P4 Printer

Operator Manual

P4-250 / P4-350

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service@argox.com

V1.2-16-01-2018

FCC ID

In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to 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 in accordance with the instructions in this manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Statement for Optional RF module

This device complies with RF radiation exposure limits set forth for an uncontrolled environment.

The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all people and must not be collocated or operating in conjunction with any other antenna or transmitter.

Bluetooh/Wireless LAN Communication

Compliance Statement

This product has been certified for compliance with the relevant radio interference regulations of your country or region. To make sure continued compliance, do not:

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

Use of this product near microwave and/or other Wireless LAN equipment, or where static electricity or radio interference is present, may shorten the communication distance, or even disable communication.

WARNING

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

(for USA only)

Liability Disclaimer

ARGOX Corporation takes steps to assure that the company's published engineering specifications and manuals are correct; however, errors do occur. ARGOX reserves the right to correct any such errors and disclaims any resulting liability. In no event shall ARGOX 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 ARGOX 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.

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1 Introduction

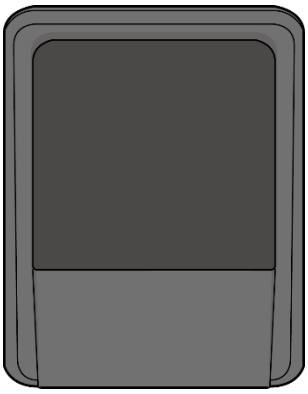
Thank you for purchasing a ARGOX P4 printer. This manual provides information about how to set up and operate your printer, load the media and solve common problems.

1.1 Features

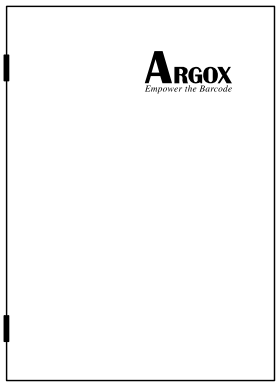
- **Various Connectivity Options** USB, Ethernet, RS-232
- **Easy Operation** One-button design for easy control
- **Fast Print Speed** Max 6 inches/sec for the P4 model
- **Wireless LAN Connection** Build a Wireless LAN printing environment with Bluetooth
- **External Memory** The extra USB port allows you to use a USB flash drive for storage

1.2 Unpacking

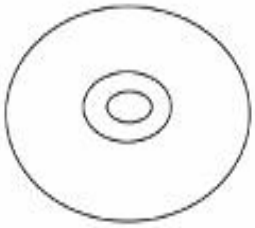
Make sure all of the following items are included in your package.



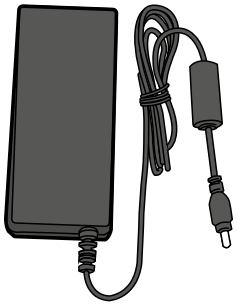
ARGOX P4 Printer



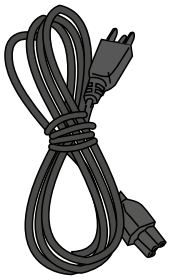
Quick Installation Guide



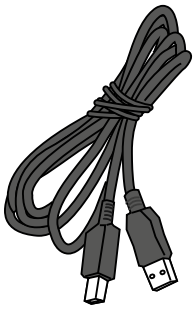
DVD



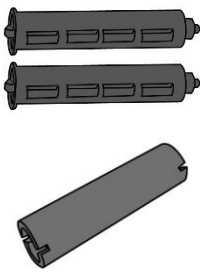
Power Supply



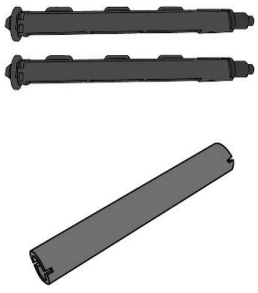
AC Power Cord



USB Cable



Ribbon Core (1 inch)



Ribbon Core (0.5 inch)

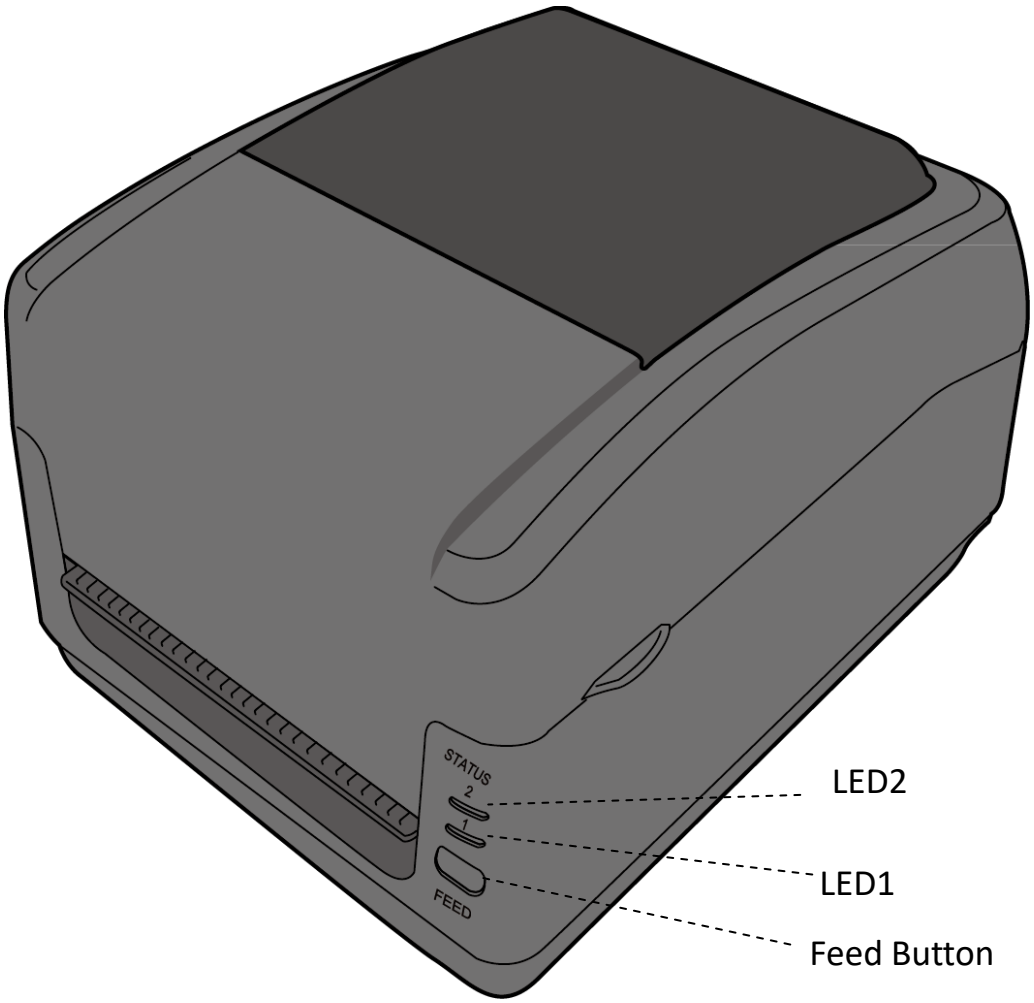
Platen Support Roller

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

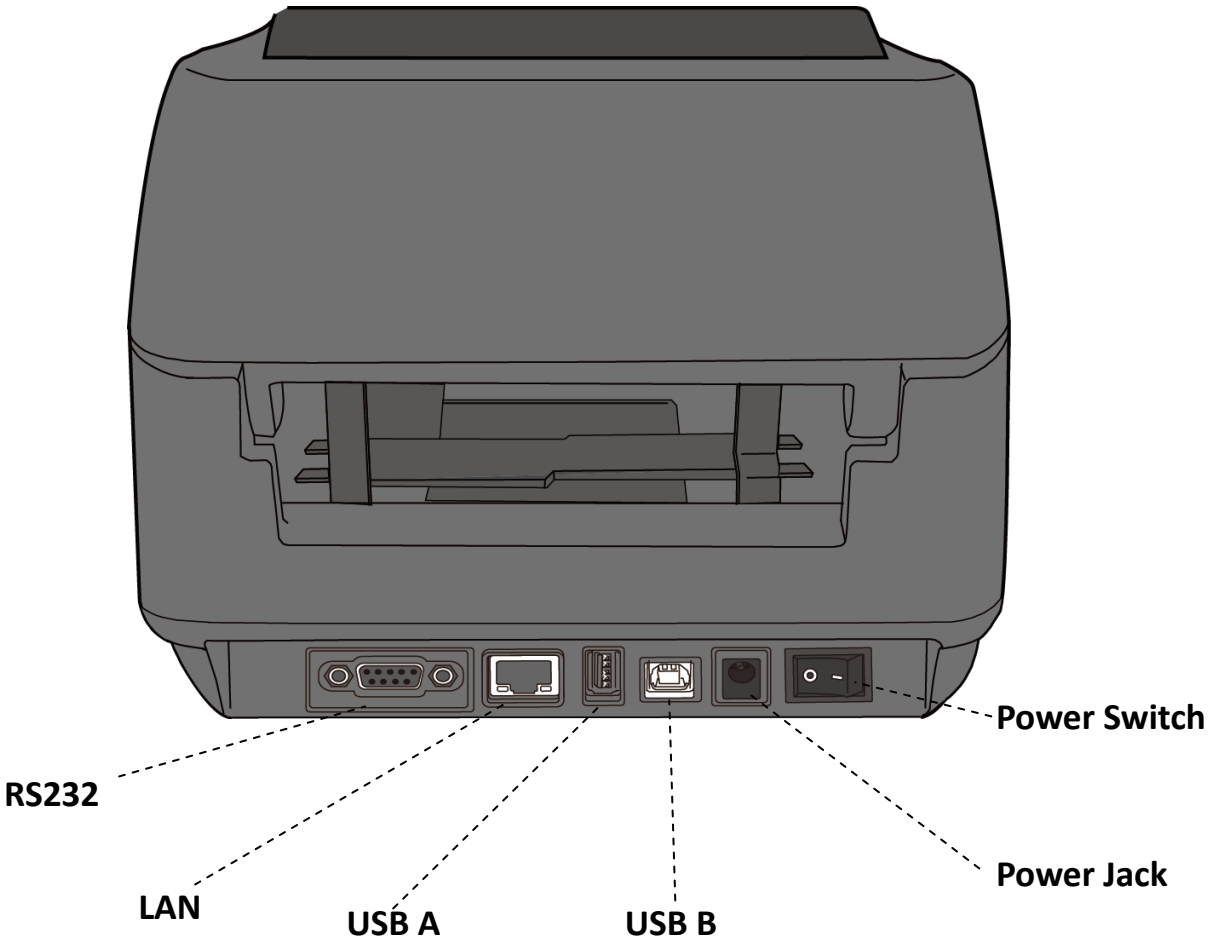
Note If any item is missing, please contact your local dealer.

1.3 Understand your printer

1.3.1 Perspective view



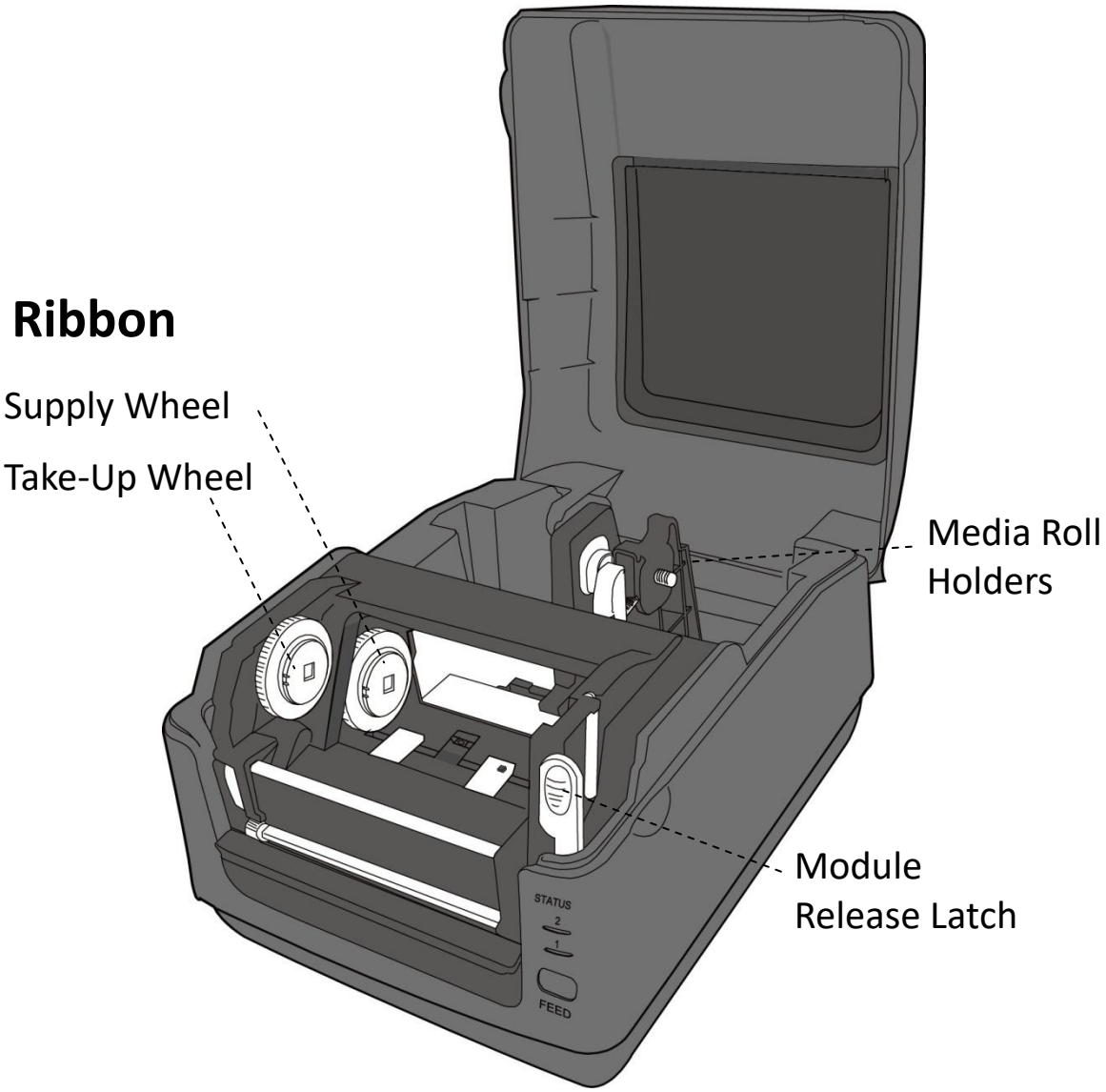
1.3.2 Back view



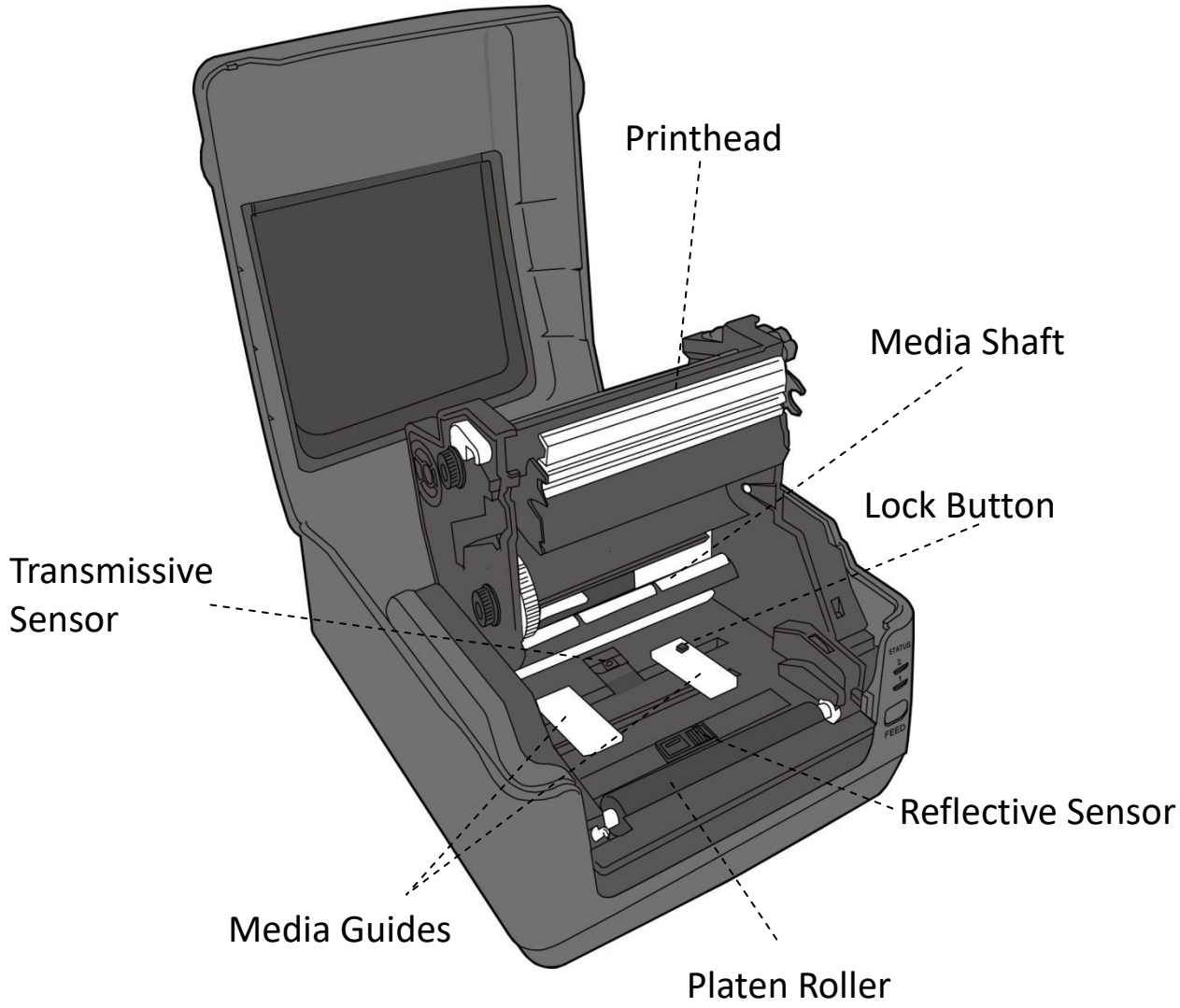
Caution The areas indicated by the ellipse have sharp edges. To avoid injury, be careful not to touch them when handling the printer.

