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Etiketten Thermotransferfolien Hard- und Software
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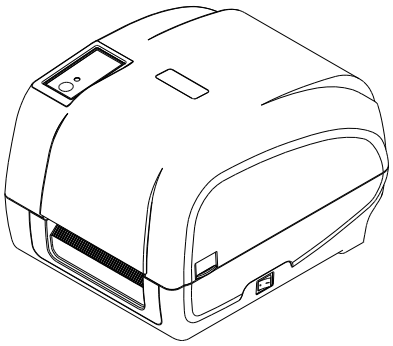
TA210/ TA310/ TA200/ TA300 Series

THERMAL TRANSFER / DIRECT THERMAL BAR CODE PRINTER

SERVICE MANUAL



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1. LED indicator
2. Feed key
3. LCD display (Option)
4. Paper exit chute
5. Top cover open tab
6. Power switch

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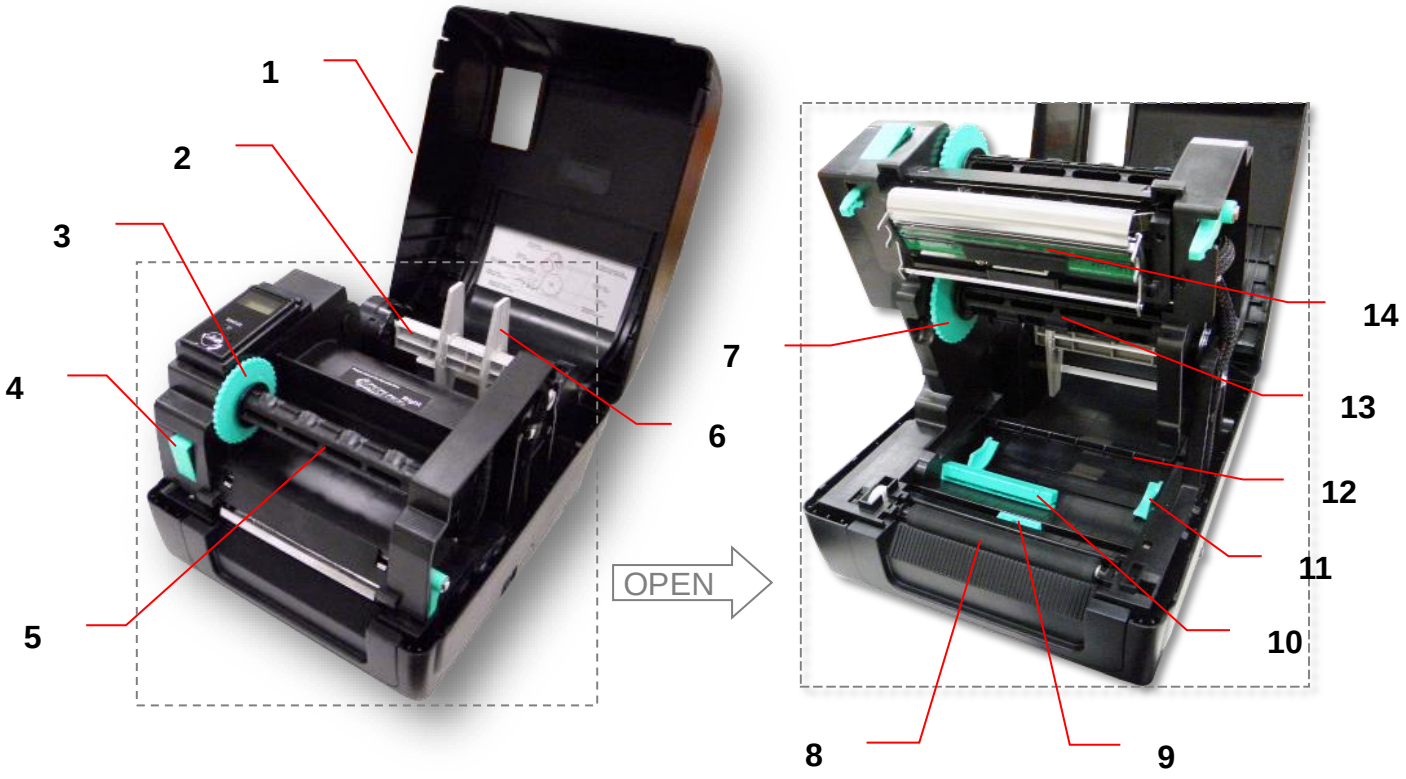
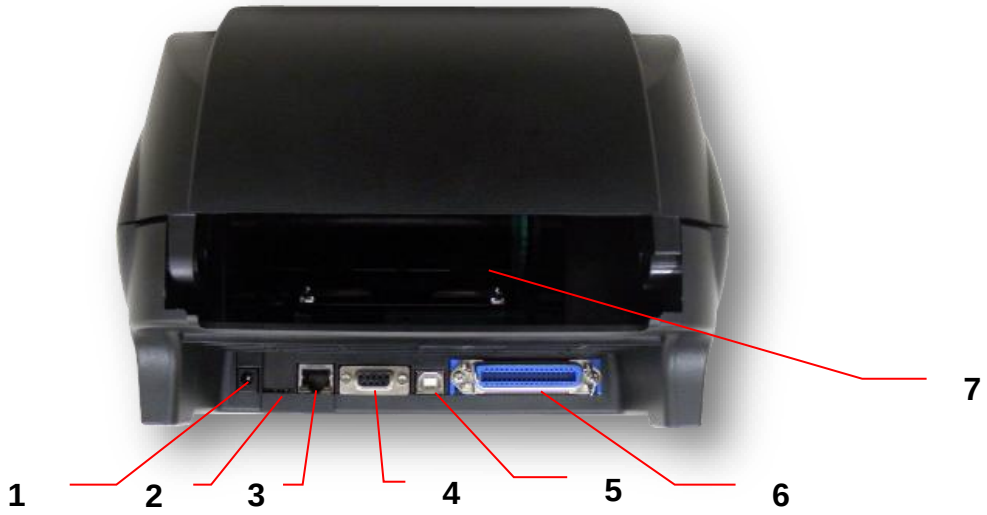


1. Printer top cover
2. Media supply spindle
3. Ribbon rewind hub
4. Print head release button
5. Ribbon rewind spindle
6. Fixing tab
7. Ribbon supply hub
8. Platen roller
9. Black mark sensor
10. Gap sensor
11. Media guide
12. Media bar
13. Ribbon supply spindle
14. Print head

1.3 Rear View



1. Power jack socket
2. *microSD card slot (Option)
3. Internal Ethernet interface (Option)
4. RS-232C interface (Option)
5. USB interface (USB 2.0/ Full speed mode)
6. Centronics interface (Option)
7. Rear external label entrance chute

Note:

The interface picture here is for reference only. Please refer to the product specification for the interfaces availability.

*** Recommended SD card specification.**

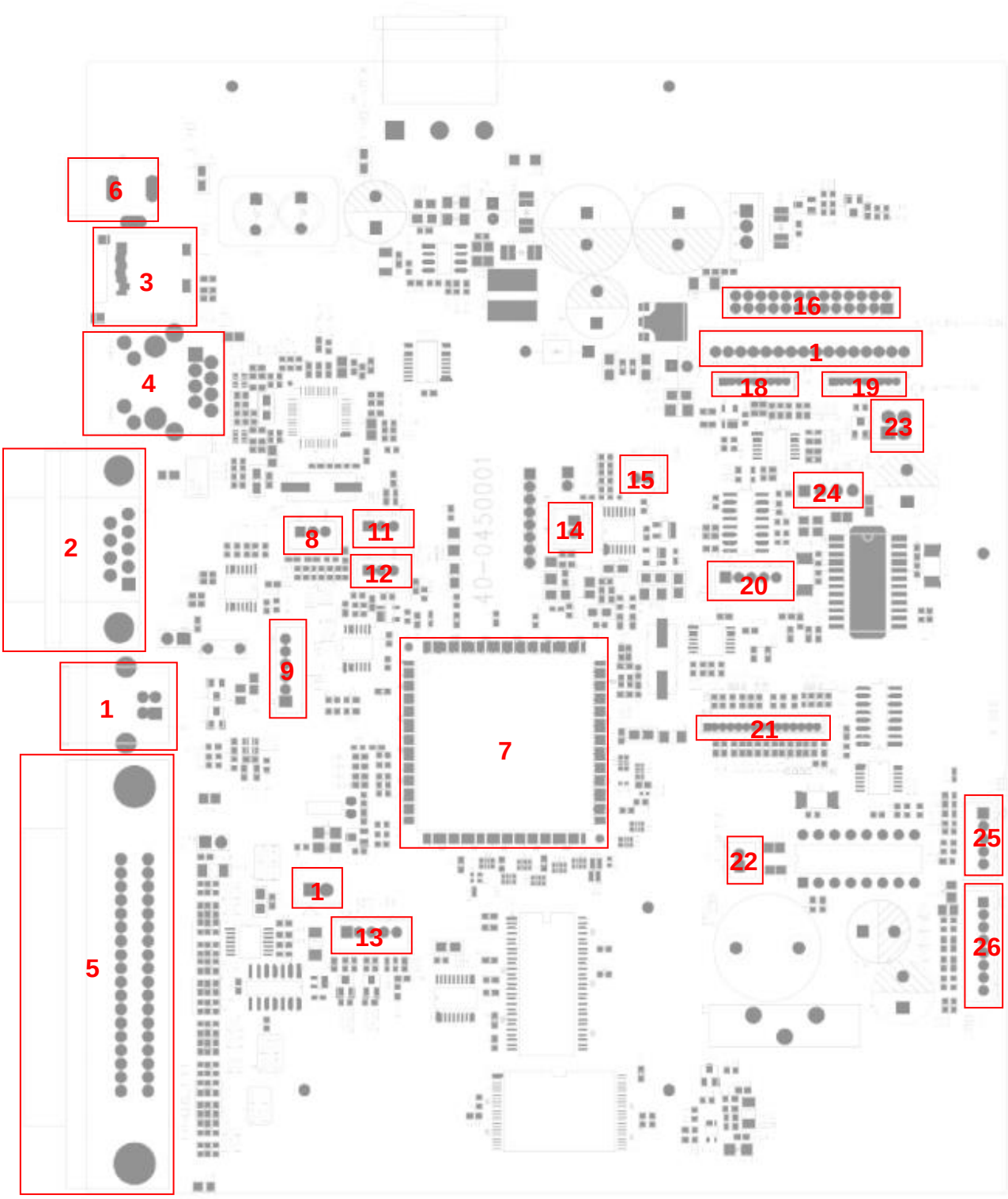
SD card spec	SD card capacity	Approved SD card manufacturer
V1.0, V1.1	microSD 128 MB	Transcend, Panasonic
V1.0, V1.1	microSD 256 MB	Transcend, Panasonic
V1.0, V1.1	microSD 512 MB	Panasonic
V1.0, V1.1	microSD 1 GB	Transcend, Panasonic
V2.0 SDHC CLASS 4	microSD 4 GB	Panasonic
V2.0 SDHC CLASS 6	microSD 4 GB	Transcend

