

# **TOSHIBA**

TOSHIBA Thermal Printer

## **B-852-R SERIES**

### **Maintenance Manual**

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**TOSHIBA TEC CORPORATION**

## TABLE OF CONTENTS

	Page
<b>1. UNPACKING -----</b>	<b>1- 1</b>
1.1 PROCEDURES-----	1- 1
1.2 CHECKS -----	1- 2
<b>2. MAJOR UNIT REPLACEMENT -----</b>	<b>2- 1</b>
2.1 OPENING AND REMOVING THE COVERS -----	2- 1
2.2 LUBRICATION-----	2- 2
2.3 REPLACING THE CPU PC BOARD -----	2- 3
2.4 REPLACING THE PANEL PC BOARD-----	2- 6
2.5 REPLACING THE STEPPING MOTOR-----	2- 8
2.6 REPLACING THE HEAD UP SENSOR, SLIT SENSOR (REWIND/FEED) AND RIBBON MOTOR (REWIND/FEED) -----	2- 10
2.7 REPLACING THE PLATEN -----	2- 14
2.8 REPLACING THE MEDIA SENSOR -----	2- 16
2.8.1 Feed Gap Sensor (TR) and Black Mark Sensor (Upper Side) -----	2- 16
2.8.2 Feed Gap Sensor (LED) and Black Mark Sensor (Lower Side) -----	2- 17
2.9 REPLACING THE PRINT HEAD-----	2- 19
2.10 REPLACING THE PS UNIT AND REACTOR -----	2- 20
<b>3. PERIODIC MAINTENANCE PROCEDURE .....</b>	<b>3- 1</b>
<b>4. TROUBLESHOOTING -----</b>	<b>4- 1</b>

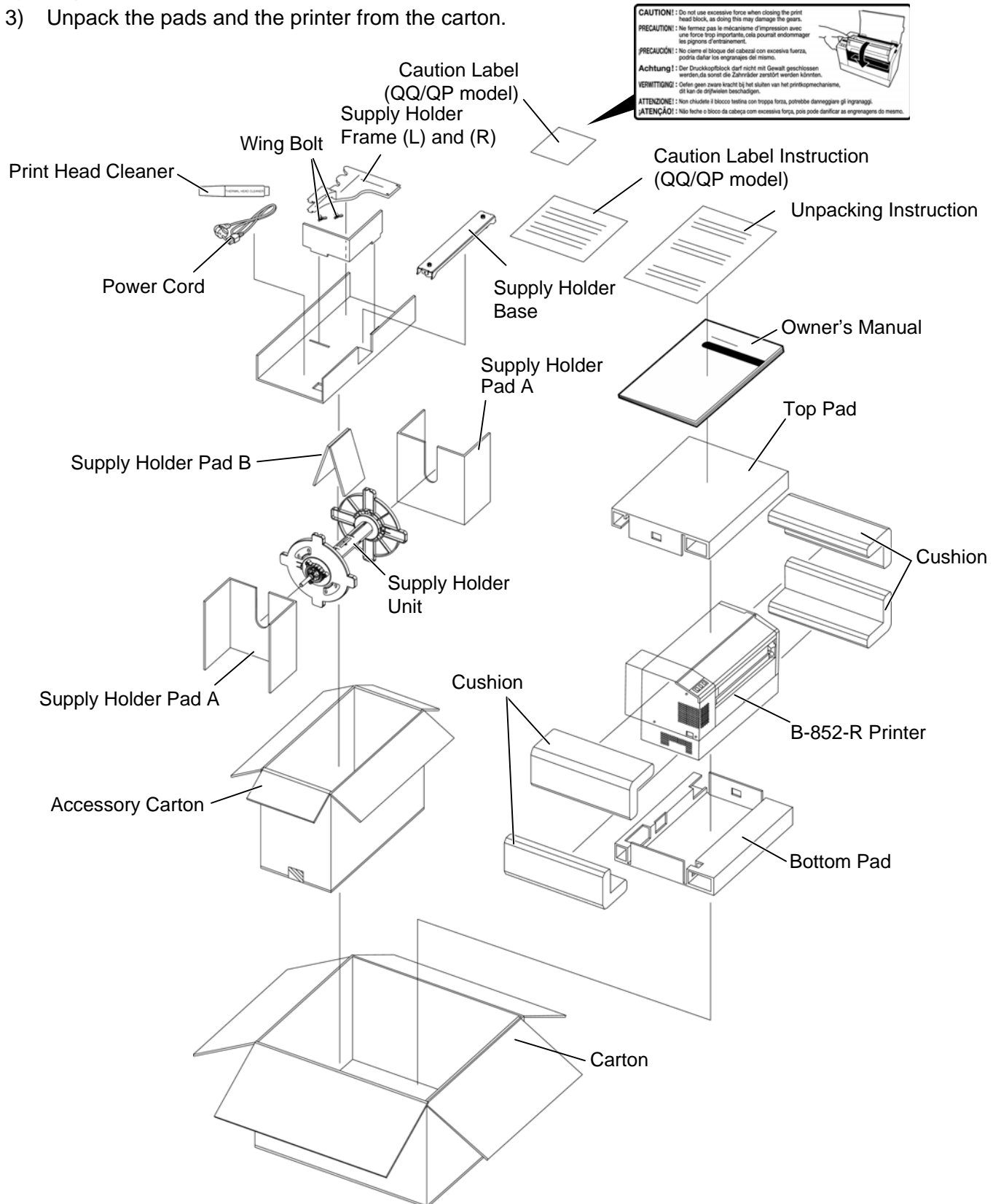
### **CAUTION!**

1. *This manual may not be copied in whole or in part without prior written permission of TOSHIBA TEC.*
2. *The contents of this manual may be changed without notification.*
3. *Please refer to your local Authorised Service representative with regard to any queries you may have in this manual.*

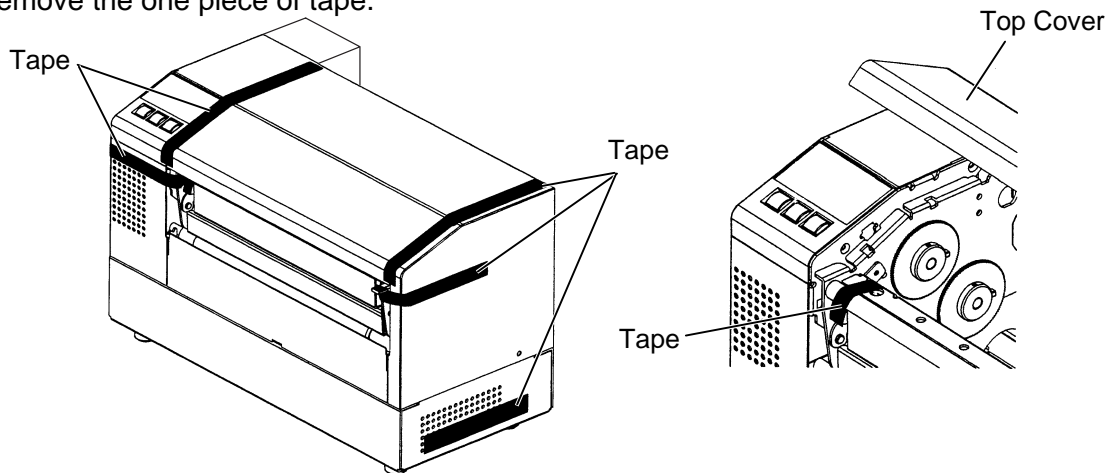
# 1. UNPACKING

## 1.1 Procedure

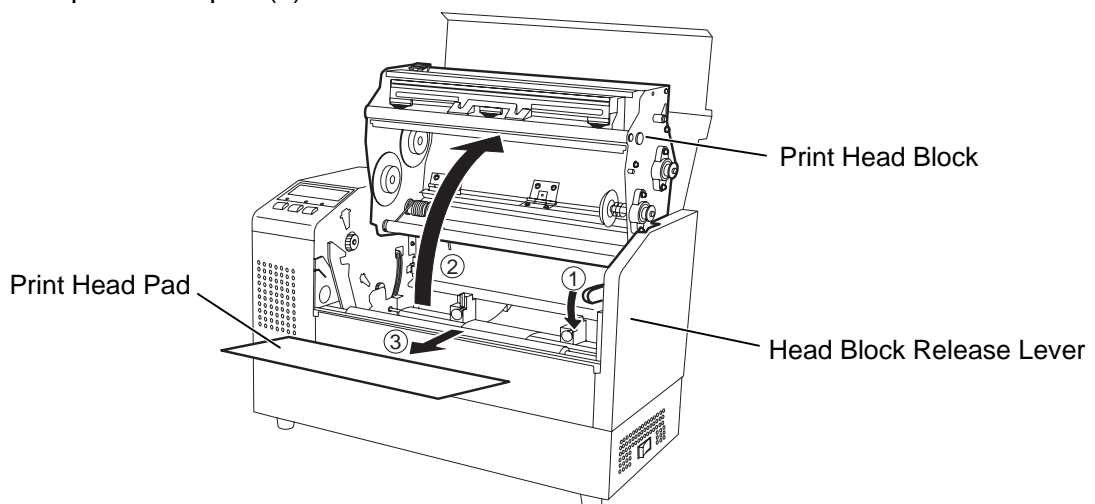
- 1) Open the carton.
- 2) Unpack the accessories from the carton.
- 3) Unpack the pads and the printer from the carton.



- 4) Remove the five pieces of tape from the printer.
- 5) Open the top cover.
- 6) Remove the one piece of tape.



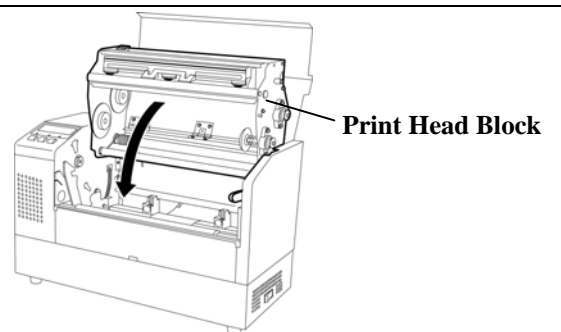
- 7) Press down the head block release lever (1) and raise the print head block (2).
- 8) Remove the print head pad (3).



- 9) Place the printer on a level surface.
- 10) Please attach the supplied Caution Label to an easily visible position on the printer. (QQ/QP model)

**CAUTION!**

Do not use excessive force when closing the print head block, as doing this may damage the gears.



**1.2 Checks**

- 1) Check for damage or scratches on the machine.
- 2) Confirm that none of the accessories are missing.  
**NOTE:** Keep the carton and pads for later transport.

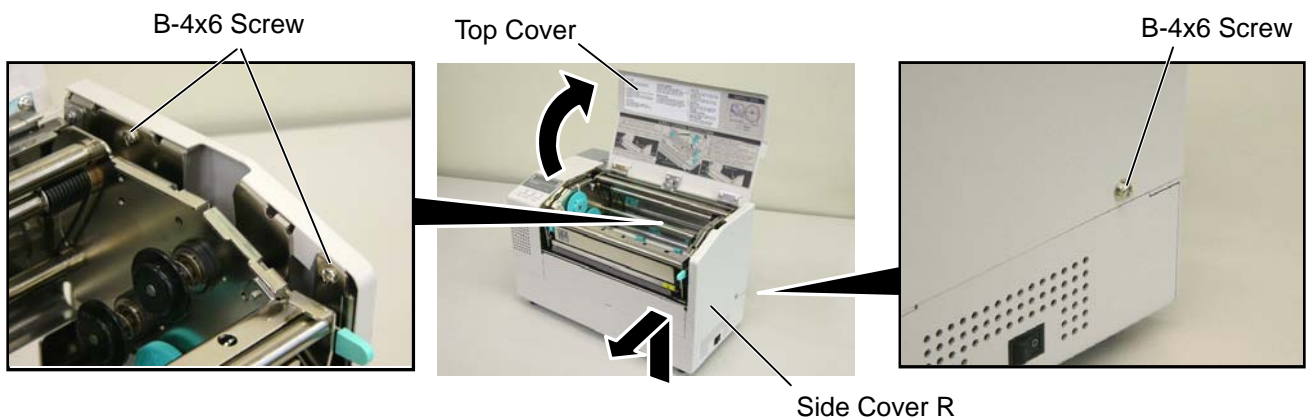
## 2. MAJOR UNIT REPLACEMENT

### WARNING!

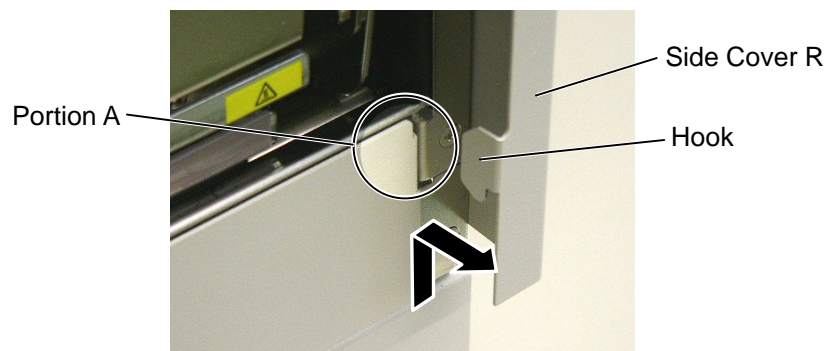
*Disconnect the power cord before replacing the parts.*

### 2.1 OPENING AND REMOVING THE COVERS

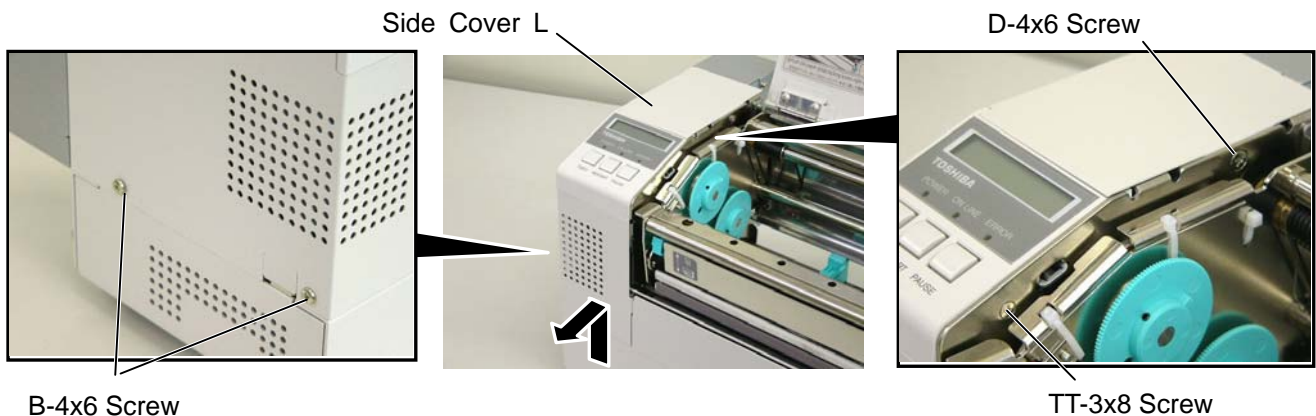
- 1) Turn the power off.
- 2) Open the top cover.
- 3) Remove the three B-4x6 screws to detach the side cover R.



