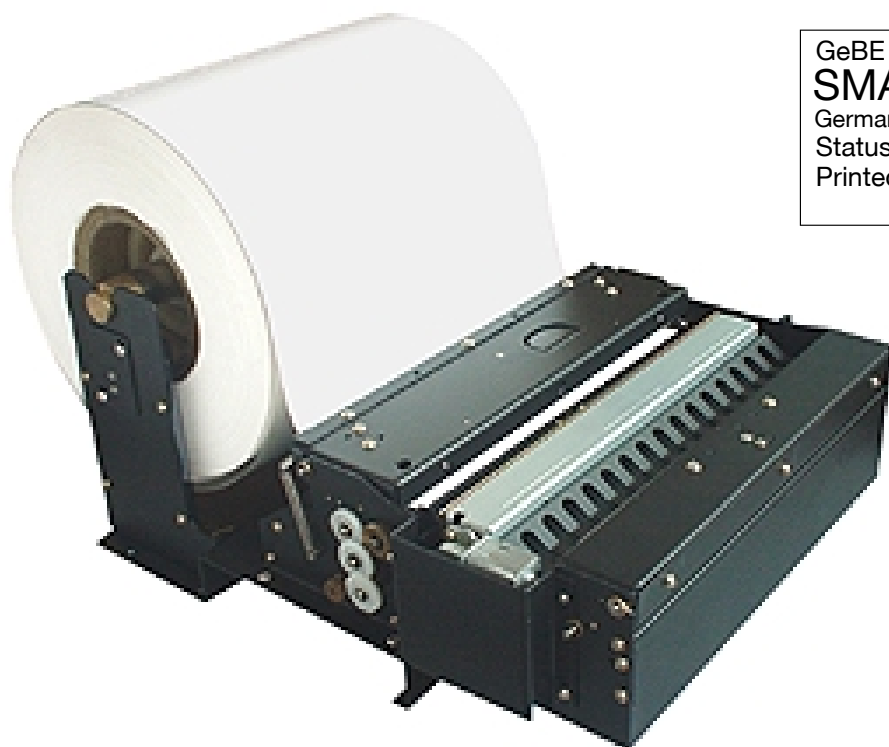


GPT-1568



GeBE Document No.:
SMAN-E-461-V1.0

German: none

Status: 21.01.2003

Printed: 01.04.2003

Operating Manual

1. Introduction	2	5. Routine maintenances	13
2. Specifications	4	6. Interface	14
3. Appearance and Parts	5	7. Troubleshooting	15
4. Installation	10		

The GeBE Logo is a registered trademark of GeBE Elektronik und Feinwerktechnik GmbH. All other brands named in this brochure are properties of the respective companies. Errors and changes reserved. The technical data given are non-committal information and do not represent any assurance of certain features. Our terms of payment and delivery apply.

Copyright © 2003 GeBE Elektronik und Feinwerktechnik GmbH. All rights reserved.

GeBE Elektronik und Feinwerktechnik GmbH

Beethovenstr. 15 • Germering • Germany • www.oem-printer.com

Phone: ++49 (0) 89/894141-0 • Fax: ++49 (0) 89/8402168 • email: sales.ef@gebe.net

General Safety Information

Before installing and using the printer, please read the following items carefully.

1. Safety instructions



Don't touch the cutter of printer.

The printhead is calorific and its temperature is high when printing or just after operation, so please don't touch it and its peripherals for safety purpose.

The thermal head is an ESD-sensitive device. Don't touch its printing part and connecting parts to keep it from damages.

2. Caution

- 1) Install the printer on a flat and stable place.
- 2) Reserve adequate space around the printer so that the operation and maintenance can be performed conveniently.
- 3) Keep the printer far away from water source.
- 4) Do not use or store the printer in a place exposed to heat of fire, moisture and serious pollution and do not expose the printer to direct sunlight, strong light and heater.
- 5) Do not place the printer on a place exposed to vibration and impact.
- 6) No dew condensation is allowed to the printer. In case of such condensation, do not turn on the power until it has completely gone away.
- 7) Connect the DC adapter to an appropriate grounding outlet. Avoid sharing a single electrical with large power motors and other devices that may cause the fluctuation of voltage.
- 8) Disconnect the DC adapter when the printer is deemed to spare for a long time.
- 9) Don't spill water or other electric materials on the printer. In case of this happens, shut down the power immediately.
- 10) Do not allow the printer to start printing when there is no recording paper installed, otherwise the printhead and platen roller will be damaged.
- 11) To ensure quality print and normal lifetime, use recommended paper or paper roll with same quality.
- 12) Shut down the printer when connecting or disconnecting interfaces connectors to avoid damages to control board.
- 13) Set the print darkness to a lower grade as long as the print quality is acceptable. This will help to keep the printhead durable.
- 14) Do not disassemble the printer without permission of a technician, even for repairing purpose.
- 15) Keep this manual carefully at hand for ready reference

1. Introduction

1.1 Outline

GPT-1568 is a high performance thermal printer with cutter and presenter as optional and can accept up to 203mm (Outer diameter) paper rolls. The maximum print width is 216mm. It can be widely used in Kiosk applications like data communication terminal, test instrument terminal and outdoor information consulting terminal etc.

