WAVECOM INSTRUMENTS PTY LTD©

www.wavecom.com.au

WAVECOM TT040-50

THERMAL TRANSFER
BAR CODE PRINTER

USER MANUAL

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Copyright Declaration

Introduction

Product Introduction

Thank you for purchasing Wavecom bar code printer. Although the printer has a small footprint, it delivers reliable, superior performance.

This printer provides direct thermal printing at user selectable speed of: 2.0, 3.0, 4.0 or 5.0 ips. It accepts roll feed and die-cut media with gap or black mark. All common bar codes formats are available. Fonts and bar codes can be printed in 4 directions, 8 different alphanumeric bitmap fonts and built-in scalable font capability. You will enjoy trouble free, high throughput for printing labels with this printer.

NOTE: - You can also try SPECIAL WHITE LEADER Wavecom colour labels designed for easy Barcode colour scanning.

Compliances

CE Class B:

EN55022: 1998+A1: 2000+A2: 2003

EN55024: 1998+A1: 2001+A2: 2003 IEC 61000-4 Series

EN61000-3-2: 2006 & EN61000-3-3: 1995+A1: 2001

FCC Part 15, Class B

UL, CUL: UL60950-1

C-Tick:

CFR 47, Part 15/CISPR 22 3rd Edition: 1997, Class B

ANSI C63.4: 2003

Canadian ICES-003

TÜV/Safety: EN60950-1 / IEC 60950-1

CAUTION

1. **THE MAIN BOARD INCLUDES A REAL TIME CLOCK FEATURE AND HAS A LITHIUM BATTERY INSTALLED.**
2. **RISK OF EXPLOSION IF BATTERY IS REPLACED BY INCORRECT TYPE**
3. **DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER INSTRUCTIONS**

Note：

The maximum printing ratio per dot line is 15% for this printer. To print the full web black line, the maximum black line height is limited to 40 dots, which is 5mm for 203 DPI resolution printer and 3.3mm for 300 DPI resolution printer.

Operations Overview

## Printer purchased as part of Wavecom Test n Print Pack

■ When TT040-50 is purchased as part of a Wavecom Test n Print Unit, the Printer is ready and fully setup to use. Owner's Barcode Label Artwork may be installed as an option.

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.

Unpacking the System, the following items are included in the carton.

■ One printer unit
■ User Manual, quick start guide and Drivers on the WinPATS CD
■ One quick start installation guide
■ One power cord
■ One auto switching power supply
■ One USB interface cable
■ One paper core
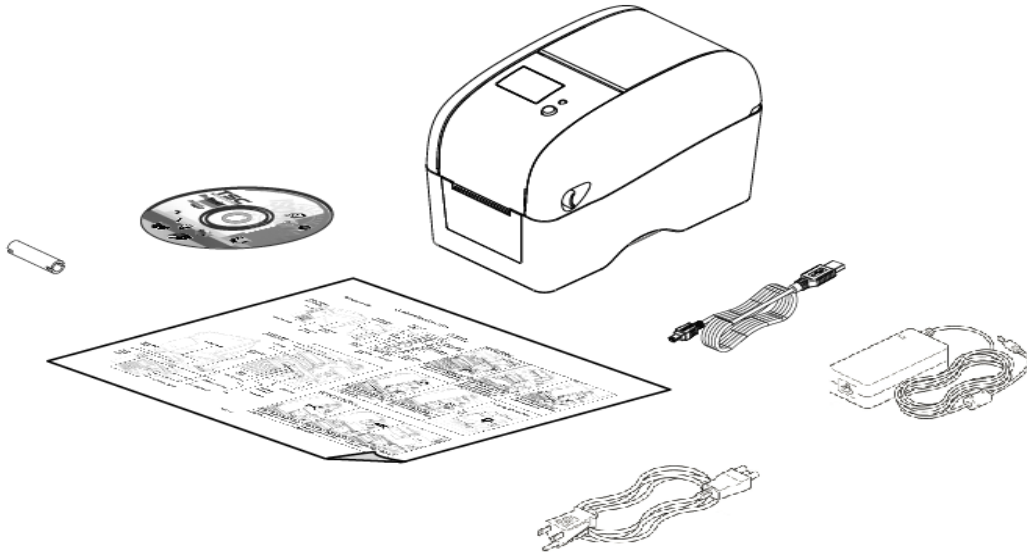
If any parts are missing, please contact your Supplier or Wavecom Instruments.

Printer Overview

Front View

If any parts are missing, please contact your Supplier or Wavecom Instruments.

