

# **BIXOLON**

## **User's Manual**

# **SRP-F310/F312/F313II**

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## **THERMAL RECEIPT PRINTER**

### **Ver. 2.00**



[www.bixolon.com](http://www.bixolon.com)

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BIXOLON maintains ongoing efforts to enhance and upgrade the functions and quality of all our products.

In the following, product specifications and/or user manual content may be changed without prior notice.

## Caution

Electronics, such as printers, are prone to damage by static electricity. Therefore, to protect the printer from static electricity, be sure to turn off the printer before connecting or disconnecting the cable to the rear of the printer. If the printer is damaged by static electricity, contact your local dealer.

This equipment is not suitable for use in locations where children are likely to be present.

When the printer is operating with the media cover open, do not wear anything that can touch the drive, such as clothing, necklaces, rings, watches, or employee certificates close to it. Also, keep yourself away from the printer as it is dangerous for some parts of the body to come into contact with it. If an object or part of your body touches the drive, immediately disconnect the power cord or turn off the power switch on the back of the product.

## Warning

Hazardous moving parts

Keep fingers and other body parts away

Pull the print head lever can be stop all moving parts.



IEC 60417-6057 (2011-05) for other moving parts.

## Mise en garde

Les appareils électroniques, tels que les imprimantes, risquent d'être endommagés par l'électricité statique. Par conséquent, pour protéger l'imprimante de l'électricité statique, veillez à l'éteindre avant de connecter ou de déconnecter le câble situé à l'arrière de celle-ci. Si l'imprimante est endommagée par l'électricité statique, contactez votre revendeur local

Cet appareil n'est pas adapté d'utiliser dans des endroits où des enfants sont probablement d'être présents.

Lorsque l'imprimante fonctionne avec le capot ouvert, ne portez rien qui puisse entrer en contact avec le mécanisme, tel que des vêtements, des colliers, des bagues, des montres ou des certificats d'employé à proximité. Éloignez-vous également de l'imprimante car il est dangereux que certaines parties du corps entrent en contact avec celle-ci. Si un objet ou une partie de votre corps entre en contact avec le mécanisme, débranchez immédiatement le câble d'alimentation ou éteignez l'interrupteur situé à l'arrière du produit.

## Attention

Pièces mobiles dangereuses

Veillez à ce que vos doigts ou toute partie du corps n'entre(nt) pas en contact avec ces pièces. Tirez le levier de la tête d'impression pour arrêter toutes les pièces en mouvement.



IEC 60417-6057 (2011-05) pour les autres pièces mobiles.

## **Compliance information**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

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 instruction manual, 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.

Caution: Exposure to Radio Frequency Radiation.

To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

Caution: Any Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Class A Digital Device: Wired Device

This Apparatus complies with class "A" limits for radio interference as specified in the Canadian department of communications radio interference regulations.

This Class A digital apparatus complies with Canadian ICES-003.

Appareil numérique de classe A: appareil filaire

Get appareil est conforme aux normes class "A" d'interference radio tel que specifier par ministre canadien des communications dans les reglements d'interference radio.

Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada.

## **Waste Electrical and Electric Equipment (WEEE)**



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life, to prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.



## **WARNING & CAUTION**

Is described as death, physical injuries, serious financial losses, and damage to data etc. that can be caused to the user.

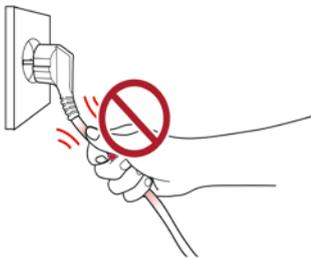
Do not connect multiple products to a single or faulty power outlet. Use only grounded power outlets that meet the industry standard. **Noncompliance may cause electric shock or fire.**



Only use authentic products from BIXOLON. **The company will not provide post-sale support for damaged or other quality issues that any fake (Or refurbished) products may incur.**



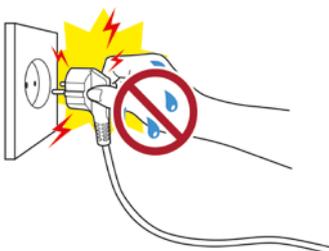
Do not excessively bend or strain the power cord. Securely push the power cord all the way into the power outlet lest it remain loose. Make sure to hold the cord tight when separating it from the power outlet. Do not remove the power cord while the product is in use. **Noncompliance may cause electric shock or fire.**



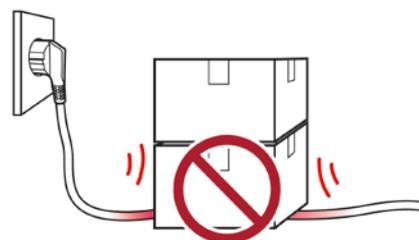
Keep small accessories or other packaging materials away from young children. Beware: choking hazard. **Mishandling the product may incur injuries which may require seeking urgent medical attention.**



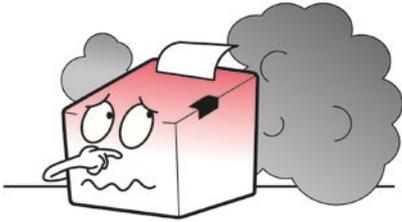
Keep excessive liquids away from the power cord and outlet. If matter is smeared onto the power cords, wipe with a dry cloth. **Noncompliance may cause electric shock or fire.**