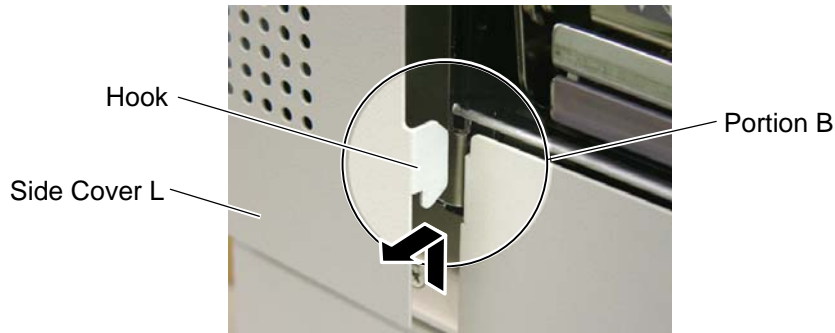
**NOTE:** After removing the screws, unhook the side cover R from portion A by lifting and moving it toward the front of the printer.



- 4) Remove the two B-4x6 screws, PT-3x8 screw and D-4x6 screw to detach the side cover L.



**NOTE:** After removing the screws, unhook the side cover L from portion B by lifting and moving it toward the front of the printer.



5) Disconnect the operation panel harness from CN13 on the MAIN PC Board.

Operation Panel Harness



**NOTE:** Instructions to open the top cover and to detach the side covers L and R are omitted from each removal/installation procedure provided below.

## 2.2 LUBRICATION

### **CAUTION!**

1. Lubrication: During parts replacement
2. Kinds of oil: FLOIL G-488: 1 Kg can. (Parts No. 19454906001)
3. Do not spray the inside of the printer with lubricants. Unsuitable oil can damage the mechanism.

All machines are generally delivered in their best condition. Efforts should be made to keep them that way. Lack of oil, or the presence of debris or dust, may cause an unexpected failure. To maintain in optional operating condition, periodically clean the machine and apply the proper kind of oil to each part in which lubrication is needed.

Although the frequency of lubrication varies according to how often the machine is used, as a minimum it is necessary to lubricate before any part becomes dry. It is also necessary to wipe off excessive oil or it will collect dirt.

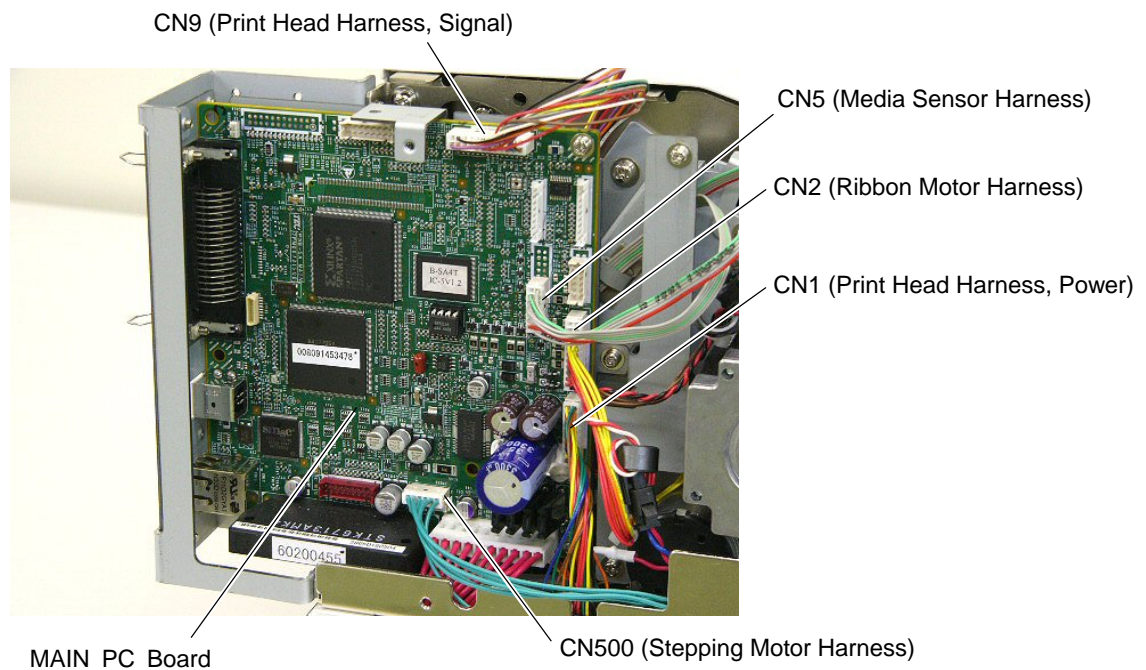


## 2.3 Replacing the MAIN PC Board

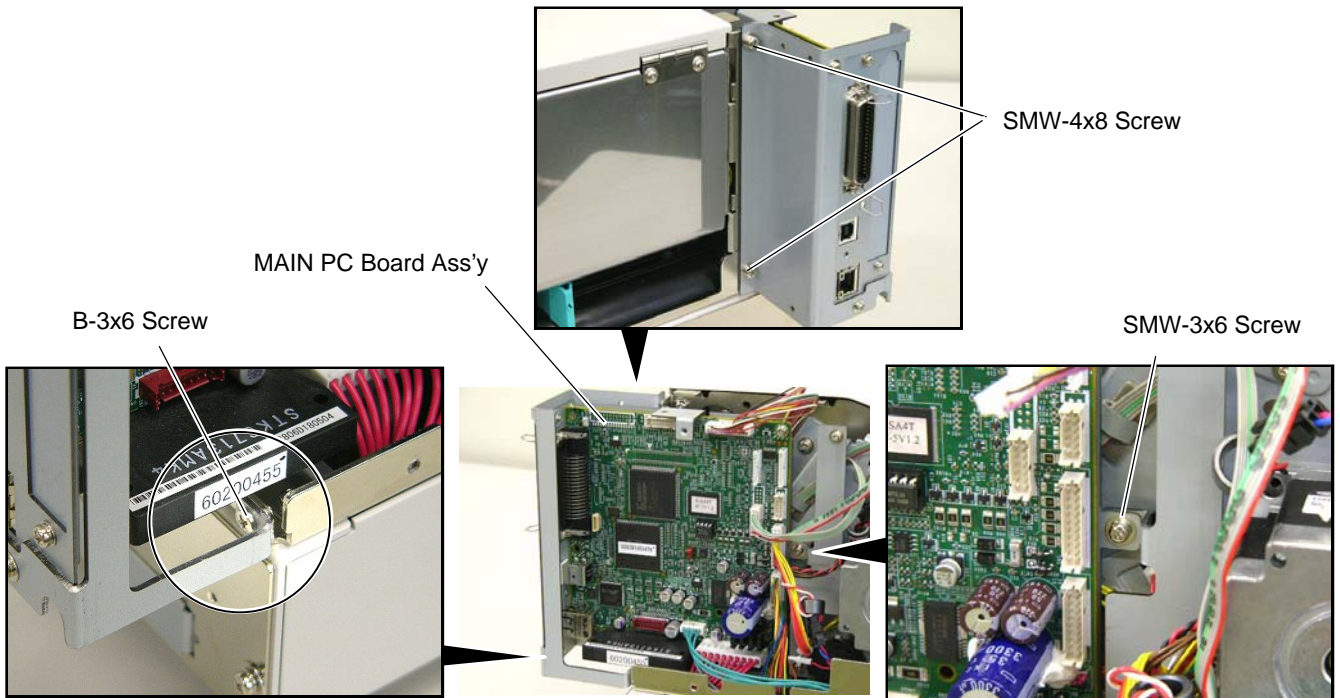
- 1) Prior to replacing the MAIN PC board, print out the parameter settings for future reference.
- 2) Remove the side cover L from the printer. (Refer to Section 2.1.)
- 3) Remove the three SMW-3x6 screws to detach the rear frame cover.



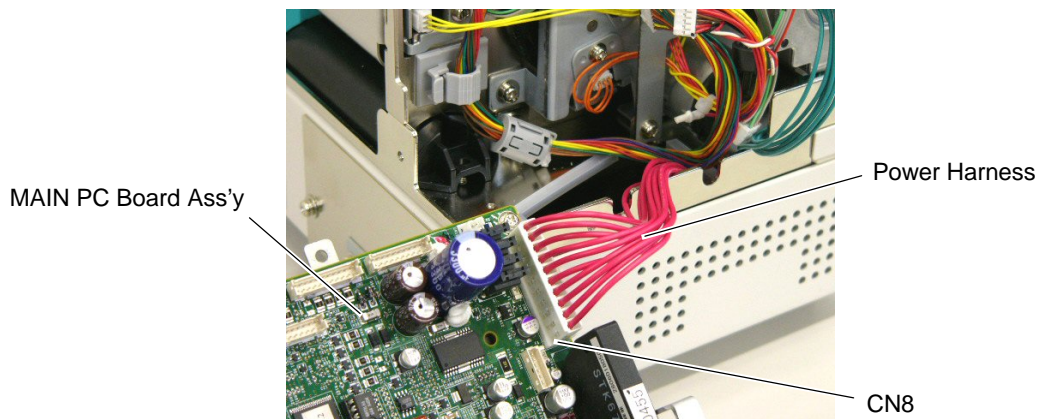
- 4) Disconnect the harnesses from CN1, CN2, CN5, CN8, CN9 and CN500 on the MAIN PC board.



- 4) Remove the two SMW-4x8 screws, SMW-3x6 screw and B-3x6 screw.

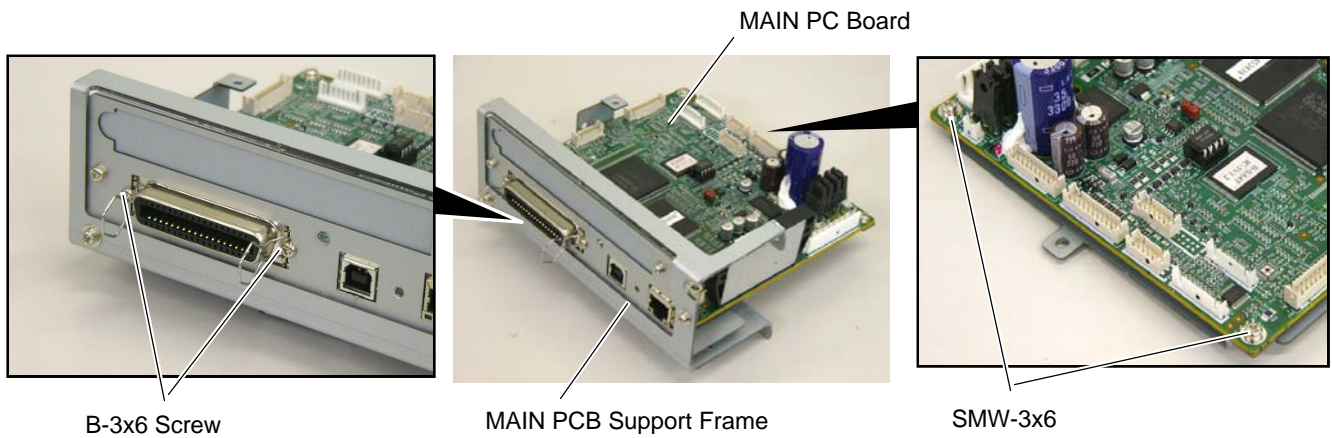


- 5) Disconnect the power harness from CN8 on the MAIN PC board ass'y, then remove the MAIN PC board ass'y from the printer.