1. LED indicator
2. Feed button
3. Paper exit chute
4. Media view window
5. Top cover open lever
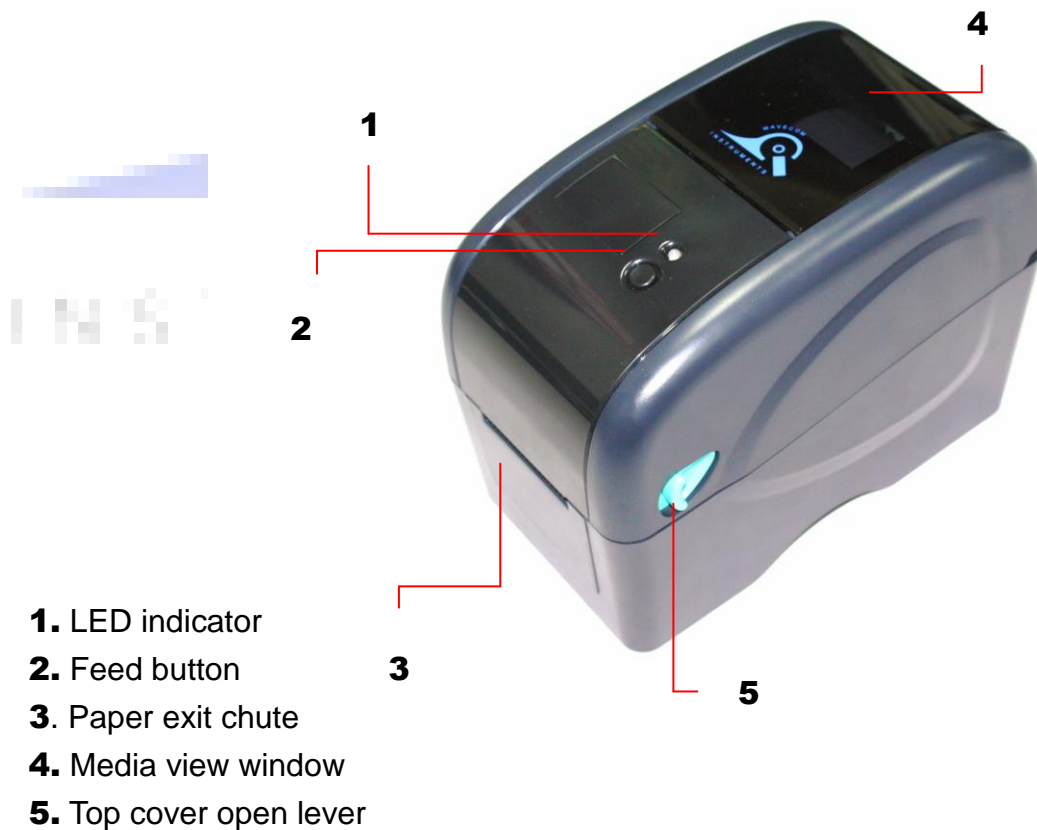
Interior View
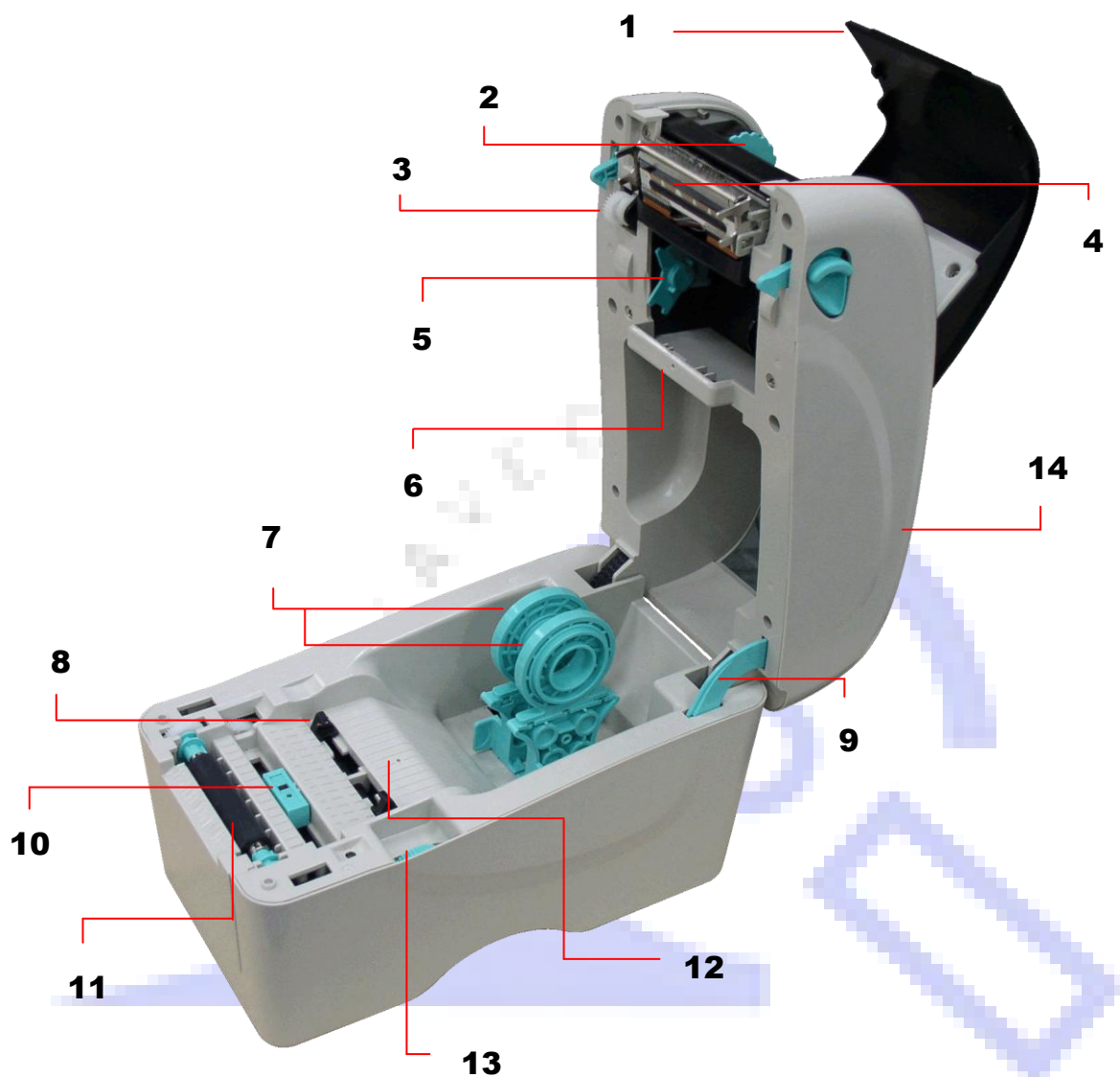
1. Ribbon access cover
2. Ribbon rewind hub
3. Ribbon rewind gear
4. Print head
5. Ribbon supply hub
6. Gap sensor (receiver)
7. Media holders