- The DOS FAT file system is supported for the SD card.
- Folders/files stored in the SD card should be in the 8.3 filename format.

2. ELECTRONICS

2.1 Summary of Board Connectors

Main board



<table>
<tr><th>Connector</th><th>Description</th></tr>
<tr><td>1</td><td>USB connector</td></tr>
<tr><td>2</td><td>RS-232C connector</td></tr>
<tr><td>3</td><td>SD card slot</td></tr>
<tr><td>4</td><td>Ethernet RJ-45 connector (Option)</td></tr>
<tr><td>5</td><td>Centronics port connector</td></tr>
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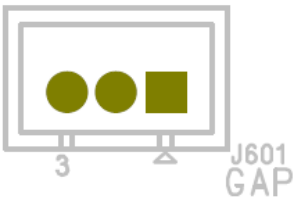
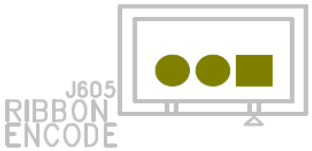
<tr><td>7</td><td>Micro processor</td></tr>
<tr><td rowspan="2">8</td><td>Gap sensor connector</td></tr>
<tr><td>


<table>
<tr><th>Pin</th><th>Description</th><th>Voltage</th></tr>
<tr><td>1</td><td>Power</td><td>3.3V</td></tr>
<tr><td>2</td><td>Gap sensor emitter</td><td>2.1~2.2V: Emitter on
2.6~2.7V: Emitter off</td></tr>
<tr><td>3</td><td>Gap sensor receiver</td><td>A/D : 0~3.3V</td></tr>
</table>
</td></tr>
<tr><td>9</td><td>RFID module connector</td></tr>
<tr><td>10</td><td>ESD_GND_PIN</td></tr>
<tr><td rowspan="2">11</td><td>Black mark sensor connector</td></tr>
<tr><td>


<table>
<tr><th>Pin</th><th>Description</th><th>Voltage</th></tr>
<tr><td>1</td><td>Power</td><td>3.3V</td></tr>
<tr><td>2</td><td>BM sensor emitter</td><td>2.1~2.2V: Emitter on
2.6~2.7V: Emitter off</td></tr>
<tr><td>3</td><td>BM sensor receiver</td><td>A/D : 0~3.3V</td></tr>
</table>
</td></tr>
<tr><td>12</td><td>Ribbon Encode connector</td></tr>
</table>



Pin	Description	Voltage
1	Power	3.3V
2	Encoder signal	3.3V
3	GND	0V

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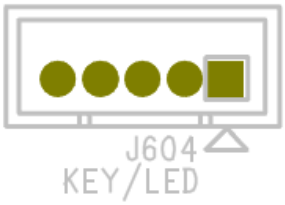
Key& LED connector



Pin	Description	Voltage
1	POWER	3.3V
2	LED Green	LED light on:1.1~1.4V LED light off:1.6~1.9V
3	LED Red	LED light on:1.4~1.7V LED light off:1.8~2.1V
4	KEY	0V: Push key 3.3V: Stand-by
5	GND	0V

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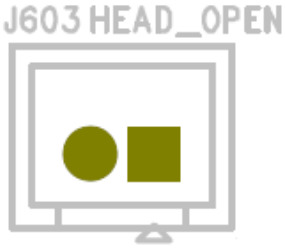
Head open switch connector



Pin	Description	Voltage
1	Head open switch	0V : Head close 3.3V : Head open
2	GND	0V

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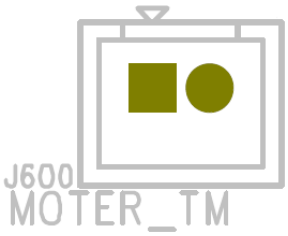
Motor temperature sensor connector



Pin	Description	Voltage
1	MOTER_TM	AD : 0~3.3V
2	GND	0V

16	HEADER
17	KPZ-108-8TAE1-TSCA
18	KD2004-CF10E_A (reserved)
19	KD2004-CF10E_B (reserved)
20	COM5_2
21	LCD panel connector
22	DC motor connector
23	ESD_GND_PIN
24	Stepping motor connector
25	Peel-off sensor connector

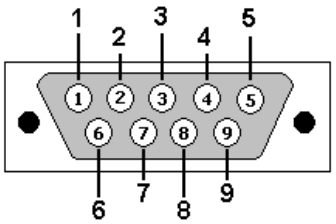
Pin	Description	Voltage
1	POWER	3.3V
2	Reserved	
3	Peel sensor emitter	Emitter on: 2.2~2.3V Emitter off: 2.6~2.7V
4	Peel sensor receiver	AD : 0~3.3V
5	GND	0V

26 Cutter connector

Pin	Description	Voltage
1	Cutter power	24V
2	GND	0V
3	Cutter direction	0V: Cutter positive cut 5V: Cutter negative cut
4	Cutter enable	0V: Cutter work 5V: Cutter stop
5	Cutter position sensor switch	0V: Cutter stop 3.3V: Cutter work
6	GND	0V
7	Logic power	5V
8	Reserved	

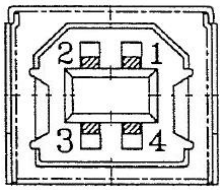
2.2 Pin Configuration

RS-232C



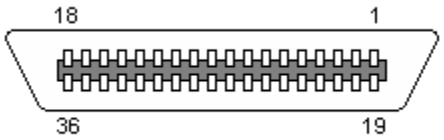
PIN	CONFIGURATION
1	+5 V
2	TXD
3	RXD
4	CTS
5	GND
6	RTS
7	N/C
8	RTS
9	N/C

USB



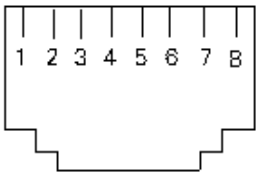
PIN	CONFIGURATION
1	N/C
2	D-
3	D+
4	GND

Centronics



Pin	SPP Mode	Nibble	In/Out
1	Strobe	N/A	In
2-9	Data 0-7	N/A	In
10	Ack	N/A	Out
11	Busy	N/A	Out
12	Paper Out / End	N/A	Out
13	Select	N/A	Out
14	Ground	N/A	GND
15	No Defined	N/A	N/A
16-17	Ground	N/A	GND
18	No Defined	N/A	N/A
19-30	Ground	N/A	GND
31	No Defined	N/A	N/A
32	Error / Fault	N/A	Out
33-35	Ground	N/A	GND
36	No Defined	N/A	N/A

Ethernet

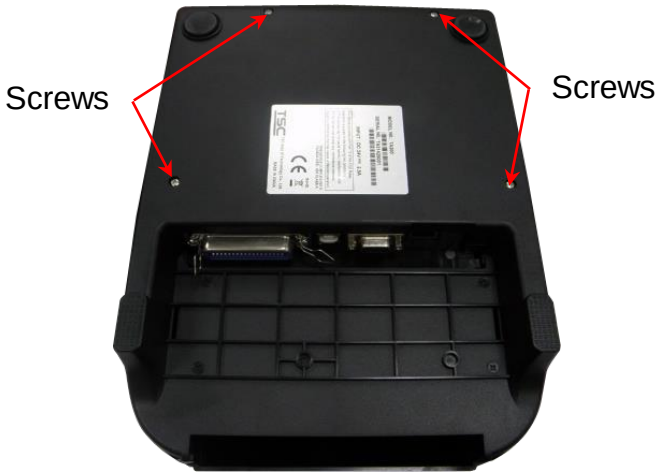
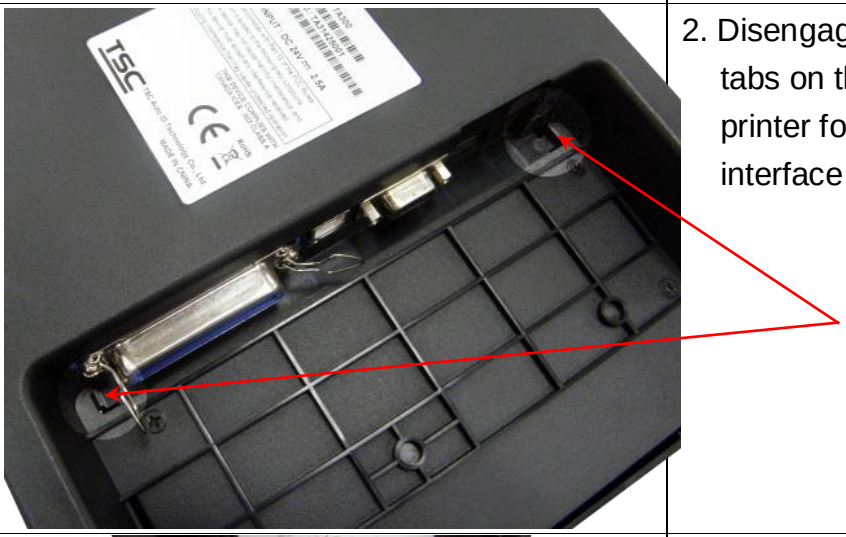


