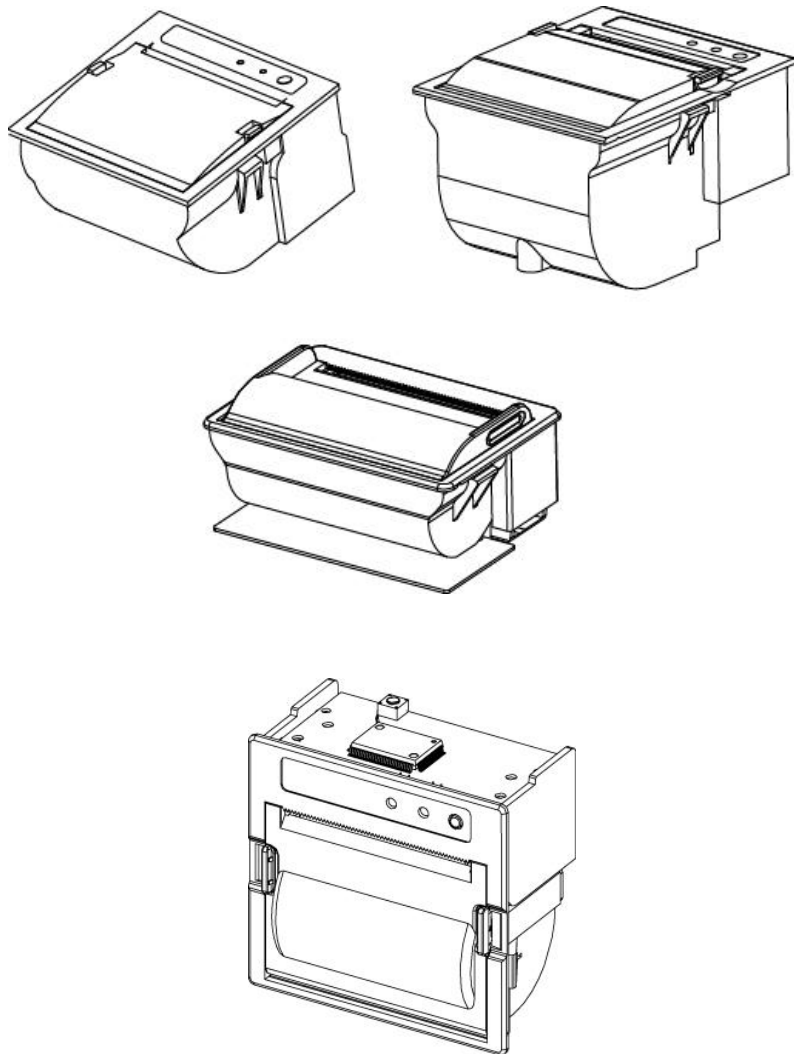**Operator's Manual**

MODEL **PORTI-P**

(2inch Panel Printer)

Rev 5.5

All specifications are subjected to change without notice

◘ Copyright

PORTI-P 2Inch Panel Printer Operator's Manual.

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◘ Trademark

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◘ Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or removed the cable 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"

◘ Notice

The contents of this manual are subject to change without notice.

◾ Introduction

The **PORTI-P** is an extremely simple and functional panel printer.
It is the ideal solution for applications which require the immediate printing of data on a paper, whether they be of an industrial, professional or laboratory nature.
Medical analyzer, Industrial instrument, Recorder, Geological analyzer, Underground analyzer, Chemical analyzer, Metallic analyzer, etc.

The general features of **PORTI-P** printer are as follows:

▶ Ultra small size rack mount printer.

▶ Very silent printing thru direct thermal printing method.

▶ High speed(50mm/sec, MAX)

▶ High resolution(203dpi : 8dots/mm).

▶ UART(RS-232C or TTL) interface

▶ Support text and graphic printing.

▶ Easier paper loading by CLAMSHELL design.

▶ Easier maintenance with self-diagnostics.

▶ In field programming – Update Firmware, Download Fonts and Logos

▶ Microsoft Windows/Windows CE, Linux, Android compatible

▶ Flow control : Software (XON/XOFF)

   ※ Hardware flow control not supported in printer.

▶ Agency Approvals

◘ Operating Precautions

Please follow the precautions below to enjoy and maintain the full performance of the printer.

▶ Using the Printer

- ● Be careful not to drop or bump the printer on a hard surface.
- ● Do not install the printer in direct sunlight or such areas.

  Suitable environment for the use of the printer is as follows:

  - ◆ Operating temperature : -10℃ to 50℃
  - ◆ Relative humidity　　　 : 30% to 85%
- ● Do not install the printer near devices that generate strong electromagnetic fields such as a copy machine.
- ● Do not open the platen cover during printing .
- ● Do not remove or reinstall the communication cable during printing or transmission.
- ● Do not touch the connectors of the communication during printing.
- ● Switch the POWER OFF when not in use.
- ● Do not other solvent.

▶ Thermal Paper Handling

- ● Store the thermal paper in a cool, dry and dark place.
- ● Do not rub the paper with hard object.
- ● Do not leave the paper with hard object.
- ● Do not allow plastic film, erasers, or adhesive tape to touch the paper for long periods.
- ● Do not stack the thermal paper with diazo copies immediately after copying or wet-type copies.
- ● Do not use chemical glue.
- ● Always use the clean thermal paper.

◾ Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 the FCC Rules.

These limits are designed to provide reasonable protection against harmful

interference in a residential installation.

These 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:
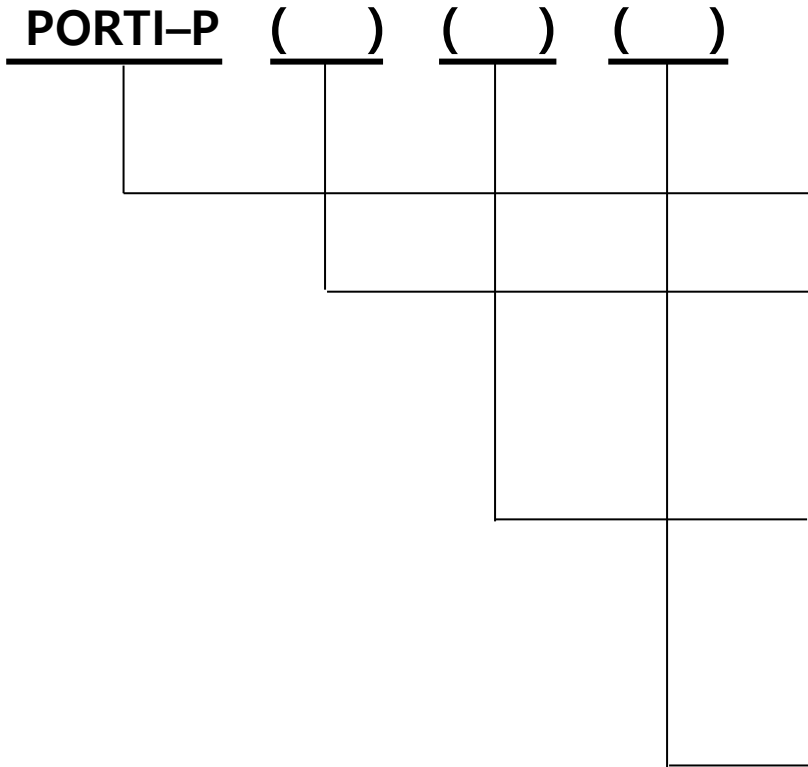
--Reorient or relocate the receiving antenna.

--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.

CONTENTS

1. Outline

1.1. Model classifications

PORTI–P ( ) ( ) ( )

Model name

Size of roll paper
30 : 57mm wide, 30Ø
40 : 57mm wide, 40Ø
60 : 57mm wide, 60Ø
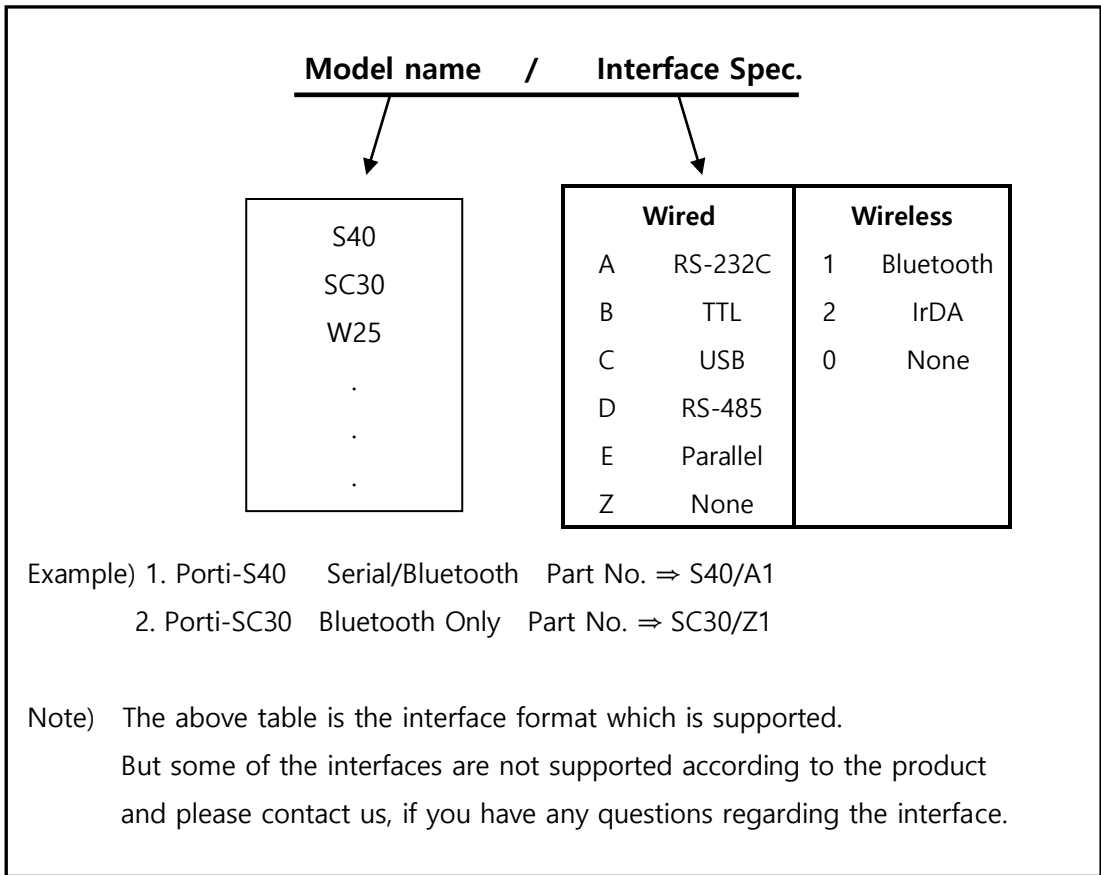
Interface
A0 : UART
C0 : USB(only PP40/60 RX)

