TTP-244 Pro Series

■ Thermal Transfer ■ Direct Thermal

Desktop Barcode Printers

Series Lists:

TTP-244 Pro

User Manual

Copyright information

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1. Introduction

Thank you very much for purchasing TSC bar code printer.

The TTP-244 Pro offers the largest media and ribbon capacities in its class. Unlike most printers, it can easily handle both a 300-meter ribbon and a full 8-inch OD roll of labels. With its fast 5 inch per second print speed, along with the largest memory capacity in its class, the TTP-244 Pro easily outperforms the competition.

With its small, compact footprint and dual-motor design, the TTP-244 Pro is perfect for a wide variety of label and tag printing applications – everything from shipping labels to compliance and general purpose product-identification labels & tags.

This document provides an easy reference for operating this printer. For system integration, the TSPL/TSPL2 printer programming manual or SDKs can be found on TSC website at: https://www.tscprinters.com.

1.1 Product Specification

Product standard feature
Thermal transfer or direct thermal printing
Black mark reflective sensor
Gap transmissive sensor
Ribbon end sensor
2 buttons
3 LED for printer status (Power, Error, On-line)
32-bit RISC CPU
USB 2.0 (full speed) & RS-232 interface
8 MB SDRAM memory
4 MB FLASH memory
Eltron® EPL and Zebra® ZPL emulation languages support
Internal 8 alpha-numeric bitmap fonts
Internal Monotype Imaging® true type font engine with one CG Triumvirate Bold Condensed scalable font
Fonts and bar codes can be printed in any one of the four directions (0, 90,180, 270 degree)
Downloadable fonts from PC to printer memory
Downloadable firmware upgrades
Bar code, graphics/image printing *Supported bar code:* *1D barcode: Code 39, Code 93, Code 128UCC, Code 128 subset A, B, C, Codabar, Interleave 2 of 5, EAN-8, EAN-13, EAN-128, UPC-A, UPC-E, EAN and UPC 2 (5) digits add-on, MSI, PLESSEY, POSTNET, RSS-Stacked, GS1 DataBar, Code 11* *2D bar code: DataMatrix, Maxicode, PDF-417, Aztec, QR code* *Support image: BITMAP, BMP, PCX (Max. 256 colors graphics)*

1.1.1 Printer Optional Features

The printer offers the following optional features.

Product option feature	User option	Factory option
Centronics parallel & RS-232 serial interfaces or Centronics parallel & USB serial interfaces		V
Bluetooth module (serial interface)	V	
802.11 b/g/n wireless module (serial interface)	V	
External roll mount, media OD. 214 mm (8.4”) on a 1” or 3” core	V	
SD card reader for memory expansion up to 4G	V	
3” core label spindle	V	
KP-200 Plus keyboard	V	

1.2 General Specification

Physical dimensions	**2**32 mm (W) x 156 mm (H) x 288 mm (D)
Enclosure	ABS plastic
Weight	2.5 kg (5.51 lbs)
Power	External universal switching power supply Input: AC 100-240V, 2.5A, 50-60Hz Output: DC 24V, 2.5A, 60W
Environmental condition	Operation: 5 ~ 40°C, 25 ~ 85% non-condensing Storage: -40 ~ 60°C, 10~ 90% non-condensing

1.3 Print Specification

Print Specifications

Print head resolution (dots per inch/mm)	203 dots/inch (8 dots/mm)
Printing method	Thermal transfer or direct thermal
Dot size (width x length)	0.125 x 0.125 mm (1 mm = 8 dots)
Max. print speed	5 ips (127 mm/sec)
Max. print width	4.25” (108 mm)
Max. print length	90” (2286 mm)

1.4 Ribbon Specification

Ribbon Specifications

Ribbon outside diameter	Max. 67 mm OD
Ribbon length	300 m
Ribbon core inside diameter	1” core
Ribbon width	40 mm ~ 110 mm (1.6” ~ 4.3”)
Ribbon wound type	Ink coated outside

Note: The maximum length of ribbon depends on its thickness and core outside diameter.

The formula below defines the correlation between ribbon roll length and ribbon core diameter.

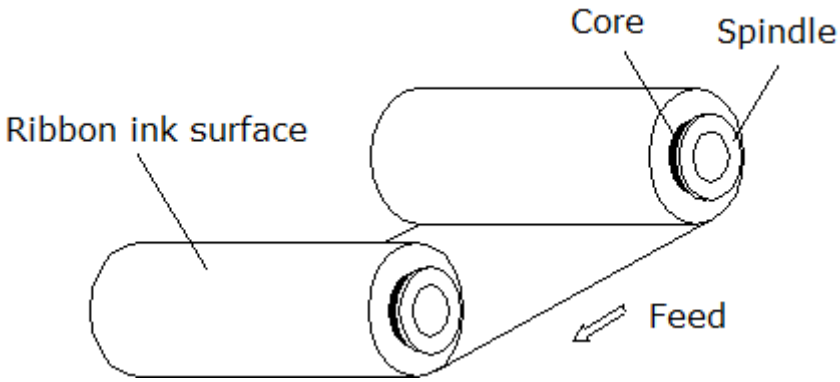
$$L = \frac{(D^2 - d^2) \times \pi}{4t}$$, where