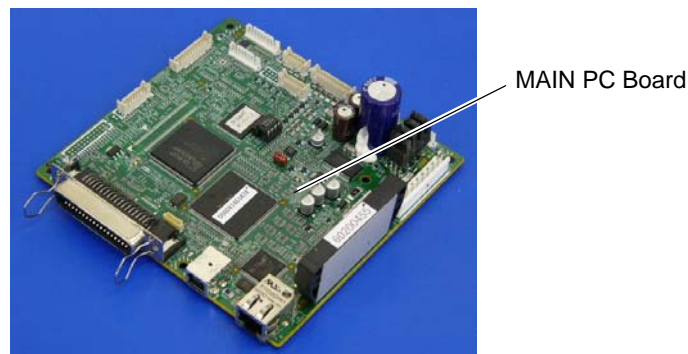




- 6) Remove the two B-3x6 screws and the two SMW-3x6 screws, then remove the MAIN PC board from the MAIN PCB support frame.



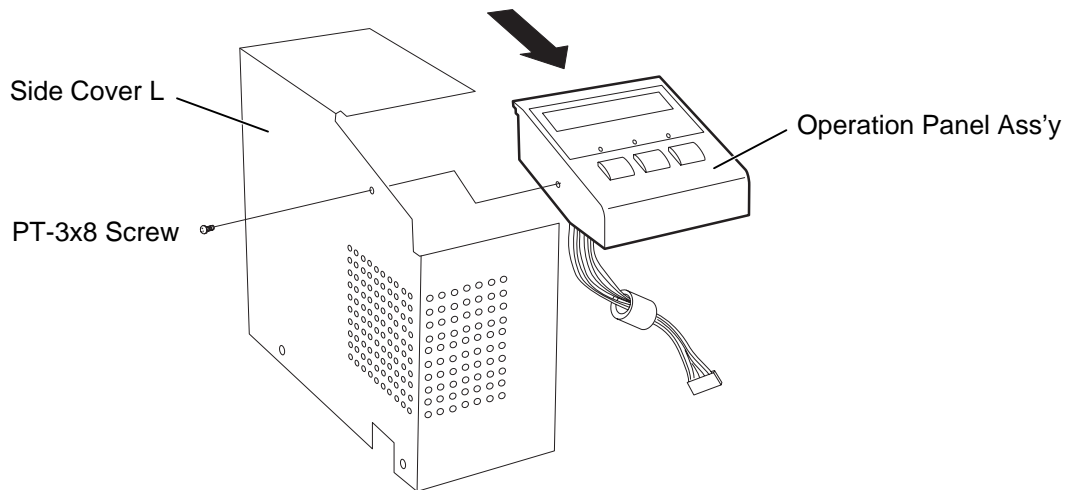
- 7) Replace the MAIN PC board with a new one, and reassemble in the reverse order of removal.



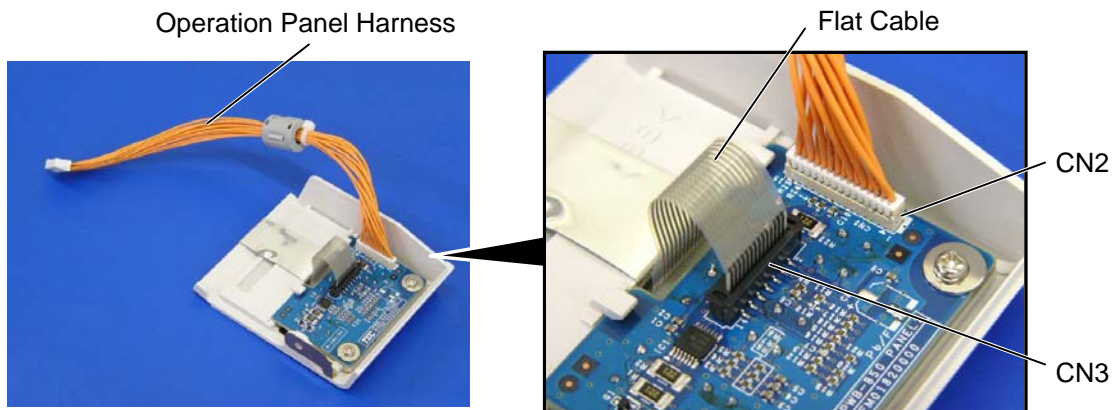
- 8) After replacing the MAIN PC board, perform the following operations.
- (1) Perform a RAM clear.
  - (2) Restore the printer system setting according to the printout of the parameter settings.
  - (3) Perform a media sensor adjustment.
  - (4) Perform a test print to print to confirm that the printer works properly.

## 2.4 Replacing the Panel PC Board

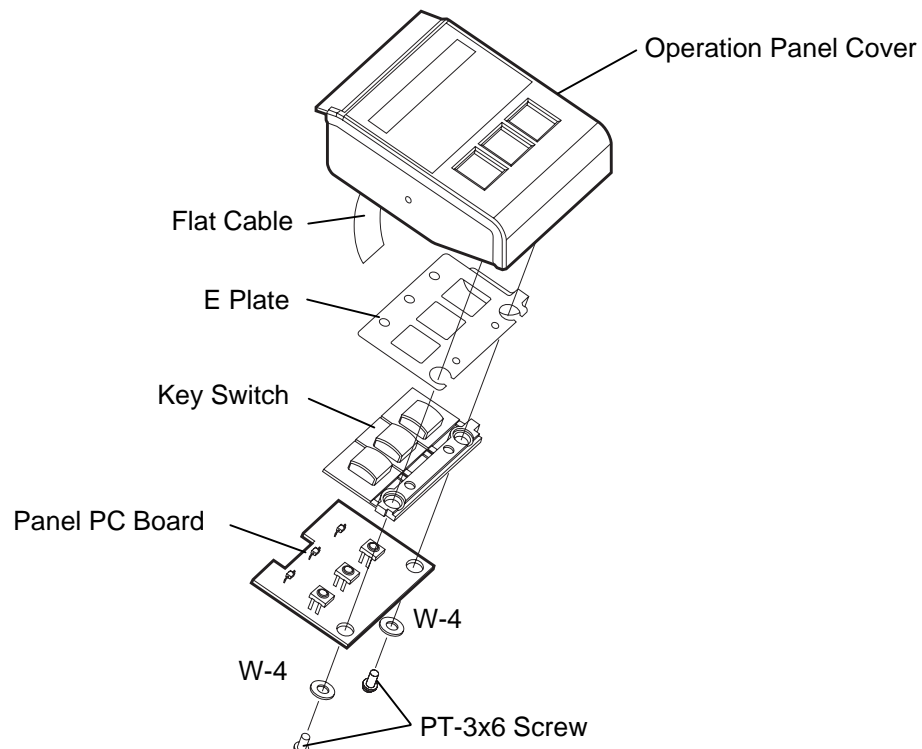
- 1) Remove the side cover L from the printer. (Refer to Section 2.1.)
- 2) Remove the PT-3x8 screw to detach the operation panel ass'y from the side cover L in the direction indicated by the arrow.



- 3) Disconnect the operation panel harness from CN2 on the panel PC board.
- 4) Disconnect the flat cable from CN3 on the panel PC board.



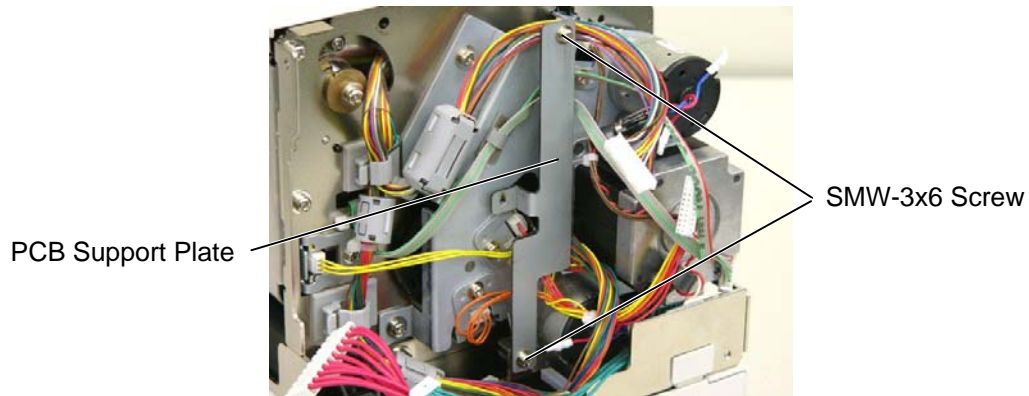
- 5) Remove the two PT-3x6 screws and W-4 washers to detach the panel PC board from the operation panel cover.



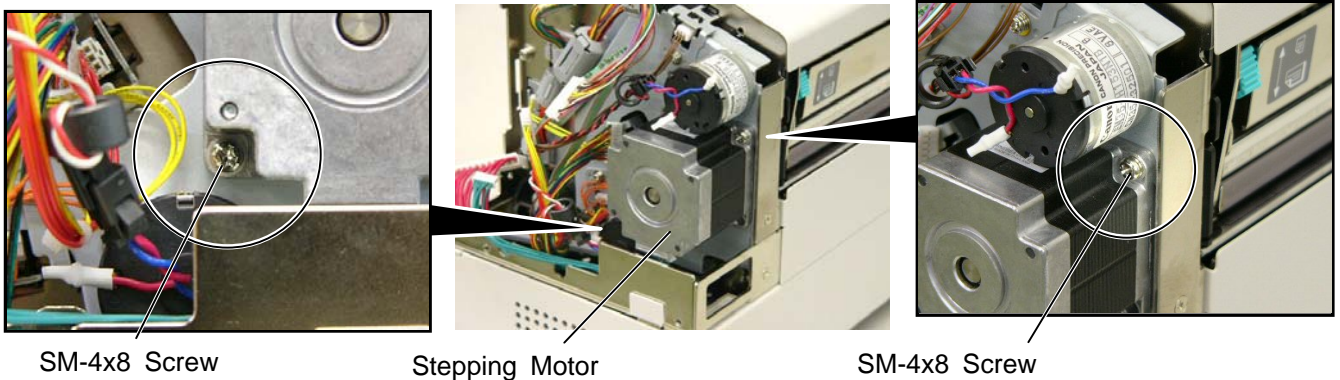
- 6) Replace the panel PC board with a new one, then reassemble in the order removal.
- 7) Turn the power on, then confirm that the LCD message is displayed properly.

## 2.5 Replacing the Stepping Motor

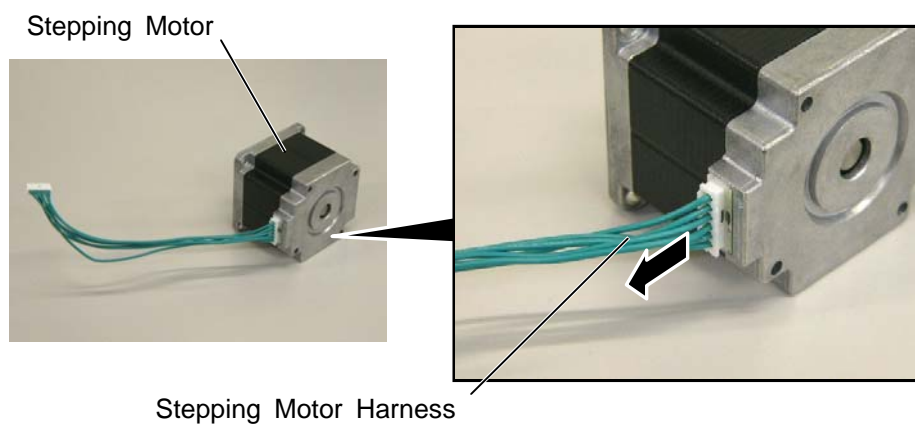
- 1) Remove the side cover L and MAIN PC board ass'y from the printer.  
(Refer to Sections 2.1 and 2.3.)
- 2) Remove the two SMW-3x6 screws to detach the PCB support plate from the printer.



- 3) Remove the two SM-4x8 screws to detach the stepping motor from the printer.



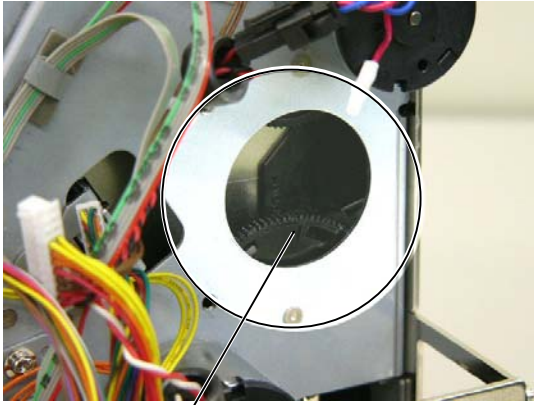
- 4) Disconnect the harness from the stepping motor.



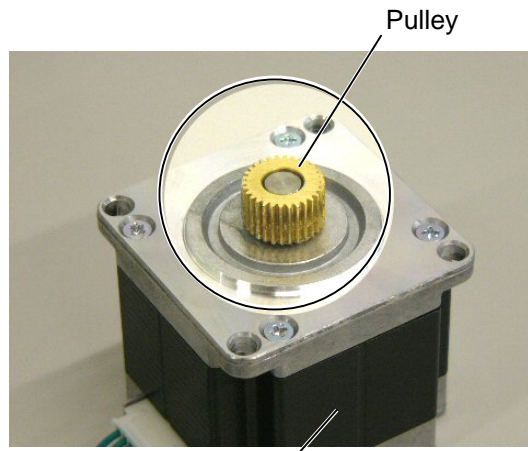
- 5) Replace the stepping motor with a new one, then reassemble in the reverse order of removal.
- 6) Perform a test print to confirm that the printer works properly.

