



User Guide

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1 General best practices

Before installing and using the printer, carefully read the following items. To keep your printer in optimal operating condition, follow these guidelines.

- Install the printer on a flat and stable surface.
- For convenient operation and maintenance, reserve adequate space around the printer.
- Keep the printer away from water, and avoid direct exposure to sun, strong light, and fire.
- Do not use or store the printer in a place exposed to high temperature, moisture, or serious pollution.
- Do not install the printer in a place exposed to vibration or impact.
- Do not allow condensation to form on the printer. If condensation does form, do not turn on the printer until the condensation has evaporated completely.
- Do not let water or conductive materials, such as metal, enter the printer. If this happens, immediately turn off the printer.
- If there is no paper loaded in the printer, do not attempt to print anything. Printing when no paper is loaded damages both the print head and platen roller.
- To ensure print quality, use the recommended paper.
- To keep the print head in good condition, set the print darkness to the lowest grade that provides acceptable print quality.
- Only a manufacturer-certified technician should disassemble or repair the printer.
- When necessary, reference this user guide.

2 Specifications

Printing specifications

Table 2-1 Printer specifications and their parameters

Printer specification	Parameter
Print method	Direct line thermal printing
Print resolution	203 × 203 DPI
Paper width	57.5 mm
Print width	Maximum 48 mm
Print speed	Maximum 90 mm/s
USB interface	USB 2.0 port (full speed)
Cash drawer interface	Can control 1 or 2 cash drawers
Memory	<ul style="list-style-type: none">• RAM: 8 MB• Flash: 8 MB
Printer status detection	<ul style="list-style-type: none">• Paper end sensor/paper presence detection• Open cover detection• Print head temperature detection• Printer voltage detection• Cutter anomaly detection
Cut mode	<ul style="list-style-type: none">• Full cut• Partial cut
1D barcodes	<ul style="list-style-type: none">• UPC-A• UPC-E• Code 39• Code 93• Code 128• EAN8• EAN13• ITF• CODABAR
2D barcodes	<ul style="list-style-type: none">• PDF417• QR• GS1
Fonts	<ul style="list-style-type: none">• Font A: 12 × 24

Table 2-1 Printer specifications and their parameters (continued)

Printer specification	Parameter
Character set	<ul style="list-style-type: none"> Font B: 9 × 17 Kanji font A: 24 × 24 95 alphanumeric 14 types of international characters 128 × 68 code page User-defined font (95) and code page Optional: Traditional Chinese, Simplified Chinese (GB2313/18030), Japanese, Korean, English, HK
Character enlargement	Enlarge up to 6 times horizontally and vertically
Character rotation	Rotation printing in four directions (0°, 90°, 180°, 270°)
Command	ESC/POS compatible
Paper type	Thermal continuous paper
Paper roll OD	Maximum 51 mm
Paper thickness	0.06 mm–0.08 mm thermal paper
Power supply input	9 V/3.6 A DC
Human-machine interface power switch	Support
Human-machine interface button	Support
Lifetime of print head	≥ 50 Km (standard test sample with 12.5% duty ratio)
Lifetime of cutter	500,000 cuts (standard test condition)
Operation temperature and humidity	-10°C–45°C, 20%–90% relative humidity (RH)
Storage temperature and humidity	-30°C–65°C, 10%–95% RH
Overall dimensions	96 mm (L) × 96 mm (W) × 121 mm (H)

Cutter specifications

Table 2-2 Cutter specifications and their parameters

Cutter specification	Parameter
Cutting method	Sliding blade
Cutting time	1 s (per cut)
Cutting interval	2 s
Applicable paper types	0.06 mm–0.08 mm thermal paper
Operation voltage	9 V DC
Maximum operation current	350 mA
Cutter lifetime	500,000 cuts (standard test condition)

Paper specifications

Table 2-3 Paper specifications and their parameters

Paper specification	Parameter
Paper type	Thermal paper
Paper supply mode	Paper roll
Paper width	57.5 mm
Paper thickness	0.06 mm–0.08 mm
Thermal layer	Outward
Paper roll	Paper roll OD maximum $\phi 51$ mm, core ID minimum $\phi 11.5$ mm

NOTICE: Use either the recommended paper or an equivalent quality paper. Using low-quality paper might affect the print quality and shorten the lifetime of the print head.

