SPRT®

SP-POS76III Receipt Printer

User's Manual

（Ver 1.00）

Beijing Spirit Technology Development Co.,Ltd

Content

Notes For Use

● Don't plug or unplug the interface cable,printer head cabe or power cable under the state of power on,or else it will cause the damage of printer or control board.

● At any time,don't take the wastepaper or other attached objects by hard things(such as tweezers,blades and so on),in order to avoide the permanent damage to the printer head.

● After printing,if open the cover,don't touch the printer head or motor case by hands, in order to avoid scald caused by the high temperature of the metal.

Warning

This is A level products.In living condition,the products may cause radio jamming.In this case,may need user to take practicable measures to the jamming.

Chapter 1 Feature and Performance

1.0 Print Performance

●Print method：9 pin inpact dot matrix
●Print paper width：76±0.5mm or 57.5±0.5mm
●Print density：40cpl-200（all point）/400（half point）
●Print speed：4.4lines/s；57mm paper width：5.6lines/s
●Feeding speed：80mm/s
●Reliability：
（1）MCBF：7,500,000lines
（2）TPH：15,000,000characters
●Valid print width：40cpl-40（7×9）/35（9×9）

1.1 Print Paper

● High quality commone white paper or impact paper roll
● Paper width ----------- 76±0.5mm or 57.5±0.5mm
　　Outside diameter ---------- Φ80mm
　　Inside diameter---------- Φ13mm
　　Simplex paper thickness ---------- 0.06mm～0.085mm
　　Impact paper thickness（1 original+2 copies）：0.05mm～0.20mm

● Paper loading：Drop-in easy loading
● Cutting method：POS76Ⅲ-D series:manually tear off；
　　　　　　　　　POS76Ⅲ-B series:partial cut

1.2 Ribbon

　ERC-39 purple or black(or two-color ribbon NH37702)

1.3 Print Font and Command

1.3.1　Print Font

● ANK character set，7×9dots or 9×9dots
● GB18030，16×16dots
　Font description：
　　　　7×9dots（W×H）：half point printing，ten half points on the horizontal direction;
　　　　9×9dots（W×H）：half point printing，twelve half points on the horizontal direction;
　　Size of a point is：0.318mm（W）×0.353mm（H）。

1.3.2 Print Command

　　　Compatible with the ESC/POS command set of EPSON,please see the details in developer guide.

1.4 Interface

●RS-232C Serial Interface：
　DB-25 socket（male）,support DTR/DSR and XON/XOFF handshaking protocol.
　Baud rate：1200,2400,4800,9600,19200bps adjustable.
　Data structure：1 start bit ＋ （7 or 8）data bits ＋ 1 stop bit
　Parity checking：no parity or odd,even parity is optional.
●Parallel interface：
　36 pin，8-bit parallel interface，support BUSY/ACK hadshaking protocol，TTL signal level
●Ethernet interface：
　　Standard ethernet interface.

●USB interface：

USB interface

●Cash drawer control

DC24V，1A，6pin RJ-11 socket

1.5 Power Supply

●DC24V±10％，2A，A-1009-3P power socket

1.6 Working Environment

●Operation temperature：0℃～50℃　　Relative humidity：10％～90％

●Storage temperature：-20℃～60℃　　Relative humidity：10％～90％

1.7 Outline Dimension

●259 mm（L）×160 mm（W）×150 mm（H）

1.8 Model classification

Model	Cutter	Interface
SP-POS76Ⅲ-BS	With	RS－232C serial interface
SP-POS76Ⅲ-BP	With	Parallel interface
SP-POS76Ⅲ-BE	With	Ethernet interface
SP-POS76Ⅲ-BU	With	USB interface
SP-POS76Ⅲ-DS	Without	RS－232C serial interface
SP-POS76Ⅲ-DP	Without	Parallel interface
SP-POS76Ⅲ-DE	Without	Ethernet interface
SP-POS76Ⅲ-DU	Without	USB interface

Chapter 2 Operation Specification

2.1 Printer Appearance

Upper cover

Paper-out slot

Open button

Paper-end indicator(red)

