

***TDP-643R Plus***

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**THERMAL TRANSFER / DIRECT THERMAL  
BAR CODE PRINTER**

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**USER'S  
MANUAL**

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# 1. PRODUCT INTRODUCTION

Thank you very much for purchasing TDP-643R Plus bar code printer. The attractive desktop printer delivers superior performance at an economical price. Both powerful and easy-to-use, TDP-643R Plus printer is your best choice among desktop direct thermal bar code printers.

TDP-643R Plus bar code printer offers direct thermal printing at a high speed of 3 inches per second. It can accept a wide range of media, including roll feed, die-cut, and fan-fold labels or tags. All of the most frequently used bar code formats are available. Fonts and bar codes can be printed in any one of four directions.

TDP-643R Plus printer provides a choice of five different sizes of alphanumeric fonts. By using font multiplication, an even greater range of sizes is possible. Smooth fonts can be downloaded from user friendly Windows label design software. In addition, TDP-643R Plus is capable of independently executing BASIC programming function, including arithmetic, logical operating, loop, flow-control and file management. This programming capability provides greatest efficiency in label printing. The status of printer and error messages may either be printed out or viewed on a monitor by means of the RS-232 connection.

## **1.1 Compliances**

CE Class A, FCC Class A, C-Tick Class A, TÜV/Safety, UL, CUL, BSMI, CCC

## **2. Getting Started**

### **2.1 Unpacking and Inspection**

The printer has been specially packaged to withstand damage in the shipping process. However, for fear that unexpected damage might occur, upon receiving the bar code printer, carefully inspect the package and the device. In case of evident damage, contact the carrier directly to specify the nature and extent of the damage. Please retain the packaging materials in case you need to reship the printer.

### **2.2 Equipment Checklist**

#### **2.2.1 Standard Parts**

- One TDP-643R Plus bar code printer
- One Windows Software/Driver CD Disk
- One quick Start Guide
- One power Supply
- One power Cord
- One Centronics Cable
- One Label Spindle