Power
None : DC 9V
5V   : DC 5V
12V   : DC 12~24V (only PP40/60)

1.2. Product Part Number System

Model name   /   Interface Spec.

S40			
SC30			
W25			
.			
.			
.			

Wired		Wireless	
A	RS-232C	1	Bluetooth
B	TTL	2	IrDA
C	USB	0	None
D	RS-485		
E	Parallel		
Z	None		

Example) 1. Porti-S40   Serial/Bluetooth   Part No. ⇒ S40/A1
         2. Porti-SC30   Bluetooth Only   Part No. ⇒ SC30/Z1

Note)   The above table is the interface format which is supported.
        But some of the interfaces are not supported according to the product
        and please contact us, if you have any questions regarding the interface.

1.3. Specifications

Item	Specification
Printing method	Direct thermal line printing
Characters per line	- Font A : 32cpl / Font B : 42cpl / Font C : 48cpl - KOR, CHN, JPN : 16cpl
Character size	- Font Size A: 12X24 / Font Size B : 9X24 / Font Size C : 8X16 - KOR : 24X24(16X24) / CHN, JPN : 24X24
Optional Characters	Alphanumeric:95, Extended Graphics:128X31 pages, International:10, Simplified/Traditional Chinese, Japanese, Korean
Resolution	203dpi, 8dots/mm
Print width	2-inch (48mm, 384dots)
Printing speed	50mm/sec (MAX)
Dimensions (including PCB)	-P30 : 77.0 x 55.0 x 45.3 mm -P40,P240 : 80.0 x 75.0 x 44.0 mm -P60,PP60 : 80.0 x 96.9 x 66.5 mm -PP40,PP240 : 80.0 x 75.0 x 63.0 mm
Weight (w/o roll paper)	-P30 : 78.5g -P40,P240 : 92.55g -P60 : 125g -PP40 : 108g -PP60 : 136g
Interface	UART(RS-232C or TTL) USB (only PP40/60 RX Version)
Paper supplied	Thermal roll paper (57mm wide - 30ø, 40ø, 60ø)

Barcode supplied	1-dimension : UPC-A, UPC-E, EAN-8, EAN-13, CODE-39, CODE-93,
	                CODE-128, ITF, CODABAR
	2-dimension : PDF417, Micro PDF417, Truncated PDF417, QR-CODE,
	                DATA Matrix, Maxicode
	Etc :GS1 databar

Driver	Microsoft Windows, Linux
H/W Spec	MCU : RX-32bit, RAM : 128M bit, FLASH : 64M bit
Receive buffer size	1M bytes

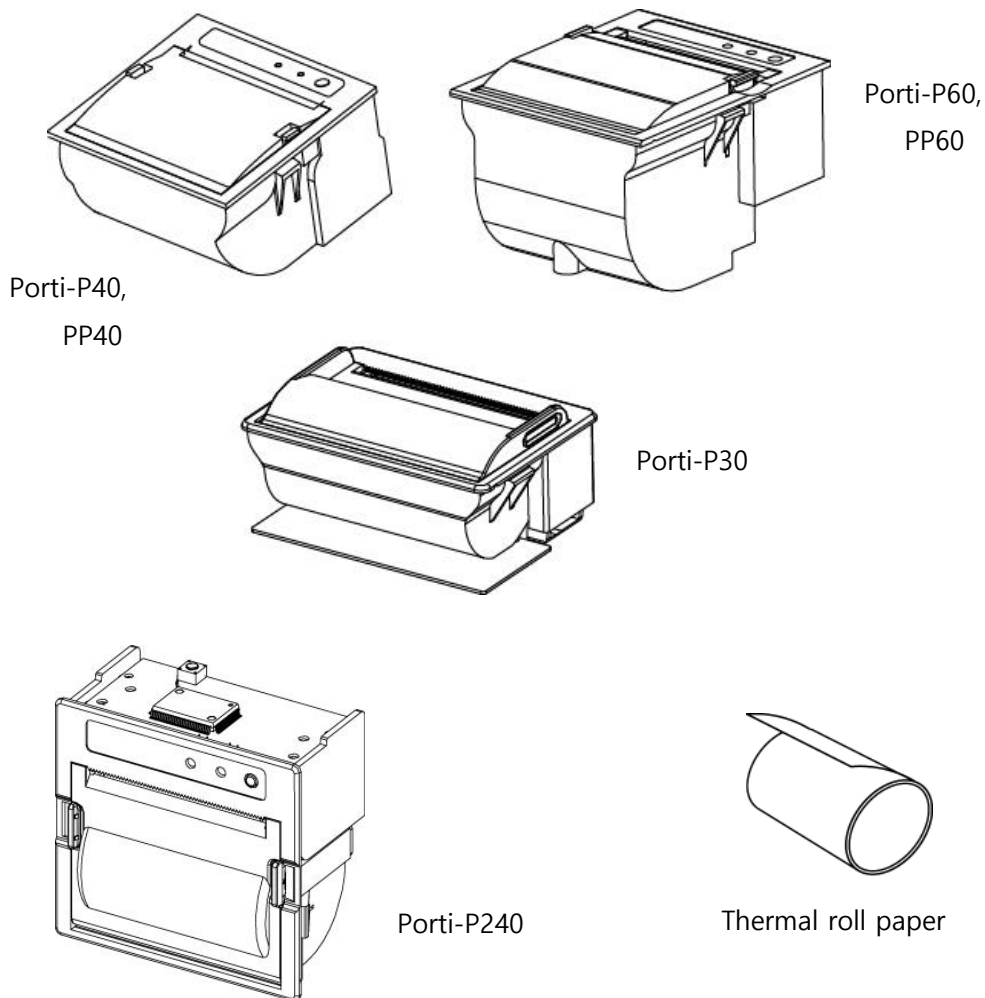**(Continue...)**

Item	Specification	
Input Power	5VDC±5%, Standby 60mA and 2.5A or more (P30,P40,P240) 7.5~8.5V (MAX 9VDC), Standby 60mA and 3A or more (P30,P40,P60,P240) 12V~24VDC, Standby 60mA and 3A or more (PP40,PP60,PP240)	
Environment conditions	Temperature	-10°C ~50°C (operating) -30°C ~ 70°C (storage)
	Humidity	30% - 80% (operating) 10% - 90% (storage)
MCBF (Mean Cycle Between failure)	Mechanical	37,000,000 lines
	Head	Approximately 50Km

< Table 1 >

2. Setting up the printer

2.1. Printer & Accessories

When unpacking your printer box make sure it contains the printer and all accessories.

If any accessories are missing or damage, please contact your dealer for assistance.

Porti-P60,
PP60

Porti-P40,
PP40

Porti-P30

Porti-P240

Thermal roll paper

2.2. Printer Features

2.2.1. Part Name

1) PORTI-P30

Platen   Platen Gear

Paper Cover

Paper Cover Lock

Manual Cutter

Mechanism

Main Body

PCB Ass'y

2) PORTI-P40

Paper cover   Platen   Palten Gear

Power lamp

Error lamp

Feed Button

Mechanism

Paper cover lock   Main body

[P240]   [P40]

