

TM-U230

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

A

1



2

3



4

B



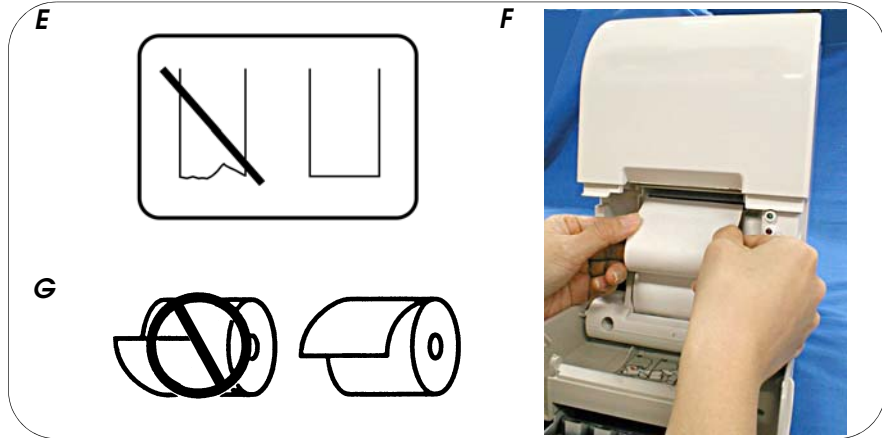
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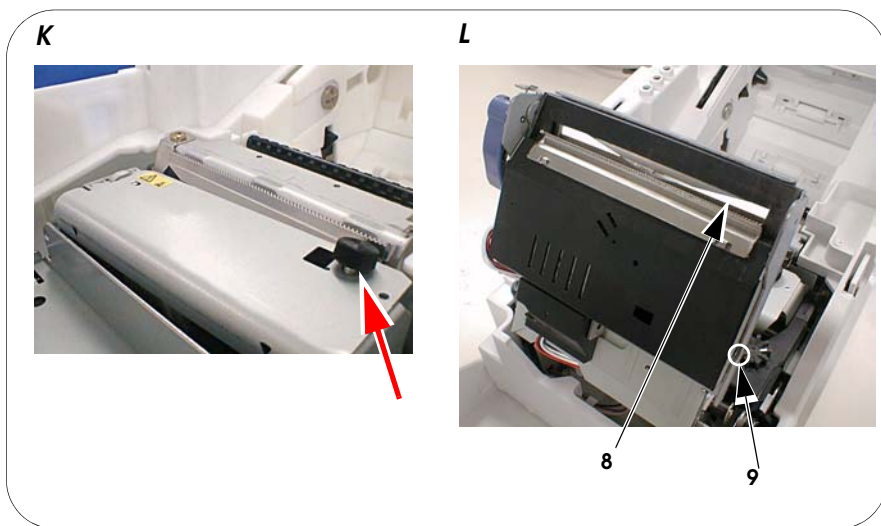
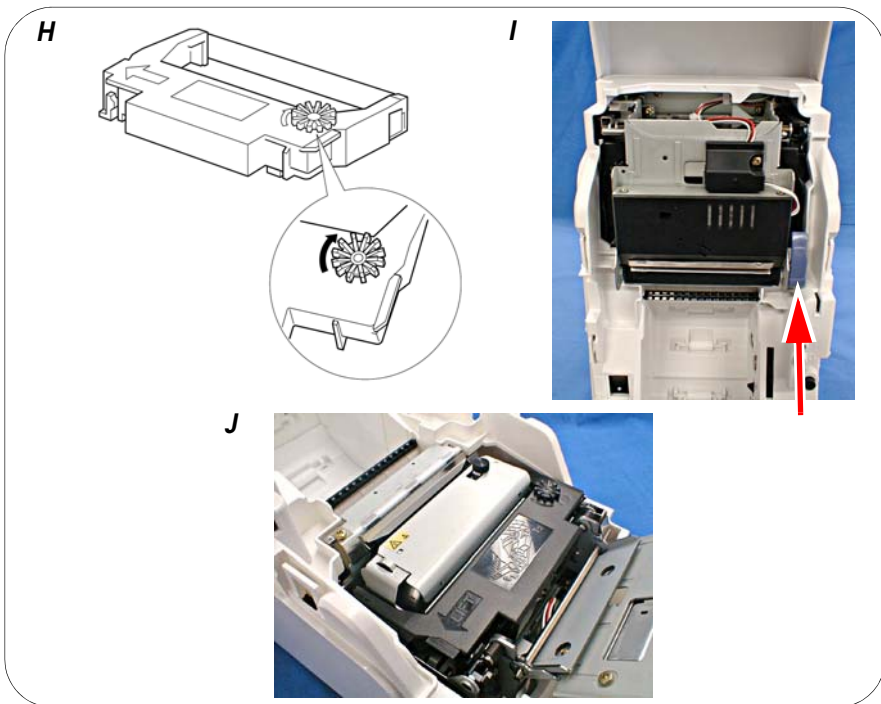
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C