Feed button（FEED

Status indicator(red)

Power

Power indicator(red)

SPRT

Cash drawer interface
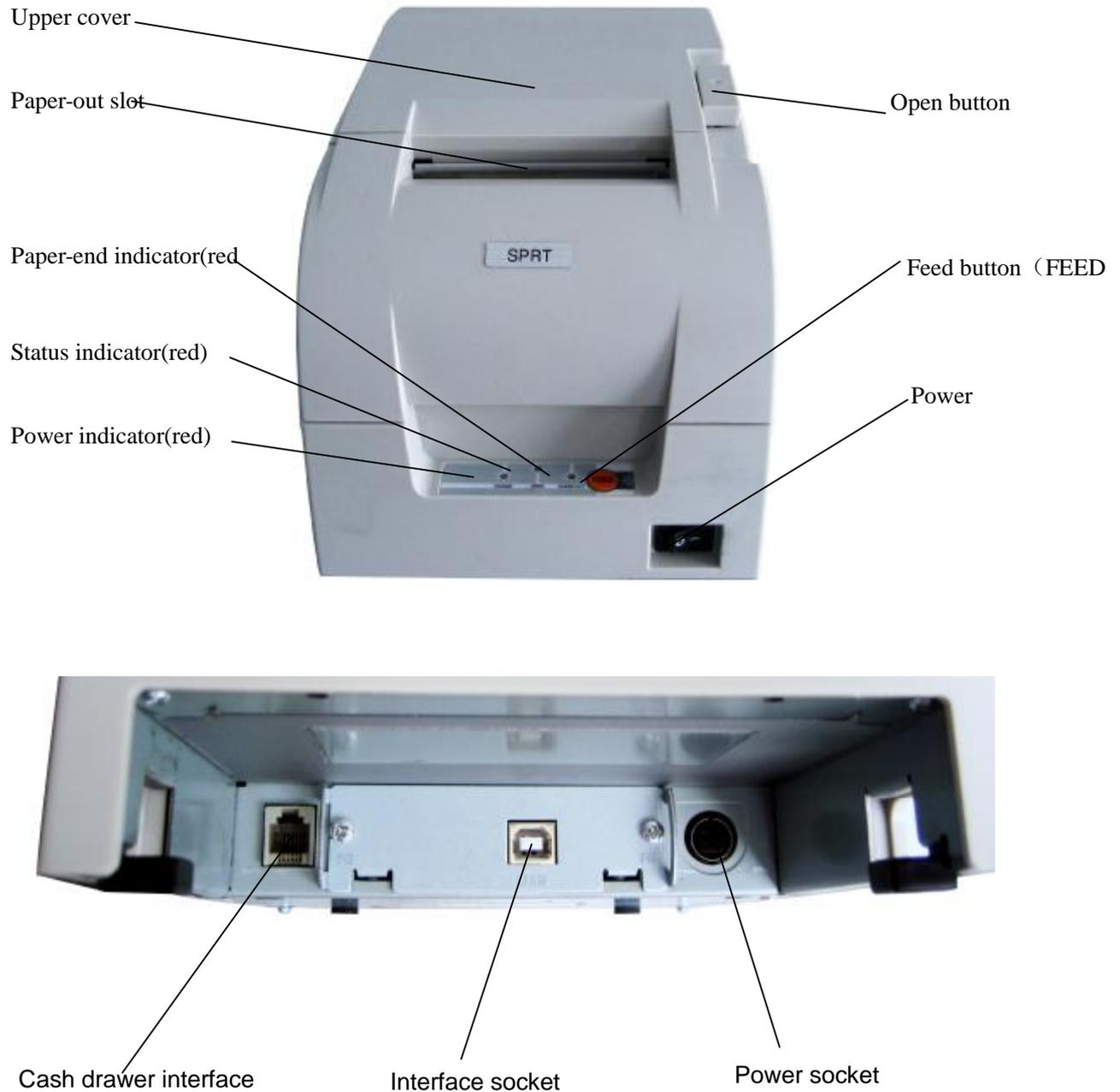
Interface socket

Power socket

Fig.2-1   printer appearance

2.2 Ribbon and Paper Installation

2.2.1 Ribbon Installation

Steps of ribbon installation are as below

（1）Shown as in figure 1,open front cover

（2）Shown as in figure 2,put the ribbon into printer head,turn the knob as the direction shown on it for two~three circles,just like shown in figure 3.

