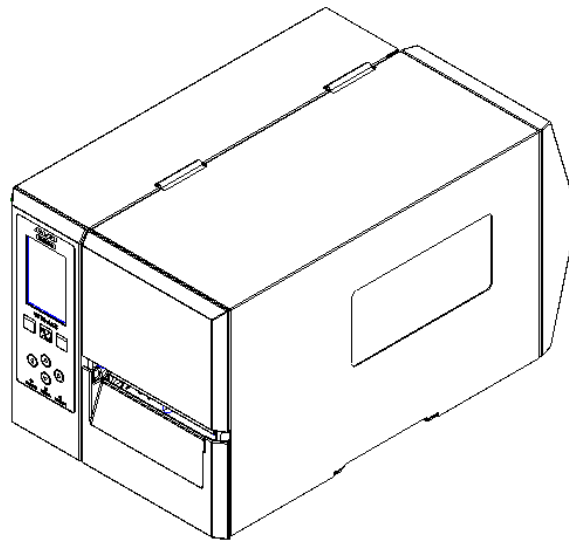# SATO BASIC LINE WT4-AXB Series Printer

Operator Manual

SATO BASIC LINE WT4-AXB TT203 / 300

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device under Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used under the instructions in this manual, it may cause harmful interference to radio communications. The operation of this equipment in a residential area is likely to cause harmful interference, and the user will be required to correct the interference at his own expense.

Bluetooth/Wireless LAN Communication

Compliance Statement
This product has been certified for compliance with your country or region's relevant radio interference regulations. To ensure continued compliance, do not:

- Disassemble or modify this product.
- Remove the certificate label (serial number seal) from this product.

Using this product near microwaves and other Wireless LAN equipment or where static electricity or radio interference is present may shorten the communication distance or turn off communication.

Liability Disclaimer

SATO Corporation ensures that the company's published engineering specifications and manuals are correct; however, errors occur. SATO reserves the right to correct the mistakes and disclaim any resulting liability. In no event shall SATO or anyone else involved in the creation, production, or delivery of the accompanying product (including hardware and software) be liable for any damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of the use of or the results of use of or inability to use such product, even if SATO has been advised of the possibility of such damages.

Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety Precautions

This section describes how to use the printer safely. Please read the following information carefully before using the printer.

Pictographic Symbols
This operator manual and the printer labels use a variety of pictographic symbols. These symbols emphasize the safe and correct use of the printer and to prevent injury to others and property damage. The explanation of the symbols is as follows. Be sure to understand these symbols well before you read the main text.

⚠️ **WARNING**	Ignoring the instructions marked by this symbol and erroneously operating the printer could result in death or severe injury.
⚠️ **CAUTION**	Ignoring the instructions marked by this symbol and erroneously operating the printer could result in injury or property damage.

The △ pictograph means "Caution is required." A specific warning symbol is contained inside this pictograph (The symbol at left is for electric shock).

The ⊘ pictograph means "Should not be done." What is prohibited is contained in or near the pictograph (The symbol at left means "Disassembly prohibited").

The ● pictograph means "Must be done." What is precisely to be done is contained in the pictograph (The symbol at left means "Unplug the power cord from the outlet").

⚠ WARNING

Do not set in an unstable area.

- Please do not set it on an unstable area, such as a wobbly table, slanted area, or one subject to strong vibration. If the printer falls off or topples over, it could injure someone.

Do not place containers full of water or other liquid on the printer.

- Do not place flower vases, cups, or other containers holding liquids, such as water, chemicals, or small metal objects, near the printer. If they are spilled and get inside the printer, immediately turn off the power switch, unplug the power cord from the outlet, and contact your SATO reseller or technical support center. Using the printer in this condition could cause a fire or electric shock.

Do not put objects inside the printer.

- Do not insert or drop metal or burnable objects inside the printer's openings (cable outlets, etc.). If foreign objects enter the printer, immediately turn off the power switch, unplug the power cord from the outlet, and contact your SATO reseller or technical support center. Using the printer in this condition could cause a fire or electric shock.

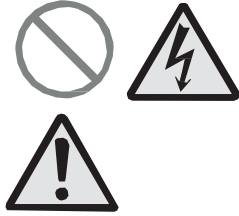Do not use other than the specified voltage.

- Do not use other than the specified voltage. Doing so could result in fire or electric shock.

Always ground the connections.

- Always connect the printer's ground wire to the ground. Not grounding the ground wire could result in electric shock.

Handling of the power cord

- Do not damage, break, or modify the power cord. Also, do not place heavy objects on it, heat it, or pull it; doing so could damage it and cause a fire or electric shock.
- If the power cord becomes damaged (core is exposed, wires broken, etc.), contact your SATO reseller or technical support center. Using the power cord in this condition could cause a fire or electric shock.
- Do not modify, excessively bend, twist, or pull the power cord. Using the power cord in such a condition could cause a fire or electric shock.

When the printer has been dropped or broken

- If the printer is dropped or broken, immediately turn off the power switch, unplug the power cord from the outlet, and contact your SATO reseller or technical support center. Using the printer in this condition could cause a fire or electric shock.

Do not use the printer when something abnormal happens.

- Continuing to use the printer in the event something is abnormal about it, such as smoke or unusual smells coming from it, could result in fire or electric shock. Immediately turn off the power switch, unplug the power cord from the outlet, and contact your SATO reseller or technical support center for repairs. It is dangerous for the customer to try to repair it, so absolutely do not attempt repairs on your own.

Do not disassemble the printer.

- Do not disassemble or modify the printer. Doing so could result in fire or electric shock. Ask your SATO reseller or technical support center to conduct internal inspections, adjustments, and repairs.

Regarding the cutter

- Do not touch the cutter with your hands, or do not put something into the cutter. Doing so could result in an injury.
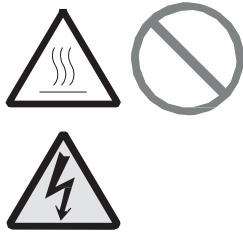
Using the head cleaning fluid

- The use of flame or heat around the head cleaning fluid is prohibited. Do not heat it or subject it to fire.
- Keep the fluid out of reach of children to prevent them from accidentally drinking it. If the fluid is drunk, immediately consult

with a physician.

Print head

- The print head is hot after printing. Be careful not to get burned when replacing media or cleaning immediately after printing.
- Touching the edge of the print head with bare hands could result in injury. Be careful not to become injured when replacing media or cleaning.
- The customer should not replace the print head. Doing so could result in injury, burns, or electric shock.
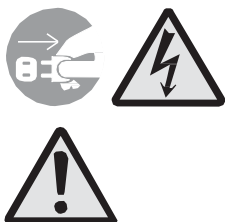
⚠ **CAUTION**

Do not place in areas with high humidity.

- Do not place the printer in areas with high humidity or where condensation forms. If condensation forms, immediately turn off the power switch and do not use the printer until it dries. Using the printer while condensation is on it could result in electric shock.

Carrying the Printer

- Always unplug the power cord from the outlet when moving the printer, and ensure all external wires are disconnected before moving it. Moving the printer with the wires still connected could damage the cords or connecting wires and result in a fire or electrical shock.
- Do not carry the printer with the media loaded in it. The media could fall out and cause an injury.
- When setting the printer on the floor or a stand, be careful not to get your fingers or hands pinched under the printer's feet.

Power supply

- Do not operate the power switch or plug in/ unplug the power cord with wet hands. Doing so could result in an electric shock.

Power cord

- Keep the power cord away from hot devices. Getting the power cord close to hot devices could cause the cord's covering to melt, causing a fire or electric shock.
- When unplugging the power cord from the outlet, hold it by the plug. Pulling it by the cord could expose or break the core wires and cause a fire or electric shock.

- The power cord set that comes with the printer is especially made for this printer. Do not use it with any other electrical devices.

Top access door

- Be careful not to get your fingers pinched when opening or closing the top access door, and also be cautious that it does not slip off and drop.

Loading media

- When loading the media roll, be careful not to get your fingers pinched between the media roll and the supply unit.

When not using the printer for a long time

- To maintain safety, unplug the printer's power cord from the outlet when it has not been used for a long time.

During maintenance and cleaning

- Unplug the power cord from the outlet to maintain safety while cleaning the printer.

Contents

1 Introduction

Welcome to the SATO family! We are delighted that you have chosen the SATO Basic Line WT4-AXB Series industrial barcode printer. SATO Basic Line is a range of affordable printers from SATO designed with just the right amount of essential features. This comprehensive manual guides you through your printer's setup, operation, and troubleshooting, ensuring a seamless printing experience. Clear illustrations and step-by-step instructions are provided to help you quickly become familiar with the printer and its powerful features.

1.1 Features

- **Easy Integration**
  - Suitable for a wide range of industries and applications
  - Compact size to fit your workspace
  - Multiple emulations are supported to integrate easily into existing systems.
  - This printer has an optional dispenser and cutter to support your media handling needs.
  - Supports 8.0-inch OD label rolls and 450m ribbon roll length

- **Easy Operation**
  - Color-coded error UI messages for quick user response
  - Color-coded user touch points and ample label route for easy media replacement

- **Easy Maintenance**
  - Easy to replace the thermal print head and platen roller
  - Backed by SATO's expert global support scheme

1.2 Unpacking

Make sure all the following items are included in your package.
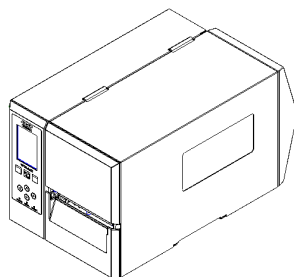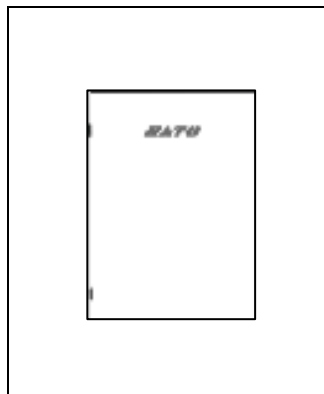
Printer	Quick Installation Guide	1" ID Core for Ribbon
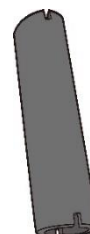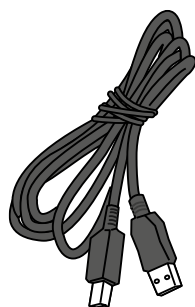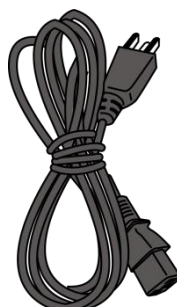
USB Cable	AC Power Cord

When you receive the printer, open the package immediately and inspect for shipping damage. Contact the shipping company and file a claim if you discover any damage. SATO is not responsible for any damage incurred during shipping. Save all package materials for the shipping company to inspect.

Note:
If any item is missing, please get in touch with your local dealer.

1.3 Understand your printer

1.3.1 Perspective view

LCD Panel

Panel Control Buttons

LED indicators

Front Access Door

Top Access Door

1.3.2 Back view

Standard

Ethernet

USB Type A

USB Type B

RS232 Serial

Power switch

AC power socket

: A0
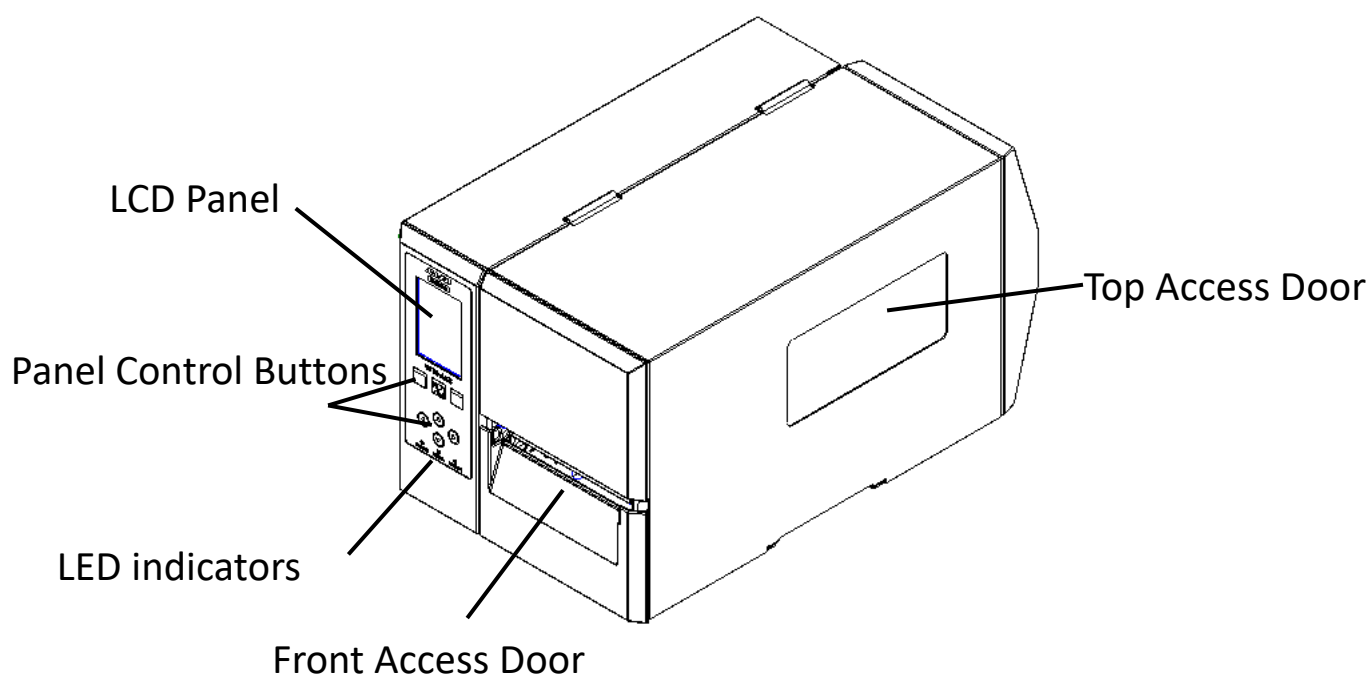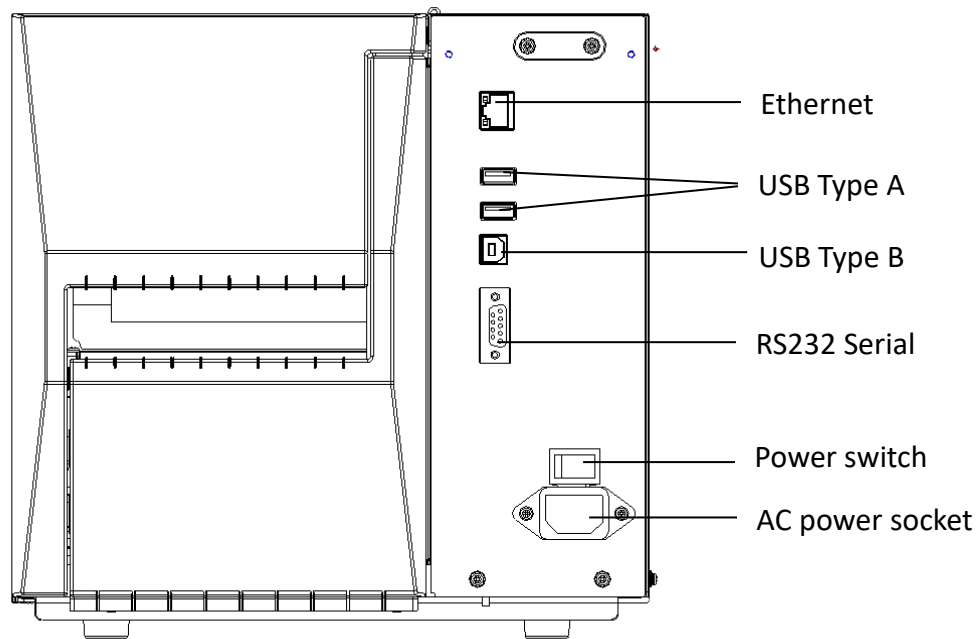
Optional
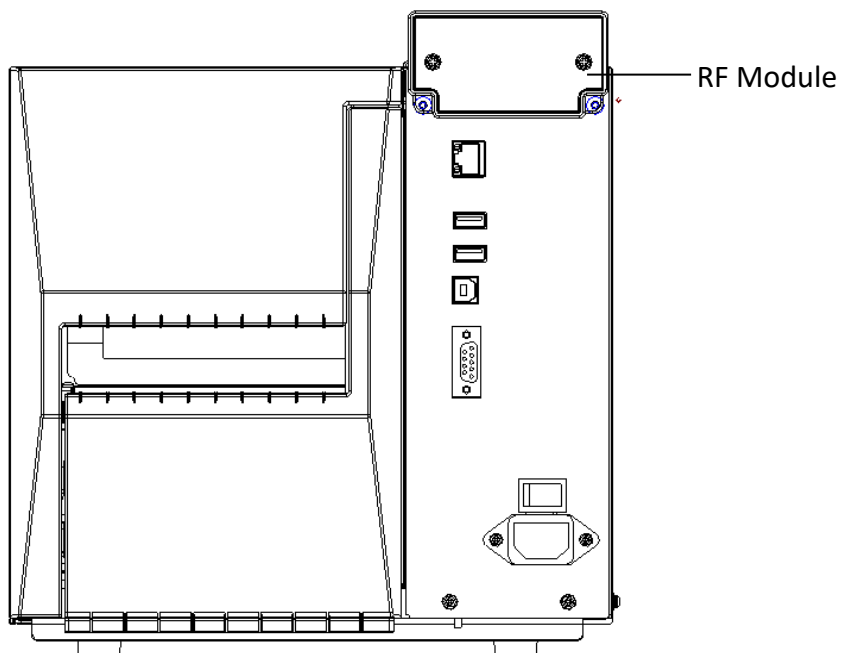
RF Module

1.3.3 Interior view

Internal Parts and Features

Ribbon Pick-up Spindle

Ribbon Supply Spindle

Media Supply Spindle

Feed Slot
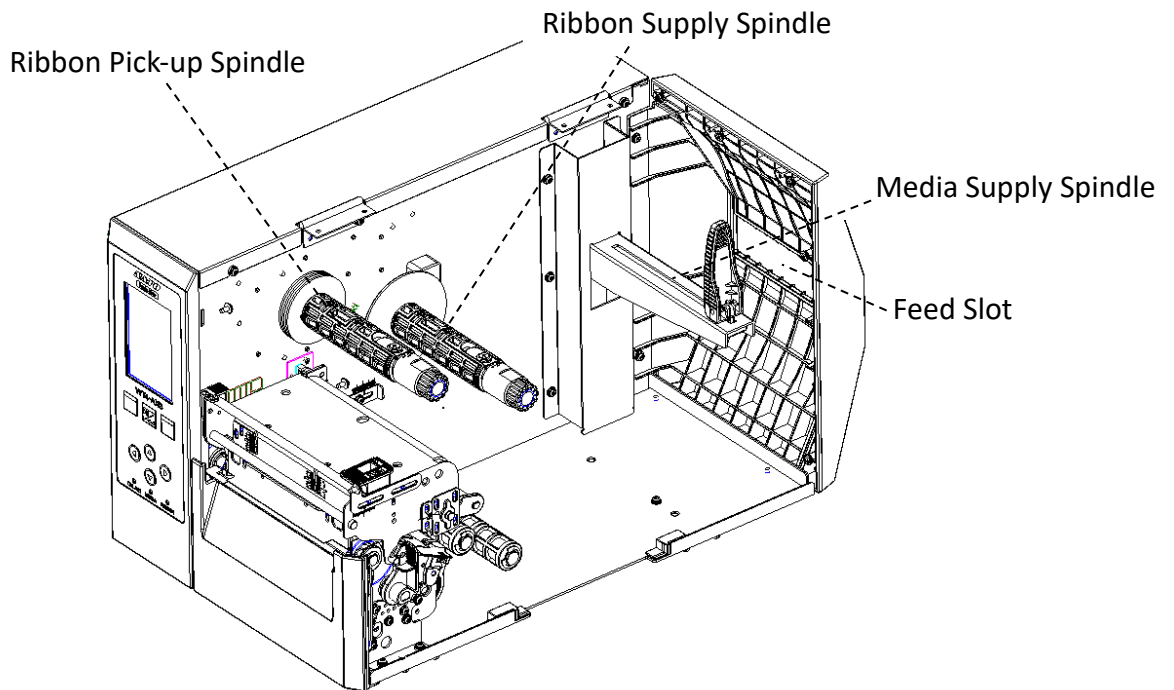
Rotate Head Latch Module

Thermal Print Head

Media sensor

Head latch

Platen Roller
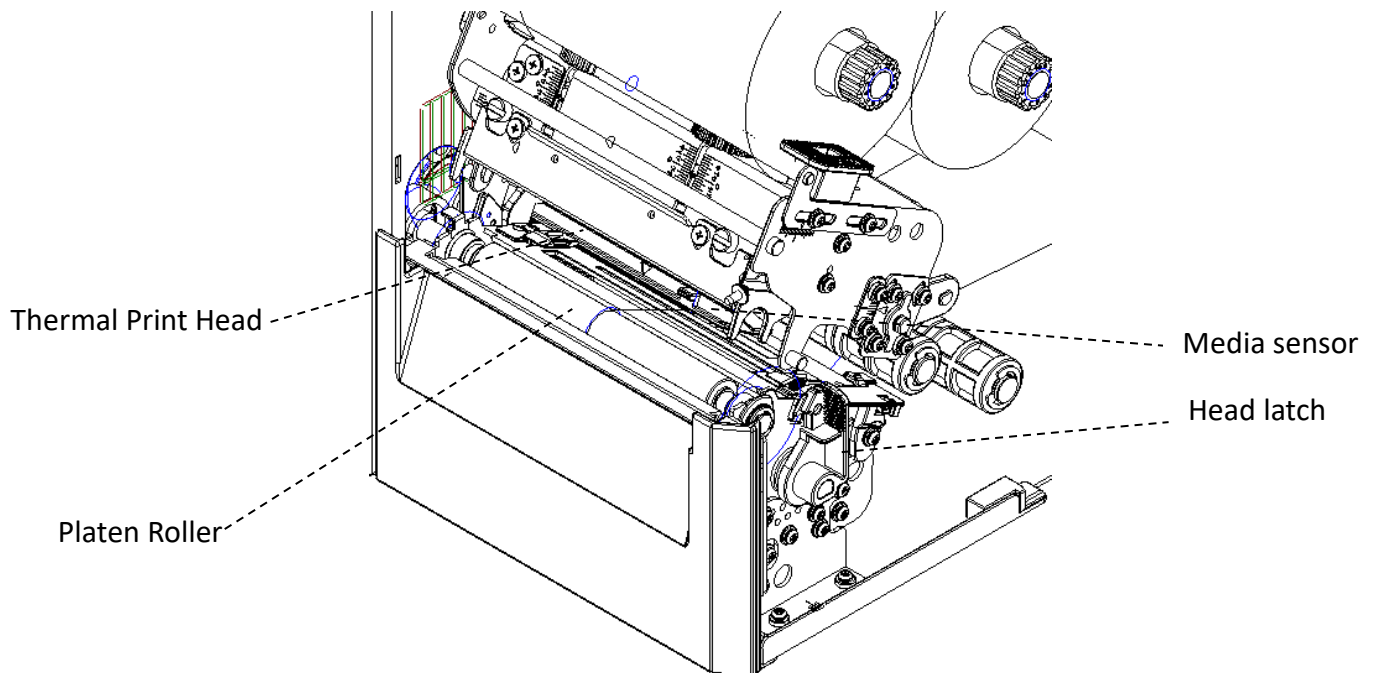
1.4 Printer control panel

The front panel has three lights: ONLINE, MEDIA, and RIBBON. These indicators display the printer's operation status. The panel control buttons can control the printer's simple functions.

1.4.1 Status lights

Status lights help you check the printer's operating status. The following tables show the status lights and the conditions they indicate.

LCD Display	ONLINE	MEDIA	RIBBON	Description
ONLINE（**203,AUTO**）	ON	ON	ON	In the ONLINE mode
Print Head Overheated	ON	Blinking	ON	The print head needs to cool down.
Command Error	ON	Blinking	Blinking	A command error was found while checking the command sequence.
EEPROM ERROR	ON	Blinking	Blinking	An EEPROM for backup cannot be read/written properly.
USB R/W Error	ON	Blinking	Blinking	• An error occurred when writing data into USB or flash memory. • An erase error has occurred in formatting USB memory or flash memory. • Saving failed because of USB or flash memory's insufficient capacity. • Firmware update has an error.
Cancel	Blinking	ON	ON	Press CANCEL KEY to interrupt and delete a print task
CLEAR FLASH	Blinking	ON	ON	Clear flash memory.
Cutter Error	Blinking	ON	ON	The cutter has failed, or there is a paper jam inside the cutter.