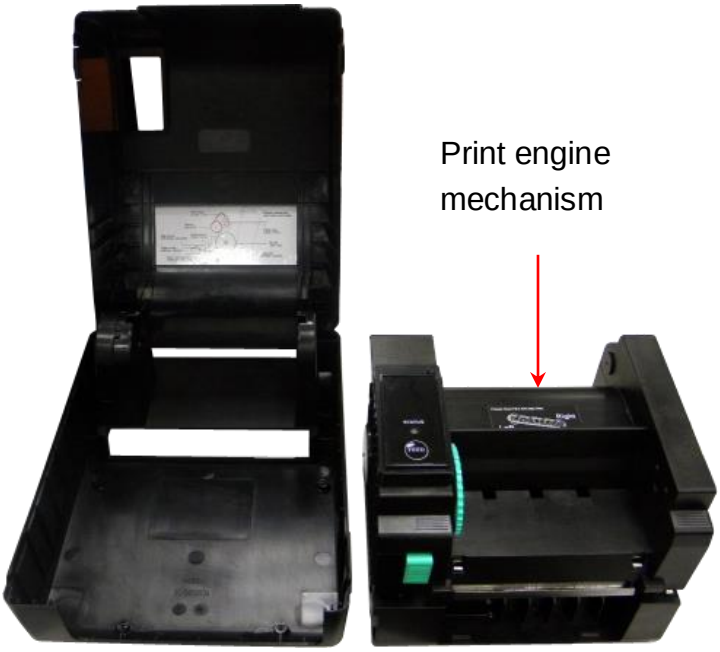
PIN	CONFIGURATION
1	Tx+
2	Tx-
3	Rx+
4	N/C
5	N/C
6	Rx-
7	N/C
8	N/C

3. MECHANISM

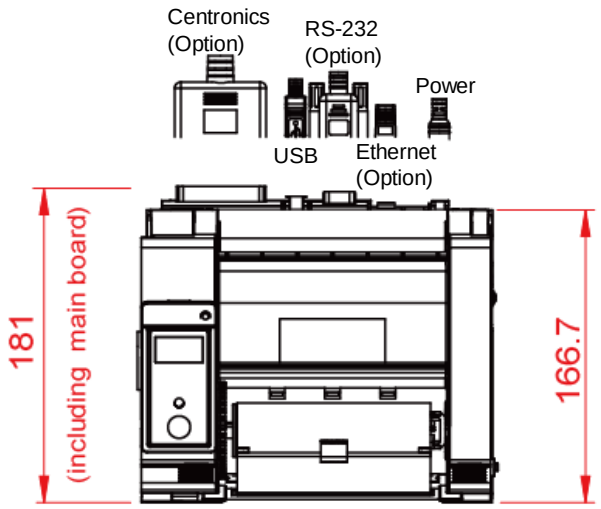
Please turn off the power switch and unplug the power adapter before replacing parts.

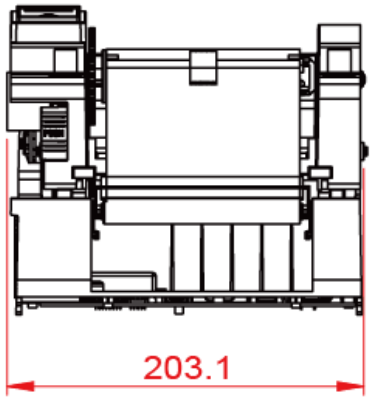
3.1 Replacing the Print Engine Mechanism

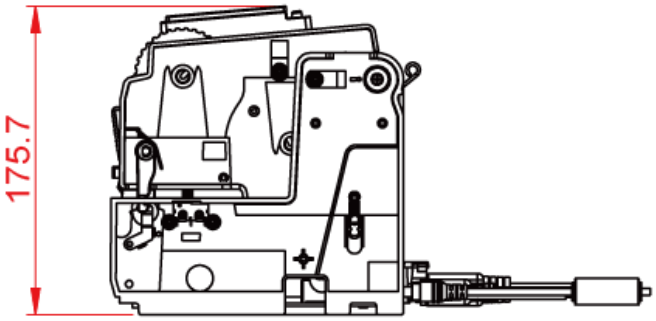
	1. Turn the printer upside down to remove the four screws.
	2. Disengage the interface cover tabs on the bottom of the printer for removing the interface cover.
	3. Open the printer top cover by pressing the top cover open tabs located on each side of the printer. Take out the interface cover.

	4. Push the print head release button to open the print head mechanism.
	5. Remove the lower front panel.
	6. Remove/Replace the print engine mechanism. 7. Reassemble the parts in the reverse procedure. **Note:** **For more detail about print engine mechanism, please refer to next page.**

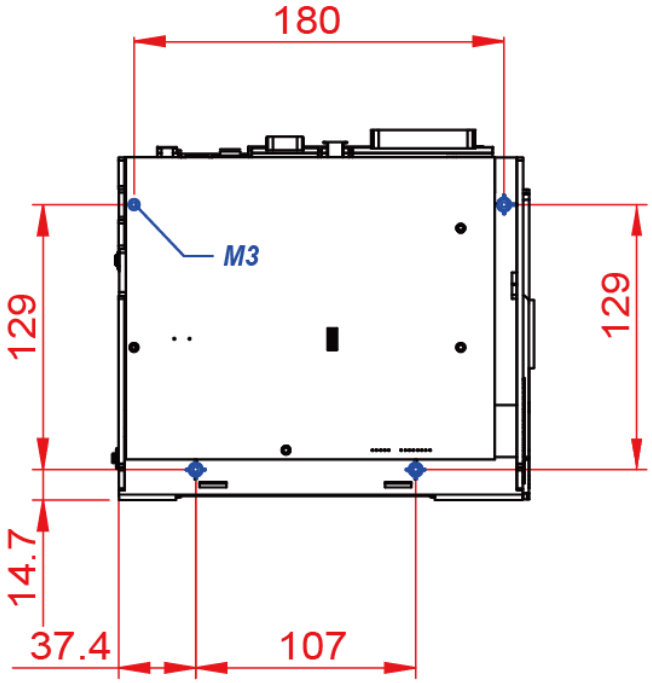
Print engine mechanism measurements







Bottom view



Note:

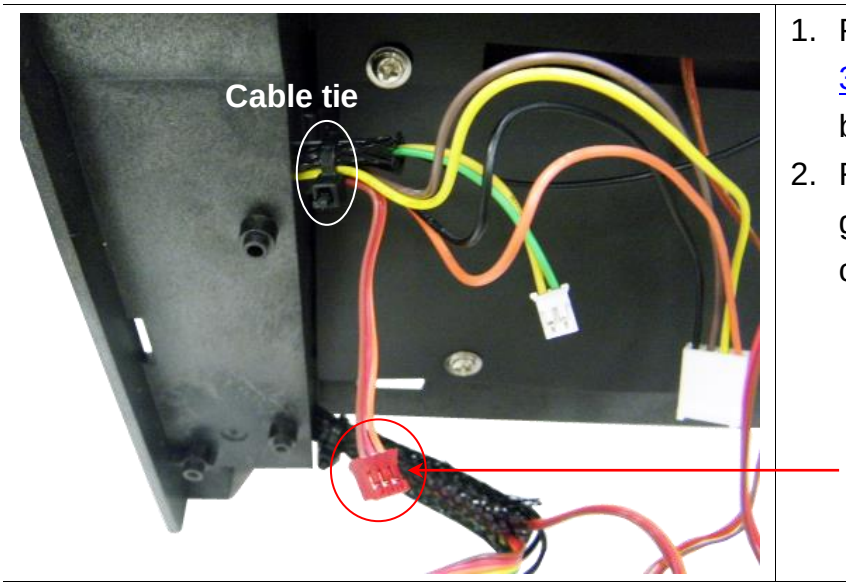
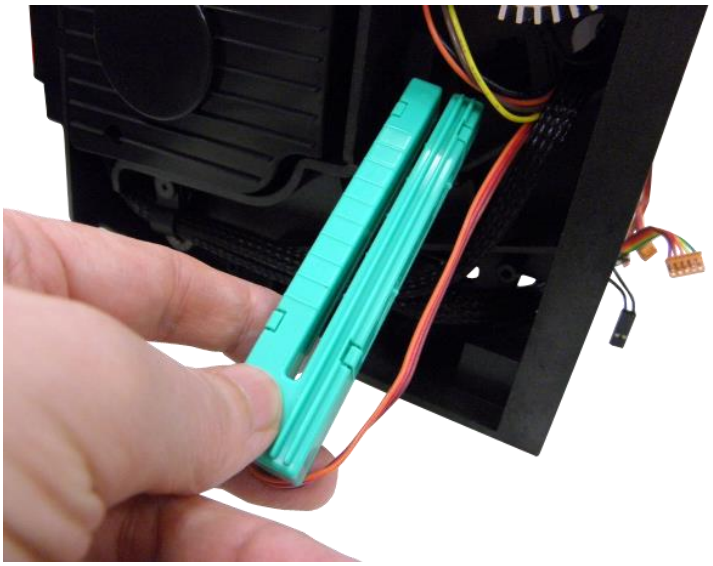
1. **All measurements are in mm.**
2. **There are 4 fastenings in this print engine mechanism, the fastening location be marked in blue on bottom view drawing, fits with screw M3.**