**NOTE:**

*Apply FLOIL to the stepping motor's pulley and the motor gear when reassembling the stepping motor.*



Motor Gear



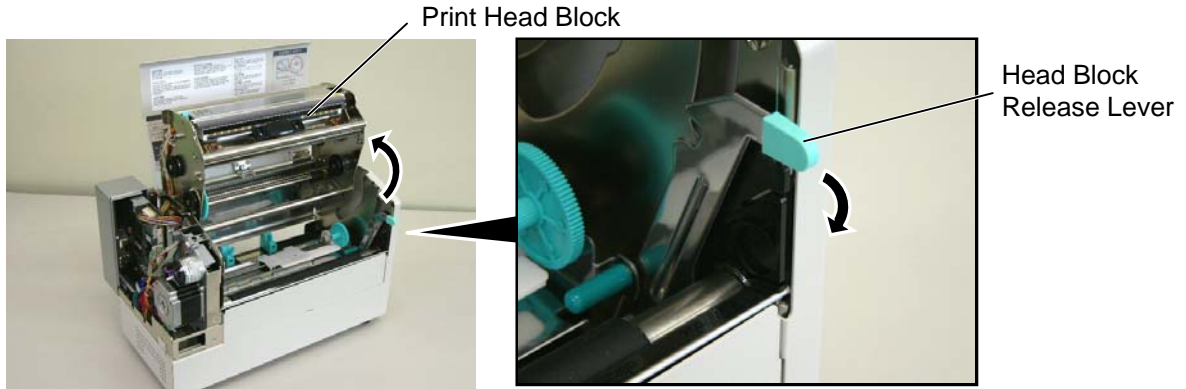
Stepping Motor



## 2.6 Replacing the Head Up Sensor, Slit Sensor (Rewind/Feed) and Ribbon Motor (Rewind/Feed)

Prior to replacing the sensors or ribbon motor, perform the following operations.

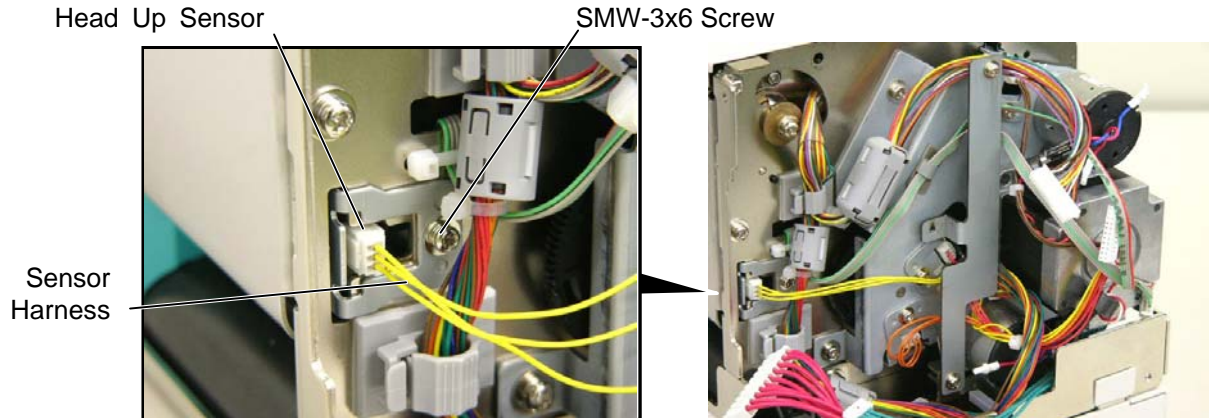
- 1) Open the top cover. (Refer to Section 2.1.)
- 2) Remove the side cover L from the printer. (Refer to Section 2.1.)
- 3) Press down the head block release lever and raise the print head block.



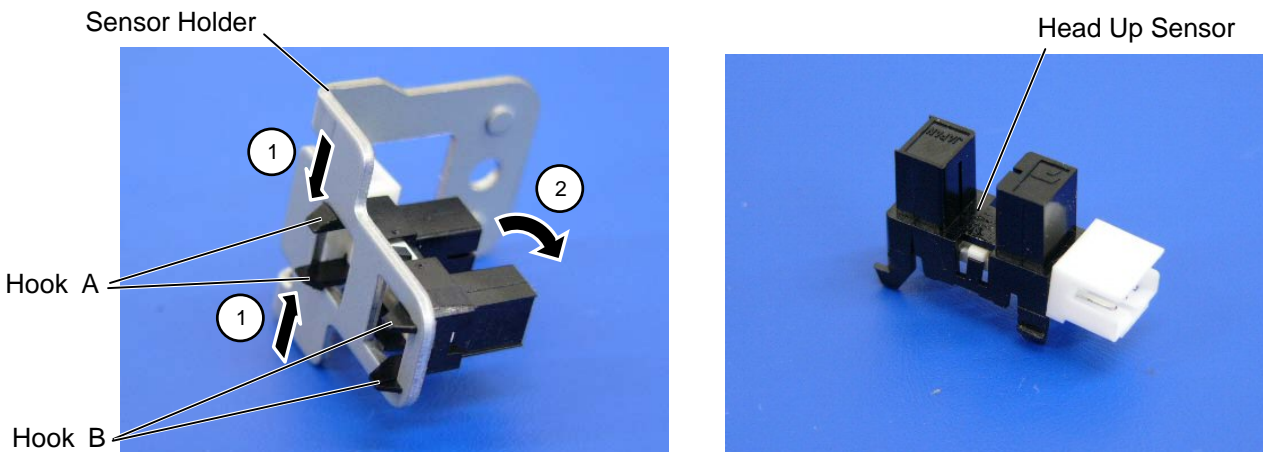
- 4) Remove the MAIN PC board ass'y. (Refer to Section 2.3.)

### 2.6.1 Replacing the Head Up Sensor

- 1) Remove the sensor harness and the SMW-3x6 screw, then remove the head up sensor from the printer.



- 2) Push and release the hook A, then release the hook B to remove the head up sensor from the sensor holder.

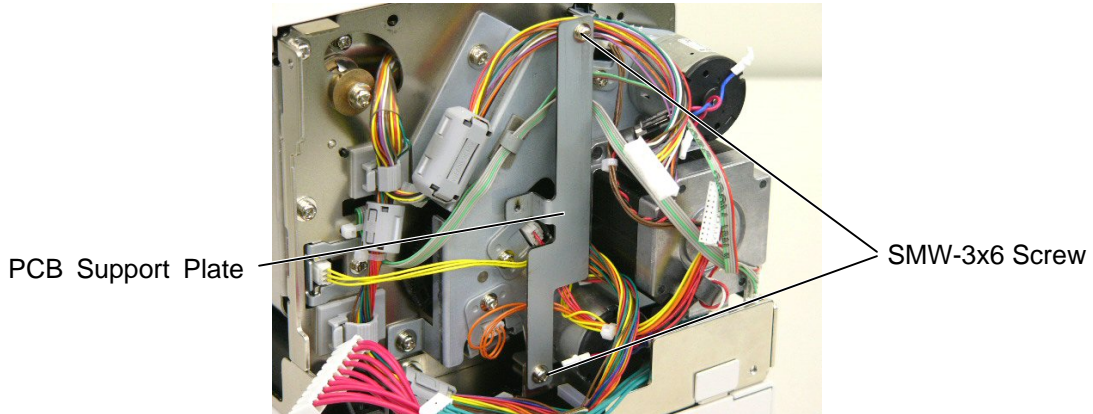


- 3) Replace the head up sensor with a new one, then reassemble in the reverse order of removal.
- 4) Perform a test print to confirm that the printer works properly.

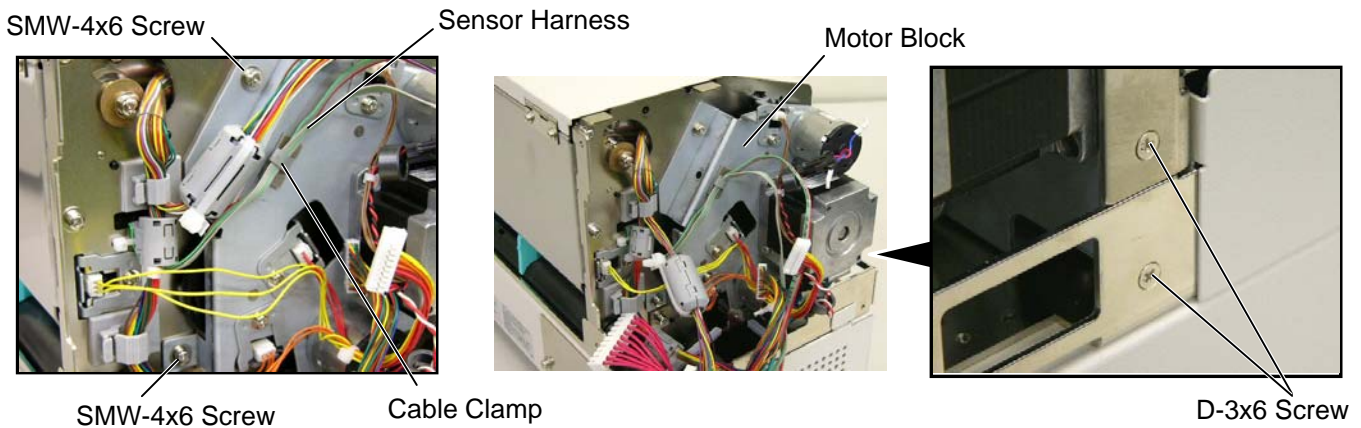
**NOTE:** Be careful not to damage the slit sensor (Rewind/Feed) when replacing it, as this may cause a malfunction.

**2.6.2 Replacing the Slit Sensor (Rewind/Feed)**

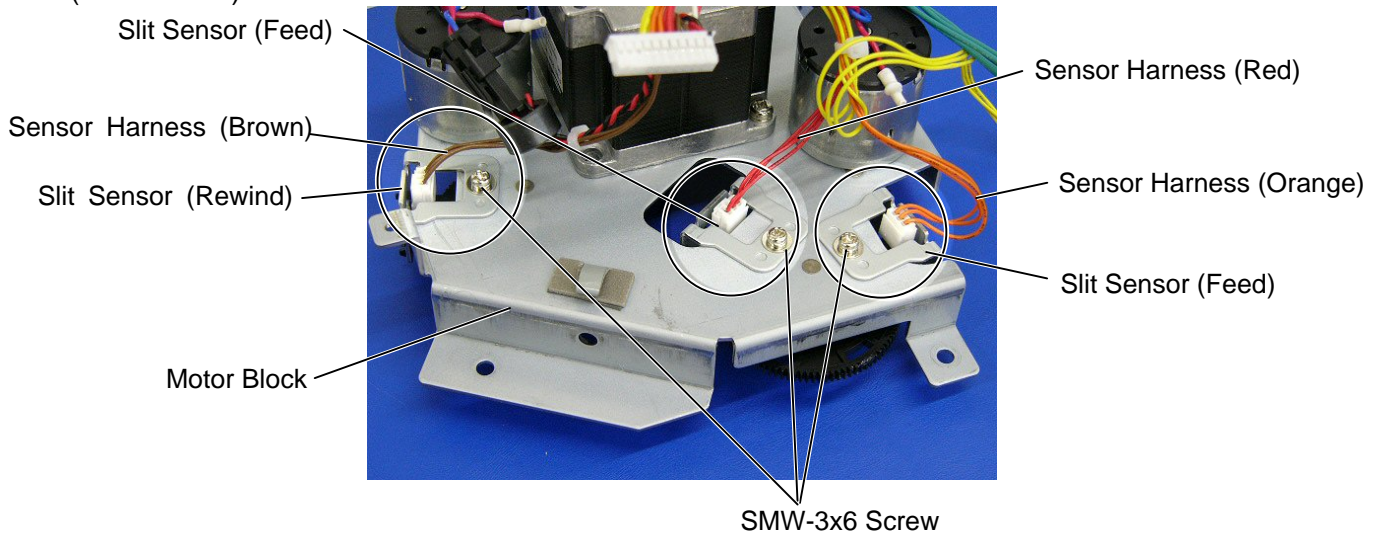
- 1) Remove the two SMW-3x6 screws, then remove the PCB support plate from the printer.



- 2) Remove the media sensor harness from the clamp.
- 3) Remove the two SMW-4x6 and the two D-3x6 screws, then remove the motor block from the printer.

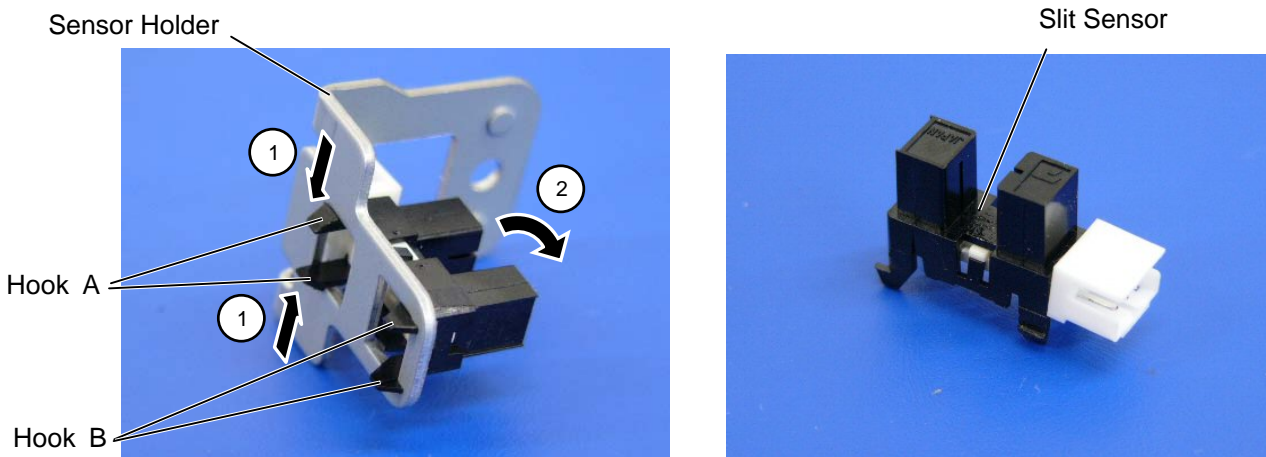


- 4) Remove the three SMW-3x6 screws and sensor harnesses, then remove the slit sensor (rewind/feed) from the motor block.