LCD Display	ONLINE	MEDIA	RIBBON	Description
Memory Full	**Blinking**	**ON**	**ON**	The loaded soft fonts, graphics, or forms entirely cause the printer buffer.
MEMORY INIT	**Blinking**	**ON**	**ON**	USB Memory is being initialized.
Offline	**Blinking**	**ON**	**ON**	The printer is in Offline status. Media sensors cannot index label gaps.
Print Head Error	**Blinking**	**ON**	**ON**	Head broken error
Print Head Open	**Blinking**	**ON**	**ON**	The head latch is not closed.
RESET	**Blinking**	**ON**	**ON**	Press CANCEL KEY + POWER ON to reset the NVR table.
Parity Error	**Blinking**	**ON**	**ON**	The format or baud rate of the RS232 communication is inconsistent between the printer and host.
Test Print	**Blinking**	**ON**	**ON**	Press FEED KEY + POWER ON to print the self-test label.
Upgrade	**Blinking**	**ON**	**ON**	The printer is receiving data
Ribbon End	**Blinking**	**ON**	**Blinking**	The ribbon was not installed, and the end-of-ribbon occurred.
Calibrating...	**Blinking**	**Blinking**	**ON**	Press the PAUSE KEY + POWER ON to calibrate the media.
Out of Paper	**Blinking**	**Blinking**	**ON**	The media is not installed or used up. The printer fails to detect the media gap. The media sensor is out of range during calibration. The label has run out. The last label was issued typically, and the label has run out.
Paper Jam	**Blinking**	**Blinking**	**ON**	A paper jam occurred during a paper feed.

2. Get started

Get your printer ready to go! This chapter provides a step-by-step setup guide.

2.1 Attach the power cord

1. Ensure the power switch is set to the OFF position.
2. Place the printer within cable distance of the host and printer (using a USB or serial cable).
3. Keep the power cord isolated from other electrical cables.
4. Plug one end of the AC power cord into the printer's power socket, which is located on the back of the printer.
5. Plug the other end of the AC power cord into a wall outlet. Ensure the wall outlet and the printer have the same voltage and frequency. Otherwise, you may damage or explode the printer.
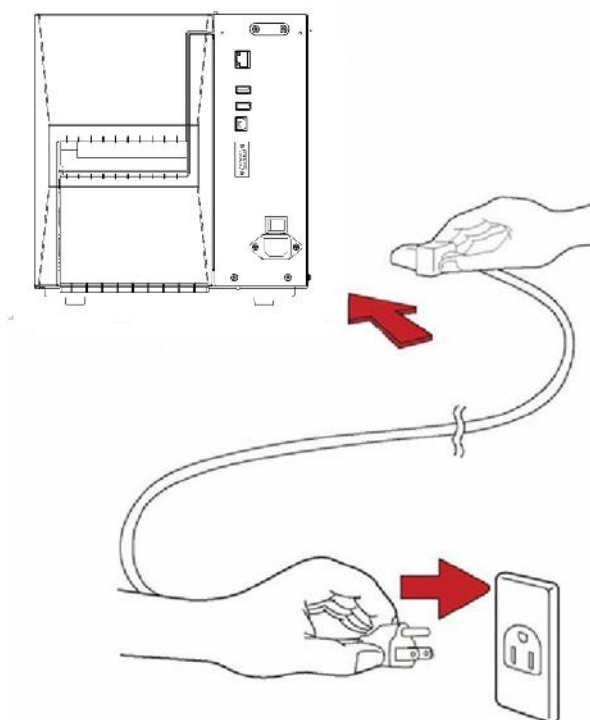
Warning: Do not plug the AC power cord with wet hands or operate the printer and the power supply in an area where they may get wet. Serious injury may result from these actions!

2.2 Turn on/off your printer

When your printer is connected to a host (a computer), it is good to turn on the printer before turning on the host and turn off the host before turning off the printer.

2.2.1 Turn on your printer

1. To turn on your printer, turn on the **Power Switch** as below. The "I" is the **ON** position.
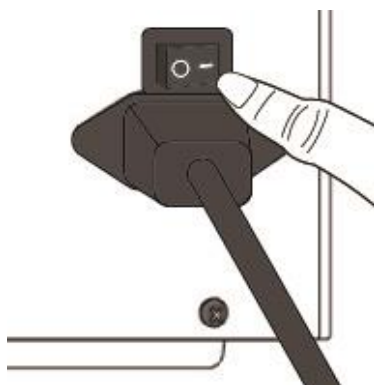
2. The ONLINE, MEDIA, and RIBBON LEDs stay solid blue. Then, the ONLINE LED turns off for a few seconds while the LCD screen displays the firmware version. The LCD screen displays Ready to Print, and the ONLINE LED returns to solid blue.

2.2.2 Turn off your printer

1. Make sure ONLINE, MEDIA, and RIBBON stay solid blue before turning off the printer.
2. To turn off your printer, turn off the **Power Switch** as below. The "O" is the **OFF** position.
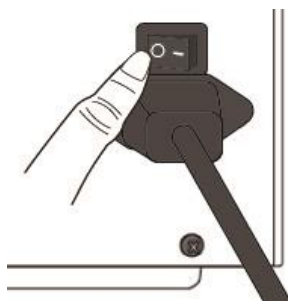
⚠ **Caution**: Do not turn off the printer during data transfer.

2.3 Load media

The SATO BASIC LINE WT4-AXB Series printers offer three different loading modes: standard, dispenser, or with a cutter.

- **Standard mode** allows you to collect each label freely.
- **Dispenser mode** peels the liner away from the label as it is printed. After the label is removed, the next label is printed.
- **Cutter mode** automatically cuts the label after it is printed. There is a guillotine cutter type for cutting media.
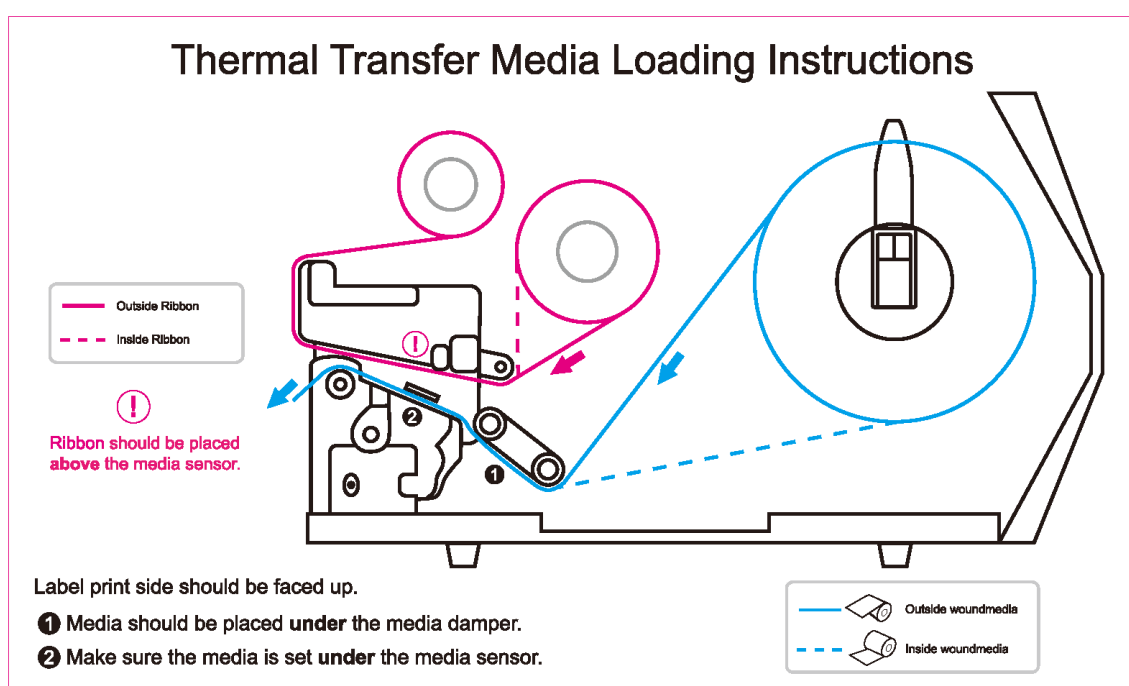
Necessary: The first time you use dispenser mode and cutter mode, make sure to enable the PEELER INSTALLED or CUTTER INSTALLED setting in the front panel. For more information on panel settings, go to CH 3.1.1 *LCD Function Setting Procedure*.

2.3.1 Prepare media

The media roll can be loaded into the printer for both inside and outside wound media.
The loading process is the same for both configurations.

Note: Before you begin, ensure the media roll is clean. If the outer portion of the media is dirty due to shipping, handling, or storage, remove it. This prevents adhesive and dirt from dragging between the printhead and platen roller, ensuring optimal print quality.

- **Step 1:** Load the media and roll it into the printer.
- **Step 2:** Remove any dirty outer portion of the media.
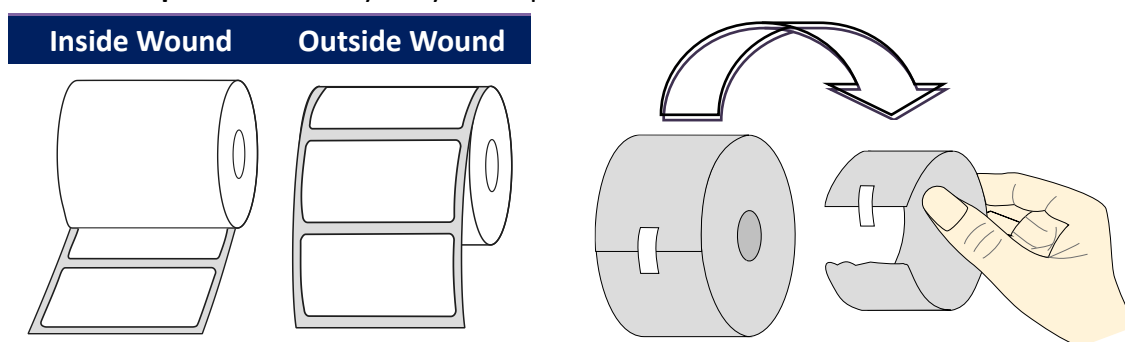
2.3.2 Placing media roll

Load media in standard mode

1 Lift the top access door to expose the media compartment.

Door
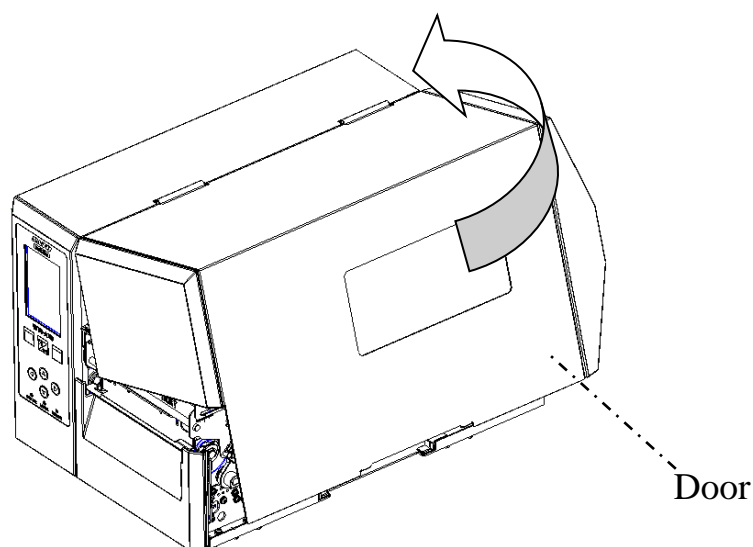
2   Insert the media roll into the media supply spindle and slide the media guide inward.

Media
Guide

Media Supply Spindle
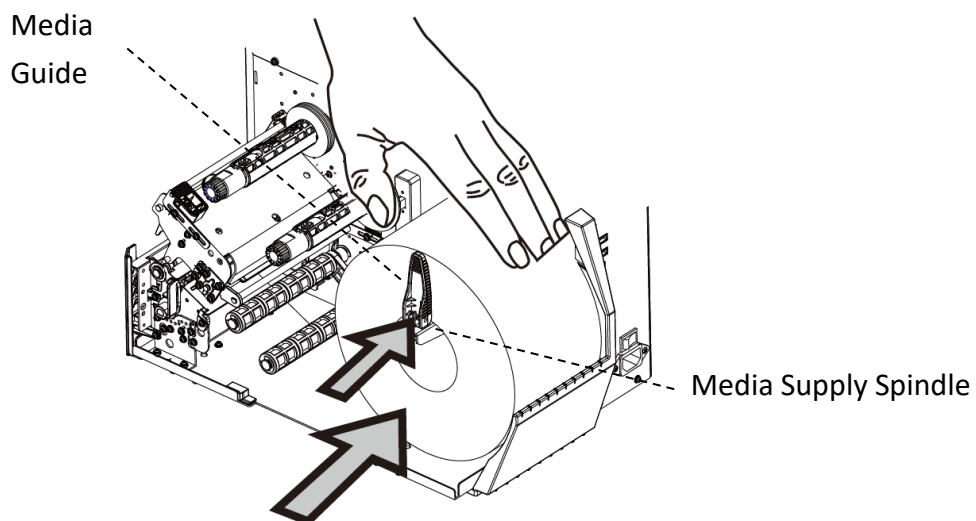
3   Push right the head latch for media loading.

Head Latch
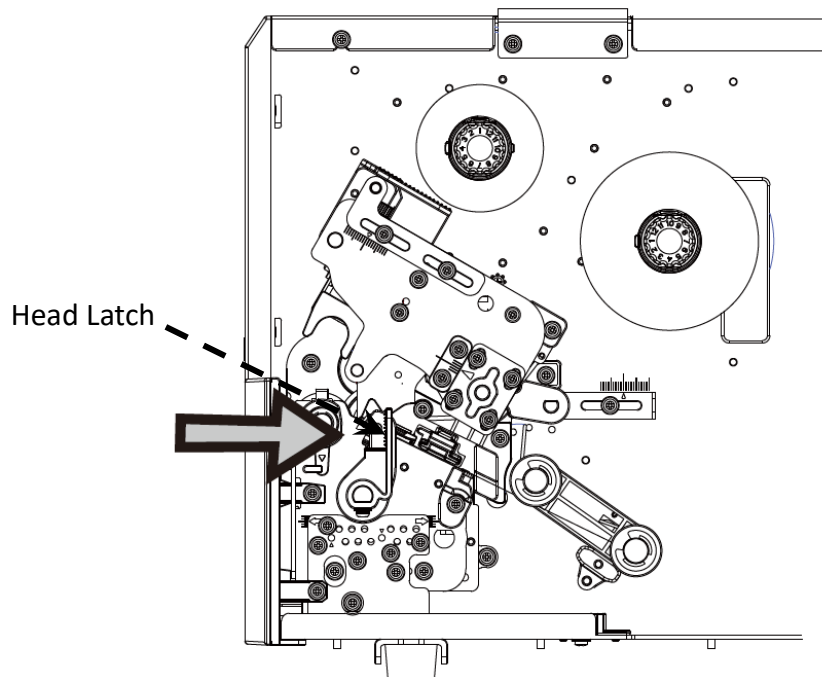
4   The label must face up to the media passes through the printhead module. Thread the media under the 'media guide' and through the damper until it locks in place. Then, pass it under the media sensor guide module and over the roller.
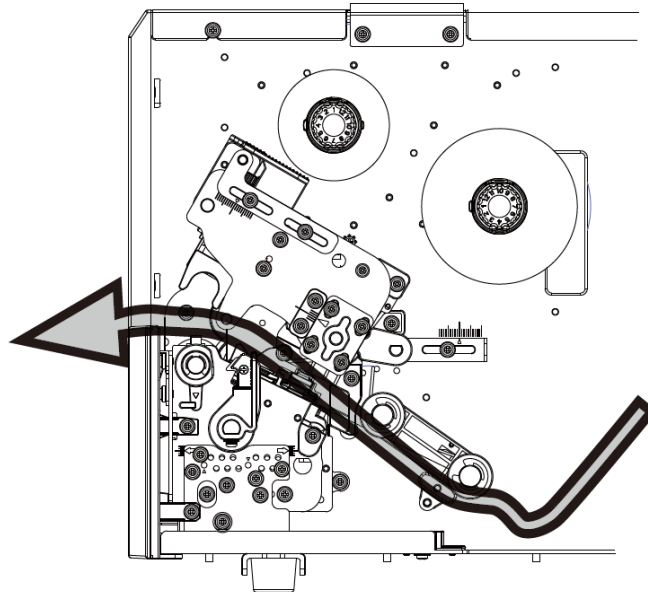
5   Press the two push points to hook the media.

Push Points

Print Head Module

Media Sensor
Guide Module

Head Latch

Media Guide

Roller
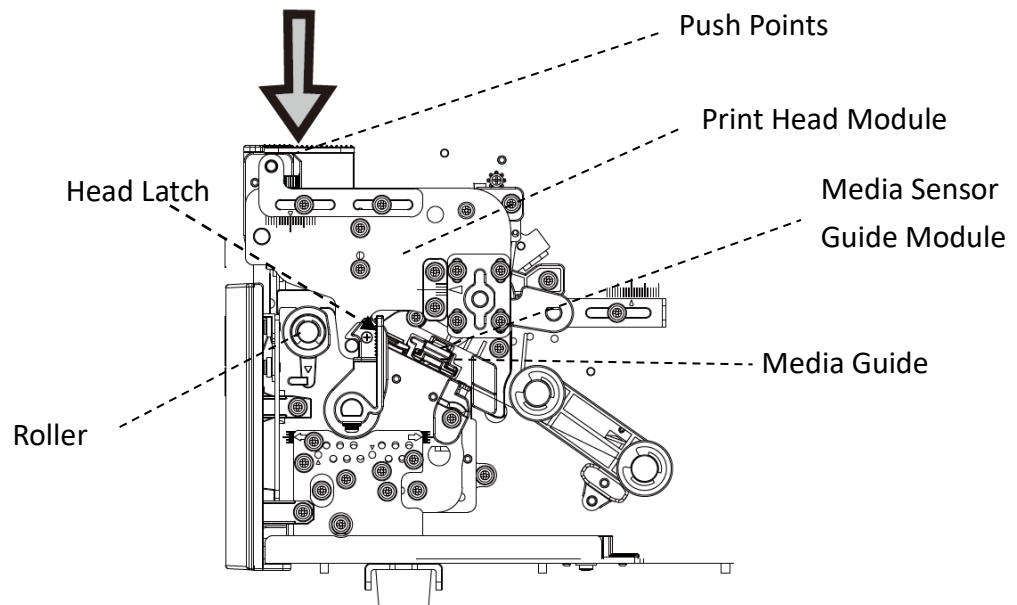
6   Close the top access door.
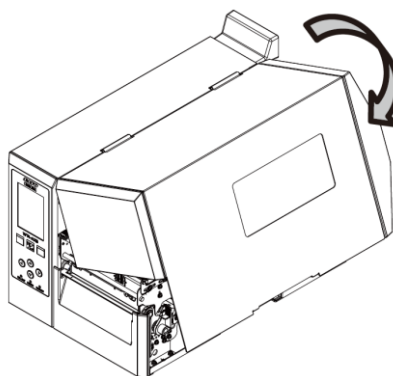
7   Press the left button if the printer is already on.
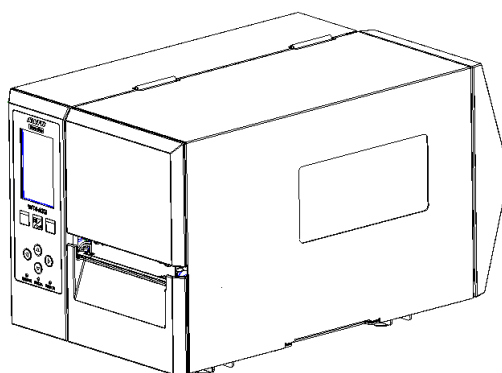
Note
Make sure the label length of the die-cut media is at least 25 mm (1") or longer for direct thermal printing in tear-off mode with perforation.

Important
After the media is loaded, please perform media calibration to calibrate the label sensor before printing.

Load media in dispenser mode

Steps 1 to 3 are like "Standard Mode".

1. Lift the top access door to expose the media compartment.

2. Load a media roll into the media supply spindle and slide the media guide inward.

3. Pull the head latch media loading.

4. Remove enough labels from the leading end of the media roll to expose 6 inches of liner.
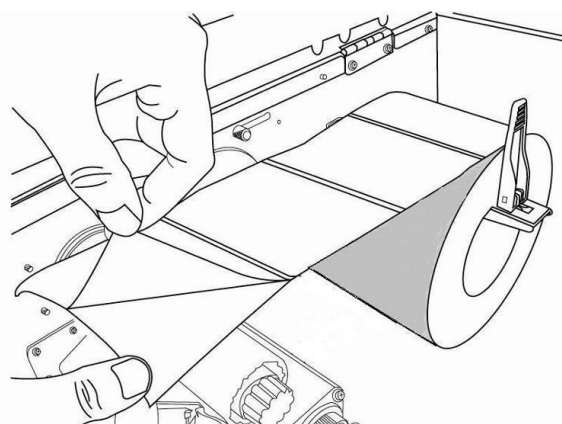
5. Guide the media liner under the printhead module. For more specific media guidance, refer to Step 4 in Standard Mode.

Print Head Module

Label Output Direction

Liner Output Direction
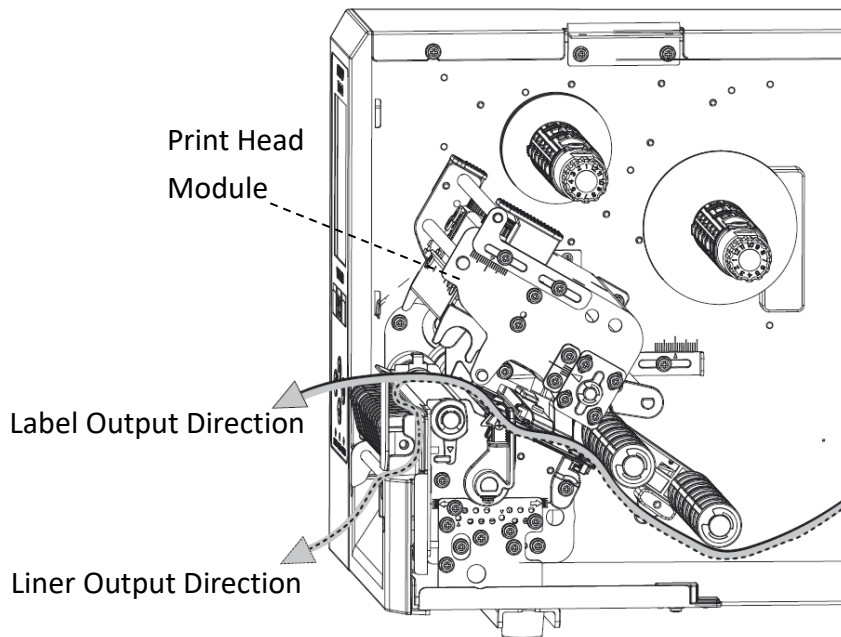
6. Push down the dispenser mechanism release lever and guide the media liner behind the dispenser (peeler) module.

