

DA200/ DA300 Series

THERMAL TRANSFER / DIRECT THERMAL BAR CODE PRINTER

SERVICE MANUAL

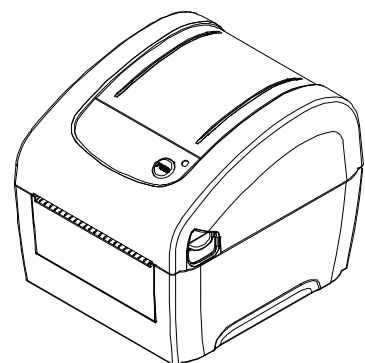


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1. OVERVIEW

1.1 Front View



1.2 Interior View

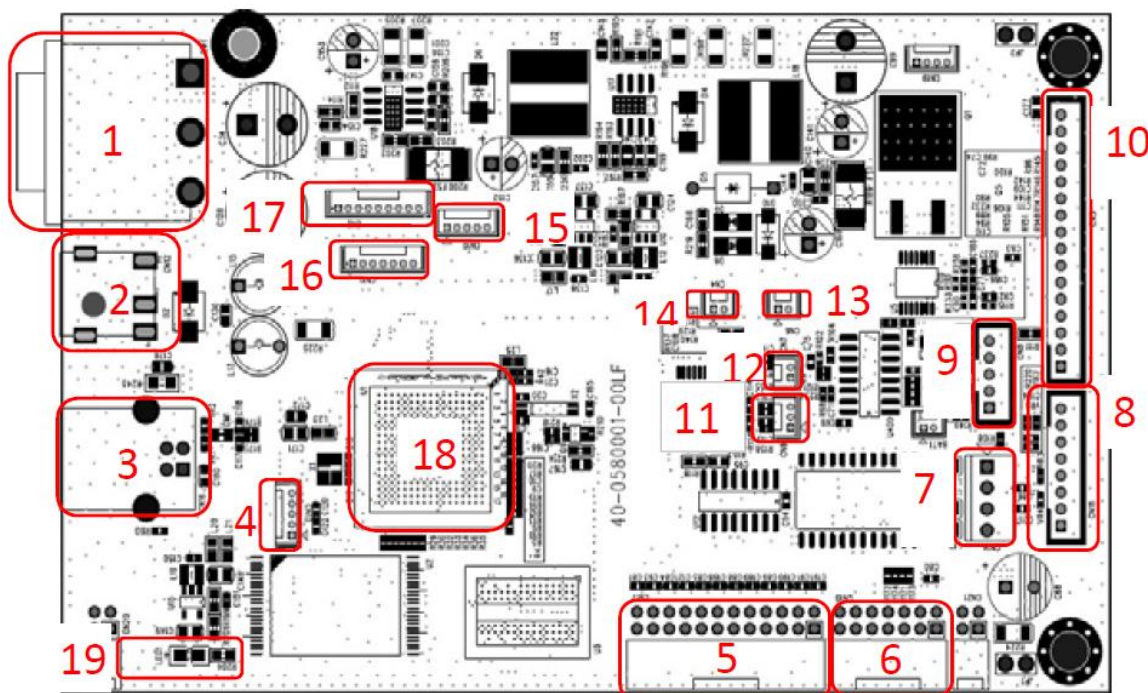


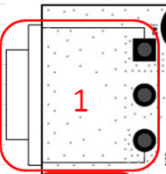
- 1. Print head
- 2. Gap sensor (transmitter)
- 3. Media viewer
- 4. Media holder
- 5. Platen roller
- 6. Media holder lock switch
- 7. Black mark sensor/ Gap sensor (receiver)

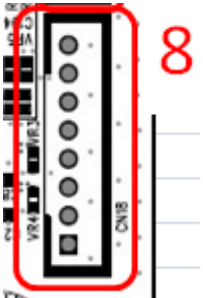
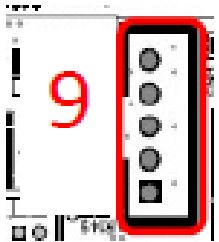
2. ELECTRONICS

2.1 Summary of Board Connectors

Main board



Connector	Description
1	ON OFF  Power switch
2	Power supply output (24V DC) connector/ 24V DC IN
3	USB device connector/ Connected to PC via USB Cable
4	USB host connector Pin 5 Pin 4 Pin 3 Pin 2 Pin 1 DGND D+ D- DGND FGND 

5	10/100 Mbps Ethernet bridge connector	
6	UART bridge connector	
7	Stepping motor connector	
8	Cutter connector Pin 8 N.C Pin 7 5V Pin 6 DGND Pin 5 Cutter position sensor switch, 0V: Cutter stop, 3.3V: Cutter work Pin 4 Cutter enable, 0V: Cutter work, 5V: Cutter stop Pin 3 Cutter direction, 0V: Cutter positive cut, 5V: Cutter negative cut Pin 2 AGND Pin 1 24V	
9	Peel-off connector Pin 5 Peel power, 3.3V Pin 4 Peel switch, 0 ~ 3.3V Pin 3 Peel enable, 0V: Peel work, 3.3V: Peel stop Pin 2 Peel sensor receiver, A/D: 0~3.3V Pin 1 DGND	
10	Print head connector	
11	BM sensor connector Pin 3 Power, 3.3V Pin 2 Black mark sensor emitter, Emitter on : 2.1~2.3V, Emitter off: 2.6~2.8V Pin 1 Gap and black mark sensor receiver, A/D: 0~3.3V	
12	Gap sensor connector Pin 2 Power, 3.3V Pin 1 Gap sensor emitter, Emitter on : 2.1~2.3V, Emitter off: 2.6~2.8V	
13	Head open sensor connector Pin 2 Head open sensor, 0V: Head close, 3.3V: Head open Pin 1 DGND	
14	Stepping motor temp. protector	
15	Power LED / FEED button connector	
16	RFID module connector	

DA200/ DA300

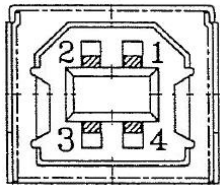
Bar Code Printer Service Manual



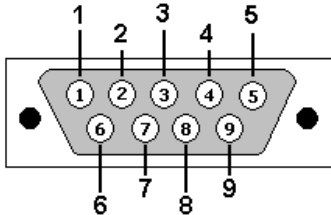
17	Emergency recovery memory connector
18	Micro processor
19	Power indicator(Orange LED)

2.2 Pin Configuration

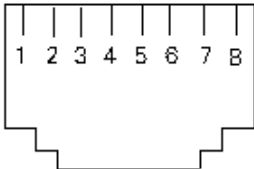
USB Device

	PIN	CONFIGURATION
	1	N/C
	2	D-
	3	D+
	4	GND

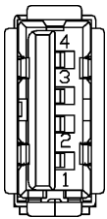
RS-232C(Optional)

	PIN	CONFIGURATION
	1	+5 V
	2	TXD
	3	RXD
	4	CTS
	5	GND
	6	RTS
	7	N/C
	8	RTS
	9	N/C

Ethernet(Optional)

	PIN	CONFIGURATION
	1	Tx+
	2	Tx-
	3	Rx+
	4	N/C
	5	N/C
	6	Rx-
	7	N/C
	8	N/C

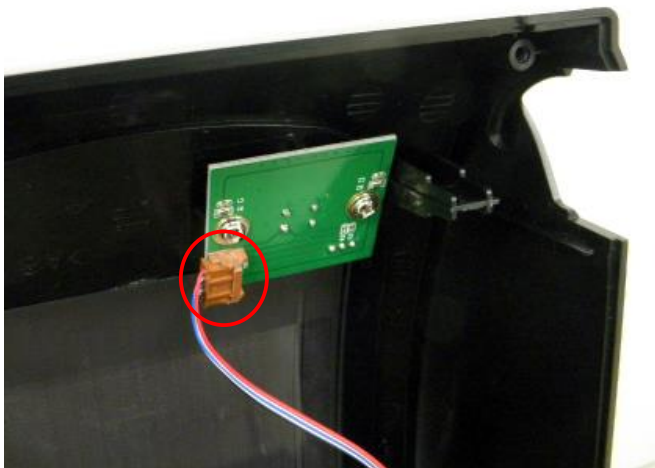
USB Host(Optional)

	PIN	CONFIGURATION
	1	5V
	2	D-
	3	D+
	4	GND

3. MECHANISM

Please turn off the power switch and unplug the power adapter before replacing parts.

