



User Guide

HP Engage One Column Printer

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Product notice

This guide describes features that are common to most models. Some features may not be available on your computer.

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About This Guide

This guide provides basic information for upgrading this computer model.






-  **WARNING!** Indicates a hazardous situation that, if not avoided, **could** result in death or serious injury.
 -  **CAUTION:** Indicates a hazardous situation that, if not avoided, **could** result in minor or moderate injury.
 -  **IMPORTANT:** Indicates information considered important but not hazard-related (for example, messages related to property damage). An Important alert warns the user that failure to follow a procedure exactly as described could result in loss of data or in damage to hardware or software. Also contains essential information to explain a concept or to complete a task.
 -  **NOTE:** Contains additional information to emphasize or supplement important points of the main text.
 -  **TIP:** Provides helpful hints for completing a task.
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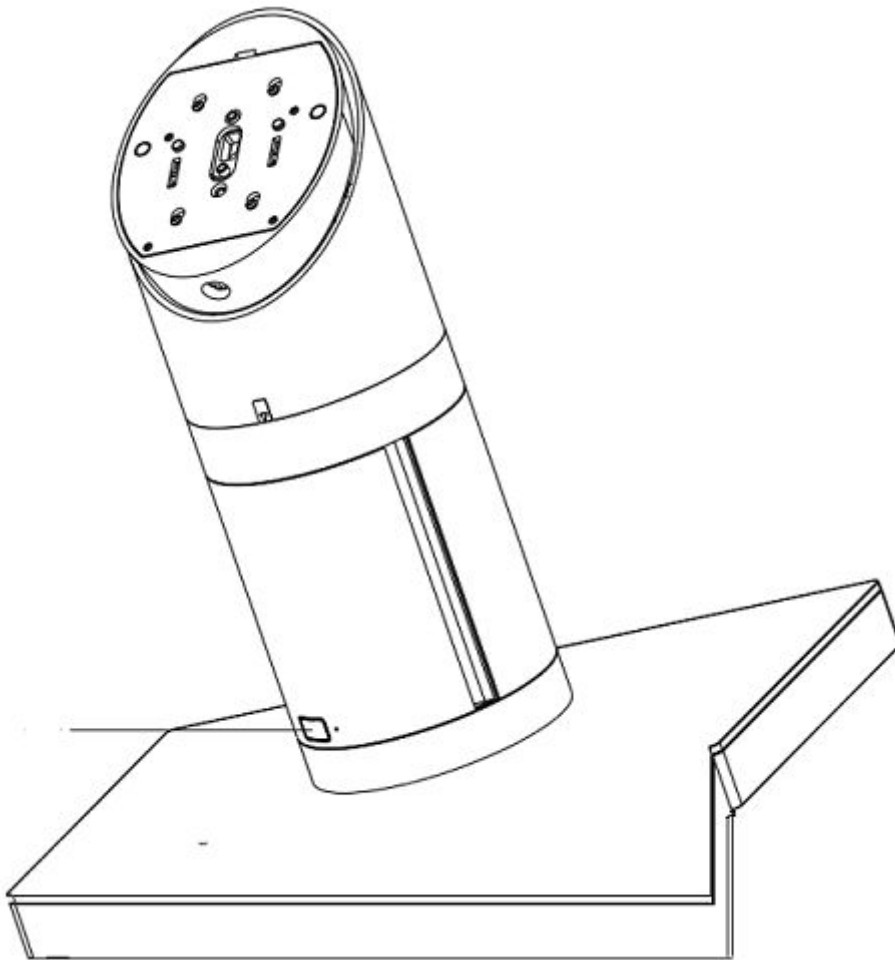
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1 Getting started

The column printer is easy to install, use, and maintain. The clamshell design allows you to snap open the receipt cover and drop the paper roll in place. You do not need to change a printer ribbon or cartridge because the printer uses thermal print technology.