#### **2.2.2 Optional Parts**

- External Roll Mount
- 3" label core adapter
- Guillotine cutter module

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

## 2.3 Printer Parts

### 2.3.1 Top Front View



Fig. 1 Printer top front view

### 2.3.2 Rear View

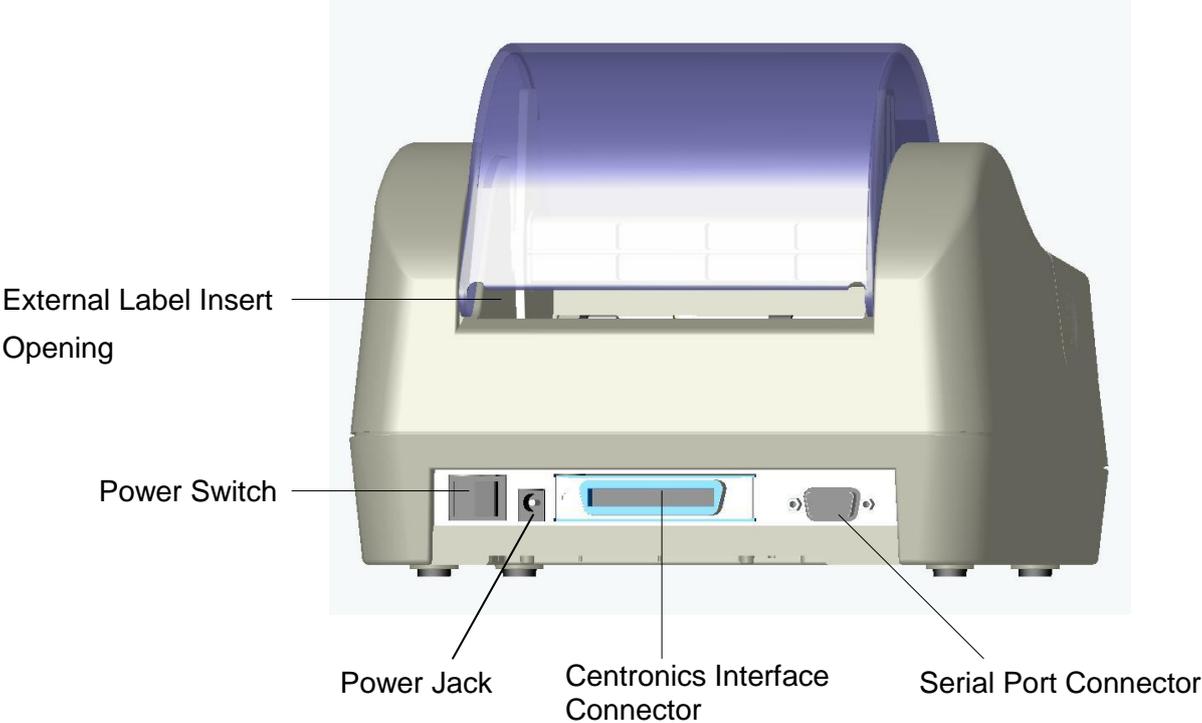
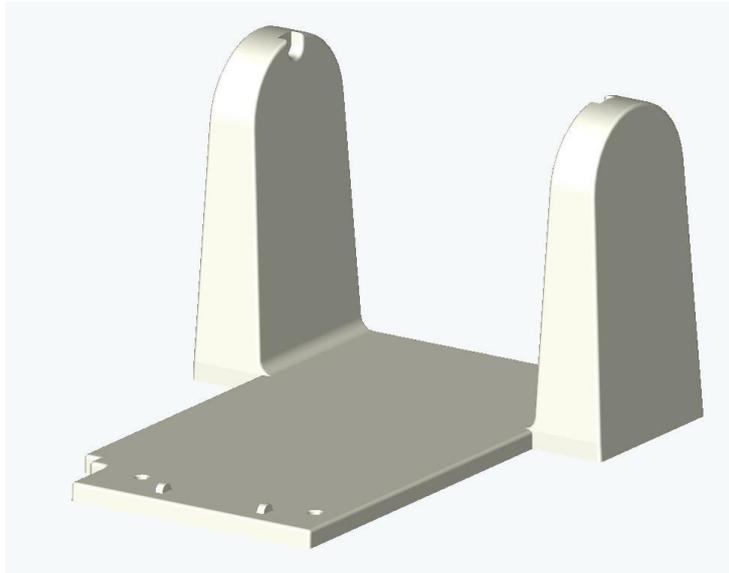
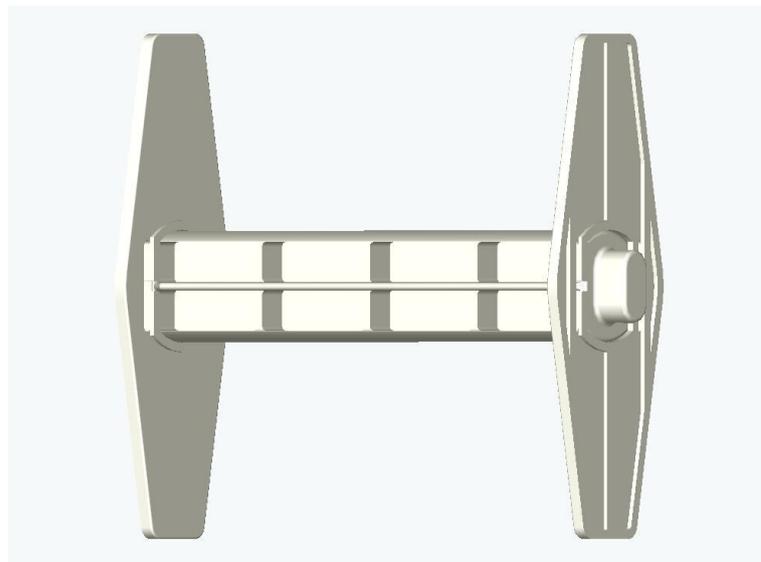


Fig.2 Printer rear view

### 2.3.3 External Roll Mount



**Fig.3 External roll mount**



**Fig.4 Label spindle**

## 2.3.4 Control Panel



Fig. 5 Control panel

### Button

#### **FEED Button**

Press the **FEED** button to feed the label to the beginning of the next label.