3.2 Replacing the Main Board

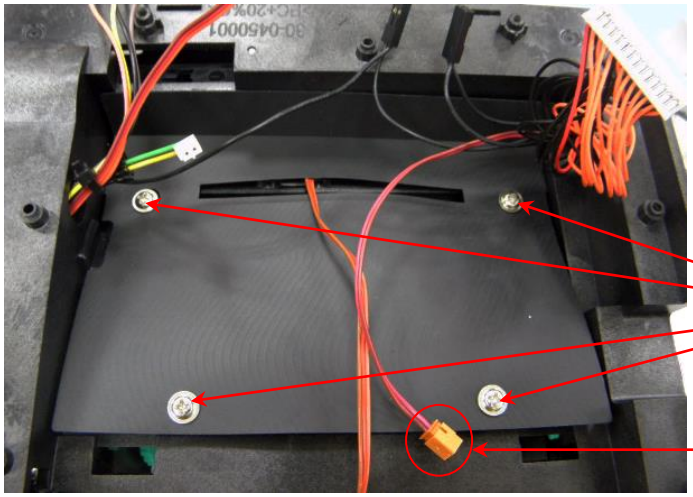
1. Please refer to the section 3.1 to take out the print engine mechanism.
2. Remove the three screws on the main board.

3. Disconnect all connectors on the main board.
4. Remove/Replace the main board.
5. Reassemble the parts in the reverse procedure.

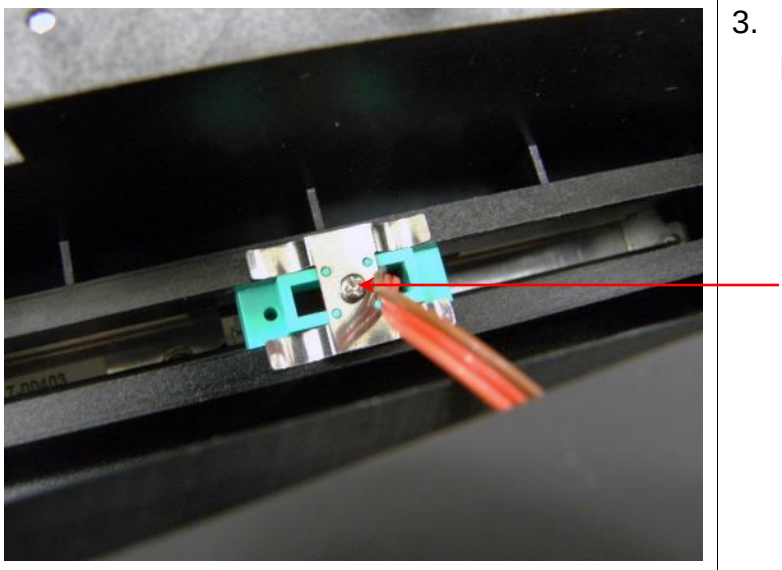
3.3 Replacing the Gap Sensor Module

	1. Please refer to the section 3.2 to remove the main board. 2. Release one cable tie for gap sensor module connector (red).
	3. Remove/Replace the gap sensor module. 4. Reassemble the parts in the reverse procedure.

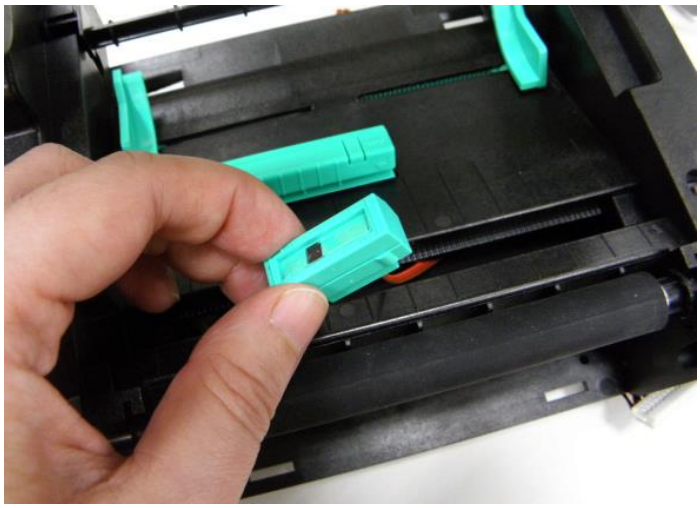
3.4 Replacing the Black-mark Sensor Module



1. Please refer to the section 3.2 to remove the main board.
2. Remove the four screws to take out the black mylar.

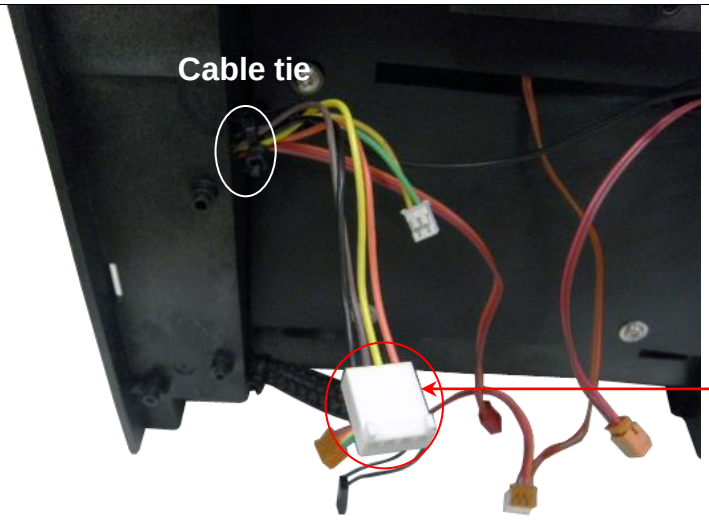


3. Remove one screw on the black-mark sensor fixing plate.



4. Open the print head mechanism to remove/replace the black-mark sensor module.
5. Reassemble the parts in the reverse procedure.

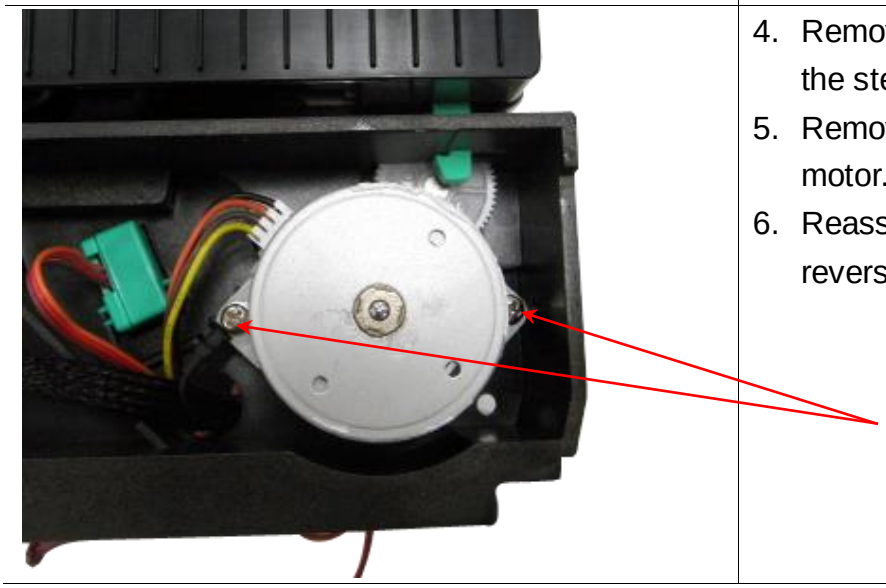
3.5 Replacing the Stepping Motor



1. Please refer to the section 3.2 to remove the main board.
2. Release the cable tie for stepping motor connector.

Stepping motor connector

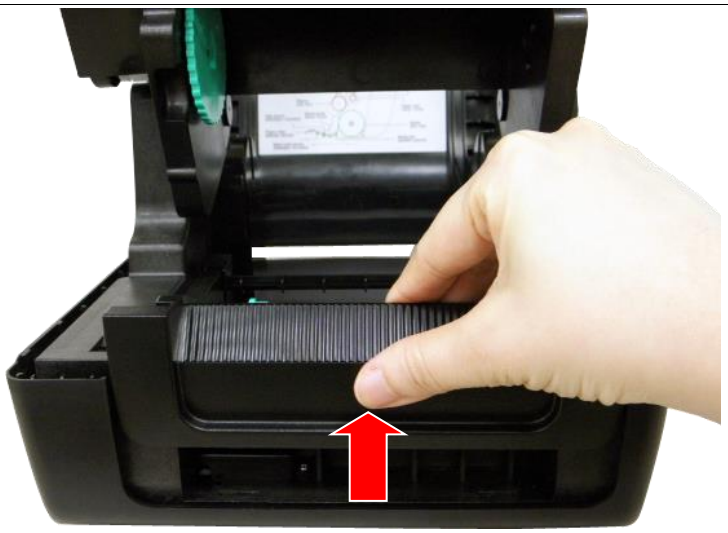
3. Remove the cooling fin.



