

Desktop Barcode Printer

DH240 Series

Direct Thermal

Series Models

DH240 / DH340

DH240T / DH340T

DH240THC / DH340THC



Service Manual

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1 Introduction

Thank you very much for purchasing TSC barcode printer.

The DH240 Series Desktop Barcode Printers are versatile and flexible for diverse printing requirements. This series' versatility enables printing a wide range of difficult labels, including thick, tiny, and long labels and certain types of vertical market labels.

Our printer language emulation makes the DH240 Series plug-and-play. Its firmware automatically identifies major printer languages and begins printing immediately without changing label templates. The DH240 Series minimizes downtime during daily operations through comprehensive printer management tools (Internal Embedded Webpage, virtual control panel, TSC Console, and SOTI Connect), printer shutdown prevention, and supports network security configurations to manage printers efficiently.

The DH240 Series scales up applications with a wide media width, high-precision printing, and several addable future-proof options. This empowers businesses to adapt to changing requirements for present and future operations. The eco-friendly printer features 100% recyclable packaging and plastic printer casing. Over 90% of printer components are recyclable at the printer's end-of-life, reducing environmental impact.

This document provides an easy reference for operating this printer. TSC printers include the Windows labeling software for creating your label template. For system integration, the TSPL/TSPL2 printer programming manual or SDKs can be found on TSC website at: <https://www.tscprinters.com>.

1.1 Printer Features

Front View

DH240 Series with LCD Panel



1. LCD
2. Media viewer window
3. Reprint button
4. Pause button
5. Feed button
6. Cover release lever
7. microSD card slot
8. Power switch

DH240 Series with LED Panel



- 1. Media viewer window
- 2. LED indicator
- 3. Icon LEDs
- 4. Reprint button
- 5. Pause button
- 6. Feed button
- 7. Cover release lever
- 8. Power switch
- 9. microSD card slot

Interior View



- 1. Printhead
- 2. Upper black mark sensor
- 3. Media holder
- 4. Platen roller
- 5. Front panel cover
- 6. Media holder lock
- 7. Black mark sensor

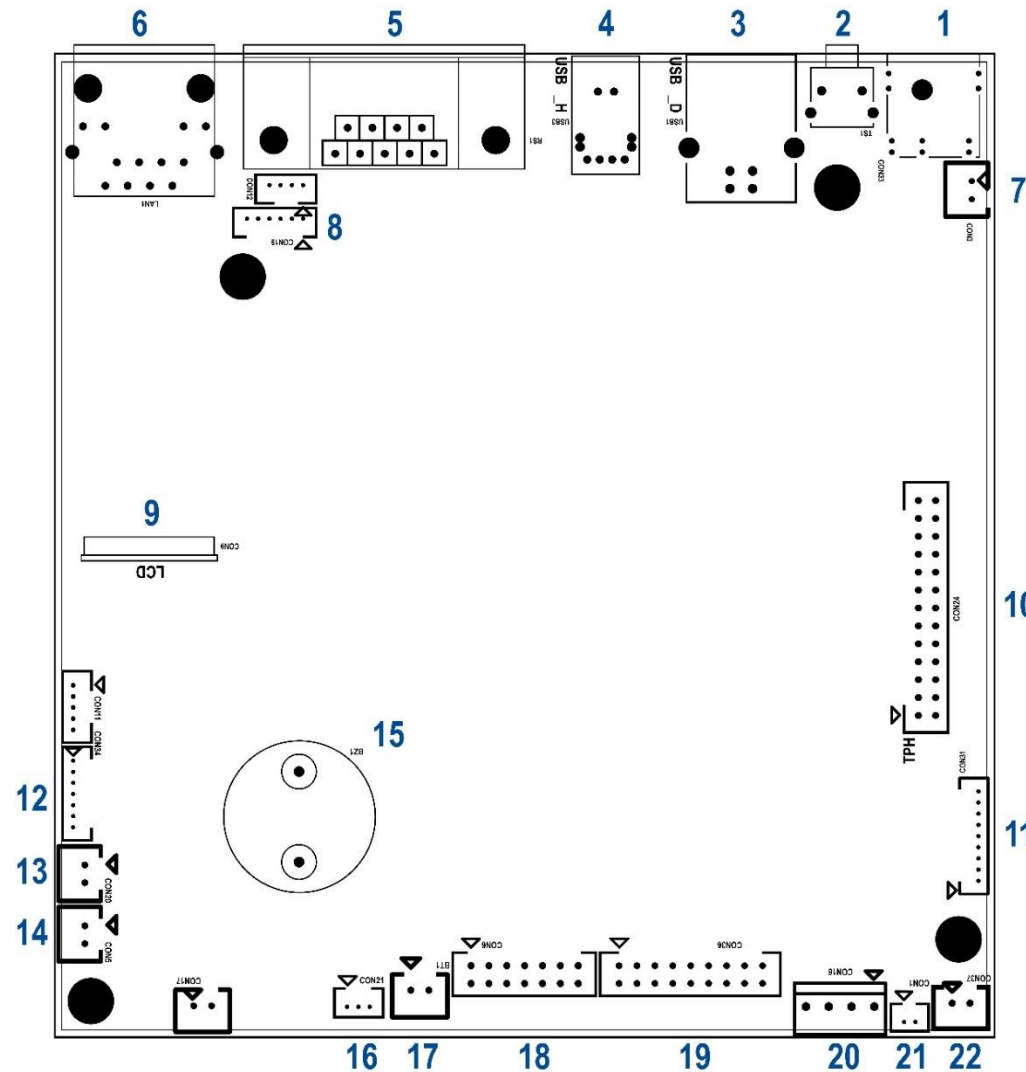
Rear View



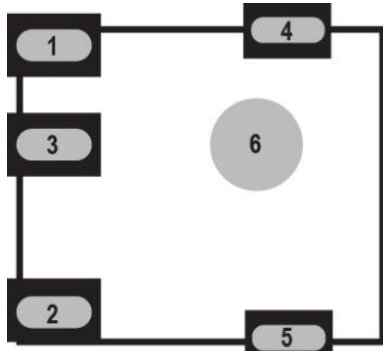
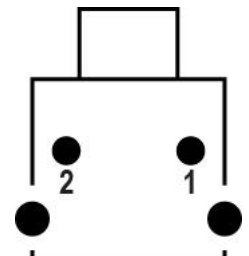
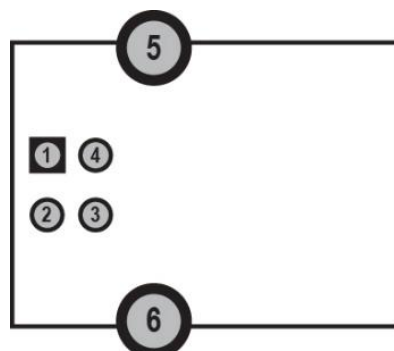
1. External label entrance chute
2. Power jack
3. Reset button
4. USB interface
5. USB host
6. RS-232C interface
7. Ethernet interface

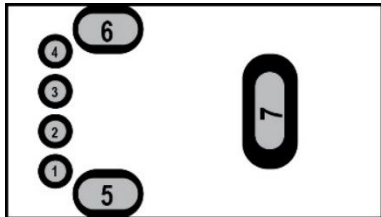
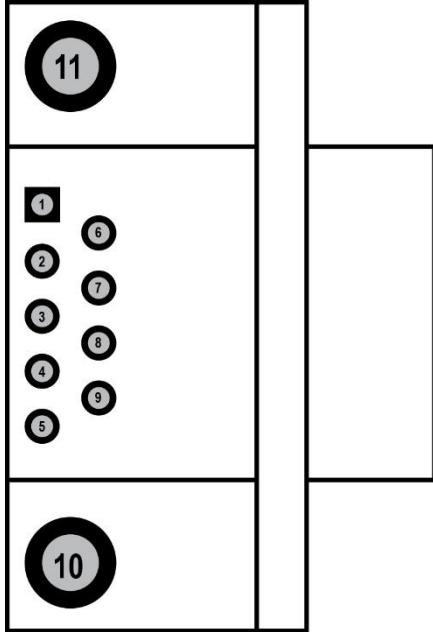
2 Electronics

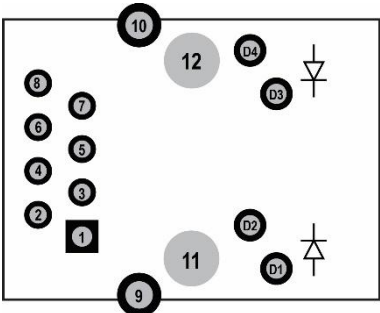
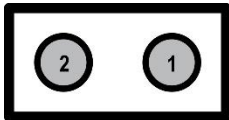
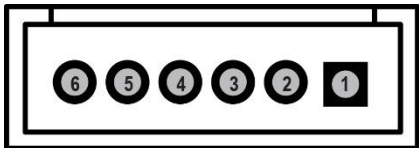
2.1 Main Board Connectors

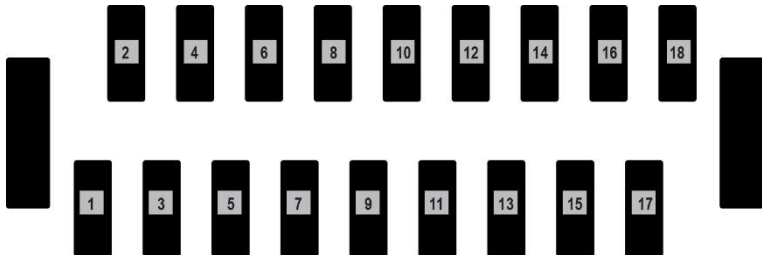


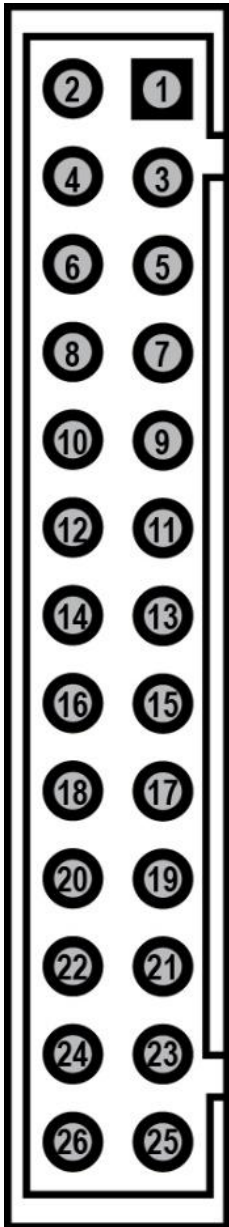
1. Power supply output (24V DC) connector
2. System reset switch
3. USB device connector
4. USB host connector
5. RS-232C connector
6. Ethernet connector
7. ESD cable connector
8. Panel touch and key connector
9. LCD connector
10. TPH connector
11. Micro SD card connector
12. NFC
13. Black mark sensor connector for print side (transmitter)
14. Black mark sensor connector for print side (receiver)
15. Buzzer
16. Black mark sensor connector for back side
17. Coin battery connector
18. Cutter / Peeler / RFID connector
19. Wi-Fi & Bluetooth connector
20. Stepping motor connector
21. Head open connector
22. Power switch connector

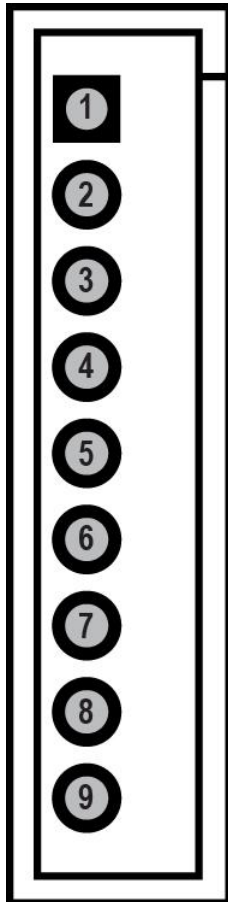
No.	Function	Pin Definition											
1	Power supply output (24V DC) connector												
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>DCIN 24V</td></tr><tr><td>2</td><td>GND</td></tr><tr><td>3</td><td>GND</td></tr><tr><td>4</td><td>GND</td></tr><tr><td>5</td><td>GND</td></tr></table>	No.	Definition	1	DCIN 24V	2	GND	3	GND	4	GND	5
No.	Definition												
1	DCIN 24V												
2	GND												
3	GND												
4	GND												
5	GND												
2	System reset switch (for resetting RTC or when printer hangs)												
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>Vbattery</td></tr><tr><td>2</td><td>VDDBU reset signal</td></tr></table>	No.	Definition	1	Vbattery	2	VDDBU reset signal					
No.	Definition												
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2	VDDBU reset signal												
3	USB device connector												
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>NC</td></tr><tr><td>2</td><td>D-</td></tr><tr><td>3</td><td>D+</td></tr><tr><td>4</td><td>GND</td></tr></table>	No.	Definition	1	NC	2	D-	3	D+	4	GND	
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1	NC												
2	D-												
3	D+												
4	GND												

