



HP Hybrid POS Printer with MICR 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 Hybrid POS Printer with MICR for Point of Sale System.

- ⚠ **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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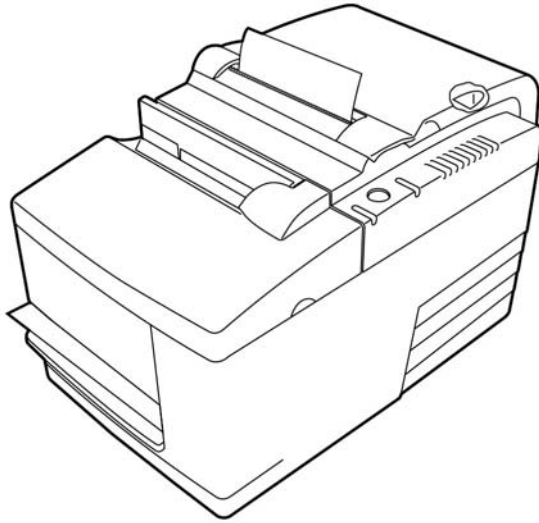
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1 Product Features

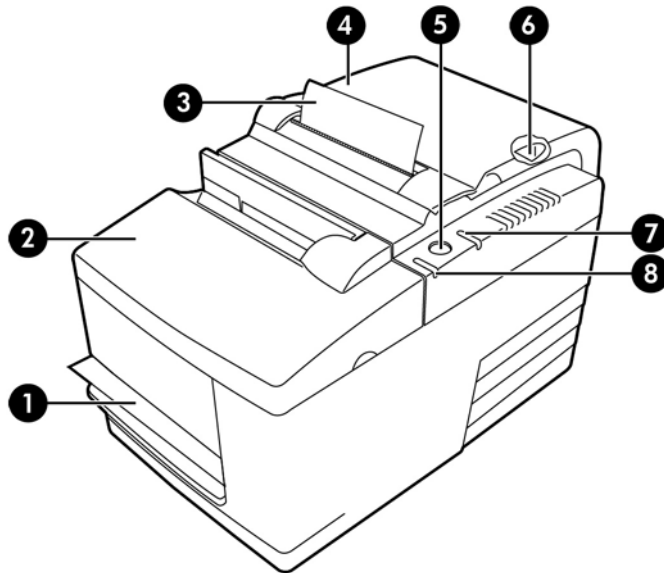


The HP Hybrid POS Printer with MICR (Magnetic Ink Character Recognition) is designed to work with point of sale system hardware and program applications. The printer features:

- Monochrome or two-color receipt printing plus a drop in validation print station
- Two printers in one: a two-color thermal printer on top that prints receipts and an impact slip printer to print on inserted forms and checks
- Built-in Magnetic Ink Character Recognition (MICR) for check reading and validating
- USB powered interface
- Standard command set to allow the printer to work with software written for most printers
- Sensors that enable the printer to communicate status to the POS computer
- Flexibility to print on checks or multi-part forms up to four plies in a wide variety of sizes and orientations
- Drop-in paper loading
- Software generated indicator beeps
- LED status indicator
- 2MB flash memory, 8k buffer
- 8 dots/mm print resolution with up to 200 mm/second throughput speed
- Selectable 44 (standard) or 56 (compressed) columns of print on 72 mm wide thermal paper
- Software and product documentation provided on the *HP Point of Sale System Software and Documentation CD*

Identifying User Controls

Figure 1-1 HP Hybrid POS Printer with MICR



1	Slip station - prints on inserted slips, forms or checks
2	Front cover - opens to install a ribbon cassette
3	Receipt - top receipt output
4	Receipt cover - opens to drop in the paper roll
5	Paper feed button - advances the receipt paper and is used in navigating the configuration menu
6	Reset button - clears the printer's memory and resets the printer
7	Online, Paper Status, Error light - indicates the printer's status by shining or flashing
8	Slip-in light - indicates that a form or check is properly inserted in the slip station

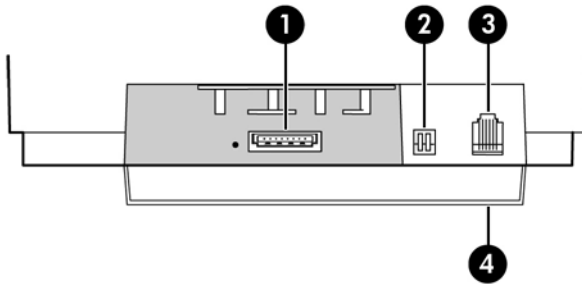
Audible Beeps

After power is applied or after reset, the printer normally emits a single beep. This indicates that the printer has successfully completed its startup and self-test routine.

If, after startup or reset, the beeping continues in a single, double, or triple pattern, an internal failure has occurred. Refer to [Status Indicators on page 30](#) or contact your HP authorized service provider for HP Point of Sale System products.

Identifying Rear Components

Figure 1-2 HP Hybrid POS Printer with MICR



-
- | | |
|-------|--|
| 1 | USB power connector - connects the printer to the POS computer and provides power to the printer |
| <hr/> | |
| 2 | Configuration switch (DIP switch 1) - allows you to change the configuration settings of the printer |
| <hr/> | |
| 3 | Cash drawer connector - connects the printer to the cash drawer |
| <hr/> | |
| 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 |
-

2 Setting Up the Printer

Choosing a Location

The HP Hybrid POS printer requires minimum counter space and may be set on or near the POS computer.

Do not place the printer in any dusty environment or anywhere that spillage of drinks or other liquids can occur. Place the printer on a level surface, and make sure there is enough room to open the receipt cover to change the paper and to open the front cover to change the printer's ribbon cassette.

Be sure to leave adequate space at the rear of the printer for connecting and accessing the cables. For models with the built in Magnetic Ink Character Recognition (MICR) check reader, you may need to make additional adjustments to the printer's location.

△ **CAUTION:** Devices such as CRT monitors or large metal surface scan can affect the printer's magnetic field and cause intermittent check reading errors. Be sure to locate the printer away from source of interference.

Checking the Packing List

Save the packing materials including the cardboard supports in the slip path in case you need to repack the printer for shipping or storage. Before installation, check that the following items have been shipped.

- Printer
- Thermal receipt sample paper roll
- Test printout protecting the printhead
- Cardboard support for cantilever (on slip table)
- USB power cable
- Ribbon cassette
- *HP Point of Sale System Software and Documentation CD*

Report any missing items or shipping related problems to your regional HP authorized service provider for Point of Sale System products.

Removing Internal Restraint Items

Internal packing restraints within the printer provide protection against severe physical shock that occurs during shipment.

1. Remove these items only after placing the printer in its user position.
2. Save all restraints and packaging materials for future use.

Having these packing materials on hand simplifies preparation of the printer for shipping or for long-term storage.

Installing New Receipt Paper

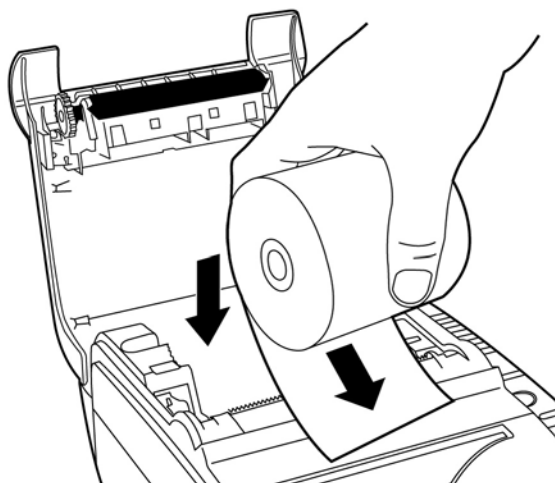
If the Online, Paper Status, Error light blinks, change the paper as soon as convenient to avoid running out of paper part way through a transaction.