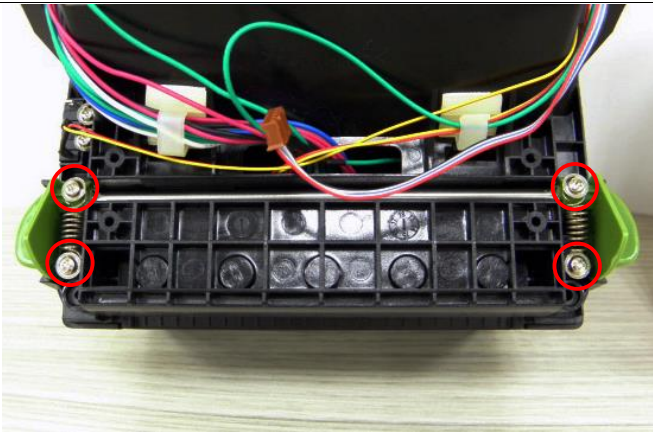
3.1 Replacing the Top Cover Assembly

	1. Open the printer top cover by pressing up the top cover open tabs located on each side of the printer and lifting the top cover to the maximum open angle. 2. Remove 4 screws on the lower inner cover.
	3. Disconnect the connector on key pad assembly.



4. Remove/Replace the top cover assembly (including key pad assembly).
5. Reassemble the parts in the reverse procedure.

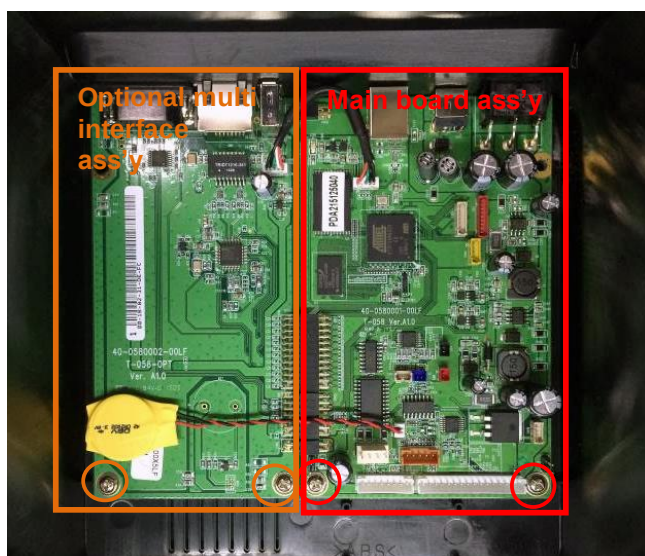
3.2 Replacing the Top Cover Open Lever Assembly

	1. Please refer to section 3.1 to remove the top cover. 
	2. Remove 4 screws on as picture shown on the levers. 3. Take out 2 springs. 4. Remove/Replace the top cover open lever assembly. 5. Reassemble the parts in the reverse procedure.

3.3 Replacing the Main Board Assembly



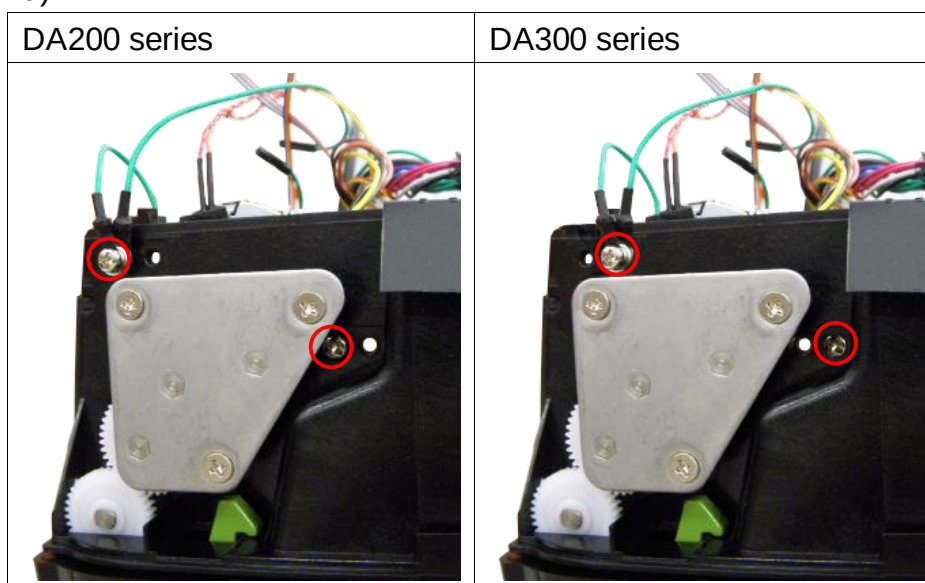
1. Remove 4 screws on the printer lower cover.
2. Disconnect all connectors on the main board.



3. Remove 2 screws to replace the main board assembly. If you have optional multi interface board assembly, remove 4 screws to replace it.
4. Reassemble the parts in the reverse procedure.

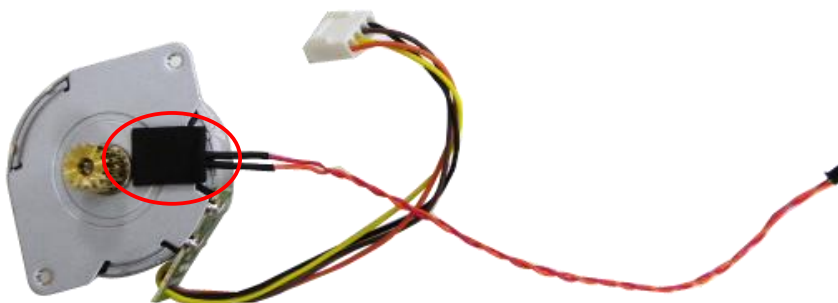
3.4 Replacing the Stepping Motor Module

1. Please refer to the section 3.3 to remove the lower cover.
2. Remove 2 screws as shown. Please note that the screwed positions of 203 dpi and 300 dpi are different. (The gear driver system of 203 dpi and 300 dpi is different.)

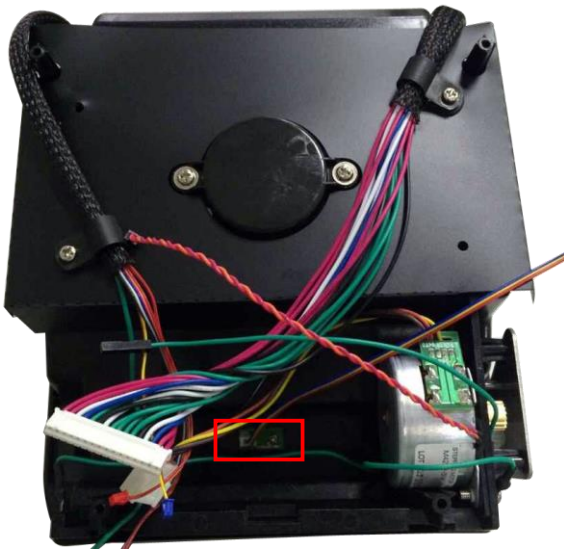


3. Remove broken stepping motor.
Take off the thermal sensor module.

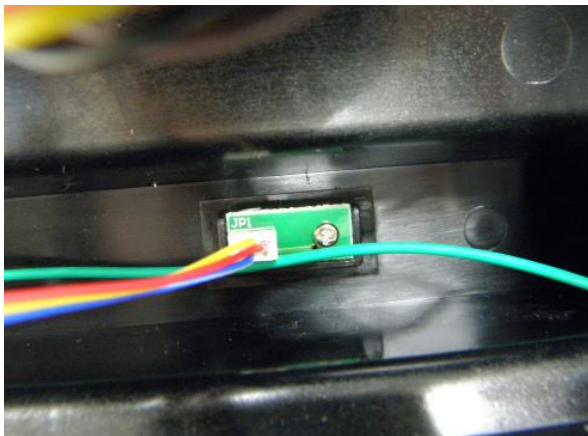
4. Install the thermal sensor module to new stepping motor. Reassemble the parts in the reverse procedure.



