



# HP Thermal Receipt Printers for Point of Sale System

User Guide

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## About This Guide

This guide provides information on setting up and using the HP Thermal Receipt Printers for Point of Sale Systems.

- ⚠ **WARNING!** Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.
- ⚠ **CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.
- 📝 **NOTE:** Text set off in this manner provides important supplemental information.



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# 1 Product Features

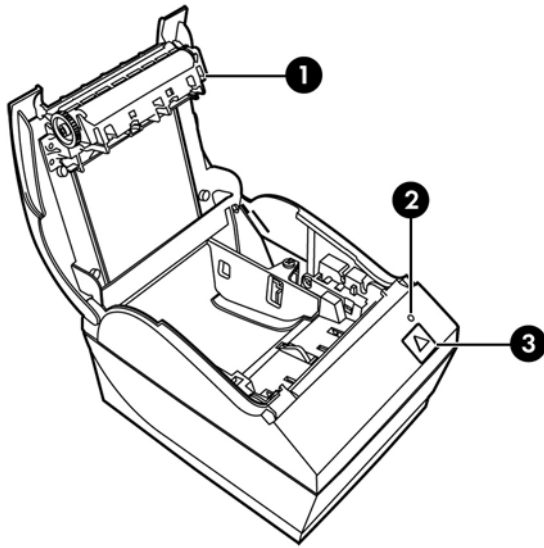
## HP Thermal Receipt Printers



HP Thermal Receipt Printers are designed to work with point of sale system hardware and program applications. The printers features include:

- Thermal printing technology that prevents changing a printer ribbon and cartridge
- Powered USB interface model with USB power cable provided or serial/USB interface model with separate power cable provided
- Snap open receipt cover and drop-in paper loading
- Software generated indicator beeps
- LED status indicator
- 4 MB flash memory, history EEROM, 4k buffer
- 8 dots/mm print resolution with up to 250 mm/second throughput speed
- Selectable 44 (standard) or 56 (compressed) columns of print on 80 mm wide thermal paper
- Paper low and paper out sensor
- Software and product documentation provided on the *HP Point of Sale System Software and Documentation CD*

# Identifying User Controls



- 
- |       |   |
|-------|---|
| 1     | Receipt cover - Snap opens to easily drop the paper roll in place.  |
| <hr/> |   |
| 2     | Status LED - the green LED indicates basic information about the printer status. A steady green light indicates the printer is on and operating normally. A flashing LED indicates the printer needs operator assistance. |
| <hr/> |   |
| 3     | Paper feed button - during normal use the paper feed button advances the paper. It is also used to access the configuration menu.   |
- 

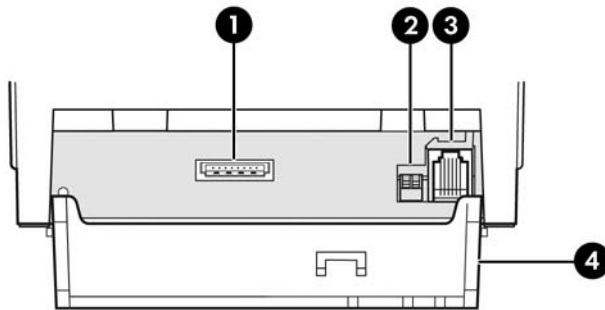


**NOTE:** A single beep indicates the printer has successfully completed its startup routine. It should beep after being powered up or reset. If the printer beeps twice, it may be experiencing a problem. Refer to [Troubleshooting on page 19](#) in this guide for more information.



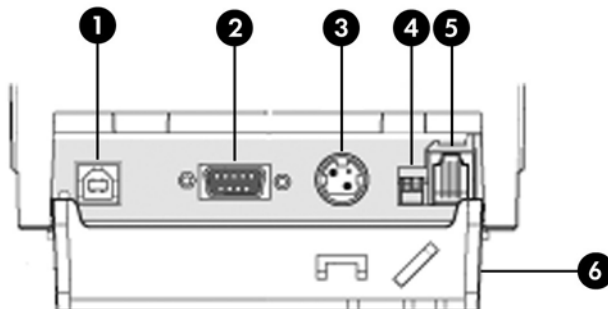
# Identifying Rear Connectors

## Powered USB Model



- |   |   |
|---|---|
| 1 | USB power connector - connects the printer to the POS computer and provides power to the printer.   |
| 2 | Configuration switch (DIP switch 1) - allows you to change the configuration settings of the printer.   |
| 3 | Cash drawer connector - connects the printer to the cash drawer.  |
| 4 | Connector cover - the connector cover provides protection and strain relief for the printer connectors and cables. This cover should remain on the printer and cables routed as described in Chapter 2. |

## Serial/USB Model



- |   |   |
|---|---|
| 1 | USB connector - connects the printer to the POS computer.   |
| 2 | Serial connector - connects the printer to the POS computer.  |
| 3 | Power connector - connects the printer to the POS computer for power.                                 |
| 4 | Configuration switch (DIP switch 1) - allows you to change the configuration settings of the printer. |

- 
- |       |   |
|-------|---|
| 5     | Cash drawer connector - connects the printer to the cash drawer.  |
| <hr/> |   |
| 6     | Connector cover - the connector cover provides protection and strain relief for the printer connectors and cables. This cover should remain on the printer and cables routed as described in Chapter 2. |
-


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## 2 Setting Up the Printer

### Checking the Packing List

Save the packing materials in case you need to repack the printer for shipping or storage. Before installation, check that all the items listed below have been shipped.

- Printer
- Starter roll of receipt paper
- Test printout
- USB power cable (some models); power cable (some models)
- *HP Point of Sale System Software and Documentation CD*

 **NOTE:** HP Serial USB Thermal Printer does not ship with an interface cable; interface cable must be purchased separately.

---


### Loading or Changing the Receipt Paper

Before setting up the receipt printer, ensure power is turned off to the printer, POS computer and other attached devices.

△ **CAUTION:** You must use qualified paper rolls with the HP printers. The list of qualified paper is in [Technical Specifications on page 25](#). Using unqualified paper may void the warranty.

