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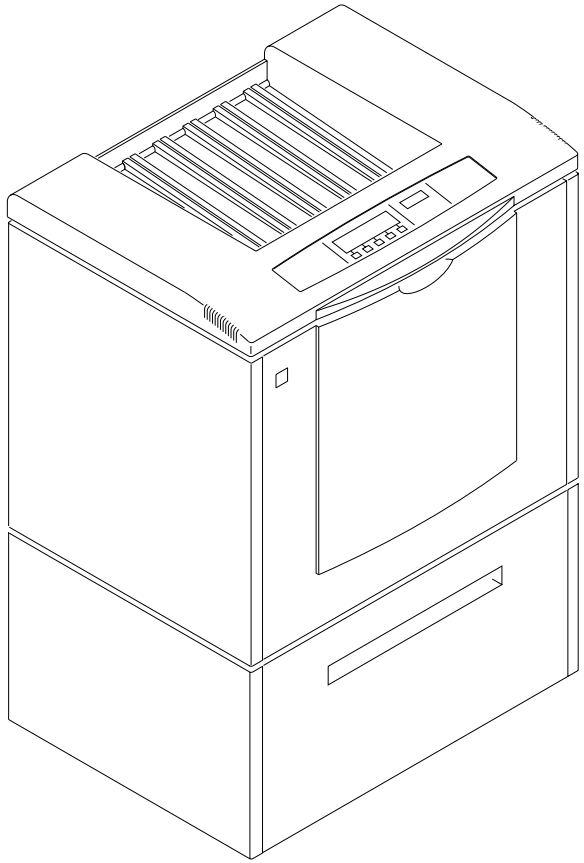
HEALTH IMAGING

ADJUSTMENTS AND REPLACEMENTS
for the
Kodak X-Omat 3000 RA PROCESSOR
Service Code: 3434



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This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

Important

This manual is for use by qualified service personnel only.

Warning

To avoid hazardous conditions, keep floors and floor coverings around your *Kodak X-Omat* 3000 RA Processor and associated drains clean and dry at all times. Any accumulation of fluids from mixing tanks and drain lines should be cleaned up immediately. In the event of an accumulation of liquid due to backup, overflow, or other malfunctions of the drain associated with your *Kodak X-Omat* 3000 RA Processor, call a plumber or other contractor to correct any problem with the drain. Kodak accepts no responsibility or liability whatsoever for the serviceability of any drain connected to or associated with a *Kodak X-Omat* Processor. Such drains are the sole responsibility of the customer.

Table of Contents

Section 1: Service Overview

Special Tools

Tool No.	Description
TL-2431	AIR METER
TL-2170	CLAMPS
TL-2170	Download DISKETTE
TL-4430	EXTRACTION TOOL
TL-3346	GROUNDING KIT
TL-4391	INTERFACE CABLE
TL-2324	Lithium BALL and ROLLER BEARING GREASE
TL1926	Magnetic Power Warning SIGN
-	PORTABLE COMPUTER[1]
TL-3230	SEALANT
TL-2192	THERMAL GREASE

The following applies to the PORTABLE COMPUTER:

- An IBM compatible computer with MS-DOS version 3.0 or higher installed on the hard disk and with a 720 kilobyte, 3 1/2 in. disk drive.
- A serial communications port configured as COM 1: Refer to the user manual for the PORTABLE COMPUTER.

Electrostatic Discharge

Overview

ESD--electrostatic discharge--is a primary source of:

- product downtime
- lost productivity
- costly repairs

While one cannot feel a static charge of less than 3,500 volts, as few as 30 volts can damage or destroy essential components in electronic equipment.

Preventive Measures

- Always look for an ESD warning label before doing any procedure involving static-sensitive components such as CIRCUIT BOARDS. All static-sensitive components are marked with bright graphic labels, which frequently include instructions. Follow all label instructions.
- Wear a grounding strap when handling static-sensitive components. Always make certain that the clip remains attached to a properly grounded, unpainted, clean surface.
- Repair static-sensitive components at an ESD-protected work station or use a portable grounding mat. For help in setting up an ESD-protected work station, contact your Kodak representative.
- When moving static-sensitive components from one area to another, insert and transport the components in ESD-protective packaging.

Service Preparation

Warning

- Dangerous Voltage
- Before you replace electrical components, move the main wall CIRCUIT BREAKER to “OFF”. Lock the wall CIRCUIT BREAKER and attach a MAGNETIC POWER WARNING SIGN TL-1926 to warn others not to energize the PROCESSOR while you are performing service.

Important

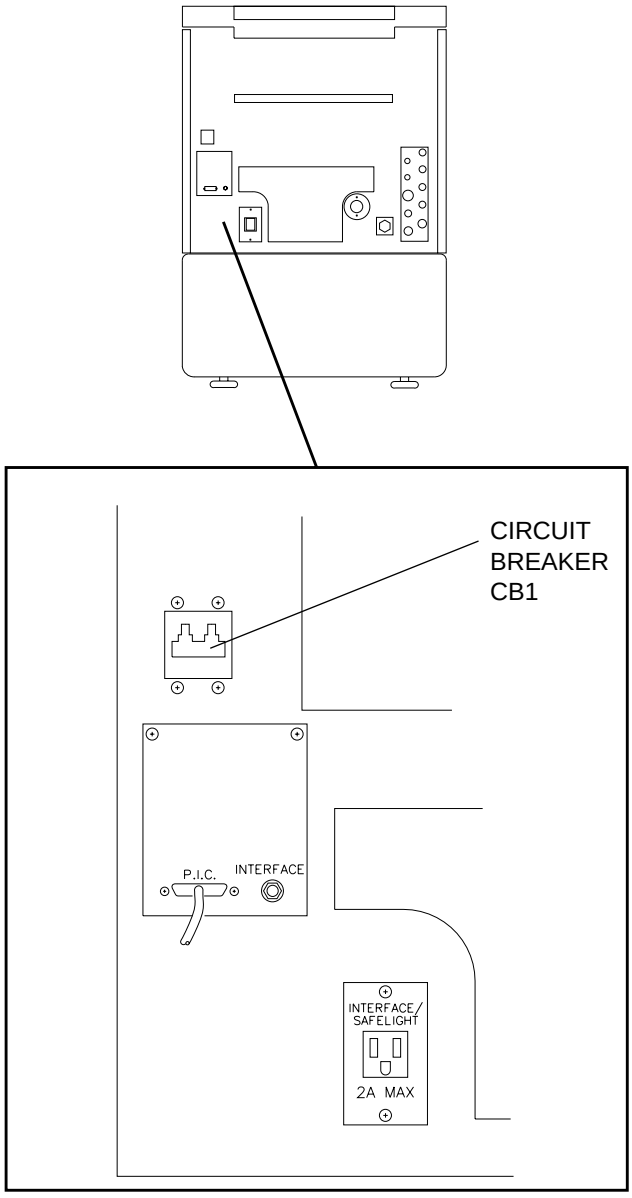
- Use qualified personnel to service the PROCESSOR.
- Many of the procedures in this manual require that you do the tasks listed below before you do the first step of the procedure.
  - de-energize the PROCESSOR
  - drain the TANKS
  - remove the CROSSOVERS and RACKS
  - remove the ACCESS PANELS

For your convenience, the next several pages contain:

- procedures for completing these basic tasks
- illustrations identifying the major components of the PROCESSOR

Preparing the PROCESSOR for Service

De-energizing and Energizing the PROCESSOR



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Warning

- Dangerous Voltage
- The PROCESSOR appears to be de-energized when it is in the Sleep Mode. Be sure that the MAIN CIRCUIT BREAKER CB1 is in the “O” position before you begin any service procedure.

[1] To de-energize the PROCESSOR:

(a) Move the wall CIRCUIT BREAKER to the “OFF” position.

(b) Lock the wall CIRCUIT BREAKER and attach a MAGNETIC POWER WARNING SIGN TL-1926 to warn others not to energize the PROCESSOR while you are performing service.

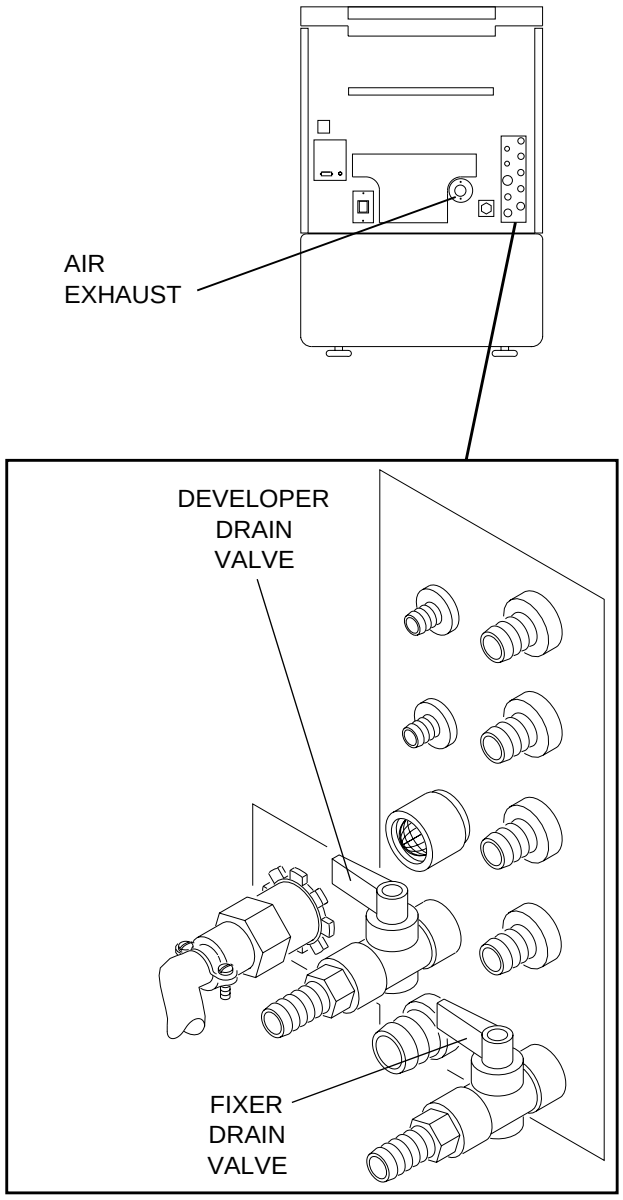
(c) Move the MAIN CIRCUIT BREAKER CB1 to the “O” position.

[2] To energize the PROCESSOR:

(a) Remove the MAGNETIC POWER WARNING SIGN from the wall CIRCUIT BREAKER. Move the wall CIRCUIT BREAKER to the “ON” position.

(b) Move the MAIN CIRCUIT BREAKER CB1 to the “I” position.

Draining the TANKS



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Warning
Dangerous Voltage

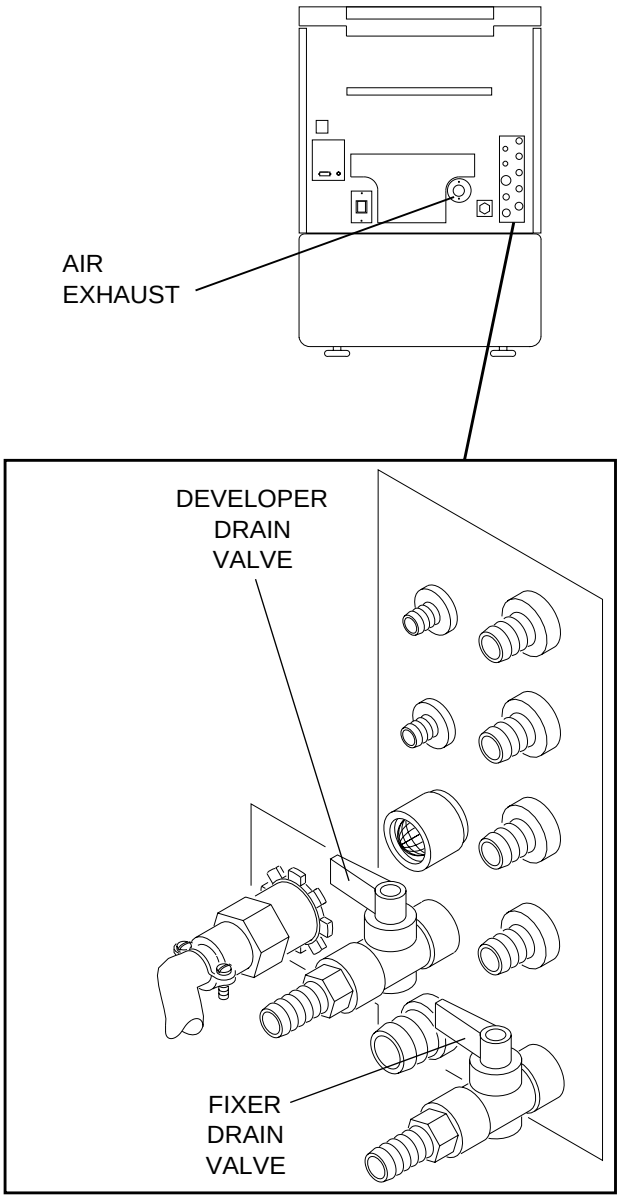
[1] De-energize the PROCESSOR.

Note
The REPLENISHMENT PUMPS will be de-energized and the flow of developer and fixer from the REPLENISHMENT TANKS will stop when the PROCESSOR is de-energized.

[2] Open:

- FIXER DRAIN VALVE
- DEVELOPER DRAIN VALVE

Filling the TANKS



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[1] To fill the processing TANKS, close:

- FIXER DRAIN VALVE
- DEVELOPER DRAIN VALVE
- TOP COVER

Warning
Dangerous Voltage

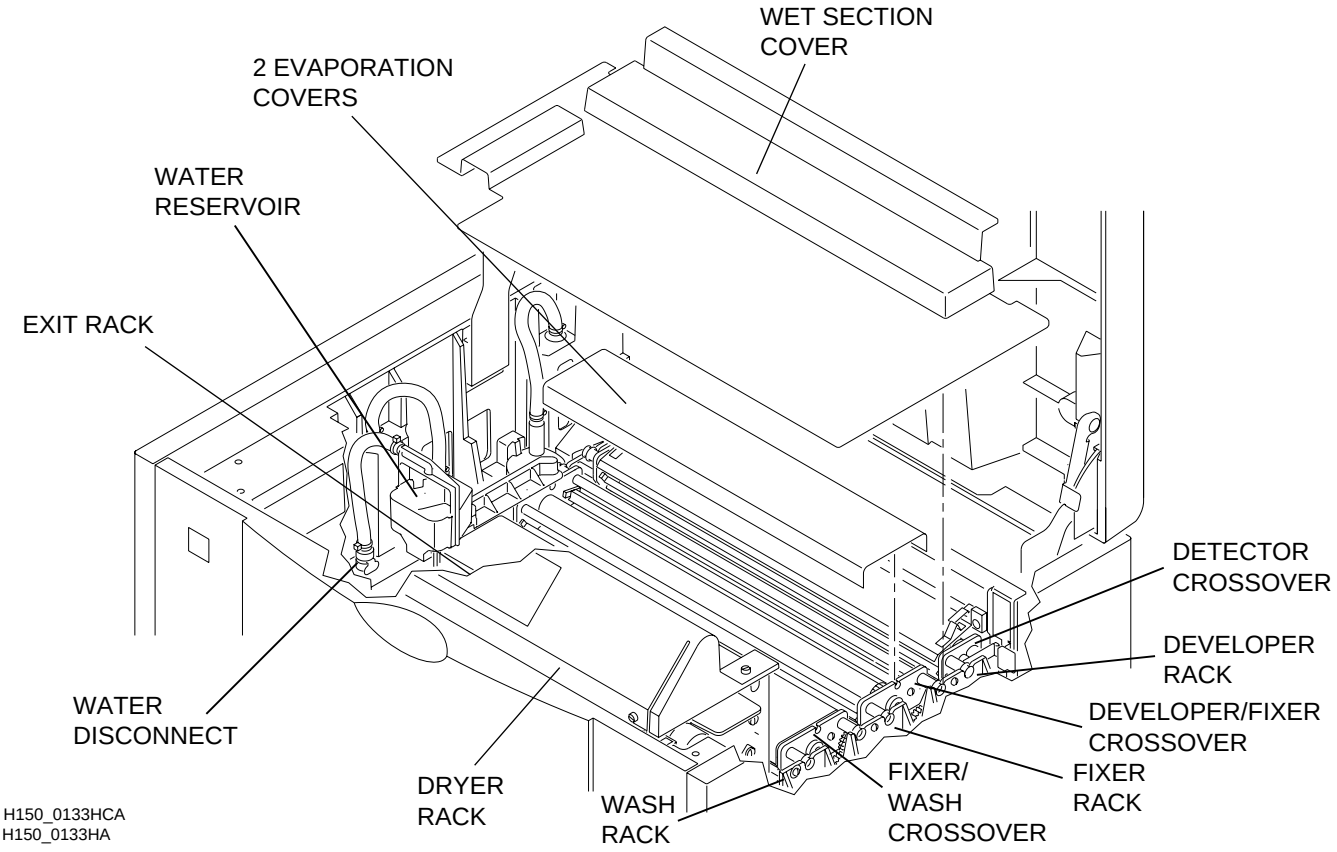
[2] Energize the PROCESSOR.

[3] On the DISPLAY PANEL on top of the PROCESSOR, press:

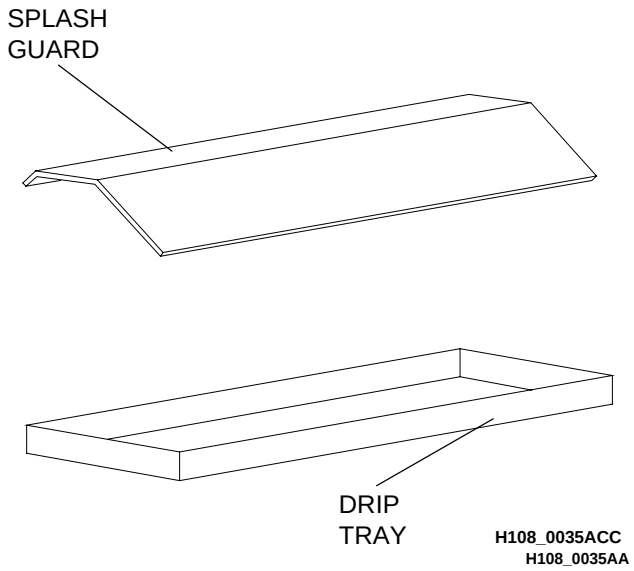
a. “GO TO SETUP” Key
b. 4-digit access code
c. “MORE” Key
d. “OPTIONS” Key
e. “REPLEN MODE” Key
f. “TANK FILL” Key

Note
See the OPERATOR MANUAL, Publication Number 5B6328, for more details on draining and filling the processing TANKS.

Identifying the RACKS and CROSSOVERS



Removing and Installing the RACKS with Solutions in the TANKS



Warning
Dangerous Voltage

[1] To remove the RACK:

- **(a)** De-energize the PROCESSOR.
- **(b)** Lift the TOP COVER.
- **(c)** Remove:
  - WET SECTION COVER
  - EVAPORATION COVERS
  - WATER RESERVOIR
  - FIXER/WASH CROSSOVER
  - DEVELOPER/FIXER CROSSOVER
  - DETECTOR CROSSOVER

[2] To remove the DEVELOPER RACK:

- **(a)** Lift the DEVELOPER RACK slowly out of the PROCESSOR. Tilt the DEVELOPER RACK to drain the developer into the DEVELOPER TANK.
- **(b)** Hold a DRIP TRAY under the DEVELOPER RACK.

Caution
Do not allow fixer to contaminate the developer solution.

- Use DRIP TRAYS.
- If you remove both the FIXER RACK and the DEVELOPER RACK, remove the DEVELOPER RACK first.
- When you remove the FIXER RACK, place the SPLASH GUARD between the DEVELOPER and FIXER TANKS. Lift the FIXER RACK slowly and drain it before moving it to the work station.

[3] Remove the FIXER RACK:

- **(a)** Place the SPLASH GUARD between the DEVELOPER and FIXER TANKS.
- **(b)** Lift the FIXER RACK slowly out of the PROCESSOR. Tilt the FIXER RACK to drain the fixer into the FIXER TANK.
- **(c)** Hold a DRIP TRAY under the FIXER RACK.

[4] Remove the WASH RACK by lifting the WASH RACK from the WASH TANK.

Caution
To prevent damage to the LOCKING TABS, do not pull the EXIT RACK straight up.

[5] Remove the EXIT RACK:

- **(a)** Rotate the EXIT RACK a small distance.
- **(b)** Slowly and carefully lift the EXIT RACK from the PROCESSOR.

[6] Remove the DRYER RACK by lifting the DRYER RACK straight up from the PROCESSOR.

Caution

To prevent contamination of the developer when you install the DEVELOPER RACK and the FIXER RACK:

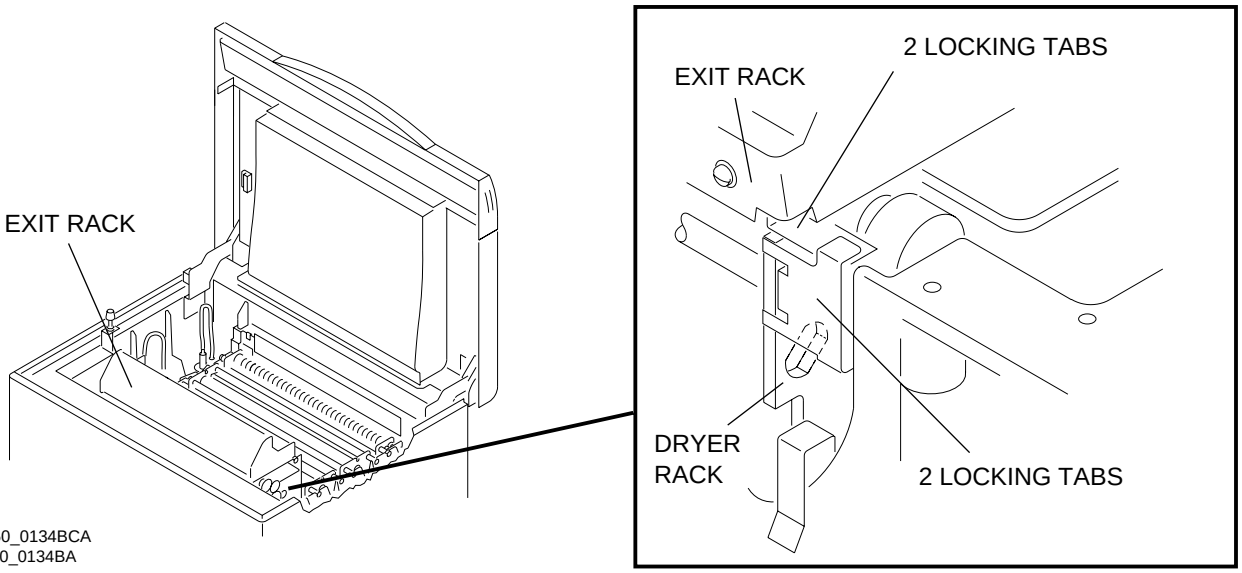
- Use the SPLASH GUARD.
- Install the FIXER RACK first.

[7] Place the SPLASH GUARD between the DEVELOPER and FIXER TANKS.

[8] Slowly install the FIXER RACK in the FIXER TANK.

[9] Remove the SPLASH GUARD.

[10] Slowly install the DEVELOPER RACK.



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Important

Check that the LOCKING TABS on the EXIT RACK engage the LOCKING TABS on the DRYER RACK.

[11] Install:

- WASH RACK
- DETECTOR CROSSOVER
- FIXER/WASH CROSSOVER
- DEVELOPER/FIXER CROSSOVER
- DRYER RACK
- EXIT RACK

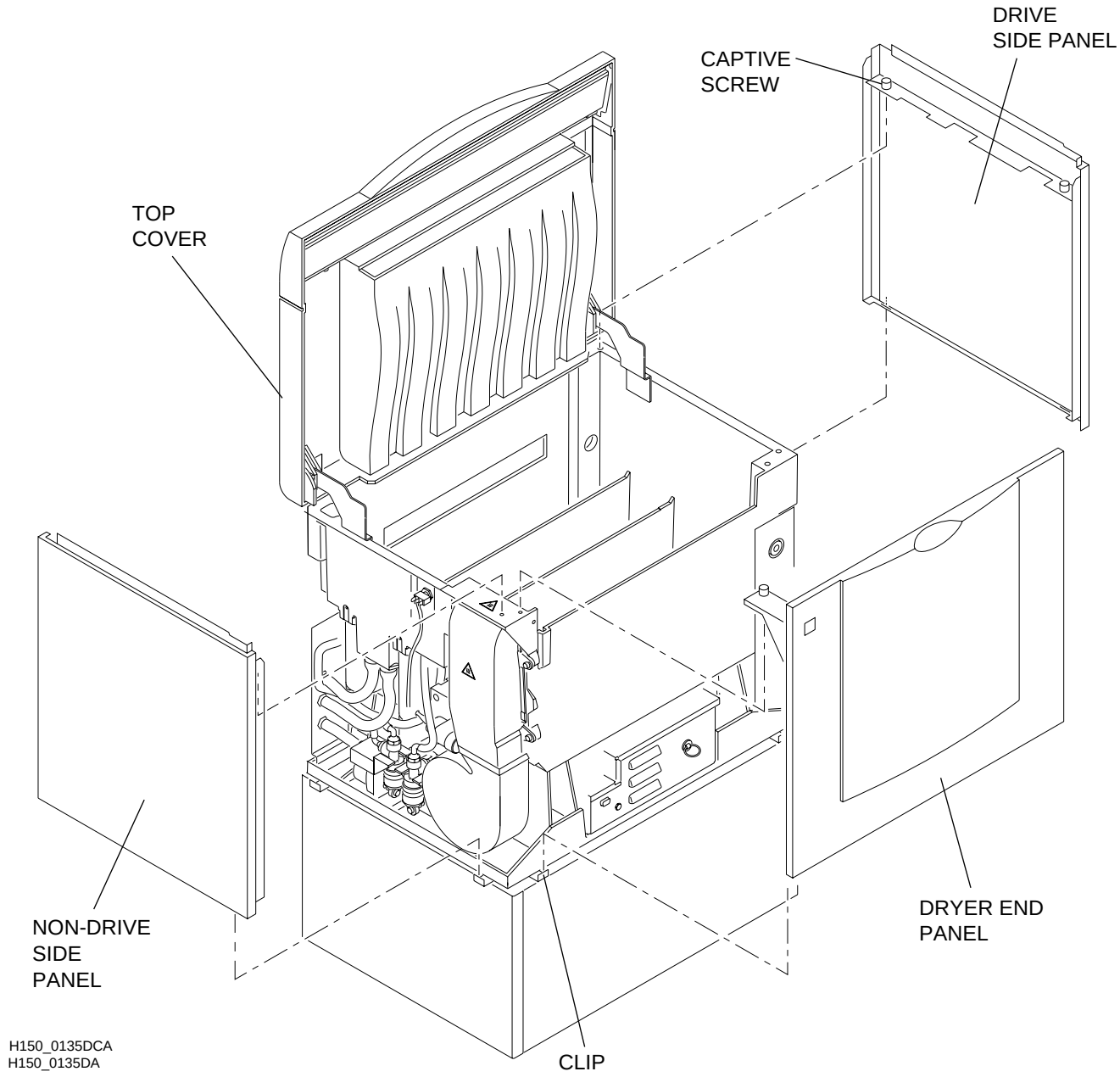
[12] Check that the RACKS and CROSSOVERS are seated correctly.

[13] Install:

- WATER RESERVOIR and WATER DISCONNECT
- EVAPORATION COVERS
- WET SECTION COVER

[14] Close the TOP COVER.

