BIXOLON ®

User's Manual
SRP-350/352plusIII

Thermal Printer
Rev. 1.05

http://www.bixolon.com

■ Safety Precautions

In using the present appliance, please keep the following safety regulations in order to prevent any hazard or material damage.
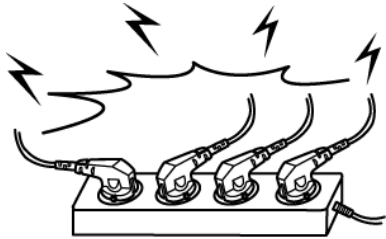
⚠ WARNING

Violating following instructions can cause serious injury or death.

Do not plug several products in one multi-outlet.

• This can provoke over-heating and a fire.
• If the plug is wet or dirty, dry or wipe it before usage.
• If the plug does not fit perfectly with the outlet, do not plug in.
• Be sure to use only standardized multi-outlets.

PROHIBITED

You must use only the supplied adapter.

• It is dangerous to use other adapters.
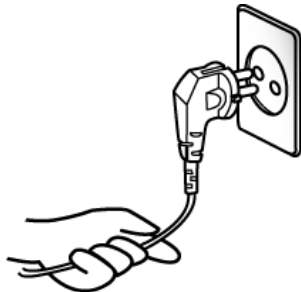
ONLY SUPPLIED ADAPTER

PROHIBITED

Do not pull the cable to unplug.

• This can damage the cable, which is the origin of a fire or a breakdown of the printer.

PROHIBITED

Keep the plastic bag out of children's reach.
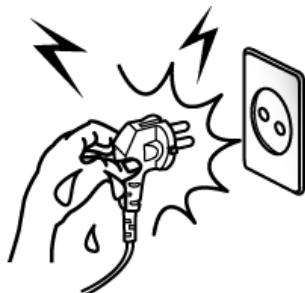
• If not, a child may put the bag on his head.

PROHIBITED

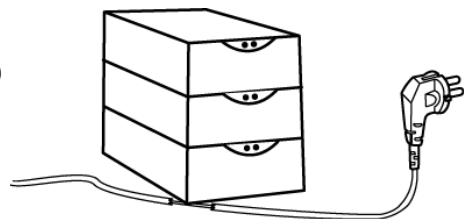**Do not plug in or unplug with your hands wet.**

• You can be electrocuted.

PROHIBITED

Do not bend the cable by force or leave it under any heavy object.

• A damaged cable can cause a fire.

PROHIBITED

Rev. 1.05

⚠ CAUTION

Violating following instructions can cause slight wound or damage the appliance.

If you observe a strange smoke, odor or noise from the printer, unplug it before taking following measures.

• Switch off the printer and unplug the set from the mains.
• After the disappearance of the smoke, call your dealer to repair it.

TO UNPLUG

Keep the desiccant out of children's reach.
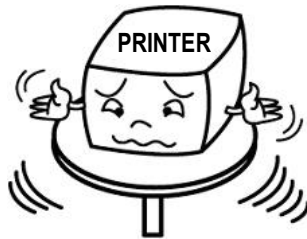
• If not, they may eat it.

PROHIBITED

Install the printer on the stable surface.

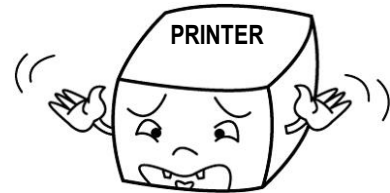• If the printer falls down, it can be broken and you can hurt yourself.

PROHIBITED

Use only approved accessories and do not try to disassemble, repair or remodel it for yourself.

• Call your dealer when you need these services.
• Do not touch the blade of auto cutter.

DISASSEMBLING PROHIBITED

Do not let water or other foreign objects in the printer.

• If this happened, switch off and unplug the printer before calling your dealer.

PROHIBITED

Do not use the printer when it is out of order. This can cause a fire or an electrocution.

• Switch off and unplug the printer before calling your dealer.

TO UNPLUG

Rev. 1.05

■ Warning - U.S.A

i) Class A Digital Device : Wired Device
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.

ii) Class B Digital Device : Wireless Device
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications, However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

iii) Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

iv) 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.

■ Notice - Canada

i) 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.
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.

ii) Class B Digital Device : Wireless Device
This Apparatus complies with class "B" limits for radio interference as specified in the Canadian department of communications radio interference regulations.
Get appareil est conforme aux normes class "B" d'interference radio tel que specifier par ministre canadien des communications dans les reglements d'interference radio.

■ Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or remove the cables on the rear side, in order to guard the printer against the static electricity. If the printer is damaged by the static electricity, you should turn the printer "OFF".

■ Waste Electrical and Electric Equipment (WEEE)

This marking shown on the product or its literature, indicates that is 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.

■ Rating Label Symbol Information

DC (Direct current)

■ Notice

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.

■ Notice – EU

This wireless device is class A that is considered to be used in an industrial environment.

■ Label Material

* Control Label: PC
* Other Labels: PET

■ Introduction to Product

SRP-350/352plusIII series printers have been designed to be connected to various types of electronic devices such as ECR (Electronic Cash Register), POS (Point Of Sales), and computer peripheral devices.

Major features of the printer are as follows.

