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Service Manual

Confidential

KONICA MINOLTA DRYPRO SIGMA Laser Imaging System

Document No.: 9G9002

Important

- Qualified service personnel must install and repair this equipment.
- When performing the procedures in this document, you must use safe work practices and wear the correct personal protective equipment (for example, safety eyewear) according to your company's standard operating procedures.

Table of Contents

Section 1: Installation Instructions

Necessary Materials

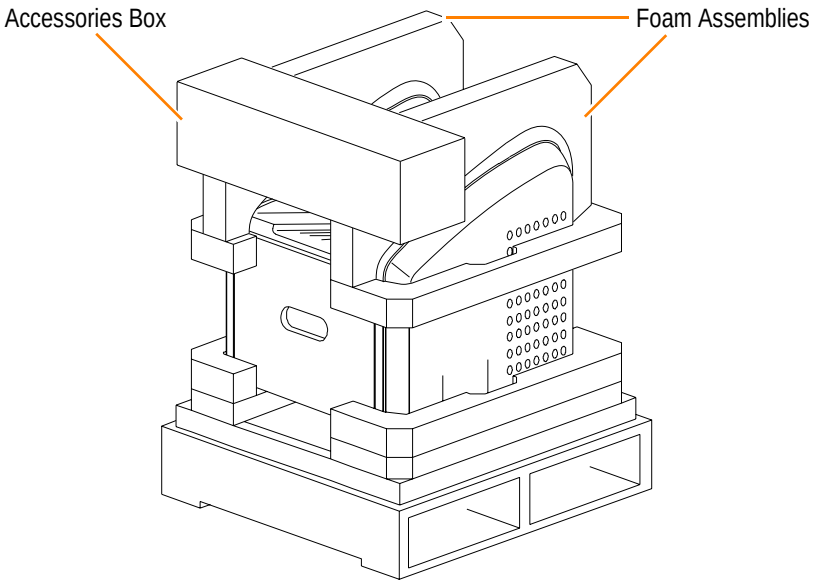
- Service laptop with MICROSOFT WINDOWS 98 operating system or higher, and MICROSOFT INTERNET EXPLORER
- Secure Link Client Software version 2.8.1 or higher (SecureLink)
- Web Service Portal Software version 4.0 or higher (Web Portal)
- Crossover cable
- Side cutters or scissors
- Phillips screwdriver

Completing the Mechanical Setup

Completing the Uncrating

[1] Locate and remove the accessories box that contains the documentation, cables, filter, and other accessories.

[2] Remove the 2 foam assemblies.

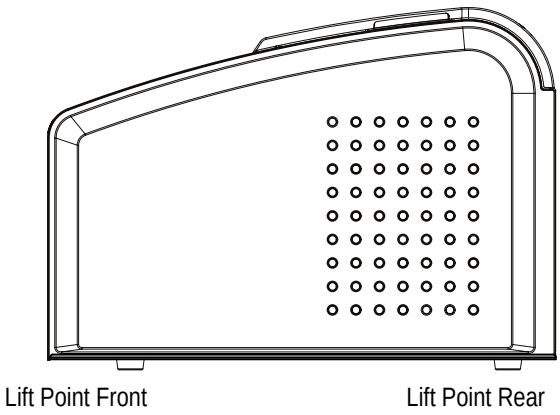


[3] Remove the side covers from the crate.

[4] Remove the bag from the laser imager.

Caution

The laser imager weighs less than or equal to 54 kg (120 lb) as packaged.



[5] Using safe lifting techniques, lift the laser imager from the shipping pallet at the lift points shown and set it on a flat surface.

Checking the Accessories

Check that the following items are included in the accessories box with the crate:

- A box with electrical accessories
  - Power cord
  - Network cable
- A box with 1 deodorant filter
- Publications kit
  - Safety Manual
  - User documentation CD
  - Quick Reference Guides

Moving the Laser Imager

Caution

The laser imager weighs less than or equal to 54 kg (120 lb) as packaged.

[1] Move the laser imager and accessories to the installation area.

[2] Position the laser imager to allow a space temporarily of at least 1 m (39 in.) at the back of the imager to install the power cord and network cable.

Moving the Shipping Brackets

Shipping brackets are fastened inside the laser imager to keep the parts safe during shipment. You must remove them, and then reinstall them in a different location (as shown) inside the laser imager. This prevents the shipping brackets from becoming lost.

Note

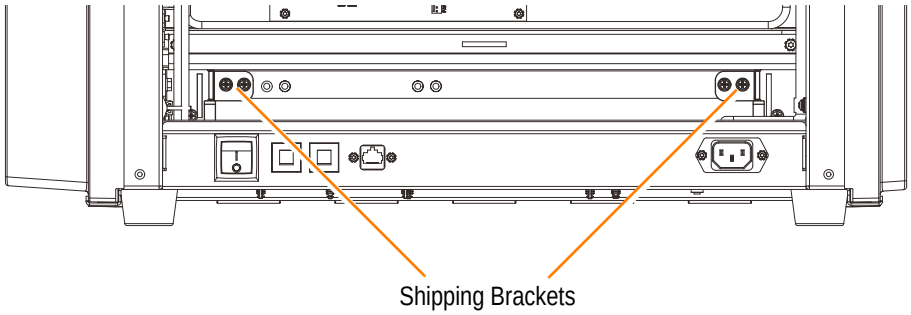
If it is necessary to ship the laser imager again, you must return the shipping brackets to the shipping locations.

[1] To move the back shipping brackets, remove the:

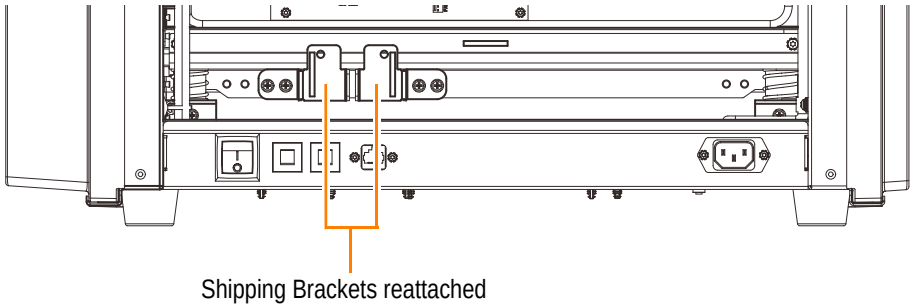
(a) Back cover (see Adjustments and Replacements, "Back cover")

(b) 4 screws that fasten the 2 shipping brackets

Back view of laser imager



[2] Rotate the shipping brackets and reattach them in the alternate set of holes on the rail.



[3] Retain the other 2 bracket screws: Install the screws into any of the empty holes where the bracket was attached earlier.

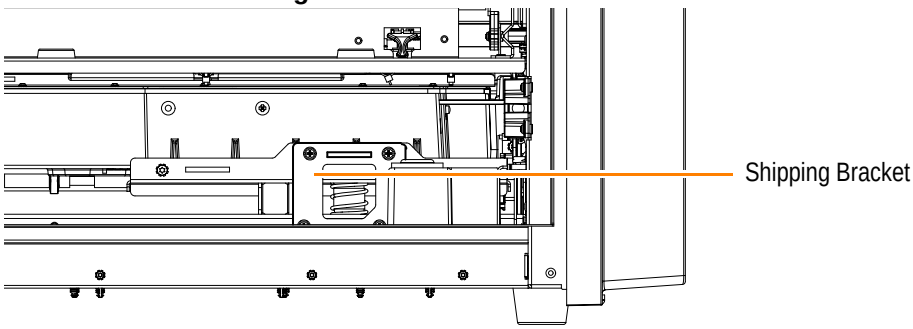
[4] Install the back cover.

[5] To move the front shipping bracket:

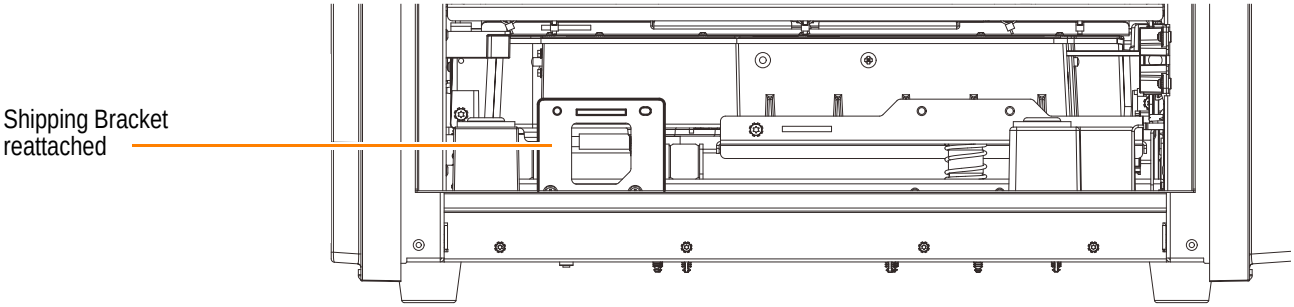
(a) Open the film supply.

(b) Remove 4 screws that fasten the shipping bracket.

Front view of laser imager



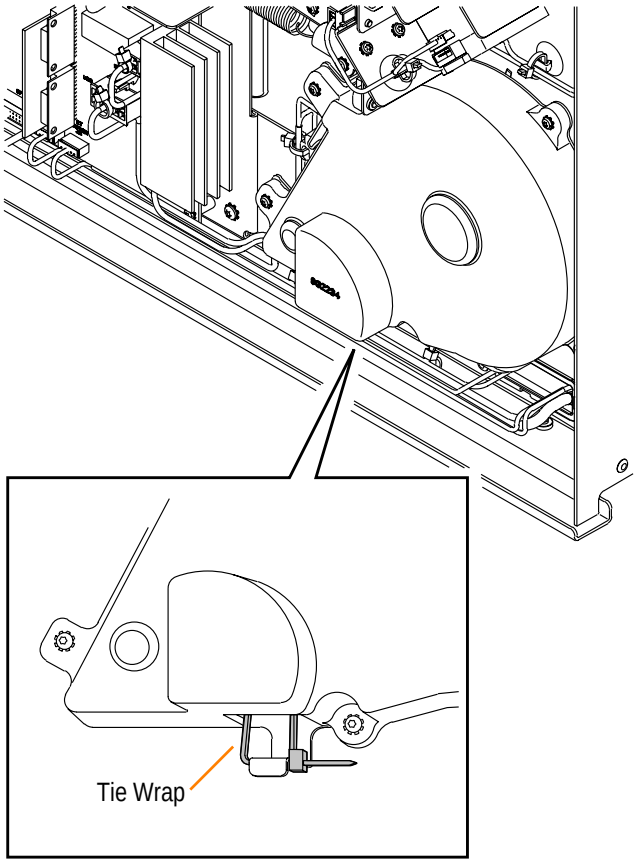
[6] Use 2 of the screws to reattach the shipping bracket in the alternate set of holes on the left side of the rail.



[7] Retain the other 2 bracket screws: Install the screws into any of the empty holes where the bracket was attached earlier.

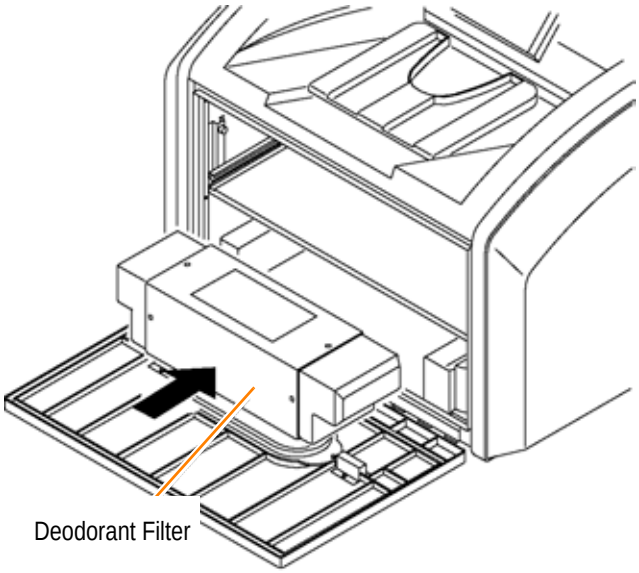
[8] Remove the right cover (see Adjustments and Replacements, "Right Cover").

[9] Cut and remove the tie-wrap from the exposure transport belt. The tie wrap removes tension from the belt during shipping.



[10] Install the right cover.

[11] Install the deodorant filter.



[12] Close the film supply.

Connecting to Electrical Power

[1] Locate the power cord. The power cord must match the AC power outlets at your site.

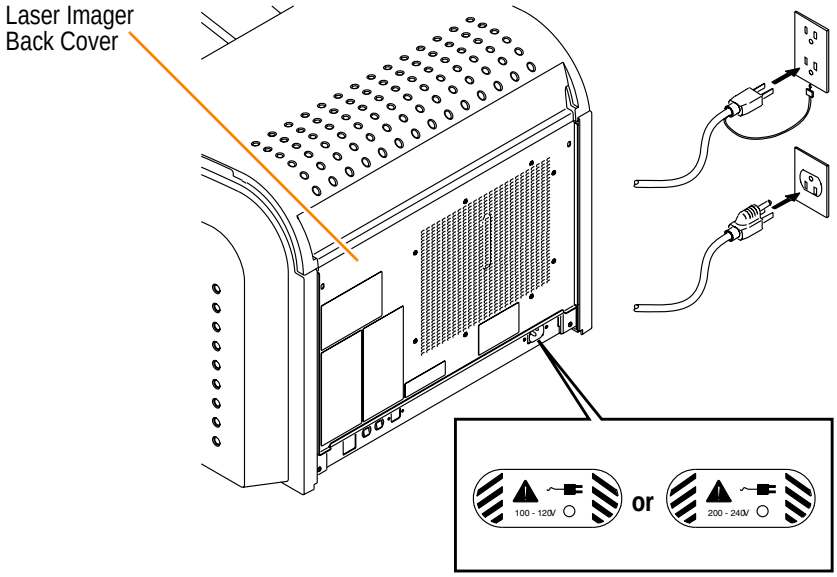
If you cannot use the power cord that is provided, obtain a suitable power cord locally. You must use an agency-approved power cord rated for adequate amperage with a plug type suitable for your location. Contact your dealer if you need assistance.

[2] Check that the voltage on the label over the power cord inlet matches the AC voltage at your site.

Caution

If the voltage on the label does not match the AC voltage at your site, do not continue with the installation.

Power cord inlet labels and connectors



[3] Remove the power cord inlet label.

Caution

Risk of electric shock: Dangerous voltage!

[4] Connect the power cord to the:

- AC power connector on the laser imager.
- Building AC power outlet.

Applying Power

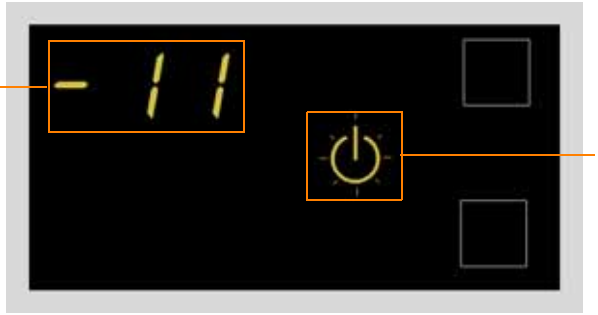
[1] Check that the film supply is closed.

[2] To start the laser imager, press the power switch on the back of the laser imager to on (I). Wait as the laser imager warms up. The warm-up period might last up to 30 minutes. The display screen shows the progress as the laser imager becomes ready to print.

Note

After the laser imager is energized, it takes approximately 90 seconds before the warm-up countdown is displayed.

Warming up



The warm-up period varies depending on how long the laser imager has been off and the ambient temperature.

Note

If the laser imager does not start, see “Troubleshooting”.

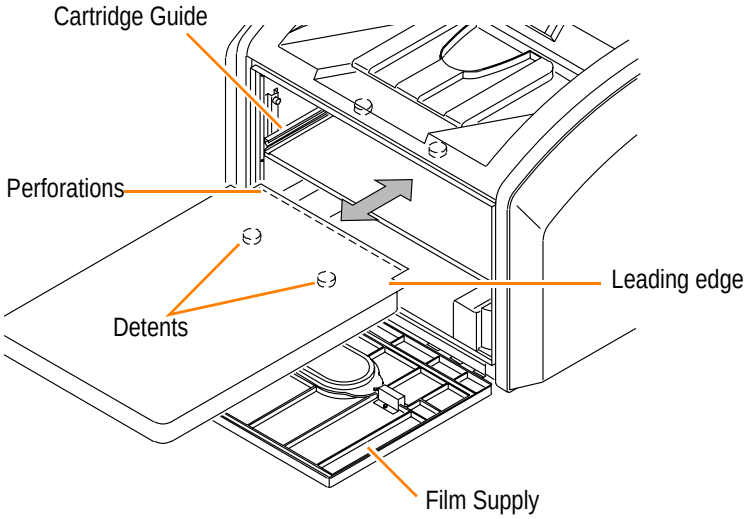
Inserting a Film Cartridge

Important

Make sure that the laser imager is finished energizing before you load film. Opening the film supply before the imager is ready causes errors.

[1] Open the film supply.

[2] Insert the film cartridge. Align the cartridge with the label facing up and the perforations to the front. Set the leading edge on the cartridge guides, then slide the film cartridge into the laser imager to engage the detents in the bottom of the cartridge.



[3] Close the film supply.

[4] Check that the film count appears on the display screen.

Note

If a film count does not appear, see the Operation Manual for help.

Configuring the Laser Imager

This section instructs how to configure the laser imager using the same methods available to the customer in the Installation Manual, 9G7567. For additional and more comprehensive configuration procedures, see Section 6: Additional Service Procedures.

Important

You must restart the laser imager from the service tool to permanently save configuration information.

Setting Up Your Computer to Communicate with the Laser Imager

Do this procedure at your computer.

[1] Select **Start > Settings > Network Connections**.

Note

Depending on your operating system, this might be **Start > Settings > Network and Dial-up Connections**.

[2] Right-click **Local Area Connection**.

[3] Select **Properties**.

[4] Select **Internet Protocol (TCP/IP)**.

[5] Click **Properties**.

Important

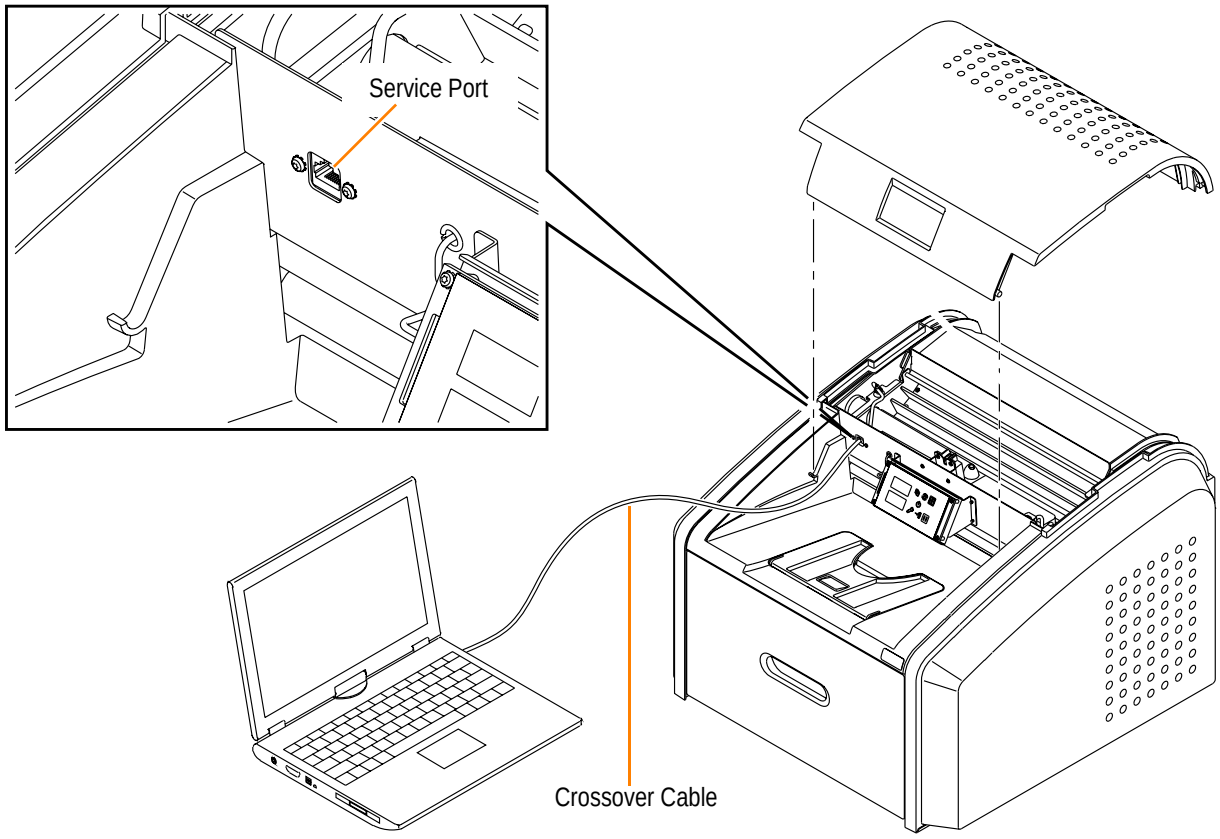
Remember or write down your current settings, as you will reset your computer to these settings near the end of the installation.

[6] Select the **Obtain an IP address automatically** option.

[7] Click **OK**.

[8] Click **OK**.

Connecting Your Computer to the Laser Imager



[1] Remove the laser imager top cover.

[2] Using a crossover cable, connect your computer to the service port on the laser imager.

[3] Route the crossover cable so that it does not interfere with the top cover when it is installed.

[4] Install the top cover.

Configuring Site-Specific Information

Important

To modify the configuration settings for several areas in this section, you must be logged on to the service tool via Secure Link.

[1] Log on to your Secure Link account.

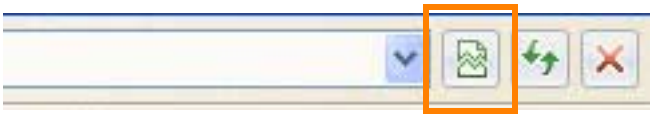
[2] Make sure that the IP address in the Secure Link window matches the service portal: **192.168.0.1**.

[3] Launch the Web Service Portal Software (Web Portal).

The main screen for the service tool displays.

Note

If you are using INTERNET EXPLORER 8, set the browser window to Compatibility View: Click the Compatibility View toolbar button. This corrects some potential viewing issues with IE8. If the icon is not on the toolbar, select **Tools > Compatibility View** from the browser menu.



[4] Select **Wizards > Installation Assistant**.

[5] Click  at the bottom of the screen. The Network Configuration screen appears.

[6] Enter:

- Host Name
- IP Address
- Subnet Mask
- Default Gateway

Note

This information should have been gathered on the Pre-installation Manual. If you need help, see the network administrator.

[7] Click **Save**.

[8] Click  . The Clock Configuration screen appears.

Important

The system clock is set before the laser imager is shipped to you. If the time zone is not correct, change it. When you change the time zone, the time and date display correctly.

[9] Are the time zone, date, and time correct?

Yes	No
Advance to Step 11.	Continue with the next step.

[10] Will you set the clock manually, or does the site use a time server for synchronization?

Manually	Synchronization
a. Select the time zone. b. Edit the time if needed. c. Click **Save**.	a. Select the **Enable Time Synchronization** check box. b. In the IP Address field, type the address of the time server to be used for synchronization. c. In the Period field, select the synchronization period (how often the clock is synchronized) from the drop-down menu. d. Select the time zone. e. Click **Save**.

[11] Click  . The System Identification screen appears.

Note

Completing this screen is optional.

[12] Enter the following information:

- Country Code
- Postal Code
- Hospital Name
- Department Name
- Device Location

[13] Click **Save**.

[14] Click  to return to the main screen.

[15] Select **Utilities > Session > Restart**, and then click **Restart**.

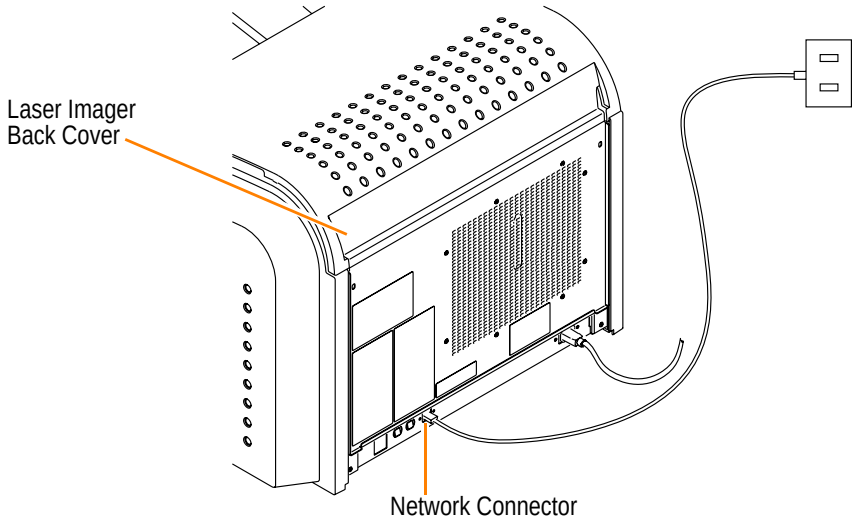
Note

Make sure to restart using these steps or the network parameters will not be saved.

Wait for the laser imager to restart. The laser imager requires approximately 30 minutes to warm up. After completing the warm-up cycle, the laser imager may print a calibration film if the film cartridge requires it. While the laser imager is warming up, continue with the next step.

Completing the Installation

Checking Image Quality



[1] Connect the network cable to the:

- Network connector on the laser imager.
- Nearest active building network connector.

[2] After the laser imager has completed the warm-up cycle, send an image from **each** modality that will print to the laser imager.

Note

The default port No. of the laser imager is set to 5040.

[3] If the image quality must be improved for a modality, optimize the images from that modality:

(a) From the main screen, select **Wizards > Image Quality**.

(b) Cancel all pending print jobs or wait until all print jobs are printed.

(c) Under Optimization Steps, click » .

(d) Send an image from the modality, and then click » .

Note

The image does not print until you click the button.

(e) View the test print and visually select the optimal image.

(f) Under Image Number, click » to select the number of your optimal image.

(g) Under Optimization Steps, click » again to continue.

(h) Check the status and result data near the bottom of the screen.

(i) Send another image from the modality and check the print.

Note

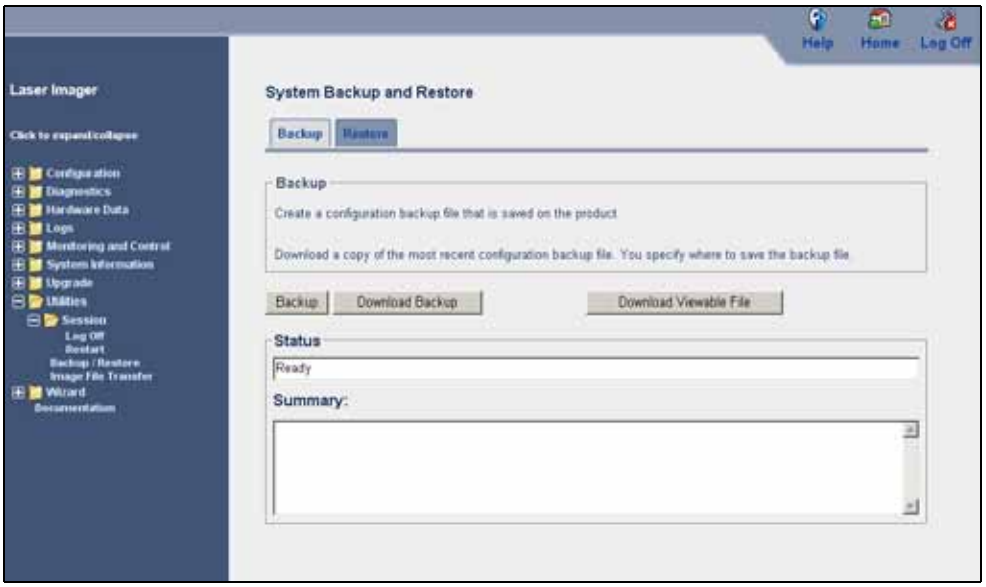
If none of the images are optimal for the site, see Additional Service Procedures, “Checking Image Quality”.

[4] Continue with “Backing Up the System Configuration”.

Backing Up the System Configuration

For the laser imager:

[1] Select: **Utilities > Backup/Restore**.



[2] To make a backup of the configuration parameters to the DRE flash drive, click **Backup**.

[3] To download the backup data to your laptop computer:

- **(a)** Click **Download Backup**.
- **(b)** Click **Save** in the confirmation window.
- **(c)** Select a folder name to place the file in.
- **(d)** Click **Save** to place the backup file in the selected folder.

[4] Log off from the service tool (see Additional Service Procedures, “Logging Off the Service Tool”).

[5] Remove the top cover.

[6] Disconnect the crossover cable and restore the settings to your computer if necessary.

[7] Install the top cover.

Discarding Excess Material

When you are finished and the laser imager is operational, discard all excess shipping materials in a manner suitable to local ordinances.

Instructing the Operator

Before you leave the installation site, instruct the operator:

- How to load film into the laser imager.
- How to change the deodorant filter on the laser imager.
- To read the Safety Manual, 9G7565, and the Operation Manual, 9G7564.

Troubleshooting

Laser Imager Does Not Start

Caution

Never pull on the cord to disconnect the plug from the wall outlet. Grasp the plug and pull to disconnect.

[1] Press the power switch on the back of the laser imager off (0), and then on (|), to restart the laser imager.

If this does not solve the problem, continue with Step 2.

[2] Disconnect the power cord from the wall outlet.

[3] Check that the power cord is properly connected to the AC power connector on the laser imager.

[4] Plug the power cord into the wall outlet.

[5] Check that the wall outlet is energized.

Error Codes

The following codes might appear during the installation. If so, see the table to resolve them. For a complete list of error codes, see Diagnostics, “Condition Codes”.

Note

As shown in the table, the same code appears as a 3-digit number on the display screen and as a 5-digit number at the Web Portal. See Diagnostics, “Condition Codes” for more information.

Display Screen	Web Portal	Web Portal Message	Action
006	20006	Disconnected or Faulty Network Cable	Check and reconnect the network cable on both ends. Try a different cable. Check that the network is functioning at your site. If the error persists, call for service.
209	20209	Laser Imager Opened During Self Test	Close the cover. Restart the laser imager. If the error persists, call for service.
701	20701	none	Close the cover.
704	20704	none	The network connection to the laser imager has been lost. Restart the laser imager.
175	21175	Rollback Failed to Engage Cartridge	If the Pause symbol is on, press it to cover the film cartridge. When the Pause symbol stops flashing, remove the film cartridge from the laser imager. Insert a different film cartridge into the laser imager. If the error persists, call for service.

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Section 2: Adjustments and Replacements

Processor—Drum Temperature Adjustment

Adjustment Specification

Purpose:	To set the correct temperature for the drum
Setting Temperature:	This procedure is required after replacing the processor assembly, processor drum, or the DRE board, or if you expect that drum temperatures are causing image quality problems.
Specification:	The temperature at the processor drum must be between 123.5–124.5 °C.
Special Tools:	• Temperature meter with probe • Block for probe, kit • Laptop computer with MICROSOFT INTERNET EXPLORER • Service tool • Crossover cable
Prerequisites	None

Note

- A temperature meter and probe with a bar type element must be used for this procedure. Probes with circular type elements will not provide correct readings. The temperature meter and probe must be calibrated together, at least once per year. If the probe breaks, a new probe and the existing meter must be calibrated again.
- The temperature meter must be at room temperature during this procedure. If the meter has been in a hot or cold vehicle, allow it to adjust to room temperature before using.

To Check:

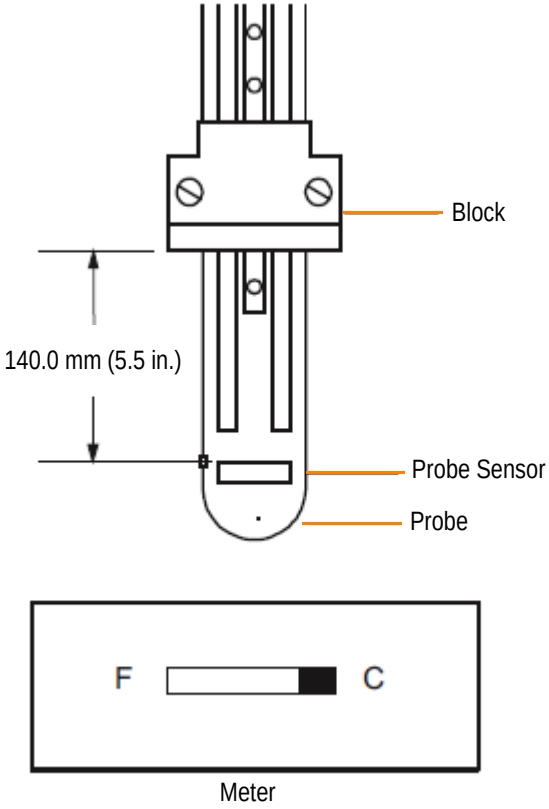
[1] Energize the laser imager and let it warm to operating temperature.

[2] Prepare the meter:

(a) Install the block on the probe 140.0 mm (5.5 in.) from the probe sensor.

(b) Clean the probe with alcohol wipes.

(c) Set the meter to display in °C.

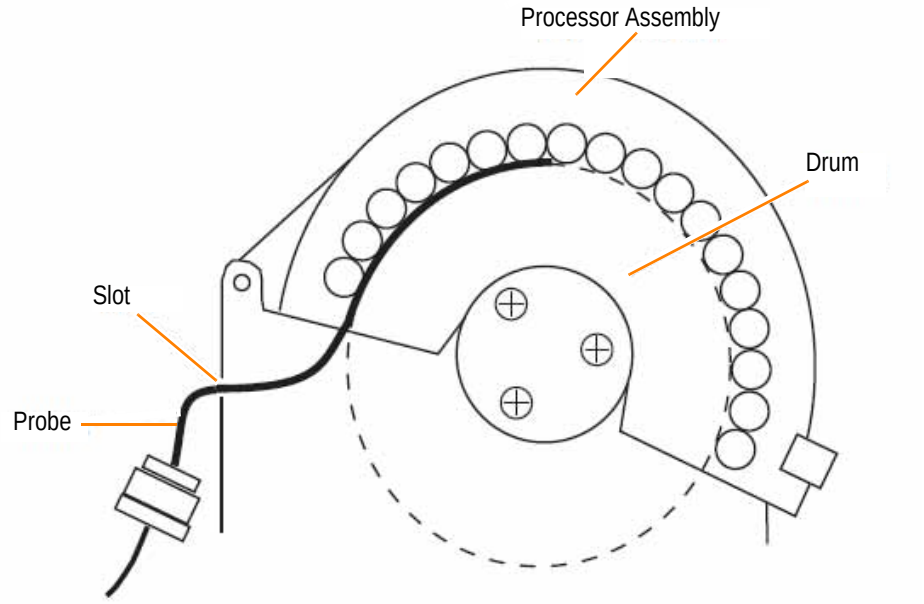


[3] Remove the back cover.

[4] Insert the probe into the slot on the left rear of the processor assembly, feed it upward, and let the rotation of the processor drum pull the probe until the block reaches the slot.

Note

If the laser imager is in Standby mode, the processor drum pulls the probe very slowly and it may be difficult to detect movement.



[5] Allow the temperature reading on the meter to stabilize. This requires approximately 90 seconds.

[6] Check that the temperature at the processor drum is between 123.5–124.5 °C.

[7] Pull back slightly, 1.0–2.0 cm (0.4–0.8 in.), on the block to confirm that the highest temperature is being read.

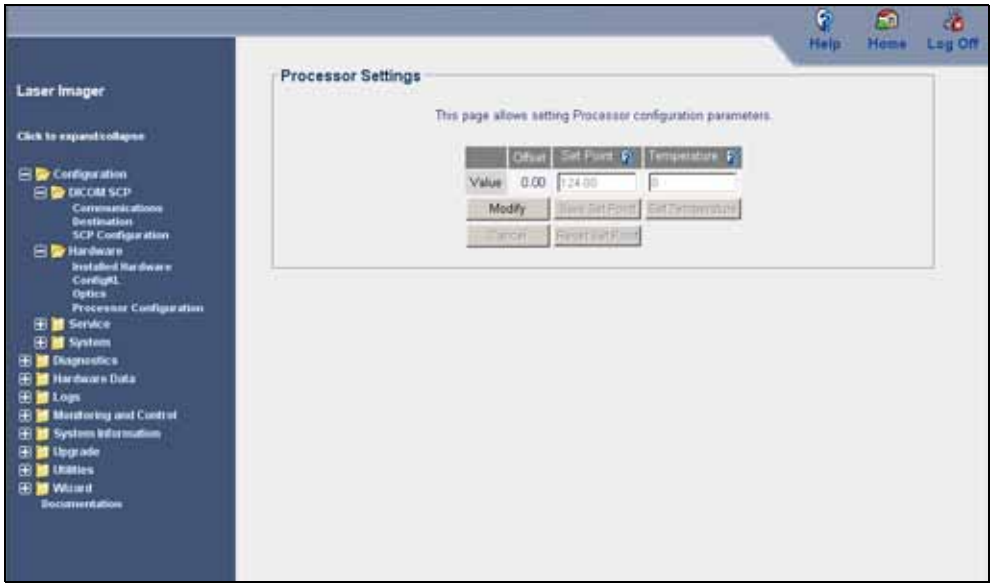
[8] Is the temperature within specification?

Yes	No
Remove the probe, and then install the back cover.	Note the highest temperature reading, and then perform the drum temperature adjustment procedure.

To Adjust:

[1] Log on to the service tool (see Additional Service Procedures, "Logging On to the Service Tool").

[2] Select **Configuration > Hardware > Processor Configuration**.



[3] Click **Modify**.

[4] In the Temperature field, enter the temperature measured by the meter.

Note

The Offset field indicates the offset value between the Set Point field and the Temperature field.

[5] Click **Set Temperature**.

[6] Allow approximately 10 minutes for the temperature of the processor drum to become stable.

[7] Use the meter to check the temperature of the processor drum. The temperature must be 123.5–124.5 °C.

[8] When the temperature is between 123.5–124.5 °C, close the Processor Configuration window.

[9] Log off from the service tool (see Additional Service Procedures, "Logging Off the Service Tool").

[10] Install the back cover.

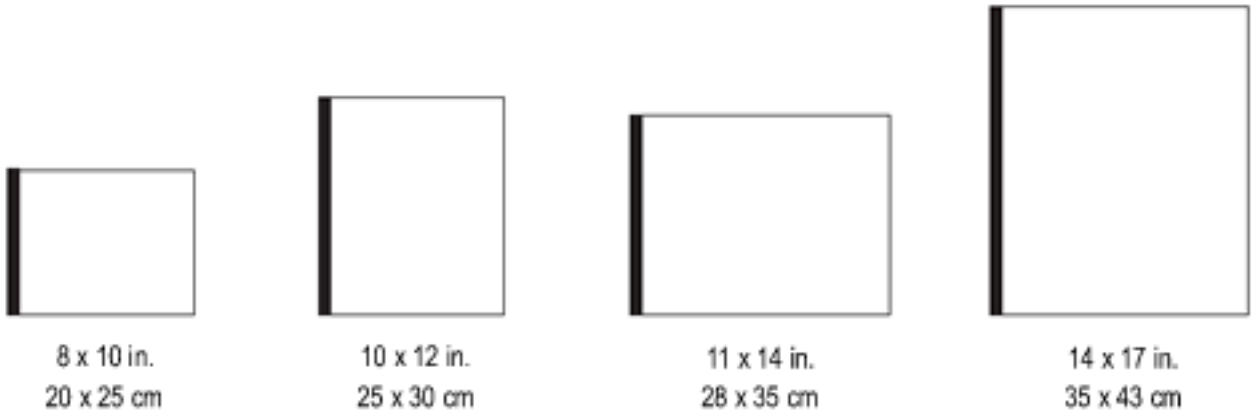
Imaging Assembly—Start Index Delay Adjustment

Adjustment Specification

Purpose:	To adjust Start of Scan timing to center an image left to right on the film
Specification:	Borders on the left and right of the image should be equal.
Special Tools:	• Laptop computer with MICROSOFT INTERNET EXPLORER • Service tool • Crossover cable
Prerequisites	None

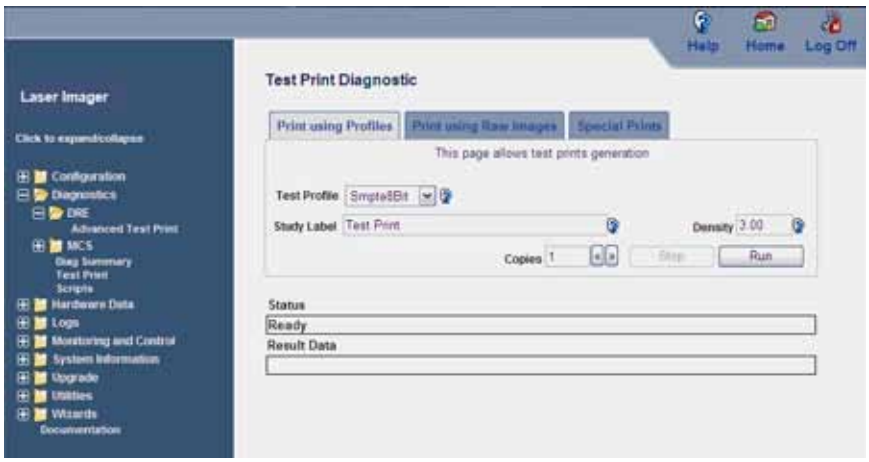
To Check:

The Start Index Delay affects the left edge of the film orientations shown.



[1] Log on to the service tool.

[2] From the Service menu, select **Diagnostics > DRE > Advanced Test Print**.



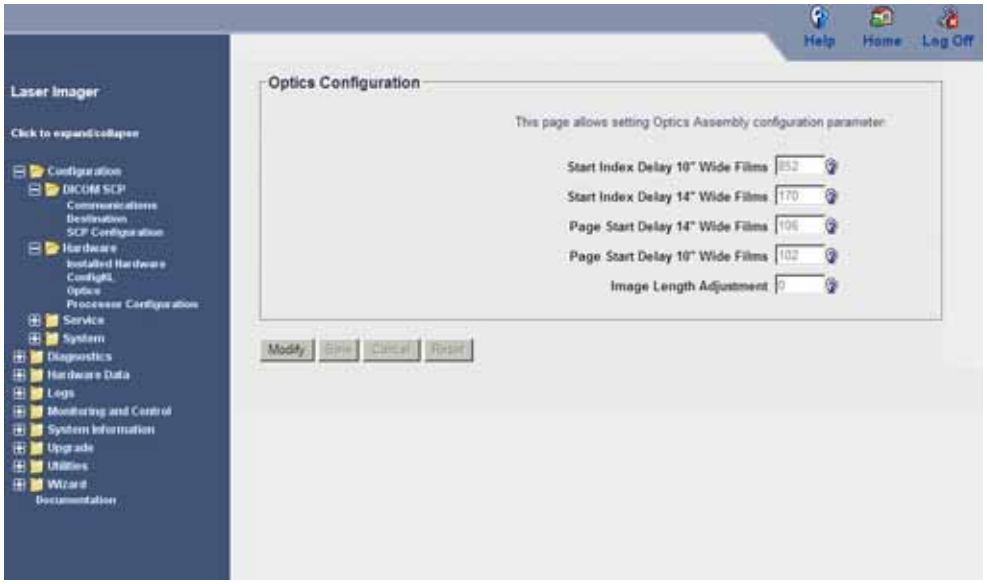
[3] Select **Smpte8Bit** from the Test Profile drop-down list.

[4] Click **Run**.

[5] Check the test print to verify the left and right borders are equal.

To Adjust:

[1] Select **Configuration > Hardware > Optics**.



[2] Observe the number displayed in the Index Delay window.

Note

There are two Index Delay adjustments depending on the width of the film. Make sure you are adjusting for the correct film width.

- When viewing the film on a light box, the notch on the film must be in the upper right.
- If the left border, as viewed on a light box, is too narrow, the number must be decreased.
- If the left border, as viewed on a light box, is too wide, the number must be increased.

[3] To decrease or increase the left border on the test print, do one of the following:

To *decrease* the left border:	**To *increase* the left border:**
Click **Modify** and *increase* the number in the Index Delay window.	Click **Modify** and *decrease* the number in the Index Delay window.
Increasing or decreasing the Index Delay value by **13** is equal to a 1.00 mm (0.04 in.) change.	

[4] Click **Save**.

[5] Make another test print and check the Index Delay area again.

[6] Repeat Steps 3–5 until the left border matches the right border.

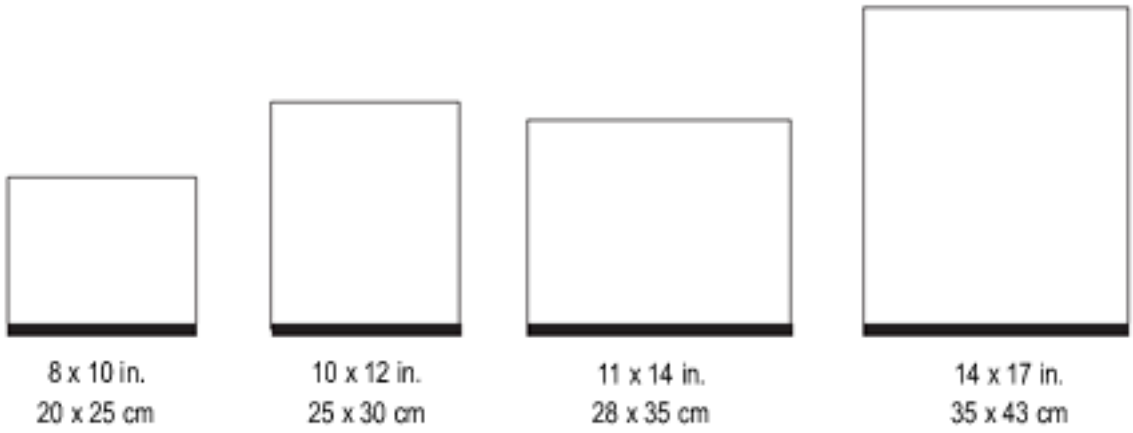
Imaging Assembly—Page Start Adjustment

Adjustment Specification

Purpose:	To adjust Start of Page timing to obtain a 2.00 mm (0.08 in.) half-tone density border at the leading edge of the film. **Note** that for notched film, this is the edge opposite the notch.
Specification:	A 2.00 mm (0.08 in.) half-tone border is visible only at the leading edge of the film.
Special Tools:	• Laptop computer with MICROSOFT INTERNET EXPLORER • Service tool • Crossover cable
Prerequisites	None

To Check:

The leading edge affected by the Page Start adjustment is shown for each film size.



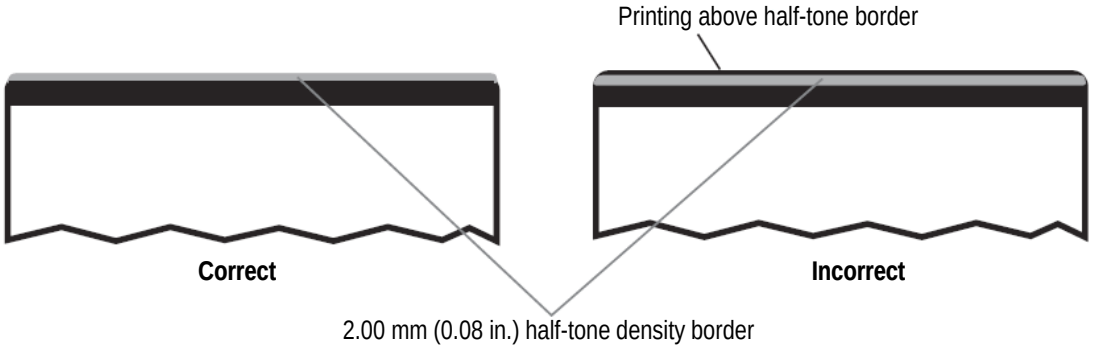
[1] Log on to the service tool.

[2] From the Service menu, select **Diagnostics > DRE > Advanced Test Print**.

[3] Select **Smpte8Bit** from the Test Profile drop-down list.

