TD-4650TNWB/4650TNWBR
TD-4750TNWB/4750TNWBR

User's Guide (English)

Version 01

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ENG

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1. Introduction

1.1 Product Introduction

The sleek design of the TD-4650TNWB/4650TNWBR/4750TNWB/4750TNWBR label printer can handle up to 984 ft (300 m) of ribbon and label rolls. Its internal 5" (127 mm) label capacity can be further expanded with an External Roll Holder to handle 8" (203.2 mm) rolls, designed for industrial label printers. The printer's movable Black Mark Sensor is compatible with a wide range of label media.

The printer uses its high-performance, high-quality, built-in Monotype Imaging® TrueType font engine with the CG Triumvirate Bold Condensed smooth scalable font. It also provides a choice of eight different sizes of the alphanumeric bitmap font. The printer's flexible firmware design allows users to download additional TrueType fonts from a computer to print custom labels. It also supports most of the standard barcode formats and can print fonts and barcodes in four directions.

1.2 Additional Product Reference

For information on how to write custom programs for your Label Printer, see the *Command Reference Manuals* on your model's **Manuals** page at support.brother.com.

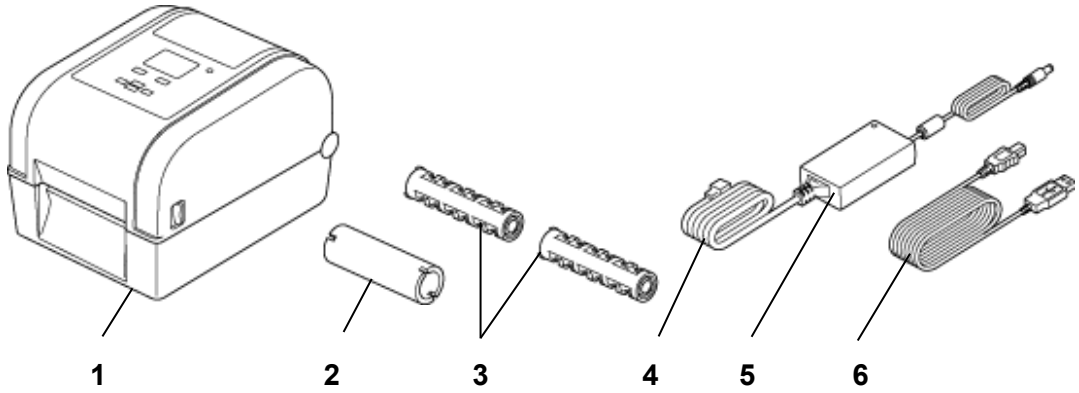
2. Operations Overview

2.1 Unpack the printer and check the components

Note

Keep the packaging materials in case you must ship the printer.

The components included in the box:

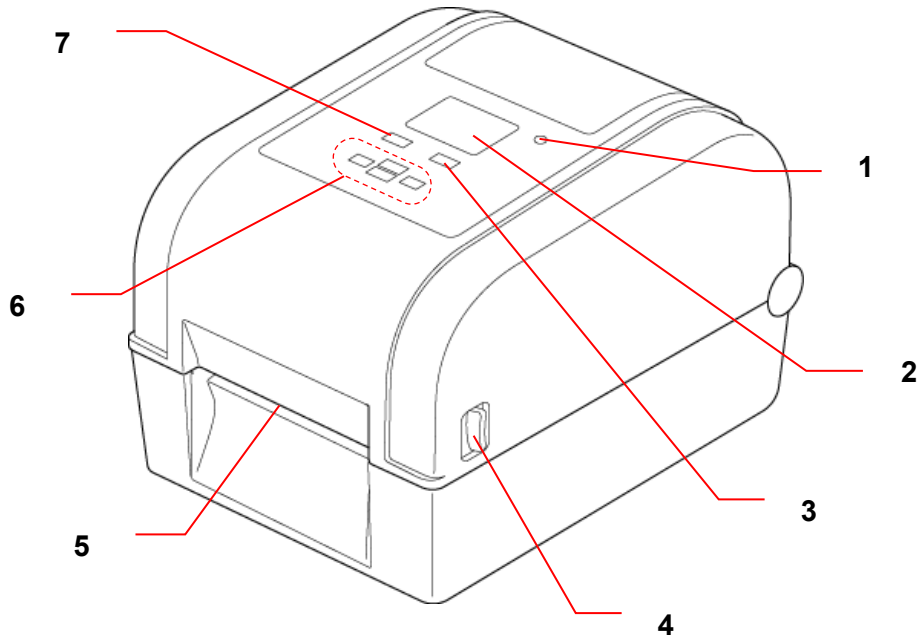


1. Printer Unit
2. 1" (25.4 mm) Ribbon Paper Core
3. Two 1" (25.4 mm) Ribbon Spindles
4. Power Cord
5. External Universal Switching Power Supply
6. USB Cable

If any components are missing, contact the product manufacturer's customer service or your local dealer.

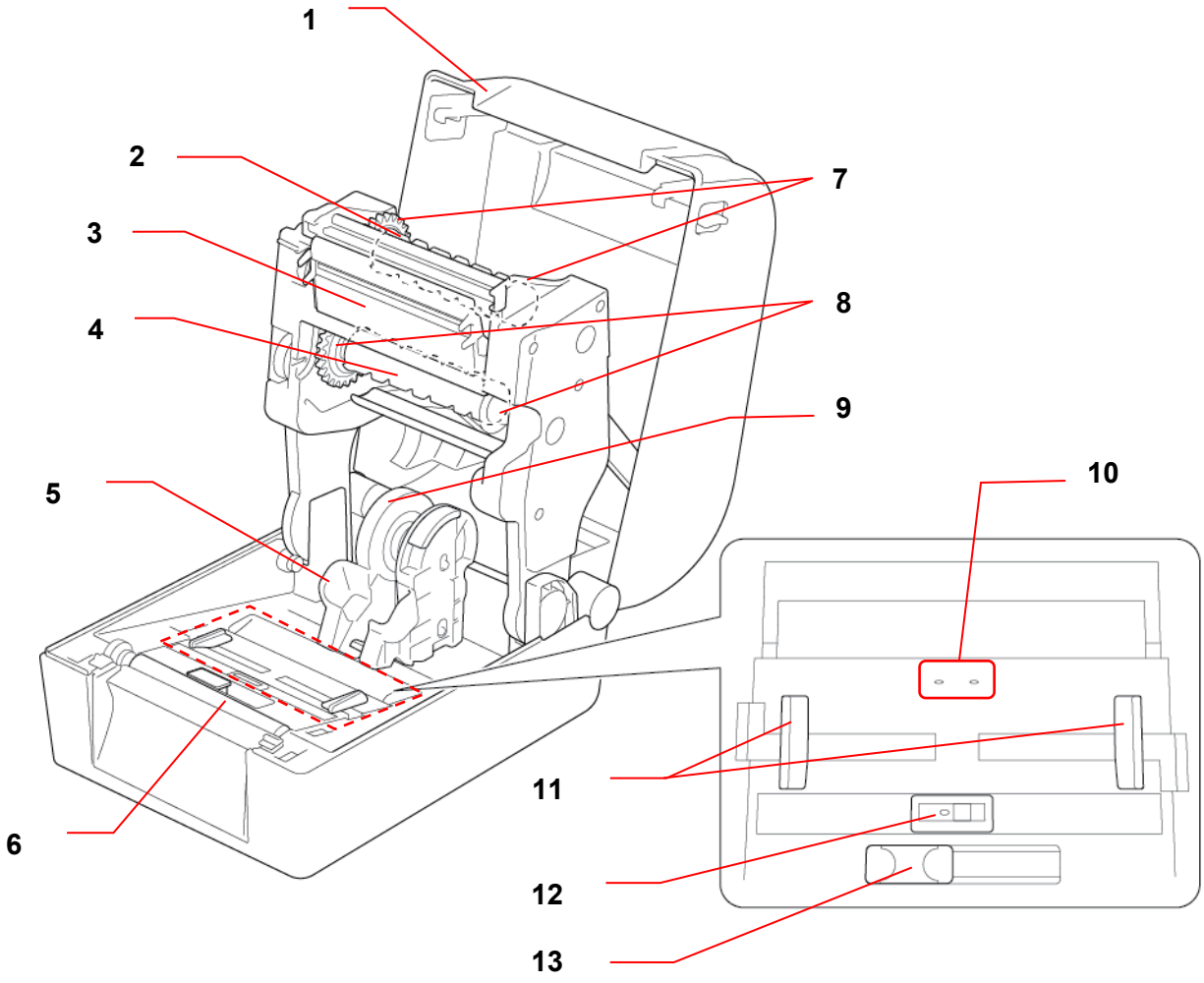
2.2 Printer Overview

2.2.1 Front View



1. LED Indicator
2. LCD
3. Feed/Pause Button (controls the icon on the right side of the LCD)
4. Roll Compartment Cover Open Tab
5. Label Output Slot
6. Navigation Buttons
7. Menu Button (controls the icon on the left side of the LCD)

2.2.2 Interior View

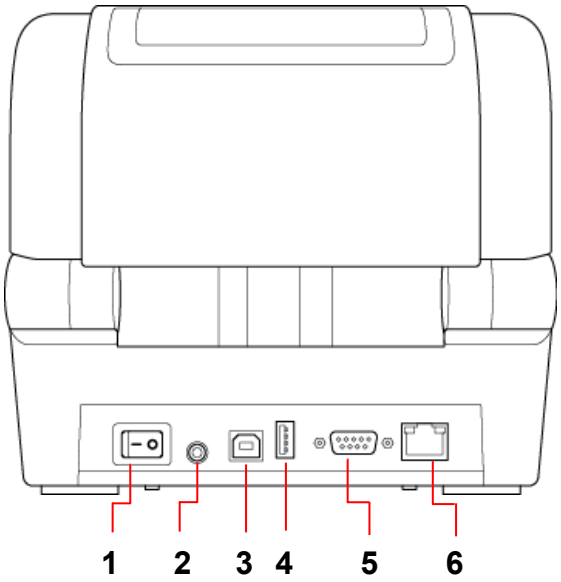


1. Roll Compartment Cover
2. Ribbon Rewind Spindle
3. Print Head
4. Ribbon Supply Spindle
5. Roll Guides
6. Platen Roller
7. Ribbon Rewind Hub
8. Ribbon Supply Hub
9. Media Adapter
10. Gap Sensor
11. Media Guide Tips
12. Black Mark Sensor
13. RFID Antenna Slider (TD-4650TNWBR and TD-4750TNWBR only)

⚠ WARNING

DO NOT touch rotating parts. There is a risk of injury if your finger is caught in the rotating gear. Turn off the product before touching any metal parts.

2.2.3 Rear View



1. Power Switch
2. Power Port
3. USB Port (USB 2.0/Hi-Speed mode)
4. USB Host Port
5. RS-232 Serial Port
6. Ethernet Port

Note

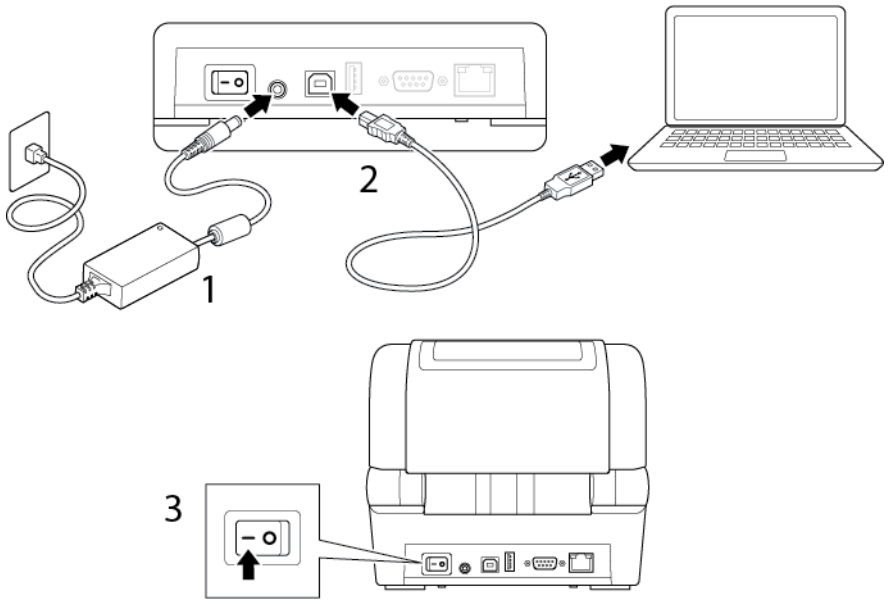
For more information, see *9. Product Specifications*.

2.3 Connect the Power Cord

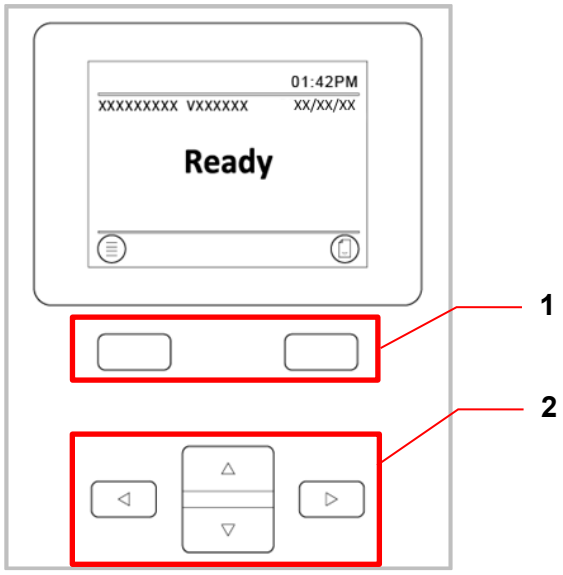
Note

- Before you plug the Power Cord into the Power Port, make sure the printer's Power Switch is in the OFF position.
- Place the printer on a flat, secure surface.
- For more information, see *9. Product Specifications*.

1. Plug the Power Cord into the Power Port at the rear of the printer, and then plug the other end into the AC power outlet (electrical socket).
2. Connect the printer to the computer with the provided USB cable.
3. Push the “-” side of the Power Switch to turn on the printer.



2.4 Control Panel



No.	Description	Functionality
1	Soft Buttons	· **Menu Button (Left):** - Opens the LCD menu in Ready Mode. - Selects the left icon in the LCD footer. · **Feed/Pause Button (Right):** - Ejects one label length of the media in Ready Mode. - Selects the right icon in the LCD footer. - Pauses a print job. The LED flashes in green. To resume the print job, press the button again.
2	Navigation Buttons	· Select menu items. · Pressing the Up and Down arrows together locks or unlocks the control panel.

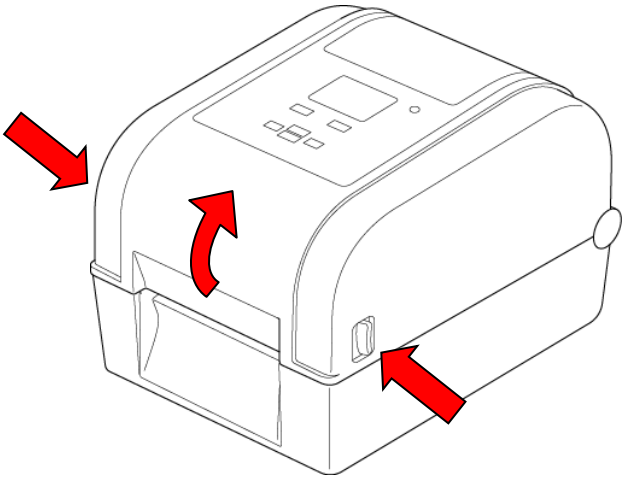
2.5 LED Indicator

LED Color	Description
Green (Lit)	The power is on and the printer is ready to use.
Green (Flashing)	・The printer is downloading data from a computer. ・The printer is paused.
Amber	The printer is removing data.
Red (Lit)	・The Print Head is open. ・There is a problem with the Cutter Module.
Red (Flashing)	There is a memory error or printing error (for example: jammed paper, no paper, no ribbon).

3. Set Up Your Printer

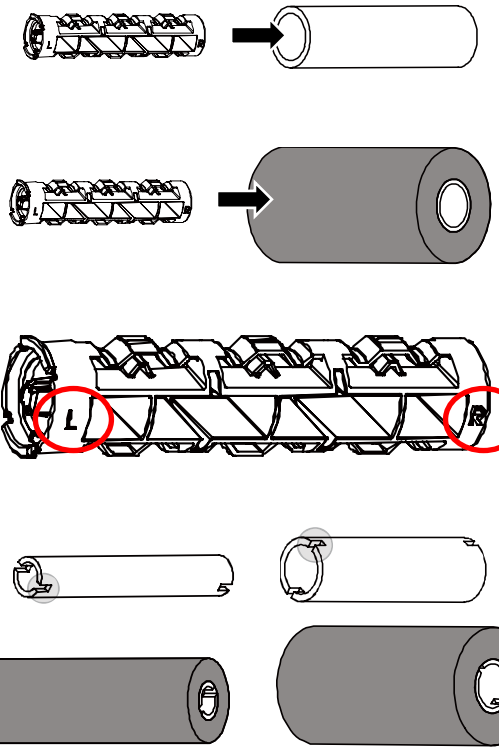
3.1 Load the Ribbon

1. Press the tabs located on each side of the printer, and then lift the Roll Compartment Cover.



2. Use one of the following paper cores:

   - For 1" (25.4 mm) and 0.5" (12.7 mm) paper cores with notches, you do not need to install the ribbon spindles.
   - For 1" (25.4 mm) paper core without notches, insert the ribbon spindles into the paper core and ribbon.

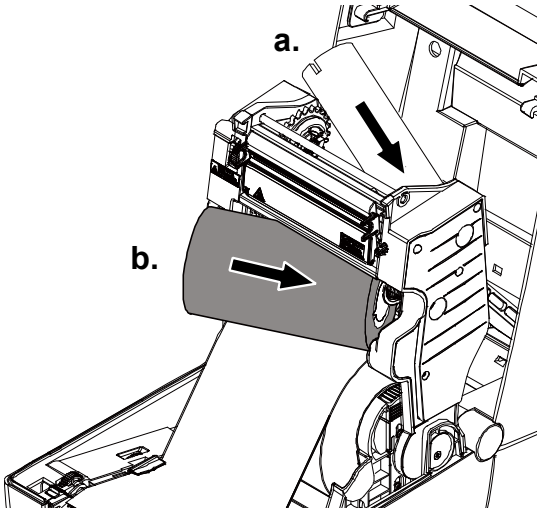


> **Note**
> Follow these directions when installing the ribbon spindle.