L = Ribbon length

D = Max. roll diameter

d = Ribbon core outside diameter

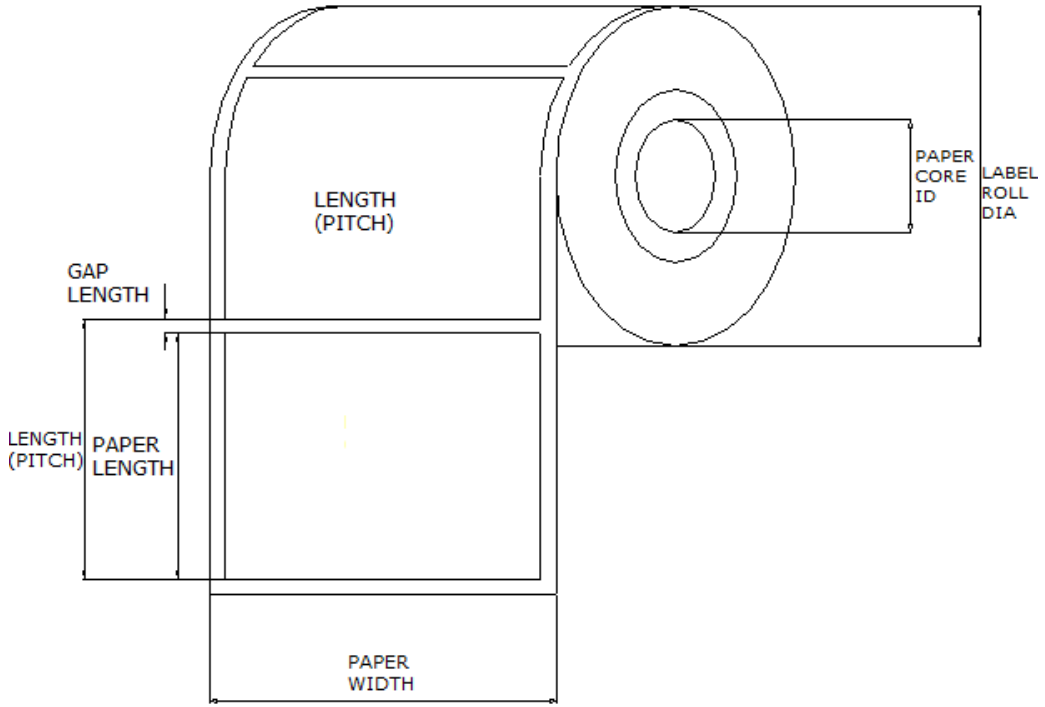
t = Ribbon thickness



1.5 Media Specification

Media Specifications

Label roll capacity	110 mm (4.33”) OD
Media core diameter	25.4 ~ 76.2 mm (1” ~ 3”)
Media type	Continuous, die-cut, black mark, External fan-fold, notched
Media wound type	Outside wound
Media width	25.4 ~ 112 mm (1.0” ~ 4.4”)
Media thickness	0.06 ~ 0.19 mm (2.36 ~ 7.48 mil)
Label length	10 ~ 2,286 mm (0.39” ~ 90”)



1.6 Various Sensor

Gap Sensor

The gap sensor detects a label gap to locate the top of form of the next label. The sensor is mounted 4 mm off the center line of the main mechanism.

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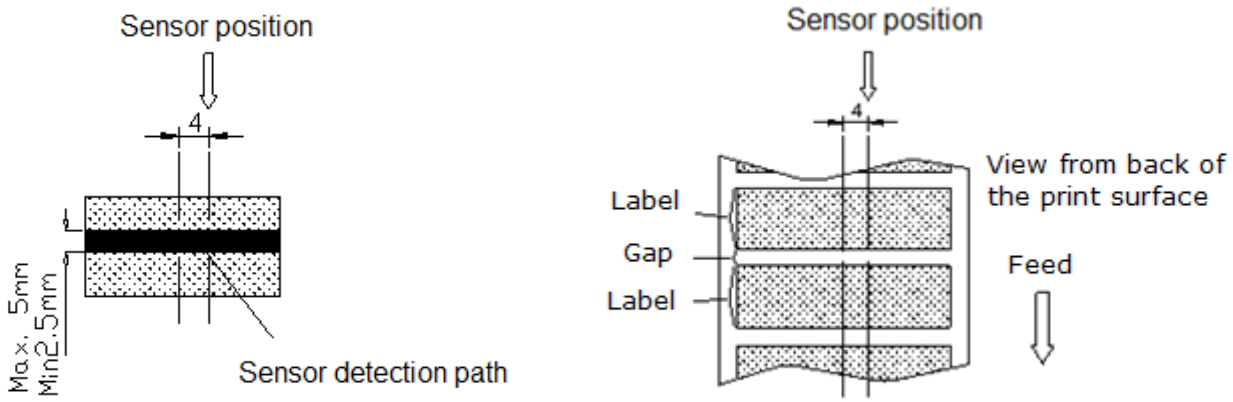
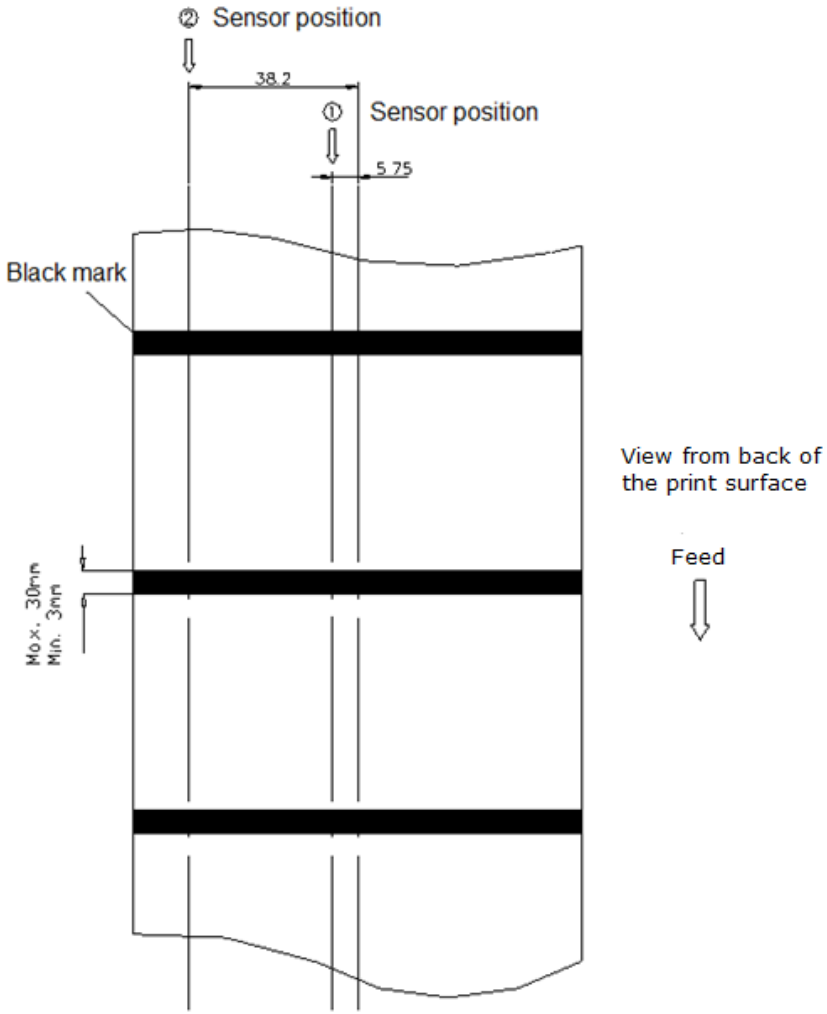


Black Mark Sensor

The black mark sensor locates the position of label by emitting infrared rays onto the black mark at the back of the ticket. The sensor is mounted 5.75 mm off the center line of the mechanism.

In case of Ticket

The default sensor position is (1) as shown on the figure below. To change to the (2) position, the customer should notify the manufacturer in advance. There can be only one position for the sensor.



Ribbon End Sensor

The sensor detects the end portion of the ribbon. The ribbon end must be transparent.