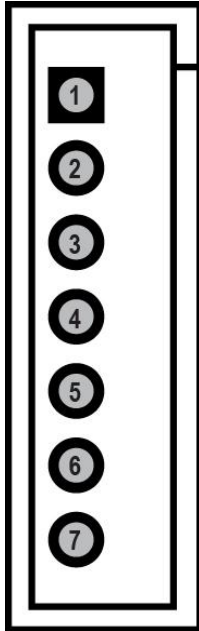
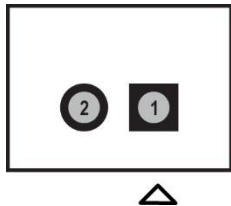
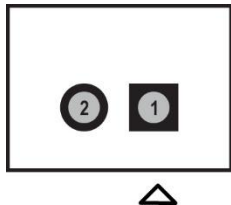
No.	Function	Pin Definition																			
4	USB host connector																				
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>VBUS 5V</td></tr><tr><td>2</td><td>D-</td></tr><tr><td>3</td><td>D+</td></tr><tr><td>4</td><td>GND</td></tr></table>	No.	Definition	1	VBUS 5V	2	D-	3	D+	4	GND									
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3	D+																				
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5	RS-232C connector																				
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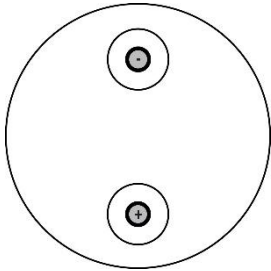
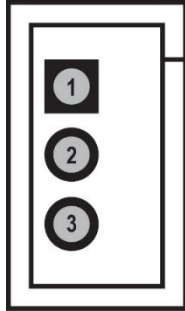
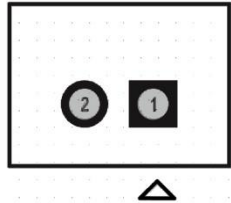
No.	Function	Pin Definition																									
6	Ethernet connector																										
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>TX+</td></tr><tr><td>2</td><td>TX-</td></tr><tr><td>3</td><td>RX+</td></tr><tr><td>4</td><td>NC</td></tr><tr><td>5</td><td>NC</td></tr><tr><td>6</td><td>RX-</td></tr><tr><td>7</td><td>NC</td></tr><tr><td>8</td><td>FGND</td></tr><tr><td>D1</td><td>3.3V</td></tr><tr><td>D2</td><td>Green LED Control</td></tr><tr><td>D3</td><td>Yellow LED Control</td></tr><tr><td>D4</td><td>3.3V</td></tr></table>	No.	Definition	1	TX+	2	TX-	3	RX+	4	NC	5	NC	6	RX-	7	NC	8	FGND	D1	3.3V	D2	Green LED Control	D3	Yellow LED Control	D4
No.	Definition																										
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3	RX+																										
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D3	Yellow LED Control																										
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7	ESD cable connector																										
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8	Panel touch and key connector																										
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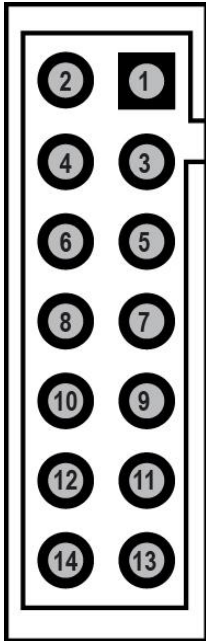
No.	Function	Pin Definition																																					
9	LCD connector																																						
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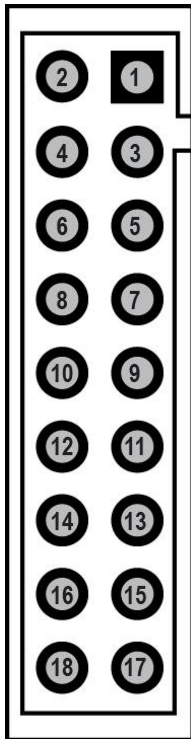
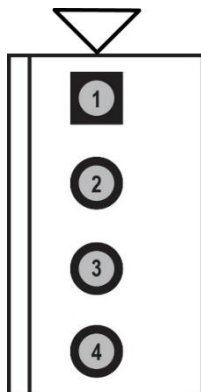
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10	TPH connector																																																							
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>TPH 24V</td></tr><tr><td>2</td><td>TPH 24V</td></tr><tr><td>3</td><td>TPH 24V</td></tr><tr><td>4</td><td>TPH 24V</td></tr><tr><td>5</td><td>GND</td></tr><tr><td>6</td><td>GND</td></tr><tr><td>7</td><td>Strobe2</td></tr><tr><td>8</td><td>Data2</td></tr><tr><td>9</td><td>TPH ID</td></tr><tr><td>10</td><td>Temperature sensor</td></tr><tr><td>11</td><td>5V</td></tr><tr><td>12</td><td>GND</td></tr><tr><td>13</td><td>Strobe1</td></tr><tr><td>14</td><td>GND</td></tr><tr><td>15</td><td>Clock</td></tr><tr><td>16</td><td>GND</td></tr><tr><td>17</td><td>GND</td></tr><tr><td>18</td><td>GND</td></tr><tr><td>19</td><td>Data1</td></tr><tr><td>20</td><td>Latch</td></tr><tr><td>21</td><td>GND</td></tr><tr><td>22</td><td>GND</td></tr><tr><td>23</td><td>TPH 24V</td></tr><tr><td>24</td><td>TPH 24V</td></tr><tr><td>25</td><td>TPH 24V</td></tr><tr><td>26</td><td>TPH 24V</td></tr></table>	No.	Definition	1	TPH 24V	2	TPH 24V	3	TPH 24V	4	TPH 24V	5	GND	6	GND	7	Strobe2	8	Data2	9	TPH ID	10	Temperature sensor	11	5V	12	GND	13	Strobe1	14	GND	15	Clock	16	GND	17	GND	18	GND	19	Data1	20	Latch	21	GND	22	GND	23	TPH 24V	24	TPH 24V	25	TPH 24V	26	TPH 24V
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	10	Temperature sensor																																																						
	11	5V																																																						
	12	GND																																																						
	13	Strobe1																																																						
	14	GND																																																						
	15	Clock																																																						
	16	GND																																																						
	17	GND																																																						
	18	GND																																																						
	19	Data1																																																						
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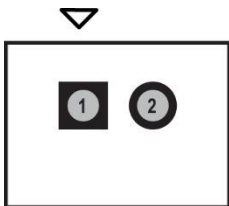
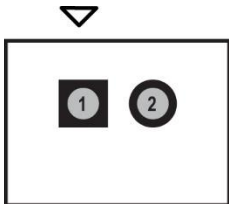
No.	Function	Pin Definition																			
11	Micro SD card connector																				
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>Micro_SD_DATA1</td></tr><tr><td>2</td><td>Micro_SD_DATA0</td></tr><tr><td>3</td><td>GND</td></tr><tr><td>4</td><td>Micro_SD_CLK</td></tr><tr><td>5</td><td>3.3V</td></tr><tr><td>6</td><td>Micro_SD_CMD</td></tr><tr><td>7</td><td>Micro_SD_DATA3</td></tr><tr><td>8</td><td>Micro_SD_DATA2</td></tr><tr><td>9</td><td>Micro_SD_DT</td></tr></table>	No.	Definition	1	Micro_SD_DATA1	2	Micro_SD_DATA0	3	GND	4	Micro_SD_CLK	5	3.3V	6	Micro_SD_CMD	7	Micro_SD_DATA3	8	Micro_SD_DATA2	9
No.	Definition																				
1	Micro_SD_DATA1																				
2	Micro_SD_DATA0																				
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4	Micro_SD_CLK																				
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No.	Function	Pin Definition															
12	NFC																
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>3.3V</td></tr><tr><td>2</td><td>NFC_TWD</td></tr><tr><td>3</td><td>NFC_TWCK</td></tr><tr><td>4</td><td>GND</td></tr><tr><td>5</td><td>NFC_RTS</td></tr><tr><td>6</td><td>NFC_CTS</td></tr><tr><td>7</td><td>NFC_UPDATE</td></tr></table>	No.	Definition	1	3.3V	2	NFC_TWD	3	NFC_TWCK	4	GND	5	NFC_RTS	6	NFC_CTS	7
No.	Definition																
1	3.3V																
2	NFC_TWD																
3	NFC_TWCK																
4	GND																
5	NFC_RTS																
6	NFC_CTS																
7	NFC_UPDATE																
13	Black mark sensor connector for print side (transmitter)																
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>3.3V</td></tr><tr><td>2</td><td>Black Mark Sensor for Print Side (transmitter)</td></tr></table>	No.	Definition	1	3.3V	2	Black Mark Sensor for Print Side (transmitter)									
No.	Definition																
1	3.3V																
2	Black Mark Sensor for Print Side (transmitter)																
14	Black mark sensor connector for print side (receiver)																
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>NC</td></tr><tr><td>2</td><td>Black Mark Sensor for Print Side (receiver)</td></tr></table>	No.	Definition	1	NC	2	Black Mark Sensor for Print Side (receiver)									
No.	Definition																
1	NC																
2	Black Mark Sensor for Print Side (receiver)																

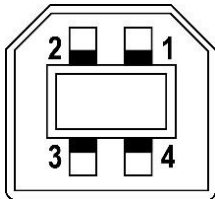
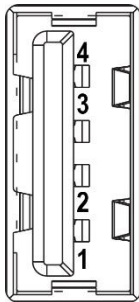
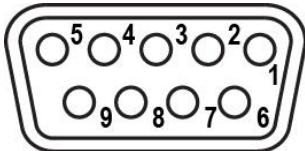
No.	Function	Pin Definition							
15	Buzzer								
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>+</td><td>SYS 24V</td></tr><tr><td>-</td><td>Buzzer control</td></tr></table>	No.	Definition	+	SYS 24V	-	Buzzer control	
No.	Definition								
+	SYS 24V								
-	Buzzer control								
16	Black mark sensor connector								
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>Black Mark Sensor Receiver</td></tr><tr><td>2</td><td>Black Mark Sensor Emitter</td></tr><tr><td>3</td><td>3.3V</td></tr></table>	No.	Definition	1	Black Mark Sensor Receiver	2	Black Mark Sensor Emitter	3
No.	Definition								
1	Black Mark Sensor Receiver								
2	Black Mark Sensor Emitter								
3	3.3V								
17	Coin battery connector								
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>Vbattery</td></tr><tr><td>2</td><td>GND</td></tr></table>	No.	Definition	1	Vbattery	2	GND	
No.	Definition								
1	Vbattery								
2	GND								

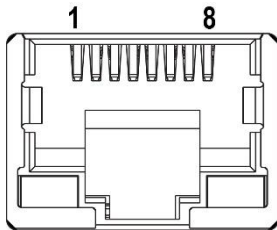
No.	Function	Pin Definition																													
18	Cutter / Peeler / RFID connector																														
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>CRFID_RXD</td></tr><tr><td>2</td><td>CRFID_TXD</td></tr><tr><td>3</td><td>5V_RFID</td></tr><tr><td>4</td><td>GND</td></tr><tr><td>5</td><td>Peeler_TWD</td></tr><tr><td>6</td><td>Peeler sensor receiver</td></tr><tr><td>7</td><td>5V_Cutter</td></tr><tr><td>8</td><td>Peeler_TWCK</td></tr><tr><td>9</td><td>Cutter rotate direction</td></tr><tr><td>10</td><td>Cutter enable signal</td></tr><tr><td>11</td><td>GND</td></tr><tr><td>12</td><td>Cutter status</td></tr><tr><td>13</td><td>GND</td></tr><tr><td>14</td><td>24V</td></tr></table>	No.	Definition	1	CRFID_RXD	2	CRFID_TXD	3	5V_RFID	4	GND	5	Peeler_TWD	6	Peeler sensor receiver	7	5V_Cutter	8	Peeler_TWCK	9	Cutter rotate direction	10	Cutter enable signal	11	GND	12	Cutter status	13	GND	14
No.	Definition																														
1	CRFID_RXD																														
2	CRFID_TXD																														
3	5V_RFID																														
4	GND																														
5	Peeler_TWD																														
6	Peeler sensor receiver																														
7	5V_Cutter																														
8	Peeler_TWCK																														
9	Cutter rotate direction																														
10	Cutter enable signal																														
11	GND																														
12	Cutter status																														
13	GND																														
14	24V																														

No.	Function	Pin Definition																																					
19	Wi-Fi & Bluetooth connector																																						
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>GND</td></tr><tr><td>2</td><td>3.3V_WIFI</td></tr><tr><td>3</td><td>WIFI/BT_Detect</td></tr><tr><td>4</td><td>WIFI_RX0</td></tr><tr><td>5</td><td>WIFI_RX1</td></tr><tr><td>6</td><td>WIFI_RXDV</td></tr><tr><td>7</td><td>WIFI_REFCK</td></tr><tr><td>8</td><td>GND</td></tr><tr><td>9</td><td>WIFI_WAKEUP</td></tr><tr><td>10</td><td>WIFI_TXEN</td></tr><tr><td>11</td><td>WIFI_TX0</td></tr><tr><td>12</td><td>WIFI_TX1</td></tr><tr><td>13</td><td>BT_TXD</td></tr><tr><td>14</td><td>BT_CTS</td></tr><tr><td>15</td><td>BT_RXD</td></tr><tr><td>16</td><td>BT_RTS</td></tr><tr><td>17</td><td>3.3V_WIFI</td></tr><tr><td>18</td><td>WIFI_RESET</td></tr></table>	No.	Definition	1	GND	2	3.3V_WIFI	3	WIFI/BT_Detect	4	WIFI_RX0	5	WIFI_RX1	6	WIFI_RXDV	7	WIFI_REFCK	8	GND	9	WIFI_WAKEUP	10	WIFI_TXEN	11	WIFI_TX0	12	WIFI_TX1	13	BT_TXD	14	BT_CTS	15	BT_RXD	16	BT_RTS	17	3.3V_WIFI	18
No.	Definition																																						
1	GND																																						
2	3.3V_WIFI																																						
3	WIFI/BT_Detect																																						
4	WIFI_RX0																																						
5	WIFI_RX1																																						
6	WIFI_RXDV																																						
7	WIFI_REFCK																																						
8	GND																																						
9	WIFI_WAKEUP																																						
10	WIFI_TXEN																																						
11	WIFI_TX0																																						
12	WIFI_TX1																																						
13	BT_TXD																																						
14	BT_CTS																																						
15	BT_RXD																																						
16	BT_RTS																																						
17	3.3V_WIFI																																						
18	WIFI_RESET																																						
20	Stepping motor connector																																						
		<table><tr><th>Pin No.</th><th>Definition</th></tr><tr><td>1</td><td>BOUT2</td></tr><tr><td>2</td><td>BOUT1</td></tr><tr><td>3</td><td>AOUT1</td></tr><tr><td>4</td><td>AOUT2</td></tr></table>	Pin No.	Definition	1	BOUT2	2	BOUT1	3	AOUT1	4	AOUT2																											
Pin No.	Definition																																						
1	BOUT2																																						
2	BOUT1																																						
3	AOUT1																																						
4	AOUT2																																						

No.	Function	Pin Definition					
21	Head open connector						
		<table><tr><th>Pin No.</th><th>Definition</th></tr><tr><td>1</td><td>Head open sensor (receiver)</td></tr><tr><td>2</td><td>GND</td></tr></table>	Pin No.	Definition	1	Head open sensor (receiver)	2
Pin No.	Definition						
1	Head open sensor (receiver)						
2	GND						
22	Power switch connector						
		<table><tr><th>Pin No.</th><th>Definition</th></tr><tr><td>1</td><td>EN_24V</td></tr><tr><td>2</td><td>SW_24V</td></tr></table>	Pin No.	Definition	1	EN_24V	2
Pin No.	Definition						
1	EN_24V						
2	SW_24V						

2.2 Interface Pin Configuration

No.	Function	Pin Configuration																			
1	USB device																				
		<table><tr><th>No.</th><th>Configuration</th></tr><tr><td>1</td><td>NC</td></tr><tr><td>2</td><td>D-</td></tr><tr><td>3</td><td>D+</td></tr><tr><td>4</td><td>GND</td></tr></table>	No.	Configuration	1	NC	2	D-	3	D+	4	GND									
No.	Configuration																				
1	NC																				
2	D-																				
3	D+																				
4	GND																				
2	USB host																				
		<table><tr><th>No.</th><th>Configuration</th></tr><tr><td>1</td><td>5V</td></tr><tr><td>2</td><td>D-</td></tr><tr><td>3</td><td>D+</td></tr><tr><td>4</td><td>GND</td></tr></table>	No.	Configuration	1	5V	2	D-	3	D+	4	GND									
No.	Configuration																				
1	5V																				
2	D-																				
3	D+																				
4	GND																				
3	RS-232C																				
		<table><tr><th>No.</th><th>Configuration</th></tr><tr><td>1</td><td>+5V</td></tr><tr><td>2</td><td>TXD</td></tr><tr><td>3</td><td>RXD</td></tr><tr><td>4</td><td>CTS</td></tr><tr><td>5</td><td>GND</td></tr><tr><td>6</td><td>RTS</td></tr><tr><td>7</td><td>NC</td></tr><tr><td>8</td><td>RTS</td></tr><tr><td>9</td><td>NC</td></tr></table>	No.	Configuration	1	+5V	2	TXD	3	RXD	4	CTS	5	GND	6	RTS	7	NC	8	RTS	9
No.	Configuration																				
1	+5V																				
2	TXD																				
3	RXD																				
4	CTS																				
5	GND																				
6	RTS																				
7	NC																				
8	RTS																				
9	NC																				

No.	Function	Pin Configuration																	
4	Ethernet LAN port																		
		<table><tr><th>No.</th><th>Definition</th></tr><tr><td>1</td><td>Tx+</td></tr><tr><td>2</td><td>Tx-</td></tr><tr><td>3</td><td>Rx+</td></tr><tr><td>4</td><td>NC</td></tr><tr><td>5</td><td>NC</td></tr><tr><td>6</td><td>Rx-</td></tr><tr><td>7</td><td>NC</td></tr><tr><td>8</td><td>NC</td></tr></table>	No.	Definition	1	Tx+	2	Tx-	3	Rx+	4	NC	5	NC	6	Rx-	7	NC	8
No.	Definition																		
1	Tx+																		
2	Tx-																		
3	Rx+																		
4	NC																		
5	NC																		
6	Rx-																		
7	NC																		
8	NC																		

3 Replacing the Parts

3.1 Before You Begin

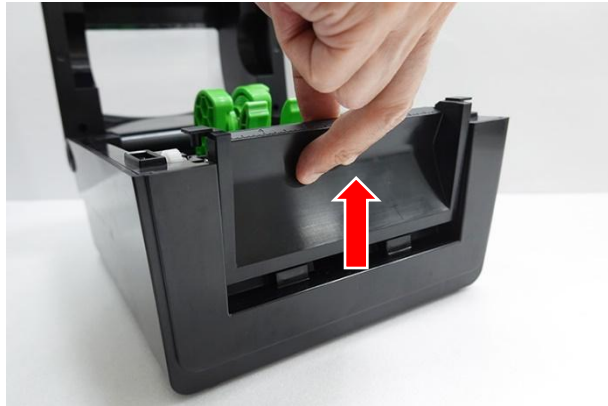
WARNING: To avoid the risk of personal injury from electrical shock, before performing any replacement procedures, unplug the power cord from the printer or power outlet to ensure that power is removed.