3.

a. First, insert the right side of the Ribbon Rewind Spindle (marked “R”) into the Ribbon Rewind Hub. Then, insert the left side of the Ribbon Rewind Spindle into the hole on the left side of the Ribbon Rewind Hub.

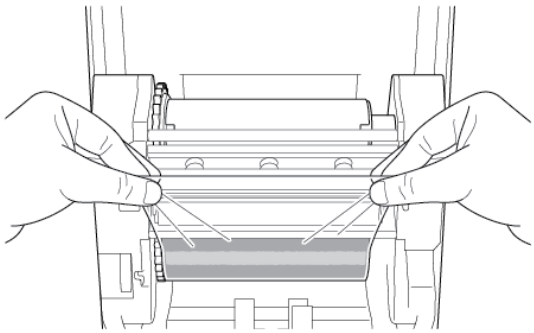
b. Insert the right side of the Ribbon Supply Spindle (marked “R”) into the Ribbon Supply Hub. Then, insert the left side of the Ribbon Supply Spindle into the hole on the left side of the Ribbon Supply Hub.

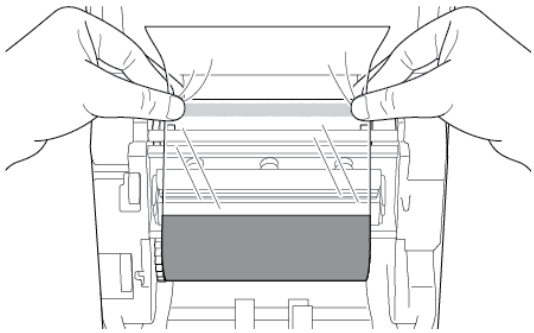


4. Thread the ribbon through the Print Head and adhere the leader of the ribbon onto the Ribbon Rewind Paper Core.

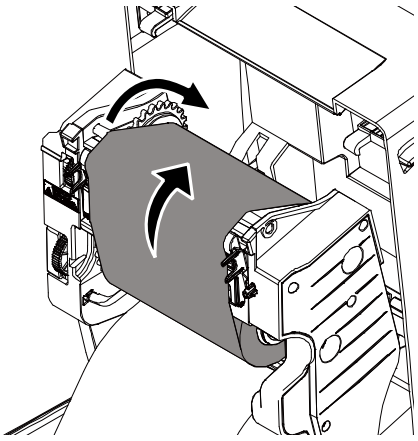
IMPORTANT

Do not dispose of the Ribbon Rewind Paper Core when replacing the ribbon roll. This part is necessary for the ribbon roll replacement.





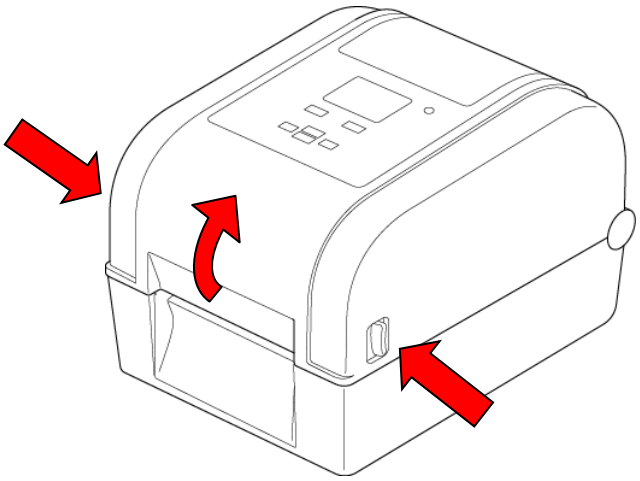
5. Using the Ribbon Rewind Gear, rotate the Ribbon Rewind Hub until the ribbon plastic leader is thoroughly wound and the black section of the ribbon covers the Print Head.



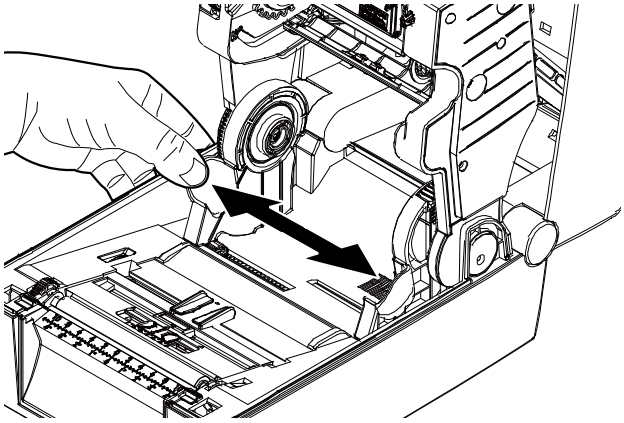
3.2 Load the Media

3.2.1 Load Label Roll

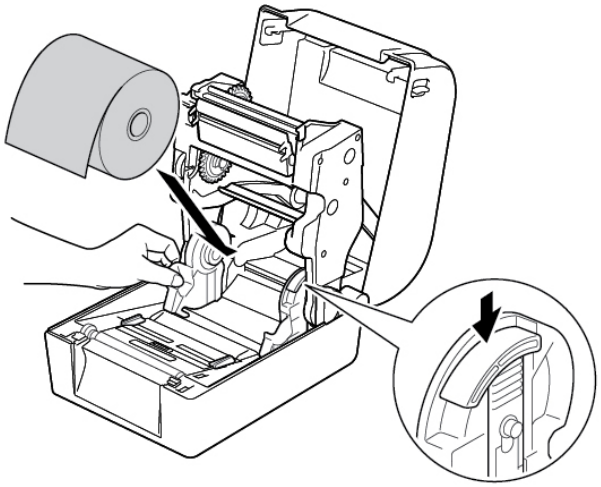
1. Press the tabs located on each side of the printer, and then lift the Roll Compartment Cover.



2. Slide both Roll Guides outwards.

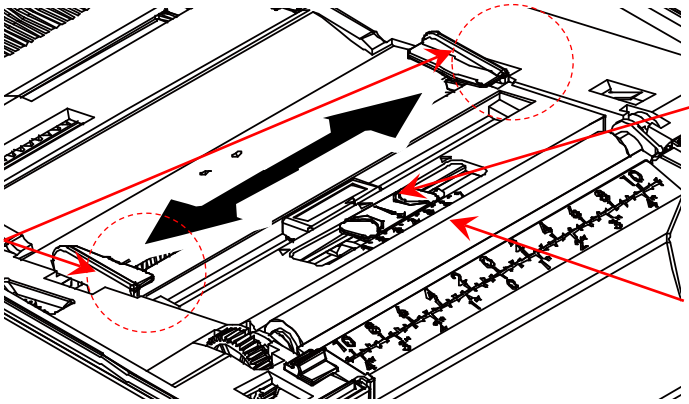


3. Insert the paper roll with the labels facing up, as shown in the illustration.
   Push down and slide the lock tab to lock the Roll Guides into place.



> **Note**
> Make sure that the label print side is facing up.

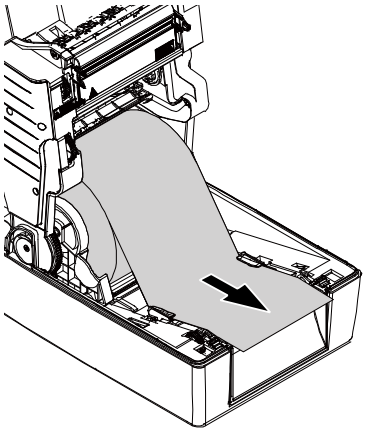
4. Slide the Media Guide Tips to the correct position.

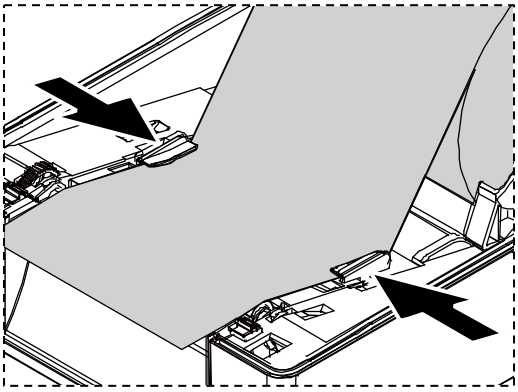


Note

- For black mark media or media with notches or holes used to indicate the label length, the Black Mark sensor is moveable. Slide the Media Guide Tips to the correct position.
- For RFID models, slide the green RFID Antenna Slide to the correct position.

5. Place the paper, printing side face up, through the media sensor and place the first label's leading edge onto the Platen Roller. Adjust the green Media Guide Tips to fit the label width.

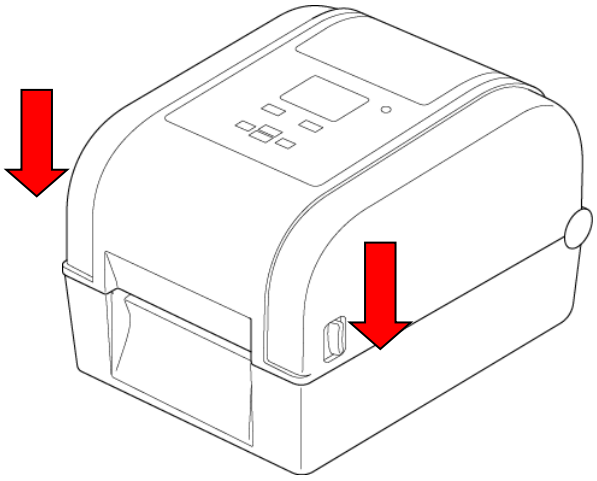




6. Press down on both sides of the Roll Compartment Cover to close it gently.
7. Use the LCD menu or the Brother Printer Management Tool (BPM) to set the media sensor type and calibrate the selected sensor.

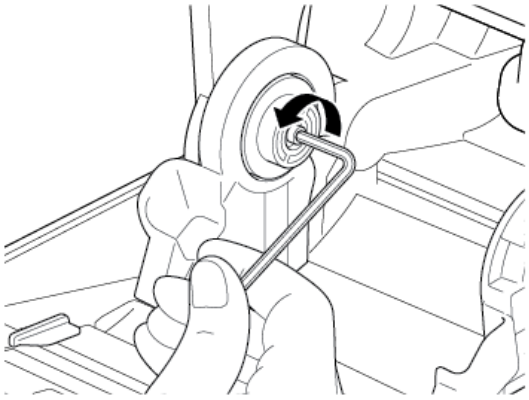
Note

For more information about sensor calibration, see section *7.2. Auto-Calibrating the Media Sensor using the BPM*.



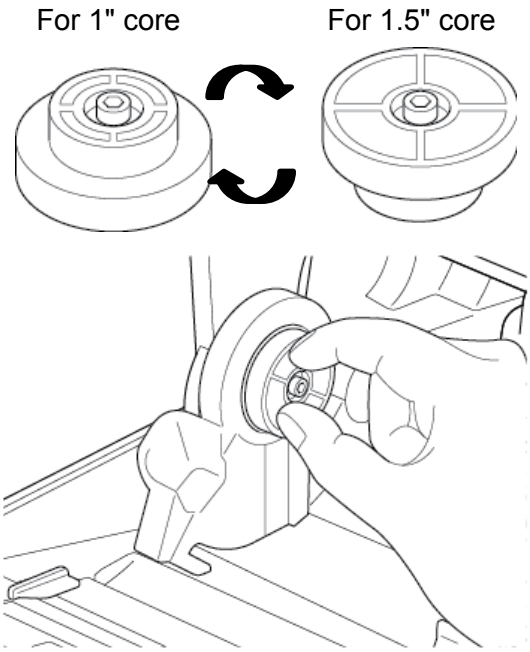
■ Convert 1" (25.4 mm) to 1.5" (38.1 mm) Core Roll Guides

1. Use a 3/32" (2.5 mm) hex key (purchased separately) to remove the Media Adapter located on both sides of the Roll Guides.

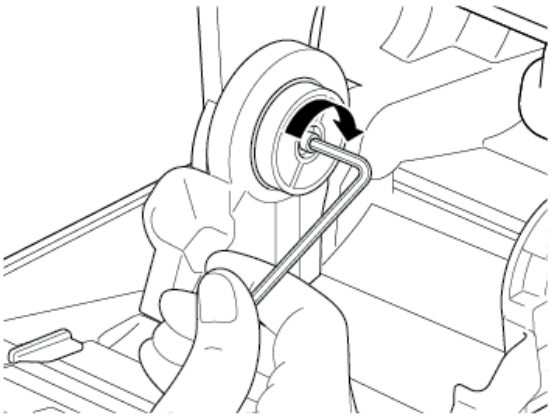


2. Reverse the direction of the Media Adapter and align it with the Roll Guide.

> **Note**
> The Roll Guide can be converted from a 1" core to 1.5" core by reversing the Media Adapter.

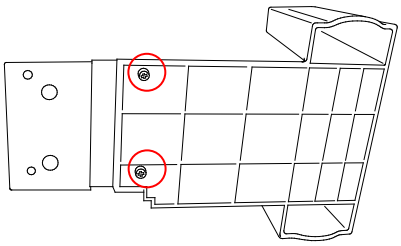


3. Reinstall the Media Adapter and use the hex key to secure it onto the Roll Guides.

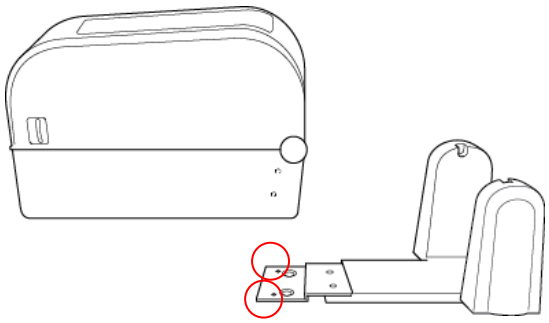


3.2.2 Install the External Roll Holder (Optional)

1. Tighten the screws on the metal fittings of the extended plate.

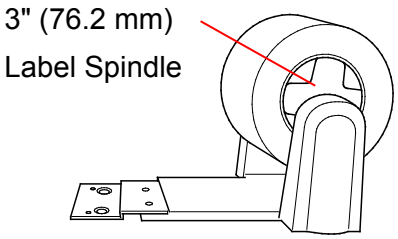


2. Attach the extended plate to the bottom of the printer.

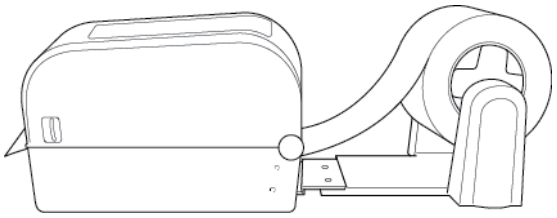


3. Insert a 3" (76.2 mm) Label Spindle into a paper roll. Then, install it on the External Roll Holder.

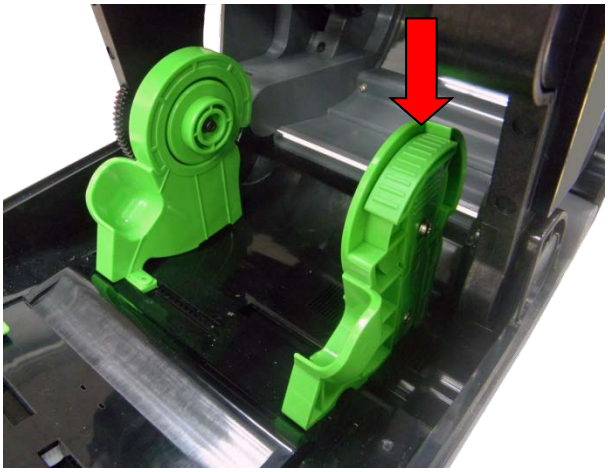
> **Note**
> Make sure that the label print side is facing up.



4. Feed the media through the feed slot in the back of the printer.



5. Open the Roll Compartment Cover. Slide the Roll Guides outwards, and then align the paper width with the Roll Guides. Push down and slide the lock tab to lock the Roll Guides into place.



6. Install the label roll as described in section *3.2.1 Load Label Roll*.
7. Feed the media through the media sensor. Adjust the Media Guide Tips to fit the label width.
8. Use the Brother Printer Management Tool (BPM) or LCD menu to set the media sensor type and calibrate the selected sensor.

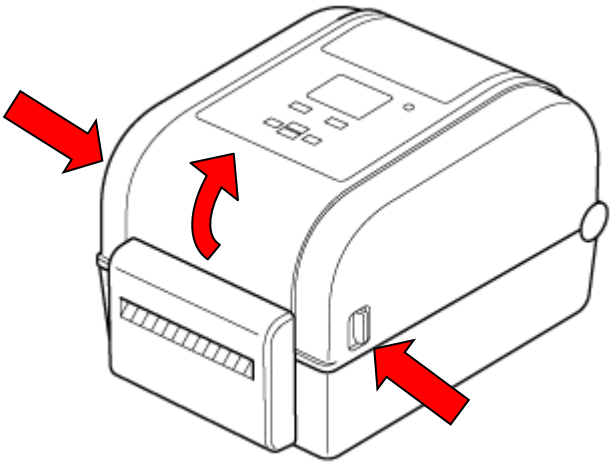
Media Guide Tips

Note

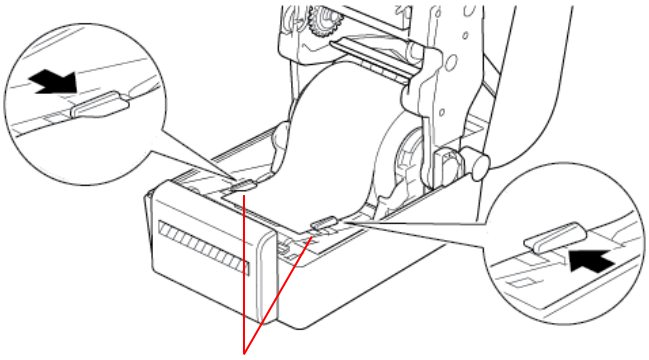
- Calibrate the Gap/Black Mark Sensor every time you change the media.
- For more information about sensor calibration, see section *7.2 Auto-Calibrating the Media Sensor using the BPM*.

3.2.3 Install the Label Roll When Using the Cutter Module (Dealers only)

1. Press the tabs located on each side of the printer, and then lift the Roll Compartment Cover.
2. Install the label roll as described in section *3.2.1 Load Label Roll*.
3. Use the Brother Printer Management Tool (BPM) to set the media sensor type and calibrate the selected sensor.