4. Remove the two screws on the stepping motor.
5. Remove/Replace the stepping motor.
6. Reassemble the parts in the reverse procedure.

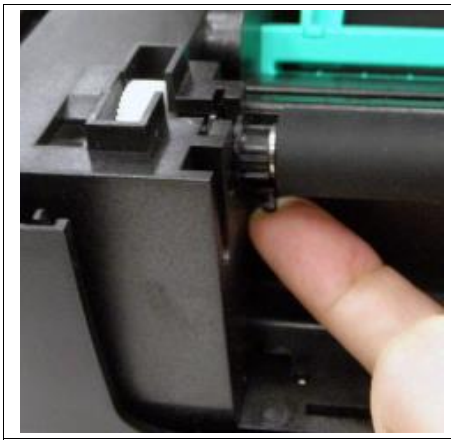
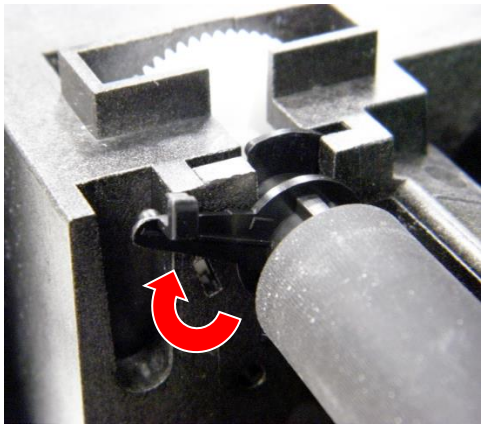
Screws

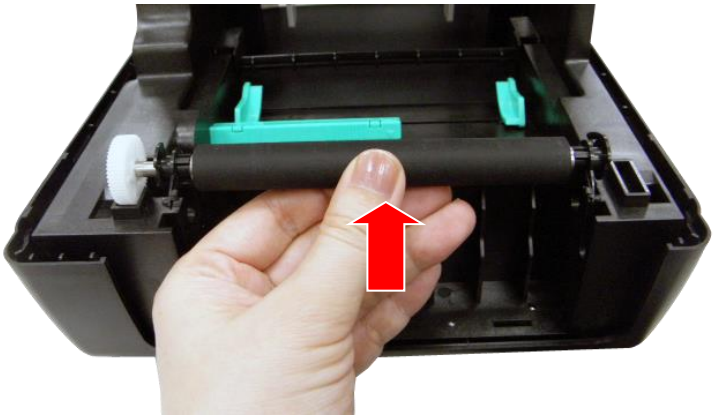
3.6 Replacing the Platen Roller Assembly



1. Open the printer top cover then open the print head mechanism.
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)

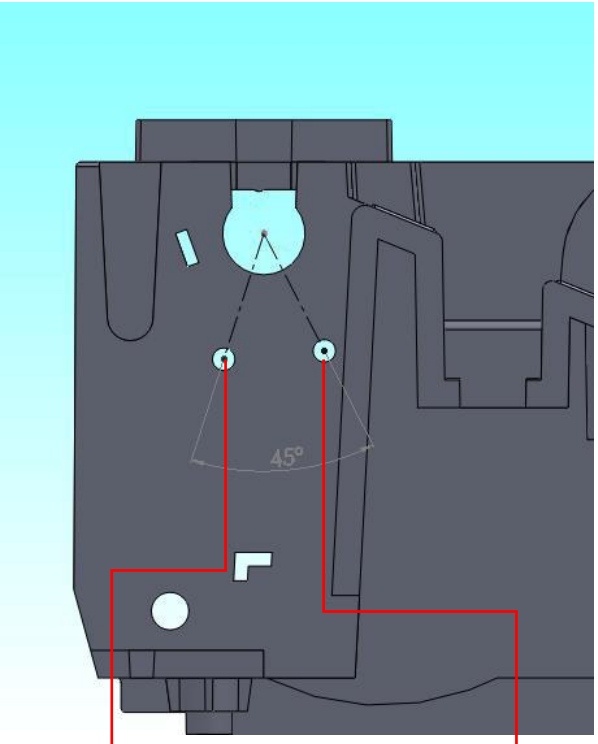
	
Unhook the both sides of platen holder tabs.	Rotate the both sides of tabs into this position.



4. Take out the platen roller assembly.

5. Reassemble the parts in the reverse procedure.

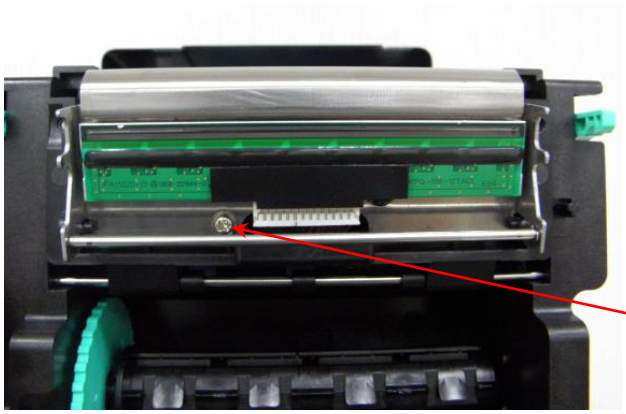
Note:



The tab here is for thick label.
(Thickness is 0.19 mm)

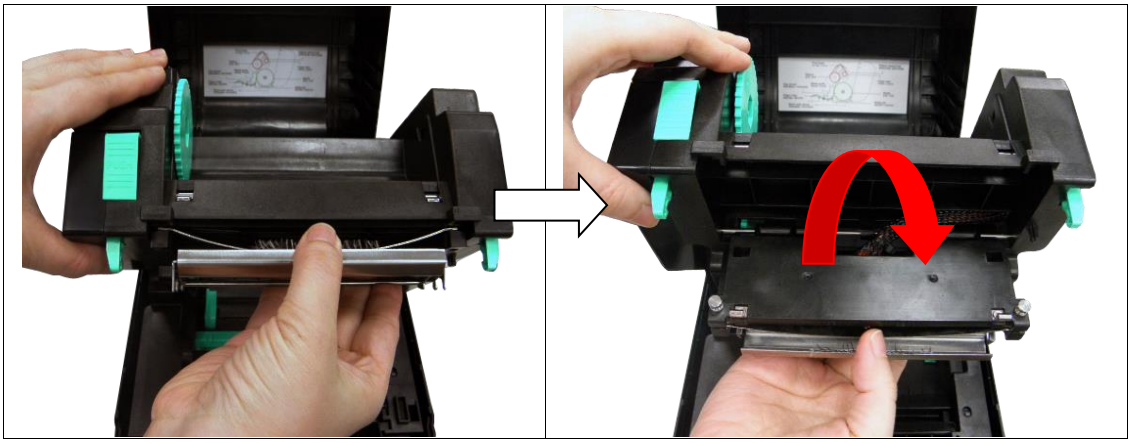
The tab here is for regular label.