Peeler Lever

Liner Output Direction
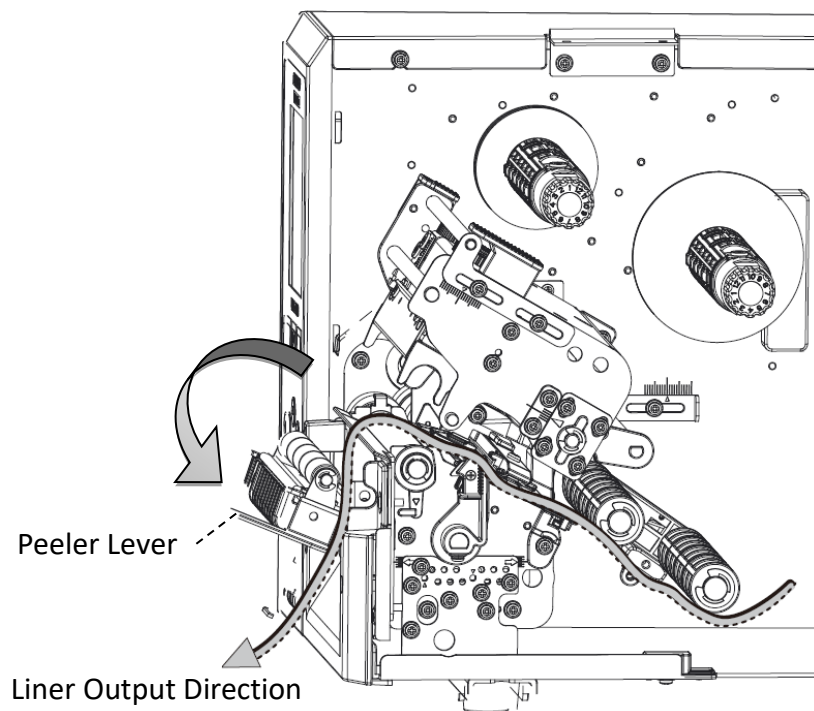
7. Close the dispenser (peeler) module by using the push points. Press the two indicated points firmly until you hear a "click," which confirms that the dispenser (peeler) module is securely closed.

Press the two push points to close.

(Dispenser) peeler lever
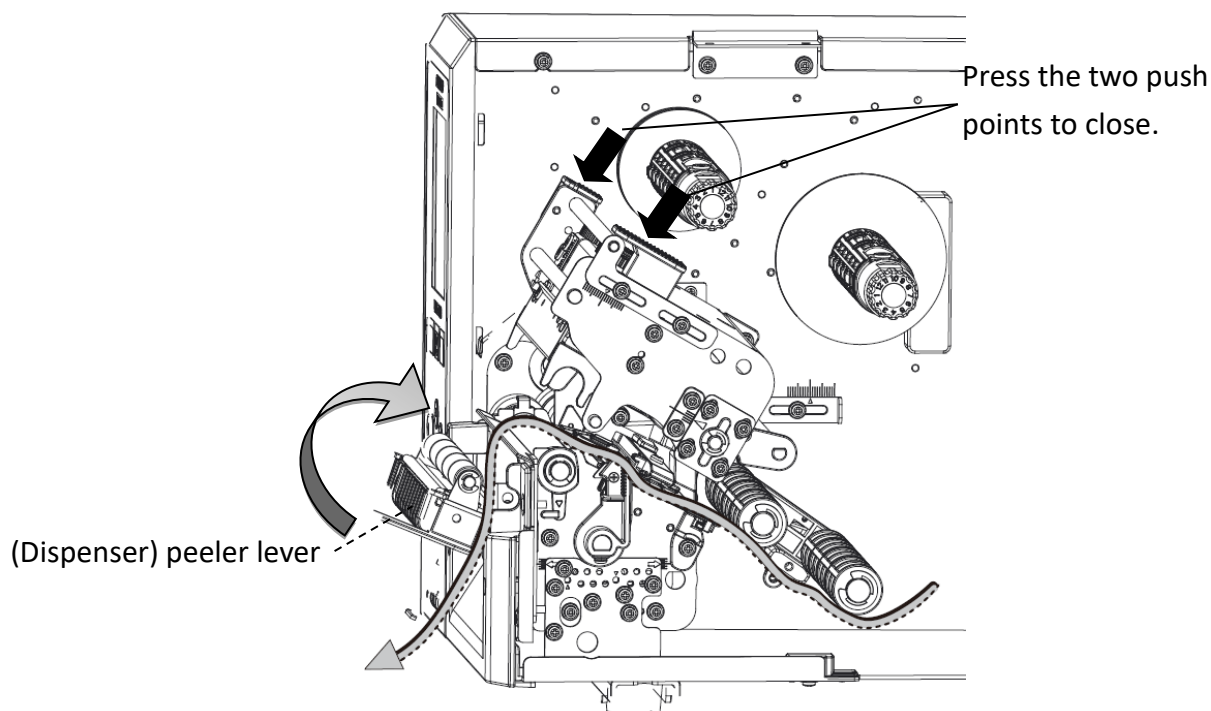
8. Close the top access door, turn on the printer, or press the Right button if it is already on.
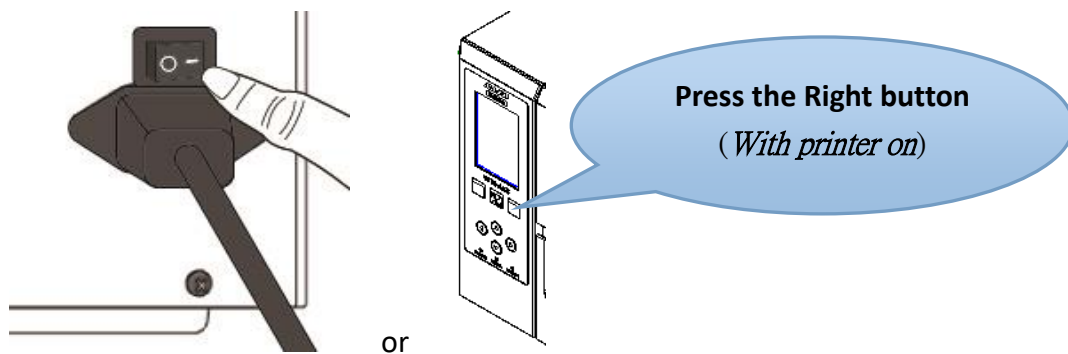
or

Press the Right button
(*With printer on*)

ⓘ *Important*
After the media is loaded, please perform media calibration to calibrate the label sensor before printing.

Load media in guillotine cutter mode

Steps 1 to 3 are like "Standard Mode".

1. Lift the top access door to expose the media compartment.

2. Load a media roll into the media supply spindle and slide the media guide inward.

3. Push the head latch.

4. Load the media roll into the printhead module and under the media sensor guide. For more specific lead media, see Step 4 in Standard Mode. Fasten the cutter module and feed media through the cutter.

Print Head Module

Label Output Direction

Head Latch
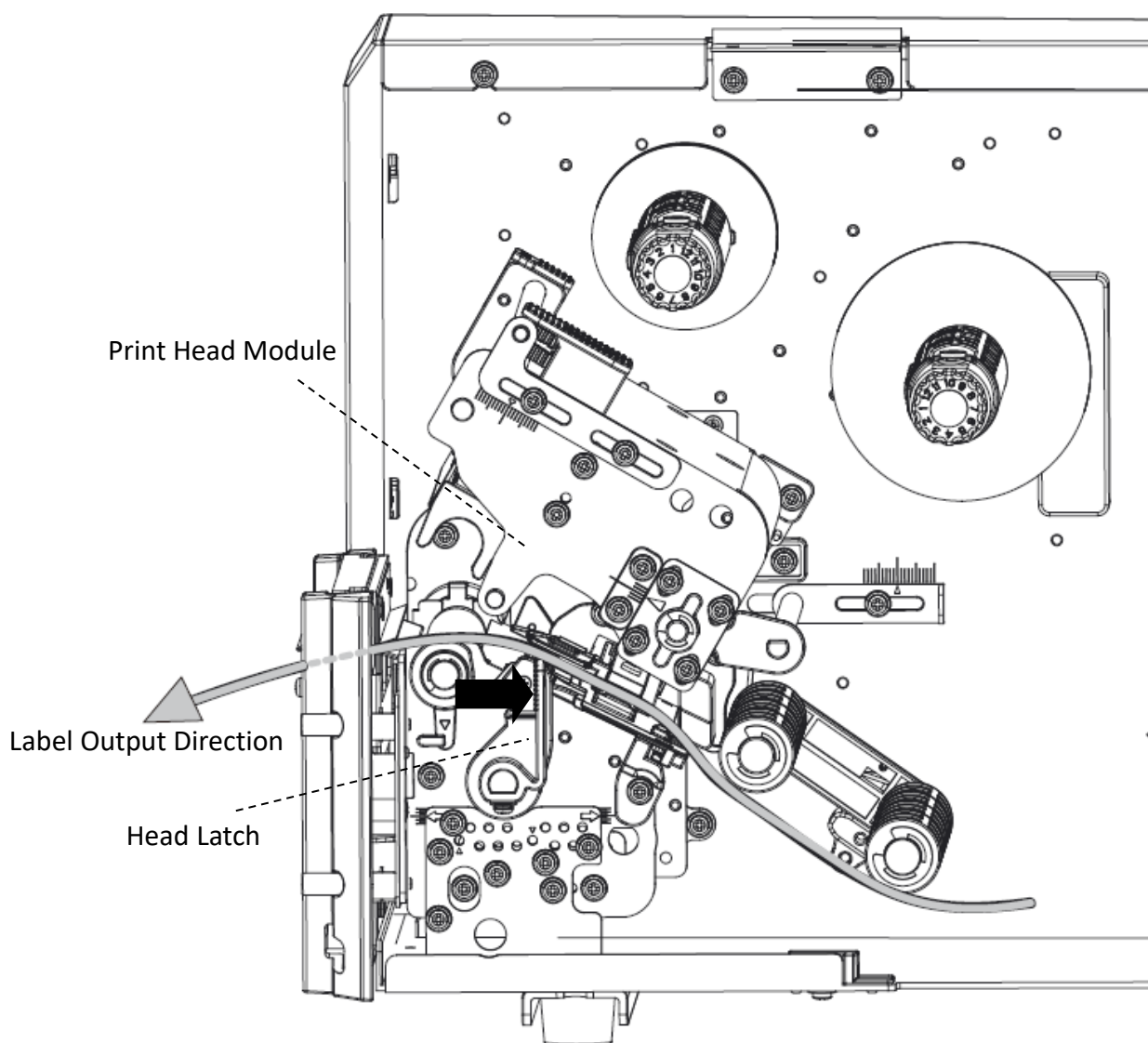
5. Retract the guillotine cutter. Press the two indicated points firmly until you hear a "click," which confirms that the dispenser (peeler) module is securely closed.

Press the two push points to close.

Label Output Direction
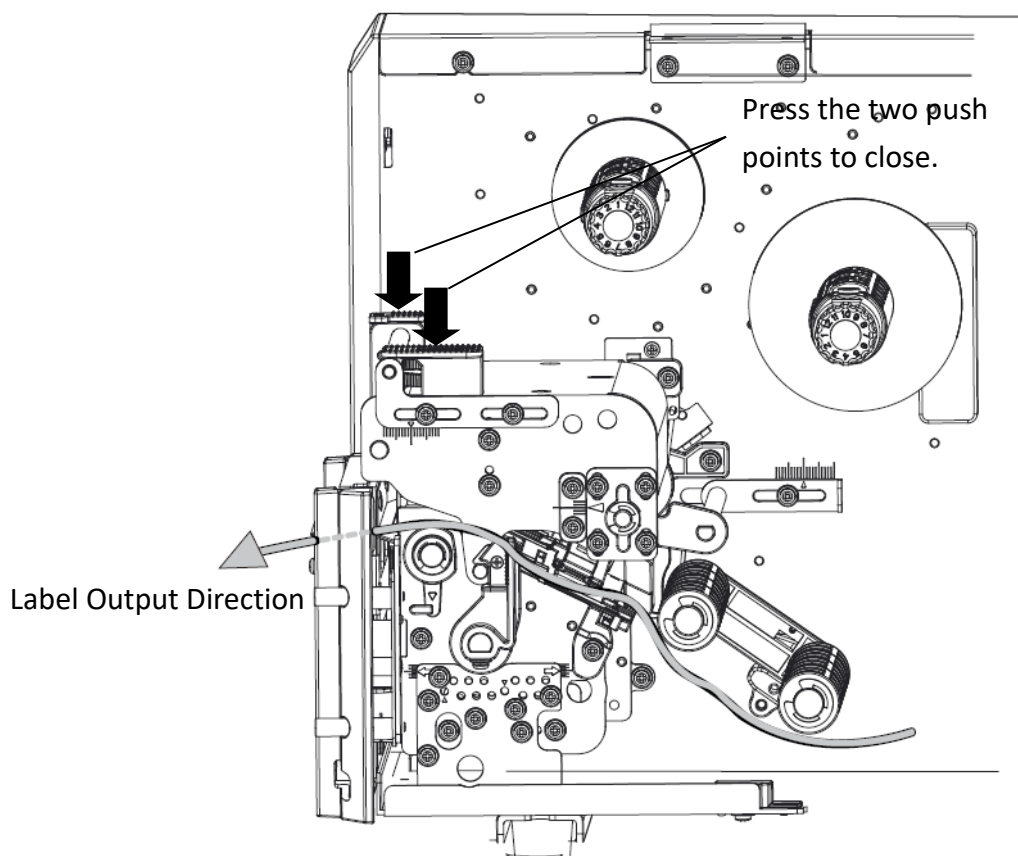
6. Close the top access door, turn on the printer, or press the FEED button if it is already on. The printer will then feed the labels through the cutter automatically.
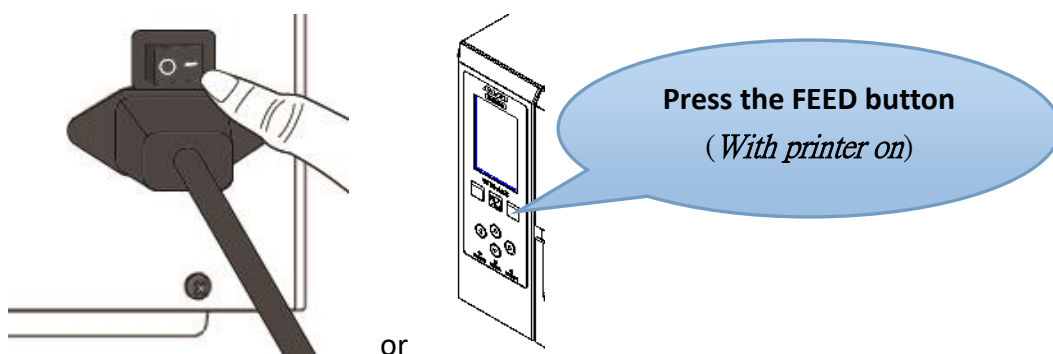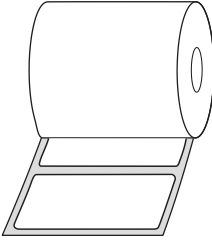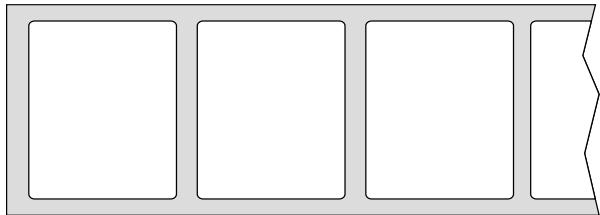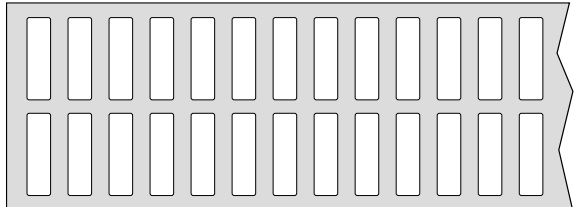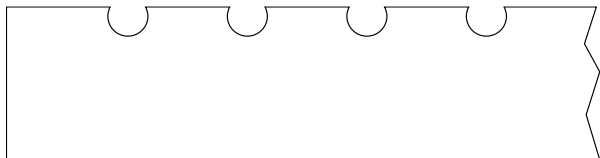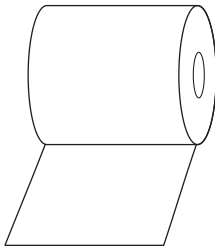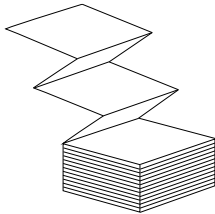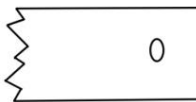
Press the FEED button
(*With printer on*)

or

Important

After the media is loaded, please perform media calibration to calibrate the label sensor before printing.

2.3.3 Media types

Your printer supports various media types, including non-continuous, continuous, and fanfold types. The following table provides details about them.

Media Type	Looks Like	Description
Non-Continuous Media		Non-continuous media is the typical medium for barcode printing. Labels and tags are made of various materials, such as paper, fabric, or cardstock, and are separated by gaps, holes, notches, or black marks. Many labels are self-adhesive with liners.

Media Type	Looks Like	Description
Continuous Media		Continuous media does not have gaps, holes, notches, or black marks. It allows you to print data anywhere on the media. A cutter may be used to split labels, but it is mostly used for direct thermal printing.
Fanfold Media		Fanfold media is in continuous form, but it can also be used as non-continuous media because folds separate its labels. Some fanfold media also have black marks or liners.
Tag Media		Tag media is usually made from heavy paper, with a center hole for the index. It does not have adhesive or a liner and is typically perforated between tags. The media may also have black marks or other separations.

2.4 Load ribbon

The following steps only apply to thermal transfer printing mode.

Direct thermal does not need a ribbon to be installed.

SATO BASIC LINE WT4-AXB Series printers apply to both inside and outside wound ribbons.

Printers can switch automatically.

Note

1. Media and ribbon types should be matched for optimal print results.

2. Always use a wider ribbon than the media to protect the print head from wear.

2.4.1 Placing ribbon roll

1. Lift the top access door to expose the media compartment.

Door
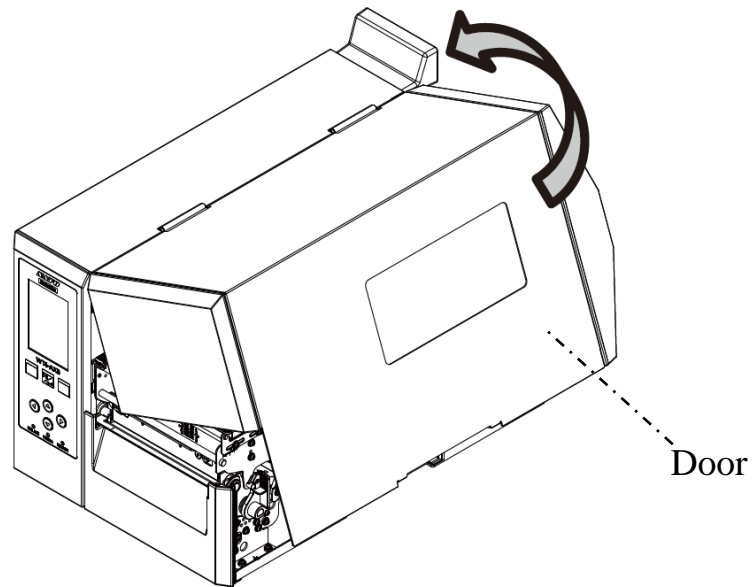
2. Push right the head latch.

Head latch
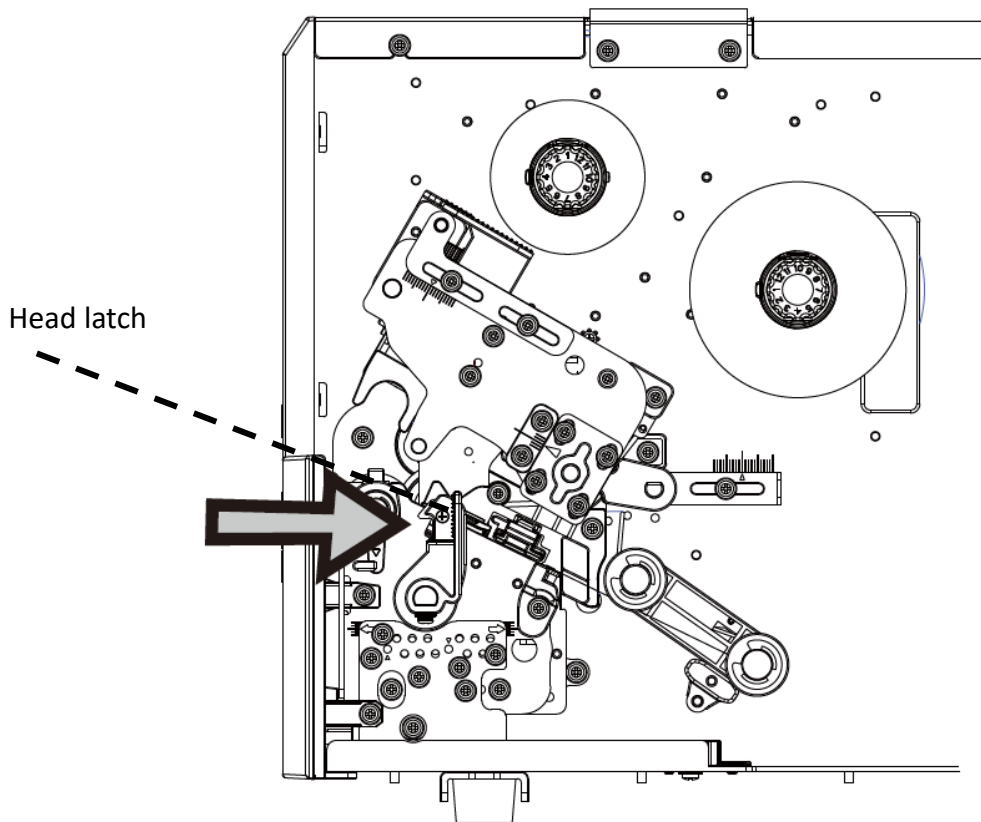
3. Unwrap the ribbon and separate the ribbon roll from the bare core. Load the ribbon roll onto the ribbon supply spindle.

Ribbon Supply Spindle
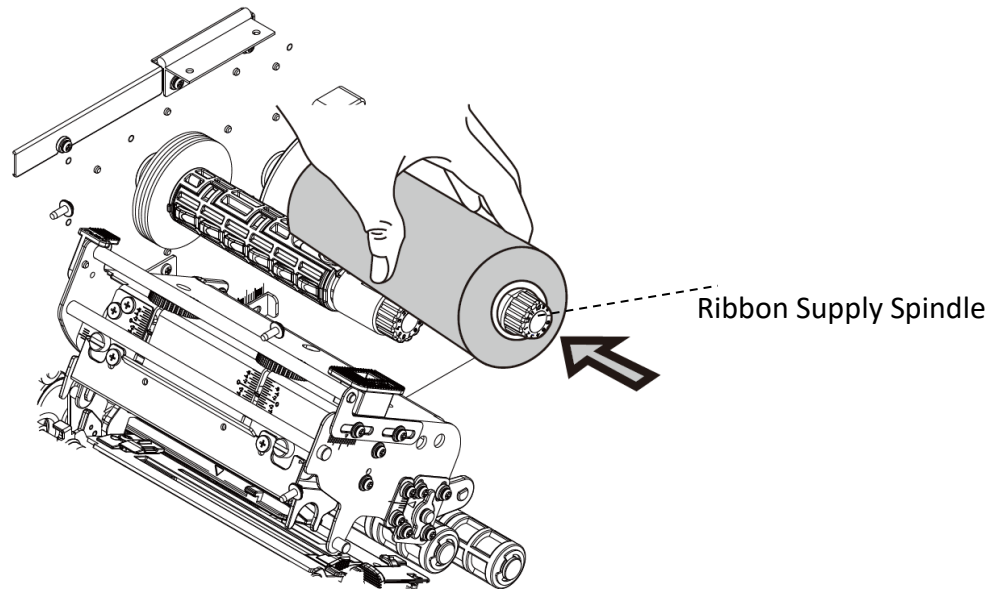
4. Thread the ribbon through the print head module. Place the edge of the ribbon on the bare core and wind a little onto the core. Make sure the coating side of the ribbon is facing down.

