Print Features
Druckeigenschaften
Caractéristiques d'impression
Posibilidades de impresión
Caratteristiche di stampa
Afdruk eigenschappen
Udskrifts-faciliteter
Utskrifts-funksjoner
Utskriftsmöjligheter
Kirjoittimen toimintamuodot

ABCDEFGHIJKLMNOPQRSTUVWXYZ	ESC &k2S
ABCDEFGHIJKLMNOPQRSTUVWXYZ	ESC &k0S
ABCDEFGHIJKLMNOPQRSTUVWXYZ	ESC &k3S
ABCDEFGHIJKLMNOP	ESC &k1S
ABCDEFGHIJKLMNOP	ESC (s1B
ABCDEFGHIJKLMNOP	ESC (s0B
ABCDEFGHIJKLMNOP	ESC &dD
ABCDEFGHIJKLMNOP	ESC &d@
ABCDEFGHIJKLM BCDEFGHIJKLMN ABCDEFGHIJKLM BCDEFGHIJKLMN	ESC &ℓ1L
ABCDEFGHIJKLM BCDEFGHIJKLMN ABCDEFGHIJKLM BCDEFGHIJKLMN	ESC &ℓ0L

HEWLETT PACKARD

02225-90031 (HP 2225A)
Printed in Singapore 4/87

HEWLETT-PACKARD

2225A

Personal Printer
ThinkJet

Benutzerhandbuch
Manuel Utilisateur
Manual del Usuario
Manuale dell 'Operatore
Gebruiker's Handboek
System Håndbog
Brukerhåndbok
Ägar Manual
Omistajan Käsikirja

Owner's Manual

CAUTIONS
Warnungen
Attention
Precauciones
Precauzioni
Let op
Advarsel
Forsiktighetsregler
Varning
Varoituksia

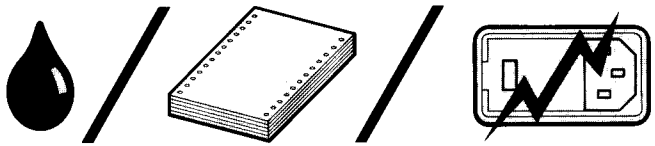
POWER/INTERFACE
Anschliessen
Interface/Alimentation secteur
Red/Interfase
Alimentazione/Interfaccia
Netvoeding
Netledning/Kabelforbindelser
Strømtilkopling/grensesnitt
Nätspänning/gränssnitt
Liitännät

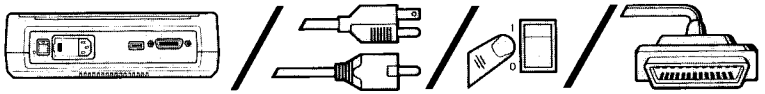
LOADING CARTRIDGE
Einsetzen der Druckkopfpatrone
Chargement de la cartouche d'encre
Cómo colocar la cabeza impresora
Caricamento della cartuccia
Inzetten van inktpatroon
Montering af beholder
Skifte kassett
Montering av behållare
Kirjoitinpääyksikön asennus

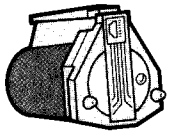
LOADING THINKJET PAPER
Einlegen des ThinkJet-Papiers
Chargement du papier pour jet d'encre
Cómo cargar el papel
Caricamento della carta per la ThinkJet
Invoeren ThinkJet papier
Montering af ThinkJet papir
Innsetting av spesialpapir (ThinkJet)
Montering av ThinkJet papper
Paperin lataus

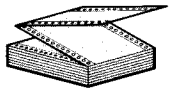
QUALITY MODE/SELF TEST
Selbsttest
Auto-test
Autodiagnóstico
Auto-test
Zelftest
Selvtest
Selvtest
Självtest
Itsetestaus

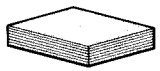
MAINTENANCE
Wartung
Maintenance
Mantenimiento
Manutenzione
Onderhoud
Vedligeholdelse
Vedlikehold
Underhåll
Huolto

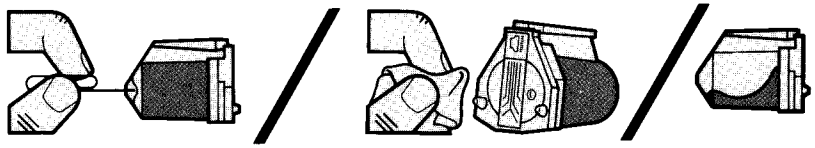












The ink in the print head cartridge contains diethylene glycol which is HARMFUL IF SWALLOWED. Keep new or used cartridges OUT OF THE REACH OF CHILDREN.

Die Tinte der Druckkopfpatrone enthält Diäthylen Glycol. EINNAHME IST SCHADLICH! Bewahren Sie deshalb die Druckkopfpatronen ÄUßERHALB DER REICHWEITE VON KINDERN auf.

L'encre de la cartouche destinée à tête d'impression contient du glycol-diéthylène dont L'ABSORPTION EST DANGEREUSE. Conservez les cartouches neuves ou usagées HORS DE LA PORTEE DES ENFANTS.

La tinta que va en el interior de la cabeza impresora contiene dietilenglicol, el cual puede ser dañino si es ingerido. Mantenga las cabezas nuevas o usadas fuera del alcance de los niños.

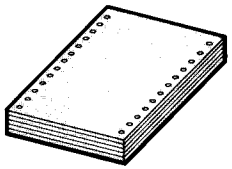
L'inchiostro nella cartuccia della testina di stampa contiene dietilen-glicole, una sostanza molto pericolosa se ingerita. Tenete le cartucce, nuove o usate, fuori dalla portata dei bambini.

De inkt in de inktpatroon bevat diethylene glycol, dat schadelijk is bij inwendig gebruik. NIEUWE OF GEBRUIKTE PATRONEN MOETEN BUITEN HET BEREIK VAN KINDEREN WORDEN GEHOUDEN.

Blækket i skrivehoved-beholderen indeholder diethylene glycol, hvilket er farligt at indtage. Opbevar brugte og ubrugte beholdere uden for børns rækkevidde.

Bläcket i skrivhuvudets behållare innehåller diethylen glykol som är farligt att förtära. Förvara dessa behållare utom räckhåll för barn.

Kirjoitinpääyksikön muste sisältää dietyleeni glykolia, joka on haitallista nautittuna. Pidä uudet tai käytetyt kirjoitinpääykosiköt POISSA LASTEN ULOTTUVILTA.



Use Hewlett-Packard ink jet paper for best print quality.

Benutzen Sie das ThinkJet-Papier von Hewlett-Packard, um eine hochwertige Druckqualität zu erreichen.

Pour obtenir une meilleure qualité d'impression, utilisez le papier spécial Hewlett-Packard pour imprimante à jet d'encre.

Use el papel especial de Hewlett-Packard para una mayor calidad de impresión.

Per una migliore qualitá di stampa usate la carta speciale della Hewlett-Packard per la tinkjet.

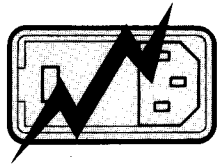
Gebruik Hewlett-Packard ThinkJet papier voor het beste afdrukresultaat.

Anvend Hewlett-Packard ThinkJet papir for at opnå den bedste skrivekvalitet.

Bruk Hewlett-Packard's spesielle Thinkjet-papir for å oppnå best skrivekvalitet.

Hewlett-Packard speciella ThinkJet papper använd för bästa resultat vid utskrift.

Käytä Hewlett-Packard "THINKJET"-paperia parhaan kirjoituslaadun saavuttamiseksi.



Check voltage required by printer. If incorrect see your dealer.

Prüfen Sie die erforderliche Stromspannung für Ihren Drucker. Stromspannung (Sicherung) und Netzkabel wurden den lokalen Erfordernissen angepast.

Vérifiez le voltage requis par l'imprimante. Voltage, fusible et cordon d'alimentation secteur sont préréglés en fonction du pays d'utilisation.

Compruebe el voltaje requerido por la impresora. El fusible ye el cable de alimentación han sido preseleccionados de acuerdo a las necesidades locales.

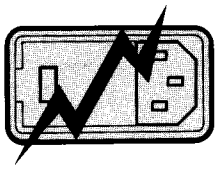
Controllare la tensione richiesta dalla stampante. Tensione, fusibile e cavo di alimentazione sono stati preselezionati a seconda delle esigenze locali.

Undersøg om skriveren er indstillet til den korrekte netspænding. Sikring og ledning til lokalt brug er medsendt.

Sjekk hvilken spenning skriveren skal ha. Hvis spenningen ikke er riktig, ta kontakt med din forhandler.

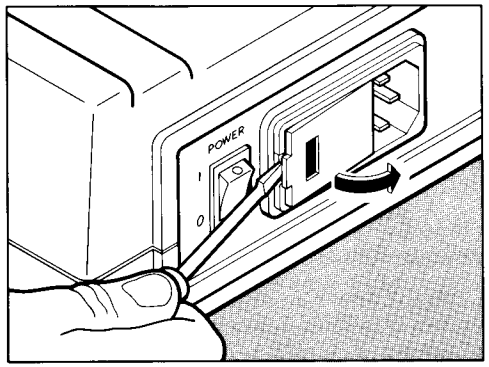
Kontrollera att skrivaren är inställd för rätt nätspanning. Skrivaren levereras med näthabel och säkring anpassad för lokala krav om detta har specificerats vid beställningen.

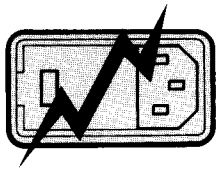
Tarkista kirjoittimeen asetettu käyttöjännite. Jännite, sulake ja verkkojohto on valittu paikallisten määräysten mukaisiksi.

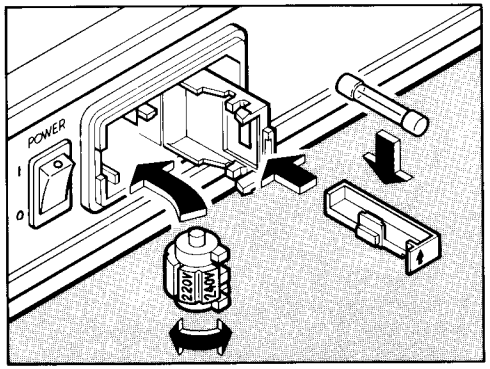


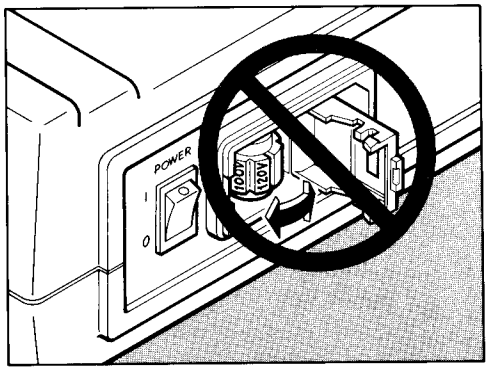
Voltage section
Spannungsgebiet
Section voltage
Sección voltaje
Sezione di voltaggio
Stroomspannings gebied
Spänningsområde
Spaendings del
Virta alue
Spenningseksjon

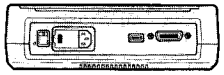
100 volt AC	T 500 mA
120 volt AC	T 400 mA
220 volt AC	T 250 mA
240 volt AC	T 200 mA



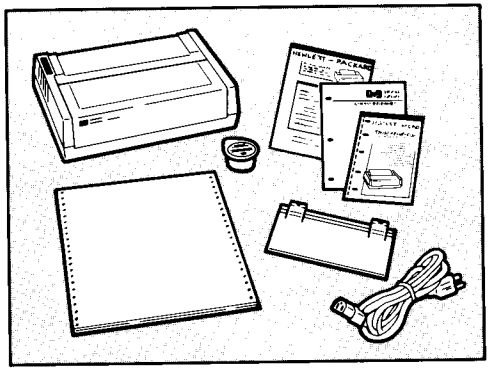


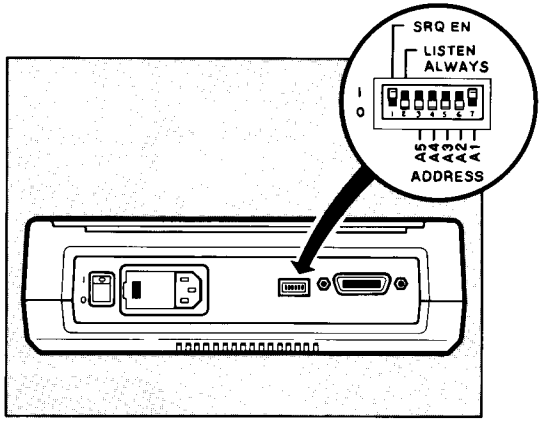


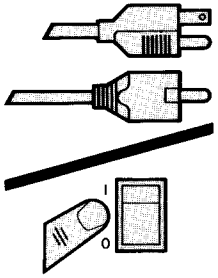




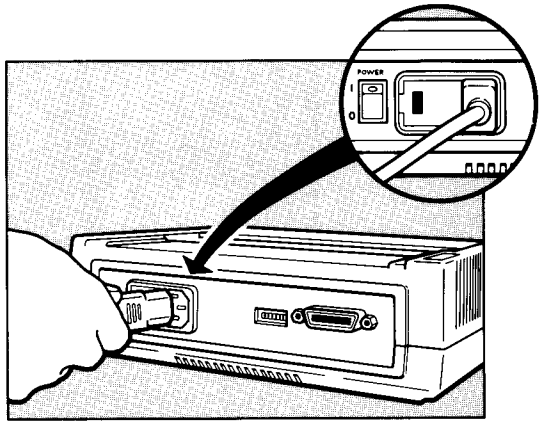
Getting started
Antrieb
Pour commencer
Empezando
Per cominciare
Getting started (Begin)
Start
Begyndelse
Käynnistetään
Å sette i gang

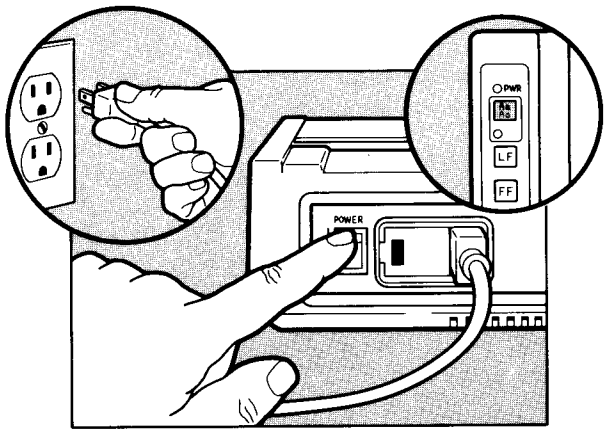


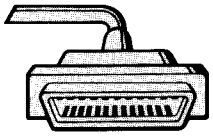




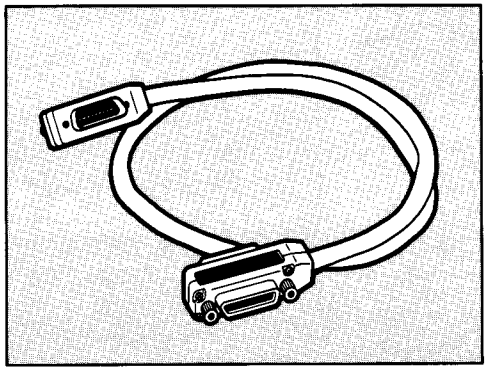
Power on
Starkstrom an
Puissance
Energía
Attivato
Stroom aan
El. på
Strøm sat til
Virta päälle
Strøm på

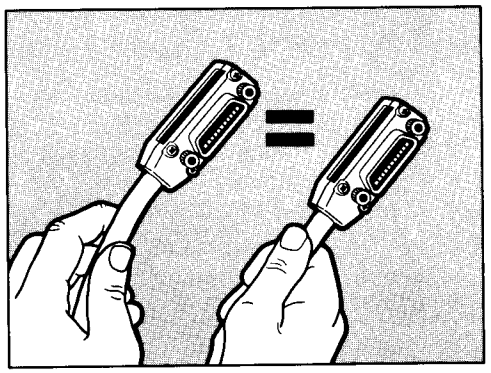


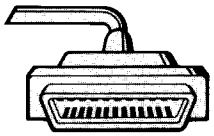




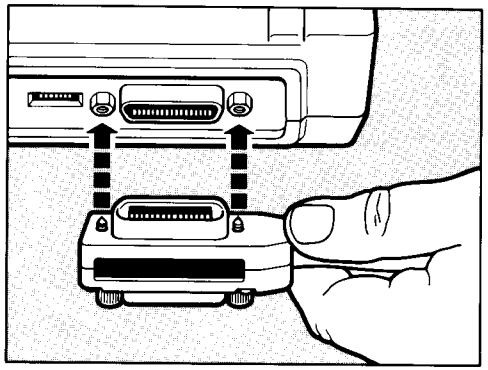
Interface cable
Zwischenkabel
Câble d'interface
Cable de acoplamiento mutuo
Cavo di interfaccia
Wisselwerkende kabel
Kopplingskabel
Graenseflade kabel
Liitentä kaapeli
Koblingsledning mellom enhetene

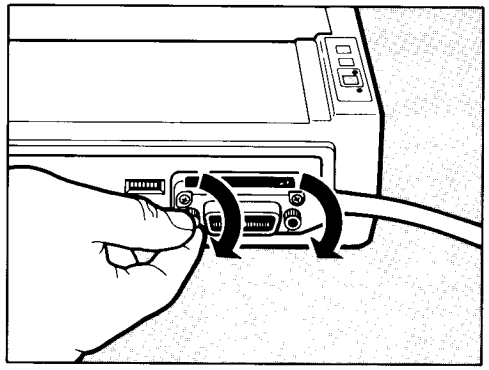


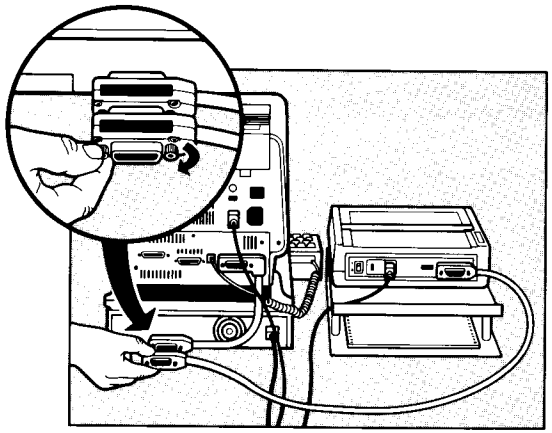




Cable Connection
Kabelverbindung
Connexion du câble
Conexión del cable
Cavo di connessione
Kabel aansluiting
Kabelanslutning
Kabel forbindelse
Kaapeli yhteys
Ledning tilkopling







HP 150 with ThinkJet

Computer configuration:

- Insert the MS-DOS System Master disc and enter P.A.M.
- Touch **DEVICE CONFIG** and **Start Applic** to display the menu shown in Figure 1.

