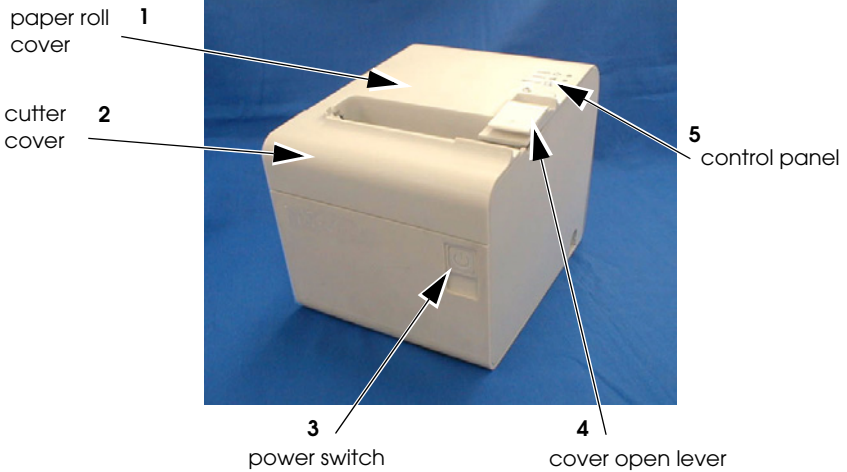


TM-T90

**User's Manual / Bedienungsanleitung
Gebruikershandleiding / Manuel d'utilisation
Manual do utilizador / Manual del usuario
Manuale dell'utente**

Printer Parts



DIP Switch Tables

Serial

SW	Function	ON	OFF
1-1	Power switch function	Disabled	Enabled
1-2	Interface condition selection	by DIP switch	by memory switch
1-3	Handshaking	XON/XOFF	DTR/DSR
1-4	Data word length	7 bits	8 bits
1-5	Parity check	Enabled	Disabled
1-6	Parity selection	Even	Odd
1-7 1-8	Transmission speed (See table below.)		
2-1	Reserved	Fixed to Off.	

Transmission speed (bps)-bits per second	1-7	1-8
2400	ON	ON
4800	OFF	ON
9600	ON	OFF
19200	OFF	OFF

Parallel

SW	Function	ON	OFF
1-1	Power switch function	Disabled	Enabled
1-2- 1-8	Reserved	Fixed to Off.	
2-1	Reserved	Fixed to Off.	

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EMC and Safety Standards Applied

Product Name: TM-T90

Model Name: M165A

The following standards are applied only to the printers that are so labeled. (EMC is tested using the EPSON power supplies.)

Europe:	CE marking Safety: EN 60950
North America:	EMI: FCC/ICES-003 Class A Safety: UL 1950/CSA C22.2 No. 950
Japan:	EMC: VCCI Class A JEIDA-52
Oceania:	EMC: AS/NZS 3548 Class B

WARNING

The connection of a non-shielded printer interface cable to this printer will invalidate the EMC standards of this device. You are cautioned that changes or modifications not expressly approved by SEIKO EPSON Corporation could void your authority to operate the equipment.

CE Marking

The printer conforms to the following Directives and Norms:

Directive 89/336/EEC	EN 55022 Class B EN 55024 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-11
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FCC Compliance Statement For American Users

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

For Canadian Users

This Class A digital apparatus complies with Canadian ICES-003.

Safety Precautions

This section presents important information intended to ensure safe and effective use of this product. Please read this section carefully and store it in an accessible location.



WARNING:

Shut down your equipment immediately if it produces smoke, a strange odor, or unusual noise. Continued use may lead to fire. Immediately unplug the equipment and contact your dealer or a SEIKO EPSON service center for advice.

Never attempt to repair this product yourself. Improper repair work can be dangerous.

Never disassemble or modify this product. Tampering with this product may result in injury or fire.

Be sure to use the specified power source. Connection to an improper power source may cause fire.

Do not allow foreign matter to fall into the equipment. Penetration by foreign objects may lead to fire.

If water or other liquid spills into this equipment, unplug the power cord immediately, and then contact your dealer or a SEIKO EPSON service center for advice. Continued usage may lead to fire.



CAUTION:

Do not connect cables in ways other than those mentioned in this manual. Different connections may cause equipment damage and burning.

Be sure to set this equipment on a firm, stable, horizontal surface. The product may break or cause injury if it falls.

Do not use in locations subject to high humidity or dust levels. Excessive humidity and dust may cause equipment damage or fire.

Do not place heavy objects on top of this product. Never stand or lean on this product. Equipment may fall or collapse, causing breakage and possible injury.

To ensure safety, unplug this product before leaving it unused for an extended period.

Do not use aerosol sprayers containing flammable gas inside or around this product. Doing so may cause fire.

Caution Labels

**WARNING:**

Do not connect a telephone line to the drawer kick-out connector; otherwise, the printer and the telephone line may be damaged.

**CAUTION:**

The thermal head is hot.

Control Panel

LEDs and Button

POWER LED

Lights when the power is on, and is off when the power is off.