2. Operation Overview

2.1 Unpacking and Inspection

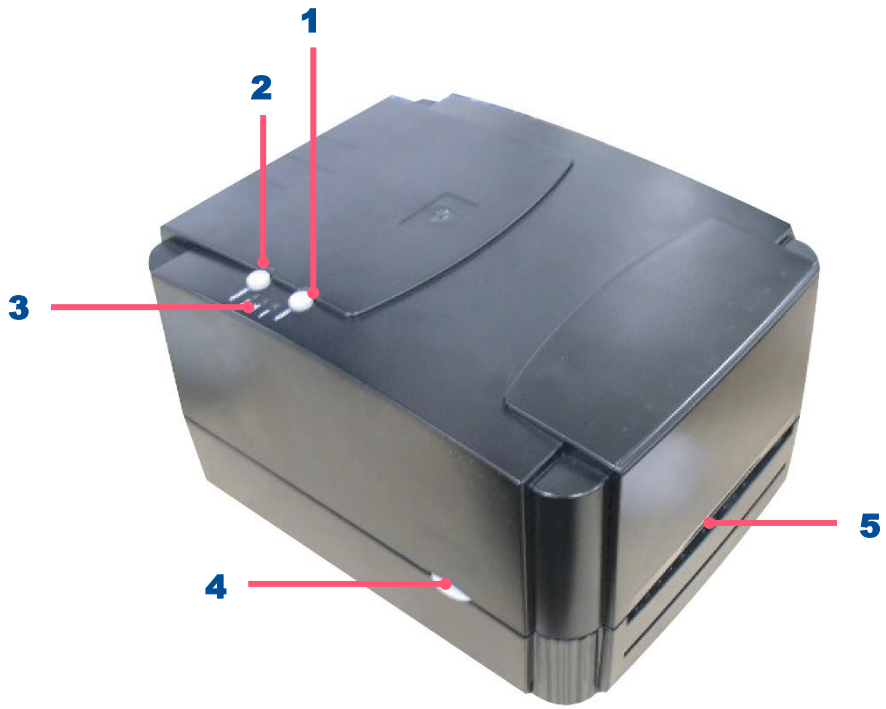
This printer has been specially packaged to withstand damage during shipping. Please carefully inspect the packaging and printer upon receiving the bar code printer. Please retain the packaging materials in case you need to reship the printer.

- 1 printer unit
- 1 quick installation guide
- 1 external auto switching power supply
- 1 power cord
- 1 label spindle
- 2 fixing tabs
- 2 ribbon spindles
- 1 paper core for ribbon rewind spindle

If any parts are missing, please contact the Customer Service Department of your purchased reseller or distributor.