8. Media guide
9. Top cover support
10. Black mark sensor
11. Platen roller
12. Gap sensor (transmitter)
13. Media guide adjuster knob
14. Top cover

Rear View

1. Power switch

2. Power jack socket

3. USB interface

4. USB host (Factory option)

5. RS-232C interface / Ethernet interface (Option)

6. SD card socket (Not Applicable to this unit)

Setup

Printer

Printer purchased as part of Wavecom Test n Print Pack
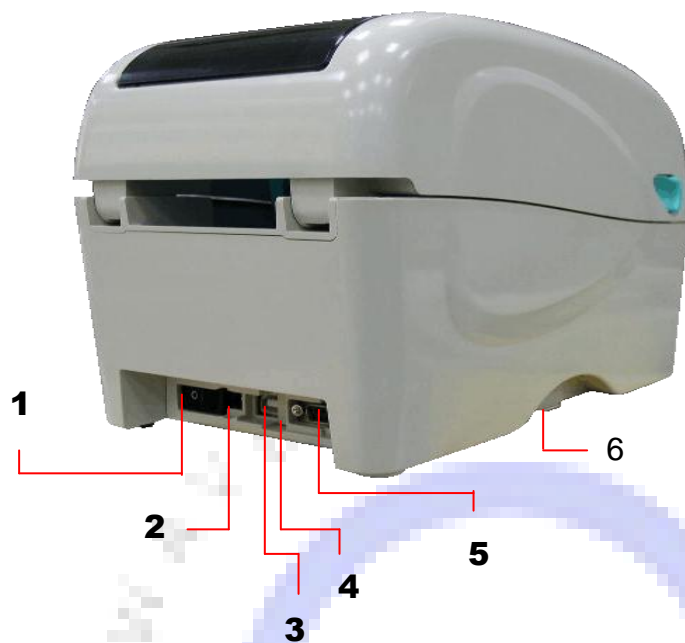
Printer when purchased as part of a Wavecom Test n Print Unit is already fully setup and ready to use.

Printer setup when connecting to computer

Place the printer on a flat, secure surface.

Make sure the power switch is set to "off".

Connect the printer to the computer with the provided USB cable.

Plug the power cord into the AC power cord socket at the rear of the printer, and then   plug the power cord into a properly grounded power outlet.

Note: Please switch OFF printer power switch prior to plug in the power cord to printer power jack.

Loading the Media

Loading the Media

Open the printer top cover by pulling the tabs located on each side towards the front of the printer, and then lift the top cover to the maximum open angle.

Separate the media holders to the label roll width.
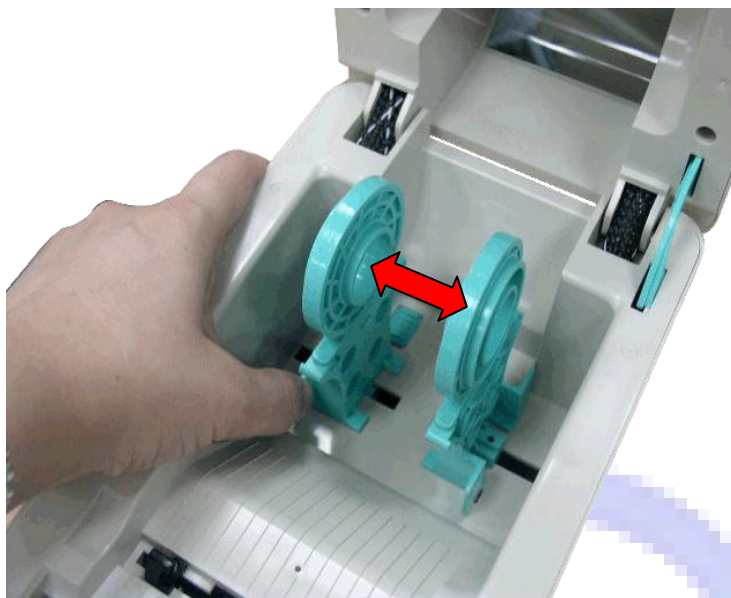
Place the roll between the holders and close them onto the core. Place the paper, printing side face up, through the media guides, media sensor and place the label leading edge onto the platen roller.
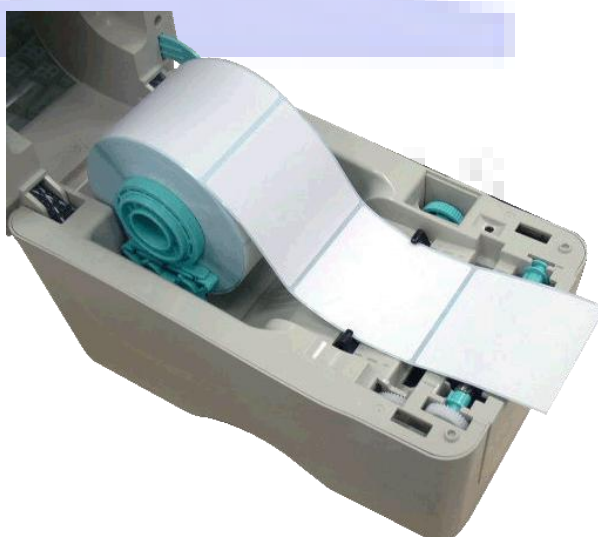
Move the media guides to fit the label width by turning the media guide adjuster knob.
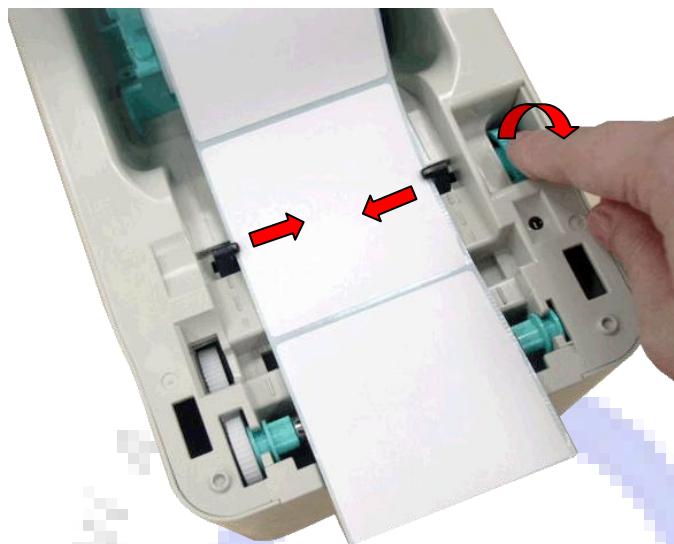
Hold the top cover and press the top cover support to disengage the top cover support with lower inner cover. Gently close the top cover. Make sure the cover latches securely.