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You will later use the same procedure to change the receipt paper as you will to load it during installation. The minor difference is noted in the directions below.

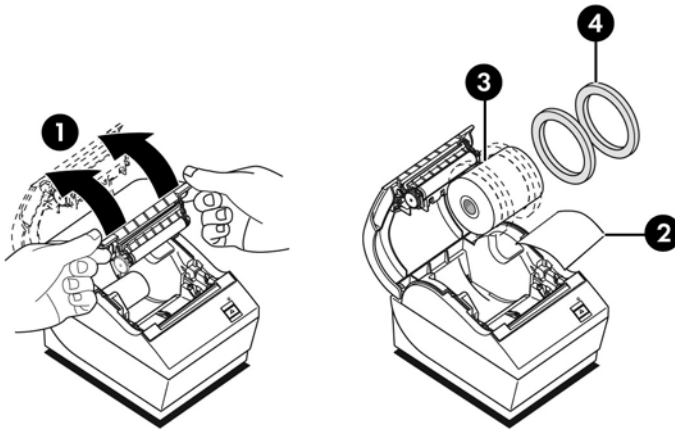
 **NOTE:** The printer must be set to the paper type being used for proper operation. This can be done by sending the command 1D 81 m n or by a selection in the configuration menu. To change the paper type in the configuration main menu select **Set Paper Type** and make selections. Refer to [Operating the Printer on page 12](#) for information on entering the configuration menu.

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1. Open the receipt cover by pushing up on each side of the cover (1) until it unsnaps.

2. **Loading:** Remove the test printout (2) and starter roll thermal paper (3). Slide the supports off the roll (4).

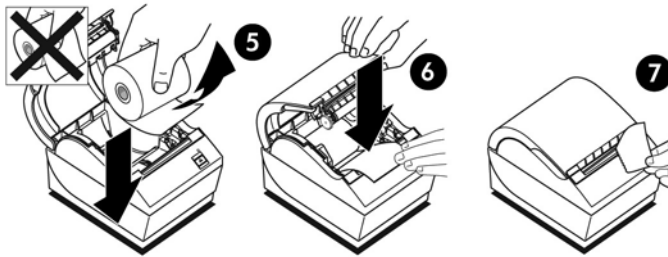
**Changing:** Remove the used paper roll.



3. Tear a clean edge on the new receipt paper roll, making sure the tape has been completely removed.
4. Place the receipt paper into the paper compartment so it **unrolls from the bottom** (5). Leave a few inches of paper sticking out of the printer.
5. While holding the paper in place, close the receipt cover (6). To test that the paper is loaded correctly, advance the paper with the paper feed button.

 **NOTE:** If the paper jams, be sure the roll is inserted correctly. Refer to the previous illustration in this section for proper paper orientation.

6. Tear the excess paper off against the blade in the cover (7).



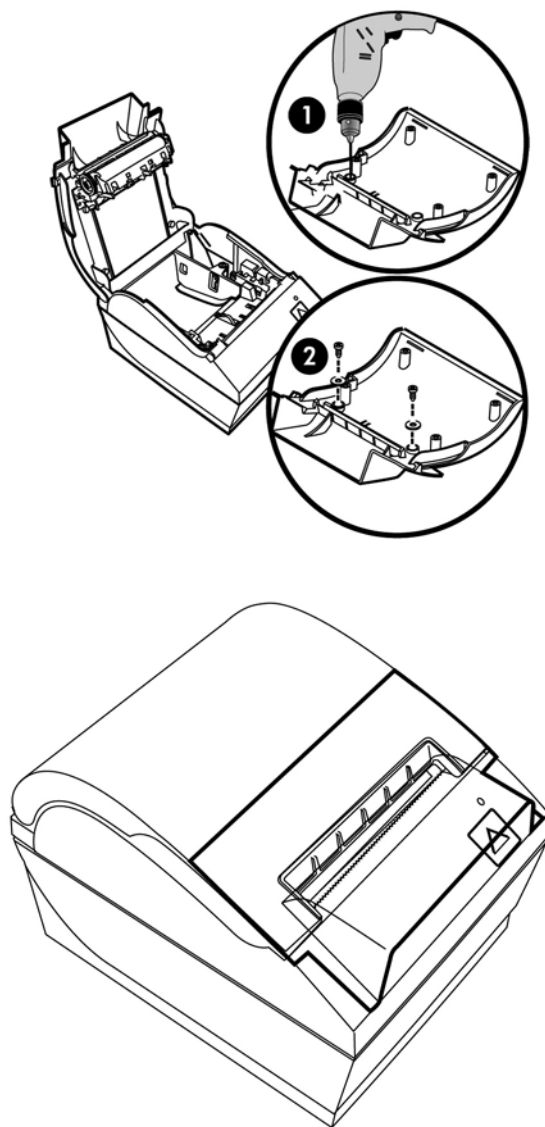
## Adjusting the Paper Low Setting

The amount of paper left on the roll when the “paper low” indication is given by the printer should be approximately 5-20 feet/1.5-6.1 meters. If too much paper is left, there is an adjustable setting in the configuration menu that can be modified. For instruction on entering the configuration menu, refer to [Operating the Printer on page 12](#). In the configuration menu, enter the **Hardware Options** section and vary the “paper low extension” setting. The setting chosen will decrease the amount of footage at paper low.


## Spill Shield Installation (Select Models)


Top and bottom spill shields provide added protection for the printer from moisture or spills. The following instructions describe how to install both of these shields. Shields may be installed individually or as a set. A phillips head screwdriver is required for installation.

1. Clean the printer receipt cover in the area where the top spill cover is to be installed.
2. Remove the receipt cover (1) and drill holes using a 5/32 inch or 4 mm drill bit. Open holes further by drilling with a 5/16 inch or 8 mm drill bit.
3. Position the spill shield to the printer.
4. Fasten the spill shield to the receipt cover with the provided screws and washer (2).