TM-U230

User's Manual

Illustrations

All of the illustrations are at the beginning of this manual. They are identified by letters (A, B, C . . .). In the text the illustrations are referred to by these letters. ("See illustration **A**," for example.) Some of these illustrations have numbered arrows or lines pointing to parts of the illustration. See the list below for the meaning of the numbers.

Illustration A

- 1.Roll paper cover
- 2.Ribbon cassette cover
- 3.Control panel
- 4.Power supply switch

Illustration B

- 5.Interface
- 6.Drawer kick-out connector
- 7.Power supply

Illustration L

- 8.Cutter blade
- 9.Hole

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EMC and Safety Standards Applied

Product Name: TM-U230

Model Name: M166A

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.

Important Safety Information

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

Key to Symbols

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.



WARNING:

Warnings must be followed carefully to avoid serious bodily injury.

**CAUTION:**

Cautions must be observed to avoid minor injury to yourself or damage to your equipment.

Safety Precautions**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. 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:

Print head is hot.



CAUTION:

Be sure not to touch the manual cutter. Otherwise your fingers might be injured.

Purpose of This Manual

This manual provides information to operators of the TM-U230 to describe basic operations to enable safe and correct use of the printer.

Notes for Cleaning the Printer

The following instructions apply only to printers with the fine coating.

A fine coating is used for the external surface of the plastic case of the printer, which makes wiping and removing kitchen stains easy; however, you should note the following when cleaning the surface in order to preserve the quality of the coating (the metal plate and the inside of the case do not have the fine coating):

- Do not scrub the surface with a hard object. Otherwise, the case will be scratched and harder to clean.
- Do not use a cleanser that includes polishing materials such as grains of glass, metal, or ceramics. Otherwise, the case will be scratched and harder to clean.
- Do not use disinfectant, bleach, alcohol, benzine, thinner, chlorine solvent, or ketone solvent. Otherwise, the case will be harder to clean, and the case may be seriously harmed or even deformed and its color may be changed.

Part Names

See illustrations **A** through **L**.

Unpacking

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

- Printer
- Ribbon cassette [ERC-38 (B/R)]
- Roll paper
- Switch panel label used for horizontal installation
- AC adapter [PS-180] (*)

- ❑ Power supply box (case and lid) (*)
- ❑ Hexagonal lock screws (2 pcs) (only for the serial interface)
- ❑ Shorter screws for attaching the lid to the power supply box (2) (*)
- ❑ Longer screws for attaching the power supply box to the printer (2) (*)
- ❑ Usage Precautions for the PS-180 Power Unit (*)

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

Selecting the Place

With its three installation positions, the printer is designed to fit every kitchen. You can install the printer 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). You can also install it horizontally (with the paper exit on top).

Vertical Installation

You can install the printer vertically or hang it on the wall. Illustration **C** shows the printer installed vertically, both with and without the power supply box attached.