3) PORTI-P60

Paper Cover Platen Platen Gear Power Lamp Error Lamp Feed Button Mechanism Main Body Paper Cover ILock
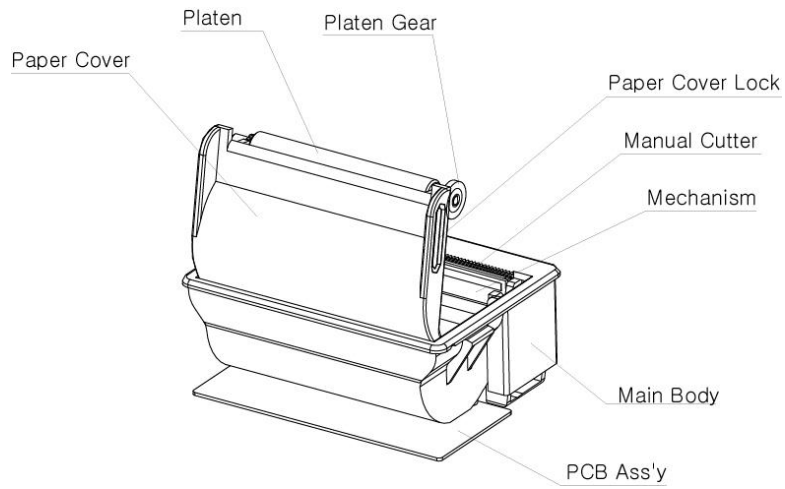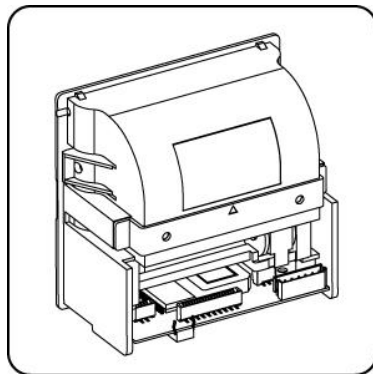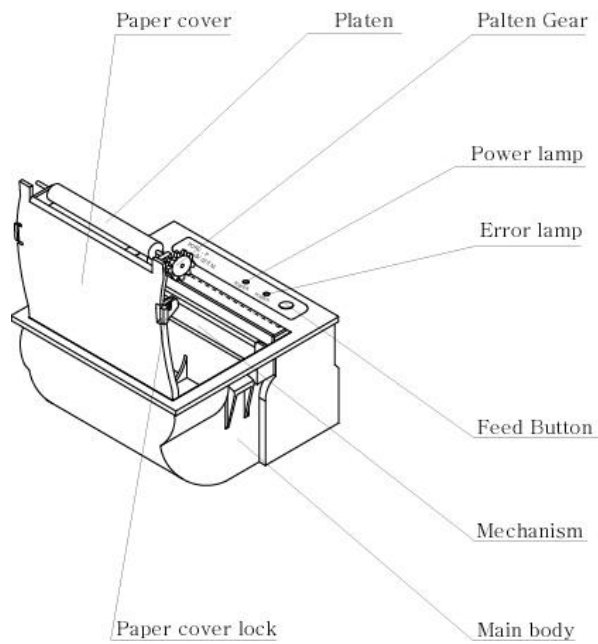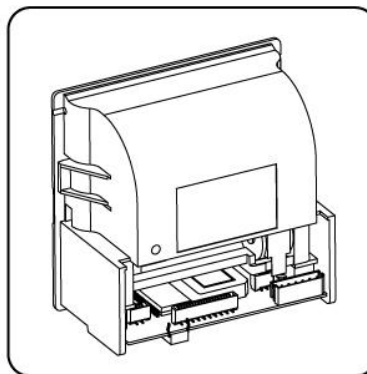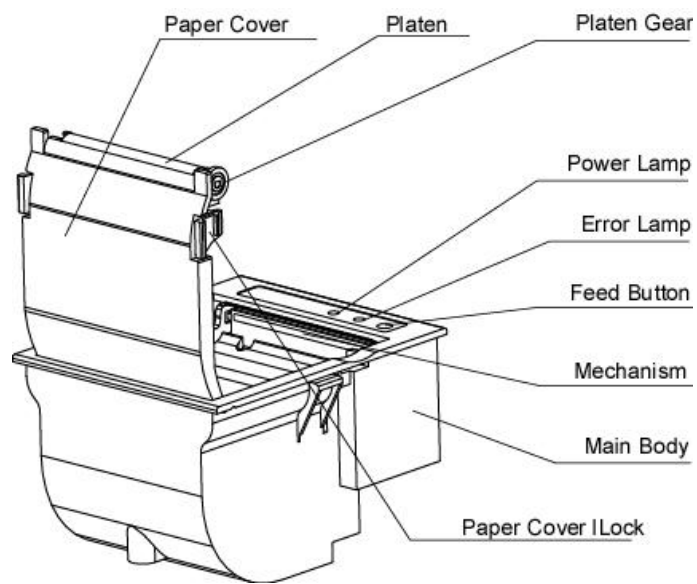
2.2.2. Dimension

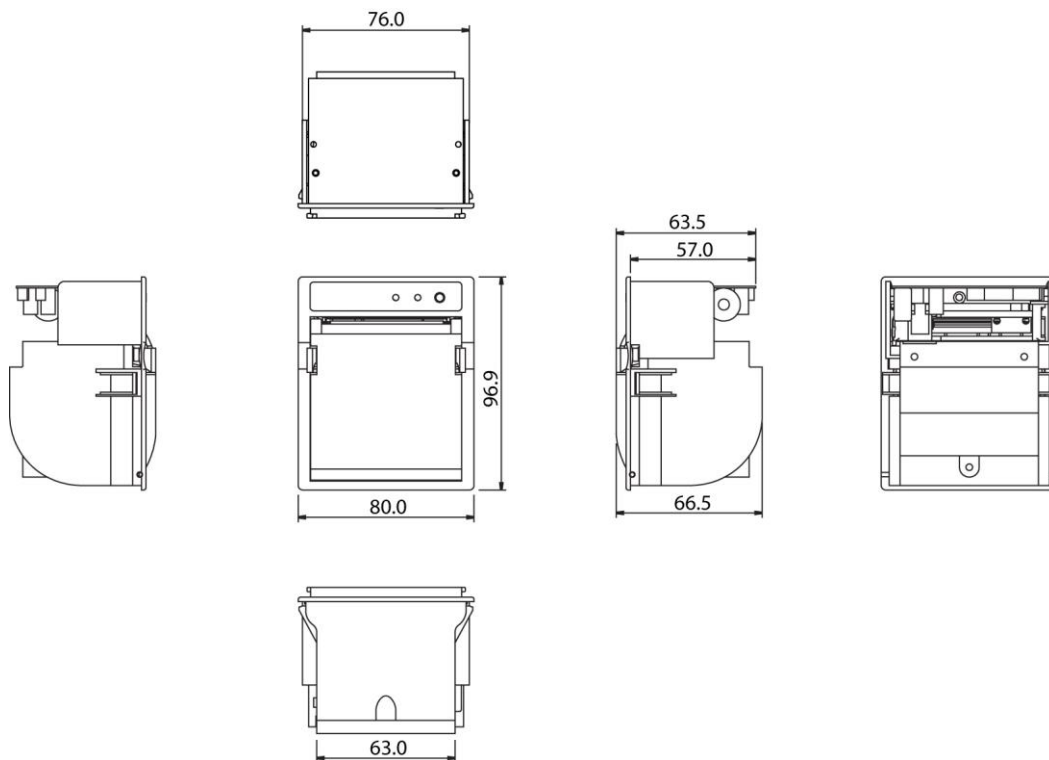### 1) PORTI-P30

[unit : mm]

