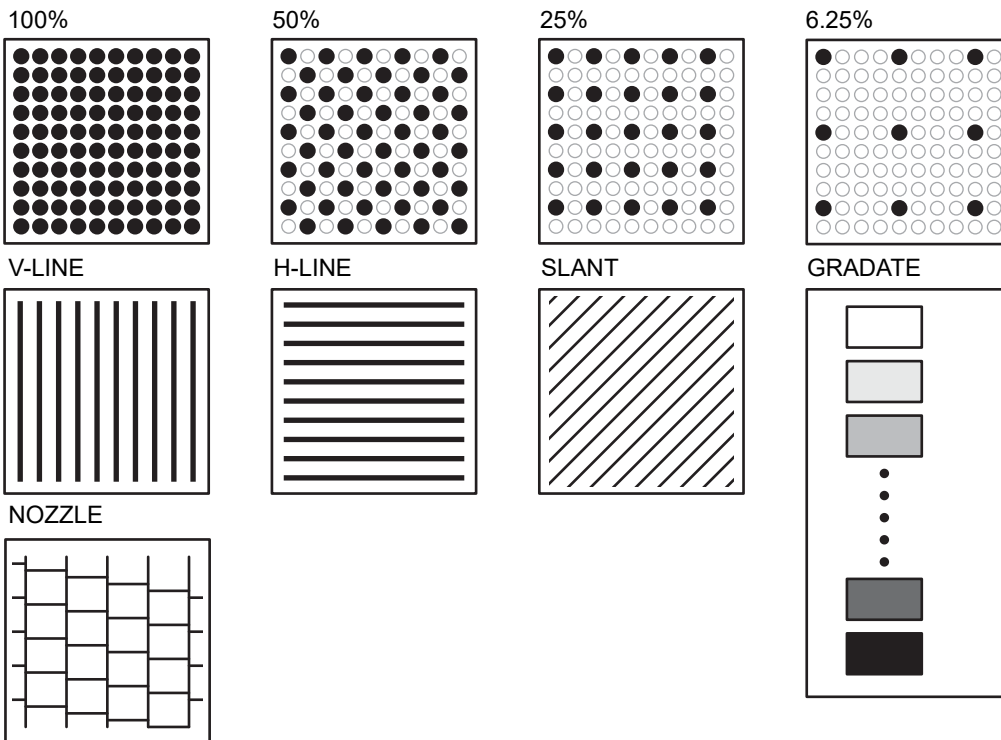
## ■ Outline

Following 9 “CHECK PATTERN” types are printable.

100%	50%	25%	6.25%
NOZZLE	V-LINE	H-LINE	SLANT
GRADATE			

## ■ List of CHECK PATTERN

No	Operation	Selectable Values / Description
1	Select a pattern	Select a desired one among the check patterns listed above.
2	Select X resolution	180 ~ 1440 dpi
3	Select Y resolution	180 ~ 1440 dpi
4	Select scan direction and the number of divisions.	Direction : SiDir ,BiDir Divisions : 4,8,16,32,64 passes,6,12,24,48 passes
5	Select the Linewidth	1~1500dots
6	Select the interval of the line.	1~9999dots
7	Select drawing size	X: 10 ~ 99990 mm Y: 10mm ~ Paper detect size
8	Select drawing color	MCYK(4 color), (4color+W) MLmCMLcCKY(6color), (6color+W)
9	Start drawing.	[ENTER]: Starts drawing. [FUNC2]: Selects nozzles and Switches between high speed scanning ON and OFF.
10	During drawing.	[END]: Stop the drawing.



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## 5.1.2 SENSOR

### ■ Outline

Each sensor is tested.

### ■ List of SENSOR TEST

Name of Test	Function	LCD display
COVER	Displaying the status of the Cover Sensor. (The identification by the cover name is not possible. Because each cover sensor for series connection.)	OPEN/CLOSE
Y ORIGIN	Displaying the status of the Y-origin Sensor.	ON/OFF
LEVER	Displaying the status of the Clamp Lever.	ON/OFF
REAR PAPER	Displaying the status of the Rear Paper Sensor.	ON/OFF
REAR PAPER (CENTER)	Displaying the status of the Rear Paper Sensor (CENTER).	ON/OFF
WIPER	Displaying the status of the Wiper Origin Sensor.	ON/OFF
MEDIA JAM	Displaying the status of the Media Jam Sensor.	ON/OFF
PUMP MOTOR1	Displaying the status of the Pass Select Sensor.	ON/OFF
PUMP MOTOR2	Displaying the status of the Pass Select Sensor.	ON/OFF
TAKE-UP ROLL SENSOR	Displaying the status of the Take-Up Motor.	ON/OFF
TAKE-UP TENSION- BAR	Displaying the origin status of the Angle Sensor of the Take-up tension bar.	ON/OFF
TAKE-UP SLIT A	Displaying the slit count status of the Angle Sensor of the Take-up tension bar.	ON/OFF
TAKE-UP SLIT B	Displaying the slit count status of the Angle Sensor of the Take-up tension bar.	ON/OFF
TAKE.Torque Limiter	Torque limit sensor condition of the take-up motor.	ON/OFF
TAKE-UP Direction	Display the status of the direction change-over switch of the take-up device	CCW/CW
TAKE-UP SW	Display the status of the ON / OFF button on the take-up device	ON/OFF
FEEDING ROLL SENSOR	Displaying the status of the feeding Motor.	ON/OFF
FEEDING TENSION- BAR	Displaying the origin status of the Angle Sensor of the feeding tension bar.	ON/OFF
FEEDING SLIT A	Displaying the slit count status of the Angle Sensor of the feeding tension bar.	ON/OFF
FEEDING SLIT B	Displaying the slit count status of the Angle Sensor of the feeding tension bar.	ON/OFF
FEED.Torque Limiter	Torque limit sensor condition of the feeding motor.	ON/OFF
FEEDING Direction	Display the status of the direction change-over switch of the feeding device	CCW/CW
FEEDING SW	Display the status of the ON / OFF button on the feeding device	ON/OFF
FEEDING SW (RIGHT)	Display the status of the ON / OFF button on the feeding device (at right-rear of the main unit)	ON/OFF
FRICTION ROLLER SW	Display the status of the ON / OFF button on the friction roller unit device	ON/OFF
STATION	Displaying the status of the Station Origin Sensor.	ON/OFF
STATION LOCK	Displaying the status of the Station Lock Sensor.	ON/OFF
PAPER PLATEN	Displaying the status of the paper platen installation.	ON/OFF
VACUUM COUNT 1	Displaying the status of the slit count of the suction fan rotation detect sensor.	ON/OFF
VACUUM COUNT 2	Displaying the status of the slit count of the suction fan rotation detect sensor.	ON/OFF
VACUUM COUNT 3	Displaying the status of the slit count of the suction fan rotation detect sensor.	ON/OFF
VACUUM COUNT 4	Displaying the status of the slit count of the suction fan rotation detect sensor.	ON/OFF

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## 5.1.3 MEMORY CHECK

### ■ Outline

Checks each memory of the machine.

### ■ Content

Item	Content
SDRAM check	Executes Read/Write check of SDRAM (PRAM). <ul style="list-style-type: none"> <li>◆ When a DATA error occurs, “SDRAM D:xxxxxxx” is displayed.</li> <li>◆ When a Address error occurs, “SDRAM A:xxxxxxx” is displayed.</li> </ul>
F-ROM check	Executes hash check of F-ROM. <ul style="list-style-type: none"> <li>◆ When a check sum error occurs, “F-ROM SUM ERROR” is displayed.</li> </ul>
SDRAM32MB check	Executes Read/Write check of SDRAM. <ul style="list-style-type: none"> <li>◆ When a DATA error occurs, “SDRAM D:xxxxxxx” is displayed.</li> <li>◆ When a Address error occurs, “SDRAM A:xxxxxxx” is displayed.</li> </ul>
HEAD check	Executes Read/Write check of Head memory.

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Maintenance manual > Test Items > Test Function > KEYBOARD TEST							Rev.
Model	Tx300P	Issued	2015.10.30	Revised	F/W ver	1.00	Remark
<b>5.1.4 KEYBOARD TEST</b>							1.0

■ **Outline**

Tests the panel switch.

■ **Content**

When the panel switch is pressed, the name of the switch is displayed on the LCD.

- If none is pressed, “NONE” is displayed on the LCD.
- When you press the [END] key, “Test end” is displayed and the keyboard test is completed.
- When you press the [▲]/[▼] key, check the buzzer sound of keyboard.

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Maintenance manual > Test Items > Test Function > LCD							Rev.		
Model	Tx300P	Issued	2015.10.30	Revised		FW ver	1.00	Remark	
<b>5.1.5 LCD</b>								1.0	

■ **Outline**

Checks the display of LCD.

■ **Content**

When you press the [ENTER] key, display color of the LCD is changed.

When you press the [END] key, the LCD is completed.

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## 5.1.6 CHECK TEMP.

### ■ Outline

Temperature check of each part that monitors temperature is available.

### ■ Content

The temperature in the table below is displayed.

Display	Content
HEAD1 - 4	Head temperature of head 1 - 4
ROOM AIR	Room temperature
HCB 1 - 4	HCB PCB 1 -4 temperature
SLP THERMISTOR	Slider P PCB temperature

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Maintenance manual > Test Items > Test Function > CHECK INK IC							Rev.		
Model	Tx300P	Issued	2015.10.30	Revised		F/W ver	1.00	Remark	
<b>5.1.7 CHECK INK IC</b>									1.0

■ **Outline**

Check the ink cartridge IC.

■ **Content**

Check is performed by reading the IC chip data, and then displays the number of errors for each cartridge.

When an error occurs, “IC=1 ERR=1” is displayed.

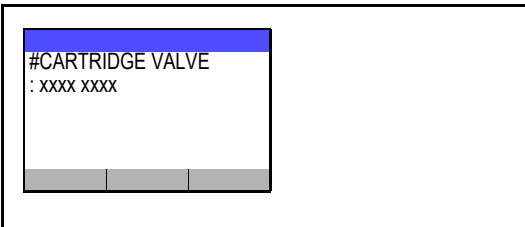
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## 5.1.8 CARTRIDGE VALVE

### ■ Function

Open/close of cartridge valve is checked.

### ■ Operation check



1. Select [#TEST] > [CartridgeSensor].
2. Select a valve and check its opening and closing.
  - [◀]/[▶]: Valve select
  - [▲]/[▼]: open / close

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Maintenance manual > Test Items > Test Function > CARTRIDGE SENSOR							Rev.
Model	Tx300P	Issued	2015.10.30	Revised	FW ver	1.00	Remark
<b>5.1.9 CARTRIDGE SENSOR</b>							1.0

■ **Function**

Check attachment or not of the cartridge IC and operating conditions of the Ink end sensor.

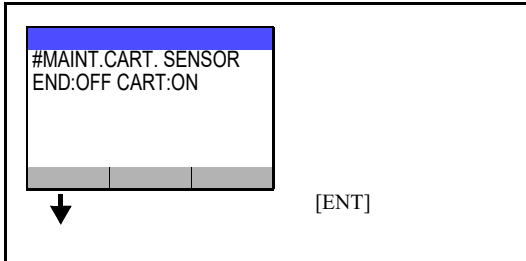
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## 5.1.10 Maintenance Cartridge

### ■ Function

Perform various operation checks of slot of the maintenance cartridge.

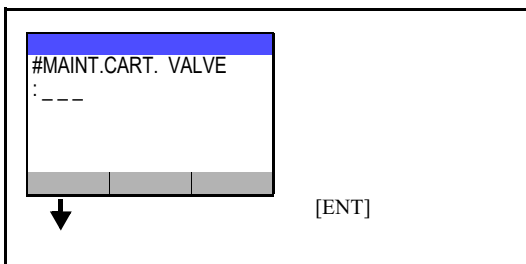
### ■ Operation check



1. Select [#TEST] > [MAINT.CARTRIDGE] > [#MAINT.CART. SENSOR].

2. Checking cartridge sensor and ink end sensor.

- END: Ink end sensor
- CART: Cartridge sensor

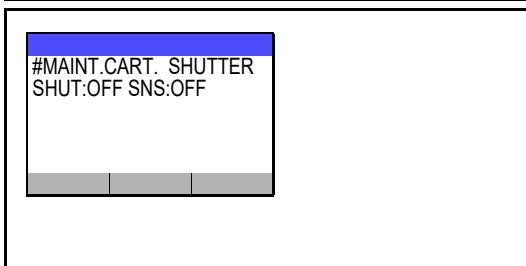


3. Valve operation test

[◀]/[▶]: Valve select

[▲]/[▼]: open / close

- Left: Wiper cleaning liquid valve 1
- Center: Carriage cleaning liquid valve
- Right: Wiper cleaning liquid valve 2 (work only for MkII)



4. Operation test of dripping prevention shutter and shutter sensor.

[▲]/[▼]: open / close

[SELECT]: Carriage out

(Shutter sensor test screen)

- SHUT: Dripping prevention shutter
- SNS: Dripping prevention shutter sensor

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## 5.1.11 AGING

### ■ Outline

For the durability testing, continuous reciprocating operation is executed.

### ■ List of AGING items

Name of Test	Function
XY SERVO*	Continuous reciprocating operation in X-axis and Y-axis
X SERVO	Continuous reciprocating operation in X-axis
Y SERVO*	Continuous reciprocating operation in Y-axis
PUMP MOTOR	Continuous operation of Ink-supplying Pump Motor (Max.24Days)
WIPER MOTER	Continuous reciprocating operation of Wiper Motor (Max.9999Times)
WIPE HEAD	Continuous reciprocating operation of Wiping. (Max.9999Times)
CAPPING	Continuous reciprocating operation of Capping.
CLEANING	Execution of cleaning operation by the designated times (Max.500Times)
FLASHING	Continuous reciprocating operation of Flashing.
X measure	Continuous operation of the X measure.
COM	For developmental debugging
CARTRIDGE VALVE	Operation of Cartridge valve.
NUC	Continuous reciprocating operation of Nozzle detecting unit.
TEST FEED	Continuous reciprocating operation of quantity of designated field.
STATION	Station up and down continuous operation

\*It may cause ink leakage from the Head when executed in keeping the ink charged.



For the work, put down unused media or the like in advance since it may cause ink leakage when [Y SERVO] or [XY SERVO] is executed.

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## 5.1.12 CHECK ENCODER

### ■ Outline

Checks the operation of the linear encoder and the motor encoder by moving the slider.

#### ● Y JOG

Use the JOG key to move the carriage and check the operation of the linear encoder and motor encoder.

#### ● Y SCAN

Operate the carriage using the specified conditions, and carry out a test between each encoder.

- Operate the carriage with the specified settings to display the difference between the linear encoder value and the Y-axis motor encoder value.
- If the deviation value of the encoder is equal to or higher than the error threshold, the operation stops and an error is displayed.

### ■ Content

#### ● Y JOG

“M: xxx E: xxx” is displayed on the lower row of the LCD. The coordinate value of the motor encoder is displayed in M, and that of the linear encoder is displayed in E in units of mm.

With [◀] [▶] key, you can move the slider to right and left.

#### ● Y SCAN

Operate the carriage with the specified values (width, speed, acceleration, wait time), and carry out a test between each encoder.

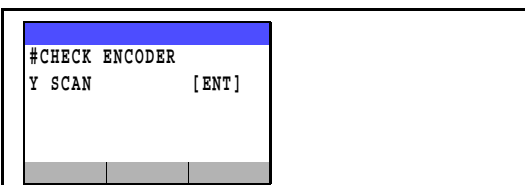
Move the carriage within the specified distance (3 times both ways) to display the difference between the linear encoder value and the Y-axis motor encoder value. If an error occurs during the operation, the test is stopped.

Moving distance: From 100mm to the maximum actual operating range(100 mm unit)

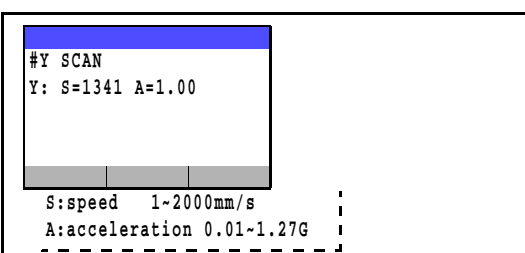
The following items are displayed on the LCD.

- Moving distance : M=\*\*\*\*.\* E=\*\*\*\*.\* (0.1mm unit)
- Differential distance of the encoder value before and after the movement : Mc=\*\*\*\*.\* Ec=\*\*\*\*.\* (0.1mm unit)
- The encoder value before the movement : Ms=\*\*\*\*\* Es=\*\*\*\*\*
- The encoder value after the movement : Mm=\*\*\*\*\* Em=\*\*\*\*\*
- The encoder value when moving within a specified distance : Mr=\*\*\*\*\* Er=\*\*\*\*\*

### ■ Work procedure of the Y SCAN

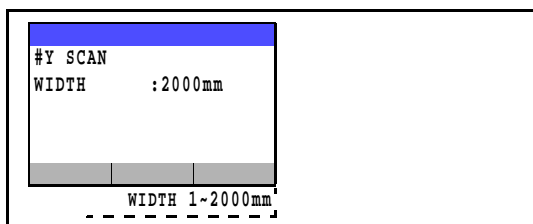


1. Select [#TEST] > [CHECK ENCODER] > [Y SCAN].

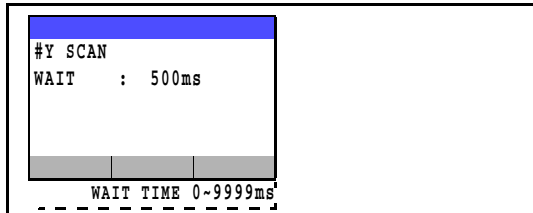


2. Set the scan speed (S).  
Set the scan acceleration (A).

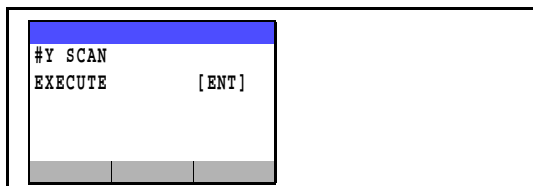
# 5.1.12 CHECK ENCODER



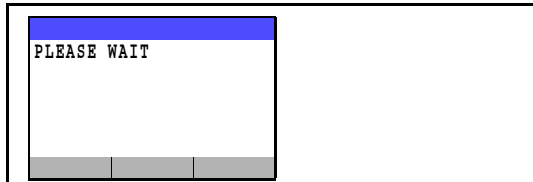
3. Set the scan operation width.



4. Set the wait time between the scan operations.



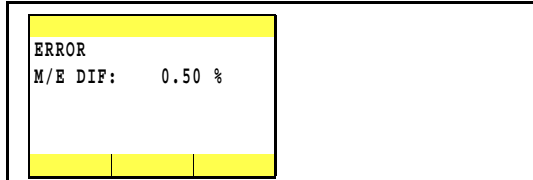
5. Press the [Enter] key on the operation start check screen to start the operation.



6. The screen indicates that the operation is in progress.

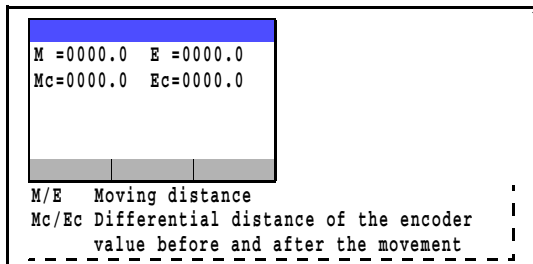
Run the scan 3 times in both directions according to the setting conditions.

Every time scan ends, the encoder deviation is calculated, and if the NG judgment threshold is exceeded, the operation is terminated.

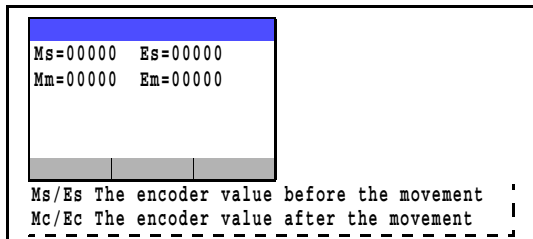


7. This screen is only displayed when an error occurs.

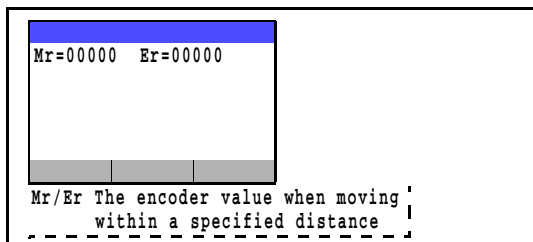
This screen is displayed when the NG threshold is exceeded. It displays the difference between the motor encoder/linear encoder.



8. Result 1 is displayed.



9. Result 2 is displayed.



10. Result 3 is displayed.

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## 5.1.13 H/W

### ■ Outline

Port test of the hardware

### ■ Content

As this is a function for development, the details are not disclosed.

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Maintenance manual > Test Items > Test Function > Paper Sensor							Rev.		
Model	Tx300P	Issued	2015.10.30	Revised		FW ver	1.00	Remark	
<b>5.1.14 Paper Sensor</b>									1.0

■ **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

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

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## 5.1.15 ACTION TEST

### ■ Function

Checks the operation of movable parts alone of the machine.

### ■ List of test items

Item	Description
VACUUM	Description: Operation test of vacuum fan motor. Set value: LOW, MID, HIGH, OFF
TAKE-UP MOTOR	Description: Operation test of take-up motor. Set value: ON, OFF
FEEDING MOTOR	Description: Operation test of feeding motor. Set value: ON, OFF
STRETCH MOTOR	Description: Operation test of friction roller motor. Set value: ON, OFF
CEILING FAN	Description: Operation test of ceiling fan. Set value: ON, OFF
STATION LOCK	Description: Operation test of station lock solenoid. Set value: ON, OFF
LED POINTER	Description: Operation test of LED pointer. Set value: ON, OFF
PILOT LAMP RED	Description: Operation test of pilot lamp (Red). Set value: ON, OFF
PILOT LAMP YELLOW	Description: Operation test of pilot lamp (Yellow). Set value: ON, OFF
PILOT LAMP GREEN	Description: Operation test of pilot lamp (Green). Set value: ON, OFF

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■ **Function**

ON/OFF test of LEDs is executed.

■ **List of LEDs**

LED	Kinds
POWER LED	ON/OFF
CARTRIDGE LED	RED, GREEN, BLUE, R/G, R/B, G/B, RGB

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Maintenance manual > Test Items > Test Function > SKEW CHECK							Rev.		
Model	Tx300P	Issued	2015.10.30	Revised		FW ver	1.00	Remark	
<b>5.1.17 SKEW CHECK</b>									1.0

■ **Function**

Skewing of media is checked.

Feed distance is designated to execute feeding.

Feed distance: 1–10 m (unit: 1 m)

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

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## 5.1.18 VOLTAGE CHECK

### ■ Outline

You can check the internal DC power supply voltage with LCD display.  
The displayed value is the read value of AD conversion circuit.

### ■ Content

For each DC power supply voltage setting value (design value), actual voltage value is displayed.

DC power supply name	Setting value (design value) [V]	Main use
V CORE	1.3310	CPU core voltage
12V	12.0	Internal circuit
V1	48.0	Motor drive Head drive etc.
5V	5	Internal circuit
3.3VB	3.3	Circuit for sleep functions
3.3V	3.3	Internal circuit
2.5V	2.5	Internal circuit
1.8Vmem	1.8	Internal circuit
1.2V	1.2	Low voltage circuit
STVpow	48	Internal circuit
ST24V	24	Internal circuit
ST24VA	24	Internal circuit
STVpow2	48	Internal circuit
ST24V2	24	Internal circuit
ST24VA2	24	Internal circuit
SL1.2V	1.2	Low voltage circuit
SL2.5V	2.5	Internal circuit
SL3.3V	3.3	Internal circuit
SL5V	5	Internal circuit
SL48V	48	Internal circuit
SL24V	24	Internal circuit
SL1.8V	1.8	Low voltage circuit

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## 5.1.19 NCU

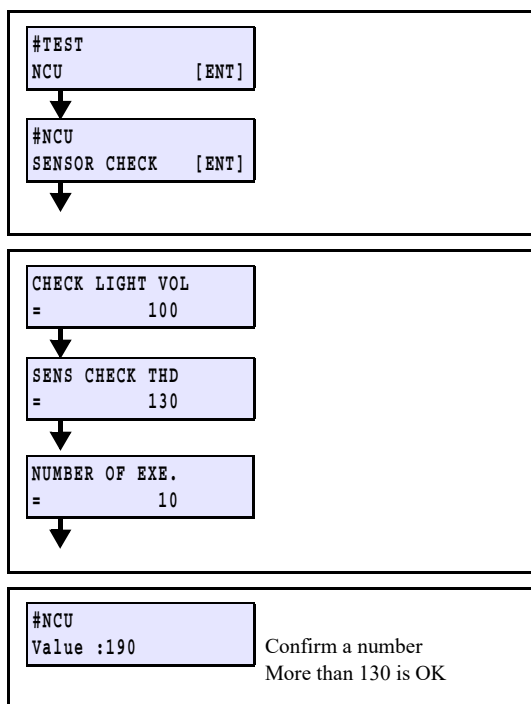
### ■ Outline

This function is capable of adjusting sensor sensitivity, degree of tilting condition and discharge position of NCU (Nozzle missing detector unit).

When NCU is replaced, always be done.

### ■ Work procedure

#### □ Sensor check



1. Select [#TEST] > [SENSOR CHECK].

[▲]/[▼]: Select

[ENTER]: Confirmation

Press [ENTER] key.

2. Change display with [ENTER] key.

Not change the numerical values.

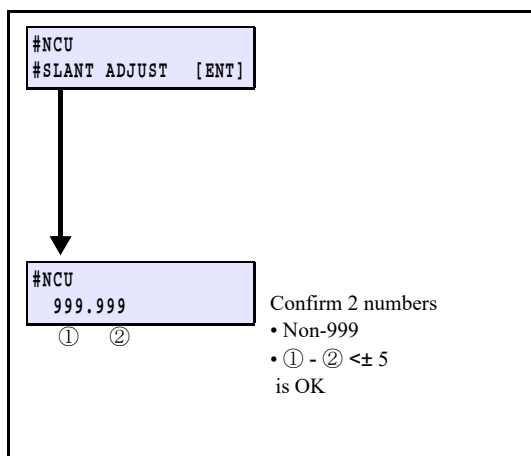
3. The number in the left figure is a light more than “130”.

In case that number is less than “130”, replace the NCU unit.



The number indicate sensor sensitivity of the NCU unit.

#### □ Adjustment for tilting



4. Select [SLANT ADJUST].

[▲]/[▼]: Select

[ENTER]: Confirmation

Press [ENTER] key.

5. Confirm 2 numbers in the left figure.

- Must be numerals other than “999”. (Example: -7. -7)

- Take the numerals to be, in left-to-right order: “①, ②”.

- ① - ② (the difference between ① and ②) must be no more than 5.

If the conditions above are satisfied, the NCU unit is not tilting (does not need adjustment).



- The numerals indicate, in left-to-right order: Head1 upper nozzle, Head1 lower nozzle.

- Unit is [0.1mm]. (ex. -7=-0.7mm)

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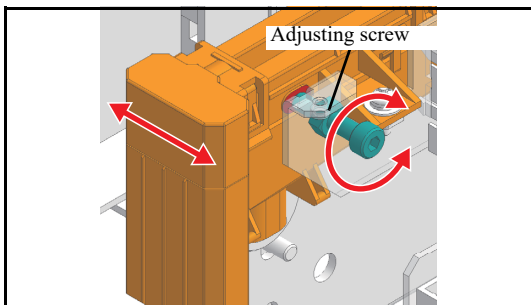
8

# 5.1.19 NCU

- The numerals indicate offset value on the basis of ideal attachment position (= mechanical design value) of the NCU.
- Negative value indicate gap to the cap direction, positive value indicate gap to the platen.
- Position of the NCU is parallel to the head so that difference of each value is small,

**IMPORTANT** Used nozzle for test:  
 0-24 and 176-200 nozzles of the Head 1 A line  
 \*Nozzle missing at used nozzle does not occurred during operation.

1  
2  
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If this is not satisfactory, loosen the adjusting screw's nut and turn the adjusting screw to adjust to inside the prescribed limit (no more than 5).

□ Discharge position

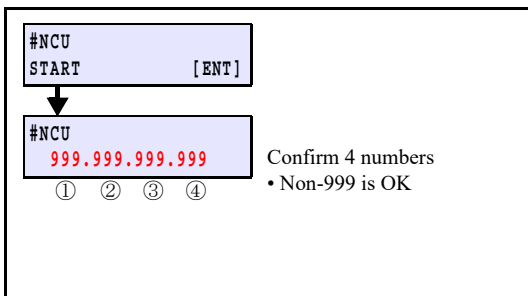
```
#NCU
POS ADJ [ENT]
```

6. Select [POS ADJ].  
 [▲]/[▼]: Select  
 [ENTER]: Confirmation  
 Press [ENTER] key.

```
CHECK LIGHT VOL
= 32
WIDTH
= 26
SHOT POSITION(0.1mm) Head 1
= -8
SHOT POSITION(0.1mm) Head 2
= -8
SHOT POSITION(0.1mm) Head 3
= -8
SHOT POSITION(0.1mm) Head 4
= -8
```

7. Change display with [ENTER] key.  
 Not change the numerical values.


## 5.1.19 NCU





8. Press [ENTER] key.


9. Confirm four numbers (①, ②, ③ and ④) in the left figure.

Non-999 is alright. (ex. -6. -7. -6. -7)

 In case of 150 series (one head machine);  
Confirm only ① because only ① is performed scanning (display of ① ' is not changed).

 ● The numerals indicate, in left-to-right order: Head1, Head2, Head3, Head4.  
● Unit is [0.1mm]. (ex. -6=-0.6mm)

 ● The numerals indicate offset value on the basis of ideal attachment position (= mechanical design value) of the NCU.  
● Flushing is performed inside slit of the Head 1-A line, the most sensitive position of the sensor is detected automatically.

 Used nozzle for test:  
All nozzles of the Head 1 A line  
\*Nozzle missing at used nozzle does not occurred during operation.

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Maintenance manual > Test Items > Test Function > EVENT LOG							Rev.		
Model	Tx300P	Issued	2015.10.30	Revised		FW ver	1.00	Remark	
<b>5.1.20 EVENT LOG</b>									1.0

■ **Function**

Saved Event Logs are displayed.

■ **Content**

As this is a function for development, the details are not disclosed.

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Maintenance manual > Test Items > Test Function > CHECK MESSAGE							Rev.
Model	Tx300P	Issued	2015.10.30	Revised	F/W ver	1.00	Remark
<b>5.1.21 CHECK MESSAGE</b>							1.0

■ **Function**

Checks the display of error and warning message.

■ **Content**

Change the display of error / warning message with [▲]/[▼] key.

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## 5.1.22 SD CARD

### ■ Outline

Check if it is possible to access to a SD card and files in it.

- “Printing-related data” is saved in the SD card. (“Print data” is not saved.)
- Prohibit connect or disconnect other than the failure.
- In principle, use the included SD card (Panasonic 128MB/512MB). (No operation guarantee of the other cards.)
- SD card needs to be formatted in FAT format. If there is a problem with the format of the included SD card, use “FAT16 / ALC16KB” (refer 10)Included SD card initial format function “FAT16/ALC16KB”and re-format.



When run the format, data files are all deleted.

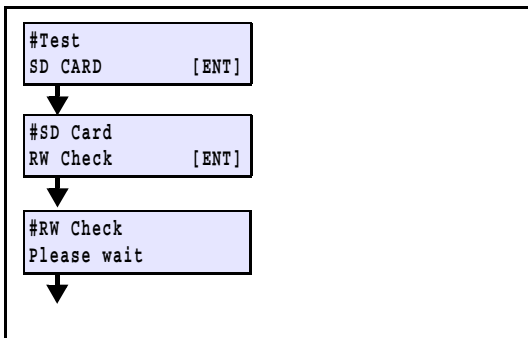
For more information about the error code, see “SD error details”, “FS error details”, and “MF error details” below.



When run the file-related test function, there is a case that unnecessary files remain on the SD card. After the test, run “Test Data Clear” (refer 8)Test File Deletion “Test Data Clear”) to delete the unnecessary files.

### 1) Read / Write Operation check “RW Check”

Check the alignment of the Write data and Read data, and display the results. Use in the process inspection.



1. Select [#Test] > [SD Card] > [RW Check].

[▲]/[▼]: Select  
[ENTER]: Execute

2. Press the [ENTER] key.
3. Wait for about 5 minutes during operation checking.



Create a test data file on the SD card, and execute the RW check three times.

4. Check the result.  
OK, if it is [OK].

Result	Result and handling
OK	The SD card is successfully accessed, and can Read and Write properly.
Error 603 Error701~788	<p>SD card-related error has occurred</p> <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB and cable.</li> </ul> <p>In case it is not reintegrated, even so,</p> <ul style="list-style-type: none"> <li>• Replace the SD card.</li> <li>• Replace the SD card PCB.</li> </ul>

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## 5.1.22 SD CARD

Result	Result and handling
Error 601~620 (Excluding Error603) Error101~513	File-related or print condition-related error has occurred <ul style="list-style-type: none"> <li>• [In case of Included SD card] Execute 10)Included SD card initial format function “FAT16/ALC16KB” and perform the format.</li> <li>[In case of the other SD cards] Execute 12)SD error details and perform the format</li> <li>• Replace the SD card.</li> </ul>

\*Refer 14)Detail of MF Error for the details of the error

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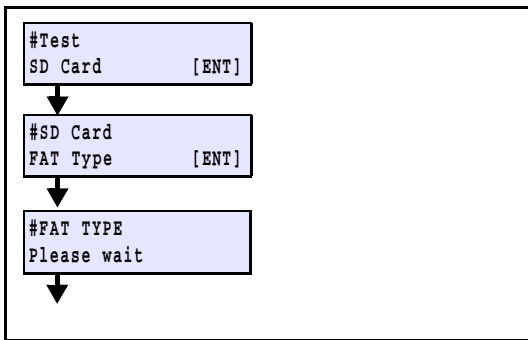
6

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### 2) Check the FAT type (Format check1) “FAT Type”

Examine the format state of the SD card and display. Use in the process inspection.



1. Select [#Test] > [SD Card] > [FAT Type].

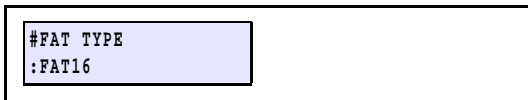
[▲]/[▼]: Select  
[ENTER]: Execute

2. Press the [ENTER] key.

3. Wait for about 1 second during the operation check.



Read the FAT information from the SD card to determine the FAT type.



4. Check the result.

OK, if it is [FAT16] or [FAT32] or [FAT12].

Default FAT type of SD card (Panasonic,128MB/512MB) for this product is [FAT16].

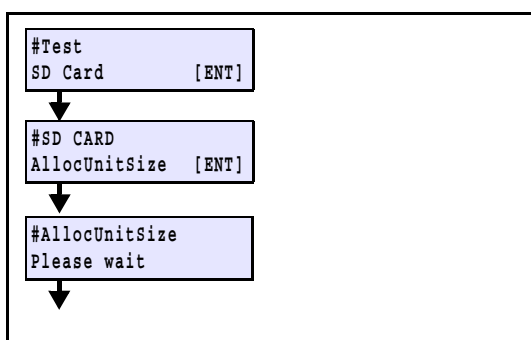
Result	Result and handling
FAT32 FAT16 FAT12	If the value is in the left, it can be used. It is formatted in FAT type that can be used in the product.
UnKnown	It is formatted in FAT type that can not be used in the product. <ul style="list-style-type: none"> <li>• Format the SD card in “FAT16/ALC16KB” refer 10)Included SD card initial format function “FAT16/ALC16KB”) “FAT16/ALC16KB” initial format function of the included SD card</li> <li>• Replace the SD card</li> </ul>
Error 1	SD card not recognized <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB and cable.</li> </ul>

Result	Result and handling
Error 2~	An error occurred while communicating with the SD card <ul style="list-style-type: none"> <li>Re-insert the SD card</li> <li>Check the connection of the SD card PCB</li> </ul> In case it is not reintegrated, even so, <ul style="list-style-type: none"> <li>Replace the SD card.</li> <li>Replace the SD card PCB.</li> </ul>

\*Refer [12\)SD error details](#) for the details of the error.

### 3) Check the Allocation unit size (Format check2) “AllocUnitSize”

Examine the format state of the SD card and display. Use in the process inspection.



```
#AllocUnitSize
:16,384[B]
```

1. Select [#Test] > [SD Card] > [AllocUnitSize].  
   [▲]/[▼]: Select  
   [ENTER]: Execute
2. Press the [ENTER] key.
3. Wait for about 1 second during the operation check.

	Read out the FAT information from the SD card to calculate the allocation unit size.
--	--

#### 4. Check the result.

Pass if the value is one of seven values between 512[B] and 32,768[B] below.

The default allocation unit size of SD card (Panasonic, 128MB/512MB) for the product is 16,384[B].

Result	Result and handling
512[B] 1,024[B] 2,048[B] 4,096[B] 8,192[B] 16,384[B] 32,768[B]	If the value is in the left, it can be used. It has been formatted with the available allocation unit size in the product.
UnKnown	Allocation unit size can not be identified. <ul style="list-style-type: none"> <li>Format the SD card in “FAT16/ALC16KB” refer <a href="#">10)Included SD card initial format function “FAT16/ALC16KB”</a> “FAT16/ALC16KB” initial format function of the included SD card</li> <li>Replace the SD card</li> </ul>
Error 1	SD card not recognized <ul style="list-style-type: none"> <li>Re-insert the SD card</li> <li>Check the connection of the SD card PCB and cable.</li> </ul>

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## 5.1.22 SD CARD

Result	Result and handling
Error 2~	An error occurred while communicating with the SD card <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB</li> </ul> In case it is not reintegrated, even so, <ul style="list-style-type: none"> <li>• Replace the SD card.</li> <li>• Replace the SD card PCB.</li> </ul>

\*Refer 12)SD error details for the details of the error.

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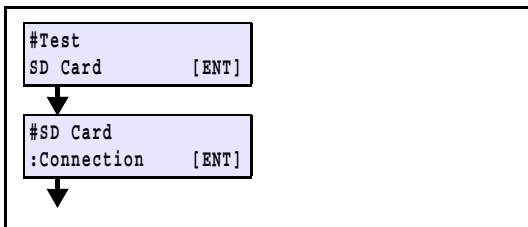
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### 4) Connect condition “Connection”

Display the result of connection process run to the SD card.

Can be used for checking insertion of SD card and cable connections.

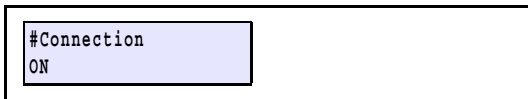


1. Select [#Test] > [SD Card] > [Connection].

[▲]/[▼]: Select  
[ENTER]: Execute

2. Press the [ENTER] key.

Run the connection start processing to the SD card.



3. Check the result.

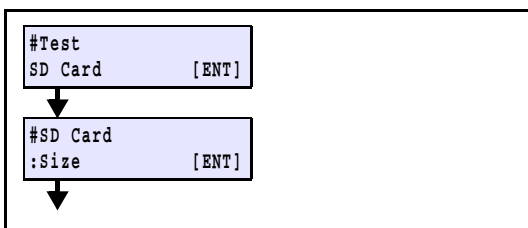
OK, if it is [ON]

Result	Result and handling
ON	Properly connected
Error 1	SD card not recognized <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of SD card PCB</li> </ul>

\*Refer 12)SD error details for the details of the error.

### 5) Check the size “Size”

Display the results of product sizes which were examined by accessing to product information on the SD card.



1. Select [#Test] > [SD Card] > [Size].

[▲]/[▼]: Select  
[ENTER]: Execute

2. Press the [ENTER] key.



- Read the card-specific information from the SD card to verify product size.
- It is different from the free space.

## 5.1.22 SD CARD

In case of 128MB

#Size	128,450,560[B]
-------	----------------

In case of 512MB

#Size	495,452,160[B]
-------	----------------

3. Check the result.

Included SD card (Panasonic) is

128MB:[128,450,560[B]]

512MB:[495,452,160[B]]

Result	Result and handling
128,450,560[B]	Properly checked the size. (128MB SD card)
495,452,160[B]	Properly checked the size. (512MB SD card)
Value other than above	Size is wrong <ul style="list-style-type: none"> <li>• Check if a SD card is for exclusive use.</li> <li>• Re-insert the SD card</li> </ul>
Error 1	SD card not recognized <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB and cable.</li> </ul>
Error 2~	An error occurred while communicating with the SD card <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB</li> </ul> In case it is not reintegrated, even so, <ul style="list-style-type: none"> <li>• Replace the SD card.</li> <li>• Replace the SD card PCB.</li> </ul>

\*Refer 12)SD error details for the details of the error.

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6) Check the minimum read access “Sector0”

Display a part of the data (fixed value of format dependent) obtained in the minimum access (512B).

```
#Test
SD Card [ENT]
↓
#SD Card
:Sector0 [ENT]
↓
```

1. Select [#Test] > [SD Card] > [Sector0].

[▲]/[▼]: Select  
[ENTER]: Execute

2. Press the [ENTER] key.



Read the data of the sector No.0 from the SD card.  
Display the data of 4Byte amount from 508th Byte.  
(If it is FAT format \*\*\*\* 55aa fixed)

#Sector0	000055aa
----------	----------

3. Check the result.

The value of the included SD card (Panasonic 128MB/512MB) is [000055aa]

Result	Result and handling
000055AA	Properly checked the size
Value other than above	Format of the SD card is wrong. <ul style="list-style-type: none"> <li>• Format the SD card in “FAT16/ALC16KB” refer 10)Included SD card initial format function “FAT16/ALC16KB” “FAT16/ALC16KB” initial format function of the included SD card</li> </ul>
Error 1	SD card not recognized <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB and cable.</li> </ul>

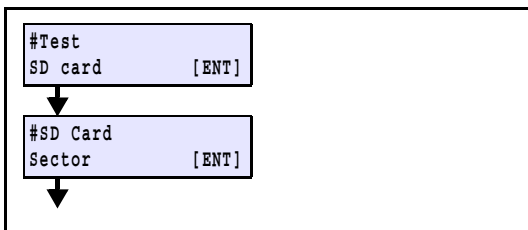
## 5.1.22 SD CARD

Result	Result and handling
Error 2~	An error occurred while communicating with the SD card <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB</li> </ul> In case it is not reintegrated, even so, <ul style="list-style-type: none"> <li>• Replace the SD card.</li> <li>• Replace the SD card PCB.</li> </ul>

\*Refer 12)SD error details for the details of the error.

### 7) Specified sector Read access confirmation “Sector”

The display designated address of the data (4 bytes) obtained by accessing the specified sector (512MB).



1. Select [#TEST] > [SD Card] > [Sector].

[▲]/[▼]: Select  
[ENTER]: Execute

2. Press the [ENTER] key.

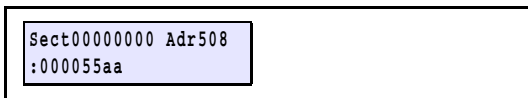
3. Specify the sector number to access.

[◀]/[▶]: Digit selection (0-8 digits)  
[▲]/[▼]: Value selection (0-9)  
[ENTER]: Confirm

4. Specify the address of the sector to be accessed. (4-byte units)

[▲]/[▼]: Selected value (0 to 508,4-byte unit)  
[ENTER]: Confirm

5. Press the [ENTER] key.



Display 4Byte data which are read from specified sector and specified address of the SD card.

6. Check the result.

The value of the included SD card (Panasonic128MB) is [000055aa]at the specified sector[010000] and specified address[508]

Result	Result and handling
#####	Check the value of specified sector and specified address before and confirm if the value is obtained successfully or not.
Error 1	SD card not recognized <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB and cable.</li> </ul>

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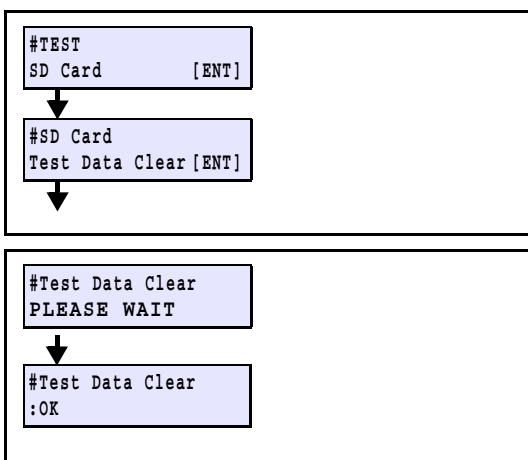
## 5.1.22 SD CARD

Result	Result and handling
Error 2~11	An error occurred while communicating with the SD card <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB</li> </ul> In case it is not reintegrated, even so, <ul style="list-style-type: none"> <li>• Replace the SD card.</li> <li>• Replace the SD card PCB.</li> </ul>

\*Refer 12)SD error details for the details of the error.

### 8) Test File Deletion “Test Data Clear”

Delete all the files in the following names that are on the SD card. “SDF\*\*\*\*\*.\*\*\*” (Files that begin with SDF).



1. Select [#TEST] > [SD Card] > [Test Data Clear].

[▲]/[▼]: Select  
[ENTER]: Execute

2. Search the root directory of the SD card, and delete the file with the name beginning with “SDF”

3. Check the result.

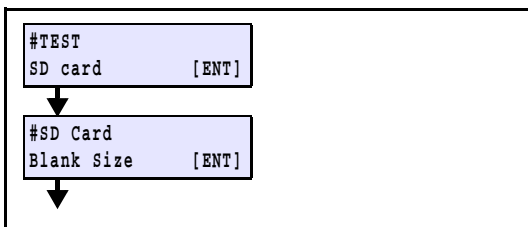
If [OK], there is no file with the name beginning with “SDF” in the root directory of the SD card..

Result	Result and handling
OK	Deleted the test file successfully
Error 1	SD card-related error has occurred <ul style="list-style-type: none"> <li>• Run the test function 1) to 5) to confirm and handle the error content.</li> </ul>
Error 2	File-related error has occurred <ul style="list-style-type: none"> <li>• Run the test function 1) to 5) to confirm and handle the error content.</li> </ul>

\*Refer 13)Detail of FS Error for the details of the error.

### 9) SD card free space check function “Blank Size”

Check the free capacity of the SD card and display.



1. Select [#TEST] > [SD Card] > [Blank Size].

[▲]/[▼]: Select  
[ENTER]: Execute

2. Press the [ENTER] key.

Check the free space by reading the format information from the SD card.



It is different from the SD card product size.

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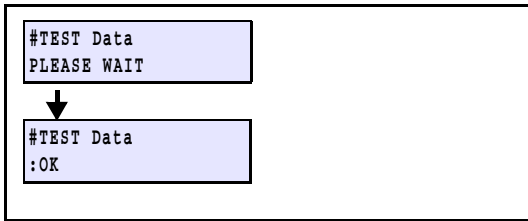
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## 5.1.22 SD CARD



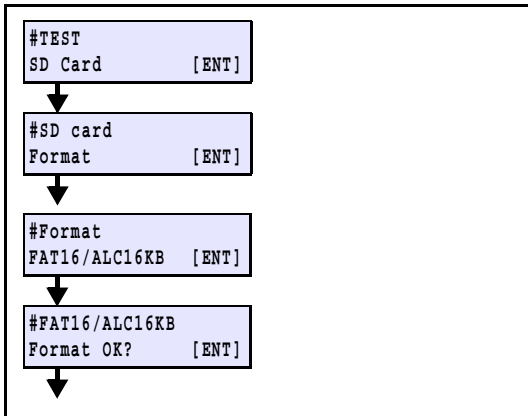
The free space of the included SD card (Panasonic) is as follows, when the SD card is formatted in “FAT16/ALC16KB”  
 128MB SD card: “128,352,256[B]”  
 512MB SD card: “493,335,008[B]”.

Result	Result and handling
###,###,###[B]	Free space was successfully verified
Error 1	Occurred SD card-related errors <ul style="list-style-type: none"> <li>Run the test function 1) to 5) to confirm and handle the error content.</li> </ul>
Error 2	File-related error has occurred <ul style="list-style-type: none"> <li>Run the test function 1) to 5) to confirm and handle the error content.</li> </ul>

\*Refer 13)Detail of FS Error for the details of the error.

### 10) Included SD card initial format function “FAT16/ALC16KB”

Run the format of the same content as the included SD card.



1. select [#TEST] > [SD Card] > [Format] > [FAT16/ALC16KB].  
 [▲]/[▼]: Select  
 [ENTER]: Execute

2. Press the [ENTER] key.

3. Execution confirmation screen is displayed.

4. Press the [ENTER] key.

5. Check the result.

If OK, formatting is complete.

Result	Result and handling
OK	Format has been successfully completed.
Error 1	Occurred SD card-related errors <ul style="list-style-type: none"> <li>Run the test function 1) to 5) to confirm and handle the error content.</li> </ul>
Error 2	File-related error has occurred <ul style="list-style-type: none"> <li>Try the format with “AUTO”.                      (refer 11)Recommended conditions automatically identified format function “AUTO”) Recommended conditions automatically identified format function “AUTO”)</li> </ul> If it still does not recover, <ul style="list-style-type: none"> <li>Replace the SD card.</li> </ul>

\*Refer 13)Detail of FS Error for the details of the error.

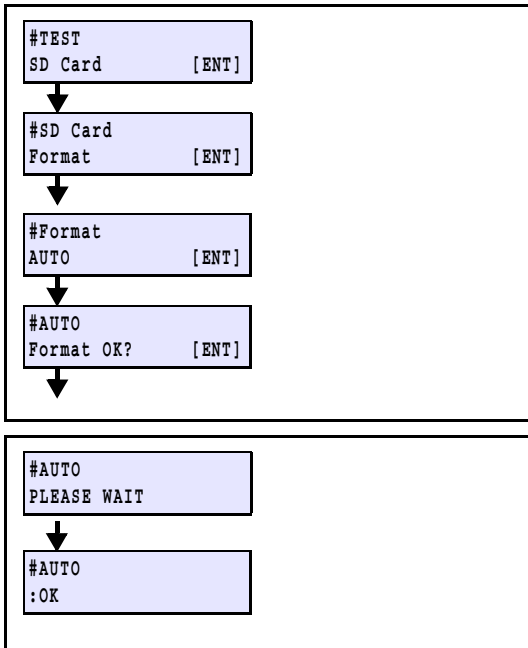
## 5.1.22 SD CARD

### 11) Recommended conditions automatically identified format function “AUTO”

Depending on the size of the SD card, it runs the format by the recommended conditions are automatically identified.



When reformatting the product equipped with SD card, it is recommended to use FAT16/ALC16KB. Refer 10)Included SD card initial format function “FAT16/ALC16KB”  
Initial format function of included SD card “FAT16/ALC16KB”



1. select [#TEST] > [SD Card] > [Format] > [AUTO].  
[▲]/[▼]: Select  
[ENTER]: Execute
2. Press the [ENTER] key.
3. Execution confirmation screen is displayed.
4. Press the [ENTER] key.
5. Check the result.

If OK, formatting is complete.

Result	Result and handling
OK	Format has been successfully completed.
Error 1	SD card-related error has occurred • Run the test function 1) to 5) to confirm and handle the error content.
Error 2	File-related error has occurred • Try the format of “FAT16/ALC16KB” refer 10)Included SD card initial format function “FAT16/ALC16KB” If it still does not recover, • replace the SD card.

\*Refer 13)Detail of FS Error for the details of the error.

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**5.1.22 SD CARD**

## 12) SD error details

Summarize the error related to access to the SD card below.

Error1 is when SD card is not recognized when it is not inserted or bad connection.

Error2 or later errors (which are connected to) are the communication error with the SD card.

Error code (Error #)	Result and handling
1	SD card not recognized <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB and cable.</li> </ul>
2	An error occurred while communicating with the SD card <ul style="list-style-type: none"> <li>• Re-insert the SD card</li> <li>• Check the connection of the SD card PCB</li> </ul> <p>In case it is not reintegrated, even so,</p> <ul style="list-style-type: none"> <li>• Replace the SD card.</li> <li>• Replace the SD card PCB.</li> </ul>

Detail of Error code

Error code (Error #)	Error Category	Error content
1	Connection	SD card not recognized
2-10	(not used)	
11	Internal processing	Abnormality occurs in IO control processing
12	Internal processing	Can not be written due to write-protected <supplement> In fact it does not occur because this product does not distinguish write-protect
13	Internal processing	Data inaccessible for the connection process is not completed
14	Internal processing	It was set outside the range of parameter values
15-20	(not used)	
21	Communication Error (DMA Read)	Start bit abnormal (SD controller error)
22	Communication Error (DMA Read)	Receive FIFO over run (SD controller error)
23	Communication Error (DMA Read)	Data time out (SD controller error)
24	Communication Error (DMA Read)	Data CRC abnormal (SD controller error)
25	Communication Error (DMA Read)	Other error (SD controller error)
26	Communication Error (DMA Read)	It did not become a data communication state (at the start of communication)
27	Communication Error (DMA Read)	It did not become data communication possible state (communication at the end)
28	Communication Error (DMA Read)	Read Start command is not accepted
29	Communication Error (DMA Read)	The waiting time of reception completion is time out.
30	Communication Error (DMA Read)	The waiting time of DMA completion interrupt is timeout
31	Communication Error (DMA Read)	The waiting time of DMA CH0 stop is timeout
32-40	(not used)	
41	Communication Error (DMA Write)	Start bit abnormal (SD controller error)

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**5.1.22 SD CARD**

Error code (Error #)	Error Category	Error content
42	Communication Error (DMA Write)	Transmission FIFO under run (SD controller error)
43	Communication Error (DMA Write)	Data time out (SD controller error)
44	Communication Error (DMA Write)	Data CRC abnormal (SD controller error)
45	Communication Error (DMA Write)	Other error (SD controller error)
46	Communication Error (DMA Write)	It did not become a data communication state (at the start of communication)
47	Communication Error (DMA Write)	It did not become data communication possible state (communication at the end)
48	Communication Error (DMA Write)	Write start command is not accepted
49	Communication Error (DMA Write)	The waiting time of Transmission completion is timeout
50	Communication Error (DMA Write)	The waiting time of SD controller complete interrupt is timeout
51	Communication Error (DMA Write)	The waiting time of DMA completion interrupt is timeout
52	Communication Error (DMA Write)	The waiting time of DMA CH0 stop is timeout
53-60	(not used)	
61	Communication Error (CPU Read)	Start bit abnormal (SD controller error)
62	Communication Error (CPU Read)	Send FIFO under run (SD controller error)
63	Communication Error (CPU Read)	Data time out (SD controller error)
64	Communication Error (CPU Read)	Data CRC abnormal (SD controller error)
65	Communication Error (CPU Read)	Other error (SD controller error)
66	Communication Error (CPU Read)	It did not become a data communication state (at the start of communication)
67	Communication Error (CPU Read)	It did not become data communication possible state (communication at the end)
68-80	(not used)	
81	Communication Error (CPU Write)	Start bit abnormal (SD controller error)
82	Communication Error (CPU Write)	Send FIFO under run (SD controller error)
83	Communication Error (CPU Write)	Data time out (SD controller error)
84	Communication Error (CPU Write)	Data CRC abnormal (SD controller error)
85	Communication Error (CPU Write)	Other error (SD controller error)
86	Communication Error (CPU Write)	It did not become a data communication state (at the start of communication)
87	Communication Error (CPU Write)	It did not become data communication possible state (communication at the end)
88	Communication Error (CPU Write)	Write start command is not accepted
89-100	(not used)	
101	Data conveyors	Write value and Read value is mismatched

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## 5.1.22 SD CARD

### 13) Detail of FS Error

Summarize the error which is related to the file access as below.

- Error1 is the SD card-related errors.
- Error2 and later are file / format related errors (can access to the SD card).

Error code (Error #)	Result and handling
1	SD-related error has occurred. <ul style="list-style-type: none"> <li>• Run the test function 1) to 5) to confirm and handle the error content.</li> </ul>
2	File / format-related errors are occurred. <ul style="list-style-type: none"> <li>• Run the test function 1) to 5) to confirm and handle the error content.</li> </ul>

### 14) Detail of MF Error

Summarize the error which is related to access to the printing-related data file below.

- Error603 and Error701~788 is SD card-related error. (Such as not inserted, bad connection, or poor communication)  
Re-inserting the SD card, replacing the SD card, or confirming the SD card slot connection can solve most of the errors.
- Error601~620 is file-related error. (Such as no specified file or not enough free space)  
The SD card is accessed.  
Reformatting the SD card can solve most of the errors.  
However, when the SD card is reformatted, all the files will be deleted.  
If print condition data has been downloaded on the SD card, the print condition data needs to be downloaded again.
- Error101~513 is print condition data file-related error. (Such as abnormal size and broken data)  
The SD card is accessed.  
Reformatting the SD card can solve most of the errors.  
However, when the SD card is reformatted, all the files will be deleted.  
If print condition data has been downloaded on the SD card, the print condition data needs to be downloaded again.

Error code (Error #)	Result and handling
603 701~788	SD-related error has occurred. <ul style="list-style-type: none"> <li>• Run the test function 2) to 5) to confirm and handle the error content.</li> </ul>
601~620	File / format-related errors are occurred. <ul style="list-style-type: none"> <li>• Run the test function 2) to 5) to confirm and handle the error content.</li> <li>• In the process inspection, reformat using the format function in 10).</li> <li>• After the installation, reformat using the format function in 10), and download the printing-related data again.</li> </ul>
101~513	Occurred data-related errors <ul style="list-style-type: none"> <li>• Run the test function 2) to 5) to confirm and handle the error content.</li> <li>• In the process inspection, reformat using the format function in 10).</li> <li>• After the installation, reformat using the format function in 10), and download the printing-related data again.</li> </ul>

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## 5.1.23 POTENTIO METER

### ■ Outline

The A/D value of the potentiometer and the currently recognized height are displayed here.

### ■ Content

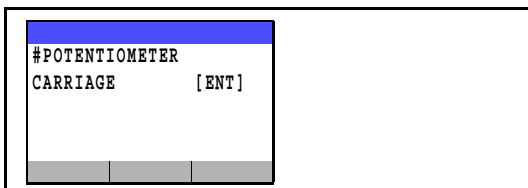
- Height range:From 2.0 to 7.0mm

The 2.0 mm and 7.0 mm positions represent the lowest and the highest points registered in [#ADJUST] > [POTENTIOMETER]. See 4.2.7

- When a station error occurs, the value separated from the judgment margin is displayed.

### ■ Work procedures

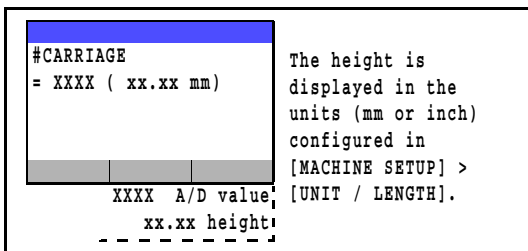
- The height of the potentiometer of the carriage are displayed.



1. Select [#TEST] > [POTENTIOMETER] > [CARRIAGE].

[▲]/[▼]: Select

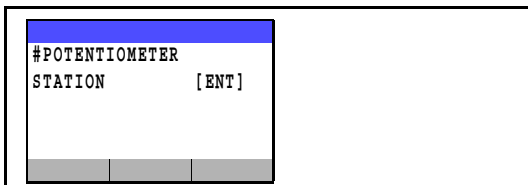
[ENTER]: Confirmation



2. The A/D value and the height of the potentiometer of the carriage are displayed.

The allowed range including the judgment margin  
: from 1.87 to 7.13mm

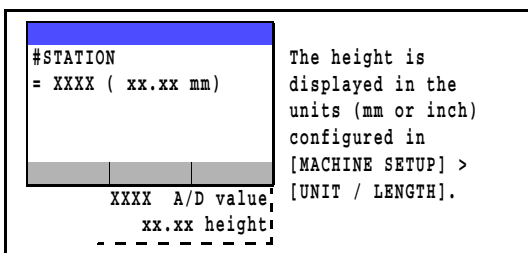
- The height of the potentiometer of the station are displayed.