### Indicators

- **READY Indicator**

When the power is activated and label properly loaded, the **READY** indicator will turn on.

- **ERROR indicator**

The **ERROR** indicator will light on if the label is not properly loaded or when the printer is out of labels.

## 3. Using the Bar Code Printer

### 3.1 Setting Up the Printer

#### 3.1.2 Setting Up the Printer

1. Make sure the power is off.
2. Connect the Centronics or RS-232 cable to corresponding ports or at the rear of printer. Connect the other end of the cable to your computer.
3. Plug the power cord into the power jack at the rear of the printer, and then plug the power cable into a properly grounded wall outlet.

### 3.2 Installing the Label

1. Insert the spindle into the core of the label roll.
2. With the print surface facing up, place the label roll spindle onto the slots of label roll mount supports.

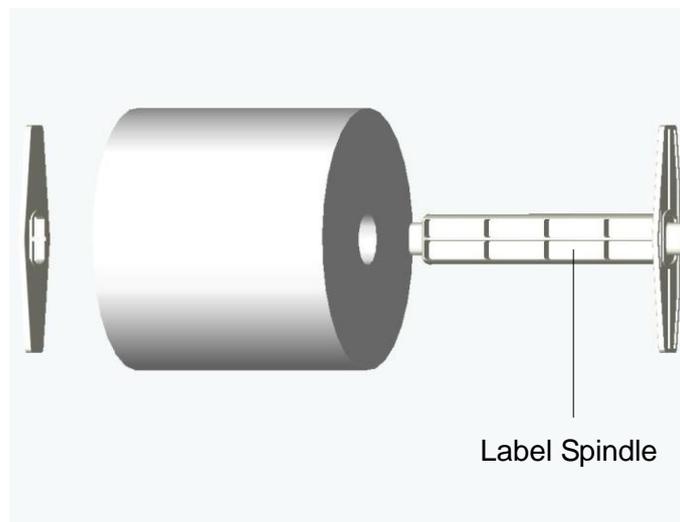
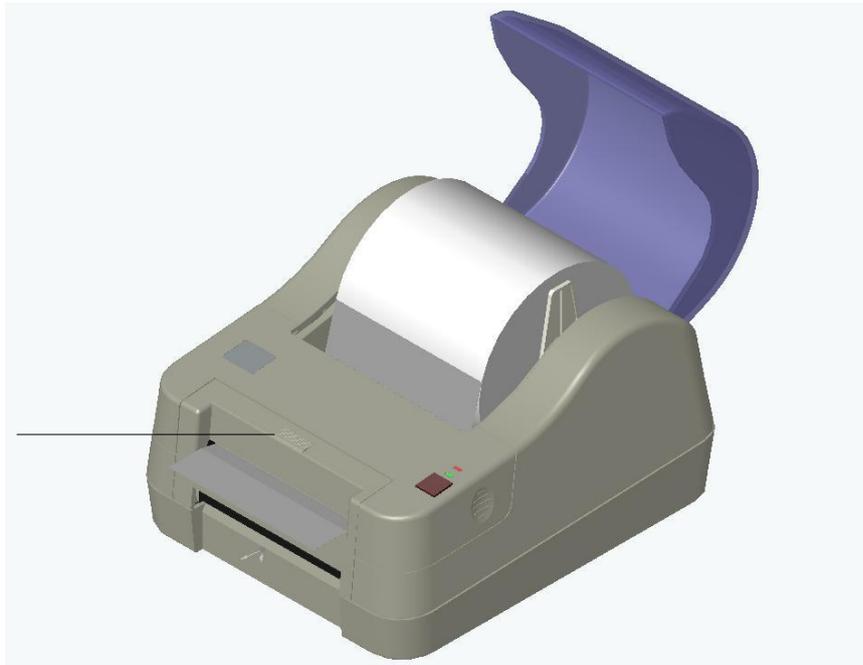


Fig. 6 Label roll and label spindle setup

3. Insert and push the label into the label insert opening until it stops.
4. Hold down the **FEED** button until the front edge of the label feeds about half an inch out of the printer's label dispense opening .