3.5 Replacing the Black-mark Sensor Module

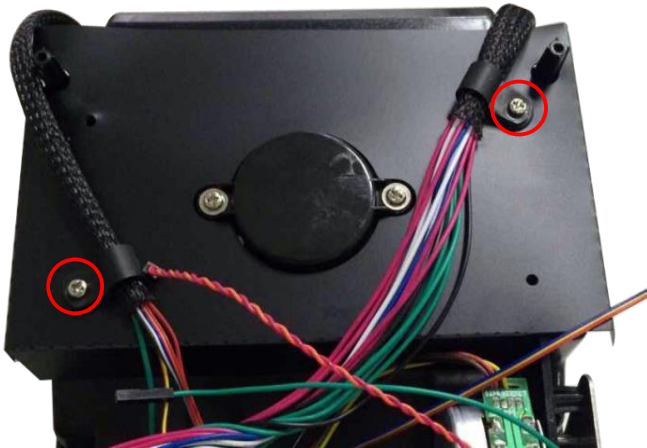


1. Please refer to the section 3.3 to remove the lower cover.



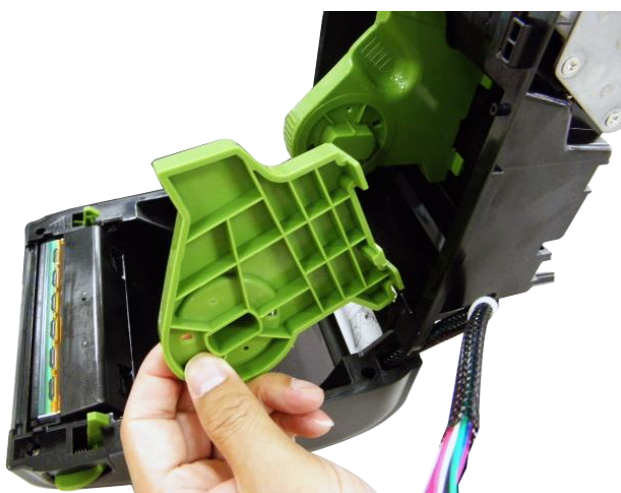
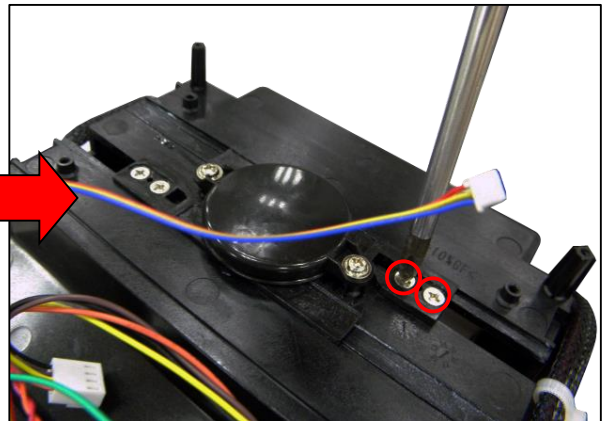
2. Remove 1 screw and 1 connector to replace the black-mark sensor board.
3. Reassemble the parts in the reverse procedure.

3.6 Replacing the Media Holder Assembly



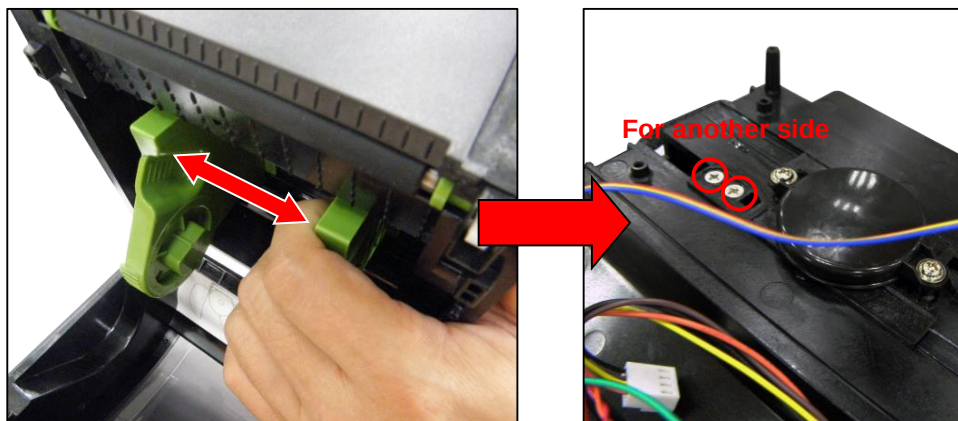
1. Please refer to the section 3.3 to remove the lower cover.
2. Remove 2 screws to take off the black mylar.

3. Separate the media holders to the remove 2 screws on 1 side of media holder.



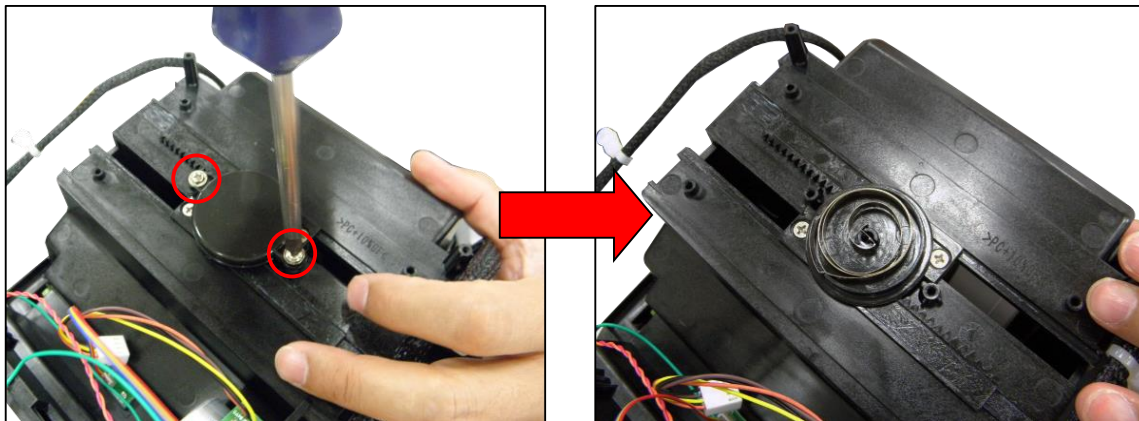
4. Replace 1 side of media holder.

5. Then, use the same steps to replace another side for replacing media holder assembly. Reassemble the parts in the reverse procedure.