Do not insert paper into the core shaft.

If the paper is contaminated by chemicals or oil, it might become discolored or lose heat sensitivity at the contaminated spot, which affects the print quality.

Do not rub the paper surface with hard objects, because this might affect the print quality.

If the environment temperature is above 70°C, the paper discolors. Do not use or store the paper in high temperature, high humidity, or strong light environments.

3 Components

Front and top

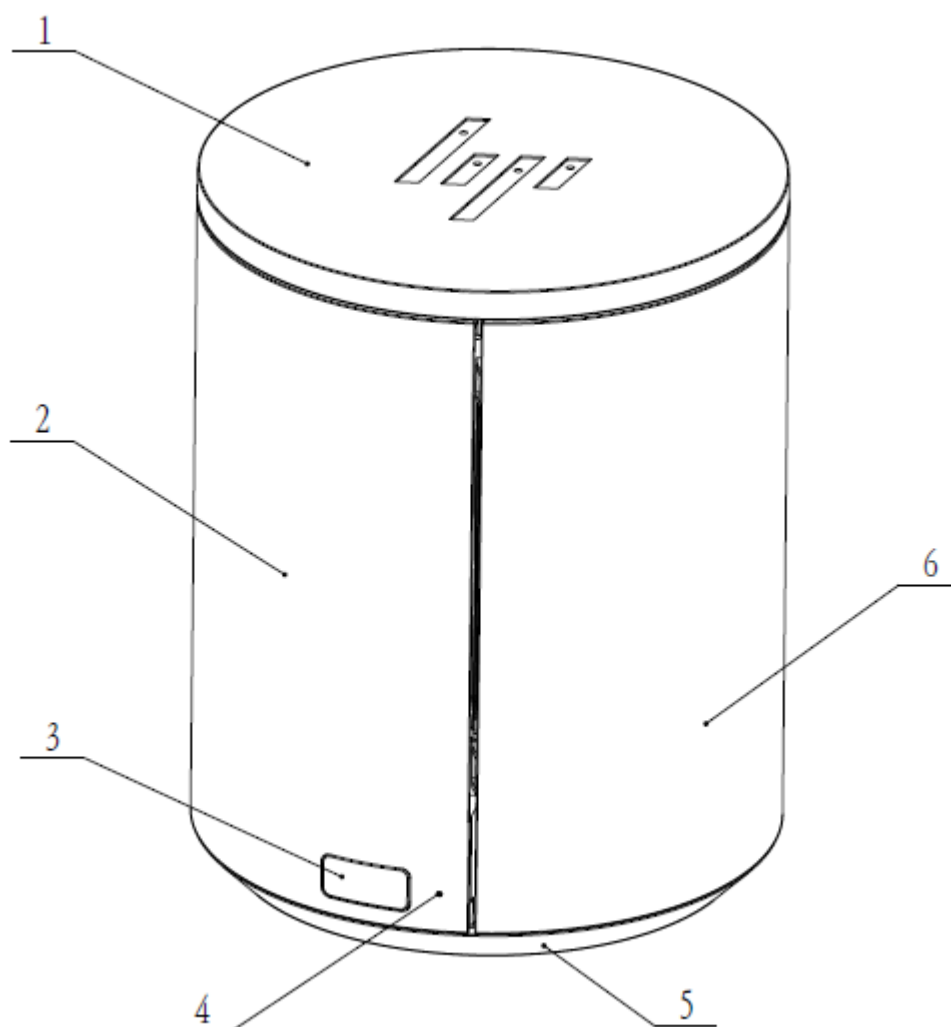


Table 3-1 Front and top components

Component	
1	Top cover
2	Case
3	Button
4	Error light

Table 3-1 Front and top components (continued)

Component	
5	Base
6	Case cover

Light

Table 3-2 Light status and description

Status	Error
Flashing slowly	The print head is overheating.
Flashing slowly	The printer voltage is abnormal.
Flashing slowly	There is a cutter error.
Flashing slowly	The print head is lifted up.
Flashing slowly	The paper roll needs to be replaced.