1. Select [#TEST] > [POTENTIOMETER] > [STATION].

[▲]/[▼]: Select

[ENTER]: Confirmation



2. The A/D value and the height of the potentiometer of the station are displayed.

The allowed range including the judgment margin  
: from 1.00 to 7.26mm

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## Test Items

**5.1  
Test Function**

**5.2  
Other Test**

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## Disassembly and Reassembly

**6.1  
Covers**

**6.2  
Ink-related Parts**

**6.3  
Drive System**

**6.4  
Electrical Parts**

**6.5  
Sensors**

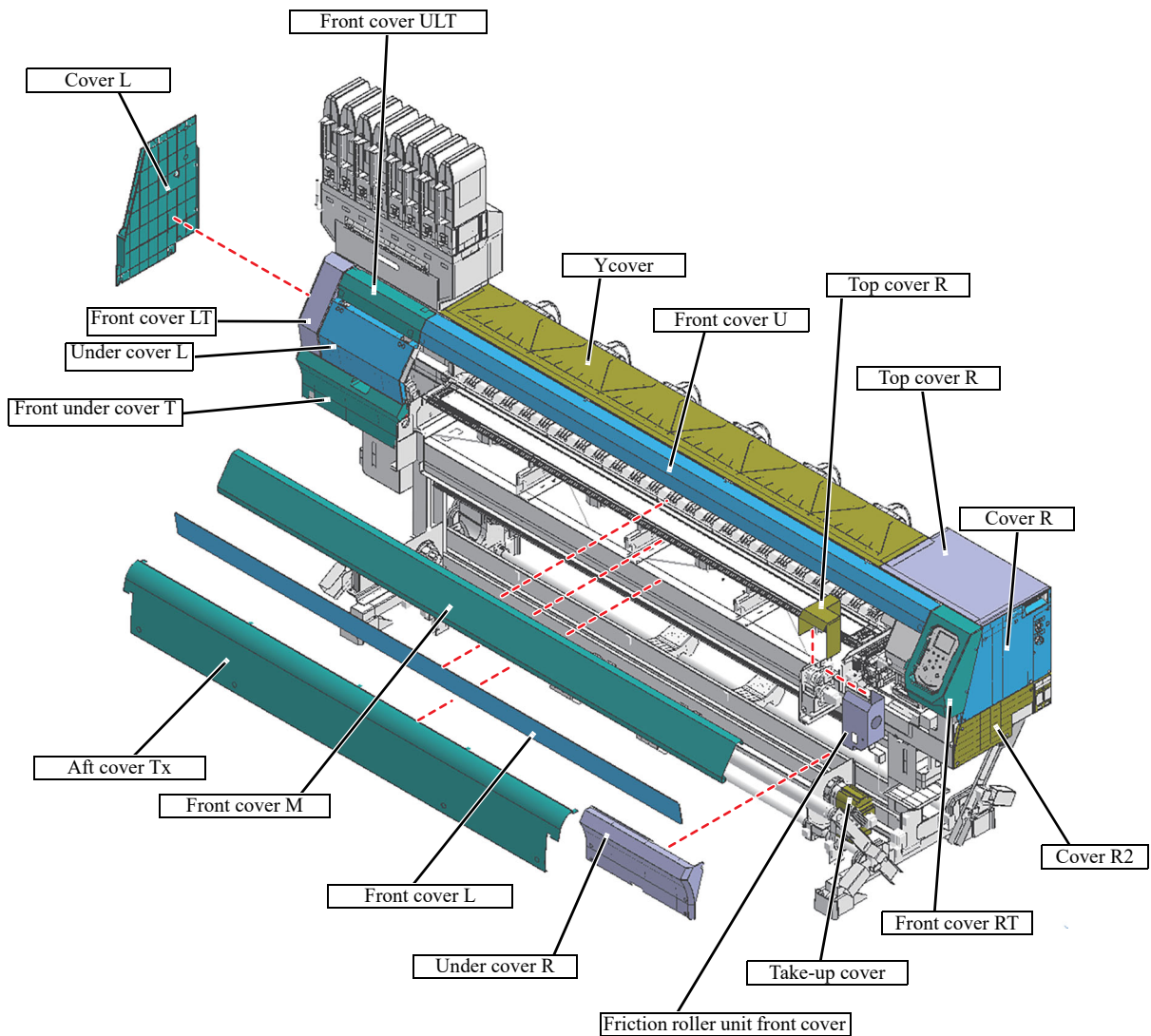
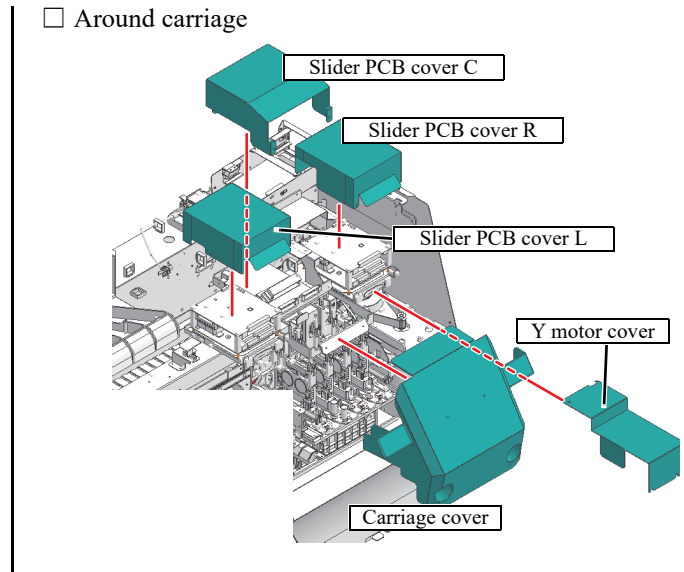
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# 6.1.1 Cover Layout

## Machine Front



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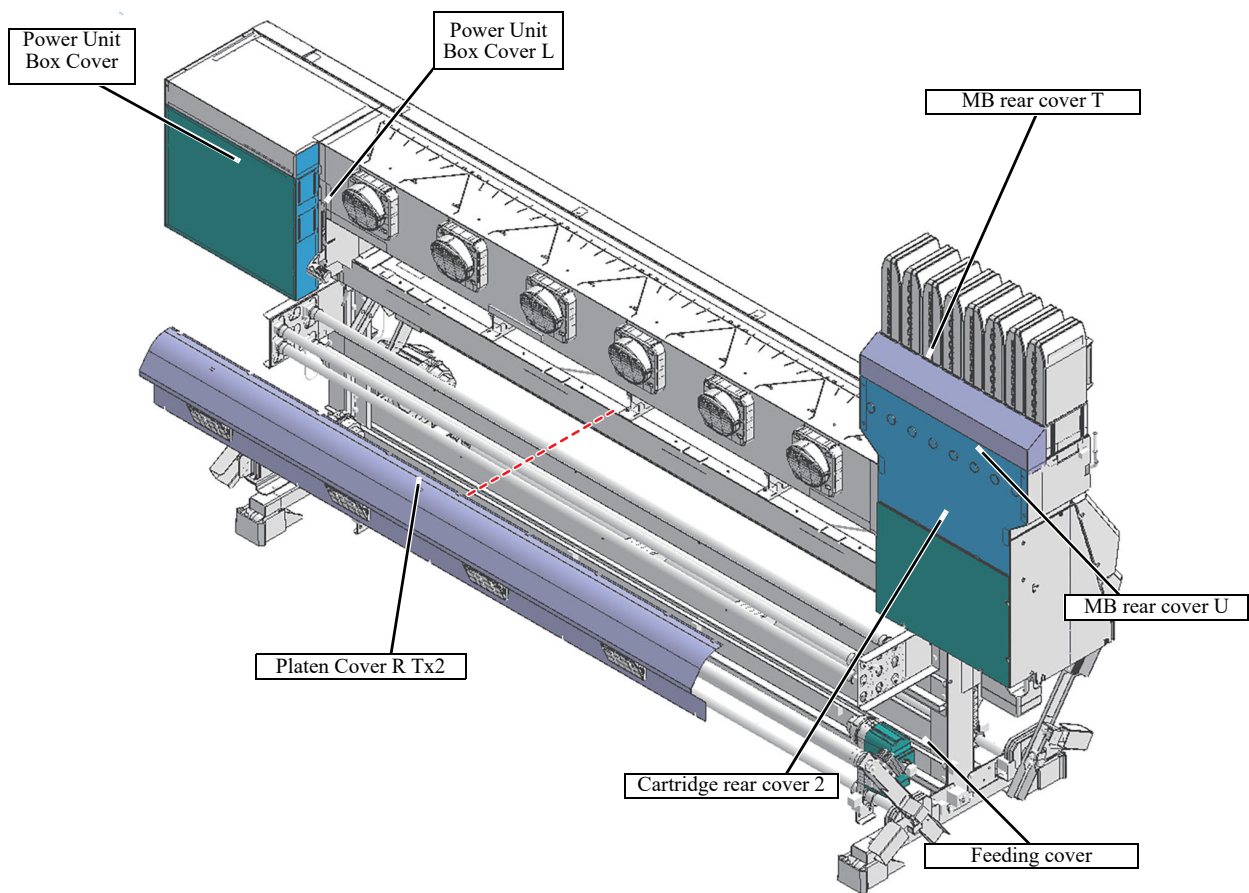
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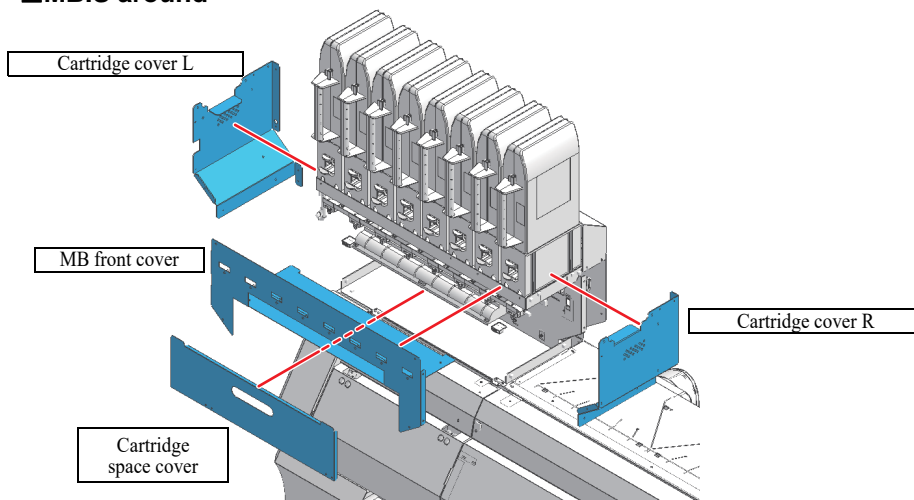
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# 6.1.1 Cover Layout

## Machine Rear



### MBIS around



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	When fixing the cover, put it inside of the washer of loosened screw and tighten the screw.	
	<p>OK: The washer of the screw is outside of the cover.</p>	<p>Not Good: The washer of the screw is inside of the cover.</p>

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## Disassembly and Reassembly

6

**6.1**  
**Covers**

**6.2**  
**Ink-related Parts**

**6.3**  
**Drive System**

**6.4**  
**Electrical Parts**

**6.5**  
**Sensors**

7

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## 6.2.1 Head Unit

### ■ Work procedures



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

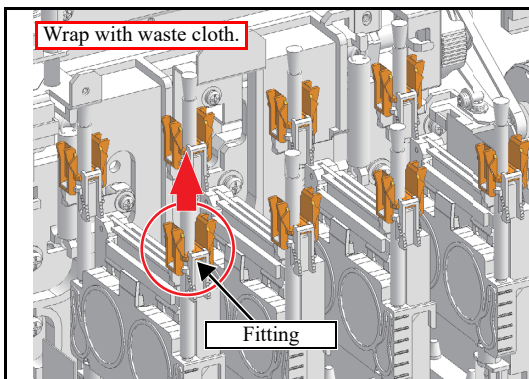
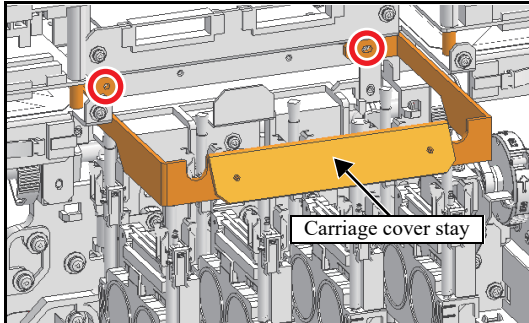


Be sure to wear protective glasses and working gloves during the operation.  
Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.



Maintenance head is switched from M015880-00 to M015885-00.  
(Refer to the Tech-Info No.2002)

1. Perform [#ADJUST] > [HEAD WASH] > [DISCHARG] and discharge ink.
2. Turning the power off.
3. Remove the following cover.  
Front cover U / M, Carriage cover, and Slider PCB cover L / C / R
4. Move the print head carriage onto the platen to make your work easy.
5. Remove the **Carriage cover stay**. (screwx2)
6. Cleaning of the head unit.  
(Refer to “3.1.1 Replacement of the Head Unit”)

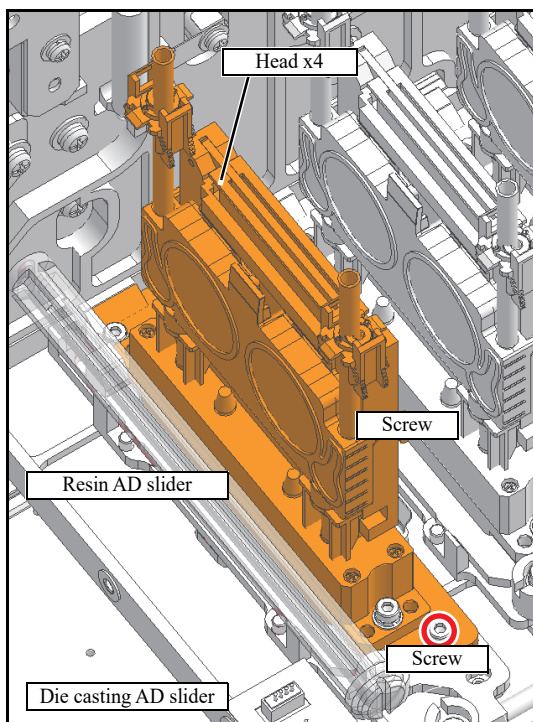


7. Remove the FFC from HCB PCB Assy.
8. Remove the  **fittings** (x8) at top of the damper and wrap with waste cloth.




- Place the waste cloth around the head unit so as not to contaminate the platen.
- Do not lose the rubber (seal) between fitting.

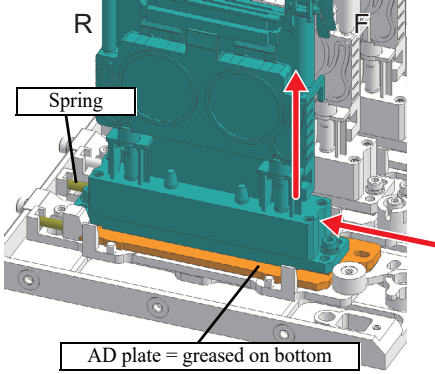
## 6.2.1 Head Unit



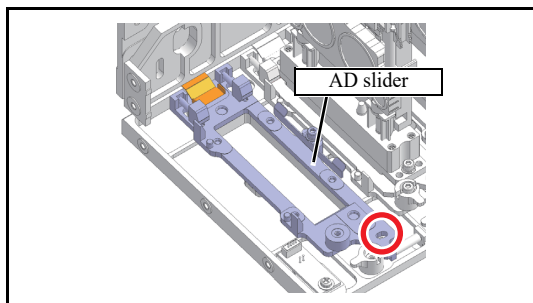
9. Remove the **Head Assy.** (x4) with the damper. (screws x1 each)



- Remove the head while holding it down to the rear direction.
- Grease is applied to the back of AD plate. Be careful not to adhere to the nozzle surface.

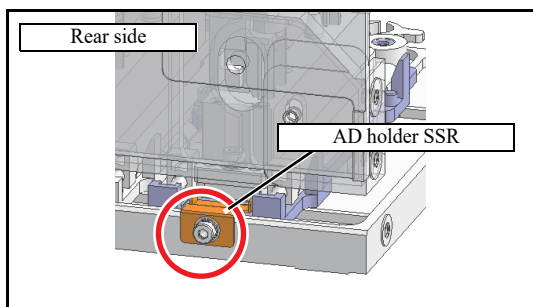


- Work procedure for resin AD slider  
(This work is not required for the machines after #667, which apply resin AD slider. Go to step 20.)




10. Remove the **FFC.**

11. Loosen the screw (CS3x8SMW cap bolt x1) that fixes **AD slider.**



12. Release the **AD holder SSR.** (CS3x8SMW cap boltx1)



- Work in the back of the printer.
- Move the carriage by hand, loosening the bolt from the clamping gap on the back of the printer.

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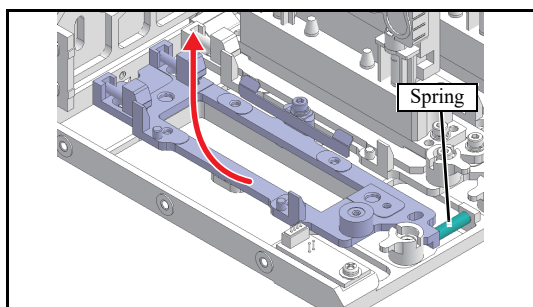
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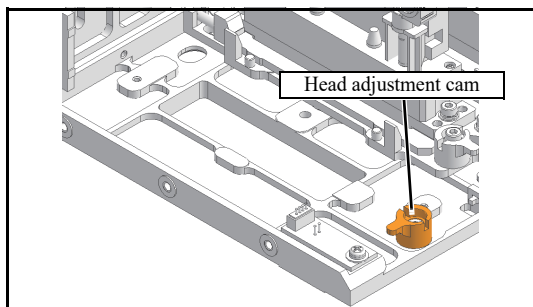
## 6.2.1 Head Unit



13. Remove the **AD slider**. Remove it by pulling up.



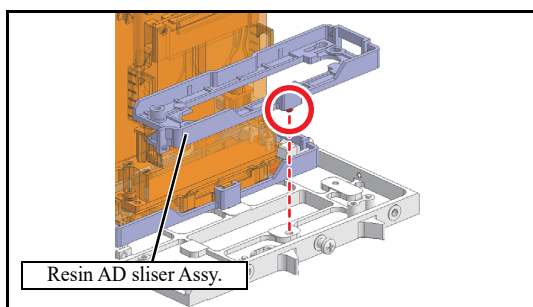
When removing, be careful not to skip the **spring** (M801340 BuescherSP34 x1). Spring is discarded.



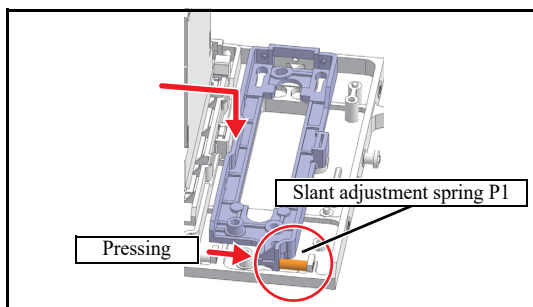
14. Remove the **Head adjustment cam**. (screw x1)



- Discard the head adjustment cam (M603989-01).
- Screw to re-use. (CS3x8SMW Cap bolt x1)



15. Plug the convex portion of **resin AD slider Assy.** (bottom) to the base side hole.

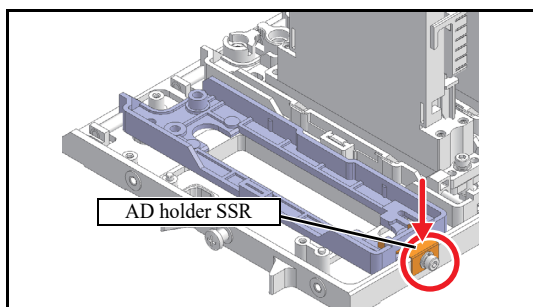


16. Attach the **slant adjustment spring P1** (M802550) to the resin AD slider Assy.

Fit **resin AD slider Assy.**



To fit while pressing in the direction shown in the figure on the left (in the direction of the spring).



17. Fix **AD holder SSR**. (CS3x8SMW Cap boltx1)



Fix while pressing in the direction shown in the figure on the left (downward direction)

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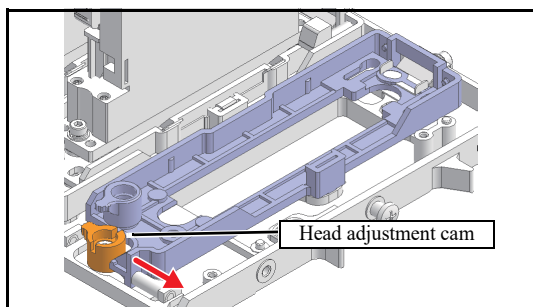
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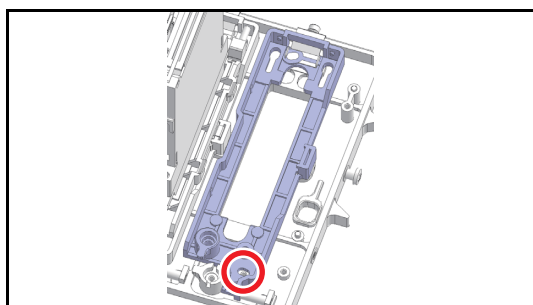
## 6.2.1 Head Unit



18. Install **head adjustment cam** (M603989-02).  
(CS3x8SMW Cap bolt)



Mounting while pressing the resin AD slider in the direction shown in the figure on the left.



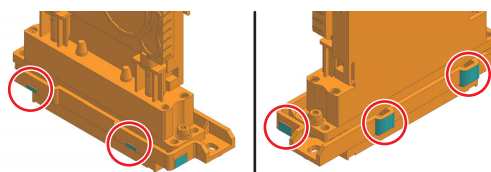
19. Attach the **resin AD slider Assy.** (CS3x8SMW Cap bolt)

20. For other assembly, perform the assembly by reversing the disassembly procedure.

Mount the covers after checking the normal start-up and the head adjustment.



Apply a grease (LONGTERM) in the following five points of head Assy.



After mounting, move the head Assy. to the right, left, front and back to adapt the grease.



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

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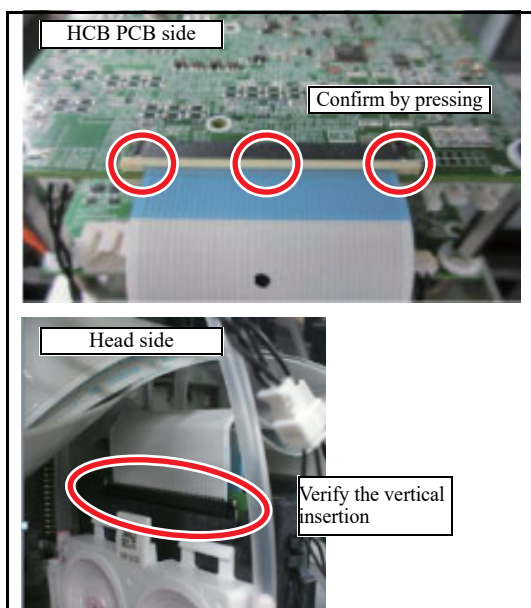
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## 6.2.1 Head Unit

□ Mount the head FFC

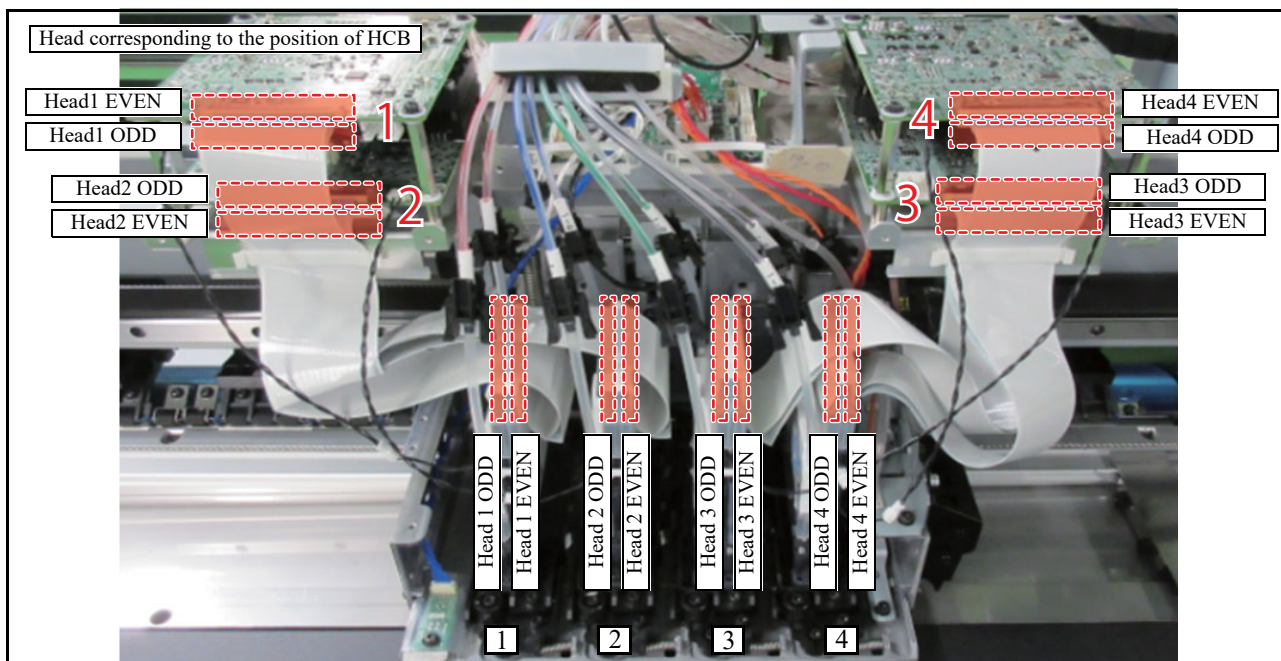
**In case of HCB PCB (4 pcs).**



(1) Attach the FFCs to the HCB PCB side connectors and the head side connectors.



- Be careful to connect each HCB PCB to proper head.
- Confirm the connector lock.
- Check if the Head-side connector is inserted vertically.



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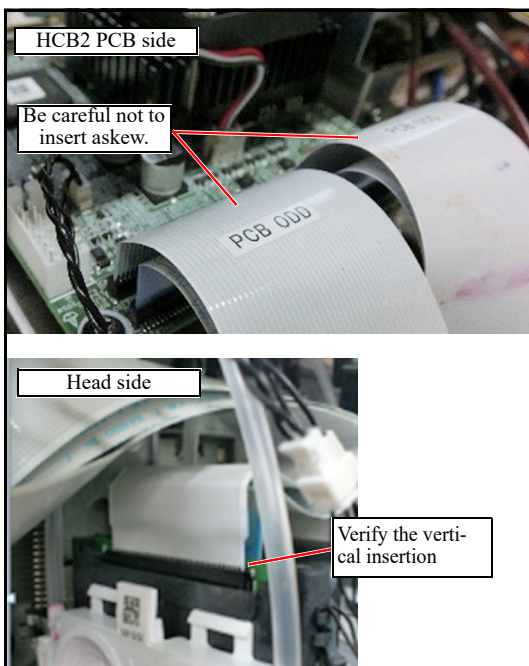
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## 6.2.1 Head Unit

In case of HCB2 PCB (2 pcs).



(1) Attach the FFCs to the HCB2 PCB side connectors and the head side connectors.

Attach the modified FFC to the connectors at HCB2 PCB side and the head side. (See the below figure.)



- Be careful to connect each HCB PCB to proper head.
- Check if the Head-side connector is inserted vertically.

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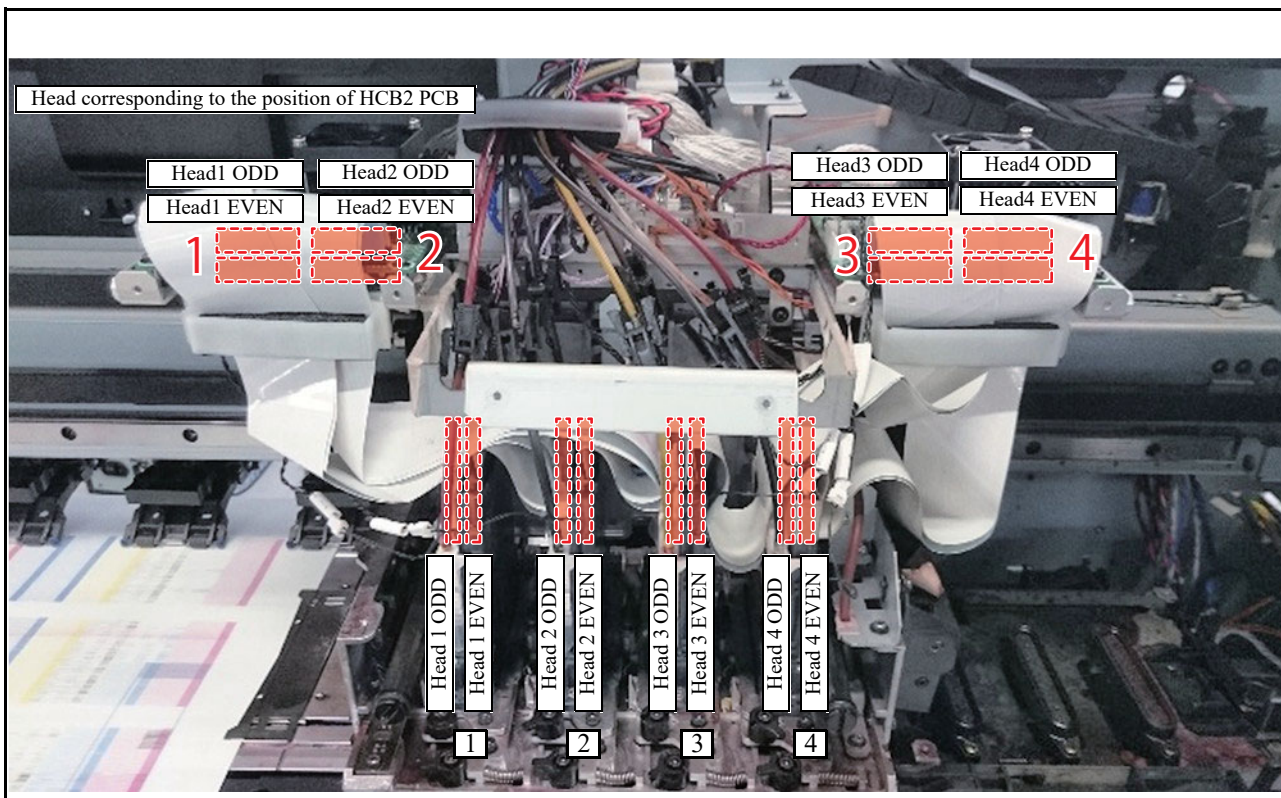
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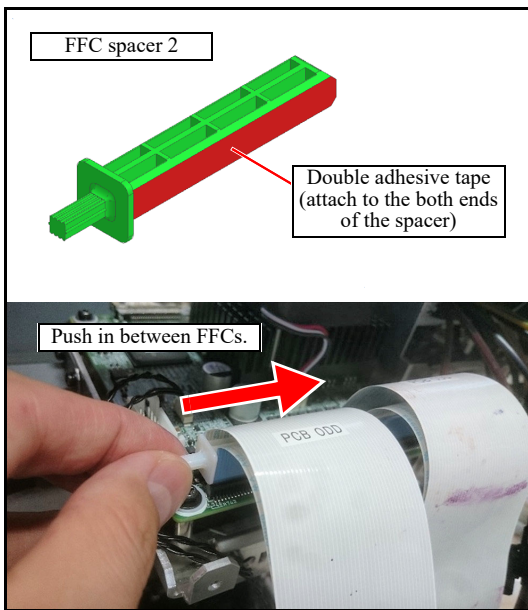
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## 6.2.1 Head Unit



(2) Attach the FFC spacer 2 to the connector at HCB PCB side.

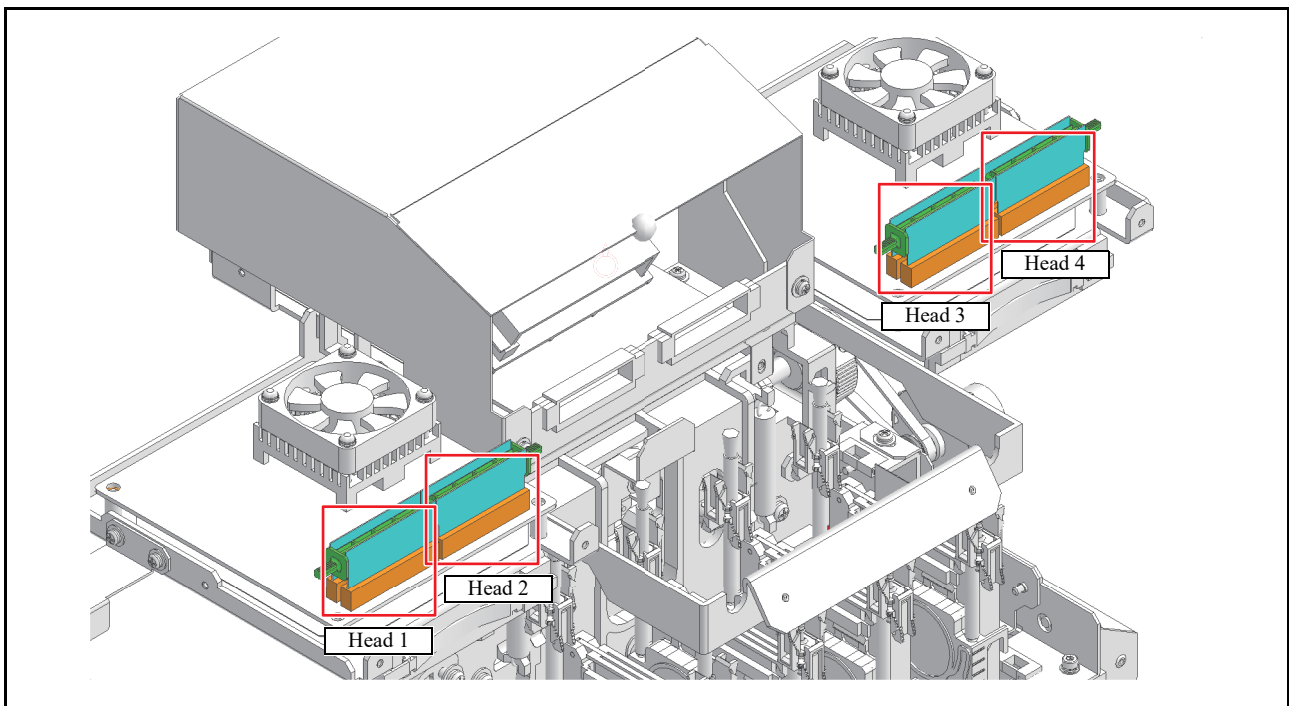
Peel off the paper liner at the both sides of the spacer. Attach the spacer in between FFCs near the connector of HCB2 PCB.

HEAD1, 3: Put the spacer from the left side of FFC.

HEAD2, 4: Put the spacer from the right side of FFC.



When attaching the spacer between FFCs, push the spacer while facing the double adhesive tape surfaces up/down and then turn 90 degrees (the double adhesive tape surfaces turn into a horizontal direction). Then stick to FFC.



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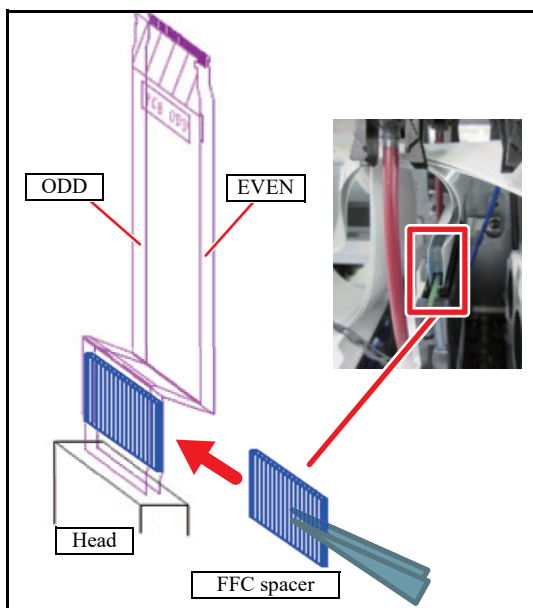
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## 6.2.1 Head Unit

\* The following procedures are common to HCB PCB and HCB2 PCB.



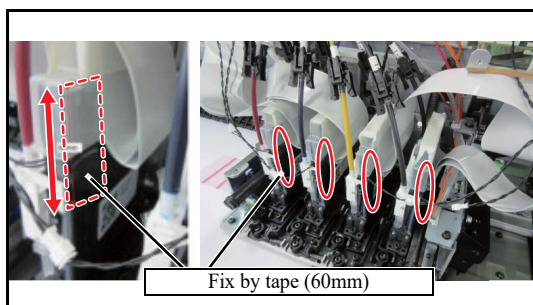
(3) Paste the FFC spacer (x4).

Peel off the release paper of the both side of the spacer.

Grasp the spacer with tweezers, and paste between the head side FFC's.



After pasting the spacer, be careful so as not to stick to a different location, missing FFC, or tilting FFC.



(4) Fix the head cap by tape.

Attach the head cap (x4).

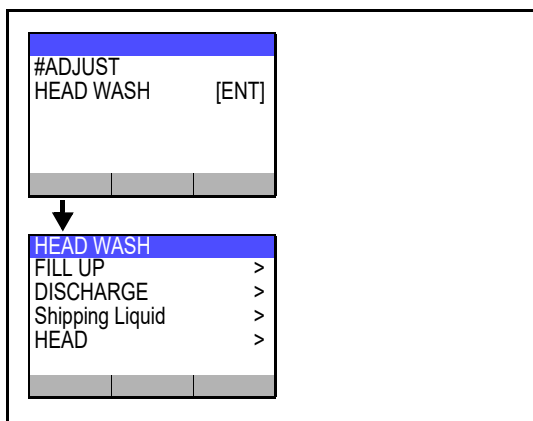
Paste the 60mm length cellophane tape (width 18mm recommended) to fix the head and the cap.

21. Turn on the main power.

Confirm the normal start-up. (It is OK if the local screen is displayed without the errors of HCB or head related.)



When the errors of HCB or head related occur: at first check the connection of the head FFC. For more information, see "7.1.2 List of Error Messages"



22. Perform Head Wash with the Jig.

(refer to "3.1.1 Replacement of the Head Unit" Head alone cleaning Procedure)

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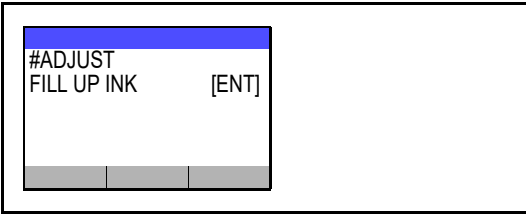
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## 6.2.1 Head Unit




23. Perform [#ADJUST] > [FILL UP INK] and fill ink in the damper.

For more information, refer to “4.2.20 FILL UP INK”.

24. Perform the head adjustment.


	Adjustment	Ref.
1. <input type="checkbox"/>	Head rank adjustment	4.2.13
2. <input type="checkbox"/>	Head slant adjustment	4.2.2
3. <input type="checkbox"/>	Correction of dot position (Press the key [#ADJUST])	4.2.4
4. <input type="checkbox"/>	Correction of dot position (Press the key [MAINTENANCE])	

25. Attach the covers.




**IMPORTANT**

When carriage cover is attached, confirm the head FFC is on the cover.



Left side



Right side

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## 6.2.2 Damper

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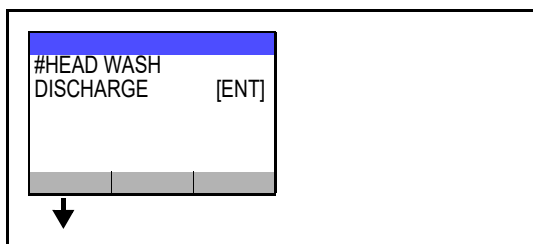
### ■ Work procedures



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



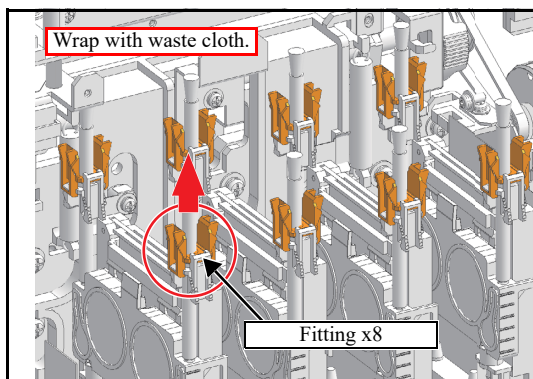
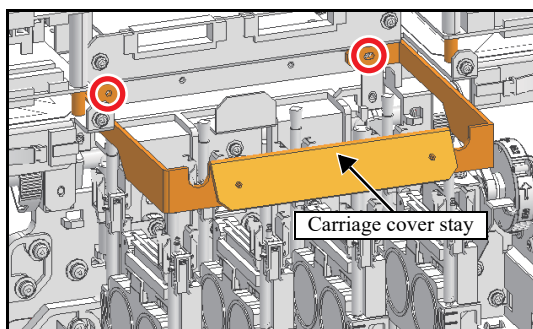
Be sure to wear protective glasses and working gloves during the operation.  
Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.



1. Select [HEAD WASH] > [DISCHARGE].

For more information, refer to "4.2.11 HEAD WASH" - "DISCHARGE".

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. Remove the **Carriage cover stay**. (screwx2)



6. Remove the **Fittings** (x8) and wrap with waste cloth.



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

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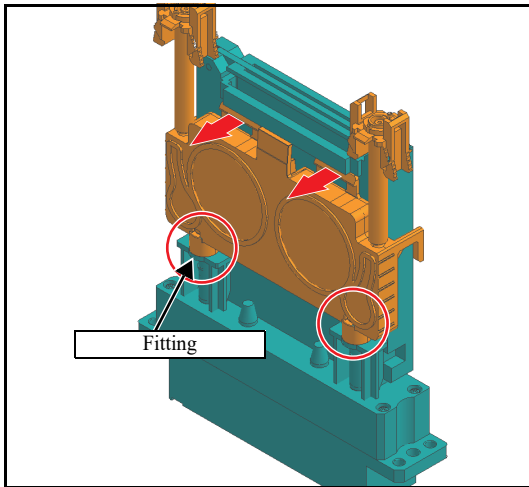
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## 6.2.2 Damper



7. Remove the damper from the fittings.



Remove the stopper (x2) of the top and remove the damper by lifting it up slowly.

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8. Perform the assembly by reversing the disassembly procedure.



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

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9. Perform [HEAD WASH] > [FILLUP] and fill ink in the damper.

For more information, refer to "4.2.11 HEAD WASH" - "FILL UP".

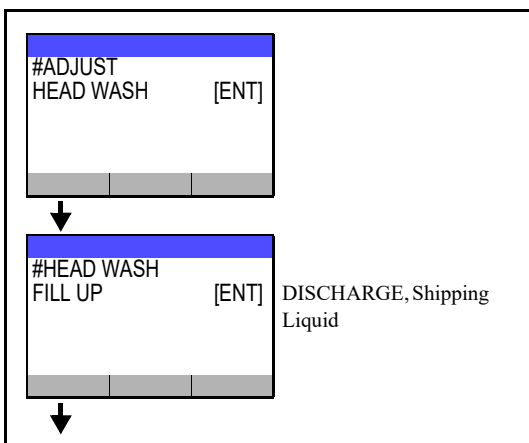
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## 6.2.3 Cleaning Liquid Valve

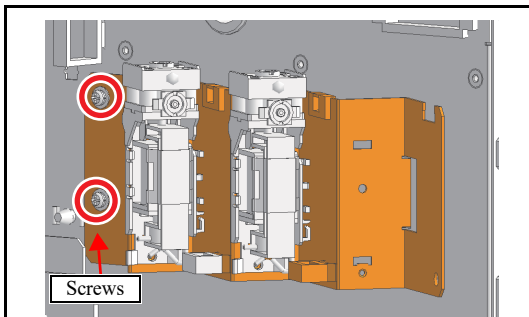
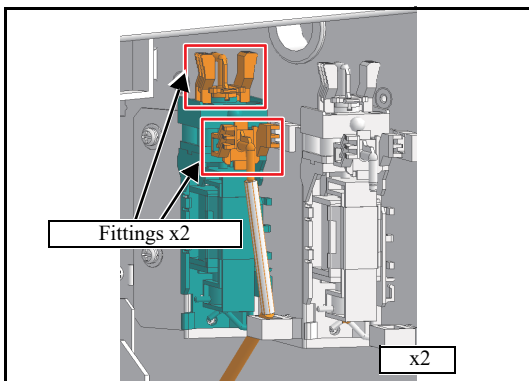
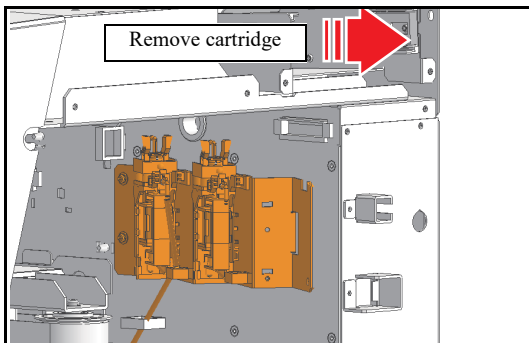
### ■ Work procedures



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



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



1. Remove the **Front cover M, L** and **Cover R**.

2. Remove the **Cleaning liquid cartridge**.

3. Discharge the cleaning liquid in the tube.

4. Turning the power off.

5. Remove the **Fittings** (x4).

Remove the **Connector**.

\*In case of Tx300P-1800MkII, remove the Fittings (x6).

6. Remove the **Valve BKT**. (Screw x2)

7. Remove the **Valve** (x2) from the Valve BKT.

\*In case of Tx300P-1800MkII, remove the Valves (x3).

8. Reverse the disassembly procedure for reassembly.



After the work, check the operation for any mistakes in the connector installation.

Refer to “5.1.10 #MAINT.CART. VALVE” for details.

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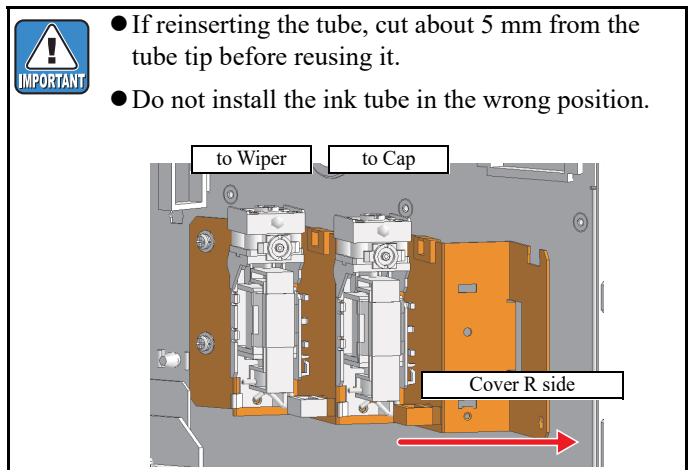
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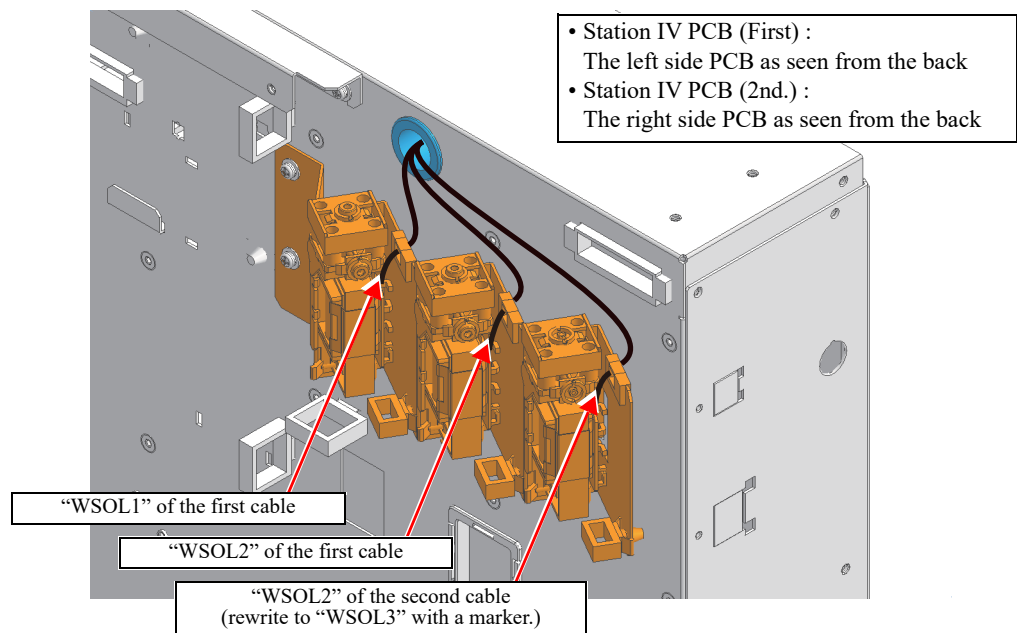
## 6.2.3 Cleaning Liquid Valve



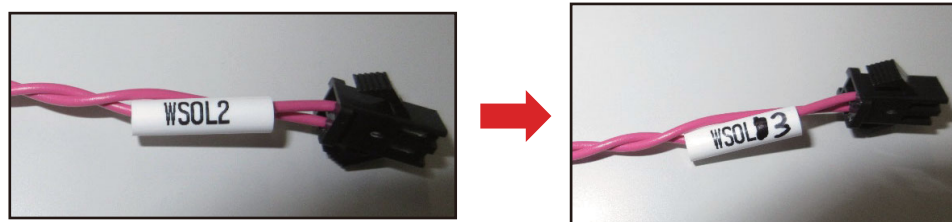
[Cables connected to each valve] (Tx300P-1800 MkII only)

- Connect “E108377\_cleaning cartridge cable” to the valve.  
Since two cables are used per machine, be careful not to make a connection error with the valve.
- Connect to the valve as follows.

The cable connected to the Station IV PCB (First) is the first cable, and the cable connected to the Station IV PCB (2nd.) is the second cable.



To prevent confusion, rewrite “WSOL2” on the second cable to “WSOL3” with a marker.



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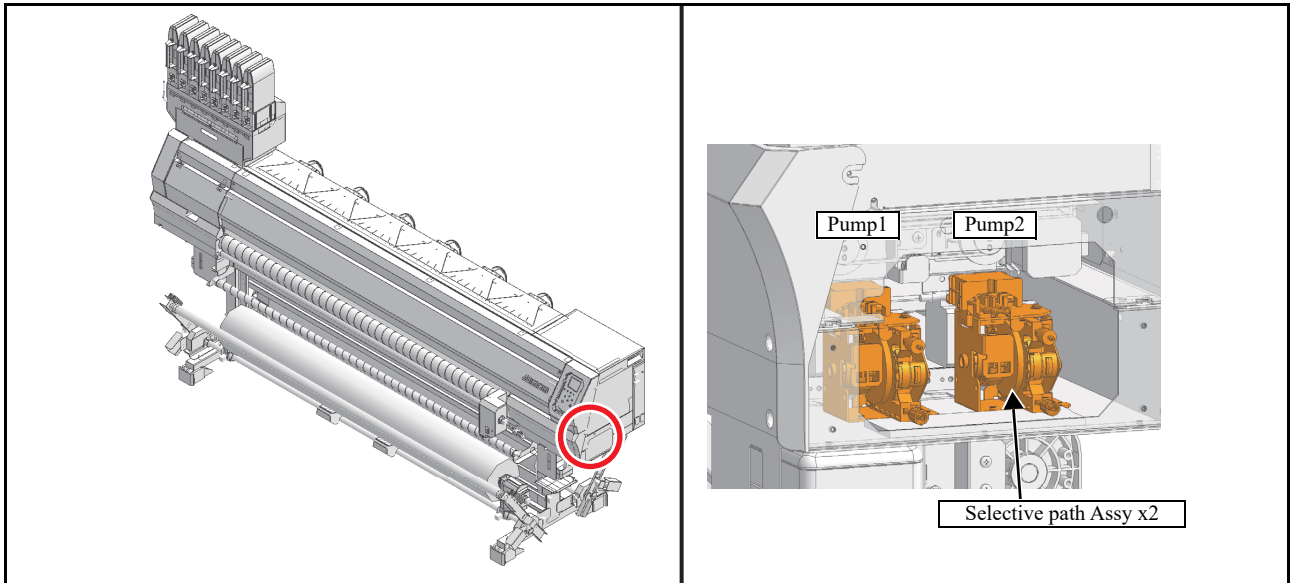
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## 6.2.4 Selective Path Pump Assy.



### ■ Work procedures

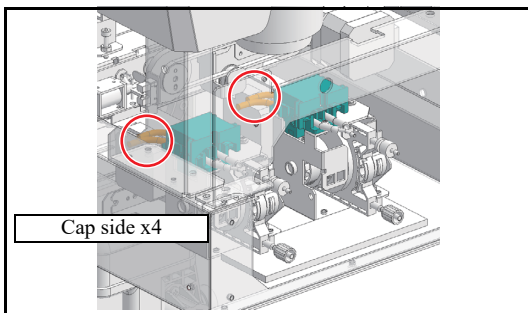


Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



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.

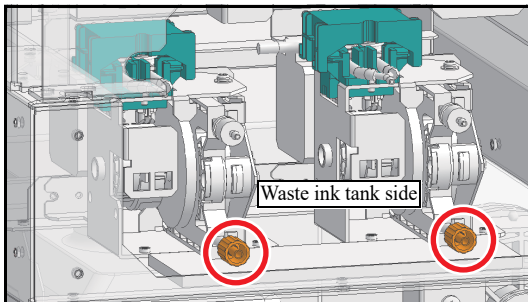
### □ Selective path pump Assy.



1. Remove the **Under cover R**, **Cover R** and **Cover R2**.
2. Remove the **Fittings** of the tubes from the caps. (x4)



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



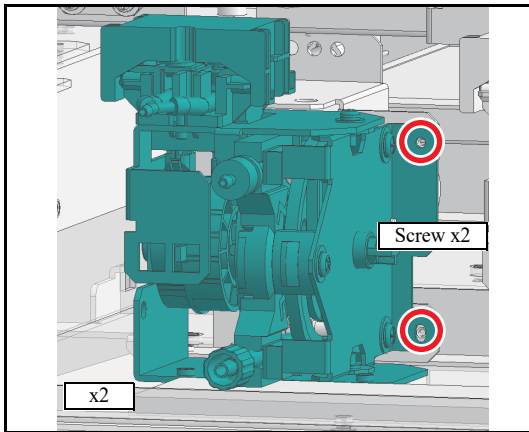
3. Remove the **tube** connected to the waste ink tank. (x2)



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

4. Remove the **connector**.

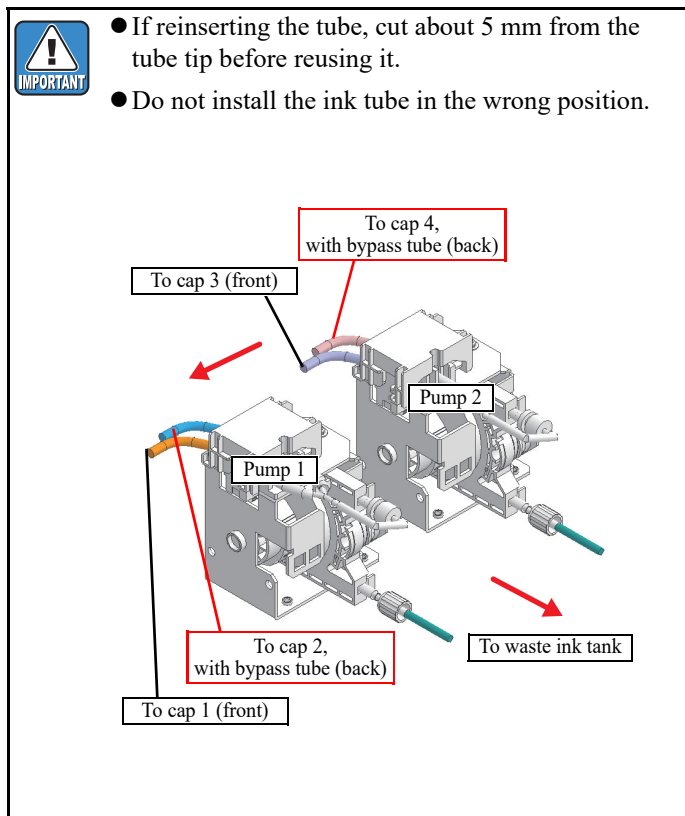
## 6.2.4 Selective Path Pump Assy.



5. Remove the **Selective path pump Assy.** (x2, with screw x2)

6. 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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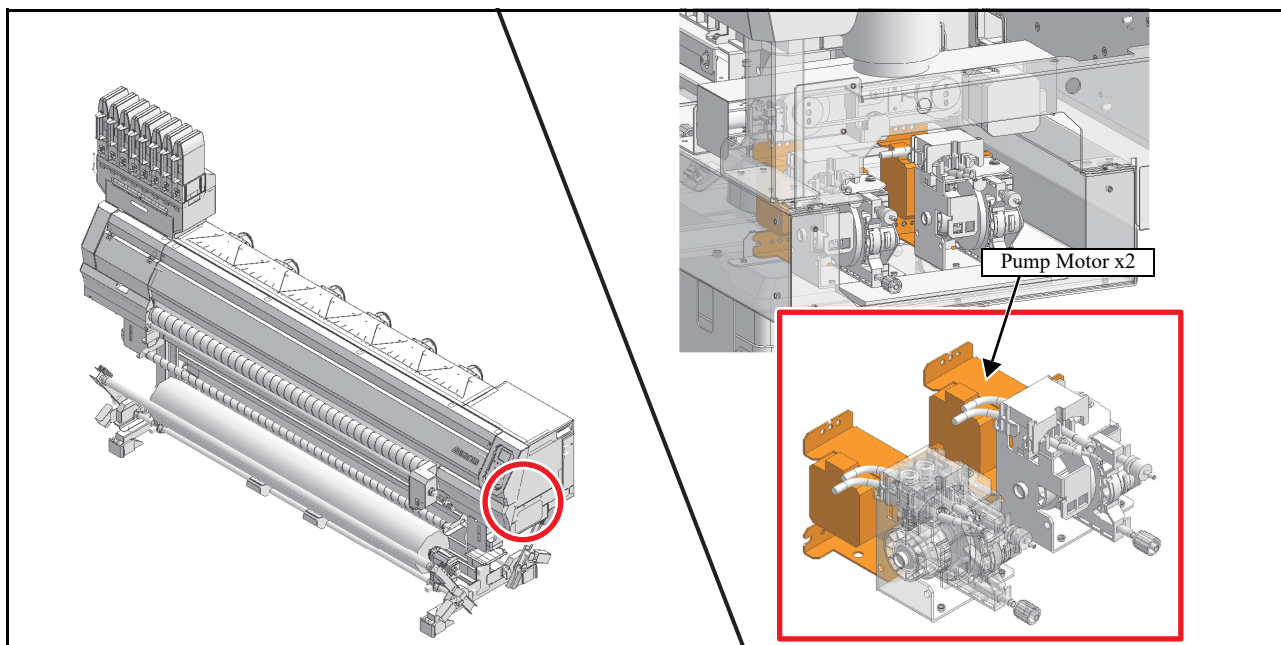
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## 6.2.5 Pump Motor



### ■ Work procedures



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



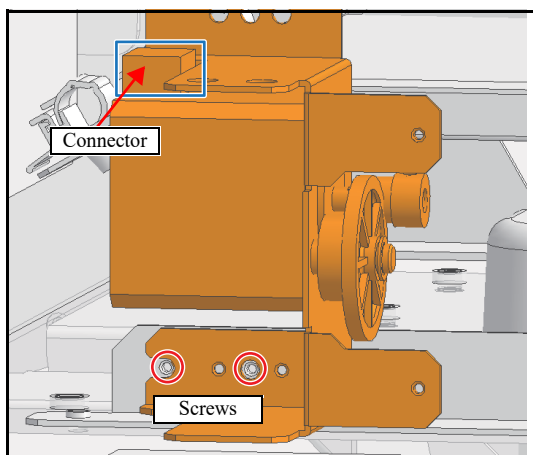
Be sure to wear protective glasses and working gloves during the operation. Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

1. Remove the **Under cover R**, **Cover R** and **Cover R2**.
2. Remove the **Selective path Assy.** (Refer to 6.2.4)



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

3. Remove the **connector**.
4. Remove screws (x2) and remove the **Pump motor Assy.** (x2)



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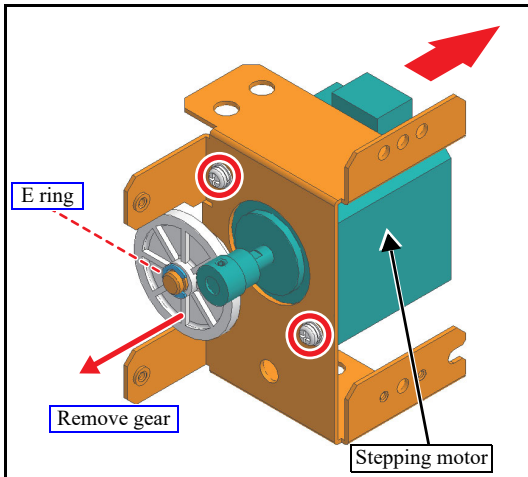
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## 6.2.5 Pump Motor



5. Remove the **Stepping motor**.

- 1) Remove the E-ring and the intermediate reduction gear.
- 2) Remove the screws (x2), and the motor from BKT.

6. Reverse the disassembly procedure for reassembly.



If reinserting the tube, cut about 5 mm from the tube tip before reusing it.

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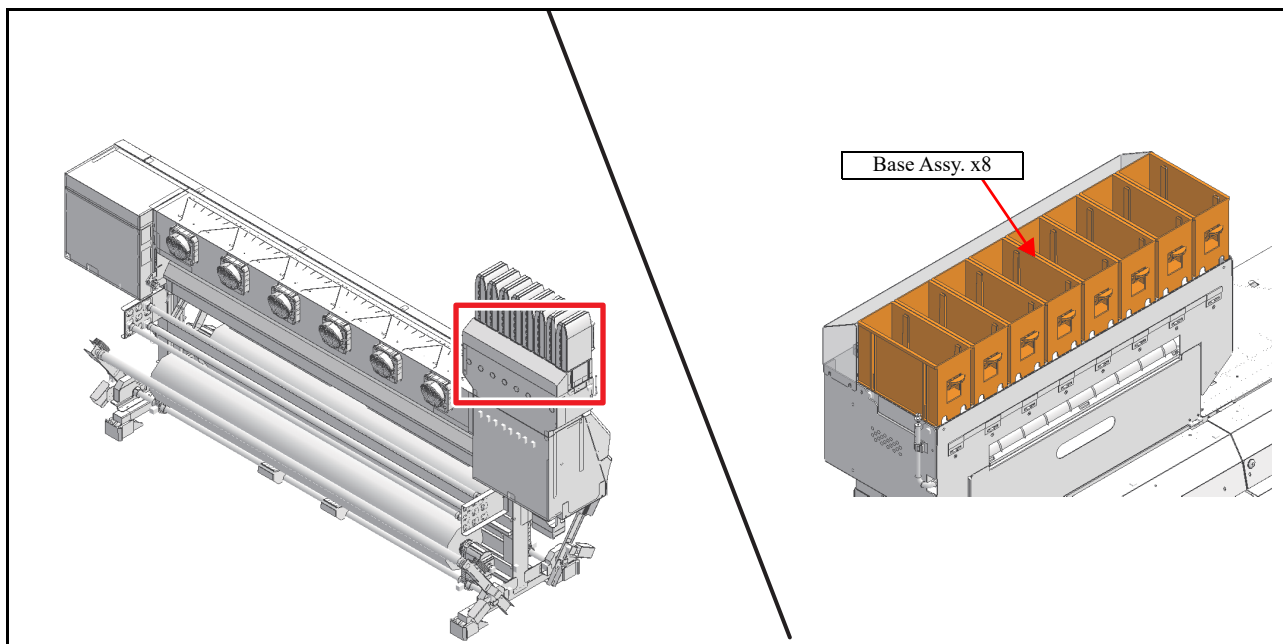
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## 6.2.6 Base Assy.



