



Smart Printer
SP1-V
&
XBA
Combo

____ Installation Guide ____

International Currency Technologies Corp.

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1. Introduction

SP1-V, a compact-size design, is installed on the vending machine that needs the functionality of output a receipt while the transaction completed. The friendly user interface of built-in print-button and the adjustable paper length function, the user can easy and quick operate SP1-V to increase the efficiency of paper-use and reduce the maintenance cost.

With a DAB (ICT's Data Audit Box) installation, it can satisfy the operator not only the requirements of audit transaction(DAB) but also to print out the receipt/coupon for the vending machines. Both coupon and receipt, the format including the logo, text contents and QR/ bar code, etc, can be set-up by the user.

The downloadable design that the operator can save or upload the printing format/ settings between SP1-V and utility tool via a USB pen-drive would considerable educe the maintenance efforts.

1-1. Feature

- Design dedicated for Vending Applications
- Easy Installation and Low Maintenance
- Anti-Pull Paper Mechanism
- Adjustable Paper Length
- Low-paper Alarm Indicator
- Quick, Easy Settings & Upgrade via USB Pen-drive

2. Specifications

General

Interface	RS232, USB
Power Source	20VDC~45VDC 24VAC
Power Consumption	Standby: 2.4W Operation: 14.4W Maximum: 84W (in case of printing in all gray)
Operation Environment	Operation Temperature : 0°C~+50°C Storage Temperature : -20°C~+60°C Humidity : 30 %~85 %RH (no condensation)
Paper Size	Width: 58+/-0.5mm Outside Diameter: 40+/-1.0mm
Paper -Length Adjustment	7.0~11.4 cm
Weight	Approx. 700g (without paper roll)
Installation	Indoor

Cutter

Thickness	Max. 0.12mm
Life Time	Max. 500,000 cuts
Time	Approx. 1.0s/ cycle

Print head

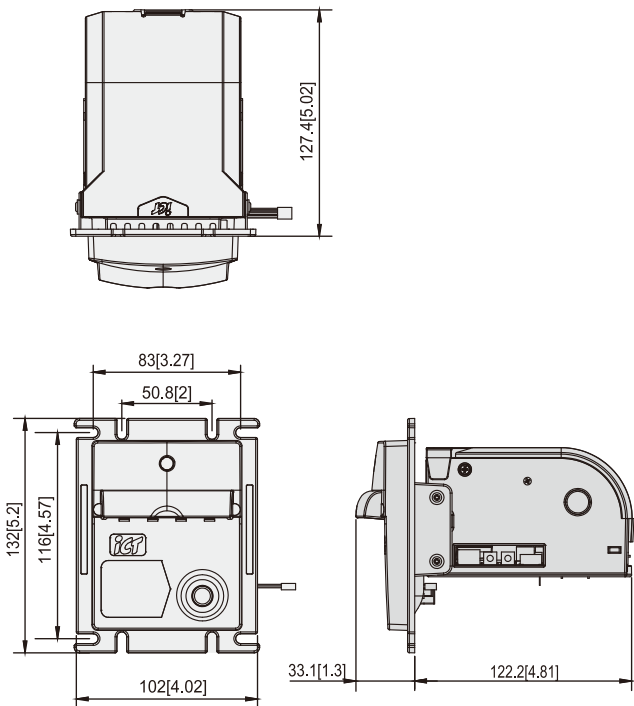
Resolution	8 dots/mm
Speed	90±5mm/Sec

3. Packing List

Main	Smart Printer
Accessory	Harness: Refer to 5-1 SP1-V & XBA Combo Installation Guide