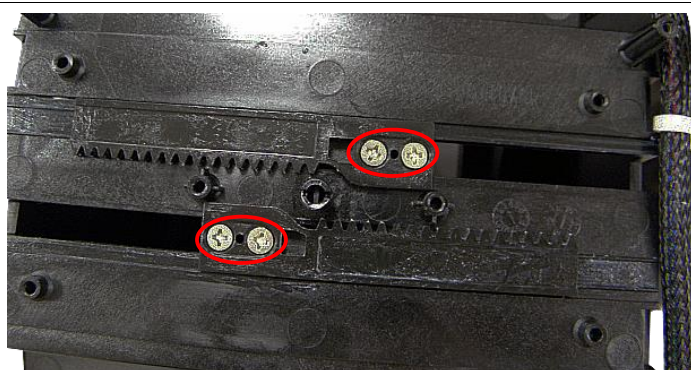
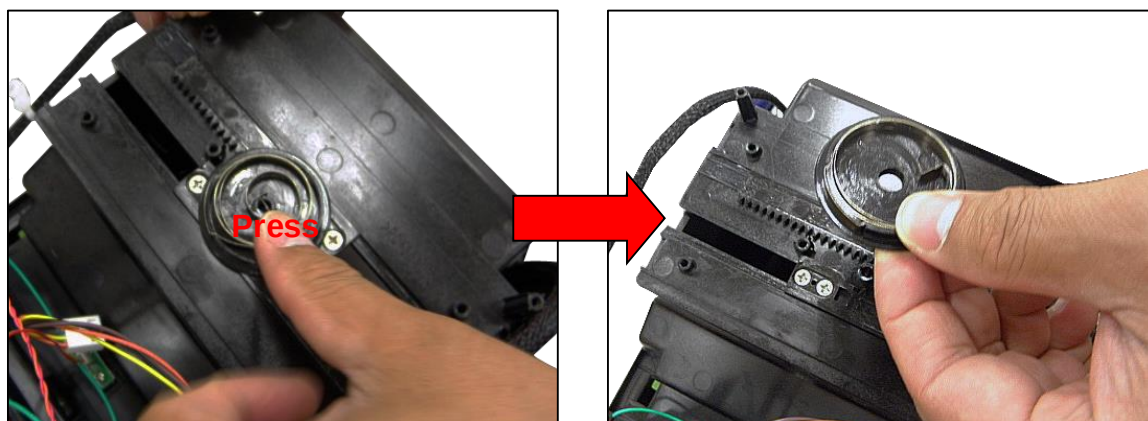


3.7 Replacing the Media Holder Base Assembly

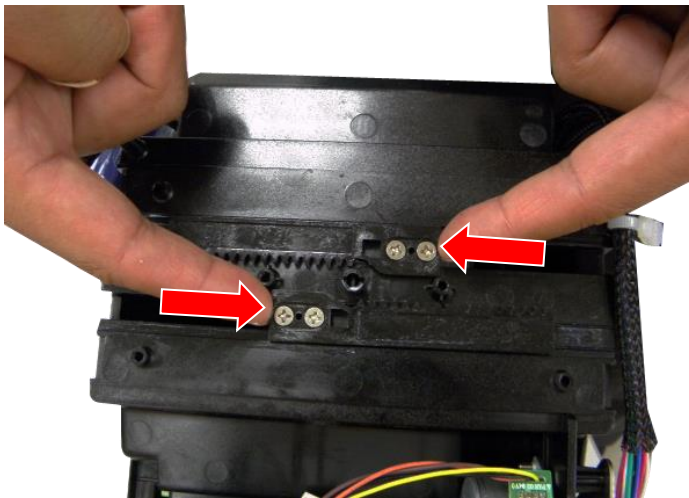
1. Please refer to the section 3.6 to remove the lower cover and black mylar.
2. Remove 2 screws to take off the upper circle cover as shown.



3. Press the spiral spring then take off lower circle cover. The spiral spring will be loosed in the cover.



4. Remove 4 screws to replace the media holder base assembly.



5. Push the media holder base assembly to the end for installing the spiral sprint assembly back.

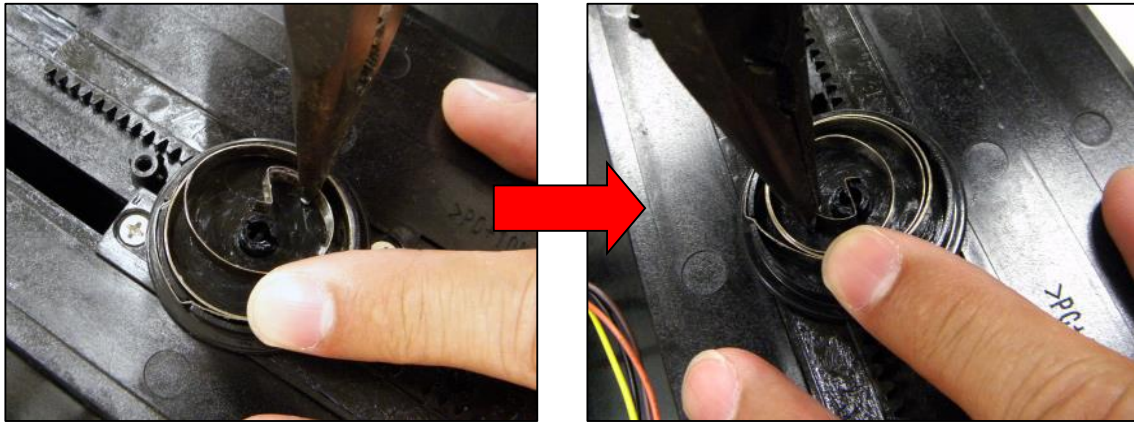


6. Install the lower cover that including spiral sprint.

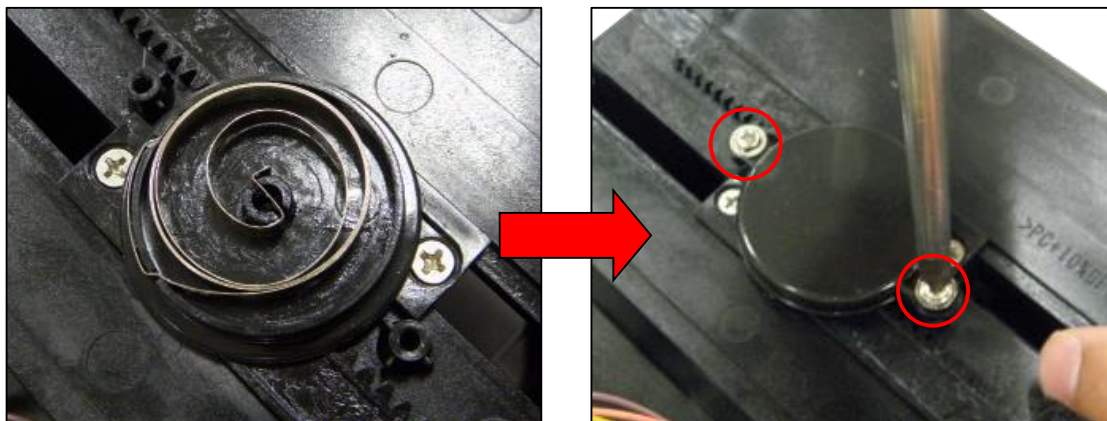
7. Please make sure the lower cover has been installed into the media holder base.