3.7 Replacing the Print Head Module

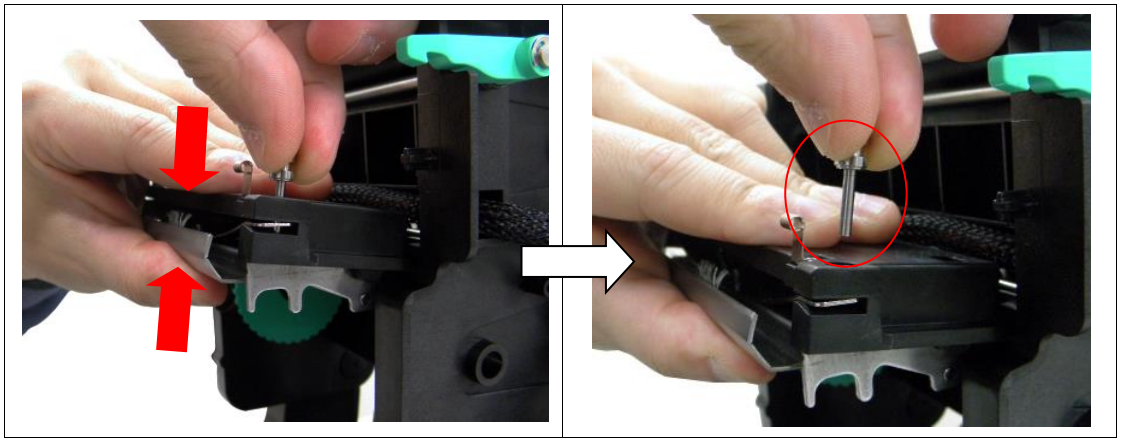


1. Open the printer top cover then open the print head mechanism.
2. Remove one screw on the print head module.

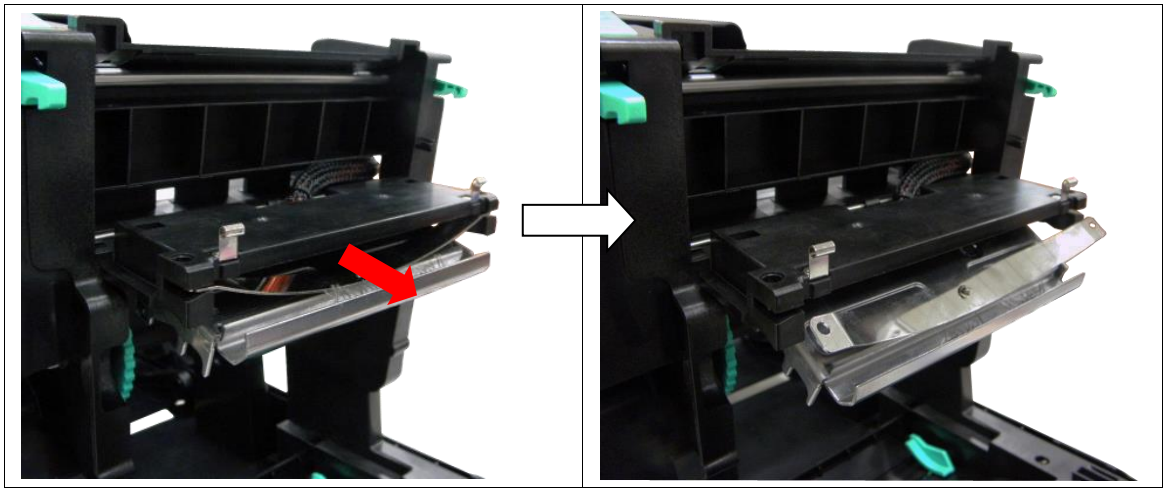
3. Disengage the print head plastic bracket by pulling down the middle of the plastic bracket. Let print head bracket drops into its place.

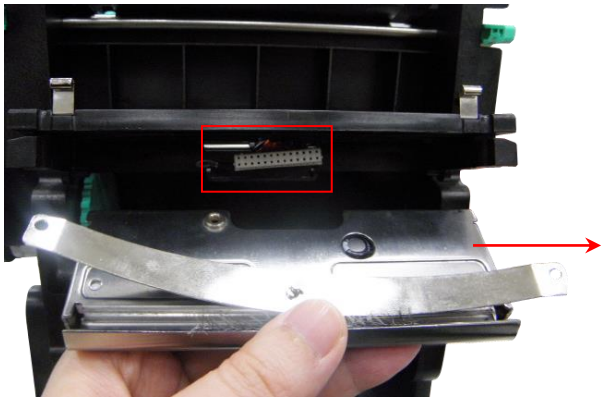


4. Press the print head bracket and print head module a little bit to remove the both side located pins.



5. Pull the print head module forward to take out the module.



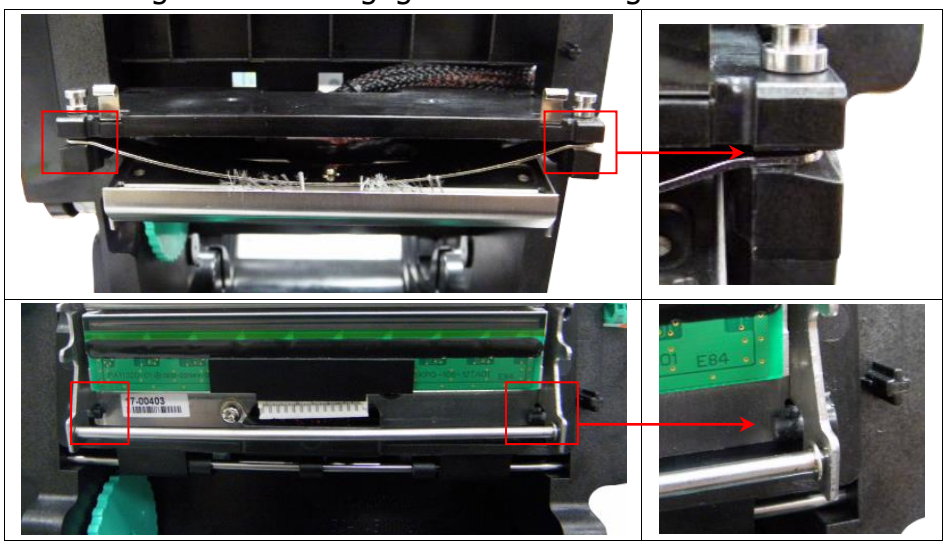


6. Disconnect the print head harness.
7. Remove/Replace the print head assembly.

Note:

There is static brush adhered on the print head module. Please insert the print head module carefully.

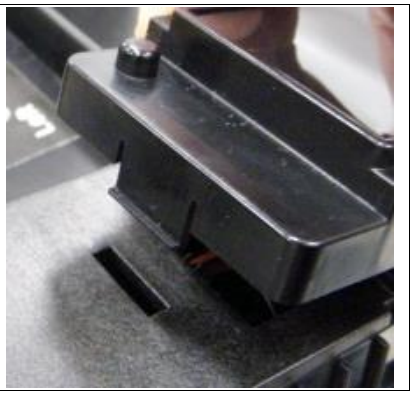
8. Connect the print head harness and carefully insert the print head module spring plate into the ribbon base print head spring plate slot. Make sure the print head bracket hinge slots are engaged with the hinges at both sides.



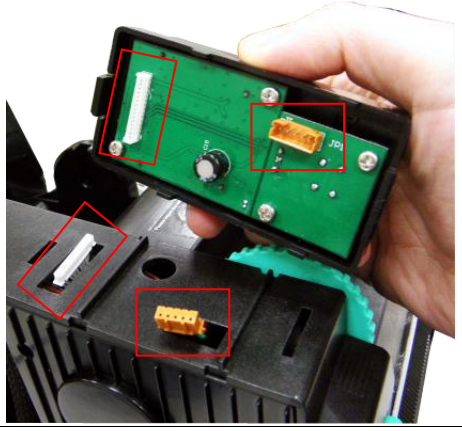
9. Reassemble the parts in the reverse procedures.

3.8 Replacing the Key Module (LCD Module/Option)

1. Remove the key/LCD module by pressing the top of the module to release the tab.

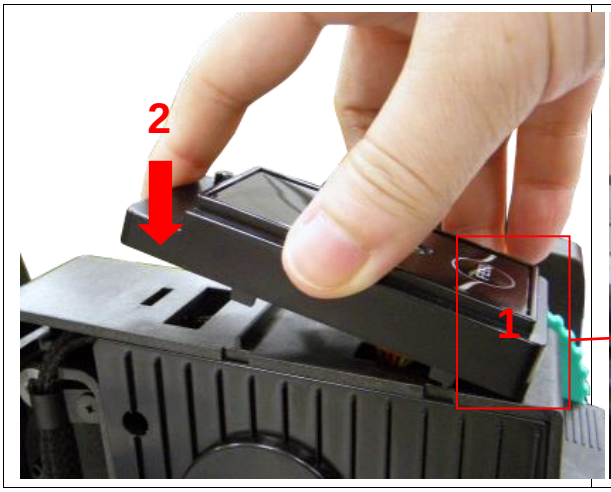



2. Disconnect the harness (or harnesses).
3. Remove/Replace the key module (or LCD module).

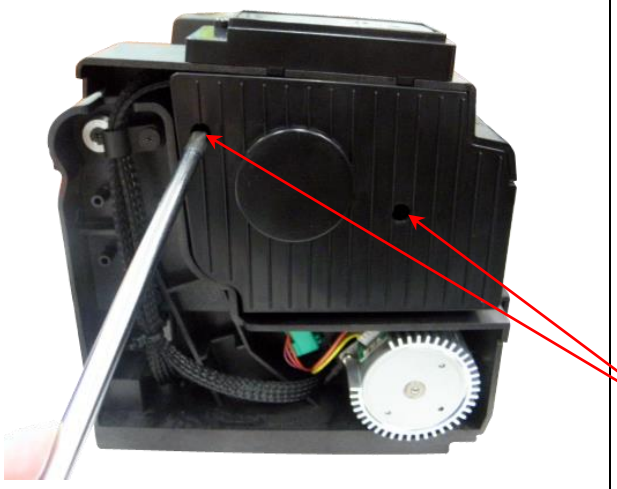
Key module	LCD module
	

4. Reassemble the parts in the reverse procedures.

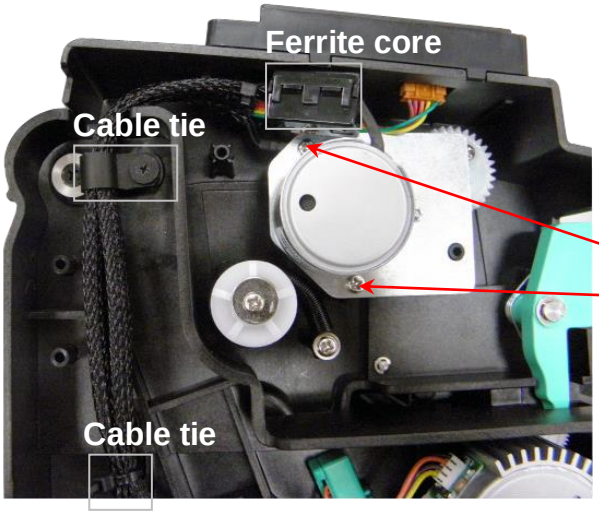
Note: Please install the lower tab first.