GPT-1568 consists of the following modules.

- Thermal print mechanism
- Presenter (optional)
- Paper holder (optional)
- Control board (RS232 or/& Centronics)
- Cutter (optional)

According to different installation position, BK-L216 has models for customer to select, the horizontal and the vertical.

Drivers are available for Win95/98/2000/NT4.0.

1.2 Features

- Easy operation & nearly maintenance free
- Rugged metal structure
- Automatic paper loading
- Automatic cutting controllable
- Paper rolls up to Ø203mm
- Multiple sensors

1.3 Printer denomination

GPT-1568 -X-X-X-X-X-X

a b c d e f g

a. Main name

b. Controller type

c. Interface type

EVAL: RS232 and Centronics

d. Cutter

Default: Without cutter

e. Presenter

Default: Without presenter

f. Operating Voltage

g. Frame type / paper holder

PHH: Horizontal type

PHV: Vertical type

Default: without paper holder

Denomination sample: GPT-1568-83-EVAL-CUT-PRE-24V-PHH means a GPT-1568 printer of 300 DPI, with RS232 & Centronics interfaces, cutter and presenter. The installation position is horizontal.

2. Specifications

2.1 Main Specifications

Item	Model		
	GPT-1568		
Printing	Print method	Direct thermal line	
	Print width	216mm	
	Resolution	203DPI	
	Paper feed pitch	1/8mm	
	Print speed	75mm/s	
	Paper type	Continuous paper	
	Page length	A4 (max.), 1/3 A4 (min.)	
Barcodes	Barcode supported	INTERLEAVED 2 OF 5, UPC_A, UPC_E, EAN_8, EAN-13, STD25, CODABAR, CODE39, CODE128	
	Fonts	Standard ASCII (18 x 34) Compressed ASCII (13 x 24)	
	Enlargement	All fonts can be enlarged 1 to 6 times vertically and horizontally respectively.	
	Rotation	0°, 90°, 180°, 270°	
	Paper sensors	Paper near end, paper end, paper load and paper out photo sensors	
	Printhead overheating protection	Thermal resistor	
	Printhead position	Micro switch	
Graphics		Bit Image Downloading 8k bytes buffer for up to 6 bit images' downloading	Bitmap printing Support
Memory		512 KB FLASH	
Interface		Serial RS232 and/or Centronics	
Power	Operation voltage	24V DC (7% allowable tolerance)	
	Current	Average3.2A (duty ratio 12.5%)	
Printhead lifetime		50km or more	
Cutter lifetime		≈300,000 cuts	
Environment	Operation temperature and humidity	+5 0C to +45 0C, 20% to 80% RH (Non-condensed)	
	Storage temperature and humidity	-40 0C to 55 0C, 93% RH or less (Non-condensed)	
Weight		6Kg (without paper roll)	
Dimensions		297 (W)°;211(D)°;88 (H) mm (Without paper holder)	

2.2 Paper Specifications

- Type : Direct thermal paper
- Paper width : 216 + 0/- 0.5 mm
- Paper thickness : 80g/m²
- Roll outer diameter : Max. 203 mm
- Roll inner diameter : 25.4 mm or 50mm
- Printing surface : Outside of the roll
- Recommended paper : F24OAC/F220-VP made by MITSUBISHI PAPER MILLS LIMITED.,



Caution:

- 1) Please use the recommended paper or its equivalents. Using other types of paper may affect the print quality and reduce the print head lifetime.
- 2) Do not paste the paper to the core.
- 3) If the paper comes in contact with chemical or oil, it may discolor or be less heat sensitive which will greatly affect the print quality.
- 4) Do not rub the paper surface with a nail or hard metal, otherwise it may discolor.
- 5) When the temperature goes up to 70 degrees, paper will discolor. Please don't use or store paper under such a high temperature.