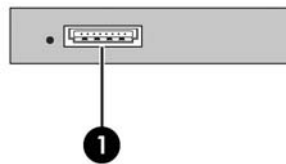


## Connecting the Cables

 **NOTE:** Place the printer on a level surface and position it in a location that allows access to cables, room to open the cover and away from traffic areas to limit the chance of being bumped or damaged.


 **CAUTION:** Connect cables to the printer before turning on power to the POS computer. The POS computer should always be turned off before connecting the communication cable.

1. Turn off the POS computer.
2. Open the connector cover on the rear of the printer to locate the connectors.
3. For printers with a USB power connector:
  - a. Plug the printer end of the USB power cable into the USB power connector (1) on the printer. Plug the other end of the USB power cable into the 24V powered USB connector on the POS computer.
  - b. Route the USB power cable from the printer through the strain relief tab on the connector cover of the printer.



For printers with serial, USB, and power connectors:

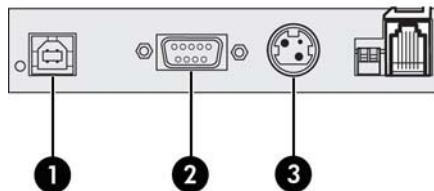
- a. Plug the printer end of the USB cable into the USB connector (1) or the serial cable into the serial connector (2) on the printer. Plug the other end of the cable to the appropriate connector on the POS computer.

 **NOTE:** You can use either the USB cable or the serial cable as the data interface with the POS computer. Do not use both.


If using the serial interface, then a 9-pin female to 9-pin female null modem serial cable must be used between the printer and POS computer.

Neither a null modem serial cable nor a USB cable is included with the printer.

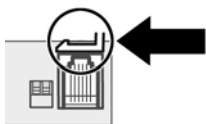
- b. Plug the printer end of the power cable into the power connector (3) on the printer. Plug the other end of the power cable into the 24V powered USB connector on the POS computer.
- c. Route the power cable and the USB cable or serial cable from the printer through the strain relief tab on the connector cover of the printer.



4. Plug the cash drawer cable into the cash drawer connector (RJ12) on the printer and the other end of the cable (RJ45) into the interface connector on the cash drawer.

 **NOTE:** The cash drawer cable is not included with the printer.

5. Route the cash drawer cable up and through the strain clip above the connector and through the opening in the connector cover when closed.



6. Close the connector cover on the rear of the printer, ensuring that all cables are aligned with the slots provided for each connector.

## Turning on the Printer

After connecting the cables to the printer and POS computer, turn on the POS computer. If the **Found New Hardware Wizard** pops up, click the **Cancel** button.

The receipt printer will beep and the green LED on the top cover will light up initializing the printer.

## Installing the Drivers

The software and documentation CD provided with this product includes OPOS and JPOS printer drivers. Depending on your POS computer's operating system, install the OPOS drivers or the JPOS drivers.

1. Follow the steps in the previous section to connect the printer cables and turn on the POS computer.
2. Insert the *HP Point of Sale System Software and Documentation* CD into the CD or DVD drive on the POS computer.
3. Read and accept the End User License Agreement. The main menu will be displayed.
4. On the main menu, click **HP Receipt Printers**, and then scroll to the menu for your printer model.
5. Select and install the OPOS or JPOS drivers required for your POS application.

## Testing the Printer

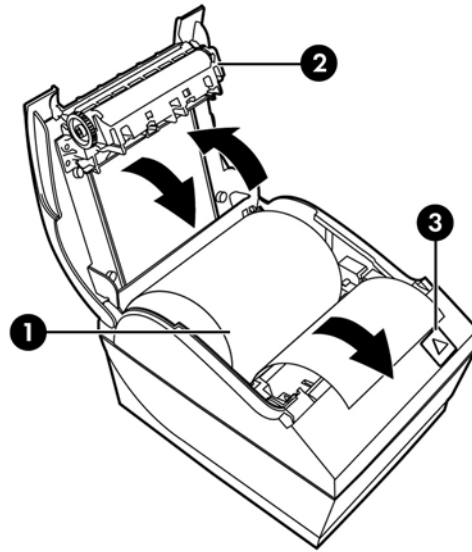
If the printer is functioning normally, it will beep once. If it responds differently, refer to [Troubleshooting on page 19](#), or contact your regional HP authorized service provider for HP Point of Sale System products.

The printer will arrive for installation pre-configured. The printer's current configuration appears on the test (diagnostics) printout. However, if you would like to run a new print test or check the configurations, you can run a diagnostics printout detailing the current configuration.

To run a diagnostics test:

1. Be sure paper is in the printer (1).
2. Open the receipt cover (2).
3. Press and hold the paper feed button (3).

4. Close the receipt cover, continually holding the paper feed button until the configuration printout begins.



For additional instructions on configuring the printer, refer to [Operating the Printer on page 12](#).

## Extending Your Character Sets and Fonts

The following character sets and code pages are available for this printer. Most models come with the code preinstalled. To confirm which code pages are resident, print out the Diagnostic form (refer to Chapter 3 for instructions). To download code pages that are not currently resident, go to HP support website at [www.hp.com/support](http://www.hp.com/support).

- Code Page 437 US English
- Code Page 737 Greek
- Code Page 850 Multilingual
- Code Page 857 Turkish
- Code Page 858 Eurosymbol
- Code Page 860 Portuguese
- Code Page 863 French Canadian
- Code Page 950 Traditional Chinese
- Code Page 936 Simplified Chinese
- Code Page 949 Korean (Hangul)
- Code Page 1251 Cyrillic
- Code Page 1252 Windows Latin 1
- Code Page 1255 Hebrew



In addition, this printer will support installation of one of the following languages from the CD included with this printer:

- Simplified Chinese
- Traditional Chinese
- Korean
- Thai (effective February 2011)

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## 3 Operating the Printer

### Configuring the Printer

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

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

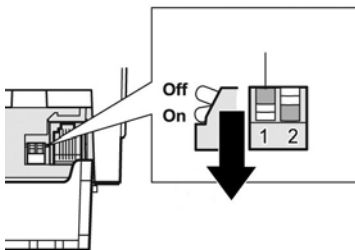
Since the printer is usually shipped pre-configured, most users do not need to change the configuration of the printer. If you make adjustments to the configuration, be careful not to inadvertently change settings that may affect the printer's performance. HP does not recommend that users change the printer configuration.

