Kodak

Versamark DP5000 Series Printers

DP5120, DP5122 and DP5240

Installation Guide

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Installation Guide

FCC Compliance Statement

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 own expense.

Note: Good quality, shielded (braided shielded) cables must be used for the RS-232-C and Centronics interfaces.

Canadian EMI Compliance Statement

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 édicté par le ministère des Communications du Canada.

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

EMI-CISPR 22/EN 55 022/CE Marking

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Versamark DP5000 Series Printers Printing Systems Installation Guide

Part Number	Media	Revision	Date	Description	ECN
0114348-603	PDF	001	05/2008	Revision for DH5122 Printhead and the K4KB	K8287

0114348-603   05/2008

Scope

This guide describes installation procedures for the following products:

- KODAK VERSAMARK DP5120 Printer (5120)
- KODAK VERSAMARK DP5240 printer (5240)
  These printers have 1" printheads
- KODAK VERSAMARK DP5122 printer (5122)
  This printer has a 2" printhead
- KODAK VERSAMARK CS150 System Controller.
  The controller and up to three DP5000 series printers comprise a printing system.

In this guide, Printing System refers specifically to a Kodak Versamark CS150 system Controller (CS150), one or more DP5000 series printers, and the standard enclosure (cabinet) supplied by Kodak.

This guide does not describe the Kodak Versamark 5000 Printer, Kodak Versamark 5100 Printing System, Kodak Versamark 5242 Printing System, or Kodak Versamark 5300 Printing System. Jetscape software and Mailscape Version 3.96 (including the Read & Image option) are described only as shipped in the dual controller configuration. See below.

Important: Availability of the Jetscape products described in this guide is limited. Contact technical support before ordering or planning to purchase any Jetscape product.

The procedures in this guide should be performed only by a Kodak Versamark field engineer, or a service technician trained by Kodak Versamark, Inc.

Text Notations

This manual uses the following typographical conventions.

This style	Refers to
Ready	Text displayed by the software.
go	Anything you type, exactly as it appears, whether referenced in text or at a prompt.
ENTER	Special keys on the keyboard, such as enter, alt, and spacebar.
[NEXT]	Buttons and lights on the printer operator panel.
Save	Software command buttons and sections of dialog boxes, such as group boxes, text boxes, and text fields.
File → **Open**	A menu and a specific menu command.
ALT+F1	Pressing more than one key at the same time.
ALT, TAB	Pressing more than one key in sequence.
xx,yy	Variable in error messages and text.
jobfile.dat	File names.

Safety Notations

The following definitions indicate safety precautions to the operator.

Note: Information that needs to be brought to the reader's attention.

Caution: A situation where a mistake could result in the destruction of data or system-type damage.

WARNING
A potential hazard that could result in serious injury or death.

DANGER
An imminent hazard that will result in serious injury or death.

Service and Support

Technical equipment support is available 24 hours a day, 7 days a week.

Software and applications support is available 8:00 a.m. to 5:00 p.m. EST/EDT, Monday through Friday.

Call for telephone or on-site technical support; to order parts or supplies; to request documentation or product information.

	Phone	Fax
U.S.A., Canada, and worldwide	+1-800-472-4839 +1-937-259-3739	+1-937-259-3808
Europe	+41-21-806-0404	+41-21-806-1920
Asia/Pacific Rim	+65-6744-6400	+65-6744-6700
Japan	+81-03-5621-2220	+81-03-5621-6195
Updated service information	http://www.kodakversamark.com	
Customer support	customer@kodakversamark.com	

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Chapter 1.   Preparation

This chapter describes the requirements for an installation, and the following procedures and guidelines:

- Safety precautions
- Required tools.

Read all procedures thoroughly prior to installation. Follow any warnings and special instructions that appear in the manuals and on labels affixed to the printer and system components to avoid physical harm to you or the components.

Safety Precautions

Observe the following safety precautions during all installation procedures.

Lifting Technique

Apply the following guidelines to moving components.

- Use two persons to lift the printer box, the printing system enclosure, or any large component, or any box that exceeds 50 lbs (27 kg).
- Lift carefully using the legs and not the back (see OSHA standards).

Electrical Safety

Apply the following guidelines when working with any internal component of the printer, or around any power source.

- Observe all precautions regarding high voltage.
- Use proper procedures for handling electrical equipment (see OSHA standards).
- Observe all precautions in warning and caution notations (see "Scope").
- Observe proper electro-static discharge (ESD) precautions.
- Use proper voltage levels, and observe proper grounding techniques.
- Observe all precautions for working around electrical devices that remain charged after input power is cut off.

Fluidic Safety

Apply the following guidelines when handling ink, replenisher, or purge fluid.

- Read the Material Safety Data Sheet (MSDS) for a fluid before handling it, and follow all instructions in the documentation shipped with the fluid.

- Clean up any spill immediately.

- Wear approved protective equipment (see OSHA standards).

- Dispose of hazardous material properly (see OSHA standards and all local, state, and Federal regulations that apply).

Required Tools

Before starting the installation, check that you have the following required tools and equipment.

- Standard FE took kit (0177490).

- ESD protection kit (0110094).

The following kits are recommended, but not required.

- DTR test kit (0178399)

- DP5120/DP5240 flush kit (0177491).

Chapter 2.   Unpacking

This chapter describes how to unpack the following components:

- Printer
- Printing system
- Printheads.

To ensure that you complete all steps of these procedures use the checklists in "Appendix A".

Printer

The printer components are shrink-wrapped to a shipping pallet (see Figure 2.1). Depending on the contents of the product order, other boxes may be shipped on the same pallet.

Removing Packaging

Use the following procedure to remove the pallet packaging.

1. Use a forklift or hand truck to move the pallet as close as possible to the final location intended for the printer.

2. Position the pallet where there is 3 ft. (1 m) of clear working space on all four sides.

3. Cut the shrink-wrap and remove it from the pallet.

Caution: Do not cut into the boxes. Use a box knife or other short-bladed tool and cut where pallet contents do not touch the shrink wrap.

4. Remove the smaller boxes from the pallet and set them aside for later unpacking.

Note: A typical printer shipment includes three extra boxes (see "Printer Inventory"). Figure 2.1 shows the pallet with the shrink wrap and smaller boxes removed.

Figure 2.1   Printer on shipping pallet

5. Cut the bands on the printer box.

6. Remove the box lid.

7. Remove the printer accessories box from inside the printer box.

Note: Set the accessories box aside for later unpacking.

8. Cut open the end (short side) of the box at the back of the printer.

   a. Access the back of the printer where the handle is located.

9. Fold down or tear off the cut side of the box.

10. Remove all the packaging from the pallet and the area around the printer.

Note: Leave the packaging on the printhead housing at the end of the umbilical.

11. Continue with the shipment inventory.

Printer Inventory

Before starting to unpack the shipment, use the following procedure to inventory its contents.

1. Check the type of printer identified by the number on the printer box (see Table 2.1).

Table 2.1   Printer model shipping numbers

Part Number	Printer Model and Options
0170151	KODAK VERSAMARK DP5120 DK GREY PRINTER, 12' UMBILICAL
0170154	KODAK VERSAMARK DP5240 DK GREY PRINTER, 12' UMBILICAL
0170155	KODAK VERSAMARK DP5240 DK GREY PRINTER, 24' UMBILICAL
0170156	KODAK VERSAMARK DP5240 DK GREY PRINTER, 24' UMBILICAL, K4K
0170159	KODAK VERSAMARK DP5120 DK GREY PRINTER, 24' UMBILICAL
0170161	KODAK VERSAMARK DP5120 DK GREY PRINTER, 24' UMBILICAL, K4K
0170162	KODAK VERSAMARK DP5122 DK GREY PRINTER, 12' UMBILICAL
0170163	KODAK VERSAMARK DP5122 DK GREY PRINTER, 24' UMBILICAL
0170168	KODAK VERSAMARK DP5120 DK GREY PRINTER, 12' UMBILICAL,W/TRANSFORMER
0170175	KODAK VERSAMARK DP5120 DK GRAY PRINTER, 12' UMBILICAL, K4K MINUS BOARD
0170176	KODAK VERSAMARK DP5240 DK GREY PRINTER, 12' UMBILICAL, HI MEMORY

2. Check the pallet contents against the packing slip (or copy of the order acknowledgement form). Note any short or over shipments.

Table 2.2 lists the contents of a typical printer shipment. The printer, printheads, base cabinet, and printhead mount are individually boxed. All other items are shipped together in one accessories box. A shipment can include additional components, most commonly ink and extra printheads.

Table 2.2   Components, typical printer shipment

Part Number	Description	Quantity	Location
0170162	KODAK VERSAMARK DP5122 DK GREY PRINTER, 12' UMBILICAL	1	Printer box
0100238-026	CORD-PWR 16AWG 13A 125V 7.5FT	1	Inside printer box[1]
0187976	PRINTER HARDWARE KIT	1	Inside printer box
0188200	PRINTHEAD	2	Separate box[2]
0177489	INSTALLATION KIT	1	Accessories box[3]
0188398	MANUALS KIT-DP5122 PRINTER	1	
0187412	CATCH PAN-SERVICE (1"/2")	1	
0187887	BASE CABINET ASSEMBLY DK GREY	1	Separate box
0187733	PRINTHEAD MOUNT - STAND ASSY	1	Separate box[4]

1. A domestic (US), European or Japanese power cord is shipped depending on the shipment destination.
2. Two printheads are shipped with a DP5240 or DP5122 printer; only one printhead is shipped with a DP5120 printer.
3. Labeled with the printer model part number or the printer serial number.
4. Shipped on a separate pallet if necessary. An alternate is the LABEL BASE 2" PRINTHEAD MOUNT (0187734).

Moving the Printer

Use the following procedure to move the printer off of the shipping pallet:

1. Cut the straps securing the printing system box to the pallet.

2. Remove the box lid.

3. Remove any loose packing material from inside the printer box.

Note: Manuals, cables, software and other small items are packed inside the installation kit box. If only a printer and printheads were shipped, these items will be shipped inside a separate box.

4. Cut open the end of the box next to the umbilical connection.

5. Fold down the cut box wall.

6. Uncoil the umbilical and lay it on top of the printer, or to one side.

7. Make sure the umbilical does not obstruct moving the printer.

Caution: The following steps require two persons.

8. If two persons are available, work together to lift the printer out of its packing base and set it on a level surface.

9. If only one person is available, pull the printer slowly out of the box and off the pallet.

Caution: Do not let the printer drop or tip over.

10. Coil the umbilical around the umbilical hanger on the printer rear panel and nest the printhead housing in the coils.

11. Continue with "System Unpacking".

Printing System

A printing system is shipped strapped to a shipping pallet (see Figure 2.2). Unpacking a system consists of the following procedures:

- Removing system packaging
- System inventory
- System unpacking
- Accessories.

Removing System Packaging

The components of a standard printing system components are shipped in four or more boxes packed on one pallet. The number of pallets and their contents can vary depending on the type of system ordered. Use the following procedure to unpack the system.

1. Move the shipping pallet as close as possible to the final location intended for the printing system.

Note: Use a forklift or hand truck to move the pallet.

2. Position the pallet where there is 3 ft. (1 m) of clear, working space on all four sides.

3. Cut the shrink-wrap and remove it from the pallet (see Figure 2.2).

Caution: Do not cut into the boxes. Use a box knife or other short-bladed tool and cut where pallet contents do not touch the shrink wrap.

Figure 2.2   Printing system pallet, shrink wrap removed
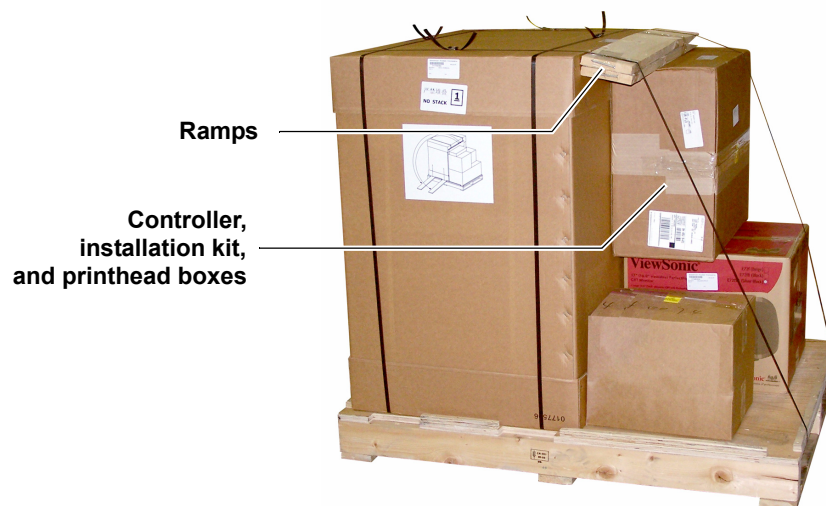
4. Remove the two wooden ramps from the shipping pallet and set them aside for later use.

5. Remove all boxes except the printing system box from the pallet. Set these boxes aside for later unpacking.

6. Cut the bands securing the printing system box lid (see Figure 2.3).

Figure 2.3 Printing system box, ready for unpacking
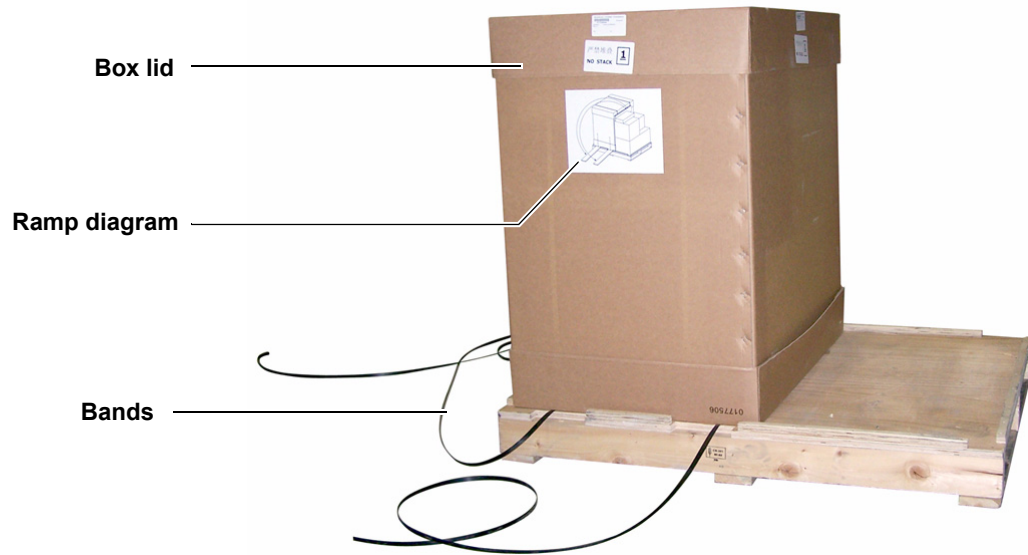
7. Remove the box lid.