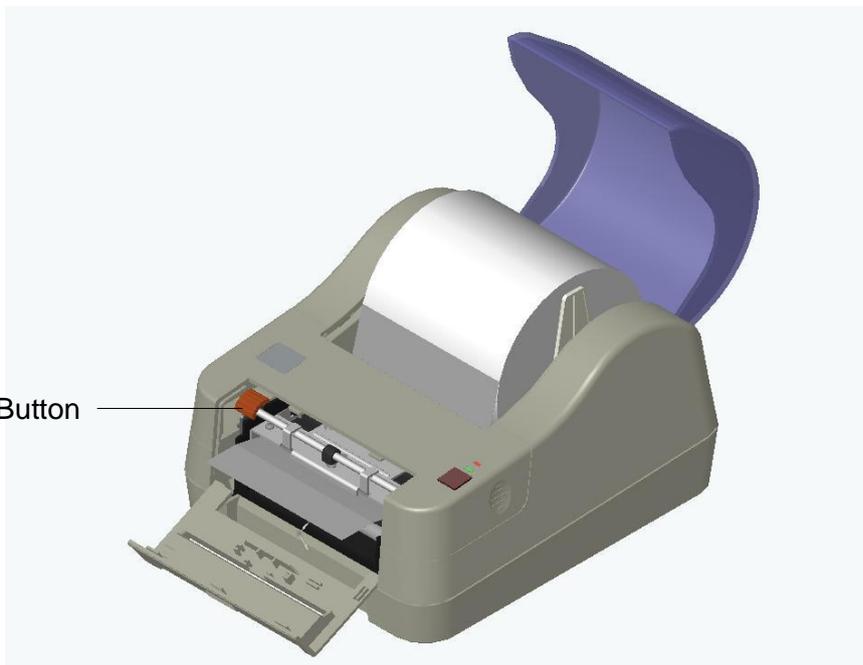
Front Cover  
Release Button



**Fig.7 Label installation**

5. If the label is not centered within the feeding path, open the front cover by depressing the release button on the front cover. Pull the paper release button to the back and hold it to adjust the label position, and then release it and close the front cover.

Paper Release Button



**Fig.8 Adjust label position**

6. (Manually) Rotate the label roll until it is stretched tight.
7. Press the **FEED** button until the **READY** indicator is on, and the label has been properly installed.

### 3.3 Peel-off Function

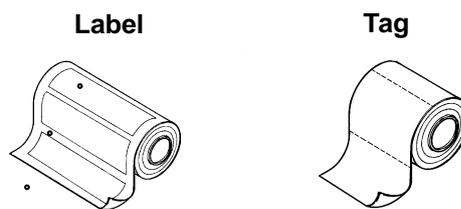
In peel-off function, the printed label will be stripped from the liner paper automatically. Follow the steps below:

1. Follow the directions in the previous section “Installing the label” to load the label well.
2. Press the **FEED** button until about 3 inches of the label extends out of the label dispense opening. Open the front cover.
3. Tear off the label from the liner paper. Place the front edge of the liner paper between the platen and the stripping roller and push in until it stops.
4. Press the **FEED** button until the liner paper is out of the bottom of the stripping roller.
5. Push the paper release button to the back and hold it to adjust the position of the label. Rewind the label roll until the label is pulled tight between the platen and the stripping roller. When the labels have been properly adjusted, release the paper release button.
6. Press and release the **FEED** button until the front edge of next label is visible.
7. Close the front cover. The installation now is complete.

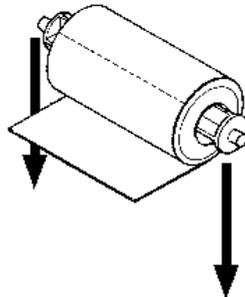
## 3.4 Installing the Tag

**Note:**

- (1) The major difference between tag and label is that there is no adhesive liner paper on the back of the tag.
- (2) The only difference between installing tag and label is that the tag roll unwinds from the bottom as depicted.