If the Online, Paper Status, Error light blinks fast, the paper is out. Change the paper immediately or data maybe lost. The printer can accept and store only a limited amount of data without paper. Memory overload can occur in the buffer, leading to a total loss of data.

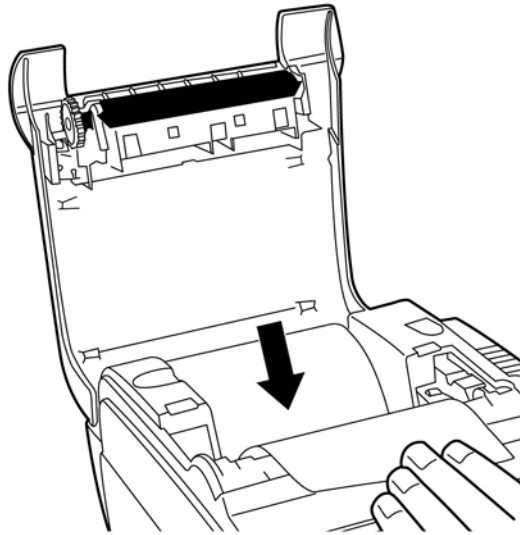
If you are changing the type of paper (monochrome versus two-color) or manufacturer type, send the **Set paper type** (1D 81 m n) command. See the **Set paper type** selection in the configuration menu. Refer to [Configuring the Printer on page 12](#) for instructions on how to enter the configuration menu.

1. Open the receipt cover and remove the used roll and core (if present).
2. Tear off the end of the new roll so that the edge is loose.
3. Place the roll into the paper bucket with the paper unrolling from the bottom of the roll, and with a few inches of paper extending over the cabinet front.

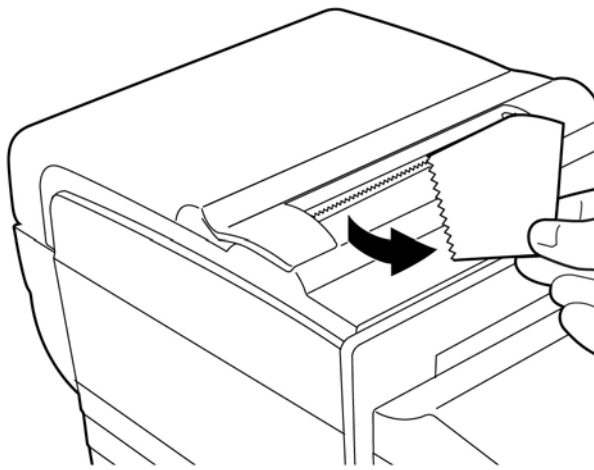
 **NOTE:** Paper must unroll from the bottom of the roll to insure that the image prints.



4. Close the receipt cover while holding the paper over the front of the cabinet.



5. Remove the excess paper by tearing it against the tear-off blade.



6. Press the paper feed button to advance the paper if necessary.

Installing or Replacing the Ribbon Cassette

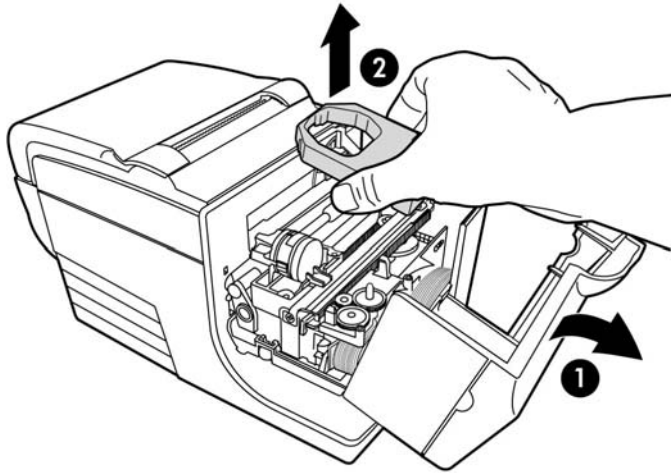
Change the printer's ribbon cassette if it is printing lightly or produces marks, lines or other inconsistent printing on the slip.

- △ **CAUTION:** Use of other than an approved ribbon cassette can void all warranties and cause damage from jamming and other ribbon problems.

Replacing a Used Ribbon Cassette

1. Open the front cover (1) by grasping the cover on each side near the top and swing toward you.

2. Pinch in tabs (2) of the old ribbon cassette and pull straight upward to remove it.



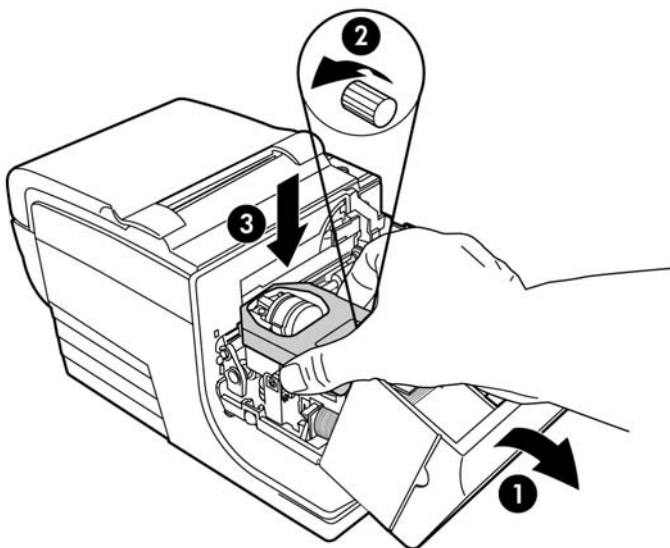
3. Continue to the following section “Installing a New Ribbon Cassette” step 2.

Installing a New Ribbon Cassette


1. Open the front cover (1) by grasping the cover on each side at the bottom and swing up.
2. Unwrap the new ribbon cassette and tighten the ribbon by turning the knob (2) on the cassette in the direction of the arrow.


△ **CAUTION:** Do not remove the transparent mylar shield that protects the exposed ribbon.

3. Position the ribbon cassette on the carriage, as shown, making sure the ribbon is not caught on the printhead.
4. Snap the cassette into place (3) and close the cover.



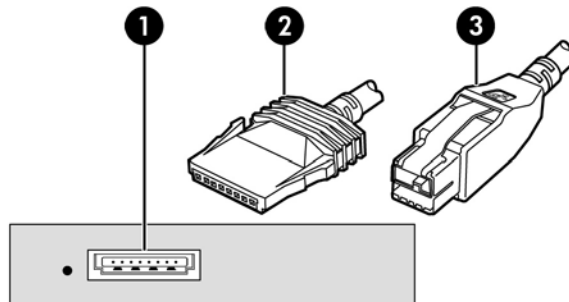
Connecting the Cables

 **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. Be sure the POS computer is turned off.
2. To connect cables to the Hybrid POS Printer with MICR:
 - a. Open the connector cover on the rear of the printer and locate the USB connector (1).
 - b. Plug the printer end of the USB power cable (2) into the USB power connector on the printer.
 - c. Plug the other end of the USB power cable (3) into the POS computer.

