

# **WPL606 Thermal Label Printer User's Guide**

**For Wasp Technologies®  
DT/TT Printer**

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# 1. Product Introduction

Thank you for purchasing the W606 bar code printer. This guide will describe all of the common operations needed to operate and maintain your W606.

## 1.1 Specification

### 1.1.1 Printer

Item	Specification
Printing Mode	Thermal transfer and direct thermal
Resolution	203DPI
Max. Print Length	1000 mm ( 39.4" )
Max. Print Width	104 mm ( 4" )
Print Speed	3,4,5,6 ips

### 1.1.2 Environment

Operating Environment	
Temperature	5 - 40 °C ( 41°F - 104 °F )
Humidity	30 % - 85 %
Storage Environment	
Temperature	-10 - 60 °C ( 14 °F - 140 °F )
Humidity	20 - 95 %
Ventilation	Free air environment

### 1.1.3 Hardware

Sensors	Label gap sensor, Paper end sensor, Ribbon end sensor, Ribbon near end sensor, Black mark sensor, Head open sensor, Case open sensor, Label taken sensor, Paper near end sensor.
Memory	Flash ROM (2MB), DRAM (2MB) and 8M optional flash ROM (memory module)
Interface	RS-232C, Centronics (SPP), USBV1.1, Internal LAN adapter (optional).
Power	100 - 240 V universal switching power supply.

### 1.1.4 Bar Code

Code 39, Code 93, Code128 subsets A B and C, Code 11, Codabar, Interleaved 2 of 5, EAN-8, EAN-13, EAN-128, UPC-A, UPC-E, EAN, UPC, EAN 2 or 5 digit add-on, UPC 2 or 5 digit Add-on, CPOST, MSI Plessy, Postnet, EAN-14, ITF-14, PDF-417, Maxicode, DataMatrix, QR Code

## 1.2 Optional Items

- Cutter module
- Peel off sensor
- Portable LCD keyboard
- Memory
- Internal or External Ethernet print server

## 1.3 Supplies

### 1.3.1 Label Specification

Item	Specification
Type	Roll and label, continuous, die-cut, fan-fold, ticket
Label Width	25.4 - 116 mm ( 1" - 4.4" )
Label Length	10 - 999 mm ( 0.4" - 39.33" )
Label Thickness	0.0 - 0.25 mm ( .003" - .001" )
Label Roll Diameter	203 mm Maximum ( 9.8" )
Roll Core Diameter	25 or 77 mm ( 1" or 3" )
Black Mark Width	3 mm Minimum ( .12" )

### 1.3.2 Ribbon Specification

Item	Specification
Ribbon Width	25.4 ~ 114.3 mm ( 1" - 4.5" )
Ribbon Length	300 m Maximum ( 984' )

## 2. Getting Started

### 2.1 Unpacking and Inspection

After receiving the bar code printer, carefully inspect the device and its packaging. The printer is specially packaged to withstand damage in shipping. In case of evident damage, contact the carrier directly to specify the nature and extent of damage. Please retain the packaging materials in case you need to reship the printer.

### 2.2 Equipment Checklist

- W606 printer unit
- Quick installation guide
- Power cord
- Centronics interface cable
- 3" (76.2 mm ) paper core adapter
- Software CD disc

If any parts are missing, please contact Product Support. For contact information see the Product Support section at the end of this document.

