

**THERMAL PRINTER
BS2-80TS
BS2-80TP
BS2-80TU
INSTRUCTION MANUAL**

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in domestic environments, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

Introduction

Thank you for purchasing this BS2-80 thermal printer. Read the 'Safety Instructions' and 'Operating Precautions' carefully before using this printer for safe handling of it. Save these instructions for future reference.

Safety Instructions

To use this equipment safely, or to protect damage to the equipment, the following symbols are used throughout this manual to highlight safety information.

	The symbol indicates that failure to observe these instructions or mishandle this equipment could lead to severe injury or death.
	The symbol indicates that failure to observe these instructions or mishandle this equipment could lead to injury or only property damage

Samples of symbol

- The symbol indicates caution (including DANGER or WARNING). The example in the left column indicates that caution or warning conditions exist.
- The symbol indicates the action is prohibited. The example in the left column indicates disassembly is prohibited.
- The symbol indicates a required operation that must be performed or an obligatory instruction. The example in the left column indicates unplugging is required.

Warning

- Do not use any AC adapter or AC power cord other than those specified.
- Do not bend the power cord forcibly, or place heavy objects on the cord. Doing so may damage the cord and cause fire or electric shock. If the cord is damaged, discontinue using it.
- Never disassemble the printer, the AC adapter and the AC power cord. Failure to follow this instruction may result in overheating or inflammation, which may lead to fire or accidents.

Caution

- Do not drop any metallic object nor spill coffee, soft drinks, water and any other liquid.
- As the thermal head may be very hot immediately after printing, do not touch it. Be sure that the thermal head is cool before removing the paper jam or cleaning the thermal head.
- Do not plug or unplug the AC adapter and batteries with wet hand. It may result in electric shock, burn and failure.
- Do not use the printer in place where it will be exposed to excess moisture and where is watered. It may result in electric shock, burn and failure.
- Remove the interface cable or AC adapter from the connector or the receptacle by holding the connector or the AC plug. Never pull the cable itself. Doing so may damage the cable or adapter.
- For following case, turn the printer power OFF and unplug the AC power cord from outlet.
 - In case the problem is not cleared and fixed.
 - Emitting smoke, making unusual noise and odd smell from the printer
 - The metallic object dropped or spilled liquid into the printer.
 Continuous use may occur the printer failure, fire and electric shock.

1. Operating precautions

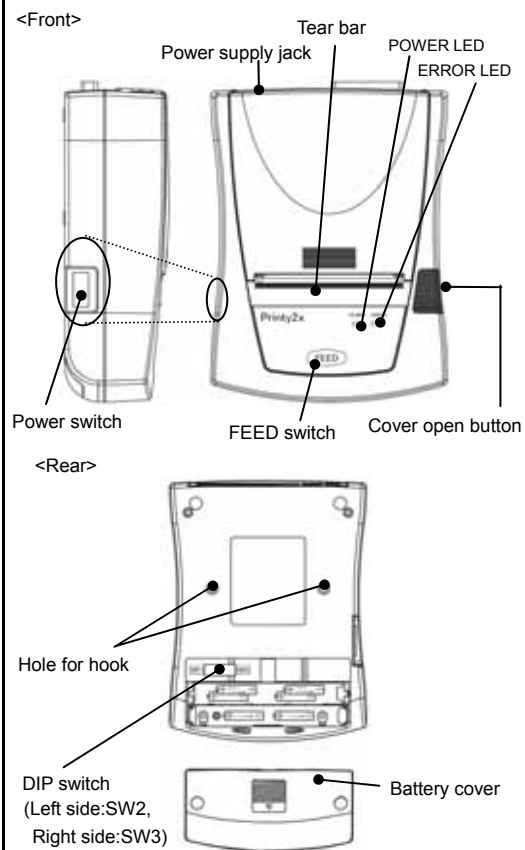
- Pay attention to the following safety operation
- Notes on use**
 - Do not subject the printer to strong shocks by dropping or hitting it.
 - If the printer is not to be used for long time, leave it disconnected from outlet.
 - Remove the batteries when the printer is not used for long time.
 - Do not pull the paper from paper exit. It may cause the damage or failure of printer
 - Notes on treatment of thermal paper**
 - Store the paper in a dry, cool and dark place.
 - Do not rub the paper with hard substance.
 - Keep the paper away from organic solvent.
 - Do not let the paper touched with vinyl chloride film, eraser or adhesive tapes for hours.
 - Do not put the paper on diazo print or wet copy that has just been copied.
 - Use specified thermal paper only.
 - Notes on installation**
 - Install the printer on a level and stable surface.
 - Avoid such places with:
 - Slanted surface, strong vibration, direct sunlight, full of dust, excessively high or low temperature, corrosive gas