ERROR LED

Off when the printer is online, lights when the printer is offline, and flashes when an error occurs.

PAPER OUT LED

Lights when roll paper is nearly out.

FEED button

Feeds the roll paper.

Power Switch and Power Switch Cover

The power switch is on the front of the printer. Press it to turn on the printer, and press and hold it for more than 3 seconds to turn off the printer.

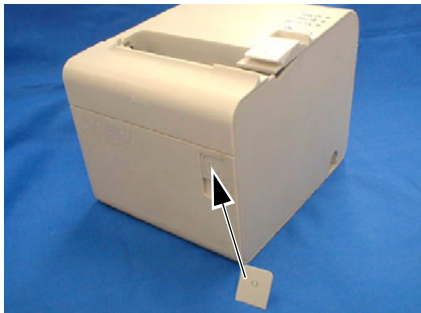
Power Switch Cover

You can use the enclosed power switch cover to make sure that the power switch is not accidentally pressed. Peel off the backing tape and press the cover into place to install it in the position shown in the illustration below.



WARNING:

If an accident occurs when the power switch cover is attached, immediately remove the bottom cover and unplug the power supply cable to avoid fire.



Unpacking

The following items are included for the standard specification printer. If any items are damaged, contact your dealer.

- Printer
- Paper roll
- Power switch cover
- Control panel label used for vertical installation
- Rubber feet (4) for vertical installation
- AC adapter (*)
- Hexagonal lock screws (2 pcs) (only for the serial interface)
- Usage Precautions for the Power Unit (*)

(*) *May not be included with the printer*

Downloading Drivers, Utilities, and Manuals

Drivers, utilities, and manuals can be downloaded from one of the following URLs.

For customers in North America, go to the following web site:

<http://www.epsonexpert.com/> and follow the on-screen instructions.

For customers in other countries, go to the following web site:

<http://www.epson-pos.com/>

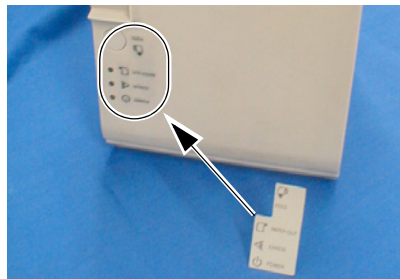
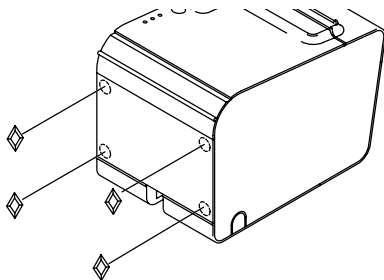
Select the product name from the “Select any product” pulldown menu.

Installing Horizontally or Vertically

You can install the printer horizontally (with the paper exit on top) or vertically (with the paper exit at the front) either on a flat surface or by hanging it on a wall (using the optional hanging bracket set, WH-10).



When you install the printer vertically, attach the rubber feet and control panel label as shown in the illustrations below.



Note:

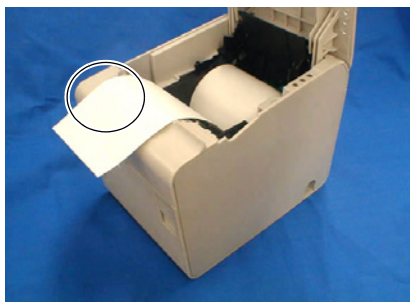
To hang the printer on the wall, see the Wall Hanging Bracket Set Installation Manual provided with the WH-10 for instructions.

Installing the Paper Roll

Note:

Be sure to use paper rolls that meet the specifications.

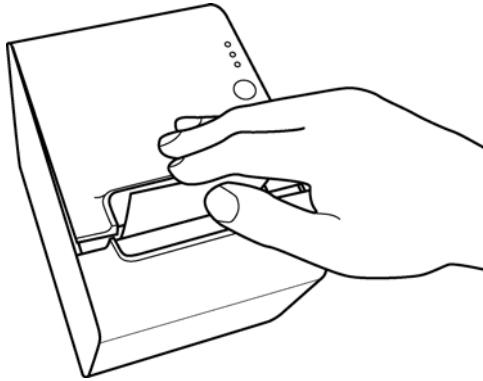
1. Open the paper roll cover, using the cover open lever.
2. Insert a paper roll and pull out a small amount of paper, aligning the paper with the guide, as shown below.



3. Close the paper roll cover; then tear off the roll paper.

Note:

Be sure to close the cover completely by pushing down on the middle of the cover.



Troubleshooting

ERROR LED on or flashing

- ❑ Check to see that the paper roll cover is closed and check the PAPER OUT LED. Close the cover or replace the paper if necessary.
- ❑ If the printer has been printing a lot, the head may be hot. Wait for the head to cool. Printing will resume automatically.
- ❑ If the autocutter is jammed, turn the printer off and then back on.
- ❑ If the paper roll cover will not open, see the section below.
- ❑ Turn off the printer and then turn it back on. If the LED is still flashing, call your supervisor or a service person.