4. Feed the label roll through the media sensor. Adjust the Media Guide Tips to fit the label width.

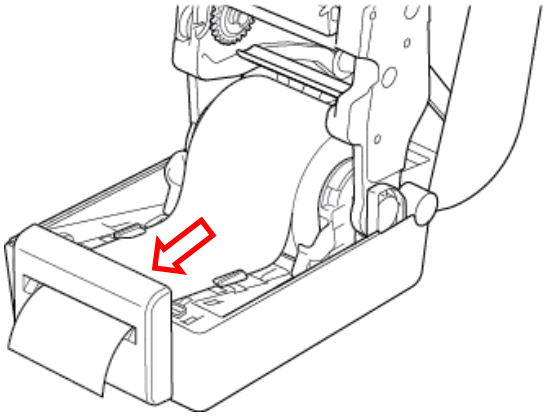


Media Guide Tips

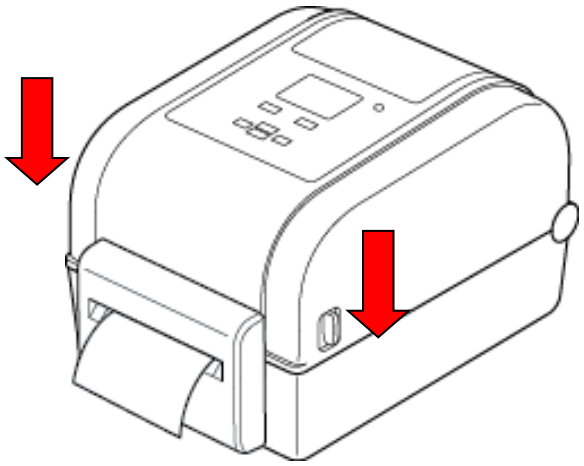
5. Push the label roll through the Cutter Output Slot.

Note

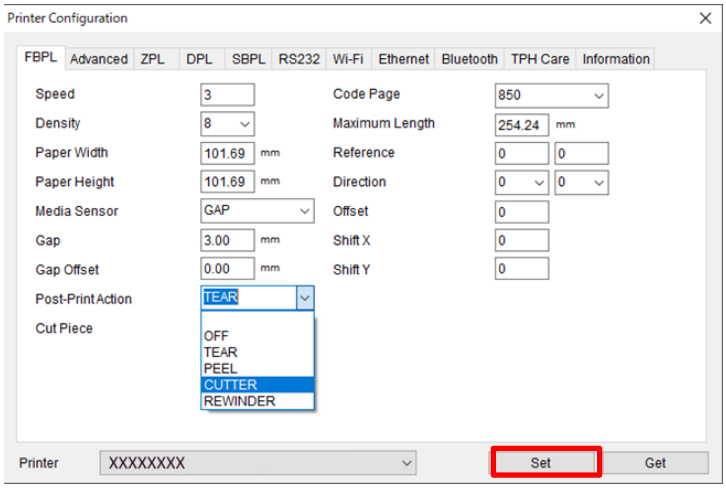
Make sure that the label print side is facing up.



6. Close the Roll Compartment Cover.



7. Use the Brother Printer Management Tool (BPM) to set the printer for Cutter Mode.
   a. Start the BPM.
   b. Click the **Printer Configuration** button.
   c. Click the **FBPL** tab.
   d. Click the **CUTTER** option from the **Post-Print Action** drop-down list.
   e. Click **Set**.



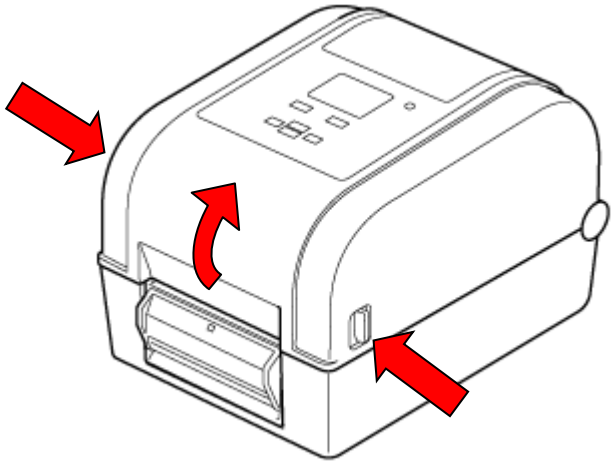
   f. Press the **Feed/Pause** button to test.

Note

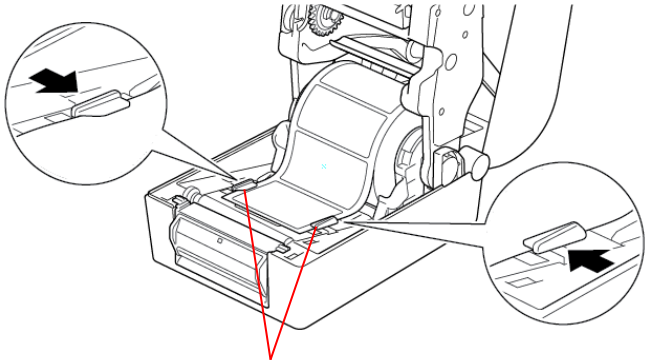
- Calibrate the Gap/Black Mark Sensor every time you change the installed media. For more information about sensor calibration, see section *7.2 Auto-Calibrating the Media Sensor using the BPM*.
- Printer settings can also be changed using the LCD.

3.2.4 Install the Label Roll When Using the Label Peeler (Dealers only)

1. Press the tabs located on each side of the printer, and then lift the Roll Compartment Cover.
2. Install the label roll as described in section *3.2.1 Load Label Roll*.
3. Use the Brother Printer Management Tool (BPM) to set the media sensor type and calibrate the selected sensor.



4. Feed the label roll through the media sensor. Adjust the Media Guide Tips to fit the label width.

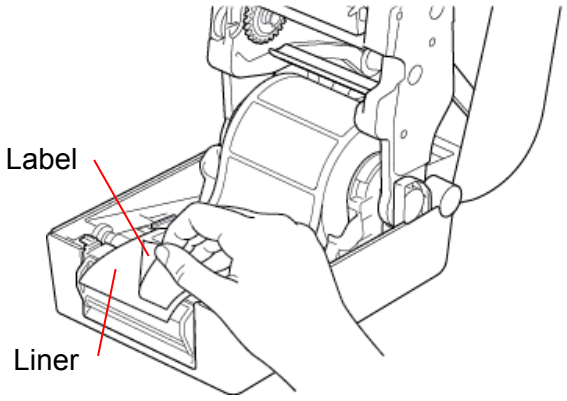


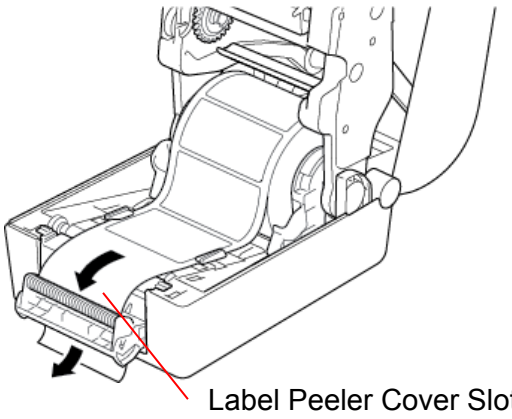
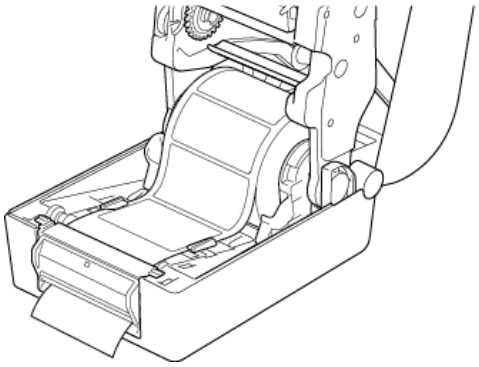
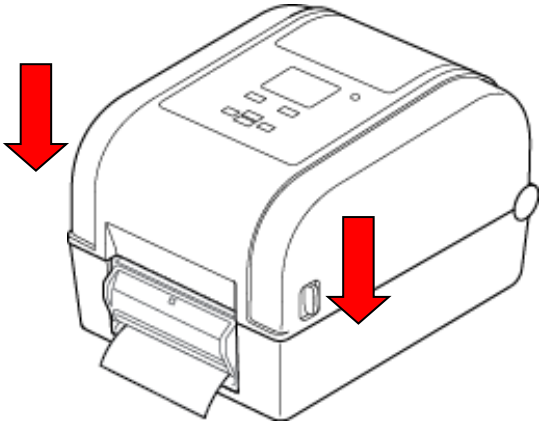
Media Guide Tips

5. Pull the media out of the printer and remove some labels, leaving only the liner.

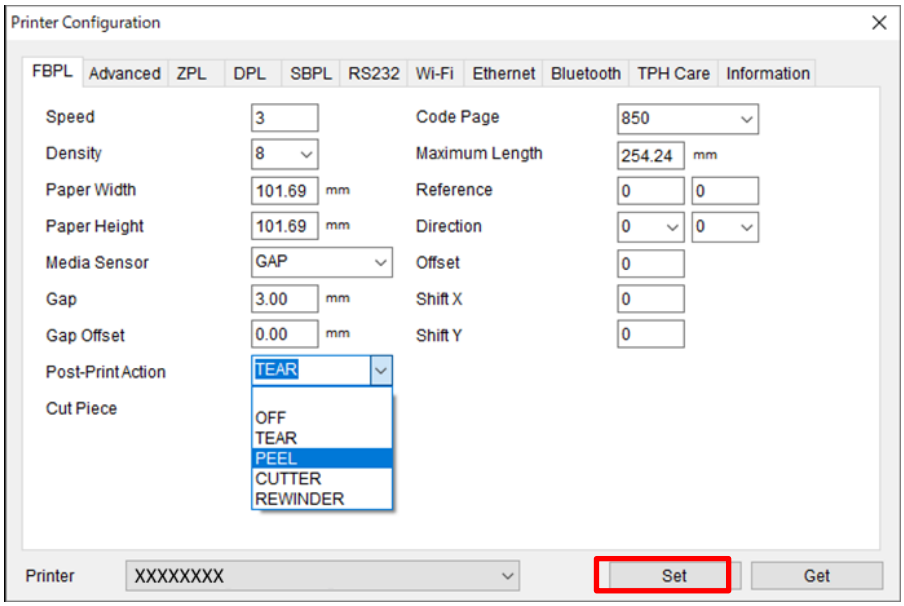
Note

Make sure that the label print side is facing up.

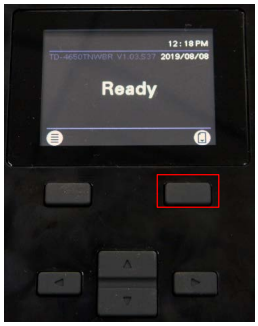


6. Open the Label Peeler Cover. Feed the liner into the Label Peeler Cover Slot.	
7. Close the Label Peeler Module.	
8. Close the Roll Compartment Cover.	

9. Use the Brother Printer Management Tool (BPM) to set Label Peeler Mode.
   a. Start the BPM.
   b. Click the **Printer Configuration** button.
   c. Click the **FBPL** tab.
   d. Click the **PEEL** option from the **Post-Print Action** drop-down list.
   e. Click **Set**.



   f. Press the **Feed/Pause** button to test.



Note

- The Label Peeler Module supports only plain paper labels.
- Printer settings can also be changed using the LCD.

4. Printing

4.1 Printer Driver Installation

Note

The model name and serial number are located on the back of the printer.

The driver installation method depends on the connection type:

- USB Connection (Windows/Mac/Linux)
- Bluetooth Connection (Windows)
- Wi-Fi Network Connection (Windows)
- Wired Network Connection (Windows)

4.1.1 USB Connection (Windows/Mac/Linux)

Note

Mac/Linux Users

For more information about driver installation, see the driver installation guide provided with the driver.

1. Connect your printer to the computer using a USB cable.
2. Visit support.brother.com, go to your model's **Downloads** page, and download the latest printer driver and software.
3. Run the Seagull Driver Wizard application and select **Install printer drivers** and **USB**.
4. Follow the on-screen instructions.

Note

If you cannot install a printer driver:

- Install a printer driver manually:
  In the Seagull Driver Wizard application, select **Install printer drivers** > **Others**.
- Remove the printer drivers:
  In the Seagull Driver Wizard application, select **Remove printer drivers** > **Automatically remove all Drivers by Seagull** or **Use advanced printer driver removal options**.
- Reset the printer settings:
  Start the BPM, and then click **Printer Function** > **Factory Default**.

4.1.2 Bluetooth Connection (Windows)

1. Check the Bluetooth Local Name:

   - Using the BPM
     a. Connect the printer to the computer using a USB cable.
     b. Click **Printer Configuration** > **Bluetooth**.
   - Using the LCD
     Select **Interface** > **Bluetooth**.

2. Turn on your computer's Bluetooth feature.
3. Pair the computer with the printer by selecting **Start** > **Settings** > **Devices** > **Bluetooth & other devices** and enabling Bluetooth.
4. Select **Add Bluetooth or other device** and select your printer.
5. Visit support.brother.com, go to your model's **Downloads** page, and download the latest printer driver and software.
6. Run the Seagull Driver Wizard application and select **Install printer drivers** and **Bluetooth**.
7. Follow the on-screen instructions.

Note

If you cannot install a printer driver:

- Remove the printer drivers:
  In the Seagull Driver Wizard application, select **Remove printer drivers** > **Automatically remove all Drivers by Seagull** or **Use advanced printer driver removal options**.
- Reset the printer settings:

Start the BPM, and then click **Printer Function** > **Factory Default**.

4.1.3 Wi-Fi Network Connection (Windows)

Make sure both your wireless router/access point's and your printer's network settings are correctly set up. For more information, see the documentation provided with your wireless router/access point, or contact the router manufacturer, your system administrator, or Internet service provider.

1. Configure the network settings:

   - Using the BPM
     a. Connect your printer to the computer using a USB cable.
     b. Click **Printer Configuration** > **Wi-Fi**.
     c. Specify **SSID**, **Encryption**, and **Key** (Network Password), and then click **Set**.
     d. Click **Get** and confirm that the printer's IP address is correct.
     When finished, the Wi-Fi icon and printer's IP address appear on the LCD.

- Using the LCD
  a. Select **Interface** > **Wi-Fi**.
  b. Specify **SSID**, **Encryption**, and **Password**.
  c. When finished, the Wi-Fi icon and printer's IP address appear on the LCD.

2. Visit support.brother.com, go to your model's **Downloads** page, and download the latest printer driver and software.
3. Run the Seagull Driver Wizard application and select **Install printer drivers** and **Network**.
4. Select your printer, and then click **Next**.
5. If your TCP/IP port does not appear in the list, click **Create port** and select **Standard TCP/IP port** > **New Port**.
6. Type your printer's IP address and port name, and then click **Next**.
7. Click **Finish**.
8. Return to the **Specify Port** window and select the port you created.
9. Follow the on-screen instructions.

Note

If you cannot install a printer driver:

- Remove the printer drivers:
  In the Seagull Driver Wizard application, select **Remove printer drivers** > **Automatically remove all Drivers by Seagull** or **Use advanced printer driver removal options**.
- Reset the printer settings:
  Start the BPM, and then click **Printer Function** > **Factory Default**.

4.1.4 Wired Network Connection (Windows)

1. Connect both the printer and the computer to your router/access point using LAN cables. The printer automatically receives a default IP address and displays it on the LCD.
2. Visit support.brother.com, go to your model's **Downloads** page, and download the latest printer driver and software.
3. Run the Seagull Driver Wizard application and select **Install printer drivers** and **Network**.
4. Select your printer, and then click **Next**.
5. If your TCP/IP port does not appear in the list, click **Create port** and select **Standard TCP/IP port** > **New Port**.
6. Type your printer's IP address and port name, and then click **Next**.
7. Click **Finish**.
8. Return to the **Specify Port** window and select the port you created.
9. Follow the on-screen instructions.

Note

If you cannot install a printer driver:

- Remove the printer drivers:
  In the Seagull Driver Wizard application, select **Remove printer drivers** > **Automatically remove all Drivers by Seagull** or **Use advanced printer driver removal options**.
- Reset the printer settings:
  Start the BPM, and then click **Printer Function** > **Factory Default**.

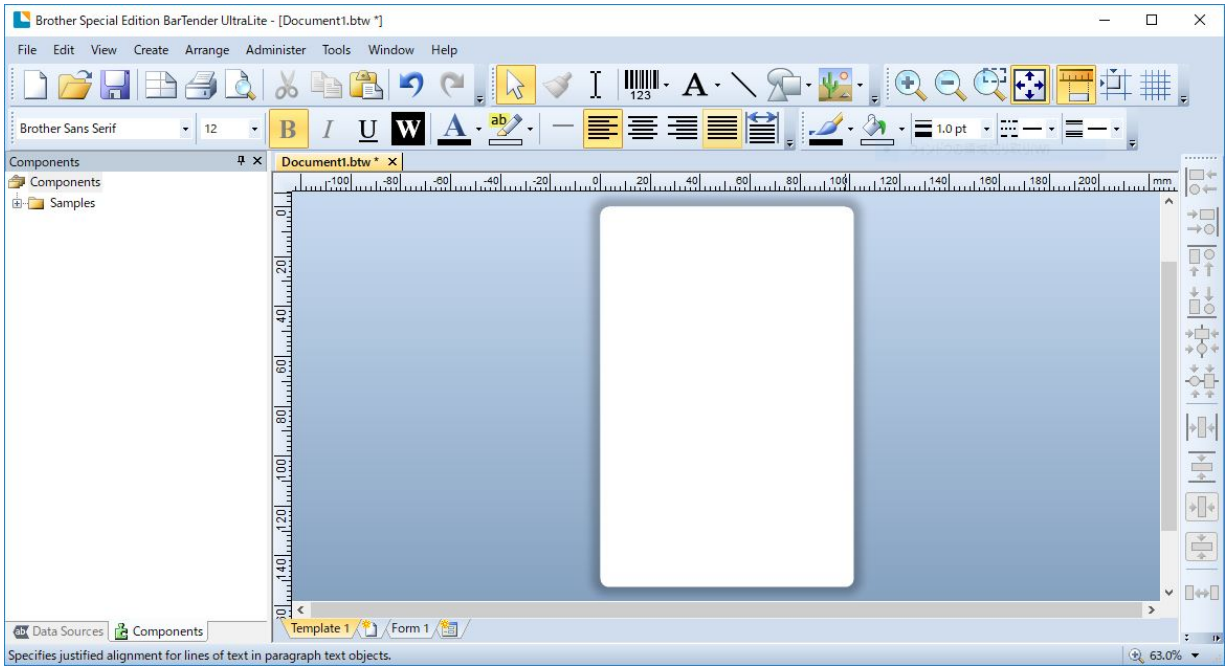
4.2 Creating and Printing Labels Using BarTender

BarTender is a label creation tool, which can be downloaded for free from the product's page at support.brother.com.

