

EPSON

PRODUCT INFORMATION GUIDE

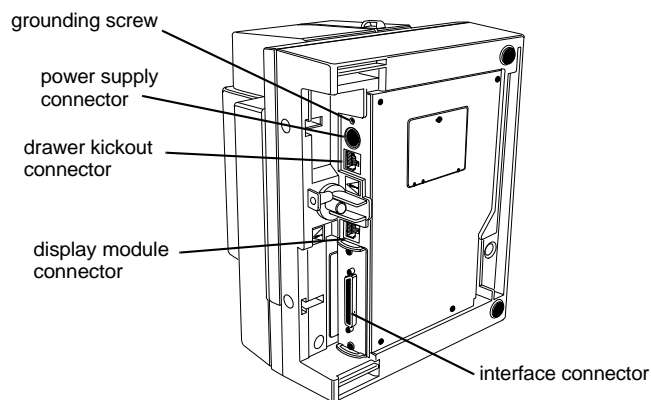
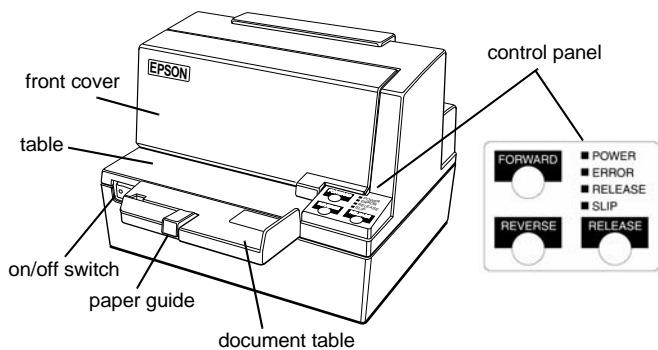
UPDATE FOR SD PRODUCTS

2/27/02

This package provides a POS printer product section to be added to the *EPSON System Device Product Information Guide*. The table of contents of this section is listed below.

EPSON TM-U590

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Paper-feed speed	approximately 3.4"/s {86.4 mm/s} continuous feeding; 60.3 ms/line
Print speed	font a (9 × 9): 233 characters/s font b (7 × 9): 311 characters/s
Line spacing	1/6" {4.23 mm} (default)
Paper type	plain, carbon-copy, and pressure-sensitive
Paper size	2.76 × 2.76 to 8.27 × 11.69" {70 × 70 to 210 × 297 mm (A4 size)}
Paper thickness	Single-ply: 0.0035 to 0.0079" {0.09 to 0.2 mm}
	Copy paper: maximum 5 sheets (original + 4 copies)
	Backing paper: 0.0023 to 0.0059" {0.06 to 0.15 mm}
	Copy + original: 0.0015 to 0.0028" {0.04 to 0.07 mm}
	Carbon paper: approximately 0.0014" {0.035 mm}
	Total thickness: ≤ 0.0118" {0.30 mm} (for from 1 to 4 copies)
	≤ 0.0141" {0.36 mm} (for 5 copies)

Accessories

Options

Option	Model	Part number
Ribbon cassette	Purple	ERC-31
External power supply	PS-170	C32C825321
External power supply (power-saving type)	PS-180	C32C825343

Printer Specifications

Printing

Printing method	9-pin serial impact dot matrix
Wire pitch	1/72" {0.353 mm}
Print direction	bidirectional, minimum-distance
Character structure	font A: 9 × 9 (3-dot spacing in half dots) font B: 7 × 9 (2-dot spacing in half dots) font C: 5 × 9 (1-normal-dot spacing)
Characters per line	font A (9 × 9): 66 font B (7 × 9): 88 font C (5 × 9): 66
Character sets	alphanumeric: 95 characters; international: 32 characters; extended graphics: 128 characters × 10 pages (including a space page)

Interfaces

Standard	RS-232 serial or IEEE-1284 parallel
Options	RS-485, Connect-It™ *

* To find out more about our line of Connect-It interfaces, contact your EPSON Sales Representative

Reliability

Life:	mechanism:	12 million lines
	print head	150 million characters (at 2 dots per wire)
MTBF:		180,000 hours
MCBF:		29 million lines

Environmental Conditions

Temperature range:	operating	41 to 113°F {5 to 45°C}
	storage	14 to 122°F {-10 to 50°C}
Humidity range:	operating	10 to 90% RH
	storage	10 to 90% RH (except paper)

Safety

EMI	FCC Class A
Safety standards	UL 1950/CSA C22.2 No. 950 (Tested using the EPSON's AC adapter.)

DIP Switches

Serial interface

Bank 1	Function	ON	OFF
1	Data reception error	Ignored	Prints "?"
2	Receive buffer capacity	69 bytes	4KB
3	Handshaking	XON/XOFF	DTR/DSR
4	Word length	7 bits	8 bits
5	Parity check	Yes	No
6	Parity selection	Even	Odd
7, 8	Transmission speed	See table below.	

Transmission speed	1-7	1-8	Transmission speed	1-7	1-8
2400	ON	ON	9600	ON	OFF
4800	OFF	ON	19200	OFF	OFF

Bank 2	Function	ON	OFF
1	Handshaking (BUSY)	Receive buffer full	Offline or receive buffer full
2	Customer display	Connected	Not connected
3, 4	Undefined	—	—
5, 6	Internal use. (Do not change.)	—	Fixed to OFF.
7	I/F pin 6 reset	Enabled	Disabled
8	I/F pin 25 reset	Enabled	Disabled

Parallel interface

Bank 1	Function	ON	OFF
1	Auto line feed	Enabled	Disabled
2	Receive buffer capacity	69 bytes	4KB
3—8	Undefined	—	—

Bank 2	Function	ON	OFF
1	Handshaking (BUSY)	Buffer full or reading data	Offline, buffer full, or reading data
2	Reserved	—	Fixed to OFF.
3, 4	Undefined	—	—
5—7	Reserved	—	Fixed to OFF.
8	I/F pin 31 (Do not change.)	Fixed to ON.	—

Control Panel

LEDs

POWER

On when the power is on.