3. Appearance and Parts

3.1 Appearance

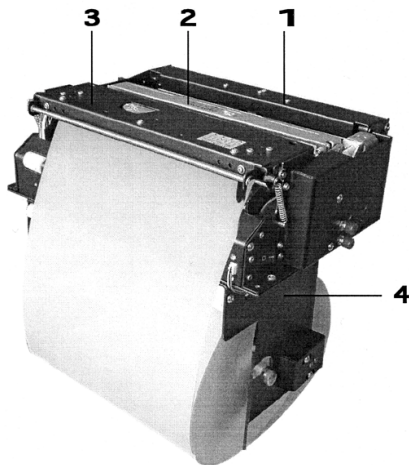


Figure1. Vertical Type

- 1.--- Presenter
- 2.--- Auto cutter
- 3.--- Print Mechanism
- 4.--- Paper holder

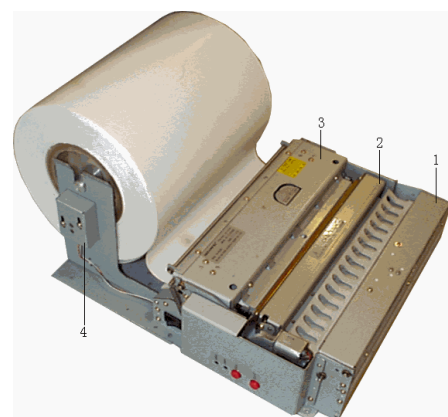
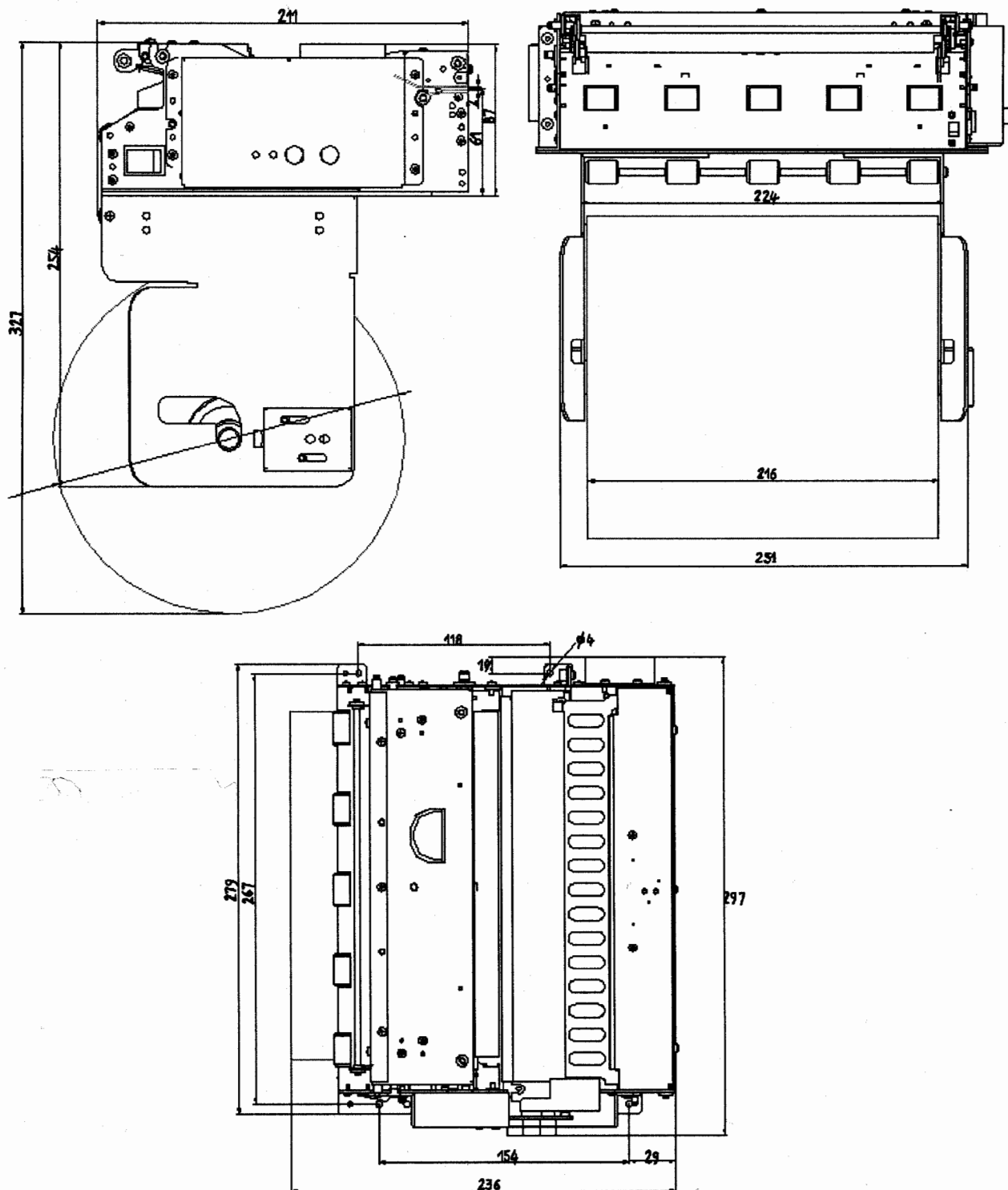
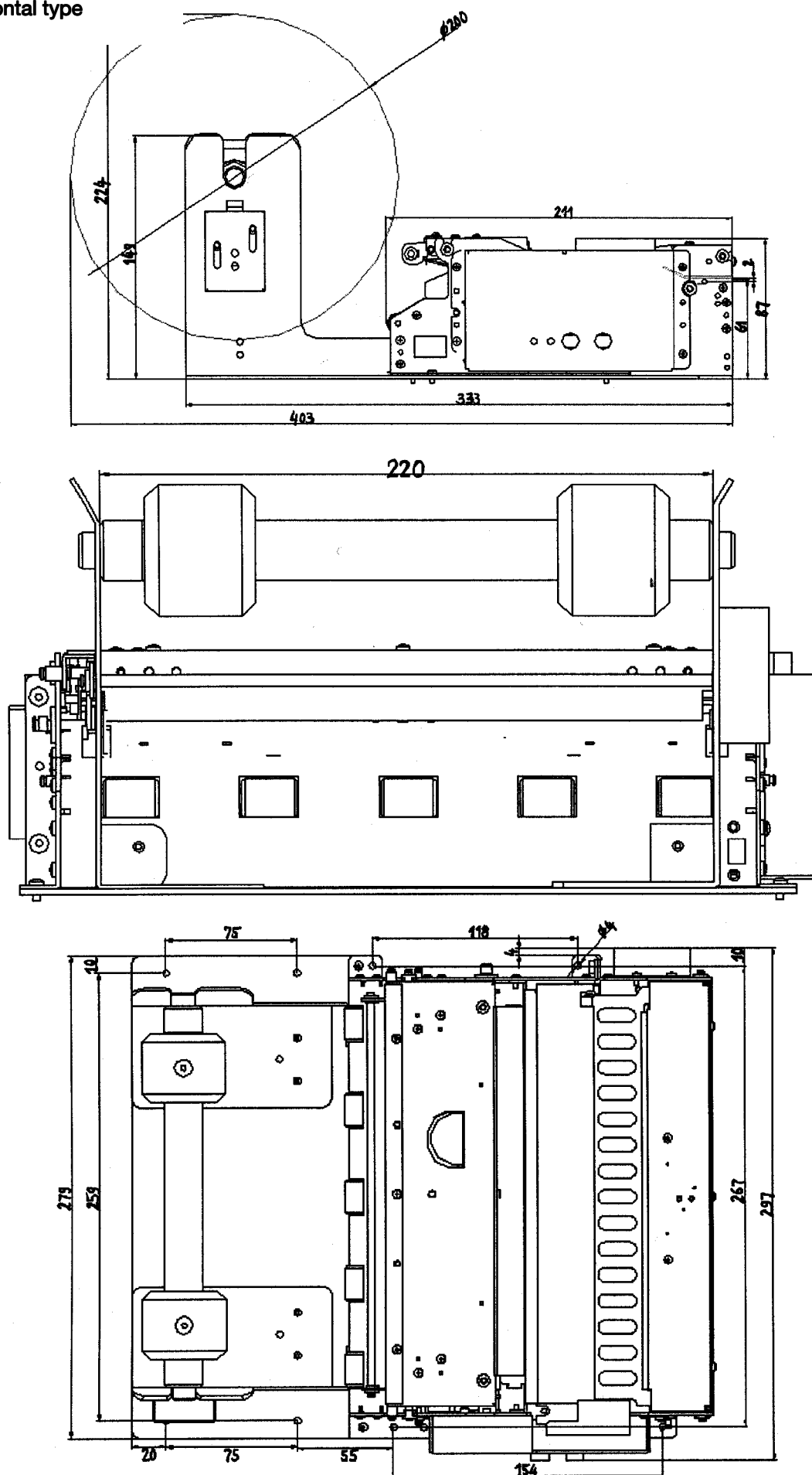