Loading the Ribbon

1. Open the printer's top cover by pulling the top cover open levers located on each side of the printer and lifting the top cover to the maximum open angle.
2. Insert the ribbon right side onto the supply hub. Align the notches on the left side and mount onto the spokes.
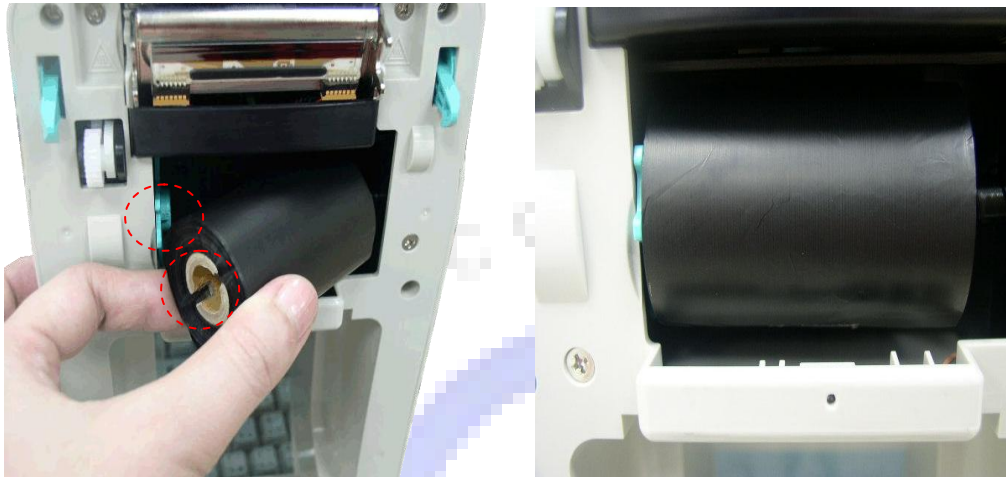
3. Open the ribbon access cover.

4. Insert the paper core right side onto the rewind hub. Align the notches on the left side and mount onto the spokes
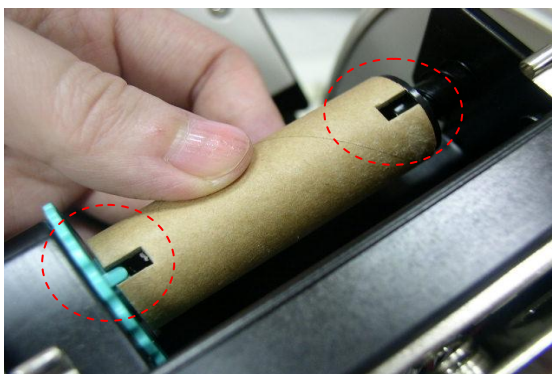
5. Pull the leading ribbon to pass the print head.
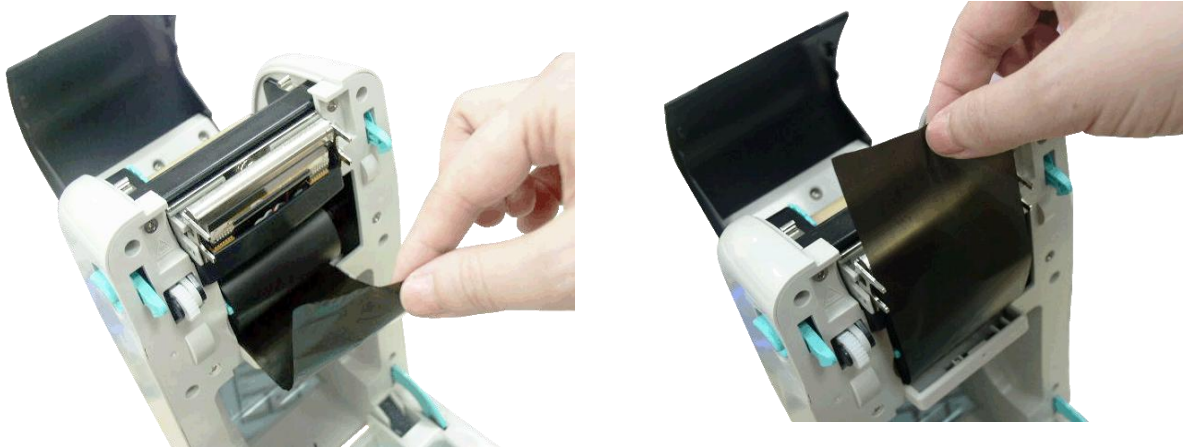
6. Stick the ribbon onto the ribbon rewind paper
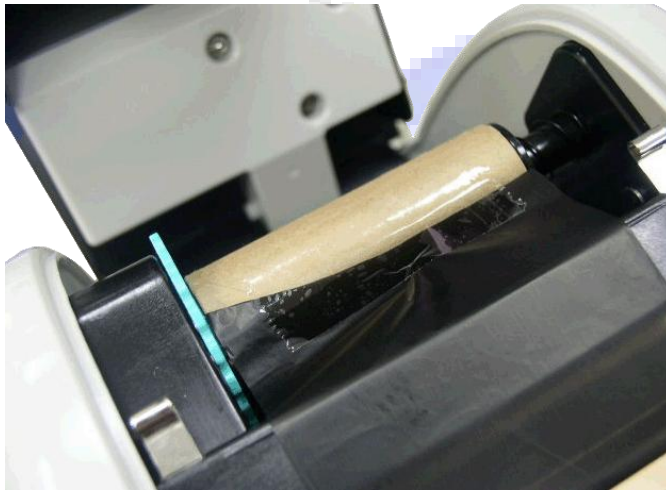
7. Turn the ribbon rewind gear until the ribbon plastic leader is thoroughly wound and the black section of the ribbon covers the print head. Close the ribbon access cover and the top cover.
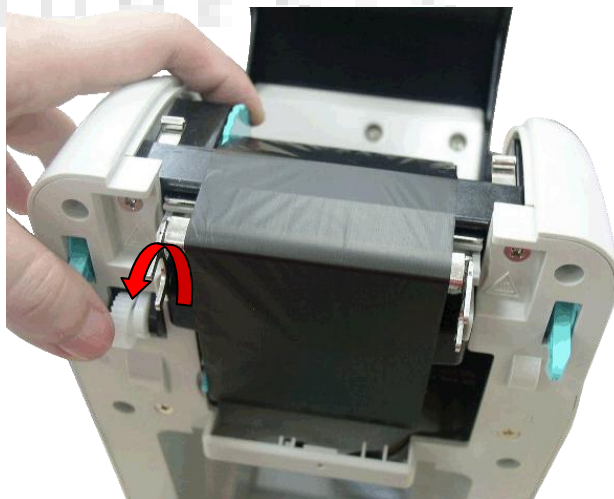
LED and Button Functions