2) PORTI-P40

3) PORTI-P240

76.0

44.0
38.0

75.0

80.0
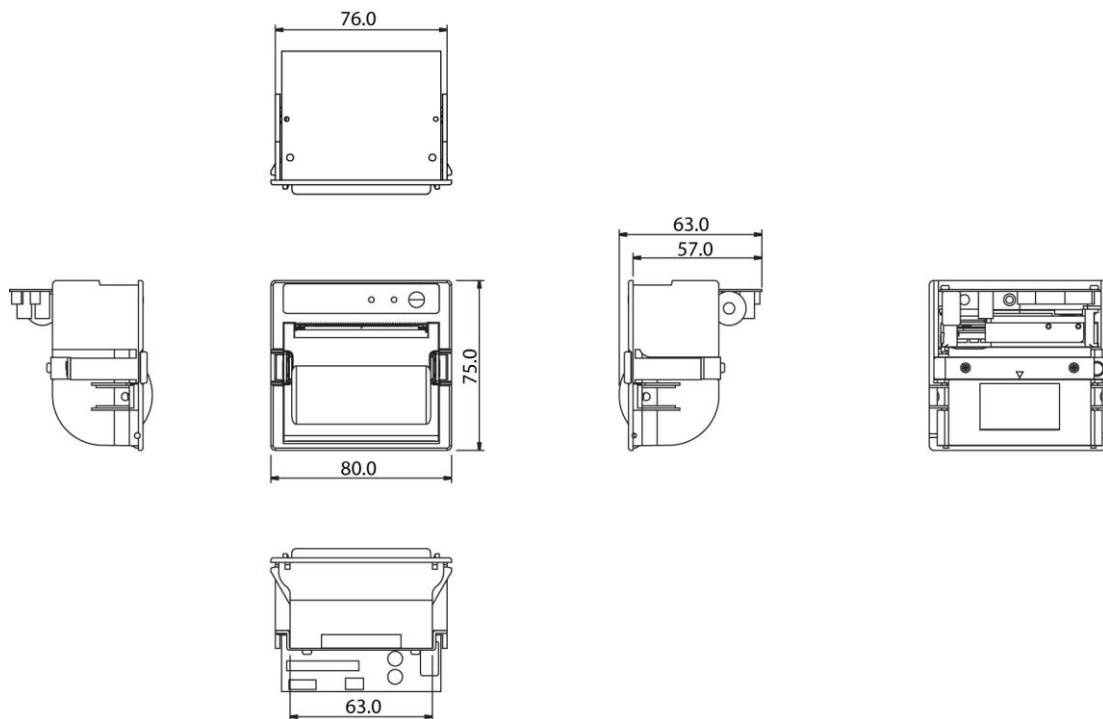
63.0

3) PORTI-P60

76.0

44.5
38.0

96.9

80.0

66.5
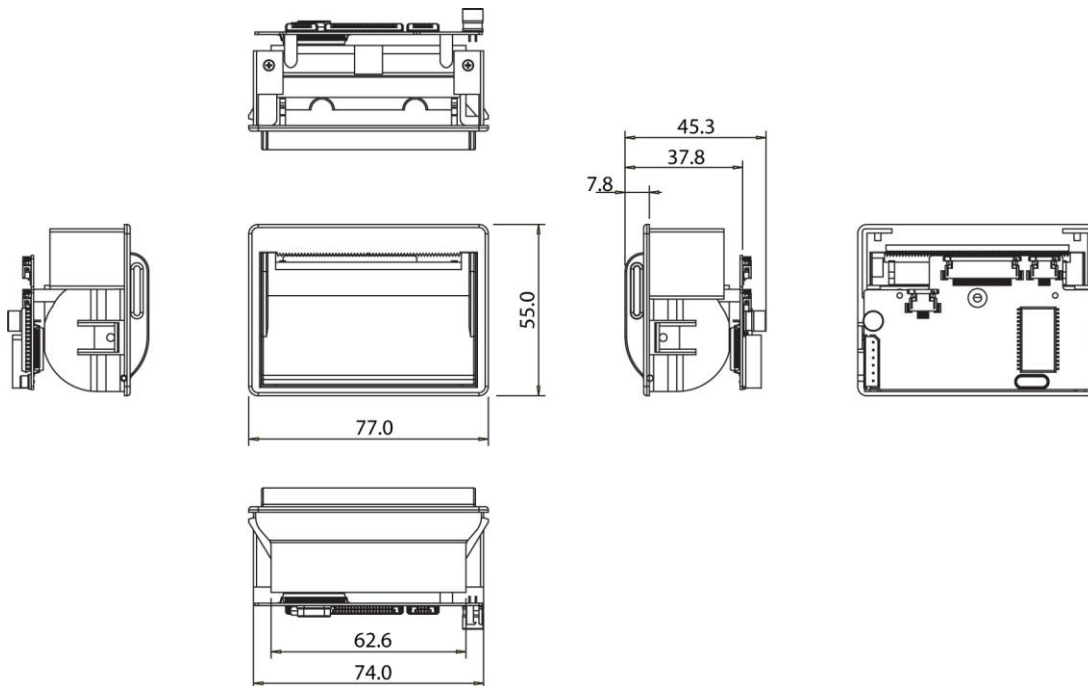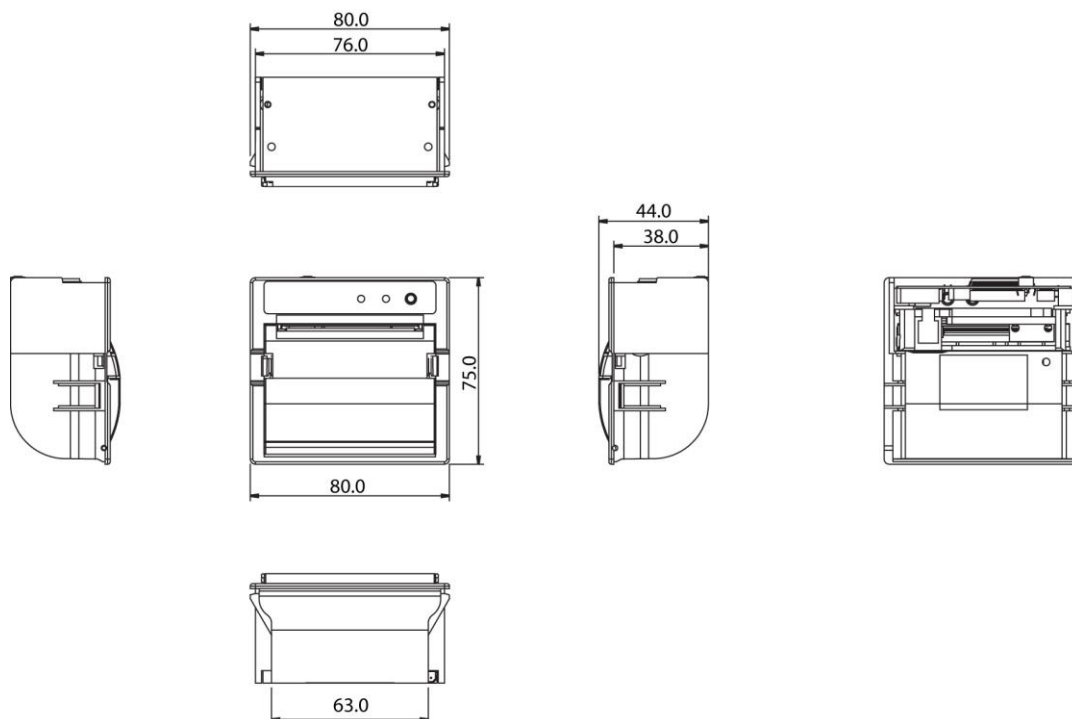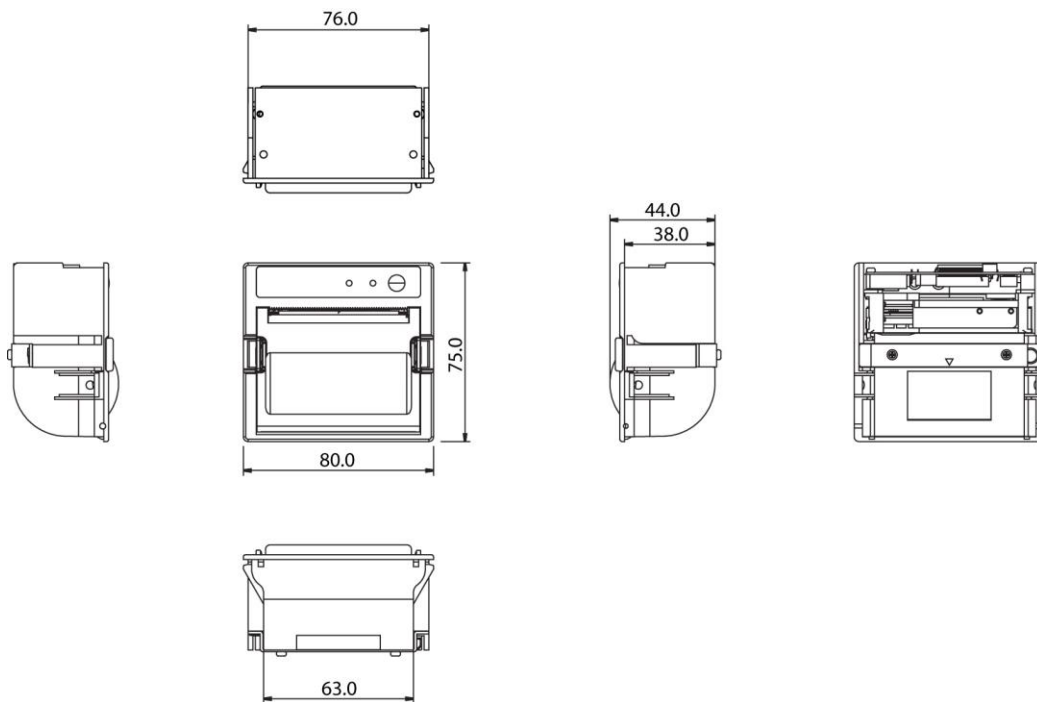
63.0
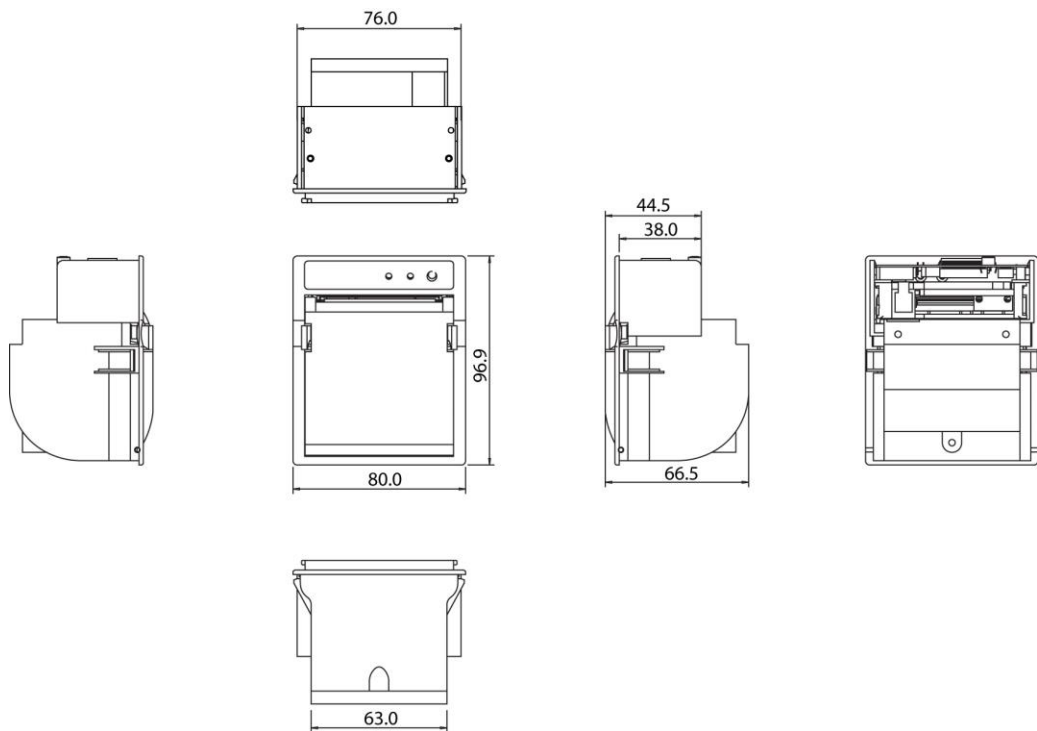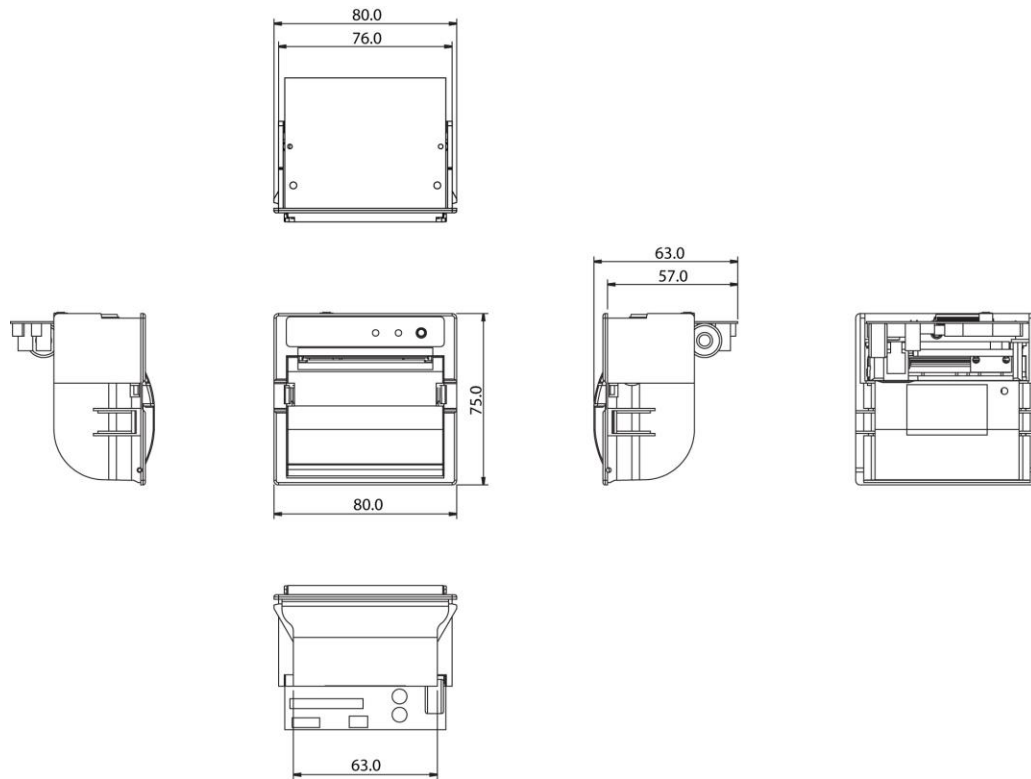
4) PORTI-PP40

