

# HP Scitex FB910 Printer

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## *User Manual*



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## FCC-A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

This equipment must be installed exactly as instructed in this manual using only the components supplied. If a supplied component ever needs to be replaced, it must be replaced with the same part supplied by the manufacturer. It is your responsibility to follow these instructions in order to maintain compliance with the FCC regulations. Changes or modifications not expressly approved by the manufacturer could void your authority to operate this equipment. In particular, this device must be operated with shielded cables to maintain FCC compliance.

A booklet is available from the Federal Communications Commission entitled, *How to Identify and Resolve Radio-TV Interference Problems* (#004-000-00345-4). Write to the U.S. Government Printing Office, Washington, DC 20402.

## DOC (Canada)

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Normes de Sécurité (Canada)

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe A prescrites dans le règlement sur le brouillage radioélectrique édictés par le Ministère des Communications du Canada.

## Telecommunications Network Statement



The VideoNet port on this device is not intended to be connected to a public telecommunications network. Connection of this device to a public telecommunications network in a European Community Member State will be in violation of national law implementing Directive 91/263/EEC on the approximation of laws of the Member States concerning telecommunication terminal equipment, including the mutual recognition of their conformity.

Der VideoNet port ist nicht dafür vorgesehen an ein öffentliches Telefonnetz angeschlossen zu werden. Der Anschluß dieses Gerätes an ein öffentliches Telefonnetz in einem Mitgliedstaat der EU, verstößt gegen nationale Gesetze zur Ausführung der Direktive 91/263/EEC, die sich mit der Annäherung von Gesetzen von Mitgliedstaaten beschäftigt, betreffend Telekommunikationsanlagen und die gegenseitige Anerkennung ihrer Konformität.

## Related Documentation

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- **Release Notes** — describes new versions of the printer's embedded software and other new information not included in this user manual.
- **Tips & Tricks** — how to get the best results with special applications of the printer, such as edge-to-edge and double-sided printing.
- **Material Safety Data Sheets** — information for safe handling of the inks and printhead flush used with the printer.

If you are using the HP Software RIP:

- **HP Software RIP User Guide** — describes how to use the RIP.
- **Printing Tools User Guide** — describes how to add printers to your operating system, and how to use the utility software.

If you are using a third-party RIP with the printer, refer to the documentation that accompanies it for instructions.

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## Chapter 1

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### Getting Started

- Quick Tour (page 1-2)
- Basic Printer Operations (page 1-6)
- Important Operating Notes (page 1-14)

## Quick Tour

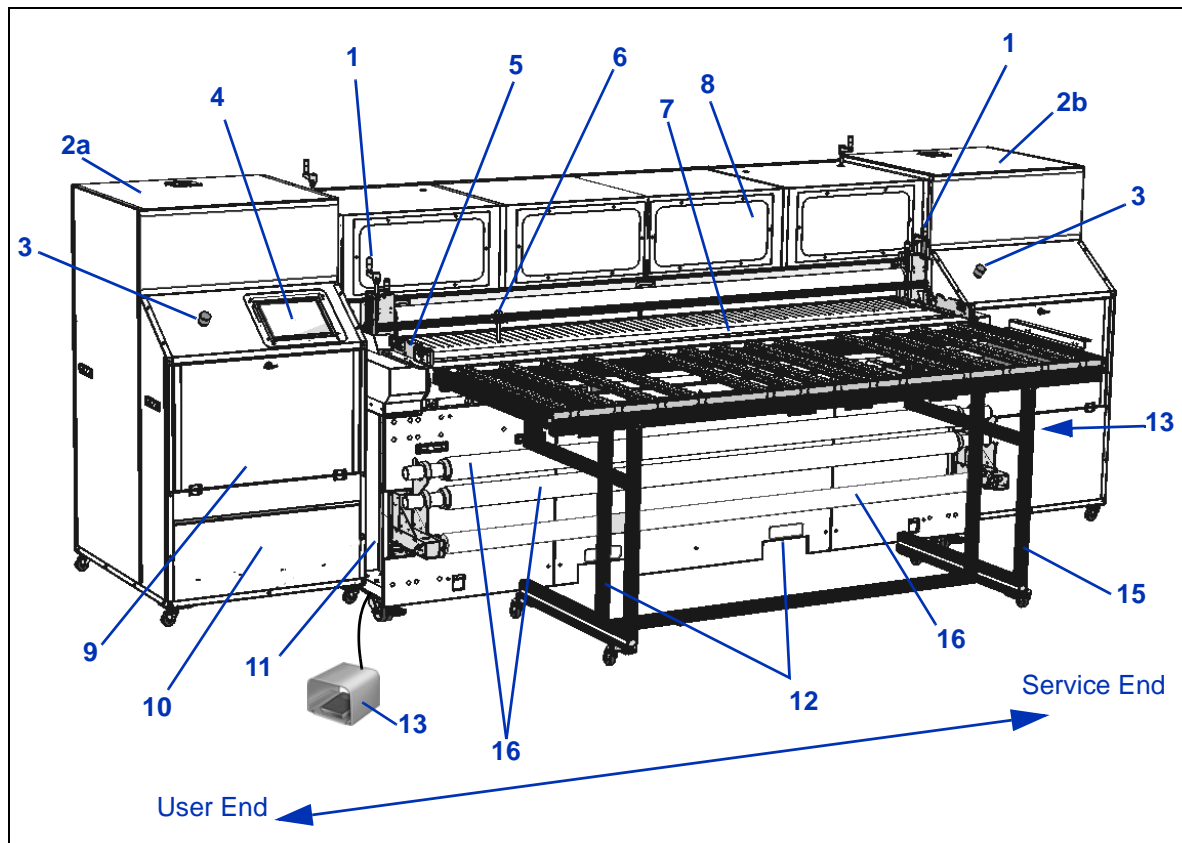
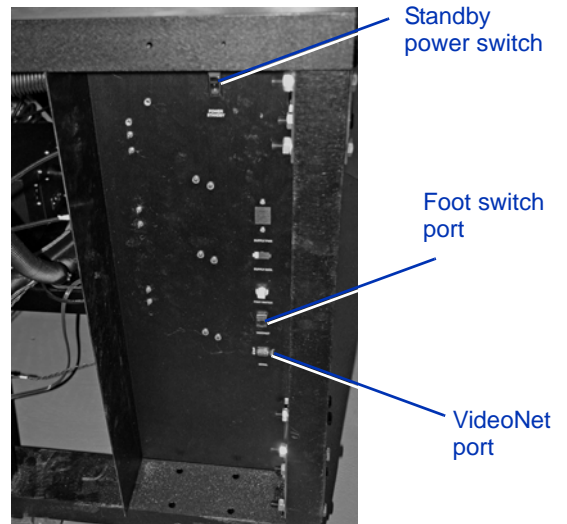


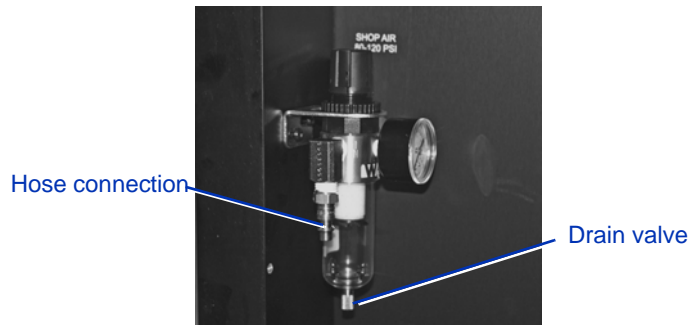
Fig. 1-1. Input Side view

1. Input media roller height adjusters
2. Endcap cabinet (2a - User End, 2b - Service End)
3. Emergency stop switch
4. Control panel
5. Media fence
6. Multiple sheet positioning pins
7. Media feed belt
8. UV-filtered observation window

- 9. Ink supply access door
- 10. Ink filter/pump access panel
- 11. Standby power switch, foot switch port, VideoNet port



- 12. Fork lift points
- 13. Sheet Ready foot switch
- 14. Shop air input (Service End of printer), industrial quick connect



- 15. Rigid media input table
- 16. Roll-fed media supply spool (optional)
- 17. Roll-fed media foam rollers storage (optional)

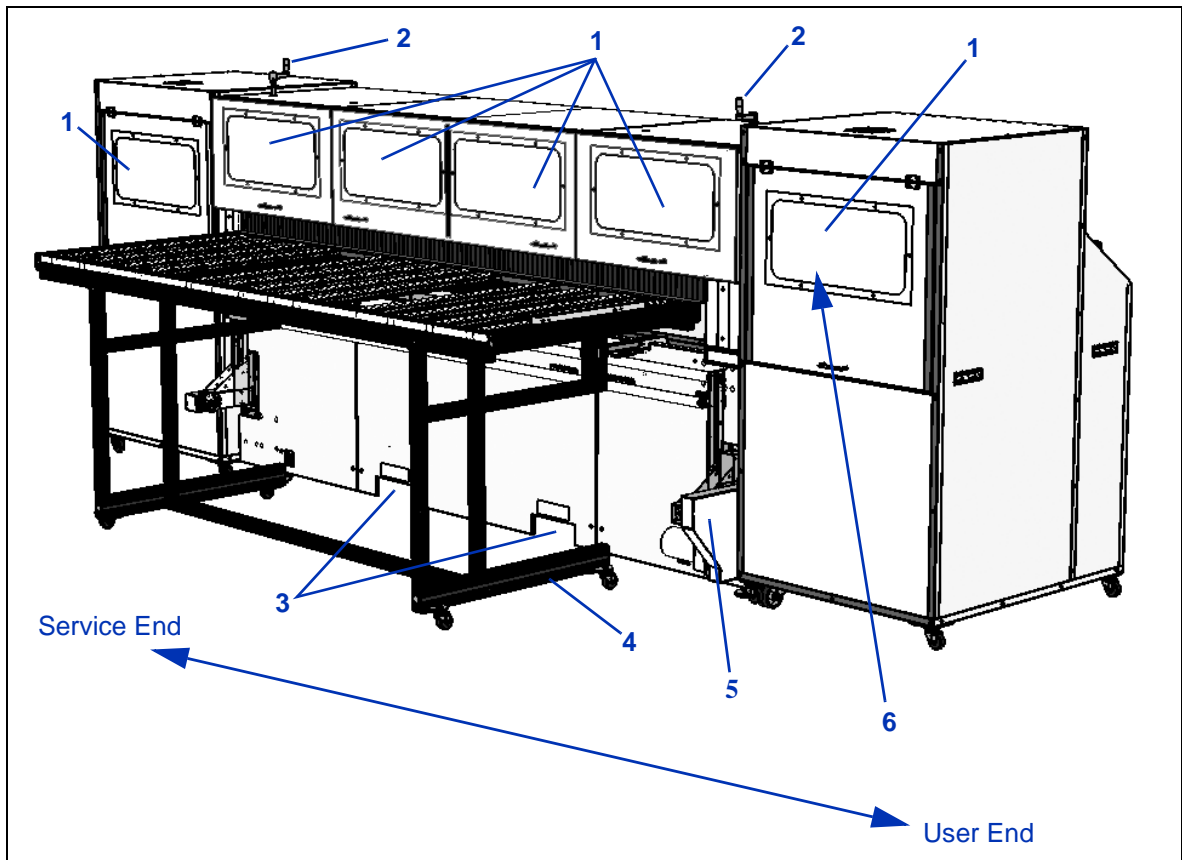


Fig. 1-2. Output Side view

1. Access door with UV-filtered observation window (opening any door on the output side will halt printing)
2. Output media roller height adjusters
3. Fork lift points
4. Output table
5. Roll-fed takeup system (optional)
6. Printhead wipe station

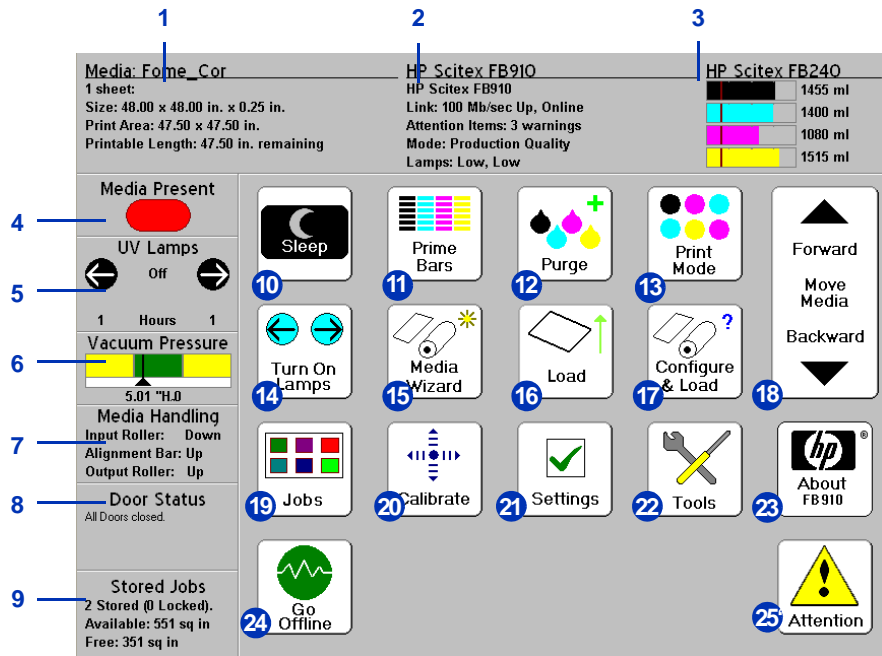


Fig. 1-3. Front Page screen

1. Media information
2. Printer status
3. Ink levels
4. Media detector (red=media out, green=media detected)
5. UV lamps status
6. Vacuum Pressure gauge
7. Media Handling status
8. Printer doors status
9. Stored jobs status
10. Sleep/Wake mode
11. Print prime bars
12. Purge printheads
13. Print mode
14. Turn On/Turn Off Lamps
15. Media Wizard
16. Load Media
17. Configure & Load media
18. Move Media Forward/Backward
19. Stored Jobs
20. Calibrate
21. Option Settings
22. Tools (maintenance, diagnostics, service functions)
23. About (embedded software version)
24. Online/offline switch
25. Attention messages

### Daily Startup

To ensure the functioning or substitution of all inkjets, and optimal output quality, follow this procedure daily:

1. **Wake** the printer from Sleep mode.
2. Press the **Purge** key on the control panel to purge the print-heads. Follow the instructions on the control panel screen. The printer will detect when you open and close the endcap access door, and remove and reinstall the drip tray, to determine when you have completed certain steps in the procedure.



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**Note**

When closing the access door on the user endcap cabinet, the pneumatic supports will pull the door closed when the door is lowered past the horizontal position. Hold on to the door until it is closed to stop it from slamming closed.

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3. Clean the media drive belt. See “Clean the Media Drive Belt and Encoder” on page 6-4.



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**Note**

Failure to clean the media drive belt daily will allow any ink on the belt to continue to cure, making later cleaning more difficult.

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4. Press the **Prime Bars** key on the control panel to print the Prime Bars.

Each prime bar is a set of horizontal lines printed by the jets in one printhead, starting with the black head 1 toward the service end of the carriage, and ending with yellow head 16 toward the user end. Every horizontal line in each prime bar is printed by a single inkjet nozzle.

- If all jets (indicated by a printed line) are working, the printer is ready to print.

- If there are any missing jets, print the Prime Bars again three or four times until all jets are working.

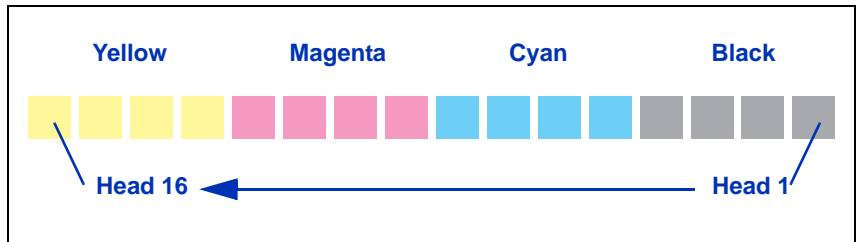


Fig. 1-4. Prime Bars

5. If any missing jets are present after printing the Prime Bars, proceed to the next step, "Recover Jets Part 1" on page 1-8.

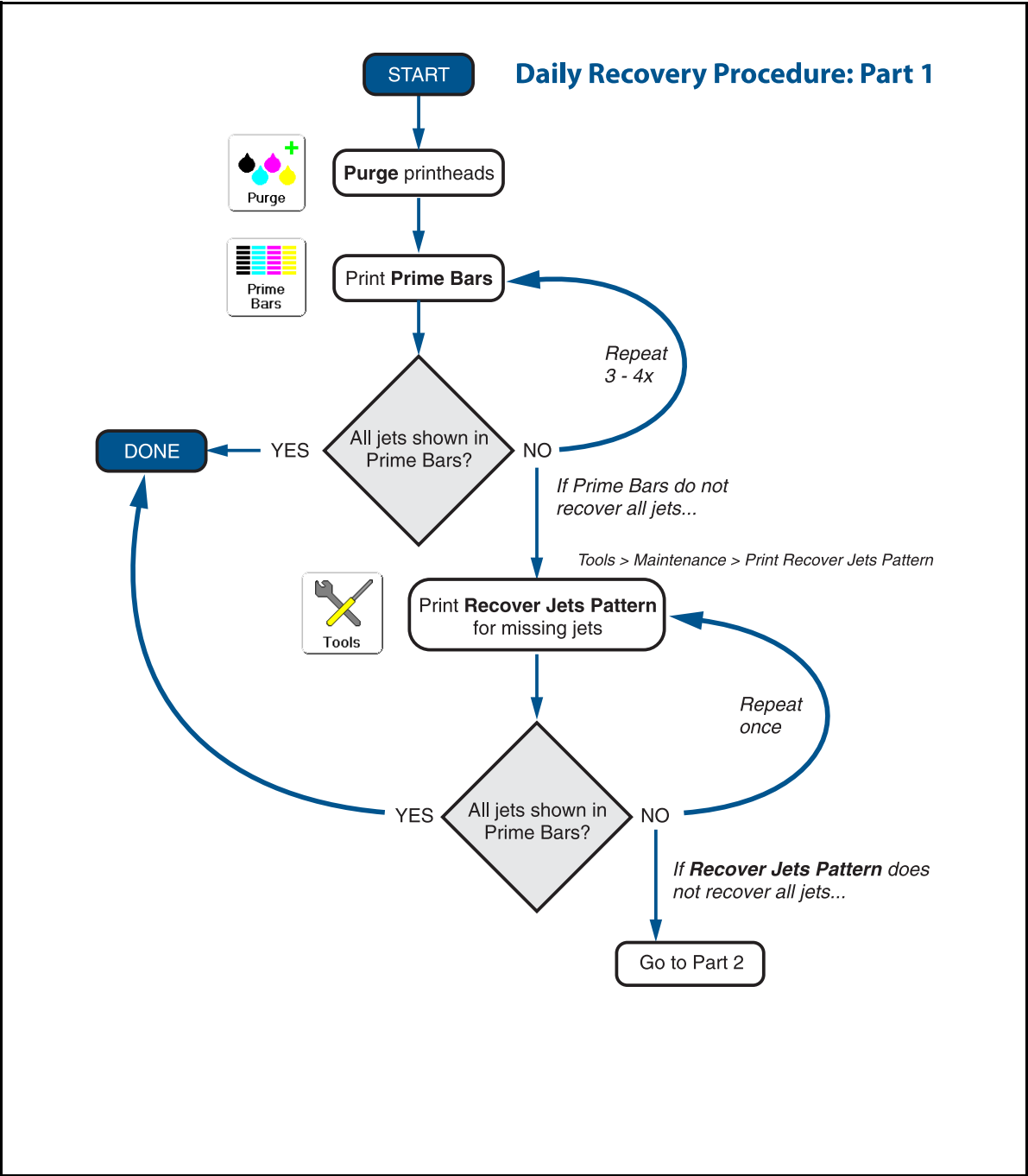
## Recover Jets Part 1

6. Press the **Purge** key on the control panel to purge the print-heads. Follow the instructions on the control panel screen. The printer will detect when you open and close the endcap access door, and remove and reinstall the drip tray, to determine when you have completed certain steps in the procedure.
7. Press the **Prime Bars** key on the control panel to print the Prime Bars.
  - If all jets (indicated by a printed line) are working, the printer is ready to print.
  - If there are any missing jets, print the Prime Bars again three or four times until all jets are working.
8. If any missing jets are present after printing the Prime Bars, print a Recover Jets Pattern (**Tools > Maintenance > Print Recover Jets Pattern**).

This is a special pattern designed to recover missing inkjets. After printing this pattern, the prime bars are printed again.

- If all jets (indicated by a printed line) are working, the printer is ready to print.
- If there are any missing jets (indicated by no printed line), print the Recover Jets Pattern again. If this shows any missing jets, proceed to the next step, "Recover Jets Part 2" on page 1-10.





## Recover Jets Part 2

If any missing jets are observed after printing the Recover Jets Pattern a second time, Purge the printheads.

9. Press the **Purge** key on the control panel to purge the printheads. Follow the instructions on the control panel screen. The printer will detect when you open and close the endcap access door, and remove and reinstall the drip tray, to determine when you have completed certain steps in the procedure.
10. Press the **Prime Bars** key and examine the printed bars.
  - If all jets (indicated by a printed line) are working, the printer is ready to print.
  - If the Prime Bars show any missing jets, dab only the printheads that have missing jets. Dab or blot the printheads with a lint-free cloth moistened with HP Scitex MF50 Flushing Solution.
11. Print the Prime Bars again.
12. Print the Recover Jets Pattern for those printheads with missing jets.