1. Print at a max. speed of 300mm/s(180 dpi)

2. Low noise thermal printing

3. Support of USB & Ethernet (built-in type), serial, parallel, POWERED USB, Wireless LAN, and Bluetooth interfaces

4. Built-in data buffer (data can be received and buffered while printing)

5. Control of external devices like cash registers through peripheral device drive circuit

6. Barcode

7. Support of various print density settings (by changing DIP switch settings)

It is advisable to read the contents of this manual carefully before using the printer for the first time.

※ **Use only authorized supplies that can be trusted!**
- We are not responsible for quality and service for damage caused by the use of unauthorized products (or recycled ones).
- The following Bluetooth mark and QD ID B021701 is only applicable to models with the Bluetooth SIG qualification.

We at Bixolon Co., Ltd. constantly strive to improve product functions and quality. To do this, the specifications of our product and the contents of the manual may change without prior notice.
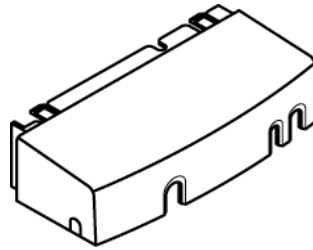
■ Table of Contents

1. Installing Printer and Getting Started

1-1 Unpacking

Check the following contents list, and contact your dealer for assistance if any item is missing or incorrect.
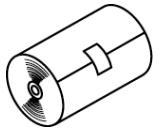
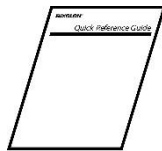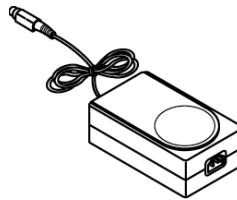SRP-350/352plusIII   Cable Cover   CD

Paper   Installation Guide   AC/DC Adapter   Power Cord

1-2 Interface

Connect the printer to the host computer using the right interface cable that complies with the specifications of the interface. The drawer to be used with the printer should meet the specifications of the printer.

※ **CAUTIONS**
Before connecting any cables, make sure that both the printer and the host are turned off.

1-2-1 USB Interface
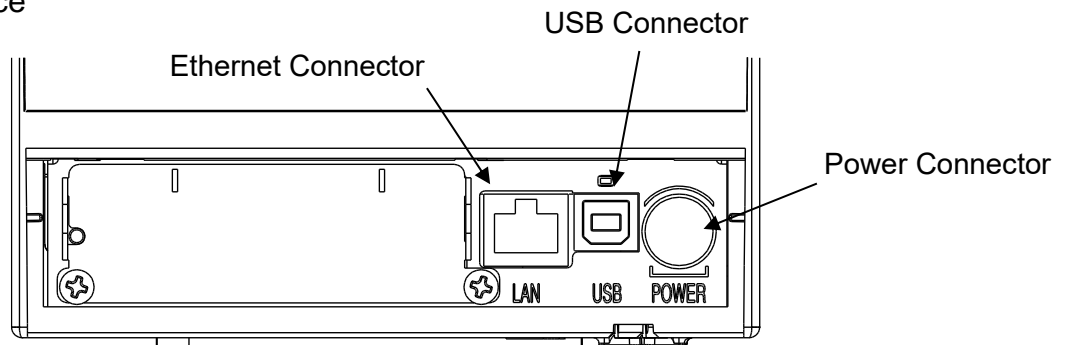
No.	Signal Name	Designation (Color)	Function
Shell	Shield	Drain Cable	Frame Ground
1	VBUS	RED	Host Power
2	D-	WHITE	Data Line (D-)
3	D+	GREEN	Data Line (D+)
4	GND	BLACK	Signal Ground

1-2-2 Ethernet Interface

Pint 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	

* IP and MAC information can be obtained from the self-test. Refer to the Ethernet User's Manual that is available from the BIXOLON website for more detailed information.
* For using this interface in the Bluetooth or WLAN applied product, Printer wiring requires to use double shielded (Cat 7) Ethernet cable.

1-2-3 Serial Interface(RS-232C)

1-2-3-1 Single Interface

Serial Cable Connector   Ethernet Connector   USB Connector   Power Connector

Printer Side (25P)		Host Side (25P)		Printer Side (25P)		Host Side (9P)	
Shield		Shield		Shield		Shield	
(TXD)	2	3	(RXD)	(TXD)	2	2	(RXD)
(RXD)	3	2	(TXD)	(RXD)	3	3	(TXD)
(RTS)	4	5	(CTS)	(RTS)	4	8	(CTS)
(CTS)	5	4	(RTS)	(CTS)	5	7	(RTS)
(DSR)	6	20	(DTR)	(DSR)	6	4	(DTR)
(DTR)	20	6	(DSR)	(DTR)	20	6	(DSR)
(S.G)	7	7	(S.G)	(S.G)	7	5	(S.G)