5) PORTI-PP60

6) PORTI-PP240

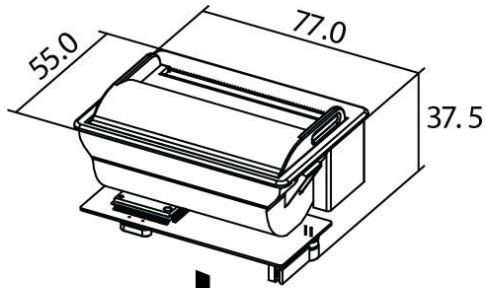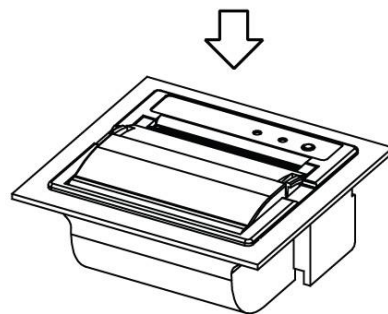## 2.3. Installation

2.3.1   P30
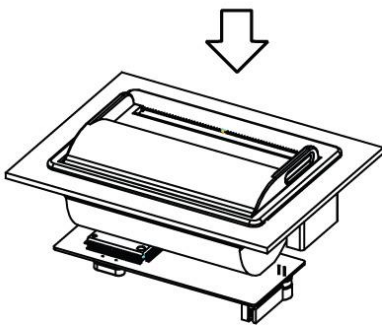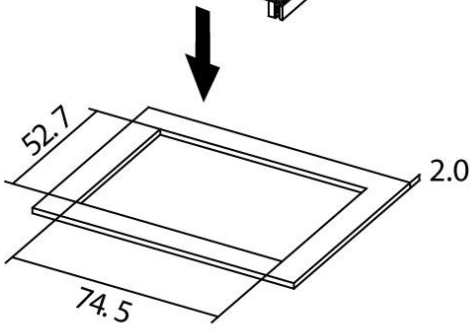
2.3.2   P40
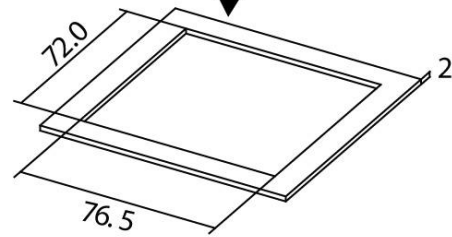
2.3.3   P60
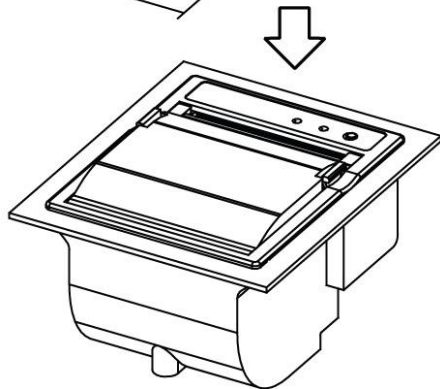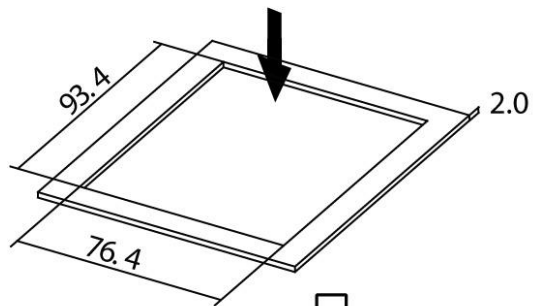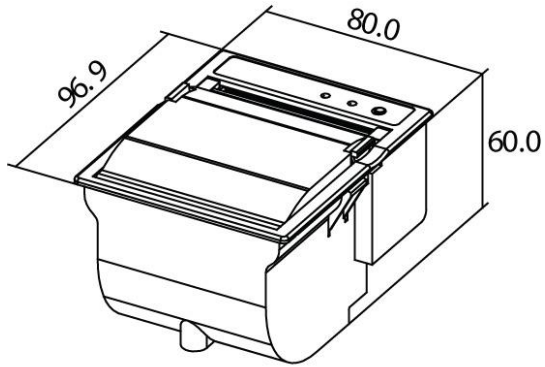
2.3.4   PP40
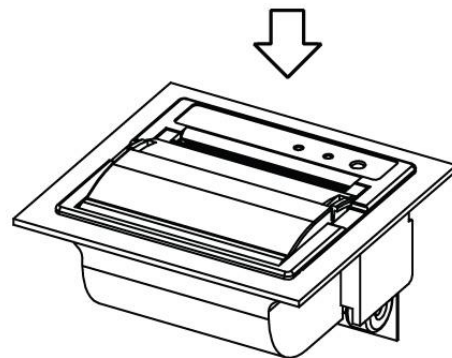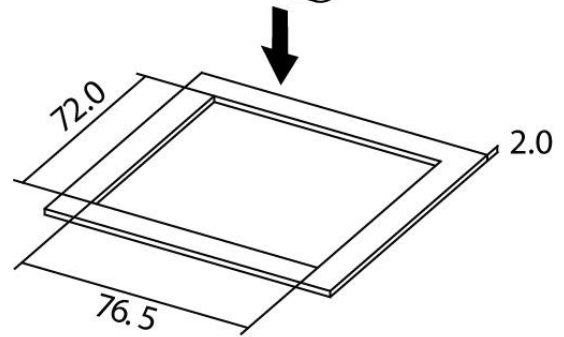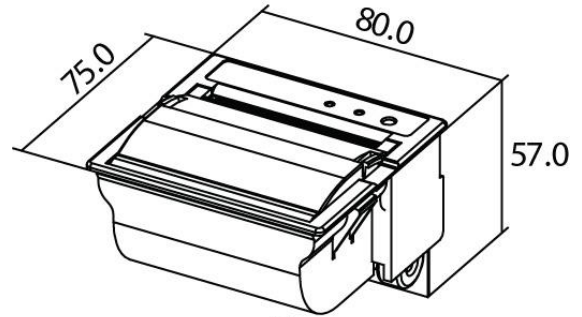
2.3.5   PP60
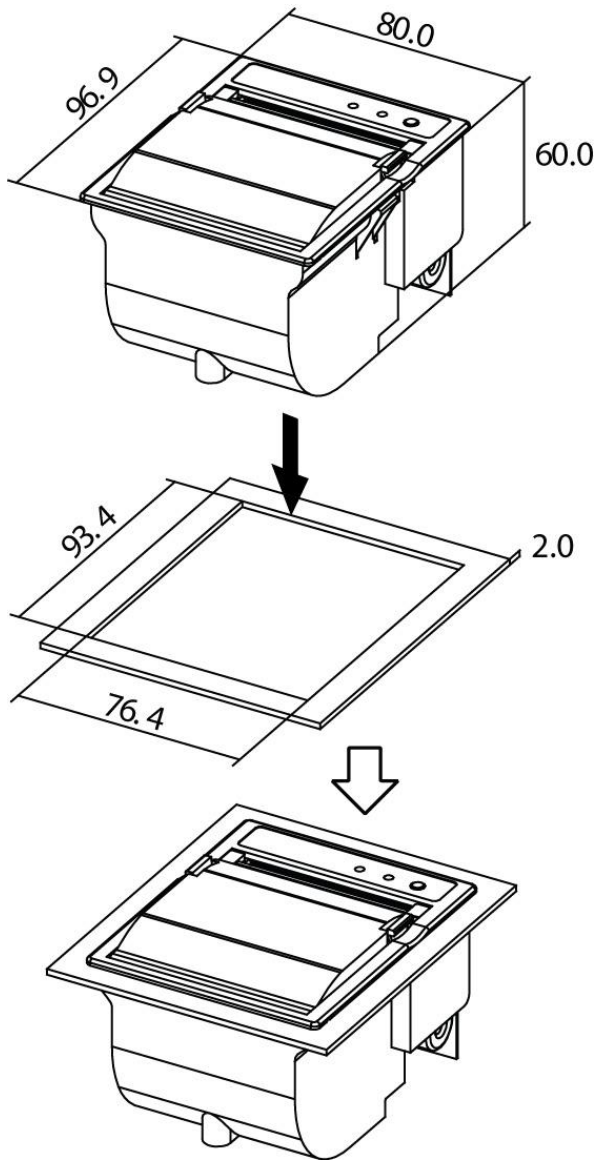
2.3.6   P240, PP240
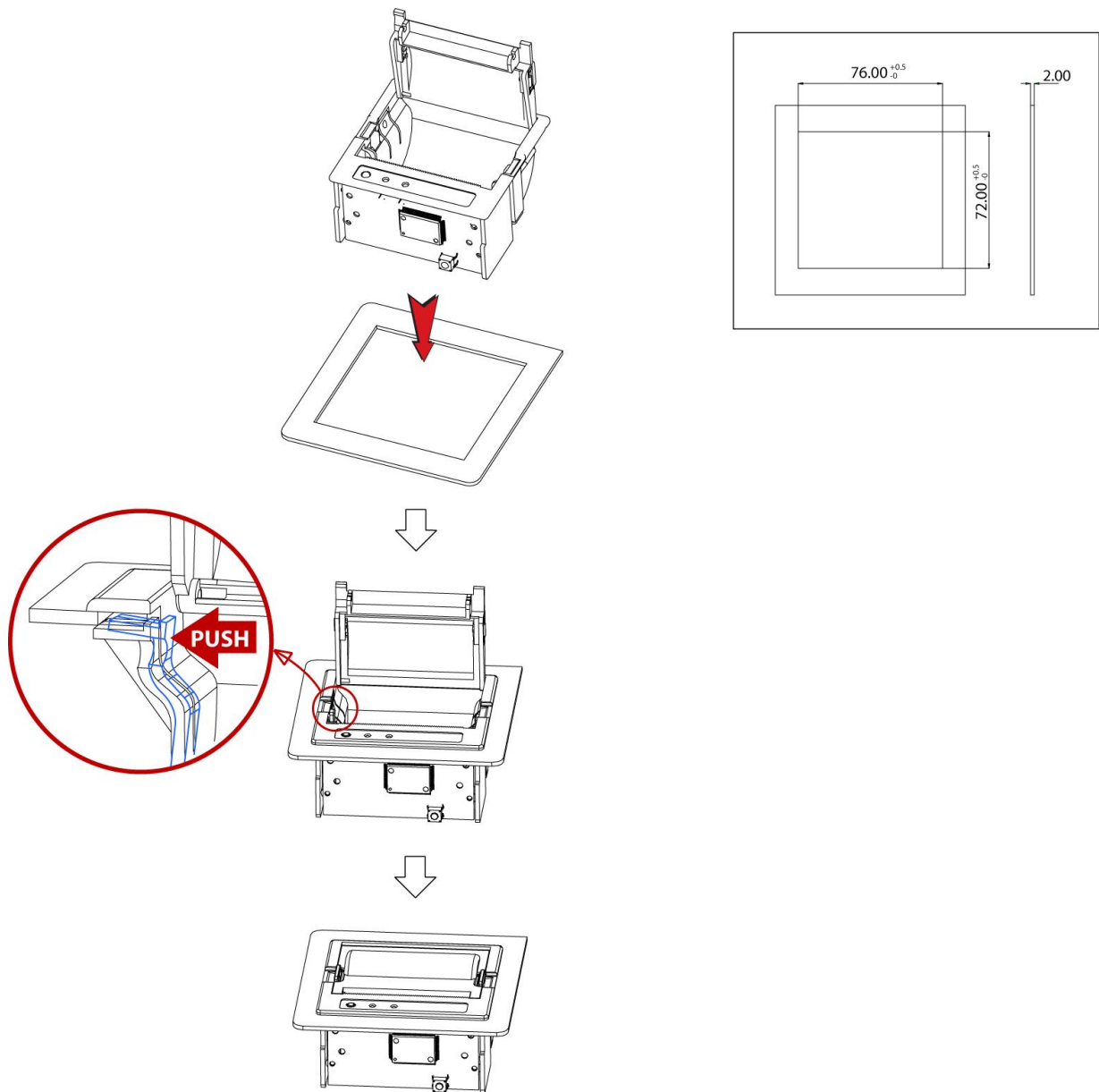
2.4. Replacing the paper roll