Identifying and Removing the COVERS and PANELS



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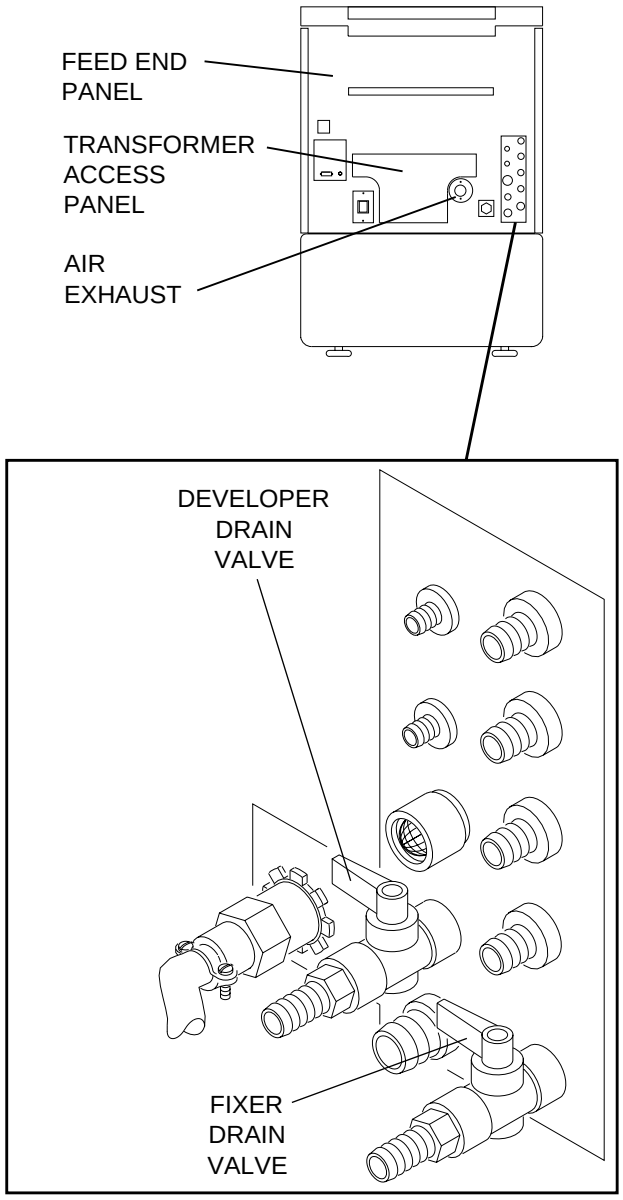
Removing the DRYER END PANEL



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Warning

Dangerous Voltage

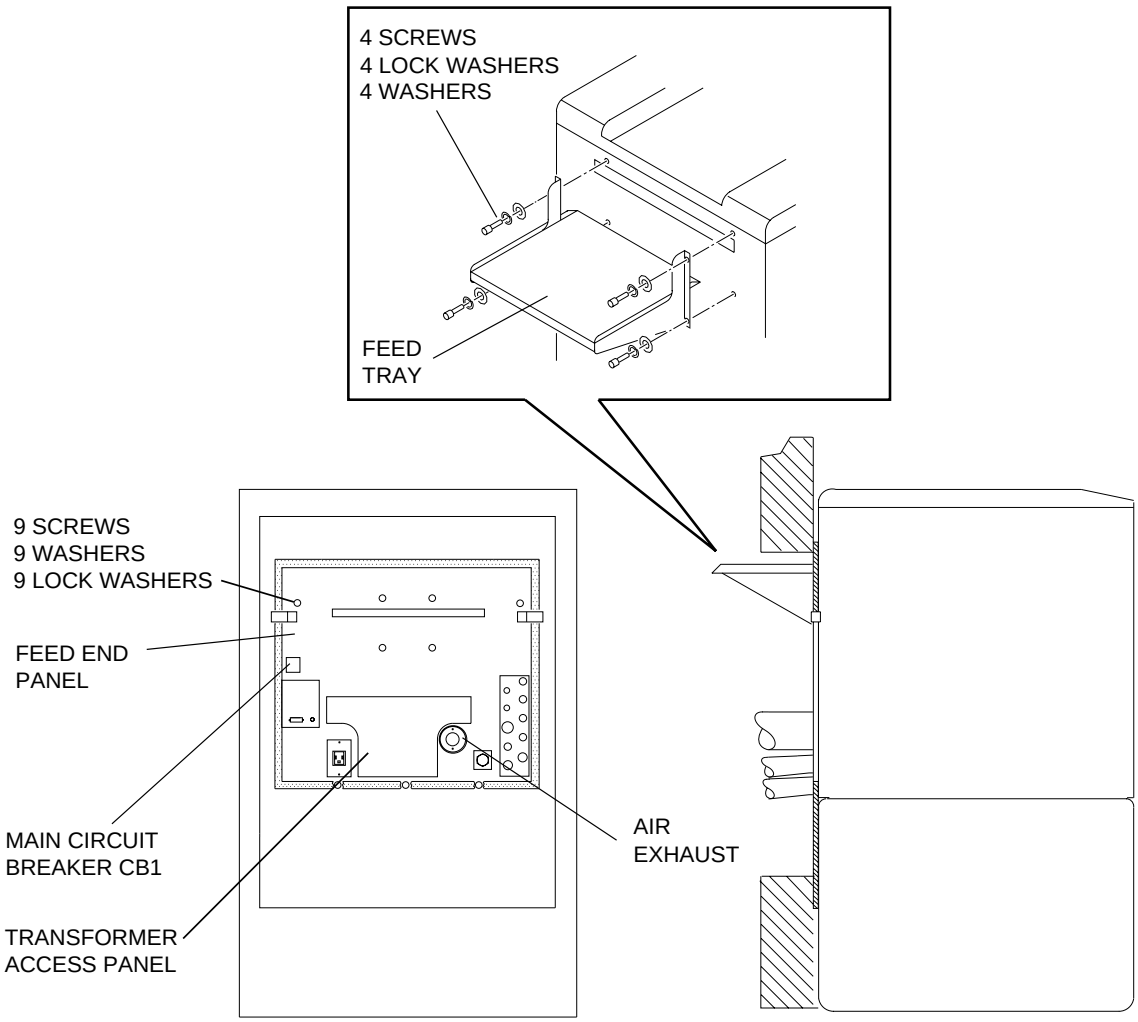
[1] De-energize the PROCESSOR.

Important

If it is necessary to move the PROCESSOR to access the FEED END PANEL, drain the TANKS before moving the PROCESSOR. Draining the TANKS will prevent the processing solutions from splashing and therefore prevent contamination.

[2] Open the DEVELOPER DRAIN VALVE and FIXER DRAIN VALVE to avoid contaminating the solutions, drain the processing TANKS.

[3] Disconnect the AIR EXHAUST from the PROCESSOR.



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[4] Remove the FEED TRAY by removing the 4 SCREWS securing it.

Note

The SCREWS that hold the FEED END PANEL are different lengths. Record the original positions of the SCREWS for easier installation.

[5] Remove the remaining 9 SCREWS from the FEED END PANEL.

[6] Move the PROCESSOR about 15 cm (6 in.) from the wall.

Important

If it is necessary to move the PROCESSOR to access the FEED END PANEL, drain the TANKS before moving the PROCESSOR. Draining the TANKS will prevent the processing solutions from splashing and therefore prevent contamination.

[7] If it is necessary to completely remove the PANEL, disconnect the CONNECTORS to.

- SAFELIGHT RECEPTACLE
- MAIN CIRCUIT BREAKER CB1
- 2000 BOARD

Note

When you install the FEED END PANEL, be sure to connect the AIR EXHAUST HOSE in the PROCESSOR to the AIR EXHAUST on the FEED END PANEL.

Removing the Remaining PANELS

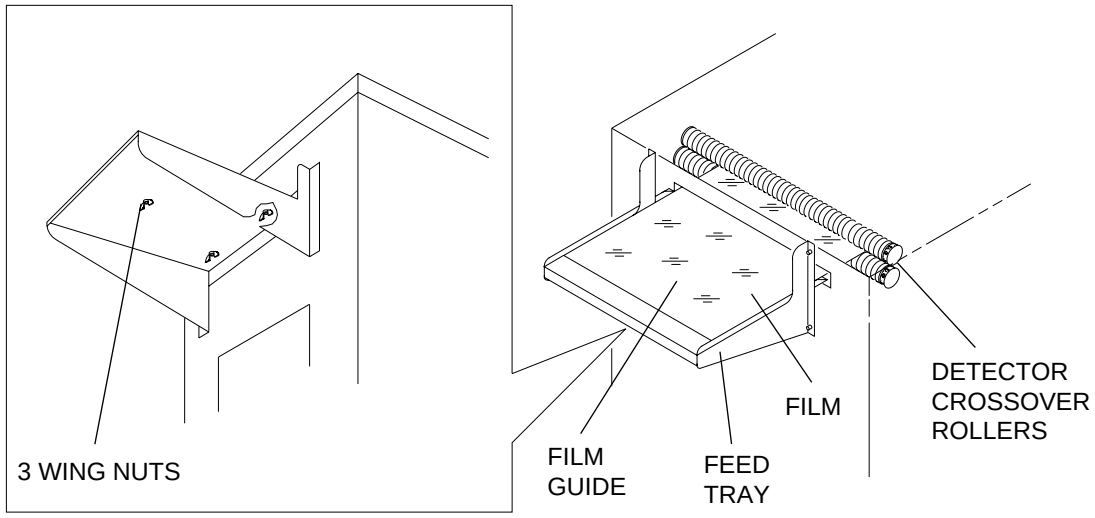
[1] Open the TOP COVER.

[2] Loosen the 2 CAPTIVE SCREWS on the PANEL to be removed.

[3] Lift the PANEL to release it from the 2 CLIPS under the PANEL.

Section 2: RACKS and CROSSOVERS

Adjusting the FEED TRAY



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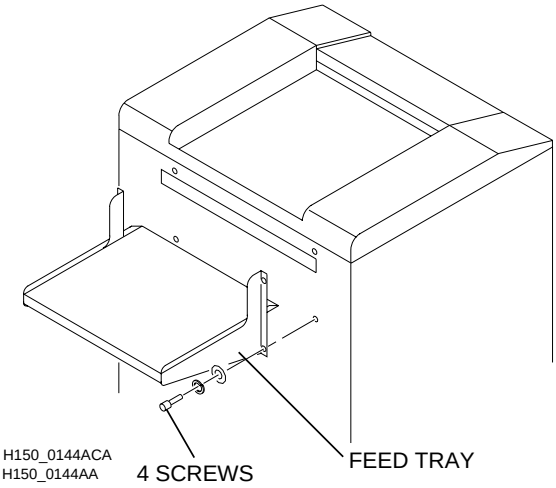

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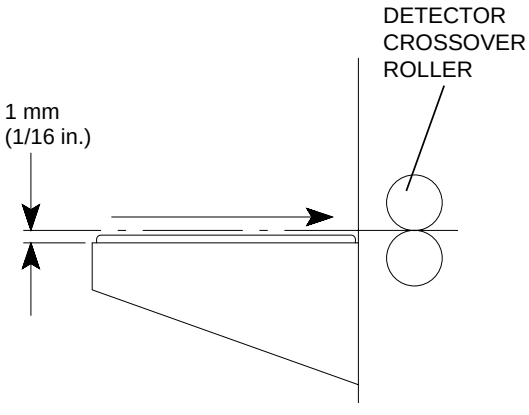

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[1] Loosen the 4 SCREWS.

[2] Adjust the position of the FEED TRAY to approximately 1 mm (1/16 in.) below the NIP of the DETECTOR CROSSOVER ROLLERS.

[3] Tighten the 4 SCREWS.

[4] Place a 35 x 43 cm (14 x 17 in.) film onto the FILM GUIDE.

[5] Loosen the 3 WING NUTS.

[6] Align the film with the left edge of the FILM GUIDE.

[7] Use the edges of the film to align the FILM GUIDE with the DETECTOR CROSSOVER.

Note

The leading edge of the film should be parallel to the DETECTOR CROSSOVER ROLLERS.

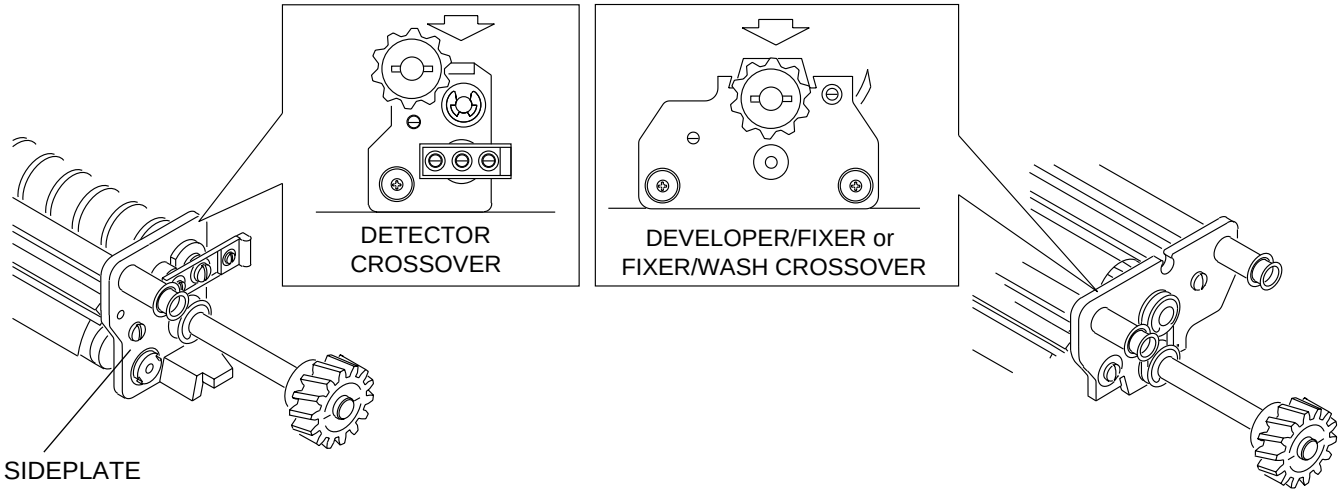
[8] Tighten the 3 WING NUTS.

Adjusting the Squareness of the CROSSOVERS

Important

Use this adjustment procedure to adjust the squareness of any of the 3 CROSSOVERS:

- DETECTOR CROSSOVER
- DEVELOPER/FIXER CROSSOVER
- FIXER/WASH CROSSOVER



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[1] Remove the CROSSOVER.

[2] Place the CROSSOVER on a smooth, flat surface.

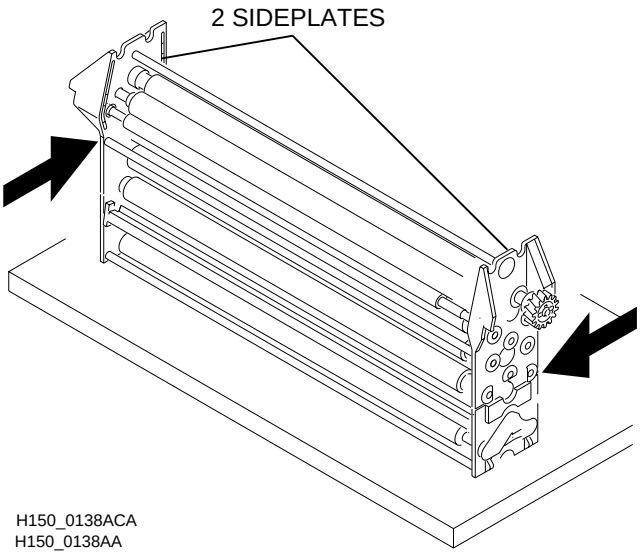
[3] Check that the SIDEPLATES of the CROSSOVER touch the flat surface evenly. If not, apply pressure to the assembly.

[4] Check that the longer edges of the GUIDE SHOES are pointed in the direction of film travel.

Note

The GUIDE SHOES are not adjustable.

Adjusting the Squareness of the RACKS



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[1] Place the bottom of the RACK on a smooth, flat surface.

[2] Check that the SIDEPLATES are flat on the flat surface.

[3] If necessary, apply pressure to the SIDEPLATES.

Adjusting the GUIDE SHOES on the DEVELOPER RACK

Important

Before doing this procedure, do:

- Adjusting the Squareness of the DEVELOPER RACK.
- Adjusting the Tension on the DRIVE CHAIN.

Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

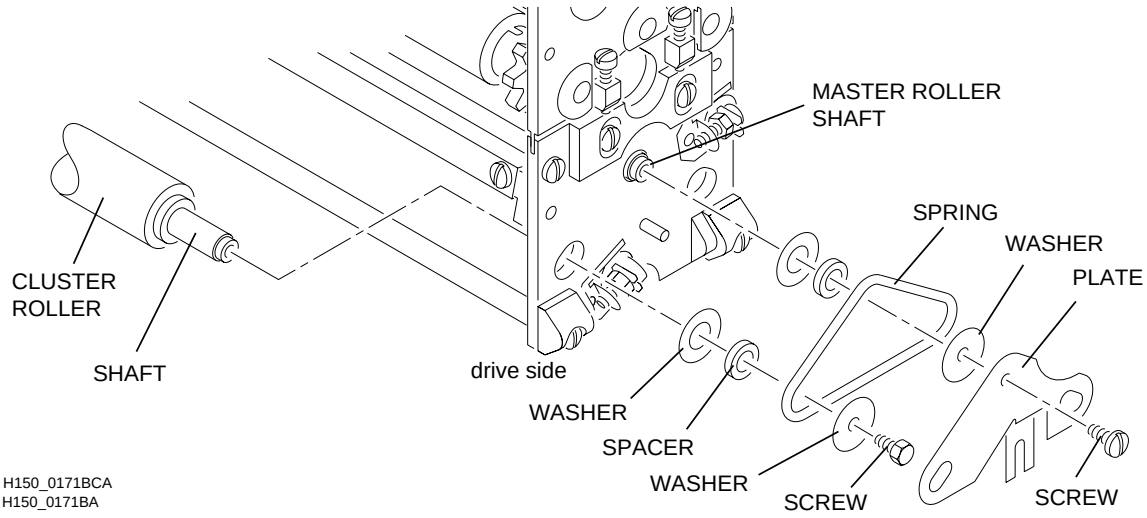
Note

To prevent the contamination of the processing solutions, use the RACK SPLASH GUARD and DRIP TRAY when you remove the RACK from the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the following parts from the PROCESSOR:

- WET SECTION COVER
- EVAPORATION COVERS
- CROSSOVERS as necessary



[4] Remove the DEVELOPER RACK from the PROCESSOR.

[5] Remove the SPRING from each end of the TURNAROUND section of the DEVELOPER RACK.

[6] Remove the following parts from the drive end of the MASTER ROLLER SHAFT:

- SCREW
- LOCKING PLATE
- WASHER

[7] Install the SCREW and WASHER removed in Step 6 to hold the MASTER ROLLER SHAFT in position.

[8] While holding the SCREW that secures the drive end of one of the CLUSTER ROLLERS, rotate the SCREW that secures the non-drive side of the CLUSTER ROLLER.

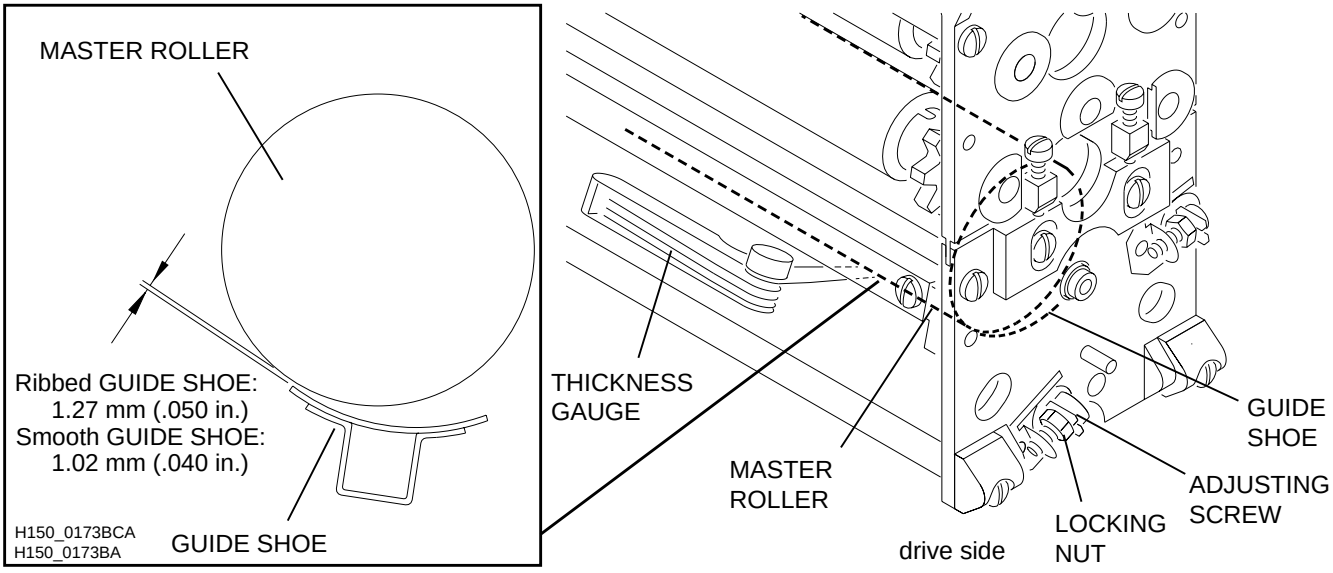
[9] Remove the following parts from either end of the CLUSTER ROLLER:

- SCREW
- 2 WASHERS
- SPACER

[10] Pull the CLUSTER ROLLER SHAFT out through the SIDEPLATE of the DEVELOPER RACK.

[11] Remove the CLUSTER ROLLER from the DEVELOPER RACK.

[12] Do Steps 8 - 11 again for the second CLUSTER ROLLER.



[13] Loosen the LOCKING NUT on the ADJUSTING SCREW for the GUIDE SHOE on the drive end of the DEVELOPER RACK.

Note

There are 2 styles of GUIDE SHOES: smooth and ribbed styles.

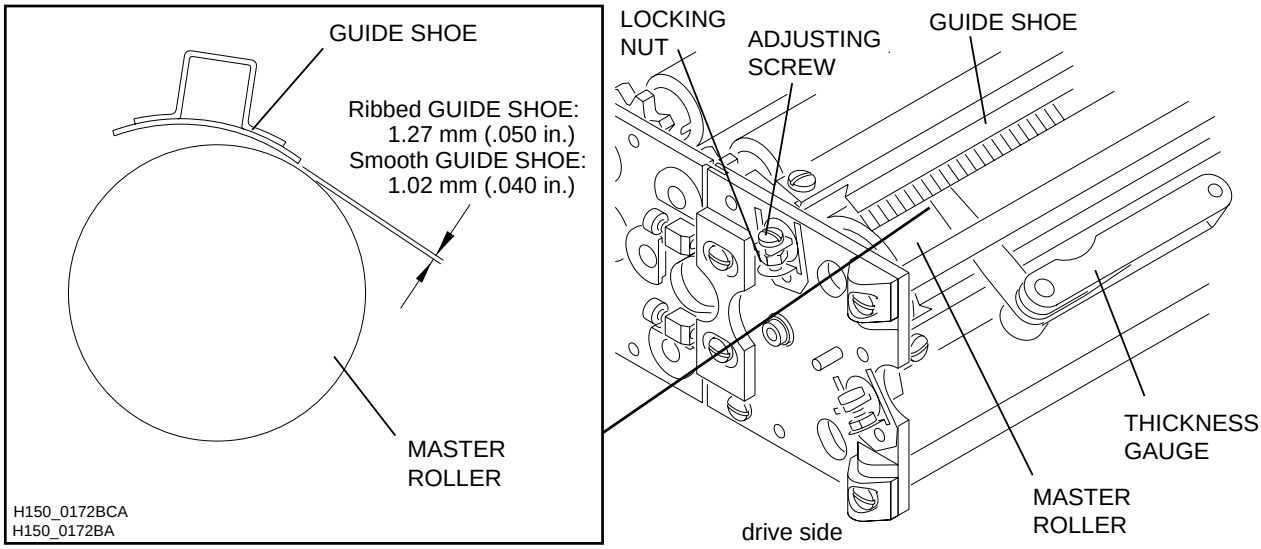
[14] Insert a THICKNESS GAUGE between the GUIDE SHOE and the MASTER ROLLER as close to the end of the GUIDE SHOE as possible.

[15] Rotate the ADJUSTING SCREW for the GUIDE SHOE until the GUIDE SHOE and MASTER ROLLER are the correct distance apart:

GUIDE SHOE style:	GUIDE SHOE/MASTER ROLLER gap:
Ribbed GUIDE SHOE	1.27 mm (.050 in.)
Smooth GUIDE SHOE	1.02 mm (.040 in.)

[16] Hold the ADJUSTING SCREW in position and tighten the LOCKING NUT.

[17] Adjust the non-drive end of the same GUIDE SHOE.



[18] Adjust the second GUIDE SHOE.

Important

When you install the CLUSTER ROLLERS, install the HEX HEAD SCREW on the drive end of the DEVELOPER RACK.

[19] Install one of the CLUSTER ROLLERS and SHAFTS so that the GEAR on the CLUSTER ROLLER engages with the GEAR on the MASTER ROLLER.

[20] Install on the CLUSTER ROLLER:

- WASHER
- SPACER
- WASHER
- SCREW

[21] Do Steps 17 and 18 again for the second CLUSTER ROLLER.

[22] Remove the SCREW and WASHER that you installed in the drive end of the MASTER ROLLER in Step 7.

[23] Push the non-drive end of the MASTER ROLLER SHAFT until the SHAFT extends as far as possible past the drive end SIDEPLATE.

[24] Hold the non-drive end of the MASTER ROLLER SHAFT in position and install the following parts into the drive end of the MASTER ROLLER SHAFT:

- WASHER
- LOCKING PLATE
- SCREW

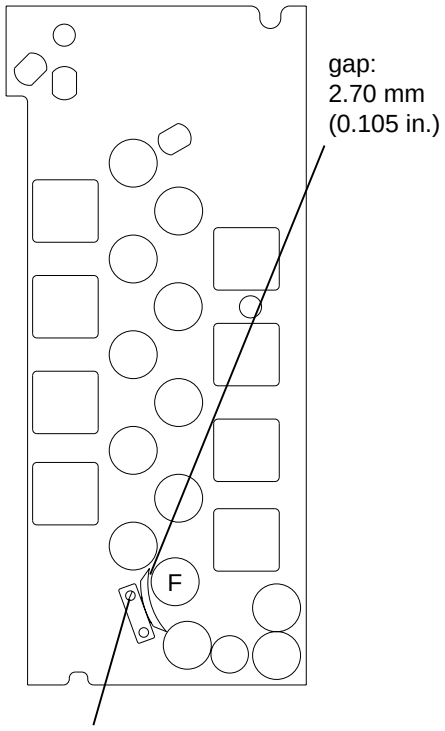
[25] Install the 2 SPRINGS that you removed from the TURNAROUND section of the RACK.

[26] Rotate the RACK so that it stands upright.

[27] Check the RACK for squareness.

[28] Install the RACK into the PROCESSOR.

Adjusting the GUIDE SHOE on the DRYER RACK



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[1] Remove parts as necessary from the DRYER RACK to obtain access to the bottom GUIDE SHOE ADJUSTMENT SCREWS.

[2] Remove ROLLERS and AIR TUBES as necessary to be able to measure the clearance between the GUIDE SHOE and the “F” ROLLER.

[3] Loosen the GUIDE SHOE ADJUSTMENT SCREWS.

[4] Set the distance between the “F” ROLLER and the GUIDE SHOE:

(a) Place a 2.70 mm (0.105 in.) FEELER GAUGE between the “F” ROLLER and the long edge of the GUIDE SHOE.

(b) Hold the GUIDE SHOE against the FEELER GAUGE and tighten the GUIDE SHOE ADJUSTMENT SCREW.

Important

The clearance along the length of the GUIDE SHOE and the ROLLER must be uniform.

[5] Check that the adjustment has not changed. The clearance must be:
2.70 to +/- 0.10 mm
(0.105 to +/- 0.005 in.).

[6] Check for correct operation of the DRYER RACK by running 35 x 43 cm (14 x 17 in.) films.

[7] If the DRYER RACK bottom GUIDE SHOE causes scratching or stubbing of the film, make the following adjustments as necessary:

Note

Make the adjustments in small increments of approximately 0.10 mm (0.005 in.) to prevent scratching or stubbing of the film.

(a) If scratching occurs, increase the distance between the bottom GUIDE SHOE and the “F” ROLLER.

(b) If stubbing occurs, decrease the distance between the GUIDE SHOE and the “F” ROLLER.

(c) Check for correct operation of the PROCESSOR.

Adjusting the DRIVE CHAIN

Important

- The RACK must be in solution at operating temperature before you begin this procedure

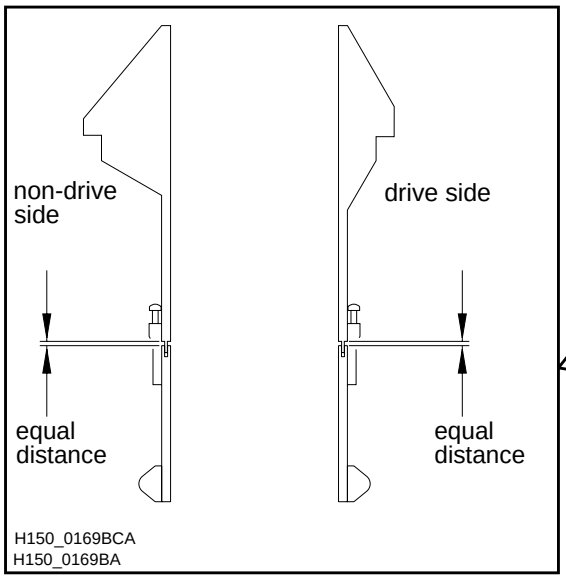
- To prevent the contamination of the processing solutions, use the RACK SPLASH GUARD and DRIP TRAY when you remove the RACK from the PROCESSOR.