4. Dimension

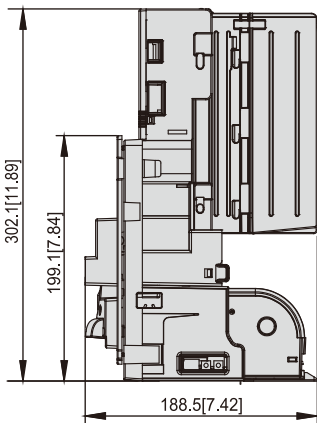
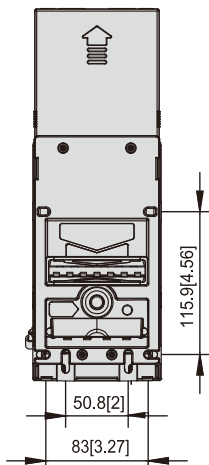
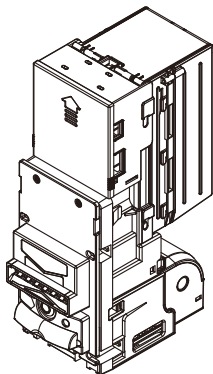
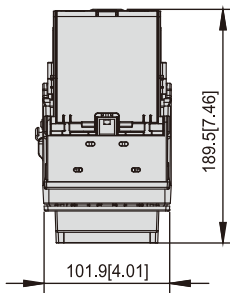
<SP1-V>



Unit:mm[inch]

4 FIG.01

<SP1-V & XBA COMBO>



Unit:mm[inch]

4 FIG.02

5. Hardware Setup

5-1. Harness Application

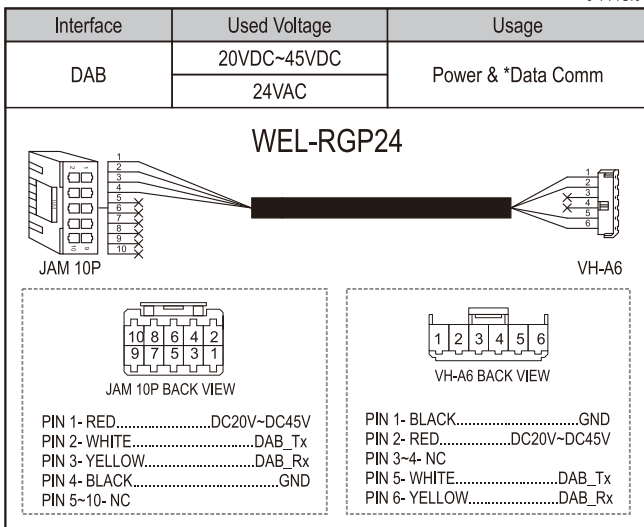
5-1 TABLE 01

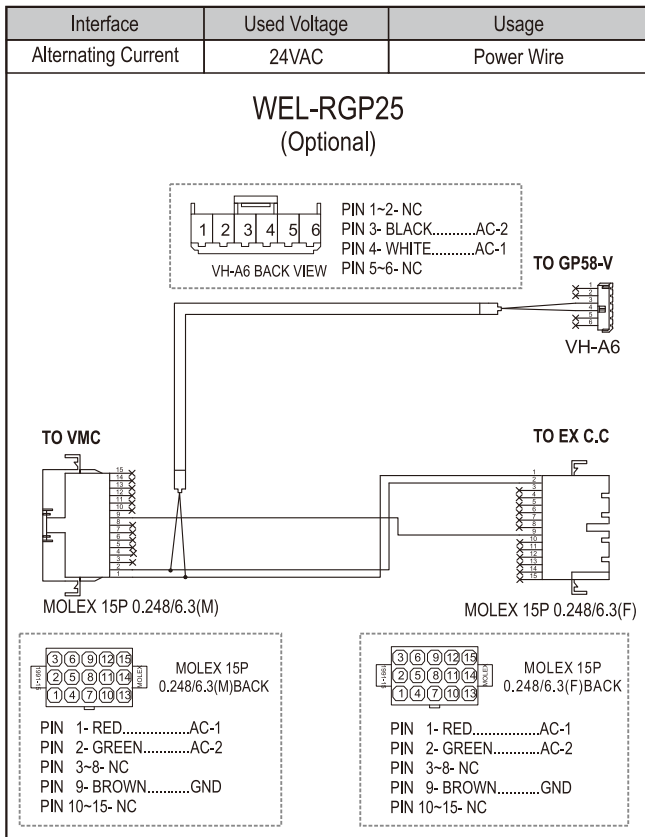
Interface	Used Voltage	Usage	Harness	Page
DAB	20VDC~45VDC	Power & *Data Comm	WEL-RGP24	7
	24VAC			
Alternating Current	24VAC	Power Wire	**WEL-RGP25	8
ICT Protocol	0~5VDC	*Data Comm	**WEL-RGP23	9
USB	0~5VDC	*Data Comm	**WEL-RHP57	10