8. Remove and discard the cut bands.

9. Remove the side walls of the box (see Figure 2.4).

Figure 2.4 Printing system box, side walls removed
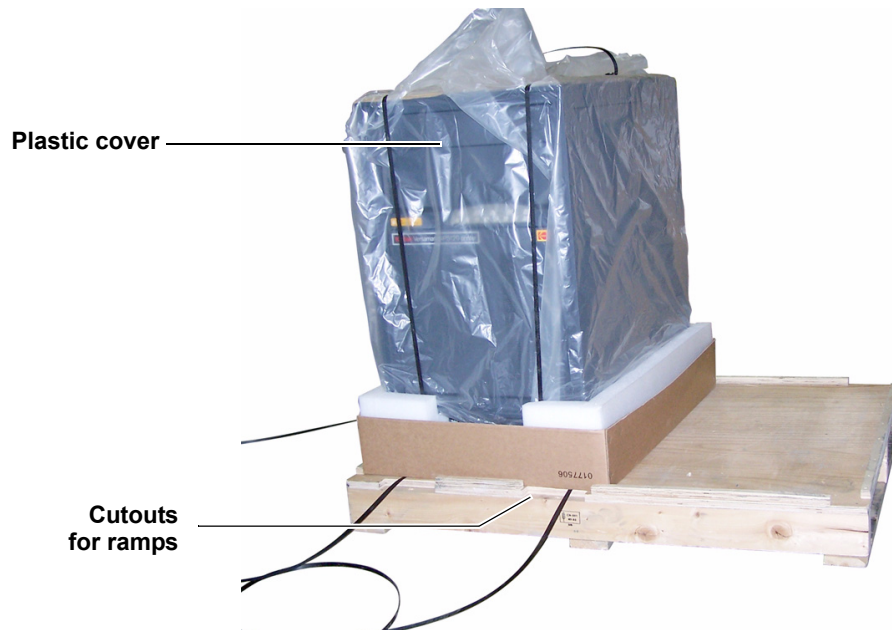
10. Remove the plastic cover from the printing system.

11. Remove the packing material from around the base of the printing system enclosure on the short side of the box next to the two cutouts in the pallet rim for the ramps.

12. Remove the screws taped to the ramps.

13. Secure the ramps to the pallet with the screws supplied. Use the pre-drilled holes on the pallet frame at each cutout.

14. Unlock the printing system enclosure (cabinet) caster locks.

Caution: The following steps should be done by two persons. If you are alone, exercise additional caution.

15. If two persons are available, tilt the cabinet slightly toward either of its long sides, and then pull any packing material under it out. If you are alone, cut away any packing material underneath the cabinet that blocks the casters

16. Roll the cabinet down the ramp and onto the floor.

17. Stop the cabinet when it is level with all four casters on the floor and lock the casters.

Hint: It is easier and safer to pull the cabinet down the ramp rather than to push it down. The printer weighs approximately 100 lbs (45 kg), and pulling the cabinet down allows you to guide and slow it as it moves down the ramps.

Caution: Do not let the cabinet roll free or tip more than 20 degrees as it moves down the ramps.

18. Remove any packaging material from inside the cabinet.

19. Remove the umbilical and printhead housing from inside the cabinet and coil the umbilical on top of the cabinet and nest the printhead housing within the coils.

Note: Leave the protective packaging on the printhead housing. This packaging should not be removed until you perform the printhead installation (see "Printheads").

20. Roll the cabinet to where the printing system is to be installed.

21. Continue with the printing system installation procedure (see "System Inventory").

System Inventory

Before starting to unpack the printing system enclosure, use the following procedure to inventory its contents.

1. Check the type of printing system identified by the number on the printer box (see Table 2.3).

Table 2.3 Printing system models and shipping numbers

Part Number	Printer Model and Options
0170152	KODAK VERSAMARK DP5120 DK GREY SYSTEM, NO MTU, 12' UMBILICAL, JETSCAPE
0170153	KODAK VERSAMARK DP5120 DK GREY SYSTEM, NO MTU, 12' UMBILICAL, CS150
0170157	KODAK VERSAMARK DP5240 DK GREY SYSTEM, NO MTU, 12' UMBILICAL, JETSCAPE
0170158	KODAK VERSAMARK DP5240 DK GREY SYSTEM, NO MTU, 12' UMBILICAL, CS150
0170160	KODAK VERSAMARK DP5120 DK GREY SYSTEM, NO MTU, 24' UMBILICAL, JETSCAPE
0170164	KODAK VERSAMARK DP5122 DK GREY SYSTEM, NO MTU, DUAL CONTROLLER, 12' UMBILICAL
0170165	KODAK VERSAMARK DP5122 DK GREY SYSTEM, NO MTU, DUAL CONTROLLER, 24' UMBILICAL
0170166	KODAK VERSAMARK DP5122 DK GREY SYSTEM, NO MTU, DUAL CONTROLLER, 12' UMBILICAL, MPI
0170167	KODAK VERSAMARK DP5122 DK GREY SYSTEM, NO MTU, DUAL CONTROLLER, 24' UMBILICAL, MPI
0170169	KODAK VERSAMARK DP5240 DK GRAY SYSTEM, NO MTU, 12' UMBILICAL, DUAL CONTROLLER
0170170	KODAK VERSAMARK DP5120 DK GRAY SYSTEM, NO MTU, 24' UMBILICAL, CS150, K4K
0170171	KODAK VERSAMARK DP5120 DK. GREY SYSTEM, MTU,12' UMBILICAL, JETSCAPE
0170172	KODAK VERSAMARK DP5120 DK. GREY SYSTEM, NO MTU,12' UMBILICAL, DUAL CONTROLLER
0170173	KODAK VERSAMARK DP5122 DK GRAY SYSTEM, NO MTU, DUAL CONTROLLER, 12' UMBILICAL, w/ TRANSFORMER

2. Check the pallet contents against the packing slip (or copy of the order acknowledgement form). Note any short or over shipments.

Table 2.4 lists the contents of a typical system shipment. The system cabinet, printheads, printhead mount, and are individually boxed. All other items are shipped together in one accessories box labeled with the shipment part number or the printer serial number. A shipment can include additional components, most commonly ink and extra printheads.

Table 2.4   Components, typical printing system shipment

Part Number	Description	Quantity[1]	Location
0170165	KODAK VERSAMARK DP5122 DK GREY SYSTEM, NO MTU, DUAL CONTROLLER, 24' UMBILICAL	1	On pallet
0100238-026	CORD-PWR 16AWG 13A 125V 7.5FT	1	Accessories box
0185072	DUAL CONTROLLER PC KIT[2]	1	Separate box
-	MONITOR	1	Separate box
0188200	PH-2"/120 DPI PKD[3]	2	Separate box
0177489	INSTALLATION KIT	1	Accessories box
0188399	MANUALS KIT-DP5122 PRINTING SYSTEM	1	
0187412	CATCH PAN-SERVICE (1"/2")	1	
0177184	TACH KIT-BELT DRIVEN TRANSPORT	1	
0175780	CUE ASSY (6 FT) W/PKG	1	
0187887	BASE CABINET ASSEMBLY DK GREY	1	Separate box
0187734	LABEL BASE 2" PRINTHEAD MOUNT	1	Separate box[4]
-	RAMPS (W/ SCREWS)[5]	1	On top of boxes

1. Quantity if shipped on the printer pallet, or location if shipped separately.
2. This kit is the Pioneer PC (chassis and documentation).
3. Two printheads are shipped with a DP5240 or DP5122 printer, one with a DP5120 printer.
4. Shipped on a separate pallet. An alternate is the PRINTHEAD MOUNT - STAND ASSY (0187733).
5. The two wooden ramps are taped together with the screws taped to them.

System Unpacking

Use the following procedure to unpack the system controller (host) and other components of a printing system.

1. Move all the boxes to the location where the system is to be installed.

2. Place the monitor and computer (system controller PC) boxes by the cabinet. They are unpacked when installed (see Chapter 4, "System Installation").

3. Unpack the PC peripherals box; it contains the following items:

   • Keyboard
   • Mouse
   • PC manuals
   • PC cables.

4. Set the PC peripherals aside until ready to begin the system installation.

5. Unpack the system accessories box. The following contains the system components:

   • Manuals set (up to six books)
   • Cables
   • Power cord kit
   • Installation kit.

6. If options or accessories were included in the shipment, unpack those items (see "Accessories"). Otherwise, continue with the installation procedure (see "Printing System").

Accessories

Use the following general procedure as a guideline for unpacking any accessories included in the shipment.

1. Use the shipping numbers on the boxes to identify which options are part of the shipment (see Table 2.5).

Table 2.5   System shipment contents

Part Number	Description	Notes / Function	Reference Document
0175834	BASE CABINET ASSY	Rollaround stand - DP5120/DP5240	Vendor document
0187887	BASE CABINET ASSEMBLY DK GRAY	Printer stand - DP5122	
0176498	PRINTHEAD MOUNT STAND	Rollaround stand - DP5120/DP5240	0113754
0187733	PRINTHEAD MOUNT 2" STAND ASSY	Rollaround stand for DP5122	
0177499	CATCH PAN ASSY	For DP5120 and DP5240	Vendor document
0187412	1"/2" SERVICE CATCHPAN ASSEMBLY	For DP5122	
0176499	LABEL BASE PRINTHEAD MOUNT	For DP5120 and DP5240	0113754
0187734	LABEL BASE 2" PRINTHEAD MOUNT	For DP5122	
0182591	RESTRAINT - UMBILICAL	Imaging tower option	Vendor document
0178202	PRINTHEAD MOUNT ASSY	Transport option	
0104009-211	POWER CONDITIONER 120VAC IN/OUT	System option	
0104009-212	POWER CONDITIONER 230VAC IN 120VAC OUT		
0180088	REMOTE OPERATOR PANEL		0113455
0187611	CS150 MULTI-PRINTER KIT H/W	Hardware and software	0114054
0186038	CS150 MULTI-PRINTER KIT S/W	Software	
0187612	MULTI-PRINTER INTERFACE JETSCAPE	Hardware and software	
0179993	PRECISION MT 1 INCH PH ASSY	Adapter for 4" printhead mount	0113757
0180117	NON-STITCH MT 1 INCH PH ASSY	Adapter for 4" printhead mount	0113758

2. Unpack each accessory box and locate the documentation.

3. Refer to installation instructions listed in Table 2.5 for detailed information on each component.

4. For software and memory options, see the DP5000 Series software Installation Guide (0114083).

5. Continue with the printhead unpacking procedure.

Printheads

Each DP5000 series printhead has a different part number and is shipped in a separate box (see Table 2.6). The following sections identify the printheads and provide general installation guidelines. Refer to the documents listed in Table 2.6 for detailed instructions.

Table 2.6   Printhead models and shipping numbers

Part Number	Printer Model and Options	Installation Documents
0139750	KODAK VERSAMARK DH5120 PRINTHEAD	DP5000 series printheads *Replacement Instructions* (0114252-602) and *Packing Instructions* (0114253-602)
0181000	KODAK VERSAMARK DH5240 PRINTHEAD	
0188200	KODAK VERSAMARK DH5122 PRINTHEAD	

DH5120 Printhead

Use the following procedure to unpack the 1", 120-dpi printhead:

1. Take the printhead box to the location where the printer is to be installed.

2. Open the outer (printhead shipping) box.

3. Remove the following contents of the box (see Figure 2.5):

    •   Inner printhead box
    •   Printhead return form (0113477) and shipping label (0193675)
    •   Ink card (0113590)
    •   Test pattern print sample.

Note: The printhead *Replacement Instructions* (0114252-602) and *Packing Instructions* (0114253-602) are in the printer or system installation kit.

4. Note the serial number on the inner box label. This number should match the printhead serial number on the outer box label. Record this number for the installation report.

5. Open the inner box.

Caution: Cut the tape carefully using a box knife or other short-bladed tool to avoid cutting the printhead capsule inside.

6. Remove the printhead capsule carefully to avoid damaging the protruding components (catcher flex cable assembly).

7. Open the capsule and remove the printhead assembly.

Note: Four Phillips screws secure the capsule.

8. Store the printhead assembly in a safe location near the printer until you are ready for printhead installation.

9. Retain the printhead packaging (outer box, inner box, and capsule).

Note: This packaging must be used if the printhead is returned.

10. Continue with the printer or printing system installation procedure.

Figure 2.5   DH5120 printhead, capsule inside inner box

DH5240 Printhead

Use the following procedure to unpack the 1", 240-dpi printhead:

1. Take the printhead box to the location where the printer is to be installed (and the second, spare printhead box, if one was included in the shipment).

2. Open the outer (printhead shipping) box.

3. Remove the following contents of the box (see Figure 2.6):

   • Inner printhead box
   • Printhead return form (0113477) and shipping label (0193675)
   • Ink card (0113590)
   • Test pattern print sample.

Note: The printhead *Replacement Instructions* (0114252-602) and *Packing Instructions* (0114253-602) are in the printer or system installation kit.

4. Note the serial number on the inner box label. This number should match the printhead serial number on the outer box label. Record this number for the installation report.

5. Open the inner box.

Caution: Cut the tape carefully using a box knife or other short-bladed tool to avoid cutting the printhead capsule inside.

6. Remove the printhead capsule carefully to avoid damaging the protruding components (catcher flex cable assembly).

7. Open the capsule and remove the printhead assembly.

Note: Four Phillips screws secure the capsule.

8. Store the printhead assembly in a safe location near the printer until you are ready for printhead installation.

9. Retain the printhead packaging (outer box, inner box, and capsule).

Note: This packaging must be used if the printhead is returned.

10. Continue with the printer or printing system installation procedure.

Figure 2.6   DH5240 printhead, capsule inside inner box

DH5122 Printhead

Use the following procedure to unpack the 2", 120-dpi printhead:

1. Take the printhead box to the location where the printer is to be installed (and the second, spare printhead box, if one was included in the shipment).

2. Open the outer (printhead shipping) box.

3. Remove the following contents of the box (see Figure 2.7):

   - Inner printhead box
   - Description Kit - Packaging (0189959)
   - Swabs (0103007).

Note: The printhead *Replacement Instructions* (0114252-602) and *Packing Instructions* (0114253-602) are in the printer or system installation kit.

4. Note the serial number on the inner box label. This number should match the printhead serial number on the outer box label. Record this number for the installation report.

5. Open the inner box.

6. Remove the top cushion section and remove the printhead capsule.

7. Open the printhead capsule and remove the printhead assembly.

Note: Four Phillips screws secure the capsule.

8. Store the printhead assembly in a safe location near the printer until you are ready for printhead installation.

9. Retain the printhead packaging (outer box, inner box, and capsule).

Note: This packaging must be used if the printhead is returned.

10. Continue with the printer or printing system installation procedure.

Figure 2.7   DH5122 printhead

Chapter 3.   Printer Installation

Printer installation consists of the following procedures:

- Printer positioning
- Fluid container installation
- Voltage selection (not required for DP5122)
- Printer connections.

To ensure that you complete all steps of the procedures, complete the "Printer Checklist" in Appendix A.

Printer Positioning

The unpacked printer is ready to be positioned for operation. The following sections describe positioning the printer on one of the following operating locations:

- Printer stand
- Customer-supplied support.

⚠ **WARNING**
Two persons are required to lift and move the printer. Do not attempt to move or carry the printer alone.

Printer Stand Installation

Use the following procedure to install the printer on the rollaround printer stand:

1. Position the assembled stand next to the printer shipping pallet.

2. Remove the packing material from the pallet to clear the base of the printer (all four bottom edges of the printer enclosure).