1. Launch BarTender.

   - For Windows 10, Windows Server 2016, or Windows Server 2019:
     Start > **BarTender 2016 R7 UltraLite** > click **BarTender UltraLite**, or double-click the **BarTender UltraLite** icon on the desktop.
   - For Windows 8.1, Windows Server 2012, or Windows Server 2012 R2:
     Click **BarTender UltraLite** on the application screen, or double-click the **BarTender UltraLite** icon on the desktop.
   - For Windows 7:
     Start > **All Programs** > **BarTender 2016 R7 UltraLite** > click **BarTender UltraLite**, or double-click the **BarTender UltraLite** icon on the desktop.

2. Follow the on-screen steps to create a label.



Note

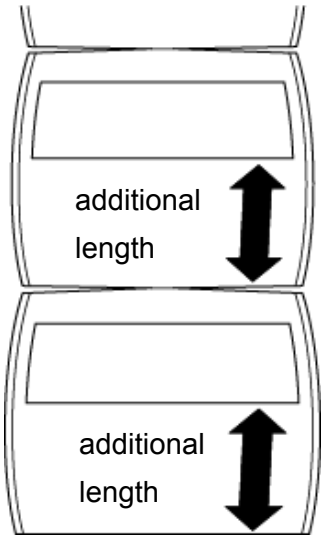
For more information on using BarTender, click **Help**.

3. Click **File** > **Print** to print the label.

Note

When the Partial Cut setting is selected, a blank area of about 2.4" (60 mm) is added between the cut line and the print area, as illustrated.

Partial Cut is only available when the Cutter Module is installed on your printer.



5. Operation

5.1 Power-on Utilities

There are six power-on utilities to set up and test the printer's functions.

To activate a power-on utility:

1. Turn off the printer.
2. Press and hold the **Feed/Pause** button, and then turn on the printer.
3. Release the button when the LED indicates the function you want:

Power-On Utility	LED Patterns						
LED color / Function	Amber (Lit)	Red/ Amber (5 times)	Amber (5 times)	Green/ Red (5 times)	Green (5 times)	Red (5 times)	Green (Lit)
1. Ribbon and Gap/Black Mark Sensor calibration		✔					
2. Gap/Black Mark Sensor calibration, self-test, and entering dump mode			✔				
3. Printer initialization				✔			
4. Media sensor calibration (for the Black Mark Sensor)					✔		
5. Media sensor calibration (for the Gap Sensor)						✔	
6. Skip the AUTO.BAS program							✔

5.1.1 Ribbon and Gap/Black Mark Sensor Calibration

The Gap/Black Mark Sensors' sensitivity should be calibrated when:

- You purchase a new printer.
- You change label stock.
- The label printer initializes.

To calibrate the Ribbon and Gap/Black Mark Sensors:

1. Turn off the printer.
2. Press and hold the **Feed/Pause** button, and then turn on the printer.
3. Release the button when the LED is flashing in red/amber.

Note

- The LED color will change as follows:
  Amber (lit) → **red/amber (5 times)** → amber (5 times) → green/red (5 times) → green (5 times) → red (5 times) → green (lit)
- To select the sensor for calibration, send the correct command to the printer:
  - For the Gap Sensor: send the GAP command
  - For the Black Mark Sensor: send the BLINE command

  For more information about the available commands, see the *FBPL Command Reference Manual* on your model's **Manuals** page at support.brother.com.

5.1.2 Gap/Black Mark Sensor Calibration, Self-Test, and Entering Dump Mode

Calibrate the Gap or Black Mark Sensor if the sensor's settings used in the last print job are not suitable for the current print job. During the calibration of the Gap/Black Mark Sensor, the printer detects the label length, prints the internal configuration (self-test), and then enters Dump Mode.

To calibrate the Gap/Black Mark Sensor:

1. Turn off the printer.
2. Press and hold the **Feed/Pause** button, and then turn on the printer.
3. Release the button when the LED is flashing in amber.

Note

The LED color will change as follows:

Amber (lit) → red/amber (5 times) → **amber (5 times)** → green/red (5 times) → green (5 times) → red (5 times) → green (lit)

4. The printer calibrates the sensor and detects the label length, prints the internal settings, and then enters Dump Mode.

Note

To select the sensor for calibration, send the correct command to the printer:

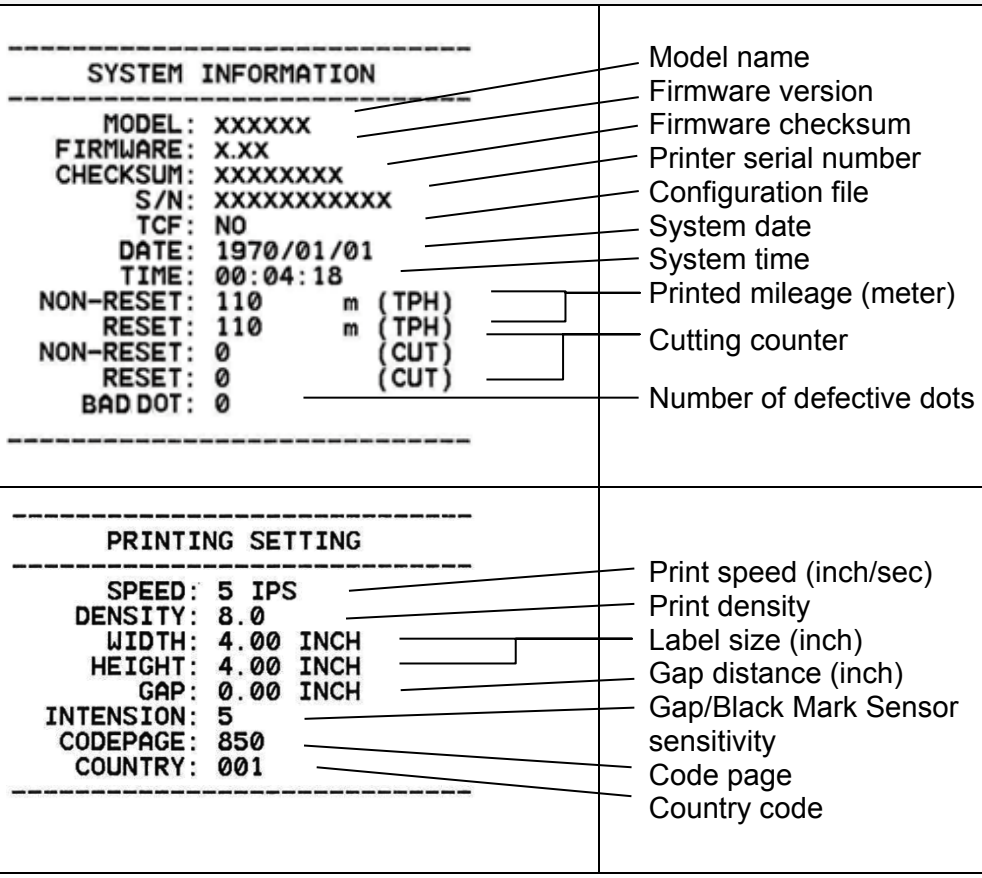
- For the Gap Sensor: send the GAP command
- For the Black Mark Sensor: send the BLINE command

For more information about the available commands, see the *FBPL Command Reference Manual* on your model's **Manuals** page at support.brother.com.

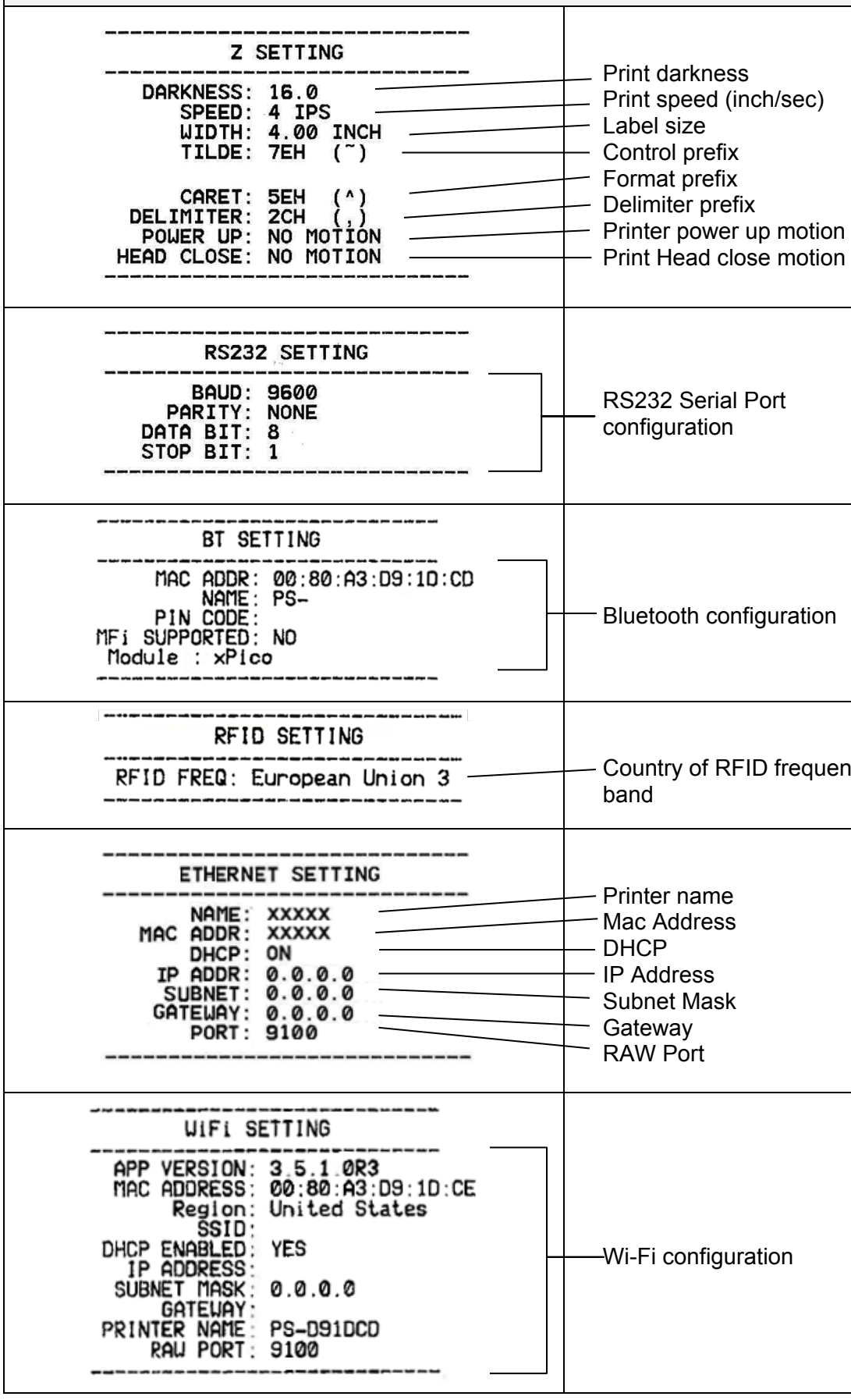
■ Self-test

Print the printer configuration after you run Gap/Black Mark Sensor calibration. The self-test printout lists the printer's configuration and available memory, and can indicate if there is any dot damage on the heater component.

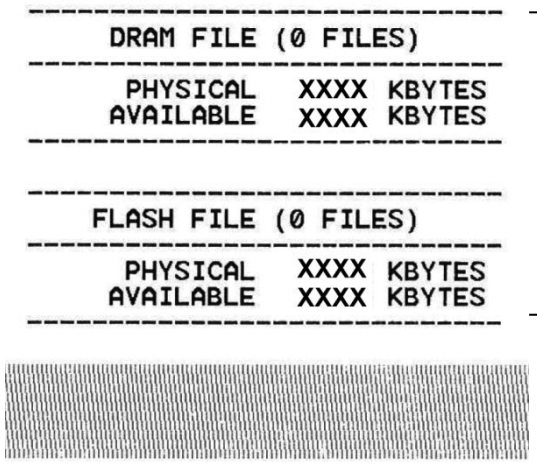
Self-test printout



Self-test printout



Self-test printout



Number of downloaded files
Total and available memory space

Print Head check pattern

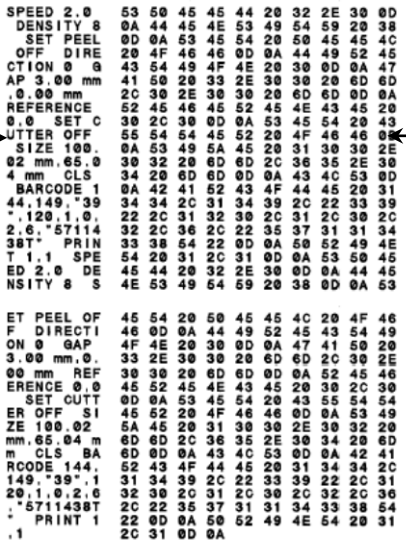
■ Dump Mode

Note

- Dump Mode requires 4" (101.5 mm) wide paper.
- To resume normal printing, turn the printer off and then on again.

The printer enters Dump Mode after printing the printer configuration. Dump Mode allows users to verify and debug the printer's programs. The characters in the left column are received from the printer's system and those in the right column are their hexadecimal representation.

ASCII data



Hexadecimal representation of the ASCII data

5.1.3 Printer Initialization

Printer initialization clears the printer's DRAM and restores its factory settings.

1. Turn off the printer.
2. Press and hold the **Feed/Pause** button, and then turn on the printer.
3. Release the button after the amber LED flashes five times and the LED is lit in green/red.

Note

The LED color will change as follows:

Amber (lit) → red/amber (5 times) → amber (5 times) → **green/red (5 times)** → green (5 times) → red (5 times) → green (lit)

After the initialization, the following factory settings will be restored:

Parameter	Default setting
Speed	76 mm/sec (3 ips)
Density	8
Label Width	4" (101.5 mm)
Label Height	4" (101.5 mm)
Sensor Type	Gap sensor
Gap Setting	0.12" (3 mm)
Print Direction	0
Reference Point	0,0 (upper left corner)
Offset	0
Tear Mode	On
Peeler Mode	Off
Cutter Mode	Off
Code Page	850
Country Code	001
Clear Flash Memory	No

5.1.4 Media Sensor Calibration (for the Black Mark Sensor)

1. Turn off the printer.
2. Press and hold the **Feed/Pause** button, and then turn on the printer.
3. Release the button after the green/red LED flashes five times and the LED is lit in green.

Note

The LED color will change as follows:

Amber (lit) → red/amber (5 times) → amber (5 times) → green/red (5 times) → **green (5 times)** → red (5 times) → green (lit)

5.1.5 Media Sensor Calibration (for the Gap Sensor)

1. Turn off the printer.
2. Press and hold the **Feed/Pause** button, and then turn on the printer.
3. Release the button after the green LED flashes five times and the LED is lit in red.

Note

The LED color will change as follows:

Amber (lit) → red/amber (5 times) → amber (5 times) → green/red (5 times) → green (5 times) → **red (5 times)** → green (lit)

5.1.6 Skip the AUTO.BAS program

You can upload the AUTO.BAS program to the printer's flash memory so that it runs automatically at startup, but if you do not want it to run automatically, follow these steps:

1. Turn off the printer.
2. Press the **Feed/Pause** button, and then turn on the printer.
3. Release the button when the LED is lit in green.

Note

The LED color will change in the following order:

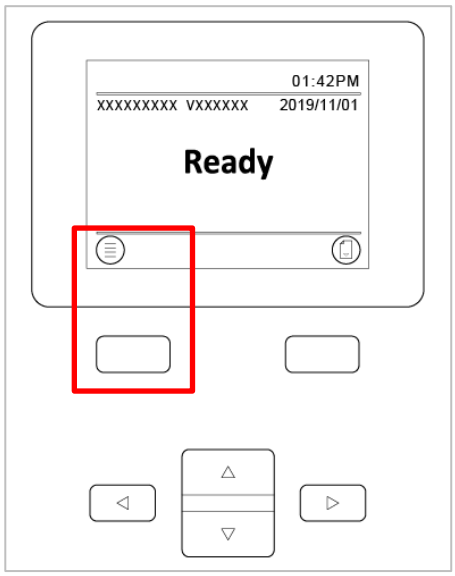
Amber (lit) → red/amber (5 times) → amber (5 times) → green/red (5 times) → green (5 times) → red (5 times) → **green (lit)**

4. The printer will start without running the AUTO.BAS program.

6. LCD Overview

6.1 Access the Main Menu

Make sure the printer's LCD displays "Ready". If not, select the **Menu** icon .



Use the **Navigation** buttons to browse the Main menu options.

- To select a highlighted icon, press the button under the icon.
- To return to the previous screen, press the button under the icon.

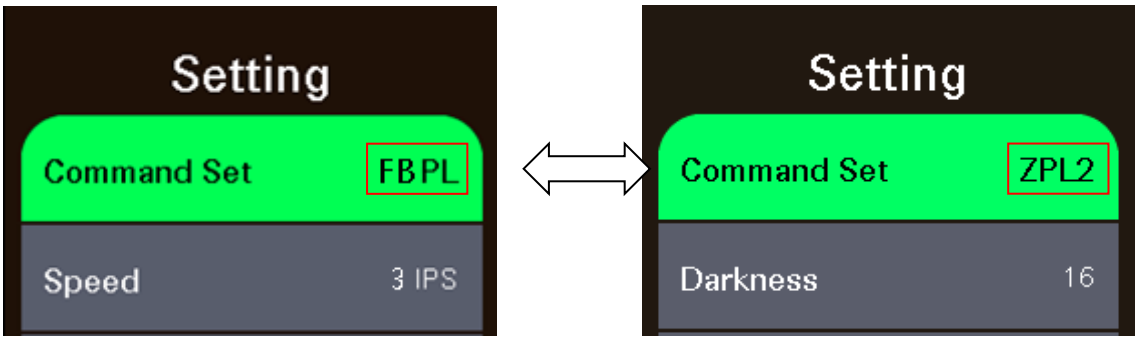
6.2 Main Menu Overview

Use the Main menu options to configure various printer settings without connecting the printer to a computer.

Icon	Option	Description
	Setting	Configure the printer's FBPL and ZPL2 settings.
	Sensor	Calibrate the selected media sensor. We recommend calibrating the sensor every time you change the media.
	Interface	Configure the printer interface settings.
	Advanced	Configure the printer's LCD, initialization, cutter type, or media low warning settings.
	File Manager	Check or manage the available printer memory.
	Diagnostic	Check the printer status to help troubleshoot any issues.