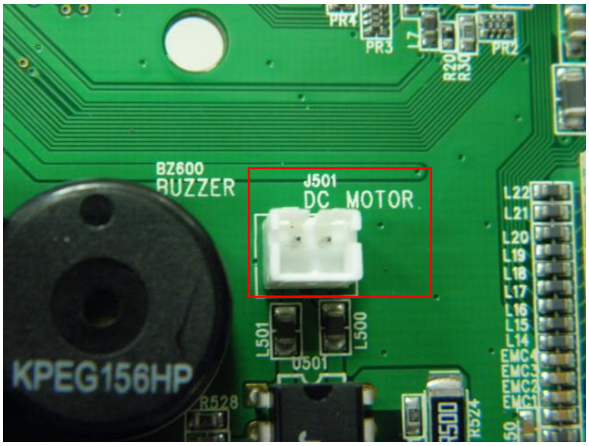
3.9 Replacing the DC Motor Module



1. Please refer to the section 3.1 to take out the print engine mechanism.
2. Remove the two screws on the DC motor cover.

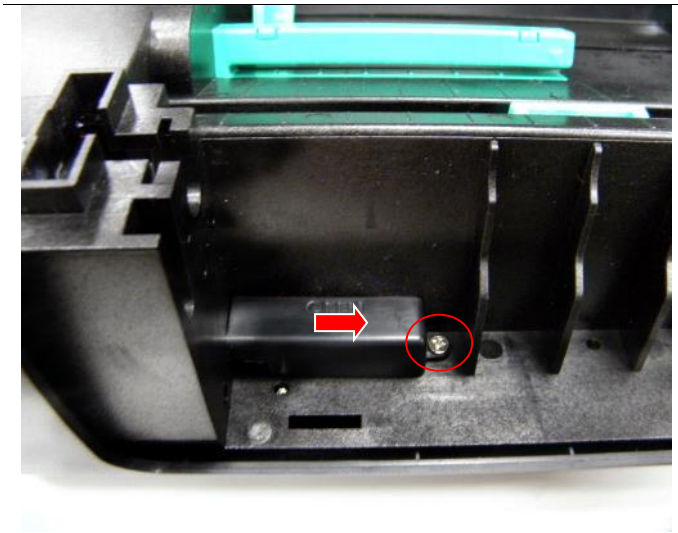
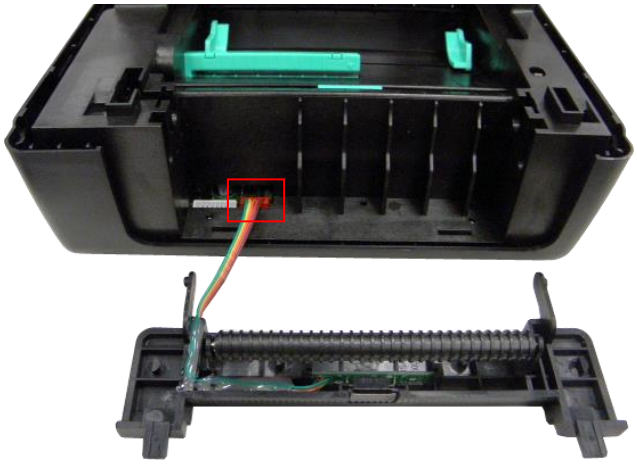
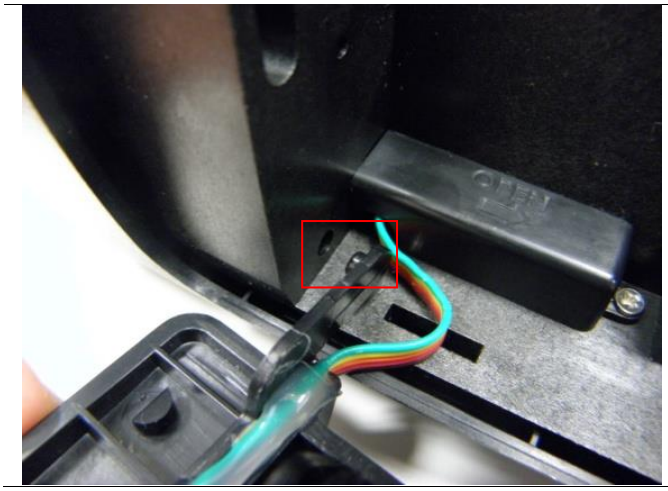


3. Remove the two screws on the DC motor.
4. Remover the ferrite core.
5. Remove the cable ties.

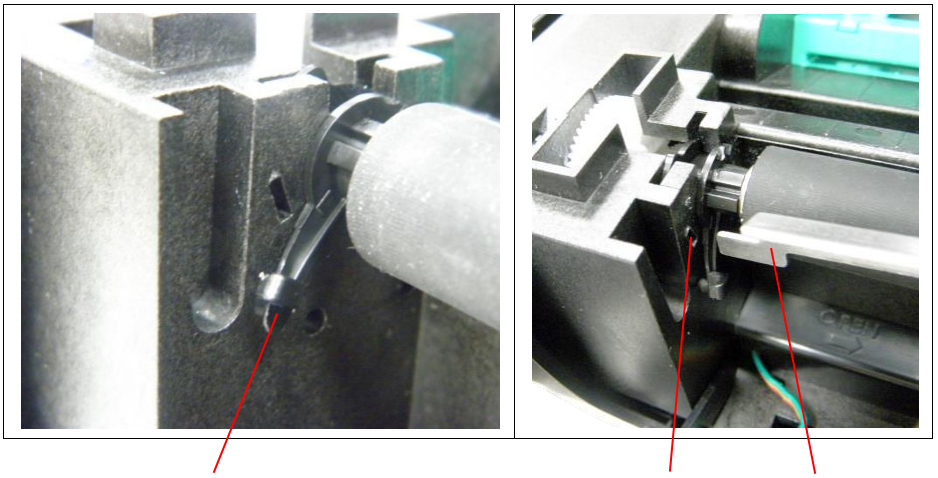


6. Disconnect the DC motor connector (J501) from the main board.
7. Remove/Replace the DC motor module.
8. Reassemble the parts in the reverse procedure.

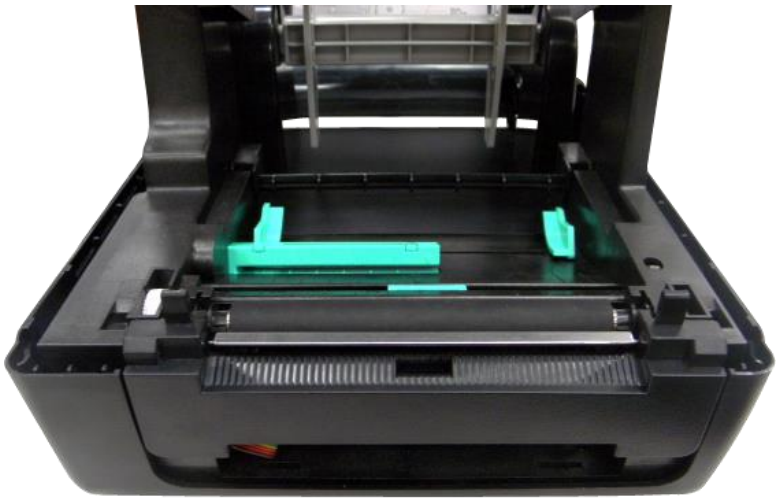
3.10 Peel-off Module Installation (Option)

	1. Please refer to the section 3.6 to remove the platen roller assembly. 2. Unscrew one screw to remove the connector cover.
	3. Plug in the peel-off module harness connector to the 5-pin red socket on the main board.
	4. Fasten back the connector cover. Install the peel-off panel by putting the both sides of tabs into the holes on front inner printer.

5. Put back the platen roller assembly. Then rotate the right side and left side platen holder tabs into down position (see picture below) to install the peel-off bar into the slots. Then, rotate the tabs to engage the platen holder tab to the printer.