3. Locate the four holes in the top of the stand that correspond to the printer feet. Orient the stand with its sliding doors at the front of the printer (the operator panel end).

Note: The stand is rectangular and the printer fits only in one orientation.

4. Holding the printer baseplate, lift the printer off the pallet and set it on the stand (see Figure 3.1). Set the rubber printer feet on the holes in the stand top.

Caution: Do not lift the printer by holding only the umbilical hanger. The hanger will bend or break if it bears the full weight of the printer. Support some of the weight of the printer with one hand under the baseplate, and then you can grip the hanger to lift with your other hand.

Figure 3.1   Printer on stand

Rubber foot position on stand —
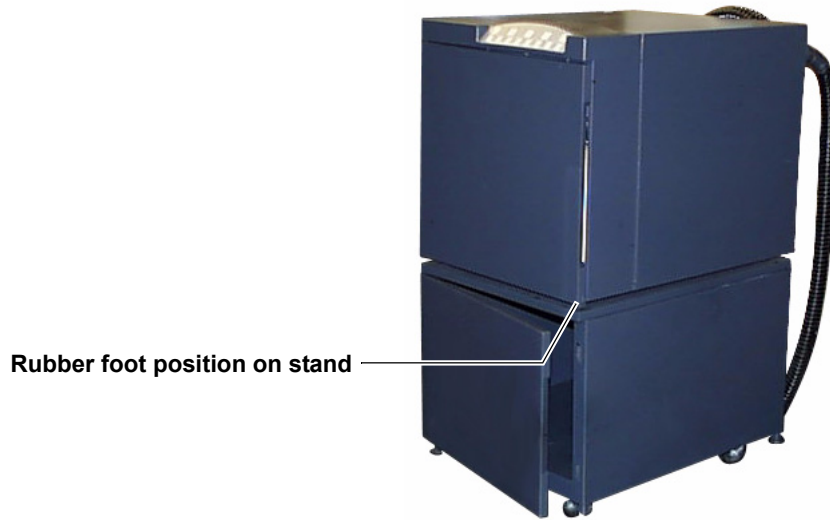
5. Adjust the printer so that all four feet line up with the holes in the stand top.

6. Secure the printer to the stand with the four screws provided with the stand (see Figure 3.2).

Note: The screws go up through the stand top into the four feet.

Figure 3.2   Screw locations, printer stand

Screw access to foot —

Customer-Supplied Support

Apply the following guidelines to mount the printer on a customer-supplied support.

• Place the printer on a level surface capable of bearing at least 120 lbs (55 kg).

• If possible, secure the printer to the support by installing screws through the surface and into the four printer feet.

• Do not mount the printhead higher than 6 ft (1.83 m) above the printer baseplate (fluid cabinet base).

• Do not route the umbilical higher than 8 ft (2.44 m) above the printer baseplate.

• Do not mount the printhead, or route the umbilical lower than 2 ft (61 cm) below the printer baseplate,

• Do not mount the printhead more than 0.5 inch (12.7 mm) above the substrate (printing surface).

• Figure 3.3 diagrams all positioning specifications.

• Do not stretch the umbilical. Mount the printer close enough to the printhead that the umbilical reaches without being visibly strained.

• Leave at least 3 in (8 cm) of ventilation clearance on both sides and at the rear of the printer.

Note: The front panel must remain unobstructed to allow access to the ink compartment.

Figure 3.3   Printer positioning limits, height and distance
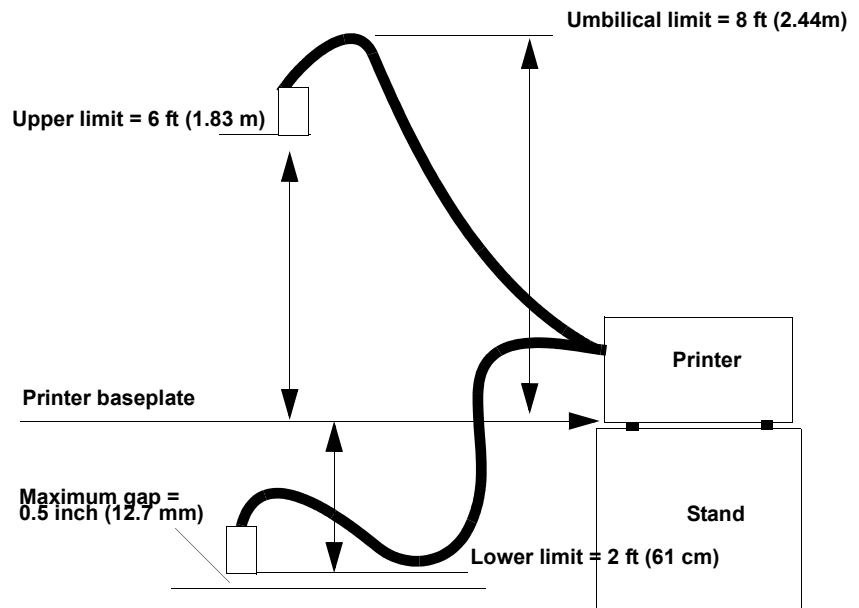
Fluid Container Installation

Use the following procedures to install or connect one the following types of fluid containers:

- Internal
- External.

Internal

Two standard, 51-oz fluid containers (1.5 L ASSY-BLADDER IN CARTON) are installed in the fluid compartment; they hold the following fluids:

- Ink
- Replenisher fluid.

Ink and replenisher container numbers identify the type of ink or replenisher fluid. For all types of ink and replenisher fluid shipped in the standard container, packaging and installation are the same.

Table 3.1 lists the most common fluids used in DP5000 series printers.

Table 3.1   Fluid part numbers, DP5000 series printers

Fluid	Part Number	Standard Container	Notes
1000 Black Ink	6001000-05	1.5L bladder in carton[1]	
1006 Black Ink	6001006-05		
1007 Black Ink	6001007-05		
1025 Blue Ink	6001025-05		
1026 Red Ink	6001026-05		
1040 IR Black Ink	6001040-05		
1080 Gold 872 Ink	6001080-05		
5000 Black Ink	0174292		
5000 Red Ink	0173481		For DP5120
5000 Blue Ink	0139425	Also in 20L cubitainer	
1014 Replenisher	6001014-05	Standard / Case	
5000 Purge Fluid	0174290		

1.   Shipped by case or ½ case; a case is four 1.5L fluid containers.

Ink Bottle

Use the following procedure to install the ink bottle:

1. Open the fluid compartment door and locate the fluid bottle connections (see Figure 3.4).

Note: See the diagram of this procedure on the label inside the fluid compartment door and refer to the instructions shipped with the ink.

Figure 3.4   Ink bottle compartment, DP5122 printer
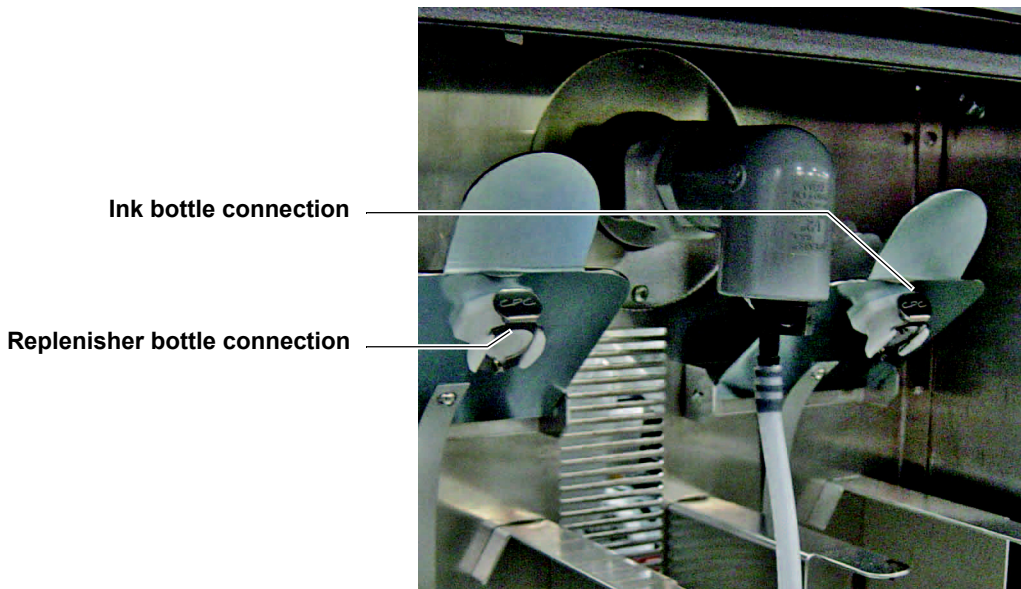
Ink bottle connection

Replenisher bottle connection

2. Carefully open the cardboard container and remove the cap from the bottle.

Note: Retain the cap to put back on the empty bottle when it is removed.

3. Install the ink container in the right position between the metal supports with the cutouts in the container facing out (toward the door).

Hint: Pull up on the bottle neck while sliding it into position.

4. Make sure that the flower-shaped collar of the bottle is above the metal support arm.

Caution: If the bottle collar is left under the support arm, the bottle (bladder) will collapse inside the container and block the bottom of the ink supply tube. This problem produces a spurious ink bottle empty error.

5. When you position the container, listen for the click of the quick-disconnect. The click confirms that the ink supply connection has sealed properly.

6. Press down on the locking plate until it punctures the bottle seal and locks the container into place.

7. Continue with the "Replenisher Bottle" procedure.

Replenisher Bottle

Use the following procedure to install the replenisher bottle:

1. Locate the fluid bottle connections inside the ink compartment (see Figure 3.4).

2. Carefully open the cardboard container and remove the cap from the bottle.

Note: Retain the cap to put back on the empty bottle when it is removed.

3. Install the replenisher container in left position between the metal supports with the cutouts in the container facing out (toward the door).

Hint: Pull up on the bottle neck while sliding it into position.

4. Make sure that the flower-shaped collar of the bottle is above the metal support arm.

Caution: If the bottle collar is left under the support arm, the bottle (bladder) will collapse inside the container and block the bottom of the replenisher supply tube. Over time, this problem produces high ink concentration.

5. When you position the container, listen for the click of the quick-disconnect. The click confirms that the ink supply connection has sealed properly.

6. Press down on the locking plate until it punctures the bottle seal and locks the container into place.

7. Continue with the "Voltage Selection" or "Printer Connections" procedure.

External

Use the following procedure to connect an external ink supply to the DP5122 printer:

Note: Replenisher must be supplied from the standard, 1.5 liter internal container (only ink is typically used in sufficient volume to justify an external supply).

1. Locate the fluid bottle connection inside the ink compartment (see Figure 3.4).

2. Connect the supply line quick-disconnect to the fluid bottle connector. For more information on external ink supply options, contact technical support (see "Scope").

Note: The standard external supply line (0183648) is 20-ft (6 m) and 1/4-inch (6 mm) diameter. Lines up to 30-ft (9 m) and 3/8-inch (10 mm) diameter can be used.

3. Attach the nozzle to the external supply container.

   a. Use a standard nozzle for the 20.0 l (5.3 gal) cubitainer (see Figure 3.5). The standard nozzles are 1/4-inch (0118739) and 3/8-inch (0118740).

Figure 3.5   External 20-liter cubitainer fluid supply

   b. For a 55-gal (208 l) drum, or other non-standard container, an adapter is required (see Figure 3.6).

4. Connect the ink supply line to the nozzle.

5. Route the line into the fluid compartment and position it so that the line runs out through the notch in the door.

6. Close the door and check the lines for pinching and kinking.

Figure 3.6   External 55-gallon supply containers

Nozzle adapter ———

Voltage Selection

Use the following procedure to set the input voltage for a DP5120 or DP5122 printer.

Caution: Do not power up the printer until the correct voltage switch is selected. Applying power at the incorrect voltage will damage the printer.

1. Locate the circuit breaker switch and confirm that it is in the offline (O) position (see Figure 3.7).

2. Locate the voltage selector switch above the circuit breaker switch.

3. Loosen the two screws securing the safety cover to the switch (see Figure 3.7).

Figure 3.7   Voltage selector switch cover

4. Remove the fuse (0178607) (see Figure 3.8).

Figure 3.8   Fuse removal, circuit breaker switch
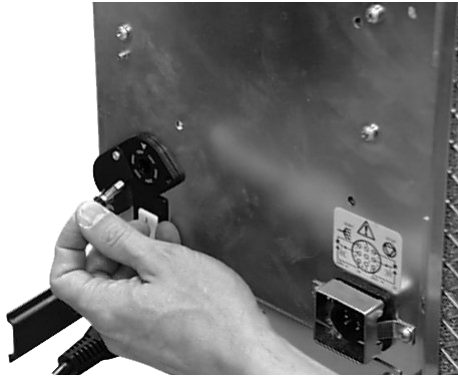
5. Rotate the safety cover counter-clockwise to clear the rotary switch.

    a. Use a large, flat-blade screwdriver to turn the switch.

6. Select the correct voltage for the input power source at the installation site. Six settings are provided (see Figure 3.9); the factory default setting is 120V. The setting is indicated by the triangle on the rotary switch.

7. Replace the fuse.

8. Replace and secure the safety cover.

Figure 3.9   Voltage selector switch, DP5120 and DP5240

**Selector switch
(cover on)**
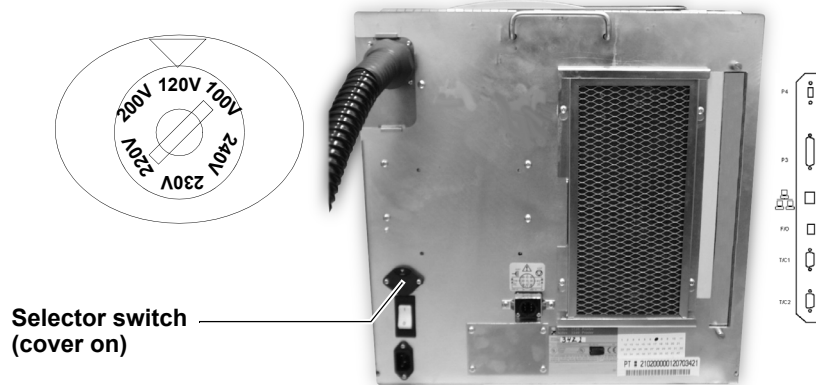
Printer Connections

Use the procedures in the following sections to install the necessary printer connections. The type of data connection used depends on the printing system and printing application. The printer requires the following connections:

- Printer power
- Tach and cue
- One of three types of data connection:
    - Ethernet
    - Centronics (parallel) and RS 232 (serial)
    - K4K.

The printer may use either of the following printing system hardware interfaces:

- Control I/O
- Sort / Stop.

The cables required for the printer connections are provided in one of the following kits shipped with the printer:

- HARDWARE AND CABLE KIT (0175833)
- SHIPPING KIT - PRINTER (0178223)
- HARDWARE & CABLE KIT - DARK GRAY (0187976).