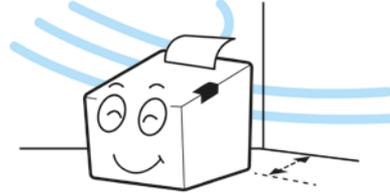
Do not allow the product to be damaged by heavy objects. **Noncompliance may cause electric shock or fire.**



If the product emits a strange sound, burning smell, or smoke, turn off the power immediately and unplug the power cord. If the product is dropped or its exterior is damaged, turn off the power immediately and unplug the power cord. Do not subject the product to shock. **It may start a fire. It may damage the product.**



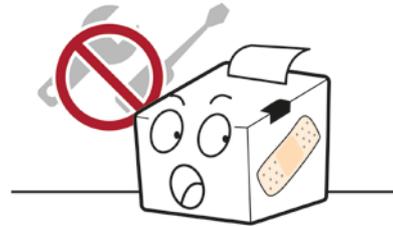
Install the product in a well-ventilated area by keeping it a certain distance from the wall. The product installed in certain places such as where a lot of fine dust is generated, where the temperature is too high or too low, where there is a lot of moisture or water, and at airports or stations that are used continuously for a long time may suffer serious quality problems due to the influence of the surrounding environment. **An increase in internal temperature may start a fire. Be sure to contact the place of purchase before installing the product.**



Install the product in a fixed place preventing it from tipping over. When moving the product, turn off the power and disconnect all connected cables, including the power cord. **It may damage the product.**



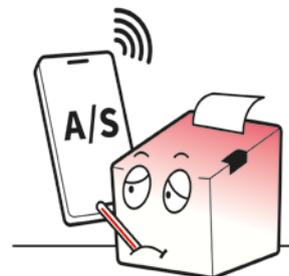
Never independently disassemble, repair, or modify the product as the warranty will become invalid. **When repair is necessary, contact the original place of purchase.**



Do not let any foreign substances enter the product. Do not place heavy objects, liquids, or metals on the product. **This could cause damage to the product or a fire.**



**If there is a problem with the product, please contact the original place of purchase or through BIXOLON website's product repair page ([www.bixolon.com](http://www.bixolon.com)).**



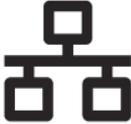
## Manual Introduction

This manual provides basic information on printers and provides ways to install, use, and check them. In order to protect the safety of users and prevent property damage, be fully familiar with this manual before using the product. Please use it.

## Manual Symbol Introduction

	<b>Precaution &amp; Warning</b>	<b>It describes death, physical injuries, serious financial losses, and damage to data etc. that can be caused to the user.</b>
	<b>Note</b>	<b>It provides additional information on the function and performance of the product.</b>

## Product symbol Introduction

	DC (Direct current)
	Error, Warning
	Paper Feeding
	Stand-By
	USB
	Ethernet

## Printer Introduction

The SRP-F310II is a powerful 3-inch (80mm) thermal printing solution, producing high quality receipts and tickets at 180dpi and 203dpi. Featuring a robust, ergonomic front-exit design, with IP12 certification, patented Liquid-Barrier™ technology and built-in power supply, to provide the perfect under counter or space constrained printing solution. Featuring the All-In-One-Plus™ interface, built-in USB V2.0 & Ethernet + optional Serial, Parallel, Powered USB, Bluetooth or WLAN. The SRP-F310IIHi model also supports various USB peripherals, alongside web and cloud-based printing. While compatible with market-leading programming languages with an extensive range of drivers and SDKs.

## The main features of the printer are as follows

1. High speed printing: 82.74/93.33 lines per second.
2. Low noise thermal printing.
3. Support of USB & Ethernet (built-in type), serial, parallel, Powered USB, Wireless LAN, and Bluetooth interfaces
4. The data buffer allows the unit to receive print data even during printing.
5. Peripheral units drive circuit enables control of external devices such as cash drawer.
6. Bar code printing is possible by using a bar code command.
7. Different print densities can be selected by DIP switches.

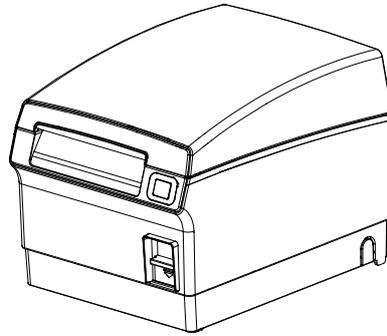
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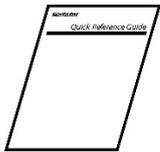
# 1. Content Confirmation



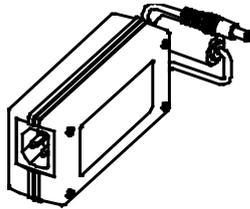
- If there is any part missing, please contact the place of purchase.
- The actual part may look different from the image.



