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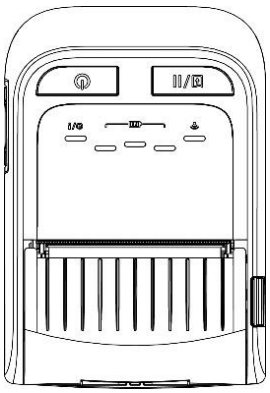
TDM-20

Direct Thermal Portable Printer

SERVICE MANUAL



Contents

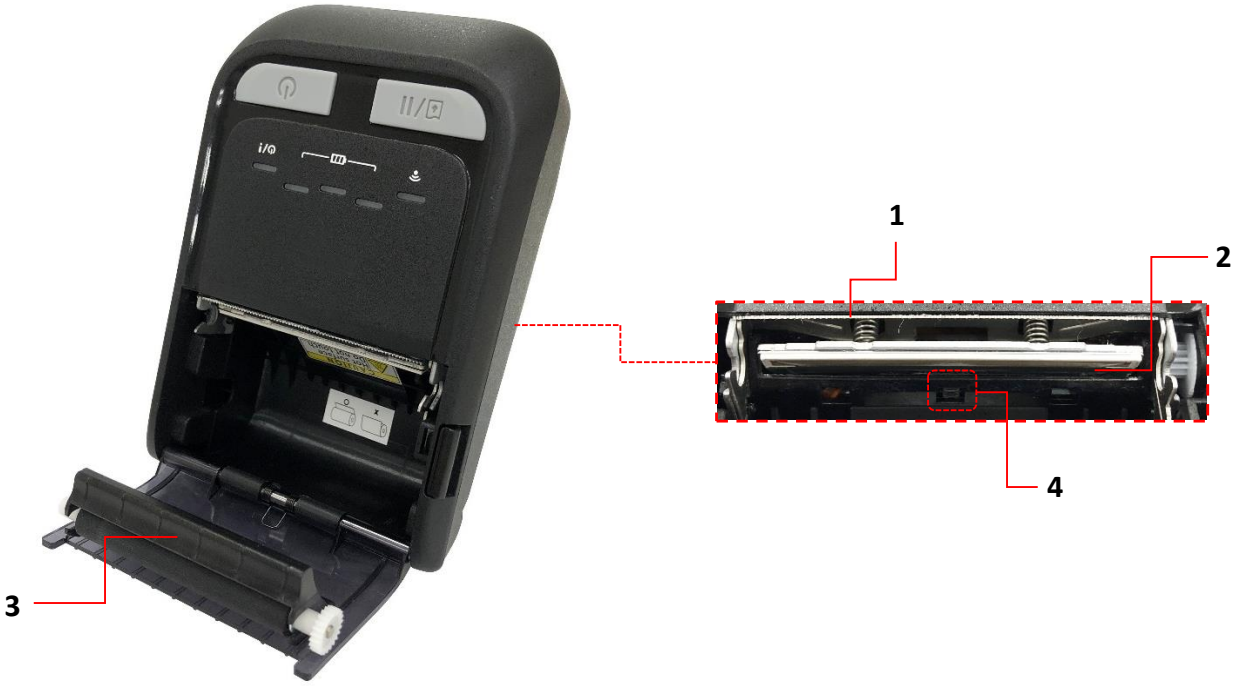
1. FUNDAMENTAL OF THE SYSTEM

1.1 Overview

Front View

1. Power on/off button
2. Feed/stop button
3. LED indicators
4. Media cover
5. Media view window
6. Media cover release button

Interior View



1. Tear edge
2. Print head
3. Platen roller
4. Black mark sensor

Rear View

1. Li-ion Battery
2. Battery open clasp
3. Interface cover
4. Power jack
5. USB interface

LED Indication and Keys

1. Power on/off button
2. Feed/Pause button
3. Printer status LED indicator
4. Battery charge level LED indicators
5. Wireless status LED indicator