Figure 3.10 shows the printer connectors.
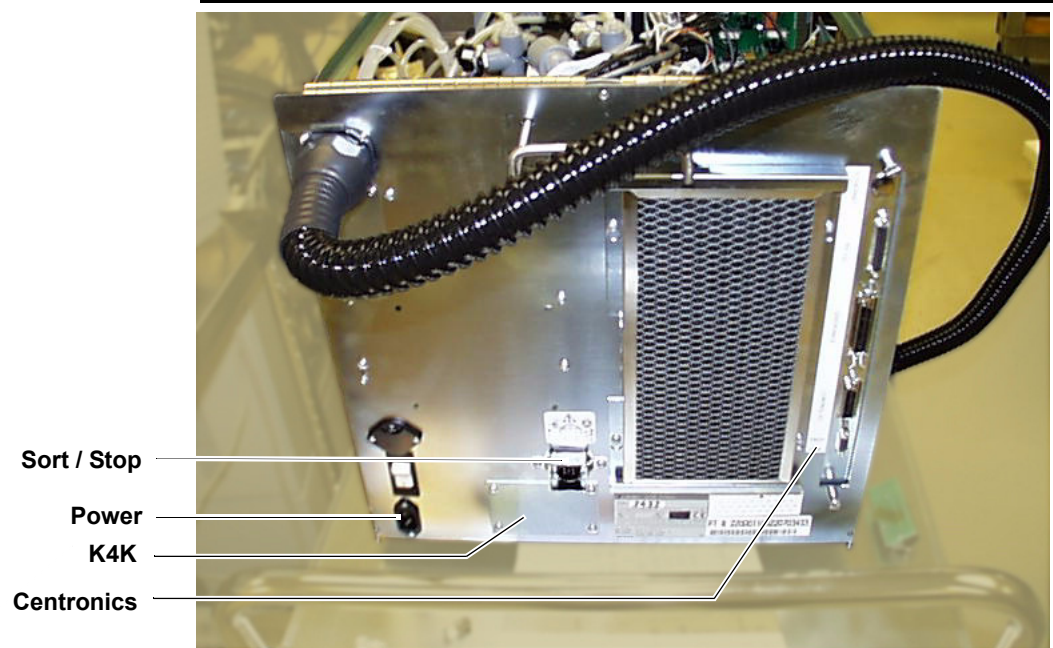
Figure 3.10   Connectors, printer back panel

Printer Power

Use the following procedure to connect the printer power cord.

1. Confirm the circuit breaker switch is in the offline position (O).

Note: This switch is on the printer rear panel (see Figure 3.11).

2. For a DP5120 or DP5240, check that the voltage selector switch is set correctly (see "Voltage Selection").

Note: The DP5122 does not have the voltage selector switch.

3. Plug the female end of the power cord to the circuit breaker receptacle on the printer back panel.

Note: The standard printer power cord is CORD-JUMPER ACC UL/CSA <HAR> M/F 10A/250V 8'- 2" (2.5m), part number 0100238-102.

4. Plug the male end of the cord into a compatible power source receptacle.

In a printing system, this cord is factory installed; it is plugged into a receptacle in the cabinet power distribution panel.

For specifications on printer power requirements see "Appendix C. Site Requirements".

Figure 3.11   Power cord connector, printer back panel

Circuit breaker switch

Power cord connector
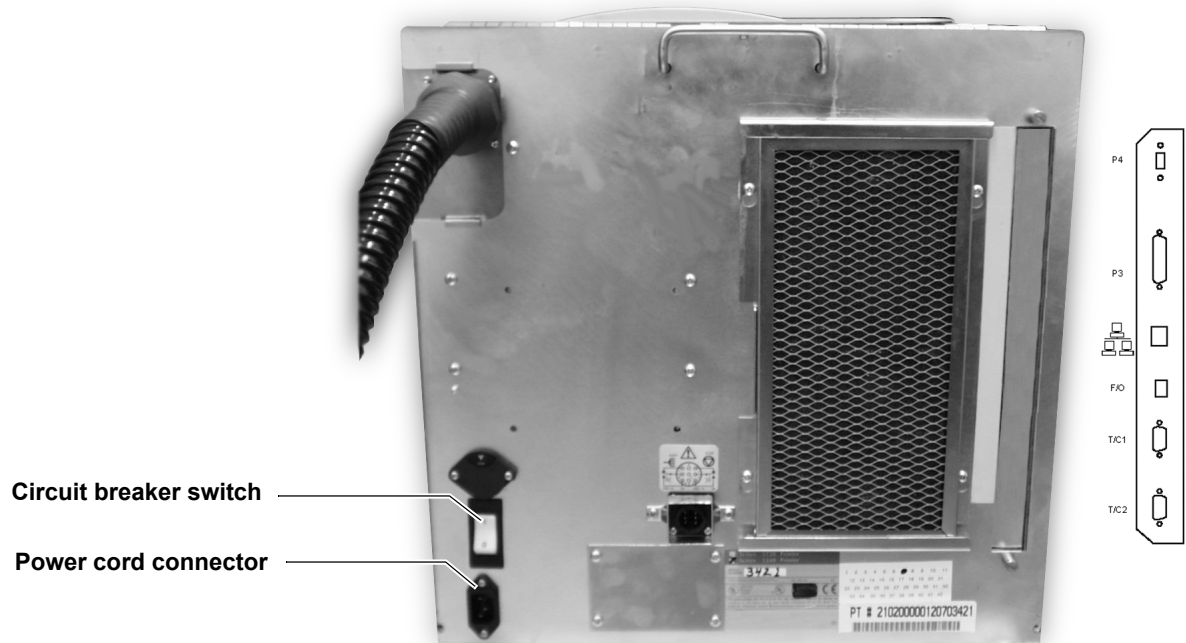
Ethernet

If the installation requires the Ethernet data input option, connect the external, coaxial data cable to the transceiver BNCM connector on the printer back panel (see Figure 3.12).

The standard Ethernet cables are:

- CBL-COAX THINET BNCM/BNCM 6FT (0100378-203)
- CBL-COAX THINET BNCM/BNCM 30FT (0100378-207).

Ethernet operation requires special printer software and internal hardware. Besides the transceiver that provides the BNCM connector (0178559), an internal cables connect the transceiver to the DS Main board (0178981 and 0178530). All the necessary components are available in the 5000 SERIES ENET KIT (0181331).

For specifications of the Thinet connector used by the DP5000 series printers, see the *Service Guide*.

Figure 3.12   Ethernet connection, printer back panel
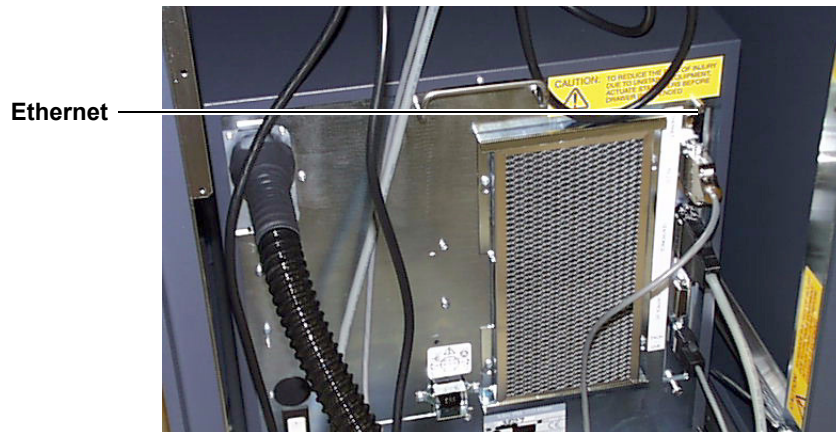
RS 232 (Serial)

If the installation requires the Centronics cable data interface, connect the external serial cable to connector RS 232 on the printer back panel (see Figure 3.13). This cable goes to a COM port on the system controller (host) PC (see "Controller Connections" in Chapter 4, "System Installation").

Note: CABLE-SERIAL PC: 5120/5240 (0139601) is the standard serial cable.

For detailed specifications of the RS 232 cable signals used by the DP5000 series printers, see the *Service Guide*.

Figure 3.13   RS 232 (serial) connection, printer back panel

RS 232 (serial)
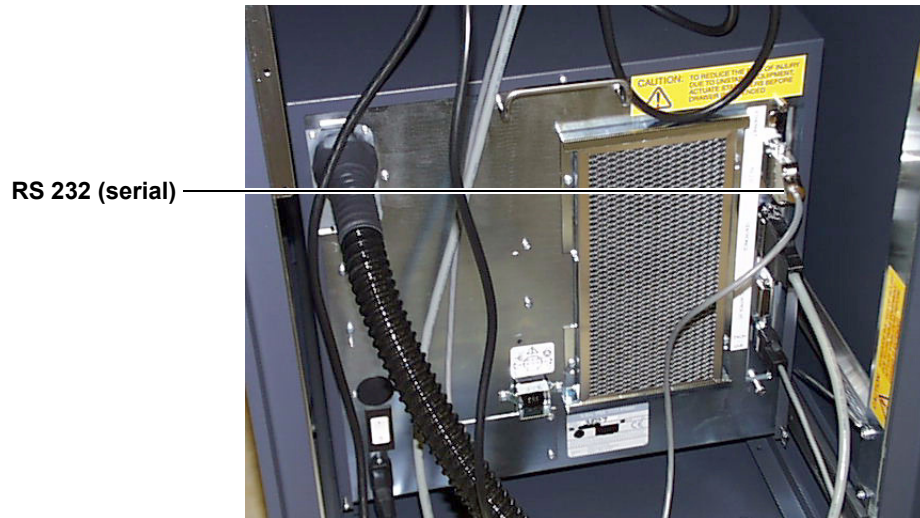
Centronics (Parallel)

If the installation requires the Centronics (parallel) data interface, connect the external parallel cable to the CENTRONICS connector on the printer back panel (see Figure 3.14). This cable goes to the parallel printer port on the system controller (host) PC (see "Controller Connections" in Chapter 4, "System Installation").

Note: CABLE-PARALLEL, 6 FOOT (0139268) is the standard parallel cable.

For detailed specifications of the CENTRONICS cable signals used by the DP5000 series printers, see the *Service Guide*.

Figure 3.14   Parallel data connection, printer

Parallel (Centronics)
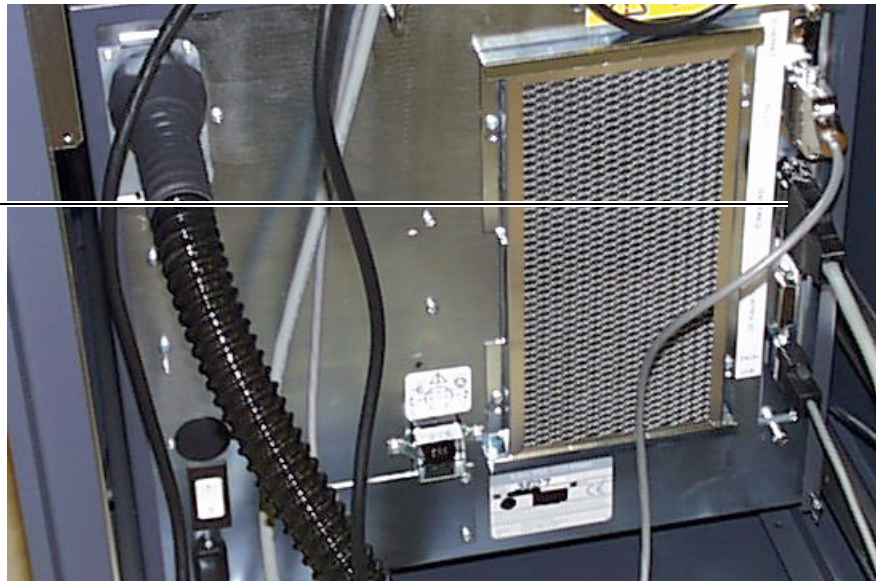
Control I/O

If the installation requires connecting the printer to a 200 or 220 system controller, an I/O box, or to an external device activated by sort codes, the control I/O connection can be used with one of the following cables:

• CABLE ASSY-SIGS SORT CODE ADPT (0139375).

This cable adapts the control I/O connector to the J1 connector on the system controller I/O board, or to an I/O box using the same 40-pin connector.

• CABLE ASSY-SIGS SORT CODE ADAPT (24") 0178602.

This cable adapts the control I/O connector to the cable used for the SORT / STOP (relay contact closure) cable. This cable typically goes to a stacker, sorter, or other inline device activated by sort codes embedded in the image data being printed.

Either cable is connected to the CONTROL I/O connector on the printer back panel (see Figure 3.15).

For detailed information on the signals used by the Control I/O cable, see the *Service Guide*.

Figure 3.15   Control I/O connection, printer back panel

Control I/O
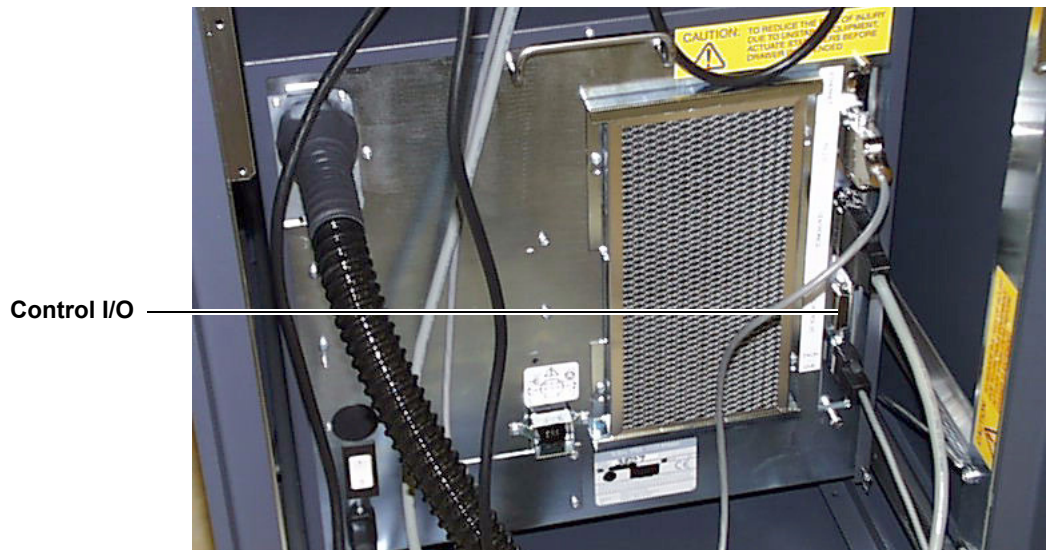
Tach and Cue

The printer requires one of the following types of tach and cue to print:

- External
- Internal
- Custom.

Internal tach and cue are used for testing and for special applications.

This section describes the external tach and cue connection. Internal tach and cue is produced by software and has no hardware requirements. For information on configuring a system for custom tach and cue operation, such as a differential encoder, contact technical support.

Use the following procedure to connect the standard tach and cue connections shipped with the printer:

1. Connect one end of the 9-pin CABLE ASSY-TACH/CUE EXT (0139366) to the TACH / CUE connector on the printer back panel (see Figure 3.16).

2. Connection to a 200 or 220 system controller requires CABLE, 6240:5120/5240 TACH/CUE. This cable connects the printer to the tach and cue board in the controller.