- 5) Push and release the hook A, then release the hook B to remove the slit sensor from the sensor holder.



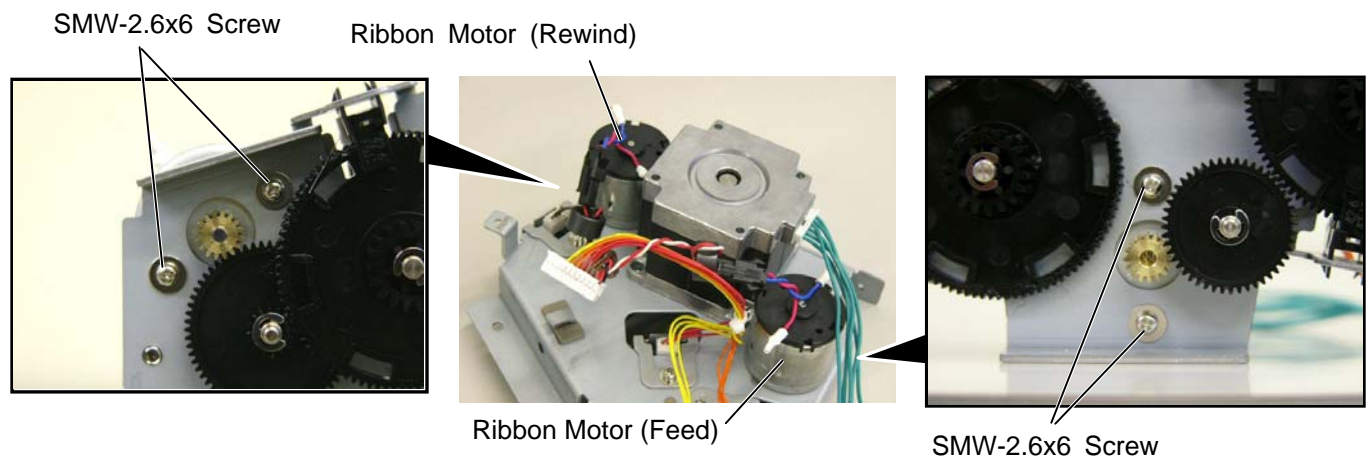
- 6) Replace the slit sensor with a new one, then reassemble in the reverse order of removal.  
7) Perform a test print to confirm that the printer works properly.

**NOTES:**

1. The colors of the sensor harnesses are different according to the sensor to be connected.
2. Be careful not to damage the slit sensor (Rewind/Feed) when replacing it, as this may cause a malfunction.

**2.6.3 Replacing the Ribbon Motor (Rewind/Feed)**

- 1) Prior to replacing the ribbon motor, print out the maintenance counter for future reference.
- 2) Remove the SMW-2.6x6 screws to remove the ribbon motor (rewind/feed).

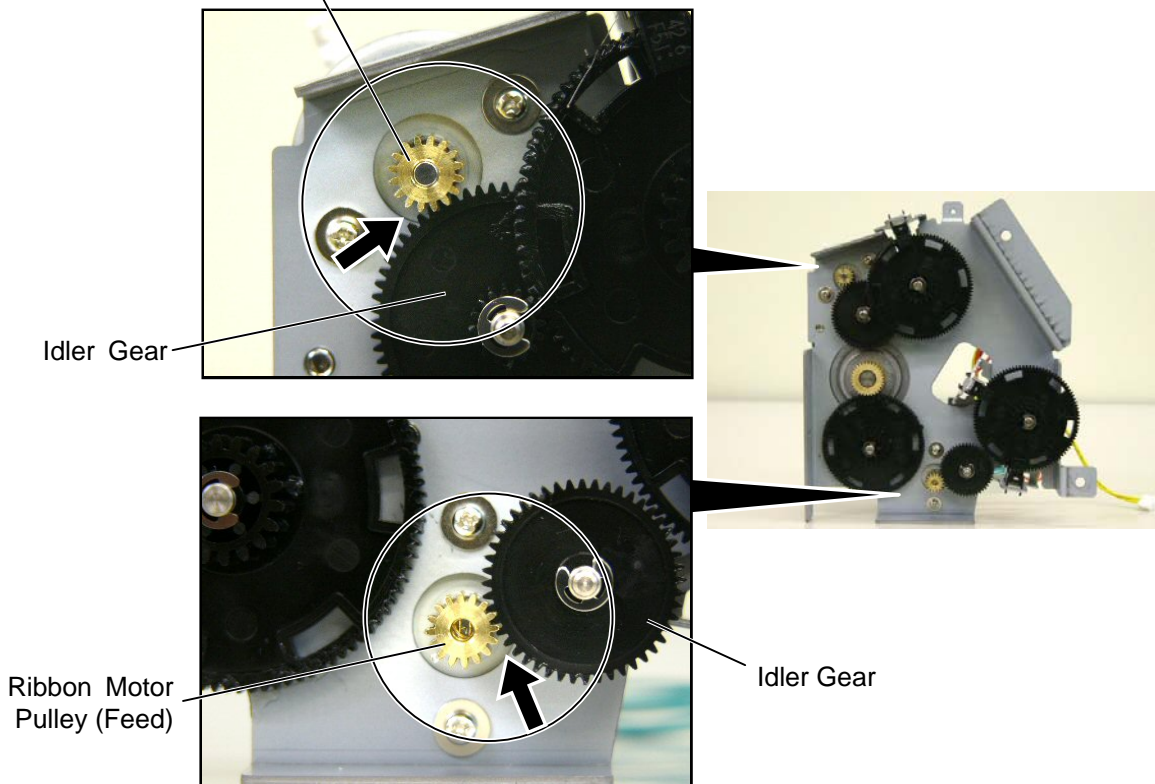


- 3) Replace the ribbon motor with a new one, then reassemble in the reverse order of removal.

**NOTES:**

1. After replacing the ribbon motor, refer to Section System Mode Manual to perform a Maintenance Counter clear.
2. Secure the ribbon motors while inserting a 0.1 mm-thick paper (or folded backing paper) between the ribbon motor pulley and the idler gear to adjust the backlash. After the ribbon motors is secured, remove the paper.

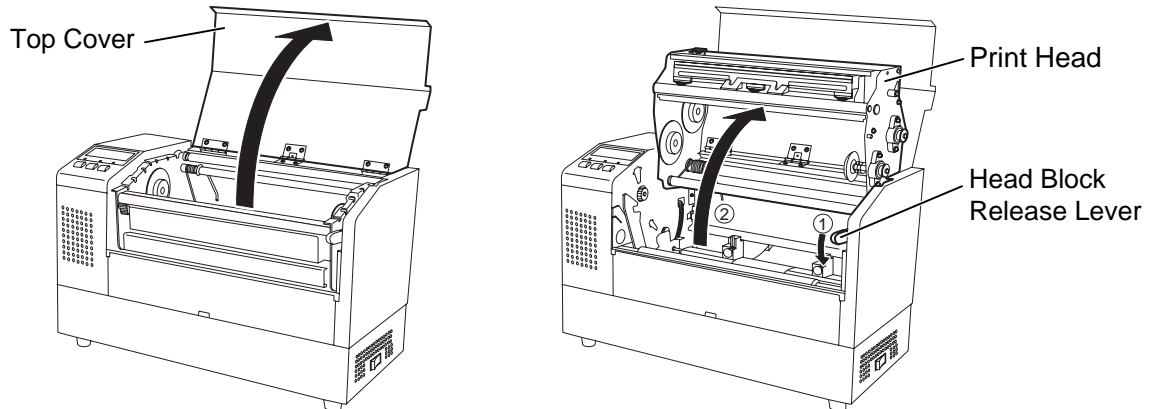
Ribbon Motor Pulley (Rewind)



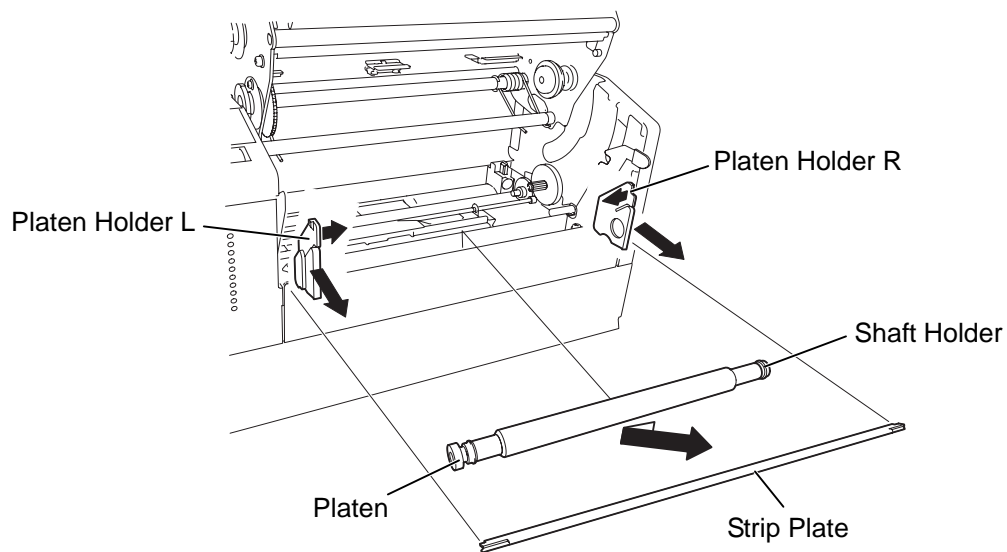
- 4) Perform a test print to print to confirm that the printer works properly.

## 2.7 Replacing the Platen

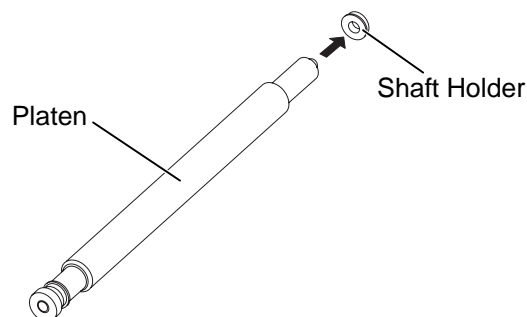
- 1) Prior to replacing the platen, print out the maintenance counter for future reference.
- 2) Open the top cover, and raise the print head block by pressing down the head block release lever.



- 3) While pulling the top part of the platen holders L and R to the center of the printer, move them to the front of the printer to remove.
- 4) Push the platen and strip plate to the left side and then, move them to the front side to remove.



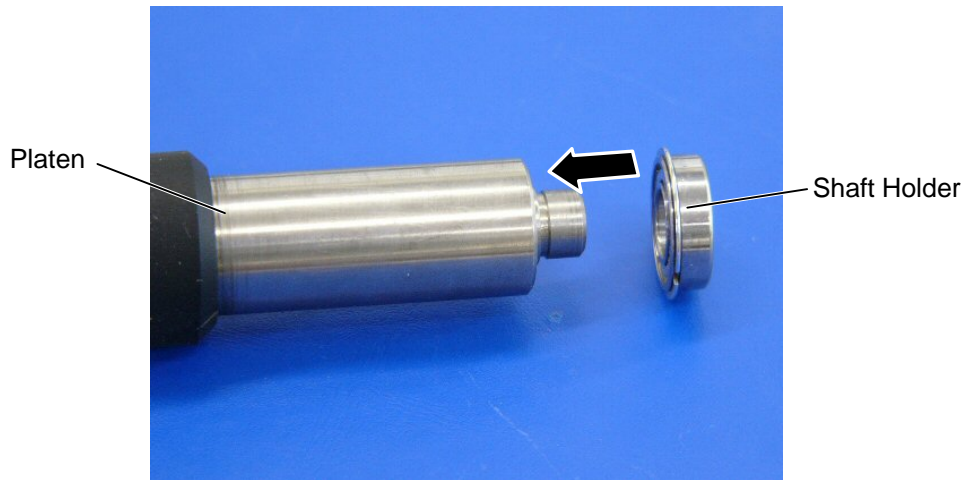
- 5) Remove the shaft holder from the platen.  
**NOTE:** Be careful not to damage the shaft holder when removing it.





6) Replace the platen with a new one, then reassemble in the reverse order of removal.