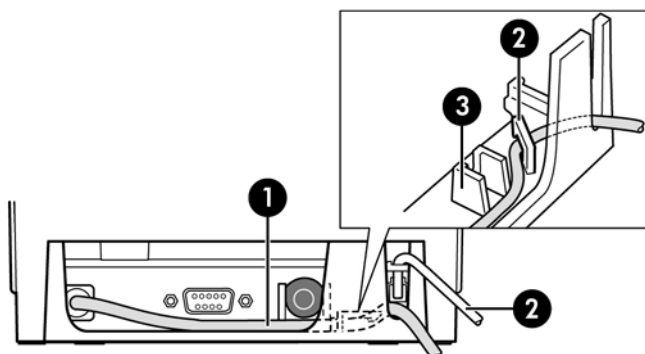
Figure 2-1 HP Hybrid POS Printer with MICR



3. Plug the cash drawer cable into the cash drawer connector (standard phone jack).

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

4. Route the USB cable (1) from the printer through the strain relief tab (2) on the connector cover of the printer.
5. Route the cash drawer cable up and through the strain clip (3) 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 the USB and cash drawer 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 green light on the top cover will light up.

Installing the Drivers

The software and documentation CD provided with this product includes USB, OPOS and JPOS printer drivers. Depending on your POS computer's operating system, install the USB and 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. The CD will run automatically.
3. Read and accept the End User License Agreement. The main menu will be displayed.
4. On the main menu, in the **MICR Printer** column, select the **Windows and OPOS Drivers** or the **JPOS Drivers** from the **Driver Installation** column. Follow the instructions on the screen to complete the installation.
5. If you installed the Windows and OPOS Drivers:
 - a. On the second page of the InstallShield Wizard, you are given the option of installing both the USB and OPOS drivers or only the USB drivers. Select **USB & OPOS Drivers** to install both drivers, or select **USB/OPOS Driver Selection** to install only the USB drivers. Follow the instructions in the Wizard to complete the installation.

 **NOTE:** If you select the **USB/OPOS Driver Selection** option, you can still choose to install the OPOS drivers by clicking the **OPOS Control Objects** check box on the next page in the Wizard.

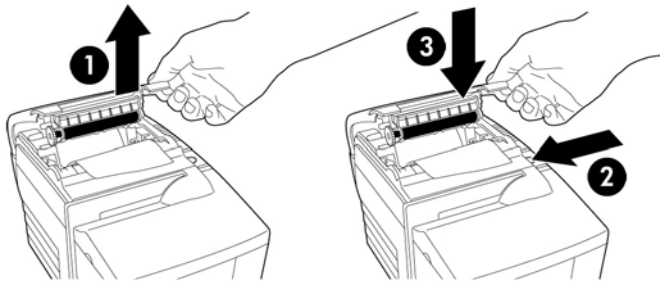
 - b. You must also install the CCO Package. On the main menu, in the **Common Control Objects (CCO)** column, click the CCO Package from the **Driver Installation** column. Follow the instructions on the screen to install the CCO Package.

Testing the Printer

This test prints a complete list of printer settings (Diagnostic form) and partially cuts the paper (see sample on the following page). This printout is useful to a service representative when there is a problem. If the quality of the test printout is poor (missing or faded text) refer to [Troubleshooting on page 30](#). Instructions at the end of the test printout describe how to enter the configuration menu. The configuration menu allows you to change the current settings of the printer.

Test Procedure

1. To run the test, open the receipt cover (1); then, while holding down the paper feed button (2), close the receipt cover (3).



2. When the printer begins printing let go of the paper feed button. The diagnostic printout will print.
3. Review this printout for printer settings. If you wish to change any of these settings go to the configuration menu as instructed at the bottom of the printout.
4. Make selections as instructed on the printout.

△ **CAUTION:** Be extremely careful changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Test Printout

Paper type can be changed in the configuration menu. Paper types and grades available:

Type 0	Monochrome grades Kanzaki P-310
Type 1	Two-color grades Kanzaki P-310 RB
Type 4	Two-color grades Kanzaki P-320 BB
Type 5	Two-color grades Kanzaki P-320 RB

Refer to [Paper Requirements on page 26](#) for more information.

*** HP - Diagnostics Form ***	
Receipt/Menu Enabled	
Model number	HP-0000
Serial number	0000000000
Boot Firmware	
Revision	V1.14
CRC	2FA0
PIN	189-7760624B
Flash Firmware	
Revision	V1.00
CRC	A037
PIN	189-7760620E
Imager Bank 1	
Revision	V1.08
Check Sum	4F9C
PIN	189-7760660A
Imager Bank 2	
Revision	V1.08
Check Sum	58FE
PIN	189-7760660A
HW parameters	
Flash Memory Size	2 Mbytes
Flash Logos/Fonts	960 kbytes
Flash User Storage	64 kbytes
Flash Journal Size	64 kbytes
SRAM Size	512 kbytes
Head setting	F
Paper Type setting	Type 0, Monochrome
Color Density Adj.	nil
Print Density (Mono)	100%
Max Speed	180 mm/sec
Max Power	55 W
Paper Low Sensor	Enabled
MICR	Enabled
MICR Dual Pass	Disabled
MICR DC offset	22 m gain
MICR DC offset	22 m gain
MICR Discriminate	Auto
Imager	Enabled
Slip Normal Alignment	07hr 7d
Compressed Alignment	04hr 4d
Comm. Interface	
RX Buffer Size	4096
Interface type	RS232C/USB
Parameters	
Baud Rate	115200
Data Bits	8
Stop Bit	1
Parity	NONE
Flow Control	DTREDSR
Reception Error	
To enter Printer Config Menu:	
1) Flip DIP switch #1 down	
2) Reset the printer, while holding the Paper Feed button down	

Printer Configurations

Printers are shipped with all the functions and parameters pre-set at the factory. Settings for various printer parameters can be changed. This menu is printed on the receipt and scrolls through instructions for selecting and changing user changeable functions or parameters.

△ **CAUTION:** Be extremely careful changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

The following functions and parameters can be changed in the scrolling configuration menu (*except as noted):

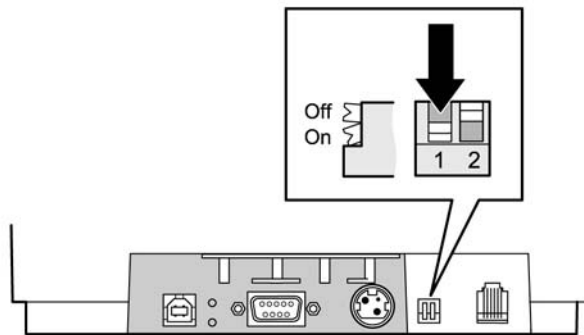
- Communication interface*
 - Universal Serial Bus (USB)
- Diagnostic modes
 - Normal
 - Datascope
 - Receipt test
 - Slip test
 - MICR test
 - Check flip test
- Emulation/software options
 - Printer emulations
 - Print ID
 - Receipt options
 - Default lines per inch
 - Carriage return usage
 - Font size

- Slip options
- Hardware options sub-menu
 - Printhead setting
 - Paper type
 - Color density
 - Print density (mono)
 - Power supply wattage (max power)
 - Alternate reset feature
 - MICR
 - MICR dual pass option

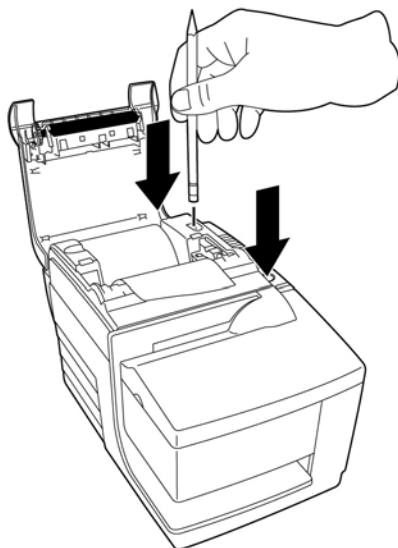
Configuring the Printer

△ **CAUTION:** Be extremely careful changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

1. Open the receipt cover and check if there is paper in the printer. If not, follow the instructions “Installing New Receipt Paper” in the previous section of this chapter.
2. Turn the printer so the back is facing you.
3. Set DIP switch 1 to the On position (down).