Note:

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

Horizontal Installation

You can install the printer horizontally. Illustration **D** shows the printer with the power supply box attached.

Important notes on integrating the PS-180 AC adapter into the printer

When integrating the PS-180 AC adapter into the power supply box of the printer unit, be sure to read the information on the label of the AC adapter (rating, Warning/Cautions) thoroughly and understand it well before you integrate the AC adapter into the printer unit.

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.

Installing the Paper Roll



CAUTION:

Be sure not to touch the manual cutter. Otherwise your fingers might be injured.

Note:

Be sure to use roll paper that meets the specifications.

1. Using scissors, cut the leading edge of the roll paper, as shown in illustration **E**.
2. Open the paper roll cover; then turn on the printer.
3. Insert a paper roll; then hold both edges of the paper and insert it straight into the paper insert slot until the paper is fed automatically, as shown in illustration **F**.

Note:

*Note the direction the paper comes off the roll, as shown in Illustration **G**.*

4. When the paper feeding is finished, tear off the fed paper with the manual cutter.
5. Close the paper roll cover.
6. When the PAPER OUT LED flashes, press the FEED button to set the printer online.

Note on the PAPER OUT LED

When the paper has reached the end or near end, the PAPER OUT LED comes on. The buzzer will also sound if the printer has been set for the buzzer to sound for the end or near end of the paper. Opening the cover to replace paper or pressing the FEED button stops the buzzer sound.

Installing the Ribbon



CAUTION:

Be sure not to touch the manual cutter. Otherwise your fingers might be injured.

Use the EPSON ERC-38. The use of any ribbon cassettes other than those approved by EPSON may damage the printer and will void the warranty.

1. Turn on the printer. Turn the knob on the ribbon cassette, as shown in illustration **H**.
2. Open the paper roll cover and cutter cover.
3. Lift the autocutter, using the tab, as shown in illustration **I**; then insert the new ribbon, as shown in illustration **J**.
4. Turn the knob 2 or 3 times again and check if the ribbon cassette is in the right position.

Troubleshooting

ERROR LED on or flashing.

- ❑ Check to see that the paper roll and cutter covers are closed, and check the PAPER OUT LED. Replace the paper when necessary.
- ❑ If the paper is jammed, remove the jammed paper, following the paper jam description below.
- ❑ Turn off the printer for a few seconds and then turn it back on. If the LED is still flashing, call your supervisor or a service person.

Paper jam.



CAUTION:

Print head is hot.

1. Turn off the printer, open the paper roll cover and cutter cover; then lift the autocutter, using the tab, as shown in illustration **I**.
2. Cut the paper off behind the paper insert slot and remove the paper roll from the printer.
3. Remove the jammed paper by pulling it in the paper feed direction. Always pull the paper in the paper feed direction to prevent damage to the printer mechanism.
4. If paper still remains in the printer, remove the ribbon cassette.
5. Loosen the screw securing the print head cover. Turn the screw only until you can tilt it as shown in illustration **K**.

Note:

Do not remove the screw from the print head cover.

6. Lift up the print head cover; then remove the jammed paper.
7. Replace the print head cover and secure it with the screw.
8. Replace the ribbon cassette and close the autocutter.

Note:

Choose an installation place so that fed paper does not accumulate. Otherwise a paper jam might occur.

The autocutter blade is not in its normal position.

If you can see the blade in the autocutter slit, the blade is not in the normal position. This might be caused by a paper jam.

- ❑ Insert a screwdriver to the right side of the autocutter and turn the gear inside to move the blade to the normal position. See illustration **L**.