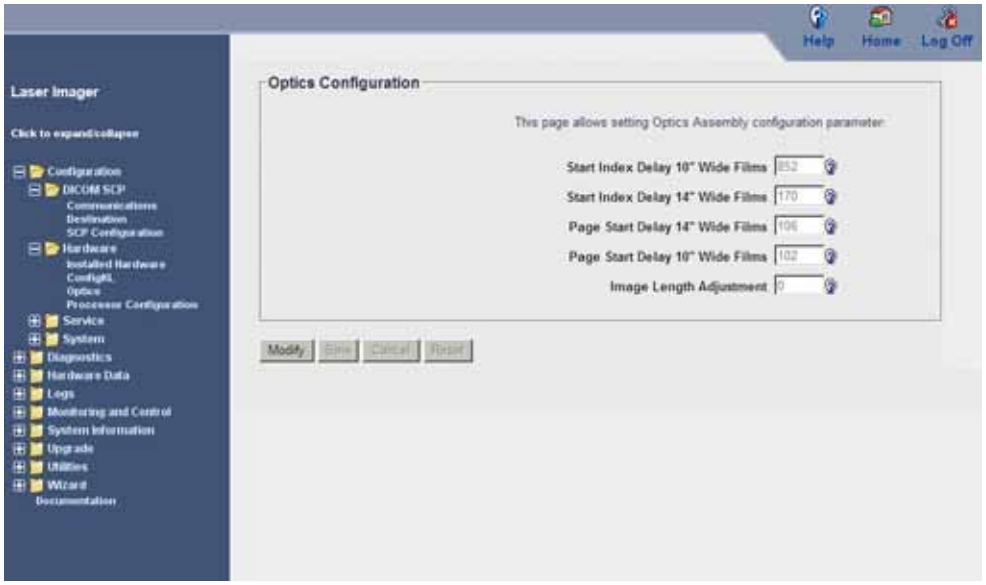
[4] Click **Run**.

[5] Check for a 2.00 mm (0.08 in.) half-tone density at the leading edge of the film with no transparent area appearing.



To Adjust:

[1] Select **Configuration > Hardware > Optics**.



[2] Observe the number displayed in the Page Start Delay window.

Note

There are two Page Start Delay adjustments depending on the width of the film. Make sure you are adjusting for the correct film width.

- When viewing the film on a light box, make sure you are looking at the leading edge.
- If the half-tone density, as viewed on a light box, is less than 2 mm, the number must be decreased.
- If the half-tone density, as viewed on a light box, is greater than 2 mm, the number must be increased.

[3] To decrease or increase the half-tone density border on the test print, do one of the following:

To *increase* the border:	To *decrease* the border:
Click **Modify** and *decrease* the number in the Page Start Delay window.	Click **Modify** and *increase* the number in the Index Delay window.
Increasing or decreasing the Page Start Delay value by **13** is equal to a 1.00 mm (0.04 in.) change.	

[4] Click **Save**.

[5] Make another test print and check the Page Start Delay area again.

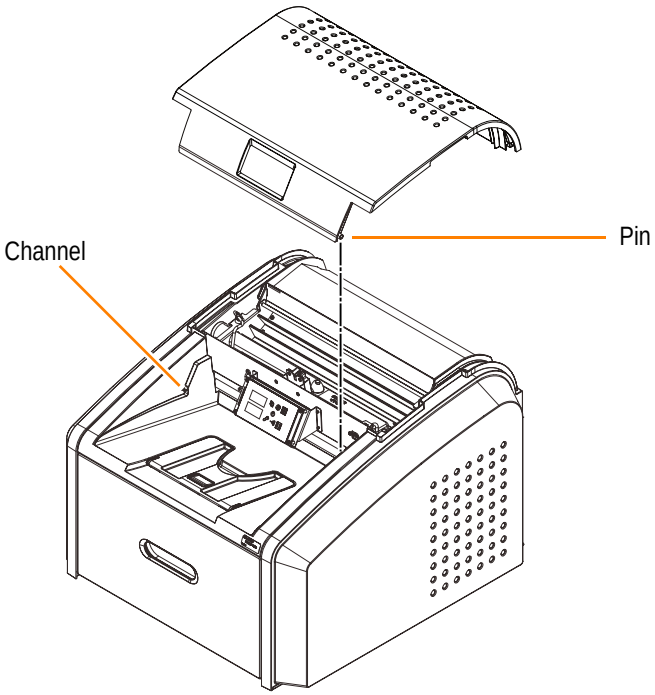
[6] Repeat Steps 3–5 until the half-tone density border is within specification.

Top Cover

Prerequisites: None

Removal

Lift up on the top cover and remove it. The top cover is not secured with any screws but rests on channels.



Installation

Reverse the steps in the removal procedure.

Note

For best results, set the pins on the front edge of the cover into the channels, and then lower the rear edge onto the laser imager.

Left cover

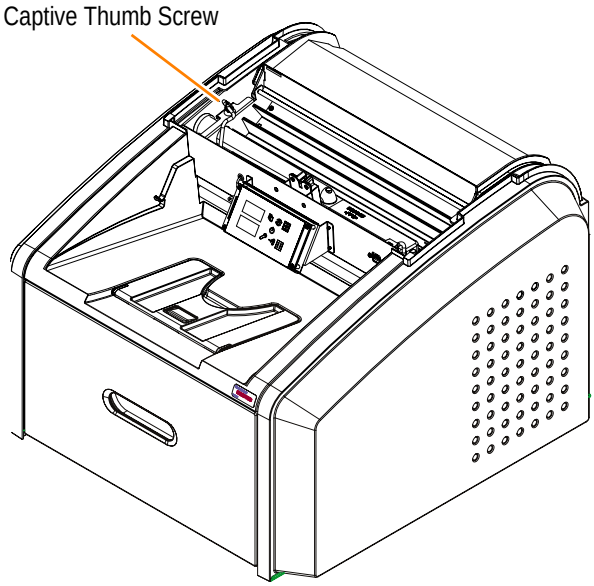
Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.

Removal

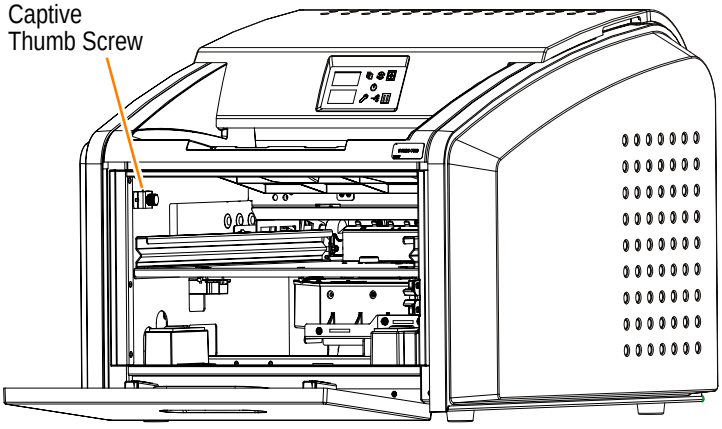
[1] Remove the top cover.

[2] Loosen the captive thumb screw.



[3] Open the film supply.

[4] Loosen the captive thumb screw located under the exit tray.



[5] Remove the left cover.

Installation

Reverse the steps in the removal procedure.

Right Cover

Prerequisites:
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.

Tools: Phillips screwdriver

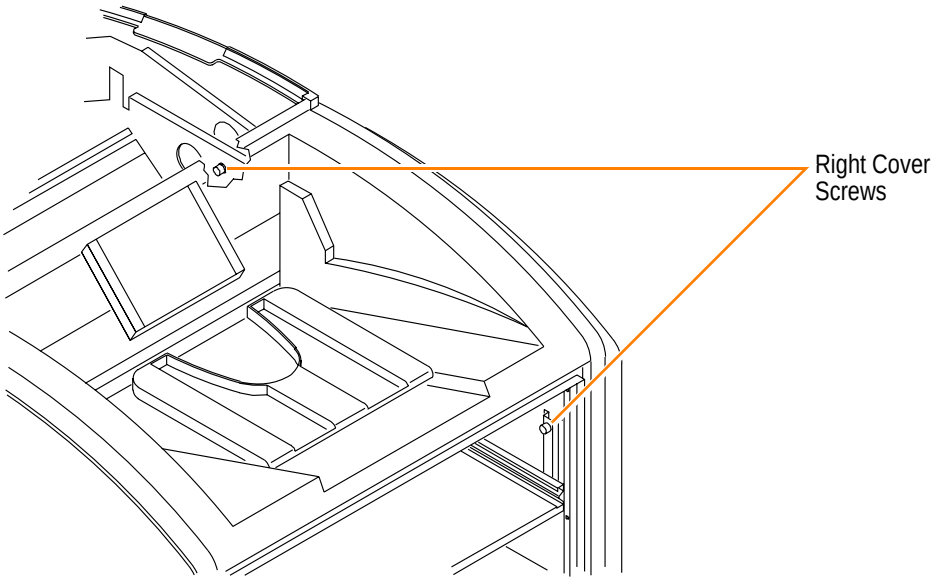
Removal

Caution

Risk of electric shock: Dangerous voltage present.

[1] Remove the top cover and open the film supply.

[2] Remove 2 screws that attach to the right cover standoffs.
- 1 screw accessible from the top
- 1 screw located underneath the exit tray



[3] Remove the right cover from the laser imager.

Installation

Reverse the steps in the removal procedure.

Back cover

Prerequisites:
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.

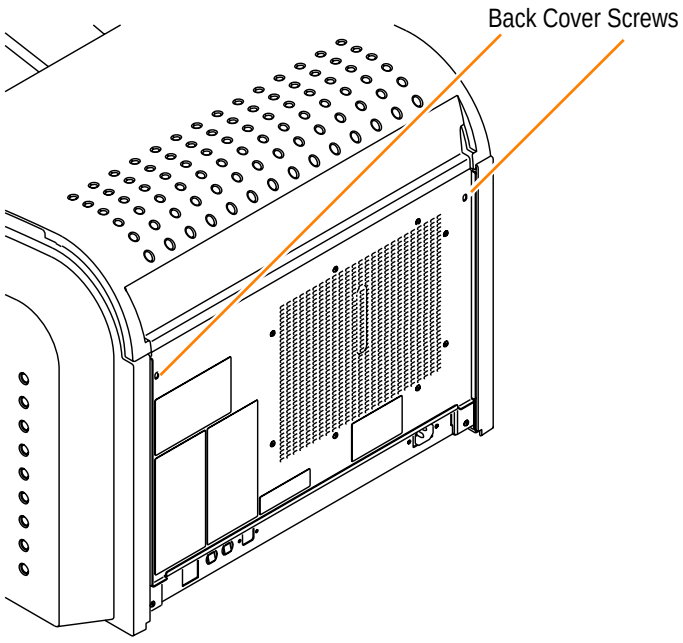
Tools: Phillips screwdriver

Removal

Caution

Risk of electric shock: Dangerous voltage present.

[1] Remove 2 screws from the back cover.



[2] Remove the back cover.

Installation

Reverse the steps in the removal procedure.

Note

For best results, set the lower edge of the cover into the lip of the imager frame first.

Display Screen Assembly

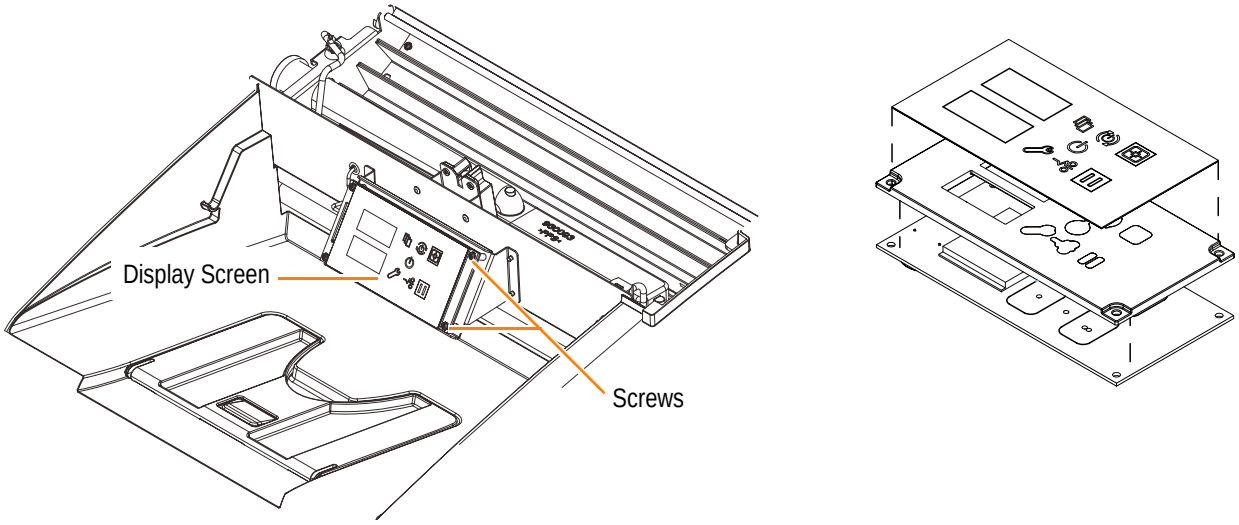
Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove the top cover.

Tools: T10 Torx driver

To Remove:

[1] Disconnect the connector from the left side of the display screen.



[2] Remove 4 screws that hold the electronics board to the mounting bracket.

Installation

Reverse the steps in the removal procedure.

Interlock Switches—Top and Front Covers and Film Supply

Prerequisites:
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.

Tools: T10 Torx driver

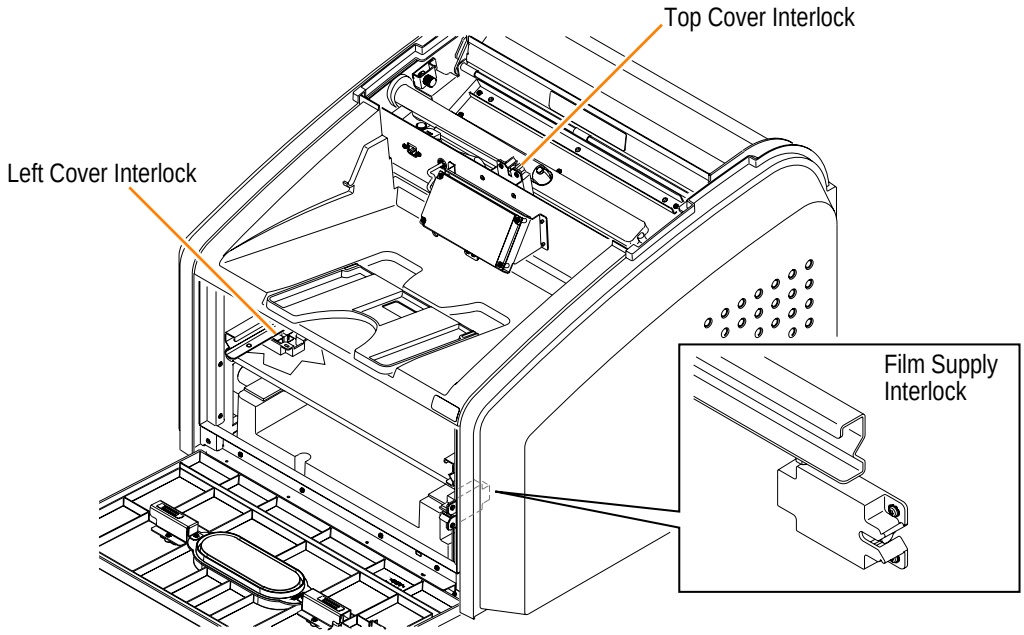
Removal

Note

This procedure is used for the left cover, top cover, and film supply interlock switches.

Caution

Risk of electric shock: Dangerous voltage present.

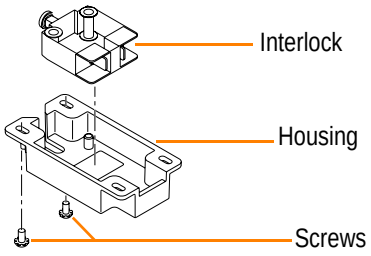


[1] Open the cover for the interlock you want to remove.

[2] Remove the 2 screws from the interlock.

[3] Separate the interlock switch from the housing.

[4] Disconnect the connector.



Installation

Reverse the steps in the removal procedure. Make sure that the switch is seated by its holes onto the locator pins of the housing.

Processor Drum

Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove:
  - Top cover
  - Right cover
  - Left cover

Tools: T10 Torx driver

Removal

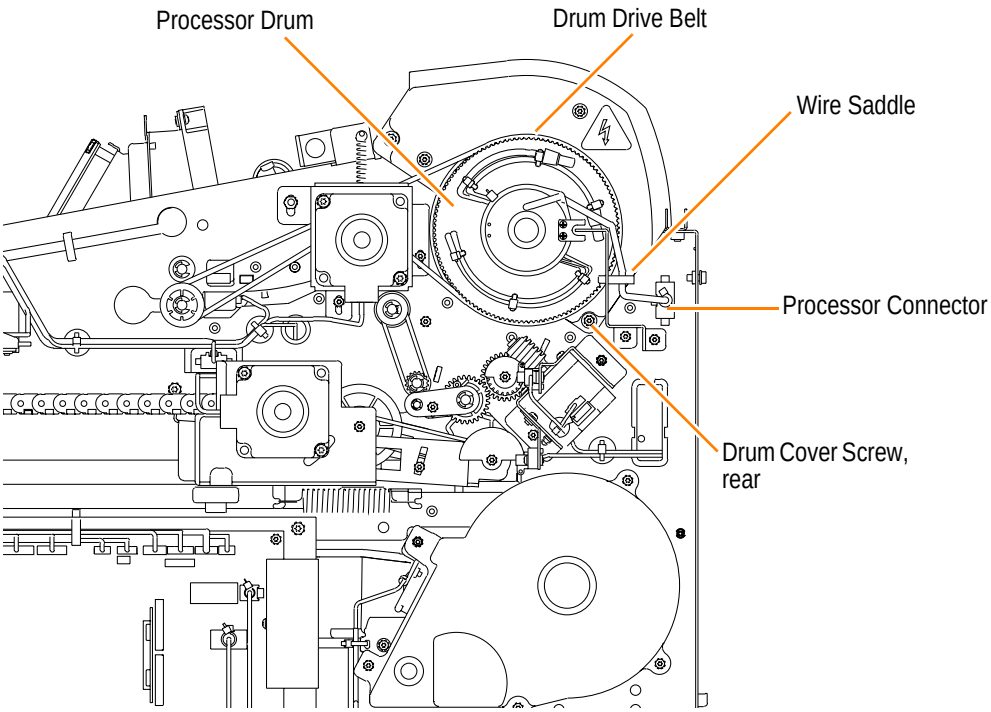
Caution

Hot Surface: When the laser imager is initially de-energized, the processor drum and rollers are hot.Take care when removing the processor drum.

Caution

Be sure to loosen the correct screws. Loosening the wrong screws will cause the bearings or the springs in the retainer to become loose and difficult to reset.

[1] Remove the 2 rear screws and bushings from the drum cover, 1 set on each side of the cover.



Caution

- The surface of the processor drum is easily damaged by fingernails and jewelry. Handle the processor drum with one hand on the drum pulley and the other hand on the opposite end.
- Do not touch the silicone surface of the processor drum.
- When removing the processor drum take care not to damage the connector.

[2] Open the drum cover by pivoting it forward on its front screws.

[3] Open the wire saddle that secures the connector to the partition near the DRE motherboard.

[4] Disconnect the processor connector from the bulkhead.

[5] Disengage the drum drive belt from the drum pulley.

[6] Remove the processor drum and set it on a flat, stable surface.

Installation

Reverse the steps in the removal procedure. The C-shaped feature on the slip ring assembly of the drum must straddle the bracket.

Note

Whenever a new processor drum is installed, you must adjust the processor temperature (see “Processor—Drum Temperature Adjustment”).

Drum Drive Belt

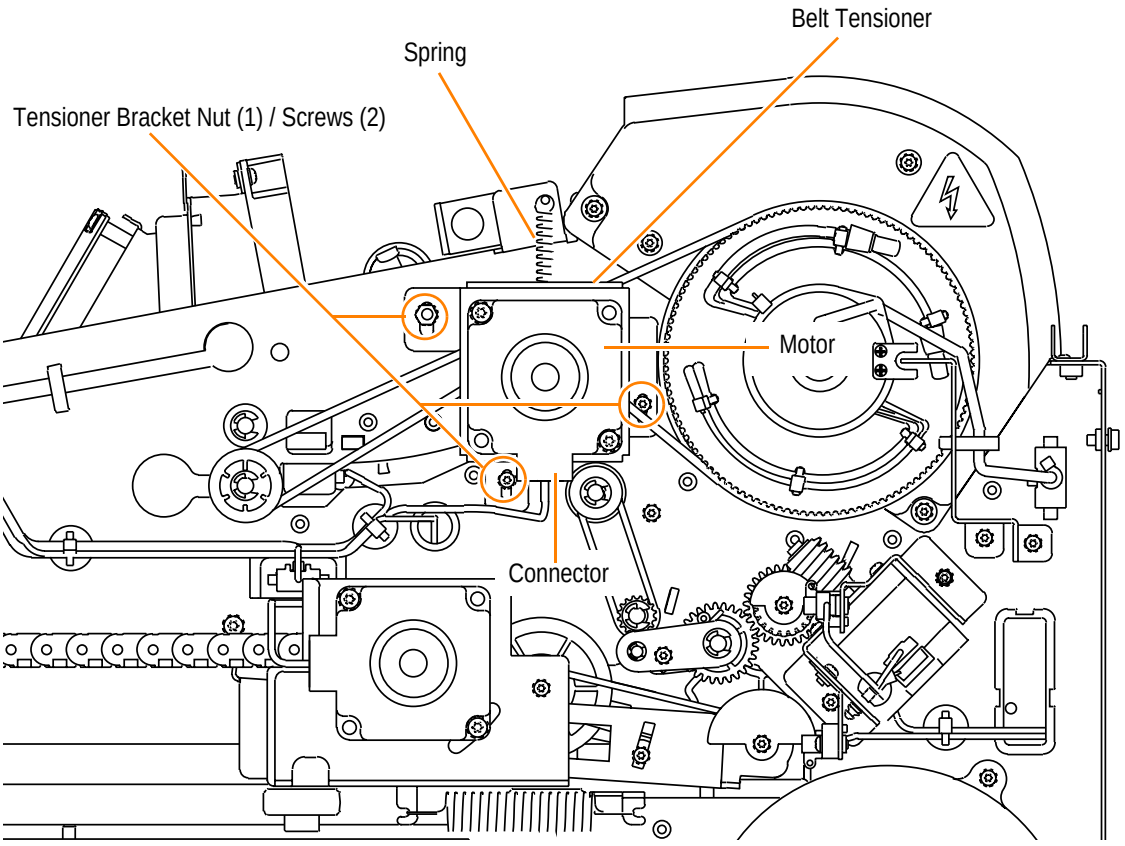
Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove:
  - Top cover
  - Right cover

Tools:

- 7 mm nut driver
- T10 Torx driver

Removal



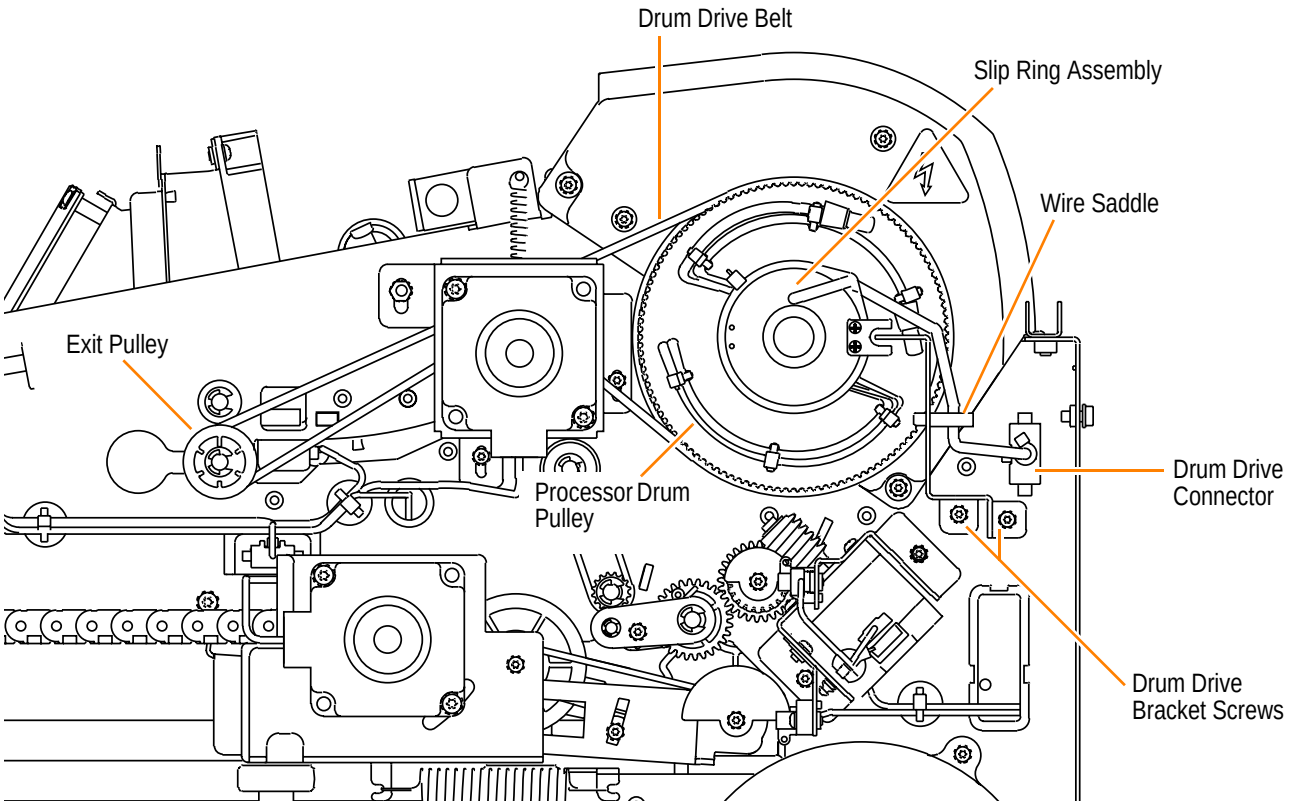
[1] Disconnect the connector from the drum drive motor.

[2] Remove the 1 nut and 2 screws from the belt tensioner bracket.

[3] Carefully slide the tensioner with the motor off the stand-off screw, and then unhook the spring.

[4] Set the tensioner and motor aside.

[5] Remove the drum drive belt from the exit pulley.



[6] To remove the belt completely, you must free it from the processor drum pulley:

(a) Open the wire saddle and disconnect the drum drive connector.

(b) Remove the front screw and loosen the rear screw on the drum drive bracket.

(c) Pivot the drum drive bracket toward the back of the imager and remove the belt from the pulley.

Installation

[1] Slide the belt over the processor drum pulley.

[2] Pivot the drum drive bracket back into place. Make sure that the C-shaped feature on the slip ring assembly straddles the bracket.

[3] Install and tighten the 2 bracket screws.

[4] Connect the drum drive connector.

[5] Hold the tensioner in position and place the belt over the exit pulley and the tensioner pulley.

- The bottom of the belt sits on the top of the tensioner pulley.
- The top of the belt runs just underneath the top of the tensioner bracket.

[6] Set the tensioner onto the end of the screw and attach the spring.

[7] Slide the tensioner completely into place, and then install the 1 nut and 2 screws.

[8] Connect the connector to the drum drive motor.

[9] Install the covers.

Note

The teeth on the belt must mesh properly with the teeth on the pulley. The longest span of the belt should deflect a maximum of 1.27 cm (0.50 in.) when finger pressure is applied.

Processor Fan Assembly

Prerequisites:

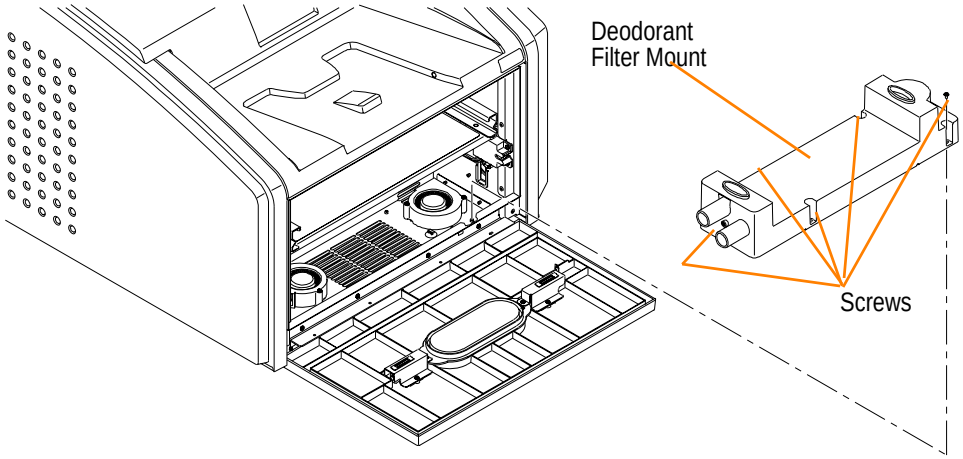
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.

Removal

Note

Two fan assemblies are located under the left and right sides of the deodorant filter mount.

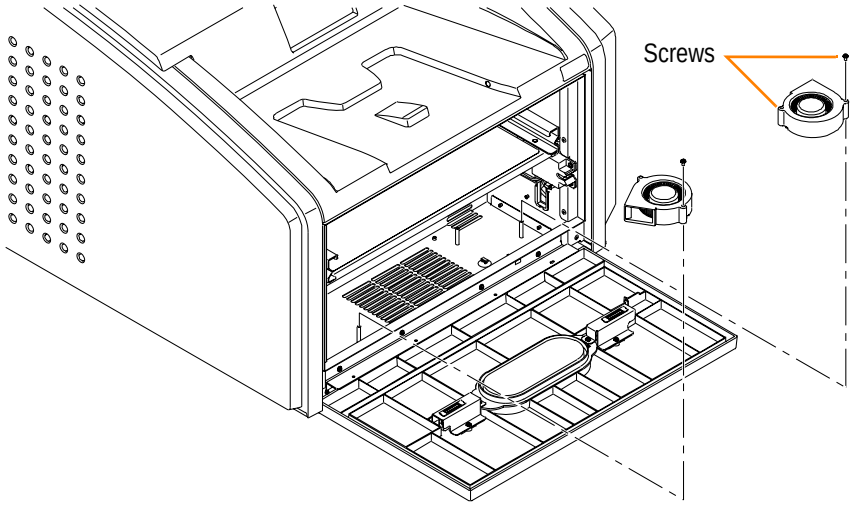
[1] Open the film supply.



[2] Remove the:

- Filter
- 5 screws from deodorant filter mount
- Deodorant filter mount

[3] Disconnect the connector from the fan assembly that you want to remove.



[4] Remove the:

- 2 screws from the fan assembly that you want to remove
- Fan assembly

Installation

Reverse the steps in the removal procedure.

Felt Pad Assembly

Prerequisites:

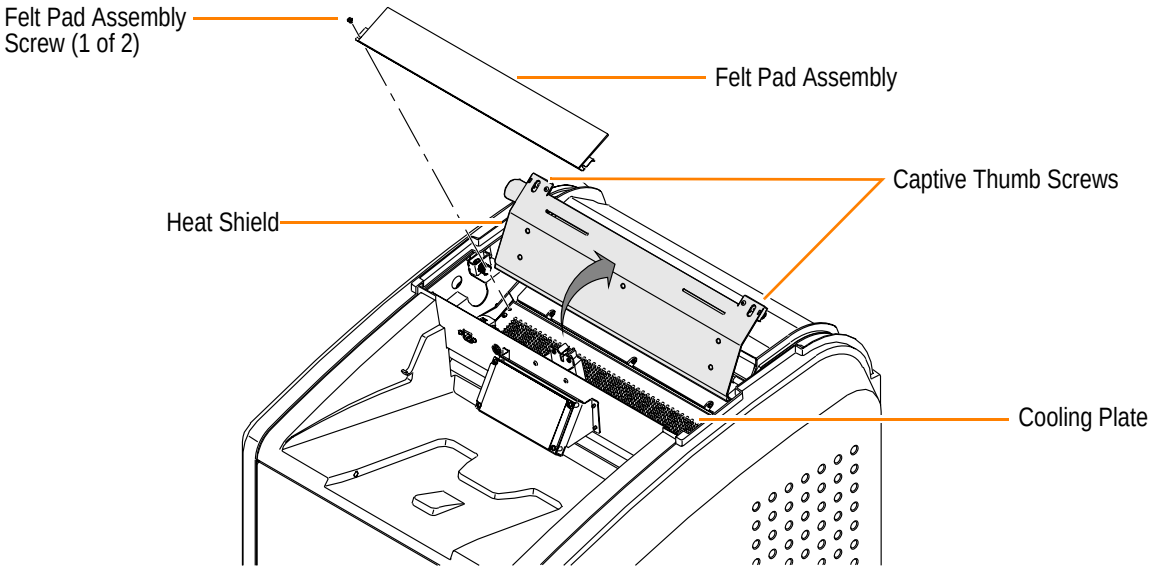
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove:
  - Top cover
  - Left cover

Removal

Caution

Hot Surface: When the laser imager is initially de-energized, the processor drum rollers are hot. Take care when working in the area of the processor.

[1] De-energize the laser imager.



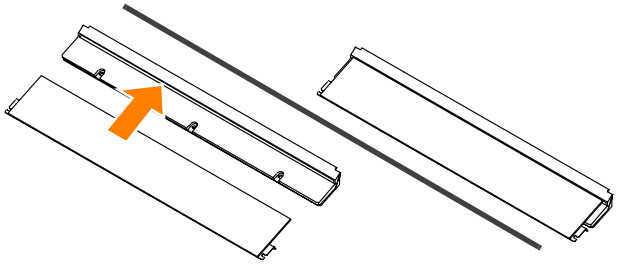
[2] Loosen the 2 captive thumb screws on the heat shield, and then lift the heat shield open.

[3] Remove the:

- 2 screws that hold the felt pad assembly to the cooling plate
- Felt pad assembly

Installation

[1] Fit the edge of the felt pad into the channel of the film diverter assembly.



[2] Install and tighten the 2 screws.

[3] Close the heat shield and tighten the captive screws.

[4] Install the top cover and the left cover.

[5] Connect the power cord, and then energize the imager.

Film Diverter Assembly

Prerequisites: Remove the Felt Pad Assembly

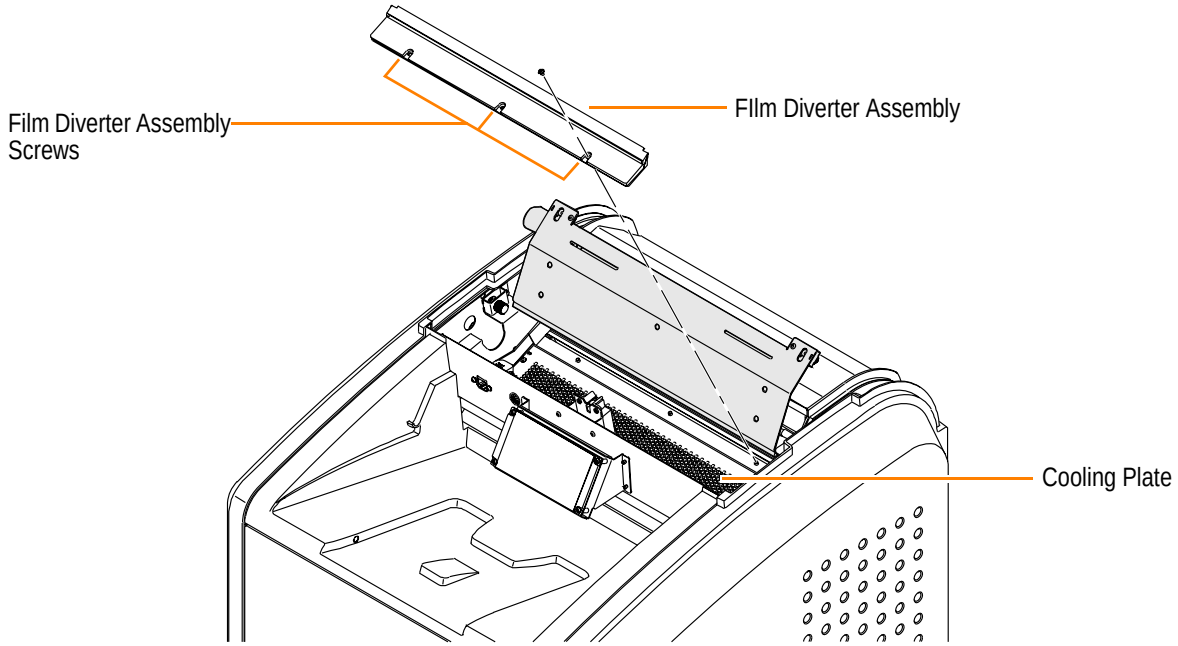
Removal

Caution

Hot Surface: When the laser imager is initially de-energized, the processor drum rollers are hot. Take care when working in the area of the processor.

[1] Remove the 3 screws that hold the film diverter assembly to the cooling plate.

[2] Remove the film diverter assembly.



Installation

[1] Clean any residue in the area before you install the film diverter.

[2] Install the new film diverter assembly with the 3 screws.

[3] Install the felt pad assembly.

[4] Close the heat shield and tighten the captive screws.

[5] Install the top cover and the left cover.

[6] Connect the power cord, and then energize the imager.

Processor Cover

Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove:
  - Top cover
  - Right cover
  - Left cover

Tools: T10 Torx driver

Removal

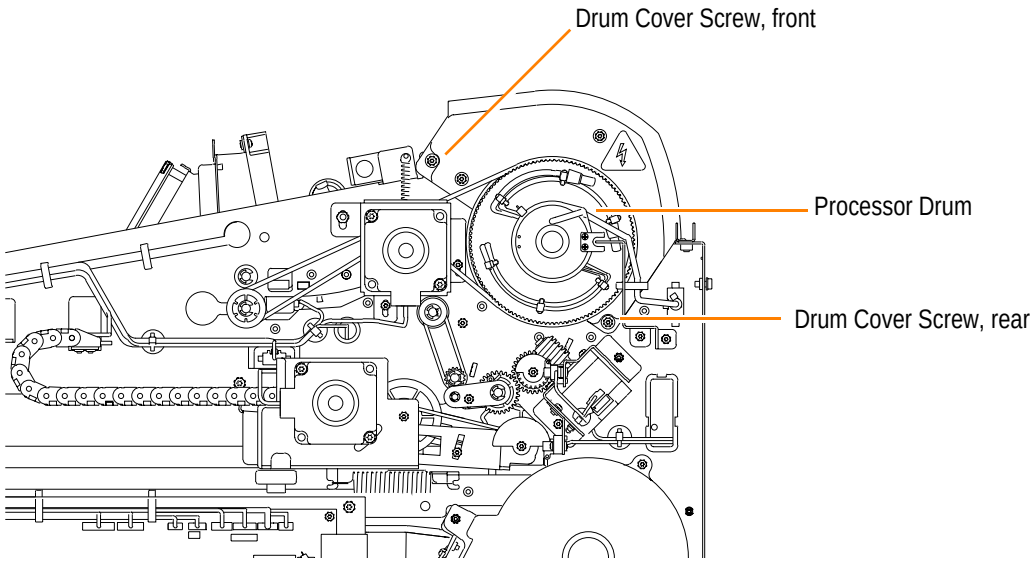
Important

The bearings on the ends of each roller are loose. Be sure to remove the correct screws at the side of the processor. Loosening the wrong screws will cause the bearings or the springs in the retainer to become loose and difficult to reset.

[1] Remove 2 screws and bushings on each side of the processor cover.

Note

The front retaining rod is held in place by the front screws and is free after you remove them.



[2] Remove the processor cover.

Installation

Reverse the steps in the removal procedure. Make sure that the front retaining rod is secured when you install the front screws of the cover.

Densitometer Assembly

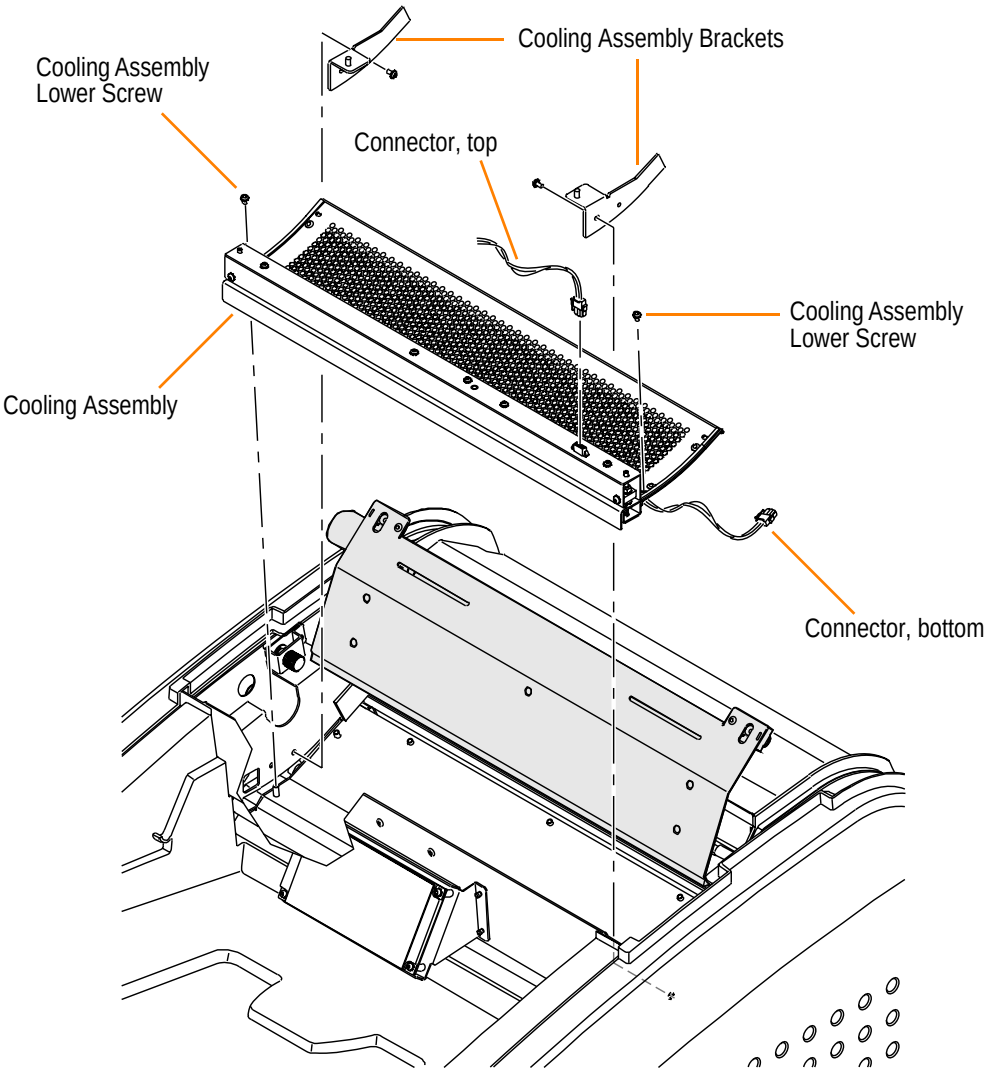
Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove:
  - Top cover
  - Right cover
  - Left cover

Removal

[1] Open the heat shield, and then remove the felt pad assembly (see "Felt Pad Assembly").

[2] Disconnect the connector on the top of the cooling assembly.



[3] Disconnect the connector on the bottom of the cooling assembly from the main wiring harness.

[4] Remove the:

- 2 screws and left cooling assembly bracket
- 2 screws and right cooling assembly bracket
- Lower 2 screws of the cooling assembly

[5] Remove the cooling assembly and densitometer, and pull the attached cable harness through the frame.

Installation

Reverse the steps in the removal procedure.

Feed Roller Motor

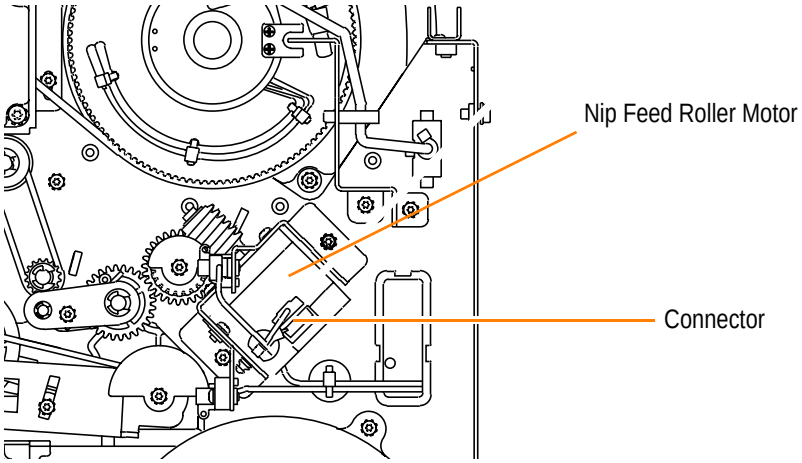
Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove:
  - Top cover
  - Right cover

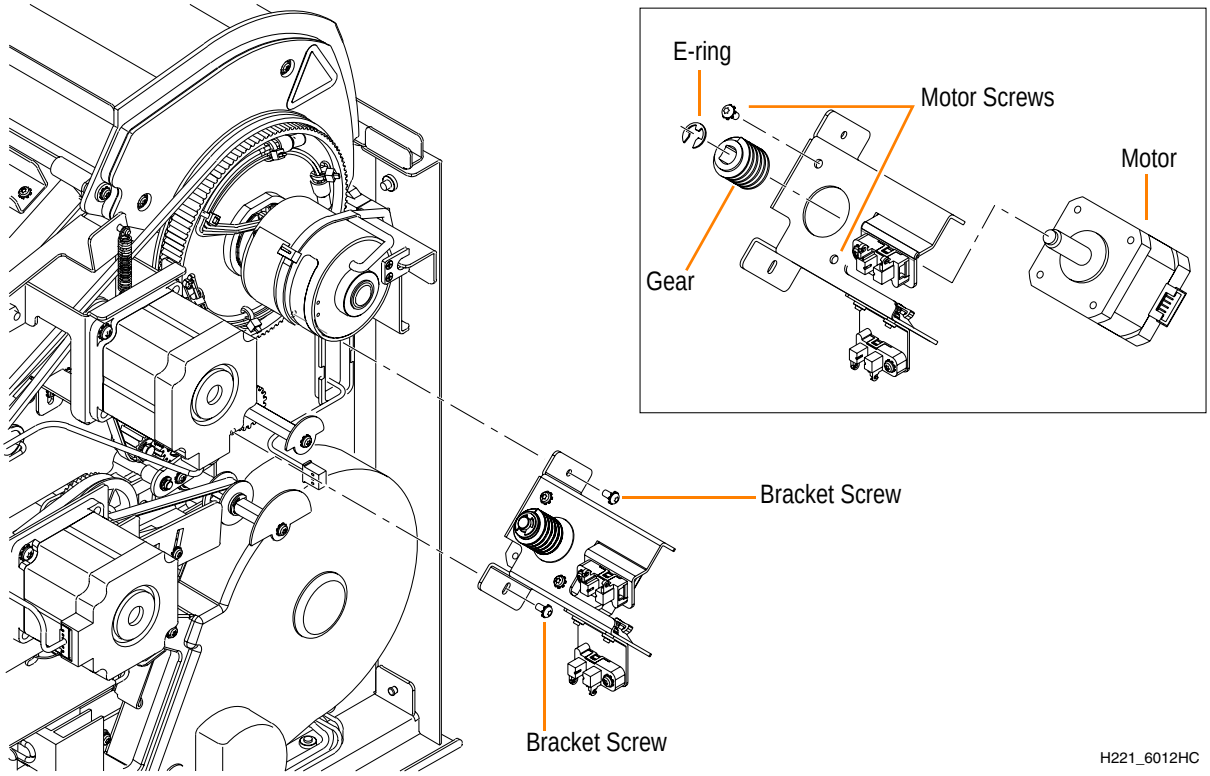
Tools: T10 Torx driver

Removal

[1] Disconnect the connector from the motor.



[2] Remove the 2 motor bracket screws.



[3] Hold the motor and bracket to keep the remaining connectors free of tension, and then remove the 2 screws that attach the motor.

[4] If you need to keep the gear to use with the new motor, remove the:

(a) E-ring

(b) Gear from the shaft

Installation

Reverse the steps in the removal procedure.

Feed Roller Nip Drive Belt

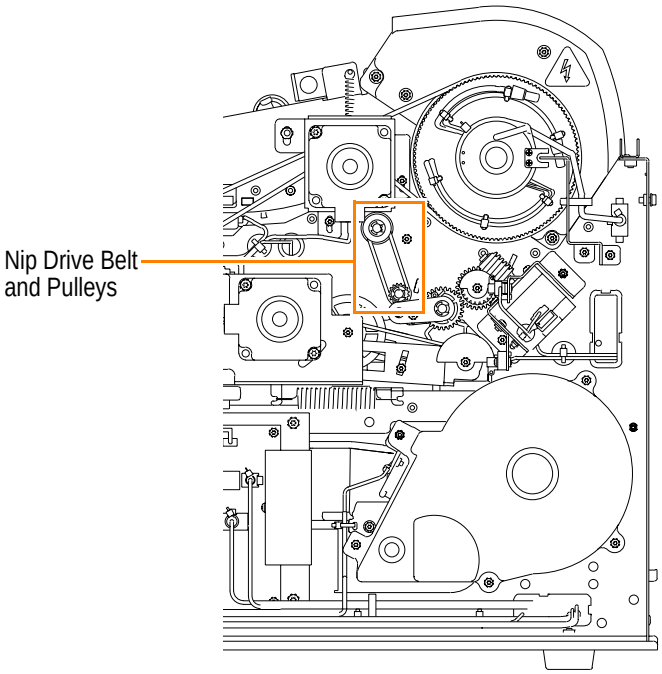
Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove the right cover

Removal

Important

The belt and pulleys must be removed as a set for the belt to fit onto the pulleys.