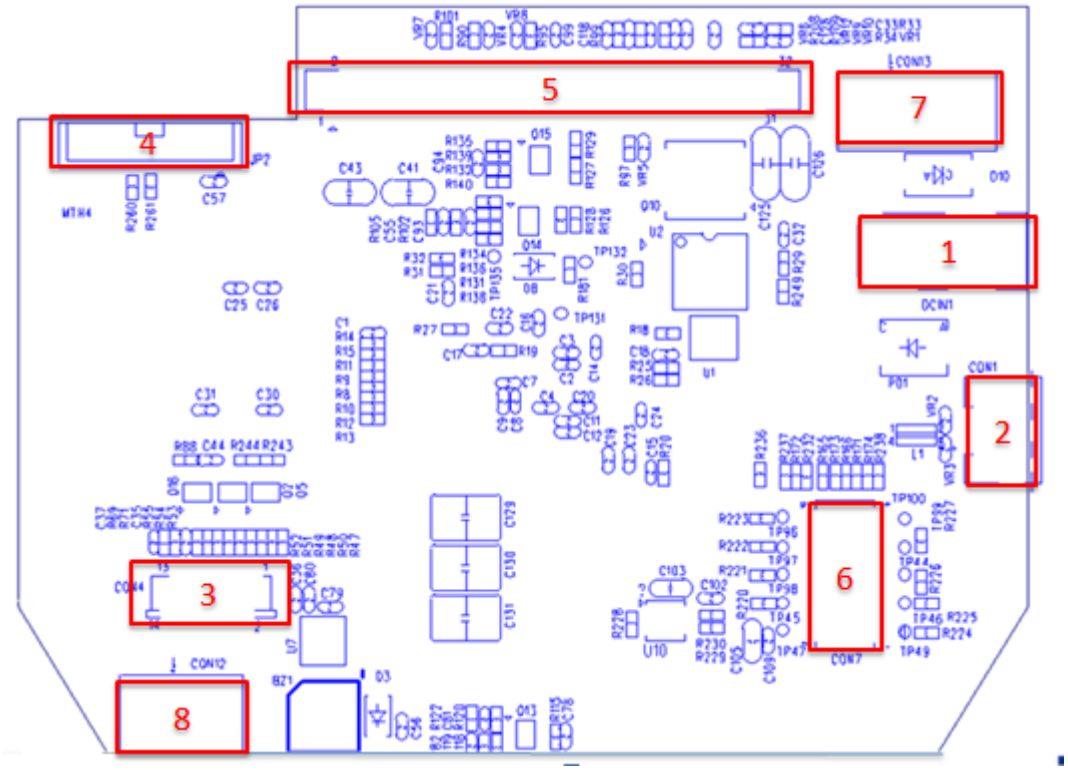
Keys	Function
	**1.** Press and hold for 2-3 seconds to turn on the printer. **2.** Press and hold for 2-3 seconds to turn off the printer.
	**1.** Ready status: Feed one label **2.** Printing status: Pause the print job

LED	Status		Indication
Printer status LED indicator	Off		Printer is ready
	Green (blinking)		Printer is paused
	Green (blinking every two seconds)		Sleep mode/ entered the sleep mode after stop working over 2 minutes (The interval can be changed by revising the command, refer to TSPL/TSPL2 programming manual on TSC website).
	Red (solid)		Media cover is open
	Red (blinking)		Printer error
	Amber (blinking)		Battery is charging.
Battery status LED indicator	Green (blinking)		Battery is charging.
	Green (solid)		Battery is charged.
Wireless/Bluetooth status LED indicator	Bluetooth/ Wi-Fi	Blue (blinking)	Bluetooth/ Wi-Fi device is communicating.
		Blue (solid)	Bluetooth/ Wi-Fi device is ready.

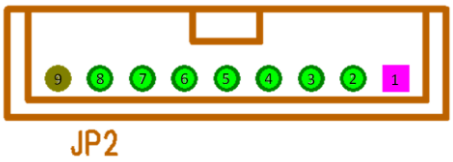
2. ELECTRONICS

2.1 Summary of Board Connectors

Main board top



Connector	Description
1	12V DC IN
2	Micro USB Connector
3	LED Key Board Connector
4	Download F/W Connector



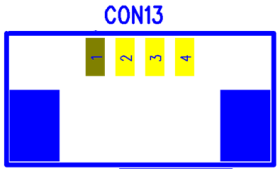
Pin	Description
1	3.3V
2	MCI0_DA0
3	MCI0_DA1
4	MCI0_DA2
5	MCI0_DA3
6	MCI0_CK
7	MCI0_CDA
8	No Connection
9	GND