SRP-F310/312/313II



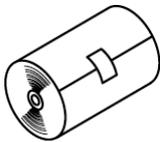
Installation Guide



AC/DC Adapter



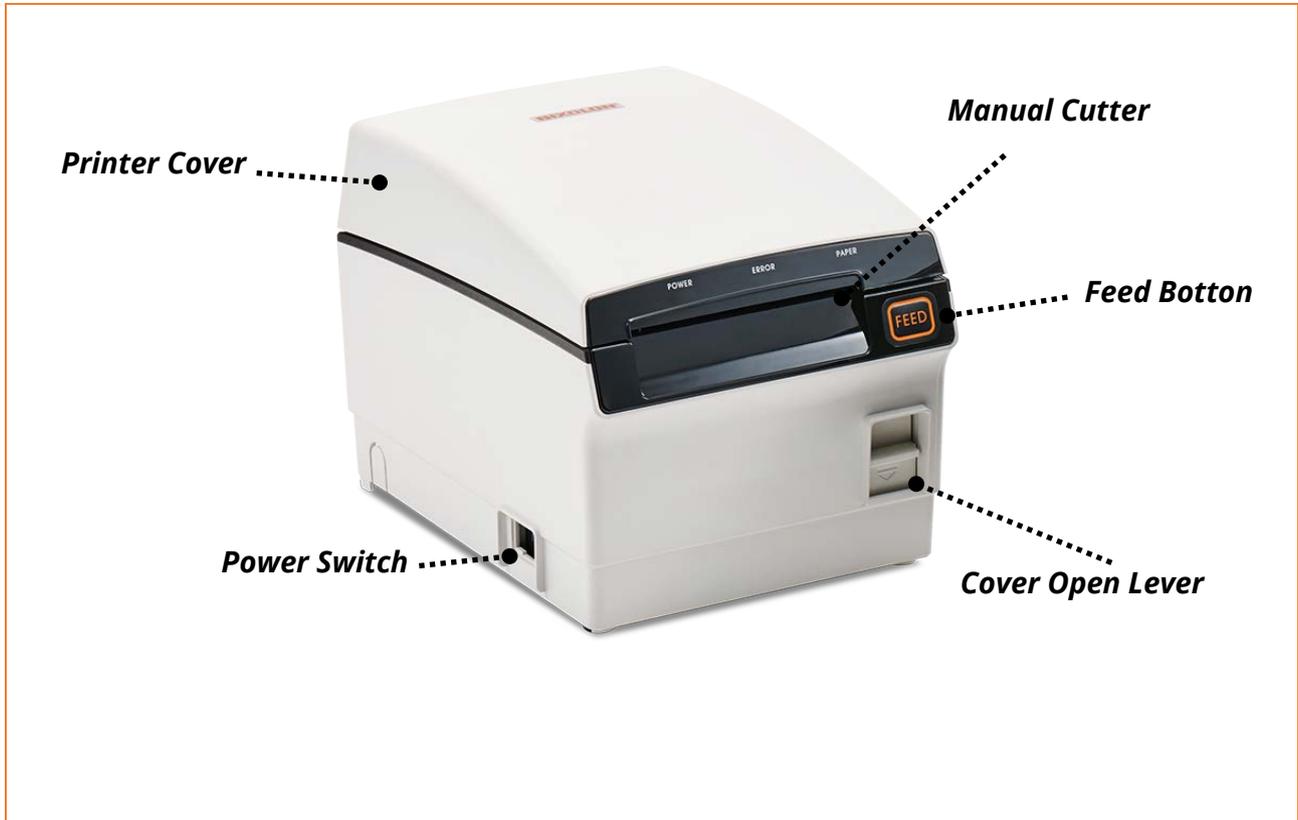
Power Cord



Roll Paper

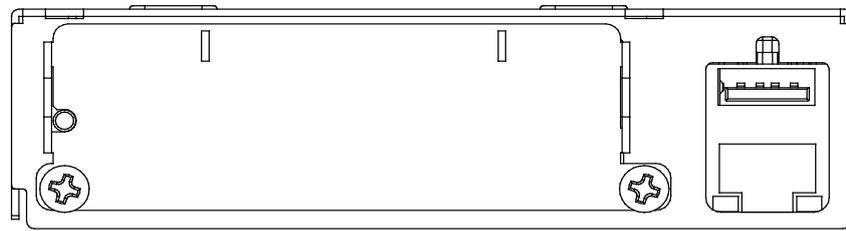
## **2. Product Part Names**

### **2-1 Printer Part Names**



## 2-2 Interface Part Names

- Connect the printer to the host computer using the right interface cable that complies with the specifications of the interface.



**USB Port**

**Ethernet port**

### 2-2-1 USB (Built-in)

Pin No.	Signal Name	Assignment (Color)	Function
Shell	Shield	Drain Wire	Frame Ground
1	VBUS	Red	Host Power
2	D-	White	Data Line (D-)
3	D+	Green	Data Line (D+)
4	GND	Black	Signal Ground



**Connect or disconnect the communication cable while the printer power is off. If power is on, your data may be lost.**

2-2-2 Ethernet (Built-in)

Pin No.	Signal Name	Color	Function
1	TD+	WHITE ORANGE	Transmit +
2	TD-	ORANGE	Transmit -
3	TCT	WHITE GREEN	Receive +
4	NC	BLUE	-
5	NC	WHITE BLUE	-
6	RCT	GREEN	Receive -
7	RD+	WHITE BROWN	-
8	RD-	BROWN	-