Components

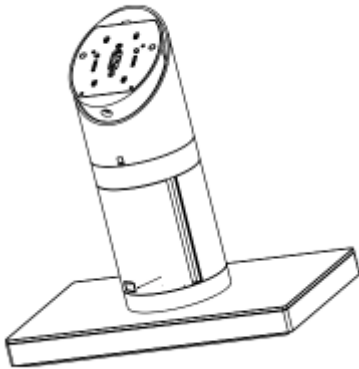
Paper feed button



During normal use, the paper feed button advances the paper. You can also use it to access the configuration menu. See [Entering configuration mode on page 9](#).

If the energy-savings feature is enabled and the printer has entered the energy-savings mode, pressing the paper feed button ends the energy-savings mode.

Light



The green light indicates basic information about the printer status. A solid green light means that the printer is on and operating normally. A blinking light means that the printer needs operator assistance, probably because the cover is not fully shut. Try opening and closing the cover until the flashing stops, or see [Troubleshooting the printer on page 12](#).

Communication interfaces

You can connect the printer to the system via USB.

Labels

The model ID is located on the model label attached to the inside of the printer.

Startup routine

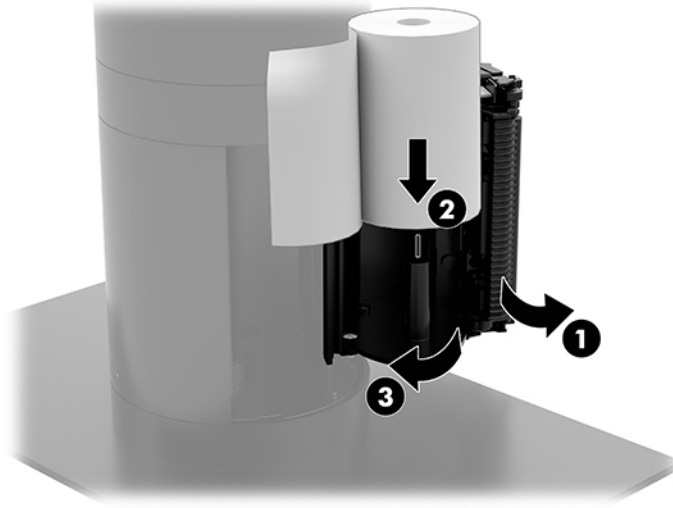
A single beep means that the printer has successfully completed its startup routine. It beeps after you turn on or restart it.

If the printer beeps twice, it might be experiencing a problem. See [Troubleshooting the printer on page 12](#).

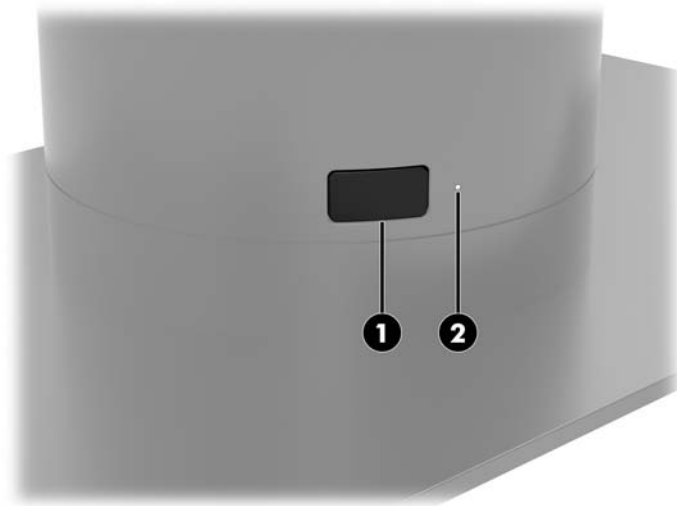
Loading the printer receipt paper

1. Open the receipt cover by pushing up evenly on each side of the cover until it unsnaps (1).
2. Remove the test printout or used paper roll if necessary. Otherwise, remove the used paper roll.
3. Place the receipt paper into the paper compartment on the spindle so that it unrolls from the inside (2). Leave a few inches of paper sticking out of the printer. To prevent jamming, make sure the paper is between the guidelines.