3. Connect the other end of the cable to extension CABLE, 5120/5240 TACH/CUE EXT. 20FT.PKGD (0183205). The extension goes to the tach encoder and cue sensor.

Note: In a system installation, this cable goes to a T/C port on the system controller PC.

4. Check that the tach encoder is installed on the document transport with its friction wheel in contact with a belt or chain that is moving at the same speed as the substrate (paper).

5. Check that the cue sensor eye is mounted over reflective tape or in line with the pre-printed cue marks on the web, and located close to and upstream of the printhead.

Note: See also the vendor documentation shipped with the tach encoder and cue sensor. Tach and cue wiring is described in "Appendix B, Tach and Cue Wiring."

Figure 3.16 Tach and cue connection

Tach and Cue
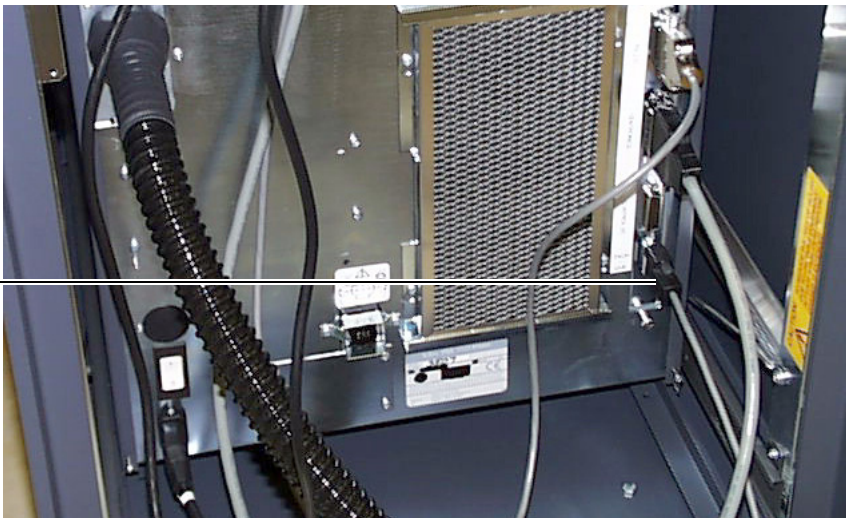
K4K

If the printing system configuration requires use of the K4K connector, connect the CABLE - K4K (0186773) to the optional K4K connector on the printer back panel (see Figure 3.17). The K4K connector can be used for either of the following data connections:

- K4K data (Admark mode)
- High-Speed parallel (pass-through mode)

If the printer has the K4K option installed, the external cable is provided in the printer accessories kit. Field upgrade kits for K4K are available (contact technical support).

K4K operation requires the optional K4K board in the printer data system and internal cables. For hardware installation procedures and detailed specifications of the K4K cable signals used by the DP5000 series printers, see the *Service Guide*.

Figure 3.17   K4K connection, DP5240

K4K (optional)
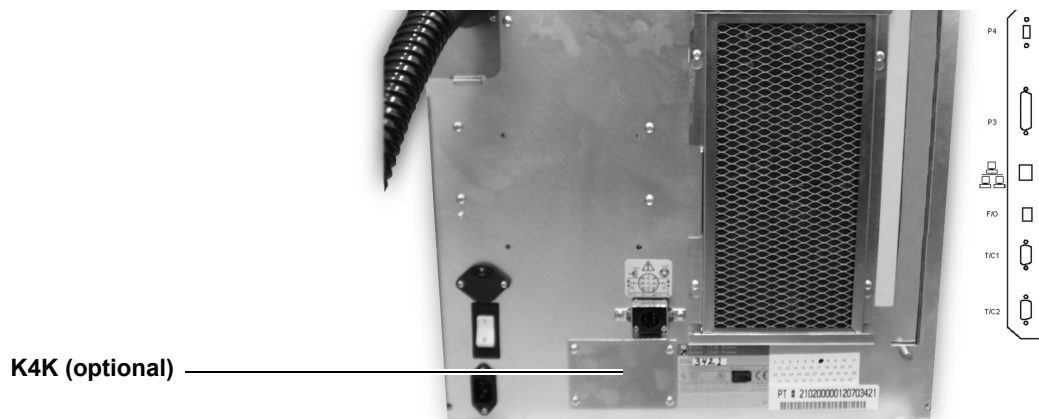
Sort / Stop

If the printing system requires sort codes sent over the sort relay connector, a sort relay cable must be connected between the external device or an I/O box and the SORT / STOP connector on the printer back panel. Either of the following types of cable can be used:

- Cable, relay contacts:

  The standard CABLE, RELAY CONTACTS (0178910) is 30.0 ft (9.14 m). This cable is part of FRU 0178938 which includes this procedure as instruction 0178939.

- Custom:

  A customer-supplied cable can be used for specialized applications. A custom cable can have wires only for the connector pins being used.

The following procedure describes how to connect the standard cable. For custom cable specifications, or additional information regarding the use of sort codes, contact technical support.

Use the following procedure to connect the relay contacts cable to the SORT / STOP connector:

1. Select which side (half) of the split cable to use depending on type of contacts on the external device (see Table 3.2).

Table 3.2   Relay contact cable wiring

Wire #	Wire Color	Contact / Type	Function
1	Brown	1 (hot) / Normally CLOSED	BASE STOP
2	Blue	2 (neutral) / Normally CLOSED	
3	Green / Yellow	- (Ground)	Shield[1]
4			Not used
5		No pins	
6			
7	Green / Yellow	- (Ground)	Shield
8	Brown	1 (hot) / Normally OPEN	SORT A
9	Blue	2 (neutral) / Normally OPEN	

1. The green/yellow wires (not shown) are not connected to a contact. They provide partial shock protection when high voltage is present.

2. Route the cable with the connector at the printer and the cut ends at the device to be activated (see Figure 3.18).

Figure 3.18   Connector wiring, relay contact cable
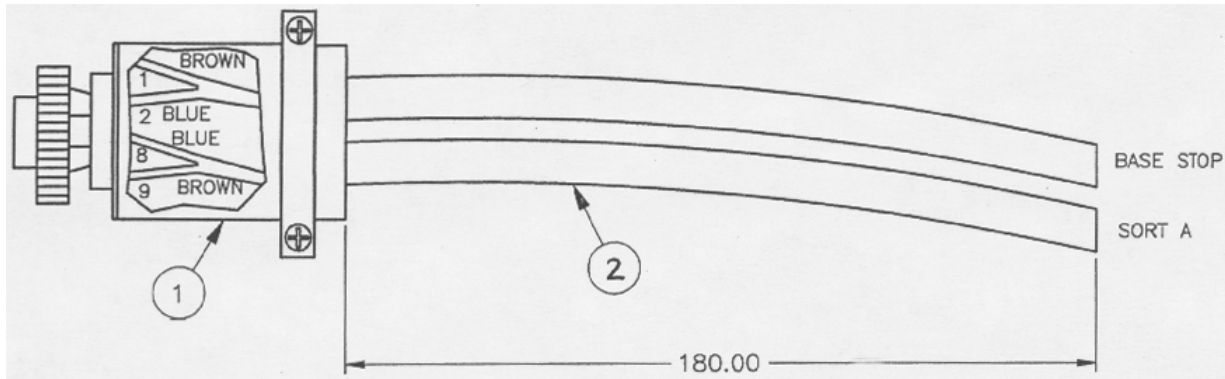
3. Plug the cable into the SORT / STOP connector on the printer back panel (see Figure 3.19).

⚠ **WARNING**
Do not touch the terminals in the cable connector when connecting or disconnecting the cable. The cable terminals are a high-voltage hazard when the cable runs from a label base.

Figure 3.19   Sort relay cable connection, printer back panel
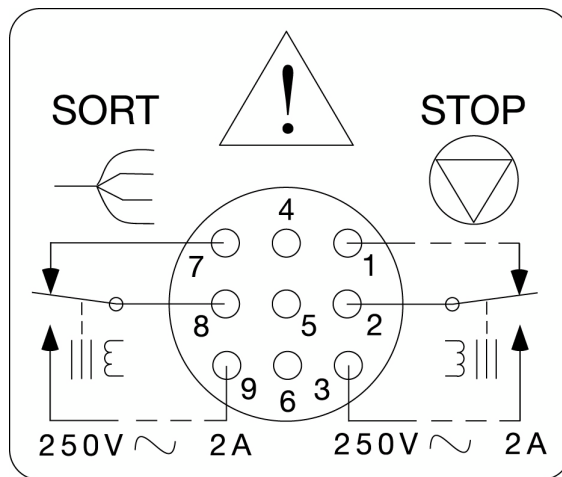
4. Power off the device or I/O box being connected.

5. Strip and separate the wires in the cut end of the cable.

6. Connect the brown wire to the terminal for contact 1 (hot).

7. Connect the blue wire to the terminal for contact 2 (neutral).

8. Cap the unused end of the cable.

Chapter 4.   System Installation

This chapter describes the following printing system installation
procedures:

- Enclosure positioning
- Controller positioning
- System connections
- Installing software.

To ensure that you complete all steps of these procedures, complete the
in "Printing System Checklist" in Appendix A.

Enclosure Positioning

Use the following procedure to position the system enclosure:

1. Check that the umbilical is safely coiled inside the cabinet and that all
   packing material is clear of the casters. If the umbilical was uncoiled,
   coil it safely inside the cabinet (see Figure 4.1).

Figure 4.1   Cabinet, ready for positioning

**Umbilical
not coiled**
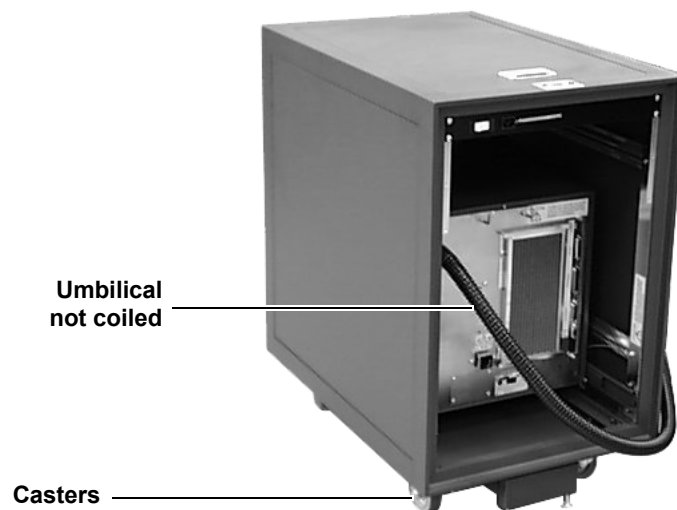
Casters

2. Unlock the enclosure casters.

   The casters should have been locked after removing the enclosure
   from its shipping pallet (see "Chapter 2. Removing System
   Packaging").

3. Roll the cabinet by pushing the front (see Figure 4.2). The enclosure is easier to control if pushed and steered from the front because the front casters swivel, and the rear casters are fixed.

Figure 4.2   Enclosure ready for positioning

Enclosure front ⎯⎯⎯⎯⎯⎯⎯

Casters, unlocked ⎯⎯⎯⎯⎯
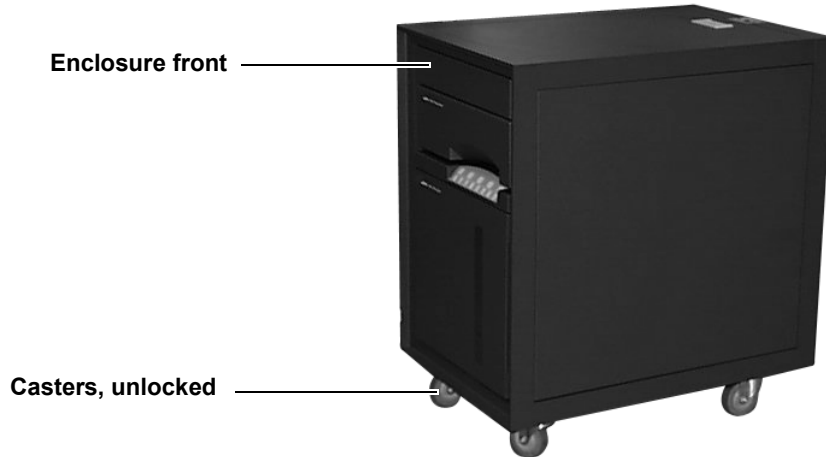
4. If possible, position the system enclosure where you have at least 3 feet (1m) of clearance in front and in back.

Note: Less clearance makes cabling the system difficult.

5. Lock the casters.

6. Route the umbilical.

Controller Positioning

Use the following procedure to position the controller components on top of the system enclosure:

1. When the cabinet is properly positioned, check that the casters are locked to ensure that the cabinet does not roll while components are being placed on top of it.

2. Check that all boxes were brought from the location where the shipping pallet was unpacked.

3. Unpack the controller PC and place the processor chassis on top of the enclosure.

4. Unpack the monitor and place it on top of the controller PC (see Figure 4.3).

Caution: Take all precautions recommended by the monitor manufacturer to protect the monitor from dust.

5. Unpack the keyboard and place it on top of the enclosure. The keyboard skin can be installed, if desired.

6. Unpack the mouse and mouse pad and place them on top of the enclosure.

Figure 4.3   Controller components on system enclosure

Monitor

Controller PC (chassis)

Keyboard

Mouse and pad
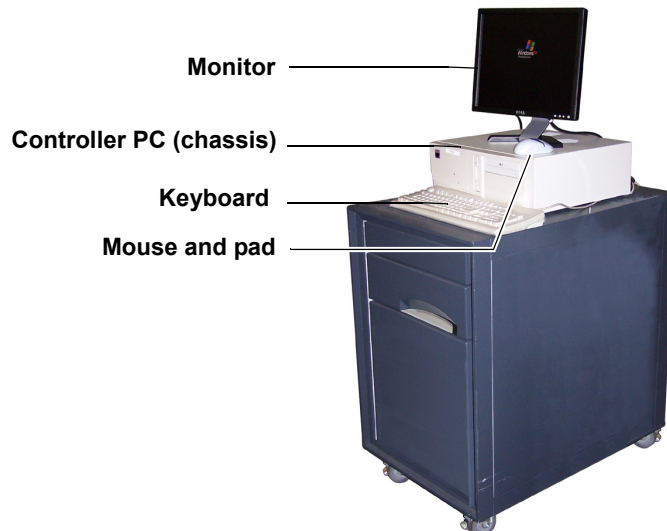
7.   Unpack the system accessories box.

8.   Disconnect the retaining cable attaching the printer rear panel to the enclosure. The retaining cable secures the printer during shipping, but prevents it from being pulled out for service access.

9.   Set all the cables aside for later use (see Figure 4.4).

Figure 4.4   Hardware and cable kit cables

0139601

0139268

System Connections

System connections are the external cables that connect the system enclosure (cabinet) and the system controller PC to other components of the printing system. System connections are divided into the following groups:

- Cabinet connections
- Controller connections.

Printer cable connections are described in Chapter 3, "Printer Installation".