4. Open the receipt cover and press the reset button while holding the paper feed button.



The printer beeps, prints the diagnostic form and the configuration main menu.

The printer pauses and waits for a main menu selection to be made (see the following sample printout).

```
*** HP - Printer Config Menu ***
This config Menu allows you to set general printer
parameters

Sub-menus are entered and selections are made using
the Paper Feed Button

- short click : Feed Button is quickly depressed
then released
- long click  : Feed button is held down for more
than 1 second then released

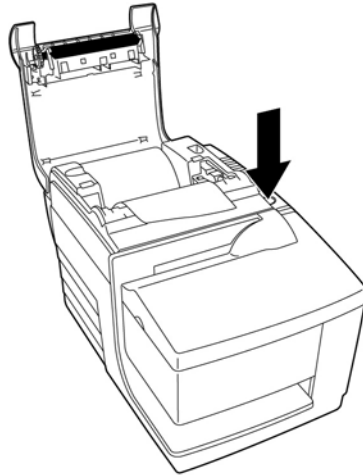
CAUTION!!
The settings are predetermined in factory and
should not be changed.
If you must change the settings do so carefully
to avoid changing other functions.

*****
***** MAIN MENU *****
*****

Select a sub-menu :
- EXIT                -> 1 click
- Print Current Configuration -> 2 clicks
- Set Communication Interface -> 3 clicks
- Set Diagnostics Modes    -> 4 clicks
- Set Emulation/Software Options -> 5 clicks
- Set Hardware Options      -> 6 clicks
- Set Paper Type           -> 7 clicks
- Set Firmware Features     -> 8 clicks

Enter code, then hold Button DOWN
at least 1 second to validate
```

5. Follow the printed instructions on the scrolling menu by pressing the paper feed button as indicated in the following illustration to make selections.



- Indicate **Yes** with a long click. (Press and hold paper feed button for more than one second.)
 - Indicate **No** with a short click. (Press paper feed button quickly.)
6. Continue through your menu selections until you are prompted, **Save New Parameters?**. Select **Yes** or **No**.
 - a. If you want to save, select **Yes**, then return DIP switch 1 to the Off position (up).
 - b. Press the reset button. The printer resets with the new selections. You can verify the setting by pressing the paper feed button to print out a diagnostics form or by holding the paper feed button and opening and closing the receipt cover.
 7. If you would like to continue configuring the printer, select No. The printer returns to the configuration menu where you can set parameters again.

Changing Diagnostic Modes

To change the diagnostic modes enter the configuration menu. Refer to [Configuring the Printer on page 12](#) for instructions on how to enter the configuration menu. Select **Set Diagnostic Modes** from the main menu and select one of the following modes:

- **Normal** - normal operating mode of the printer.
- **Datascope** - the receipt printer prints incoming commands and data in hexadecimal format to help troubleshoot communication problems.
- **Receipt test** - the receipt printer prints two code pages to verify proper printing of the receipt.
- **Slip test** - the slip printer prints two code pages to verify the slip printer is operating properly.
- **MICR test mode** - the receipt printer prints all characters recognized by the MICR (check reader) to verify proper reading of an inserted check.

Enabling or Disabling Datascope Mode

The datascope mode test prints a hexadecimal dump of all data sent to the printer: **1** prints as hexadecimal 31, **A** prints as hexadecimal 41 and so on. This helps troubleshoot communication problems and runs during a normal application (after being enabled through printer configuration).




NOTE: Datascope mode is usually considered a level 1 diagnostic test.

Enter the configuration menu. Datascope mode is enabled and disabled by selecting the **Diagnostic Modes** sub-menu of the configuration menu.

Press the paper feed button as instructed on the **Diagnostic Modes Menu** to enable or disable the datascope mode test.

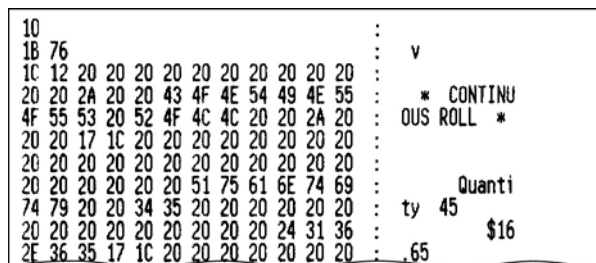
- Off, normal mode (Datascope mode disabled)
- Datascope mode (enabled)

 **NOTE:** Press the paper feed button for at least one second to validate the selection.

To run the datascope mode:

1. After you have enabled the datascope mode, exit the configuration menu.
2. Run a transaction from the POS computer.

All commands and data sent from the POS computer will be printed as hexadecimal characters as shown in the following illustration.



The illustration shows a receipt with hexadecimal data on the left and transaction details on the right. The hexadecimal data is organized into columns. The transaction details include a 'CONTINUOUS ROLL' status, a 'Quantity' of 45, and a total amount of \$16.65.

Hex Data	Transaction Details
10	
1B 76	
1C 12 20 20 20 20 20 20 20 20 20 20 20 20 20 20	
20 20 2A 20 20 43 4F 4E 54 49 4E 55	* CONTINU
4F 55 53 20 52 4F 4C 4C 20 20 2A 20	OUS ROLL *
20 20 17 1C 20 20 20 20 20 20 20 20 20 20	
20 20 20 20 20 20 20 20 20 20 20 20 20 20	
20 20 20 20 20 20 51 75 61 6E 74 69	Quantity
74 79 20 20 34 35 20 20 20 20 20 20	ty 45
20 20 20 20 20 20 20 20 20 24 31 36	\$16
2F 36 35 17 1C 20 20 20 20 20 20 20	.65

To exit the datascope mode:

1. Enter the configuration menu again.
2. Disable the datascope mode.
3. Exit the configuration menu.

The printer is once again online and can communicate normally with the POS computer.

Enabling or Disabling Receipt Test Mode

The receipt test mode verifies proper receipt printing. Receipt test is enabled and disabled by selecting the **Diagnostic Modes** sub-menu of the configuration menu. Refer to [Configuring the Printer on page 12](#) for instructions on how to enter the configuration menu.

To run the Receipt test mode:

1. Enable the receipt test mode in the configuration menu.
2. Exit the configuration menu.
3. Press the paper feed button. The receipt station prints two code pages and cuts the receipt.
4. To repeat this test, press the paper feed button again.

To exit the receipt test mode:

1. Enter the configuration menu again.
2. Disable the receipt test mode.
3. Exit the configuration menu.

The printer is online and can again communicate normally with the POS computer.

Enabling or Disabling Slip Test Mode

The slip test mode verifies proper printing on a slip. Slip test is enabled or disabled by selecting the **Diagnostic Modes** sub-menu of the configuration menu. Refer to [Configuring the Printer on page 12](#) for instructions on how to enter the configuration menu.