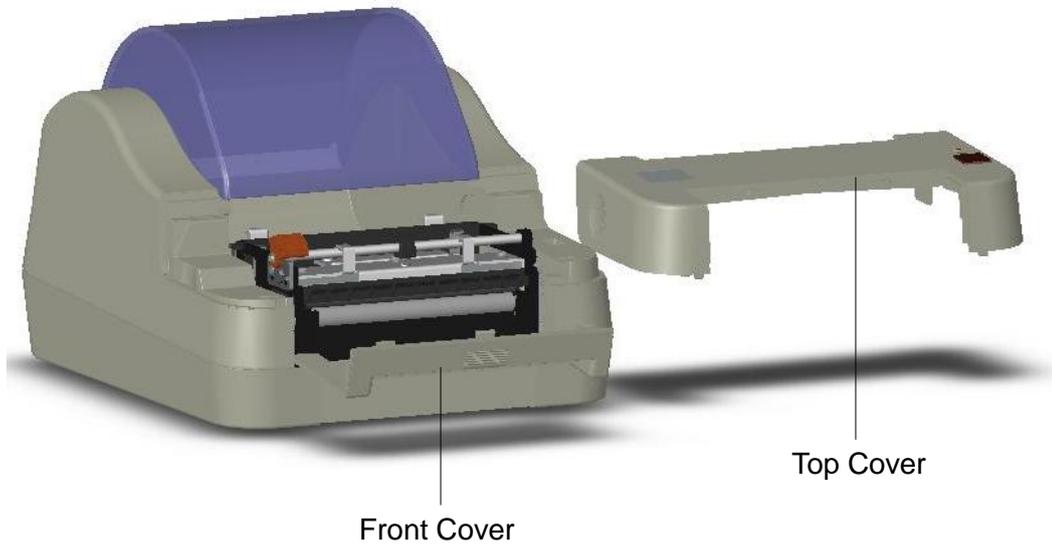
1. Insert the spindle into the core of the tag roll.
2. With the tag roll setting to unwind from the bottom, place the spindle onto the slots of the external roll mount supports.



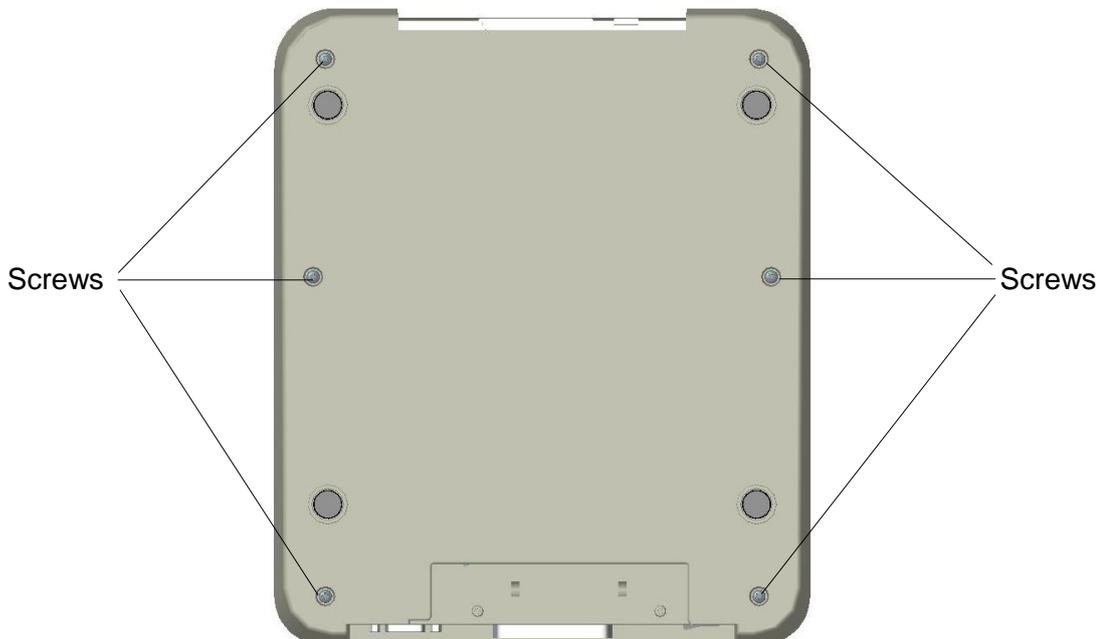
3. Push the front edge of the tag into the label insert opening until it stops.
4. Press and hold the **FEED** button until the front edge of tag feeds out of the label dispense opening of the printer.
5. Open the front cover by pushing down the front cover release button, then push the paper release button to the back and hold to adjust the tag to its proper position.
6. Rewind the tag roll to remove any slack and adjust the paper guides until they are close to the edges of the tag roll.
7. Press and release the **FEED** button until the **READY** indicator is on. The installation now is complete.