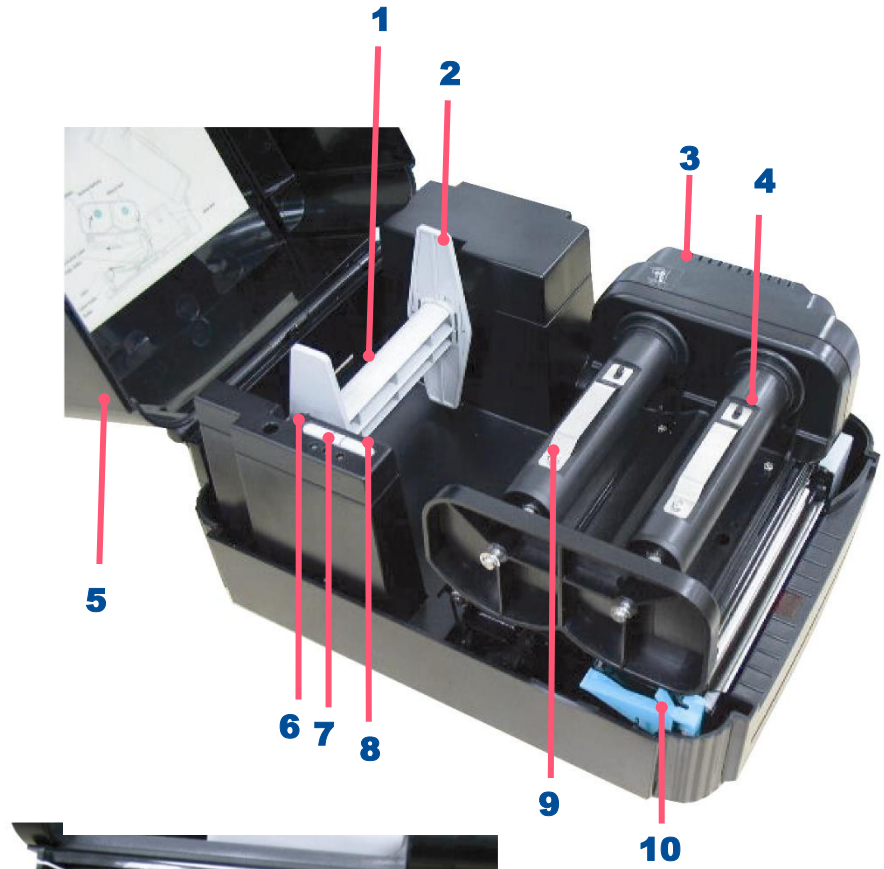
2.2 Printer Overview

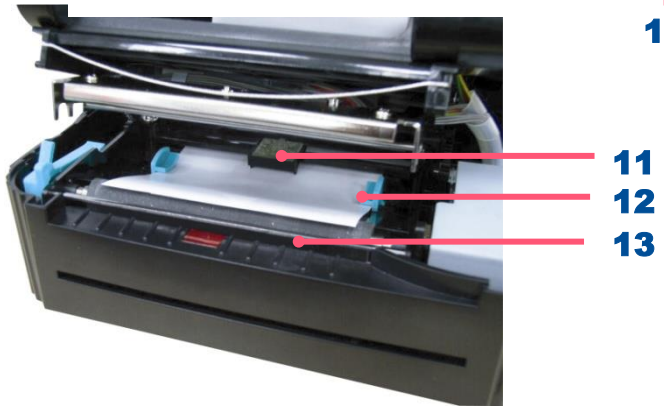
2.2.1 Front View



1. FEED button
2. PAUSE button
3. PWR., ON-LINE and ERR. indicators
4. Cover release button
5. Label dispense opening

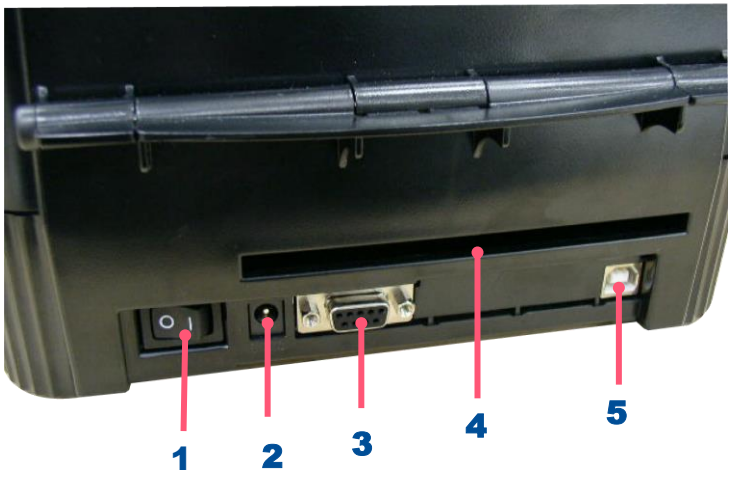
2.2.2 Interior View

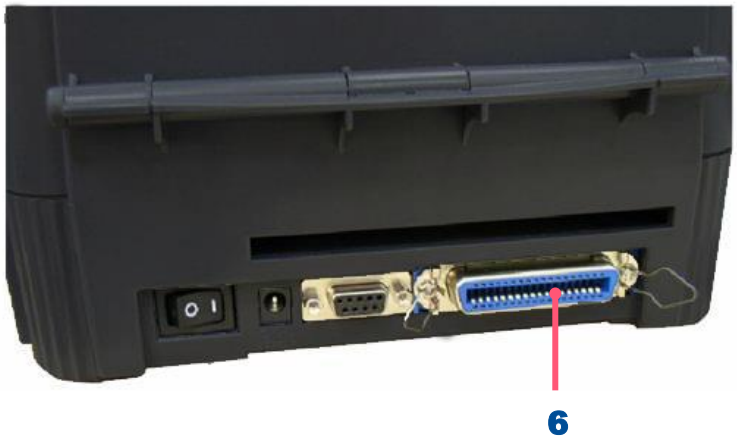




1. Label supply roll spindle
2. Fixing tabs
3. Ribbon mechanism
4. Ribbon rewind spindle
5. Printer cover (in open position)
6. PAUSE button
7. PWR., ON-LINE, ERR. indicators
8. FEED button
9. Ribbon supply spindle
10. Printer carriage release lever
11. Media sensor
12. Adjustable label guide
13. Platen roller

2.2.3 Rear View





1. Power on/off switch
2. Power supply DC jacket
3. RS-232C interface
4. Label insert opening (For use with external media)
5. USB interface
6. Centronics interface (Factory option)

3. Setup

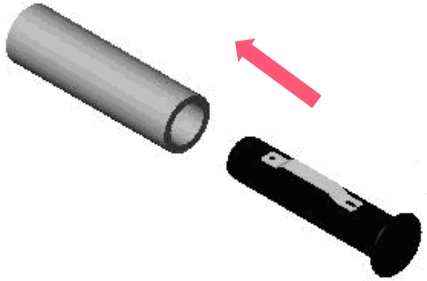
3.1 Setting up the Printer

1. Open the printer top cover.
2. Place the printer on a flat surface.
3. Make sure the POWER switch is OFF.
4. Connect the printer to the computer with RS-232C or USB cable.

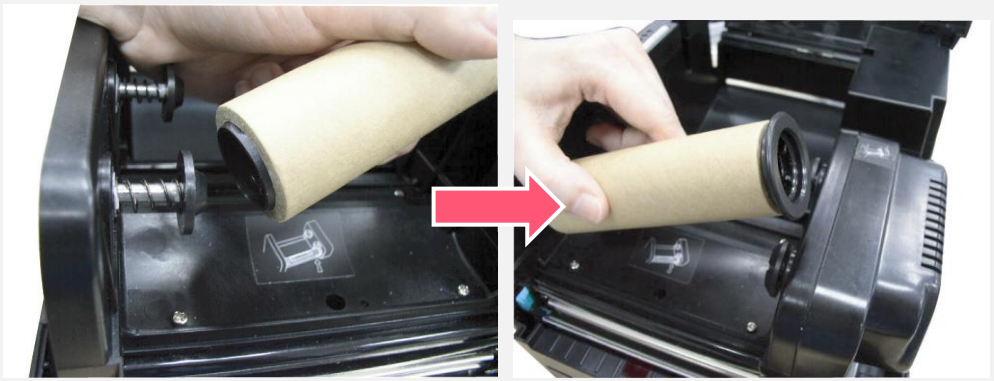
5. Plug the power cord into the power jacket at the rear of the printer, and then plug the power cord into a properly grounded receptacle.

◆ **Note: Please switch OFF the printer before plugging in the power cord to printer power jack.**

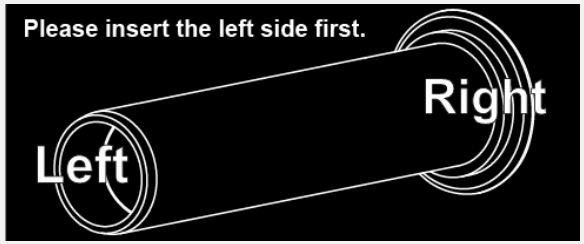
3.2 Loading the Ribbon

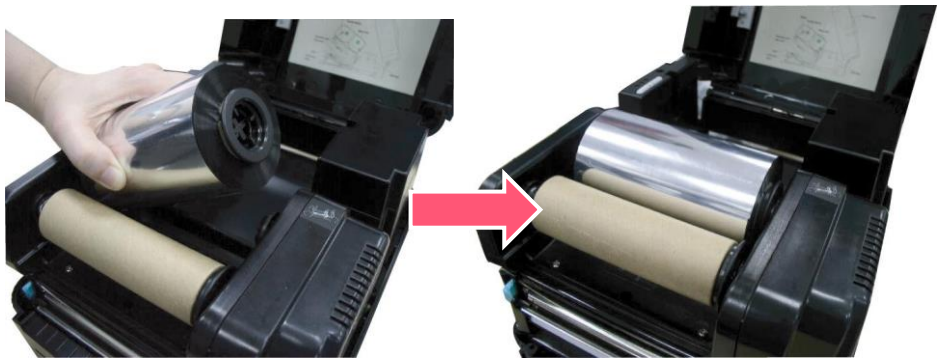


1. Place paper core on the ribbon rewind spindle.

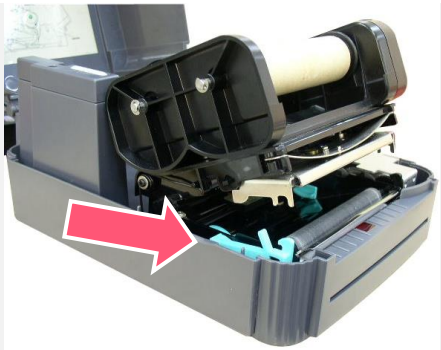


2. Insert the left side first. Mount the ribbon rewind paper core on the front hubs.
Please be noted that the bigger hub side with 4 ribs must be installed toward the right side of ribbon mechanism.





