# TM-H6000II with Image Scanner

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

401468100

This TM-H6000II with Image Scanner printer combines slip, impact, and two-color thermal printing with the new image scanner function. The image scanner can digitize a check image, which offers you an efficient method of check processing.

Part Names

1 roll paper cover

2 unit cover

5 control panel

3 front cover

4 power switch
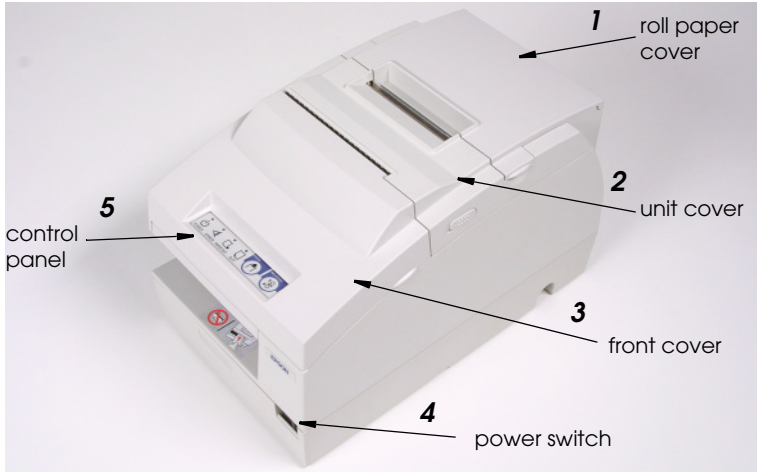
DIP Switch Tables

Serial

SW	Function	ON	OFF
1-1	Data receive error	Ignored	Prints "?"
1-2	Receive buffer capacity	45 bytes	4 KB
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	Handshaking (BUSY condition)	Receive buffer full	Offline or Receive buffer full
2-2	Customer display connection	Connected	Not connected
2-3 2-4	Print density	See Table A.	
2-5 2-6	Internal use. Fixed to Off.		
2-7	I/F pin 6 reset	Enabled	Disabled
2-8	I/F pin 25 reset	Enabled	Disabled

SW	Transmission speed (bps)-bits per second			
	4800	9600	192000	38400
1-7	ON	OFF	ON	OFF
1-8	ON	ON	OFF	OFF

Parallel

SW	Function	ON	OFF
1-1	Auto line feed	Always enabled	Always disabled
1-2	Receive buffer capacity	45 bytes	4 KB
1-3~ 1-8	Reserved. Fixed to Off.		
2-1	Handshaking (BUSY condition)	Receive buffer full	Offline or Receive buffer full
2-2	Internal use. Do not change setting. Fixed to Off.		
2-3 2-4	Print density	See Table A.	
2-5 2-6	Internal use. Fixed to Off.		
2-7	Reserved (for serial interface) Fixed to Off.		
2-8	I/F pin 31 reset signal. Do not change setting. Fixed to On.		

Table A

Print density/low power	SW 2-3	SW 2-4
1 Print density (Light)	ON	ON
2	OFF	OFF
3	ON	OFF
4 Print density (Dark)	OFF	ON

EMC and Safety Standards Applied

Product Name: TM-H6000II with Image Scanner
Model Name: M147D

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
		M147D: Class A

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
	M147D: Class A
	EN 55024
	IEC 61000-4-2
	IEC 61000-4-3
	IEC 61000-4-4
	IEC 61000-4-5
	IEC 61000-4-6
	IEC 61000-4-8
	IEC 61000-4-11

WARNING

M147D is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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. 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. 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 touch the thermal head or paper feed motor. Wait for the head and the motor to be cool. The head and the motor can be very hot after printing for a long time. Touching them may cause burns.

Caution Labels

⚠ WARNING:
Do not connect a telephone line to the drawer kick-out connector or the display module connector; otherwise, the printer and the telephone line may be damaged.

⚠ ⚠ CAUTION:
The thermal head and paper feed motor for the thermal section are hot.

Purpose of This Manual

This manual provides information to operators of the TM-H6000II with Image Scanner to describe basic operations to enable safe and correct use of the printer.

Unpacking

- ❏ Printer
- ❏ Ribbon cassette
- ❏ Power switch cover

- ❏ Roll paper
- ❏ Endorsement ribbon cassette
- ❏ Two hexagonal millimeter screws (only for the serial interface printer)

Control Panel (LEDs and Buttons)

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 out or nearly out.