To prepare the printer for the replacement or installation:

1. Protect yourself from ESD and wear protective gloves.
2. Place the printer on a flat surface.
3. Set the printer's power switch to the **○** (Off) position.
4. Remove the power adapter from the printer or unplug the power cord from the AC power outlet.
5. Disconnect all interface cables from the rear panel of the printer.
6. Remove the media from the printer.
7. Read through the maintenance procedures.

3.2 Replacing the Platen Roller Assembly

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Pull the two release latches on the right and left sides of the printer to release the top cover and then open the top cover.
3. Remove the lower front panel.



4. Rotate the two tabs of the platen roller assembly to the indicated position to unlock the platen roller assembly.

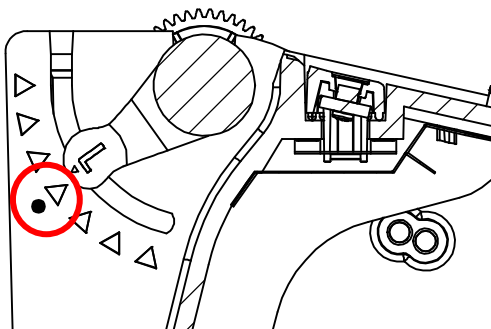


5. Lift up to remove the platen roller assembly.



6. Reverse the steps to install the platen roller assembly.

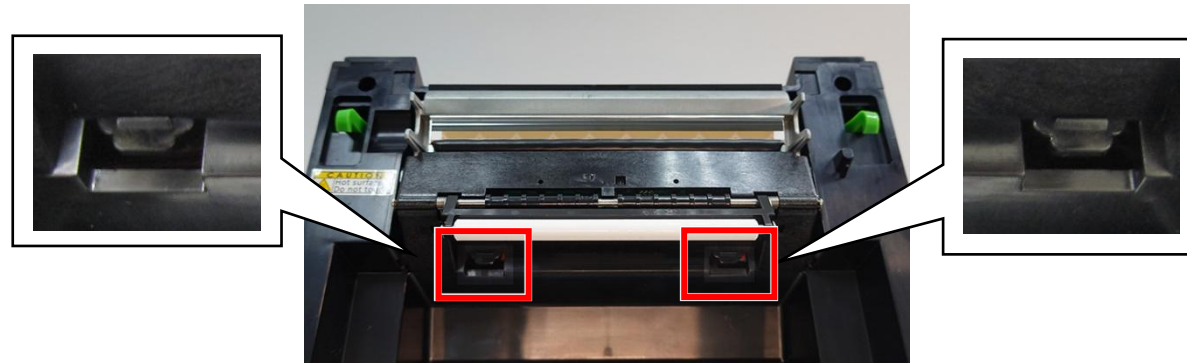
Note: The image below indicates the default position for the two tabs of the platen roller.



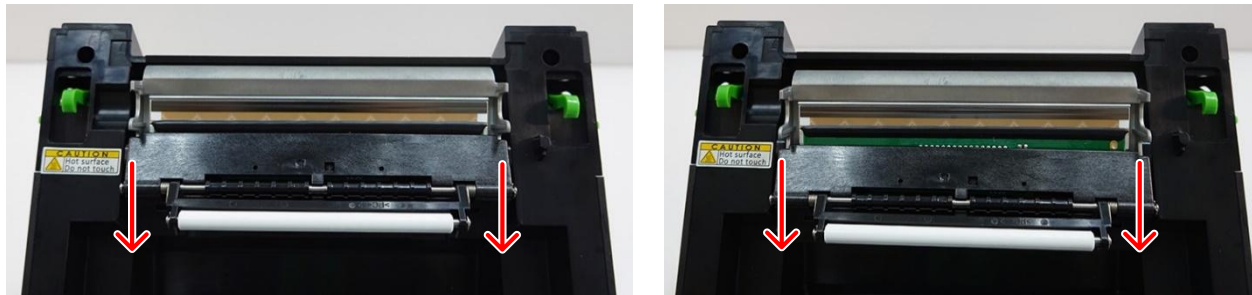
3.3 Replacing the Printhead Cover with Upper Black Mark Sensor Assembly

CAUTION: To prevent electrostatic damage to the electronic components, touch the unpainted part of the printer chassis to ground yourself before the replacement procedures.

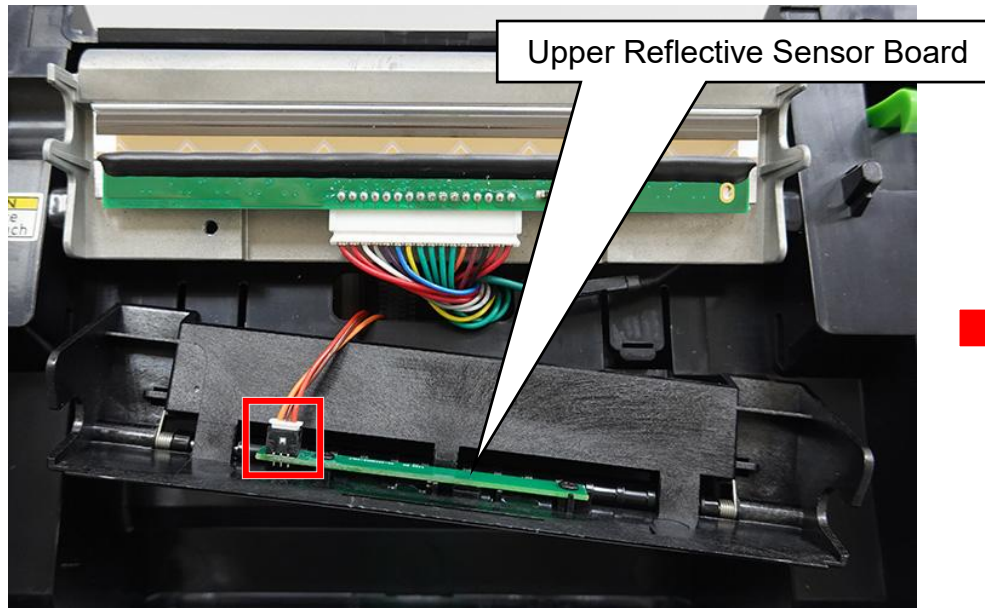
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Open the top cover. For how to open the top cover, refer to [Replacing the Platen Roller Assembly](#).
3. Press and hold the latch to release the printhead cover with upper black mark sensor assembly.



4. Slide down the assembly while pressing and holding the latch.



5. Disconnect the cable from the upper reflective sensor board to remove the printhead cover with upper black mark sensor assembly.



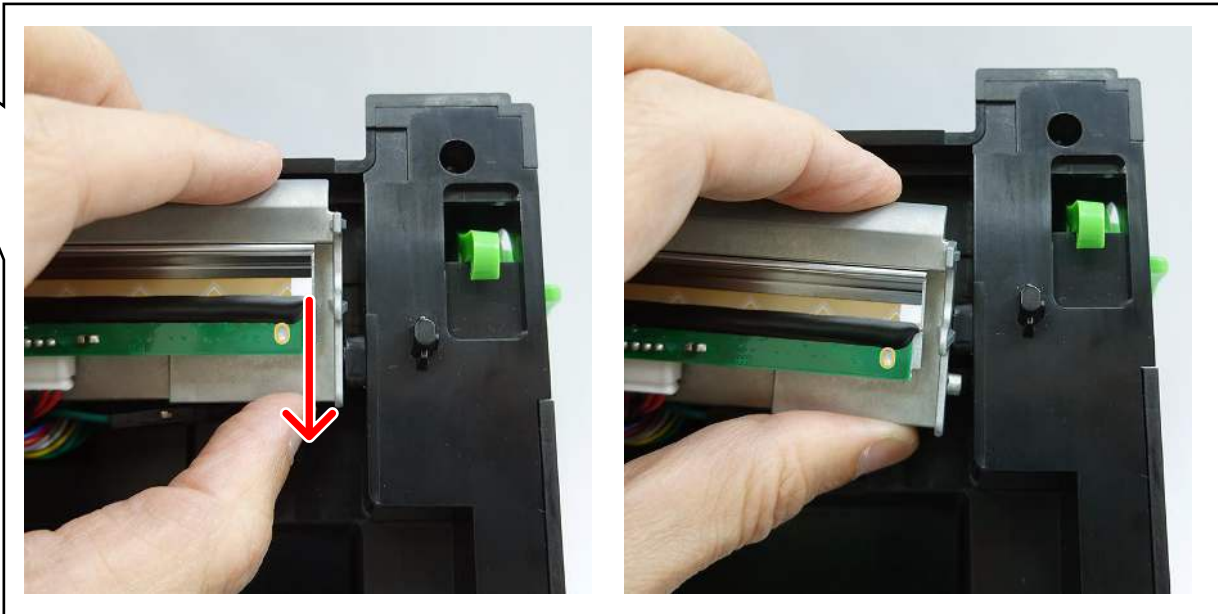
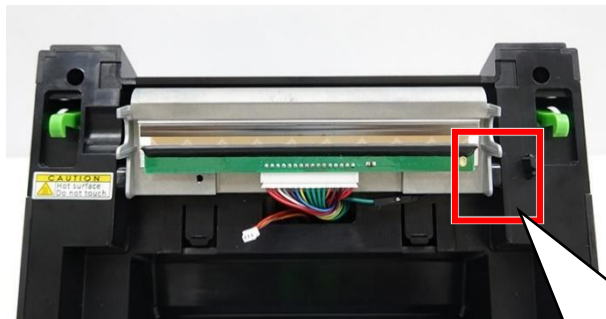
Printhead Cover with Upper
Black Mark Sensor Assembly

6. Reverse the steps to install the printhead cover with upper black mark sensor assembly.

3.4 Replacing the Printhead Assembly

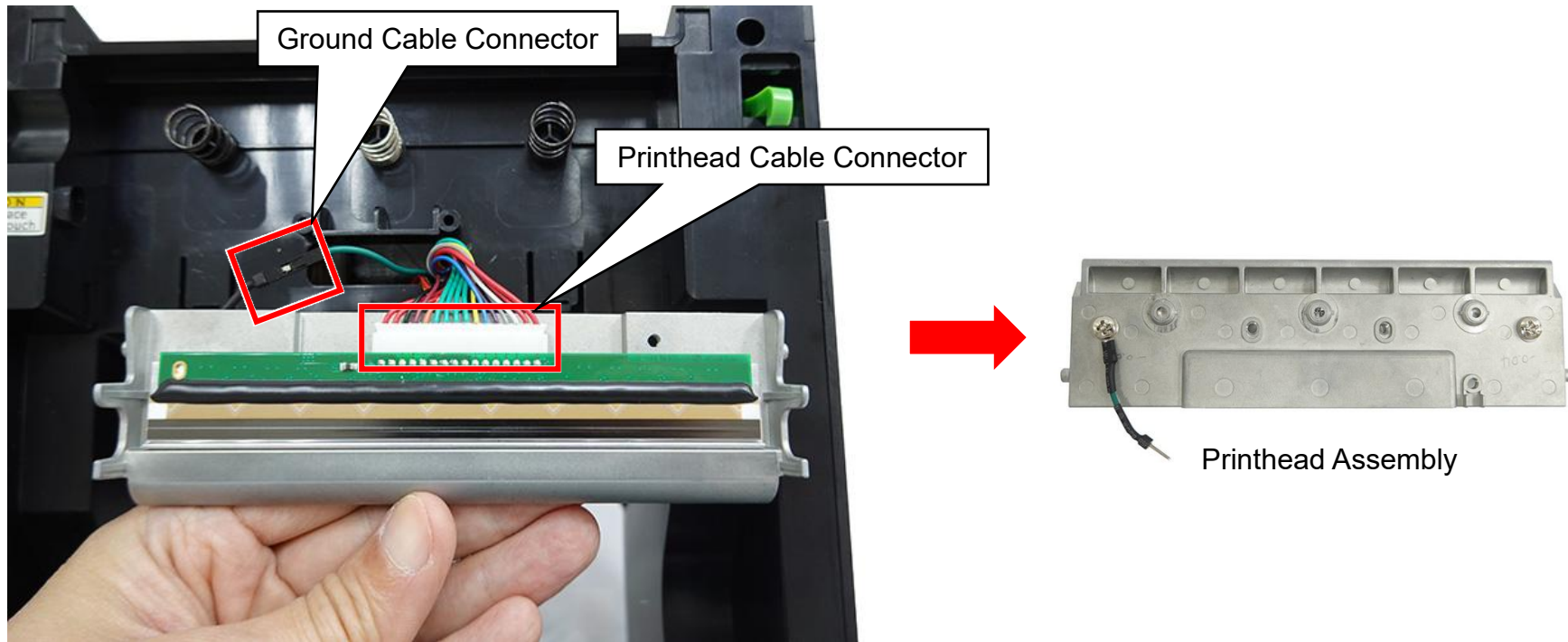
CAUTION: To prevent electrostatic damage to the electronic components, touch the unpainted part of the frame to ground yourself before the replacement procedures.

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Open the top cover. For how to open the top cover, refer to [Replacing the Platen Roller Assembly](#).
3. Remove the printhead cover with upper black mark sensor assembly. For how to remove the printhead cover with upper black mark sensor assembly, refer to [Replacing the Printhead Cover with](#) .
4. Slide down the right side of the printhead bracket as indicated to disengage the printhead assembly from the inner cover.