NOTICE: The temperature of the print head is detected by a thermal resistor. If the print head is overheating, the protective circuit automatically turns off the power to the printer and stops the current print operation.

Bottom

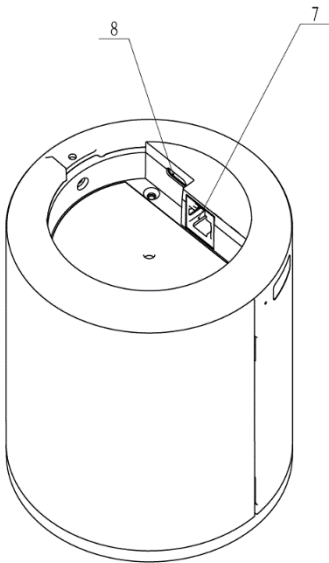


Table 3-3 Bottom components

Component	
7	Cash drawer connector
8	USB Type-C port and power connector

Internal

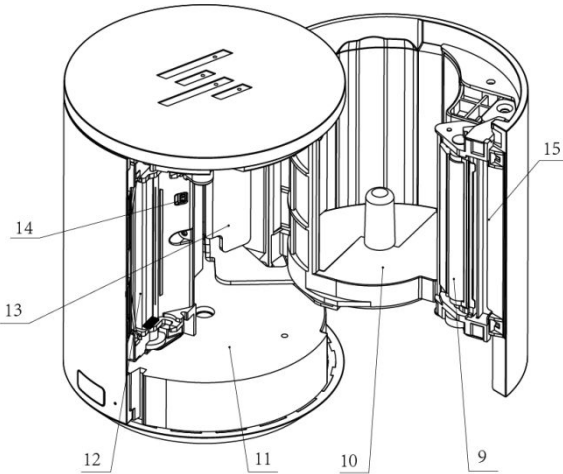


Table 3-4 Internal components

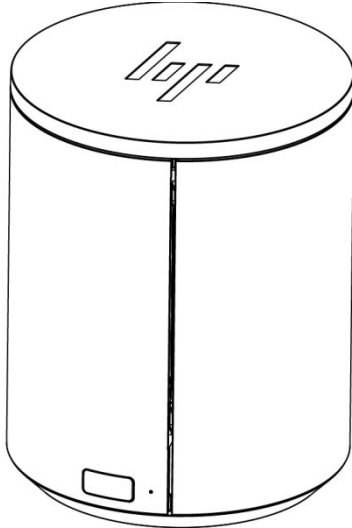
Component	
9	Platen roller
10	Paper roll holder
11	Mechanism chassis
12	Print head
13	Pendulum block
14	Paper presence sensor
15	Guide paper board