MS-DOS Device Configuration				Main		Active Values	
System Devices							
	Interface	Address	Model	Print Wheel		Interface	Address
PRN:	HP-IB	1	2225A		PLT:	Port2	
LST:	No Device				COM1:	Remote	
AUX:	Remote				COM2:	Port2	

Figure 1 HP 150 MS-DOS Configuration Menu

- Touch the PRN:Interface field and set to "HP-IB" by touching **Previous Choice** or **Next Choice**.
- Touch the PRN:Address field and set the address to "1" by touching **Previous Choice** or **Next Choice**.
- Touch the PRN:Model field and set to "2225A" (82906A if 2225A is not a choice) by touching **Previous Choice** or **Next Choice**.
- Touch **Save Config** to save the printer configuration.
- Touch **Exit CONFIG** to return to P.A.M.
- Touch **terminal**
- Press **Users System** on keyboard
- Touch **Device Control**
- Touch **"TO" Devices**
- Touch **HP-IB Device** so that asterisk appears
- Return to P.A.M. by pressing simultaneously with **Shift** **Stop**

Printer settings:

- Use with the HP-IB configuration switch set as shipped (see Page 11).

HP 150 und ThinkJet

Computerkonfiguration:

- MS-DOS System-Master-Diskette einlegen und P.A.M. aufrufen;
- Innerhalb von P.A.M. **KONFIGURIEREN** und anschließend die Funktion **Applik. starten** wählen. Folgende Bildschirmanzeige erscheint:

MS-DOS Device Configuration · Main Active Values

System Devices

	Interface	Address	Model	Print Wheel		Interface	Address
PRN:	HP-IB	1	2225A		PLT:	Port2	
LST:	No Device				COM1:	Remote	
AUX:	Remote				COM2:	Port2	

Abbildung 1 MS-DOS-Konfigurationsmenü

- Durch Berühren des PRN:-Anschlußfeldes und anschließen des Berühren der Funktionen **Voriger Wert** oder **Nächster Wert** die Schnittstelle als "HP-IB" festlegen:
- Durch Berühren des PRN:-Adressfeldes und der Funktionen **Voriger Wert** oder **Nächster Wert** die Adresse auf "1" setzen:
- Durch Berühren des PRN:-Modellfeldes und der Funktionen **Voriger Wert** oder **Nächster Wert** den Druckertyp "2225A" definieren (82906A, falls 2225A in der Auswahl nicht vorhanden ist);
- Mit der Funktion **Sichere Konfig** die vorgenommene Konfiguration sichern;
- Mit der Funktion **Abschluß KONFIG** in P.A.M. zurückkehren;
- Die Funktion **Terminal** drücken;
- Auf der Tastatur die Taste **Prog System** drücken;
- Die Funktion **Geräte Steuerng*** berühren;
- Die Funktion **Ziel-Geräte*** berühren;
- Durch Berühren **HP-IB-Geräte*** aktivieren (ein * erscheint);
- Durch gleichzeitiges Drücken der **Umschalttaste** und der **Stop-Taste** in P.A.M. zurückkehren.

Konfiguration des Druckers:

- Die Drucker werden mit der richtigen Schaltereinstellung auf der Rückseite geliefert (S. Seite 11).

HP 150 AVEC ThinkJet

Configuration de l'Ordinateur:

- Introduire la disquette Système MS-DOS et entrer dans P.A.M.
- Effleurer **CONFIG. UNITES** et **DEMARRER APPLIC** pour voir apparaître le menu 1)

Configuration Unites MS-DOS Menu Valeurs Modif.

Unités Système

	Interface	Adresse	Modèle	Rosace d' Impression		Interface	Adresse
PRN:	HP-IB	1	2225A		PLT:	Porte2	
LST:	Inactive		Autre		COM1:	Systeme	
AUX:	Systeme				COM2:	Porte2	

Fig. 1 MENU DU HP 150 MS-DOS

- Effleurer LA ZONE "INTERFACE" de PRN, l'initialiser en HP-IB en effleurant **CHOIX PRECEDENT** ou **CHOIX SUIVANT**
- Effleurer la zone adresse de PRN et mettre l'adresse à "1" en effleurant **CHOIX PRECEDENT** ou **CHOIX SUIVANT**
- Effleurer la zone modèle de PRN et le mettre à "2225A" (ou à "82906A" si "2225A" n'est pas disponible) en effleurant **CHOIX PRECEDENT** ou **CHOIX SUIVANT**
- Effleurer **FIGER CONFIG** pour sauvegarder la configuration de l'imprimante
- Effleurer **FIN CONFIG** pour retourner dans l'environnement P.A.M.
- Effleurer **TERMINAL**
- Appuyer **CLES SYSTEME**
- Effleurer **DEVICE CONTROL**
- Effleurer **TO DEVICE**
- Effleurer **HP-IB DEVICE** (pour qu'un astérisque apparaisse)
- Appuyer **SHIFT / STOP**

Préparation de l'imprimante:

- Les commutateurs d'adresse HP-IB gardent leur positionnement usine (voir page 11)

EL HP 150 con la ThinkJet

Configuración del computador:

- Introduzca el disco maestro de MS-DOS y el P.A.M.
- Toque **config disp** y **comienzo aplic** para ver el menú mostrado en la figura 1.

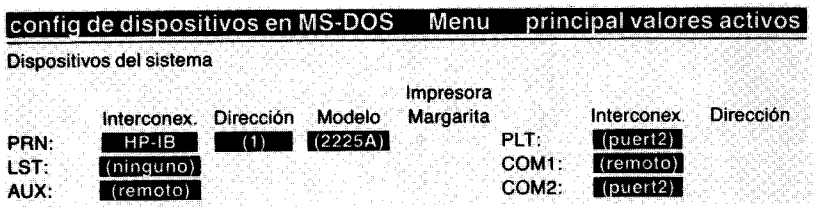


Fig 1 Menú de configuracón MS-DOS HP150.

- Toque el campo PRN: interconex. y fíjelo en HP-IB tocando **opcion ant.** u **opcion sgte.**.
- Toque el campo PRN: dirección y fíjelo en "1" tocando **opcion ant.** u **opcion sgte.**.
- Toque el campo PRN: modelo y fíjelo en "2225A" 82906A si no existe la opcion 2225A tocando **opcion ant.** u **opcion sgte.**.
- Toque **guardar config** para guardar 1 configuración
- Toque **salir de config** para volver al P.A.M.
- Toque **terminal**
- Oprima **usuario sistema** en el teclado
- Toque **control disp.**
- Toque **"a" disp.**
- Toque **a disp. HP-IB** para que aparezca un asterisco.
- Oprima **cambio alto**, en el teclado, para volver al P.A.M.

Configuración impresora:

- Usela con la configuración HP-IB que viene fijada ver página 11.

L'HP 150 con l'ThinkJet

Configurazione del computer:

- Inserire il disco contenente l' MS-DOS (sys master) ed entrare nel P.A.M.
- Toccare **MS-DOS config** e **attiva applic** per visualizzare il menu mostrato in Figura 1.

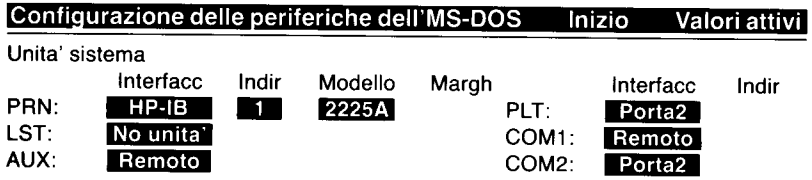


Figura 1 Menu di configurazione di sistema dell' HP150

- Toccare il campo PRN: interfacc e fissarlo su "HP-IB" toccando **scelta preced** o **scelta seguente**.
- Toccare il campo PRN: indir e fissare l'indirizzo A "1" toccando **scelta preced** o **scelta seguente**.
- Toccare il campo PRN: modello e fissarlo su "2225A" (82906A se la scelta 2225A non e' contemplata) toccando **scelta preced** o **scelta seguente**.
- Toccare **conserva config** per salvare la configurazione della stampante
- Toccare **esci da config** per tornare al P.A.M.
- Toccare **termin** quindi premere il tasto **utente sist** (sulla tastiera USASCII **user system**)
- Toccare in sequenza: **contr unita'** ([device control])
  unita' di dest (["to device])
- Toccare **unita' HP-IB** (HP-IB device) in modo che nell'etichetta toccata compaia un asterisco
- Premere contemporaneamente i tasti **shift** e **stop** per tornare al P.A.M.

Selettori della stampante:

- Con la configurazione per l'interfaccia HP-IB usare la stessa configurazione dei selettori con cui vi e' stata spedita la stampante (vedi página 11).

HP 150 met ThinkJet

Computer configuratie:

- plaats de MS-DOS systeemschijf en laadt P.A.M.
- tip **randapparaat configuratie** en **begin toepass**. het menu van figuur 1 verschijnt op uw beeldscherm:

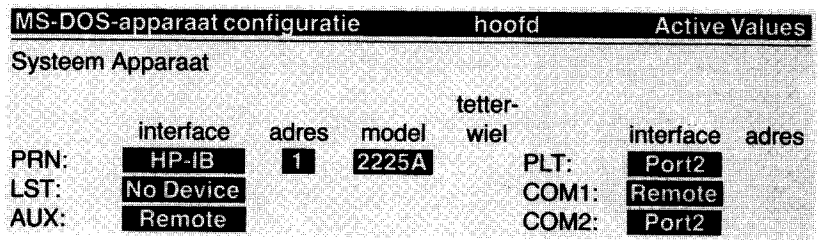


Fig 1 HP150 MS-DOS configuratie menu

- Tip het PRN: interface-veld aan en verander de instelling in HP-IB door het aantippen van **vorige keuze** of **volgende keuze**
- Tip het PRN:adres-veld aan en selekteer adres '1' door het aantippen van **vorige keuze** of **volgende keuze**
- Tip het PRN:model-veld aan en kies '2225A' (wanneer 2225A op uw computer geen keuze is, kies dan model 82906A) door het aantippen van **vorige keuze** of **volgende keuze**
- Tip **bewaar config** om de printerconfiguratie op te slaan
- Tip **verlaat config** om terug te keren naar P.A.M.
- Tip **terminal**
- Druk 'def/systeem' in
- Tip **apparaat besturen**
- Tip naar' apparaat'
- Tip HP-IB apparaat' zodat in dit veld ee sterretje verschijnt
- Druk op **wissel"stop** om terug te keren naar het P.A.M. menu

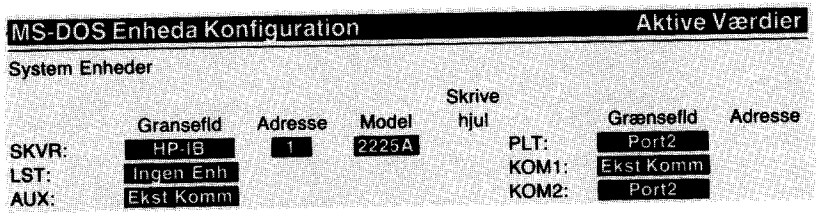
Configuratie voor drukkers:

- Gebruik drukker met HP-IB configuratie zo als afgelverd. (zie bladzijde 11).

HP 150 med ThinkJet

Computer konfiguration:

- Isæt MS-DOS System Master disken og ga ind i P.A.M.
- Berør **ENHEDS KONFIG** og **Start Applik**. for at Fa menuen vist pa fig 1 frem pa skærmen.



Figur 1 HP 150 MS-DOS Konfigurationsmenu

- Berør SKVR:Grænseflade-feltet og sæt det til "HP-IB" ved at berøre **Forrige Valg** eller **Næste Valg**
- Berør SKVR:Adresse-feltet og sæt det til "1" ved at berøre **Forrige Valg** eller **Næste Valg**.
- Berør SKVR:Model-felte: og sæt det til 2225A" (82906A hvis 2225A ikke er en valgmulighed) ved at berør **Forrige Valg** eller **Næste Valg**.
- Berør **Gem Konfig** for at gemme skrivere-konfigurationen.
- Berør **Slut Konfig** for at returnere til P.A.M.
- Berør **Terminal**.
- Tryk pa **Bruger System**.
- Berør **enhed kontrol** ("[device control]).
- Berør **"til enheder** ("["to" devices]).
- Berør **HP-IB ENHED** (= [HP-IB DEVICE]) saledes at en stjerne fremkommer.
- Tryk **Skift** **Stop** for at returnere til P.A.M.

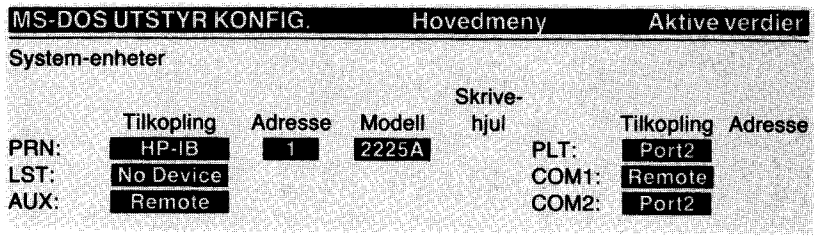
Skriver indstilling:

- Anvend HP-IB konfigurations-konlaktindstillingen som den var da de modtog skriveren. Kontaktirndstillingen er vist pa side 11.

HP 150 med ThinkJet

Konfigurasjon:

- Sett inn MS-DOS programdisketten og trykk 'Les disk på nytt'.
- Berør **UTSTYR KONFIG** og **Start program** for å frem manyen som er vist i figur 1.



Figur 1 HP150 MS-DOS Konfigurasjons-meny

- Berør etiketten for Tilkopling merket PRN: og innstill denne på HP-IB ved å berøre **Foreg. valg** eller **neste valg**.
- Berør etiketten for Adresse (PRN:) og sett adressen til "1" ved å berøre **Foreg. valg** eller **Neste valg**.
- Berør etiketten for Modell (PRN:) og innstill på 2225A (eller 82906A hvis du ikke kan velge 2225A) ved å berøre **Foreg. valg** eller **Neste valg**.
- Berør **Lagre konfig** for å lagre skriver-konfigurasjonen.
- Berør **Avslutt KONFIG** for å vende tilbake til P.A.M.
- Berør **Terminal**
- Trykk **Bruker system** (på tastaturet)
- Trykk **Device Control**
- Trykk **"To" devices**
- Trykk **HP-IB DEVICE** slik at en asterisk vises (*)
- Trykk **Skift** og **Stopp** (på tastaturet) samtidig for å returnere til P.A.M.

Skriveroppsett:

- Med HP-IB konfigurasjon skal bryterne være innstilt som de var da du mottok maskinen (se side 11).

HP 150 och ThinkJet

Anpassning av dator:

- Montera den diskett som är märkt "SYS_MASTER" och se till att P.A.M. visas på bildskärmen.
- Starta konfigurationsprogrammet genom att vidröra
- **KONFIGURATION** och därefter **Starta program**. Följande bild kommer att visas:

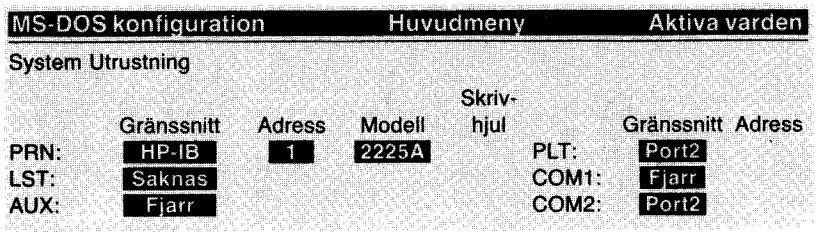


Bild 1 HP 150 MS-DOS Konfigurationsmeny

- Vidrör det fält som är märkt PRN: och sätt gränssnittet till "HP-IB" genom att vidröra **Foreg val** eller **Nasta val**.
- Vidrör adressfältet för PRN: och sätt adressen till "1" genom att vidröra **Foreg val** eller **Nasta val**.
- Vidrör modellfältet för PRN: och ändra typ av skrivare till "2225A" genom att vidröra **Foreg val** eller **Nasta val**. Beroende på vilken version av operativsystemet som används kan denna model-lbeteckning saknas. Sätt i så fall detta fält till "82906A".
- Vidrör den funktionstangent som är märkt **Spara konfig**" så att denna konfiguration lagras.
- Vidrör **Avsluta** för att återå till P.A.M.
- Vidrör den funktionstangent som är märkt **Terminal**.
- Tryck på tangenten **Funktioner** på tangentbordet.
- Vidrör **styr utrustn** (Device control).
- Vidrör **snd till** ("to" devices).
- Vidrör **HP-IB UTRUSTN** (HP-IB DEVICE) så att en stjärna visas i detta fält.
- Tyrck på **Skift** **Stopp** (Shift/Stop) för att återvända till P.A.M.

Anpassning av skrivare:

- Använd den HP-IB konfiguration som är fördefinierad när skrivaren levereras (enligt p. 11).

HP 150 ja ThinkJet

Tietokoneen laiteasetus:

- Aseta MS-DOS System Master (KJ_kanta) -levy asemaan ja lataa P.A.M.
- Kosketa **LAITEASETUS** ja Aloita sovellus saadaksesi valintanäytön, joka on kuvassa 1.