Figure 2. Horizontal Type

3.2 External Dimensions

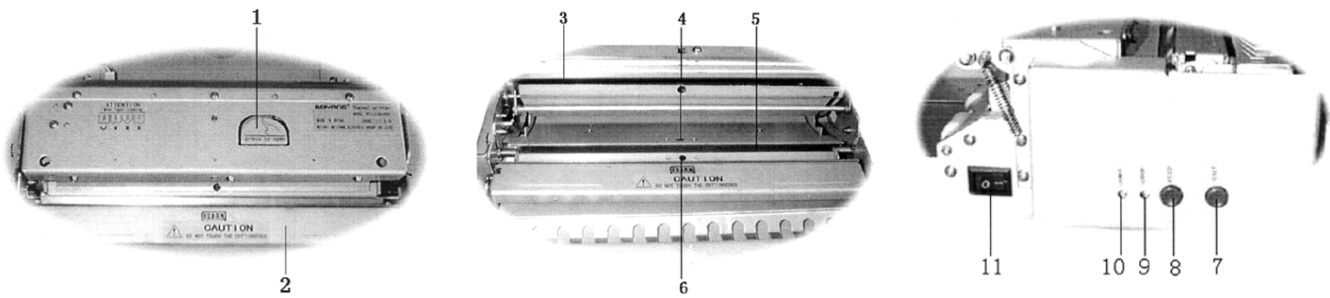


B. Horizontal type



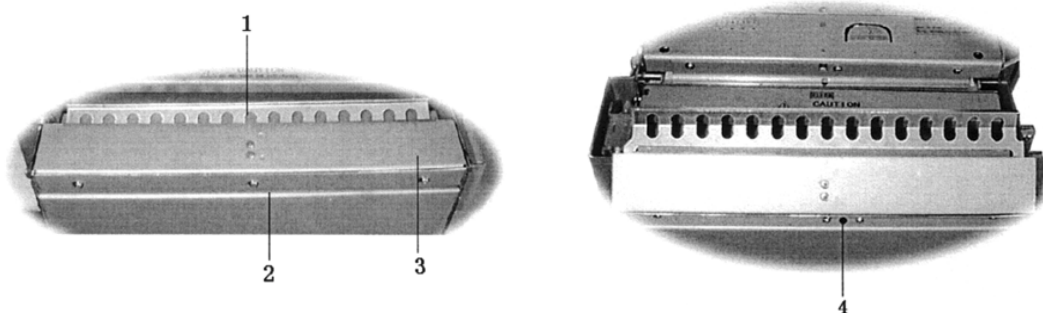
3.3 Print mechanism

Function of keys, indicators and parts



- 1.--- Print head open key:** Press to lift up the printer head
- 2.--- Auto cutter:** Automatic cutter
- 3.--- Printhead:** Thermal printer head
- 4.--- Paper end sensor:** Detect whether the paper is in.
- 5.--- Platen roller:** Silicon rubber roller
- 6.--- Paper-loading sensor:** Detect the position of the front end of paper.
- 7.--- Cut key:** Press to cut paper under any circumstances even the printer has errors.
- 8.--- Feed key:**
- Under normal status (no error), press to feed paper for one line. Keep pressing for continuous paper feeding.
 - Turn on the power while pressing this button to print the printer's internal configuration table with information like version, maximum print width, print speed, print darkness etc.
- 9.--- Error LED:** This LED is used to indicate different status of the printer. Normally, it isn't light. When errors happened (for example, paper end), it will flash to give alarms.
- 10.--- Power LED:** To indicate whether the printer is turned on.
- 11.--- Power switch:** Turn on or turn off the printer.

3.4 Presenter module



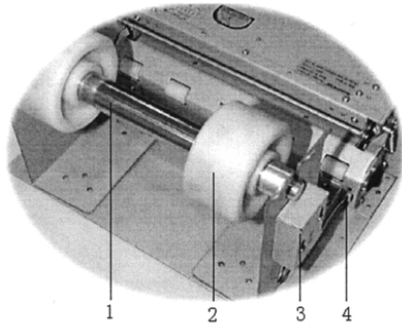
- 1.--- Presenter top panel**
- 2.--- Paper out pass**
- 3.--- Presenter module**
- 4.--- Paper out sensor:** The paper out sensor is used to detect whether presented printout has been taken away.



Caution:

Do not place the presenter module in a place exposed to the direct sunshine, or the paper out sensor will become ineffective.

3.5 Paper holder



1.--- Paper roller 1: diameter 25.4 mm

2.--- Paper roller 2: diameter 50 mm

If the inner diameter of paper roll is 50mm, use both of them (see figure A). If the inner diameter is 25.4mm, remove paper roller 2 and use paper roller 1 only.