*Data Communication

**Optional, used to connect to ICT CC6100E. Please contact ICT Sales for purchase.

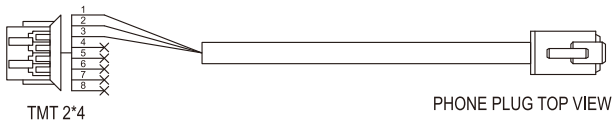
5-1 FIG.01





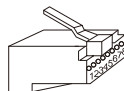
Interface	Used Voltage	Usage
ICT Protocol	0~5VDC	*Data Comm

WEL-RGP23 (Optional)



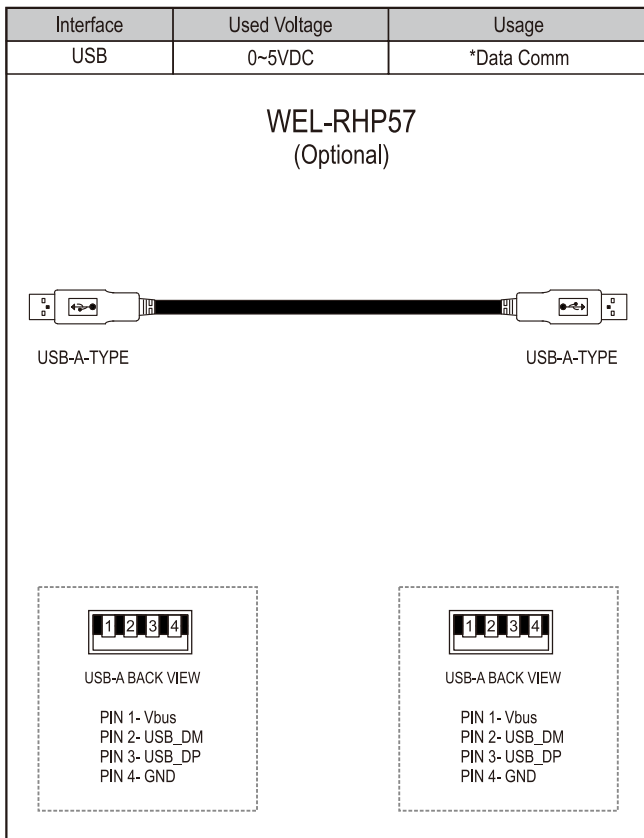
TMT 2*4 BACK VIEW

PIN 1- ORANGE/WHITE.....GND
 PIN 2- BROWN/WHITE.....CC_TX
 PIN 3- BROWN.....CC_RX
 PIN 4~8- NC

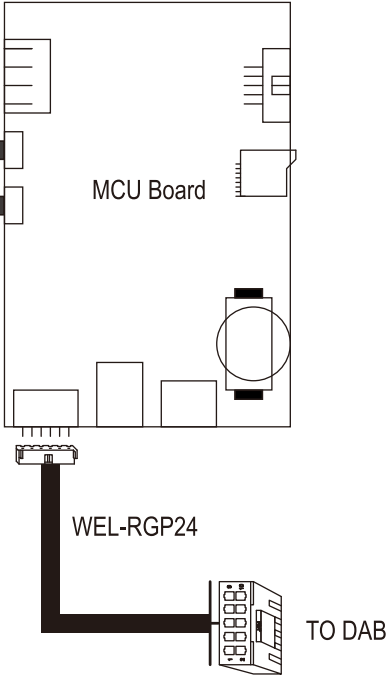


PCB JACK VIEW

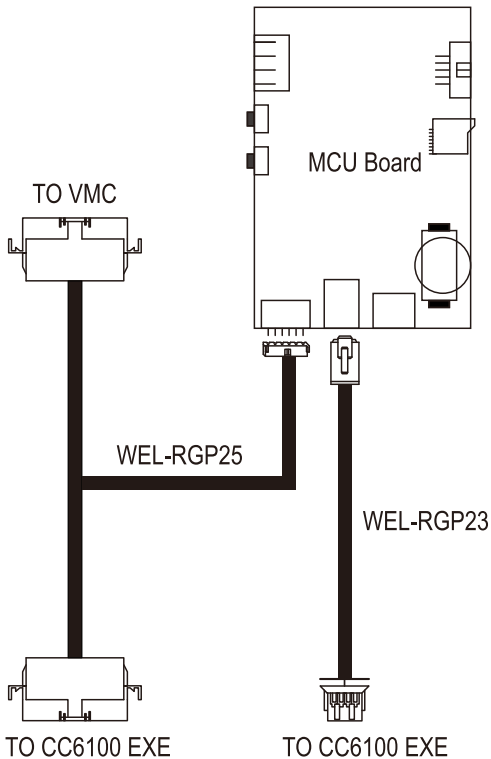
PIN 8- BROWN.....GP58V-TX
 PIN 7- BROWN/WHITE.....GP58V-RX
 PIN 6- GREEN
 PIN 5- BLUE/WHITE
 PIN 4- BLUE
 PIN 3- GREEN/WHITE
 PIN 2- ORANGE
 PIN 1- ORANGE/WHITE.....GND



5-1-1. DAB connection



5-1-2. CC6100 EXE & VMC connection



5-2. I/O Connector



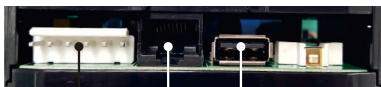
5-2 FIG.01



A: DIP Switch, please refer to section 5.3

Button 1: Print test.

Button 2: Reserved .



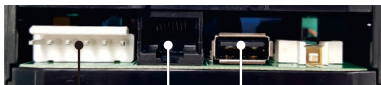
5-2 FIG.02-1



A: PWR/DAB Communication connector
(for cable: WEL-RGP24)

PN.		RPN-R9004
Pin Assignment		note
1	P-GND	POWER_GND
2	VIN	VDC20V~VDC45V
3	AC-2	VAC_24V
4	AC-1	VAC_24V
5	RS232-RXD1	±12V EIA-RS-232
6	RS232-TXD1	

5-2 TABLE 01



5-2 FIG.02-2

A **B** **C**

B: RJ-45 (for cable: WEL-RGP23)

5-2 TABLE 02