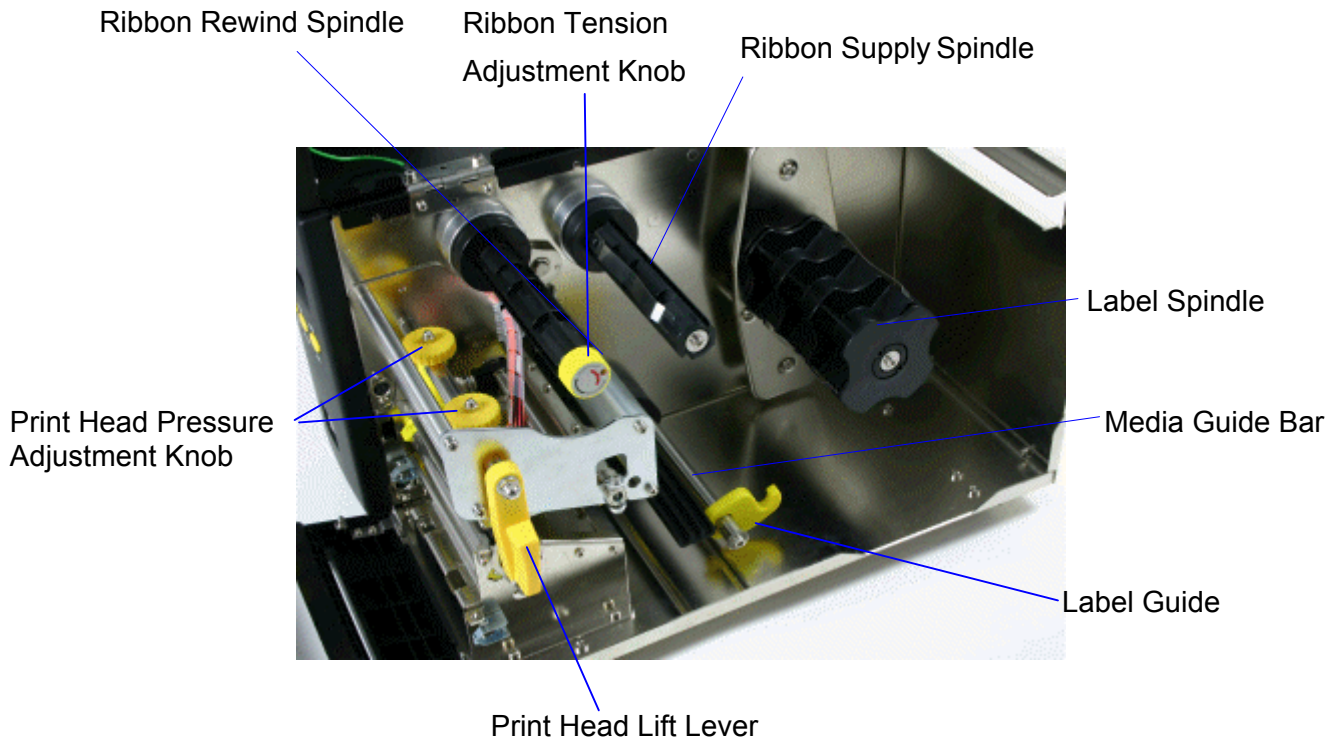
### 2.3 Printer Parts



**Figure 1: Printer front view**



**Figure 2: Printer rear view**



**Figure 3: Printer interior view**



## 2.4 Buttons, Indicators and adjustment knobs

### Power Indicator

When the printer is in the power-on state, the **Power** indicator is lit.

### On-Line Indicator

This green **On-Line** indicator is lit when the printer is ready. The **On-Line** indicator blinks when in **PAUSE** mode.

### Error Indicator

The red **Error** indicator illuminates in the event of a printer error, such as memory full, carriage open, cutter error and so forth.

### MENU/SELECT Button

Press the **MENU** button to enter printer setup mode. Press the **MENU** button again to advance the cursor to the next menu item. (Printer Setup, Sensor Setup, System Setup, File Setup and Printer Test) For more information, please refer to **Appendix 1** for the structure and operation logic of the menu.

### PAUSE/EXE/INC Button

This button combines three functions:

- A. **PAUSE:** If the printer is in the Ready status, pressing the **PAUSE:**
  - (1) Stops at the completion of printing of the current label
  - (2) The **On-Line** LED flashes, and
  - (3) The printer holds all data in memory. This allows for trouble-free replacement of label stock and thermal transfer ribbon. A second depression of the **PAUSE** button will restart the printer.
- B. **EXE/INC (Execute/Increment):** If the printer is in the setup mode, Press **INC** button to increase the value of parameters. Press **EXE** to execute the selected item.

### FEED/DEC Button

This button also has dual functions.

Press the **FEED** button and the printer will advance one label.

Press the **DEC** button to decrease the value of parameters.

### Print Head Lift Lever

When the Print Head Lift Lever is opened, the On-Line LED will be turned off, the

LCD display shows “Carriage Open” and the red Error light will come on. After closing the print head lift lever, the On-Line light will blink. Press the FEED button to re-register the label.

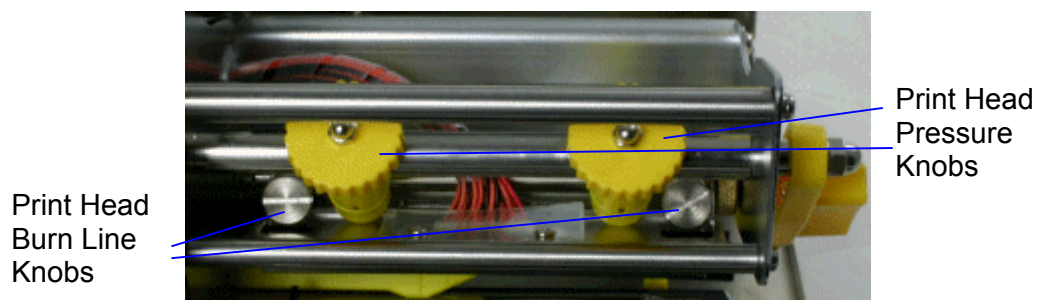
### **Ribbon Tension Adjustment Knob**

The Ribbon Tension Adjustment Knob offers 6 levels of tension to adjust for different widths of ribbon. Turn the ribbon tension knob clockwise and you will hear a light click sound as the gear changes. The levels increase the tension from 0 to the tightest at 5. You will hear a louder click when level 0 is selected to indicate reset.

Note: Use the lowest setting possible for longer print head life.

### **Print Head Pressure Adjustment Knob**

The Print Head Adjustment Knobs are used to fine tune print quality for different thickness of media. Turning the knobs increases or decreases the pressure on the media by the print head. The knobs should always be set to the same level. If setting them to different levels fixes a printing problem you should clean the print head and consider replacing it.



**Figure 4: Print head adjustment knobs**

### **Print Head Burn Line Adjustment Knob**

The **Print Burn Line Adjustment Knobs** are used to fine tune print quality for different thickness of media. Turning the knobs adjusts the print head's burn line forward or backward as it relates to the platen roller.