Caution To avoid injury, be careful not to trap your fingers in the Paper Slot while opening or closing the Top Cover.

1.3.3 Interior view I



1.3.4 Interior view II



Warning The printhead becomes very hot during printing. Do not touch the printhead or touch around it directly after printing. By doing so you may get burnt.

1.4 Printer lights

There are two LED lights that show the status of your printer.

1.4.1 Status lights

Status lights help you check printer's condition. The following tables show the blinking speed of status lights and the conditions they indicate.

LED image	Blinking Speed	Blinking Interval
	lighting	Always on
	Slow	0.8 Seconds
	Fast	0.2 Second

LED image	Blinking Pattern description
	Alternate blinking.
	Blinking at the same time.

Blinking pattern	LED 2	LED 1	Description
	Green	**Green**	The printer is ready to print.

	Green	**Green**	In pause.	
	Green	**Green**	The printer is transmitting data.	
	Green	**Green**	TPH high temperature.	
	Green	**Green**	The printer is writing data to the flash or USB memory. The USB memory is being initialized.	
	Amber	**Amber**	Paper jam.	
			The media is out when the print data sent to the printer. Paper end.	
	Amber	**Amber**	Ribbon end or ribbon error. (for thermal transfer models)	
	Red	**Red**	H/W Error	The printhead is broken.
				Communication error (RS-232C).
				Cutter error (with optional cutter).
				The RTC battery is low. (If the printer has a built-in RTC)
	Red	**Red**	Command error	An EEPROM for backup cannot be read or written properly.
				A command has been fetched from an odd address.
				Word data has been accessed from a place other than the boundary of the word data.
				Long word data has been accessed from a place other than the boundary of the long word data.
				Command error.
	Red	**Red**	Top Cover open	The print module is opened when the printer is turned on.
				Cover (Thermal Head) open error during printing.

	Red	**Red**	USB r/w error	Flash ROM on the CPU board error or USB memory error.
				An erase error has occurred when formatting the USB memory.
				Unable to save files due to insufficient USB memory.

1.4.2 System mode

The system mode consists of status light color combinations. It contains a list of commands for you to select and run.

To enter the system mode and run the command, do the following:

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. Next, they turn to green shortly, and then turn to other colors.
4. When status lights show the color combination you need, release the **FEED** button immediately.
5. Press the **FEED** button to run the command.

The following table is the command list of the system mode.

LED 2	LED 1	Command
Red	Green	Transmissive Sensor Calibration (Section 3.1)
Amber	Green	Reflective Sensor Calibration (Section 3.1)
Red	Red	Resetting Your Printer (Section 3.3)
Amber	Red	Reserved
Green	Red	Disable Checking RTC Battery Charge
Red	Amber	Reserved
Green	Amber	Self Test Mode (Section 3.2)

2 Get started

This chapter describes how to set up your printer.

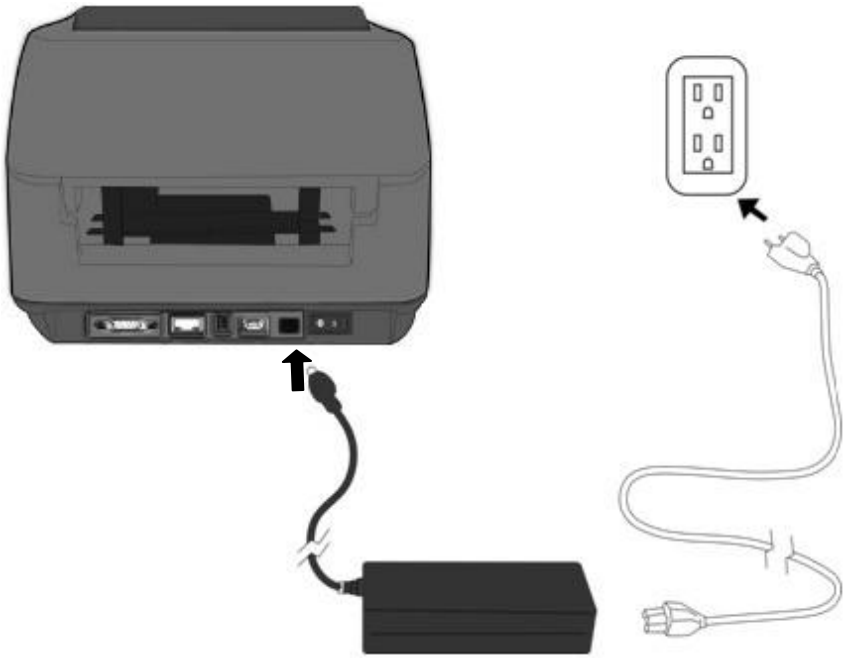
Caution Do not use your printer in areas exposed to splashing water or any other liquid.

Caution Do not drop your printer, or place it in an area subject to humidity, vibration or shock.

2.1 Attach the power cord

1. Make sure the 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.
4. Plug the other end of the AC power cord into the wall socket.

Important Use only power supplies listed in the user instructions.



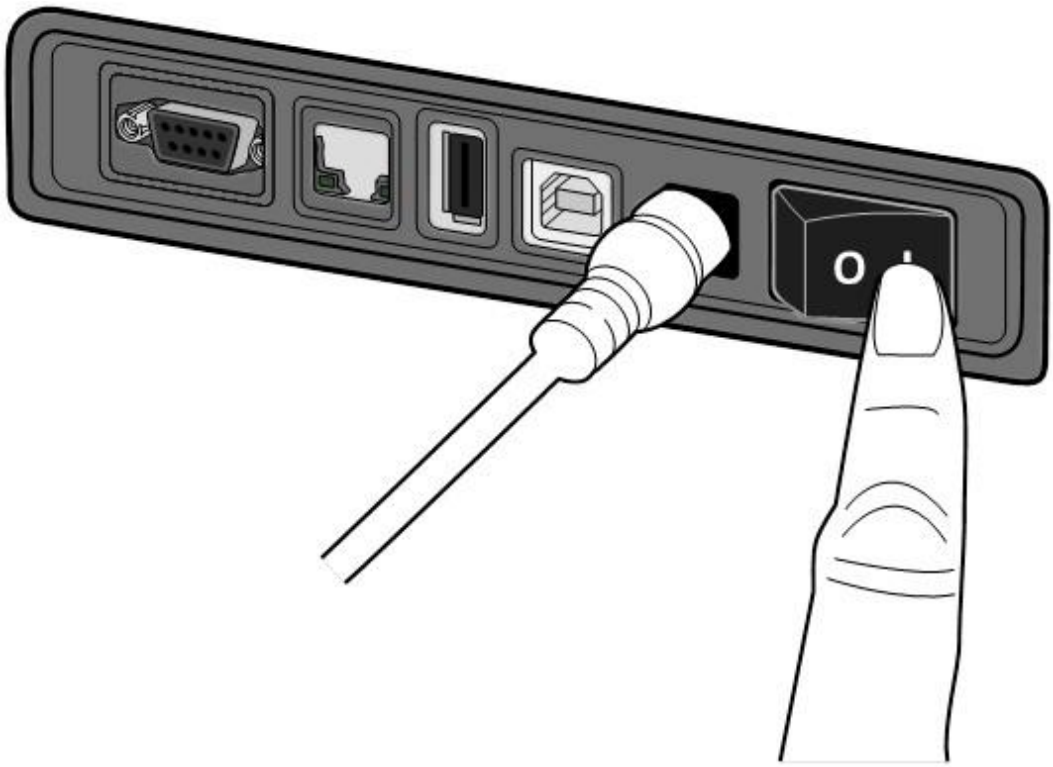
Warning Do not plug the AC power cord with wet hands, or operate the printer and the power supply in an area where they may get wet. Serious injury may result from these actions!

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.

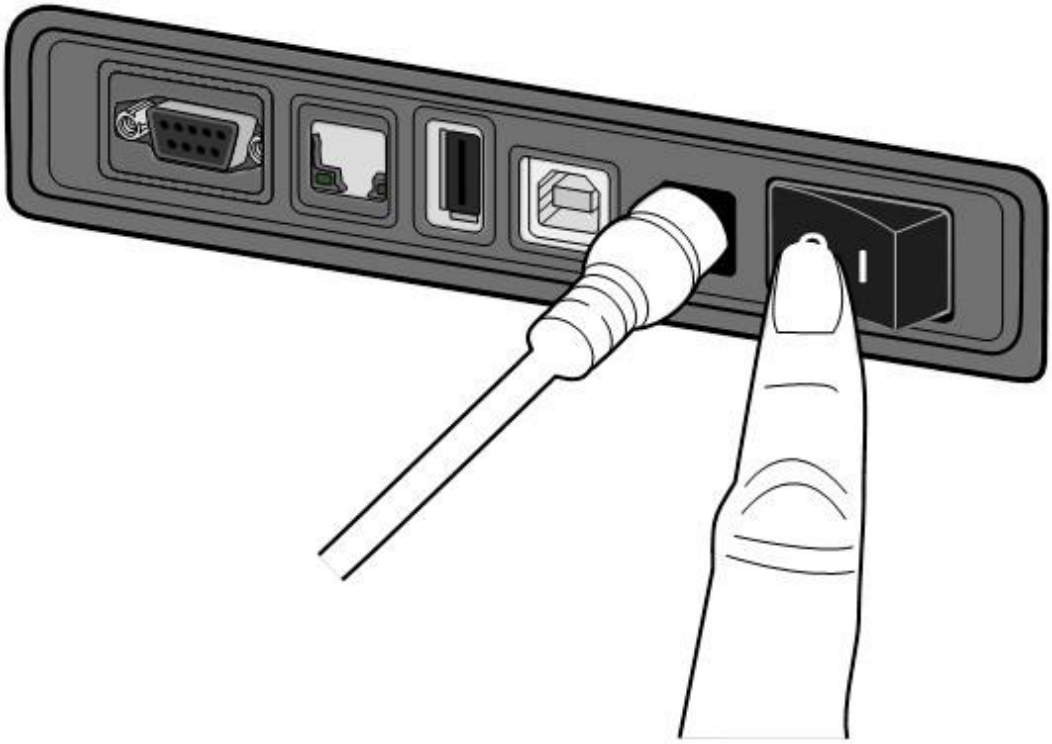


2. Both status lights glow solid amber for a few seconds, and then LED 2 goes out, while LED 1 turns to solid green.

Note If you connect the printer to the internet or insert a USB drive before turning on the printer, it will take longer for the printer to enter the online mode (LED 1 glows solid green) after you turn it on.

2.2.2 Turn off your printer

1. Make sure LED 2 is off and LED 1 is solid green before turning off the printer.
2. To turn off your printer, turn off the **Power Switch** as below. The “O” is the **OFF** position.



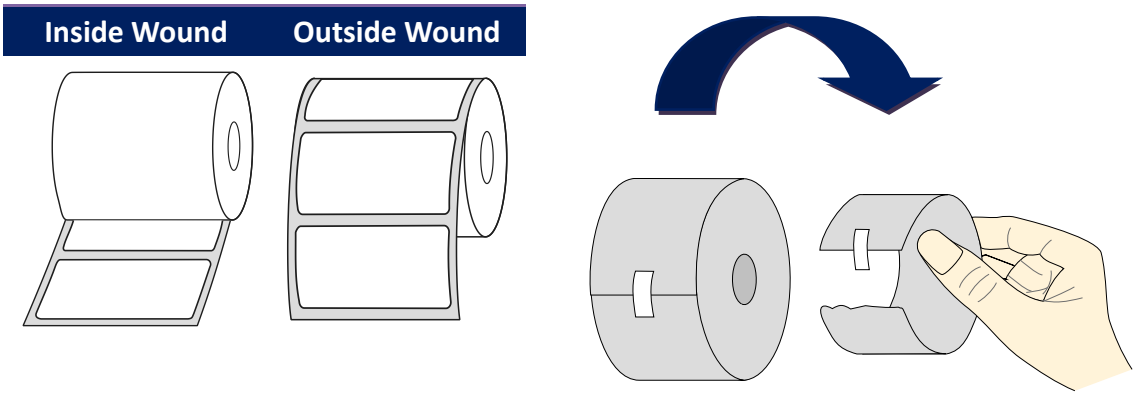
Caution Do not turn off your printer during data transmission.

2.3 Load media

There are various types and sizes for the media roll. Load the applicable media to satisfy your need.

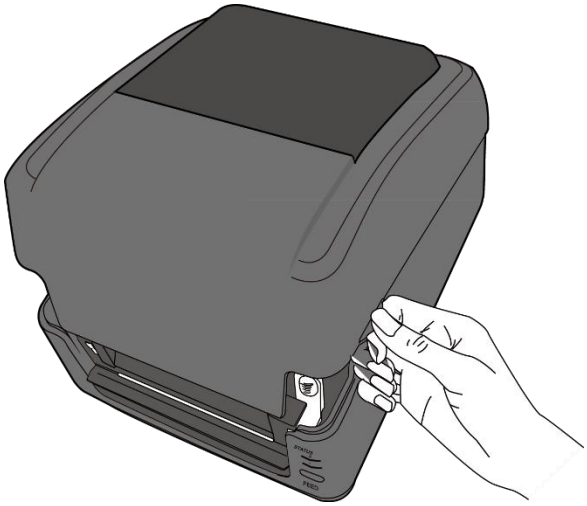
2.3.1 Prepare media

The inside wound and outside wound media roll can be loaded into the printer the same way. In case the media roll is dirty during shipping, handling or storage, remove the outside length of the media. It helps avoid dragging adhesive and dirty media between the printhead and platen roller.

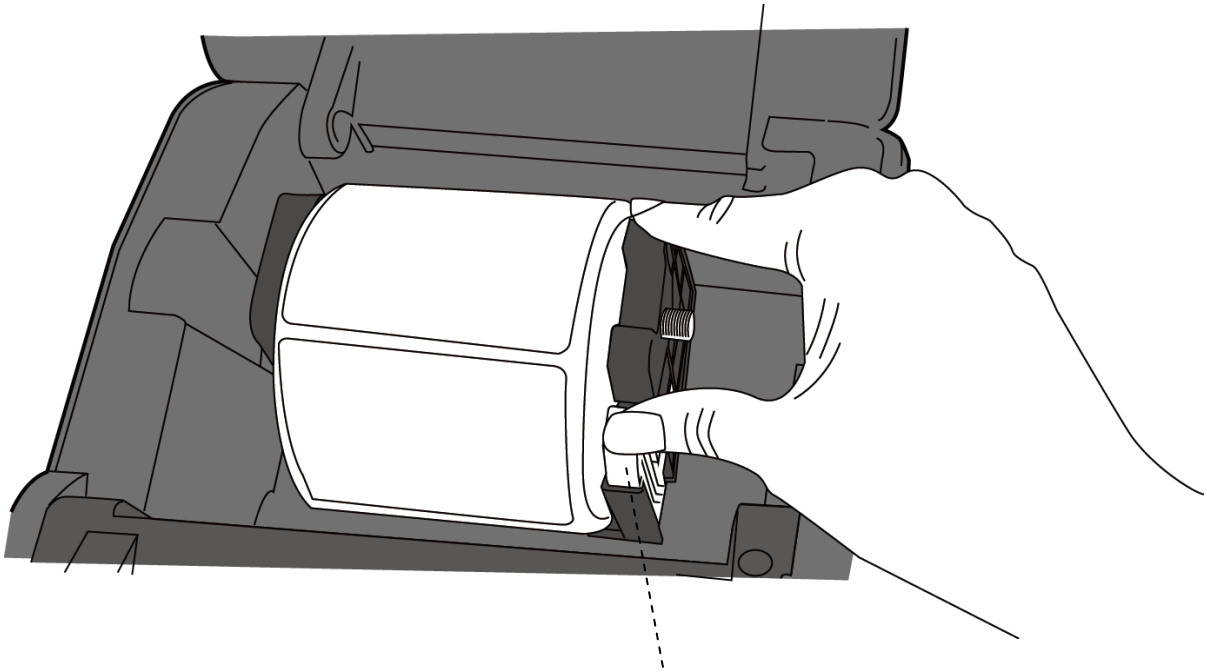


2.3.2 Place a media roll

1. Open the top cover of the printer.

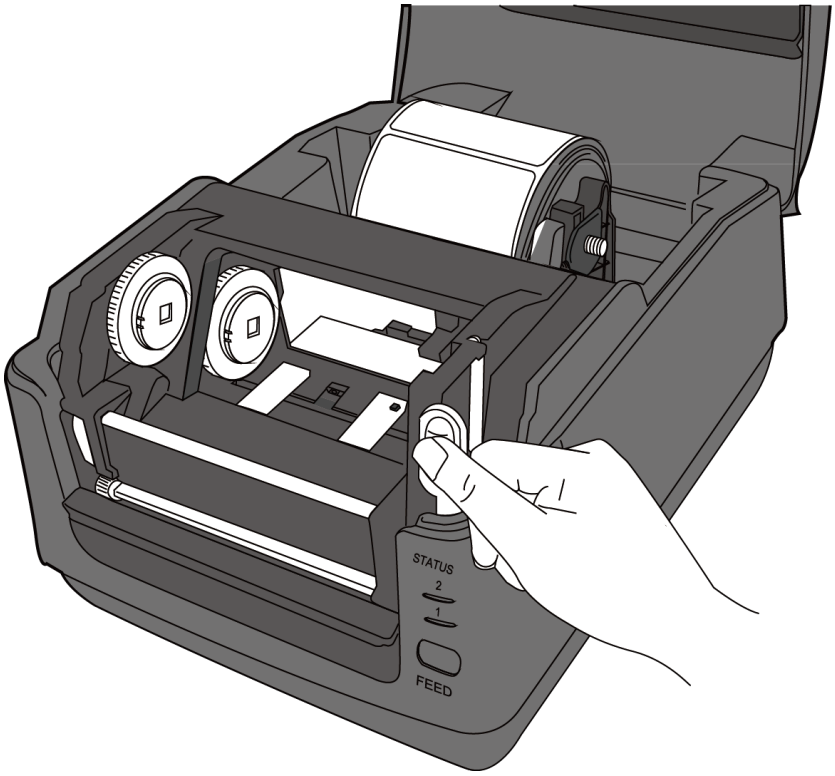


2. Press the switch lock on the **Media Roll Holders** to slide them outward, and place the media roll between the holders. Adjust the media roll so its print side is facing up, and make sure it is clamped tightly by the holders.