Bare Core

Print Head Module
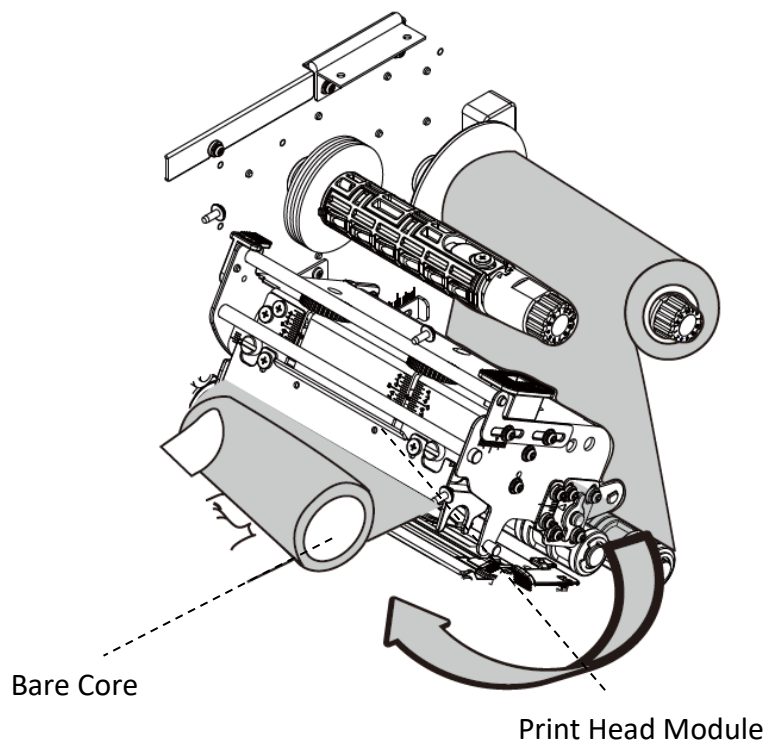
5. Slide the core onto the ribbon pick-up spindle. Rotate the spindle to ensure that the ribbon is wound tightly.

Ribbon Pick-up spindle
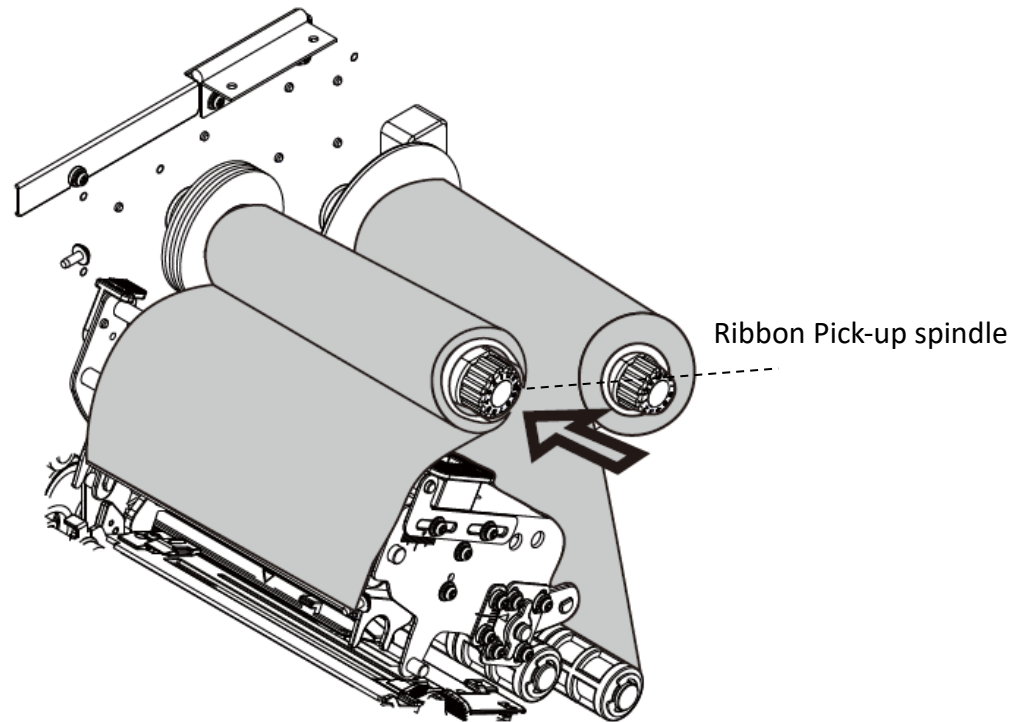
6. Close the top access door and turn on the printer.
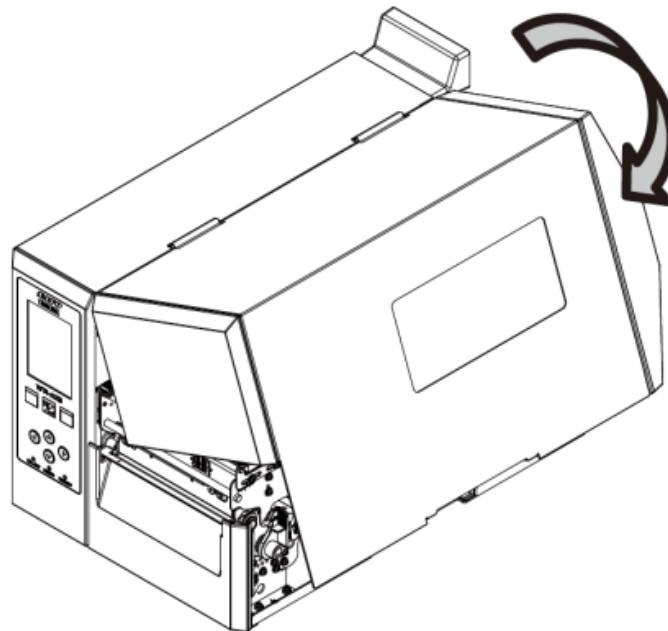
3. Printer operation

This chapter provides detailed instructions on how to operate your printer.

3.1 Front Panel

Change settings using the panel buttons:

Button	Function
Menu key	Press and hold for 2 seconds to enter menu setting mode.
Back key	Return to the top level of the setup page or exit the menu setup mode.
Enter key	Select the next level of menu items or save a parameter in the permanent FLASH memory.
Up / Down / Left / Right	The navigation key is used to change a selected item or set its value. It is active only in Menu mode.

⚠️ **Caution: Avoid changing settings while printing or sending print data.**

3.2 LCD Function Setting Procedure

The following procedure is an example of setting procedure to direct thermal printing mode:

Online (300, SZPL)

Press the **Middle** button to enter the offline mode.
Then, in the offline mode, press and hold the
Middle button to enter the menu settings.

Printing Mode
Thermal Transfer

Press the UP or DOWN button until the
LCD prompts the function setting.

Printing Mode
Direct Thermal

Press **the ENTER** button to store the setting.

Printing Mode
Direct Thermal

Press the **BACK** button to
continue the other settings.

Menu Configuration Exit?
Cancel   Exit

Online (300, SZPL)

Now printer is in
normal printing

3.3 Control / Navigation Buttons

This manual section provides information on the control and navigation buttons on the printer's control panel. The diagram on this page shows the location and function of each button.
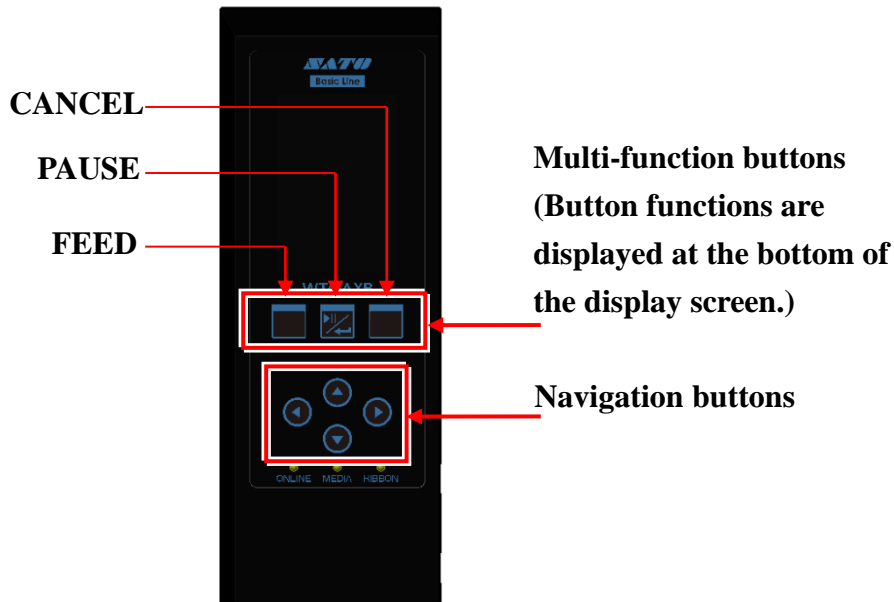
To enter the printer setup menu, press and hold the PAUSE button on the control panel for more than 2 seconds.
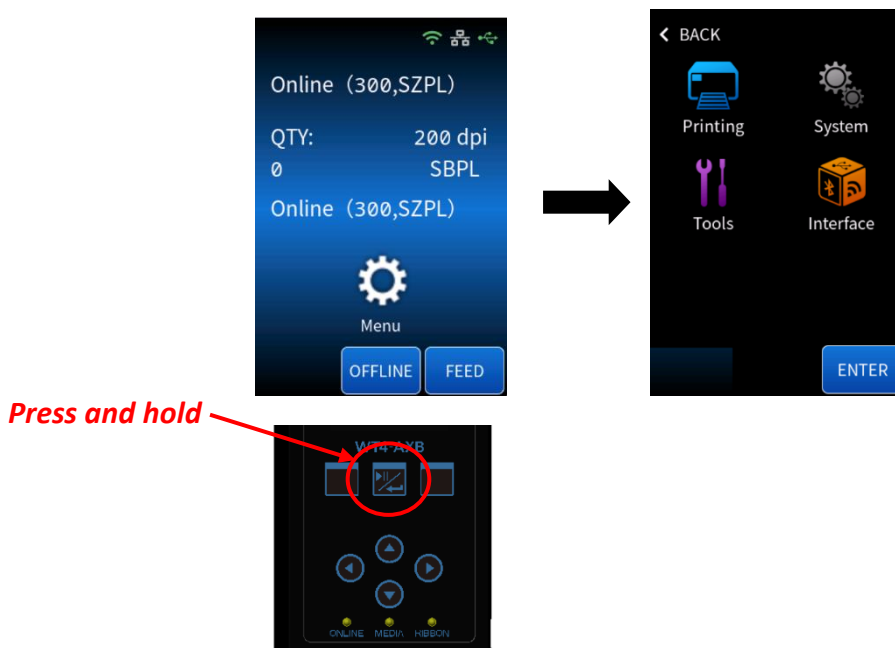
3.4 Printer Setup Menu

The printer setup menu has four main setup options: *Setting*, *System*, *Test*, and *Interface*. On the printer setup menu screen, press the navigation button on the control panel to navigate to the option to be set, which will appear in orange. After that, press the button below Enter on the screen to enter the setup sub-menu.

The following is a summary list of all setting items of each main setup option.

➢ **Settings**

Item	No.	Sub Item
Menu		
Printing		
	1	**Printing Mode**
	2	**Speed**
	3	**DARKNESS (0-30)**
	4	**Vertical Offset**
	5	**Back Feed**
	6	**Backfeed Distance**
	7	**Cutter Installed**
	8	**Cutting Mode**
	9	**Cutter/Dispenser Offset**
	10	**Dispenser Installed**

Item	No.	Sub Item
Menu		
Advanced		
	11	**Sensor Type**
	12	**Calibration Mode**
	13	**QTY Counting**
	14	**Reprint**
	15	**WIN.CON.LEN.**
	16	**Counter Reset**

➢ System

Item	No.	Sub Item
System		
	17	Languages
	18	Information
	19	MENU PASSWORD
	20	Clear Flash
	21	Setting Priority
	22	Standby
	23	Emulations
	24	Buzzer
	25	Load Defaults
	26	User Manual

➢ Tools

Item	No.	Sub Item
Test		
	27	Test Print
	28	Sensor Type
	29	Cut Action

➢ Interface

Item	No.	Sub Item
Interface		
RS-232C		
	30	**BAUD RATE**
	31	**PARITY(RS232)**
	32	**LENGTH(RS232)**

3.4.1 Printing

The following detailed settings are **Print** and **Advanced**. This section provides a comprehensive guide to configuring your printer settings. You can access and modify various settings to optimize print quality, adjust label specifications, and personalize your printing experience.

➢ **Print**

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
Printing				Enter/Right	Up/Down	Back/Left
Print				Enter/Right	Up/Down	Back/Left
	1	Printing Mode		Enter/Right	Up/Down	Back/Left
			Direct Thermal Therma. Transfer	Enter/Right	Left/Right	Back

Factory Default: Thermal Transfer

Remark: Restart the printer after changing the settings.

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
	2	Speed		Enter/Right	Up/Down	Back/Left
			6 ~ 8 ips (SATO BASIC LINE WT4-AXB-203) 2 ~ 6 ips (SATO BASIC LINE WT4-AXB-300)	Enter/Right	Left/Right	Back

Factory Default: 6 ips (SATO BASIC LINE WT4-AXB-203) / 5 ips (SATO BASIC LINE WT4-AXB-300)

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
	3	Darkness (0-30)		Enter/Right	Up/Down	Back/Left
			0 ~ 30	Enter/Right	Left/Right	Back

Factory Default: 16

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
	4	Vertical Offset		Enter/Right	Up/Down	Back/Left
			-9 ~ 9 mm	Enter/Right	Left/Right	Back

Factory Default: 0 mm

Remark: To adjust the offset of the vertical print position

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
	5	Backfeed		Enter/Right	Up/Down	Back/Left
			DISABLE / ENABLE	Enter	Enter	Back

Factory Default: ENABLE

Remark: This option is available only in the PPLA and PPLB printer languages. Once "ENABLE" is selected, the printer enters the Back Distance setting.

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
	6	Back Distance		Enter/Right	Up/Down	Back/Left
			10 ~ 40 mm	Enter/Right	Left/Right	Back

Factory Default: 22 mm

Remark: Available only when Back Feed is enabled

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
	7	Cutter Installed		Enter/Right	Up/Down	Back/Left
			NO / YES	Enter/Right	Left/Right	Back

Factory Default: NO

Remark: Restart the printer after changing the setting.

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
	8	Cutting Mode		Enter/Right	Up/Down	Back/Left
			NORMAL / CUT W/O BACK 1 / CUT W/O BACK 2	Enter/Right	Left/Right	Back
	9	Cutter/Dispenser Offset		Enter/Right	Up/Down	Back/Left
			-15 ~ 15 mm	Enter/Right	Left/Right	Back

Factory Default: 0 mm

Remark: To adjust cut and peel positions

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
	10	Dispenser Installed		Enter/Right	Up/Down	Back/Left
			NO / YES	Enter	Enter	Back

Factory Default: NO

➢ **Advanced**
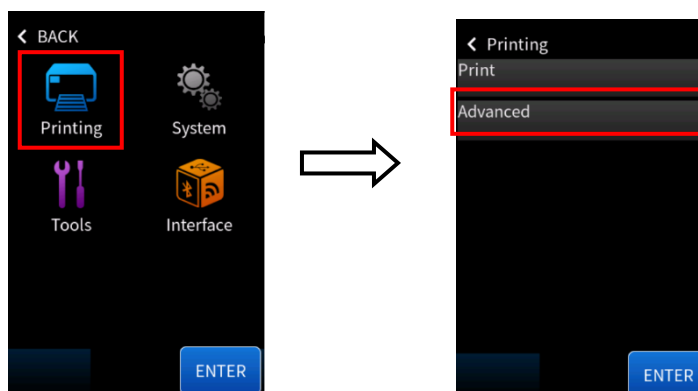
Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
Printing				Enter/Right	Up/Down	Back/Left
Advanced				Enter/Right	Up/Down	Back/Left
	11	Sensor Type		Enter/Right	Up/Down	Back/Left
			Reflective Gap	Enter/Right	Left/Right	Back

Factory Default: Gap

Remark: To select different media types, calibrate the sensor setting after changing it before printing. (Restart the printer after changing the settings.)

	12	Calibration Mode		Enter/Right	Up/Down	Back/Left
			Auto Calibration Smart Calibration Manual Calibration	Enter/Right	Left/Right	Back

Factory Default: Auto Calibration

Remark: In Auto Calibration mode, install labels, latch the print module, and press the FEED button once. The printer will feed 1-2 labels to detect the next gap / black mark before printing. Print immediately from the first label according to the label length setting in Smart Calibration mode. Carefully align the label's bottom edge at the tear-off position before printing. Restart the printer after changing the settings.

	13	QTY Counting		Enter/Right	Up/Down	Back/Left
			DOWN UP	Enter/Right	Left/Right	Back

Factory Default: DOWN

	14	Reprint		Enter/Right	Up/Down	Back/Left
			DISABLE ENABLE	Enter	Enter	Back

Factory Default: ENABLE

Remark: There will be no reprint after recovery from a media out or ribbon out error.

	15	WIN.CON.LEN.		Enter/Right	Up/Down	Back/Left
			0 ~ 254 mm	Enter/Right	Left/Right	Back

Factory Default: 0 mm

Remark: Available only in Windows with bundled printer driver and for continuous media

	16	Counter Reset		Enter/Right	Up/Down	Back/Left
			Head Counter Reset Cutter Counter Reset	Enter/Right	Left/Right	Back

Factory Default: Head Counter Reset

Remark: Select this option to reset specific counters related to printer operation.

3.4.2 System

The printer's detailed settings are **Language**, **Information**, **MENU PASSWORD**, **Clear Flash**, **Setting Priority**, **Standby**, **Emulations**, **Buzzer**, **Load Defaults**, and **User Manual**.
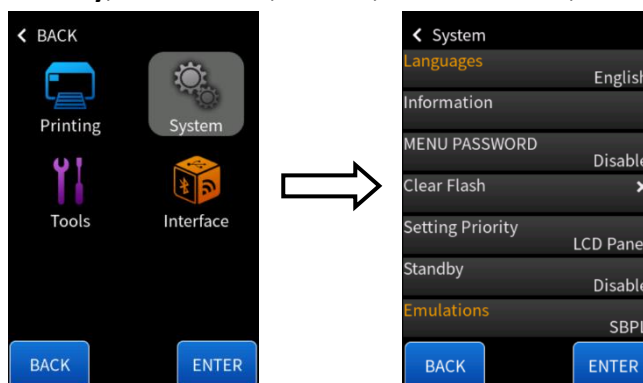
Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
System				Enter/Right	Up/Down	Back/Left
	18	Language		Enter/Right	Up/Down	Back/Left
			English 简体中文 繁體中文	Enter/Right	Left/Right	Back

Factory Default: English

Remark: Restart the printer after changing the setting.

	19	Information		Enter/Right	Up/Down	Back/Left
			Printer Information Head Counter Cutter Counter	Enter	Enter	Back

Printer Information: This displays detailed information about the printer, such as the system version, firmware version, LAN MAC address, and other essential details.

Head Counter: Tracks the usage distance of each printhead, helping the user monitor the printhead's lifespan.

Cutter Counter: This tracker tracks the number of times the cutter has been used, ensuring proper maintenance and upkeep of the device.

Remark: "Printer Information" provides detailed information about the system and firmware, which can assist with technical support and troubleshooting. "Head Counter" and "Cutter Counter" show the usage statistics for device components. It is recommended that the device be checked and maintenance performed after a certain amount of usage.

20	MENU PASSWORD		Enter/Right	Up/Down	Back/Left
		Enable / Disable (depending on the current state)	**Enter**	**N/A**	**Back**

Factory Default: Disable

Remark: Setting a menu password secures the configuration menu. If a password is enabled, it will be required to access menu settings.

21	Clear Flash		Enter/Right	Up/Down	Back/Left
		NO YES	**Enter**	**Enter**	**Back**

Factory Default: NO

Remark: When "YES" is selected, all the label forms, soft fonts, and graphics stored will be deleted. After changing the setting, restart the printer.

22	Setting Priority		Enter/Right	Up/Down	Back/Left
		Commands LCD Panel	**Enter/Right**	**Left/Right**	**Back**

Factory Default: COMMAND

Remark: Choosing the priority of LCD settings. It decides which setting method - command or LCD panel - takes precedence.

23	Standby		Enter/Right	Up/Down	Back/Left
		DISABLE 1 MINUTE 2 MINUTE 5 MINUTE 10 MINUTE 20 MINUTE 30 MINUTE	**Enter/Right**	**Left/Right**	**Back**

Factory Default: DISABLE

24	Emulations		Enter/Right	Up/Down	Back/Left
		AUTO SZPL SIPL SBPL	Enter/Right	Left/Right	Back

Factory Default: AUTO

Remark: Restart the printer after changing the setting.

25	Buzzer		Enter/Right	Up/Down	Back/Left
		DISABLE ENABLE	Enter	Enter	Back

Factory Default: ENABLE

26	Load Defaults		Enter/Right	Up/Down	Back/Left
		FACTORY	Enter/Right	Left/Right	Back

FACTORY: NO.1, NO6, NO9, NO11, NO14~15, NO17, NO.27~30 will be loaded.

27	User Manual		Enter/Right	Up/Down	Back/Left
		User Manual QSG	Enter/Right	N/A	Back

Remark: Restarting the printer after viewing or scanning the User Manual is unnecessary.

3.4.3 Tools

The following detailed printer settings are **Test Print**, **Sensor Type**, and **Cut Action**.

Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
Tools				Enter/Right	Up/Down	Back/Left
	25	Test Print		Enter		Back
	26	Sensor Type		Enter/Right	Up/Down	Back/Left
			Current Sensor Reflective Gap	Enter/Right	Left/Right	Back
	27	Cut Action		Enter/Right	Up/Down	Back/Left
			Cut Immediately Cut With Backfeed Reverse Normal Reverse Forcing	Enter/Right	Left/Right	Back

3.4.4 Interface

The printer's following detailed settings are **RS-232C**, **Ethernet**, **WLAN**, and **Bluetooth**.
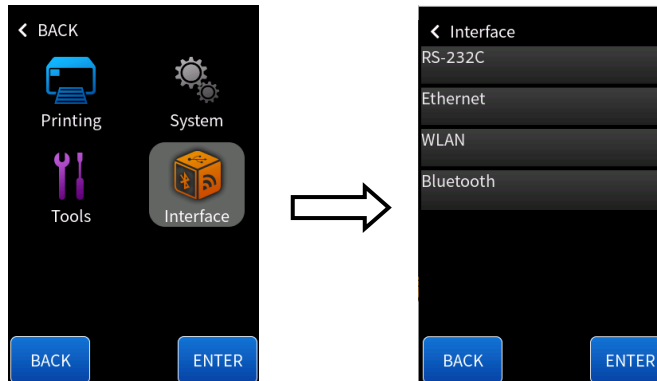
Item	No.	Sub Item	Value	Enter key	Select Key	Back Key
Interface				Enter/Right	Up/Down	Back/Left
RS-232C				Enter/Right	Up/Down	Back/Left
	28	BAUD RATE		Enter/Right	Up/Down	Back/Left
			2400 4800 9600 19200 38400 57600 115200	Enter/Right	Up/Down	Back/Left
Factory Default: 9600						
Remark: It should be set to the same value as the host. After changing the setting, restart the printer.						
	29	Parity (RS232)		Enter/Right	Up/Down	Back/Left
			None Odd Even	Enter/Right	Up/Down	Back
Factory Default: None						
Remark: It should be set to the same value as the host. After changing the setting, restart the printer.						
	30	Length (RS232)		Enter/Right	Up/Down	Back/Left
			8 data bits 7 data bits	Enter/Right	Left/Right	Back
Factory Default: 8 data bits						
Remark: It should be set to the same value as the host. After changing the setting, restart the printer.						
Ethernet				Enter/Right	Up/Down	Back/Left

			Enter/Right	Up/Down	Back/Left
31	**DHCP**		**Enter/Right**	**Up/Down**	**Back/Left**
32	**IP Address**		**Enter/Right**	**Up/Down**	**Back/Left**
33	**Subnet Mask**		**Enter/Right**	**Up/Down**	**Back/Left**
34	**Default Gateway**		**Enter/Right**	**Up/Down**	**Back/Left**

Remarks:

➢ **DHCP**

Range: Disable / Enable

If the printer is connected to a router, the DHCP server will automatically assign its IP address after powering it. If the printer is not connected to a router and DHCP is disabled, the LCD will display the IP ADDRESS, SUBNET MASK, and DEFAULT GATEWAY settings. Whenever DISABLE is changed to ENABLE, LCD will prompt "ETHERNET CARD UPDATE FINISH…". Then, please reboot the printer.

➢ **IP Address / Subnet Mask / Default Gateway**

Range: xxx.xxx.xxx.xxx (0~255)

(MAC ADDRESS RANGE: Read-only)

When DHCP is disabled, the default IP address is 192.168.1.100. If the "_" sign appears, the DHCP setting is disabled. On the contrary, it is enabled.