1-2-3-2 Dual Interface

Serial Cable Connector   Ethernet Connector   USB Connector   Power Connector
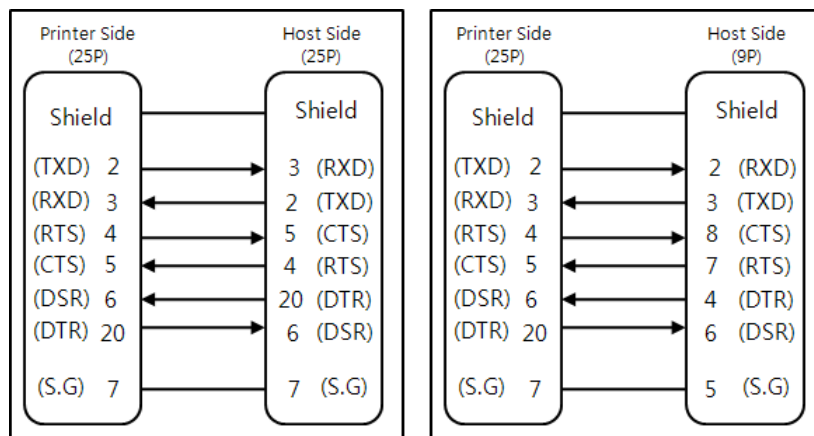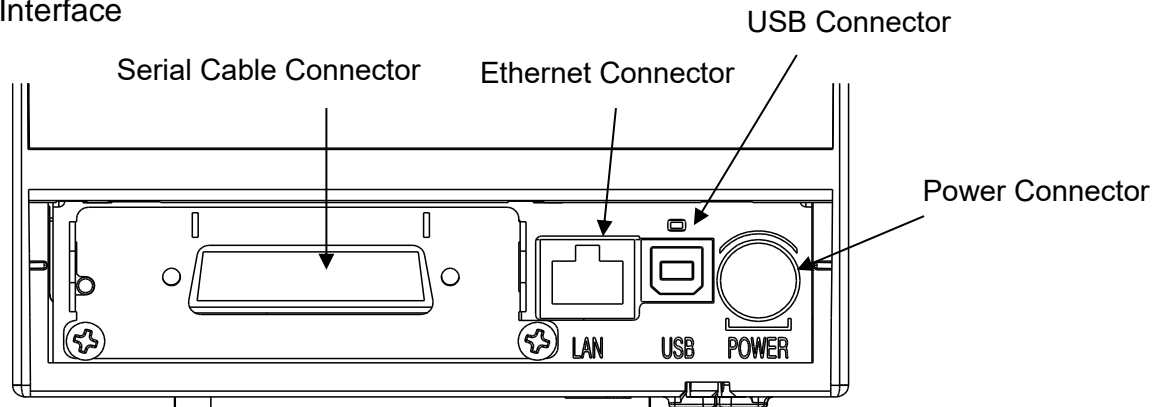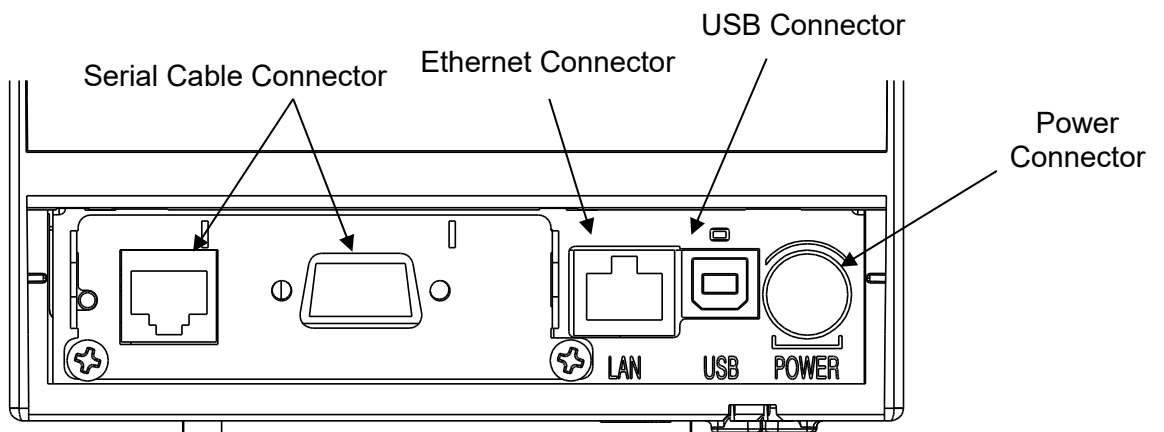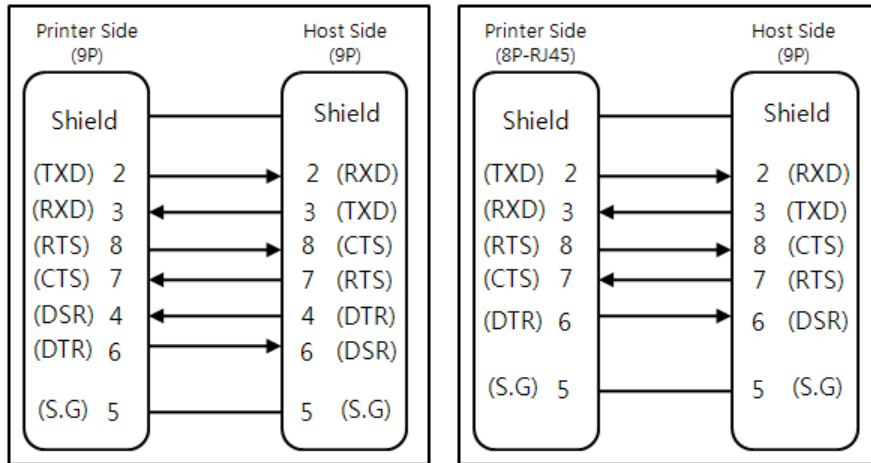
Pin No.	Signal Name	Direction	Function
Main	Frame GND	-	Frame Ground
2	TXD	Output	Data Transmission
3	RXD	Input	Data Reception
6	DSR	Input	This signal shows whether the host computer can receive data (hardware flow control). 1) MARK (Logic 1): The host computer can receive data. 2) SPACE (Logic 2): The host computer cannot receive data. 3) After checking the signal in the printer, it transmits data to the host. 4) When XON/XOFF flow control is selected, the printer does not confirm this signal.
7	Signal GND	-	Signal Ground
20	DTR	Output	This signal shows whether the printer works or not (hardware flow control). 1) MARK (Logic 1): Printer is working. 2) SPACE (Logic 2): Printer is not working. 3) After checking the signal in the printer, it transmits data to the host. 4) When XON/XOFF flow control is selected, the printer does not confirm this signal.
Shield	Frame GND	-	Frame Ground