PN.		CNT-R8001-7
Pin Assignment		Note
1	GND	GND
2	TXD3	UART_TX3 TTL 5V (PROGRAM USE)
3	RXD3	UART_RX3 TTL 5V (PROGRAM USE)
4	/PROGRAM	PROGRAM USE
5	/RESET	RESET
6	VCC	5V
7	RXD6	UART_RX6 TTL 5V
8	TXD6	UART_TX6 TTL 5V

C: USB Port (for cable: WEL-RHP57)

5-2 TABLE 03

PN.		CNT-R9B15
Pin Assignment		note
1	VBUS	VBUS
2	DM	USB_D-
3	DP	USB_D+
4	GND	GND



5-2 FIG.03

A

A: Micro SD card socket (MicroSD card inserted)

5-3. DIP Switch Setup

There are two kinds of mode that the user can configure to print out the receipt. One is DAB Mode (auto), the other is DAB Mode (button).

DAB Mode(auto): While each transaction finished, SP1-V would automatically print out the receipt.

DAB Mode(button): While each transaction finished, the user would need to press the print button then to get the receipt.

The DIP S/W Setup is as below table:

Function	SW1	SW2	*SW3	SW4
**DAB Mode (auto)	OFF	OFF	OFF	OFF
DAB Mode (button)	OFF	OFF	ON	
ESC/POS	ON	OFF	OFF	
Reserve	OFF	ON	OFF	
Diagnostic (auto test)	ON	ON	OFF	

5-3 TABLE 01

If you would like to diagnose SP1-V via PC tool, please follow up the DIP Switch Setup as above table.

Note: (*) Only available in DAB interface.

(**) Default Setting.

6. Receipt Format setting

There are two kinds of methods that you can setup the receipt format for SP1-V.