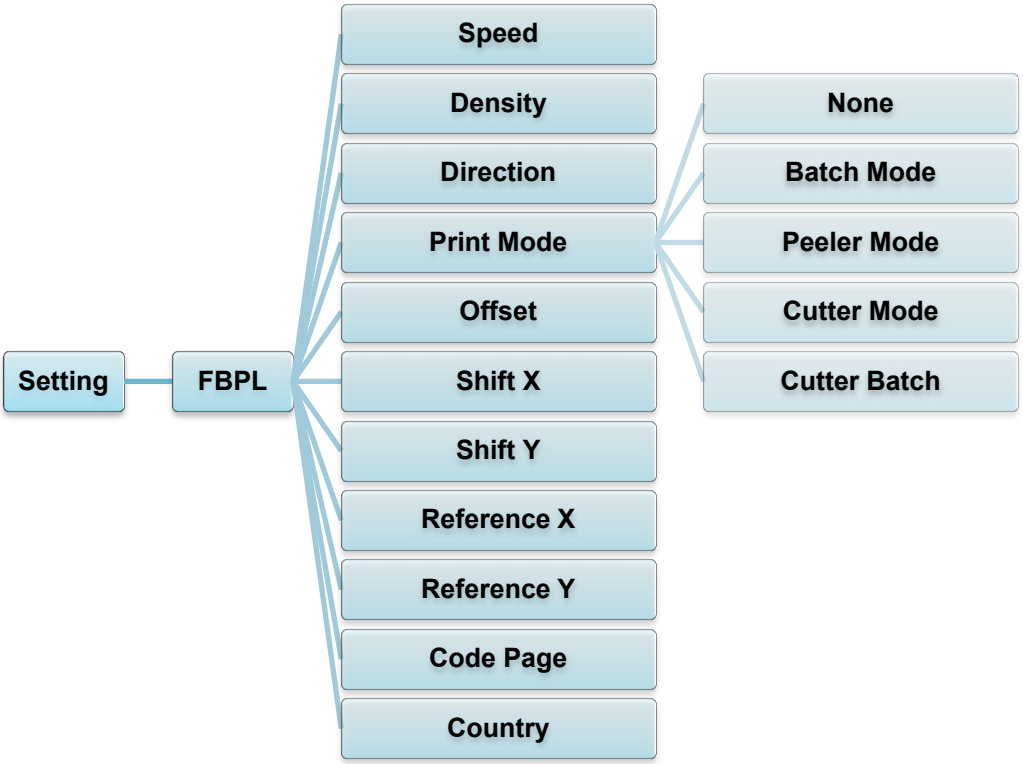
6.3 Setting Menu

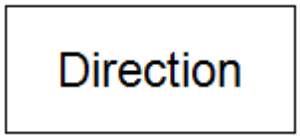
1. In the Main menu, select **Setting**.
2. Press **Command Set**, and then select the programming language you want.
3. Select the icon.



6.3.1 FBPL Settings

Available FBPL settings:



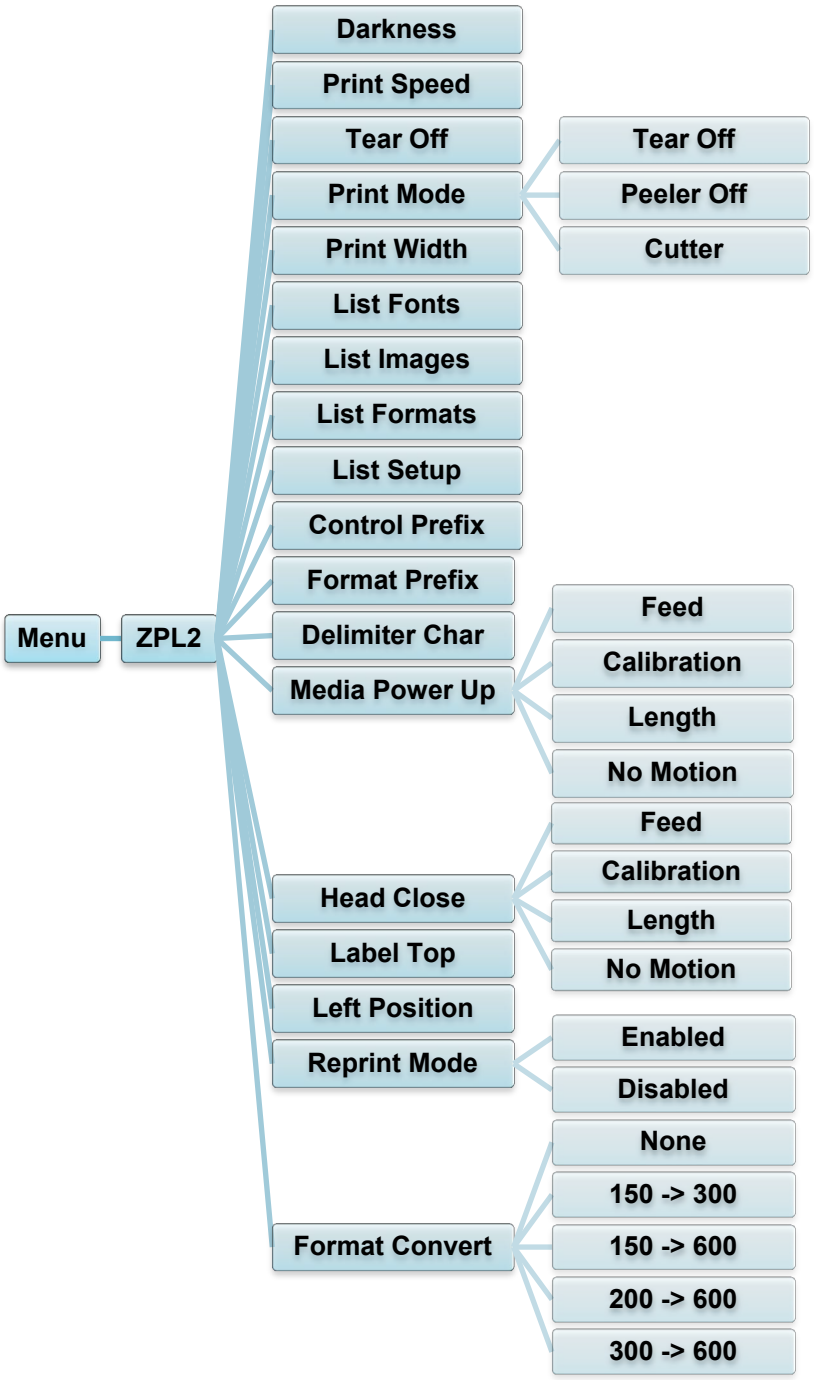
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Speed</td><td>Set up the print speed.</td></tr>
<tr><td>Density</td><td>Adjust the print darkness/lightness. Settings range from 0 to 15. You may need to adjust the print density based on the media.</td></tr>
<tr><td>Direction</td><td>Specify print direction.
<table>
<tr><th>DIRECTION 0</th><th>DIRECTION 1</th></tr>
<tr><td> 
</td></tr>
</table></td></tr>
<tr><td>Print Mode</td><td>Set the print mode.
<table>
<tr><th>Print Mode</th><th>Description</th></tr>
<tr><td>None</td><td>The top of the next label is aligned with the Print Head burn line (Tear Off Mode).</td></tr>
<tr><td>Batch Mode</td><td>When the image is printed, the Gap/Black Mark is fed through the tear plate for tear away.</td></tr>
<tr><td>Peeler Mode</td><td>Enables label Peeler Mode.</td></tr>
<tr><td>Cutter Mode</td><td>Enables label Cutter Mode.</td></tr>
<tr><td>Cutter Batch</td><td>Cuts the label once at the end of the printing job.</td></tr>
</table></td></tr>
<tr><td>Offset</td><td>Fine-tune the media stop location. Settings range from -999 dots to 999 dots.</td></tr>
<tr><td>Shift X</td><td rowspan="2">Fine-tune the print position. Settings range from -999 dots to 999 dots.</td></tr>
<tr><td>Shift Y</td></tr>
<tr><td>Reference X</td><td rowspan="2">Set the origin of the printer coordinate system horizontally and vertically. Settings range from 0 dots to 999 dots.</td></tr>
<tr><td>Reference Y</td></tr>
<tr><td>Code Page</td><td>Set the international character set code page.</td></tr>
<tr><td>Country</td><td>Set the country code. Settings range from 1 to 358.</td></tr>
</table>

Note

If printing from the downloaded software/driver, the software/driver commands will overwrite the settings set from the LCD.

6.3.2 ZPL2 Settings

Available ZPL2 settings:



<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Darkness</td><td>Set up the print darkness. Settings range from 0 to 30. You may need to adjust the print density based on the selected media.</td></tr>
<tr><td>Print Speed</td><td>Set up the print speed. Settings range from:
2 to 18 for 203 dpi
2 to 14 for 300 dpi
1.5 to 6 for 600 dpi</td></tr>
<tr><td>Tear Off</td><td>Fine-tune the media stop location. Settings range from -120 dots to 120 dots.</td></tr>
<tr><td>Print Mode</td><td>Set the print mode.<table><tr><th>Print Mode</th><th>Description</th></tr><tr><td>Tear Off</td><td>The top of the next label is aligned with the Print Head burn line.</td></tr><tr><td>Peeler Off</td><td>Enable the label Peeler Off mode.</td></tr><tr><td>Cutter</td><td>Enable the label Cutter mode.</td></tr></table></td></tr>
<tr><td>Print Width</td><td>Set the print width. Settings range from 2 dots to 999 dots.</td></tr>
<tr><td>List Fonts</td><td>Print the current printer fonts list to the label. The fonts can be stored in the printer’s DRAM, Flash, or optional memory card.</td></tr>
<tr><td>List Images</td><td>Print the current printer images list to the label. The images can be stored in the printer’s DRAM, Flash, or optional memory card.</td></tr>
<tr><td>List Formats</td><td>Print the current printer formats list to the label. The formats can be stored in the printer’s DRAM, Flash, or optional memory card.</td></tr>
<tr><td>List Setup</td><td>Print the current printer configuration.</td></tr>
<tr><td>Control Prefix</td><td>Set the control prefix character.</td></tr>
<tr><td>Format Prefix</td><td>Set the format prefix character.</td></tr>
<tr><td>Delimiter Char</td><td>Set the delimiter character.</td></tr>
<tr><td>Media Power Up</td><td>Set the media action you want when you turn the printer on.<table><tr><th>Action</th><th>Description</th></tr><tr><td>Feed</td><td>The printer ejects one label.</td></tr><tr><td>Calibration</td><td>The printer calibrates the sensor levels, determines the label length, and feeds one label.</td></tr><tr><td>Length</td><td>The printer determines the label length and feeds the label.</td></tr><tr><td>No Motion</td><td>No action.</td></tr></table></td></tr>
</table>

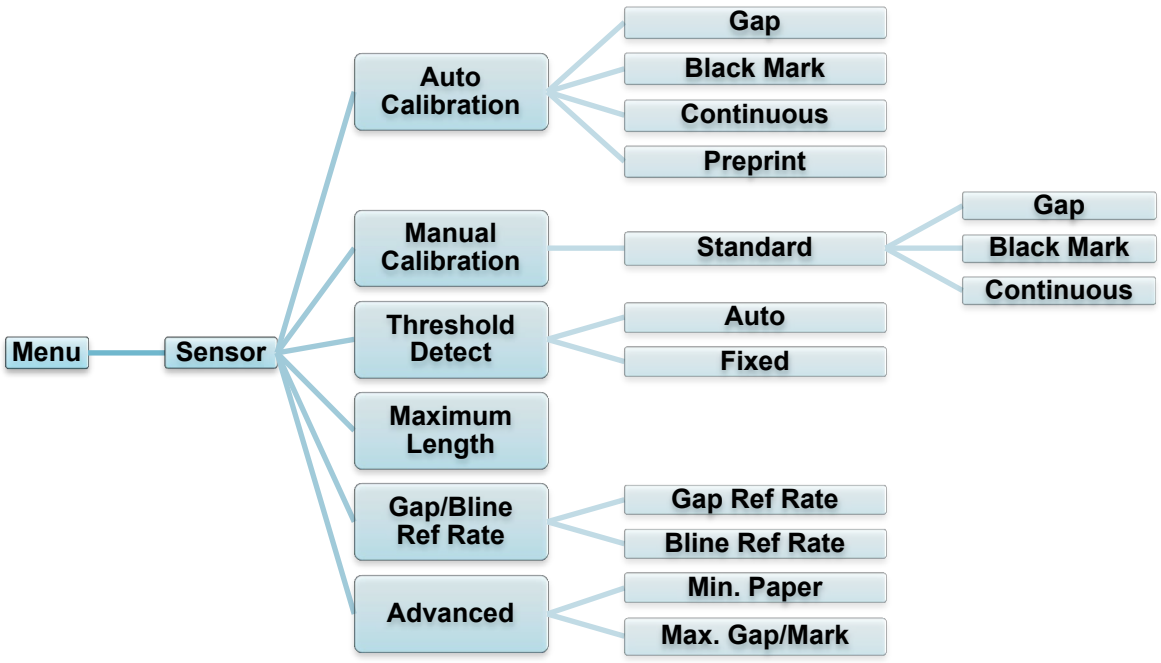
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Head Close</td><td>Set the media action when you close the Print Head.
<table>
<tr><th>Action</th><th>Description</th></tr>
<tr><td>Feed</td><td>The printer ejects one label.</td></tr>
<tr><td>Calibration</td><td>The printer calibrates the sensor levels, determines the label length, and feeds one label.</td></tr>
<tr><td>Length</td><td>The printer determines the label length and feeds the label.</td></tr>
<tr><td>No Motion</td><td>No action.</td></tr>
</table></td></tr>
<tr><td>Label Top</td><td>Adjust the print position vertically on the label. Settings range from -120 dots to +120 dots.</td></tr>
<tr><td>Left Position</td><td>Adjust the print position horizontally on the label. Settings range from -9999 dots to +9999 dots.</td></tr>
<tr><td>Reprint Mode</td><td>Reprint the last label by pressing the Up arrow (△) button on the control panel.</td></tr>
<tr><td>Format Convert</td><td>Selects the bitmap scaling factor. The first number is the original DPI value; the second number is the DPI setting you want.</td></tr>
</table>

Note

If printing from the downloaded software/driver, the software/driver commands will overwrite the settings set from the LCD.

6.4 Sensor Settings

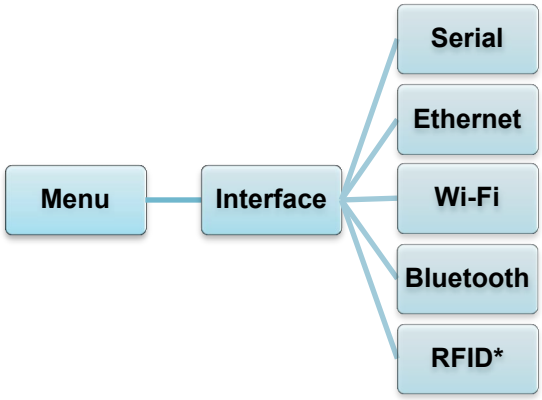
We recommend calibrating the sensors every time you change the media.



Setting	Description
Auto Calibration	Set the media sensor type and calibrate the selected sensor automatically. The printer feeds up to three gap labels to calibrate the sensor sensitivity automatically.
Manual Calibration	If “Automatic” cannot apply to the media, use the “Manual” function to set the paper length and gap/BLINE size, and then scan the backing/mark to calibrate the sensor sensitivity.
Threshold Detect	Set the sensor sensitivity to Fixed or Auto.
Maximum Length	Set the maximum length for label calibration.
Gap/Bline Ref Rate	Adjusts sensitivity for gap (spacing) detection on die-cut labels or for black mark detection.
Advanced	Set the minimum paper length and maximum gap/BLINE length to calibrate the sensor sensitivity automatically.

6.5 Interface Settings

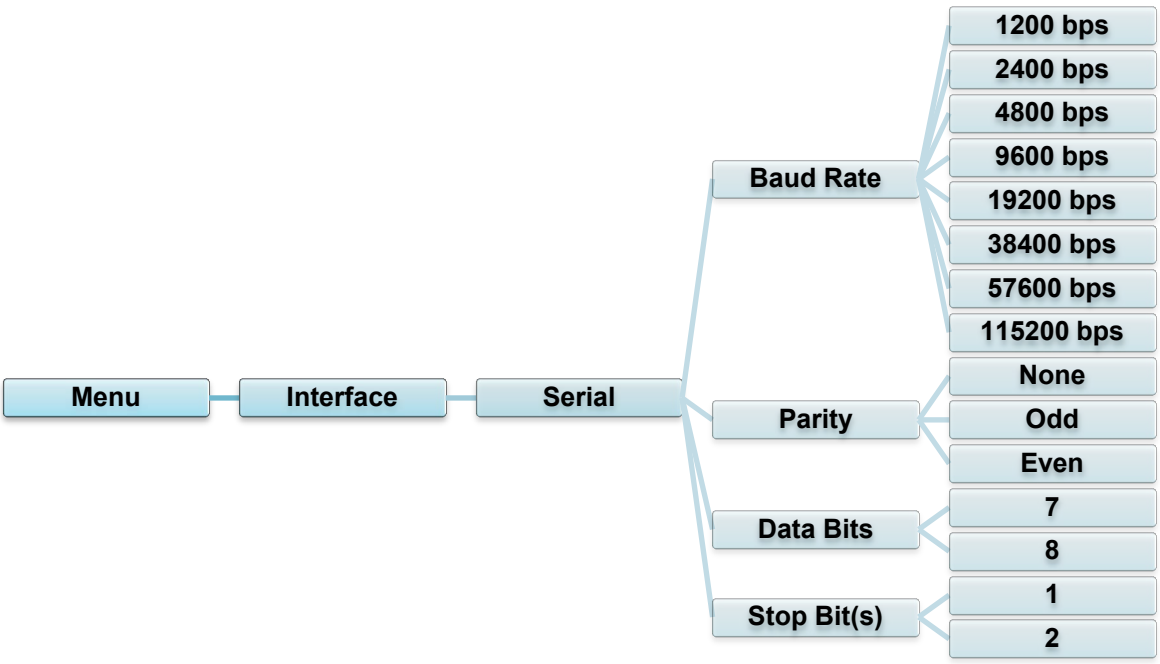
Set the printer interface settings.



* Available for: TD-4650TNWBR and TD-4750TNWBR.

6.5.1 Serial Communication Settings

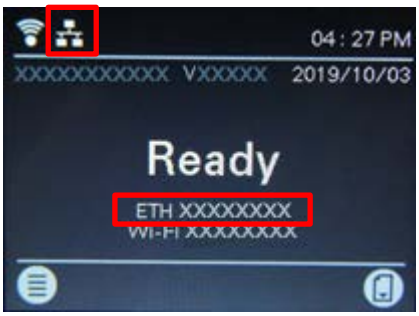
Set the printer RS-232 settings.