 **NOTE:** The printer is shipped with a test printout that includes the preset configuration. If you run into problems after changing the printer configuration, use the settings as a default

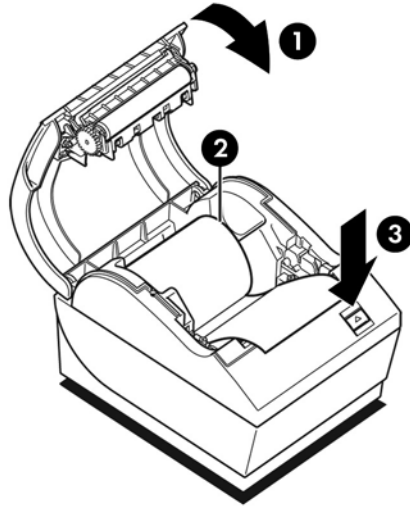
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### Entering the Configuration Mode

1. Turn off power to the printer.
2. Open the rear connector cover.
3. Set DIP switch 1 to the ON position (down). DIP switch 2 should be in the OFF position (up).



4. Be sure the receipt paper (1) is loaded in the printer before proceeding (for instructions on loading the receipt paper, refer to [Setting Up the Printer on page 5](#)).
5. Close the receipt cover (2).
6. Turn on power to the printer and immediately press and hold the paper feed button (3) until the configuration printout begins.
  - The printer beeps, then prints the diagnostics form and the configuration main menu.
  - The printer pauses and waits for a main menu selection to be made (see sample printout on the following page in this chapter; short clicks are used, except when answering Yes or validating selection).



7. To communicate with the printer, press the paper feed button using either short or long clicks. Use a long click for “yes” (more than one second) and a short click for “no.” Follow the printed instructions to make selections.
8. Continue through your menu selections until you are prompted, **Save New Parameters?**. Select “Yes” or “No.”
  - a. If you wish to save, select **Yes**, then return DIP Switch 1 to the OFF position (up).
  - b. Open the receipt cover.
  - c. Press and hold the paper feed button while closing the receipt cover.
  - d. The diagnostic printout verifies your new settings.
9. If you would like to continue configuring the printer, select **No**. The printer then returns to the configuration menu, where you can set parameters again.

The following is a sample printer configuration menu.

\*\*\* A799 – Diagnostics Form \*\*\*

ReceiptWare Enabled

Model number	: A799-720D
Serial number	: K07101234
Boot Firmware	
Revision	: V0.02
CRC	: 7790
P/N	: 189-7940109B
Flash Firmware	
Revision	: V0.02
CRC	: 86BD
P/N	: 189-7940110B
H/W parameters	
Flash Memory Size	: 2 Mbytes
Flash Logos/Fonts	: 896 kbytes
Flash User Storage	: 64 kbytes
Flash Journal Size	: 64 kbytes
SRAM Size	: 256 kbytes
Head setting	: F
Motor ID	: 1
Paper Type setting	: Type 0, Monochrome
Color Density Adj	: n/a
Print Density (Mono)	: 100%
Max Speed	: 250 mm/sec
Paper Width	: 80 mm
Max Power	: 55 W
Knife	: Enabled
Partial Cut	: 110 steps
Paper Low Sensor	: Enabled
Paper Logo Extension	: 10 ft
Comm. Interface	
RX Buffer Size	: 4096
Interface type	: RS232/USB
Parameters	
Baud Rate	: 115200
Data Bits	: 8
Stop Bit	: 1
Parity	: NONE
Flow Control	: DTR/DSR
Reception Errors	: Ignore
USB Driver Type	: Native
USB Packet w/Error	: Reject
Resident Code Pages	: 437, 850, 852, 858 860, 863, 865, 866 1252, 862, 737, 857
Logo(s) defined	: YES
User Char(s) defined	: NO
Journal Unused	: 64 kbytes

To enter Printer Config Menu :

- 1) Flip DIP switch #1 down
- 2) Reset the printer, while holding the Paper Feed button down

Print test and Configuration menu samples. (Shown approximately 60% of size.)

Short clicks are used in the main menu selections.

## Monochrome Paper Print Density (Default)

This function makes it possible to adjust the energy level of the printhead to darken the printout or adjust for paper variations. An adjustment should only be made when necessary. The factory setting is 100%.

- △ **CAUTION:** Choose an energy level no higher than necessary to achieve a dark printout. Failure to observe this rule may result in a printer service call or voiding of the printer warranty. Running at a higher energy level will reduce the printhead life.

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

#### To change the print density:

1. Enter the configuration menu. Refer to [Entering the Configuration Mode on page 12](#).
2. Select **Set Hardware Options** from the main menu.  
Printer responds, **Hardware Options Menu**, and when scrolled prompts, **Set Print Density?**.
3. Select **Yes**.  
A warning is printed, followed by the density adjustment selections.  
Using the paper feed button, enter clicks for selection, then hold button down at least 1 second to validate.

## Color Density

This function makes it possible to adjust the energy level of the printhead to darken the color printing or adjust for paper variations. An adjustment should only be made when necessary. The factory setting is 100%.

- △ **CAUTION:** Choose an energy level no higher than necessary to achieve a dark printout. Failure to observe this rule may result in a printer service call or voiding of the printer warranty. Running at a higher energy level will reduce the printhead life.

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

#### To change the color density:

1. Enter the configuration menu. Refer to [Entering the Configuration Mode on page 12](#).
2. Select **Set Hardware Options** from the main menu.  
Printer responds, **Hardware Options Menu**, and when scrolled prompts, **Set Color Density Adjustment?**.
3. Select **Yes**.  
A warning is printed, followed by the density adjustment selections.  
Using the paper feed button, enter clicks for selection, then hold button down at least 1 second to validate.