**Caution: incorrectly adjusting these knobs can lead to poor print quality and may cause damage to the printer. Proceed with caution.**

The print head burn line default is set for general purpose printing media (plain paper and paper thickness less than 0.20mm). The print head moves 0.7mm for each 360 degree turn. Poor print quality when using paper thicker than 0.20mm may be due to the print head burn line not being at the optimized position. To correct this, increase the head pressure and adjust the knobs counter-clockwise to move print head burn line forward then print again. Continue to adjust and test print as necessary until the image is clear.

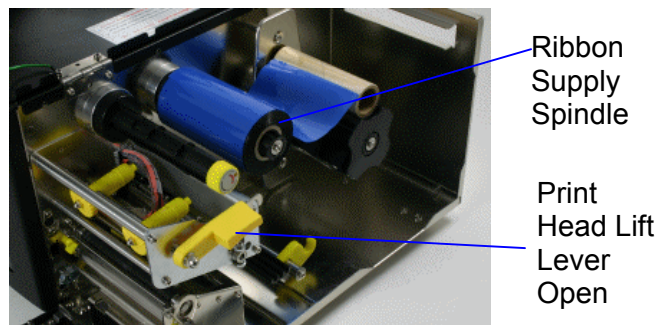
## 3. Set Up

### 3.1 Setting Up the Printer

1. Place the printer on a flat, secure surface
2. Make sure the **POWER** switch is off
3. Connect the printer to the computer with the provided RS-232C, Centronics/Parallel, or USB cable
4. Plug the power cord into the power supply connector at the rear of the printer, and then plug the power cord into a properly grounded power outlet

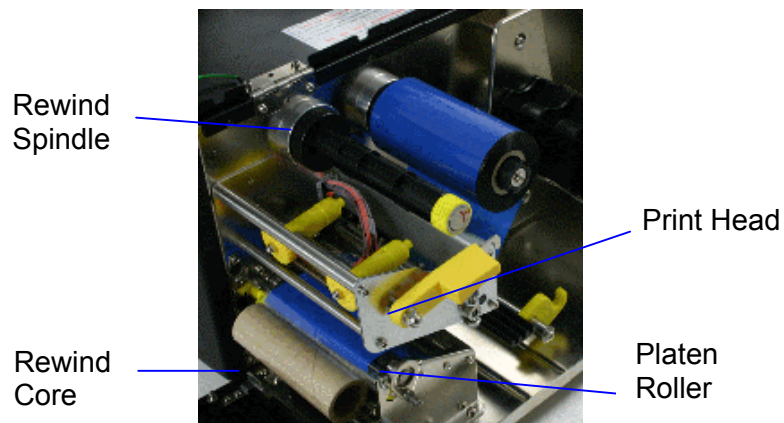
### 3.2 Ribbon Installation

1. Turn the power to the printer off
2. Open the printer right side cover and front panel
3. Raise print head lift lever and remove the old ribbon by firmly grasping the media and pulling it off of the spindle
4. Wasp ribbons are wound with the dull ink side out and come with the rewind spindle connected to the ribbon. Slide the ribbon onto the ribbon supply spindle so that when the rewind spindle is extended toward the back of the printer the Wasp logo is facing up. Slide the ribbon about half way onto the spindle



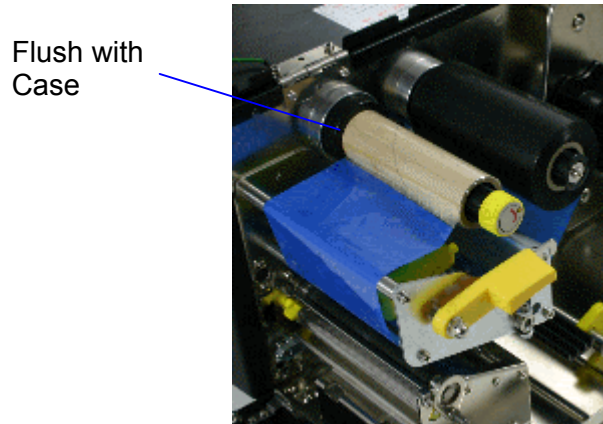
**Figure 5: Ribbon placed onto Supply Spindle**

5. Wrap the ribbon under the print head and out the front of the printer. The Wasp logo will be facing down toward the platen roller. The Platen Roller is the black rubber roller bar that advances the media



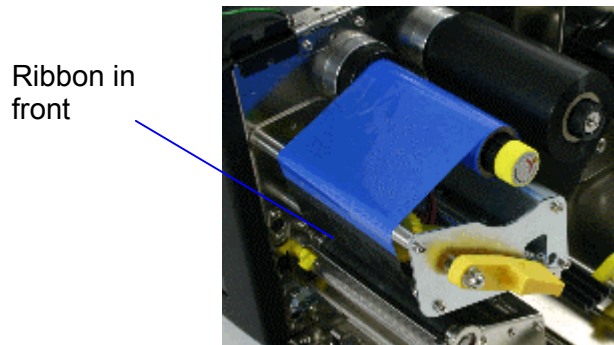
**Figure 6: Ribbon under Pint Had**

6. Pull the paper core up to the rewind spindle and slide it on. Slide both the ribbon and rewind spindle all the way to be flush with the case side of the spindle. The Wasp logo will face up again



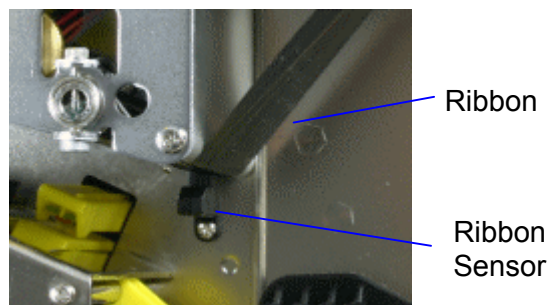
**Figure 7: Ribbon placed onto Rewind Spindle**

7. Roll the rewind spindle by hand until some of the actual ribbon shows in the front of the printer. The Wasp logo will roll over the top of the spindle.