3. Install a ribbon on the ribbon supply spindle. Mount the ribbon supply spindle on the rear hubs.
Please be noted that the bigger hub side with 4 ribs must be installed toward the right side of ribbon mechanism.



4. Disengage the printer carriage by pulling the carriage release lever forwards.

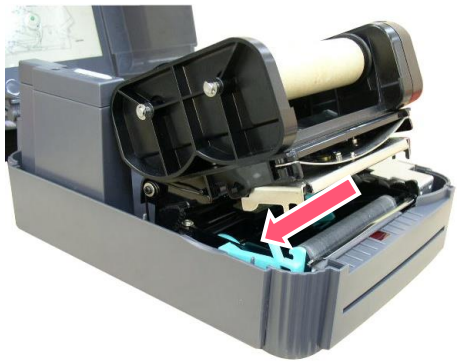
5. Following the direction of the ↓ **RIBBON** label, pull the transparent ribbon leader to the front from under the ribbon mechanism.

6. Attach the ribbon leader to the empty paper core on the ribbon rewind spindle (with a tape).

Note: Please install ribbon and media and close print head mechanism before turning on the power. Printer will determine direct thermal or thermal transfer mode automatically.

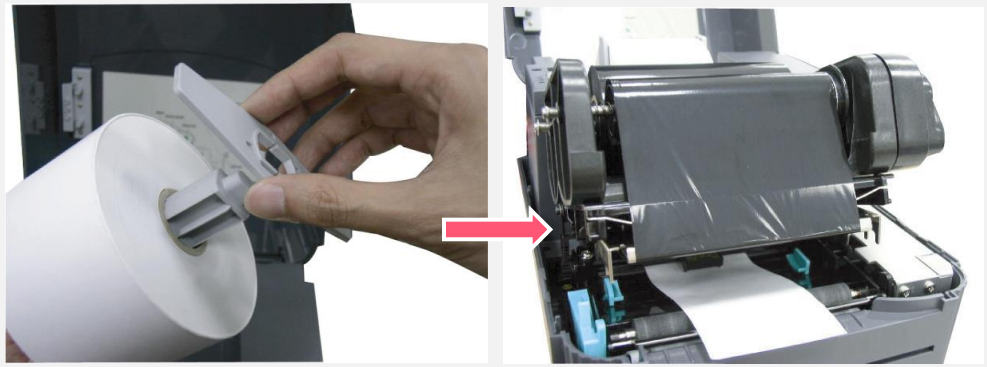
7. Rotate the ribbon rewind spindle until the ribbon overlaps the ribbon leader and stretches tight.
8. Close the printer carriage.
9. Close the printer cover and press the **FEED** button until the green **ON-LINE** LED illuminates.

3.3 Loading the Media

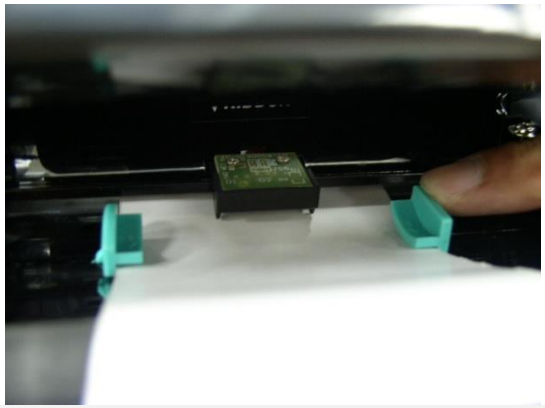


1. Open the printer cover then disengage the printer carriage.

2. Place the label roll into the label roll mount/ or external label roll mount. Feed the label under the carriage and over the platen.



External Label Roll Mount (Option)



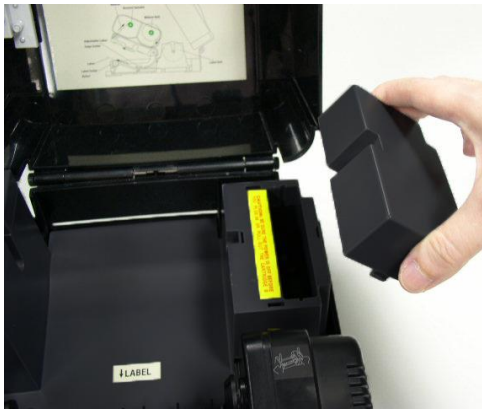
3. Adjust the label guide to fit the width of the media.

4. Engage the printer carriage.

5. Wind the label roll until it becomes adequately taut.
6. Close the printer cover and press the **FEED** button three or four times until the green **ON-LINE** indicator illuminates.
7. When the printer is out of ribbon or media, the **ON-LINE** LED will not illuminate and the **ERR.** LED will flash. Reload the ribbon or media without turning off the printer power. Press the **FEED** button three or four times until the **ON-LINE** LED illuminates. The printing job will be resumed without data loss.

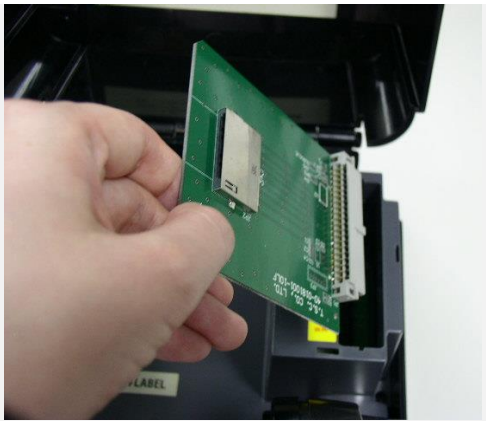
N/A

3.4 Install SD Memory Card (Option)



1. Open the memory card cover.

2. Make sure the direction of the memory card is correct



3. Plug in the SD memory card module on the main board.

4. Close the print head mechanism as indicated.

4. LED and Button Functions

4.1 LED Indication

LED	Indication
PWR. (POWER) Indicator	The green **PWR.** indicator illuminates when the **POWER** switch is turned on.
ON-LINE Indicator	The green **ON-LINE** indicator illuminates when the printer is ready to print. When **PAUSE** button is pressed, the **ON-LINE** indicator flashes.
ERR. Indicator (Error/Paper Empty)	The red **ERR.** indicator illuminates in the event of a printer error, such as memory error, syntax error, and so forth.