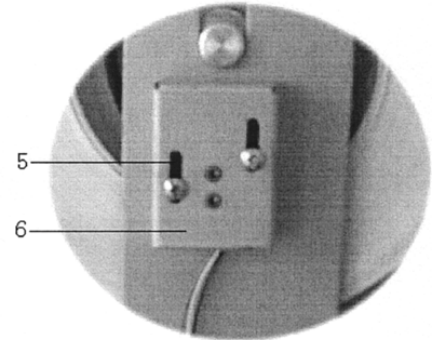
3.--- Paper near end sensor: User may check whether paper is near end by sending an inquiring command (refer to “command set” for details) to printer.

4.--- Paper near end sensor connector

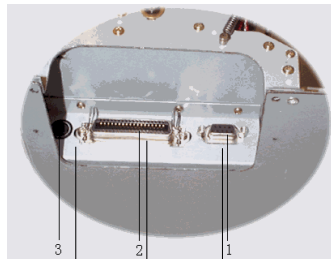
5.--- Paper near end sensor slide track

6.--- Paper near end sensor positioning board

It allows users to adjust paper near end sensor to an appropriate position when a new paper roll with different inner diameter is loaded or when a new reference point (appropriate amount of remaining paper) for the paper near end sensor is wanted. To position the sensor, loose those two fixing screws (see figure B) and move the positioning board up or down to the right position along the slide track then tighten the screws.



3.6 Interface



1. 2. 3.

1.--- RS-232

2.--- Centronics

3.--- Power Input

4. Installation

4.1 Unpacking

Save the carton and all packing materials in case reshipping is required. Check whether all items listed on the packing list are in and if they have any damages. In case of damages or missing items, please contact your dealer or the manufacture for assistance.

4.2 Assembling the printer

For safety transporting purpose, the print mechanism and paper holder are separate when they arrive at a customer's place. Before getting the printer into use, please reassemble them by consulting the following figures.

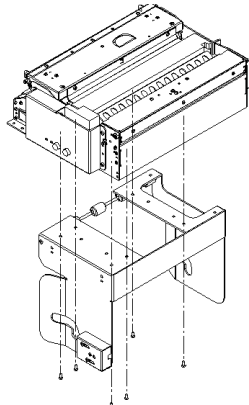


Figure 1 Vertical type

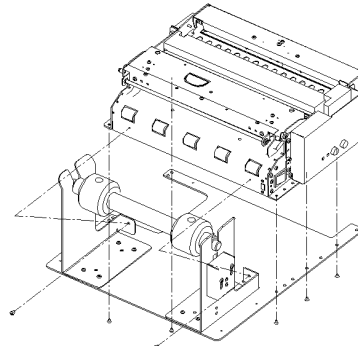


Figure 2 Horizontal Type



Caution:

- Do not use an AC adapter other than specified.
- When connecting or disconnecting the cable connector of the AC adapter, always hold the connector, not the cable.
- Avoid dragging or pulling the cable of AC adapter, otherwise the cable may be damaged or broken and a fire and electric shock may be caused accordingly.
- Avoid placing the AC adapter near a heating device; otherwise the cover of the cable may melt and cause a fire or electric shock.

4.4 Connecting communication cable

- 1) Make sure that the printer has been shut down.
- 2) Connect one end of the communication cable to an appropriate interface connector of the printer and fix them by screws or pinchcocks.
- 3) Connect the other end of the communication cable to computer.

4.5 Loading paper

Before starting to load a paper roll, make sure that the paper's specifications are in conformity with requirements given in paragraph 2.2.

(1) See figure 1. Insert the paper roller into the core of the paper roll. Make sure that the paper winding direction is correct and then put the paper roll onto the paper holder.



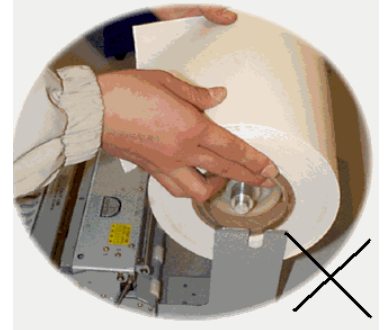
Figure 1

Warning:

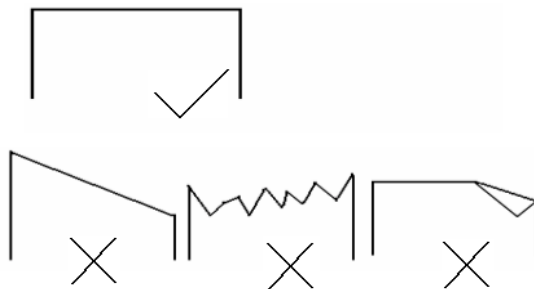
Do not hold the paper roll in a way showed below; otherwise your fingers will be hurt.