SLIP LED
Lights when a cut sheet (slip or check) is being printed or when a check is being scanned. Flashes while waiting for a cut sheet to be inserted or removed.

FEED button
Feeds the roll paper.

RELEASE button
Releases a cut sheet (slip or check).

Power Switch Cover

You can use the
enclosed power switch
cover to make sure that
the power switch is not
accidentally pressed.
Just press the cover into
place to install it.

⚠️ *WARNING:*

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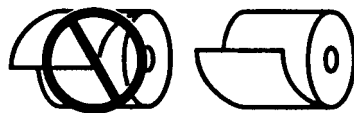when the power switch cover is attached, immediately unplug the
power supply cable to avoid fire.*

Installing the Roll Paper

Note:
*Do not use paper rolls that have the paper glued or taped to the core
because they might cause a paper jam.*

*To prevent paper jams, make sure that nothing obstructs paper coming
out of the paper exit, and do not pull the paper out of the printer.*

Installing the Ribbon

Use the EPSON ERC-32. 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. Open the front cover of the printer, and insert the new ribbon.
2. Turn the knob 2 or 3 times, and check the ribbon position.
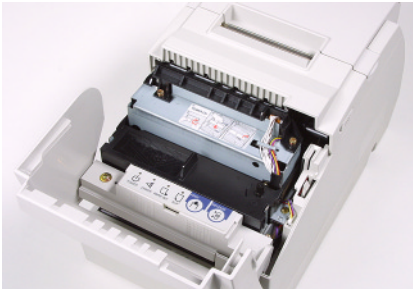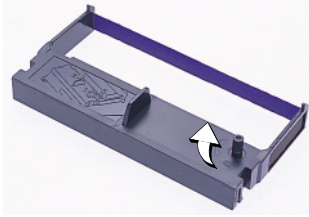
Inserting Slip Paper

Note:
Be sure that the slips are flat, without curls, folds, or wrinkles.

Troubleshooting

Error light on or blinking.

❏ The print head temperature may be extremely high. Wait until the print head cools and the printer resumes printing automatically.

❏ Make sure that the roll paper and unit cover are properly closed.

❏ Turn off the printer, and check for a paper jam.

❏ The autocutter may be jammed. See the description below.

❏ Turn off the power, wait several seconds, and then turn it on again. If the error remains, contact your qualified service person.

The autocutter is jammed or the roll paper cover will not open.

1. Turn off the printer, and open the unit cover.
2. Then turn the knob (A) until you see a pin (B) in the opening.
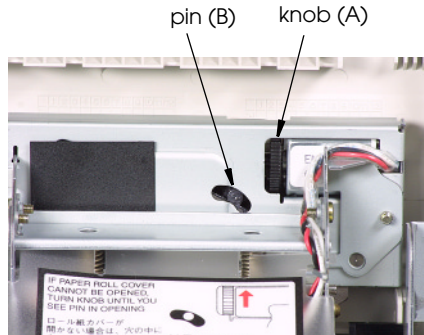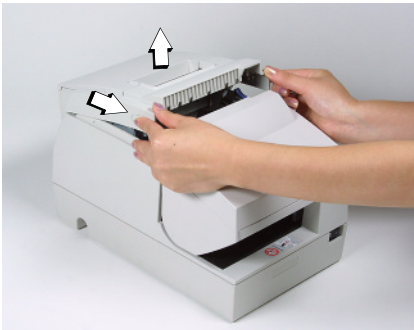
Cleaning the Thermal Print Head

⚠ 🔥 *CAUTION:*

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

To keep good print quality, remove paper dust from the thermal print head as follows.

Be sure that the printer is turned off. Open the roll paper cover and clean the thermal element (the green part) of the thermal print head with a cotton swab moistened with an alcohol solvent (ethanol, methanol, or IPA).

Clean the thermal print head periodically (generally every 3 months) to maintain receipt print quality.
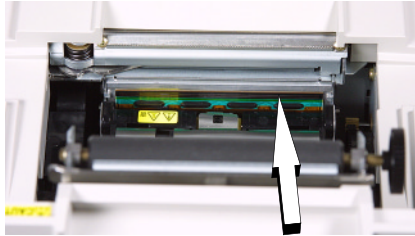

MICR Reading/Image Scanning/Printing (Factory installed options)

With the scanning function, when a check is inserted into the printer, the check image is digitized and stored, which saves check processing time and cost. EPSON recommends the following sequence for single-pass processing. The single pass eliminates the need to turn the check paper over.