**Figure 8: Ribbon wound into printing position**

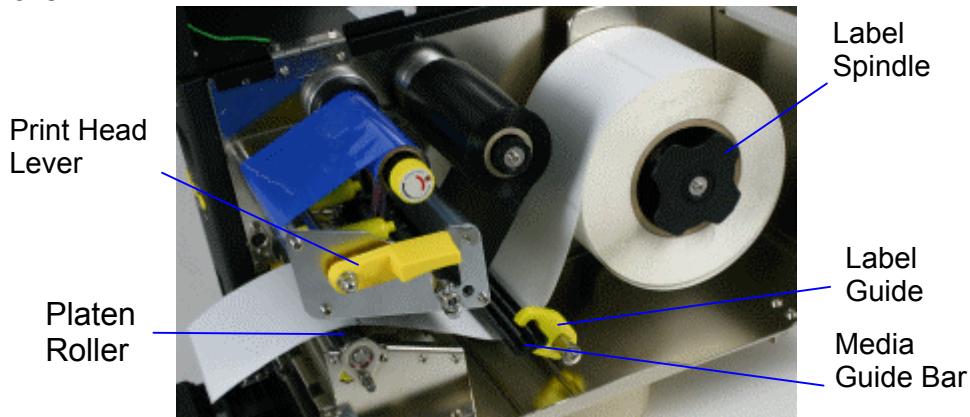
8. The ribbon must route above the black ribbon sensor.



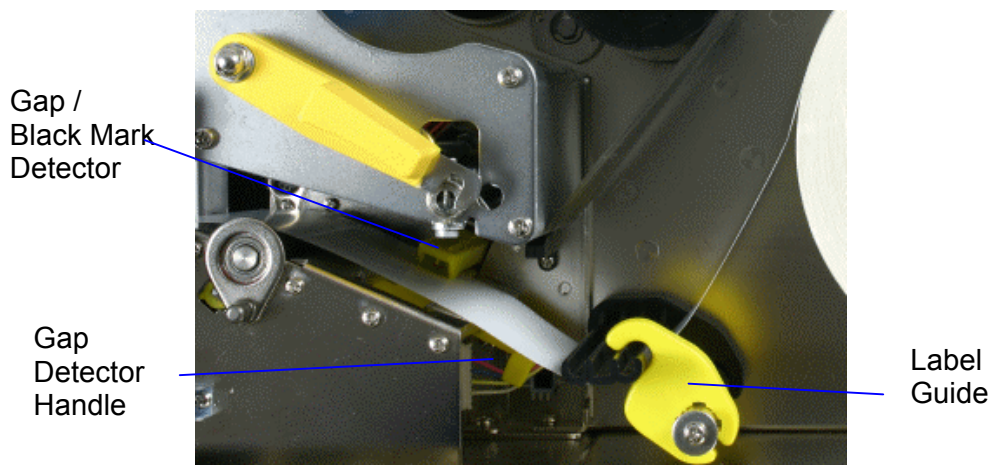
**Figure 9: Ribbon Sensor and Ribon placement**

### 3.3 Label Roll Installation

1. Open the printer panels and the print head lift lever
2. Rotate the Label Guide clockwise away from the Media Guide Bar
3. Insert a new label roll into the label spindle
4. Pull labels leading edge forward under the black media guide bar, through the gap/black mark sensor and place the label leading edge onto the Platen Roller



**Figure 10: Insert a label roll into label spindle.**



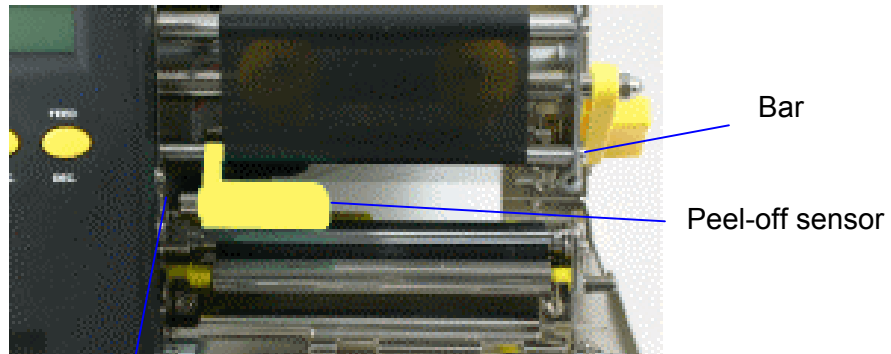
**Figure 11: Media guide bar the gap/black mark detector**