Paper jam

Turn off the power and open the paper roll cover and check for a paper jam. If there is a paper jam, remove the jammed paper and follow the instructions in the Installing the Paper Roll section to prepare the printer for printing.

The paper roll cover will not open

Turn on the printer and remove the cutter cover. To remove the cover, use a tool such as a screwdriver, and insert it into one of the slots indicated by a circle in the illustration below and push the

cover upward. After removing the cutter cover, use a ballpoint pen or tweezers to turn the knob in the direction indicated by the arrow until you see a triangle in the opening.



Cleaning the Print Head

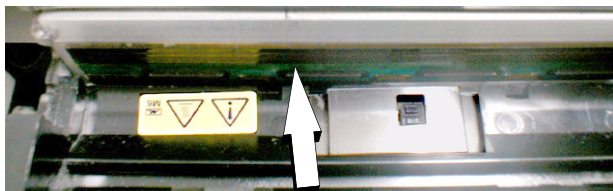


CAUTION:

After printing, the print head can be very hot. Be careful not to touch it and to let it cool before you clean it. Do not damage the print head by touching it with your fingers or any hard object.

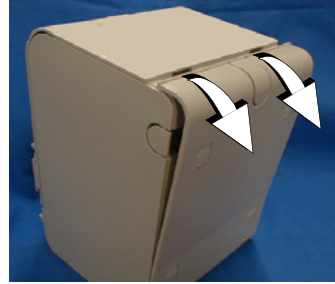
Turn off the printer, open the paper roll cover, and clean the thermal element of the print head with a cotton swab moistened with an alcohol solvent (ethanol, methanol, or IPA).

EPSON recommends cleaning of the thermal head periodically (generally every three months) to maintain receipt print quality.

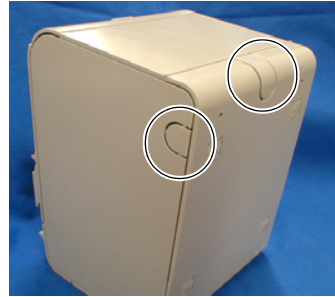


Connecting Cables

To connect cables, first remove the bottom of the cover as shown in the illustration.



To place the cables, first break off by hand any of the three portions indicated by circles in the illustration (the other portion is on the right). Then put the cables through the holes and replace the bottom of the cover.



TM-T90 Specifications

Print method	Thermal line, 0.141 mm/dot × 0.141 mm/dot (180 dpi × 180 dpi)
Print font	12 × 24/9 × 17
Columns	12 × 24/9 × 17: 42/56 (when paper roll width is 80 mm)
Print width	72.2 mm {2.84"}, 512 dot positions (when paper width is 80 mm)
Character size (W × H)	12 × 24: Normal/double-high/double-width/quadruple 1.692 × 3.384 mm/1.692 × 6.768 mm/3.384 × 3.384 mm/3.384 × 6.768 mm {0.07 × 0.13"/0.07 × 0.27"/0.13 × 0.13"/0.13 × 0.27"} 9 × 17: Normal/double-high/double-width/quadruple 1.269 × 2.397 mm/1.269 × 4.794 mm/2.538 × 2.397 mm/2.538 × 4.794 mm {0.05 × 0.09"/0.05 × 0.19"/0.10 × 0.09"/0.10 × 0.19"}
Character sets	95 alphanumeric, 37 international characters, 128 × 11 graphic
Print speed	Normal: Maximum: 170 mm/s {6.69"/s} Ladder bar code or two-dimensional code printing: Maximum: 100 mm/s {3.94"/s} Four-divided energizing: Maximum: 70 mm/s {2.76"/s} Two-color printing: Maximum: 100 mm/s {3.94"/s}
Paper feed speed	Approximately 170 mm/s {6.69"/s}
Line spacing	4.23 mm {1/6"}
Paper dimensions	80 mm (factory setting): 79.5 ± 0.5 × max 102 mm {3.13 ± 0.02 × 4"} 60 mm: 59.5 ± 0.5 × max 102 mm {2.34 ± 0.02 × 4"} 58 mm: 57.5 ± 0.5 × max 102 mm {2.26 ± 0.02 × 4"}
Thermal paper type	Monochrome: ENTPA series, Two-color: ENTPB series
Interface (compatible)	RS-232C/Bi-directional parallel, Dealer option: RS-485, USB, 10 Base-T I/F
Receive data buffer	4 KB/45 bytes
D.K.D. function	2 drives
Power supply	+24 VDC ± 7%
Current consumption	Normal: Approximately 1.7 A
Temperature	Operating: 5 to 45°C {41 to 113°F}, Storage: -10 to 50°C {14 to 122°F}
Humidity	10 to 90%
Reliability	MTBF: 360,000 hours, MCBF: 70,000,000 lines (single-color thermal paper used), 35,000,000 (two-color thermal paper used)
Overall dimensions	148 × 140 × 201 mm {5.83 × 5.51 × 7.91"} (H × W × D)
Weight (mass)	Approximately 1.8 kg {3.97 lb}

dpi: dots per 25.4 mm (dots per inch)