### Work procedures

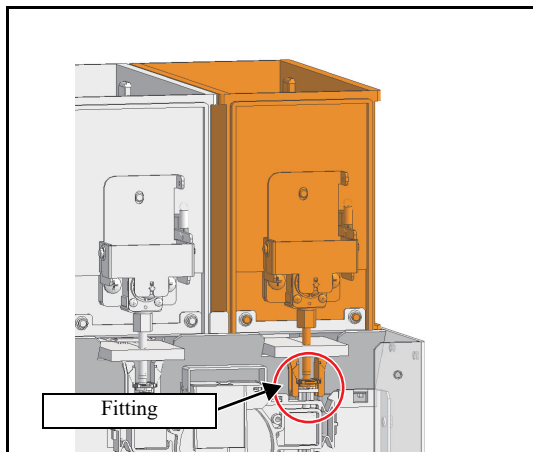


Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.



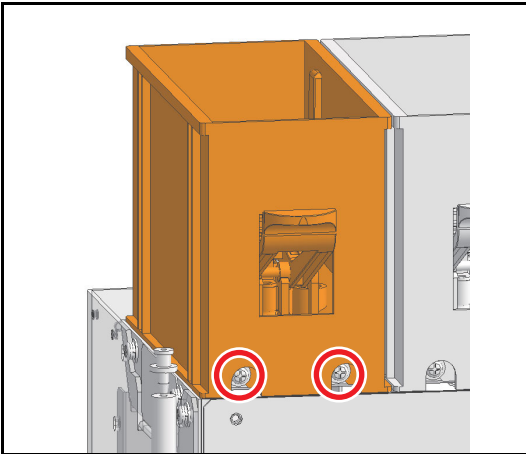
Be sure to wear protective glasses and working gloves during the operation.  
Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

1. Remove the **MB rear cover T**, **MB rear cover U**.
2. Discharge the ink.  
(Refer to "4.2.11 HEAD WASH" - "DISCHARGE")
3. Remove the **Eco-case**. (x8)
4. Remove the **tube** from the Base Assy.



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

## 6.2.6 Base Assy.



5. Remove the Base Assy. from the fixing table BKT. (screw x2)

6. Reverse the disassembly procedure for reassembly.



If reinserting the tube, cut about 5 mm from the tube tip before reusing it.

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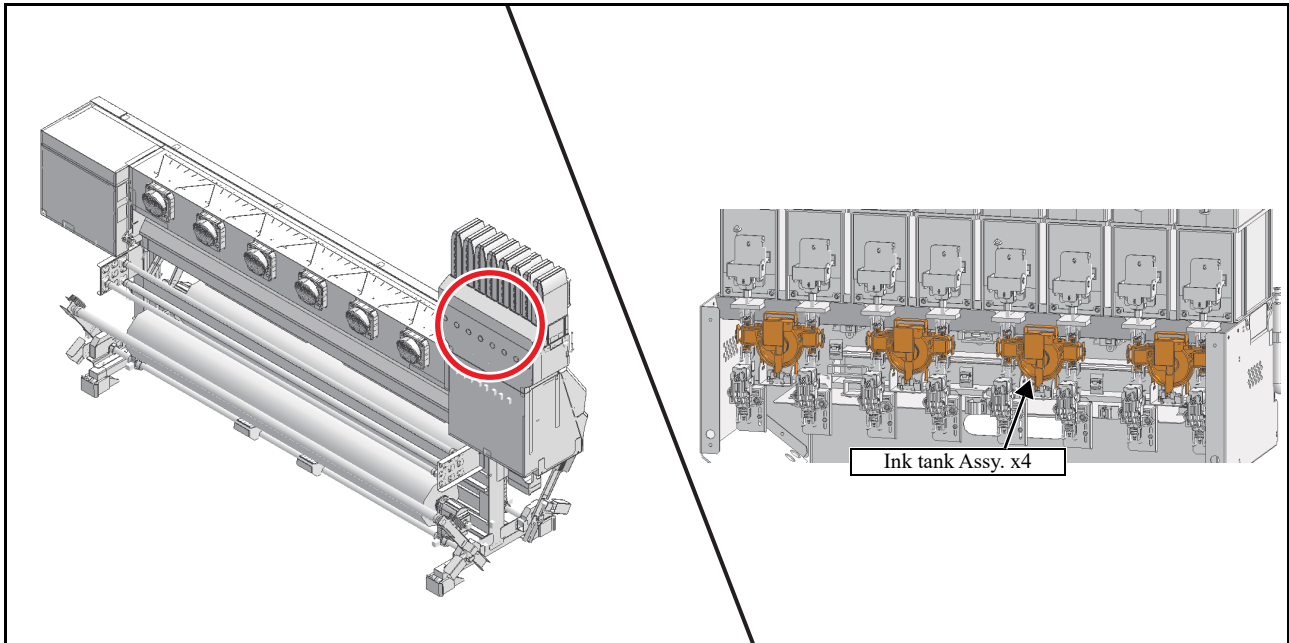
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## 6.2.7 Ink Tank Assy.



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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.

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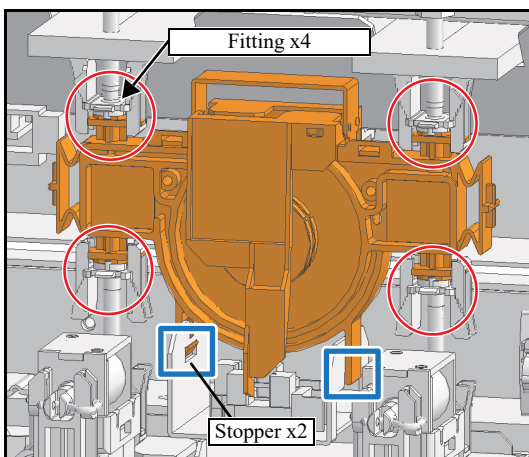


Be sure to wear protective glasses and working gloves during the operation. Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

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1. Remove the **MB rear cover T**, **MB rear cover U**.
2. Carry [#ADJUST] — [HEAD WASH] to discharge the ink. (Refer to "4.2.11 HEAD WASH" - "DISCHARGE")
3. Remove the **Eco-case**. (x8)
4. Remove the **tubes**. (x4)

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- When disconnect the lower side of the tube, loosen the ink valve Assy. Screws (x2).
- Be careful so as not to stain the surrounding area with ink, etc.

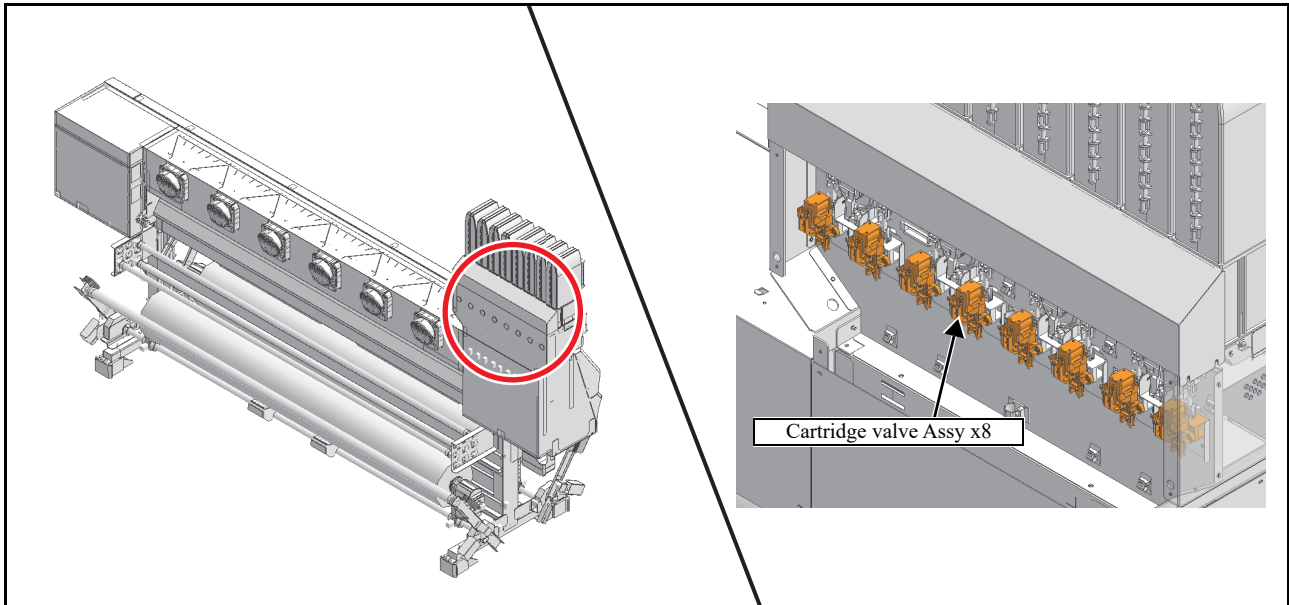
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5. Remove the stopper (x2) to remove.

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6. Reverse the disassembly procedure for reassembly.

## 6.2.8 Cartridge Valve Assy



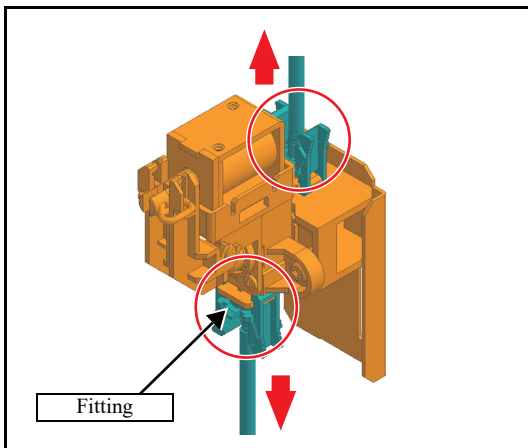
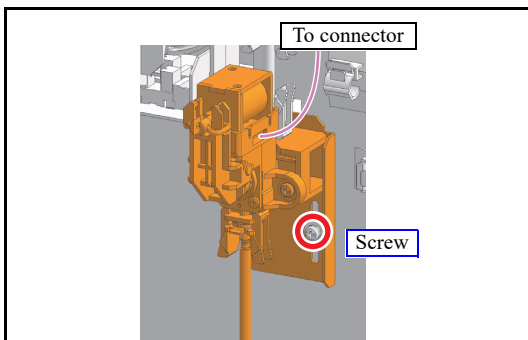
### Work procedures



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 HEAD WASH" - "DISCHARGE")
2. Remove the **MB rear cover U**.
3. Remove the cable connector.
4. Removes the **Cartridge valve Assy**. (screw x1)



5. Disconnect **tube (x2)** with the **fitting**.



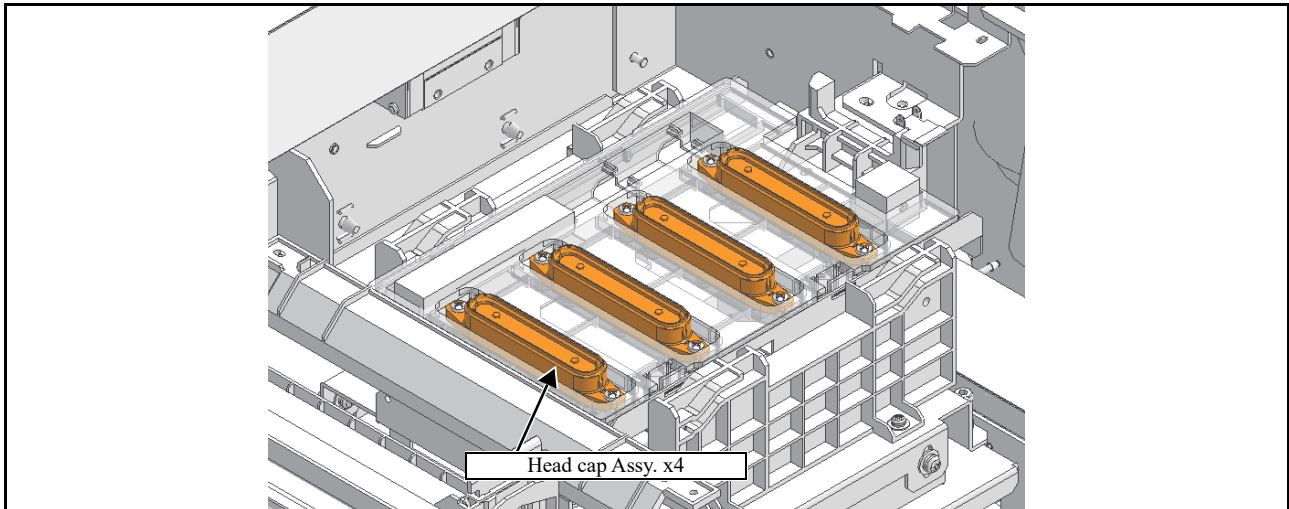
Take care not to contaminate the surroundings with ink. Also, take care not to lose the O-ring.

6. Reverse the disassembly procedure for reassembly.



If reinserting the tube, cut about 5 mm from the tube tip before reusing it.

## 6.2.9 Head Cap Assy



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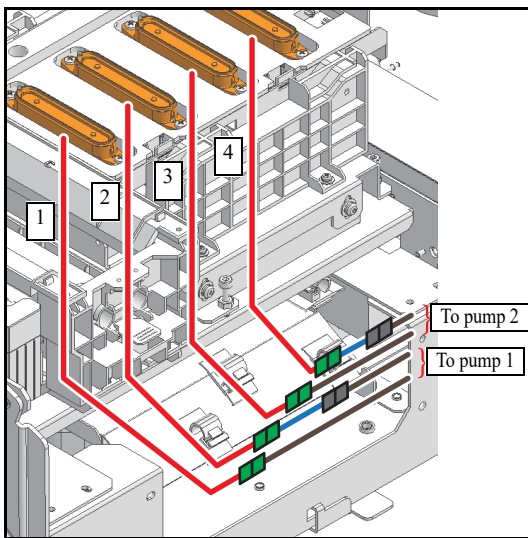
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### ■ Work procedures

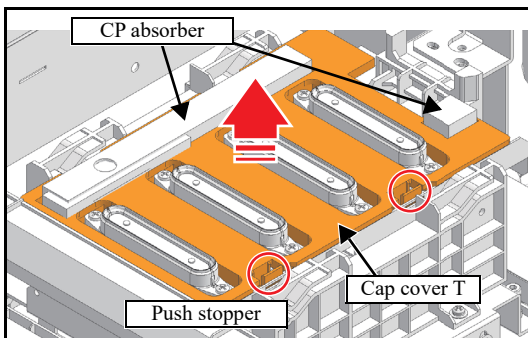


Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

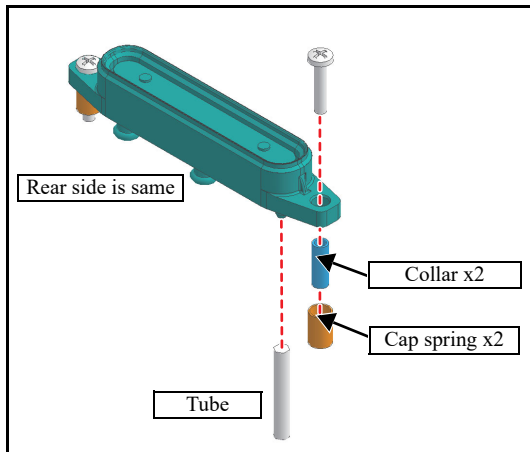
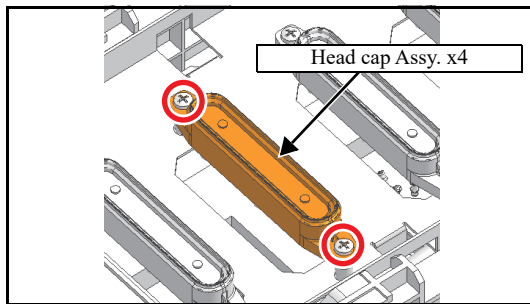
1. Turn off the main power supply of the machine.
2. Manually move the carriage over the platen.
3. Remove ST decorative plate and the fitting of tube to the ink pump (left green part). (x4)  
(Do not remove tube of the bypass portion.)



4. Remove the **Cap cover T** by pushing the stopper (x2).  
Remove **CP absorber** (x2).



## 6.2.9 Head Cap Assy



5. Remove the **Head cap Assy.** (screw x2)

6. Remove the **tube, Cap spring (x2), and collar (long) R side, collar (short) F side** from the Head cap Assy.



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

7. Reverse the disassembly procedure for reassembly.



- If reinserting the tube, cut about 5 mm from the tube tip before reusing it.
- Do not install the ink tube in the wrong position.
- Collar is different in length front and back. Attach the long end on the rear side.
- After the cap replacement, apply the cleaning solution on the cap edge.

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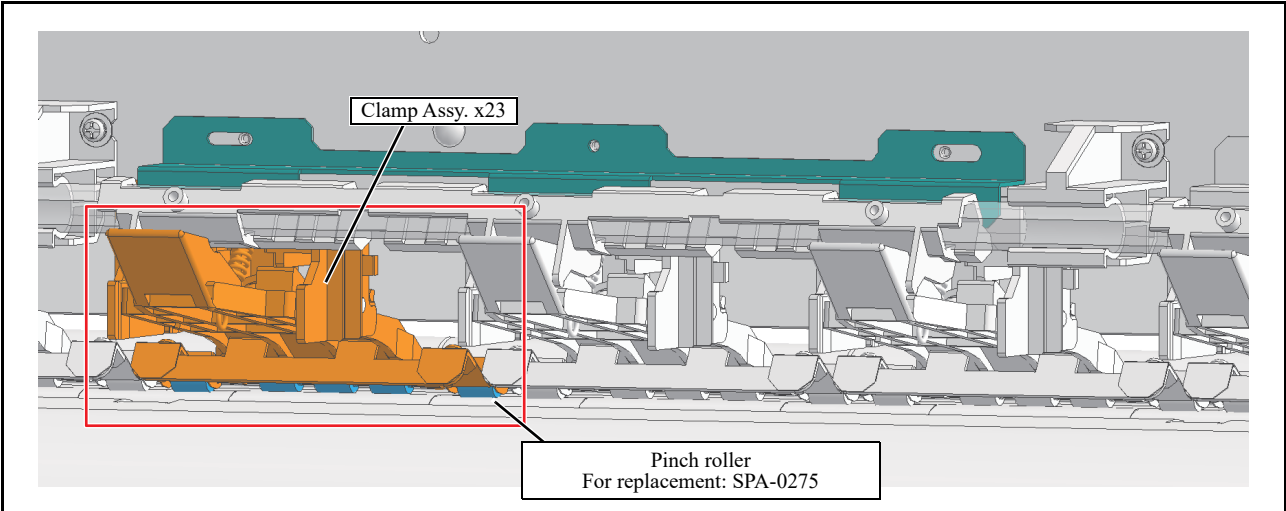
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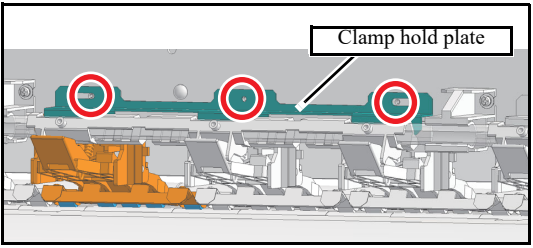
## 6.2.10 Clamp Assy.



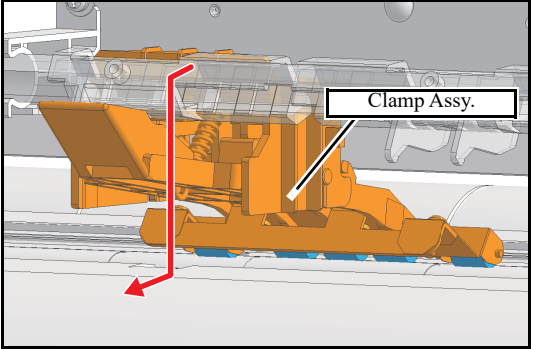
### Work procedures

	<p>Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.</p>
--	--

1. Turn off the main power supply of the machine.
2. Remove the **Y cover**. (Refer to 6.1.1)
3. Remove the **Clamp hold plate A** (2 range, screw x1) or **Clamp hold plate B** (3 range, screw x7).



4. Remove the **Clamp Assy**.



5. Reverse the disassembly procedure for reassembly.

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## 6.2.11 Changing Joint

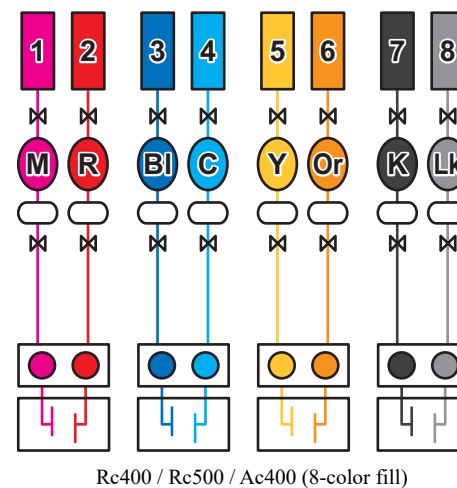
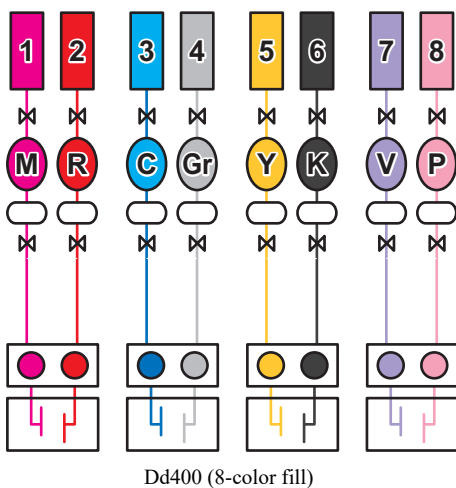
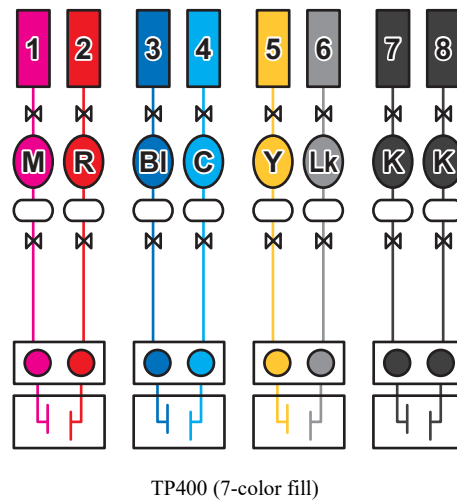
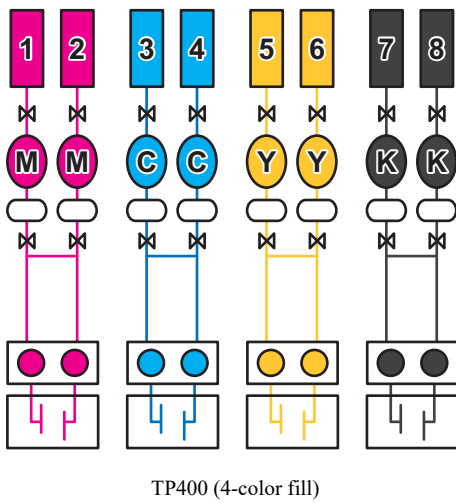
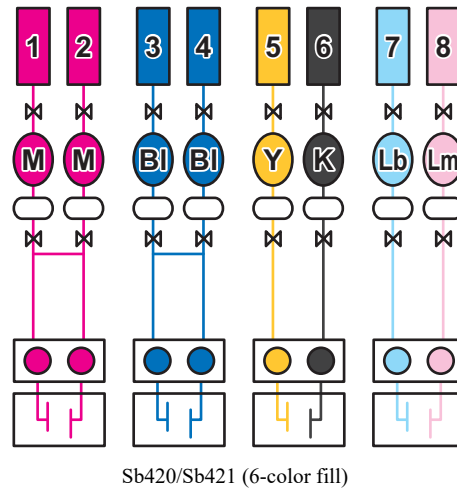
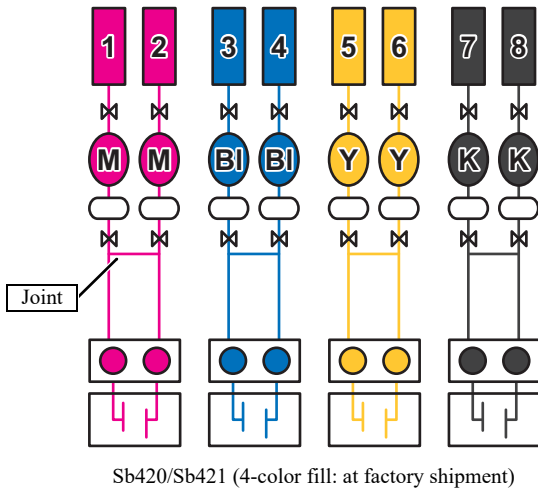
### ■ Outline

It is possible to set the following ink supply paths for Tx300P.

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

For details on ink types, refer to “1.3.1 Configuration”.

### Ink Supply Path Diagrammatic Illustration



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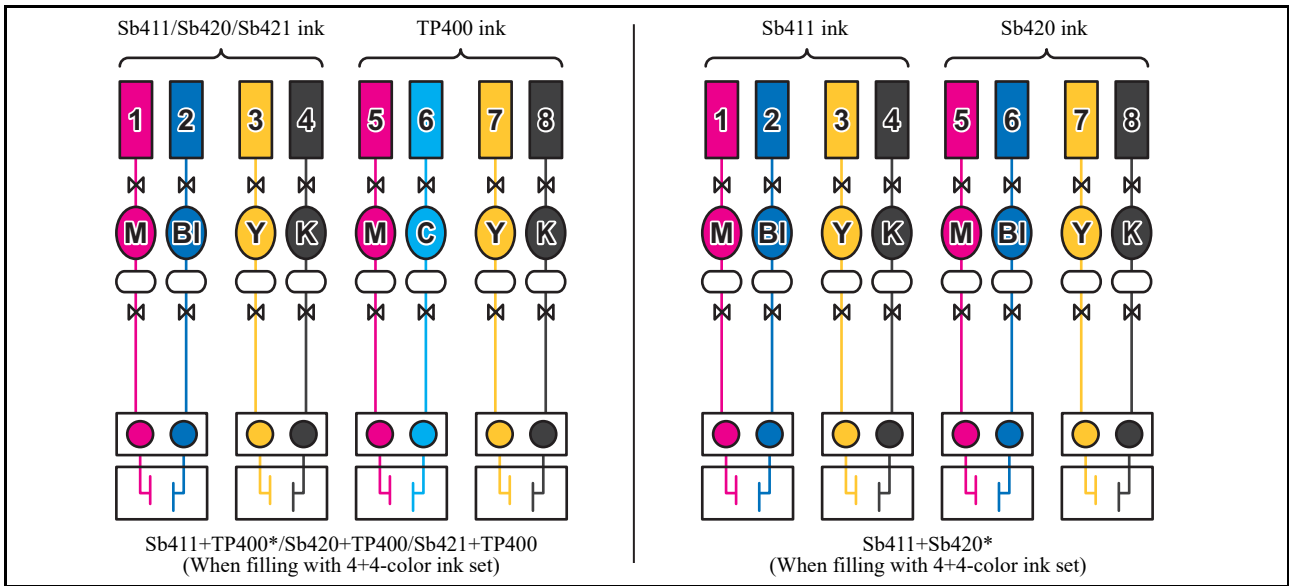
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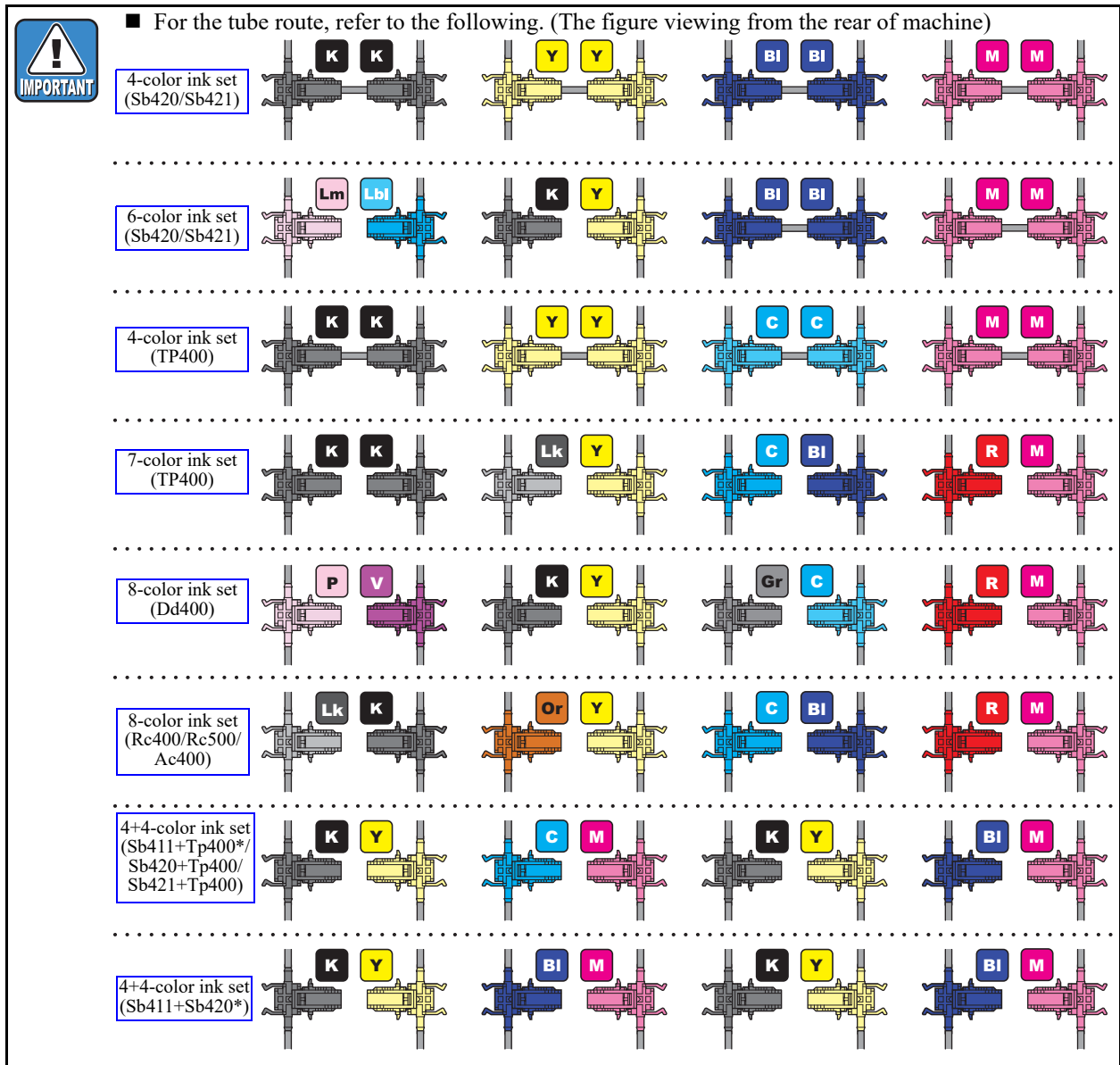
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# 6.2.11 Changing Joint



\*: Tx300P-1800MkII dedicated Ink Set



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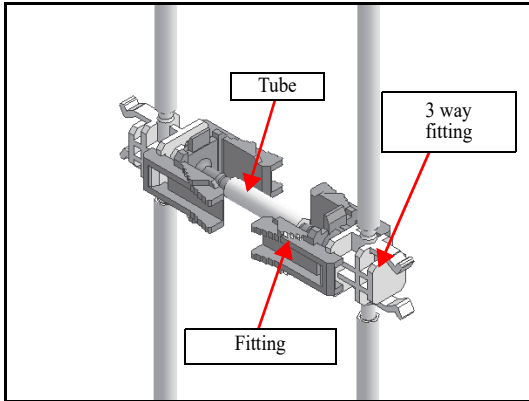
## 6.2.11 Changing Joint

### ■ Work procedures



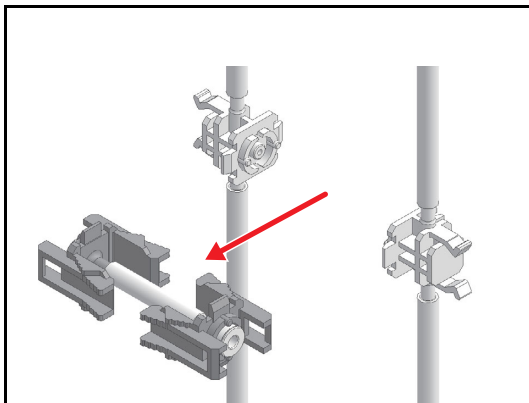
Be sure to wear protective glasses and working gloves during the operation.  
Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

#### □ Removing the joints:



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

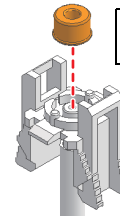
2. Remove the **Cartridge rear cover**.



3. Remove the **Tube and Fittings Assy.**



Make sure that O-ring (F seal rubber 300) is not remaining in the joint screws.



F seal rubber 300  
(MP-M700734)



Take care not to contaminate the surroundings with ink.

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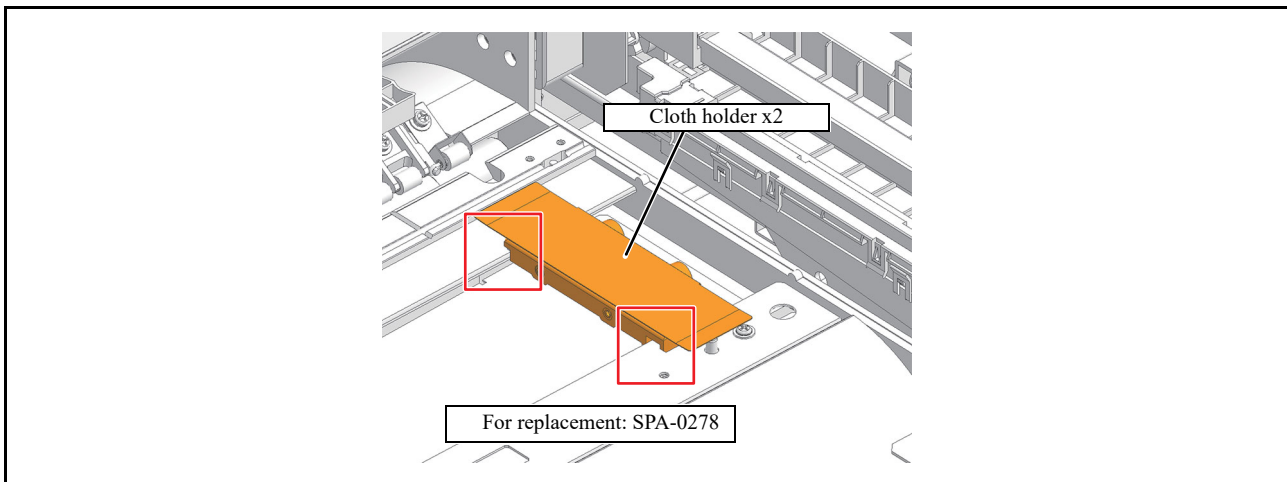
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## 6.2.12 Cloth holder



### ■ 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. If necessary, remove the **Front cover** and the **Front cover L**. (Refer to 6.1.1)
3. Remove the **cloth holder R/L**.
4. Reverse the disassembly procedure for reassembly.



- Be careful in the direction of the media plate.
- When replacing with a new cloth holder, replace the cloth holder spacer.

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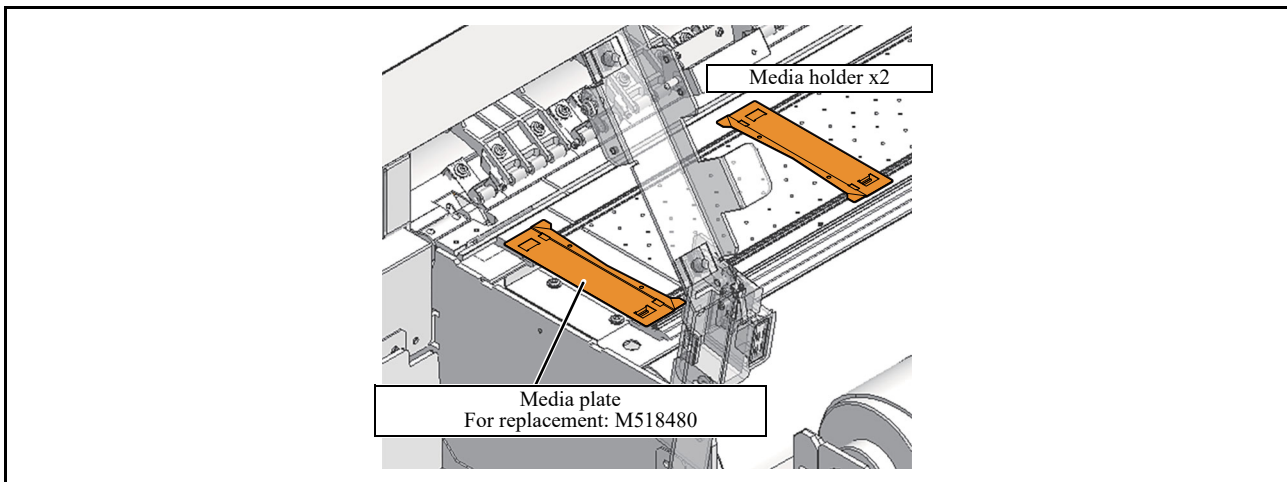
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## 6.2.13 Media holder (only for MkII)

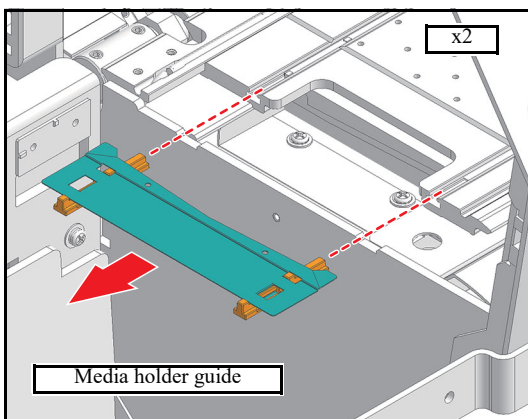


### ■ Work procedures



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. Remove the **Front under cover T**. (See 6.1.1)  
If necessary, remove the front cover and the front cover L.
3. Remove the **Media plate** with the **Media holder guide**.  
(each x2)



4. Reverse the disassembly procedure for reassembly.



Be careful in the direction of the media plate.

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## Disassembly and Reassembly

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**6.1**

**Covers**

**6.2**

**Ink-related Parts**

**6.3**

**Drive System**

**6.4**

**Electrical Parts**

**6.5**

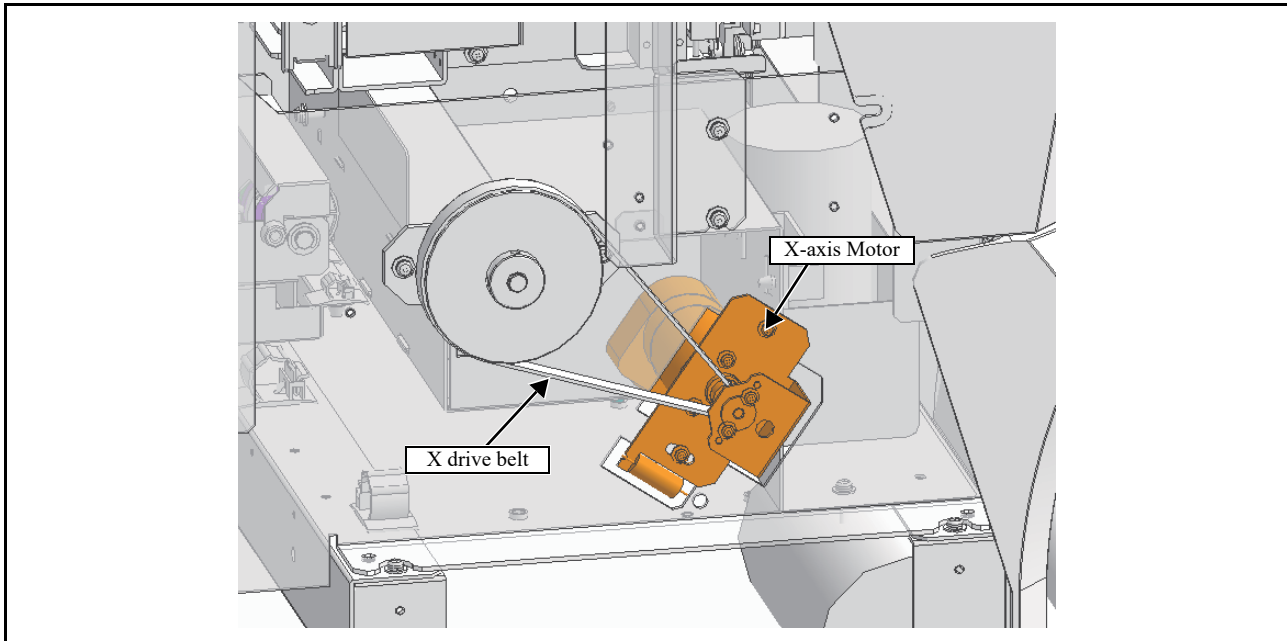
**Sensors**

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## 6.3.1 X-axis Motor Assy / X drive belt

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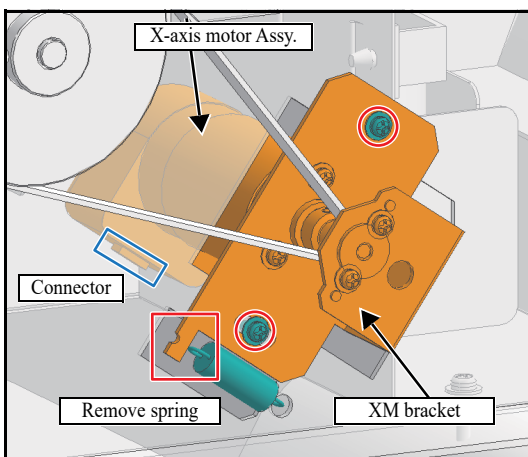
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### Work procedures



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

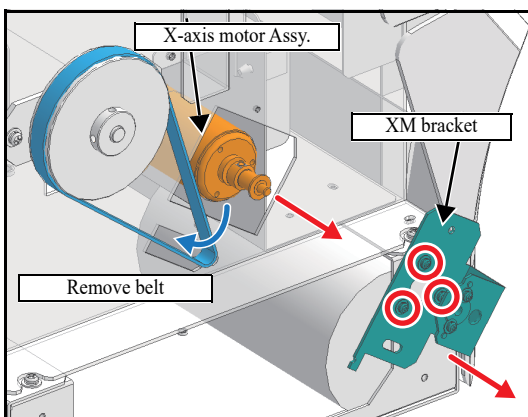
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1. Remove the **Cover L**.
2. Remove the screws (x2) attached to the XM bracket.
3. Remove the X-axis motor **connector**.
4. Remove the **Spring**, and remove the **XM bracket** and **X-axis motor** from the main unit.



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5. Remove the screws (x3) attached to the **XM bracket**, and remove the **Belt** and the **X-axis motor Assy**.

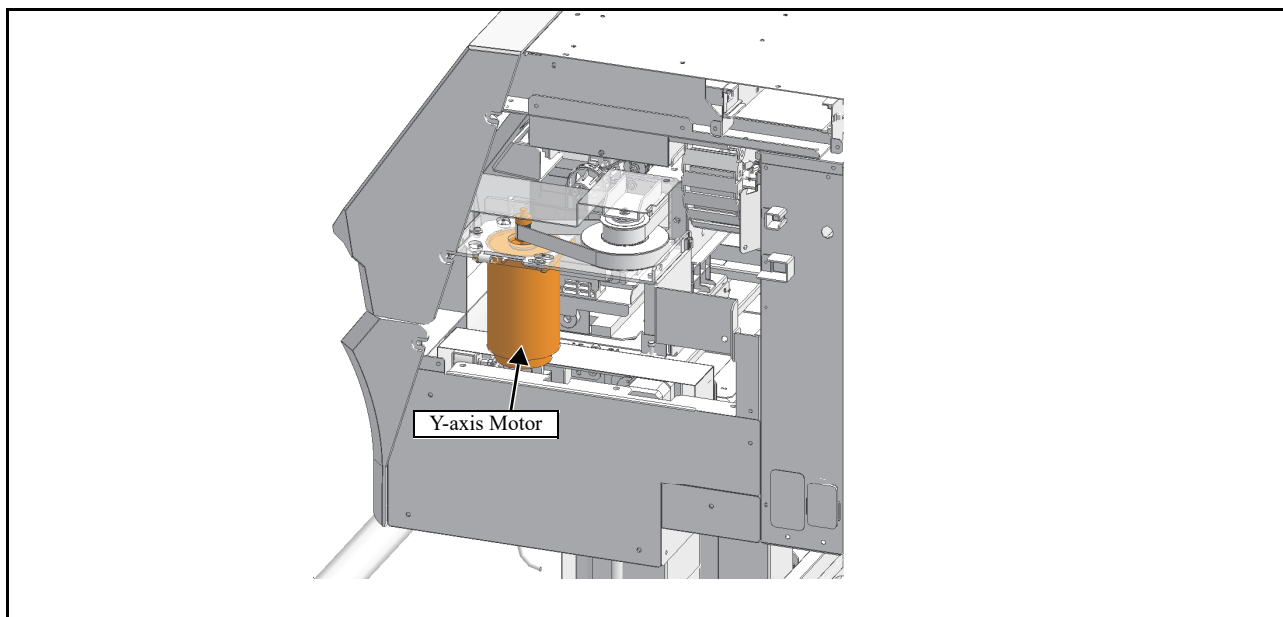
6. Reverse the disassembly procedure for reassembly.



The belt tension does not need to be adjusted.

7. If necessary, press [FUNC 2] on [# Adjust] > [REPLACE COUNT] > [Xmotor] to reset the rotation time. (See "4.2.5 REPLACE COUNT")

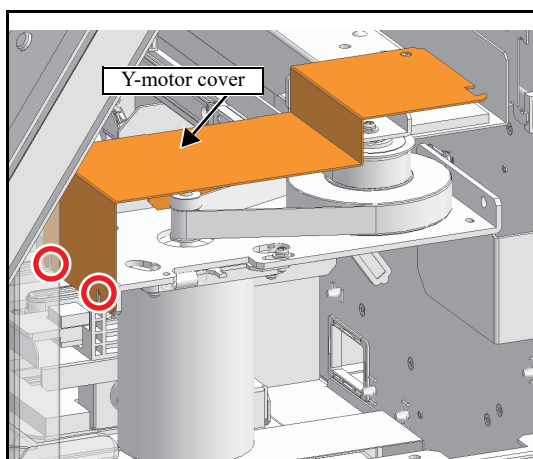
## 6.3.2 Y-axis Motor



### ■ 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 **Cover R**.
2. Manually move the carriage on the platen and remove the **Y-motor cover** (screw x2).

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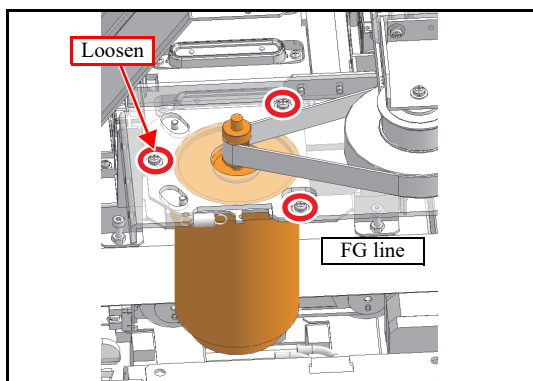
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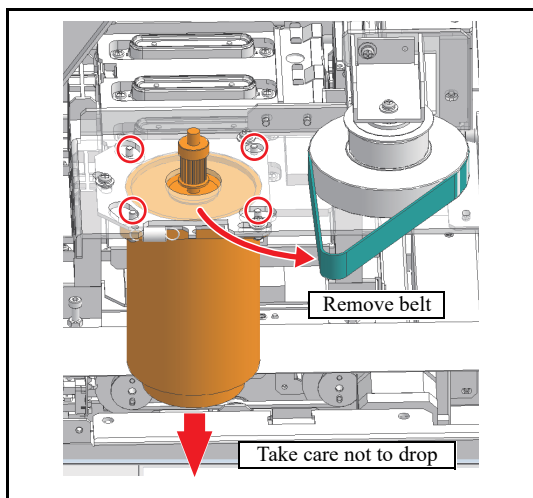
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## 6.3.2 Y-axis Motor

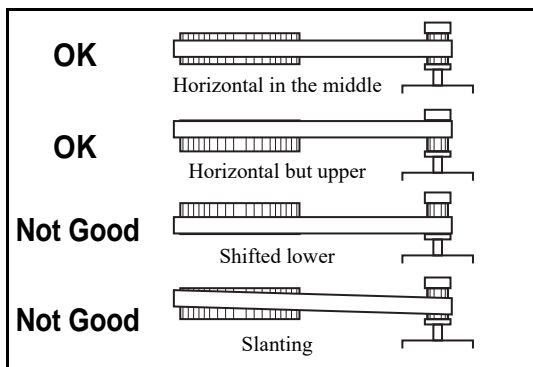


3. Loosen the screws (x3) for fixing the Y-axis motor belt tension, and reduce the tension of the belt.

4. Remove the **FG line** and two **connectors**.



5. Remove the **Y-axis motor belt**, and then remove the **Y-axis motor** while taking care not to drop it.



6. 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 attachment, rotate the pulley several times to adapt the belt.

7. If necessary, press [FUNC 2] on [# Adjust] > [REPLACE COUNT] > [Ymotor] to reset the rotation time. (See "4.2.5 REPLACE COUNT")

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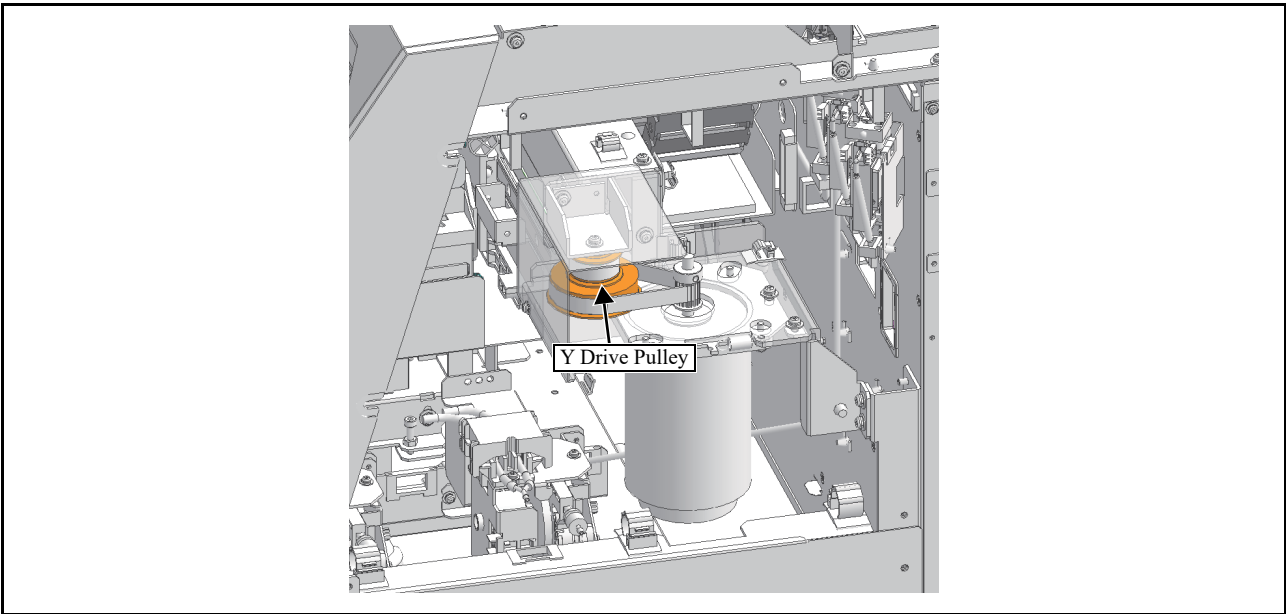
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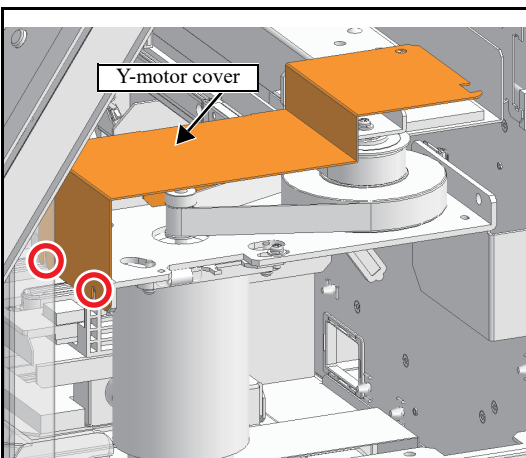
## 6.3.3 Y Drive Pulley



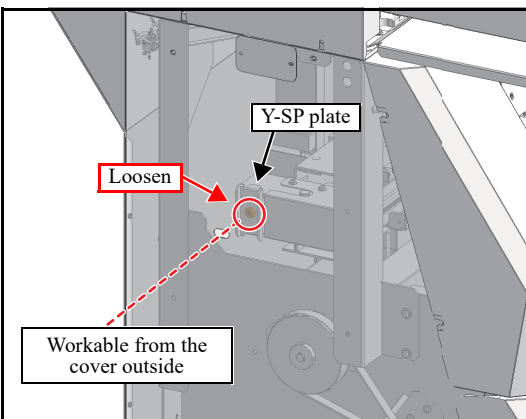
### ■ Work procedures



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 **Cover R**.
2. Manually move the carriage on the platen and remove the **Y-pulley cover**. (screw x2)



3. 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.



You can access a screw from hole of the cover L.

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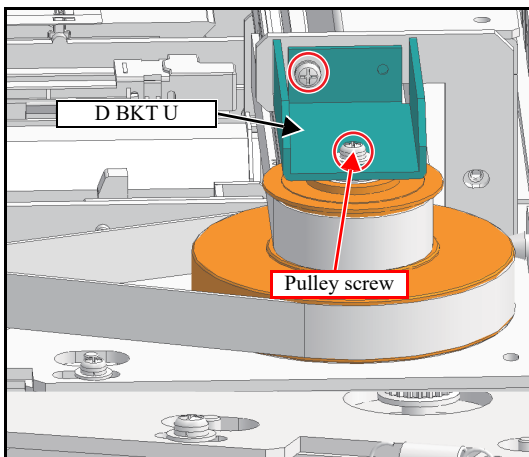
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## 6.3.3 Y Drive Pulley

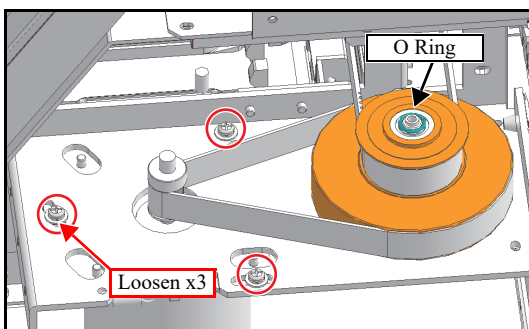


4. Remove the screw (x1) from the top of the Y drive pulley.



Do not remove the Y drive belt from the slider.

5. Remove the screw, and detach the **D BKT U** from the Y drive pulley. (screw x1)



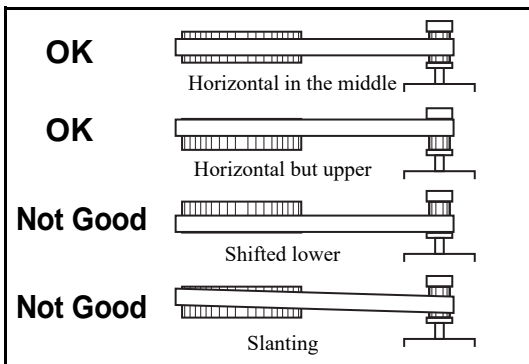
6. Loosen the screws (x3) for fixing the Y-axis motor belt tension, and reduce the tension of the belt.

7. 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.

8. 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 attachment, rotate the pulley several times to adapt the belt.

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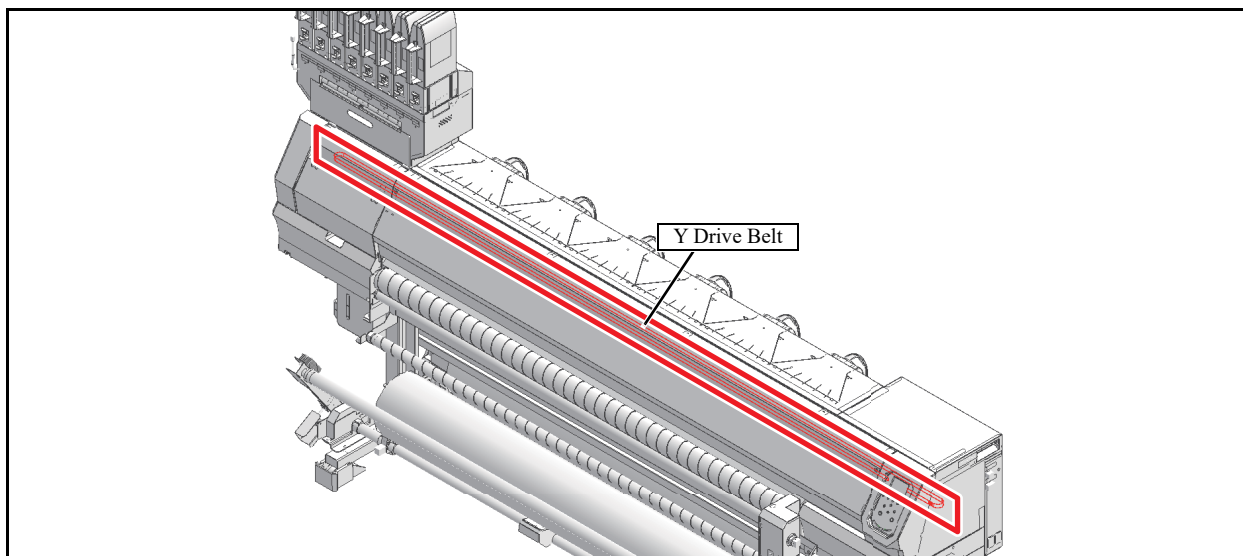
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## 6.3.4 Y Drive Belt



### Work procedures

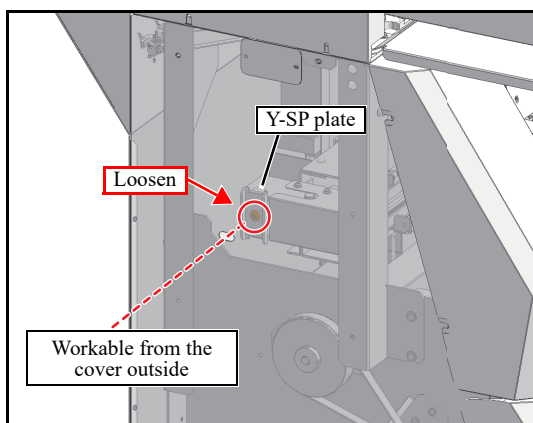


Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

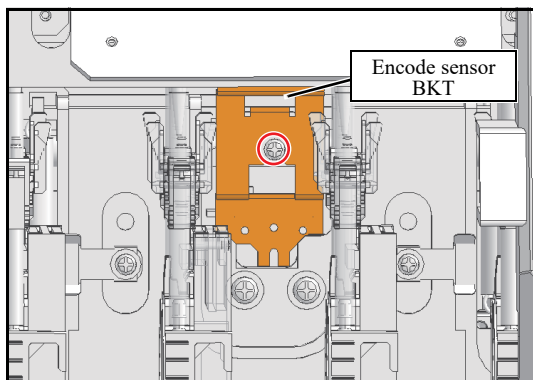
1. Remove the following covers.

- Front cover L, M
- Carriage cover

2. 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.



You can access a screw from hole of the cover L.



3. Remove the **Encode sensor BKT** (screw x1).

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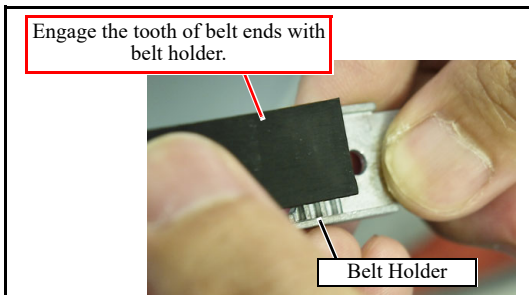
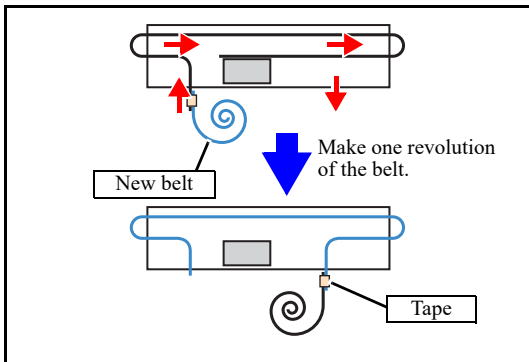
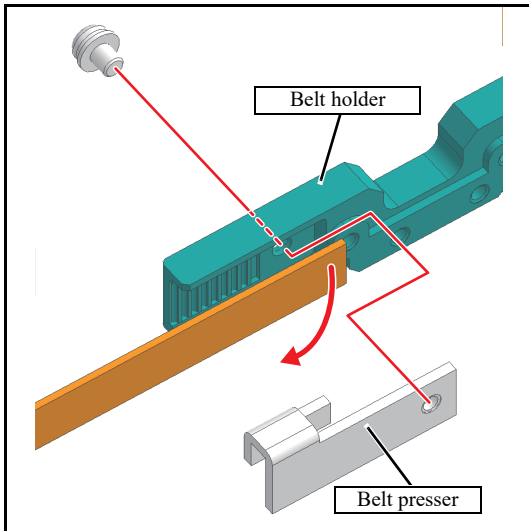
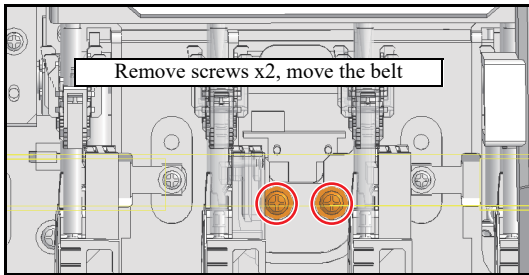
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## 6.3.4 Y Drive Belt



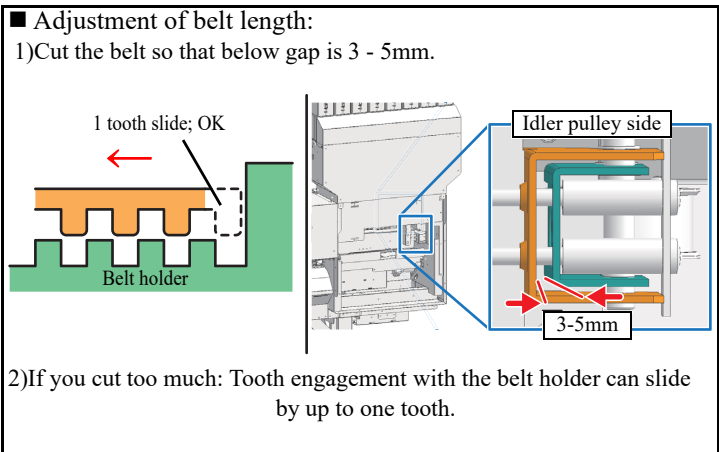
4. Remove the two screws, and move the **Y-drive belt** to left side.

