

HEWLETT-PACKARD

AUSTRALIAN DEFENCE INDUSTRIES



0005374

Personal Printers QuietJet Series

Owner's Manual



|| 2845 ||

HEWLETT-PACKARD



Limited Warranty

One-Year Limited Hardware Warranty

Except when used as part of an HP system, Hewlett-Packard warrants your printing peripheral hardware product against defects in materials and workmanship for a period of one year from receipt by the end user. If HP receives notice of such defects during the warranty period, HP will either, at its option, repair or replace products which prove to be defective.

Should HP be unable to repair or replace the product within a reasonable amount of time, customer's alternative exclusive remedy shall be a refund of the purchase price upon return of the product.

If this product was purchased as part of an HP system in a coordinated shipment or as a system add-on, it is warranted against defects in material and workmanship during the same period as the HP system.

Exclusions

The above warranty shall not apply to defects resulting from: improper or inadequate maintenance by customer; customer-supplied software or interfacing; unauthorized modification or misuse; operation outside of the environmental specifications for the product; or improper site preparation and maintenance.

Obtaining Warranty Service

To obtain warranty service, products must be returned to a service facility designated by HP. HP may repair on-site at the option of the customer. Customer is responsible for travel charges when on-site repair is requested.

Warranty service for products purchased as part of a system will be subject to service in accordance with the system support services.

Customer shall prepay shipping charges for products returned to HP for warranty service and HP shall pay for return of the products to customer. However, customer shall pay all shipping charges, duties, and taxes for products returned to HP from another country.

Warranty Limitations

HP makes no other warranty, either expressed or implied, with respect to this product. HP specifically disclaims the implied warranties of merchantability and fitness for a particular purpose. Some states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion may not apply to you. However, any implied warranty of merchantability or fitness is limited to the one-year duration of this written warranty.

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state, or province to province.

Exclusive Remedies

The remedies provided herein are customer's sole and exclusive remedies. In no event shall HP be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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Obtaining Service During or After Warranty

During the Warranty Period.

If your hardware should fail during the warranty period, follow the HELP! procedures in the owner's manual, then take the failed piece of equipment to an Authorized HP Personal Computer Dealer Repair Center—or send the equipment to one of the HP Field Repair Centers listed in the directory sent with your product. (HP may repair on-site at your option, in which case you are responsible for travel charges.)

After the Warranty Period.

If your hardware should fail after the warranty period, follow the HELP! procedures in the owner's manual, then contact an Authorized HP Personal Computer Dealer Repair Center or call your HP Sales and Service Office for details of the services available.

If you are uncertain about which unit to return, call your Authorized HP Personal Computer Dealer or a Field Repair Center for assistance.



Determining If Your Printer Needs Service

Your printer is designed to give you years of reliable service. If you are having a problem with your printer, however, see Chapter 5 of the owner's manual, for help in determining if your printer needs service.

Returning Your Printer for Service

If your printer requires servicing, contact the Hewlett-Packard Dealer or HP Sales and Support Office where you purchased the printer for complete service information.

If you need to ship your printer, be sure it is packed in a protective carton. We recommend that you save the original shipping container for this purpose. If needed, packaging materials and carton may be obtained from Hewlett-Packard. In-transit damage is not covered by the warranty. We suggest that you always insure shipments.

You can help assure effective servicing of your printer by following these guidelines:

- 1.** Follow the instructions in this manual to make certain the malfunction is in your printer and not the result of an interface error or a malfunction in your computer or software. If possible, identify the defective area or function.
- 2.** If you determine that repair is required, please include the following items when you return your printer for service:
 - a. A description of the exact configuration at the time of the malfunction, including the interface cable, computer and peripherals, and software (program) in use.
 - b. A brief description of symptoms for service personnel.
 - c. Hardcopy produced on the printer that might help illustrate the problem area.
 - d. The serial number of the printer (located on the printer's bottom).
 - e. If purchased through an HP dealer, a copy of the sales slip or other proof of purchase to establish the warranty coverage period.
- 3.** Include your name, address, and a phone number where you may be reached during the day.
- 4.** Do not include any operating accessories with the printer, unless the problem relates to an accessory. Do include the print cartridge and power supply.

QuietJet Plus Personal Printer Owner's Manual



**Manual Part No.
02227-90019**

Notice

The information contained in this document is subject to change without notice.

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Regulatory Notices

Potential for Radio/ Television Interference (USA only)

The QuietJet printer generates and uses radio frequency energy and may cause interference to radio and television reception. Your printer complies with the specifications in Subpart J of Part 15 or the Federal Communications Commission rules for a Class B computing device. These specifications provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If the printer does cause interference to radio or television reception, which can be determined by turning the printer off and on, you can try to eliminate the interference problem by doing one or more of the following.

- Reorient the receiving antenna.
- Reorient the position of the printer with respect to the receiver.
- Move the printer away from the receiver.
- Plug the printer into a different outlet so that the printer and the receiver are on different branch circuits.

If necessary, consult an authorized HP dealer or an experienced radio/television technician for additional suggestions. You may find the following booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio/TV Interference Problems*. This booklet is available from the US Government Printing Office, Washington D.C. 20402, Stock No. 004-000-00345-4.

To comply with FCC rules Part 15J Class B computing device use only shielded interface cables.

**Electromagnetic
Interference
Regulations—
Germany**

This device was tested in a typical system configuration and meets the General License requirements in Germany (FTZ 1046/84). As a proof of compliance it carries the VDE Radio Protection Mark with index 0871-B/P for peripherals.

If this device is to be operated with a system,

- And if the General License is being claimed, the complete system has to comply with the General Licensing requirements.
- Which has its own FTZ-Serial-License, and for which an operating license has been granted or requested, usually no further steps are necessary.

**Funkentstörung
Deutschland**

Dieses Gerät wurde in einer typischen Systemkonfiguration geprüft und entspricht den Bestimmungen der Allgemeinen Genehmigung FTZ 1046/84. Als Nachweis ist das Gerät mit dem VDE-Funkschutzzeichen mit Index 0871-B/P für Peripheriegeräte gekennzeichnet.

Wird das Gerät innerhalb einer Anlage betrieben,

- So muß bei Inanspruchnahme der Allgemeinen Genehmigung FTZ 1046/84 die gesamte Anlage der oben genannten Genehmigung entsprechen.
- Die mit einer FTZ-Serienprüfnummer gekennzeichnet ist, und für die eine Betriebsgenehmigung vorliegt oder beantragt wird, so sind in der Regel keine weiteren Schritte notwendig.

**Power Module
Statement—
Australia**

The power module cannot be repaired; if it is defective it should be discarded or returned to the supplier.

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* HP Series 100 includes the Touchscreen/150 A, B, C.

* Apple II Series includes Apple II+, IIc, and IIe

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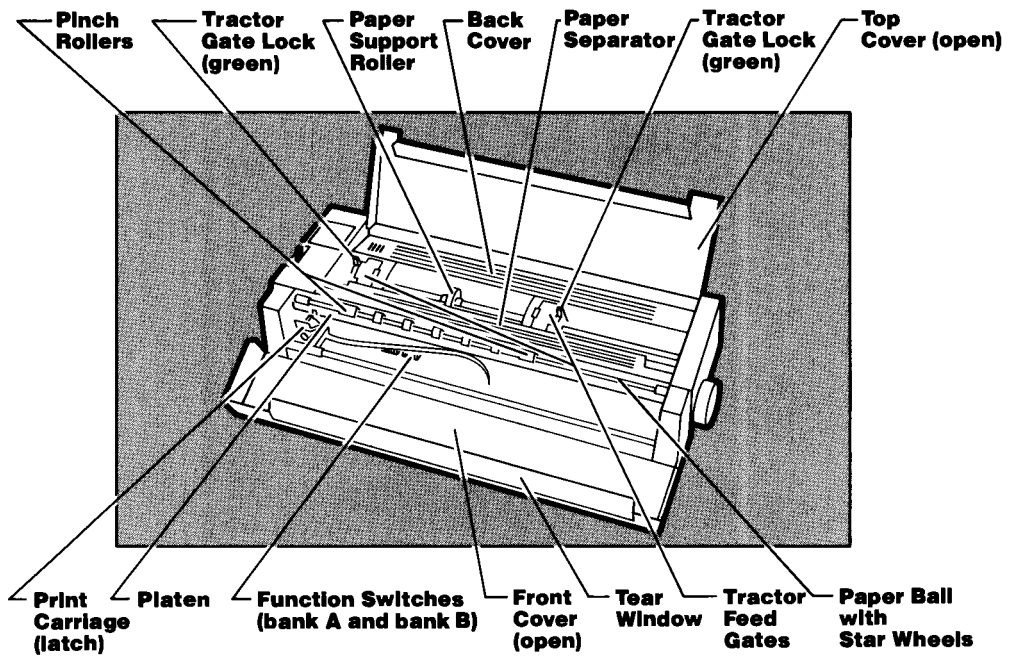
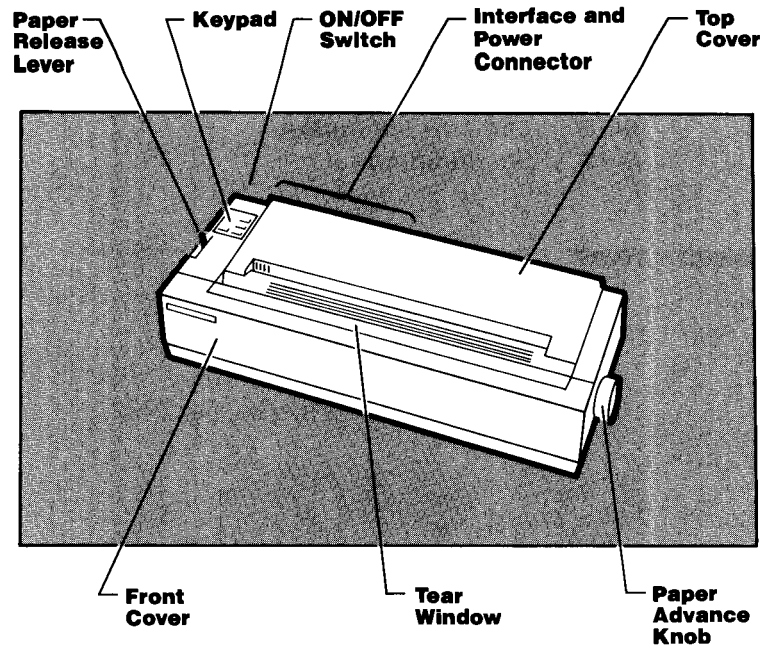
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1

Getting Started



Welcome!

This section of your Owner's Manual contains the information you'll need to get started using your new printer. We encourage you to read it from start to finish.

Unpacking and Setting Up Your Printer

Unpack your printer and set it on a flat, stable surface.

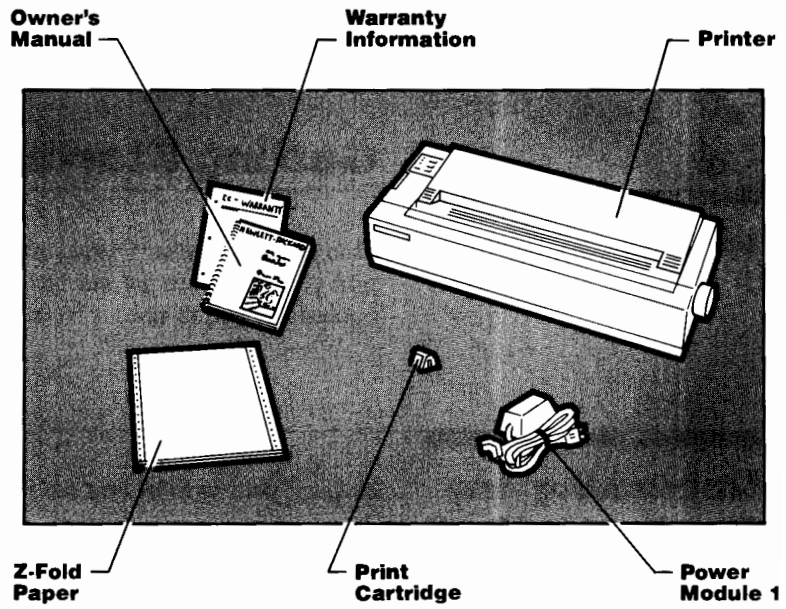
Check that the following items were shipped along with your printer:

- Owner's Manual (which you are reading)
- Warranty Information
- Print Cartridge
- Power Module 1
- 50 Sheets of Z-Fold Ink Jet Paper



Note

Check the part number on the bottom of your power module against the list located in the Appendix on page 6-14 to be sure that you have the correct power module for your area.



If any of these items are missing immediately contact your local HP Sales and Support Office, or the dealer from whom you purchased your unit.

Note

The interface cable, used to connect your printer to your PC or terminal, is not provided with your printer, it must be ordered separately. See Setting Up Your PC or Terminal in Chapter 2 for information on interface cables used with many popular PC's. If your system is not represented there, contact your nearest HP dealer. Be sure to use only shielded interface cables.



Warning

The ink in the print cartridge contains diethylene glycol which is harmful if swallowed. Keep new or used cartridges out of the reach of children.



Before Proceeding:

- Be sure your printer is turned OFF (red circle on ON/OFF switch showing).

Then:

- Connect Power Module 1 between your printer and the wall outlet.
- Prime the print cartridge and install it.
- Load Paper.
- Run the printer's self test.
- Connect the interface cable between the printer and your PC or terminal and configure them.
- Set up your software package to work on your printer.
- Have Fun!

Instructions on the following pages will help you accomplish these steps. The self test will provide you with a printing sample, demonstrating that the printer is working properly.

Abbreviations to Know

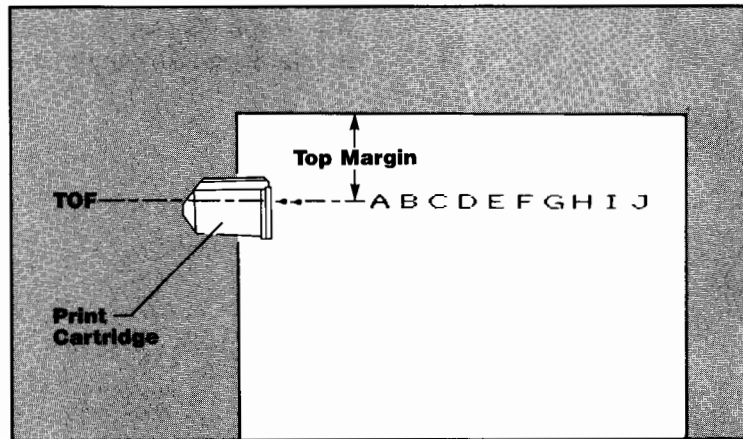
We'd like to define a few abbreviations you will see often in this manual.

CPI—Characters per inch. Also called pitch. Used in describing the number of characters that will print within one horizontal inch. For example, 10 pitch printing will yield 10 characters per inch.

CPS—Characters per second. Refers to printing speed. Used in describing the number of characters that will print per second. For example, QuietJet printers print in draft mode at 160 cps.

LPI—Lines per inch. Used in describing the number of lines that will print within one vertical inch. Most printing is done in 6 or 8 lpi.

TOF—Top-of-form. Used to describe the first line on a page that printing begins on. The distance from this point to the top of the paper equals the top margin. On QuietJet printers, the TOF is the line directly even with the nozzles on the face of the print cartridge when the printer is turned ON. The TOF will change whenever the Paper Advance Knob is used to move the paper.



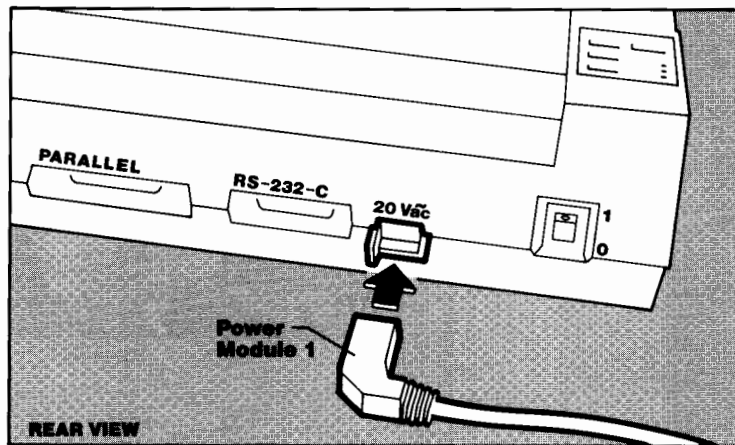
Getting Ready to Print

ON/OFF Switch

The ON/OFF switch is located on the printer's rear panel (right side as viewed from the back). The printer is ON when the red circle on the top of the switch is not visible. When the printer is turned ON the print carriage "homes". If there is no paper loaded, the lights on the keypad will blink.

Connecting the Power Module

1. Begin with the printer turned OFF.
2. Plug Power Module 1 into the power connector on the printer's back panel (right side as viewed from the back). Be sure that the plug is connected rightside up (power cord to the right as viewed from the back).
3. Plug the other end of the power module into a grounded 3-prong outlet.



Warning

Use only the power module provided with your printer.

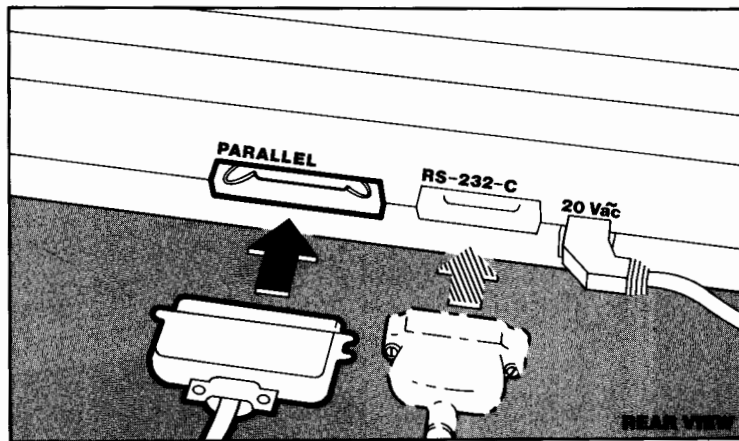
Connecting the Interface Cable

All QuietJet series printers have both RS-232-C and Parallel interface connectors as standard equipment. Connect one end of the interface cable to the connector (also called a port) on the rear of your printer and the other end to your PC or terminal. Take extra care to be sure you are connecting the interface cable to the correct connector.

If your PC offers both interfaces, we recommend that you connect your printer to the PC's Parallel port because many software packages assume that the Parallel port will be used.

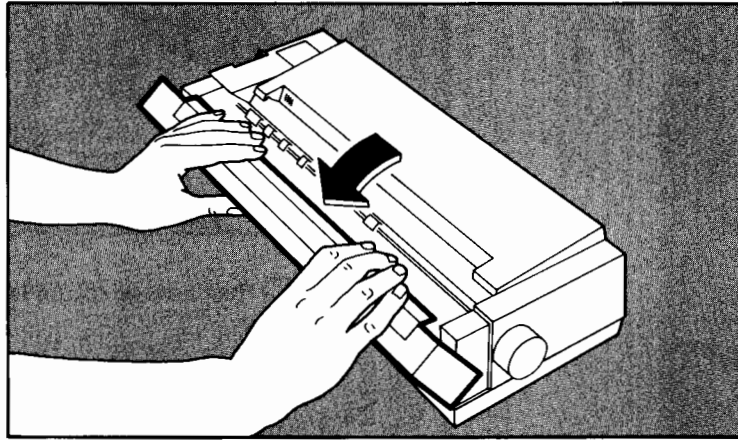


Do not connect more than one interface cable to the printer. Use only HP approved shielded interface cables.



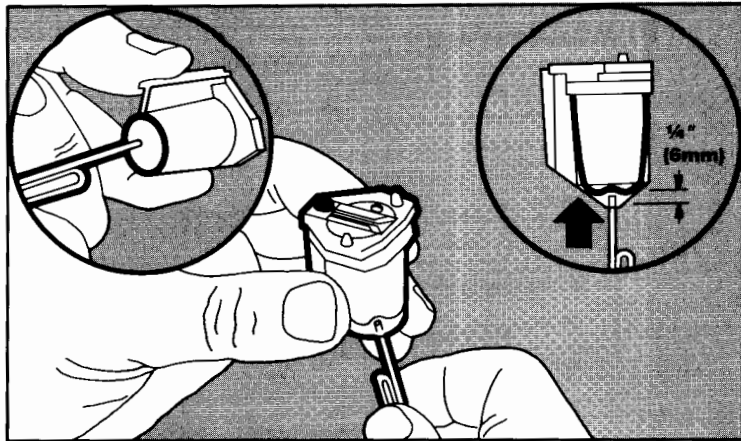
Installing the Print Cartridge

1. Open the print cartridge container, and take out the print cartridge; set it aside. Discard the white/yellow rectangular object and the clear plastic disc.
2. Open the printer's front cover by placing both hands on the front cover and gently pressing down on the tear window while pulling the cover toward you. See below.

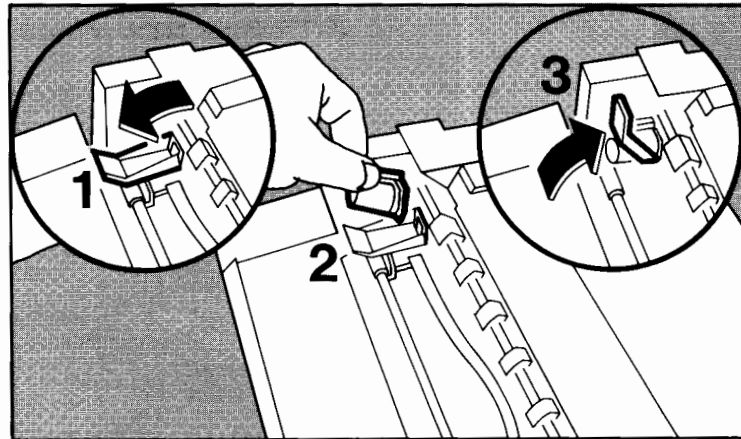


3. Prime the print cartridge by gently pushing the end of a straightened paper clip, or similar object, about $\frac{1}{4}$ " into the hole in the rear of the print cartridge. Gently push the ink bladder until a drop of ink appears on the face of the print cartridge. Wipe the print cartridge face with a soft cloth or tissue. See next page. Be careful, excessive force will puncture the bladder!

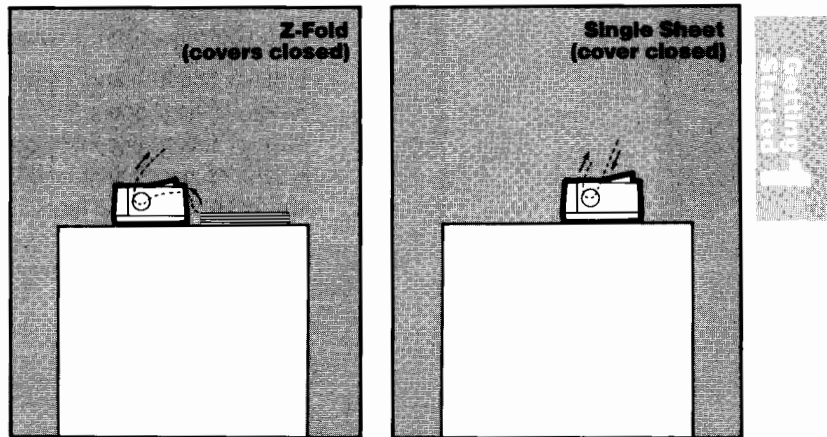




4. Pull the carriage cradle latch down toward you. Step 1 below.
5. Set the print cartridge in the cradle (step 2 below) and push the cradle latch back to lock the print cartridge in place. Step 3 below.

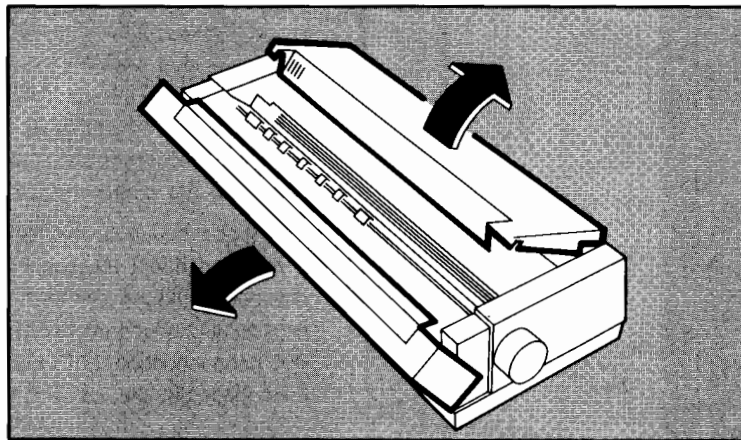


Loading Paper— Paper Paths



Loading Paper— Z-Fold and Labels*

1. Begin with the printer turned OFF
2. Open the printer's top and front covers. See below.



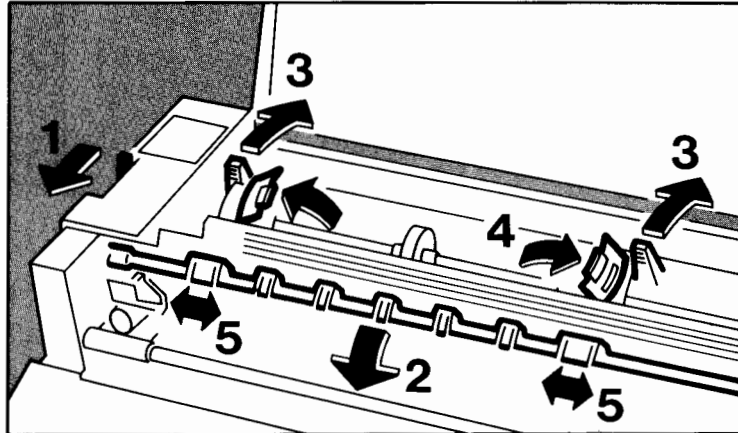
*Paper and labels share common loading instructions.



Note

For best print quality use only inkjet paper.

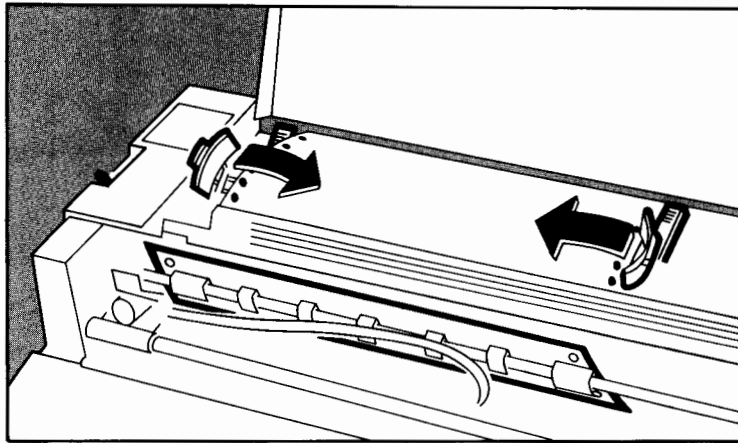
3. Pull the paper release lever forward. Step 1 below.
4. Pull the paper bail toward you. Step 2 below.
5. Unlock the left and right tractor feeds (green levers, step 3 below) and open the tractor feed gates. Step 4 below. Adjust the paper support roller and star wheels for the width of paper you will be using. Place each bail pinch roller $\frac{1}{2}$ " from the edges of the paper. Step 5 below.



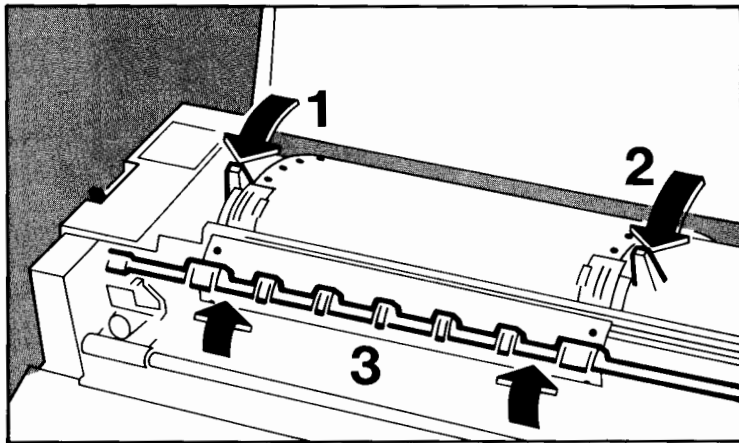
6. Place a stack of paper at the rear of the printer, and slide the paper, correct side* down, under the printer's open cover, to the open tractor feed gates.
7. Align the holes in the left edge of the paper over the pins on the left tractor. Close the left tractor gate over the paper. Move the right tractor as necessary for the width of paper you are using and place the paper over the pins on the right tractor. Close the right tractor feed gate over the paper. See next page.

* Correct side of paper is identified by numbers along one edge of the paper.

Correct side of labels is side of paper containing labels.



- 8.** Move the paper and tractor gates as necessary to align the left edge of the paper with one of the four vertical margin lines on the printer's back cover. (Margins are discussed on page 1-20.) Lock the left tractor feed gate into place (green levers). Step 1 next page.
- 9.** Adjust the right tractor as necessary, making sure that the paper is taut enough that it won't wrinkle as the print cartridge moves across it, but not so taut that the paper tears around the tractor feed pins. Lock the right tractor feed gate into place (green levers). Step 2 next page.
- 10.** Use the paper advance knob to advance the paper until it emerges about one inch from under the platen.
- 11.** Close the paper bail making sure that the paper is caught between it and the platen. Step 3 next page.

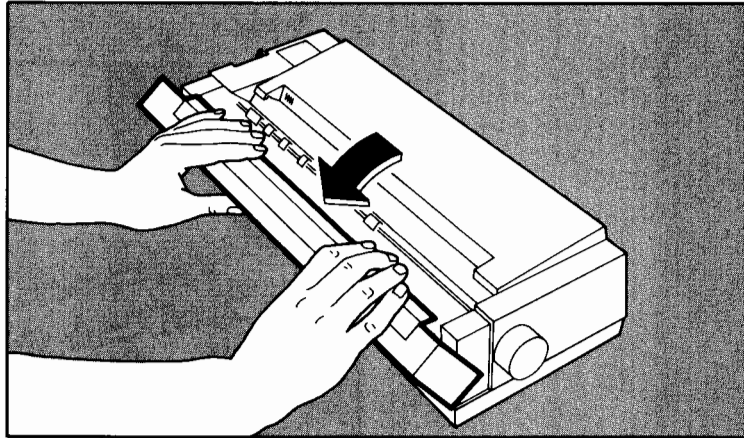


- 12.** Close the printer's top and front covers.
- 13.** Use the paper advance knob to advance the paper to the edge of the tear window. The tear window allows you to cleanly tear the paper off at the perforation without wasting a sheet of paper. (When the edge of the paper is positioned here, printing will begin on line $5\frac{1}{2}, \frac{3}{4}$ " from the top of the page.)
- 14.** If you want a deeper top margin, advance the paper to the desired point using the paper advance knob.
- 15.** Turn ON the printer. The print cartridge will "home", and the draft font light will be ON.

You are ready to do the self test.