Note : 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 can not detect the paper end correctly.
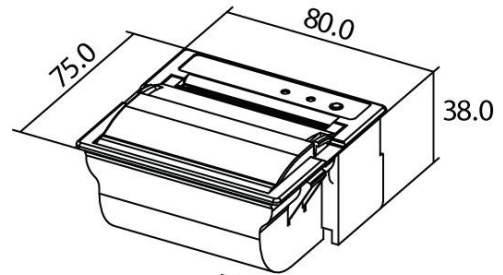
1. Make sure that the printer is not receiving data; otherwise, data may be lost.
2. Open the paper cover using finger on both side of printer, and remove the remaining paper.
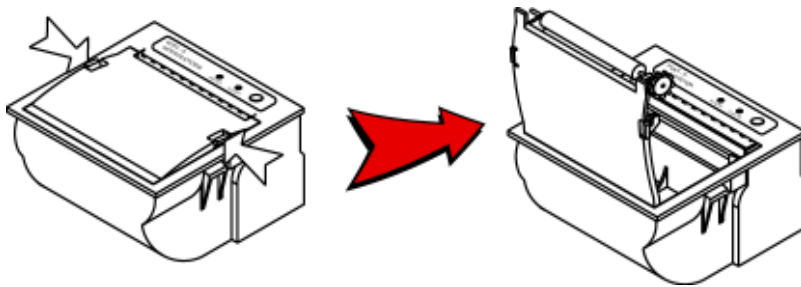
3. Insert the paper roll as shown.
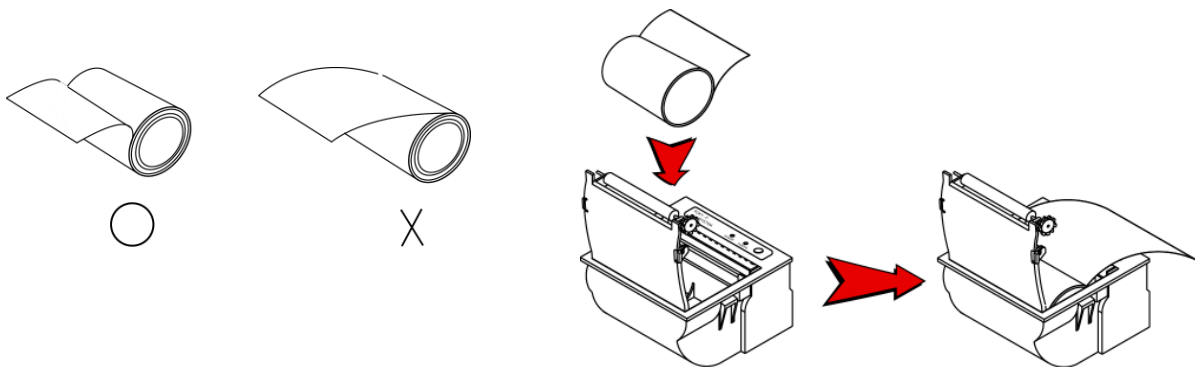
4. Tear the excess paper off using the edge of paper door as a tear bar.
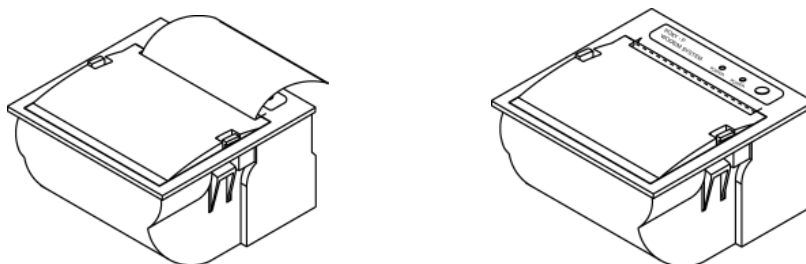
2.5. Setting operation mode
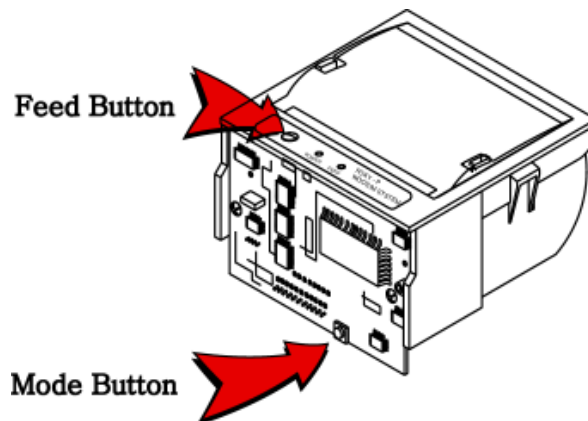
< M16C, ARM (NEW) Version >

Change the mode and option using the MODE Code.