Figure 2



(2) Cut the paper neatly by consulting the figure below.



Caution:

- Make sure to use recommended paper or its equivalent.
- Do not use coarse paper or the printer will be jammed.
- Make sure the paper roll isn't loose. To smooth the running of paper roll, always keep the margin of paper roll neat and regular.

(3) Semi-automatically loading paper or manually loading paper

A. Semi-automatically loading paper

- Make sure that the power is turned on and the buzzer is warning paper end.
- See figure below. Thread the front end of the paper roll neatly through the paper feed pass and loose hands when platen roller starts running and holds the paper.
- The printer will finish the left loading action automatically and In default, the printer will not print a self-test page subsequently. But user may set the printer to do so by changing its configuration. To change the configuration, please consult "command set" for assistance.
- The presenter will feed out the printout.



**Caution:**

The front end of paper should be thread out below the printhead and its spindle as shown in figure 1. If it wrongly comes out between the printhead and its spindle as shown in figure 2, the paper will be jammed.

Figure 1. Good

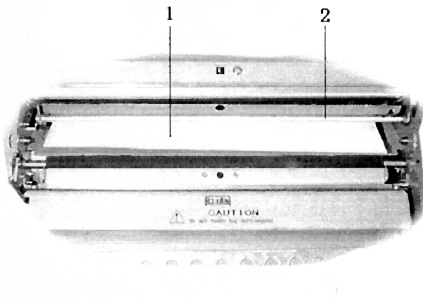
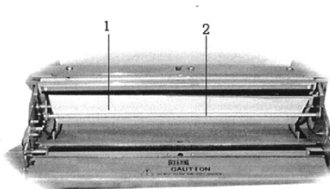


Figure 2. Wrong

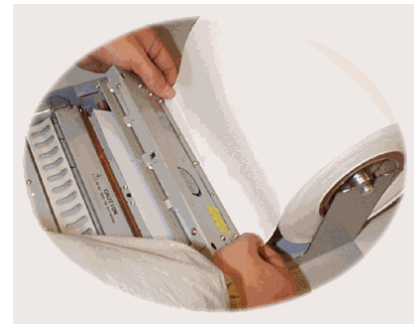


1.--- The front end of the paper

2.--- Print head spindle

B. Manually loading paper

- Turn off the power and the buzzer will alarm paper end.
- Press the print head open button to open the print head.
- Thread the front end of the paper through the channel of printer mechanism, and make sure that the paper-loading sensor is fully covered by it.
- Close the print head. The printer will automatically up paper to the right position.

**4.6 Self testing**

Turning on the power while pressing the feed button to print self-test page.

5. Routine maintenances

5.1 Cleaning print head

When one or more of the following phenomena occur, the printhead should be cleaned.

- | Print out is not clear
- | Some columns on the page are not clear.
- | Paper feeds or backs with large noises.

To clean the printhead, follow steps given below.

- 1) Turn off the power and press the printhead open button to open the printhead.
- 2) Allow a few minutes for printhead to cool down if it has just finished printing.
- 3) Wipe off stains, such as dust and the like, on the heating element of the print head using a cotton swab impregnated with ethyl alcohol. The cotton swab shall be wrung before using.

5.2 Cleaning sensors

When one or more of the following phenomena occur, the sensors should be cleaned.

- During printing, the printer sometimes stops printing and alarms paper end when there is paper in fact.
- Doesn't alarm paper end when paper is end.
- Paper auto-loading action cannot be completed successfully.
- PRESENTER cannot correctly detect whether printout has been taken away.

To clean sensors, following steps given below,

- 1) Turn off the power
- 2) Open the printhead and presenter cover
- 3) With soft cotton swab impregnated with ethyl alcohol, carefully wipe off stains of the surfaces of sensors.
- 4) Allow a few minutes for ethyl alcohol to evaporate and close the printhead and present cover.
- 5) Turn on the power and get the printer ready to use.

5.3 Cleaning platen roller

When one or more of the following phenomena occur, the platen roller should be cleaned.

- Print out is not clear
- Some columns on the page are not clear.
- Paper feeds or backs with large noises.

To clean the platen roller, follow steps given below.

- 1) Turn off the power.
- 2) Open the printhead and presenter cover
- 3) Allow a few minutes for printhead to cool down if it has just finished printing.
- 4) With a swab, rotate the platen roller carefully and wipe the surface of platen roller thoroughly.