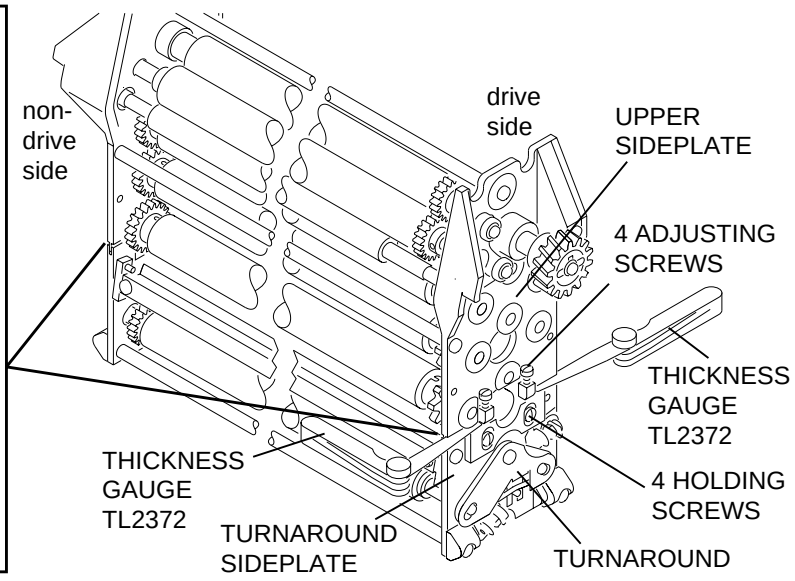
[1] With the “Ready” INDICATOR illuminated, de-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove from the PROCESSOR:

- WET SECTION COVER
- EVAPORATION COVERS
- CROSSOVERS as necessary
- DEVELOPER or FIXER RACK





[4] Loosen the 2 HOLDING SCREWS at each end of the RACK approximately one full turn.

[5] Hold the RACK vertically above the work surface and allow gravity to provide full tension on the TURNAROUND.

[6] If necessary, turn the 2 ADJUSTING SCREWS on the drive end of the RACK counterclockwise until the SCREWS do not contact the TURNAROUND SIDEPLATE.

[7] Rotate the DRIVE GEAR 6 full turns.

[8] Tighten the 2 HOLDING SCREWS on the drive end of the RACK.

[9] Place the RACK vertically on a flat work surface.

[10] Rotate the 2 ADJUSTING SCREWS on the drive end of the RACK clockwise until both SCREWS just touch the TURNAROUND SIDEPLATE on the drive end of the RACK.

[11] Loosen the 2 HOLDING SCREWS on the drive end of the RACK approximately one full turn.

[12] Rotate the 2 ADJUSTING SCREWS on the drive end of the RACK counterclockwise one full turn.

[13] Tighten the 2 HOLDING SCREWS on the drive end of the RACK.

[14] Using a THICKNESS GAUGE TL-2372 measure the distance between the UPPER SIDEPLATE and the TURNAROUND SIDEPLATE on the drive end of the RACK.

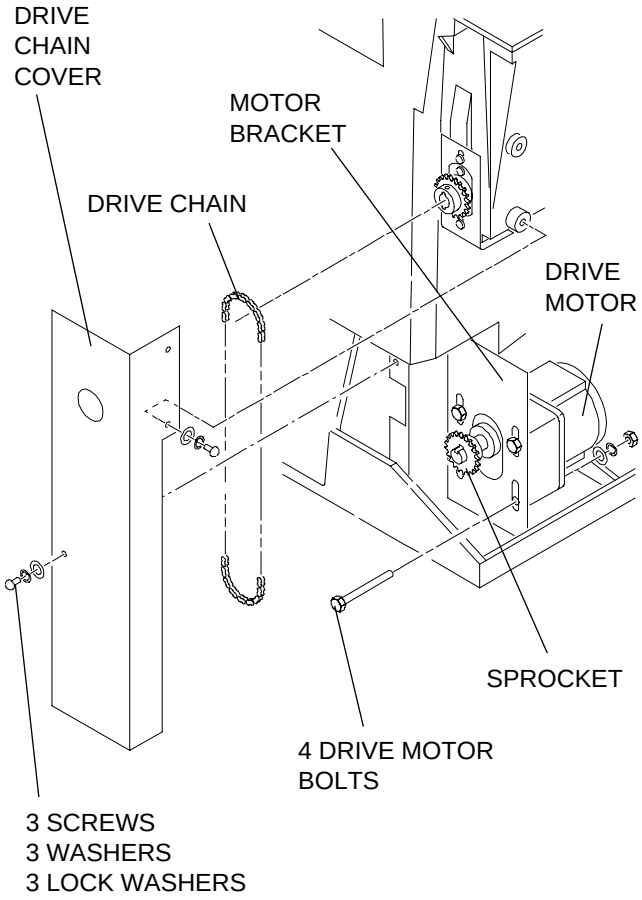
[15] Rotate the 2 ADJUSTING SCREWS on the non-drive end of the RACK until the distance between the UPPER SIDEPLATE and the TURNAROUND SIDEPLATE is the same as the distance between the 2 SIDEPLATES on the drive end of the RACK.

[16] Tighten the 2 HOLDING SCREWS on the non-drive end of the RACK.

[17] Assemble the PROCESSOR and check that it operates correctly.

Section 3: MAIN DRIVE

Removing the DRIVE SHAFT and the WORM GEARS



H104_0147CCF
H104_0147CA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

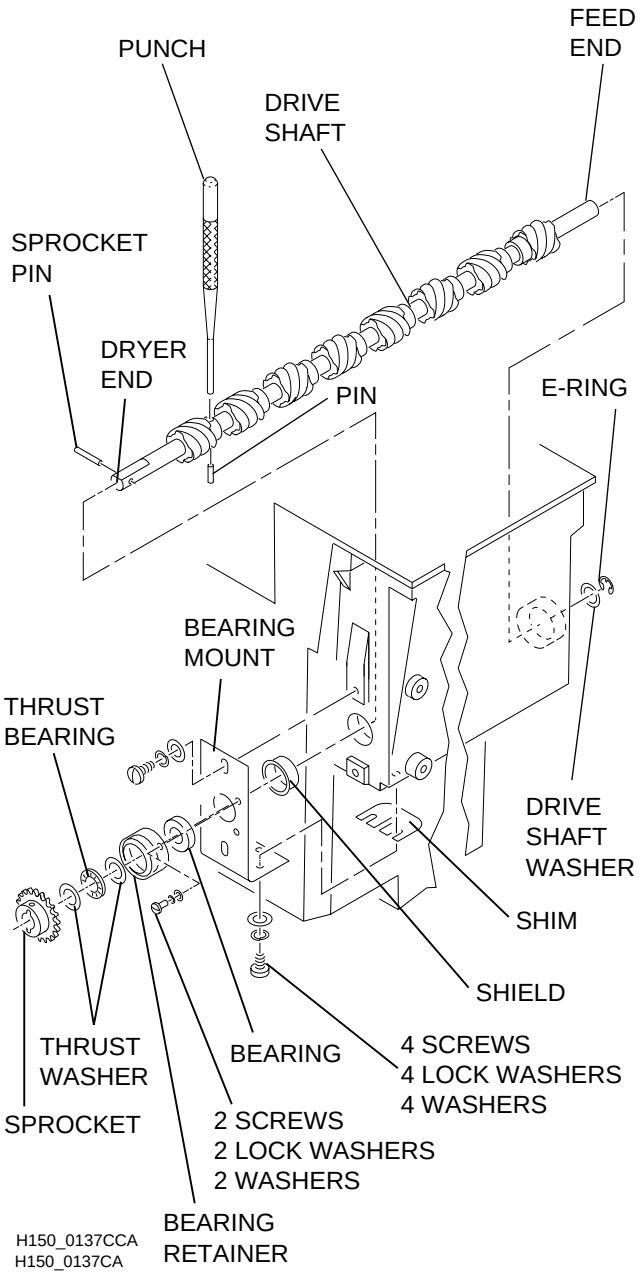
[3] Remove:

- DRIVE SIDE PANEL
- DRYER END PANEL
- WET SECTION COVER
- 2 EVAPORATION COVERS
- CROSSOVERS
- RACKS

[4] Remove the DRIVE CHAIN COVER by removing the 3 SCREWS.

[5] Loosen the 4 DRIVE MOTOR BOLTS from the MOTOR BRACKET.

[6] Lift the DRIVE MOTOR and remove the DRIVE CHAIN.



[7] Remove from the feed end of the DRIVE SHAFT:

- E-RING
- DRIVE SHAFT WASHER(S)

[8] For access to the SPROCKET PIN, move the DRIVE SHAFT toward the DRYER end of the PROCESSOR.

[9] Remove the following parts from the DRYER end of the DRIVE SHAFT:

- SPROCKET PIN
- SPROCKET
- 2 THRUST WASHERS
- THRUST BEARING
- BEARING RETAINER
- BEARING

[10] Remove:

- 4 SCREWS
- BEARING MOUNT
- any SHIM
- SHIELD

Note

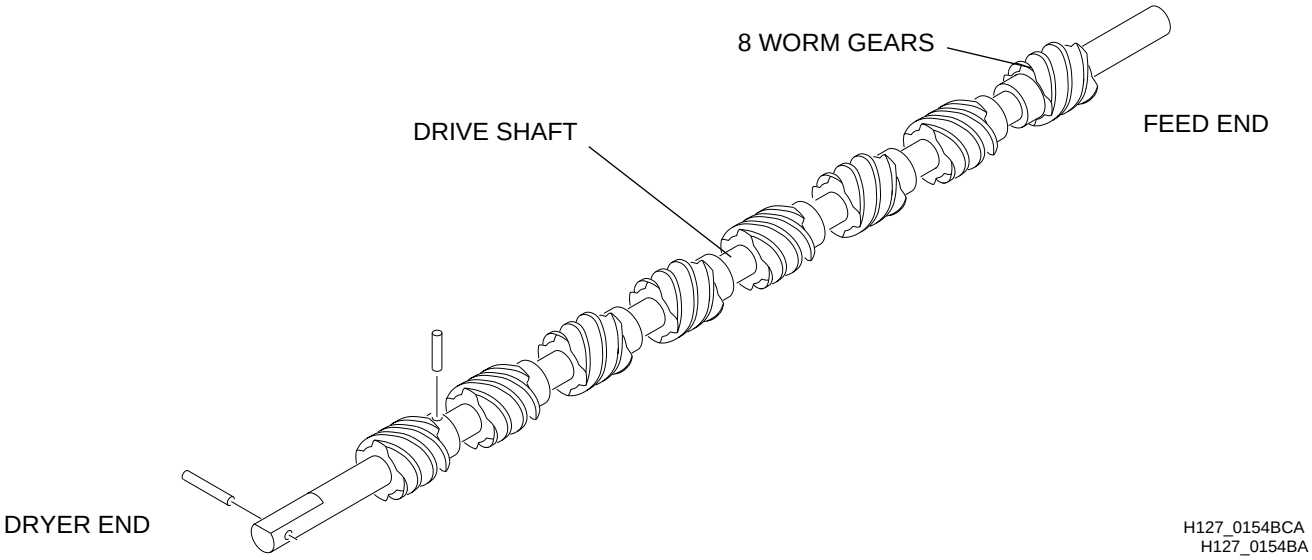
Observe the quantity of SHIMS removed. When assembling the DRIVE SHAFT, install the same quantity of SHIMS.

[11] Remove the DRIVE SHAFT by slowly pulling it toward the DRYER end of the PROCESSOR.

[12] If necessary, remove from the DRIVE SHAFT any WORM GEARS that have wear. Use a PUNCH to remove the PIN from the WORM GEAR.

Important

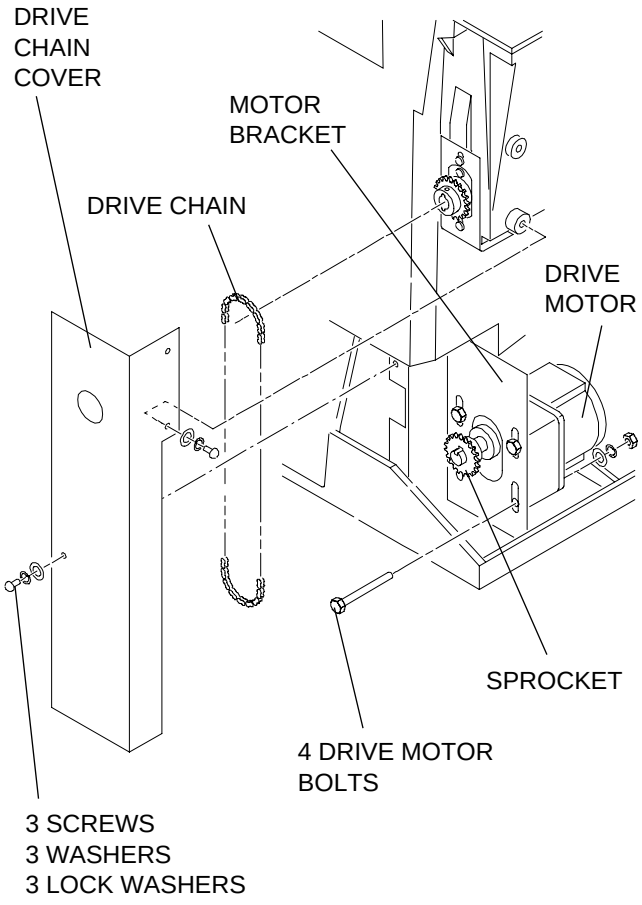
Check the direction of the WORM GEARS. See the graphic below for the correct orientation on the DRIVE SHAFT.



[13] Install new WORM GEARS and a new DRIVE SHAFT. Install the same quantity of SHIMS that you removed.

[14] Adjust the tension on the DRIVE CHAIN.

Removing and Adjusting the Tension of the DRIVE CHAIN



H104_0147CCF
H104_0147CA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove:

- DRIVE SIDE PANEL
- DRYER END PANEL
- DRIVE CHAIN COVER

[4] Loosen the 4 DRIVE MOTOR BOLTS from the MOTOR BRACKET.

[5] Lift the DRIVE MOTOR and remove the DRIVE CHAIN.

[6] Install a new DRIVE CHAIN.

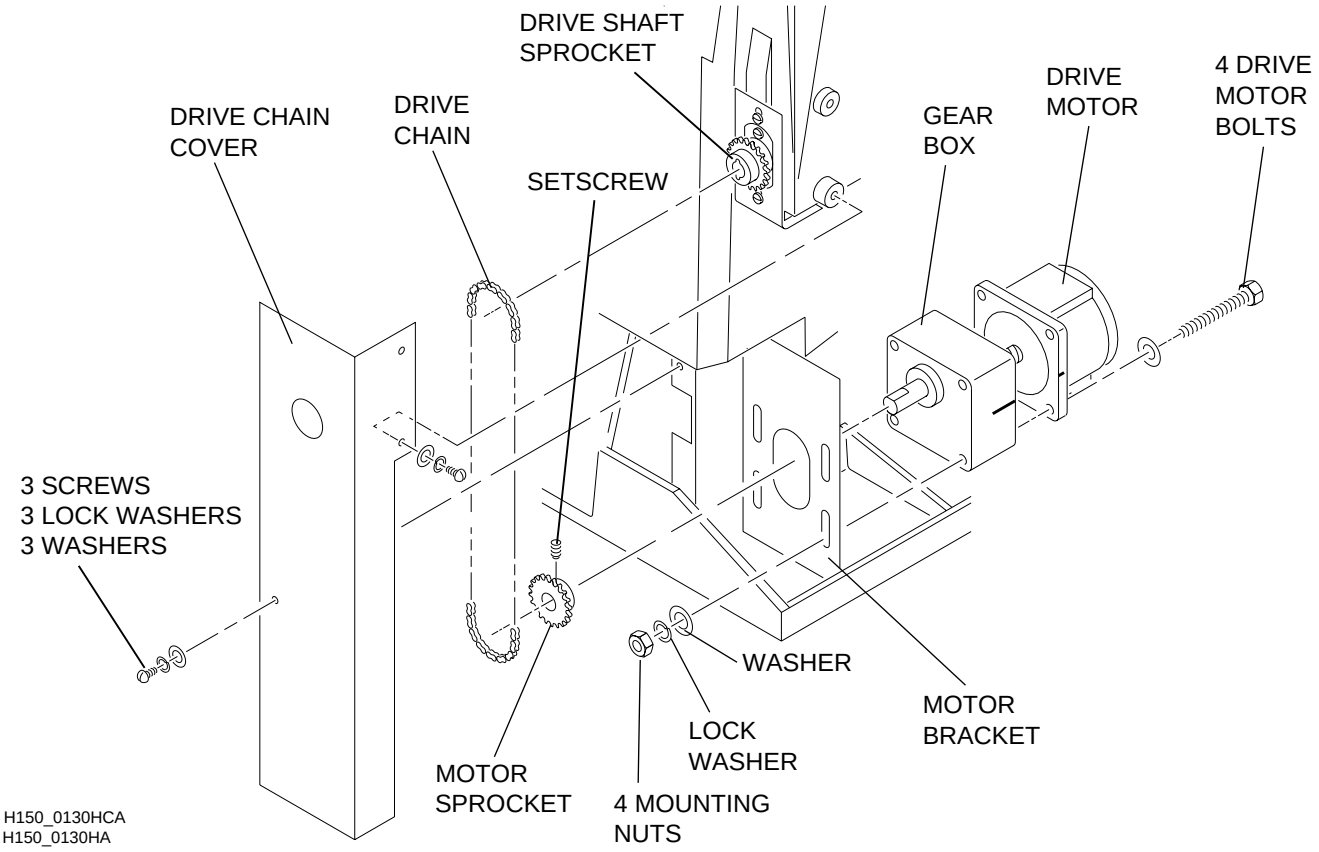
[7] Adjust the tension on the DRIVE CHAIN:

(a) Press down on the DRIVE MOTOR to tighten the DRIVE CHAIN. Allow 5mm (1/4 in.) deflection of the DRIVE CHAIN at the center of the DRIVE CHAIN.

(b) Tighten the 4 DRIVE MOTOR BOLTS.

[8] Assemble the PROCESSOR.

Removing the DRIVE MOTOR B6 and the GEAR BOX



Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

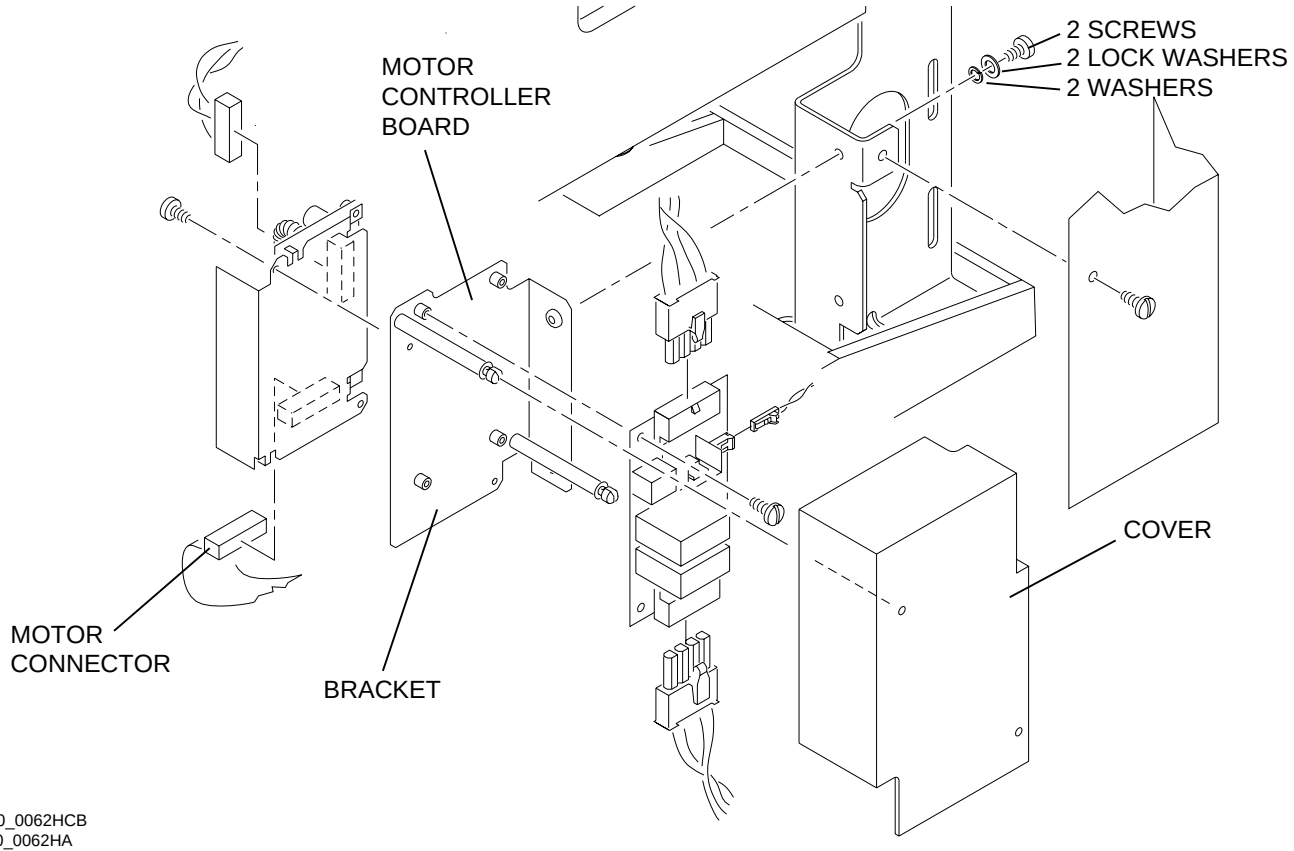
[3] Remove:

- DRIVE SIDE PANEL
- DRYER END PANEL
- DRIVE CHAIN COVER by removing the 3 SCREWS

[4] Loosen the 4 DRIVE MOTOR BOLTS from the MOTOR BRACKET.

[5] Lift the DRIVE MOTOR and remove the DRIVE CHAIN.

[6] Remove the SPROCKET from the DRIVE MOTOR by loosening the SETSCREW.



H150_0062HCB
H150_0062HA

[7] Pull off the COVER protecting the BOARDS.

[8] Remove:

- 2 SCREWS that hold the BRACKET to the PROCESSOR
- MOTOR CONNECTOR from the MOTOR CONTROLLER BOARD
- 4 MOUNTING NUTS from the DRIVE MOTOR
- DRIVE MOTOR and the GEAR BOX

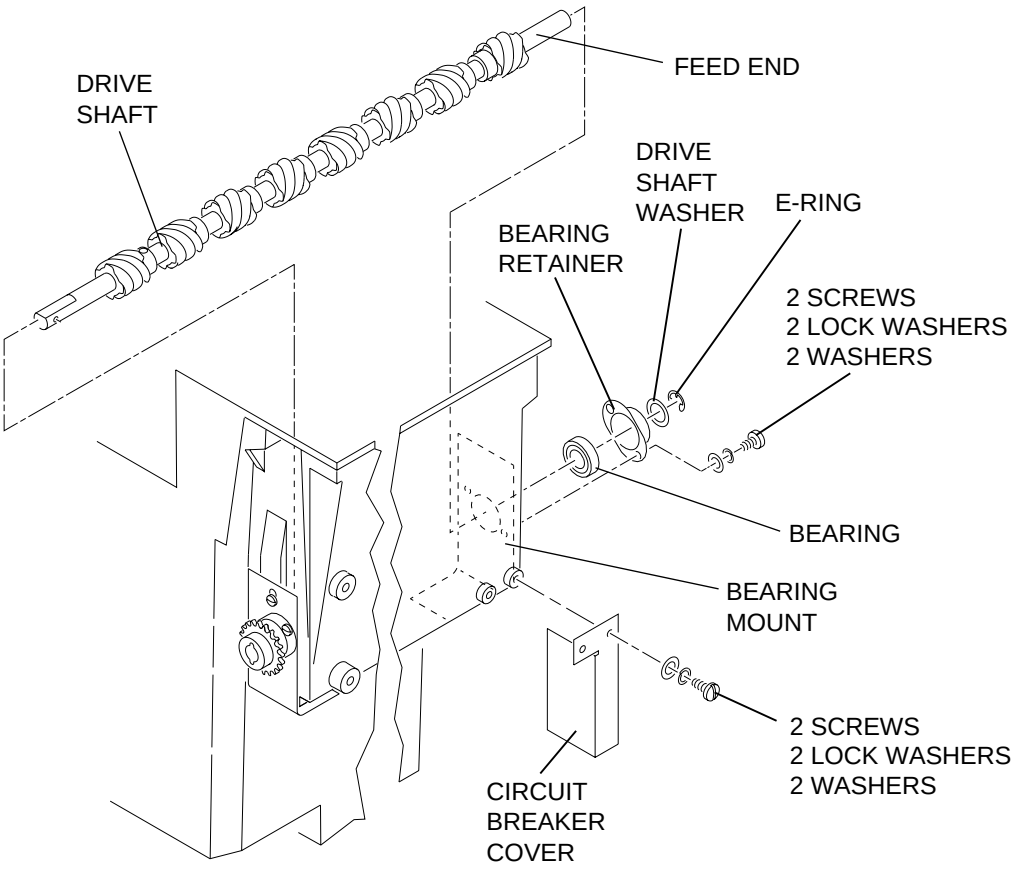
[9] Install a new DRIVE MOTOR and a new GEAR BOX.

Note

When you install the MOTOR SPROCKET, align the MOTOR SPROCKET with the DRIVE SHAFT SPROCKET.

[10] Adjust the tension on the DRIVE CHAIN.

Removing the BEARING from the DRIVE SHAFT on the Feed End



H150_0139HCA
H150_0139HA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

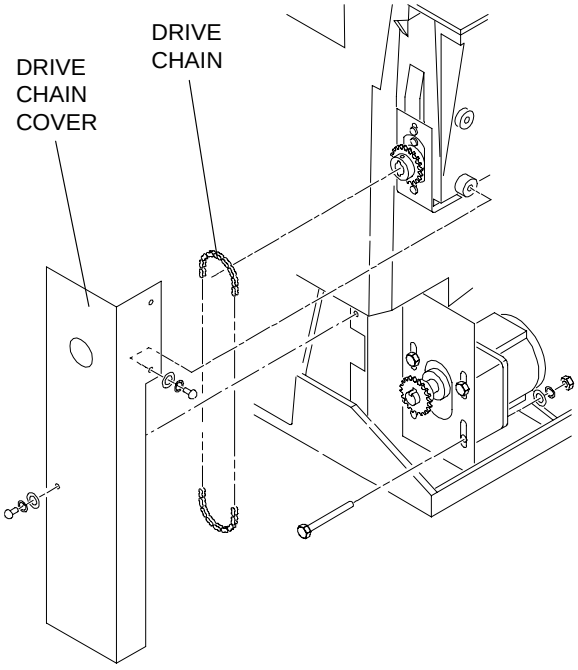
[2] Lift the TOP COVER.

[3] Remove:

- DRIVE SIDE PANEL
- CIRCUIT BREAKER COVER by removing the 2 SCREWS that secure it
- E-RING and the DRIVE SHAFT WASHER(S) from the DRIVE SHAFT
- BEARING RETAINER by removing the 2 SCREWS securing it
- BEARING from the feed end of the DRIVE SHAFT

[4] Install a new BEARING and assemble the PROCESSOR.

Removing the BEARING from the DRIVE SHAFT on the DRYER



H104_0147CCE
H104_0147CA

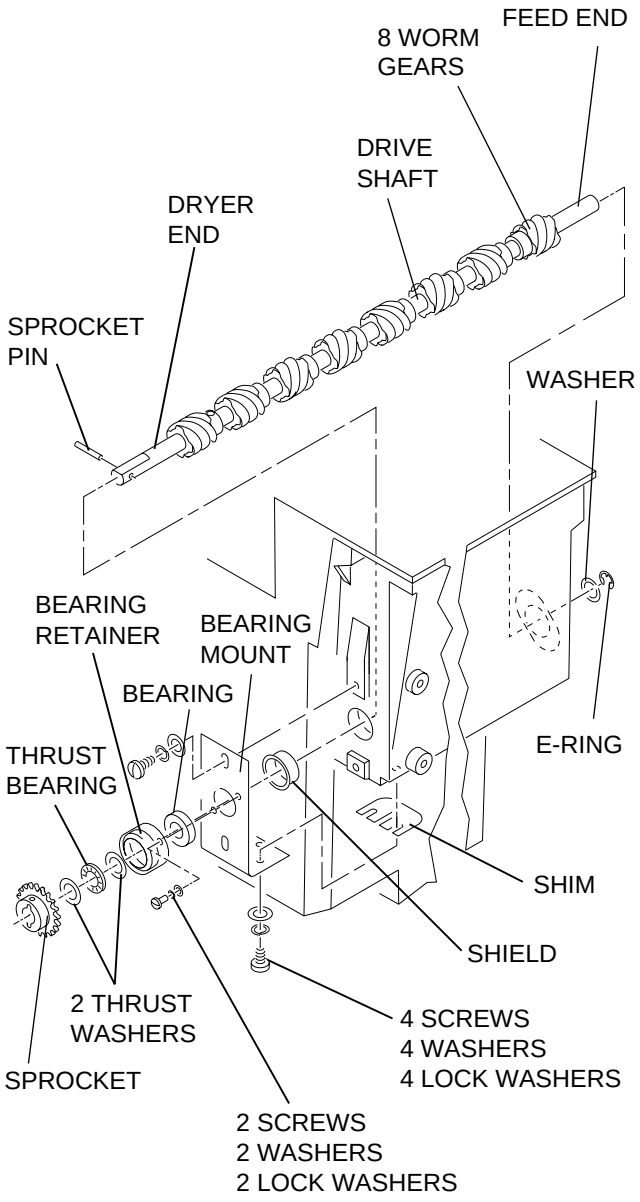
Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove:

- DRIVE SIDE PANEL
- DRYER END PANEL
- DRIVE CHAIN COVER by removing the 3 SCREWS



H150_0143CCA
H150_0143CA

[4] Remove the E-RING and the DRIVE SHAFT WASHER(S) from the feed end of the DRIVE SHAFT.