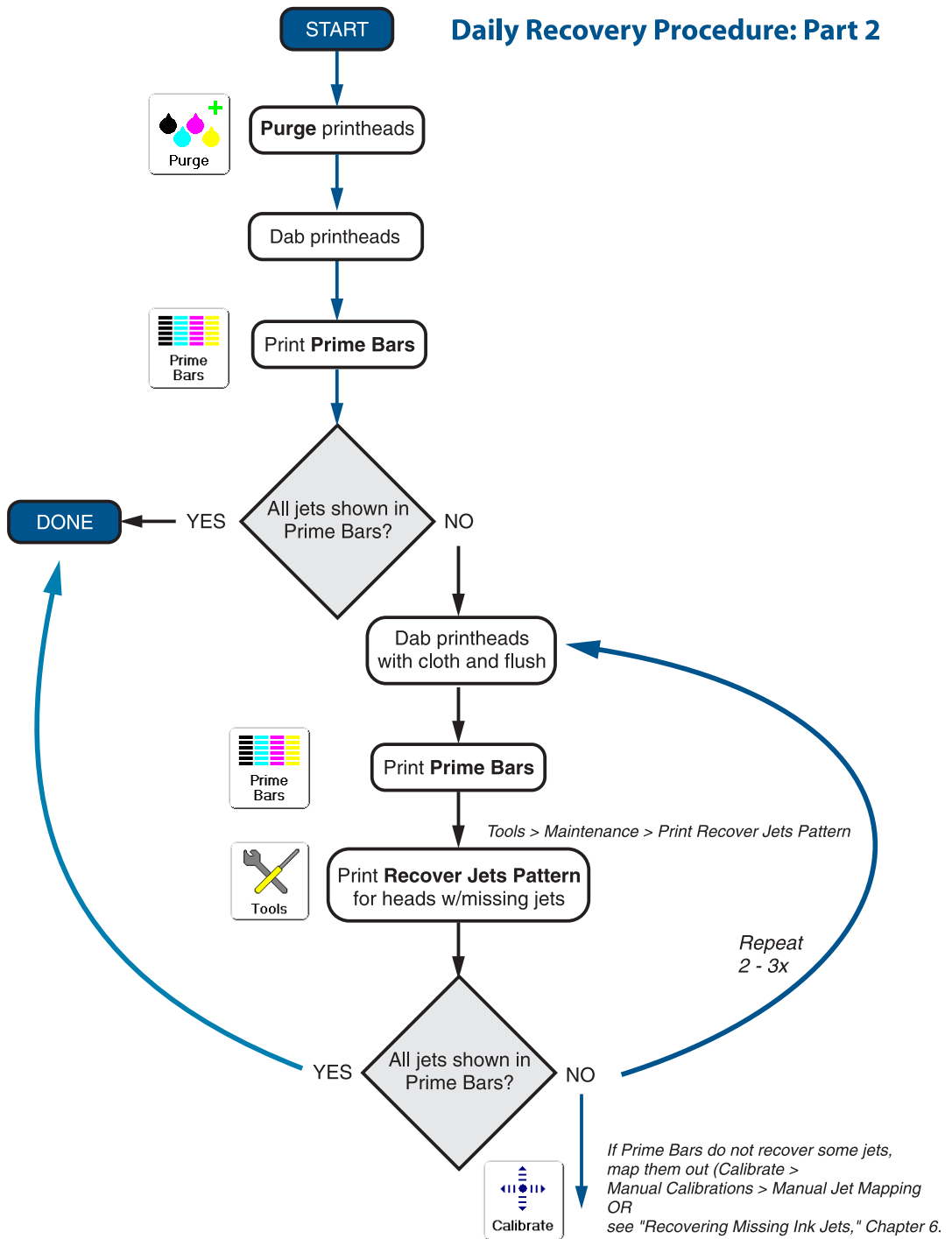
After printing this pattern, the prime bars are printed again.

- If all jets (indicated by a printed line) are working, the printer is ready to print.
  - If there are any missing jets, repeat steps 9 through 12 two or three times until all jets are working.
13. If the Prime Bars show any missing jets, map them out using the Manual Jet Mapping function (**Calibrate > Manual Calibrations > Manual Jet Mapping**). See “Manual Jet Mapping” on page 4-16 for instructions. Select “Report individual hard bad jets” to map out these jets permanently.

Alternatively, you can run AutoJet to automatically map out jets. See “AutoJet” on page 4-3 for instructions.

You can attempt to recover the remaining missing jets again. See “Recover Missing Ink Jets” on page 6-11 for instructions.

## Daily Recovery Procedure: Part 2



## Printing

When the printer is connected to a HP RIP, here is how a typical print job progresses from the client workstation to the printer. If you are using a non-HP RIP, refer to the documentation that accompanies it for details.

1. The operator sends a file to be printed from a client workstation (for example, by copying the file to a Hot Folder).
2. The print job is received by the RIP.

Once it reaches the print server, the print job may be reprioritized, combined with other jobs, re-routed, or otherwise manipulated. Refer to the online help or manual for instructions.

The raster image processing (RIP) process translates the PostScript language data that comprises the print job into the data required by the printer.

3. The RIP sends the image to the printer for printing, or, depending on its route, to an output queue for printing later.



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### Tip

To avoid the UV lamps warm-up period (approximately 1-3 minutes), you can turn on the lamps manually before sending the first print job from the RIP or printing a calibration pattern. See the menu at **Tools > Turn UV Lamps On**. The lamps will turn off automatically after the period of no printing defined in the menu at **Settings > UV Lamps Idle Time**.

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## 600x300 Printing

The default printing resolution is 600x600 dpi. To print a document at 600x300 dpi, configure the RIP to rasterize print jobs at this resolution (in the HP Software RIP, under the RIP tab of the Port Properties screen). For best results, select a color profile on the RIP that matches the resolution setting of the RIP, and color calibrate at the resolution at which you will be printing. Refer to the Software RIP *User Guide* (part number 0706399) for instructions.

## **Daily Shutdown**

### **DO NOT POWER DOWN THE PRINTER.**

The printer will automatically enter a Sleep mode when it has been idle for a user-defined period of time (see page 5-4 and page 5-12 for details).

If the printer must be shipped or power removed for an extended period, contact Technical Services for instructions.

- **UV CURE INK IS PERISHABLE.** Unlike other inks used in wide format printing, UV cure ink has a limited shelf life. Plan to rotate your ink stock and use it promptly by the date printed on the ink box.
- **DO NOT POWER DOWN THE PRINTER.** Constant vacuum at the printheads is required to prevent ink from flowing from the printheads when not printing. If the printer must be powered down for shipping, contact Technical Services for instructions.



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**Caution** Do not switch off the UV lamp power supply unless the lamps have fully completed their controlled cool-down cycle (with fans and heat extraction). Removing power from hot lamps can result in overheating and permanent damage. If sudden removal of power occurs, contact technical support before starting the printer again.

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**Caution** Do not connect any equipment to the line conditioner for the UV power supply, except as specified in this manual.

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- To dab the printheads, use only genuine HP Scitex MF50 Flushing Solution. (See “Recover Missing Ink Jets” on page 6-11 for instructions.) DO NOT USE ISOPROYPL ALCOHOL.
- The maximum diameter allowed on the takeup spool is 7.0 inches (178 mm) on a 3-inch core. When the takeup spool has a diameter of 6.5 inches (165.0 mm) or more, the control panel displays a warning about possible print quality issues. The supply-takeup system can support rolls of up to approximately 125 pounds (56.7 kg).
- The media supply may be wound either printed-side-out or printed-side-in, but the takeup, if used, must be loaded printed-side-in.
- The default head height set to 0.085 inches (2.2 mm) above the media. (The space below the carriage will be 0.070 inches due to the printhead protection frame around the outside of the carriage.)

- The Media Wizard stores a set of operational parameters for predefined and user-defined media types. When you load a new media type, select an existing Media Wizard set, or create a custom set. Media Wizard parameter sets can be selected at any time from the control panel.
- Enable AutoTune during long periods of unattended printing. AutoTune runs AutoJet at user-defined intervals to ensure that all jets are either working or substituted with working jets. (See “AutoTune” on page 4-4 for instructions.)
- Wear cotton gloves when loading media to prevent fingerprints that could show after printing.
- **DO NOT** rest or store a media roll on end, or you could cause edge creases that could strike the printheads during printing.
- **DO NOT** clean the printhead surfaces with a dry cloth or paper towel of any kind. Use only a lint-free (Class 100 cleanroom) cloth, such as those supplied with the printer and available from Supplies Sales, moistened with HP Scitex MF50 Flushing Solution.
- **DO NOT** reprint over any output that has not completely cured. If ink does get onto the media rollers, clean them with a minimal amount of isopropyl alcohol and dry them thoroughly before printing again.
- **DO NOT** set heavy objects on the power cord or printer cable; do not bend the cables or force them into contorted positions.
- **DO NOT** place heavy objects anywhere on the printer.
- **DO NOT** print on the media drive belt. If printing on the belt does occur, clean as soon as possible to avoid buildup. The ink will continue to cure after initial curing by the lamps, making later removal more difficult. See “Clean the Media Drive Belt and Encoder” on page 6-4 for instructions.
- **DO NOT** attempt to lift the printer by its rail or the media drive motor. Lift with a fork lift at marked lifting points only.
- **DO NOT** operate the printer without the endcap cabinets installed. The endcap cabinets are an integral component of the printer's ESD grounding system. During operation of the printer, they must be attached to the body of the printer with the screws provided in order to avoid an ESD event which could damage printer electronics. The endcap cabinets are

also required by UL compliance as protection from UV light and moving parts hazards.

- **DO NOT** rest or store the roll-feed foam rollers (“lift roller” and “press roller”) on a horizontal surface, or a persistent flat spot on the roller will be created. When not in use, store the foam rollers in the storage rack provided; see item 16 in Fig. 1-1.



## Safety Warnings **English**

- **UV light** — the ultraviolet (UV) curing lamps emit high power UV light. The printer must be operated with all safety shielding installed to protect the operator from eye and skin damage. When operated according to manufacturer's instructions, safety glasses or other protective clothing are not necessary.
- **Mechanical hazards** — Keep fingers away from carriage and media path. Use a fork lift truck to lift the printer. Do not exceed the maximum weight load of the input or output tables, as printed on the label.
- **Ink** — read and practice safety guidelines as outlined in the Material Safety Data Sheet (MSDS) for the ink, and post the document in the work area as required by prevailing law. Avoid any contact with skin and eyes. Provide adequate general and local exhaust ventilation. Avoid breathing vapors. Respirator protection may be required under exceptional circumstances when excessive air contamination exists. None of the component substances have established exposure standards per OSHA, NIOSH or ACGIH.
- **Electrical** — WITH THE POWER SWITCH IN THE OFF POSITION, POWER MAY STILL BE SUPPLIED TO THE PRINTER COMPONENTS. To completely cut power from the printer, you must unplug the power cord from the power outlet.
- **Ozone** — the high power UV light emitted by the curing lamps reacts with oxygen and produces ozone. This formation tends to be greatest during lamp start-up. The printer should be operated in a well-ventilated area to avoid minor effects such as headaches, fatigue, and dryness of the upper respiratory tract. Normal air movement will mix the ozone with fresh air, causing it to revert back to oxygen.
- **Hazardous waste** — THE PRINTER ELECTRONICS ASSEMBLY CONTAINS A LITHIUM BATTERY DEVICE. THERE IS A DANGER OF EXPLOSION IF THE BATTERY IS INCORRECTLY REPLACED. The battery must be replaced only by authorized service providers, and must be replaced only with the same or equivalent type. Dispose of this lithium battery device in accordance with local, state (or province), and Federal (or country) solid waste requirements.

## Deutsch

- **UV-Licht** – die ultraviolett härtenden Lampen strahlen Hochleistungs-UV-Licht ab. Der Drucker muss mit allen installierten Sicherheitsabschirmungen betrieben werden, um den Bediener vor Augen- und Hautschäden zu schützen. Sicherheitsbrillen oder andere Schutzkleidung ist nicht erforderlich, wenn gemäß den Herstelleranweisungen gearbeitet wird.
- **Mechanische Risiken** – Halten Sie die Finger fern vom Laufwagen und von der Medienzuführung. Überschreiten Sie nicht die maximale Gewichtsauslastung der Eingabe- oder Ausgabebetische, die auf dem Etikett aufdrucken sind.
- **Tinte** – lesen und beachten Sie die Sicherheitsrichtlinien, wie sie im Material-Sicherheitsdatenblatt (MSDS) für die Tinte dargestellt sind und bringen Sie das Dokument, wie von der aktuellen Rechtsprechung gefordert, im Arbeitsbereich an. Vermeiden Sie jeden Kontakt mit Haut und Augen. Stellen Sie ausreichende generelle und lokale Absaugvorrichtungen bereit. Vermeiden Sie das Einatmen von Dämpfen. Eine Atemschutzmaske könnte unter außergewöhnlichen Umständen, wenn erhöhte Luftverschmutzung besteht, erforderlich sein. Keine der Bestandteile haben Gefahrenstandards nach OSHA, NIOSH oder ACGIH etabliert.
- **Ozon** – das Hochleistungs-UV-Licht, das von den Aushärtungslampen abgegeben wird, reagiert mit Sauerstoff und produziert Ozon. Diese Entwicklung ist am größten, während die Lampe hochgefahren wird. Der Drucker sollte in einem gut gelüfteten Umfeld betrieben werden, um geringfügige Auswirkungen, wie Kopfschmerzen, Müdigkeit und Austrocknen der oberen Atemwege zu vermeiden. Die normale Luftbewegung vermischt das Ozon mit Frischluft, wodurch es wieder zu Sauerstoff umgewandelt wird.

## Español

- **Luz UV** — Las lámparas de curado ultravioleta (UV) emiten luz UV de alta intensidad. La impresora debe ser manejada con filtros de seguridad instalados para proteger al operador de posibles daños en ojos y piel. Si la operativa del equipo se ajusta a las instrucciones del fabricante no será necesario el uso de gafas de seguridad ni vestimenta de protección.

- **Riesgos mecánicos** — Mantener los dedos fuera del camino tanto del cabezal como del soporte. No debe excederse el peso máximo de carga de las mesas de entrada y salida, según lo especificado en la etiqueta.
- **Tinta** - Lea y ponga en práctica las recomendaciones de seguridad recogidas, en la Hoja de Datos de Seguridad del Material (Material Safety Data Sheet - MSDS), para la tinta y exponga dicho documento en el área de trabajo, tal y como requiere la legislación vigente. Evite todo contacto con piel y ojos. Asegúrese de disponer de una adecuada ventilación y extracción tanto general como local. Evite la inhalación de vapores. Un respirador de protección puede llegar a ser necesario, bajo circunstancias excepcionales, cuando exista una excesiva contaminación del aire. Ninguna de las sustancias componentes tienen estándares de exposición establecidos por OSHA, NIOSH o ACGIH.
- **Eléctrico** — CON EL INTERRUPTOR DE POTENCIA EN POSICIÓN "OFF", LA POTENCIA PUEDE SEGUIR SIENDO SUMINISTRADA A LOS COMPONENTES DE LA IMPRESORA. Para cortar totalmente el suministro de corriente a la impresora, deberá desenchufar los cables de potencia de las tomas.
- **Ozono** — La luz UV de alta intensidad emitida por las lámparas de curado reacciona con el oxígeno y produce ozono. Esta reacción tiende a ser de mayor relevancia durante el proceso de arranque de lámparas. La impresora deberá ser operada en un área bien ventilada para evitar pequeños efectos secundarios como dolor de cabeza, fatiga y sequedad de las vías respiratorias superiores. El movimiento normal del aire mezclará el ozono con aire fresco, haciendo que reaccione de forma inversa, a oxígeno.
- **Residuos Peligrosos** — EL GRUPO ELECTRÓNICO DE LA IMPRESORA CONTIENE UNA BATERÍA DE LITIO. EXISTE RIESGO DE EXPLOSIÓN SI LA BATERÍA ES REEMPLAZADA DE FORMA INCORRECTA. La batería debe ser reemplazada únicamente por personal técnico autorizado y sólo por otra igual o equivalente. Deshágase de esta batería de litio según los requisitos de tratamiento de residuos sólidos establecidos por su localidad, provincia y país.

## Français

- **Lumière UV** — Les lampes à séchage ultraviolet (UV) diffusent une puissance de lumière UV importante. L'imprimante doit être utilisée en tenant compte de toutes les mesures de sécurité mises en place pour protéger l'opérateur de blessures aux yeux et sur la peau. Quand vous utilisez l'imprimante, les lunettes de protection et vêtements de protection ne sont pas nécessaire.
- **Risques mécaniques** — Garder les mains éloignées du chariot et du chemin papier. Ne pas dépasser le poids maximum pour des tableaux en entrée et en sortie, comme indiqué sur la fiche.
- **Encre** — Concernant les encres, lire et respecter toutes les mesures de sécurité comme indiqué dans le Material Safety Data Sheet (MSDS) et placer ce document dans l'espace de travail comme requis par la loi. Éviter tout contact avec les yeux et la peau. Mettre en place une ventilation générale et locale adéquate. Éviter de respirer les vapeurs. Des protections respiratoires peuvent être nécessaires dans des circonstances exceptionnelles lorsque qu'une contamination excessive de l'air existe. Aucun des composant standard n'a été établi comme une menace our OSHA, NIOSH ou ACGIH.
- **Electricité** — Lorsque la touche ON/OFF est sur la position OFF, l'électricité est quand même fournie aux composants de l'imprimante. Pour éteindre totalement l'imprimante, il faut débrancher le câble électrique de la prise.
- **Ozone** — L'émission importante de lumière UV émise pour le séchage par les lampes réagit à l'oxygène et produit de l'ozone. Cette réaction tend à être plus importante au moment du démarrage des lampes. L'imprimante doit être utilisée dans un espace ventilé pour éviter des réactions mineures de type maux de tête, fatigue, sécheresse de la partie supérieure de l'appareil respiratoire. Un mouvement normal de l'air mixe l'ozone avec de l'air frais pour revenir à de l'oxygène.
- **Déchets hasardeux** — Le système électronique de l'imprimante contient une batterie en lithium. Il y a un danger d'explosion si la batterie n'est pas correctement remplacée. La batterie doit être remplacée par du personnel autorisé par le fournisseur et doit être remplacée par un type de batterie

identique ou équivalent. Se débarrasser de cette batterie en lithium en accord avec la réglementation de gestion des déchets locale, régionale ou gouvernementale.

## Italiano

- **Luce Ultravioletta (UV)** — Le lampade UV, emettono raggi ultravioletti ad alta intensita'. Bisogna operare il plotter con tutti i filtri di protezione installati, per proteggere l'operatore da eventuali esposizioni dannosi agli occhi e alla pelle. Se ci si attiene alle disposizioni e istruzioni d'uso del fabbricante, non sono necessary occhiali o ulteriori materiali aggiuntivi di protezione.
- **Rischi parti meccaniche in movimento** — Tenere le dita e le mani lontano dal movimento del supporto delle testine di stampa. Non eccedere il peso massimo consentito sui tavoli di supporto, come specificato sulle etichette.
- **Inchiostri** — Leggere attentamente le istruzioni e le raccomandazioni degli inchiostri contenute nella documentazione (Material Safety Data Sheet-MSDS) e metterlo in chiara esposizione all'interno dell' area di lavoro come prevede la normativa di legge. Evitare qualsiasi contatto con gli occhi e la pelle. Assicurarsi che l'ambiente di lavoro sia sufficientemente ventilato. Evitare di respirare le emissioni di vapori. L'uso di una maschera di protezione potrebbe essere necessaria in una situazione eccezionale con un'eccessiva contaminazione dell'aria. Nessuna delle sostanze contenute negli inchiostri tiene emissioni standard come descritte da OSHA, NIOSH o ACGIH.
- **Sistema elettrico** — Anche se l'interruttore di accensione si trova nella posizione spenta (OFF) potrebbe comunque fornire tensione a componenti del plotter. Per staccare totalmente la tensione elettrica, scollegare completamente i cavi di alimentazione dalle relative prese.
- **Ozono** — La elevata intensita' ultravioletta delle lampade UV, reagisce con l'ossigeno e produce ozono. Questo processo tende ad essere piu' elevato nella fase di riscaldamento delle lampade. Il plotter deve operare in un'area ben ventilata, per evitare leggeri disturbi, tipo mal di testa, affaticamento e irritazione delle vie respiratorie superiori. Con l'emissione di aria fresca, l'ozono reagisce e si trasforma in ossigeno.

- **Residui pericolosi** — All'interno del gruppo elettrico del plotter, si trova una batteria al litio il quale se non sostituita in maniera corretta può rischiare di esplodere. Per tale motivo, solamente personale tecnico specializzato deve eseguire tale operazione. Per lo smaltimento della batteria usata o danneggiata, verificare le modalità locali, provinciali o nazionali in materia.

## Chapter 2

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## Printing

This chapter shows you how to set print mode and media options, load media, and print:

- [Configure Printing \(page 2-2\)](#)
- [Configure Media \(page 2-6\)](#)
- [Load and Print on Rigid Media \(page 2-8\)](#)
- [Load and Print on Roll-Fed Media \(page 2-15\)](#)
- [Printing Tips \(page 2-21\)](#)
- [Checking Jet Health \(page 2-23\)](#)

# Configure Printing

The printer can print in several different modes for the combination of quality, resolution, and speed that you require.

Mode	Maximum Speed (bidirectional printing)	Jet Replacement
Billboard Quality with 600x300 dpi jobs	811 sq. ft/hr (74.3 sq. m/hr)	No
with 600x600 dpi jobs	438 sq. ft/hr (40.7 sq. m/hr)	No
Production Quality with 600x300 dpi jobs	438 sq. ft/hr (40.7 sq. m/hr)	Yes
with 600x600 dpi jobs	225 sq. ft/hr (20.9 sq. m/hr)	Yes
High Quality with 600x300 dpi jobs	225 sq. ft/hr (20.9 sq. m/hr)	Yes
with 600x600 dpi jobs	112 sq. ft/hr (10.4 sq. m/hr)	Yes

Jet replacement refers to the printer’s ability to locate and replace inkjets that are clogged or misfiring. High Quality mode has the best jet replacement, Billboard Quality mode has the highest speed, but without jet replacement.

The current print mode is shown in the top center of the control panel. To change the print mode, follow these instructions.

1. On the control panel, press the **Print Mode** key.

The print mode menu appears, with these options:

- Billboard Quality
- Production Quality
- High Quality

2. Press a print mode to select it.

A menu appears with these options:

- Bidirectional
- Unidirectional - Print From User to Service Side
- Unidirectional - Print From Service to User Side

The printer can print in both directions (bidirectional) or in one direction only (unidirectional). Unidirectional printing can



occur in either direction. Printing occurs at about half the speed of the corresponding bidirectional print mode. Unidirectional printing eliminates the bidirectional misalignment that occurs when printing on media that is not perfectly flat.