To run the slip test mode:

1. Enable the slip test mode in the configuration menu.
2. Exit the configuration menu.
3. Insert a slip into the slip station.
4. Press the paper feed button. Two code pages will be printed.
5. To repeat this test, perform steps 3 and 4 again.

To exit the slip test mode:

1. Enter the configuration menu again.
2. Disable the slip test mode.
3. Exit the configuration menu.

The printer is online and can again communicate normally with the POS computer.

Enabling and Disabling MICR Test Mode

MICR test mode tests the MICR operation. In this mode the MICR reads the characters on a check, but instead of transmitting the values to the software it prints them out. MICR test is enabled or disabled by selecting the **Diagnostic Modes** sub-menu of the configuration menu. Refer to [Configuring the Printer on page 12](#) for instructions on how to enter the configuration menu.

To run the MICR test mode:

1. Enable the MICR test mode through the configuration menu. Then exit the configuration menu.
2. Insert a check into the slip station. (Refer to [Verifying and Validating Checks on page 22](#).)
3. Once a check is detected by the printer, the platen closes and the characters are read by the MICR check reader. The decoded data is printed as characters on receipt paper. The platen is then opened, and the test is re-started.
4. The printed characters should match the characters on the check. If the MICR check reader misreads a character, a question mark ? is printed. If no characters can be read, NO MICR CHARACTERS is printed.

MICR Data :

>123456789>12345677(010925

To exit the MICR test mode:

1. Enter the configuration menu again.
2. Disable the MICR test mode.
3. Exit the configuration menu.

The printer returns to normal mode and can again communicate with the POS computer.

Setting the Printer Emulations and Software Options

Printer emulations determine what commands are available to the printer. To change the printer emulations settings, select the **Emulations/Software Options** sub-menu of the main menu and answer Yes to **Set the Printer Emulations?** printed on the receipt. This takes you to the instructions for setting the printer emulation


△ **CAUTION:** Be extremely careful changing any of the printer settings to avoid inadvertently changing other settings that might affect the performance of the printer.

Press the paper feed button as instructed to select the printer emulation you want.

- Printer Emulation
 - Native mode
 - TPG printer model A756 emulation
- Printer ID mode

This function determines the ID value returned by the printer in response to a Transmit printer ID command (1D 49 n). The printer can be configured to send back the ID of TPG printer models A776, A760, A758 or A756.
- Carriage return usage

This function allows the printer to use the carriage return (hexadecimal 0D) command as a print command or to ignore it, depending on the application.

 **NOTE:** Press the paper feed button for a least one second to validate the selection.

Receipt Options

- Default lines per inch

This function allows you to set the receipt default for lines per inch to any of the following:

 - 8.13 lines per inch
 - 7.52 lines per inch
 - 6.77 lines per inch
 - 6.00 lines per inch
- Default font

Sets the default receipt font for monochrome, two-color, and user-defined fonts.
- Font size

Allows user to set font size for the emulation being used.

Slip Options

- Slip eject at receipt select

When enabled the printer ejects the slip when receipt is selected.
- Delete lead spaces: N Standard Columns

Sets the print to delete number (N) of leading spaces in the slip format for standard print.
- Delete lead spaces: N Compressed Columns

Sets the printer to delete number (N) of leading spaces in the slip format for compressed print.

- Compressed mode: Disabled/Enabled

Turns on compressed print for all slip printing.

- Delete trailing spaces: Disabled/Enabled

Removes all trailing spaces for slip printing.

- Max Lines Rotated: N lines

Varies the spacing between the rotated print formats to allow printing of more lines. The setting (N) is changeable from 21 to 25 lines.

- A760 Slip Stop: Disabled/Enabled

Causes the slip form to be printed at the same spot as in the TPG printer models A758 or A760 printer.

Selecting Hardware Options Sub-menu to Set

- Printhead setting

This is the printhead energy rating. It must match the rating marked on the front right of the thermal mechanism in the printer.

△ **CAUTION:** Do not change printhead setting unless printhead is replaced.

When a new thermal mechanism is installed, be sure this setting matches the indicated energy rating on the mechanism.

- Color density

Adjusts printhead energy level to change color printing or adjust to paper variations. Factory setting is 100%.

△ **CAUTION:** Choose an energy level no higher than necessary to achieve a dark printout. Failure to observe this caution may result in a printer service call or voiding the printer warranty. Running a high energy level reduces the printhead life. Consult your HP authorized service provider for HP Point of Sale System products if you have questions.

- Print density (monochrome papers only)

Adjusts printhead energy level to darken printout or adjust for paper variations. When the printer prints high-density color print lines (text or graphics), it automatically slows down. Factory setting is 100%.

△ **CAUTION:** Choose an energy level no higher than necessary to achieve a dark printout. Failure to observe this caution may result in a printer service call or voiding the printer warranty. Running a high energy level reduces the printhead life. Consult your HP authorized service provider for HP Point of Sale System products if you have questions.

- Power supply wattage (Max power)

You can choose between a 55-watt or 75-watt power supply. This matches the wattage of the printer to the power supply.

- 55-watt power supply (standard)
- 75-watt power supply (enables printer to optimize speed at higher dot coverage.)

- Alternate reset feature

This feature allows you to reset the printer by opening and closing the front cover instead of using the dipswitch or reset button.

- Paper low sensor

Allows the user to enable or disable the paper low sensor.

- MICR

Allows the user to enable or disable the MICR to read checks.

- MICR dual pass option

This feature when enabled allows the printer to attempt a second reading of the check MICR number, if the first attempt was unsuccessful.

3 Operating the Printer

Printing on Forms or Checks

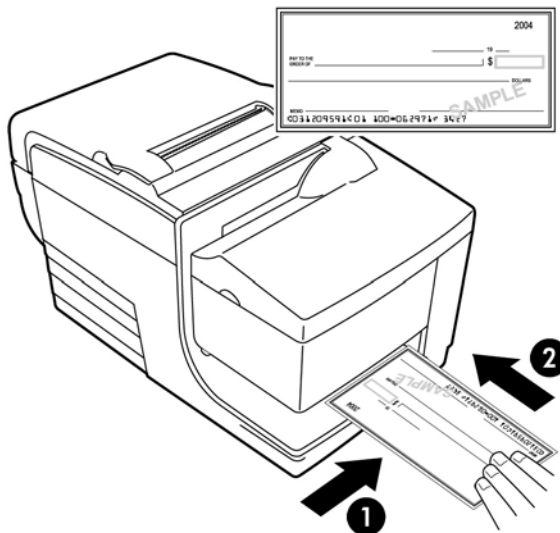
Several types of transactions may require the insertion of a check or other form into the printer:

- Credit card transaction (requiring a merchant verification or authorization slip)
- Multiple-part forms such as credit transactions or merchandise returns
- Electronic funds transfers
- Electronic check
- Check printing (printing the date, payee, and amount on the check face)
- Check endorsement

The printer can also print on multi-part forms up to four parts thick. Use either the front insertion or drop in method.

Front Insertion Printing Method

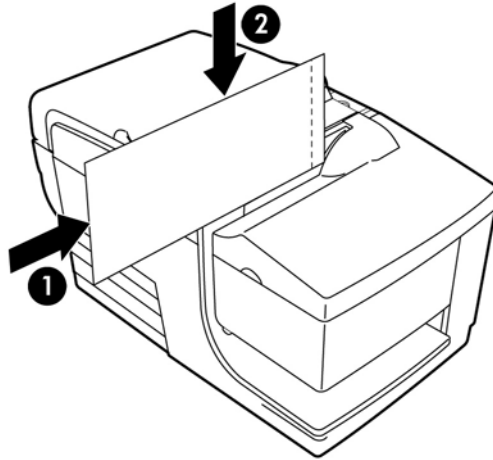
1. Insert the form or check from the front and place it on the slip table with the print side up. If the form is extra long, you may need to insert it from the side. A slight resistance may be felt when the form comes in contact with the form stop.
2. Slide the form or check to the right (1) until it aligns against the check guide.
3. Slide the form or check toward the top (2) of the printer until the green slip-in light on the top cover turns on. This indicates that both sensors are covered.