### 3.5 Installing the Cutter Module

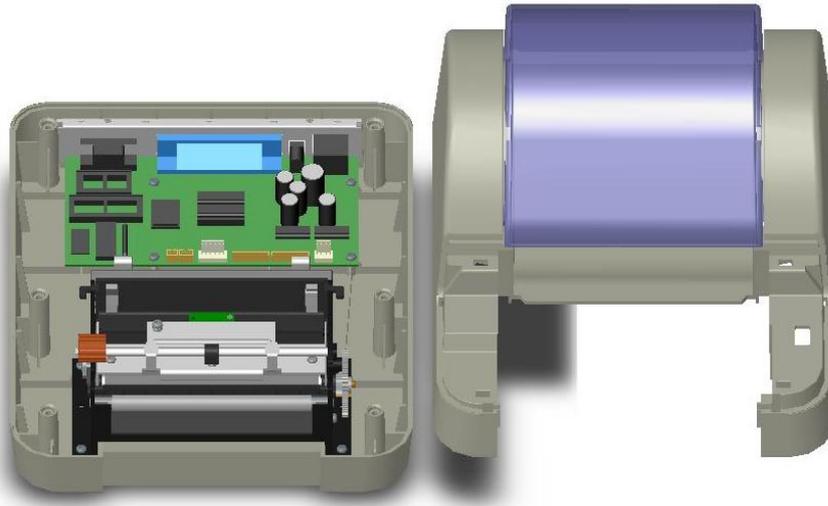
1. Open the Front Cover and remove the Top Cover.



2. Unplug the Front Cover harness from the PCB of the Button.
3. Remove the Front Cover.
4. Remove 6 screws from the button of the printer.



5. Open the Top Cover Assembly.



6. Plug Cutter harness to the JP3 connector on the mainboard.
7. Close the Top Cover Assembly and fasten the screws.
8. Close the Top Cover.



9. Place the Cutter Module as shown in the following figure.



### 3.6 Printer Initialization

To initialize the printer, press the **FEED** button while turning on the printer. Instantly the red and green indicators will flash alternately. Press the **FEED** button again and the printer will be initialized.

*Note: Please calibrate the gap sensor again after printer initialization is done.*

### 3.7 Self Test Mode and Gap Sensor Calibration

To initiate the self-test mode, depress the **FEED** button while turning on the printer power. Instantly the red and green LEDs will flash alternately. Release the button when this happens, wait for 10 seconds, and the printer will calibrate the label length as well as detect the gap sensor emission strength. If the label gap is not detected within 7 inches, the printer stops feeding labels and the media is treated as continuous paper. In self-test mode, a check pattern is used to check the performance of the thermal print head. Following the check pattern, the printer prints internal setting as listed below:

1. Print head test pattern
2. Printer Model & Firmware Version
3. Mileage
4. Flash times

5. Firmware check sum
6. Serial port setting
7. Parallel port setting
8. Country code setting
9. Print speed setting
10. Print density setting
11. Label size setting
12. Gap (Blind) width and offset setting
13. Liner paper transparency
14. File list
15. Memory available

Avoid using labels that are too thick to be detected by the gap sensor (emission strength). Else, the error message "Out of Paper" may appear.

**Note:**

*The physical flash memory and DRAM on board is 2MB respectively. Due to system firmware will occupy 1MB, so total available flash memory space for downloads is 1024 K bytes.*