#### Tip

The service hours for each lamp is shown on the printing direction screen. If you are selecting a unidirectional mode, and the user-side lamp has a much larger number of service hours than the service-side lamp, rebalance these hours by selecting **Unidirectional - Print From User to Service Side**. This will turn off the user-side (trailing) lamp and cure with the service-side (leading) lamp only.

If the service-side lamp has more hours than the user-side lamp, select **Unidirectional - Print From Service to User Side**.

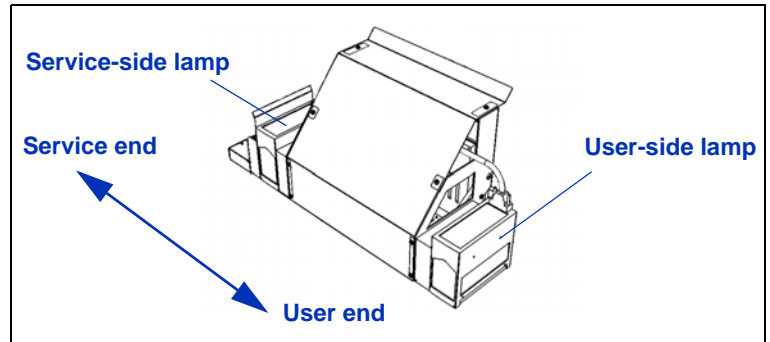


Fig. 2-1. Printhead carriage

### 3. Press a direction option to select it.

In Production and High Quality modes, a menu appears with these options:

- **Normal** — prints at full speed.
- **Sharp Edge** — improves the appearance at the edges of larger text, colored borders, graphics, and images by directing the inkjet overspray into the printed area. This mode requires an additional print pass than Normal mode. (Not available with unidirectional printing or in Bill-board mode.)

- **Fine Text** — prints at half the normal head speed to improve the output quality of fine text and line art by eliminating overspray.



### Caution

Printing in **Fine Text** mode, which prints at 50% of the speed of the "normal" Production and High Quality modes, may expose the media to excessive heat from the UV lamps, which could result in bowing of the center of the media, and possible contact with the printheads. Thinner rigid media such as fluted polypropylene (Coroplast) are susceptible. To avoid warping, set a media delay in **Printer Settings > Printing Delay**, or in a custom Media Wizard parameter set for Fine Text printing.

This could also be an issue with **Sharp Edge** printing, although this mode prints at 80% speed, so it is less susceptible to excessive heat buildup.

### 4. Press an option to select it.

The UV lamps settings appear.





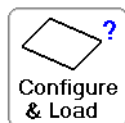
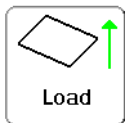
<b>Media: Fome_Cor</b> 1 sheet: Size: 48.00 x 48.00 in. x 0.25 in. Print Area: 47.50 x 47.50 in. Printable Length: 47.50 in. remaining		<b>HP Scitex FB910</b> HP Scitex FB910 Link: 100 Mb/sec Up, Offline Attention Items: 3 warnings Mode: Production Quality Lamps: Low, Low		<b>HP Scitex FB240</b> <table border="1"> <tr><td>Black</td><td>1455 ml</td></tr> <tr><td>Cyan</td><td>1400 ml</td></tr> <tr><td>Magenta</td><td>1080 ml</td></tr> <tr><td>Yellow</td><td>1515 ml</td></tr> </table>		Black	1455 ml	Cyan	1400 ml	Magenta	1080 ml	Yellow	1515 ml				
Black	1455 ml																
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<b>Media Present</b> 		<div style="text-align: center;"> <b>Select Lamp Mode</b> </div> <table border="0"> <tr> <td style="text-align: center;">Leading</td> <td></td> <td style="text-align: center;">Trailing</td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/>            High         </td> <td></td> <td style="text-align: center;"> <input type="checkbox"/>            High         </td> </tr> <tr> <td style="text-align: center;"> <input checked="" type="checkbox"/>            Low         </td> <td></td> <td style="text-align: center;"> <input checked="" type="checkbox"/>            Low         </td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/>            Shuttered         </td> <td></td> <td style="text-align: center;"> <input type="checkbox"/>            Shuttered         </td> </tr> </table> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <span> Cancel</span> <span> Proceed</span> </div>				Leading		Trailing	<input type="checkbox"/> High		<input type="checkbox"/> High	<input checked="" type="checkbox"/> Low		<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Shuttered		<input type="checkbox"/> Shuttered
Leading						Trailing											
<input type="checkbox"/> High						<input type="checkbox"/> High											
<input checked="" type="checkbox"/> Low						<input checked="" type="checkbox"/> Low											
<input type="checkbox"/> Shuttered						<input type="checkbox"/> Shuttered											
<b>UV Lamps</b> Off																	
1 Hours 1																	
<b>Vacuum Pressure</b>  5.01 "Hg																	
<b>Media Handling</b> Input Roller: Down Alignment Bar: Up Output Roller: Up																	
<b>Door Status</b> All Doors closed.																	
<b>Stored Jobs</b> 2 Stored (0 Locked). Available: 551 sq in Free: 351 sq in																	

Fig. 2-2. Select Lamp Mode screen

5. Configure the UV lamps operation by touching the “High,” “Low,” or “Shuttered” options for the leading and trailing lamps. Buttons will appear or disappear to present only valid combinations (for example, you cannot set both lamps to Shuttered).
  - For standard media listed in the Media Wizard, leave the lamp settings at their default values, then adjust as needed.
  - Faster print modes require higher lamp settings to ensure sufficient curing.
  - If the ink is not curing, increase the setting. The lamps will gradually lose curing effectiveness, so increasing the setting eventually may become necessary. (For information about UV lamp life, see “Replacing UV Lamp Bulbs” on page 6-19.)
  - If the media is wrinkling or warping from the heat of the lamps, lower the setting.
6. Press **Proceed** to save the settings and return to the Front Page, or **Cancel** to restore the previous print mode settings.

## Configure Media

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Before the printer will accept a print job, it must be configured for a specific media type. The currently-configured media type, if any, is displayed in the upper left corner of the control panel.

1. If the control panel displays the media type you intend to print, press the **Load** key and go to “Load and Print on Rigid Media” on page 2-8. Otherwise, go to step 2.
2. From the Front Page screen, press the **Configure & Load** key.

The **Select Media to Load** menu appears. The list of media ends with the option **Create Media Type**.

---

### Tip

Start by using one of the standard media types. If you are not using a standard media type, select the standard media type that most closely matches the media you are using. Then only if necessary, create a new media type using the standard type you selected as a starting point, and adjust it as needed.

---

3. Press a media name, or **Create Media Type**.

- If you pressed a media name, a list of settings appears.
- If you pressed **Create Media Type**, the control panel displays a list of settings for you to configure.

For each media type, the Media Wizard stores the following settings (as indicated, some settings apply to either roll-fed or cut sheet media only):

- **Media Name** — for user-defined media, use the alphabetic keyboard displayed on the control panel to enter the media name. (Standard media names cannot be changed.)
- **Feed Method** — Cut Sheet or Rollfed (with optional media handler installed) or Roll-Fed.
- **Rollers** — sets whether the Input and Output media rollers are used (yes) or not used (no).
- **Weight** — sets the media belt drive motor and media advance amount to handle Light (up to 50 pounds/22 kg) or Heavy (50-250 pounds/22-113 kg) media.



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**Caution** The input and output tables are rated at a maximum load of 80 pounds (36 kg). Do not exceed this maximum load.

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**Note** The printer senses the weight of the media before printing begins. If a heavy board (over 50 pounds/23 kg) is detected while the printer is set to Light, the printer automatically switches to the Heavy setting. This cannot be changed during printing. Printing in Heavy mode is slower than in Light mode due to the shorter media advances, but reduces the chance of damage to the media belt drive motor.

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- **Visible to Printer** — if Yes, the media sensor and image sensor will be used. If No, the media sensor and image sensor will not be used (with clear films, for example).
  - **Print Mode** — quality and direction settings (see “Configure Printing” on page 2-2).
  - **UV Lamps** — see “Configure Printing” on page 2-2 for the possible UV lamp settings.
  - **Vacuum** — this option turns on the vacuum fans, and displays ▲ and ▼ keys on the control panel. Press ▲ and ▼ to raise or lower the fan speed for each zone (input zone, between the pinch rollers, and print zone). Observe the media as the fan speed changes. If the media is lifting off the belt, increase the fan speed. If the media advance seems impeded by the vacuum, decrease the fan speed.
  - **Printing Delay** — press the ▲ and ▼ keys on the control panel to increase or decrease the delay (seconds per print swath). To increase throughput, decrease the delay.
4. Press **Proceed** to load the media, or press **Cancel** to discard your changes.

## Media Wizard



To view or delete settings for an existing media type, press the **Media Wizard** key. The Media Wizard also lets you create a media type without configuring it as the currently-loaded media.

## Load and Print on Rigid Media

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1. At the end of the Configure Media process (see “Configure Media” on page 2-6), press the **Proceed** key on the control panel:

**OR**

from the Front Page screen, press the **Load Media** key.

Before you can load media, you must configure the media as explained in “Configure Media” on page 2-6.

2. On the control panel menu, press one of the following media rollers options:
  - Flat Media — media rollers optional, which may not be needed for unwarped media (the media drive belt and vacuum are sufficient for unwarped media)
  - Warped Media, Hold Down — media rollers used to prevent warped media from striking the printhead carriage and keep the media feeding properly. When the media rollers are used, the printable length is reduced by several inches at the leading and trailing edges, to allow the rollers to hold down the media during printing.



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### Note

The media rollers are not lowered onto the media with any force or pressure, other than their own weight. They are designed to hold down lighter weight media with a moderate amount of warping. They may have no effect on heavier, badly warped media. For best results, use flat media.

---

3. On the menu, press the media thickness that is closest to the thickness of the media you are loading.
4. Load the sheet of media onto the input table, sliding it forward against the media alignment bar (under the rail), then left along the media alignment bar until the media touches the media fence.
5. Press the **Sheet Ready** foot pedal or button on the control panel, or **Cancel** to cancel the media load process.

At this point you can also adjust the vacuum fans in each zone, and the printhead height clearance from the media. If

the sheet warped or not being held down, you may want to increase the vacuum or raise the head height. A lower head height reduces overspray, but increases the chance of the carriage or printheads striking the media.

6. Verify the height of the media rollers shown on the control panel, and adjust if necessary.

Check and adjust the right *and* left sides of both media rollers (input and output). The rollers should just touch the media or remove any warping.



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**Note**

Do not lower the rollers too far. On narrow media (less than 98 inches/2.5 m), it is possible to lower the input roller below the height of the media on one side, causing the media to skew.

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7. Press the **Proceed** key.
8. Enter the media length.
9. Enter the number of sheets:
  - Single sheet
  - N-UP
10. Measure media width.

The margin and imageable area are displayed, and you can adjust them.

11. Press the **Proceed** key.
12. Press the **Go Online** key.
13. Send a print job from the RIP.

For multiple copy jobs, the printer control panel will prompt for the next sheet a short time before the previous sheet is done printing. Load the subsequent sheet as before, and press the Sheet Ready foot pedal or control panel button. The printer prints on the next sheet and will use the same option settings on all of the copies in the print job.

## Quick Load

After printing a job, if the next job will be printed on the same type of media with the same settings and dimensions, you can skip these settings with Quick Load.

1. Press the **Load Media** key on the Front Page screen.

The control panel displays a menu with a Normal Load and Quick Load option. If the media type or dimensions are different from the previous job, you must select Normal Load.

2. Press the **Quick Load** key.
3. Load the media against the media alignment bar.
4. Press the **Sheet Ready** foot pedal or **Ready** button on the control panel.

The printer is ready to receive the next job from the RIP.

## Multi-Sheet N-UP

Multi-sheet N-UP allows you to print a multiple-copy job on multiple sheets across the belt, and multiple rows of sheets, until the job is complete.

To print multi-sheet N-UP, load multiple sheets on the printer, then send a print job from the RIP with a quantity greater than or equal to the number of sheets you loaded. The printer will prompt you to load more sheets until the number of copies you specified has been printed. You can also print Stored Jobs as multi-sheet N-UP (see "Stored Jobs" on page 2-11 for details).

This type of printing works best with an image that has wide margins on all four edges, but edge-to-edge printing is also possible with the appropriate printer settings, and by carefully matching the dimensions of the image to the dimensions of the media sheets.

### Margins

When printing a multi-sheet N-UP job, the image positioned horizontally (left-right) as defined under the menu option: **Printer Settings > Margin Settings > Margins**.

### Using the Camera to Locate the Sheets

The camera is used to locate the position of each sheet as part of the load process. You can set the printer camera to either "measure all sheets" or "measure the first sheet only:"



- **Measure all sheets** — each sheet in every row of sheets will be measured, and reported to the server. This aids in accurate placement of edge-to-edge images. In this mode, use of the alignment pins is unnecessary.
- **Measure first sheet only** — only the first row is measured, and those measurements are used for all subsequent rows. Use the alignment pins to locate the sheets in subsequent rows. This speeds throughput by eliminating the measurement step for each row.

### “Incomplete” Rows

You can print any number of copies in a multi-sheet N-UP job, even if the total number does not divide evenly into the number of sheets per row. Typically, only the last row would have a different number of sheets.

For example: in a twenty-sheet job, you might be able to fit three sheets in each row, so you might print six rows of three sheets, plus one row of two sheets ( $6 \times 3 = 18$ ,  $1 \times 2 = 2$ ,  $18 + 2 = 20$ ). If the last row is a partial row, load the sheets from the user end toward the service end.

## Stored Jobs

Whenever the printer receives a print job from the RIP, the job is automatically stored in the printer’s memory, on a rotating first-in-first-out (FIFO) basis. You can “lock” a job to prevent it from being rotated out, but this reduces the amount of memory available for subsequent jobs to be saved.

The printer can store up to ten jobs, with a total area of approximately 98 x 98 inches (2.49 x 2.49 m). Jobs RIPed at 600x300 dpi will take less memory to store than jobs RIPed at 600x600 dpi. If power is removed or the printer is restarted, these jobs are lost from the printer memory.

If a job is too large to be saved, it is simply discarded from memory after printing. If a complete print job has been received from the RIP and you pause or cancel the print, it will still appear in the Stored Jobs listing.

Stored Jobs can be viewed and managed from the control panel. The Front Page screen shows the following summary of the stored jobs on the printer:

- Number of jobs stored and locked

- Available area for storage — the area (size) of new print jobs that can be saved in the printer's memory. Previously-stored, unlocked jobs will be deleted to make room for new jobs. Locking a stored job reduces the Available space.
- Free area for storage — the Available area minus the area of jobs that are currently stored in the printer memory. This is the largest job that can be stored without deleting previously stored jobs.

To print or manage Stored Jobs:

1. Press the **Stored Jobs** key on the Front Page screen.

The Stored Jobs screen appears.

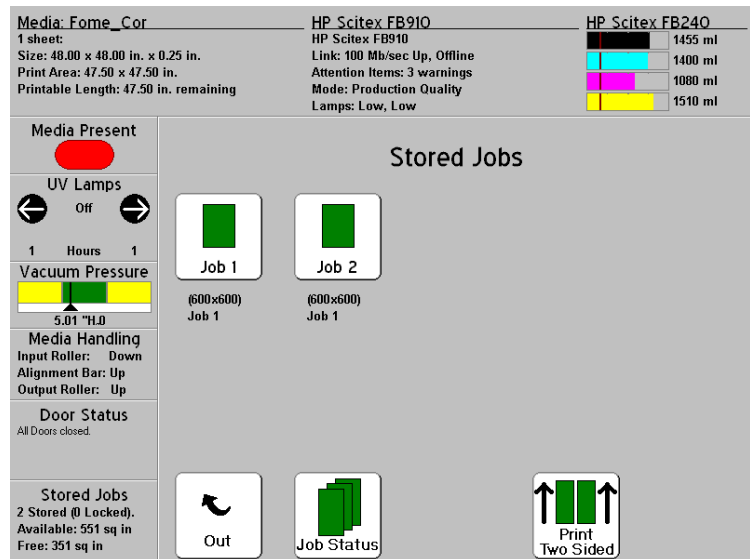
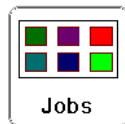


Fig. 2-3. Stored Jobs screen

- To view the properties of a Stored Job, or to print a Stored Job, press the key above its file name.
- To set up a two-sided print job using Stored Jobs, press the **Print Two Sides** key. The printer will prompt you to select a Stored Job for the front and back of the sheet. After printing, side one of the sheet will be ejected to the input side of the printer, and you will be prompted to flip over and reload the sheet for printing side two.

After printing, the sheet will be ejected to the output side of the printer.

- **To view a log of the activity** in the Stored Jobs area of the printer's memory, press the **Job Status** key.
2. When you press the key to display a Stored Job property page, a screen similar to the following appears (exact details will vary by print job):

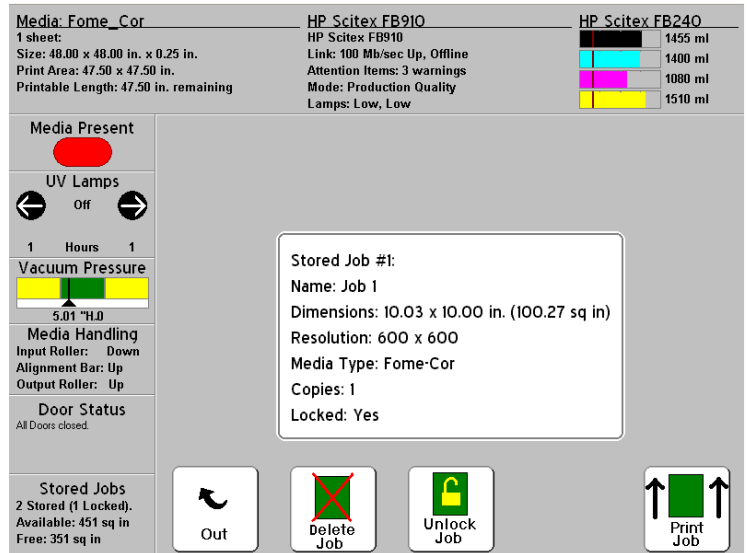


Fig. 2-4. Stored Jobs properties screen

- **To print the job**, press the **Print Job** key. The printer will prompt you for the number of copies to print. If you have multiple sheets loaded, each copy will print on a separate sheet, and the printer will prompt for additional sheets until the number of copies requested have been printed.
- **To lock or unlock the job**, press the appropriate key. Locking a job prevents it from being deleted, but subtracts from the available memory for Stored Jobs.
- **To delete the job**, press the **Delete Job** key.



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**Note**

If you want to print on a media type that is different from the media specified in a Stored Job, or if you must re-linearize the printer, do not reprint the Stored Job. For the best color, re-send the job from the RIP instead.

When printing a job, the printer checks that the currently loaded media matches the media type that was loaded when the job was stored. If different, a warning is raised. You can choose to not print the job, or ignore the warning and print anyway. Printing on a media type that is different from the original media may result in a noticeable color shift. Performing a linearization and then reprinting a Stored Job may also result in a color shift.

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## Load and Print on Roll-Fed Media

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If the optional roll-fed media supply and takeup system is installed on the printer, you can print on roll-fed media.

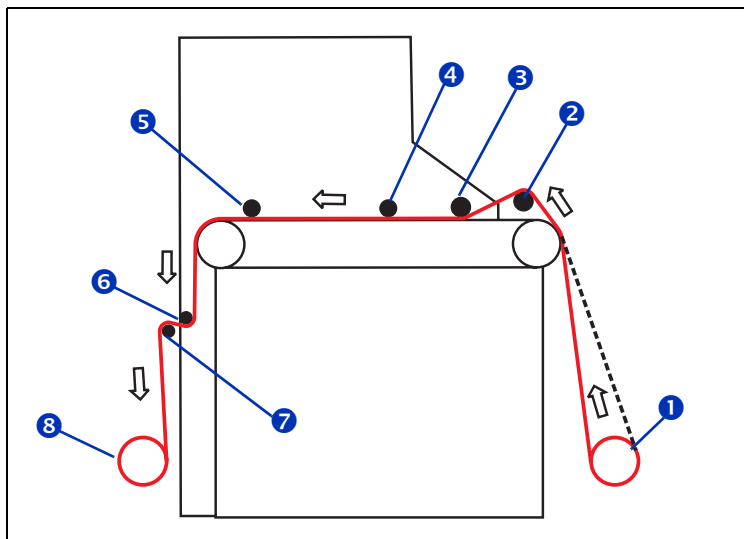


Fig. 2-5. Media route in the takeup system

1. If installed, detach the rigid media input and output tables from the printer, and set them aside.
2. If you will be using the takeup system, install the takeup spool (see 8 in Fig. 2-5).
3. Load the media centered onto the supply spool 1.



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**Note** To prevent fingerprints from showing on printed output, wear gloves while handling the media.

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4. Load the supply spool onto the supply system bracket.

You can print on either side of the media by loading the spool so the media spools off the bottom of the roll or the top of the roll.

5. Configure the media as explained in “Configure Media” on page 2-6. At the end of the Configure Media process, press the **Proceed** (▶) key on the control panel.

## OR

If the media is already configured, from the Front Page screen of the control panel, press the **Load** key.

The printer displays a menu with the following options:

- **New Load** — loads a new media, discards previous settings (see page 2-16).
- **Restore Loaded State** — loads media using the previously-used settings when rolled media is already loaded in the printer but the printer is not in a loaded state. This can happen if the printer goes to sleep or is rebooted, or if you press the Unload key on the front panel, but not physically remove the media from the printer (see page 2-19).

Follow the procedure on the next sections that corresponds to the load option you choose.

### New Load

6. On the Select Thickness Units screen, press the option that corresponds to the units you will use.
7. On the Enter Media Thickness screen, enter the media thickness, or press the **Esc** key to use the default thickness.
8. As prompted by the control panel, remove the foam press roller, then press the Proceed (▶) key.
9. Pull the media from the roll, pull it over the foam lift roller ❷ (the foam press roller ❸ should not be in position yet) and lay it on the belt up to the input media roller ❹.
10. On the control panel, press the upper (forward) **Advance Media** arrow key to advance the media, with the vacuum fans on.