1. *FEED/CONFIG.:*

   Change contents. *(ex. from 000.000.000.000 to 255.255.255.255)*

2. *PAUSE/CALIBR.:*

   Shift the position of the "_" character. *(ex. from 255.255.255.255 to 255.255.255.255)*

3. *CANCEL/RESET:*

   Select the next function setting. *("_" sign must be at the third digit of each parameter, for example, xxx).*

4. *To* change IP Address or Subnet Mask, enter the Default Gateway setting and press the CANCEL button once; LCD will prompt "ETHERNET CARD UPDATE FINISH…".

   Then, reboot the printer.

WLAN			Enter/Right	Up/Down	Back/Left
35	**DHCP**		**Enter/Right**	**Up/Down**	**Back/Left**
36	**Network Type**		**Enter/Right**	**Up/Down**	**Back/Left**
		Host Name Port Number	**Enter/Right**	**Up/Down**	**Back**
37	**SSID**		**Enter/Right**	**Up/Down**	**Back/Left**
38	**Authentication**		**Enter/Right**	**Up/Down**	**Back/Left**
		Open (Default) WPA-Personal WPA2-Personal WEP Conf. WPA Conf.	**Enter/Right**	**Up/Down**	**Back**

	39	Static IPv4		Enter/Right	Up/Down	Back/Left
			IP Address			
			Subnet Mask	Enter/Right	Up/Down	Back
			Default Gateway			
	40	Information		Enter/Right	Up/Down	Back/Left
			RSSI			
			IP Address			
			Subnet Mask		Up/Down	Back
			Default Gateway			
			Channel			
			SSID			
	41	Restore Default		Enter/Right	Up/Down	Back/Left

Remark:

These settings require the Printer Tool software to be configured completely. The menu displays information such as SSID and IP Address (for WLAN), but these fields are read-only.

WLAN

- **Description: Set Wi-Fi interface parameters.**

- **Enter: Select Wi-Fi in the Interface menu, then press Enter/Right.**

- **Exit: Press Back/Left.**

- **Remarks:**

    i. **Wi-Fi functionality may be optional on some printer models.**

    ii. **ensure the printer is within a strong Wi-Fi signal range for optimal performance.**

    iii. **If you experience connectivity issues, reset the Wi-Fi module or check for firmware updates.**

    iv. **Some advanced Wi-Fi settings on a connected PC may only be configurable through the Printer Configuration Tool.**

    v. **Always use a secure Wi-Fi network and change the default password to protect your printer and data.**

    vi. **The printer supports 2.4GHz/5GHz Wi-Fi networks.**

    vii. **After changing Wi-Fi settings, the printer may need to restart to apply the new configuration.**

- **DHCP - Options: Disable, Enable - Description: Enable or disable DHCP.**
  (When enabled, the printer will automatically obtain an IP address from the network. When disabled, you must manually set the IP address, Subnet Mask, and Gateway.)

- **IP Address - Format: xxx.xxx.xxx.xxx - Description: Set static IP address (when DHCP is disabled). (Ensure your network's IP address is unique to avoid conflicts.)**

- **Subnet Mask - Format: xxx.xxx.xxx.xxx - Description: Set subnet mask (when DHCP is disabled). (Usually set to 255.255.255.0 for most small networks.)**

> **Gateway - Format: xxx.xxx.xxx.xxx - Description: Set default gateway (when DHCP is disabled).**
>
> **(This is typically the IP address of your router.)**

> **SSID - Description: Set or display the wireless network name.**
>
> **(Case-sensitive. Make sure to enter the exact SSID of your Wi-Fi network.)**

> **Security - Options: Open, WEP, WPA, WPA2 - Description: Set wireless network security type.**
>
> **WPA2 is recommended for best security. Avoid using Open or WEP as they are less secure.**

Bluetooth			Enter/Right	Up/Down	Back/Left
42	Device Name		Enter/Right	Up/Down	Back/Left
43	BD Address			Up/Down	Back/Left

Remark: The Bluetooth feature is optional.

3.5 Printing Media Calibration & Configuration

Each media roll has its type of label separator, such as gaps, holes, notches, or black marks. The media sensor must detect these separators to ensure that labels are printed in the correct position. SATO BASIC LINE WT4-AXB printers offer both transmissive and reflective sensor calibration for media detection.

Before starting calibration, ensure that the media and ribbon (if using thermal transfer printing) are loaded correctly. The label sensor must be appropriately positioned to detect the gaps/notches/holes on the labels. After loading the media, perform media sensor calibration.

Steps:

1. Turn off the printer

2. Press and hold the **Middle** button, and then turn on the printer.

3. Release the Middle button When "Calibrating..." is displayed on the LCD and both the ONLINE and MEDIA indicators are blinking.

4. The printer will feed labels to calibrate the sensor.

5. Calibration is complete When "Online" is displayed on the LMiddleCD, and the ONLINE and MEDIA indicators are lit but no longer blinking.

3.6 Printing a Configuration Report

Perform a self-test and print a configuration report to check the printer's print quality and internal settings. Follow the steps below:

1. Turn off the printer.

2. Load media and ribbon.

3. Press and hold the **Left** button while turning on the power.

4. Release the Left button When "SELF-TEST …" is displayed on the LCD.

5. The printer will print a configuration report, as shown in the example on the next page. All characters will be printed in 2 columns: the right shows characters received from your system, and the left shows the corresponding hexadecimal values of the characters. It allows users or engineers to verify and debug the program.

After printing the self-test page, you can view the printer's configuration settings. The self-test page provides valuable information about the printer's current setup, allowing you to verify and ensure that the printer is functioning correctly and set up to meet your specific needs. The printed settings typically include details as follows:

The figure below shows the configuration label.

■ SBPL

```
LABEL PRINTER WITH FIRMWARE
WT4-AXB TT203-V72.00.00.00 20241022 SBPL
STANDARD RAM : 128M BYTES
AVAILABLE RAM : 32348K BYTES
FLASH TYPE : ON BOARD 128M BYTES
AVAILABLE FLASH : 59894K BYTES
NO. OF DL SOFT FONTS(FLASH) :  0
NO. OF DL SOFT FONTS(RAM)   :  0
NO. OF DL SOFT FONTS(HOST)  :  0
H. POSITION ADJUST.: 0000
GAP SENSOR
REF: 01E4 GAP: 0093
MAX LABEL HEIGHT: 100 INCHES
PRINT WIDTH: 812 DOTS
LAB LEN(TOP TO TOP): 156mm
SPEED: 6 IPS
DARKNESS: 16
THERMAL TRANSFER
PRINT DISTANCE: 363M
CUT COUNT:3052
RS232: 115200, 8, N, 1P, N
MEDIA : NON-CONTINUOUS
PRINT LENGTH METHOD: MANUAL PRINT
REPRINT AFTER ERROR : DISABLED
BACKFEED ENABLED
CUTTER DISABLED
PEELER DISABLED
CUTTER/PEELER OFFSET: 0 <+-0.01mm>
IP ADDRESS: 0.0.0.0
SUBNET MASK: 0.0.0.0
GATEWAY: 0.0.0.0
MAC ADDRESS: 12-34-56-78-90-00
DHCP: ENABLED
DHCP CLIENT ID: FFFFFFFFFFFFFFFF
               FFFFFFFFFFFFFFFF
DHCP HOST NAME:
SNMP: ENABLED
SOCKET COMM.: ENABLED
SOCKET PORT: 9100
IPV6 MODE: MANUAL
IPV6 TYPE: NONE
IPV6 ADDRESS: 0000:0000:0000:0000:
             0000:0000:0000:0000
LINK LOCAL  : 0000:0000:0000:0000:
             0000:0000:0000:0000
PRODUCT SN: 00000000001
USB SN: 000000000001
ot(0,0)<0.1dot,0.01mm>
rm(0,0)<1+ 0-,0.01mm>
sm(0,0)<1+ 0-,0.01mm>
rv(219,175,43)<0.01v><F>
sv(220,95,125)<0.01v><P>
bv(329,5,323)<0.01v><P>
rso(0)<0.01mm>
sso(0)<0.01mm>
drso(0)<0.01mm>
dsso(0)<0.01mm>
urso(0)<0.01mm>
usso(0)<0.01mm>
ragc(207)<0.01v><P> lv(4)
sagc(117)<0.01v><P> lv(3)
```

1. **LABEL PRINTER WITH FIRMWARE**

   The model name of the printer and the firmware version installed.

2. **STANDARD RAM**

   The total amount of SDRAM (Synchronous Dynamic Random-Access Memory) available in the printer.

3. **AVAILABLE RAM:**

   The amount of RAM currently available for use.

4. **FLASH TYPE**

   The type and size of flash memory installed in the printer.

5. **AVAILABLE FLASH:**

   The amount of flash memory currently available for use.

6. **NO. OF DL SOFT FONTS (FLASH):**

   The number of downloaded soft fonts stored in the flash memory.

7. **NO. OF DL SOFT FONTS (RAM)**

   The number of downloaded soft fonts stored in RAM.

8. **NO. OF DL SOFT FONTS (HOST)**

   The number of downloaded soft fonts stored in the USB host.

9. **H. POSITION ADJUST.**

   The horizontal print position adjustment value.

10. **GAP SENSOR**

    Indicates the type of media sensor being used: **GAP:** Transmissive sensor.

11. **REF:**

    The sensor reading value when using the reflective sensor. This is not applicable in this case as the printer is using a GAP sensor.

12. **GAP:**

The distance between the sensor and the media when using the transmissive

sensor (GAP).

13. **MAX LABEL HEIGHT:**

The maximum printable label height.

14. **PRINT WIDTH:**

The maximum print width in dots.

15. **LAB LEN (TOP TO TOP):**

The length between the top edges of two consecutive labels for non-continuous

media.

16. **SPEED:**

The printing speed in inches per second (ips).

17. **DARKNESS:**

The current print darkness setting.

18. **Thermal Transfer**

Indicates the printing method: **THERMAL TRANSFER:** Uses ribbon.

19. **PRINT DISTANCE:**

The total print length in meters.

20. **CUT COUNT:**

The total number of cuts performed by the cutter.

21. **RS232:**

The RS-232C communication settings (baud rate, data bits, parity, stop bits, flow

control).

22. **MEDIA:**

The type of media loaded in the printer (continuous or non-continuous).

23. **PRINT LENGTH METHOD:**

Indicates how the print length is determined. In this case, it's set to **MANUAL PRINT**.

24. **REPRINT AFTER ERROR**

Indicates whether the reprint after error function is enabled or disabled. Currently, it is not enabled.

25. **BACKFEED ENABLED**

Indicates that the backfeed function is enabled.

26. **CUTTER DISABLED**

Indicates that the cutter is disabled.

27. **PEELER DISABLED**

Indicates that the peeler is disabled.

28. **CUTTER/PEELER OFFSET:**

The offset value for the cutter or peeler position.

29. **IP ADDRESS:**

The IP address assigned to the printer.

30. **SUBNET MASK:**

The subnet mask used by the printer.

31. **GATEWAY:**

The gateway address used by the printer.

32. **MAC ADDRESS:**

The MAC address of the printer's network interface.

33. **DHCP:**

Indicates whether DHCP (Dynamic Host Configuration Protocol) is enabled or disabled. If enabled, the printer automatically obtains an IP address from a DHCP server.

34. **DHCP CLIENT ID:**

The DHCP client identifier used by the printer.

35. **DHCP HOST NAME:**

The host name used for DHCP.

36. **SNMP:**

Indicates whether SNMP (Simple Network Management Protocol) is enabled or disabled.

37. **SOCKET COMM:**

Indicates whether socket communication is enabled or disabled.

38. **SOCKET PORT:**

The port number used for socket communication.

39. **IPV6 MODE:**

The IPv6 address assignment mode.

40. **IPV6 TYPE:**

The type of IPv6 address.

41. **IPV6 ADDRESS:**

The IPv6 address assigned to the printer.

42. **LINK LOCAL**

The link-local IPv6 address of the printer.

43. **PRODUCT SN:**

The serial number of the printer.

44. **USB SN:**

The serial number of the USB host interface.

45. **rt/rm/sm/rv/sv/bv/rso/sso/drso/dsso/urso/usso/sagc:**

   Developer debug information related to sensor calibration and offsets.

46. **lv:**

   Developer debug information.

   If your printer has a Wireless combo module, your SBPL configuration label will
   contain the following entries:

```
COMBO VERSION: V7.2.4
BT DEVICE: BT PRINTER
BT MAC: DC-0D-30-68-39-76
WLAN IP ADDRESS: 0.0.0.0
WLAN SUBNET MASK: 0.0.0.0
WLAN GATEWAY: 0.0.0.0
WLAN MAC ADDRESS: DC-0D-30-88-39-76
WLAN DHCP: ON
WLAN DHCP HOSTNAME: dc-0d-30-88-39-7
                  : 6
WLAN SOCKET  PORT: 9100
WLAN SSID: SATO_PRINTER
WLAN MODE: Infrastructure
WLAN COUNTRY CODE: WW
WLAN CHANNEL: AUTO
WLAN NETWORK AUTHENTICATION: WPA2-Personal
WLAN WPA PRE-SHARED KEY: ****
```

1. **COMBO VERSION**

   The firmware version of the combined WLAN/Bluetooth module.

2. **BT DEVICE**

   The type of Bluetooth device. In this case, it is a Bluetooth printer.

3. **BT MAC**

   The MAC address of the Bluetooth interface. This is a unique identifier for the
   printer's Bluetooth communication.

4. **WLAN IP ADDRESS**

   The IP address assigned to the printer's Wi-Fi interface.

5. **WLAN SUBNET MASK**

   The subnet mask used by the printer's Wi-Fi interface.

6. **WLAN GATEWAY**

   The gateway address used by the printer's Wi-Fi interface.

7. **WLAN MAC ADDRESS**

The MAC address of the printer's Wi-Fi interface. This is a unique identifier for the printer's Wi-Fi communication.

8. **WLAN DHCP**

Indicates whether DHCP (Dynamic Host Configuration Protocol) is enabled for the Wi-Fi interface. If enabled, the printer automatically obtains an IP address from a DHCP server.

9. **WLAN DHCP HOSTNAME**

The hostname used for DHCP on the Wi-Fi interface.

10. **WLAN SOCKET PORT**

The port number used for socket communication over Wi-Fi.

11. **WLAN SSID**

The SSID (Service Set Identifier) of the Wi-Fi network the printer is connected to. This is the name of the Wi-Fi network.

12. **WLAN MODE**

The operating mode of the Wi-Fi interface. In this case, it is "Infrastructure" mode, which means the printer is connected to a Wi-Fi access point.

13. **WLAN COUNTRY CODE**

The country code setting for Wi-Fi regulations.

14. **WLAN CHANNEL**

The Wi-Fi channel used by the printer.

15. **WLAN NETWORK AUTHENTICATION**

The authentication method used for connecting to the Wi-Fi network. In this case, it is WPA2-Personal, which is a secure encryption method.

16. **WLAN WPA PRE-SHARED KEY**

Indicates whether a WPA pre-shared key (password) is used for Wi-Fi security. The asterisks represent the actual password, which is masked for security reasons.

The figure below shows the configuration label.

■   SZPL

```
LABEL PRINTER WITH FIRMWARE
WT4-AXB TT203-V72.00.00.00 20241022 SZPL
STANDARD RAM : 128M BYTES
AVAILABLE RAM : 32348K BYTES
FLASH TYPE : ON BOARD 128M BYTES
AVAILABLE FLASH : 59894K BYTES
NO. OF DL SOFT FONTS(FLASH) :  0
NO. OF DL SOFT FONTS(RAM)   :  0
NO. OF DL SOFT FONTS(HOST)  :  0
H. POSITION ADJUST.: 0000
GAP SENSOR
REF: 01E4 GAP: 0093
MAX LABEL HEIGHT: 100 INCHES
PRINT WIDTH: 812 DOTS
LAB LEN(TOP TO TOP): 156mm
SPEED: 6 IPS
ABS. DARKNESS: 16
TRIM. DARKNESS: 0
THERMAL TRANSFER
PRINT DISTANCE: 363M
CUT COUNT:3052
RS232: 115200, 8, N, 1P, N
CARET CONTROL CHAR    : <^>    5EH
DELIMITER CONTROL CHAR : <,>    2CH
TILDE CONTROL CHAR    : <~>    7EH
CODE PAGE : USA1
MEDIA : NON-CONTINUOUS
PRINT LENGTH METHOD: MANUAL PRINT
REPRINT AFTER ERROR : DISABLED
BACKFEED ENABLED
CUTTER DISABLED
PEELER DISABLED
CUTTER/PEELER OFFSET: 0 <+-0.01mm>
IP ADDRESS: 0.0.0.0
SUBNET MASK: 0.0.0.0
GATEWAY: 0.0.0.0
MAC ADDRESS: 12-34-56-78-90-00
DHCP: ENABLED
DHCP CLIENT ID: FFFFFFFFFFFFFFFF
                FFFFFFFFFFFFFFFF
DHCP HOST NAME:
SNMP: ENABLED
SOCKET COMM.: ENABLED
SOCKET PORT: 9100
IPV6 MODE: MANUAL
IPV6 TYPE: NONE
IPV6 ADDRESS: 0000:0000:0000:0000:
              0000:0000:0000:0000
LINK LOCAL  : 0000:0000:0000:0000:
              0000:0000:0000:0000
PRODUCT SN: 00000000001
USB SN: 000000000001
ot(0,0)<0.1dot,0.01mm>
rm(0,0)<1+ 0-,0.01mm>
sm(0,0)<1+ 0-,0.01mm>
rv(219,175,43)<0.01v><F>
sv(220,95,125)<0.01v><P>
bv(329,5,323)<0.01v><P>
rso(0)<0.01mm>
sso(0)<0.01mm>
drso(0)<0.01mm>
dsso(0)<0.01mm>
urso(0)<0.01mm>
usso(0)<0.01mm>
rsgc(207)<0.01v><P> lv(4)
ssgc(117)<0.01v><P> lv(3)
```

THIS IS FONT A. 0123ABCabc
THIS IS FONT B. 0123ABCABC
THIS IS FONT C. 0123ABCabc
THIS IS FONT D. 0123ABCabc
THIS IS FONT E. 0123ABCabc
THIS IS FONT F. 0123ABCabc
THIS IS FONT G.
THIS IS FONT H. 0123ABC
This Is Font CG Triumv Bd Condensed.

1. **LABEL PRINTER WITH FIRMWARE**

   The model name of the printer and the firmware version installed.

2. **STANDARD RAM**

   The total amount of SDRAM (Synchronous Dynamic Random-Access Memory) available in the printer.

3. **AVAILABLE RAM:**

   The amount of RAM currently available for use.

4. **FLASH TYPE**

   The type and size of flash memory installed in the printer.

5. **AVAILABLE FLASH:**

   The amount of flash memory currently available for use.

6. **NO. OF DL SOFT FONTS (FLASH):**

   The number of downloaded soft fonts stored in the flash memory.

7. **NO. OF DL SOFT FONTS (RAM)**

   The number of downloaded soft fonts stored in RAM.

8. **NO. OF DL SOFT FONTS (HOST)**

   The number of downloaded soft fonts stored in the USB host.

9. **H. POSITION ADJUST.**

   The horizontal print position adjustment value.

10. **GAP SENSOR**

    Indicates the type of media sensor being used: **GAP:** Transmissive sensor.

11. **REF:**

    The sensor reading value when using a reflective sensor. This is not applicable in this case as the printer is using a GAP sensor.

12. **GAP:**

The distance between the sensor and the media when using the transmissive sensor (GAP).

13. **MAX LABEL HEIGHT:**

The maximum printable label height.

14. **PRINT WIDTH:**

The maximum print width in dots.

15. **LAB LEN (TOP TO TOP):**

The length between the top edges of two consecutive labels for non-continuous media. You can also use the SZPL command ^LL to define it.

16. **SPEED:**

The printing speed in inches per second (ips).

17. **ABS. DARKNESS:**

The current print darkness setting. You can use the SZPL command ~SD to define it.

18. **TRIM. DARKNESS:**

The adjustment of the current darkness. You can use the SZPL command ^MD to define it.

19. **THERMAL TRANSFER**

Indicates the printing method: **THERMAL TRANSFER:** Uses ribbon.

20. **PRINT DISTANCE:**

The total print length in meters.

21. **CUT COUNT:**

The total number of cuts performed by the cutter.

22. **RS232:**

The RS-232C communication settings (baud rate, data bits, parity, stop bits, flow control).

23. **CARET CONTROL CHAR**

The control character used for the caret symbol (^).

24. **DELIMITER CONTROL CHAR**

The control character used for the delimiter symbol (,).

25. **TILDE CONTROL CHAR**

The control character used for the tilde symbol (~).

26. **CODE PAGE**

The character set table used by the printer.

27. **MEDIA:**

The type of media loaded in the printer (continuous or non-continuous).

28. **PRINT LENGTH METHOD:**

Indicates how the print length is determined. In this case, it's set to **MANUAL PRINT**.

29. **REPRINT AFTER ERROR**

Indicates whether the reprint after error function is enabled or disabled.

30. **BACKFEED ENABLED**

Indicates that the backfeed function is enabled.

31. **CUTTER DISABLED**

Indicates that the cutter is disabled.

32. **PEELER DISABLED**

Indicates that the peeler is disabled.

33. **CUTTER/PEELER OFFSET:**

The offset value for the cutter or peeler position.

34. **IP ADDRESS:**

The IP address assigned to the printer.

35. **SUBNET MASK:**

The subnet mask used by the printer.

36. **GATEWAY:**

The gateway address used by the printer.

37. **MAC ADDRESS:**

The MAC address of the printer's network interface.

38. **DHCP:**

Indicates whether DHCP (Dynamic Host Configuration Protocol) is enabled or disabled. If enabled, the printer automatically obtains an IP address from a DHCP server.

39. **DHCP CLIENT ID:**

The DHCP client identifier used by the printer.

40. **DHCP HOST NAME:**

The host name used for DHCP.

41. **SNMP:**

Indicates whether SNMP (Simple Network Management Protocol) is enabled or disabled.

42. **SOCKET COMM:**

Indicates whether socket communication is enabled or disabled.

43. **SOCKET PORT:**

The port number used for socket communication.

44. **IPV6 MODE:**

The IPv6 address assignment mode.

45. **IPV6 TYPE:**

The type of IPv6 address.

46. **IPV6 ADDRESS:**

The IPv6 address assigned to the printer.

47. **LINK LOCAL**

The link-local IPv6 address of the printer.

48. **PRODUCT SN:**

The serial number of the printer.

49. **USB SN:**

The serial number of the USB host interface.

50. **rt/rm/sm/rv/sv/bv/rso/sso/drso/dsso/urso/usso/ragc:**

Developer debug information related to sensor calibration and offsets.

51. **lv:**

Developer debug information.

52-57. **Font Image**

Sample font images printed for reference and checking label fonts.

If your printer has a wireless combo module, your SZPL configuration label will contain the following entries:

```
COMBO VERSION: V7.2.4
BT DEVICE: BT PRINTER
BT MAC: DC-0D-30-68-39-76
WLAN IP ADDRESS: 0.0.0.0
WLAN SUBNET MASK: 0.0.0.0
WLAN GATEWAY: 0.0.0.0
WLAN MAC ADDRESS: DC-0D-30-88-39-76
WLAN DHCP: ON
WLAN DHCP HOSTNAME: dc-0d-30-88-39-7
                  : 6
WLAN SOCKET  PORT: 9100
WLAN SSID: SATO_PRINTER
WLAN MODE: Infrastructure
WLAN COUNTRY CODE: WW
WLAN CHANNEL: AUTO
WLAN NETWORK AUTHENTICATION: WPA2-Personal
WLAN WPA PRE-SHARED KEY: ****
```

1. **COMBO VERSION**

   The firmware version of the combined WLAN/Bluetooth module.

2. **BT DEVICE**

   The type of Bluetooth device. In this case, it is a Bluetooth printer.

3. **BT MAC**

   The MAC address of the Bluetooth interface. This is a unique identifier for the printer's Bluetooth communication.

4. **WLAN IP ADDRESS**

   The IP address assigned to the printer's Wi-Fi interface.

5. **WLAN SUBNET MASK**

   The subnet mask used by the printer's Wi-Fi interface.

6. **WLAN GATEWAY**

   The gateway address used by the printer's Wi-Fi interface.

7. **WLAN MAC ADDRESS**

   The MAC address of the printer's Wi-Fi interface. This is a unique identifier for the printer's Wi-Fi communication.

8. **WLAN DHCP**

   Indicates whether DHCP (Dynamic Host Configuration Protocol) is enabled for the Wi-Fi interface. If enabled, the printer automatically obtains an IP address from a DHCP server.