5. Slide out the connection point of the Y drive belt, and remove either the left or right **Belt presser** (screw x1) from the **belt holder**, and remove the **Y drive belt**.

6. 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.

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

8. Align the Belt holder and the teeth on the left and right belt ends, and attach the belt presser to the Belt holder while engaging the teeth. Then tighten the screw.



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## 6.3.4 Y Drive Belt

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

10. Reverse the disassembly procedure for the subsequent reassemblies

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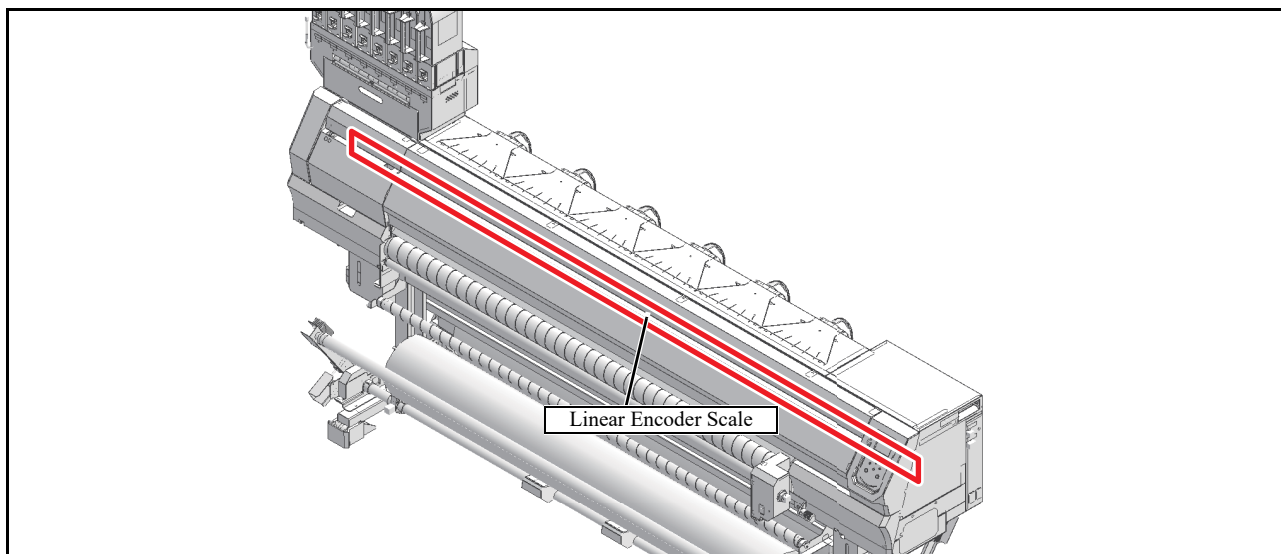
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## 6.3.5 Linear Encoder Scale



### 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.)

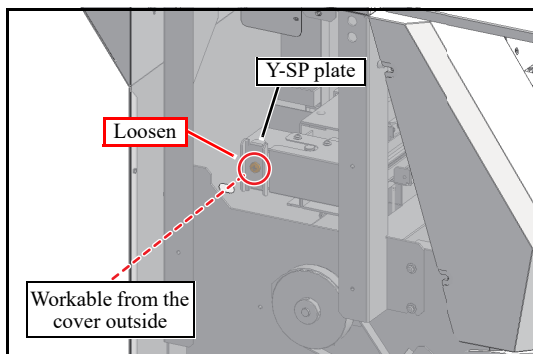
1. Remove the following covers.

- Front cover M, L
- Carriage cover
- Front under cover

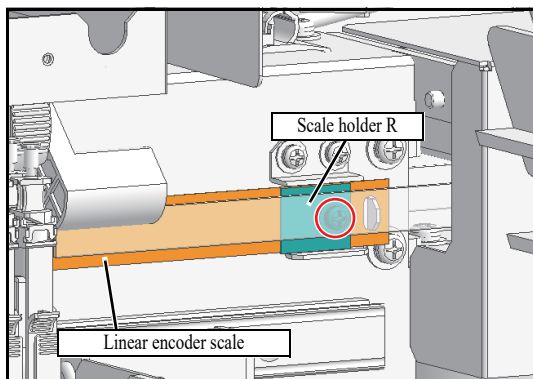
2. Remove the **Encoder PCB Assy**.

- "6.4.6 Encoder PCB Assy"

3. 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.

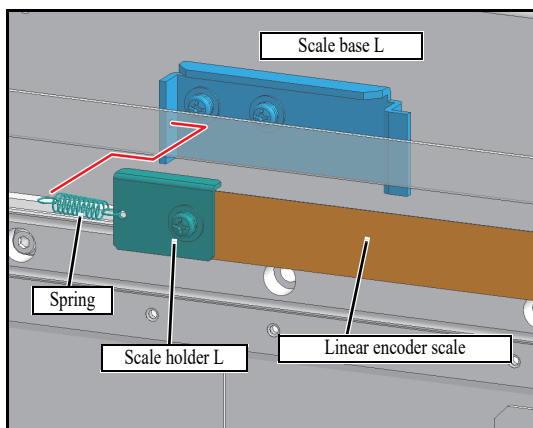


You can access a screw from hole of the cover L.

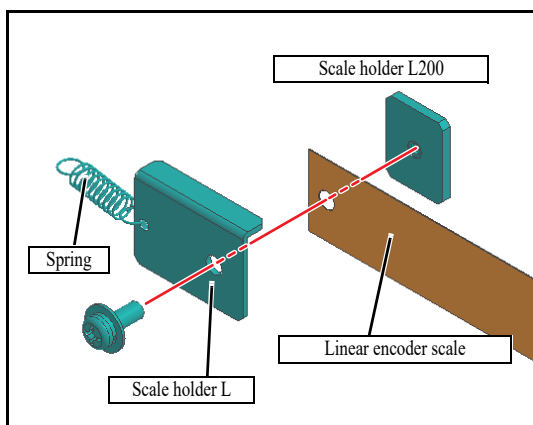


4. Remove the screws from the right end of the linear encoder scale, and detach the **Scale holder R** and **Linear encoder scale**.

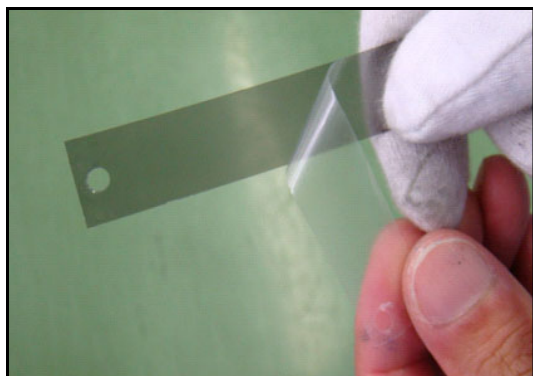
## 6.3.5 Linear Encoder Scale



5. Remove the screw from the left end of the linear encoder scale, and detach the **Scale holder L** and **Linear encoder scale** together with the springs.



6. Remove the **Linear encoder scale** (screw x1).



7. Peel off the left end (the side with short shape hole) 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.)

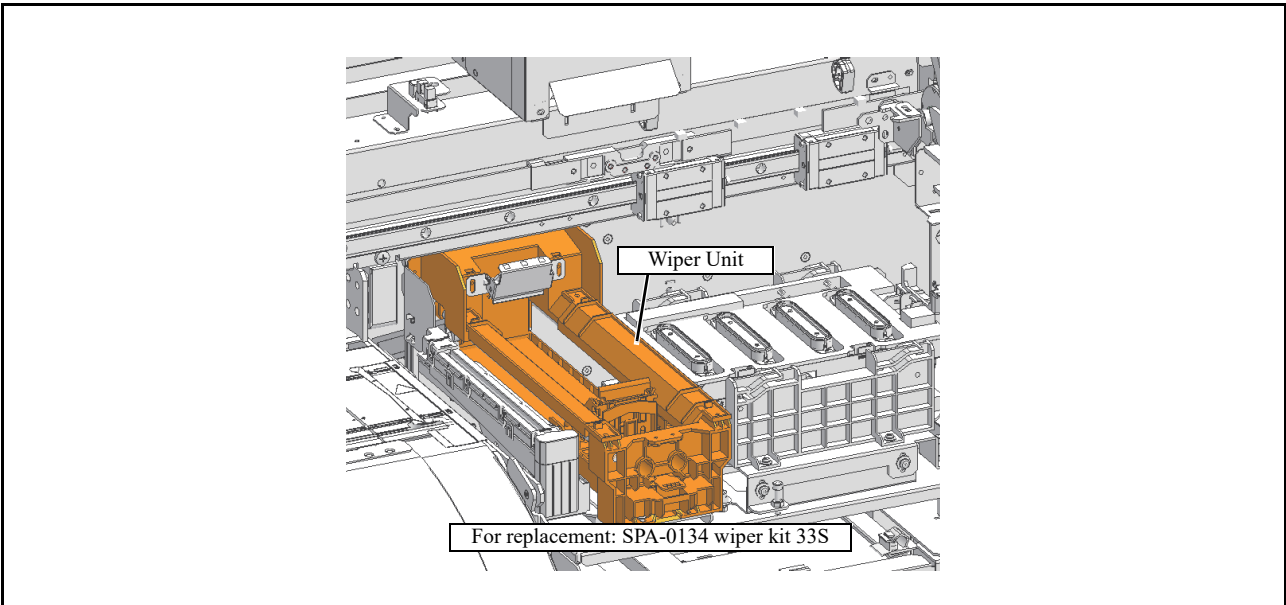
8. Mount the **Scale holder L** on the **Linear encoder scale** so that the surface where the protection film is stuck faces to the Y bar side.



9. Engage the **Scale holder L** with the **scale base L** through a spring, and mount the **Linear encoder scale** while peeling off the protection film.

10. Reverse the disassembly procedure for the subsequent reassemblies.

## 6.3.6 Wiper Unit



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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.

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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.

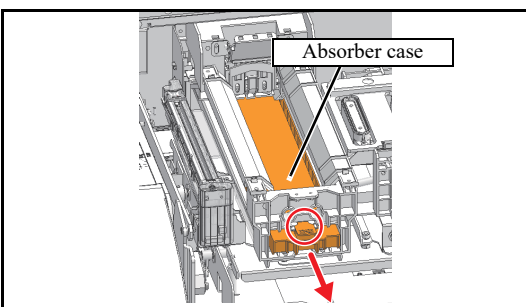
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1. Remove the following covers.

• **Front cover M, L**

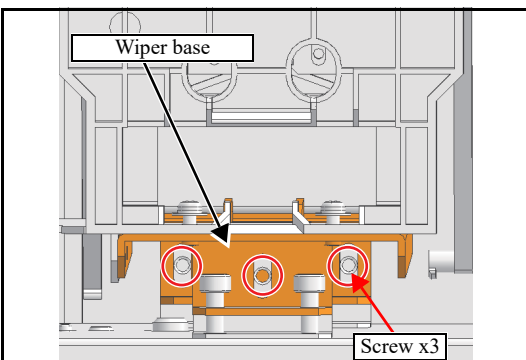
2. Remove the absorber case (+absorber).

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Take care not to contaminate the surroundings with ink.

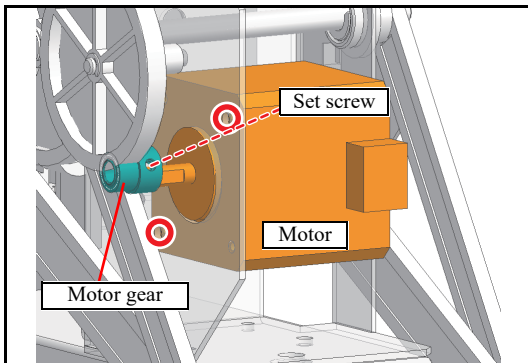
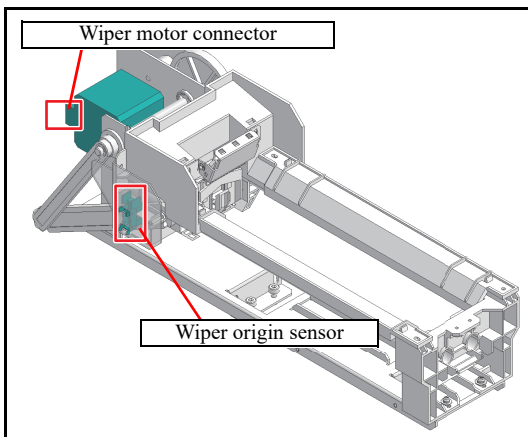
7



3. Remove screws (x3) of the wiper base, and remove the **Wiper unit**.

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## 6.3.6 Wiper Unit



4. Release the clamp under the station and disconnect the wiper motor connector.

5. Disconnect the wiper origin sensor connector.

6. When replacing only the motor,

1) Remove the motor gear. (set screw x1)

2) Remove the motor. (screw x2)



The clearance between the motor and base should be 0.5 mm when the motor is replaced.

7. Reverse the disassembly procedure for reassembly.

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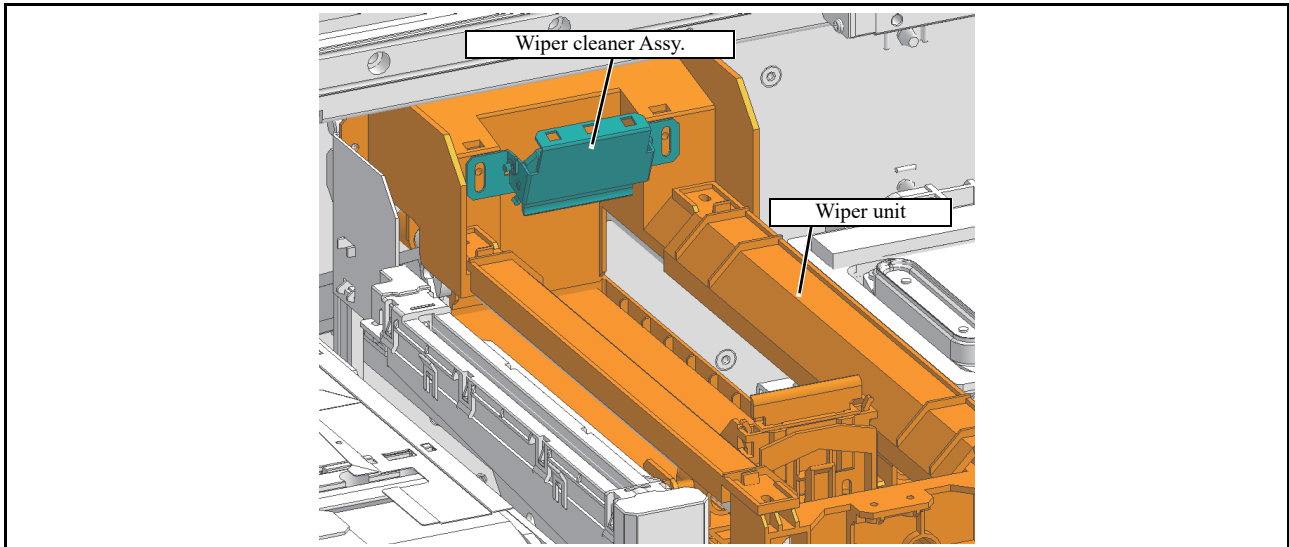
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## 6.3.7 Wiper Cleaner Assy.



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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.

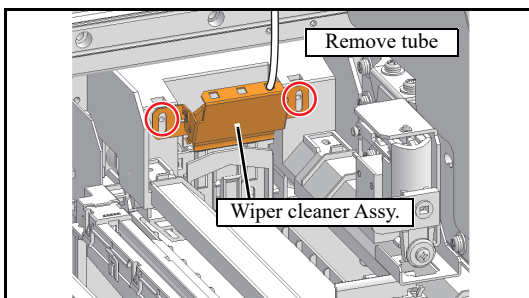


Be sure to wear protective glasses and working gloves during the operation. Ink may get into your eyes depending on the working condition, or hand skin may get rough if you touch the ink.

1. Remove the following covers.

- **Front cover M, L**

2. Remove the tube.



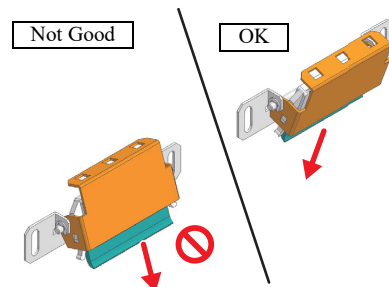
Take care not to contaminate the surroundings with ink.

3. Remove the **Wiper cleaner Assy.** (screw x2)

4. Reverse the disassembly procedure for reassembly.



Check if the cleaner does not face up after assembled.

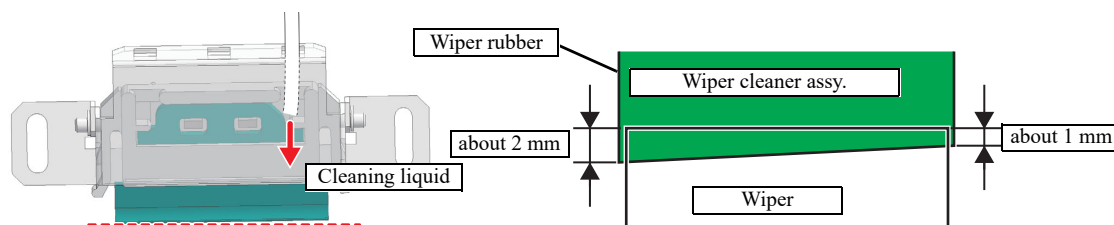


## 6.3.7 Wiper Cleaner Assy.



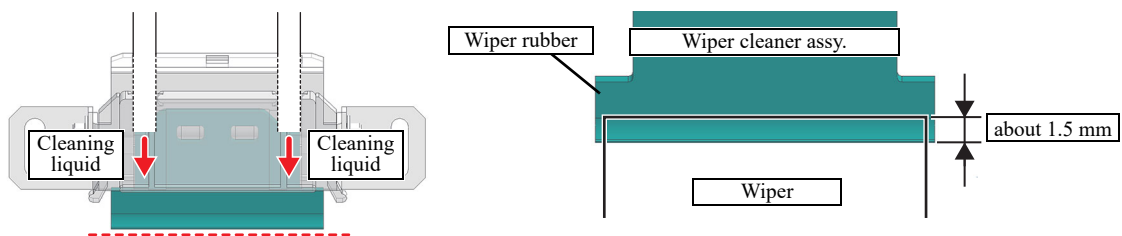
### [case of Tx300P-1800]

- Attach as cleaning solution is spread over the entire wiper. Recommend to install the left side slightly lower.
- Fix the wipers so that the upper and lower wiper rubbers overlap by about 1 mm at the right edge of the wiper cleaner Assy.



### [case of Tx300P-1800 MkII]

- Attach as cleaning solution is spread over the entire wiper.
- Fix the upper and lower wiper rubber so that they overlap by about 1.5 mm.



### □ Replacement Assy. list

Model	Ink set	Use Assy.	
		Part number	Product name
Tx300P-1800	All ink sets	SPA-0271	Wiper kit 300TS
Tx300P-1800 MkII	Other than below	SPA-0271	Wiper kit 300TS
	Sb411+TP400 Sb411+Sb420	SPA-0313	Wiper kit 300Tx-II

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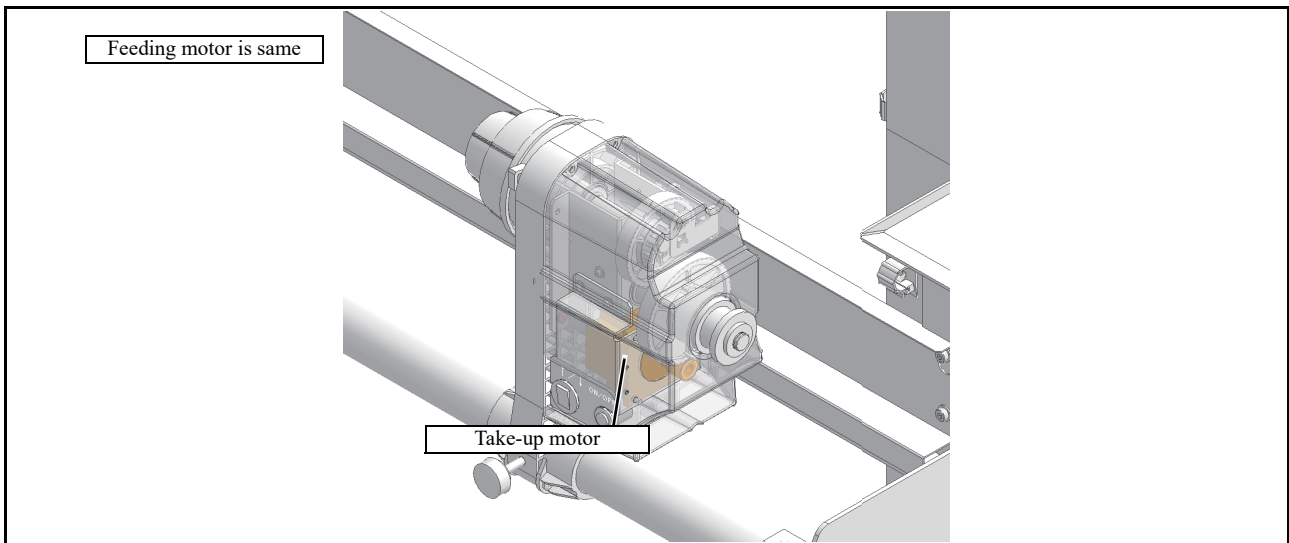
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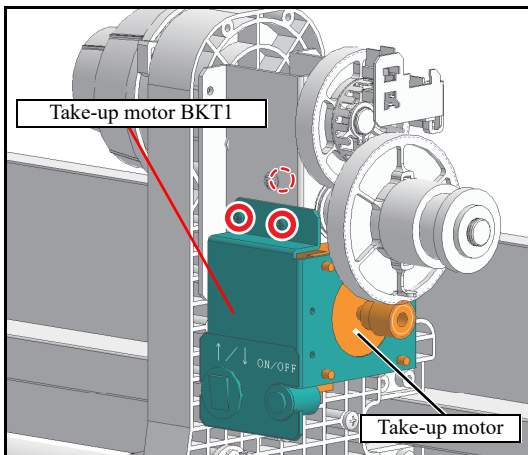
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## 6.3.8 Take-up / Feeding Motor

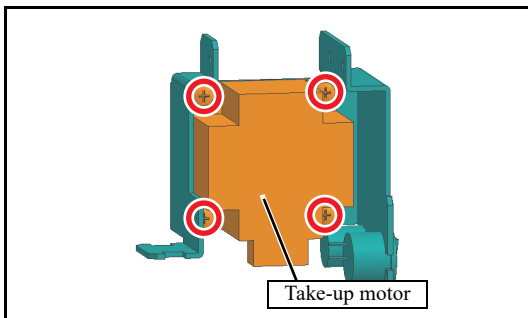


### ■ Work procedures

1. Remove the **Take-up cover**.
2. Disconnect all connectors. (for sensor x2, for motor x1)
3. Remove the **Take-up motor** together with the **Take-up motor BKT** (screw x3).



4. Remove the screws (x4) and then remove the **Take-up motor**.



5. Reverse the disassembly procedure for reassembly.

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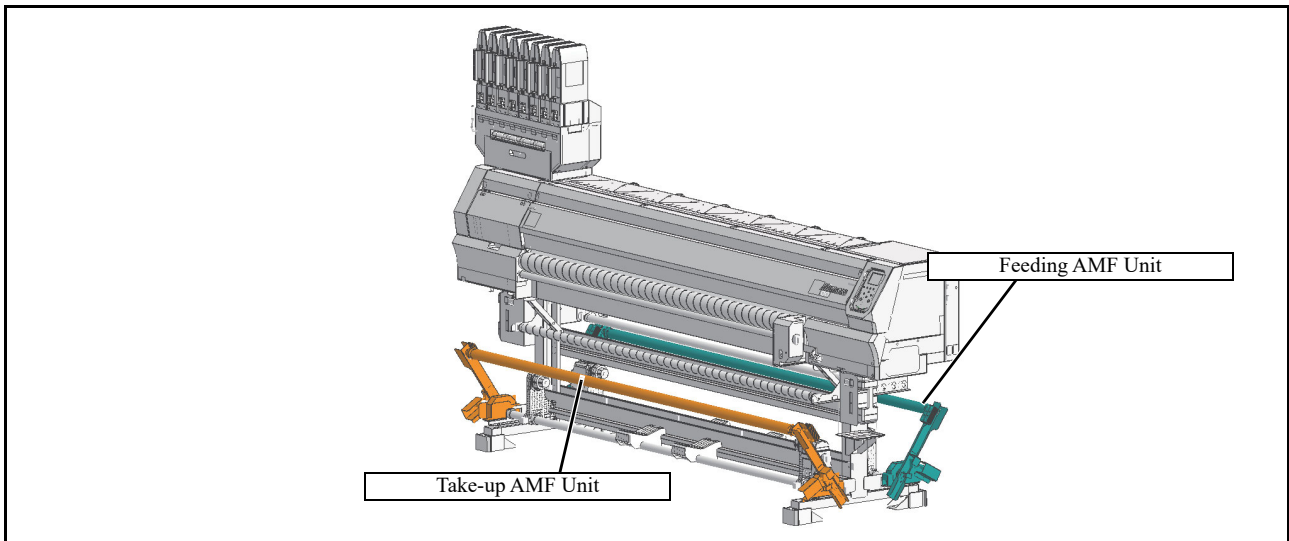
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## 6.3.9 Take-up / Feeding AMF Unit

### ■ Outline



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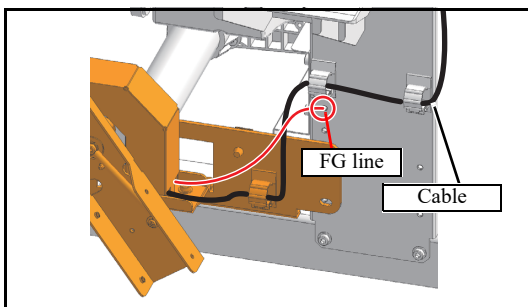
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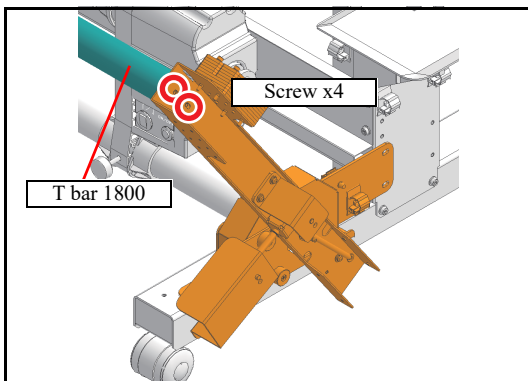
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### ■ Work procedures



1. Disconnect the connector and FG line at right side of the unit.



2. Remove the tension bar. (screw x2 each side, total x4)

**IMPORTANT** Remove the tension bar in the following procedure.

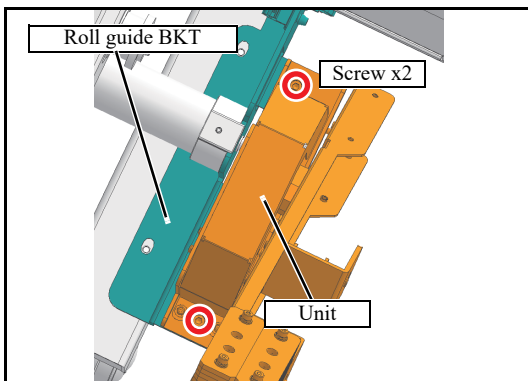
1. Remove one screw, and other screw is released temporarily.
2. Remove two screws at the other side.
3. Remove the screw at the side in the step 1.

The diagram consists of three numbered steps:
 

- Step 1: One screw is removed, and the other is labeled 'Temporarily'.
- Step 2: Two screws are removed from the opposite side.
- Step 3: The final screw is removed, labeled 'Remove'.

**Caution** Be careful about the jumping up of the tension bar arm at removing the screws.

## 6.3.9 Take-up / Feeding AMF Unit



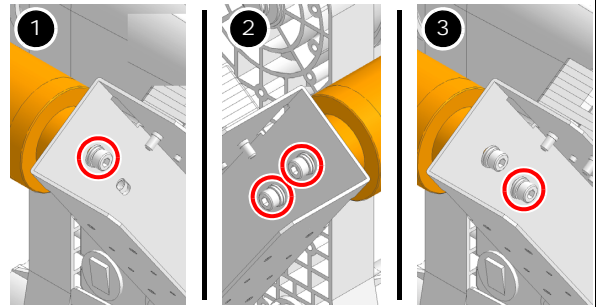
- Remove screws (x2 each side, total x4), and then remove the unit from roll guide BKT.

- Reverse the disassembly procedure for reassembly.



Install the tension bar in the following procedure.

- Temporarily fasten a screw at one side.
- Temporarily fasten two screws at the other side.
- Temporarily fasten the other screw at the side in the step 1.
- Pushing the tension bar, tighten four screws.  
(Refer to the left figure)



Install that with the connector cable sticking out to the right side.

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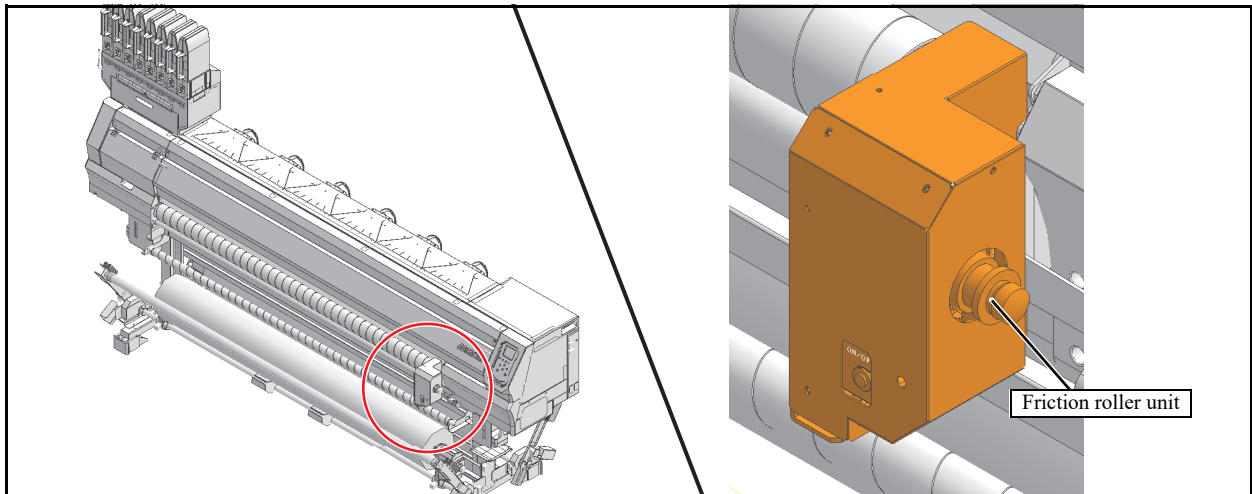
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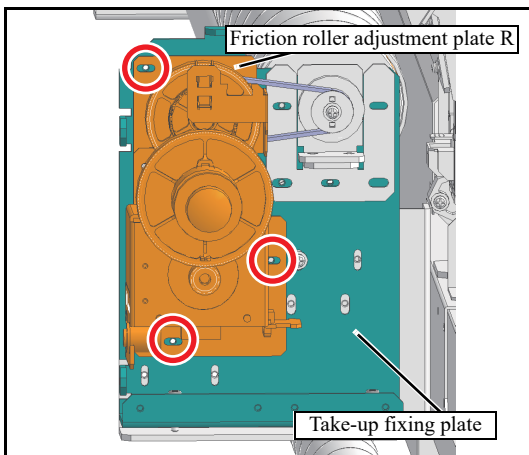
## 6.3.10 Friction Roller Unit

### ■ Outline

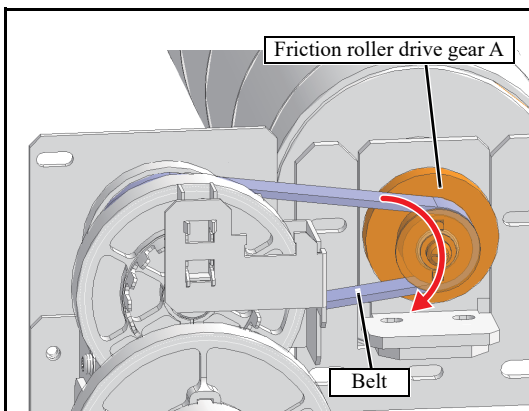


### ■ Work procedures

1. Remove the following covers.
  - Side cover of friction unit
  - Front cover of friction unit
2. Remove the screw(x3) which connect take-up fixing plate and friction roller adjustment plate R.



Attention should be paid to falling of unit.



3. Remove the belt from the friction roller drive gear A.
4. Remove the friction unit.

5. Reverse the disassembly procedure for reassembly.



The tension of the belt at 3 measurement points is 200 ~ 250gF, when the protrusion amount 1.8mm,

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## Disassembly and Reassembly

6

**6.1  
Covers**

**6.2  
Ink-related Parts**

**6.3  
Drive System**

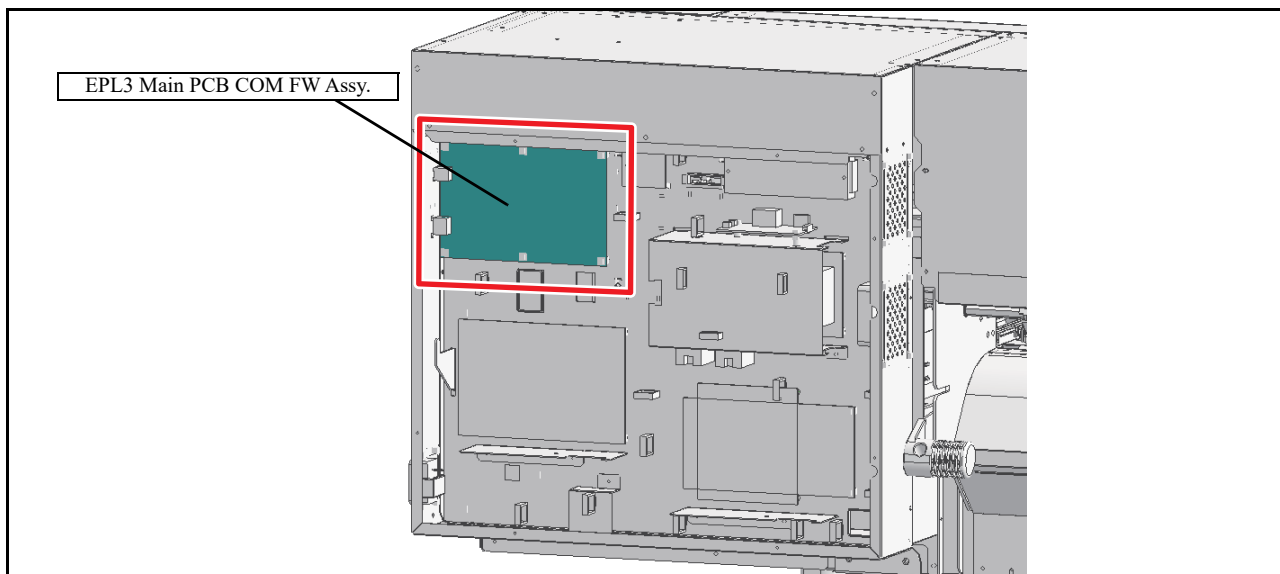
**6.4  
Electrical Parts**

**6.5  
Sensors**

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## 6.4.1 EPL3 Main PCB COM FW Assy



### ■ 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.



● A button type lithium battery is used for this board. Warn following 1)~4).

1), Danger of explosion if battery is incorrectly replaced.

2), Replace only with the same or equivalent type recommended by the manufacture.

Recommended type : [CR1220]

3), Dispose of used batteries according to the manufacturer's instructions.

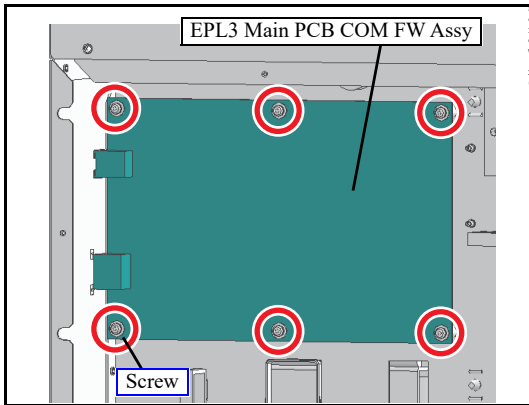
4), When the battery is replaced with a new one, pay attention to the polarity at replacing.

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.

## 6.4.1 EPL3 Main PCB COM FW Assy



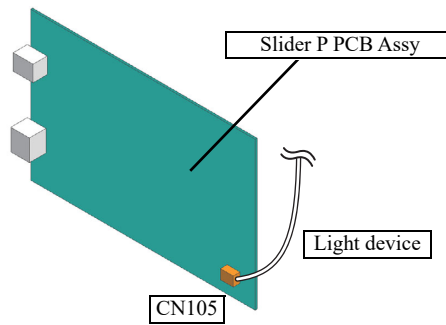
4. Remove the **main PCB Assy**. (screw x6)

5. Reverse the disassembly procedure for reassembly.



Note of the handling of AYG4V1F06HWAYG4V1F06HW light device (fiber)

- Straightly and carefully perform the connect and disconnect the connector.
- Handle so as not to put the stress on the optical fiber.



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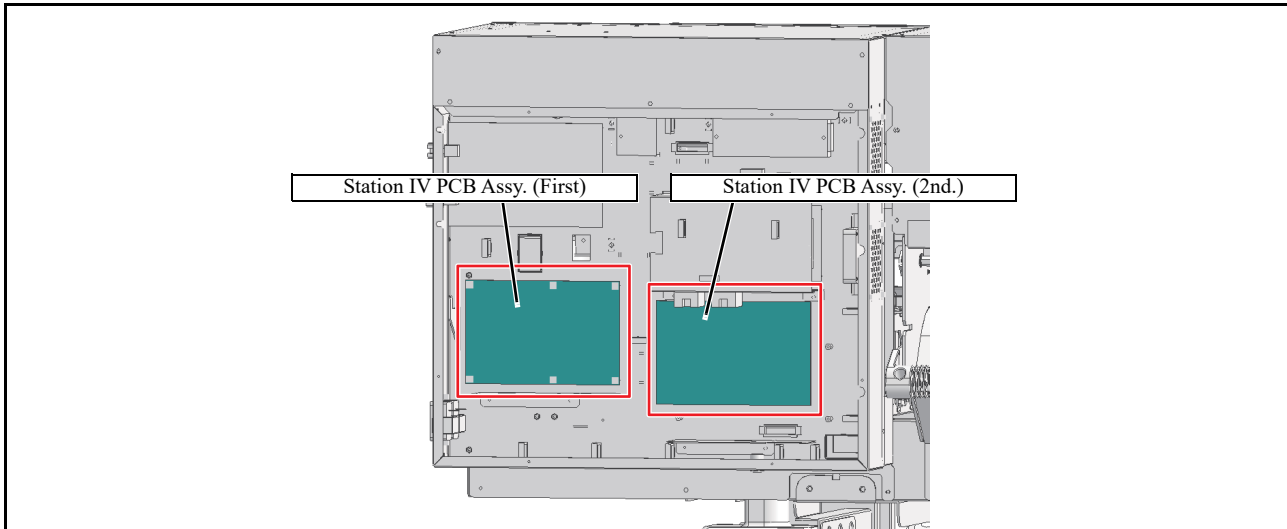
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## 6.4.2 STATION IV PCB Assy



### ■ Work procedures

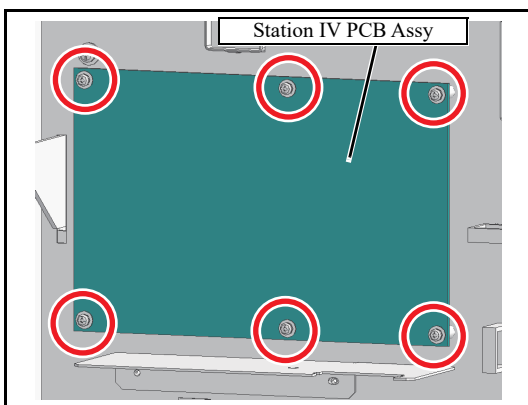


After turning off the sub and main power switches, unplug the power cord. Make sure to take 15 minutes before restarting the operation. It is very dangerous if sleep mode functions mistakenly during the operation.

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.
4. Remove the screws (x6) and then remove the **Station IV PCB Assy**.



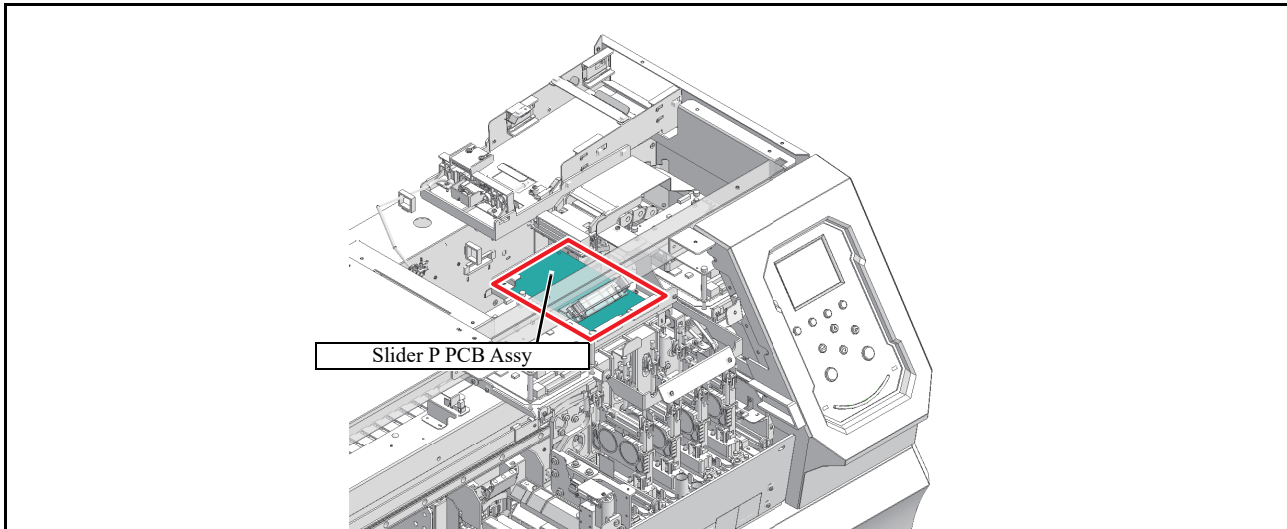
5. Reverse the disassembly procedure for reassembly.



Since this machine has two station IV PCB Assy, it is described in this document as follows.

- 1st PCB: The PCB on the left as seen from the back of the machine
- 2nd PCB: The PCB on the right as seen from the back of the machine

## 6.4.3 SLIDER P 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.

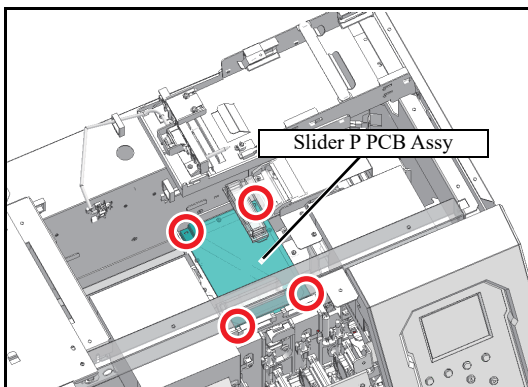
Also, there is a possibility of electric shock because of high power voltage applied to the high-pressure part of PCBs. Take care to avoid contact with it.

1. Remove the following covers.

- **Top cover R**
- **Slider PCB Cover**

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

3. Remove the screws (x3) and then remove the **Slider PCB Assy**.



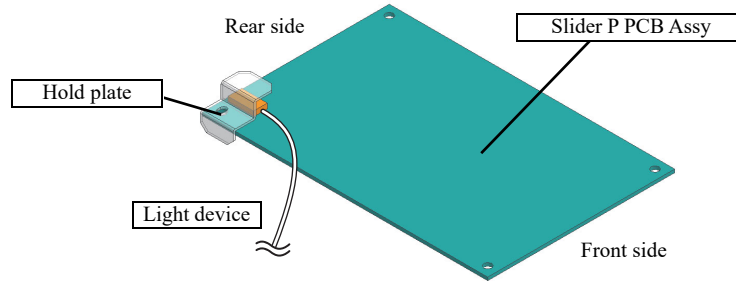
4. Reverse the disassembly procedure for reassembly.

### 6.4.3 SLIDER P PCB Assy



Note of the handling of AYG4V1F06HWAYG4V1F06HW light device (fiber)

- Straightly and carefully perform the connect and disconnect the connector.
- Handle so as not to put the stress on the optical fiber.



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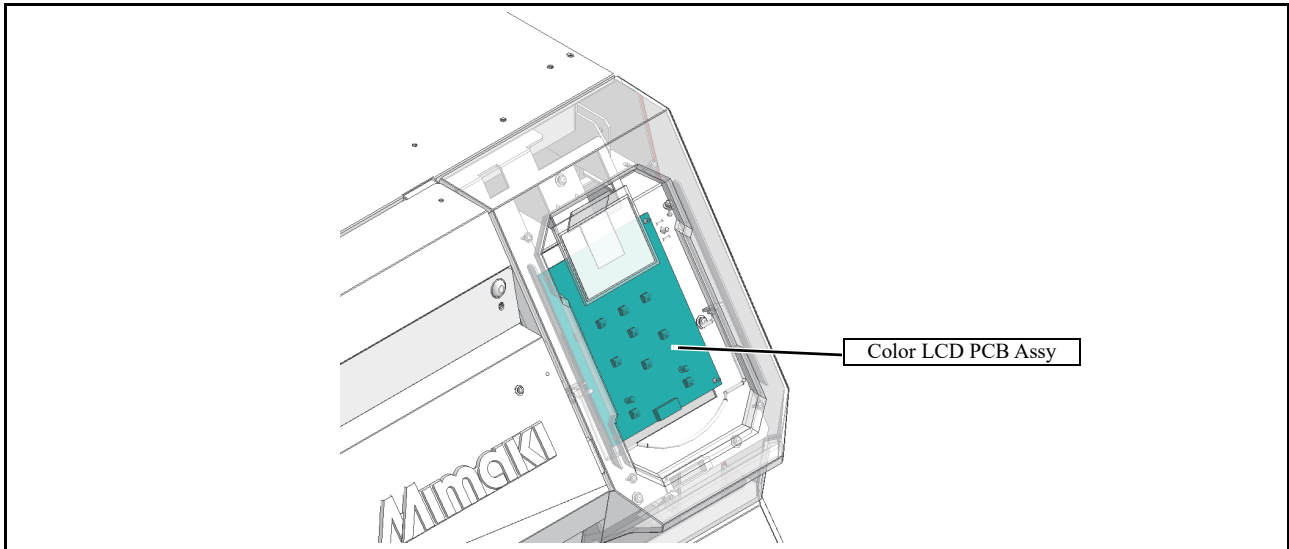
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## 6.4.4 Color LCD PCB Assy.



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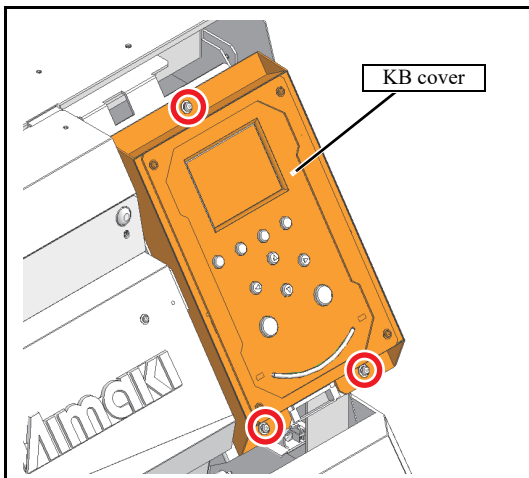
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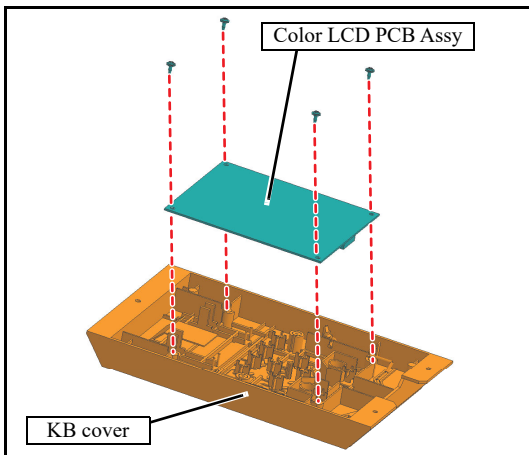
### Work procedures



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



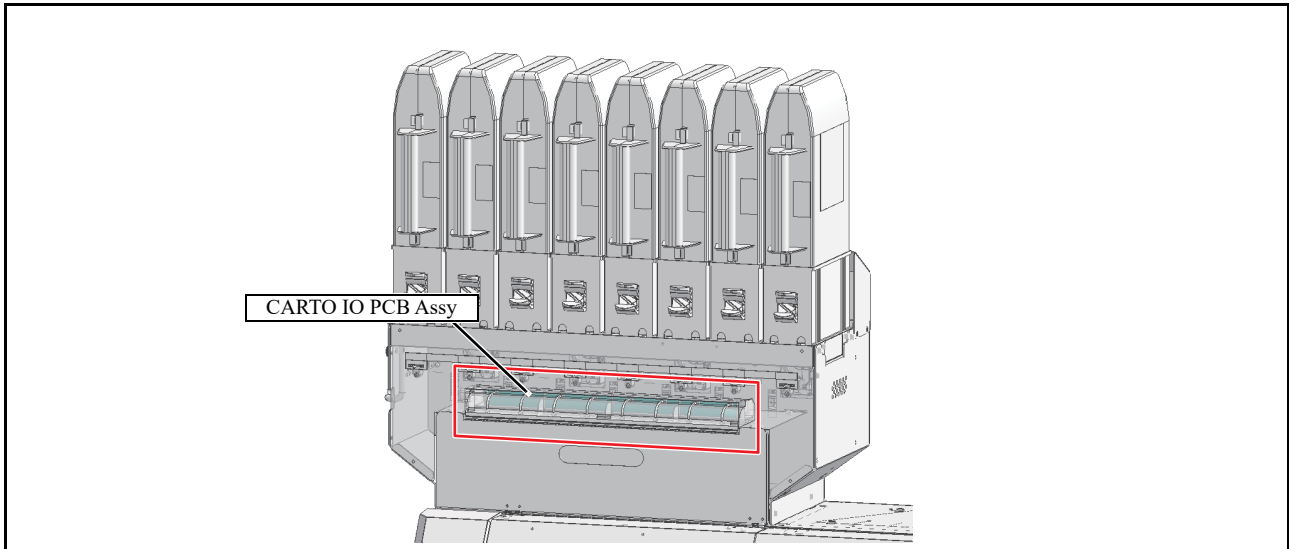
1. Remove the **Front cover R**.
2. Disconnect the cable from PCB, and then remove the KB cover (screw x3).



3. Remove the screws (x4) and then remove the **Color LCD PCB Assy**.

4. Reverse the disassembly procedure for reassembly.

## 6.4.5 CART IO PCB Assy



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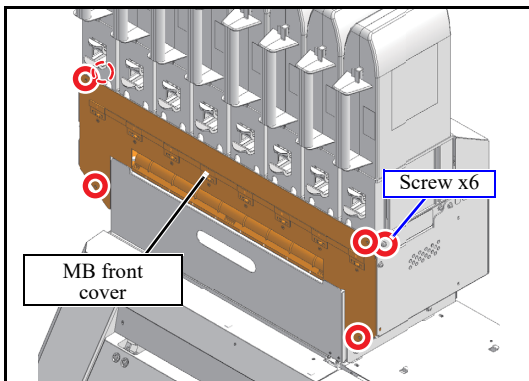
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### Work procedures

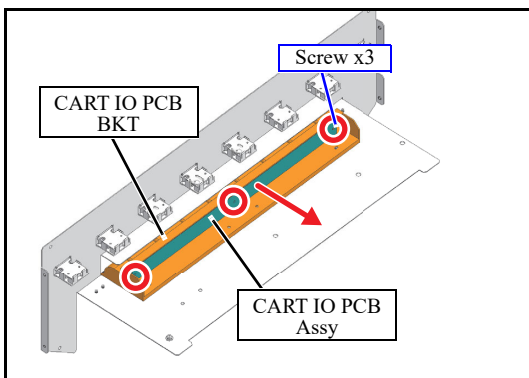


Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the **MB front cover**. (screw x6)

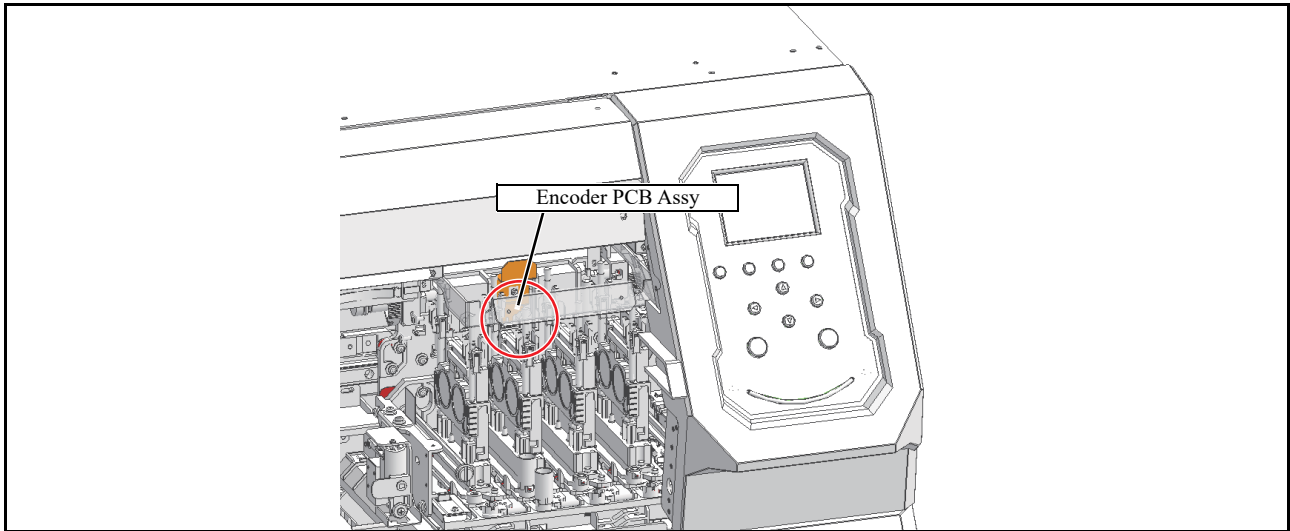
2. Disconnect the all connectors.



3. Remove the **CART IO PCB Assy** (screw x3).

4. Reverse the disassembly procedure for reassembly.

## 6.4.6 Encoder PCB Assy



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### Work procedures

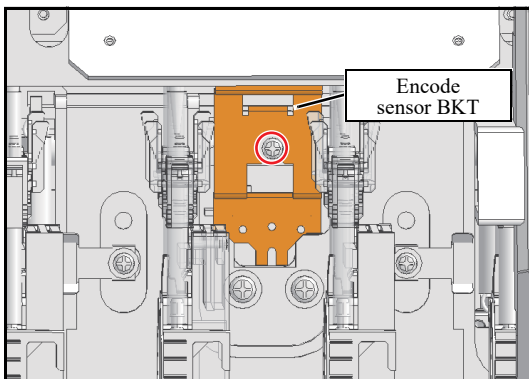


Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.

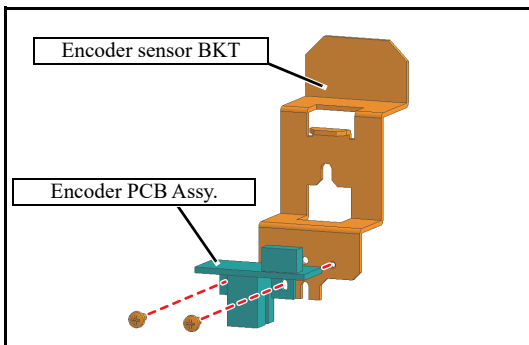
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1. Remove the **Front cover M, L** and **Carriage cover**.
2. Remove the **connector**.
3. Remove the **Encoder sensor BKT** (screw x1).

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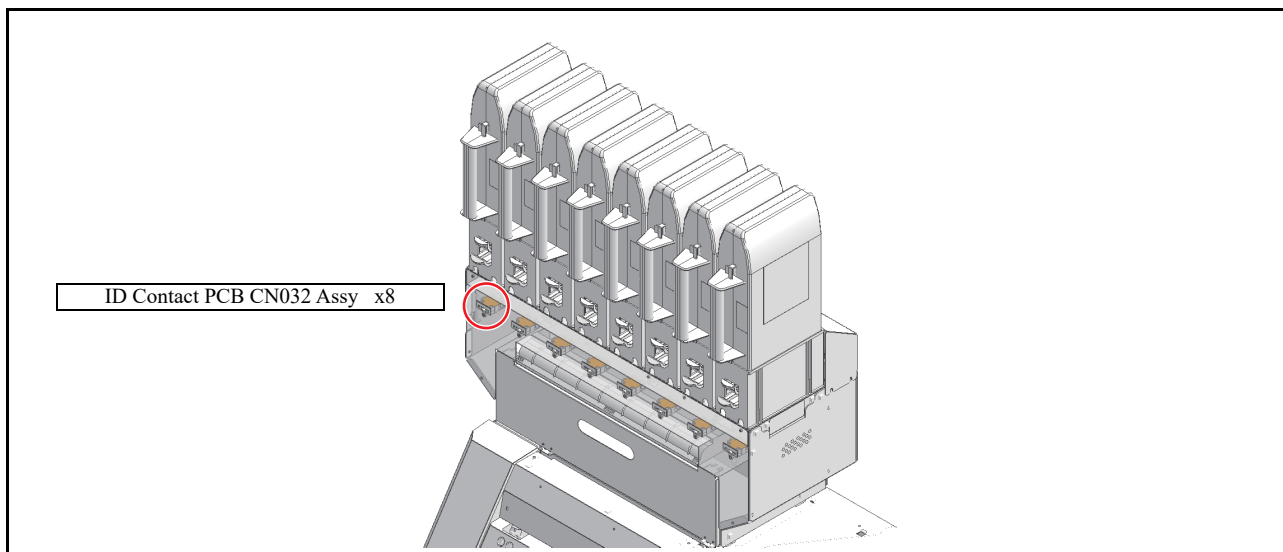
4. Remove the two screws and then remove the **Encoder PCB Assy**.

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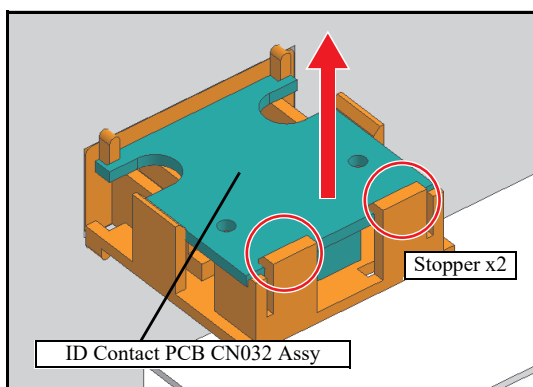
5. Reverse the disassembly procedure for reassembly.

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## 6.4.7 ID Contact PCB CN032 Assy



### ■ Work procedures



1. Remove the **MB front cover**.
2. Remove the connector and then the **ID contact PCB CN032 assy.** (x8)

3. Reverse the disassembly procedure for reassembly.

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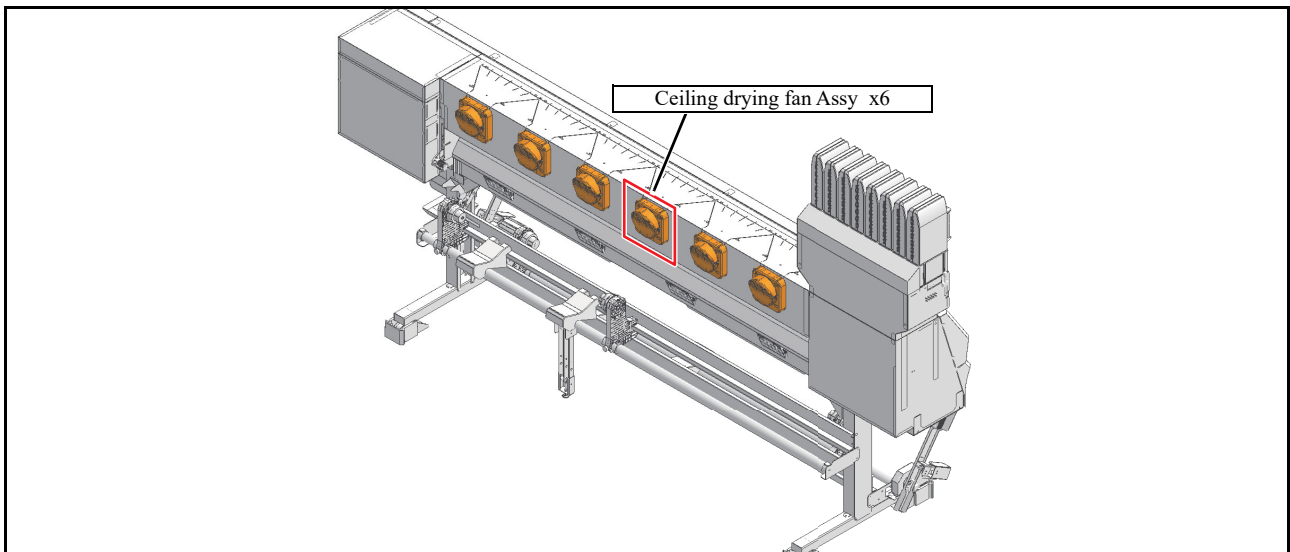
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## 6.4.8 Ceiling Drying Fan Assy.