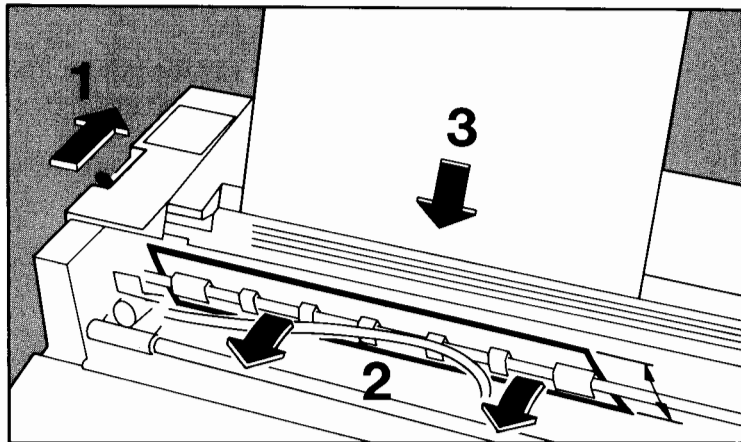
Loading Paper— Cut Sheets

1. Begin with the printer turned OFF, and the printer's top cover closed.
2. Open the printer's front cover. See below.

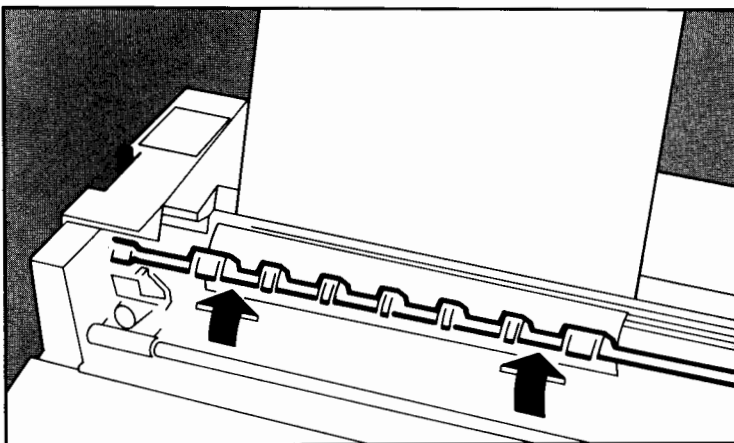


Getting
Started
1

3. Push the paper release lever back. Step 1 below. Pull the paper bail toward you. Step 2 below.
4. Insert a sheet of paper, smooth side facing away from you, squarely into the printer, left edge aligned with the appropriate margin line on the printer's top cover. Step 3 below. See the discussion of margins on page 1-20.



5. Using the paper advance knob, advance the paper about one inch from under the platen.
6. Push the paper bail back toward the platen, making sure that the paper is caught between it and the platen. See below.



7. If the paper didn't load squarely, pull the paper release lever toward you and adjust the paper. Push the paper release back when done.
8. Close the printer's front cover, and use the paper advance knob to advance the paper to the desired top margin.
9. Turn ON the printer. The print cartridge will "home", and the draft font light will be on.

You are ready to do the self test.

Printing!

Self Test

1. Begin with the printer OFF.
2. Press and hold the LF (Line Feed) key while turning the power switch ON.
3. Release the LF key when the draft mode light comes ON.

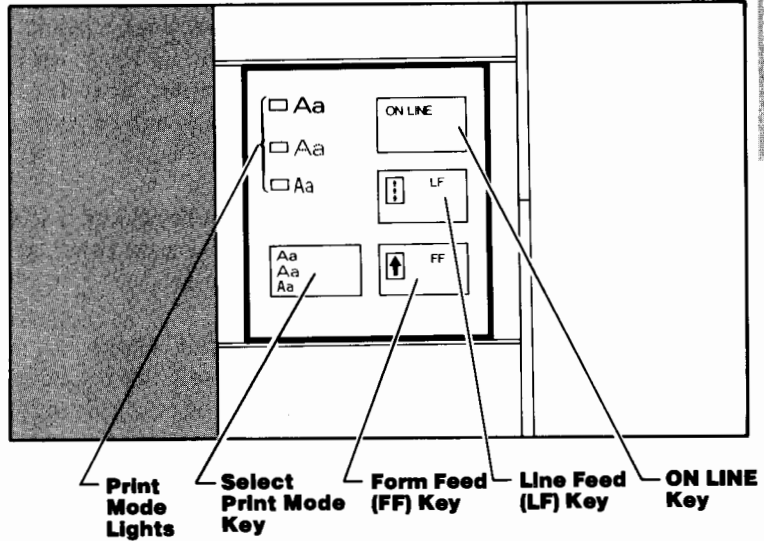
A self test pattern like the sample on the next page will print. (One or more pages will print, depending on your printer.)

If your printed self test doesn't resemble the example shown on the next page, or nothing prints at all, see pages 5-1, 5-2 in Chapter 5, HELP!

Your printer is ready for use!



Keypad



The following descriptions will help you become acquainted with your printer.

ON LINE

The ON LINE key has several uses.

- A. To stop printing.** Press and hold the ON LINE key until printing has stopped. The printer will finish printing the line it is on, then stop (the lights on the printer's keypad will blink slowly). Press the key once more to resume printing. The printer will start where it left off.
- B. To restart printing after loading paper.** When the printer runs out of paper the printer detects an "error condition". This is reflected by the blinking LED's on the printer's keypad. When paper is reloaded and the ON LINE key is pressed, the error condition is cleared, TOF is set, and the printer is again ready to print. Remember, the TOF changes whenever the paper advance knob is used to advance or retract paper.

**LF**

The LF (Line Feed) key is used to advance paper one line at a time. Press the LF key once to advance the paper one line. Press and hold the LF key to advance the paper more than one line. If the LF key is used to reset the paper's top margin (TOF), the printer must be turned OFF then ON again so that the change will be recognized.

FF

The FF (Form Feed) key is used to advance Z-fold paper to the TOF on the next sheet, or to eject single sheets of paper from the printer.

Aa (Select Print Mode)

This key is used as a toggle key to select between the three print modes offered through the keypad: NLQ mode, draft mode, or compressed mode. When the printer is turned ON (paper is loaded) the printer will be in draft mode, as indicated by the light on next to **Aa**. (The printer is automatically in draft mode when it is turned ON). When the key is pressed once, the printer will be in NLQ mode as indicated by light on next to **Aa**. When the key is pressed again the printer will be compressed mode, as indicated by the light on next to **Aa**. Press the key once more to put the printer back into draft mode.

Print modes can be changed while the printer is printing, but the change will not take effect for several lines. Accurate changing of print modes is handled by software commands.

Draft mode = 160 cps in 10 cpi.

NLQ = 40 cps in 10 cpi.

Compressed = 226 cps in 21.3 cpi.

Blinking Lights

The three print mode lights also have another function. When the printer runs out of paper, the three lights will blink rapidly; when the printer is off-line, the three lights will blink slowly; when a self test fails one of the lights will flash, depending on the type of test failed. This is explained further in Chapter 5, HELP!



When to Use Draft Mode, NLQ Mode, or Compressed Mode

- Draft mode is typically used for everyday-printing jobs. Draft mode uses less ink and prints faster than NLQ mode.
- NLQ is near-letter quality printing. Near-letter quality printing is the highest density printing your printer offers. It is denser than draft mode, and is typically used for printing jobs that require a polished, business-like appearance. NLQ printing uses more ink than draft mode.
- Compressed printing is the fastest mode your printer offers. It allows you to squeeze 21.3 characters in an horizontal inch. Compressed print is typically used on spreadsheets, or whenever printing space is restricted.

This is an example of draft mode.

This is an example of NLQ mode.

This is an example of compressed mode.

Setting Margins

When loading paper, discussed on pages 1-9 to 1-14, align the paper's left edge with one of the vertical margin lines located on the printer's top and back covers (see below). When deciding the width of the left margin to use, take into consideration the printer's print zone, indicated by the long horizontal lines on the printer's paper support and back cover. The printer cannot print outside of this zone. Use these two features to visualize where the text will be positioned in relation to left margin selected. If you plan to print 80 columns of text at 10 cpi on 8½ inch (215mm) paper, use a ¼ inch left margin to prevent the printer from printing on the platen.

Z-fold Paper. For a 1" left margin

Align the left edge of the paper with the leftmost line on the printer's back cover.

For a ¾" left margin

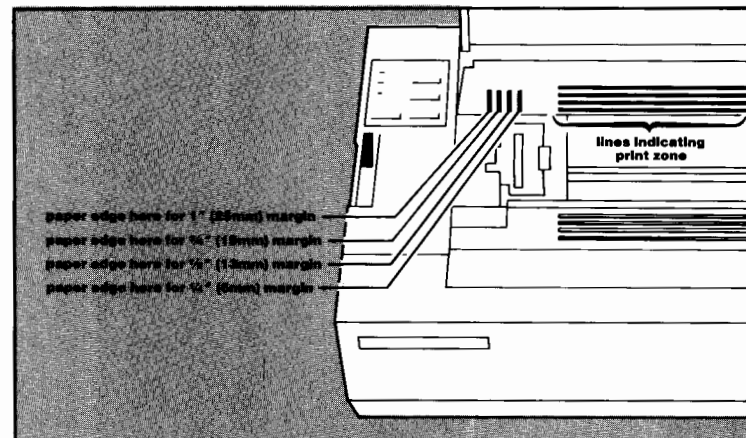
Align the left edge of the paper with the second line from the left on the printer's back cover.

For a ½" left margin

Align the left edge of the paper with the third line from the left on the printer's back cover.

For a ¼" left margin

Align the left edge of the paper with the rightmost line on the printer's back cover.



Cut Sheets. For a 1" left margin

Align the left edge of the paper with the leftmost line on the printer's top cover.

For a 3/4" left margin

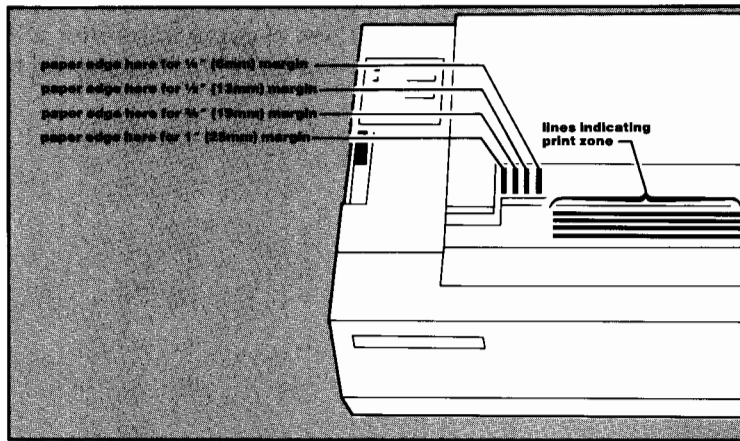
Align the left edge of the paper with the second line from the left on the printer's top cover.

For a 1/2" margin

Align the left edge of the paper with the third line from the left on the printer's top cover.

For a 1/4" left margin

Align the left edge of the paper with the rightmost line on the printer's top cover.



Reloading Paper

When your printer runs out of paper the lights on the keypad blink rapidly and the printer goes "off-line". Data waiting to print **is not** lost when the printer goes off-line; however, data waiting to print **is** lost when the printer is turned OFF.

- 1.** Load paper as discussed earlier: Z-fold paper and labels, pages 1-9 to 1-12. Cut sheets, pages 1-13, 1-14.
- 2.** Press the ON LINE key. (Sets the TOF to the current paper position.) The lights on the keypad will stop blinking.

The printer is ready to begin printing. Remember that your printer will advance the paper to the same spot on the next sheet of paper unless the TOF is changed by using the paper advance knob. Pressing the LF key will not affect the TOF.

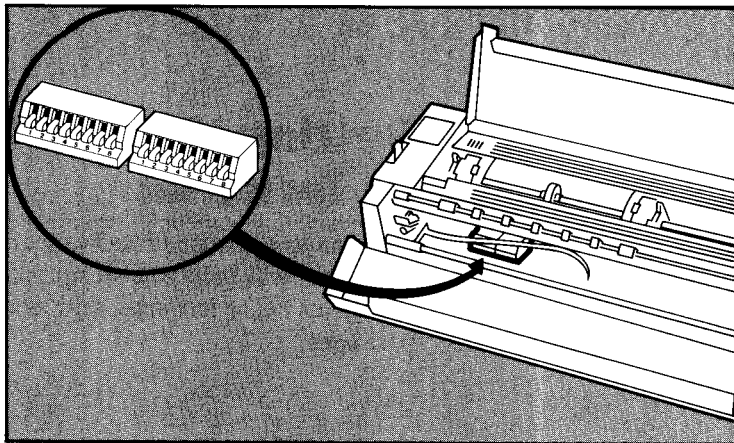
2

Setting Up Your PC or Terminal

This chapter contains hardware and software application notes that will help you set up your QuietJet series printer with your PC or terminal, and many popular software packages.

Setting
Up
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**Mode Function Switches
(Factory Default Settings)**

2-2 Setting Up Your Software and QuietJet Printer

Setting Up Your PC or Terminal

The following application notes describe how to set up your personal computer or terminal with a QuietJet series printer.

These notes describe the correct setup when QuietJet is the "primary" and only printer on your system. Most of the personal computers discussed allow connection to more than one printer at a time. If you are using more than one printer, use the following notes for the data communications and printer setup, and refer to your PC or terminal documentation to determine the correct PC setup.

If you are using a system that is not covered by these notes, follow the setup instructions provided in your system documentation for your computer or terminal, then refer to Chapter 4, Datacomm, in this manual for information on data communications.

Set up information is provided for the following PC's and terminals.

HP Vectra

HP Series 100* PC's

HP Portable

HP Portable Plus

HP 2392A and 2394A

HP 2393A and 2397A

IBM PC Family and Compatibles

Apple IIc

Apple IIe, Apple II+

Apple Macintosh

* HP Touchscreen/150 A, B, C.



HP Vectra PC To HP QuietJet Series Printers

HOST SET UP:

Follow the instructions below for the type of interface you will be using with your QuietJet Series printer.

Parallel Interface:

When using HP 24540A Parallel interface card—
Cable: HP 24542D.

No other configuration is required.

Serial Interface:

If using the HP 24540A—Serial/parallel dual interface card, use—
Cable: HP 24542G

If using the HP 24541A—Dual serial interface card, use—
Cable: For port 1 (9 pin connector) use HP 24542G cable.
For port 2 (25 pin connector) use Hp 13242G cable.

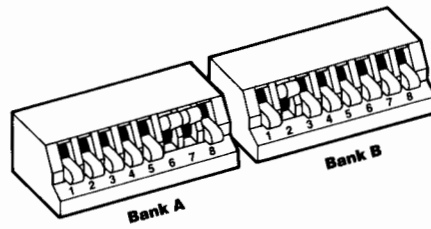
From the DOS prompt (A > or C >) enter the following commands:

1. **MODE COM1:96,N,8,1,P** then press the **Enter** key.
 - This command sets the serial communications at 9600 baud, no parity, 8 data bits, and 1 stop bit.
2. **MODE LPT1: = COM1:** then press the **Enter** key.
 - This command directs the primary communication to the first serial port.

Refer to your DOS manual for more information on the MODE command.

If your printer is connected to the second serial port, change COM1 to COM2 in the two DOS commands above.

PRINTER SETTINGS:



TO VERIFY:

To verify that your printer is connected properly, type something on your screen and copy it to your printer by doing the following:

1. Make sure the printer and PC are ON.
2. Make sure that a DOS (op. sys.) disk is in drive A, or on the hard disk. If you are using the serial interface, make sure the above MODE commands have been executed.
3. Hold down the **Shift** key and press the **PrtSc** key.

All text on the screen will print.

Touchscreen/ Touchscreen Max/HP 150 To HP QuietJet Series Printers



HOST SET UP:

Cable: HP 13242G

From P.A.M.

1. Select **DEVICE CONFIG** then **Start Applic.** The menu below will appear.
2. Ensure that the values displayed reflect those given in the fields below.

MS-DOS Device Configuration			Main		Active Values	
System Devices						
	Interface	Model	Print Wheel		Interface	Address
PRN:	Port2	ThinkJet		PLT:		
LST:				COM1:		
AUX:				COM2:		

Only the fields associated with the operation of QuietJet have values displayed in them. Refer to your PC's manual for information on changing the values in the fields.

3. Once the changes, if any, have been made, save the information by pressing the **Save Config** key (f4). After saving the changes press **Exit Config** (f8) to return to P.A.M.

Next, from P.A.M.

1. Press the **Terminal** key (f6), then the **User System** key followed by the **device control** (f1) and **"to" devices** (f2) keys.
2. Ensure that an asterisk (*) appears in the **Serial Device** (f2) field. Do this by pressing the function key corresponding to the field.

2-6 Setting Up Your Software and QuietJet Printer

3. Press the **User System** key again, then press **config keys (f8)** and **port2 config (f4)**.
4. The following menu will be displayed. Press the **system default** key (f4) then the **DEFAULT VALUES** key (f4).

Ensure that the values displayed on your screen reflect those shown in the menu fields below. Only those fields that are associated with the operation of your printer are given; all other fields have been left blank. Refer to your PC's owner's manual for information on changing the values in the fields.

Terminal Config. Screen

FULL DUPLEX HARDWIRED Port 2

BaudRate	9600	Parity	None	DataBits	8	EnqAck	No	Clock	INT
Asterisk	Off	Check Parity	No	Stop Bits	1				
TR(CD)	Hi			SR(CH)	Lo				
RecvPace	None			SRRXmit	No	RR(CF)Recv	No		
XmitPace	Xon/Xoff			SRRInvert	No	CS(CB)Xmit	No	DM(CC)Xmit	No

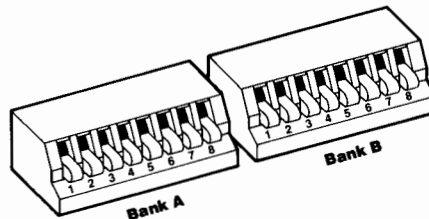


5. Remember to save the values once the changes have been made by pressing the **SAVE CONFIG** key (f1).
6. Return to P.A.M. by holding down the **Shift** key and pressing the **Stop** key.

Note: Information on printing HP Line Draw characters is located in Chapter 7, Addendum.

To ensure that your Touchscreen PC is using these new settings, hold down the **CTRL** and **Shift** keys while pressing the **Reset/Break** key. This will reset your PC.

PRINTER SETTINGS:



TO VERIFY:

From P.A.M.

1. Select **MSDOS COMMANDS**, then press **Start Applic.**
2. Once the **A >** system prompt appears, type **dir > prn**, then press the **Return** key. This will cause the directory of the disc in drive A to print.
3. Type **Exit**, then press the **Return** key. This will return you to P.A.M.

HP Portable To HP QuietJet Series Printers

HOST SET UP:

Cable: HP 92221P

Datacom Set Up:

From P.A.M., press the **Datacom Config** key and ensure that the following fields in the Datacom Configuration menu reflect the values given below. Press **Exit Config** after the changes have been made.

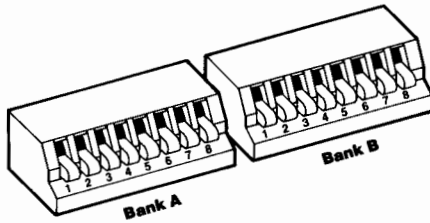
Serial port: RS-232
Serial baud rate: 9600
Serial word length: 8
Serial stop bits: 1
Serial parity: None
Serial XON/XOFF pacing: On
Serial CTS line: Ignore
Serial DSR line: Ignore
Serial DCD line: Ignore

System Set Up:

From P.A.M., press the **System Config** key and ensure that the following fields in the System Configuration Menu reflect the values given below. Press **Exit Config** after the changes have been made.

Printer: HP Graphics/Alpha
Printer Interface: Serial
Print Pitch: No Config
Print line spacing: No config
Printer skip perf: No config

PRINTER SETTINGS:



TO VERIFY:

From P.A.M.:

1. Select **DOS Commands** using the **TAB** key, then press **Start Applic** (f1 key).
2. Once the **A >** system prompt appears, type **dir > prn**, then press **Return**. This will cause the directory of the internal disc A to print.
3. Type **exit**, then press the **Return** key to return to the P.A.M. screen.



HP Portable Plus To HP QuietJet Series Printers

HOST SET UP:

Cable: HP 92221P



Datacom Set Up:

From P.A.M. press the **Datacom Config** key and ensure that the following fields in the Datacom Configuration Menu reflect the values shown below. Press **Exit Config** after the changes have been made.

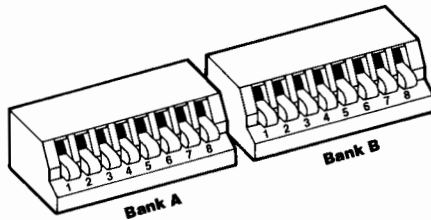
Parameter	Serial
Transmission rate (BPS)	9600
Word Length (bits)	8
Stop bits	1
Parity	None
XON/XOFF Pacing	On
CTS line	Ignore
DSR line	Ignore
DCD line	Ignore

System Set Up:

From P.A.M., press the **System Config** key and make sure that the following fields in the System Configuration Menu reflect the values shown below. Press **Exit Config** after the changes have been made.

Parameter	Setting
Printer Interface	Serial
Printer Mode	Alpha and Hp Graphics
Print Pitch	No Configuration
Print line spacing	No Configuration
Printer skip perf	No Configuration

PRINTER SETTINGS:



TO VERIFY:

From P.A.M.:

1. Select **DOS Commands**, then press **Start Applic** (f1 key).
2. Once the **A>** system prompt appears, type **dir > prn**, then press **Return**. This will cause the directory of the internal disc A to print.
3. Type **exit**, then press the **Return** key to return to the P.A.M. screen.

HP 2392A and HP 2394A To HP QuietJet Series Printers

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HOST SET UP:

Serial Cable : HP 13242G or HP 40242G
Parallel Cable: HP 13242D or HP 40242D

To configure the terminal's port to work with your QuietJet Series Printer, press the **User System** key. Next, press the **config keys** (f8) and the **ext dev config** key (f4). The External Device Configuration Menu will be displayed. Ensure that the display of settings reflect those shown below. The same settings can be used for both serial and parallel interfaces. Be sure to exit this display by pressing **Save Config** (f1).

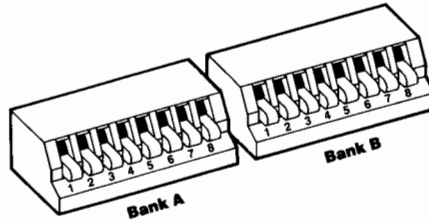
EXTERNAL DEVICE CONFIGURATION

BaudRate	9600	Parity/DataBits	None/8	PrinterNulls	000
PrinterType	ROMAN8	SRRXmit	NO	CS(CB)Xmit	NO
XmitPace	Xon/Xoff	SRRInvert	NO		

Note: Information on printing HP Line Draw characters is located in Chapter 7, Addendum.

PRINTER SETTINGS:

Both Interfaces



TO VERIFY:

To verify that your printer is connected properly, type something on the screen and copy it to your printer by doing the following:

1. Press the **User System** key.
2. Press the **modes** key (f4).
3. Press **REMOTE MODE** key (f4) until the asterisk (*) disappears from the **REMOTE MODE** label on the screen. This selects Local Mode.
4. Press **AUTO LF** (f8) until the asterisk (*) disappears from the **AUTO LF** label on the screen. This deselects automatic line feeding.
5. Type **This is a Test!** and press the **Return** key.
6. Hold down the **Shift** key and press the **Print Enter** key. **This is a test!** will print.
7. Press **REMOTE MODE** (f4) until the asterisk (*) appears in the **REMOTE MODE** label, then press the **User System** key to return the terminal to normal operation.



HP 2393A and HP 2397A To HP QuietJet Series Printers

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Up 2

HOST SET UP:

Serial Interface: Cable—HP 13242G or HP 40242G

Parallel Interface: Cable—HP 13242D or HP 40242D

To configure your terminal to work with your QuietJet printer, press the **System** key twice. Next, press the key labeled **config keys**, then the **ext dev config** key. When you press the **ext dev config** key, one of the following menus will be displayed: If your terminal has a serial interface connector, the External Serial Device configuration Menu will be displayed; if your terminal has a parallel interface connector, the External Parallel Device Configuration Menu will be displayed. Ensure that the value displayed reflects those shown below for the interface your terminal has. When the changes have been made, save the new configuration by pressing the **SAVE CONFIG** key.

EXTERNAL SERIAL DEVICE CONFIGURATION

BaudRate	9600	Parity/DataBits	None/8	PrinterNulls	0		
XmitPace	Xon/Xoff	SRRXmit	No	CS(CB)Xmit	No	DM(CC)Xmit	No
		SRRInvert	No	Protocol	HP		

GRAPHICS PRINTOUT

Contents	B&W	Invert B&W	Yes	Image Size	X1	Layout	Vert
----------	----------------	------------	------------	------------	-----------	--------	-------------

EXTERNAL PARALLEL DEVICE CONFIGURATION Port 2

Protocol **HP**

GRAPHICS PRINTOUT

Contents **B&W**

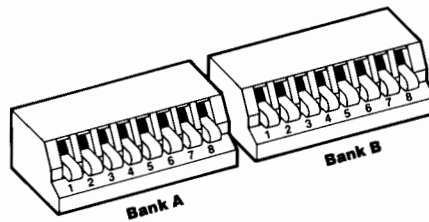
Invert B&W **Yes**

Image Size **X1**

Layout **Vert**

Note: Information on printing HP Line Draw characters is located in Chapter 7, Addendum.

PRINTER SETTINGS:



TO VERIFY:

To verify that your printer is connected properly, type something on the screen and copy it to your QuietJet printer by doing the following:

1. Press the **User System** key.
2. Press the **modes** key (f4).
3. Press the **REMOTE MODE** key (f4) until the asterisk (*) disappears from the **REMOTE MODE** label on the screen.
4. Press **AUTO LF** (f8) until the asterisk (*) disappears from the **AUTO LF** label on the screen. This deselects automatic line feeding.
5. Type **This is a Test!** and press the **Return** key.
6. Hold down the **Shift** key and press the **Print Enter** key. **This is a Test!** will print out on your QuietJet printer.
7. Press **REMOTE MODE** (f4) until the asterisk (*) appears in the **REMOTE MODE** label. Press the **User System** key to return the terminal to normal operation.

IBM PC Family and Compatibles To QuietJet Series Printers



HOST SET UP:

Follow the instruction below for the type of interface you will be using with your QuietJet Series printer.

Parallel Interface:

Use Cable: HP 24542D

No other configuration is necessary.

Serial Interface:

If using IBM Asynchronous Communications Adaptor on the PC –
Cable: HP 13242H, or HP 17255D.

If using Serial/Parallel Dual Interface Card on the PC AT –
Cable: HP 24542G.

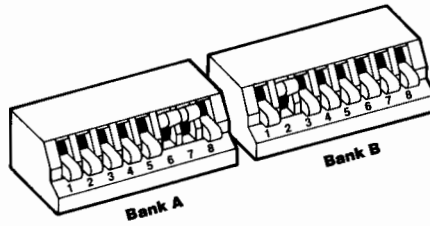
From the DOS prompt (A> or C>) enter the following commands:

- 1. MODE COM1:96,N,8,1,P** then press the **ENTER** key.
 - This command sets the serial communications to 9600 baud, no parity, 8 data bits, and 1 stop bit.
- 2. MODE LPT1: = COM1:** then press the **ENTER** key.
 - This command directs the primary printer communication to the first serial port.

Refer to your DOS manual for more information on the MODE command.

If your printer is connected to the second serial port, change COM1 to COM2 in the two DOS commands above.

PRINTER SETTINGS:



TO VERIFY:

To verify that your printer is connected properly, type something on your screen and copy it to your printer by doing the following:

1. Make sure that the printer and PC are ON.
2. If you are using the serial interface, make sure that the above MODE commands have been executed.
3. Hold down the **SHIFT** key and press the **PrtSc** key.

All text on the screen will print.



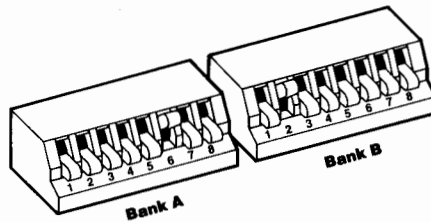
Apple IIc To HP QuietJet Series Printers

HOST SET UP:

Cable: HP 92219N Serial Printer Cable, or Apple Serial Printer Interface Cable, Apple P/N 590-0191-A.

PRINTER SETTINGS:

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TO VERIFY:

The following BASIC program will verify proper connection between computer and printer. This program will run properly only if DOS is loaded. Type:

```
10 REM CONNECTION VERIFICATION
20 PRINT CHR$ (4);"PR#1"
30 FOR I=0 TO 10
40 FOR J=33+I TO 111+I
50 PRINT CHR$ (J);
60 NEXT J
70 PRINT
80 NEXT I
90 PRINT
100 PRINT CHR$ (4);"PR#0"
110 END
```


Type **RUN** and press **RETURN**. The following will print:

```
]RUN
["#%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
"#%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
#%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
$%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
()()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
stuv*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
stuv*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
+,-./0123456789:;<=>?@ABCDEFGHIJKLMNopqrstuvwxyz[\ ]_abcdefghijklmnop
```



Apple IIe or Apple II+ To HP QuietJet Series Printers

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HOST SET UP:

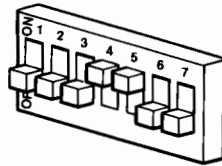
Follow the instructions below for the type of interface you will be using with your QuietJet Series printer.

Parallel Interface:

When using the Apple II Parallel Interface Card—

Cable: Apple parallel printer interface cable, Apple P/N 590-0042, or equivalent.

Set the configuration switches on the Parallel Interface Card according to the illustration below, and install the board into slot 1 as instructed in chapter 1 or the Parallel Interface Card Installation and Operating Manual.

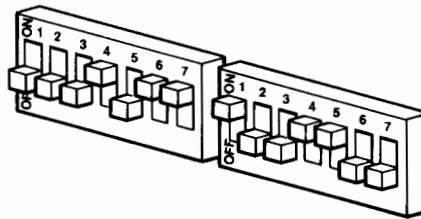


Serial Interface:

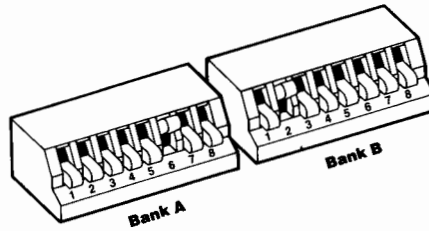
When using the Apple Super Serial Card—

Cable: HP 17355M Serial Printer Cable, or Apple Printer Interface Cable, Apple P/N 590-0037.

Set the configuration switches on the Super Serial Card to match the following illustration and install the card in slot 1 as instructed in the Super Serial Card Installation and Operating Manual.



PRINTER SETTINGS:



TO VERIFY:

The following BASIC program will verify proper connection between computer and printer. This program will run properly only if DOS is loaded. Type:

```
10 REM CONNECTION VERIFICATION
20 PRINT CHR$(4);"PR#1"
30 FOR I=0 TO 10
40 FOR J=33+I TO 111+I
50 PRINT CHR$(J);
60 NEXT J
70 PRINT
80 NEXT I
90 PRINT
100 PRINT CHR$(4);"PR#0"
110 END
```

Type **RUN** and press **RETURN**. The following pattern will print.

```
]RUN
!"#%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnop
"#$%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnop
#$%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnopq
$%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnopqr
%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnopqrs
&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnoprst
() *+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnoprstu
) *+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnoprstuv
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnoprstuvw
+, -./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ[\ ]_abcdefghijklmnoprstuvwx
```

Apple Macintosh/ Macintosh 512K/ Macintosh Plus to HP QuietJet Series Printers

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HOST SET UP:

You can run your QuietJet printer from the Macintosh personal computer with the help of Jetstart, SoftStyle's software package that modifies the standard Macintosh printer driver to correctly drive QuietJet.