MS-DOS LAITTEISTOASETUKSET PAATASO Aktiivit arvot

Järjestelmälaitteet

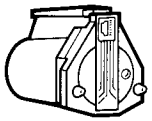
	Liitäntä	Osoite	Malli	Kirjasin-kiekko		Liitäntä	Osoite
PRN:	HP-IB	1	2225A		PLT:	Portti2	
LST:	Ei lait.				COM1:	Etais	
AUX:	Etais				COM2:	Portti2	

Kuva 1 HP 150 MS-DOS Laiteasetus valintanäyttö

- Kosketa PRN:Liitäntä -kenttää ja aseta siihen "HP-IB" koskettamalla **Edell. valinta** tai **Seuraava valinta**
- Kosketa PRN:Osoite -kenttää ja aseta osoitteeksi "1" koskettamalla **Edell. valinta** tai **Seuraava valinta**
- Kosketa PRN:Malli -kenttää ja aseta siihen "2225A" (82906A jos 2225A ei ole valillavissa) koskettamalla **Edell. valinta** tai **Seuraava valinta**
- **Talleta asetus** koskettamalla Talleta asetus
- Palaa takaisin P.A.M.:iin koskettamalla **Lopeta ASETUS**
- Kosketa **Paate**
- Paina **Omat Jarj-nappainta**
- Kosketa **laiteohjaus**
- Kosketa **kohdelaitteet**
- Kosketa **HP-IB/laite** niin että tähti tulee näkyviin
- Palaa P.A.M.:iin painamalla **Vaihto** **Pysayta**

Kirjoittimen asetus:

- Käytä HP-IB-liitännän kanssa kirjoittimessa valmiina olevaa kytkinasetusta (katso p. 77)



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Druckkopf-Möglichkeiten, s. E-2.
Scelta testine stampa, pagina E-2.
Selección de cabeza de impresión, página E-2.
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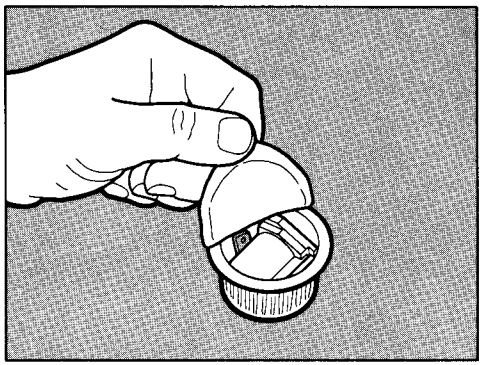
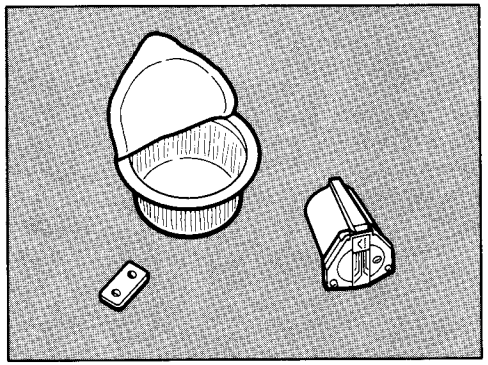
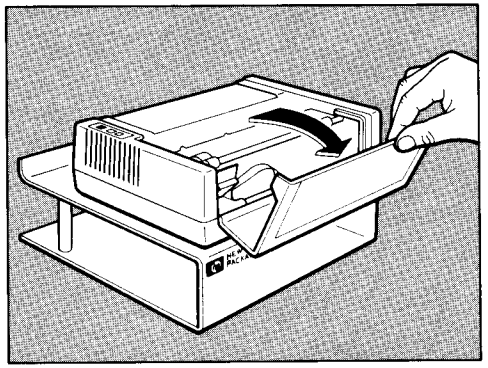
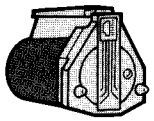
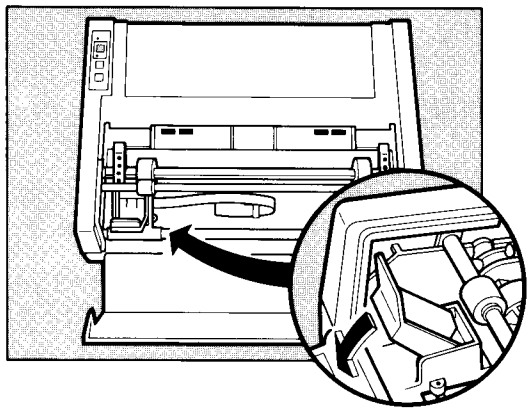
Kirjoituspääte valinnat, sivu E-2.
Skrivehodefunksjoner, side E-2.

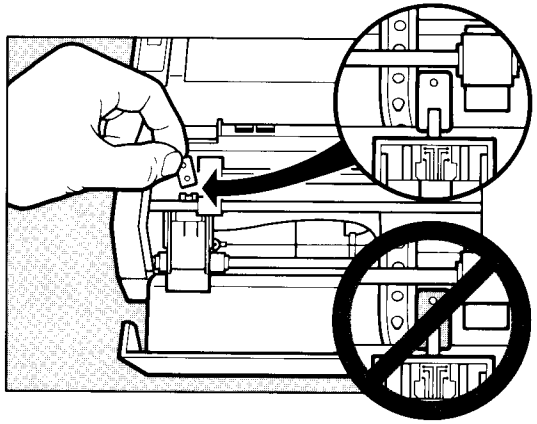


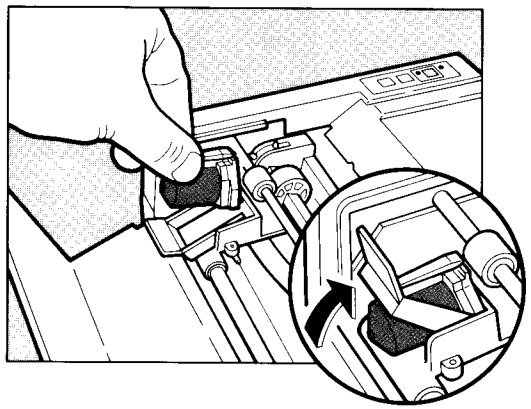


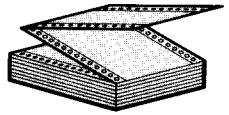


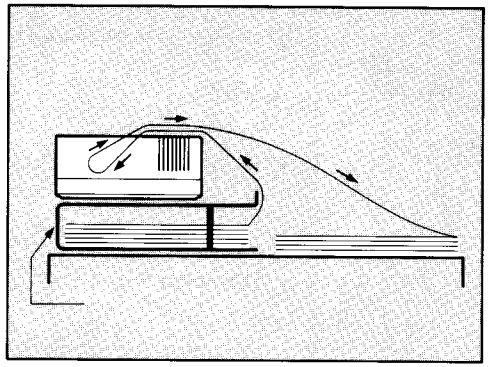


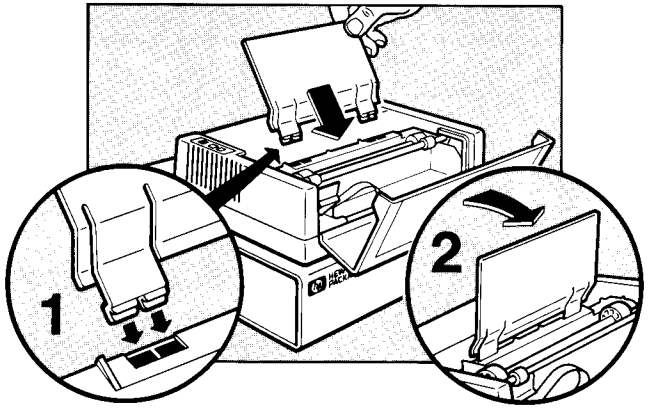








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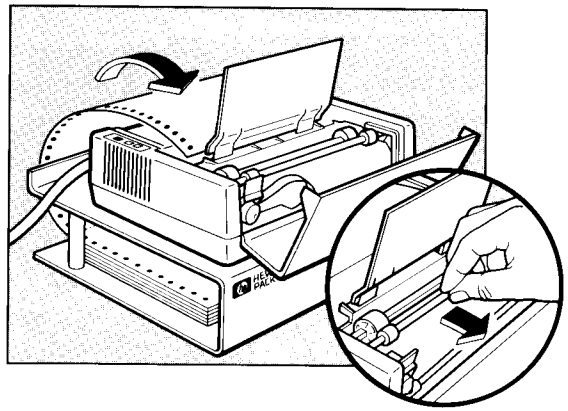
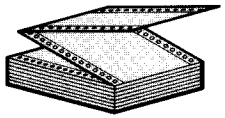
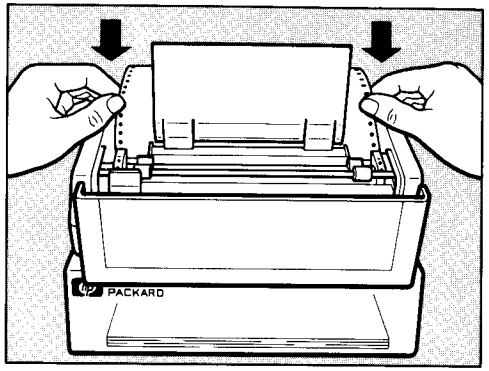
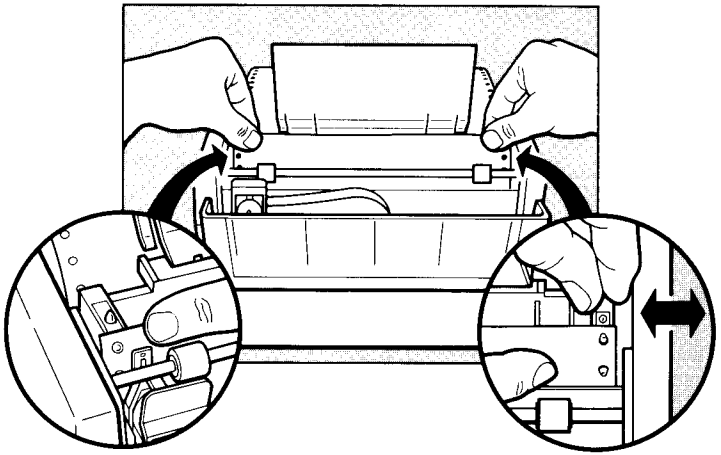
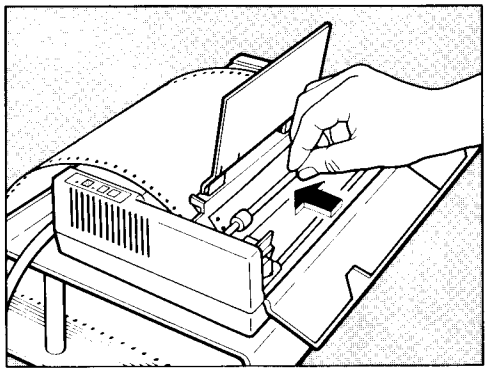
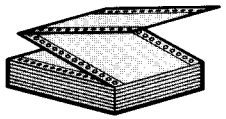


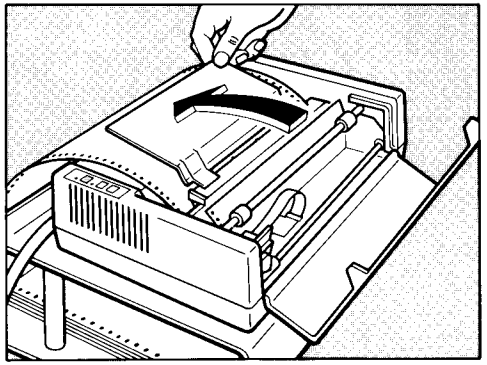


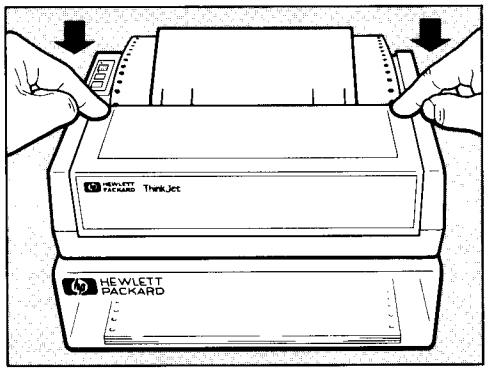

PACKARD

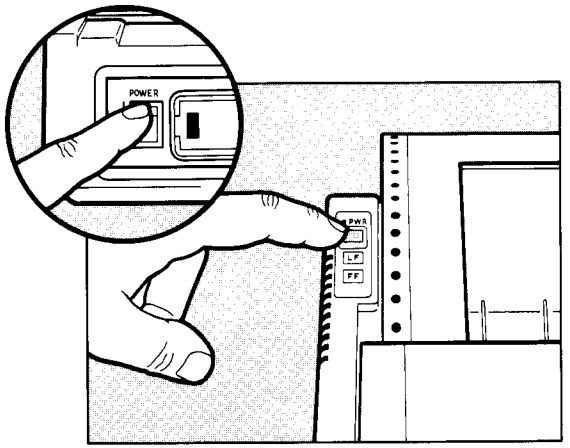









HEWLETT PACKARD ThinkJet
HEWLETT PACKARD


POWER
PWR
LF
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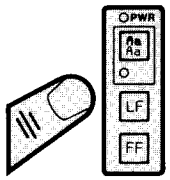
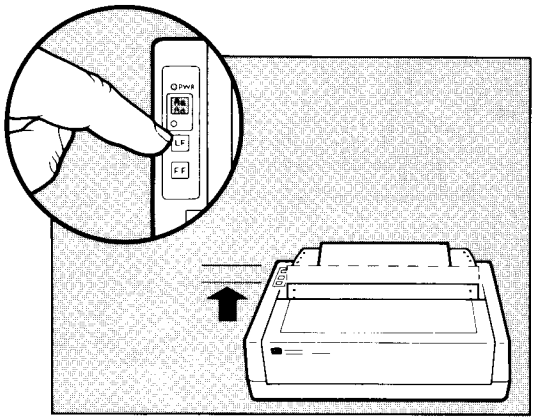
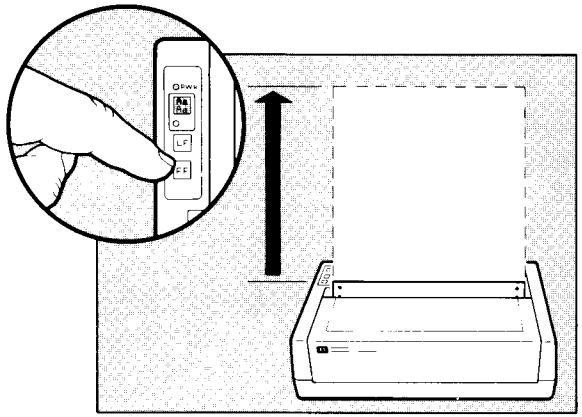
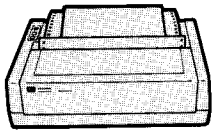








Top of form is set to the current line each time the printer is turned on or the blue button is pushed.

Seitenvorschub wird immer auf die aktuelle Zeile gesetzt, wenn der Drucker eingeschaltet oder der blaue Knopf gedrückt wird.

L'imprimante se positionne en HAUT DE PAGE sur la ligne en cours à chaque remise en marche, ou à chaque fois que vous pressez la touche bleue.

El límite superior del formato se fija en la línea en que se encuentra la cabeza cada vez que se enciende la impresora o se oprime el botón azul.

L'inizio della pagina é fissato alla linea corrente ogni volta che la stampante viene accesa o il pulsante blu viene premuto.

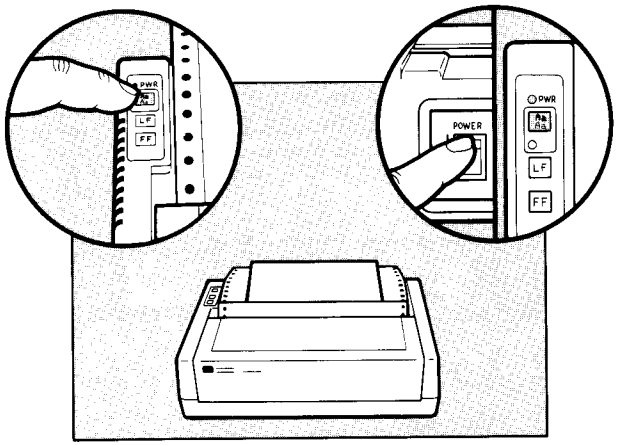
De bladzijde bovenkant wordt ingesteld op de huidige lijn, waar de printkop staat, iedere keer wanneer de printer aangezet wordt of wanneer de blauwe knop wordt ingedrukt.

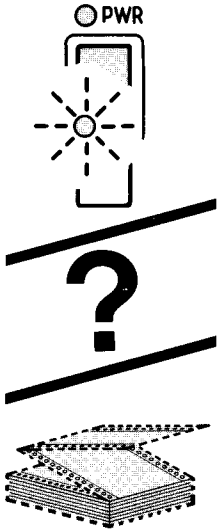
Skrivehovedet vil være i startposition (d.v.s. den linie, hvor skrivehovedet nu befinder sig vil blive toppen af papiret) hver gang skriveren tændes eller hver gang der trykkes på den blå tast.

Når skriveren slås på eller den blå knappen trykkes inn, vil skriveren være innstilt i skriveposisjon.

Skrivhuvudets startpunkt ("Top Of Form") i förhållande till papperet bestäms när skrivaren slås på eller när den blå knappen trycks ned.

Sivun yläreuna asettuu aina sen hetkiselle riville, kun virta kytketään päälle tai kun painetaan sinistä painiketta.




PWR
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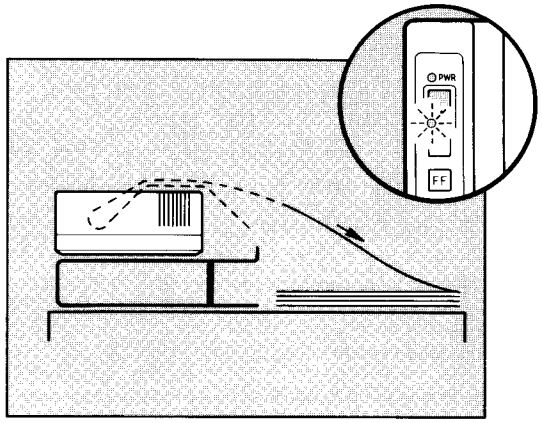
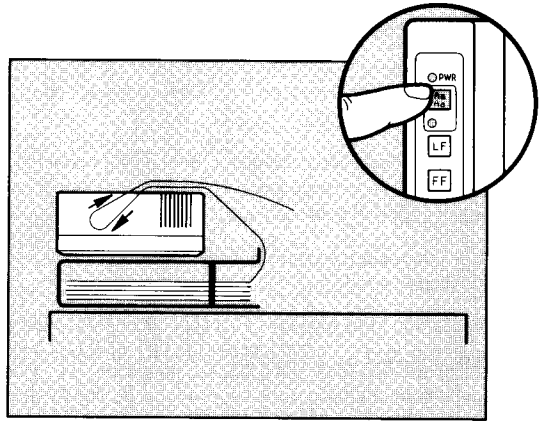