## When to Change the Receipt Paper

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

#### When paper is low:

- Colored stripe appears on the receipt paper, (if paper is purchased with stripe) and indicates enough paper remains for a small transaction.
- If paper low option is installed on the printer, the green LED flashes slowly indicating that approximately 15 feet/4.5 meters of paper remains. If too much paper is left on the roll, the “paper low” setting can be adjusted by entering the configuration menu and changing the “paper low” extension setting.

#### When paper is out:

Green LED flashes quickly indicating the paper must be installed.

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

For instructions on how to change the receipt paper, refer to [Loading or Changing the Receipt Paper on page 5](#).

- 📝 **NOTE:** When changing the type of paper being used, you must set the printer to the new paper type. This is done through the command 1D 81 m n or through the configuration menu (refer to [Entering the Configuration Mode on page 12](#)).

#### Paper type grades

- Type 0: Monochrome
- Type 4: Two-color

## Setting the Printhead

The printhead energy rating and printer setting must match. The setting will be preconfigured from the factory but may require changing if service to the thermal mechanism is required. The “Head Setting” on the diagnostic printout must match the letter marked on the front right of the thermal mechanism. Whenever the thermal mechanism is replaced, if the letter on the mechanism is different from the head setting, you must enter the configuration menu and set the printhead to match. Contact an HP authorized service provider to replace the thermal mechanism.

## Preventing Printhead Overheating

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.

Keep in mind that the ambient temperature may be affected by factors such as direct exposure to sun or close proximity to heating elements.

- △ **CAUTION:** When the duty cycle exceeds the limits shown in the following table, the receipt printhead will heat up and shut down. This may damage the printhead.

To avoid this problem, do one or a combination of the following:

1. Reduce the amount of coverage.
2. Reduce the time of continuous solid printing.
3. Reduce the ambient temperature.

#### Allowable duty cycle (measured over one minute of continuous printing)

Amount of Solid Coverage	Ambient Temperature		
	25°C	35°C	50°C
20%	100%*	50%*	20%*
40%	50%*	25%*	10%*
100%	20%*	10%*	4%*

\*Duty Cycle - Percentage of time that the specified "Amount of Solid Coverage" can be printed during a one minute period of time. Example: at 20% solid coverage, 35° C temperature, a 50% duty cycle is to be used, resulting in 30 seconds of printing and 30 seconds without printing.

**For reference:**

- 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.

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## 4 Maintenance Guidelines

### Cleaning the Printer

Clean the outside of the cabinet as needed to remove dust and finger marks. Use any household cleaner made for plastics. Test it first on a small unseen area. Clean the printer paper bucket with a clean, damp cloth.


The cabinet materials and finish are durable and resistant to the following items:

- Cleaning solutions
- Cooking oils
- Lubricants
- Ultraviolet light
- Fuels

### Cleaning the Thermal Printhead

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△ **CAUTION:** Do not clean the inside of the printer with any cleaner. Do not allow cleaning spray to come in contact with the thermal printhead. Damage to the internal electronics or thermal printhead could occur.

 **NOTE:** The thermal printhead does not normally require cleaning when recommended paper grades are used. If non-recommended paper is used over an extended period, attempting to clean the printhead will have little effect on the print quality.

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1. Turn off the printer and POS computer.
2. Unplug the printer from the POS computer and the cash drawer, if connected.
3. Wipe the printhead with a cotton swab moistened with rubbing alcohol.

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△ **CAUTION:** Do not use rubbing alcohol to clean any internal parts of the printer other than the printhead. Damage will occur.

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If spotty or light printing problems persist after cleaning the thermal printhead, the entire thermal mechanism may need to be replaced.

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△ **CAUTION:** Using non-recommended paper over an extended period of time can result in printhead failure. Refer to [Technical Specifications on page 25](#) for paper specifications.

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# A Troubleshooting

## Diagnostics

The printer performs three primary diagnostic tests that provide useful information about the printer's operating status:

- Startup diagnostics, performed during the printer's startup cycle
- Runtime diagnostics
- Remote diagnostics, maintained during normal operation and reported in the print test

### Startup Diagnostics

When the printer receives power or performs a hardware reset, it automatically performs the startup diagnostics (also known as level 0 diagnostics) during the startup cycle. The printer:

- Turns off the motors
- Performs boot CR check of the firmware ROM, test external SRAM, test EEPROM, and test main program CRC

Failure causes startup diagnostics to stop; the printer beeps and the LED flashes a set number of times, indicating the nature of the failure. The following table describes the specific tone and LED sequences.

LED Behavior	Failure
One blink	Boot CRC error
Two blinks	RAM failure
Three blinks	EEPROM failure
Four blinks	Memory initialization failure

To resolve:

- Check if paper is present
- Return the knife to the home position; failure causes a fault condition
- Check if the rear cover is closed; failure does not interrupt the startup cycle

When the startup diagnostics are complete, the printer makes a two-tone beep (low then high frequency), the paper feed button is enabled, and the printer is ready for normal operation.

If the printer has not been turned on before, or a new EEPROM has been installed, the default values for the printer functions will be loaded into the EEPROM during startup.

## Runtime Diagnostics

Runtime diagnostics (sometimes called level 2 diagnostics) run during normal printer operation. When the following conditions occur, the printer automatically turns off the appropriate motors and disables printing to prevent damage to the printer.

- Paper out
- Rear cover open
- Knife unable to home
- Printhead too hot
- Voltages out of range

The LED on the operator panel will signal when these conditions occur as well as indicate printer state or mode.

LED Behavior	Printer Status
Off	No power
Fast blink	Firmware download
Fast blink	Level 0 diagnostics (occurs at power on, and on reset)
Slow blink	Paper low, temperature error or voltage error
Steady on	All other issues

## Remote Diagnostics

Remote diagnostics (sometimes called level 3 diagnostics) keep track of the following tallies and prints them on the receipt during the print test. These tallies can be used to determine the printer's state of health.