**NOTE:** When reassembling, confirm the orientation of the shaft holder. (See the picture below.)

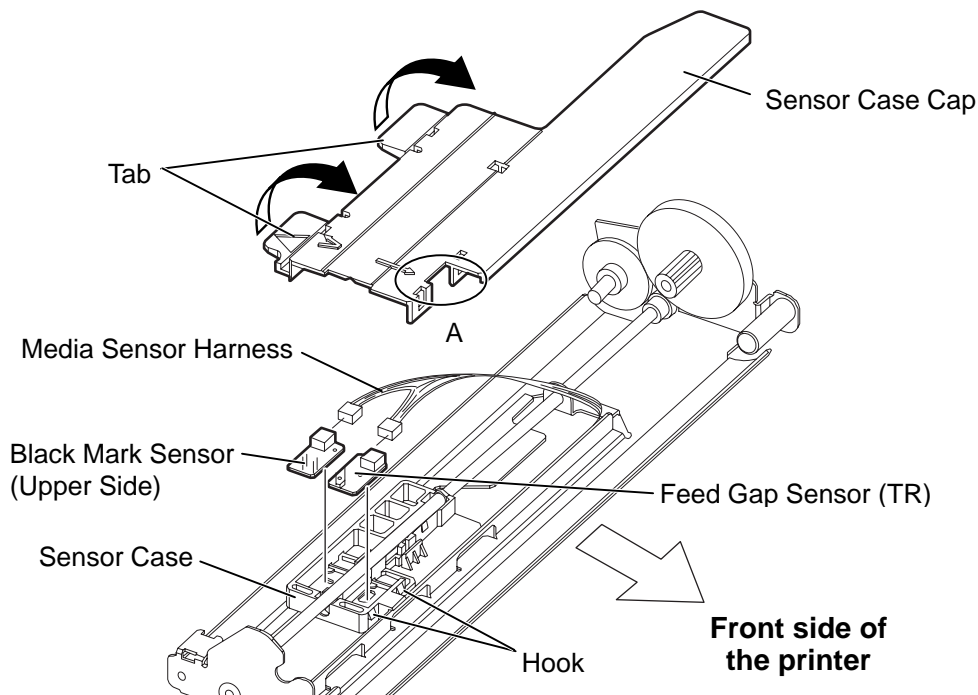


7) Perform a test print to confirm that the printer works properly.

## 2.8 REPLACING THE MEDIA SENSOR

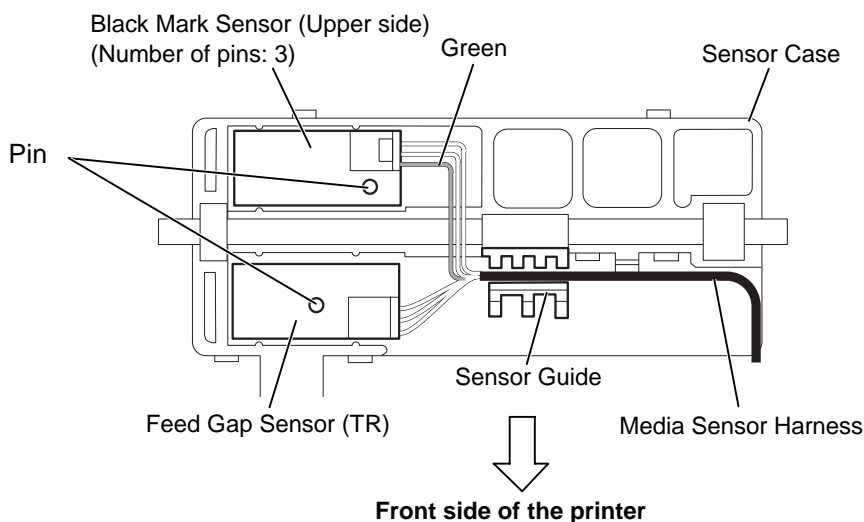
### 2.8.1 Feed Gap Sensor (TR) and Black Mark Sensor (Upper Side)

- 1) Open the top cover and raise the print head block.
- 2) Pull up the two tabs of the sensor case cap to remove it from the sensor block.
- 3) Remove the feed gap sensor (TR) and black mark sensor (upper side) from the sensor case. Disconnect the media sensor harness.



- 4) Replace the sensors with new ones, then reassemble in the reverse order of removal.

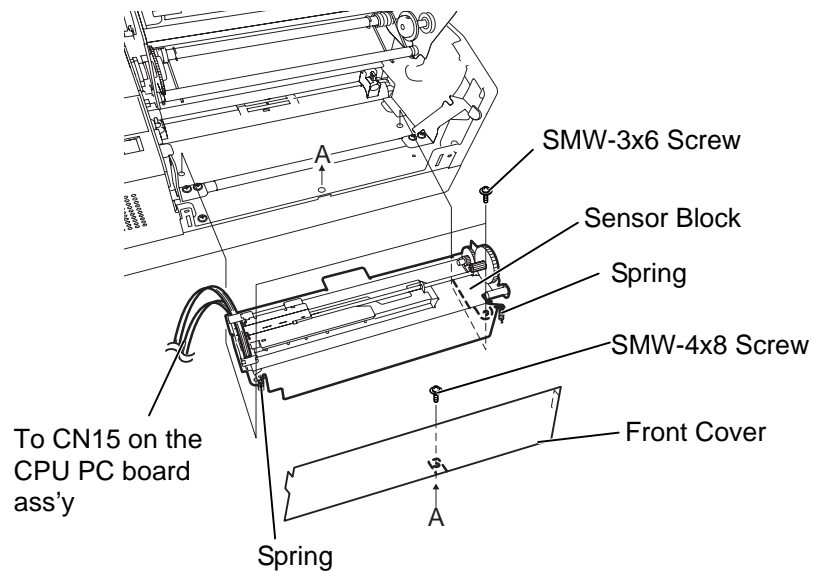
- NOTES:**
1. When reassembling the sensor case cap, fit the hooks of the sensor case into portion A of the sensor case cap.
  2. When reassembling the sensors, align the pins on the sensor case with the holes of the sensors.
  3. Connect the harness including the green wire to the black mark sensor (Upper side).
  4. Pass the media sensor harness between the harness guides.



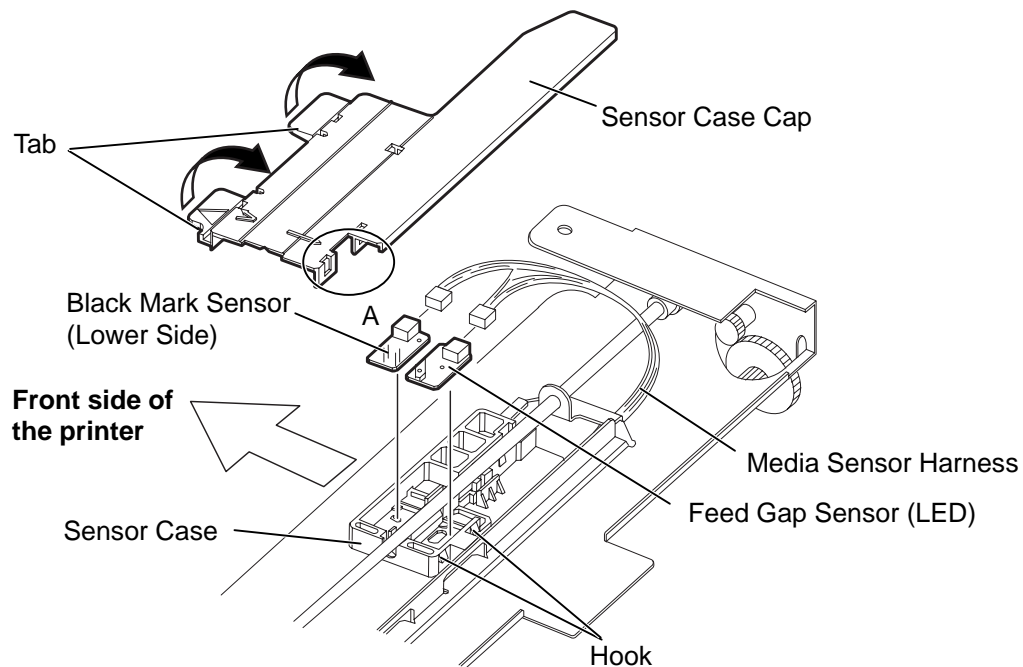
5. Since connectors of the sensors are small, be careful not to break their pins.

### 2.8.2 Feed Gap Sensor (LED) and Black Mark Sensor (Lower Side)

- 1) Remove the platen holder R, platen holder L, platen, and strip plate from the printer.
- 2) Remove the SMW-4x8 screw to detach the front cover from the printer.
- 3) Unhook the two springs.
- 4) Remove the two SMW-3x6 screws to detach the sensor block from the printer.

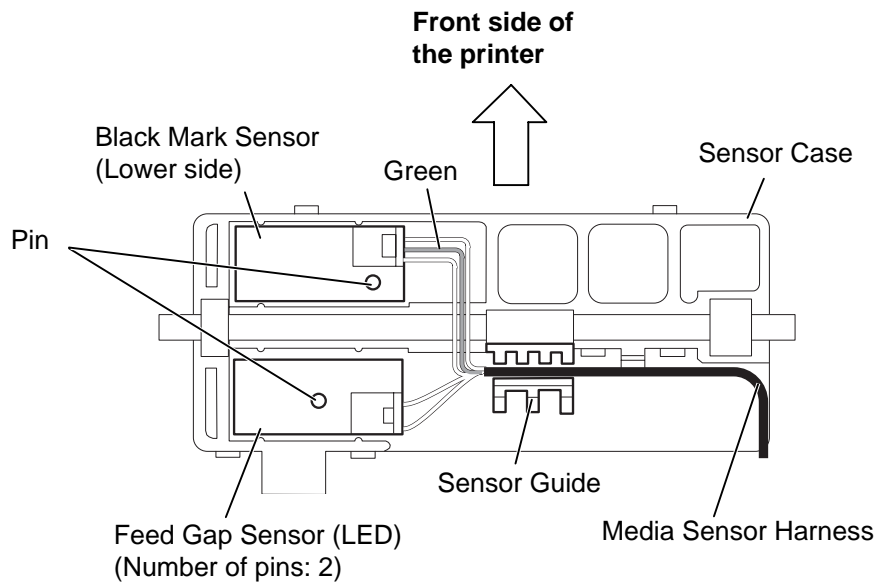


- 5) Turn over the sensor block.
- 6) Pull up the two tabs of the sensor case cap to remove it from the sensor case.
- 7) Remove the feed gap sensor (LED) and black mark sensor (lower side) from the sensor case, and disconnect the media sensor harness from each sensor.



- 8) Replace the sensor with a new one, then reassemble in the reverse order of removal.

- NOTES:**
1. When reassembling the sensor case cap, fit the hooks of the sensor case into portion A of the sensor case cap.
  2. When reassembling the sensors, align the pins on the sensor case with the holes of the sensors.
  3. Connect the harness including the green wire to the black mark sensor (lower side).
  4. Pass the media sensor harness between the harness guides.

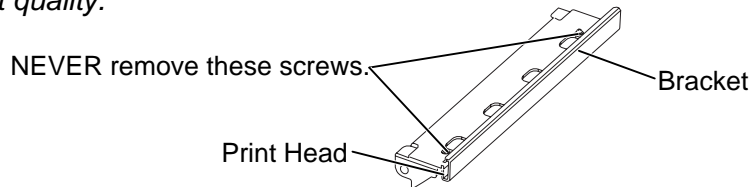


5. Since connectors of the sensors are small, be careful not to break their pins.

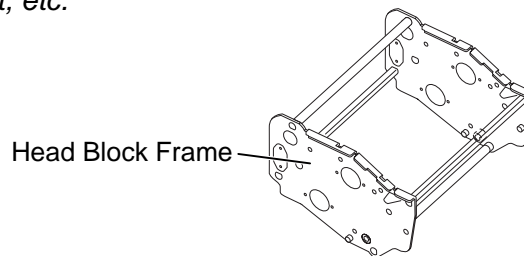
## 2.9 REPLACING THE PRINT HEAD

### CAUTION:

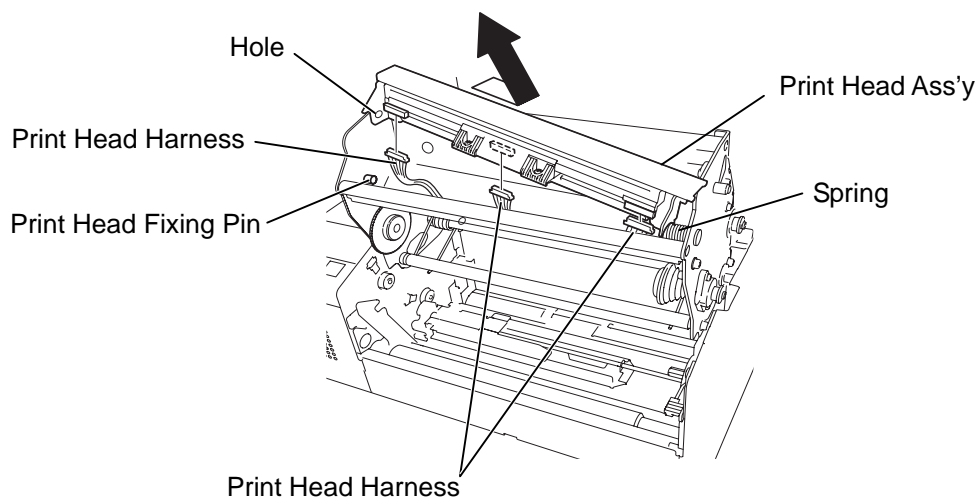
1. Never touch the print head element when handling the print head.
2. Never touch the connector pins to avoid a breakdown of the print head by static electricity.
3. Never remove the screws which secure the print head to the bracket. Doing so may cause improper print quality.