9. **WLAN DHCP HOSTNAME**

   The hostname used for DHCP on the Wi-Fi interface.

10. **WLAN SOCKET PORT**

    The port number used for socket communication over Wi-Fi.

11. **WLAN SSID**

    The SSID (Service Set Identifier) of the Wi-Fi network the printer is connected to. This is the name of the Wi-Fi network.

12. **WLAN MODE**

    The operating mode of the Wi-Fi interface. In this case, it is "Infrastructure" mode, which means the printer is connected to a Wi-Fi access point.

13. **WLAN COUNTRY CODE**

    The country code setting for Wi-Fi regulations.

14. **WLAN CHANNEL**

    The Wi-Fi channel used by the printer.

15. **WLAN NETWORK AUTHENTICATION**

    The authentication method used for connecting to the Wi-Fi network. In this case, it is WPA2-Personal, which is a secure encryption method.

16. **WLAN WPA PRE-SHARED KEY**

    Indicates whether a WPA pre-shared key (password) is used for Wi-Fi security. The asterisks represent the actual password, which is masked for security reasons.

The figure below shows the configuration label.

- SIPL

1. **LABEL PRINTER WITH FIRMWARE**

   The model name of the printer and the firmware version installed.

2. **STANDARD RAM**

   The total amount of SDRAM (Synchronous Dynamic Random-Access Memory)
   available in the printer.

3. **AVAILABLE RAM:**

   The amount of RAM currently available for use.

4. **FLASH TYPE**

   The type and size of flash memory installed in the printer.

5. **AVAILABLE FLASH:**

   The amount of flash memory currently available for use.

6. **NO. OF DL SOFT FONTS (FLASH):**

   The number of downloaded soft fonts stored in the flash memory.

7. **NO. OF DL SOFT FONTS (RAM)**

   The number of downloaded soft fonts stored in RAM.

8. **NO. OF DL SOFT FONTS (HOST)**

   The number of downloaded soft fonts stored in the USB host.

9. **H. POSITION ADJUST.**

   The horizontal print position adjustment value.

10. **GAP SENSOR**

    Indicates the type of media sensor being used: **GAP:** Transmissive sensor.

11. **REF:**

    The sensor reading value when using the reflective sensor. This is not applicable in
    this case as the printer is using a GAP sensor.

12. **GAP:**

The distance between the sensor and the media when using the transmissive sensor (GAP).

13. **MAX LABEL HEIGHT:**

The maximum printable label height.

14. **PRINT WIDTH:**

The maximum print width in dots.

15. **LAB LEN (TOP TO TOP):**

The length between the top edges of two consecutive labels for non-continuous media.

16. **SPEED:**

The printing speed in inches per second (ips).

17. **ABS. DARKNESS:**

The current print darkness setting.

18. **TRIM. DARKNESS:**

The adjustment value applied to the current darkness setting.

19. **Thermal Transfer**

Indicates the printing method: **THERMAL TRANSFER:** Uses ribbon.

20. **PRINT DISTANCE:**

The total print length in meters.

21. **CUT COUNT:**

The total number of cuts performed by the cutter.

22. **RS232:**

The RS-232C communication settings (baud rate, data bits, parity, stop bits, flow control).

23. **MEDIA:**

The type of media loaded in the printer (continuous or non-continuous).

24. **PRINT LENGTH METHOD:**

Indicates how the print length is determined. In this case, it's set to **MANUAL PRINT**.

25. **REPRINT AFTER ERROR**

Indicates whether the reprint after error function is enabled or disabled.

26. **BACKFEED ENABLED**

Indicates that the backfeed function is enabled.

27. **CUTTER DISABLED**

Indicates that the cutter is disabled.

28. **PEELER DISABLED**

Indicates that the peeler is disabled.

29. **CUTTER/PEELER OFFSET:**

The offset value for the cutter or peeler position.

30. **IP ADDRESS:**

The IP address assigned to the printer.

31. **SUBNET MASK:**

The subnet mask used by the printer.

32. **GATEWAY:**

The gateway address used by the printer.

33. **MAC ADDRESS:**

The MAC address of the printer's network interface.

34. **DHCP:**

Indicates whether DHCP (Dynamic Host Configuration Protocol) is enabled or disabled. If enabled, the printer automatically obtains an IP address from a DHCP server.

35. **DHCP CLIENT ID:**

The DHCP client identifier used by the printer.

36. **DHCP HOST NAME:**

The host name used for DHCP.

37. **SNMP:**

Indicates whether SNMP (Simple Network Management Protocol) is enabled or disabled.

38. **SOCKET COMM:**

Indicates whether socket communication is enabled or disabled.

39. **SOCKET PORT:**

The port number used for socket communication.

40. **IPV6 MODE:**

The IPv6 address assignment mode.

41. **IPV6 TYPE:**

The type of IPv6 address.

42. **IPV6 ADDRESS:**

The IPv6 address assigned to the printer.

43. **LINK LOCAL**

The link-local IPv6 address of the printer.

44. **PRODUCT SN:**

The serial number of the printer.

45. **USB SN:**

The serial number of the USB host interface.

46. **rt/rm/sm/rv/sv/bv/rso/sso/drso/dsso/urso/usso/ragc:**

Developer debug information related to sensor calibration and offsets.

47. **lv:**

Developer debug information.

3.7 Resetting to Factory Defaults

Resetting your printer can restore it to its original factory settings, which can help resolve problems caused by changed settings.

Caution: Resetting the printer will restore all settings to their defaults. Print a configuration label before resetting the printer if you want to keep a record of your current settings. All settings stored in the printer's flash memory are retained even after the printer is turned off.

To reset the printer to factory default settings:

1. Turn off the printer.

2. Press and hold the **Right** button, and then turn on the printer.

3. Release the Right button When "RESET" is displayed on the LCD and the ONLINE indicator blinks.

4. The printer will reset. The reset is complete when "Online" is displayed on the LCD, and the ONLINE indicator is lit but no longer blinking.

5. The following will now be reset to default values:

    *   Label parameters

    *   Heat (Darkness)

    *   Speed

    *   Others for specific emulation

> **Note:**
>
> Print length meter which indicates label length already printed cannot be reset.

3.8 Media sensing

The printer offers two types of media sensors: transmissive and reflective. Both sensor types detect specific media types and are installed together as a movable module.

3.8.1 Transmissive sensor

The transmissive sensor is used to detect gaps across the entire width of the label.
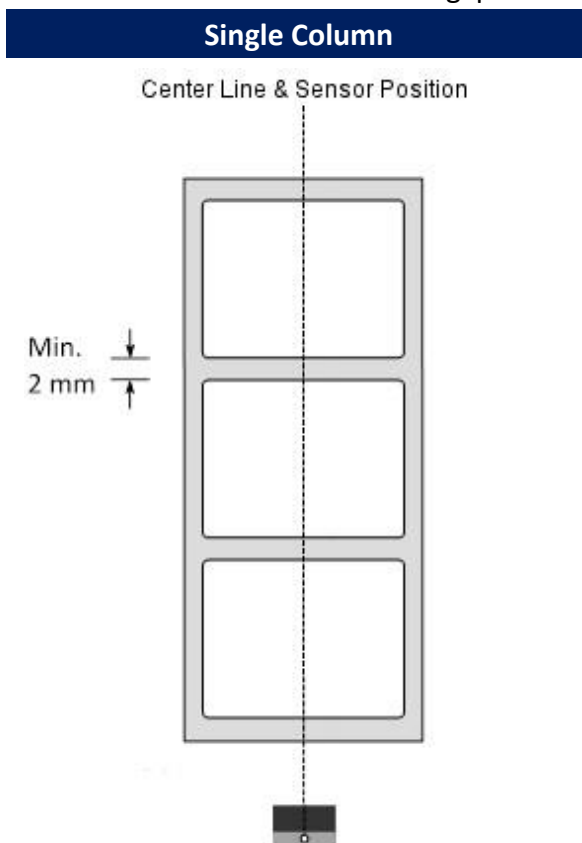
3.8.2 Reflective sensor

The reflective sensor detects gaps, notches, and black marks.

Multi Columns	Notch

Sensor Position

Min. 2 mm
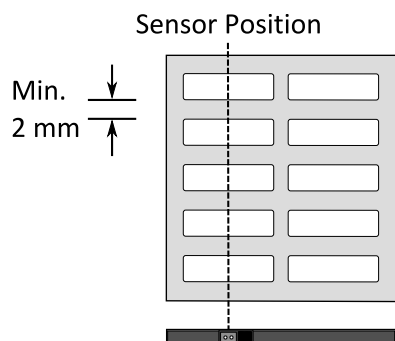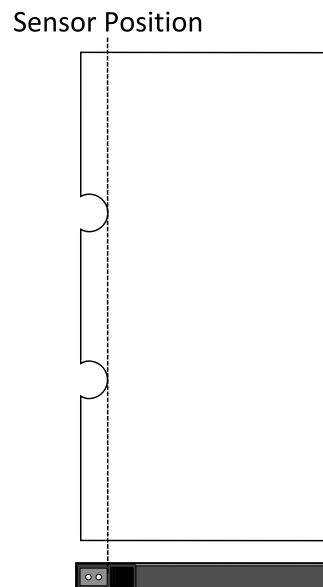
Sensor Position

Black Mark

Flip the media so the black-mark side faces down to align with the sensor.

Media Sensor Holder   Media Sensor Position Mark

Front View

Min. 2 mm
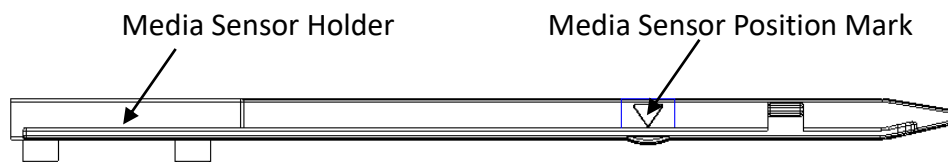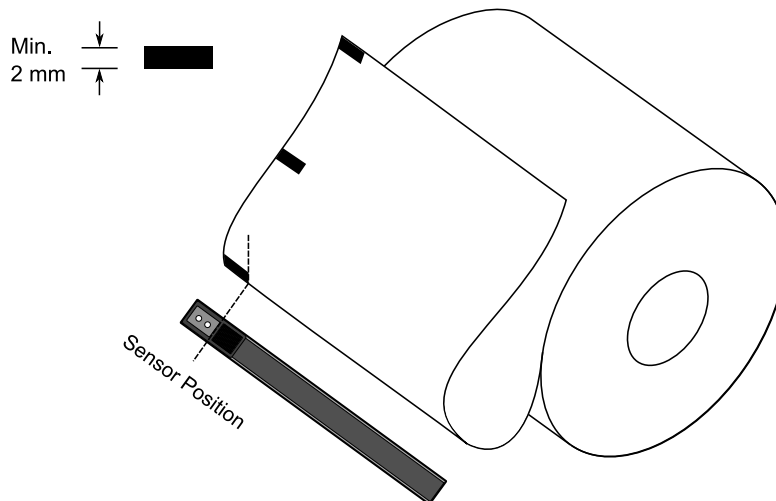
Sensor Position

3.8.3 Adjust Position of Label Sensor

The label sensor detects gaps, notches, or holes in labels to help the printer achieve accurate print positions and label length. The sensor can be positioned wherever the media is located for labels with gaps. If labels with notches or holes are in use, pull in or out the Paper Sensor Position Lever to horizontally adjust the position of the label sensor.
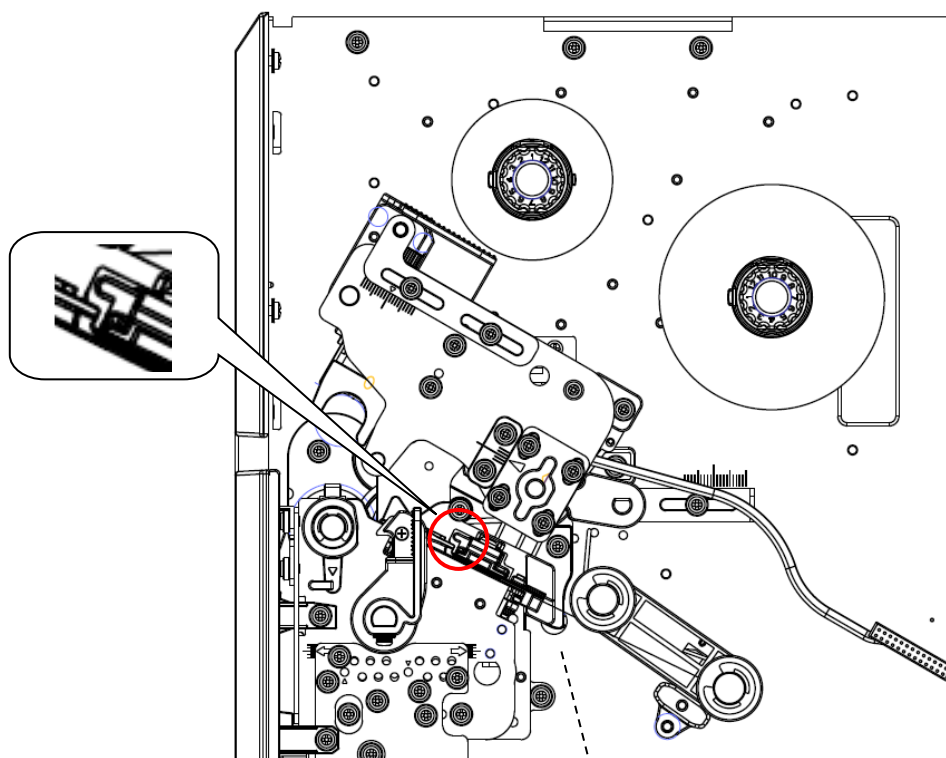
Paper Sensor Position Lever

➕ Ensure the Media sensor position mark is located right on the notch or hole of the labels. Check below.

3.9 Interfaces and Requirements

This printer comes with USB type A and type B interfaces, a nine-pin Electronics Industries Association (EIA) RS-232 serial data interface, a standard Centronics parallel interface (optional), and a GPIO interface(optional).

■ USB Interface Requirements

The Universal Serial Bus (USB) interface is compatible with your PC hardware. Its " plug-and-play" design makes installation easy. Multiple printers can share a single USB port/hub. The different usages of types A and B are below.

USB type A	USB flash drive (available for one only), USB keyboard, USB scanner
USB type B	To connect the printer to a PC for initial setup and configuration

■ Serial (RS-232) Port

The required cable must have a nine-pin "D" type male connector on one end, plugged into the serial port on the back of the printer. The other end of the cable connects to a serial port on the host computer. For technical and pin-out information, please refer to RS-232C in this manual.

■ Ethernet Module Status Indicators

The indicators with two different colors help users understand the status of Ethernet:

LED Status	Description	
Both Off	No Ethernet link was detected.	
Blinking	The printer waits for the printer to be ready. It will take about a few seconds to be ready.	
Orange (Yellow)	Duplex/COL LED	On: Full duplex Off: Half duplex Blinking: Collision occurs
Green	Link/Activity LED	On: link up Off: link down Blinking: activity

3.10 Driver installation

The bundled printer driver can be applied to all applications under Windows 7/ Windows 8/ Windows 10, supporting 32-bit/ 64-bit operation systems. With this driver, you can print on this printer using any popular Windows software application, including Bartender UL label editing software, MS Word, etc.

Drivers can be downloaded from the SATO website.

3.10.1 Installing a Plug and Play printer driver (for USB only)

We strongly recommend using the Seagull Driver Wizard instead of the Microsoft Windows Add Printer Wizard when installing and updating your Drivers by Seagull.

(Even though the "Add Printer Wizard" is from Microsoft, it too efficiently performs many tasks incorrectly when updating existing drivers. It also severely handles situations where a Windows application already uses a printer driver.)

1. Turn off the printer. Plug the power cable into the wall power socket and connect the other end of the cable to the printer's power socket. Connect the USB cable to the USB port on the printer and the PC.

2. Turn on the printer. Suppose it supports Plug-and-Play, and you have successfully connected it using a USB cable. In that case, the Windows Add Hardware Wizard will automatically detect the printer and display a dialog that allows you to install a driver. Click Cancel, and do not install the driver using this wizard.

3. Run the driver. At the prompt, "Windows Printer Driver," select "I accept..." and click "Next."
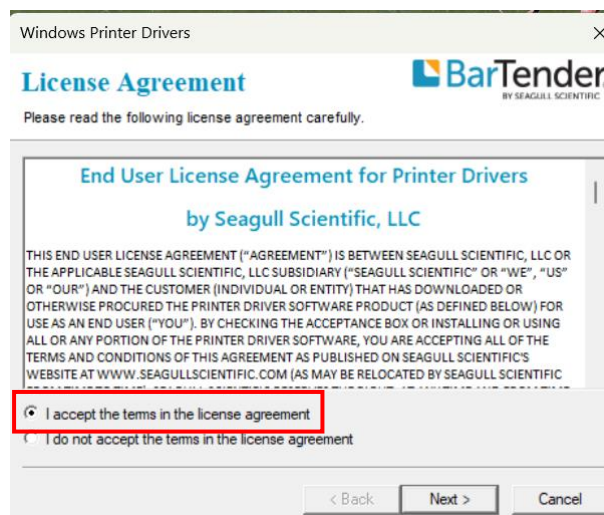
4. Assign the directory to keep Seagull driver, (for example: C:\Seagull) and click "Next".
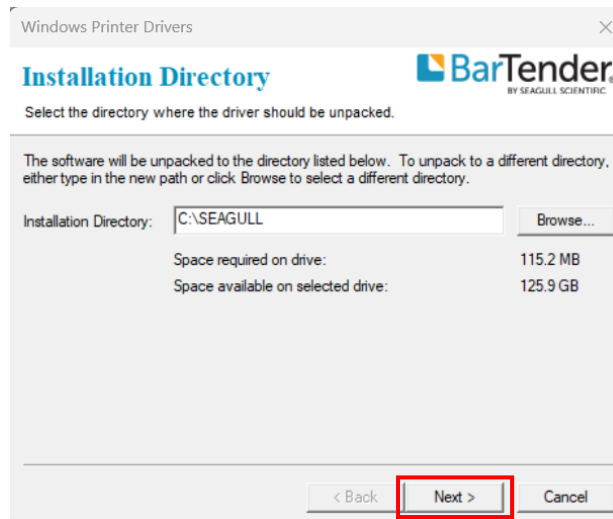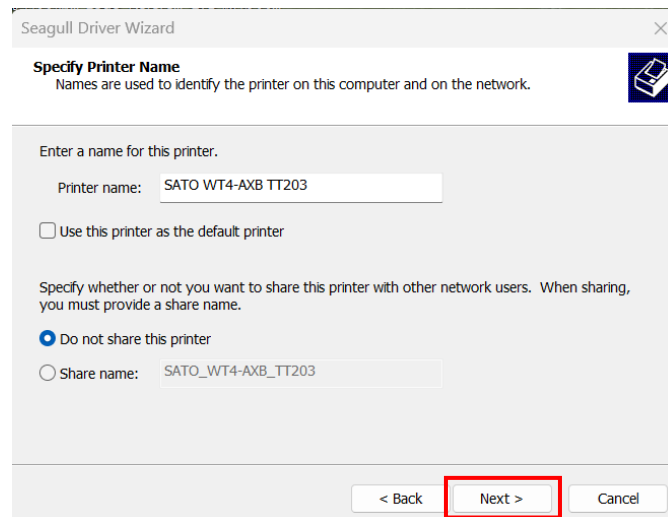

5. Click "Finish".
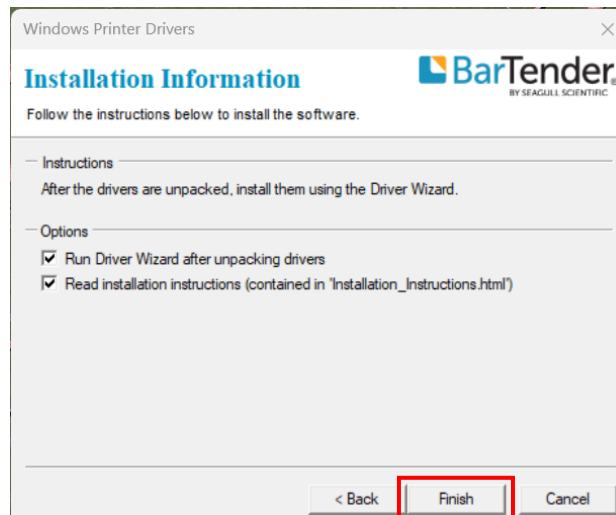
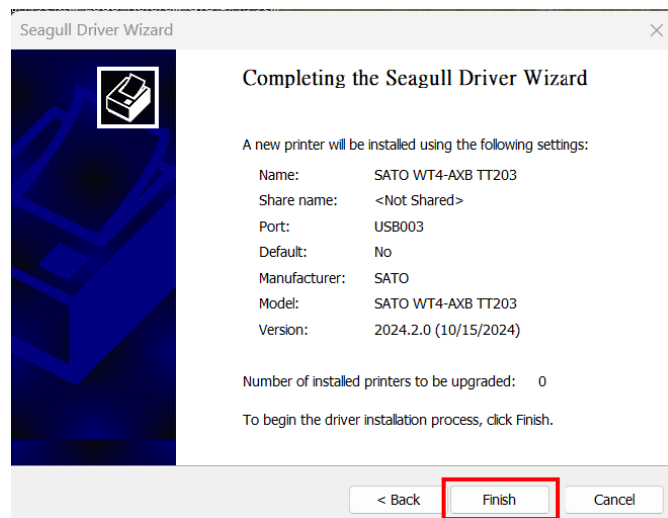6. Select Install printer drivers and Click "Next"
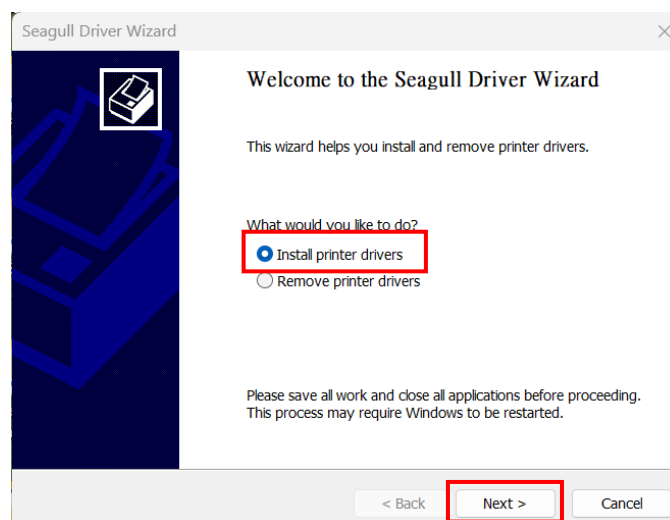
7. On the Seagull Driver Wizard prompt, select the first radio button to "Install a driver for a Plug and Play printer." Then click "Next."
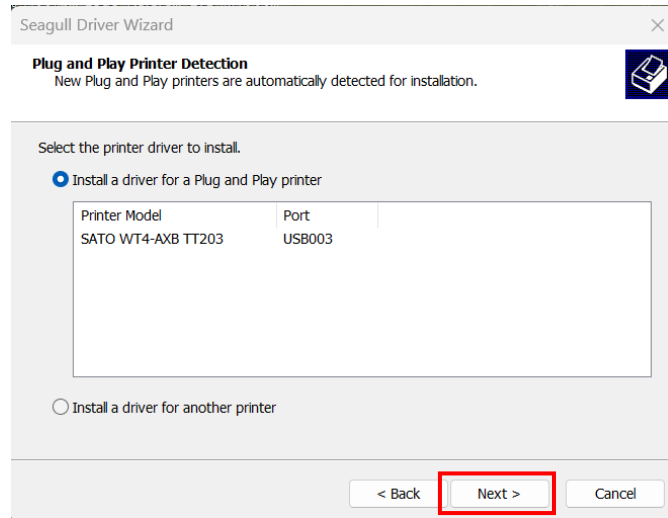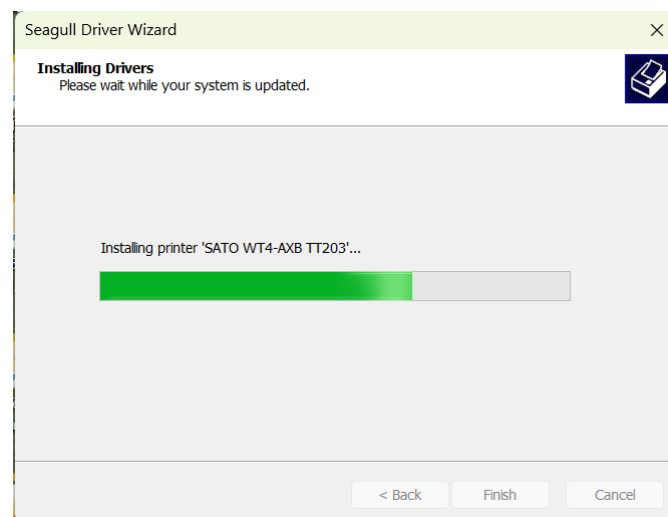

8. Enter the Printer name (i.e., Argox P4-250 PPLB) and select "do not share this printer" and click "Next."
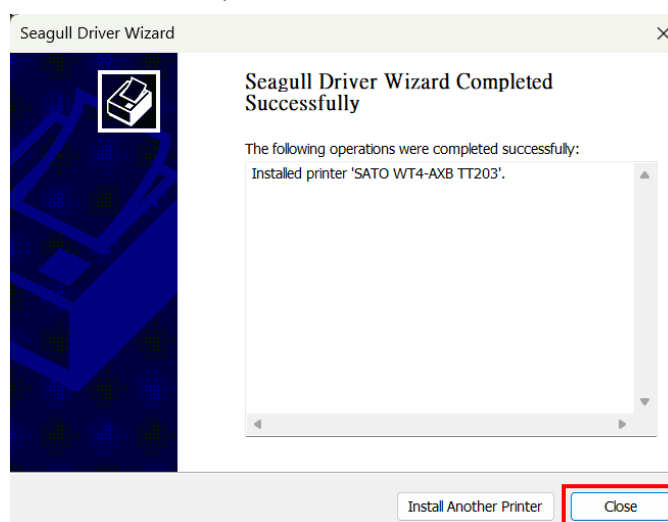
9. Check all the data on the screen; if it is correct, click "Finish."