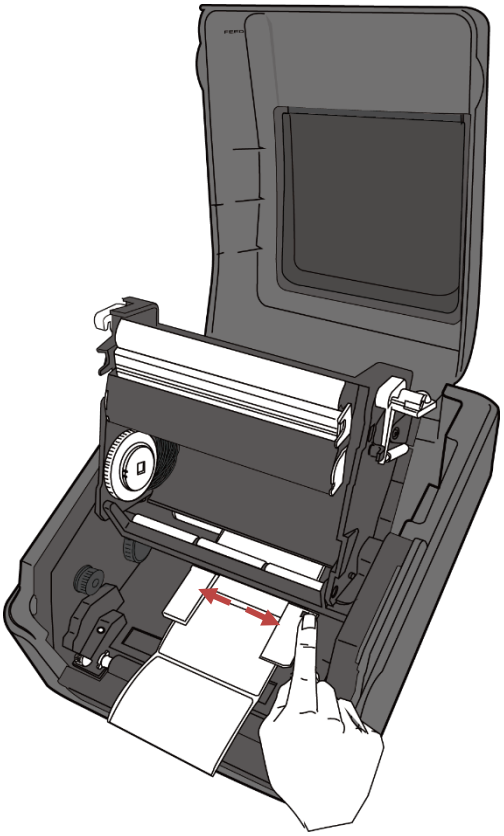


Switch Lock

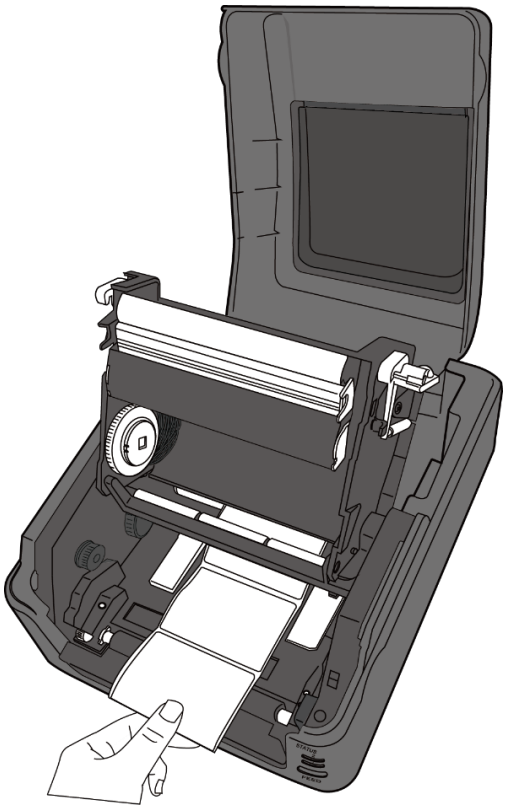
3. Push the **Module Release Latch** to open the printer module.



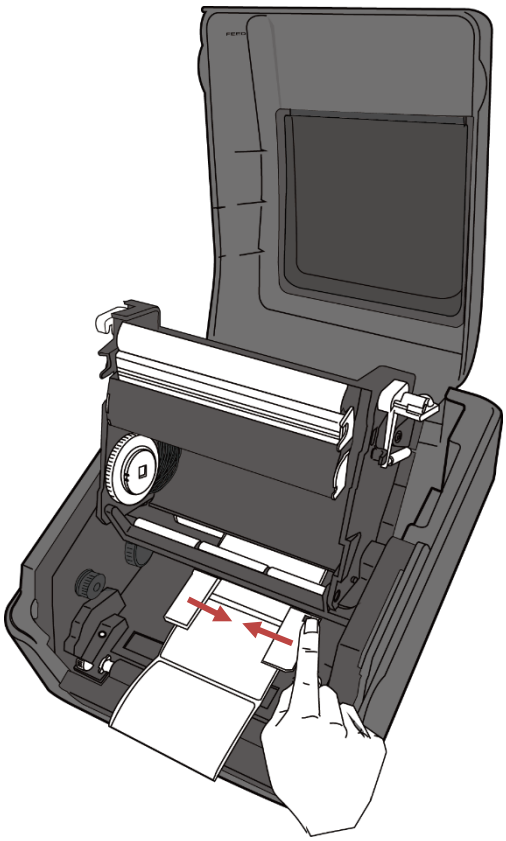
4. Press the **Lock** button on the **Media Guides** to slide them outward.



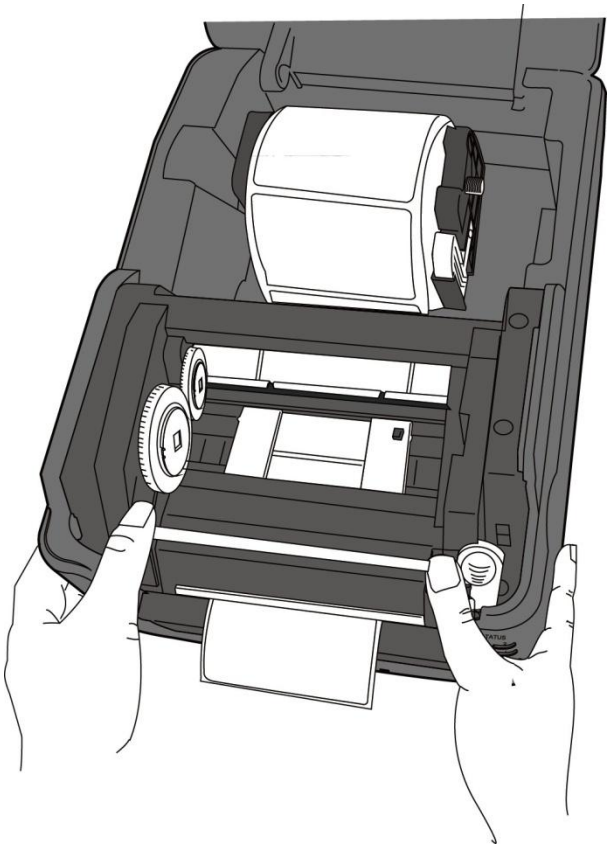
5. Pull the media until it reaches out of the printer.



6. Put the media under the **Media Shaft** and center it between the **Media Guides**.

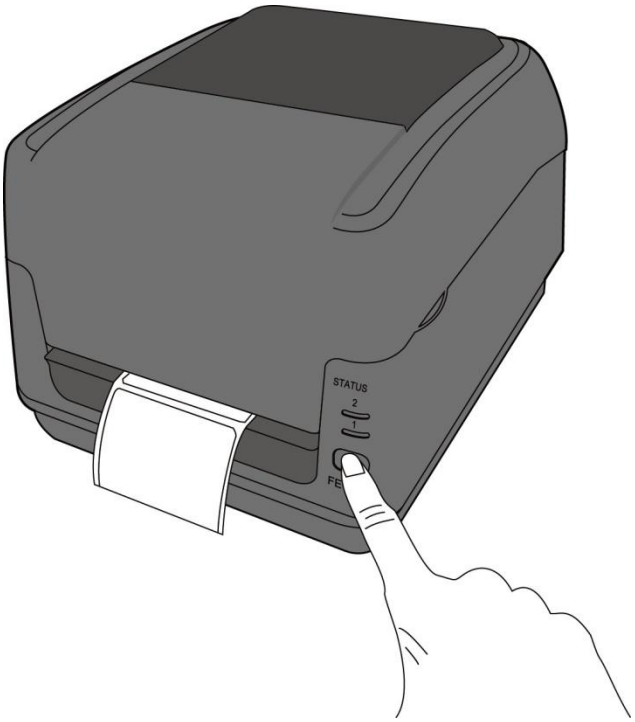


7. Close the printer module and press down firmly at its both sides, until you hear a click.

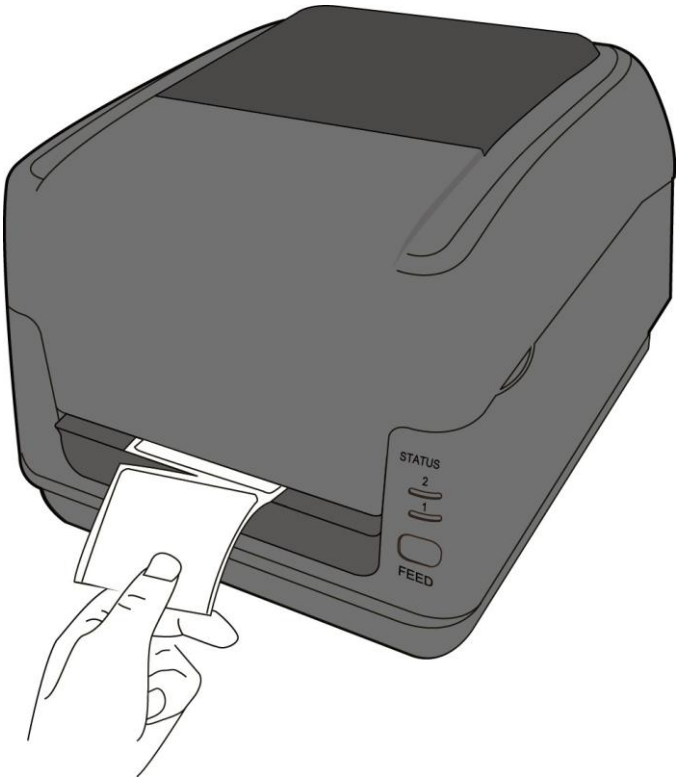


2.3.3 Test media feed

1. Turn on the printer, and press the **FEED** button to feed a label.

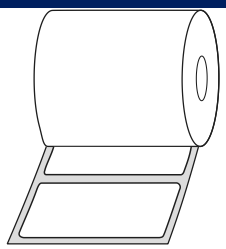
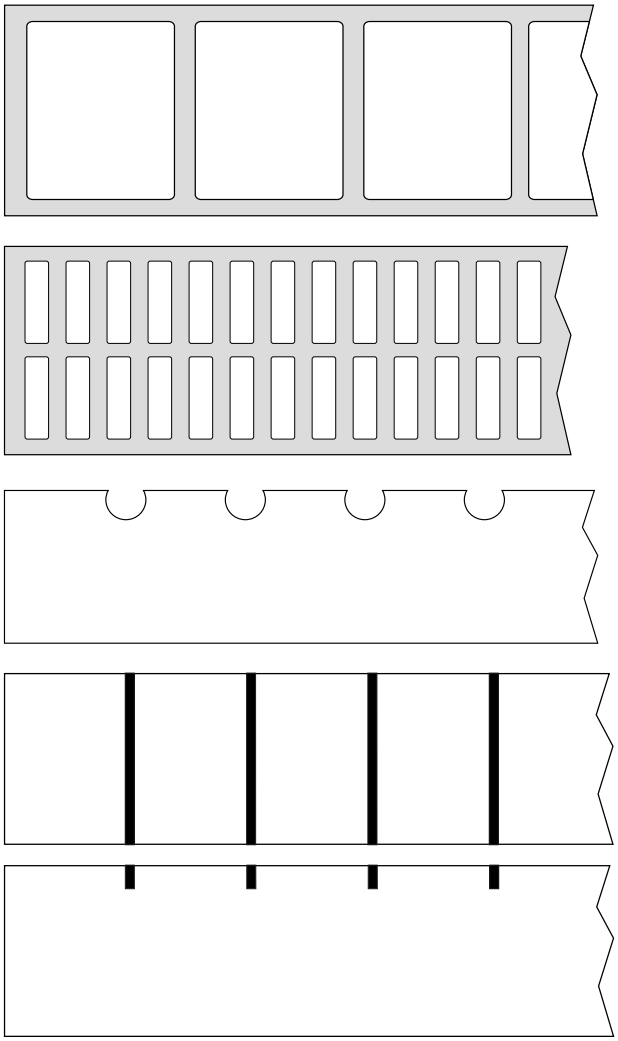


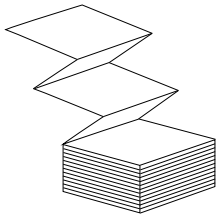
2. Flip the media and tear it along the edge of the top cover.



2.4 Media types

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

Media Type	Looks Like	Description
Non-Continuous Media		Non-continuous media is the typical media for bar code 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, while some are linerless. 

Media Type	Looks Like	Description
Fanfold Media		Fanfold media is in continuous form, but it can be used as non-continuous media, because its labels are separated by folds. Some fanfold media also has black marks or liners.

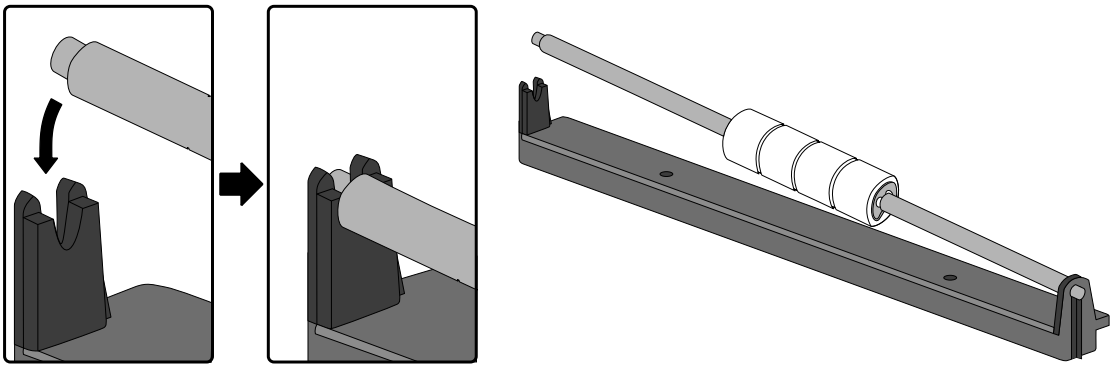
2.5 Paper Support Roller

Important if the label length is less than 45 mm, width is less than 50 mm, gap is more than 3 mm, and the media roll is outside wound. We recommend you use the paper support roller

A paper support roller is used to prevent paper jam. It is placed between the **Media Shaft** and the **Media Roll Holders**. When paper is moving forward during the printing, it might be curled or crumpled and cause paper jam. The roller can hold the paper down to solve this problem.

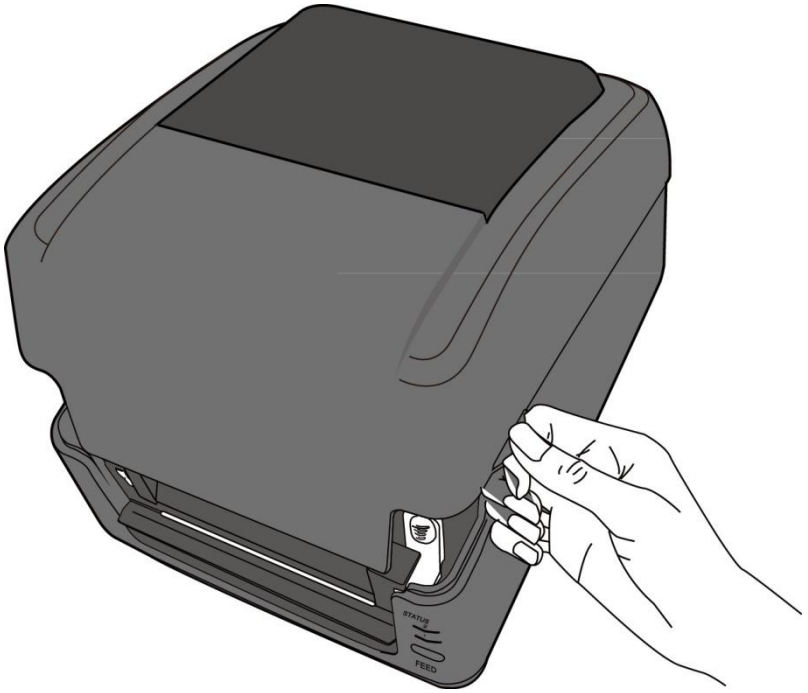
To install a paper support roller:

1. Insert the right end of the rod to the hole of the right bracket holder.
2. Place the left end of the rod on the left bracket holder.