[5] For access to the SPROCKET PIN, move the DRIVE SHAFT toward the DRYER end.

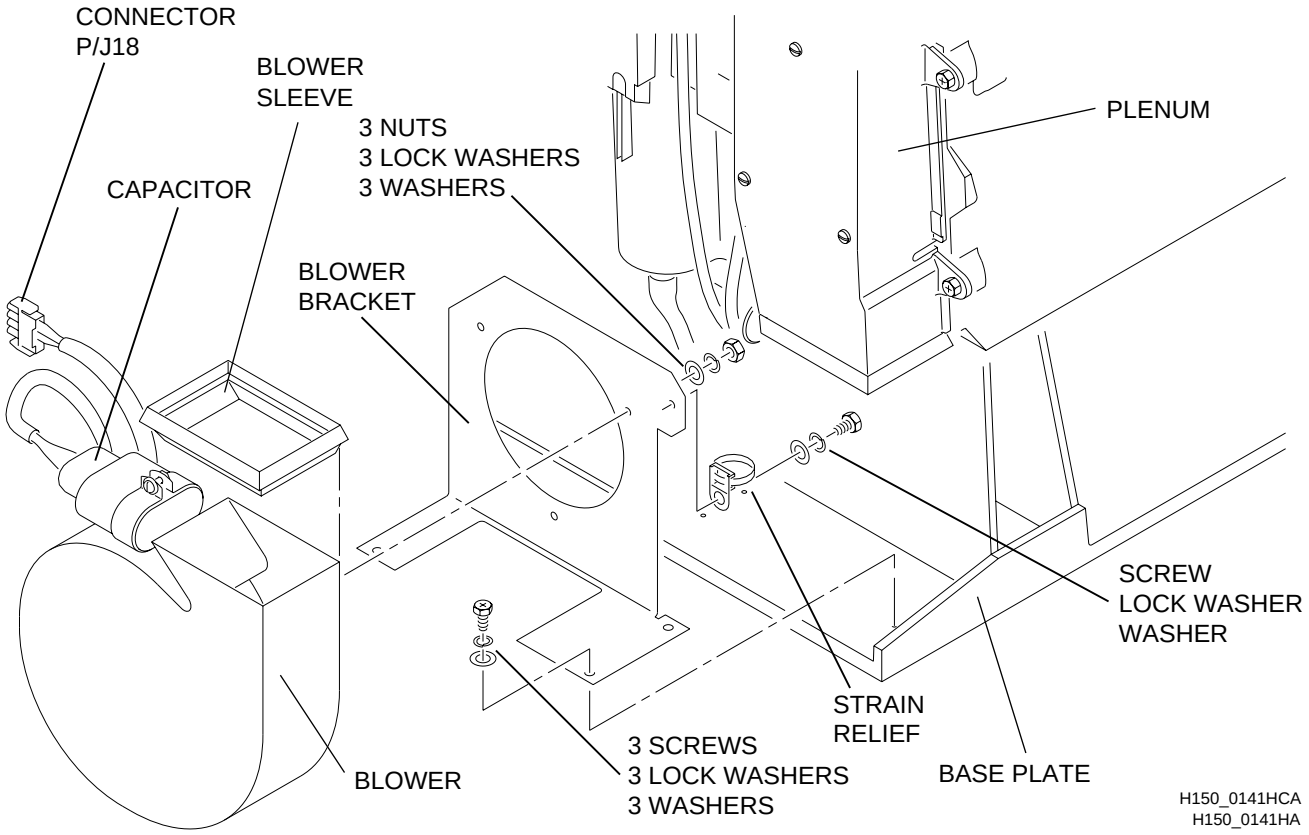
[6] Remove:

- SPROCKET PIN
- SPROCKET with the DRIVE CHAIN
- 2 THRUST WASHERS
- THRUST BEARING
- BEARING RETAINER
- BEARING

[7] Install a new BEARING and assemble the PROCESSOR.

Section 4: DRYER

Removing the BLOWER B1



Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove:

- NON-DRIVE SIDE PANEL
- DRYER END PANEL
- 3 SCREWS holding the BLOWER BRACKET to the BASE PLATE

[4] Pull the BLOWER toward you and remove it from the PROCESSOR.

[5] Remove the SCREW and the STRAIN RELIEF from the BLOWER BRACKET.

[6] Disconnect the CONNECTOR P/J18.

[7] Disconnect the 2 wires from the CAPACITOR.

[8] Remove the 3 NUTS and separate the BLOWER from the BLOWER BRACKET.

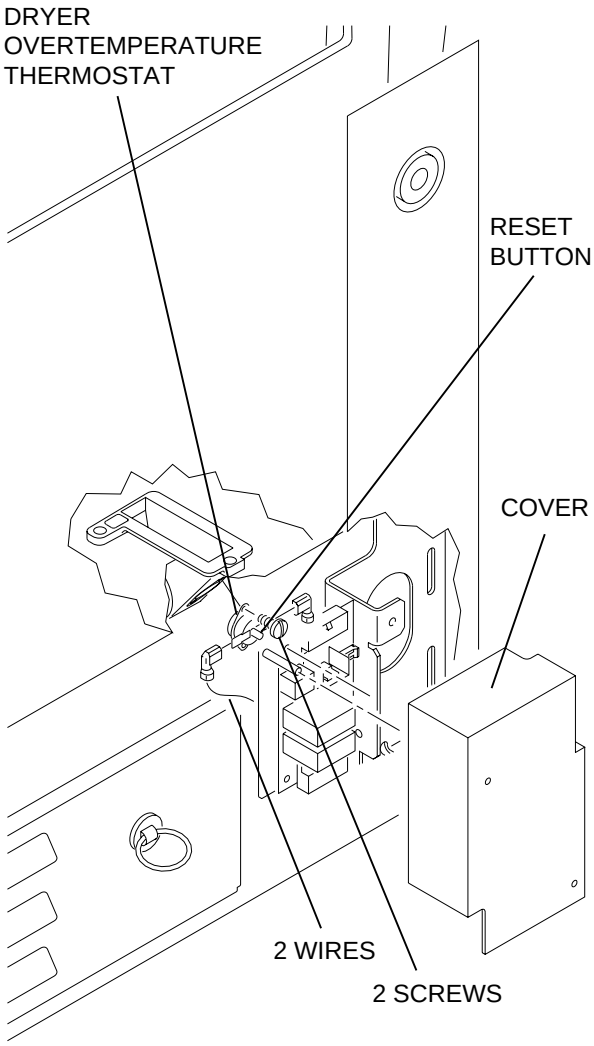
[9] Transfer the BLOWER SLEEVE from the existing BLOWER to the new BLOWER.

[10] Install the new BLOWER and assemble the PROCESSOR.

Note

When you install the new BLOWER, be sure that the BLOWER SLEEVE is positioned correctly to prevent air leaks.

Removing the DRYER OVER-TEMPERATURE THERMOSTAT



H150_0152CCA
H150_0152CA

Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

Important

The DRYER OVER-TEMPERATURE THERMOSTAT does not automatically reset after an over-temperature condition. To reset the DRYER OVER-TEMPERATURE THERMOSTAT manually, press the RESET BUTTON.

[2] Lift the TOP COVER.

[3] Remove the DRYER END PANEL.

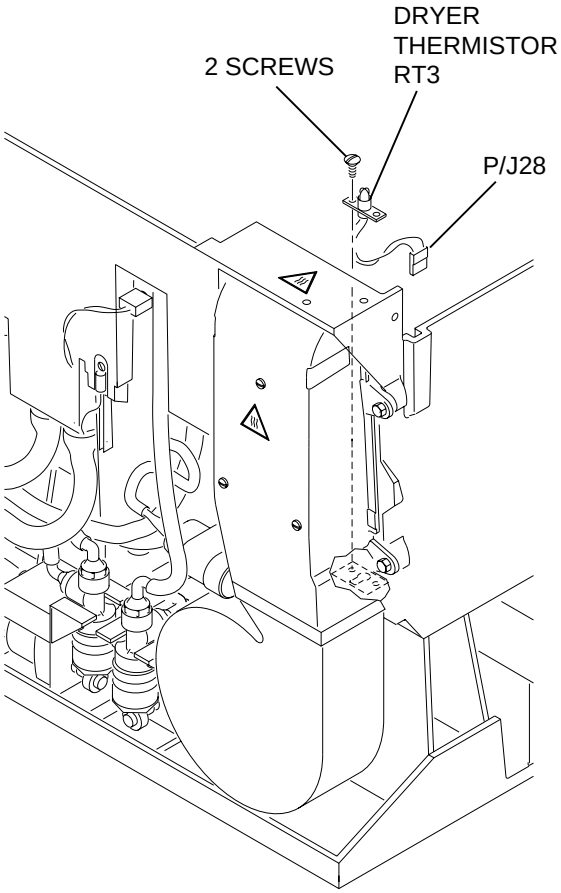
[4] Pull off the COVER.

[5] Remove the 2 SCREWS and the DRYER OVER-TEMPERATURE THERMOSTAT.

[6] Disconnect the 2 WIRES from the DRYER OVER-TEMPERATURE THERMOSTAT.

[7] Install a new DRYER OVER-TEMPERATURE THERMOSTAT and assemble the PROCESSOR.

Removing the DRYER THERMISTOR RT3



H150_0148CCA
H150_0148CA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove:

- DRYER END PANEL
- WET SECTION COVER
- EXIT RACK
- DRYER RACK

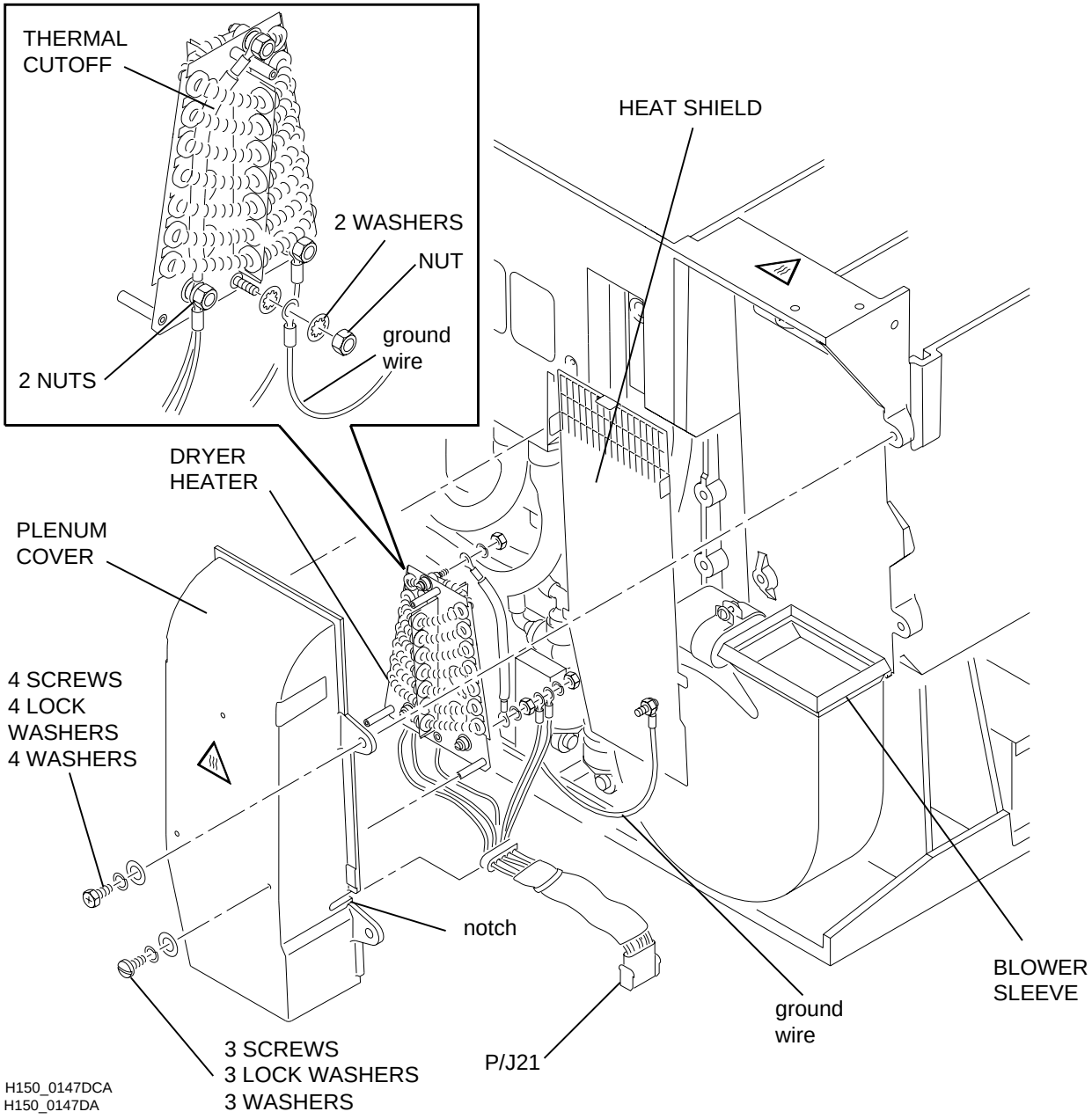
[4] Remove the 2 SCREWS from the DRYER THERMISTOR.

[5] Disconnect the CONNECTOR P/J28.

[6] Remove the DRYER THERMISTOR from the PROCESSOR.

[7] Install a new DRYER THERMISTOR and assemble the PROCESSOR.

Removing the DRYER HEATER HR3 or THERMAL CUTOFF



Warning

- Dangerous Voltage
- The PLENUM COVER may be hot. Allow it to cool before you remove the DRYER HEATER.

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

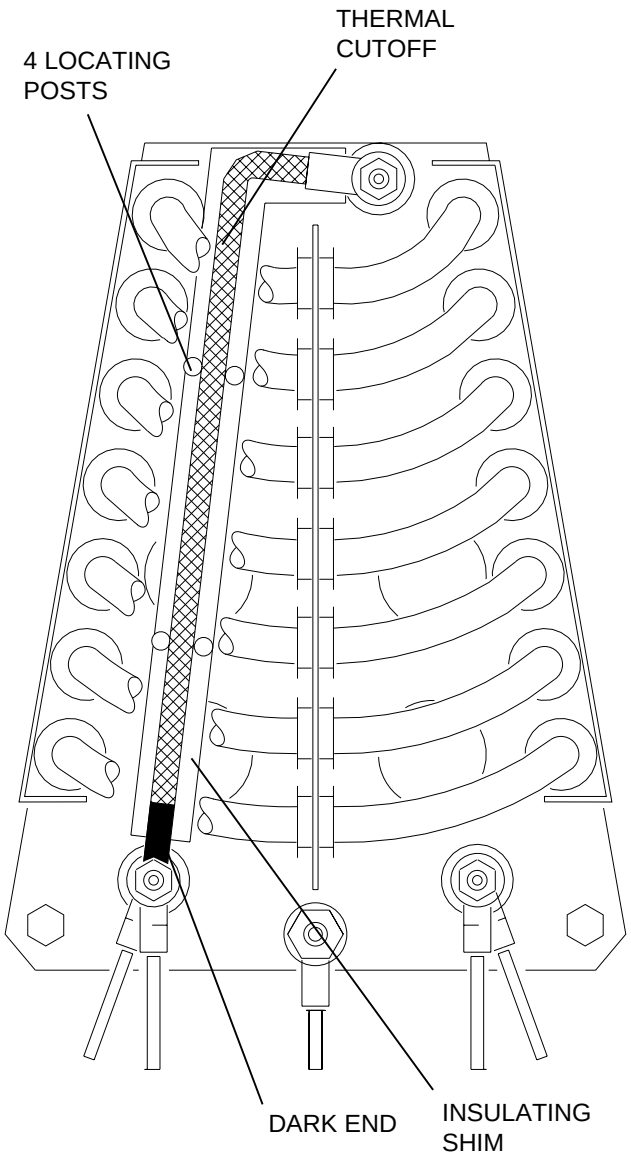
[3] Remove the NON-DRIVE SIDE PANEL and the DRYER END PANEL.

[4] Disconnect CONNECTOR P/J21.

[5] Remove the 4 SCREWS and the PLENUM COVER.

[6] Remove the HEAT SHIELD from the PLENUM COVER.

[7] Remove the THERMAL CUTOFF by removing the 2 NUTS.



H150_0174CCA
H150_0174CA

[8] Remove:

- NUT and ground wire from the DRYER HEATER
- wires from the notch in the PLENUM COVER
- 3 SCREWS and the DRYER HEATER from the PLENUM COVER

[9] Install the new parts and assemble the PROCESSOR.

Note

When you install the new BLOWER, be sure that the BLOWER SLEEVE is positioned correctly to prevent air leaks.

[10] If you have installed a new THERMAL CUTOFF:

(a) Check for any parts that are not operating correctly and may cause the THEMAL CUTOFF to open.

(b) Check that you installed the THERMAL CUTOFF in the correct position.

[11] Place:

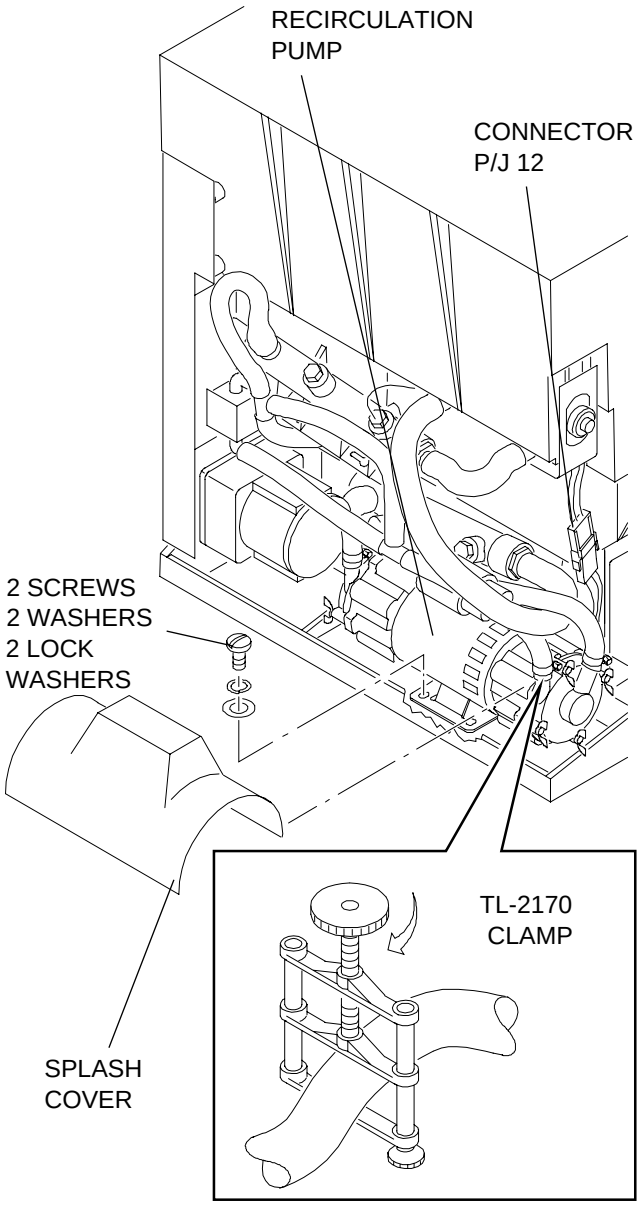
- dark end of the THERMAL CUTOFF at the bottom of the HEATER
- THERMAL CUTOFF flush against the INSULATING SHIM
- THERMAL CUTOFF between the 2 pairs of LOCATING POSTS

[12] If the THERMAL CUTOFF is not installed correctly, the THREMAL CUTOFF may not protect the PROCESSOR or may open when there is no over-temperature condition.

Section 5: Plumbing

Developer Recirculation System

Removing the RECIRCULATION PUMP B5



H104_0154CCC
H104_0154CA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRIVE SIDE PANEL.

[4] Remove the SPLASH COVER.

[5] Remove the 2 SCREWS that hold the RECIRCULATION PUMP to the PROCESSOR.

[6] Move the RECIRCULATION PUMP for better access to the HOSES.

[7] Install 4 CLAMPS TL-2170 on the 2 developer HOSES and on the 2 fixer HOSES to the RECIRCULATION PUMP.

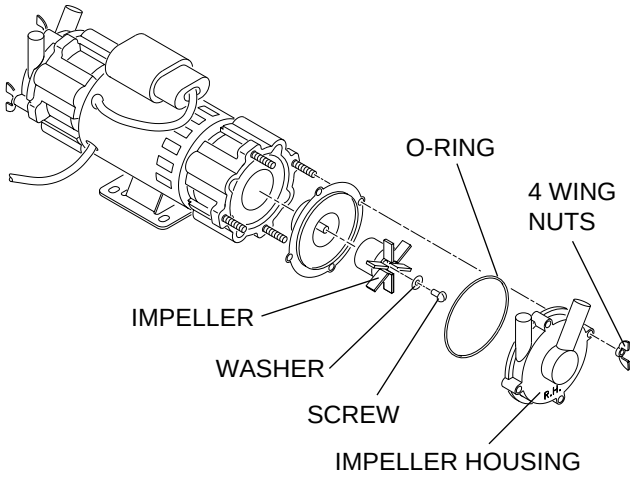
[8] Loosen the 4 HOSE CLAMPS and remove the 2 developer HOSES and the 2 fixer HOSES from the RECIRCULATION PUMP.

[9] Disconnect the CONNECTOR P/J12.

[10] Remove the RECIRCULATION PUMP.

[11] Install a new RECIRCULATION PUMP and assemble the PROCESSOR.

Removing the IMPELLER HOUSING or the IMPELLER



H150_0165ACA
H150_0165AA

Important

Use this procedure for either the developer IMPELLER HOUSING or the fixer IMPELLER HOUSING.

[1] Remove the RECIRCULATION PUMP.

[2] Remove the 4 WING NUTS from the IMPELLER HOUSING.

[3] Remove the IMPELLER HOUSING from the RECIRCULATION PUMP.

Caution

To prevent chemical contamination, do not interchange the developer and fixer IMPELLERS or the developer and fixer IMPELLER HOUSINGS.

[4] Remove:

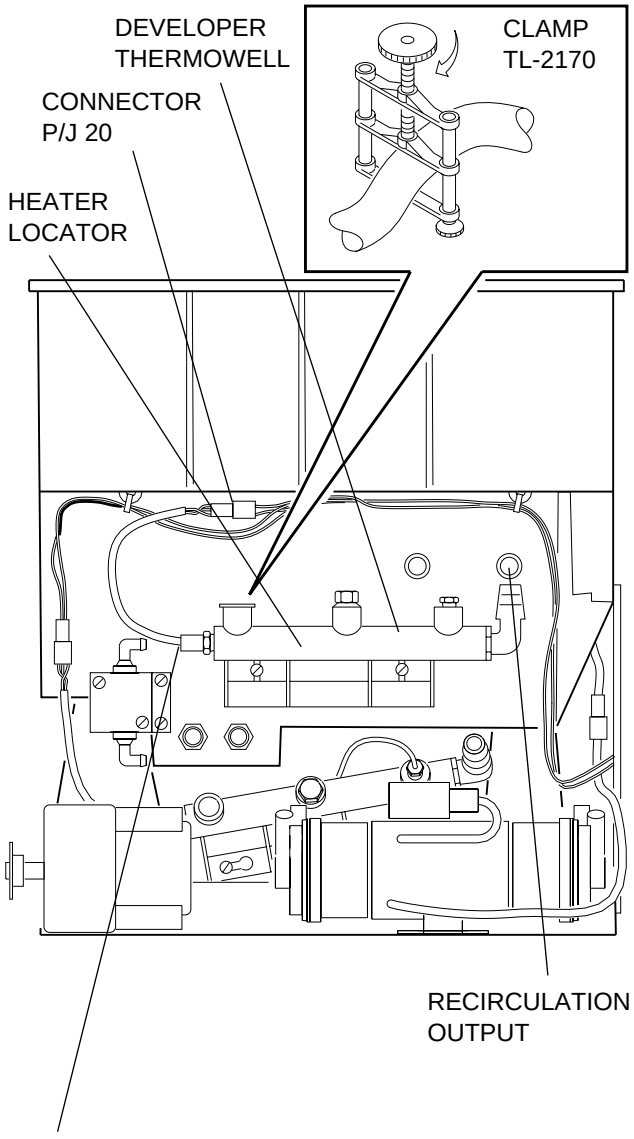
- SCREW
- WASHER
- IMPELLER

[5] Check the O-RING for wear. If necessary, install a new O-RING.

[6] To prevent leakage, check that the O-RING is correctly seated.

[7] Install the new parts and assemble the PROCESSOR.

Removing the DEVELOPER HEATER HR1



H150_0129CCA
H150_0129CA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

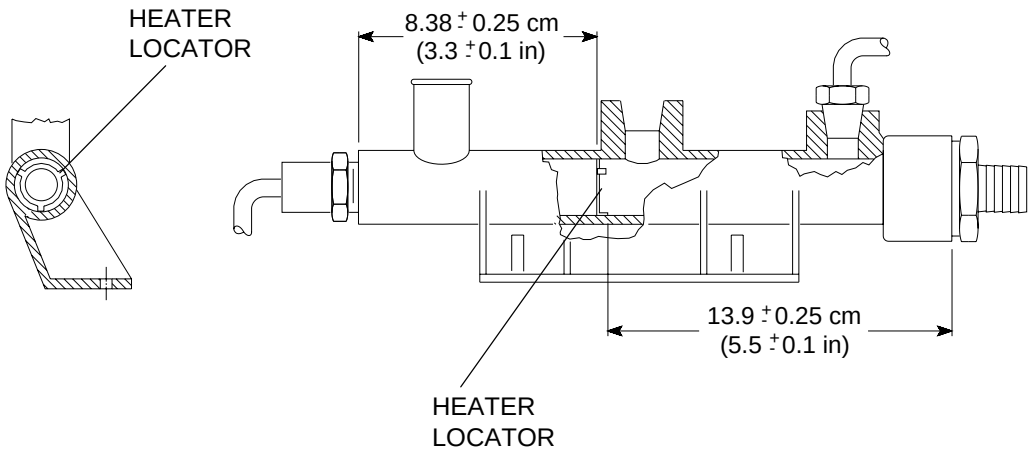
[2] Lift the TOP COVER.

[3] Remove the DRIVE SIDE PANEL and the DRYER END PANEL.

[4] Drain the DEVELOPER TANK to below the RECIRCULATION OUTPUT opening.

[5] Disconnect the CONNECTOR P/J20.

[6] Remove the DEVELOPER HEATER.



H104_0444BCA
H104_0444BA

Caution

- To prevent cracks in the THERMOWELL, do not overtighten the DEVELOPER HEATER
- Apply only SEALANT TL-3230 when you install the DEVELOPER HEATER into the DEVELOPER THERMOWELL. A different SEALANT might cause damage to the plastic in the THERMOWELL. See the instructions packed with the SEALANT.