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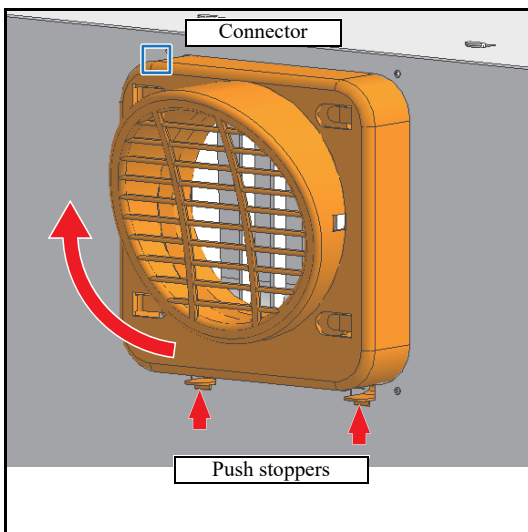
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### Work procedures



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 connector.
2. Push up the stoppers at bottom of the cover, and then remove the Assy. together with cover.

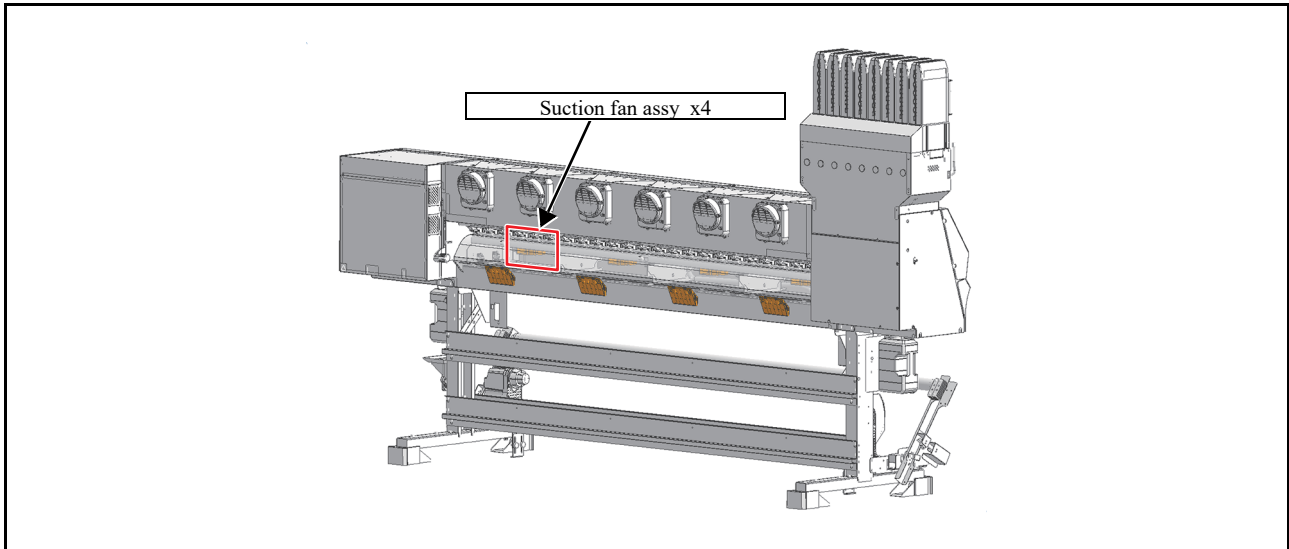
3. Reverse the disassembly procedure for reassembly.



When attaching, push down the stopper and fix the Assy. It is not fixed only by having fitted it.



## 6.4.9 Suction Fan Assy. (only for MkII)



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### Work procedures



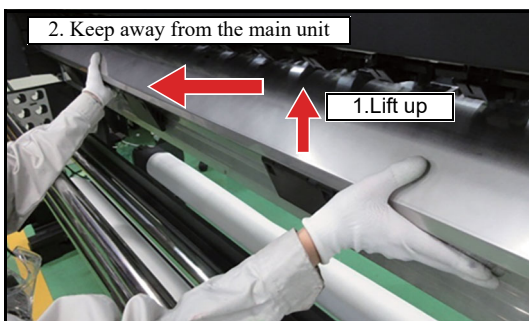
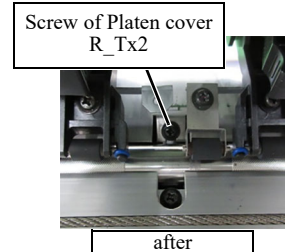
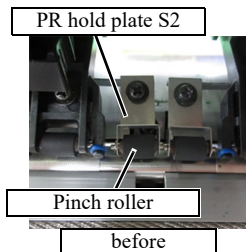
Turn the main power OFF when turning the power OFF.  
It is very dangerous if sleep mode functions mistakenly during the operation.



1. Remove the screw (x14) of platen cover R\_Tx2.



If there is a pinch roller before the screw of platen cover R\_Tx2, remove PR hold plate S2, and then remove the screw of platen cover R\_Tx2.

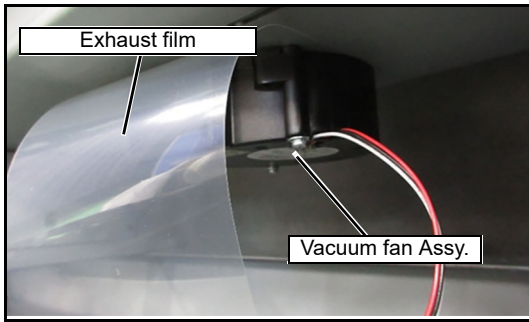


2. Remove the **platen cover R\_Tx2**.

3. Disconnect the connector (x1) of Vacuum Fan Assy.

4. Use a ratchet or stubby screwdriver to remove the screws (x2) from the Vacuum Fan Assy.

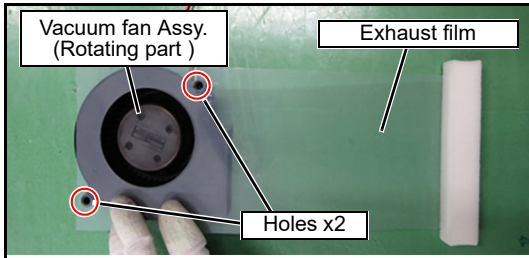
## 6.4.9 Suction Fan Assy. (only for MkII)



5. Remove the Vacuum Fan Assy. and exhaust film.



The exhaust film attached with the Vacuum Fan is necessary during assembly, so do not lose it.



6. Before assembling, align the Vacuum Fan Assy. to be installed and the holes of the exhaust film (x2 places).

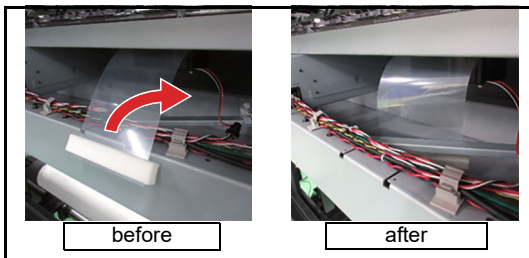


Stack the exhaust film on the surface where the rotating part of the Vacuum Fan Assy. is visible.

7. Attach the Vacuum Fan Assy. in step 6 with screws (x2) so that the exhaust film is on top.

8. Connect the connector (x1) of the Vacuum Fan Assy.

9. Put the exhaust film inside the body frame.

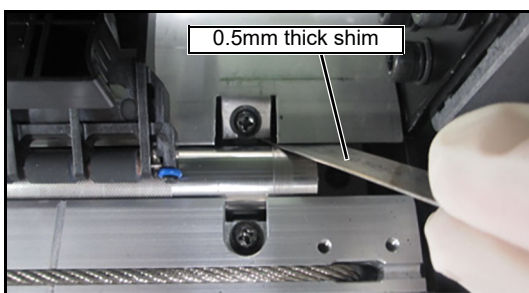


10. Attach the plate cover R\_Tx2.

11. Insert a 0.5mm thick shim between the platen cover R\_Tx2 and the grit roller and tighten the screws (x14).



If the gap between the platen cover R\_Tx2 and the grit roller is narrow, there is a possibility of contact.



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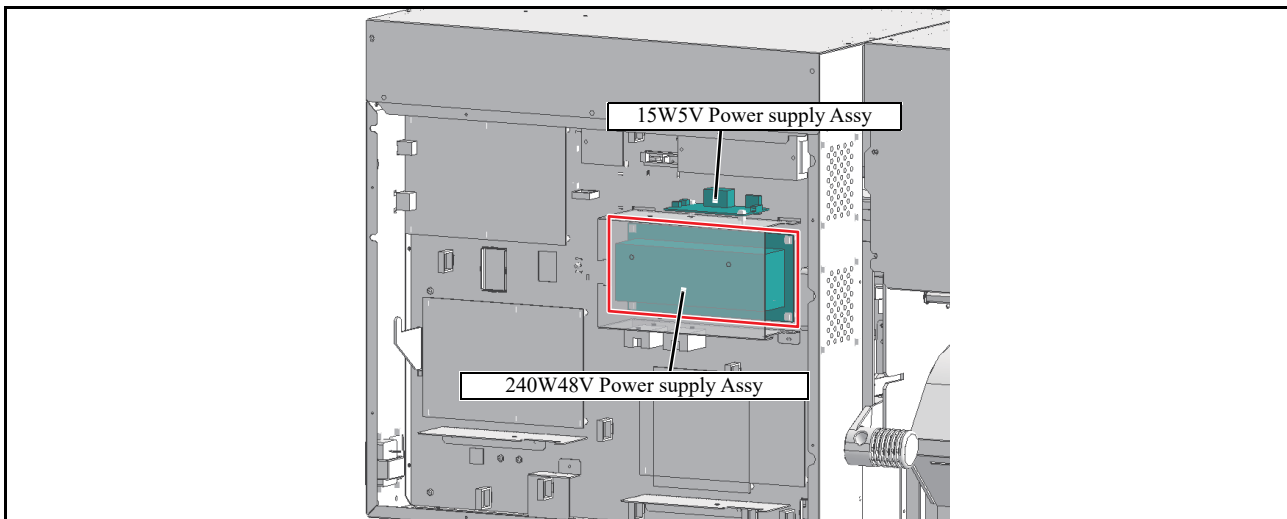
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## 6.4.10 240W48V / 15W5V Power Supply Assy.



### ■ Work procedures

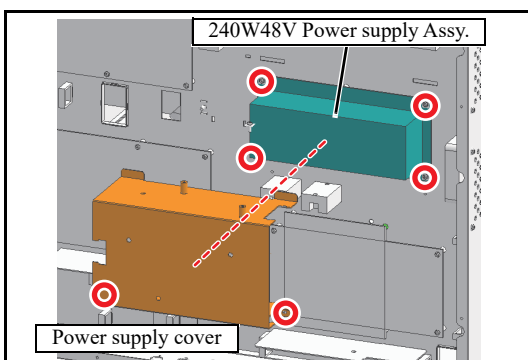
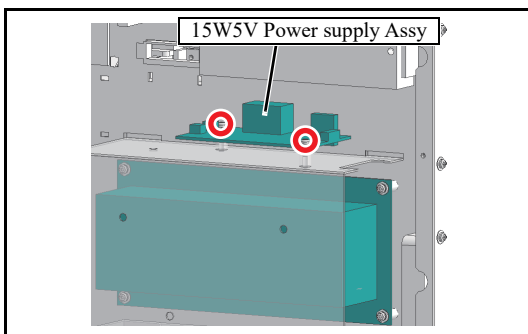


After turning off the sub and main power switches, unplug the power cord. Make sure to take 15 minutes before restarting the operation. It is very dangerous if sleep mode functions mistakenly during the operation.

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 PCBs. 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 **Electrical box cover** and **Power supply cover**.
3. Disconnect all **connectors** on PCB.
4. Remove the **15W5V power supply Assy**. (screw x2)



5. Remove the **Power supply cover**. (screw x2)
6. Remove the **240W48V power supply Assy**. (screw x5)

7. Reverse the disassembly procedure for reassembly.

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## Disassembly and Reassembly

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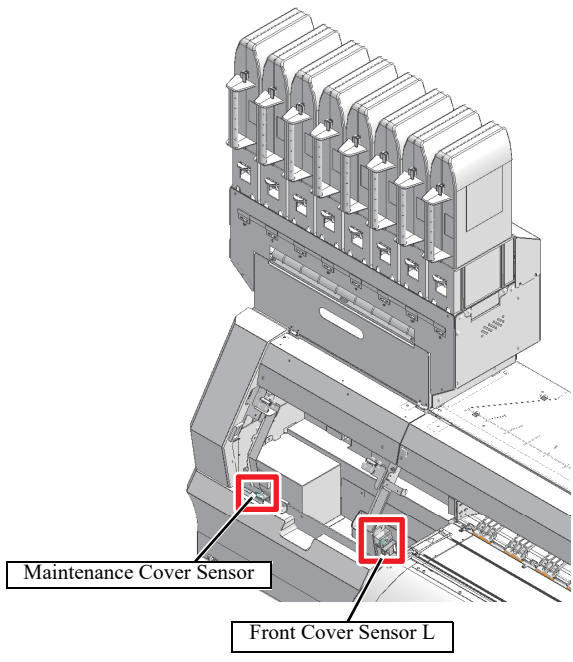
<b>6.1 Covers</b>	<b>6.2 Ink-related Parts</b>	<b>6.3 Drive System</b>
<b>6.4 Electrical Parts</b>	<b>6.5 Sensors</b>	

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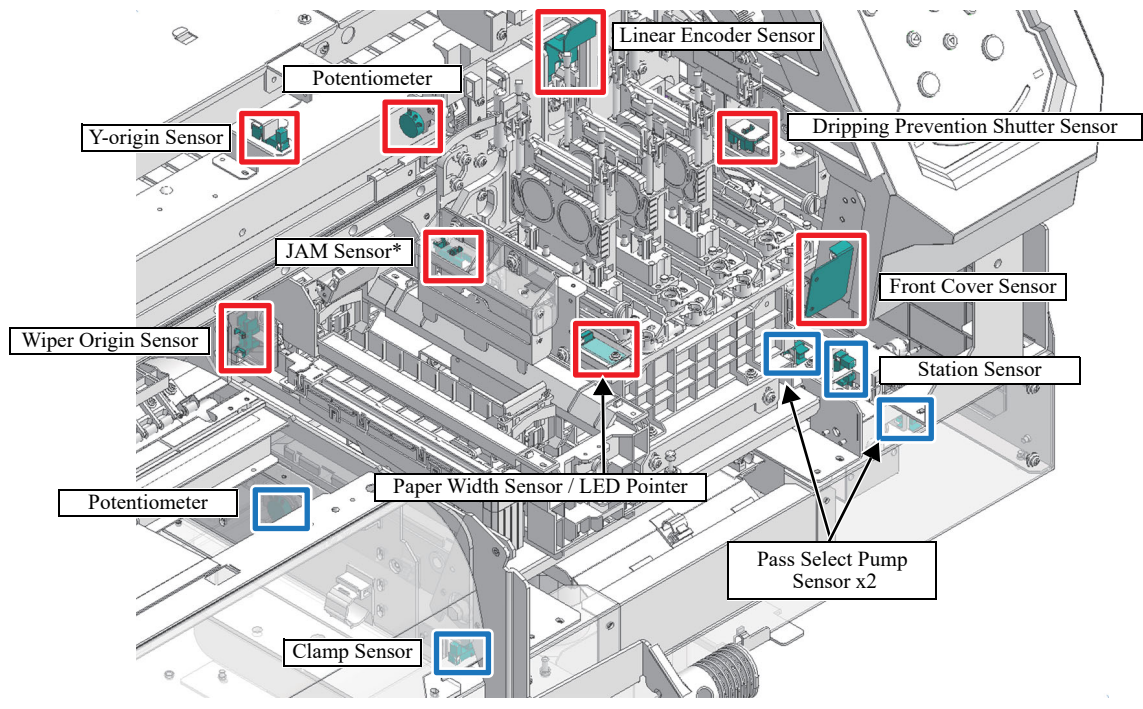
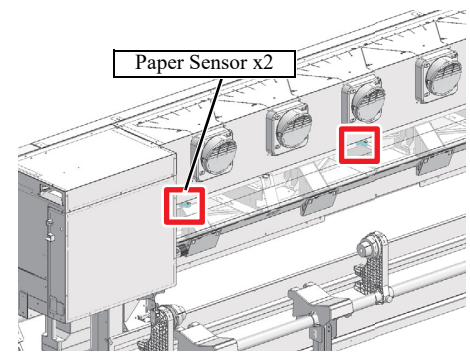
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## 6.5.1 Sensor Layout

Front left side



Rear right side



\*JAM Sensor: to be attached to the right side of the Carriage in case of Tx300P-1800.

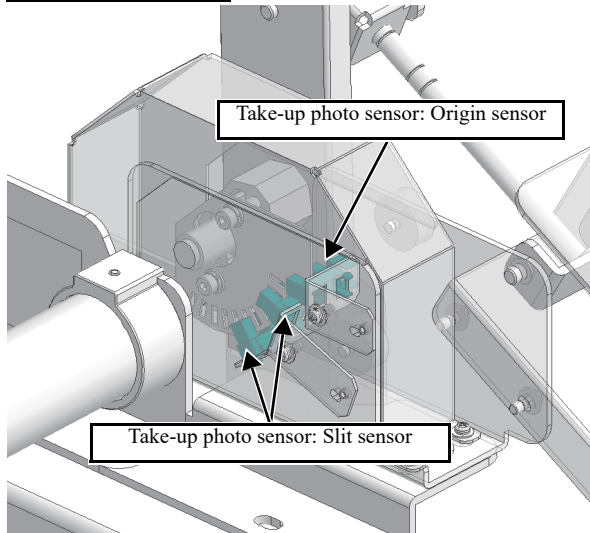
Front right side / Carriage

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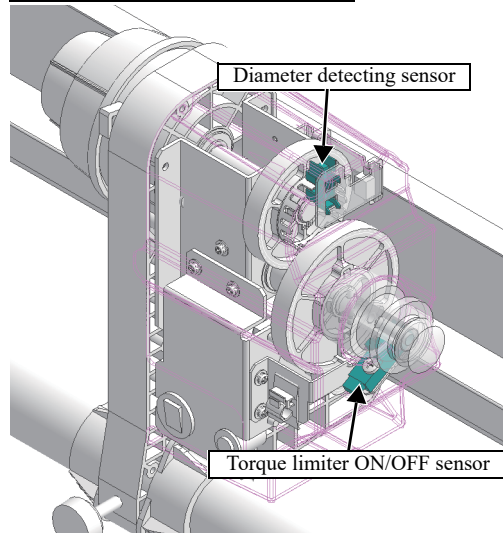
# 6.5.1 Sensor Layout

Leg

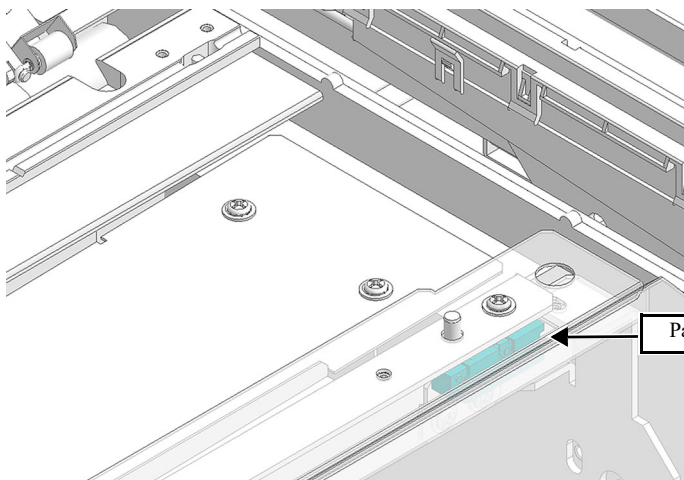
AMF right side x2



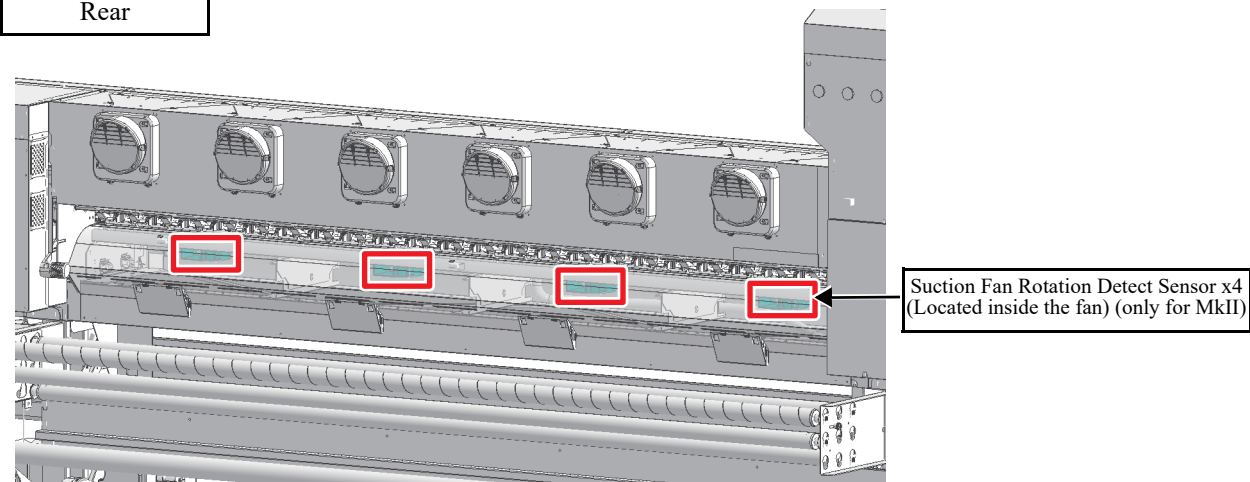
Take-up motor / Feeding motor



Front right side / Platen

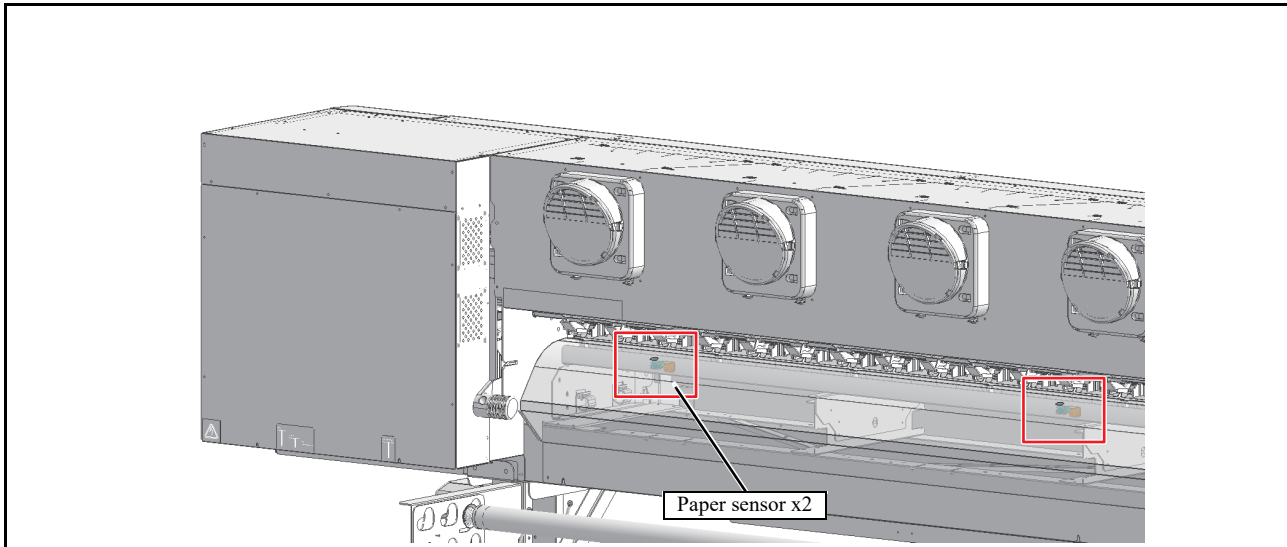


Rear



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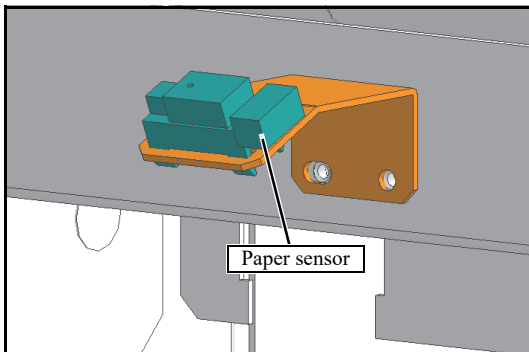
## 6.5.2 Paper Sensor



### 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 **Platen cover R1800**.
2. Remove the **Paper sensors** from the Paper sensor BKT and then disconnect the connector.

3. Reverse the disassembly procedure for reassembly.

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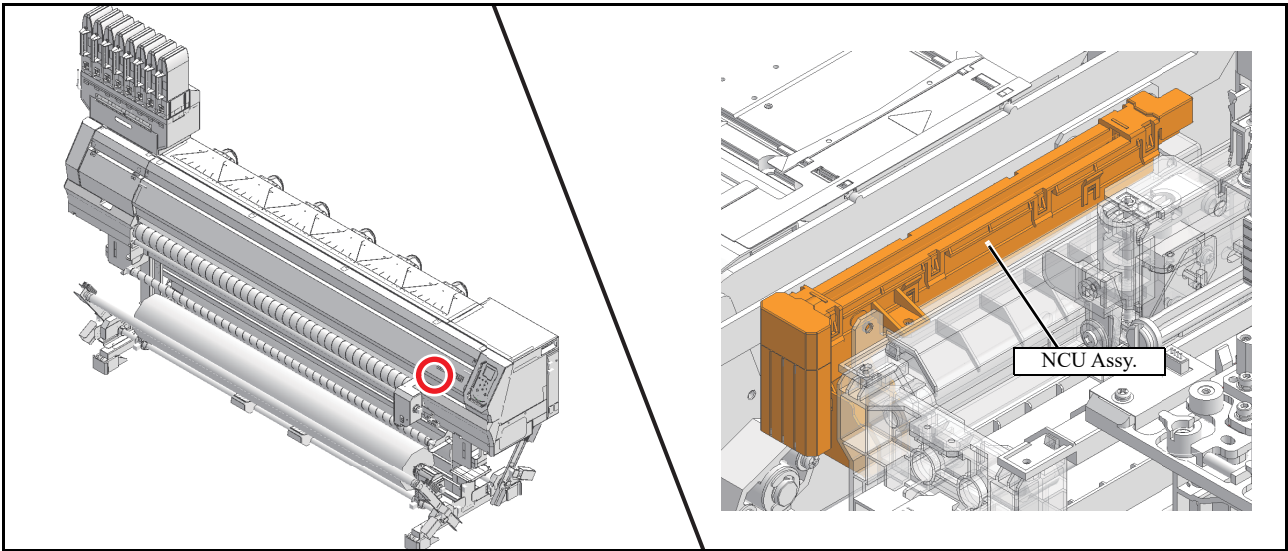
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## 6.5.3 NCU Assy. (Nozzle Missing Detector)

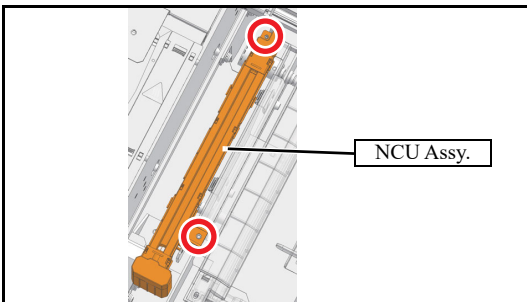
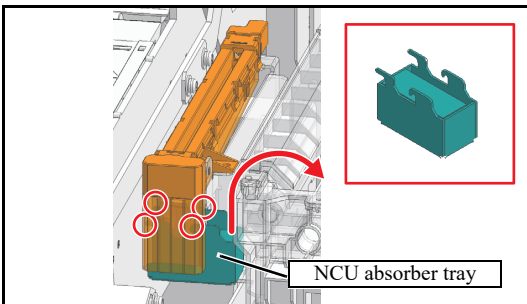


### Work procedures

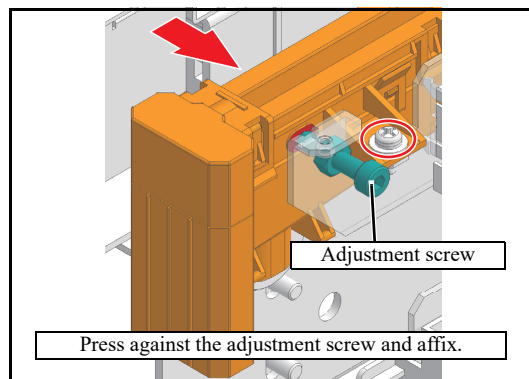


Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

1. Turn the main power OFF.
2. Remove the Front cover M and L.
3. Move slowly the carriage onto the platen by hand.
4. Remove the NCU absorber tray. (take off a hook, stopper x4).
5. Disconnect the all connectors.



6. Remove screws (x2) on the NCU frame, and then remove the NCU Assy.
7. Reverse the disassembly procedure for reassembly.



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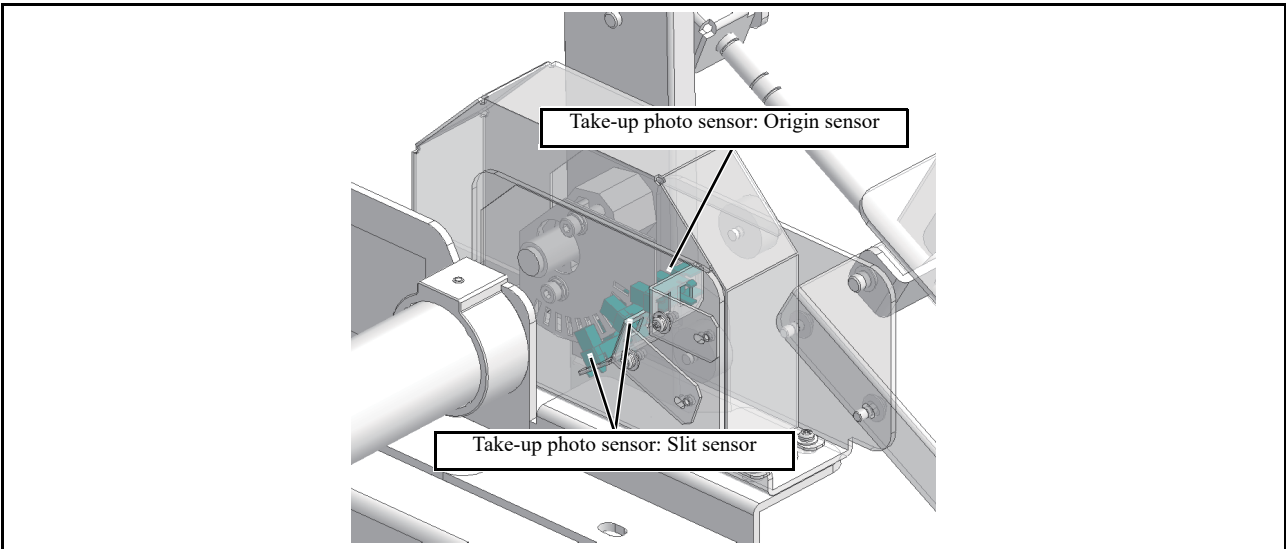
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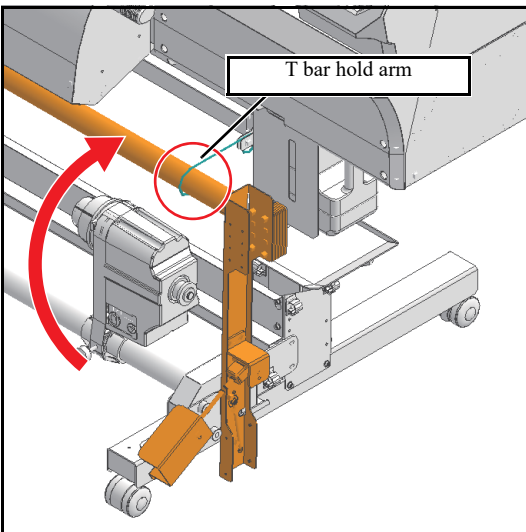
## 6.5.4 Take-up Photo Sensor (T bar angle detect sensor)



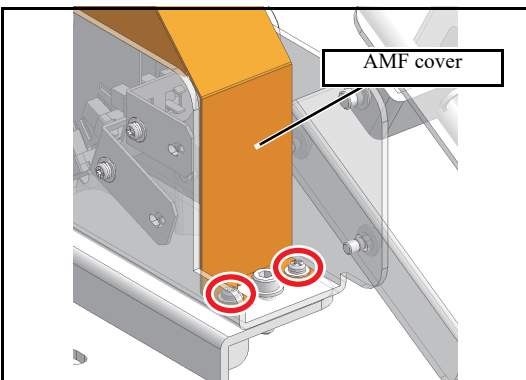
### Work procedures



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



1. Move up the T bar to holding position, and hold it with hook.  
Be sure to hold it with hook for improving workability.



2. Remove the **AMF cover** (screw x2).

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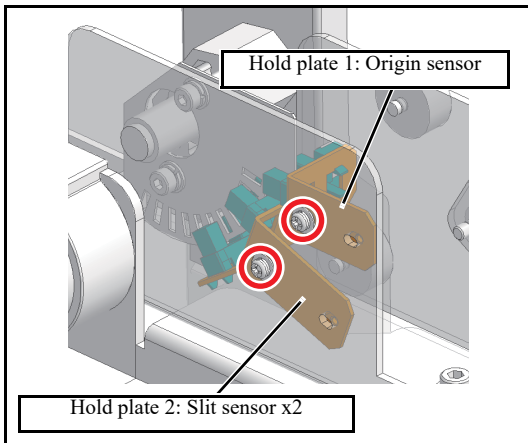
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## 6.5.4 Take-up Photo Sensor (T bar angle detect sensor)



3. Remove the Hold plate 1 and 2 from each sensor (by 1 screw each).

Remove the harness from the sensor, and remove the each sensor from the hold plate.

4. Reverse the disassembly procedure for reassembly.

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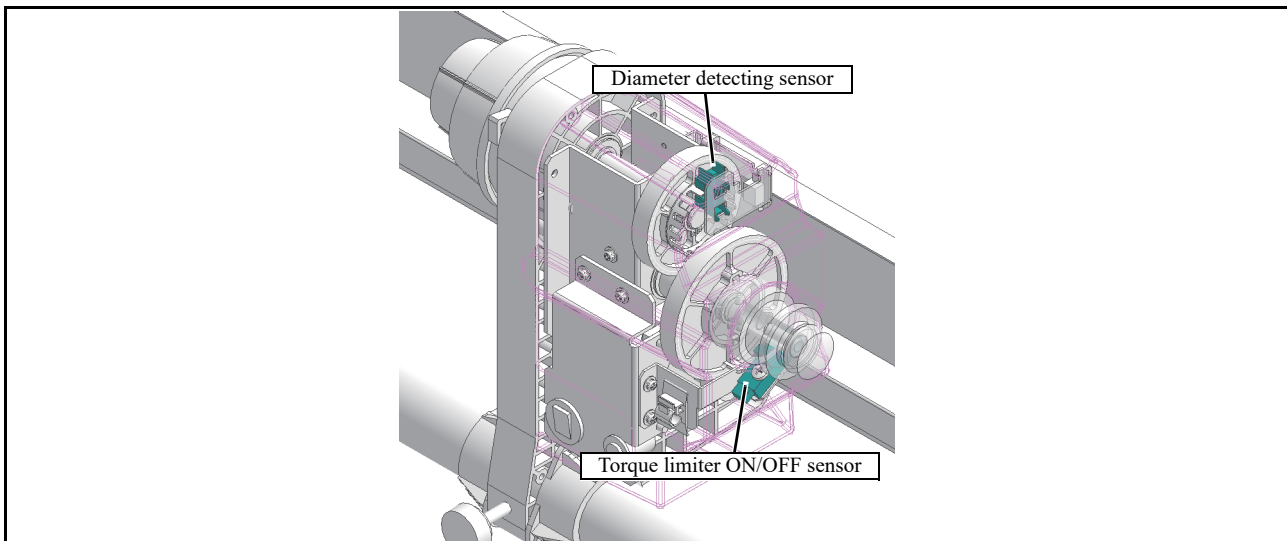
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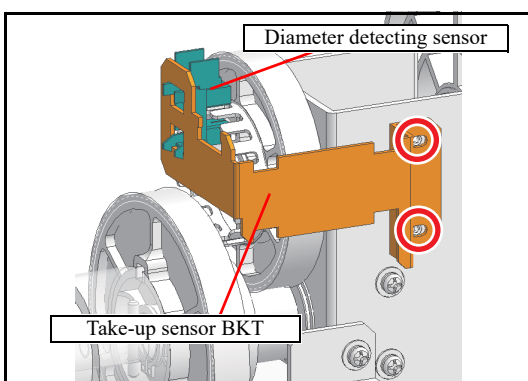
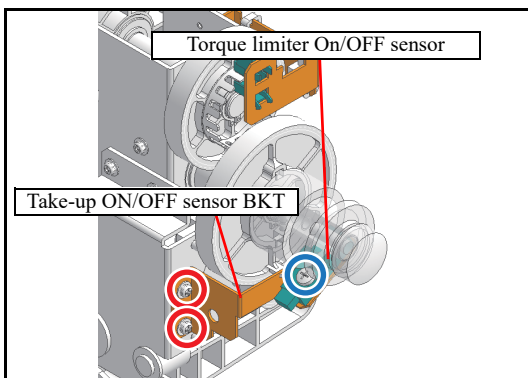
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## 6.5.5 Take-up Sensor / Feeding Sensor

3.0



### ■ Work procedures



1. Remove the **Take-up cover**.
2. Disconnect all connectors of the sensors. (x2)
3. Remove the **Take-up On/OFF sensor BKT** (screw x2).  
Remove the **Torque limiter ON/OFF sensor** (screw x1).

4. Remove the **Take-up sensor BKT** (screw x2).  
Remove the **Diameter detecting sensor** (screw x1).

5. Reverse the disassembly procedure for reassembly.

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## 6.5.6 Potentiometer

### ■ Work procedures

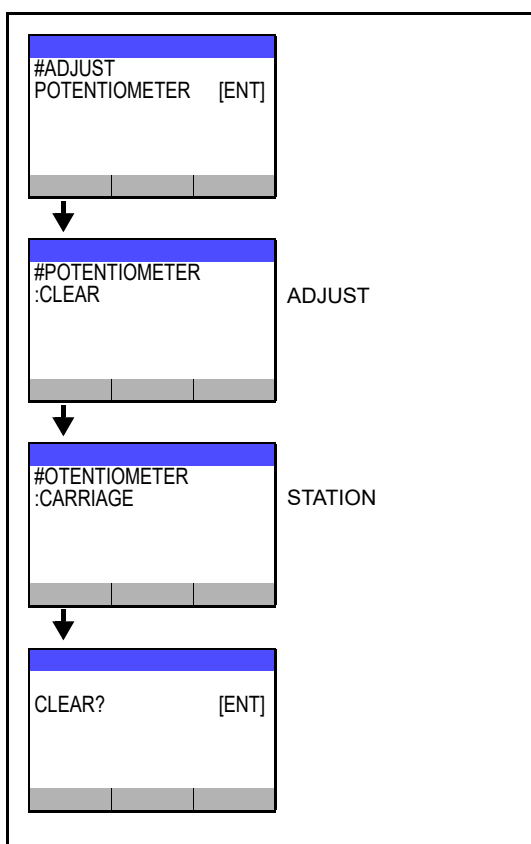


Turn the main power OFF when turning the power OFF. It is very dangerous if sleep mode functions mistakenly during the operation.

- Clear adjusting value of the potentiometer



If replace without clearing the adjustment value, it is possible that the station and the carriage clash at initial power ON after the replacement.



1. Select [#ADJUST] > [HEAD WASH].

2. Select "CLEAR".

3. Select potentiometer for replacement.

4. Execute clearing with [ENTER] key.



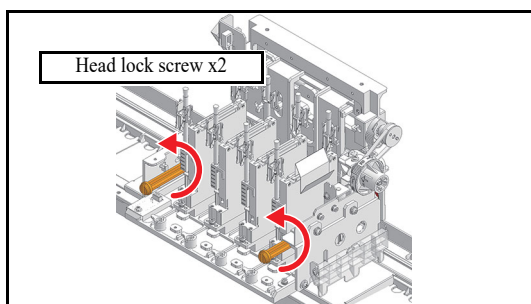
When clear the adjustment value of the potentiometer either of the carriage or station, the up and down control of station is not performed.



The following error occurs in a state where the adjustment value is cleared.

- ERROR 52f CARRIAGE ORG
- ERROR 530 STATION ORG

- Disassemble the potentiometer



5. Remove the **Carriage cover**.

6. Loosen the **Head lock screw**. (x2)

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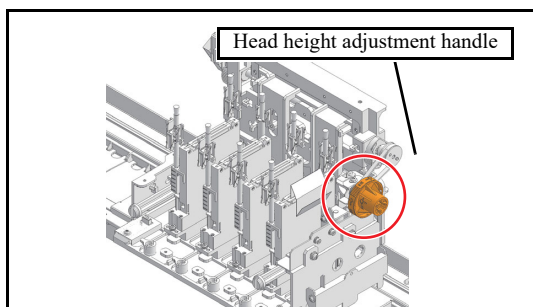
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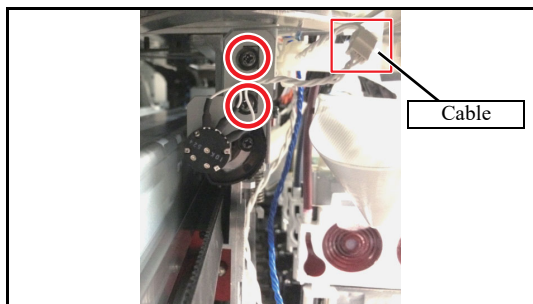
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## 6.5.6 Potentiometer

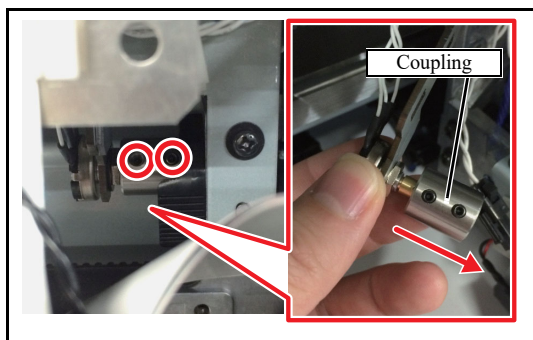


7. Lower the carriage at lowest position by rotating (clockwise) the head height adjusting handle.




8. Remove the **BKT**. (screw x2)

9. Disconnect the  **cable**.

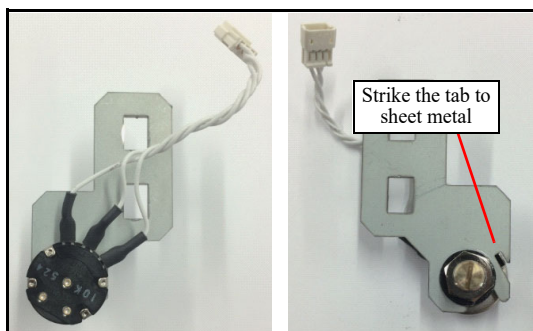


10. Remove the **Potentiometer** with the coupling. (set screw x2)

11. Pull out the **coupling**.

 It is hard to pull out for burr.


Assemble the potentiometer




12. Attach the **BKT**.



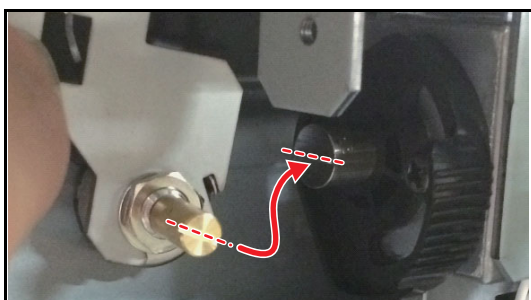
13. Rotate the shaft of the potentiometer to full clockwise.

 Rotate the shaft until touch the stopper.

 When mounted in a state of being turned in reverse, the load is applied to a direction that is not rotated and the potentiometer may be damaged.

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## 6.5.6 Potentiometer

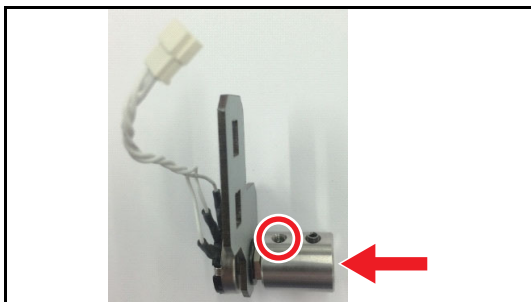


14. Adjust position of the shaft so that projecting part of the end surface of the shaft matches dent part of the shaft of potentiometer.



Return slightly from the position hitting the stopper in the counterclockwise direction to adjust the position. There is a case of inadequate position at full tightening if not adjust the position.

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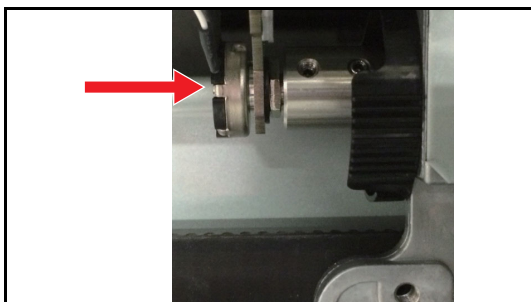


15. Deep insert the coupling, and then tighten the left set screw.



Considering fixing to the carriage, it is advisable to mount at an angle shown in the left.

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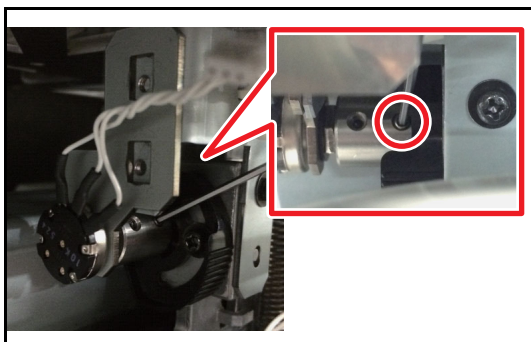
16. Attach the potentiometer to the shaft.



Match projecting part of the end surface of the shaft to dent part of the shaft of potentiometer in attaching. Be careful to the uneven portion. It is hidden by the coupling. After fitted, uneven portion is easy to match by turning the coupling.

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17. Tighten the right set screw of the coupling.

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18. Fix the BKT.

19. Connect the cable.

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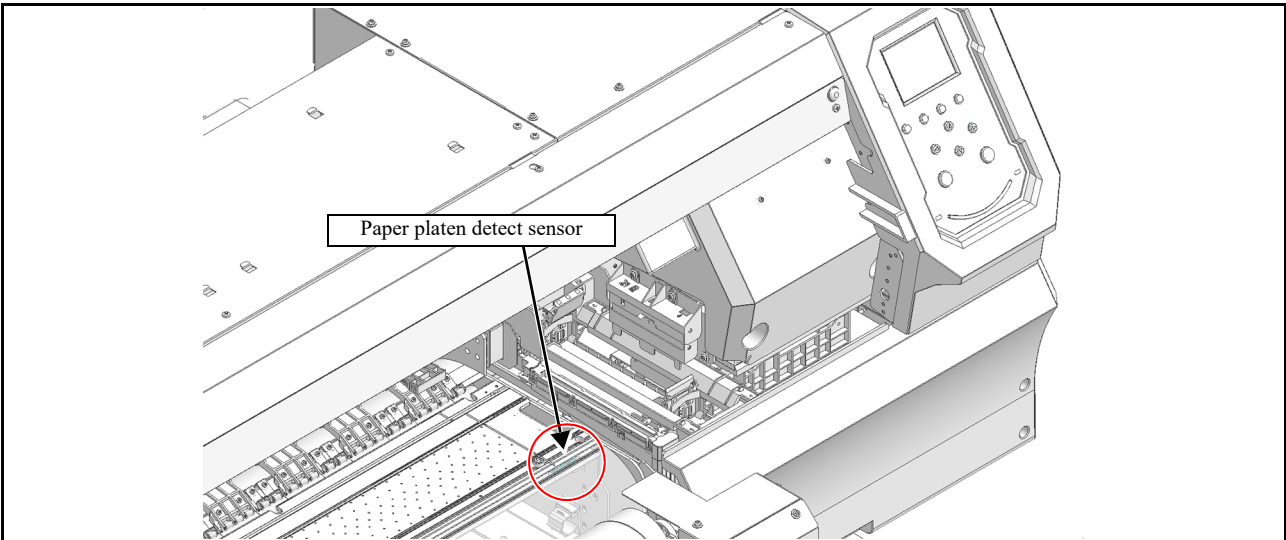
20. Turn power on.

21. Register the lowest position and the highest position of the potentiometer. (Refer to "4.2.7 POTENTIO METER")

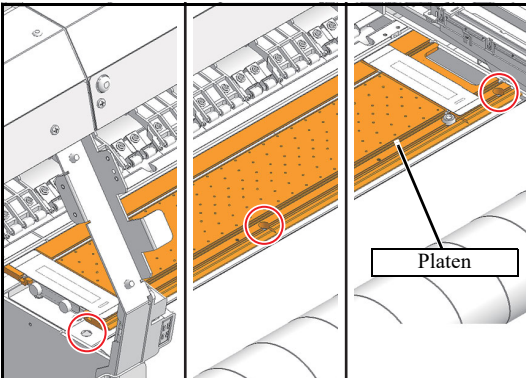
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22. Attach the cover which has been removed.

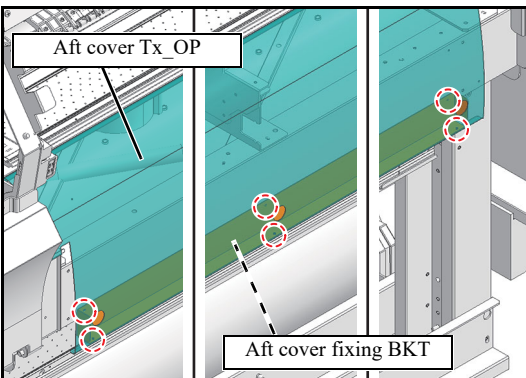
## 6.5.7 Paper Platen Detect Sensor



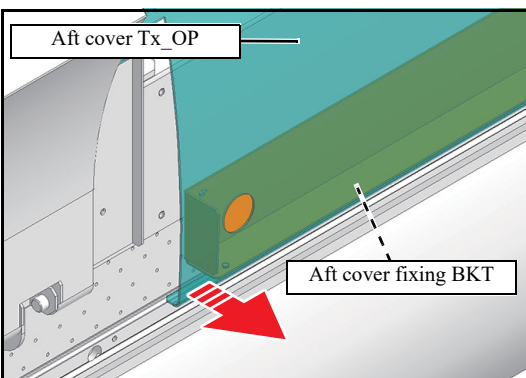
### ■ Work Procedures



1. Remove the screw in front of the platen. (screw x5)



2. Remove the screw fixing the aft cover fixing BKT. (screw x10)



3. While moving the aft cover Tx\_OP toward you, remove the **aft cover fixing BKT**.

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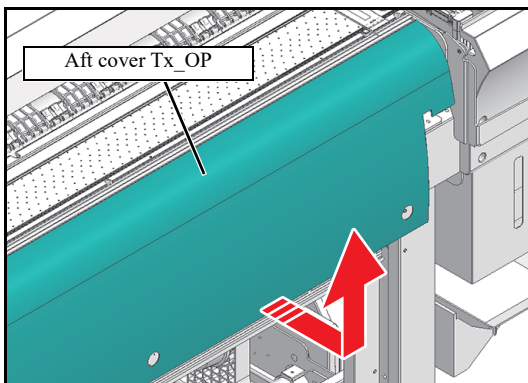
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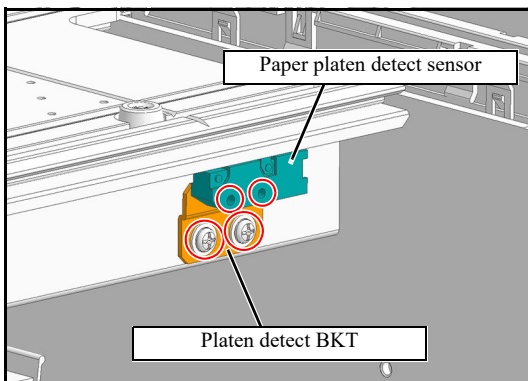
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## 6.5.7 Paper Platen Detect Sensor



4. Move the **aft cover Tx\_OP** toward you and lift it off.



5. Remove the screws (x4), the connector, the **paper platen detect sensor** and the **platen detect BKT**.

6. Adjust the position of the platen detect BKT.



When assembling, use the sensor check and adjust the BKT position so that the Paper Platen Sensor is in the proper position. (See "5.1.2 SENSOR")

- When paper platen is loaded: ON
- When paper platen is not set: OFF

7. Reverse the disassembly procedure for reassembly.

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# Troubleshooting

**7.1**  
**Details on Errors and Malfunctions**

**7.2**  
**Detailed Methods of Coping with  
the Malfunctions**

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# 7.1.1 Concerning Errors and Malfunctions

■ **Outline**

This chapter describes the troubleshooting for this machine.

■ **Rough identification of the source of the trouble**

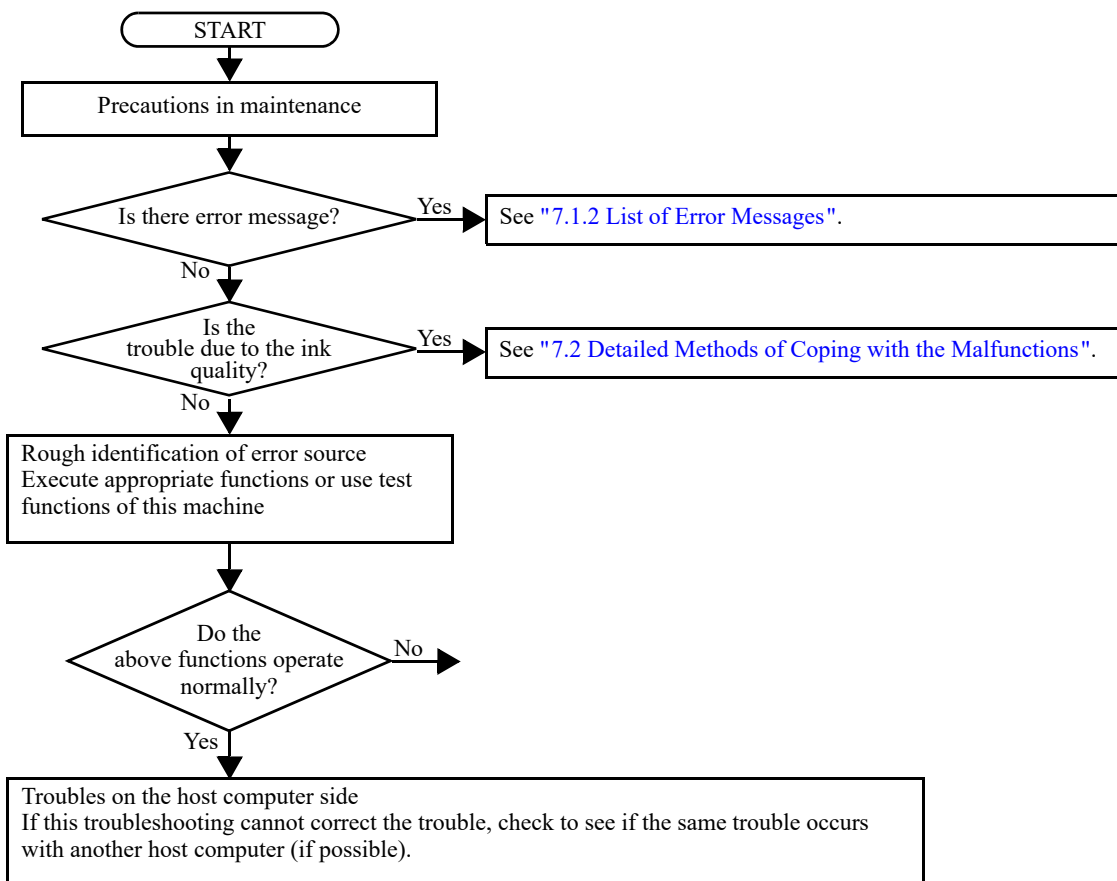
At the beginning of troubleshooting, it is necessary to identify roughly which functions the trouble relates to.

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.



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## 7.1.1 Concerning Errors and Malfunctions

### ■ 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.

- Uploading and checking of parameters
- Reinstalling of firmware
- Checking of FFC and cable connections
- Replace the defective part (sensor, etc.) or make the necessary adjustment.
- Replace the PCBs.

#### 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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## 7.1.2 List of Error Messages

## ■ List of Error Messages (1/13)

No.	LCD	Cause	List of Countermeasures
1	ERROR 108 HD THERMIS[1234]	Head temperature error (Head temperature is abnormal)	<ol style="list-style-type: none"> <li>1. Check the connection of the thermistor wire between the error head error and the HCB PCB.</li> <li>2. Insert and remove the thermistor line connector between the error head and the HCB PCB.</li> <li>3. Replace the HCB PCB connected error head with a new one.</li> <li>4. Replace the print head with a new one.</li> </ol>
2	ERROR 108 HD CONNECT[1234]	Head connection error (head connection can not be confirmed)	<ol style="list-style-type: none"> <li>1. Check the connection between the error head and the HCB PCB.</li> <li>2. Insert and remove the FFC between the error head and the HCB PCB.</li> <li>3. Replace the HCB PCB connected to the error head.</li> <li>4. Replace the FFC between the error head and the HCB PCB.</li> <li>5. Replace the print head with a new one.</li> </ol>
3	ERROR 122 CHECK:SDRAM	FW update failed or error occurs in SDRAM of main PCB	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
4	ERROR 128 HDC FIFO OVER	HDC FIFO OVER error (Data transmission speed is too fast control PCB trouble)	<ol style="list-style-type: none"> <li>1. Check that the scan parameter is the default value.</li> <li>2. Update F/W.</li> <li>3. Check cable connection between the EPL3 main PCB (CN104/CN105) and the Slider P PCB (CN1/CN3).</li> </ol>
5	ERROR 128 HDC FIFO UNDER	HDC FIFO UNDER error (Data transmission speed is too slow control PCB trouble)	<ol style="list-style-type: none"> <li>4. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>5. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
6	ERROR 130 HD DATA SEQ	Head data transferring sequence error	<ol style="list-style-type: none"> <li>6. Make sure that the power grounding are securely grounded.</li> </ol>
7	ERROR 129 BATTERY EXCHANGE	Battery on the main PCB dead.	<ol style="list-style-type: none"> <li>1. Replace a battery equipped on the EPL3 main PCB with new one. (CR1220) * The new battery should be the same product or the equivalent. * Discard the old battery according to the instruction from the maker.</li> <li>2. If the problem persists after replacement the battery, replace the EPL3 main PCB. (Refer to 3.3.1)</li> </ol>
8	ERROR 12a HDC SPEED	Detected an abnormality of ink ejection trigger. Discharge trigger is detected at a rate that exceeds the period of the discharge waveform.	<ol style="list-style-type: none"> <li>1. Check that the scan parameter is the default value.</li> <li>2. Update F/W.</li> <li>3. Conduct a linear encoder test.</li> <li>4. Check if there is dirt or scratch on the linear scale.</li> <li>5. Replace the liner encoder sensor with anew one.</li> <li>6. Replace the liner encoder scale with anew one. (Refer to 6.3.5)</li> <li>7. Replace the encoder PCB with anew one. (Refer to 6.4.6)</li> <li>8. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> </ol>
9	ERROR 148 E-LOG SEQ	Abnormality occurs in the log control.	<ol style="list-style-type: none"> <li>1. Initialize event log. (#TEST &gt; EVENT LOG &gt; [DATA CLEAR] key &gt; [ENTER] key)</li> <li>2. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>

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## 7.1.2 List of Error Messages

### ■ List of Error Messages (2/13)

No.	LCD	Cause	List of Countermeasures
10	ERROR 151 EPL3 main PCB V1R2	EPL3 main PCB 1.2V power supply is abnormal.	<ol style="list-style-type: none"> <li>1. Check the output voltage of the LFA15F-5-J1/ZWS 15B-5 (from +4.9V to 5.3V).</li> <li>2. Replace the power supply above, when the output voltage is abnormal.</li> <li>3. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
11	ERROR 152 EPL3 main PCB V2R5	EPL3 main PCB 2.5V power supply is abnormal.	
12	ERROR 153 EPL3 main PCB V3R3	EPL3 main PCB 3.3V power supply is abnormal.	
13	ERROR 154 EPL3 main PCB V05	EPL3 main PCB 5V power supply is abnormal.	
14	ERROR 157 EPL3 main PCB VTT	EPL3 main PCB VTT power supply is abnormal.	
15	ERROR 16e EPL3 main PCB V3R3B	EPL3 main PCB 3.3VB power supply is abnormal.	
16	ERROR 18a EPL3 main PCB V_CORE	EPL3 main PCB V_CORE power supply is abnormal.	
17	ERROR 18c EPL3 main PCB V12	EPL3 main PCB 12V power supply is abnormal.	<ol style="list-style-type: none"> <li>1. Check the output voltage of the LFP240F-48-J1R2Y/SWF240P-48-R(+47 V to +49V) and the LFA15F-5-J1/ZWS 15B-5 (from +4.9V to 5.3V).</li> <li>2. Replace the power supply above, when the output voltage is abnormal.</li> <li>3. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
18	ERROR 15f HEAD DRIVE HOT	COM driver of the HCB PCB becomes the high temperature. (more than 75°C)	<ol style="list-style-type: none"> <li>1. Check the ambient temperature.</li> <li>2. Check cable connection between the HCB PCB and the Slider P PCB.</li> <li>3. Check if the fan of each HCB PCB is operating.</li> <li>4. Replace the HCB PCB with a new one.</li> </ol>
19	ERROR 171 NEW HEAD CONNECT	New Print Head was recognized. Compare S/N written in the head memory with S/N stored in the machine.	<p>It is normal that an error occurs only at the time of the first start after having connected a new head.</p> <p>It is abnormal that an error occurs at the time of start every time.</p> <ol style="list-style-type: none"> <li>1. Check the cable connection between the HCB PCB Assy. and Slider P PCB.</li> <li>2. Check the cable and FFC connection between the HCB PCB Assy. and head.</li> <li>3. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>4. Replace the Printer Head with anew one.</li> </ol>
20	ERROR 18e FLS NOT COMP	Flushing control is not completed.	<ol style="list-style-type: none"> <li>1. Check cable connection between the HCB PCB and the Slider P PCB.</li> <li>2. Check the cable and FFC connection between the HCB PCB Assy. and head.</li> <li>3. Replace the HCB PCB with a new one.</li> <li>4. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>5. Replace the Printer Head with anew one.</li> </ol>
21	ERROR 18f OFFSET START	Abnormality is detected in the voltage control of the head. Head drive voltage does not rise.	<ol style="list-style-type: none"> <li>1. Check cable connection between the HCB PCB (CN4) and the Slider P PCB (CN23).</li> <li>2. Connect and disconnect the FFC between the HCB PCB and the head.</li> <li>3. Replace the HCB PCB with a new one.</li> <li>4. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>5. Replace the Printer Head with anew one.</li> </ol>
22	ERROR 18f OFFSET END	Abnormality is detected in the voltage control of the head. Head drive voltage does not fall.	