PWR
FF


PWR
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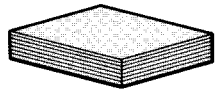
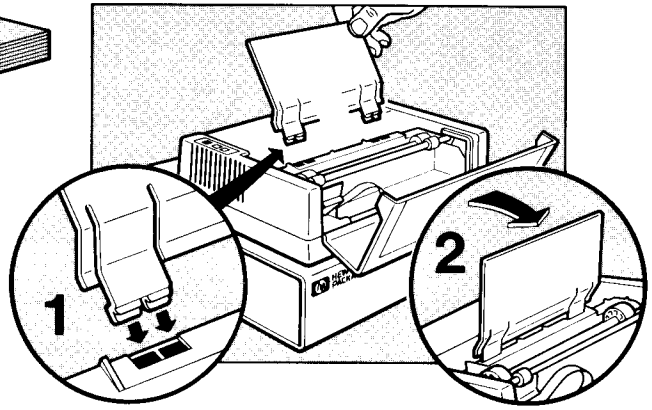
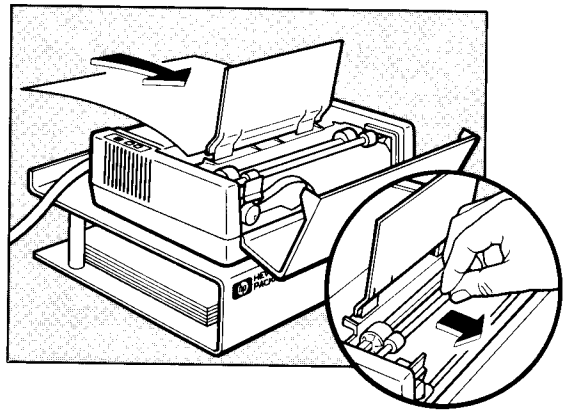
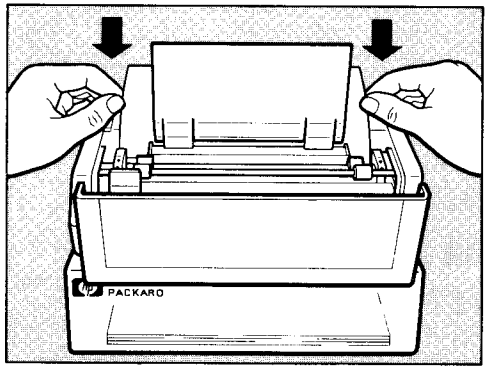
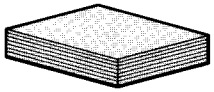
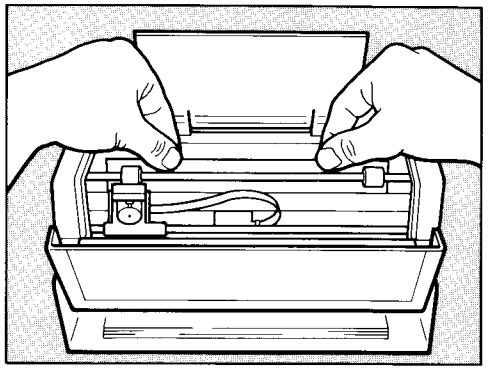


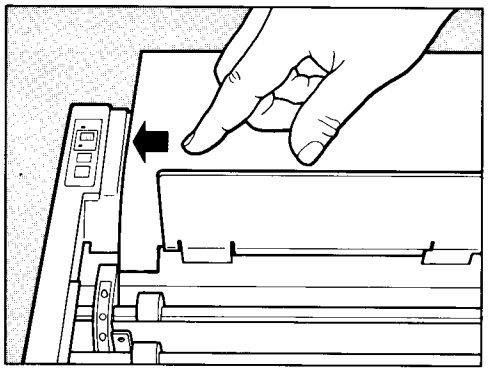

1
2

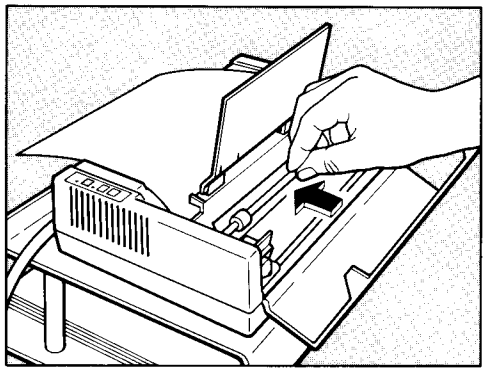


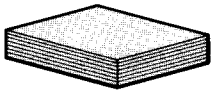

PACKARD

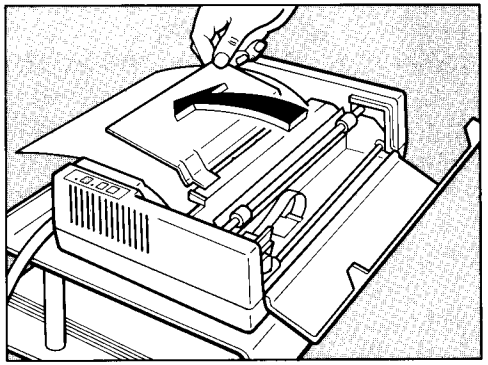


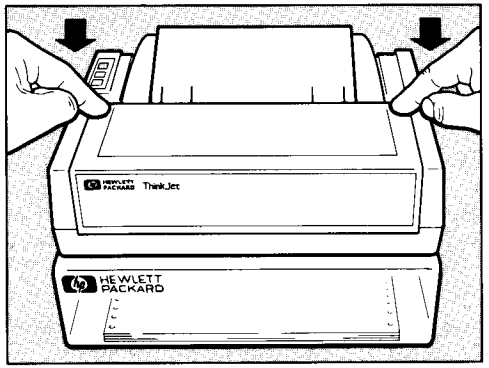


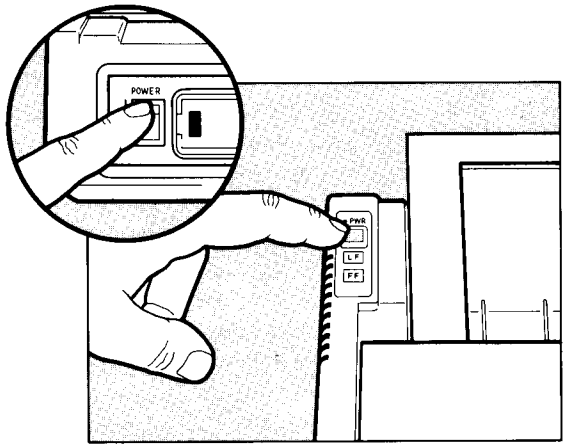


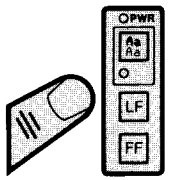


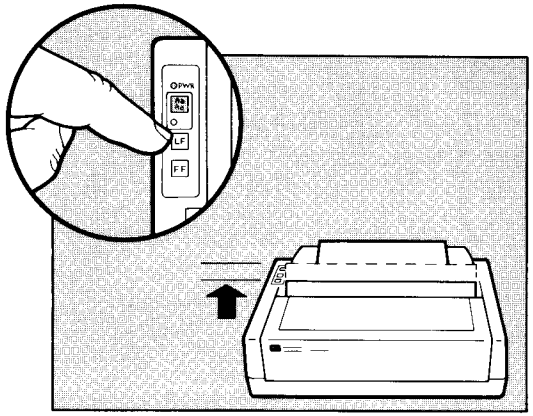


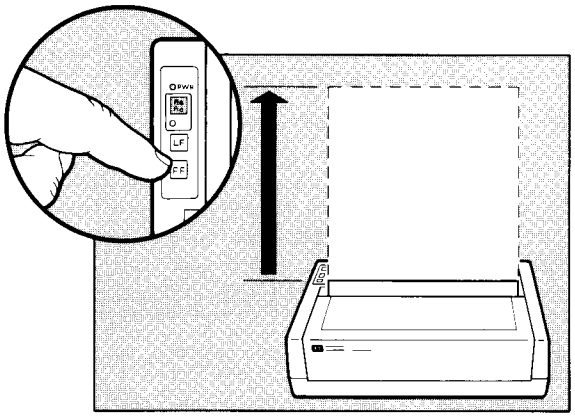


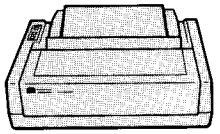

HEWLETT PACKARD
ThinkJet
HEWLETT PACKARD


POWER
PWR
LF
FF









Top of form is set to the current line each time the printer is turned on or the blue button is pushed.

Seitenvorschub wird immer auf die aktuelle Zeile gesetzt, wenn der Drucker eingeschaltet oder der blaue Knopf gedrückt wird.

L'imprimante se positionne en HAUT DE PAGE sur la ligne en cours à chaque remise en marche, ou à chaque fois que vous pressez la touche bleue.

El límite superior del formato se fija en la línea en que se encuentra la cabeza cada vez que se enciende la impresora o se oprime el botón azul.

L'inizio della pagina e' fissato alla linea corrente ogni volta che la stampante viene accesa o il pulsante blu viene premuto.

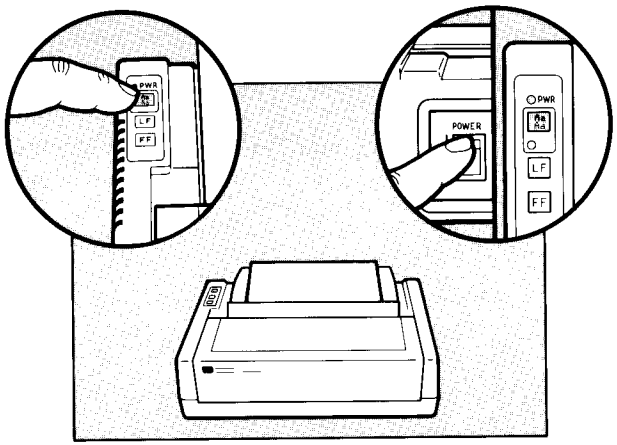
De bladzijde bovenkant wordt ingesteld op de huidige lijn, waar de printkop staat, iedere keer wanneer de printer aangezet wordt of wanneer de blauwe knop wordt ingedrukt.

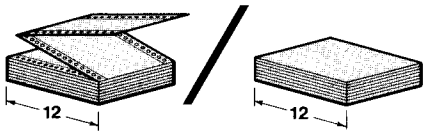
Skrivehouedet vil vare i startposition (d.v.s. dem linje, hvor shrivehovedet er i postion vil blive toppen of papiret) hver gang shriveren tandes eller hver gang der trykkes p& den blå tast.

Når skriveren slås på eller den blå knappen trykkes inn, vil skriveren være innstilt i skriveposisjon.

Skrivhuvudets startpunkt ("Top Of Form") i förhållande till papperet bestäms när skrivaren slås på eller när den blå knappen trycks ned.

Sivun yläreunà asettuu aina sen hetkiselle riville, kun virta kytketään päälle tai kun painetaan sinistä painiketta.





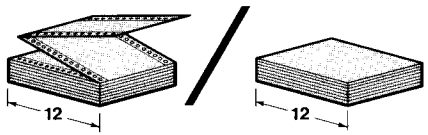
Using 12″ paper

- Touch **Terminal**
- Touch **Display Functions** so that asterisk appears
- (Touch **Remote Mode** if asterisk is displayed so that asterisk disappears.)
- Press **DEL ESC**
- Type &ℓ72P
- Touch **Display Functions** so that asterisk disappears.
- (Touch **Remote Mode** if your 150 has been operated in remote mode before so that asterisk reappears)
- Press **User System**
- Touch **Device Control**
- Touch **Copy Line**
- Press **shift** **stop** to return to P.A.M.

If you use standard 12 inch fanfold paper, you have to go through this procedure to get a correct form feed in the following occasions:

1. Every time you turn on your ThinkJet
2. Every time you turn on your HP 150
3. Every time you perform a hard reset on your HP 150
   (This is **shift** **CTRL** **Reset Break**)

If you can define the page length for your printer in your Application Software Package, you will not need this procedure.



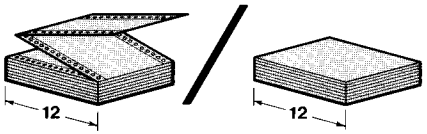
Einstellen der Seitenlänge auf 12 Zoll:

- Wählen Sie **Terminal**
- Wählen Sie **Funkt. Anzeige** (Display Functions) so daß im Feld ein "*" erscheint.
- Wählen Sie **Externer Rechner** (Remote Mode) falls im Feld ein "*" angezeigt wird, so daß das "*" verschwindet.
- Drücken Sie die **DEL/ESC** Taste und geben Sie anschließend folgende Zeichenfolge ein: &ℓ72P
- Wählen Sie **Funkt. Anzeige** (Display Functions) so daß das "*" wieder verschwindet.
- Wählen Sie gegebenenfalls **Externer Rechner** (Remote Mode) so daß das "*" wieder im Feld erscheint.
- Drücken Sie die Taste **Prog System**
- Wählen Sie **Geräte Steuerung** (Device Control)
- Wählen Sie **Zeile Kopieren** (Copy Line)
- Drücken Sie gleichzeitig die **Umschalttaste** und die **Stop -Taste**

Bei Verwendung von zwölf Zoll Endlos Computerpapier müssen Sie bei den folgenden drei Gelegenheiten die Seitenlänge auf zwölf Zoll einstellen um den richtigen Seitenvorschub zu erreichen:

1. Wenn Sie Ihren Drucker einschalten
2. Wenn Sie Ihren HP 150 einschalten
3. Wenn Sie einen "Hard Reset" **Umschalttaste** **KTRL** **Reset/Break** an Ihrer HP 150 durchführen.

Es sei denn Ihr Software-Packet erlaubt Ihnen die Seitenlänge im Konfigurationsmenü vorzugeben.



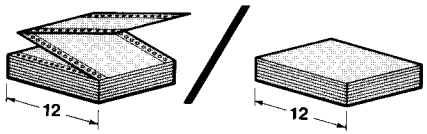
Réglage du saut de page sur 12 pouces:

- Effleurer **Terminal**
- Effleurer **Affich Fonct** (Display Functions) pour faire apparaitre l'astérisque.
- (Effleurer **Connecte** (Remote Mode) pour ôter l'astérisque si celle-ci y figurait)
- Presser **SUP ESC** (del ESC)
- Taper &ℓ72P
- Effleurer **Affich Funct** (Display Functions) pour ôter l'astérisque
- (Effleurer **Connecte** (Remote Mode) pour rétablir l'astérisque si nécessaire)
- Presser **Cles Sys** (User System)
- Effleurer **Gestion Unites** (Device Control)
- Effleurer **Copier Ligne** (Copy Line)
- Presser et **Stop** pour revenir à P.A.M.

Si vous utilisez du papier en continu au standard de 12 pouces, il vous faut exécuter la procédure indiquée ci-dessus de façon à obtenir un saut de page correct à chaque fois que:

1. vous mettez sous tension votre imprimante à jet d'encre
2. vous mettez sous tension votre HP 150
3. vous effectuez une remise à zéro complète du système HP 150 (en pressant simultanément **CTRL** et **R.A.Z. Halte**

Si vous avez la possibilité de pré-définir le saut de page dans vos Logiciels d'Applications, il est inutile d'exécuter cette procédure.



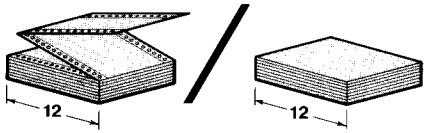
Cómo configurar la impresora para papel de 12 pulgadas:

- toque **terminal**
- toque **mostrar func** (display functions) para que aparezca un asterisco
- toque **modo remoto** (remote mode) si aparece un asterisco, para que desaparezca
- oprima **ELIM ESC** (del ESC)
- escriba &ℓ72P
- toque **mostrar func** (display functions) para que se desaparezca el asterisco
- toque **modo remoto** (remote mode) si su HP 150 estaba operando en modo remoto, para que vuelva a sparecer el asterisco
- oprima **usuario sistema** (user system)
- toque **control disp.** (device control)
- toque **copiar linea** (copy line)
- oprima **cambio** **alto** para volver al p.a.m.

Si usa papel contínuo de 12 pulgadas, debe sequir lo anteriormente señalado para conseguir un salto de página correcto en las siguientes ocasiones:

1. cada vez que encienda su impresora ThinkJet
2. cada vez que encienda su HP 150
3. cada vez que realice una restauración completa del sistema (esto es: **cambio** **CTRL** **rest interrup**

Si puede definir la longitud del papel para la impresora en su programa de aplicación, no necesitará este procedimiento.



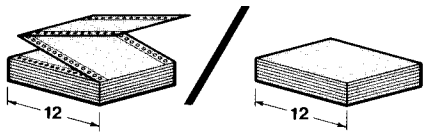
Come fissare la lunghezza della pagina a 12 pollici (inch):

- Toccate **Termin** (Terminal)
- Toccate **Mostra Comandi** (display functions) in modo che compaia l'asterisco
- (Toccate **Modo Remoto** (remote mode) in modo che l'asterisco non compaia)
- Premete **DEL ESC**
- Battete &ℓ72P
- (Toccate **Modo Remoto** (remote mode) per far riapparire l'asterisco, se volete che il vostro HP 150 operi come computer o come terminale)
- Premete **Utente Sist** (user system)
- Toccate **contr unita** (device control)
- Toccate **Copia Linea** (copy line)
- Premete **Shift** **Stop** per tornare al menu del P.A.M.

Se usate carta a modulo continuo da 12 pollici, per ottenere una pagina formattata correttamente, dovete eseguire questa procedura nelle seguenti occasioni:

1. ogni volta che accendete la ThinkJet
2. ogni volta che accendete il vostro HP 150
3. ogni volta che effettuate un "hard reset" del HP 150 (cioè **(CTRL** **Shift** **Reset**)

Se la lunghezza della pagina di stampa può essere definita all'interno dei programmi applicativi software, non sarà necessario eseguize questa procedura.



Hoe stel ik de papierlengte in op 12 inch:

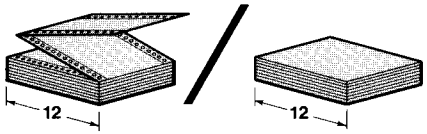
- Tip **Terminal**
- Tip **Funkties Zichtb** (Display Functions), zodat de asterix zichtbaar is
- Tip **Remote** (Remote Mode), wanneer de asterix zichtbaar was, om de asterix te laten verdwijnen.
- Druk **DEL ESC** (Del ESC)
- Type &ℓ72P
- Tip **Funkties Zichtb** (Display Functions), zodat de asterix verdwijnt
- Tip **Remote** (Remote Mode), wanneer uw HP 150 in remote mode werkte, de asterix wordt weer zichtbaar.
- Druk **Def System** (user system)
- Tip **Apparaat Besturen** (device control)
- Tip **Kopieer Regel** (copy line)
- Druk op **Wissel** **Stop** om terug te keren naar P.A.M.

Wanneer u standaard 12 inch kettingpapier gebruikt, moet u deze procedure volgen iedere keer wanneer u:

1. de ThinkJet inschakelt.
2. de HP 150 inschakelt.

   CNTRL **Wissel** **Reset** geeft op de HP 150

Als u in uw applicatie software de papierlengte moet instellen, is deze procedure overbodig.



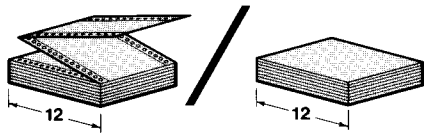
Sadan sættes sidelængden til 12 tommer:

- Berør **Terminal**
- Berør **Vis Funktnr** (Display Functns) saledes at en stjerne fremkommer.
- Berør **Ekstern Komm** (Remote Mode) hvis der er en stjerne; sa stjernen forsvinder.
- Tryk **SLET/ESC**
- Indtast &ℓ72P
- Berør **Vis Funktnr** (Display Functns) saledes at en stjerne fremkommer.
- Berør **Ekstern Komm** (Remote Mode) hvis Deres HP 150 er i Ekstern kommunikations-status; saledes at en stjerne fremkommer.
- Tryk **Bruger System**
- Berør **Enhed Kontrol** (Device Control)
- berør **Kopier Linie** (Copy Line)
- Tryk **Skift** **Stop** for at returnere til P.A.M.