8. Use needle-nose pliers to install the spiral spring back.

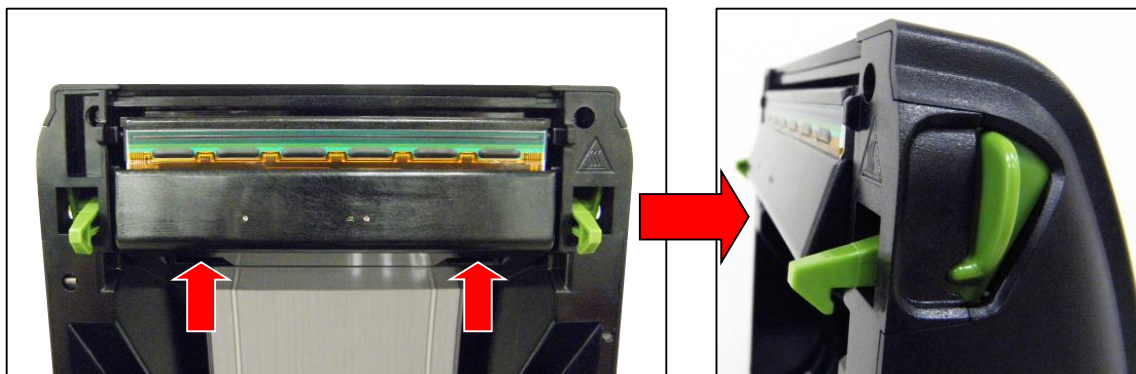


9. Screw 2 screws to replace the upper cover of spiral spring assembly. Reassemble the parts in the reverse procedure.

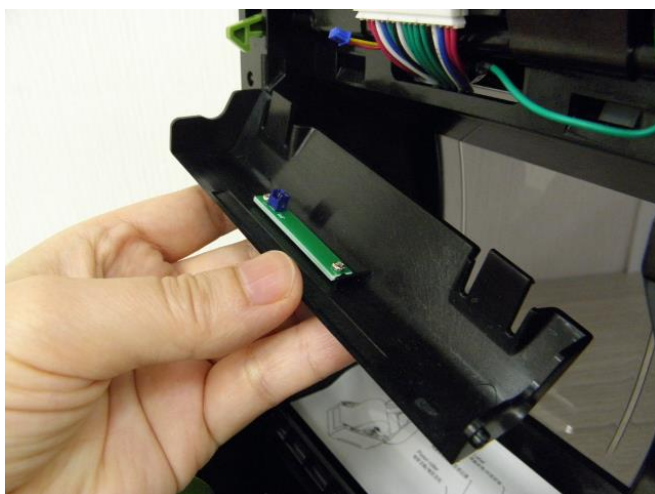


3.8 Replacing the Printhead Module

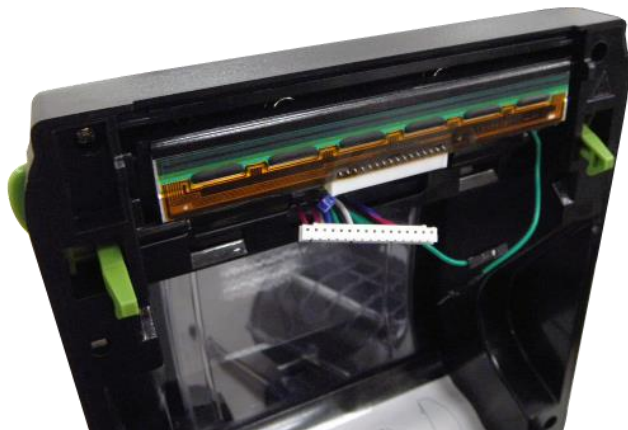
1. Press tabs of gap sensor cover to release from the printer. Please DON'T let cover to press the printhead module.



2. Drop down the cover as picture (O) shown. The cover CANNOT press the printhead module.



3. Disconnect the gap sensor connector to remove the cover.



4. Disconnect the printhead harness and the ground cable connector.



5. Peel off the printhead module (with fixing cover). Please DON'T just peel the connector.

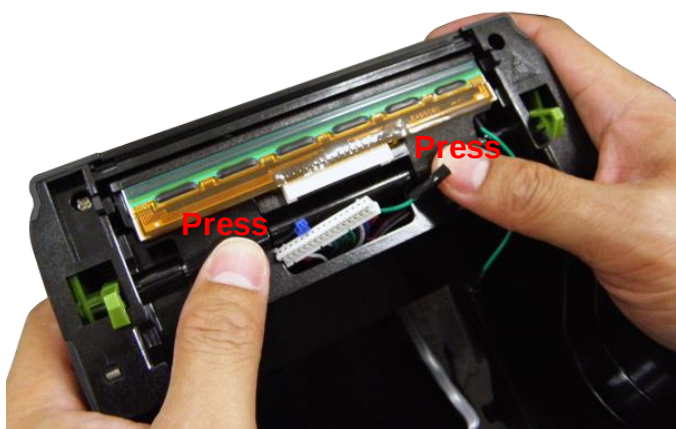
6. Press one side of the printhead module then drop down it to remove/replace it.





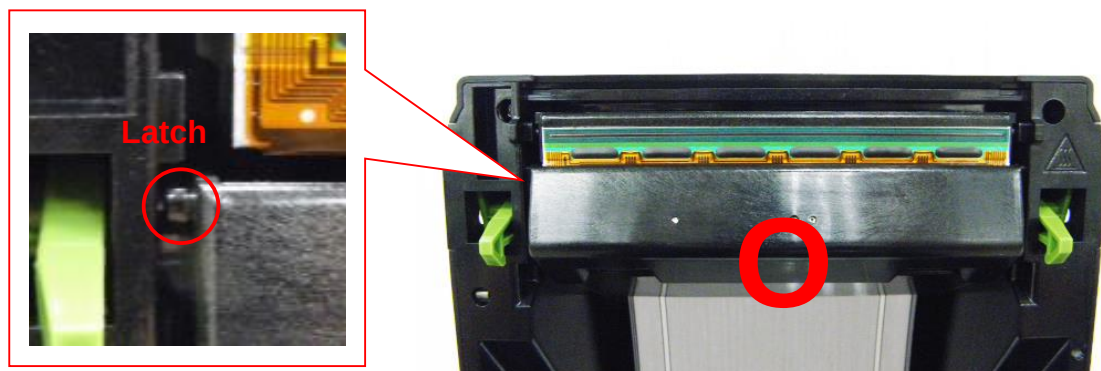
7. Install back 2 springs onto the new printhead module.

8. Pressing both sides of new printhead module let latches into the printer inner cover. Then lift up them, let latches into the socket.



9. Press down both tabs of printhead fixing cover into the printer inner cover.
10. Connect the printhead harness and ground cable.

11. Lift up both latches of gap sensor cover into the printer inner cover. (you can press the center of the printhead module for installing the cover easily) Please note that the gap sensor cover CANNOT press the printhead module.



The gap sensor cover should cover about 1/2 printhead.



12. Press back the gap sensor cover tabs into the socket.

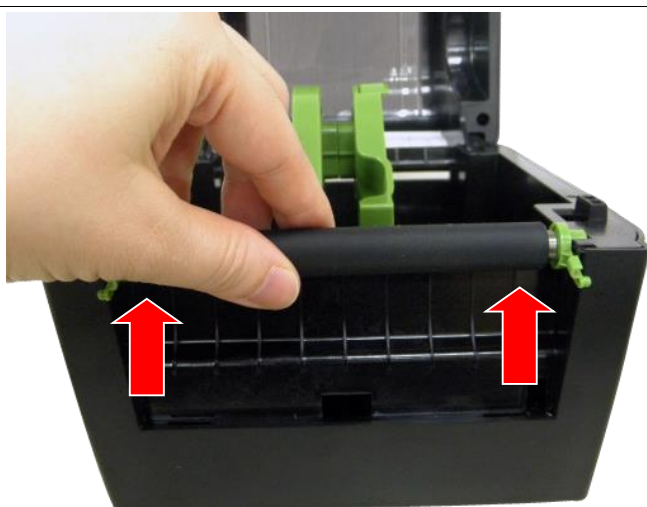
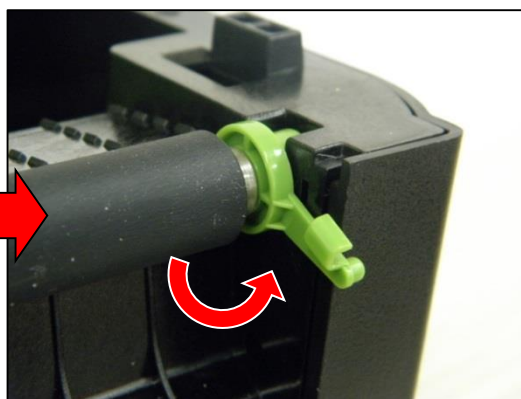


3.9 Replacing the Platen Roller assembly



1. Open the printer top cover by pressing up the top cover open tabs located on each side of the printer.
2. Remove the lower front panel.