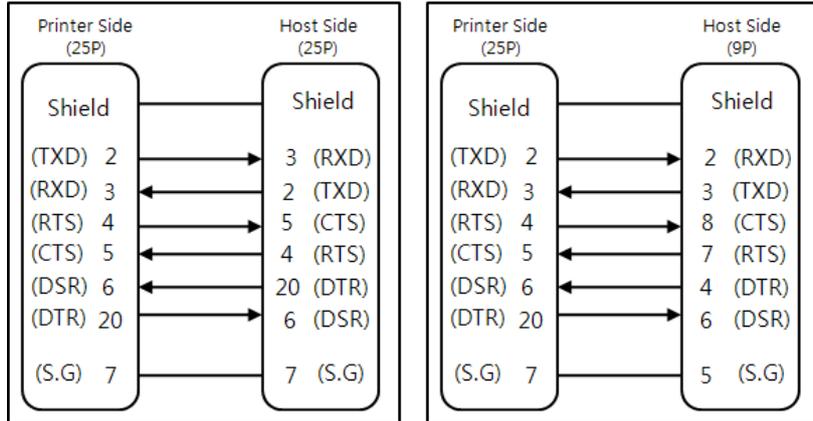
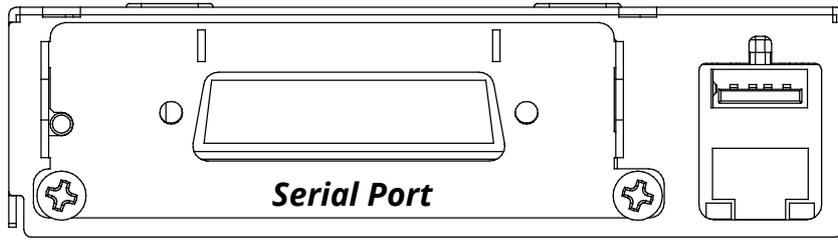


**Connect or disconnect the communication cable while the printer power is off. If power is on, your data may be lost.**



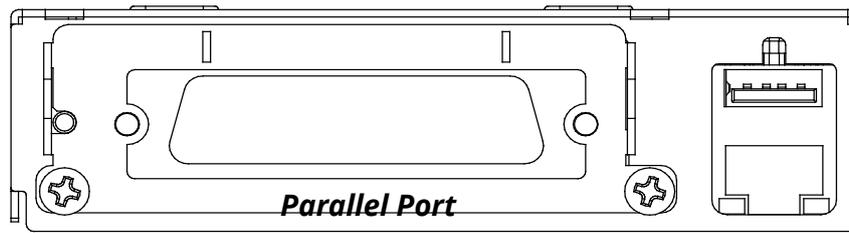
- IP and MAC information can be obtained from the self-test
- Refer to the utility and network connection manual for Interface connection information. ([www.bixolon.com](http://www.bixolon.com))

2-2-3 Single Serial Interface Card (RS-232C)



**Connect or disconnect the communication cable while the printer power is off. If power is on, your data may be lost.**

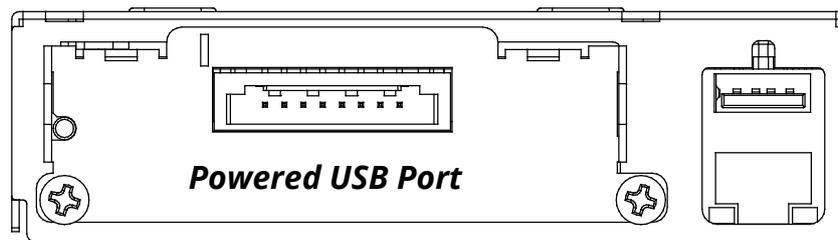
2-2-4 Parallel Interface Card (IEEE1284)



Pin No.	Source	Compatibility Mode	Nibble Mode	Byte Mode
1	Host	nStrobe	HostClk	HostClk
2	Host / Printer	Data 0 (LSB)	-	Data 0 (LSB)
3	Host / Printer	Data 1	-	Data 1
4	Host / Printer	Data 2	-	Data 2
5	Host / Printer	Data 3	-	Data 3
6	Host / Printer	Data 4	-	Data 4
7	Host / Printer	Data 5	-	Data 5
8	Host / Printer	Data 6	-	Data 6
9	Host / Printer	Data 7 (MSB)	-	Data 7 (MSB)
10	Printer	nAck	PtrClk	PtrClk
11	Printer	Busy	PtrBusy / Data3,7	PtrBusy
12	Printer	Perror	AckDataReq / Data2,6	AckDataReq
13	Printer	Select	Xflag / Data1,5	Xflag
14	Host	nAutoFd	HostBusy	HostBusy
15	-	NC	NC	NC
16	-	GND	GND	GND
17	-	FG	FG	FG
18	Printer	Logic-H	Logic-H	Logic-H
19~30	-	GND	GND	GND
31	Host	nInit	nInit	nInit
32	Printer	nFault	nDataAvail / Data0,4	nDataAvail
33	-	GND	ND	ND
34	Printer	DK_Status	ND	ND
35	Printer	+5V	ND	ND
36	Host	nSelectIn	1284-Active	1284-Active



**Connect or disconnect the communication cable while the printer power is off. If power is on, your data may be lost.**

**2-2-5 Powered USB Interface Card**

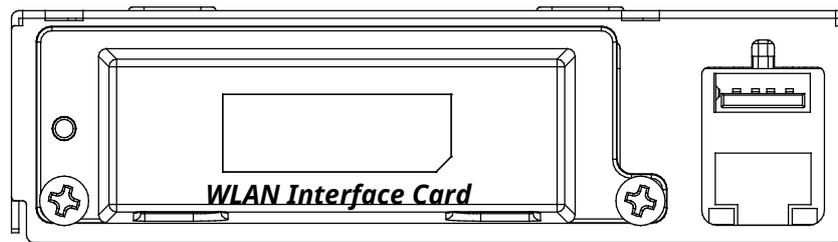
Pin No.	Signal Name	Function
Shield	Shield	Frame Ground
1	PGND	Main Power Ground
2	VPP24V	Main Power
3	GND	Signal Ground
4	D+	Data Line (D+)
5	D-	Data Line (D-)
6	VBUS	Hose Power
7	VPP24V	Main Power
8	PGND	Main Power Ground