4. While holding the paper in place, close the receipt cover (3) making sure to apply a little more pressure after the first click to ensure that it is fully latched. When fully latched with paper installed, the light stops blinking.

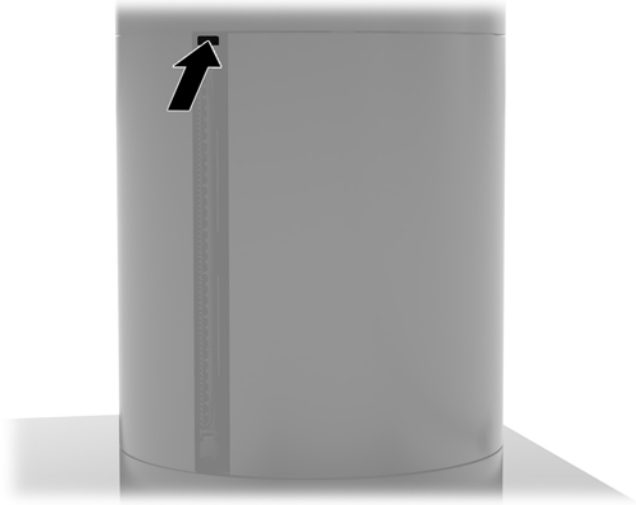


5. To test that the paper is loaded correctly, advance the paper with the paper feed button (1), and then tear the excess paper off against the knife on the cover. A solid green light (2) means that the printer is on and operating normally. If the light is flashing, the cover might not be completely shut.



Latch failsafe

In the event that the receipt cover becomes stuck, the printer has a failsafe to release the cover's latches. Using a thin pointed object, press the rectangular button adjacent to the printhead. With enough pressure, the latches should release, and the receipt cover should open.



2 Using the column printer

Standard features

Table 2-1 Standard features and their descriptions

Standard features	Description
Interface	USB
Memory/firmware	8 MB flash memory, History EEROM, 4 K buffer
Energy-savings	Option to configure printer to enter low-power (1 W) idle state if no data is received after user-specified number of minutes
Resident character sets	PC code pages 437 (US), 720 (Arabic), 737 (Greek), 775 (Baltic), 850 (Multilingual), 852 (Latin II), 857 (Turkish), 858 (with Eurosymbol), 860 (Portuguese), 862 (Hebrew), 863 (French Canadian), 864 (Arabic), 865 (Nordic), 866 (Cyrillic), 874 (Thai), 1250 (Windows® Central Europe), 1251 (Windows Cyrillic), 1252 (Windows Latin I), 1254 (Windows Turkish), 1255 (Windows Hebrew), 1256 (Windows Arabic), 1257 (Windows Baltic), 28591 (Windows Latin 1), 28592 (Windows Latin 2), 28594 (Windows Baltic), 28596 (Windows Arabic), 28599 (Windows Turkish), 28605 (Windows Latin 9), Katakana, and KZ_1048 (Kazakh)
Downloadable fonts	Code pages 932 (Kanji), 949 (Korean), 936 (Simplified Chinese), and 950 (Traditional Chinese)
Integrated bar codes	Code 39, Code 93, Code 128, UPC-A, UPC-E, JAN8 (EAN), JAN13 (EAN), Interleaved 2 of 5, Codabar, Code 128, PDF-417 (two-dimensional), Code 128 extended, GS1 Databar, QR code, and Datamatrix
Print	Monochrome in either 44 (standard) or 56 (compressed) columns on 80 mm wide thermal paper
Paper path	80.0 mm
Roll Diameter	50.8 mm max. (2 inches)
Print resolution	8 dots/mm
Speed	Up to 114 mm/second throughput (monochrome)
Paper sensing	Paper out
Human interface	Audible tone from speaker (software-driven). You can issue simple commands in the configuration menu through the paper feed button. Green LED status light, located next to the paper feed button.
Cash drawer driver	Connector for one or two cash drawers (obtain a Y cord for two drawers)
Knife	Paper cutter standard on all units


Printing features

The printer is versatile, with diverse printing options available. Text, graphics, and bar codes can be presented in many different forms and sizes.