（3）Close the front cover

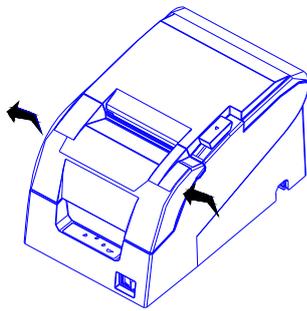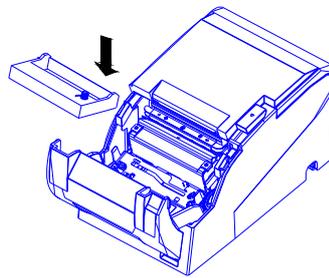Fig 1   Fig 2   Fig 3

2.2.2 Paper Installation

The installation steps of paper are as below:

Press the button on the right side,open the paper cover,and put paper into the paper holder(the direction is as shown in fig2-2). Draw a certain length of the paper roll, put the paper end on the print head, close the upper cover and press it downwards lightly.
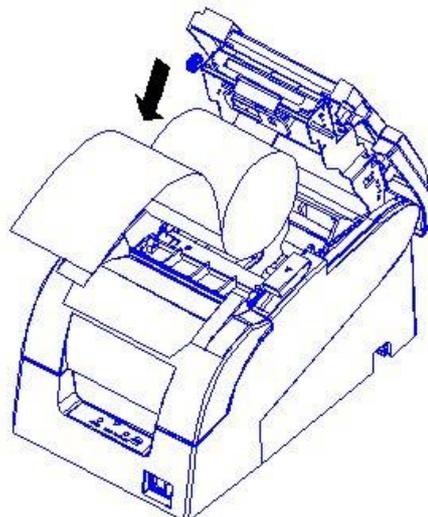
Fig2-2 Paper Installation Sketch

2.3 Interface

2.3.1 Serial Interface

The serial interface of POS76Ⅲ printer is compatible with RS-232C,use DB-25(female)socket, DTR/DSR handshaking protocols.The pin order of the serial port is as Fig.2-2 shows:

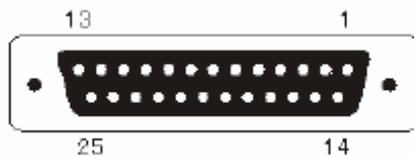Fig.2-2 Pin Order of Serial Port

The pin assignment of serial interface is shown in Fig. 2-3:

Pin No.	Signal Name	Direction	Source	Description
1	FG	——	——	Ground
2	TXD	Output	Printer	Printer transmits control code X-ON/X-OFF and data to host
3	RXD	Output	Host	Printer receives data from host
4	RTS	Output	Printer	The same with 20pins DTR signal
6	DSR	Input	Host	Signal "MARK" means the host is busy and can not receive data.Signal "SPACE" means the host is ready to receive data.
7	GND	——	——	Signal Ground
20	DTR	Output	Printer	Signal "MARK" means the host is busy and can not receive data.Signal "SPACE" means the host is ready to receive data.

Fig. 2-3 The pin assignment of serial interface

Note: (1)"Source" denotes the source that signal come from;

 (2)Logical signal level is EIA.

The baud rate and data structure under serial interface mode is 9600bps, 8-bit data bits, no parity and 1 stop bit.