2. Preparation

2.1 Unpacking the printer

- Check that all items listed were shipped. The following items are packed in the shipping box.
- Main unit 1 unit
 - Thermal paper (paper length 15m) 1 roll
 - Instruction Manual 1 volume
- ★For ordering the thermal paper, contact our office.

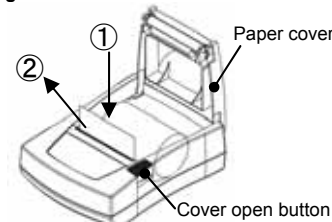
2.2 Components/Parts names



- Power switch: Turn the power ON/OFF
- FEED switch: Feed paper when the switch is pressed
- Cover open button: Unlock the paper cover
- ERROR LED: Indicate the printer error
- POWER LED: Indicate the power ON/OFF
- Tear bar: Cutting the paper
- Power supply jack: Connect to AC adapter
- Hole for hook: Hook the printer by these holes
- DIP switch: Setting the printer function
- Battery cover: Cover for battery bucket

3. Handling

3.1 Paper loading



- Press the cover open button and open the paper cover.
- Place the paper as shown in "1"
- Set the paper end slightly sticking out and keep straight for such end as shown in "2"
- Close the paper cover completely.

※If the paper roll is loosen, it may happen the paper jam. Tighten the paper roll before printing.
 ※If the paper is not set in straight, feed the paper until coming out properly or try to set the paper again.

Handle the tear bar carefully not to cut your hand when the paper is cut.

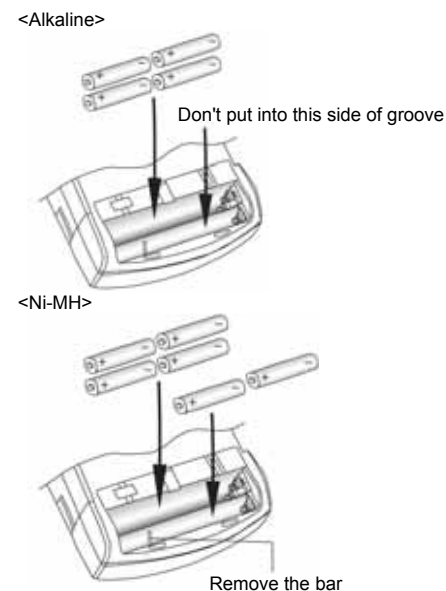
3.2 Remove jammed paper

Open the paper cover and remove the jammed paper. Do not attempt to forcibly remove the paper.

3.3 Place the battery

This printer is able to use Dry Cell Battery, AA Alkaline battery (4 cells) or Ni-MH battery (6 cells). For setting batteries, refer to below picture.

There is the bar protruding from the battery bucket and in case of using Ni-MH, cut and remove the bar.



※Do not mix up both new and used batteries together.
 ※If the voltage of battery becomes low, the printer may stop printing and loose the buffer memory data. Replace the battery if the voltage level is low.

Make sure + - (positive, negative) and set the dry cell batteries. Or it may occur explosion or leakage of battery liquid.

Do not attempt for short circuit, disassembling, heating and putting into fire. It may cause explosion or leakage of battery liquid.

3.4 Mounting method

For wall mounting, use the 2 holes located in the bottom and fix the printer by the screw (M3 x 3mm)

3.5 Maintenance

When the printer surface is contaminated, wipe it with soft dry cloth or with cloth containing mild detergent.