[1] Remove the:

- **(a)** E-rings from the 2 nip drive belt pulleys
- **(b)** 2 pulleys from their shafts
- **(c)** Nip drive belt

Installation

Reverse the steps in the removal procedure.

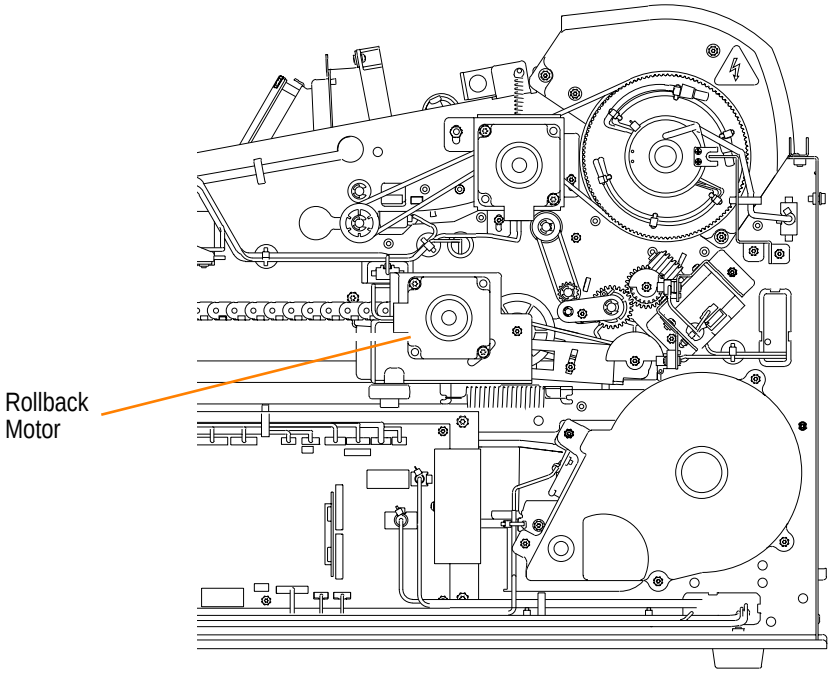
Rollback Motor

Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove the right cover

Tools: T20 Torx driver

Removal



[1] Disconnect the rollback motor connector.

Important

An anti-rotational nut secures the lower screw that holds the motor. Press the nut against the back of the motor as you untighten the lower screw to keep the nut from falling down when the motor is released.

[2] Remove the:

(a) 2 screws

(b) Motor

Installation

Reverse the steps in the removal procedure.

Film Cartridge Detect Sensor

Prerequisites: Remove the DRE motherboard bracket.

Tools:
- T10 Torx driver
- Small flathead screwdriver (optional)

Removal

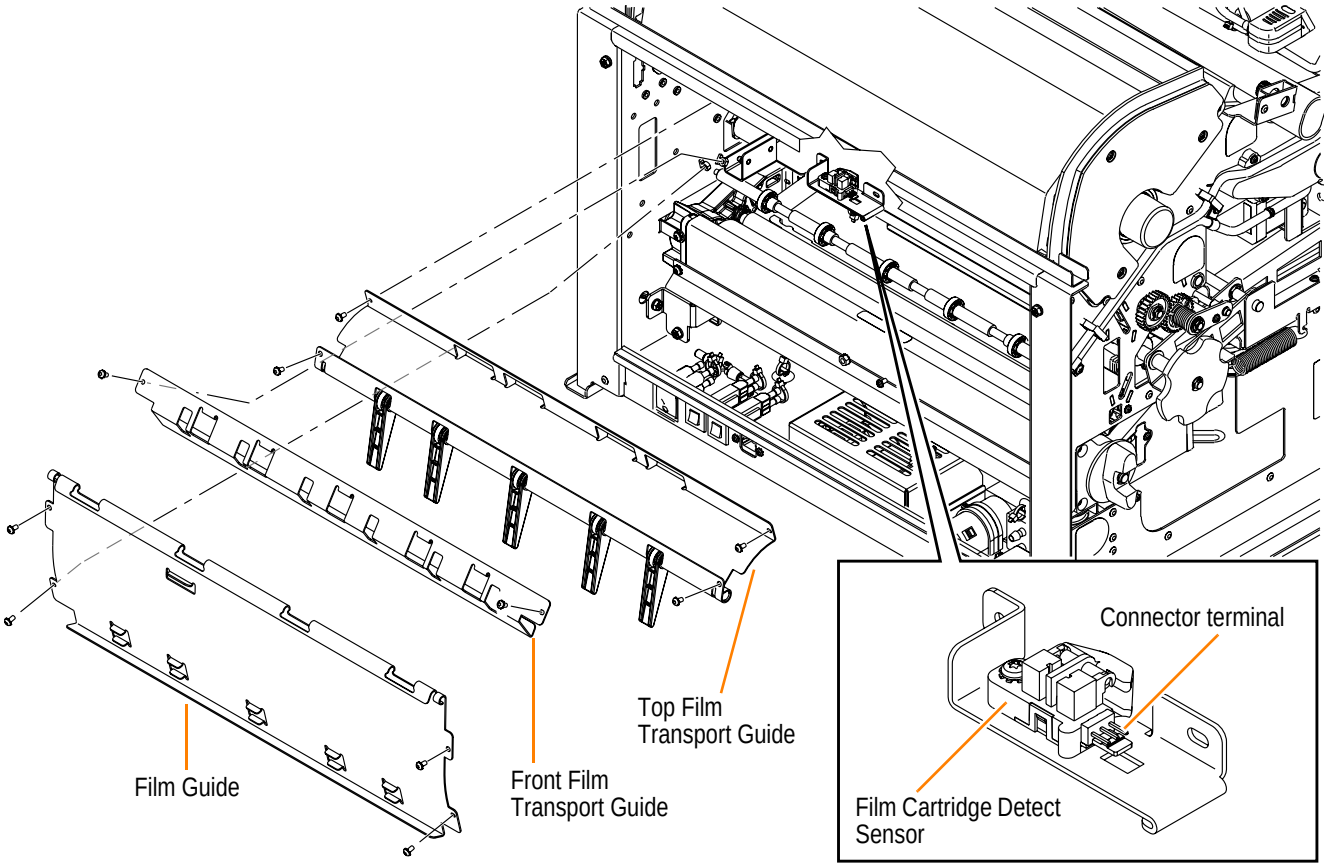
ESD

Possible damage from electrostatic discharge.

When installing circuit boards, always use a wrist strap to prevent damage from electrostatic discharge.

[1] Remove the 4 screws near each corner of the film guide, and then remove the film guide.

After you remove the film guide, the 2 film transport guides are visible.



Caution

The imaging roller of the exposure transport can be scratched easily while working in that area. To protect the roller, cover the roller opening with a sheet of used film.

[2] For better access to the sensor, remove the front and top film transport guides.

(a) Remove the 2 screws at the ends of the front film transport guide, and then remove the guide.

(b) Remove the 4 screws at the corners of the top film transport guide, and then remove the guide.

[3] Remove the connector from the film cartridge detect sensor.

Note

The connector position is tight. You might need to use a small flathead screwdriver to remove the connector.

[4] Remove the sensor screw and then remove the film cartridge detect sensor.

Installation

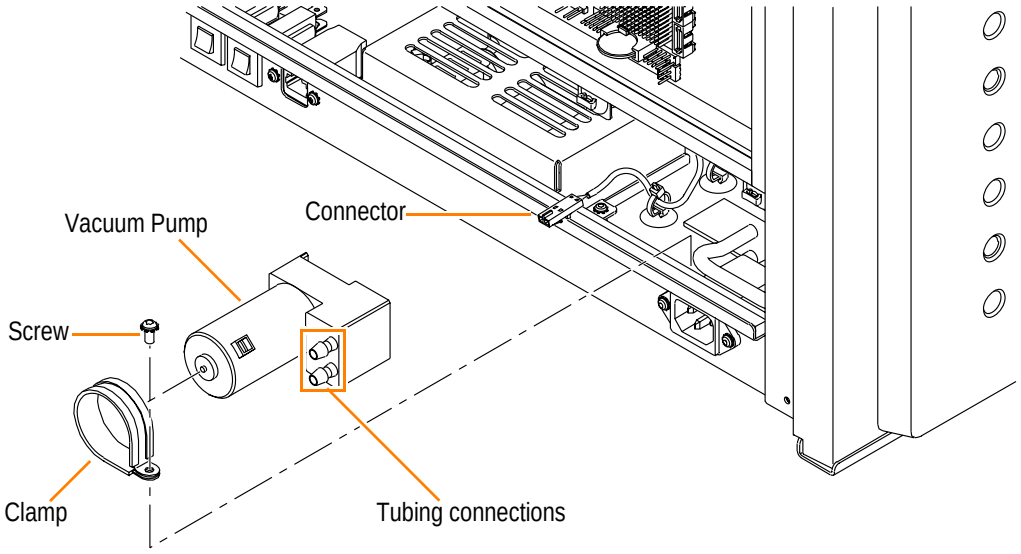
Reverse the steps in the removal procedure, except install the front film transport guide **before** you install the top film transport guide (Step 2).

Vacuum Pump

Prerequisites:
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove the back cover.

Tools: T20 Torx driver

Removal



[1] Remove the:
- **(a)** Screw from the clamp
- **(b)** Loop clamp from the vacuum pump

Important

When disconnecting the tubing, leave the tie wrap in place.

[2] Disconnect the:
- **(a)** Connector
- **(b)** Tubing

Installation

[1] Connect the:
- **(a)** Tubing
- **(b)** Connector

[2] Place the loop clamp around the vacuum pump.

[3] Insert the screw through the ends of the loop clamp.

[4] Install the screw with clamp and pump onto the frame.

Pickup Assembly

Prerequisites:

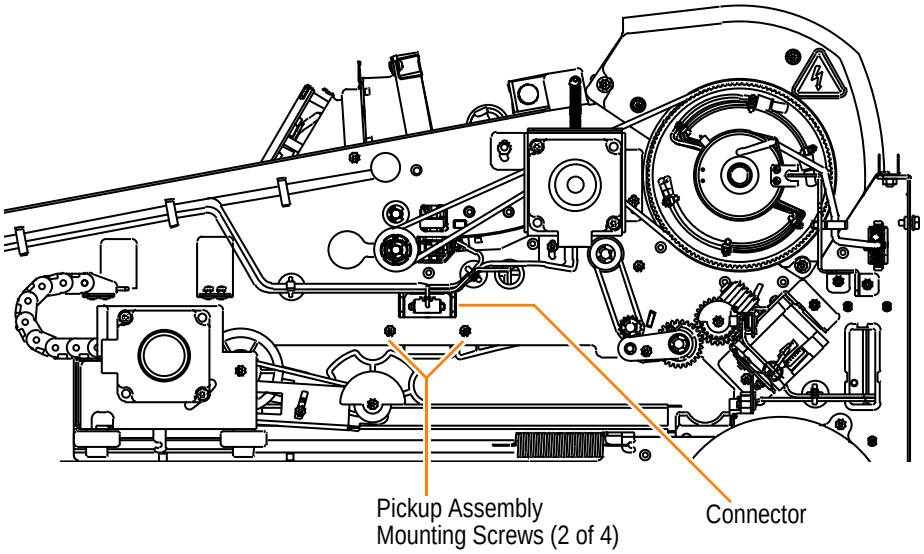
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
  - Top cover
  - Right cover
  - Left cover

Tools:

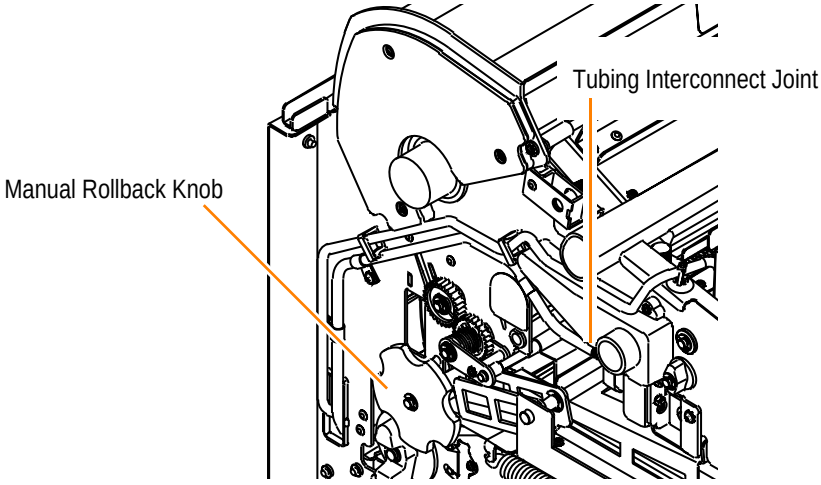
- T20 Torx driver
- Small flathead screwdriver

Removal

[1] From the right side of the imager, disconnect the pickup assembly connector.



[2] From the left side of the imager, disconnect the tubing at the interconnect joint.

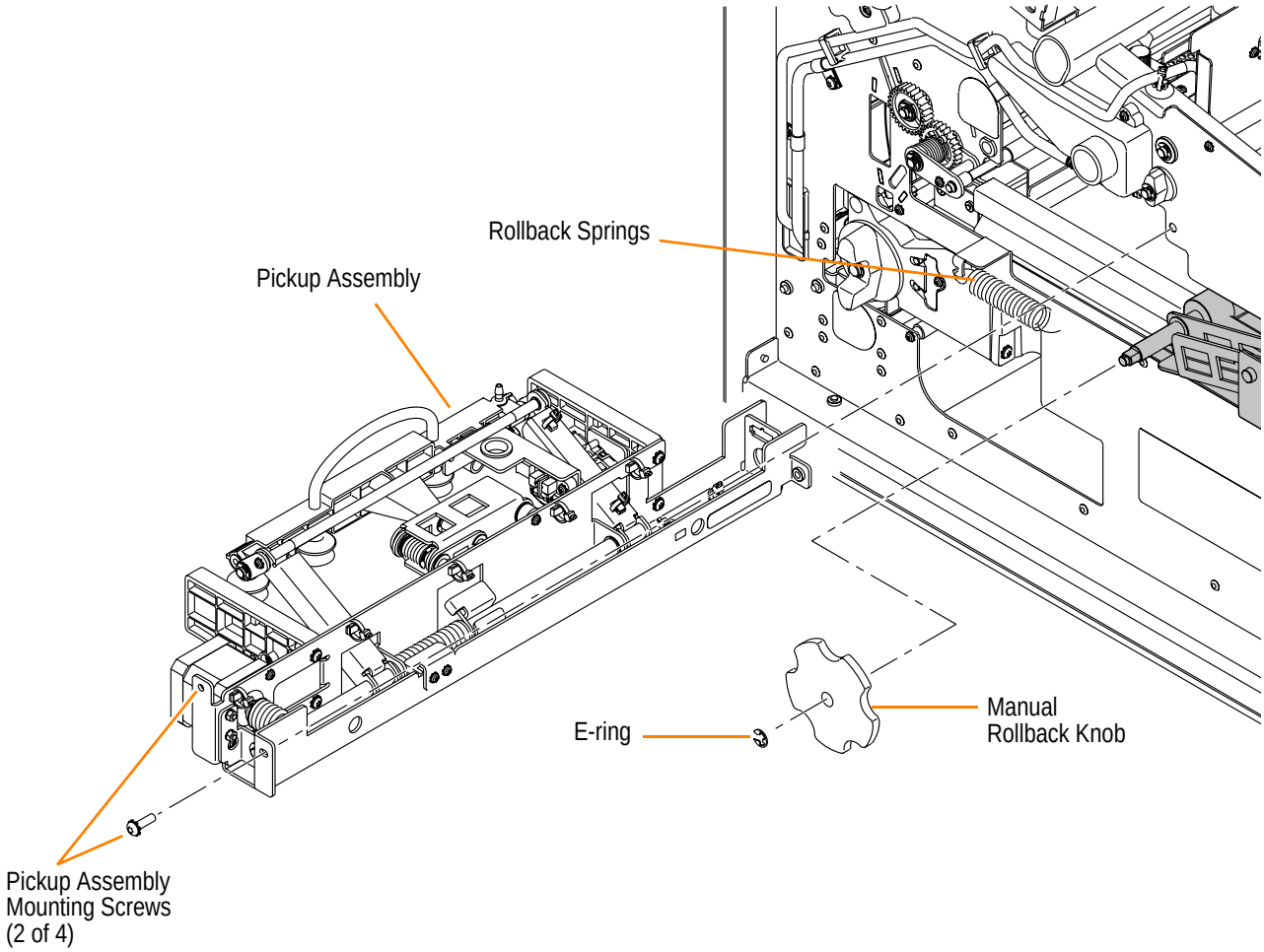


[3] Remove the left and right side rollback springs.

[4] Move the rollback assembly to the fully open position.

[5] From the left side of the imager, remove the E-ring from the end of the rollback knob, and then remove the knob. This allows more clearance to remove the pickup assembly.

[6] Remove 2 screws each on the left and right side of the imager.



[7] Pull the film pickup assembly through the slot on the left side of the laser imager and place it on a flat, stable surface.

Installation

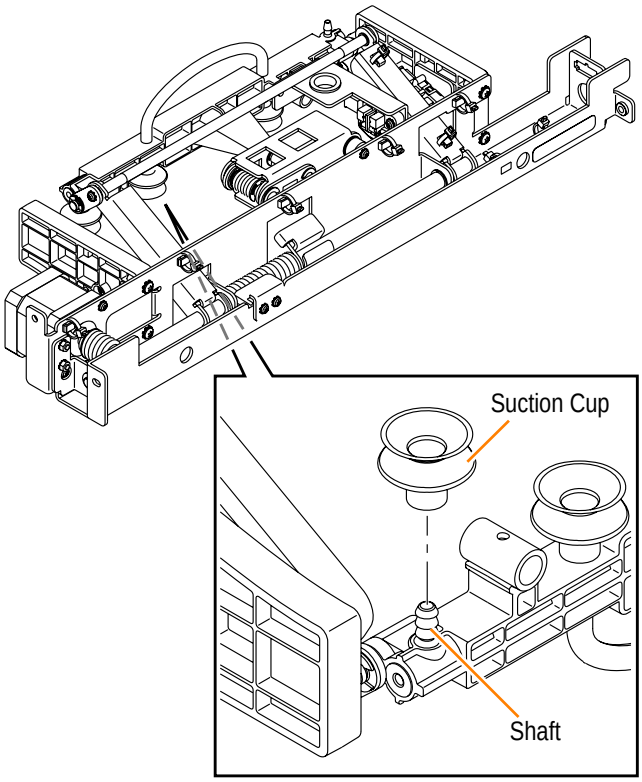
Reverse the steps in the removal procedure.

Suction Cup

Prerequisites: Remove the pickup assembly.

Removal

Pull the suction cup straight from the shaft.



Installation

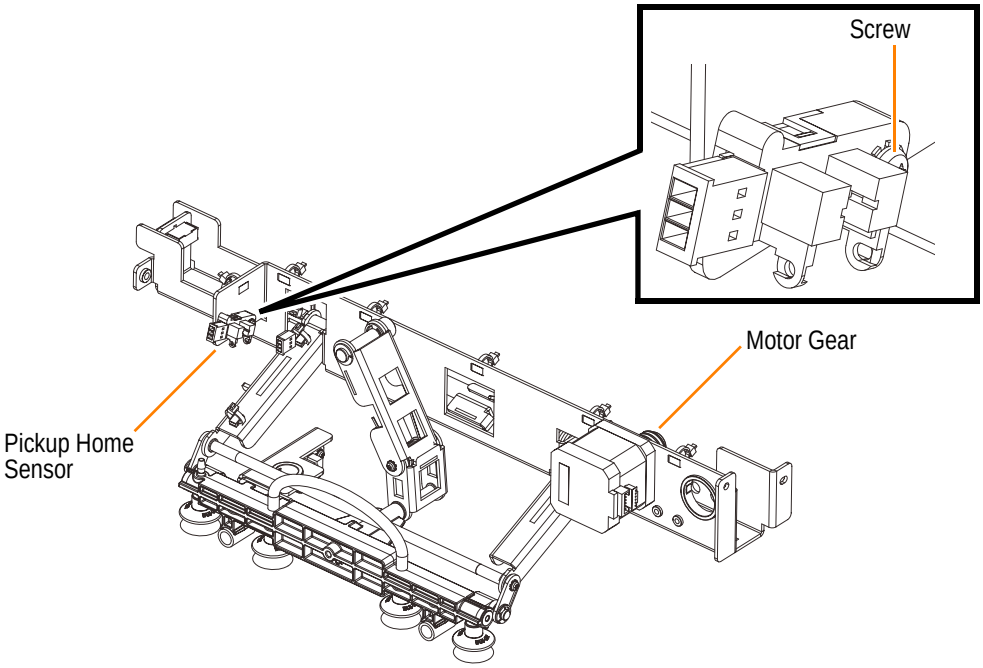
Push the cup onto the shaft until it is fully seated.

Pickup Home Sensor

Prerequisites: Remove the pickup assembly.

Tools: T10 Torx driver

Removal



[1] Turn the motor gear to extend the pickup assembly to full length.

[2] Disconnect the connector.

[3] Remove the:

- **(a)** Screw
- **(b)** Pickup home sensor

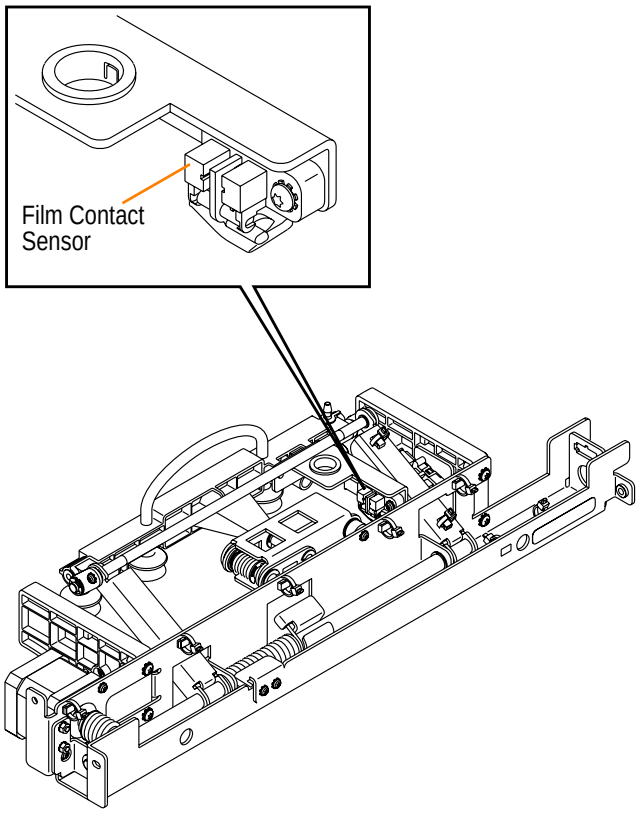
Installation

Reverse the steps in the removal procedure.

Film Contact Sensor

Prerequisites:	Remove the pickup assembly.
Tools:	T10 Torx driver

Removal



[1] Disconnect the connector.

[2] Remove the:

- **(a)** Screw
- **(b)** Film contact sensor

Installation

Reverse the steps in the removal procedure.

Imaging Assembly

Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove:
  - Top cover
  - Right cover
  - Left cover
- To support the imaging assembly during the procedure, move the front and rear shipping brackets into their shipping location (see Installation Instructions, "Moving the Shipping Brackets"). Use at least 2 screws per bracket.

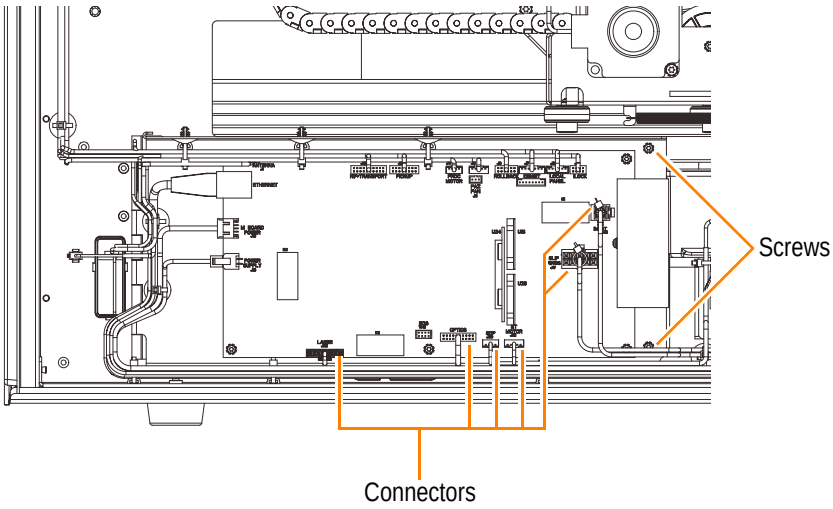
Tools: T20 Torx driver

Removal

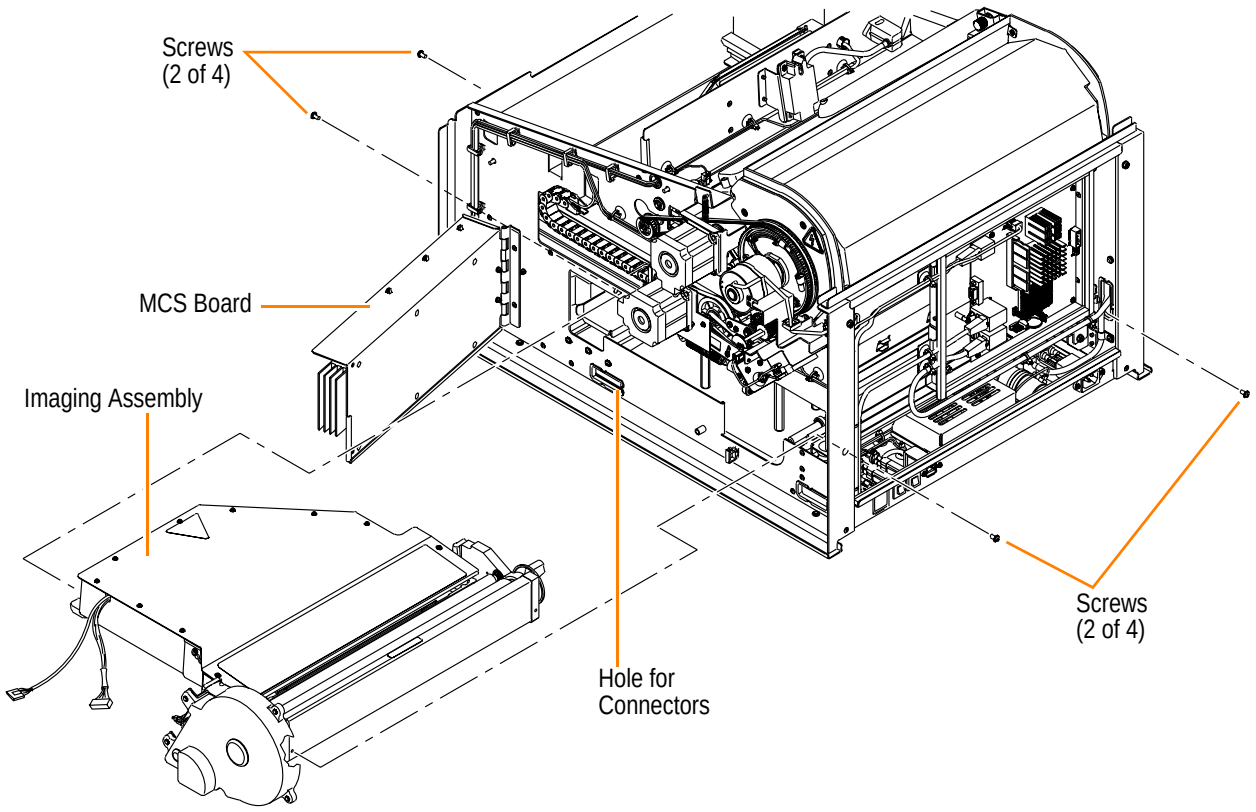
[1] Remove 6 connectors from the MCS board:

- 4 across the bottom of the board (J19, J20, J21, J22)
- 2 on the right side of the board (J15, J17)

[2] Remove 2 screws on the right of the MCS board bracket.



[3] Swing the MCS board open.



[4] Pull the 2 connectors in through the hole in the frame.

[5] Remove the 4 screws that secure the imaging assembly:

- 2 screws from the front guide rail
- 2 screws from the rear guide rail

[6] Carefully remove the imaging assembly and place it on a flat, stable surface.

Installation

Important

You must make a calibration print after installing the new imaging assembly.

[1] Reverse the steps in the removal procedure.

[2] Move the shipping brackets back to the operational position.

[3] Print a calibration image.

[4] Check the Start of Page and Index Delay settings.

Optics and Exposure Transport

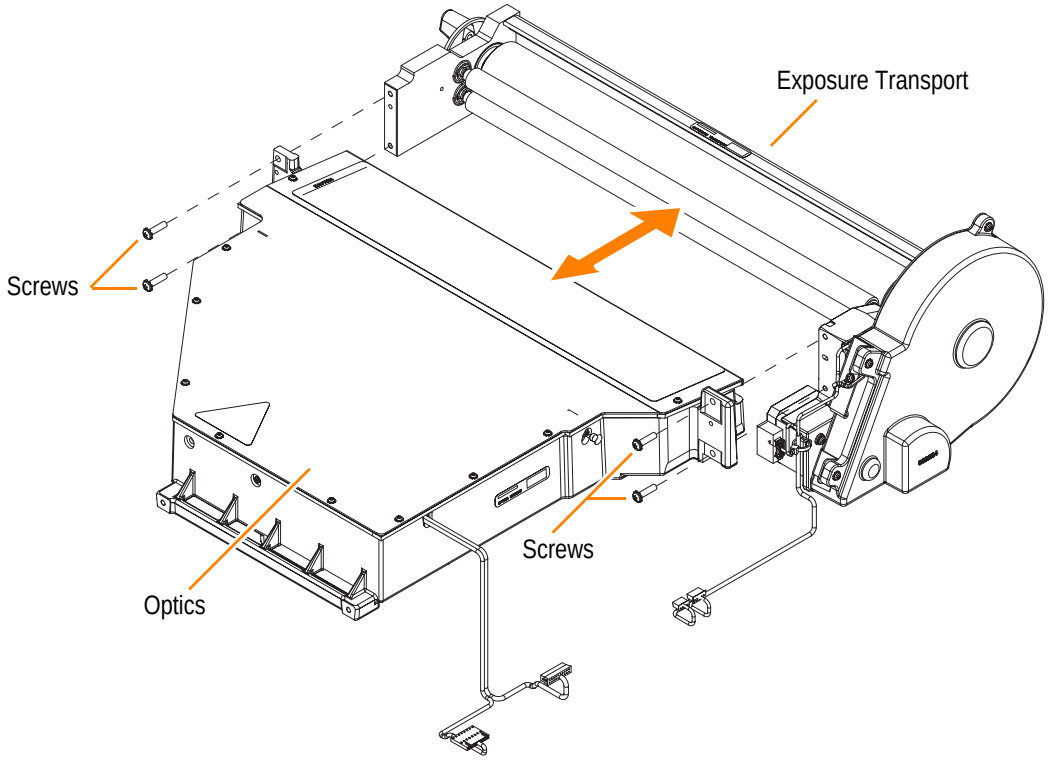
Prerequisites: Remove the imaging assembly.

Tools: T20 Torx driver

Removal

[1] Remove 2 screws on each side of the imaging assembly where the optics and exposure transport are joined.

[2] Carefully separate the optics from the transport.



Installation

Reverse the steps in the removal procedure.

Note

Use the alignment pins near the screw holes to help line up the two components.

Exposure Transport Belt

Prerequisites: Remove the:
- Top cover
- Right cover

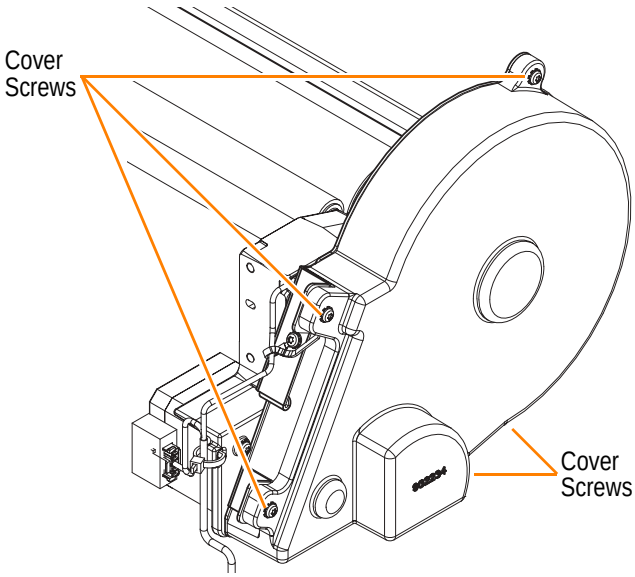
Tools: T10 Torx driver

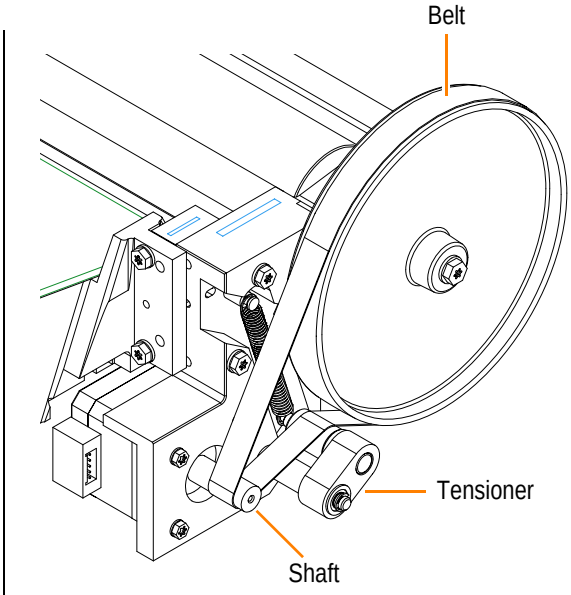
Removal

[1] Remove the:

(a) 5 cover screws

(b) Exposure transport cover





[2] Push down on the tensioner to release pressure on the belt.

[3] Slide the belt off the lower shaft and remove the belt.

Installation

Reverse the steps in the removal procedure.

Exposure Transport Motor

Prerequisites: Remove the:
- Imaging assembly
- Exposure transport belt

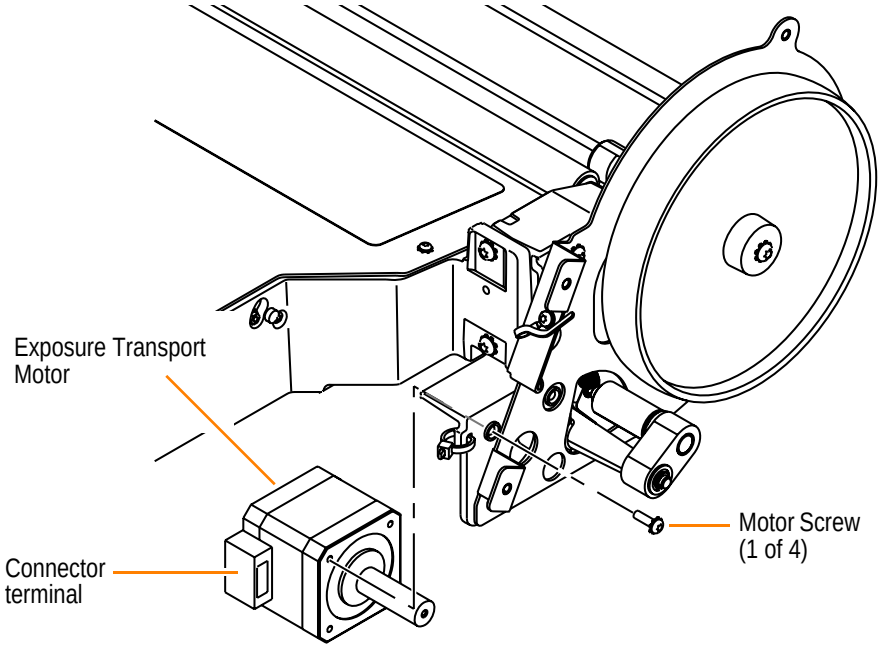
Tools:
- T10 Torx driver
- Small flathead screwdriver (optional)

Removal

[1] Disconnect the connector from the motor.

Note

The connector position is tight. If necessary, use a small flathead screwdriver to remove the connector.



[2] Remove the:

(a) 4 screws

(b) Exposure transport motor

Installation

Reverse the steps in the removal procedure.

Power Supply Board

Prerequisites:
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove the back cover.

Tools: T10 Torx driver

Removal

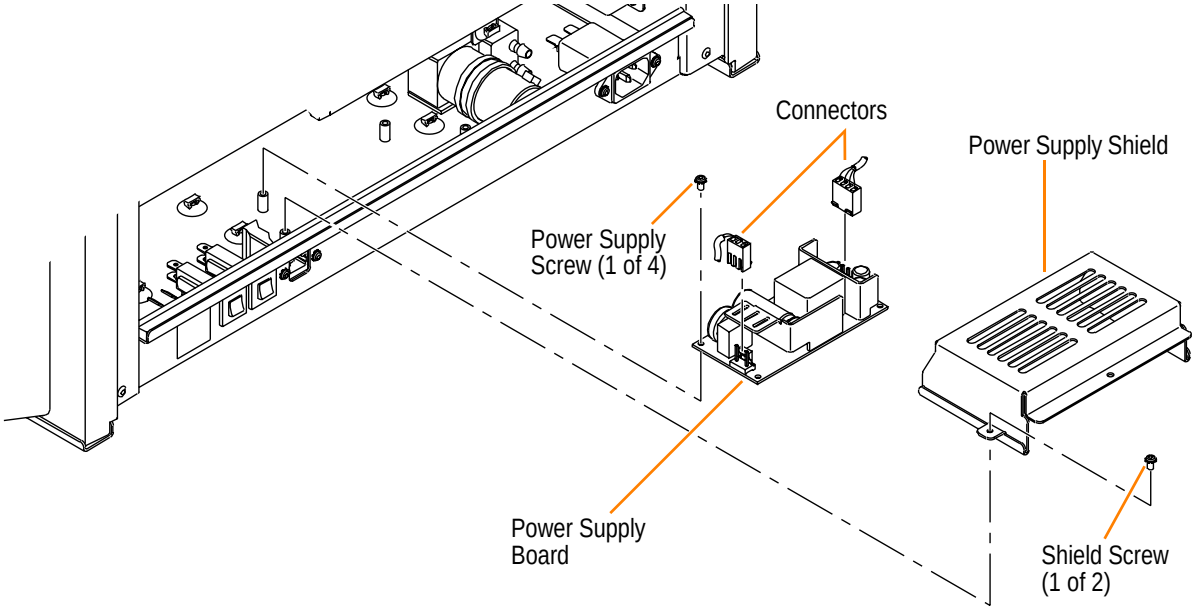
ESD

Possible damage from electrostatic discharge.

When installing circuit boards, always use a wrist strap to prevent damage from electrostatic discharge.

[1] Remove the:
- 2 power supply shield screws
- Power supply shield

[2] Disconnect the input and output connectors, 1 on each side of the power supply board.



[3] Remove the:
- 4 screws that secure the power supply board to the standoffs
- Power supply board

Installation

Reverse the steps in the removal procedure.

Machine Control System (MCS) Board

Prerequisites:

- Perform "Making a Configuration Backup".
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove the:
  - Top cover
  - Right cover

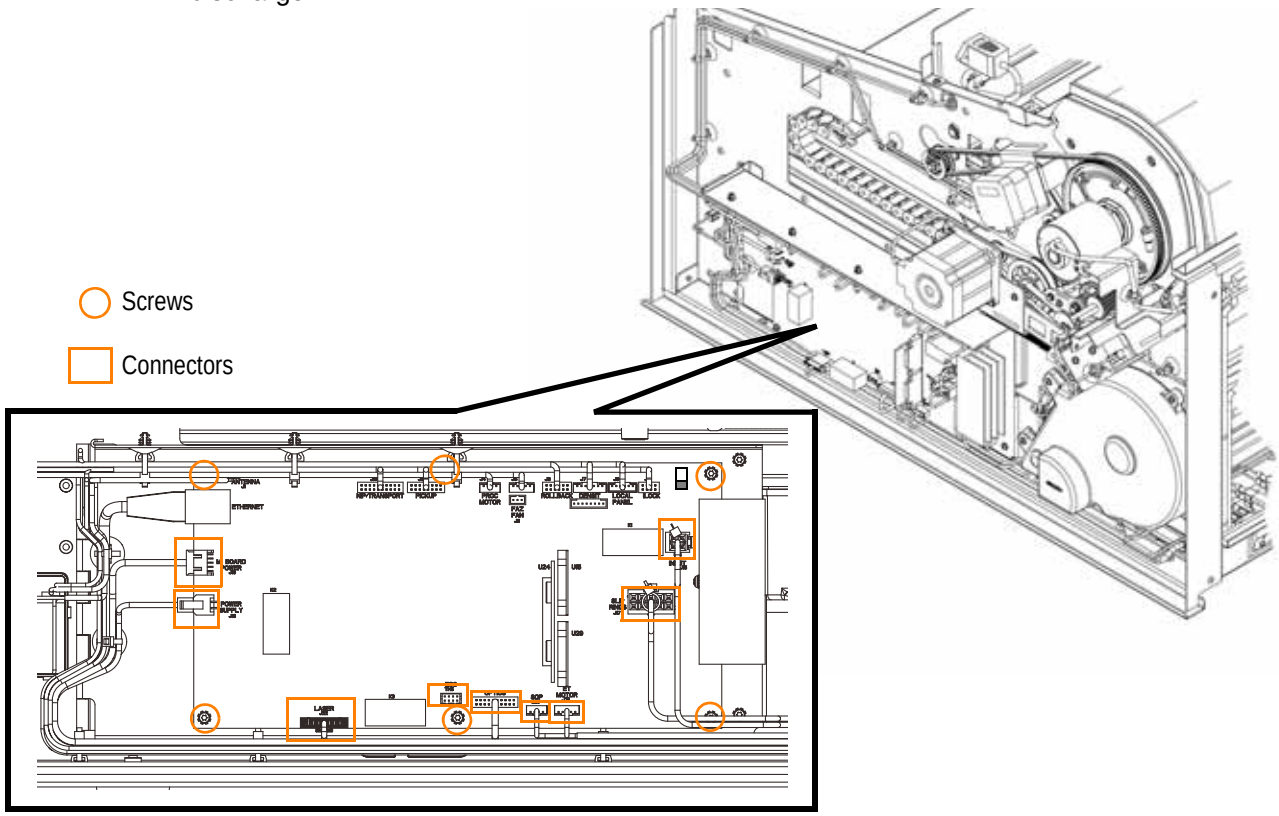
Tools: T10 Torx driver

Removal

ESD

Possible damage from electrostatic discharge.

When installing circuit boards, always use a wrist strap to prevent damage from electrostatic discharge.



[1] Disconnect all connectors.

[2] Remove:

- 6 screws
- Machine Control System (MCS) board

Installation

Reverse the steps in the removal procedure.

Note

If necessary, perform "Restoring the Configuration".

DRE Motherboard Bracket

Prerequisites:

- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove the back cover.

Tools: 7 mm nut driver

Removal

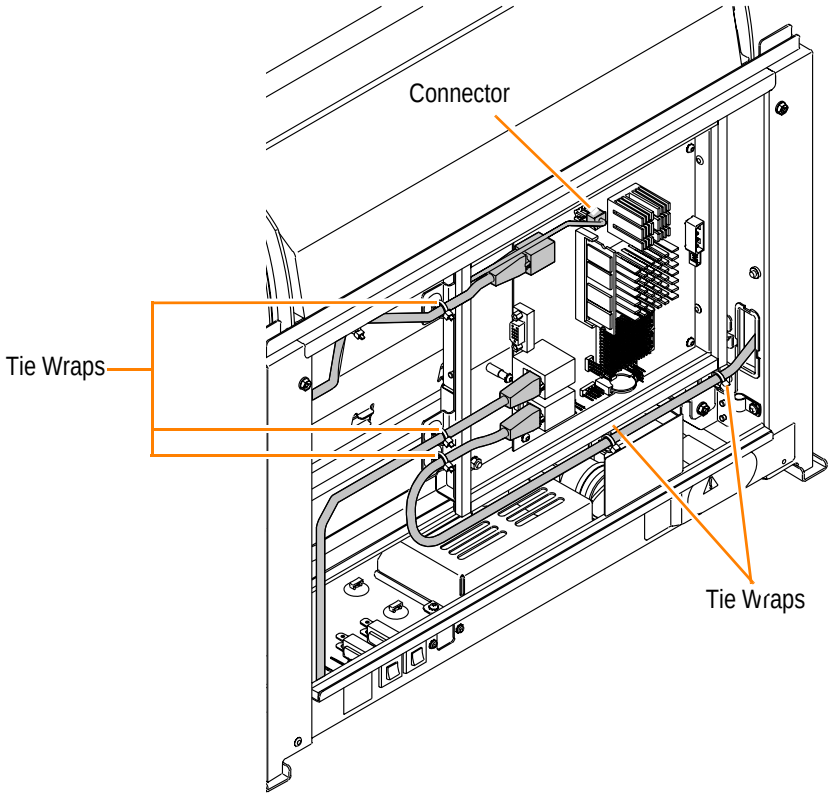
ESD

Possible damage from electrostatic discharge.

When installing circuit boards, always use a wrist strap to prevent damage from electrostatic discharge.

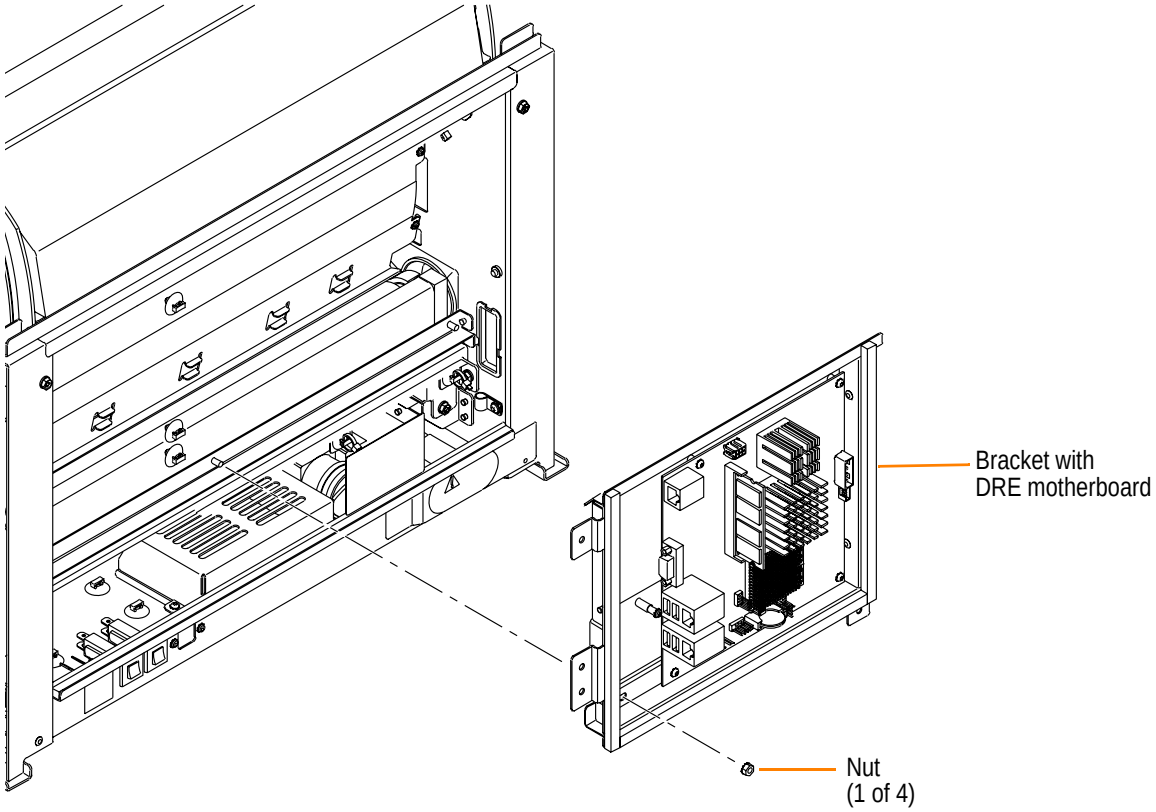
[1] Remove the 5 tie wraps that hold the cables in place near the DRE motherboard bracket.

[2] Disconnect the connector and 3 network cables from the DRE motherboard.



[3] Remove:

- 4 nuts
- Bracket with DRE motherboard



Installation

Reverse the steps in the removal procedure.

Note

If necessary, perform “Restoring the Configuration”.

DRE Motherboard and Flash Drive

Prerequisites:

- Perform "Making a Configuration Backup".
- Close the film cartridge. (Touch the Pause button on the display screen.)
- De-energize the laser imager.
- Disconnect the power cord.
- Remove the back cover.