This printer has one button and one three-color LED indicator. By indicating the LED with different color and pressing the button, printer can feed labels, pause the printing job, select and calibrate the media sensor, print printer self-test report, reset printer to defaults (initialization). Please refer to the button operation below for different functions.

LED Indicator

| LED Color	Description
Green/ Solid	This illuminates that the power is on and the device is ready to use.
Green/ Flash	This illuminates that the system is downloading data from PC to memory or the printer is paused.
Amber	This illuminates that the system is clearing data from printer.
Red / Solid	This illuminates printer head open, cutter error.
Red / Flash	This illuminates a printing error, such as head open, paper empty, paper jam or memory error etc.

Regular Button Function

1. Feed labels

When the printer is ready, press the button to feed one label to the beginning of next label.

2. Pause the printing job

When the printer is printing, press the button to pause a printing job. When the printer is paused, the LED will be green blinking. Press the button again to continue the printing job.

Power on Utilities

There are six power-on utilities to set up and test printer hardware. These utilities are activated by pressing FEED button then turning on the printer power simultaneously and release the button at different color of LED.

Please follow the steps below for different power-on utilities.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED indicates with different color for different functions.

Power on utilities	The LED color will be changed as following pattern:						
LED color / *Functions*	Amber	Red (5 blinks)	Amber (5 blinks)	Green (5 blinks)	Green/Amber (5 blinks)	Red/Amber (5 blinks)	Solid green
1. Gap / black mark sensor calibration		*Release*					
2. Gap / black mark sensor calibration, Self-test and enter dump mode			*Release*				
3. Printer initialization				*Release*			
4. Set black mark sensor as media sensor and calibrate the black mark sensor					*Release*		
5. Set gap sensor as media sensor and calibrate the gap sensor						*Release*	
6. Skip AUTO.BAS							*Release*

Gap/Black Mark Sensor Calibration

Gap/black mark sensor sensitivity should be calibrated at the following conditions:

1. A brand new printer
2. Change label stock.
3. Printer initialization.

Please follow the steps below to calibrate the gap/black mark sensor.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED becomes **red** and blinking. (Any red will do during the 5 links).

   ■ It will calibrate the gap/black mark sensor sensitivity.
   ■ The LED color will be changed as following order：

Amber → **red (5 blinks)** → amber (5 blinks) → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → solid green

Note: **1. Sensor calibration can be done by Diagnostic Tool or by power on utility.**

2. Please select gap or black mark sensor type prior to calibrate the sensor.

Gap/Black Mark Calibration, Self-test and Dump Mode

While calibrate the gap/black mark sensor, printer will measure the label length, print the internal configuration (self-test) on label and then enter the dump mode. To calibrate gap or black mark sensor depends on the sensor setting in the last print job.

Please follow the steps below to calibrate the sensor.

1. Turn off the power switch.

2. Hold on the button then turn on the power switch.

3. Release the button when LED becomes **amber** and blinking. (Any amber will do during the 5 blinks)

■ The LED color will be changed as following order.