Hvis De anvender 12 tommer fanfold-papir, skal De udfœre denne procedure for at opna korrekt papirfremfœrsel i fœlgende situationer:

1. Hver gang Deres ThinkJet skriver tændes.
2. Hver gang Deres HP 150 tændes.
3. Hver gang der har været udfœrt en total reset pa Deres HP 150 (hver gang der er trykket pa **KONTROL** **Skift** **Reset/Afbryd**).

Hvis De kan definere sidelængden for Deres skriver i Deres program, behœver De ikke at udfœre denne procedure.



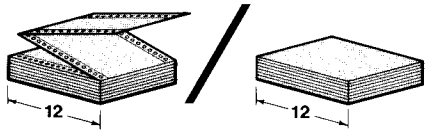
Slik setter du 12 tommers sidelengde:

- Berør **Terminal**
- Berør **Display Functions** slik at
- Det kommer en stjerne i etiketten. (Hvis det vises en stjerne i etiketten **Remote Mode**, berør stiketten så stjernen forsvinner).
- Trykk **FJERN ESC** på tastaturet
- Skriv inn &ℓ72P
- Berør **Display Functions** slik at stjernen i etiketten forsvinner. (Berør **Remote Mode** slik at stjernen kommer til syne, dersom HP 150 skal brukes i REMOTE MODE)
- Trykk **Bruker System** på tastaturet
- Berør **Device Control**
- Berør **Copy Line**
- Trykk **Skift** og **Stopp** på tastaturet samtidig for å vende tilbake til program-assistenen.

Hvis du bruker standard 12 tommers papir på løpende bane, må du gå gjennom denne prosedyren:

1) Hver gang du slår på ThinkJet-skriveren.
2) Hver gang du slår på HP 150
3) Hver gang du foretar en omstart ved hjelp av **Skift** **KONTROLL** **Omstart**

Hvis du kan definere sidelengden 1 brukerprogrammet, trenger du ikke gjennomføre denne prosedyren.



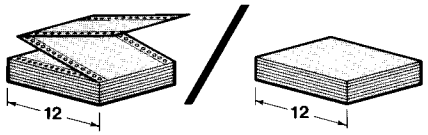
Tolv tums papperslängd för skrivaren ställs in på följande sätt:

- Vidrör **Terminal**.
- Vidrör **VISA ASCII** (DISPLAY FUNCTNS) så att en stjärna visas i detta fält.
- Vidrör **FJARR** (REMOTE MODE) om det finns en stjärna i detta fält, så att denna fårsvinner.
- Tryck på **TA BORT/ESC** på tangentborcet.
- Skriv &ℓ72P
- Vidrör **VISA ASCII** (DISPLAY FUNCTNS) så att stjärnan försvinner.
- Vidrör **FJARR** (REMOTE MODE) så att en stjärna visas i detta fält. Detta gäller endast om denna funktion var aktiverad tidicare, enligt ovan.
- Tryck på **Funktioner**.
- Vidrör **styre utrustn** (device control).
- Vidrör **KOPIERA RAD** (COPY LINE)
- Tyrck på **Skift** **Stopp** (Shift Stop) för att återvända till P.A.M.

Om du använder dig av 12 tums vikt standardpapper, måste du gå igenom ovanstående procedur vid följande tillfällen för att få en korrekt pappersmatning:

1. Varje gång du slår av skrivaren.
2. Varje gång du slår av HP 150.
3. Varje gång du genomför en "hård" återställning **CTRL** **Skift** **Återstall** av HP 150.

Om skrivarens sidlängd kan defineeras från det program du använder, behöver du inte gå igenom denna procedur.



12 tuuman sivun pituuden asetus:

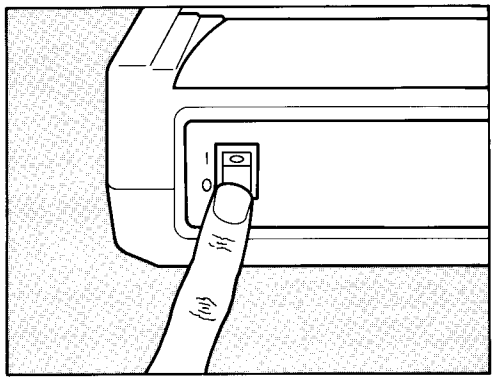
- Kosketa **Paate**
- Kosketa **Nayta toiminto** (Display Functions) niin että tähti ilmestyy
- (Kosketa **Etaiskaytto** (Remote Mode) jos tähti näkyy, niin että se häviää)
- Paina **POISTA VARA** (Del ESC)
- Kosketa &ℓ72P
- Kisketa **Nayta toiminto** (Display Functions) niin että tähti häviää.
- (Kosketa **Etaiskaytto** (Remote Mode) jos HP 150:si on aiemmin käytetty etäiskäytössä, niin että tähti tulee uudelleen näkyviin)
- Paina **Oma Jarj** (User System)
- Kosketa **Laiteohjaus** (device control)
- Kosketa **Kopioi rivi** (copy line)
- Paina **Vaihto Pysayta** palataksesi P.A.M:iin

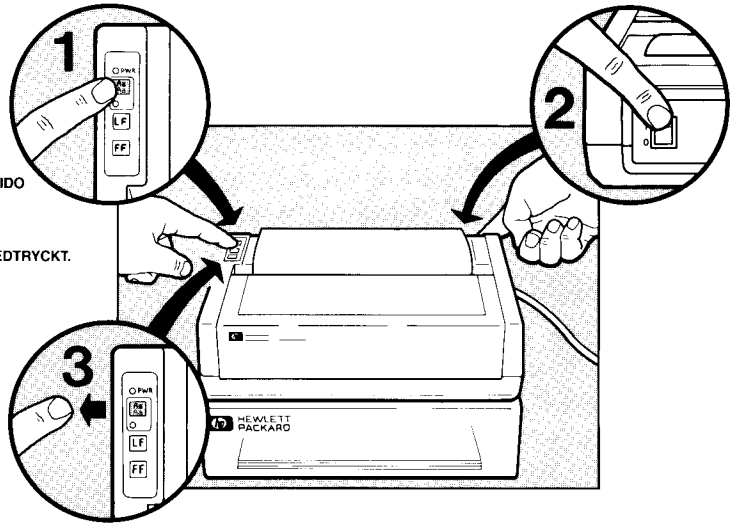
Jos käytät 12 tuuman jatkolomaketta, sinun täytyy toimia edellä kuvatusti oikean sivun pituudenasettamiseksi seuraavissa tilanteissa:

1. Aina kytkiessäsi ThinkJet-kirjoittimen päälle.
2. Aina kytkiessäsi HP 150:n pääle.
3. Aina tehdessäsi "laitteisto uudellen käynnistys" -toiminto HP 150:lle (Se tehdään painamalla yhtäaikaa **Vaihto** **OHJAUS** **Alkutila Seis**)

Jos voit määritellä kirjoittimesi sivunpituuden sovellusohjelmassasi, edellä kuvattua ei tarvitse tehdä.

Aa
Aa

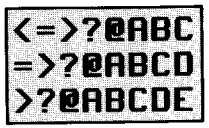




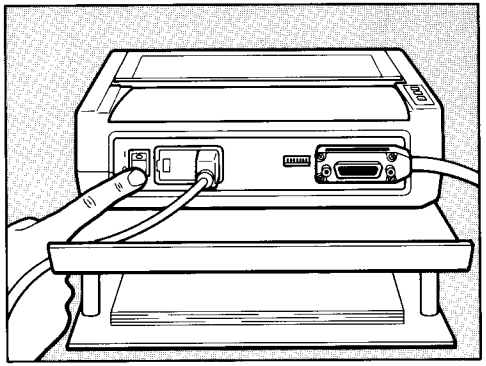
HOLD
HALTEN
MAINTENIR
MANTENER OPRIMIDO
TENERE PREMUTO
HOUD VAST
HOLD
TRYKK
HALL KNAPPEN NEDTRYCKT.
PIDÄ PAINETTUNA

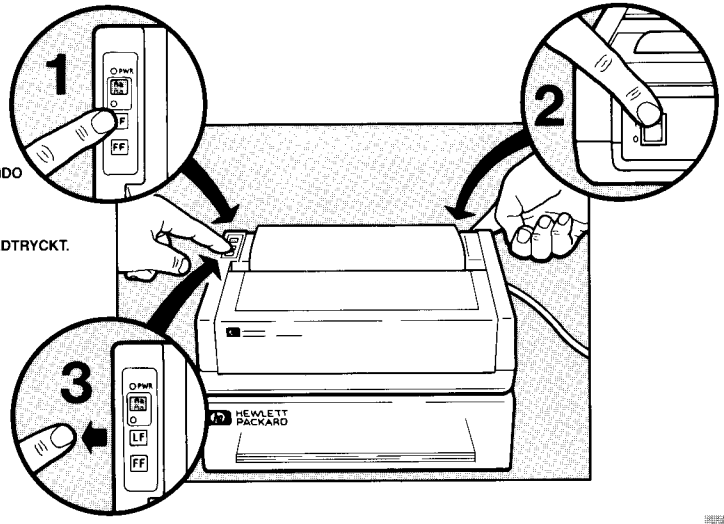
RELEASE
LOSLASSEN
RELÂCHER
SOLTAR
RILASCIARE
LAAT LOS
SLIP
FRIGJØR
SLÄPP KNAPPEN.
VAPAUTA

Quality mode is used to print entire documents. Quality mode can highlight a whole page or several pages. The illustrations above tell you how to enable Quality mode.



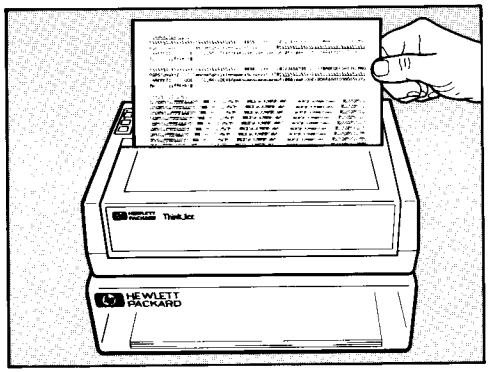
Self test
Eingnungspruefung
Test de diagnostic
Prueba de diagnóstico
Test diagnostico
Zelf proef
System test
Selvprøve
Kone testa
Selv eksamen

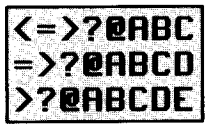




HOLD
HALTEN
MAINTENIR
MANTENER OPRIMIDO
TENERE PREMUTO
HOUD VAST
HOLD
TRYKK
HALL KNAPPEN NEDTRYCKT.
PIDÄ PAINETTUNA

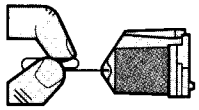
RELEASE
LOSLASSEN
RELÂCHER
SOLTAR
RILASCIARE
LAAT LOS
SLIP
FRIGJØR
SLÄPP KNAPPEN.
VAPAUTA





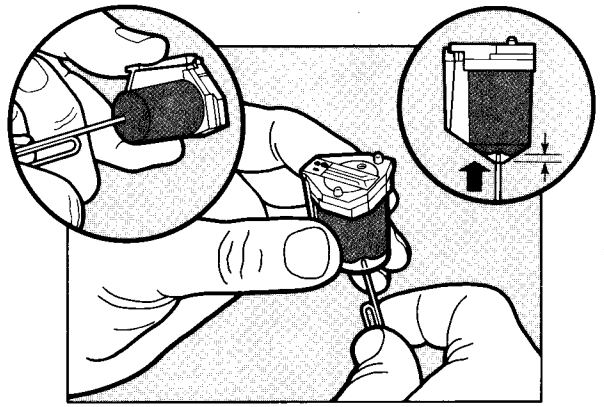
CHARACTER SETS

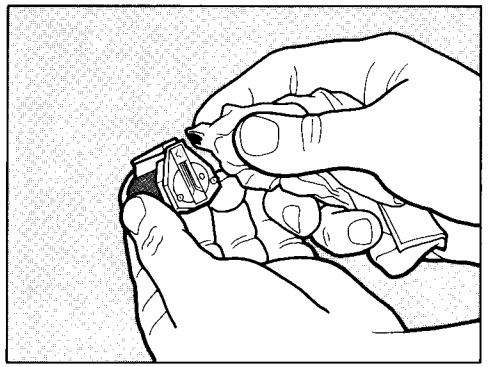
PRINT PITCHES

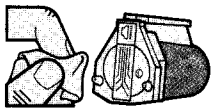


CHARACTER SETS

PRINT PITCHES

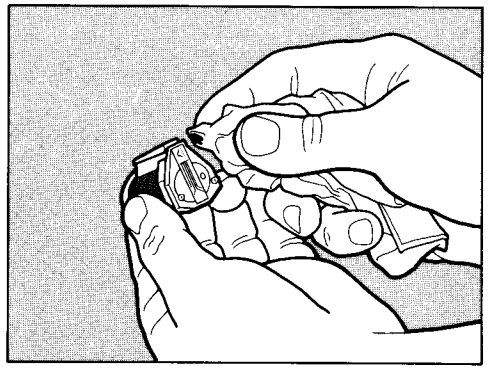


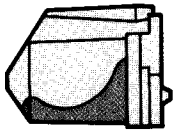




CHARACTER SETS

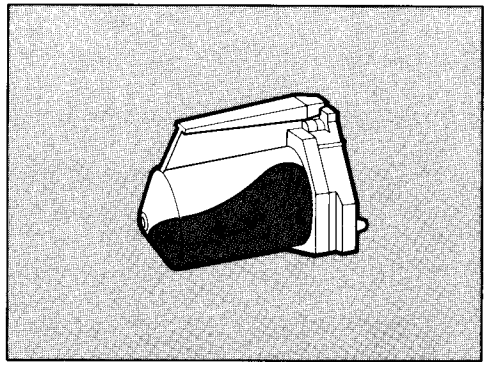
PRINT PITCHES

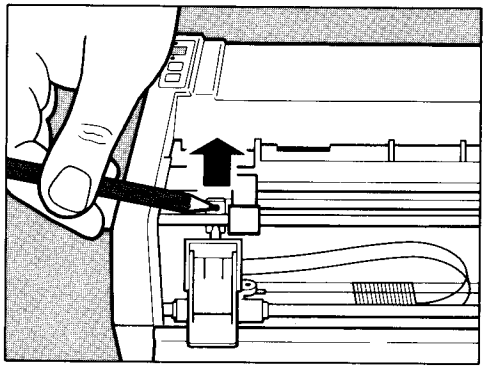


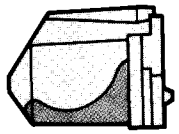


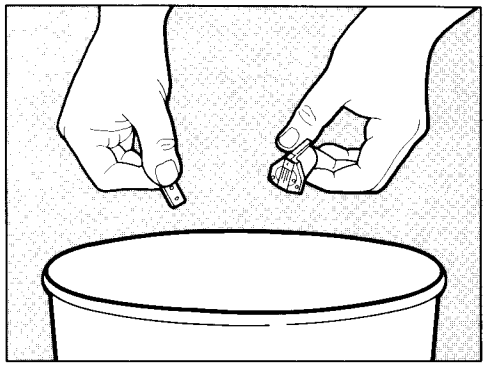
CHARACTER SETS

PRINT PITCHES









ThinkJet Printer

The Personal Printer from Hewlett-Packard

Reference Section

December 1987

Printed in Singapore

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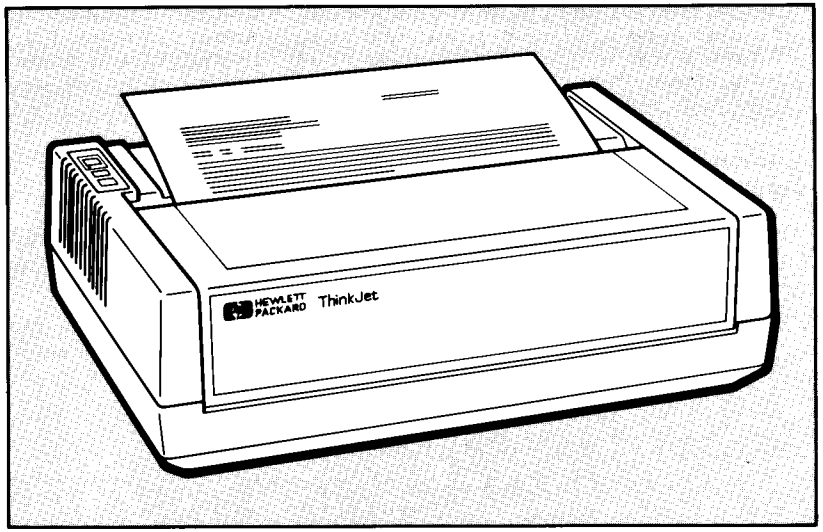
Table of Contents

General Information

Congratulations on your purchase of the Hewlett-Packard ThinkJet printer. Your printer is designed to give you years of trouble-free operation. Its small footprint uses little precious desk space. However, do not let its size fool you. It is fast (150 characters per second), intelligent and offers a wide variety of easy-to-use print features.



ThinkJet Printer

The versatility and convenience of your printer are enhanced by the quietness of its ink jet printing. The ink jet print head cartridge contains sufficient ink to print approximately 500 pages. The cartridge is completely disposable and easy to replace. In addition, the ThinkJet printer uses the Hewlett-Packard Interface Bus (HP-IB or IEEE-488) to communicate with a wide variety of computers, terminals and electronic instruments.

To set up your printer you will need an HP-IB cable. You should have obtained an HP-IB cable with either your computer or your HP-IB interface card. If you do not have one, they are available from authorized Hewlett-Packard dealers and sales representatives in the following lengths:

- 1/2 meter (1-1/2 feet) - model number HP 10833D
- 1 meter (3 feet) - model number HP 10833A
- 2 meter (7 feet) - model number HP 10833B
- 4 meter (13 feet) - model number HP 10833C

How to Use Your Reference Section

Chapter 1, "Setting Up Your Printer," provides the configuration information you need to begin operating your printer.

Chapters 2 and 3, "Using Print Features" and "More on Print Features," describe how to use the many advanced print features of the ThinkJet printer.

Chapter 4, "Maintenance and Troubleshooting," offers easy-to-use tips on keeping your printer running smoothly.

The appendices contain reference guides where you can quickly find information about your printer. Also included in the appendices are the list of accessories and information on warranty and service.

Chapter 1

Setting Up Your Printer

Configuring Your Printer and Computer

The following information may be used as a guide for setting the printer's HP-IB configuration switch and for configuring your computer. Please refer to Appendix D and your computer's user manuals for further information on using the ThinkJet printer with Hewlett-Packard computers, terminals, electronic instruments and their software.