Do not use the volatile chemicals such as thinner and benzene

Never wet the inside of the printer with water or other liquid

3.6 Error indication

When error occurs, the POWER LED and ERROR LED lights or blinks depending on the types of errors.
 ○:Turn ON ●:Turn OFF △:Varied by situation
 Paper empty/Cover open(ON), Normal(OFF)

Power switch	Status	Lamp indication
ON	Normal (Printing enable)	POWER LED ○ ERROR LED △
	Abnormal voltage	POWER LED ○●○●○●○●○● ERROR LED ○
	Caution of low voltage	POWER LED ○●○●○●○●○● ERROR LED △
	Temperature error	POWER LED ○●○●○●○●○● ERROR LED ○
	No paper, Cover open	POWER LED ○ ERROR LED ○
	Test print	POWER LED ○●○●○●○●○● ERROR LED △
OFF	Initializing when the power turns ON	POWER LED ○●○●○●○●○● ERROR LED ●
	Power off	POWER LED ● ERROR LED ●

3.7 Test print

Turning on the power switch while pressing the FEED switch starts test printing set by DIP switch. After that, press FEED switch for internal character print.

3.8 HEX dump print

Data entered from the computer is printed in hexadecimal numbers and characters. While setting the DIP-2 switch of the SW3 ON, turning ON the power switch starts the HEX dump mode.

3.9 Function set

Setting the printer function by DIP switch.
 means default.

[SW2]

No.	Function	OFF	ON
1~4	Communication method, Parity	Refer to table 1	
5	Bit length	8bit	7bit
6	Control method	RTS/CTS	Xon/Xoff
7~8	Printing density	Refer to table 2	
9	Command system	ESC/POS	BS-80 Emulation
10	Characters per line	Graphics (28)	Characters (25)

[SW3]

No.	Function	OFF	ON
1	Choice of character	Full sized character	Half sized character
2	Initiation mode	Normal	HEXdump

Table1. Data Communication

Interface	Baud rate	Parity	1	2	3	4
Serial	115200	Non	OFF	OFF	OFF	OFF
			ON	OFF	OFF	OFF
			OFF	ON	OFF	OFF
			ON	ON	OFF	OFF
			OFF	OFF	ON	OFF
			ON	OFF	ON	OFF
	19200	Odd	ON	OFF	ON	OFF
			OFF	ON	ON	OFF
			ON	ON	ON	OFF
			OFF	OFF	OFF	ON
			ON	OFF	OFF	ON
			OFF	ON	ON	ON
9600	Even	ON	ON	OFF	ON	
		OFF	OFF	ON	ON	
		ON	OFF	ON	ON	
		OFF	ON	ON	ON	
		ON	OFF	ON	ON	
		OFF	ON	ON	ON	

*:Function 1-6 of [SW2] is only enabled for serial interface and disabled for USB and Parallel.

Table2. Printing density

Density	7	8
100%	OFF	OFF
110%	ON	OFF
120%	OFF	ON
90%	ON	ON

3.10 Connecting / disconnecting cables

- Choose the shielded interface cable which length is 2m or less
- When the power of host system is turned off before powering off the printer, disconnect the cable to avoid printer resetting or uncertain character printing

4. Specifications

4.1 General specifications

- Printing method Direct line thermal
- Data input
 - BS2-80TS Serial (RS-232C) Connector: 25pin D-SUB male (inch type)
 - BS2-80TP Parallel (Centronics) Connector: Amphenol 36pin female
 - BS2-80TU USB ver.2.0 Connector: USB 4P B type
- Printing speed 60mm/s max. (Use dedicated AC adapter)
- Printing/Paper width 63mm/80mm
- Barcode UPC-A/E, JAN8/13, CODE39, ITF, CODABAR, CODE128
- Command system ESC/POS compatible, BS-80 emulation
- Power supply
 - <Dedicated AC adapter> Part No. :BS-100W, BS-110W
 - Input Volt. :AC100V~240V,50/60Hz
 - Output Volt. :DC7.5V 3.0A
 - <Dry Cell Battery> 4 Alkaline AA batteries or 6 Ni-MH AA batteries
- Dimensions (W x H x D, no protruding) 134mm x 60mm x 180mm
- Weight approx.450g (without paper and battery)
- Operating environment
 - Temperature 0°C~+40°C
 - Humidity 30%RH~80%RH (no condensation)
- Storage environment
 - Temperature -20°C~+60°C
 - Humidity 20%RH~90%RH (no condensation)
- Thermal paper (Consumables)
 - Part No. :BL-80-30
 - Paper width :80mm
 - Roll diameter :φ50mm
- Receiving buffer 4K bytes
- Input buffer 8K bytes

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