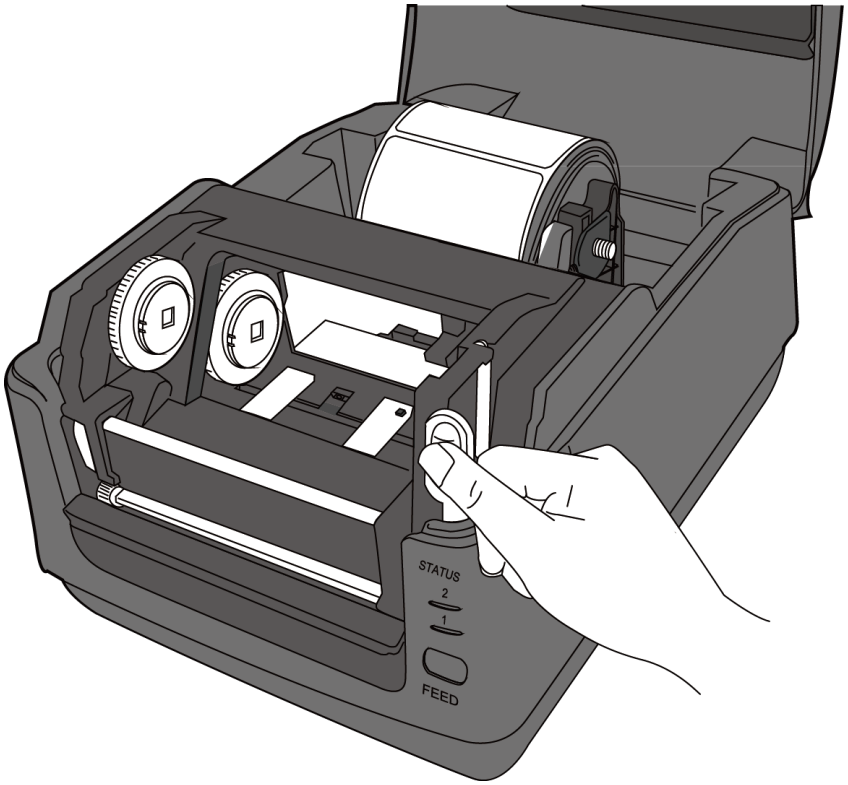


2.6 Placing Ribbon Roll

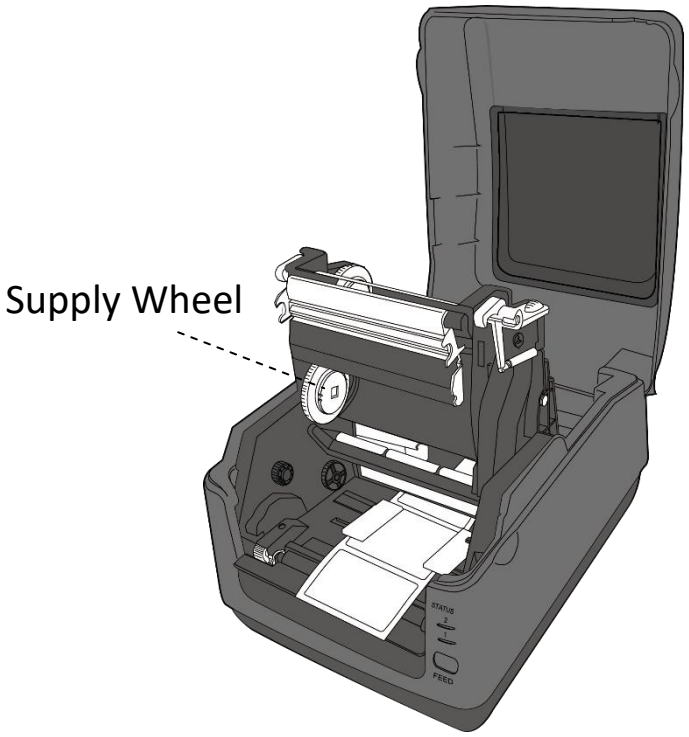
1. Open the top cover of the printer.



2. Push the **Module Release Latch** to open the printer module.

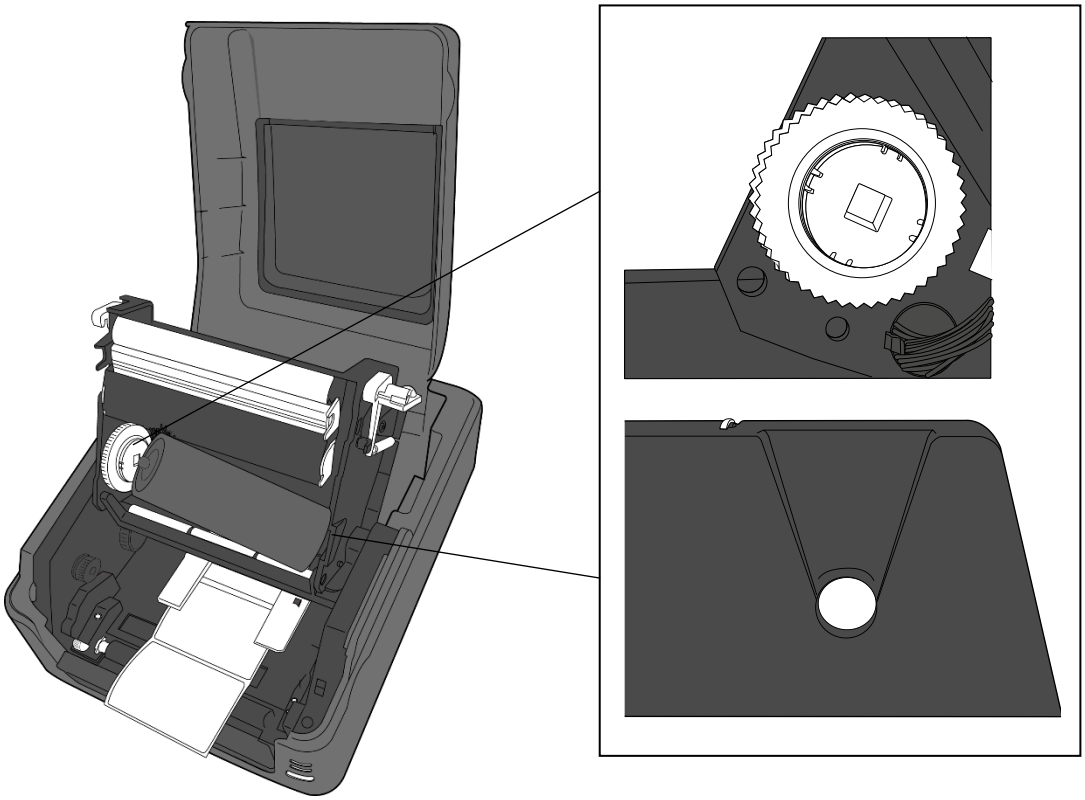


3. Lift the printer module to reveal the **Supply Wheel**.

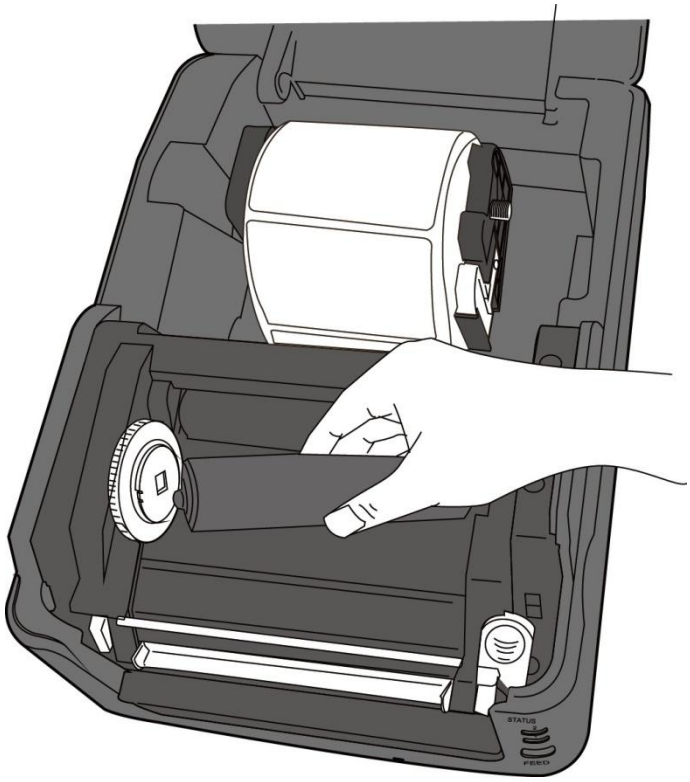


4. Do the following to install both rolls:

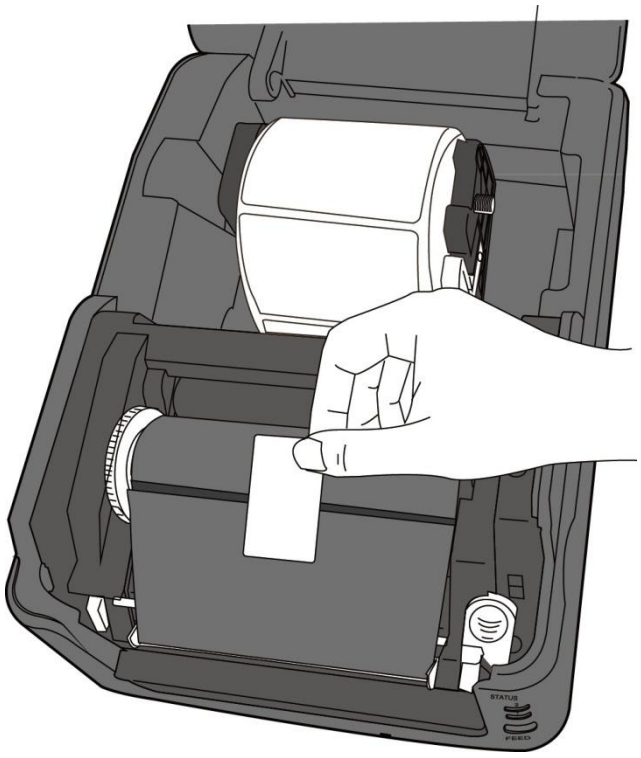
- To load the supply roll, align the notches on the left side and press the roll to the supply hub, and then press the right side of the roll to the hole.



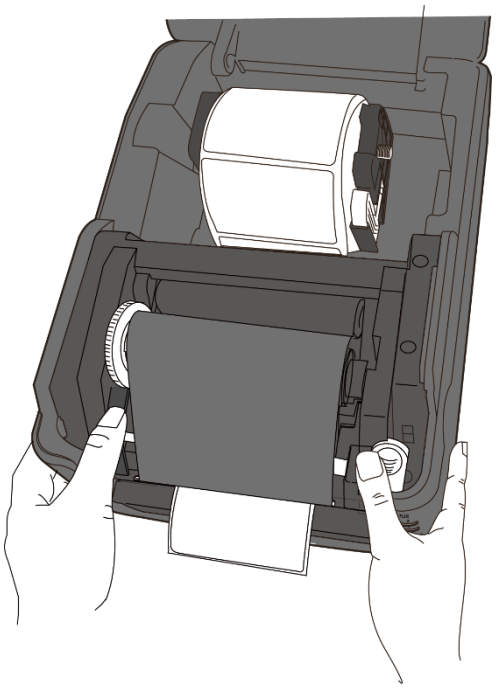
- To load the take-up roll, align the notches on the left side and press the roll to the take-up hub, and then press the right side of the roll to the hole.



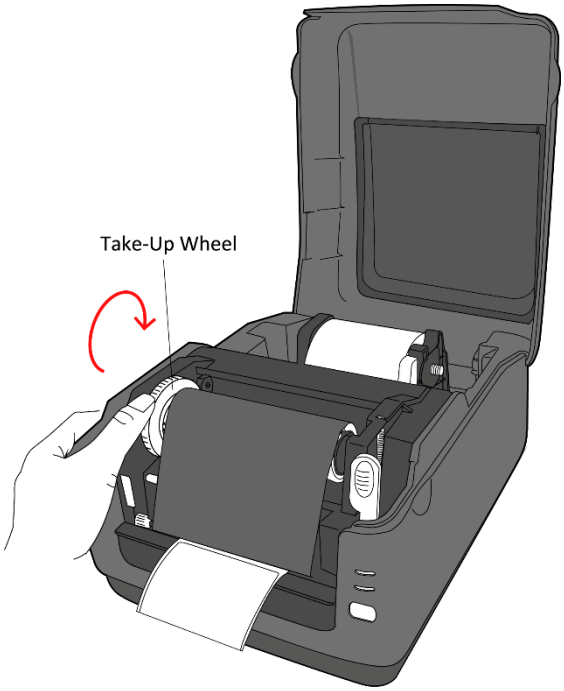
5. Pull the ribbon from the supply roll and tape it on the take-up roll.



6. Close the printer module and press down firmly at its both sides, until you hear a click.



7. Rotate the **Take-Up Wheel** to straighten the ribbon and reduce its wrinkles.



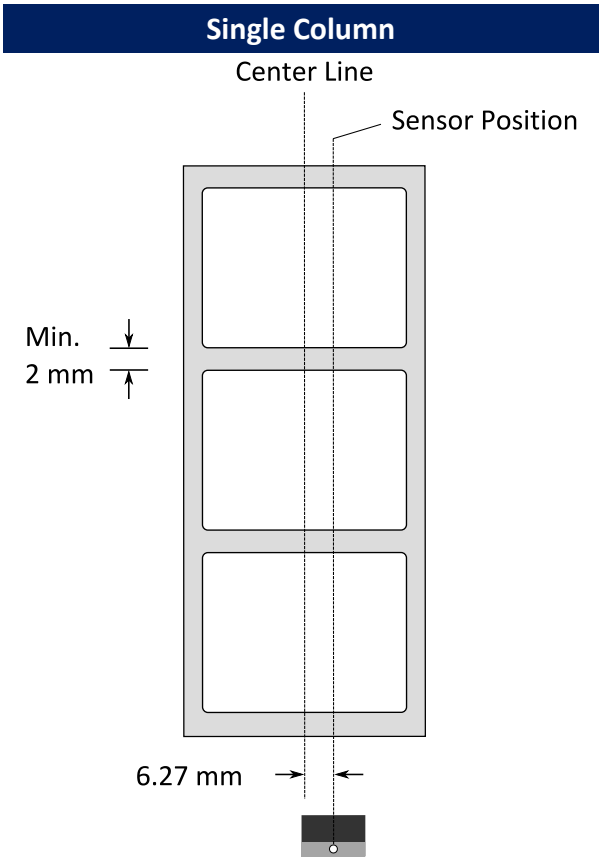
Note For the supply hub, the ribbon wind direction can be coated side in (CSI) or coated side out (CSO); for the take-up hub, the wind direction must be CSO.

2.7 Media sensing

P4 printers offer two types of media sensor: transmissive and reflective. They are used for detecting specific media types.

2.7.1 Transmissive sensor

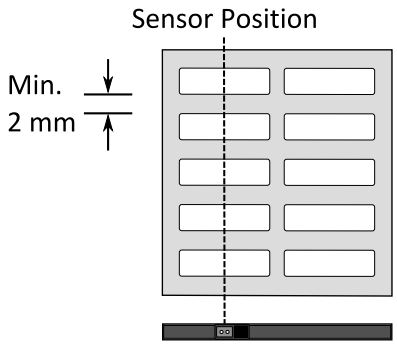
The transmissive sensor is fixed and placed near the center of the printhead. It is used for detecting gaps across the entire width of the label.



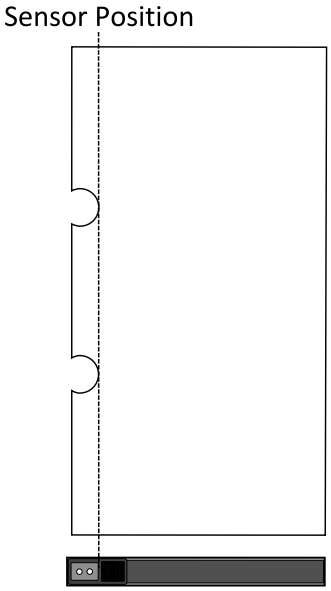
2.7.2 Reflective sensor

The reflective sensor is movable within the entire width of the media. It detects gaps, notches and black marks not located at the center of the media.