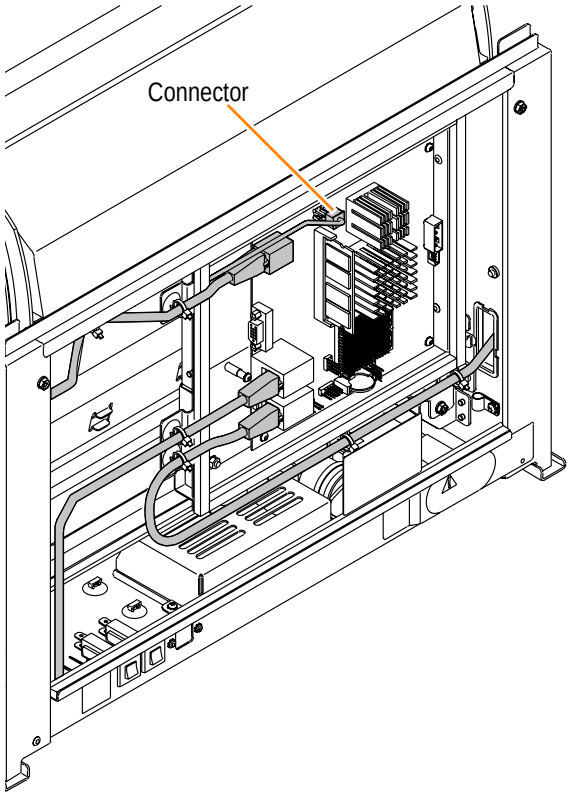
Removal

ESD

Possible damage from electrostatic discharge.

When installing or working with circuit boards, always use a wrist strap to prevent damage from electrostatic discharge.

[1] Disconnect the connector and 3 network cables from the DRE motherboard.

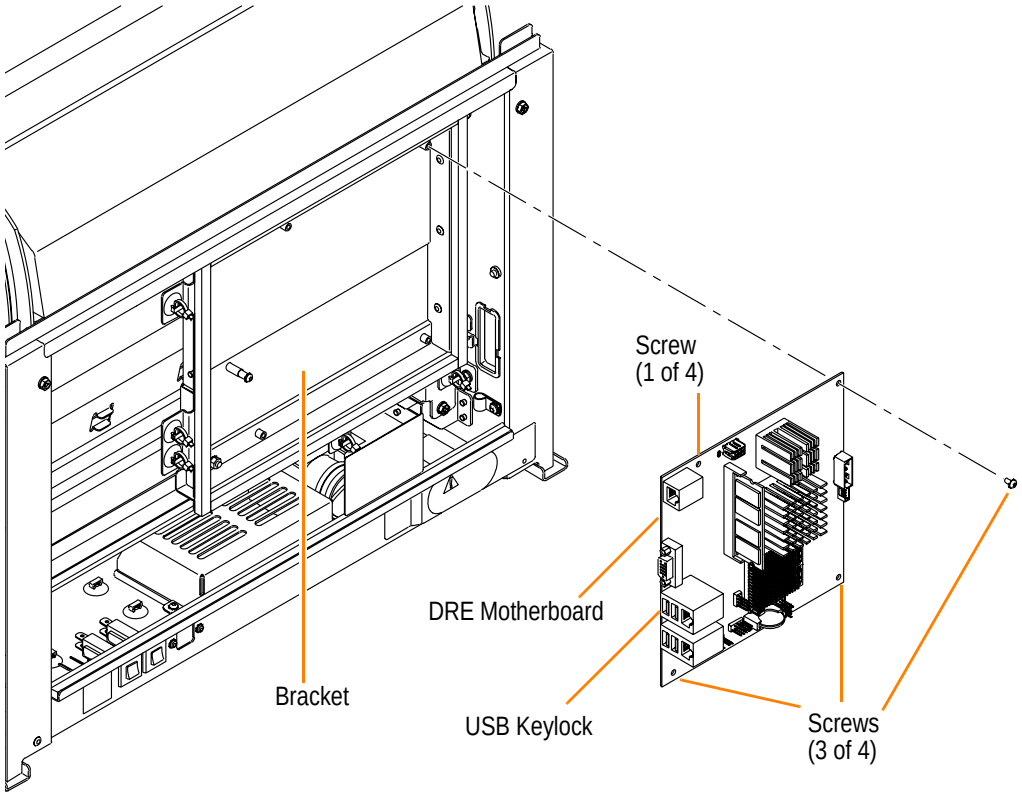


[2] Remove the:

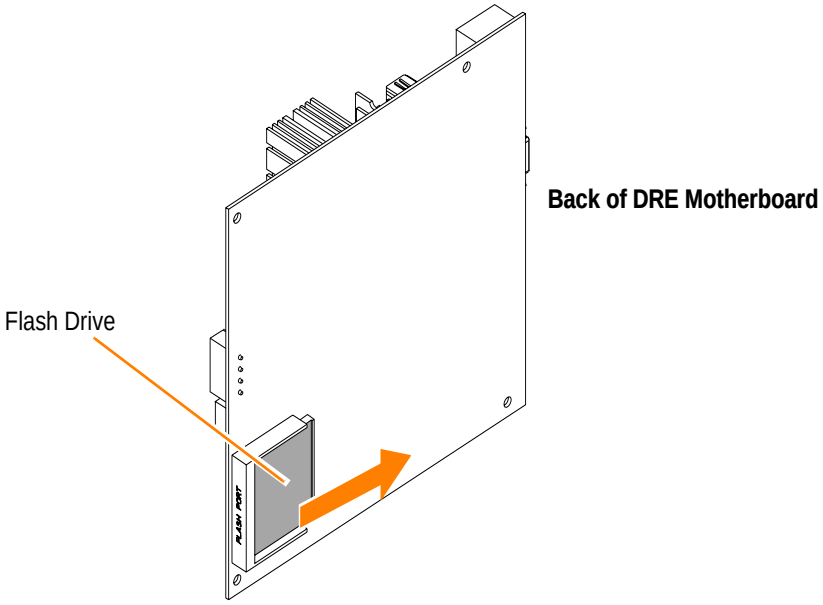
(a) 4 screws that mount the DRE motherboard to the bracket.

(b) DRE motherboard from the bracket.

(c) If you are replacing the motherboard, remove the USB keylock to install on the new motherboard.



[3] Slide the flash drive out from the port on the back of the DRE motherboard.



Installation

Important

If replacing the motherboard, remove the USB keylock from the old motherboard and install it on the new motherboard.

[1] Reverse the steps of the removal procedure.

[2] Energize the imager.

[3] After the system is operational, perform “Restoring the Configuration”.

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Section 3: Preventive Maintenance

Necessary Materials

The materials necessary for performing Preventive Maintenance (PM) are:

- Tools
- PM materials

Required Tools

- Laptop computer with MICROSOFT WINDOWS 98 operating system or higher and MICROSOFT INTERNET EXPLORER
- Service tool
- Crossover cable
- Temperature meter with probe
- Block for probe, kit
- Vacuum cleaner
- Flashlight
- Scraper – recommended blade size is 1.25 × 4.75 in.
- T20 Torx driver
- T10 Torx driver

PM Materials

Part No.	Description	Notes
—	3M Auto-Pak tack cloth	
—	Alcohol wipes	Texwipe TX1065, 50 each
—	Cleaning pads, 10 × 10 cm (4 × 4 in.)	100 each
—	Bag with tie-wraps	Use one bag for each PM.
A4A99G7543	Deodorant filter	Take 3 to the PM site
A4A99G5904	Felt pad assembly	Replace every PM (20,000 cycles)
—	Safety glasses with side shields	

PM Intervals

Important

A Preventive Maintenance (PM) call must be made every 20,000 film cycles. To consistently produce high quality images, the imager must receive periodic routine maintenance. Perform PM procedures:

- Every Emergency Maintenance Call (EM)
- Every 20,000 cycles the display screen displays a message prompting the user to schedule preventive maintenance. The procedures listed in the 20,000 cycle checklist should be performed as soon as possible after the 20,000 cycle PM prompt.

Modifications

Important

Check the modification status of the imager at each PM call. If any Type 1 modifications are outstanding, install them during the call. It is important to fit modifications promptly at scheduled maintenance times to improve and maintain imager performance to corporate and customer expectations.

EM Call Checklist

If the number of prints since the last PM is more than 18,500, use the 20,000 Cycle PM Procedure instead of the EM call checklist.

[1] Repair the print problem that caused the EM call.

[2] Touch the Pause icon on the display screen to close the film cartridge.

[3] De-energize the laser imager, and then disconnect the power cord.

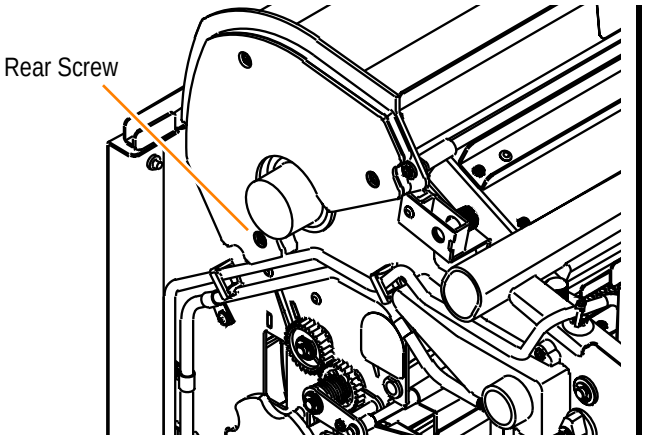
[4] Remove the:

- Top cover
- Left cover (see Adjustments and Replacements, “Left cover”).
- Right cover (see Adjustments and Replacements, “Right Cover”).

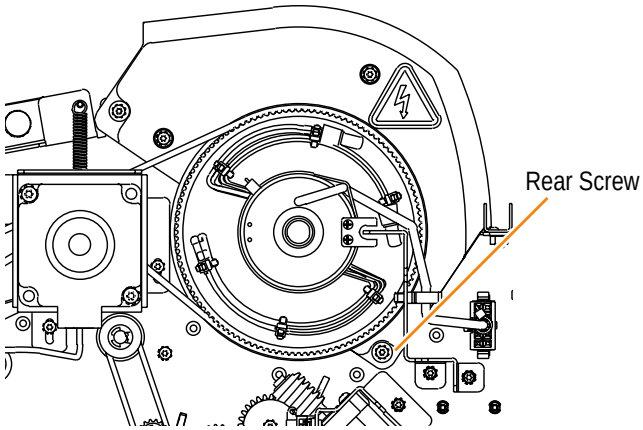
Caution

The processor drum is very hot.

[5] Remove the 2 rear screws on the processor drum cover, and then pivot the cover open toward the front of the imager.



Left Side of Imager



Right Side of Imager

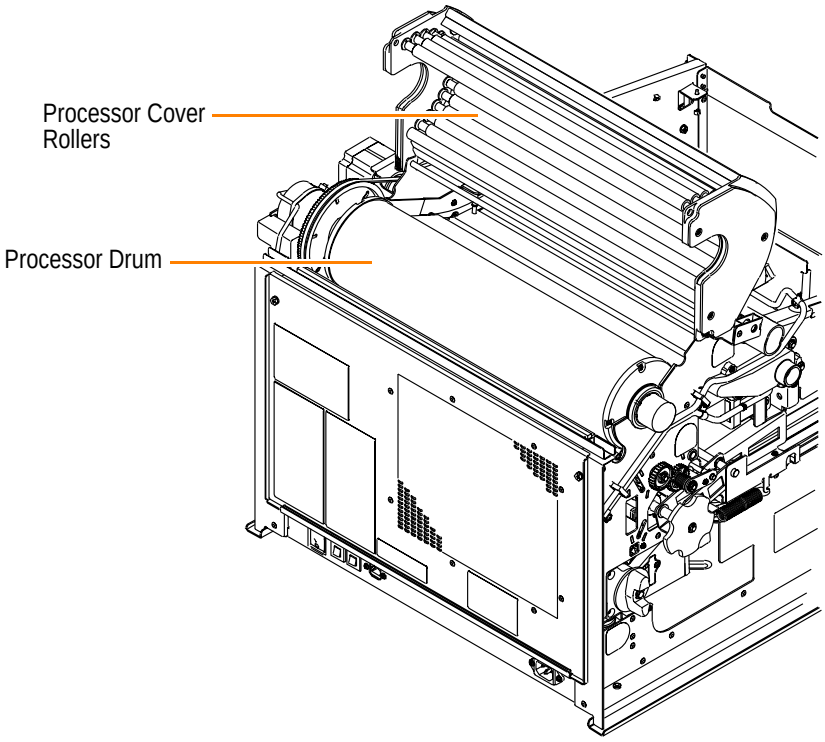
[6] Check the processor drum for damage.

If the processor drum is damaged, replace it (see Adjustments and Replacements, “Processor Drum”).

Caution

Isopropyl alcohol is highly flammable. Follow the manufacturer's instructions for safe use and handling.

[7] Use alcohol wipes to clean the processor drum and processor cover rollers.



Note

After cleaning, place the used wipes in a bag, close the bag with a tie-wrap, and dispose of it according to local ordinances.

[8] If you installed a new processor drum, calibrate the processor drum temperature (see Adjustments and Replacements, "Processor—Drum Temperature Adjustment").

Performing the PM

Every PM, perform all of the following procedures in the order listed:

[1] Print a flat-field gray film to compare against the film after PM is complete.

(a) In the service tool, select **Diagnostics > DRE > Advanced Test Print**.

(b) In the Test Profile drop-down list, select **Flat1.8**.

(c) Click **Run**.

[2] Touch the Pause icon on the display screen to close the film cartridge.

[3] Open the film supply and remove the film cartridge. Leave the film supply open.

[4] De-energize the imager, and then disconnect the power cord.

[5] Remove the:

- Top cover (see Adjustments and Replacements, "Top Cover").
- Left cover (see Adjustments and Replacements, "Left cover").
- Right cover (see Adjustments and Replacements, "Right Cover").

Caution

The processor drum is very hot. Allow it to cool for 10 minutes before cleaning.

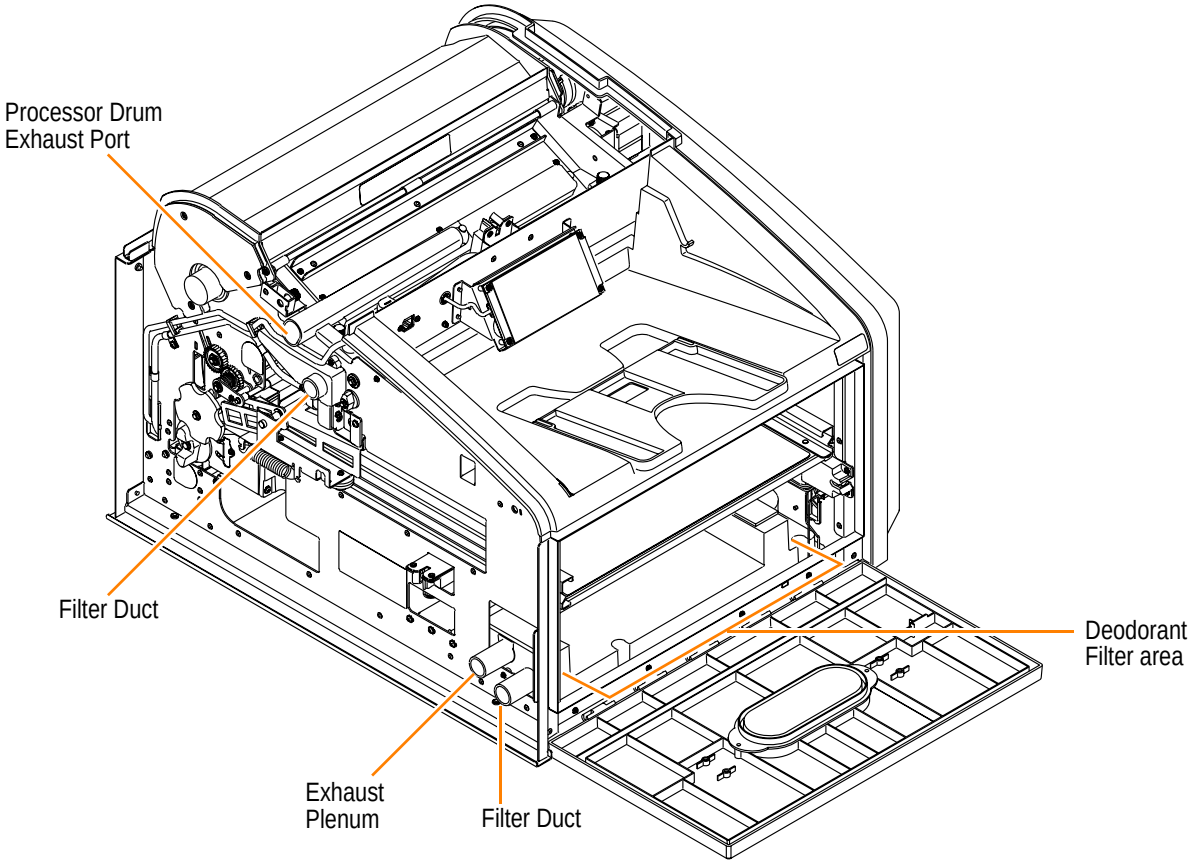
[6] Pivot open the processor drum cover.

Continue with the next steps while the processor drum cools.

[7] Remove the deodorant filter.

[8] Use a vacuum cleaner to clean the:

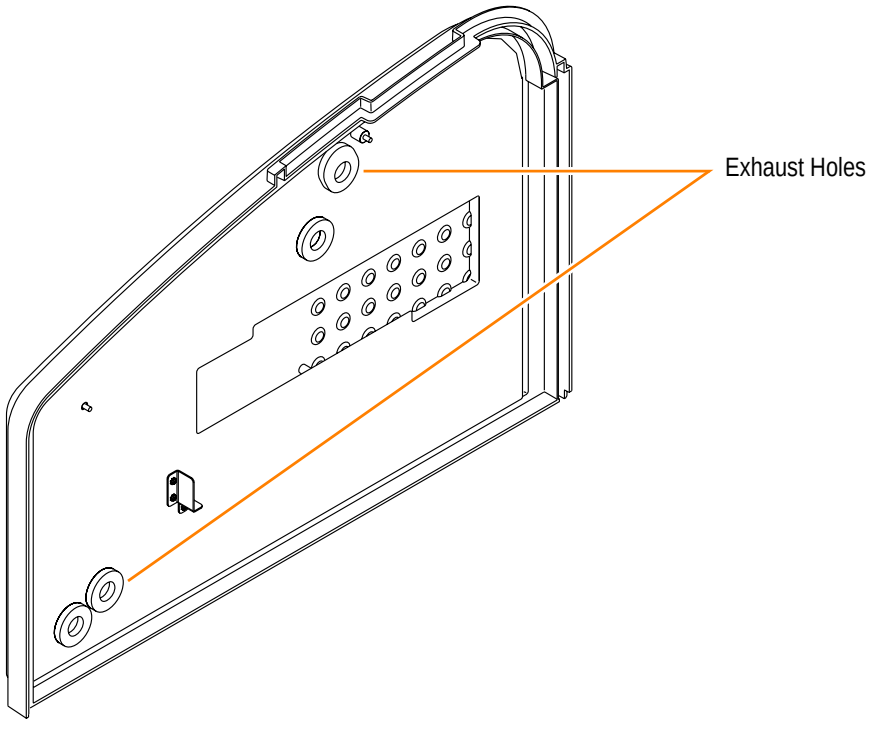
- Deodorant filter area
- Filter duct
- Exhaust plenum



[9] On the left side of the imager, vacuum the:

- Processor drum exhaust port
- Filter duct

[10] Vacuum the 2 exhaust holes on the left cover.



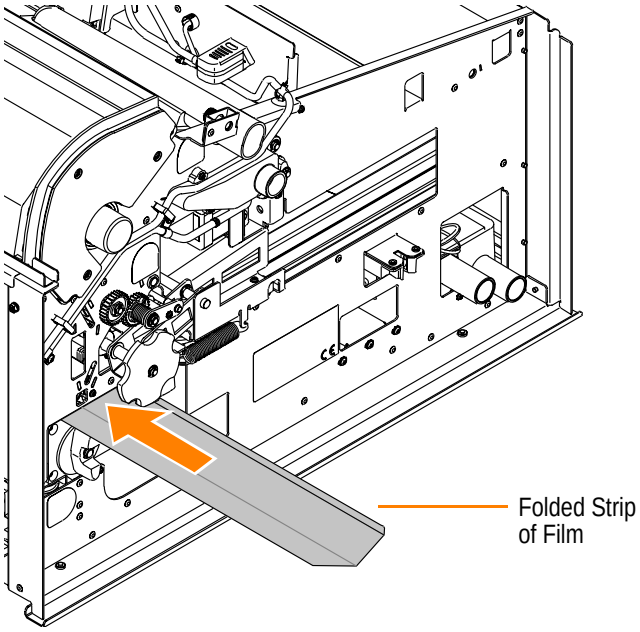
[11] Take a sheet of the largest size film available and cut it lengthwise to make a strip 8 cm (3 in.) wide.

Note

The strip is used to cover and protect the imaging assembly from debris during cleaning.

[12] Fold the film strip lengthwise to form a V.

[13] From the left side of the imager, insert the strip over the imaging roller to cover it.



[14] Clean the processor drum.

- Wipe the processor drum with alcohol wipes in one direction with an even steady pressure. Rotate the processor drum while wiping.
- Check the processor drum for imperfections, gouges, and areas of excessive buildup of debris.

[15] Clean and inspect the processor cover rollers.

[16] Pivot the processor drum cover closed.

[17] Pivot the heat shield open.

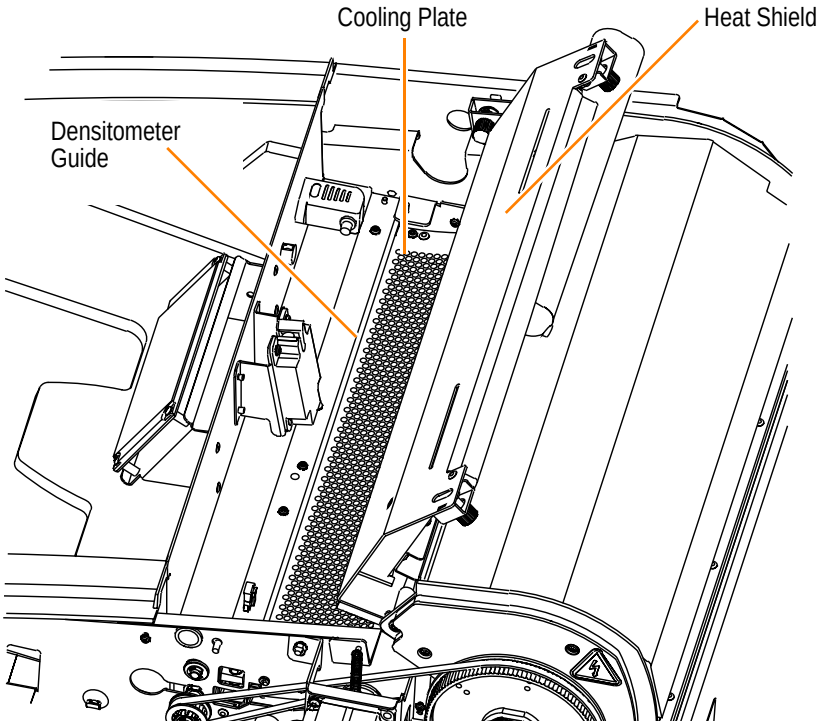
[18] Remove the felt pad assembly from the diverter assembly (see Adjustments and Replacements, “Felt Pad Assembly”).

Caution

Isopropyl alcohol is highly flammable. Follow the manufacturer's instructions for safe use and handling.

[19] Use alcohol wipes and a scraper to inspect and clean debris and buildup from the:

- Heat shield, including the bottom side of the shield
- Cooling plate
- Densitometer guide



[20] Vacuum the:

- Top cover
- Film supply
- Entire processor assembly

[21] Install a new felt pad assembly with 2 screws (see Adjustments and Replacements, "Felt Pad Assembly").

[22] Carefully remove the film you inserted over the imaging roller and discard it.

[23] Close the heat shield.

[24] Install the 2 rear screws on the processor drum cover.

[25] Install the:

- New deodorant filter
- Right cover
- Left cover
- Top cover

[26] Close the film supply.

[27] Place all used alcohol wipes and cleaning pads in a bag, close the bag with a tie-wrap, and then dispose of it according to local ordinances.

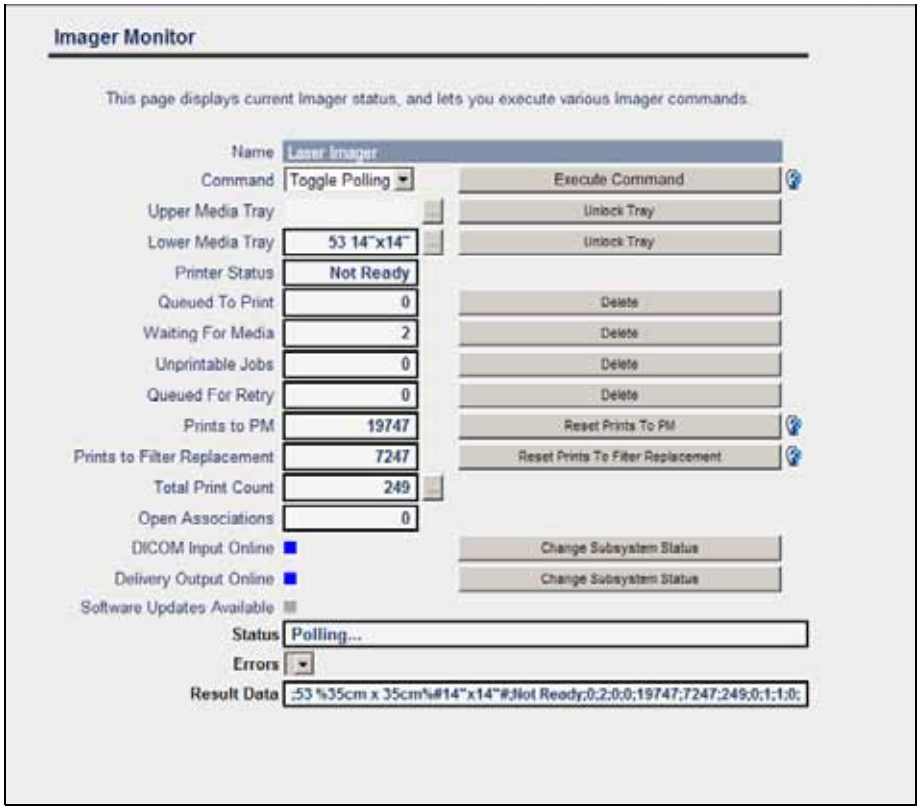
[28] Energize the imager.

[29] Perform "Resetting the PM Counts and Changing the Service History".

Resetting the PM Counts and Changing the Service History

[1] In the service tool, select **Monitoring and Control > Imager Monitor**.

The Imager Monitor screen displays.



[2] Click:

- **Reset Prints To PM**

  This action also enters the PM record into the service history.

- **Reset Prints To Filter Replacement**

[3] Perform “Completing the PM”.

Completing the PM

[1] Wait while the processor warms to Ready.

[2] Check the temperature of the drum (see Adjustments and Replacements, “Processor—Drum Temperature Adjustment”).

[3] If necessary, adjust the temperature.

[4] Make a flat-field gray test print.

[5] Compare the test print with the test print made before the PM.

[6] Make a print of a customer image.

[7] Check the quality of the print with the customer.

[8] Leave 2 deodorant filters with the customer.

Section 4: Diagnostics

Using the Service Switch

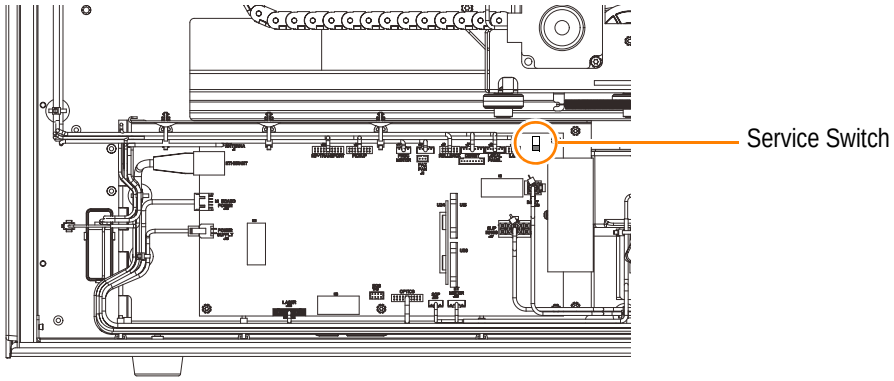
The service switch is located behind the right cover at the top right corner of the MCS board.

[1] Touch the Pause icon on the display screen to close the film cartridge.

[2] De-energize the laser imager, and then disconnect the power cord.

[3] Remove the:

- Top cover (see Adjustments and Replacements, “Top Cover”).
- Right cover (see Adjustments and Replacements, “Right Cover”).

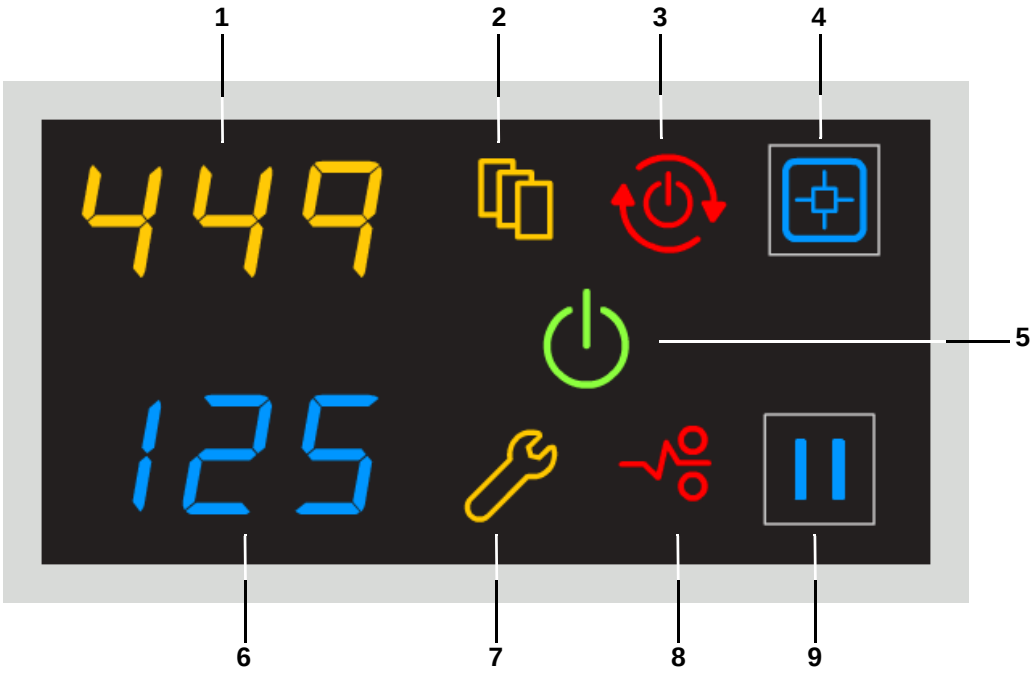


[4] To activate the service switch, push the button down to SERV.

[5] To deactivate the service switch, push the button up to NORMAL.

The Service Mode icon disappears from the display screen.

Display Screen Symbols



1 **Error code**. When lit, this code displays an applicable code for the error, such as film jam, restart error condition, or filter change is needed.

2 **Film Size/Queue symbol**. When lit, this symbol indicates the status of media in the image, such as requested media is not loaded.

3 **Restart symbol**. Indicates an error condition. It requires that you power the laser imager on/off.

4 **Calibration symbol**. When lit, this symbol indicates that a calibration is in process.

5 **Status/Ready symbol**. Indicates that the laser imager is ready to print or, if it is blinking, that the laser imager is warming up.

6 **Film Size/Count code**. This code changes to indicate the film size loaded and the film count left in the cartridge. If zero, it indicates an empty film cartridge.

7 **Wrench symbol**. Indicates that a filter change or preventive maintenance is needed.

8 **Film Jam symbol**. Indicates that a film jam occurred.

9 **Pause symbol**. When blinking, the film cartridge cover is open.

Display Screen Symbols—Detailed Descriptions

Symbol	Description
 	**Power** • When steady **green**, the laser imager is ready to print. • When blinking green, the laser imager is processing or printing. • When steady **yellow**, attention is needed. Refer to other symbol descriptions for details. • When blinking yellow, the laser imager is warming up. The screen also displays the time-until-ready countdown.
 	**Error or Status Code** • A **3**-digit code displays when an error or status condition is present. If the laser imager is on and a 3-digit code does not display, the imager is operating normally. • A **2**-digit code displays the requested film size if the loaded film size does not match the requested size. The code alternates between the height and width of the requested size.
 	**Film Count and Dimensions** • Displays the number of films remaining in the film cartridge or the loaded film size • Displays the height and width of the loaded film size
 	**Calibrate** • When steady **blue**, press this symbol to initiate calibration. • When blinking blue, calibration is in process. • When **yellow**, calibration failed or a calibration error occurred.
	**Pause** • During normal operation, this symbol is off. • When the film cartridge cover is open, this symbol is on. – You can press the symbol to close the film cartridge cover. – To avoid exposing the film to light, *do not open the film supply until the symbol is off*.
	**Film Size** • When this symbol is on, the wrong film size is loaded for the requested print job. The Status Code display shows the requested film size. • You can press and hold the symbol for five seconds to delete all print requests.
	**Restart** You must restart the laser imager. An error code also displays to indicate why the restart is required.
	**Film Jam** Film is jammed. An error code also displays to indicate the location of the jam.
	**Maintenance** Preventive maintenance is required. An error code also displays to indicate the required action.

DICOM Printer Status Messages

In response to a DICOM printer N-GET status request, a printer status message and printer status info message are returned to the requesting Service Class User (SCU). Every error has an associated printer status info message. If more than one (1) error exists when a printer N-GET request is received, a status message is sent in response according to an established priority. The following table shows the DICOM printer status and status info messages:

Printer Status	Printer Status Info	Printer Status	Printer Status Info
FAILURE	ELEC DOWN	WARNING	BAD SUPPLY MGZ
	PRINTER DOWN		CALIBRATION ERR
	PROC DOWN		CHECK PRINTER
			COVER OPEN
			EMPTY MEDIASZ MEDIATP
			FILM JAM
			FILM TRANS ERR
			PROC INIT
			PRINTER INIT
			PRINTER OFFLINE

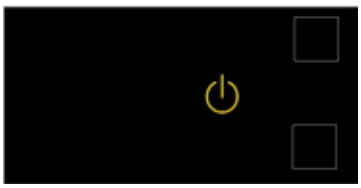
Machine Control System (MCS) Imager Status Messages

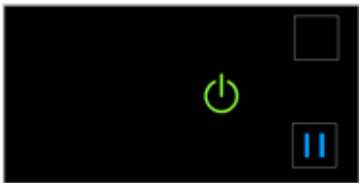
The following table describes how the display screen and Web Portal indicate imager status to the user:

Printer Status	Display Screen	Web Portal (remote) Display	DICOM Status	Description
Service Mode		Service Mode	WARNING / PRINTER OFFLINE	The service override switch is enabled. The laser imager is not ready.
Offline		Printing Disabled	WARNING / PRINTER OFFLINE	Printing/delivery has been disabled.
Failed	 (Code will vary)	Failed	See error tables	An error occurred that prevents printing.
Self-test		Self-test	WARNING / PRINTER INIT	This occurs when power is first applied to the MCS.
Warming up		Warming=xx	WARNING / PROC INIT	The processor is currently warming up and will not be ready to print for xx minutes.
Door Open		Cover Open	WARNING / COVER OPEN	A laser imager cover is open. Laser imager not ready. (A side cover could be off.)
Printing		Printing	NORMAL	The laser imager is printing.
Ready		Ready	NORMAL	The laser imager is online and the processor has reached operating temperature.
Pause (cartridge close requested)		Not Ready	WARNING / COVER OPEN	The laser imager is completing prints in progress.

Film Supply Status Messages

The following table describes how the display screen and Web Portal indicate film supply status to the user:

Film Supply State	Display Screen	Web Portal Display	Description
Failed		Failed	An error occurred that affects normal operation. The film cartridge is currently not usable. Reinsert the cartridge. If the error recurs, insert a new film cartridge.
Calibrating		Calibrating	A calibration is in progress for this film cartridge.
Film cartridge empty		Empty and/or sheet count of 0	The film cartridge is inserted but the sheet count is 0. Insert a new film cartridge.
Manual Mode		AIQC Off (with normal tray information)	The film in this cartridge does not meet AIQC standards. However, the laser imager prints if ready.
Invalid film cartridge		Invalid Film Tray	There is a film cartridge in the film supply, but it does not contain a liner/ RF tag. Install a new film cartridge.
Ready		Normal Tray Info	The film cartridge is ready to use.
Requires Calibration		Requires Calibration	The film cartridge must be calibrated before the laser imager can print. Initiation of the calibration may require user action.
Film cartridge not detected		No Film Tray	The film cartridge is not fully inserted into the laser imager. Insert the cartridge.

Film Supply State	Display Screen	Web Portal Display	Description
Not Ready	Varies	Not Ready	When the conditions are corrected, the laser imager can print.
Cartridge closure pending		Pause Requested	You pressed the Pause button, but the film cartridge has not started to close because films are still moving through the imager. When the cartridge finishes closing, the Pause symbol turns off and you can remove the film cartridge.

Job Manager Status Messages

The following table describes how the display screen and Web Portal indicate job status to the user:

Job Manager Status	Display Screen	Web Portal Display	Description
Active	Not applicable	Shows how many jobs having this status are queued	The laser imager is accepting DICOM job requests and film is available for all current jobs.
No Media	 (Status Code shows requested size)	Shows how many jobs having this status are queued	The laser imager is accepting DICOM job requests, but film of the correct size and type is not available for at least one current job.
Offline		DICOM Offline	The laser imager cannot accept any DICOM job requests. Restart the imager.

Condition Codes

Subsystems in the laser imager

Note

Each subsystem has a range of error numbers. The numbers have two parts, a subsystem ID number and an error ID number. This number system keeps the error ID numbers given to software components in other laser imagers for similar errors. The subsystem ID and error number are only separated by a hyphen on the Web Portal and not on the display screen or in the error log. For example, the Web Portal displays “20-209” while the error log displays “20209.”

Subsystem IDs

Subsystem ID	Subsystem/Component Name	Error ID
MIM Core Components:		
01	Configuration and Control Subsystem	01-xxx
04	DICOM Input Print Service SCP Subsystem	04-xxx
05	Study Reclamation Subsystem	05-xxx
06	Delivery Subsystem	06-xxx
DRE:		
10	Delivery Subsystem (also contains certain system-wide definitions)	10-xxx
13–14	Service tool or Web Portal User Interface	13-xxx, 14-xxx
MCS:		
20	General MCS System	20-xxx
21	Film Supply Drawer	21-xxx
25	RF Tag	25-xxx
26	Film Transport (jams and film path controller errors)	26-xxx
27	Optics (beam power micro and FPGA)	27-xxx
28	Processor	28-xxx
29	Densitometer	29-xxx
36	Display Screen	36-xxx

Severity Levels

The following table describes the severity levels associated with condition codes for the laser imager:

Severity	Description	Example	Display Screen Notify (Notes 1 and 2)	Web Portal Notify (Notes 1 and 2)	Recovery
0=Fatal	A failure occurred and the laser imager will have to be restarted.	• System resource failure • Hardware failures for unique subsystems • Configuration/registry failure • Software init failure • Network unavailable	Yes	Yes	The laser imager must be restarted.
1=Alert	A failure occurred, but it should be temporary and correctable by the user.	Film jam	Yes	Yes	The laser imager should be able to continue after the problem is corrected. If the failure is film supply specific, the laser imager should be able to continue operating using the other film supply.
2=Warning	An event occurred that should notify the user.	Connection lost (SCU to SCP)	Yes	Yes	No recovery needed.
3=Notify	An event occurred, but was automatically recovered.	• Communication retries • Film pickup retry • Approaching warning sidebands or limits of adjustment	No	No	A notice is written to the log. The laser imager should be able to continue automatically.
4=Auxiliary	Status information	• Indicate status of a supply cartridge, such as film saver on, or manual mode • Indicate status of the laser imager, such as cover open, or film cartridge missing	Yes	No	Does not impact laser imager operation.

Note 1: This table describes general behavior—there are exceptions to these generalizations, predominantly in the MIM Core Conditions Section. See the individual errors for specific information about Web Portal and Display Screen notification and alarms.

Note 2: The display screen is limited to very simple communication scheme (codes and lights), and so it makes use of the auxiliary codes; the Web Portal's more sophisticated user interface does not require auxiliary codes in order to detect and communicate the same conditions.

Condition Code: 01-000 – General Configuration and Control Subsystem Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	General Error in Configuration and Control Subsystem	NORMAL	3-Notify

Description A general error occurred in the Configuration and Control Subsystem.

System Impact Unknown. This is an unexpected or unknown error; it is not possible to document specific details.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_CONFIG_CONTROL

Condition Code: 01-001 – Maximum Number of Allowed Restarts for a Subsystem or Component Has Been Exceeded

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Maximum Number of Restarts Exceeded for xxxx (where xxxx is the subsystem name)	NORMAL	2-Warning

Description When a subsystem or component generates a non-recoverable, Configuration-and-Control will attempt to shut down and restart it. This error means that Configuration-and-Control has initiated more than the configured number of allowed restarts.

System Impact The system will continue to run normally, unless the subsystem or component in question cannot run any longer.

User Action None

DICOM Printer Status NORMAL

Unique Symb. ID ERR_EXCEED_MAX_RESTARTS

Condition Code: 01-002 – Error Reading Configuration Information

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Error reading configuration information	NORMAL	2-Warning

Description An error occurred while reading the Configuration-and-Control subsystem configuration information.

System Impact The Configuration-and-Control subsystem may not execute correctly.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_READING_CONFIG

Condition Code: 01-004 – Error Starting a Subsystem

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIM Core: Internal Software Error	Error starting subsystem xxxx (where xxxx is the subsystem name)	NORMAL	1-Alert

Description An error occurred while attempting to start a subsystem.

System Impact The subsystem in question will not be started.

User Action

1. Restart the laser imager.
2. If the error persists, call for service.

Show at DS True

DICOM Printer Status NORMAL

Unique Symb. ID ERR_SUBSYSTEM_START

Note

The error will only display if message queueing facilities are running.

Condition Code: 01-005 – Error Stopping a Subsystem

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Error stopping subsystem xxxx (where xxxx is the subsystem name)	NORMAL	1-Alert

Description An error occurred while attempting to stop a subsystem.

System Impact The subsystem in question may still be running, in which case full shutdown will not be possible.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_SUBSYSTEM_STOP

Note

Rationale for not reporting to user: The user requests shutdown of the entire laser imager, not just a subsystem. The OS will eventually shut down regardless of whether all subsystems shut down successfully.

Condition Code: 01-007 – General Subsystem Communication Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Configuration and Control Subsystem cannot communicate with subsystem xxxx (where xxxx is the subsystem name)	NORMAL	2-Warning

Description An unknown error occurred while communicating with a subsystem.

System Impact Configuration-and-Control will attempt to re-establish communications with the subsystem in question. If communication is lost, the subsystem will be shut down by force and restarted.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_SUBSYSTEM_COM

Condition Code: 01-008 – All Subsystems Have Been Started

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	All subsystems successfully started	NORMAL	3-Notify

Description All subsystems to be started by the Configuration-and-Control subsystem have been started.

Note
This code will not be sent as a message.

System Impact None. The system will function normally. [SI-0]

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_ALL_START_COM

Condition Code: 01-009 – Operating System Could Not Be Shut Down

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	OS could not be shut down	NORMAL	3-Notify

Description The operating system did not complete the shutdown in the expected amount of time.

Note
This code will not be sent as a message.

System Impact None. The system will function normally. [SI-0]

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_NO_OS_SHUTDOWN

Condition Code: 01-010 – A Subsystem Terminated Abnormally

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Subsystem xxxx terminated (where xxxx is the system name)	NORMAL	3-Notify

Description A subsystem that was started by the Configuration-and-Control subsystem terminated abnormally.

Note

This code will not be sent as a message.

System Impact The subsystem will be temporarily unavailable until it is restarted by the Configuration-and-Control subsystem. Depending on the subsystem, it may cause associations to be rejected or printing to be delayed.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_ABNORMAL_TERMINATION

Condition Code: 04-000 – General DICOM Input Print SCP Subsystem Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	General Error in DICOM Input Print SCP Subsystem	NORMAL	3-Notify

Description A general error occurred in the DICOM Input Print Service Class Provider (SCP) Subsystem.

System Impact Unknown. This is an unexpected or unknown error; it is not possible to document specific details.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_GEN_DICOM

Condition Code: 04-100 – Limit on Number of Simultaneous Associations

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Maximum Number of Associations Exceeded	NORMAL	1-Alert

Description The maximum number of associations configured has been exceeded. The association is rejected.

System Impact The Service Class User (SCU) will not be able to open an association, and therefore will not be able to deliver a print job.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_EXCEED_ASSOC

Note

Rationale for not reporting to user: This problem is likely transient. If it is not, the user cannot correct this from the imager.

Additional DICOM information: There is a specific result/reason code available for this circumstance: -Rejected transient/3-Local limit exceeded.

Condition Code: 04-101 – The Called AE Title Does Not Correspond to a Recognized Printer

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	No Destination Matching Called AE Title	NORMAL	1-Alert

Description The AE title did not map to a destination that is currently available at this Service Class Provider (SCP).

System Impact The SCU will not be able to open an association, and therefore will not be able to deliver a print job.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_AE_NOT_RECOGNIZED

Note

Rationale for not reporting to user: This is a DICOM SCU configuration problem, not an operational error. The user cannot correct this from the imager.

Additional DICOM information: There is a specific result/reason code available for this circumstance: 1-Rejected permanent/7-Called AE title not recognized.

Condition Code: 04-110 – Invalid Association Request

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	The association request was rejected	NORMAL	1-Alert

Description An association request was rejected for one or more of the following reasons:

- The Service Class User (SCU) did not specify an implementation UID.
- The SCU did not specify an application context name.
- The protocol version is a two-byte field; bit zero (0) must be one (1).
- The SCU did not specify any presentation context items to be negotiated.
- None of the proposed presentation context items were successfully negotiated. This may happen, for example, when a DICOM Store SCU tries to communicate with a DICOM Print SCP.

System Impact The SCU will not be able to open an association, and therefore will not be able to deliver a print job.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_INVALID_ASSOCIATION

Note

Rationale for not reporting to user: This is a DICOM SCU configuration problem, not an operational error. The user cannot correct this from the imager.

Additional DICOM information: There is a specific result/reason code available for this circumstance: 1-Rejected permanent/7-Called AE title not recognized.

Condition Code: 04-200 – Disk Full

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIM Core: Disk Full	Disk Full	NORMAL	1-Alert

Description The partition of the disk where studies are stored is full.

System Impact If a print request is in progress, it cannot be completed. New studies will not be accepted.

User Action

1. Load the requested film type for jobs waiting to be printed.
2. If the error persists, call for service.

Show at DS True

DICOM Printer Status NORMAL

Unique Symb. ID ERR_DISK_FULL

Condition Code: 04-201 – Keep-Alive Message Failed

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Send Keep-Alive Message Failed	NORMAL	2-Warning

Description The Service Class Provider (SCP) may be configured to periodically send packets to maintain a TCP/IP connection with a Service Class User (SCU), to which the SCU should reply. This error means that the SCU did not reply to the SCP's "Are You There?" packet.

System Impact The SCP will abort the association tied to this connection.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_KEEP_ALIVE_FAILED

Condition Code: 04-202 – Connection Has Been Lost

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Network Connection Lost	NORMAL	2-Warning

Description The Service Class Provider (SCP) has lost the network connection to a Service Class User (SCU).

System Impact The SCP will abort the association tied to this connection.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_CONNECTION_LOST

Condition Code: 04-300 – Referenced PLUT is Missing

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Referencing Missing PLUT	NORMAL	1-Alert

Description The referenced preference look up table (PLUT) specified by tag (2050,0500) in the film box or image box is not present.

System Impact The MIM core software will not process the current print job.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_MISSING_PLUT

Note

Rationale for not reporting to user: This is a DICOM SCU configuration problem, not an operational error. The user cannot correct this from the imager. (This problem likely occurs only on first-time SCU setup.)

Condition Code: 04-301 – Missing Required Attribute

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Required attribute xxxx (GGGG,EEEE) is missing from YYYY SOP (where xxxx (GGGG,EEEE) is the tag name and number, and YYYY is SOP name)	NORMAL	1-Alert

Description A required attribute for the specified SOP class is missing.

System Impact The named SOP will not be processed. If the SOP is a film session or film box, the requested page(s) will not print.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_MISSING_ATTRIBUTE

Note

Rationale for not reporting to user: This is a DICOM SCU configuration problem, not an operational error. The user cannot correct this from the imager. (This problem likely occurs only on first-time SCU setup.)

Condition Code: 04-302 – Invalid Attribute

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Invalid attribute xxxx (GGGG,EEEE) encountered in YYYY SOP (where xxxx (GGGG,EEEE) is the tag name and number, and YYYY is SOP name)	NORMAL	1-Alert

Description An invalid attribute for the specified SOP class was found. For a complete description of valid attributes and their contexts, see [PART4].