5. Disconnect the green ground cable and printhead cable from the printhead assembly.

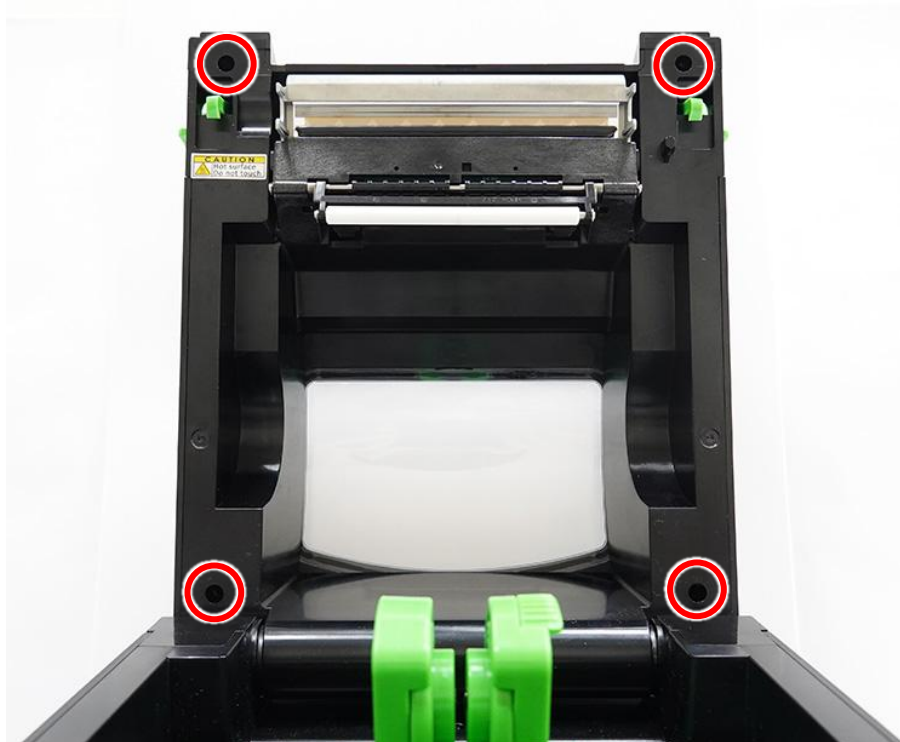
CAUTION: DO NOT touch the printhead throughout the replacement procedures. Oils from your hand may damage the printhead.



6. Reverse the steps to install the printhead assembly.

3.5 Replacing the Top Cover

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Open the top cover. For how to open the top cover, refer to [Replacing the Platen Roller Assembly](#).
3. Remove the four screws securing the top cover in place.
4. Remove the top cover from the printer.

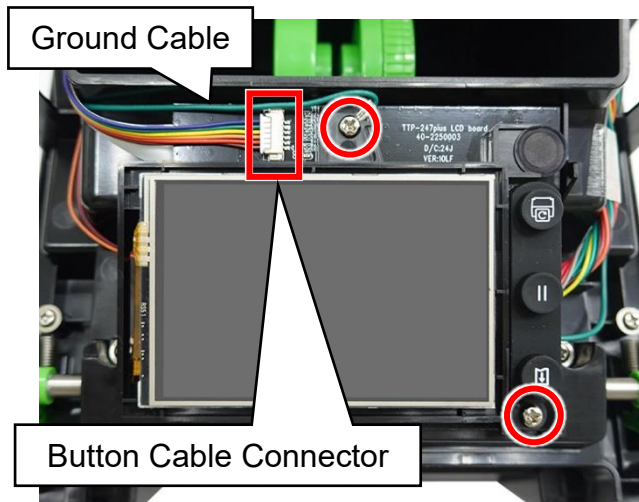


Top Cover

5. Reverse the steps to install the top cover.

3.6 Replacing the Control Panel Assembly

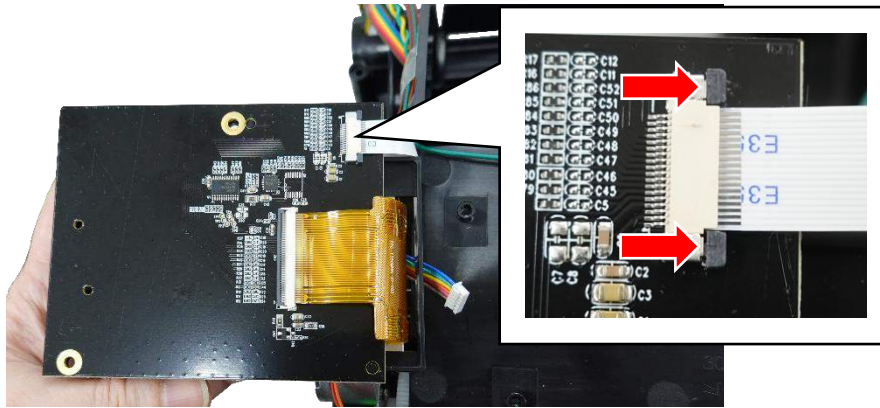
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Open the top cover. For how to open the top cover, refer to [Replacing the Platen Roller Assembly](#).
3. Remove the top cover. For how to remove the top cover, refer to [Replacing the Top Cover](#).
4. For LCD version (For LED version, skip the step 8), disconnect the button cable from the control panel board and then remove the two screws securing the ground cable and control panel board in place.



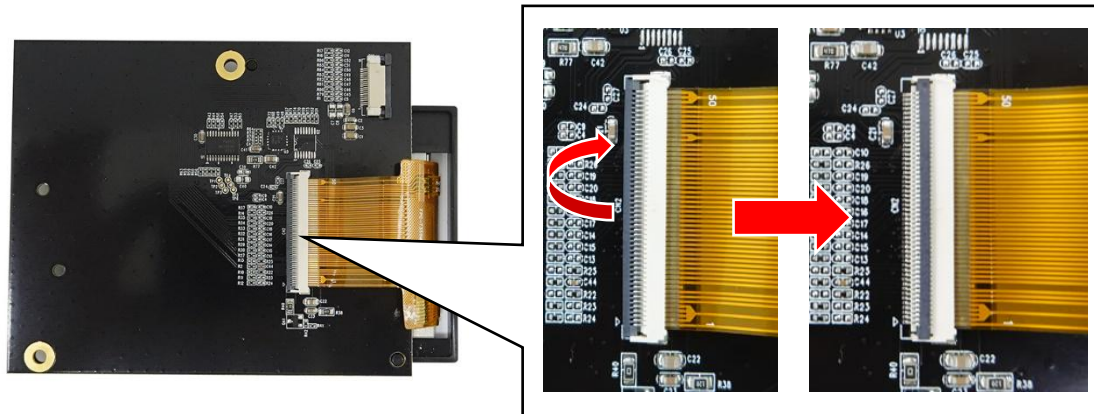
Note: When installing the control panel assembly, the ground cable must be secured underneath the control panel bracket.



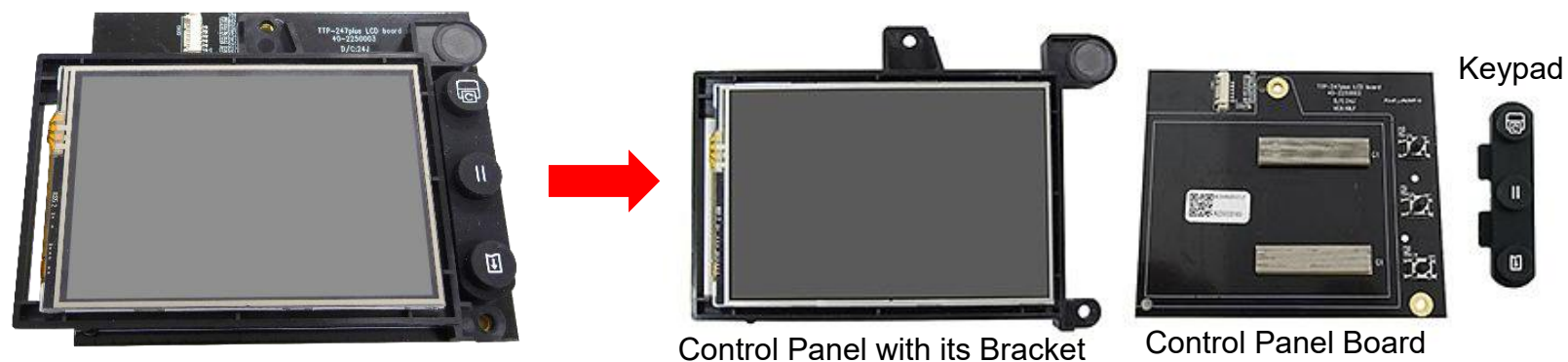
5. Flip over the control panel board. Carefully push the two black tabs in the indicated direction to unlock the white FFC and disconnect the FFC from the control panel board.



6. Carefully flip up the tab to unlock the control panel FPC.



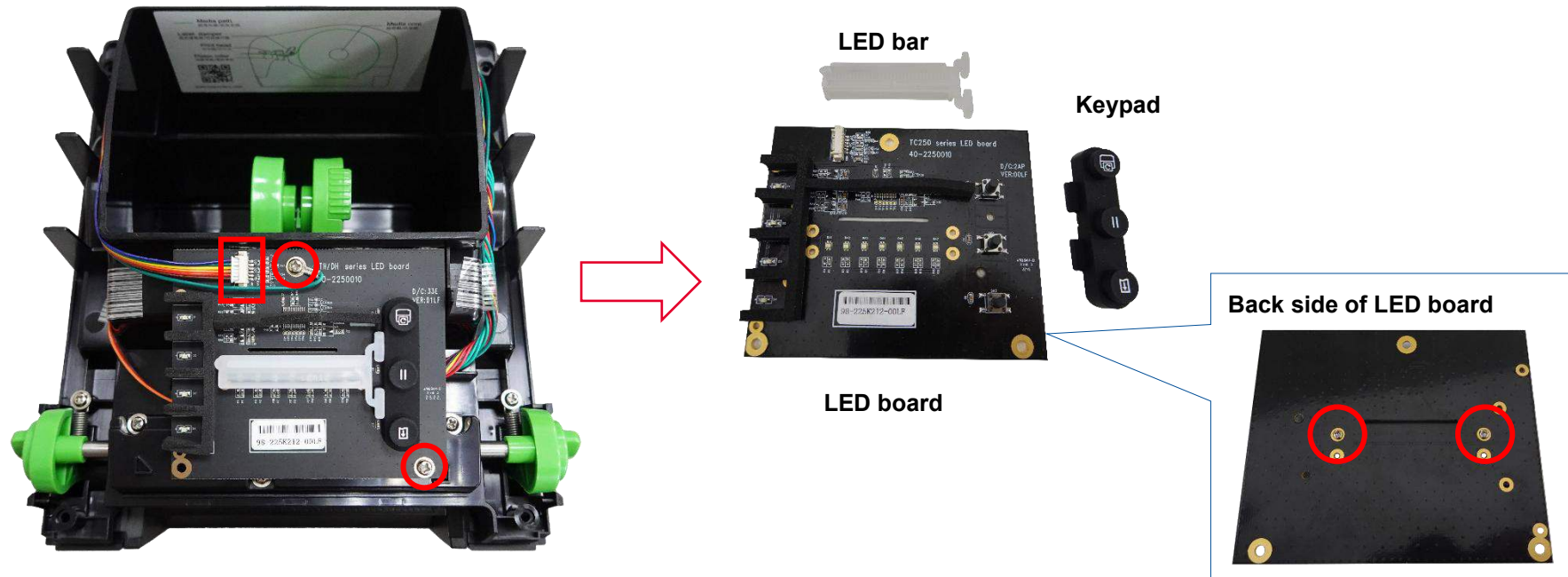
7. Remove the keypad and then carefully detach the control panel with its bracket from the control panel board.



Note: For models shipped with the LCD display and wireless or Bluetooth module, when replacing the control panel assembly, the NFC tag **MUST** be transferred to the new control panel assembly. **DO NOT** dispose the NFC tag with the old control panel assembly.



8. For LED version, remove two screws and one connector on LED board as shown below. Remove two screws on back of LED board to replace the LED bar and the keypad.



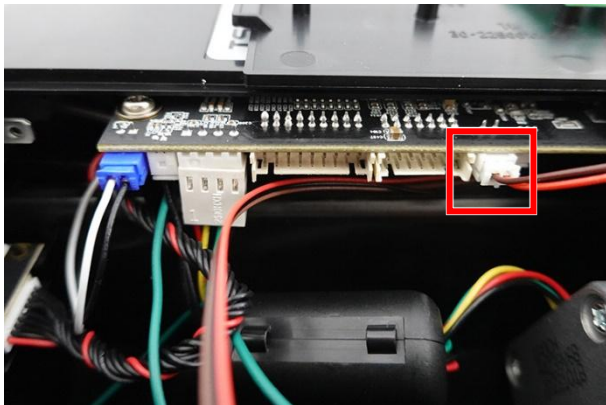
9. Reverse the steps to install the control panel assembly.

3.7 Replacing the RTC Module

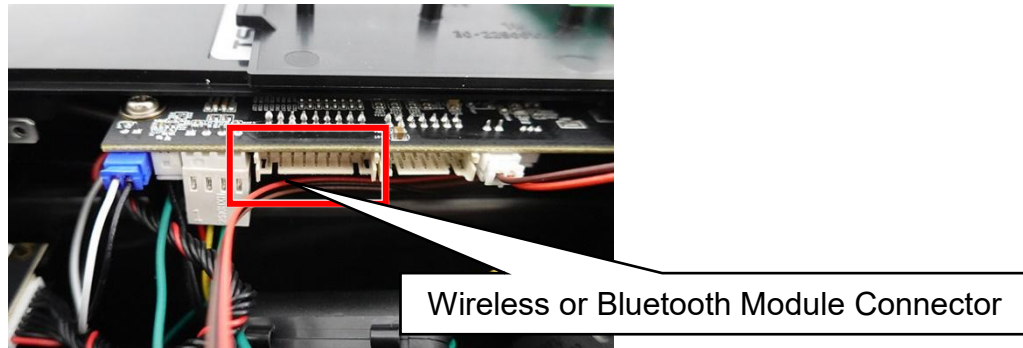
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the single screw securing the RTC module cover in place.



3. Disconnect the RTC battery cable from the main board.

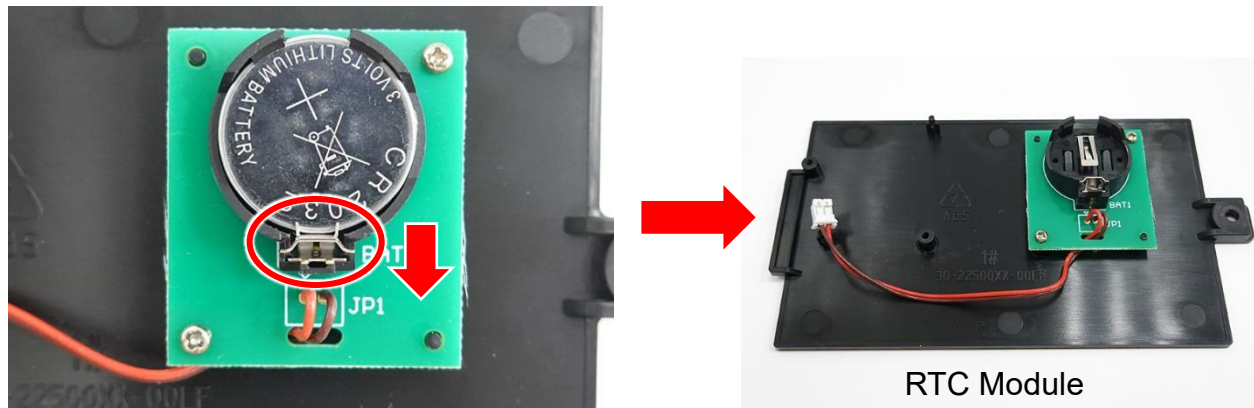


Note: For models shipped either with a wireless or Bluetooth module, you need to disconnect its corresponding cable from the main board before removing the RTC module cover from the printer.