ERROR

On if the printer is offline, except when feeding paper with the FORWARD or REVERSE buttons and during a self-test. Flashing if the head is too hot or there is an error. Turn the printer off, let the head cool, and turn it back on. If still flashing, contact a dealer or qualified service person.

RELEASE

On to indicate that you can insert a slip.

SLIP

On after power on.

Flashes while waiting for slip insertion and removal.

Off while the printer is ejecting a slip.

Buttons

FORWARD

Press to feed slip paper forward one line. Hold down to feed paper forward continuously.

REVERSE

Press to feed slip paper in reverse one line. Hold down to feed paper in reverse continuously.

RELEASE

Press to release slip paper.

Buffer Sizes

Receive	4KB or 69 bytes, selected via DIP switch
User-defined	5KB

Electrical Characteristics


Supply voltage +24 V ± 10% (using the EPSON PS-170 or PS-180)

Current consumption (approximate, at room temperature)

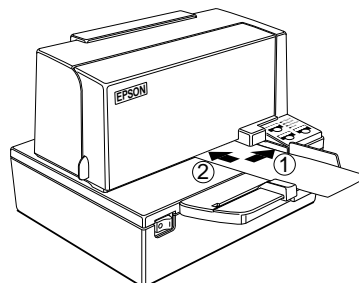
Operating Mean: Approximately 1.9 A
Peak: Approximately 8 A

Standby Mean: Approximately 0.3 A

Inserting Paper

 **Note:** Use only slip paper that matches the specifications. Do not use wrinkled or curled paper.

- When the SLIP LED flashes, insert the slip, using the right edge of the paper inlet as a guide (see the illustration below).
- Insert the slip into the inlet as far as it will go. The sensor detects the slip, and the SLIP LED goes from flashing to on.



- After printing is done, the SLIP LED goes off and you can remove the slip.

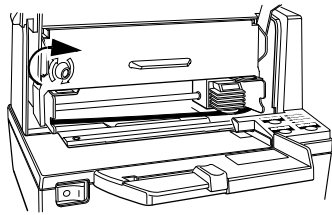
Installing the Ribbon Cassette

Use only the EPSON ERC-31 ribbon. The use of any ribbon cassette not approved by EPSON may damage the printer and will void the warranty.



CAUTION: Never turn the ribbon cassette's feed knob in the opposite direction of the arrow marked on the cassette; otherwise, the ribbon cassette may be damaged.

1. Turn the printer on, and open the front cover by pulling up the tab on the left side.
2. Be sure the print head is on the right side.
3. If a ribbon is already installed, remove it by grasping the end of the tab and removing it from the printer.
4. Turn the cassette knob on the cartridge in the direction of the arrow 2 or 3 times to remove any slack.
5. Insert the ribbon, and rotate the cassette knob 2 or 3 more times, as shown in the illustration below.



6. Be sure the ribbon has no wrinkles or creases and is below the print head as shown on the label inside the printer.

Testing the Printer

1. Hold down the REVERSE button, and turn on the printer. Release the REVERSE button when the SLIP LED starts flashing.
2. Insert slip paper into the unit.
3. The self-test prints the current status of the printer.
4. The self-test automatically ejects the paper after printing "*** completed ***." The printer is ready to receive data as soon as it completes the self-test.



Note: To pause the self-test manually, press the FEED button. Press FEED again to continue the self-test

Clearing a Slip Paper Jam

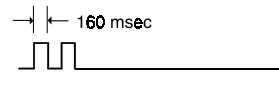
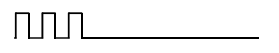
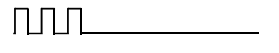
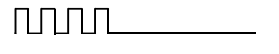
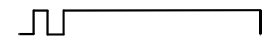
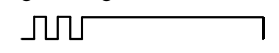
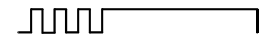
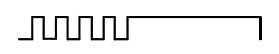
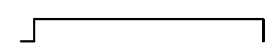


CAUTION: Do not touch the print head after printing, because it can be very hot.
Do not move the print head carriage.

1. If paper is jammed, turn the printer off.

2. Open the front cover, remove the jammed paper, and close the cover.

Error LED Codes

LED pattern	Solution
Home position detection error 	Check detector for dust or dirt. When the problem is solved, the printer can recover after you send a DLE ENQ1 or DLE ENQ2 command.
Carriage detection error 	Check for a foreign object obstructing the carriage. Check detector for dust or dirt. When the problem is solved, the printer can recover after you send a DLE ENQ1 or DLE ENQ2 command.
Front cover open error 	Check detector for dust or dirt. When the problem is solved, the printer can recover after you send a DLE ENQ1 or DLE ENQ2 command.
Slip ejection error 	Check for a paper jam. Check detector for dust or dirt. When the problem is solved, the printer can recover after you send a DLE ENQ1 or DLE ENQ2 command.
Read/write error in memory or gate array 	Turn the printer off and then back on. If problem continues, contact your servicer.
High voltage error 	Contact your servicer.
Low voltage error 	Contact your servicer.
CPU execution error error 	Turn the printer off and then back on. If problem continues, contact your servicer.
Thermistor error 	Turn the printer off. After the print head has cooled, turn the printer back on. If problem continues, contact your servicer.

Related Documentation

- EPSON TM-U590 Service Manual
- EPSON TM-U590 Parts Price List
- EPSON TM-U590 User's Manual
- EPSON TM-U590 Specification