1. MICR reading
2. Pre-scanning
3. Endorsement printing (printing on back)
4. Printing on front
5. VOID printing
6. Scanning

Notes on Using the Image Scanner

❏ *Be sure to include the pre-scanning step because it can minimize as much as possible problems of decreasing image data quality caused by environmental temperature, wear of scanner parts, great variation in color shading of the background of a check, and input voltage fluctuation.*

❏ *The quality of image scanning on the front of a check may be reduced by a large variation in density of an ink ribbon cassette.*

❏ *Be sure to consider these other conditions that may reduce image quality:*

- *Extremely low density of handwriting on the front of a check.*
- *Extremely high density of the background of a check.*

- *An extremely large variation in the density and color tone of the background of a check.*
- *Many folds or wrinkles in a check.*
- *Exposure of the image scanning part of the printer to strong sunlight.*
- *A foreign object, such as sand, entering the printer and scratching the glass surface of the scanner.*

⚠ *CAUTION:*

Do not insert checks with staples in them. This may cause paper jams, MICR reading errors, and damage to the MICR head.
Be sure the checks are flat, without curls, folds, or wrinkles.

1. Wait until the SLIP light blinks. Then insert the check *face up* with the right side of the check against the right side of the paper guide as far as it will go. Be sure that the MICR characters are on the right.

MICR characters on this side face up

2. The printer will detect the check and start drawing it in. When the printer starts drawing it in, let go of the check immediately. When the printer ejects the check and the SLIP light starts blinking again, remove the check by pulling it straight out; do not pull it at an angle.

Cleaning the MICR Mechanism

Foreign matter in the mechanism can cause MICR reading errors. Clean the MICR head with a moistened cleaning sheet approximately every 12 months.

Use the following or an equivalent commercially available cleaning sheet:

PRESAT brand (KIC) "CHECK READER CLEANING CARD"

Note:
Be sure not to use an adhesive cleaning sheet.

Follow the steps below:

1. Load roll paper in the printer, turn off the power, then open the roll paper cover and turn the power back on while holding down the RELEASE button.

2. Press the RELEASE button 7 times, then close the roll paper cover. The printer prints the following message on receipt paper, and the SLIP light flashes.

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****   RECOGNITION   MODE ****

        Please set check.
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3. Insert the cleaning sheet like a standard check.

⚠ *CAUTION:*

Be sure that the sheet is inserted with the correct side up and that it is inserted in the correct direction.

Use a cleaning sheet only one time; then discard it.

4. When the sheet is ejected, press the RELEASE button, and remove the sheet from the printer.

Notes on using the MICR reader

Do not install the printer near any magnetic fields. Be especially careful where you install your display device, and be sure to check the recognition rate of the MICR reader with the display device in place.

Make sure that the printer is not subjected to any impact or vibration when it is performing a MICR reading.

Endorsement Printing

If your printer has the optional endorsement printing mechanism, install the endorsement ribbon following the steps below:

Use the EPSON ERC-41. The use of any ribbon cassettes other than those approved by EPSON may damage the printer and will void the warranty.

Note:
Be sure to turn on the power before installing a ribbon cassette.

1. Turn the ribbon cassette knob. Then open the unit cover.
2. Inside the printer, push the levers backward to open the unit.

    Note:
    Do not open the unit during printing.

3. Insert the ribbon and turn the knob again to seat the ribbon; then close the printer.
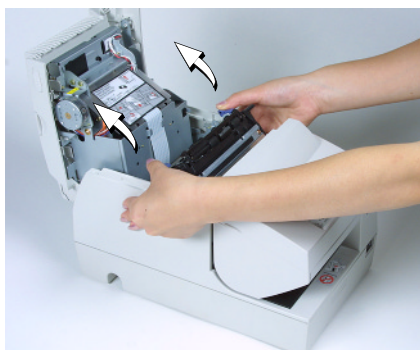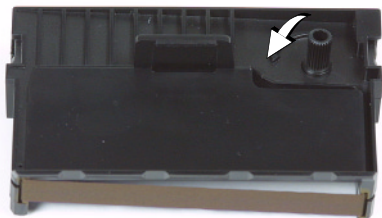
Cleaning the Scanner

The glass part of the scanner may become dirty due to ink or paper dust, which can decrease the image quality. To avoid this, clean the glass part every 12 months.