5. Adjust the label guide by sliding it along its bar to meet the width of the label. Then rotate the Label Guide counter-clockwise and secure it to the Media Guide Bar
6. Adjust the Gap Detector to overlap at least one inch of the label by moving the yellow Gap Detector Handle located under the media and just in front of the media guide bar
7. Close the print head lift lever
8. Close the lower front panel and printer cover
9. Turn the power on
10. Go to section 4.2 Gap / Black Mark Detector Sensor Calibration and calibrate the labels

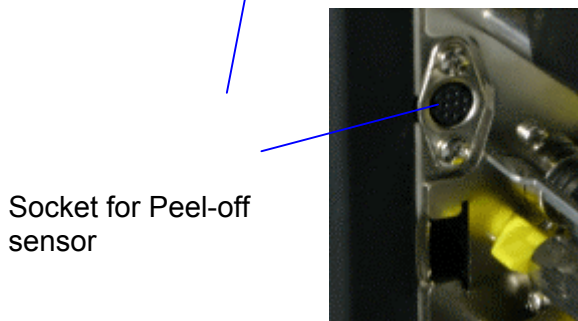


### 3.4 Peel-off Sensor Installation (Sold Separately)

1. Turn the printer off
2. Open the lower front panel
3. Snap the peel-off sensor onto the bar that is under the print head pressure adjustment knobs horizontally

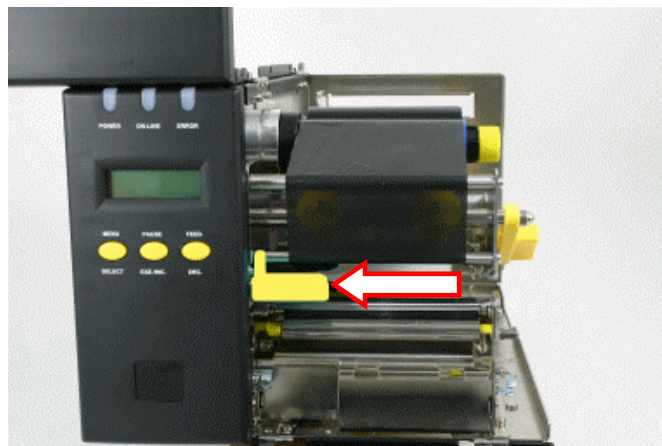


**Figure 12: Peel Sensor attached to bar**



**Figure 13: Peel Socket**

4. Plug the Peel-off sensor into the socket by sliding it along the bar into the socket

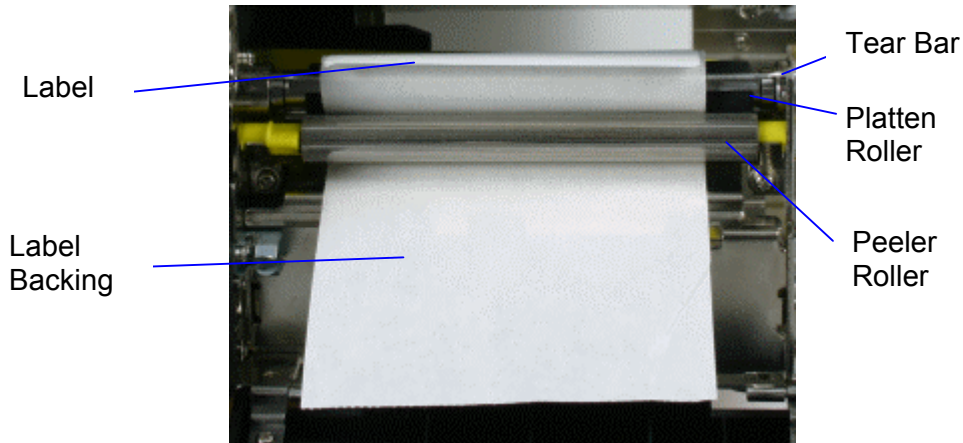


**Figure 14: Peel Sensor into Socket**

5. Close the panels and turn the printer back on
6. If you are printing from windows you must turn peel off mode on in the Advanced Setup section of Printing Preferences for this printer
7. Go to section 4.2 Gap / Black Mark Detector Sensor Calibration and calibrate the labels

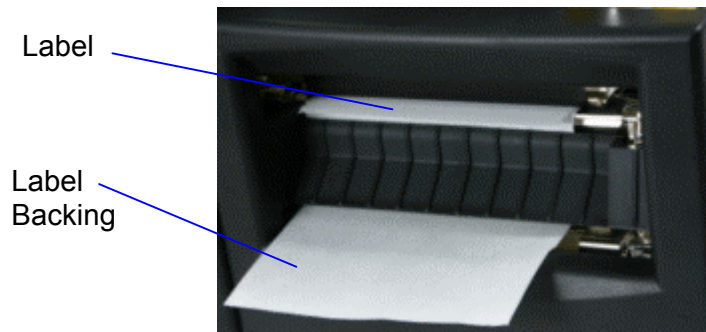
### 3.5 Loading Label For Peel-off Mode

1. Open the front and top printer doors
2. Open the print head left lever
3. Pull several inches of labels out through the front of the printer and remove the label(s) from the backing
4. Feed the label backing between the platen roller and the silver peeler roller then press the **MENU** button several times to advance the label backing through the rollers.
5. Either advance the backing or roll back the labels to take the slack out of the media.



**Figure 15: Peeler installation**

6. Close the print head lift lever.
7. Close the front panel and feed the excess backing through the bottom of the front panel.