**Connect or disconnect the communication cable while the printer power is off. If power is on, your data may be lost.**



- Refer to [www.powered.org](http://www.powered.org) for detailed information related to the specifications of cable and port.
- Do not apply 24V when using powered USB.  
(Powered USB uses its own power.)
- In case of using Powered USB interface, the other USB interface provided by default is not useful. (In this case, USB communication is only available through the Powered USB)

2-2-6 WLAN Interface Card

## 1) Wireless LAN Communication Specifications

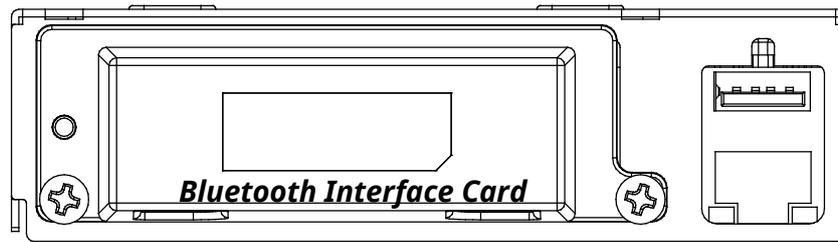
Item	Specifications
Frequency	2.4GHz / 5GHz
Protocol	802.11 a/b/g/n

## 2) Connecting Wireless LAN

Printer can be connected to terminal devices with wireless LAN communication capability (PDA, PC, smartphone, tablet PC, etc.).



Refer to the Network Connection Manual for more detailed instructions about how to establish the connection. The Network connection manual is on the BIXOLON website ([www.bixolon.com](http://www.bixolon.com)) We're offering it.

2-2-7 Bluetooth Interface Card

## 1) Bluetooth Communication Specifications

Item	Specifications
Frequency	2.402 ~ 2.480 GHz
Version	5.2

## 2) Bluetooth Connection

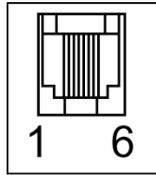
Printer can be connected to terminal devices with Bluetooth communication capability (PDA, PC, smartphone, tablet PC, etc.)



Refer to the Bluetooth Connection Manual for more detailed instructions about how to establish the connection. The Bluetooth Connection manual is on the BIXOLON website ([www.bixolon.com](http://www.bixolon.com)) We're offering it.

**2-2-8 Drawer Kick-out Port**

Connect the Drawer Kick-out connection cable to the drawer kick-out port on the rear side of the printer.



Pin No.	Signal name	Direction
1	Frame ground	-
2	Drawer kick- out drive signal 1	Output
3	Drawer open/close signal	Input
4	+24V	-
5	Drawer kick- out drive signal 2	Output
6	Signal ground	-



- Use a cash drawer that meets the printer specifications. Using a cash drawer that is inappropriate to the specs or using it as a power supply for a separate device may result in damage to the product.
- Do not connect a telephone line to the drawer kick-out port. Otherwise, the telephone line and the computer may be damaged.
- Do not allow a foreign object such as a conductor to touch the drawer kick-out port. This may result in damage to the product.
- Make sure to use a cash drawer with an internal coil resistance of 24  $\Omega$  or higher. (The maximum current is 1A.)
- The open signal time for the cash drawer should not exceed 0.8 seconds. After opening the cash drawer, make sure to idle for at least 3.2 seconds (at least 4 times that of the open signal time) before operating it.

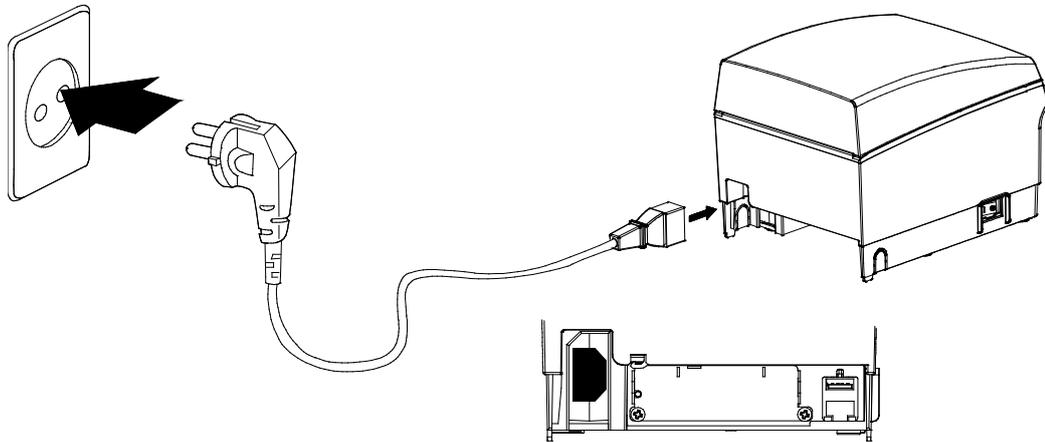
## **3. Installation & Usage**

### **3-1 Printer Installation Placings**

- Allow sufficient space around the printer for proper ventilation.
- Do not place objects close to the back or bottom of the printer, which may hinder the air circulation.
- Install the printer on a flat and level surface.
- Avoid humid environment.
- Install in a place that does not exceed the protocol standard of the wireless communication or the specified maximum distance.
- For stable wireless communication, install in a place where there is no physical obstacle (wall, object, etc.).