4 Setup

Placing the printer

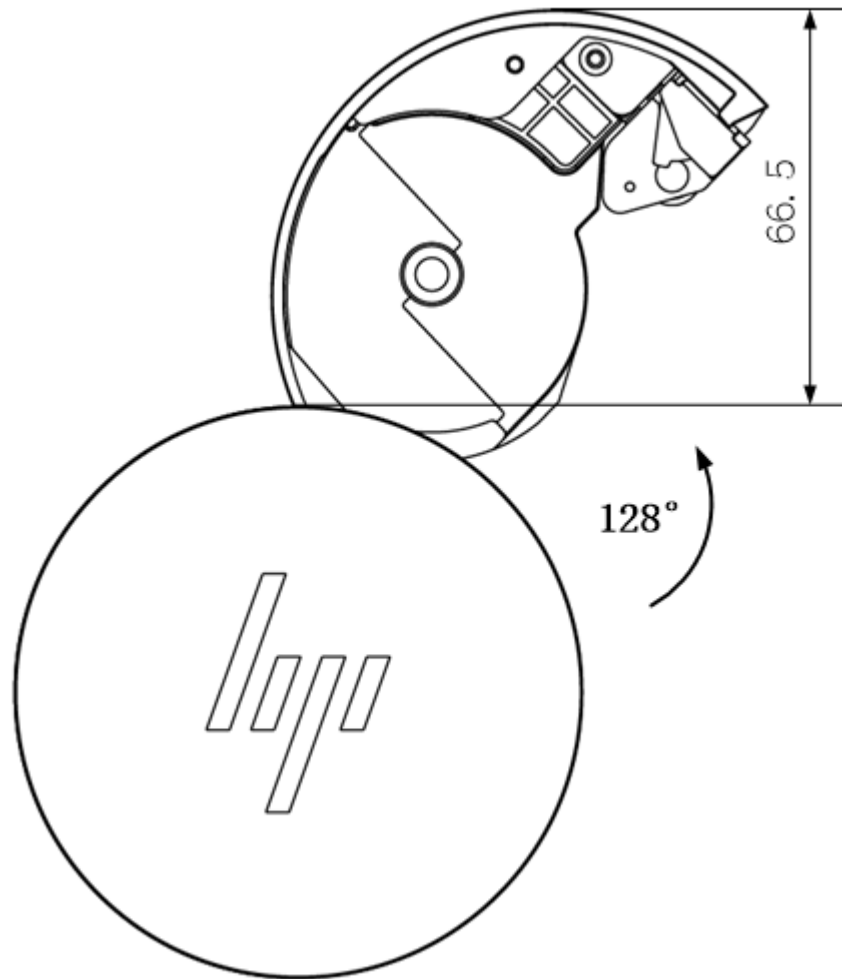
Use the following guidelines to properly place the printer.

- Place the printer horizontally on the table. The incline installation angle must not exceed 5°.



- Do not place the printer near a water source.
- Do not place the printer in an environment exposed to vibration and impact.
- Be sure that the printer power supply is grounded.

- Be sure that there is space around the printer for convenience during operation and maintenance. There must be room to open the case 128°.

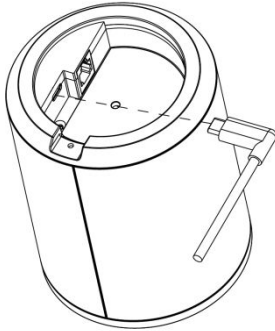


Downloading the drivers

1. Go to <http://www.hp.com/support> and follow the instructions to find your product.
2. Download and install the latest drivers.

Connecting the printer to power

1. Before setting up the printer, turn off the host computer and other attached devices.
2. Connect a USB Type-C cable to the USB Type-C port and power connector.



3. Connect the other end of the USB Type-C cable to a USB Type-C port and power connector connected to the host computer.



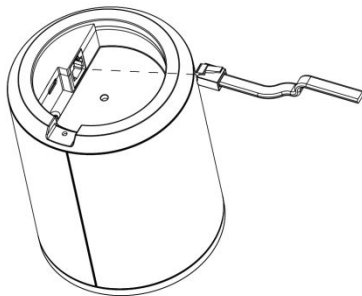
NOTE: Never disconnect from the computer while the printer is on.

Connecting the cash drawer

1. Before setting up the printer, turn off the host computer and other attached devices.
2. Connect the cash drawer cable to the cash drawer connector.



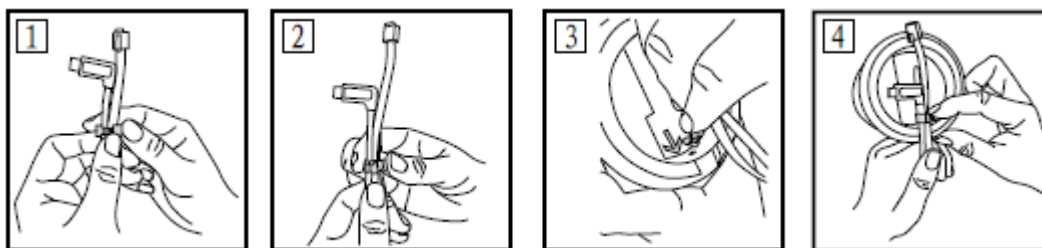
NOTE: Do not attempt to connect a telephone cable to the cash drawer connector.