The serial interface of POS76Ⅲ can be connected to standard RS-232C interface. When it is connected with IBM PC or its compatible machine, connection can accord to Fig.2-4.
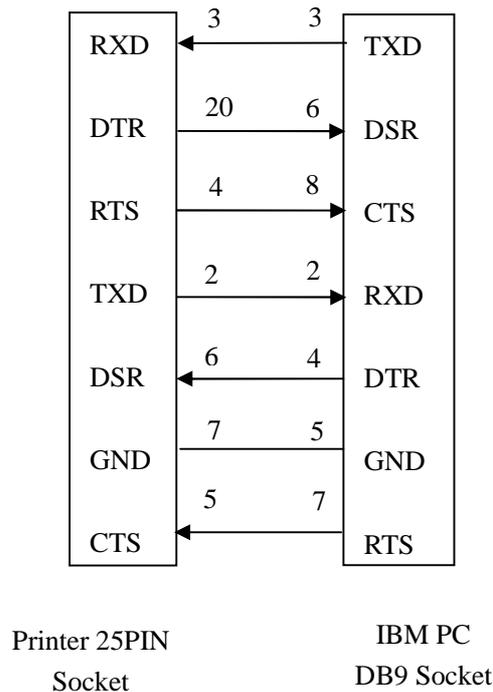

Printer 25PIN
Socket

IBM PC
DB9 Socket

Fig.2-4 Sketch Map of Connection between POS76III and IBM PC Serial Interface

2.3.2 Parallel Interface

The parallel interface of POS76III printer is compatible with CENTRONICS, supports BUSY or ACK handshaking protocol.

The pin assignment of 36PIN parallel interface is as Fig. 2-5 shows:

Pin No.	Signal	Direction	Description
1	STROBE	In	Strobe pulse to latch data, Reading occurs at falling edge.
2	D1	In	These signals represent the 1st bit to 8th bit of the parallel
3	D2	In	data representatively, each signal is at HIGH level when
4	D3	In	data is logic 1, and LOW when data is logic 0.
5	D4	In	
6	D5	In	
7	D6	In	
8	D7	In	

9	D8	In	
10	ACK	Out	Answer pulse, LOW level signal indicates that data have already been received and the printer gets ready to receive the next data.
11	BUSY	Out	HIGH level signal indicates that the printer is BUSY and can not receive data.
12	PE	Out	HIGH level signal indicates that paper is end.
13	SEL	Out	Pulling up to HIGH level signal by a resistor
17	FG	---	CGND
18	Logic-H	---	Logic "1" level
32	nFault	Out	Low level means the printer is at fault
14,15,17 18,34,36	NC	---	No connection
16,19~30, 33	GND	---	Grounding, logical 0 level
35	+5V	---	+5V power

Fig.2-5 36Pin assignment of parallel interface

Note: (1)"In" denotes input to the printer,"Out" denotes output from the printer.

(2)Signal level is TTL standard.

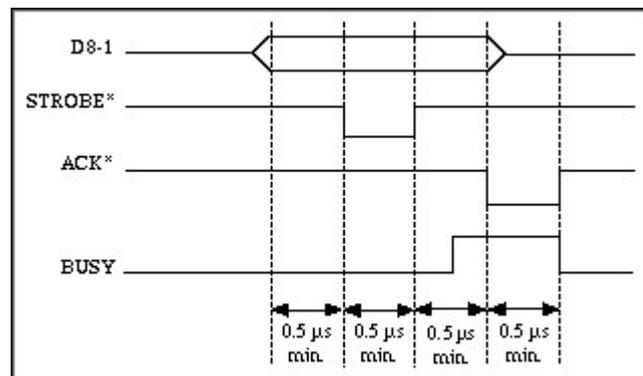The timing chart for interface signal of parallel interface is as Fig.2-6shows:

Fig.2-6 Signal Timing Chart of Parallel Interface

2.3.3 Cash Drawer Interface

The cash drawer interface of POS-POS88Ⅴ adopts RJ-11 6-pin socket, as Fig.2-7 shows:

Fig.2-7 Cash Drawer Interface

The pin assignment is as below：

Pin No.	Signal	Direction
1	**Chassis Ground**	——
2	**Cash drawer driver signal 1**	**Out**
3	**Cash drawer on/off status signal**	**In**
4	+24VDC	——
5	Cash drawer driver signal 2	Out
6	**Signal ground**	——