Apple Macintosh + SoftStyle Jetstart + QuietJet Printer

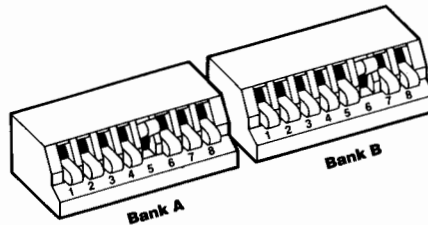
Your Jetstart manual contains easy-to-follow instructions on using Jetstart to modify your application disks. Simply open Jetstart, select the appropriate printer setup, and insert the application disk you want to alter. It's that easy!

Cable Requirements: Standard Imagewriter cable or equivalent from Hewlett-Packard, HP P/N 92219M.

Macintosh Plus Cable Requirements:

Cable: Mac Plus Cable, Apple P/N M0187, and Mac-Imagewriter Adaptor, Apple P/N M0189.

PRINTER SETTINGS:



Refer to the More on Using Jetstart chapter in the Jetstart manual for further information on the recommended switch settings.

TO VERIFY:

To verify the configuration, insert an application disk that has been modified by Jetstart. For example, insert MacWrite, begin the application and type something on the screen. The entire screen can be copied to the printer by doing a print screen. For information on printing the entire screen, refer to the Test the Printer section in the How to Begin chapter of your Jetstart manual.

Jetstart is available from your nearest Hewlett-Packard dealer, HP Computer Supplies Operation (DMK, formerly CSO), or a SoftStyle dealer.



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Setting Up Your Software and QuietJet Printer

Your Software and QuietJet Series Printers

The following software application notes will help you quickly set up your QuietJet series printer with many popular word processing and "office" software packages. Before referring to the application notes, read through the following paragraphs for answers to some common software questions.



Q. Will QuietJet printers work with my software?

A. It is very likely that QuietJet series printers will work with your software. To understand how, let's look at your software from the standpoint of a printer. When we do this we see that most software packages fit into one of two categories.

The first category includes most spreadsheet and database software, such as dBase, Multiplan and R:Base. These software packages tend to perform simple functions with printers and can print without special setup or installation. QuietJet printers work very well with these packages without any special installation.

The second category of software includes word processing, graphics, and integrated software packages, such as 1-2-3, Wordstar, MS Word, Symphony, and Multimate. This type of software demands complex printer functions and requires special setup or installation for printers. As part of this setup or installation it is necessary to select a printer name from the list offered in your software's printer menu. Whenever QUIETJET* appears in this list it is clearly the best choice.

* May be referred to in your software packages as HPQuietJet, HPQJet, HPQuiet, or any number of variations on the QuietJet name.

Because QuietJet series printers are very versatile they should work with your software regardless of the name chosen. The PRINTER NAME list provided below reflects the printers commonly offered in the printer menu of many software packages. The printer name at the top of the list, QUIETJET, will give you the best performance. If QUIETJET is not offered in your software's printer menu, choose an alternate printer. This PRINTER NAME list is arranged in order of the most desirable choice to least. The QuietJet Control Mode list indicates in which mode, HP or Alternate, your printer must be put in when the corresponding PRINTER NAME is chosen.

PRINTER NAME in Software Printer Menu	QuietJet Control Mode
QUIETJET THINKJET	Switch A5 DOWN – HP Mode See your software documentation
HP 82906	Switch A5 DOWN – HP Mode
HP2932 or 2934	Switch A5 DOWN – HP Mode
IBM Graphics Printer	Switch A5 UP – Alternate Mode
IBM ProPrinter	Switch A5 UP – Alternate Mode
Epson MX-80 or MX-100	Switch A5 UP – Alternate Mode
Standard Printer	Switch A5 DOWN – HP Mode

Q. Do I need to upgrade my software?

A. Consult your software manual or the software itself to determine if QUIETJET is listed. If it is, follow the proper steps for your software to use this "support". This will give the best QUIETJET performance possible using your software. If your software does not specifically "support" QUIETJET refer to the software application notes that follow. These notes will recommend the use of alternative printer names. Try these, and in most cases they will satisfy your printing needs.

Certain QUIETJET features may not work when using these alternative names, for example, sub and superscripts or all six print pitches. If these features are important to you, and your software can perform them, contact your software dealer or software company about obtaining QUIETJET "support".

Q. Should I set my QUIETJET to 10 pitch or 12 pitch?

A. This is largely a matter of personal taste: you may wish to try both. Our initial recommendation is to set switch A2 DOWN for 10 pitch, and to use your software to select other pitches. This setting will provide the best results with the majority of software packages available today.

There is, however, one instance where it is important to set switch A2 UP for 12 pitch. This is when you are using a word processor that was setup or installed with the HPTHINKJET printer name (driver). In these cases, selecting 12 pitch will provide the correct character positioning and justification in documents that have mixed pitches.



Software Packages

Setup information is provided for the following software packages:

AdvanceWrite I, II, III HP Vectra

AppleWorks Apple IIe

Framework II HP Vectra, IBM PC Family and Compatibles

Lotus 1-2-3 HP Vectra, HP Series 100*, IBM PC Family and Compatibles

Lotus 1-2-3 Release 2 HP Vectra, IBM PC Family and Compatibles

MS Word HP Vectra, HP Series 100*, IBM PC Family and Compatibles

Microsoft Windows HP Vectra, IBM PC Family and Compatibles

MultiMate HP Vectra, HP Series 100*, IBM PC Family and Compatibles

pfs:file/pfs:report Apple II PC's

pfs:file/pfs:report and HP Vectra, IBM PC Family and IBM Filing/IBM Reporting Assistant Compatibles

* HP Series 100 PC's include the Touchscreen/150 A, B, C, and The Portable. Apple II Series PC's include the Apple II+, IIc, and IIe.

cont.	<i>pfs:graph</i> and IBM	HP Vectra, IBM PC Family and Compatibles, and Apple II Series*
	<i>pfs:write</i> and IBM	HP Vectra, IBM PC Family and Compatibles, and Apple IIe
	Print Shop	HP Vectra, Apple II Series*, IBM PC Family and Compatibles
	Symphony	HP Vectra, HP Series 100*, IBM PC Family and Compatibles
	Volkswriter Deluxe	HP Vectra, IBM PC Family and Compatibles
	Volkswriter 3	HP Vectra, IBM PC Family and Compatibles
	WordPerfect	HP Vectra, IBM PC Family and Compatibles
	WordStar	Apple IIe
	WordStar	HP Vectra, HP Series 100*, IBM PC Family and Compatibles
	WordStar 2000.	HP Vectra, IBM PC Family and Compatibles



On the HP Vectra

Introduction

The procedures outlined here will help you use AdvanceWrite with your QuietJet series printer. Before beginning the setup procedures for the printer, please review the Printers chapter in your Using AdvanceWrite manual.

The install program for AdvanceWrite allows you to select the printer you will be using. If you have already installed AdvanceWrite, the CHANGE program provided on the Printing Disk will set up AdvanceWrite to work with your QuietJet series printer. Because the CHANGE program is similar to the printer section of the install program, CHANGE program instructions are provided below. They can be used when installing the AdvanceWrite program, or when using the CHANGE program. For more detailed information on running the CHANGE program, refer to the Using Printers with AdvanceWrite section of the Printers chapter in the Using AdvanceWrite manual. For information on running the Install program refer to the AdvanceWrite Getting Started Manual.

Setting Up AdvanceWrite

If you are installing AdvanceWrite, proceed with the Install program until a list of printers is displayed. If AdvanceWrite is already installed, run the CHANGE program. To begin the CHANGE program, insert the Printing Disk and type **CHANGE**. As the program begins, you will be asked questions concerning your system. These questions deal with the location of the Printing disk and the AdvanceWrite program files. Enter the letter of the drive that contains the Printing Disk (A or B) and the letter of the drive that contains the AdvanceWrite Program Disk (A, B, or C). Next, indicate if the installed program is on a flexible disk and press the **Enter** key. A list of printers will be displayed.

From the list of printers, select the **HP QuietJet** printer. If HP QUIETJET does not appear on the list, select the **HP ThinkJet** printer. If you selected HP ThinkJet your printer will be working in Alternate mode which requires function switch A5, located on the inside of your printer, to be set UP. Also, if you selected the HP ThinkJet printer program, because of the print pitch differences between QuietJet and ThinkJet you will have to set function switch A2 UP. This will ensure that your document's spacing is correct. With function switch A2 UP the available print pitches are 6, 10.6, 12 and 21.3 characters per inch. After selecting your printer, indicate the type of interface you will be using with your printer by entering a **P** for parallel, or an **S** for serial interface.



Next, you will be asked if you are using more than one printer. AdvanceWrite allows you to install more than one printer; each printer program is kept in a separate directory on your AdvanceWrite Program Disk. To ensure support for other currently installed printers or for printers you may want to install, enter **Y** to indicate that you are using more than one printer.

The name of the directory where your printer program will reside will be displayed. AdvanceWrite uses the directory name to find the printer program to be used with your printer. Press the **Enter** key to accept the given directory name. This directory name must be inserted into the Printer Directory field of AdvanceWrite's Default Page. If you are unfamiliar with the Default Page, refer to the Default Page section in your Using AdvanceWrite manual.

To insert the necessary information into your Default Page, begin AdvanceWrite and press the key labeled **DO**, then press **D**. You will be asked if you wish to work with the default settings. Press the **Enter** key and the Default Page Settings will be displayed. Use the Arrow Keys to move to the field entitled **Path for Output:**. Indicate the specific port (LPT or COM) you will be using for output (LPT1 for parallel port, and COM1 for serial port). After indicating the port, use the **TAB** key to move to the **Printer Directory:** field. This field indicates the directory where your QuietJet printer program resides. Enter the directory name that was displayed in the CHANGE program, and press the **Enter** key to use the new default values.



Special Note

Function switch B2 (RS-232 Handshake Switch) on your printer must be UP for the printer to work properly.

Using Printer Features

The Printers chapter in the Using AdvanceWrite manual gives an overview of each of the supported printers. Refer to the HP QuietJet section of the chapter for the explanation of how AdvanceWrite works with your printer. If QuietJet was not present in the list of supported printers, refer to the HP 2225 ThinkJet section of the Printers chapter. If you are using the HP ThinkJet printer program, it expects the printer to be in Alternate Mode: function switch A5 UP. See Chapter 3, Programming, for information on Alternate Mode.

If you are using the HP ThinkJet printer program, please note the following:

- NLQ must be activated through the printer's keypad.
- AdvanceWrite's default pitch for the HP ThinkJet printer program is 10.6 cpi. If you want to print a document in 12 pitch, you must activate 12 pitch at the beginning of the document. For instructions on changing pitch in a document, refer to the Pitch Change Mark section in the Word Processing functions chapter of your Using AdvanceWrite manual.
- For AdvanceWrite to correctly compute spacing, function switch A2 on your printer must be set UP. In AdvanceWrite, in order to use QuietJet's 10 pitch correctly, you must use the HP QuietJet printer program. If it is not available in your copy of AdvanceWrite contact your local HP dealer.
- Because of ThinkJet's requirement that right and left margins be at least 1", margin settings of 1" and less in AdvanceWrite will be ignored on QuietJet. To have a 1" margin on QuietJet when you are using the HP ThinkJet printer program, you must set the margin at 2". For more information on setting margins refer to the FORMAT section of your Using AdvanceWrite Manual.



The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding AdvanceWrite should be directed to Hewlett-Packard Company. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

On the Apple IIe

Introduction

The procedures outlined here will help you use AppleWorks with your QuietJet series printer. Please refer to the Printers and Printing chapter in your AppleWorks Reference Manual for information on AppleWorks' method of controlling printers.

Setting Up AppleWorks

From AppleWorks' main menu, select option **5. Other Activities**, by typing 5 and pressing the **RETURN** key. When the Other Activities menu is displayed, select option **7. Specify Information About Your Printer(s)**. If you already have three printers selected in the Change Printer Specifications section of the Printer Information menu, you must remove a printer before adding the QuietJet Series Printer. To remove a printer from the Printer Information menu, type **3** and press the **RETURN** key, then type the number of the printer to remove and press the **RETURN** key. The removed printer should no longer appear in the Printer Information menu, allowing room to add the QuietJet Series Printer. If Apple DMP is on the list, remove it.

To add QuietJet in the Printer Information menu type **2**, then press the **RETURN** key. A list of printers will be displayed. The printer type is selected from this list. Select **Epson MX/Graphtrax+** which will give you the best performance for your QuietJet Series printer. This means that you will need to operate your printer in Alternate Mode (function switch A5 UP). Refer to Chapter 3, Programming, for more information on Alternate mode.

After you have added the QuietJet series printer, you will be prompted for the name you would like to call it, for example, QuietJet, or any other name you wish to associate with it. You will then be asked to which slot the printer will be connected. Select the desired slot, normally number 1.

The printer name, the slot number, and the printer type, will be displayed along with the following four questions. The correct answers are listed to the right of the question. Be sure that these correct answers are given.

- | | |
|---------------------------------------|--------------|
| 1. Needs line feed after each Return: | NO |
| 2. Accepts top-of-page commands: | YES |
| 3. Stop at end of each page: | NO |
| 4. Platen width: | 13.2* inches |

After answering these questions, your QuietJet series printer is ready to use. Return to the top level of the program by pressing the **ESC** key until the main menu appears.

Using Printer Features

For the best information on using your printer's features, refer to the Formatting a Word Processor Document chapter in your AppleWorks Reference Manual.



Special Note

NLQ print must be activated through QuietJet's keypad. To print in compressed pitch, enter the Printer Options Window, select CI, characters per inch, and specify 17 characters per inch.

*This number depends on your printer. See Specifications, page 6-15 of the Appendix, for widths of paper your printer accepts.



The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Apple Works should be directed to Apple Computer, Inc. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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On the HP Vectra, and IBM PC Family and Compatibles

Introduction

The procedures outlined in this application note will help you use Framework II with your QuietJet series printer. Before proceeding, please review the Setting Up FrameWork section of the Framework II Getting Started manual.

Setting Up Framework II

Framework II provides an easy-to-use program entitled SETUP which asks you about your computer system and modifies Framework II accordingly. SETUP is used when Framework II is initially installed, and is also the program used when setting up your new QuietJet series printer to run with Framework II.

The SETUP program is contained on your program disk, or it can be found on the original SETUP disk. Begin the SETUP program by typing **SETUP**. The program will ask if you are setting up Framework for the first time or if you are making changes to an already installed copy of Framework II. Select the answer that reflects your situation.

If you are installing Framework II, follow the instructions below under 1st Time Install. If you are changing an already installed copy of Framework II, follow the instructions below under Reconfiguring Framework II.

1st Time Install

Proceed with the SETUP program until the Setting Up Your Printer, Step One, menu appears. A list of supported printers will be displayed. From this list select the group that contains the HP drivers, then select **QuietJet** from that list. If QuietJet isn't on the list, select **ThinkJet**. You will be asked to confirm the selection you just made. Next, select the type of interface (parallel or serial) that you will be using. Again, you will be asked to confirm your selection.

All of the selections that you've made up to this point, including the printer port that Framework II assigned to your printer, will be displayed. If the selections are correct, select the option to set up Framework II as specified. If they are not correct, select the option to start over again. Follow the instruction on the screen to complete the installation of Framework II.

Reconfiguring Framework II

Proceed with the SETUP program until the Main Menu is displayed. From the Main Menu, select **CONFIGURATION**. The Configuration Menu will be displayed. From there select the **PRIMARY HARDWARE** option. When the Primary Hardware Menu is displayed, select **Printer 1 Driver**. A list of supported drivers will be displayed. From this list select the group that contains HP drivers, then select **QuietJet**. If QUIETJET isn't offered, select ThinkJet.



After selecting the Printer 1 Driver, you will return to the Primary Hardware menu. Select **Printer 1 Port Assignment**. The list of possible ports (parallel and serial) will be displayed. Select the desired port, usually Parallel Port 1 for parallel interfaces, or Serial Port 1 for serial interfaces. Return to the Main Menu by entering an **M**. Now select **SAVE ALL NEW SETTINGS**. Follow the instructions to have the new printer driver copied from the SETUP disk.

Special Note

If the QuietJet driver was not available and you selected the ThinkJet driver, the printer must be used in Alternate mode. To do this, set function switch A5 UP. Also, if you selected the HP ThinkJet (QUIETJET not offered), set function switch A2 UP to avoid problems due to print pitch differences between ThinkJet and QuietJet. This will ensure that your document's spacing is correct. With function switch A2 UP the available print pitches are 6, 10.6, 12 and 21.3 characters per inch. See Chapter 3, Programming, for information on Alternate Mode.

Using Printer Features

Framework II has a variety of printing features and print formatting commands available. The Print Menu in Framework II contains selections that start and control printing. Select **BEGIN** from the Print Menu and press the **Enter** key to print the currently selected frame. For more information on printing from Framework II refer to the Formatting and Printing section of your Using Framework II manual. For additional information about Framework II Print Formatting Functions refer to the Framework II Advanced Topics manual.

Things to consider when using Framework II:

- Framework does not support sub and superscripts.
- QuietJet cannot print italics unless an optional character ROM containing an italics font is installed.
- When using the ThinkJet Driver, Framework II will underline text specified as italics.
- When using the ThinkJet driver, NLQ must be chosen from the printer's keypad. Draft and compressed can be turned ON from the Format Options Menu.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Framework II should be directed to Ashton-tate. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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On the HP Vectra, HP Series 100*; and IBM PC Family and Compatibles



Introduction

The procedures outlined here will assist you in using your QuietJet series printer with Lotus 1-2-3. Lotus 1-2-3 has two printing environments, 1-2-3 and PrintGraph, which are set up separately. Spreadsheets can be printed from within the 1-2-3 environment, and graphs, made in 1-2-3, can be printed from the PrintGraph environment. The Lotus 1-2-3 manual contains two sections that provide a complete description of how to use your printer. One of these sections is the PRINT Command description, and the other is the PrintGraph program. This application note will help you set up 1-2-3 and PrintGraph so that your QuietJet series printer is your default system printer.

Setting Up 1-2-3

1. Start Lotus 1-2-3.
2. When the empty spreadsheet appears, type one of the following commands:
 - a. HP Vectra, IBM PC Users: If your printer is connected to the first parallel port (LPT1:), enter **/WGDPI1** (Worksheet, Global, Default, Printer, Interface, Parallel); if your printer is connected to the first serial port (COM1:), enter **/WGDPI28** (Worksheet, Global, Default, Printer, Interface, Serial, 9600 Baud).
 - b. HP Series 100 Users: If your printer is connected to the PRN device, enter **/WGDPI1**; if your printer is connected to the LST device, enter **/WGDPI28**. For instructions on configuring the PRN and LST devices, refer to the hardware application note for your system located earlier in this chapter.

* HP Touchscreen/150A, B, C and The Portable

The preceding sequence of commands selects the Primary System Printer as the 1-2-3 output device. These are the correct commands if your system is set up as described in the Hardware Application Notes found in this manual.

3. Type **AN**. (Auto-LF, NO. This ensures the correct linefeeding.)
4. Type **QU**. (Quit, Update. This saves your interface configuration on the disk.)
5. Type **Q/QY**. (Quit, Command Mode, Quit, Yes. Exit 1-2-3, back to P.A.M.)

Setting Up PrintGraph

PrintGraph requires that you choose a driver from its library that will provide the capability of outputting graphics properly to your QuietJet series printer. Choosing the HP QUIETJET or HP THINKJET driver from your library will provide you with the best performance and easiest use of the system. The HP THINKJET driver is contained in Graphics Library II available from your Lotus dealer. If neither is offered in your library, select Epson MX-80 Single or Double Density. The double density driver provides high quality output but sacrifices speed. Note that a number of settings are based on personal preference; therefore, if you would like to position or size your graphs differently, feel free to experiment.

1. Insert the disk that contains the PrintGraph program and type **Graph**.
2. Type **CD**. (Configure, Device.) The driver library will appear.
3. Use the arrow keys to highlight HP QUIETJET or HP THINKJET. If neither is offered, highlight the Epson MX-80 Single Density or Double Density Mode drivers.



4. Press the Space key to select the desired driver, then press the **Enter** or **Return** key. The # symbol will appear next to HP QUIETJET
5. Type **I1**. (Interface, first parallel port.)
6. Type **SR**. (Save, Replace.) Saves the new set up.
7. Type **QQY**. (Quit, Quit, Yes). To exit PrintGraph.

When using QuietJet in HP Mode (function switch A5 DOWN) with the HP THINKJET driver selected, the full and half-page size settings are used to format your output. From the main PrintGraph menu the size settings are activated by typing **OS**, then choosing **F** or **H** for full or half page format. When the Epson MX-80 has been selected (Alternate Mode, function switch A5 UP) the following size settings are suggested. These settings are individually changed by choosing **M** for manual formatting.

Setting	Half Page	Full Page
Left Margin	.000	.000
Top Margin	.000	0
Width	11.00	11.100
Height	6.66	12.750
Rotation	.000	90.000
Page size—		
length	15.000	15.000
width	12.000	12.000



Caution

Be certain that function switch A5 is set properly.
 –Switch A5 DOWN (HP Mode) for HP QUIETJET or HP THINKJET.
 –Switch A5 UP (Alternate Mode) for Epson MX-80.

Using Printer Features

Graphics output to QuietJet is done through PrintGraph. To print from PrintGraph, make sure that you've made the selections specified in the previous section. Also, if you are using the Epson MX-80 driver, make the recommended size setting changes. Next, ensure that you have selected the graph(s) to print, then select GO from the main menu.

If you print using the Epson MX-80 driver and have made the recommended size changes, use the Form Feed key on the printer's keypad to move the paper to the top of the next page and select Align from PrintGraph's main menu. This will align the top of page. Omit this step if you are using the HP ThinkJet driver.

Text output to QuietJet is done through 1-2-3. From within 1-2-3 you can specify the type of format to use when printing text or worksheets.

1-2-3 has been designed such that you can define a general or default page format as well as unique formats for any spreadsheet you choose. The default format will be used unless you have specifically defined one for the current spreadsheet.

To Define the Default Format:

- 1.** Type **/WGDP** (Worksheet, Global, Default, Printer). Select your left, right, top and bottom margins, and page length.
- 2.** After the selections have been made, type **QUQ** (Quit, Update, Quit). Your format will be saved on disk, and will automatically be used each time you run your program.



To Define a Spreadsheet Format:

1. Type **/PPO** (Print, Printer, Options). You can now change/select headers, footers, margins, borders, and page length for this spreadsheet. (Each spreadsheet format is selected individually.)
2. Type **QQ/FS** (Quit, Quit, Command Mode, File, Save) and your file name to save this format for future use.

Reminder. Before you begin printing, be sure that you have positioned the paper at the desired top-of-form, then type **/PPA** (Print, Printer, Align). This will tell Lotus 1-2-3 that the paper is aligned at the beginning of a page.

For more advanced users, 1-2-3 provides the ability to send control codes and escape sequences directly to the printer. This is done by using what is called a setup string. Setup strings are available for both the default and current page formats. For the default format, type **/WGDPS** (Worksheet, Global, Default, Printer, Setup) or, for the current format, type **/PPOS** (Print, Printer, Option, Setup). 1-2-3 is now waiting for you to enter a setup string.

Printer Feature	Init String
Compressed print (21.3 cpi)	\027(s21.3H
Normal print (12 cpi)	\027(s12H
Normal print (10 cpi)	\027(s10H
Expanded-Comp. print (10.6 cpi)	\027(s10.6H
Expanded print (6 cpi)	\027(s6H
Expanded print (5 cpi)	\027(s5H
8 lines per inch	\027&l8D
6 lines per inch	\027&l6D
Bold print mode ON	\027(s1B
Bold print mode OFF	\027(s0B
NLQ print ON	\027(s1Q
NLQ Print OFF	\027(s0Q
Printer Reset*	\027E

* Printer reset will return the printer to its default state. Any activated printer features will be turned OFF.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding 1-2-3 should be directed to Lotus Development Corporation. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

Lotus and 1-2-3 are registered trademarks of Lotus Development Corporation.
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On the HP Vectra, and IBM PC Family and Compatibles

Introduction

The procedures outlined here will help you use your QuietJet series printer with Lotus 1-2-3 Release 2. Lotus 1-2-3 Release 2 has two printing “environments”, 1-2-3 and PrintGraph. Spreadsheets can be printed from within the 1-2-3 environment, and graphs can be printed from the PrintGraph environment. The set up and use of printers in 1-2-3 and PrintGraph are different and independent. The Printing Your Work section, Worksheet Global Default Commands section, and the Print Commands section in Chapter 2 of the 1-2-3 Reference Manual will give you detailed information on printing in the 1-2-3 environment. Chapter 5, The PrintGraph Program, details printing in the PrintGraph environment.

Running Install and Selecting the Text and Graphics Printer Drivers

Before you set up the 1-2-3 and PrintGraph printing environments in 1-2-3 Release 2, you must create a driver set. Chapter 2 in the 1-2-3 Getting Started manual discusses the Install Program which is used to create a driver set. The driver set you define tells 1-2-3 about the peripherals (printers, monitors, plotters) that are connected to your computer. Follow the appropriate instructions for starting the Install program, and proceed until the Main Menu appears. If you are creating a new (first time) driver set, select **First-Time Installation** and follow the instructions displayed on the screen.

If you are changing a driver set that you previously created, select **Change Selected Equipment** and follow its instructions. When you get to the sections of the install program that allow you to add text and graphics printer drivers, select to do so. Select HP, then select the **QuietJet or 2225 ThinkJet series** entry for both the text and graphics printer drivers. After you have made your selections, continue with the remainder of the installation process, save your selections in the driver .SET file, and exit the program. Refer to the Installing 1-2-3 chapter of your 1-2-3 Getting Started manual for more information on naming and saving driver sets.



Setting Up 1-2-3

1-2-3's default printer connection is the first parallel printer port. To confirm this setting (or to change it if your printer is connected to the first serial port) do the following:

1. Start 1-2-3.
2. When the empty spreadsheet appears, enter one of the following commands:
 - a. If using the Parallel port—/WGDPI1 (Worksheet, Global, Default, Printer, Interface, Parallel 1).
 - b. If using the Serial port—/WGDPI28 (Worksheet, Global, Default, Printer, Interface, Serial 1, 9600 Baud).
3. Type **AN** (sets Auto-line feed OFF).
4. Type **WN** (No Wait on page breaks. Continuous feed).
5. Type **QUQ** (Quit, Update setup on disk, Quit).

Setting Up PrintGraph

The graphics driver(s) that you selected with the Install program will be available for you to use in PrintGraph. To set up PrintGraph:

1. Start the PrintGraph program.
2. a. If your printer is connected to the first Parallel Printer port, type **SHI1** (Setup, Hardware, Interface, Parallel Printer 1).
b. If your printer is connected to the first Serial port, type **SHI28** (Setup, Hardware, Interface, Serial Printer 1, 9600 Baud).

3. Type **P** (Set type of graphics printer).
4. Use the UP and DOWN arrow keys to highlight the QuietJet or HP2225 ThinkJet series driver.
5. Press the **Space** bar. (This marks your selection).
6. Press the **Enter** key. (This enters your selection.)
7. Type **QIS**. (Quit, Image, Size.)
8. If you want a full page image, type **F**. If you want a half-page image, type **H**. If manual size settings are used, be sure that the total image width (left and width) is less than 7.9 inches.
9. Type **QQS**. (This will save your new settings on disk.)

Using Printer Features

Spreadsheets can be easily formatted to meet your output needs. 1-2-3 allows you to define a general or default page format as well as unique formats for any spreadsheet you choose. The default format will be used unless you have specifically defined one for the current spreadsheet.

To Define the Default Page Format.

1. Type **/WGDP** (Worksheet, Global, Default, Printer.)
2. You now have the choice of altering the left, right, top, and bottom margins, and the page length. When you select one of these entries, you will first be shown what the current setting is. Simply type the new setting and press Enter.
3. After you have made your selection, type **QUQ** (Quit, Update, Quit). Your default page format will be saved on disk.

To Define a Spreadsheet Format.

1. Type **/PPO** (Print, Printer, Options). You can now select or change headers, footers, margins, borders, and page length for the current spreadsheet. Once you have made your selections, type **QQ** (Quit, Quit) to return to the spreadsheet.

2. The next time you save your spreadsheet, the page format you selected will be saved with it. To save your selected format and spreadsheet, type **/FS** (File, Save) and the spreadsheet's file name, then press **Enter**. If you do not resave the spreadsheet file, the default page format will be used the next time you retrieve the spreadsheet.

For more advanced users, 1-2-3 provides the ability to send printer control codes and escape sequences directly to the printer by specifying setup strings. Setup strings are available for both the default and current page formats. In addition, setup strings can be imbedded in spreadsheets. For example:



1. To specify a setup string for the default page format that will turn on NLQ print mode, type **/WGDPS** (Worksheet, Global, Default, Printer, Setup), then type the setup string **\027(s1Q**, and press **Enter**.
2. To specify a setup string for the current page format that will turn on bold print, type **/PPOS** (Print, Printer, Options, Setup), then type the setup string **\027(s1B**, and press **Enter**.
3. To imbed a setup string that will turn on compressed print mode for a range of cells within a spreadsheet, select a cell that is before the beginning of the range of cells you are going to print. Type **||** by holding down the shift key and pressing the **** key, then enter the setup string **\027(s21.3H**. After the range of cells, type **||\027(s10H** to return the printer to normal print mode. Note that these cells must be included in the print range.

Refer to the table below and the back of this manual for other printer control codes and escape sequences.

Printer Feature	Init String
Compressed print (21.3 cpi)	\027(s21.3H
Normal print (12 cpi)	\027(s12H
Normal print (10 cpi)	\027(s10H
Expanded-Comp. print (10.6 cpi)	\027(s10.6H
Expanded print (6 cpi)	\027(s6H
Expanded print (5 cpi)	\027(s5H
8 lines per inch	\027D
6 lines per inch	\027D
Bold print mode ON	\027(s1B
Bold print mode OFF	\027(s0B
NLQ print ON	\027(s1Q
NLQ Print OFF	\027(s0Q
Printer Reset*	\027E

* Printer reset will return the printer to its default state. Any activated printer features will be turned OFF.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding 1-2-3 Release 2 should be directed to Lotus Development Corporation. Questions regarding QuietJet series printer should be directed to your nearest Hewlett-Packard dealer.

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On the HP Vectra, HP Series 100*; and IBM PC Family and Compatibles



Introduction

The procedures outlined in this application note will help you use your QuietJet series printer with MS Word. For more information on printing and the Print command, check the index of your MS Word manual.

Setting Up MS Word

When using MS Word to print documents, it is necessary to have a copy of the correct .PRD file on your Program Disk. A .PRD file is a printer description file which MS Word uses to correctly activate the printer. These files can usually be found on the Utility or Program disk. If you have the QUIETJET.PRD file, copy it to your Program Disk. This file will give the best QuietJet series performance with MS Word.

If you do not have a copy of the QUIETJET.PRD file, use THINKJET or HPTHINK. When using these ThinkJet PRD's, function switch A2, located inside of your printer, should be set UP. This switch sets the normal pitch to 12 which matches that of ThinkJet. Also, mode function switch A5 must be set UP when using HPTHINK.