4. Pull the latch in the indicated direction to release the RTC battery from its compartment.

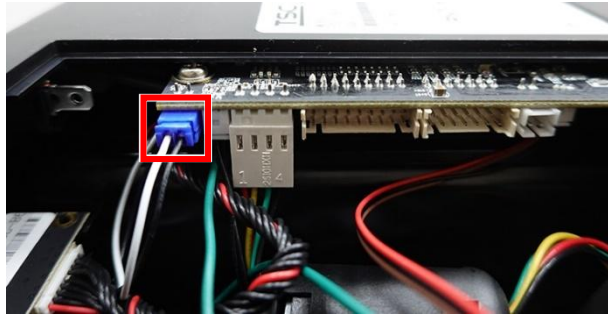
Note: The RTC module kit you purchase will not come equipped with the RTC battery (CR2032). As a result, the RTC battery **MUST** be transferred to the new RTC module. **DO NOT** dispose the RTC battery.



5. Reverse the steps to install the RTC module.

3.8 Replacing the Lower Cover

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the RTC battery cover. For how to remove the RTC battery cover, refer to [Replacing the RTC Module](#).
3. Disconnect the power switch cable from the main board.



4. Remove the two screws securing the interface cover in place and then remove the interface cover.



Interface Cover

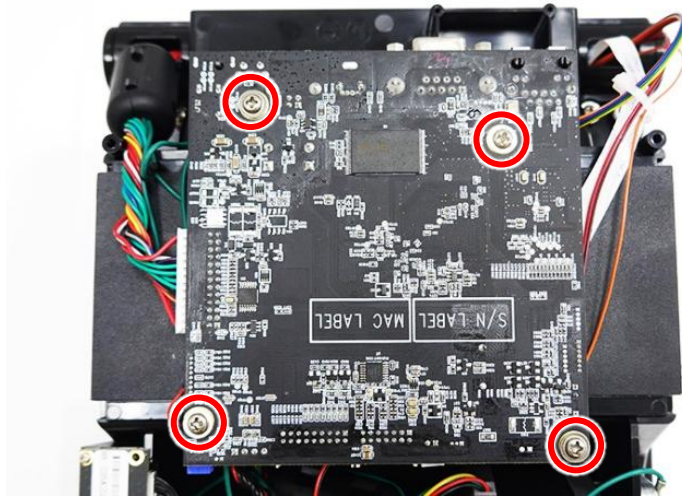
5. Remove the four screws securing the lower cover in place.



6. Reverse the steps to install the lower cover.

3.9 Replacing the Main Board

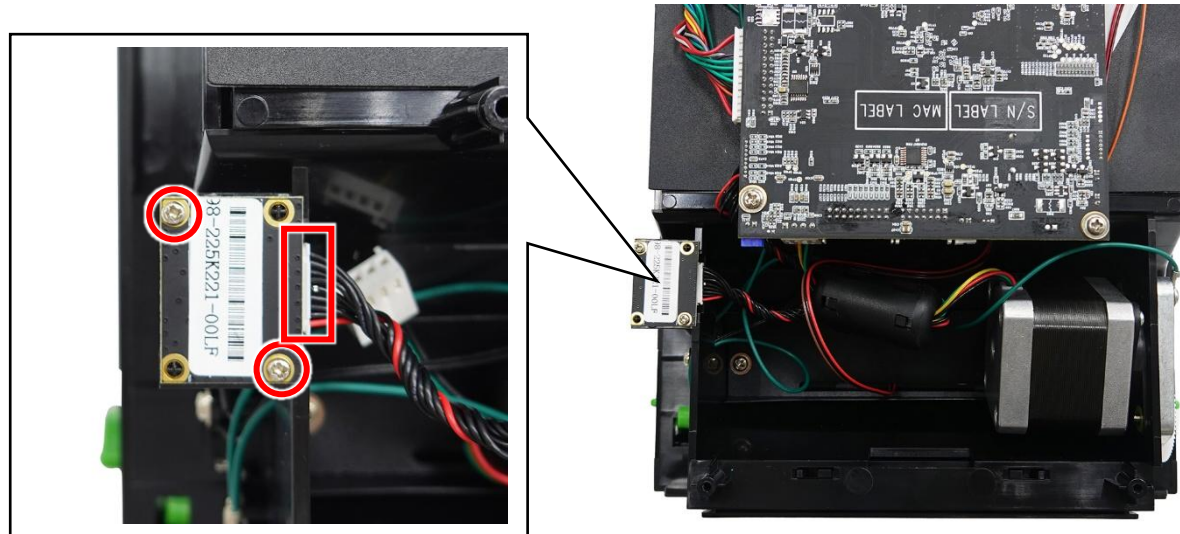
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the RTC module. For how to remove the RTC module, refer to [Replacing the RTC Module](#).
3. Remove the lower cover. For how to remove the lower cover, refer to [Replacing the Lower Cover](#).
4. Remove the four screws securing the main board in place.



5. Disconnect all cables from the main board to separate the main board from the printer.
6. Reverse the steps to install the main board.

3.10 Replacing the SD Card Board

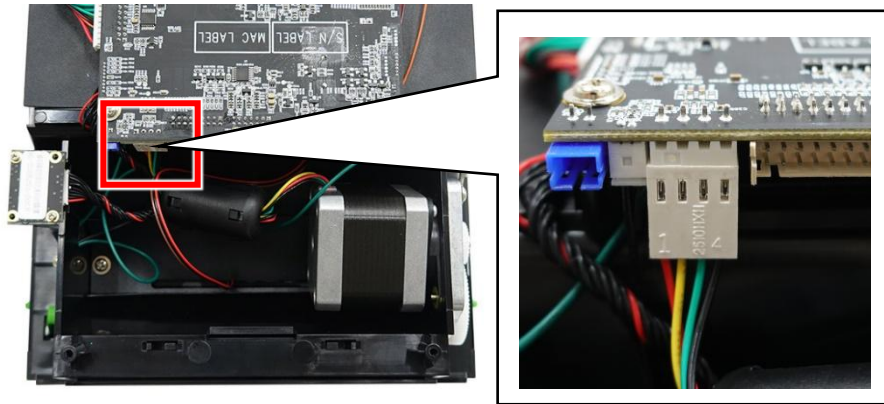
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the RTC module. For how to remove the RTC module, refer to [Replacing the RTC Module](#).
3. Remove the lower cover. For how to remove the lower cover, refer to [Replacing the Lower Cover](#).
4. Disconnect the cable from the SD card board.
5. Remove the two screws securing the SD card board in place.



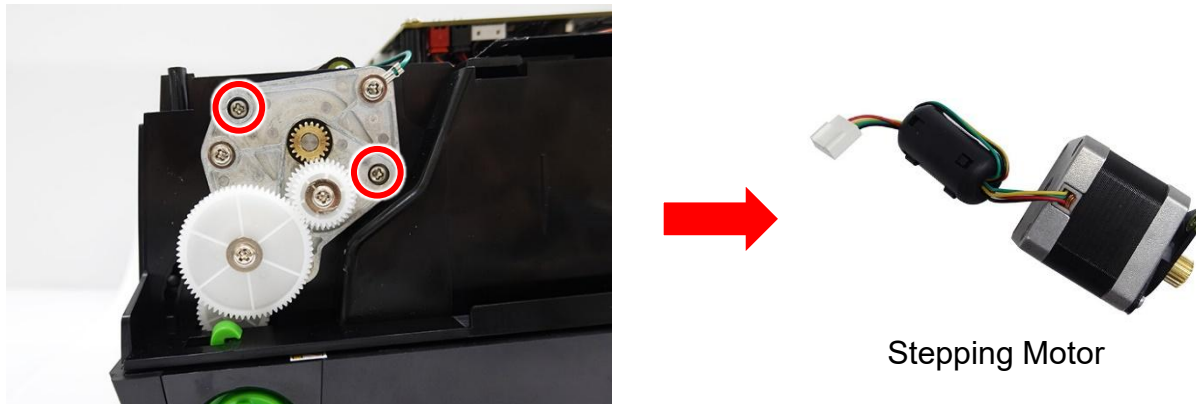
6. Reverse the steps to install the SD card board.

3.11 Replacing the Stepping Motor

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the RTC module. For how to remove the RTC module, refer to [Replacing the RTC Module](#).
3. Remove the lower cover. For how to remove the lower cover, refer to [Replacing the Lower Cover](#).
4. Disconnect the stepping motor cable from the main board.



5. Remove the two screws with its washer securing the stepping motor in place and then remove the motor.

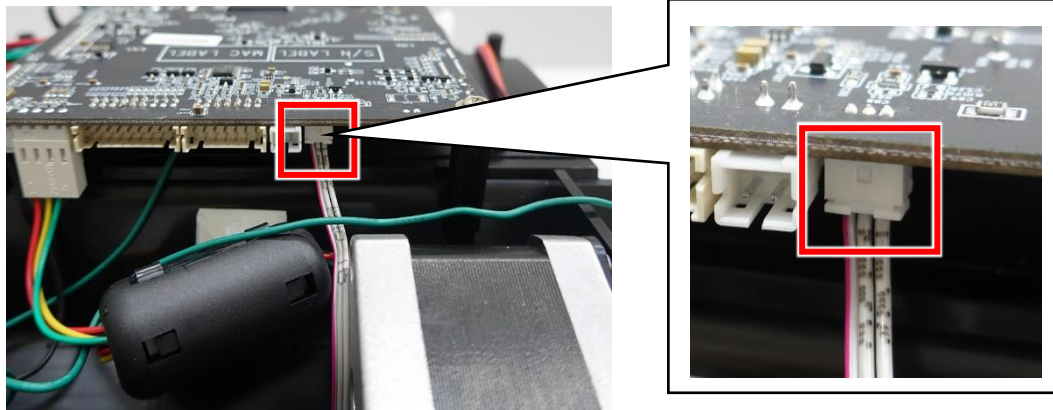


Stepping Motor

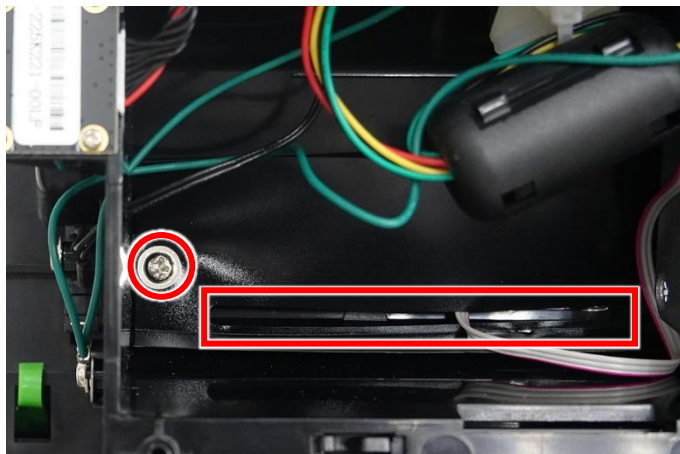
6. Reverse the steps to install the stepping motor.

3.12 Replacing the Black Mark Sensor

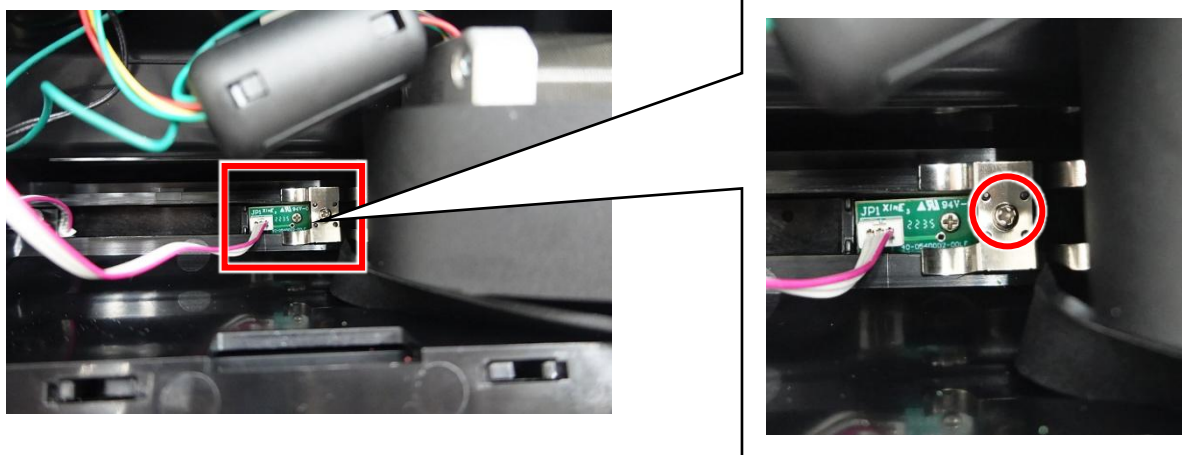
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the RTC module. For how to remove the RTC module, refer to [Replacing the RTC Module](#).
3. Remove the lower cover. For how to remove the lower cover, refer to [Replacing the Lower Cover](#).
4. Disconnect the black mark sensor cable from the main board.



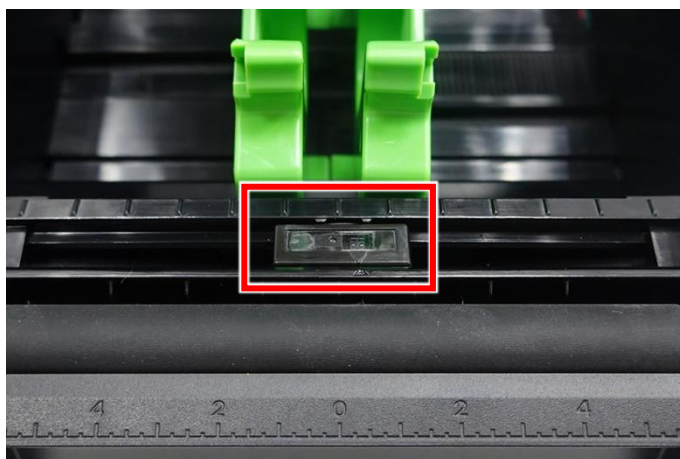
5. Remove the screw and then thread the black mark sensor cable through the opening on the black mylar.