5 TPH Connector

6 WiFi Module Connector

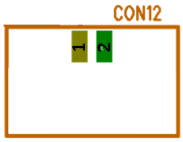
Pin	Description
1	RESET
2	3.3V
3	RTS
4	MISO
5	CTS
6	MOSI
7	CLK
8	Interrupt
9	WB GPIO
10	GND

7 Cradle Connector



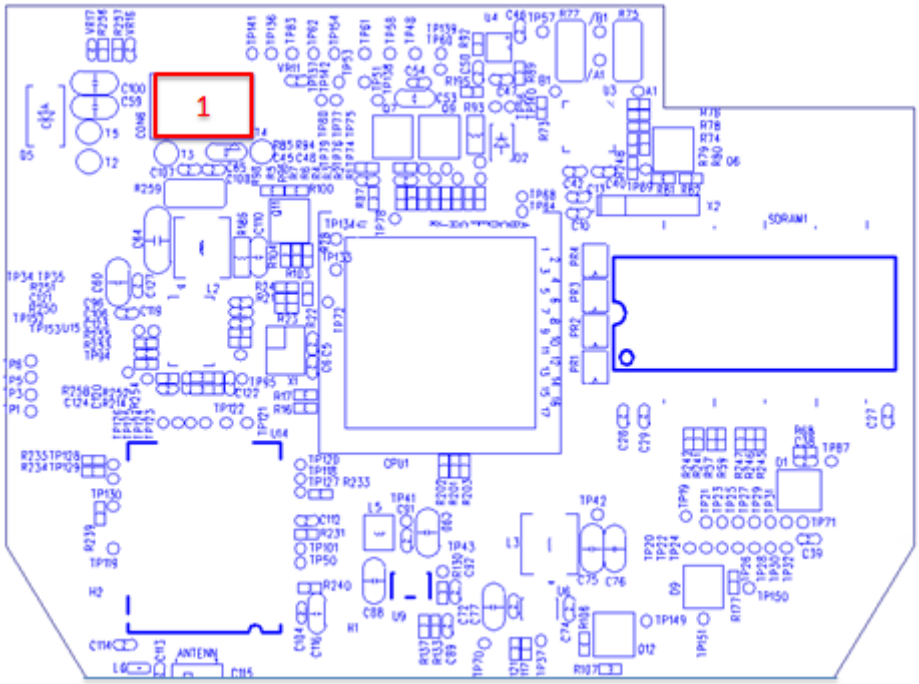
Pin	Description
1	12V
2	Charge Status
3	ISET
4	GND

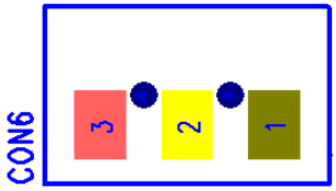
8 RTC Battery



Pin	Description
1	VDDBU
2	GND

Main board bottom



<table>
<tr><th>Connector</th><th>Description</th></tr>
<tr><td>1</td><td>Battery connector
<table>
<tr><td rowspan="4"> 
</td><td>Pin</td><td>Description</td></tr>
<tr><td>1</td><td>Negative (-)</td></tr>
<tr><td>2</td><td>NTC</td></tr>
<tr><td>3</td><td>Positive (+)</td></tr>
</table></td></tr>
</table>