System Impact The named SOP will not be processed. If the SOP is a film session or film box, the requested page(s) will not print.

User Action None.

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_INVALID_ATTRIBUTE

Note

Rationale for not reporting to user: This is a DICOM SCU configuration problem, not an operational error. The user cannot correct this from the imager. (This problem likely occurs only on first-time SCU setup.)

Condition Code: 05-000 – Error Unknown

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Error Unknown	NORMAL	2-Warning

Description An unknown error occurred in the Study Reclamation subsystem.

System Impact Unknown. This is an unexpected or unknown error; it is not possible to document specific details.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_UNKNOWN

Condition Code: 05-001 – Error Reading Configuration Information

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Error reading configuration information	NORMAL	2-Warning

Description An error occurred while reading the Study Reclamation subsystem configuration information.

System Impact The Study Reclamation subsystem may not execute correctly.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_CONFIG_READ

Condition Code: 05-002 – Study Reclamation Initiated

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	High water-mark reached. Scheduled study reclamation time reached.	NORMAL	3-Notify

Description Study reclamation has been initiated because either the “high-water mark” has been reached or the scheduled time for study reclamation occurred.

Note

The “high-” and “low-water marks” refer to the boundaries of the storage drive where image data can be stored.

System Impact Completed studies will be systematically removed from the system until the “low-water mark” is reached.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_STUDY_RECLAM_INITIATED

Condition Code: 05-003 – Low-Water Mark Cannot be Reached

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Low water-mark could not be reached	NORMAL	3-Notify

Description The Storage Recovery subsystem could not reach the low-water mark while running the storage reclamation routines.

System Impact None. The MIM core software should continue to run normally, although this warning may continue to be logged periodically.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_LOW_WATER_NOT_REACHED

Condition Code: 05-004 – Low-Water Mark Reached

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Low-water-mark reached	NORMAL	3-Notify

Description Study reclamation has been completed because the low-water mark was successfully reached.

System Impact None

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_LOW_WATER_REACHED

Condition Code: 05-005 – Study Reclamation is Shutting Down

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Study reclamation is shutting down	NORMAL	3-Notify

Description The Study Reclamation subsystem has received a shutdown request.

System Impact None. Most likely, the entire system is shutting down. Also, it may be that a configuration information change requires the subsystem to be restarted.

User Action None

Show at DS False

FE Action None. This is a log notification only.

DICOM Printer Status NORMAL

Unique Symb. ID ERR_STUDY_RECLAM_SHUTDOWN

Condition Code: 06-000 – General Delivery Subsystem Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	General error in delivery subsystem	NORMAL	3-Notify

Description A general, non-specific error occurred in the Delivery subsystem.

System Impact Unknown. This is an unexpected or unknown error; it is not possible to document specific details.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_GENERAL_DELIVERY

Condition Code: 06-001 – General Startup Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	General startup error	NORMAL	1-Alert

Description A general error occurred while starting the Delivery subsystem.

System Impact Jobs will not be delivered because the software interface for the Delivery subsystem could not be started.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_STARTUP

Note

Rationale for not reporting to user: This error should be recoverable.

Condition Code: 06-002 – Bad or Missing Configuration Data

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Bad or missing configuration information	NORMAL	1-Alert

Description An error occurred while reading the Delivery subsystem configuration information.

System Impact The Delivery subsystem may not execute correctly.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_BAD_MISSING_CONFIG

Note

Log entry will reflect the specific cause from the listed set of causes.

Condition Code: 06-101 – Internal Job Processing Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	General job processing error • Startup error • Bad or missing configuration data • Resource allocation error • Mode switching error • Multi-threading error • Message exchange error • Status callback error • Inaccessible buffer • Job is null • System exception • Invalid parameter	NORMAL	1-Alert

Description The job delivery component has encountered a general error while processing a job.

System Impact The current job may not be processed to completion due to an internal error.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_JOB_PROCESS

Note

The log entry will reflect the specific cause from the listed set of causes.

Rationale for not reporting to user: This error should be recoverable.

Condition Code: 06-102 – Printer Not in Ready State

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Printer not in ready state	NORMAL	2-Warning

Description The imager is not ready to accept delivery jobs.
System Impact Jobs will not be delivered while the imager is in this state.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_NOT_READY

Condition Code: 06-103 – Invalid Media

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Invalid Media	NORMAL	1-Alert

Description An error occurred while reading the Delivery subsystem configuration information.
System Impact The submitted job will not be delivered.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_INVALID_MEDIA

Note
Current page will not be delivered. (Undeliverable)

Rationale for not reporting to user: The source of this error is unknown.

Condition Code: 06-104 – Media Unavailable

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Media unavailable	NORMAL	2-Warning

Description The currently requested media is not available.
System Impact The submitted job will not be delivered.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_UNAVAIL_MEDIA

Condition Code: 06-105 – Page Delivery Success

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Page delivery success	NORMAL	3-Notify

Description Notification that a page was successfully delivered; this is not an error condition.

System Impact None

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_PAGE_SUCCESS

Condition Code: 06-106 – Job Delivery Success

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Job delivery success	NORMAL	3-Notify

Description Notification that a job was successfully delivered; this is not an error condition.

System Impact None

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_JOB_SUCCESS

Condition Code: 06-200 – MIM Data Component Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Database access error	NORMAL	1-Alert

Description An error occurred while accessing the MIM Core database. The database may be corrupted or a timeout occurred.

System Impact The current job will not deliver.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_MIM_DATA

Note

Rationale for not reporting to user: This error should be recoverable.

Condition Code: 06-300 – Destination Business Logic Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Database access error	NORMAL	1-Alert

Description An error occurred in the destination business logic component. The database may be corrupted, or a timeout occurred.

System Impact The current job will not deliver.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_BUS_LOGIC

Note

Rationale for not reporting to user: This error should be recoverable.

Condition Code: 06-400 – General Page Builder Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIM Core: Image Page Error	General page builder error	NORMAL	1-Alert

Description A general page builder error occurred. Conditions include:

- Performance timer errors
- Dumping images at lower level
- Error initializing text, line lists, or member variables

System Impact The current page will not be proœssed because it could not be rendered due to an internal error.

User Action

1. Resend the print job from the image source.
2. If the error persists, call for service.

Show at DS True

DICOM Printer Status NORMAL

Unique Symb. ID ERR_PAGE_BUILD

Note

Current page will not be delivered. (Undeliverable)

Condition Code: 06-410 – Rendering Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIM Core: Image Rendering Error	• General error rendering the page • Error after completion of chain-forming • Error rendering trim or rectangle • Error rendering text: xxxx (where xxxx is the text to be rendered) • Error rendering icon xxxx (where xxxx is the name of the icon) • General error with algorithm parameters	NORMAL	1-Alert

Description	The page builder component has encountered a rendering error:
System Impact	The current page will not be processed because it œuld not be rendered due to an internal error.
User Action	1. Resend the print job from the image source. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_RENDERING **Note** The log entry reflects the specific cause from the listed set of causes. Current page will not be delivered. (Undeliverable)

Condition Code: 06-411 – Bad Image Data

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIM Core: Image Data Error	• Width and/or height less than zero • Bits beyond pixel depth not zeroed	NORMAL	1-Alert

Description The page builder component has encountered the following image data error:
- Width and/or height is less than zero
- Bits beyond the pixel depth are not zeroed

System Impact The current page will not be processed because it could not be rendered due to an internal error.

User Action
1. Resend the print job from the image source.
2. If the error persists, call for service.

Show at DS True

DICOM Printer Status NORMAL

Unique Symb. ID ERR_IMAGE_DATA

Note

The log entry reflects the specific cause from the listed set of causes. Current page will not be delivered. (Undeliverable)

Condition Code: 06-412 – Abort Requested

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Render abort requested	NORMAL	1-Alert

Description The page builder component has been asked to halt a rendering that is currently in progress.

System Impact The current page will not be processed because rendering was aborted.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_ABORT_REQ

Note

Rationale for not reporting to user: Because the page was canceled via an abort, it may retry successfully.

Condition Code: 06-420 – Invalid Data or Data Access Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIM Core: Internal Software Error	• Page width and/or height are less than zero • Invalid page band • Invalid coordinates for indicator icon: (X1,Y2), (X2,Y2). (where X1, Y1 and X2, Y2 are the calculated icon coordinates) • Image size mismatch error • Error in cropping coordinates • The file XXXX could not be found (where XXXX is the file name) • Error reading image XXXX (where XXXX is the name of the image file) • General error accessing database components • General error accessing page formatter	NORMAL	1-Alert

Description

The page builder component has encountered the following data error:

- The specified page width and/or height is less than zero.
- The number of page bands is neither 1 nor 3, and each of the bands does not have the same type.
- Icon (x1,y1) and/or (x2,y2) is beyond the page extents.
- Image size mismatch error, where the size read does not match the size expected.
- Bad cropping coordinates.
- Icon or image file not found.
- Trying to read image data; most likely, the image input file could not be found.
- General error accessing the database component.

System Impact

The current page will not be processed because it œuld not be rendered due to an internal error.

User Action

1. Resend the print job from the image source.
2. If the error persists, call for service.

Show at DS

True

DICOM Printer Status

NORMAL

Unique Symb. ID

ERR_INVALID_DATA

Note

The log entry reflects the specific cause from the listed set of causes. Current page will not be delivered. (Undeliverable)

Condition Code: 06-430 – Chain-building Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIM Core: Internal Software Error	• General error building image processing chain • Error in tonescaling xxxx (where xxxx is the specific tonescaling problem) • Error forming the color processing chain • Error in layout chain • Error forming the printer processing chain	NORMAL	1-Alert

Description

The page builder has encountered one of the following errors while building the image processing chain:

- General chain-building error
- Tonescaling error, usually an error in the transfer function tables (TFT), preference look up table (PLUT), or curve shape
- Error forming the color processing chain, including missing ICC profile files
- Layout chain error, including bad rotation and/or flip parameters
- Error forming the imager processing chain

System Impact

Unknown

User Action

1. Resend the print job from the image source.
2. If the error persists, call for service.

Show at DS

True

DICOM Printer Status

NORMAL

Unique Symb. ID

ERR_CHAIN_BUILDING

Note

The log entry reflects the specific cause from the listed set of causes. Current page will not be delivered. (Undeliverable)

Condition Code: 06-440 – Greater Than 12-bit Image Data Encountered

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	sendPage(): myMPageBuilder.RenderPage() call has high bits masked out	NORMAL	2-Warning

Description	The 12-bit image data had pixels that were greater than 12 bits.
System Impact	None. The system will automatically compensate for the problem.
User Action	None
Show at DS	False
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_OVER_12_BIT_IMAGE

Condition Code: 06-500 – Internal Page Delivery Component Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	• BIND error. Code = YY; Page ID = XXX • STAGE error. Code = YY; Page ID = XXX • PRINT error. Code = YY; Page ID = XXX • EXPOSE error. Code = YY; Page ID = XXX • Unknown error. Code = YY; Page ID = XXX	NORMAL	1-Alert

Description One of the following internal errors occurred:

- Binding error
- Staging error
- Printing error
- Exposure error
- Unknown internal error

System Impact The job may not be delivered due to an internal error communicating with the MCS Interface Server (MIS).

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_PAGE_DELIV_COMP

Note

The log text will reflect the specific cause from the listed set of causes.

Rationale for not reporting to user: This is an error on an individual job and does not affect imager operation. THe imagerwill automatically attempt to printthe job again.

Condition Code: 06-501 – Requested Media Not Loaded

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Media xxx not loaded (where xxx is the requested media)	NORMAL	2-Warning

Description The requested media is not loaded in the imager.
System Impact The current job will not be delivered until the specified media is loaded.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_NOT_LOADED

Condition Code: 06-502 – Requested Media Requires Calibration

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Media xxx requires calibration (where xxx is the requested media)	NORMAL	2-Warning

Description The requested media is not calibrated.
System Impact The current job will not be delivered until the specified media has been calibrated.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_NOT_CALIB

Condition Code: 06-503 – Requested Media is Calibrating

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Media xxx is calibrating (where xxx is the requested media)	NORMAL	3-Notify

Description The requested media is currently being calibrated.
System Impact Jobs will not be delivered until the calibration cycle is completed.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_NOW_CALIBRATING

Condition Code: 06-504 – Calibration Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Error calibrating media xxx (where xxx is the media that failed calibration)	NORMAL	3-Notify

Description An error occurred during media calibration.
System Impact Jobs may not be delivered because the media could not be calibrated.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_CALIBRATION

Condition Code: 06-505 – Requested Media is Empty

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Media xxx is empty. (where xxx is the requested media)	NORMAL	2-Warning

Description The requested media is empty.
System Impact The current job will not be delivered until the specified media is loaded.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_EMPTY_MEDIA

Condition Code: 06-506 – Requested Media is Jammed

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Media xxx is jammed (where xxx is the jammed media)	NORMAL	2-Warning

Description The requested media is jammed.
System Impact The current job will not be delivered until the media jam is cleared.
User Action None
Show at DS False
DICOM Printer Status NORMAL
Unique Symb. ID ERR_MEDIA_JAM

Condition Code: 06-600 – General Delivery Engine Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	General error in delivery subsystem	NORMAL	1-Alert

Description A general error occurred in the Delivery subsystem.

System Impact Unknown. This is an unexpected or unknown error; it is not possible to document specific details.

User Action None

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_DELIVERY_ENGINE

Note

Rationale for not reporting to user: This error should be recoverable.

Condition Code: 10-001 – Internal Software Error in MIS

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIS: Internal Software Error	MIS Internal Error	PRINTER DOWN	0-Fatal

Description This represents any of a number of errors that indicate that internal software functionality of the MCS Interface Server (MIS) subsystem has failed. Examples include: persistent memory failures, object creations failing, system call failures, and missing configuration files.

System Impact The DRE is not functional. [SI-9]

User Action

1. Shut down the laser imager, and then restart the imager.
2. If the error persists, call for service.

FE Action

1. Make a copy of the log with the error.
2. Send the log to Service Engineering.
3. Make a copy of the system configuration.
4. Load new system software.
5. Restore the configuration.

Show at DS True

DICOM Printer Status FAILURE

Unique Symb. ID ERR_MIS_INTERNAL

Condition Code: 10-003 – Image Buffer Error in MIS

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIS: Image Buffer Error	MIS Image Buffer Error	PRINTER DOWN	0-Fatal

Description	This represents any of a number of errors that indicate that image memory buffer functionality of the MCS Interface Server (MIS) subsystem has failed.
System Impact	The DRE is not functional. [SI-9]
User Action	1. Restart the laser imager. 2. If the error persists, call for service.
FE Action	1. Make a copy of the log with the error. 2. Send the log to Service Engineering. 3. Make a copy of the system configuration. 4. Load new system software. 5. Restore the configuration.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_MIS_IMAGE_BUFFER

Condition Code: 10-015 – Database Error in MIS

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIS: Database Error	MIS Database Error	CHECK PRINTER	1-Alert

Description	This represents any of a number of errors indicating that database software functionality of the MCS Interface Server (MIS) subsystem has failed. Examples include: SQL server down, incorrect database table installation, and database read/write/update failed.
System Impact	The imager can accept jobs and print, but cannot track the total print counts, prints to PM, prints to filter change, or the history of calibration data.
User Action	1. Restart the laser imager. 2. If the error persists, call for service.
FE Action	1. Make a copy of the log with the error. 2. Send the log to Service Engineering. 3. Make a copy of the system configuration. 4. Load new system software (see Additional Service Procedures, “Upgrading the Imager Flash Drive with a New Version of System Software – Ghosting”). 5. Restore the configuration (see Additional Service Procedures, “Restoring the Configuration”).
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_MIS_DATABASE

Condition Code: 10-910 – No Communications with the MCS

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MIS: MCS Communication Failure	MIS to MCS Communications Fail	PRINTER DOWN	0-Fatal

Description	This error occurs when the MCS fails to respond to the MIS. The error is declared by the MIS and a log message is generated. This error is a fatal error that will probably result in a service call.
System Impact	The imager is unable to print films. The spooler is still able to accept jobs, but new films will not be initiated. Films in progress will not be completed. [SI-3]
User Action	1. Restart the laser imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_NO_COMM_MCS

Note

This error is used to cover all common problems between the MIS and MCS software module. (No hardware connection is involved.)

Condition Code: 13-001 – Service Tool or Web Portal Internal Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	General Error in Service Tool Subsystem	NORMAL	3-Notify

Description	An internal error occurred that is attributable to software components used by the service tool or Web Portal. (The Web Portal is based on the service tool software, so the source of this error cannot be discerned.) This error code represents any of a number of errors that indicate the internal software functionality of the service tool or Web Portal subsystem has failed. Examples include: persistent memory failures, object creations failing, system call failures, Common Service Platform (CSP) framework errors.
System Impact	Service tool operations or Web Portal operations may not be working correctly. The DRE should be functional, but may not respond correctly to the service/ portal function being run, or the function may fail.
User Action	None
Show at DS	False
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_ST_INTERNAL

Condition Code: 14-001 – Service Tool or Web Portal Internal Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	General Error in Web Portal Subsystem	NORMAL	3-Notify

Description An internal error occurred that is attributable to software components used by service tool or Web Portal. (The Web Portal is based on the service tool software, so the source of this error cannot be discerned.) This error code represents any of a number of errors that indicate the internal software functionality of the service tool or Web Portal subsystem failed.

System Impact Service tool operations or Web Portal operations may not be functioning. The DRE should be functional but may not respond correctly to the service/portal function being run, or the function may fail.

Show at DS False

DICOM Printer Status NORMAL

Unique Symb. ID ERR_WP_INTERNAL

Condition Code: 20-154 – MCS Storage Media Failure

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
MCS: Internal Communications Failure	MCS failed to read/ write to the storage media	ELEC DOWN	0-Fatal

Description This error occurs when the Machine Control System (MCS) detects an error while attempting to read from or write to the storage media. The error clears only when power is cycled.

System Impact The imager is unable to print films. The spooler is still able to accept and queue jobs but new films will not be initiated. Films downstream of the affected subsystem will be completed. All other films will be reprinted. [SI-1]

User Action

1. Shut down the laser imager, then restart the laser imager.
2. If the error persists, call for service

FE Action Perform the actions below in sequence. If an action provides a resolution, do not continue with the other actions.

1. De-energize then energize the laser imager.
2. Re-ghost the laser imager (see Additional Service Procedures, “Upgrading the Imager Flash Drive with a New Version of System Software – Ghosting”).
3. Install a new hard drive (see Adjustments and Replacements, “DRE Motherboard and Flash Drive”).
4. Install a new DRE motherboard (see Adjustments and Replacements, “DRE Motherboard Bracket”).

Show at DS True

DICOM Printer Status FAILURE

Unique Symb. ID ERR_MCS_HARDDRIVE_ACCESS

Condition Code: 20-155 – MCS Printer Configuration is Incompatible with Hardware

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Incompatible MCS Printer Configuration for Hardware	MCS printer configuration is incompatible with model hardware	ELEC DOWN	0-Fatal

Description	This error occurs when the MCS application reports that the imager configuration is incompatible with the hardware model information. The error clears only when power is cycled.
System Impact	The imager is unable to print films. The spooler is still able to accept and queue jobs but new films will not be initiated. Films downstream of the affected subsystem will be completed. All other films will be reprinted. [SI-1]
User Action	1. Shut down the laser imager, then restart the laser imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_MCS_INCOMPATIBLE_HARDWARE

Condition Code: 20-156 – Micro Software Version is Incompatible with MCS Software

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Incompatible Software Versions Installed	One or more micros have software versions installed that are incompatible with the MCS version	PRINTER DOWN	0-Fatal

Description	This error occurs during MCS diagnostics when the MCS determines that the software version of one or more of the microcontrollers is incompatible with the MCS software version. This error should only happen when the MCS software is being installed or updated. The error is cleared when MCS diagnostics passes.
System Impact	The imager is unable to print films. The spooler is still able to accept jobs but new films will not be initiated. Films in progress will not be completed. [SI-3]
User Action	1. Shut down the laser imager, then restart the laser imager. 2. If the error persists, call for service.
FE Action	TBD
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_MCS_INCOMPATIBLE_VERSIONS

Condition Code: 20-209 – Imager Opened During Self Test

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Laser Imager Opened During Self Test	Top, Side, or Front Cover Opened During Self Test	PRINTER DOWN	0-Fatal

Description This error occurs during MCS diagnostics when the laser imager determines that a cover was opened during the execution of self test. The error clears only when power is cycled.

System Impact The imager is unable to print films. The spooler is still able to accept jobs but new films will not be initiated. Films in progress will not be completed. [SI-3]

User Action

1. Close the open top cover or the open cover.
2. Shut down the laser imager, then restart the laser imager.
3. If the error persists, call for service.

FE Action

1. Check that the following are closed and secured:
   - Top cover
   - Film supply (front) and back covers
2. De-energize and then energize the laser imager.

Show at DS True

DICOM Printer Status FAILURE

Unique Symb. ID ERR_MCS_DOOR_OPENED_DURING_SELF_TEST

Condition Code: 20-449 – Processor Filter Maintenance Required

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Processor Filter Maintenance Required	NORMAL	3-Notify

Description This notification is written to the log when the processor filter maintenance (PFM) sheet count exceeds the PFM sheet count limit.

Note

This notification is shown to the user but is different from other “errors” because it is a special situation.

System Impact None. The system will function normally. [SI-0]

User Action None

FE Action

1. Change the filter.
2. Use the service tool to reset the Counts to Filter Change.

Show at DS True

DICOM Printer Status NORMAL

Unique Symb. ID ERR_PFM_REQUIRED

Condition Code: 20-550 – Preventive Maintenance Required

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Preventive Maintenance Required	NORMAL	3-Notify

Description	This notification is written to the log when the preventive maintenance (PM) sheet count exceeds the preventive maintenance/system cleaning sheet count limit. **Note** This notification is shown to the user but is different from other “errors” because it is a special situation.
System Impact	None. The system will function normally. [SI-0]
User Action	None
FE Action	Perform the PM.
Show at DS	True
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_PM_REQUIRED

Condition Code: 20-700 – Printer in Service Mode

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	None	N/A	4-Auxiliary

Description	This auxiliary code indicates that the laser imager is in Service Mode.
System Impact	The imager is unable to print films. The spooler is still able to accept jobs but new films will not be initiated. Films in progress will not be completed. [SI-3]
User Action	None
FE Action	Take the laser imager out of Service Mode.
Show at DS	True
DICOM Printer Status	N/A
Unique Symb. ID	ATTEN_PRINTERINFO_SERVICEMODE **Note** This is a printer status indication, not an error condition.

Condition Code: 20-701 – Printer Top Cover Open

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	None	N/A	4-Auxiliary

Description	This auxiliary code indicates that the imager top cover or other cover was opened.
System Impact	The imager is unable to print films. The spooler is still able to accept jobs but new films will not be initiated. Films in progress will not be completed. [SI-3]
User Action	None
FE Action	None
Show at DS	True
DICOM Printer Status	N/A
Unique Symb. ID	ATTEN_PRINTERINFO_DOOROPEN

Note

This is a printer status indication, not an error condition.

Condition Code: 20-704 – DICOM Offline

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	None	N/A	4-Auxiliary

Description	This auxiliary code indicates that the DICOM network connection to the imager is offline. The user can place the network back online by using the Web Portal. The code clears when DICOM is back online.
System Impact	The system is unable to queue new jobs for printing. It can still print jobs already queued.
User Action	None
Show at DS	True
DICOM Printer Status	N/A
Unique Symb. ID	ATTEN_PRINTERINFO_DICOM_OFFLINE

Note

This is a printer status indication, not an error condition.

Condition Code: 20-705 – Restart in Process

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	None	N/A	4-Auxiliary

Description	This auxiliary code indicates that a user-initiated system restart is in process. The user should not power the imager off during the startup sequence but wait for the sequence to complete. The code clears after the sequence completes. **Note** One of the reasons that the operating system would be restarted is for a software update procedure.
System Impact	The imager is unable to print films.
User Action	None
Show at DS	True
DICOM Printer Status	N/A
Unique Symb. ID	ATTEN_PRINTERINFO_RESTART **Note** This is a printer status indication, not an error condition.

Condition Code: 20-706 – Shutdown Completed

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	None	N/A	4-Auxiliary

Description	This auxiliary code indicates that a user-initiated system shutdown is complete. (The shutdown would have been initiated remotely from the Web Portal because shutting down the imager at the machine accomplishes the power-off without initiating a shutdown.) The imager must now be powered off using the power switch. When this code is displayed, the imager can be restarted only by using the power switch to power off and then power on.
System Impact	The imager is unable to print films.
User Action	None
FE Action	De-energize the laser imager.
Show at DS	True
DICOM Printer Status	N/A
Unique Symb. ID	ATTEN_PRINTERINFO_SHUTDOWN **Note** This is a printer status indication, not an error condition.

Condition Code: 20-913 – DRE Data Transfer Error Notification

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Image transfer failure. Wrong number of bytes transferred in the allotted timeframe.	NORMAL	3-Notify

Description This notification occurs when the wrong number of pixels is transferred between the DRE and the DPB in the allotted timeframe. The faulty image prints. The job fails and the imager attempts to print the image again.

Note

Code 20-915 is generated when this problem is detected on the third successive film.

System Impact None. The system will function normally. [SI-0]

User Action None

Show at DS True

DICOM Printer Status NORMAL

Unique Symb. ID ERR_DATA_TRANSFR_RETRY

Condition Code: 20-915 – DRE Data Transfer Fatal Error Detected

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Internal Image Data Transfer Failed	Image transfer failure after multiple attempts. Wrong number of bytes delivered in the allotted timeframe.	ELEC DOWN	0-Fatal

Description	This error occurs when the wrong number of pixels is transferred between the DRE and the MCS board in the allotted timeframe on 3 successive films. A faulty image prints on each failure. Jobs associated with the faulty image fail, and the imager attempts to print the image again. The error is cleared when the imager power is cycled.
System Impact	The imager is unable to print films. The spooler is still able to accept and queue jobs but new films will not be initiated. Films downstream of the affected subsystem will be completed. All other films will be reprinted. [SI-1]
User Action	1. Shut down the laser imager, and then restart the laser imager. 2. If the error persists, call for service.
FE Action	Perform the actions below in sequence. If an action provides a resolution, do not continue with the other actions. 1. Close the film cartridge. 2. De-energize then energize the laser imager. 3. Install a new DRE-to-DPB USB cable from the DRE to the optics module. 4. Install a new hard drive (see Adjustments and Replacements, “DRE Motherboard and Flash Drive”). 5. Install a new DRE motherboard (see Adjustments and Replacements, “DRE Motherboard Bracket”). 6. Install a new imaging assembly (see Adjustments and Replacements, “Imaging Assembly”).
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_DATA_TRANSFR_FAIL

Condition Code: 20-919 – DRE Image Render Incomplete

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Internal Image Data Render Failed	Image Render did not complete.	ELEC DOWN	0-Fatal

Description	This error occurs when image data transfer between the DRE and the MCS is interrupted and does not complete within a reasonable time. The error is cleared when the imager power is cycled.
System Impact	The imager is unable to print films. The spooler is still able to accept and queue jobs, but new films will not be initiated. Films downstream of the affected subsystem will be completed. All other films will be reprinted. [SI-1]
User Action	1. Shut down the laser imager, and then restart the laser imager. 2. If the error persists, call for service.
FE Action	Perform the actions below in sequence. If an action provides a resolution, do not continue with the other actions. 1. Close the film cartridge. 2. De-energize then energize the laser imager. 3. Install a new DRE-to-DPB USB cable from the DRE to the optics module. 4. Install a new hard drive (see Adjustments and Replacements, “DRE Motherboard and Flash Drive”). 5. Install a new DRE motherboard (see Adjustments and Replacements, “DRE Motherboard Bracket”). 6. Install a new imaging assembly (see Adjustments and Replacements, “Imaging Assembly”).
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_DATA_RENDER_FAIL

Condition Code: 21-002 – Film Supply in Manual Mode

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	None	N/A	4-Auxiliary

Description	This auxiliary code indicates that the supply is operating in Manual Mode. The image quality is not within the normal range.
System Impact	None. The system will function normally. [SI-0]
User Action	None
Show at DS	True
DICOM Printer Status	N/A
Unique Symb. ID	ATTEN_FILMTRAYSTATE_UPPER_MANUAL_MODE **Note** This is a printer status indication, not an error condition.

Condition Code: 21-116 – Film Pickup Failed

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Jam in Area 1	Film Supply: Film Pickup Failure. Film did not lift successfully as indicated by SOP sensor (S6).	FILM TRANS ERR	1-Alert

Description

This error occurs if, on the third successive attempt, the imager fails to pick up a sheet of film as indicated by the Exposure Transport SOP sensor (S6). The film has most likely fallen back down onto the cartridge. The error is cleared when a film cartridge is removed and then re-inserted.

System Impact

Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2]

User Action

1. Close the film cartridge.
2. Remove the film cartridge from the laser imager.
3. Remove any misplaced films from Area 1.
4. If Area 1 did not contain misplaced films, take the cartridge to a dark room and remove the cartridge cover. Remove any misplaced films and reapply the cartridge cover.
5. Re-insert the cartridge.

FE Action

Perform the actions below in sequence. If an action provides a resolution, do not continue with the other actions.

1. De-energize, and then energize the laser imager.
2. Do the following:

Check:	If an existing problem:
the film cartridge	Install a new film cartridge.
for a film jam	See “Film Jam in Area 1 – Error Code 116 (Web Portal code 21116)”.
for an obstruction	Remove the obstruction.
all connectors and cables	Seat all connectors.
film separated sensor	Install a new sensor (see Adjustments and Replacements, “Film Contact Sensor”).
the pickup home sensor	Install a new sensor (see Adjustments and Replacements, “Pickup Home Sensor”).
the film contact sensor	Install a new sensor (see Adjustments and Replacements, “Film Contact Sensor”).
the suction cups	Install new cups (see Adjustments and Replacements, “Suction Cup”).
the vacuum pump	Install a new pump (see Adjustments and Replacements, “Vacuum Pump”).

FE Action (continued)	3. Install a new pickup assembly (see Adjustments and Replacements, "Pickup Assembly").
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_FILM_PICKUP_FAIL
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 21-117 – Film Pickup Retry Notification

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Film pickup retry. Film did not lift successfully.	NORMAL	3-Notify

Description	This notification occurs if the imager fails to pick up a sheet of film as indicated by the SOP sensor. **Note** Code 21-116 is generated on the third successive failed pickup attempt.
System Impact	None. The system will function normally. [SI-0]
User Action	None
Show at DS	False
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_UP_FILM_PICKUP_RETRY
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 21-118 – Pickup Failed to Go Home

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Internal Hardware Failure	Film Supply: Pickup Home Sensor (S3) failed to sense the pickup assembly in the appropriate home or off-home position.	FILM TRANS ERR	1-Alert

Description

This error occurs if the pickup fails to leave the home position at the beginning of a pickup cycle or fails to reach the home position at the end of a pickup cycle (as indicated by the pickup home sensor S3). It can also occur if the pickup reached home unexpectedly. This error can indicate a problem with sensor S3 or motor M3. The error is cleared when a film cartridge is removed and then re-inserted.

System Impact

Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2]

User Action

1. Close the film cartridge.
2. Remove the cartridge from the imager.
3. Re-insert the film cartridge.
4. If the error persists, call for service.

FE Action

Perform the actions below in sequence. If an action provides a resolution, do not continue with the other actions.

1. De-energize, and then energize the laser imager.
2. Do the following:

Check:	If an existing problem:
all connectors and cables	Seat all connectors.
the pickup home sensor	Install a new sensor (see Adjustments and Replacements, "Pickup Home Sensor").

FE Action (continued)

3. Install a new pickup assembly (see Adjustments and Replacements, "Pickup Assembly").

Show at DS

True

DICOM Printer Status

WARNING

Unique Symb. ID

ERR_UP_PICKUP_HOME

Condition Code: 21-119 – Film Contact Failure

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Internal Hardware Failure	Film Supply: Film contact sensor (S4) failed to confirm that the pickup arm assembly lowered and contacted the film	FILM TRANS ERR	1-Alert

Description

This error occurs only while attempting to pick up a film or checking for film in the cartridge. This error can occur when the contact sensor was active when the pickup was at home, or when the contact sensor is stuck on. The most likely cause of the error is a failed contact sensor (S4).
The error is cleared when a film cartridge is removed and then re-inserted.

System Impact

Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2]

User Action

1. Close the film cartridge.
2. Remove the film cartridge from the laser imager.
3. Re-insert the cartridge.
4. If the error persists, call for service.

FE Action

Perform the actions below in sequence. If an action provides a resolution, do not continue with the other actions.

1. De-energize, and then energize the laser imager.
2. Do the following:

Check:	If an existing problem:
the film cartridge	Install a new film cartridge.
for a film jam	Remove films.
all connectors and cables	Seat all connectors.
the pickup home sensor	Install a new sensor (see Adjustments and Replacements, “Pickup Home Sensor”).
the film contact sensor	Install a new sensor (see Adjustments and Replacements, “Film Contact Sensor”).

FE Action (continued)

3. Install a new pickup assembly (see Adjustments and Replacements, “Pickup Assembly”).

Show at DS

True

DICOM Printer Status

WARNING

Unique Symb. ID

ERR_UP_FILM_CONTACT

Logged for RMS

[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 21-125 – Feed Roller Nip Failure

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Internal Hardware Failure	Film Supply: Feed Roller Sensor (S5) failed to detect feed roller open/closed position.	FILM TRANS ERR	1-Alert

Description

This error occurs if the feed roller nip sensor (S5) does not change from unblocked to blocked when opening or from blocked to unblocked when closing. The most likely cause is the motor (M1) did not turn or the sensor did not detect the motion.
The error is cleared when a film cartridge is removed and then re-inserted.

System Impact

Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2]

User Action

1. Close the film cartridge.
2. Remove the film cartridge from the laser imager.
3. Re-insert the cartridge.
4. If the error persists, call for service.

FE Action

Perform the actions below in sequence. If an action provides a resolution, do not continue with the other actions.

1. De-energize then energize the laser imager.
2. Do the following:

Check:	If an existing problem:
all connectors and cables	Seat all connectors.
the feed roller NIP sensor	Install a new sensor.
the feed roller NIP open/close motor	Install a new motor (see Adjustments and Replacements, "Feed Roller Motor").

FE Action (continued)

3. Install a new pickup assembly (see Adjustments and Replacements, "Pickup Assembly").

Show at DS

True

DICOM Printer Status

WARNING

Unique Symb. ID

ERR_UP_FEED_ROLLER

Condition Code: 21-139 – Unable to Read or Write to RF tag

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Unable to Identify Film Cartridge	Film Supply: RF Tag Reader failed to Read or Write RF Tag data in film cartridge	BAD SUPPLY MGZ	1-Alert

Description	The imager attempts to read the RF tag in the film cartridge at power-up and when a film cartridge is inserted. It attempts to write a new sheet count to the tag after a successful film feed. The error is generated if invalid data is read or if the write fails. The error is cleared when a film cartridge is removed and then re-inserted.
System Impact	Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2]
User Action	1. Insert a different film cartridge. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_CANTREAD_RFTAG

Condition Code: 21-145 – Unsupported Media Type

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Unsupported Film Type	Film Supply: Media Type in film cartridge is not supported	BAD SUPPLY MGZ	1-Alert

Description	The imager obtains the media type and CE mark information from the RF Tag when the film cartridge is loaded or when the imager is powered on. This error occurs if the imager does not support the type at all. The error is cleared when a film cartridge is removed and then re-inserted.
System Impact	Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2]
User Action	The laser imager has not been configured to use this film type. 1. Try a different film type or reconfigure the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_UNSUPPORTED_MEDIA
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 21-146 – Unsupported Media Size

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Unsupported Film Size	Film Supply: Media Size in film cartridge is not supported	BAD SUPPLY MGZ	1-Alert

Description	The imager obtains the media size information from the RF Tag when the film cartridge is loaded or when the imager is powered on. This error occurs if the imager does not support the size. The error is cleared when a film cartridge is removed and then re-inserted.
System Impact	Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2]
User Action	The laser imager has not been configured to use this film size. 1. Try a different film size or reconfigure the laser imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	Unique Symb. ID: ERR_UP_WRONG_MEDIA_SIZE
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 21-175 – Rollback Failed to Engage Cartridge

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Rollback Failed to Engage Cartridge	Rollback failed to engage cartridge	BAD SUPPLY MGZ	1-Alert

Description	This error occurs if the rollback mechanism reactivates at the home position (S2x) because the rollback mechanism is rotating in place. The rollback motor is moving (because the home sensor changes state), but it does not travel toward the open sensor. The most likely cause is a mis-inserted cartridge. The error is cleared when the film supply is closed (as indicated by the supply drawer interlock switch i1x).
System Impact	Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2].
User Action	1. Insert a new film cartridge. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_ROLLBACK_ENGAGE
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 21-177 – Film Cartridge Failed to Close

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Cartridge Failed to Close	Rollback Home Sensor (S2U) failed to activate in specified time	BAD SUPPLY MGZ	1-Alert

Description	This error occurs only when attempting to close a film cartridge. (Note that an open cartridge operation always closes the cartridge first, before attempting to open the cartridge.) This error occurs for all rollback close failure conditions. Rollback home sensor (S2x) failure is the most likely cause, but the error can also occur from rollback motor (M6x) failure. The error is cleared when the film supply is closed (as indicated by the supply drawer interlock switch i1x), or when power is cycled.
System Impact	Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2].
User Action	1. Open the film supply. 2. Remove the left cover, 3. Use the blue knob to rotate the cover roller to the home position. 4. Manually close the cartridge to prevent film fogging. 5. Close the film supply. 6. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_FILM_CARTRIDGE_NOT_CLOSE
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 21-178 – Rollback Failed to Leave Home

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Rollback Failed to Leave Home	Rollback Home Sensor (S6U) failed to deactivate in specified time	BAD SUPPLY MGZ	1-Alert

Description	This error occurs only when attempting to open a film cartridge. This error occurs if the rollback mechanism movement from its home position toward open is not confirmed by the rollback home sensor (S2x). Because no rollback movement was detected, either the rollback motor (M6x) failed or the sensor failed. The error is cleared when the film supply is closed (as indicated by the supply drawer interlock switch i1x), or when power is cycled.
System Impact	Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2].
User Action	1. Insert a new film cartridge. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_ROLLBACK_NOT_LEAVE
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 21-624 – Bad Densitometer Data

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Film Calibration Failure	Film Supply: Calibration Failed	CALIBRATION ERR	1-Alert

Description	This error occurs when the density readings that come from the calibration print are not monotonic or the densitometer did not find exactly 21 steps in the calibration wedge. The most likely cause is fogged or expired film. The error is cleared when a film cartridge is removed and then re-inserted.
System Impact	Cannot print from the loaded film cartridge. The spooler is still able to accept and queue jobs. [SI-2]
User Action	1. Insert a different film cartridge. 2. If the error repeats, restart the imager. 3. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_BAD_DENSITOMETER_DATA
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size][TriggerValues=a,b,c,...,u] [TriggerNotes=Optical Density values, from max to min]

Condition Code: 21-631 – Dmin Not Met

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Film Calibration Failure - Dmin Outside Target	Film Supply: Calibration failed - Dmin Not Met	CALIBRATION ERR	1-Alert

Description	The error occurs when the calibration sheet does not have a step density at or below the required Dmin value. The most likely causes are expired film or incorrect processor temperature. The error is cleared when a new calibration is initiated or when the film cartridge is removed. Any cartridge using these calibration results will automatically go into AIQC-Manual Mode and will continue printing but with reduced range in achievable densities. A new calibration will be attempted when this cartridge is re-inserted.
System Impact	None. The system will function normally. [SI-0]
User Action	The minimum density of the film is too high. Calibration results for this film are outside the normal range but will still be used. If you do not wish to use these calibration results, perform a new calibration on this film or try another film cartridge.
FE Action	1. Check for “fogged” film. If necessary, replace the film. 2. Use the service tool to check the processor temperature and set point for correct values. If necessary, adjust the temperature (see Adjustments and Replacements, “Processor—Drum Temperature Adjustment”).
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_DMIN_NOT_MET
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size][TriggerValues=a,b,c,...,u] [TriggerNotes=Optical Density values, from max to min]

Condition Code: 21-632 – Dmax Not Met

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Supply: Film Calibration Failure - Dmax Outside Target	Film Supply: Calibration failed - Dmax Not Met	CALIBRATION ERR	1-Alert

Description	The error occurs when the calibration sheet does not have a step density at or above the required Dmax value. The most likely causes are expired film or incorrect processor temperature. The error is cleared when a new calibration is initiated or when the film cartridge is removed. Any cartridge using these calibration results will automatically go into AIQC-Manual Mode and will continue printing but with reduced range in achievable densities. A new calibration will be attempted when this cartridge is re-inserted.
System Impact	None. The system will function normally. [SI-0]
User Action	The maximum density of the film is too low. Calibration results for this film are outside the normal range but will still be used. If you do not wish to use these calibration results, perform a new calibration on this film or try another film cartridge.
FE Action	Use the service tool to check the processor temperature and set point for correct values. If necessary, adjust the temperature (see Adjustments and Replacements, “Processor—Drum Temperature Adjustment”).
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_UP_DMAX_NOT_MET
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size][TriggerValues=a,b,c,...,u] [TriggerNotes=Optical Density values, from max to min]

Condition Code: 25-922 – RF Tag Micro Diagnostics Failure

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
RF Tag: Internal Diagnostic Failure	RF Tag reader failed self diagnostics	BAD SUPPLY MGZ	0-Fatal

Description	When the RF Tag reader is told to perform diagnostics and returns a diagnostics failure, the MCS commands a retry. This error occurs if the microcontroller still indicates a diagnostics failure after 3 attempts. The error clears only when power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, and then restart the laser imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_RFTAG_DIAG_FAIL

Condition Code: 26-323 – Jam During Film De-skew

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Jam in Area 2	Sensor (S6) detected initial film leading edge, but did not detect edges again during or after de-skew	FILM JAM	1-Alert

Description	This error occurs if the leading edge of the film is detected at the SOP (start-of-page) sensor (S6) as film is fed, and then is not detected leaving and re-entering the SOP sensor as the film de-skews (moves backward and then forward). The error clears when the film cartridge is removed and re-inserted or when the top cover is removed and then installed.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	Clear the jam (see “Film Jam in Area 2 – Error Codes 323, 324 or 325 (Web Portal code 26323, 26324 or 26325)”).
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_ENTERING_EXPOSURE_JAM
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 26-324 – Jam Leaving Exposure Transport to Accumulator

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Jam in Area 2	Film Jam Leaving Exposure Transport to accumulator: SOP sensor (S6) failed to detect film trailing edge	FILM JAM	1-Alert

Description	This error occurs if the trailing edge (as determined by film direction) is not detected at the SOP (start-of-page) sensor (S6) while it exits toward the accumulator in a timely manner. The error is cleared when either film cartridge is removed and re-inserted or when the top cover is opened and then closed.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	Clear the jam (see “Film Jam in Area 2 – Error Codes 323, 324 or 325 (Web Portal code 26323, 26324 or 26325)”).
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_ENTERING_EXPOSURE_JAM
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 26-325 – Jam Entering Exposure Transport from Accumulator

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Jam in Area 2	Film Jam Entering Exposure Transport from accumulator: SOP sensor (S6) failed to detect film leading edge	FILM JAM	1-Alert

Description	This error occurs if the trailing edge (as determined by film direction) is not detected at the SOP (start-of-page) sensor (S6) when coming from the accumulator in a timely manner. The error is cleared when either a film cartridge is removed and re-inserted or when the top cover is opened and then closed.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	Clear the jam (see “Film Jam in Area 2 – Error Codes 323, 324 or 325 (Web Portal code 26323, 26324 or 26325)”).
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_ENTERING_EXPOSURE_JAM
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 26-326 – Jam Exiting Exposure Transport to Processor

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Jam in Area 2 or 3	Film Jam Exiting Exposure Transport to Processor: SOP sensor (S6) failed to detect film trailing edge	FILM JAM	1-Alert

Description	This error occurs if the trailing edge (as determined by film direction) is not detected at the SOP (start-of-page) sensor (S6) after the film has entered the exposure transport area from the accumulator on its way to the processor. The error is cleared when the film supply is opened then closed. When this error occurs, the processor stops rotating and the heater is turned off. All jobs in the imager will fail and then automatically reprint.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	Clear the jam (see “Film Jam in Area 2 or 3 – Error Code 326 (Web Portal code 26326)”).
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_PRE_DENSITOMETER_JAM
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 26-543 – Jam Prior to Densitometer

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Jam in Area 3	Film Jam Prior to Densitometer: Film at Densitometer sensor (S7) failed to detect film leading edge	FILM JAM	1-Alert

Description	This error occurs if the leading edge is not detected at the film-at-densitometer sensor (S7) after the film leaves the exposure area. The error is cleared when the imager top cover is opened then closed. When this error occurs, the processor stops rotating and the heater is turned off. All jobs in the imager will fail and then automatically reprint.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	Clear the jam (see “Film Jam in Area 3 – Error Code 543 (Web Portal code 26543)”).
FE Action	1. Clear the jam (see “Film Jam in Area 3 – Error Code 543 (Web Portal code 26543)”). 2. If the above action does not correct the problem or if the problem recurs, it could be caused by a burr or a buildup of film residue on the cooling plate. To check and correct for this: a. Push the leading edge of a film over the cooling plate. b. If the film sticks in any way, clean the cooling plate with an alcohol wipe. c. If necessary, replace the cooling plate.
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_PRE_DENSITOMETER_JAM
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 26-544 – Jam at Densitometer

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Film Jam in Area 3	Film Jam at Densitometer: Film at Densitometer sensor (S7) failed to detect film trailing edge	FILM JAM	1-Alert

Description	This error occurs if the trailing edge is not detected at the film-at-densitometer sensor (S7) as the film exits the densitometer. The error is cleared when the imager top cover is opened then closed. When this error occurs, the processor stops rotating and the heater is turned off. All jobs in the imager will fail and then automatically reprint.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	Clear the jam (see “Film Jam in Area 3 – Error Code 543 (Web Portal code 26543)”).
Show at DS	True
DICOM Printer Status	WARNING
Unique Symb. ID	ERR_DENSITOMETER_JAM
Logged for RMS	[CartridgeInfo=bbeeee-cjj-d-iii][FilmSize=size]

Condition Code: 27-123 – Polygon Motor Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Optics: Internal Hardware Failure	Polygon fails to rotate at desired speed.	ELEC DOWN	0-Fatal

Description	This error occurs when the polygon speed measured by the optics module microcontroller is out of range. The error clears only when power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, and then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_SPINNER_ERROR
Logged for RMS	[TriggerValues=a][TriggerNotes=Polygon Speed]

Condition Code: 27-601 – Invalid Power Monitor Offset

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Optics: Calibration Failed	Optics Calibration Failed. Power Monitor Offset outside valid range.	ELEC DOWN	0-Fatal

Description	This error occurs when the power monitor offset measured by the optics calibration and diagnostics is outside the predefined valid range. The error clears when a calibration is requested or power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, and then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_INVALID_POWER_MONITOR _OFFSET
Logged for RMS	[TriggerValues=x][TriggerRange=y,z][TriggerNotes=Power Monitor Offset: value, limits]

Condition Code: 27-604 – Unable to Adjust Laser Dynamic Range

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Optics: Calibration Failed	Optics calibration failed to Adjust Laser Dynamic Range within limits	ELEC DOWN	0-Fatal

Description	This error occurs when the laser dynamic range measured by the optics calibration and diagnostics is outside the predefined valid range after 5 successive adjustment attempts. The error clears when a calibration is requested or power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, then restart the laser imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_CANT_ADJUST_LASER_DYNAMIC_RANGE
Logged for RMS	[TriggerValues=x][TriggerRange=y,z][TriggerNotes=Laser Dynamic Range: value, limits]

Condition Code: 27-607 – Optics Maximum Laser Power Outside Valid Range

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Optics: Calibration Failed	Optics calibration detected Optics Maximum Power outside valid range	ELEC DOWN	0-Fatal

Description	This error occurs when the maximum laser power measured by the optics calibration and diagnostics is outside the predefined valid range. The error clears when a calibration is requested or power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, and then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_OPTICS_MAX_LASER_POWER
Logged for RMS	[TriggerValues=x][TriggerRange=y,z][TriggerNotes=Laser Power: value, limits]

Condition Code: 27-608 – Invalid Laser Dynamic Range

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Optics calibration detected laser dynamic range approaching predefined limits	NORMAL	3-Notify

Description	This notification occurs when the laser dynamic range has been adjusted and its value is within 10% of the upper or lower limit of the adjustment range.
System Impact	None. The system will function normally. [SI-0]
User Action	None
FE Action	None. This is a log notification only.
Show at DS	False
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_OPTICS_LASER_DYNAMIC_RANGE_NEAR_LIMIT

Condition Code: 27-609 – Optics Maximum Laser Power Approaching Limit

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Optics calibration detected Optics Maximum Power approaching limit	NORMAL	3-Notify

Description	This notification occurs when the maximum laser power measured by the optics calibration and diagnostics is approaching the predefined valid limit.
System Impact	None. The system will function normally. [SI-0]
User Action	None
Show at DS	False
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_OPTICS_MAX_LASER_POWER_NEAR_LIMIT

Condition Code: 27-611 – Optics Laser Gain Adjustment Failed

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Optics: Internal Hardware Failure	Optics calibration laser power gain adjustment failed	ELEC DOWN	0-Fatal

Description	The laser power gain is measured using a voltage on the laser driver. This error occurs when the laser driver voltage cannot be adjusted to within limits by the optics calibration after 20 successive attempts.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, and then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_OPTICS_LASER_GAIN_FATAL_ERROR
Logged for RMS	[TriggerValues=x][TriggerRange=y,z][TriggerNotes=Laser Voltage: value, limits]

Condition Code: 27-646 – Start of Page Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Optics: Internal Hardware Failure	Optics hardware failed to report start of page although Start of Page sensor (S6) detected film	ELEC DOWN	0-Fatal

Description	This error occurs if the optics hardware does not report the start-of-page condition even though the start-of-page (SOP) sensor (S6) did indicate the leading edge of the film has been detected. The image is likely blank, but the film is not jammed and should exit the imager successfully. The error clears only when power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, and then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_START_OF_PAGE

Condition Code: 27-650 – Exposure Timeout Error

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Optics: Internal Hardware Failure	Image Exposure time out failure – multiple successive timeouts	ELEC DOWN	0-Fatal

Description	This error occurs when the image exposure does not complete in the required time for 3 successive films. The error is cleared when the imager power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, and then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_EXPOSE_TMO_FAIL

Condition Code: 27-651 – Exposure timeout notification

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Image Exposure timed out, job will be reprinted	NORMAL	3-Notify

Description	This notification occurs when the image exposure does not complete in the required time. The faulty image prints. The job fails and the imager attempts to print the image again. If this problem is detected on three successive films, error 27-650 is declared.
System Impact	None. The system will function normally. [SI-0]
User Action	None
Show at DS	False
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_EXPOSE_TMO_RETRY

Condition Code: 28-501 – Processor RTD Short Circuit

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Processor: Internal Hardware Failure	Short in RTD circuit	PROC DOWN	0-Fatal

Description	This error can occur for many electromechanical reasons: Resistance Temperature Detector (RTD) and connector leads touching, drum-slip-ring failure, condensation (cold machine in warm environment), failed component in analog-to-digital conversion circuitry on the processor board, etc. The error clears only when imager power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, and then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_PROCESSOR_RTD
Logged for RMS	[TriggerValues=a, b][TriggerNotes=RTD zone number, temperature in degrees C]

Condition Code: 28-509 – Processor Failed to Complete Warm-Up

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Processor Warm-up Failure	Processor failed to warm up in the specified time	PROC DOWN	0-Fatal

Description

There are three primary causes for this error:

1. The processor-measured temperature has not locked into ±0.15 °C of the set point for at least 20 seconds before the end of the warm-up time allotted. The processor electronics have failed. For this case, the allotted time for warm-up will expire. (Resolution: Replace the board.)
2. There was a failure to heat or the warm-up rate was too slow (=/< 3 °C per minute). For this case, the failed SSR status bit should be set. Either the solid-state relay (SSR) or mechanical power relay has failed. (Resolution: Replace the board.)
3. The environment may be too cold or the power source underrated. (Resolution: Repeat the warm-up cycle.)