*For DRAM, system and image buffer will occupy 1792 K bytes, so total available DRAM for downloads will be 256 K bytes.*

```

PRINTER INFO.
*****
TDP643P Version: 1.05
MILAGE(Km): 0.0506
CHECKSUM: 02FD8F49
SERIAL PORT: 9600,N,8,1
CODE PAGE: 437
COUNTRY CODE: 001
SPEED: 2 INCH
DENSITY: 8
SIZE: 4.10 , 3.97
GAP: 0.23 , 0.00
TRANSPARENCE: 140
*****
FILE LIST:
DRAM FILE:          0      FILE(S)
FLASH FILE:         0      FILE(S)
TOTAL FLASH:        1024    KBYTES
AVAIL FLASH:        1024    KBYTES
TOTAL DRAM:         256     KBYTES
AVAIL DRAM:         256     KBYTES
END OF FILE LIST
*****
NOW IN DUMP MODE

```

**Fig.9 Self test**

### 3.8 Dump Mode

After the Self-Test mode, the printer is in Dump Mode. In Dump Mode, any characters received from the host computer will be printed in two columns as follows: on the left side of the paper are the characters received and on the right side are the corresponding hexadecimal values of the characters. This allows the user to verify programming commands and debug the program. To exit Dump Mode, turn off and then on the printer.

```
*****
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
```

Fig.10 Dump mode

**Note:** If the gap sensor does not locate gaps precisely, perform the self test function described in the foregoing section to calibrate the gap sensor.

## 4. Maintenance

Periodically clean the printer external cover by wiping it with a soft cloth that has been dampened with water. Never use abrasive cleaners or solvents to clean the printer, as it will cause damage by these ways.

Once a week, clean the printer head by carefully wiping it with a soft cloth soaked with alcohol. Following the maintenance procedures below will ensure longer service life with higher printing quality.

### 4.1 Pre-maintenance

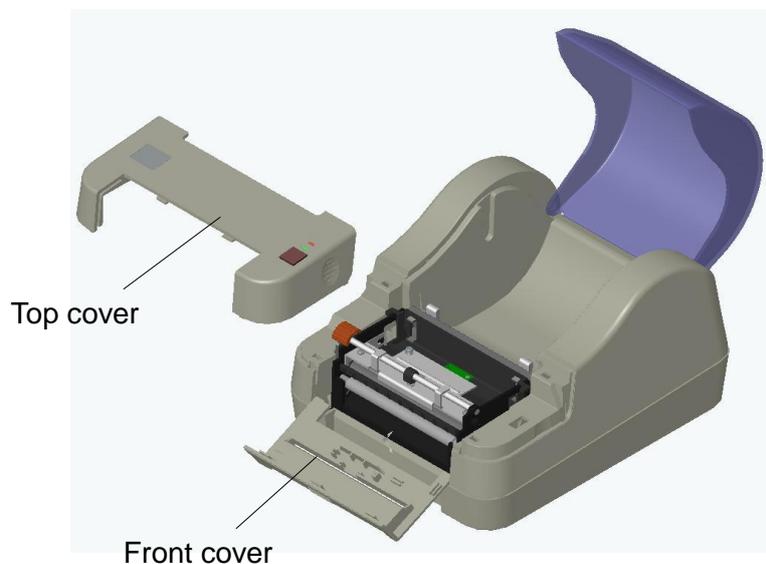
The problem that frequently happens is that the label is jammed or stuck in the print head or the feeder mechanism. The easiest way to avoid it is to make sure the label is closely adhered to the liner paper.

**Note :** Before you start the maintenance procedures, make sure the power is off and remove the interface cable and plug from the printer.

#### 4.1.1 Removing the Top Cover

Before starting to take care of the problem inside the printer, follow the steps below to remove the upper cover.

1. Remove the label roll or tag roll and spindle.
2. Open the Front Cover.
3. Remove the Top cover:



**Fig. 11 Remove top cover**

## 4.2 Removing labels stuck on the print head

**Note:**

Static electricity will damage the print head. Touch any grounded object such as a metal doorframe to discharge yourself before touching the print head. Avoid any action that might possibly cause lots of static electricity like chafing your feet on the carpet.