**Figure 16: Front panel media location with Peeler**

8. Press the FEED button several times to align the labels and recalibrate

### 3.6 Self-test

To initiate the self-test mode, press the MENU button to advance the selection to Printer Test. Press the EXE button to enter the submenu and press the MENU button to advance the selection to Printer Config. Press EXE button to print the printer's internal settings. During self-test, a check pattern is used to check the performance of the thermal print head. Following the check pattern, the printer prints internal settings as listed below:

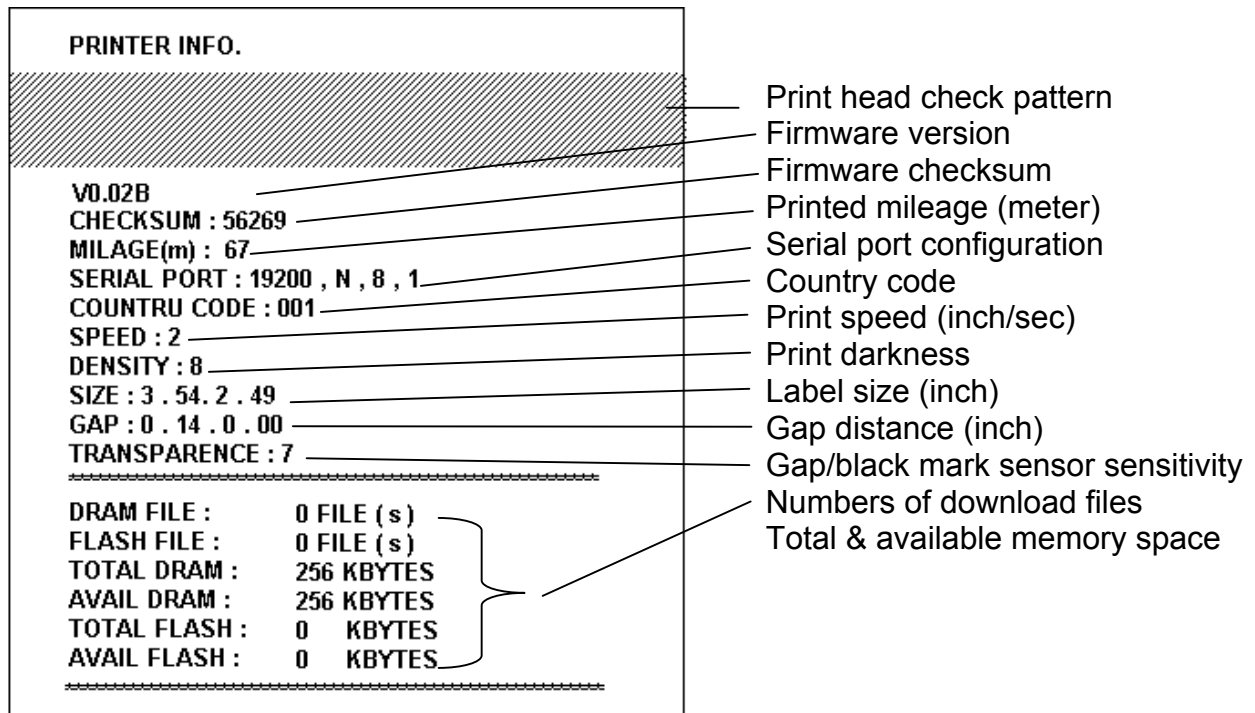


Figure 17: Printout of self-test

### 3.7 Dump Mode

To enter dump mode, press the MENU button to select the Printer Test menu. Press EXE then SELECT until Dump Mode Off is displayed. Press INC to change the display to Dump Mode On. In this mode, any character sent from the host computer will be printed in two columns as shown in Figure 18. On the left side of the paper are the characters received, and on the right side are the corresponding hexadecimal values. This is used for verification of programming commands or debugging of printer programs. Reset the printer by pressing the FEED button.



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

Figure 18: Printout of dump mode

## 4. Calibration

There are two power-on button combinations to initialize the printer settings and to calibrate sensors on the W606.

### 4.1 Printer Initialization

Printer Initialization will restore printer settings to defaults. Do this if labels are printing incorrectly and all other solutions have failed to solve the problem.

**Default settings:**

Item	Default Value	Cleared by Initialization	Property Saved when Turning off Power
Mileage	N/A	No	Yes
Check Sum	N/A	No	Yes
Serial Port	9600,n,8,1	Yes	Yes
Code Page	850	Yes	Yes
Country Code	001	Yes	Yes
Tear Mode	On	Yes	Yes
Peel Mode	Off	Yes	Yes
Cutter Mode	Off	Yes	Yes
Offset	0	Yes	Yes
Reference Point	0,0	Yes	Yes
Print Direction	0	Yes	Yes
Speed	4 IPS	Yes	Yes
Density	08	Yes	Yes
Label Size	3"x3" (77X77mm)	Yes	Yes
Gap/Bline Sensor	Gap Sensor	Yes	Yes
Gap(Bline)	0.12" (3 mm)	Yes	Yes
Transparency	17	Yes	Yes
Ribbon Sensor Sensitivity	1	Yes	Yes
LCD Language	English	Yes	Yes
Aux. LED	Off	Yes	Yes
Aux. Buzzer	Off	Yes	Yes
Download Files	N/A	No	Yes
RTC	N/A	No	No

**To initialize the printer:**

1. Turn off the printer power
2. Hold down the **PAUSE** and **FEED** buttons and turn on the printer power
3. Release the buttons once the Power, On-Line, and Error lights are lit

**Note: The printing method, thermal transfer or direct thermal printing, will be set automatically at the activation of printer power by checking for the ribbon. If there is no ribbon the printer will go into direct thermal printing mode.**

**Note: When printer initialization is done, please calibrate the gap sensor again.**

## 4.2 Gap/Black Mark Sensor Calibration Utility

The gap/black mark sensor must be calibrated whenever the label media changes or after printer initialization.