3. Disengage the platen holder tabs by pulling out the right side and left side tabs. Rotate the tabs into the forward position. (see picture below)



4. Take out the platen roller assembly to replace. Reassemble the parts in the reverse procedure.



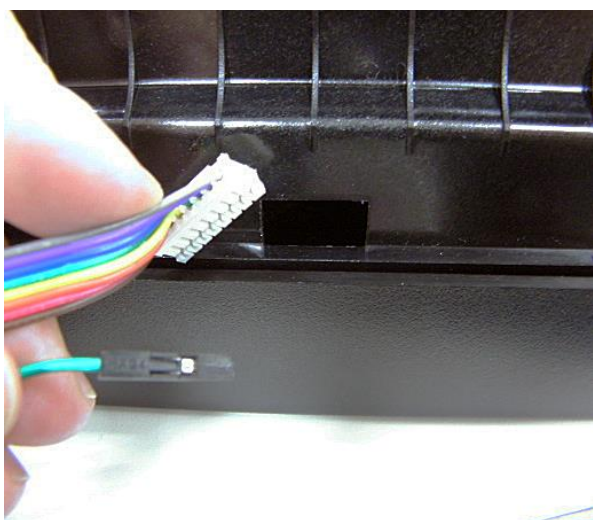
3.10 Cutter Module Installation (Option)



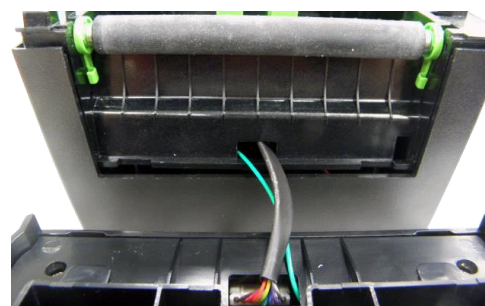
1. Open the printer top cover by pressing up the top cover open tabs located on each side of the printer.
2. Remove the lower front panel.

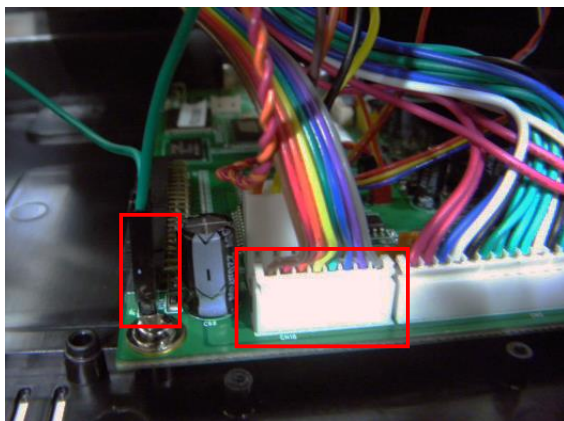


3. Remove 4 screws on the printer lower cover.



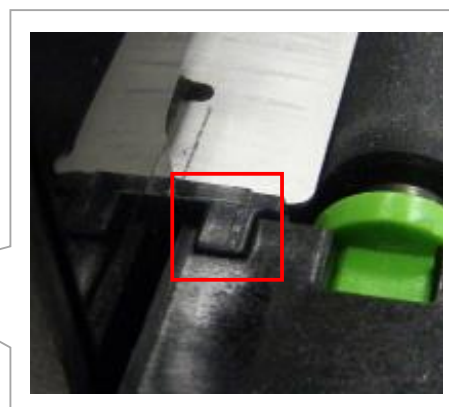
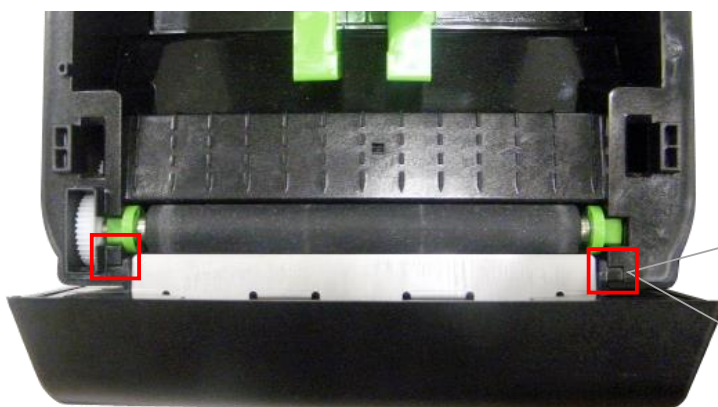
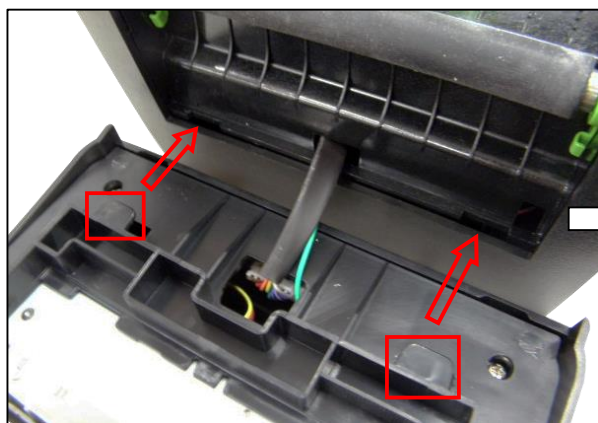
4. Thread the cutter module 8-pin harness and ground cable through the front slot of lower inner cover.





5. Connect the cutter module harness connector (8-pin white socket) and ground cable on the printer main board.
6. Fasten 4 screws back on the printer lower cover.

7. Place the cutter module into the both sides of notches on lower inner printer. Then push the cutter module to lock into the lower front printer. (see picture below)



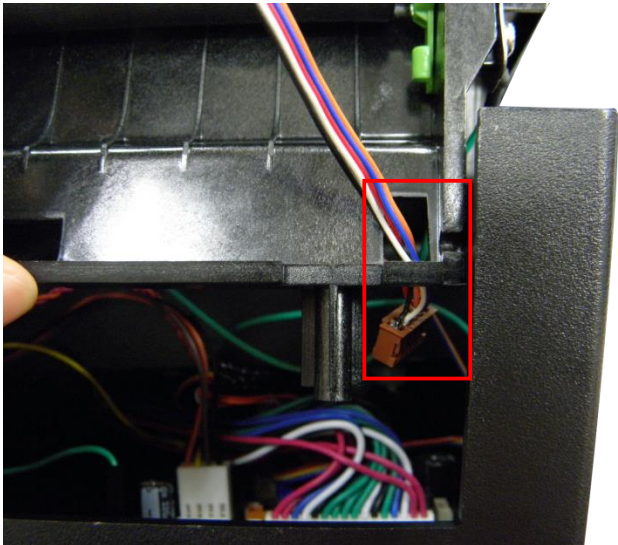
8. The cutter module is ready to use.

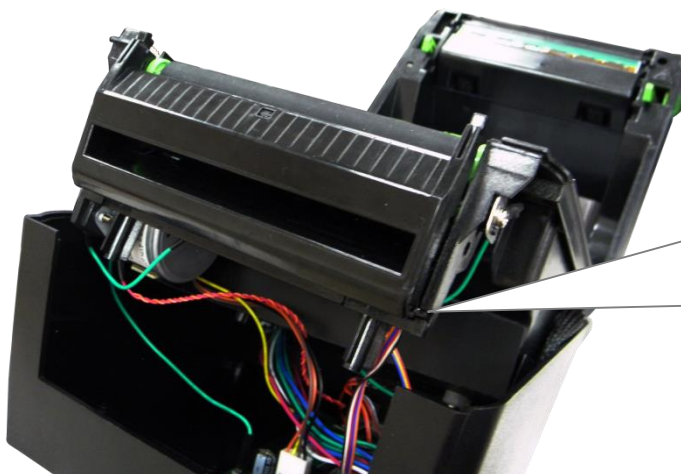


Note:

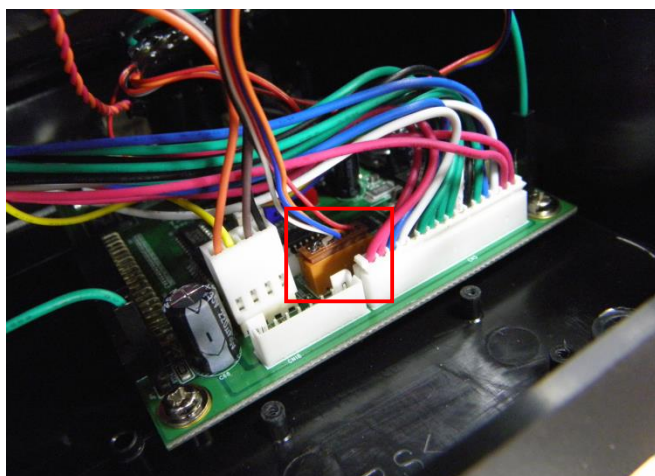
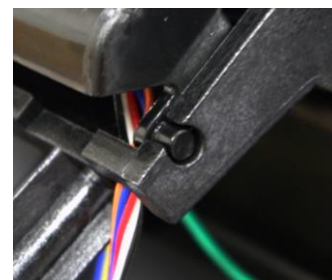
* All regular/ heavy duty/ care label cutters DO NOT cut on media with glue. For more details, please refer to the cutter specification in the user's manual.