1. Open the unit cover.
2. Inside the printer, push the levers backward to open the unit.
3. Wipe the glass gently with a soft, dry cloth.

Note:
Do not use any liquid, such as alcohol, benzine, or water.

glass part

TM-H6000II Specifications

Print method	Receipt: Thermal line, 180 dpi × 180 dpi Slip: 9-pin serial impact dot matrix Endorsement: 8-pin shuttle impact dot matrix (dpi: dots per inch (number of dots per 25.4 mm {1"}))
Print font	Receipt: 12 × 24/9 × 17 Slip: 5 × 9/7 × 9 Endorsement: 5 × 7
Columns	Receipt (Standard): 42/56 Slip: 45/60 Endorsement: 40

Character size
(W × H)
	Receipt: 1.41 × 3.39 mm {0.06 × 0.13"}
	                  0.99 × 2.40 mm {0.04 × 0.09"}
	Slip: 1.56 × 3.1 mm {0.06 × 0.12"}
	                  1.24 × 3.1 mm {0.05 × 0.12"}
	Endorsement: 1.1 × 2.42 mm {0.04 × 0.10"}

Character sets	95 alphanumeric, 37 international characters 128 × 11 (slip: 12) graphic

Print speed	Receipt:
	  Normal: Max.: 170 mm/s {approx. 6.7"}
	  Ladder bar code/2-dimensional code printing:
	    Max.: 114 mm/s {approx. 4.5"}
	  Two-color printing: Maximum: 75 mm/s {approx. 3.0"}
	Slip: Approx. 5.14 lps
	Endorsement: Approx. 1.9 lps
	 (lps: lines per second)

Paper dimensions	Receipt: Thermal roll paper 79.5 ± 0.5 × 83 mm {3.13 ± 0.02 × 3.27"} Slip/endorsement: 68 ~ 230 × 68 ~ 297 mm {2.7 ~ 9.1 × 2.7 ~ 11.7"} (W × L) Note: the minimum size is 68 × 152 mm {2.7 ~ 6.0"}
Paper thickness	Slip (single-ply): 0.09 ~ 0.2 mm {0.0035 ~ 0.0079"} Endorsement: 0.09 ~ 0.2 mm {0.0035 ~ 0.0079"}
Copy capability	Receipt/Endorsement: Single-ply Slip: 1 original + 3 copies
Thermal paper type	Monochrome: NTP080-80, Two-color: ENTPB080080
Inked ribbon	Slip: ERC-32(P), (B) Endorsement: ERC-41(P), (B)

TM-H6000II Specifications

Ribbon life	Slip: Purple: 6 million characters, Black: 4 million characters Endorsement: Purple: 1 million characters, Black: 800,000 characters
Interface (compatible)	RS-232/IEEE 1284 Bidirectional Parallel
Data buffer	Selectable for 45 bytes or 4 KB using DIP switch
D.K.D. function	2 drives
Power supply	+24 VDC ± 10%
Current consumption	Slip: Approximately 1.7 A (mean) Receipt: Approximately 1.9 A (mean)
Temperature	Operating: 5 to 45°C {41 to 113°F} Storage: –10 to 50°C {14 to 122°F}
Humidity	Operating: 10 to 90% RH Storage: 10 to 90% RH

Reliability	Receipt: MTBF: 360,000 hours, MCBF: 52 million lines
	Slip: MTBF: 180,000 hours
	   MCBF: 18 million lines (when the printer is used with the MICR and
	   performs both-sided printing)
	Endorsement: MTBF: 180,000 hours, MCBF: 3,300,000 lines

Overall dimensions	185 × 186 × 298 mm {7.28 × 7.32 × 11.73"} (H × W × D)
Mass	Approximately 6.2 kg {13.7 lb}

Image Scanner Specifications

Image scanner type	CIS (Contact Image Sensor)
Resolution	200 dpi × 200 dpi (W × H) (dpi: dots per inch (number of dots per 25.4 mm {1"}))
Image scanning mode	Black and white
Image scanning area	Width: 100 mm (typ.)
Image scanning speed	120 mm/s
Data compression	CCITT Group 4
Data transmission format	TIFF (If data is not compressed, the format is raw data or BMP.)