When to change the receipt paper

Change the paper when it is near the end of the roll or when the roll is empty. When the paper is low, you must monitor usage to avoid running out part of the way through a transaction. When the roll is empty, you must load a new roll immediately or data may be lost.

- When the paper is low, a colored stripe appears on the receipt paper (if the paper purchased has a stripe), indicating that enough paper remains for a small transaction.
- When the roll is empty, a green light on the printer blinks quickly, indicating that the paper must be installed.

 **IMPORTANT:** Do not try to operate the printer or host computer if the printer runs out of paper. The printer may continue to accept data from the host computer even though it is unable to print. Data may be lost as a result.

For instructions on how to change the receipt paper, see [Loading the printer receipt paper on page 2](#).

Testing the printer

If the printer is functioning normally, it beeps once. Otherwise, see [Troubleshooting the printer on page 12](#).

The printer configuration appears on the test (diagnostics) printout.


To run a diagnostic test or verify the configuration:

1. Make sure that paper is loaded in the printer.
2. Open the receipt cover.
3. Press and hold the paper feed button.
4. Continue to hold the paper feed button and close the receipt cover.
5. Continue to hold the paper feed button until the configuration printout begins.

Preventing overheating of the printhead

There are restrictions on the duty cycle because of the heat generated by the thermal printhead when printing solid blocks (regardless of the length of the block in relation to the print line). The restrictions are ambient temperature, the percentage of time (measured against one minute) of continuous solid printing, and the amount of coverage.

Ambient temperature might be affected by factors such as direct exposure to sun or close proximity to heating elements.

 **IMPORTANT:** When the duty cycle exceeds the limits shown in the table, the receipt printhead heats up and shuts down. This might damage the printhead.

To avoid this issue:

- Reduce the amount of coverage.
- Reduce the time of continuous solid printing.
- Reduce the ambient temperature.

The percentages in the following table are the percentage of time that the specified amount of solid coverage can be printed during a 1 minute period. That is, at 20% solid coverage at a 35° C ambient temperature, a 50% duty cycle is used, resulting in 30 seconds with printing and 30 seconds without printing.

Table 2-2 Allowable duty cycle (measured over 1 minute of continuous printing)

Amount of solid coverage	25°C ambient temperature	35°C ambient temperature	50°C ambient temperature
20%	100%	50%	20%
40%	50%	25%	10%
100%	20%	10%	4%

A typical receipt with text (contains some blank spaces) is approximately 12% dot coverage.

A full line of text characters (every cell on the line has a character in it) is approximately 25% dot coverage.

Graphics are approximately 40% dot coverage.

Barcodes are approximately 50% dot coverage.

A solid black line is 100% dot coverage.

Thermal paper specifications

The printer requires qualified thermal paper with the following dimensions:

- **Width:** 80 +0/-0.6 mm (3.15 +0/-0.03 inches)
- **Diameter:** 50.8 mm maximum (2 inches)

The paper must not be attached at the roll's core. Use paper with a colored stripe at the end to indicate that the paper is running low.

The previous figures are based on a core diameter of 22 ± 0.5 mm (0.87 inches) outside and 11.5 ± 0.5 mm (0.45 inches) inside.

Qualified paper grades

Contact the manufacturer of your choice to order paper. HP recommends the following paper grades produced by their respective manufacturers. Many paper manufacturers are qualified to provide this paper, provided the POS paper rolls are from the recommended grades for monochrome (black ink) paper.