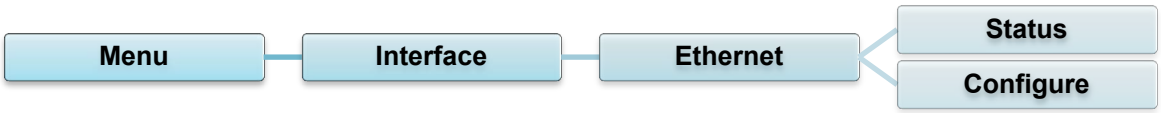


Setting	Description
Baud Rate	Set the RS-232 Baud rate.
Parity	Set the RS-232 Parity.
Data Bits	Set the RS-232 Data bits.
Stop Bit(s)	Set the RS-232 Stop bits.

6.5.2 Ethernet Settings

Configure your printer's Ethernet (wired) connection and check its status.
When the Ethernet is connected, the Ethernet icon and IP address are displayed on the LCD as shown below.





Item	Description
Status	Check the Ethernet IP address and Mac address setting status.
Configure	**DHCP:** Enable (On) or disable (Off) the Dynamic Host Configuration Protocol (DHCP) network protocol. **Static IP:** Set the printer's IP address, subnet mask, and gateway.

Note

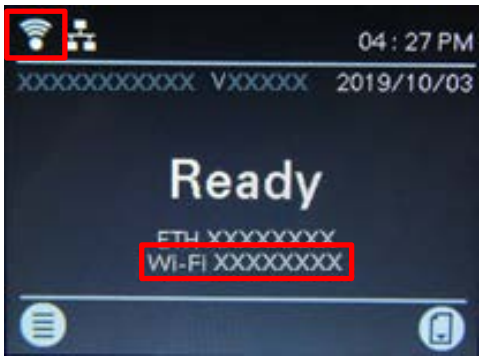
For information about installing a printer driver, see section *4.1.4 Wired Network Connection (Windows)*.

6.5.3 Wi-Fi Settings

Configure your printer's Wi-Fi connection and check its status.

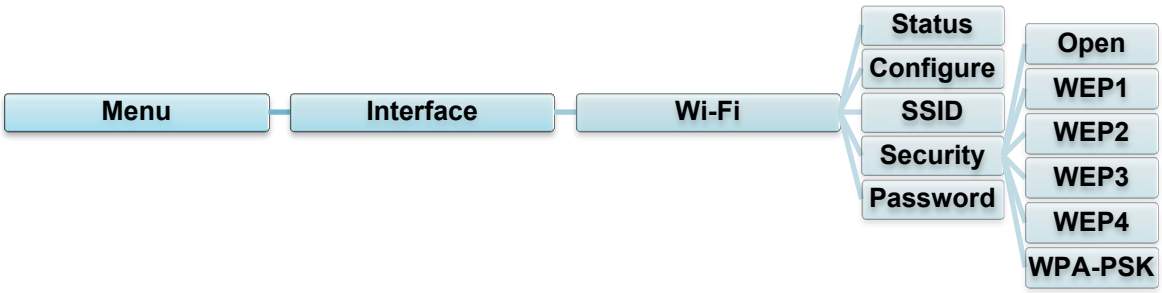
To use this feature, set up the Enterprise configuration with the Brother Printer Management Tool (BPM). For more information on setting Wi-Fi using BPM, see the *Brother Printer Management Tool Quick Start Guide* on your model's **Manuals** page at support.brother.com.

When the Wi-Fi module is connected, the Wi-Fi icon and IP address are displayed on the LCD as shown below.



Note

Make sure both your wireless router/access point's and your printer's network settings are correctly set up. For more information, see the documentation provided with your wireless router/access point, or contact the router manufacturer, your system administrator, or Internet service provider.



Item	Description
Status	Check the Wi-Fi IP address and Mac address setting status.
Configure	**DHCP:** Enable (On) or disable (Off) the Dynamic Host Configuration Protocol (DHCP) network protocol. **Static IP:** Set the printer's IP address, subnet mask, and gateway.
SSID	Set the SSID (Network Name).
Security	Select the Wi-Fi encryption.
Password	Set the password (Network Key).

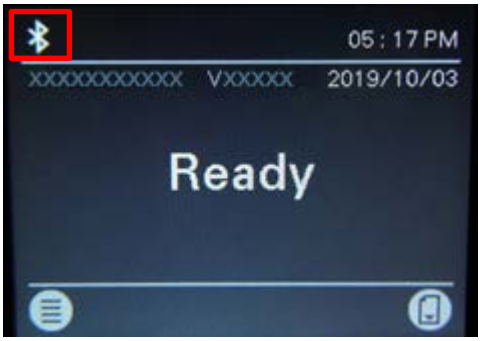
Note

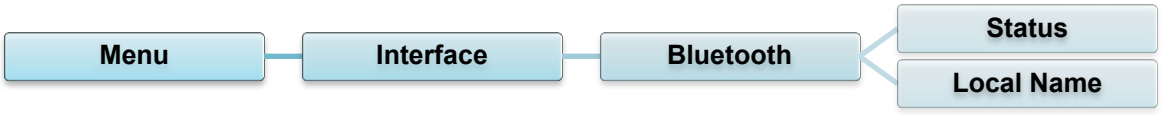
For information about installing a printer driver, see section *4.1.3 Wi-Fi Network Connection (Windows)*.

6.5.4 Bluetooth Settings

Configure your printer's Bluetooth connection, check its status, and reset the local name.

Enable the Bluetooth feature to allow your mobile device to discover and connect your printer.





Item	Description
Status	Check the Bluetooth setting status.
Local Name	Reset the Bluetooth local name.

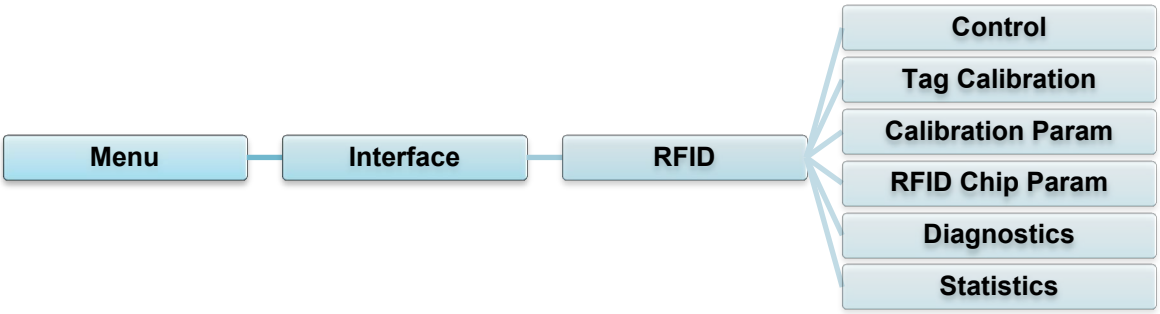
Note

For information about installing a printer driver, see section *4.1.2 Bluetooth Connection (Windows)*.

6.5.5 RFID (Radio Frequency Identification) Settings

Set the printer RFID settings.

(Available for TD-4650TNWBR and TD-4750TNWBR only)



<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Control</td><td>
<table>
<tr><td>RFID Active</td><td>Select “Enable” to enable the RFID encoder module.</td></tr>
<tr><td>Error Handling</td><td>Select the error handling mode for RFID errors.
<table>
<tr><td>Overstrike (Default)</td><td>Each incorrectly processed label prints with the Overstrike pattern, and the form retries on a new label until the Label Retry count is exhausted. Whether an error message appears or the label gets reprinted depends on the Max Retry Error setting.</td></tr>
<tr><td>None</td><td>No specific action is taken when a tag fails to be programmed.</td></tr>
<tr><td>Stop</td><td>The printer will halt and display the error message “RFID Error: Check Media”. The label is discarded and reprinting of the label must be initiated from the host. When the error is cleared, the label with the incorrect tag moves forward until the next label is in position to be printed.</td></tr>
</table></td></tr>
<tr><td>Label Retry</td><td>Specifies the number of label retries that the RFID encoder will attempt before declaring a fault. This may indicate a problem with the RFID encoder, the coupler assembly, the printer setup, or the label stock.
<table>
<tr><td>Minimum</td><td>1</td></tr>
<tr><td>Maximum</td><td>10 (Default)</td></tr>
</table></td></tr>
<tr><td>Max Retry Error</td><td>Determines if errors occur when the Label Retry count is exceeded.</td></tr>
<tr><td>EPC Write Ctrl</td><td>Controls how the printer encodes the RFID tag EPC field.</td></tr>
<tr><td>Non-RFID Warning</td><td>Displays a warning if the printer receives a print job that does not contain any RFID commands when RFID media is installed in the printer.</td></tr>
</table>
</td></tr>
</table>

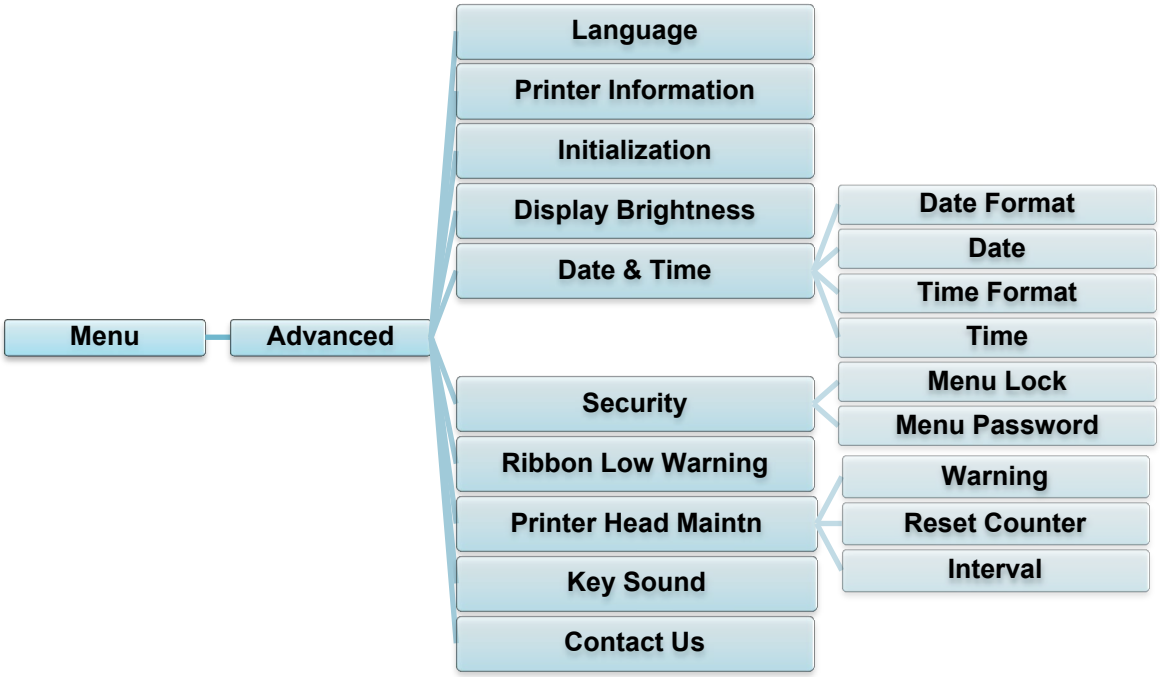
<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Tag Calibration</td><td>This submenu is used to perform an RFID calibration. The user must perform a tag calibration when installing a new tag in the printer. RFID calibration determines the RFID chip type, the write/read power, program position, and the length of the EPC/User field.
<table>
<tr><td>RFID Calibrate</td><td>Performs the RFID calibration.
Execute it every time you change the RFID tag type.</td></tr>
<tr><td>Num Label for Calibration</td><td>Determines the number of tags to use for calibration. However, this value does not include tags moved when seeking gaps during the calibration process. Depending on the difficulty in calibrating the installed tags, the printer may use more or fewer labels, but generally, the greater the number selected in this menu, the more tags will be used to determine the calibration result. The default value (3) is most commonly used.
<table>
<tr><td>Minimum</td><td>3 (Default)</td></tr>
<tr><td>Maximum</td><td>7</td></tr>
</table></td></tr>
<tr><td>Test EPC Length</td><td>Determines the size of the EPC data that will be used to perform the RFID calibration. This length can be increased to improve the accuracy of the RFID calibration, but it should not be increased to a value greater than the maximum EPC length that the current Tag Type can support.
<table>
<tr><td>Minimum</td><td>16</td></tr>
<tr><td>Maximum</td><td>256</td></tr>
<tr><td>Default</td><td>96</td></tr>
</table></td></tr>
</table></td></tr>
<tr><td>Calibration Param</td><td>Contains the settings used for optimal tag encoding. These parameters can be obtained automatically through RFID calibration.
<table>
<tr><td>Tag Position</td><td>Determines how far the RFID tag encoding position of the currently installed tag should be offset from Top of Form.</td></tr>
<tr><td>Write Power</td><td>Specifies the write power level to be used in the RFID encoder. Normally, this value is set automatically by the RFID calibration process and should not be changed.
<table>
<tr><td>Minimum</td><td>1</td></tr>
<tr><td>Maximum</td><td>25</td></tr>
</table></td></tr>
<tr><td>Read Power</td><td>Specifies the read power level to be used in the RFID encoder. Normally, this value is set automatically by the RFID calibration process and should not be changed.
<table>
<tr><td>Minimum</td><td>1</td></tr>
<tr><td>Maximum</td><td>25</td></tr>
</table></td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>RFID Chip Param</td><td>These settings are used to configure the system when custom RFID tags are required.
<table>
<tr><td>USR Size</td><td>Specifies the USR block bytes size within the RFID tag memory. Normally, this value is set automatically by the RFID calibration process and should not be changed.
<table>
<tr><td>Minimum</td><td>0 (Default)</td></tr>
<tr><td>Maximum</td><td>256</td></tr>
</table>
Note
This value is hidden if Higgs 3 tags are detected, and the Higgs 3 USR Len menu is shown instead.</td></tr>
<tr><td>USR Address</td><td>Specifies the starting location of the USR block within the RFID tag memory. Normally, this value is set automatically by the RFID calibration process and should not be changed.
<table>
<tr><td>Minimum</td><td>0 (Default)</td></tr>
<tr><td>Maximum</td><td>32</td></tr>
</table></td></tr>
<tr><td>TID Size</td><td>Indicates the size of the memory block within the RFID tag memory that contains the Tag ID. Normally, this value is set automatically by the RFID calibration process and should not be changed.
<table>
<tr><td>Minimum</td><td>0</td></tr>
<tr><td>Maximum</td><td>12</td></tr>
<tr><td>Default</td><td>8</td></tr>
</table></td></tr>
<tr><td>Tag Length</td><td>Specifies the EPC block bytes size within the RFID tag memory. This value is set automatically by the RFID calibration process and should not be changed.
<table>
<tr><td>Minimum</td><td>8</td></tr>
<tr><td>Maximum</td><td>64</td></tr>
<tr><td>Default</td><td>12</td></tr>
</table>
Note
This value is hidden if Higgs 3 tags are detected, and the Higgs 3 EPC Len menu is shown instead.</td></tr>
<tr><td>EPC Address</td><td>Specifies the starting location of the EPC block within the RFID tag memory. Normally, this value is set automatically by the RFID calibration process and should not be changed.
<table>
<tr><td>Minimum</td><td>0 (Default)</td></tr>
<tr><td>Maximum</td><td>32</td></tr>
</table></td></tr>
<tr><td>Block Size</td><td>Specifies the maximum number of bytes written to the USR block within the RFID tag memory at one time. Normally, this value is set automatically by the RFID calibration process and should not be changed.
<table>
<tr><td>Minimum</td><td>0</td></tr>
<tr><td>Maximum</td><td>32</td></tr>
<tr><td>Default</td><td>8</td></tr>
</table></td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Diagnostics</td><td>These settings are used to run test procedures to help determine the accuracy of the RFID system and troubleshoot it.
<table>
<tr><td>Read Tag</td><td>Reads the tag in range of the internal RFID coupler and reports the tag data to the debug port and displays it on the LCD. It is primarily intended for development verification by checking that the system is working.
Note
This menu item does not position the RFID tag over the coupler. Make sure to position the tag over the coupler to receive an accurate reading.</td></tr>
<tr><td>Read Tag & Eject</td><td>This menu item works exactly the same as Read Tag, except that after the printer reads the tag, it feeds the label to the next top-of-form.
Note
This menu item does not position the RFID tag over the coupler. Make sure to position the tag over the coupler to receive an accurate reading.</td></tr>
<tr><td>Read USR</td><td>Reads the User Memory bank of the tag in range of the internal RFID coupler and reports the data to the debug port and displays it on the LCD. It is primarily intended for development verification by checking that the system is working.
Note
This menu item does not position the RFID tag over the coupler. Make sure to position the tag over the coupler to receive an accurate reading.</td></tr>
<tr><td>Read TID</td><td>Reads the Tag ID (TID) from the tag in range of the internal RFID coupler and displays the value read in the Tag ID menu.
Note
This menu item does not position the RFID tag over the coupler. Make sure to position the tag over the coupler to receive an accurate reading.</td></tr>
<tr><td>Tag ID</td><td>Displays the first Tag ID (TID) read since power-up, or if using the Read TID menu, the most recently read TID. If no tag is in range of the internal RFID coupler, “Unknown” appears on the LCD.</td></tr>
<tr><td>Read PC</td><td>Reads the PC (Protocol Control) field from an RFID tag in range of the internal RFID coupler and displays the value read in the Tag PC menu.
Note
This menu item does not position the RFID tag over the coupler. Make sure to position the tag over the coupler to receive an accurate reading.</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><td>Tag PC</td><td>Displays the last PC (Protocol Control) field read from an RFID tag. If no tag is in range of the internal RFID coupler, “Unknown” appears on the LCD.</td></tr>
<tr><td>Write EPC with 1s</td><td>Writes all ones to the tag in range of the internal RFID coupler. It is primarily intended for development verification by checking that the system is working.
Note
This menu item does not position the RFID tag over the coupler. Make sure to position the tag over the coupler to receive an accurate writing.</td></tr>
<tr><td>Write EPC with 2s</td><td>Writes all twos to the tag in range of the internal RFID coupler. It is primarily intended for development verification by checking that the system is working.
Note
This menu item does not position the RFID tag over the coupler. Make sure to position the tag over the coupler to receive an accurate writing.</td></tr>
</table>
</td></tr>
<tr><td>Statistics</td><td>These settings are generally read-only and used to collect and report statistics on how the RFID system is reporting on print jobs sent to the printer.
<table>
<tr><td>Tag Write Count</td><td>Displays the number of tags attempted to be written since the last Clear Tag Stat operation has been initiated.</td></tr>
<tr><td>Tag Failed Count</td><td>Displays the number of failed RFID tags since the last Clear Tag Stat operation has been initiated.</td></tr>
<tr><td>Tag Read Count</td><td>Displays the number of tags read since the last Clear Tag Stat operation.</td></tr>
<tr><td>Clear Tag Stat</td><td>Clears the Count menu items in this submenu.</td></tr>
<tr><td>RFID Reader F/W</td><td>Displays the RFID firmware version installed in the encoder. (Available for TD-4650TNWBR and TD-4750TNWBR)</td></tr>
<tr><td>RFID Reader Hd/W</td><td>Displays the RFID hardware version installed in the encoder. (Available for TD-4650TNWBR and TD-4750TNWBR)</td></tr>
</table>
</td></tr>
</table>

6.6 Advanced Settings



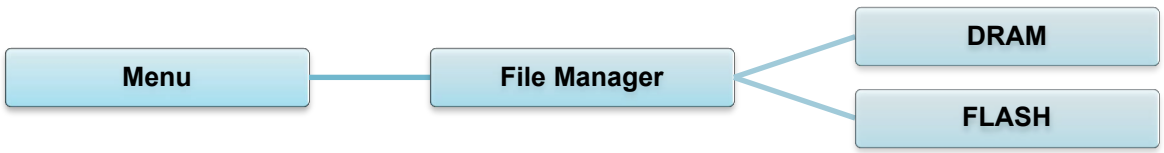
Item	Description
Language	Specify the LCD language.
Printer Information	Check the printer serial number, printed mileage (in./m), number of printed labels (pcs), and cutting counter.
Initialization	Restore the printer settings to the default settings.
Display Brightness	Adjust the LCD brightness (settings range from 0 to 100).
Date & Time	Adjust the date and time displayed on the LCD.
Security	Set the password for locking the menu or favorites. The default password is 8888.
Ribbon Low Warning	Set the ribbon low warning message. For example, if you set the value at 10%, when the ribbon capacity is lower than 10%, the icon appears in red.