- The allotted time is calculated from the initial processor drum temperature.
- The error clears only when imager power is cycled.

System Impact

The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]

User Action

1. Shut down the laser imager, then restart the imager.
2. If the error persists, call for service.

Show at DS

True

DICOM Printer Status

FAILURE

Unique Symb. ID

ERR_PROCESSOR_WARMUP

Logged for RMS

[TriggerValues=a, b][TriggerNotes=RTD zone number, temperature in degrees C]

Condition Code: 28-510 – Processor RTD Open Circuit

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Processor: Internal Hardware Failure	Processor detected a sudden change to infinite resistance in the RTD circuitry	PROC DOWN	0-Fatal

Description	This error likely occurred in conjunction with the overheat error. The most likely cause is an opening in the RTD circuit (RTD fractured, drum slip ring failure, wiring harness disconnected, etc.). The error clears only when imager power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_PROCESSOR_RTD_OPEN Logged for RMS: [TriggerValues=a, b][TriggerNotes=RTD zone number, temperature in degrees C]
Logged for RMS	[TriggerValues=a, b][TriggerNotes=RTD zone number, temperature in degrees C]

Condition Code: 28-551 – Processor Heater Failure

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Processor Heater Failure	Processor failed to warm up when heater turned on	PROC DOWN	0-Fatal

Description

There are three primary causes for this error:

1. The processor-measured temperature has not locked into ±0.15 °C of the set point for at least 20 seconds before the end of the warm-up time allotted. The processor electronics have failed. For this case, the allotted time for warm-up will expire. (Resolution: Replace the board.)
2. There was a failure to heat or the warm-up rate was too slow (=/< 3 °C per minute). For this case, the failed SSR status bit should be set. Either the solid-state relay (SSR) or mechanical power relay has failed. (Resolution: Replace the board.)
3. The environment may be too cold or the power source underrated. (Resolution: Repeat the warm-up cycle.)

- The allotted time is calculated from the initial processor drum temperature.
- The error clears only when imager power is cycled.

System Impact

The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]

User Action

1. Shut down the laser imager, then restart the laser imager.
2. If the error persists, call for service.

Show at DS

True

DICOM Printer Status

FAILURE

Unique Symb. ID

ERR_PROCESSOR_HEATER

Logged for RMS

[TriggerValues=a, b][TriggerNotes=RTD zone number, temperature in degrees C]

Condition Code: 28-554 – Over Temperature Errors

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Processor Over Temperature	Processor Over Temperature	PROC DOWN	0-Fatal

Description	This error occurs if the measured temperature is approximately 148 °C or greater. If there is no corresponding “Processor Open Circuit Error,” then the likely cause is a stuck on solid-state relay (SSR). The software shuts power off to the drum, but the redundant safety feature of the thermal circuit breaker in the drum may also trip (the drum thermal circuit breaker must be manually reset). The error clears only when imager power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_OVER_TEMP_ERRORS
Logged for RMS	[TriggerValues=a, b][TriggerNotes=RTD zone number, temperature in degrees C]

Condition Code: 29-924 – Densitometer Failed Offset Reading Diagnostics

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Densitometer: Internal Diagnostic Failure	Densitometer offset reading out of range with light source off	ELEC DOWN	0-Fatal

Description	During a calibration print and during densitometer diagnostics, a reading from the density sensor is taken with the light source turned off. The error occurs if the microcontroller reports the reading out of range. The error clears only when imager power is cycled.
System Impact	The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]
User Action	1. Shut down the laser imager, then restart the imager. 2. If the error persists, call for service.
Show at DS	True
DICOM Printer Status	FAILURE
Unique Symb. ID	ERR_DENSITOMETER_OFFSET_LIGHT_OFF
Logged for RMS	[TriggerValues=a, b, c, d][TriggerNotes=Density Reference, Density Offset, Fiducial Reference, Fiducial Offset]

Condition Code: 29-925 – Densitometer Reference Reading Failed Diagnostics

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Densitometer: Internal Diagnostic Failure	Densitometer reference reading out of range with light source on	ELEC DOWN	0-Fatal

Description

During a calibration print and during densitometer diagnostics, a reading from the density sensor is taken with the light source turned on. This error occurs when the reading is out of range.

Note

Code 29-945 is generated when this reading is nearing the range limit.

The error clears only when imager power is cycled.

System Impact

The imager can only print jobs that were in process when the error occurred. The spooler can still accept jobs, but the jobs will not print until the error is resolved. All jobs that were in process when the error occurred will reprint completely when the error is resolved. [SI-1]

User Action

1. Shut down the laser imager, and then restart the imager.
2. If the error persists, call for service.

Show at DS

True

DICOM Printer Status

FAILURE

Unique Symb. ID

ERR_DENSITOMETER_REFERENCE_LIGHT_ON

Logged for RMS

[TriggerValues=a, b, c, d][TriggerNotes=Density Reference, Density Offset, Fiducial Reference, Fiducial Offset]

Condition Code: 29-945 – Densitometer Reference Reading Diagnostics Warning

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	Densitometer reference reading outside of optimal range with light source on	NORMAL	3-Notify

Description

During a calibration print and during densitometer diagnostics, a reading from the density sensor is taken with the light source turned on. This notification occurs when the reading is outside of the optimal range (approaching the range limit).

Note

Code 29-925 is generated when this reading is over the range limit.

System Impact

None. The system will function normally. [SI-0]

User Action

None

Show at DS

False

DICOM Printer Status

NORMAL

Unique Symb. ID

ERR_DENSITOMETER_OFFSET_LIGHT_ON_NOTICE

Condition Code: 36-931 – Local Panel Communications Failure

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Local Panel Internal Communications Failure	MCS failed to communicate with Local Panel after multiple attempts	ELEC DOWN	0-Fatal

Description This error occurs when the MCS tries to communicate with the microcontroller but receives no response to five attempts. The error clears only when power is cycled.

System Impact The display screen will not display correct data.

User Action

1. Shut down the laser imager, and then restart the imager.
2. If the error persists, call for service.

Show at DS True

DICOM Printer Status FAILURE

Unique Symb. ID ERR_UI_COMMN_FAIL

Condition Code: 36-932 – Local Panel Communications Retry

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
None	MCS failed to communicate with Local Panel	NORMAL	3-Notify

Description This notification occurs when the MCS tries to communicate with the microcontroller but receives no response.

Note

Code 36-931 is generated when this problem is detected on the fifth successive failed communication attempt.

System Impact None. The system will function normally. [SI-0]

User Action None

Show at DS False

DICOM Printer Status FAILURE

Unique Symb. ID ERR_UI_COMMN_RETRY

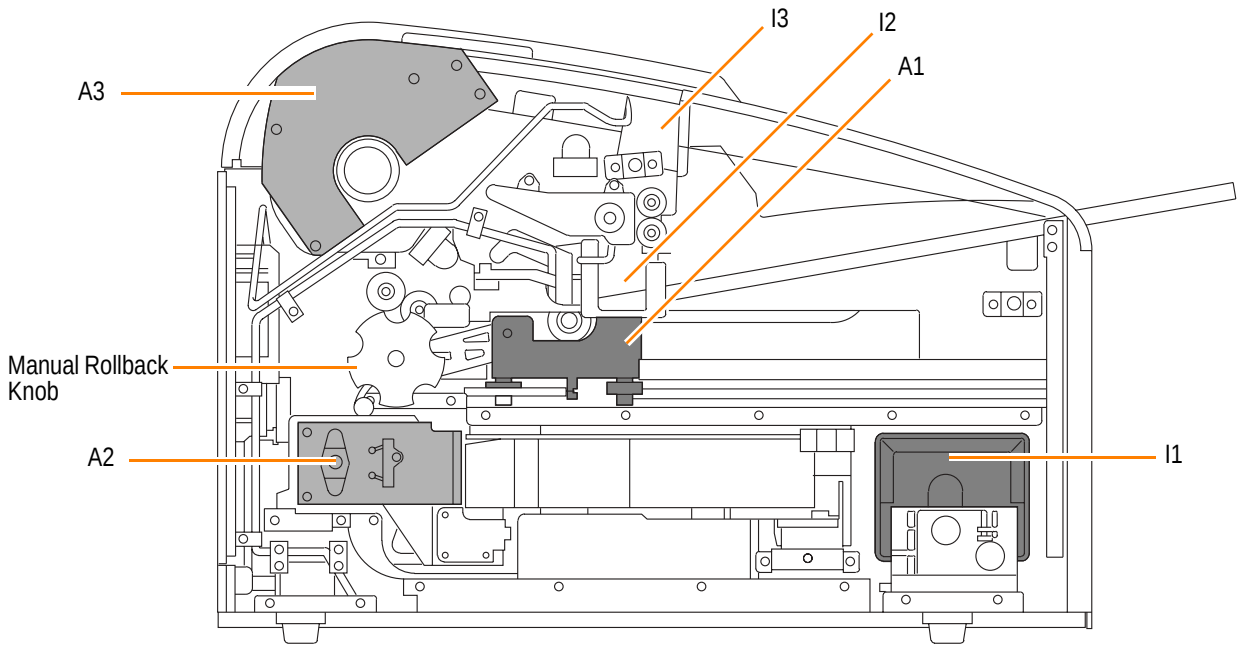
Condition Code: 36-935 – Local Panel Not Receiving Communications

Web Portal Message	Log Message	DICOM Printer StatusInfo	Severity
Local Panel: No Communications from MCS	Local Panel not receiving communications from MCS	NORMAL	2-Warning

Description	This error occurs when the display screen does not receive communications from the MCS. The display screen waits for 50 seconds, then attempts to invoke communications from the MCS. After an additional 10 seconds, if the display screen has not received MCS communications, this error displays on the display screen. The error clears when the display screen detects MCS communications.
System Impact	Unknown. If the MCS is down, the imager will not print films. If the problem is limited to communications, the imager may be able to print films.
User Action	1. Shut down the laser imager, and then restart the imager. 2. If the error persists, call for service.
FE Action	None
Show at DS	True
DICOM Printer Status	NORMAL
Unique Symb. ID	ERR_UI_MCS_COMMN_FAIL

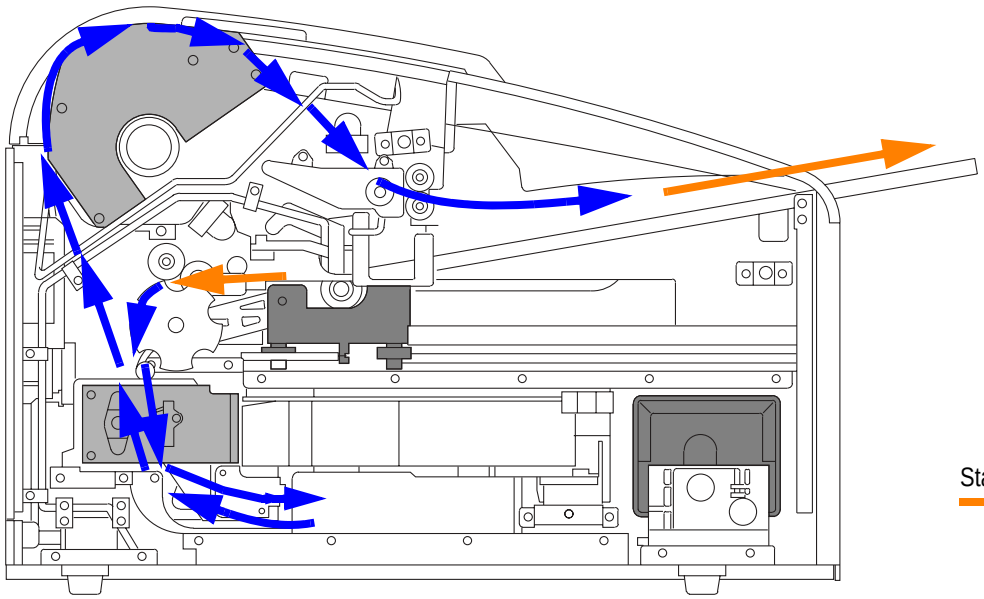
Clearing Film Jams

Film Jam Areas and Interlocks

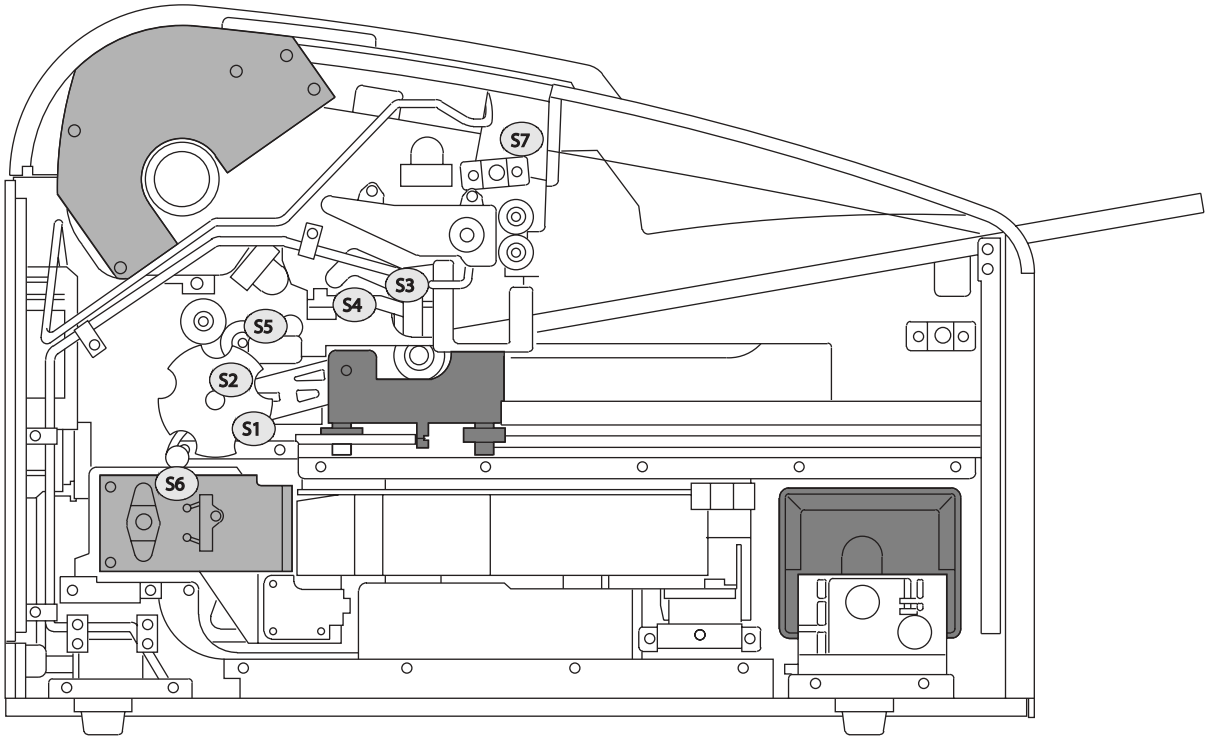


Jam Clear Area	Description
A1	Film supply
A2	Film path
A3	Processor/densitometer
Interlocks	**Description**
I1	Film supply
I2	Left cover
I3	Top cover

Film Path



Sensors



Sensor	Description
S1	Film cartridge
S2	Rollback home
S3	Pickup home
S4	Film contact (Pickup)
S5	Feed roller open
S6	Start of Page (SOP - Exposure Transport)
S7	Densitometer

Film Jam in Area 1 – Error Code 116 (Web Portal code 21116)

[1] If possible, close the film cartridge.

[2] Remove the film cartridge from the laser imager.

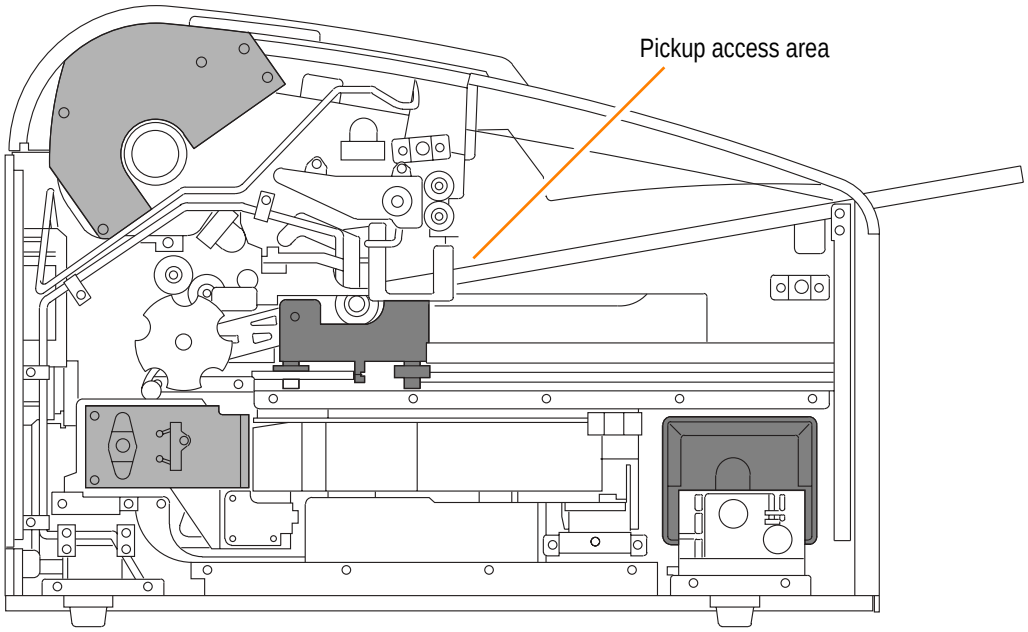
[3] Remove any films jammed in Area 1. Access this area from the front of the imager through the film supply.

Note

If the film is not accessible from the film supply, continue with Step 4.

[4] Remove the top cover.

[5] Remove the left cover.



[6] Remove any jammed films in the pickup access area.

[7] If Area 1 did not contain jammed films, take the film cartridge to a dark room and remove any jammed films.

[8] Reinsert the film cartridge into the laser imager.

[9] Install the left cover.

[10] Install the top cover.

Film Jam in Area 2 – Error Codes 323, 324 or 325 (Web Portal code 26323, 26324 or 26325)

[1] Remove the left cover.

[2] Remove any film from Area 2.

[3] If the film is not loose, carefully turn the exposure transport knob clockwise to remove the film from the rollers.

[4] Install the left cover.

If misplaced films were never located and this error recurs on the next film, continue with Step 5.

[5] Remove the top cover.

[6] Remove the left cover.

[7] Remove any misplaced film in the pickup access area.

[8] Install the left cover.

[9] Install the top cover.

Film Jam in Area 2 or 3 – Error Code 326 (Web Portal code 26326)

[1] Remove the top cover.

[2] Rotate the exit roller handle clockwise until a film exits the laser imager.

[3] If a film does not exit:

(a) Remove the left cover.

(b) Reach into Area 2 and remove any film.

(c) If the film is not loose, carefully turn the exposure transport knob clockwise to remove the film from the rollers.

[4] Install the left cover.

[5] Install the top cover.

Film Jam in Area 3 – Error Code 543 (Web Portal code 26543)

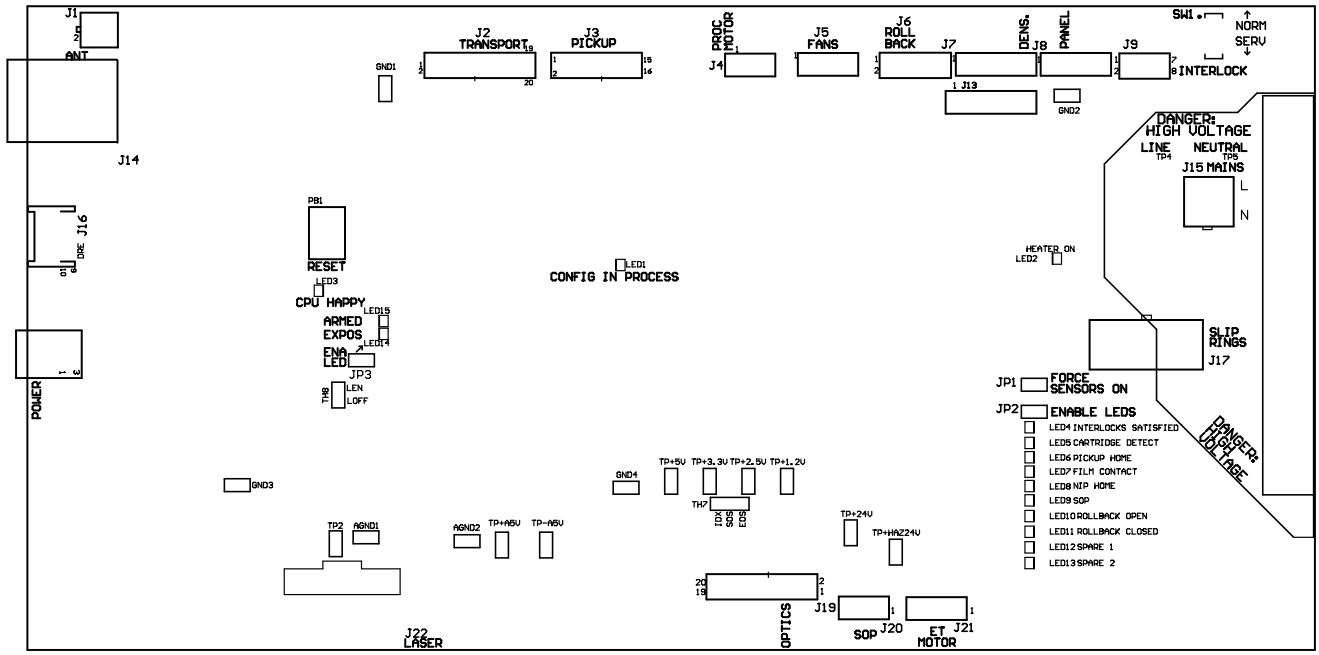
[1] Remove the top cover.

[2] Rotate the exit roller handle clockwise until a film exists the laser imager.

[3] Install the top cover.

Functions of the MCS Board Test Points, Jumpers, and Switches

Machine Control System (MCS) Board



LEDs, Jumpers, and Switches

Item	Function	Status
LED1	Config	**Off** = normal (On for a short time after reset)
LED2	Heater on	**Blinking** = normal
LED3	CPU “OK”	**Blinking** = normal
LED4	Interlocks satisfied	**On** = all interlocks closed
LED5*	Cartridge detect	• **Off** = Cartridge detected • **On** = No cartridge
LED6*	Pickup home	**On** = pickup at home position
LED7*	Film contact	• **Off** = sensor actuated by film (detected) • **On** = sensor did not detect any film
LED8*	Nip home	**On** = film transport nip roller at home position
LED9*	SOP	**Blinks briefly** when film is first detected by SOP sensor. Does not stay in steady state.
LED10*	Rollback open	Not used
LED11*	Rollback closed	**On** = rollback at home position
LED12	Spare 1	Not used
LED13	Spare 2	Not used
LED14*	Armed	**On** = hardware is ready to lay down pixels on film when SOP sensor triggers it
LED15*	Expose	**On** = laser is on

Item	Function	Status
Important During normal operation, jumpers should be off so that LEDs and optical sensors do not fog film.		
JP1	Force sensors on	• Jumper **off** = normal operation • Jumper **on** = troubleshooting
JP2	Enable LEDs	
JP3	Enables Armed and Exposed LEDs	
SW1	Service switch	• **Norm** = normal operation • **Serv** = Service Mode
PB1	Reset	Performs hard reset of board when pressed (same as a power cycle)

* Indicates that LED is always off during normal operation. Jumpers on JP1, JP2, and JP3 are used to force the sensor/LED condition for troubleshooting.

Motors and Sensors

Description	Home/Default	Limit/Sensed Position
M3x – Pickup drive motor	Home = Up	Limit = Cassette bottom
S3 – Pickup home sensor	Blocked = Pickup home	Unblocked = Pickup not home
S4 – Film contact sensor (also used for Film out detect)	Blocked = Pickup not contacting film	Unblocked = Pickup contacting film
S2 – Rollback home sensor	Blocked = Rollback home	Unblocked = Rollback not home
Rollback motor	Home = Cartridge closed	Limit = Cartridge open
Feed roller nip open/close motor	Home = Feed roller open	Limit = Feed roller closed
Feed roller nip drive motor	Off	On
Vacuum pump	Off	On
S5 – Feed roller home sensor	Blocked = Feed roller up	Unblocked = Feed roller down
S1 – Cartridge detect sensor	Blocked = Cartridge not present	Unblocked = Cartridge present
S6 – Start-of-page (SOP) sensor	No film detected	Film detected
Exposure transport motor	Off	On
Polygon spinner motor	Lock signal low = Spinner up to speed	Lock signal high = Spinner not up to speed
Film processor motor (continuous)	N/A	N/A
S7 – Densitometer film sensor	Unblocked = No film at sensor	Blocked = Film at sensor

Using the Logs

Types of Logs

The service tool includes eight logs.

Log	Function
Application Log	Records the events controlled and monitored by all system software applications and subsystems
Audit Log	Records who has been on the machine
DICOM Log	A log of network (DICOM) subsystem events filtered from the Application Log. The network subsystem is part of the MIM (DRE) application.
Error History	Records all error events
IIS (Internet Information Server) Log	Records all attempts to connect to the Web site server
NT Event Log (Application)	Records Windows events for software applications
NT Event Log (System)	Records Windows events for system software
Print Delivery Log	A log of all delivery and SDS Server Subsystem events filtered from the application log. The subsystems are part of the MIM application.

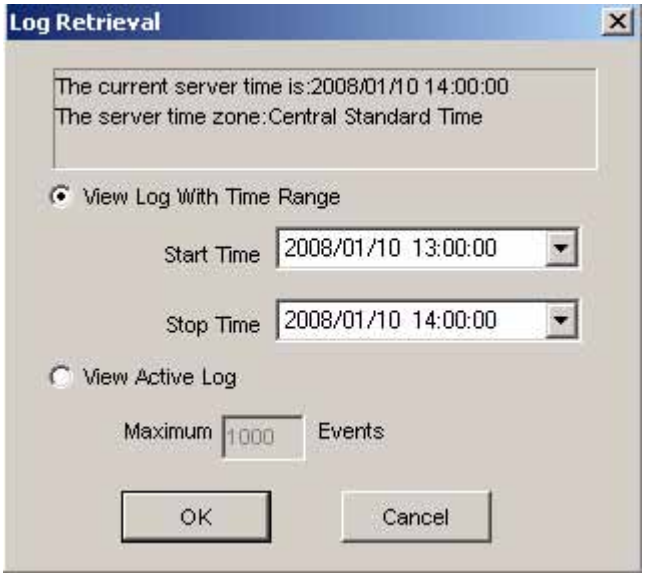
Application Log

The application log and the other subsystem logs, which can be filtered from the application log, are important troubleshooting resources. When an error occurs, search the logs to help locate the problem by checking the sequence of events leading up to the error. A troubleshooting sequence might be:

- Connect your laptop to the laser imager and use Secure Link client software to access the service tool.
- Search the error history to determine the number of times the error occurred.
- Open the NT event (system) log to determine the time at which the error occurred.
- Search the application log (or a subsystem log) for data at the time of the error.
- View the data in the log before the error.

Accessing the Application Log

[1] Select **Logs > Application Log** from the main menu of the service tool. A blank log screen with a Log Retrieval window is displayed.



[2] Use the Log Retrieval window to locate the log data to view:

- If you know the approximate time when the event occurred, select **View Log With Time Range** and enter a Start and End Time.
- To view the log of an event when the event is occurring, select **View Active Log**.

[3] Click **OK**. The retrieved log displays.

[4] Click **Options** to display a screen of the columns of the log.

You can use this screen to choose the data fields you want to view or decrease the width of the log.

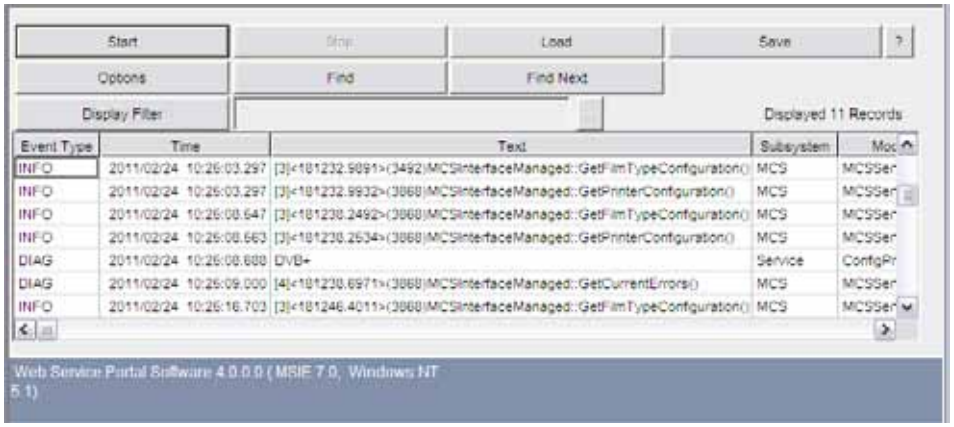
[5] To decrease the log to a usable width, clear the check boxes of the columns in the display field that you do not want to view.

Note

You can also decrease or increase the column width in the log by clicking the lines between the columns and dragging the column left or right.

[6] Click **OK**.

Log Keying Functions



Note

Your computer must have Log Viewer software to view the logs.

Button	Function
Start	Displays parameters for retrieving a new log. The Log Retrieval screen displays. • If you know the approximate time when an error occurred: 1. Select **View Log With Time Range**. 2. Type a Start Time and an End Time. 3. Click **OK**. • To view the log during the time an event occurs: 1. Select **View Active Log**. 2. Click **OK**.
Stop	Stop the loading process while a log is loading
Load	Loads a log from a saved .xml or .KFC-log file on your computer
Save	Saves a log to a folder to your computer
?	Opens the Help screen
Options	Displays a screen of the log columns available for viewing 1. Select the name of each column you want to view in the log. 2. Click **OK** to display the log.
Find	Searches for a string in the log that you can identify by words or numbers, for example, a condition code
Find Next	Locates the next instance of the string that you entered from the Find operation
Display Filter	Filters the log to decrease the amount of log data for analytical use. (See “Using Filtering”)

Contents of the Log

Each line of the log documents an event. Each event has 18 columns of information. Only five of the columns, listed below, are useful for diagnostics by field service personnel. The other data is for use by Software Engineering.

Column Title	Function
Event Type	Provides the same information in the Level column—the level provided for the event. The levels from highest to lowest are: Trace (Level 6), Debug (5), Diag (4), Info (3), Warning (2), Error (1), and Fatal Error (0).
Time	Provides the time of the event, down to 1/100th of a second. The time is used to locate events in the log.
Code	The code for an event, normally an error code
Text	Describes the event
App	The software application in which the event occurred

Using Filtering

Filtering decreases the amount of log data according to criteria that you select. An example of when you might need to filter a log would be if modalities are unable to select the laser imager because the current number of scp associations has reached the limit (12). Use filtering to search for key words and numbers in the log to locate the information to solve the problem. See the following example search:

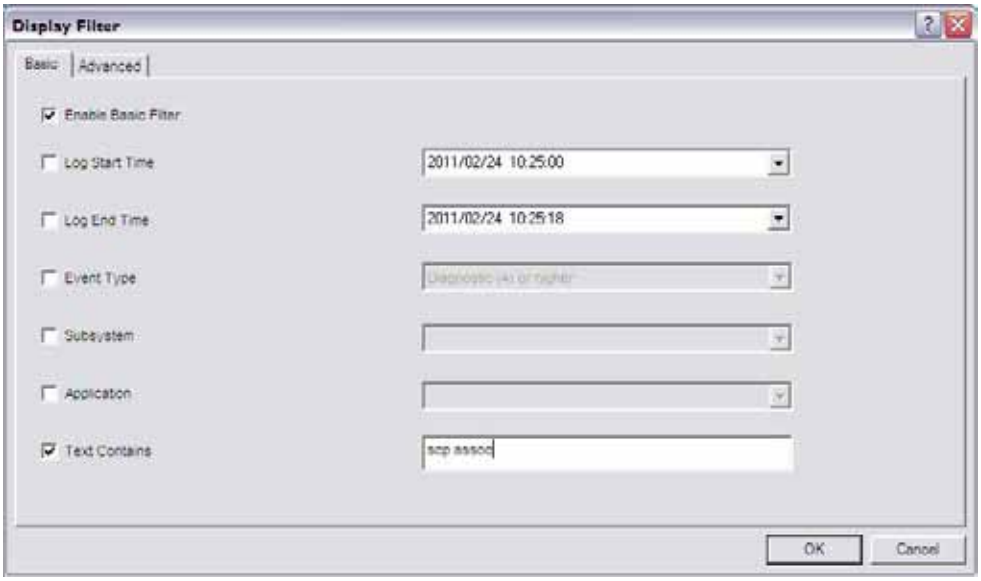
[1] Access the application log and use the **Log Retrieval** window to select the time within which the laser imager problem occurred.

[2] Click **OK** to capture the log data.

[3] Click **Display Filter**.

[4] Under the **Basic** tab, select:

- **Enable Basic Filter**
- **Text Contains**



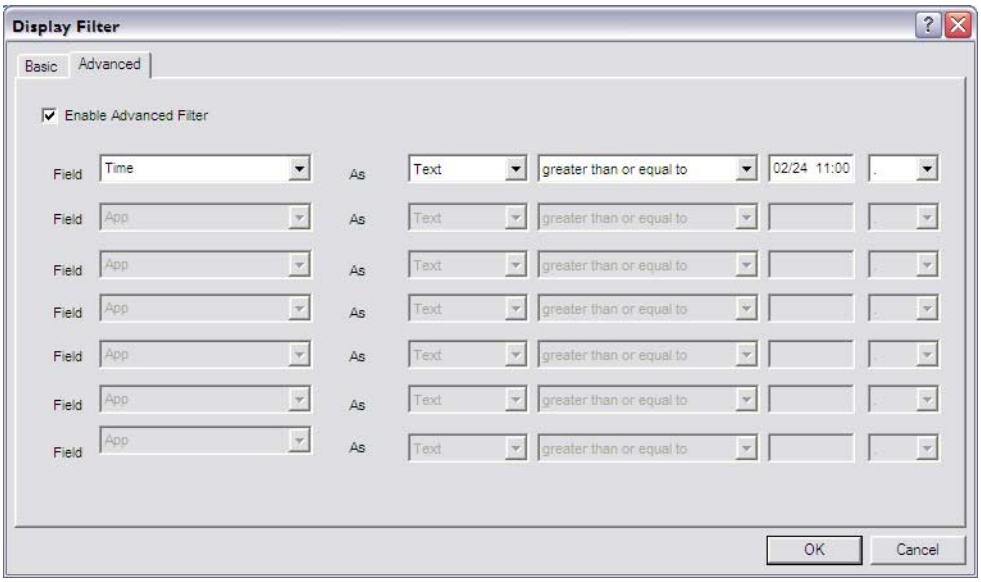
[5] In the Text Contains box, type the words and numbers that you want to search on. In this example, “scp assoc” was entered so that it appears in the events in the log you want to view.

[6] Click **OK** to search the log for the specified text.

The search retrieves only log items that include the words “scp assoc.” If the log includes too many records, decrease the data by applying additional filtering.

[7] Click **Display Filter**.

[8] Click the **Advanced** tab.



[9] Select **Enable Advanced Filter**. This adds the filter criteria to the original search words “scp assoc”.

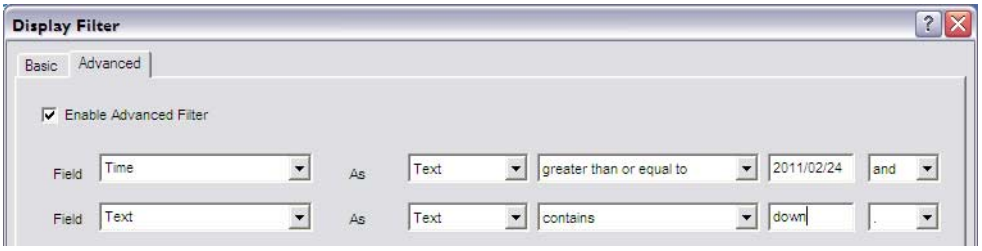
(a) Select **Time** in the Field drop-down list (scroll the list).

(b) Select **Text** in the As drop-down list.

(c) Narrow the time period by selecting the appropriate parameter in the next drop-down list, and then type the date and time in the box. Use **yyyy/mm/dd[space][space]hh:mm** format, with hours in 24-hour time.

[10] Click **OK** to retrieve all the “scp association” events during the time selected.

[11] Open the Advanced filter again and add criteria to show only the events where the Text field contained “down.”



The log is filtered to show scp associations that went down during the specified time period.

Changing Log Levels

Important

Levels higher than the recommended defaults can slow down the system. If you change a level to help diagnose a problem, return the level to the default value after completing troubleshooting.

The level recorded in the logs for each subsystem can be changed, if necessary, for troubleshooting purposes. To change log levels for subsystems:

[1] From the service tool, select **Configuration > System > Log Level**.

[2] Click **Modify**.

[3] From the drop-down list for the each subsystem, select the log level you want, and then click **Save**.

The log levels, from highest to lowest, are:

Fatal Error: Record only fatal errors.

Error: Record all errors.

Warning: Record warnings and all errors.

Information: Record key events.

Diagnostic: Provide a level of information for field troubleshooting.

Debug: Provide a level of information for software debugging.

Trace: Records all communication in use for any subsystems

Section 5: Illustrated Parts List

Main Assembly

Figure 1 Main Assembly – Front view

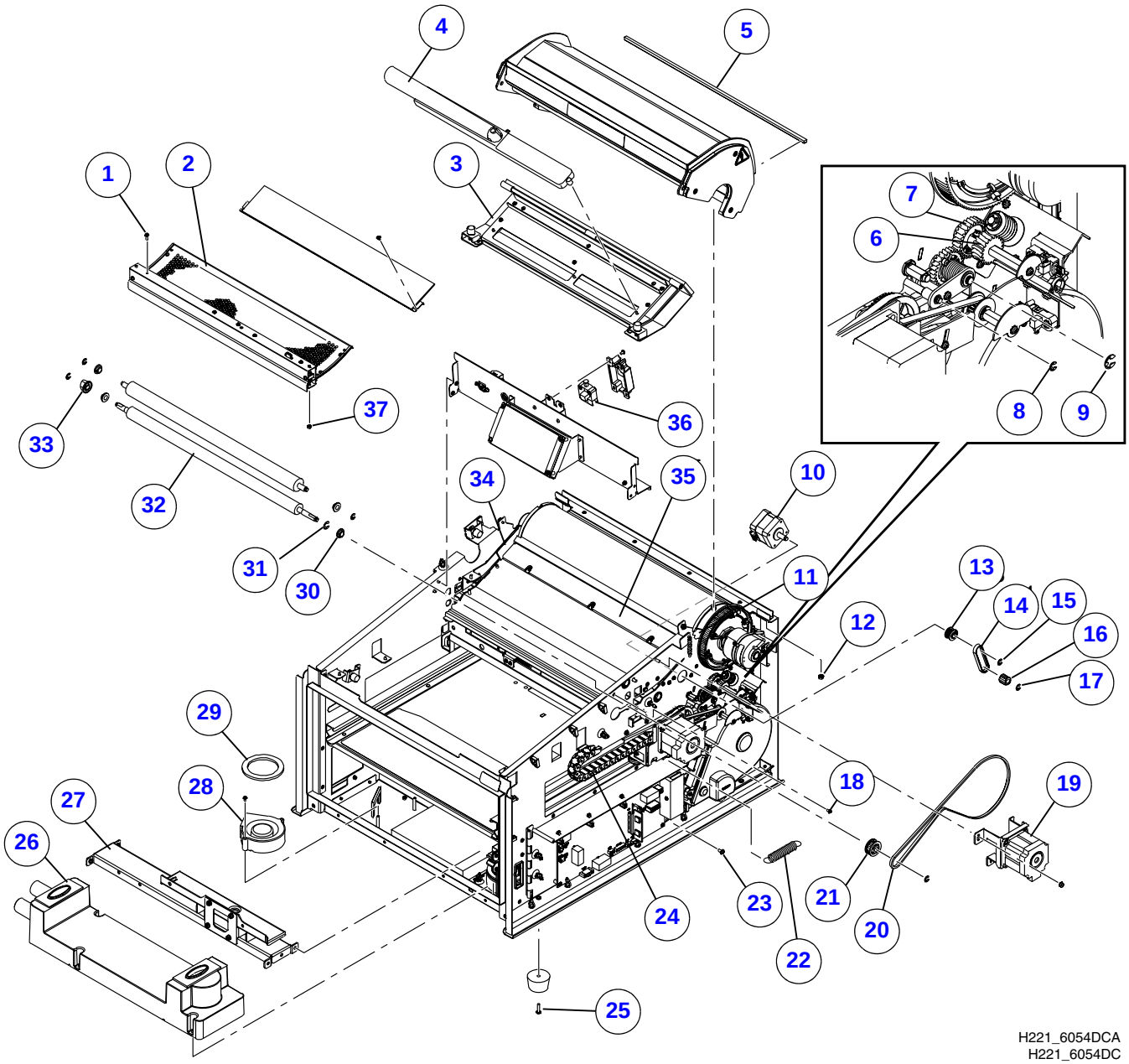


Figure 1 Main Assembly – Front view

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G0893	Screw	15	Screw - machine; M3 × 10 mm L, steel, ZPCC
2	A4A99G5248	Assembly - Cooling and densitometer	1	Assembly: Processor coolingand densitometer
3	A4A99G5649	Assembly - Heat sink	1	Assembly: Heat sink - processor
4	A4A99G0093	Manifold - Exhaust	1	Assembly: Exhaust - cooling, processor
5	A4A99G3970	Gasket - drum cover	1	Gasket - drum cover, processor
6	A4A99G3271	Gear - drive	2	Gear - drive, feed roller
7	A4A99G4017	Gear - worm	1	Gear - worm, 20 tooth, transport; RoHS compliant
8	A4A95F0907	Retaining ring	1	Retaining ring - external; 4.0–5.0 mm shaft dia., 0.6 mm T, carbon steel, Trivalent Zinc Plus sealer
9	A4A95F4586	Retaining ring	7	Retaining ring - external; 6.0–8.0 mm shaft dia., 0.7 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
10	A4A98F3170	Motor - stepper	1	Motor - stepper, DC
11	A4A99G4093	Insulation - end plate, right	1	Insulation - end plate, right, processor; RoHS compliant
12	A4A95F1875	Nut	2	Nut - machine; Keps, steel class 6/8, plain zinc, M4 × 0.7 mm; RoHS compliant
13	A4A97F2484	Pulley	1	Pulley - transport; 3 mm, GT, 16 groove
14	A4A99G1676	Belt - timing	1	Belt - timing; 6 mm W, 48 tooth, 144 mm L × 3 mm W pitch
15	A4A95F4586	Retaining ring	7	Retaining ring- external; 6.0–8.0 mm shaft dia., 0.7 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
16	A4A99G4605	Pulley	1	Pulley- transport; 3 mm, 16 tooth, GT, machined; RoHS compliant
17	A4A95F4586	Retaining ring	7	Retaining ring - external; 6.0–8.0 mm shaft dia., 0.7 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
18	A4A99G5064	Screw	2	Screw - machine; SEMS, pan head, Torx T10, M3 × 0.5 × 6, clear zinc
19	A4A92G1630	Motor - stepper	1	Motor - stepper, processor drive
20	A4A99G1675	Timing belt	1	Belt - timing; 6 mm W, double-sided, 232 tooth, 696 mm L × 3 mm W pitch
21	A4A97F2485	Pulley	1	Pulley - transport; 3 mm, 24 groove, GT; RoHS compliant
22	A4A99G6356	Spring - extension	2	Spring - extension; 0.018 in. wire diameter × 2.750 in. L, stainless steel
23	A4A99G0894	Screw	2	Screw - machine; SEMS, pan head, Torx T20, M4 × 0.7 mm × 8.0 mm, clear zinc
24	A4A97E8211	Chain	1	Chain; MicroTrak 0130 series, cable carrier system, fiber reinforced nylon, flexible, black, 17 links, 1 set of brackets, 20 mm bend radius
25	A4A99G0895	Screw	4	Screw - machine; SEMS, pan head, Torx T20, M4 × 0.7 × 16, clear zinc

Item	Part No.	Part Name	Quantity	Detailed Description
26	A4A98F3389	Gasket - plenum	2	Gasket - plenum, processor
27	A4A99G3599	Assembly - rail	1	Assembly: Rail - isolation, front; RoHS compliant
28	A4A99G2073	Blower	2	Blower; 24 V (DC), 10.2 CFM, 52 db
29	A4A92G6910	Gasket	2	Gasket - fan, processor
30	A4A99G1916	Bearing	8	Bearing - flange, transport
31	A4A95F4836	Retaining ring	7	Retaining ring - external; 8.0–11.0 mm shaft dia., 0.9 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
32	A4A98H5592	Roller - drive	1	Roller - drive, processor
33	A4A97F2391	Knob - roller	1	Knob - roller, transport
34	A4A99G4094	Insulation - end plate, left	1	Insulation - end plate, left, processor; RoHS compliant
35	A4A98H5844	Assembly - Diverter	1	Assembly: Diverter - processor
36	A4A99G3507	Switch, interlock	3	Switch, interlock - SPDB-NO (SPST), 16 A, screw mount; RoHS compliant
37	A4A95F1872	Nut	2	Nut - machine; Keps, steel, class 6/8, plain zinc, M3 × 0.5 mm; RoHS compliant