Amber → red (5 blinks) → **amber (5 blinks)** → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → solid green

4. It calibrates the sensor and measures the label length and prints internal settings then enter the dump mode.

Note: **1. Sensor calibration can be done by power on utility.**

2. Please select gap or black mark sensor type prior to calibrate the sensor.
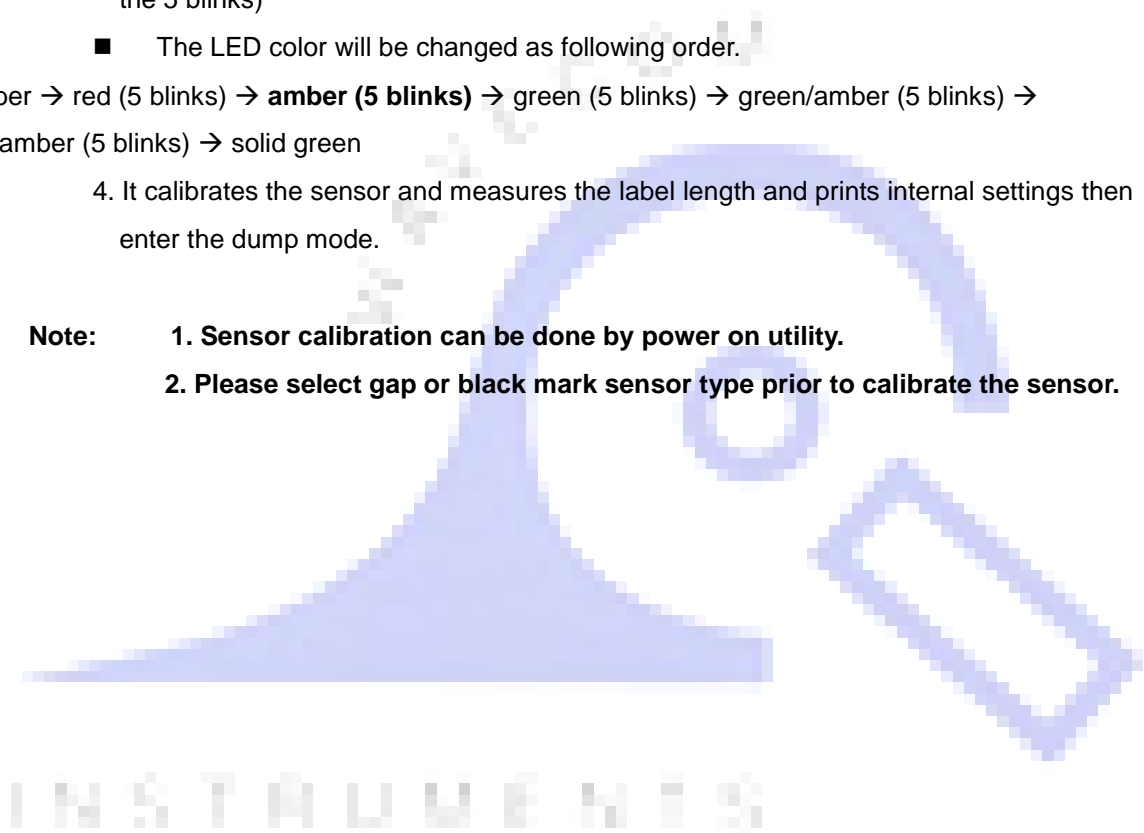
Self-test

Printer will print the printer configuration after gap/black mark sensor calibration. Self-test printout can be used to check if there is any dot damage on the heater element, printer configurations and available memory space.

```
PRINTER INFO.

                                                  ──── Print head test pattern
XXXXXX Version: X.XX         ──────────────────── Printer model name & Main board firmware version
MILAGE(m): 0                 ─────────────────── Printed mileage
CHECKSUM: 06A08CB3           ──────────────── Main board firmware checksum
SERIAL PORT: 9600,N,8,1      ─────────────── Serial port setting
CODE PAGE: 850               ────────────── Code page
COUNTRY CODE: 001            ───────────── Country code
SPEED: 5 INCH               ──────────── Print speed
DENSITY: 8.0                ─────────── Print darkness
SIZE: 2.00 , 2.00           ────────── Label size (width, height)
GAP:  X.XX , X.XX           ───────── Gap size (vertical gap, offset)
TRANSPARENCE: 16            ──────── Sensor sensitivity


********************************
FILE LIST:
DRAM FILE:             0 FILE(S)

FLASH FILE:            0 FILE(S)

PHYSICAL  DRAM:     XXXX KBYTES           File management information
AVAILABLE DRAM:     XXXX KBYTES FREE
PHYSICAL  FLASH:    XXXX KBYTES
AVAILABLE FLASH:    XXXX KBYTES FREE
END OF FILE LIST

********************************
```
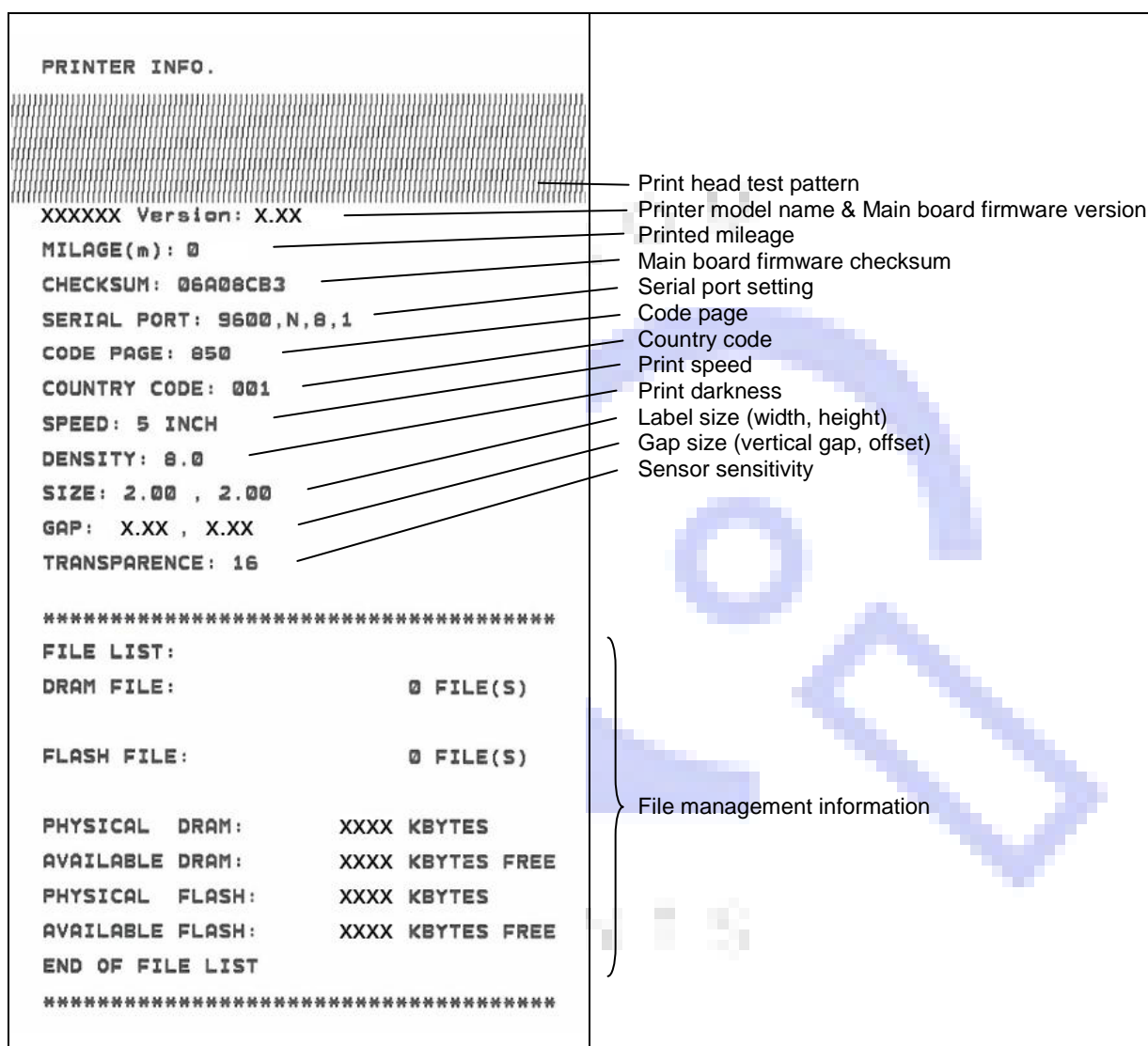
■ Dump mode