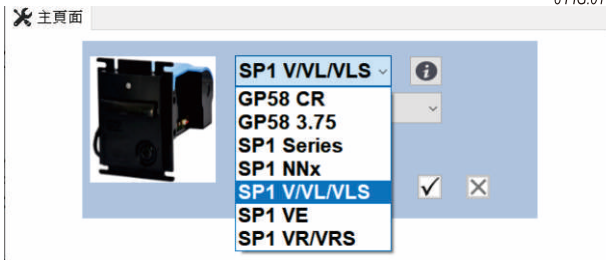
Method 1:

In case of SP1-V is connected to DAB, you should open the software of Audit Box Tool (WinXP/7 and above OS) to edit your receipt format. Please refer to DAB-M/DAB-E user manual, section 2.3.

Method 2:

In case of SP1-V is connected to ICT 6100E (Please contact ICT Sales for necessary communication cables & SP1 series all-in-one tool) you should open SP1 series all-in-one tool to edit receipt format. The beginning tool screen is as below.

6 FIG.01



You can save the format data that you setup on all-in-one PC tool to SP1-V's Micro SD card or a USB Pendrive. After that, plug that Micro SD card or USB Pendrive into your SP1-V to finish data upgrade.

7. Download & Upgrade program

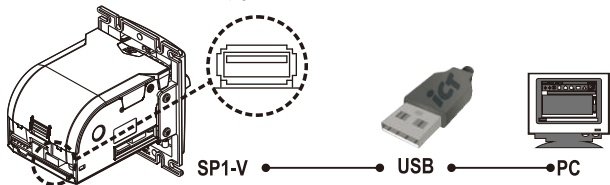
There are two kinds of methods that you can download Firmware for upgrading SP1-V.

Method 1:

In case of SP1-V is connected to DAB, you can download SP1-V firmware(.ecf file). (please make sure the communication cable is connected to DAB and DAB is on the status of power on. Please refer to DAB-M/DAB-E user manual, section 1.7 Upgrade BA/CC Firmware)

Method 2:

1. Please copy the firmware file (.bin) to the folder of ECF of your USB pen drive. Please keep only one file (.bin) in this folder to avoid the possible version fault.
2. Please insert the USB Pen drive to SP1-V USB Port, no need of any changes on DIP switch at this moment.
3. After inserted the USB Pen drive, please re-power on SP1-V to finish firmware upgrade.



Please note:

1. During the process of upgrading, the panel's LED would flash in orange. After finished the LED would change to green light.
2. During the process of upgrading, please don't shut down the SP1-V or remove USB Pen drive and SD card.

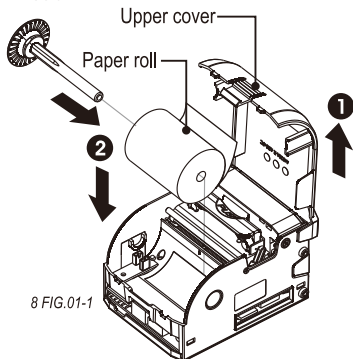
8. How to replace a new paper roll?

Step 1. Open the upper cover.

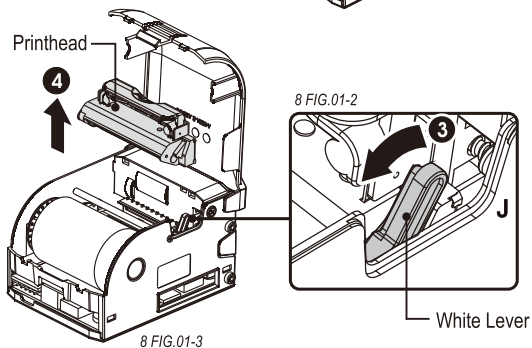
Step 2. Insert a new paper roll going clockwise.

Step 3. Pull back the white lever.

Step 4. Lift the Printhead.



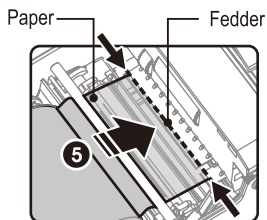
8 FIG.01-1



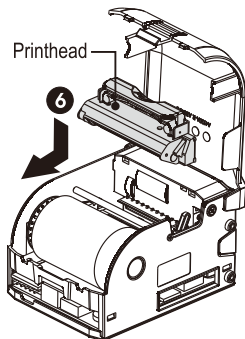
8 FIG.01-3

Step 5. Insert the paper roll into the feeder. The paper will be fed automatically without opening the printer head.