Table 2-3 Qualified manufacturers of monochrome (black ink) paper

Qualified manufacturers	Phone/Fax	Paper grade
Appvion, Inc. (USA)	Voice: (800) 922-1729	Alpha 400-2.3 (was T1030)
825 E. Wisconsin Ave.	Fax: (800) 922-1712	Alpha 800-2.4 (was T1012A)
Appleton, WI 54912		POS-Plus 600-2.4
http://www.appvion.com		Alpha 900-3.4 (was Superior)
		All current Appvion papers are BPA-free
Jujo Thermal Ltd.	Voice: 358 (0) 10 303 200	AF50KS-E3
P.O. Box 92 FI-27501	Fax: 358 (0) 10 303 2419	AP62KS-E3
Kauttua, Finland		
http://www.jujothermal.com/		

Table 2-3 Qualified manufacturers of monochrome (black ink) paper (continued)


Qualified manufacturers	Phone/Fax	Paper grade
Kanzaki Specialty Papers (USA) 20 Cummings St. Ware, MA 01082-2002 http://www.kanzakiusa.com/	Voice: (888) 526-9254 Fax: (413) 731-8864	P30023 (was P-300), P31023 (was P-310), P35024 (was P-350), P35032 (was P-354), P39023 (BPA free, was P-390), P30521 (BPA free), P30523 (BPA free), P31523 (BPA free), P35532 (BPA free)
Koehler UK Ltd. (Great Britain) 2 White Oak Square London Road Swanley, Kent BR8 7AG, U.K. http://www.koehlerpaper.com/en/	Voice: (44) 1322 661010 Fax: (44) 1322 614656	KT55-F20
Koehler AG Hauptstr. 2-4 D-77704 Oberkirch, Germany http://www.koehlerpaper.com/en/	Voice: (49) 7802 81-0 Fax: (49) 7802 81-4330	KT55-F20
Mitsubishi Int'l Corp. (USA) 655 Third Ave. New York, New York 10017 http://www.mitsubishicorp.com/us/en/	Voice: (212) 605-2000 Fax: (212) 605-2597	P-5035 T-8051 TP-8065 PP-5051
OJI Paper Company Ltd. Ginza 4-chome Tokyo 104, Japan http://www.ojipaper.co.jp/english/	Voice: (81)3-3563-1111 Fax: (81)3-3563-1135	KF-60 PD-170R PD-170R
Thermal Solutions Intl, Inc. 6740 Broadview Ave, Suite D Jacksonville, FL 32254 http://thermalsolutionsinternational.com	Voice: (800) 479-6070, (904) 860-1966 Fax: (904) 646-4530	19018RDT Features: 30% post-consumer waste, recycled/BPA free

3 Configuring the printer

The configuration menu allows the user to set general printer parameters. The test prints the diagnostics form, which details settings for all functions. The printer partially cuts the paper between each variation.

The printouts might vary. The test ends with a partial cut of the paper. A complete test printout might require the use of several feet of paper.

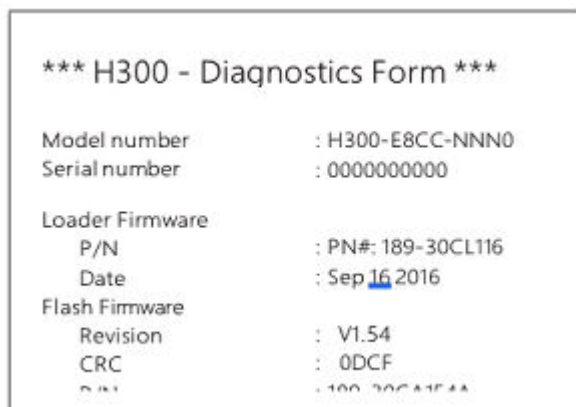
You might not need to change the configuration of the printer. If you make adjustments to the configuration, be careful not to inadvertently change settings that might affect the printer's performance. HP does not recommend changing the printer configuration.