Printer will enter dump mode after printing printer configuration. In the dump mode, all characters will be printed in 2 columns as following. The left side characters are received from your system and right side data are the corresponding hexadecimal value of the characters. It allows users or engineers to verify and debug the program.

ASCII Data

```
SPEED 2.0    53 50 45 45 44 20 32 2E 30 0D
  DENSITY 8  0A 44 45 4E 53 49 54 59 20 38
   SET PEEL  0D 0A 53 45 54 20 50 45 45 4C
 OFF  DIRE   20 4F 46 46 0D 0A 44 49 52 45
CTION 0  G   43 54 49 4F 4E 20 30 0D 0A 47
AP 3.00 mm   41 50 20 33 2E 30 30 20 6D 6D
.0.00 mm     2C 30 2E 30 30 20 6D 6D 0D 0A
REFERENCE    52 45 46 45 52 45 4E 43 45 20
0.0  SET C   30 2C 30 0D 0A 53 45 54 20 43
UTTER OFF    55 54 54 45 52 20 4F 46 46 0D
 SIZE 100.   0A 53 49 5A 45 20 31 30 30 2E
02 mm.65.0   30 32 20 6D 6D 2C 36 35 2E 30
4 mm  CLS    34 20 6D 6D 0D 0A 43 4C 53 0D
 BARCODE 1   0A 42 41 52 43 4F 44 45 20 31
44,149."39   34 34 2C 31 34 39 2C 22 33 39
",120,1,0,   22 2C 31 32 30 2C 31 2C 30 2C
2,6,"57114   32 2C 36 2C 22 35 37 31 31 34
38T"  PRIN   33 38 54 22 0D 0A 50 52 49 4E
T 1,1  SPE   54 20 31 2C 31 0D 0A 53 50 45
ED 2.0  DE   45 44 20 32 2E 30 0D 0A 44 45
NSITY 8  S   4E 53 49 54 59 20 38 0D 0A 53

ET PEEL OF   45 54 20 50 45 45 4C 20 4F 46
F  DIRECTI   46 0D 0A 44 49 52 45 43 54 49
ON 0  GAP    4F 4E 20 30 0D 0A 47 41 50 20
3.00 mm.0.   33 2E 30 30 20 6D 6D 2C 30 2E
00 mm  REF   30 30 20 6D 6D 0D 0A 52 45 46
ERENCE 0,0   45 52 45 4E 43 45 20 30 2C 30
  SET CUTT   0D 0A 53 45 54 20 43 55 54 54
ER OFF  SI   45 52 20 4F 46 46 0D 0A 53 49
ZE 100.02    5A 45 20 31 30 30 2E 30 32 20
mm.65.04 m   6D 6D 2C 36 35 2E 30 34 20 6D
m  CLS  BA   6D 0D 0A 43 4C 53 0D 0A 42 41
RCODE 144,   52 43 4F 44 45 20 31 34 34 2C
149,"39",1   31 34 39 2C 22 33 39 22 2C 31
20,1,0,2,6   32 30 2C 31 2C 30 2C 32 2C 36
,"5711438T   2C 22 35 37 31 31 34 33 38 54
"  PRINT 1   22 0D 0A 50 52 49 4E 54 20 31
,1           2C 31 0D 0A
```

Hex decimal data related to left column of ASCII data

Note:

1. Dump mode requires 2" wide paper width.

2. Turn off / on the power to resume printer for normal printing.

3. Press FEED button to back to the previous menu.

Printer Initialization

Printer initialization is used to clear DRAM and restore printer settings to defaults.