Step 6. Push back the Printhead.



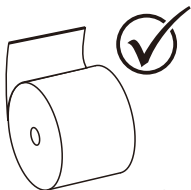
8 FIG.02-1



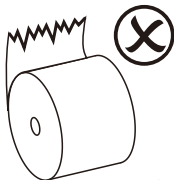
8 FIG.02-2

8-1. Take heed of the notices, when insert paper Roller

1. No burrs, the edge of paper.

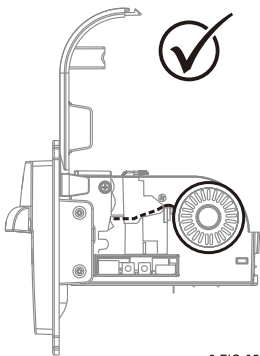


8 FIG.03

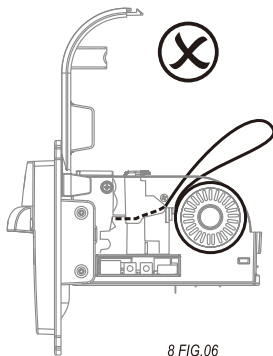


8 FIG.04

2. No bend, be straight.



8 FIG.05

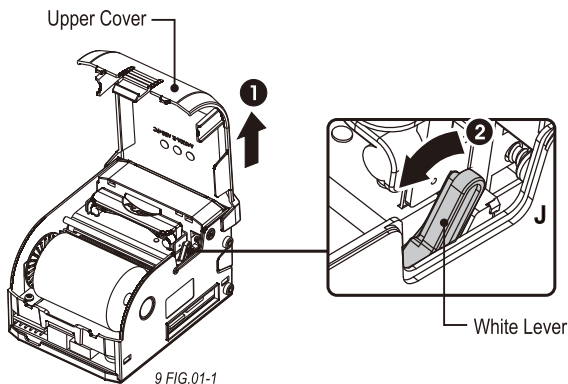


8 FIG.06

3. After feed/setup thermal paper, please press **KEY 1** to initial printer.

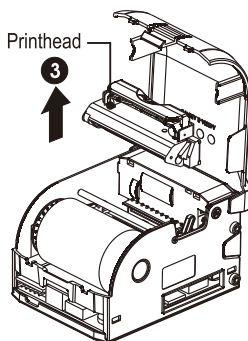
9. Printer Head Guide

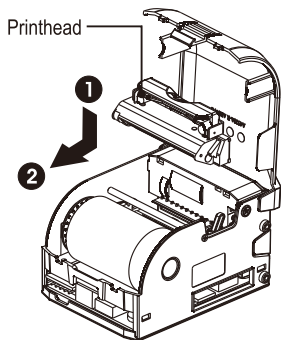
When you need to reset the printer head please follow the steps below.



Unlock the Printer Head:

- Step 1. Open the upper cover.
- Step 2. Pull back the white lever.
- Step 3. Lift the Printhead.





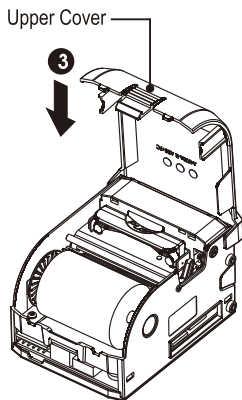
9 FIG.02-1

Lock the Printer Head:

Step 1. Push down the Printhead.

Step 2. Push back the Printhead.

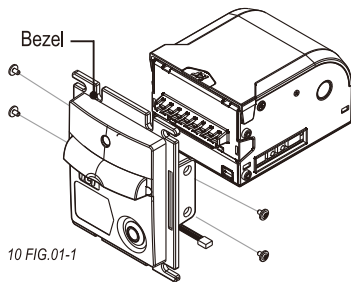
Step 3. Closes the upper cover.