- Model number
- Serial number
- CRC number
- Number of lines printed
- Number of knife cuts
- Number of hours the printer has been on
- Number of flash cycles
- Number of cutter jams
- Number of times the cover is opened
- Maximum temperature reached

# Solving Common Problems

The following table lists possible problems, the possible cause of each problem, and the recommended solutions.

Problem	Possible Cause	Solution
Green LED, quick continuous flashing.	Paper is out.	Load a new paper roll. Refer to <a href="#">Setting Up the Printer on page 5</a> .
	Receipt cover open.	Close the cover.
	Knife unable to home.	Stop using the printer. Check the knife to see if it needs to be replaced. Contact your regional HP authorized service provider for HP Point of Sale System products.
Green LED, slow steady flashing.	Paper is low (if paper low sensor is installed).	Load a new paper roll. Refer to <a href="#">Setting Up the Printer on page 5</a> .
	Continuous printing of graphics has overheated the printhead.	Reduce the demand on the printer.
	Other problems may be indicated.	Stop using the printer. Contact your regional HP authorized service provider for HP Point of Sale System products.
Continuous flashing of LED	DIP switch is in ON position, indicating flash download mode.	Put the DIP switch in the OFF position for normal operation.
Printer beeps (two-tone - low frequency, high frequency).	Printer has been turned on and is ready to operate.	No action required.
Printer beeps and flashes green LED in various combinations.	Indicates serious conditions.	Stop using the printer. Contact your regional HP authorized service provider for HP Point of Sale System products.
Colored stripe is on the receipt.	Paper is low.	Change the paper roll.
Double beep, double LED flash.	SRAM test failure.	Run the startup diagnostics again. If this does not work, contact your regional HP authorized service provider for HP Point of Sale System products.
Triple beep, triple LED flash.	EEPROM test failure.	Run the startup diagnostics again. If this does not work, contact your regional HP authorized service provider for HP Point of Sale System products.
Two-tone beep (high frequency, low frequency).	Main program CRC test failure.	Run the startup diagnostics again. If this does not work, contact your regional HP authorized service provider for HP Point of Sale System products.
Receipt does not come out all the way.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear the 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 the jammed paper.

Problem	Possible Cause	Solution
Receipt is not cut.	Paper is jammed.	Open the receipt cover, inspect the knife, and clear the jammed paper.
	The knife is not enabled.	Enable the knife in the configuration menu. Refer to <a href="#">Operating the Printer on page 12</a> .
Print is light or spotty.	Paper roll is loaded incorrectly.	Check that the paper is loaded properly.
	Thermal printhead is dirty.	Clean thermal printhead with rubbing alcohol. Use the recommended thermal receipt paper. Refer to <a href="#">Technical Specifications on page 25</a> in this guide for paper specifications and recommendation.  <b>NOTE:</b> If paper has been used which is not on the recommend paper list, resulting in a dirty printhead, the printhead may require cleaning prior to switching back to recommended paper. See <a href="#">Technical Specifications on page 25</a> for a list. If non-recommended paper is used over an extended period, attempting to clean the printhead will have little effect on print quality. Do not try to clean within the printer except as indicated in <a href="#">Maintenance Guidelines on page 18</a> .
	Variations in paper.	Increase the print density in "Set Hardware Options" of the printer configuration menu to 110% or 120% as needed.
Color print is light.	Variations in paper.	Increase energy level of printhead in "Color Density Adj" of the printer configuration menu.
Inconsistent printing, no two-color print.	Paper type used and paper type setting do not match.	Print the diagnostic form and verify setting paper type setting to type 0, 1, 4, or 5.
Vertical column of print is missing.	Printhead is defective or indicates a serious condition with the printer electronics.	Stop using the printer. Contact your regional HP authorized service provider for HP Point of Sale System products.
One side of the receipt is missing.	Printhead is defective or indicates a serious condition with the printer electronics.	Stop using the printer. Contact your regional HP authorized service provider for HP Point of Sale System products.
Printout has missing characters or wrong characters.	Wrong type of serial cable is being used.	You must use a null modem serial cable for the printer to function properly.

Problem	Possible Cause	Solution
Printer does not function when turned on.	The printer is not plugged in.	Check that printer cables are properly connected at both ends.  Check that the POS computer is turned on.
	Receipt cover is not fully closed.	Close and latch the receipt cover.
	DIP switch 2 has been left in the ON position.	Return DIP switch 2 to the OFF (up) position.
	Printer is not correctly configured.	Check the printer's configuration and reconfigure if necessary. Refer to <a href="#">Operating the Printer on page 12</a> .
	Power supply voltage is out of range.	Measure the voltage with an AC voltmeter and check measurement against the power supply label: the voltage should be 24V +/-10%.
	Printhead has overheated because operating environment is above recommended temperature.	Adjust room temperature or move the printer to a cooler location.
	Printhead has overheated because of continuous printing or graphics.	Reduce the demand on the printer.
	Printhead has gotten too cool because the operating environment is below recommended temperature.	Adjust the room temperature or move the printer to a warmer location.  <b>NOTE:</b> The printer will shut off when it is above or below recommended temperature.
	Interrupted data signal over USB connection.	Ensure the USB cable is not more than 5 meters long, with no extensions; eliminate hubs.
	Faulty USB port.	Plug cable into another USB port on the POS computer.
	Faulty serial port.	Plug cable into another serial port on the POS computer.
Printer stops functioning.	Wrong type of serial cable is being used.	You must use a null modem serial cable for the printer to function properly.
	Printhead has overheated.	Allow printhead to cool down.
	Interrupted data signal over USB connection.	Ensure the standard USB cable is no more than 5 meters long with no extensions; eliminate hubs.
	Faulty USB port.	Plug cable into another USB port on the POS computer.
Printer goes off-line (red LED on USB connector is on or off).	Faulty serial port.	Plug cable into another serial port on the POS computer.
	USB or serial cable is not connected properly.	If printer does not auto-recover after 5-20 seconds, reconnect the USB or serial cable, reset the printer, reboot the POS computer, check that the USB or serial cable is properly connected at both ends.