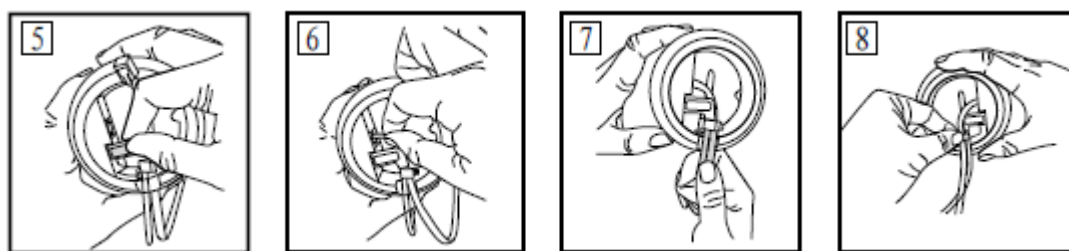
Using the cable clip

1. Insert the cables into the clip (1).
2. Slightly tighten the clip (2).

3. Insert the end of the buckle into the hole on the printer case (3) and then slide the clip along the buckle until it cannot move (5).

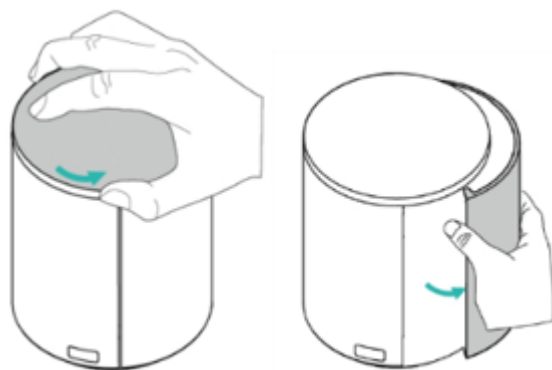


4. Connect the USB Type-C cable (5) and the cash drawer cable (6) to the appropriate ports.
5. Be sure the cables are routed through the hole in the printer case (7), and then tighten the clip until it is locked (8).



Installing a paper roll

1. Verify that you have the correct paper roll. See [Paper specifications on page 4](#).
2. Turn off the printer.
3. Rotate the top cover counterclockwise until the cover assembly ejects, and then open the cover assembly.



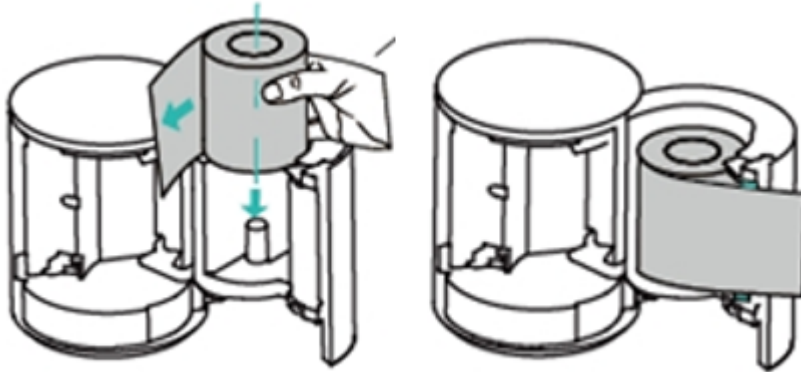
4. Place the paper roll into the paper compartment, and then pull the edge of the paper past the cover.



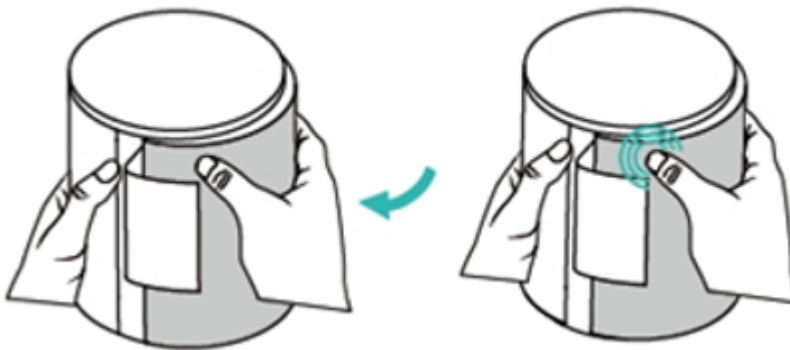
NOTE: Be sure the thermal side of the paper roll is exposed.