Multi Columns

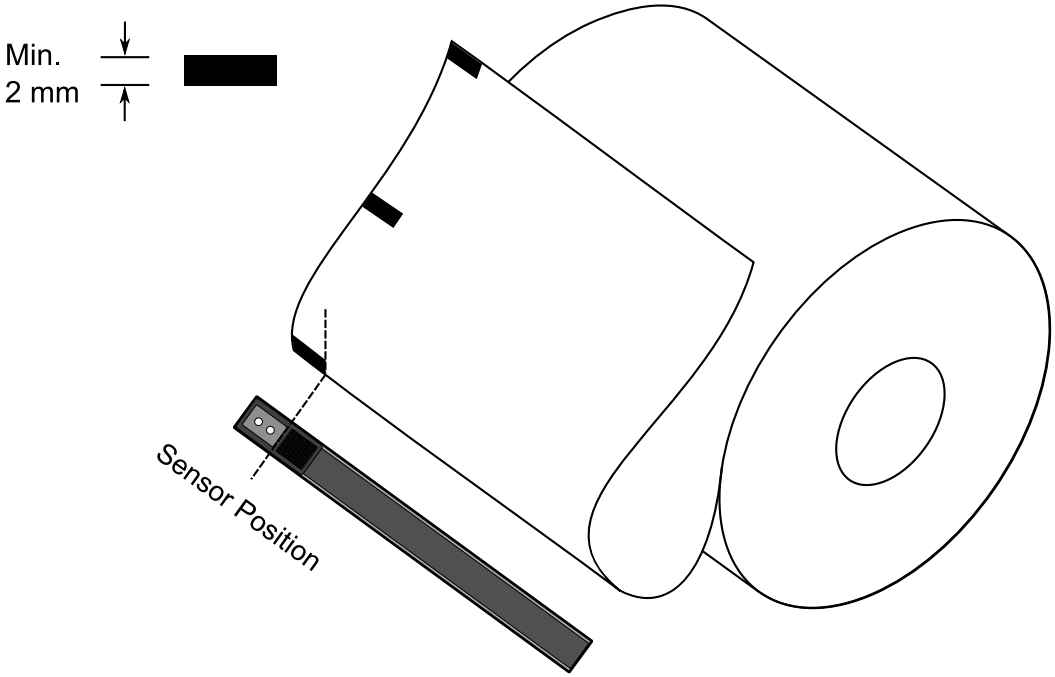


Notch



Black Mark

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



3 Printer operation

This chapter provides information about printer operation.

3.1 Printing Media Calibration & Configuration

You will want the printer to work properly before starting your print jobs. To do this, you need to calibrate the media sensor. Printers provide transmissive and reflective sensor calibration. Take the following steps to use them.

1. Make sure the media is properly loaded, the print module is closed, and the printer's power switch is set to the **OFF** position.
2. Press and hold the **FEED** button, and turn on the printer.
3. Both status lights glow solid amber for a few seconds. Next, they turn to green shortly, and then turn to other colors. Do one of the following to select the sensor:

- If you want to calibrate the transmissive sensor, when LED 2 turns to red and LED 1 turns to green, release the **FEED** button immediately.
- If you want to calibrate the reflective sensor, when LED 2 turns to amber and LED 1 green turns to, release the **FEED** button immediately.

4. Press the **FEED** button. The media calibration is complete after the printer feeds 3-4 labels and stops.

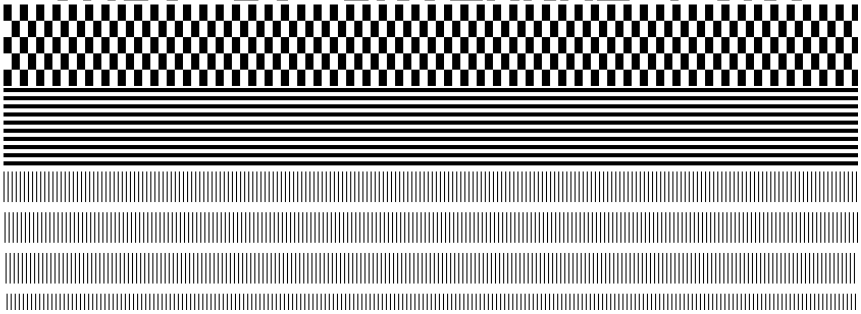
3.2 Self test

The printer can run a self test to print a configuration label, which helps you understand current settings of the printer.

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. Next, they turn to green shortly, and then turn to other colors. When LED 2 turns to green and LED 1 turns to amber, release the **FEED** button.
4. Press the **FEED** button to print a configuration label.

Your configuration label should look like this:

```
LABEL PRINTER WITH FIRMWARE
P4-250-V01.00 20170119 PPLB
STANDARD RAM : 32M BYTES
AVAILABLE RAM : 3678K BYTES
FLASH TYPE : ON BOARD 16M BYTES
AVAILABLE FLASH : 7268K 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.: 001A
REFLECTIVE SENSOR
REF: 0051 SEE2: 0213
MAX LABEL HEIGHT: 39 INCHES
PRINT WIDTH: 812 DOTS
LAB LEN(TOP TO TOP): 81mm
SPEED: 5 IPS
DARKNESS: 5
THERMAL TRANSFER
PRINT LENGTH: 0M
CUT COUNT:0
RS232: 9600, 8, N, 1P, XON/XOFF
CODE PAGE : English (437)
MEDIA : NON-CONTINUOUS
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: 00-00-00-00-00-00
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: 00000000002
USB SN: 000000000001
CG ENABLED
ot(0,0)<0.1dot,0.01mm>
rm(0,0)<1+ 0-,0.01mm>
sm(0,0)<1+ 0-,0.01mm>
rv(122,77,44)<0.01v><P>
sv(278,158,119)<0.01v><P>
bv(319,41,277)<0.01v><P>
rso(0)<0.01mm>
sso(0)<0.01mm>
This is internal font 1. 0123456789 ABCabcXyz
This is internal font 2. 0123456789 ABCabcXyz
This is internal font 3. 0123456789 ABCabcXyz
This is internal font 4. 0123456789 ABCXYZ
THIS IS INTERNAL FONT
```



3.3 Restore your printer

By resetting your printer, you can return your printer to the state it was in when you receive it. This can help you solve some problems caused by settings changed during the printing.

Do the following to reset your printer:

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. Next, they turn to green shortly, and then turn to other colors. When both lights turn to red, release the **FEED** button immediately.
4. Press and hold the **FEED** button for 3 seconds and release it. Both status lights blink red three times, and turn to solid amber for a few seconds. After the printer is reset, LED 2 goes out while LED 1 turns to solid green.

Important In step 4, if you do not hold the **FEED** button long enough, LED 2 will blink amber three times while LED 1 goes out. It means the printer is not reset.

3.4 Communications

3.4.1 Interfaces and Requirements

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

■ USB Interface Requirements

The Universal Serial Bus (USB) interface is compatible with your existing PC hardware. The USB's "plug and play" design makes installation easy. Multiple printers can share a single USB port/hub. The different usage of type A and B as below.

USB type A	USB Flash drive, USB keyboard or USB Scanner.
USB type B	PC to set printer.

■ Serial (RS-232) Port

The required cable must have a nine-pin "D" type male connector on one end, which is plugged into serial port located 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 status of Ethernet:

LED Status	Description	
Both Off	No Ethernet link detected.	
Blinking	The printer waits for printer ready. It will take about few seconds to be ready.	
Green	Speed LED	On: 100 Mbps link Off: 10 Mbps link
Amber	Link/Activity LED	On: link up Off: link down Blinking: activity

3.5 Driver installation

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

Drivers can be downloaded from Argox website

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

Note:

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

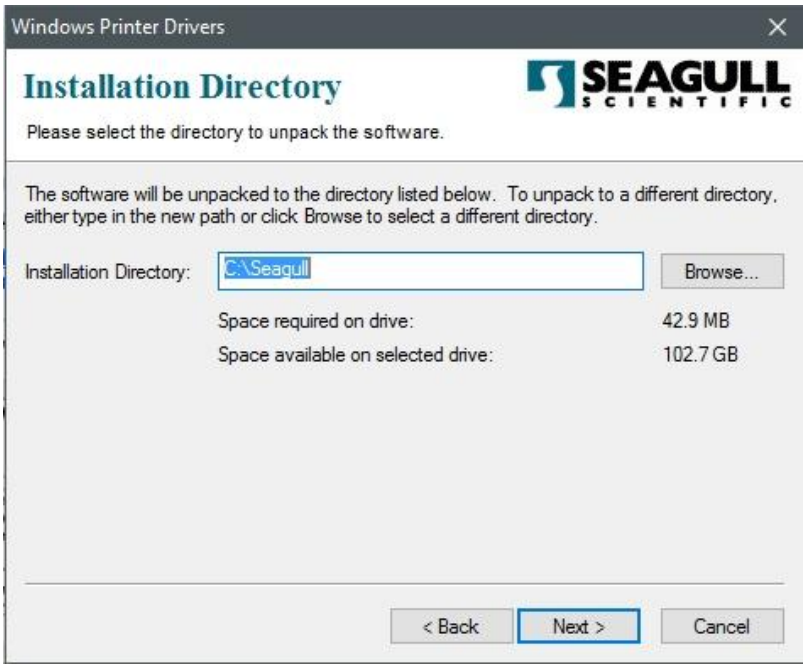
(Even though the "Add Printer Wizard" is from Microsoft, it too easily performs a number of tasks incorrectly when updating existing drivers. It also badly handles the situation where a printer driver is already in use by a Windows application.)

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

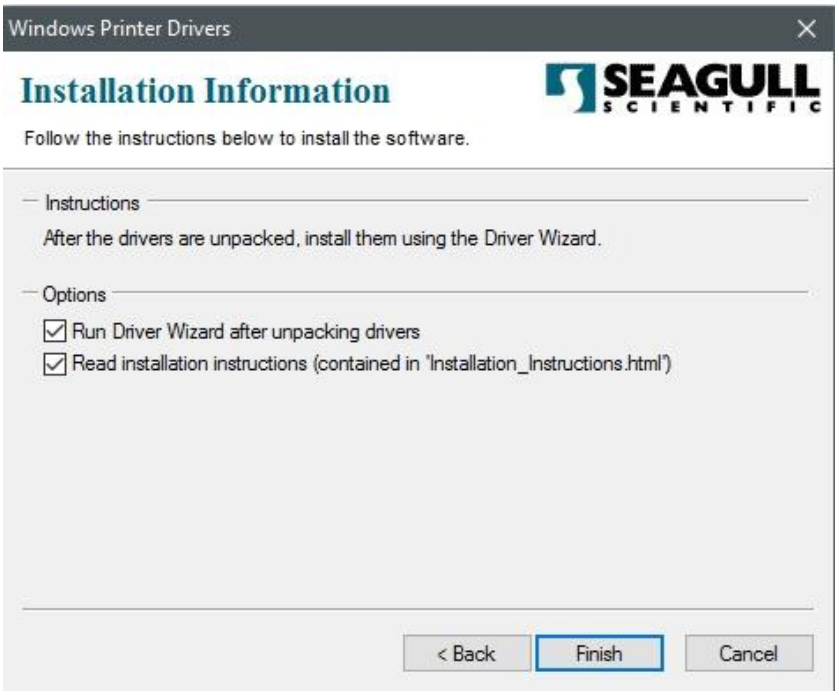
2. Turn on the printer. If the printer supports Plug-and-Play, and you have successfully connected it using a USB cable, then the Windows Add Hardware Wizard will automatically detect the printer and display a dialog that allows you to install a driver. Click Cancel and do not install the driver using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

3. Run the driver from Argox website. On the prompt, Windows Printer Driver, select “I accept…” and click "Next".

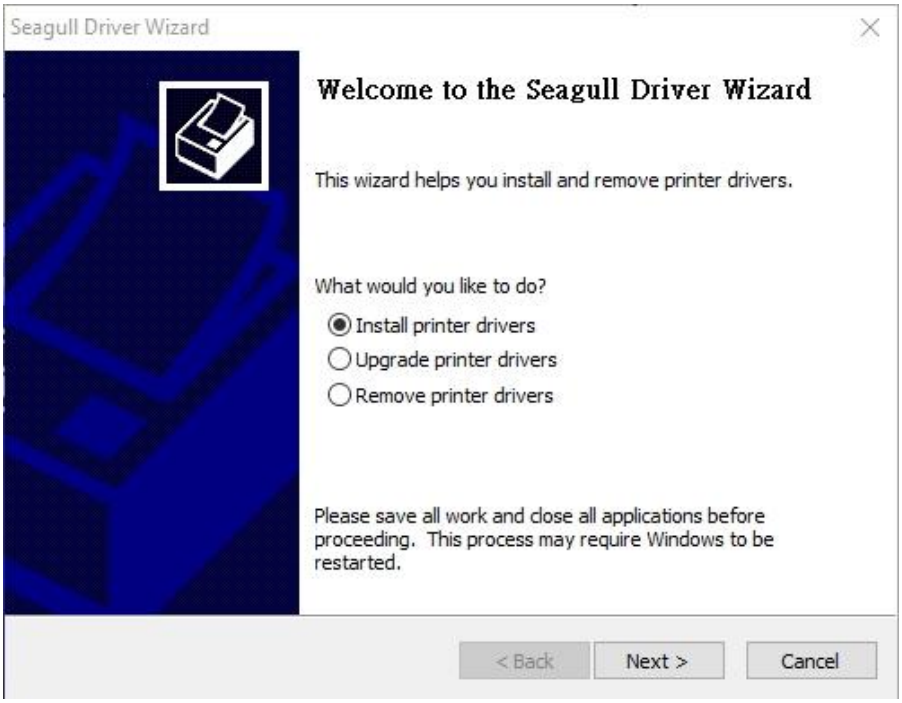
4. Assign the directory to keep Seagull driver, (for example: C:\Seagull) and click "Next".



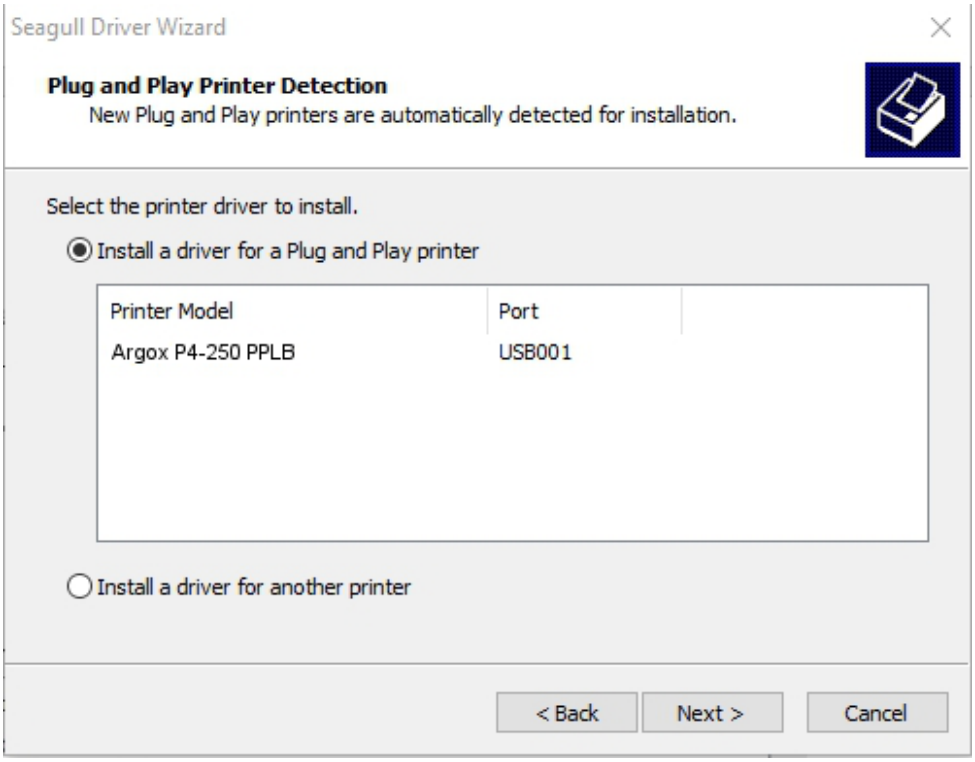
5. Click "Finish".



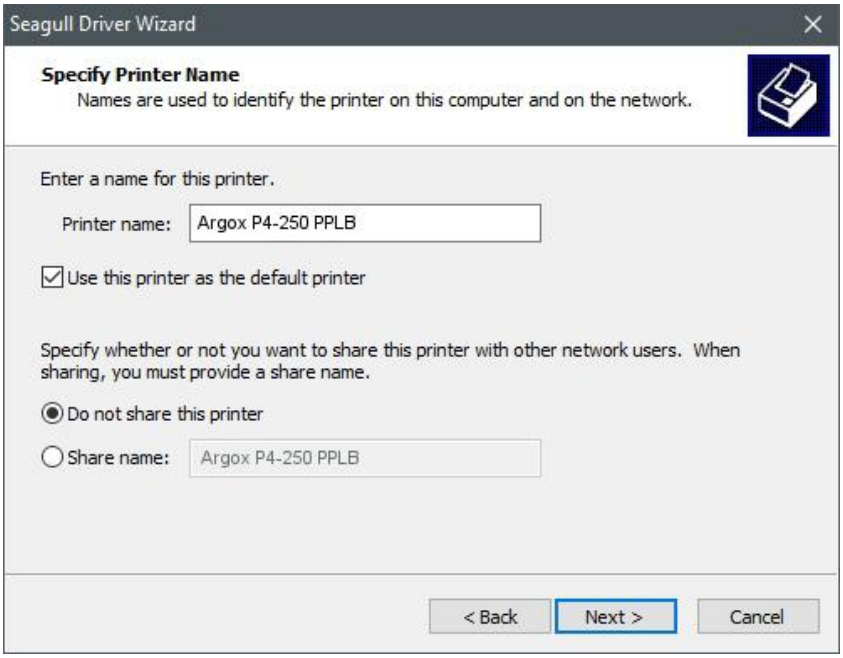
6. Select Install printer drivers and Click "Next"



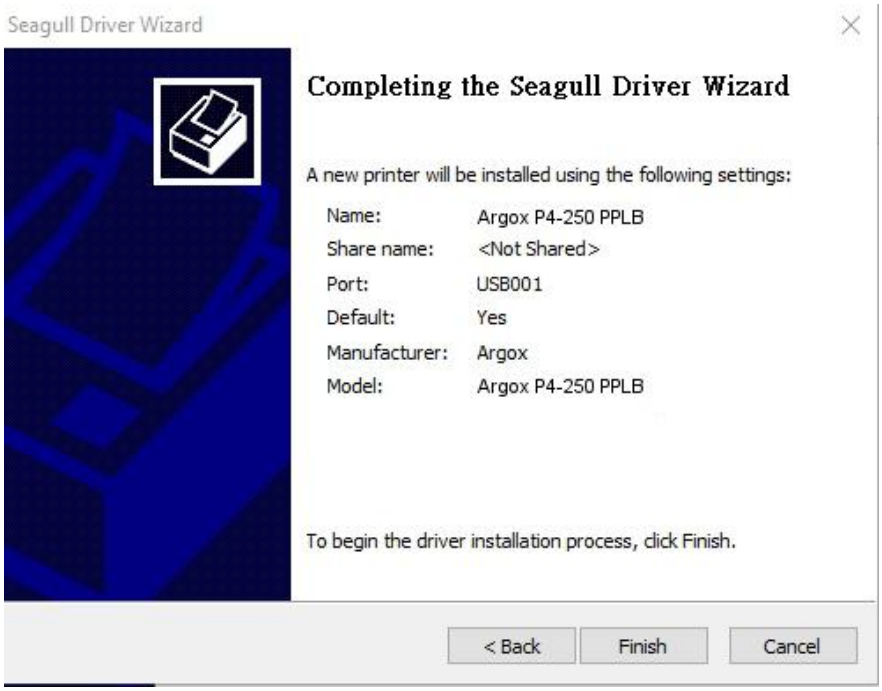
7. On the Seagull Driver Wizard prompt, select the first radio button to “Install a driver for a Plug and Play printer” Then click “Next.”