**To calibrate the Gap/Black Mark Sensor:**

1. Install the ribbon and label roll as the above-mentioned procedures, and engage the print head lift lever.
2. Turn off printer power.
3. Hold down the **PAUSE** key and then turn on printer power. Release the **PAUSE** key when “GAP/BLINE sensor calibrating...” message is shown on the LCD display. The printer will calibrate the gap/black mark sensor automatically.

### 4.3 Troubleshooting Guide

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.

Condition	Reasons	Solutions
<b>No ribbon</b>	<ol style="list-style-type: none"> <li>1. Out of ribbon</li> <li>2. The ribbon is installed incorrectly.</li> <li>3. The ribbon sensor is not been calibrated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Supply a new ribbon roll</li> <li>2. Reinstall the ribbon using the steps in section <b>3.2 Ribbon Installation</b></li> <li>3. Calibrate the ribbon sensor</li> </ol>
<b>No paper</b>	<ol style="list-style-type: none"> <li>1. Out of labels</li> <li>2. The label is installed incorrectly.</li> <li>3. The moveable gap/black mark sensor is not placed in the proper location.</li> </ol>	<ol style="list-style-type: none"> <li>1. Supply a new label roll</li> <li>2. Reinstall the labels using the steps in section <b>3.3 Label Roll Installation</b></li> <li>3. Please move the sensor to the proper location</li> </ol>
<b>Poor printing quality</b>	<ol style="list-style-type: none"> <li>1. Dirt is accumulated on the print head.</li> <li>2. The density setting is not set properly</li> <li>3. Ribbon and media are incompatible.</li> <li>4. The pressure of print head is not set properly</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean the print head using the steps in the section <b>5.1 Print Head Cleaning</b></li> <li>2. Adjust the print density in the driver</li> <li>3. Use the proper ribbon or proper label roll.</li> <li>4. Adjust the print head pressure adjustment knob.</li> </ol>
<b>Power indicator does not illuminate</b>	<ol style="list-style-type: none"> <li>1. The power cord is not properly connected</li> </ol>	<ol style="list-style-type: none"> <li>1. Please check the power cord between printer and outlet.</li> </ol>
<b>Paper jam</b>	<ol style="list-style-type: none"> <li>1. The label size is not set properly.</li> <li>2. Labels may be stuck in side print mechanism.</li> </ol>	<ol style="list-style-type: none"> <li>1. a. Reset the label size. b. Re-calibrate the gap/black mark sensor.</li> <li>2. Remove the stuck label.</li> </ol>
<b>Carriage open</b>	The printer carriage is open.	Please close the print carriage.
<b>Memory full (FLASH / DRAM)</b>	The space of FLASH/DRAM is full.	Delete unused files in the FLASH/DRAM. Maximum 50 files saved in DRAM. Maximum 100 files saved in Flash Files.
<b>No printout printing through serial port</b>	<ol style="list-style-type: none"> <li>1. The serial port setting is not consistent between host and printer.</li> <li>2. The serial port cable pin configuration is not pin to pin assignment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Please reset the serial port setting.</li> <li>2. Please replace the cable with pin to pin assignment.</li> </ol>

## 5. Printer Maintenance

The printer should be cleaned regularly to maintain high quality printing.

### 5.1 Cleaning the Print Head

1. Switch off and unplug the printer
2. Open the printer cover
3. Open the print head lift lever
4. Remove the ribbon. (If loaded)
5. Rub the Wasp Thermal Printer Cleaning Pen Part# 633808441012 tip across the print head several times
6. Do not close the print head until the alcohol evaporates
7. Reload the ribbon, close the print head lift lever and close the printer cover

### 5.2 Cleaning the Outside of the Printer

1. Switch off and unplug the printer
2. Wipe the printer lightly using a lint-free cloth soaked in water or mild detergent.

**NOTE: Do not use harsh or abrasive cloth and solvent.**

### 5.3 Cleaning the Internal Parts of the Printer

1. Switch off and unplug the printer
2. Open the printer right side cover
3. Remove the media and ribbon (If loaded)
4. Open the printer print head lift lever
5. Using a soft dry cloth, wipe the internal parts. Compressed air can also be used to remove dust
6. The rubber roller can be cleaned with a damp cloth. Dry the roller after cleaning
7. Install the ribbon and label, close the print head lift lever
8. Close the printer right side cover

## **6. Support and Warranty**

### **6.1 Product Support**

If you experience any problems with your Wasp printer that you are unable to resolve, use our online support site to register and report the problem then call for technical assistance at (214) 547-4100, Monday through Friday, 8:00 AM – 5:00 PM Central Standard Time. You must register to be eligible for technical support. Our web site is [www.waspbarcode.com/support](http://www.waspbarcode.com/support)

You may also contact us in writing at:

Wasp Technologies  
1400 10<sup>th</sup> Street  
Plano, TX 75074  
(214) 547-4100  
(214) 547-4101 Fax

### **6.2 Warranty Information**

Wasp printers are warranted against defects in workmanship and materials for a period of one year from the date of shipment, provided that the product remains unmodified and is operated under normal and proper conditions.