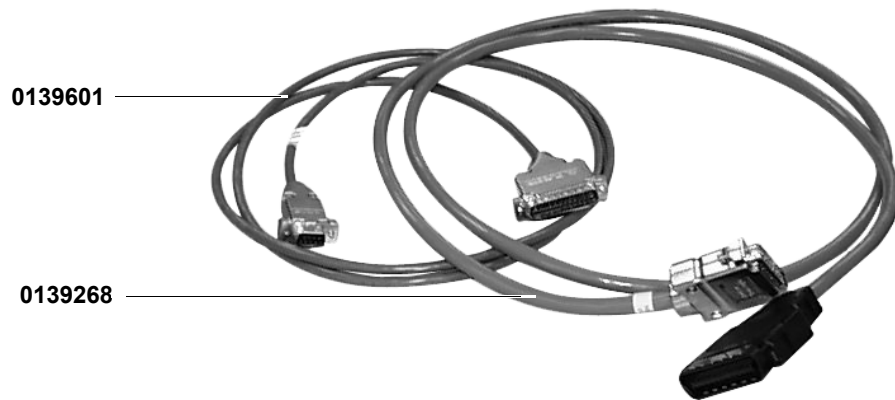If the multi-printer interface option is part of the installation, follow the connection procedure in the Multi-Printer Interface Option *Installation Instructions* (0114054).

Note: This guide shows a dual-controller PC installation.

Cabinet Connections

The following cables connect the system enclosure to other components of the printing system:

- System (cabinet) power
- Tach and cue (external).

Connections to the printer are described in Chapter 3, "Printer Installation" (see Figure 3.10). Tach and cue wiring is detailed in Appendix B.

Apply the following general guidelines to making system connections:

- For detailed information on the interfaces and connectors, see the *Service Guide*.
- Cable tie and bundle all cables that pass through the opening in the top of the cabinet.
- Route the umbilical, cabinet power cord, tach and cue, and other external cables through the left side of the printer cabinet rear panel.

System Power

Systems are shipped with one of the following power cord options, depending on which is compatible with the installation location.

- Domestic power cord, 13A, 125V (0100238-026)
- European power cord, 10A, 200-230V (0181015)
- Japanese power cord, 12A, 100V (0100238-017).

Apply the following guidelines when installing a power cord:

- If installing a printing system in an environment that uses 50 Hz, 220 volts (or higher), use the European power cord.
- On a DP5120 or DP5122 printer, check that the voltage selector switch is properly set.
- On a Jetscape controller PC, set the voltage switch to 115V if the printer voltage is set to 100 or 120 volts. Set the PC to 240V if the printer voltage is set to 200, 220, 230, or 240 volts.

Check that the power cord option received is correct, and then connect it using the following procedure:

1. Put the power strip line switch in the offline (O) position.

2. Plug the female end of the cord into the main receptacle on the enclosure power strip (see Figure 4.5).

3. Install the cable-tie strain relief as shown in Figure 4.5.

4. Plug the male end of the power cord into the input power source receptacle.

Figure 4.5   Power cord connection, printing system

Strain relief cable tie

System power cord
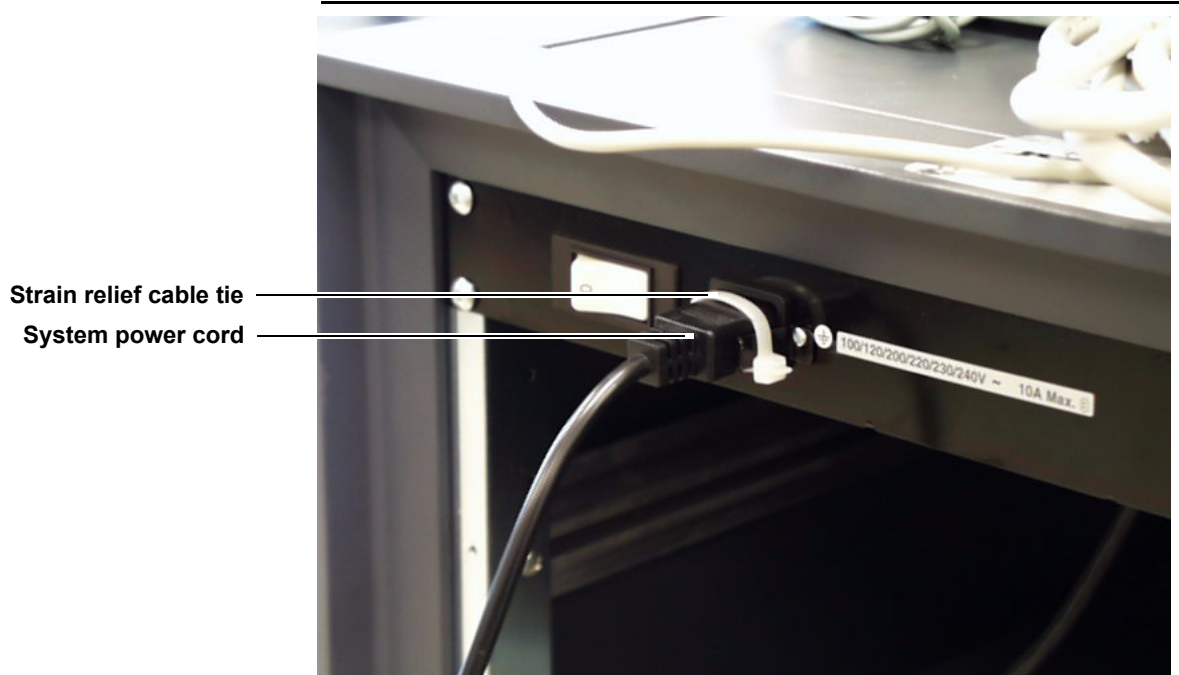
External Tach and Cue

Connect the external tach and cue CABLE ASSY-TACH/CUE EXT (0139366) between the Tach encoder/Cue sensor cabling and the TACH/CUE connector on the rear panel of the printer.

The standard external tach and cue cable is included in the installation kit. This cable can be used to connect a printer directly to its tach and cue source. Other cables of different lengths are available, including CABLE ASSY-SHLD 9DM/ 9DF 10FT (0100378-003).

For connection to a system controller 100 or 200/220, use CABLE-S100/ S200:5120/5240 TACH/CUE, 10 FT. (0178740). This cable is included in the Ethernet kit.

Controller Connections

The following cables connect the system controller PC components to each other and to components in the cabinet:
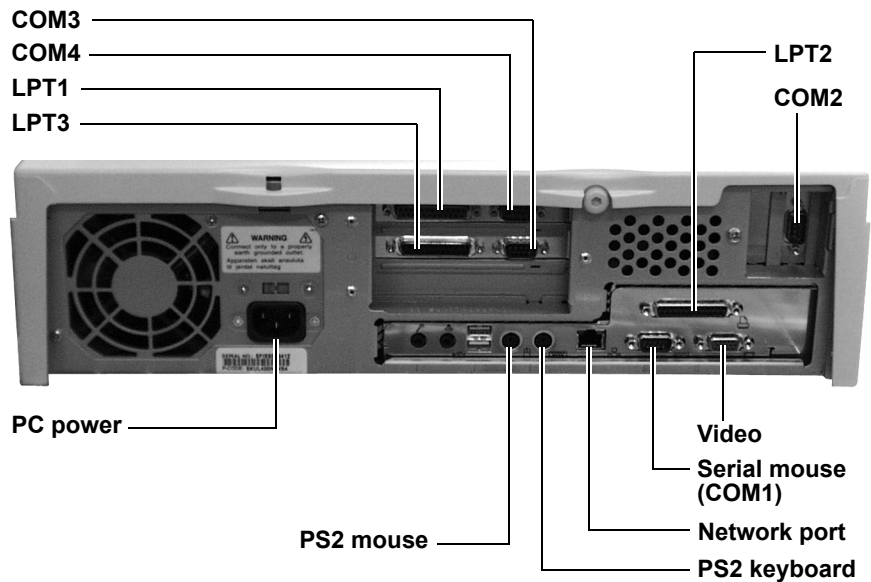
• Data cable
• Keyboard and mouse

- Monitor interface (SVGA)
- Power cables (PC and Monitor).

Figure 4.6 shows all the system controller PC connectors. Not all connectors are used.

Note: The tach and cue connection to the PC is described in "Cabinet Connections" because it connects the system enclosure to another printing system component.

Figure 4.6   Controller PC connectors, back panel

Data Cable

The data cable is connected between the controller PC and the printer. The data cable can be any of the following types:

- CENTRONICS (parallel) and RS 232 (serial)
- K4K

Connect the RS 232 (serial) cable (0178552 or 0139601) to a COM port on the PC. COM2 is the standard configuration, but another port can be used. The correct COM port must be configured in Jetscape or CS150.

Connect the CENTRONICS (parallel) cable (0178550) to an LPT port on the PC. The other end goes to the CENTRONICS connector on the printer connector panel. LPT1 is the standard configuration, but another port can be used. The correct LPT port must be configured in Jetscape or CS150. The CS150 dongle is already connected to LPT1 on a CS150 or dual controller (see the controller software *Installation Guide*).

Connect the K4K cable to an LPT port on the PC. The correct LPT port must be configured in Jetscape or CS150.

For a multi-printer system, see the Multi-Printer Interface *Installation Instructions* for a connection diagram.

Keyboard and Mouse

The keyboard and mouse have integral cables. Connect the keyboard adapter (serial to PS/2) packaged with it to the keyboard cable, and then plug the keyboard into the PS mouse connector on the PC back panel. Plug the mouse cable into the PS mouse connector on the PC back panel (see Figure 4.7).

Note: On older Jetscape controllers, GlidePoint was plugged into COM1.

Figure 4.7   Controller data, keyboard and mouse cables
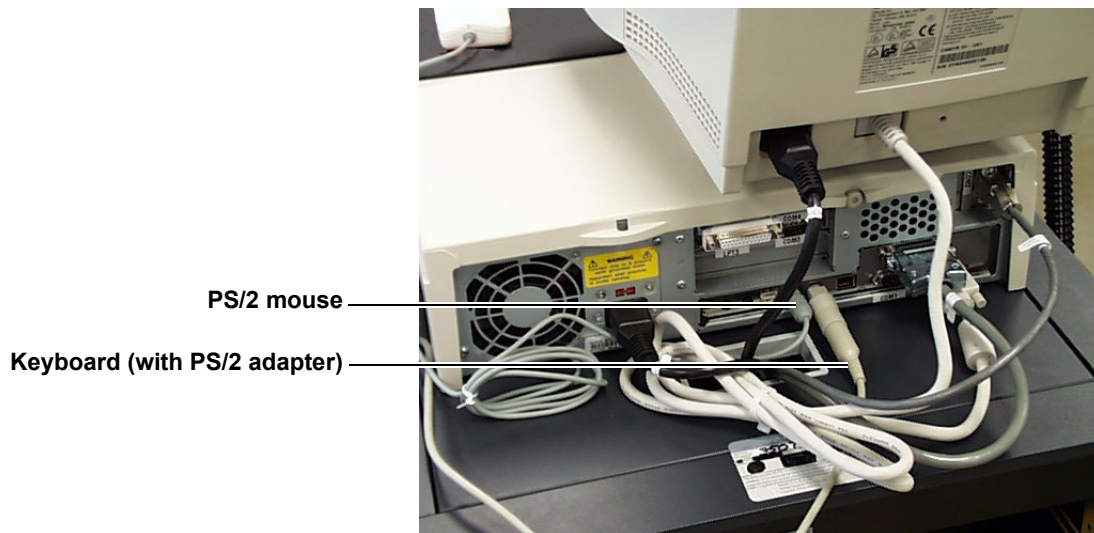
Monitor Interface

Plug the SVGA cable permanently affixed to the monitor into the VIDEO connector on the PC back panel (see Figure 4.8).

Secure the connector by tightening the set screws until snug; do not over tighten.

Figure 4.8   Video connection, controller PC
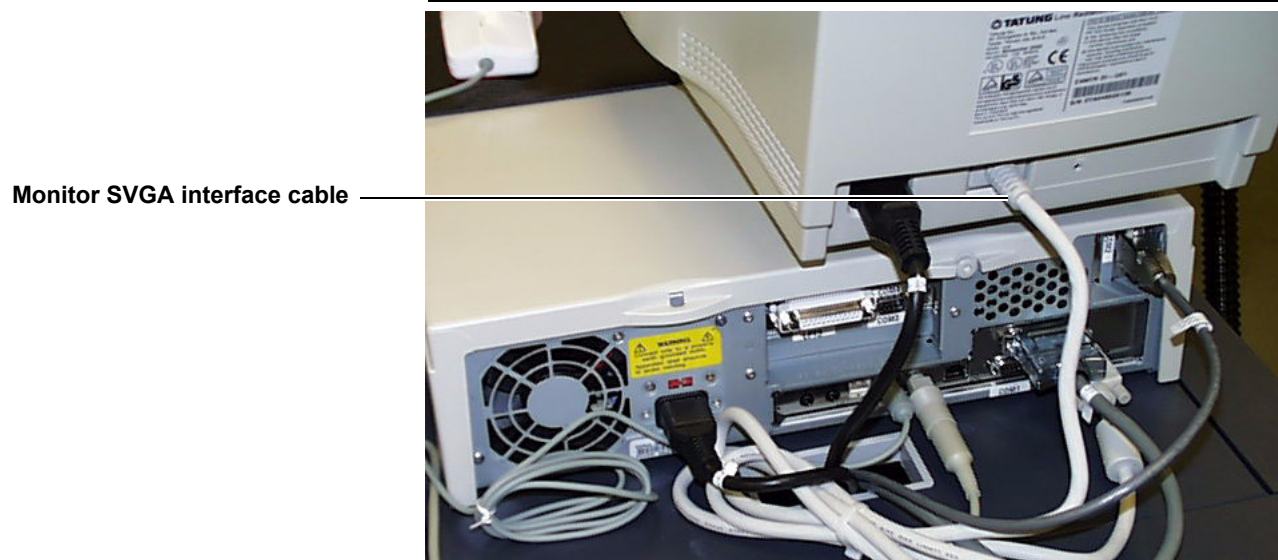
Power Cables

The system controller PC has the following two component power cables:

- PC power cable
- Monitor power cable.

The two cables are the same; both are CORD-JUMPER ACC UL/CSA <HAR> M/F 10A/250V 8'- 2" (2.5m), part number 0100238-217. These cables are shipped in the components boxes.

Plug the female ends of the cables into the power receptacles on the PC and monitor (see Figure 4.9). Route the cables down into the cabinet through the cutout in the top, and plug the male ends of the cables into 110V receptacles in the front of the power distribution panel inside the cabinet.