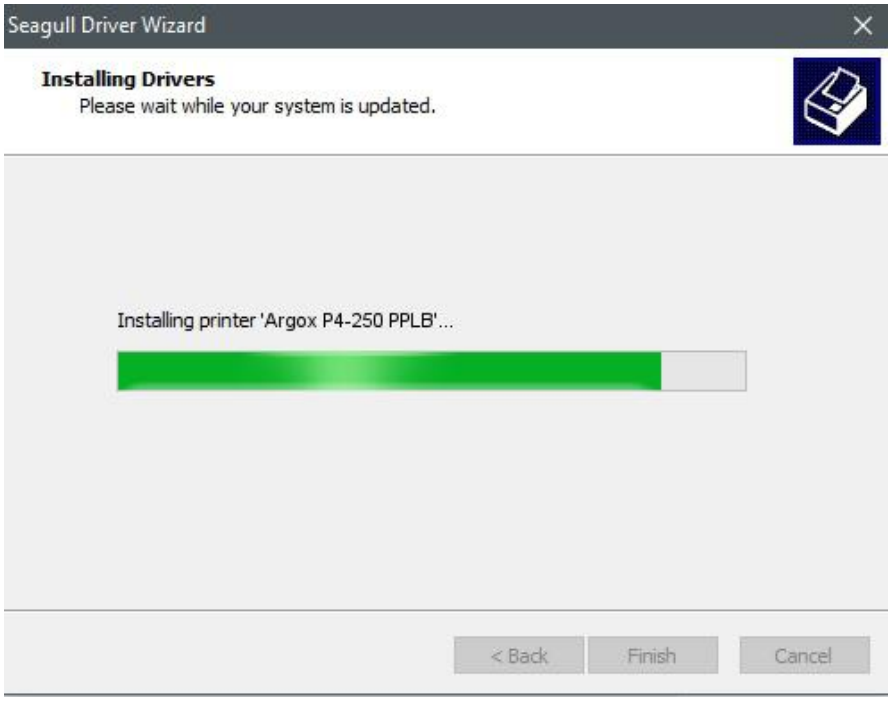
8. Enter Printer name (i.e. Argox P4-250 PPLB) and select "do not share this printer”, and click "Next"



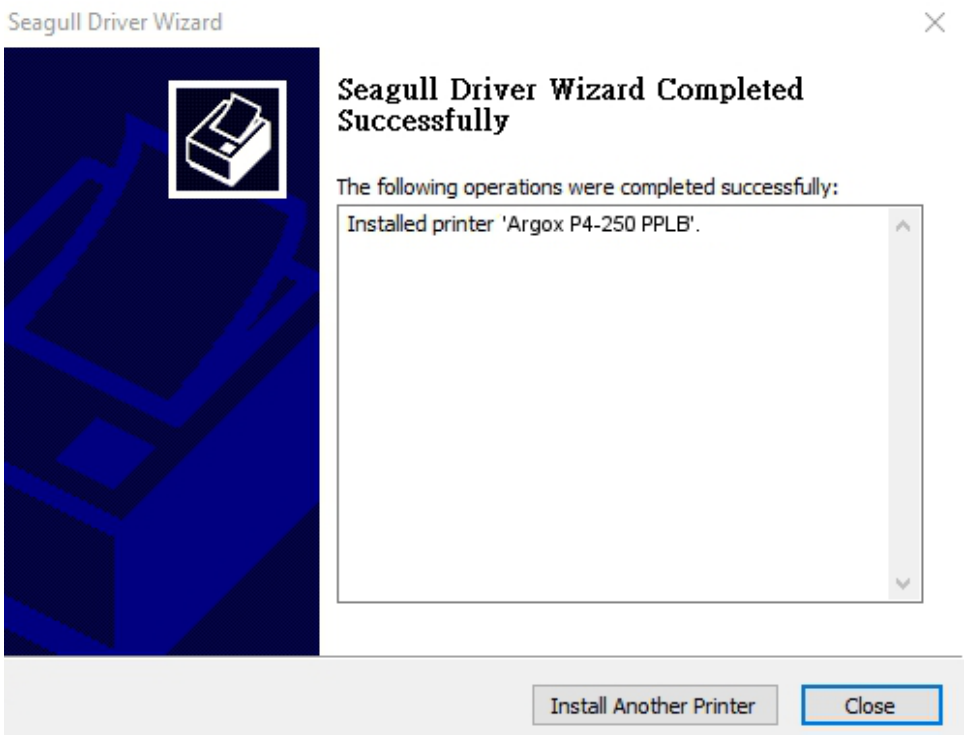
9. Check all the data on the showing screen, if it is correct, click "Finish".



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



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

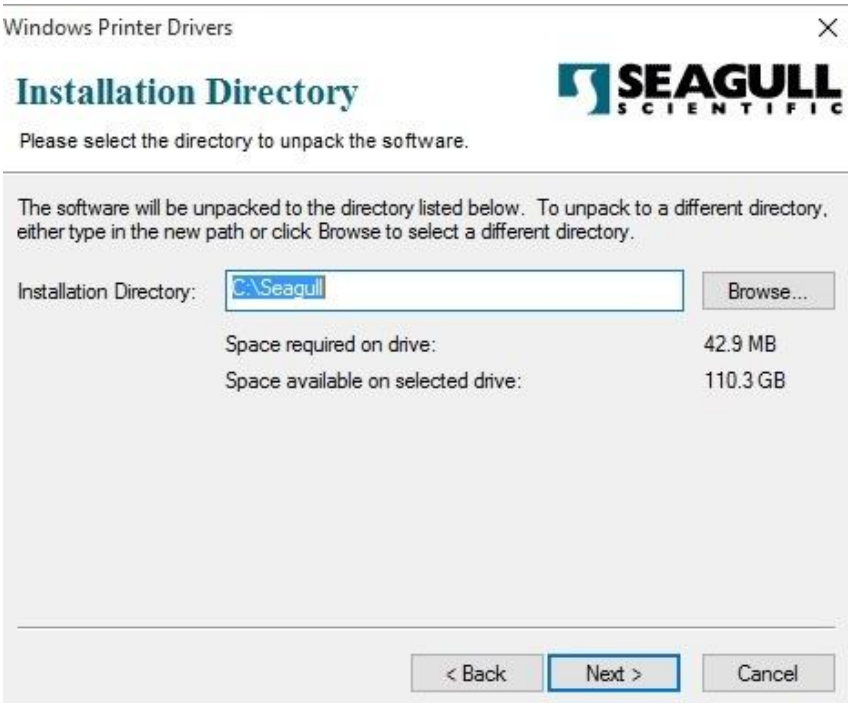


3.5.2 Installing a Printer Driver (for other interfaces except USB)

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

2. Run the driver from Argox website. On the prompt, Windows Printer Driver, select “I accept…”and click "Next".

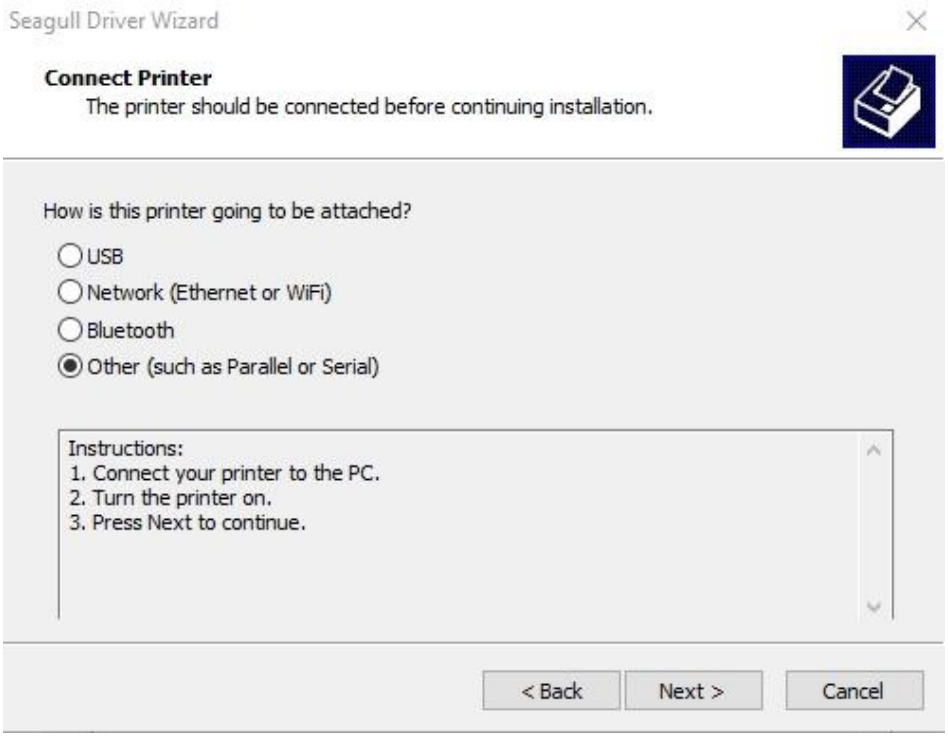
3. Assign the directory to keep Seagull driver, (for example: C:\Seagull) and click "Next".



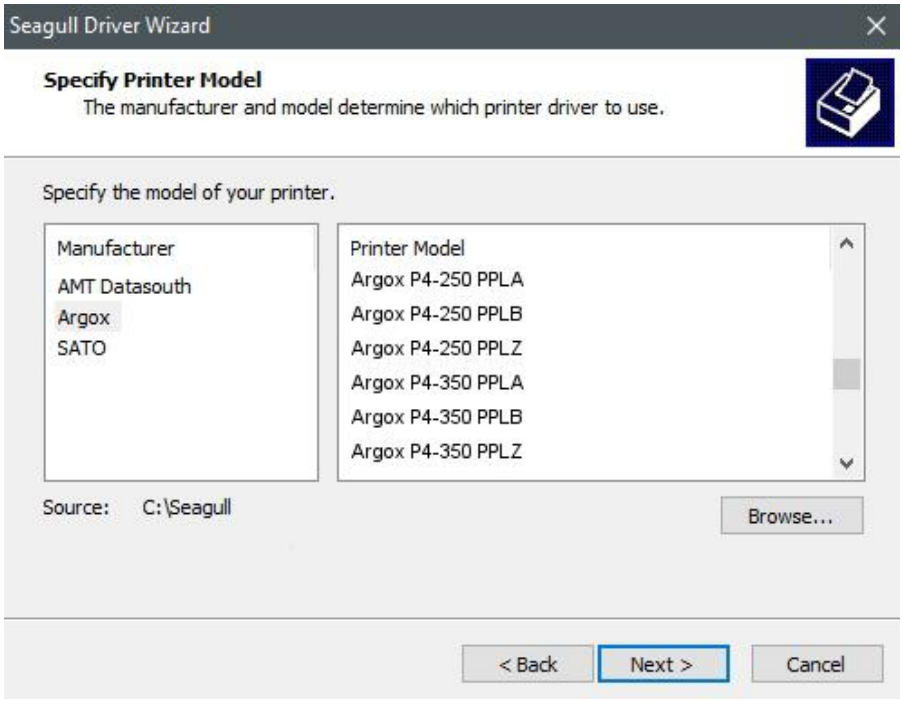
4. Click "Finish".

5. Select Install printer drivers and Click "Next"

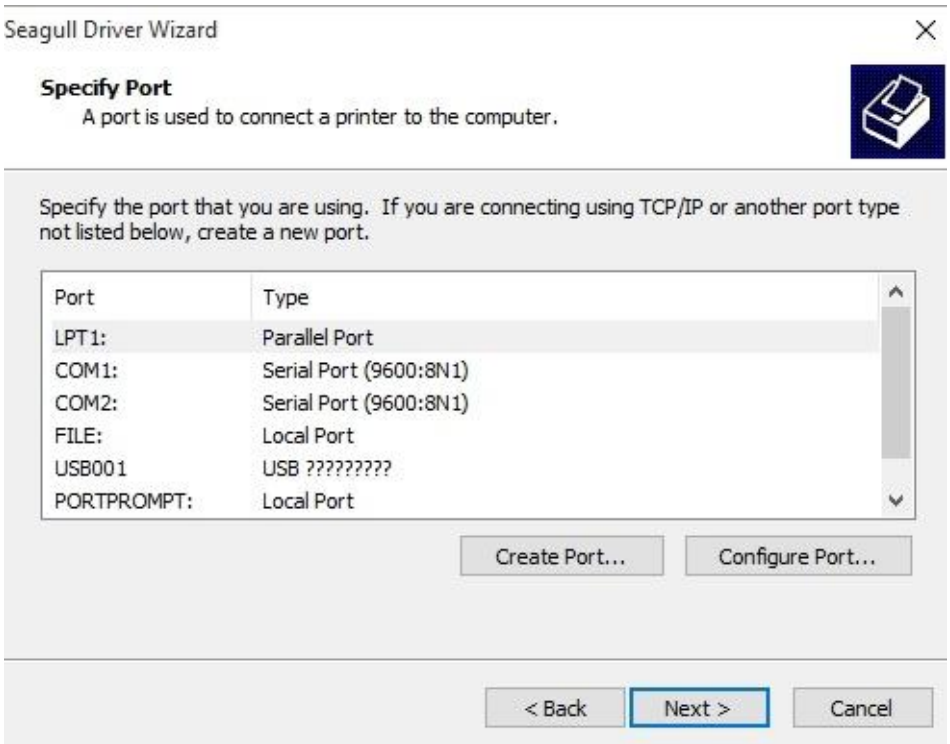
6. Make sure printer is connected to PC, select “Other” and click “Next”:



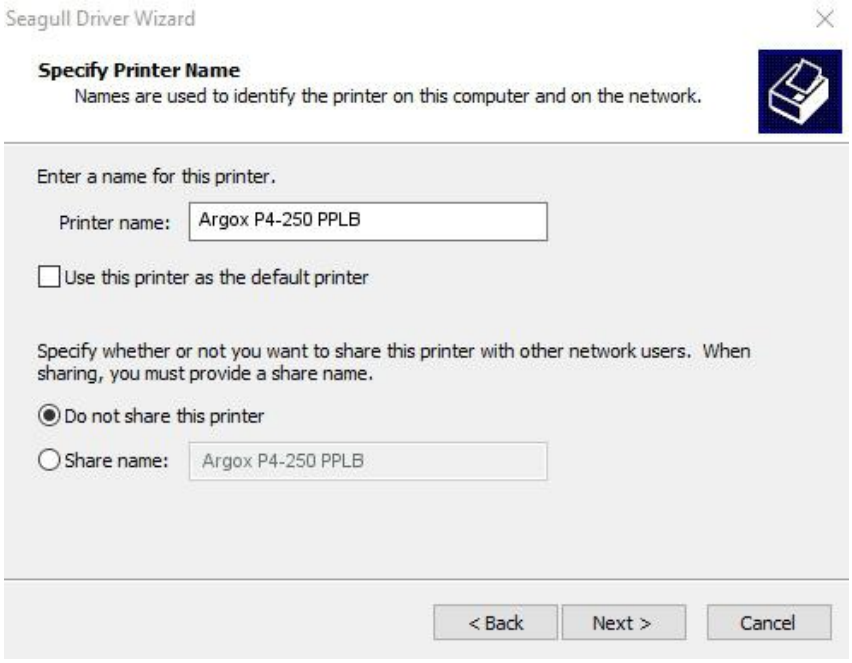
7. Select model & emulation - the following examples are based on model P4-250 PPLB:



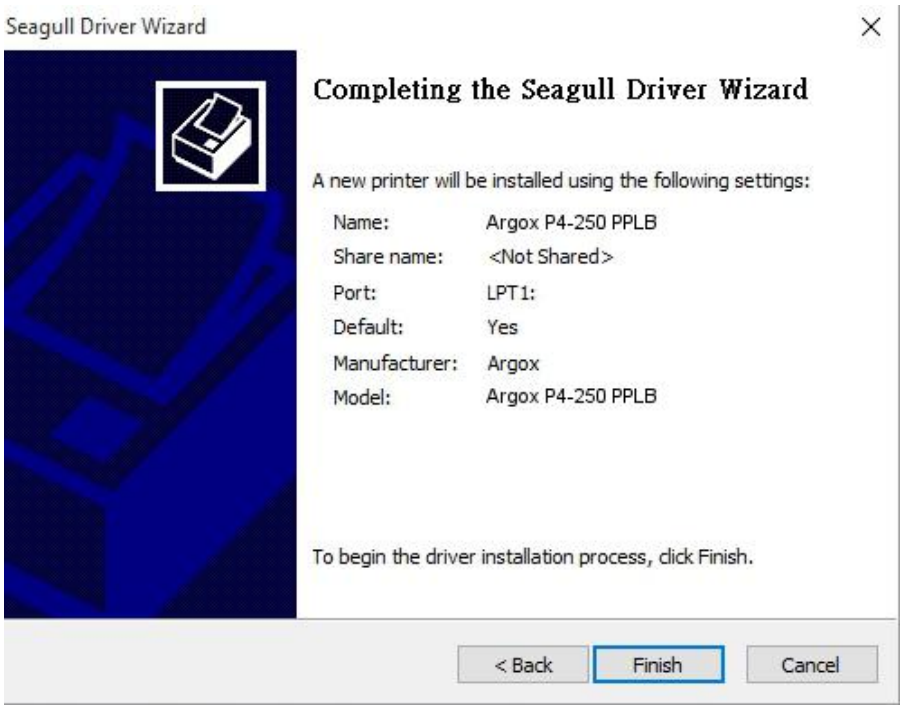
8. Select the port of the printer and click "Next".