The HP-IB configuration switch is a seven-segment switch on the rear panel of the printer as shown in Figure 1-1. The individual switch segments can be independently set to the 0 or 1 position with the tip of a pencil or similar tool.

NOTE

The printer reads the switch settings only when it is first turned on. Therefore if you change any of the switch settings, you must turn the printer off for several seconds and back on before printing.

The ThinkJet printer is shipped with the HP-IB configuration switch set as shown in Figure 1-1.

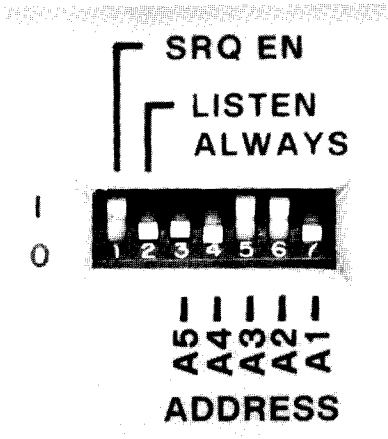


Figure 1-1 HP-IB Configuration Switch, as shipped

This switch setting specifies the following configuration:

- HP-IB address is 1
- Listen Always is off (0)
- SRQ* Enable is on (1)

*Service Request

HP 150 with ThinkJet

Computer configuration:

- Insert the MS-DOS System Master disc and enter P.A.M.
- Touch **DEVICE CONFIG** and **Start Applic** to display the menu shown in Figure 1-2.

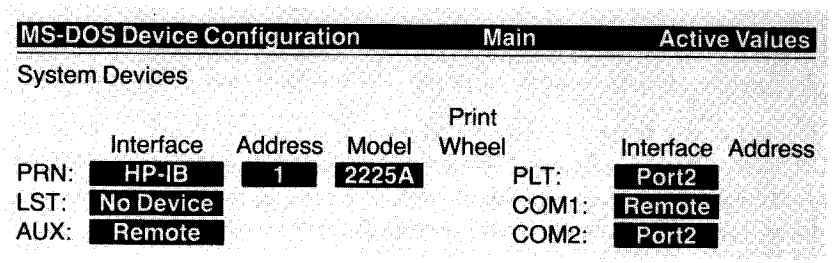


Figure 1-2 HP 150 MS-DOS Configuration Menu

- Touch the PRN:Interface field and set to "HP-IB" by touching **Previous Choice** or **Next Choice**.
- Touch the PRN:Address field and set the address to "1" by touching **Previous Choice** or **Next Choice**.
- Touch the PRN:Model field and set to "2225A" (82906A if 2225A is not a choice) by touching **Previous Choice** or **Next Choice**.
- Touch **Save Config** to save the printer configuration.
- Touch **Exit CONFIG** to return to P.A.M.
- Touch **terminal**
- Press **User System** on keyboard
- Touch **DEVICE CONTROL**
- Touch **"TO" DEVICES**
- Touch **HP-IB DEVICE** so that asterisk appears
- Return to P.A.M. by pressing simultaneously with **SHIFT** **STOP**

Printer settings:

- Use with the HP-IB configuration switch set as shipped. See Operator's Section (page 11).

HP 120 and HP 125 with ThinkJet

Computer configuration:

- Press the **AIDS** key and then the **config** key (f8) to display the screen shown in Figure 1-3 (only the screen bottom is shown).

Figure 1-3 HP 120, HP 125 OPSYS General List Device

- Position cursor to HP-IB ON/OFF field and select "ON" using the **NEXT CHOICE** key (f2).
- Press the **AIDS** key to return.

Printer settings:

- Use with the HP-IB configuration switch set as shipped (see Figure 1-2).

HP Series 80 with ThinkJet

Computer configuration:

If you have an HP 85A/B or HP 86A you will need the 82937A HP-IB Interface Card. The HP 85A/B also requires the Printer/Plotter ROM. These items are available from Hewlett-Packard dealers or authorized sales representatives.

The BASIC program statement "printer is" must specify the same address as set on the printer. For example; "printer is 701" corresponds to the printer settings as shipped (HP-IB address set to 1).

Printer settings:

- Use with the HP-IB configuration switch set as shipped (see Figure 1-2).

HP Series 200 with ThinkJet

Computer configuration:

The BASIC program statement "printer is" or "output" must specify the same address as set on the printer. For example; "printer is 701" or "output 701" correspond to the printer settings as shipped (HP-IB address set to 1).

Printer settings:

- Use with the HP-IB configuration switch set as shipped (see Figure 1-2).

HP 2647A, HP 2647F, and HP 2648A with ThinkJet

Terminal configuration:

- 13296A Shared Peripheral Interface must be installed.

Printer settings:

- For 2647A and 2647F, use with the HP-IB configuration switch set as shipped (HP-IB address set to 7).
- For 2648A, change the printer address to 6 as shown in Figure 1-4.

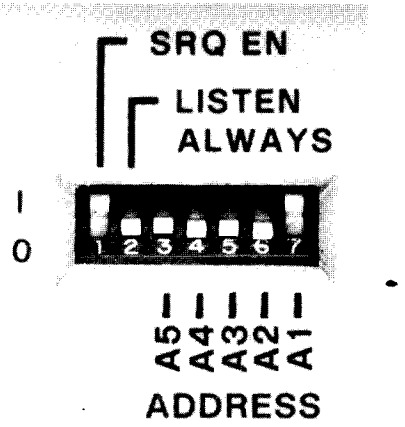


Figure 1-4 HP-IB Configuration Switch, for HP 2648A

Chapter 2

Using Print Features

The Operator's Section described how to set up and begin operating your ThinkJet printer. This chapter tells you how to use the more commonly selected print modes and form control features: print pitches, Quality mode, Bold printing, underlining, line spacing and perforation skip. Chapter 3 introduces more advanced print features.

Introduction to Control Codes and Escape Sequences

You may already have software which allows you to use many of the print features of your ThinkJet printer. If, however, you wish to use any of these print features on your own, the following two chapters provide you with examples of each of the print features and the data used to generate those examples.

The print 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 are commands which cause an action. An example of how control codes are written in this manual is [CTL] N, abbreviation for "control N."

One of the control codes is named "escape," which appears in this manual as [ESC]. Escape sequences consist of the [ESC] control code followed by one or more other characters. For example, [ESC] & k 1 S is an escape sequence which changes the print pitch. None of the characters in an escape sequence is printed; together they form a command which is used to control a feature of your printer, just as a single control code is a command.

NOTE

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

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

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

  Many computer keyboards have a key labeled **ESC** and another key labeled **CNTL**, **CTL**, or **CTRL**. When the **ESC** key is pressed, it generates the escape control code. Other control codes are generated by holding down the **CTL** key while pressing a different key, just as holding down the **SHIFT** key while pressing another key generates special puncuation characters and uppercase characters. On some keyboards that do not have an **ESC** key, [ESC] can be generated as[CTL] [.

> **NOTE**
> If you are entering escape sequences in this manner, do not type any spaces between the characters of the escape sequence. In this manual spaces have been inserted in the escape sequences for readability; they are not part of the escape sequence.

- Specifying each control code, including [ESC], by its ASCII* number.

  Some software packages require that you specify each control code by its ASCII number, usually preceded by a special character such as "\". For example, the escape sequence [ESC] & k 1 S would be specified as \027 & k 1 S. Appendix B contains the ASCII representation of each control code.

- Specifying each character of the escape sequence by its ASCII number.

  Some software packages require that you specify [ESC] and the characters following it by their ASCII numbers. The reference table in Appendix A contains the ASCII representation of each escape sequence.

  As an example, the escape sequence [ESC] & k 1 S is represented in ASCII as 27 38 107 49 83.

*The ASCII (American Standard Code for Information Interchange) character table in Appendix B assigns a number between 0 and 255 to every character and control code recognized by the printer. Computers use these numbers when storing or communicating text material. Unless specifically noted otherwise, the numbers used in this manual are decimal numbers. A few software packages require you to enter ASCII numbers in "hexadecimal." The reference table in Appendix A includes the hexadecimal representation of each control code and escape sequence.

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

If you are writing BASIC programs, you can generate control codes with the CHR$( ) function. For more information on the CHR$( ) function, refer to a BASIC programming manual.

Print Pitches

Your ThinkJet printer offers four print pitches: normal, expanded, compressed, and expanded-compressed.

```
This is compressed print.
This is normal print.
his is expanded-compressed print.
This  is  expanded  print.
```

Table 2-1 provides the specific escape sequence for each print pitch.

Table 2-1
Print Pitches

Print Pitch	Characters/Inch	Characters/Line	Escape Sequence
Compressed	21.3	142	[ESC] & k 2 S
Normal	12.0	80	[ESC] & k 0 S
Expanded-Compressed	10.7	71	[ESC] & k 3 S
Expanded	6.0	40	[ESC] & k 1 S

If more characters per line are sent than is allowed by the selected print pitch, the additional characters are normally ignored. To print those additional characters, you may use the wrap-around mode described in Chapter 3.

The data used to generate the preceding example is:

```
ESC &k2SThis is compressed print.
ESC &k0SThis is normal print.
ESC &k3SThis is expanded-compressed print.
ESC &k1SThis is expanded print.
```

Print Quality

The ThinkJet printer can print characters in normal, Quality mode, or bold.

Quality Mode

Quality mode can be enabled in two ways as described below.

• Through the Keypad

Quality mode is enabled by holding down the blue button while turning ON the printer. Once Quality mode is enabled through the blue button, it can only be disabled by turning the printer OFF. See the example of Quality mode given below.

• By Escape Sequence

Quality mode can also be enabled by sending the escape sequence ESC(s1B. The printer will then print darker characters until Quality mode is disabled by sending the escape sequence ESC(s0B, or by turning the printer OFF.

```
Quality mode is used to print entire documents.
Quality mode can highlight a whole page or
several pages. The instructions on this page tell
you how to enable Quality mode in two ways.
```

The data used to generate the preceding example is:

```
ESC(s1BQuality mode is used to print entire documents. Quality
mode can highlight a whole page or several pages. The instructions
on this page tell you how to enable Quality mode in two ways.
ESC(s0B
```

NOTE

If Quality Mode has been enabled through the keypad be aware that some word processing software packages may not respond to "emphasized" commands.

Bold Print

Bold printing is enabled by sending an escape sequence.

Bold printing is enabled by sending the escape sequence ESC(s1B. The printer will then print darker characters until Bold printing is disabled by sending the escape sequence ESC(s0B, or by turning the power OFF.

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

The data used to generate the preceding sample is:

```
Bold printing can ESC(s1Bhighlight ESC(s0B single words.
ESC(s1BEntire lines can also be highlighted. ESC(s0B
```

Underlining

Underline mode is enabled by ESC & d D. The printer will then underline all characters until underline is disabled by ESC & d @.

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

The data used to generate the preceding example is:

```
Underlining can be used for a ESC &dDsingle ESC &d@ word.
ESC &dDEntire lines can be underlined. ESC &d@
```

Mixing Modes

The ThinkJet printer is capable of mixing any combination of print modes. For example, it can print in expanded and underline mode. The printer does not limit the number of mode changes allowed in a single line.

```
Print modes can be mixed on a line.
```

The data used to generate the preceding example is:

```
Print modes can be mixed on a ESC &k1S ESC &dDline ESC &d@ ESC &k0S.
```

Perforation Skip

The ThinkJet printer is capable of automatically leaving top and bottom margins on every page. This is called "perforation skip mode" because, when printing, the printer does not print on the perforations, it skips over them.

The printer does not sense the perforations in the paper; you must tell it where to put the margins by setting top of form as described on page 1-16. When you set top of form, you specify 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. If top of form is set to the fourth line of the page, the printer will leave a margin of three lines at the top and bottom of each page.

Figure 2-1 shows top of form set correctly for equal top and bottom margins.

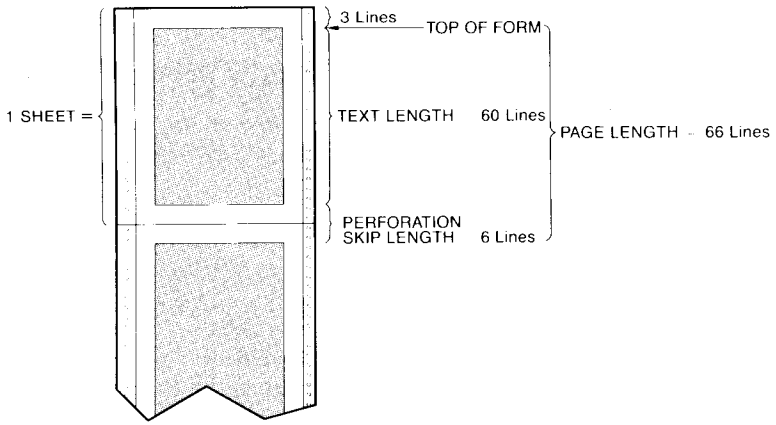


Figure 2-1 Top and Bottom Margins

The escape sequence [ESC] & ℓ 1 L turns perforation skip mode on, [ESC] & ℓ 0 L turns it off.

The perforation skip length is not specified directly. If you want to change the perforation skip length from the default, you must change the "text length," which is the number of lines to be printed on each page. The perforation skip length is the total length of each page minus the text length.

For example, if the printer is set for a text length of 54 lines and 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

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.

Text length cannot be less than one line nor 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 (6 lines at 6 lines per inch) less than the page length.

Page Length

The ThinkJet printer allows you to change the page length. The current value of page length determines how far the printer advances the paper when the form feed button is pressed or the printer receives a form feed control code. The printer also uses the value of page length, when perforation skip mode is on, to determine where to place the top and bottom margins.

The escape sequence [ESC] & ℓ # P sets the page length to # lines. For example, [ESC] & ℓ 50 P sets the page length to 50 lines.

Page length can be set to any number of lines from 1 to 255. The escape sequence [ESC] & ℓ 0 P will reset the page length to the default, 11 inches (66 lines at 6 lines per inch).

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

Line Spacing

The ThinkJet printer offers two different line spacings. To print at 8 lines per inch, send the escape sequence [ESC] & ℓ 8 D. To return to 6 lines per inch, use [ESC] & ℓ 6 D.

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


These three lines are printed at
the default line spacing of
6 lines per inch.
```

The data used to generate the preceding example 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 three lines are printed at
the default line spacing of
6 lines per inch.
```

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).

Chapter 3

More on Print Features

In the previous chapter we discussed the frequently used print features. In this chapter we will discuss some advanced print features.

Positioning the Print on the Page

Some of the 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.

- Carriage Return ([CTL] M): 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 handle them automatically.

  The Automatic Line Termination escape sequence discussed on page 3-7 can cause the printer to perform a line feed in addition to each carriage return.

- Back Space ([CTL] H): 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): Advances the paper one line. Normally you do not need to send line feeds explicitly; your computer system will handle them automatically.

  The Automatic Line Termination escape sequence discussed on page 3-7 can cause the printer to perform a carriage return in addition to each line feed.

- 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.

H_2O

$a^3=b^2+c$

The data used to generate the preceding example is:

```
H 0|ESC|=|CTL|M 2
  3 2|ESC|=|CTL|M a =b +c
```

- Form Feed (|CTL| L): Advances the paper to the top of the next form.

NOTE

The printer cannot sense the actual position of the paper. For form feed to advance the paper to the next perforation, top of form must be set correctly as described in the Operator's Section.

Overstrike

There are two methods of overstriking text:

- Sending two lines of text separated only by a carriage return. This causes the printer to print the second line over the first line.

  This method will work only if the carriage return does not perform a line feed (see Carriage Return on page 3-1). If the carriage return does perform a line feed, you must use the back space method for overstriking.

- Using back space. Each time the printer receives a back space control code, it moves the current active position one character position to the left before printing the next character. Therefore, if two characters are sent to the printer separated only by a back space, the second character is printed over the first.

Graphics

Many computer systems allow you to draw graphs or pictures on your computer display using the computer's capabilities and a graphics software package. The computer then handles the details of copying the graphics data to the printer. You may, however, be interested in writing your own graphics software program. The following information provides the details of the ThinkJet graphics capabilities.

The ThinkJet printer is capable of printing in two modes: text mode and graphics mode. In text mode, the printer interprets each data byte it receives from the computer as an ASCII character. It then looks that character up in its internal character table and prints the dot pattern which it finds. In graphics mode, however, the data received from the computer directly specifies the dot pattern which is to be printed.

The ThinkJet printer uses a form of graphics called "raster graphics." 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 the manual for your computer to determine how to prevent your computer from sending this extra data to the printer.

Graphics Density

The ThinkJet is capable of printing graphics in two different dot densities. The default dot density is 96 dots/inch in both the horizontal and vertical directions; the print region is 640 dots wide. The higher dot density is 192 dots/inch in the horizontal direction and 96 dots/inch in the vertical direction; the print region is 1280 dots wide. The escape sequence used to select high density graphics is [ESC] * r 1280 S. To return to the default graphics density use [ESC] * r 640 S. Once the graphics resolution is specified, it stays in effect until it is explicitly changed or the printer is reset.

Raster Dot Row

Graphics data is sent to the printer one byte (8 bits) at a time. Each bit 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. Graphics data bytes are sent to the printer in groups, where each group contains 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 x 8 bits) of the current dot row. If less data is sent for a dot row than will fit in the print region, the rightmost dots of the row are left blank. If more data is sent than will fit in the print region, the extra data is ignored.

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

Beginning and Ending Graphics Mode

If the printer has a partial line of text data in its buffer and it receives the raster dot row escape sequence, it terminates the line of text with a carriage return (but no line feed), prints it, and then accepts the graphics data. This may cause the graphics data to be printed over the text data.

To avoid printing graphics over text, send the escape sequences [ESC] * r A before sending any graphics data. This escape sequence causes any partial lines of text to be terminated with a carriage return and line feed. If there is no text in the buffer, this escape sequence has no effect.

When the printer receives graphics data, it places that data in its buffer. Normally the graphics data is not actually printed until the buffer contains 12 dot rows of default-density graphics or 6 dot rows of high-density graphics. To make sure all of the dot rows are printed and not still stored in the printer's buffer, send the escape sequence [ESC] * r B after sending all of the graphics data.

Sample Graphics Program

The following is an example of a simple HP BASIC program which prints graphics.

Enter	Description
10 PRINT CHR$(27)&"*r640S";	Select default graphics density
20 PRINT CHR$(27)&"*rA";	Begin raster graphics
30 FOR I=1 TO 55	55 dot rows will be printed
40 PRINT CHR$(27)&"*b5W";	Initiate a dot row of length 5 bytes
50 FOR J=1 TO 5	5 bytes = 40 dots
60 PRINT CHR$(136);	Send 1 byte of graphics data
70 NEXT J	136 decimal = 10001000 binary
80 NEXT I	
90 PRINT CHR$(27)&"*rB"	Terminate raster graphics

Printer output:

You may need to modify this program to make it run correctly on your computer. To produce the preceding graphics example using Microsoft BASIC, Version 5.28, use the following program:

Enter	Description
10 WIDTH LPRINT 255	Prevent the computer from sending CR, LF
20 LPRINT CHR$(27)+"*r640S";	Select default graphics density
30 LPRINT CHR$(27)+"*rA";	Begin raster graphics
40 FOR I=1 TO 55	55 dot rows will be printed
50 LPRINT CHR$(27)+"*b5W";	Initiate a dot row of length 5 bytes
60 FOR J=1 TO 5	5 bytes = 40 dots
70 LPRINT CHR$(136);	Send 1 byte of graphics data
80 NEXT J	136 decimal = 10001000 binary
90 NEXT I	
100 LPRINT CHR$(27)+"*rB"	Terminate raster graphics

Selecting Unidirectional or Bidirectional Printing

The ThinkJet 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).