You may need to hold the media down on the belt until the vacuum grabs it.

- **If using the takeup system**, advance the media until it hangs on exit side down to the takeup roller. *Do not tape the media to the core at this time.*
- **If not using the takeup system**, advance the media at least past the output media roller ❺. During printing,

make sure that the media does not fall behind takeup rollers ⑥ ⑦ and ⑧.

11. On the control panel, press the **Turn Off Fans** key.

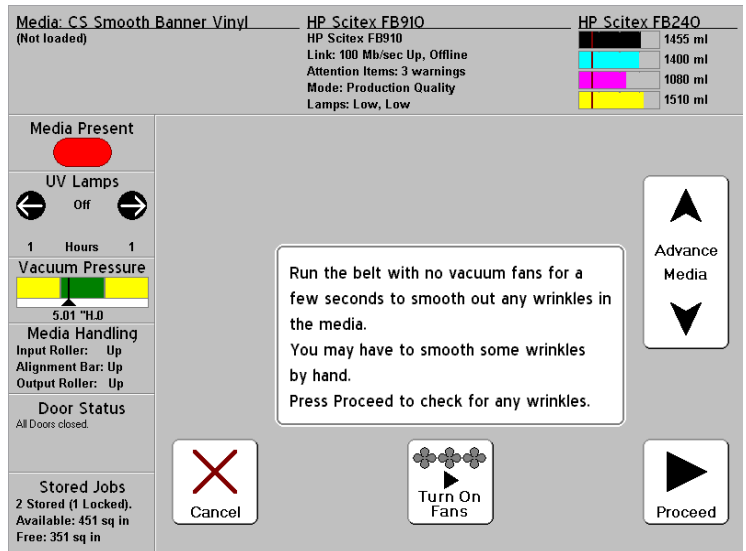


Fig. 2-6. Load roll-fed media

12. Hold the upper (forward) **Advance Media** key down for about five seconds.

This will help smooth out wrinkles and equalize the tension of the media across the belt.

Since the fans are off, the media should not advance. If the media moves, hold on to the media with your right hand while pressing the Advance Media key with your left hand.

13. On the control panel, press the **Turn On Fans** key.
14. Lower the input ④ and output media rollers ⑤ to their lowest positions.

Use the adjustment cranks on both the user and service ends to lower the rollers at both ends. This will help keep wrinkles out of the media.

15. Check for wrinkles in the media across the full length and width of the belt.

If you see any wrinkles, turn off the fans and smooth them out with your hand. Repeat steps 11 through 15 until no wrinkles are visible.

16. Place the foam press roller ③ into operating position.

17. If you are not using the takeup system, go to step 23.

18. Align the cardboard takeup core to the media and tighten the collets to lock the core in place.

19. Lift the first dancer bar ⑥ (with the gears), and lock in the upper position.

20. Pull the media under the first dancer bar, over second dancer bar ⑦, and down to the printer side of takeup roller ③.

Looking down the length of the takeup roller from the user end, the roller rotates clockwise. Ensure that the media is wrapped as shown in Figure 2-5 on page 2-15.

21. Tape the end of the media to printer side of takeup roller, starting in the middle and working out to both ends.

Be sure to maintain even tension across the width of the media.

22. Release the dancer bar locking lever.

23. Press the **Proceed** key.

24. Enter the media length or press the **Esc** key for an undefined length.

The printer measures the media width.

25. On the Front Page screen, press the **Proceed** key.

The Front Page screen appears on the control panel.



26. Press the **Go Online** key.

The printer is now ready to receive a print job from the RIP.

## Restore Loaded State

27. As prompted by the control panel, remove the foam press roller, then press the Proceed (▶) key.
28. Press the upper (forward) Advance Media key to advance the media to the takeup spool and/or past any printed area of the media.
29. On the control panel, press the **Turn Off Fans** key.
30. Hold the upper (forward) **Advance Media** key down for about five seconds.
31. On the control panel, press the **Turn On Fans** key.
32. Press the **Proceed** key.
33. Check for wrinkles in the media across the full length and width of the belt.  
  
If you see any wrinkles, turn off the fans and smooth them out with your hand. Repeat steps 29 through 33 until no wrinkles are visible.
34. Place the foam press roller ❸ into operating position.
35. If you are not using the takeup system, or if the media is already loaded in the takeup, go to step 41.
36. Align the cardboard takeup core to the media and tighten the collets to lock the core in place.
37. Lift the first dancer bar ❹ (with the gears), and lock in the upper position.
38. Pull the media under the first dancer bar, over second dancer bar ❺, and down to the printer side of takeup roller ❸.

Looking down the length of the takeup roller from the user end, the roller rotates clockwise. Ensure that the media is wrapped as shown in Figure 2-5 on page 2-15.

39. Tape the end of the media to printer side of takeup roller, starting in the middle and working out to both ends.

Be sure to maintain even tension across the width of the media.

40. Release the dancer bar locking lever.

41. Press the **Proceed** key.

42. Enter the media length or press the **Esc** key for an undefined length.

The printer measures the media width.

43. Press the **Proceed** key.

The Front Page screen appears on the control panel.

44. On the Front Page screen, press the **Go Online** key.

The printer is now ready to receive a print job from the RIP.

## Printing Tips

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- **Rigid cut-sheet media** — use only flat, unwarped, undamaged sheets, with parallel opposite edges and 90° corners.
- **Curing continues for 24-48 hours** — the UV ink will continue to cure for a day or two after printing. Maximum durability and adhesion is achieved after the ink is fully cured.
- **Pausing printing** — to pause printing, press the **||** (Pause) key. While printing is paused, you can:
  - Perform a Standard Purge of one or more colors, to restore missing inkjets.
  - Change media settings (vacuum, print delay).
  - Pause-swap inks (see “Pause Swapping Ink,” below).



---

**Caution** Synthetic media commonly used for inkjet printing can build up a static charge, especially in environments with low relative humidity. This charge can pose an electrostatic discharge (ESD) hazard to persons, the printer, and other equipment. It can be safely discharged by draping a grounded chain or tinsel over the top of the stack of media.

---

- **Printing roll-fed media without the takeup** — cured output is dry to the touch immediately, so roll-fed output can be allowed to collect on the floor (for example, during unattended printing) without using the takeup system, with no damage to the output.
- **Lighter, smaller media rolls** — for lighter, smaller rolls of media, you can use the rigid media tables and media rollers to feed the media like rigid media.

## Pause-Swapping Ink

You can replace one or more ink boxes during a print by pausing the printer:

1. On the printer control panel, press the  (Pause) key.

2. Remove the old profiler.

This signals to the printer that the ink box is being replaced.

3. Disconnect and remove the old ink box.

4. Install and connect the new ink box.

5. Install the profiler that was included with the new ink box.

6. Repeat steps 2 through 5 for any other ink boxes you want to replace.

7. On the printer control panel, press the  (Resume) key.

## Checking Jet Health

When AutoJet detects a missing jet, it attempts to replace it with a working jet on the same or another printhead (in Production and High Quality modes). In this way, printing occurs with all jets for maximum quality.

When you notice a decrease in print quality, one or more inkjets may be clogged. To recover clogged jets:

1. Print a **Prime Bars** pattern to determine whether there are any missing jets (see below).
2. Run **AutoJet** (page 4-3) or **Manual Jet Mapping** (page 4-16).
3. If there are any missing jets, **Print Jet-Out Lines** (see below).

Repeat this process until all jets are working or substituted for another jet.

### Print Prime Bars



1. From the control panel Front Page screen, press the **Prime Bars** key.

The control panel displays a prompt asking you to enter the total width of the prime bar pattern you wish to print.

2. Enter a width for the prime bar pattern by pressing the ▼ and ▲ keys.
3. Press the ► (Proceed) key to continue.

The printer prints the prime bar pattern. The prime bars will show correctly working jets with a solid line, and missing jets with no line.

### Map Out Missing Jets

If the Prime Bars (above) reveal a blank lines, the corresponding jets should be mapped out. When all missing jets have been substituted, printed output will appear as if all jets are working.

You can map jets out temporarily (“soft bad jets”) or permanently (“hard bad jets”). For instructions, see “AutoJet” on page 4-3 or “Manual Jet Mapping” on page 4-16.

## Print Jet-Out Lines



1. From the control panel Front Page screen, press the **Calibrate** key.

The Calibrate menu appears.

2. Press **Manual Calibrations**.

The Manual Calibrations menu appears.

3. Press **Print Jet-Out Lines**.

The Jet-Out Lines pattern prints. Substituted jets are marked with a black square.

## Chapter 3

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**Ink**

This chapter describes how to use the ink.

- Ink System Overview (page 3-2)
- Loading Ink (page 3-5)

## Ink System Overview

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The printer's ink system consists of the following components:

- **Ink boxes** — bag-in-box supply of UV cure ink, suitable for both flexible and rigid media applications.



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### Note

Unlike other inks used in wide format printing, UV cure ink has a limited shelf life. Plan to rotate your ink stock and use it promptly by the date printed on the ink box.

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- **Flushing solution** — used to moisten a lint-free cloth for cleaning the printheads, also in automated flushing of the printheads. It has no properties that work against the ink to soften or reliquify cured ink, or any other similar cleaning properties. It does not react with the ink, making it suitable for use as a lubricating agent for cleaning.



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### Caution

Use only genuine HP inks and Flushing Solution in the printer. Use of any other inks or cleaning fluids **COULD DAMAGE THE PRINTER AND WILL VOID THE WARRANTY.**

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- **Profilers** — provided with each ink box, they contain information about the ink and must be installed together with their corresponding box. Profiler data are used to track ink levels, and to help ensure optimal output quality and compatibility with printer components.
- **Ink tubes** — carry ink to the printheads, they are opaque to prevent ink curing before printing.
- **Printheads** — permanent piezo-based printheads.
- **Vacuum/Pressure (VP) System** — provides vacuum to maintain negative pressure at the printheads, and pressure to purge the ink tubes and printheads.
- **UV lamps** — provide the high-intensity ultraviolet light required to cure the ink.



## UV Lamps

The printer's two UV lamps (on the left and right sides of the printhead carriage) emit the high-intensity ultraviolet light that is necessary to cure the UV ink. The lamps have shutters, which close when lamps are not over the media. This prevents the light from causing the ink in the drip tray, on the printheads, and elsewhere off the media from curing.

You should be aware of the following characteristics of these lamps when operating the printer:



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**WARNING** UV light hazard. The UV parking station must be installed during printing. Excess exposure to high-intensity UV light can result in photokeratitis (also known as snowblindness or welder's flash). **AVOID LOOKING DIRECTLY AT THE UV LAMPS.**

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**VORSICHT** UV Licht hoher Intensität. Bitte vermeiden Sie es, direkt in die Lampen zu schauen.

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- **UV light exposure** — the printer is designed with shields, louvers, and other features to protect the operator from exposing the eyes and skin to high levels of UV radiation. Do not look directly at the UV light.
- **High/low lamp operation** — the UV lamps are operated at high intensity only when curing the ink. When the carriage is not directly over the media, the lamps are switched to a lower intensity.
- **Warm-up/cool down cycle** — the UV lamps take about one minute to warm up to operating temperature, and about three minutes to cool down fully. After printing, the lamps must fully complete their controlled cool-down cycle before warming up again for the next print job (for a total elapsed time of about four minutes). During each cycle, a countdown timer that shows the time remaining appears on the control panel.

To save time, you can manually switch on or off the lamps on via the control panel (**Tools > Turn UV Lamps On/Off**).



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**Caution**

**Do not switch off the UV lamp power supply unless the lamps have fully completed their controlled cool-down cycle** (with fans and heat extraction). Removing power from hot lamps can result in overheating and permanent damage. If sudden removal of power occurs, contact technical support before starting the printer again.

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- **Lamp replacement** — the UV lamps will gradually lose their intensity and therefore their ability to cure the ink. At that point, you can switch the lamp intensity from Low to High, but they will eventually have to be replaced. For details, see step 5 on page 2-5 and “Replacing UV Lamp Bulbs” on page 6-19.
- **Unidirectional printing** — when printing for long periods in one direction (unidirectionally), the curing ability of the lamps will become unbalanced, which could result in insufficient curing or printing anomalies. To avoid this, occasionally switch between Unidirectional Left and Unidirectional Right printing (see “Configure Printing” on page 2-2).

## Loading Ink

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### When to Load Ink

The amount of ink in each ink box is shown in bar graphs on the control panel. The control panel notifies you when it is time to exchange an empty ink box with a new one.



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**Note**

A small amount of ink may drip from the connectors when disconnecting and connecting them. To protect your hands from ink stains when unloading and loading ink boxes, wear latex or nitrile gloves.

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### Unloading an Empty Ink Box

1. Open the ink supply access door.
2. Remove the profiler corresponding to the ink you are replacing.
3. Lift the box out of its holder and turn the box upside down so the ink tube is pointing up.
4. Push the button at the end of the ink tube connector and disengage the tube from the ink box.
5. Remove and dispose of the ink box (refer to the MSDS for proper disposal procedures).

### Loading a Full Ink Box

1. Open the new ink box and locate the supply connector.



Fig. 3-1. Ink box with supply connector

2. Connect the ink supply tube to the ink box.

Grasp and squeeze the ink tube connector as shown, engage the connector to the ink box, and release the connector. Ensure that the connectors are firmly engaged before proceeding.



Fig. 3-2. Connecting the ink tube to the ink box

3. Invert and install the ink box into position in the holder.

The position for each ink color is shown on a label below the ink box holder and on the profiler docking station.

4. Install the profiler in the corresponding docking station slot.
5. Close the ink supply access door.

## Pause-Swapping Ink

You can replace one or more ink boxes during a print by pausing the printer:

1. On the printer control panel, press the **⏸** (Pause) key.

2. Remove the old profiler.

This signals to the printer that the ink box is being replaced.

3. Disconnect and remove the old ink box.

4. Install and connect the new ink box.

5. Install the profiler that was included with the new ink box.

6. Repeat steps 2 through 5 for any other ink boxes you want to replace.

7. On the printer control panel, press the **▶** (Resume) key.



## Chapter 4

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# Calibrating the Printer

This chapter explains how to calibrate the printer for the best possible output:

- When to Calibrate (page 4-2)
- AutoJet (page 4-3)
- AutoTune (page 4-4)
- Auto Calibrations (page 4-6) — AutoBiDi Calibration, AutoH2H (Head-to-Head) Calibration, AutoJet Calibration, Full AutoSet
- Manual Calibrations (page 4-9) — Manual BiDi Registration, Manual X Head Registration, Manual Jet Mapping, Media Feed, Jet Status Lines, Default Registration Data
- Linearization (page 4-24)

# When to Calibrate

The printer features several types of calibrations. Some should be run routinely, others only when necessary:

When to run	Calibration	Function
When printing a large group of print jobs	<b>AutoTune</b> (page 4-4)	Automatic jet maintenance during extended printing periods.
When loading a new media (but not when loading a new roll of the same media)	<b>Linearization</b> (third-party RIP manual or <i>HP RIP documentation</i> )	Linearization of colors.  <b>Note:</b> For maximum accuracy, the photodiode must be cooled by its fan before reading color patches. If the left UV curing lamp has been on for longer than 10 minutes, the photodiode cooling fan runs for 12 minutes before taking readings; otherwise the fan runs for 7.5 minutes. The control panel displays a countdown timer while the photodiode is cooling.
Banding (roll-fed printing)	<b>Media Feed</b> (page 4-21)	Calibrates the media advance.
Poor output quality (apparent mis-registration of colors, banding)	<b>Auto Calibrations</b> (page 4-6)	Calibrates the printhead positions and inkjets. You can also run the Manual Calibrations if necessary.
When printheads have been moved or replaced	<b>Auto Bidirectional</b> (page 4-6) or <b>Manual Bidirectional</b> (page 4-13)	Head calibration, run Manual when calibrating transparent or other media that the onboard digital image sensor cannot calibrate.



AutoJet detects individual inkjets that are misfiring or not firing at all. During subsequent printing, the printer compensates for these jets by using other jets in their place, ensuring maximum print quality without reducing print speed.

You can also identify and map missing jets manually from the Manual Calibrations menu (see “Manual Jet Mapping” on page 4-16). You may want to manually map weak or misdirected jets that AutoJet does not detect and substitute.

Jet replacement is not available in Billboard mode.

### To run AutoJet:

- Select AutoJet Calibration from the Auto Calibrations menu (see “Auto Calibrations” on page 4-6), or
- Run AutoJet automatically with the AutoTune scheduler (see “AutoTune” on page 4-4)



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### Tip

AutoJet does not work with transparent media, nor with many translucent media. In this case, run Manual Jet Mapping, or map jets on opaque media before loading transparent or translucent media for printing.

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1. Press the **Calibrate** key from the Front Page screen, then press **Auto Calibrations > AutoJet Calibration** in the menu.
2. The printer prints the AutoJet test pattern.
3. The printer reads the AutoJet test pattern and maps any missing jets to available working jets.

The control panel shows the progress of this operation as the percentage completed.

4. The printer prints an AutoJet report.

## AutoTune

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AutoTune runs AutoJet maintenance automatically at intervals you specify. You can use the Quality Check Mode feature to handle AutoJet errors (with or without user intervention). AutoTune is shown on the menu only when roll-fed media is loaded.

1. On the Front Page screen, **Calibrate** key, then press **AutoTune** on the menu.

The control panel displays the AutoTune status (off or current interval).

2. Press ▲ or ▼ to set the AutoTune interval.
3. Press ► (Proceed).

The control panel displays a confirmation message:

Setting completed.

4. Press the ⌂ (Menu Out) key repeatedly until the Front Page screen is displayed. Press the Online/Offline button to return the printer to the Ready state.



---

**Note**

When AutoTune is enabled, it will be executed as scheduled regardless of whether you initiate it manually from the control panel.

---

## Quality Check

When you run AutoJet manually, the software notifies you if there are any jet or alignment problems so that they can be addressed. When AutoTune runs AutoJet at scheduled intervals, you can use the Quality Check feature to handle AutoJet errors.

When Quality Check is enabled, if any missing jets are found that are not substituted by a working jet, or if the BiDi calibration has not been performed, the operator can be alerted by the control panel or the job can be routed to the Attention queue on the HP print server.

1. On the Front Page screen, press the **Settings** key, then press **Quality Check** from the menu.

The control panel displays the Quality Check options.

- **Attended Mode** — user must press ► (Proceed) to acknowledge the error and print the job (if one is pending), or ✕ (Cancel) to cancel printing.
  - **Unattended Mode** — no user acknowledgment of errors is required. When a quality check fails, print jobs are sent to the HP print server's Attention queue with a disposition of "Uncalibrated Printer" (this feature may not be supported by non-HP RIPs).
  - **OFF** — no quality check is performed, all jobs will print.
2. Select a Quality Check option.
  3. Press the ⏮ (Menu Out) key repeatedly until the Front Page screen is displayed. Press the Online/Offline button to return the printer to the Ready state.

## Auto Calibrations

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The printer's piezo printheads are aligned at the factory. Head and bidirectional calibrations should be necessary only rarely (for example, when the heads have been moved within the carriage or replaced).

1. Press the **Calibrate** key from the Front Page screen, then press **Auto Calibrations** in the menu.
2. Select one of the Auto Calibrations.
  - **AutoBiDi (bidirectional) Calibration** — ensures that every working jet fires at precisely the same location (regardless of the carriage direction of travel).
  - **AutoH2H (head-to-head) Calibration** — ensures that the printheads are in alignment relative to each other.
  - **AutoJet Calibration** — locates and substitutes missing jets for working jets. This is the same calibration performed as when you press the AutoJet button on the Front Page screen (see “AutoJet” on page 4-3).
  - **Full AutoSet** — runs all three calibrations in sequence. The printer prints a test pattern then reads it and makes the necessary adjustments or jet substitutions. After completing the calibration(s), a report is printed that shows:
    - Calibration results — a summary such as SUCCESSFUL CALIBRATION or an error message
    - Header showing the date and time, software version, and printer type
    - Calibration detail — the calibration data for each head. The AutoJet detail reports how many jets were mapped out by AutoJet, how many are permanently mapped out by the operator, and whether the head is usable (from a jetout standpoint) in the various print modes. The higher quality modes (Production and High Quality) use jet replacement, so they can print successfully with a greater number of jets out than can Billboard mode.

- **AutoSet Summary** — when enabled, a table of the results of the Full AutoSet calibration is printed after the AutoSet test patterns. When you enable the AutoSet Summary, you can show or hide the detailed calibration data.



## Manual Calibrations

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When you run the calibrations from this menu, you evaluate the calibration test patterns visually and enter the calibration values via the control panel.



---

**Note**

The manual BiDi and X head calibrations are time-consuming and can be error-prone, but is necessary when calibrating transparent media or other media that the printer's digital image sensor cannot calibrate.

---

Before calibrating the printer, first clean the printhead jets. See “Checking Jet Health” on page 2-23 for tips on detecting and recovering missing jets.

1. Press the **Calibrate** key from the Front Page screen, then press **Manual Calibrations** in the menu.

The Manual Calibration menu consists of these options:

- **Manual BiDi Registration** (page 4-13) — the manual version of AutoBiDi Calibration.
- **Manual X Head Registration** (page 4-10) — the manual version of AutoH2H Calibration.
- **Manual Jet Mapping** (page 4-16) — the manual version of AutoJet.
- **Jet Status Lines** (page 4-21) — prints a quick test pattern that shows which jets are out.
- **Media Feed Calibration**
- **Print Jet-Out Lines** — prints a version of the Prime Bars in which missing jets that are replaced are marked with a black square.
- **Default Registration Data** (page 4-23) — sets all registration data to zero.

After calibration and jet mapping, perform a linearization or color calibration (as supported by your print server or RIP).

## Manual X Head Registration

Precise positioning of each drop of ink is essential for optimal print quality. This is possible only if you register all printheads in the printhead assembly to each other in the X (along the length of the platen) direction.

This is a two-part process:

- Print a registration pattern.
- Enter the X registration data for each head.



---

**Note**

This is the manual version of AutoH2H Calibration (see “Auto Calibrations” on page 4-6 for details).