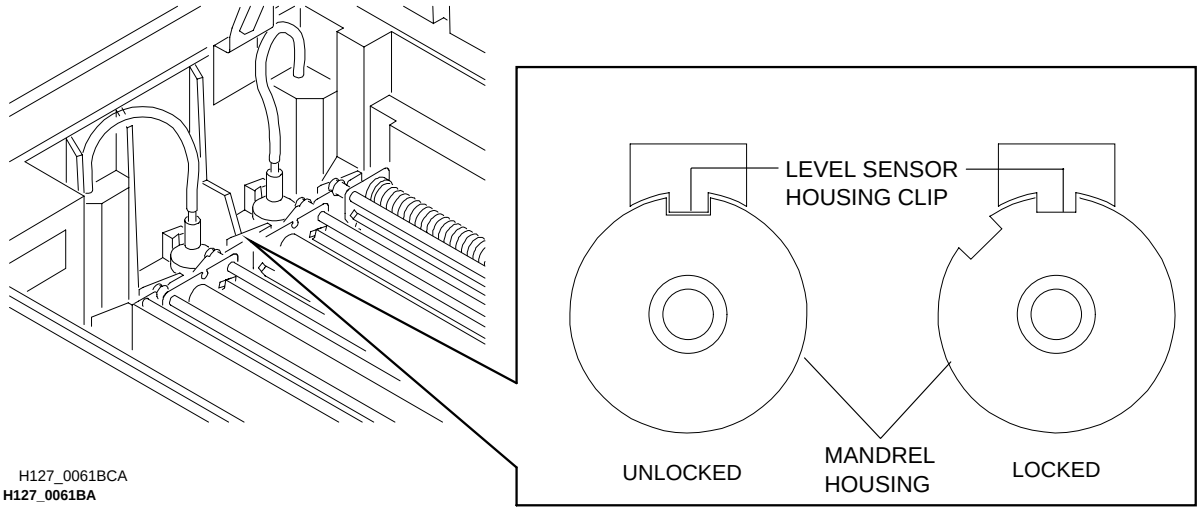
[7] Check that the internal HEATER LOCATOR is in the correct position inside the DEVELOPER THERMOWELL.

[8] Install a new DEVELOPER HEATER.

[9] Check for leakage at the DEVELOPER THERMOWELL.

[10] Assemble the PROCESSOR.

Removing the DEVELOPER FILTER



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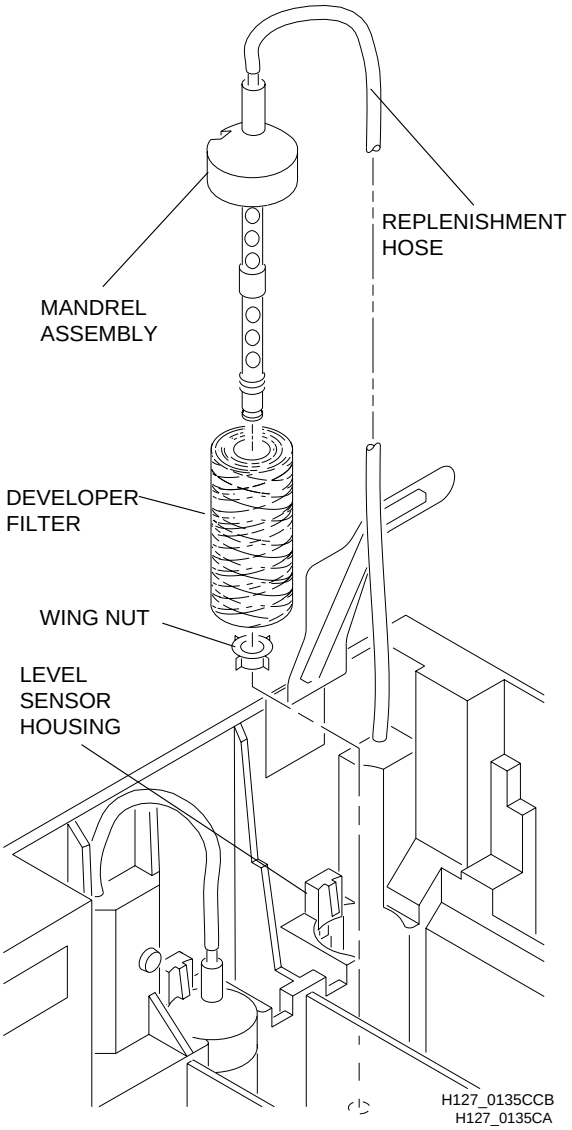


H127_0135CCB
H127_0135CA

Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove:

- WET SECTION COVER
- REPLENISHMENT HOSE from the MANDREL ASSEMBLY

[4] Rotate the MANDREL ASSEMBLY until the notch in the top of the ASSEMBLY aligns with the LEVEL SENSOR HOUSING CLIP.

Note

When you remove the MANDREL ASSEMBLY, place a DRIP TRAY under it to prevent contamination of the fixer.

[5] Remove the MANDREL ASSEMBLY by pulling it straight up.

[6] Remove:

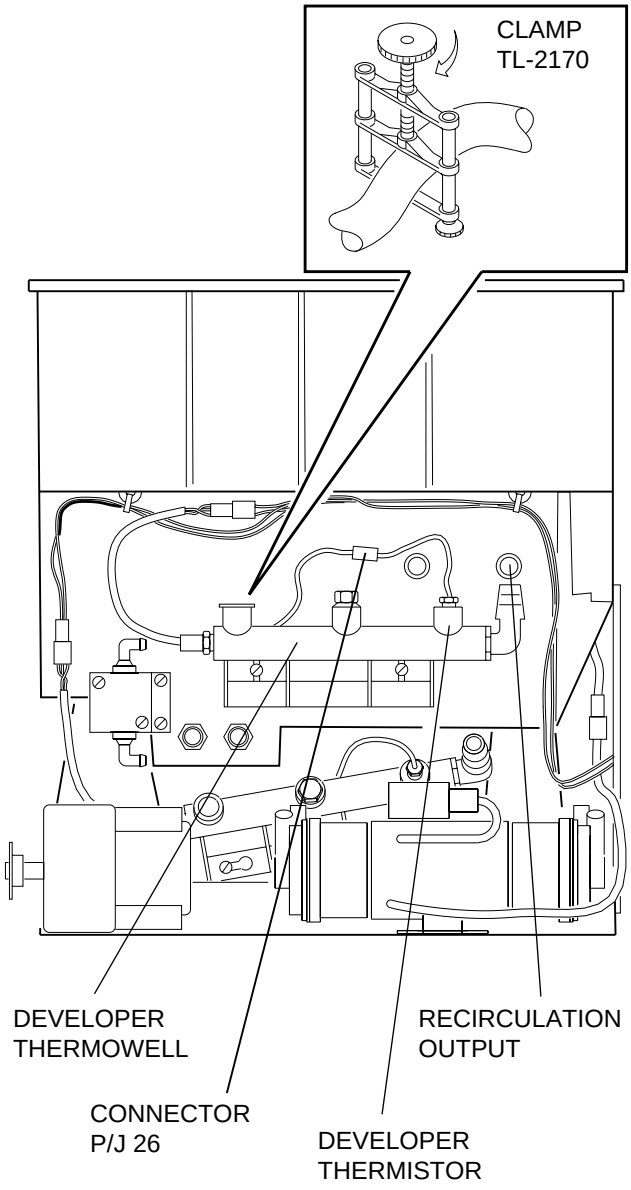
- WING NUT
- DEVELOPER FILTER

[7] Install a new DEVELOPER FILTER.

[8] Rotate the MANDREL ASSEMBLY until the LEVEL SENSOR HOUSING CLIP is in the “LOCKED” position.

[9] Assemble the PROCESSOR.

Removing the DEVELOPER THERMISTOR RT1



H150_0128CCA
H150_0128CA

Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRIVE SIDE PANEL.

[4] Drain the DEVELOPER TANK until the developer is below the RECIRCULATION OUTPUT opening.

[5] Disconnect the CONNECTOR P/J26.

[6] Remove the DEVELOPER THERMISTOR RT1 from the DEVELOPER THERMOWELL.

Caution

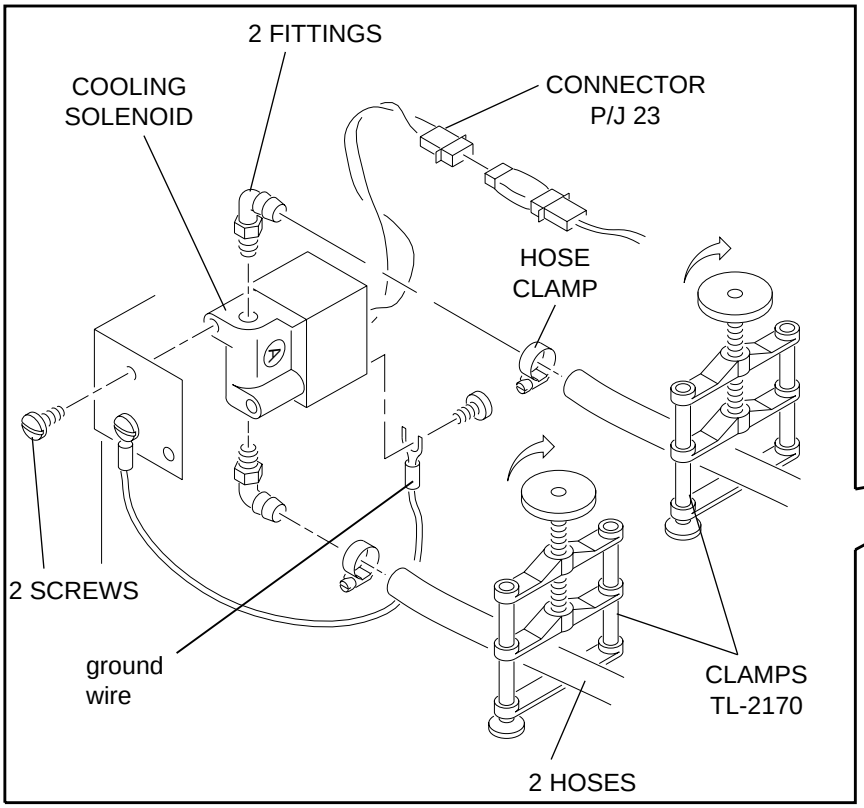
- Apply only SEALANT TL-3230 on the DEVELOPER THERMISTOR when you install the DEVELOPER THERMISTOR in the DEVELOPER THERMOWELL. A different SEALANT might cause damage to the plastic in the THERMOWELL.
- Do not overtighten the parts when you install the DEVELOPER THERMISTOR.

[7] Install a new DEVELOPER THERMISTOR.

[8] Check for leakage at the DEVELOPER THERMOWELL.

[9] Assemble the PROCESSOR.

Removing the DEVELOPER COOLING SOLENOID L2



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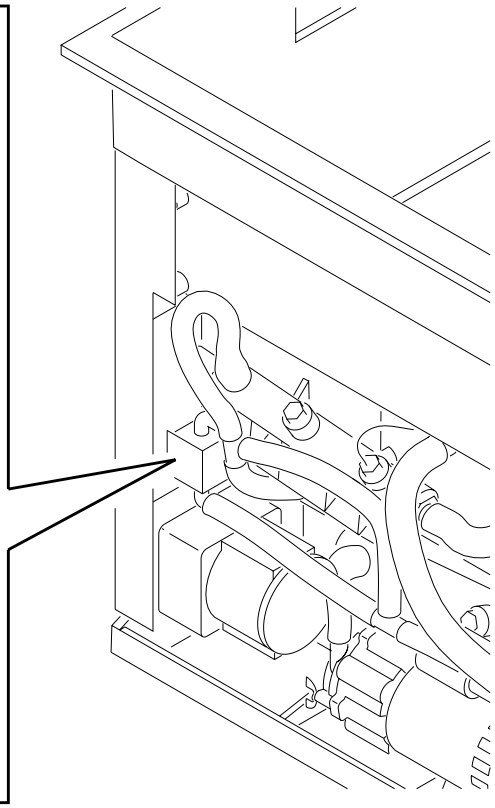
H150_0127HA



H104_0438HCA

Warning
Dangerous Voltage

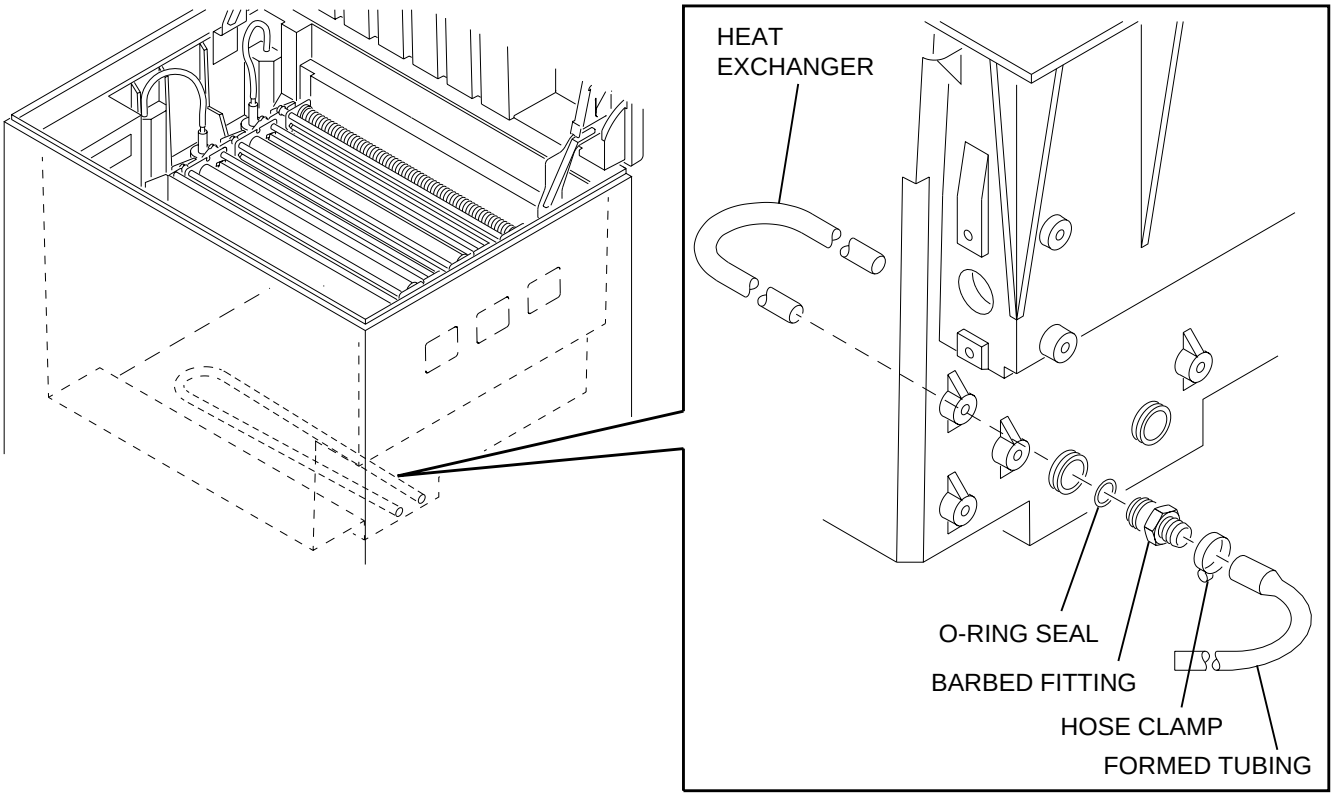
[1] De-energize the PROCESSOR.
[2] Lift the TOP COVER.
[3] Remove the DRIVE SIDE PANEL.
[4] Install 2 CLAMPS TL-2170 on the 2 HOSES to the COOLING SOLENOID for the developer.
[5] Remove the HOSE CLAMPS and the HOSES.
[6] Remove the 2 SCREWS securing the COOLING SOLENOID to the BRACKET.
[7] Disconnect the CONNECTOR P/J23.
[8] Disconnect the ground wire by loosening the SCREW at the COOLING SOLENOID.
[9] Remove the COOLING SOLENOID.
[10] Remove and keep the 2 FITTINGS.

Caution

- Install the COOLING SOLENOID so that the A is at the top and the C is at the bottom.
- Apply only SEALANT TL-3230 on the FITTINGS. A different SEALANT might cause damage to the plastic in the THERMOWELL. See the instructions packed with the SEALANT.
- Do not overtighten the parts during installation of the COOLING SOLENOID.

[11] Assemble the PROCESSOR.
[12] Check for leakage at the COOLING SOLENOID.

Removing the HEAT EXCHANGER



H150_0150HCA
H150_0150HA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove:

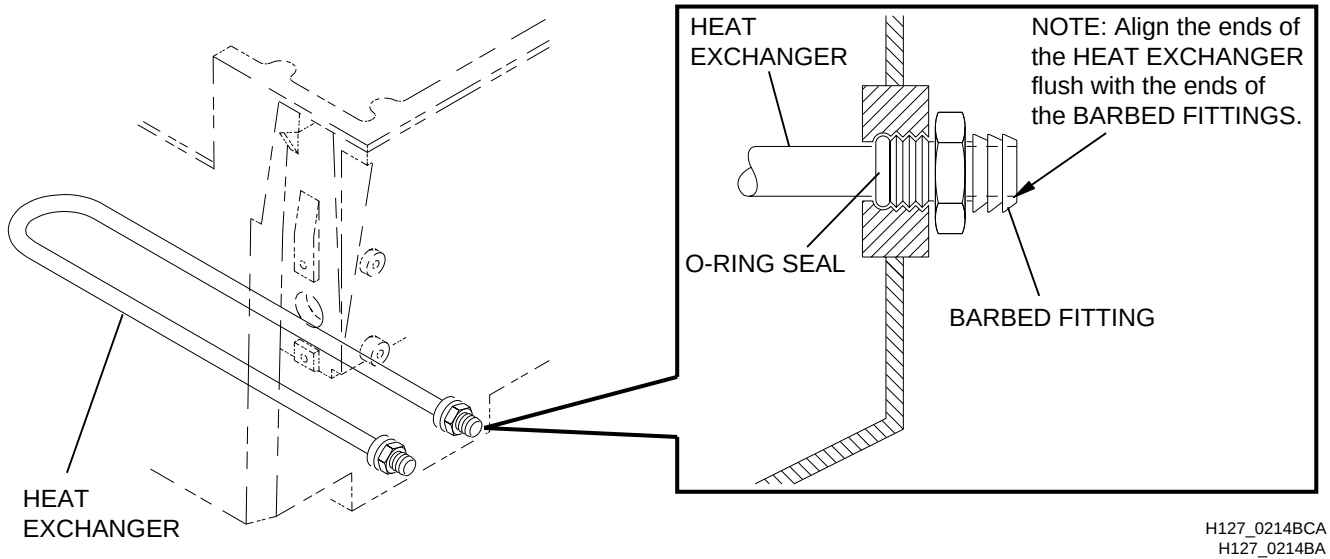
- DRIVE END PANEL
- WET SECTION COVER
- EXIT RACK
- DRYER RACK

[4] Install 2 CLAMPS TL-2170 on the HEAT EXCHANGER FORMED TUBING.

[5] Remove the 2 HOSE CLAMPS on the HEAT EXCHANGER FORMED TUBING.

[6] Remove:

- FORMED TUBING from the ends of the BARBED FITTINGS
- BARBED FITTINGS from the HEAT EXCHANGER
- O-RING SEALS
- HEAT EXCHANGER from the WASH TANK



H127_0214BCA
H127_0214BA

Caution

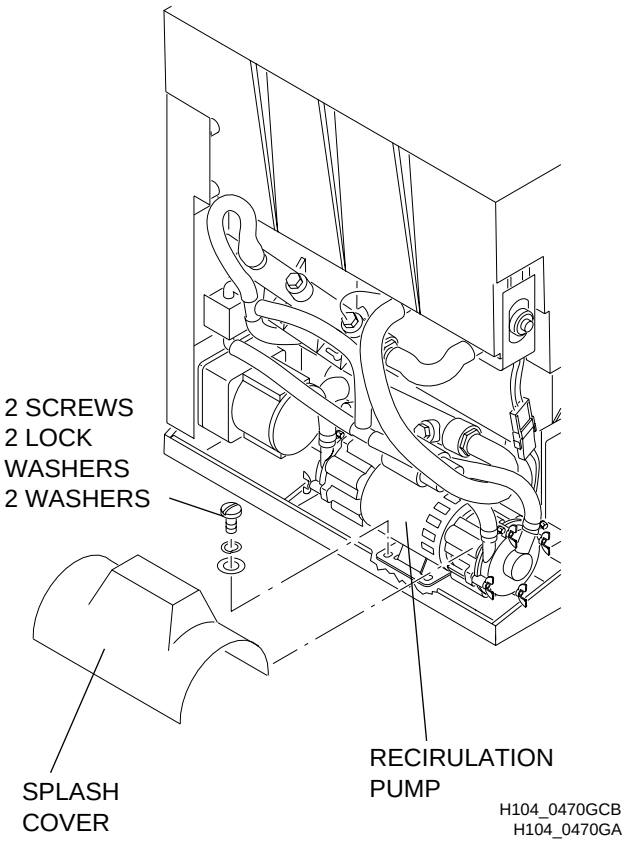
- Install new O-RING SEALS 532378. Do not use the existing O-RING SEALS again.
- Do not overtighten the BARBED FITTINGS.

[7] When you install the new HEAT EXCHANGER, align the ends of the HEAT EXCHANGER flush with the ends of the BARBED FITTINGS.

[8] Assemble the PROCESSOR.

Fixer Recirculation System

Removing the FIXER HEATER HR2



Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

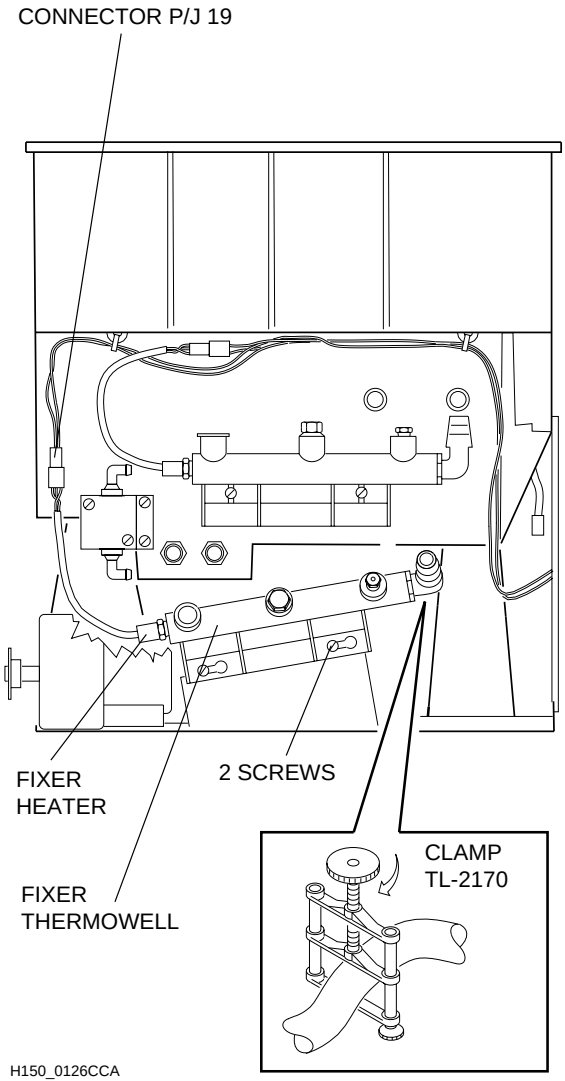
[2] Lift the TOP COVER.

[3] Remove the DRIVE SIDE PANEL.

[4] Remove from the RECIRCULATION PUMP:

- SPLASH COVER
- 2 SCREWS

[5] For access to the FIXER THERMOWELL, move the RECIRCULATION PUMP.



H150_0126CCA
H150_0126CA

[6] Remove the 2 SCREWS from the FIXER THERMOWELL.

[7] Install 2 CLAMPS TL-2170 on the 2 HOSES to the FIXER THERMOWELL.

[8] Move the FIXER THERMOWELL for access to the FIXER HEATER.

[9] Disconnect the CONNECTOR P/J19.

[10] Remove the FIXER HEATER from the FIXER THERMOWELL.

[11] Apply only SEALANT TL-3230 on the threads of the FIXER HEATER when you install the FIXER HEATER in the FIXER THERMOWELL.

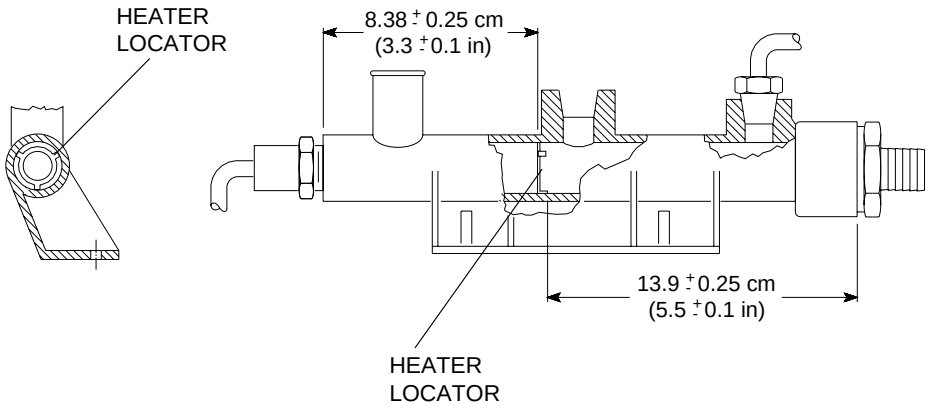
Note

- A different SEALANT might cause damage to the plastic in the THERMOWELL. See the instructions packed with the SEALANT.
- The HEATER LOCATOR must be in the correct position.
- Do not overtighten the parts when you install the FIXER HEATER.

[12] Check that the internal HEATER LOCATOR is in the correct position inside the FIXER THERMOWELL.

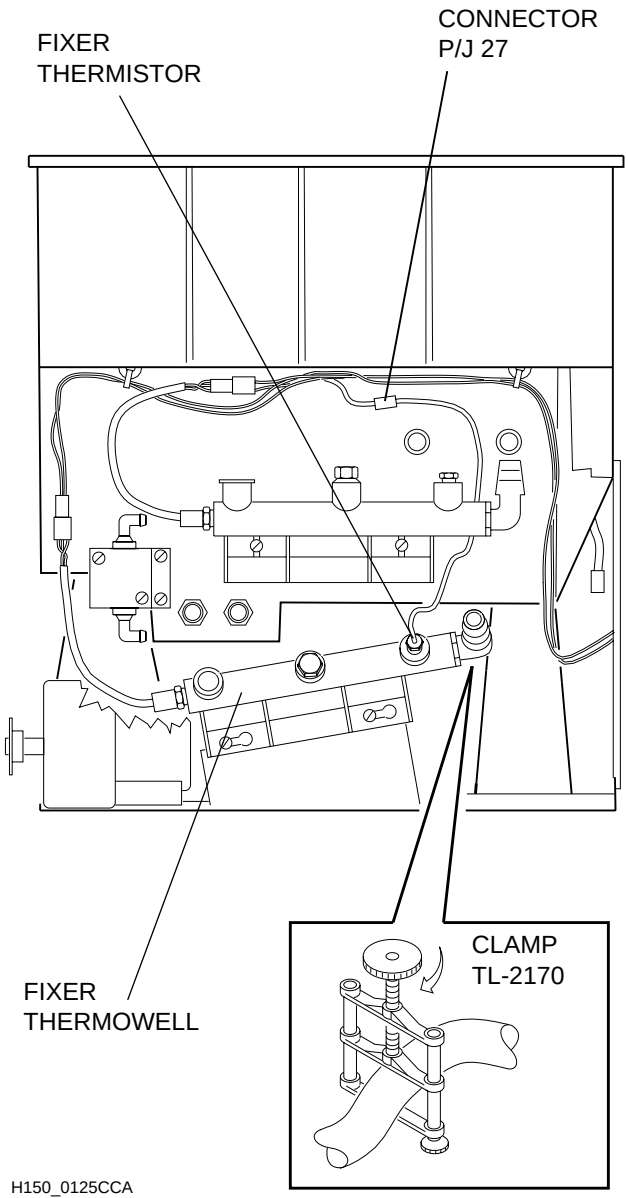
[13] Assemble the PROCESSOR.

[14] Check for leakage at the FIXER THERMOWELL.



H104_0444BCA
H104_0444BA

Removing the FIXER THERMISTOR RT2



H150_0125CCA
H150_0125CA

Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRIVE SIDE PANEL.

[4] Install 2 CLAMPS TL-2170 on the 2 HOSES to the FIXER THERMOWELL.

[5] Disconnect the CONNECTOR P/J27.

[6] Remove the FIXER THERMISTOR from the FIXER THERMOWELL.

[7] Apply only SEALANT TL-3230 on the threads when you install the FIXER THERMISTOR.