2.3.4 Power Connection

POS76Ⅲ uses the external power supply adopter as 24V±10％、2A,power socket is A-1009-3P model,as Fig. 2-8 shows:

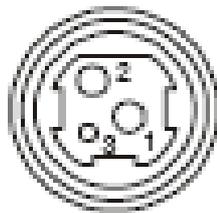**Fig.2-8 Power Socket**

The pin assignment is as below：

Pin No.	Signal
1	**+24VDC**
2	**Ground**

3	NC

Recommend to use the power supply which is offered by factory,user can put it into the printer outlet directly.If use other power supply,it must meet requirement of rating voltage and power,and make sure it is properly connected,if not,it will can not ensure the printer on normal work,may even damage the printer.

2.4 Indicators and Buttons

There is one button and three indicators on POS76III printer. 【FEED】is paper feeding button, the function of its enabling or disabling the button on/off can be set by print command, when the button is enabled, press 【FEED】 button, then the paper presenting driver starts up and paper feed into the printer; release 【FEED】 button, paper feeding stops. The green POWER light is the power indicator, red ERROR light is status indicator, it is dark when the printer works normally, while it flashes when reporting an abnormal emergency.The red PAPER OUT light is the paper ending indicator,when there is no paper in printer head,the light will be on, it is out under normal condition.As the following form shows:

Error	Indicator and Buzzer Status	Description
Paper ending	"ERROR" indicator flashes	Paper is running out
No paper	"PAPER OUT" indicator is on	Paper has run out
Up	"ERROR" indicator flashes	Close the cover tight it will return to normal.
Print head overheat	"ERROR" indicator flashes and buzzer rings	It will recover automatically when the print head cools.

2.5 Memory DIP Switch

Function of Msw2 and Msw8 is as below:

Memory DIP Switch Msw2

DIP	Function	48 （Off）	49（On）	Default Value
1	No definition			Off
2	No definition			Off
3	Select Chinese Font System	GB18030	GB2312	Off
4	No definition			Off
5	No definition			Off
6	No definition			Off
7	No definition			Off
8	No definition			Off

Memory DIP Switch Msw8

DIP	Function	48 （Off）	49（On）	Default Value
1	No definition			Off
2	No definition			Off
3	No definition			Off
4	No definition			Off
5	Select Open Mode of Paper Holder Cover	Paper Out	Cover Open	Off
6	No definition	Fixed As Off		Off
7	Send busy state signal when receiving buffer	Remain 256 bytes	Remain 138 bytes	Off
8	Cover open during printing	Error recover automatically	Use command to recover	Off

Msw8-5：If select "off",printer will send paper out state when the cover open or close;

If select "on",printer will send cover open state when the cover open or close.

2.6 Self-test

Method of self-test：press【FEED】 button and turn on the printer,loose the button when hear the sound of peep(if there is a cutter,it will be the sound of cutter turning),then the printer will print out the content of self-test below:

Version No. of the printer,type of interface and disposition,size of the buffer,number of remain bytes,type of handshaking,type of cutter,type of word stock,paper width,CPL,set of memory DIP switch,and so on.

After printing the state of printer,it will print the information below:

If you want to continue

SELF-TEST printing

please press FEED button

At this moment,the red "PAPER OUT" indicator will flash,this means the printer enter the state of self-test printing,press 【FEED】 can begin to self-test print.

2.7 Hexadecimal Printing

Turn on the printer according to the steps below,it will enter the mode of Hexadecimal Printing.

Open the cover；

Press 【FEED】 button,and switch on;

Close 【FEED】 button,the printer will print out 3 lines as below:

Hexadecimal Dump

To terminate hexadecimal dump,

Press FEED button three times.

This means the printer has entered hexadecimal printing mode,and under this mode,all of the input will be printed out as hexadecimal number,feed one line with single-click of "FEED" button,after 3 times,it will print out "Hexadecimal Dump Completed" and exit hexadecimal printing mode.