Figure 2 Main Assembly – Rear view

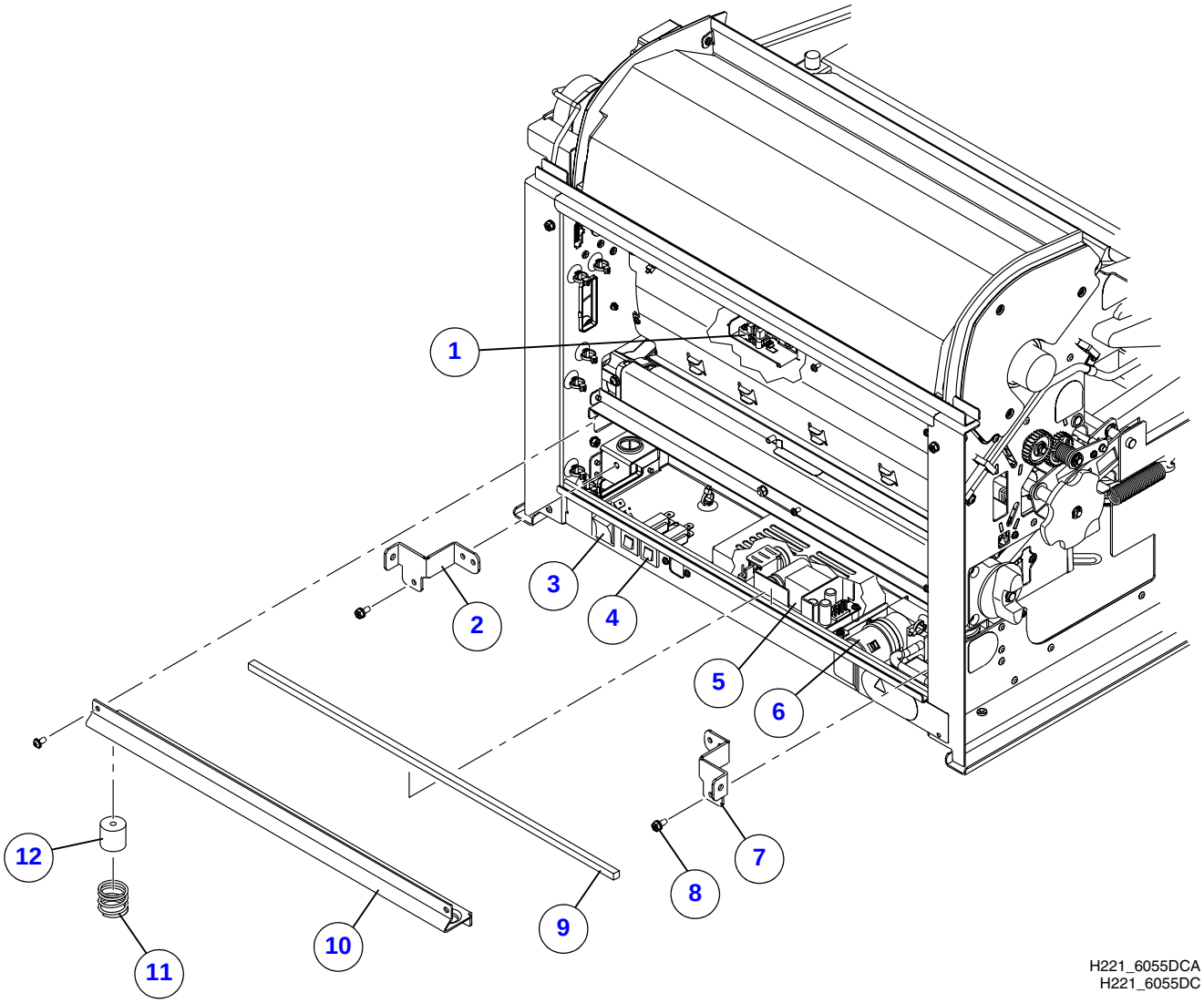


Figure 2 Main Assembly – Rear view

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A98E4053	Switch	1	Switch - optical, emitter/sensor, interruptive; Schmitt Trigger w/flag, 5.0 V (DC), Molex 5102 series connector. 0.2 in. W slot; RoHS compliant
2	A4A99G1143	Lock	1	Lock - shipping, rear, right
3	A4A95E5849	Switch	1	Switch - rocker, mechanical; single unit, alternate action, non-illuminated, snap-in mounting, panel mount, DPST, 250 V (AC), 20 A, 6.3 in. × 0.8 in.
4	26-1004-3199-3	Circuit breaker	2	Circuit breaker; single pole, 15 A @ 32 V (DC)/ 250 V (AC), black bezel, black button, through-hole
5	A4A99G0777	Power supply	1	Power supply - switching, single; 24 V, 65 W; RoHS compliant
6	A4A95F7220	Pump	1	Pump - compressor/vacuum; through-hole, 0.125 in. barb, EPDM valves, 24 V (DC), 22.5 psi
7	A4A99G1618	Lock	1	Lock - shipping, rear, lt
8	A4A99H0680	Screw	10	Screw - machine; hex washer head, M4 × 8 mm L, steel, ZPCC; RoHS compliant
9	A4A99G2723	Gasket - horizontal, back panel	1	Gasket - horizontal, back panel; RoHS compliant
10	A4A99G1142	Rail - isolation	1	Rail - isolation, floating, rear
11	A4A95F9624	Spring	2	Spring, compression - 0.97 in. OD × 0.08 wire dia., 1.00 free length; RoHS compliant
12	A4A92G0068	Damper - foam	2	Damper - foam, isolation; RoHS compliant

Cables and Harnesses

Figure 3 Cables and Harnesses

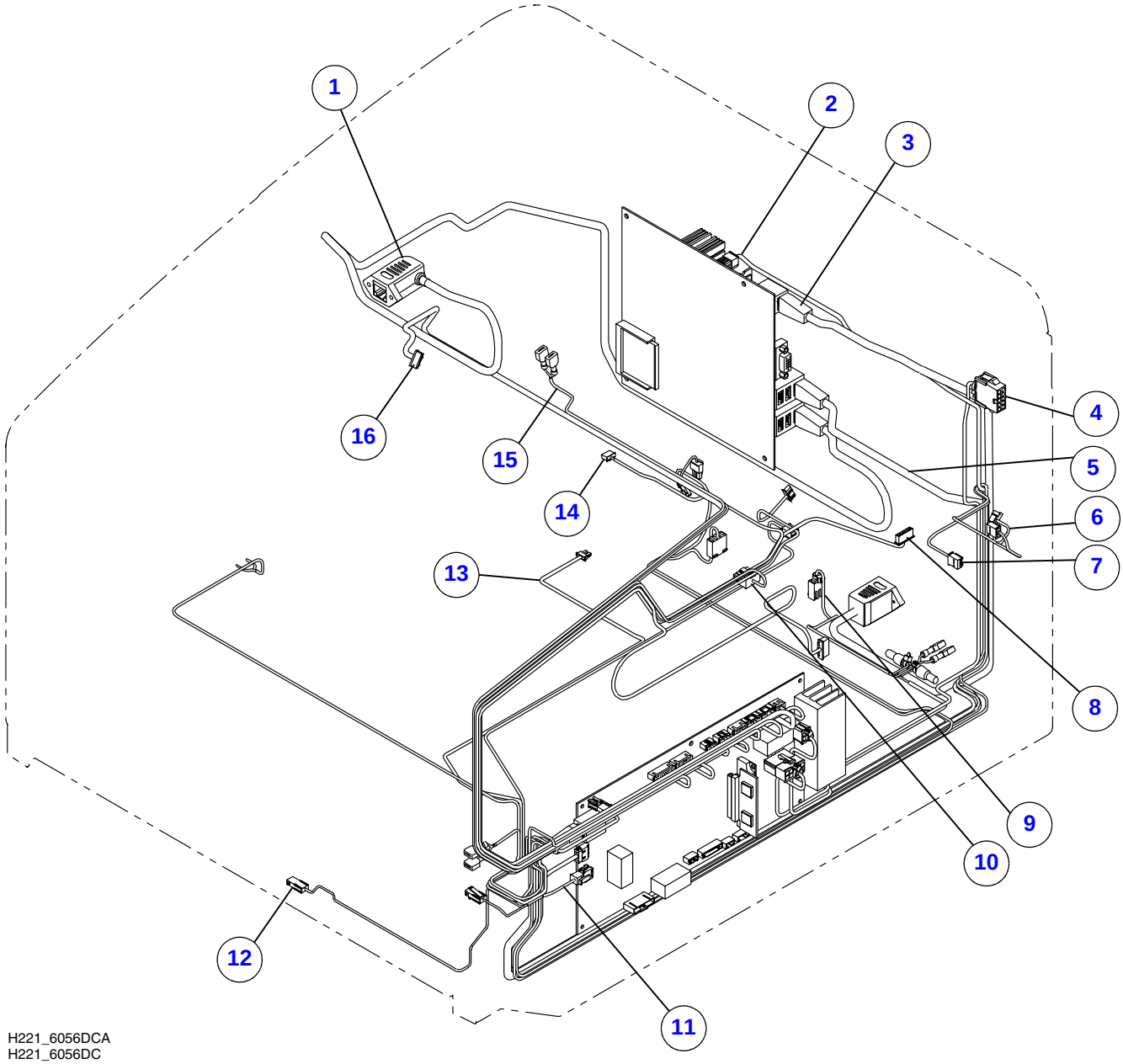


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Figure 3 Cables and Harnesses

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G3453	Cable	1	Cable - MCS to service, ethernet; RoHS compliant
2	A4A99G0724	Cable	1	Cable - MCS to DRE; RoHS compliant
3	A4A99G0716	Cable	1	Cable - MCS to DRE, ethernet; RoHS compliant
4	A4A99G0721	Harness	1	Harness - MCS to slip ring, intermediate; RoHS compliant
5	A4A99G2642	Cable	1	Cable - DRE to bulkhead, ethernet; RoHS compliant
6	A4A99G0718	Harness	1	Harness - MCS to transport; RoHS compliant
7	A4A99G0727	Harness	1	Harness - MCS to rollback; RoHS compliant
8	A4A99G0720	Cable	1	Cable - MCS to processor motor; RoHS compliant
9	A4A99G0728	Harness	1	Harness - power switch to MCS/power supply; RoHS compliant
10	A4A99G3397	Harness	1	Harness - MCS to pickup, intermediate; RoHS compliant
11	A4A99G0725	Cable	1	Cable - MCS to power supply; RoHS compliant
12	A4A99G3002	Harness	1	Harness - MCS to faz fans, intermediate; RoHS compliant
13	A4A99G0723	Cable	1	Cable - MCS to RF tag, RoHS compliant
14	A4A99G0714	Harness	1	Harness - MCS to densitometer; RoHS compliant
15	A4A99G0726	Harness	1	Harness - MCS to interlocks; RoHS compliant
16	A4A99G0715	Cable	1	Cable - MCS to local panel; RoHS compliant

Covers

Figure 4 Covers

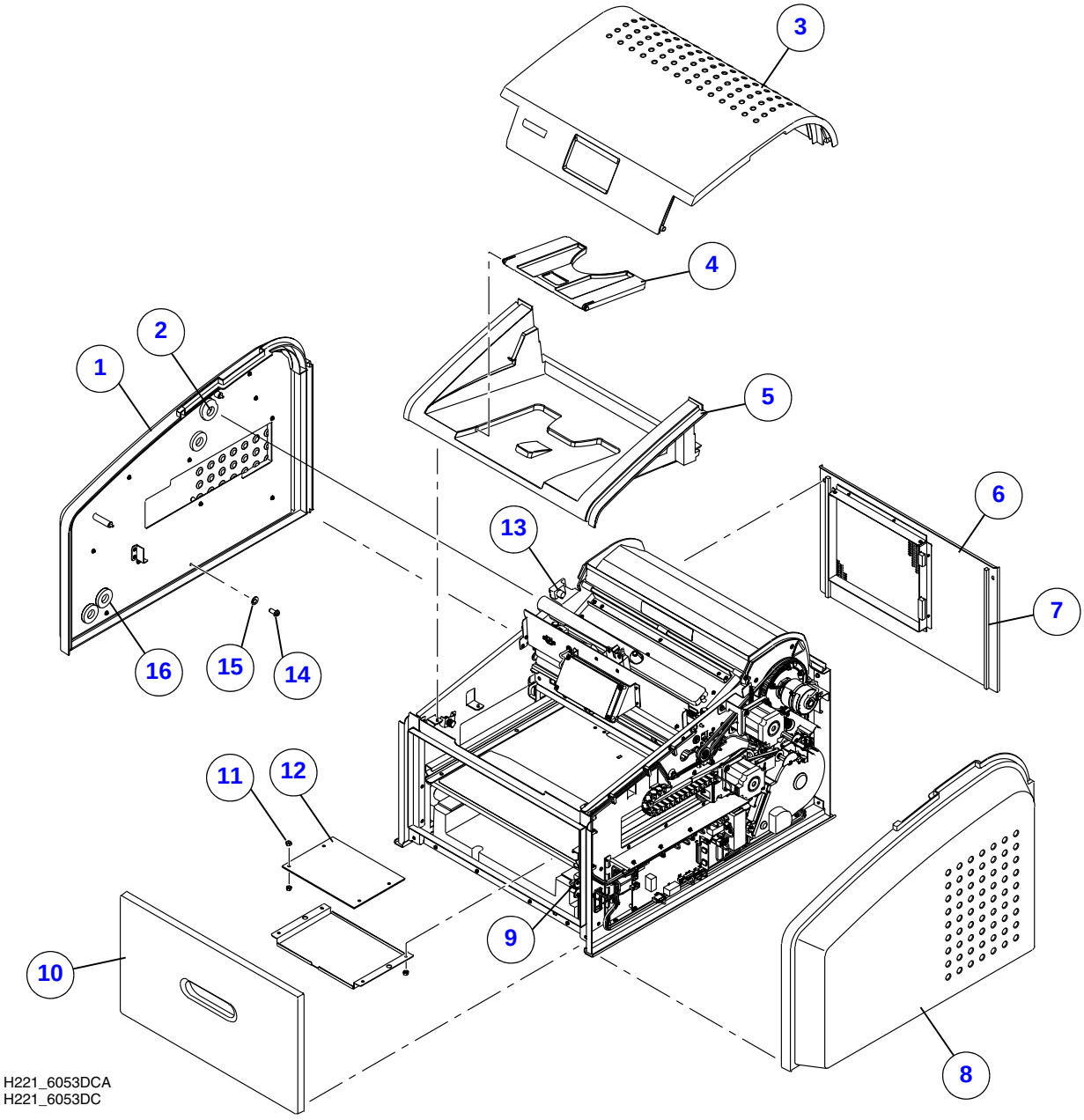

Figure 4 Covers

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A69G7518	Assembly - left panel	1	Assembly: Left panel
2	A4A99G2726	Gasket	1	Gasket - air channel, left panel; RoHS compliant
3	A4A99G7526	Cover - top, main	1	Assembly: Cover- branded, main
4	A4A99G7515	Support - exit tray	1	Support - film, exit tray; RoHS compliant
5	A4A99G7513	Exit tray	1	Tray - exit, main; RoHS compliant
6	A4A99G7524	Assembly: Back panel	1	Assembly: Back panel
7	A4A99G2724	Gasket	2	Gasket - vertical, back panel; RoHS compliant
8	A4A99G7516	Assembly: Right panel	1	Assembly: Right panel
9	A4A99G2946	Cover - interlock	1	Cover - interlock; RoHS compliant
10	A4A99G7520	Assembly: Door - main	1	
11	A4A99G4052	Spacer	4	Spacer - round; 4.3 mm ID × 8.0 mm OD × 4.0 mm L, nylon, plain; RoHS compliant
12	A4A99G1211	Assembly: RF antenna	1	RF tag
13	A4A99G2835	Knob - captured	2	Knob - captured, left panel
14	A4A99G5064	Screw	2	Screw - machine; SEMS, pan head, Torx T10, M3 × 0.5 × 6, clear zinc
15	A4A96H7585	Washer	2	Washer - shoulder; non-metallic, nylon, natural, 0.031 T × 0.078 L, 0.128 ID × 0.312 OD × 0.185 shoulder dia.
16	A4A99G2725	Gasket - duct	5	Gasket - duct, left panel

Exposure Transport Assembly

Figure 5 Exposure Transport Assembly

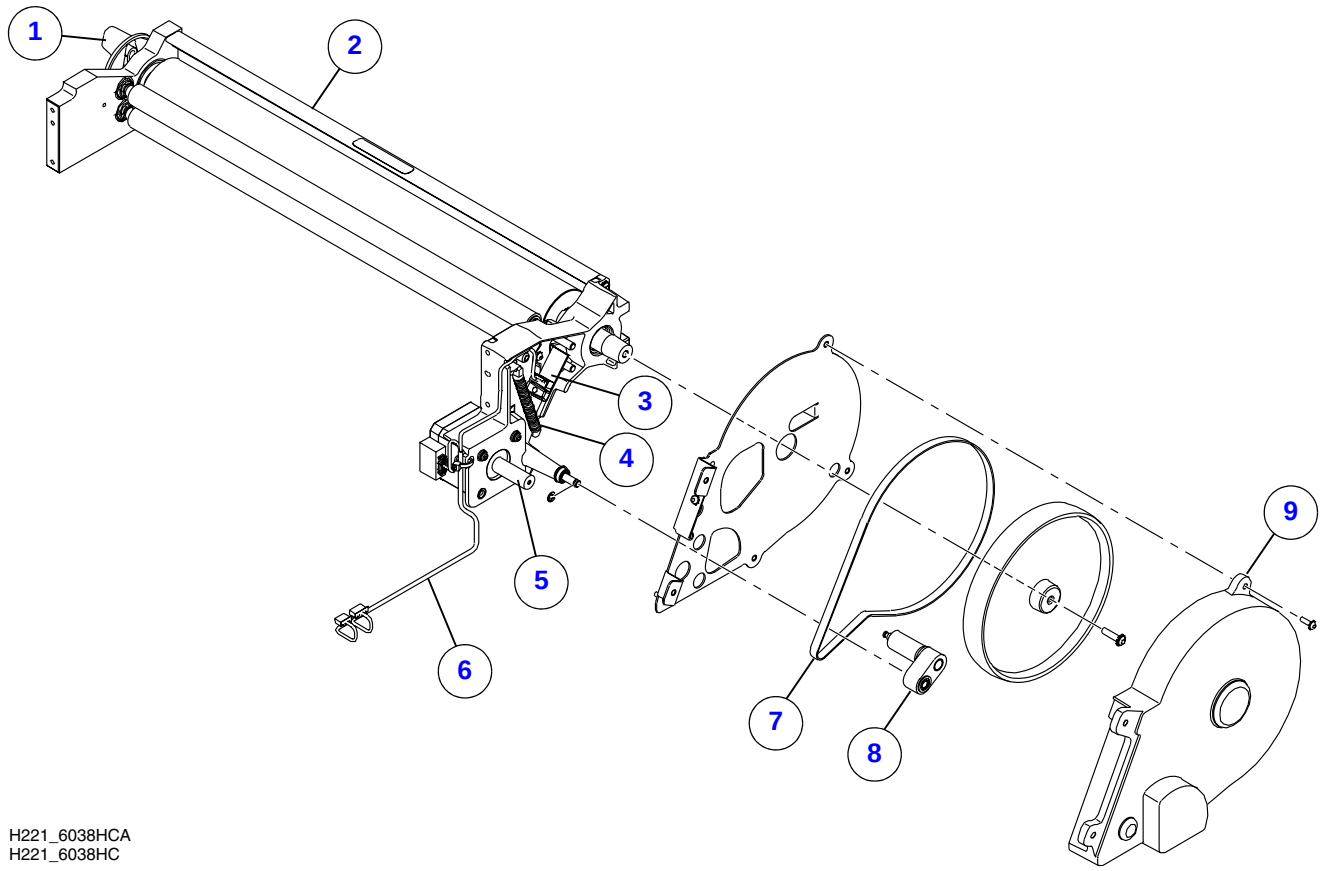

Figure 5 Exposure Transport Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	78-8094-5562-5	Handle - rollback	1	Handle - rollback
2	A4A99G6964	Assembly: Exposure transport	1	Assembly: Exposure transport
3	A4A99G2919	Assembly: Piezo start of page	1	Assembly: Piezo start of page
4	A4A99G0062	Spring - extension	1	Spring - extension; 0.028 in. wire dia. × 1.516 in. free length, stainless steel
5	A4A99G4828	Assembly: Motor	1	Assembly: Motor
6	A4A99G0719	Harness	1	Harness - MCS to exposure transport; RoHS compliant
7	A4A99G3655	Belt	1	Belt - exposure transport
8	A4A98H5415	Assembly: Tensioner	1	Assembly: Tensioner
9	A4A99G6923	Cover - belt	1	Cover - belt, outer; RoHS compliant

Transport Assembly

Figure 6 Transport Assembly

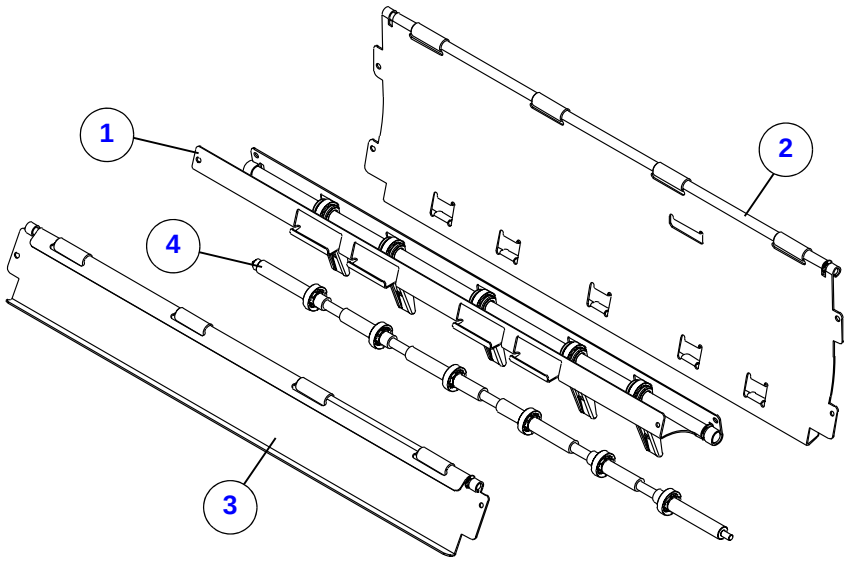

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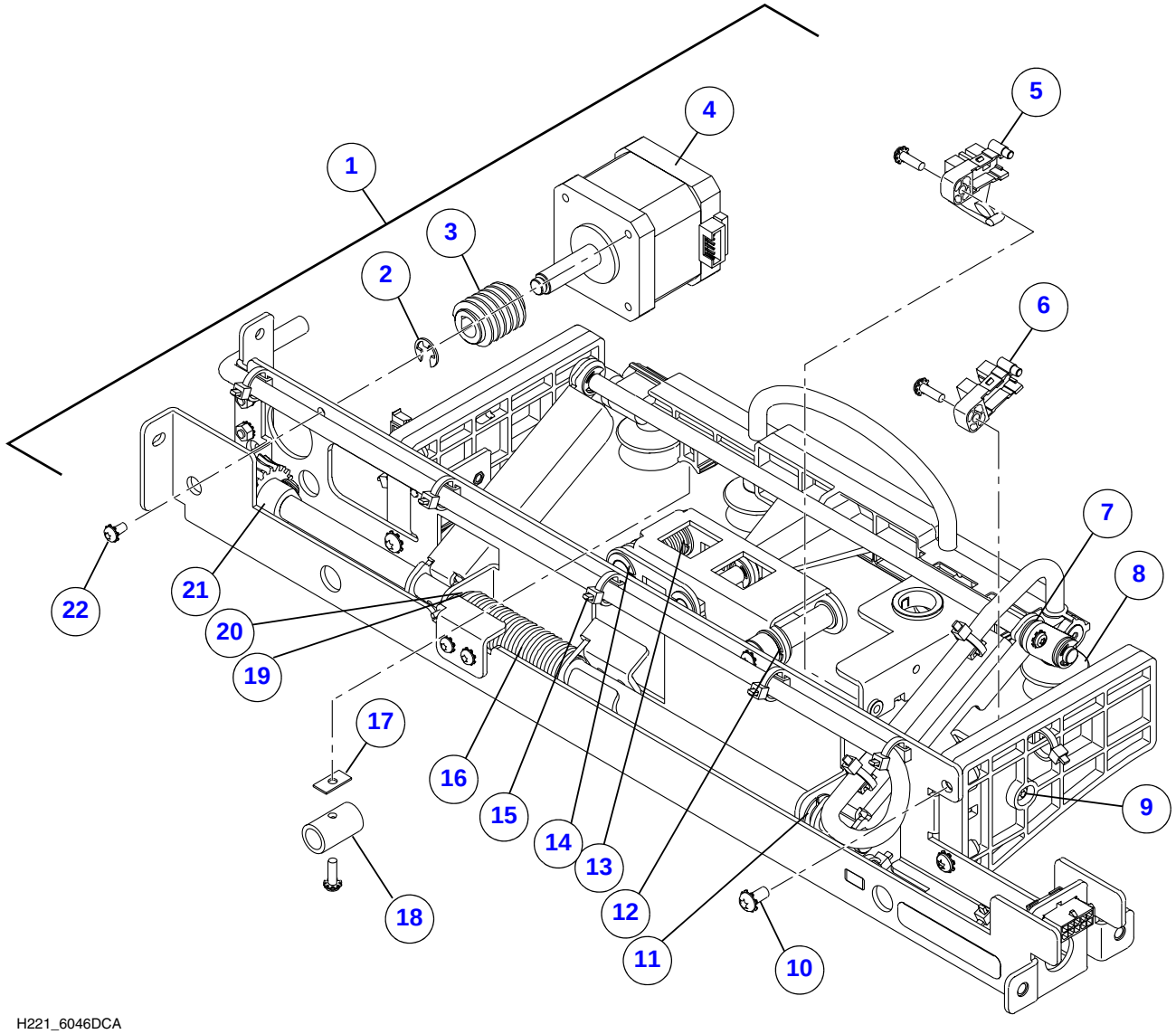
Figure 6 Transport Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G1383	Assembly: Guide - top, front	1	Assembly: Guide - top, front, film transport
2	A4A99G1284	Assembly: Guide - back	1	Assembly: Guide - back, film transport
3	A4A99G1425	Assembly: Guide - top, back	1	Assembly: Guide - top, back, film transport
4	A4A99G1426	Assembly - idler	2	Assembly: Idler - film transport

Pickup Assembly

Figure 7 Pickup Assembly



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H221_6046DC

Figure 7 Pickup Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G6744	Assembly: Pickup	1	Assembly: Pickup
2	A4A95F4586	Retaining ring	3	Retaining ring - external; 6.0–8.0 mm shaft dia., 0.7 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
3	A4A99G4074	Worm - single start	1	Gear - worm; single start, transport; RoHS compliant
4	A4A99G4876	Motor - stepper	1	Motor - stepper, transport
5	A4A98E4053	Switch	1	Switch - optical, emitter/sensor, interruptive; Schmitt Trigger w/flag, 5.0 V (DC), Molex 5102 series connector. 0.2 in. W slot; RoHS compliant
6	A4A98E1025	Switch	1	Switch - optical, emitter/sensor, interruptive; Schmitt Trigger, slotted. 5.0 V (DC), Molex 5102 series connector, 0.2 in. W slot; RoHS compliant
7	96-000-1185-6	Bearing - sleeve	6	Bearing - sleeve; 2 flanges, split axial, type 7, TEP 110, white, 6 mm ID for 2 mm sheet T, 6.025 mm dia. bore, 7.200 mm dia Hsg bore
8	A4A95F2826	Cup - suction, bellows	4	Cup - suction, bellows; silicone, 22 mm, 0.89 mm flange OD, 0.95 mm OD × 0.19 mm ID × 0.77 mm H
9	A4A99G0893	Screw	8	Screw - machine; M3 × 10 mm L, steel, ZPCC
10	A4A99G0894	Screw	5	Screw - machine; SEMS, pan head, Torx T20, M4 × 0.7 mm × 8.0 mm, clear zinc
11	A4A99H0087	Sleeve bearing	2	Bearing - sleeve; 2 flanges, split, 10 mm ID for 2 mm T
12	A4A93B7328	Bearing - sleeve	4	Bearing - sleeve; 2 flanges, split axial, type 7, TEP 110, nylon, while, 8 mm ID for 2 mm sheet T, 8.025 mm dia. bore, 9.600 mm dia. Hsg bore; RoHS compliant
13	A4A99G5009	Spring	1	Spring - torsion; music wire, 0.038 wire dia.; RoHS compliant
14	A4A99G3409	Bearing - flange	2	Bearing - flange; split, 8 mm ID × 8 mm L
15	26-1001-7033-6	Tie wrap	10	Tie wrap; miniature, nylon, natural, 51 Max bundle
16	A4A99G4111	Spring - lift, pickup	1	Spring - lift, pickup
17	A4A99G1894	Washer - rectangular	2	Washer - rectangular; 0.25 in. × 0.50 in. × 0.03 in. T, stainless steel
18	A4A92G0913	Tubing - finger	2	Tubing - finger; RoHS compliant
19	A4A99H0570	Bearing - sleeve	4	Bearing - sleeve; 10 mm ID × 12 mm OD × 15 mm L
20	A4A95F4836	Retaining ring	3	Retaining ring - external; 8.0–11.0 mm shaft dia., 0.9 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
21	A4A99G4017	Gear - worm	1	Gear - worm, 20 tooth, transport; RoHS compliant
22	A4A99G5064	Screw	11	Screw - machine; SEMS, pan head, Torx T10, M3 × 0.5 × 6.0, clear zinc

Feed Roller Assembly

Figure 8 Feed Roller Assembly

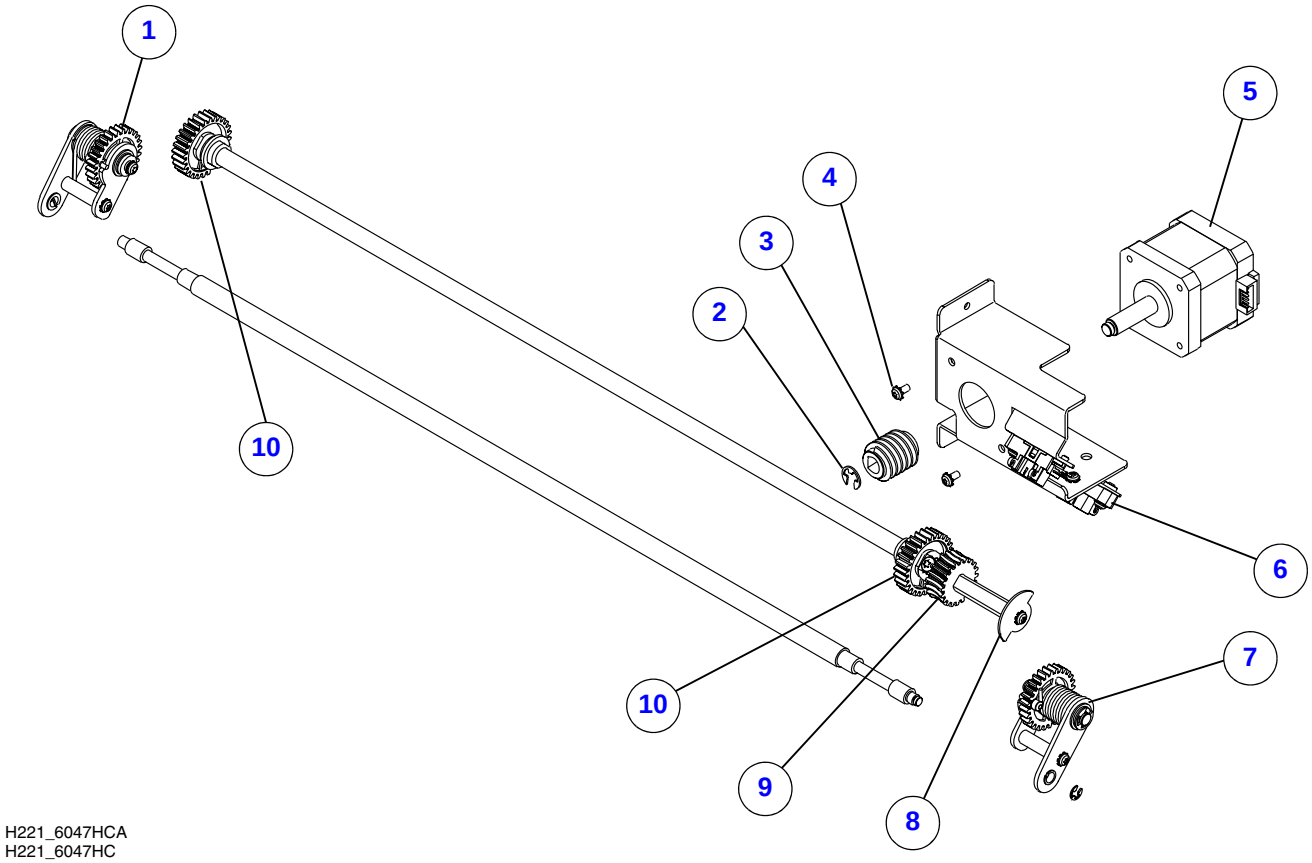


Figure 8 Feed Roller Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G3747	Assembly - link, left	1	Assembly: Link, left, feed roller
2	A4A95F4586	Retaining ring	1	Retaining ring - external; 6.0–8.0 mm shaft dia., 0.7 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
3	A4A99G4074	Worm - single start	1	Gear - worm; single start, transport; RoHS compliant
4	A4A99G5064	Screw	4	Screw - machine; SEMS, pan head, Torx T10, M3 × 0.5 × 6.0, clear zinc
5	A4A99G4876	Motor - stepper	1	Motor - stepper, transport
6	A4A98E1025	Switch	2	Switch - optical, emitter/sensor, interruptive; Schmitt Trigger, slotted. 5.0 V (DC), Molex 5102 series connector, 0.2 in. W slot; RoHS compliant
7	A4A99G3353	Assembly - link, right	1	Assembly: Link, right, feed roller
8	A4A99G1480	Flag - sensor	1	Flag - sensor, feed roller
9	A4A99G4017	Gear - worm	1	Gear - worm; 20 tooth, transport
10	A4A99G3271	Gear - drive	1	Gear - drive, feed roller

Processor Drum Assembly

Figure 9 Processor Drum Assembly

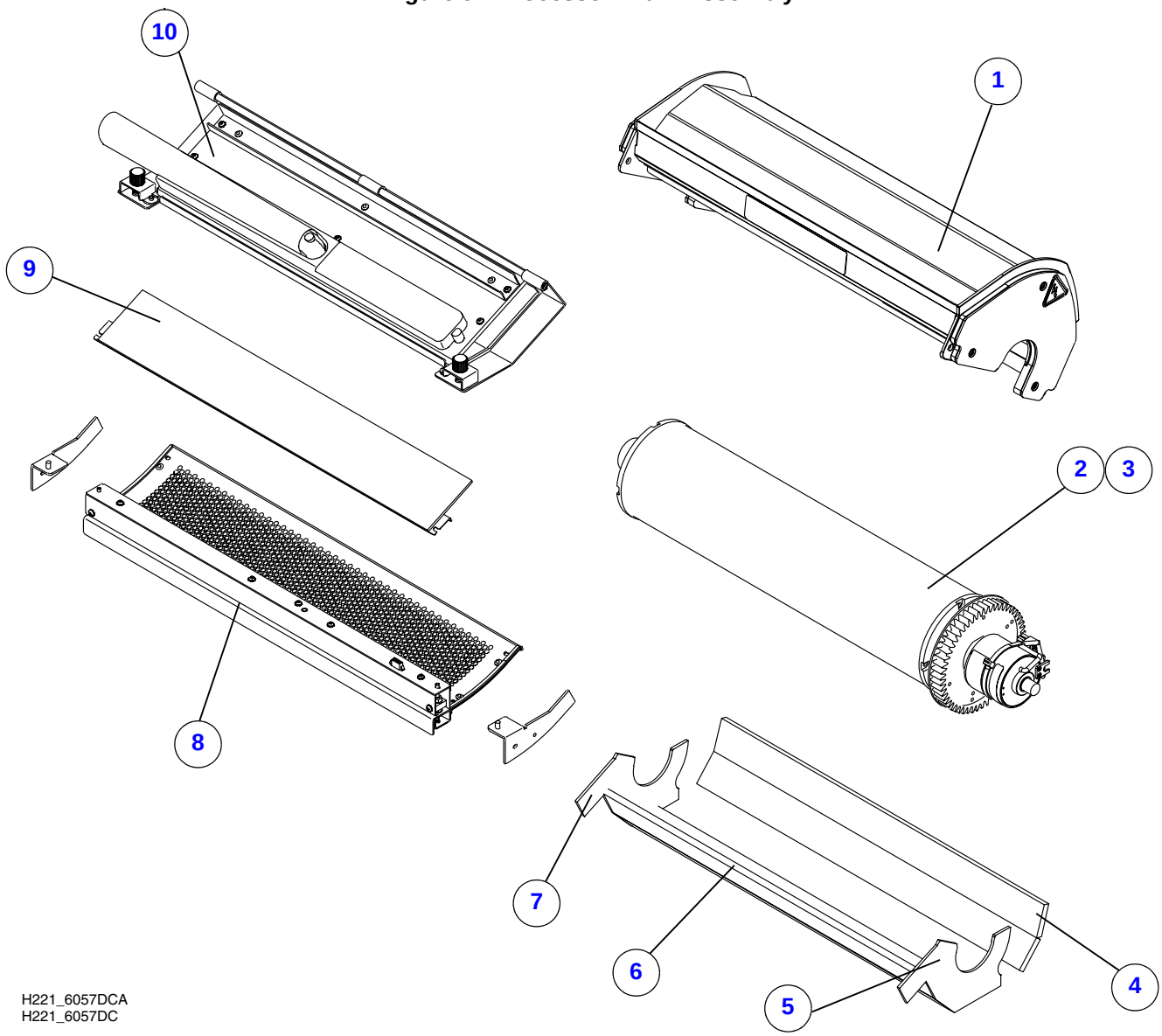
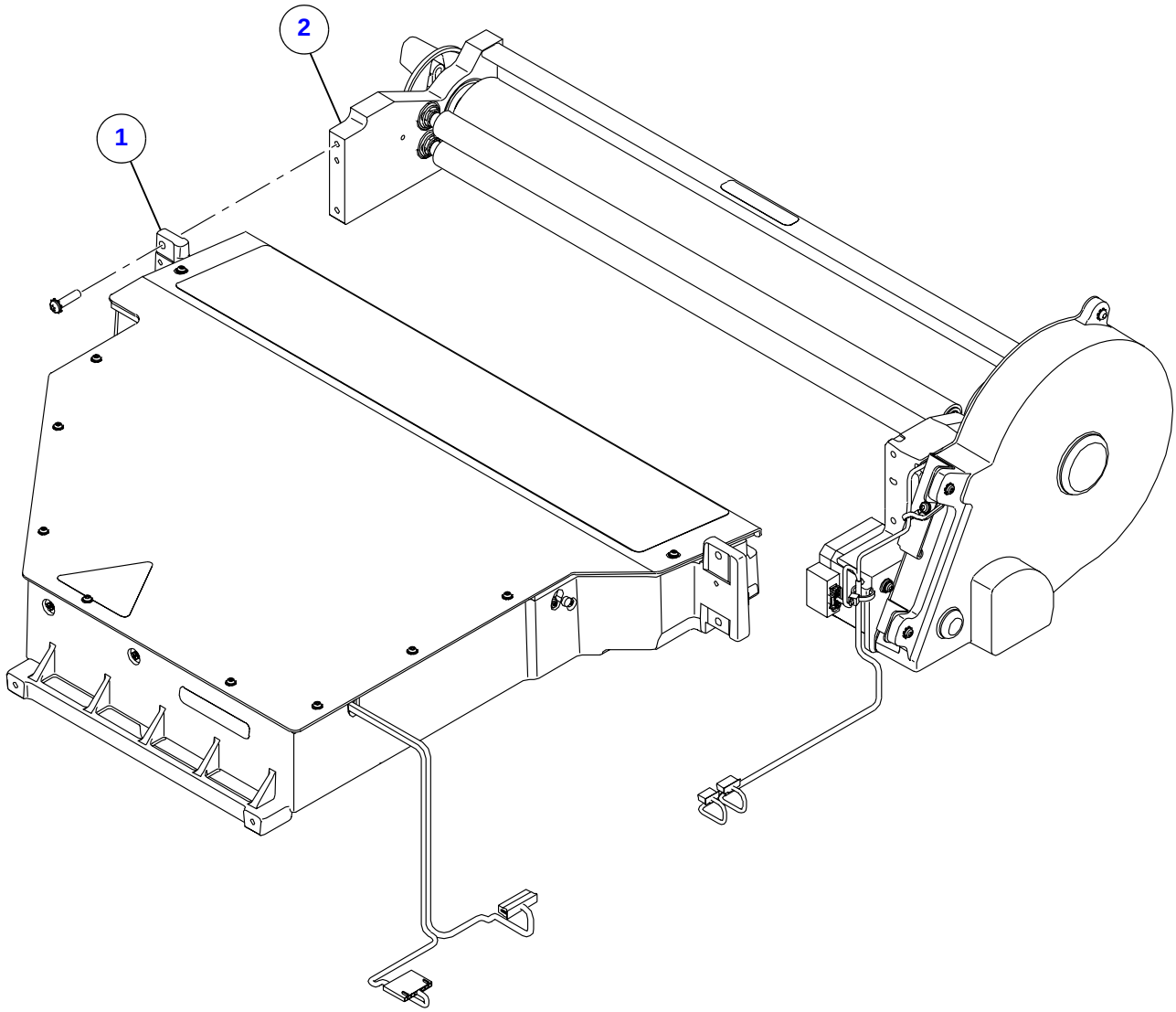


Figure 9 Processor Drum Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G6749	Assembly - cover	1	Assembly: Cover - processor
2	A4AA9G6746	Assembly - drum, 120 V	1	Assembly: Drum - processor; 120 V; RoHS compliant
3	A4A99G6748	Assembly - drum, 240 V	1	Assembly: Drum - processor; 240 V; RoHS compliant
4	A4A99G0195	Insulation drum - back	1	Insulation - drum, back, processor
5	A4A99G4093	Insulation - end plate, right	1	Insulation - end plate, right, processor; RoHS compliant
6	A4A99G0027	Insulation - drum, front	1	Insulation - drum, front, processor
7	A4A99G4094	Insulation - end plate, left	1	Insulation - end plate, left, processor; RoHS compliant
8	A4A99G5248	Assembly - Cooling and densitometer	1	Assembly: Processor coolingand densitometer
9	A4A99G5904	Assembly - pad	1	Assembly: Pad - processor
10	A4A99G5649	Assembly - heat sink	1	Assembly: Heat sink - processor

Imaging Assembly

Figure 10 Imaging Assembly



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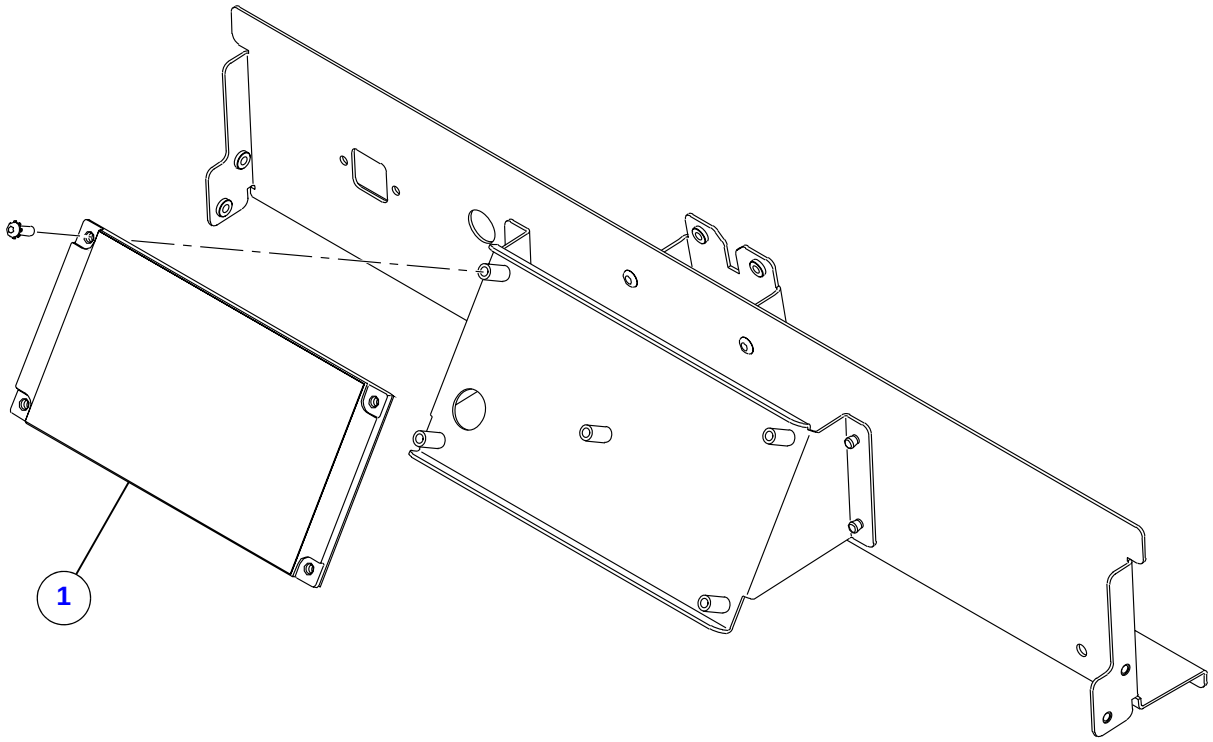
H221_6048DC

Figure 10 Imaging Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G6742	Assembly - optics	1	Assembly: Optics; RoHS compliant
2	A4A99G6964	Assembly: Exposure transport	1	Assembly: Exposure transport

Local Panel (Display Screen) Assembly

Figure 11 Local Panel (Display Screen) Assembly



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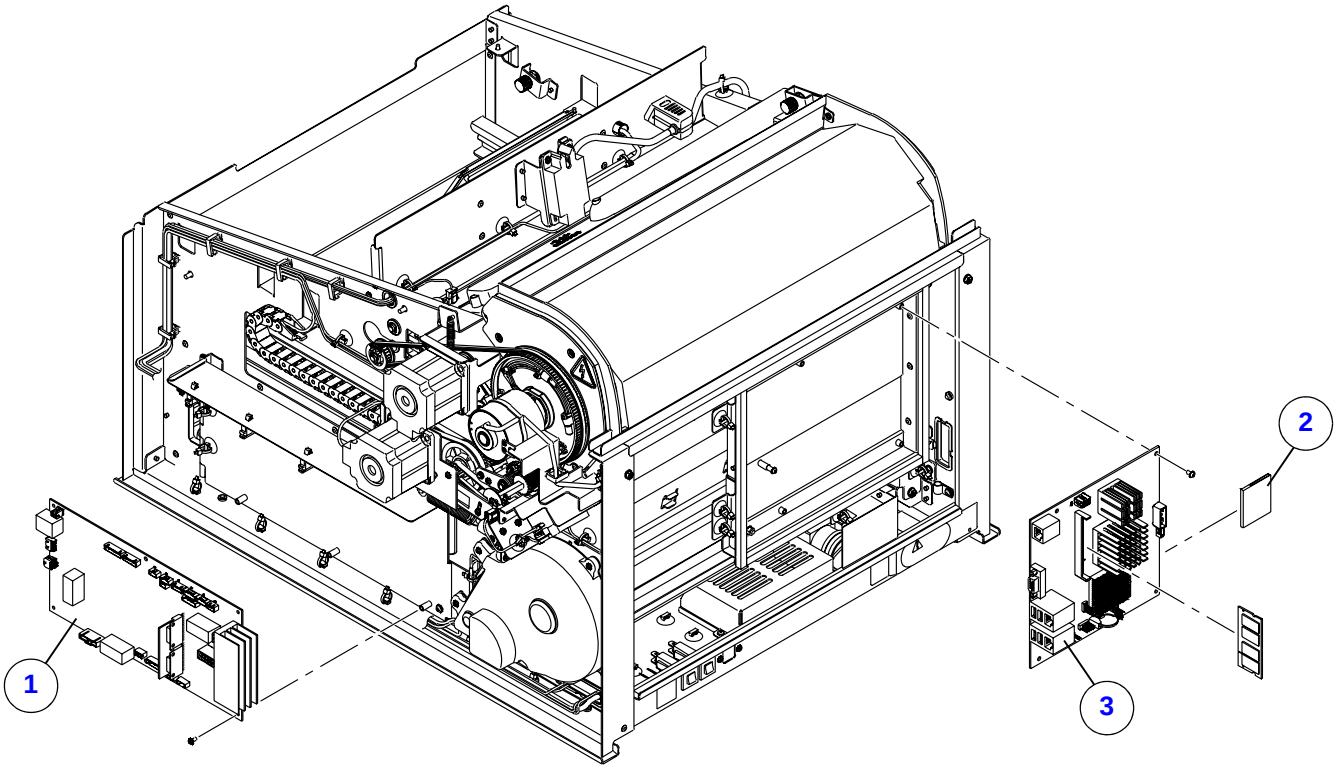
H221_6049HC

Figure 11 Local Panel (Display Screen) Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G1217	Assembly - local panel	1	Assembly: Local panel; RoHS compliant

Electronics Assembly

Figure 12 Electronics Assembly



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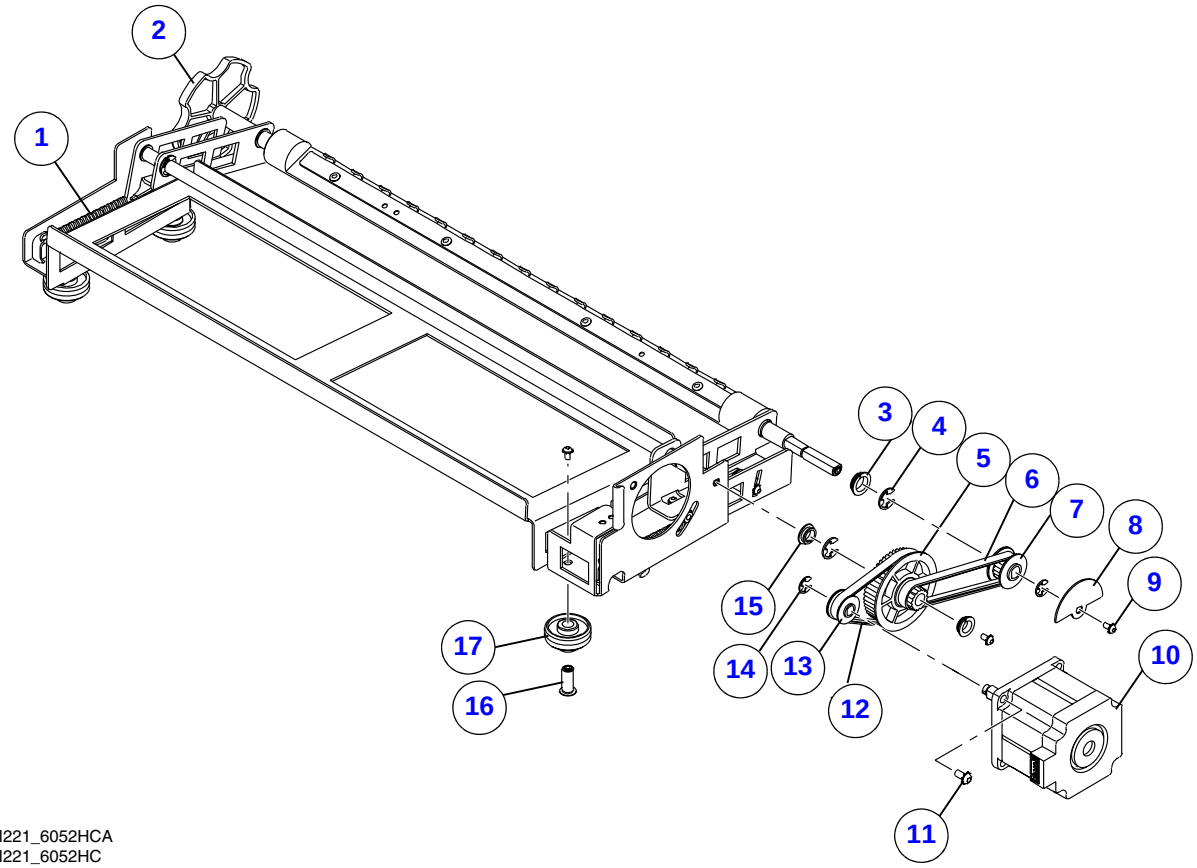
H221_6044HC

Figure 12 Electronics Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A99G0249	Assembly: MCS	1	Assembly: MCS
2	A4A99G4842	Assembly - Compact flash	1	Compact flash; CF 4, MLC, 4 GB
3	A4A99G4716	Assembly - motherboard	1	Assembly: Motherboard - DRE, programmed; RoHS compliant

Rollback Assembly

Figure 13 Rollback Assembly



H221_6052HCA
H221_6052HC

Figure 13 Rollback Assembly

Item	Part No.	Part Name	Quantity	Detailed Description
1	A4A97H5747	Spring	2	Spring - extension; close wound, centered full loops, 2 lb./in. stainless steel, 0.240 in OD × 0.029 in. wire dia. × 1.750 in. free L, 0.33 lb. initial tension, 3.47 extension W-O set
2	A4A98F2668	Knob	1	Knob - rollback
3	A4A99H0087	Sleeve bearing	2	Bearing - sleeve; 2 flanges, split, 10 mm ID for 2 mm T
4	A4A95F4836	Retaining ring	4	Retaining ring - external; 8.0–11.0 mm shaft dia., 0.9 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
5	A4A99G3660	Pulley	1	Pulley - reduction; 3 mm, GT, 50:16
6	A4A99G3576	Belt - timing	1	Belt - timing; 3 mm, 219 mm L × 6 mm W pitch, 73 teeth, GT2; RoHS compliant
7	A4A98F3211	Pulley	1	Pulley - processor; 3 mm, GT, 18 groove; RoHS compliant
8	A4A99G1413	Flag - home	1	Flag - home, rollback
9	A4A99G5064	Screw	6	Screw - machine; SEMS, pan head, Torx T10, M3 × 0.5 × 6.0, clear zinc
10	A4A92G1630	Motor - stepper	1	Motor - stepper, transport
11	A4A99G0894	Screw	2	Screw - machine; SEMS, pan head, Torx T20, M4 × 0.7 mm × 8.0 mm, clear zinc
12	A4A95F4743	Belt - timing	1	Belt - timing; 3 mm, 201 mm L × 6 mm W pitch, 67 teeth, GT2, neoprene, nylon, fiberglass; RoHS compliant
13	A4A97F2484	Pulley	1	Pulley - transport; 3 mm, GT, 16 groove
14	A4A95F4586	Retaining ring	3	Retaining ring - external; 6.0–8.0 mm shaft dia., 0.7 mm T, carbon steel, Trivalent Zinc Plus sealer; RoHS compliant
15	A4A93B7328	Bearing - sleeve	4	Bearing - sleeve; 2 flanges, split axial, type 7, TEP 110, nylon, while, 8 mm ID for 2 mm sheet T, 8.025 mm dia. bore, 9.600 mm dia. Hsg bore; RoHS compliant
16	A4A99G2677	Shaft - wheel	4	Shaft - wheel, rollback
17	A4A99G2014	Wheel - convex	4	Wheel - convex, rollback

Section 6: Additional Service Procedures

Accessing the Service Tool

Logging On to the Service Tool

Important

- You must have the Secure Link Client Software, version 2.3 or higher and the Web Service Portal Software, version 3.1.0.5 or higher installed and configured on your laptop computer.
- You will not be able to log on until 3 or 4 minutes after you have energized the laser imager.