4.2 Regular Button Function

Buttons	Function
PAUSE Button	The PAUSE button allows the user to stop or continue a print job. By pressing the PAUSE button: (1) the printer stops printing after printing label (2) the PAUSE LED flashes (3) the printer will hold all data in memory. This allows for trouble-free replacement of label stock and thermal transfer ribbon. Press again the button will restart the printer. **Note: If the PAUSE button is held down for more than 3 seconds, the printer will be reset and all data of the previous printing job will be lost.**
FEED Button	Press the FEED button to feed the label.

4.3 Power-on Utilities

There are three power-on utilities to set up and test hardware. These utilities are activated by pressing the FEED or PAUSE button and turning on the printer power simultaneously. The utilities are listed as below:

1. Self-test
2. Gap sensor calibration
3. Printer initialization

Self Test and Dump Mode

This utility is used to use self test function to see the setting of the printer. Please follow below steps to activate the function:

Install the label first > Press the FEED button> Turn on the printer power > The printer will perform the following items:

1. Calibrate label pitch
2. Print out thermal print head check pattern
3. Print the internal settings
4. Enter dump mode

Dump Mode

After the self test, the printer enters the dump mode. In this mode, any characters sent from the host computer will be printed in two columns. The characters received will be shown in the first column, and their corresponding hexadecimal values will be shown in the second column. Reset the printer by turning the POWER switch off and on.

ASCII Data →

```
*******************************
NOW IN DUMP MODE

DOWNLOAD "DE   44 4F 57 4E 4C 4F 41 44 20 22 44 45
MO2.BAS"  SI   4D 4F 32 2E 42 41 53 22 0D 0A 53 49
ZE 4.00,5.00   5A 45 20 34 2E 30 30 2C 35 2E 30 30
  CLS  SPEED   0D 0A 43 4C 53 0D 0A 53 50 45 45 44
 1.5  DENSIT   20 31 2E 35 0D 0A 44 45 4E 53 49 54
Y 10  DIRECT   59 20 31 30 0D 0A 44 49 52 45 43 54
ION 0  SET C   49 4F 4E 20 30 0D 0A 53 45 54 20 43
UTTER OFF  S   55 54 54 45 52 20 4F 46 46 0D 0A 53
ET DEBUG LAB   45 54 20 44 45 42 55 47 20 4C 41 42
EL  REFERENC   45 4C 0D 0A 52 45 46 45 52 45 4E 43
E 0,0  A=100   45 20 30 2C 30 0D 0A 41 3D 31 30 30
0  Y=100  FO   30 0D 0A 59 3D 31 30 30 0D 0A 46 4F
R I=1 TO 3     52 20 49 3D 31 20 54 4F 20 33 0D 0A
BARCODE 100,   42 41 52 43 4F 44 45 20 31 30 30 2C
Y,"39",96,1,   59 2C 22 33 39 22 2C 39 36 2C 31 2C
0,2,4,STR$(A   30 2C 32 2C 34 2C 53 54 52 24 28 41
)  A=A+1  Y=   29 0D 0A 41 3D 41 2B 31 0D 0A 59 3D
Y+150  NEXT    59 2B 31 35 30 0D 0A 4E 45 58 54 0D
 PRINT 1  EO   0A 50 52 49 4E 54 20 31 0D 0A 45 4F
P  DEMO2       50 0D 0A 44 45 4D 4F 32 0D 0A
```

← Hex decimal data related to left column of ASCII data

Gap Sensor Calibration Utility

This utility is used to calibrate the sensitivity of gap sensor. Please follow the steps below to calibrate gap sensor:

1. **Turn off the printer power > install blank labels > Hold the PAUSE button > Turn on printer power.**
2. **Release PAUSE button when printer feeds labels > Do not turn off printer until the printer stops and two green LED lights on.**

Note: Black mark sensor has fixed sensitivity. It is no need to calibrate the black mark sensor

Printer Initialization

Printer initialization sets printer parameters to default values. And it will not clear downloaded files resident in flash memory.

Please follow the steps below to initialize the printer:

1. **Turn off the printer power > Hold down the PAUSE and FEED buttons > Turn on the printer.**
2. **Do not release the buttons until the three LED flash in turn.**

Note: Printing method (thermal transfer or thermal direct printing) will be set automatically at the activation of printer power. When printer initialization is done, sensor sensitivity will be reset to default. Sensor calibration is required before printing labels.

Printer configuration will be restored to defaults as below after initialization.

Parameter	Default setting
Speed	76.2 mm/sec (3 ips)
Density	8
Media Width	4” (101.6 mm)
Media Height	4” (101.6 mm)
Sensor Type	Gap sensor
Gap Setting	0.12” (3.0 mm)
Print Direction	0
Reference Point	0,0 (upper left corner)
Offset	0
Post-Print Action	Tear mode
Serial Port Settings	9600 bps, none parity, 8 data bits, 1 stop bit
Code Page	850
Country Code	001
Clear Flash Memory	No

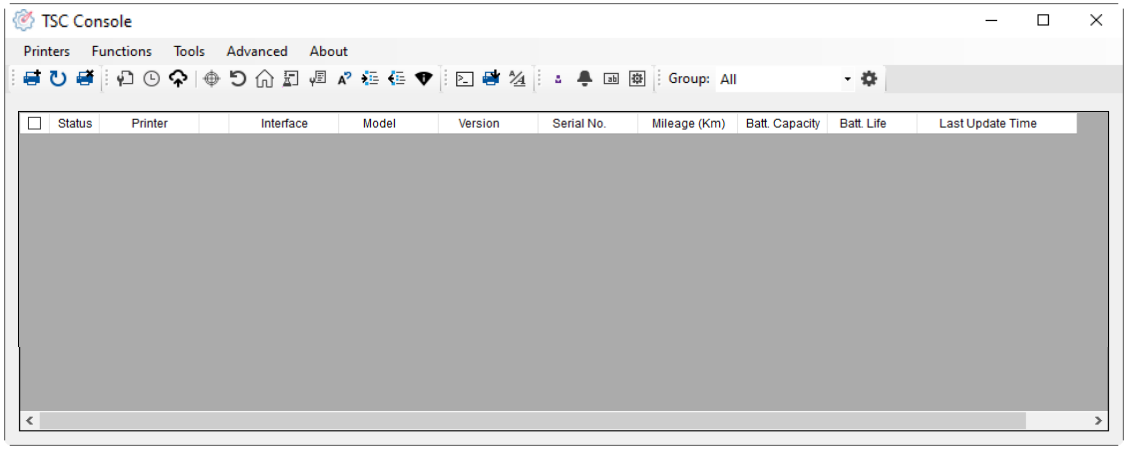
5. TSC Console

TSC Console is a management tool combining the Printer Management, Diagnostic Tool, CommTool and Printer Webpage settings, which enables you to adjust printer's settings/status; change printers' settings; download graphics, deploy fonts, graphics, label templates or upgrade the firmware to the group of printers, and send additional commands to printers at the same time.