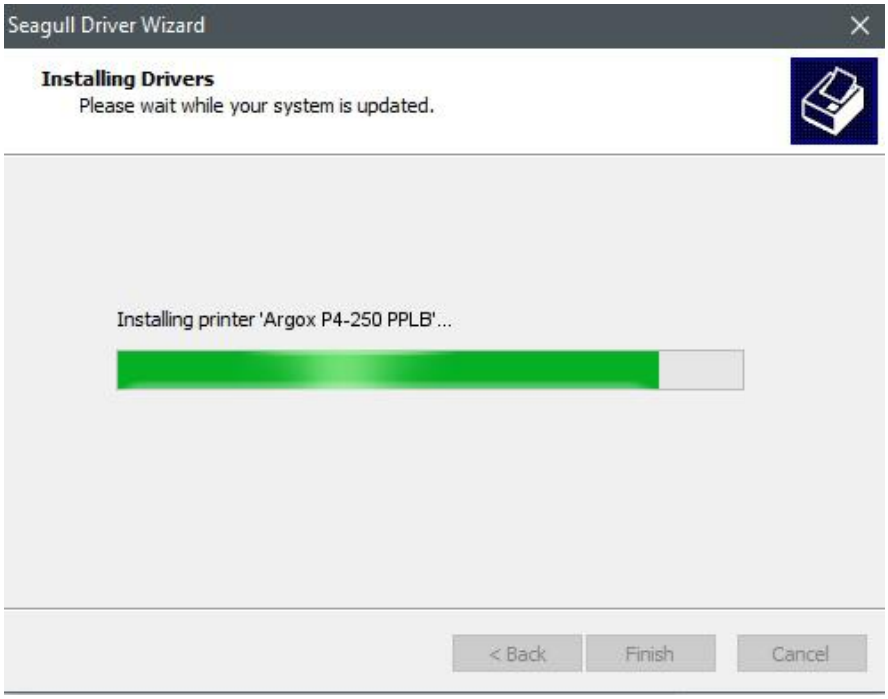
9. Enter Printer name (i.e. Argox P4-250 PPLB) and select "do not share this printer", and click "Next".



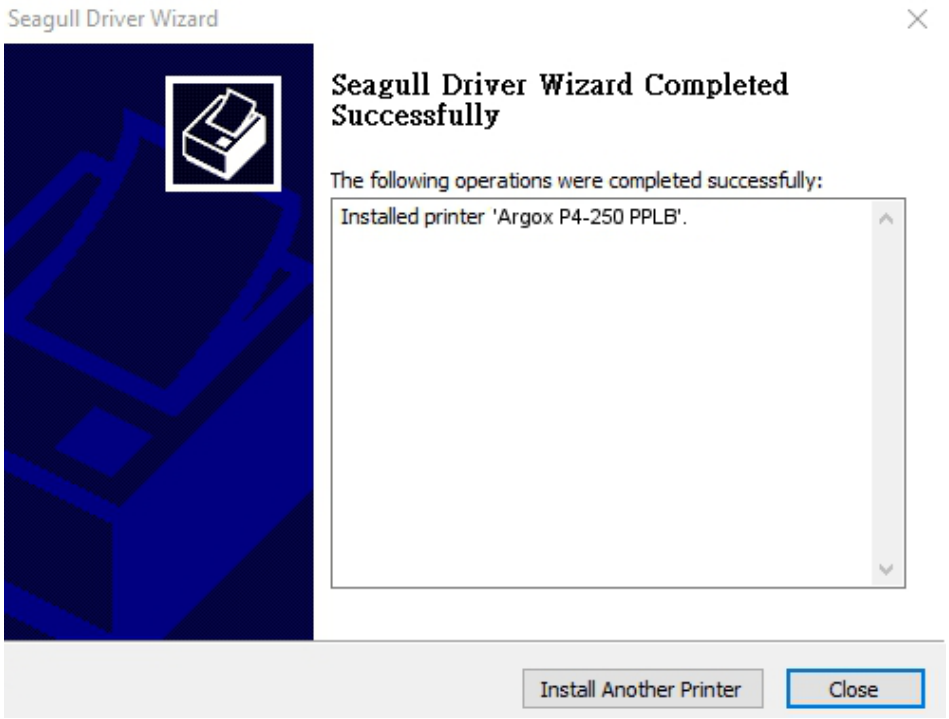
10. Check all the data on the showing screen, if it is correct, click "Finish".



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



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



4 Maintenance

This chapter describes routine cleaning procedure.

4.1 Cleaning

To maintain print quality and prolong the printer's life, you need to perform some routine maintenance. Daily maintenance should be done for high volume printing, and weekly for low volume printing.

Caution Always turn off the printer before cleaning.

4.1.1 Printhead

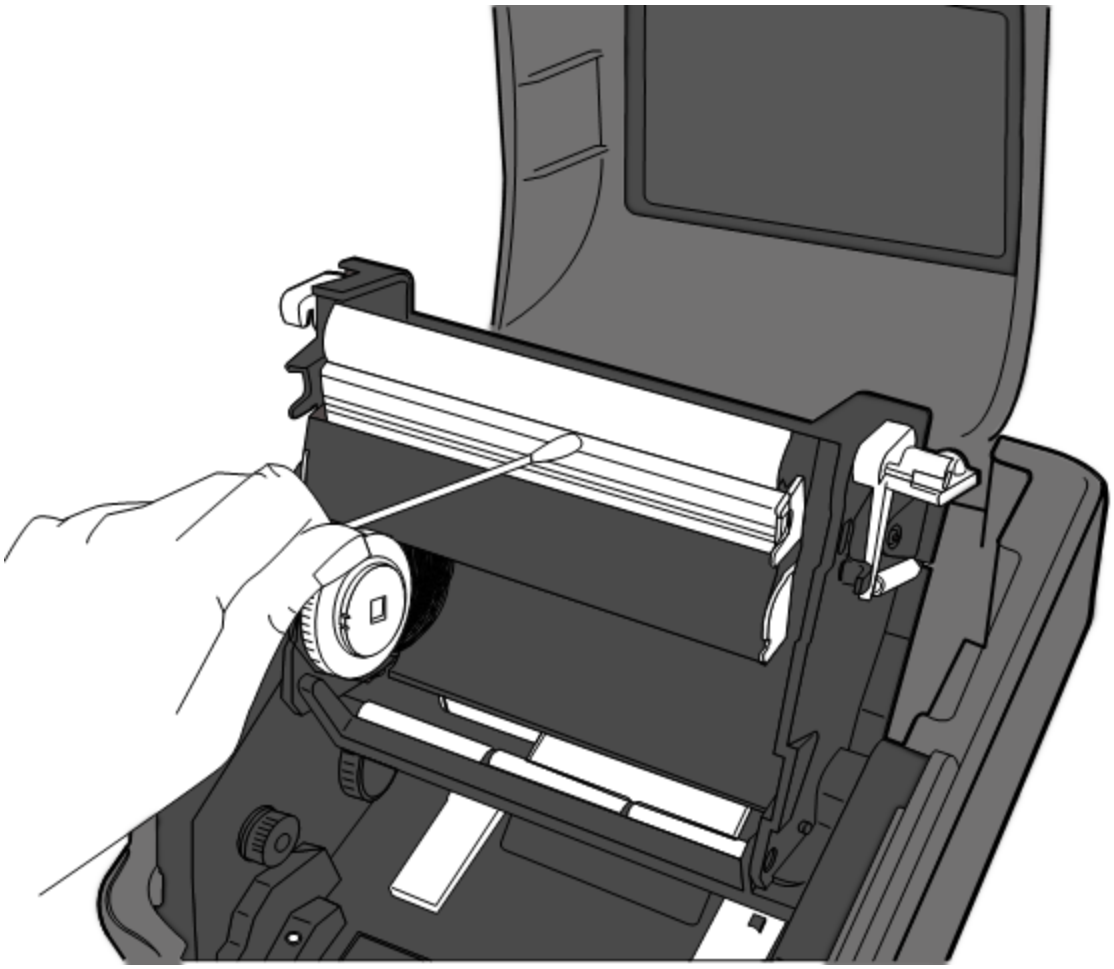
It is essential to keep printhead clean if you want the best print quality. We strongly recommend that you clean the printhead when you load a new media roll. If the printer is operated in critical environment, or the print quality declines, you need to clean the printhead more frequently.

Keep in mind these things before you clean:

- Keep the water away in case of corrosion on heating elements.
- If you just finish printing, wait until the printhead cools down.
- Do not touch the printhead with bare hands or hard 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, in case dust or dirt attaches to the printhead again.??

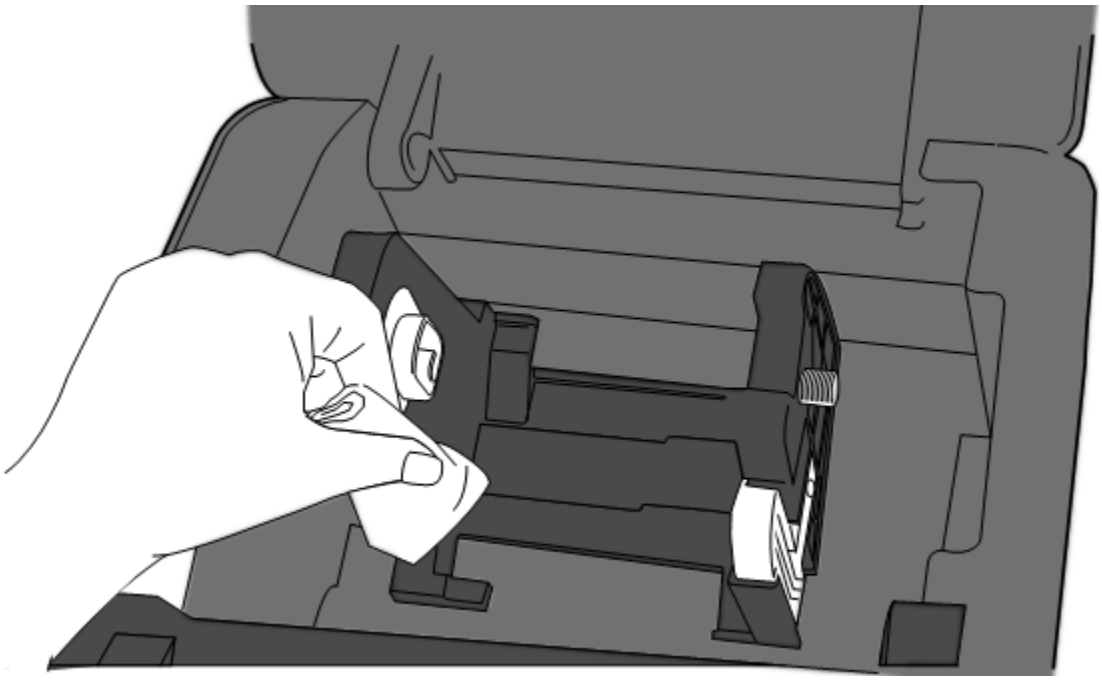


Note Printhead warranty becomes void if printhead's serial number is removed, altered, defected, or made illegible, under every circumstance.

4.1.2 Media housing

Use a soft cloth to clean the dust, dirt or debris built up on the **Media Roll Holders**, **Media Guides** and media path.

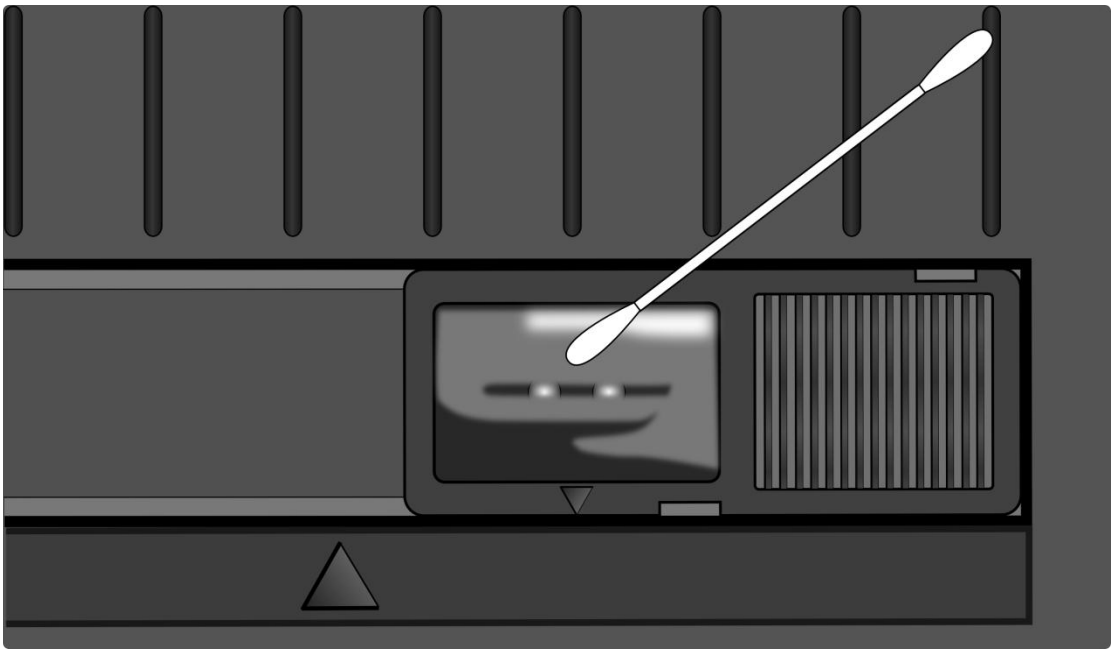
1. Moisten a soft cloth with ethyl alcohol.
2. Wipe the **Media Roll Holders** to clean dust.
3. Wipe the **Media Guides** to clean dust and dirt.
4. Wipe the media path to clean paper debris.



4.1.3 Sensor

Media sensors may not be able to detect the media correctly if it becomes dirty.

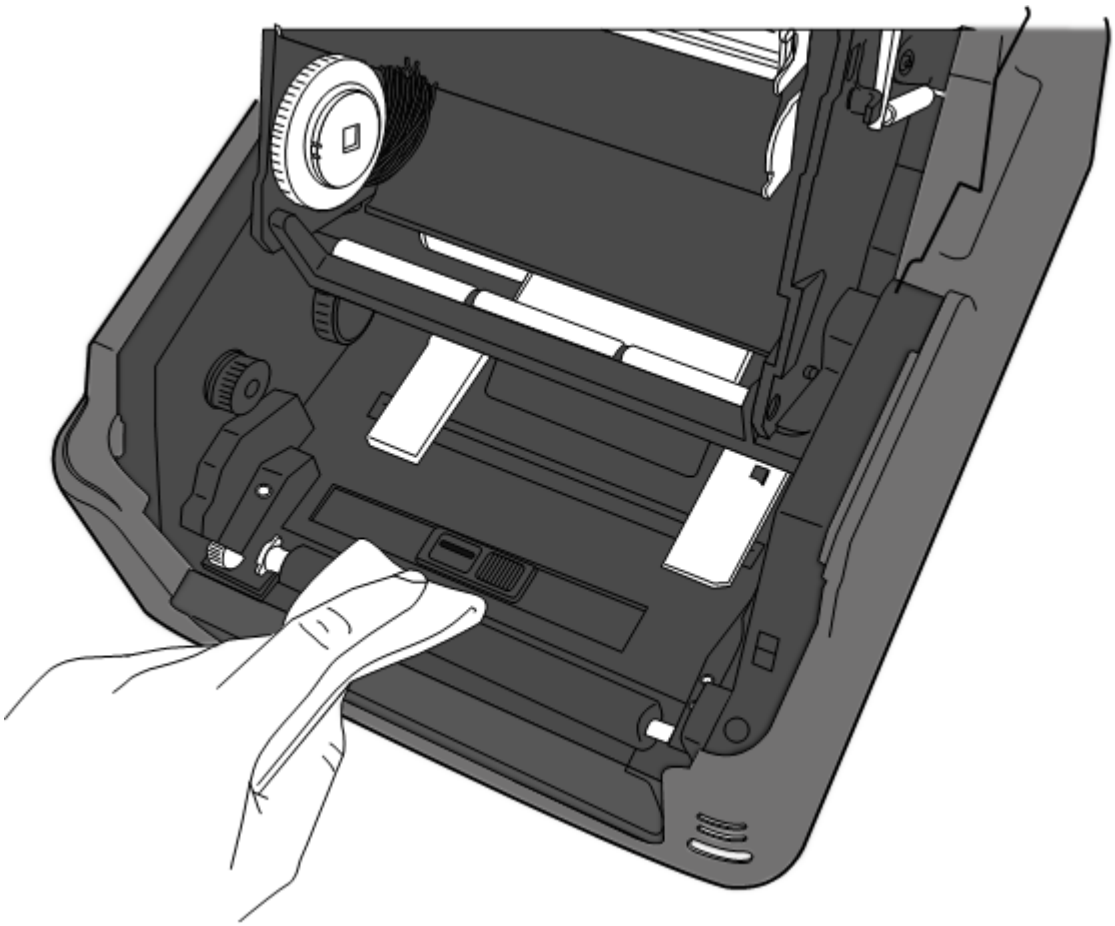
1. Moisten a soft cloth or a cotton swab with absolute ethyl alcohol.
2. Gently brush sensors to remove the dust away.
3. Use a dry cloth to clean the residue.