To prevent paper jams and other malfunctions, be sure that the paper is tightly rolled and that the paper is inserted in the middle of the paper guide stop.

Be sure that the paper roll is installed horizontally and not at an incline.




5. Rotate the cover clockwise until it is fully closed.



Starting the printer

- ▲ After the printer is connected to the host computer and power via USB Type-C and a paper roll is installed, the light turns green. Press the paper feed button to prepare for printing.

5 Maintenance

 **IMPORTANT:** Before starting maintenance, be sure that power is disconnected from the printer.

Do not use organic solvents such as gasoline or acetone.

Do not restore power to the printer until the isopropyl alcohol completely evaporates.

Perform this maintenance cycle once a month.

Cleaning the print head and platen roller

1. Turn off the printer and twist the top cover counterclockwise to open it.
2. If you have recently printed, wait for the print head to cool completely.
3. Dampen a piece of cotton with isopropyl alcohol, and use it to wipe the dust and stains from the surface of the print head and the platen roller.
4. After the isopropyl alcohol has completely evaporated, close the top cover.

Cleaning the sensor

When the printer cannot identify the mark effectively, you must clean the sensor.

1. Turn off the printer and twist the top cover counterclockwise to open it.
2. Dampen a piece of cotton with isopropyl alcohol, and use it to wipe the dust and stains from the sensor.
3. After the isopropyl alcohol has completely evaporated, close the top cover.

Clearing jammed paper

1. Turn off the printer and twist the top cover counterclockwise to open it.
2. Clear and reload the paper.
3. Close the top cover and restore power to the printer.

Resetting the cutter

1. Turn off the printer and twist the top cover counterclockwise to open it.
2. Close the top cover and restore power to the printer to automatically reset the cutter.
3. Then, clear the paper jam. See [Clearing jammed paper on page 13](#).

6 Interface signal

USB interface

Interface specifications

Table 6-1 USB interface specifications

Parameter	Specifications
Data transmission	USB 2.0 full-speed protocol
Connector	USB Type-C connector (supports USB hub)

Interface signal definition and function

Table 6-2 Interface signal definition and function

Pin number	Signal name	Description
A4/B4/A9/B9	VBUS	Power
A7/B7	DATA-	Data minus
A6/B6	DATA+	Data plus
A1/B1/A12/B12	GND	Ground

Interface connector



Table 6-3 Interface pin numbers and signals

Pin number	Signal name
A1	GND
B12	GND
A2	TX1+
B11	RX1+
A3	TX1-
B10	RX1-

Table 6-3 Interface pin numbers and signals (continued)

Pin number	Signal name
A4	VBUS
B9	VBUS
A5	CC1
B8	SBU2
A6	D+
B7	D-
A7	D-
B6	D+
A8	SBU1
B5	CC2
A9	VBUS
B4	VBUS
A10	RX2-
B3	TX2-
A11	RX2+
B2	TX2+
A12	GND
B1	GN

Mode

The USB interface can work in either API mode or Windriver mode. API mode is the manufacturer self-defined mode, which requires you to install the USB driver provided by the manufacturer. Windriver mode is also called class mode and requires only the generic driver. The default setting is API mode. To use the printer with a Linux® computer, switch to class mode.

Cash drawer interface

Electrical specifications

Table 6-4 Electrical specifications

Parameter	Specifications
Driving voltage	24 V DC
Driving current	Maximum 1 A
Cash drawer status detection signal	“L” = 0 V–0.5 V; “H” = 3.3 V

Interface connector

The cash drawer connector is an RJ-12 6P connector.



Interface signal definition and function

Table 6-5 Interface signal definition and function

Number	Signal name	Description
1	FG	Frame ground
2	DRAWER 1	Cash drawer 1 driving signal
3	DRSW	Cash drawer status detection signal
4	VDR	Cash drawer driving power
5	DRAWER 2	Cash drawer 2 driving signal
6	GND	Circuit share ground