3.11 Peel-off Module Installation (Option)

	1. Open the printer top cover by pressing up the top cover open tabs located on each side of the printer. 2. Remove the lower front panel.
	3. Remove 4 screws on the printer lower cover.
	4. Thread the peel-off module 5-pin harness through the front slot of lower inner cover.



5. Embed the tenons into the both sides mortise of lower inner cover and close the peel-off cover.

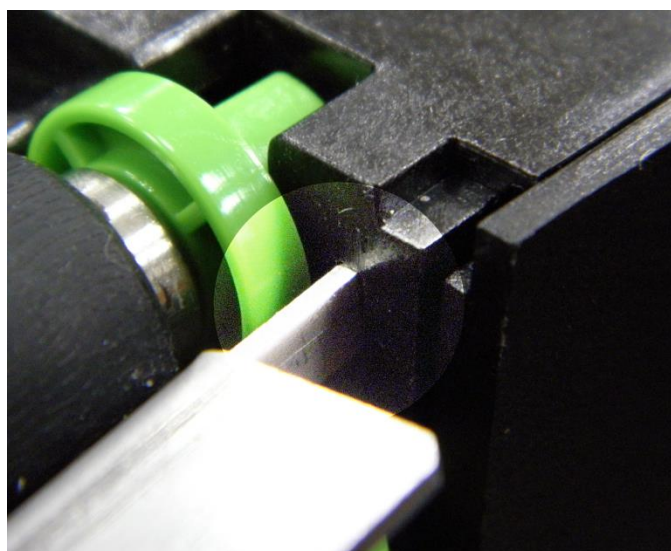
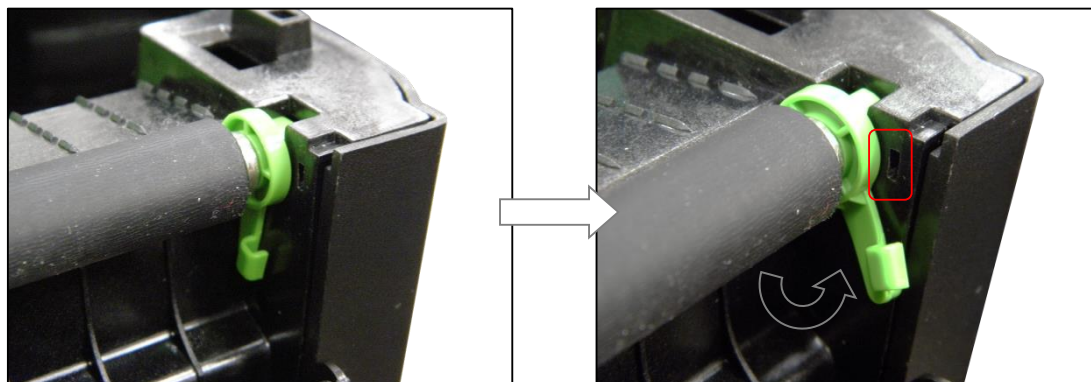


6. Connect the peel-off module harness connector to the 5-pin white socket on the printer main board.

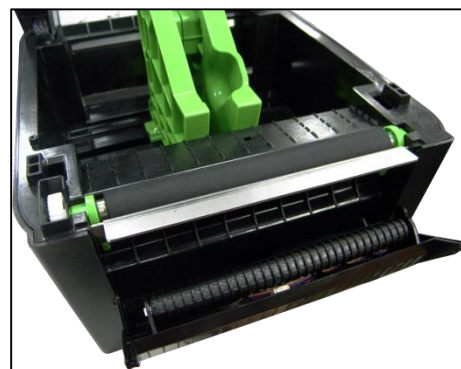


7. Fasten 4 screws back on the printer lower cover.

8. Open the peel-off cover. Disengage one of platen holder tab from lower inner cover as picture shown.

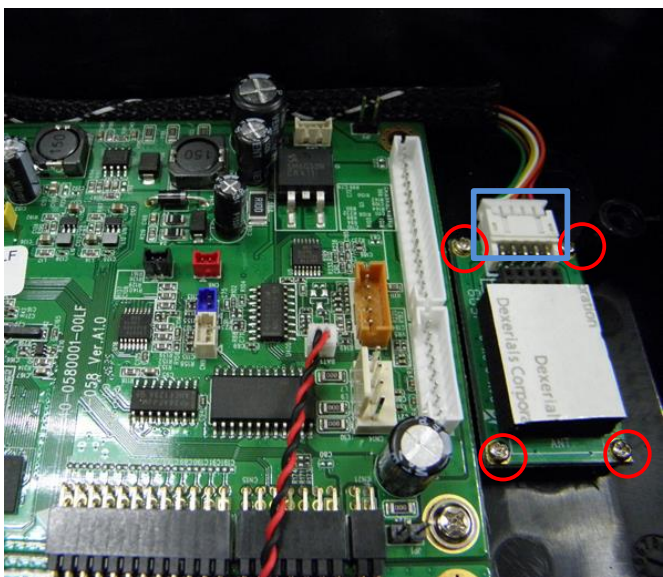


9. Install the peel-off bar into the both slots. Then install back the platen holder tab.



10. The peel-off module is ready to use.

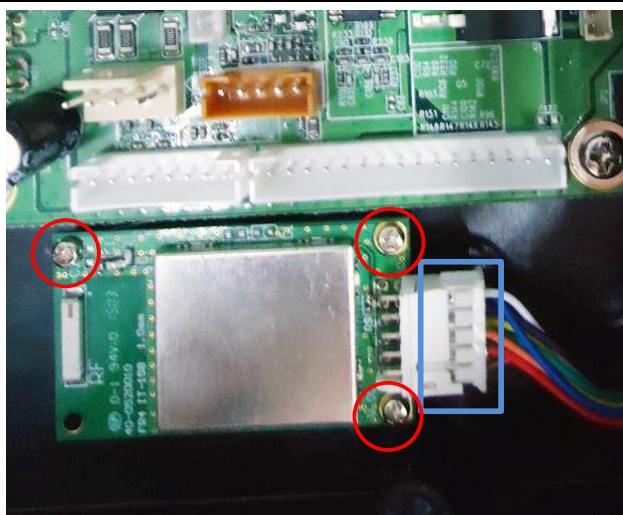
3.12 Replacing the Wi-Fi Module (Option)

	1. Turn the printer upside down and remove 4 screws on the printer lower cover. 2. Disconnect all connectors on the main board.
	3. Disconnect the antenna on Wi-Fi module carefully to remove the Wi-Fi module. 4. Disconnect the connector and remove the 4 screws on Wi-Fi adapter board.
	5. Install the new adapter board and new Wi-Fi module in the reverse order. Note: Please remove the liner on the foam of adapter board before installing Wi-Fi module. 6. Reassemble the parts in the reverse order.

3.13 Replacing the Bluetooth Module (Option)



1. Turn the printer upside down and remove 4 screws on the printer lower cover.
2. Disconnect all connectors on the main board.



3. Disconnect the connector and remove the 3 screws on Bluetooth module to remove/replace it.



4. Reassemble the parts in the reverse order.

Note:

Inspect the route of connector cable as shown. (The cable should be bypassed the capacitors and pressed into the slit of the mainboard.)

4. TROUBLESHOOTING

The following guide lists the most common problems that might be encountered when operating this bar code printer. If the printer still does not function after all suggested solutions have been invoked, please contact the Customer Service Department of your purchased reseller or distributor for assistance.