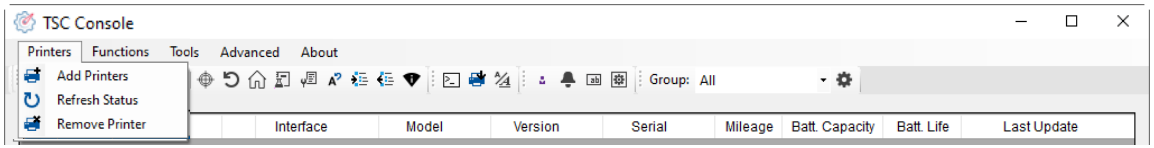
※ **Printer firmware version before A2.12 will only use 9100 Port as command port; Printer firmware after A2.12 will use 6101 Port as command port.**

5.1 Start TSC Console

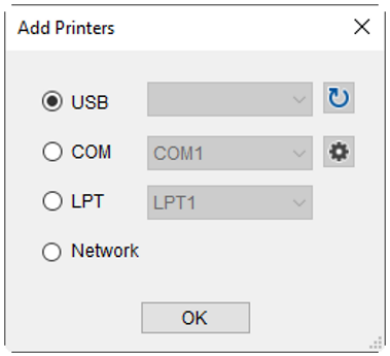
1. Double click TSC Console icon to start the software.



2. Manually add the devices by clicking **Printer > Add Printers**.

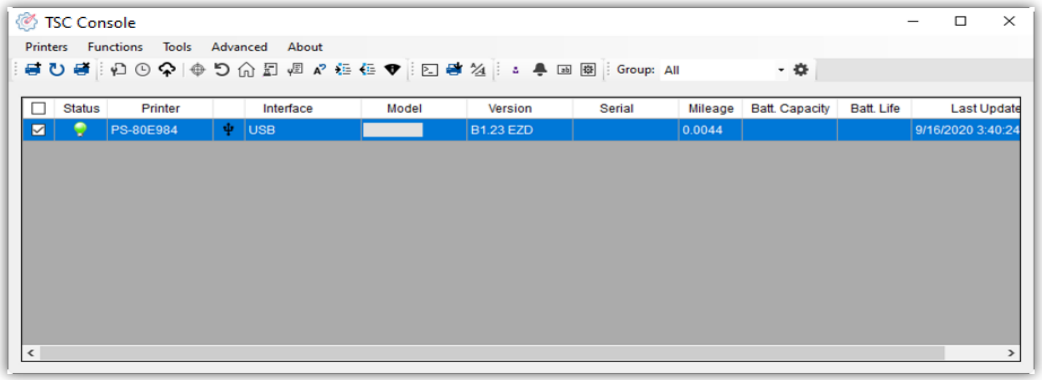


3. Select the current interface of the printer.



4. The printer will be added to **TSC Console**'s interface.

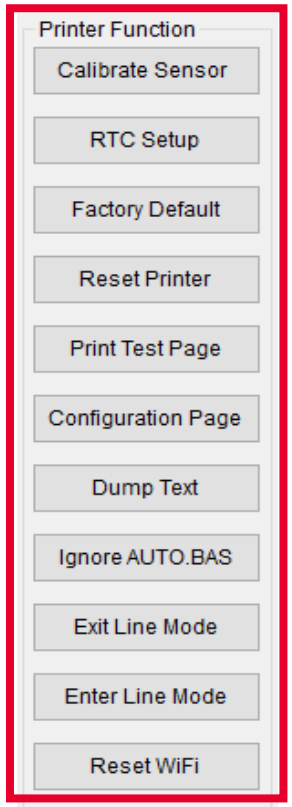
5. Select the printer and set the settings.



For more information, please refer to TSC Console User Manual.

5.2 Printer Function

Printer Function could be found in **Printer Configuration**. “**Printer Function**” will be shown on the left side of the window.



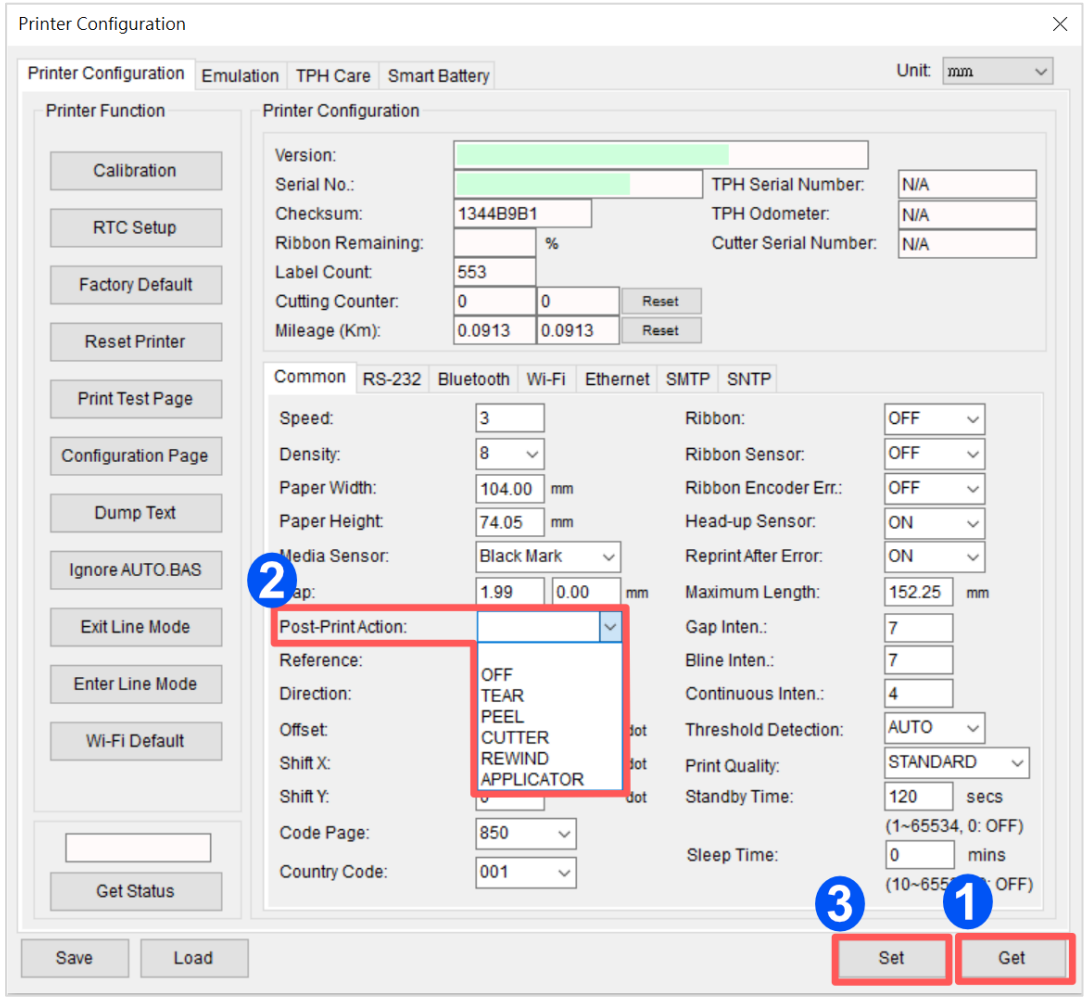
Functions	Description
Calibrate Sensor	Detect media types and the size of the label
RTC Setup	Synchronize printer with Real Time Clock on PC
Factory Default	Initialize the printer to default settings
Reset Printer	Reboot printer
Print Test Page	Print test page according to the specified label size and sensor type.
Configuration Page	Print printer configurations
Dump Text	Activate the printer to dump mode
Ignore AUTO.BAS	Restart the printer and Ignore AUTO.BAS file for once
Exit Line Mode	Exit the line mode to page mode
Enter Line Mode	Leave page mode and enter line mode
Reset WiFi	Restore the WiFi settings to defaults.