Rev. 1.05

1-2-4 Parallel Interface(IEEE1284)
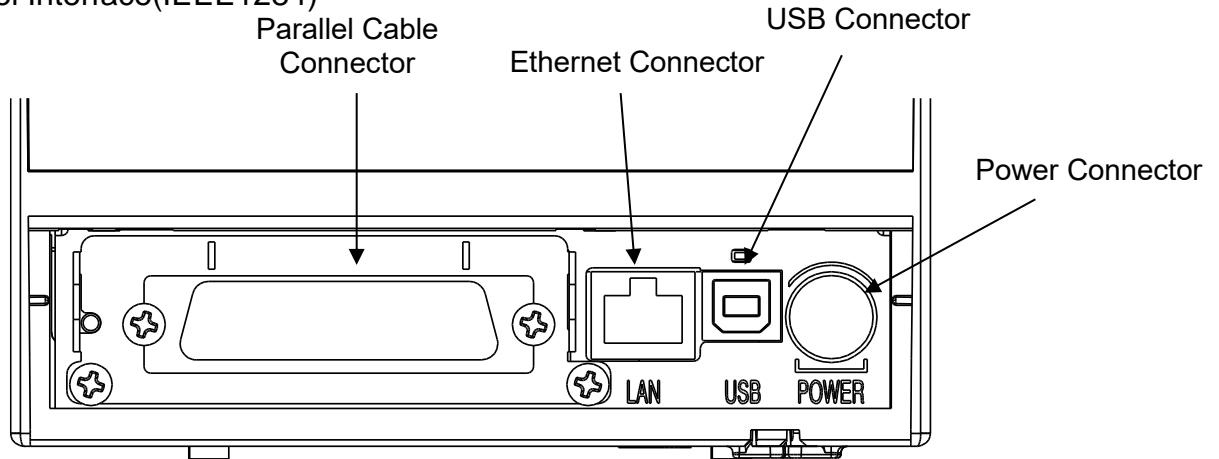
Pin No.	Source	Compatibility Mode	Nibble Mode
1	Host	nStrobe	HostClk
2	Host/Printer	Data 0 (LSB)	-
3	Host/Printer	Data 1	-
4	Host/Printer	Data 2	-
5	Host/Printer	Data 3	-
6	Host/Printer	Data 4	-
7	Host/Printer	Data 5	-
8	Host/Printer	Data 6	-
9	Host/Printer	Data 7 (MSB)	-
10	Printer	Nack	PtrClk
11	Printer	Busy	PtrBusy /Data3,7
12	Printer	Perror	AckDataReq/Data2,6
13	Printer	Select	Xflag/Data1,5
14	Host	nAutoFd	HostBusy
15	-	NC	NC
16	-	GND	GND
17	-	FG	FG
18	Printer	Logic-H	Logic-H
19~30	-	GND	GND
31	Host	nInit	nInit
32	Printer	nFault	nDataAvail/Data0,4
33	-	GND	ND
34	Printer	DK_Status	ND
35	Printer	+5V	ND
36	Host	nSelectIn	1284-Active

1-2-5 Wireless LAN Interface

1) Wireless LAN Communication Specifications

Item	Specifications
Frequency	2.412~2.484 GHz
Channel	Channel 1~13
Protocol	802.11b, 802.11g, 802.11n

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 Wireless LAN Connection Manual for more detailed instructions about how
  to establish the connection.

1-2-6 Bluetooth Interface

1) Bluetooth Communication Specifications

Item	Specifications
Frequency	2.402 ~ 2.480 GHz
Version	2.1 + EDR
Module Type	Class 1

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.

1-2-7 Powered USB Interface

Pin No.	Signal Name	Function
Shield	Shield	Prevent Noise
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	Host Power
7	VPP24V	Main Power
8	PGND	Main Power Ground

* Refer to www.powered.org for detailed information related to the specifications of cable
  and connector.
* Do not apply SMPS 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)

1-3 Drawer Cable

1   6
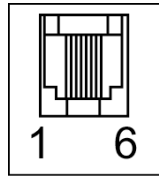
Connect the cash drawer connecting cable to the cash drawer connector located in the back of the printer.

※ **WARNING**

Use a cash drawer that meets the printer specifications.
Using an improper cash drawer may cause faults in the cash drawer and the printer.

※ **CAUTIONS**

Do not connect a telephone line to the drawer kick-out connector.
Otherwise, the telephone line and the computer may be damaged.