Caution

- Before starting routine care, make sure the printer has been shut down.
- Do not touch the surface of printhead with hands and metal. Do not use forceps to clean printhead, platen roller and sensors. Do not use organic solvent like gasoline, acetone and etc.
- Allow a few minutes for ethyl alcohol to evaporate before getting printer ready to use.

6. Interface

6.1 Parallel Interface

The parallel interface is IEEE 1284 compatible. Therefore, the Parallel Port mode of computer's integrated peripherals should be SPP.

IEEE 1284 CONNECTOR PIN ASSIGNMENTS:

Pin#	Source	Compatible
1	H	nStrobe
2	H	Data 1 (Least Significant Bit)
3	H	Data 2
4	H	Data 3
5	H	Data 4
6	H	Data 5
7	H	Data 6
8	H	Data 7
9	H	Data 8 (Most Significant Bit)
10	P	nAck
11	P	Busy
12	P	PErrors
13	P	Select
14	H	nAutoFd
15		Not defined
16		Logic Gnd
17		Chassis Gnd
18	P	Peripheral Logic High
19		Signal Ground (nStrobe)
20		Signal Ground (Data 1)
21		Signal Ground (Data 2)
22		Signal Ground (Data 3)
23		Signal Ground (Data 4)
24		Signal Ground (Data 5)
25		Signal Ground (Data 6)
26		Signal Ground (Data 7)
27		Signal Ground (Data 8)
28		Signal Ground (PErrors, Select, and nAck)
29		Signal Ground (Busy and nFault)
30		Signal Ground (nAutoFd, nSelctIn, and nInit)
31	H	nInit
32	P	nFault
33		Not defined
34		Not defined
35		Not defined
36	H	nSelectIn

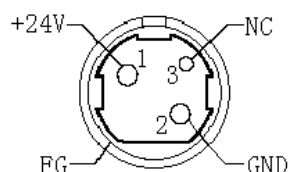
6.2 Serial Interface

PIN No.	Signal	PIN No.	Signal	PIN No.	Signal
PIN1	NC	PIN 4	DTR	PIN 7	RTS
PIN2	RXD	PIN 5	GND	PIN 8	CTS
PIN 3	TXD	PIN 6	NC	PIN 9	NC

6.3 Signal assignment of power connector

As shown in the following figure, the specification of power input is:

- 1 --- Positive (+24V)
- 2 --- Negative (GND)
- 3 --- NC.



7. Troubleshooting

If the printer operates in malfunction, consult the troubleshooting table below.

Problems during paper installation

Problems	Possible causes
Paper roll can't be drop in the paper holder.	The paper roll width and diameter do not meet the requirements of the printer.
Paper does not feed automatically.	The front end of paper is ragged or dog-eared
Buzzer gives alarms.	The paper load sensor is not covered by paper
Retrace while feeding.	Dust or wastepaper covers the paper load sensor.
	The printer cover is not fully closed.
	Paper end.
	Dust or wastepaper covers the paper end sensor.
	Dust or wastepaper covers the paper load sensor.

Problems during printing

Problems	Possible causes
Paper roll can't be drop in the paper holder.	The paper roll width and diameter do not meet the requirements of the printer.
Paper does not feed automatically.	The front end of paper is ragged or dog-eared
Buzzer gives alarms.	The paper load sensor is not covered by paper
Retrace while feeding.	Dust or wastepaper covers the paper load sensor.
	The printer cover is not fully closed.
	Paper end.
	Dust or wastepaper covers the paper end sensor.
	Dust or wastepaper covers the paper load sensor.

- Consulting command set for the adjustment of print darkness.
- If the cutter got stuck, remove stuck paper first. Then press cut button to reset cutter.

Problems during paper out

Problems	Possible causes	How to deal with
The printer stops printing and warning errors during printing.	Paper is end.	Install a new paper roll.
	Dust or wastepaper covers the paper end sensor.	Clean the paper end sensor.
	The cutter got stuck	Check if there is something in cutter channel.

Note: Contaminated paper will cause detection failure.

Other problems

Problem	Possible causes	How to deal with
LED isn't light and printer mechanism doesn't work.	The printer is not connected to the power supply properly.	Connect the printer to a power supply properly.
The printer doesn't work after sending commands.	The printer is not turned on.	Turn on the printer.
	Printer has errors. For instance, the paper is end.	Remove all errors.
	The interface setting is wrong.	Print a self-test page and set the interface again according to information on it.
	The communication cable is not connected correctly.	Make sure the communication cable is connected correctly.

Note: Paper near end alarm acts only as a prompt for users to pay attention to remained paper. Therefore, the printer doesn't take it as an error. When this alarm is given, no effect will be applied to printing.

Further detailed Information in the Internet: www.oem-printer.com