4.1 LED Status

This section lists the common problems that according to the LED status and other problems you may encounter when operating the printer. Also, it provides solutions.

LED Status / Color	Printer Status	Possible Cause	Recovery Procedure
OFF	No response	No power	* Turn on the power switch. * Check if the green LED is lit on power supply. If it is not lit on, power supply is broken. * Check both power connections from the power cord to the power supply and from the power supply to the printer power jack if they are connected securely.
Solid Green	ON	The printer is ready to use.	* No action necessary.
Green with blinking	Pause	The printer is paused.	* Press the FEED button to resume for printing.
Red with blinking	Error	The out of label or the printer setting is not correct	* Printer setting is not correct * Initialize the printer by instructions in "Power on Utility" or "Diagnostic Tool".

Note:

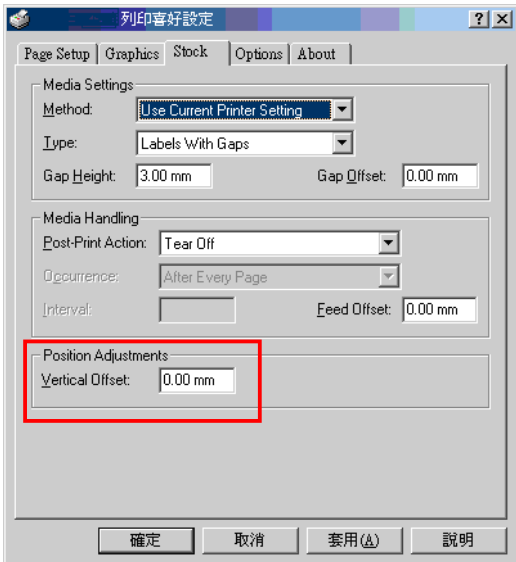
Printer status can be easily shown on the Diagnostic Tool. For more information about the Diagnostic Tool, please refer to the instruction in the software CD disk.

4.2 Print Quality

Problem	Possible Cause	Recovery Procedure
Not Printing	Check if interface cable is well connected to the interface connector.	Re-connect cable to interface or change a new cable.
	The serial port cable pin configuration is not pin to pin connected.	Please replace the cable with pin to pin connected.
	The serial port setting is not consistent between host and printer.	Please reset the serial port setting. Check the baud rate setting. The default baud rate setting of printer is 9600,n,8,1.
	The port specified in the Windows driver is not correct.	Select the correct printer port in the driver.
	The Ethernet IP, subnet mask, gateway is not configured properly.	- 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 then check the IP address setting again.
Continuous feeding labels	The printer setting may go wrong.	Please do the initialization and gap/black mark calibration.
- The printer status from DiagTool shows "Paper Jam". - The LCD shows "Paper Jam".	Gap/black mark sensor sensitivity is not set properly (sensor sensitivity is not enough)	Calibrate the gap/black mark sensor.
	Make sure label size is set properly.	Set label size exactly as installed paper in the labeling software or program.
	Labels may be stuck inside the printer mechanism near the sensor area.	Remove the stuck label.
Poor Print Quality	* Media is loaded incorrectly * Dust or adhesive accumulation on the print head. * Print density is not set properly. * Printhead element is damaged. * The printhead pressure is not properly.	* Reload the supply. * Clean the print head. * Clean the platen roller. * Adjust the print density and print speed. * Run printer self-test and check the print head test pattern if there is dot missing in the pattern. * The print head mechanism does not latch the print head properly.
Power indicator does not illuminate	The power cord is not properly connected.	Plug the power cord in printer and outlet.
		Switch the printer on.

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The printer status from DiagTool shows “ Head Open ”.	The printer carriage is open.	Please close the print carriage.
The printer status from DiagTool shows “ Out of Paper ”.	Running out of label.	Supply a new label roll.
	The label is installed incorrectly.	Please reinstall the label roll.
	Gap/black mark sensor is not calibrated.	Calibrate the gap/black mark sensor.
Memory full (FLASH / DRAM)	* The space of FLASH/DRAM is full.	Delete unused files in the FLASH/DRAM.
Cutter is not working	* The connector is loose. * Cutter jam. * Cutter PCB is damaged.	* Plug in the connect cable correctly. * Remove the label. * Make sure the thickness of label is less than 0.19 mm. * Replace a cutter driver IC board.
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.
The printing position of small label is incorrect	* Media sensor sensitivity is not set properly. * Label size is incorrect. * The vertical offset setting in the driver is incorrect.	* Calibrate the sensor sensitivity again. * Set the correct label size and gap size. * If using the software BarTender, please set the vertical offset in the driver. 
Missing printing on the left or right side of label	* Wrong label size setup.	* Set the correct label size.
RTC time is incorrect when reboot the printer	* The battery has run down.	* Check if there is a battery on the main board.
Gray line on the blank label	* The print head is dirty. * The platen roller is dirty.	* Clean the print head. * Clean the platen roller.

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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.
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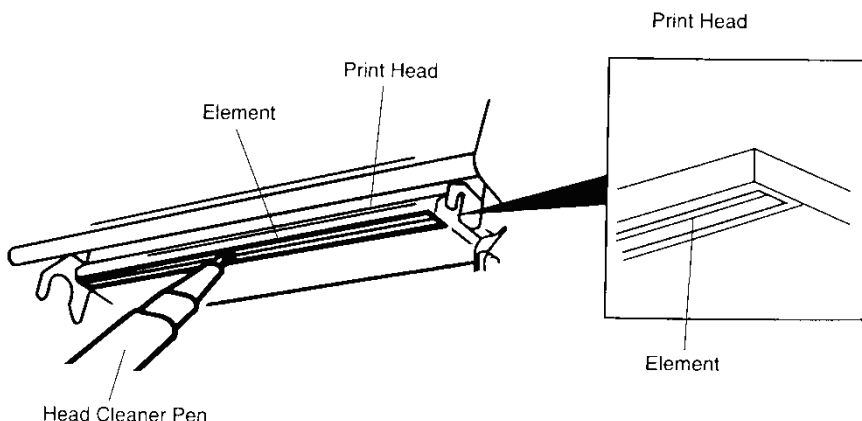
5. MAINTENANCE

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

1. Please use one of following material to clean the printer.

- Cotton swab (Head cleaner pen)
- Lint-free cloth
- Vacuum / Blower brush
- 100% ethanol

2. The cleaning process is described as following

Printer Part	Method	Interval
Print Head	1. Always turn off the printer before cleaning the print head. 2. Allow the print head to cool for a minimum of one minute. 3. Use a cotton swab (Head cleaner pen) and 100% ethanol to clean the print head surface.	Clean the print head when changing a new label roll
		
Platen Roller	1. Turn the power off. 2. Rotate the platen roller and wipe it thoroughly with 100% ethanol and a cotton swab, or lint-free cloth.	Clean the platen roller when changing a new label roll
Tear Bar/Peel Bar	Use the lint-free cloth with 100% ethanol to wipe it.	As needed

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Sensor	Compressed air or vacuum	Monthly
Exterior	Wipe it with water-dampened cloth	As needed
Interior	Brush or vacuum	As needed

Note:

- **Do not touch printer head by hand. If you touch it careless, please use ethanol to clean it.**
- **Please use 100% Ethenol. DO NOT use medical alcohol, which may damage the printer head.**
- **Regularly clean the print head and supply sensors once change a new supply to keep printer performance and extend printer life.**

UPDATE HISTORY

Date	Content	Editor
2015/7/28	Add section 3.11 for linerless cutter module installation	Camille
2015/10/13	Add section 3.12 for peel-off module installation	Camille
2016/3/18	Modify section 3.10 & 3.11 for cutter & linerless cutter module installation	Camille
2016/7/21	Remove linerless cutter module installation section	Camille
2016/9/19	Add a note on section 3.4	Camille
2017/7/25	Add section 3.12 for Replacing the Wi-Fi Module	Camille
2017/7/28	Add section 3.13 for Replacing the Bluetooth Module	Camille



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