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	-

1-4 Setting Dip Switches

1-4-1 Serial Interface
  • DIP Switch 1

SW	Function	ON	OFF	Default
1-1	Auto Line Feed	Enabled	Disabled	OFF
1-2	Flow Control	XON/XOFF	DTR/DSR	OFF
1-3	Data Length	7-bit	8-bit	OFF
1-4	Parity Check	Yes	No	OFF
1-5	Parity Selection	EVEN	ODD	OFF
1-6	Baud Rate Selection (bps)	Refer to the following Table 1		OFF
1-7				ON
1-8				OFF

  • DIP Switch 2

SW	Function	ON	OFF	Default
2-1	Reserved	-	-	OFF
2-2	Reserved	-	-	OFF
2-3	Internal Bell Control	Disabled	Enabled	OFF
2-4	Auto Cutter Selection	Disabled	Enabled	OFF
2-5	Printing Density	Refer to the following Table 2		OFF
2-6				OFF
2-7	Near End Sensor Control	Disabled	Enabled	OFF
2-8	Auto External Buzz	Enabled	Disabled	OFF

1-4-2 Parallel / USB / Ethernet / Wireless LAN / Powered USB Interface
  • DIP Switch 1

SW	Function	ON	OFF	Default
1-1	Auto Line Feed	Enabled	Disabled	OFF
1-2	Reserved	-	-	OFF
1-3	Reserved	-	-	OFF
1-4	Reserved	-	-	OFF
1-5	Reserved	-	-	OFF
1-6	Reserved	-	-	OFF
1-7	Reserved	-	-	ON
1-8	Reserved	-	-	OFF

  • DIP Switch 2

SW	Function	ON	OFF	Default
2-1	Reserved	-	-	OFF
2-2	Reserved	-	-	OFF
2-3	Internal Bell Control	Disabled	Enabled	OFF
2-4	Auto Cutter Selection	Disabled	Enabled	OFF
2-5	Printing Density	Refer to the following Table 2		OFF
2-6				OFF
2-7	Near End Sensor Control	Disabled	Enabled	OFF
2-8	Auto External Buzz	Enabled	Disabled	OFF

1-4-3 Bluetooth Interface
• DIP Switch 1

SW	Function	ON	OFF	Default
1-1	Auto Line Feed	Enabled	Disabled	OFF
1-2	Reserved	-	-	OFF
1-3	Reserved	-	-	OFF
1-4	Reserved	-	-	OFF
1-5	Bluetooth mode	iOS	Normal	OFF
1-6	Reserved	-	-	OFF
1-7	Reserved	-	-	ON
1-8	Reserved	-	-	OFF

• DIP Switch 2

SW	Function	ON	OFF	Default
2-1	Reserved	-	-	OFF
2-2	Reserved	-	-	OFF
2-3	Internal Bell Control	Disabled	Enabled	OFF
2-4	Auto Cutter Selection	Disabled	Enabled	OFF
2-5	Printing Density	Refer to the following Table 2		OFF
2-6				OFF
2-7	Near End Sensor Control	Disabled	Enabled	OFF
2-8	Auto External Buzz	Enabled	Disabled	OFF

• Table 1 – Baud rate (bps) Selection

Transmission Speed	1-6	1-7	1-8	Default
2400	ON	OFF	OFF	
4800	ON	OFF	ON	
9600	OFF	ON	OFF	
19200	OFF	OFF	OFF	9600
38400	OFF	ON	ON	
57600	OFF	OFF	ON	
115200	ON	ON	ON	

• Table 2 – Print Density Selection

Printing Density	2-5	2-6	Default
Level 1	OFF	OFF	- Level 1 is default
Level 2	ON	OFF	- Level 4 darkest
Level 3	OFF	ON	
Level 4	ON	ON	

※ Attention
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.

To change the 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.

※ Note
Please make sure that the printer is turned off when changing the DIP switch settings. The change is not accepted when the power is on.
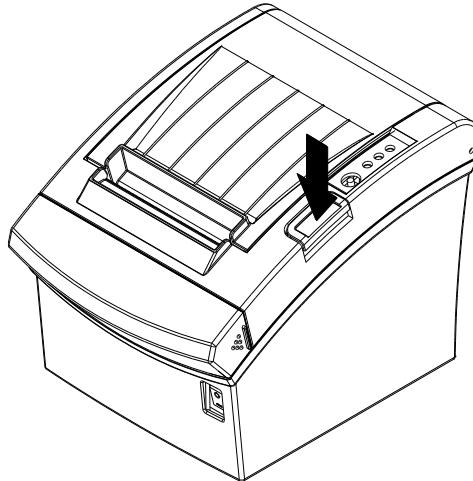
1-5 Installing & Replacing Paper

※ CAUTIONS

Be sure to use paper rolls that meet the specifications. Do not use paper rolls that have the paper glued to the core because the printer may not detect the paper end correctly.

1-5-1 Make sure that the printer is not receiving data; otherwise, data may be lost.

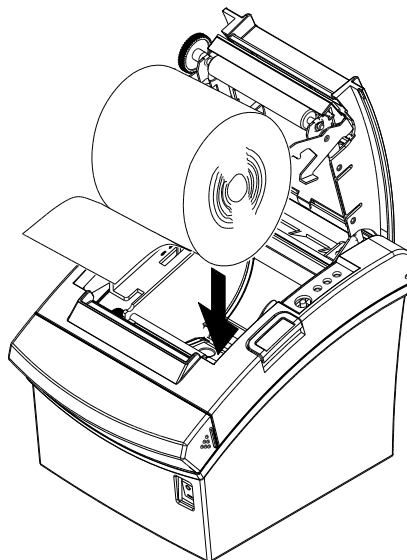1-5-2 Open the paper roll cover by pressing the Cover-Open button.