The escape sequence [ESC] & k 0 W will force unidirectional printing. To return to bidirectional text printing, use [ESC] & k 1 W.

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

End of Line Wrap-Around

If the printer is in wrap-around mode, the first character received which exceeds the line length of the printer forces a new line of print to be started. This causes long lines to be broken and printed as several lines. If the printer is not in wrap-around mode, characters which exceed the line length of the current print pitch 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

You can link several escape sequences into one escape sequence string by following two rules:

- The first two characters after [ESC] must be the same. In the following example 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 becomes lower case. In the following example, D becomes d.

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.

Display Functions Mode

Control codes and escape sequences are not normally printed; they are either 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. The symbol which is printed for each control code can be found in Appendix B.

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

```
In Display Funtions mode, control codes
are printed not executed.
&k
&In &Display Funtions mode&, control codes&k
&are printed &&dDnot&&d@ executed.&k
&&Z
```

The data used to generate the preceding example is:

```
In|CTL|N Display Functions mode|CTL|O, control codes
are printed |ESC|&dDnot|ESC|&d@ executed.
|ESC|Y
In |CTL|N Display Functions mode|CTL|O, control codes
are printed |ESC|&dDnot|ESC|&d@ executed.
|ESC|Z
```


Self Test

Your ThinkJet printer can perform a self test to ensure that it is operating properly. The escape sequence [ESC] z causes it to perform a test of the electronics and then print one page of characters.

In addition, the Operator's Section 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, then on. This causes the printer to read the HP-IB configuration switch, reset all features to their default values, and set top of form to the current line.

Two additional methods for resetting your printer are:

- Send the escape sequence [ESC] E. This causes the printer to print whatever data is 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.

  This escape sequence does not cause the HP-IB configuration switch to be read. The printer will use the value read when it was turned on.

- Send a Device Clear command to the printer (see page D-6). This causes the printer to immediately stop printing, clear all remaining data from 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.

  This reset does not cause the HP-IB configuration switch to be read. The printer will use the value read when it was turned on.

Ready to Print

The ThinkJet printer is now prepared for printing. The ThinkJet has a 1" fixed margin on the left and gives the convenience of a 1" margin on the right. This gives a fixed printing area of 6.7 inches, which can accommodate 80 characters in normal print mode. You can increase the margins (i.e., wider) by setting them on your computer. The printer is also pre-set to the following (default) printing specifications:

- 12 characters/inch
- 80 characters/line
- 6 lines/inch
- 66 lines/page

Automatic Line Termination

Most computers terminate each line with a carriage return and a line feed. However, there are computers which terminate with either a carriage return or a line feed, but not both. In order for your printer to operate normally with these systems, you need to change the definition of the carriage return and line feed control codes using the escape sequences listed in Table 3-1.

Table 3-1
Automatic Line Termination Escape Sequences

Character* received by printer	Character(s) executed by printer	Escape Sequence
CR LF FF	CR LF FF	ESC & k 0 G
CR LF FF	CR, LF LF FF	ESC & k 1 G
CR LF FF	CR CR, LF CR, FF	ESC & k 2 G
CR LF FF	CR, LF CR, LF CR, FF	ESC & k 3 G

*NOTE: CR = Carriage Return
LF = Line Feed
FF = Form Feed

Chapter 4

Maintenance and Troubleshooting

Your ThinkJet printer is designed for durability. This chapter provides a few basic instructions on care and some simple troubleshooting instructions for printer malfunctions.

Environmental Conditions

Your printer should be maintained and operated under the following environmental conditions:

- Operate only at temperatures from 50°F to 104°F (10°C and 40°C).
- Store only at temperatures from -4°F to 140°F (-20°C to 60°C).
- Operate only in relative humidity from 10% to 90%.

Maintenance of the Print Head Cartridge

The print head cartridge is durable, disposable, and easy to maintain. Observe a few simple rules of care, and your print head cartridge should be trouble-free.

- Avoid touching the face of the print head cartridge with your fingers.
- Periodically check the ink level of the print head cartridge. Hold the cartridge up and view the bladder inside. If the bladder is collapsed, then the ink supply is nearly depleted and the cartridge needs to be replaced.

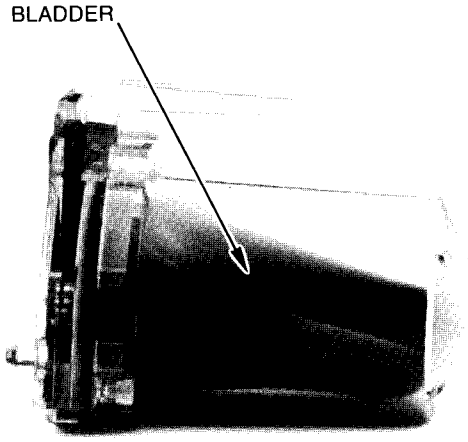


Figure 4-1 Empty Cartridge

- If the printer has not been used for a prolonged period, or if dust has accumulated on the face of the print head cartridge, wipe the face of the cartridge with a tissue to maintain best print quality. If print quality problems remain, see Table 4-1.

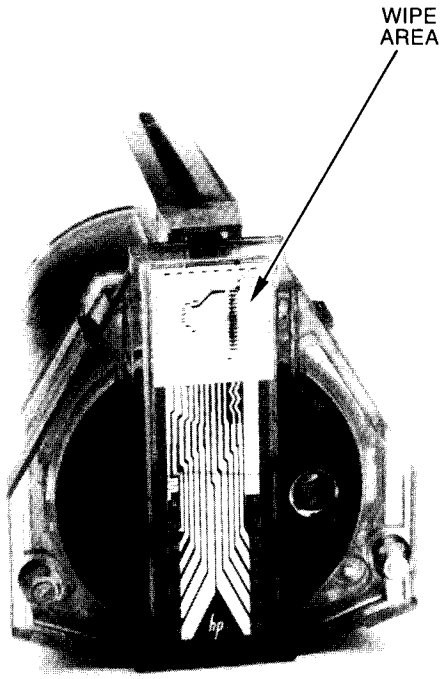


Figure 4-2 Wipe Area

- Avoid allowing the face of the print head cartridge to come into prolonged contact with other materials. This may cause the ink to wick out of the cartridge.
- Use the print head cartridge prior to the month and year of expiration printed on the package.

WARNING

The ink in the print head cartridge contains diethylene glycol which is HARMFUL IF SWALLOWED. Keep new or used cartridges OUT OF REACH OF CHILDREN.

Maintenance of the Printer

Ideally your printer should be stored and operated in a clean, dust-free environment. However, it can endure some rugged use.

To remove dirt and smudges, damp wipe with a mild solution of dishwashing detergent and water. Never use harsh chemicals to clean the printer. Unplug the printer prior to cleaning.

Periodically clean the paper dust out of the printer.

Fuse Replacement

Appendix C contains instructions for replacing the fuse in your printer. A blown fuse may be a sign of a malfunction in your printer. If you experience trouble with blown fuses, do not continue installing new ones; return your unit for repair.

Troubleshooting

Table 4-1 contains some possible error conditions and recommended corrective action. In most instances, performing the corrective action described will eliminate the problem. If the problem persists, however, the printer should be returned for repair.

Table 4-1
Error Conditions

Error Condition	Correction Action
1. Red power light off.	• Ensure that the power cord is plugged into a working outlet and the power switch is on. See Operator's Section (Power/Interface). • Ensure that the voltage selector is correctly set (see Appendix C). • Ensure that the fuse is installed correctly and not blown (see Appendix C).
2. Yellow attention light on continuously.	• Load paper into the printer. The attention light will begin flashing. See Operator's Section (Loading ThinkJet Paper).
3. Yellow attention light flashing.	• Press the blue button. The carriage will move and the attention light will turn off. See Operator's Section (Loading ThinkJet Paper). • Remove any obstruction from around the carriage and press the blue button again. See Operator's Section (Loading ThinkJet Paper). • If the attention light continues flashing, the printer should be returned for repair.
4. Printer does not respond to computer.	• Ensure that the power light is on and the attention light is off. If this is not the case, refer to error conditions 1 through 3 above. • Ensure that the HP-IB cable is correctly attached. See Operator's Section (Power/Interface). • Ensure that the printer is operational by running the self test. See Operator's Section (Self Test). • Ensure that the HP-IB address and mode of the printer is correct and does not overlap with any other device on the interface (See Appendix D).

5. Paper does not feed properly.	• Remove the paper from the printer and discard any that is crumpled. • If you are using fanfold paper, verify that it can travel freely without catching, and that the right-side pinwheel is adjusted correctly for the width of your paper (see the Operator's Section, Loading ThinkJet Paper). • Reload the paper (see the Operator's Section, Loading ThinkJet Paper).
6. Print quality is poor, rows of dots are missing from printouts, or the carriage moves but produces no print.	• If the print head stops printing after a few lines, it was probably jarred in shipment and needs to be activated (see the Operator's Section, Maintenance). • Ensure that there is sufficient ink in the cartridge by viewing the bladder. If the bladder is collapsed, replace the cartridge (see the Operator's Section, Loading Cartridge). • Ensure that the carriage latch is fully closed (see the Operator's Section, Loading Cartridge). • Ensure that you are using a recommended ink jet paper. • Wipe the face of the print head using a tissue to remove any accumulated dust (see the Operator's Section, Maintenance). If the print head cartridge has not been used for a prolonged period, moisten the tissue with water before wiping. • Lightly wipe the electrical connector of the carriage using a cotton swab dipped in alcohol (see the Operator's Section, Maintenance). • If the problem continues, replace the print head cartridge.

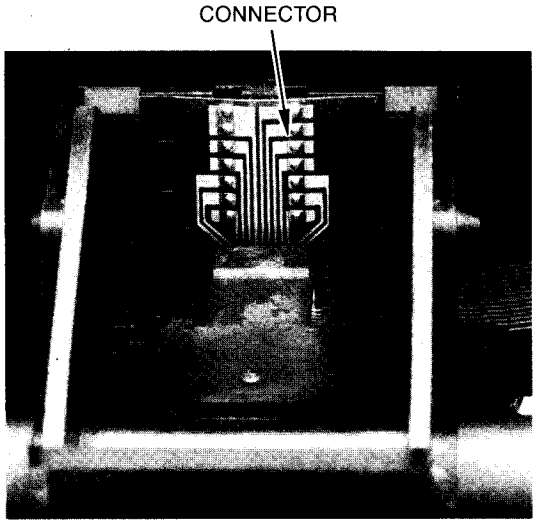


Figure 4-3 Carriage Electrical Connector

Appendix A

Table of Print Features

Print Feature	Escape Sequence or Control Code	ASCII Decimal Equivalent	ASCII Hexadecimal Equivalent
PRINT PITCHES			
Normal (default) (12 cpi, 80 cpl)	ESC & k 0 S	27, 38, 107, 48, 83	1B, 26, 6B, 30, 53
Expanded (6 cpi, 40 cpl)	ESC & k 1 S	27, 38, 107, 49, 83	1B, 26, 6B, 31, 53
Compressed (21.3 cpi, 142 cpl)	ESC & k 2 S	27, 38, 107, 50, 83	1B, 26, 6B, 32, 53
Expanded-Compressed (10.7 cpi, 71 cpl)	ESC & k 3 S	27, 38, 107, 51, 83	1B, 26, 6B, 33, 53
PRINT QUALITY			
Quality Mode ON	ESC (s1B	27, 40, 115, 49, 66	1B, 28, 73, 31, 42
Quality Mode OFF (default)	ESC (s0B	27, 40, 115, 48, 66	1B, 28, 73, 30, 42
Bold Print ON	ESC (s1B	27, 40, 115, 49, 66	1B, 28, 73, 31, 42
Bold Print OFF	ESC (s0B	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 (default)	ESC & d @	27, 38, 100, 64	1B, 26, 64, 40
LINE SPACING			
6 lines/inch (default)	ESC & ℓ 6 D	27, 38, 108, 54, 68	1B, 26, 6C, 36, 44
8 lines/inch	ESC & ℓ 8 D	27, 38, 108, 56, 68	1B, 26, 6C, 38, 44
PERFORATION SKIP			
Perforation skip on	ESC & ℓ 1 L	27, 38, 108, 49, 76	1B, 26, 6C, 31, 4C
Perforation skip off (default)	ESC & ℓ 0 L	27, 38, 108, 48, 76	1B, 26, 6C, 30, 4C
PAGE LENGTH			
# lines/page* (default 66 lines)	ESC & ℓ # P	27, 38, 108, #, . . . #, 80	1B, 26, 6C, #, . . . #, 50
TEXT LENGTH			
# lines/text area* (default 60 lines)	ESC & ℓ # F	27, 38, 108, #, . . . #, 70	1B, 26, 6C, #, . . . #, 46
END OF LINE WRAP-AROUND			
Wrap-around on	ESC & s 0 C	27, 38, 115, 48, 67	1B, 26, 73, 30, 43
Wrap-around off (default)	ESC & s 1 C	27, 38, 115, 49, 67	1B, 26, 73, 31, 43
DISPLAY FUNCTIONS MODE			
Display Functions on	ESC Y	27, 89	1B, 59
Display Functions off (default)	ESC Z	27, 90	1B, 60
UNIDIRECTIONAL OR BIDIRECTIONAL PRINT			
Unidirectional print	ESC & k 0 W	27, 38, 107, 48, 87	1B, 26, 6B, 30, 57
Bidirectional text print (default)	ESC & k 1 W	27, 38, 107, 49, 87	1B, 26, 6B, 31, 57

Print Feature	Escape Sequence or Control Code	ASCII Decimal Equivalent	ASCII Hexadecimal Equivalent
PRINT POSITION CONTROLS			
Line Feed	[CTL] J	10	0A
Carriage Return	[CTL] M	13	0D
Back Space	[CTL] H	8	08
Half line Feed	[ESC] =	27, 61	1B, 3D
Form Feed	[CTL] L	12	0C
GRAPHICS			
Select low density graphics	[ESC] * r 640 S	27, 42, 114, 54, 52, 48, 83	1B, 2A, 72, 36, 34, 30, 53
Select high density graphics	[ESC] * r 1280 S	27, 42, 114, 49, 50, 56, 48, 83	1B, 2A, 72, 31, 32, 38, 30, 53
Raster dot row*	[ESC] * b # W	27, 42, 98, #, ..#, 87	1B, 2A, 62, #, ..#, 57
Begin raster graphics	[ESC] * r A	27, 42, 114, 65	1B, 2A, 72, 41
End raster graphics	[ESC] * r B	27, 42, 114, 66	1B, 2A, 72, 42

AUTOMATIC LINE TERMINATION

Character** Received	Character(s) Executed	Escape Sequence or Control Code	ASCII Decimal Equivalent	ASCII Hexadecimal Equivalent
CR	CR	[ESC] & k 0 G	27, 38, 107, 48, 71	1B, 26, 6B, 30, 47
LF	LF			
FF	FF			
CR	CR, LF	[ESC] & k 1 G	27, 38, 107, 49, 71	1B, 26, 6B, 31, 47
LF	LF			
FF	FF			
CR	CR	[ESC] & k 2 G	27, 38, 107, 50, 71	1B, 26, 6B, 32, 47
LF	CR, LF			
FF	CR, FF			
CR	CR, LF	[ESC] & k 3 G	27, 38, 107, 51, 71	1B, 26, 6B, 33, 47
LF	CR, LF			
FF	CR, FF			

SELF TEST			
Perform self test	[ESC] z	27, 122	1B, 7A
RESET			
Perform reset	[ESC] E	27, 69	1B, 45

*When using the decimal or hexadecimal form of these escape sequences, you must substitute the decimal or hexadecimal form of each digit of the value field (#). For example, the character "7" is represented in ASCII as 55 decimal or 37 hexadecimal; the character "2" is represented in ASCII as 50 decimal or 32 hexadecimal (see Appendix B). Therefore the escape sequence [ESC] &ℓ72 P has a decimal form of 27,38,108,55,50,80 and a hexadecimal form of 1B,26,6C,37,32,50.

**NOTE: CR = Carriage Return
LF = Line Feed
FF = Form Feed

Appendix B

Character Set

Your computer communicates with your printer by sending it a series of "data bytes" (numbers between 0 and 255). Each data byte value corresponds to either a control code (0-31, 127, 128-159, and 255) or a printing character (32-126, and 160-254).

When the printer receives a data byte corresponding to a printing character, it looks up the value in the character table and prints the character which it finds. When the printer receives a data byte corresponding to a control code, it either executes the control code (8, 10, 12-15, and 27 are executed) or ignores it.

The ThinkJet printer uses the "Roman-8" character set. In addition to all of the characters of the standard ASCII character set, shown in Table B-1, Roman-8 contains the international characters and symbols which are displayed in Table B-2.

Table B-1
ASCII Characters

CHAR.	DEC.	HEX.
CTL@	0	00
CTLA	1	01
CTLB	2	02
CTLC	3	03
CTLD	4	04
CTLE	5	05
CTLF	6	06
CTLG	7	07
CTLH	8	08
CTLI	9	09
CTLJ	10	0A
CTLK	11	0B
CTLL	12	0C
CTLM	13	0D
CTLN	14	0E
CTLO	15	0F
CTLP	16	10
CTLQ	17	11
CTLR	18	12
CTLS	19	13
CTLT	20	14
CTLU	21	15
CTLV	22	16
CTLW	23	17
CTLX	24	18
CTLY	25	19
CTLZ	26	1A
CTL[	27	1B
CTL\	28	1C
CTL]	29	1D
CTL^	30	1E
CTL_	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
■	127	7F

NOTE: Characters DEC. 0-31, 127-159 and 255 are only printed when display functions are enabled.