---

1. Press the **Calibrate** key from the Front Page screen, then press **Manual Calibrations** in the menu.
2. Press **Manual X Head Registration** in the menu.

The control panel asks whether you want to print a manual head-to-head calibration page.

- If you have a calibration pattern from a recent print, you can use it to calibrate the heads. Press **X** (Cancel) and go to the next step.
- If you need to print a new calibration pattern, press **►** (Proceed). The printer prints a calibration page.

When the calibration page has printed, the control panel displays this prompt:

Take readings from left side of pattern.

3. Press the **►** key.

The control panel displays this message:

X Direction Registration  
Head 2: +0

4. Examine the X direction pattern (in the left-hand group of patterns) for the current head, and determine which pattern of colored and black lines are the closest to perfectly aligned.



Use a printer's loupe or magnifying glass if the patterns are difficult to see.

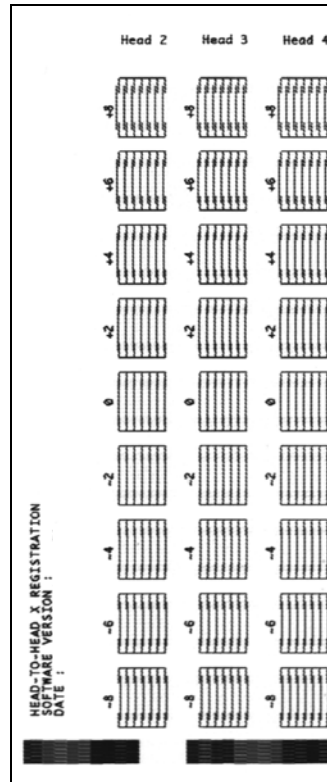


Fig. 4-2. Sample head calibration patterns

5. Press the ▲ or ▼ control panel keys repeatedly until the number next to the pattern that is closest to aligned perfectly is displayed.

For example, if pattern -1 is the closest aligned, press the ▼ key to change the display to:

X Direction Registration  
Head 2: -1

If a printhead is extremely out of alignment, there may be no pattern in alignment. Since the black vertical bars are five pixels apart, you can add +5 or -5 to a pattern number to shift the colored bars up or down by one black bar. Alternatively, you can repeatedly perform the X calibration, which

will move the head in smaller increments, until the head is aligned.

6. Press ► (Proceed).

The control panel message increments the head number by one.

7. Repeat steps 4 through 6 for each of the heads.

When you have entered registration values for all of the patterns, the control panel displays this message:

Registration successful.

## Manual BiDi Registration

Bidirectional registration is a method to align each of the print-heads so that dot placement is accurate in both directions along the X axis (along the direction of printhead travel).

The bidirectional registration pattern consists of a series of vertical lines. Half the pixels in this pattern are printed in one direction, half of them in the other direction. When the pixels are accurately aligned, the pattern is clear. When the dots are not aligned, the pattern appears fuzzy and ill-defined.



---

### Note

AutoBiDi Calibration is the automatic version of this calibration. Try AutoBiDi first before running this manual calibration (see “Auto Calibrations” on page 4-6 for details).

---

1. Press the **Calibrate** key from the Front Page screen, then press **Manual Calibrations** in the menu.
2. Press **Manual BiDi Registration** on the menu.

The control panel displays this prompt:

Print a manual bidi registration page?

3. Press ► (Proceed).

The printer prints the calibration pattern you selected.

4. When the calibration page has printed, the control panel displays this prompt:

Bidi registration  
Head 1: 0

5. Examine the BiDi Registration pattern for the current head, and determine which pattern is the closest to perfectly aligned.

Use a printer's loupe to select the pattern, since the lines in the patterns may be difficult to see.

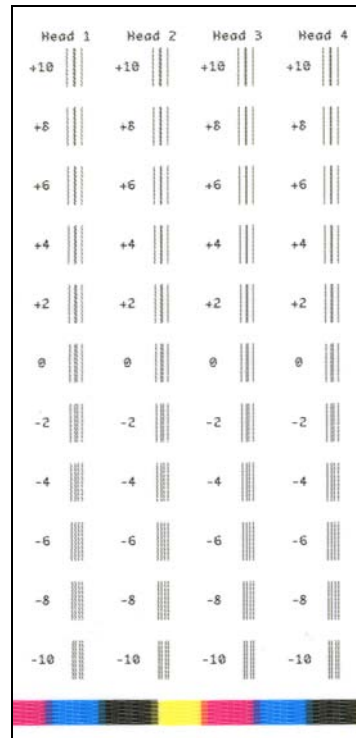


Fig. 4-3. BiDi Registration pattern

6. Press the ▲ or ▼ control panel keys repeatedly until the number next to the pattern that is closest to aligned perfectly is displayed.

For example, if pattern +2.0 is the closest aligned, press the ▲ key to change the display to:

BiDi registration  
Head 1: +2

If a printhead is extremely out of alignment, there may be no pattern in alignment. Since the black vertical bars are nominally five pixels apart, you can add +5 or -5 to a pattern number to shift the colored bars right or left by one black bar. Alternatively, you can perform the BiDi Registration repeat-

edly, which will move the head in smaller increments, until the head is aligned.

7. Press ► (Proceed).

The control panel message increments the head number by one.

8. Repeat steps 5 through 7 for each of the twelve heads.

When you have entered registration values for all heads, the control panel displays this message:

Registration Successful

## Manual Jet Mapping

Jets that are missing or misfiring are usually detected by the AutoJet calibration. Alternatively, you can map out jets manually using the Manual Jet Mapping function. You may want to manually map weak or misdirected jets that AutoJet does not substitute.



---

**Tip**

AutoJet is the automatic version of this calibration (see “AutoJet” on page 4-3 for details).

---



---

**Tip**

For best results, print the prime bars and purge the printheads as necessary to ensure the maximum number of working jets. See “Checking Jet Health” on page 2-23 for instructions.

---

1. Press the **Calibrate** key from the Front Page screen, then press **Manual Calibrations** in the menu.
2. Press **Manual Jet Mapping** in the menu.

The control panel displays this message:

Print Jet Map?

If you have a calibration pattern from a recent print, you can use it to calibrate the heads. Press **X** (Cancel) and go to the next step. Otherwise, press **►**.

The printer prints a jet map test pattern.

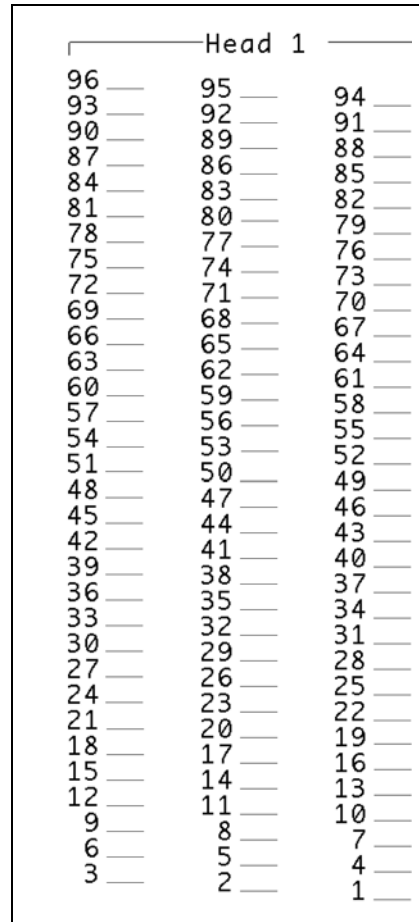


Fig. 4-4. Sample jet mapping pattern (Head 1 of 16)

- If a line segment is missing or broken, the jet number shown next to it is out.
- If a line segment is marked with a code letter:

R — no replacement

S — user disqualified “soft” jetout

H — user disqualified “hard” jetout

D — disqualified (and replaced) by AutoJet

3. When the calibration pattern has printed, the control panel displays a menu with the following options:
  - **Report individual soft bad jets** — enables you to report a “soft” bad jet, which can be automatically reenabled if AutoJet finds it working.
  - **Report individual hard bad jets** — enables you to report a “hard” bad jet, which will not be checked or reenabled by AutoJet.
  - **Clear individual bad jets** — enables you to clear (mark as good) a jet.
  - **View current bad jets** — lists the bad jets on a given printhead.
  - **Clear all bad jets** — clears (marks as good) all jets currently marked as unusable.

A “soft” bad jet is a jet that you believe is temporarily out, based on past performance. A “hard” bad jet is a jet that you believe is permanently out.

Select an option and follow the corresponding procedure below.

### Report Individual Bad Jets

When you select Report Individual Bad Jets, the control panel displays the following prompt:

Head 1:  
Press Proceed to report a bad jet.

4. Press ▲ and ▼ to select a head number, then press ► (Proceed).

The control panel displays a numeric keyboard that you can use to enter the number of the bad jet.

5. Enter the jet number, then press the Enter key.
6. When you are finished entering jet numbers, press the Esc key.

The control panel displays the head selection message again.



7. Press ▲ and ▼ to select the next head number, then press ► (Proceed).
8. Repeat steps 5 through 7 for each head containing bad jets you want to report.
9. When you are finished reporting bad jets, press X.

The control panel displays the previous menu.

### Clear Individual Bad Jets

When you select Clear Individual Bad Jets, the control panel displays the following prompt:

Head 1:  
Press Proceed to clear a bad jet.

10. Press ▲ and ▼ to select a head number, then press ► (Proceed).

The control panel displays a numeric keyboard that you can use to enter the number of the bad jet.

11. Enter the jet number, then press the Enter key.
12. When you are finished entering jet numbers, press the Esc key.

The control panel displays the head selection message again.

13. Press ▲ and ▼ to select the next head number, then press ► (Proceed).
14. Repeat steps 11 through 13 for each head containing bad jets you want to clear.
15. When you are finished clearing bad jets, press X.

The control panel displays the previous menu.

### View Current Bad Jets

When you select View Current Bad Jets, the control panel displays the following prompt:

Head 1:  
Press Proceed to view bad jets.

16. Press ▲ and ▼ to select a head number, then press ► (Proceed).

The control panel displays a message that lists the bad jets by number.

17. Press ► to return to the head selection screen.
18. Repeat steps 16 and 17 for each head you want to check for bad jets.
19. When you are finished clearing bad jets, press ✕.

The control panel displays the previous menu.

### Clear All Bad Jets

When you select Clear All Bad Jets, the control panel displays the following prompt:

Are you sure you want to clear  
ALL reported bad jets?

- Press ✕ to cancel this function, or
- Press ► (Proceed). The control panel displays this message:

Do you want to clear the hard bad jets?

- Press **No** to clear the soft bad jets only.
- Press **Yes** to clear both the hard and soft jets.

The control panel displays this message:

All reported bad jets have been cleared.

20. Press ► (Proceed).

When you have finished mapping jets, the following summary appears on the control panel:

x soft jets currently reported bad.  
x hard jets currently reported bad.  
  x new soft bad jets reported.  
  x new hard bad jets reported.  
x previous soft bad jets cleared.  
x previous hard bad jets cleared.

where x is the number of jets.

## Jet Status Lines

This option prints the Manual Jet Mapping test pattern (see Fig. 4-4 on page 4-17) that shows which jets are working, and which jets are out, but does not run the Manual Jet Mapping calibration (see “Manual Jet Mapping” on page 4-16 for information).

## Media Feed Calibration


This calibration allows you to calibrate the accuracy of the media advance. Inaccurate media advance can result in blank spaces between print swaths (too much advance) or overlapping swaths (too little advance). The Media Wizard stores this value by media type, and displays a media feed number (MFN), which you can record for subsequent entry.

The media feed number enables you to quickly specify a known good media feed setting without recalibration. For example, you could keep a list of media feed numbers by media type, or by media type and full, half, and nearly empty supply rolls.




### Tip


You can also adjust the media advance while a print job is printing. Repeatedly press the increase advance or decrease advance button shown on the control panel to eliminate blank spaces or overlap between print swaths. When you do this, the media feed number displayed on the control panel changes accordingly.

1. On the **Manual Calibrations** menu, highlight **Media Feed**.
2. Press the  (Menu In) key to select the option.

**Stitch pattern** — First, allow the printer to print the following number of swaths, depending on the mode you want to calibrate:

- 16 swaths in High Quality mode, or
- 8 swaths in Production mode, or
- 4 swaths in Billboard mode

Next, press the  key to increase the advance until you see blank spaces between swaths.

Finally, press the  key to decrease the advance until the blank spaces are eliminated, but avoid dark lines between swaths (which indicate overlap). This method allows for the

tendency of the media advance to gradually decrease as the size of the supply roll decreases.

You can pause and resume the printing of the stitch pattern.

**34-inch (900 mm) calibration** — prints a 34-inch (or 900 mm) test pattern so you can verify its length with an accurate metal ruler. Cut the pattern from the media web, then measure and adjust the media advance as needed until the pattern is exactly 34 inches (900 mm) long.

**10-inch (250 mm) calibration** — prints a 10-inch (or 250 mm) test pattern so you can verify its length with an accurate metal ruler. This is not as precise as the 34-inch (900 mm) calibration, but it uses less media. Measure and adjust the media advance as needed until the pattern is exactly 10 inches (250 mm) long.

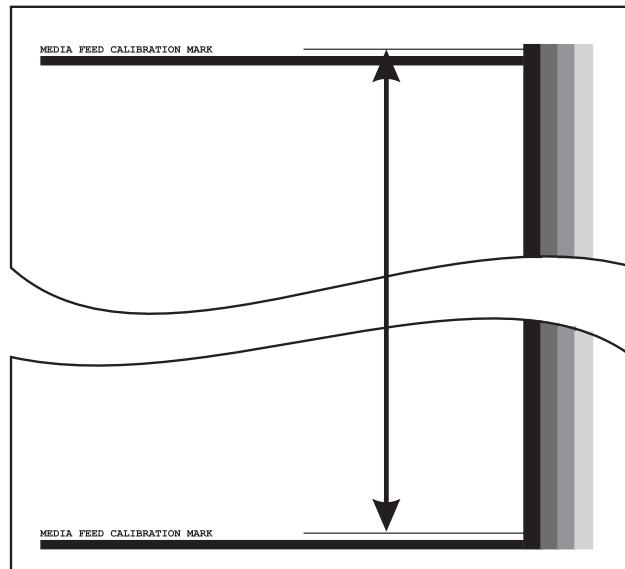


Fig. 4-5. Measure between the calibration marks



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**Tip**

To avoid cutting the 10-inch (250 mm) pattern from the media web, copy the marks from the printed pattern to the long edge of a letter-size (or A4) sheet of paper. Then measure the transferred marks and adjust the media advance as needed until the marks are exactly 10 inches (250 mm) apart.

---



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**Tip**

Run the 34-inch or 10-inch calibration first, then run the stitch pattern version to fine-tune the media advance accuracy.

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**Input MFN** — enter the Media Feed Number that was displayed after a previous media feed calibration, to return to that setting without performing the calibration again.

## Print Jet-Out Lines

This option prints a version of the Prime Bars in which missing jets that are replaced are marked with a black square.

## Default Registration Data

This option resets all registration data. Since there is no registration data after running this option, all calibration values must be reestablished by running the calibrations.

## Linearization

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As the density of an image varies from highlights to shadows, or from lighter tints to darker tints, the printer should accurately reproduce these areas in a predictable, or linear, fashion. The process of linearization (or color calibration) involves printing and reading color test patches, and calibrating the printer to ensure that the expected and printed densities will match. This in turn will ensure optimal color matching.

You should perform a color calibration when:

- You notice a shift (change) in color output
- Changing media types
- Changing print mode (only if the most precise color matching is required)

Color calibration is a feature of the print server or RIP connected to the printer. Refer to the documentation that accompanies the RIP for further information.

## Chapter 5

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# Using the Control Panel

This chapter describes the functions of the control panel.

- Overview (page 5-2)
- Front Page (page 5-3)
- Menu Tree (page 5-7)
- Menus (page 5-8)

## Overview

---

The touch-screen control panel shows you the printer's current status, and enables you to interact with the printer when changing media and ink, respond to an error condition, or configure options.

The control panel provides various forms of online user assistance:

The ? button provides an explanation of the current function, with some guidance for what to do next.

The **ATTN** (Attention) key blinks on the control panel when the printer detects an error condition, potential error condition, or when you make a change that suggests recalibration or other action to ensure best print quality. There are two types of ATTN messages:

- **Actions** — the printer has detected an error condition that stopped printing or will prevent printing from starting. You must correct the error before the printer will be ready to print.
- **Warnings** — the printer has detected a condition that, if left unaddressed, could result in substandard prints or a condition that will require an action before printing can continue. Any action on your part is optional. Printing is not interrupted for a Warning message.

When the printer issues one of these messages, the ATTN key will blink, and an alert beep will sound (unless disabled, see page 5-13). Press the ATTN key to display a list of message titles, and select a title to display a detailed cause-and-recovery screen.

If you choose to not correct a Warning condition and resume printing, the ATTN key will remain displayed, but will not blink until the printer issues a new Warning or Action message. The messages can be dismissed by correcting the condition, or by pressing the applicable key on the detail screen.



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### Tip

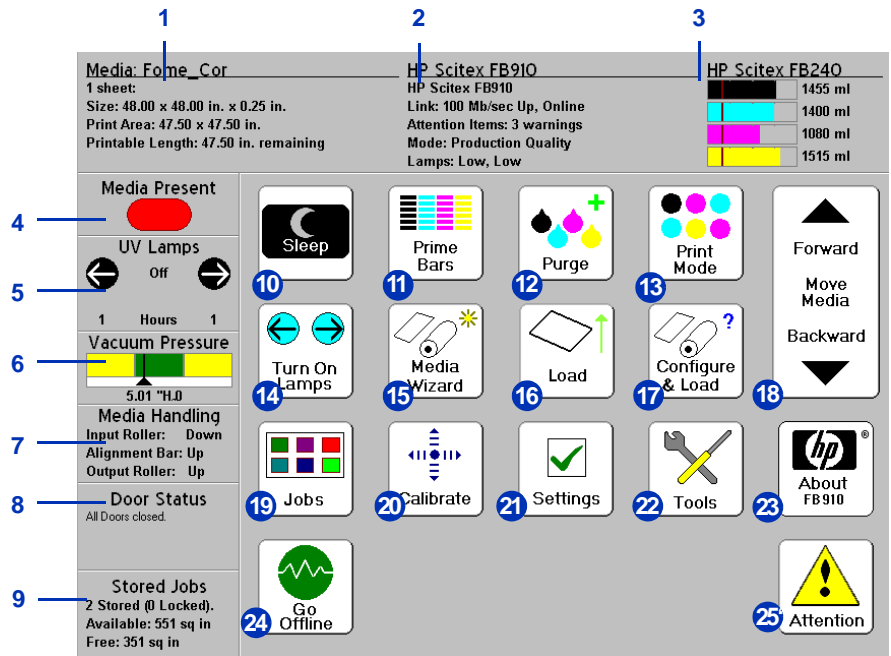
To disable the ATTN key, switch to Expert Mode. Expert mode routes most messages to an Actions & Warnings menu option. See page 5-12 for instructions on choosing Expert mode.

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## Front Page

The Front Page is the primary control panel interface. The most common operations can be initiated from this screen.



1. Media information — media name, size, print area, printable length
2. Printer status
  - Printer model
  - Printer name — the name of the printer as defined on the print server or under the menu at **Printer Settings > Printer Name**
  - Network status
  - Current print mode
3. Ink levels — numeric and graphic ink levels; line marks “low ink” level
4. Media detector (red=media out, green=media detected)
5. UV lamps status (U=user side, S=service side) — black=off, yellow=on, blinking=warming up

6. Vacuum Pressure — graphical and numeric indication of vacuum pressure; green region is nominal
7. Media Handling
  - Input media roller up or down
  - Media alignment bar up or down
  - Output media roller up or down
8. Output side door status (open or closed) — monitors the doors on the output side of the printer and endcap cabinets
9. Stored Jobs — displays status information for the Stored Jobs area in the printer's memory: number of Stored Jobs, amount of available and free memory. See "Stored Jobs" on page 2-11 for details.
10. Sleep/Wake mode — **Sleep** powers down the UV lamps, ionizer bar, printheads, carriage, ink pumps, and media drive motors, but maintains vacuum to the printheads to prevent ink leakage. (The ionizer bar is not switched off in Sleep mode, but may be turned off manually at its power supply, inside the cover on the service end of the stand.) During Sleep mode, the carriage is moved back and forth a short distance to prevent flat spots from developing on its wheels. **Wake** powers up the printer components. The printer goes into sleep mode automatically after a user-defined period of time (see page 5-12), and "wakes" automatically when a print job is received or a printer operation is performed from the control panel.



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**Caution**

If printhead vacuum is lost during Sleep Mode, ink will begin to seep from the printheads and onto the drip tray.

To prevent ink leakage during an unexpected power outage, use the vacuum/pressure system's 24 volt auxiliary power supply and connect it to an uninterruptible power supply (UPS). See Appendix A for specifications. It is not necessary to connect the entire printer to a UPS, only the vacuum/pressure system needs to be connected to avoid ink seepage.

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11. **Print prime bars** — fires all jets by drawing a set of lines called prime bars. This is a good way to inspect and prepare the jets for printing after they have been idle (see “Print Prime Bars” on page 3-9). You can also print a similar pattern called Print Jet-Out Lines, which shows which jets have been detected and replaced by AutoJet (see page 3-12 for details).
12. **Purge printheads** — purges the printheads to help recover missing jets. Follow a purge with a manual dab or blot of the printheads (do not wipe) with a lint-free cloth.
13. **Print mode** — sets print quality mode. See “Configure Printing” on page 2-2 for instructions.
14. **Turn On Lamps/Turn Off Lamps** — enables you to manually switch the lamps on and off.
15. **Media Wizard** — displays the Media Wizard.
16. **Load** (visible when media is not loaded) — loads media. See “Load and Print on Rigid Media” on page 2-8, or “Load and Print on Roll-Fed Media” on page 2-15, for instructions.
17. **Configure & Load** — configures the printer for a media type. See “Configure Media” on page 2-6 for instructions.
18. **Move media forward/backward** — press the ▼ key to advance the media forward. When you press and hold the ▼ key, the media moves faster. Press the ▲ key to reverse the media back onto the supply spool. When you press and hold the ▲ key, the media moves faster.
19. **Jobs** — print and managed Stored Jobs. See “Stored Jobs” on page 2-11 for instructions.
20. **Calibrate** — displays the Calibrate Printer menu.
21. **Option settings** — displays the Printer Settings menu.
22. **Tools** — displays the Tools menu.
23. **About** — displays the embedded software version.
24. **Online/offline switch** — switches network communications on and off between the printer and RIP.