9 FIG.02-2

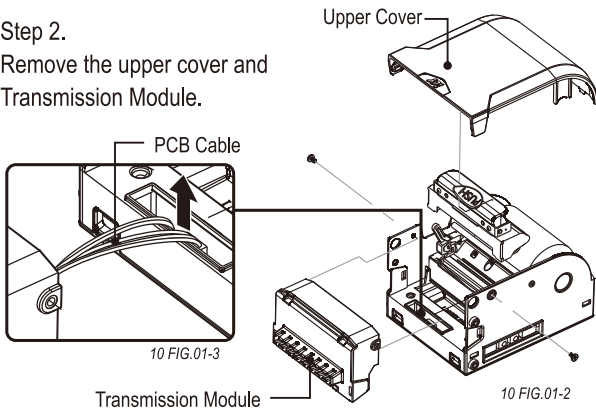
10. Maintenance


<SP1-V>



Step 1.
Use a screwdriver to loose 4 screws and disassemble the bezel.

Step 2.
Remove the upper cover and Transmission Module.

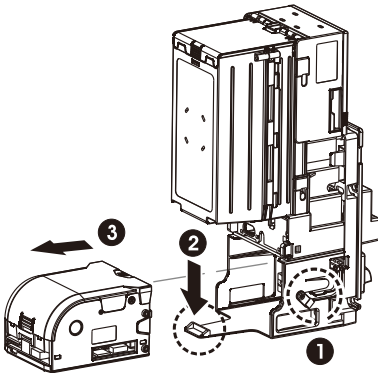


	Maintenance Notice (Any improper maintenance will result invalid warranty.)	
	Recommended	Mild, non-abrasive, soap water.
	DO NOT USE	Organic solvent , Alcohol, Volatility liquid.

<COMBO>

Step 1.

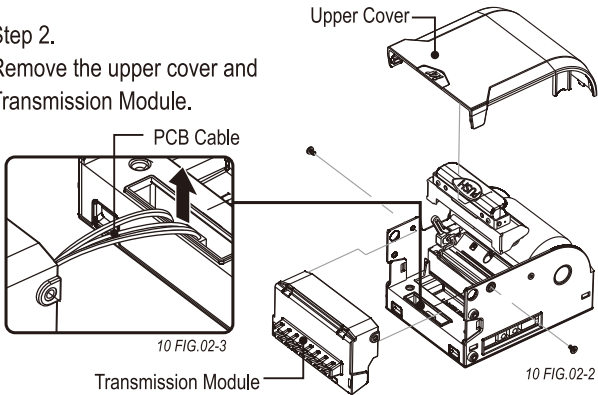
Unplug connector that connected with the SP1-V.
Pull down the hook.
Remove the SP1-V.



10 FIG.02-1

Step 2.

Remove the upper cover and
Transmission Module.



10 FIG.02-3

10 FIG.02-2



Maintenance Notice

(Any improper maintenance will result invalid warranty.)

Recommended Mild, non-abrasive, soap water.

DO NOT USE Organic solvent, Alcohol, Volatility liquid.

11. Troubleshooting

LED Indicator	Status	Solution
Red	Check Sum abnormal.	Contact technician.
Green	Standby.	
Red flash 1 time	1. Moveable frame not close. 2. Thermal head no paper.	1. To make sure moveable frame is closed 2. Re-feed paper.
Red flash 2 times	Cutter abnormal.	To make sure paper path jam-free.
Red flash 3 times	Out of paper or raster error.	Refill paper roll.
Red flash 4 times	Anti-jam abnormal.	To make sure paper path jam-free.
Red flash 5 times	SD card abnormal.	1. To make sure SD card inserted. 2. To make sure SD card format and specify the file exists.
Red flash 6 times	Printer head over heat.	
Orange light / green light will flash alternately (1 sec)	In testing mode.	1. DIP switch is set as not to enter the test mode, and restart device. 2. If the DIPSW is set into the non-test mode, please contact technician.
Orange	System booting	
Orange light Flash	Firmware upgrading or USB data operation.	
Green light Flash	Printing	
Red light highly flash	Low paper warning	



If the error can not be solved after corrective actions or it recurs, please contact ICT for technical support.

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