 **NOTE:** The printer is shipped with a test printout that includes the preset configuration. Use these settings as a default to reset the printer, if necessary.

Entering configuration mode

1. Turn off the printer.
2. Be sure that paper is loaded in the printer and the printer cover is closed.
3. Turn the printer on, and press and hold the paper feed button until the configuration printout begins.

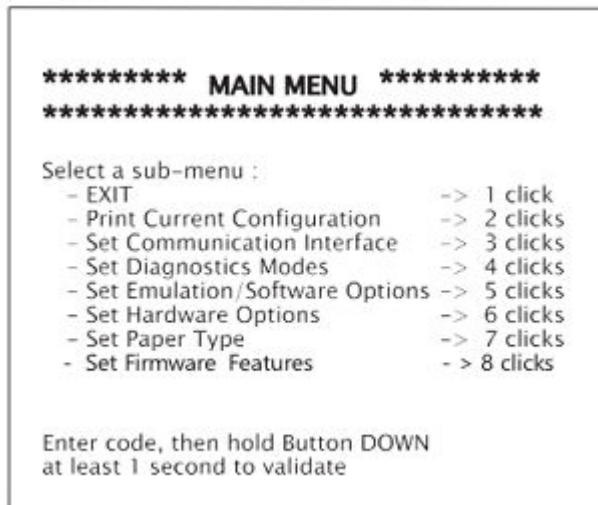
The printer beeps and then prints Diagnostics Form I.



4. After this form finishes printing, press the paper feed button within 2 seconds to enter the configuration main menu.

The printer prints Diagnostics Form II and then the Main Menu.

5. Enter a menu selection using short clicks for no and long clicks for yes. Follow the printed instructions.
 - Short click: Press the paper feed button for less than a second.
 - Long click: Press the paper feed button for more than a second.



6. Continue until you are asked to save new parameters. Enter a long click for yes.
7. To verify the new settings with a diagnostic printout, restart the printer, open the receipt cover, and then press and hold the paper feed button while closing the receipt cover.

Energy-savings mode


This function makes it possible to set the number of minutes that the printer remains idle before entering a low-power (1 W) idle state.

1. Enter the configuration menu. See [Entering configuration mode on page 9](#).
2. Select **Set Firmware Features**.
3. Scroll to **Set Energy Savings Timeout Value**, and then select **Yes**.
4. Enter up to six short clicks to set the timeout value.
 - 1 click: No timeout (default)
 - 2 clicks: 15 minute timeout
 - 3 clicks: 30 minute timeout
 - 4 clicks: 60 minute timeout
 - 5 clicks: 120 minute timeout
 - 6 clicks: 240 minute timeout
5. Restart the printer.

To exit energy-savings mode, press the paper feed button.

Monochrome paper print density

This function makes it possible to adjust the energy level of the printhead to darken the printout or adjust for paper variations. Only make an adjustment when necessary. The factory setting is 100%.

 **IMPORTANT:** Choose an energy level no higher than necessary to achieve a dark printout. Running at a higher energy level reduces the printhead life and might void your warranty.

When the printer prints high-density print lines (text or graphics), it automatically slows down.

1. Enter the configuration menu. See [Entering configuration mode on page 9](#).
2. Select **Set Hardware Options**.
3. Scroll to **Set Print Density**, and then select **Yes**.

A warning is printed, followed by the density adjustment selections.

4. Enter short clicks for your selection, and then hold the paper feed button down for at least 1 second to validate your selection.

4 Troubleshooting the printer

The printer is usually trouble-free; however, unexpected conditions can arise. See the following sections to diagnose and solve these printer conditions. To resolve complex issues, you might have to contact an authorized HP service representative.