[1] Connect the laptop computer to the laser imager (see Installation Instructions, “Connecting Your Computer to the Laser Imager”).

[2] Energize the laptop computer.

[3] Launch Secure Link from the Start menu.

[4] Type your password.

[5] Click **OK**.

[6] Type the IP address of the Service Port: **192.168.000.1**.

[7] Check that the Port is set to **443**.

[8] Click **Connect**.

[9] Launch the Web Service Portal Software (Web Portal) from the Start menu.

The main menu of the service tool displays.

Logging Off the Service Tool

[1] In the right corner of the service tool, click **Log Off**.

[2] At the Web Portal screen, click **Log Off**.

[3] Close the Web Portal software.

[4] At the Secure Link screen:

(a) Click **Disconnect**.

(b) Close the screen.

[5] Disconnect the laptop computer from the laser imager.

[6] If you are finished with the service tool, install the right cover.

Configuring the Laser Imager

Important

You must restart the laser imager from the service tool to permanently save configuration information.

Setting the Language

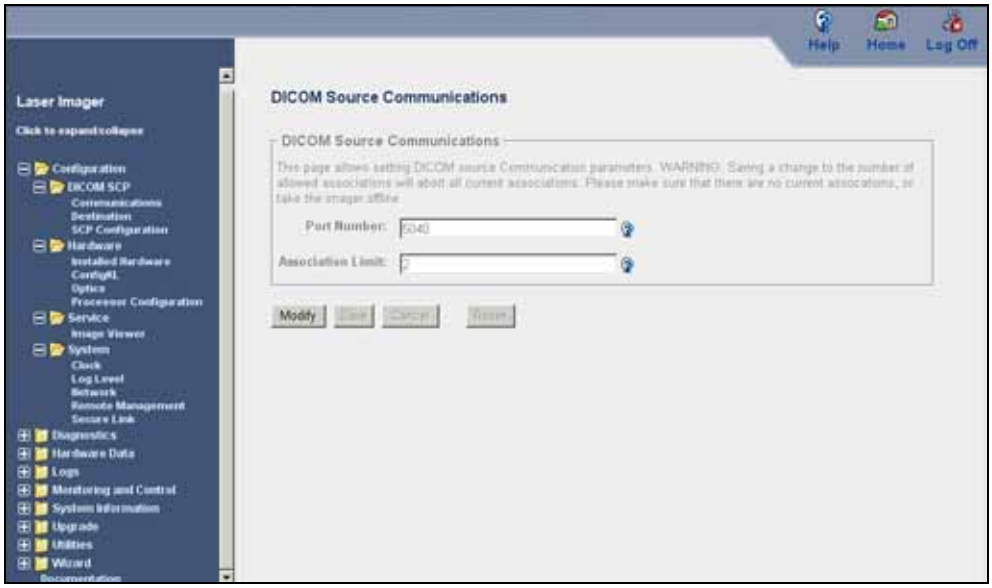
Important

The language is set by the customer in the Web Portal.

Checking the Values for the DICOM Source Communications

[1] Connect the laptop computer to the laser imager (see Installation Instructions, "Connecting Your Computer to the Laser Imager").

[2] Select **Configuration > DICOM SCP > Communications**.



[3] Check:

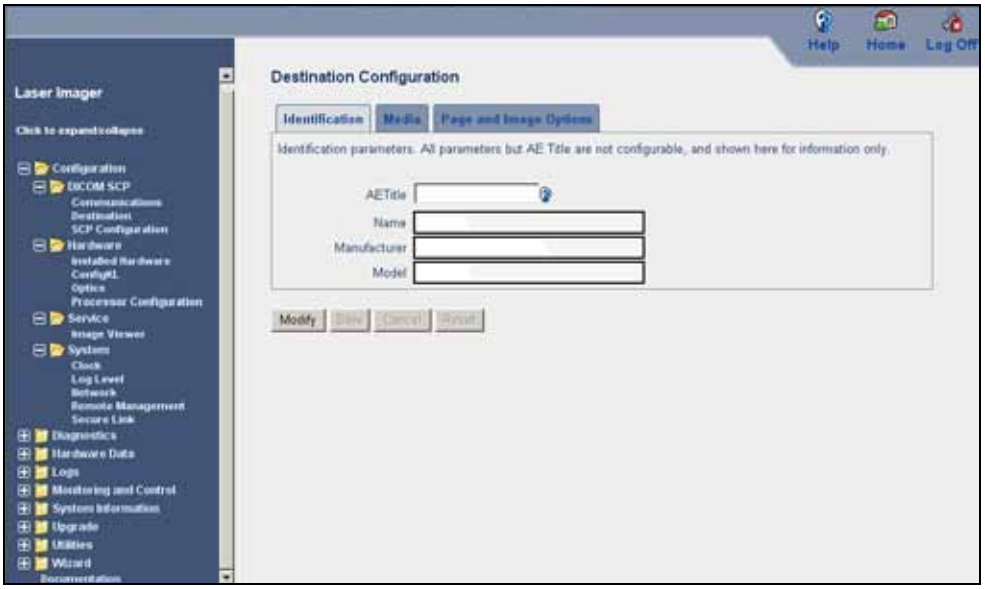
- Port Number is **5040**.
- Association Limit is **2**.

[4] Are the values correct?

Yes	No
Continue with "Setting the Laser Imager to be a Destination".	a. Click **Modify**. b. Type the correct values. c. Click **Save**. d. Continue with "Setting the Laser Imager to be a Destination".

Setting the Laser Imager to be a Destination

[1] Select **Configuration > DICOM SCP > Destination**.



Important

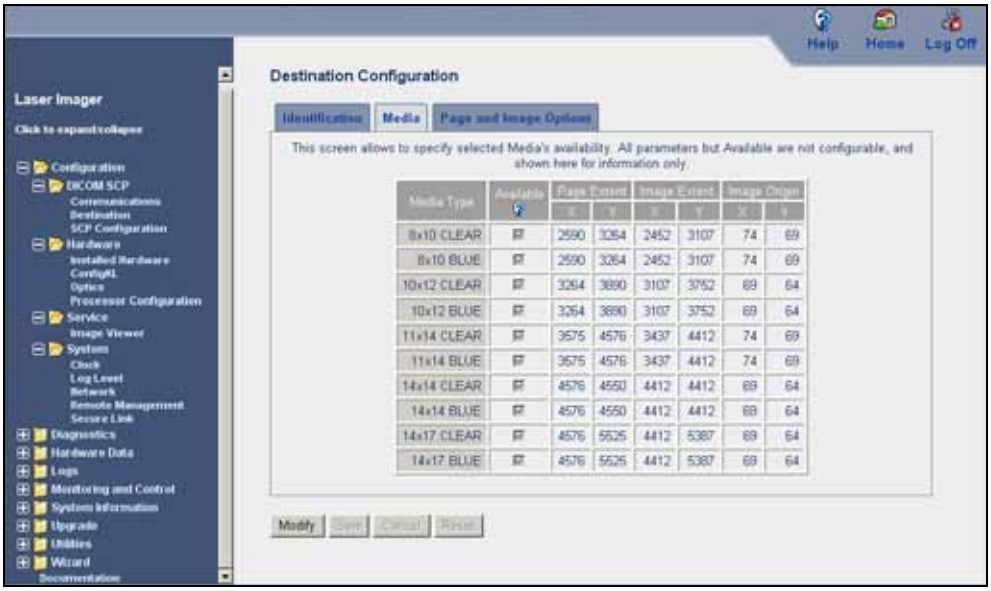
The AE Title is the name by which the modalities recognize the laser imager.

[2] Check with the customer to determine the AE Title to use.

[3] Click **Modify**.

[4] Type the selected AE Title in the window.

[5] Click the **Media** tab.



[6] In the Available column, select the check box next to the Media Type that will be used with the imager.

Note

Under normal operations, all media types should be allowed.

[7] Click the **Page and Image Options** tab, and then modify any settings according to customer demand.

Important

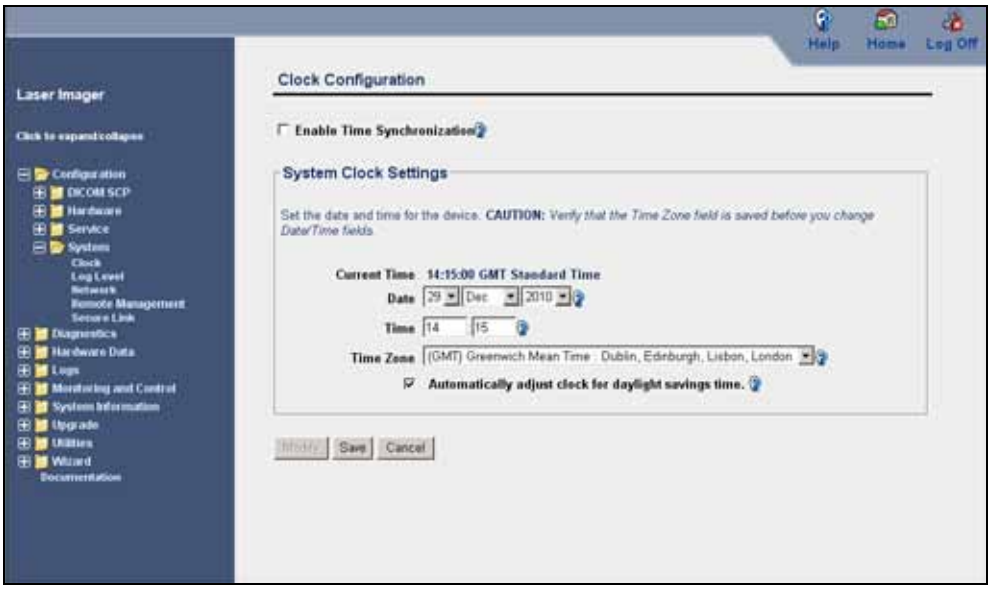
Do not disable any of the page formatting settings of the laser imager except if instructed by the customer.

[8] Click **Save**.

[9] Continue with "Setting the System Clock".

Setting the System Clock

[1] Select **Configuration > System > Clock**.



Important

The system clock is set in the factory. At installation, the time zone has to be reset if the laser imager is installed in some other time zone. When you reset the time zone value, the time and date should display correctly.

[2] Will the clock be set manually or does the customer use a time server for synchronization?

Manually	Server
Continue with Step 3.	a. Obtain the IP address of the server from the customer. b. Perform Steps 16–23.

[3] To correct the Time Zone value:

(a) Click **Modify**.

(b) If the **Enable Time Synchronization** check box is selected, clear it.

(c) Select the correct time zone from the **Time Zone** drop-down list.

(d) Click **Save**.

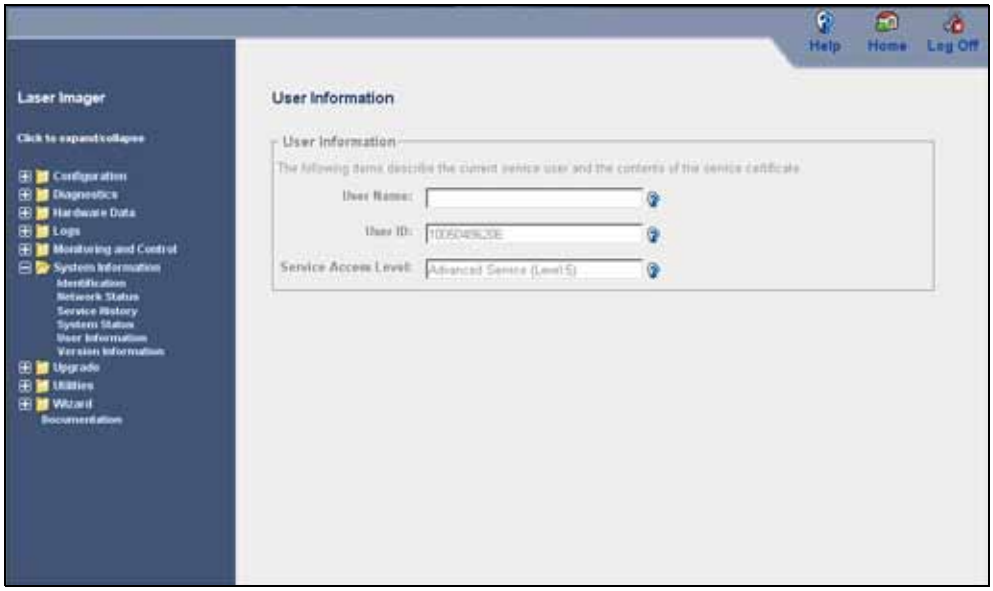
[4] Is the time value correct?

Yes	No
Continue with Step 5.	a. Click **Modify**. b. In the **Time** boxes, type the hour and minute. c. Click **Save**. d. Continue with Step 5.

[5] Is the Date correct?

Yes	No
Advance to Step 15.	Continue with Step 6.

[6] Select **System Information > User Information**.



[7] Call your Technical Support Center to gain temporary Level 5 access.

[8] Click **Modify**.

[9] In the Authorization Key field, type the key from the Technical Support Center.

[10] Click **Save**.

Note

You will have Level 5 access for 24 hours.

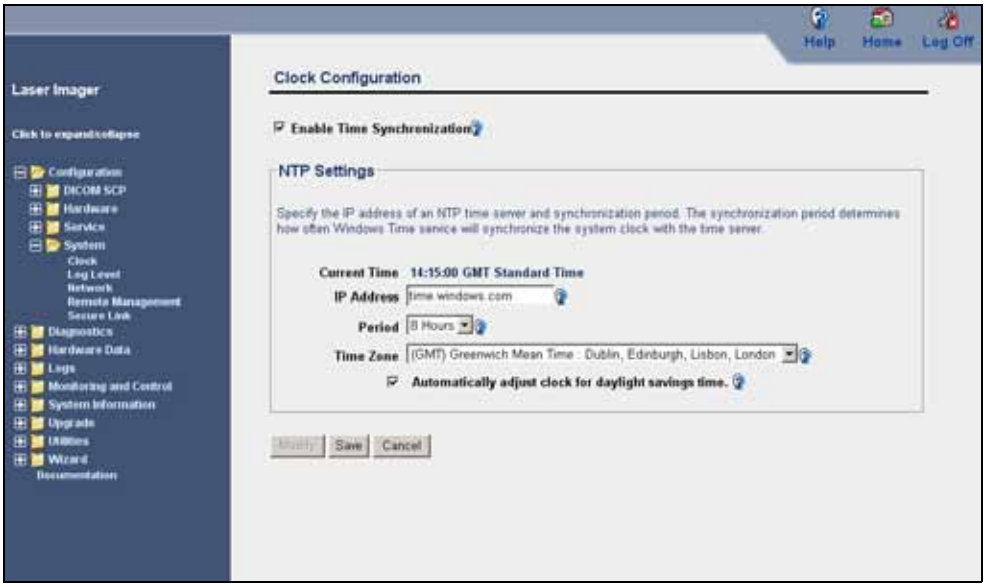
[11] Return to the Clock Configuration screen.

[12] Click **Modify**, and then set the correct date.

[13] If daylight savings time applies in the area of installation, select the **Automatically adjust clock for daylight savings time** check box.

[14] Click **Save**.

[15] Advance to "Setting the Host Name and the IP Address".



Perform the following steps if the customer uses a time server for synchronization.

[16] Click **Modify**.

[17] Select the **Enable Time Synchronization** check box.

[18] In the **IP Address** field, type the address of the time server to be used for synchronization.

[19] Select the synchronization period (how often the clock is synchronized) from the **Period** drop-down list.

[20] Select the correct time zone from the **Time Zone** drop-down list.

[21] If daylight savings time applies in the area of installation, select the **Automatically adjust clock for daylight savings time** check box.

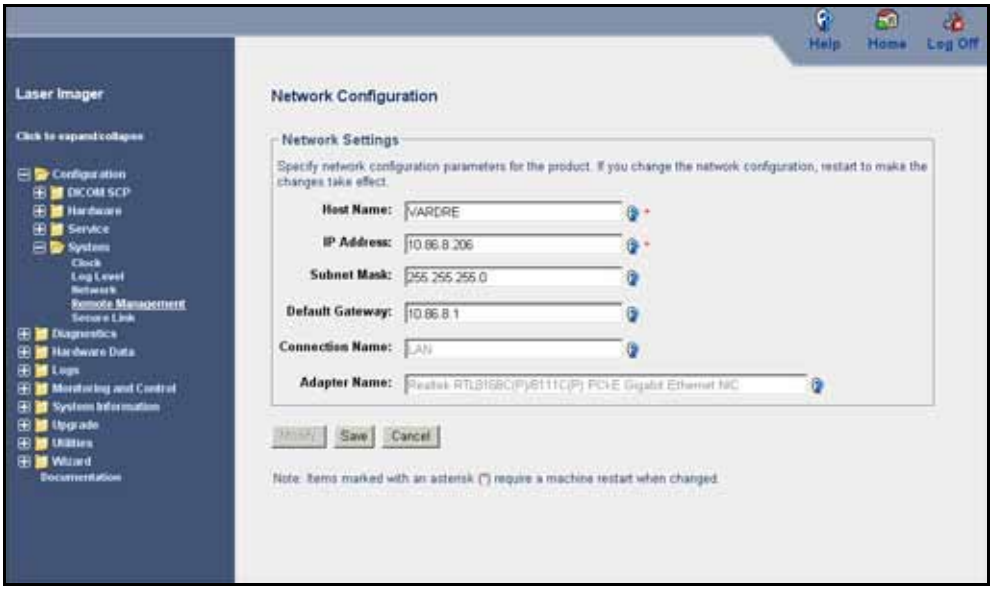
[22] Click **Save**.

[23] Continue with “Setting the Host Name and the IP Address”.

Setting the Host Name and the IP Address

[1] Obtain from the customer the host name, IP address, subnet, and gateway for the laser imager.

[2] Select **Configuration > System > Network**.



[3] Click **Modify**.

Important

The Host Name is the network name for this laser imager. It can be a maximum of 14 characters and a minimum of one. The first character must be a letter. Other characters can be a letter, a number, or a hyphen (-).

[4] Type:

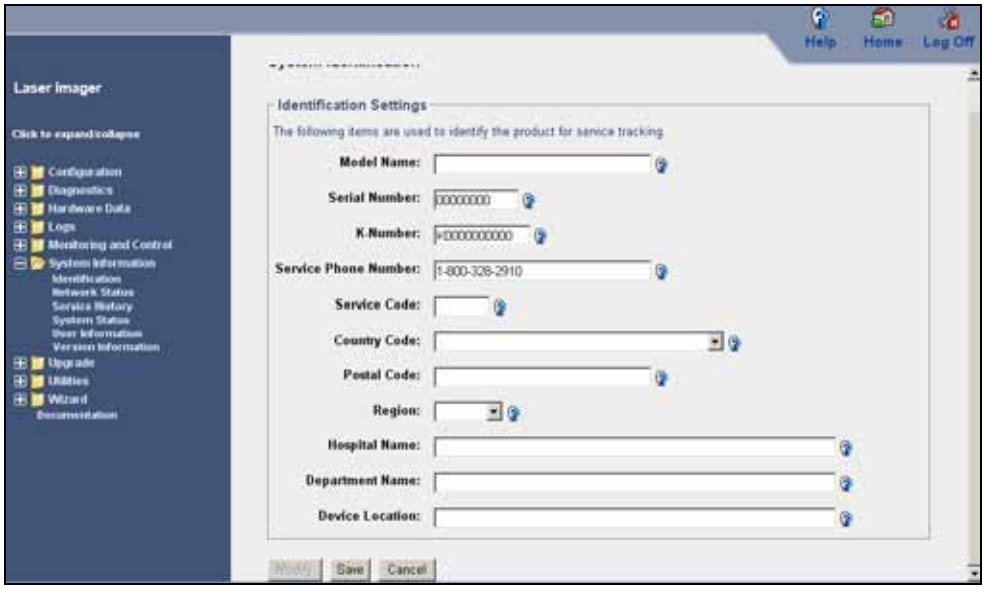
- Host Name
- IP Address
- Subnet Mask
- Default Gateway

[5] Click **Save**.

[6] Continue with “Setting the Service Tracking”.

Setting the Service Tracking

[1] Select **System Information > Identification**.



[2] Click **Modify**.

Important

The values for Serial Number, K-Number, Windows OS ID, and Service Code are set at the factory.

- Model Name — set at the factory and cannot be changed
- Serial Number — set at the factory and can only be changed with a Level 5 access, if not correct
- K-Number — can be changed if not correct
- Service Phone Number — should be populated but can be changed if not correct
- Service Code — set at the factory and cannot be changed

[3] Type or select from the drop-down list the correct information for the following fields:

- Country Code
- Region
- Hospital Name
- Department Name
- Device Location

Note

If the K-Number or Service Phone Number is not correct, type the correct information before continuing with Step 4.

[4] Click **Save**.

[5] Select **Utilities > Session > Restart**.

[6] Click **Restart**.

Wait for the laser imager to restart.

[7] Continue with “Loading Customer Film”.

Loading Customer Film

[1] Install the film cartridge.

[2] Continue with “Checking the Installed Hardware and Display Units”.

Checking the Installed Hardware and Display Units

[1] Select **Configuration > Hardware > Installed Hardware**.

[2] Click **Modify**.

[3] Under Additional Configuration, select **Yes** from the Use Metric Units drop-down list to display metric units on the display screen, or select **No** from the list to display imperial units.

[4] Click **Save**.

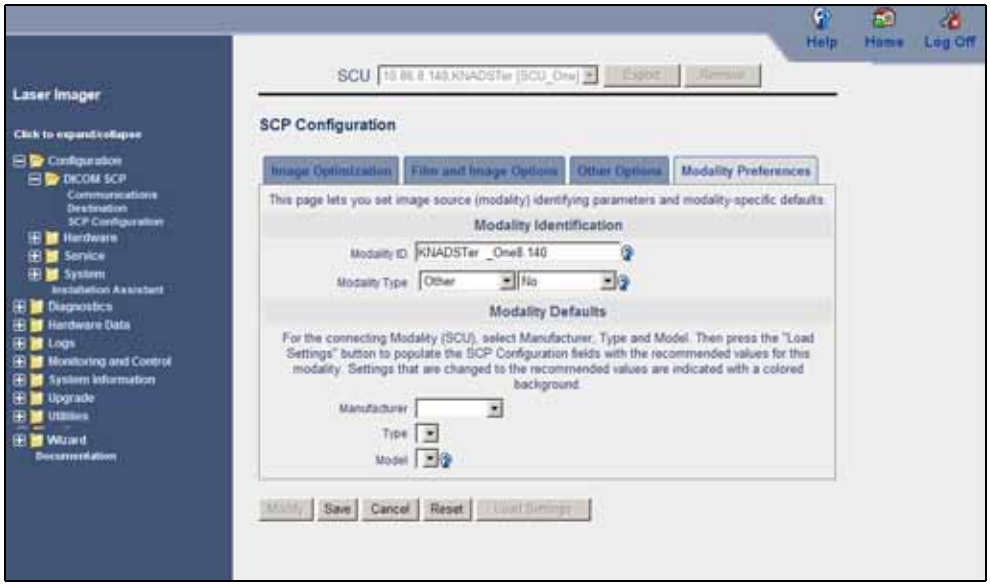
[5] Continue with “Configuring the SCP Services”.

Configuring the SCP Services

[1] Have each SCU send an image to make a connection with the laser imager.

[2] Select **Configuration > DICOM SCP > SCP Configuration**.

[3] When the SCP Configuration screen appears, click the **Modality Preferences** tab.



Note

- The information for each entry in the SCU drop-down list includes, in order: IP Address and AE Title of the SCU that will send the image, and AE Title of the destination.
- The parameter values on the screen apply to the modality identified in the SCU list.

[4] At the top of the screen, select an SCU from the drop-down list.

[5] Is the information for the selected SCU correct?

Yes	No
Perform Steps 4 and 5 for each SCU in the list.	a. Click **Modify**. b. Select the correct information from the drop-down lists. c. Click **Save**. d. Perform Steps 4 and 5 for each SCU in the list.

[6] After the configuration of all SCUs is completed, continue with "Checking Image Quality".

Checking Image Quality

[1] Ask the customer to send images from the modalities to the laser imager.

[2] Check for image skew. If necessary, adjust the optics assembly (see "Imaging Assembly—Start Index Delay Adjustment").

[3] Is the image quality acceptable to the customer?

Yes	No
Advance to "Editing the Service History Log".	Continue with Step 4.

[4] Click the **Image Optimization** tab on the SCP Configuration screen.

[5] At the top of the screen, select an SCU from the drop-down list.

Note

- The information for each entry in the SCU drop-down list includes, in order: IP Address and AE Title of the SCU that will send the image, and AE Title of the destination.
- The parameter values on the screen apply to the modality identified in the SCU list.
- Perform **Image Optimization** and **Other Options** for each SCU in the drop-down list.

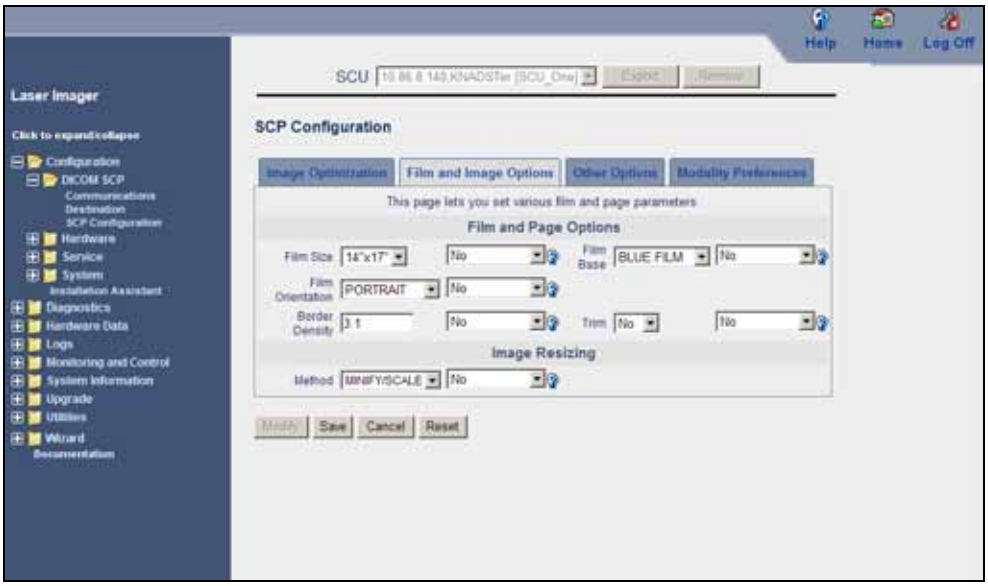
[6] Click **Modify**.

[7] To change a parameter, type the new value or select it from the drop-down list.

Note

- The value selected will be the default for this SCU.
- The value in the list to the right of the parameter value indicates whether the value sent from the SCU is overridden.
  - If you select **Always Apply**, the parameter on the screen overrides the parameter the SCU sends.
  - If you select **No**, the SCU parameter is applied. Normally, you should select **No** to allow the SCU to override the default selected.

[8] Click the **Film and Image Options** tab.

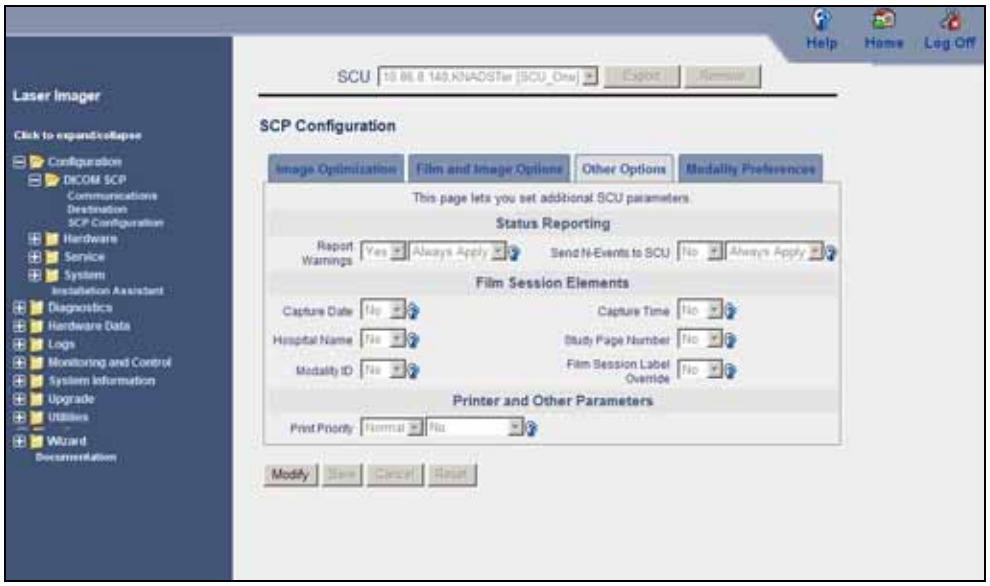


[9] Select or type the parameter values.

Note

- The value selected will be the default for this SCU.
- The value in the list to the right of the parameter value indicates whether the value sent from the SCU is overridden.
  - If you select **Always Apply**, the parameter on the screen overrides the parameter the SCU sends.
  - If you select **No**, the SCU parameter is applied. Normally, you should select**No** to allow the SCU to override the default selected.

[10] Click the **Other Options** tab.



[11] Select the parameter values.

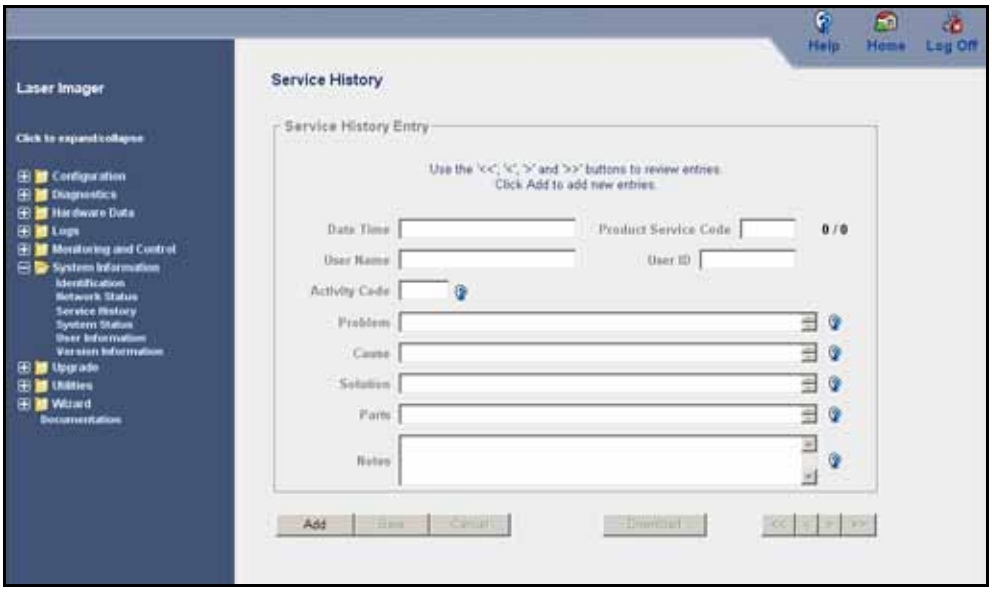
[12] After you set the parameters for this SCU, perform the same procedures for each SCU identified in the SCU connection window.

[13] Click **Save**.

[14] After you complete the configuration of all SCUs, continue with “Editing the Service History Log”.

Editing the Service History Log

[1] Select **System Information > Service History**.



[2] Click **Add**.

Note

The Date Time, Product Service Code, and your User Name and User ID for Secure Tunnel fields are filled in automatically.

[3] Type data about the service performed in the remaining fields.

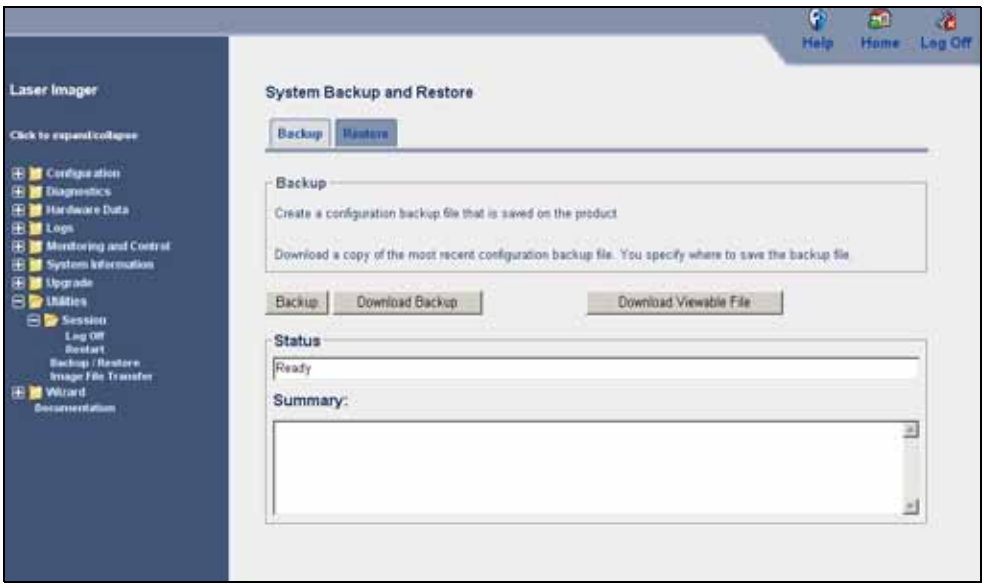
[4] Click **Save**.

Backing Up and Restoring Configurations

Making a Configuration Backup

[1] Log on to the service tool (see “Logging On to the Service Tool”).

[2] Select **Utilities > Backup/Restore**.



[3] To make a backup of the configuration parameters to the hard drive, click the **Backup** tab.

[4] To download the backup data to your laptop computer:

- **(a)** Click **Download Backup**.
- **(b)** Click **Save** in the File Download window.
- **(c)** Select a destination on your computer to save. If you want to change the name of the saved data file, type a file name.
- **(d)** Click **Save** to place the backup file in the selected destination.

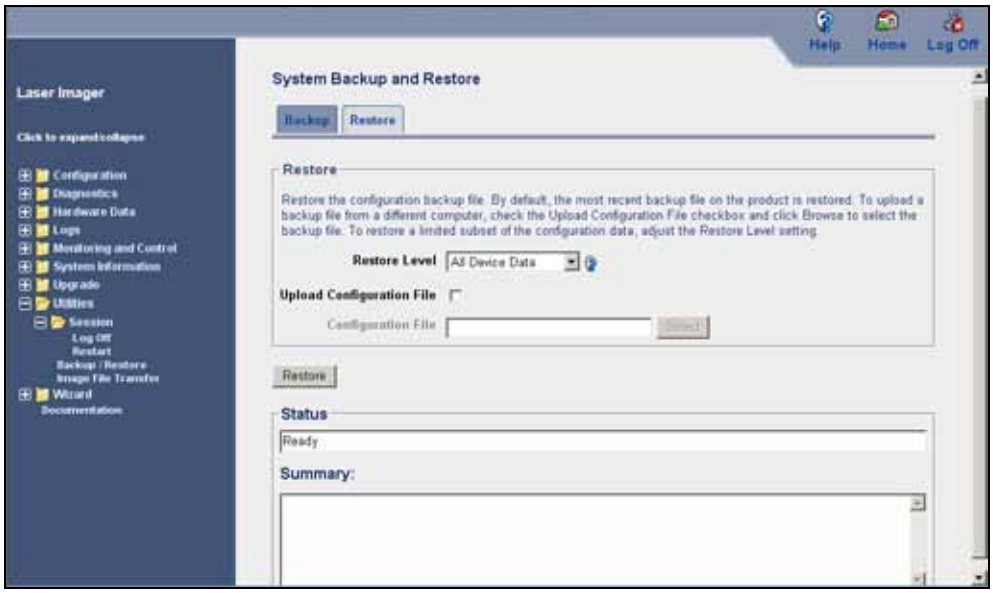
[5] Log off from the service tool (see “Logging Off the Service Tool”).

Restoring the Configuration

[1] Log on to the service tool (see "Logging On to the Service Tool").

[2] Select **Utilities > Backup/Restore**.

[3] Click the **Restore** tab.



[4] Select the type of information to be restored from the **Restore Level** drop-down list.

[5] Choose how you want to restore the backup data:

From flash drive	Upload stored configuration data from laptop
Click **Restore**.	a. Select the **Upload Configuration File** check box. b. Click **Select**. c. In the File Upload window, click **Browse**. d. When the Choose File window displays, select the **.bin** file. e. Click **Open**, and then click **Upload**.

Important

You must restart the imager from the service tool.

[6] Select **Utilities > Session > Restart**.

[7] Click **Restart**.

Wait for the imager to restart.

[8] If you are finished with the service tool:

(a) Disconnect the laptop computer from the imager.

(b) Install the top cover.

Upgrading Software and Firmware

Updating a Portable Flash Drive with a New Version of System Software

Important

Energize your laptop computer before you insert the flash drive into the USB port.

[1] Energize your laptop computer.

[2] Insert the:

- Portable flash drive into the USB port on your laptop computer.
- Ghost CD into the CD-ROM drive of your laptop computer.

[3] Copy the software from the CD-ROM to the flash drive.

Note

The new version of system software on the CD-ROM will overwrite the old version on the flash drive.

[4] When the copy is complete, remove the flash drive and CD-ROM from your laptop computer.

Upgrading the Imager Flash Drive with a New Version of System Software – Ghosting

Important

Save the backup file to your laptop computer.

[1] Make a backup of the configuration file for the imager (see "Making a Configuration Backup").

[2] Close the film cartridge.

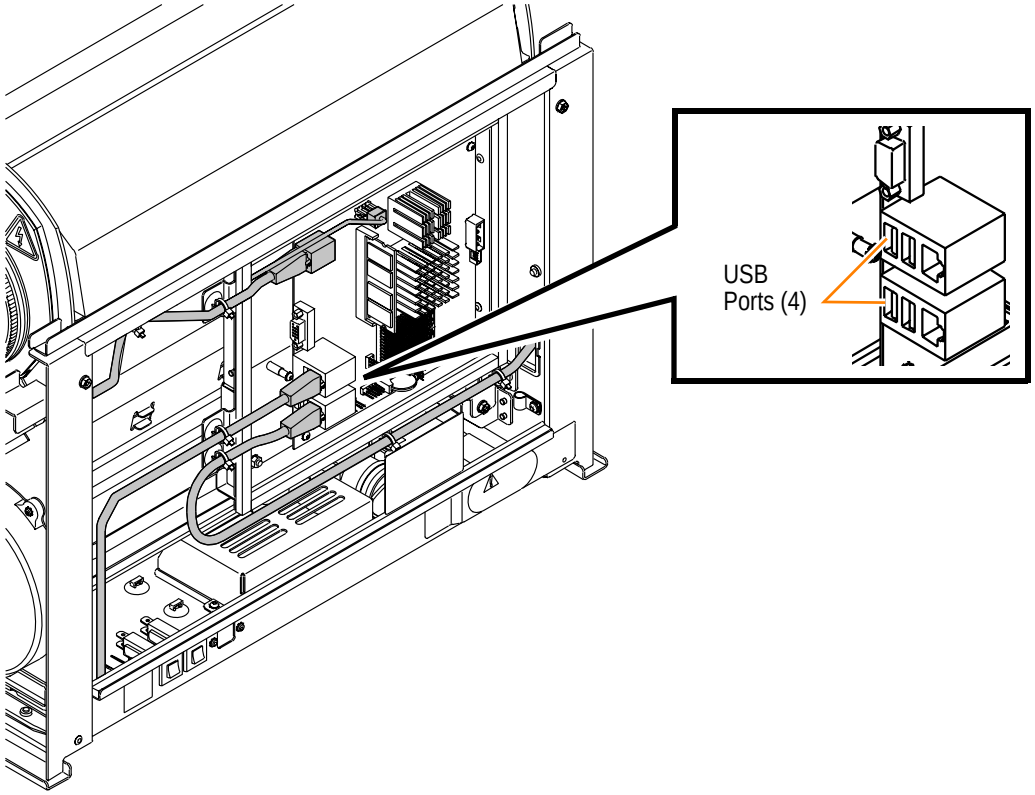
[3] De-energize the imager.

[4] Remove the back cover (see Adjustments and Replacements, "Back cover").

[5] Install the portable flash drive that contains the ghost software into one of the USB ports on the DRE board.

Note

The USB ports are located behind the lower 2 network connections.



[6] Install the back cover, and then attach the power cord.

[7] Energize the imager to begin ghosting.

The imager beeps 3 times when ghosting has completed.

[8] After ghosting has completed, de-energize the imager.

[9] Remove the back cover, and then remove the portable flash drive.

[10] Install the back cover, and then attach the power cord.

[11] Energize the imager.

[12] Do the microcontrollers need to be updated?

Yes	No
a. Perform "Upgrading the Firmware in the Microcontrollers" b. Continue with Step 13.	Continue with Step 13.

[13] Perform "Restoring the Configuration".

Upgrading the Firmware in the Microcontrollers

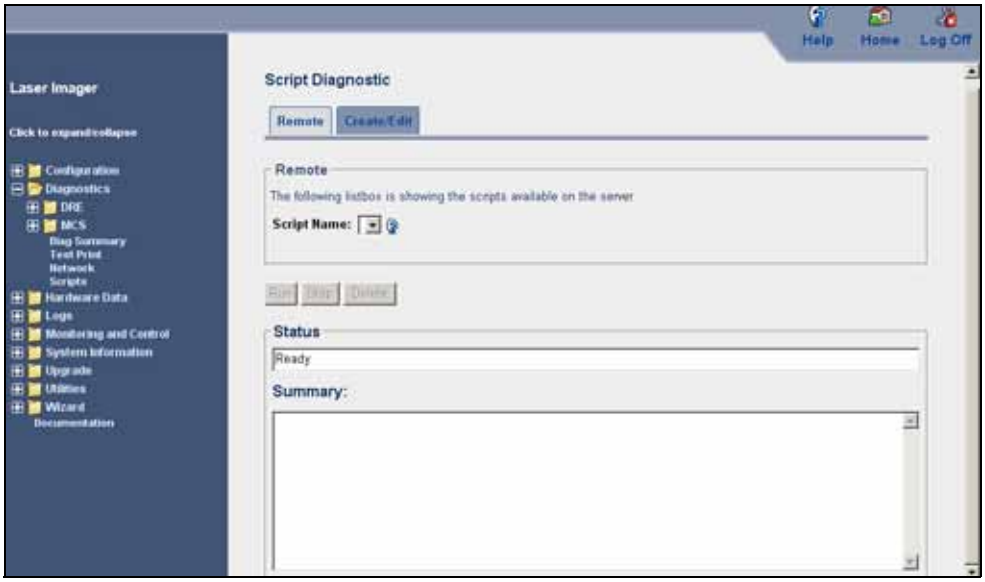
Important

You must perform this procedure when:

- The imager is ghosted and there are changes for the microcontrollers
- Condition code 20-156 is generated

[1] Log on to the service tool (see “Logging On to the Service Tool”).

[2] Select **Diagnostics > Scripts**.



[3] Select **MicroUpdate_WithAutoRestart_ST.vbs** from the Script Name drop-down list.

[4] Click **Run**.

Note

This procedure updates the microcontrollers as necessary and then restarts the imager. Be patient, as this process could take approximately 10 minutes.

Publication History

Publication Date	Revision	ECO No.	Changed Pages	File Name	Notes
2011/08/15	30	N/A	N/A	9G9002-A.pdf	New Publication
2011/10/19	-	-	p. 1−13	A4A9YG220B_111019_Fix.pdf	Added a Note to the step [2]. Edited the PDF with Acrobat by KM.

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