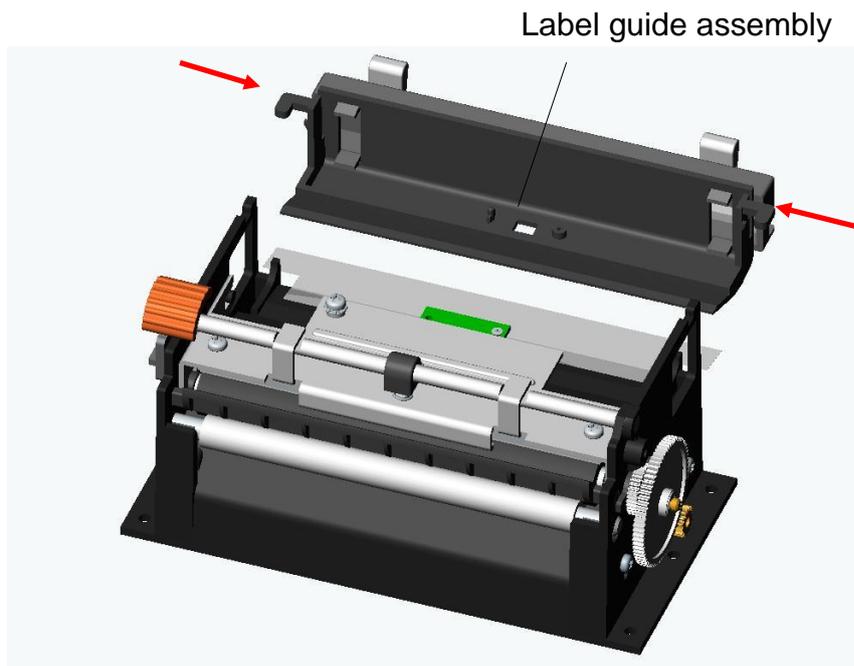
1. Follow the steps below to remove the print head:
  - a. Pull the paper release button.
  - b. Pull out the rod on the print head to remove it.
  - c. Take out the print head bracket.
  - d. Unplug the connector from the print head.
2. Turn over the print head, and check for anything stuck on it.
3. Use clean soft cloth soaked with alcohol to clean the print head carefully.

After all the steps described above have been finished, and the mechanism is cleaned up, reassemble the printer in the reverse order of removal.

## 4.3 Removing Label stuck in the Label Guides Assembly

Please follow the steps below to solve this problem:

1. Squeeze the left and right latches of the label guide assembly together toward each other, in the direction as shown in Fig. 12.



**Fig. 12 Remove label guide assembly**

2. Pull the label guide assembly up and away from the mechanism to remove.
3. Check the label guide assembly for stuck labels.
4. Use clean soft cloth soaked with alcohol to clean the print head carefully.

After all the steps described above have been finished, and the mechanism is cleaned up, reassemble the printer in the reverse order of removal.

**Warning :** Never use any metal to scrap stuck material from the print head, for this will cause damage.

## 4.4 Troubleshooting

The following is a list of symptoms and solutions for the most commonly encountered problems:

Problem Symptom	Solution
1. Both indicators are off if the printer is turned on.	Check all the power connections of the printer. Be sure that the AC adapter is connected to the printer and the power is plugged into an active outlet.
2. The <b>READY</b> indicator is on, but the printer doesn't work.	Check the interface cables between the printer and the computer are correct and securely attached.
3. The printer appears to be working but does not print.	Check that the label roll is properly loaded with the labels facing up. Make sure you are using thermal direct labels.
4. The printing quality is poor.	Clean the print head carefully (Refer to section 4.2). Adjust the darkness setting, or run the printer in a slower printing speed.
5. The labels are not completely printed.	Check for and remove any label stuck on the print head.
6. Problems on loading labels roll.	Check for and remove any label sticks on the print head or inside the feeder guide assembly.
7. Labels are stuck on the print head.	Remove stuck labels and make sure any curled or damaged label is removed from the label roll prior to loading.
8. The printer continues to print even though it has run out of labels.	Check for and remove any label sticks on the gap sensor or paper guide.
9. Printing stops and the	● Program error happens, use the

<p>indicators are flashing between <b>READY</b> and <b>ERROR</b>.</p>	<p>“Dump Mode” to debug.</p> <ul style="list-style-type: none"> <li>● Check if the label gap is too small. The label gap must be larger than 1/16 inch.</li> <li>● Check and remove any stuck label on gap sensor.</li> </ul>
<p>10. A large amount of black graphics printed on the label and the darkness is not adequate.</p>	<p>Run the printer at a slower speed.</p>



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