Figure 4.9   PC and monitor power cables

Monitor power cord

PC power cord
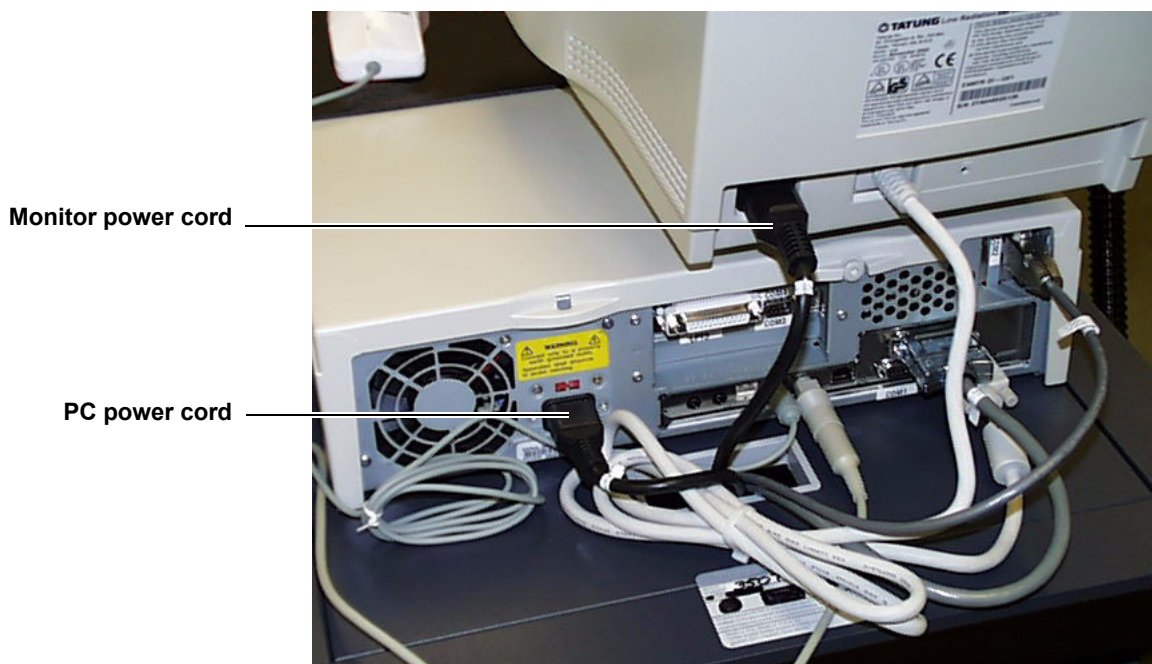
Installing Software

Install the CS150 system controller software on the controller PC.

The installation of the software package is described in the document shipped with the system software CD-ROM, either *Getting Started Guide* (0113994-602) or software *Installation Guide* (0114083).

Chapter 5.   Printhead Installation

This chapter summarizes the following procedures:

- DH5120 printhead installation
- DH5240 printhead installation
- DH5122 printhead installation.

The information in this chapter supplements the instructions shipped with a replacement printhead. For detailed printhead installation (and removal) procedures, consult the documents shipped with each printhead.

Caution: Always take precautions against electro-static discharge when handling a printhead.

To ensure that you complete all steps of the procedures, complete the "Printhead Checklist" in Appendix A

DH5120 Printhead

Apply the following guidelines to a DH5120 printhead installation:

- Remove the packing material from the printhead housing, mount the housing on a printhead stand, and make sure it is secure before starting the printhead installation.

- Remove the printhead front and rear covers from the housing. A single screw secures the cover.

- Check the contents of the printhead container (see Table 5.1).

- Read through the installation procedure in the printhead *Replacement Instructions* before removing the printhead from its capsule.

- The capsule is secured with four Phillips screws. Handle the capsule carefully to avoid damaging the NV-RAM board and its attached cable. The DH5120 printhead connections are: inlet line, outlet line, NV-RAM board connector, and two screws (slotted).

- Note the printhead serial number for the installation report. After replacing the covers, continue with the procedures in Chapter 6, "Testing".

Table 5.1   Printhead container contents, DH5120 printhead

Part Number	Description
0139750	Printhead capsule
0179357	Printhead flex cable assembly
0173679	NV-RAM board
-	Test pattern sample
0113477	Printhead information form
0193675	Printhead return label

Figure 5.1   DH5120 printhead, in shipping container

Flex cable assembly

Printhead capsule

DH5240 Printhead

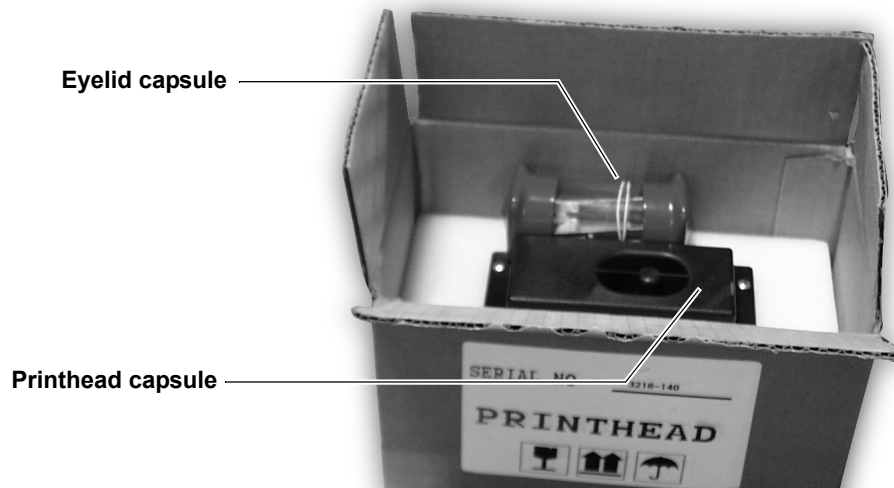Apply the following guidelines to a DH5240 printhead installation:

- Remove the packing material from the printhead housing, mount the housing on a printhead stand, and make sure it is secure before starting the printhead installation.

- Perform the printhead shutdown procedure described in the Printhead *Replacement Instructions* (0113480).

- Remove the printhead front and rear covers from the housing. A single screw secures the covers.

- Check the contents of the shipping container (see Table 5.2).

- Read through the installation procedure in the printhead *Replacement Instructions* before removing the printhead from its capsule.

- The capsule is secured with four Phillips screws. Handle the capsule carefully. The DH5240 printhead connections are: inlet line, outlet line, adapter board connector, catcher line, and two latches.

- Note the printhead and eyelid serial numbers for the installation report. After replacing the covers, continue with the procedures in Chapter 6, "Testing".

Table 5.2   Printhead container contents, DH5240 printhead

Part Number[1]	Description
0178935 + 0179410	Printhead capsule (base + cover)
0180248	Eyelid assembly - 240 (capsule)
0103007-036	Foam swabs TX707A (pack of 50)
0101247-124	Disposable anti-static wristband 3M 2209
0113477	Printhead information form
0193675	Printhead return label

1.   Packaging components are not all marked with part numbers.

Figure 5.2   DH5240 printhead, in shipping container

Eyelid capsule

Printhead capsule

DH5122 Printhead

Apply the following guidelines to a DH5122 printhead installation:

*   Remove the top cushion section from the printhead housing, mount the housing on a printhead stand, and make sure it is secure before starting the printhead installation.

*   Remove the printhead front and rear covers from the housing. A single screw secures the covers.

*   Check the contents of the shipping container (see Table 5.3).

*   Read through the installation procedure in the printhead *Replacement Instructions (0114252)* before removing the printhead from inner printhead box. Handle the box carefully to avoid damaging the printhead.

*   The box is secured with four Phillips screws.

*   Note the printhead serial number for the installation report. After replacing the covers (the position of the cover screw can vary slightly), continue with the procedures in Chapter 6, "Testing".

Table 5.3   Printhead box contents, DH5122

Part Number[1]	Description
0187923	Top Cushion Section
0187924	Bottom foam
0189959	Description Kit - Packaging

1.   Packaging components are not all marked with part numbers.

Figure 5.3   DH5122 printhead in shipping container

Printhead housing

Chapter 6.   Testing

This chapter describes the following procedures for checking the installation:

- Electronics test
- Fluidics test
- System test
- Printhead Adjustment.

Note: These tests can also be done using Jetscape diagnostics if you have that program available on the controller or a service laptop.

To ensure that you completed all steps of the installation procedure, use the checklist in "Appendix A. Installation Checklists".

Electronics Tests

Use the following procedure to powerup the system and run the automatic powerup confidence checks (POC).

1. For a printing system, turn on the main power switch (on the power distribution panel). For a printer, check that the line switch on the back panel is in the online (|) position.

2. While holding the OPEN EYELID button, press the PRINTER ON button.

3. Continue to hold the OPEN EYELID button until all lights on the front panel are illuminated.

4. Release the OPEN EYELID button.

5. On a printing system, turn on all the components.

6. Check for error messages that indicate a POC failure.

7. If no errors occur, continue with "Fluidics Tests". If an error message is generated, note what type of failure occurred and continue with step 8.

8. Start diagnostics and run the test on the failed component.

Note: See the *Service Guide* for diagnostics and troubleshooting procedures.

9. If the component fails again, troubleshoot the problem and replace the component, if necessary.

Fluidics Tests

Use the following procedure to test the printer fluidics:

1. After installing a printhead (see Chapter 5, "Printhead Installation"), turn on the printer with the fluid system bypassed.

2. Press and hold the OPEN EYELID button and PRINTER ON until all the operator panel indicators light.

3. To fill the ink tank, start diagnostics and select the Service View for the printer.

Note: For more information on diagnostics, see CS150 controller online help and *Getting Started Guide*.

4. Select **Mode** → **Maintenance.**
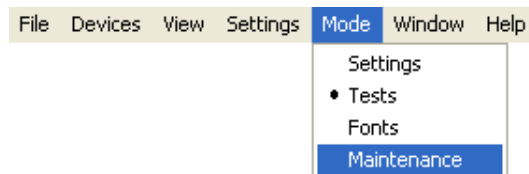
5. Choose **Select State Table Type** → **Circulate** and then OK.

6. On the Maintenance screen, select the **Printer to State #** button.

7. Enter **2** in the dialog box that opens and select OK.

Note: Wait approximately 3 minutes for the ink tank to fill. When the fill cycle is complete, state 2 has been reached.

8. Enter **6** in the dialog box to complete test.

Note: Allow the ink to circulate for approximately 5 minutes. When the cycle completes, state 6 has been reached.

9. Make sure the installer is checking for fluid leaks during the ink circulation process.

10. On the main Service View screen, select **A test pattern** and then START TEST to print test patterns.

Note: You can also print a test job from the Production screen.
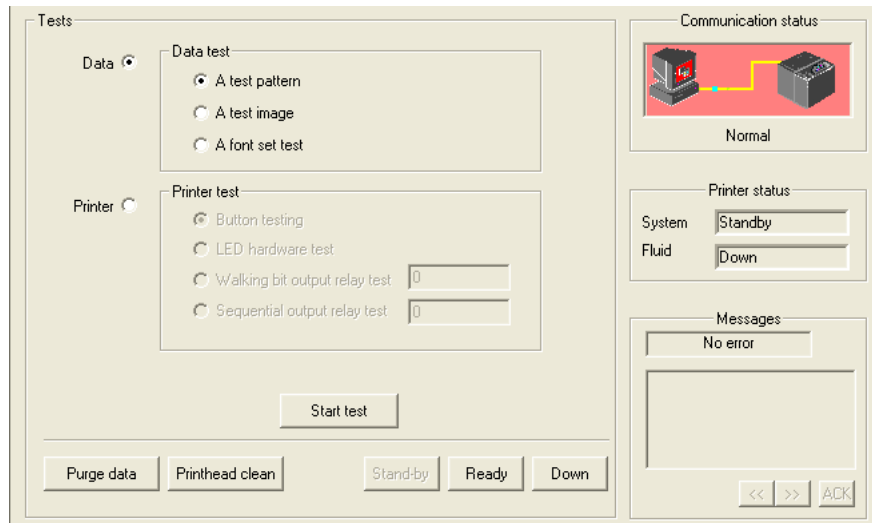
Note: See the *Operator's Guide* for printing procedures.

11. Check the print quality of the test patterns.

a. If test patterns do not print, check for tach and cue (see "System Tests"). If print quality is poor, adjust the phase and voltage (see "Printhead Adjustment").

b. If the test pattern print quality is acceptable, the system is operational, and the installation is complete. Continue with the installation report.
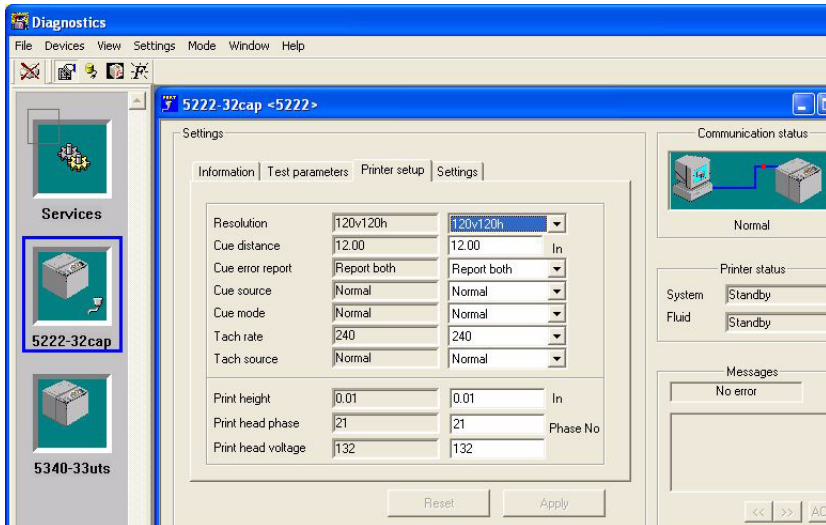
System Tests

Use the following procedure to test the operation of the printing system:

1. Turn on the printer.

2. Press PRINTER ON on the operator panel.

3. Start diagnostics.

4. Select **Mode** → **Settings** → **Printer Setup** to verify the tach and cue settings.

5. Select the **Printer Setup** tab and check the system configuration parameters.

Note: For more information on setup parameters, see CS150 controller online help and *Getting Started Guide*.

6. If required, enter known good parameters (or defaults) and select APPLY.

7. The maximum values for image Length, substrate Length, cue Distance and cue Delay depend on the maximum image area, which depends on the selected resolution. Lowering resolution changes the maximum values. If the existing values exceed the new maximum values, the existing values are truncated to the new maximum values.

8. If no known good values are available, use the following values as a guideline for test printing:

   • Image length: 7.0

   • Substrate length: Per application

   • Printhead height: 0.2

   • Transport direction: Per application

   • Piece orientation: 180°

   • Cue distance: Per application

   • Cue delay: 0.0

   • Cue source: Internal

   • Tach source: Internal

   • Tach rate: 240 ppi

   • Resolution: 120x120

   • Cue error handling: Ignore

   • Print density: 1 drop per dot.

Note: If the printhead is not yet mounted, you can quickly pass a blank piece under the print array to confirm that an image is being printed. If the image appears backwards, run the piece under the print array in the opposite direction.

9. On the main Service View screen, select **Data Test** and **A Test Image** then START TEST.

10. You can also run a test job from the Production screen, or press the [TEST PRINT] button on the printer operator panel.

11. To stop printing, press [TEST PRINT] again.

12. Check the test patterns.

13. If test patterns print, check the print quality. If the print quality is acceptable, the system is operational, and the installation is complete. Continue with the installation report.

14. If print quality is not acceptable, adjust the printhead phase and voltage (see "Printhead Adjustment").If test patterns do not print, run full diagnostics starting with the printhead (see "Fluidics Tests" in Chapter 1, and "Diagnostics" of the *Service Guide*).

Printhead Adjustment

Use the procedures in this section to adjust the printhead if the print quality of the test patterns initially produced by the printer are not acceptable.