Printer initialization is activated by the following procedures.

1. Turn off the power switch.

2. Hold on the button then turn on the power switch.

3. Release the button when LED turns **green** after 5 amber blinks. (Any green will do during the 5 blinks).

■ The LED color will be changed as following:

Amber → red (5 blinks) → amber (5 blinks) → **green (5 blinks)** → green/amber (5 blinks) → red/amber (5 blinks) → solid green

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

Parameter	Default setting
Speed	127 mm/sec (5 ips) (203DPI) 76.2 mm/sec (3 ips) (300DPI)
Density	8
Label Width	2" (50.8 mm)
Label Height	2" (50.8 mm)
Sensor Type	Gap sensor
Gap Setting	0.12" (3.0 mm)
Print Direction	0
Reference Point	0,0 (upper left corner)
Offset	0
Tear Mode	On
Peel off Mode	Off
Cutter Mode	Off
Serial Port Settings	9600 bps, none parity, 8 data bits, 1 stop bit
Code Page	850
Country Code	001
Clear Flash Memory	No
IP Address	DHCP

Set Black Mark Sensor as Media Sensor and Calibrate the Black Mark Sensor

Please follow the steps as below.

1. Turn off the power switch.

2. Hold on the button then turn on the power switch.

3. Release the button when LED turns **green/amber** after 5 green blinks. (Any green/amber will do during the 5 blinks).

■ The LED color will be changed as following:

Amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → **green/amber (5 blinks)** → red/amber (5 blinks) → solid green

Set Gap Sensor as Media Sensor and Calibrate the Gap Sensor

Please follow the steps as below.

1. Turn off the power switch.

2. Hold on the button then turn on the power switch.

3. Release the button when LED turns **red/amber** after 5 green/amber blinks. (Any red/amber will do during the 5 blinks).

■ The LED color will be changed as following:

Amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → green/amber (5 blinks) → **red/amber (5 blinks)** → solid green

Skip AUTO.BAS (not applicable)

TSPL2 programming language allows user to download an auto execution file to flash memory. Printer will run the AUTO.BAS program immediately when turning on printer power. The AUTO.BAS program can be interrupted without running the program by the power-on utility.

Please follow the procedures below to skip an AUTO.BAS program.

1. Turn off printer power.

2. Press the FEED button and then turn on power.

3. Release the FEED button when LED becomes **solid green**.

■ The LED color will be changed as following:

Amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → **solid green**

4. Printer will be interrupted to run the AUTO.BAS program.

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.

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	1. Out of label * Load a roll of label and follow the instructions in loading the media 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".

Print Problem

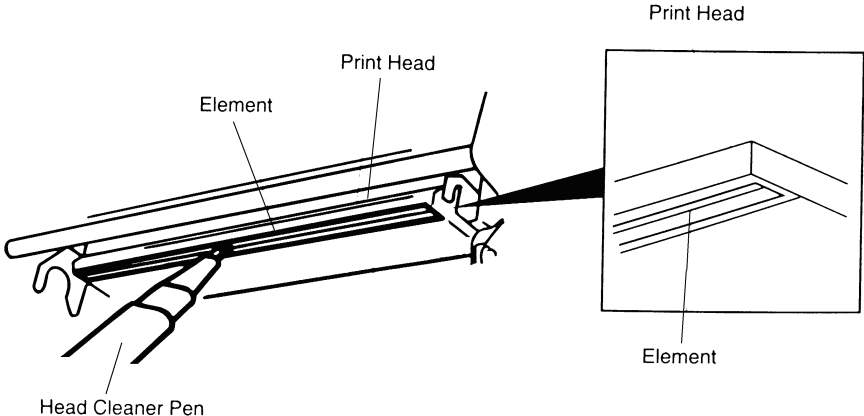| Problem	Possible Cause	Recovery Procedure
Not Printing	Check if interface cable is well connected to the interface connector.	Re-connect cable to interface.
	The serial port cable pin configuration is not pin to pin connected.	Please replace the cable with pin to pin connected.
	The serial port setting is not consistent between host and printer.	Please reset the serial port setting.
	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.	Configure the IP, subnet mask and gateway.
No print on the label	Label loaded not correctly.	Follow the instructions in loading the media.
Continuous feeding labels	The printer setting may go wrong.	Please do the initialization and gap/black mark calibration.
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	Top cover is not closed properly.	Close the top cover completely and make sure the right side and left side levers are latched properly.
	Wrong power supply is connected with printer.	Check if 24V DC output is supplied by the power supply.
	Check if supply is loaded correctly.	Reload the supply.
	Check if dust or adhesives are accumulated on the print head.	Clean the print head.
	Check if print density is set properly.	Adjust the print density and print speed.
	Check print head test pattern if head element is damaged.	Run printer self-test and check the print head test pattern if there is dot missing in the pattern.

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 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 accidently, please use ethanol to clean it.**
- **Please use 100% Ethenol. <u>DO NOT use medical alcohol</u>, which may damage the printer head.**
- **Regularly clean the print head and supply sensors when changing media to keep optimal performance and extend printer life.**
- **The maximum printing ratio per dot line is 15% for this printer. To print the full web black line, the maximum black line height is limited to 40 dots, which is 5mm for 203 DPI resolution printer and 3.3mm for 300 DPI resolution printer.**