If none of the above PRD's are available on your copy of MS Word, use TTYBS.PRD. This allows you to use QuietJet Series, but with limited printing features.

When you are ready to print an MS Word document, you must set up MS Word to properly communicate with your QuietJet series printer. Assuming that you have the QUIETJET.PRD file and you are using the serial interface, type **ESC P O**, and enter the settings on the following page in the Print Options Menu. Use the **TAB** key to move between fields.

* HP Touchscreen/150 A, B, C and The Portable.

printer: **QUIETJET**

draft: **YES** for draft quality, **NO** for NLQ.

feed: **Manual** for single sheets, **Continuous** for Z-fold paper

setup: **LPT1:***

* For Series 100 PC's, use **PRN:**. For IBM/Vectra compatibles, if your printer is connected to the first parallel printer port use **LPT1:**. If your printer is connected to the first serial port use **COM1:**

The printer .PRD file, draft, feed, and setup information entered in the Print Options menu are automatically saved each time you quit and exit MS Word, so you need only enter those settings once. Printer settings active at the end of an edit session will become active the next time you start MS Word.



Using Printer Features

The Character Formats (enhancements) supported by MS Word are listed below. Also, note that some MS Word Character Formats are not supported (italics), and if used will produce a result different than expected. Formatting is done while in the Type-In or Alpha mode of MS Word. For example, to underline the word "support" in a document:

1. While holding down the ALT* key press u. (Start Underline.)
2. Type **support**.
3. While holding down the ALT key press the SPACE key. (Start normal.)
4. When you are ready to print your document, type ESC PP (Command Menu, Print, Printer).

Other Enhancements

Key-strokes*	Character Format	Actual QuietJet Output
Alt b	Boldface	Bold Print
Alt i	Italic (not supported)	Text will be underlined
Alt u	Underline	Underline
Alt d	Double Underline	Underline
Alt s	Strikethrough	Legal strikethrough
Alt k	Small caps (not supported)	Normal caps
Alt +	Superscript	Superscript
Alt -	Subscript	Subscript
Alt SPACE	Normal character	Normal, end other format

* Hold down the Alt key while typing the next character. This also applies to SPACE. For touchscreen PC's, use the Ctrl key instead of the Alt key, ie <CTRL><space>, <ctrl>, etc.

Another way to use these Character Formats is through the Edit Menu. The Format Character Menu includes all of the formats in the above list. To get to this menu from the edit mode:

1. Press the ESC key. (This puts you in Command Menu.)
2. Type FC. (Now you are in the Format Character Menu.)

Use the TAB key to move through the menu, and make selections by typing the first letter of the desired setting. To exit and use the new settings, press the Enter or Return key.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding MS Word should be directed to Microsoft Corporation. Questions regarding the QuietJet series printer should be directed to your nearest Hewlett-Packard dealer.

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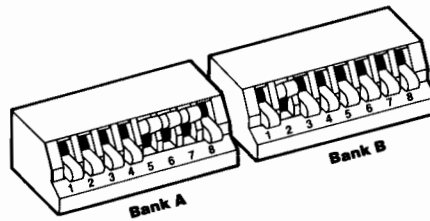
On the HP Vectra, and IBM PC Family and Compatibles

Introduction

The procedures outlined here will help you use your QuietJet series printer with the MicroSoft Windows operating environment. Before you can use your QuietJet series printer with Windows, you must install the QuietJet printer driver. A printer driver is a program/file that Windows applications use to communicate correctly with your printer. Printer drivers are installed with the Control application program that is distributed along with your Windows application disk. For more information, refer to the Adding and Removing Printers and Configuring Your System sections of the Using the Control Panel chapter in your Microsoft Windows User's Guide. The following information describes how to use the CONTROL.EXE program to install the QuietJet printer driver.

Setting Up Your Printer

The two groups of function switches located inside your printer should be set like this:





Note

"Select", as used in the following instructions, means to use the mouse or keyboard to choose (or enable) designated menus and/or menu items.

Setting Up Microsoft Windows

1. Select the Control Program (CONTROL.EXE) from the MSDOS Executive.

To Install the Printer Driver:

2. Select the **Installation** Menu.
3. Select **"Add New Printer"**.
4. Enter the Path name to your QuietJet printer driver. For example, if your QuietJet printer driver file is on the disk inserted in disk drive A enter **A:**. If your file is in the WINDOWS directory on drive C, enter **C:\WINDOWS**.
5. Press the **Enter** key.
6. Select the **QUIETJET** printer driver and press the **Enter** Key.

To Select the Printer Output Port:

7. Select the **Setup** Menu.
8. Select **Connections**.
9. Select the **QUIETJET** printer driver.
10. Select the port to which your QuietJet printer is connected.
11. Select **OK**.

If You Are using the Serial Printer Port:

12. Select the **Setup** Menu.
13. Select **Communications**.



- 14.** Select the serial port that your printer is connected to (COM1: or COM2:), then select the following settings.

Communications Settings	
Port	<input checked="" type="radio"/> COM1: <input type="radio"/> COM2:
Baud Rate:	9600
Word Length	<input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input checked="" type="radio"/> 8
Parity	<input type="radio"/> Even <input type="radio"/> Odd <input checked="" type="radio"/> None
Handshake	<input checked="" type="radio"/> Hardware <input type="radio"/> None

Selecting the Default System Printer and Changing Printer Features:

If you have more than one printer installed, Microsoft Windows allows you to choose any one of these printers to be the current, or default, system printer. The current printer is the printer that applications designed to run with Windows will use. Once you have selected the QuietJet as the default system printer you may specify whether you want your printouts to be printed in Portrait mode (normal), or Landscape mode (sideways). To select these modes:

- 15.** Select the **Setup** Menu.
- 16.** Select **Printer**.
- 17.** Select **QUIETJET**.
- 18.** Select **OK**.
- 19.** Use the mouse or keyboard keys to select the printer options you want enabled, then select **OK** when you are done.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Microsoft Windows should be directed to Microsoft Corporation. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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On the HP Vectra, HP Series 100*; and IBM PC Family and Compatibles



Introduction

The procedures outlined in this application note will help you use your QuietJet series printer with MultiMate. We suggest you read and follow the Getting Started chapter of your MultiMate manual, as well as the Print Document Utility section in the Screens and Menus chapter. These sections will help you set up the MultiMate system for your computer.

Before using MultiMate to print documents to your QuietJet series printer, you must have a copy of the correct .PAT file on your system disk. The .PAT file is the file that MultiMate uses to communicate with your printer. If you are using an HP Series 100 PC, you need QUIETJET.PAT. If you are using an HP Vectra, IBM PC, or compatible, you need HPQUIET.PAT. If you do not have either of these files use THINKJET.PAT or TTYCRLE.PAT. (If you use THINKJET.PAT, mode function switch A2 (located inside of your printer) must be set UP. With this switch UP your printer's available print pitches will be the same as ThinkJet's print pitches. This is necessary for MultiMate to correctly calculate spacing in your documents.)

The TTYCRLE.PAT file is a generic file already on your system disk that most printers can use. Written copies of the QUIETJET.PAT and HPQUIET.PAT files are available through MultiMate International; we urge you to become familiar with the MultiMate EDITPAT program on the utilities disk, and your QuietJet series printer, before attempting to create these files on disk. For HP Vectra, IBM and compatibles, refer to the Utilities section of the MultiMate manual for more information on the EDITPAT program; HP Series 100, refer to Appendix B of the MultiMate manual for more information on the EDITPAT program.

* HP Touchscreen/150 A, B, C and The Portable.

Setting Up MultiMate

To use your QuietJet series printer with MultiMate, you must set up the Print Document Utility. This is done by selecting the Print Document Utility from MultiMate's Main Menu, choosing a document to print, the interface you are using, and the .PAT file you wish to use.

Before you enter the Print Document Utility you will need a sample document to print. Create an initial sample document then return to the main function menu. From the main menu:

- 1.** Select the **Print Document Utility**.
- 2.** Enter the sample document's name and press the **Enter** key. The "Submit Document for Printing" screen will be displayed.
- 3.** Move to the port selection field and select the port your printer is connected to.
 - **Vectra and IBM Users:**
If your printer is connected to the first parallel port, select **P** in the Parallel or Serial field. If your printer is connected to the first serial port, select **S**. Select **1** in the Printer Number field.
 - **HP Series 100 Users:**
In the P (PRN) / L (LST) / C (COM) / A (AUX) / F (FILE) field, select **P**. Refer to the hardware application notes located in this section for information on configuring your particular PC's PRN device.
- 4.** On the Vectra/IBM, move to the Printer Type field, or on the HP Series 100 PC's, move to the Printer Action Table field, and type the name of your .PAT file.
- 5.** On the Vectra/IBM press the **F10** key to start printing. On the HP Series 100 press the **Enter** key.

MultiMate will begin formatting and printing your sample document.



Using Printer Features

Printer enhancements are selected by using the special dedicated function keys before and after the phrases you want enhanced in your MultiMate documents. HP Vectra and IBM Users: Consult the "Reference" chapter in the MultiMate manual for more information on how to use the special print enhancements. HP Series 100 Users: Consult the Function Reference chapter in the MultiMate manual for more information on how to use the special print enhancements. A list of features supported on QuietJet are listed below.

Features supported by the QUIETJET.PAT and HPQUIET.PAT files:

- Bold print.
- Draft/Enhanced print.
- Auto-underlining.
- Six print pitches (characters per inch).
- Subscript/Superscripts.

Features supported by the THINKJET.PAT file:

- Bold Print.
- Auto-underline.
- Four print pitches (characters per inch).

Features supported by the TTYCRLF.PAT file:

- Bold print.
- Auto-underlining.

Print pitches are chosen in MultiMate by entering a number from 1 to 9 in the print pitch field of the Print Document Utility. Listed below is the print pitch that a QuietJet Series printer will print in when the QUIETJET.PAT and HPQUIETJET.PAT files are used.

Set Pitch Indicator	Print Pitch Selected
To 1	Expanded (5 cpi)
2	Expanded (6 cpi)
3	Normal (10 cpi)
5	Expanded-Compressed (10.6 cpi)
7	Normal (12 cpi)
9	Compressed (21.3 cpi)

Listed below is the print pitch that a QuietJet series printer will print in when the THINKJET.PAT file is used. When the THINKJET.PAT file is used the printer's mode function switch A2 must be set UP.

Set Pitch Indicator	Print Pitch Selected
To 1 or 2	Expanded (6 cpi)
3 or 4	Expanded-compressed (10.6 cpi)
5, 6, 7	Normal (12 cpi)
8 or 9	Compressed (21.3 cpi)

cpi = characters per inch.

Remember to alter your document margins so that you do not have lines greater than the maximum allowable characters per line at the given pitch.

Line Spacing

The QuietJet series printer supports 6 and 8 lines per inch spacing. The printer does not support quarter line spacing.

Helpful Hints

Consult the Print Document Utility section in the Using Screens and Menus chapter of the MultiMate manual for more detailed information on printing documents. If you would like the printer menu to come up with the QuietJet series printer for all of your new documents, consult the Edit Printer Defaults section.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding MultiMate should be directed to MultiMate International. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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Using *pfs*®:file/*pfs*®:report

On Apple II PC's

Introduction

The procedures outlined here will help you use your printer with *pfs*:file and *pfs*:report. We recommend you review the following chapters in your *pfs*: manuals: Print in the *pfs*:file manual, and Print a Report in the *pfs*:report manual. These chapters explain how to send data to your printer.

Setting Up *pfs*:file/report

No special set up is necessary for *pfs*:file or *pfs*:report. The information provided earlier in this chapter for connecting the Apple II PC to your printer describes the necessary printer set up for these programs.

Printing With *pfs*:file

The following example uses the *pfs*:file Print Options Menu to select NLQ print:

1. From the *pfs*:file Function menu, type 5 then press the **TAB** key.
2. Type the name of the file you desire printed, then press **CONTROL-C** (press the **Control** key and type **C** simultaneously).
3. Type 1 then press **CONTROL-C** twice.

4. Modify the Print Options menu as shown below. Use the **TAB** key to move between fields in the Print Options menu.

PRINT OPTIONS

PRE-DEFINED PRINT SPEC:
PRINT ITEM NAMES (Y/N):Y
ADD LINEFEED CHARACTERS (Y/N):Y
LINES PER PAGE:66
NUMBER OF COPIES:1
PAUSE BETWEEN PAGES (Y/N):N
PRINTER CONTROL CODES: 27 40 115 49 81

The decimal numbers in the PRINTER CONTROL CODES set your printer to NLQ print.

6. Press **CONTROL-C** when the PRINT OPTIONS menu fields are correct.
7. Press **CONTROL-C** to begin printing.

Printing With *pfs:report*

The following example uses the *pfs:report* Report Options Menu and selects compressed print:

1. From the *pfs:report* menu, type 1 then press the **TAB** key.
2. Type the name of the file you desire printed, then press **CONTROL-C**.
3. Press **CONTROL-C** again to leave the RETREIVE SPEC screen.



4. Modify the REPORT OPTIONS Menu as shown below. Use the **TAB** key to move between fields in the Print Options menu.

REPORT OPTIONS

TITLE:

PRE-DEFINED REPORT NAME:

LINES PER PAGE:66 PAGE WIDTH: see note below

PRINTER DEVICE (D/P):P

ADD LINEFEED CHARACTERS (Y/N):N

PAUSE BETWEEN PAGES (Y/N):N

PRINTER CONTROL CODES: 27 38 107 50 83

The code shown above next to PRINTER CONTROL CODES sets the printer to compressed print.

5. When the REPORT OPTIONS menu fields are correct press **CONTROL-C**.
6. Number the fields to be printed and press **CONTROL-C**.

NOTE:

For the previous example, compressed print = 21.3 characters per inch. When using compressed print, the PAGE WIDTH should be set like the following:

For 8 inch paper set Page Width to 170. For 13.2 inch paper set Page Width to 170 or higher. For best results try different settings. The width is dependent on the number and size of columns printed in your report.

Using Printer Features

Many useful escape sequences are included in the appendix of this manual. Use the ASCII Decimal Equivalent control numbers if you are using your printer in HP mode. If your printer is set to Alternate Mode, use the Escape Sequence/Control Code Summary – Alternate Mode table in the Appendix.



The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding *pfs:file* and *pfs:report* should be directed to Software Publishing Corporation. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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Using *pfs*®:file/*pfs*®:report and IBM® Filing/Reporting Assistant

On the HP Vectra and IBM PC Family and Compatibles

Introduction

The procedures outlined below will help you use your printer with *pfs:file* and *pfs:report*, and IBM Filing Assistant and Reporting Assistant. The *pfs:series*' and IBM Assistant series' methods of dealing with printers are similar, therefore, instructions for both packages are combined below. For additional information, we recommend you review the following sections of your software manuals:

- For the *pfs:series*, review the Print chapter of the *pfs:file* manual and the Print A Report chapter of the *pfs:report* manual. Also, review the information contained in the Appendices of both of these manuals concerning the Printer Program which is used by the *pfs:series* to send special control codes to your printer to activate printer features such as bold or underline.
- For the IBM Assistant Series, review the Printing Information From a File chapter in the IBM Filing Assistant manual, and the Creating a Simple Report chapter in the IBM Reporting Assistant manual. Also, review the Set Printer section of your manuals. The Set Printer option available from the main menu of the Assistant Series programs allows you to send special control codes to your printer to activate printer features such as bold or underline.

Printing With pfs:file/report and IBM Filing/ Reporting Assistant

In order to print from each of these applications on your QuietJet series printer, you must indicate to the program where your printer is located. For example, if you are using the parallel interface on your printer you will indicate to the program that your printer will be LPT1. If you are using the serial interface you will indicate COM1. These locations could also be LPT2, LPT3, or COM2 depending on your specific configuration.

Follow the instructions in your manual for the Print portion of your program and proceed until the Print Options Menu or the Report Options Menu appears. In these menus, the printer location as described above (LPT1, COM1), must be inserted in the **Print to:** or the **Output to:** field, whichever appears on your menu.

The program can now communicate with your QuietJet series printer. For convenience, each of these applications provides a SETUP program that will change the default values displayed in the menus so that you won't have to enter the printer location every time you print. Refer to your software manuals for more information on the SETUP program.

Using Printer Features.

The PRINTER program on the *pfs:write/report* disk, and the Set Printer option of the IBM Filing/Reporting Assistant's Main Menu, allows you to send special format control codes to your printer, enabling you to use your printer's features. For example, if you want your printout to be printed in bold, before printing your report run the Printer program for the *pfs:series*, or select Set Printer from the main menu for the Assistant series. For the IBM Assistant series, skip step 1 below.

- 1.** If your printer is connected to the first parallel port type **LPT1:**. If your printer is connected to the first serial port, type **COM1:** in this field.
- 2.** Press the ESC key and type **(s)B**. Enter these characters carefully.



- 3.** The following will appear on your screen (press the **F6** key to quit the program if you make a mistake):

```
:Escape  
:(  
:s  
:1  
:B  
:
```

- 4.** Press the **F10** key to send the string to the printer. All printing will be **BOLD** until the printer is reset or the command to turn OFF bold is sent.

Other Useful Setup Strings.

Esc(s0B	Turn OFF bold print.
Esc(s10H	Select 10 characters per inch printing.
Esc(s5H	Select 5 characters per inch printing.
Esc(s21.3H	Select 21.3 characters per inch printing.
Esc(s10.6H	Select 10.6 characters per inch printing.
Esc(s1Q	Activate NLQ print.
Esc(s0Q	Deactivate NLQ print.



Special Note:

For the IBM Assistant Series, in order to enter a "(" in the Set Printer function, you must enter the ASCII (decimal) equivalent. The decimal number, 40, must be presented enclosed in parenthesis: (40). For example, to enter the escape sequence to activate bold you would press the ESC key then type (40)s1B. This would appear on your screen as:

```
:ESCAPE  
:(40)  
:s  
:1  
:B
```

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding *pfs:file/* report should be directed to Software Publishing Corporation. Questions regarding IBM Filing/Reporting Assistant should be directed to IBM Corporation. Questions regarding the QuietJet series printer should be directed to your nearest Hewlett-Packard dealer.

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On the HP Vectra, IBM PC Family and Compatibles, and Apple II Series *



Introduction

The procedure outlined here will help you set up and use your QuietJet series printer with *pfs*:graph (revision B) and IBM Graphing Assistant. *pfs*:graph's and IBM Graphing Assistant's methods of dealing with printers are similar; therefore, instructions for both of them plus the instructions for the Apple version of *pfs*:graph are combined below.

We suggest that you review the chapters in your manual on printing charts. If you are using an Apple II, review the Printer/Plotter chapter. If you are using an HP Vectra, IBM PC, or compatible, review the Printing Charts chapter.

Setting Up *pfs*:graph and IBM Graphing Assistant

pfs:graph and the IBM Graphing Assistant require that graphs be printed in Alternate mode. Therefore, the printer's mode function switch A5 must be UP. When you are ready to print a graph, select **Print** from the main menu. For the Apple version of *pfs*:graph select the **Print/Plot** option from the main menu, then select **Printer**. The Printer Menu will be displayed. The setting(s) displayed in each of the fields of the menu are the default settings. For HP Vectra and IBM users, the default settings can be changed by using the SETUP program. Refer to your software manual for more information on the SETUP program.

*Apple II+, IIc, and IIe.

From the Printer Menu select the HP ThinkJet. If it is not available, select the Epson printer driver. Remember that your printer must be in Alternate mode (switch A5 UP). For HP Vectra and IBM PC users, ensure that the Print To: field contains the name of the printer port that your QuietJet is connected to; this will usually be LPT1: if you are using the parallel interface, and COM1: if you are using the serial interface. Ensure the other fields are as you like them and press the **Continue** key to print your graph.



If your version of the program does not contain the HP ThinkJet driver, you may wish to select the Epson driver; however, the dots per inch used in Epson graphics differs from the dots per inch used in QuietJet graphics. This difference will cause the graphics printed to be smaller in both the horizontal and vertical directions.



The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding *pfs:graph* should be directed to Software Publishing Corporation. Questions regarding IBM Graphing Assistant should be directed to IBM. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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Using *pfs*®:write and IBM® Writing Assistant



On the HP Vectra, IBM PC Family and Compatibles, and the Apple IIe

Introduction

The procedures outlined here will help you use *pfs*:write and IBM Writing Assistant with your QuietJet series printer. *pfs*:write's and IBM Writing Assistant's methods of dealing with printers are similar; therefore, the instructions for both packages are combined below.

We suggest you review the following sections of your manual: the Print chapter, the Print Enhancements, and Sending Special Codes to Your Printer sections in your *pfs*:write manual. In your IBM Writing Assistant manual, please review the Printing Documents chapter and the Emphasizing Words or Phrases in a Document section. These sections will help you use the special features of your QuietJet series printer.

Printing With *pfs*:write/IBM Writing Assistant

To print documents, select the Print Function in the Main Menu. On the Vectra/IBM follow the instructions in the next paragraph. For the Apple version of *pfs*:write, skip the instructions in the next (second) paragraph and go on to the third paragraph.

The Print To: field should specify the port your printer is connected to (LPT1:, LPT2:, LPT3:, COM1:, or COM2:). If your printer is connected to the first parallel printer port, LPT1: should be chosen. If you are using a serial printer connected to the first serial port, COM1: should be selected.

If you are using single sheet paper, be sure to enter YES after the Pause Between Pages: field. Once you have made these selections and are ready to print, press the continue key.

Using Printer Features

A list of all print features is located in the Appendix of this manual. You can enable any of these features from within your documents by sending the corresponding control code/escape sequence to your printer with the *PRINTER* or *P* command. The Sending Special Codes to your Printer section of your *pfs:write* and IBM Writing Assistant manuals explains how to use this option. Examples of using the *P* features appear below.

Feature	HP Mode Command	Alternate Mode Command
	Switch A5 DOWN	Switch A5 UP
Expanded Print ON	*P 27,38,107,49,83*	*P 14*
Expanded Print OFF	*P 27,38,107,48,83*	*P 20*
Compressed Print ON	*P 27,38,107,50,83*	*P 15*
Compressed Print OFF	*P 27,38,107,48,83*	*P 18*
6 LPI line spacing	*P 27,38,108,54,68*	*P 27,50*
8 LPI line spacing	*P 27,38,108,56,68*	*P 27,48*
Bold Mode On	*P 27,40,115,49,66*	*P 27,69*
Bold Mode Off	*P 27,40,115,48,66*	*P 27,70*
LPI=lines per inch		



Note

Be sure to see the list of print features, located in the Appendix of this manual, that corresponds to your printer control mode. Use HP mode commands if function switch A5 is DOWN. Use Alternate Mode commands if function Switch A5 is UP. Use the numbers in the ASCII Decimal Equivalent column for either case.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding *pfs:write* should be directed to Software Publishing Corporation. Questions regarding IBM Writing Assistant should be directed to IBM. Questions regarding QuietJet series printers should be directed to Hewlett-Packard.

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On the HP Vectra, Apple II Series *, IBM PC Family and Compatibles

Introduction

The procedures outlined in this application note will help you use Print Shop with your QuietJet series printer. Before setting up Print Shop to work with your printer, review the Introduction and Getting Started sections of your Print Shop Reference Manual.

Setting Up Print Shop

To use your printer with Print Shop, select the SETUP option from Print Shop's Main Menu. You will be asked to give information about your printer, your disk drives, and your monitor.

The first menu displays a list of printers. From this list select QUIETJET. If QUIETJET isn't listed in your version of Print Shop, choose Epson. If Epson is chosen, function switch A5 on the inside of your printer must be set to UP. This puts the printer into Alternate Mode.

Next, you will be asked to provide other information about your Personal Computer. These may include your Interface Card, Disk Drive setup, and Monitor type. Answer these inquiries appropriately.

* Apple II+, IIc, and IIe

After answering the set up questions, it is time to test your printer. Follow the instructions displayed on the screen, then press the **ENTER** or **RETURN** key to send the test message to your printer. WELCOME TO PRINT SHOP should print out on your printer. After you have verified that your printer works, Print Shop will ask if you want to save the setup information for future use. Press **ENTER** or **RETURN** to save it. If nothing is printed, make sure that your printer is properly connected, and that you have answered the setup questions as explained above.

Using Printer Features

If Epson was chosen in your Setup, it is important to note that due to the difference in the number of dots per inch used by Epson and QuietJet, graphics printed on QuietJet will be about 40% smaller horizontally, and 20% smaller vertically than if printed on an Epson printer (circles will print as ovals). As an example, the wording on Greeting Cards will be smaller, and you will not be able to fold the card in quarters as directed in the Print Shop Reference Manual.



The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Print Shop should be directed to Broderbund Software. Questions regarding the QuietJet series printer should be directed to your nearest Hewlett-Packard dealer.

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On the HP Vectra, HP Series 100*; and IBM PC Family and Compatibles



Introduction

The procedures outlined here will help you use Symphony with your QuietJet series printer. Symphony has two printing "environments". The text or character printing environment is used when you are in Symphony; the graphics printing environment is used when you are in PrintGraph. The set up and use of Symphony and PrintGraph are different and independent, and are treated that way in this application note.

For a good, general understanding of printing in Symphony, review the sections of your software manual that discuss printing your work from the spreadsheet, the word processor, and the database. Also, review the section on printing graphics.

Running Install and Selecting the Text and Graphics Printer Drivers

Before you set up the Text and Graphics printing environments, you must create a driver set. The Driver Set you define tells Symphony about the peripherals (printers, monitors, plotters) that are connected to your computer. To create a driver set you must run the Install Program. Refer to the Install section of your Symphony manual for instructions on beginning the Install Program. For Vectra/IBM users, when the main menu is displayed, select the **Installation: Create a Driver Set** option. Follow the instructions for selecting the type of monitor you are using. You will then be asked to select a text printer and then a graphics printer.

* HP Touchscreen/150 A, B, C and The Portable.

Select **QuietJet or HP 2225, 2930, 2686** for the text printer driver, and select **QuietJet or 2225 ThinkJet** for the graphics driver. For HP Series 100 users, when the main menu is displayed, select the **Text Printer(s)**, and the **Graphics Printer(s)** options. Select **HP**, then select **QuietJet or 2225 ThinkJet** for both the text and graphics printer drivers. After you've made your selections, continue with the remainder of the installation process, save your selections in the driver .SET file, and exit the program.

Setting Up Symphony

Symphony's default printer connection is the first parallel printer port, LPT1 for Vectra/IBM, or PRN for Series 100 PCs. To confirm these settings (or to change them if your printer is connected to a port other than the default) do the following:

1. Start Symphony.
2. Press the **Services** key.
3. Type **CP**. (Configuration, Printer Menu.)
4. a. For Vectra/IBM users: If your printer is connected to the first Parallel Printer port, type **T1** (printer type 1, parallel Port). If your printer is connected to the first serial port, type **T28** (printer type, serial interface, 9600 baud).
b. For HP Series 100 users: If your printer is connected to the PRN device, type **T1** (printer type, primary printer). If your printer is connected to the LST device, type **T2** (printer type, secondary printer).
Refer to the appropriate hardware application note for instructions on configuring your PRN or LST devices.
5. Type **AN**. (Sets Auto-Line Feed off.)
6. Type **WN**. (No Wait on page breaks. Continuous feed.)
7. Type **QU**. (Quit then Update setup on disk.)
8. Press the **ESC** key then type **EY**. (Go back to the Services menu then Exit.)





PrintGraph Printer Set Up

To print from Symphony, press the **Services** key, then type **PSSR** (Print, Settings, Source, Range). Next specify the range to be printed and press **Enter** or **Return**, **Q** (Quit), and **G** (Go). The range specified will be printed.

1. Start the PrintGraph program.
2. a. For Vectra/IBM users: If your printer is connected to the first parallel printer port, type **SHI1** (Setup, Hardware, Interface, Parallel Port). If your printer is connected to the first Serial port, type **SHI28** (Setup, Hardware, Interface, Serial Port, 9600 Baud). If your printer is connected to the first serial port, type **SHI2**. (Setup, Hardware, Interface, Serial Printer 1.)
b. For HP Series 100 users: If your printer is connected to the PRN Device, type **SHI1** (Setup, Hardware, Interface, PRN–Primary Printer). If your printer is connected to the LST Device, type **SHI2** (Setup, Hardware, Interface, LST–Secondary Printer).
3. Type **P**. (Select Graphic Output Device.)
4. Use the **UP** and **DOWN** cursor control keys to highlight HP2225 ThinkJet.
5. Press the **SPACE** bar. (This marks your selection.)
6. Press the **ENTER** key. (This enters your selection.)
7. Type **QIS**. (Quit, Image, Size.)
8. If you want your image to be Full Page, type **F**. If you want your image to be Half Page, type **H**. If manual size settings are used be sure the total image width (left and width) is less than 7.9 inches.
9. Type **QQS**. (This will save your new settings on disk).

To print a graph, ensure you have an image selected and type **G** (go) from the main menu.

Using Printer Features

Reports and documents can be easily formatted to meet your output needs. This is done from any of the environments by pressing the **S**ervices key then typing **P**. Print Settings will be displayed. Next, type **S**. This will get you to where you can define your page format, then type **P** to change any of the page settings, or type **M** to change the margins.

For more advanced users this is the menu where you can define Init-Strings. This is a method of sending control and escape sequence codes, useful in changing printer functions like character pitch and line spacing, directly to your printer. The Init-String that you define will be sent to the printer when you initiate printing. To input an init-string, from the Print Menu type **SI**, then type the desired string (see below).

Printer Feature	Init-String
Compressed Print (21.3 cpi)	\027(s21.3H
Normal Print (12 cpi)	\027(s12H
(10 cpi)	\027(s10H
Expanded-Compressed (10.6 cpi)	\027(s10.6H
Expanded Print (6 cpi)	\027(s6H
(5 cpi)	\027(s5H
8 lines/inch	\027&l8D
6 lines/inch	\027&l6D
Printer Reset	\027E

All the Print Settings displayed are saved along with the sheet, document, or form. This gives you a great deal of flexibility in tailoring your output for each kind of report or document that you generate.



Symphony provides the ability to imbed init-strings into spreadsheets: as the report is sent out to the printer the init-strings are sent also. Using this you can take advantage of the advanced printing features of your QuietJet series Printer. In the spreadsheet Environment follow the example below.

1. Press the **home** key. (Home the cursor on the spreadsheet.)
2. Type `␣\027(s1B` (␣= the shift key and \ key). (Init-string that starts bold printing.)
3. Press the **down arrow** key. (This enters the string and advances to the next cell down on the spreadsheet.)
4. Type **BOLD TITLE**.
5. Press the **down arrow**. (This enters the string and advances to the next cell down on the spreadsheet.)
6. Type `␣\027(s0B`. (Init-string that ends Bold.)
7. Press the home key. (Enters the last label and homes the cursor on the spreadsheet.)
8. Press the **Services** key, then type **PSSR**. (Display the Services Menu, then Print, Settings, Source, and Range.)
9. Type **A1..B3** then press the **ENTER** or **RETURN** key. (This specifies the range of the example spreadsheet.)
10. Type **QG**. (Quit then Go. Your QuietJet will print **BOLD TITLE**.)
11. Type **Q**. (Quit gets you back to our spreadsheet.)

QuietJet series printing enhancements or attributes that Symphony supports in the Word Processing environment are shown below. These attributes are discussed in some depth in your Symphony Manual.