5.3 Setting Post-Print Action

When the printer is equipped with other option kits, ex: cutter, peeler, rewinder, please select the mode after finishing the calibration.

Follow below procedure to set the post action for the printing:

Refer Ch. 5.1 to connect the printer with TSC Console > Double click the printer > Printer Configuration Page will pop up > Click Get to load information > Go to Common Tab > Find Post-Print Action > Select the mode for the application > Click Set to finish setting.



6. Troubleshooting

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	Solution
Ribbon does not advance or rewind	1. The media and ribbon must be installed then engage the print head mechanism prior to turning on printer power. 2. Install the black ribbon spindle at the correct direction. 3. Please check the "Media settings method" in the driver if it is set to direct thermal mode.
Poor print quality	1. Clean the thermal print head. 2. Adjust the print density setting. 3. Ribbon and media are not compatible. 4. Media thickness is over spec. 5. Check if correct power supply is connected with printer.
Power indicator on printer does not illuminate	1. Check the power cord see whether it is properly connected. 2. Check if the LED on the power supply is illuminated. If it is not lit on, then the power supply is damaged. 3. Check if correct power supply is connected with printer.
ON-LINE indicator is off, ERR. indicator is on	1. Out of paper or out of ribbon **If there is one beep sound when printer is error, then it's gap sensor problem. Please check the following items.** ・ Calibrate gap sensor or setup the paper length in labeling software/program properly. ・ Install the paper at the correct **If there are two beeps sound when printer is error then it's ribbon sensor problem.**

	Please check the following items. ・ Is outside wound ribbon is used with this printer? ・ Is ribbon threaded correctly in the mechanism? ・ Is paper core installed on the ribbon take up spindle? 2. Calibrate the sensitivity of gap sensor.
Continuous feeding when printing labels	1. Check the driver or command script setting if sensor type is set properly. 2. Calibrate the gap sensor again if die cut media is used for printing.

7. 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 print head 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.

Cleaning Tools

- 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)

Cleaning Process:

Printer Part	Method	Interval
Print Head	I. Always turn off the printer before cleaning the printhead. II. Allow the printhead to cool for at least one minute. III. Use a cotton swab and 99% Isopropyl Alcohol or genuine print head cleaning pen to clean the print head surface.	Clean the print head when changing a new label roll.
Platen Roller	I. Turn off the printer. II. Rotate the platen roller and wipe it thoroughly with the lint-free 99% Isopropyl Alcohol.	Clean the platen roller when changing a new label roll
Peel Bar	Use the lint-free cloth with 99% Isopropyl Alcohol to wipe it.	As needed
Sensor	Use brush with soft non-metallic bristles or a vacuum cleaner, to remove paper dust. Clean upper and lower media sensors to ensure reliable Top of Form and Paper Out sensing.	Monthly
Exterior	Clean the exterior surfaces with a clean, lint-free cloth (water-dampened cloth). If necessary, use a mild detergent or desktop cleaning solution then use the 75% Ethanol to wipe it.	As needed
Interior	Clean the interior of the printer by removing any dirt and lint with a vacuum cleaner, as described above, or use a brush with soft non-metallic bristles then use the 75% Ethanol to wipe it.	As needed

8. Agency Compliance and Approvals

EN 55032, Class A
EN 55024
EN 60950-1; EN 61000-3-2; EN 61000-3-3
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC part 15B, Class A
ICES-003, Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

AS/NZS CISPR 32, Class A

KN 22
KN 24
이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

	GB 4943.1 GB 9254, Class A GB 17625.1 此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰， 在这种情况下，可能需要用户对干扰采取切实可行的措施。
	EN 60950-1
	IS 13252(Part 1)/ IEC 60950-1
	TP TC 004/2011 TP TC 020/2011

Note: There may have certification differences in the series models, please refer to product label for accuracy.

Important safety instructions:

1. Read all of these instructions and keep them for later use.
2. Follow all warnings and instructions on the product.
3. Disconnect the power plug from the AC outlet before cleaning or if fault happened.
   Do not use liquid or aerosol cleaners. Using a damp cloth is suitable for cleaning.
4. The mains socket shall be installed near the equipment and easily accessible.
5. The unit must be protected against moisture.
6. Ensure the stability when installing the device, Tipping or dropping could cause damage.
7. Make sure to follow the correct power rating and power type indicated on marking label
   provided by manufacture.
8. Please refer to user manual for maximum operation ambient temperature.

WARNING:

Hazardous moving parts, keep fingers and other body parts away.

CAUTION:

(For equipment with RTC (CR2032) battery or rechargeable battery pack)

Risk of explosion if battery is replaced by an incorrect type.

Dispose of used batteries according to the Instructions as below.

1. DO NOT throw the battery in fire.
2. DO NOT short circuit the contacts.
3. DO NOT disassemble the battery.
4. DO NOT throw the battery in municipal waste.
5. The symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

 **Caution:** The printhead may be hot and could cause severe burns. Allow the printhead to cool.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

9. Revision History

Date	Content	Editor
2023/8/10	Modify 2.1 Unpacking and Inspection section	Camille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