10. After copying the related files to your system, click "Finish."

11. After the driver installation is complete, click "Close." The driver should now be installed.

# 3.10.2 Installing a Printer Driver (for other interfaces except USB)

1. Turn off the printer. Plug the power cable into the wall's power socket and connect the other end of the cable to the printer's power socket. Connect the Parallel cable, Serial cable, or Ethernet cable to the proper port on the printer and your computer.

2. Run the driver. At the prompt, Windows Printer Driver, select "I accept…" and click "Next."
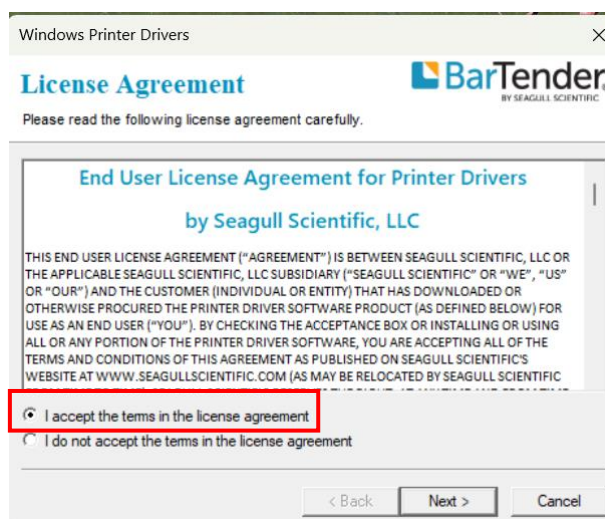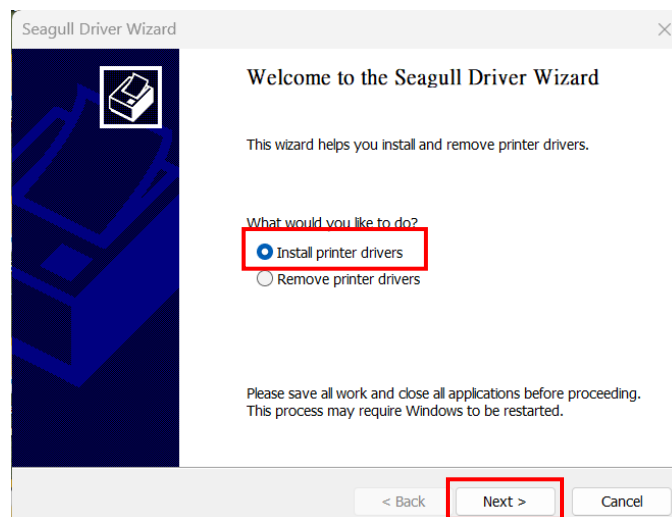

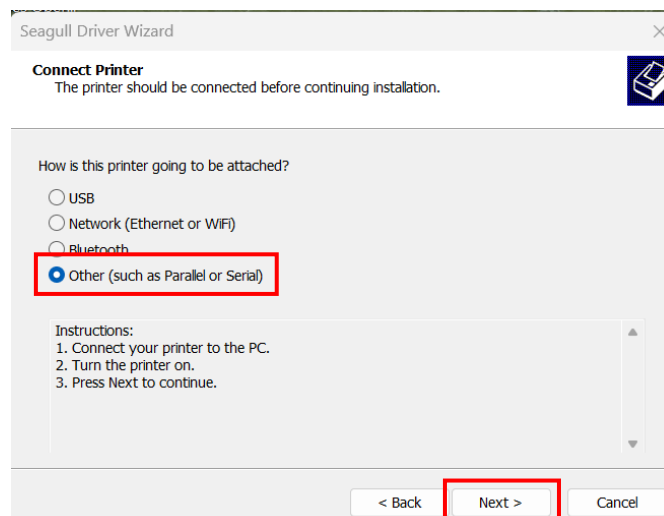3. Assign the directory to keep the Seagull driver (for example C:\Seagull) and click "Next."
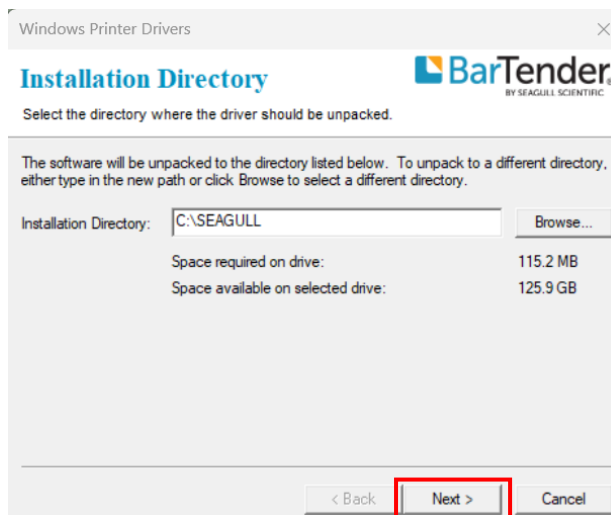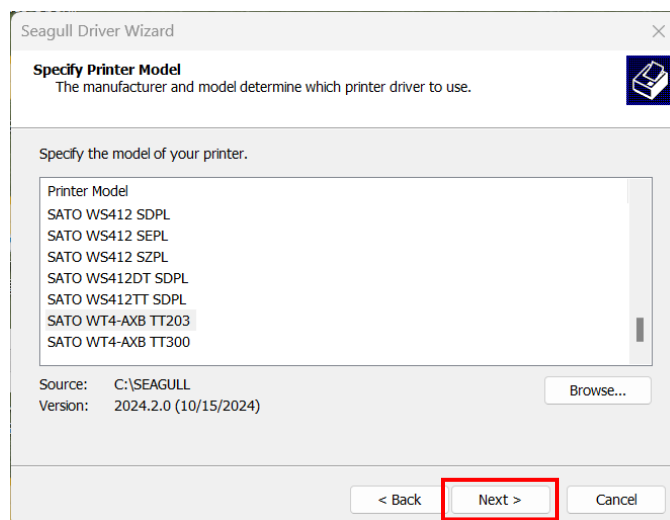
4. Click "Finish".
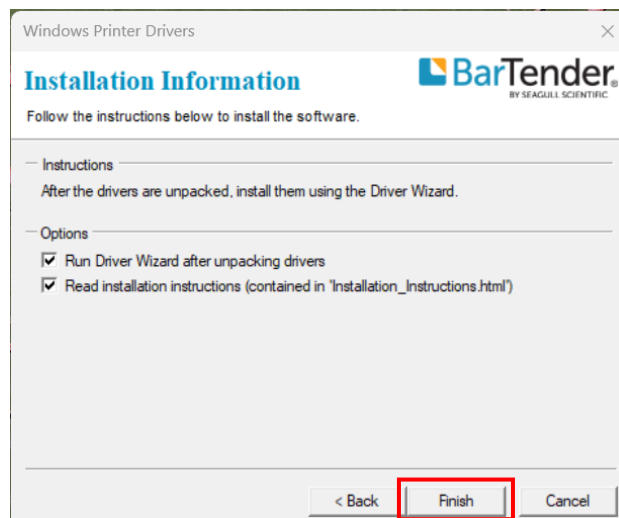
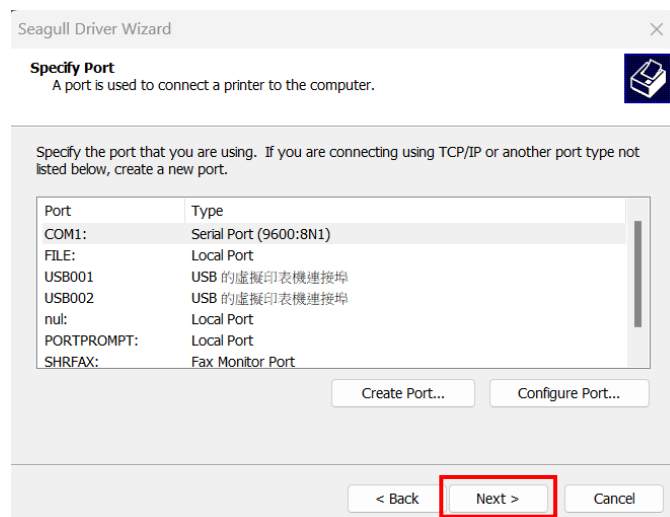5. Select Install printer drivers and Click "Next."

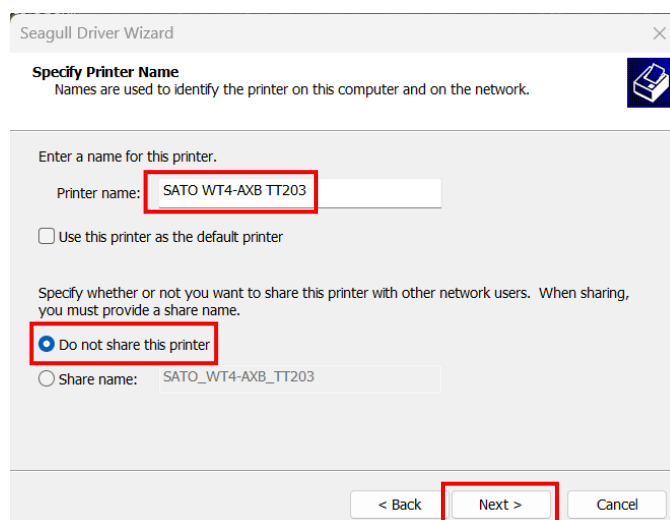6. Make sure the printer is connected to the PC, select "Other," and click "Next".

7. Select a model and click "Next".

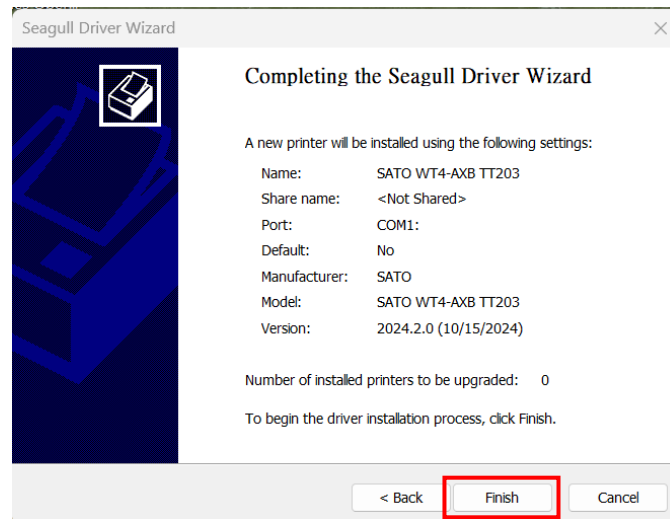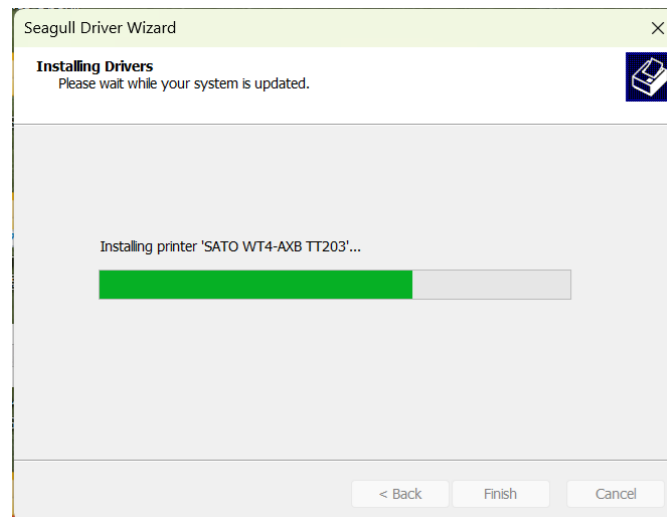8. Select the port of the printer and click "Next".

9. Enter the Printer name (i.e., SATO WT4-AXB TT203) and select "do not share this printer," and click "Next."
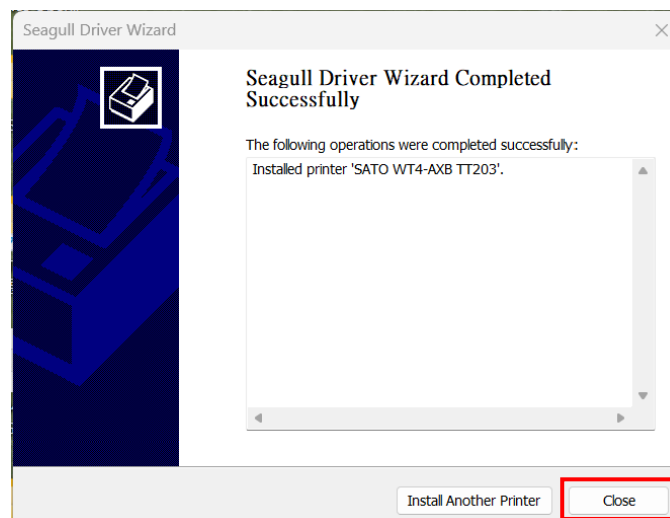
10. Check all the data on the screen, if it is correct, click "Finish".

11. After the related files have been copied to your system, click "Finish".

12. After the driver installation is complete, click "Close." The driver should now be installed.

4. Configuration on Web Setting Tool

Before setting your printer settings, ensure you have a LAN cable. The cable is connected to your printer's LAN connector. The LAN connector is an 8-PIN RJ45-type modular connector. Please use the LAN cable of CAT 5 of a proper length to connect the LAN connector on the printer to a LAN hub as appropriate.

The printer's default static IP address is 0.0.0.0, and the default listen port is 9100. If you are configuring your printer through the web setting tool for the first time, you must still follow the step-by-step instructions below.

Attaching the power cord

1. Make sure the printer power switch is set to the **OFF** position.
2. Insert the power supply's connector into the printer power jack.
3. Insert the AC power cord into the power supply.
   Important: _Use only the power supply listed in the user instructions._
4. Plug the other end of the AC power cord into the wall socket.

> ⚠️ _Do not plug the AC power cord with wet hands or operate the printer and the power supply in an area where they may get wet. Serious injury may result from these actions!_

Connecting the printer to a LAN hub

Use a CAT 5 cable of the proper length to connect the printer's LAN connector to a LAN hub, to which your desktop or laptop PC is also connected as a host terminal.

Getting the IP address of the printer

You can have the printer run a self-test to print a configuration label, which will help you get the IP address of your printer connected to the LAN hub.

1. Turn off the printer.
2. Press and hold the **FEED** button and turn on the printer.
3. Both status lights glow solid amber for a few seconds. They then briefly turn green and then change colors. When LED 2 turns green and LED 1 turns amber, release the **FEED** button.
4. Press the **FEED** button to print a configuration label.
5. Get the printer's IP address from the printed configuration label.

Logging in to the web setting tool

The Web Setting Tool is a built-in firmware setting tool for SATO WT4-AXB series printers. Users can connect to the supported SATO printer with their web browser to change printer settings, update firmware, download fonts, and more.

After obtaining the printer's IP address from the printed configuration label, you can connect to the printer with a supported web browser. Enter the printer's IP address (for example, 192.168.6.185) into the URL bar and navigate to it.
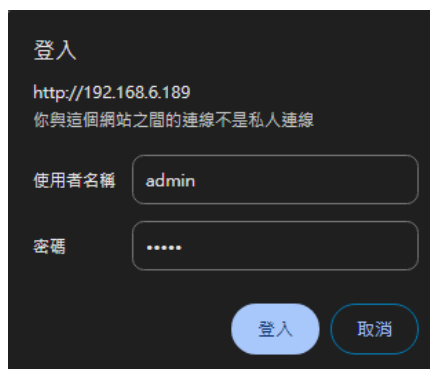
When the connection is successful, the Login page will be displayed. When you log in for the first time, you must set a password. Input the user name and password to log in to the web setting tool. The default user name and the default password are given below:

Default user name: admin (which is fixed and cannot be changed)

Default password: admin

This web setting tool can manage multiple label printers in the same local area network segment under the Windows operating system if there is no conflicting IP address. You can also check each of the MAC addresses listed in this tool against the MAC address label you can find on each of the printers.

Like a directly connected local printer, the label printer connected through TCP/IP can be used with a random PC connected to the same local area network segment. So, through the tool, all commands applicable to the LAN mode can work on the printer similarly, as the printer must be configured using the TCP/IP communication protocol with the printer's IP address.

When setting up settings through a tablet PC or smartphone for the printer working in infra mode, please set the same network segment of the host terminal to that of the printer, for example, 192.168.6.XXX (1~254). The Wi-Fi mode for the printer is infra mode, which the wireless device manager of the host terminal can search.

5. Maintenance

Vertical streaks in the printout usually indicate a dirty or faulty print head. (Refer to the following examples.) Clean the print head. If the problem persists, replace it.
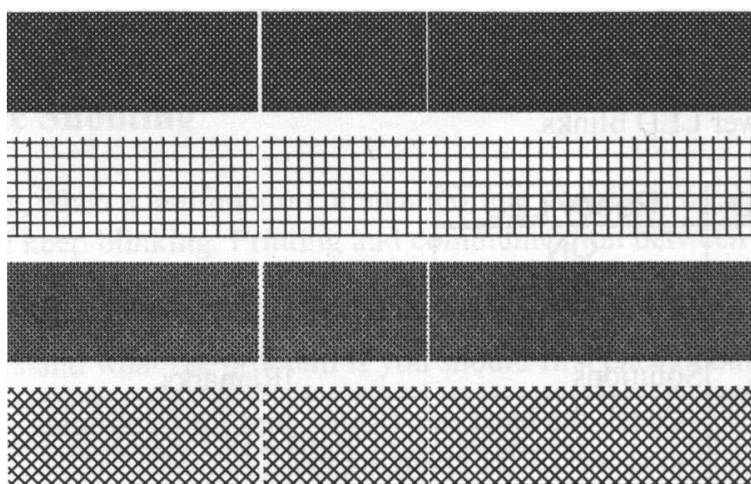
Check the label path for unstable ribbon roll rotation and ensure the head latch is securely closed.

Poor printout quality:
- The ribbon may not match the media in use.
- Adjust the Darkness (heat temperature).
- Slow down the print speed.
- Refer to the following and clean the related spare parts.

5.1 Cleaning

Routine maintenance is necessary to maintain print quality and prolong the printer's life. Daily maintenance should be performed; for low-volume printing, weekly maintenance should be performed.

> ⚠️ **Warning**: Always turn off the printer before cleaning.

5.1.1 Printhead

To achieve the best print quality, you must keep the printhead clean. We strongly recommend cleaning it when you load a new media roll. If the printer is operated in a critical environment or the print quality declines, you need to clean it more frequently.

Keep in mind these things before you clean:
- Keep the water away in case of corrosion on heating elements.
- If you finish printing, wait until the printhead cools down.
- Do not touch the printhead with bare hands or complex objects.

Cleaning steps:
1. Moisten a soft cloth or a cotton swab with ethyl alcohol.
2. Gently wipe the printhead in one direction. That is, wipe it only from left to right or vice versa. Do not wipe back and forth if dust or dirt attaches to the printhead again.

> **Note: Printhead warranty becomes void if the printhead's serial number is removed, altered, defective, or made illegible under every circumstance.**

5.2 Printer Adjustments

> **Note: The printer head pressure adjustment is available for the WT4 series model with the serial number 21C58061 or earlier. You can also contact your local service center or printer supplier for technical support.**

The printing quality can be finely adjusted according to the areas with inconsistent printing quality indicated by the labels. Do not adjust the left knob. The right knob allows fine pressure adjustments: turning clockwise decreases the pressure, while turning counterclockwise increases the pressure, to meet different pressure requirements.

Spring pressure pad

Scale dial

Repeat the same process until the printing quality is well balanced on both ends of the label. Once the desired quality has been reached, please make note on the new setting of **Adjust Spring pressure pad** and the type number of ribbon used in this printing task for future reference.

> **Note** To print small labels, such as 1-2 inch labels, please adjust the pressure range of the print head.

5.2.1 Ribbon Tension Adjustment

Both ribbon supply spindle and ribbon pickup spindle are equipped with control knobs to adjust ribbon tension. The control knobs can rotate to both directions.

If the ribbon is wrinkled at ribbon supply, rotate clockwise control knob of ribbon supply, to increase ribbon tension at ribbon supply and further improve ribbon wrinkle.

● Rotate control knob clockwise to increase ribbon tension.

Control Knobs

+ pressure

+ pressure
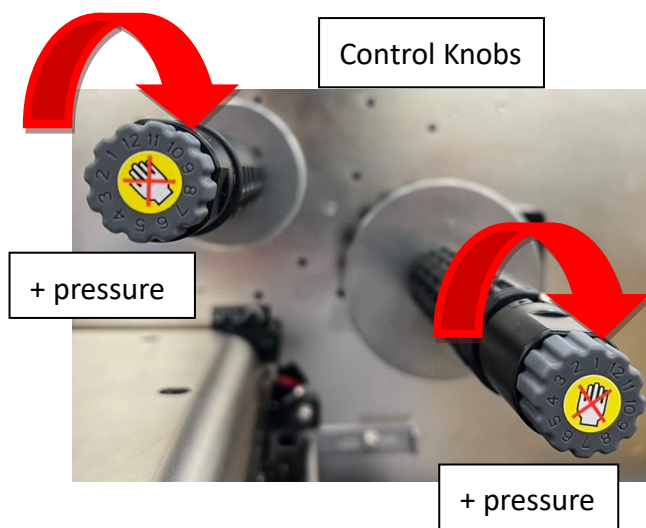
Too much tension at ribbon supply may result in ribbon not moving smoothly. Once it happens, rotate counterclockwise control knob of ribbon supply, to reduce ribbon tension to balance the tension.

● Rotate control knob counterclockwise to reduce ribbon tension.