4. Never disassemble the head block frame. Doing so may cause a print failure, such as ribbon wrinkle, blurred print, etc.



- 1) Open the top cover and raise the print head block.
- 2) Push the print head ass'y to the right side, lift it in the direction of the arrow, and release it from the print head fixing pin.
- 3) Disconnect the print head harnesses from the three connectors of the print head.



- 5) Replace the print head with a new one, then reassemble in the reverse order of removal.

- NOTES:**
1. Install the print head in position by fitting its holes into the spring and print head fixing pin.
  2. After replacing the print head, refer to Section 6.8 to perform a Maintenance Counter Clear.



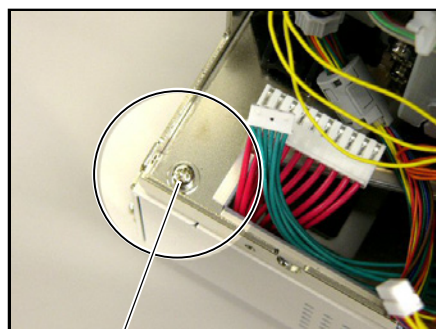
## 2.10 Replacing the PS Unit and Reactor

### WARNING!

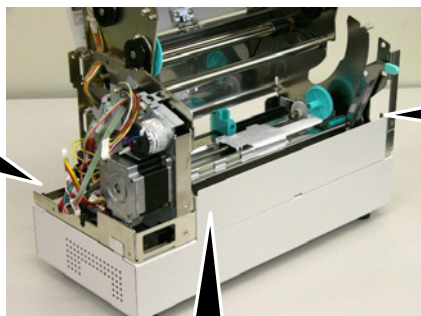
1. *Hazardous electrical parts. Before disassembling the unit, unplug the power cord from the mains.*
2. *As the printer block and PS unit are heavy, be careful not to pinch your fingers or drop it on your feet.*
3. *The PS unit should be replaced as a unit. Never disassemble the PS unit. Doing so may cause a fire or machine failure.*

**NOTE:** The reactor is installed in the B-852-TS22-QP-R and B-852-TS22-CN models.

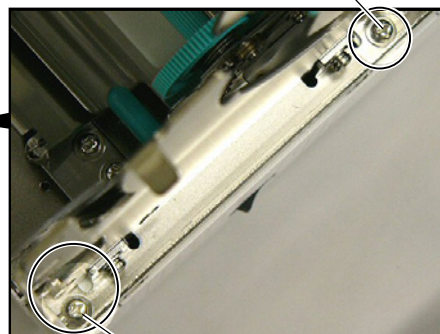
- 1) Remove the side covers L, side cover R and MAIN PC Board from the printer.
- 2) Raise the print head block.
- 3) Remove the platen.
- 4) Remove the four SMW-4x8 screws to remove the power supply block from the printer block.



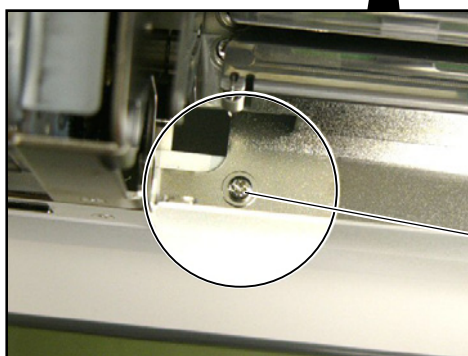
SMW-4x8 Screw



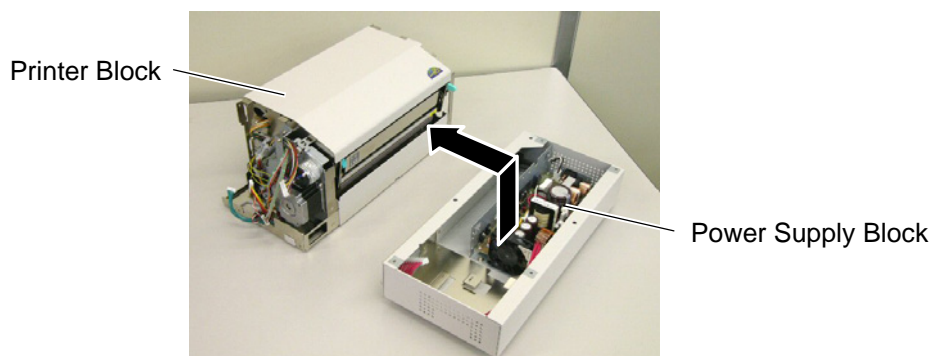
SMW-4x8 Screw



SMW-4x8 Screw



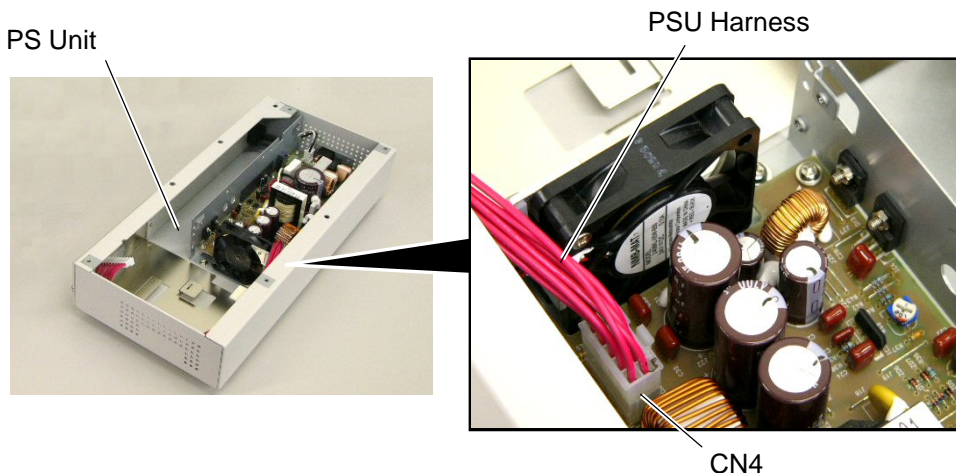
SMW-4x8 Screw



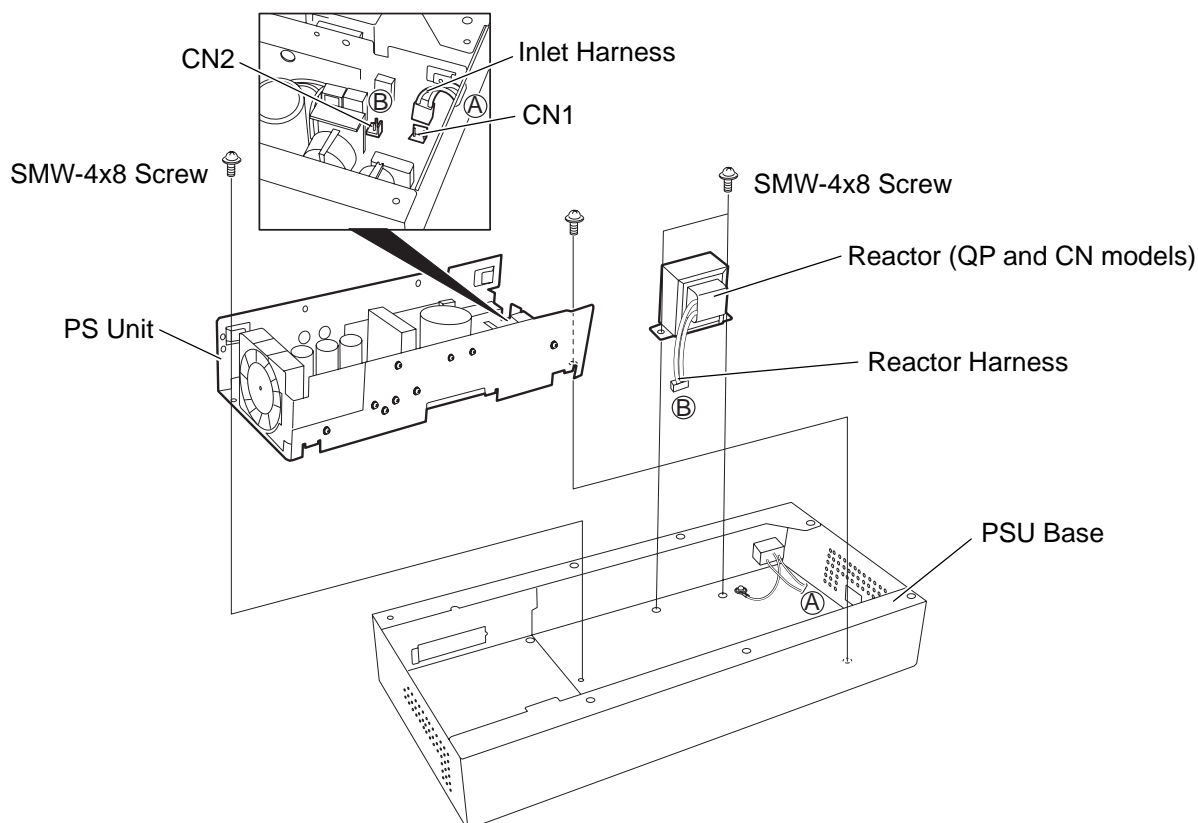
Printer Block

Power Supply Block

- 5) Disconnect the PSU harness from CN4 on the PS unit.



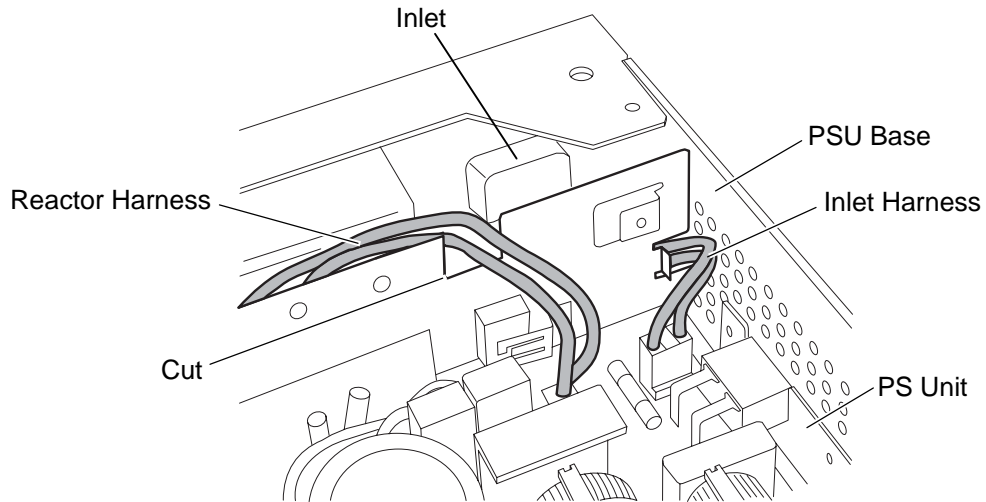
- 6) Disconnect the harnesses from CN1 on the PS unit. For the QP and CN models, disconnect the harness from CN2, too.
- 7) Remove the two SMW-4x8 screws to detach the PS unit from the PSU base.
- 8) Remove the SMW-4x8 screws to detach the reactor from the PSU base. (QP and CN models)



- 9) Replace the PS unit or reactor with a new one, then reassemble in the reverse order of removal.

**WARNING!**

Pass the reactor harness and inlet harness through the cut in the PS unit frame. Care must be taken not to pinch the harnesses in the frame. Failure to do this may break the harnesses causing a fire or electric shock.



### 3. PERIODIC MAINTENANCE PROCEDURE

#### WARNING!

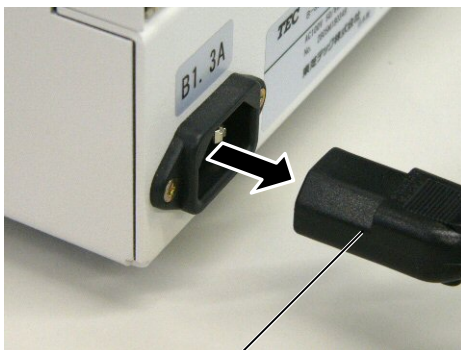
1. Be sure to turn the power off before cleaning the cutter unit.
2. As the cutter blade is sharp, care should be taken not to injure yourself when cleaning.

All machines are generally delivered in their best condition. To maintain optimal operating condition and help gain maximum performance and life of machines, we would recommend you to conduct periodic maintenance. Doing this is also effective in preventing unexpected troubles and avoiding wasteful system down time, by which more benefit is produced to your customers and greater reliance is placed on the product quality.

Please refer to the following general maintenance procedure and perform periodic servicing.

**NOTE:** Before starting the periodic maintenance, be sure to read carefully and understand the Service Manuals, especially warnings, cautions and adjustment.

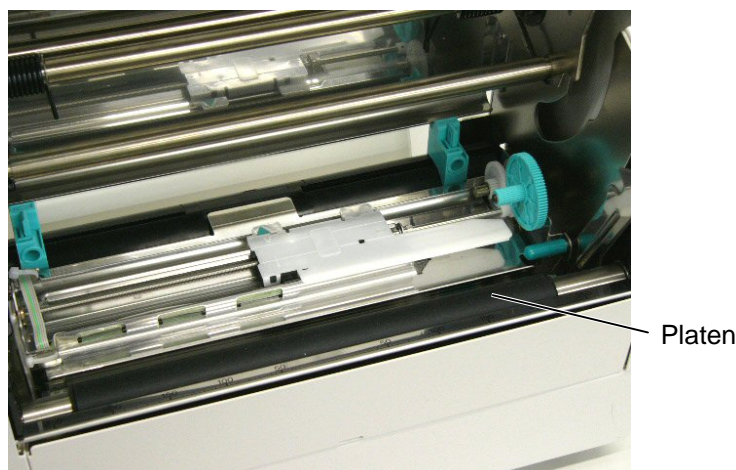
1. Ask an operator or a manager about any machine trouble.
2. Check the run distance on the maintenance counter.
3. Unplug the power cord, and then open the top cover and the head block.