Printer tone and green LED

Table 4-1 Printer tone and light conditions, causes, and solutions

Condition	Possible causes	Possible solutions	Where to go for more information
Green LED, quick steady flashing.	Paper roll is empty.	Load a new paper roll.	See Loading the printer receipt paper on page 2 .
	Receipt cover is open.	Close the cover. If the problem persists, continue opening and closing the cover until the LED stops blinking.	
Green LED, slow steady flashing.	The knife is unable to return to the home position.	Stop using the printer.	Contact your authorized HP service representative.
	Other problems may be indicated.	Stop using the printer.	Contact your authorized HP service representative.
Printer beeps (two-tone—low frequency, high frequency).	Printer has been turned on and is ready to operate.	No action is required.	
Printer beeps and flashes green LED in various combinations.	These all indicate a serious condition.	Stop using the printer.	Contact your authorized HP service representative.

Printing issues

Table 4-2 Printer issues conditions, causes, and solutions

Condition	Possible causes	Possible solutions	Where to go for more information
Colored stripe on the receipt.	Paper is low.	Change the paper.	See Loading the printer receipt paper on page 2 .
Receipt does not come out all the way.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear any jammed paper.	
Printer starts to print, but stops while the receipt is being printed.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear any jammed paper.	
Receipt is not cut.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear any jammed paper.	
Print is light or spotty.	Paper roll is loaded incorrectly.	Reload the paper correctly.	See Loading the printer receipt paper on page 2 .

Table 4-2 Printer issues conditions, causes, and solutions (continued)

Condition	Possible causes	Possible solutions	Where to go for more information
	Thermal printhead is dirty.	Use recommended thermal receipt paper and clean the printhead with 99% isopropyl alcohol. Always clean the printhead after using unrecommended paper.	See Thermal paper specifications on page 7 .
	Variations in paper.	Increase print density in Set Hardware Options of printer configuration menu to 110% or 120% as needed.	Contact your authorized HP service representative. See Monochrome paper print density on page 10 .
Vertical column of print is missing.	This indicates a serious condition with the printer electronics or missing dot on printhead.	Stop using the printer.	Contact your authorized HP service representative.
One side of receipt is missing.	This indicates a serious condition with the printer electronics.	Stop using the printer.	Contact your authorized HP service representative.



NOTE: Using unrecommended paper might damage the printhead and void the warranty.

Printer does not function

Table 4-3 Loss of printer function issues conditions, causes, and solutions

Condition	Possible causes	Possible solutions	Where to go for more information
Printer does not function when turned on and LED is off.	Power is not plugged in.	Check that the host or power supply is getting power.	
Printer does not function when turned on and LED is blinking.	Receipt cover is not fully closed.	Close and latch the receipt cover.	
Printer stops functioning.	Printhead has overheated.	Allow the printhead to cool down.	See Preventing overheating of the printhead on page 6 .
	Printer is in energy-saving mode.	Press the paper feed button to revive the printer.	See Energy-savings mode on page 10 .
Printer does not open.	Receipt cover is stuck.	Release the latch failsafe.	See Latch failsafe on page 4 .

Paper jams

Preventing a paper jam

There are several common causes of paper jams.

To prevent a paper jam, follow these best practices:

- Use only recommended paper. See [Thermal paper specifications on page 7](#).
- Clean the printer regularly to clear debris near the knife. See [Cleaning the printer on page 14](#).
- Do not pull on or tear the receipt until it has completely finished printing.
- Be sure that you load the paper correctly. See [Loading the printer receipt paper on page 2](#).

Resolving a paper jam

- ▲ If there is a paper jam, wait 30 seconds and then open the printer cover to clear the paper.



IMPORTANT: A paper jam can prevent the knife from operating correctly and cause the knife to take up to 30 seconds to retract to the home position. If you open the printer cover while the knife is extended, the knife could be damaged or might fall out of the printer.

Cleaning the printer

Because of the way the printer sits while in use, it is likely there will be buildup of paper and other debris from the knife. HP recommends that you keep the printer in working order by periodically cleaning the debris from the printer.

To clean the printer, open the cover, remove the paper roll, and then use a can of compressed air to blow the debris out from the bottom plate where it accumulates.

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