### 3-2 Turn on the Power

- 1) After turning the printer off, connect the power cord jack to the printer's power port.
- 2) Plug it into the power outlet on the wall.



- 2) Press the "ON" switch to turn on the printer.



- Check the power supply's label to check its electronic specs.
- Only use a power supply provided by BIXOLON. BIXOLON shall bear no responsibility for damage caused by using a third-party power supply.
- When removing the power supply, make sure you have a firm grasp of the plug terminal of the power jack and the printer and pull horizontally.
- When connecting or disconnecting power, make sure to remove the power supply from the power outlet before removing.
- Pay attention to the direction in which you insert the power cord.
- Do not connect a voltage out of the specifications of the power supply. It can cause damage to the product or a fire.

**3-3 Inserting and changing the paper roll**

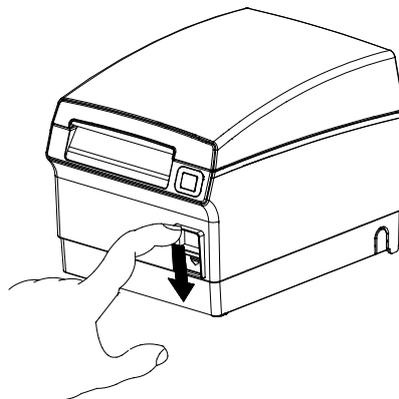


- Use paper roll that complies with the specifications  
Use paper roll that complies with the specifications.  
If you use a paper roll including paper core attached to paper, the paper may not be properly recognized as paper Empty due to not proper releasing of paper.
- Do not use paper wider than 80 mm or plastic paper tube when using a printer that specifies 80 mm paper.



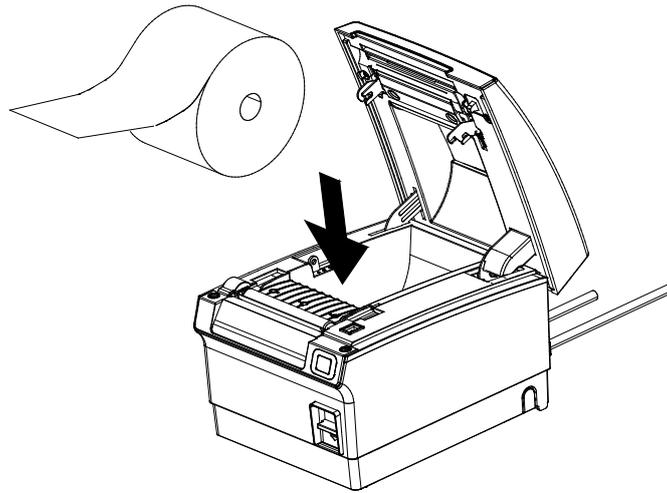
- **When opening or closing the cover, be careful not to pinch your fingers.**
- **Do not open the print head levers while the printer is printing.  
The printer may be damaged.**
- **Change the paper when the printer is not receiving data,  
or data may be lost.**
- **While the printer is operating, the printer head gets very hot,  
so turn off the power and let it cool down completely.  
The hot printer head can cause serious burns.**

1) Open the Printer Cover by pushing the Cover-Open Button.

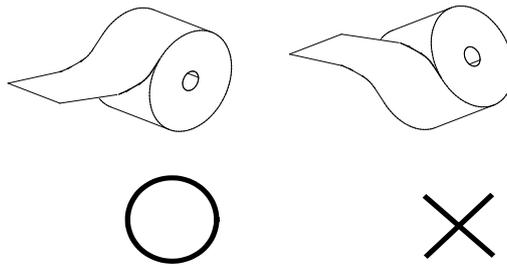


When you change the paper, remove the used paper roll.

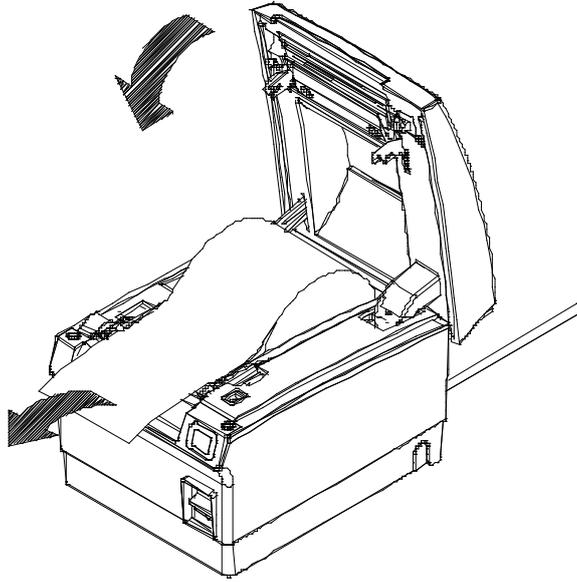
2) When you change the paper, remove the used paper roll.



3) Check the orientation of the roll paper when inserting it into the printer.