4. Follow the instructions from the POS computer. The printer begins printing.
5. Remove the form or check after it has been ejected.
6. Follow the instructions from the POS computer to finish the transaction.

Drop In Printing Method

1. Insert the form or check into the slot from the top or side with the print side toward you. A slight resistance may be felt when the form comes in contact with the form stop.
2. Move the form or check to the right (1) until it is aligned against the right edge of the slot.
3. Slide the form or check downward (2) until the green slip-in light on the top cover turns on. This indicates that both sensors are covered.



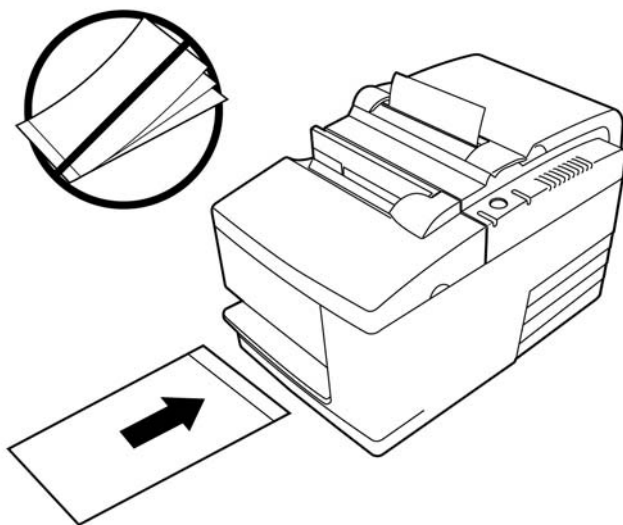
4. Follow the instructions from the POS computer. The printer begins printing.
5. Remove the form or check after it has been fed back out.
6. Follow the instructions from the POS computer to finish the transaction.

Inserting Multi-Part Forms

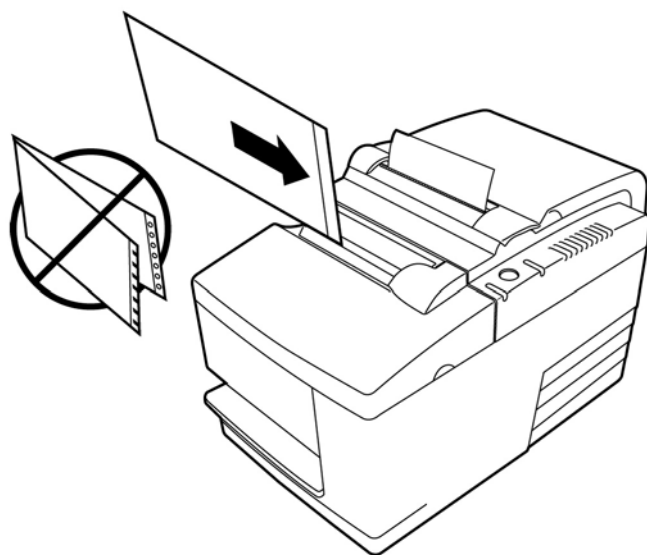
Be sure to insert multi-part forms glued-edge-first as shown in the following illustrations, whether inserting the form from the front, top or side.

△ **CAUTION:** Failure to insert multi-forms properly can result in costly paper jams and damage to the form.

Front insertion printing - glued edge leading




Top or side slip-in printing - no perforation holes to right side



Verifying and Validating Checks


The printer's MICR check reader enables check verification and validation by inserting the check from the front of the printer.

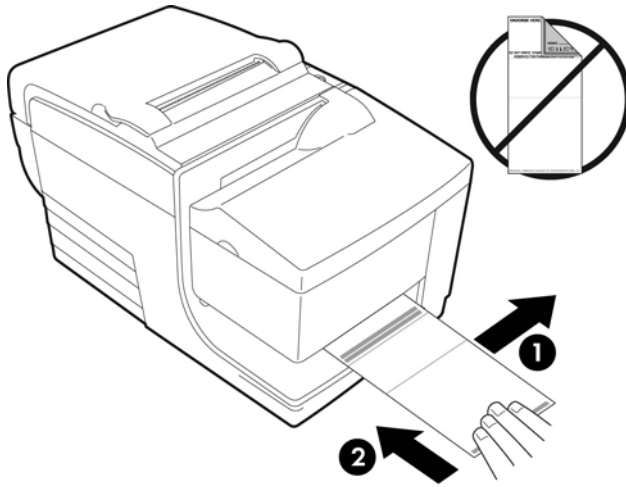
 **NOTE:** To ensure that checks are properly verified and validated, they must be free of folds and wrinkles and inserted correctly into the MICR printer. Smooth a wrinkled or folded check for best performance.

Inserting a Check

1. Place the check face down on the slip table, with the bottom edge of the check to the right (1). Move the check to the right so it aligns along the check guide.

2. Slide the check straight forward (2) into the printer until the green slip-in light on the top right edge of the printer comes on, indicating both sensors are covered.

 **NOTE:** Hold the check to the right, against the check guide and release it as soon as the printer begins to run. Do not fold the check.



3. Follow the instructions on the POS computer to complete the MICR process.
Upon instruction from the POS computer, the check is fed into the printer, read and backed out to a position ready for endorsement, if desired.
If the terminal indicates an incorrect read of the MICR:
 - Remove the check.
 - Reinsert the check following steps 1, 2 and 3 above.
4. Remove the check only when it is fully released by the printer.
5. Continue to follow the instructions from the POS computer to finish the transaction.

Preventing Printhead Overheating

Overheating of the thermal printhead is one of the most common causes of serious printer problems. To prevent overheating, certain duty cycle restrictions need to be applied because of the heat generated by the thermal printhead, particularly when it is printing logos. Certain limits we can apply are: ambient temperature, the percentage of time of continuous solid printing (measured against one minute), and the percentage amount of coverage.

To avoid overheating do one or more of the following:

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

Keep in mind that the ambient temperature may be adversely affected by direct exposure to sunlight or close proximity to other sources of heat.

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

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

Amount of Solid Coverage	Ambient Temperature		
	25°C (77°F)	35°C (95°F)	50°C (122°F)
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.

Avoiding Harsh Environments

The printer is a durable piece of equipment and can withstand a range of physical environments. However, the printer’s internal mechanical components are vulnerable to airborne contaminants, particularly in certain harsh areas, such as home improvement stores, garden shops, and warehouse environments. The printer can become inoperative rapidly in these kinds of environments, if routine cleaning is not performed. To prolong the serviceability of your printer in these harsh environments, HP recommends regular periodic inspection and general cleaning of the MICR read head, sensors, carriage shaft and both printer mechanisms.

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

△ **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.

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.

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

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

△ **CAUTION:** Using non-recommended paper over an extended period of time can result in printhead failure. Refer to [Technical Specifications on page 37](#) for paper specifications.

5 Paper Requirements

Thermal Paper

The printer requires qualified paper with the following dimensions:


- Width: 80 ± 5 mm (3.15 ± 0.2 in)
- Diameter: 83 mm max (3.75 in)
- Length: 98 meters (321 feet) 2.4 mil thick

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.