Note

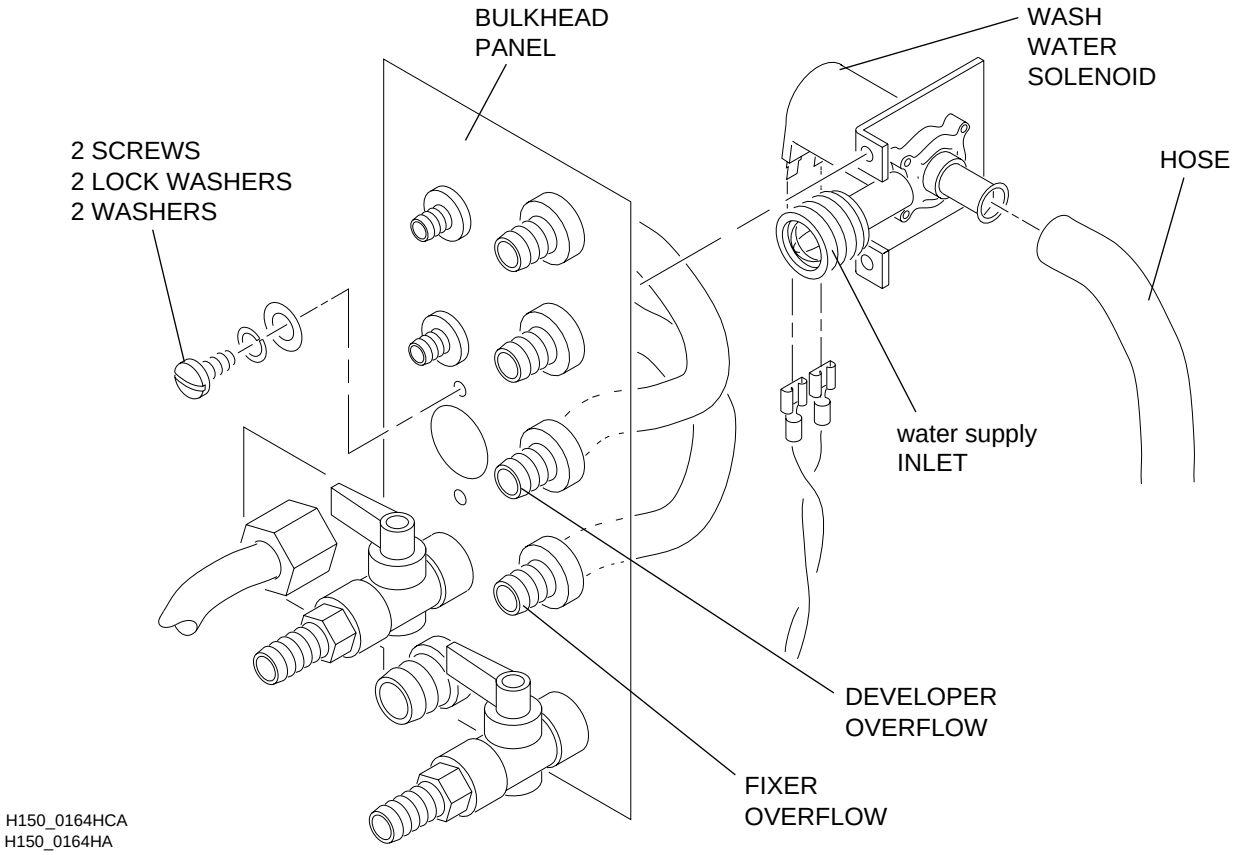
A different SEALANT might cause damage to the plastic in the THERMOWELL. See the instructions packaged with the SEALANT.

[8] Install a new THERMISTOR and assemble the PROCESSOR.

[9] Check for leakage at the FIXER THERMOWELL.

Wash System

Removing the WASH WATER SOLENOID L1



Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the NON-DRIVE SIDE PANEL.

[4] Shut off the water to the PROCESSOR.

Note

Slowly disconnect the water HOSE to release the pressure in the HOSE.

[5] Disconnect the HOSE to the water supply INLET to the PROCESSOR at the WASH WATER SOLENOID.

[6] Loosen the 2 HOSE CLAMPS at the BULKHEAD PANEL for the FIXER and DEVELOPER OVERFLOW HOSES. Remove the HOSES from the side of the BULKHEAD PANEL facing inside the PROCESSOR.

[7] Remove the 2 SCREWS from the WASH WATER SOLENOID.

[8] Loosen the HOSE CLAMP and remove the water HOSE from the WASH WATER SOLENOID.

[9] Disconnect the wires from the WASH WATER SOLENOID.

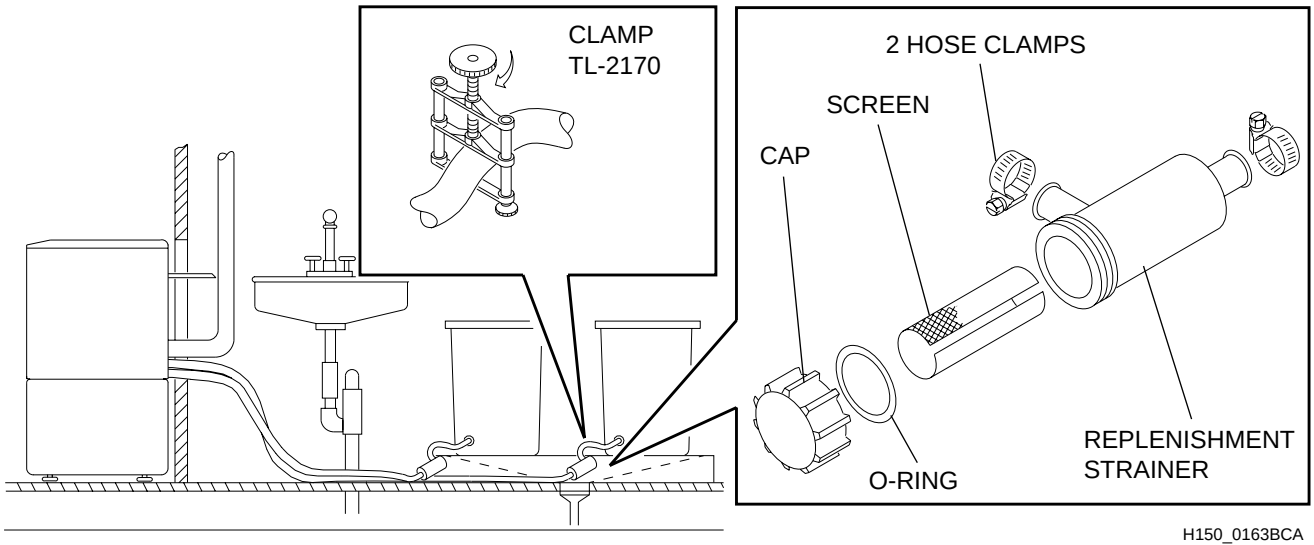
[10] Remove the WASH WATER SOLENOID.

[11] Install a new WASH WATER SOLENOID and assemble the PROCESSOR.

[12] Check for leakage at the WASH WATER SOLENOID.

Replenishment System

Removing the REPLENISHMENT STRAINERS and SCREENS



H150_0163BCA
H150_0163BA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Install 2 CLAMPS TL-2170 on the REPLENISHMENT HOSES on either side of the REPLENISHMENT STRAINER.

[3] Loosen the 2 HOSE CLAMPS and remove the REPLENISHMENT STRAINER.

[4] Remove the CAP.

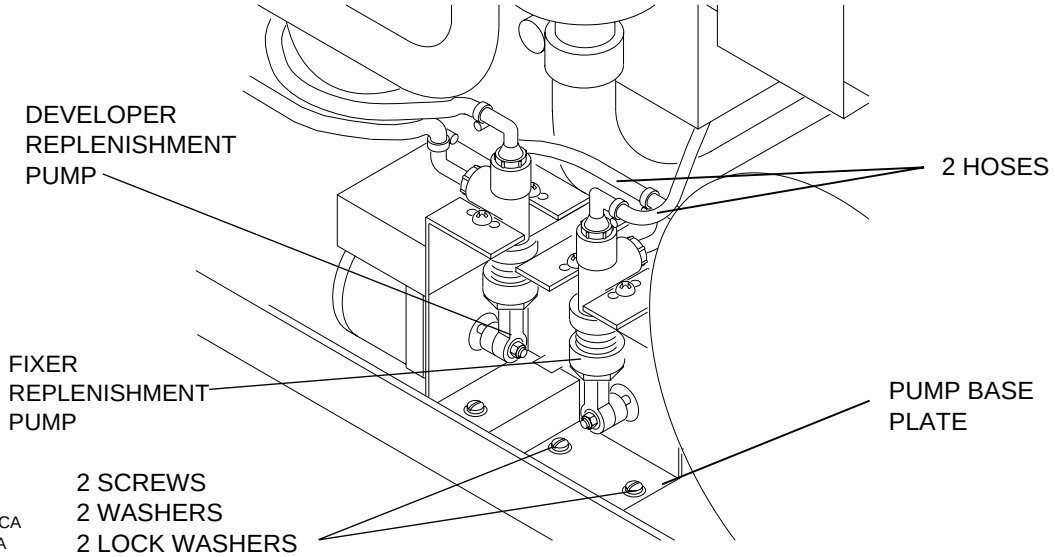
[5] Remove the SCREEN.

[6] Clean the SCREEN or, if necessary, install a new SCREEN.

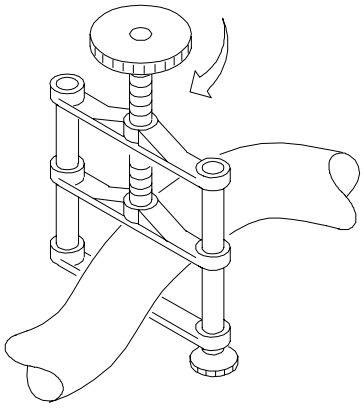
[7] Check the O-RING for wear. If necessary, install a new O-RING.

[8] Install the REPLENISHMENT STRAINER and assemble the PROCESSOR.

Removing the DEVELOPER or FIXER REPLENISHMENT PUMP, B3 or B4



H150_0124BCA
H150_0124BA



H104_0257AA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the NON-DRIVE SIDE PANEL.

[4] Remove the SCREWS from the PUMP BASE PLATE.

[5] Install the 2 CLAMPS TL-2170 on the 2 HOSES at the REPLENISHMENT PUMP.

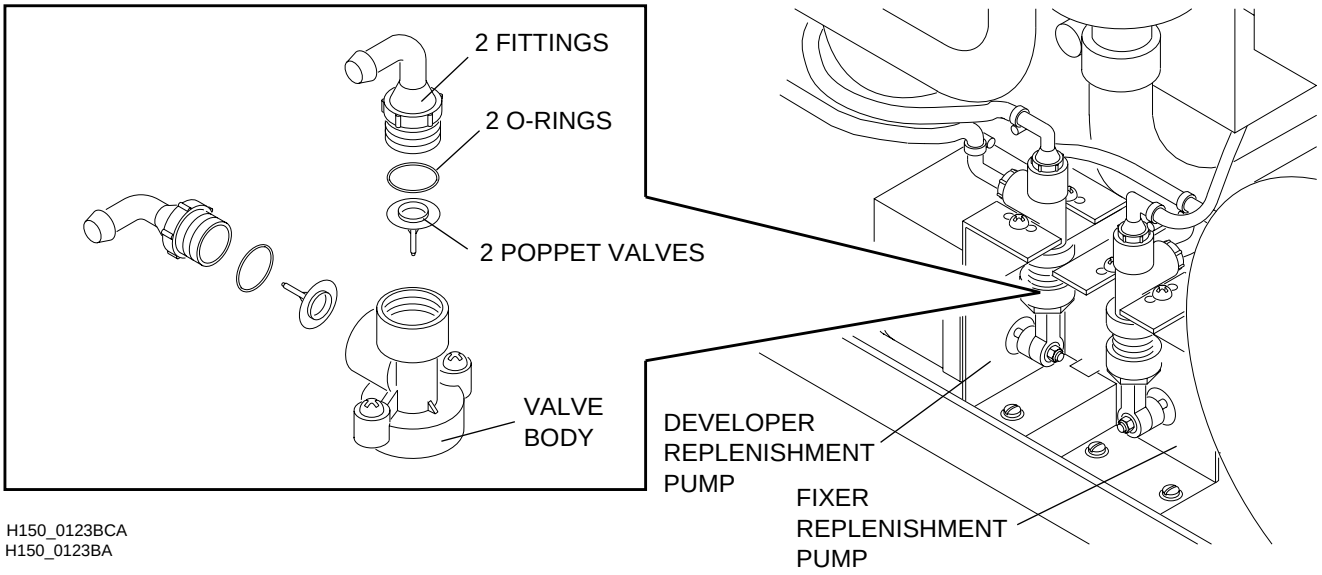
[6] Loosen the HOSE CLAMPS and remove the 2 HOSES from the REPLENISHMENT PUMP.

[7] Disconnect the CONNECTOR P/J15 for the DEVELOPER, or P/J16 for the FIXER.

[8] Remove the REPLENISHMENT PUMP.

[9] Install a new REPLENISHMENT PUMP and assemble the PROCESSOR.

Removing the POPPET VALVES for the REPLENISHMENT PUMPS



H150_0123BCA
H150_0123BA

Important

- Use this procedure for removing the POPPET VALVES in either the FIXER or the DEVELOPER REPLENISHMENT PUMP.
- Observe the direction of the POPPET VALVES before you remove them.
- Removing the REPLENISHMENT PUMP may be necessary for easier access to the POPPET VALVES.
- Check that the POPPET VALVES and O-RINGS seat correctly.

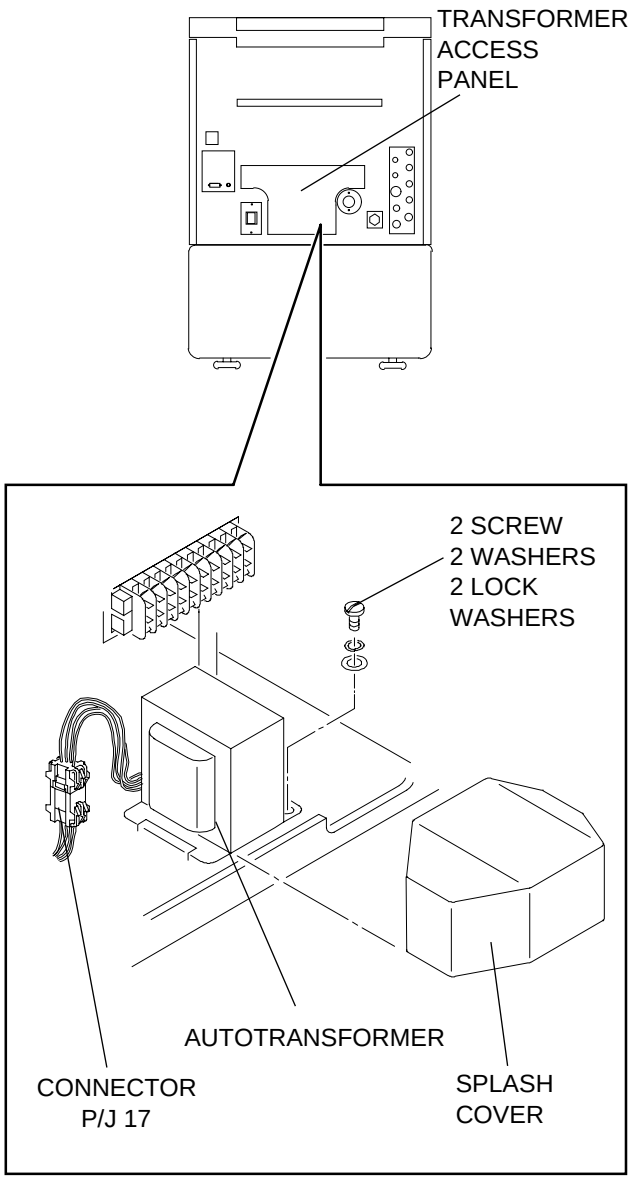
Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.
[2] Lift the TOP COVER.
[3] Remove the NON-DRIVE SIDE PANEL.
[4] Install 2 CLAMPS TL-2170 on the 2 HOSES at the REPLENISHMENT PUMP.
[5] Loosen the HOSE CLAMPS and remove the 2 HOSES from the REPLENISHMENT PUMP.
[6] Remove the 2 FITTINGS from the VALVE BODY.
[7] Remove the 2 O-RINGS and the 2 POPPET VALVES from the VALVE BODY.
[8] Install all new POPPET VALVES and O-RINGS in the VALVE BODY.
[9] Install the REPLENISHMENT PUMP and assemble the PROCESSOR.

Section 6: Electrical

Removing the AUTOTRANSFORMER T1



H104_0171CCB
H104_0171CA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Remove the TRANSFORMER ACCESS PANEL by removing the 2 SCREWS.

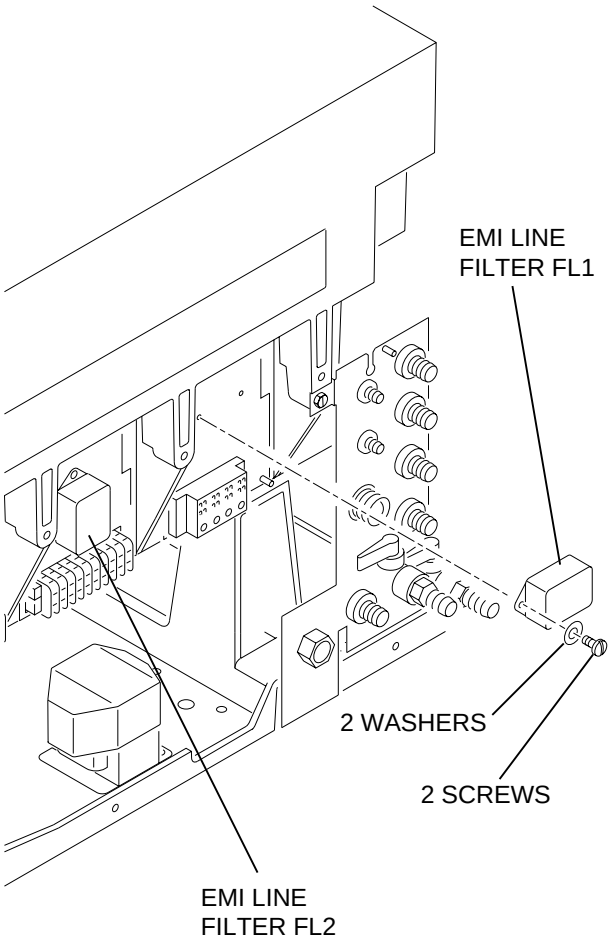
[3] Remove the SPLASH COVER.

[4] Disconnect the CONNECTOR P/J17.

[5] Remove the AUTOTRANSFORMER by removing the 2 SCREWS securing it.

[6] Install the new AUTOTRANSFORMER and assemble the PROCESSOR.

Removing the EMI LINE FILTER FL1 or FL2



H150_0146CCA
H150_0146CA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Remove the TRANSFORMER ACCESS PANEL.

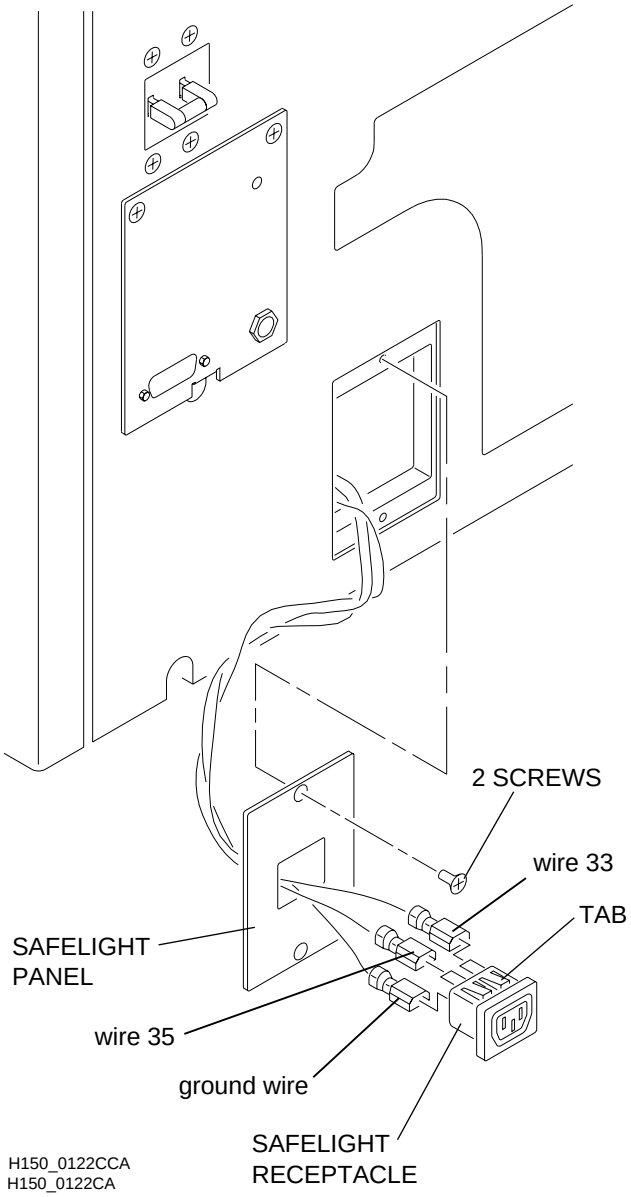
[3] Record the position of the wires for future installation.

[4] Remove the wires at the EMI LINE FILTER.

[5] Remove the EMI LINE FILTER by removing the 2 SCREWS securing it.

[6] Install the new EMI LINE FILTER and assemble the PROCESSOR.

Removing the SAFELIGHT RECEPTACLE J35



H150_0122CCA
H150_0122CA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

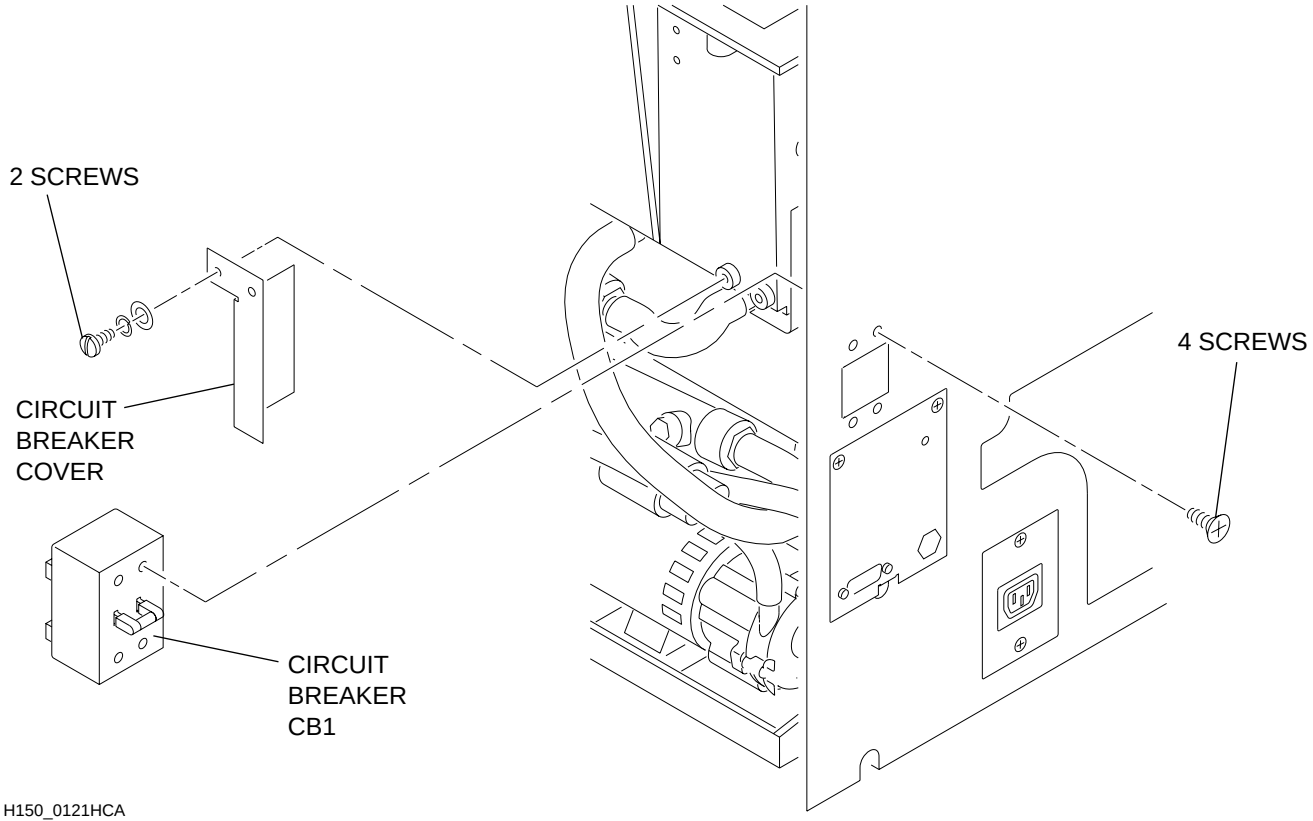
[2] Remove the 2 SCREWS and the SAFELIGHT PANEL.

[3] Disconnect the 3 wires at the SAFELIGHT RECEPTACLE.

[4] Press the TABS together to remove the SAFELIGHT RECEPTACLE from the SAFELIGHT PANEL.

[5] Install the new SAFELIGHT RECEPTACLE and assemble the PROCESSOR.

Removing the AC CIRCUIT BREAKER CB1



H150_0121HCA
H150_0121HA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRIVE SIDE PANEL.

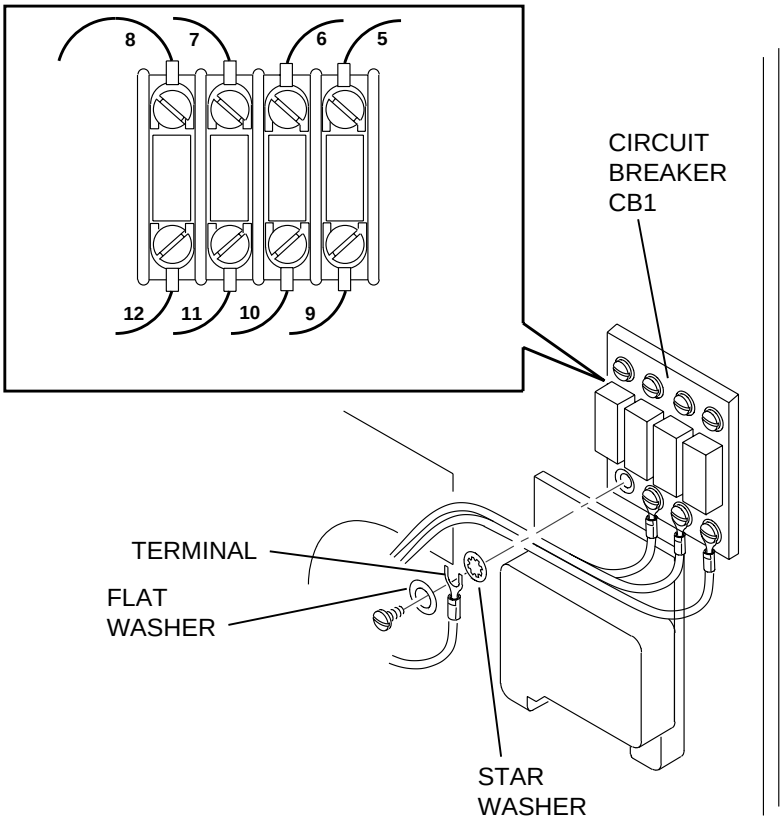
[4] Remove the 2 SCREWS and the CIRCUIT BREAKER COVER.

[5] Remove the 4 SCREWS that hold the CIRCUIT BREAKER CB1 to the PROCESSOR.

Important

You may need to gently push out the FEED END PANEL of the PROCESSOR to remove the CIRCUIT BREAKER.

[6] Loosen the 4 SCREWS to disconnect the wires from the CIRCUIT BREAKER CB1.

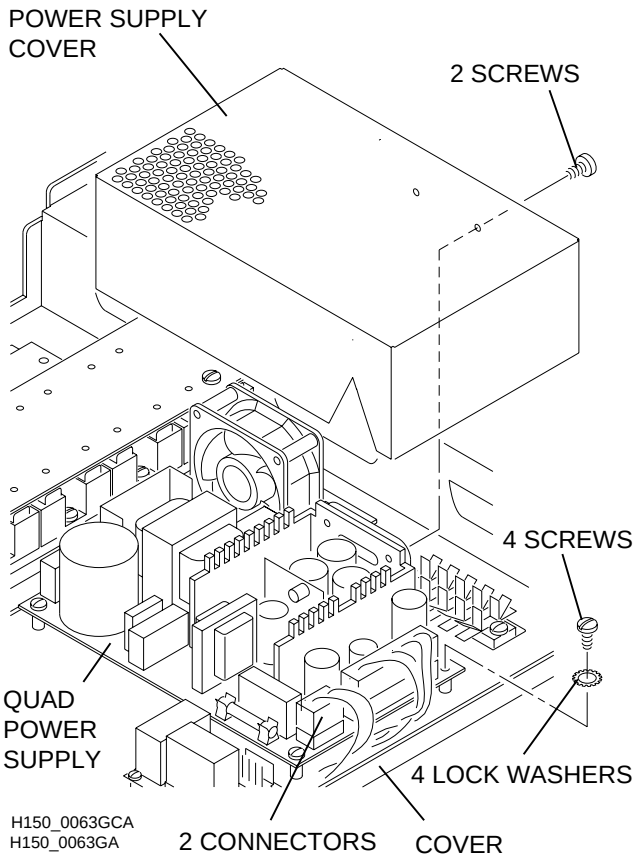


H150_0151HCA
H150_0151HC

[7] When you connect the wires on the new CIRCUIT BREAKER CB1, insert the wire TERMINAL between the STAR WASHER and the FLAT WASHER.