## Online Technical Support

For the online access to technical support information, self-solve tools, online assistance, community forums or IT experts, broad multivendor knowledge base, monitoring and diagnostic tools, go to <http://www.hp.com/support>.

## Preparing to Call Technical Support

HP provides hardware break/fix support for this product.

If you can not solve a problem using the troubleshooting tips in this section, you may need to call technical support. Contact your regional HP authorized service provider for HP Point of Sale System products. Refer to the HP Technical Support Phone Numbers on the *HP Point of Sale System Software and Documentation* CD. Have the following information available when you call:

- Serial number of the HP accessory located on the label underneath the product
- Purchase date on invoice
- Spares part number located on the label underneath the product
- Condition under which the problem occurred
- Error messages received
- Hardware configuration
- Hardware and software you are using

## Ordering Paper Rolls

To order paper rolls, contact your converter of choice. Refer to [Qualified Paper Grades on page 27](#) for contact information.

# B Technical Specifications

## HP Thermal Receipt Printer

Printer Specifications	
<b>Reliability</b>	
MCBF Printlines	59 million
MCBF Knife Cuts	1.75 million
<b>Interface</b>	
	Powered USB (some models)
	USB or Serial (some models)
<b>Memory</b>	
	4 MB flash memory, 512K RAM
<b>Power Requirements</b>	
Operating Voltage	24Vdc +/- 10%
	+5 volts for logic circuit
Power Consumption	2.3 Amps maximum current draw
<b>Temperature</b>	
Operating Temperature	5°C to 28°C (41°F to 82°F)
	28°C to 45°C (82°F to 113°F)
Operating Humidity	10% to 90%
	5% to 40%
Storage:	
Temperature	10°C to 50°C (14°F to 122°F)
Humidity	5% to 90%
Transit:	
Temperature	40°C to 60°C (-40°F to 140°F)
Humidity	5% to 95%
Condensation	Condensation may occur when the printer is moved from cold to warm areas after shipment. The printer's design permits operation after drying out and stabilizing at room temperature.
<b>Dimensions and Weight</b>	
Height	134 mm (5.34")
Width	144 mm (5.66")
Depth	184 mm (7.24")
Weight	1.3 kg (2.9 lbs)

Printer Specifications	
Printing Specification	
Speed - Monochrome	250 mm/sec
Two-color capability	Yes
Receipt - columns	44/56
Paper roll size	80 mm x 90 mm
Paper low	Standard (out and low)
Resolution	203 DPI
Knife	Standard (ceramic, rotary)

## Characters Appearance

The appearance of text can be changed using the following available print modes:

- Standard
- Compressed
- Double high
- Double wide
- Upside down
- Rotated
- Underlined
- Bold
- Reverse
- Italic
- Scaled
- Strike-through
- Shading

## Print Size

Character sizes for the standard and compressed mode:

- Standard
  - 15.6 characters per inch
  - 44 characters per line
  - 13 x 24 dots cell size
- Compressed
  - 20.3 characters per inch



56 characters per line

10 x 24 dots cell size

## Ordering Thermal Paper

The printer requires qualified thermal paper with the following dimensions:

Width	Diameter	Length
80 ± 0.2 mm (3.15 ± 0.01 in.)	90 mm max. (3.54 in.)	98 meters (322 ft.) nominal

The above figures are based on a core diameter of 22 ± 0.5 mm (0.87 in.) outside, 11.5 ± 0.5 mm (0.45 in.) inside.

The paper must not be attached at the core. Use paper with a colored stripe at the end to indicate that the paper is running low, required when the printer is positioned vertically.

## Qualified Paper Grades

The following paper grades produced by their respective manufacturers are recommended. There are a number of paper converters qualified to provide this paper, provided the POS rolls are from these recommended grades.



**NOTE:** When changing paper type, you will need to set the printer to that paper type by sending the “Set paper type” command (1D 81 m n) or by changing the paper type setting in the configuration menu. (Refer to [Operating the Printer on page 12](#) to enter the configuration menu.)

To order paper rolls, contact your converter of choice.

## Monochrome (Black Ink) Paper

Qualified Manufacturer	Paper Grade (Density)
Appleton Papers, Inc. (USA)	Optima T1030 (Light)
825 E. Wisconsin Avenue	Optima T1012A (Standard)
Appleton, WI	Optima POS-Plus (Light)
Voice: (800)922-1729	Optima T2162(Light)
Fax: (800)922-1712	Optima Superior (Standard)
	Optima Hi-Yield
Kanzaki Specialty Papers (USA)	P-300 (Light)
20 Cummings St.	P-310 (Standard)
Ware, MA 01082-2002	P-350 (Standard)
Voice: (888)526-9254	P-354 (Standard)
Fax: (413)731-8864	P-390 (Standard)
	TO-260 (Standard)
	TO-381L (Standard)

Qualified Manufacturer	Paper Grade (Density)
Jujo Thermal LTD. P.O. Box 92 FIN-27501 Kauttua, Finland Voice: (358)2-8393-2900 Fax: (358)2-3893-2419	AF50KS-E3 (Standard) AP62KS-E3 (Standard)
OJI Paper Company Ltd. 5-12-8 Ginza Chuo-ku Tokyo 104, Japan Voice: (81)3-5550-3076 Fax: (81)3-5550-2950	KF-60 (Standard) PD-170R (Light) PD-160R (Standard)
Koehler UK LTD. (GB) Voice: (44)1322-661010	KT55-F20 (Standard)