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

Manufacturers

HP recommends the following paper grades produced by their respective manufacturers. 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 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.

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 54912	Optima POS-Plus (Light)
Voice: (800)922-1729	Optima T2162(Light)
Fax: (800)922-1712	Optima Superior (Standard)
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)
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)
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)

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)

Single or Multiple Forms

The HP Hybrid POS Printer prints on single- or multiple-part forms in the slip station (up to four-part forms). Forms and slips must meet the following requirements:

- Front insertion (minimum)
 - 51 mm (2.00") wide
 - 68 mm (2.68") long
- Side insertion (minimum)
 - 51 mm (2.0") wide
 - 203 mm (8.0") long
- Single-ply forms should be on paper that is greater than 15 pounds

- Multiple-part forms (up to four parts) should be no thicker than 0.40 mm (0.014") and a minimum thickness of 0.08 mm (0.003").



NOTE: Do not use forms containing holes along the top or right edge.

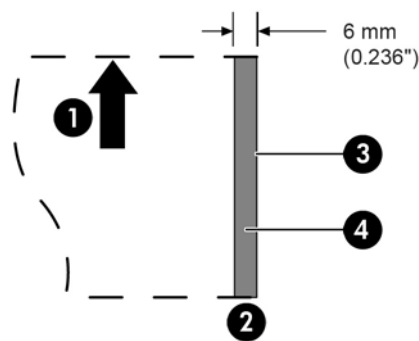
- Forms for use with flip check (minimum)
70 mm (2.75") wide
152 mm (6.00") long

Slip Forms

- The slip form should be flat and void of curls or wrinkles, especially at the top.
- When using slip paper with glued edges consider the following:
 - No glue on bottom edge.
 - Right or top edge - paper feeding and insertion are affected by gluing method, length of edge, and quality of glue used.
 - Left edge or wide slip paper - skewing may occur.

The Slip sensors that activate the slip-in light use a reflective photo sensor.

- Do not use paper that has holes or dark areas with low reflection (less than 60% reflection) at the slip sensor location. (Area "2" in the following illustration.)
- Thin paper should be used between the top and bottom sheets of multi-ply paper. Thick paper reduces the copy capability.
- For best print quality on the bottom sheets of multipart forms, use the double-strike mode.
- If any ply in a multipart form exceeds .003 inches in thickness, the remaining plies may be unreadable.



1	Paper feed direction
2	Slip sensor location
3	Slip edge
4	Paper holes and low reflection prohibited areas

Checks

Check specifications for paper are defined by American Standards ANSI X9.13 and ANSI X9.18, and International Standard ISO 1004.

- Minimum check size: 70 mm (2.75") wide x 152 mm(6.00") long
- Maximum check size: 95 mm (3.75") wide x 222 mm(8.75") long

MICR Reader

- For best results the check should be flat and free of curls, folds, or wrinkles (especially at the edges). Wrinkled checks may rub against the ribbon causing them to become ink-stained.
- Checks must be void of clips or staples that could cause paper jams, MICR read errors, and/or MICR head damage.
- Immediately release the check once the printer starts to feed it. Failure to release the check could skew it, causing paper jams and MICR read errors.

Ribbon Cassettes

The HP Hybrid POS Printer uses the following TPG brand or comparable ribbon cassettes:

A152–0041 (purple long life ribbon cassette—5 million character life)

A152–0042 (black long life ribbon cassette—5 million character life)

A Troubleshooting

The design of the HP printers require virtually no periodic servicing. However, if problems do occur, they can usually be diagnosed readily by checking the light status indicators, below, then referring to appropriate sections in this appendix.

Status Indicators

The Online, Paper Status, Error light is the light to the rear, on the top edge of the printer. It may be the first indication that something is wrong.

The light closer to the front on the right edge of the printer indicates that a form is inserted properly. It does not indicate an error.

For some unexpected conditions, the printer communicates the information to the POS computer and relies on the application to indicate the condition.

Light Behavior	Printer Status
Off	No power
Fast blink	Firmware download
Fast blink	Level 0 diagnostics (occurs at power on and on reset)
Fast blink	Cover open (receipt or slip) Paper out Carriage jam Slip jam Knife jam
Slow blink	Paper low Temperature error Voltage error
Steady on	All other states

The information on the following pages describes common conditions that you could encounter and easily fix yourself. A few may require that you contact a regional HP authorized service provider for HP Point of Sale System products. You should be able to correct many of the conditions locally without calling for service. However, if a condition persists, contact your regional HP authorized service provider. Refer to [Preparing to Call Technical Support on page 35](#).

Typical Remedy Procedure

If an unexpected condition has occurred, take the following general steps:

1. Cycle the power of the printer and note its behavior.
2. Check the Online, Paper Status, Error light and compare its behavior to the previous light behavior table.
3. Test the receipt printer or slip printer by printing a sample test print. Refer to [Testing the Printer on page 9](#).
4. Determine if the condition is with the thermal receipt printer or the impact slip printer and refer to the troubleshooting tables on the following pages.

Solving Common Problems

The following tables list possible problems, the possible cause of each problem, and the recommended solutions.

Printer Beeps

Problem	Possible Cause	Solution
Printer beeps in a single, double, or triple pattern at first power on. The Online, Paper Status, Error light blinks in the same pattern, and the printer won't power up.	The printer has problems with its electronics.	Contact a regional HP authorized service provider for HP Point of Sale System.
Printer beeps during normal operation.	The printer may be programmed to beep during normal operation by the software application used on the POS computer.	Check the software set up configuration of the computer.

Printer Will Not Print

Problem	Possible Cause	Solution
The Online, Paper Status, Error light is blinking and the printer won't print.	The receipt paper may be out, the cover open, the knife jammed or the printhead temperature is out of range.	Check that the receipt paper is properly loaded and covers are closed. Refer to the light behavior table at the beginning of the appendix. If problems continue contact your regional HP authorized service provider for HP Point of Sale System.
Printer has power but doesn't print.	Cable may not be connected properly.	Check all cable connections. Check that the POS computer is on.
	DIP switches are not set correctly.	Check the switch settings. DIP switch 1 should be off (up position) for normal operation.
	All other causes.	Contact your regional HP authorized service provider for HP Point of Sale System.

Online, Paper Status, Error Light

Problem	Possible Cause	Solution
Online, Paper Status, Error light is blinking.	Receipt paper is out.	Change the paper immediately. Do not run a transaction without paper. Data may be lost.
	Cover is open	Close the receipt cover or front cover. The printer will not operate with any of the covers open.
	The knife is jammed.	Open the receipt cover and check the knife. Do not force the cover if it will not open. Clean any jammed paper you can see. Tear off any excess paper against the tear-off blade.
	The slip is jammed.	Open the front cover and clear paper from the path.
	The carriage is jammed	Open the front cover and clear paper from path.
	Receipt paper is low.	The printer has 5 to 10 meters (15 to 30 feet) of paper left. Change the paper soon to avoid running out of paper part way through the transaction. Refer to Installing New Receipt Paper on page 5 .
	Thermal printhead temperature is out of range.	The printhead may overheat when printing in a room where the temperature is above the recommended operating temperature or when printing high density graphics continuously, regardless of the room temperature. In either case, the printer will shut off. If the temperature of the printhead is too hot, adjust the room temperature or move the printer to a cooler location. If the printhead is overheating because of printing high density graphics continuously, reduce the demand on the printer.

Slip-in Light

Problem	Possible Cause	Solution
Light does not operate.	No check or form is inserted into printer.	Ensure the check or form is aligned properly. Refer to Printing on Forms or Checks on page 20 .
	Check or form is incorrectly inserted.	