Attribute Code	Attribute
B	Bold
U	Underline
X	Strike through all characters
I	Bold underline
+	Superscripts (QuietJet Driver Only)
-	Subscript (QuietJet Driver Only)

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On the HP Vectra, and IBM PC Family and Compatibles

Introduction

The procedures outlined here will help you use your QuietJet series printer with Volkswriter Deluxe. Before using Volkswriter Deluxe with your new printer you must run the configuration (set up) program located on the Tutorial Disk. For details on running the CONFIGUR program refer to Customizing Volkswriter Deluxe located in the Appendix of your Volkswriter Deluxe Manual.



Setting Up Volkswriter Deluxe

From CONFIGUR's main menu select **option 3**, Select Printer. A list of printers will be displayed. Find HP 2225 ThinkJet in the list, noting its number. (While QuietJet works well with Volkswriter Deluxe, it is not included in the list of printers. ThinkJet must be chosen in its place.) Indicate that you found ThinkJet on the list by entering a **Y** in answer to the question. Next, select **option 1** and enter the number from the list that corresponds to HP ThinkJet. Then, indicate the type of interface you are using by entering a **P** for parallel interface, or an **S** for serial interface. Next, answer **NO** to the highspeed print mode question. Exit the CONFIGUR program by entering an **X**. Since you will be using the HP 2225 ThinkJet printer table with your QuietJet series printer, function switch A2, located on the inside of your printer, must be set UP. With this switch UP your QuietJet's normal print pitches will be 6, 10.6, 12, and 21.3 characters per inch. This is necessary for Volkswriter Deluxe to correctly calculate spacing in your documents.

Printing in Volkswriter Deluxe is controlled by a "Format". To make sure that a document's current format will work well with QuietJet, edit a document and hold down the **CTRL** key and press **F1** key while doing so. The current format settings will be displayed. Examine the format and ensure

that the number indicating the PRINTER TYPE is appropriate for your printer. (For a list of the supported printers and their corresponding numbers, refer to Appendix E of your Volkswriter Deluxe Manual.) Also, be sure that you are satisfied with the other format settings. If you wish to modify any of the settings, refer to the Formatting Your Text chapter in the Volkswriter Deluxe Manual, where information on setting up and using the appropriate format is located.

Using Printer Features

For best results, use the Format features of Volkswriter Deluxe. If you are using the HP ThinkJet Printer table note the following:

- Shadow and bold print will look the same.
- All Volkswriter fonts will look the same.
- NLQ print must be activated through your printer's keypad.
- Subscripts and superscripts are not supported in the HP2225 ThinkJet printer table; however, QuietJet does support them. To use sub-and superscripts, use the `..CMD` to issue the special escape sequence to create subscripts and superscripts. Refer to the Escape Sequence section of the Editor Reference Guide in your Volkswriter Deluxe Manual. For information on the escape sequences used by QuietJet, refer to Chapter 3, or the Appendix, of this manual.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Volkswriter Deluxe should be directed to Lifetree Software, Inc. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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On the HP Vectra, and IBM PC Family and Compatibles

Introduction

The procedures outlined here will help you use your QuietJet series printer with Volkswriter 3. Before using Volkswriter 3 you must run the set up program (CONFIGUR) provided on the Installation Disk. For details on running the CONFIGUR program, refer to the Starting Volkswriter 3 chapter in the Volkswriter 3 manual. If you are installing Volkswriter for the first time, these same instructions apply. The installation program uses the CONFIGUR program for part of the installation process.

Setting Up Volkswriter 3

The top half of the CONFIGUR Program main menu displays the current configuration settings. The bottom half contains the options that allow you to change the displayed settings. Select option **3. Select Printer**. The first page of supported printers will be displayed. Find the page that contains the HP printers and indicate that your printer is listed there by entering a **Y**. Next, select **HP QuietJet**. If HP QuietJet is not on the list, select the HP ThinkJet printer. The CONFIGUR program will assign a number to the selected printer. This is the number that Volkswriter 3 will use to identify your QuietJet printer.

Press the **Enter** key to return to the main menu. Next, select option **4. Select Where Document Will Be Printed**. A menu will be displayed that indicates the possible places that your document can be sent. Select the desired destination. This is usually Printer LPT1 for parallel interfaces and Printer COM1 for serial interfaces. Press **X** to return to the main menu.

The configuration settings displayed at the top of the main menu should reflect the changes that you made. Press **X** to exit the CONFIGUR program.



Special Note

If you are using the HP ThinkJet printer table, ensure that function switch A5 on your QuietJet printer is UP (Alternate mode). Refer to page 2-26 of this chapter for more information on using your QuietJet printer in Alternate mode.

Using Printer Features

For information on printing, refer to Chapter 7, Printing Your Document, in your Volkswriter 3 manual.

The layout appearance of your document is controlled by the Layout Menu. While you are editing a document, press the **F9** key and the Layout Menu will appear. From this menu, type a **D** to select Document Options. The setting for your current document will be displayed. Examine the **Type of Printer** field and ensure that the number is appropriate for your printer. The number displayed will be the number that was assigned to your printer in the CONFIGUR program. Refer to Appendix D of your Volkswriter 3 manual for the list of supported printers. Also, be sure that you are satisfied with the other settings displayed. If you wish to modify the current settings, refer to the Your Document's Layout chapter, for more information on setting up and using the appropriate layout.

To see the degree of support for your QuietJet printer, print out the TESTFILE document which is contained on the Tutorials and Utilities Disk. To print this file, select **P** (Print) from the main menu. Next, select **N** (Print Document from Disk) and type **A:\TESTFILE**. This is assuming the Tutorials and Utilities Disk is in drive A:. Then indicate you will print the entire document and will print one copy. Then, ensure your printer is ready and press any key. The document will be printed.



If you have selected HP ThinkJet from the CONFIGUR program (HP QuietJet was not available in the list of supported printers), note the following:

1. Shadow and bold print look the same.
2. All Volkswriter fonts will look the same.
3. NLQ print must be activated through the printer's keypad.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Volkswriter 3 should be directed to Lifetree Software, Inc. Questions regarding QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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On the HP Vectra, and IBM PC Family and Compatibles



Introduction

The procedures outlined here will help you use WordPerfect with your QuietJet series printer. In order to print documents from WordPerfect, you must specify the printer you are using. This is done through the Select Printers command available from the WordPerfect Printer Control Menu. Refer to the Printers section of the Reference chapter in your WordPerfect manual for more information on the Select Printers command.

Setting Up WordPerfect

The purpose of the Select Printers menu is to allow you to identify, in order of priority, the printers you will use. Begin with the Print Menu command by holding down the **Shift** key and pressing **F7**. Select option 4, Printer Control. From this menu select **option 3**, Select Printers. The Select Printer menu, containing a list of printers, will appear. WordPerfect allows you to select six printers. Notice the current number in parentheses at the top of the menu. The number in the parentheses indicates to WordPerfect the printer that you are about to select.

From this menu enter the number corresponding to HP QuietJet. If HP QuietJet does not appear on the list, select printer 1, Line Printer. Next, you will be asked to indicate the printer port that you will be using. This will usually be LPT1 if you are using the parallel interface. If you are using the serial interface it will usually be COM1. For a serial interface (COM Port) you will be asked to provide the following settings for your printer:

Baud Selection	–9600
Parity	–None
Stop Bits	–1
Character Length	–8

Following the port selection, you will be asked to indicate the method of paper feeding you are using on your printer. After answering this question, the list of printers will reappear. The number in parentheses at the top of the menu will be increased by one. You may proceed and select other printers (up to 6) to work with, or press **F7** to return to the Printer Control Command. From there, select **option 1**, Select Printer Options. Ensure that the Printer Number displayed there corresponds to the printer number (the one in parentheses) that you just indentified from the Select Printers menu.

Using Printer Features

If HP QuietJet did not appear in the Select Printer Menu and you chose the Line Printer, you will not be able to use all of QuietJet's features. To determine which features are working, print the PRINTER.TST file contained on the WordPerfect supplementary disk. To print this file, you must first bring it into the WordPerfect program. Do this by holding down the Shift key and pressing **F10**. You will then be prompted for the name of the document. Type **A:\Printer.tst** (assuming the supplementary disk is in the A: drive). Then hold down the **Shift** key and press **F7**. Select 1, Full Text Print and the document will be printed. For information on print functions, refer to Section III of the WordPerfect manual.



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On the Apple IIe

Introduction

The procedures outlined in this application note will help you use your QuietJet series printer with WordStar.

Setting Up WordStar

WINSTALL is the program that is used to customize WordStar. With it you can prepare WordStar to work with your QuietJet series printer. It will also allow you to tailor a variety of WordStar features to your needs. For information on how to begin WINSTALL, see Chapter 1, and the Apple Addendum, in the WordStar Installation Manual.

Following the instructions in your manual, proceed with the WINSTALL program until the Installation Menu appears. This menu displays the options that can be used to tailor your copy of WordStar. Select the option entitled **Menu of Printers**. The first page of supported printers will then be displayed. Remember that the list continues on the next page. Select the **STANDARD PRINTER**, then proceed with the next question by selecting **NO PROTOCOL** and by selecting the **PRIMARY LIST DEVICE**.

After answering the appropriate questions you will return to the Installation Menu. Exit the menu by entering an **X**. The printer settings will be displayed with any changes you have made; if they are correct save them. If they are not correct, go back to the Installation Menu.



Using Printer Features

With WordStar there are two good ways to format your printed output. One way is through WINSTALL, and the other is using Print Control and Dot Commands. In WINSTALL you can change the "default" or initial settings for a large number of WordStar features including printing format. The settings you input while in WINSTALL will be used every time you begin a new WordStar session: these become your new default. The Print Control and Dot Commands can be used to tailor the print format for a particular document. They are saved along with that document and can only be changed while running WordStar.

All Print Controls and Dot Commands are summarized at the end of Chapter 7 in your WordStar Reference Manual. You will get a good idea of the printing features available in WordStar from glancing through the Summary Table located in Chapter 7.

Dot Commands are used to format or layout documents. They provide the ability to define settings like page length, margins, page numbering, headers, footers, etc. A dot command must begin in the first column with a dot followed by a valid command. An example dot command is **.OP** which will omit page numbering from the current page throughout the remainder of the document.

Print Control Commands are primarily used for doing special effects or enhancements like bold, underlining, overstrike, strikeout, etc. Once a document has been opened, a print menu can be displayed by holding down the **Ctrl** key and pressing **P**. This menu can be used as an easy reference, or, more importantly, to begin a special effect.

To verify that WordStar supports your printer, print out the document named PRINT.TST. The WordStar-supported features will appear.

Some things to note when choosing STANDARD PRINTER in Winstall:

- Only a single pitch and single line height can be printed.
- Super and subscripts are printed a full line above or below the main line. To print sub and superscripts properly, the line above or below the main line must be blank, even if you have customized Winstall to do half line feeds.
- NLQ printing must be selected through QuietJet's keypad.

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On the HP Vectra, HP Series 100*; and IBM PC Family and Compatibles

Introduction

The procedures outlined here will help you use your QuietJet series printer with Wordstar.

Setting Up WordStar

WINSTALL is the program used to customize WordStar. With it you can prepare WordStar to work properly with your QuietJet series printer. It will also allow you to tailor a variety of WordStar features to your needs.

For information on how to begin WINSTALL if you are using an HP VECTRA, IBM PC, XT, refer to Chapter 1 of the WordStar Installation Manual, Basic Installation, and the IBM PC Addendum; if you are using an HP Series 100 Computer, refer to Chapter 1 of the Series 100 WordStar Installation Guide, Basic Installation.

Follow the instructions in your WordStar manual and proceed with the WINSTALL program until the Installation Menu appears. This menu displays the options that can be used to tailor your copy of WordStar. Select the option entitled Menu of Printers. The first page of supported printers will be displayed. Look through the list of printers (it may be several pages long) and select QuietJet, ThinkJet (HP2225), or HP 2934. QuietJet should be your first choice. If neither of these printers are listed, select STANDARD PRINTER. For the IBM version, go to the next question by selecting NO PROTOCOL and a Parallel or Serial Driver, depending on the type of interface you will be using with your printer. HP Series 100 PC users: you will return to the Installation Menu.

* HP Touchscreen/150 A, B, C, and The Portable.

Exit the Installation Menu by entering an **X**. The printer settings will be displayed with any changes that you have made. If they are correct save them; if they are not correct go back to the Installation Menu and correct them.

Using Printer Features

In WordStar there are two good ways to format your printed output. One way is through Winstall, and the other is by using Print Control and Dot Commands. In Winstall you can change the "default" or initial settings for many WordStar features including printing format. The settings you input while in Winstall will be used every time you begin a new WordStar session: these become your new default. Documents must be "opened" before these commands can be used. All formatting and enhancements will be maintained right along with the document when it is saved.



Dot Commands are used to format or layout your document. They provide you with the ability to define settings like Page Length, Margins, Page Numbering, Headers, Footers, etc. A Dot Command must begin in the first column with a dot followed by a valid command. An example Dot Command is **.OP**, Omit Page Numbering, which cancels page numbering from the current page through the remainder of the document.

Print Control Commands are primarily used for doing special effects or enhancements like bold, underlining, overstrike, strikeout, etc. After a document has been opened a print menu can be displayed by holding down the **CTRL** key and typing **P**. This menu can be used as an easy reference or, even more importantly, to invoke a special effect.

Print Controls and Dot Commands are summarized at the end of Chapter 7 in the WordStar Reference Manual. Glance through the Summary Tables and you will get a good idea of the printing features available in WordStar.

What To Expect

After running Winstall, we suggest you verify your configuration. An excellent way to do this is to use WordStar to print a file called PRINT.TST which is provided along with your copy of WordStar. With PRINT.TST output to your QuietJet you can easily determine which printing features are available.

When running Winstall, NLQ printing is available by choosing QuietJet, then using the Alternate Ribbon Color Print Command. If ThinkJet, HP 2934 or Standard are selected, NLQ printing must be chosen through the printer's keypad.

The following list defines WordStar Print Control Commands whose function may be unclear. The corresponding function is dependent on the printer chosen in Winstall.

Command	ThinkJet	HP2934	Standard
Alternate Pitch (^PA)	Compressed	12 cpi	**
Standard Pitch (^PN)	Normal	Normal	**
Superscript (^PT)	Half line up	Half line up	Full line up
Subscript (^PV)	Half line down	Half line down	Full line down
User Patch Q(1)	Compressed	Compressed	**
User Patch W(2)	Expanded	Expanded	**
User Patch E(3)	**	6 cpi	**
User Patch R(4)	Exp-Comp.	Exp-Comp.	**

** Indicates that this is not recognized by the QuietJet Series printer.



Important Note

WordStar will not properly format or justify lines where User Patches are used for changing pitch.

The following Wordstar Commands are not recognized by QuietJet when ThinkJet, HP 2934, or Standard printers have been chosen in its place:

Alternate and Standard Ribbon Color (^PY)
Character Width (.CW)
Line Height (.LH)
Microjustify (.UJ)
Bidirectional Print (.BP)
Super/Sub Roll (.SR)



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On the HP Vectra, and IBM PC Family and Compatibles

Introduction

The procedures outlined here will help you use your QuietJet series printer with WordStar 2000. WordStar 2000 provides a good deal of flexibility in formatting printed output. Please review the Installing a Printer chapter in the WordStar 2000 Installation Guide before proceeding.

Setting Up WordStar 2000

The program used to customize WordStar 2000 is WS2INS. It allows you to tailor a variety of features to your needs, and prepares WordStar 2000 to print with your QuietJet printer. This program is contained on the Installation Disk, or if you have a hard disk with WordStar 2000 installed, it will be in the directory with the WordStar 2000 program.

Once WordStar 2000 has been installed, follow this procedure to begin the WS2INS program:

- If you have a two-floppy disk system, place a copy of the installation disk in drive A: and a copy of the WordStar 2000 program disk in drive B:. With A: being your currently active drive, enter **WS2INS**.
- If you have a hard disk system, change directories to your WordStar 2000 directory and enter **WS2INS**.

Proceed with the WS2INS program until the Printer Menu appears which contains the first page of supported printers. Look for HP QuietJet in the list of supported printers and select it. If HP QuietJet is not in the list, select **HP ThinkJet** (HP Mode) as the printer of choice. If you selected HP ThinkJet, note that because of the print pitch differences between QuietJet and ThinkJet you will have to set function switch A2 UP. This will ensure that your document's spacing is correct. With switch A2 UP the available print pitches are 6, 10.6, 12, and 21.3 characters per inch.

After selecting a printer, you will be given the opportunity to save the choices that you made, to exit without saving the choices, or to re-enter the choices. If the displayed settings reflect the choices you made, save the choices and exit the program.

Refer to the WordStar 2000 Installation Guide for more information on the WS2INS program.

WordStar 2000 uses the DOS default output device known as PRN or LPT1. If you are using the parallel interface, simply connect the printer to your computer's first parallel port. If you are using a serial interface, the following commands must be executed from DOS before you run WordStar 2000:

```
MODE COM1:9600,N,1,8,P  
MODE LPT1: =COM1
```



For convenience, these commands may be inserted into the AUTOEXEC.BAT file that is executed every time your computer is started. Refer to your DOS manual concerning the MODE command and the AUTOEXEC.BAT file.

Using Printer Features

For an example of QuietJet features that WordStar 2000 supports, print out the file PRINT.SPL on your Installation Disk. If you chose the HP ThinkJet (HP Mode) printer in the installation program (WS2INS), several QuietJet features will not be supported. These include subscripts and superscripts. Also, the pitch selection will be limited to 5, 10.6, 12 and compressed print. NLQ print must be activated through the printer's keypad. If HP QuietJet was selected in WS2INS, NLQ print is available through the Print Color command. Refer to your WordStar 2000 Reference Guide for information on the Print Color command.

For information on the print features of WordStar 2000 refer to Lesson 4 of the WordStar 2000 Training Guide and to the sections on formatting and printing in the WordStar 2000 Reference Guide.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding WordStar 2000 should be directed to MicroPro International Corporation. Questions regarding the QuietJet series printers should be directed to your nearest Hewlett-Packard dealer.

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3

Programming

Introduction to Control Codes and Escape Sequences



Note

Spaces have been imbedded in the control codes and escape sequences found in this chapter for ease of reading only. Do not add spaces when sending these commands.

This chapter explains how to use the many features of the QuietJet printer. It is written for users who have programming experience and want to write their own programs, and users whose software requires them to input escape sequences.

The features of your printer are controlled by control codes and escape sequences. Control codes are data that, when sent to your printer, do not cause anything to be printed, they cause an action (such as line feeds and carriage returns). CTL is used in this manual to specify a control code.



Note

When reading this manual be very careful not to confuse O (uppercase oh) with 0 (zero) or l (lowercase ell) with 1 (one).

One control code is ESCAPE. ESCAPE is always followed by one or more characters which together form escape sequences used to control specific printer features, such as print pitch and underlining. The ESCAPE control code is represented in this manual by ESC.

Some printer features are controlled by function switches located inside of the printer, and by escape sequences. In these cases, the switch sets the default condition of the feature, but the escape sequence overrides the switch. When the printer is turned OFF and ON, or the switch position is changed, the feature returns to the setting selected by the switch.

To generate printouts using these print features you must become familiar with the method used by your computer or software to send escape sequences and control codes to your printer. Several of the methods used are:

- Typing escape sequences and control codes directly from the keyboard.

Control codes always begin with the letters CTL*. CTL is generated by pressing the CONTROL key on your terminal's or PC's keyboard. This key may be labeled on your keyboard as CTRL, CNTL, or CTL. An example of a control code is CTL N. To generate a control code, hold down the CTL key while typing the next character.

ESC is generated by pressing the ESC* key on your keyboard, or by pressing the CONTROL key and typing "[" (left bracket) simultaneously. An example of an escape sequence is ESC & k 1 S. A list of the control codes and escape sequences recognized by QuietJet is located on pages 6-9 to 6-13 in the Appendix.

* In BASIC, control codes are represented by CHR\$(). For example, CTL N is represented by CHR\$(14). The ESC control code is represented by CHR\$(27).

- Specifying each control code, including ESC, by its decimal value.

Some software packages require that you specify each control code by its decimal value, usually preceded by a special character such as “\”. For example, ESC & k 1 S would be specified in Lotus 1-2-3 as \027&k1S.

- Specifying each character of the escape sequence by its decimal value.

Some software packages require that you specify ESC and the characters following it by their decimal values. For example, ESC & k 1 S would be specified as 27 38 107 49 83.

If you are using a software package such as a word processor or spreadsheet, refer to your software documentation to see how control codes and escape sequences must be sent.

Control Modes

As mentioned earlier, your printer has two control modes: HP mode and Alternate mode. Switch A5 on the inside of the printer sets the mode the printer is used in. The position of Switch A5 (UP or DOWN) depends on the printer driver specified in the software program's print menu. Choosing the appropriate control mode for your computer system is discussed in Chapter 2 of this manual. Once you have determined in which position Switch A5 should be set it should not have to be changed.

However, you can change control modes from your computer. To do so:

- ESC % @ = Return to mode previously selected by switch A5.
- ESC % A = Select HP mode.
- ESC % C = Select Alternate mode.

Using Printer Features

The following examples show how escape sequences would be sent in HP or Alternate mode.



Note

Spaces imbedded in the control codes and escape sequences that follow have been added for clarity. Do not imbed spaces in the control codes and escape sequences that you send. (For example, you will see ESC & k 0 S below, but you would send ESC&k0S.)

Print Pitches

Your printer offers six print pitches: 10 and 12 (Normal), 5 and 6, compressed, and expanded-compressed.

This is compressed print.

This is expanded-compressed print.

This is normal print.

This is expanded print.

Normal pitch is set with Switch A2. If Switch A2 is DOWN, normal pitch is 10 characters per inch. If Switch A2 is UP, normal pitch is 12 characters per inch. Other pitches are selected through escape sequences.

In HP Mode. To change pitch, use the following escape sequences:

Print Pitch	Characters/ Inch	Escape Sequence
Normal	10* or 12**	ESC & k 0 S
Expanded	5* or 6**	ESC & k 1 S
Compressed	21.3* or 21.3**	ESC & k 2 S
Expanded- Compressed	10.6* or 10.6**	ESC & k 3 S

* Switch A2 DOWN.

** Switch A2 UP.



The pitch can also be set independent of the position of Switch 2 with the following escape sequences.

Characters/ Inch	Characters/ Line		Escape Sequences
	QJ	QJ +	
21.3	170	281	ESC (s 21.3 H
12	96	158	ESC (s 12 H
10.6	85	140	ESC (s 10.6 H
10	80	132	ESC (s 10 H
6	48	79	ESC (s 6 H
5	40	66	ESC (s 5 H

The data used to generate the example shown is:

ESC(s21.3HThis is compressed print.

ESC(s10.6HThis is expanded-compressed print.

ESC(s10HThis is normal print.

ESC(s5HThis is expanded print.

QJ = QuietJet Printer.

QJ+ = QuietJet Plus Printer.

In Alternate Mode.

Print Pitch	Chars/ Inch	Chars/ Line		Turn On	Turn Off
		QJ	QJ +		
Compressed	21.3	170	281	CTL O CHR\$(15)	CTL R CHR\$(18)
Expanded- Compressed	10.6	85	140	EscW1 CTL O	EscW0 CTL R
Normal	10.0*	80	132	default	
Expanded	5.0**	40	66	EscW1	EscW0

* = With Switch A2 Down (10 cpi).

** = With Switch A2 Down (5 cpi).

The data used to generate the example shown are:

CTL O This is compressed print. CTL R
 EscW1 CTL O This is expanded-compressed print. EscW0 CTL R
 This is normal print.
 EscW1 This is expanded print. EscW0

QJ = QuietJet Printer.

QJ+ = QuietJet Plus Printer.

Print Quality

Your printer offers two print qualities, near letter quality (NLQ) at 40 characters per second, and draft at 160 characters per second.

This is NLQ print.
 This is draft print.

In HP Mode. Select NLQ with ESC (s 1 Q. Select draft quality with ESC (s 0 Q.

The data used to generate the example shown is:

ESC(s1QThis is NLQ print.
 ESC(s0Qthis is draft print.

In Alternate Mode. Select NLQ with ESC G. Select draft quality with ESC H.

The data used to generate the example shown is:

```
ESC G This is NLQ print.  
ESC H This is draft print.
```

Bold Print

Your printer can print characters in normal or bold (darker) print. This enhancement is recommended for use in applications that call for bold print, shadow print, double strike, or emphasized printing.

```
Bold mode can highlight single words.  
Entire lines can also be highlighted.
```

In HP Mode. Bold print is enabled by sending ESC (s 1 B. The printer will then print darker characters until bold mode is disabled with ESC (s 0 B.

For example, the data used to generate the example shown is:

```
Bold mode can ESC(s1BhighlightESC(s0B single words.  
ESC(s1BEntire lines can also be highlighted.ESC(s0B
```

In Alternate Mode. The bold print mode is enabled by ESC E. The printer will then print darker characters until bold mode is disabled with ESC F.

The data used to generate the example shown is:

```
Bold mode can ESC E highlight ESC F single words.  
ESC E Entire lines can also be highlighted. ESC F
```



Underlining

Your printer can underline text as shown in the following example.

Underlining can be used for a single word.
Entire lines can be underlined, too.

In HP Mode. Underlining is enabled by sending ESC & d D. The printer will then underline all characters and spaces until underlining is disabled by ESC & d @.

The data used to generate the example shown is:

Underlining can be used for a ESC&dDsingleESC&d@word.
 ESC&dDEntire lines can be underlined, too.ESC&d@

In Alternate Mode. Underlining is enabled by sending ESC -1. The printer will then underline all characters and spaces until underlining is disabled by sending ESC -0.

The data used to generate the example shown is:

Underlining can be used for a ESC-1singleESC-0 word.
 ESC-1Entire lines can be underlined, too,ESC-0.

Mixing Print Modes

Your printer is capable of mixing any combination of print modes. The printer does not limit the number of mode changes allowed in a single line.

Print modes can be mixed on a line.

In HP Mode. The data used to generate the example shown is:

ESC&k1SPrint ESC&dDmodes ESC&k2Scan be ESC&k3SmixedESC&d@ on ESC&k0Sa line.

In Alternate Mode. The data used to generate the example shown is:

CTLNPrint ESC-1modes CTLTCTLOcan be CTLNCTLOmixedESC-0 on CTLTCTLRa line.

Selecting Symbol Sets— HP Mode Only

Symbol sets represent sets of characters that are contained in the printer's memory. Different symbol sets allow you to print different sets of characters—more specialized sets make it possible to print forms with line draw characters.

The QuietJet printer allows you to print with several different symbol sets. The following escape sequences select the designated symbol set:

Symbol Set	Escape Sequence
Printer Default Set*	ESC (0 @ (The default symbol set is specified by mode function switches.)
Roman 8*	ESC (8 U
ASCII*	ESC (0 U
Swedish 1*	ESC (0 S
IBM 8–US*	ESC (10 U
French*	ESC (1 F
German*	ESC (1 G
UK*	ESC (1 E
Spanish*	ESC (2 S
Portuguese	ESC (4 S
Swedish 2	ESC (3 S
IBM 8–Denmark/ Norway*	ESC (11 U
Norwegian 1*	ESC (0 D
Norwegian 2	ESC (1 D
ISO IRV	ESC (2 U
Italian*	ESC (0 I
Line Draw	ESC (0 L
ECMA-94 Latin 1	ESC (0 N

* Also selectable by mode function switch. See Appendix, pg. 6-3.

Typeface

Useful only if additional ROM has been purchased for your printer. Contact your local HP dealer or HP Sales and Support Office for details.

To select a typeface use the following escape sequence:

ESC (s 3 T = select Courier. Prints in NLQ regardless of quality selected without additional ROM.

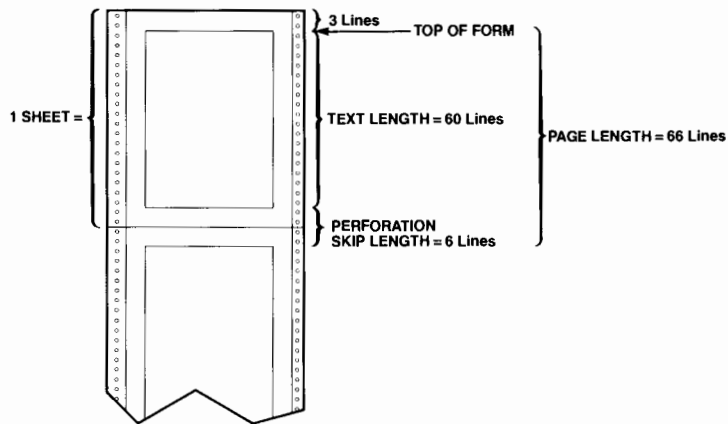
ESC (s 6 T = select Gothic. Prints in draft regardless of quality selected without additional ROM.

Perforation Skip- Z-Fold Paper

Your printer is capable of automatically leaving top and bottom margins on every page. This is called "perforation skip" because the printer skips over the perforation rather than printing on it.

Establish the top margin by setting the top of form as described in Chapter 1. By setting the top of form you are specifying the position of the first line of print (the line immediately following the top margin). The default "perforation skip length" (combined length of the top and bottom margins) is 6 lines: 3 lines top and 3 lines bottom. If TOF is set at the fourth line of the page, the printer will leave a margin of three lines at the top and bottom of each page, and will begin printing on the fourth line.

The following figure shows the top of form set correctly for equal top and bottom margins.



Switch A3 determines the default perforation skip. If Switch A3 is DOWN, perforation skip is OFF; if Switch A3 is UP, perforation skip is ON.

In HP Mode. The escape sequence ESC & l 1 L turns perforation skip mode ON, ESC & l 0 L turns it OFF. These escape sequences override Switch A3.

The perforation skip length is not specified directly. If you wish to use a value other than the default, you must specify a new "text length", which is the number of lines to be printed on each page. The perforation skip length is the page length minus the text length (see example above).

In Alternate Mode. ESC N *n* sets the perforation skip length to *n* lines and turns perforation skip mode ON. From BASIC, to set the perforation skip length to 10 lines send CHR\$(27);"N";CHR\$(10). Note that CHR\$(27);"N6" does not set perforation skip length to 6 lines. The perforation skip length would be set to the decimal value for the character 6, which is 54. This would provide a 54 line perforation skip length, leaving 12 lines for text on an 11 inch page (at 6 lpi). A rather small text length.

ESC O turns perforation skip OFF

These escape sequences override Switch A3.

Text Length

In HP Mode. The escape sequence to set the text length is ESC & l # F, where # is the text length specified in number of lines. For example, the escape sequence ESC & l 54 F sets the text length to 54 lines. If the printer is set for a page length of 66 lines (11 inch paper, 6 lines per inch), the perforation skip length is 66 minus 54: 12 lines. To get equal top and bottom margins of 6 lines, top of form must be set to the seventh line of the page.

Text length cannot be less than one line or greater than the page length. The escape sequence ESC & l 0 F will set the text length back to the default, which is 1 inch less than the page length.

In Alternate Mode. Text length is specified indirectly by the ESC N *n* sequence found under perforation skip. Text length in lines is page length in lines minus *n*. See explanation under Perforation Skip on page 3-10.

Page Length

Your printer allows you to change the page length. The current value of page length determines how far the printer will advance the paper when the form feed button is pressed, or the printer receives a form feed control code.

Switch A4 selects the default page length. If switch A4 is DOWN, page length defaults to 11 inches (179.4 mm), which is 66 lines at 6 lines per inch. If switch A4 is UP, page length defaults to 12 inches (304.8 mm), which is 72 lines at 6 lines per inch.

In HP Mode. ESC & l # P sets the page length where # is the page length specified in number of lines. For example, ESC & l 50 P sets the page length to 50 lines. This escape sequence overrides switch A4.