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Printer Head Maintn</td><td>Check the Print Head status and maintenance notifications.

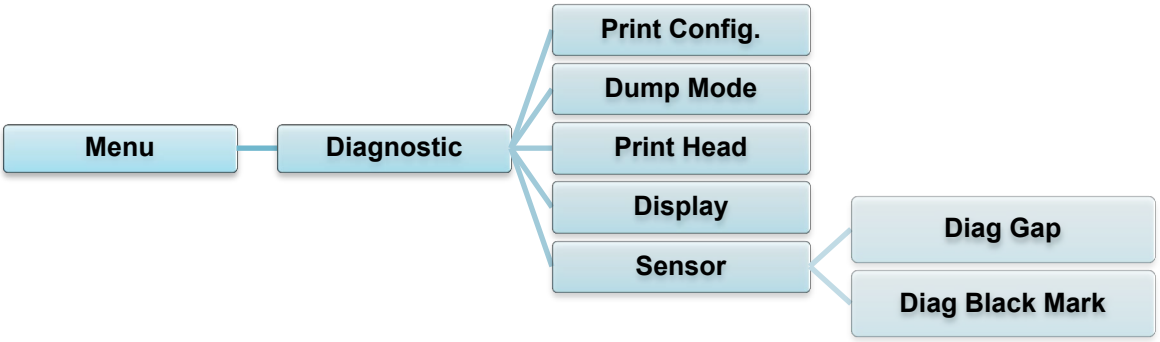
<table><tr><th>Item</th><th>Description</th></tr><tr><td>Warning</td><td>Enable or disable the Print Head cleaning warning. If this setting is enabled and the Print Head has reached the setting mileage limit, a warning appears on the LCD to remind you to clean the Print Head. The default setting is "Disable".</td></tr><tr><td>Reset Counter</td><td>Reset the Print Head mileage warning after the Print Head has been cleaned.</td></tr><tr><td>Interval</td><td>Set the mileage for when to display the Print Head cleaning warning. You must enable the “TPH warning lock” to use it. The default setting is 1 km.</td></tr></table></td></tr>
<tr><td>Key Sound</td><td>Enable or disable the button press sound.</td></tr>
<tr><td>Contact us</td><td>Display a QR code to access the Brother Support website at support.brother.com using a mobile device.</td></tr>
</table>

6.7 File Manager

Check the printer's available memory, show the files list, delete the files, or run the files that are saved in the printer's DRAM/Flash memory.



6.8 Diagnostic Functions



Item	Description
Print Config.	Print the current printer configuration. On the configuration printout, there is a Print Head test pattern, which is useful for checking if there is dot damage to the Print Head Heating Element. For more information, see section *5.1.2 Gap/Black Mark Sensor Calibration, Self-Test, and Entering Dump Mode*.
Dump Mode	Captures the data from the communications port and prints out the data received by the printer. In the dump mode, all characters will be printed in two columns. The characters in the left column are received from the printer's system and those in the right column are their hexadecimal representation. It allows you to verify and debug the program. For more information, see section *5.1.2 Gap/Black Mark Sensor Calibration, Self-Test, and Entering Dump Mode*. **Note** Dump mode requires 4" (101.6 mm) paper width.
Print Head	Check for any visible dots and the Print Head's temperature.
Display	Check the LCD’s color state.
Sensor	Check the sensors’ intensity and reading state.

7. Brother Printer Management Tool (BPM)

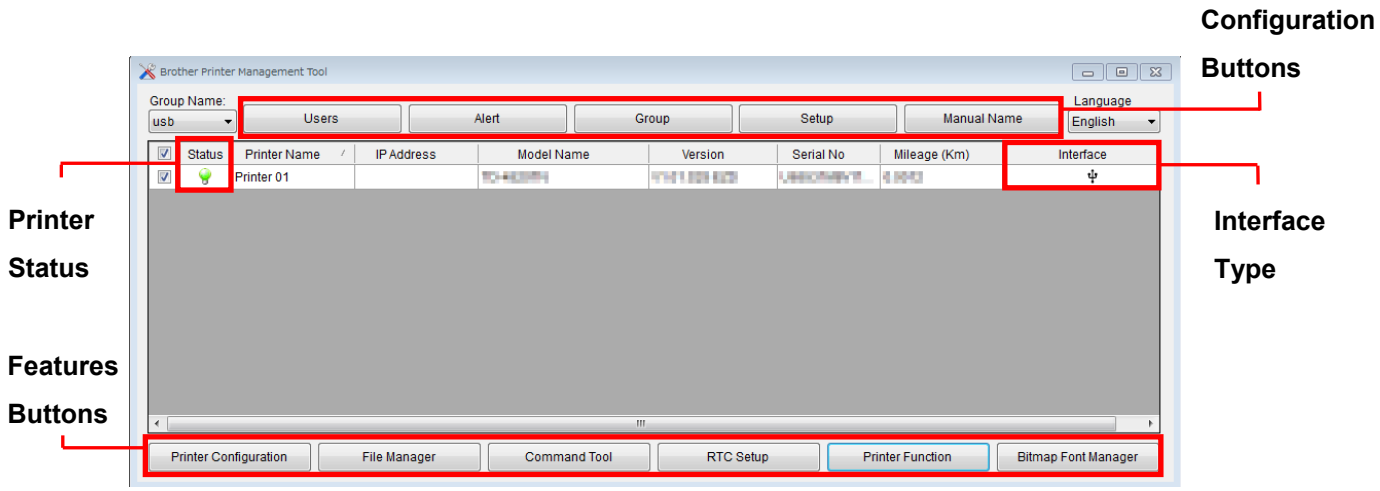
The Brother Printer Management Tool (BPM) is an integrated tool that lets you:

- Check a printer's status and settings
- Change printer settings
- Send additional commands to a printer
- Download graphics and fonts
- Create a printer bitmap font
- Download and update firmware
- Configure Wireless LAN (Wi-Fi) and Bluetooth settings

Using this tool, you can also review your printer's status and settings to troubleshoot any problems.

7.1 Start the BPM

1. Double-click the BPM icon to start the software.



BPM's main screen allows you to access the following options:

- Printer Configuration
- File Manager
- Command Tool
- RTC Setup
- Printer Function
- Bitmap Font Manager

For more information, see the *Brother Printer Management Tool Quick Start Guide* on your model's **Manuals** page at support.brother.com.

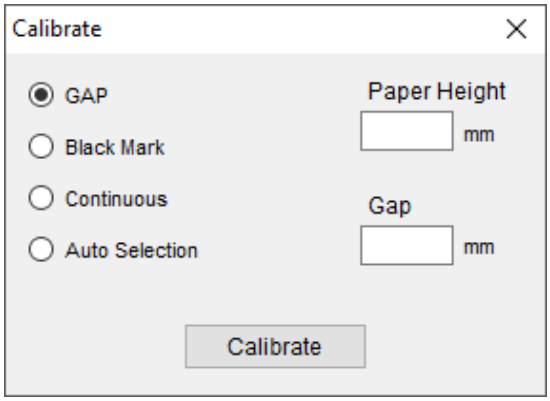
7.2 Auto-Calibrating the Media Sensor using the BPM

Use the BPM to set the media sensor type (Gap Sensor or Black Mark Sensor) and calibrate the selected sensor.

Gap Sensor	Black Mark Sensor

The Gap Sensor (transmissive sensor) detects the beginning of the label and feeds the label to the correct position.
The Black Mark Sensor (reflective sensor) detects the mark and feeds the media to the correct position.

1. Make sure the media is already installed and the Print Head is closed. (See section *3.2 Load the Media*.)
2. Turn on the printer.
3. Start the BPM.
4. Click the **Printer Function** button.
5. Click the **Calibrate** button.
6. Select the sensor media type and click **Calibrate**.



8. Setting up the RFID

8.1 Introduction

When printing smart labels that use an EEPROM technology, the printer may need to write and verify some RFID tags more than once before accepting them. This additional processing may result in a short pause between each printed label, but is necessary to ensure consistent quality and reliability.

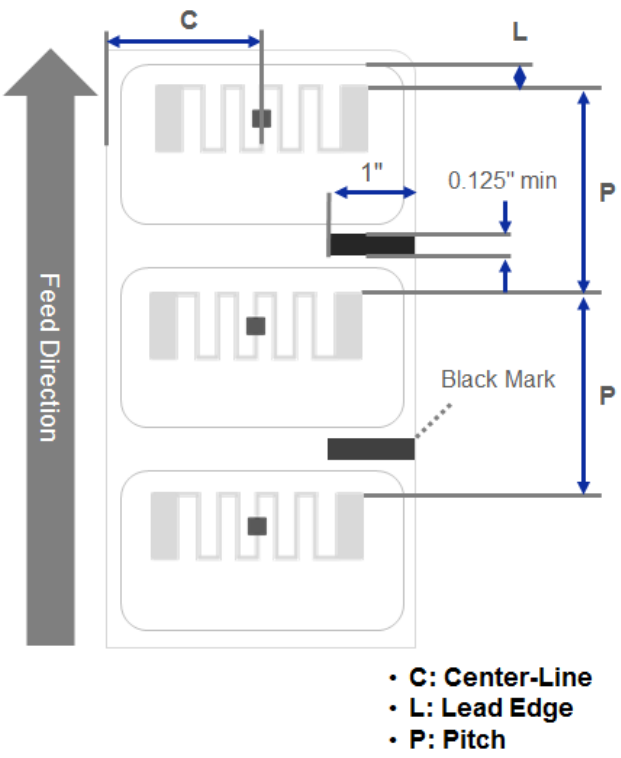
Note

Static electricity can damage smart labels. Before you handle smart labels, open the printer's Media Cover and touch an unpainted metal part to discharge any static electricity that may have built up on your hands.

This printer is equipped with an Auto-Calibration feature, which eliminates the need to specify exact inlay placement or RFID power settings. The calibration routine is compatible with most major inlays embedded in typical label sizes and will work with many other inlays as well.

For optimum performance:

- Center inlays horizontally across the media (dimension "C"). Consistent, tag-to-tag placement of the inlays is more important than their proximity to the center.
- The pitch is the overall distance from inlay to inlay (dimension "P"). On-pitch tags and tags with a pitch less than 1" may require the printer to back-feed during the encoding and printing process, thus slowing the throughput of the printer. To avoid this, this pitch should be greater than 1".
- Set the inlay back from the lead edge of the media (dimension "L") at the same tag-to-tag distance. To avoid back-feeding, for labels longer than 1", this distance should be greater than 0.5".



IMPORTANT

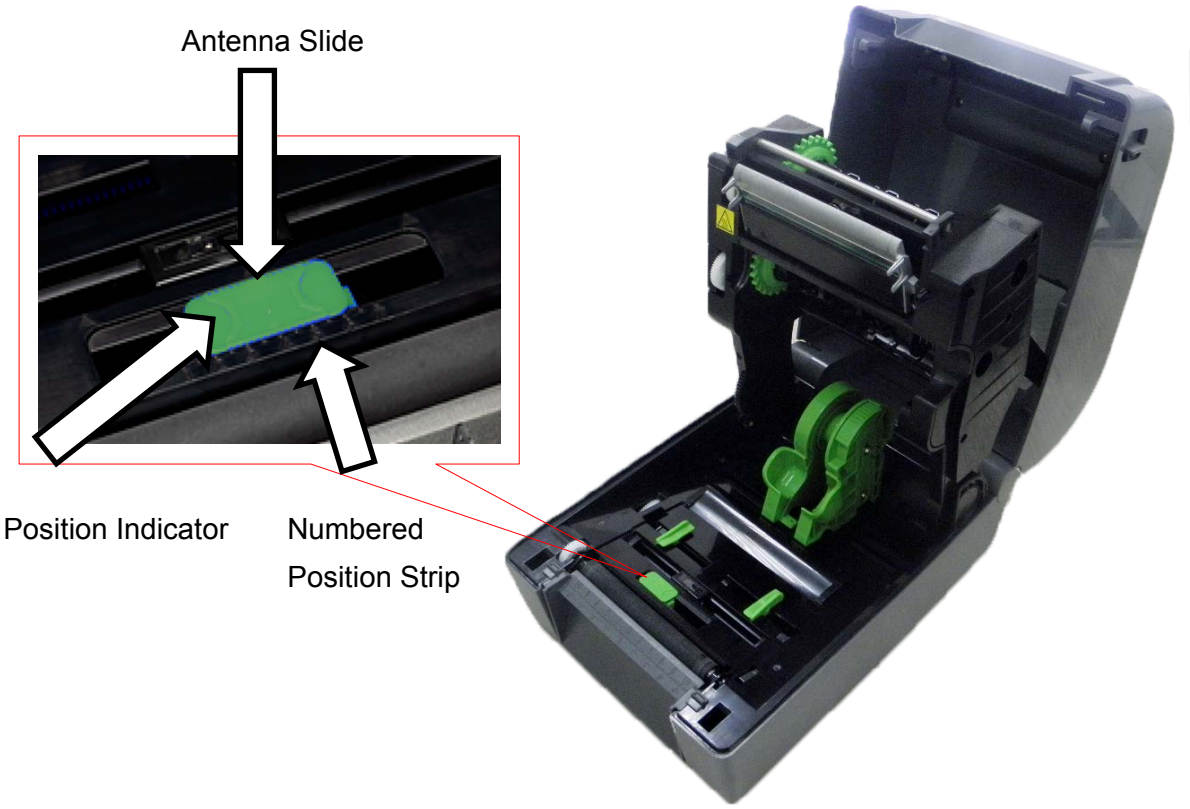
Always test RFID media on your printer before purchasing large quantities of media.

8.2 RFID Calibration (available for TD-4650TNWBR and TD-4750TNWBR only)

8.2.1 Select the Antenna Position

Check the label to determine the best position for the antenna, locating the antenna loop within the tag. In most cases, the antenna loop is directly above or below the chip. The loop may be off to one side of the chip in some tags.

Open the Roll Compartment Cover. Move the Antenna Slide so that the Position Indicator aligns with the loop in the tag.



8.2.2 RFID Calibration Procedure

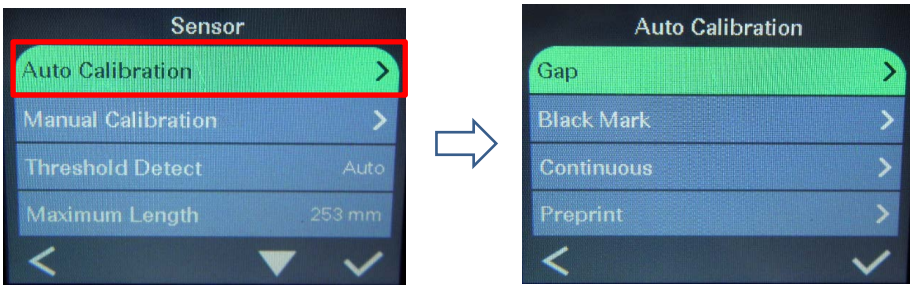
Note

For optimal calibration results, perform Media Calibration before RFID Calibration. Make sure you correctly install both the ribbon and the label roll.

1. Perform Media Auto Calibration:
   - **Using the LCD menu:**
     a. Load the RFID media into the printer.
     b. (Thermal transfer only) Load the ribbon into the printer.
     c. Select the **Menu** .

d. Select the **Sensor** .

e. Select **Auto Calibration**, select the media type, and then select the icon.



Note

For more information, see section *6.4 Sensor Settings*.

- **Using the BPM:**

  a. Load the RFID media into the printer.

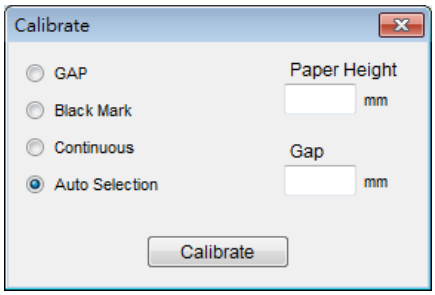
  b. (Thermal transfer only) Load the ribbon into the printer.

  c. Connect the USB cable between the computer and the printer.

  d. Start the BPM.

  e. Select the printer in the list, and then click the **Printer Function** button.

  f. Click **Calibrate**.



  g. Click **Printer Configuration** and make sure the paper width and height in the FBPL tab are set correctly.