[8] Assemble the PROCESSOR.

Removing the QUAD POWER SUPPLY A1



Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRYER END PANEL.

[4] For easier access to the components on the COVER of the ELECTRICAL BOX, you may want to remove the NON-DRIVE SIDE PANEL so that you can fully open the ELECTRICAL BOX COVER.

[5] Pull out the ELECTRICAL BOX and open the COVER.

[6] Remove the POWER SUPPLY COVER by loosening the 2 SCREWS that hold it in position.

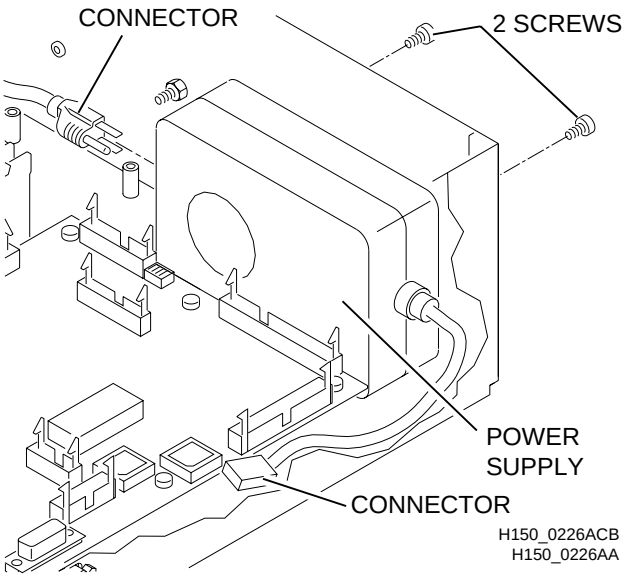
[7] Disconnect the 2 CONNECTORS.

[8] Remove the 4 SCREWS that hold the QUAD POWER SUPPLY in position.

[9] Remove the QUAD POWER SUPPLY.

[10] Install a new QUAD POWER SUPPLY and assemble the PROCESSOR.

Removing the 5 V DC POWER SUPPLY - for Serial No. 100500 and above



Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

Important

See the next page for Serial Nos. below 100500.

[2] Lift the TOP COVER.

[3] Remove the DRYER END PANEL.

[4] Pull out the ELECTRICAL BOX and open the COVER.

[5] Remove the 2 SCREWS that hold the POWER SUPPLY to the side walls of the ELECTRICAL BOX.

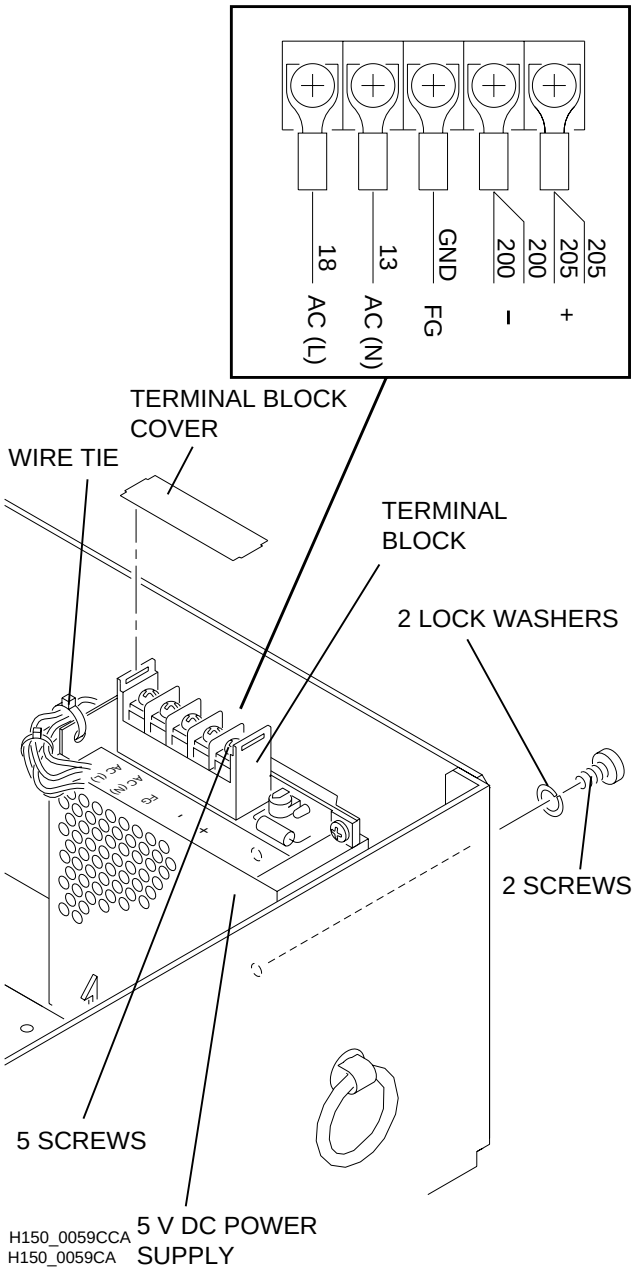
[6] Disconnect both CONNECTORS.

[7] Remove the old POWER SUPPLY.

[8] Install a new POWER SUPPLY.

[9] No adjustment is necessary for this POWER SUPPLY.

Removing the 5 V DC POWER SUPPLY - for Serial Nos. below 100500



H150_0059CCA
H150_0059CA

Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

Important

See the previous page for Serial No.100500 and above.

[2] Lift the TOP COVER.

[3] Remove the DRYER END PANEL.

[4] Pull out the ELECTRICAL BOX and open the COVER.

[5] Loosen the 5 SCREWS that hold the wire CONNECTORS on the TERMINAL BLOCK.

[6] Cut the WIRE TIE.

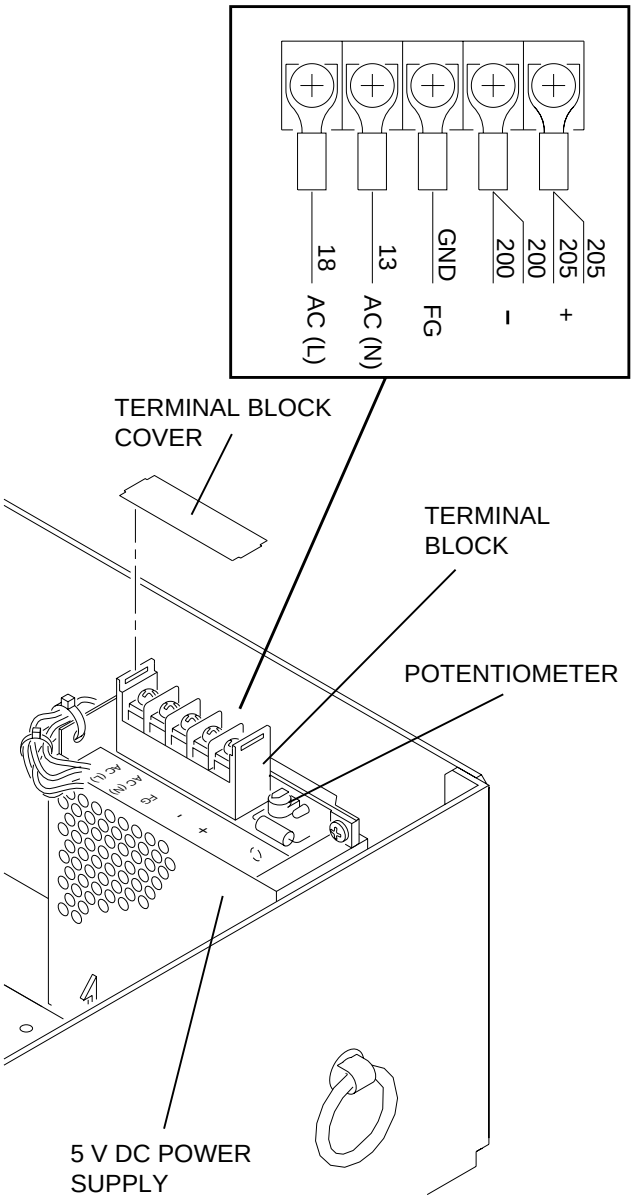
[7] Remove the 2 SCREWS that hold the POWER SUPPLY to the side walls of the ELECTRICAL BOX.

[8] Remove the POWER SUPPLY.

[9] Install a new POWER SUPPLY.

[10] Do the procedure to adjust the voltage.

Adjusting the 5 V DC POWER SUPPLY Voltage - Serial No. below 100500



H150_0170CCA
H150_0170CA

Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Allow the PROCESSOR to remain off for one full minute.

[3] Rotate the POTENTIOMETER fully counterclockwise and in small increments.

Note

If you increase the voltage to more than approximately 6.0 volts, the internal over-voltage protection reduces the voltage through the POWER SUPPLY to 0 volts. If you need to reset the POWER SUPPLY, do the steps below.

[4] Energize the PROCESSOR.

[5] Connect a METER to the plus (+) and minus (-) TERMINALS on the TERMINAL BLOCK.

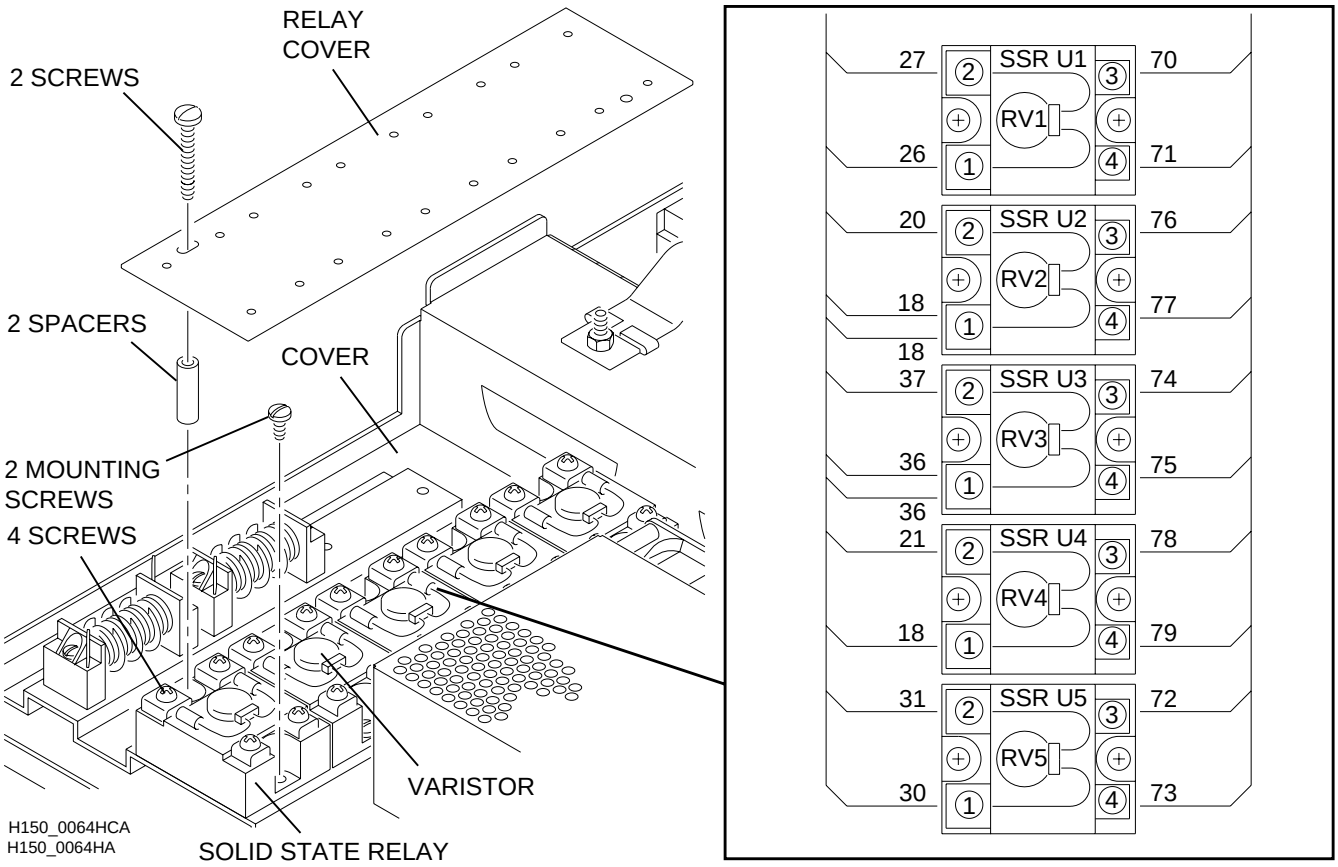
[6] Rotate the POTENTIOMETER clockwise until you obtain a reading of 5.50 volts.

Note

Rotate the POTENTIOMETER clockwise to increase the volts, or counterclowise to decrease the voltage.

[7] Assemble the PROCESSOR.

Removing a SOLID STATE RELAY



Warning

- Dangerous Voltage
- Possible damage from electrostatic discharge.

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRYER END PANEL.

[4] For easier access to the components on the COVER of the ELECTRICAL BOX, you may want to remove the NON-DRIVE SIDE PANEL so that you may fully open the ELECTRICAL BOX COVER.

[5] Pull out the ELECTRICAL BOX and open the COVER.

[6] Remove:

- 2 SCREWS
- 2 SPACERS
- RELAY COVER

[7] Loosen the 4 SCREWS that hold the wires to the SOLID STATE RELAY.

[8] To remove the malfunctioning SOLID STATE RELAY, remove the 2 MOUNTING SCREWS .

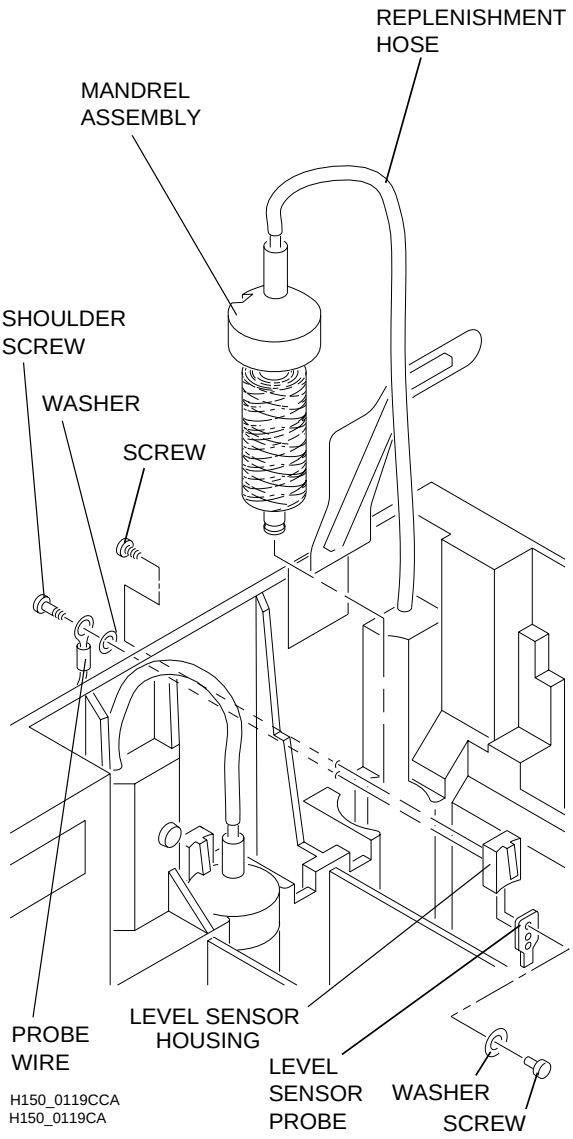
[9] Lift the SOLID STATE RELAY from the ELECTRICAL BOX.

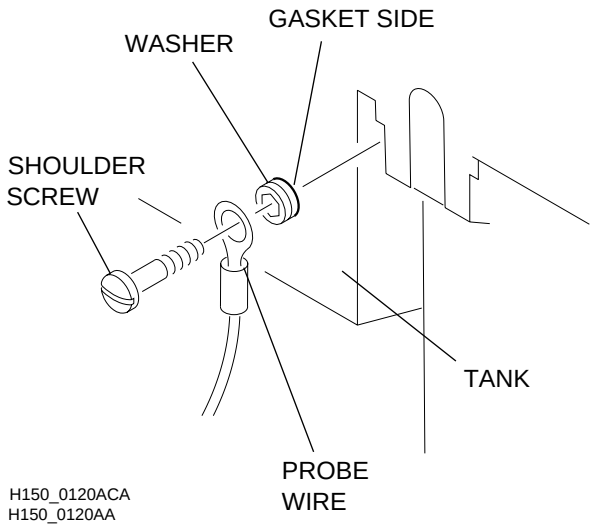
[10] Apply THERMAL GREASE TL-2324 under the new SOLID STATE RELAY. Use a thin application, but cover the area under the SOLID STATE RELAY completely.

[11] Install a new TRANSIENT SUPPRESSOR VARISTOR.

[12] Install the new SOLID STATE RELAY and assemble the PROCESSOR.

Removing the LEVEL SENSOR HOUSING and LEVEL SENSOR PROBES





Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

Important

Use this procedure for either the red developer or the blue fixer LEVEL SENSOR PROBES.

[2] Lift the TOP COVER.

[3] Remove the WET SECTION COVER and the NON-DRIVE SIDE PANEL.

[4] Remove from the outside of the TANK:

- SCREW
- SHOULDER SCREW
- WASHER

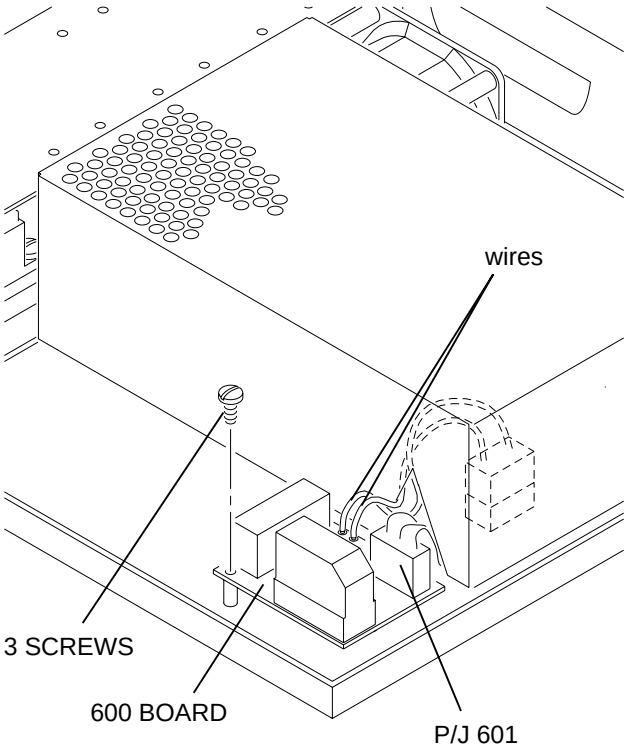
[5] Lift off the LEVEL SENSOR HOUSING.

[6] Remove the SCREW that holds the LEVEL SENSOR PROBE to the LEVEL SENSOR HOUSING.

[7] When you install new LEVEL SENSOR PROBES or a new LEVEL SENSOR HOUSING, check that the PROBE WIRE is correctly attached to the SHOULDER SCREW and WASHER. Install the GASKET SIDE of the WASHER against the TANK. See the graphic below.

[8] Assemble the PROCESSOR.

Removing the 600 BOARD



H150_0065GCA
H150_0065GA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRYER END PANEL.

[4] For easier access to the components on the COVER of the ELECTRICAL BOX, you may want to remove the NON-DRIVE SIDE PANEL so that you may fully open the ELECTRICAL BOX COVER.

[5] Pull out the ELECTRICAL BOX and open the COVER.

[6] Remove the 3 SCREWS that hold the 600 BOARD to the ELECTRICAL BOX.

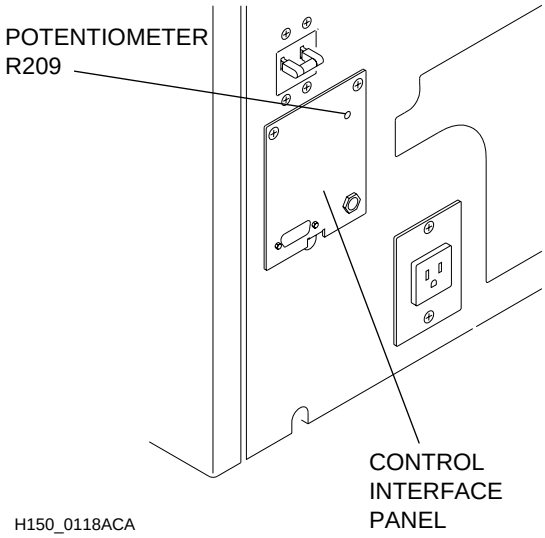
[7] Remove the CONNECTOR P/J601.

[8] Record the position of the 2 wires for future installation. Unsolder the 2 wires.

[9] Remove the 600 BOARD.

[10] Install a new 600 BOARD and assemble the PROCESSOR.

Adjusting the LAMP Intensity on the 2000 BOARD

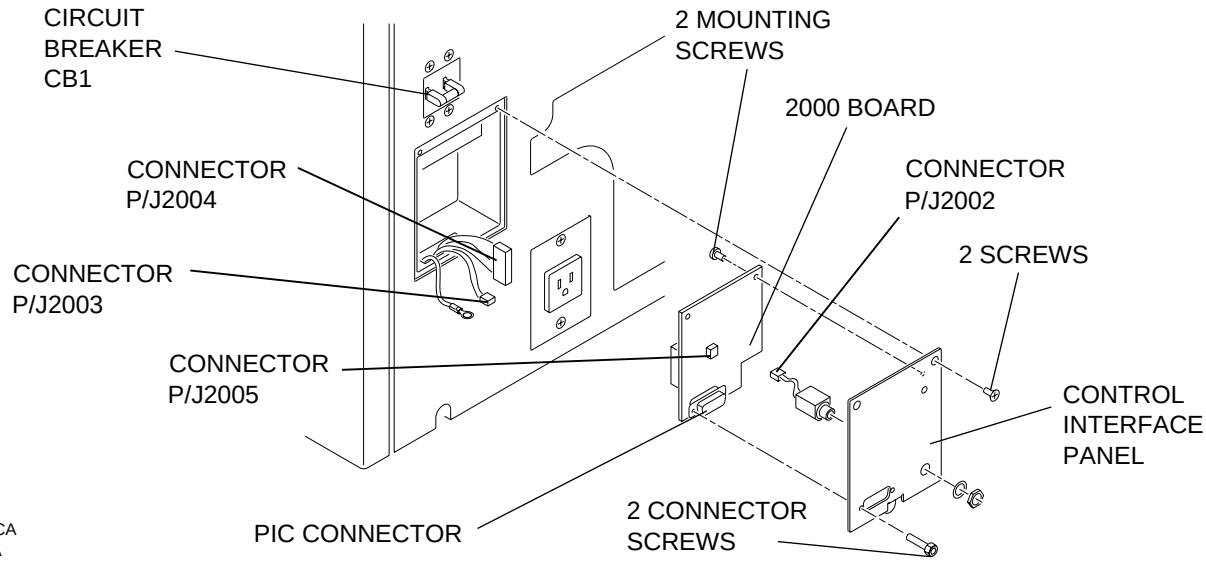


H150_0118ACA
H150_0118AA

[1] Rotate the POTENTIOMETER R209 to adjust the intensity of the LAMP:

- clockwise to increase the intensity
- counterclockwise to decrease the intensity

Removing the 2000 BOARD



H150_0117BCA
H150_0117BA

Warning

- Dangerous Voltage
- Possible damage from electrostatic discharge.

[1] De-energize the PROCESSOR.

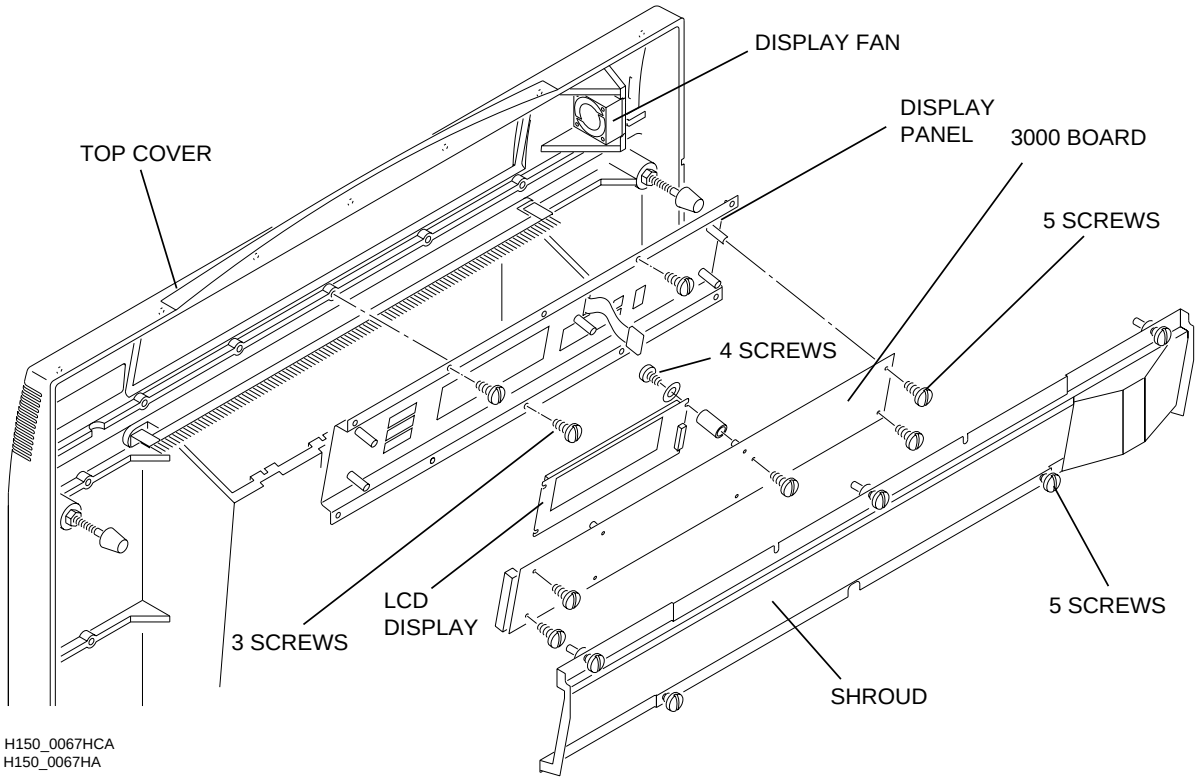
[2] Remove:

- 2 SCREWS from the CONTROL INTERFACE PANEL
- CONTROL INTERFACE PANEL from the PROCESSOR

- 3 CONNECTORS from the 2000 BOARD
  - P/J2002
  - P/J2003
  - P/J2004
- 2 MOUNTING SCREWS from the 2000 BOARD
- 2 CONNECTOR SCREWS from the PIC CONNECTOR
- 2000 BOARD from the CONTROL INTERFACE PANEL
- CONNECTOR P/J2005

[3] Install a new 2000 BOARD and assemble the PROCESSOR.

Removing the 3000 BOARD, LCD DISPLAY, and DISPLAY PANEL



Warning

- Dangerous Voltage
- Possible damage from electrostatic discharge.

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the SHROUD by loosening the 5 SCREWS.

[4] Remove the 5 SCREWS that secure the 3000 BOARD.

[5] Disconnect from the 3000 BOARD:

- P/J3001
- P/J3002
- P/J3003

[6] Remove the 3000 BOARD.

[7] Remove the LCD DISPLAY from the the 3000 BOARD:

(a) Remove the 4 SCREWS.

(b) Disconnect CONNECTORS P/J3004 and P/J3005.