Note: Print heads are warranted for 90 days against defect in workmanship. Print heads will be replaced during the 90 day period once it is determined that the print head is defective.

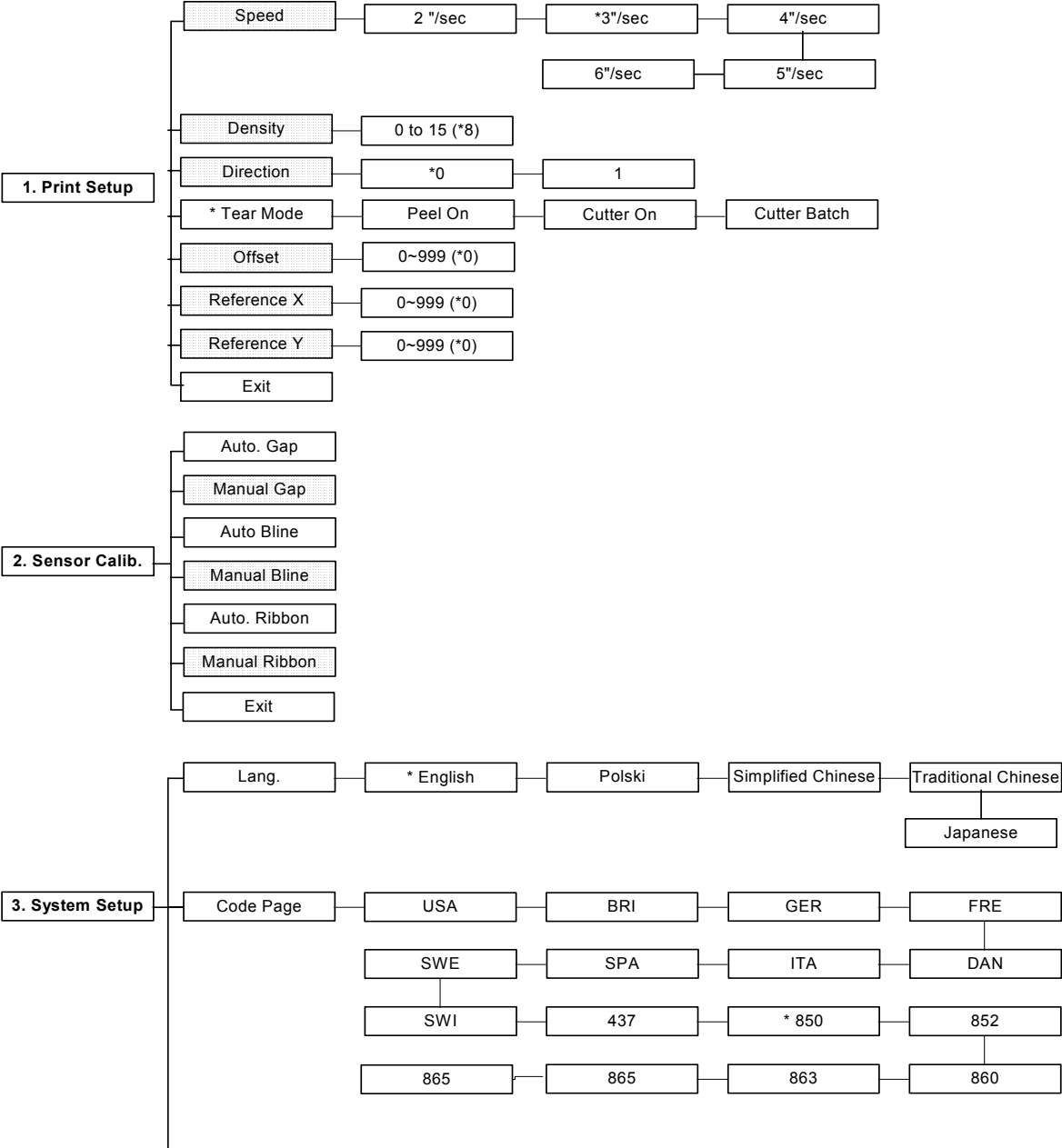
This warranty is limited to repair or replacement at Wasp Technologies' option, with reasonable promptness after being notified. These provisions do not prolong the original warranty term for any product which has been repaired or replaced by Wasp Technologies.

This warranty applies to the original owner and does not extend to any product which has been subject to misuse, neglect, accidental damage, unauthorized repair, or tampering.

No other express warranty is given. The replacement or repair of a product is your exclusive remedy. Any other implied warranty of merchantability or fitness is limited to the duration of this written warranty. Some states, provinces and countries do not allow how long an implied warranty lasts, so the above limitation may not apply to you.

In no event shall Wasp Technologies be liable for consequential damages. Some states, provinces, and countries do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

# Appendix 1: LCD Control Panel Operation Map



Note:  
 1. Defaults are marked with an asterisk (\*)  
 2. The parameters of shaded area can be accessed by pressing the INC. or DEC. key to set the value.