DIP Switch Tables

Serial (DIP Switch 1)

SW	Function	On	Off
1	Data receive error	Ignored	Prints "?"
2	Receive buffer capacity	1KB	16KB
3	Handshaking	XON/XOFF	DTR/DSR
4	Word length	7 bits	8 bits
5	Parity check	Yes	No
6	Parity selection	Even	Odd
7	Transmission speed	4800 bps	9600 bps
8	BUSY condition	Receive buffer full	Receive buffer full or Offline

Serial (DIP Switch 2)

SW	Function	On	Off
1	Selects number of characters per line (cpl) 7 × 9 font/ 9 × 9 font	42/35	40/33
2	For internal use only (autocutter) (Do not change)	Enabled	Disabled
3	Pin 6 reset signal	Used	Not used
4	Pin 25 reset signal	Used	Not used
5	PAPER OUT LED flashing pattern	Flashes	Lights on
6	For internal use only (flash memory rewriting) (Do not change)	Enabled	Disabled
7	For internal use only (internal synchronization) (Do not change)	Asynchronous	Synchronous with clock
8	Internal buzzer	Disabled	Enabled

Parallel (DIP Switch 1)

SW	Function	On	Off
1	Auto line feed	Enabled	Disabled
2	Receive buffer capacity	1kB	16KB
3-7	Undefined	-	-
8	BUSY condition	Receive buffer full	Receive buffer full or Offline

Parallel (DIP Switch 2)

SW	Function	On	Off
1	Selects number of characters per line (cpl) 7 × 9 font/ 9 × 9 font	42/35	40/33
2	For internal use only (autocutter) (Do not change)	Enabled	Disabled
3	Undefined	-	-
4	Pin 31 reset signal	Used	Not used
5	PAPER OUT LED flashing pattern	Flashes	Lights on
6	For internal use only (flash memory rewriting) (Do not change)	Enabled	Disabled
7	For internal use only (interface synchronization) (Do not change)	Asynchronous	Synchronous with clock
8	Internal buzzer	Disabled	Enabled

(bps: bits per second)

TM-U230 Specifications

Print method	9-pin serial impact dot matrix
Print font	7 × 9 / 9 × 9
Columns	40 / 42 or 33 / 35
Character size (W × H)	7 × 9: ANK/Graphic 1.2 × 3.1 mm {0.05 × 0.12"} / 1.7 × 3.1 mm {0.07 × 0.12"} or 1.2 × 3.1 mm {0.05 × 0.12"} / 1.6 × 3.1 mm {0.06 × 0.12"} 9 × 9: ANK/Graphic 1.6 × 3.1 mm {0.06 × 0.12"} / 2.0 × 3.1 mm {0.08 × 0.12"} or 1.6 × 3.1 mm {0.06 × 0.12"} / 1.9 × 3.1 mm {0.07 × 0.12"}
Character sets	95 alphanumeric, 37 international characters, 128 × 8 graphic

TM-U230 Specifications

Print speed	3.5 lps (40 columns, 16 cpi) 6.4 lps (16 columns, 16 cpi)
Paper dimensions	76 ± 0.5 × 83 mm {3.0 ± 0.02 × 3.3"}
Paper thickness	0.06 ~ 0.085 mm {0.0024 ~ 0.0033"}
Inked ribbon	ERC-38 (Black, Black/Red)
Ribbon life	Black: 3,000,000 characters, B/R: 1,500,000 characters (Black), 750,000 characters (Red)
Interface (compatible)	RS-232C / Bi-directional parallel / 10 Base T I/F Dealer option: USB
Data buffer	1 KB/16 KB
D.K.D. function	2 drives
Power supply	DC +24 ~ +34 V
Current consumption	Operating: 38 W avg. Standby: 3 W avg.
Temperature	Operating: 0 to 50 °C {32 to 122 °F} Storage: -10 to 50 °C {14 to 122 °F}
Humidity	10 to 90% without condensation
Reliability	MTBF: 180,000 hours, MCBF: 18,000,000 lines
Overall dimensions	259.5 × 166 × 168 mm {10.21 × 6.54 × 6.61"} (H × W × D)
Weight (mass)	Approximately 2.8 kg {6.2 lb}

lps: lines per second, cpi: characters per 25.4 mm (characters per inch)
Inch values are approximate.