- 4) Pull out a small amount of paper as shown in the picture, and close the Printer Cover.



When closing the cover, hold down the center of printer cover firmly so that paper roll is loaded correctly.

- 5) Cut out the paper as indicated.



**3-4 Using Controller**

Explanation	
Power LED	The Power LED light is on whenever the printer is on.
Error LED	Error LED is on when there is an error such as no paper roll, open cover, etc.
Paper LED	Paper LED is on when the paper roll is almost used up or there is no paper roll inside. Paper LED flickers when the machine is in a self-diagnosis stand-by or macro execution stand-by state.
Feed Button	Press the Feed button once to output one line of the paper roll. Press the Feed button for more than 3 seconds to output the paper roll continuously.

## 4. Printer Setting Change

### 4-1 Serial Interface

- DIP Switch 1

SW	Function	ON	OFF	Default
1-1	Auto-Cutter Selection	Disable	Enable	OFF
1-2	Handshaking	XON / OFF	DTR / DSR	OFF
1-3	Word length	7 bits	8 bits	OFF
1-4	Parity check	Yes	No	OFF
1-5	Parity selection	EVEN	ODD	OFF
1-6	Baud rate selection	Refer to the Following Table 1		OFF
1-7				ON
1-8				OFF

### 4-2 Parallel / USB / Ethernet / Wireless LAN / Powered USB Interface

- DIP Switch 1

SW	Function	ON	OFF	Default
1-1	Auto-Cutter Selection	Disable	Enable	OFF
1-2 ~ 1-8	Reserved	-	-	OFF

**4-3 Bluetooth Interface**

- DIP Switch 1

SW	Function	ON	OFF	Default
1-1	Auto-Cutter Selection	Disable	Enable	OFF
1-2	Reserved	-	-	OFF
1-3	SSP Mode	Enabled	Disabled	OFF
1-4	Reserved	-	-	OFF
1-5	Reserved	-	-	OFF
1-6	Reserved	-	-	OFF
1-7	Reserved	-	-	ON
1-8	Reserved	-	-	OFF

Transmission speed	SW1 - 6	SW1 - 7	SW1 - 8	Default
2400 baud	ON	OFF	OFF	9600
4800 baud	ON	OFF	ON	
9600 baud	OFF	ON	OFF	
19200 baud	OFF	OFF	OFF	
38400 baud	OFF	ON	ON	
57600 baud	OFF	OFF	ON	
115200 baud	ON	ON	ON	

Table 1 - Baud Rate Selection

**※ Auto Cutter Enable / Disable selection**

Dip Switch Set 1		
SW1 - 1	ON	Auto Cutter Disable
	OFF	Auto Cutter Enable
Application	Ignores Auto Cutter error for continuous printing	



The printer must be turned off when changing the DIP switch settings. Failure to turn it off may cause a short circuit and damage the printer.



- Turn the product power ON/OFF by using the virtual memory switch utility.
- For more details, please refer to Utility and Service Manual.

**4-4 Order of Change Settings**

- 1) Turn off the printer.
- 2) Open the DIP switch cover located at the back of the printer.
- 3) Set the DIP switch number.
- 4) Close the DIP switch cover after the settings have been completed.
- 5) Position the printer in front and turn it on.

## 5. Self-Test

The self-test checks whether the printer has any problems.

If the self-diagnostics reveal no error in the printer, please see other device or software. If the printer does not run normally, please contact the place of purchase.



**- Do not open the top cover while the printer is running.**

**It may damage the printer.**

**- If the printer does not run normally, please contact Customer Center.**

- 1) Check whether paper is inserted correctly.
- 2) Turn on the power while holding down the FEED button and the self-test begins.
- 3) The printer will print out details of its current status including which version of ROM.
- 4) After printing out its current status of printer, the printer will print following lines and wait for the next step (paper light will keep blinking).

**SELF-TEST PRINTING.  
PLEASE PRESS THE FEED BUTTON.**

- 5) Press the FEED button to continue printing.  
The printer prints a pattern using the built-in character set.
- 6) The self-test automatically ends and cuts the paper after printing the following.

**\*\*\* COMPLETED \*\*\***

- 7) The printer is ready to receive data as soon as it completes the self-test.

## 6. Hexadecimal Dumping

This function allows experienced users to see exactly what data is coming to the printer. This can be useful in finding software problems. When you turn on the hexadecimal dump function, the printer prints all commands and data in hexadecimal format along with a guide section to help you find specific commands.

- 1) After making sure that the printer is off, open the cover.
- 2) Pressing the FEED button will turn on the power with a beep.
- 3) Closing the cover will switch the printer to hexadecimal dump mode.
- 4) Run any software program that sends data to the printer.  
The printer will print all the codes it receives in a two-column format.  
The first column contains the hexadecimal codes and the second column gives the ASCII characters that correspond to the codes.

```

1B 21 00 1B 26 02 40 40 40 40   . ! . . & . @ @ @ @
02 0D 1B 44 0A 14 1E 28 28 28   . . . D . . . . ( ( (
00 01 0A 41 0D 42 0A 43 43 43   . . . A . B . C C C

```

- A period (.) is printed for each code that has no ASCII equivalent.
- During hexadecimal dumping, all commands except for DLE EOT and DLE ENQ cannot be used.

- 5) When the printing finishes, turn off the printer.
- 6) Turn on the printer and then the hexadecimal mode is off.