※ CAUTIONS

Do not open the print cover while the printer is operating, otherwise the printer may be damaged.

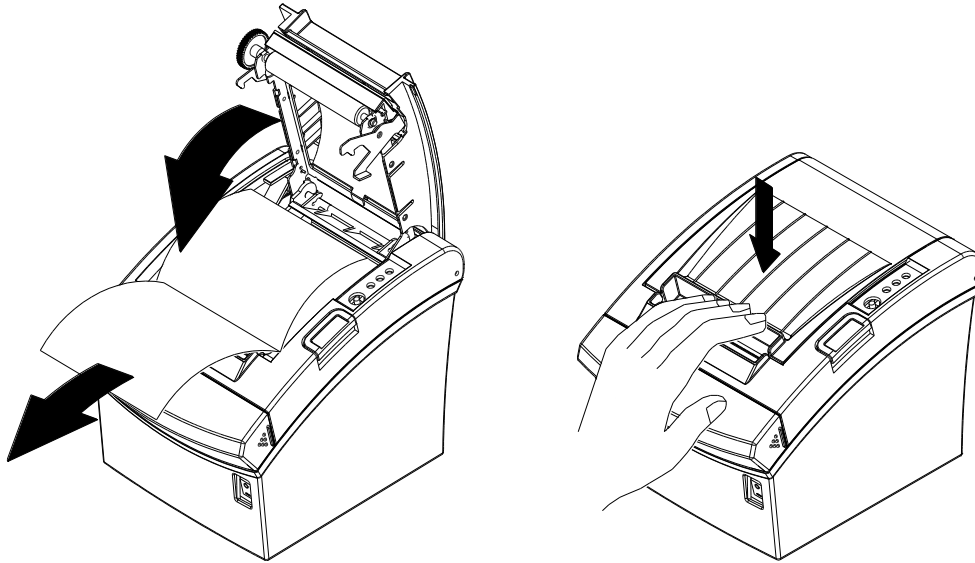1-5-3 Remove any existing used paper roll core when replacing the paper roll

1-5-4 Insert the paper roll as shown in the following picture.

1-5-5 Check the orientation of the roll paper when inserting it into the printer.
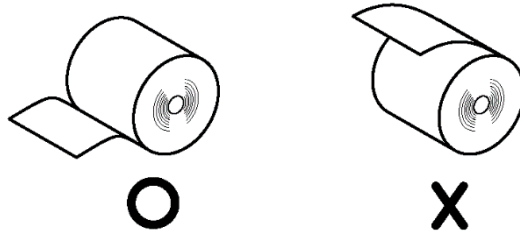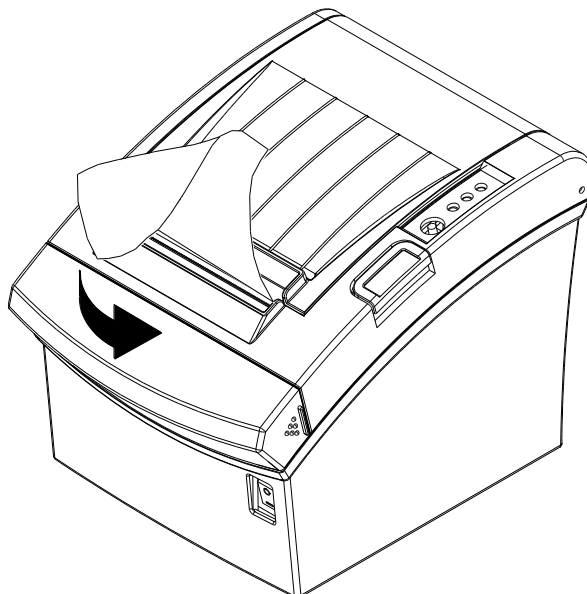

1-5-6 Pull out a small amount of paper as shown in the picture, and close the cover.

※ **CAUTIONS**

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

1-5-7 Cut the paper as shown in the following picture.