Note: Always print the first test patterns using the factory phase and voltage settings. Adjustments should be made only after print defects are observed in the test patterns.

Phase Adjustment

Phase adjustment defines the phase "window" that produces optimum print quality. The phase window is a range of voltage values. Use test patterns to check the changes in print quality produced by phase window adjustments. Use these adjustments to calculate the phase window that produces the best print quality.

Apply the following guidelines to phase adjustment:

*   A voltage setting that is out of the print window range can affect the phase window.

*   A phase setting that is near the edge of the phase window range can affect the print window.

*   Print speed may also affect the print window. Use 400 fpm (122 mpm) as the standard print speed for print window evaluation.

Use the following procedure to establish the phase window:

1. Enter Diagnostics.

2. Select **Mode → Settings → Printer Setup**.

3. Check the printhead height, phase and voltage settings.

    a. Use typical settings to print test images, such as height 0.10 in, 15 phase and 140 volts for DP5120.

4. Print test images.

5. Examine the test patterns for defects.

    a. If the test pattern is normal, go to step 7.

    b. If missing spots or bands of print occur (Figure 6.1), go to step 6.

Figure 6.1   Missing spots or bands of print
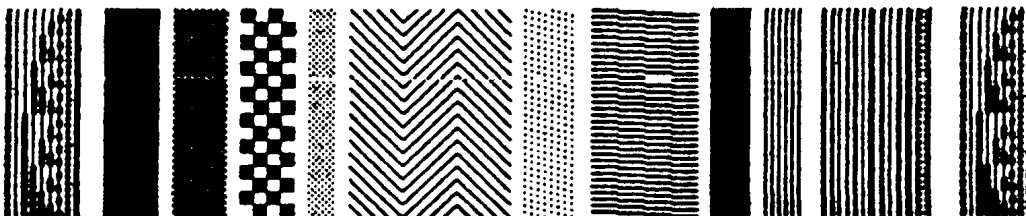
6. Raise the phase setting and check each adjustment by printing test patterns. Stop when a you produce a test pattern with voids or dark defects (see Figure 6.1). Note this setting; it is the *high end* of the phase window.

7. Raise the phase setting, and print a test pattern to check the effect of the adjustment. Continue this process until you produce a test pattern with no visible defects. Note this setting; it is the *low end* of the phase window.

8. Determine the middle of the phase window by subtracting the low end value from the high end value.

    For example: 12 - 48 = -36.

9. If the result is a negative number, subtract it from 56. The resulting value is the size of the phase window.

    For the example above: 56 - 36 = 20.

10. Divide the phase window size by 2.

    For the example above: 20 ÷ 2 = 10.

11. Add this value to the low-end phase window setting.

    For the example above: 48 + 10 = 58.

12. If the resulting value exceeds 55, subtract it from the high-end setting.

    For the example above: 48 + 10 = 58; 12 - 10 = 2.

13. Note the resulting value; it is the mid-range phase setting.

14. Select **Mode** → **Settings** → **Printer Setup** and enter the mid-range value.

15. Press APPLY to save this setting.

Adjusting Voltage

Use the following procedure to determine the print window and the mid-range value to be used as the voltage setting. This procedure assumes that you have printed test patterns that reveal print quality problems.

1. In Diagnostics, select **Mode** → **Settings** → **Printer Setup**.

2. Enter 165 for the printhead volts parameter.

3. If the printer does not operate properly at 165 volts, reduce the volts setting incrementally until you find the highest setting at which the printer operates properly.

4. Print a test pattern and examine it for defects.

5. Beginning at 165 volts (or the setting determined in step 2), lower the voltage setting by 5 and check print quality.

6. Continue lowering the voltage incrementally until you produce a test pattern with dark defects (see Figure 6.2). Note this setting; it is the *low end of the print window*.

Figure 6.2   Dark defect, defines low end of print window
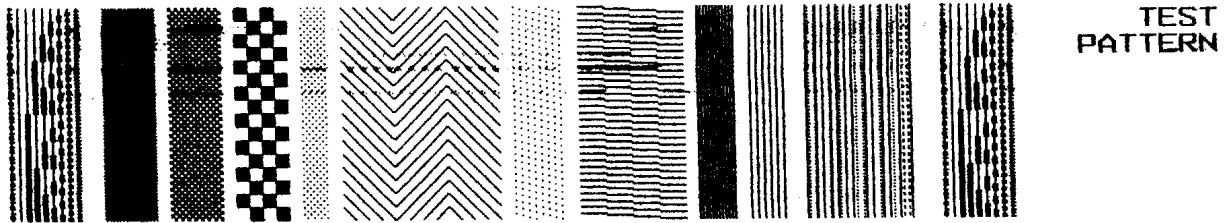
Caution: Operating the printer at voltages below the low-end setting of the print window causes increased dark defects. As the voltage drops further, streakers appear.

7.   Select **Mode** → **Settings** → **Printer Setup** and enter a value 10 volts above the low-end setting.

8.   Press APPLY to save this setting.

9.   Print another test pattern to verify the phase and voltage settings.

If print quality is unsatisfactory, repeat both procedures.

Appendix A. Installation Checklists

Fill out the following checklists to keep track of the progress of the installation and ensure that all procedures are performed, and done in the proper order.

Printer Checklist

- ☐ Unpack the shipping pallet
- ☐ Inventory the shipment
- ☐ Unpack the printer
- ☐ Assemble the printer stand (optional)
- ☐ Position the printer
- ☐ Install the ink and replenisher bottles
- ☐ Unpack and assemble the printhead stand or label base mount
- ☐ Unpack and mount the printhead housing
- ☐ Connect the external printer cables (power, tach and cue)
- ☐ Select the input voltage (not required for DP5122)
- ☐ Power up and test the printer electronics
- ☐ Continue with the printhead checklist

Printhead Checklist

- ☐ Unpack the printhead
- ☐ Remove the printhead covers
- ☐ Install the printhead assembly
- ☐ Install the eyelid assembly
- ☐ Install lockout switch actuator tool
- ☐ Test the printer fluidics
- ☐ Test the printhead fluidics
- ☐ Install the catch pan
- ☐ Print test patterns
- ☐ Adjust printhead phase and voltage (if required)
- ☐ Remove the lockout switch actuator tool and replace the covers
- ☐ Complete the system checklist (if required)
- ☐ Fill out and return the installation report

Printing System Checklist

☐   Unpack the printing system pallet

☐   Inventory the shipment

☐   Unpack and position the enclosure

☐   Remove the umbilical and printhead housing from the system cabinet

☐   Unpack and position the computer components

☐   Connect the internal system cables

☐   Connect the printer cables

☐   Select the input voltage (not required for DP5122 printer)

☐   Install the tach encoder and cue sensor assemblies

☐   Connect the external system cables

☐   Power up and test the system controller

☐   Complete the "Printhead Checklist" procedures

☐   Install the multi-printer interface option (if required)

☐   Repeat the installation procedures for additional printers (if required)

☐   Fill out and return the installation report

Appendix B. Tach and Cue Wiring

Use Figure B.1 as a guideline for wiring the standard tach encoder and cue sensor.

Figure B.1   Tach and cue wiring, DP5000 series printers

Appendix B.   Tach and Cue Wiring
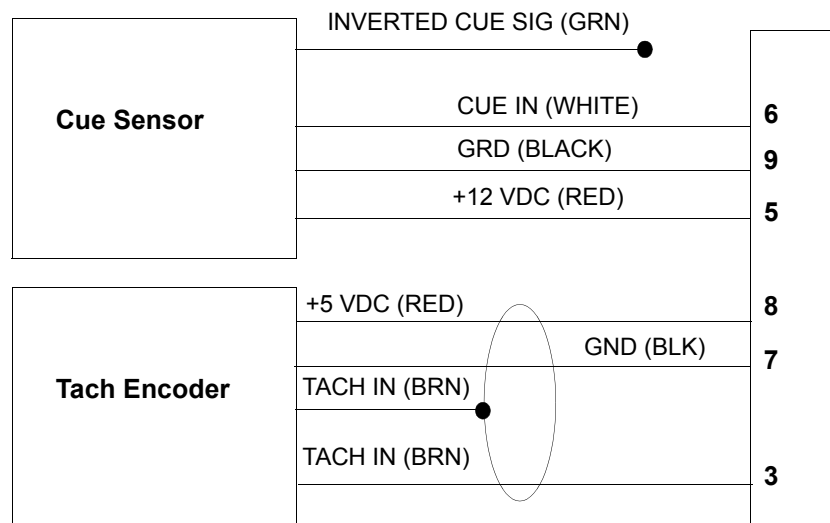
Appendix C. Site Requirements

The tables in this appendix describe the following requirements for an installation of a DP5000 series printer or printing system:

- Electrical
- Environmental
- Space.

Electrical Requirements

Table C.1 lists the electrical requirements of all three DP5000 series printers and the dual controller printing system.

Table C.1   Electrical requirements

Product	Voltage (VAC)[1]	Current (Amps)	Cycles (Hertz)	VA
DP5120 printer	100/120/200/220/230/240 +6/-10% - Single phase	Switchable - 6.3/4/4/4/4/4	50/60	630/480/800/920/960/
DP5240 printer				
DP5122 printer	100-120 +6/-10% - Single phase	4 A		
System with CS150 controller	100/120/200/220/230/240 +6/-10% - Single phase	Switchable - 6.3/4/4/4/4/4		1000/960/1600/1386/1449/ 1512/

1. Selectable at transformer

Environmental Requirements

Table C.2 lists the environmental requirements of all three DP5000 series printers and the dual controller printing system.

Table C.2 Environmental requirements

Operating Temperature[1]	Relative Humidity[2]	Altitude
60°F (16°C)	10-90%	Sea level up to 7000 ft (2137 m)
85°F (30°C)	Up to 90%	
104°F (40°C)	Up to 60%	

1. The power-on cycle takes 7-8 minutes at 70°F (21°C) and 50% relative humidity.
2. Non-condensing

Space Requirements

Table C.3 lists the space requirements of all three DP5000 series printers and the dual controller printing system.

Table C.3 Space requirements

Component	Dimensions[1]			
	Length[2]	Width[3]	Height[4]	Weight[5]
Printer enclosure	23.4 / 59.5	17.7 / 44.9	18.7 / 47.5	110.0 / 49.8
			17.9 / 45.7	
Printer stand	23.5 / 60	18.0 / 45.7	19.0 / 49.3	20.0 / 9.1
System enclosure	32.4 / 82.3	22.1 / 56.2	35.88 / 91.1	45.0 / 20.4
DH5120 printhead	5.13 / 13.02	1.98 / 5.03	11.79 / 29.95	2.5 / 1.1
DH5240 printhead	4.81 / 12.22	2.39 / 6.09	11.94 / 30.33	
DH5122 printhead	5.18 / 13.16	3.90 / 9.91		5.1 / 2.3
12-ft Umbilical	144.0 / 365.8	1.3 / 3.3	N/A	7.0 / 3.2
24-ft Umbilical	288.0 / 731.5			14.0 / 6.4

1. Dimensions in inches and centimeters, rounded to 0.1 (0.01 for printheads).
2. Measured from front edge to rear edge at the bottom (closest to the print array), alternatively called depth.
3. Measured side to side; diameter for the umbilicals.
4. For the printer, height is given with feet and without the feet installed.
5. Weights in pounds and kilograms (rounded to 0.1); system enclosure weight is cabinet and internal components excluding printer.

Figure C.1   DH5122 printhead dimensions
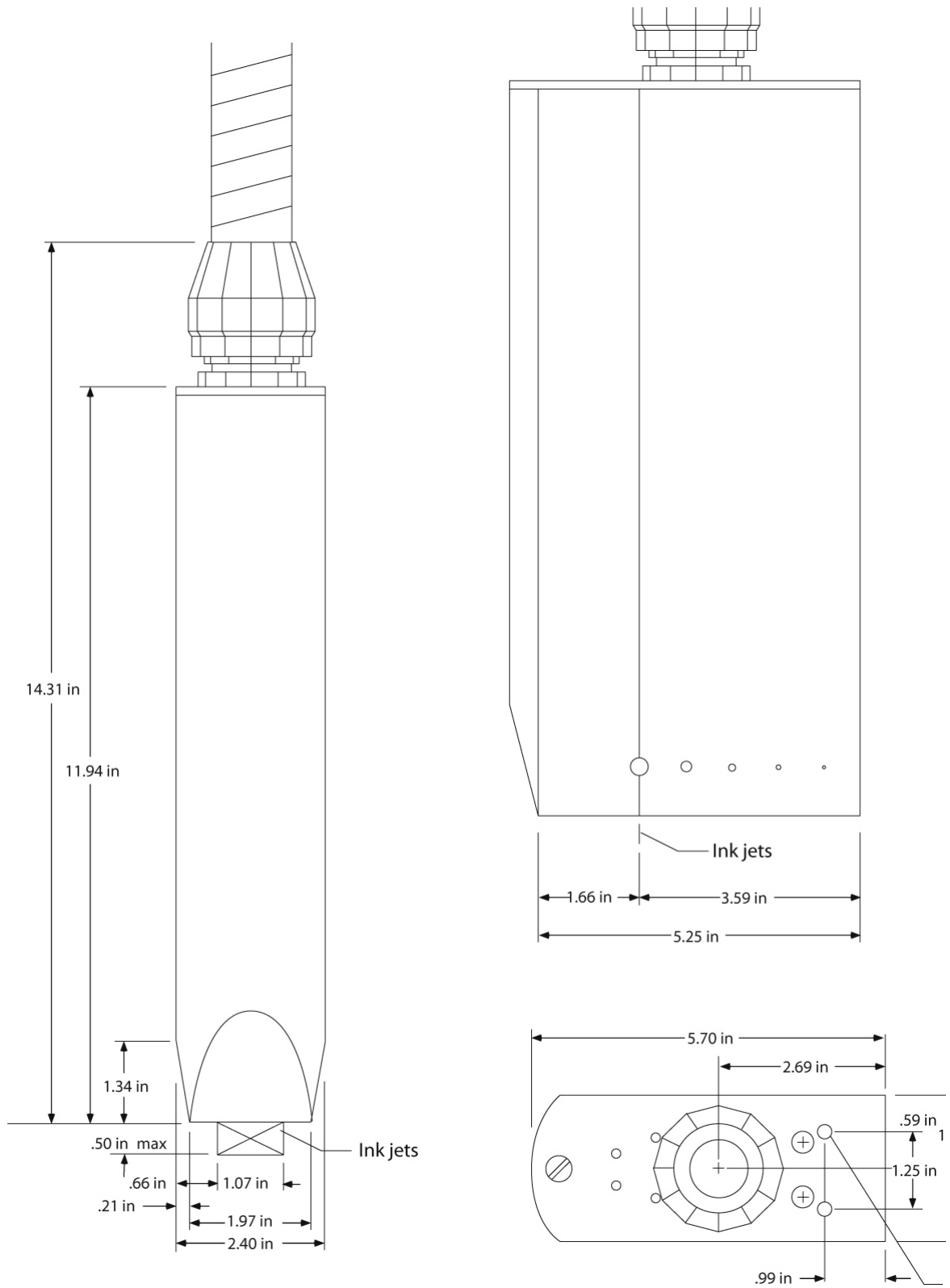
Kodak

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