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## 7.1.2 List of Error Messages

### ■ List of Error Messages (3/13)

No.	LCD	Cause	List of Countermeasures
23	ERROR 1ce SLIDER PCB V24	Slider P PCB 24V power supply is abnormal.	<ol style="list-style-type: none"> <li>1. Check the output voltage of the LFP240F-48-J1R2Y/SWF240P-48-R (+47 V to +49V) and the LFA15F-5-J1/ZWS 15B-5 (from +4.9V to 5.3V).</li> <li>2. Replace the power supply above, when the output voltage is abnormal.</li> <li>3. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> </ol>
24	ERROR 1cf SLIDER PCB V1R8	Slider P PCB 1.8V power supply is abnormal.	
25	ERROR 1d9 Main PCB V48-1	EPL3 PCB 48V power supply is abnormal.	<ol style="list-style-type: none"> <li>1. Check the output voltage of the LFP240F-48-J1R2Y/SWF240P-48-R (+47 V to +49V) and the LFA15F-5-J1/ZWS 15B-5 (from +4.9V to 5.3V).</li> <li>2. Replace the power supply above, when the output voltage is abnormal.</li> <li>3. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
26	ERROR 1db Station4 PCB V48	Station IV PCB (First) 48V power supply is abnormal.	<ol style="list-style-type: none"> <li>1. Check the output voltage of the LFP240F-48-J1R2Y/SWF240P-48-R (+47 V to +49V) and the LFA15F-5-J1/ZWS 15B-5 (from +4.9V to 5.3V).</li> <li>2. Replace the power supply above, when the output voltage is abnormal.</li> <li>3. Replace the Station IV PCB (First) with a new one. (Refer to 6.4.3)</li> </ol>
27	ERROR 1dc Station4 PCB V24	Station IV PCB (First) 24V power supply is abnormal.	
28	ERROR 1dd Station4 PCB V24-A	Station IV PCB (First) 24-AdjV power supply is abnormal.	
29	ERROR 1db Station4-2 PCB V48	Station IV PCB (2nd.) 48V power supply is abnormal.	<ol style="list-style-type: none"> <li>1. Check the output voltage of the LFP240F-48-J1R2Y/SWF240P-48-R (+47 V to +49V) and the LFA15F-5-J1/ZWS 15B-5 (from +4.9V to 5.3V).</li> <li>2. Replace the power supply above, when the output voltage is abnormal.</li> <li>3. Replace the Station IV PCB (2nd.) with a new one. (Refer to 6.4.3)</li> </ol>
30	ERROR 1dc Station4-2 PCB V24	Station IV PCB (2nd.) 24V power supply is abnormal.	
31	ERROR 1dd Station4-2 PCB V24-A	Station IV PCB (2nd.) 24-AdjV power supply is abnormal.	
32	ERROR 1de SLIDER PCB V1R2	Slider P PCB 1.2V power supply is abnormal.	<ol style="list-style-type: none"> <li>1. Check the output voltage of the LFP240F-48-J1R2Y/SWF240P-48-R (+47 V to +49V) and the LFA15F-5-J1/ZWS 15B-5 (from +4.9V to 5.3V).</li> <li>2. Replace the power supply above, when the output voltage is abnormal.</li> <li>3. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> </ol>
33	ERROR 1df SLIDER PCB V2R5	Slider P PCB 2.5V power supply is abnormal.	
34	ERROR 1e0 SLIDER PCB V3R3	Slider P PCB 3.3V power supply is abnormal.	
35	ERROR 1e1 SLIDER PCB V5	Slider P PCB 5V power supply is abnormal.	
36	ERROR 1e2 SLIDER PCB V48	Slider P PCB 48V power supply is abnormal.	<ol style="list-style-type: none"> <li>1. Check the connection of DDR II PRAM PCB.</li> <li>2. Replace the DDR II PRAM PCB.</li> <li>3. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
37	ERROR 1e6 PRAM SIZE SHORTAGE	DDR II RAM PCB can not be detected.	
38	ERROR 201 COMMAND ERROR	Command error Other data than commands is received	<ol style="list-style-type: none"> <li>1. Check if the output set of the PC matches the set of the machine side.</li> <li>2. Change the profile.</li> <li>3. Check if there is no trouble on the USB Cable.</li> <li>4. Replace the USB Cable.</li> <li>5. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
39	ERROR 202 PARAMETER ERROR	Parameter error Parameter out of the numeral value range is received	
40	ERROR 203 Ment Command	Maintenance command Operation of a maintenance command fails	<ol style="list-style-type: none"> <li>1. Check the PRM file.</li> <li>2. Check the number of each parameter. (if PRM matches up to the machine.)</li> </ol>

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## 7.1.2 List of Error Messages

## ■ List of Error Messages (4/13)

No.	LCD	Cause	List of Countermeasures
41	ERROR 206 PRINTING MODE	Received the print data of non-printable conditions	<ol style="list-style-type: none"> <li>1. Check the print data output conditions of the RIP software.</li> <li>2. Change the profile.</li> <li>3. Check if there is no parameter error.</li> <li>4. Check if there is no trouble on the USB Cable.</li> <li>5. Replace the USB Cable.</li> <li>6. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
42	ERROR 304 USB INIT ERR	USB initialization error (Failures in initializing USB device)	<ol style="list-style-type: none"> <li>1. Check if there is no parameter error.</li> <li>2. Check if there is no trouble on the USB Cable.</li> <li>3. Replace the USB Cable.</li> <li>4. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
43	ERROR 305 USB TIME OUT	USB time-out (Occurrence of time-out error on USB device)	<ol style="list-style-type: none"> <li>1. Check if there is no parameter error.</li> <li>2. Check if there is no trouble on the USB Cable.</li> <li>3. Replace the USB Cable.</li> <li>4. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
44	ERROR 307 MCFD File IF Error	Abnormality occurs during access to the media configuration data on the SD card.	<ol style="list-style-type: none"> <li>1. Execute [# TEST] &gt; [SD CARD] &gt; [RW CHECK].</li> <li>2. In the case of error number 700 or larger, there is an abnormality in the communication with the SD card. Check whether SD card is inserted. Check the connection of SD card slot.</li> <li>3. In the case of error number less than 700, there is an abnormality in the communication with the SD card or in the format of SD card. Check whether SD card is inserted. Check the connection of SD card slot. Execute [# TEST] &gt; [SD CARD] &gt; [FORMAT] &gt; [FAT16/ALC16KB] and format the SD card. (Note) media configuration data are deleted, Please re-download.</li> </ol>
45	ERROR 401 MOTOR X	X Servo error (Excessive load to the X-motor)	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. Check if there is no trouble on the X motor belt.</li> <li>3. Check if there is no trouble on the CN14 and CN15 of the EPL3 main PCB, and Motor Cable. (disconnecting, burnout, or the like)</li> <li>4. Replace the X-axis Motor with a new one. (Refer to 3.2.1)</li> <li>5. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
46	ERROR 403 X CURRENT	X-motor current (Over current error of X-motor is detected.)	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. In the power turned OFF state, make sure it works smoothly in the Y direction.</li> <li>3. Check if there is no trouble on the timing belt.</li> <li>4. Check if there is no trouble on the CN14 and CN15 of the EPL3 main PCB, and Motor Cable. (disconnecting, burnout, or the like)</li> <li>5. Replace the Y-axis Motor with a new one. (Refer to 3.2.2)</li> <li>6. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
47	ERROR 402 MOTOR Y	Y Servo error (Excessive load to the Y-motor)	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. In the power turned OFF state, make sure it works smoothly in the Y direction.</li> <li>3. Check if there is no trouble on the timing belt.</li> <li>4. Check if there is no trouble on the CN14 and CN15 of the EPL3 main PCB, and Motor Cable. (disconnecting, burnout, or the like)</li> <li>5. Replace the Y-axis Motor with a new one. (Refer to 3.2.2)</li> <li>6. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
48	ERROR 404 Y CURRENT	Y-motor current (Over current error of Y-motor is detected.)	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. In the power turned OFF state, make sure it works smoothly in the Y direction.</li> <li>3. Check if there is no trouble on the timing belt.</li> <li>4. Check if there is no trouble on the CN14 and CN15 of the EPL3 main PCB, and Motor Cable. (disconnecting, burnout, or the like)</li> <li>5. Replace the Y-axis Motor with a new one. (Refer to 3.2.2)</li> <li>6. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>

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## 7.1.2 List of Error Messages

## ■ List of Error Messages (5/13)

No.	LCD	Cause	List of Countermeasures
49	<b>ERROR 423</b> <b>TAKE-UP TENSION-BAR</b>	<p>Take-up tension bar error (Origin of tension bar can not be detected) (Angle change of tension bar can not be detected)</p> <p>It occurs under conditions of follows;</p> <ul style="list-style-type: none"> <li>• When initializing operation of the tension bar fails after detecting the media.</li> <li>• When initializing operation of the tension bar during printing (only without torque limiter).</li> <li>• When retry operation fails two times after abnormal control of the tension bar (only without torque limiter).</li> </ul> <p>Tension bar control is not performed after error outbreak.</p> <ul style="list-style-type: none"> <li>→ In case that torque limiter is available, control the take-up unit.</li> <li>→ In case that torque limiter is not available, take up operation is not performed.</li> </ul>	<ol style="list-style-type: none"> <li>1. Check the setting status of the media.</li> <li>2. Check the connection of the round connector under electrical BOX and the take-up sensor cable.</li> <li>3. Confirm that tension bar is risen by taking up the media with manual SW. (If it is not risen, adjust the weights.)</li> <li>4. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [TAKE-UP TENSION-BAR]. (Confirm that the ON/OFF display is switched by moving the tension bar up and down.)</li> <li>5. Check the connector connection of Take-up tension bar origin sensor and cable.</li> <li>6. Replace the Take-up tension bar origin sensor.</li> <li>7. Replace the Station IV PCB, which connects take-up unit, with a new one. (Refer to 6.4.2)</li> </ol>
50	<b>ERROR 424</b> <b>FEEDING TENSION-BAR</b>	<p>Feeding tension bar error (Origin of tension bar can not be detected) (Angle change of tension bar can not be detected)</p> <p>It occurs under conditions of follows;</p> <ul style="list-style-type: none"> <li>• When initializing operation of the tension bar fails after detecting the media.</li> <li>• When initializing operation of the tension bar during printing (only without torque limiter).</li> <li>• When retry operation fails two times after abnormal control of the tension bar (only without torque limiter).</li> </ul> <p>Tension bar control is not performed after error outbreak.</p> <ul style="list-style-type: none"> <li>→ In case that torque limiter is available, control the take-up unit.</li> <li>→ In case that torque limiter is not available, take up operation is not performed.</li> </ul>	<ol style="list-style-type: none"> <li>1. Check the setting status of the media.</li> <li>2. Check the connection of the round connector under electrical BOX and the take-up sensor cable.</li> <li>3. Confirm that tension bar is risen by taking up the media with manual SW. (If it is not risen, adjust the weights.)</li> <li>4. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [FEEDING TENSION-BAR]. (Confirm that the ON/OFF display is switched by moving the tension bar up and down.)</li> <li>5. Check the connector connection of Feeding tension bar origin sensor and cable.</li> <li>6. Replace the Feeding tension bar origin sensor.</li> <li>7. Replace the Station IV PCB, which connects feeding unit, with a new one. (Refer to 6.4.2)</li> </ol>
51	<b>ERROR 425</b> <b>Take-up WRONG</b>	<p>An error occurred in the take-up status of the take-up unit. (A tension bar deviated from the lowest control position for a certain time.)</p> <p>When the lower limit of control range exceeds for a certain time, the error occurs. The operations after the error outbreak are as follows.</p> <ul style="list-style-type: none"> <li>→ In case that torque limiter is available, control the take-up unit.</li> <li>→ In case that torque limiter is not available, slow acceleration and retry (twice).</li> </ul>	<ol style="list-style-type: none"> <li>1. Check the setting status of the media.</li> <li>2. Check the connection of the round connector under electrical BOX and the take-up sensor cable.</li> <li>3. Confirm that tension bar is risen by taking up the media with manual SW. (If it is not risen, adjust the weights.)</li> <li>4. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [TAKE-UP SLIT-A], [TAKE-UP SLIT-B]. (Confirm that the ON/OFF display is switched by moving the tension bar up and down.)</li> <li>5. Check the connection of Take-up tension bar slit sensor.</li> <li>6. Replace the Take-up tension bar slit sensor with a new one.</li> <li>7. Replace the Station IV PCB, which connects take-up unit, with a new one. (Refer to 6.4.2)</li> </ol>

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## 7.1.2 List of Error Messages

## ■ List of Error Messages (6/13)

No.	LCD	Cause	List of Countermeasures
52	<b>ERROR 429</b> <b>Take-up Limit DETECT</b>	<p>Limit position of take-up tension bar (A tension bar deviated from the highest control position for a certain time.)</p> <p>When the upper limit of control range exceeds for a certain time, the error occurs. The operations after the error outbreak are as follows.</p> <p>→ In case that torque limiter is available, control the take-up unit.</p> <p>→ In case that torque limiter is not available, slow acceleration and retry (twice).</p>	<ol style="list-style-type: none"> <li>1. Check the setting status of the media.</li> <li>2. Check the connection of the round connector under electrical BOX and the take-up sensor cable.</li> <li>3. Confirm that tension bar is risen by taking up the media with manual SW. (If it is not risen, adjust the weights.)</li> <li>4. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [TAKE-UP SLIT-A], [TAKE-UP SLIT-B]. (Confirm that the ON/OFF display is switched by moving the tension bar up and down.)</li> <li>5. Check the connection of Take-up tension bar slit sensor.</li> <li>6. Replace the Take-up tension bar slit sensor with a new one.</li> <li>7. Replace the Station IV PCB, which connects take-up unit, with a new one. (Refer to 6.4.2)</li> </ol>
53	<b>ERROR 426</b> <b>Feeding WRONG</b>	<p>An error occurred in the feeding status of the take-up unit. (A tension bar deviated from the lowest control position for a certain time.)</p> <p>When the lower limit of control range exceeds for a certain time, the error occurs. The operations after the error outbreak are as follows.</p> <p>→ In case that torque limiter is available, control the take-up unit.</p> <p>→ In case that torque limiter is not available, slow acceleration and retry (twice).</p>	<ol style="list-style-type: none"> <li>1. Check the setting status of the media.</li> <li>2. Check the connection of the round connector under electrical BOX and the take-up sensor cable.</li> <li>3. Confirm that tension bar is risen by taking up the media with manual SW. (If it is not risen, adjust the weights.)</li> <li>4. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [FEEDING TENSION SLIT-A], [FEEDING TENSION SLIT-B]. (Confirm that the ON/OFF display is switched by moving the tension bar up and down.)</li> <li>5. Check the connection of Feeding tension bar slit sensor.</li> <li>6. Replace the Feeding tension bar slit sensor with a new one.</li> <li>7. Replace the Station IV PCB, which connects feeding unit, with a new one. (Refer to 6.4.2)</li> </ol>
54	<b>ERROR 42A</b> <b>Feeding Limit DETECT</b>	<p>Limit position of feeding tension bar (A tension bar deviated from the highest control position for a certain time.)</p> <p>When the upper limit of control range exceeds for a certain time, the error occurs. The operations after the error outbreak are as follows.</p> <p>→ In case that torque limiter is available, control the take-up unit.</p> <p>→ In case that torque limiter is not available, slow acceleration and retry (twice).</p>	<ol style="list-style-type: none"> <li>7. Replace the Station IV PCB, which connects feeding unit, with a new one. (Refer to 6.4.2)</li> </ol>
55	<b>ERROR 44f</b> <b>Take-UP Roll Sns Err</b>	<p>Take-up shaft sensor is abnormal (Take-up shaft sensor can not be read exactly.)</p> <p>It occurs under conditions of follows;</p> <ul style="list-style-type: none"> <li>• When take-up shaft sensor does not work</li> <li>• When detection of take up diameter fails</li> </ul> <p>Update of the take up diameter is not performed after error occurs.</p>	<ol style="list-style-type: none"> <li>1. Check the connection of the round connector under electrical BOX and the take-up drive cable.</li> <li>2. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [Take UP Roll sensor]. (Confirm that the ON/OFF display is switched by moving the Take-Up unit with manual switch.)</li> <li>3. Check the connection of the diameter detection sensor.</li> <li>4. Replace the diameter detection sensor with a new one.</li> <li>5. Replace the Station IV PCB, which connects take-up unit, with a new one. (Refer to 6.4.2)</li> </ol>

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## 7.1.2 List of Error Messages

## ■ List of Error Messages (7/13)

No.	LCD	Cause	List of Countermeasures
56	<b>ERROR 450</b> <b>Feeding Roll Sns Err</b>	Feeding shaft sensor is abnormal (Take-up shaft sensor can not be read exactly.)  It occurs under conditions of follows; • When take-up shaft sensor does not work • When detection of take up diameter fails Update of the take up diameter is not performed after error occurs.	<ol style="list-style-type: none"> <li>1. Check the connection of the round connector under electrical BOX and the take-up drive cable.</li> <li>2. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [Feeding Roll sensor]. (Confirm that the ON/OFF display is switched by moving the Take-Up unit with manual switch.)</li> <li>3. Check the connection of the diameter detection sensor.</li> <li>4. Replace the diameter detection sensor with a new one.</li> <li>5. Replace the Station IV PCB, which connects feeding unit, with a new one. (Refer to 6.4.2)</li> </ol>
57	<b>ERROR 509</b> <b>HDC POSCNT</b>	HDC position counter error	<ol style="list-style-type: none"> <li>1. Execute and confirm [#TEST] &gt; [CHECK ENCODER]. (Confirm that value of the motor encoder and scale encoder change linearly)</li> <li>2. Check the mounting position of the Linear encoder scale and Encoder PCB.</li> <li>3. Check if there is no trouble on the connection of the Encoder PCB. (disconnecting, burnout, or the like)</li> <li>4. Check cable connection between the EPL3 main PCB (CN101)and the Slider P PCB(CN1).</li> <li>5. Check cable connection between the EPL3 main PCB (CN16)and the Station IV PCB(CN5).</li> <li>6. Make sure to mount linear encoder scale and no such as dirt and scratches.</li> <li>7. Check if there is no trouble on the motor cable. (disconnecting, burnout, or the like)</li> <li>8. Replace the liner encoder scale with anew one. (Refer to 6.3.5)</li> <li>9. Replace the encoder PCB with anew one. (Refer to 6.4.6)</li> <li>10. Replace the Y-axis Motor with a new one. (Refer to 3.2.2)</li> </ol>
58	<b>ERROR 50a</b> <b>Y ORIGIN</b>	Y-origin error	<ol style="list-style-type: none"> <li>1. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [Y-ORIGIN]. (Confirm that the ON/OFF display is switched by moving the carriage left and right.)</li> <li>2. Check if there is no trouble on the connection of Y-origin Sensor. (disconnecting, burnout, or the like)</li> <li>3. Replace the Y-origin Sensor with a new one.</li> <li>4. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
59	<b>ERROR 50c</b> <b>MEDIA WIDTH SENSOR</b>	The media width could not be read correctly.	<ol style="list-style-type: none"> <li>1. Check the media setting position.</li> <li>2. Perform cleaning of the media width sensor.</li> </ol>
60	<b>ERROR 516</b> <b>MEDIA SET POSITION R</b>	The media is set outside the range.	<ol style="list-style-type: none"> <li>3. Execute and confirm [#TEST] &gt; [PAPER SENSOR]. (Confirm readings of the sensor change on the media and on the platen)</li> <li>4. Replace the mark sensor with a new one.</li> <li>5. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> </ol>

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## 7.1.2 List of Error Messages

## ■ List of Error Messages (8/13)

No.	LCD	Cause	List of Countermeasures
61	ERROR 50f L-SCALE BLACK	Liner Scale error	<ol style="list-style-type: none"> <li>1. Execute and confirm [# TEST] &gt; [CHECK ENCODER]. (Confirm that a value of the scale encoder (E) changes)</li> <li>2. Check the mounting position of the Linear encoder scale and Encoder PCB.</li> <li>3. Make sure to mount linear encoder scale and no such as dirt and scratches.</li> <li>4. Check cable connection between the EPL3 main PCB (CN101)and the Slider P PCB(CN1).</li> <li>5. Check cable connection between the EPL3 main PCB (CN16)and the Station IV PCB(CN5).</li> <li>6. Replace the Linear encoder Scale with a new one. (Refer to 6.3.5)</li> <li>7. Replace the Encoder PCB with a new one. (Refer to 6.4.6)</li> </ol>
62	ERROR 504 CLAMP UP	CLAMP UP is detected.	<ol style="list-style-type: none"> <li>1. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [LEVER]. (Confirm that the ON/OFF display is switched by moving the clamp lever up and down.)</li> <li>2. Check the connection of CN11 on the Station IV PCB.</li> <li>3. Replace the clamp sensor with new one.</li> <li>4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
63	ERROR 505 MEDIA JAM	The media jam sensor reacted.	<ol style="list-style-type: none"> <li>1. Remove the media that hit it, and reset the media.</li> <li>2. Clean the media holder. (False detection may be occurred by ink dirt collecting.)</li> <li>3. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [MEDIA JAM]. (Confirm that the ON/OFF display is switched by moving the jam sensor right and left.)</li> <li>4. Check if there is no trouble on the connection of the jam sensor. (disconnecting, burnout, or the like)</li> <li>5. Check cable connection between the EPL3 main PCB (CN1 01)and the Slider P PCB(CN1).</li> <li>6. Replace the jam sensor with new one. (Carry it out without forgetting height adjustment of jam sensor)</li> <li>7. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>8. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)</li> </ol>
64	ERROR 528 PUMP MOTOR SENSOR	Pump sensor detection error	<ol style="list-style-type: none"> <li>1. Execute [#TEST] &gt; [SENSOR] &gt; [PUMP MOTOR]. • (Press SEL key and confirm the operation of path switching of pump and the sensor ON/OFF.)</li> <li>2. Replace the pump sensor with a new one.</li> <li>3. Replace the selective path pump Assy. with a new one.</li> <li>4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
65	ERROR 52f CARRIAGE ORG	Potentiometer control origin position setting of the carriage has not been done.	<ol style="list-style-type: none"> <li>1. Execute [#ADJUST &gt; POTETIOMETER].</li> </ol>
66	ERROR 530 STATION ORG	Potentiometer control origin position setting of the station has not been done.	

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## 7.1.2 List of Error Messages

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### ■ List of Error Messages (9/13)

No.	LCD	Cause	List of Countermeasures
67	<b>ERROR 536</b> <b>STATION LOCK</b>	Station locking mechanism does not work properly.	<ol style="list-style-type: none"> <li>1. Execute [#TEST] &gt; [ACTION TEST] &gt; [STATION LOCK].</li> <li>2. If it does not work properly, replace the station lock solenoid.</li> <li>3. EXECUTE [#TEST] &gt; [SENSOR] &gt; [STATION LOCK].</li> <li>4. If it does not work properly, replace the station lock sensor.</li> <li>5. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
68	<b>ERROR 537</b> <b>MAINT.WASH SHUTTER</b>	Cleaning solution shutter mechanism is not working properly.	<ol style="list-style-type: none"> <li>1. Run [#TEST] &gt; [MAINT.CARTRIDGE] &gt; [SHUTTER].</li> <li>2. Replace the cleaning liquid shutter solenoid.</li> <li>3. Replace the cleaning liquid shutter sensor.</li> <li>4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
69	<b>ERROR 54c</b> <b>Vacuum Fan Error</b>	The Vacuum Fan does not run. (Tx300P-1800 MkII only)	<ol style="list-style-type: none"> <li>1. Execute [#TEST] &gt; [ACTION TEST] &gt; [VACUUM] to check if the Vacuum Fan operates.</li> <li>2. Replace the vacuum fan.</li> </ol>
70	<b>ERROR 550</b> <b>CHECK PLATEN</b>	The combination of the selected media and platen sensor status does not match. (only for Tx300P-1800 MkII)	<ol style="list-style-type: none"> <li>1. Check the media selection and the platen setting status, and make the correct combination. (When selecting cloth media: Remove the paper platen. When selecting paper media: Set the paper platen)</li> <li>2. Check that there is a pin on the back of the right front side of the paper platen. (If the above pin is not attached, the platen sensor cannot be pressed even if the paper platen is set in the step 3.)</li> <li>3. EXECUTE [#TEST] &gt; [SENSOR] &gt; [PAPER PLATEN]. (Check that ON / OFF is switched when the paper platen is set / removed.)</li> <li>4. Check if the Platen Sensor connection is normal. (Such as missing or broken wires)</li> <li>5. Replace the platen sensor.</li> <li>6. Replace the cable between the platen sensor and the station IV PCB (2nd).</li> <li>7. Replace the Station IV PCB (2nd) with a new one. (Refer to 6.4.2)</li> </ol>

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## 7.1.2 List of Error Messages

## ■ List of Error Messages (10/13)

No.	LCD	Cause	List of Countermeasures
71	<b>ERROR 602 CARTRIDGE END</b>	Ink end (Non of printing, ink use-up cleaning is only allowed.)	(When the message is still displayed even after a new Ink Cartridge or an empty Ink Cartridge is charged;) <ol style="list-style-type: none"> <li>1. Perform [#TEST] &gt; [SENSOR] &gt; [CartridgeSensor]. (The number correspond to the cartridge number.)(Confirm that the END display is switched by pushing the near end sensor.) (Confirm that the CART display is switched by ejecting and inserting the cartridge.)</li> <li>2. Disconnect and connect the FFC located between the Station IV PCB (CN6) and the CART IO PCB (CN2).</li> <li>3. Check the peripheral and the assembly of near end sensor.</li> <li>4. Check the connection of the ID contact PCB and Detector Assy, I/C, Y.</li> <li>5. Replace the cartridge.</li> <li>6. Replace the ID contact PCB with new one. (Refer to 6.4.7)</li> <li>7. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> <li>8. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
72	<b>ERROR 608 WRONG INK IC</b>	IC chip of Ink cartridge unreadable property.	<ol style="list-style-type: none"> <li>1. Check the attached status of the chip on the cartridge.</li> <li>2. Perform [#TEST] &gt; [CHECK INK IC].</li> <li>3. Disconnect and connect the FFC located between the Station IV PCB (CN6) and the CART IO PCB (CN2).</li> <li>4. Replace the ID contact PCB with new one. (Refer to 6.4.7)</li> <li>5. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> <li>6. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
73	<b>ERROR 627 RE-INSERT CARTRIDGE</b>	The cartridge has not been set for a certain amount of time.	Set the cartridge. <ol style="list-style-type: none"> <li>1. Check that the cartridge has been inserted correctly.</li> <li>2. Check the attached status of the chip on the cartridge.</li> <li>3. Perform [#TEST] &gt; [SENSOR] &gt; [CartridgeSensor]. (The number correspond to the cartridge number.)(Confirm that the CART display is switched by ejecting and inserting the cartridge.)</li> <li>4. Disconnect and connect the FFC located between the Station IV PCB(CN6) and the CART IO PCB(CN2).</li> <li>5. Replace the ID contact PCB Assy. with new one. (Refer to 6.4.7)</li> <li>6. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> <li>7. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
74	<b>ERROR 628 WRONG INK CARTRIDGE</b>	An error occurred in the IC chip information of the ink cartridge. Consumption exceeds the rated value.	<ol style="list-style-type: none"> <li>1. Check whether the chip was also replaced when the pack was replaced.</li> <li>2. Check the W ink nozzle clogging and resolve it.</li> <li>3. Replace the IC chip with new one.</li> </ol>
75	<b>ERROR 650 NCU CONECT</b>	NCU Assy. (E107983) is not connected to the NCU unit.	<ol style="list-style-type: none"> <li>1. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13).</li> <li>2. Replace the NCU unit with new one.(Refer to 6.5.3)</li> <li>3. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>

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## 7.1.2 List of Error Messages

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### ■ List of Error Messages (11/13)

No.	LCD	Cause	List of Countermeasures
76	<b>ERROR 651 REPLACE NCU</b>	Light quantity decreases because deterioration of the source of light LED, dirt and wound.	At test drawing, if occurs even in the absence of missing nozzles 1. Clean the NCU inner wall. 2. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13). 3. Replace the NCU unit with new one.(Refer to 6.5.3) 4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
77	<b>ERROR 652 NCU NZK CHK (HW)</b>	H/W can not sample the Ink ejection pattern of the NCU unit. Many nozzle missing or trajectories have occurred.	At test drawing, if occurs even in the absence of missing nozzles 1. Clean the left and right internal walls of the NCU Assy detection slits with a cotton-tipped swab. 2. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13). 3. Replace the NCU unit with new one.(Refer to 6.5.3) 4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
78	<b>ERROR 653 NCU NZK CHK (MARK)</b>	Ink ejection pattern of the NCU unit is analyzed, and then recognized abnormal ink ejection which not reach criteria of the pattern. The normal determination can not be made by Many nozzle missing or trajectories.	At test drawing, if occurs even in the absence of missing nozzles 1. Clean the left and right internal walls of the NCU Assy detection slits with a cotton-tipped swab. 2. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13). 3. Replace the NCU unit with new one.(Refer to 6.5.3) 4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
79	<b>ERROR 654 NCU CENTER POS</b>	Detection of central position of the NCU unit fails. The normal determination can not be made by Many nozzle missing or trajectories.	
80	<b>ERROR 655 NCU FLUSH POS</b>	Detection of optimum position for the sensor of the NCU unit fails. The normal determination can not be made by Many nozzle missing or trajectories.	
81	<b>ERROR 656 NCU SN ADJUST</b>	Light quantity adjustment to get optimum sensitivity fails. ① The normal determination can not be made by Many nozzle missing or trajectories. ② Light quantity decreases because deterioration of the source of light LED, dirt and wound.	
82	<b>ERROR 657 Check NCU waste ink</b>	Waste ink absorber of NCU is full.	1. Replace the waste ink absorber of NCU unit with new one.
83	<b>ERROR 658 NCU SENSOR LV LOW</b>	Light quantity adjustment to get optimum sensitivity fails. ① The normal determination can not be made by Many nozzle missing or trajectories. ② Light quantity decreases because deterioration of the source of light LED, dirt and wound.	At test drawing, if occurs even in the absence of missing nozzles 1. Clean the left and right internal walls of the NCU Assy detection slits with a cotton-tipped swab. 2. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN14). 3. Replace the NCU unit with new one.(Refer to 6.5.3) 4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
84	<b>ERROR 65b NCU Sens Adj Err H</b>	Since the sensitivity level is low, the suitable sensitivity level cannot be obtained even if the LED light intensity is raised.The unit may be dirty, the LED may be defective or there may be an error in the connection.	

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## 7.1.2 List of Error Messages

### ■ List of Error Messages (12/13)

No.	LCD	Cause	List of Countermeasures
85	ERROR 65c NCU Sens Adj Err L	Since the sensitivity level is low, the suitable sensitivity level cannot be obtained even if the LED light intensity is decreased. The unit may be dirty, the LED may be defective or there may be an error in the connection.	At test drawing, if occurs even in the absence of missing nozzles 1. Clean the left and right internal walls of the NCU Assy detection slits with a cotton-tipped swab. 2. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN14). 3. Replace the NCU unit with new one. (Refer to 6.5.3) 4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
86	ERROR 901 INVALID OPERATION	Function cannot carry out by some errors.	1. Return to a local screen and confirm the error situation.
87	ERROR 902 DATA REMAIN	Drawing data is remaining.	(Carry out the followings if the error still occurs when data is cleared.) 1. Remove USB cable from the printer and execute data clear. -> If solved, it is a problem on USB cable or PC. 2. Replace the USB Cable with a new one. 3. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)
88	ERROR 909 PARAMETER VERSION	Parameter version which is downloaded is different from FW version.	1. Check the FW version of the parameter which is downloaded.
89	ERROR 90d NO HEAD SELECT	Loaded number of the head is assumed zero.	1. Check the setting of loading number of the head in the parameter. (System parameter No.41 "HEAD NO"=4)
90	ERROR 90f PRINT AREA SHORT	Lacking printing area in printing the built-in pattern.	1. Move the Y-Origin to right. 2. In the case of leaf media, move the X origin in front. 3. Exchange the media that has enough wide media width and length.
91	ERROR 04 PARAM ROM	Access Error of the PARAMETER ROM 1. The state that cannot access "FROM" on the EPL3 main PCB. 2. Parameter data is abnormal.	1. Initialize parameter data. 2. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)
92	ERROR 91a ADJUST HEAD HEIGHT	There is a difference in the current head gap and a head gap setting value stored in the machine	1. Run [MACHINE SETUP > HEAD HEIGHT]. 2. Check the value of the potentiometer by [#ADJUST] > [POTENTIOMETER] > [CARRIAGE]. 3. Replace the potentiometer of the carriage. 4. Replace the Slider P PCB with a new one. (Refer to 6.4.3)
93	ERROR d01 HCB POWER [1234]	One of the following power failure is detected at HCB PCB • VREF Power failure • +5VA Power failure • +38VA Power failure • -5VA1 Power failure • -5VA2 Power failure • +5VD Power failure • C1AMP initial failure • C2AMP initial failure	1. Check cable connection between the HCB PCB (CN4) and the Slider P PCB (CN23). 2. Connect and disconnect the FFC between the error displayed HCB PCB and the head. 3. Replace the error displayed HCB PCB.
94	ERROR d02 HCB COMMON [1234]	Any of the following problems are detected in the HCB board. • Head VPP blown fuse • Head VDD blown fuse • C1 AMP current excesses 625mA • C2 AMP current excesses 625mA	

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## 7.1.2 List of Error Messages

### ■ List of Error Messages (13/13)

No.	LCD	Cause	List of Countermeasures
95	ERROR d03 HCB HARD [1234]	Any of the following problems are detected in the HCB board. <ul style="list-style-type: none"> <li>Power source initialization error</li> <li>AMP power source error</li> <li>Power source output voltage low</li> <li>High power source output voltage</li> <li>The voltage or current anomaly in Production Mode</li> <li>Temperature sensor abnormality</li> <li>Undefined error</li> </ul>	<ol style="list-style-type: none"> <li>1. Check cable connection between the HCB PCB and the Slider P PCB.</li> <li>2. Check the connections of the cable between the error displayed HCB PCB and the head and check the connection of FFC.</li> <li>3. Replace the error displayed HCB PCB.</li> <li>4. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>5. Replace the print head.</li> </ol>
96	ERROR d04 HCB CMD [1234]	Communication command error between the main F / W and the HCB PCB has occurred	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. Check cable connection between the HCB PCB and the Slider P PCB.</li> </ol>
97	ERROR d05 HCB WFM [1234]	Discharge waveform control abnormality is detected in the HCB PCB	<ol style="list-style-type: none"> <li>3. Check the connections of the cable between the error displayed HCB PCB and the head and check the connection of FFC.</li> </ol>
98	ERROR d06 HCB VUP [1234]	Failed to version-up of the HCB PCB	<ol style="list-style-type: none"> <li>4. Replace the error displayed HCB PCB.</li> </ol>
99	ERROR d07 HCB FAN [1234]	An error occurred in the fan of the HCB PCB.	<ol style="list-style-type: none"> <li>5. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> </ol>
100	ERROR d08 HCB UKNWN [1234]	Detected an undefined error from the HCB PCB.	
101	ERROR d09 HCB MEMORY [1234]	Detected an abnormality in the head built-in memory.	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. Check cable connection between the HCB PCB and the Slider P PCB.</li> <li>3. Check the connections of the cable between the error displayed HCB PCB and the head and check the connection of FFC.</li> <li>4. Replace the error displayed HCB PCB.</li> <li>5. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>6. Replace the print head.</li> </ol>
102	ERROR d0a HCB BUSY [1234]	Abnormality occurs in the communication of the HCB PCB and Slider P PCB.	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. Check cable connection between the HCB PCB and the Slider P PCB.</li> <li>3. Check the connections of the cable between the error displayed HCB PCB and the head and check the connection of FFC.</li> <li>4. Replace the error displayed HCB PCB.</li> <li>5. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> </ol>

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## 7.1.3 List of Warning Messages

## ■ List of Warning Messages (1/6)

No	Message	Cause	Corrective Measures
<b>List of Ink Error (Checking by guidance)</b>			
1	WRONG INK IC	IC chip of Ink Cartridge unreadable properly	<ol style="list-style-type: none"> <li>1. Check the attached status of the chip on the cartridge.</li> <li>2. Execute and confirm [#TEST] &gt; [INC IC CHECK].</li> <li>3. Disconnect and connect the FFC located between the Station IV PCB(CN5) and the CART IO PCB(CN2).</li> <li>4. Replace the ID contact PCB with a new one. (Refer to 6.4.7)</li> <li>5. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> <li>6. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
2	INK TYPE	Type of inserted Ink Cartridge is different.	(When the message is still displayed even after a Ink Cartridge is inserted;)
3	INK COLOR	The color of Ink Cartridge inserted is different from the color to be set.	<ol style="list-style-type: none"> <li>1. Check the attached status of the chip on the cartridge.</li> <li>2. Execute and confirm [#TEST] &gt; [INC IC CHECK].</li> <li>3. Disconnect and connect the FFC located between the Station IV PCB(CN5) and the CART IO PCB(CN2)</li> <li>4. Replace the ID contact PCB with a new one. (Refer to 6.4.7)</li> <li>5. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> <li>6. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
4	WRONG CARTRIDGE	An error occurred in the IC chip information of the ink cartridge.	<p>The chip was used too much.</p> <ol style="list-style-type: none"> <li>1. Check whether the chip was also replaced when the pack was replaced.</li> <li>2. Check the W ink nozzle clogging and resolve it.</li> <li>3. Replace the IC chip with new one.</li> </ol>
5	NO CARTRDG	No cartridge (Cartridge is not installed)	(When the message is still displayed even after a Ink Cartridge is inserted;)
6	INK END	Ink end (No ink left)	(When the message is still displayed even after a new Ink Cartridge or an empty Ink Cartridge is charged;)
7	INK NEAR END	Ink near end (A small amount of ink left)	<ol style="list-style-type: none"> <li>1. Execute and confirm [#TEST] &gt; [SENSOR]-[CartridgeSensor](The number meets the cartridge No.).</li> <li>2. Disconnect and connect the FFC located between the Station IV PCB(CN5) and the CART IO PCB(CN2).</li> <li>3. Check the peripheral and the assembly of the End Sensor.</li> <li>4. Check the connection of the ID contact PCB and Detector Assy, I/ C, Y.</li> <li>5. Replace the Cartridge with a new one</li> <li>6. Replace the ID contact PCB with new one. (Refer to 6.4.7)</li> <li>7. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> <li>8. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>

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## 7.1.3 List of Warning Messages

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### ■ List of Warning Messages (2/6)

No	Message	Cause	Corrective Measures
8	EXPIRATION	Some ink cartridges are expired. (Usable)	<ol style="list-style-type: none"> <li>1. Be careful that the expiration date is coming soon. You can use up to the two month later. (If this message appears when a correct cartridge is set)</li> <li>2. Check the clock time of the machine.</li> <li>3. Check the assembly of the ID Contact PCB and the shape of the contact plate, and execute the cleaning.</li> <li>4. Check the connection of the ID Contact PCB.</li> <li>5. Replace the Cartridge with a new one.</li> <li>6. Replace the ID Contact PCB Assy. with a new one. (Refer to 6.4.7)</li> <li>7. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> </ol>
9	EXPIRATION(1MONTH)	Some ink cartridges are expired. (One month has passed after the expiration date./Usable)	<ol style="list-style-type: none"> <li>1. Be careful that the expiration date is coming soon. You can use up to the next month. The red LED blinks. (If this message appears when a correct cartridge is set)</li> <li>2. Check the clock time of the machine.</li> <li>3. Check the assembly of the ID Contact PCB and the shape of the contact plate, and execute the cleaning.</li> <li>4. Check the connection of the ID Contact PCB.</li> <li>5. Replace the Cartridge with a new one.</li> <li>6. Replace the ID Contact PCB Assy. with a new one. (Refer to 6.4.7)</li> <li>7. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> </ol>
10	EXPIRATION(2MONTH)	Some ink cartridges are expired. (Two months have passed after the expiration date./ Not usable)	<p>Replace the cartridge with the warning.</p> <ol style="list-style-type: none"> <li>1. Expiration date expired. (If this message appears when a correct cartridge is set)</li> <li>2. Check the clock time of the machine.</li> <li>3. Check the assembly of the ID Contact PCB and the shape of the contact plate, and execute the cleaning.</li> <li>4. Check the connection of the ID Contact PCB.</li> <li>5. Replace the Cartridge with a new one.</li> <li>6. Replace the ID Contact PCB Assy. with a new one. (Refer to 6.4.7)</li> <li>7. Replace the CART IO PCB with a new one. (Refer to 6.4.5)</li> </ol>
<b>Warning Messages (LOCAL)</b>			
11	Can't print/ cartridge	Multiple ink errors (unusable inks) occurred. Ink supply (printing, cleaning, etc.) cannot be performed.	<ol style="list-style-type: none"> <li>1. Press the [ENTER] key, and check the relevant cartridge and the error contents. Then replace it with a usable one.</li> </ol>
12	Check waste ink	The count of the waste ink tank exceeded the specified amount.	<ol style="list-style-type: none"> <li>1. Check the waste ink tank.</li> <li>2. Press the [MAINTENANCE] &gt; [WASTE INK TANK REPLACEMENT], and correct the counter or reset it.</li> </ol>
13	Replace WIPER	The count of the wiper exceeded the specified amount.	<ol style="list-style-type: none"> <li>1. Perform [MAINTENANCE] &gt; [STATION] &gt; [WIPER REPLACEMENT].</li> <li>2. Replace the wiper with new one.</li> </ol>
14	NO MEDIA	The media is not set. Or, the sensor has been broken.	<p>(If it appears even media is set)</p> <ol style="list-style-type: none"> <li>1. Check the set of the media.</li> <li>2. Implement [# TEST] &gt; [SENSOR] &gt; [REAR PAPER]. (Place the media into the hole of the media presence sensor to ensure the ON / OFF switch)</li> <li>3. Check the connection of the CN10 of the Station IV PCB.</li> <li>4. Replace the media presence sensor.</li> <li>5. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>

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## 7.1.3 List of Warning Messages

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### ■ List of Warning Messages (3/6)

No	Message	Cause	Corrective Measures
15	DATA REMAIN	Data has already been received.	(Carry out the followings if the error still occurs when data is cleared.) 1. Remove USB cable from the printer and execute data clear. -> If solved, it is a problem on USB cable or PC. 2. Replace the USB Cable with new one. 3. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)
16	MachineTEMP/H ***°C	The machine temperature is high.	Adjust the ambient temperature of the installation place within the specifications (20 - 35°C).
17	MachineTEMP/L ***°C	The machine temperature is low.	(If displayed even the temperature is within the room temperature) 1. Disconnect and connect the FFC located between the EPL3 main PCB (CN100) and the Color LCD PCB (CN3). 2. Replace the FFC above with new one. 3. Replace the Color LCD PCB with new one. (Refer to 6.4.4) 4. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)
18	Replace the spout rubber of ECO-CARTRIDGE	It became the time to replace the spout rubber of the Eco Case (MBIS)	1. Replace the spout rubber.
19	Wash liquid cartridge non	No maintenance washing liquid cartridge (cartridge not insert)	(If this message appears when a cartridge is set) 1. Execute and confirm [# TEST] > [MAINT.CARTRIDGE]. 2. Check the connection of the Detector Assy.
20	Wash liquid end	Maintenance washing liquid is end (No washing liquid left)	3. Replace the Cartridge with a new one. 4. Replace the Detector Assy. with a new one. 5. Replace the Station IV PCB with a new one.
21	NCU CONNECT	NCU Assy. (E107983) is not connected to the NCU unit.	1. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13). 2. Replace the NCU unit with new one. (Refer to 6.5.3) 3. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
22	REPLACE NCU	Light quantity decreases because deterioration of the source of light LED, dirt and wound.	At test drawing, if occurs even in the absence of missing nozzles 1. Clean the NCU inner wall. 2. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13). (Refer to 2.3.7) (Refer to 2.3.2) 3. Replace the NCU unit with new one. (Refer to 6.5.3) 4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
23	NCU NZK CHK (HW) Nozzle check OFF	H/W can not sample the Ink ejection pattern of the NCU unit. Many nozzle missing or trajectories have occurred.	At test drawing, if occurs even in the absence of missing nozzles 1. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13). (Refer to 2.3.7) (Refer to 2.3.2) 2. Replace the NCU unit with new one. (Refer to 6.5.3)
24	NCU NZK CHK (MARK) Nozzle check OFF	Ink ejection pattern of the NCU unit is analyzed, and then recognized abnormal ink ejection which not reach criteria of the pattern. The normal determination can not be made by Many nozzle missing or trajectories.	3. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
25	NCU FLUSH POS Nozzle check OFF	Detection of optimum position for the sensor of the NCU unit fails. The normal determination can not be made by Many nozzle missing or trajectories.	

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## 7.1.3 List of Warning Messages

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### ■ List of Warning Messages (4/6)

No	Message	Cause	Corrective Measures
26	NCU CENTER POS Nozzle check OFF	Detection of central position of the NCU unit fails. The normal determination can not be made by Many nozzle missing or trajectories.	At test drawing, if occurs even in the absence of missing nozzles 1. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13). (Refer to 2.3.7) (Refer to 2.3.2) 2. Replace the NCU unit with new one. (Refer to 6.5.3) 3. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
27	NCU SN ADJST Nozzle check OFF	Light quantity adjustment to get optimum sensitivity fails. ① The normal determination can not be made by Many nozzle missing or trajectories. ② Light quantity decreases because deterioration of the source of light LED, dirt and wound.	
28	REPLACE NCU INK PAD	Waste ink absorber of NCU is full.	1. Replace the waste ink absorber of NCU unit with new one.
29	NCU SENSOR LEVEL LOW	Light quantity decreases to get optimum sensitivity. ① The normal determination can not be made by Many nozzle missing or trajectories. ② Light quantity decreases because deterioration of the source of light LED, dirt and wound.	At test drawing, if occurs even in the absence of missing nozzles 1. Clean the left and right internal walls of the NCU Assy detection slits with a cotton-tipped swab. 2. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB(CN13). 3. Replace the NCU unit with new one. (Refer to 6.5.3) 4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
30	NCU Sens Adj Err H	Since the sensitivity level is low, the suitable sensitivity level cannot be obtained even if the LED light intensity is raised.The unit may be dirty, the LED may be defective or there may be an error in the connection.	
31	NCU Sens Adj Err L	Since the sensitivity level is low, the suitable sensitivity level cannot be obtained even if the LED light intensity is decreased.The unit may be dirty, the LED may be defective or there may be an error in the connection.	
32	Nozzle Missing Print Stopped	Since it is determined the nozzle missing in a nozzle check and stopped printing.	
33	NCU ERROR Nozzle check OFF	Nozzle check has been interrupted due to some problem.	1. Update FW. 2. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)

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## 7.1.3 List of Warning Messages

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### ■ List of Warning Messages (5/6)

No	Message	Cause	Corrective Measures
34	NCU SENSOR LEVEL LOW	Light quantity decreases to get optimum sensitivity. ① The normal determination can not be made by Many nozzle missing or trajectories. ② Light quantity decreases because deterioration of the source of light LED, dirt and wound.	At test drawing, if occurs even in the absence of missing nozzles 1. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB(CN13). (Refer to 2.3.7) (Refer to 2.3.2) 2. Replace the NCU unit with new one. (Refer to 6.5.3) 3. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
35	Nozzle Missing Print Stopped	Since it is determined the nozzle missing in a nozzle check and stopped printing.	
36	NCU ERROR Nozzle check OFF	Nozzle check has been interrupted due to some problem.	1. Update FW. 2. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)
37	NCU CONNECT	NCU Assy. (E107983) is not connected to the NCU unit.	1. Check the cable connection between the PD_AMP PCB Assy. (CN1) and Station IV PCB (CN13). (Refer to 2.3.7) (Refer to 2.3.2) 2. Replace the NCU unit with new one. (Refer to 6.5.3) 3. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
38	REPLACE NCU	Light quantity decreases because deterioration of the source of light LED, dirt and wound.	1. Replace the NCU unit with new one. (Refer to 6.5.3)
39	REPLACE NCU INK PAD	Waste ink absorber of NCU is full.	1. Replace the waste ink absorber of NCU unit with new one.
40	NCU ERROR Nozzle check OFF	Nozzle check has been interrupted due to some problem.	1. Update FW. 2. Replace the EPL3 main PCB with a new one. (Refer to 3.3.1)
41	ADJUST HEAD HEIGHT	There are differences in head height setting value and the current head height stored in the machine	1. Execute [MACHINE SETUP] > [HEAD HEIGHT]. 2. Confirm the value of the potentiometer by [#ADJUST] > [POTENTIOMETER] > [CARRIAGE]. 3. Replace the potentiometer at carriage with a new one. 4. Replace the Slider P PCB with a new one. (Refer to 6.4.3)
42	CHECK PLATEN	The combination of the selected media and platen sensor status does not match. (only for Tx300P-1800 MkII)	1. Check the media selection and the platen setting status, and make the correct combination. (When selecting cloth media: Remove the paper platen. When selecting paper media: Set the paper platen) 2. Check that there is a pin on the back of the right front side of the paper platen. (If the above pin is not attached, the platen sensor cannot be pressed even if the paper platen is set in the step 3.) 3. EXECUTE [#TEST] > [SENSOR] > [PAPER PLATEN]. (Check that ON / OFF is switched when the paper platen is set / removed.) 4. Check if the Platen Sensor connection is normal. (Such as missing or broken wires) 5. Replace the platen sensor. 6. Replace the cable between the platen sensor and the station IV PCB (2nd). 7. Replace the Station IV PCB (2nd) with a new one. (Refer to 6.4.2)
43	Vacuum Fan Error	The Vacuum Fan does not run.(only for Tx300P-1800 MkII)	1. Execute [#TEST] > [ACTION TEST] > [VACUUM] to check if the Vacuum Fan operates. 2. Replace the vacuum fan.

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## 7.1.3 List of Warning Messages

### ■ List of Warning Messages (6/6)

No.	Message	Cause	Corrective Measures
44	Replace Cap Pad	The amount of absorber used has exceeded the specified amount (use for one year). (only for Tx300P-1800 MkII)	1. Perform [MAINTENANCE] > [STATION] > [Replace Cap Pad]. 2. Replace the cap absorber .
<b>Warning Messages (Operation)</b>			
45	INVAILD OPERATE :MEDIA UNDETECTED	The media has not been detected.	1. Perform media detection.
46	INVAILD OPERATE :MOTOR POWER OFF	The motor is OFF after the cover was opened, etc.	1. Close the front cover and maintenance covers.
47	INVAILD OPERATE :INK ERROR	An ink error occurred.	1. Check the bottle for the supply path corresponding to the indicated color.
48	INVAILD OPERATE :COVER OPEN	The cover is opened.	1. Confirm each cover sensor.
49	INVAILD OPERATE :DATA REMAIN	The data has been received.	1. Perform clear data or start printing with [REMOTE] key.
50	Please check Motor direct-connect unit	Mounting of the motor direct-connect unit and torque limiter against the set of the tension bar is not correct.	1. Mount the motor direct-connect unit to the take-up unit or the feeding unit. 2. Check the connection of the take-up unit or the feeding unit and the torque limiter sensor.  (Check the sensor ON/OFF state with [# TEST] > [SENSOR] > [TAKE.Torque Limiter] or [#TEST] > [SENSOR] > [FEED.Torque Limiter]). 3. Replace the torque limiter sensor of the take-up unit or the feeding unit. 4. Replace Station IV PCB being connected to the take-up unit or feeding unit. ( <a href="#">Refer to 6.4.2</a> )

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## 7.1.4 List of SYSTEM HALT

### ■ List of SYSTEM HALT (1/9)

No.	LCD	Cause	Corrective Measures
1	SYSTEM HALT (*) 10e : FROM CLEAR	F-ROM CLEAR error (F-ROM clear unable)	1. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
2	SYSTEM HALT (*) 10f : FROM WRITE	FROM WRITE error (F-ROM writing unable)	
3	SYSTEM HALT (*) 110 : PCB KEY	There is a possibility of occurrence when LCD does not light in power ON status. Without ColorLCD PCB; If there is no colorLCD PCB, it is not appeared so check with the error Log.	1. Check the connections between the ColorLCD PCB(CN3) and the EPL3 MAIN PCB(CN100), and then disconnect and connect the FFCs. 2. Replace the FFCs of the above routes. 3. Replace the Color LCD PCB with a new one. (Refer to 6.4.4) 4. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
4	SYSTEM HALT (*) 112 :	No CART IO PCB	1. Check the connections between the Station IV PCB(CN5) and the CART IO PCB(CN2), and then disconnect and connect the FFCs. 2. Replace the FFCs of the above routes. 3. Replace the CART IO PCB with a new one. (Refer to 6.4.5) 4. Replace the Station IV PCB with a new one. (Refer to 6.4.2)
5	SYSTEM HALT (*) 122 : PRAM NONE	SDRAM of Main PCB is not accessible	1. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
6	SYSTEM HALT (*) 123 : PRAM DATA	PRAM data error	
7	SYSTEM HALT (*) 124 : PRAM ADDR	PRAM address error	
8	SYSTEM HALT (*) 127 : POWER OFF	Communication fault with Mini memory PCB	
9	SYSTEM HALT (*) 147 : DS-IC BUSY	Communication fault with ink IC	1. Perform [#TEST] > [IC CHCK]. 2. Check the connection and mount of the ID contact PCB. 3. Replace the Cartridge with a new one 4. Replace the ID contact PCB with new one. (Refer to 6.4.7) 5. Replace the CART IO PCB with a new one. (Refer to 6.4.5)
10	SYSTEM HALT (*) 115 : PCB MAIN-F1	EPL3 MAIN PCB fuse (F1) blown (+IO5V)	1. Turn on the power, and then confirm D29 on the EPL3 main PCB is lit. (Refer to 2.3.1)(Confirm it before an error occurs, because when an error occurs, the LED is not lit) 2. When LED is not lit, confirm connection and damage of the FFC between EPL3 main PCB (CN9) and Station IV PCB (CN1). Replace the F1 fuse. (Refer to 2.3.1)(Refer to 2.3.3) 3. When an error occurs with LED is lit, replace the EPL3 main PCB.(Refer to 3.3.1)

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## 7.1.4 List of SYSTEM HALT

### ■ List of SYSTEM HALT (2/9)

No.	LCD	Cause	Corrective Measures
11	SYSTEM HALT (*) 12d : PCB MAIN-F4	EPL3 MAIN PCB fuse (F4) blown (+HOPOW)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D35 on the EPL3 main PCB is lit. (Refer to 2.3.1)(Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. When LED is not lit, confirm connection and damage of the FFC between EPL3 main PCB (CN9) and Station IV PCB (CN1). Replace the F4 fuse. (Refer to 2.3.1)(Refer to 2.3.3)</li> <li>3. When an error occurs with LED is lit, replace the EPL3 main PCB.(Refer to 3.3.1)</li> </ol>
12	SYSTEM HALT (*) 1bf : PCB MAIN-F2/F3	EPL3 MAIN PCB fuse (F2 or F3) blown (+SLD POW1 FFC or Cable)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D33 on the EPL3 main PCB are lit. (Refer to 2.3.1)(Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. When LED is not lit, confirm connection and damage of the FFC between EPL3 main PCB (CN104) and Slider P PCB (CN1). Replace the F2 fuse. (Refer to 2.3.1)(Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the EPL3 main PCB.(Refer to 3.3.1)</li> </ol>
13	SYSTEM HALT (*) 1b5 : MAIN CN6	Connection error between EPL3 Main PCB(CN1/CN3) and Slider P PCB(CN1/CN3)	<ol style="list-style-type: none"> <li>1. Disconnect and connect the FFC located between the EPL3 main PCB(CN104/CN105) and the Slider P PCB(CN8).</li> <li>2. Replace the above FFC.</li> <li>3. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>4. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)</li> </ol>
14	SYSTEM HALT (*) 1c7 : PCB SLDRP-F1	Slider P PCB fuse (F1) blown (+30pin-48V)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D1 on the Slider P PCB are lit. (Refer to 2.3.3)(Confirm it before an error occurs, because when an error occurs, the LED is not lit) When LED is not lit, replace the F1.</li> <li>2. When an error occurs with LED is lit, replace the Slider P PCB.(Refer to 6.4.3)</li> </ol>
15	SYSTEM HALT (*) 1c8 : PCB SLDRP-F2	Slider P PCB fuse (F2) blown (+16pin-48V)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D12 on the Slider P PCB are lit. (Refer to 2.3.3)(Confirm it before an error occurs, because when an error occurs, the LED is not lit) When LED is not lit, replace the F2.</li> <li>2. When an error occurs with LED is lit, replace the Slider P PCB.(Refer to 6.4.3)</li> </ol>
16	SYSTEM HALT (*) 1c9 : PCB SLDRP-F8	Slider P PCB fuse (F8) blown (+24V)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D50 on the Slider P PCB are lit. (Refer to 2.3.3)(Confirm it before an error occurs, because when an error occurs, the LED is not lit) When LED is not lit, replace the F2.</li> <li>2. When an error occurs with LED is lit, replace the Slider P PCB.(Refer to 6.4.3)</li> </ol>

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## 7.1.4 List of SYSTEM HALT

## ■ List of SYSTEM HALT (3/9)

No.	LCD	Cause	Corrective Measures
17	SYSTEM HALT (*) 1d2 : PCB STA4-1-F1	Station IV PCB (First) fuse (F1) blown (+Vpov)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D78 on the Station IV PCB (First) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, check the cleaning of the cartridge solenoid, suction motor, wiper motor, station up and down motor, damage of the take-up motor, and damage to the cable of station IV PCB (First) CN7, CN8, CN11, and CN12. (Refer to 2.3.2) Replace the F1 fuse. (Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (First). (Refer to 6.4.2)</li> </ol>
18	SYSTEM HALT (*) 1d3 : PCB STA4-1-F2	Station IV PCB (First) fuse (F2) blown (+IO5V)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D79 on the Station IV PCB (First) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, check the connections and damage of station IV PCB (First) CN5, CN7, CN8, CN9, CN11, CN13, CN16, and CN20. (Refer to 2.3.2) Replace the F2 fuse. (Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (First). (Refer to 6.4.2)</li> </ol>
19	SYSTEM HALT (*) 1d5 : PCB STA4-1-F4	Station IV PCB (First) fuse (F4) blown (+VCAS-16)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D83 on the Station IV PCB (First) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, check the FFC connections and damages between station IV PCB (First) (CN5) and CARTIO PCB (CN2). Replace the F4 fuse. (Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (First). (Refer to 6.4.2)</li> </ol>
20	SYSTEM HALT (*) 1d6 : PCB STA4-1-F5	Station IV PCB (First) fuse (F5) blown (+24V)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D85 on the Station IV PCB (First) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, replace the F5 fuse.</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (First). (Refer to 6.4.2)</li> </ol>
21	SYSTEM HALT (*) 1d7 : PCB STA4-1-F6	Station IV PCB (First) fuse (F6) blown (+24Vadj)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D87 on the Station IV PCB (First) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, check the damage to the suction fan and the cable connection or damage of the station IV PCB (First) (CN9). Replace the F6 fuse. (Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (First). (Refer to 6.4.2)</li> </ol>
22	SYSTEM HALT (*) b43 : PCB STA4-1-FET	FET on Station IV PCB (1st board) has failed.	<ol style="list-style-type: none"> <li>1. Replace the Station IV PCB (first board).</li> </ol>

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## 7.1.4 List of SYSTEM HALT