Power Cord

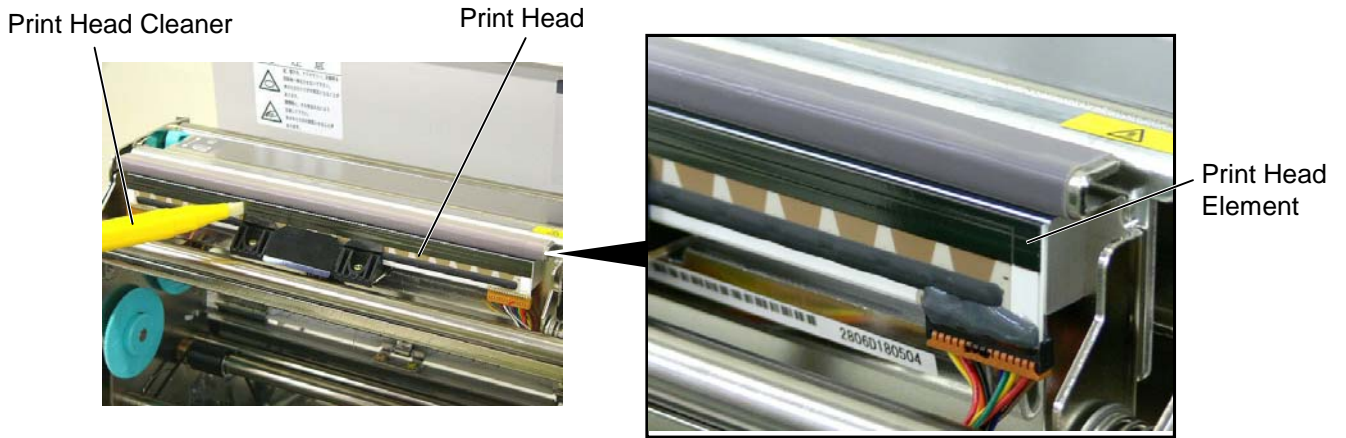


4. Clean the inside of the printer.
  - 1) The entire inside of the printer should be cleaned.
  - 2) Wipe the platen with a cloth moistened with alcohol.

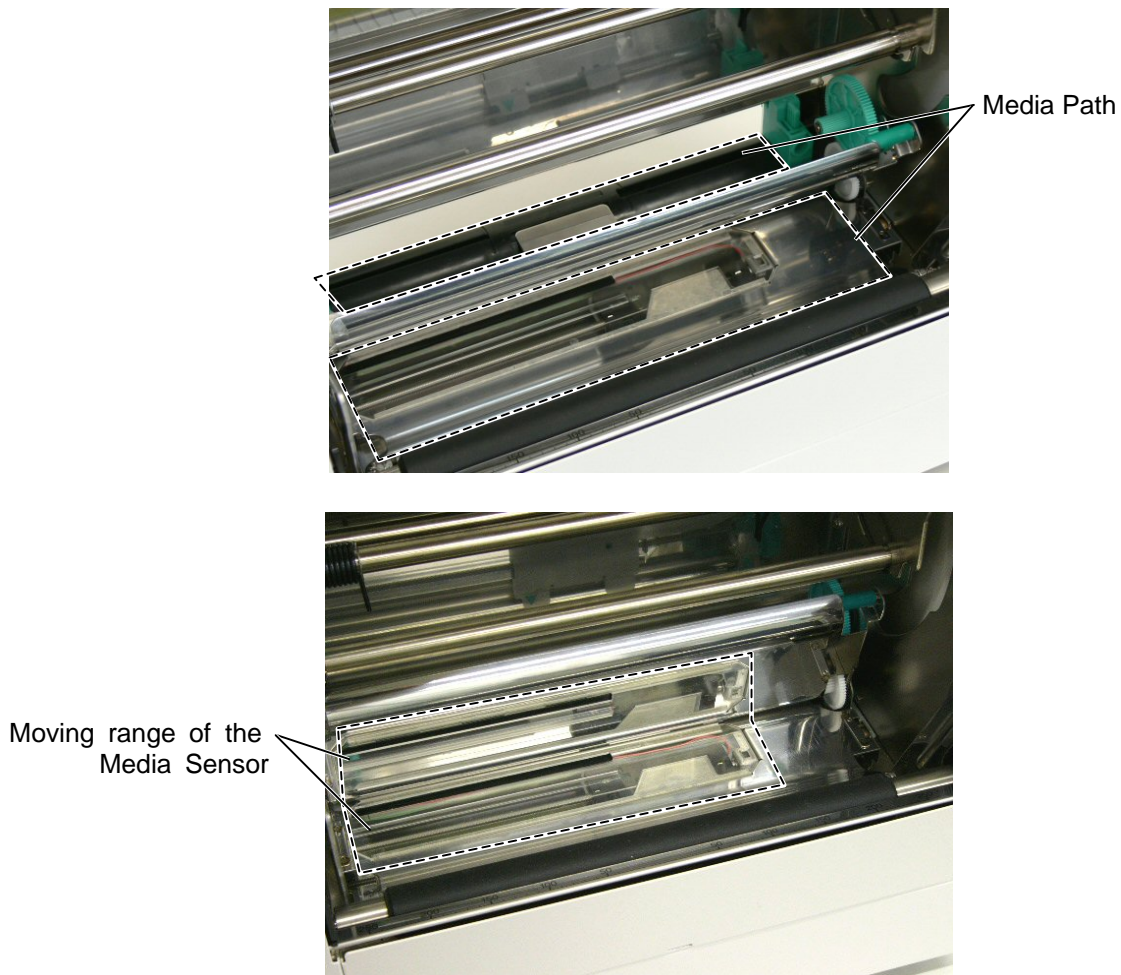




- 3) Clean the print head elements with the TOSHIBA TEC-approved print head cleaner.  
(Please instruct your customers to clean them daily.)

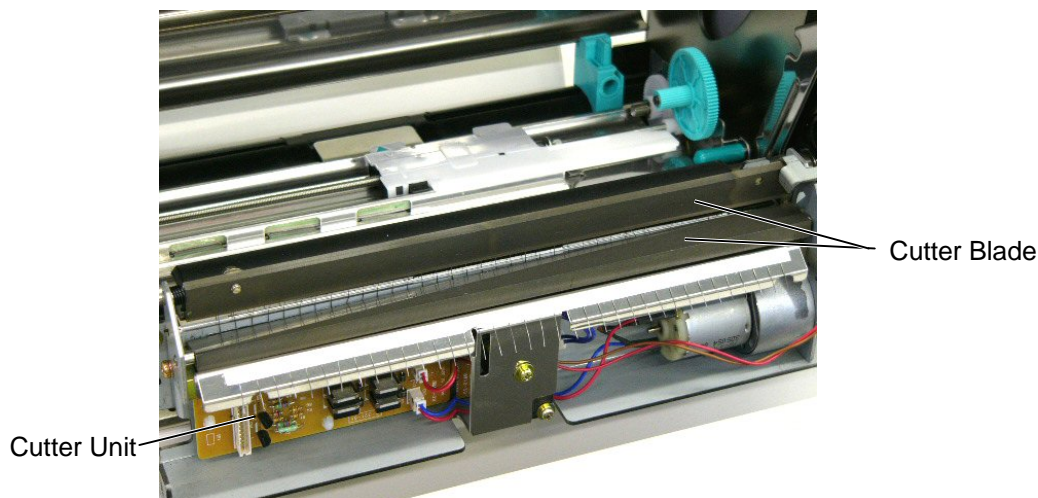


- 4) Remove any paper dust and glue of the label. Wipe off moving range of the media sensor.





5. Apply FLOIL G-488 to the cutter unit using a soft cloth.
6. Clean the Cutter Blade with a cotton swab moistened with absolute ethyl alcohol.



7. Confirm that the problem occurs as reported, and then take corrective action.
8. Replace the following parts periodically, if necessary. The following table shows approximate product life for each part.

No.	Part Name	Part No.	Standard interval of replacement
1	Cutter unit (Option)	G0-00415000	1,000,000 cuts
2	Platen	FMCC0054701	50 km

**NOTES:** 1. The above values of the cutter life are obtained on condition that the periodically maintained cutter is used with TOSHIBA TEC-approved supplies by the proper method described in the manuals.

2. The above values differ depending on the thickness and substances of the media to be used. When using the cutter to cut the labels, be sure to cut the backing paper. Failure to do this may cause the glue to stick to the cutter and shorten the cutter life.

8. Confirm each part adjustment. Make any necessary adjustments.
9. Conduct the following tests and make sure that there is no problem.
  - 1) Print test with TOSHIBA TEC-approved media and ribbon. (Print tone, print head position, etc.)
  - 2) Paper skew
  - 3) Print start position adjustment (Horizontal: media position, vertical: sensor adjustment/adjustment by issuing commands.)
  - 4) Communication test
  - 5) Abnormal noise
  - 6) Confirm that there are not any other errors.
10. Close the top cover.

11. Clean the outside of the printer.



12. Fill out a report form. Hand it to the manager and obtain a signature.

## 4. TROUBLESHOOTING

Problems	Cause	Solution
Power does not turn ON.	<ol style="list-style-type: none"> <li>1. Input voltage to the printer is not within the rated voltage.</li> <li>2. Output voltage from the printer is not within the rated voltage.</li> <li>3. No voltage to the MAIN PC board.</li> <li>4. Failure of MAIN PC board.</li> </ol>	<p>Replace the power cable or power inlet.</p> <p>Replace the PS unit.</p> <p>Check if the power harness is connected to CN8 on the MAIN PC board correctly. Replace the power harness or Power Supply Unit.</p> <p>Replace the MAIN PC board.</p>
LED or LCD does not light.	<ol style="list-style-type: none"> <li>1. Failure of the panel PC board or operation panel</li> <li>2. Failure of the operation panel harness</li> <li>3. Failure of the MAIN PC board</li> </ol>	<p>Replace the panel PC board or operation panel.</p> <p>Replace the operation panel harness.</p> <p>Replace the MAIN PC board.</p>
Poor printing	<ol style="list-style-type: none"> <li>1. Poor media quality.</li> <li>2. Dirty print head</li> <li>3. The print head block is not set completely.</li> </ol>	<p>Use the media approved by TOSHIBA TEC.</p> <p>Clean the print head.</p> <p>Close the print head block completely.</p>
Printer does not print.	<ol style="list-style-type: none"> <li>1. Print head failure</li> <li>2. Connection of the print head connector is incomplete, a bad contact, or broken elements.</li> <li>3. Failure in rewinding/feeding of the ribbon.</li> <li>4. Failure of the MAIN PC board.</li> <li>5. Failure of the software</li> <li>6. Failure of the printer cable.</li> </ol>	<p>Replace the print head.</p> <p>Connect the harness completely, or replace the harness.</p> <p>Replace the ribbon rewind motor, ribbon feed motor or MAIN PC board.</p> <p>Replace the MAIN PC board.</p> <p>Check the program.</p> <p>Replace the printer cable.</p>
Dot missing	<ol style="list-style-type: none"> <li>1. Broken print head element</li> <li>2. Broken print head cable wires</li> <li>3. Failure of the MAIN PC board</li> </ol>	<p>Replace the print head.</p> <p>Replace the print head harness.</p> <p>Replace the MAIN PC board.</p>
Blurred print	<ol style="list-style-type: none"> <li>1. Poor media quality.</li> <li>2. Dust is on the media.</li> </ol>	<p>Use only TOSHIBA TEC-approved media.</p> <p>Clean the print head and remove any dust from the media.</p>
Ribbon wrinkle	<ol style="list-style-type: none"> <li>1. Poor ribbon quality.</li> <li>2. Ribbon is not rewound or fed smoothly.</li> </ol>	<p>Use only TOSHIBA TEC-approved ribbon.</p> <p>Replace the ribbon rewind motor or ribbon feed motor.</p>

Problems	Cause	Solution
Media feed failure	<ol style="list-style-type: none"> <li>1. Media is not set properly.</li> <li>2. Poor media quality</li> <li>3. Improper adjustment of the feed gap sensor or black mark sensor.</li> <li>4. Threshold is improper.</li> <li>5. Failure of the feed gap sensor or black mark sensor</li> <li>6. The cutter mechanism is not installed properly.</li> <li>7. Failure of the stepping motor.</li> </ol>	<p>Set the media properly. Use the media approved by TOSHIBA TEC. Re-adjust the sensor.</p> <p>Set the threshold correctly. Replace the feed gap sensor or black mark sensor. Install the cutter module properly.</p> <p>Replace the stepping motor or MAIN PC board.</p>
Communication error	<ol style="list-style-type: none"> <li>1. Failure of the communication cable</li> <li>2. Failure of the RS-232C connector</li> <li>3. Failure of the communication connector</li> <li>4. Failure of the PC or application software</li> <li>5. Failure of the SIO PC board. (Option)</li> </ol>	<p>Replace the cable. Replace the connector Replace the connector.</p> <p>Modify the program.</p> <p>Replace the SIO PC Board.</p>

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