● **MODE button** : use for changing OPTION status. (Error Lamp)

● **FEED button** : use for changing MODE status.   (Power Lamp)

[Example] The defaults of the printer are :

UART / 9600 bps / 8 data bit / No parity / 1 stop bit / Density low / Mark use / Sensor low

If a user wants to modify the defaults with

Protocol UART / 57600 bps / 7 data bit / Odd parity / 2 stop bit / Density high

/ Mark no use / Sensor medium1

▶ Press **MODE Button** during the Error Lamp flicking 5 times.

→ You will see the Power Lamp and the Error Lamp flickers once.

→ Press the **MODE Button** once and the Error Lamp flickers twice.

And then, interface mode has set to **Protocol UART** mode.

▶ When you press **FEED button** once again, Power Lamp flickers twice and

the Error Lamp flickers once.

→ Press **MODE Button** 3 times, Error Lamp flickers 4 times.

And then, baudrate has set to **57,600 bps**.

▶ When you press **FEED Button** once again, Power Lamp flickers 3 times

and the Error Lamp flickers twice.

→ Press **MODE Button** once, Error Lamp flickers once.

And then Data Bit has set to **7 data bit**.

▶ When you press **FEED Button** once again, Power Lamp flickers 4 times and the Error Lamp flickers once.
→ Press **MODE Button** once, Error Lamp flickers twice.
And then the Parity bit has set to **Odd parity bit**.

▶ When you press **FEED Button** once again, Power Lamp flickers 5 times and Error Lamp flickers once.
→ Press **MODE Button** once, Error Lamp flickers twice.
And then the density has set to **2 stop bit**.

▶ When you press **FEED Button** once again, Power Lamp flickers 6 times and Error Lamp flickers once.
→ Press **MODE Button** twice, Error Lamp flickers 3 times.
And then the density has set to **Density high**.

▶ When you press **FEED Button** once again, Power Lamp flickers 7 times and Error Lamp flickers twice.
→ Press **MODE Button** once, Error Lamp flickers once
And then the mark has set to **Mark no use**.

▶ When you press **FEED Button** once again, Power Lamp flickers 8 times and Error Lamp flickers once.
→ Press **MODE Button** once, Error Lamp flickers twice
And then the sensor has set to **Sensor medium1**.

If all the mode have set, press the **MODE Button** and the **FEED Button** at the same time after then release the buttons at the same time.

The printer will print out the mode status which has modified.
(Protocol UART / 57600 bps / 7 data bit / Odd parity / 2 stop bit / Density high /
Mark no use / Sensor medium1 / Power down no use)
If the status is not correct, please try it again according to the procedure.

* M16C Version

MODE	POWER Lamp (Green)	ERROR Lamp (Red)	Option
Communication Port	1	1	UART(RS-232C)
		2	Protocol UART(RS-232C)
Baud Rate	2	1	9600 bps
		2	19200 bps
		3	38400 bps
		4	57600 bps
		5	115200 bps
Data Bit	3	1	7 Data bit
		2	8 Data bit
Parity	4	1	No Parity
		2	Odd Parity
		3	Even Parity
Stop bit	5	1	1 stop bit
		2	2 stop bit
Density	6	1	Density Low
		2	Density Medium
		3	Density High
Mark	7	1	No use
		2	Use
Sensor	8	1	Low
		2	Medium1
		3	Medium2
		4	High

< Table 2 >

* RX Version (only PP40)

MODE	POWER Lamp (Green)	ERROR Lamp (Red)	Option	
Communication Port	1	1	UART	USB
		2	Protocol UART	Protocol USB
Baud Rate	2	1	9600 bps	
		2	19200 bps	
		3	38400 bps	
		4	57600 bps	
		5	115200 bps	
Data Bit	3	1	7 Data bit	
		2	8 Data bit	
Parity	4	1	No Parity	
		2	Odd Parity	
		3	Even Parity	
Stop bit	5	1	1 stop bit	
		2	2 stop bit	
Density	6	1	Density Low	
		2	Density Medium	
		3	Density High	

< Table 3 >

2.6. Power supply

The following specifications are requested for Power supply.

INPUT POWER:

1. Porti-P30, P40, P240   : DC 5V / 2.5A or more
2. Porti-P30, P40,P240, P60   : DC 7.5~8.5V / 3A or more
3. Porti-PP40, PP240, PP60   : DC 12~24V / 3A or more

Avoid using power supply which its power capacity of power current is extremely high.

3. Interface

3.1. Serial Interface (Porti-P30)
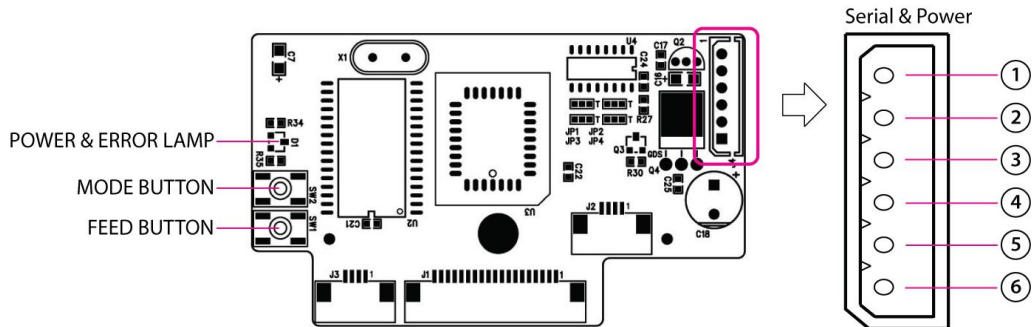
The Porti-P30 printer has a UART(RS-232C or TTL) interface and power connector is connected by 6 pin female connector.

In the following table, the signals present on the connector are listed:

Pin no.	Signal name	Direction	Function
6	INPUT	-	5V/2.5A or 7.5~8.5V/3A
5	TxD	Output	Transmit Data
4	RxD	Input	Receive Data
3	N.C	-	-
2	N.C	-	-
1	GND	-	Ground

<J4 : MOLEX (5267-06P)>

Applicable connector : MOLEX 5264-06P or equivalent.

⚠ **WARNING**

A wrong connection of power supply connector could be damage the printer.

3.2. Serial Interface (Porti-P40/60, P240)

Serial & Power

The Porti-P40/P60(P240) printer has a UART (RS-232C or TTL) serial interface and power connector is connected by 6 pin female connector.

In the following table, the signals present on the connector are listed:

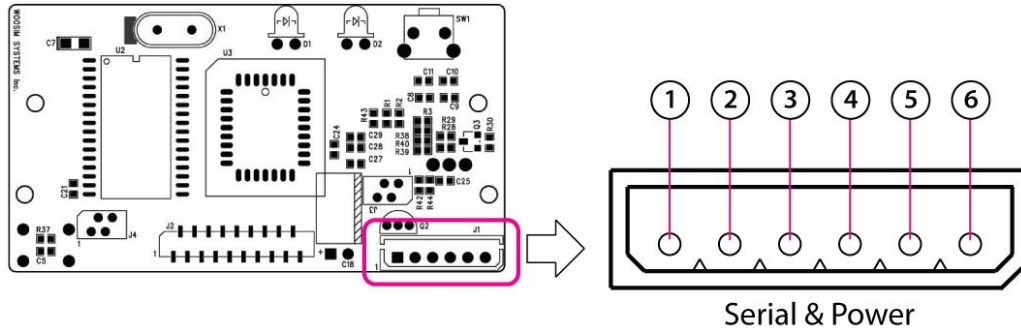| Pin no.	Signal name	Direction	Function
6	INPUT	-	5V/2.5A or 7.5~8.5V/3A
5	TxD	Output	Transmit Data
4	RxD	Input	Receive Data
3	N.C	-	-
2	N.C	-	-
1	GND	-	Ground

\<J1 : MOLEX (5267-06P)\>

Applicable connector : MOLEX 5264-06P or equivalent.

⚠ **WARNING**
A wrong connection of power supply connector could be damage the printer.

3.3. Serial and Parallel Interface - (Porti-PP40/60, PP240)

Parallel

Serial

Power

The Porti-PP40/60 printer has Parallel and UART (RS-232C or TTL) interface.

They are connected by 5 pin female and 15 pin female connector.

In the following table, the signals present on the connector are listed:

● **Power**

Pin no.	Signal name	Function
1	GND	Ground
2	Vpp (12V~24V/3A)	INPUT

<J6 : MOLEX (5267-02P)>

Applicable connector : MOLEX 5264-02P or equivalent.