### ■ List of SYSTEM HALT (4/9)

No.	LCD	Cause	Corrective Measures
23	SYSTEM HALT (*) 1d2 : PCB STA4-2-F1	Station IV PCB (2nd.) fuse (F1) blown (+Vpow)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D78 on the Station IV PCB (2nd) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, check the cleaning of the cartridge solenoid, suction motor, wiper motor, station up and down motor, damage of the take-up motor, and damage to the cable of station IV PCB (2nd) CN7, CN8, CN11, and CN12. (Refer to 2.3.2) Replace the F1 fuse. (Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (2nd).(Refer to 6.4.2)</li> </ol>
24	SYSTEM HALT (*) 1d3 : PCB STA4-2-F2	Station IV PCB (2nd.) fuse (F2) blown (+HO5V)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D79 on the Station IV PCB (2nd) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, check the connections and damage of station IV PCB (2nd) CN5, CN7, CN8, CN9, CN11, CN13, CN16, and CN20.(Refer to 2.3.2) Replace the F2 fuse. (Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (2nd).(Refer to 6.4.2)</li> </ol>
25	SYSTEM HALT (*) 1d4 : PCB STA4-2-F3	Station IV PCB (2nd.) fuse (F3) blown (+VCAS-20)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D80 on the Station IV PCB (2nd) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, replace the F3 fuse.</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (2nd).(Refer to 6.4.2)</li> </ol>
26	SYSTEM HALT (*) 1d5 : PCB STA4-2-F4	Station IV PCB (2nd.) fuse (F4) blown (+VCAS-16)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D83 on the Station IV PCB (2nd) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, check the FFC connections and damages between station IV PCB (2nd) (CN5) and CARTIO PCB (CN2). Replace the F4 fuse. (Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (2nd).(Refer to 6.4.2)</li> </ol>
27	SYSTEM HALT (*) 1d6 : PCB STA4-2-F5	Station IV PCB (2nd.) fuse (F5) blown (+24V)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D85 on the Station IV PCB (2nd) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, replace the F5 fuse.</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (2nd).(Refer to 6.4.2)</li> </ol>
28	SYSTEM HALT (*) 1d7 : PCB STA4-2-F6	Station IV PCB(2nd.) fuse (F6) blown (+24Vadj)	<ol style="list-style-type: none"> <li>1. Turn on the power, and then confirm D87 on the Station IV PCB (2nd) are lit. (Refer to 2.3.2) (Confirm it before an error occurs, because when an error occurs, the LED is not lit)</li> <li>2. If the LED is not lit, check the damage to the suction fan and the cable connection or damage of the station IV PCB (2nd) (CN9). Replace the F6 fuse. (Refer to 2.3.2)</li> <li>3. When an error occurs with LED is lit, replace the Station IV PCB (2nd).(Refer to 6.4.2)</li> </ol>

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## 7.1.4 List of SYSTEM HALT

## ■ List of SYSTEM HALT (5/9)

No.	LCD	Cause	Corrective Measures
29	SYSTEM HALT (*) b45 : PCB STA4-2 FET	FET on Station IV PCB (second board) has failed.	1. Replace the Station IV PCB (second board).
30	SYSTEM HALT (*) 1e3 : PCB SLDRP	No Slider P PCB	<ol style="list-style-type: none"> <li>1. Check the connection of the cable between EPL3 main PCB (CN105) and the slider P PCB(CN3).(Refer to 2.3.1)(Refer to 2.3.3)</li> <li>2. Check the connection of the cable between EPL3 main PCB (CN104) and the slider P PCB (CN1) (Refer to 2.3.1)(Refer to 2.3.3)</li> <li>3. Replace the Slider P PCB with a new one. (Refer to 6.4.3)</li> <li>4. Replace the above FFC.</li> <li>5. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)</li> </ol>
31	SYSTEM HALT (*) 1e4 : PCB STA4-1	No 1st. Station IV PCB	<ol style="list-style-type: none"> <li>1. Disconnect and connect the FFC located between the EPL3 main PCB(CN9) and the Station IV PCB (First)(CN1).(Refer to 2.3.1)</li> <li>2. Replace the Station IV PCB (2nd.) with a new one. (Refer to 6.4.2)</li> <li>3. Replace the above FFC.</li> <li>4. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)</li> </ol>
32	SYSTEM HALT (*) 1e5 : PCB STA4-2	No 2nd. Station IV PCB	<ol style="list-style-type: none"> <li>1. Disconnect and connect the FFC located between the Station IV PCB (First)(CN2) and the Station IV PCB (2nd.)(CN1).</li> <li>2. Disconnect and connect the FFC located between the EPL3 main PCB(CN9) and the Station IV PCB (First)(CN1).(Refer to 2.3.1)</li> <li>3. Replace the Station IV PCB (First) with a new one. (Refer to 6.4.2)</li> <li>4. Replace the above FFC.</li> <li>5. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)</li> </ol>
33	SYSTEM HALT (*) 303 : PCB MAIN ET	EPL3 MAIN PCB Ethernet IC trouble	1. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
34	SYSTEM HALT (*) 405 : STATION ERR**	Station move malposition (Movement instruction to the station move out of range)	<ol style="list-style-type: none"> <li>1. Execute [#TEST] &gt; [POTENTIO METER]. Check if potentiometer value of the carriage / station is not an abnormal value) <ul style="list-style-type: none"> <li>• **=01: The value of the potentiometer of the carriage is abnormal.</li> <li>• **=02: The value of the potentiometer of the station is abnormal.</li> <li>• **=03: The potentiometer value of either carriage or station is abnormal.</li> </ul> </li> <li>2. Replace the potentiometer of the carriage. (Refer to 3.2.5)</li> <li>3. Replace the potentiometer of the station. (Refer to 3.2.5)</li> <li>4. Replace the Station IV PCB (Refer to 6.4.2) or the Slider P PCB (Refer to 6.4.3) with a new one.</li> </ol>

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## 7.1.4 List of SYSTEM HALT

### ■ List of SYSTEM HALT (6/9)

No.	LCD	Cause	Corrective Measures
35	SYSTEM HALT (*) 406 : WIPER ORG	Wiper origin undetectable	<ol style="list-style-type: none"> <li>1. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [WIPER]. (Confirm that the ON/OFF display is switched by moving the wiper back and forth.)</li> <li>2. Check that the wiper moves back and forth smoothly in manual.</li> <li>3. Check the assembly and connector connection of Wiper Origin Sensor.</li> <li>4. Check the connector connection of Wiper motor, and then disconnect and connect the connector.</li> <li>5. Check the connection of the Station IV PCB (CN11).</li> <li>6. Replace the Wiper Origin Sensor with a new one.</li> <li>7. Replace the Wiper Motor with a new one.</li> <li>8. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
36	SYSTEM HALT (*) 502 : Y ORGIN	Y Origin Sensor error	<ol style="list-style-type: none"> <li>1. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [Y-ORIGIN]. (Confirm that the ON/OFF display is switched by moving the carriage left and right.)</li> <li>2. Check in manual if the carriage moves left and right smoothly.</li> <li>3. Check the connector connection of Y-origin Sensor and EPL3 Main PCB(CN7).</li> <li>4. Replace the Y Origin Sensor with a new one.</li> <li>5. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)</li> </ol>
37	SYSTEM HALT (*) 506 : STATION SENS	Can not detect the station origin	<ol style="list-style-type: none"> <li>1. Execute and confirm [#TEST] &gt; [SENSOR] &gt; [STATION]. (Confirm that the ON/OFF display is switched.)</li> <li>2. Check in manual if the station motor moves</li> <li>3. Check the connector connection of Station Sensor and Station IV PCB(CN8).</li> <li>4. Replace the Station sensor with a new one.</li> <li>5. Replace the Station IV PCB with a new one. (Refer to 6.4.2)</li> </ol>
38	SYSTEM HALT (*) 509 : HDC POSCNT	HDC position counter error	<ol style="list-style-type: none"> <li>1. Execute [#TEST] &gt; [CHECK ENCODER].</li> <li>2. Check the assembly of Liner encoder scale and Encoder PCB.</li> <li>3. Check if there is no trouble of connection of the Encoder PCB. (disconnecting, burnout, or the like).</li> <li>4. Check the connections between the Slider P PCB(CN1/CN3) and the EPL3 MAIN PCB(CN104/CN105), and then disconnect and connect the cable.</li> <li>5. Check the connections between the Station IV PCB(CN5) and the EPL3 MAIN PCB(CN16), and then disconnect and connect the cable.</li> <li>6. Check the assembly of Liner encoder scale, and confirm that there is neither dirt nor scratch.</li> <li>7. Replace the Liner encoder scale with a new one.</li> <li>8. Replace the Encoder PCB with a new one.</li> <li>9. Replace the Y-axis Motor with a new one. (Refer to 6.3.2)</li> </ol>

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## 7.1.4 List of SYSTEM HALT

## ■ List of SYSTEM HALT (7/9)

No.	LCD	Cause	Corrective Measures
39	SYSTEM HALT (*) 801 : (C)OPCODE	System error (CPU exception: OP code error)	1. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
40	SYSTEM HALT (*) 802 : (C)SLOT	System error (CPU exception: Slot instruction error)	
41	SYSTEM HALT (*) 803 : (C)CPU ADDR	System error (CPU exception: CPU address error)	
42	SYSTEM HALT (*) 804 : (C)DMA ADDR	System error (CPU exception: DMA address error)	
43	SYSTEM HALT (*) 806 : FW/SIO bit	Serial control error	Serial communications for the EPL3 - Station IV PCB side; 1. Disconnect and connect the FFC located between the Station IV PCB(CN1) and the EPL3 main PCB(CN9). (Refer to 2.3.1) (Refer to 2.3.2) 2. Disconnect and connect the FFC located between the first Station IV PCB (CN2) and the second Station IV PCB (CN1). (Refer to 2.3.2) 3. Check the connection of CN24 on both of the Station IV PCBs (the first one and the second one). (Refer to 2.3.2) 4. Replace the FFCs of the above routes. 5. Replace the Station IV PCB with new one (the first one and the second one). (Refer to 6.4.2) 6. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
44	SYSTEM HALT (*) 807 : FW/SIO wbsy		
45	SYSTEM HALT (*) 808 : FW/STP-MTR**	FW error	1. Update F/W. 2. Check or clear the parameters 3. Check or replace the step motors listed below. • **=00:Wiper • **=01:Suction pumps1 • **=02:Suction pumps2 • **=13:Station up and down • **=17:Feeding • **=18:Take-up • **=20:Tention 4. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
46	SYSTEM HALT (*) 809 : FW/XY param		1. Update F/W. 2. Check or clear the parameters
47	SYSTEM HALT (*) 80b : FW/ctrltsk		3. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
48	SYSTEM HALT (*) 80c : FW/PUMP W		
49	SYSTEM HALT (*) 80e : FW/FROM prm		1. Update F/W. 2. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)

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## 7.1.4 List of SYSTEM HALT

## ■ List of SYSTEM HALT (8/9)

No.	LCD	Cause	Corrective Measures
50	SYSTEM HALT (*) 80f : FW/SIO vch	Serial control error	Serial communications for the EPL3 - Station IV PCB side; 1. Disconnect and connect the FFC located between the Station IV PCB(CN1) and the EPL3 main PCB(CN9). (Refer to 2.3.1) (Refer to 2.3.2) 2. Disconnect and connect the FFC located between the first Station IV PCB (CN2) and the second Station IV PCB (CN1). (Refer to 2.3.2) 3. Check the connection of CN24 on both of the Station IV PCBs (the first one and the second one). (Refer to 2.3.2) 4. Replace the FFCs of the above routes. 5. Replace the Station IV PCB with new one (the first one and the second one). (Refer to 6.4.2) 6. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
51	SYSTEM HALT (*) 811 : FW/SIO read		
52	SYSTEM HALT (*) 812 : FW/CRTRG NO	FW error	Serial communications for the EPL3 - Slider P PCB side; 1. Check the connections between the Slider P PCB(CN1/CN3) and the EPL3 MAIN PCB(CN104/CN105), and then disconnect and connect the cable. 2. Replace the Slider P PCB with new one. (Refer to 6.4.3) 3. Replace the cables of the above routes. 4. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1) 1. Update F/W. 2. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)
53	SYSTEM HALT (*) 813 : FW/WIPER RN		
54	SYSTEM HALT (*) 814 : FW/drivinfm		

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## 7.1.4 List of SYSTEM HALT

1.1

## ■ List of SYSTEM HALT (9/9)

No.	LCD	Cause	Corrective Measures
55	SYSTEM HALT (*) 815 : FW/SIO rsrc	Serial control error	<p>Serial communications for the EPL3 - Station IV PCB side;</p> <ol style="list-style-type: none"> <li>1. Disconnect and connect the FFC located between the Station IV PCB(CN1) and the EPL3 main PCB(CN9). (Refer to 2.3.1) (Refer to 2.3.2)</li> <li>2. Disconnect and connect the FFC located between the first Station IV PCB (CN2) and the second Station IV PCB (CN1). (Refer to 2.3.2)</li> <li>3. Check the connection of CN24 on both of the Station IV PCBs (the first one and the second one). (Refer to 2.3.2)</li> <li>4. Replace the FFCs of the above routes.</li> <li>5. Replace the Station IV PCB with new one (the first one and the second one). (Refer to 6.4.2)</li> <li>6. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)</li> </ol> <p>Serial communications for the EPL3 - Slider P PCB side;</p> <ol style="list-style-type: none"> <li>1. Check the connections between the Slider P PCB(CN1/CN3) and the EPL3 MAIN PCB(CN104/CN105), and then disconnect and connect the cable.</li> <li>2. Replace the Slider P PCB with new one. (Refer to 6.4.3)</li> <li>3. Replace the cables of the above routes.</li> <li>4. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)</li> </ol>
56	SYSTEM HALT (*) 816 : FW/FROM WRC	FW error	<ol style="list-style-type: none"> <li>1. Update F/W.</li> <li>2. Replace the EPL3 MAIN PCB with a new one. (Refer to 3.3.1)</li> </ol>
57	SYSTEM HALT (*) 817 : FW/SaveArea		
58	SYSTEM HALT (*) 818 : FW/EEP SIZE		
59	SYSTEM HALT (*) 819 : FW/HROM SIZ		
60	SYSTEM HALT (*) 81b : FW/STACK OV		
61	SYSTEM HALT (*) 826 : FW/PrmSaveBuf		
62	SYSTEM HALT (*) 828 : FW/ERR L*****		
63	SYSTEM HALT (*) 829 : FW/ERASE TIMEOV		
64	SYSTEM HALT (*) 82b : FW/MENU.*****		
65	SYSTEM HALT (*) 000 : UNNOWN ERR	Unknown error	

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# Troubleshooting

**7.1**

**Details on Errors and Malfunctions**

**7.2**

**Detailed Methods of Coping with the Malfunctions**

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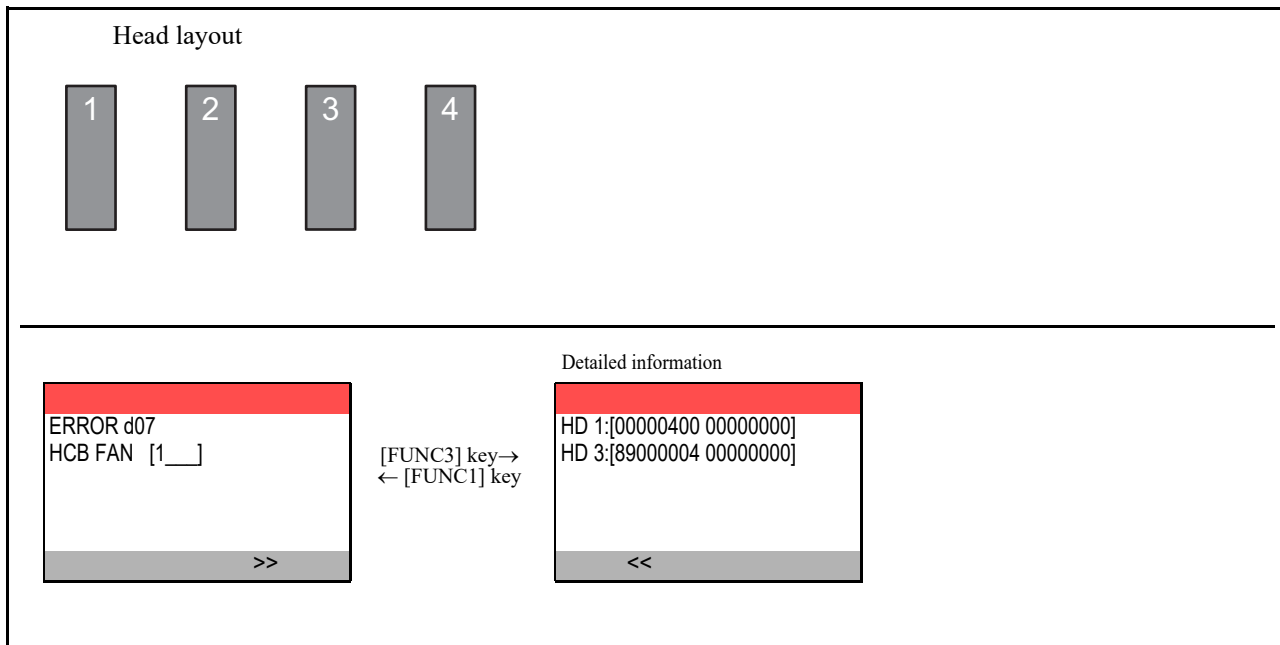
## 7.2.1 Head-related error display

### ■ Outline

Troubleshooting When a Head-related Error Occurs

### ■ Head-related error display

The head where an error occurs is displayed with one of the numbers "1, 2, 3, and 4". The following shows the layout of the numbered heads.



No.	LCD	Cause	Corrective Measures
1	ERROR d01 HCB POWER[1234]	One of the following power supply failures is detected in HCB PCB. - VREF power supply failure - +5VA power supply failure - +38VA power supply failure - -5VA1 power supply failure - -5VA2 power supply failure - +5VD power supply failure - C1 AMP initial failure - C2 AMP initial failure	1. Check the cable connection between the Slider P PCB (CN23) and the HCB PCB (CN4). 2. Disconnect and connect the FFC between the print head and the HCB PCB. 3. Replace the HCB PCB.
2	ERROR d02 HCB COMMON[1234]	One of the following problems is detected in HCB PCB. - Head VPP blown fuse - Head VDD blown fuse - C1 AMP current exceeds 625mA - C2 AMP current exceeds 625mA	
3	ERROR d03 HCB HARD[1234]	One of the following problems is detected in HCB PCB. - Power source initialization error - AMP power source initialization error - Low power source output voltage - High power source output voltage - Voltage or current error when in Production Mode - Temperature sensor error - Undefined error	1. Check the cable connection between the Slider P PCB and the HCB PCB. 2. Check the cable and FFC connection between the error-displayed print head and the HCB PCB. 3. Replace the error-displayed HCB PCB. 4. Replace the Slider P PCB. 5. Replace the print head. (Refer to 3.1.1)

## 7.2.1 Head-related error display

No.	LCD	Cause	Corrective Measures
4	ERROR d04 HCB CMD[1234]	Communication command error between the main F/W and the HCB PCB has occurred	<ol style="list-style-type: none"> <li>1. Update the firmware.</li> <li>2. Check the cable connection between the Slider P PCB and the HCB PCB.</li> <li>3. Check the cable and FFC connection between the error-displayed print head and the HCB PCB.</li> <li>4. Replace the error-displayed HCB PCB.</li> <li>5. Replace the Slider P PCB.</li> </ol>
5	ERROR d05 HCB WFM[1234]	Discharge waveform control error is detected in the HCB PCB	
6	ERROR d06 HCB VUP[1234]	Failed to upgrade the version of the HCB PCB	
7	ERROR d07 HCB FAN[1234]	Error in the HCB fan operation	<ol style="list-style-type: none"> <li>1. Verify the operation of the HCB cooling fan.</li> <li>2. Replace the HCB PCB.</li> </ol>
8	ERROR d08 HD UKNWN[1234]	Error with undefined error code has occurred	<ol style="list-style-type: none"> <li>1. Update the firmware.</li> <li>2. Check the cable connection between the Slider P PCB and the HCB PCB.</li> <li>3. Check the cable and FFC connection between the error-displayed print head and the HCB PCB.</li> <li>4. Replace the error-displayed HCB PCB.</li> <li>5. Replace the Slider P PCB.</li> </ol>
9	ERROR d09 HCB MEMORY[1234]	Abnormal data in the memory of the head	

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# Operation Flow

**8.1**  
**Basic Operation**

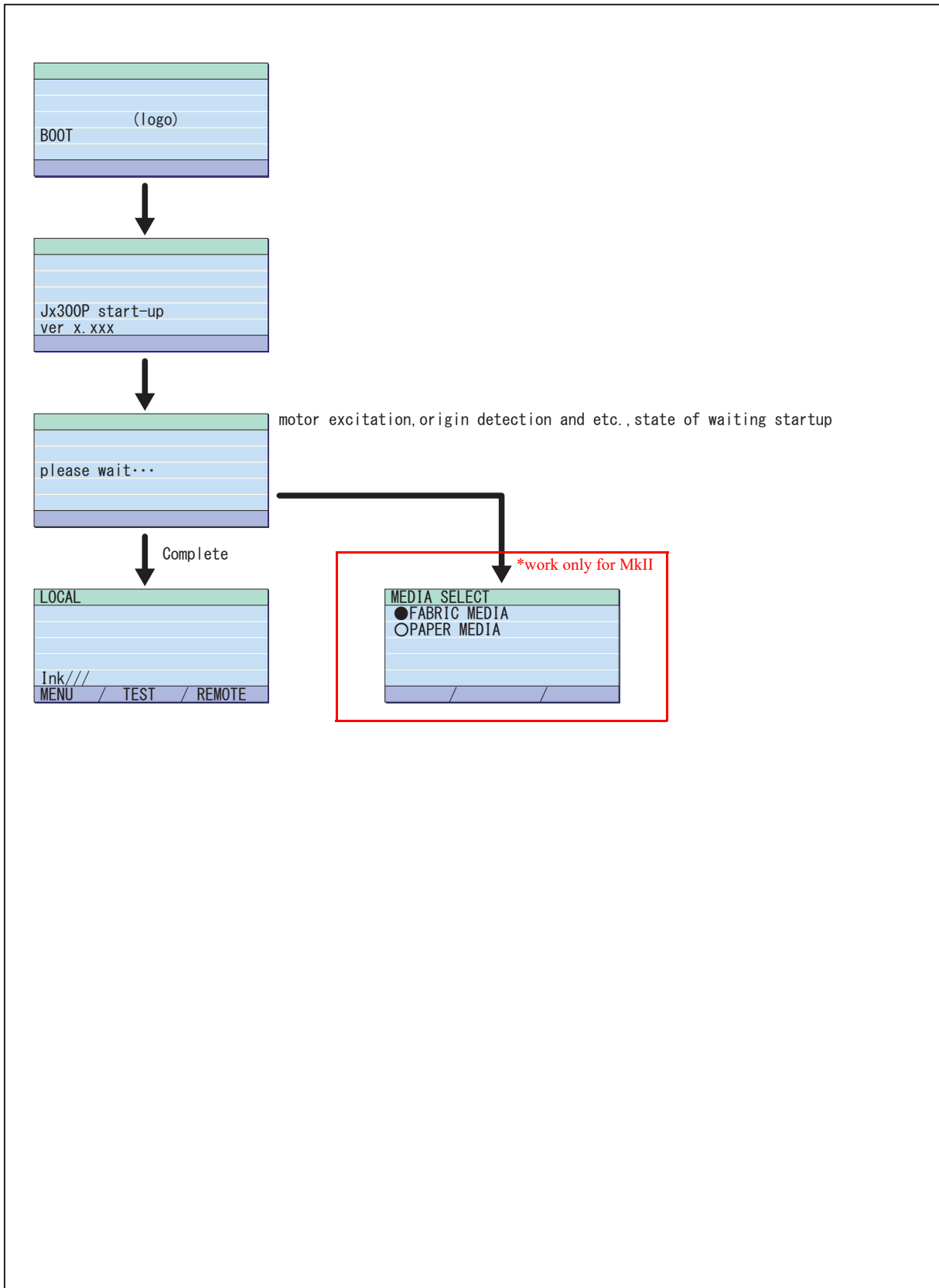
**8.2**  
**Print Mode**

**8.3**  
**Common Setting**

**8.4**  
**Service Mode**

# 8.1.1 Start

## Start



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# Operation Flow

**8.1**  
**Basic Operation**

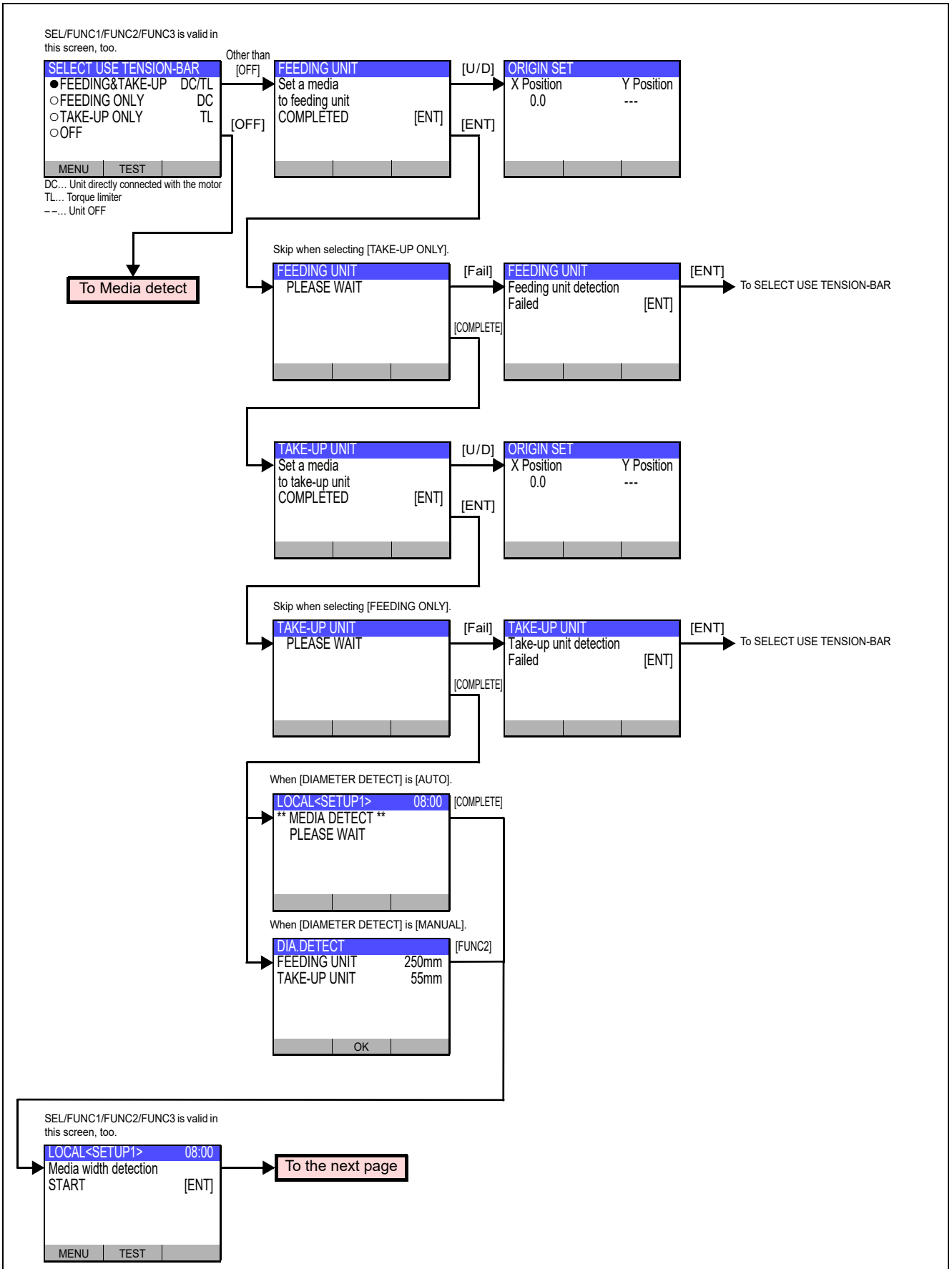
**8.2**  
**Print Mode**

**8.3**  
**Common Setting**

**8.4**  
**Service Mode**

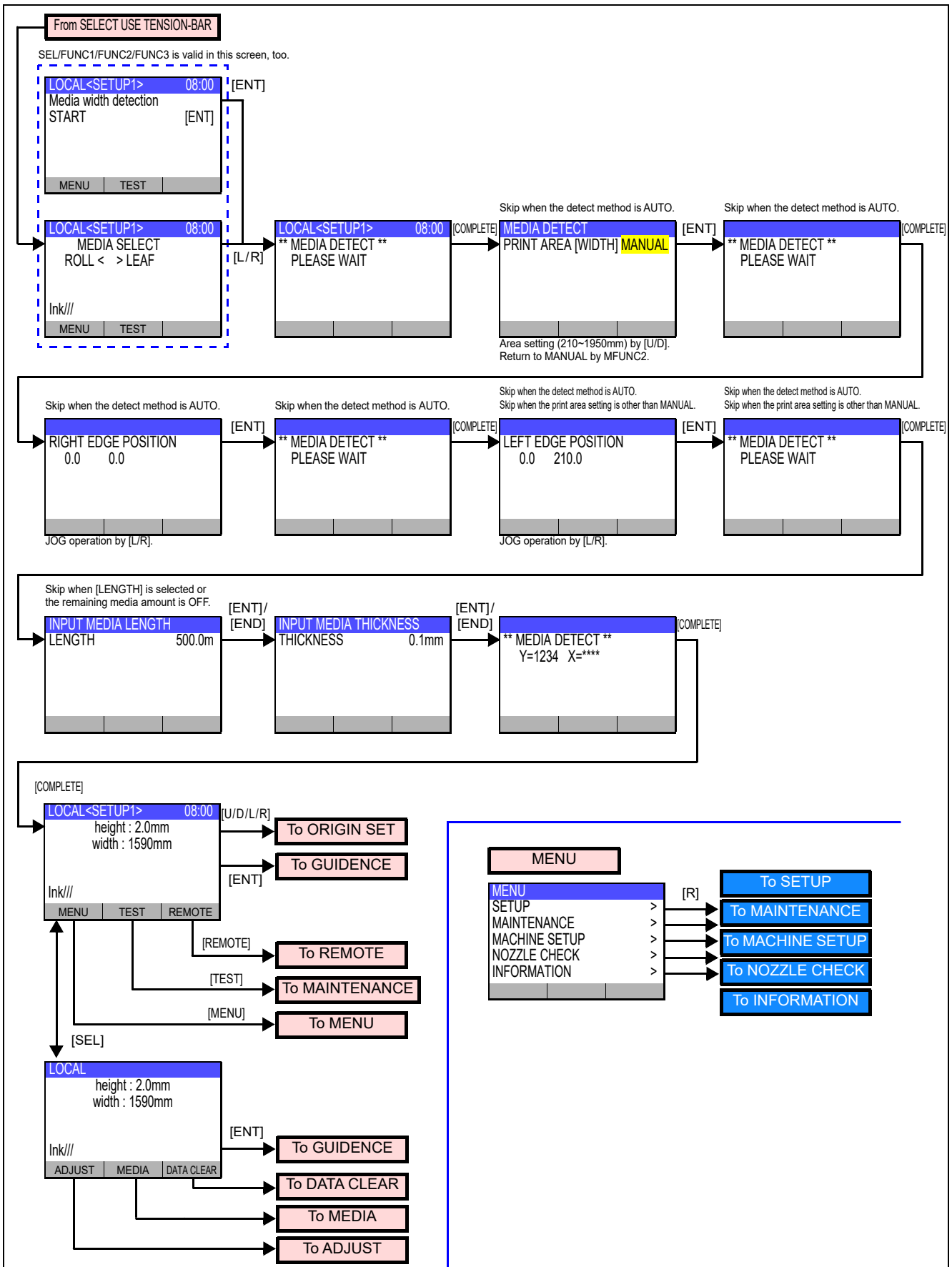
# 8.2.1 LOCAL / REMOTE

## SELECT USE TENSION-BAR / Media detect / Local



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- 8

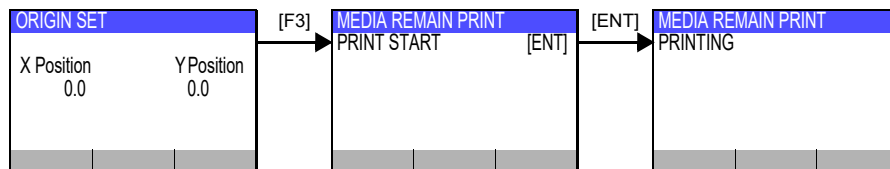
# 8.2.1 LOCAL / REMOTE



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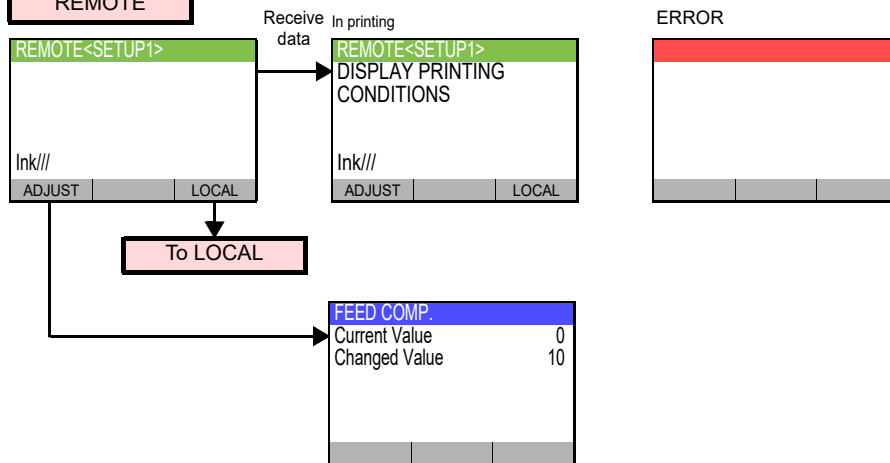
# 8.2.1 LOCAL / REMOTE

### ORIGIN SET



F3 is not indicated when the remaining media amount is OFF.  
F2 is not indicated when any media is not detected.

### REMOTE



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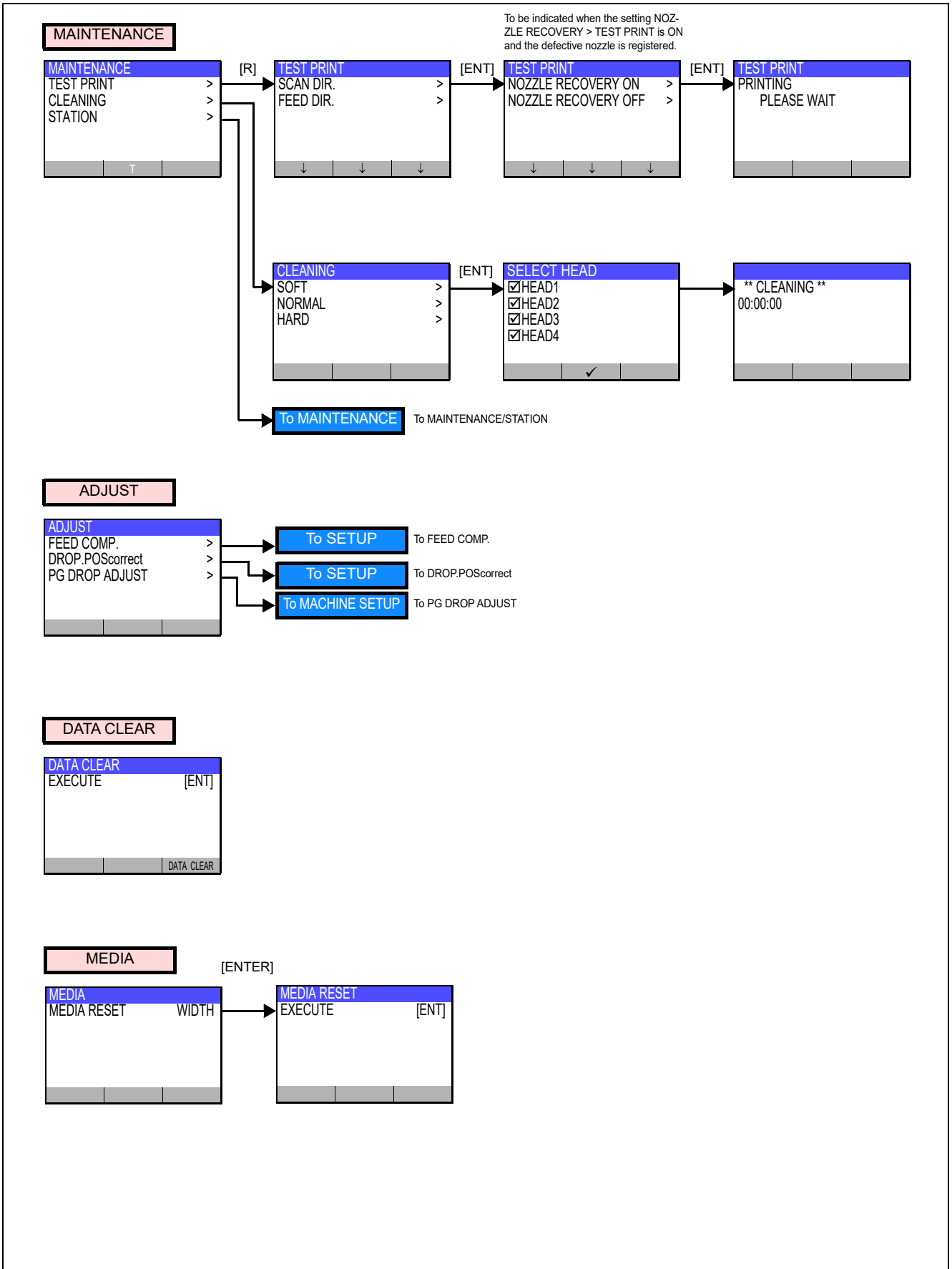
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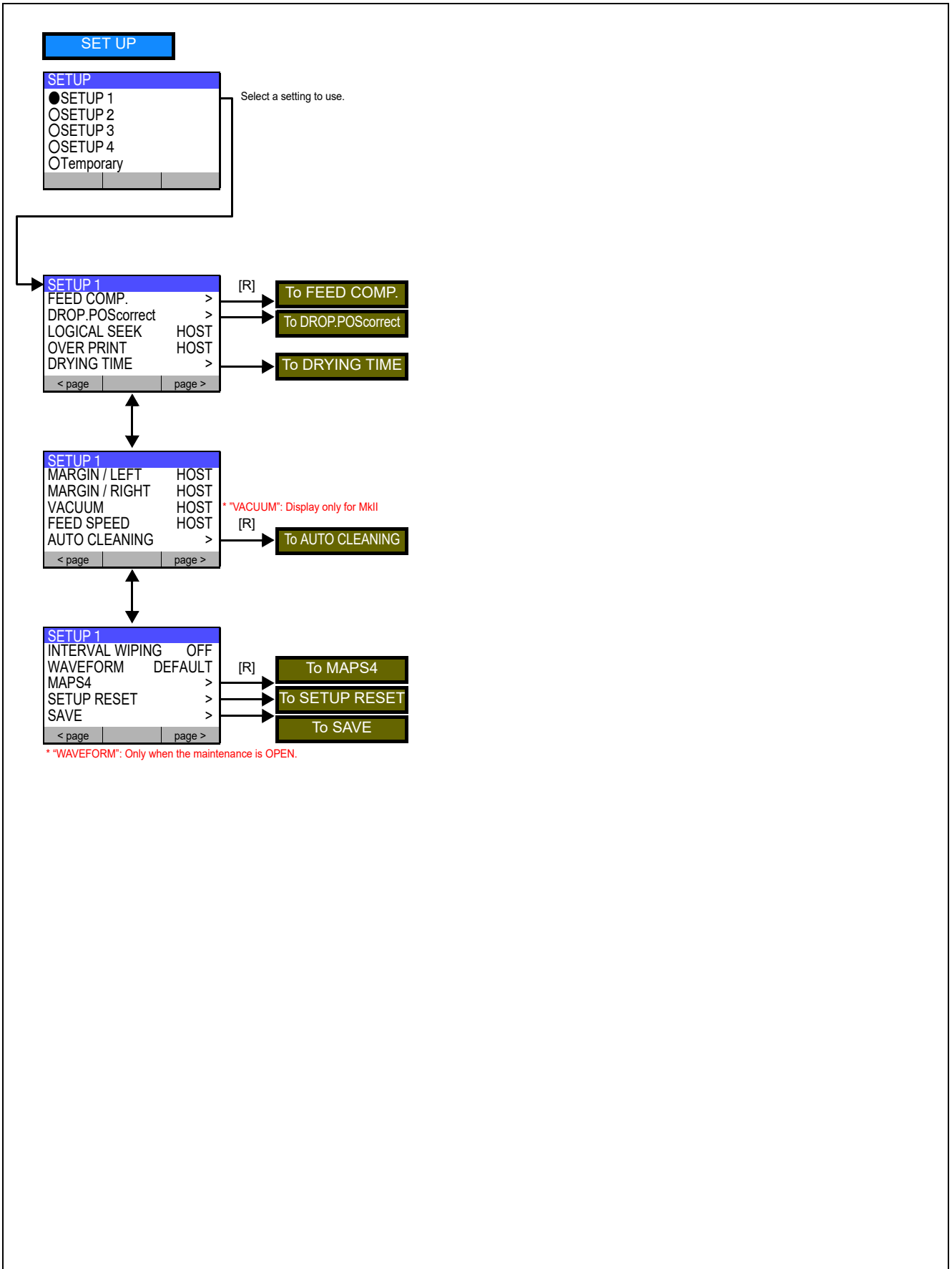
# 8.2.1 LOCAL / REMOTE



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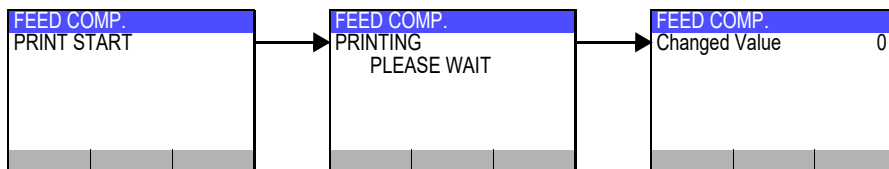
## 8.2.2 SETUP

### ■ Set up

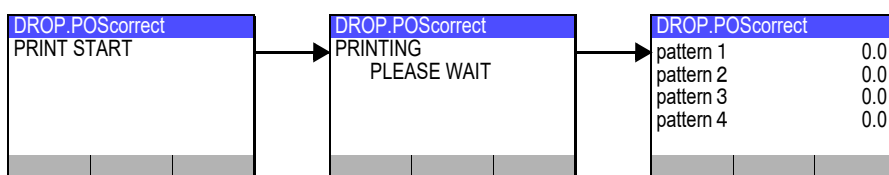


## 8.2.2 SETUP

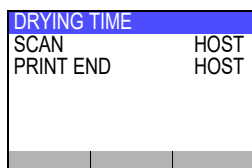
### FEED COMP.



### DROP.POScorrect



### DRYING TIME



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## 8.2.2 SETUP

### AUTO CLEANING

AUTO CLEANING	
SETUP	DEFAULT
INTERVAL	---
TYPE	---
Cleaning Check	---
EXEC.TIMING	---

[INTERVAL], [TYPE], [Cleaning Check], and [EXEC.TIMING] are not indicated by default.

### MAPS4

MAPS4	
MAPS4	AUTO

MAPS4	
MAPS4	MANUAL
SPEED	-10%
Smoothing Level	25%

Only when the maintenance is OPEN.

MAPS4	
MAPS4	OFF

### SETUP RESET

SETUP1	
SETUP RESET	
EXECUTE	[ENT]

Temporary	
SETUP RESET	>
DEFAULT	>
COPY	>

Temporary	
SETUP RESET	>
EXECUTE	[ENT]
OK	

Temporary	
COPY	>
SETUP1->Temporary	>
SETUP2->Temporary	>
SETUP3->Temporary	>
SETUP4->Temporary	>

Temporary	
COPY	>
COPY SETUP xx	[ENT]
OK	

### SAVE

Temporary	
SAVE	
Temporary->SETUP1	>
Temporary->SETUP2	>
Temporary->SETUP3	>
Temporary->SETUP4	>

Temporary	
SAVE	
SAVE SETUP xx	[ENT]
OK	

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## 8.2.3 MAINTENANCE

### ■ Maintenance

#### MAINTENANCE

MAINTENANCE	>
STATION	>
NOZZLE RECOVERY	>
AUTO MAINT.	>
FILL UP INK	>
REPLACE WasteInkTank	>
Switch Ink Type <sup>1</sup>	>

[R]	To STATION
	To NOZZLE RECOVERY
	To AUTO MAINT.
	To FILL UP INK
	To REPLACE WasteInkTank
	Switch Ink Type

\*1. Once "Switch Ink Type" is performed, it is not displayed.

#### STATION

STATION MAINT.	>
CARRIGE OUT	>
NOZZLE WASH	>
DISWAY WASH	>
CUSTODY WASH	>
REPLACE WIPER	>

[R]	To CARRIGE OUT
	To NOZZLE WASH
	To DISWAY WASH
	To CUSTODY WASH
	To REPLACE WIPER

#### CARRIGE OUT

MOVE POSITION	>
STATION MAINT.	>
HEAD MAINT.>	>

CARRIGE OUT	PLEASE WAIT
-------------	-------------

CARRIGE OUT	COMPLETED	[ENT]
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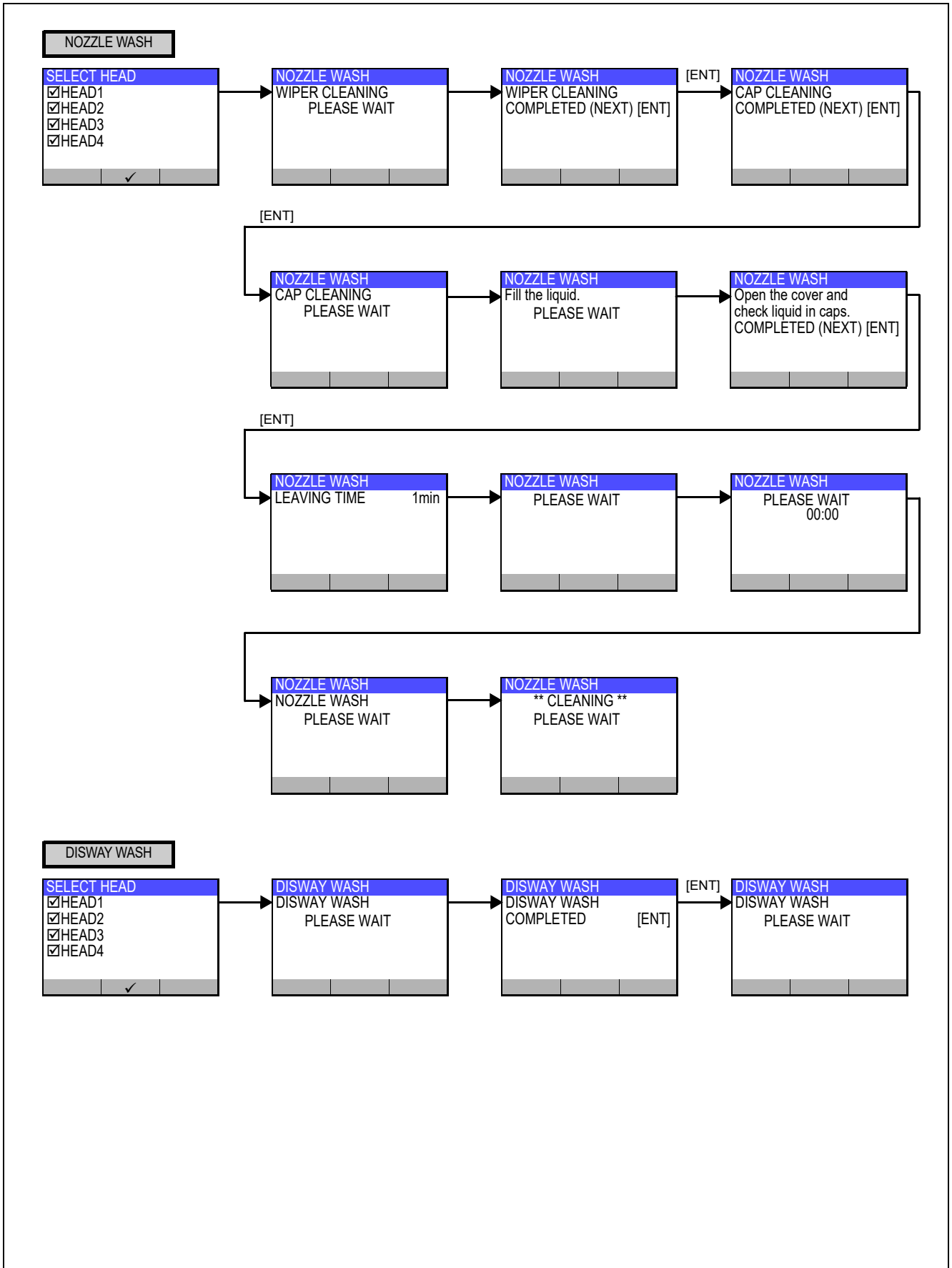
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## 8.2.3 MAINTENANCE



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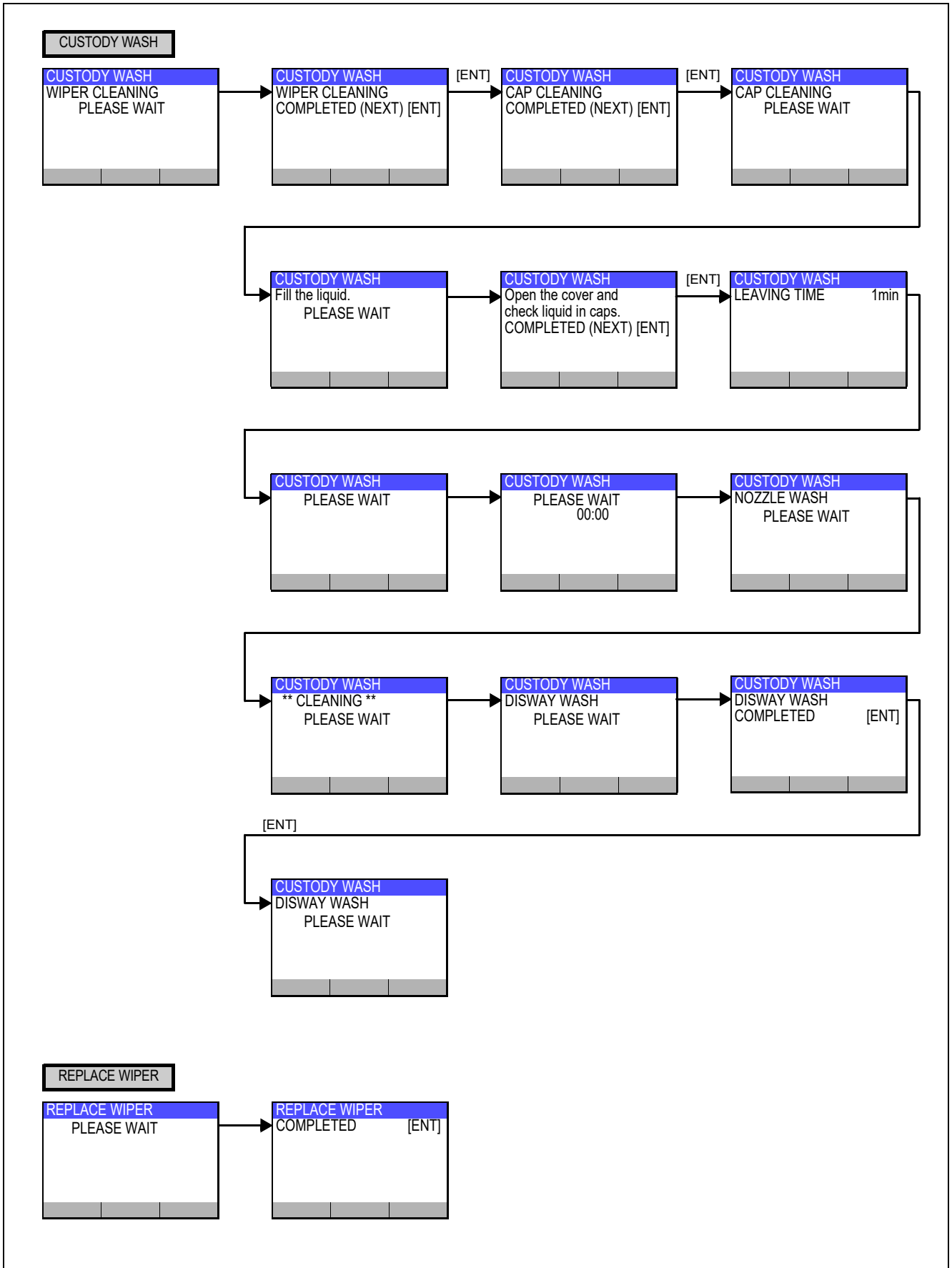
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## 8.2.3 MAINTENANCE



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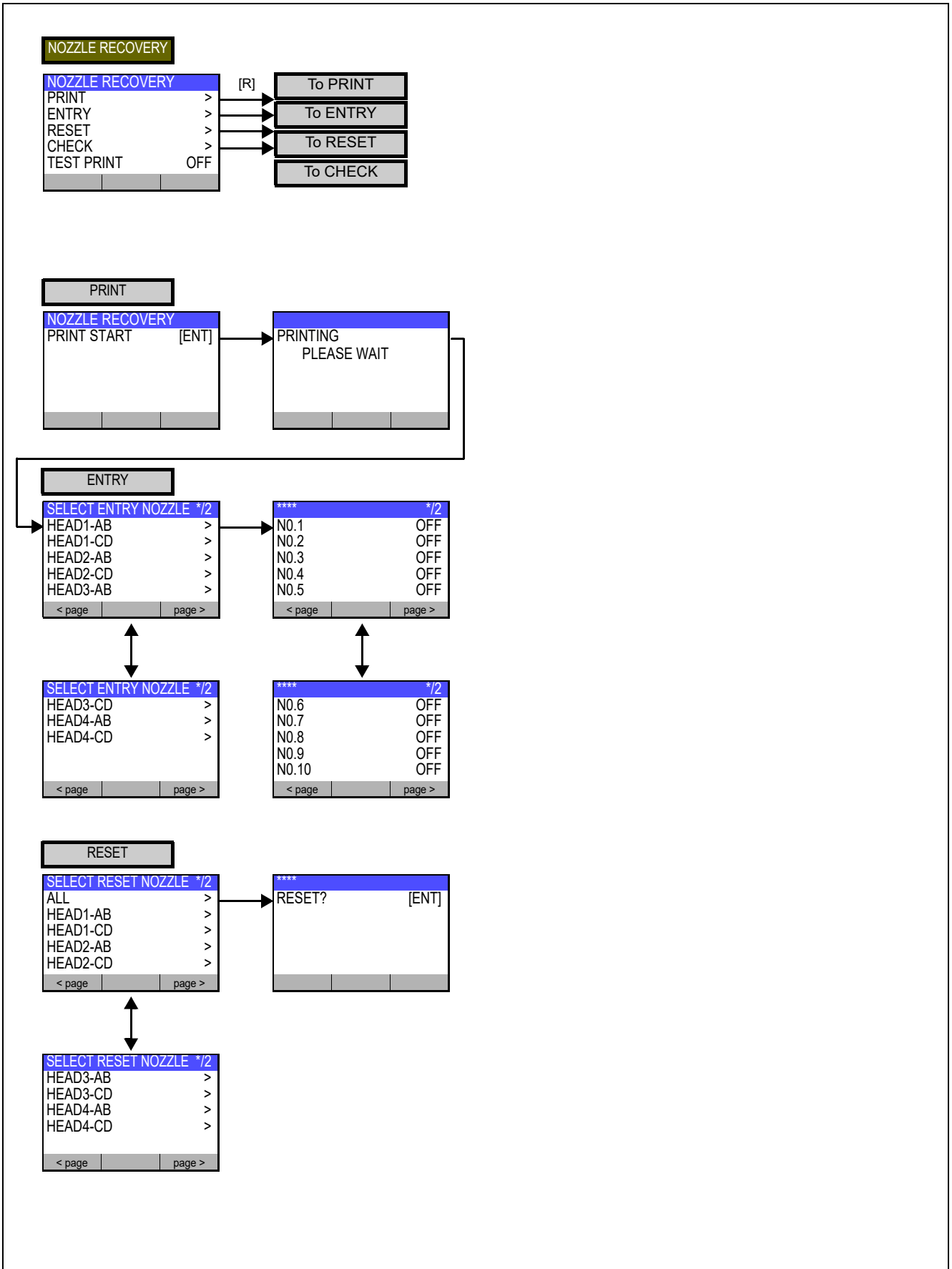
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## 8.2.3 MAINTENANCE



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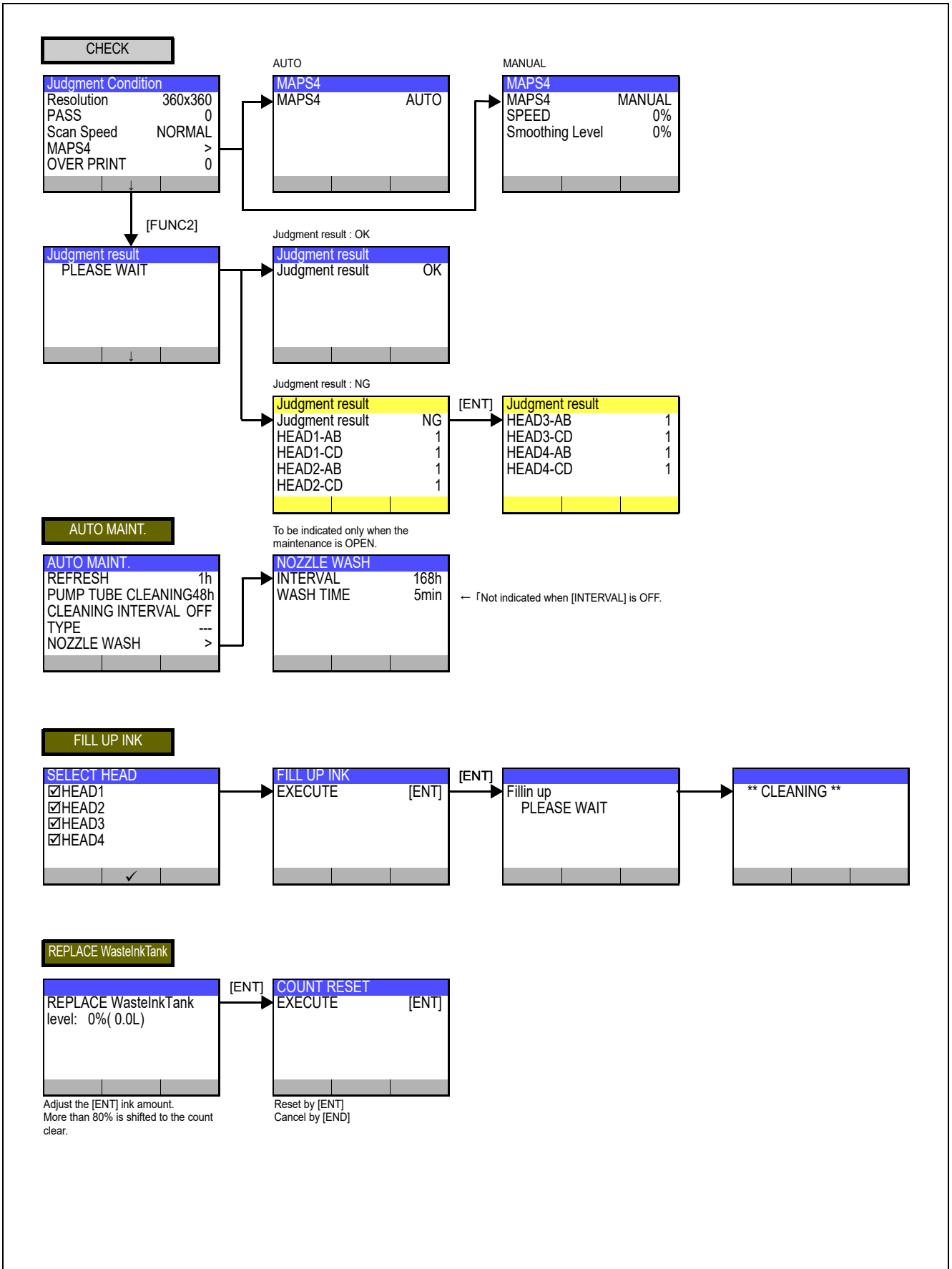
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# 8.2.3 MAINTENANCE



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## 8.2.3 MAINTENANCE

Switch Ink Type

Switch Ink Type  
 REMOVE ALL INK ICs AND  
 INK PACKS  
 :MMBBYYKK

Switch Ink Type  
 SET Sb411 INK ICs AND  
 INK PACKS  
 :MMBBYYKK

Switch Ink Type  
 Switch to Sb411 ink.  
 It can't be returned to  
 Sb410 ink.  
 OK ? [ENT]