- 25.** Attention messages — blinks on the control panel when the printer detects an error condition, potential error condition, or when you make a change that requires recalibration or other action to ensure best print quality. See “Overview” on page 5-2 for more information.

## Menu Tree

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This menu tree reflects version 2.30 of the embedded printer software. Refer to the *Release Notes* for more recent versions. Options shown in *italics* are dynamically hidden depending on the printer mode.

### Calibrate Printer

- Auto Calibrations
  - AutoBidi Calibration
  - AutoH2H Calibration
  - AutoJet Calibration
  - Full AutoSet
  - AutoSet Summary
- Manual Calibrations
  - Manual Bidi Registration
  - Printhead X Calibration
  - Manual Jet Mapping
  - Jet Status Lines
  - Media Feed Calibration
  - Print Jet-Out Lines
  - Default Registration Data
- AutoTune (Rolled printing only)

### Printer Settings

- Special Modes (sheetfed printing)
  - Edge-To-Edge (Sides Only)
  - Edge-To-Edge (All 4 Edges)
- Vacuum Control
- Printing Delay
- Margins
- Space Between Prints (Rolled)
- Print Position
- Measure Media (Sheetfed)
- Print White Space
- Head Height off Media
- Eject Sheets to Input Side (Sheetfed)
- Purge Type
- Top Gutters
- Quality Check
- Sleep Wait Time
- Expert/Novice Messages
- Localization
  - Units of Measure
  - Time Format
  - Date Format
  - Vacuum Pressure Units
- Use Thickness Sensor
- Low Ink Warning
- UV Lamps Idle Time
- Support Rolled
- Printer Name
- Restore All Defaults

### Tools

- System Information
- Maintenance
  - Perform An Air Purge
  - Print Recover Jets Pattern
  - Access Printheads
  - Print Jet-Out Lines
  - Print Media Skew Lines
  - Reset Reservoir Filters
  - Reset UV Lamp Hours
  - Printheads Procedures
    - Load Ink In All Heads
    - Fill Heads with Ink
    - Empty Heads (Fill with Air)
- User Diagnostics
  - Printhead Jet Statistics
  - VideoNet Status
  - VideoNet Connection
  - Carriage Motion
  - Calibration
  - Vacuum Pressure
  - Warnings and Actions List
  - Error History
  - Log Error History
  - Log System Info

### Warnings & Actions (In Expert Mode only)

### Service Printer

### Print Menus

The printer's less-often used functions are accessed via the menus. The printer has these menus and functions:

- Calibrate Printer (see below)
- Printer Settings (page 5-10)
- Tools (page 5-14)
- Warnings & Actions (page 5-16), shown in Expert Messages Mode only
- Print Menu (page 5-16)
- Service Menu — for use by factory, technical support, and authorized service providers

### Calibrate Printer



To display this menu, press the Calibrate button on the Front Page screen. For instructions on using these options, see Chapter 4, Calibrating the Printer.

- **Auto Calibrations** — see “Auto Calibrations” on page 4-6 for instructions.
  - Auto Bidi Calibration — ensures that every working jet fires a pixel at precisely the same location, in both directions of travel
  - Auto H2H Calibration — aligns the printheads relative to each other
  - AutoJet Calibration — locates and substitutes missing jets for working jets
  - Full AutoSet — runs AutoJet, AutoBiDi, and AutoH2H in sequence
  - AutoSet Summary — when enabled, a table of the results of the Full AutoSet calibration is printed after the AutoSet test patterns. When you enable the AutoSet Summary, you can show or hide the detailed calibration data.

- **Manual Calibrations** — allows you to calibrate the printer visually, without the printer's digital imaging sensor. Inaccurate judgments by the operator during these tests could result in substandard output. See "Manual Calibrations" on page 4-9 for instructions.
  - Manual Bidi Registration
  - Manual X Head Registration
  - Manual Jet Mapping — the manual version of AutoJet
  - Jet Status Lines — prints the Manual Jet Mapping pattern without running the calibration
  - Media Feed Calibration
  - Print Jet-Out Lines — prints a version of the prime bars (see page 5-3), in which missing jets that are replaced are marked with a black square.
  - Default Registration Data — resets all registration data. Since there is no registration data after running this option, all printhead calibration values must be reestablished by running the calibrations.
- **AutoTune** (roll-fed media only) — schedules jet maintenance to run automatically after a certain number of prints have printed. See "AutoTune" on page 4-4 for instructions.

## Printer Settings



To display this menu, press the Settings button on the Front Page screen. Printer Settings enables you to set many options that control how the printer operates. Settings saved by the Media Wizard are indicated by *MEDIA WIZARD* in the margin.

*MEDIA WIZARD*

- **Vacuum Control** — turns on the vacuum fans, then allows you to raise or lower the fan speed. Raise the speed if the media is warped and rising off the platen, lower the speed if the media is buckling or wrinkling. Turn off the vacuum fans for lightweight media. There are three vacuum zones:
  - Input Zone — from the media alignment bar to about half-way to the input end of the media drive belt. This zone is automatically turned off during the media load process until the SHEET READY foot switch is depressed.
  - Pre-Print Zone — from the media alignment bar to just before the printhead carriage.
  - Print Zone — under the printhead carriage.

*MEDIA WIZARD*

- **Printing Delay** — slows throughput (media advance speed) to allow the media to cool between passes, preventing warping of rigid media or curling of roll-fed media.
- **Gutter Settings** — determines the appearance of the top and side gutters:
  - Top Gutters — allows you to turn **On** or **Off** the gutter data at the top edge of the print, which shows the job name, ink, media, date and time printed, print mode, lamps setting, printer, embedded software version, plus write-in blanks for other data.
  - Side Gutters — sets the side gutter pattern to **Narrow**, **Medium**, or **Wide** sizes, or turns them **Off**. Side gutter patterns help keep the inkjets open by firing ink through them in a pattern outside the printed image area.
- **Margin Settings**
  - Space Between Prints (roll-fed) — sets the blank space between print jobs, between 0 and 10 inches (25 cm).



- **Margins:**
  - **Right and Left Margin** — sets the amount of blank space for the right and left margins, between 0.25 and 5 inches (6-127 mm) for roll-fed media, and between 0 and 5 inches (0-127 mm) for rigid cut-sheet media.
  - **Leading Margin** — defines the margin on the leading edge of cut-sheet media, between 0 and 15 inches (0-38 cm).
  - **Trailing Margin** — defines the margins on the trailing edge of cut-sheet media, between 0 and 15 inches (0-38 cm).

When you set the margins to zero (edge-to-edge printing on cut-sheet media), the printer prompts you for an **Overprint** value. This is the distance beyond the edge of the media to print, to help avoid a blank strip if the sheet is slightly skewed, not perfectly rectangular, or other error is present.



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**Note**

If you load roll-fed media after printing on cut-sheet media, the printer automatically resets the margins to 0.25 inches (6 mm). You can still change them at any time.

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**Tip**

You can position an image anywhere on the media by setting the right margin (horizontal or x distance from the right edge) and leading margin (vertical or y distance from the leading edge). Since the image appears upside down as it emerges from the printer, the upper left corner of the image will appear at this point.

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- **Print Position** — when the printed image does not span the entire width of the media, positions the printed image flush left (nearest the control panel or user side), flush right, or centered on the media.
- **Print White Space** — provides the option of causing the printer to advance the media past white space in the document file without the usual “printing” carriage motion. The

printer will finish curing any printed areas before skipping white space.

- **Head Height off Media** — automatically raises the rail to set the printhead clearance from the media, at the height you specify. A lower height reduces overspray, but increases the chances for a head strike on the media. Bidi calibration is automatically adjusted for changes in this value.
- **Eject Sheets to Input Side** — after printing, reverses the media feed and ejects the printed sheet out the input side. This makes it possible for the operator to perform all operations on the input side of the printer, and makes the workflow for two-sided printing more efficient. (Two-sided printing of Stored Jobs always ejects out the output side. See “Stored Jobs” on page 2-11 for details.)
- **Purge Type** — Select Low Volume to clear most jet-outs, or High Volume to clear stubborn jet-outs (default, expels more ink).
- **Measure Media** — for cut-sheet media, you can choose various levels of precision for finding the left (user end), right (service end), and front edges of the media.
  - Minimal — measures the width of the media once and finds the front right edge; no skew detection
  - Standard — measures the width of the media once, and finds the front edge in two places to estimate skew
  - One Edge — measures the user- and service-end edges on the first sheet, user-end edge only on subsequent sheets, and the front right edge (no skew detection). For single-sheet jobs only, not available for multi-sheet N-UP. Works best on jobs with wider margins.
  - Maximal — measures the width of the media in two places to estimate skew

Choose Minimal for fastest throughput, Maximal for greatest precision and skew detection when printing edge-to-edge.

- **Quality Check** — determines how AutoTune errors are handled (see page 4-4).
- **Sleep Wait Time** — sets the period of time to wait for a print job before going into Sleep mode (see page 5-4).
- **Expert/Novice Messages** — **Novice** mode presents an ATTN (Attention) key with Warnings (alerts that do not prohibit printing) and Actions (conditions that require user inter-

vention before printing can proceed). **Expert** mode presents Actions only, presents fewer “press Proceed” prompts after an Action has been addressed. The default is Novice mode.

When in Expert mode, active Warnings and Actions can be displayed by selecting **Warnings & Actions** from the menu, since Warnings will not cause the ATTN key to appear in Expert mode. See “Overview” on page 5-2 for further information about Actions and Warnings.

- **Localization** — sets **English** or **Metric** units of measure, time and date formats, and vacuum pressure units, for data displayed by the control panel.
- **Low Ink Warning** — defines the amount of ink remaining in the ink box supply at which the printer will display a “low ink” message on the control panel.
- **Support Rollfed** — enables or disables support for the roll-fed media supply and takeup system. If the system does not appear to be working, check this menu item.
- **UV Lamps Idle Time** — sets the amount of time the lamps will stay on after printing before they are automatically turned off by the printer. The idle time can be set from 1 to 10 minutes. Increase the idle time if you are printing several jobs and waiting for the lamps to warm up between prints. Decrease the idle time if printing single jobs.
- **UV Lamps Warm-Up Time** — if both UV lamps have not warmed up completely when the first print begins printing, printing anomalies are likely to occur due to insufficiently-cured ink. This option allows you to extend the warm-up period to ensure that both lamps have warmed up enough to cure the ink completely. The current warm-up period is displayed on the Front Page printer status pages.
- **Printer Name** — displays a keypad to change the printer name displayed on the control panel and RIP.
- **Restore All Defaults** — restores all Printer Configuration settings to their factory default values, and zeroes all registration data. After running this option, all printhead calibration values must be reestablished by running AutoSet or manual calibrations.

## Tools

To display this menu, press the Tools button on the Front Page screen.



- **Turn UV Lamps On/Off** — enables you to turn on or off the UV lamps manually instead of automatically when the printer detects a print job. For example, you may want to turn on the lamps to allow them to warm up before sending a print job from the RIP.
- **System Information** — displays current status information for the printer.

## Maintenance

- **Perform An Air Purge** — purges the printheads with air, as specified under **Purge Type** (see page 5-12).
- **Print Recover Jets Pattern** — prints a special pattern designed to recover missing inkjets. After printing this pattern, the prime bars are printed.
- **Access Printheads** — moves the printhead carriage to the service end for inspection or cleaning.
- **Print Jet-Out Lines** — prints a version of the prime bars (see page 5-3), in which missing jets that are replaced are marked with a black square.
- **Print Media Skew Lines** — continuously prints a swath of parallel lines across the width of the media, in alternating directions, until you stop the print. If the swaths are not parallel to each other, the media is skewed (not feeding straight). If there is a noticeable space between swaths, or if they overlap, the media advance should be calibrated.
- **Reset Reservoir Filters** — after you replace the filters, select this option to reset the ink counts to zero. See “Replace Ink Filters” on page 6-15 for instructions.
- **Reset UV Lamp Hours** — resets the lamp's elapsed operating time clock to zero. The printer displays a warning message when the UV lamps have been in service for a certain period. They should be replaced when they are no longer curing the ink. To view the total operating time for each lamp, press the **Status** key on the Front Page, and advance to the page where this is listed.

- **Printheads Procedures** — see “Printhead Procedures” on page 6-24, for instructions on using the following options:
  - Load Ink in All Heads — fills empty printheads with ink.
  - Fill Heads with Ink — fills the printheads with ink.
  - Empty Heads (Fill With Air) — fills the printheads with air.

## User Diagnostics

User Diagnostics presents an interactive troubleshooting program to diagnose problems before calling technical support. It walks you through a series of tests and checks for certain printer functions. The printer asks you to make observations or run simple tests to help it diagnose problems and suggest corrective actions. It has the following sections:

- **Printhead Jet Statistics**
- **VideoNet Status**
- **VideoNet Connection**
- **Carriage Motion**
- **Calibration**
- **Vacuum Pressure**
- **Warnings and Actions List** — table of all actions and warnings with cause and recovery
- **Error History** — displays a list of errors that have occurred since the printer was last powered up.
- **Log Error History** — writes a file containing all of the errors that have occurred on the printer since the printer was put into service, for troubleshooting by technical support personnel. The file c3.txt is saved on the computer running the HP Software RIP in the C:\Program Files folder.

- **Log System Info** — general system events, including head motion failures and printhead purges, are now saved to a log file for troubleshooting by technical support personnel. The file c3.txt is saved on the computer running the Software RIP in the C:\Program Files folder.

Alternatively, the log can be printed (**Service Printer > Print Info Pages**) and mailed or faxed.

## **Warnings & Actions**

When in Expert mode, any current Warning, Change, and Action messages can be displayed by selecting **Warnings & Actions** from the menu. When in Novice mode, press the ATTN icon on the Front Page screen to view these messages.

See “Overview” on page 5-2 for further information about Actions and Warnings.

See page 5-12 for a description of the Expert/Novice Messages mode.

## **Print Menus**

This option prints all of the menu options in a hierarchical tree format for reference.

## **Service Printer**

These functions are for factory, service, and technical support use.

## Chapter 6

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# Maintaining the Printer

This chapter describes how to maintain the printer:

- Maintenance Schedule (page 6-2)
- Clean the Media Drive Belt and Encoder (page 6-4)
- Clean the Media Rollers (page 6-7)
- Clean the Rail and Bearings (page 6-8)
- Recover Missing Ink Jets (page 6-11)
- Clean the Drip Tray (page 6-14)
- Replace Ink Filters (page 6-15)
- UV Lamp Operation and Maintenance (page 6-17)
- Clean the Quartz Windows (page 6-20)
- Clean the Ionizer Bar (page 6-22)
- Printhead Procedures (page 6-24)
- Power Down and Restart (page 6-25)

## Maintenance Schedule

Task	Description
<b>Interval: Daily</b>	
Daily Startup Procedure	See "Daily Startup" on page 1-6.
<b>Interval: Weekly or as needed</b>	
Clean media drive belt and encoder	See "Clean the Media Drive Belt and Encoder" on page 6-4.
Clean carriage rail and bearings (page 6-8)	Inspect for dust buildup, clean if necessary (see "Clean the Rail and Bearings" on page 6-8).
Clean the carriage encoder strip	Inspect for dust buildup, wipe if necessary with plain water. Encoder must be fully dry before printing.
	Cured ink buildup on the encoder strip cannot be removed without damaging the encoder strip. Clean ink spills immediately. If cured ink buildup on the encoder strip causes printing errors, contact your Authorized Service Provider or Technical Services for a replacement.
<b>Interval: As needed</b>	
Clean printheads	See "Checking Jet Health" on page 2-23.  To recover jets with a purge, see "Recover Missing Ink Jets" on page 6-11.
Clean quartz windows	See "Clean the Quartz Windows" on page 6-20.
Clean ionizer bar	The ionizer bar should be cleaned as needed to maintain its effectiveness. See "Clean the Ionizer Bar" on page 6-22.
Clean media rollers	Uncured ink that has been rolled over by the media rollers can be cleaned with a paper towel and isopropyl alcohol.
Drain the compressed air condensate reservoir	Condensate from the compressed air collects in a reservoir attached to the pressure gauge at the shop air connection. This reservoir should be checked occasionally and drained when necessary. See page 1-3 for location.
<b>Interval: At control panel warning</b>	
Replace ink filters	See "Replace Ink Filters" on page 6-15.  Replace all four filters as a set, to prevent ink pump failure. The control panel will display a Warning message when 20 liters of ink have passed through the set of filters. You may continue printing past this point, but printhead fill errors may occur.



Task	Description
Replace UV lamp bulbs	<p>See “Replacing UV Lamp Bulbs” on page 6-19.</p> <p>The control panel warns you when either of the UV lamp bulbs have been illuminated for 500 hours, but they may be usable for many more hours beyond that point. Bulb life will vary. The bulbs must be replaced when they no longer cure the UV ink sufficiently.</p>

## Clean the Media Drive Belt and Encoder

---

The printer relies on high-resolution encoders for high quality output. The proper functioning of the encoder wheel that reads the position of the media drive belt is particularly important. If the encoder wheel and belt become dirty, lose contact with each other, or become damaged, banding in prints or printer malfunction may occur.

Clean the media drive belt every day, and the encoder wheel once per week.



---

**Caution** The media drive belt encoder is a high-precision electronic instrument that is easily damaged. Use extreme caution when cleaning and handling the encoder assembly.

---

### Media Drive Belt

1. Remove any media from the media drive belt and tables.
2. Stand at the user end of the printer, next to the control panel.
3. Hold a clean, lint-free cloth against the media drive belt, just below the level of the input table.

If the belt has been printed on, moisten the cloth with isopropyl alcohol.

4. On the Front Page screen of the control panel, press the Media Forward/Backward buttons to move the belt until it is clean.

If necessary, remoisten the cloth or allow cured ink on the belt to soak with isopropyl alcohol before wiping dry.

## Media Drive Belt Encoder

5. Open the right-most (user end) access door above the belt on the output side of the printer.

The encoder is located at the edge of the media drive belt.

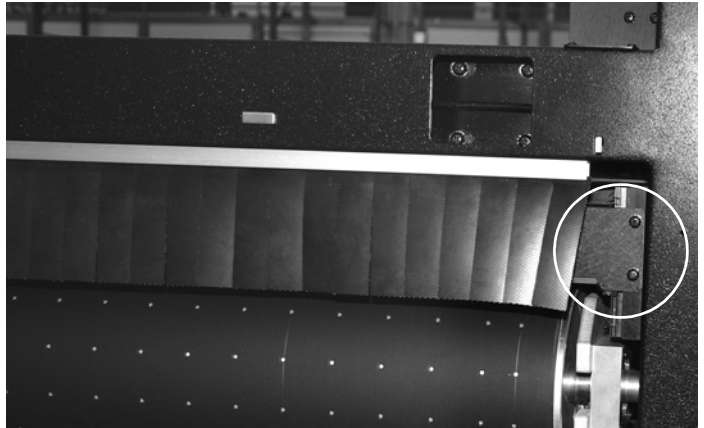


Fig. 6-1. Media drive belt encoder

6. Remove the four Phillips head screws that attach the cover to the media drive belt encoder. Set aside the cover and screws for reinstallation.

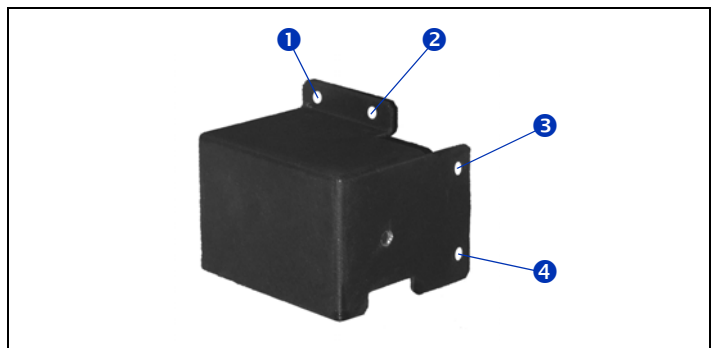


Fig. 6-2. Encoder cover screw locations

7. Clean the encoder wheel with a cloth moistened with isopropyl alcohol.

Carefully raise the encoder straight up on its rail. This will cause the media drive belt to move automatically.

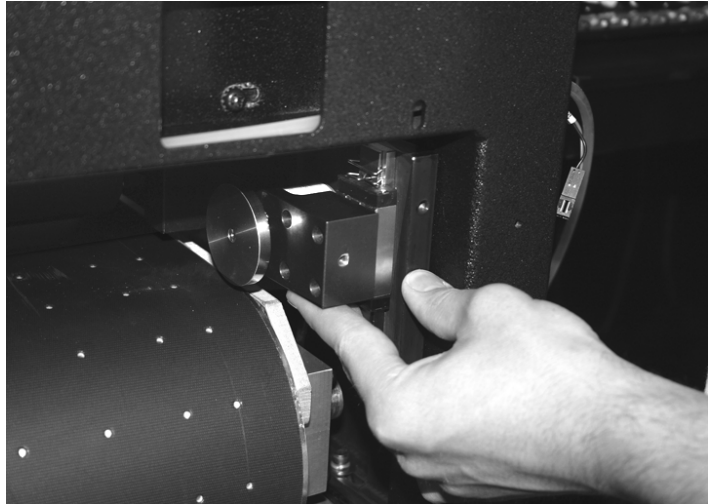


Fig. 6-3. Raising the encoder wheel

8. When it is clean, lower the encoder wheel back down slowly to avoid damaging it.

The encoder should slide smoothly up and down; if not, inspect the assembly for misaligned parts or wires that are in the way.

9. Reattach the cover with the four screws.

Avoid pinching any wires when reattaching the cover. Carefully align the cover straight over the encoder assembly. Do not allow the cover or the screwdriver to touch the encoder wheel.