Page length can be set to any number of lines, but cannot exceed 21 inches. Any number above this will default to 21 inches. The escape sequence ESC & l 0 P will reset the page length to the default.

The page length sequence automatically sets the text length to 1 inch (6 lines at 6 lines per inch) less than the new page length.

To set page length to 11 inches at 8 lpi, send ESC & l 88 P. To set page length to 11 inches at 6 lpi, send ESC & l 66 P.

In Alternate Mode. ESC C n sets the page length to n lines. From BASIC, to set the page length to 70 lines, send CHR\$(27);"C";CHR\$(70). Page length is limited to 127 lines, or a maximum page length of 21 inches.

This escape sequence also turns perforation skip mode OFF.

Line Spacing

Your printer offers many line spacings. The most frequently used are 6 and 8 lpi. 6 lpi is the power-up default value. 8 lpi is frequently used in generating spreadsheets and reports from data bases.

This group of lines is printed at a line spacing of 8 lines per inch. Notice that they are close together.

These lines are printed at the default line spacing of 6 lines per inch. Notice that they are further apart.

In HP Mode. The following line spacings are supported: 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 16, 18, 20, 24, 30, 32, 36, 40, 45, 48, 60, 64, 72, 80, 90, 96, 120, 144, 160, 180, and 192. 192 equals one dot row.

To print at 8 lines per inch, send ESC & l 8 D. To return to 6 lines per inch, send ESC & l 6 D.

If line spacing is changed, page length and text length measured in inches remain the same. For example, if line spacing is 6 lines per inch and page length is 66 lines (11 inches), changing line spacing to 8 lines per inch will also change page length to 88 lines (11 inches).

The data used to generate the example shown is:

ESC&l8DThis group of lines is printed at a line spacing of 8 lines per inch. Notice that they are close together.ESC&l6D

These lines are printed at the default line spacing of 6 lines per inch. Notice that they are farther apart.

In Alternate Mode. To print 8 lines per inch, send ESC 0. To return to 6 lines per inch, send ESC 2. To set line spacing to 7 dot rows (96/7 lines per inch) send ESC 1. ESC A *n* sets the line spacing to *n* dot rows. From BASIC, CHR\$(27);"A";CHR\$(20) sets the line spacing to 20 dot rows.

The data used to generate the example shown is:

ESC0This group of lines is printed at a line spacing of 8 lines per inch. Notice that they are close together.ESC2

These lines are printed at the default line spacing of 6 lines per inch. Notice that they are farther apart.

Positioning the Print on the Page

Some control codes and escape sequences change the position at which the next character received will be printed. This position is called the current active position. Each time the printer receives a printing character, the current active position is moved one character to the right. The following control codes separate lines of print, cause the printer to overstrike characters, or cause the printer to advance the paper.

Control Codes

Unless otherwise noted, these control codes are identical in HP mode (Switch A5 DOWN) and Alternate mode (Switch A5 UP).

- Carriage Return, CTL M, CHR\$(13): Moves the current active position to the first character position on the current line. Normally you do not need to send carriage returns explicitly; your computer system will send them automatically.

Also, Switch A1 or the automatic line termination escape sequence discussed on page 3-31 can cause the printer to perform a line feed in addition to each carriage return.

Switch A1 UP=linefeed with carriage return
Switch A1 DOWN=carriage return with no line feed

- Back Space, CTL H, CHR\$(8): Moves the current active position one character to the left. If the current active position is already the leftmost character position, no action is taken.
- Line Feed, CTL J, CHR\$(10): Advances the paper one line. Normally you do not need to send line feeds; your computer system automatically sends them.

Alternate Mode = carriage return with line feed.



- Form Feed, CTL L, CHR\$(12): Advances the paper to the top of the next form.

Alternate Mode = carriage return with form feed.

 **Note**

The printer cannot sense the actual position of the paper. For form feed to advance the paper to the top of the next page, TOF must be set as described in Chapter 1, Getting Started.

Escape Sequences—HP Mode

- Half Line Feed, ESC = : Advances the paper half the distance of the current line spacing.

Half line feed is useful for printing subscripts and superscripts.



The data sent to generate the example shown is:

H OESC=CTLM 2

- Vertical Dot Row Positioning, ESC * p # Y. This escape sequence provides both relative and absolute vertical positioning by dot rows. One dot row equals $\frac{1}{192}$ inch. If the value of # is preceded by a plus sign the printer will move # dot rows positively (down the page) relative to the current position. If the value of # is preceded by a minus sign the printer will move # dot rows negatively (up the page) relative to the current position. If no sign precedes #, the printer will move to the absolute position corresponding to # dot rows down from the top margin.

- Vertical Decipoint Positioning, ESC & a # V. This escape sequence provides both relative and absolute vertical positioning in decipoints, $\frac{1}{720}$ inch. If the value of # is preceded by a plus sign the printer will move # decipoints positively (down the page) relative to the current position. If the value of # is preceded by a minus sign, the printer will move # decipoints negatively (up the page) relative to the current position. If no sign precedes #, the printer will move to the absolute position corresponding to # decipoints down from the top margin.



Note

Do not attempt to negatively move (up the page) more than $\frac{1}{3}$ ".

- Horizontal Dot Positioning, ESC * p # X. This escape sequence moves the current active position to a new position along the X axis. If the escape sequence specifies a position outside the print region, the current active position is moved to the edge of the print region. The left edge of the print region is zero. A plus sign indicates the new position is relative to the right of the current active position. A minus sign indicates the new position is relative to the left of the current active position. No sign indicates an absolute distance from the left edge of the print region. A dot is $\frac{1}{192}$ nd of an inch.
- Horizontal Decipoint Positioning, ESC & a # H. This escape sequence moves the current active position to a new position along the X axis. If the escape sequence specifies a position outside the print region, the current active position is moved to the edge of the print region. The left edge of the print region is zero. A plus sign indicates the new position is relative to the right of the current active position. A minus sign indicates the new position is relative to the left of the current active position. No sign indicates an absolute distance from the left edge of the logical page. The value field is valid down to the second decimal place. A decipoint is $\frac{1}{720}$ of an inch.

Escape Sequences—Alternate Mode

- Sub/Superscripts—See Chapter 7, Addendum in the back of this manual.
- Paper Advance in $n/288$ Dot Rows, ESC J n . Advances the paper $n/288$ inch. The printer actually moves to the nearest $1/192$ nd of an inch, but internally position is maintained in units of $1/288$ th of an inch, so there will be no cumulative positional error. Sets the current active position to the left margin. This escape sequence ignores perforation skip.

Graphics

Many computer systems and commercial software packages allow you to draw graphs or pictures on your terminal or PC screen, then copy the images to the printer. If you are interested in writing your own graphics software program, however, the following information will be of help to you.

QuietJet printers can print in two modes: text mode and graphics mode. In text mode, the printer interprets each data byte it receives from the computer as a character. It then looks that character up in its internal character table and prints the dot pattern that it finds. In graphics mode, however, the data byte received from the computer directly specifies the dot pattern to be printed.

QuietJet uses a form of graphics called “dot-image” graphics, in which pictures are made up of patterns of tiny dots. In this system, the paper can be thought of as consisting of a grid of dot positions. Graphics data specifies which of the dot positions should be printed and which should be left blank.



Note

Some computers automatically add control codes, such as carriage returns and line feeds, or blanks to the data being sent to the printer. These characters are necessary when printing text. In graphics mode, however, they may be interpreted as graphics data and give unexpected results. Before writing programs which generate graphics, you should consult your PC or terminal manual to find out how to prevent your computer from sending this extra data to the printer.

In HP Mode

The QuietJet printer is capable of printing graphics in three dot densities:

96 dpi × 96 dpi = single density (default)
192 horizontal dpi × 96 dpi vertical = double density
192 dpi × 192 dpi = quad density.

The escape sequences for these densities are:

ESC * t 96 R = single density
ESC * r 1280 S = double density
ESC * t 192 R = quad density.

Choose the graphics density you want, send the escape sequence for the chosen density, then send ESC * r A to Start Raster graphics. Graphics resolution can not be changed until the End Graphics escape sequence is sent.

Then, for each row of graphics, send the following escape sequence:

ESC * b # W graphics data



Raster Dot Row. Graphics data is sent to the printer one byte (8 bits) at a time. Each bit specifies whether a dot position is blank or printed. If a bit is zero, the corresponding dot position is left blank. If a bit is one, a dot is printed at the corresponding position. In HP Mode, graphics data bytes are sent to the printer in groups, each group containing the graphics data for one raster (horizontal) dot row. The first (most significant) bit of a graphics data byte specifies the leftmost dot; the last (least significant) bit specifies the rightmost dot.

The escape sequence to transfer the data for one dot row is ESC * b # W. The value field, #, specifies the number of graphics data bytes which follow the escape sequence. For example, if the printer receives ESC * b 20 W, it interprets the next 20 bytes of data as specifying 160 dots (20×8 bits) of the current dot row. If less data are sent for a dot row than will fit in the print region, the rightmost dots of the row are left blank. If more data are sent than will fit in the print region, the extra data are ignored.

Paper advance occurs automatically between graphics dot rows; it is not necessary to send any paper advance control codes.

To End Graphics mode, send ESC * r B.

Sample Graphics Program. The following example program prints raster graphics in the shape of an arrow. The illustration of 1's and 0's shows how each dot is placed to form the arrow. A 1 causes the printer to print a dot, and a 0 causes a space.

In BASIC, data must be sent to the printer in decimal numbers (in the form CHR\$(decimal number)). Therefore, each group of eight 1's or 0's (each byte) must be converted to a decimal number. The following illustration shows the binary (1's and 0's) representation of the arrow and illustrates how the first line of binary data is converted to decimal so that BASIC can interpret the data. NOTE that this example was tested using MicroSoft BASIC, version A2.0 on the IBM PC. Other versions or releases may not support some of the BASIC commands (such as WIDTH "LPT1:",255).

Binary Representation.

BINARY REPRESENTATION

byte 1 byte 2 byte 3 byte 4

```

00000000000000000000000000000000
00000000000000000100000000000000
00000000000000000110000000000000
00000000000000000111000000000000
00000000000000000111100000000000
00000000000000000111110000000000
00000000000000000111111000000000
00000000000000000111111100000000
11111111111111111111111111000000
11111111111111111111111111100000
11111111111111111111111111110000
11111111111111111111111111110000
11111111111111111111111111111000
11111111111111111111111111111100
11111111111111111111111111111110
11111111111111111111111111111111
11111111111111111111111111111111
11111111111111111111111111111110
11111111111111111111111111111100
11111111111111111111111111111000
11111111111111111111111111110000
11111111111111111111111111110000
11111111111111111111111111110000
00000000000000000111111110000000
00000000000000000111111110000000
00000000000000000111111100000000
00000000000000000111111000000000
00000000000000000111110000000000
00000000000000000111100000000000
00000000000000000111000000000000
00000000000000000110000000000000
00000000000000000100000000000000
00000000000000000100000000000000

```

(LINE 1) DECIMAL CONVERSION

0	0	128	0
┌───────────┐	┌───────────┐	┌───────────┐	┌───────────┐
'00000000'	'00000000'	'10000000'	'00000000'
byte 1	byte 2	byte 3	byte 4
CHR\$(0)	CHR\$(0)	CHR\$(128)	CHR\$(0)



To print this arrow:



```
10 REM *** BASIC program to print an arrow ***
20 REM
30 REM
40 WIDTH "lpt1:",255 :REM   Disable auto CR-LF
50 OPEN "lpt1:" AS #1 :REM   Open printer as a file
60 REM
70 PRINT #1,CHR$(27);"*t96R"; :REM   Set resolution to 96 dpi
80 REM
90 PRINT #1,CHR$(27);"*rA"; :REM   Start raster graphics
100 REM
110 REM Begin loop to read data and print graphics
120 FOR J = 1 TO 32
130 READ A,B,C,D :REM Each raster row has four bytes
140 PRINT #1,CHR$(27);"*b4W";CHR$(A);CHR$(B);CHR$(C);CHR$(D);
150 NEXT J
160 REM
170 REM
180 PRINT #1,CHR$(27);"*rB"; :REM End raster graphics
190 REM
200 CLOSE
210 REM
220 REM This is the data for the arrow
230 DATA 0,0,128,0
240 DATA 0,0,192,0
250 DATA 0,0,224,0
260 DATA 0,0,240,0
270 DATA 0,0,248,0
280 DATA 0,0,252,0
290 DATA 0,0,254,0
300 DATA 0,0,255,0
310 DATA 0,0,255,128
320 DATA 255,255,255,192
330 DATA 255,255,255,224
340 DATA 255,255,255,240
350 DATA 255,255,255,248
360 DATA 255,255,255,252
370 DATA 255,255,255,254
380 DATA 255,255,255,255
390 DATA 255,255,255,255
400 DATA 255,255,255,254
410 DATA 255,255,255,252
420 DATA 255,255,255,248
430 DATA 255,255,255,240
440 DATA 255,255,255,224
450 DATA 255,255,255,192
460 DATA 0,0,255,128
470 DATA 0,0,255,0
480 DATA 0,0,254,0
490 DATA 0,0,252,0
500 DATA 0,0,248,0
510 DATA 0,0,240,0
520 DATA 0,0,224,0
530 DATA 0,0,192,0
540 DATA 0,0,128,0
```



To print this arrow:



To print this arrow, replace line 70 in the above program with this line of code:

```
70 PRINT #1,CHR$(27);"*t192R"; :REM   Set resolution to 192 dpi
```

To print this arrow:



To print this arrow, replace line 70 in the above program with this line of code:

```
70 PRINT #1,CHR$(27);"*r1280S"; :REM   Set resolution to double density
```

In Alternate Mode

The QuietJet printer is capable of printing graphics in two dot densities:

96 dpi × 96 dpi = single density
192 dpi horizontally × 96 vertically = double density

The escape sequences to send graphics to QuietJet also specify the density.

ESC K *n m* = single density
ESC L *n m* = double density.

The decimal values of *n* and *m* specify the number of bytes of graphics data to follow. *n* and *m* are interpreted as binary values, not ASCII characters; they form a 16-bit binary number where *m* is the most significant byte and *n* is the least significant byte.

Number of bytes of graphics data = $(m \times 256) + n$

Column Graphics. Each bit of a graphics byte specifies one dot position. If a bit is zero, the corresponding dot position is left blank. If a bit is one, a dot is printed at the corresponding position. Each byte of graphics data specifies one column of 8 dots. The most significant bit specifies the top dot of the column. The least significant bit specifies the bottom dot of the column. The number of bytes of graphics data specifies the number of columns (dots) of graphics horizontally across the page. If more data are sent than will fit in the print region, the extra data are ignored.

Before sending any graphics data, line spacing should be set to 8 dot rows by the ESC A CTL H escape sequence. From BASIC, send CHR\$(27);"A";CHR\$(8);. After sending all of the graphics columns across one row, you must send a carriage return and line feed to the printer to cause it to advance the paper and return to the left margin.

Some computer systems do not have the capability of controlling the most significant bit of data bytes sent to the printer. If your computer system always clears this bit you can still print graphics by setting the line spacing to 7 dot rows, with ESC 1 or ESC A CTL G, before sending graphics data. From BASIC, send `CHR$(27);"A";CHR$(7);`.

Be aware that due to the graphics aspect ratio of Alternate mode graphics (pseudo-Epson mode) graphics designed for an Epson printer may be unsatisfactory, e.g., circles will be oval shaped.

Sample Column Graphics. The following example program prints column graphics in the shape of a small arrow. The illustration of 1's and 0's shows how each dot is placed to form the arrow. A one causes the printer to print a dot and a zero causes a space.

In BASIC, data must be sent to the printer in decimal numbers (in the form `CHR$(decimal number)`). Therefore, each group of eight 1's or 0's (each byte) must be converted to a decimal number. The following illustration shows the binary (1's and 0's) representation of the arrow and illustrates how the first line of binary data is converted to decimal so that BASIC can interpret the data. NOTE: The example has been tested using GWBASIC, version 3.01 on the HP Vectra. Other versions or releases may or may not support some of the BASIC commands (such as `WIDTH "LPT1:",255`).

To print this arrow: 

```
10 REM *** BASIC program to print an arrow in column graphics ***
20 REM
30 WIDTH "lpt1:",255 :REM Disable auto CR-LF
40 OPEN "lpt1:" AS #1 :REM Open printer as a file
50 REM
60 REM
70 PRINT #1,CHR$(27);"A";CHR$(8); :REM Set line spacing to 8 dot rows
80 REM
90 REM Loop to read data and print graphics
100 FOR I = 1 TO 4 :REM Loop for each row
110 REM Single density column graphics with 32 bytes of data.
120 PRINT #1,CHR$(27);"K";CHR$(32);CHR$(0);
130 FOR J = 1 TO 32
140 READ COL :REM Read one byte
150 PRINT #1,CHR$(COL); :REM Print one column
160 NEXT J
170 PRINT #1,CHR$(10); :REM Advance and return to left margin
180 NEXT I
190 PRINT #1,CHR$(27);"2"; :REM Reset line spacing to 6 lpi
200 REM
210 CLOSE
220 REM
230 REM Data for the arrow
240 REM
250 REM Row 1
260 REM
270 DATA 0,0,0,0,0,0,0,0
280 DATA 0,0,0,0,0,0,0,0
290 DATA 255,127,63,31,15,7,3,1
300 DATA 0,0,0,0,0,0,0,0
310 REM
320 REM Row 2
330 REM
340 DATA 127,127,127,127,127,127,127,127
350 DATA 127,127,127,127,127,127,127,127
360 DATA 255,255,255,255,255,255,255,255
370 DATA 255,127,63,31,15,7,3,1
380 REM
390 REM row 3
400 REM
410 DATA 254,254,254,254,254,254,254,254
420 DATA 254,254,254,254,254,254,254,254
430 DATA 255,255,255,255,255,255,255,255
440 DATA 255,254,252,248,240,224,192,128
450 REM
460 REM Row 4
470 REM
480 DATA 0,0,0,0,0,0,0,0
490 DATA 0,0,0,0,0,0,0,0
500 DATA 255,254,252,248,240,224,192,128
510 DATA 0,0,0,0,0,0,0,0
```

Program-
ming
3

To print this arrow: 

To print this arrow, replace lines 110 and 120 in the above program with these two lines of code:

```
110 REM Double density column graphics with 32 bytes of data.
120 PRINT #1,CHR$(27);"L";CHR$(32);CHR$(0);
```

Selecting Unidirectional or Bidirectional Printing

Your printer normally prints text bidirectionally. You can get slightly better alignment between lines of print by setting the printer to print unidirectionally (left to right only).

In HP Mode. The ESC & k 0 W will force unidirectional printing. To return to bidirectional text printing, send ESC & k 1 W.

This escape sequence does not affect graphics printing; the printer always prints graphics unidirectionally.

In Alternate Mode. The escape sequence ESC U 1 will force unidirectional printing. To return to bidirectional text printing, send ESC U 0.

This escape sequence does not affect graphics printing; the printer always prints graphics unidirectionally.



End-of-Line Wrap Around—HP Mode Only

If the printer is in wrap-around mode, the first character received that exceeds the allotted number of characters for a line forces a new line of print to be started. Thus, long lines are broken and printed as several lines. If the printer is not in wrap-around mode, characters which exceed the line length are not printed.

The default is wrap-around mode disabled. The escape sequence ESC & s 0 C enables wrap-around mode; ESC & s 1 C disables wrap-around mode.

Linking Escape Sequences— HP Mode Only

You can link several escape sequences into one escape sequence string. For example, you can enable perforation skip mode and set line spacing to 8 lines per inch by entering either ESC & l 8 D and ESC & l 1 L or ESC & l 8 d 1 L.

The two rules to follow when linking escape sequences are:

- The first two characters following ESC must be the same. In the example above, these are & and l. ESC and the first two characters following it are used only once in a string of linked escape sequences.
- The final character of the internal escape sequences must be in lower case. In the example above, D becomes d.

Displaying Control Codes and Escape Sequences— HP Mode Only

Display Functions Mode

Control codes and escape sequences are not normally printed; they are recognized as commands and cause some action, or they are ignored.

The display functions mode allows you to print control codes and escape sequences without executing them. This is useful if you are trying to determine exactly what control codes and escape sequences are being sent to your printer, as when debugging a program. The symbol which is printed for each control code can be found on pages 6-7 to 6-8 in the Appendix.

Display functions mode is enabled by ESC Y and disabled by ESC Z.

When in display functions mode, the only control codes or escape sequences executed are:

- Carriage Return, which is printed then executed as a carriage return and line feed.
- ESC Z, which is printed then executed.

Display functions mode enables end-of-line wrap around and limits the print zone to 8 inches.

With display functions mode disabled the following will print:

In display functions mode, control codes are printed not executed.

With display function mode enabled the following will print:

```
In ESC(S1Bdisplay functions modeESC(S0B, control codes  
are printed ESC&dDnotESC&d@ executed.ESCZ
```

The data sent to generate the examples show is:

```
LFIn ESC(S1Bdisplay functions modeESC(S0B, control codesCR  
LFare printed ESC&dD not ESC&d@ executed.CR LFESCZ.
```

Transparent Data Transfer

This feature is useful for printing or listing control codes or escape sequences without the printer acting on any of the data, e.g. print FF rather than execute a form feed. Every character code specified in the data transfer will print a symbol or a blank.

Transparent data transfers start with ESC & p # X.
specifies the number of characters following the X that will be printed and not executed.

Self Test— HP Mode Only

Your printer can perform a self test to ensure that it is operating properly. The escape sequence ESC z causes it to print one page of characters.

In addition, Chapter 1 explains how to perform a power-up self test.

Resets



The simplest way to return your printer to its default printing specifications is to turn the printer OFF for several seconds, then ON again. This causes the printer to read the mode select switches, reset all features to their default values, and set top of form to the current line. Another way is to send a reset command from the computer.

In HP Mode. ESC E causes the printer to print whatever data are in the print buffer, reset all features to their default values, and, if the paper is not at the top of form, execute a form feed. Your printer remains in HP mode after the reset.

In Alternate Mode. ESC @ causes the printer to reset all features to their default values.

Your printer remains in Alternate mode after the reset.

Automatic Line Termination

Most computers terminate each line with a carriage return and a line feed. However, some computers terminate with a carriage return or a line feed, not both. In order for your printer to operate normally with these systems, you must change the definition of the carriage return and line feed control codes. This can be done with switch A1, or by sending one of the escape sequence listed below (HP mode only).

ESC & k # G – Line Termination Control

Value Field (Default)	CR	LF	FF
0 (Switch A1 down)	CR	LF	FF
1 (Switch A1 up)	CR-LF	LF	FF
2	CR	CR-LF	CR-FF
3	CR-LF	CR-LF	CR-FF

In Alternate Mode. There are no escape sequences to change the definition of carriage return, line feed, or form feed control codes. Switch 1 may be used to add a line feed to every carriage return. Line feed and form feed always cause a carriage return to be executed.

Downloadable Characters

The capability to download characters and even whole fonts to your QuietJet Printer adds a new dimension of flexibility to Text Printing. You are no longer constrained to the characters and typefaces we have designed, you can design your own.

In order to use this feature properly, it is important to understand some of the hardware design of the printer. Primarily, this includes the character cell structure and some memory considerations. It is important to note that this capability is supported only in HP mode.

When downloading characters, the bit patterns for those characters are stored in RAM by the printer. The amount of RAM needed to store a character depends greatly upon the design of the character and whether it is Draft or NLQ. With the standard Quietjet printer (no RAM added) there is enough RAM to store:

Four 10-pitch NLQ characters, or
Nine 10-pitch draft characters.

Any number of characters can be downloaded, but the RAM space is limited to 800 bytes. All downloaded characters must be of the same pitch and density.

The standard amount of RAM in a QuietJet printer is adequate for downloading special characters, but cannot accept a full font. When more RAM is desired you can upgrade your printer to 16K more RAM, in 8K increments, which will hold a full 256 character NLQ font. Instructions for using additional RAM are provided with the RAM. See your local HP Sales and Support person, or dealer for more information on additional RAM for downloading fonts.

Character Download Algorithm

The following diagram illustrates an algorithm for downloading characters to QuietJet. This method overlays the downloaded characters on the Default ROM font, then invokes the hybrid font as the primary font.

Clear any residual RAM font.

with
ESC * c 0 F
↓

Copy/Map currently selected ROM font into RAM

with
ESC * c 6 F
↓

Set character code

with
ESC * c # E
↓

Download character(s)

with
ESC (s # W [data]
↓

Select RAM font

with
ESC (X



Escape Sequence Definitions

Font Control. ESC * c # F. This escape sequence performs a variety of functions based on the value of the parameter # as follows:

- 0 Delete current RAM font.
- 6 Copy/map current ROM font into RAM font.
- 7 Re-establish ROM and switch defaults.
- 8 Sets the RAM font as the default font.

Assigning Character Code. ESC * c # E. This escape sequence sets the decimal value of the forthcoming downloaded character. The default value for # is zero (0). The possible range of values is 0 to 255 decimal with the exception of 32, space, which cannot be replaced.

Example: Replace ASCII character 126 (~): ESC * c 126 E.

Downloading the Character. ESC (s # W [data]. This escape sequence is used to download a character to QuietJet. The character being downloaded will be assigned to the character code last issued by an ESC * c # E sequence. This character will replace the character currently residing at this character code location. If there is not enough space in RAM for the character being downloaded the entire RAM font will be deleted.

The protocol for this sequence can be broken into three parts. These are the escape sequence itself, the character descriptor (header) and the character data. They are transmitted in this order, immediately following one another. The parameter # specifies the number of bytes included in the descriptor and the character data.

Miscellaneous Character Cell Information

- Characters should be formed so that any two adjacent columns do not print the same dots (e.g., if column 2 prints dot 9, columns 1 and 3 may not print dot 9).
- Descenders extend to row 0.
- Ascenders extend to row 15.
- Underline is printed on row 0 and extends through the full width of the cell.
- NLQ printing doubles the resolution vertically, i.e. there are twice as many rows printed in the same physical space.
- Character Cell Widths

Print Pitch	Cell Width (Columns)
21.3 Compressed	9
12	16
10 Normal	19

Selecting the RAM font. ESC (X. Sets density, bold, typeface, quality, and pitch to those of the download font.

Font Downloading

QuietJet printers have the ability to download fonts; however, this can be done only after an additional RAM has been installed in the printer. Instructions for downloading fonts is included with the RAM. Contact your local HP dealer, or Sales and Service Office for information on ordering the additional RAM kit.

4

Data Communications

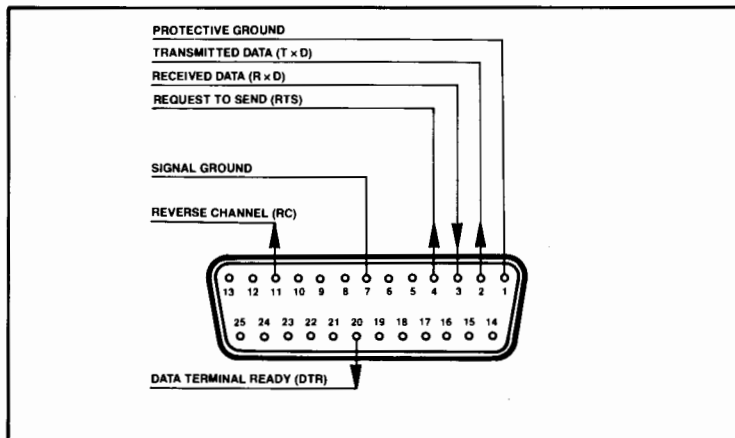
The data communications interfaces of the QuietJet series printers, RS-232-C and Parallel, provide a means of communication between the printer and its host.

Serial Interface

The QuietJet series printer uses a standard serial interface which is compatible with many computers and terminals.

Printer Connection Pin Assignments

The direction conventions used in the table below are: In—The signal is received by the printer from the host. Out—The signal is transmitted by the printer to the host.



Signal Descriptions

Pin 1, Protective Ground: This conductor serves as an electrical ground line for connecting the cable shield.

Handshaking Protocol

Pin 2, Transmitted Data: Bit serial data transmitted to the computer system or terminal from the printer. This line is used with XON/XOFF handshaking.

Pin 3, Received Data. Bit serial data transmitted to the printer from the computer.

Pin 4, Request to Send: An output from the printer that is always at +10V (SPACE or logic 0) when the printer is ON.

Pin 7, Signal Ground. The established reference potential for all data communication.

Pin 11, Reverse Channel. Signal line from the printer to the computer for enabling and disabling data transmission. Data transmission is enabled with a +10V (SPACE or logic 0) and is disabled with -10V (MARK or logic 1).

Pin 20, Data Terminal Ready and Reverse Channel: Outputs from the printer to enable and disable transmission of data to the printer. Data transmission is enabled when at +10V (SPACE or logic 0) and is disabled when at -10V (MARK or logic 1).

Handshaking involves the printer and its host exchanging signals to prevent the printer's buffer overflowing and losing data. The type of handshaking you use will depend on which type your computer system or terminal uses.

The handshakes available are XON/XOFF (Transmission ON/Transmission OFF, also known as software handshakes) and Data Terminal Ready (also known as DTR, Printer Busy, or Hardware Handshake).



Note:

Transmitting data to the printer without using handshaking may result in the loss of data and is therefore not recommended.

XON/XOFF. When the printer's buffer has room for only 100 more characters, the printer will send the host an XOFF character to stop data transmission. The XOFF character used by your printer is an ASCII DC3.

The printer will continue printing after sending the XOFF character, thus making more room in its buffer. When the buffer has room for 256 more characters, the printer sends the host an XON character to resume data transmission. The XON character used by the printer is the ASCII DC1.

Data Terminal Ready. Unlike the XON/XOFF handshake, DTR or hardware handshakes use electrical signals to signal the host that it is ready to receive data. The printer will accept data until it has room for only 100 more characters. It will then turn off its hardware signal to the host device, indicating that it is no longer ready to receive data. The signal used is on pin 11 or 20. The off state is at -10V (MARK or logic 1).

When the printer's buffer has room for 256 more characters it will turn on the hardware signal, enabling the host to resume data transmission. The on state is at +10V (SPACE or logic 0).

Parallel Interface

The QuietJet series printer uses a standard parallel printer interface which is compatible with many personal computers.

Printer Connector Pin Assignments

The printer interface connector is compatible with a standard amphenol type 36-pin connector.

The direction conventions used in the table on the next page are:

In—The signal is received by the printer from the computer.

Out—The signal is transmitted by the printer to the computer.