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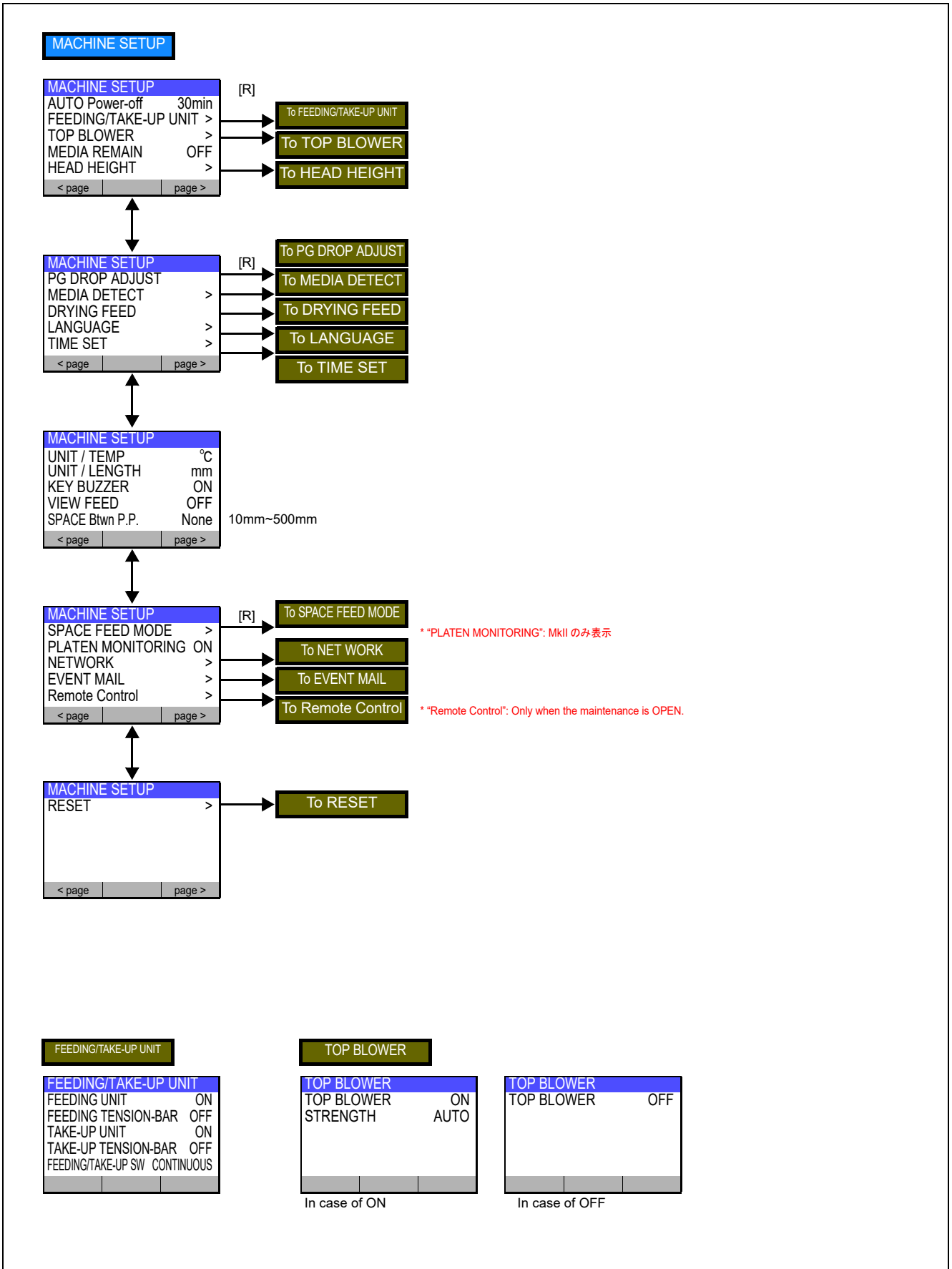
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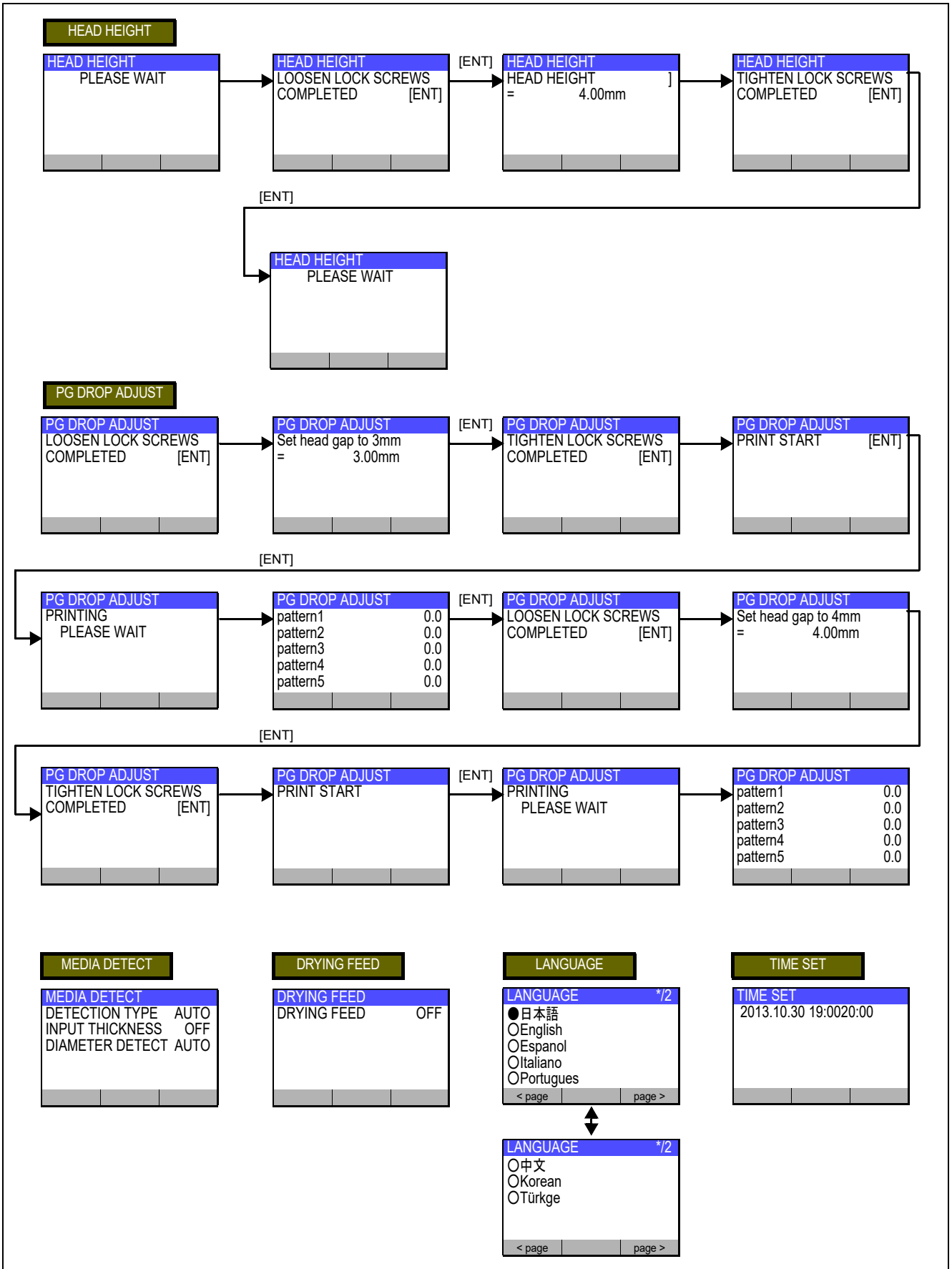
# 8.2.4 MACHINE SETUP

## Machine setup



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# 8.2.4 MACHINE SETUP



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# 8.2.4 MACHINE SETUP

## SPACE FEED MODE

SPACE FEED MODE

INTERMITTENT

CONTINUOUS

## NETWORK

NETWORK

Check IP ADDRESS >

Check MAC ADDRESS >

DHCP ON

AutoIP ON

IP ADDRESS >

< page page >

Check IP ADDRESS

0. 0. 0. 0

Check MAC ADDRESS

00:0d:1b:00:00:00

IP ADDRESS

0. 0. 0. 0

NETWORK

DEFAULT GATEWAY >

DNS ADDRESS >

SUB NET MASK 24

< page page >

DEFAULT GATE WAY

0. 0. 0. 0

DNS ADDRESS

DNS ADDRESS

0. 0. 0. 0

The item of red color is settable in case that [DHCP] and [AutoIP] are OFF

## EVENT MAIL

EVENT MAIL

MAIL DELIVERY OFF

SELECT EVENT >

MAIL ADDRESS >

MESSAGE SUBJECT >

SERVER SETUP >

< page page >

[R] To SELECT EVENT

To MAIL ADDRESS

To MESSAGE SUBJECT

To SERVER SETUP

EVENT MAIL

TRANSMIT TEST >

< page page >

[R] To TRANSMIT TEST

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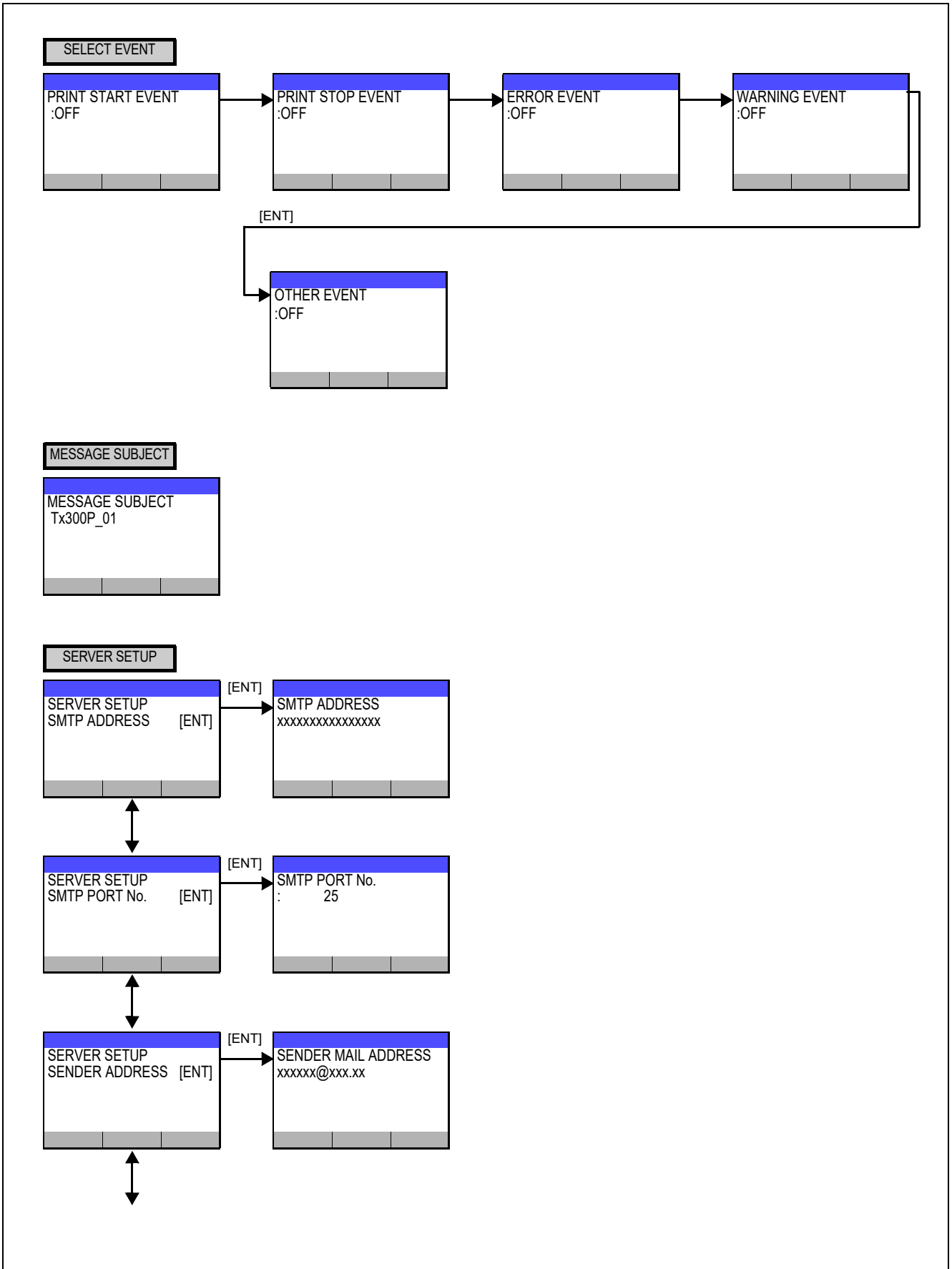
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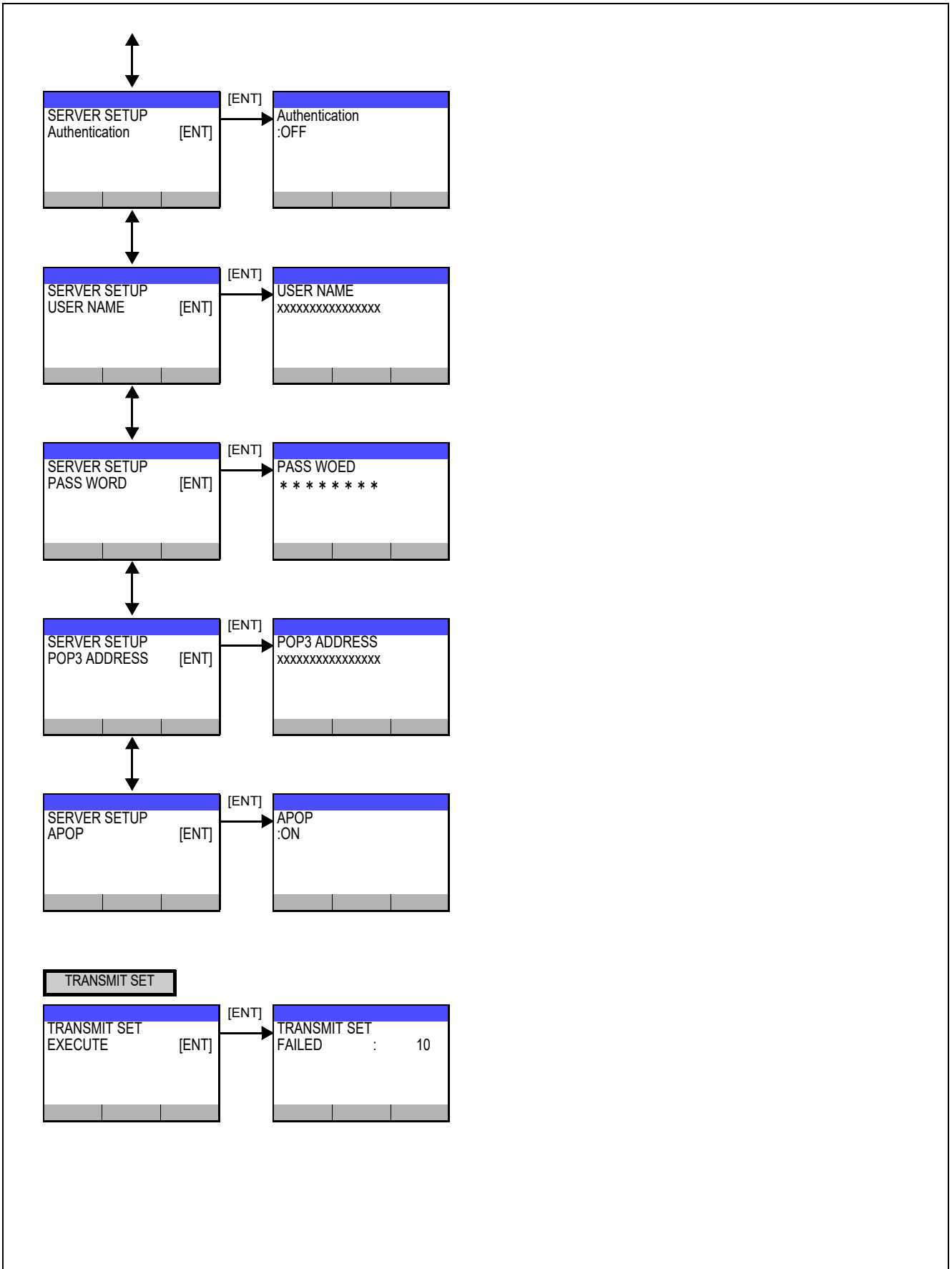
8

# 8.2.4 MACHINE SETUP

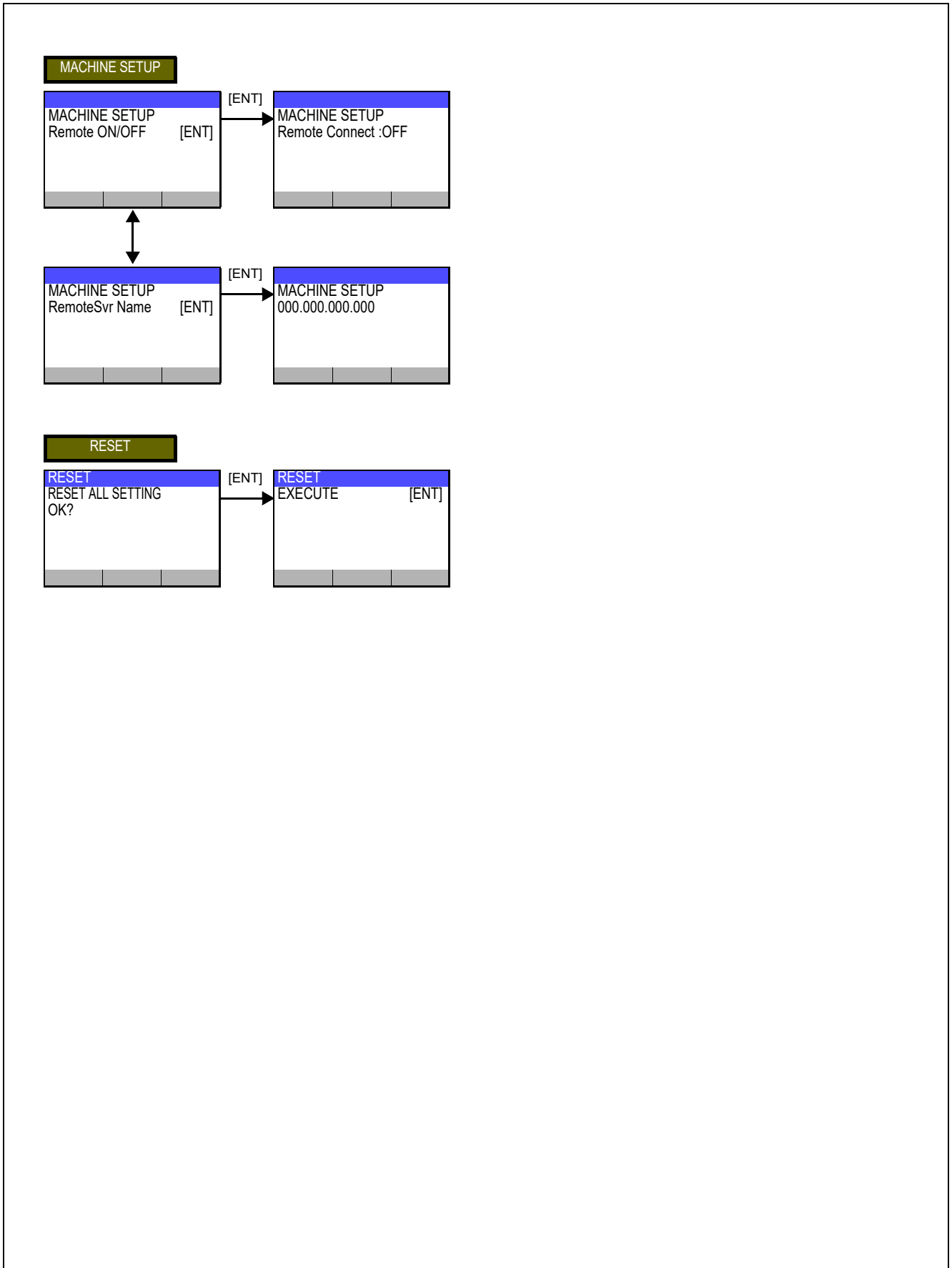


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# 8.2.4 MACHINE SETUP



## 8.2.4 MACHINE SETUP



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# Operation Flow

**8.1**  
**Basic Operation**

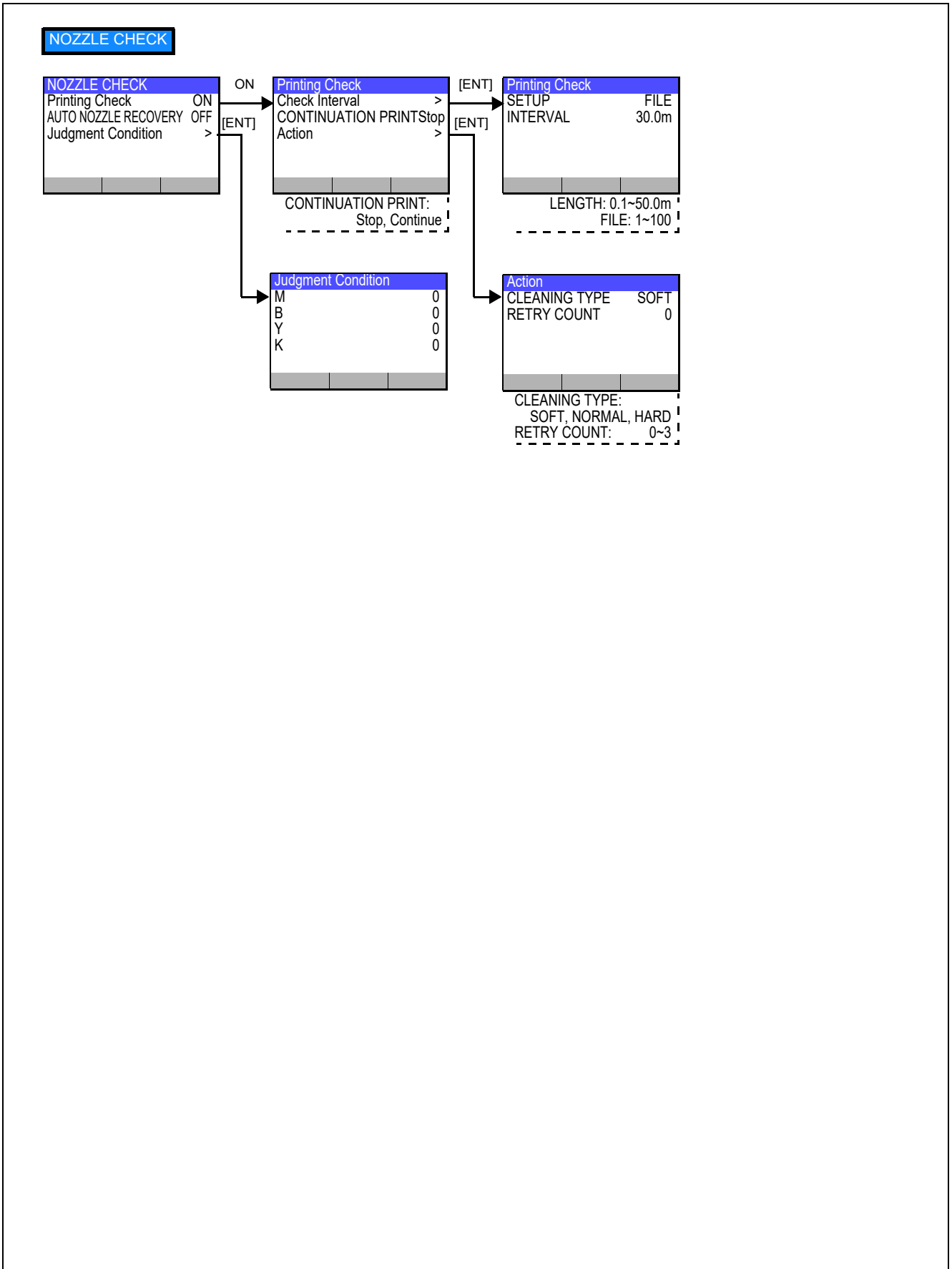
**8.2**  
**Print Mode**

**8.3**  
**Common Setting**

**8.4**  
**Service Mode**

# 8.3.1 NOZZLE CHECK

## ■ NOZZLE CHECK



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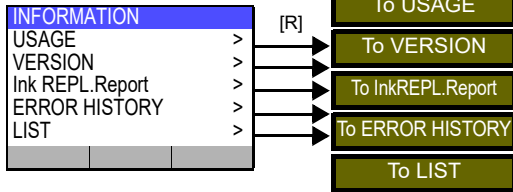
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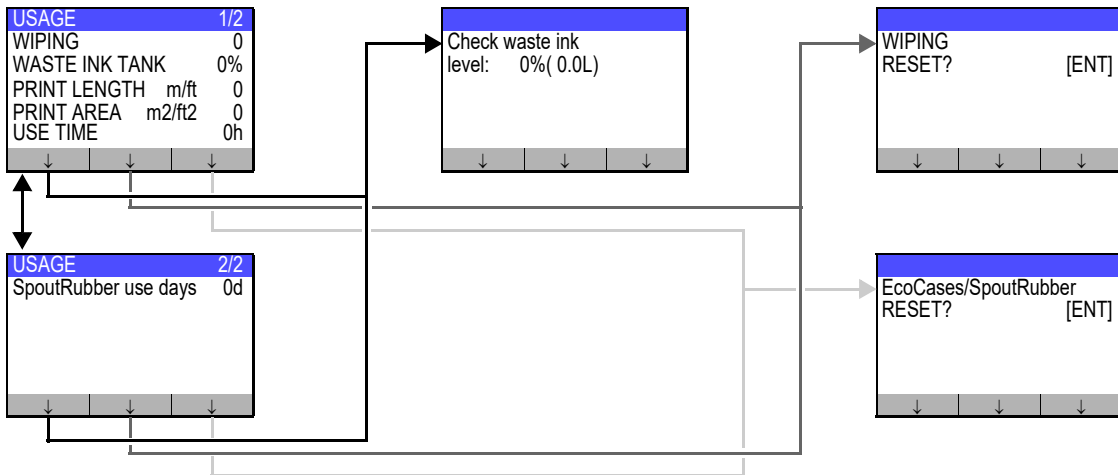
## 8.3.2 INFORMATION

### Information

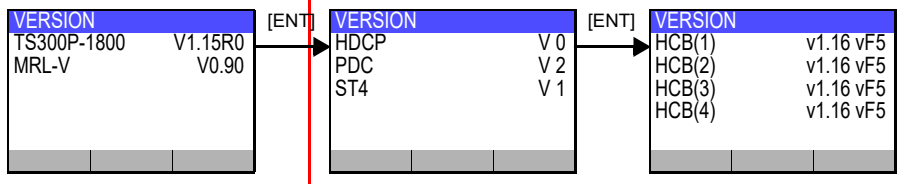
#### INFORMATION



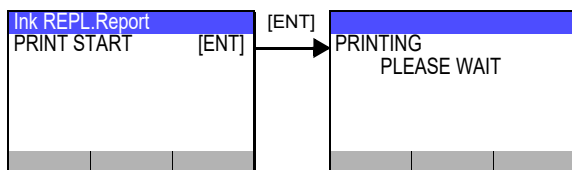
#### USAGE



#### VERSION



#### Ink REPL.Report



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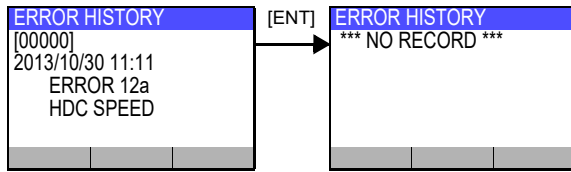
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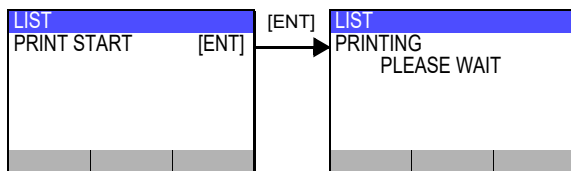
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## 8.3.2 INFORMATION

### EROR HISTORY



### LIST



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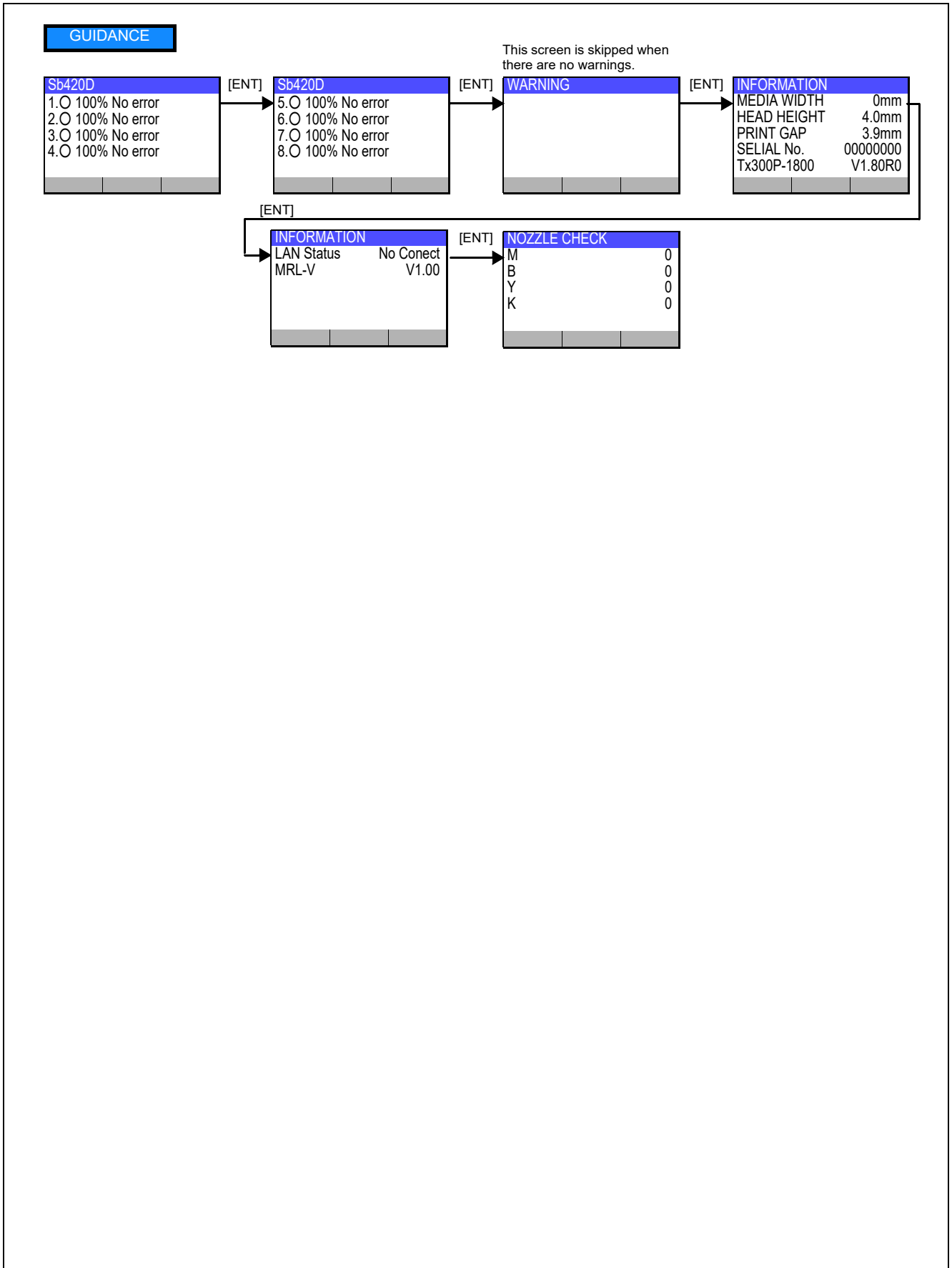
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### 8.3.3 GUIDANCE

■ Guidance



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## Operation Flow

**8.1**  
**Basic Operation**

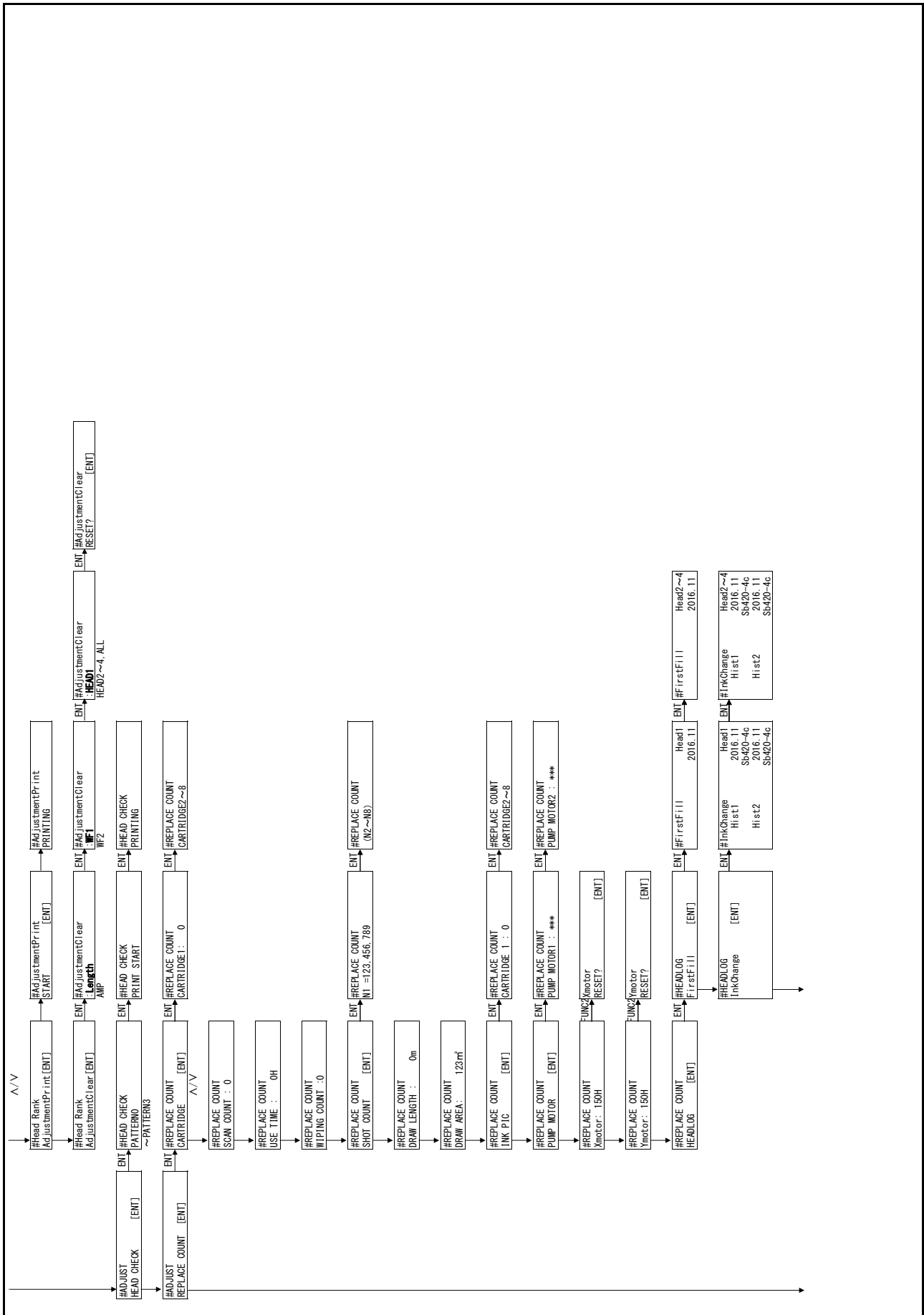
**8.2**  
**Print Mode**

**8.3**  
**Common Setting**

**8.4**  
**Service Mode**



# 8.4.1 #ADJUST

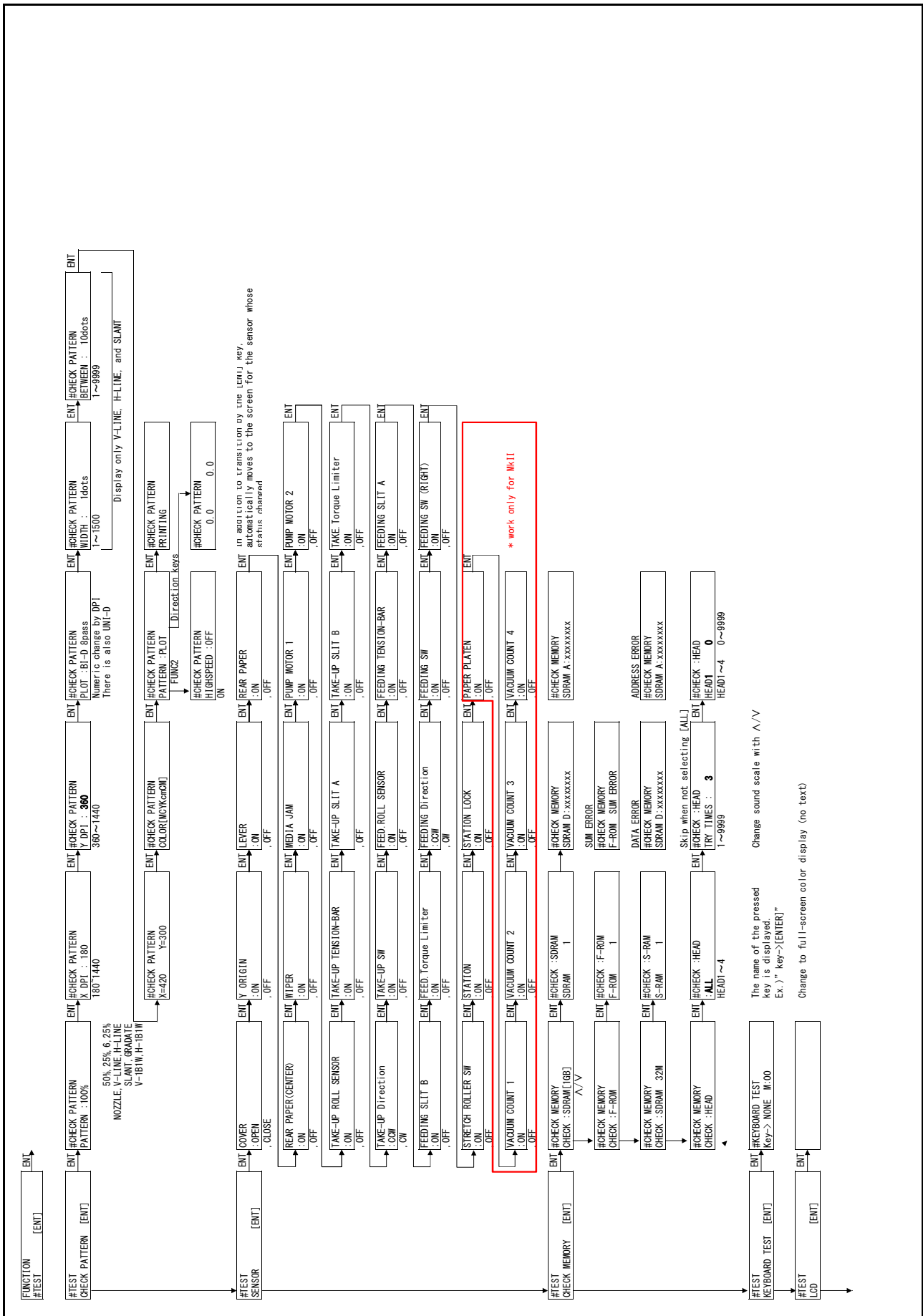


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# 8.4.2 #TEST



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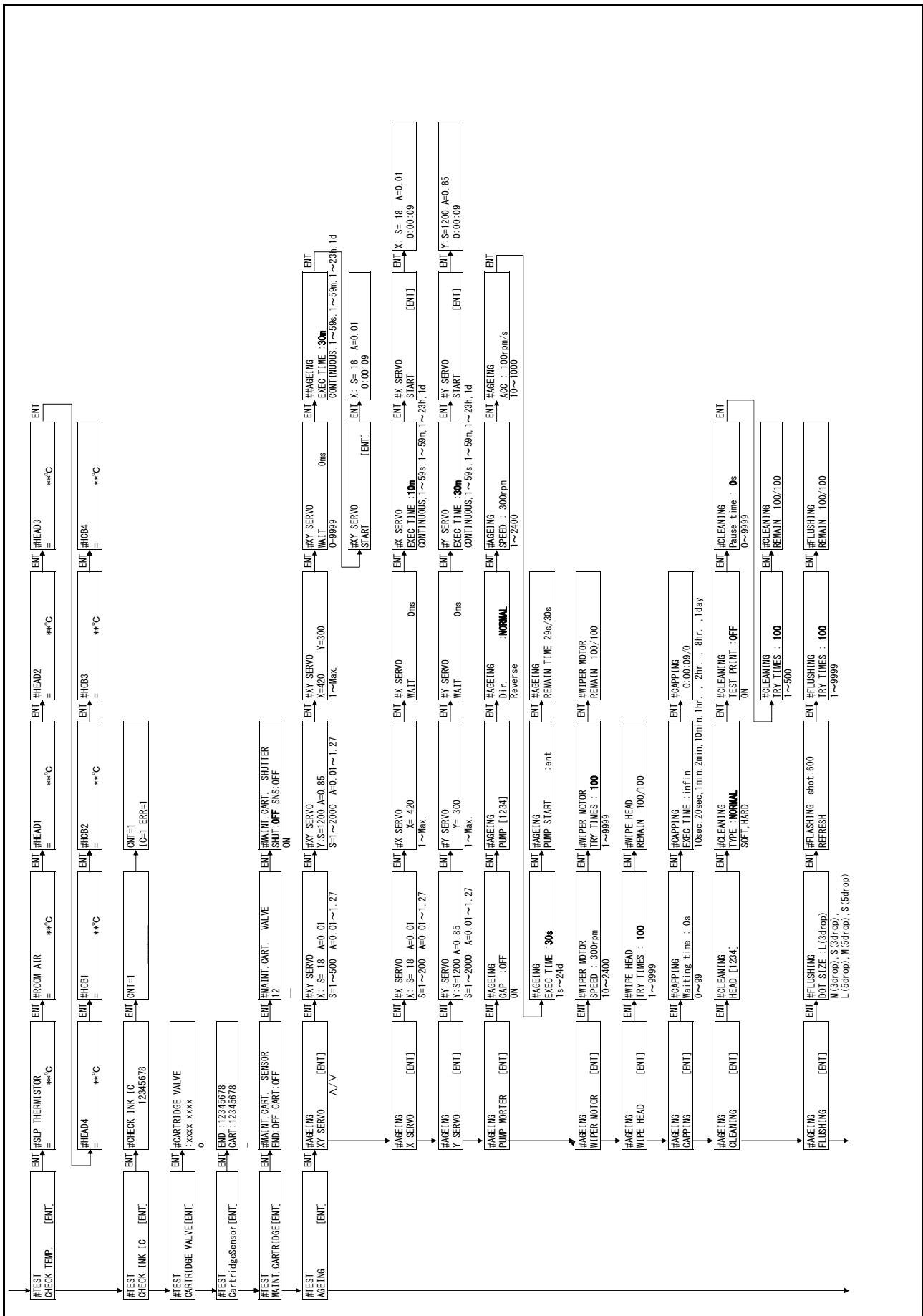
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# 8.4.2 #TEST



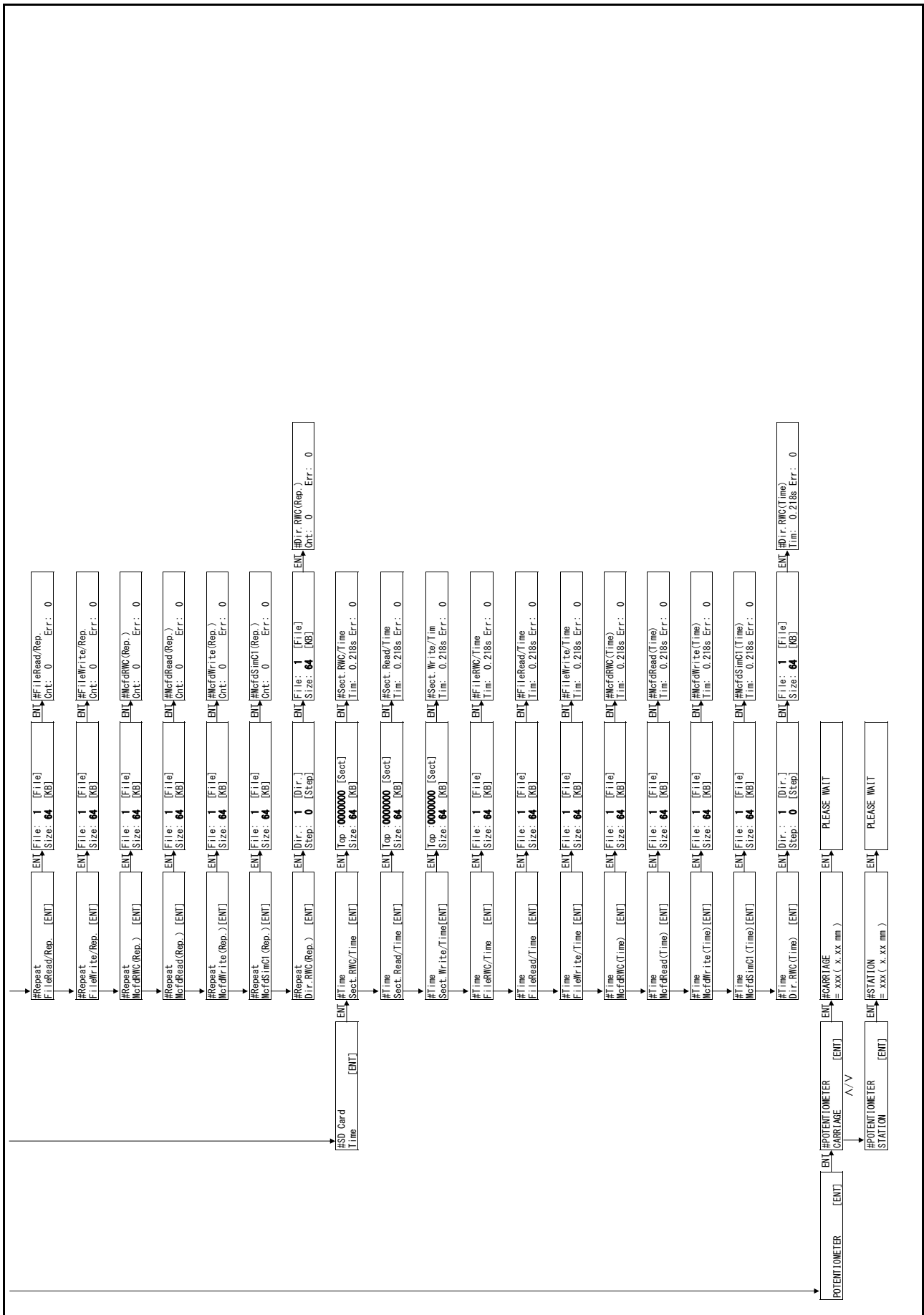
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# 8.4.2 #TEST



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# Maintenance Manual Change Tracking

Date	2022.05.10	Manual Ver.	3.3	Remark	
Status	Index	Rev.	Changes		
Added	7.1.4	3.3	Add error.		

Date	2020.03.19	Manual Ver.	3.2	Remark	
Status	Index	Rev.	Changes		
Changed	2.1.1	3.2	Changed the part number of "Slider - optical cable assy."		

Date	2020.03.17	Manual Ver.	3.1	Remark	
Status	Index	Rev.	Changes		
Added	1.1.1	3.1	New page is added.		
Changed	1.3.6	3.1	Ink set list changed.		
Added	1.3.8	3.1	4+4-Color(Transfer)		
Added	4.2.9	3.1	[Important] added.		
Added	5.1.15	3.1	Pilot lamp Red, Yellow, Green		
Added	6.3.7	3.1	Replacement Assy. list changed.		
Changed	6.4.9	3.1	Step changed.		
Added	7.1.2-P10	3.1	ERROR 679 [Vacuum Fan Error] added.		
Added	7.1.3-P5	3.1	[Vacuum Fan Error], [Replace Cap Pad] added.		
Changed	8.4.2-P2	3.1	Text		

Date	2019.11.15	Manual Ver.	3.0	Remark	
Status	Index	Rev.	Changes		
Added	1.3.1-P.3	3.0	Sb411+TP400 / Sb411+Sb420 ink set added.		
Changed	1.3.2-P.1,P.2	3.0	"COMPLETELY EXPIRED" is deleted. Table is changed.		
Added	1.3.6-P.1	3.0	Sb411+TP400 / Sb411+Sb420 ink set added.		
Added	1.3.8-P.1	3.0	Sb411+TP400 / Sb411+Sb420 ink set added.		
Changed	2.1.1-P.5,P.6	3.0	Tx300P-1800MkII inside connection diagram is added.		
Added	2.3.2-P.1,P.2	3.0	List of connectors: Remarks column is added. Main specification: Added		
Added	2.3.3-P.1	3.0	List of connectors: Remarks column is added.		
Added	3.1.1-P.7	3.0	Sb411+TP400 / Sb411+Sb420 ink set added.		
Changed	3.1.2-P1 3.1.3-P1	3.0	Replacment parts is deleted.		
Changed	3.1.6	3.0	Changed illustration Step 2: Added		
Added	3.1.9	3.0	New page is added.		
Changed	3.2.5	3.0	No.1: changed the reference		
Changed	4.2.1	3.0	[Important] / Step 3: "Paper Platen in case of Tx300P-1800MkII" is added.		
Changed	4.2.2	3.0	[Important] / Step 1: "Paper Platen in case of Tx300P-1800MkII" is added.		
Changed	4.2.3	3.0	[Important] / Step 1: "Paper Platen in case of Tx300P-1800MkII" is added.		

# Maintenance Manual Change Tracking

Date	2019.11.15	Manual Ver.	3.0	Remark	
Status	Index	Rev.	Changes		
Changed	4.2.4-P1,P.5	3.0	Step 1: "Paper Platen in case of Tx300P-1800MkII" is added.		
Added	4.2.4-P.1,P.4,P.5	3.0	Sb411+TP400 / Sb411+Sb420 ink set added.		
Added	4.2.10	3.0	New page is added.		
Changed	4.2.13 P.1,P.4,P.5	3.0	Step 5,16:"Paper Platen in case of Tx300P-1800MkII" is added. Step 14,17 [Important]: Sb411+TP400, Sb411+Sb420 added.		
Changed	4.3.1-P.2,P.3	3.0	Step 7,10: "Paper Platen in case of Tx300P-1800MkII" is added.		
Changed	4.3.4	3.0	Step 1,5: "Paper Platen in case of Tx300P-1800MkII" is added. Setting position of JAM sensor is changed. [Important] is added.		
Added	5.1.2-P.1	3.0	5 sensors are added.		
Added	5.1.8-P.1	3.0	[Operation check] is added.		
Added	5.1.10-P.1	3.0	[Operation check] is added.		
Changed	6.1.1	3.0	Parts around Aft Cover are changed.		
Added	6.2.3	3.0	Step5, 7: Added the case of Tx300P-1800MkII. [Caution] is added.		
Added	6.2.10	3.0	SPA part number is added.		
Added	6.2.11-P.2	3.0	Sb411+TP400 / Sb411+Sb420 ink set added		
Changed	6.2.12	3.0	Changed illustration [Important] is added.		
Added	6.2.13	3.0	New page is added.		
Added	6.3.7-P.2	3.0	[Important] is added.		
Added	6.4.2-P.1	3.0	Illustration is added. [Important] is added.		
Added	6.4.9	3.0	New page is added.		
Changed	6.5.1-P.1,P.2	3.0	Front right side around the Carriage is changed. Paper platen detect sensor is added. Suction fan rotation detect sensor is added.		
Added	6.5.7	3.0	New page is added.		
Added	7.1.2-P.9	3.0	ERROR 550 [CHECK PLATEN] is added.		
Added	7.1.3-P.5	3.0	[CHECK PLATEN] is added.		
Added	8.1.1-P.1	3.0	[MEDIA SELECT] menu is added.		
Added	8.2.2-P.1	3.0	[VACUUM] menu is added.		
Added	8.2.4-P.1	3.0	[PLATEN MONITORING] menu is added.		
Changed	8.4.1	3.0	changed		
Changed	8.4.2	3.0	changed		

Date	2018.11.09	Manual Ver.	2.5	Remark	
Status	Index	Rev.	Changes		
Changed	4.2.12	2.5	Changed Outline and Changed procedure" Head rank adjustment (LENGTH pattern)"		
Deleted	5.1.24	2.5	SD CARD is deleted.		

# Maintenance Manual Change Tracking

Date	2018.09.07	Manual Ver.	2.4	Remark	
Status	Index	Rev.	Changes		
Changed	2.1.2	2.4	"SYSTEM HALT(*)1d4*PCB STA4-1-F3" is deleted.		
Changed	7.1.2-P.1	2.4	Error 128-130: "List of Countermeasures" is changed.		
Changed	7.1.4-P3	2.4	"SYSTEM HALT 1d4" is deleted.		

Date	2018.08.07	Manual Ver.	2.3	Remark	
Status	Index	Rev.	Changes		
Added	2.1.2	1.0	New page is added.		
Changed	4.2.4	2.2	Changed illustration Step 8, 15		
Changed	6.3.4-P2	1.0	Changed description" Adjustment of belt length"		
Changed	7.1.2-P.1	1.2	Error 128-130: "List of Countermeasures" is changed.		

Date	2018.06.15	Manual Ver.	2.2	Remark	FW ver 3.30
Status	Index	Rev.	Changes		
Changed	ALL	2.2	Sb421/Sb421+TP400 ink set added. [Maintenance] > [Switch Ink Type] added. [#Adjust] > [REPLACE COUNT] > [X / Y motor], [HEADLOG] added. [MACHINE SETUP] > [DRYING FEED] > [BACKWARD FEED] deleted. [MACHINE SETUP] > [MEDIA DETECT] > [DIAMETER DETECT] added		
Added	1.3.1 - P.1, P.3	2.2	Sb421/Sb421+TP400 ink set added.		
Changed	1.3.6 - P.1	2.2	Sb421/Sb421+TP400 ink set added.		
Changed	1.3.8	2.2	Sb421/Sb421+TP400 ink set added.		
Added	1.3.9	2.2	[Switch Ink Type] added.		
Changed	3.1.1 - P.7	2.2	Sb421/Sb421+TP400 ink set added.		
Changed	4.2.4 - P.1, P.4, P.5	2.2	Sb421/Sb421+TP400 ink set added.		
Changed	4.2.5	2.2	[#Adjust] > [REPLACE COUNT] > [X / Y motor], [HEADLOG] added.		
Changed	4.2.12 - P.3, P.4	2.2	Sb421/Sb421+TP400 ink set added.		
Changed	6.3.1	2.2	X motor replacement: [#Adjust] > [REPLACE COUNT] > [Xmotor] Reset rotation time added at the end of the procedure.		
Changed	6.3.2 - P.2	2.2	Y motor replacement: [#Adjust] > [REPLACE COUNT] > [Ymotor] Reset rotation time added at the end of the procedure.		
Changed	6.2.11 - P.1, P.2	2.2	Sb421/Sb421+TP400 ink set added.		
Changed	8.2.1 - P.1	2.2	[DIAMETER DETECT] = [Auto] added.		
Changed	8.2.3 - P.1, P.6	2.2	Operation Flow: [Maintenance] > [Switch Ink Type] added.		
Changed	8.2.4 - P.2	2.2	Operation Flow: [MACHINE SETUP] > [DRYING FEED] > [BACKWARD FEED] deleted. [MACHINE SETUP] > [MEDIA DETECT] > [DIAMETER DETECT] added		
Changed	8.4.1 - P.3, P.4	2.2	Operation Flow: [#Adjust] > [REPLACE COUNT] > [X / Y motor], [HEADLOG] added.		

Date	2017.08.31	Manual Ver.	2.1	Remark	
Status	Index	Rev.	Changes		
Changed	1.3.1-P.2	1.3	Added Rc500		
Changed	1.3.6-P.1	1.4	Added Rc500		
Changed	1.3.8-P.1	1.4	Added Rc500		

# Maintenance Manual Change Tracking

Date	2017.08.31	Manual Ver.	2.1	Remark	
Status	Index	Rev.	Changes		
Changed	3.1.1-P.7	1.4	Added Rc500		
Changed	4.2.4-P.1, 4	1.5	Added Rc500		
Changed	4.2.9-P.1	1.1	Deleted Step.3		
Changed	4.2.12-P.1~6	1.3	Changed		
Changed	4.3.1-P.1	1.1	Changed illustration Step 2		
Changed	4.3.1-P.2	1.1	Changed illustration Step 6, 7 Step 7: the platen ---> the dummy platen		
Changed	4.3.1-P.3	1.1	Changed illustration Step 8, 9, 10 Step 10: the platen ---> the dummy platen		
Changed	6.2.11-P.1~2	1.4	Added Rc500		
Changed	7.1.2-P.1	1.2	Added "ERROR 108 HD CONNECT" Changed "ERROR 108 HD THERMIS"		

Date	2017.06.26	Manual Ver.	2.00	Remark	
Status	Index	Rev.	Changes		
Changed	1.3.1-P.3,P.5	1.2	Sb420+TP400 (When filling with 4+4-color ink set) is added.		
Changed	1.3.2-P.1	1.2	[Important]: is changed		
Changed	1.3.3-P.1	1.3	Table is changed.		
Changed	1.3.6-P.1	1.3	Table is changed.		
Changed	1.3.8-P.1	1.3	Table is changed.		
Changed	3.1.1-P.7	1.3	Table is changed.		
Changed	4.2.4-P.1,P.4	1.3	Table is changed.		
Changed	6.2.11-P.2	1.3	Sb420+TP400 (When filling with 4+4-color ink set) is added. [Important]: 4+4-color ink set (Sb420+TP400) is added.		
Changed	8.4.1-p.1	1.3	[BASIS SET] deleted.		

Date	2017.04.14	Manual Ver.	1.30	Remark	
Status	Index	Rev.	Changes		
Changed	1.3.1-P.1, P.2, P.3	1.2	Text inside figure is changed. TP400 (When filling with 7-color ink set) is added, and text inside figure is changed. Table is changed.		
Changed	1.3.3-P.1	1.2	Table is changed.		
Changed	1.3.6-P.1	1.2	Table is changed.		
Changed	1.3.8-P.1	1.2	Table is changed.		
Added	1.3.9	1.0	Newly added.		
Changed	3.1.1-P.6, P.7	1.2	Procedure number is changed. Table is changed.		
Changed	4.2.1-P.1	1.2	Procedure number is changed.		
Changed	4.2.4-P.1,  P.2, P.4, P.5	1.3	[Important]: wording is changed, LCD is changed, Procedure 2: wording is changed (Procedure numbering is changed thereafter), and [Important]: is deleted. Procedure 5: LCD is changed. Procedure 9, 12: LCD is changed. [Important]: wording is changed. Procedure 2: wording is changed (Procedure numbering is changed thereafter), and [Important]: is deleted.		
Changed	4.2.5-P.1	1.1	Table is changed, and [Tips] is added.		
Changed	4.3.2-P.1	1.2	Words are deleted.		
Changed	5.1.18-P.1	1.1	Table is changed.		

# Maintenance Manual Change Tracking

Date	2017.04.14	Manual Ver.	1.30	Remark	
Status	Index	Rev.	Changes		
Changed	6.2.11-P.1, P.2	1.2	TP400 (When filling with 7-color ink set) is added. [Important]: 7-color ink set is added.		
Added	7.2.1-P.1,P.2	1.0	Newly added.		
Changed	8.2.1-P.2,P.4	1.3	Media is added.		
Changed	8.2.4-P.1	1.3	LCD is changed.		
Changed	8.4.1-P.1	1.2	LCD is changed.		
Changed	8.4.2-P.1	1.2	LCD is changed.		

Date	2016.06.30	Manual Ver.	1.20	Remark	
Status	Index	Rev.	Changes		
Changed	1.3.1	1.1	P.1 ~ P.3 is changed		
Changed	1.3.2	1.1	P.1 is changed		
Changed	1.3.3	1.1	P.1 is changed		
Changed	1.3.4	1.1	P.1 is changed		
Changed	1.3.6	1.1	P.1 is changed		
Changed	1.3.8	1.1	P.1 is changed		
Added	2.1.1	1.2	P.3, P4 is added		
Changed	2.3.2	1.1	P.1 ~ P.2 list is changed		
Changed	2.3.3	1.1	P.2 list is changed		
Changed	2.3.11	1.1	P.1 ~ P.2 list is changed		
Added	2.3.17	1.0	New page is added		
Changed	3.1.1	1.1	P.1 list is changed, P.2 ~ work procedure step is changed		
Changed	3.1.3	1.1	P.1 list is changed		
Changed	3.1.5	1.1	P.1 list is changed		
Changed	4.2.1	1.1	P.1 important note is changed, P.2 ~ work procedure step is changed		
Changed	4.2.2	1.2	P.1 important note is changed		
Changed	4.2.8	1.2	P.1 ~ work procedure step is changed		
Changed	4.2.10	1.1	P.1 ~ work procedure step is changed		
Changed	4.2.12	1.2	P.1 ~ is changed		
Changed	4.2.19	1.1	P.1 ~ is changed		
Changed	4.3.2	1.1	P.2 is changed		
Added	4.3.9	1.0	New page is added		
Changed	5.1.12	1.1	P.1 is changed		
Added	5.1.23	1.0	New page is added		
Changed	6.2.1	1.1	P.1 ~ is changed		
Changed	6.2.11	1.1	P.1 is changed		
Changed	6.3.7	1.1	P.1 is changed.		
Changed	7.1.2	1.1	No. 7-8: "List of Countermeasures" is changed No. 21: "Cause", "List of Countermeasures" is added No. 24: added (Hereafter, move down) No. 73: "LCD", "List of Countermeasures" is changed No. 80: "Cause", "List of Countermeasures" is changed No. 81-82: added (Hereafter, move down) No. 86: "List of Countermeasures" is changed No. 70-99: "LCD" is changed		

# Maintenance Manual Change Tracking

Date	2016.06.30	Manual Ver.	1.20	Remark	
Status	Index	Rev.	Changes		
Changed	7.1.3	1.1	No. 14: deleted (Hereafter, move up) No. 19: "Corrective Measures" is changed No. 22: "Corrective Measures" is changed No. 29-41: is changed		
Changed	7.1.4	1.1	No. 33: "LCD", "Corrective Measures" is changed No. 42-50: "Corrective Measures" is changed No. 44: "LCD" is changed No. 54: "Corrective Measures" is changed No. 55 ~: "Corrective Measures" is changed		
Changed	8.1.1	1.1	P.1 is changed		
Changed	8.2.1	1.1	P.1 ~ P.3 is changed		
Changed	8.2.2	1.2	P.1 ~ is changed		
Changed	8.2.3	1.2	P.1 ~ is changed		
Changed	8.2.4	1.1	P.1 is changed		
Added	8.3.1	1.0	New page is added.		
Changed	8.3.2	1.1	P.1 is changed		
Added	8.3.3	1.0	New page is added.		
Changed	8.4.1	1.1	P.1 ~ is changed		
Changed	8.4.2	1.1	P.1 ~ is changed		

Date	2015.12.10	Manual Ver.	1.10	Remark	
Status	Index	Rev.	Changes		
Changed	2.1.1	1.1	Block diagram is changed.		
Added	2.3.16	1.0	New page is added.		
Changed	3.1.6	1.1	List is changed.		
Changed	4.2.2	1.1	P.1 important note is changed, P.2 work procedure step 1. is changed.		
Changed	4.2.3	1.1	P.1 important note is changed, P.2 work procedure step 1.is changed.		
Changed	4.2.4	1.1	P.1 work procedure step 1.is changed, P.4 work procedure step 1.is changed.		
Changed	4.2.8	1.1	Step 4. is changed,		
Changed	4.2.12	1.1	P.1 work procedure step 1.is changed.		
Changed	4.3.7	1.1	P.3-4 work procedures are added.		
Changed	6.1.1	1.1	P.2 parts name is changed.		
Changed	6.2.9	1.1	P.2 important note is added.		
Changed	6.3.9	1.1	P.1 work procedure step 1.is changed.		
Changed	6.3.10	1.1	Work procedure step 5.is changed.		

Date	2015.10.30	Manual Ver.	1.00	Remark	
Status	Index	Rev.	Changes		
Released	—	—	New issued		



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