1-6 Recommended Papers

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

※ CAUTIONS

Use of papers other than those recommended above may damage TPH or degrade the printing quality and our company 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.
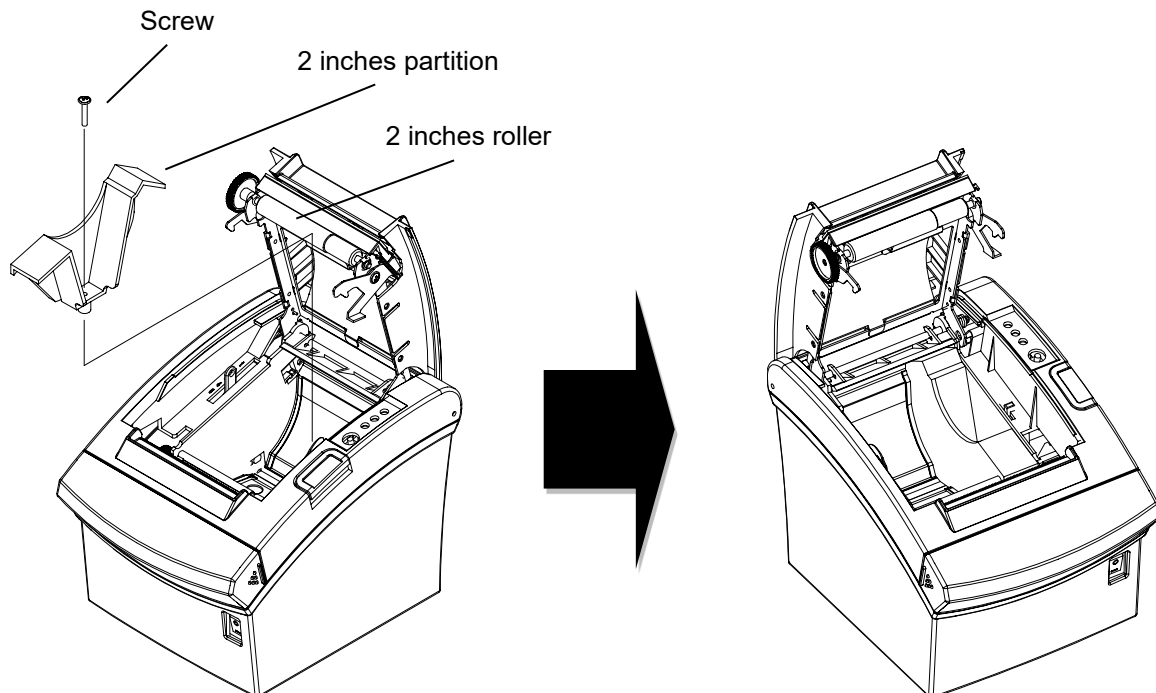
1-7 Structure of 2 inches specification.

※ NOTE

This setting can be changed from VMSM Utility.

※ CAUTIONS

The changes for 2 inches specification should be applied to the following components as well.

1-8 Removing Paper Jam

1-8-1 When a paper jam occurs, turn the printer off and then back on, open the cover, and remove the jammed paper.

※ **In case of a minor jam, it may be possible that the operating blade returns to the original position and cover can be opened simply by turning the printer off and then back on.**

Follow the steps shown below if the cover does not open after power cycling.
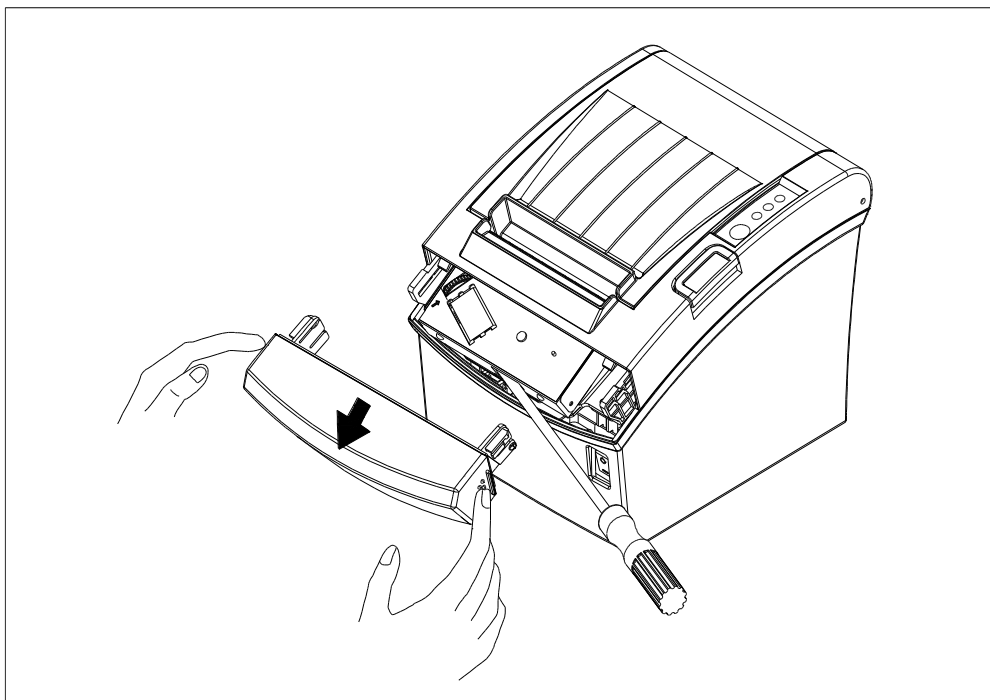
1-8-2 Turn the printer off.

1-8-3 Separate the cover-cutter while pressing down both sides as shown in the following picture.

1-8-4 Turn the knob and insert the blade that sticks out using a cross-head screwdriver as shown below.
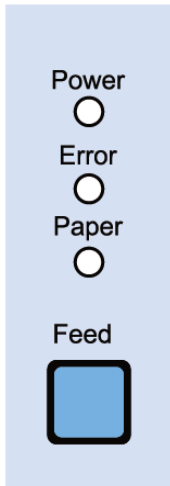
1-8-5 Press the Cover-Open button, open the cover, remove the jammed paper, and assemble the separated COVER-CUTTER.

1-8-6 Turn the printer on and use it.

1-9Using Printer Functions

Control Panel

○ POWER
Green light will be on when the power is supplied to printer.

○ ERROR
Red light will be on in various error conditions (e.g. no paper, cover open, etc.)

○ PAPER
Red LED will be lit when the paper roll is running low. The LED keeps blinking when the printer is in self-test standby mode or macro execution standby mode.