Table B-2
ASCII Characters, Roman Extension

CHAR.	DEC.	HEX.
NUL	128	80
SOH	129	81
STX	130	82
ETX	131	83
EOT	132	84
ENQ	133	85
ACK	134	86
BEL	135	87
BS	136	88
HT	137	89
LF	138	8A
VT	139	8B
FF	140	8C
CR	141	8D
SO	142	8E
SI	143	8F
DLE	144	90
DC1	145	91
DC2	146	92
DC3	147	93
DC4	148	94
NAK	149	95
SYN	150	96
ETB	151	97
CAN	152	98
EM	153	99
SUB	154	9A
ESC	155	9B
FS	156	9C
GS	157	9D
RS	158	9E
US	159	9F

CHAR.	DEC.	HEX.
	160	A0
À	161	A1
Â	162	A2
È	163	A3
Ê	164	A4
Ë	165	A5
Î	166	A6
Ï	167	A7
´	168	A8
`	169	A9
^	170	AA
¨	171	AB
~	172	AC
Ù	173	AD
Û	174	AE
€	175	AF
—	176	B0
	177	B1
	178	B2
°	179	B3
Ç	180	B4
ç	181	B5
Ñ	182	B6
ñ	183	B7
¡	184	B8
¿	185	B9
¤	186	BA
£	187	BB
¥	188	BC
§	189	BD
ƒ	190	BE
¢	191	BF

CHAR.	DEC.	HEX.
à	192	C0
è	193	C1
ô	194	C2
û	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
Å	208	D0
î	209	D1
Ø	210	D2
Æ	211	D3
å	212	D4
í	213	D5
ø	214	D6
æ	215	D7
Ä	216	D8
ì	217	D9
Ö	218	DA
Ü	219	DB
É	220	DC
ï	221	DD
ß	222	DE
Ô	223	DF

CHAR.	DEC.	HEX.
Á	224	E0
Ã	225	E1
ã	226	E2
Ð	227	E3
ð	228	E4
Í	229	E5
Ì	230	E6
Ó	231	E7
Ò	232	E8
Õ	233	E9
õ	234	EA
Š	235	EB
š	236	EC
Ú	237	ED
Ÿ	238	EE
ÿ	239	EF
Þ	240	F0
þ	241	F1
	242	F2
	243	F3
	244	F4
	245	F5
—	246	F6
¼	247	F7
½	248	F8
ª	249	F9
º	250	FA
«	251	FB
■	252	FC
»	253	FD
±	254	FE
■	255	FF

Appendix C

Changing the Fuse or Line Voltage

Possible Line Voltages

The ThinkJet printer is capable of operating from one of the following AC power sources:

- 100 volt AC, 50/60 Hz
- 120 volt AC, 50/60 Hz
- 220 volt AC, 50/60 Hz
- 240 volt AC, 50/60 Hz

The fuse box on the rear panel of the printer contains a voltage selector drum for selecting one of the four line voltages. The line voltage your printer is set for is visible through the small window in the cover of the fuse box.

Selecting a Line Voltage

WARNING

Incorrect voltage selection or fuse may cause damage to your printer. Read and follow all instructions carefully.

Replacing the Fuse

The fuse for the ThinkJet is located behind the cover of the fuse box. The fuse is in a carrier which slides into a cavity in the fuse box. There are two cavities for fuse carriers; one above the other. The fuse must be installed in the UPPER cavity. The white arrows on the inside of the fuse box cover point up, to the correct cavity.

Two fuse carriers can be used with the printer, one (white) for U.S. style fuses, and one (black) for European style fuses. The correct carrier for your area was suppied with your printer. If you wish to use your printer with a line voltage which requires the other fuse carrier, contact your local Hewlett-Packard dealer or authorized sales representative. An unused carrier may be stored in the lower cavity of the fuse box.

Table C-1
Fuse Sizes and Ratings

Line Voltage	Area	Fuse Rating	Fuse Size	Carrier
100 volt AC	Japan	500 ma TD	3AG	white
120 volt AC	USA	400 ma TD	3AG	white
220 volt AC	Europe	250 ma TD	5 x 20mm	black
240 volt AC	UK	200 ma TD	5 x 20mm	black

Power Cords

The power cord supplied with your printer should match the plug requirement for your area. However, power cords with different plugs are available and are illustrated in Figure C-3. If you wish to use a different power cord, contact your local Hewlett-Packard dealer or sales representative.

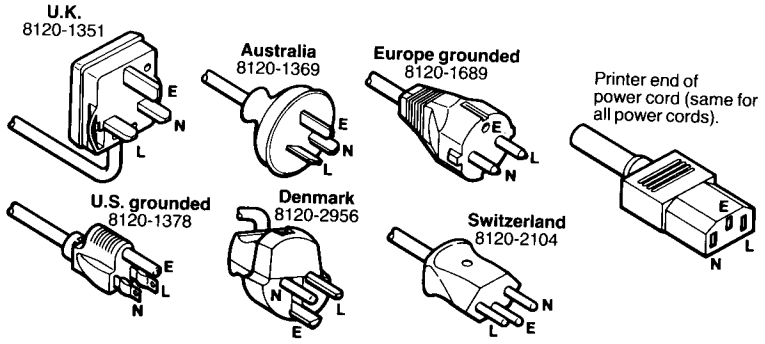


Figure C-3 Available Power Cords

Appendix D

HP-IB Interface (IEEE-488)

The Hewlett-Packard Interface Bus (HP-IB) is the most common interface between HP computers, peripherals and instruments. HP-IB is Hewlett-Packard's implementation of the IEEE-448 (1978) interface standard. It allows many peripherals to be connected to one computer port, provides high speed communication, and is reliable and simple to use.

NOTE
The information in this appendix is for advanced applications. Most printer users will not need to refer to this information.

The HP-IB is a 16-line bus consisting of:

- Three handshake lines
- Five control lines
- Eight data I/O lines

Table D-1
Pin Assignments

Pin Number	Signal Line	Pin Number	Signal Line
1	DI/O 1	13	DI/O 5
2	DI/O 2	14	DI/O 6
3	DI/O 3	15	DI/O 7
4	DI/O 4	16	DI/O 8
5	EOI	17	REN
6	DAV	18	DAV Gnd
7	NRFD	19	NRFD Gnd
8	NDAC	20	NDAC Gnd
9	IFC	21	IFC Gnd
10	SRQ	22	SRQ Gnd
11	ATN	23	ATN Gnd
12	SHIELD	24	LOGIC Gnd

A device on the HP-IB may function as a "listener," a "talker," or a "controller" (the computer). A listener receives data that is sent over the bus. A talker transmits data to other devices on the bus. The controller regulates interaction of the devices on the HP-IB system.

Your printer is usually a listener, but can function as a talker, as explained later in this appendix. It cannot be a controller.

Addressing

The HP-IB address is a number from 0 to 30 which identifies each device connected to the interface. Using the HP-IB addresses, the controller can individually access the various devices on the interface.

Figure D-1 shows the HP-IB configuration switch on the rear panel of the printer. This switch is used to set the address of the printer and turn the Listen Always state on or off.

NOTE

The printer reads the switch settings only when it is first turned on. Therefore if you change any of the switch settings, you must turn the printer off for several seconds and back on before printing.

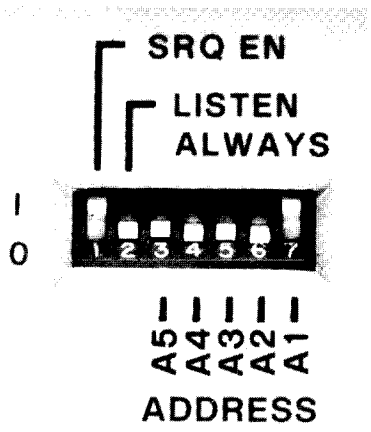


Figure 1-2 HP-IB Configuration Switch, as shipped

The ThinkJet printer is shipped from the factory with the address portion of the HP-IB configuration switch set to address 1.

Table D-2 shows the HP-IB address which corresponds to each of the possible settings of the HP-IB configuration switch.

Table D-2
HP-IB Addresses

Listen Always	A5	A4	A3	A2	A1	HP-IB Address decimal
0	0	0	0	0	0	0
0	0	0	0	0	1	1
0	0	0	0	1	0	2
0	0	0	0	1	1	3
0	0	0	1	0	0	4
0	0	0	1	0	1	5
0	0	0	1	1	0	6
0	0	0	1	1	1	7
0	0	1	0	0	0	8
0	0	1	0	0	1	9
0	0	1	0	1	0	10
0	0	1	0	1	1	11
0	0	1	1	0	0	12
0	0	1	1	0	1	13
0	0	1	1	1	0	14
0	0	1	1	1	1	15
0	1	0	0	0	0	16
0	1	0	0	0	1	17
0	1	0	0	1	0	18
0	1	0	0	1	1	19
0	1	0	1	0	0	20
0	1	0	1	0	1	21
0	1	0	1	1	0	22
0	1	0	1	1	1	23
0	1	1	0	0	0	24
0	1	1	0	0	1	25
0	1	1	0	1	0	26
0	1	1	0	1	1	27
0	1	1	1	0	0	28
0	1	1	1	0	1	29
0	1	1	1	1	0	30
0	1	1	1	1	1	31 (test—invalid address)
1	X	X	X	X	X	Listen Always

X = Don't Care

Listen Always

The Listen Always switch is set to the 0 (off) position at the factory. With this switch off, the printer must be addressed by the computer before it will respond to data sent on the interface.

If you want the printer to respond to all of the data sent on the interface, set the Listen Always switch to the 1 (on) position. This puts the printer in the "Listen Always" state. In this state, the printer will print all data messages sent on the bus without being addressed by the computer.

Because the Listen Always state overrides the normal system addressing procedure, the printer cannot be addressed to talk when this switch is on. Thus, status (see page D-5) will not be returned when the switch is on.

Service Request (SRQ)

The "service request" is a signal sent from the printer to the computer, over the SRQ control line, whenever the printer requires some kind of attention. Not all HP-IB controllers are capable of recognizing the service request signal.

When the SRQ enable switch is on (set to 1), the printer will assert the SRQ control line (request service) whenever one or more of the following conditions is true:

- Self Test Failed
- Out of Paper
- Carriage Motion Disabled

The printer will assert the SRQ control line until the computer performs a serial poll (explained in the next section), or the fault condition is corrected.

NOTE
If Listen Always is enabled, the printer will never assert SRQ.

When the SRQ enable switch is off (set to 0), the printer is prevented from requesting service.

The SRQ enable switch is set to the 1 (on) position at the factory.

Polling

The controller on the HP-IB may run periodic checks of the devices on the bus to find out which, if any, of the devices require service. Also, a device may request service, which may prompt the controller to check the devices on the bus. Two kinds of polling may be performed over HP-IB: serial and parallel.

Serial Poll

The controller will perform a serial poll either in search of information or in response to a service request. In a serial poll, the controller requests the status of one specific device on the bus by addressing only that device to respond. The ThinkJet responds to a serial poll by sending a status byte. Table D-3 contains the definition of each bit of the status byte.

Table D-3
Status Byte

Bit	Condition
7 (most significant)	Self Test Failed
6	always 0
5	Out of Paper
4	always 0
3	Buffer Full
2	Buffer Empty
1	always 0
0	Carriage Motion Disabled

A one in a particular bit signifies that the corresponding condition is true. The default status is 4 (0000 0100 binary): Buffer Empty.

If the Self Test Failed condition is true, the printer will not accept data or move the paper; it must be returned for repair. If either the Buffer Full or the Carriage Motion Disabled condition is true, the printer will not accept data until the condition is corrected.

The Buffer Full condition is true if one or more of the following is true:

- The buffer is full of data.
- The printer receives a raster graphics dot row escape sequence and it is not ready to accept the graphics data. In this case, Buffer Full is true only until all the data before the graphics escape sequence is printed.
- The printer is printing graphics data.
- The printer is performing a self test.
- The printer is executing a Device Clear or [ESC] E reset.

Parallel Poll

Parallel polling provides a fast way for a controller to periodically check if any devices need service or to determine which device sent an SRQ. The controller can retrieve parallel poll information only from devices that it has enabled to respond. The controller performs a parallel poll by asserting the EOI (End or Identify) and ATN (Attention) lines simultaneously. Each

device that has been enabled to respond does so by asserting its assigned DI/O line if it requires service. The ThinkJet will respond to a parallel poll, once enabled, if the Self Test Failed, Out of Paper, or Carriage Motion Disabled conditions are true.

NOTE

The SRQ enable switch also controls parallel poll response; the printer will only respond to parallel polls if the SRQ enable is on.

Parallel poll is enabled when the printer is an addressed listener and receives the Parallel Poll Configure (PPC) command followed immediately by a Parallel Poll Enable (PPE) secondary command. These commands are discussed in the next section. The parallel poll response bit is determined by the least significant three bits of the PPE command, as shown in Table D-4. The printer always responds in the positive sense.

Table D-4
Parallel Poll Response

PPE bits			
2	1	0	DI/O response line
0	0	0	1
0	0	1	2
0	1	0	3
0	1	1	4
1	0	0	5
1	0	1	6
1	1	0	7
1	1	1	8

Bus Commands

Devices on the HP-IB receive special instructions in the form of commands. To send a command over the bus, the controller sets the bus into command mode by asserting the ATN line. Once the ATN line is asserted, the devices on the bus will understand that what follows is a command, not data.

Device Clear (DCL) X0010100

This command causes the printer to immediately clear 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.

The Device Clear command does not cause the HP-IB configuration switch to be read. The printer will use the value read when it was turned on.

Interface Clear (IFC)

The IFC line is used by the controller to override all bus operations. This command causes the printer to stop being a talker or a listener.

Listen Address (LAD) X01AAAAA

AAAAA = message address

If the message address matches the printer address, then the printer stops being a talker and becomes a listener.

Parallel Poll Configure (PPC) X00000101

If the printer is a listener, this command enables the printer to interpret the next command (if it is a secondary command) as a parallel poll enable or disable. If the next command is not a secondary command, the printer is automatically parallel poll disabled.

Parallel Poll Enable (PPE) X110SBBB

S = parallel poll sense (ignored by the ThinkJet printer), BBB = response bit

If the printer is parallel poll configured, it is enabled to respond to parallel polls (see Parallel Poll page D-5).

Parallel Poll Disable (PPD) X111XXXX

If the printer is parallel poll configured, a PPD disables response to parallel polls.

Parallel Poll Unconfigure (PPU) X0010101

Disables printer response to parallel polls.

Selected Device Clear (SDC) X0000100

If the printer is a listener, SDC has the same effect as the Device Clear command, otherwise it has no effect.

Serial Poll Disable (SPD) X0011001

This command prevents the printer from sending status when it is a talker.

Serial Poll Enable (SPE) X0011000

This command enables the printer to send status when it is a talker.

Talk Address (TAD) X10AAAAA

AAAAA = message address

If the message address matches the printers address, then the printer stops being a listener and becomes a talker, otherwise the printer stops being a talker.

Unlisten (UNL) X0111111

This command causes the printer to stop being a listener.

Untalk (UNT) X1011111

This command causes the printer to stop being a talker.

Appendix E

List of Accessories and Supplies

Part No.	Description
92261A	Print Head Cartridge
51604A	Plain-paper Print Head Cartridge
92261M	InkJet Paper–2000 sheets, single sheets
92261N	InkJet Paper–2500 sheets, Z-fold
92261S	Printer Stand–Clear Acrylic
10833D	HP-IB Cable–1/2 meter
10833A	HP-IB Cable–1 meter
10833B	HP-IB Cable–2 meter
10833C	HP-IB Cable–4 meter

These accessories and supplies are available through your local dealer or directly from Hewlett-Packard. For most of the United States, direct ordering information can be obtained by calling, toll-free, 1-800-538-8787. In Alaska, California, or Hawaii, call 1-408-738-4133.

Print Head Cartridge Choices

Two types of print cartridges are available for use with your ThinkJet printer.

For heavy graphics printing and best print quality, select the 92261A print head cartridge for use with JetPaper. A 92261A print head cartridge and 50 sheets of Z-fold paper were shipped with your printer.

For the flexibility of using many common office papers, select the Plain-paper cartridge (51604A).

Paper to Use with the Plain-paper Print Head Cartridge

The Plain-paper print head cartridge is designed to work well with most types of paper, although some variables in paper composition may significantly affect print quality. Many papers manufactured for impact printers yield good results for most general applications. Some papers, particularly those of lower quality, yield degraded print quality. For other applications, such as letterhead paper, most cotton bond papers yield good results. Paper should be tested fully before it is purchased in order to ensure desirable performance.

Fast phones for price and availability by location:

Austria: (0222) 25 00 or 615/616 • Belgium/Luxembourg: (02) 7 62 32 00 • Denmark: (02) 816640, Ext. 258 • Finland: (90) 4550211 • France: (6) 928 3264 • 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) 537954; 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.

Appendix F

Warranty and Service Information

Warranty Information

The complete limited 90-day warranty statement is included with your printer. Additional copies may be obtained from any authorized Hewlett-Packard dealer, or the sales and service office where you purchased your printer.

If you have any questions concerning this warranty, please contact an authorized Hewlett-Packard dealer or a Hewlett-Packard sales and service office. Should you be unable to contact them, please contact:

• **In the United States:**

Hewlett-Packard Company
Personal Computer Group
Customer Support
11000 Wolfe Road
Cupertino, CA 95014
Telephone: (503) 758-1010

Toll-Free Number: (800) FOR-HPPC (800 367-4772)

• **In Europe:**

Hewlett-Packard S.A.
150, route de Nant-d'Avril
P.O. Box CH-1217 Meyrin 2
Geneva
Switzerland
Telephone: (022) 83 81 11

Note: Do **not** send units to this address for repair.

• **In other countries:**

Hewlett-Packard Intercontinental
3495 Deer Creek Rd.
Palo Alto, CA 94304
U.S.A.
Telephone: (415) 857-1501

Note: Do **not** send units to this address for repair.

How to Obtain Repair Service

For information on service in your area, contact an authorized HP dealer or the nearest Hewlett-Packard service facility listed in the limited 90-day warranty statement included with your printer.

If your printer malfunctions and repair is required, you can help assure efficient servicing by having the following items with your printer at the time of service:

- A description of the configuration of the system you were using at the time of failure.
- A brief description of the malfunction symptoms for the service personnel.
- Printouts or other material that illustrate the problem area(s).
- A copy of the sales slip or other proof of purchase to establish the warranty coverage period.

Serial Number

Each printer carries an individual serial number. It is a good idea to keep a separate record of this number. Should your printer be stolen or lost, the serial number is required for insurance claims and is often helpful for tracing and recovery. Hewlett-Packard does not maintain records of individual owners' names and printer serial numbers.

General Shipping Instructions

Should you ever need to ship the printer, be sure that all components are packed in a protective package (use the original shipping case) to avoid in-transit damage. We suggest that you always insure shipments.

If you happen to be outside of the country where you bought your printer, contact the nearest authorized dealer or local Hewlett-Packard office for shipping instructions. All customs and duty charges are your responsibility.

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Page numbers in **bold** type indicate primary references; page numbers in standard type indicate secondary references.

Potential for Radio/ Television Interference

The ThinkJet 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 of 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 U.S. Government Printing Office, Washington D. C. 20402, Stock No. 004-000-00345-4.

WARNING

Use of a non-shielded printer interface cable will invalidate the FCC certification. HP-IB cables supplied by Hewlett-Packard are shielded.

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