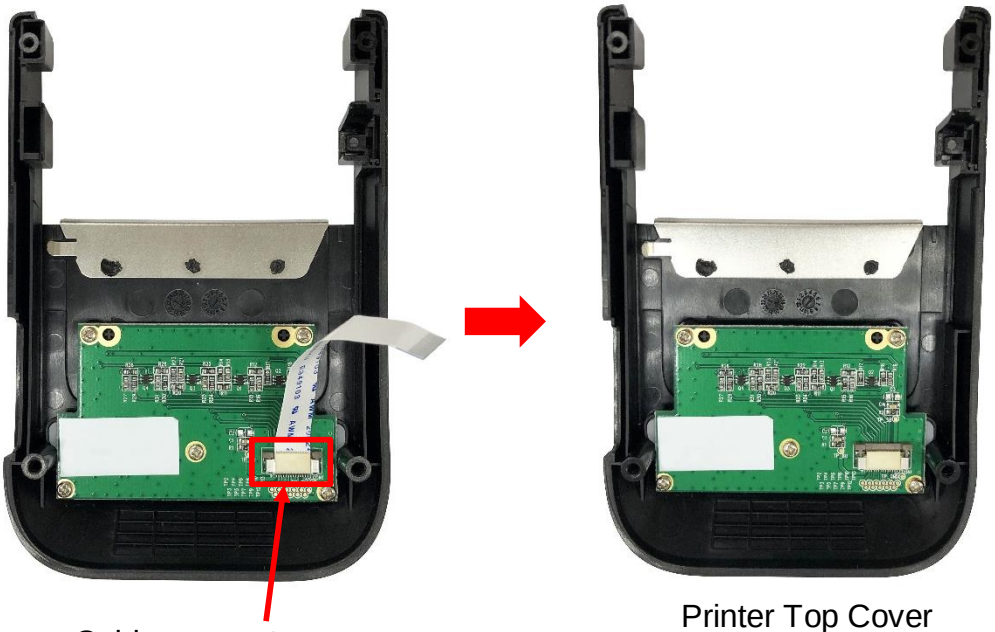
3. MECHANISM

3.1 Replacing the Printer Top Cover (with Keys Control Board)

1. Remove four screws from the back of the printer as indicated.

Screws

2. Remove the cable on cable connector and take out the printer top cover (with keys control board).



Cable connector

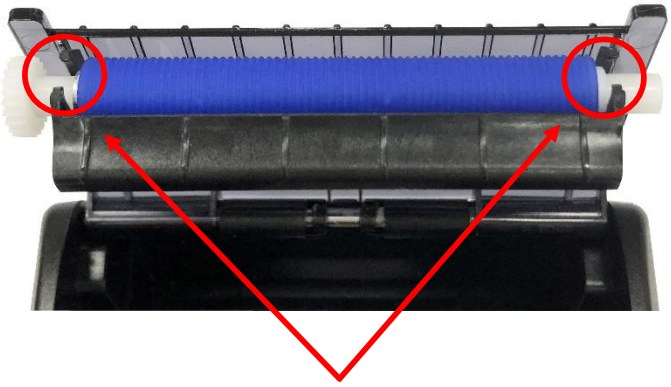
Printer Top Cover
(with Keys Control Board)

3. Reassemble the parts in the reverse procedures.

3.2 Replacing the Linerless Platen Roller (Option)

1. Open the media cover by pressing the media cover release button.

2. Pull up and remove the linerless platen roller through the slots as indicated.



Slots

3. Remove/Replace the linerless platen roller.

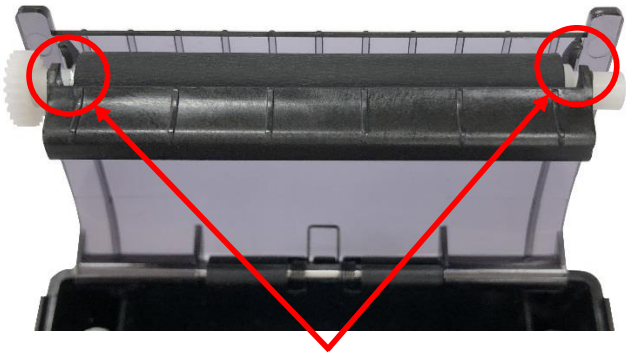
Linerless Platen Roller

4. Reassemble the parts in the reverse procedures.

3.3 Replacing the Platen Roller

1. Open the media cover by pressing the media cover release button.

2. Pull up and remove the platen roller through the slots as indicated.



Slots

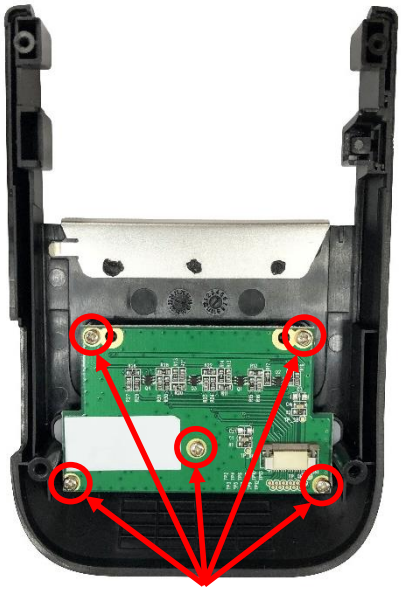
3. Remove/Replace the platen roller.