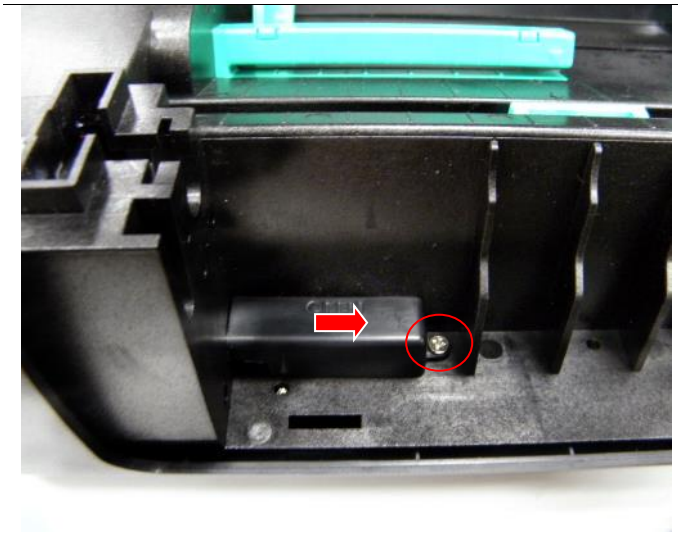


Rotate the tab into this degree for the peel-off bar. **Slot** **Peel-off bar**

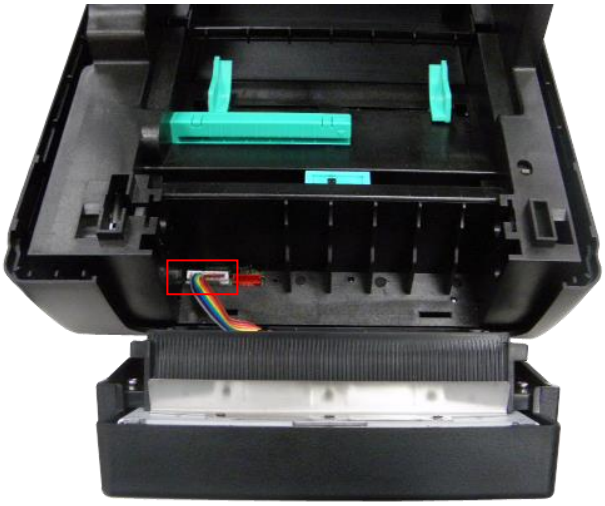


6. The peel-off module is ready to use.

3.11 Cutter Module Installation (Option)

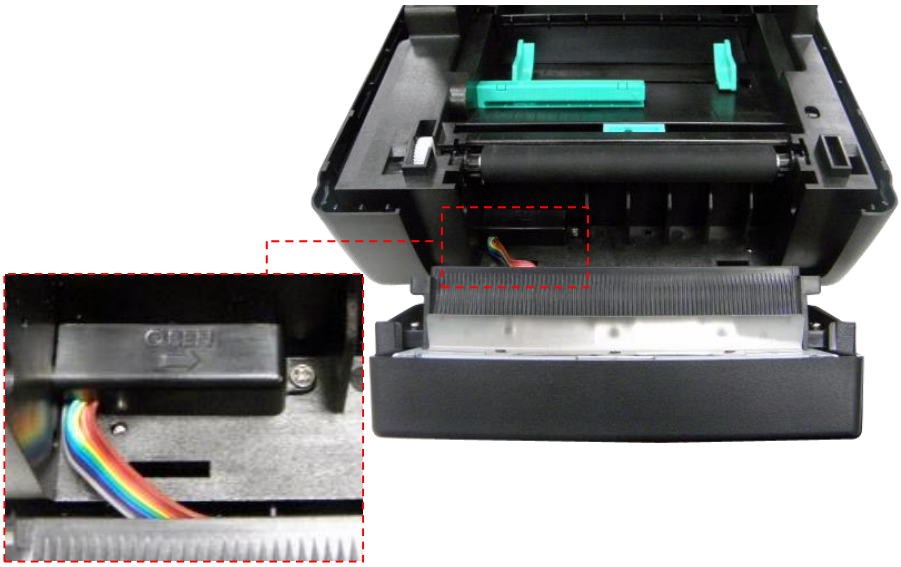


1. Please refer to the section 3.6 to remove the platen roller assembly.
2. Unscrew one screw to remove the connector cover.

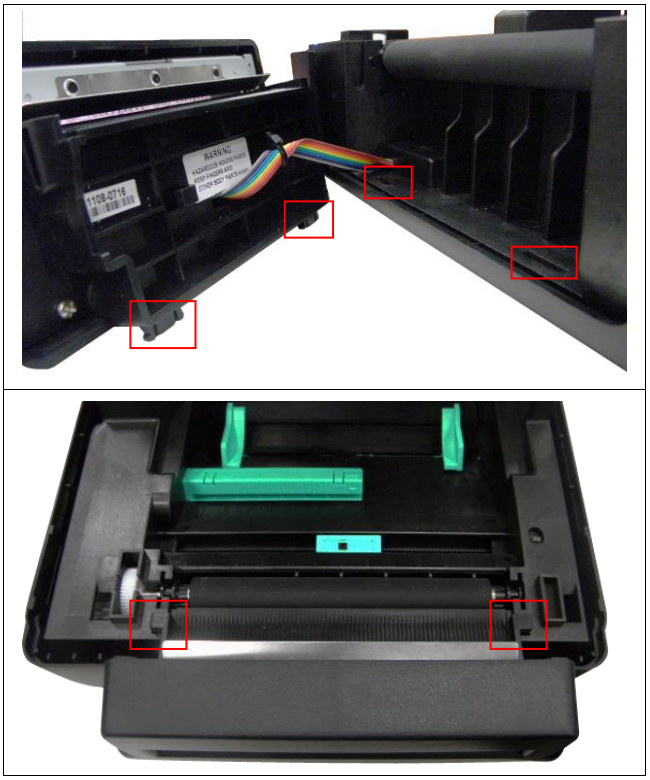


3. Plug in the cutter module harness connector to the 8-pin white socket on the main board.

4. Install back the connector cover and platen roller assembly.



5. 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)



	6. The cutter module is ready to use.

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 ribbon or the printer setting is not correct	1. Out of label or ribbon * Load a roll of label and follow the instructions in loading the media then press the FEED button to resume for printing. * Load a roll of ribbon and follow the instructions in loading the ribbon then press the FEED button to resume for printing. 2. Printer setting is not correct * Initialize the printer by instructions in “Power on Utility” or “Diagnostic Tool”.

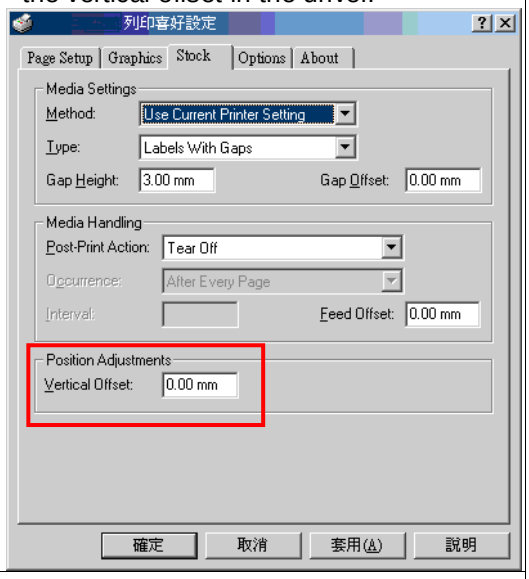
Note:

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 chang 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.
No print on the label	Label or ribbon loaded not correctly.	Follow the instructions in loading the media or loading the ribbon.
	Ribbon run out.	Loading the ribbon.
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	* Ribbon and media is loaded incorrectly * Dust or adhesive accumulation on the print head. * Print density is not set properly. * Printhead element is damaged. * Ribbon and media are incompatible. * The printhead pressure is not set 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. * Change proper ribbon or proper label media. * 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.
- The printer status from DiagTool shows "**Head Open**". - The LCD shows "**Carriage Open**".	The printer carriage is open.	Please close the print carriage.
- The printer status from DiagTool shows "**Ribbon End Err.**" Or "**Ribbon Encoder Err.**" - The LCD shows "**No Ribbon**".	Running out of ribbon.	Supply a new ribbon roll.
	The ribbon is installed incorrectly.	Please re-install the ribbon.
- The printer status from DiagTool shows "**Out of Paper**". - The LCD shows "**No 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.
- The LCD shows "**Take Label**".	* Peel-off function is enabled.	* If the peel-off module is installed, please remove the label. * If there is no peel-off module in front of the printer, please switch off the printer and install it. * Check if the connector is plugging correctly.
Memory full (FLASH / DRAM)	* The space of FLASH/DRAM is full.	* Delete unused files in the FLASH/DRAM. * The max. numbers of DRAM is 256 files. * The max. user addressable memory space of DRAM is 256KB. * The max. numbers of file of FLASH is 256 files. * The max. user addressable memory space of FLASH is 2560KB.

microSD card is unable to use	* microSD card is damaged. * microSD card doesn't insert correctly. * Use the non-approved microSD card manufacturer.	* Use the supported capacity microSD card. * Insert the microSD card again. * The supported microSD card spec and the approved microSD card manufacturers, please refer to section 1.3.
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 parameter Shift Y in the LCD menu 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.
Wrinkle problem	* Ribbon installation 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 guide touch the edge of the media guide.
Gray line on the blank label	* The print head is dirty. * The platen roller is dirty.	* Clean the print head. * 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.

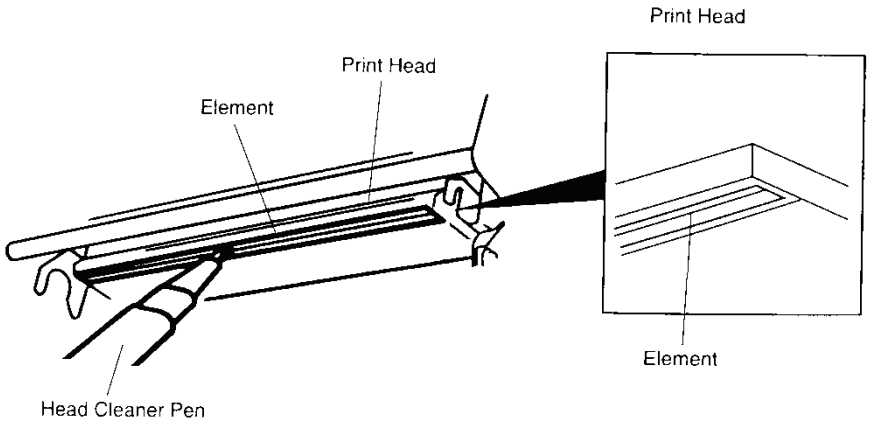
5. MAINTENANCE

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

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 ribbon to keep printer performance and extend printer life.**

UPDATE HISTORY

Date	Content	Editor
2012/5/4	Add the print engine mechanism info on section 3.1	Camille
2014/10/31	Add TA210/TA310 model	Camille

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