[Remark]:

The ribbon shaft has its user-friendly feature to allow users to adjust the tension of ribbon shaft by rotating the knob. User can reset to factory default tension b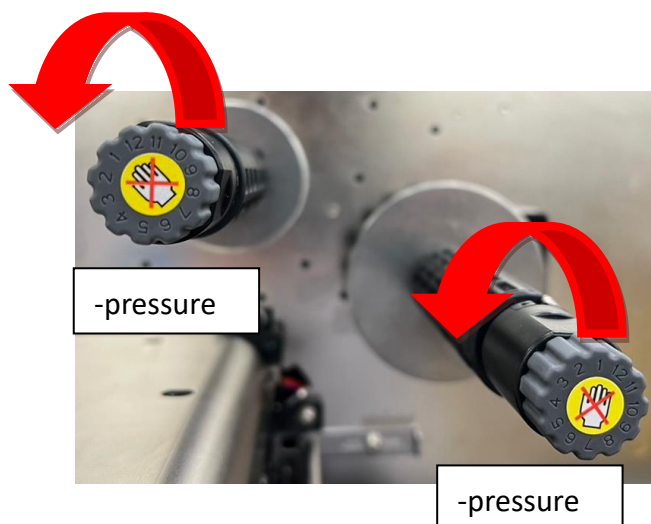y adjusting the ribbon shaft while the black line was aligned to the marked arrows. The default setting when shipped from Argox factory is shown as Figure 2 – the two arrows are in line with the black line.

Note   If the ribbon is wrinkled at ribbon pickup, rotate counter-clockwise control knob of ribbon pickup, to decrease ribbon tension at ribbon pickup and further improve ribbon wrinkle. If the tension is too little at ribbon pickup, ribbon will not move smoothly and needs control knob to rotate clockwise to increase tension.

5.2.2 Printing Wrinkle Adjustment

During printing, ribbon may wrinkle and cause abnormal printing quality. The following describes how to solve ribbon wrinkle accordingly.

Once the printouts as above appear, the possible cause may be the unequal positions of Ribbon Bracket, which needs to be adjusted properly to make its heights equally the same at both sides. Steps to adjust are as below:

1. Loose the screws at both sides and rotate counterclockwise:

2. Make sure the Ribbon Bracket is at its **lowest** position first; then tight up the screws by rotating clockwise.

3. Alternatively, please reduce the occurrence of ribbon wrinkles through the ribbon wrinkle adjustment mechanism on both ends.

For Ribbon Rewind   For Ribbon Supply

4. Print a test page to check print quality. If the quality improves, stop the adjustment; if not, continue with the next step.

5. If the test print appears as below, remain the screw at the right of the Ribbon Bracket fixed, then lose the screw at the left, and gradually fine-tune upward until the print quality gets improves.

If the test print appears as Figure B, remain the screw at the left of Ribbon Bracket fixed, and then loose the screw at the right, and gradually fine-tune upward, until the print quality gets improved.

5.2.3 Small-size Media Offset Adjustment

⚠️ *__Note: If your labels do not tend to distort or snake easily, you may not need to adjust the media guide and the damper. Simply securing the labels in the normal way should suffice.__*

When printing on labels of smaller sizes, such as 1-inch or smaller labels, and significantly softer media, like **water-resistant labels**, if you encounter issues with label misalignment or wrinkling, you may need to adjust the position of the media guide.

Adjustment Steps

1. Lift the damper upwards.
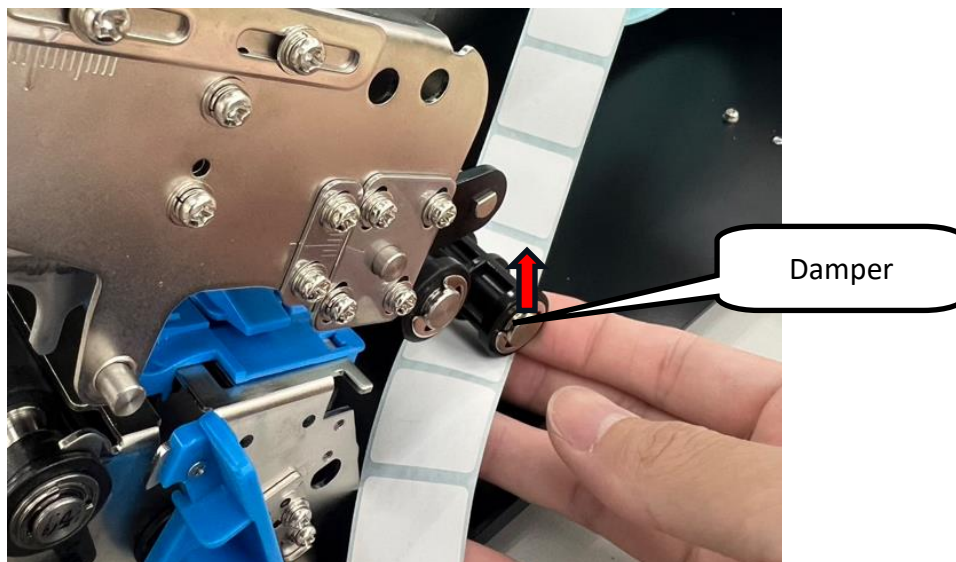
2. Gently thread the labels to be printed under the black media sensor and push them inwards.

3. Use your fingers or a pointed tool to gently push the small media guide against the side of the labels to prevent them from slipping.
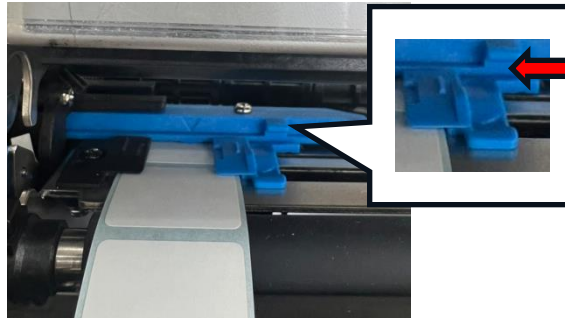
Print a test page and check the print quality. If the print quality is improved, the adjustment is complete.

Caution

➢ Be careful when adjusting and avoid scratching or damaging any parts.

➢ Moving the sensor in small increments and testing the print quality after each adjustment is recommended.

When to Adjust
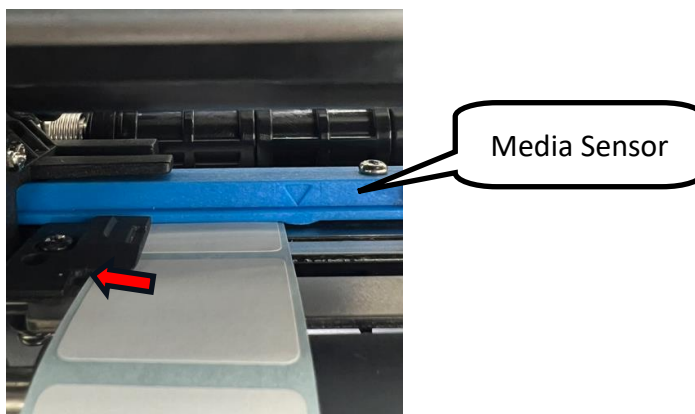
● When printing on small media sizes and experiencing misalignment or wrinkling.

● When switching to a different media size.

Consequences of Incorrect Adjustment

● Labels may be printed in the wrong position.

● Labels may wrinkle during printing.

● The printer may fail to feed labels properly.

💡 *Remember: Only adjust the media guide and the damper if you encounter label misalignment or wrinkling issues. If your labels feed and print correctly without adjustments, leaving the media guide and the damper in their default positions is best.*

6. Troubleshooting

This chapter provides information about printer problems and solutions.

6.1 Printer issues

The printer won't turn on.
- Did you attach the AC power cord?
- Check the power connection from the wall socket to the printer. Test the power cord and the socket with other electrical devices.
- Disconnect the printer from the wall socket and connect it again.

The printer turns itself off.
- Turn on the printer again.
- If the printer keeps turning itself off, check the socket and make sure it has enough power for the printer.

The printer does not feed the media out.
- The media is not loaded correctly. See Section 2.3, Loading Media, to reload the media.
- If there is a paper jam, clear it.

6.2 Media issues

The media is out.
- Load a new media roll.

The paper is jammed.
- Open the printer and clear the jammed paper.
- Make sure the Media Guides adequately hold the paper.

The printing position is not correct.
- Did you use the correct media type for printing?
- The media is not loaded correctly. See Section 2.3, Loading Media, to reload the media.
- The media sensor needs to be calibrated. See Section 3.2, Printing Media Calibration & Configuration, to calibrate the sensor.
- The media sensor is dirty. Clean the media sensor.

Nothing is printed.
- The media is not loaded correctly. See Section 2.3, Loading Media, to reload the media.
- The print data might not be sent successfully. Ensure the interface is set correctly in the printer driver and send the print data again.
- Make sure the media and ribbon both match.

The print quality is poor.
- The printhead is dirty. Clean the printhead.
- The platen roller is dirty. Clean the platen roller.
- Adjust the print darkness or lower the print speed.
- The media is incompatible with the printer. Use appropriate media roll instead.

6.3 Ribbon issues

The ribbon is out.
- Load a new ribbon roll.

The ribbon is broken.
- Check the print darkness and adjust it if it is too high, and take the following steps to fix the broken ribbon:
  1. Unload the ribbon supply roll and take up the roll from the printer.
  2. Pull the ribbon from the supply roll to overlap the broken end of the take-up roll.
  3. Tape the overlapped parts together.
  4. Reload both rolls into the printer.

The ribbon is "printed out" with the media.
- The ribbon is not loaded correctly. See the above *Loading Ribbon* section to reload the ribbon.
- The printhead temperature is too high. Reload the ribbon and print a configuration label to check the settings (See the above *Printing Media Calibration & Configuration* section). If the print darkness is very high, adjust it in printer preference or reset your printer (see the above *Resetting to Factory Default Setting* section).

The ribbon is wrinkled.
- Make sure the ribbon is loaded correctly.
- Rotate the Thumb Wheel of Ribbon spindles to straighten the ribbon.

6.4 Other issues

There are broken lines in the printed label.

● The printhead is dirty. Clean the printhead.

The printhead temperature is exceptionally high.

● The printer controls the printhead temperature. If it is incredibly high, the printer will stop printing automatically until the printhead cools. After that, the printer will resume printing automatically if there is an unfinished print job.

The printhead is broken.

● Contact your local dealer for assistance.

7. Specifications

This chapter provides specifications for the printer.

7.1 Printer

Printing Method	Direct Thermal/Thermal Transfer
Printing Resolution	203 dpi / 300 dpi
Printing Speed	2~8 ips (203 dpi) / 2~6 ips (300 dpi)
Printable Area	Length 400mm x width 104mm (Max :203dpi L2500mm×W104mm, 300dpi L1500mm×W104mm)
Memory	128MB DRAM, 128MB Flash
CPU Type	32-bit RISC microprocessor
Sensors	● Media sensor (reflective/transmissive, movable ● Head open sensor ● Ribbon out sensor ● Dispense sensor (with Dispenser option)
LCD	3.5" Color LCD
Operation Interface	LED indicator x 3, Button x 7
Comm. Interface	● USB 2.0 (Type A) x 2 ports ● USB 2.0 (Type B) x 1 port ● RS-232C ● LAN (10BASE-T/100BASE-TX) ● Bluetooth 5.0 (optional) ● WLAN IEEE802.11b/g/n (optional)
Fonts	Bitmap: XS, XU, XM, XB, XL, OCR-A, OCR-B Scalable: CG Times, CG Triumvirate Simplified Chinese: GB18030、GB2312 Traditional Chinese: BIG5 Koeran: KSC5601(KSX1001)
Graphics	SZPL (PPLZ): GRF, Hex, GDI
Emulation	SBPL, PPLZ (SZPL), and SIPL
Software	● SDK ● Printer Drivers (Europlus, SATO, 3rd Party) ● All-In-One Tool

	● Installer Pro ● Setting Pro ● Web Config.
Optional Items	● Cutter Kit ● Dispenser Kit ● External Rewinder (RWG500, RW350) ● External Supply (UW200EF, UWC400)
Agency Listing	● Safety regulations: IEC62368-1 ● Energy Efficiency: Energy Star Program ● RoHS: RoHS 2.0 ● WEEE compliant ● Bluetooth (optional)

Note: Print quality and speed are based on 15% print coverage.

7.2 Media & Ribbon

Properties	Description
Media	**Media Size:** ➢ Continuous: 　● Length: 6 to 2497 mm (9 to 2500 mm including liner) (203 dpi) 　● Length: 6 to 1497 mm (9 to 1500 mm including liner) (300 dpi) 　● Width: 22 to 112 mm (25 to 115 mm including liner) ➢ Tear-off / Cutter: 　● Length: 22 to 2497 mm (25 to 2500 mm including liner) (203 dpi) 　● Length: 22 to 1497 mm (25 to 1500 mm including liner) (300 dpi) 　● Width: 22 to 112 mm (25 to 115 mm including liner) ➢ Dispenser: 　● Length: 22 to 397 mm (25 to 400 mm including liner) (203/300 dpi) 　● Width: 22 to 112 mm (25 to 115 mm including

liner)

Media Type:

Direct Thermal Label, Direct Thermal Tag, Roll Paper
(Inside Wound or Outside Wound), Fanfold Paper

Paper Thickness (label & liner):

80 to 190 μm (0.08 to 0.19 mm)

Paper Outside Diameter/Core Size:

➢ Max. Diameter: 203.2 mm (8") OD on a 76 mm (3")
   ID core.

➢ 177.8 mm (7") OD on a 38 mm (1.5") ID core

Ribbon	**Ribbon Size:** ➢ Max. Length: 450 m ➢ Maximum Diameter: 82 mm ➢ Core Size: 25.4 mm (1") **Ribbon Type:** Wax, Wax/Resin, Resin

7.3 Electrical and Operating Environment

Properties	Description
Power Supply	Voltage: AC 100 V ~ 240 V ± 10 % (full range) Frequency: 50 Hz - 60 Hz ± 5 %
Temperature / **Humidity**	Operational Environment: 4～40℃ / 30～80%RH (non-condensing)
	Storage Environment: -20～50℃ / 15～85%RH (non-condensing)

7.4 Physical dimension

Dimension	Size and Weight
Size	265.5 mm (W) x 235 mm (H) x 293.5 mm (D)
Weight	11.5 kg

> **Note** that the specifications may be changed at any time without prior notice. For more information about the new specifications, visit the SATO website or contact your dealer.

7.5 Fonts, Barcodes, and Graphics

Fonts, bar codes, and graphics specifications depend on the printer emulation. The emulations PPLA, PPLB, and PPL Z are printer programming languages through which the host can communicate with the printer.

Printer Programming Language SBPL

Programming Language	SBPL
Internal fonts	12 bitmap fonts (OCR-A; OCR-B; XU; XS; XM; XB; XL; U; S; M; WB; WL) with different point size. 2 chinese bitmap fonts (GB18030; Big5) with different point size. 1 korean font (KSC5601). 1 outline font. 4 true type fonts (Sato CG Times;Sato CG Triumvirate;SUD-SON;SUD-HEI)
Symbol sets (Code pages)	Dos737, Dos850, Dos852, Dos855, Dos857, Dos858, Dos866, Dos869, ISO8859-1, ISO8859-2, ISO8859-9, UTF-8, UTF-16, Code page 1250, 1251, 1252, 1253, 1254, 1257
Soft fonts	Downloadable TTF font by command
Font size	1 x 1; 12 x 12
Character rotation	0, 90, 180, 270 degrees, 4 direction rotation
Graphics	Binary, HEX, BMP, PCX, IMG.
1D Barcodes	Code39, UPC-A, UPC-E, Postnet, Code128 subset A/B/C, Industrial 2of5, Matrix 2of5, Code 93, Code 39, MSI, ITF, EAN-8, Codabar, Code 11, EAN-13, GS1 Databar (RSS)
2D Barcodes	PDF417, Micor PDF, MAXI, QR code, Micro QR code, DataMatrix, GS1 DataMatrix, Aztec

Printer Programming Language PPLZ (SZPL)

Programming Language	PPLZ (SZPL)
Internal fonts	8 (A~H) fonts with different point sizes. 8 AGFA fonts: 7 (P~V) fonts with fixed different point sizes (not scalable) 1 (0) font with scaling point size.
Symbol sets (Code pages)	USA1, USA2, UK, HOLLAND, DENMARK/NORWAY, SWEDEN/FINLAND, GERMAN, FRANCE1, FRANCE2, ITALY, SPAIN, MISC, JAPAN, IBM850, Multibyte Asian Encodings, UTF-8, UTF-16 Big-Endian, UTF-16 Little-Endian, Code page 1250, 1251, 1252, 1253, 1254
Soft fonts	Downloadable soft fonts by Print Tool
Font size	1x1 to 10x10
Character rotation	0, 90, 180, 270 degrees, 4 direction rotation
Graphics	GRF, Hex, and GDI
1D Barcodes	Code39, UPC-A, UPC-E, Postnet, Code128 subset A/B/C, Interleave 2 of 5, Interleaved 2 of 5 with checksum, Interleaved 2 of 5 with human readable check digit, Code 93, Code 39 with checksum digit, MSI, EAN-8, Codabar, Code 11, EAN-13, Plessey, GS1 Data bar (RSS), Industrial 2 of 5, Standard 2 of 5, Logmars
2D Barcodes	MaxiCode, PDF417, Data Matrix (ECC 200 only), QR code, Composite Codes, Aztec

Printer Programming Language SIPL

Programming Language	SIPL
Internal fonts	15 fonts (a to p) with different point size.
Symbol sets (Code pages)	U.S.A., United Kingdom, Germany, Denmark, France, Sweden, Italy, Spain, 8-Bit ASCII, Switzerland, Code Page 850, Code Page 1250 (Central Europe), Code Page 1251 (Cyrillic, Russian), Code Page 1252 (Latin 1, Western Europe), Code Page 1253 (Greek), Code Page 1254 (Turkish), Code Page 1255 (Hebrew), Code Page 1256 (Arabic), Code Page 1257 (Baltic Rim), Code Page 1258 (Vietnamese), Code Page 874 (Thai), Code Page 932 (Shift JIS, Japanese), Code Page 936 (GB 2312-80, Simplified Chinese), Code Page 949 (KSC5601, Korean Hangeul), Code Page 950 (Big 5, Traditional Chinese), UTF-8
Soft fonts	Downloadable soft fonts by Print Tool
Font size	1 to 250 dots (Human Readable)

Programming Language	SIPL
Character rotation	0, 90, 180, 270 degrees, 4 direction rotation
Graphics	Supports .bmp, .pcx, and .png formats with one-bit depth.
1D Barcodes	Code 39, Code 93, Interleaved 2 of 5, Code 2 of 5, Codabar, Code 11, Code 128 / GS1-128, EAN/UPC, HIBC Code 39, Code 16K, Code 49, POSTNET, JIS-ITF, HIBC Code 128, GS1 DataBar, GS1 Composite, Planet, ISBT 128, USPS4CB
2D Barcodes	PDF417, MaxiCode, DataMatrix, QR Code, MicroPDF417, Aztec

7.6 Wireless LAN (Optional)

|	Properties	Wireless LAN I/F
Hardware	Protocol	IEEE 802.11 b/g/n, 2.4GHz
	Enabled Device	WT4 Series
	Operating Temperature	-4°F (-20°C) ~ 185°F (85°C)
	Storage Temperature	-40°F (-40°C) ~ 221°F (105°C)
	Frequency	2.400 ~ 2.484 GHz;
	Antenna	Built-in antenna
	Maximum data rate	54Mbps in 802.11g,150Mbps in 802.11n
	Transmit Power	(2.4GHz) 17.5dBm (11 b),15.5dBm (11 g),13.5dBm (11 n)
Software	Connection Mode	Infrastructure
	Default IP Address	192.168.1.1
	Default Subnet Mask	255.255.255.0
	Default ESSID	SATO_PRINTER
	Security Authorization	Open, WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise
	EAP	PEAP, TLS, TTLS, FAST
	Protocol	Light Weight TCP/IP protocol
	Wireless LAN Parameter and Status Monitor	Parameter: Command (Printer Tools)

7.7 Bluetooth

Properties	Bluetooth I/F
Standard	Bluetooth 5.0
Enable Device	WT4 Series
Operating Temperature	-4°F (-20°C) ~ 185°F (85°C)
Storage Temperature	-40°F (-40°C) ~ 221°F (105°C)
Humidity	10 ~ 90 % Non-condensing
Connections	Classic Bluetooth: No Supports Bluetooth Low Energy: 1 Client.
Profile	Bluetooth Low Energy: Support both central and peripheral modes
Flow Control	HW flow control
Frequency	2.402 ~ 2.480 GHz
Transmit Power	+8 dBm (Maximum)

7.8 Interfaces

This section provides information about IO port specifications for the printer.

7.8.1 USB

There are two standard USB connectors. Typically, type A is found on hosts and hubs; type B is found on devices. The figure below shows their pinouts.

Type A	Type B
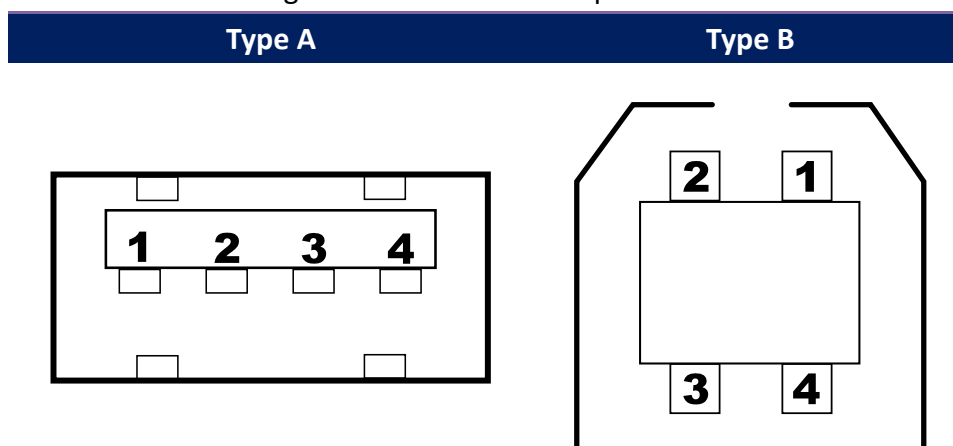
Pin	Signal	Description
1	VBUS	+5V
2	D-	Differential data signaling pair -
3	D+	Differential data signaling pair +
4	Ground	Ground

7.8.2 RS-232C

The printer's RS-232C is DB9 female. It transmits data bit by bit in asynchronous start-stop mode. The figure below shows its pinout.

5 4 3 2 1

9 8 7 6
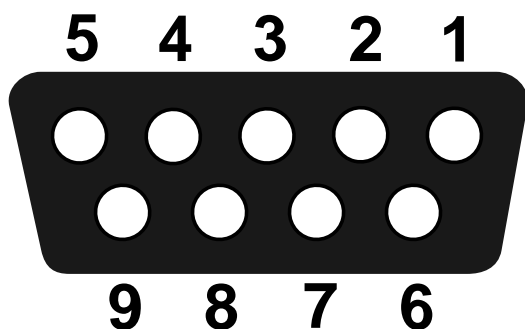
Pin	Signal	Description
1	NA	No Function
2	TxD	Transmit
3	RxD	Receive
4	NA	No Function
5	GND	Ground
6	NA	No Function
7	CTS	Clear to Send
8	RTS	Request to Send
9	NC	No Connection

Host (DB9)				Printer (DB9)	
Signal	**Description**	**Pin**	**Pin**	**Description**	**Signal**
CD	Carrier Detect	1	1	No Function	NC
RxD	Receive	2	2	Transmit	TxD
TxD	Transmit	3	3	Receive	RxD
DTR	Data Terminal Ready	4	4	No Function	NC
GND	Ground	5	5	Ground	GND
DSR	Data Set Ready	6	6	No Function	NC
RTS	Request to Send	7	7	Clear to Send	CTS
CTS	Clear to Send	8	8	Request to Send	RTS
CI		9	9	No Function	NC

7.8.3 Ethernet

The Ethernet uses an RJ-45 cable, which is 8P8C (8-Position 8-Contact). The figure below shows its pinout.
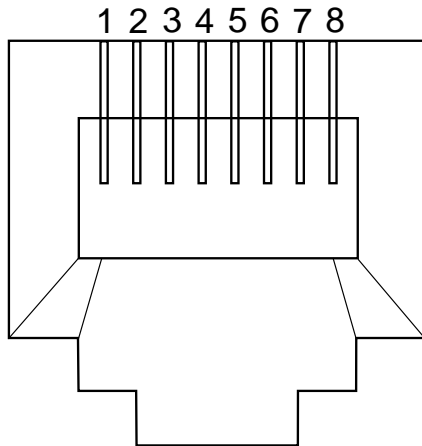
Pin	Signal
1	Transmit+
2	Transmit-
3	Receive+
4	Reserved
5	Reserved
6	Receive-
7	Reserved
8	Reserved