○ FEED
Press the FEED button once to feed out extra paper. Hold down the FEED button to feed the paper continuously until the button is released...
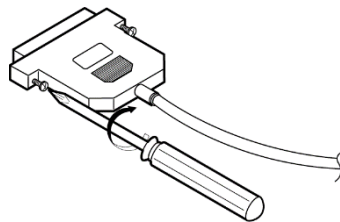
1-10Connecting a Computer

Use the cable that comes with the printer to connect the printer to computers.

1-10-1 Plug the cable connector securely into the printer's interface connector located in the back of the printer.

1-10-2 Tighten the screws on the cable connector.

1-10-3 Attach the other end of the parallel cable to the computer.

1-11 Connecting Power Supply

※ CAUTIONS

When connecting or disconnecting the power supply to and from the printer, make sure that the power supply adapter is unplugged from the electrical outlet. Otherwise you may damage the power supply or the printer.

If the power supply's rated voltage and your outlet's voltage do not match, do not plug in the power cord and contact your dealer for assistance. Otherwise, you may damage the power supply or the printer.

1-11-1 Make sure that the printer's power switch is turned off, and the power supply's power cord is unplugged from the electrical outlet.

1-11-2 Check the label on the power supply to make sure that the voltage required by the power supply matches that of your electrical outlet.

1-11-3 Plug in the power supply's cable as shown below. Notice that the flat side of the plug faces down.

Power Connector

Power Cable
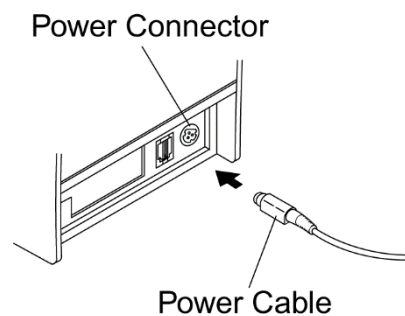
※ NOTE

If you want to remove the power cord, grab the arrow part of the connector securely and pull it straight out.

2. Self-Test

The self-test checks whether the printer has any problems. If the printer does not function properly, contact your dealer. The self-test procedure is as follows:

2-1 Make sure paper roll has been installed properly.

2-2 Turn on the power while holding down the FEED button and the self-test begins.

2-3 The self-test prints the current status of the printer including control ROM version and the DIP switch settings.

2-4 After printing the current printer status, the printer wait for the next step after printing the following lines. (The paper signal light keeps blinking.)

<div align="center">

SELF-TEST PRINTING.
PLEASE PRESS THE FEED BUTTON.

</div>

2-5 Press the FEED button to continue printing. The printer prints a form using the built-in character sets that can be printed.

2-6 The self-test ends automatically and the printer cuts the paper after printing the following line.

<div align="center">

*** COMPLETED ***

</div>

2-7 The printer is ready to receive data for normal operation upon completion of self-test operation.

3. 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.

To use the hexadecimal dump function, follow these steps.

3-1 After making sure that the printer is off, open the cover.

3-2 Turn the printer on, while holding down the FEED button.

3-3 Close the cover, and then the printer enters the hexadecimal dump mode.

3-4 Select the hexadecimal printing function in the mode selection menu to move to the hexadecimal printing mode.

3-5 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 the hex dump, all commands except DLE EOT and DLE ENQ are disabled.

3-6 When the printing finishes, turn off the printer.

3-7 Turn on the printer and then the hexadecimal mode is off.

4. Specifications

Printing Method	Thermal transfer printing	
Dot Density	SRP-350plusIII: 180 dpi (7dots/mm)	
	SRP-352plusIII: 203 dpi (8dots/mm)	
Printing Width	3 inches	72 mm
	2 inches	48 mm
Roll Width	3 inches	79.5±0.5 mm
	2 inches	57.5±0.5 mm
No. of Characters per Line (Default Value)	SRP-350plusIII : 42 (Font A), 56 (Font B), 56 (Font C) SRP-352plusIII : 48 (Font A), 64 (Font B), 64 (Font C)	
Printing Speed	SRP-350plusIII: Max. 300 mm/sec	
	SRP-352plusIII: Max. 270 mm/sec	
Receiving Buffer Size	4K bytes	
※ **NOTE** Printing speed may become slightly slower depending on the data transmission speed and the combination of commands.		
Supply Voltage	SMPS Input Voltage	100~240 VAC
	Frequency	50/60 Hz
	SMPS Output Voltage	24 VDC
Environment Condition	Temperature	Operating: 0 ~ 40 ℃ Storage: -20 ~ 60 ℃
	Humidity	Operating: 10 ~ 80 % RH Storage: 10 ~ 90 % RH Paper excluded
Life Span	Printer Head *)	150 Km
	Auto Cutter	1,800,000 cuts
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.

*) The specifications were tested according to standard reliability. If you want to test the product to determine its life cycle, please contact us for more details and comply with the standard reliability for testing.

* These values may vary with environment temperature, printing level, etc.

* The switch is the disconnecting device. Turn off switch from any hazard.

5. Appendix

5-1 Cleaning Printer

Paper dust inside the printer may lower the print quality. In this case clean the printer as follows:

5-1-1 Open the printer cover and remove any paper.

5-1-2 Clean the print head with a cotton swab moistened with alcohol solvent.

5-1-3 Clean the paper sensor and paper roller with a cotton swab and a dry cloth.

5-1-4 Insert a paper roll and close the printer cover.

The remaining amount of paper detected by paper near-end sensor varies with the diameter of the paper core. To set the paper near-end sensor, contact your dealer.