6. Flip over the black mylar and then remove the single screw securing the black mark sensor in place.



7. Remove the black mark sensor with its cable from the top side of the printer.

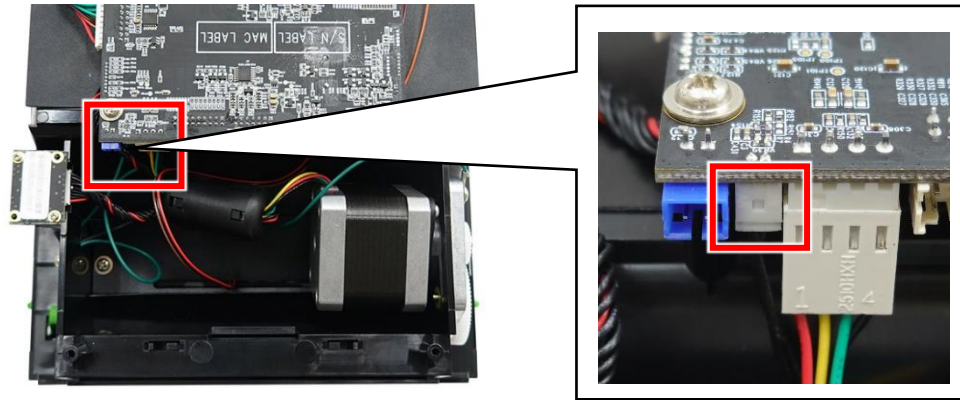


Black Mark Sensor

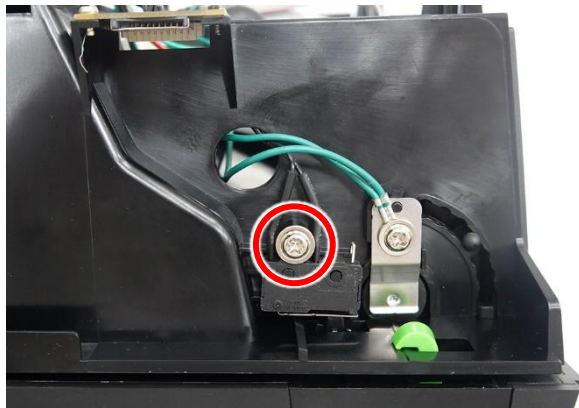
8. Reverse the steps to install the stepping motor.

3.13 Replacing the Head Open Sensor

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the RTC module. For how to remove the RTC module, refer to [Replacing the RTC Module](#).
3. Remove the lower cover. For how to remove the lower cover, refer to [Replacing the Lower Cover](#).
4. Disconnect the head open sensor cable from the main board.



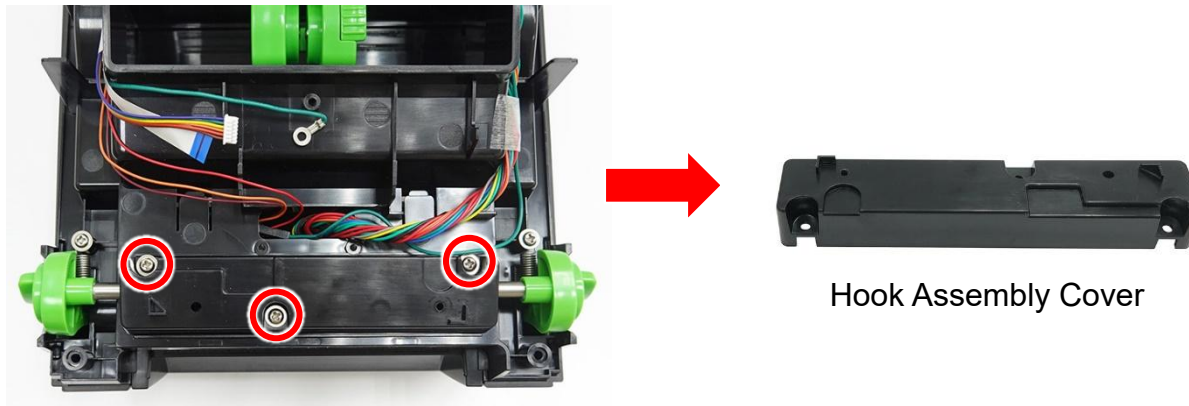
5. Remove the single screw securing the head open sensor in place and then remove the head open sensor.



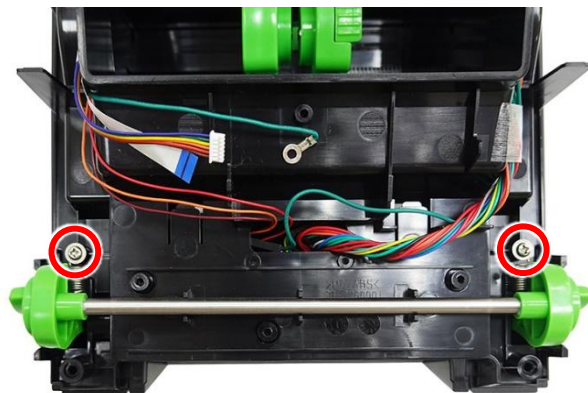
6. Reverse the steps to install the head open sensor.

3.14 Replacing the Hook Assembly

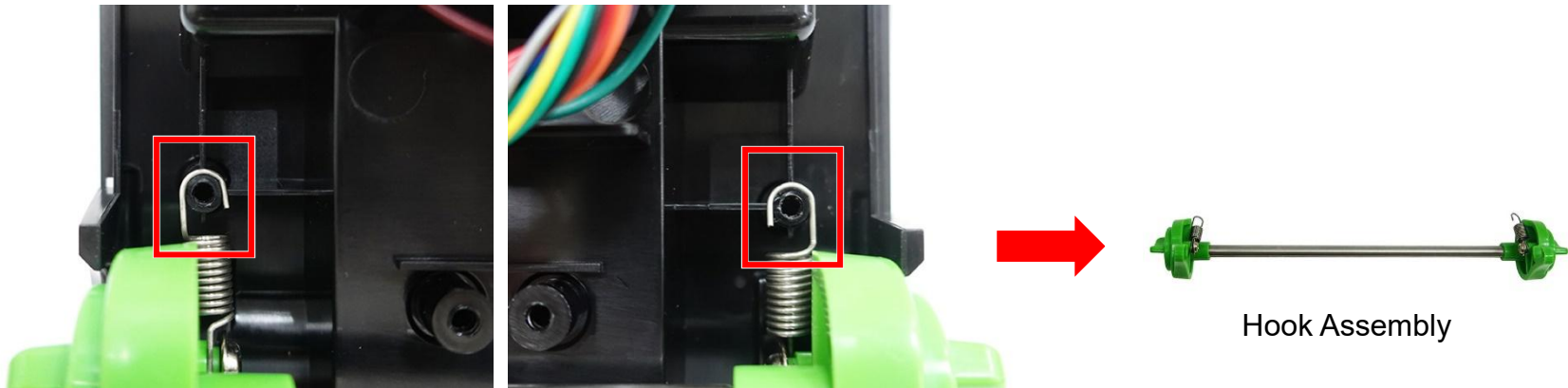
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the top cover. For how to remove the top cover, refer to [Replacing the Top Cover](#).
3. Remove the control panel assembly. For how to remove the control panel assembly, refer to [Replacing the Control Panel Assembly](#).
4. Remove the three screws securing the hook assembly cover in place and then remove the hook assembly cover.



5. Remove the two screws securing the hook assembly in place.



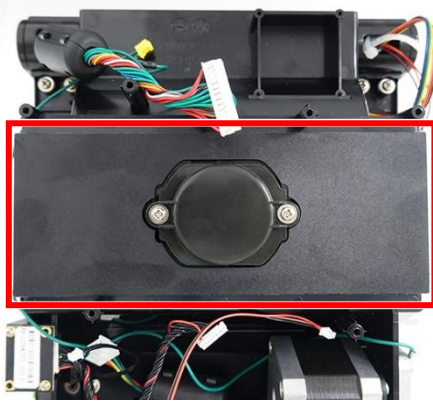
6. Release the two springs from their rib on the chassis and then remove the hook assembly from the printer.



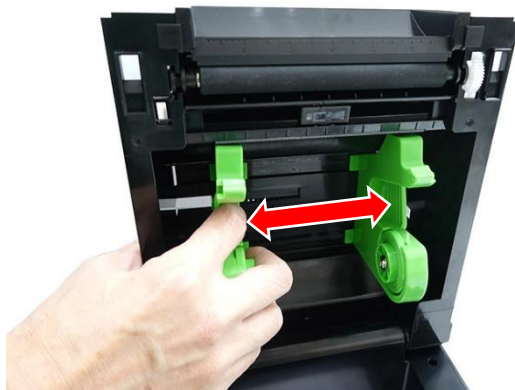
7. Reverse the steps to install the hook assembly.

3.15 Replacing the Media Holder

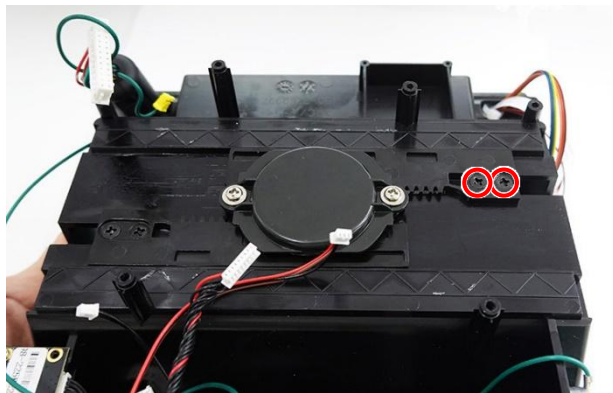
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the RTC module. For how to remove the RTC module, refer to [Replacing the RTC Module](#).
3. Remove the lower cover. For how to remove the lower cover, refer to [Replacing the Lower Cover](#).
4. Remove the main board. For how to remove the main board, refer to [Replacing the Main Board](#).
5. Remove the black mylar from the printer.



6. Pull and hold the right media holder.



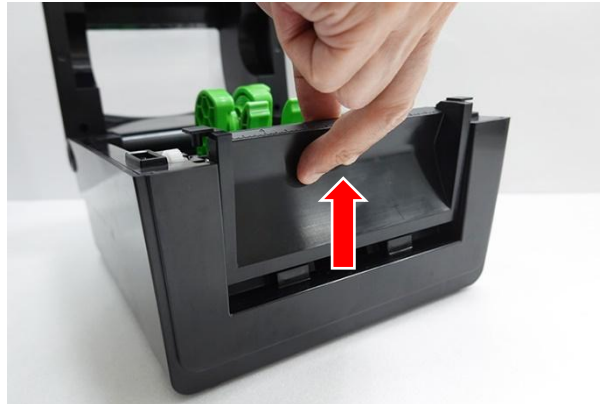
7. Remove the two screws securing the left media holder in place and then remove the left media holder.



8. Reverse the steps to install the left media holder.
9. Repeat the same steps to replace the other media holder if necessary.

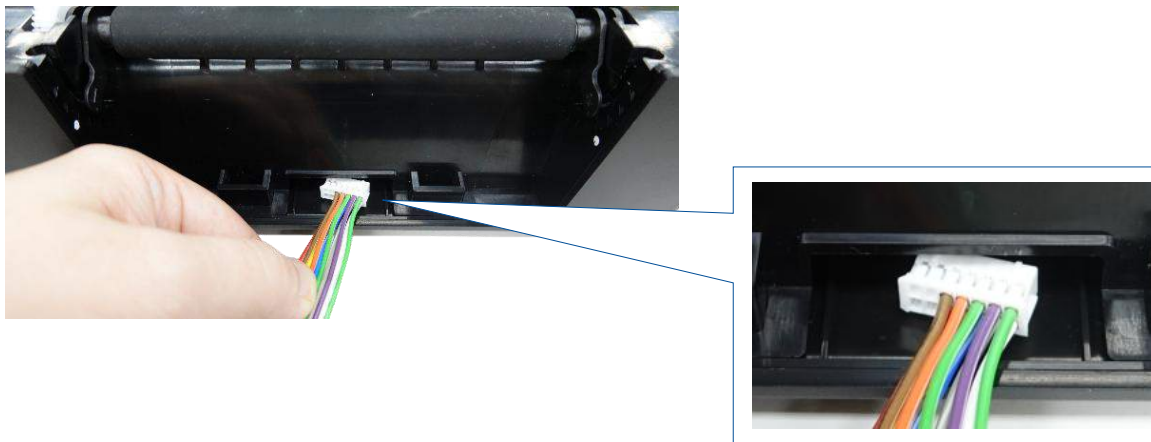
3.16 Installing the Cutter Module

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Open the top cover. For how to open the top cover, refer to [Replacing the Platen Roller Assembly](#).
3. Remove the lower front panel.



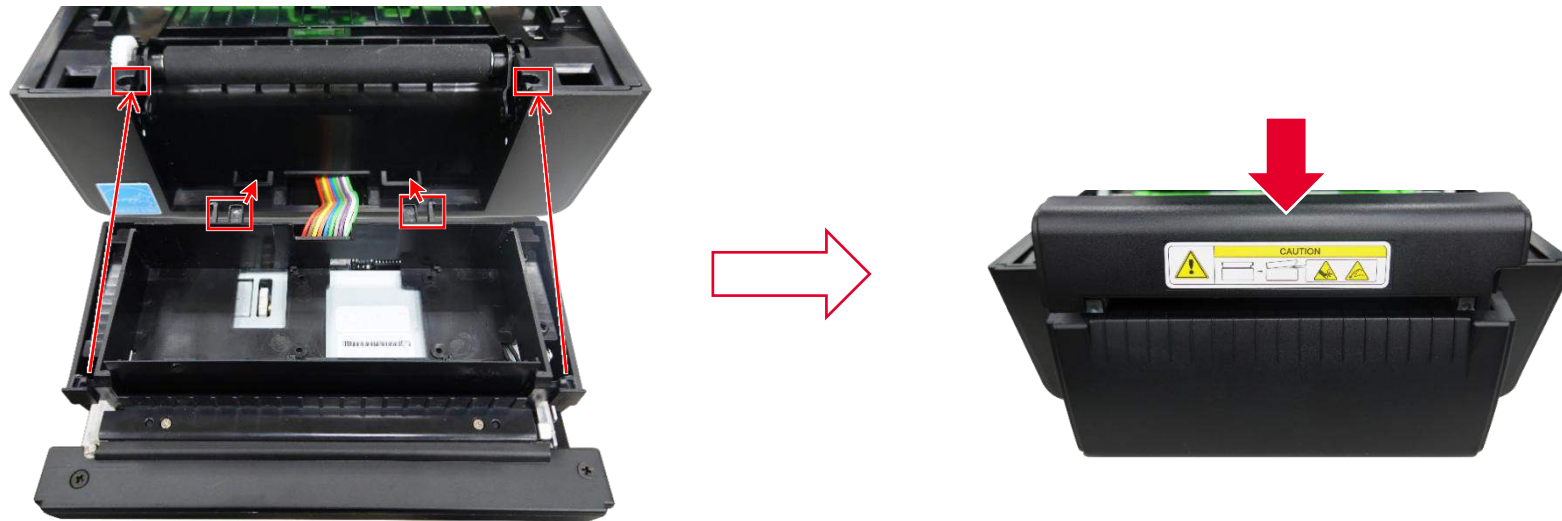
1.