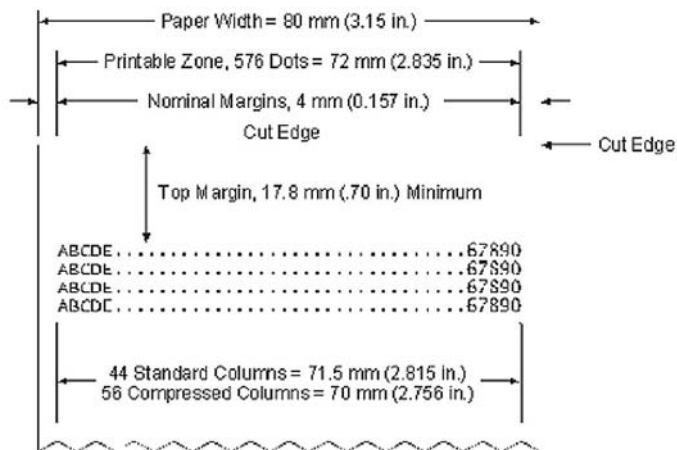
## Two-Color Paper

Qualified Manufacturer	Paper Grade (Density)
Kanzaki Specialty Papers (USA) 20 Cummings St. Ware, MA 01082-2002 Voice: (413)736-3216 Fax: (413)731-8864	P-310 RB (Red and Black) P-320 RB (Red and Black) P-320 BB (Blue and Black) P-320 GB (Green/Black)
Mitsubishi Int'l Corp (USA) 520 Madison Ave. New York, New York 10022-4223 Voice: (212)605-2000 Fax: (212)605-2597	P-5035 (Light) T-8051 (Standard) TP-8065 (Standard) PB-770 (Blue/Black)

## Print Zones for 80 mm Paper

Specifications of print zone for 80 mm paper:

- 576 dots (addressable) @ 8 dots/mm, centered on 80 mm
- Standard Mode minimum margins: 2.0 mm (.079 inches)
- Top margin to manual tear-off: 17.8 mm (0.70 inches)
- Top margin to knife cut: 19.0 mm (0.75 inches)



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## C Agency Regulatory Notices

### Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

### Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett Packard Company may void the user's authority to operate the equipment.

### Cables

Connections to this device must be made with shielded cables with metallic RF/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

### Declaration of Conformity for Products Marked with the FCC Logo (United States Only)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

For questions regarding the product, contact:

Hewlett Packard Company

P. O. Box 692000, Mail Stop 530113

Houston, Texas 77269-2000

Or, call 1-800-HP-INVENT (1-800 474-6836)

For questions regarding this FCC declaration, contact:

Hewlett Packard Company

P. O. Box 692000, Mail Stop 510101

Houston, Texas 77269-2000

Or, call (281) 514-3333

To identify this product, refer to the Part, Series, or Model number found on the product.

## Canadian Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

## Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## European Union Regulatory Notice

Products bearing the CD marking comply with the following EU Directives:

- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC
- Ecodesign Directive 2009/125/EC, where applicable

CE compliance of this product is valid if powered with the correct CE-marked AC adapter provided by HP.

Compliance with these directives implies conformity to applicable harmonized European standards (European Norms) that are listed in the EU Declaration of Conformity issued by HP for this product or product family and available (in English only) either within the product documentation or at the following Web site: [www.hp.eu/certificates](http://www.hp.eu/certificates) (type the product number in the search field).

The compliance is indicated by one of the following conformity markings placed on the product:



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For non-telecommunications products and for EU harmonized telecommunications products, such as Bluetooth within power class below 10 mW.

For EU non-harmonized telecommunications products (If applicable, a 4-digit notified body number is inserted between CE and !).

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Please refer to the regulatory label provided on the product. The point of contact for regulatory matters is: Hewlett-Packard GmbH, Dept./MS: HQ-TRE, Herrenberger Strasse 140, 71034 Boeblingen, Germany.

## Japanese Notice

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

## Korean Notice

B급 기기

(가정용 방송통신기기)

이 기기는 가정용(B급)으로 전자파적합등록을 한 기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

## Product Environmental Notices

### Disposal of Waste Equipment by Users in Private Household in the European Union



This symbol on the product or on its packaging indicates that this product must not be disposed of with your household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling or waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact the local city office, the household waste disposal service or the shop where you purchased the product.

## Chemical Substances

HP is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (*Regulation EC No 1907/2006 of the European Parliament and the Council*). A chemical information report for this product can be found at: <http://www.hp.com/go/reach>

## Restriction of Hazardous Substances (RoHS)

A Japanese regulatory requirement, defined by specification JIS C 0950, 2005, mandates that manufacturers provide Material Content Declarations for certain categories of electronic products

offered for sale after July 1, 2006. To view the JIS C 0950 material declaration for this product, visit <http://www.hp.com/go/jisc0950>.

2008年、日本における製品含有表示方法、JISC0950が公示されました。製造事業者は、2006年7月1日以降に販売される電気・電子機器の特定化学物質の含有につきまして情報提供を義務付けられました。製品の部材表示につきましては、[www.hp.com/go/jisc0950](http://www.hp.com/go/jisc0950)を参照してください。

有毒有害物质/元素的名称及含量表

根据中国  
《电子信息产品污染控制管理办法》



部件名称	有毒有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
扬声器	X	○	○	○	○	○
其它 I/O PCA	X	○	○	○	○	○
机箱/其它	X	○	○	○	○	○
风扇	X	○	○	○	○	○
鼠标	X	○	○	○	○	○
键盘	X	○	○	○	○	○
内存	X	○	○	○	○	○
电缆/其它	X	○	○	○	○	○
处理器	X	○	○	○	○	○
电源	X	○	○	○	○	○
主 PCA	X	○	○	○	○	○
内部/外部介质读取设备	X	○	○	○	○	○
外部控制设备	X	○	○	○	○	○
硬盘驱动器	X	○	○	○	○	○

O: 表示该有毒或有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

X: 表示该有毒或有害物质至少在该部件所用的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

表中标有“X”的所有部件都符合欧盟 RoHS 法规 — “欧洲议会和欧盟理事会 2003 年 1 月 27 日关于电子电器设备中限制使用某些有害物质的 2002/95/EC 号指令”。

注：环保使用期限的参考标识取决于产品正常工作的温度和湿度等条件。

Turkey EEE Regulation

In Conformity with the EEE Regulation  
EEE Yönetmeliğine Uygundur

## HP Recycling Program

HP encourages customers to recycle used electronic hardware, HP original print cartridges, and rechargeable batteries. For more information about recycling programs, go to <http://www.hp.com/recycle>.