## **7. Maintenance**

### **7-1 Paper Jam**

- 1) Power cycling the printer will return the movable blade to its home position and clear minor paper jams.
- 2) Open and close the printer cover if power cycling does not solve the problem.



- **If a paper jam occurs, do not use force to pull the paper out.**
- **Forcing the printer cover open may damage the printer.**
- **If paper jam persists, contact your local seller.**

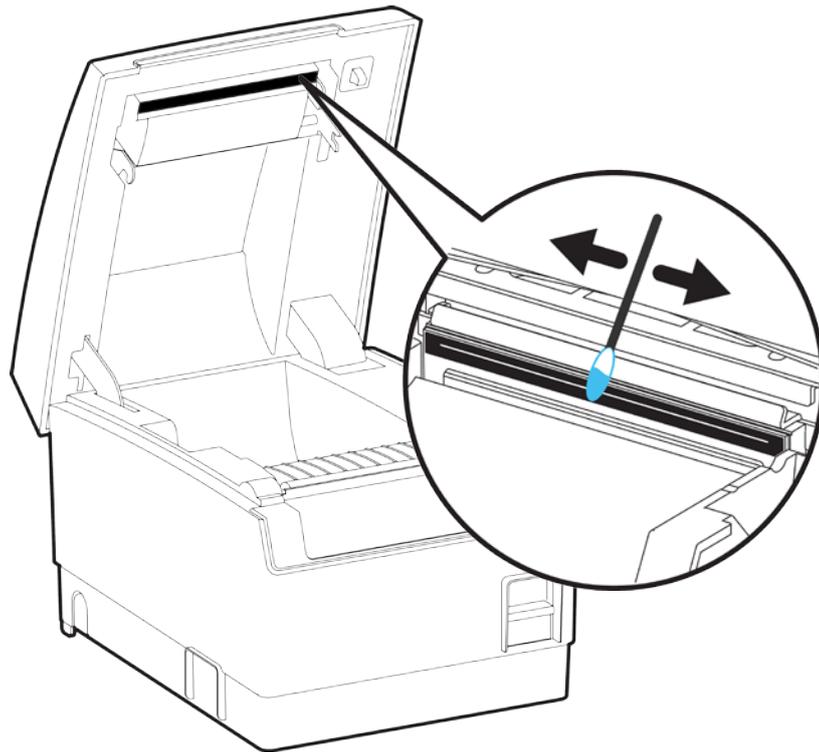


Placing your hand over the paper exit may cause a paper jam.

### 7-2 Cleaning Printer

- The presence of dust, foreign matter, adhesive matter, or other pollutants inside the printer's head and internal capacity may undermine printing quality. It is recommended to clean printer at every paper roll change.

- 1) Open the printer cover and remove the paper currently in use.
- 2) Residue or contamination of printer head should be wiped out by alcohol for medical.
- 3) Insert a paper roll and close the printer cover.



- Be sure to clean after turning the printer off.
- Be careful not to leave scratches in the print head. The printer may be damaged.
- Print head is very hot while the printer is printing, so clean the printer after cooling it sufficiently with power off.
- Do not touch heated area of print-head when cleaning. Personal injury may result from static electricity, etc.

## 8. Specifications

### 8-1 Printer Specifications

Printing method	Thermal line printing	
Dot density	SRP-F310II: 180dpi(7dots/mm) SRP-F312II: 203dpi(8dots/mm) SRP-F313II: 203dpi(8dots/mm)	
Printing width	SRP-F310II: 72mm SRP-F312II: 72mm SRP-F313II: 80mm	
Paper width	79.5±0.5mm/82.5±0.5mm	
Characters per line (default)	SRP-F310II: 42(Font A), 56(Font B) SRP-F312II: 48(Font A), 64(Font B) SRP-F313II :53(Font A), 71(Font B)	
Printing speed	SRP-F310II: 82.74 lines/sec, Max. 350mm/sec SRP-F312II: 93.33 lines/sec, Max. 350mm/sec SRP-F313II: 93.33 lines/sec, Max. 350mm/sec	
Receive Buffer Size	4K Bytes	
AC/DC Adapter	Input voltage	100~240VAC
	Frequency	50/60Hz
	Output voltage	24VDC
Environmental Conditions	Temperature	0~40 °C (Operating) -20~60 °C (Storage)
	Humidity	10~80 % RH (Operating) 10~90 % RH (Storage) ; Except for paper
LIFE	Printer Head	250 Km
	Auto Cutter	3,000,000 Cut
MCBF	Printer Mechanism	70,000,000 lines



The specifications were determined based on operation at normal temperature using designated paper on default settings. They are subject to change depending on temperature or printing level. Printing speed may become slightly slower depending on the data transmission speed and the combination of commands.

**8-2 Recommended Papers**

- TF50KS-E (Paper Thickness: 65 $\mu$ m): Nippon Paper Industries Co., Ltd.
- PD 160R (Paper Thickness: 75 $\mu$ m): New Oji Paper Mfg, Co., Ltd.
- P350 (Paper Thickness: 62 $\mu$ m): Kansaki Specialty Paper, Inc. (USA)



- **The use of papers other than those recommended above may cause damage to the printer's TPH or degrade the printing quality. BIXOLON is not responsible for the damage caused by non-recommended papers.**
- **If you have to use other products, we recommend that you use papers with a similar level of quality to the recommended ones.**