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**Caution**

The media drive belt encoder is a high-precision electronic instrument that is easily damaged. Use extreme caution when cleaning and handling the encoder assembly.

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10. Close the access door.

## Clean the Media Rollers

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There is one input media roller and one output media roller, located on the corresponding sides of the printer.

To clean, wipe the media rollers with a lint-free cloth. To remove ink, wipe with a minimal amount of isopropyl alcohol, and dry thoroughly before printing again.



---

### Caution

**DO NOT ALLOW ISOPROPYL ALCOHOL TO TOUCH THE PRINTHEADS**, especially the inkjet orifice plates. Contact with the ink could cause the ink to coagulate, rendering the printhead unusable and requiring it to be replaced. Be sure that cleaned surfaces have dried before printing.

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## Clean the Rail and Bearings

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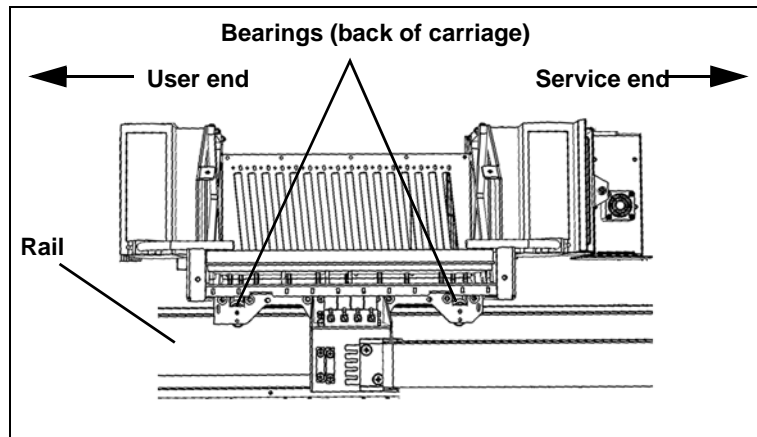


Fig. 6-4. Location of carriage bearings and rail

The carriage rail carries the printhead carriage across the width of the printer. As dust and ink accumulates on the rail, the material could accumulate on the carriage bearings (wheels) and cause banding in printed output or noisy (“click-click-click”) carriage motion.

### Rail

Wipe the entire length of the rail with a lint-free cloth or wipe moistened with isopropyl alcohol.

The rail surfaces that must be clean are the surfaces that touch the carriage bearings. These are the top surface, including the front and back of the front lip, and the side surface, behind the belt. Move the carriage manually or press **Tools > Maintenance > Access Printheads** on the control panel menu so you can access and clean the entire rail.

## Carriage Bearings

There are four bearings that should be kept clean, one pair on each end of the carriage. Each pair of bearings rolls along the front and back of the lip on the top of the rail. If any buildup occurs on one of these bearings, banding or other artifacts could appear in printed output. This buildup can range from a fine dust to visible particles.

The fifth bearing rolls along the lower edge of the rail, behind the belt. Cleaning this bearing is not necessary. It usually does not get dirty.

1. Move the user endcap cabinet away from the printer.

Remove the screws that attach the cabinet to the printer. As you move the cabinet away from the printer, avoid pulling the grounding cable and other cables from their connection points.

2. Remove the eight carriage cover attachment screws as shown, and lift off the cover.

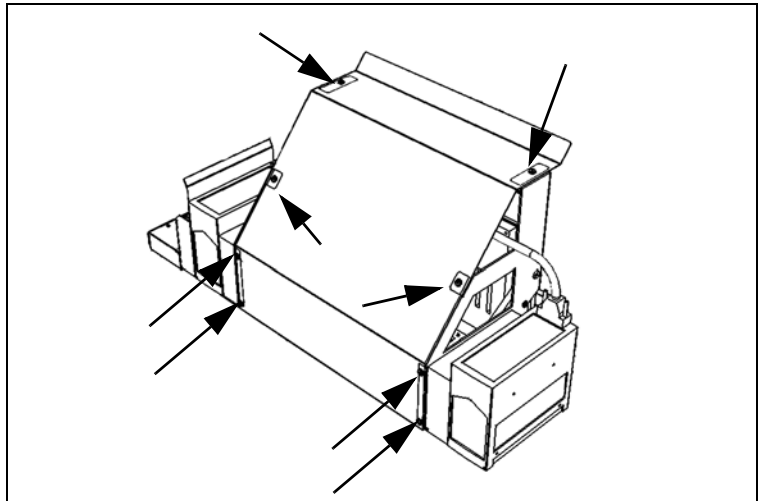


Fig. 6-5. Carriage cover attachment screws

**3. Clean the user- and service-side outside bearings.**

Moisten a cotton swab with isopropyl alcohol or water, place it against the left side of the bearing, and manually push the carriage to the left. Then place the swab against the right side of the bearing, and manually push the carriage to the right. Repeat once or twice. Remove any large dust particles you see.

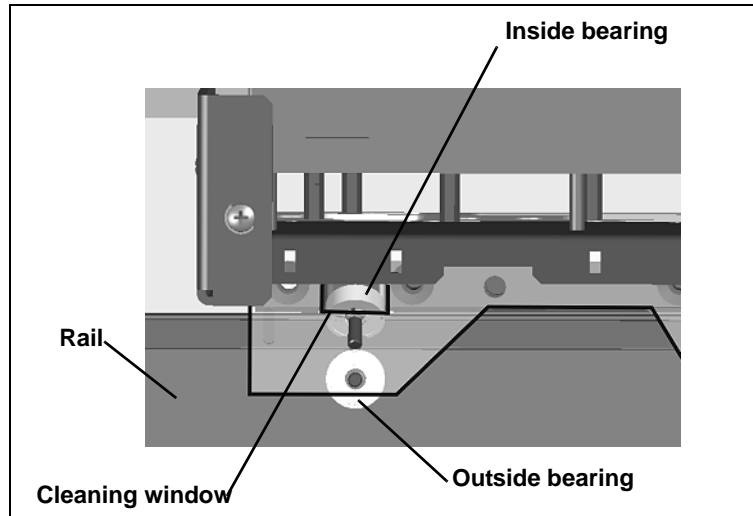


Fig. 6-6. Carriage bearings, top view, user-side pair shown

**4. Clean the user- and service-side inside bearings.**

Insert a moistened cotton swab into the bearing cleaning window, and clean the bearing by manually pushing the carriage to the left and right. Repeat once or twice. Remove any large dust particles you see.

**5. Reattach the carriage cover with the original attachment screws.**

**6. Reposition the user endcap cabinet and reattach the screws.**



## Recover Missing Ink Jets

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The printer is designed to operate with a certain number of missing (clogged or misfiring) inkjets that are substituted by other working jets, without affecting print speed. If your daily startup process (as described in “Daily Startup” on page 1-6) fails to revive all missing jets, you can try the following advanced jet recovery measures.



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### Tip

You may wish to wear gloves during this procedure to prevent staining your hands with ink.

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1. Set the **Purge Type** to **High Volume (Printer Settings > Purge Type)**.
2. Select **Perform an Air Purge** from the menu (**Tools > Maintenance > Perform an Air Purge**).
3. Select a color, a combination of colors, or all colors to purge.
4. Press the ► (Proceed) key.

The printer purges the color(s) that you selected.



---

### Caution

Purged printheads must be dabbed (not wiped) *before* printing or moving the carriage. Moving the carriage with wet printheads will cause uncured (wet) ink to drop onto the media drive belt and louvers. The ink will smoke if it contacts heated louvers.

---

5. Open the output-side door of the user-end cabinet, or carefully wheel the cabinet away from the printer.
6. Use a lint-free cloth to dab the printheads, not a paper towel, which could shed fibers that could clog the inkjets.
7. The carriage moves out of the wiping station.
8. From the Front Page screen, press the **Prime Bars** key.
  - If all jets (indicated by a printed line) are working, the printer is ready to print.

9. If the Prime Bars show any missing jets, dab only the print-heads that have missing jets with a lint-free cloth moistened with HP Scitex MF50 Flushing Solution:

- Gently dab the printhead with a blotting motion. **Do not wipe the printheads.**
- Close the cabinet door or wheel the cabinet back into position.

10. Select **Tools > Maintenance > Print Recover Jets Pattern** from the menu for those printheads with missing jets (or select all printheads).

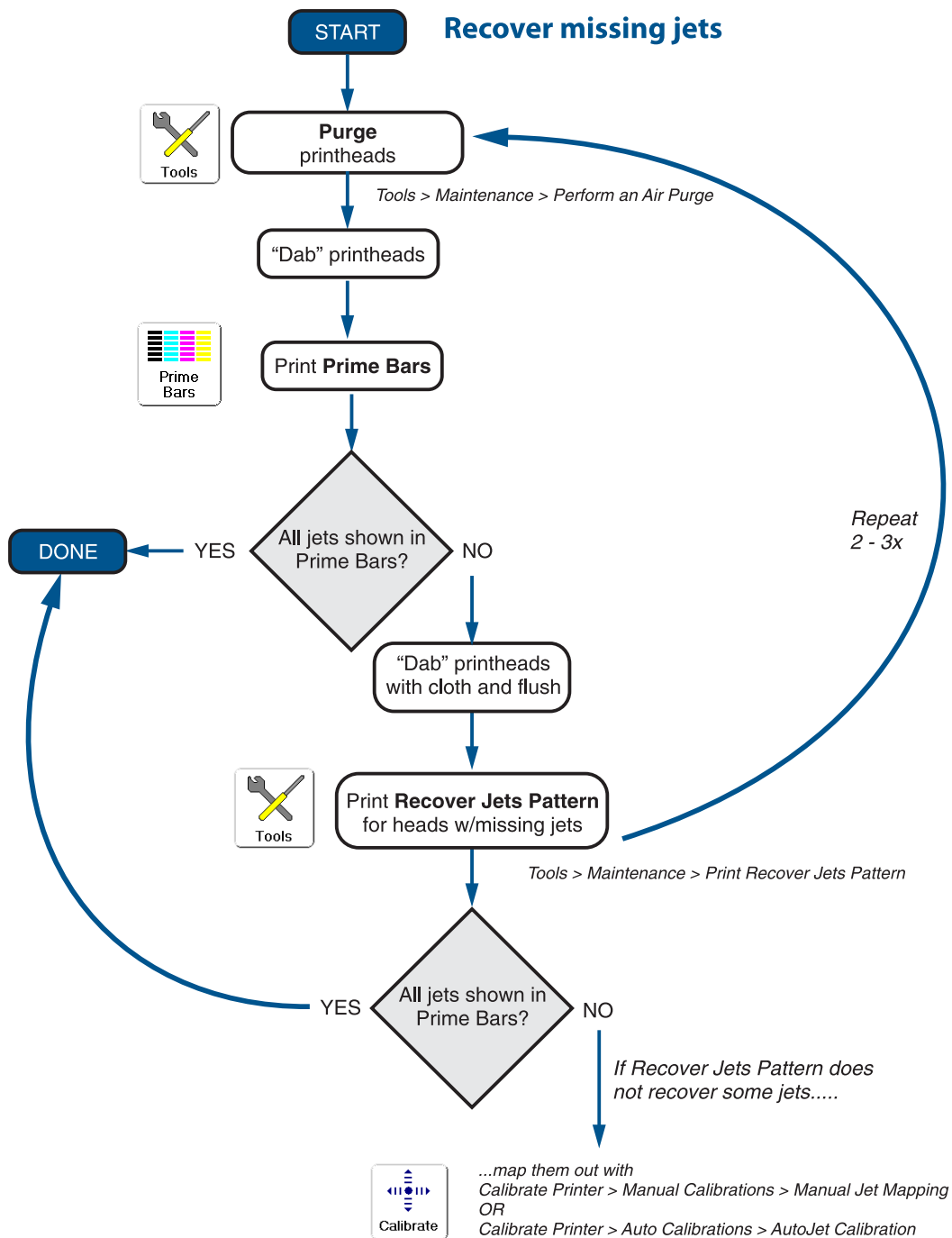
After printing this pattern, the prime bars are printed again.

- If all jets (indicated by a printed line) are working, the printer is ready to print.
- If there are any missing jets, repeat steps 2 through 10 two or three times until all jets are working.

11. From the Front Page screen, press the **Prime Bars** key.

- If all jets (indicated by a printed line) are working, the printer is ready to print.
- If the Prime Bars still show missing jets, map them out (see “Manual Jet Mapping” on page 4-16, or “AutoJet” on page 4-3) or contact technical support for further instructions.

12. Close the cabinet door or replace the cabinet into the operating position.



## Clean the Drip Tray

1. When the printer is idle, open the output-side door of the user-end cabinet.
2. Slide the drip tray straight and level toward you until it clears its rails, and pour any uncured ink into a waste receptacle.

Cured ink is not hazardous waste. If you place the waste receptacle in sunlight, the ink will cure and it can be disposed of as non-hazardous waste.

3. Scrape any cured ink out of the tray and into a waste receptacle.
4. Replace the drip tray.
5. Close the cabinet door.

## Replace Ink Filters

The control panel displays a Warning message on the control panel when 20 liters of ink have passed through the filters. Replace all four filters as a set if possible. Failure to replace the filters will eventually cause the filters to clog and prevent ink from reaching the printheads.

Have a paper towel ready to catch the small amount of ink that will spill out of some of the tubes and the filter itself as you disconnect them. You may also want to wear protective gloves during this procedure.

1. Access the ink filter area by opening the input-side access door on the user-end endcap cabinet, OR by removing the lower access panel of the cabinet.
2. Cut the zip tie to release the filter from its retaining strap.

See Fig. 6-7 for location.

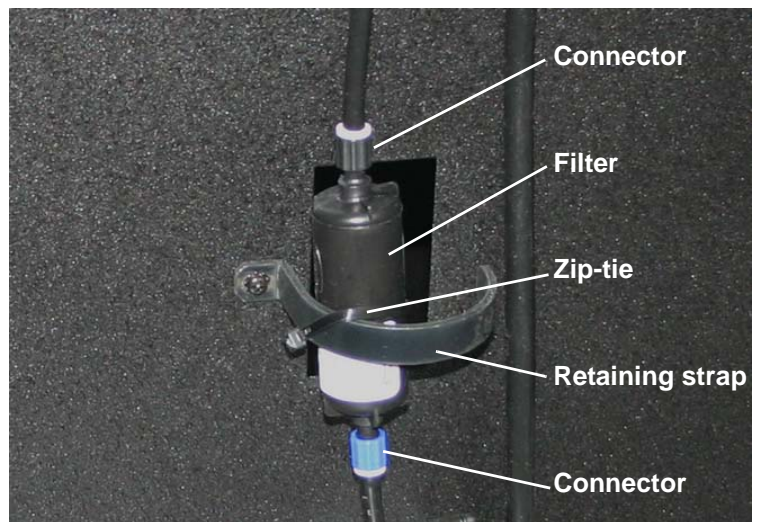


Fig. 6-7. Filter connections

3. Unscrew the hose connectors (Luer fittings) from the filter.  
See Fig. 6-7 for location.
4. Remove the old filter.

5. Position the new filter into the retaining strap.

The filter's label has an arrow that indicates the direction of flow. Install the filter with the arrow pointing **up**.

6. Connect the hoses to the top and bottom of the filter, and tighten the connectors.
7. Secure the filter to the retaining strap with a zip tie.
8. Close the endcap cabinet door, or replace the access panel.
9. On the Front Page screen, press the **Tools** key.
10. Press **Maintenance**.
11. Press **Reset Reservoir Filters**.

If you are not replacing the entire set of filters, you can reset the count for an individual filter.

## UV Lamp Operation and Maintenance

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For an overview of the UV lamp system, see “UV Lamps” on page 3-3.

This section covers the following topics:

- Operating Tips (page 6-18)
- Replacing UV Lamp Bulbs (page 6-19)
- Balancing Lamp Hours (page 6-19)



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**WARNING** UV light hazard. Excess exposure to high-intensity UV light can result in photokeratitis (also known as snow blindness or welder’s flash). **AVOID LOOKING DIRECTLY AT THE UV LIGHT.**

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**VORSICHT** UV Licht hoher Intensität. Bitte vermeiden Sie es, direkt in die Lampen zu schauen.

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**Caution** Failure to allow the lamps to cool down properly will damage the lamps. If you disconnect the power cable from the back of the printer or disconnect the green power cable from the lamp assembly before the cool down sequence has finished, you will damage the lamps.

---

## Operating Tips

You can extend the life of the UV lamp bulbs as follows:

- If the head height is significantly above the standard height over the media, the curing effectiveness of the lamps will be reduced.
- When the lamps do not cure output sufficiently in Billboard Quality Mode, switch to Production Quality Mode. When the lamps do not cure the output in Production Mode, switch to High Quality Mode (**Front Page > Print Mode**).
- If the lamps are not curing the ink with the lamps set to Low, increase the setting to Medium or High (**Front Page > Media Wizard**).
- Check the quartz windows and clean them if necessary (see “Clean the Quartz Windows” on page 6-20 for instructions).

If the lamps are still not curing printed output after taking these steps, contact Technical Services for assistance in diagnosing the problem. The technician may be able to suggest further steps to extend the service life of the bulbs.



## Replacing UV Lamp Bulbs

The UV lamp bulbs will gradually lose their intensity and therefore their ability to cure the ink. The control panel will display a warning message when one or both of the bulbs have been operated for 500 hours, but the bulbs may continue to cure printed output for up to 1000 hours. The number of hours that each lamp has operated is shown on the Front Page screen.

Replacing the bulbs as a pair is recommended. If the total operating time for the right and left bulbs is significantly different, printing artifacts may be visible due to uneven ink curing. When you replace the bulbs, be sure to reset the operating time counter (**Tools > Maintenance > Reset UV Lamp Hours**).

Refer to the instructions that accompany the replacement bulbs for a detailed procedure for replacing the lamps.



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### Note

The UV lamps contain heavy metals and other elements that should be disposed of as hazardous waste. They should be taken by a hazardous waste service or facility that accepts mercury lamps.

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## Balancing Lamp Hours

If you do an extensive amount of unidirectional printing, or otherwise print with only one lamp, the lamps' different hours of service will eventually cause the lamps to cure ink differently and reach end-of-life at different times. This would result in ink curing anomalies.

To avoid this, switch between left-only and right-only printing as needed to equalize the lamp hours. (See "Configure Printing" on page 2-2 for instructions.)

The printer software will display a Warning message if the difference between the right and left lamps' service hours exceeds 300, but you can display the lamp hour counts at anytime by pressing the **Status** key on the Front Page, and advancing to the page where the number of hours are listed.

## Clean the Quartz Windows

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The quartz windows protect the UV lamp cartridges from ink, media, and environmental dust. They should be checked periodically for dust buildup, which reduces the curing efficiency of the UV lamps.



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**WARNING** UV light hazard. Excess exposure to high-intensity UV light can result in photokeratitis (also known as snowblindness or welder's flash). **AVOID LOOKING DIRECTLY AT THE UV LIGHT.**

---

---

**VORSICHT** UV Licht hoher Intensität. Bitte vermeiden Sie es, direkt in die Lampen zu schauen.

---



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**Caution** Avoid depositing skin oils onto the quartz windows. Skin oils left on the quartz windows could cause the windows to shatter when heated.

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**Note** If the quartz window is becoming opaque (devitrification) or is chipped, cracked, or cannot be cleaned, then it should be replaced to ensure that the ink can be cured.

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To perform this procedure, you will need

- Protective gloves and safety glasses
- Lint-free (cleanroom) cloths
- HP Scitex MF50 Flushing Solution in small squirt bottle
- Non-metallic scouring pad or razor blade scraper

1. **ALLOW THE LAMPS TO COOL COMPLETELY BY FINISHING ALL PRINTING, AND WAITING FOR AUTOMATIC SHUTOFF OR PRESSING THE “LAMPS OFF” BUTTON ON THE CONTROL PANEL.**

Do not perform this procedure when the lamps are on or have not cooled completely.

2. From the Front Page screen of the control panel, press the **Tools** key, then select **Maintenance > Access Printheads**.

The printhead carriage moves to the access position at the service end of the printer. You will now be able to access the service-end quartz windows from below the carriage. Access the user-end quartz windows with the carriage at the user end (after removing the drip tray).

3. Moisten a lint-free cloth with HP Scitex MF50 Flushing Solution, and wipe the quartz plates to moisten, soften, and remove the cured ink and dust.

Any ink and dust present will be very hard cured, so you may need to allow the buildup to soak. Then scrub with a non-metallic scouring pad (to avoid scratching the window), or scrape with a razor blade scraper.

4. After all of the ink and dust has been removed, wipe the quartz windows clean with a lint-free cloth moistened with HP Scitex MF50 Flushing Solution.
5. With a new lint-free cloth, dry-polish the quartz windows to ensure that no smearing or residue remains.
6. If the carriage is at the service end, from the Front Page screen of the control panel, press the **Access Heads** key.

The printhead carriage moves back to the wiping station.

## Clean the Ionizer Bar

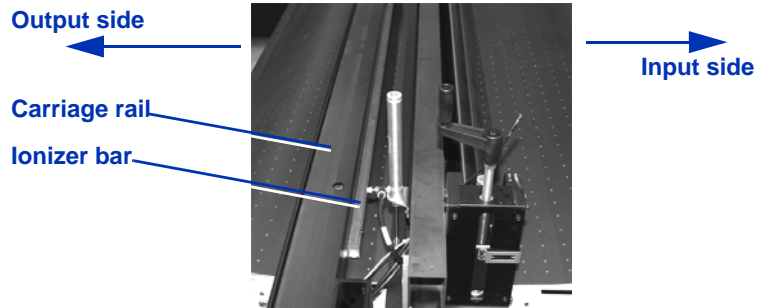


Fig. 6-8. Ionizer bar

Clean the ionizer bar as needed to maintain its efficient operation. The ionizer bar cannot eliminate static charges if it is dirty or if its cable is not securely connected.

A buzzing noise at the ionizer bar, and a flickering of the orange neon bulb at the service end of the bar, indicates reduced ionizer efficiency. This may be due to oxidation or buildup on the titanium pins, lack of a good earth ground, or an incomplete cable connection.

The ionizer bar is attached to the printhead carriage rail.

1. Switch off power to the ionizer bar.

The ionizer bar's power supply is mounted inside the cover on the lower service end of the printer. The power switch is located on the side of the power supply.