Print Quality

Problem	Possible Cause	Solution
Printer starts to print but stops while form is being printed.	Communication error or software error.	Check the interface cable. Check that the software is working properly.

Print Quality

Problem	Possible Cause	Solution
Forms print is light or spotty.	Form is not inserted correctly.	Refer to Printing on Forms or Checks on page 20 .
	Impact printhead is dirty or defective.	Contact a regional HP authorized service provider for HP Point of Sale System.
	Improper platen gap.	Contact a regional HP authorized service provider for HP Point of Sale System.
	Ribbon cassette is defective.	Replace the cassette ribbon. Refer to Installing or Replacing the Ribbon Cassette on page 6 .
Ribbon Cassette is worn.	Ribbon cassette needs to be replaced.	Replace the cassette ribbon. Refer to Installing or Replacing the Ribbon Cassette on page 6 .
Light print, smudging or slip skews.	Platen gap needs adjustment.	Contact a regional HP authorized service provider for HP Point of Sale System.
Color stripe appears on receipt.	Receipt paper is low.	Install new receipt paper.
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.
Print is light or spotty.	Paper roll is loaded incorrectly.	Check that paper is loaded properly. Refer to Installing New Receipt Paper on page 5 .
	Thermal printhead is dirty.	Use recommended thermal receipt paper. Clean the thermal printhead with an alcohol pen prior to going back to an approved paper. Do not spray the thermal printhead with household cleaner as this may damage it and the electronics. The thermal printhead does not normally require cleaning if the recommended paper grades are used. If non-recommended paper has been used for an extended period of time, cleaning the printhead with an alcohol pen will not help.
	Printhead is defective.	Contact a regional HP authorized service provider for HP Point of Sale System.
Color print is light.	Variations in paper.	Enter the configuration menu of the printer to increase the energy level of the printhead in "Color Density Adj." Refer to Configuring the Printer on page 12 .
	Incorrect paper setting.	Check the diagnostic setting.

Print Quality

Problem	Possible Cause	Solution
Inconsistent printing, not two-color print.	Paper type used and paper typesetting do not match.	Print diagnostic form and verify paper type setting to type 0, 4, or 5. Refer to Configuring the Printer on page 12 and paper types specified in Paper Requirements on page 26 .
Vertical column of print is missing, one side of receipt is missing or top bottom half of characters are missing.	Print head is defective.	Contact a regional HP authorized service provider for HP Point of Sale System.
	Incorrect printhead setting.	Check the diagnostic setting.

Slip Station and MICR

Problem	Possible Cause	Solution
Slip-in light does not come on.	form or check is not inserted properly.	Line up the form or check against the check guide (wall) and slide it toward the front of the printer until it is visible from the top (the light should come on). Extra long forms may need to be inserted from the side to disengage the Form Stop. Refer to Printing on Forms or Checks on page 20 or Verifying and Validating Checks on page 22 .
Forms or check skew or catch in the slip station.	There is an obstruction or paper jam in the slip station.	Open the front cover and check for paper jams or other obstruction in the slip station. Clear the jammed paper or obstruction.
The MICR check reader does not read or misreads checks.	The check is not properly inserted.	Make sure the check is inserted properly with the MICR characters down. Refer to Verifying and Validating Checks on page 22 .
	The check is fraudulent.	Make sure that the check is not fraudulent. On fraudulent checks, the characters the printer reads may be different from those that are visible on the check face.
	A nearby magnetic source is interfering with the check reader.	Devices, such as CRT monitors, security devices or large metal surfaces near the printer can affect the printer's magnetic field, causing intermittent errors when the MICR check reader is operating. Move the printer away from such items.

Knife

Problem	Possible Cause	Solution
Receipt does not cut.	Paper is jammed.	Open the receipt cover, inspect the knife and clear any jammed paper.
All other problems.	Unknown cause.	Contact a regional HP authorized service provider for HP Point of Sale System.

Other Conditions

The following problems all need to be corrected by a regional HP authorized service provider for HP Point of Sale System. Refer to [Preparing to Call Technical Support on page 35](#) in this appendix.

- MICR check reader not operating properly
- Forms not feeding into the slip/forms area properly
- Missing dots in slip or forms printing
- Printer will not cycle or stop when required
- Illegible characters
- Paper will not feed

Using the Worldwide Web

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 *Support Telephone Numbers* guide on the *HP Point of Sale System Software and Documentation* CD. Have the following information available when you call:

- If connected to an HP POS computer, provide the serial number of the POS computer
- Purchase date on invoice
- Serial and spares part numbers located on the label underneath the product
- Condition under which the problem occurred
- Error messages received
- Hardware configuration
- Hardware and software you are using

Returning a Printer

Follow these packing instructions if you need to return a printer for servicing.

1. Remove the ribbon cassette.
2. Place the two cardboard supports on the slip table.
3. Place the printer in the corrugated pack, place the packed printer in the box and secure the box with packing tape.

B Technical Specifications

HP Hybrid POS Printers

Printer Specifications	
Receipt Station	
Print Method	Direct Thermal, 203 DPI
Character Cell Size	13 x 24, 10 x 24
CPI	15.6, 20.3
Print Columns	44 & 56
Print Line Width	72 mm/2.8 in
Printing Speed	Monochrome 200 mm/sec
	59.2 LPS
	Color 100 mm/sec
Printing Speed	27 LPS
Character Sets	Code Page 437, 737, 850, 852, 858 (with Eurosymbol), 860, 862, 863, 865, 866, 1251, 1255 and 1252 (Expanded character sets available)
Bar Codes	UPC-A, UPC-E, Code 39, Code 93, Code 128, JAN8 and JAN13 (EAN), Interleaved 2 of 5, Codabar, PDF 417 (receipt station only)
Auto Cutter	Partial Cut
Slip Station	
Print Method	9-Pin Impact
Character Cell Size	7 x 7, 12 x 7, 5 x 9
CPI	13.9 & 16.8
Print Columns	42 & 51
Print Line Width	76.8 mm/3.02 in
Printing Speed	16 mm/sec
	4.8 LPS
MICR Reader	
Character sets/fonts	E-13B and CMC-7, auto discriminate (Integrated in slip station)
Check Read Rate	99% minimum
Parsing Formats	E-13B only. Programmable to any format
Dimensions and Weight	

Printer Specifications	
Height	167.64 mm/6.6 in
Width	165.10mm/6.5 in
Depth	336.55 mm/13.25 in
Weight	3.62 kg/8 lbs
Interface	Powered USB
Memory	2 MB flash memory, 8K RAM; shared for graphics, logos, user defined characters, and user data storage
Power Requirements	24 VDC, 3 Amps
Temperature	
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.
Thermal Paper Requirements	
Paper Type	Direct Thermal, POS Grade(s), special requirements for color printing
Paper Roll (W x Dia)	80 mm x 83 mm/3.15 in x 3.27 in
Impact Slip Forms	
Size	68 mm x 203.00 mm/2.68 in x 8.00 in maximum front & side
Front Insertion Minimum	51 mm x 68 mm/2.00 in x 2.68 in
Side Insertion Minimum	51 mm x 203 mm/2.0 in x 8.0 in
Maximum Length	279.4 mm/11.00 in
Number of Plies	1 - 4 ply multipart
Paper Thickness	0.40 mm/0.014 in maximum

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 RFI/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 (type the product number in the search field).

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



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 !)..

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を参照してください。

有毒有害物质/元素名称及含量表

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>.