4. Thread the module's cable through the opening on the front side of the printer.

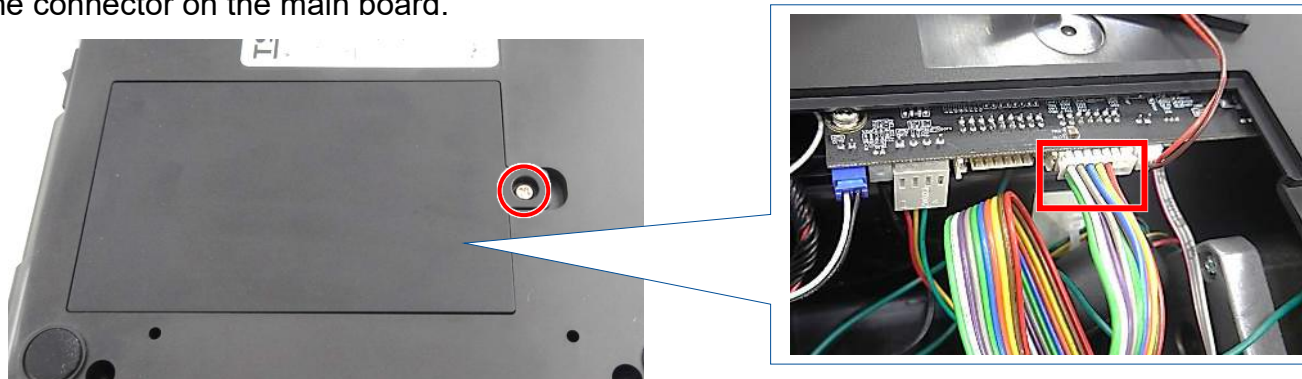


5. Press down to install the module ensuring that the ribs on the module are correctly inserted into the indicated openings.

NOTE: Make sure that the cable is completely threaded through and is not pressed throughout the installation process.



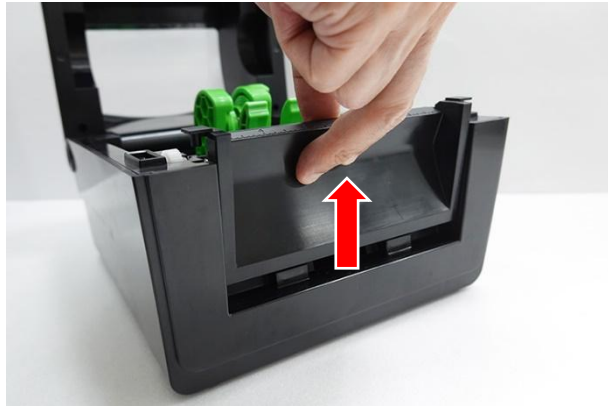
6. Remove the single screw securing the RTC module cover in place and then open the cover. Connect the cutter module's cable to the connector on the main board.



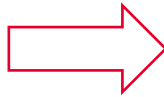
7. Reassemble the RTC module cover and install the single screw to secure the cover in place.

3.17 Installing the Peel-off Module

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Open the top cover. For how to open the top cover, refer to [Replacing the Platen Roller Assembly](#).
3. Remove the lower front panel.



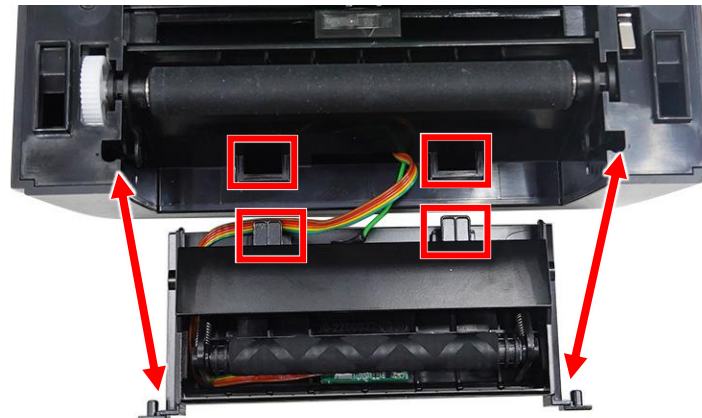
4. Open the peel roller.



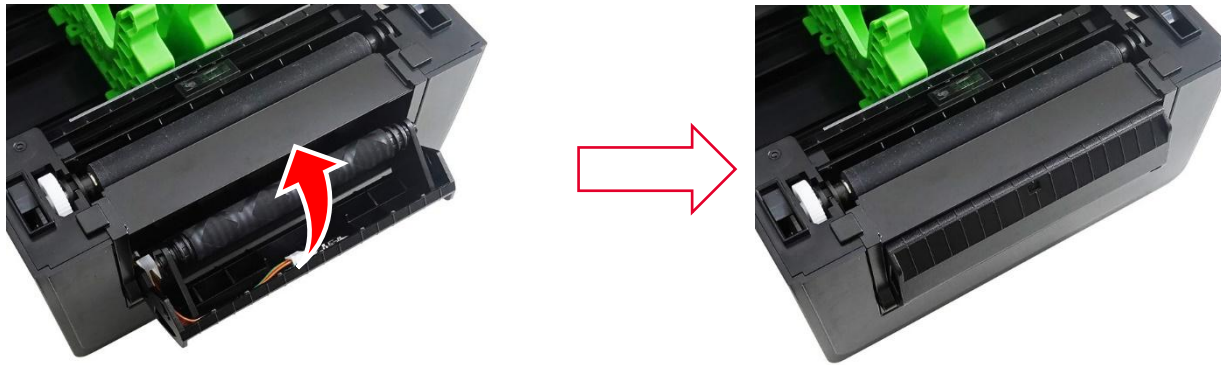
5. Thread the module's cable through the opening on the front side of the printer.



6. Press down to install the module ensuring that the ribs on the module are correctly inserted into the indicated openings.



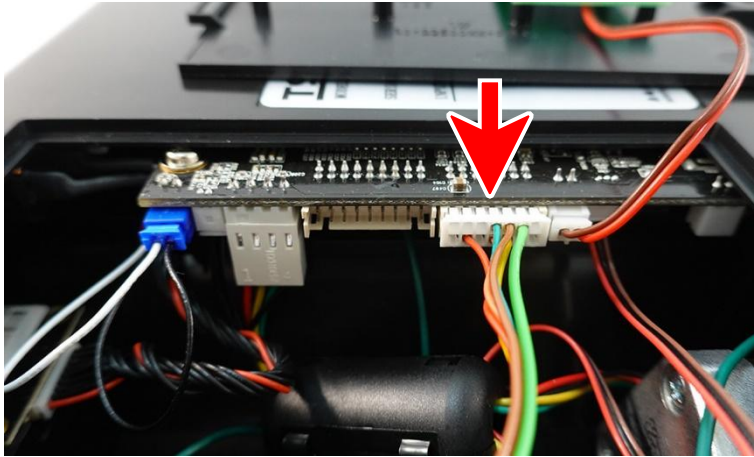
7. Close the peel roller.



8. Remove the single screw securing the RTC module cover in place and then open the cover.

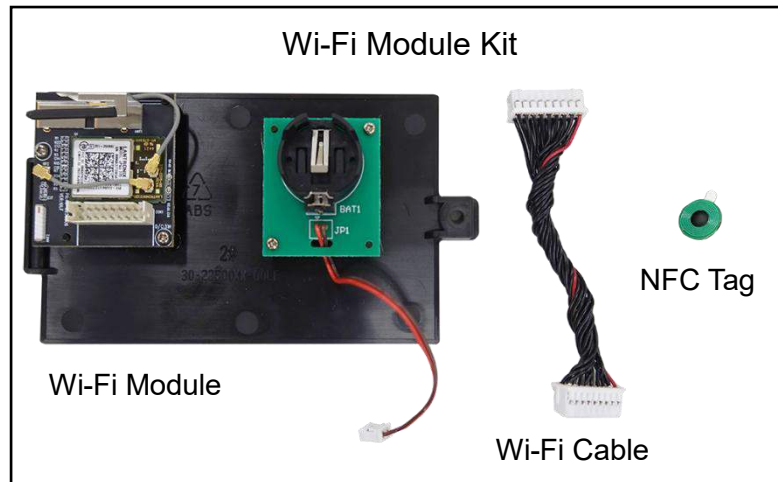


9. Connect the module's cable to the connector on the main board.



10. Reassemble the RTC module cover and install the single screw to secure the cover in place.

3.18 Installing the Wi-Fi / Bluetooth Module



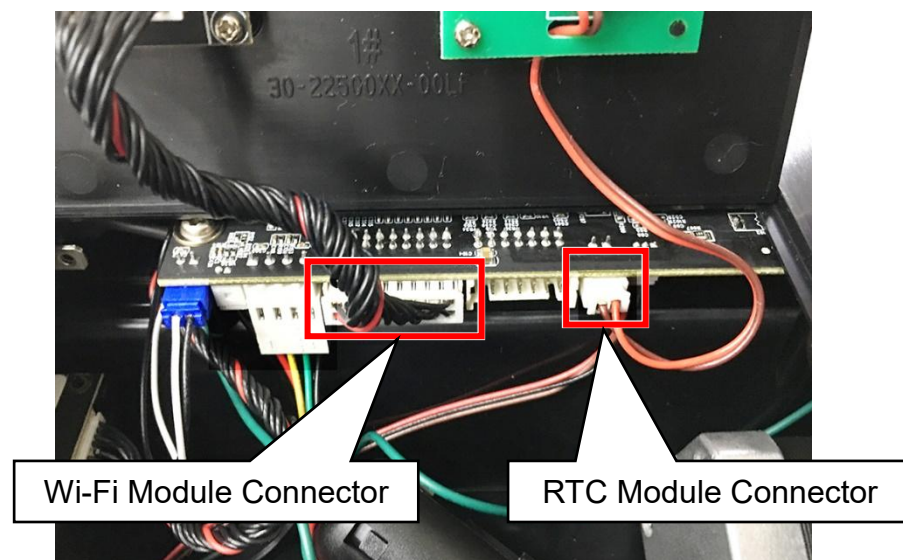
Note: This section demonstrates how to install the Wi-Fi module. The same process is also applicable to the installation of Bluetooth module.

1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Remove the RTC module. For how to remove the RTC module, refer to [Replacing the RTC Module](#).
3. Connect the Wi-Fi cable to the Wi-Fi module and then install the RTC battery on the Wi-Fi module.

Note: The Wi-Fi / Bluetooth module kit you purchase will not come equipped with the RTC battery (CR2032). As a result, the RTC battery **MUST** be transferred to the new Wi-Fi / Bluetooth module. **DO NOT** dispose the RTC battery.



4. Connect the RTC module cable and Wi-Fi module cable to the main board.



5. Install the single screw to secure the Wi-Fi module cover in place.



6. Remove the top cover and then adhere the NFC tag onto the LCD panel bracket as indicated.



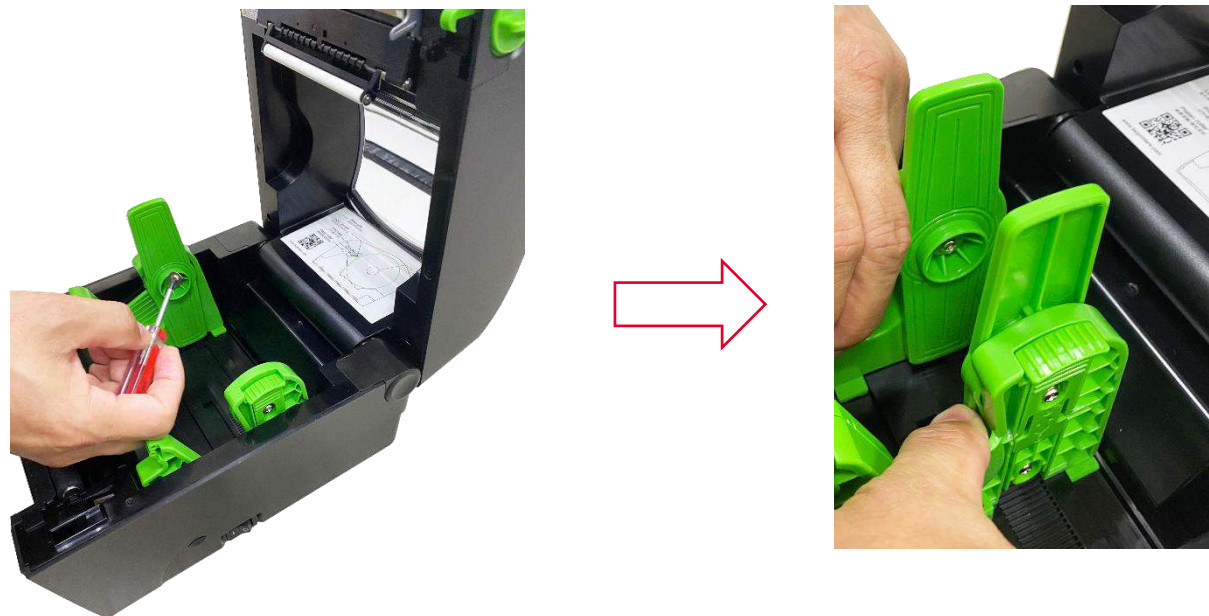
7. Re-install the top cover.
8. Reverse the steps to remove the Wi-Fi module.

3.19 Installing the Narrow Media Adaptor

1. Open the printer's top cover and separate the media holders, then press down the media holder lock switch to fix the media holder. Remove the two screws on media holder as indicated to remove the two 3-inch cores.



2. Install the narrow media cores on both side of media holder as shown.



3. Secure the two narrow media adapters inside the media guide with the two screws. Note that the narrow media adapters have a right and left side.



3.20 Installing the Linerless Cutter Module / Linerless Tear Module

NOTE: This section demonstrates how to install the linerless cutter module. The same process is also applicable to the installation of the linerless tear module.

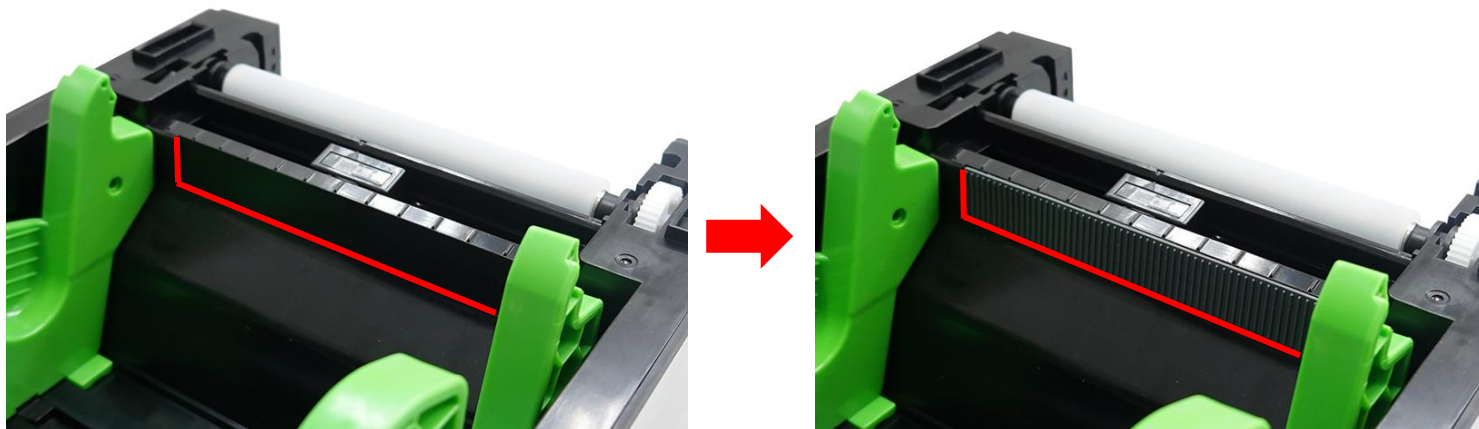
1. Follow the steps in [Before You Begin](#) to prepare the printer.
2. Open the top cover and remove the platen roller assembly. For how to remove the platen roller assembly, refer to [Replacing the Platen Roller Assembly](#).
3. Install the linerless platen roller assembly.