2. Verify that the cable connected to the service end of the ionizer bar is fully seated and completely threaded into position.
3. Use an ohm meter to measure the resistance between the metal electronics assembly and the metal bars that run the length of the ionizer bar.

The measurement should be less than 1 ohm after subtracting the resistance of the test leads. If so, no cleaning is necessary. Go to step 5.

4. Brush the titanium pins with a soft metal bristle brush (part number 0602665).

5. Switch on power to the ionizer bar.

If the pins are clean, there will be no buzzing sound, and the orange light will remain off; otherwise, repeat this procedure.



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**Tip**

If the printer is located in a high-humidity environment, or if you have not noticed problems associated with static discharge, the ionizer bar may not be needed. Switching off the ionizer bar during periods of high humidity or when otherwise not needed will significantly lengthen the life of this component and reduce required maintenance.

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## Printhead Procedures

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The printer uses air pressure to both fill and evacuate ink and printhead flush from the printheads. The following functions are available from the menu at **Tools > Maintenance > Printhead Procedures**:

- **Load Ink In All Heads** — when installing ink for the first time, or when restarting the printer after an extended power down period, this function fills the empty printheads with ink.
- **Fill Heads with Ink** — fills the printheads with ink, one color at a time. Should only be done with empty printheads.
- **Empty Heads (Fill With Air)** — empties all printheads by using air pressure.

As you perform Printhead Procedures from the menu, monitor the ink level in the drip tray under the carriage. Remove the tray and drain the ink into a container occasionally to prevent overflows. Since this mixture of ink and printhead flush will not cure, dispose of it according to the instructions in the Material Safety Data Sheets for the ink and printhead flush.

## Power Down and Restart

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**UNDER NORMAL OPERATION, DO NOT POWER DOWN THE PRINTER.** Constant vacuum at the printheads is required to prevent ink from running out of the printheads. Also, power must not be removed suddenly from the UV lamp system; permanent damage to the lamps could occur if hot lamps are not cooled according to specifications.

If the power must be removed for a brief period of time, the ink will no longer be held inside the printheads by the vacuum/pressure system, so it will drain onto the drip tray. Optionally, you can maintain power to the vacuum system by using the auxiliary 24 volt power supply. This will prevent ink from running out of the printheads. See Appendix A, Specifications for instructions.

If the printer will be powered down for an extended period, contact Technical Services for instructions.



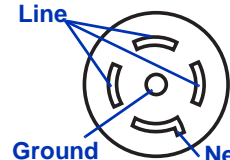
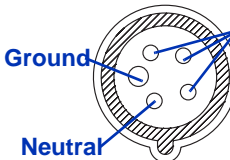


## Appendix A

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## Specifications

# Specifications

Dimensions (Assembled)	Height: 63 inches (160 cm) Depth without tables: 49 inches (124 cm) Depth with tables: 121inches (307 cm) Width: 179 inches (454 cm)
Weight (Assembled)	Printer without tables: 1675 pounds (760 kg) Tables only: 150 pounds (68 kg)
Operating Conditions	Temperature: 68–85° F (20–30° C) Relative Humidity: 20–80%, non-condensing
Storage Conditions	Temperature: -30–120° F (-34–49° C) Relative Humidity: 10–80%, non-condensing
Agency Compliance	Safety: CE, UL, c-UL Emissions: FCC-A, CE Immunity: CE
Electrical Power	<p>Power used: 200-240 VAC, three phase (3<math>\phi</math>), 50/60 Hz, 16 Amps maximum</p> <p>Required electrical circuit:</p> <p>North America/Japan            200-240 VAC, 20 Amps, 3<math>\phi</math>, with NEMA L21-20R locking wall receptacle</p> <div>  <p><b>NEMA L21-20R receptacle</b>            4-pole 5-wire grounding            20A 3-phase            locking</p> </div> <p>Europe            200-250 VAC, 16 Amps, 3<math>\phi</math>, with 5-pin IEC 60309 wall receptacle</p> <div>  <p><b>IEC 60309 receptacle</b>            5-pin            16A 3-phase            200-240 VAC</p> </div>

	<p>This product can be used with a single- to three-phase power converter, only as specified in the <i>Site Preparation Guide</i>, part number 0700116.</p> <p>Required power cord (supplied with printer):</p> <ul style="list-style-type: none"> <li>• <b>Part No. 0506213 North America (UL/CSA approved), length 19.7 feet (6 m), OR</b></li> <li>• <b>Part No. 0602650 Europe (Harmonized), length 19.7 feet (6 m)</b></li> </ul> <p>Optional auxiliary power for vacuum system:</p> <p>Supplied 24 volt DC power supply with universal adapters, connected from the auxiliary power jack on the vacuum/pressure assembly to one of the following:</p> <ol style="list-style-type: none"> <li>1. Printer's patch panel power outlet (configuration as shipped) — if the power cord to the printer is removed, power to the vacuum system is removed. If the printer standby power switch is switched off, but the power cord is not removed, power to the vacuum system is preserved.</li> <li>2. Wall outlet — 100-240 VAC, 50/60 Hz, provides temporary power to the vacuum system when it is necessary to remove power from the printer for service.</li> <li>3. UPS — customer-supplied uninterruptable power supply, output 100-240 VAC, 50/60 Hz, minimum of 15 watts of power, provides battery backup to the vacuum system in the event of a power failure. UPS is connected to the electric wall outlet.</li> </ol>												
Printing Technology	16 piezo-electric inkjet printheads utilizing Micro-Quad™ Jet Technology.												
Resolution	600 x 600 dpi, 600x300 dpi (as supported by the RIP)												
Ink	HP Scitex FB240 4-color (CMYK) flexible UV cure inks, off-head ink system.												
Curing System	Dual carriage-mounted 850-watt shuttered UV lamps.												
Print Speeds (bidirectional)	<p>Unidirectional modes (right-only or left-only) print in approximately half the speed of the corresponding bidirectional modes.</p> <table> <tr> <td>Billboard 600x300</td><td>811 ft<sup>2</sup>/hr (75.4 m<sup>2</sup>/hr)</td></tr> <tr> <td>Billboard 600x600</td><td>438 ft<sup>2</sup>/hr (40.7 m<sup>2</sup>/hr)</td></tr> <tr> <td>Production 600x300</td><td>438 ft<sup>2</sup>/hr (40.7 m<sup>2</sup>/hr)</td></tr> <tr> <td>Production 600x300</td><td>225 ft<sup>2</sup>/hr (20.9 m<sup>2</sup>/hr)</td></tr> <tr> <td>High Quality 600x300</td><td>225 ft<sup>2</sup>/hr (20.9 m<sup>2</sup>/hr)</td></tr> <tr> <td>High Quality 600x600</td><td>112 ft<sup>2</sup>/hr (10.4 m<sup>2</sup>/hr)</td></tr> </table>	Billboard 600x300	811 ft <sup>2</sup> /hr (75.4 m <sup>2</sup> /hr)	Billboard 600x600	438 ft <sup>2</sup> /hr (40.7 m <sup>2</sup> /hr)	Production 600x300	438 ft <sup>2</sup> /hr (40.7 m <sup>2</sup> /hr)	Production 600x300	225 ft <sup>2</sup> /hr (20.9 m <sup>2</sup> /hr)	High Quality 600x300	225 ft <sup>2</sup> /hr (20.9 m <sup>2</sup> /hr)	High Quality 600x600	112 ft <sup>2</sup> /hr (10.4 m <sup>2</sup> /hr)
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High Quality 600x600	112 ft <sup>2</sup> /hr (10.4 m <sup>2</sup> /hr)												

Vacuum/Pressure System	Nominal relative vacuum: 5.0 inches H <sub>2</sub> O Maintains negative relative pressure at the printheads and provides air pressure for purging. Since relative pressure is maintained, the printer can be operated at various altitudes above or below sea level without adjustments to the system.
Compressed Air	Customer-supplied (shop air), 80-100 psi (5.6-8.4 Kg/cm), required for media handling system.
Media Handling	Vacuum belt media drive for easy loading and accurate media feeding. Pneumatically-operated media rollers and media alignment bar. Front and rear roller tables support rigid materials up to 98.4 inches (250 cm) in width and 80 inches (203 cm) in length, 125 pounds (56.7 kg) in weight. A second set of roller tables (optional) extends the support of rigid materials up to 150 inches (381 cm) in length. Optional Supply & Take-up system supports up to 98.5-inch-wide (2.5 m) roll-fed media on 3-inch cores.
Maximum Media Thickness	2.75 inches (70 mm).
Maximum Print Width	98.4 inches (250 cm). Edge-to-edge printing in both width and length of rigid media.
Maximum Print Length (rigid media)	400 inches (1016 cm).
Minimum printable rigid sheet size	Width: 6 inches (15 cm) Length: 9 inches (23 cm)
Software Features	Touch screen with graphical interface. Automatic calibration and detection/substitution of missing jets. Media Wizard stores operational parameter sets by media type for subsequent recall. Automatic edge detection and media positioning. Automatic head clearance above media. Stored Jobs feature stores print jobs on the printer for reprinting

## Appendix B

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# Troubleshooting

This appendix explains how to prevent and diagnose printing problems and provides information about getting technical support.

- Troubleshooting Checklist (page B-2)
- Warranty Claims (page B-8)
- Diagnostics (page B-10)
- Hewlett-Packard Technical Services (page B-11)

## Troubleshooting Checklist

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Before you troubleshoot your printer, make sure that it is properly installed as described in Chapter 1, Getting Started.

Follow the steps in this checklist to isolate and resolve printing problems.

**1. Does the printer's power come ON?**

YES: Go to question 2.

NO: The following could be the problem:

- The power cable may not be plugged into an electrical outlet.
- If the printer is plugged into a surge protector, the surge protector may not be connected to power, or it may be switched off.

**2. Did the start-up sequence of the control panel end by displaying a Ready (status) screen similar to the one shown in Fig. 2-1. on page 2-3?**

YES: Go to question 3.

NO: The following could be the problem:

- There may be a hardware problem with the printer's internal components. Follow the diagnostic routine on the control panel to determine the problem. Call technical support as directed by the control panel.

**3. Can you send a file from the print server to the printer?**

YES: Go to question 4.

NO: The following could be the problem:

- The cable may not be securely connected between the print server and the printer. Refer to the server's documentation for more information.
- The cable may be connected to the wrong port on the print server. Refer to the server's documentation for more information.

**4. Can you send (print or download) a document from a client computer to the server?**

YES: Go to question 5.

NO: The following could be the problem:

- The connection from the client to the local area network may not be configured correctly. See your system administrator for assistance.
- The cable between your computer or network and the print server may not be securely connected at both ends. Refer to the print server manual for more information.
- Your computer may not be working properly. Run an application that you know works correctly and print to be sure.
- The computer's port may not be working properly. Print to another output device that you know works correctly (and is not connected to the print server) to check this.
- There may be another error condition reported by the print server.

5. Is the print quality good?

YES: Then the problem is not covered in this checklist.

Contact technical support.

NO: The following could be the problem:

- **Banding or general poor image quality** — the print-heads may need to be calibrated (see Chapter 4, Calibrating the Printer). One or more inkjets may be clogged or not firing.
- **Inaccurate color or under- or over-saturated output** — the wrong color profile may be selected at the print server or RIP. Refer to the documentation that accompanies the print server or RIP.
- **Inaccurate color or lack of detail** — one or more ink-jets may be clogged or not firing (see "Recover Missing Ink Jets" on page 6-11).
- **Media buckling or media feed problems** — the wrong media could be selected in the Media Wizard (see "Configure Media" on page 2-6). The media may not have been loaded squarely (see "Load and Print on Rigid Media" on page 2-8).
- **Head strike** — if the printhead is striking the media, check how the media is tracking from the supply spool to the takeup spool. The sides of the media should be parallel to the sides of the printer, with no wrinkling or buckling. If necessary, reload the media. Also check the

control panel to see whether the correct media is selected. Head strikes may indicate that the printhead height is too low; see "Head Height Off Media" on page 5-12 for instructions. If head strikes become a recur frequently, contact technical support for an edge retainer that can be attached to the printer.

## **Head Strike or Carriage Motion Error**

**Cause:** Head height is set automatically with a media thickness sensor and moving carriage rail. The most likely causes of a head strike:

Media is bowed ("non-flat") and a media edge is sticking up where the carriage will hit it when either the input or output roller is not in a position to hold it down (either rollers are not being used or the leading/trailing edge of the media does not reach the pinch roller).

Media is bent. Some edge or corner has been damaged so that even though the media is relatively flat, the bent edge sticks up into the carriage space.

**What to do:** Inspect the media for bowing, warping, and folding. Do not print on any media that cannot be flattened. Select warped (non-flat media) during configuration so that the front and back pinch rollers are used to hold down the media (note: this reduces significantly the available print zone).

## **Head Strike Recovery**

A head strike occurs when the media comes in contact with the bottom of the carriage while the carriage is in motion. The printer carriage is designed to protect the printheads from contact in the event of a head strike on media. It is important, however, to take steps after a head strike event to assure that the printheads have not come in contact with partially-cured ink.

Following a head strike, it may be possible to observe all known working jets firing correctly in the Prime Bar pattern or other printing. Even when the Prime Bars appear visually correct, the printheads should be manually cleaned immediately after a head strike to ensure that no partially cured ink has been scraped from the media and deposited on or near the printhead orifices.

The ink will continue to cure at a low rate and could enter an orifice and cure the ink in the orifice even without subsequent exposure of the orifice area to UV. Once the ink starts to cure it continues for some time at a slow rate.



If previously known working jets are visually found to be missing from the Prime Bars after a head strike, a standard Purge should also be performed as part of the cleaning. The procedures for cleaning the UV printheads follows below.

1. Select "Access printheads" from the control panel, **OR**, at your option, select "Purge" from the control panel to perform a purge.

The carriage will travel to the service side, allowing access to the printhead jetting orifices.

2. Moisten an approved cleaning cloth with HP Scitex MF50 Flushing Solution.

Beginning with the #16 printhead, lightly dab the printhead orifice plate with the moistened cleaning cloth, moving from the back of the printhead toward the front.



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**Note**

Do not wipe the printheads with a horizontal (front to back) motion of the cloth. Use a vertical dabbing (blotting up and down) motion, working your way across the printhead surface. The printheads have very small but very sharp features that can make small tears in the cloth, creating conditions for fiber particles to enter the jets and clog. The dabbing motion greatly reduces this possibility.

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3. Repeat for each printhead, turning the cloth regularly and remoistening with head flush as necessary.
4. When all printheads have been cleaned, return the carriage to the user side of the printer.
5. Proceed with the remaining daily startup procedures as documented in this manual.

## **Media Feed Errors (Sheet-Fed Printing)**

**Cause:** The printer relies on high-resolution encoders for high quality output. The proper functioning of the encoder wheel that reads the position of the media drive belt is particularly important. If the encoder on the media drive motor (at the service end of the printer) detects more than one inch (25 mm) of difference between it and the media drive belt encoder (at the user end of the printer), a media feed error occurs.

**What to do:** The most likely causes of this are a dirty belt or encoder, or the belt encoder wheel has lost contact with the belt. The latter can occur if the shipping bolt was left installed, which keeps the encoder wheel raised off the belt for shipping, or if the encoder cover was installed crooked, which could also block or raise up the wheel. In either case, remove the shipping bolt or remove and replace the cover carefully, making sure to lower the encoder wheel, which is mounted on a vertical rail (bearing) slowly onto the belt.

## **Ink Not Curing**

**Cause:** Lamp failure, possibly due to overheating, disconnected, or shutter fault, which the printer can detect and report via an error message; or due to a non-functioning or weak lamp, which the printer cannot detect.

**What to do:** In the case of overheating, allow the lamps to cool and try printing again. If an error reveals an electrical disconnection or shutter fault, contact Technical Services. If the lamp(s) have over 500 hours of service, switch the lamp(s) to High mode and try printing again. If one of the bulbs does not light, replace the bulb. To print with one lamp, print unidirectionally with the leading lamp (for example, if the user side bulb does not light but the service side bulb does, print from the user side to the service side).

## **Shaking or Vibrations from Media Drive Servo**

**Cause:** Media was configured as Light (up to 50 pounds/22 kg) but weighs more than 50 pounds (22 kg).

**What to do:** Unload the media, then select Configure & Load and select Medium mode. Then try printing again.

## Banding

**Cause:** (Sheet-fed printing) The media encountered an obstruction, such as the operator touching the media during printing; or the media slipped on the media drive belt due to being warped (not flat); or there was a problem with the media drive belt encoder.

(Roll-fed printing) There may be a media feed error.

**What to do:** (Sheet-fed printing) Do not touch the media during printing. Use flat media. If the media has a slight bow, use the media rollers to hold the media flat against the media drive belt. Clean the media drive belt and its encoder (see “Clean the Media Drive Belt and Encoder” on page 6-4). If regularly-spaced blank bands or overlapping bands appear, the encoder may be damaged or misaligned; in this case, contact your Authorized Service Provider or Technical Services.

(Roll-fed printing) Perform a Media Feed Calibration to ensure accurate media advance.

## Shutter Errors

The UV curing system uses shutters to block and expose the UV lamps as needed to cure jetted ink or prevent curing of the ink on the printheads.

A control panel warning message appears if the shutters become jammed shut or closed, or if a sensor indicates they are not opening or closing as required (this will not interrupt printing):

- If the shutters appear to be opening and closing, simply reset the warning message and proceed with printing.
- If one of the shutters appears to be jammed open or closed, report this to Technical Services for a possible repair. In this case, you can continue printing unidirectionally with the working lamp. For performance similar to bidirectional printing, print right-to-left with the user-side lamp, or print left-to-right with the service-side lamp.
- If either shutter is jammed open, you may continue printing on thinner media (less than 0.5 inches/127 mm); printing on thicker media is not recommended due to UV light exposure when the lamps are off the media.

## Warranty Claims

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The printer is covered by a manufacturer's limited warranty (part number 0700117), which includes the printheads. The piezo printheads are designed to remain in service for the life of the printer.

The printer incorporates many automatic and manual features for preventing clogs from occurring, and for recovering inkjets that do become clogged (see "Recover Missing Ink Jets" on page 6-11). The warranty terms require that the maintenance procedures contained in this *User Manual* are followed prior to classifying a printhead anomaly as a "printhead failure."

A printhead failure is defined as any printhead that develops one or more individual jets that do not fire *and* that cannot be recovered or replaced ("mapped out") by the AutoJet or Manual Jet Mapping software when printing in Production Mode. If the jet(s) can be mapped out by the software in Production Mode, the printhead is deemed to be working satisfactorily and is not considered to have a failure.

In the event of a printhead failure as defined above, the cause and/or circumstances that lead to the failure must be identified. The following is a list of causes and/or circumstances that may lead to printhead failure. This list is not considered comprehensive, and any causes and/or circumstances that are not identified in this list will be evaluated on a case-by-case basis.

All printheads submitted for warranty claims will be subjected to failure analysis to confirm the cause of failure. The final determination of warranty applicability will be provided by this analysis.

For more information about warranty claims, contact technical support (see page ii for contact information).

### **Causes that are covered by the manufacturer's warranty:**

- **Manufacturing defect** — when a flaw in materials or workmanship causes a printhead to fail, the failure will be covered by the manufacturer's warranty.

### **Causes and/or circumstances that are not covered by the manufacturer's warranty:**

- Third party hardware or software
- Damage caused by accident, abuse, misuse (including damage resulting from head strikes or use of non-approved sup-

plies), misapplication, relocation of product without approved procedures, failure to perform user maintenance as defined in the *User Manual* or contamination of the ink supply due to improper handling of the ink or ink system

- Printheads which have not been properly maintained as defined in the *User Manual*, and printheads with jet-outs that AutoJet is able to substitute in Production print mode
- Service (including upgrades and expansions) performed by anyone who is not an Authorized Service Provider
- Modification of the product without the written permission of HP
- Product on which the serial number has been removed or defaced or for which you cannot provide proof of purchase and payment
- Software (whether embedded in ROMs or other hardware or contained on diskettes or other media), including related manuals and documentation, its quality, performance, merchantability or fitness for any particular purpose

## Diagnostics

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The printer includes a series of self-diagnostic tests designed to help technical support solve printer hardware problems. If one of the tests encounters an error, an error message appears, which includes:

- Error code — always write down this code for future reference by technical support
- Brief description of the error
- A series of buttons that allow you to respond to the error. In some cases, you can ignore the error or enter a further diagnostic routine. In other cases, you must restart the printer.

During the course of operating the printer, another class of error messages may appear on the control panel. In Novice mode, the ATTN (Attention) key blinks on the Ready or Front Page screen when the printer detects an error condition, or potential error condition. When you press this button, the panel displays one or more messages of the following types:

- **Warnings** — the printer has detected a condition that, if left unaddressed, could result in substandard prints or a condition that will require an action before printing can continue. Any action on your part is optional.
- **Actions** — the printer has detected an error condition that stopped printing or will prevent printing from starting. You must correct the error before the printer will be ready to print.

(In Expert mode, you can display current messages via the menu option, **Warnings & Actions**.)

For service and support, contact Hewlett-Packard Technical Services:

- **World Wide Web:** [www.colors span.com](http://www.colors span.com)
- **Internet E-mail:** [cs.support@hp.com](mailto:cs.support@hp.com)

United States and Canada:

- Telephone: (800) 925-0563 or (952) 944-4040
- Fax: (952) 944-8509

Latin America:

- Telephone: +1 (952) 943-3427 or +1 (952) 943-3627
- Fax: +1 (952) 944-8509

Europe/Middle East/Africa:

- Telephone: +31 23.5622000
- Fax: +31 23.5627944

Asia/Pacific:

- Telephone: +1 (952) 943-3320
- Fax: +1 (952) 943-3313

## Supplies and Accessories

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Consult HP or your HP representative for an updated listing of supported ink and media.

Use only genuine HP inks and flushing solution in the printer. Use of any other inks or cleaning fluids could damage the printer and will void the warranty.

### Supplies Sales

- North America: (800) 723-3002 or (952) 943-3636
- Europe: +31 23.5622000
- Asia: (952) 943-3300
- Latin America: (800) 664-7242 or (952) 943-3600



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