- **Using the AUTODETECT command:**

Note

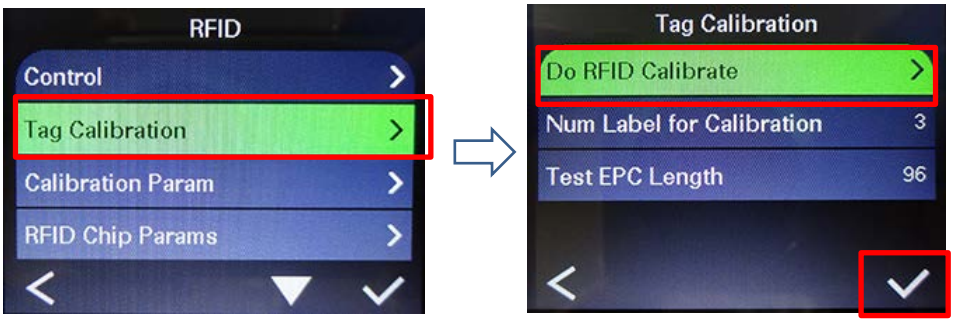
For more information, see the *FBPL Command Reference Manual* on your model's **Manuals** page at support.brother.com.

2. Check that the RFID antenna is set at the center of the RFID chip or the antenna loop on the tag. For more information, see section *8.2.1 Select the Antenna Position*.

3. Start RFID Calibration.

- **Using the LCD Menu:**

  Go to the **RFID** menu. Select **Interface** **RFID → Tag Calibration → RFID Calibrate**, and select the icon.



> **Note**
>
> For more information, see section *6.5.5 RFID (Radio Frequency Identification) Settings*.

- **Using the RFIDDETECT command:**

> **Note**
>
> For more information, see the *FBPL Command Reference Manual* on your model's **Manuals** page at support.brother.com.

4. Depending on the tag type and tag length, the calibration can take several minutes. At the end of calibration either a green or red screen appears. The green screen appears when the calibration is successful and the red one when it is not.

5. If calibration fails, select the or icon to clear the error. In most cases when this error occurs, it is necessary to reposition the Antenna Slide. In some cases, it may be due to an incompatibility between the tag and the reader. After the calibration is complete, select the or icon to continue and save the RFID calibration values.

9. Product Specifications

Display	
LCD	2.3" color LCD
LED	1 (3 colors - Green, Red, Amber)
Printing	
Print Method	Thermal Transfer & Direct Thermal
Maximum Print Width	4.25" (108 mm) max. (TD-4650TNWB, TD-4650TNWBR) 4.16" (105.7 mm) max. (TD-4750TNWB, TD-4750TNWBR)
Maximum Print Length	1000" (25,400 mm) (TD-4650TNWB, TD-4650TNWBR) 450" (11,430 mm) (TD-4750TNWB, TD-4750TNWBR)
Maximum Print Speed	8" (203.2 mm) / second (TD-4650TNWB, TD-4650TNWBR) 6" (152.4 mm) / second (TD-4750TNWB, TD-4750TNWBR)
Print Resolution	203 dpi (TD-4650TNWB, TD-4650TNWBR) 300 dpi (TD-4750TNWB, TD-4750TNWBR)
Size	
Dimensions	Approximately 8.62" (W) × 11.18" (D) × 7.52" (H) (219 mm (W) × 284 mm (D) × 191 mm (H))
Weight	Approximately 6.6 lbs (3 kg)
Interface	
USB	USB Ver.2.0 (High Speed) (Type B)
Serial	RS-232
Wired LAN	10/100 Mbps
USB Host Port	Stand alone: USB keyboard, USB scanner Storage: USB flash drive
Bluetooth	Bluetooth Ver.4.2 SPP (Bluetooth Classic)
Wi-Fi	IEEE 802.11 a/b/g/n
Wi-Fi Security	Authentication method (encryption scheme) * Infrastructure mode - Open system (None/WEP64/WEP128) - WPA/WPA2-PSK (TKIP+AES) - EAP-FAST (TKIP/AES) - PEAPv0 (TKIP/AES) - EAP-TLS (TKIP/AES) - EAP-TTLS (TKIP/AES)

Environment	
Temperature	Operation: 41°F - 104°F (5°C - 40°C) Storage: -40°F - 140°F (-40°C - 60°C)
Humidity	Operation: 25% - 85% (without condensation) Storage: 10% - 90% (without condensation)
Power Supply	
Power Supply	External Universal Switching Power Supply • Input: AC 100 V - 240 V, 2.0 A, 50 Hz - 60Hz • Output: DC 24 V, 3.75 A, 90 W
Paper Specification	
Media Type	Continuous, die-cut, black mark, fan-fold, notch, punched hole media, Gen2 RFID tag (TD-4650TNWBR, TD-4750TNWBR)
Wound Type	Outside wound
Media Width	0.8" - 4.4" (20 mm - 112 mm)
Media Thickness	2.36 mil - 7.48 mil (0.06 mm - 0.19 mm)
Roll Outside Diameter (maximum)	5" (127 mm)
ore Size	1", 1.5" (25.4 mm, 38.1 mm)
Media Sensor	Gap (Transmissive), Black mark (Reflective)
Ribbon Specification	
Width	984.2" (300 m) long, max. Outer Diameter 2.64" (67 mm), 1" (25.4 mm) core (ink coated outside) 360.1" (110 m) long, max. Outer Diameter 1.57" (40 mm), 0.5" (12.7 mm) core (ink coated outside)
Ribbon Width	1.6" - 4.3" (40 mm - 110 mm)
RFID Specification (TD-4650TNWBR and TD-4750TNWBR only)	
RF Protocol	UHF EPC global Class 1 Gen2 / ISO 18000-63
Operating Frequency	Global (902 MHz - 928 MHz) and EU (866 MHz - 868 MHz)
Minimum Pitch	0.625" (15.875 mm)

Other	
Cutter	Guillotine & Partial Auto cutter option (Not User Replaceable)*1,2
Label Peeler	Label Peeler option (Not User Replaceable)*1,2
Bar Code	• 1D barcodes Code128 subsets A, B, C, Code128UCC, EAN128, Interleaved 2 of 5, Interleaved 2 of 5 with check digit, Standard 2 of 5, Industrial 2 of 5, Code39, Code93, Code39 with check digit, EAN-13, EAN-8, Codabar, Postnet, UPC-A, UPC-E, EAN and UPC 2 (5) digits add-on, MSI, MSI with check digit, PLESSEY, China post, ITF14, EAN14, Code11, TELEPEN, TELEPEN number, PLANET, Code49, Deutsche Post Identcode, Deutsche Post Leitcode, LOGMARS • 2D barcodes CODABLOCK F mode, GS1 DataMatrix, Maxicode, PDF417, AZTEC, Micro PDF417, QR Code, RSS Barcode (GS1 Databar), TLC39
Printer Control Command	FBPL-EZD (Compatible to EPL II, ZPL II, DPL) FBPL-EZS (Compatible to EPL II, ZPL II, SBPL)
Built in Fonts	• 8 alphanumeric bitmap fonts • Monotype Image® true type font engine with one CG Triumvirate Bold Condensed scalable font

*1 Not compatible with RFID tags

*2 Only authorized Brother Dealers should perform accessory replacements.

10. Troubleshooting

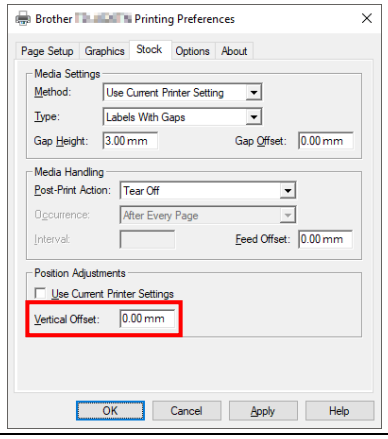
10.1 Common Problems

This chapter explains how to resolve typical problems you may encounter when using the printer. If you have any problems with the printer, first make sure you have performed the following tasks correctly.

If you still have problems, contact the product manufacturer's customer service or your local dealer.

Problem	Possible Cause	Solution
The LED Indicator is not lit.	The Power Cord is not correctly connected.	Make sure the printer is correctly connected to the power outlet (electrical socket) using the Power Cord.
		Turn the printer on.
- The Brother Printer Management Tool shows **Head Open**. - The LED flashes in red.	The Print Head is open.	Close the Print Head.
- The Brother Printer Management Tool shows **Out of Ribbon** or **Ribbon Encoder Err.** - The LED flashes in red.	The ribbon has finished.	Install a new ribbon roll. To install a new ribbon roll, see section *3.1 Load the Ribbon*.
	The ribbon is installed incorrectly.	Reinstall the ribbon. To install the ribbon roll, see section *3.1 Load the Ribbon*.
- The Brother Printer Management Tool shows **Out of Paper**. - The LED flashes in red.	The label roll has finished.	Install a new label roll. To install a new label roll, see section *3.2 Load the Media*.
	The label is installed incorrectly.	Reinstall the label roll. To install the label roll, see section *3.2 Load the Media*.
	The Gap/Black Mark Sensor is not calibrated.	Calibrate the Gap/Black Mark Sensor.
- The Brother Printer Management Tool shows **Paper Jam**. - The LED flashes in red.	The Gap/Black Mark Sensor is not calibrated.	Calibrate the Gap/Black Mark Sensor.
	Make sure the label size is set correctly.	Set the label size correctly.
	Labels may be jammed inside the Printer Head.	

Problem	Possible Cause	Solution
I cannot print.	The serial or USB cable is not connected correctly.	Reconnect the serial or USB cable.
	The serial or USB cable may be damaged.	Try a new cable.
	The ribbon or media may be incorrect or damaged.	Use a correct ribbon or media.
		Check the ribbon for damage.
		Reinstall the ribbon.
	The Print Head may need cleaning.	Clean the Print Head.
	The print density and speed may be set incorrectly.	Adjust the print density and print speed.
	The Print Head's harness connector may not be connected correctly with the Print Head.	Turn off the printer and plug the Print Head's harness connector to the Print Head again.
	Your custom program may not contain the necessary commands.	Make sure that your program contains the PRINT command at the end of the file and a CRLF at the end of each command line.
Memory full (FLASH/DRAM).	The printer's FLASH/DRAM memory is full.	Delete unused files from the FLASH/DRAM memory.
Poor Print Quality.	The ribbon/media is loaded incorrectly.	Reload the media/ribbon.
	Dust or adhesive has accumulated on the Print Head.	Clean the Print Head.
		Clean the Platen Roller.
	The print density is set incorrectly.	Adjust the print density and print speed.
	The Print Head is damaged.	Run the printer self-test and check the Print Head test pattern for missing dots.
	The ribbon/media is incompatible.	Install the correct ribbon/media.
Labels are skipped when printing.	The label size is not specified correctly.	Check if the label size is set up correctly.
	The sensor sensitivity is not set correctly.	Calibrate the sensor using the Auto Gap or Manual Gap options.
	The media sensor is dirty.	Clean the Gap/Black Mark Sensor using a blower brush.

Problem	Possible Cause	Solution
The printing position of small labels is incorrect.	The media sensor sensitivity is not set correctly.	Calibrate the sensor sensitivity again.
	The label size is incorrect.	Set the correct label size and gap size.
	The vertical offset setting in the driver is incorrect.	If using the BarTender software, set the Vertical Offset in the driver. 
Incomplete printing on the left or right side of label.	The label size is set up incorrectly.	Set the correct label size.
Warped labels.	The ribbon is installed incorrectly.	Reinstall the ribbon. To install the ribbon roll, see section *3.1 Load the Ribbon*.
	The media is installed incorrectly.	Reinstall the label roll. To install the label roll, see section *3.2 Load the Media*.
	The print density setting is incorrect.	Adjust the print density to improve the print quality.
	The media is not fed correctly.	Make sure the label guide touches the edge of the Media Guide Tips.
Blank labels with gray lines.	The Print Head is dirty.	Clean the Print Head.
	The Platen Roller is dirty.	Clean the Platen Roller.
Irregular printing.	The printer is in Hex Dump mode.	Turn the printer on and off to skip the dump mode. (See section *5.1.2 Gap/Black Mark Sensor Calibration, Self-Test, and Entering Dump Mode*.)

For more information about cleaning the printer, see section *11. Maintenance*.

10.2 RFID Error Messages

The RFID encoder can detect several errors. When these errors occur, the RFID encoder alerts the printer and the LCD displays the appropriate error message.

Error Message	Possible Cause	Solution
`RFID Is Disabled`	The RFID function is not activated.	Select **RFID** > **Control** > **RFID Active** to enable the RFID function.
`Failure EPC Write Failed`	The EPC tag cannot be written via **Diagnostics** > **Write EPC with 1s** or **Write EPC with 2s**.	· The label could be misaligned. Perform the **Sensor** > **Auto Calibration** procedure to ensure the label is at top-of-form. · Select **RFID** > **Control** > **Tag Calibration** > **RFID Calibrate**. · Use smart labels with RFID tags located in the correct position. · The RFID tag could be defective. Try another tag. · Make sure the application does not send too few or too many digits to the RFID tag.
`RFID Calibrate Write Tag Failed`	Tag calibration cannot be performed.	· The label could be misaligned. Perform the **Sensor** > **Auto Calibration** procedure to ensure the label is at top-of-form. · Use smart labels with RFID tags located in the correct position. · The RFID tag could be defective. Try another tag.
`RFID Disabled`	The RFID command is sent to the printer when the RFID function is disabled.	1. Select **RFID** > **Control** > **RFID Active** to enable the RFID function. 2. Then send RFID commands.
`NON-RFID DATA On RFID Tag`	When the "Non- RFID warning" option is "ON" (**RFID** > **Control** > **Non-RFID Warning**), the printer has obtained the non-RFID data.	Make sure you send RFID commands to the printer.
`INVALID RFID DATA`	The RFID tag data sent does not match the settings.	Check the tag data of the RFID commands.
`INVALID RFID DATA LEN`	The tag length size (the size parameter of RFID command) sent does not match the setting.	Check the data length size of the RFID commands.

Error Message	Possible Cause	Solution
RFID TAG FAILED	The tag cannot be written.	· The label could be misaligned. Perform the **Sensor** > **Auto Calibration** procedure to ensure the label is at top-of-form. · Select **RFID** > **Control** > **Tag Calibration** > **RFID Calibrate**. · Use smart labels with RFID tags located in the correct position. · The RFID tag could be defective. Try another tag. · Make sure the application does not send too few or too many digits to the RFID tag. · Check that the RFID commands are correct.
RFID ERROR No Tag Found	The tag cannot be read.	· Make sure the media are smart labels with RFID tags located in the correct position. · The RFID tag could be defective. Try another tag.
Remove Label or No Paper	The label is jammed inside the machine or the paper size is not correct.	· Remove the label carefully so as not to damage the printer. · Make sure the media are smart labels that have RFID tags located in the correct position. · To reduce vibration to the printer, position the printer so printed labels can fall freely to a lower surface. · Calibrate the Gap/Black Mark Sensor. · Set the label size correctly.

Note

If you cannot write RFID tags:

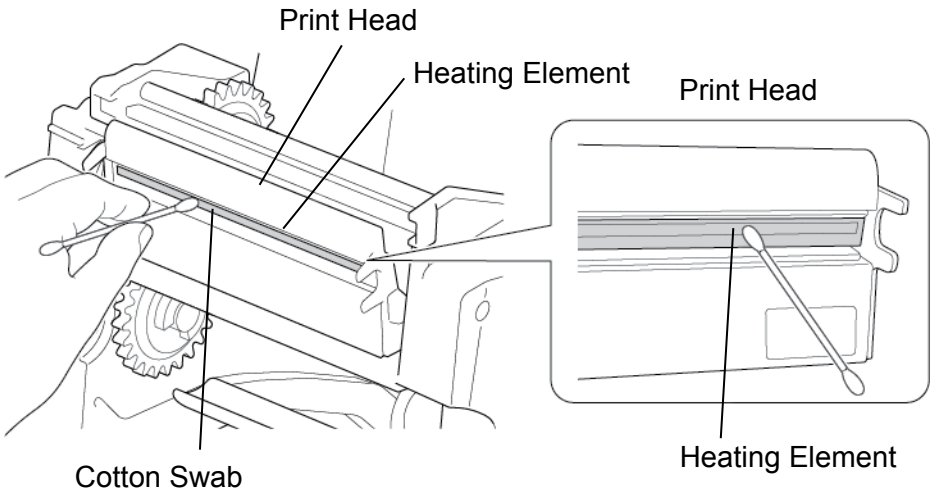
- Make sure the media are smart labels that have RFID tags located in the correct position.
- The RFID tag could be defective. Try another tag.
- Set the label size correctly, and then calibrate the RFID tag.
- Set the sensor sensitivity correctly (LCD: ***Sensor*** > ***Gap/Bline Ref Rate***).
- Check the data length size of the RFID commands.

11. Maintenance

We recommend cleaning your printer on a regular basis to maintain its correct performance.

Recommended cleaning materials:

- Cotton swab
- Lint-free cloth
- Vacuum / Blower brush
- Compressed air
- Isopropyl alcohol or ethanol

<table>
<tr><th>Printer Part</th><th>Cleaning Method</th><th>Interval</th></tr>
<tr><td rowspan="2">Print Head</td><td>1. Turn the printer off.
2. Allow the Print Head to cool down for at least one minute.
3. Wipe the Print Head with a cotton swab dipped in isopropyl alcohol or ethanol.</td><td>Clean the Print Head when changing a label roll.</td></tr>
<tr><td colspan="2"> 
</td></tr>
<tr><td>Platen Roller</td><td>1. Turn the printer off.
2. Rotate the Platen Roller and wipe it thoroughly with a lint-free cloth or cotton swab dipped in isopropyl alcohol or ethanol.</td><td>Clean the Platen Roller when changing a new label roll.</td></tr>
<tr><td>Tear Bar/Peel Bar</td><td>Wipe with a lint-free cloth dipped in isopropyl alcohol or ethanol.</td><td>As needed.</td></tr>
<tr><td>Sensor</td><td>Use compressed air or vacuum.</td><td>Monthly.</td></tr>
</table>

Printer Part	Cleaning Method	Interval
Exterior	Wipe the printer exterior with a lint-free cloth dipped in water.	As needed.
Interior	Use a brush or vacuum.	As needed.

Note

- Do not touch the Print Head. If you have touched it, clean it as described above.
- Do not use medical alcohol as it may damage the Print Head. Use isopropyl alcohol or ethanol according to the manufacturer's safety guidelines, as applicable.
- To maintain correct performance, we recommend cleaning the Print Head and sensors every time you install a new ribbon.
- 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 5 mm for 203 DPI resolution printer and 3.3 mm for 300 DPI resolution printer.

IMPORTANT

Securely dispose of any printers, components, and supplies if they are no longer going to be used. Ensure there is no jammed paper in the printer and destroy the thermal transfer ribbon if it has retained any visible prints.