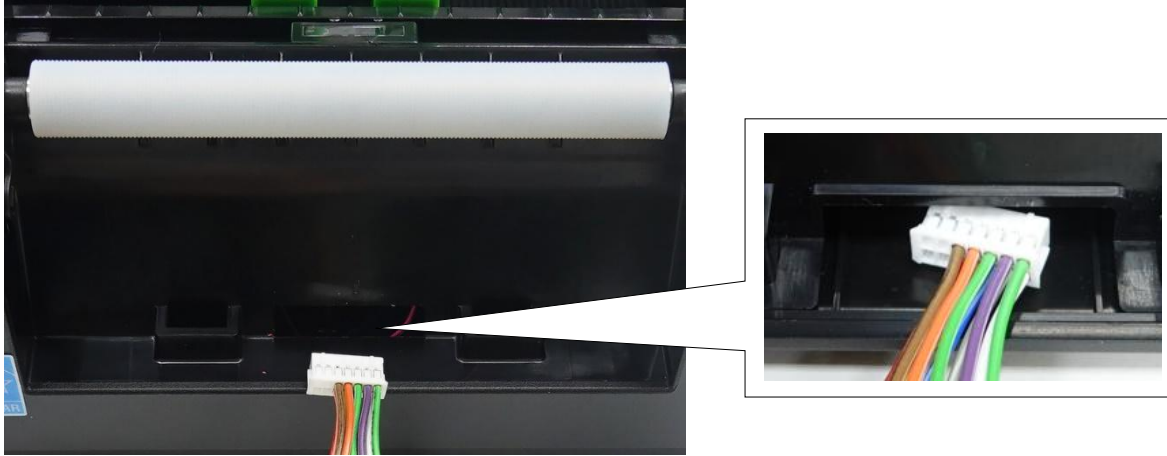
4. Rotate the two tabs for the platen roller assembly in the indicated direction to secure the linerless platen roller assembly in place.



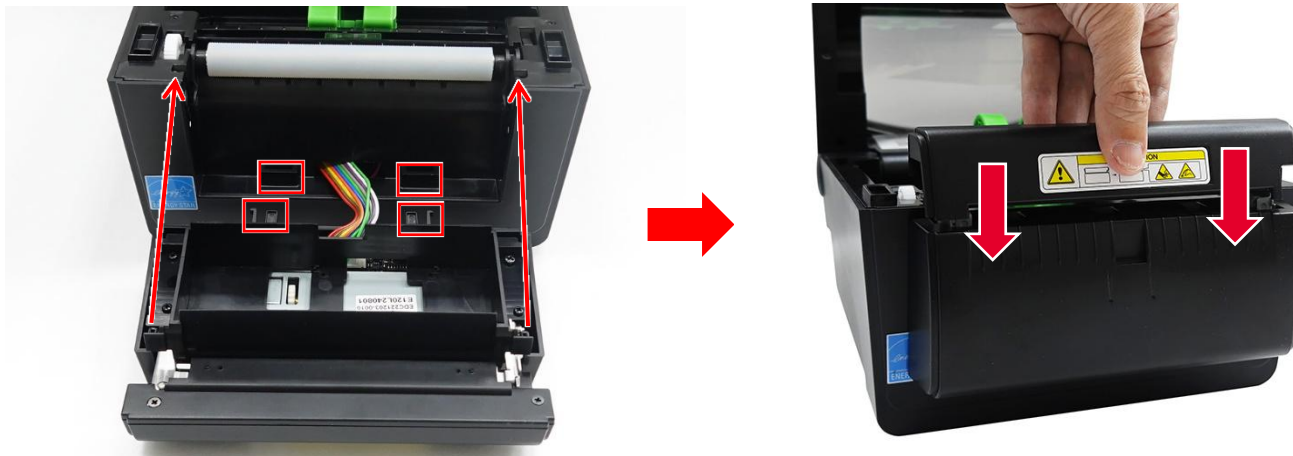
5. Adhere the anti-stick rubber onto the printer ensuring that the anti-stick rubber is aligned with the rib located inside the chassis.



6. Thread the linerless cutter module's cable through the opening on the front side of the printer.



7. Press down to install the linerless cutter module ensuring that the ribs on the module are correctly inserted into the indicated openings.



NOTE: The image below demonstrates the installation of the linerless tear module.

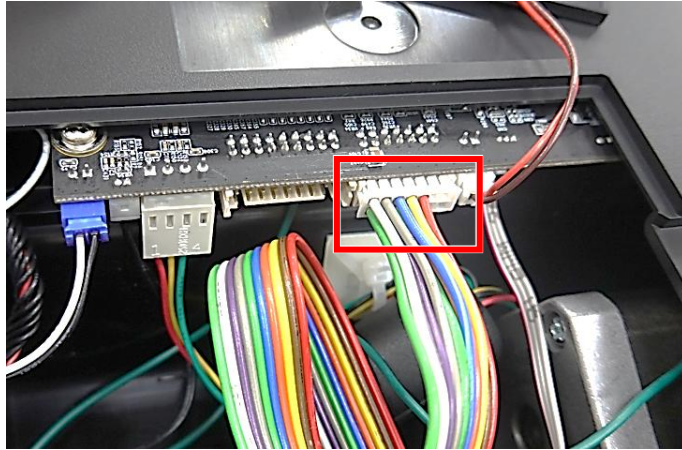


8. Remove the single screw securing the RTC module cover in place and then open the cover.



9. Connect the linerless cutter module's cable to the connector on the main board.

NOTE: When installing the linerless tear module, connect the linerless tear module's cable to the same connector on the main board.



10. Install the label tray onto the linerless cutter module.



Linerless Tear Module

4 Troubleshooting

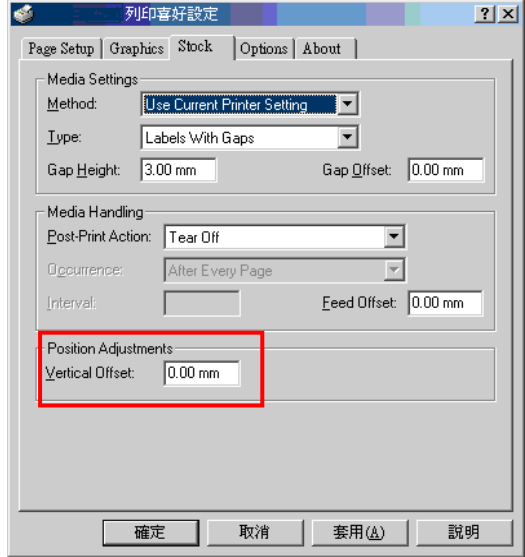
4.1 Common Problems

Problem	Possible Cause	Recovery Procedure
Power indicator/ LCD does not illuminate	The power cord is not properly connected.	• Plug the power cord in printer and outlet. • Switch the printer on.
LED turn on (Carriage Open)	The printer head is open.	Please close the print carriages.
Not Printing	• Check if interface cable is well connected to the interface connector. • Check if wireless or Bluetooth device is well connected between host and printer. • The port specified in the Windows driver is not correct.	• Re-connect cable to interface or change a new cable. • If using serial cable, • Please replace the cable with pin to pin connected. • Check the baud rate setting. The default baud rate setting of printer is 9600,n,8,1. • If using the Ethernet cable, • Check if the Ethernet RJ-45 connector green LED is lit on. • Check if the Ethernet RJ-45 connector amber LED is blinking. • Check if the printer gets the IP address when using DHCP mode. • Check if the IP address is correct when using the static IP address. • Wait a few seconds let the printer get the communication with the server

Problem	Possible Cause	Recovery Procedure
		then check the IP address setting again. • Please reset the wireless device setting. • Select the correct printer port in the driver. • Print head's harness connector is not well connected with printhead. Turn off the printer and plug the connector again. • Check your program if there is a command PRINT at the end of the file and there must have CRLF at the end of each command line.
No print on the label	• Label is not loaded correctly. • Use wrong media type.	• Follow the instructions to reload the media. • The print density setting not correct. • Clean the printhead.
No Paper	• Running out of label. • The label is installed incorrectly. • Gap/black mark sensor is not calibrated.	• Supply a new label roll. • Reinstall the label roll. • Calibrate the gap/black mark sensor.
Paper jam	• Gap/black mark sensor is not set properly. • Make sure label size is set properly. • Labels may be stuck inside the printer mechanism.	• Calibrate the media sensor. • Set media size correctly. • Remove the stuck label inside the printer mechanism.
Can't downloading the file to memory (FLASH / CARD)	The space of memory is full.	Delete unused files in the memory.

Problem	Possible Cause	Recovery Procedure
SD card is unable to use	- SD card is damaged. - SD card doesn't insert correctly. - Use the non-approved SD card manufacturer.	- Use the supported capacity SD card. - Insert the SD card again.
Poor Print Quality	- Media is not loaded correctly. - Dust or adhesive accumulation on the printhead. - Print density is not set properly. - The type of media is not compatible. - Print head element is damaged. - The printhead pressure is not set properly.	- Reload the media. - Clean the printhead. - Clean the platen roller. - Adjust the print density and print speed. - Run printer self-test and check the printhead test pattern if there is dot missing in the pattern. - Use proper media type. - The release lever does not latch the printhead properly.
Missing printing on the left or right side of label	Wrong label size setup.	Set the correct label size.
Gray line on the blank label	- The printhead is dirty. - The platen roller is dirty.	- Clean the printhead. - Clean the platen roller.
Irregular printing	- The printer is in Hex Dump mode. - The RS-232 setting is incorrect.	- Turn off and on the printer to skip the dump mode. - Re-set the Rs-232 setting.
Label feeding is not stable (skew) when printing	The media guides do not touch the edge of the media.	If the label is moving to the right side, please move the label guide to left.

Problem	Possible Cause	Recovery Procedure
		If the label is moving to the left side, please move the label guide to right.
Skip labels when printing	- Label size is not specified properly. - Sensor sensitivity is not set properly. - The media sensor is covered with dust.	- Check if label size is setup correctly. - Calibrate the sensor by Auto Gap or Manual Gap options. - Clear the Gap/Black mark sensor by blower.
Wrinkle problem	- Printhead pressure is incorrect. - Media installation is incorrect. - Print density is incorrect. - Media feeding is incorrect.	- Please set the suitable density to have good print quality. - Make sure the label guides touch the edge of the media guide.
RTC time is incorrect when reboot the printer	The battery has run down.	Check if there is a battery on the main board.
The left side printout position is incorrect	- Wrong label size setup. - The parameter Shift X in printer is incorrect.	Set the correct label size.

Problem	Possible Cause	Recovery Procedure
The printing position of small label is incorrect	- Media sensor sensitivity is not set properly. - Label size is incorrect. - The parameter Shift Y is incorrect. - The vertical offset setting in the driver is incorrect.	- Calibrate the sensor sensitivity again. - Set the correct label size and gap size. - Enter LCD menu (or via TSC Console) to fine tune the parameter of Shift Y. - If using the software BarTender, please set the vertical offset in the driver. 

5 Maintenance

This session presents the clean tools and methods to maintain the printer.

■ For Cleaning

Depending on the media used, the printer may accumulate residues (media dust, adhesives, etc.) as a by-product of normal printing. To maintain the best printing quality, you should remove these residues by cleaning the printer periodically. Regularly clean the printhead and supply sensors once change a new media to keep the printer at the optimized performance and extend printer life.

■ For Disinfecting

Sanitize your printer to protect yourself and others and can help prevent the spread of viruses.

■ Important

- Set the printer power switch to O (Off) prior to performing any cleaning or disinfecting tasks. Leave the power cord connected to keep the printer grounded and to reduce the risk of electrostatic damage.
- Do not wear rings or other metallic objects while cleaning any interior area of the printer.
- Use only the cleaning agents recommended in this document. Use of other agents may damage the printer and void its warranty.
- Do not spray or drip liquid cleaning solutions directly into the printer. Apply the solution on a clean lint-free cloth and then apply the dampened cloth to the printer.
- Do not use canned air in the interior of the printer as it can blow dust and debris onto sensors and other critical components.
- Only use a vacuum cleaner with a nozzle and hose that are conductive and grounded to drain off static build up.
- All reference in these procedures for use of isopropyl alcohol requires that a 99% or greater isopropyl alcohol content be used to reduce the risk of moisture corrosion to the printhead.
- Do not touch printhead by hand. If you touch it careless, please use 99% Isopropyl alcohol to clean it.
- Always taking personal precaution when using any cleaning agent.

5.1 Cleaning Supplies

- Cotton swab
- Lint-free cloth
- Brush with soft non-metallic bristles
- Vacuum cleaner
- 75% Ethanol (for disinfecting)
- 99% Isopropyl alcohol (for printhead and platen roller cleaning)
- Genuine printhead cleaning pen
- Mild detergent (without chlorine)

5.2 Cleaning Procedures

Component	Method	Recommended Cleaning Schedule
Printhead	1. Power off the printer before cleaning the printhead. 2. Leave the printhead to cool down for at least one minute. 3. Wet a cotton swab with the 99% Isopropyl alcohol and then wipe across the printhead head. You can also use the genuine printhead cleaning pen to clean the printhead.	Clean the printhead when you load new media.
Platen Roller	1. Power off the printer. 2. Use a piece of 99% Isopropyl alcohol saturated lint-free cloth to wipe the platen roller while rotating the platen roller.	Clean the platen roller when you load new media.
Peel Bar	Use a piece of 99% Isopropyl alcohol saturated lint-free cloth to wipe the peel bar.	Clean as needed.
Sensor	Use the brush with soft and non-metallic bristles or vacuum cleaner to remove the dust or particles in order to optimize the print quality or sensor calibration.	Clean the sensor monthly.
Exterior	Use a piece of water-dampened lint-free cloth to wipe the surface. If necessary, you can apply the chlorine free detergent. After finishing cleaning, use the 75% ethanol to disinfect the surface.	Clean as needed.
Interior	Use the brush with soft and non-metallic bristles or vacuum cleaner to remove the dust or particles. After finishing cleaning, use the 75% ethanol to disinfect the interior.	Clean as needed.
Linerless Printer	Please refer to Linerless Cleaning Kit User Manual for more information. 	• Clean as needed or after printing every 1 km. • Please determine the maintenance intervals based on actual usage.

Revision History

Date	Content	Editor
2023/09/06	Added the “Installing the Narrow Media Adapter” section.	Peter Yao
2023/09/08	▪ Added the “Installing the Cutter Module” section. ▪ Replaced the images for the “Installing the Peel-off Module” section.	Peter Yao
2023/09/21	Add the “Installing the Linerless Cutter Module / Linerless Tear Module” section.	Peter Yao
2023/10/16	First draft.	Peter Yao
2023/11/15	Official release in new format.	Peter Yao
2024/03/21	Added information about how to clean a linerless printer, page 69.	Peter Yao
2025/10/23	Add liability statements Update "Printer Features" section for adding DH240 series model info. Update "Replacing the Control Panel Assembly" for adding LED version info.	Camille Pao



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