Platen Roller

4. Reassemble the parts in the reverse procedures.

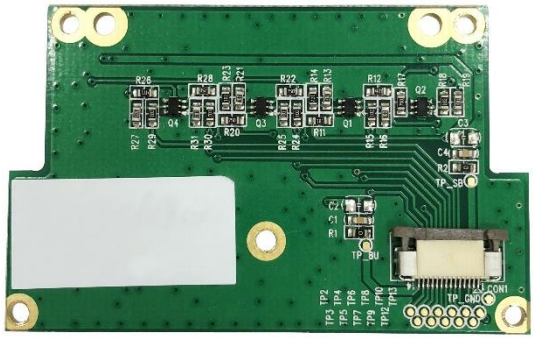
3.4 Replacing the Keys Control Board

1. Refer to section 3.1 to remove the printer top cover (with keys control board).
2. Remove five screws on the keys control board as indicated.



Screws

3. Remove/Replace the keys control board.

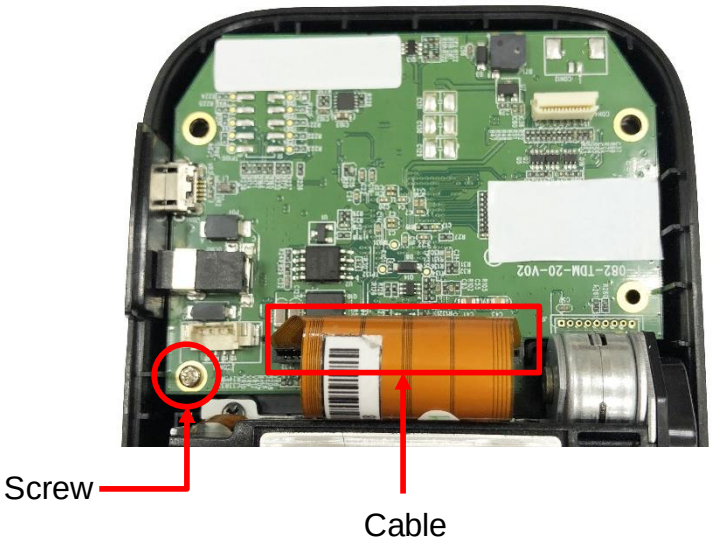


Keys Control Board

4. Reassemble the parts in the reverse procedures.

3.5 Replacing the Main Board Assembly

1. Refer to section 3.1 to remove the printer top cover (with keys control board).
2. Remove one screw and disconnect the cable on the main board assembly as indicated.



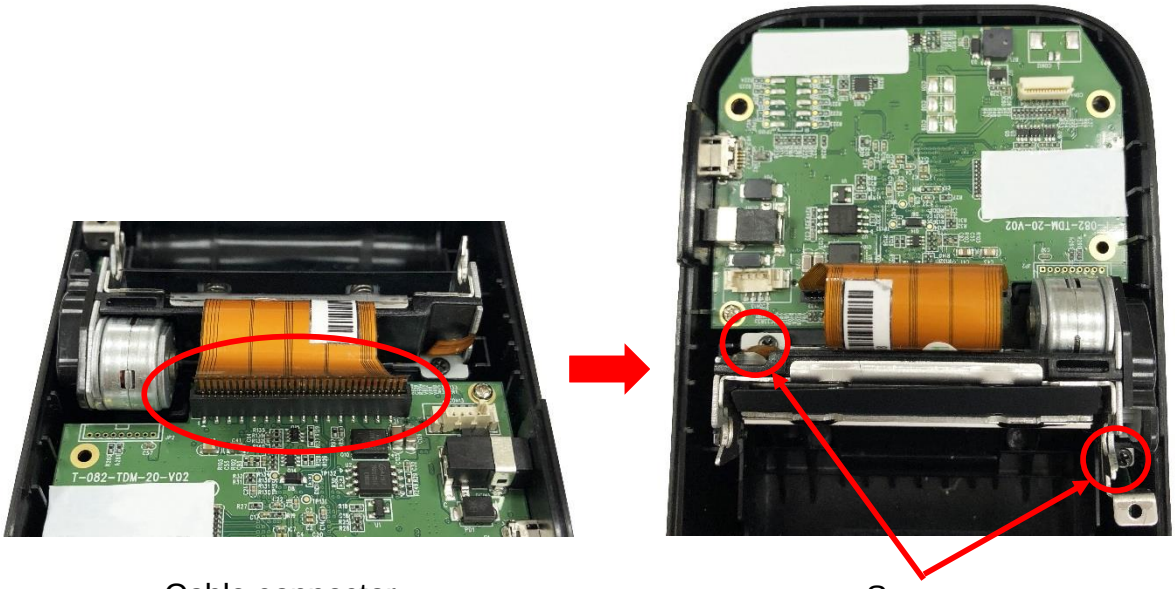
3. Remove/Replace the main board assembly.