4.1.4 Platen roller

The platen roller is also important for print quality. Dirty platen roller may damage the printhead. Clean the platen roller right away if the adhesive, dirt or dust accumulates on it.

1. Moisten a soft cloth with absolute ethyl alcohol.
2. Gently wipe the platen roller to remove the dust and adhesive.



5 Troubleshooting

This chapter provides the information about printer problems and solutions.

5.1 Printer issues

The printer is not turned on

- Did you attach the AC power cord?
- Make sure the power supply's connector is inserted into the printer power jack.
- 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 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.

I accidentally press the feed button while the printer module is opened

Close the printer module and press the **FEED** button.

5.2 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 paper is held properly by the **Media Guides**.

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 3.1, “Media Sensor Calibration” 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, “Load Media” to reload the media.
- The ribbon is not loaded correctly. See Section 2.6, “Load Ribbon” to reload the ribbon.
- The print data might not be sent successfully. Make sure the interface is set correctly in the printer driver, and send the print data again.

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 for the ribbon. Use the compatible media instead.

5.3 Ribbon Problems

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 roll from the printer.
2. Pull the ribbon from the supply roll so it overlaps 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 Section 2.6, “Load Ribbon” to reload the ribbon.
- The printhead temperature is too high. Reload the ribbon and print a configuration label to check the settings (see Section 3.2, “Self Test mode”). If the print darkness is very high, adjust it in printer preference, or reset your printer (see Section 3.3, “Restore Your Printer”).

The ribbon is wrinkled

1. Make sure the ribbon is loaded correctly.
2. Rotate the **Take-Up Wheel** to straighten the ribbon.

5.4 Other issues

There are broken lines in the printed label

- The ribbon is wrinkled. Adjust or reload the ribbon. Or, print a few labels until the wrinkled part goes away.
- The printhead is dirty. Clean the printhead.

An error occurred when writing data to the USB memory

- Did you insert the USB drive?
- Make sure the USB drive is plugged tightly into the port.
- The USB drive might be broken. Replace it with another one.

The printer is unable to save files due to insufficient USB memory

- Delete the files on your USB drive to free some space, or replace your USB drive with an empty one.

The cutter is experiencing issues

- If there is a paper jam, clear it.
- The cutter has become loose. Fix the cutter in position and tighten it.
- The cutter blade is not sharp anymore. Replace your cutter with a new one.

The printhead temperature is extremely high

- The printhead temperature is controlled by the printer. If it is extremely high, the printer will stop printing automatically, until the printhead is cool down. After that, the printer will resume printing automatically, if there is any unfinished print job.

The printhead is broken

- Contact your local dealer for assistance.

6 Specifications

This chapter provides specifications for the printer. Specifications are subject to change without notice.

6.1 Printer

Model	P4-250	P4-350
Print method	Direct Thermal and Thermal Transfer	
Resolution	203 dpi (8 dots/mm)	300 dpi (12 dots/mm)
Media Alignment	Centered	
Operation Mode	Standard: Continuous **mode**, Tear-off **mode** Optional: Cutter **mode**, Peeler **mode**	
Sensor	Media Sensor: Gap Sensor (Transmissive, Fixed) Sensor (Reflective, Movable)	
	Head Open Switch	
	Ribbon Sensor	
Print Speed	2, 3, 4, 5, 6 inches/sec (50.8, 76.2, 101.6, 127, 152.4 mm/sec) 2 &3ips for peel off mode	2, 3, 4 inches/sec (50.8, 76.2, 101.6 mm/sec) 2 &3ips for peel off mode
Print Darkness	Darkness level: PPLB TT SD 0~30 Default: PPLB TT SD 5, DT SD 8	
Max Printable Area	Max. 100”	Max. 50”
Print Ratio	Average print ratio within 15 % or less (whole print layout area) Full width with 1mm pitch is required	
Interface	USB (Type A and Type B), Ethernet	
Optional Interface	RS-232C, Centronics (SPP Mode)	
Programming Language	PPLA+PPLB+PPLZ	
Accessories	Peeler, Full Cutter, Partial Cutter, RTC, External Media Stand	
On-Board Memory	Standard Memory (Flash ROM): 16 MB User Memory: 8 MB	

	Standard Memory (SDRAM): 32 MB
External Memory	USB: Max 16 GB
Panel	2 LED, 1 Button
LED	1st LED: Red and Green (Various Combinations: Amber) 2nd LED: Red and Green (Various Combinations: Amber)
Agency Listing	CE, FCC, UL/cULus

6.2 Media

Properties	Description
Media Size	**Continuous Mode** Length: 8 ~ 997 mm (including liner 10 ~ 999 mm) Width: 22.4 ~ 115 mm (including liner 25.4 ~ 118 mm) **Tear-Off Mode** Length: 8 ~ 997 mm (including liner 10 ~ 999 mm) Width: 22.4 ~ 115 mm (including liner 25.4 ~ 118 mm) **Peel-Off Mode** Length: 23.4 ~ 150.4 mm (including liner 25.4 ~ 152.4 mm) Width: 22.4 ~ 115 mm (including liner 25.4 ~ 118 mm) **Cut Mode** Length: 19.4 ~ 993 mm (including liner 25.4 ~ 999 mm) Width: 22.4 ~ 115 mm (including liner 25.4 ~ 118 mm) Max Roll Diameter Size: 127 mm (5 inches) Max Roll Diameter Size for External Media Stand: 216 mm (8.5 inches)
Media Type	Thermal Transfer Label Thermal Transfer Tag Direct Thermal Label Direct Thermal Tag Roll Paper (Inside Wound or Outside Wound) Fanfold Paper
Ribbon Size	Length: 100 m (ϕ Core Size: 0.5 inch), Max 300 m (ϕ Core Size: 1 inch) Width: 40~110 mm
Ribbon Type	Wax, Wax-Resin, Resin Coated Side In or Coated Side Out

6.3 Fonts, Barcodes, and Graphics Specification

The specifications of fonts, bar codes and graphics depends on the printer emulation. The emulations PPLA, PPLB, and PPLZ are printer programming languages, through which the host can communicate with your printer.

Printer Programming Language PPLA

Programming Language	PPLA
Internal fonts	9 fonts with different point size 6 fonts with ASD smooth font. Courier font with different symbol sets.
Symbol sets (Code pages)	Courier font symbol set: Roman-8, ECMA-94, PC, PC-A, PC-B, Legal, and PC437 (Greek), Russian.
Soft fonts	Downloadable soft fonts by Print Tool
Font size	1x1 to 24x24 times
Character rotation	0, 90, 180, 270 degree, 4 direction rotation
Graphics	PCX, BMP, IMG, GDI and HEX format files
1D Barcodes	Code 39、UPC-A、UPC-E、Code 128 subset A/B/C、EAN-13、EAN-8、HBIC、Codabar、Plessey、UPC2、UPC5、Code 93、Postnet、UCC/EAN-128、, UCC/EAN-128 K-MART、UCC/EAN-128 Random weight、Telepen、FIM、Interleaved 2 of 5 (Standard/with modulo 10 checksum/ with human readable check digit/ with modulo 10 checksum & shipping bearer bars) 、GS1 Data bar (RSS)
2D Barcodes	MaxiCode、PDF417、Data Matrix (ECC 200 only) 、QR code、Composite Codes、Aztec

Printer Programming Language PPLB

Programming Language	PPLB
Internal fonts	5 fonts with different point size
Symbol sets (Code pages)	8 bits code page : 437, 850, 852, 860, 863, 865, 857, 861, 862, 855, 866, 737, 851, 869, 1252, 1250, 1251, 1253, 1254, 1255 7 bits code page: USA, BRITISH, GERMAN, FRENCH, DANISH, ITALIAN, SPANISH, SWEDISH and SWISS
Soft fonts	Downloadable soft fonts by Print Tool
Font size	1x1 to 24x24 times
Character rotation	0, 90, 180, 270 degree, 4 direction rotation
Graphics	PCX , Binary Raster, BMP and GDI
1D Barcodes	Code 39、UPC-A、UPC-E、Matrix 2 of 5、UPC-Interleaved 2 of 5、 Code 39 with check sum digit 、Code 93、EAN-13、EAN-8 (Standard, 2 /5digit add-on) 、Codabar、Postnet、Code128 subset A/B/C、 Code 128 UCC (shipping container code) 、 Code 128 auto、UCC/EAN code 128 (GS1-128) 、Interleave 2 of 5、Interleaved 2 of 5 with check sum、Interleaved 2 of 5 with human readable check digit、German Postcode、Matrix 2 of 5、UPC Interleaved 2 of 5、EAN-13 2/5 digit add-on、UPCA 2/5 digit add-on、UPCE 2/5 digit add-on、 GS1 Data bar (RSS)
2D Barcodes	MaxiCode、PDF417、Data Matrix (ECC 200 only) 、QR code、Composite Codes、Aztec

Printer Programming Language PPLZ

Programming Language	PPLZ
Internal fonts	8 (A~H) fonts with different point size. 8 AGFA fonts: 7 (P~V) fonts with fixed different point size (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 degree, 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 check sum、Interleaved 2 of 5 with human readable check digit、Code 93、Code 39 with check sum 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

6.4 Bluetooth

Properties	Bluetooth I/F
Standard	Bluetooth 2.1
Enable Device	BT PRINTER
Operating Temperature	41°F (5°C) ~ 104°F (40°C)
Storage Temperature	-4°F (-20°C) ~ 140°F (60°C)
Operating Humidity	25 ~ 85 % Non-condensing R.H
Storage Humidity	10 ~ 90 % Non-condensing R.H
Connection Form	Only one-to-one connection is supported.
Support Profile	Serial Port Profile (SPP) PIN code is supported.
Class of Radio Transmission	CLASS 2
Transmission Method	Bi-directional (Half-duplex)
Flow Control	Credit based flow control
Operating Mode	Slave Mode
Transmission Distance	10 m without obstacles *2 (360 degrees)
SR Mode in Page/Inquiry Scanning	R1 Scan Interval 1.28 sec. Scan Window 22.5 msec.
RF Frequency Range	2402 ~ 2480 MHz
Nominal Output Power	+4 dBm (2.51 mW) MAX

6.5 Ethernet

Properties	Description
Port	RJ-45
Speed	10Base-T/100Base-T (Auto Detecting)
Protocol	ARP, IP, ICMP, UDP, TCP, HTTP, DHCP, Socket, LPR, IPv4, SNMPv2
Mode	TCP Server/Client, UDP Client
Technology	HP Auto-MDIX, Auto-Negotiation

6.6 Wireless LAN (Option)

	Properties	Wireless LAN I/F		
Hardware	Protocol	IEEE 802.11 b/g/n		
	Enabled Device	WIRELESS PRINTER		
	Operating Temperature	-20°C ~ +85°C		
	Destination	USA	Europe	
	Frequency (Center Channel)	2412 ~ 2462 MHz	2412 ~ 2472 MHz	
	Channel	1 ~ 11 ch	1 ~ 13 ch	
	Spacing	5 MHz		
	Transmission Speed/ Modulation	IEEE 802.11b	Transmission Method	Conforming to IEEE 802.11b DSSS method
			Channel	Depending on the country
			Data Transmission Speed/Modulation	11/5.5 Mbps: CCK 2 Mbps: DQPSK 1 Mbps: DBPSK
		IEEE 802.11g	Transmission Method	Conforming to IEEE 802.11g OFDM method DSSS method
			Channel	Depending on the country
			Data Transmission Speed/Modulation	54/48 Mbps: 64 QAM 36/24 Mbps: 16 QAM 18/12 Mbps: QPSK 9/6 Mbps: BPSK
		IEEE	Transmission	Conforming to

Properties			Wireless LAN I/F	
		802.11n	Method	IEEE802.11n OFDM method
			Channel	(US)1-11ch (JP/DE)1-13ch
			Data Transmission Speed/Modulation	20MHz : 6.5M / 7.2M / 13M / 14.4M / 19.5M / 21.7M / 26M /28.9M / 39M / 43.3M / 52M / 57.8M / 58.5M / 65M / 72.2M(Auto-sensing)
	Antenna	External antenna		
	Aerial power	802.11b	Max +15 dBm	
		802.11g	Max +17 dBm	
		802.11n	Max +17 dBm	
Software	Connection mode	Infrastructure, Adhoc		
	Default IP Address	192.168.1.1		
	Default Subnet Mask	255.255.0.0		
	Default ESSID	WIRELESS PRINTER		
	Security	IEEE 802.11i		
	Cryptography	WEP 128 bit, TKIP (WPA), AES (WPA2)		
	Authorization	Open Key (for WEP), PSK		
	Protocol (*)	TCP/IP, Socket, DHCP		
	Wireless LAN Parameter Setting and Status Monitor	Parameter Setting: Command (PC Setting Tool)		

6.7 Electrical and operating environment

Properties	Range
Power Supply	Voltage: AC 100 V ~ 240 V ± 10 % (full range) Frequency: 50 Hz - 60 Hz ± 5 %
Power Consumption	90W
Temperature	Operating: 5 °C ~ 40 °C Storage: -40 °C ~ 60 °C
Humidity	Operating: 25 %RH ~ 85 %RH (non-condensing) Storage: 10 %RH ~ 90 %RH (non-condensing)

6.8 Physical dimension

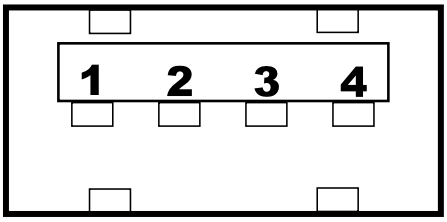
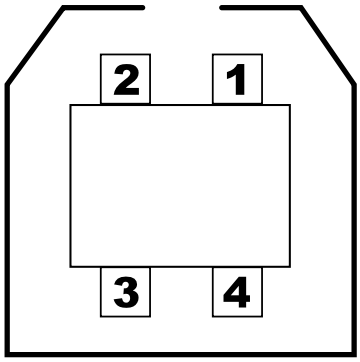
Dimension	Size and Weight
Size	W 221 mm x D 279.3 mm x H 182.8 mm
Weight	2.45 kg (excluding media and accessories)

6.9 Interfaces

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

6.9.1 USB

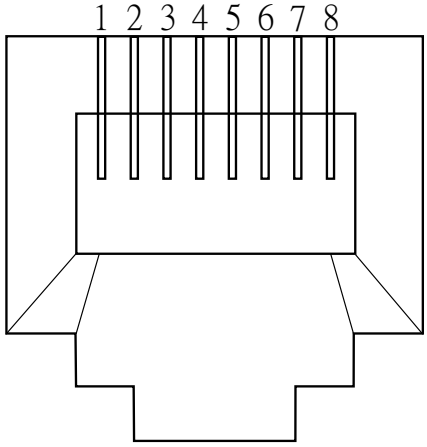
There are two common USB connectors. Typically, type A is found on hosts and hubs; type B is found on devices and hubs. The figure below shows their pinouts.

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

6.9.2 Ethernet

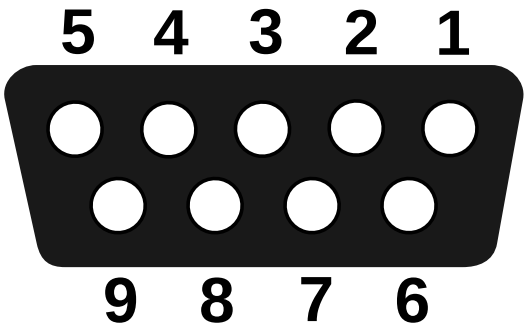
The Ethernet uses RJ-45 cable, which is 8P8C (8-Position 8-Contact). The figure below shows its pinout.



Pin	Signal
1	Transmit+
2	Transmit-
3	Receive+
4	Reserved
5	Reserved
6	Receive-
7	Reserved
8	Reserved

6.9.3 RS-232C

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



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	RxD
TxD	Transmit	3	3	Receive	TxD
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	RTS
CTS	Clear to Send	8	8	Request to Send	CTS
CI		9	9	No Function	NC