- **Serial**

Pin no.	Signal name	Function
1	GND	Ground
2	N.C	-
3	N.C	-
4	RXD	Receive Data
5	TXD	Transmit Data

<J2 : MOLEX (53014-05P)>

Applicable connector : MOLEX 51004-05P or equivalent.

- **Parallel**

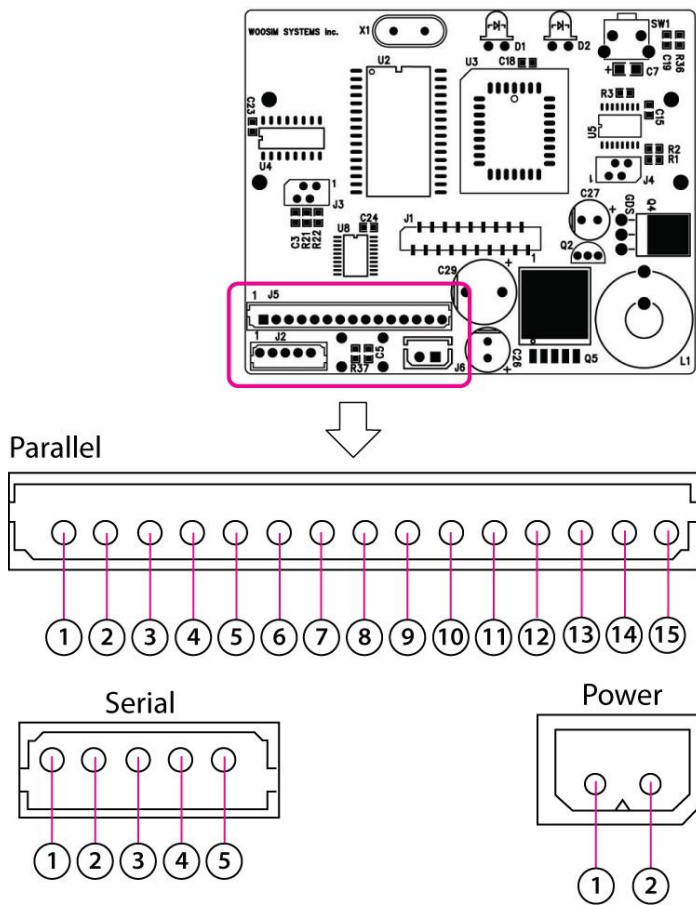| PIN No.	Signal	etc
1	STB	
2	DATA BIT 0	
3	DATA BIT 1	
4	DATA BIT 2	
5	DATA BIT 3	
6	DATA BIT 4	
7	DATA BIT 5	
8	DATA BIT 6	
9	DATA BIT 7	
10	ACK	
11	BUSY	
12	P/E	
13	ERR	
14	INIT	
15	GROUND	

<J5 : MOLEX (53014-15P)>

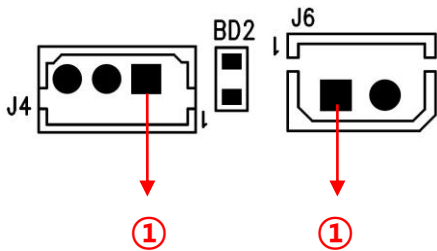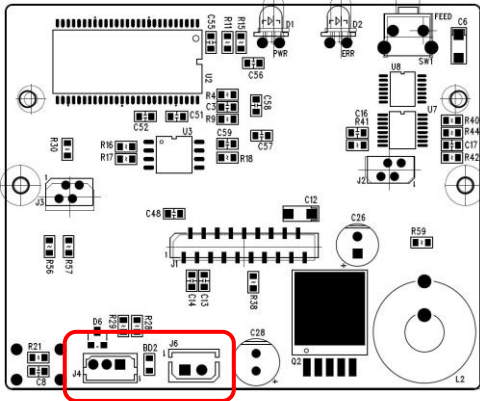Applicable connector : MOLEX 51004-15P or equivalent.

⚠ **WARNING**

A wrong connection of power supply connector could be damage the printer.

3.4. Serial & USB Interface – (Porti-PP40/60, PP240-**RX Version**)

UART Version

USB Version

Pin no.	Signal name	Function
1	GND	Ground
2	RXD	Receive Data
3	TXD	Transmit Data

<J4 : MOLEX (53014-0310)>

Mates with : MOLEX 51004-0300 or equivalent.
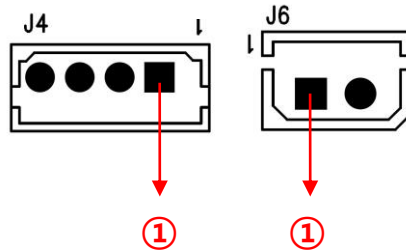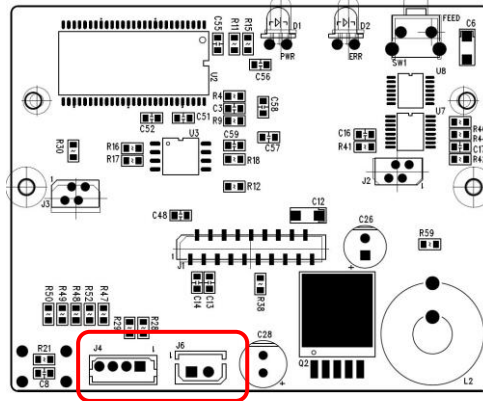
Pin no.	Signal name	Function
1	USB_VCC	5VDC
2	DM	Data "+"
3	DP	Data "-"
4	GND	Ground

<J4 : MOLEX (53014-0410)>

Mates with : MOLEX 51004-0400 or equivalent.

Pin no.	Signal name	Function
1	GND	Ground
2	INPUT	+24V

<J2 : MOLEX (5267-02)>

Mates with : MOLEX 5264-02 or equivalent.

Pin no.	Signal name	Function
1	GND	Ground
2	INPUT	+24V

<J2 : MOLEX (5267-02)>

Mates with : MOLEX 5264-02 or equivalent.

4. Using the printer

4.1. Control panel

```
PORTI-𝒫        ○      ○     (FEED)
              POWER  ERROR
```

▶ **Button**
   - **FEED :**   When the printer is on, paper can be feed manually by pressing
              and holding the FEED button for more than one second.

▶ **Panel Lamp**
- **POWER(Green) :** Printer is ON and ready to receive data.
- **ERROR (Red)   :** Indicates a fault condition or a printer error.
                 (details : no paper, paper cover opened. etc.)

4.2. The self test

Self-Test prints out the current setting value of printer. The way of self-test is as follows.

   1. Insert proper paper into the printer.
   2. Power on while pressing feed button to start self-test.
   3. Printer will print out the current status. (F/W version and set contents)
   4. And then pattern of characters will be printed out.
   5. Self-test will be finished automatically and turned to the standby status.

※ In case printer does not work properly, please contact Woosim customer service center.

5. Consumable Parts

5.1. Recommended paper

Type　　　　　 : Thermal Paper
Paper width　　 : 57mm
Paper thickness : 60±5㎛
Outer diameter　: Ø30mm(P30) , Ø40mm(P40, P240, PP40, PP240) , Ø60mm(P60,PP60)
Recording side　 : Outside of roll

> ⚠ **Cautions**
> 1. Do not paste the paper to the core. And the roll paper which has near end mark printing on its near end is recommended.
> 2. Chemicals or oil may change the color of paper, or printed characters may fade.
> 3. Change of paper color starts from approx. 70℃.
>   Pay attention to heat, humidity and sun light.
> 4. Color of paper may be changed by being scratched by nail or hard metal, etc.

5.2 Printing position
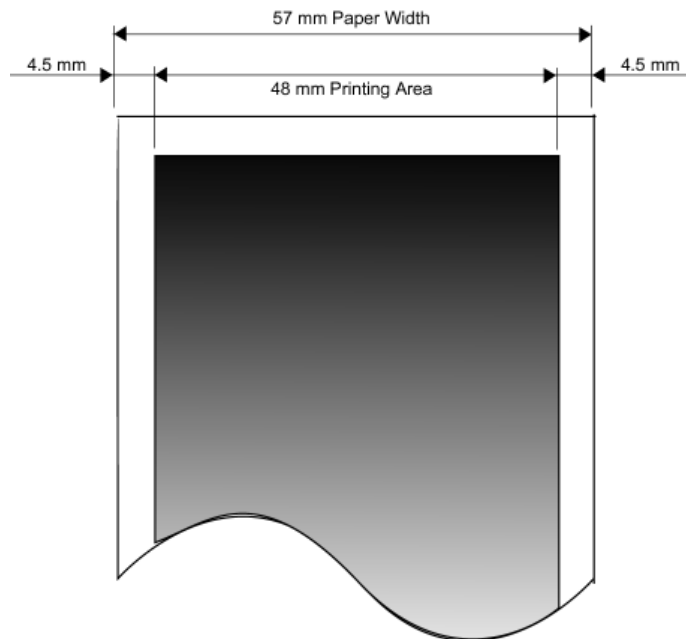
6. Revision History

Date	Version	Comments
May. 21. 2012	5.0	p15 : p40 dimension added p30 : Parallel pin number. modified
Aug 11, 2015	5.1	PP240 dimension added
Dec 30, 2015	5.2	PP40/60 RX Version interface added Storage temperature : -10℃~70℃ → -30℃~70℃
Mar 10, 2016	5.3	p9 Dimension, weight update p15 Dimension, install update
April 12, 2016	5.4	p9,31,32,33 : Input Power modify
May. 15. 2017	5.5	Change page layout (B5→A4) * Delete address