Main board assembly

4. Reassemble the parts in the reverse procedures.

3.6 Replacing the Print Mechanism

1. Refer to section 3.1 to remove the Printer Top Cover (with Keys Control Board).
2. Remove the cable connector on interior mechanism and two screws on the Print mechanism as indicated.



Cable connector

Screws

3. Remove/Replace the print mechanism.

Print Mechanism

4. Reassemble the parts in the reverse procedures.

4. TROUBLESHOOTING

4.1 Common Problems

The following guide lists the most common problems that may 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.

Problem	Possible Cause	Recovery Procedure
Power indicator does not illuminate	* The battery is not properly installed. * The battery metal contacts pins are with dirt. * The battery is dead.	* Clean the battery metal contacts. * Reinstall the battery. * Switch the printer on. * Charge the battery.
The printer status from DiagTool shows "**Head Open**".	* The media cover is open.	* Please close the media cover.
The printer status from DiagTool shows "**Out of Paper**".	* Running out of media roll. * The media is installed incorrectly. * Black mark sensor is not calibrated.	* Supply a new media roll. * Please refer to the section 3.4 on User's manual to reinstall the media roll. * Calibrate the black mark sensor.
The printer status from DiagTool shows "**Paper Jam**".	* Black mark sensor is not properly calibrated. * Make sure media size is set properly. * Media may be stuck inside the printer mechanism.	* Calibrate the black mark sensor. * Set media size correctly. * Clean the printer mechanism.
Memory full (FLASH / DRAM)	* The space of FLASH/DRAM is full.	* Delete unused files in the FLASH/DRAM. * Run printer self-test and check the available memory space for DRAM or FLASH. * Check the available memory space for DRAM or FLASH via DiagTool.
Poor Print Quality	* Media cover is not fully latched. * Dust or adhesive accumulation on the print head. * Print density is not set properly. * Print head element is damaged.	* Make sure the right/ left side of media cover is fully latched. * 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 media roll.
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 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.	* Turn off and on the printer to exit the dump mode.

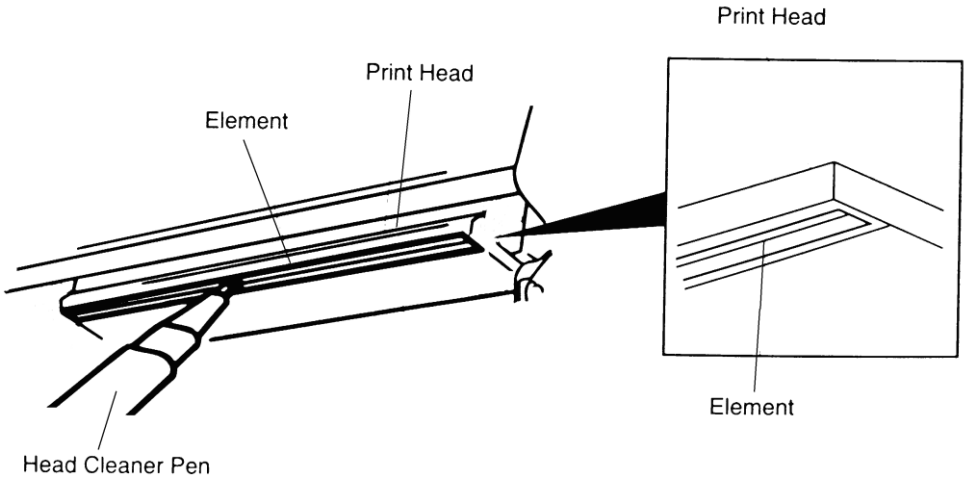
5. Maintenance

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
- 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 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.

Revise History

Date	Content	Editor
2019/9/27	Add Ch.3.2 Replacing the Linerless Platen Roller (Option)	Kate

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