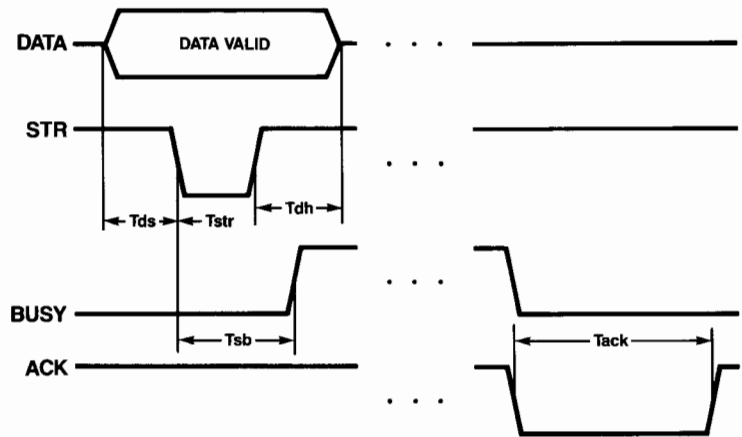
Pin Assignments

Pin No.	Signal	Direction	Description
1	$\overline{\text{Strobe}}$	In	A LOW pulse of width greater than 0.5 μs causes the printer to read one byte of data.
2	DATA 1	In	Data bit 0
3	DATA 2	In	Data bit 1
4	DATA 3	In	Data bit 2
5	DATA 4	In	Data bit 3
6	DATA 5	In	Data bit 4
7	DATA 6	In	Data bit 5
8	DATA 7	In	Data bit 6
9	DATA 8	In	Data bit 7
10	$\overline{\text{Acknlg}}$	Out	The printer sends a LOW pulse to indicate that it has accepted a byte of data and is ready for more data.
11	Busy	Out	A HIGH logic level indicates the printer cannot receive data due to data entry, a full buffer, or error status.
12	OOP	Out	A HIGH logic level indicates the printer is out of paper.
13	Selected	Out	Always HIGH
14, 15			Not used
16, 17	Logic Gnd		
18			Not used
19 to 30	Logic Gnd		
31	$\overline{\text{Input Prime}}$	In	A LOW pulse of width greater than 10 μs resets the printer and clears the print buffer.
32	$\overline{\text{Error}}$	Out	A LOW level indicates the printer has reached an error state: self test failed or carriage position lost.
33	Logic GND		
34 to 36			Not Used

Printer Timing Diagram

The timing diagram below illustrates the data and hand-shake lines during transfer of one data byte to the computer. DATA 1 through DATA 8 and the Strobe line are driven by the computer; the Acknlg line is driven by the printer.

Interval	Description	Minimum Value	Typical Value
T_{ds}	Delay from DATA written to data $\overline{\text{Strobe}}$	0.5 μs	
T_{str}	Data $\overline{\text{Strobe}}$ width.	0.5 μs	
T_{ack}	$\overline{\text{Acknlg}}$ pulse width.		3.75 μs
T_{dh}	Duration of valid data after $\overline{\text{Strobe}}$.	0.5 μs	
T_{sb}	Delay from falling edge of $\overline{\text{Strobe}}$ to rising edge of Busy	0.5 μs (max)	



Data Communications 4

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5

HELP!

The following information is provided to help you solve problems that do not require the help of a trained service person. If your printer is not operating properly, follow the suggestions below, then if you still need help with printer operation or set up (configuration), call our help line at 1-206/253-3000. For obvious hardware problems contact your local Hewlett-Packard Sales and Support Office, listed in the back of this manual.

No Power, Print Mode Lights Aren't ON:

CHECK . . .

1. That the printer is turned ON.
2. That Power Module 1 is connected completely to the printer, and/or to the electrical power outlet.

Printer Doesn't Print:

CHECK . . .

1. That the printer is ON LINE (a single light on the keypad will be ON). If all the keypad lights are flashing, press the ON LINE key to put the printer ON LINE.
2. That paper is loaded in your printer. Follow paper loading instructions in Chapter 1.
3. That a print cartridge is installed.
4. That the print cartridge is installed properly. It may not be seated completely in the cradle, or the cradle latch may not be completely closed.
5. That the print cartridge isn't empty or low on ink. Take the cartridge out of the printer and examine the bladder to make sure it has ink in it. Reprime the print cartridge, or replace it if necessary. See Maintenance, this chapter.



6. That the printer and your PC or terminal are set up properly. See Chapter 2, *Setting UP . . .*, for the proper settings for your system.
7. That you are using the correct interface cable. See Chapter 2.

**Paper Jams, Z-fold
Paper/Labels:**

CHECK . . .

1. That the pin holes along the edges of the paper fit over the pins on the tractor feeds.
2. That the tractor gates are closed over the paper.
3. That the paper bail is closed.
4. That the paper is not dog-eared or wrinkled.
5. That the paper is loaded evenly in the tractors.
6. That the pinch rollers are spaced about 1/2" in from each edge of the paper.
7. That the paper release lever is forward.
8. That there are no bits of paper obstructing the paper path.
9. That the paper is not feeding back into the rear of the printer.

**Paper Jams,
Cut Sheet:**

CHECK . . .

1. That the paper release lever is back.
2. That the bail star wheels and pinch rollers are spaced evenly across the paper.
3. That the paper bail is closed.
4. That the paper is not dog-eared or wrinkled.
5. That there are no bits of paper obstructing the paper path.

**Self Test Doesn't
At All Resemble
Example Shown:**

CHECK . . .

1. With qualified HP service personnel.

Printing/Paper is Skewed or Slanted:

CHECK, Z-fold Paper . . .

1. That the paper is loaded evenly in the tractors.
2. That the pinch rollers are spaced about $\frac{1}{2}$ " in from each edge of the paper.
3. That the paper release lever is forward.

Cut Sheet . . .

1. That the paper is loaded squarely in the printer.
2. That the paper release lever is back.
3. That the paper bail is closed over the paper.

Poor Print Quality: faint print



CHECK . . .

1. That there is sufficient ink in the print cartridge. See Maintenance, this chapter.
2. That you are using recommended inkjet paper.
3. That the face of the print cartridge is clean. This is discussed under Maintenance, this chapter.
4. That the print cartridge is primed.

Complete Letters Aren't Printing: (Dots Are Missing)

CHECK . . .

1. That the face of the print cartridge is clean. Cleaning the face is discussed under Maintenance, this chapter.
2. That the print cartridge is primed.

Printer Continues to Print After It Has Run Out of Paper:

CHECK . . .

1. That function switch B7 is DOWN.
2. That a piece of paper isn't lodged under the platen covering the out-of-paper detector.



**Printer is Printing
on the Platen:**

CHECK . . .

1. That function switch B8 is UP when you are using 8½ inch paper. See the Summary of Switch Settings in the Appendix.
2. That the printer and your PC or terminal is set up properly. See Chapter 2, Setting UP . . . , for the proper settings for your system.

**Printer Won't Print
the Full Width of
Wide Paper:**

CHECK . . .

1. That function switch B8 is DOWN when you are using wide paper.
2. That the printer and your PC or terminal is set up properly. See Chapter 2, Setting UP . . . , for the proper settings for your system.

**All Lights on the
Keypad Are
Blinking:
*rapidly***

CHECK . . .

1. That paper is loaded in the printer.
2. That the print carriage is positioned correctly to begin printing. See Print Carriage Doesn't Home . . . , next page.

slowly

CHECK . . .

1. That the printer is ON LINE. Press the ON LINE key once to put the printer ON LINE.

**One Light on the
Keypad is Blinking**

CHECK . . .

1. Non-Printing Self Tests, next page.



Print Carriage Doesn't "Home," or Behaves Strangely

CHECK . . .

- 1.** That the print carriage path is unobstructed.
- 2.** That the print carriage can be moved to the right and left. Manually move the carriage back and forth. If it won't move, contact qualified HP service personnel.

Non-Printing Self Tests

Your printer does a non-printing self test each time it is turned ON. If the printer fails this test, a keypad light will flash, indicating the portion of the test that failed.

Aa light flashing: RAM failure.

Λa light flashing: ROM failure.

Aa light flashing: HP Custom IC failure.

Any of these instances require servicing by qualified service personnel.

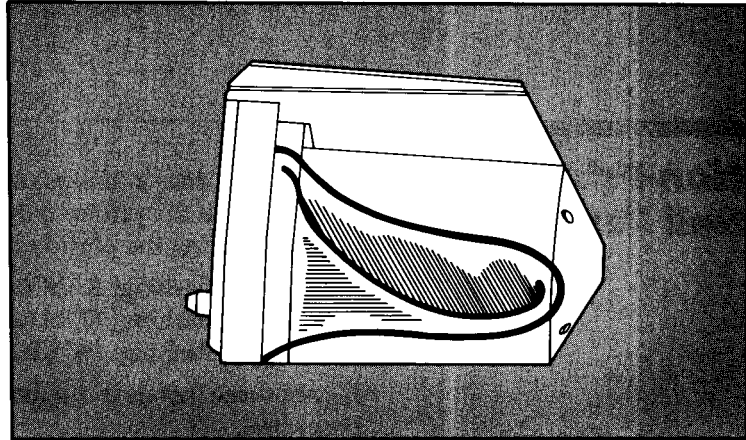
Maintenance

Although your QuietJet series printer doesn't require periodic maintenance, we suggest that you perform the following maintenance to keep your printer in good operating condition.



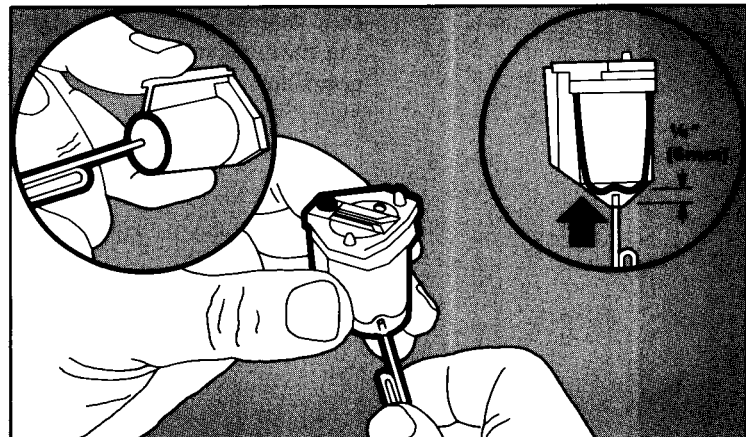
Print Cartridge Maintenance

Maintaining the print cartridge is easy and convenient. If dots are missing on a printout or print is faint, remove the print cartridge from the printer, and examine it to make sure that it has ink in it. If the bladder looks like that in the illustration below, it is out of ink and needs replacing.



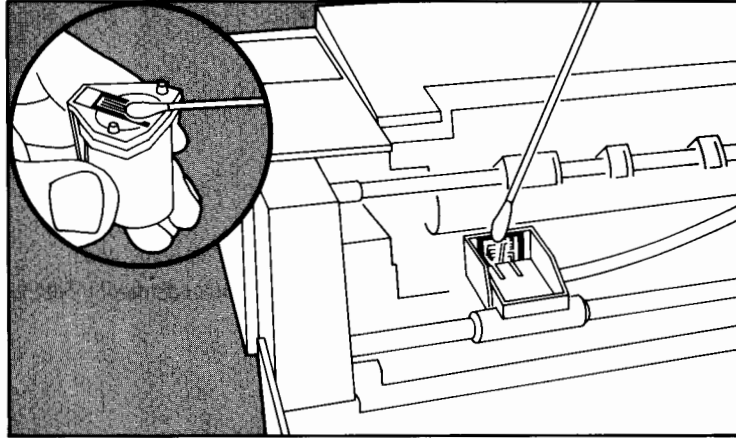
To Prime the Print Cartridge.

If the print cartridge has ink in it, dust may have accumulated on the nozzle, or the print cartridge may need priming.



Cleaning the Nozzles.

- 1.** Wipe the face of the print cartridge with a clean tissue or swab.
- 2.** Wipe the two columns of contacts on the print cartridge with a clean soft tissue. Clean the carriage contact points with a swab. See below.



Exterior Clean smudges, dust, etc., with a soft cloth moistened with a mild detergent and water. Blow out or vacuum out accumulated paper dust.

Platen Remove ink from the platen with a soft cloth soaked in mild detergent. Turn the paper advance knob as you wipe the platen to make sure that all platen surfaces are cleaned.

Tear Window Ink or paper dust on the tear window can be removed with a clean soft cloth or tissue. Do not use solvents on this surface.



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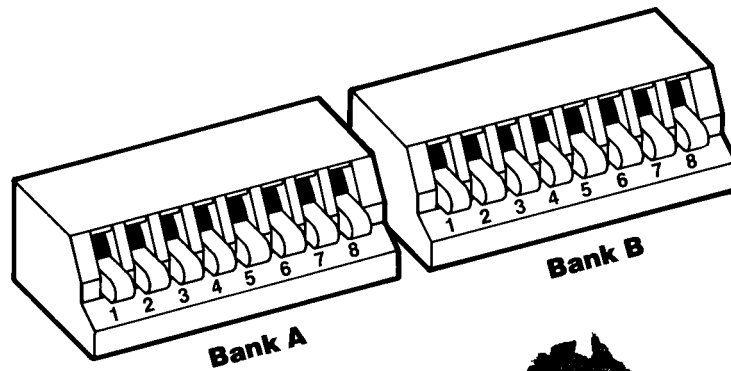


6

Appendix

Summary of Switch Settings

QuietJet series printers have two banks of mode function switches located inside of the front cover. These switches define a number of printer settings, ranging from page length to data communications settings. The illustration below shows the function switches in their default positions.



Factory Default Settings



Function Switch Definitions

Switch Number	Switch Function	Switch Position	
		Down	Up
A1	Carriage Return Definition	CR=CR only	CR=CR and LF
A2	Normal (Default) Pitch	10 cpi	12 cpi
A3	Perforation Skip	Off	On
A4	Page Length	11"	12"
A5	Programming Command Set	HP PCL*	Alternate
A6 } A7 } A8 } B1 }	Symbol Set Selection	See page 6-3	
B2	RS 232-C Handshake	XON/XOFF	DTR
B3 } B4 }	RS 232-C Parity	See page 6-3	
B5 } B6 }	RS 232-C Baud Rate	See page 6-3	
B7	Out-of-Paper Detection	Enabled	Disabled
B8**	Width Detection/Print Region	13.2"	8"

*Level 1

**This switch is used for QuietJet Plus only, it has no effect on QuietJet.

Function Switch Symbol Set Selection

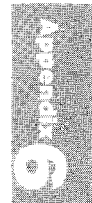
Character Set	Switch Setting			
	A6	A7	A8	B1
Roman8	down	down	down	down
Roman8–HP Terminal Mode	down	down	down	up
ANSI ASCII	up	down	down	down
Swedish (Names)	down	up	down	down
IBM-8 (US version)	up	up	down	down
French	down	down	up	down
German	up	down	up	down
United Kingdom	down	up	up	down
Spanish	up	up	up	down
IBM-8 (Denmark/Norway)	up	up	down	up
Norwegian (Version 1)	down	down	up	up
Italian	up	up	up	up
ECMA-94 Latin 1	down	up	up	up

RS 232-C Parity Selection

Switch		Parity	Word Length
B3	B4		
down	down	None	8 Bits
down	down	Zero	7 Bits
down	up	Odd	7 Bits
up	down	Even	7 Bits
up	up	One	7 Bits

RS 232-C Baud Rate Selection

Switch		Baud Rate
B5	B6	
down	down	9600
down	up	19.2K
up	down	2400
up	up	1200



Symbol Set Selection

HP ROMAN8 SYMBOL SET CHART

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0			0	@	P	`	p					-	â	Á	Ã	Þ
1		!	1	A	Q	a	q				À	ÿ	ê	î	Ä	þ
2		"	2	B	R	b	r				Â	ý	ô	Ø	ä	•
3		#	3	C	S	c	s				È	°	û	Æ	Ð	µ
4		\$	4	D	T	d	t				Ê	Ç	á	à	ð	¶
5		%	5	E	U	e	u				Ë	ç	é	í	Í	¾
6		&	6	F	V	f	v				Ï	Ñ	ó	ø	Ì	-
7		'	7	G	W	g	w				Ë	ñ	ú	æ	Ó	¼
8		(	8	H	X	h	x				Ì	i	à	Ä	Ö	½
9		)	9	I	Y	i	y				Í	ï	è	ì	Õ	à
A		*	:	J	Z	j	z				Î	ï	ò	Ö	õ	º
B		+	;	K	[	k	{				Ï	£	ù	Ü	Š	«
C		,	<	L	\	l	|				Û	¥	ä	É	š	■
D		-	=	M	]	m	}				Ü	§	ë	ï	Ú	»
E		.	>	N	^	n	~				Û	f	ö	ß	ÿ	±
F		/	?	O	_	o	¸				£	c	ü	Ô	ÿ	

INTERNATIONAL SYMBOL SET CHART (ISO)

	ASCII	Swedish	Swedish	Spanish	French	German	UK	Portuguese	Norwegian1	Norwegian2	ISO IRV	Italian	
ISO Reg. #	6	11	10	17	69	21	4	16	60	61	2	15	
Decimal code	35	#	#	#	£	£	#	£	#	#	§	#	£
	36	\$	α	α	\$	\$	\$	\$	\$	\$	α	\$	
	64	@	É	@	§	à	§	@	§	@	@	§	
	91	[	Ä	Ä	ï	°	Ä	[	Ä	Æ	Æ	[
	92	\	Ö	Ö	Ñ	ç	Ö	\	Ç	Ø	Ø	\	
	93	]	Å	Å	¿	§	Ü	]	Ö	Å	Å]	
	94	^	Ü	^	¿	^	^	^	^	^	^	^	
	96	`	é	`	`	µ	`	`	`	`	`	`	
	123	{	ä	ä	°	é	ä	{	ä	æ	æ	{	
	124	|	ö	ö	ñ	ù	ö	|	ç	ø	ø	|	
	125	}	å	å	ç	è	ü	}	ö	å	å	}	
	126	~	ü	~	~	~	ß	~	°	~	~	~	

IBM-US SYMBOL SET CHART

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		▶		0	@	P	`	p	Ç	É	á	█	⊥	⊥	α	≡
1	☺	◀	!	1	A	Q	a	q	ü	æ	í	█	⊥	⊥	β	±
2	☹	↑	"	2	B	R	b	r	é	Æ	ó	█	⊥	⊥	Γ	≥
3	♥	!!	#	3	C	S	c	s	â	ô	ú	|	⊥	⊥	π	≤
4	♦	¶	\$	4	D	T	d	t	ä	ö	ñ	|	⊥	⊥	Σ	∫
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	|	⊥	⊥	σ	∫
6	♠	-	&	6	F	V	f	v	á	û	ã	|	⊥	⊥	μ	÷
7	·	±	´	7	G	W	g	w	ç	ù	õ	|	⊥	⊥	τ	≈
8	■	↑	(	8	H	X	h	x	ê	ÿ	¿	|	⊥	⊥	Φ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	ä	|	⊥	⊥	Θ	•
A	◼	→	*	:	J	Z	j	z	è	Ü	Ä	|	⊥	⊥	Ω	·
B	♂	←	+	;	K	[	k	{	ï	ø	ℓ	|	⊥	⊥	δ	√
C	♀		,	<	L	\	l	|	î	£	ñ	|	⊥	⊥	∞	n
D	♪	↔	-	=	M	]	m	}	ì	∅	ı	|	⊥	⊥	φ	2
E	♫	▲	.	>	N	^	n	~	ï	Ä	ı	|	⊥	⊥	ε	■
F	✳	▼	/	?	O	_	o	~	Ä	ı	ı	|	⊥	⊥	∩	■

IBM-DANISH/NORWEGIAN SYMBOL SET CHART

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		▶		0	@	P	`	p	Ç	É	á	█	⊥	⊥	α	≡
1	☺	◀	!	1	A	Q	a	q	ü	æ	í	█	⊥	⊥	β	±
2	☹	↑	"	2	B	R	b	r	é	Æ	ó	█	⊥	⊥	Γ	≥
3	♥	!!	#	3	C	S	c	s	â	ô	ú	|	⊥	⊥	π	≤
4	♦	¶	\$	4	D	T	d	t	ä	ö	ñ	|	⊥	⊥	Σ	∫
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	|	⊥	⊥	σ	∫
6	♠	-	&	6	F	V	f	v	á	û	ã	|	⊥	⊥	μ	÷
7	·	±	´	7	G	W	g	w	ç	ù	õ	|	⊥	⊥	τ	≈
8	■	↑	(	8	H	X	h	x	ê	ÿ	¿	|	⊥	⊥	Φ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	ä	|	⊥	⊥	Θ	•
A	◼	→	*	:	J	Z	j	z	è	Ü	Ä	|	⊥	⊥	Ω	·
B	♂	←	+	;	K	[	k	{	ï	ø	ℓ	|	⊥	⊥	δ	√
C	♀		,	<	L	\	l	|	î	£	ñ	|	⊥	⊥	∞	n
D	♪	↔	-	=	M	]	m	}	ì	∅	ı	|	⊥	⊥	φ	2
E	♫	▲	.	>	N	^	n	~	ï	Ä	ı	|	⊥	⊥	ε	■
F	✳	▼	/	?	O	_	o	~	Ä	ı	ı	|	⊥	⊥	∩	■

**HP LINE DRAW SYMBOL
SET (Seven Bit)**

	0	1	2	3	4	5	6	7
0			†	‡	∟	‡	∟	∟
1		†	‡	∟	∟	∟	∟	∟
2		†	‡	†	∟	†	∟	∟
3		†	‡	■	∟	■	∟	∟
4		†	‡	∟	∟	∟	∟	∟
5		†	‡	∟	∟	∟	∟	∟
6		†	‡	∟	†	∟	†	†
7		†	‡	∟	∟	∟	∟	∟
8		†	‡	∟	■	∟	■	■
9		†	‡	∟	∟	∟	∟	∟
10		†	‡	∟	∟	∟	∟	∟
11		†	‡	∟	∟	∟	∟	∟
12		†	‡	∟	∟	∟	∟	∟
13		†	‡	∟	∟	∟	∟	∟
14		†	‡	∟	∟	∟	∟	∟
15		†	‡	∟	∟	∟	∟	∟

ASCII-Decimal-Hex Table

The Roman-8 symbol set is an 8-bit symbol set. In addition to the symbols of the standard ASCII symbol set, it also contains international characters and symbols.

ASCII-Decimal-Hex Table

CHAR.	DEC.	HEX.
CTL@	N _U	0 00
CTLA	S _H	1 01
CTLB	S _X	2 02
CTLC	E _X	3 03
CTLD	E _T	4 04
CTLE	E _Q	5 05
CTLF	A _K	6 06
CTLG	Q	7 07
CTLH	R _S	8 08
CTLI	H _T	9 09
CTLJ	L _F	10 0A
CTLK	V _T	11 0B
CTLL	F _F	12 0C
CTLM	C _R	13 0D
CTLN	S _O	14 0E
CTLO	S _I	15 0F
CTLP	D _L	16 10
CTLQ	D ₁	17 11
CTLR	D ₂	18 12
CTLS	D ₃	19 13
CTLT	D ₄	20 14
CTLU	N _K	21 15
CTLV	S _V	22 16
CTLW	E _B	23 17
CTLX	C _N	24 18
CTLY	E _M	25 19
CTLZ	S _B	26 1A
CTL[	E _C	27 1B
CTL\	F _S	28 1C
CTL]	G _S	29 1D
CTL^	R _S	30 1E
CTL_	U _S	31 1F

CHAR.	DEC.	HEX.
	32	20
!	33	21
"	34	22
#	35	23
\$	36	24
%	37	25
&	38	26
'	39	27
(	40	28
)	41	29
*	42	2A
+	43	2B
,	44	2C
-	45	2D
.	46	2E
/	47	2F
0	48	30
1	49	31
2	50	32
3	51	33
4	52	34
5	53	35
6	54	36
7	55	37
8	56	38
9	57	39
:	58	3A
;	59	3B
<	60	3C
=	61	3D
>	62	3E
?	63	3F

CHAR.	DEC.	HEX.
@	64	40
A	65	41
B	66	42
C	67	43
D	68	44
E	69	45
F	70	46
G	71	47
H	72	48
I	73	49
J	74	4A
K	75	4B
L	76	4C
M	77	4D
N	78	4E
O	79	4F
P	80	50
Q	81	51
R	82	52
S	83	53
T	84	54
U	85	55
V	86	56
W	87	57
X	88	58
Y	89	59
Z	90	5A
[	91	5B
\	92	5C
]	93	5D
^	94	5E
_	95	5F

CHAR.	DEC.	HEX.
`	96	60
a	97	61
b	98	62
c	99	63
d	100	64
e	101	65
f	102	66
g	103	67
h	104	68
i	105	69
j	106	6A
k	107	6B
l	108	6C
m	109	6D
n	110	6E
o	111	6F
p	112	70
q	113	71
r	114	72
s	115	73
t	116	74
u	117	75
v	118	76
w	119	77
x	120	78
y	121	79
z	122	7A
{	123	7B
|	124	7C
}	125	7D
~	126	7E
DEL	127	7F

ASCII-Decimal-Hex (continued)

CHAR.	DEC.	HEX.
8 ₀	128	80
8 ₁	129	81
8 ₂	130	82
8 ₃	131	83
8 ₄	132	84
8 ₅	133	85
8 ₆	134	86
8 ₇	135	87
8 ₈	136	88
8 ₉	137	89
8 _A	138	8A
8 _B	139	8B
8 _C	140	8C
8 _D	141	8D
8 _E	142	8E
8 _F	143	8F
9 ₀	144	90
9 ₁	145	91
9 ₂	146	92
9 ₃	147	93
9 ₄	148	94
9 ₅	149	95
9 ₆	150	96
9 ₇	151	97
9 ₈	152	98
9 ₉	153	99
9 _A	154	9A
9 _B	155	9B
9 _C	156	9C
9 _D	157	9D
9 _E	158	9E
9 _F	159	9F

CHAR.	DEC.	HEX.
	160	A0
À	161	A1
Á	162	A2
Â	163	A3
Ã	164	A4
Ä	165	A5
Å	166	A6
Ā	167	A7
ˆ	168	A8
˜	169	A9
˘	170	AA
˙	171	AB
˚	172	AC
Ū	173	AD
Ů	174	AE
€	175	AF
—	176	B0
Ÿ	177	B1
Ź	178	B2
°	179	B3
Ç	180	B4
ç	181	B5
Ñ	182	B6
ñ	183	B7
ı	184	B8
ı̇	185	B9
İ	186	BA
£	187	BB
¥	188	BC
§	189	BD
f	190	BE
ç	191	BF

CHAR.	DEC.	HEX.
ä	192	C0
ë	193	C1
ò	194	C2
ù	195	C3
á	196	C4
é	197	C5
ó	198	C6
ú	199	C7
à	200	C8
è	201	C9
ò	202	CA
ù	203	CB
ä	204	CC
ë	205	CD
ö	206	CE
ü	207	CF
À	208	D0
ı̇	209	D1
ø	210	D2
Æ	211	D3
á	212	D4
ı	213	D5
ø	214	D6
æ	215	D7
À	216	D8
ı	217	D9
Ō	218	DA
Ū	219	DB
É	220	DC
ı	221	DD
ß	222	DE
Ō	223	DF

CHAR.	DEC.	HEX.
Á	224	E0
Â	225	E1
ã	226	E2
ð	227	E3
đ	228	E4
ı̇	229	E5
ı	230	E6
Ō	231	E7
Ū	232	E8
Ō	233	E9
ô	234	EA
š	235	EB
š	236	EC
Ū	237	ED
Ÿ	238	EE
ÿ	239	EF
ƒ	240	F0
ƒ	241	F1
•	242	F2
μ	243	F3
¶	244	F4
¾	245	F5
—	246	F6
¼	247	F7
½	248	F8
¾	249	F9
◊	250	FA
«	251	FB
■	252	FC
»	253	FD
±	254	FE
DEL	255	FF

Escape Sequence/ Control Code Summary— HP Mode

Print Features	Escape Sequence or Control Code	ASCII Decimal Equiv.	ASCII Hex. Equiv.
Select HP Mode	ESC % A	27, 37, 65	1B, 25, 41
Select Default Mode	ESC % @	27, 37, 64	1B, 25, 40
Select Alternate Mode	ESC % C	27, 37, 67	1B, 25, 43
PRINT PITCH			
Change print pitch to Normal (10 or 12 cpi)*	ESC & k 0 S	27, 38, 107, 48, 83	1B, 26, 6B, 30, 53
Change print pitch to Expanded (5 or 6 cpi)*	ESC & k 1 S	27, 38, 107, 49, 83	1B, 26, 6B, 31, 53
Change print pitch to Compressed (21.3 cpi)	ESC & k 2 S	27, 38, 107, 50, 83	1B, 26, 6B, 32, 53
Change print pitch to Expanded/Compressed (10.6 cpi)	ESC & k 3 S	27, 38, 107, 51, 83	1B, 26, 6B, 33, 53
Set print pitch to 21.3 cpi	ESC (s 21.3 H	27, 40, 115, 50, 49, 46, 51, 72	1B, 28, 73, 32, 31, 2E, 33, 48
Set print pitch to 12 cpi	ESC (s 12 H	27, 40, 115, 49, 50, 72	1B, 28, 73, 31, 32, 48
Set print pitch to 10.6 cpi	ESC (s 10.6 H	27, 40, 115, 49, 50, 46, 54, 72	1B, 28, 73, 31, 30, 2E, 36, 48
Set print pitch to 10 cpi	ESC (s 10 H	27, 40, 115, 49, 50, 72	1B, 28, 73, 31, 30, 48
Set print pitch to 6 cpi	ESC (s 6 H	27, 40, 115, 54, 72	1B, 28, 73, 36, 48
Set print pitch to 5 cpi	ESC (s 5 H	27, 40, 115, 53, 72	1B, 28, 73, 35, 48
PRINT MODE			
Select NLQ Printing	ESC (s 1 Q	27, 40, 115, 49, 81	1B, 28, 73, 31, 51
Select Draft Printing	ESC (s 0 Q	27, 40, 115, 48, 81	1B, 28, 73, 30, 51
BOLD MODE			
Bold Printing ON	ESC (s 1 B	27, 40, 115, 49, 66	1B, 28, 73, 31, 42
Bold Printing OFF	ESC (s 0 B	27, 40, 115, 48, 66	1B, 28, 73, 30, 42
UNDERLINE			
Underline ON	ESC & d D	27, 38, 100, 68	1B, 26, 64, 44
Underline OFF	ESC & d @	27, 38, 100, 64	1B, 26, 64, 40
SUB/SUPERSCRIPTS			
Subscripts ON	ESC (s -1 U	27, 40, 115, 45, 49, 85	1B, 28, 73, 2D, 31, 55
Superscript ON	ESC (s 1 U	27, 40, 115, 49, 85	1B, 28, 73, 31, 55
Return to Normal (default)	ESC (s 0 U	27, 40, 115, 48, 85	1B, 28, 73, 30, 55

* Dependent on position of function switch A2.

Print Features (Cont.)	Escape Sequence or Control Code	ASCII Decimal Equiv.	ASCII Hex. Equiv.
SELECTING SYMBOL SETS			
Printer Default Set	ESC (0 @	27, 40, 48, 64	1B, 28, 30, 40
Roman 8	ESC (8 U	27, 40, 56, 85	1B, 28, 38, 55
ASCII	ESC (0 U	27, 40, 48, 85	1B, 28, 30, 55
Swedish 1	ESC (0 S	27, 40, 48, 83	1B, 28, 30, 53
IBM 8-US	ESC (10 U	27, 40, 49, 48, 85	1B, 28, 31, 30, 55
French	ESC (1 F	27, 40, 49, 70	1B, 28, 31, 46
German	ESC (1 G	27, 40, 49, 71	1B, 28, 31, 47
UK	ESC (1 E	27, 40, 49, 69	1B, 28, 31, 45
Spanish	ESC (2 S	27, 40, 50, 83	1B, 28, 32, 53
Portuguese	ESC (4 S	27, 40, 52, 83	1B, 28, 34, 53
Swedish 2	ESC (3 S	27, 40, 51, 83	1B, 28, 33, 53
IBM 8-Euro	ESC (11 U	27, 40, 49, 49, 85	1B, 28, 31, 31, 55
Norwegian 1	ESC (0 D	27, 40, 48, 68	1B, 28, 30, 44
Norwegian 2	ESC (1 D	27, 40, 49, 68	1B, 28, 31, 44
ISO IRV	ESC (2 U	27, 40, 50, 85	1B, 28, 32, 55
Italian	ESC (0 I	27, 40, 48, 73	1B, 28, 30, 49
Line Draw	ESC (0 L	27, 40, 48, 76	1B, 28, 30, 4C
TYPEFACE			
Select Courier. Prints in NLQ regardless of quality selected without additional ROM.	ESC (s 3 T	27, 40, 115, 51, 84	1B, 28, 73, 33, 54
Select Gothic. Prints in draft regardless of quality selected without additional ROM.	ESC (s 6 T	27, 40, 115, 54, 84	1B, 28, 73, 36, 54
PERFORATION SKIP			
Perforation Skip ON	ESC & | 1 L	27, 38, 108, 49, 76	1B, 26, 6C, 31, 4C
Perforation Skip OFF	ESC & | 0 L	27, 38, 108, 48, 76	1B, 26, 6C, 30, 4C
TEXT LENGTH			
# lines per text area	ESC & l # F	27, 38, 108, #, ...#, 70	1B, 26, 6C, #, ...#, 46
Default lines per text area	ESC & l 0 F	27, 38, 108, 48, 70	1B, 26, 6C, 30, 46
PAGE LENGTH			
# lines per page	ESC & l # P	27, 38, 108, #, ...#, 80	1B, 26, 6C, #, ...#, 50
Default lines per page	ESC & l 0 P	27, 38, 108, 48, 80	1B, 26, 6C, 30, 50
LINE SPACING			
Print at 8 lpi	ESC & l 8 D	27, 38, 108, 56, 68	1B, 26, 6C, 38, 44
Print at 6 lpi	ESC & l 6 D	27, 38, 108, 54, 68	1B, 26, 6C, 36, 44
PRINT POSITIONING			
Carriage Return	CTL M	13	0D
Back Space	CTL H	8	08
Line Feed	CTL J	10	0A
Form Feed	CTL L	12	0C
Half Line Feed	ESC -	27, 61	1B, 3D

Print Features (Cont.)	Escape Sequence or Control Code	ASCII Decimal Equiv.	ASCII Hex. Equiv.
Vertical Dot Row Positioning	ESC * p # Y	27, 42, 112, #, ...#, 89	1B, 2A, 70, #, ...#, 59
Vertical Decipoint Positioning	ESC & a # V	27, 38, 97, #, ...#, 86	1B, 26, 61, #, ...#, 56
Horizontal Dot Positioning	ESC * p # X	27, 42, 112, #, ...#, 88	1B, 2A, 70, #, ...#, 58
Horizontal Decipoint Positioning	ESC & a # H	27, 42, 97, #, ...#, 86	1B, 26, 61, #, ...#, 48
GRAPHICS			
Single Density	ESC * t 96 R	27, 42, 116, 57, 54, 82	1B, 2A, 74, 39, 36, 52
Double Density	ESC * r 1280 S	27, 42, 114, 49, 50, 56, 48, 83	1B, 2A, 72, 31, 32, 39, 30, 53
Quad Density	ESC * t 192 R	27, 42, 116, 49, 57, 50, 82	1B, 2A, 74, 31, 39, 32, 52
Begin Raster Graphics Transfer	ESC * r A	27, 42, 114, 65	1B, 2A, 72, 41
Raster Dot Row	ESC * b # W	27, 42, 98, #, ...#, 87	1B, 2A, 62, #, ...#, 57
End Graphics Transfer	ESC * r B	27, 42, 114, 66	1B, 2A, 72, 42
BIDIRECTIONAL/ UNIDIRECTIONAL PRINTING			
Print Unidirectionally	ESC & k 0 W	27, 38, 107, 48, 87	1B, 26, 6B, 30, 57
Return to Bidirectional Printing	ESC & k 1 W	27, 38, 107, 49, 87	1B, 26, 6B, 31, 57
END-OF-LINE WRAP			
End-of-line Wrap ON	ESC & s 0 C	27, 38, 115, 48, 67	1B, 26, 73, 30, 43
End-of-line Wrap OFF (default)	ESC & s 1 C	27, 38, 115, 49, 67	1B, 26, 73, 31, 43
DISPLAY FUNCTIONS MODE			
Display Functions Mode ON	ESC Y	27, 89	1B, 59
Display Functions Mode OFF (default)	ESC Z	27, 90	1B, 60
MISC.			
Transparent Data Transfer	ESC & p # X	27, 38, 112, #, ...#, 88	1B, 26, 70, #, ...#, 5B
Self Test	ESC z	27, 122	1B, 7A
Reset	ESC E	27, 69	1B, 45
Automatic Line Termination	ESC & k # G	27, 38, 107, #, 71	1B, 26, 6B, #, 47

Escape Sequence/ Control Code Summary— Alternate Mode

Print Features	Escape Sequence or Control Code	ASCII Decimal Equiv.	ASCII Hex. Equiv.
Select HP Mode	ESC % A	27, 37, 65	1B, 25, 41
Select Default Mode	ESC % @	27, 37, 64	1B, 25, 40
PRINT PITCHES			
Expanded ON	CTL N	14	0E
Expanded OFF (default)	CTL T	20	14
Compressed ON	CTL O	15	0F
Compressed OFF (default)	CTL R	18	12
Expanded-compressed ON	CTL N CTL O	14, 15	0E, 0F
Expanded-compressed OFF (default)	CTL T CTL R	20, 18	14, 12
BOLD MODE			
Bold mode ON	ESC E	27, 69	1B, 45
Bold mode OFF (default)	ESC F	27, 70	1B, 46
PRINT MODE			
NLQ ON	ESC G	27, 71	1B, 47
NLQ OFF	ESC H	27, 72	1B, 48
UNDERLINE			
Underline ON	ESC-1	27, 45, 49	1B, 2D, 31
Underline OFF (default)	ESC-0	27, 45, 48	1B, 2D, 30
SUB/SUPERSCRIPTS			
Subscript ON	ESC S 1	27, 83, 49	1B, 53, 31
Superscript ON	ESC S 0	27, 83, 48	1B, 53, 30
Normal	ESC T	27, 84	1B, 54
LINE SPACING			
6 lines/inch (default)	ESC 2	27, 50	1B, 32
8 lines/inch	ESC 0	27, 48	1B, 30
7 dot row line spacing	ESC 1	27, 49	1B, 31
# dot row line spacing	ESC A CHR\$(#)	27, 65, #	1B, 41, (# Hex)
Advance n/288"	ESC J #	27, 74, #	1B, 4A, #
PERFORATION SKIP			
Set perforation skip length (in lines)	ESC N CHR\$(#)	27, 78, #	1B, 4E, (# Hex)
Perforation skip OFF (switch 3 sets default)	ESC O	27, 79	1B, 4F

Print Features (Cont.)	Escape Sequence or Control Code	ASCII Decimal Equiv.	ASCII Hex. Equiv.
PAGE LENGTH			
# lines/page	ESC C CHR\$(#)	27, 67, #	1B, 43, (# Hex)
# inches/page	ESC C CHR\$(0) CHR\$(#)	27, 67, 0, #	1B, 43, 0, (# Hex)
(switch 4 sets default)			
UNIDIRECTIONAL OR BIDIRECTIONAL PRINT			
Unidirectional print	ESC U 1	27, 85, 49	1B, 55, 31
Bidirectional text print (default)	ESC U 0	27, 85, 48	1B, 55, 30
PRINT POSITION			
Line Feed	CTL J	10	0A
Carriage Return	CTL M	13	0D
Back Space	CTL H	8	08
Form Feed	CTL L	12	0C
GRAPHICS			
Low density column graphics	ESC K #1 #2	27, 75, #1, #2	1B, 4B, (#1 Hex), (#2 Hex)
High density column graphics	ESC L #1 #2	27, 76, #1, #2	1B, 4C, (#1 Hex), (#2 Hex)
RESET			
Perform reset	ESC @	27, 64	1B, 40



Ordering Information

Standard unit includes:

Print cartridge, Power Module 1, 50 sheets of Z-fold paper, owner's manual.

Fast phones for price and availability by location:

Austria: (0222) 25 00 or 615/616 • Belgium/Luxembourg: (02) 7 62 32 00 • Denmark: (02) 8166 40, Ext. 258 • Finland: (90) 4 55 0211 • France: (6) 9 28 32 64 • Greece: (01) 6473360-1 • Italy: (02) 92 36 91 or (06) 5 48 31 • Middle East: Athens—(01) 808-0359 • Norway: (02) 17 1180 • South Africa: Johannesburg—(011) 802 5111; Cape Town—(021) 53 7954; Durban—(031) 28 4178 • Spain: (01) 6 38 4013 • Sweden: (08) 750 20 28 • The Netherlands: (020) 47 0639 • Switzerland: (057) 312254/59 • United Kingdom: (0734) 69 72 01 • United States: 800-538-8787; California—408-738-4133 • West Germany: 0130 33 22.

Supplies and Accessories

Supplies	Reorder Number
Print Cartridges—Single Color	
black	92261A
red	51605R
green	51605C
blue	51605B
Paper	
500 sheets, Z-fold, 8½×11" paper	51630A
500 sheets, wide Z-fold paper, 14⅞×11"	51630B
2500, Z-fold, 14.8×11"	51630D
500 sheets, cut sheet, 8½×11" paper	51630J
2000 labels, 3½×15⅛-inches, 20 to a 9½" page, two across	51630L
2500, Z-fold, 8½×11"	92261N
Printer Stand	92261T
Power Module 1:	
USA, Canada, 120V/50/60H (393-1089-001A00)	17122B
Euro, 220V/50H (3W4-1089-00102)	17222B
Japan, 100V/50H (353-1089-00100)	17322B
U.K., 240V/50H (3Y4-1089-00104)	17422B
Switzerland, 220V/50H (3W4-1089-00103)	17522B
South Africa, 220V/50H (3W4-1089-00105)	17622B
Australia, 240V/50H (3Y4-1089-00101)	17722B
Denmark, 220V/50H (3W4-1089-00106)	17822B
China, 220V/50H (3W4-1089-00101)	17922B
Manuals	
Owner's Manual	02227-90012
Multi-Language Operator's Guide	02227-90004
Service Manual	02227-90005



Specifications

Print Speed

160 characters per second, draft mode,
10 cpi
192 characters per second, draft mode,
12 cpi
40 characters per second, NLQ, 10 cpi
48 characters per second, NLQ, 12 cpi
Bidirectional, optimized path in draft
mode

Character Structure

19 (h) × 12 (v), draft mode
19 (h) × 24 (v), NLQ mode

Character Sets

HP Roman 8
128 USASCII (upper and lower case
and control codes) Supports Danish,
Dutch, English, Finnish, French, Ger-
man, Norwegian, Portuguese, Span-
ish, and Swedish)

ISO 7-bit languages

Supports French, German, Spanish,
Swedish/Finnish, United Kingdom,
and USASCII

IBM PC character set

ECMA-94 Latin 1

Graphics

96 × 96 dots per inch in single density
mode
192 × 96 dots per inch in double-density
mode
192 × 192 dots per inch in quadruple-
density mode

Printing Format

Pitch	Characters/ inch	Characters/ 13.2" line	Characters/ 8" line
Normal	10	132	80
Normal	12	158	96
Expanded	5	66	40
Expanded	6	79	48
Compressed	21.3	281	170
Expanded- compressed	10.6	140	85
Variable line spacing (lines per inch)	6, 8		

Paper Handling

Friction feed for single sheets
Pin feed for continuous tractor paper
Paper widths:
QuietJet Plus
10.2 cm (4") to 35.2 cm (13⁷/₁₆") single
sheets. 10.3 cm (4¹/₁₆" to 38.1 cm (15")
tractor paper
QuietJet
10.2 cm (4") to 21.7 cm (8⁹/₁₆") cut
sheets. 10.3 cm (4¹/₁₆") to 24.8 cm (9³/₄")
z-fold.

For best results, use HP-recommended
inkjet paper only. All paper should be
tested for satisfactory feeding, registra-
tion and print quality.

Controls and Indicators

Buttons
On-line, Form feed, Line feed, Select
LEDs
LED Indicators
NLQ, Draft, Compressed printing

Interfaces and Power Sources

Built-in I/O
Centronics parallel, RS-232C serial
Power modules
100 volts AC (+ 10%, - 10%) 47.5-63 Hz
120 volts AC (+ 10%, - 10%) 47.5-63 Hz
220 volts AC (+ 10%, - 10%) 47.5-63 Hz
240 volts AC (+ 10%, - 10%) 47.5-63 Hz
Power consumption at 20 VAC
10 W maximum non-printing
18 W maximum printing
Maximum heat output 61.5 BTU/hour

Operational Modes

Switch selectable HP/alternate modes

Environmental Conditions

Temperature, free space ambient
10° to 40°C (50° to 104°F) operating
-20° to 60°C (-4° to 140°F) non-
operating

Humidity

10% to 90% RH, non-condensing
Acoustics (per ISO DP7779 standard)
Sound pressure level - L_{pa}: < 48.5
dB(A)@1 meter
bystander position

Physical Specifications

QuietJet Plus
527 mm (20.75") W × 118 mm (4.7")
H × 214 mm (8.4") D
4.27 kg (9 lbs. 6.5 oz.) net weight
QuietJet
395 mm (15.55") W × 118 mm (4.7")
H × 214 mm (8.4") D.
3.9 kg (8 lbs. 5 oz.) net weight

Buffer Size

2K bytes

Product Certifications

UL, CSA, FEI, NEMKO, KEMA, TUV,
SEV, VDE/FTZ, IEC Compliance. FCC
Class B Certified per FCC Rules, Part
15, subpart J, when used with a Class
B computing device.

Software Support

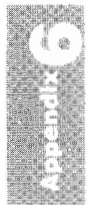
The QuietJet Series Printers are fully
supported on major software pack-
ages. Additional support is being pro-
vided on a regular basis.

Estimated Typical Usage

Less than 40 pages per day.

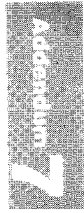


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7

Addendum



1: a thing added; ADDITION. 2: a supplement to a book.

Sub/ Superscripts

QuietJet Series printers allow you to print sub/superscripts automatically. Superscripts are printed $\frac{1}{192}$ inch above the normal text position. Subscripts are printed $\frac{1}{192}$ inch below the normal text position.

HP Mode.

Superscripts are selected by sending ESC(s1U. Subscripts are selected by sending ESC(s-1U. Normal text positioning is selected by sending ESC(s0U.

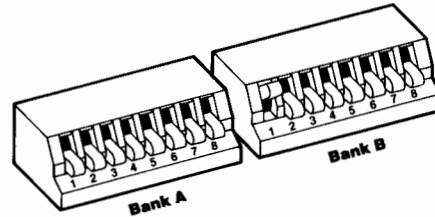
Alternate Mode.

Superscripts are selected by sending ESC S0. Subscripts are selected by sending ESC S1. Normal text positioning is selected by sending ESC T.

HP Terminal Mode- Line Draw

The Line Draw characters displayed on your HP terminal can be printed on QuietJet Series printers by using your terminal's normal print controls.

Follow the hardware configuration for your terminal as described in Chapter 2. Make sure that the function switches located inside of your printer are set as shown below.



In addition to setting the function switches, the Terminal Configuration menu must show:

ESC Xfer (N) YES

To get to this field, press **config. keys** then **terminal config.** Be sure to press **save config.** after making this change. This setting insures correct character communication between the terminal and printer.

**ECMA-94 LATIN 1
SYMBOL SET**

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0			0	@	P	`	p					°	À	Ð	à	ð
1		!	1	A	Q	a	q				ı	±	Á	Ñ	á	ñ
2		"	2	B	R	b	r				ı	²	Â	Ò	â	ò
3		#	3	C	S	c	s				£	³	Ã	Ó	ã	ó
4		\$	4	D	T	d	t				¤	´	Ä	Ô	ä	ô
5		%	5	E	U	e	u				¥	µ	Å	Õ	å	õ
6		&	6	F	V	f	v				¦	¶	Æ	Ö	æ	ö
7		'	7	G	W	g	w				§	•	Ç	×	ç	÷
8		(	8	H	X	h	x				:	·	È	Ø	è	ø
9		)	9	I	Y	i	y				©	¹	É	Ù	é	ù
A		*	:	J	Z	j	z				ª	º	Ê	Û	ê	û
B		+	;	K	[	k	{				«	»	Ë	Ü	ë	ü
C		,	<	L	\	l	|				¬	¼	Ì	Ý	ì	ý
D		.	=	M	]	m	}					½	Í	Þ	í	þ
E		>	.	N	^	n	~				®	¾	Î	ß	î	ÿ
F		/	?	O	_	o						¿	Ï		ï	

Addendum 7



Sales and Support Offices

Contact the Sales & Support Offices listed on the following pages with any questions or problems you may have concerning your printer.

SALES & SUPPORT OFFICES

Arranged alphabetically by country

Product Line Sales/Support Key

Key Product Line

- A** Analytical
- CM** Components
- C** Computer Systems Sales only
- CH** Computer Systems Hardware Sales and Services
- CS** Computer Systems Software Sales and Services
- E** Electronic Instruments & Measurement Systems
- M** Medical Products
- P** Personal Computation Products
- * Sales only for specific product line
- ** Support only for specific product line

IMPORTANT: These symbols designate general product line capability. They do not insure sales or support availability for all products within a line, at all locations. Contact your local sales office for information regarding locations where HP support is available for specific products.

HP distributors are printed in italics.

HEADQUARTERS OFFICES

If there is no sales office listed for your area, contact one of these headquarters offices.

AFRICA AND

MIDDLE EAST

Hewlett-Packard S.A.
Mediterranean and Middle East
Operations
Atrina Centre
32 Killissias Ave.
Paradissos-Amarousion, **ATHENS**
Greece
Tel: 682 88 11
Telex: 21-6588 HPAT GR
Cable: HEWPACKSA Athens

NORTH/CENTRAL AFRICA

Hewlett-Packard S.A.
7, Rue du Bois-du-Lan
CH-1217 **MEYRIN 2**, Switzerland
Tel: (022) 63 12 12
Telex: 27835 hpspe
Cable: HEWPACKSA Geneve

ASIA

Hewlett-Packard Asia Ltd.
47/F, 26 Harbour Rd.,
Wanchai, **HONG KONG**
G.P.O. Box 863, Hong Kong
Tel: 5-8330833
Telex: 76793 HPA HX
Cable: HPASIAL TD

CANADA

Hewlett-Packard (Canada) Ltd.
6877 Goreway Drive
MISSISSAUGA, Ontario L4V 1M8
Tel: (416) 678-9430
Telex: 610-492-4246

EASTERN EUROPE

Hewlett-Packard Ges.m.b.h.
Liebiggasse 1
P.O. Box 72
A-1222 **VIENNA**, Austria
Tel: (222) 2365110
Telex: 13 4425 HEPA A

NORTHERN EUROPE

Hewlett-Packard S.A.
Uilenstede 475
P.O. Box 999
NL-1180 AZ AMSTELVEEN
The Netherlands
Tel: 20 437771

SOUTH EAST EUROPE

Hewlett-Packard S.A.
World Trade Center
110 Avenue Louis Carol
1215 Cointrin, **GENEVA**, Switzerland
Tel: (022) 98 96 51
Telex: 27225 hpspe.

EASTERN USA

Hewlett-Packard Co.
4 Choke Cherry Road
ROCKVILLE, MD 20850
Tel: (301) 258-2000

MIDWESTERN USA

Hewlett-Packard Co.
5201 Tollview Drive
ROLLING MEADOWS, IL 60008
Tel: (312) 255-9800

SOUTHERN USA

Hewlett-Packard Co.
2000 South Park Place
P.O. Box 105005
ATLANTA, GA 30348
Tel: (404) 955-1500

WESTERN USA

Hewlett-Packard Co.
3939 Lankershim Blvd.
P.O. Box 3919
LOS ANGELES, CA 91604
Tel: (213) 506-3700

OTHER INTERNATIONAL AREAS

Hewlett-Packard Co.
Intercontinental Headquarters
3495 Deer Creek Road
PALO ALTO, CA 94304
Tel: (415) 857-1501
Telex: 034-8300
Cable: HEWPACK

ANGOLA

Telectra
Empresa TAecnica de Equipamentos
R. Barbosa Rodrigues, 41-I-DT.
Caixa Postal 6487
LUANDA
Tel: 35515,35516
E,P

ARGENTINA

Hewlett-Packard Argentina S.A.
Avenida Santa Fe 2035
Martinez 1640 **BUENOS AIRES**
Tel: 798-5735, 792-1293
Cable: HEWPACKARG
A,E,CH,CS,P

AUSTRALIA

Adelaide, South Australia Office

Hewlett-Packard Australia Ltd.
153 Greenhill Road
PARKSIDE, S.A. 5063
Tel: 272-5911
Telex: 82536
Cable: HEWPARD Adelaide
A*,CH,CM,CS,E,M,P

Brisbane, Queensland Office

Hewlett-Packard Australia Ltd.
10 Payne Road
THE GAP, Queensland 4061
Tel: 30-4133
Telex: 42133
Cable: HEWPARD Brisbane
A,CH,CS,CM,E,M,P

Canberra, Australia Capital Territory Office

Hewlett-Packard Australia Ltd.
121 Wollongong Street
FYSHWICK, A.C.T. 2609
Tel: 80 4244
Telex: 62650
Cable: HEWPARD Canberra
C,CH,CM,CS,E,P

Melbourne, Victoria Office

Hewlett-Packard Australia Ltd.
31-41 Joseph Street
BLACKBURN, Victoria 3130
Tel: 895-2895
Telex: 31-024
Cable: HEWPARD Melbourne
A,CH,CM,CS,E,M,P

Perth, Western Australia Office

Hewlett-Packard Australia Ltd.
261 Stirling Highway
CLAREMONT, W.A. 6010
Tel: 383-2188
Telex: 93859
Cable: HEWPARD Perth
A,CH,CM,CS,E,M,P

Sydney, New South

Wales Office

Hewlett-Packard Australia Ltd.
17-23 Talavera Road
P.O. Box 308
NORTH RYDE, N.S.W. 2113
Tel: 888-4444
Telex: 21561
Cable: HEWPARD Sydney
A,CH,CM,CS,E,M,P

AUSTRIA

Hewlett-Packard Ges.m.b.h.
Grottenhofstrasse 94
A-8052 **GRAZ**
Tel: (0316) 29 15 66
Telex: 32375
CH,E

Hewlett-Packard Ges.m.b.h.

Liebiggasse 1
P.O. Box 72
A-1222 **VIENNA**
Tel: (0222) 23 65 11-0
Telex: 134425 HEPA A
A,CH,CM,CS,E,M,P

BAHRAIN

Green Salon
P.O. Box 557
Manama
BAHRAIN
Tel: 255503-255950
Telex: 84419
P

Wael Pharmacy

P.O. Box 648

BAHRAIN

Tel: 256123
Telex: 8550 WAEL BN
E,M

BELGIUM

Hewlett-Packard Belgium S.A./N.V.
Blvd de la Woluwe, 100
Woluwedal
B-1200 **BRUSSELS**
Tel: (02) 762-32-00
Telex: 23-494 paloben bru
A,CH,CM,CS,E,M,P

BERMUDA

Applied Computer Technologies
Atlantic House Building
Par-La-Ville Road
Hamilton 5
Tel: 295-1616
P

BRAZIL

Hewlett-Packard do Brasil
i.e.C. Ltda.
Alameda Rio Negro, 750
Alphaville
06400 BARUERI SP
Tel: (011) 421.1311
Telex: (011) 33872 HPBR-BR
Cable: HEWPACK Sao Paulo
A,CH,CM,CS,E,M,P

BRAZIL (Cont'd)

Hewlett-Packard do Brasil
 I.e.C. Ltda.
 Avenida Eptacio Pessoa, 4664
 22471 RIO DE JANEIRO-RJ
 Tel: (021) 286.0237
 Telex: 021-21905 HPBR-BR
 Cable: HEWPACK Rio de Janeiro
 A,CH,CM,E*,M,P*
 Convex/Van Den
 Rua Jose Bonifacio
 458 Todos Os Santos
 CEP 20771
 RIO DE JANEIRO, RJ
 Tel: 249-7121, 591-4946
 Telex: 33487

ANAMED I.C.E.I. Ltda.
 Rua Bage, 103
 04012 SAO PAULO
 Tel: (011) 570-5726
 Telex: 021-21905 HPBR-BR
 M

CANADA**Alberta**

Hewlett-Packard (Canada) Ltd.
 3030 3rd Avenue N.E.
 CALGARY, Alberta T2A 6T7
 Tel: (403) 235-3100
 A,CH,CM,E*,M,P*
 Hewlett-Packard (Canada) Ltd.
 11120-178th Street
 EDMONTON, Alberta T5S 1P2
 Tel: (403) 466-6666
 A,CH,CM,CS,E,M,P

British Columbia

Hewlett-Packard (Canada) Ltd.
 10691 Shellbridge Way
 RICHMOND,
 British Columbia V6X 2W7
 Tel: (604) 270-2277
 Telex: 610-922-5059
 A,CH,CM,CS,E*,M,P*
 Hewlett-Packard (Canada) Ltd.
 121 - 3350 Douglas Street
 VICTORIA, British Columbia V8Z 3L1
 Tel: (604) 381-6616
 CH,CS

Manitoba

Hewlett-Packard (Canada) Ltd.
 1825 Inkster Blvd.
 WINNIPEG, Manitoba R3H 0Y1
 Tel: (204) 786-6701
 A,CH,CM,E,M,P*

New Brunswick

Hewlett-Packard (Canada) Ltd.
 37 Shediac Road
 MONCTON, New Brunswick E1A 2R6
 Tel: (506) 855-2841
 CH,CS

Nova Scotia

Hewlett-Packard (Canada) Ltd.
 Suite 111
 900 Windmill Road
 DARTMOUTH, Nova Scotia B2Y 3Z6
 Tel: (902) 469-7820
 CH,CM,CS,E*,M,P*

Ontario

Hewlett-Packard (Canada) Ltd.
 3325 N. Service Rd., Unit 6
 BURLINGTON, Ontario P3A 2A3
 Tel: (416) 335-8644
 CS,M*

Hewlett-Packard (Canada) Ltd.
 496 Days Road
 KINGSTON, Ontario K7M 5R4
 Tel: (613) 384-2088
 CH,CS

Hewlett-Packard (Canada) Ltd.
 552 Newbold Street
 LONDON, Ontario N6E 2S5
 Tel: (519) 686-9181
 A,CH,CM,E*,M,P*

Hewlett-Packard (Canada) Ltd.
 6877 Goreway Drive
 MISSISSAUGA, Ontario L4V 1M8
 Tel: (416) 678-9430
 A,CH,CM,CS,E,M,P

Hewlett-Packard (Canada) Ltd.
 2670 Queensview Dr.
 OTTAWA, Ontario K2B 8K1
 Tel: (613) 820-6483
 A,CH,CM,CS,E*,MS,P*

Hewlett-Packard (Canada) Ltd.
 1855 Lasalle Boulevard
 SUDBURY, Ontario, P3A 2A3
 Tel: (705) 560-5450
 CH

Hewlett-Packard (Canada) Ltd.
 220 Yorkland Blvd. Unit #11
 WILLOWDALE, Ontario M2J 1R5
 Tel: (416) 499-9333
 CH

Quebec

Hewlett-Packard (Canada) Ltd.
 17500 South Service Road
 Trans-Canada Highway
 KIRKLAND, Quebec H9J 2M5
 Tel: (514) 697-4232
 A,CH,CM,CS,E,M,P*

Hewlett-Packard (Canada) Ltd.
 1150 Rue Claire Fontaine
 QUEBEC CITY, Quebec G1R 5G4
 Tel: (418) 648-0726
 CH,CS

Hewlett-Packard (Canada) Ltd.
 #7-130 Robin Crescent
 SASKATODN, Saskatchewan S7L 6M7
 Tel: (306) 242-3702
 CH,CS

CHILE

ASC Ltda.
 Austria 2041
 SANTIAGO
 Tel: 223-5946, 223-6148
 Telex: 340192 ASC CK
 P,C

Jorge Calcagni y Cia. Ltda.
 Av. Italia 634 Santiago
 Casilla 16475
 SANTIAGO 9
 Tel: 222-0222
 Telex: 440283 JCYCL CZ
 CM,E,M

Metrolab S.A.

Monjitas 454 of. 206
 SANTIAGO
 Tel: 395752, 398296
 Telex: 340866 METLAB CK
 A

Olympia (Chile) Ltda.
 Av. Rodrigo de Araya 1045
 Casilla 256-V
 SANTIAGO 21
 Tel: 225-5044
 Telex: 340892 OLYMP
 Cable: Olympachie Santiagochile
 CH,CS,P

CHINA, People's Republic of

China Hewlett-Packard Co., Ltd.
 6th Floor, Sun Hung Kai Centre
 30 Harbour Road
 HONG KONG
 Tel: 5-8323211
 Telex: 36678 HEWPA HX
 A,C,CH,CS,E,M,P

China Hewlett-Packard Rep. Office
 P.O. Box 418
 1A Lane 2, Luchang St.
 Beihai Rd., Xuanwu District
 BEIJING

Tel: 33-1947, 33-7426
 Telex: 22601 CTSHP CN
 Cable: 1920
 A,CH,CM,CS,E,P

COLOMBIA

Instrumentación
 H. A. Langebaek & Kier S.A.
 Carrera 4A No. 52A-26
 Apartado Aereo 6287
 BOGOTA 1, D.E.

Tel: 212-1466
 Telex: 44400 INST CO
 Cable: AARIS Bogota
 CM,E,M

Nefromedicas Ltda.
 Calle 123 No. 9B-31
 Apartado Aereo 100-958
 BOGOTA D.E., 10
 Tel: 213-5267, 213-1615
 Telex: 43415 HEGAS CO
 A

Processa, S.A.
 CRA 7 No. 24-89 Piso 25
 Torre Colpatría
 Apartado Aereo No. 49667
 BOGOTA D.E.
 Tel: 2344925, 2344958, 2344742
 Telex: 43127 COVER CO
 C,P

Compumundo
 Avenida 15 # 107-80
 BOGOTA D.E.
 Tel: 214-4458
 Telex: 45466 MARICO
 P

COSTA RICA

Cientifica Costarricense S.A.
 Avenida 2, Calle 5
 San Pedro de Montes de Oca
 Apartado 10159
 SAN JOSÉ
 Tel: 24-38-20, 24-08-19
 Telex: 2367 GALGUR CR
 CM,E,M

CYPRUS

Telexra Ltd.
 P.O. Box 4809
 14C Stassinou Avenue
 NICOSIA
 Tel: 62698
 Telex: 2694 LEVIDO CY
 E,M,P

DENMARK

Hewlett-Packard A/S
 Datavej 52
 DK-3480 BIRKEROD
 Tel: (02) 81-66-40
 Telex: 37409 hpas dk
 A,CH,CM,CS,E,M,P
 Hewlett-Packard A/S
 Rolighedsvej 32
 DK-8240 RISSKOV, Aarhus
 Tel: (06) 17-60-00
 Telex: 37409 hpas dk
 CH,E

DOMINICAN REPUBLIC

Microprog S.A.
 Juan Tomás Mejía y Cotes No. 80
 Arroyo Honda
 SANTO DOMINGO
 Tel: 565-6268
 Telex: 4510 ARENTA DR (RCA)
 P

ECUADOR

CYEDE Cia. Ltda.
 Avenida Eloy Alfaro 1749
 y Belgica
 Casilla 6423 CCI

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