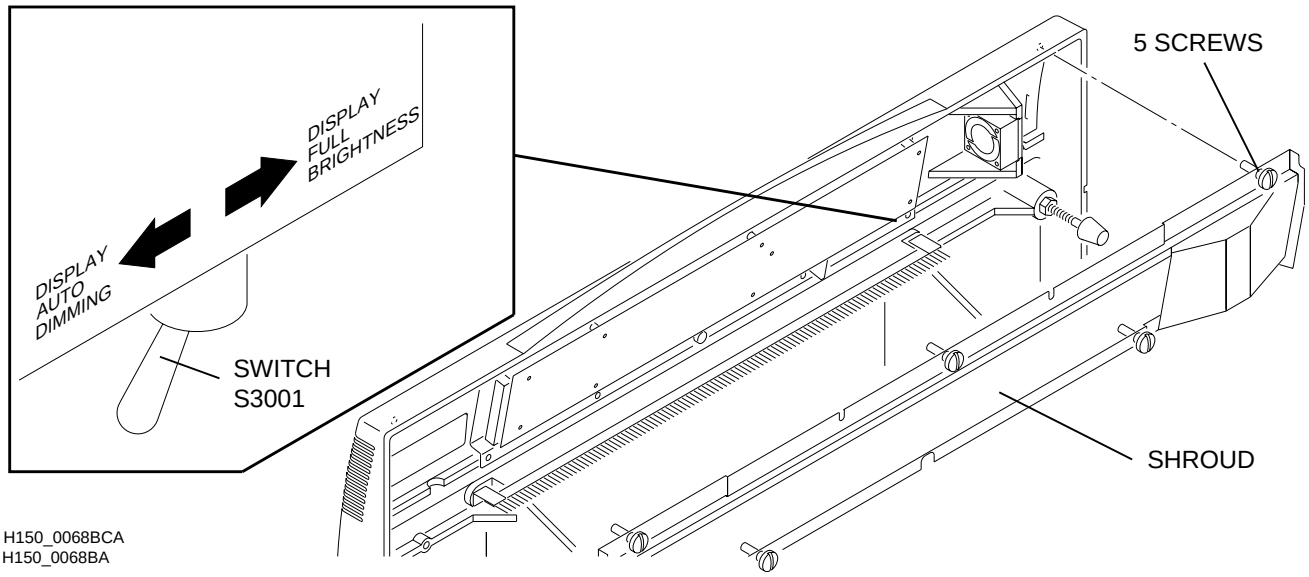
[8] Remove the DISPLAY PANEL from the TOP COVER:

(a) Remove the 3 SCREWS.

(b) Remove the NUT securing the ground wire.

[9] Install a new BOARD and assemble the PROCESSOR.

Enabling and Disabling the Automatic Dimming Feature on the DISPLAY PANEL



H150_0068BCA
H150_0068BA

Important

The ROOMLIGHT SENSOR SWITCH 3001 can be set to either of the positions below:

- “Display Auto Dimming” to automatically dim the DISPLAY PANEL when the operator turns off the room lighting
- “Display Full Brightness” to display the DISPLAY PANEL at full brightness regardless of the room lighting

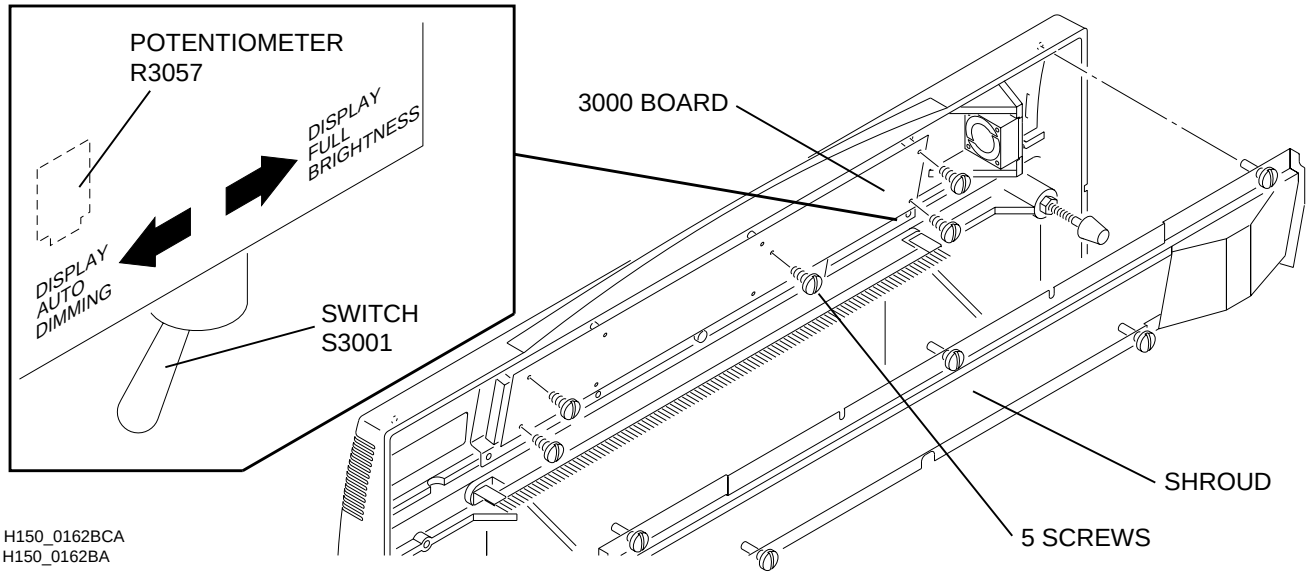
[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the SHROUD by loosening the 5 SCREWS.

[4] Move the SWITCH S3001 to the desired position.

Adjusting the Sensitivity of the DISPLAY PANEL LIGHT SENSOR



H150_0162BCA
H150_0162BA

Warning

- Dangerous Voltage
- Possible damge from electrostatic discharge.

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the SHROUD by loosening the 5 SCREWS.

[4] Remove the 5 SCREWS that secure the 3000 BOARD.

[5] Move the 3000 BOARD to access POTENTIOMETER 3057.

[6] Move SWITCH 3001 to “Display Auto Dimming” and rotate POTENTIOMETER R3057:

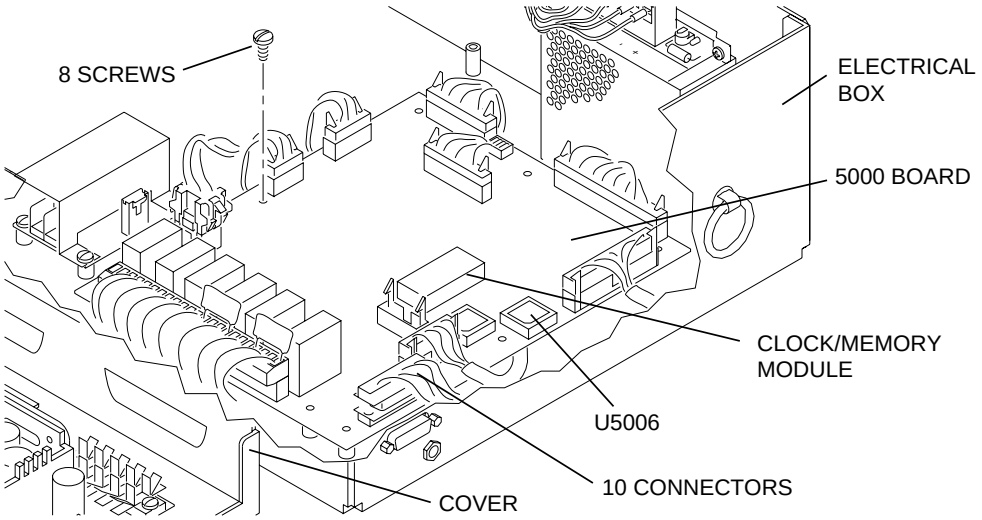
- clockwise to keep the DISPLAY PANEL illuminated in dim room lighting
- counterclockwise to dim the DISPLAY PANEL in bright room lighting

[7] Assemble the PROCESSOR and check that it operates correctly.

Removing the 5000 BOARD-Microprocessor

Important

- This procedure requires the use of a PORTABLE COMPUTER. The 5000 BOARD does not contain a removable program software PROM. The new 5000 BOARD will not work unless you download software.
- The 5000 BOARD is shipped without the CLOCK/MEMORY MODULE. The CLOCK/MEMORY MODULE can be ordered separately or transferred from the old 5000 BOARD.
- The newer 5000 BOARDS have removable plug-in RELAYS K5001 through K5006.



H150_0060BCA
H150_0060BA

Warning

- Dangerous Voltage
- Possible damge from electrostatic discharge.

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRYER END PANEL.

[4] Pull out the ELECTRICAL BOX and open the COVER.

[5] Disconnect the 9 CONNECTORS from the 5000 BOARD.

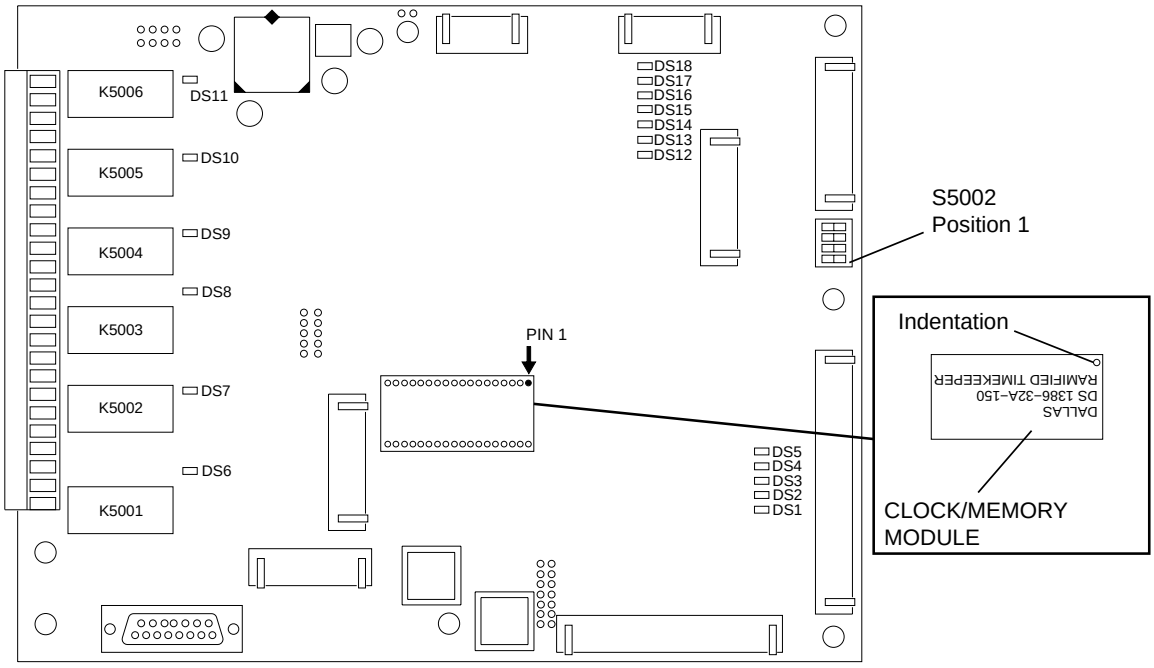
[6] Remove the 8 SCREWS and the 5000 BOARD.

[7] Place the new 5000 BOARD on a grounded work surface.

Caution

The CLOCK/MEMORY MODULE must be installed as shown in the graphic.

[8] Move the CLOCK/MEMORY MODULE to the new 5000 BOARD. Align the indentation on the MODULE with PIN 1 on the 5000 BOARD.



H150_0203HCA
H150_0203HA

Important

- The CLOCK/MEMORY MODULE stores all operating parameters set by the operator. Transferring the MODULE eliminates the need to reprogram the PROCESSOR.
- The SWITCH positions on SWITCH S5002 are arbitrary. The PROCESSOR does not read the actual position of the SWITCH; the PROCESSOR reads a signal change caused when a SWITCH position is changed while the PROCESSOR is energized.

[9] Install the new 5000 BOARD in the PROCESSOR.

[10] Connect the 9 CONNECTORS removed in Step 5.

[11] Assemble the PROCESSOR and check for correct operation. See the procedure “Downloading the Operating Software” in the OPERATOR MANUAL, Publication Number 5B6328, if necessary.

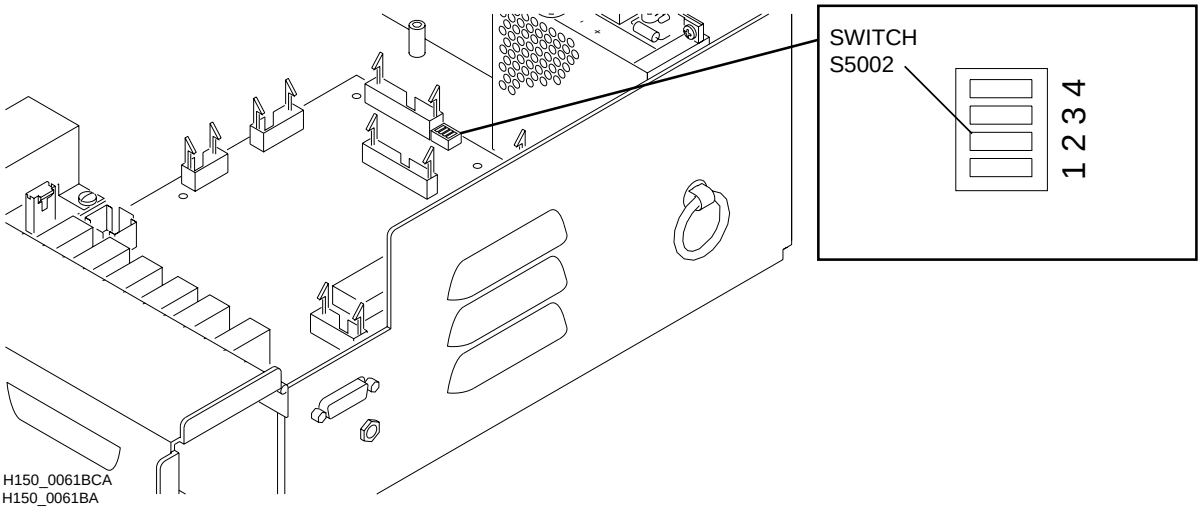
Bypassing or Resetting the Access Code

Access Code

In order to enter the PROCESSOR'S internal diagnostic procedures, you must either enter the correct access code, or know how to bypass or reset the access code in case the operator has changed the access code from the default of 4-2-3-1. This procedure outlines both how to bypass and how to reset an access code.

The Service Bypass procedure allows you to access all processor functions without knowing or changing the access code set by the operator.

The User Bypass procedure allows you to reset the access code to the default of 4-2-1-3 if the operator forgets the new access code he or she has entered.



Service Bypass

Warning

Dangerous Voltage

[1] Energize the PROCESSOR.

[2] Move the first SWITCH on SWITCH S5002 on the 5000 BOARD to the alternate position.

Note

The original position of the first SWITCH is not important. The software only recognizes a change in the position of the SWITCH.

User Reset

Warning

Dangerous Voltage

[1] Energize the PROCESSOR.

[2] Move the fourth SWITCH on SWITCH S5002 on the 5000 BOARD to the alternate position.

Note

The original position of the fourth SWITCH is not important. The software only recognizes a change in the position of the SWITCH.

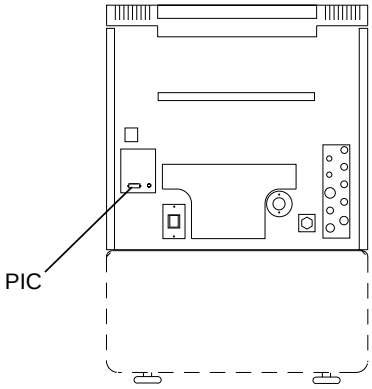
Downloading the Operating Software

Important

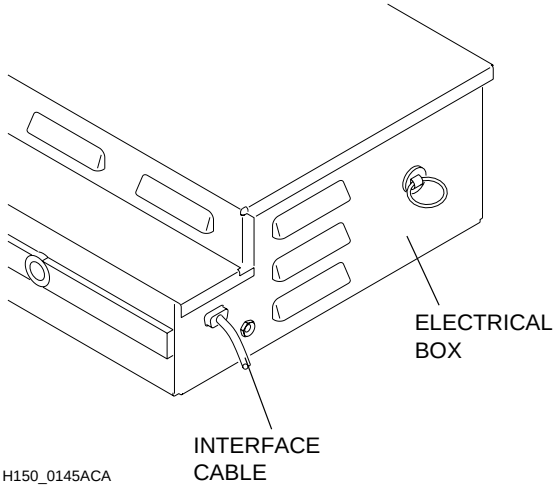
- This procedure requires the use of a PORTABLE COMPUTER.
- This procedure downloads operating software to both the 5000 and 6000 BOARDS simultaneously.

You will need the following tools to complete this procedure:

- DOWNLOAD DISK 9B8449
- INTERFACE CABLE TL-4391
- IBM compatible PORTABLE COMPUTER
  - MS-DOS Version 3.0 or higher
  - 720 KB 3.5 in. DISK DRIVE
  - serial communication port configured as COM1.
    See the USER MANUAL for the PORTABLE COMPUTER



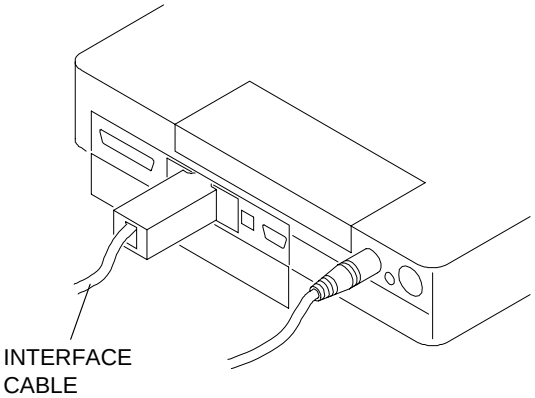
H150_0093ACC
H150_0093AA



H150_0145ACA
H150_0145AA

[1] Connect the INTERFACE CABLE to either part listed below:

- the PROCESSOR INTERFACE CONNECTOR (PIC) on the feed end of the PROCESSOR
- the INTERFACE CONNECTOR on the ELECTRICAL BOX



H108_0205ACA
H108_0205AA

[2] Connect the INTERFACE CABLE to the PORTABLE COMPUTER.

[3] Energize the PROCESSOR.

[4] Allow the PROCESSOR to operate for a minimum of 10 seconds.

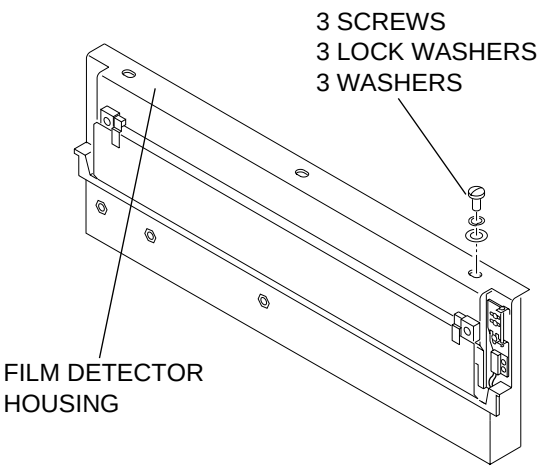
[5] Move the POWER SWITCH on the PORTABLE COMPUTER to the “ON” position.

[6] Insert the DOWNLOAD DISKETTE into the A DRIVE.

[7] At the C:> prompt, type the command A: and press [ENTER].

[8] At the A:> prompt, type the command DOWNLOAD and press [ENTER].

Removing the 6000 BOARD



H104_0317ACB
H104_0317AA

Warning

Dangerous Voltage

[1] De-energize the PROCESSOR.

Important

- This procedure requires the use of a PORTABLE COMPUTER.
- The 6000 BOARD does not contain a removable main program software PROM. The new 6000 BOARD will not work unless you download the operating software.
- The ALARM located on the 6000 BOARD can be replaced separately. See the PARTS LIST, Publication Number 5B6336.

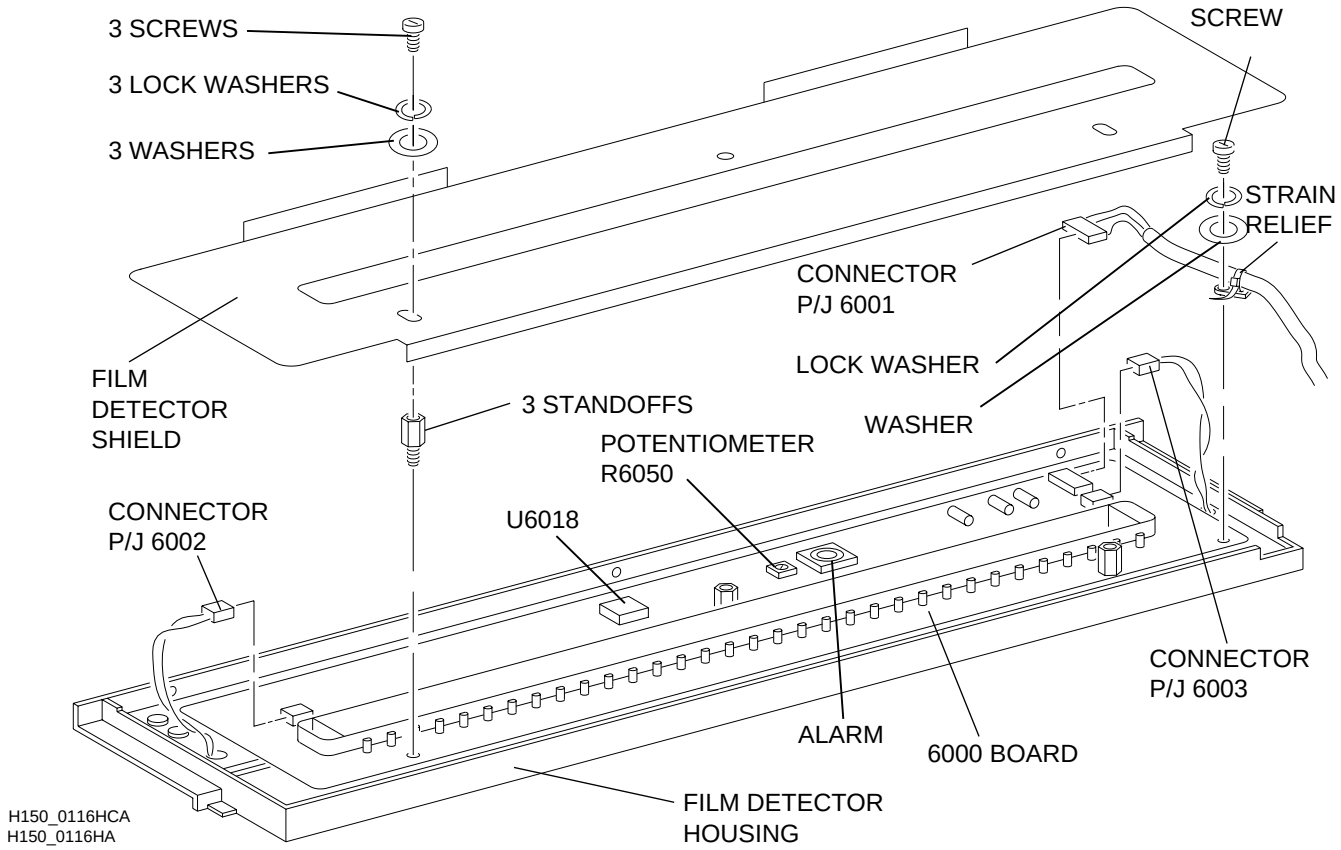
[2] Lift the TOP COVER.

[3] Remove:

- WET SECTION COVER
- DETECTOR CROSSOVER
- 3 SCREWS that hold the FILM DETECTOR HOUSING to the PROCESSOR

[4] Remove the 3 SCREWS that hold the FILM DETECTOR SHIELD to the 6000 BOARD.

[5] Remove the SCREW and the STRAIN RELIEF.



[6] Remove the FILM DETECTOR SHIELD.

[7] Disconnect CONNECTOR P/J6001 from the 6000 BOARD.

[8] Remove the FILM DETECTOR HOUSING and place it on a flat surface with the 6000 BOARD on the top.

[9] Disconnect CONNECTOR P/J6002 and CONNECTOR P/J6003.

[10] Remove the 3 STANDOFFS.

[11] Remove the 6000 BOARD.

[12] Install the new 6000 BOARD and assemble the PROCESSOR.

[13] Do the procedure “Downloading the Operating Software”.

[14] Check for correct operation of the DETECTOR SWITCHES.

[15] If necessary, adjust the volume of the FILM SIGNAL ALARM. See the procedure “Setting the Volume of the Alarm” in the OPERATOR MANUAL, Publication Number 5B6328.

Maximizing the Accuracy of the Film Logging Feature

Although up to 3 of the SENSORS on the 6000 BOARD may malfunction before a “Film Accumulator LED Error” will appear on the DISPLAY PANEL, all of the SENSORS must be operating correctly to ensure the maximum accuracy of the Film Logging feature.

To check that all the SENSORS are operating correctly, use the PROCESSOR’S internal diagnostics. See the Diagnostics Manual, Publication Number 5B6333. When you do the FILM ACCUMULATOR test, any of the following status indicators may appear on the DISPLAY PANEL of the PROCESSOR:

+ indicates that film is detected

- indicates that film is not detected

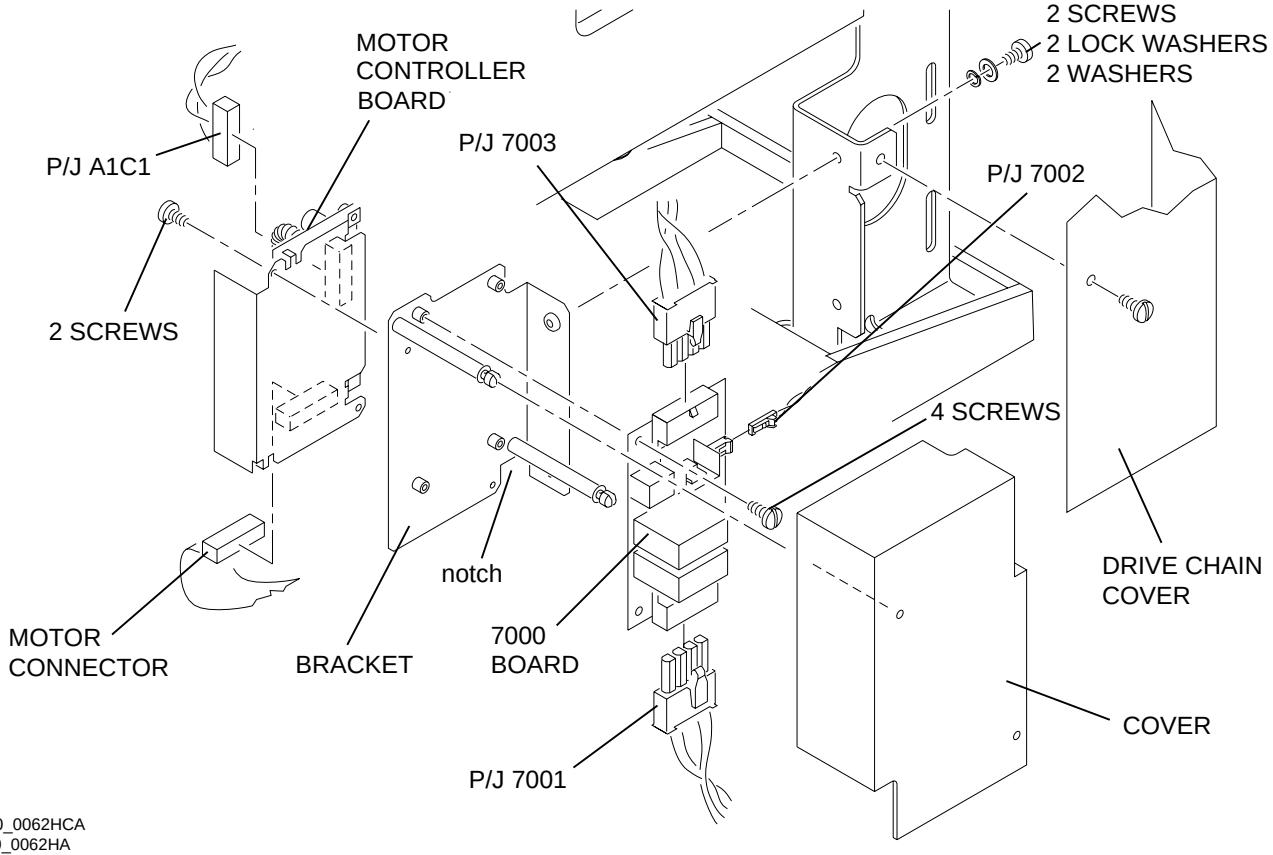
? indicates that the LED SENSOR is not operating correctly

If one of the SENSORS is not operating correctly and you require optimum accuracy of the Film Logging feature, you will need to install a new 6000 BOARD.

Important

- To ensure optimum accuracy of the Film Logging feature, align films with either the left or the right edge of the FILM GUIDE when you feed them into the PROCESSOR.
- Because the metric and English films are often very close in size, the PROCESSOR cannot always differentiate between the following film sizes:
  - 24 x 30 cm and 10 x 12 in.
  - 30 x 35 cm and 11 x 14 in.

Removing the 7000 BOARD and MOTOR CONTROLLER BOARD



H150_0062HCA
H150_0062HA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove:

- FRONT PANEL
- COVER protecting the BOARDS
- DRIVE CHAIN COVER by removing the 3 SCREWS that secure it
- 2 SCREWS that hold the BRACKET to the PROCESSOR
- 3 CONNECTORS:
  - P/J7001
  - P/J7002
  - MOTOR CONNECTOR
- BRACKET with the 2 BOARDS attached
- either of the CIRCUIT BOARDS

[4] Remove:

- CONNECTOR P/J7003
- 4 SCREWS that hold the BOARD to the BRACKET
- 7000 BOARD

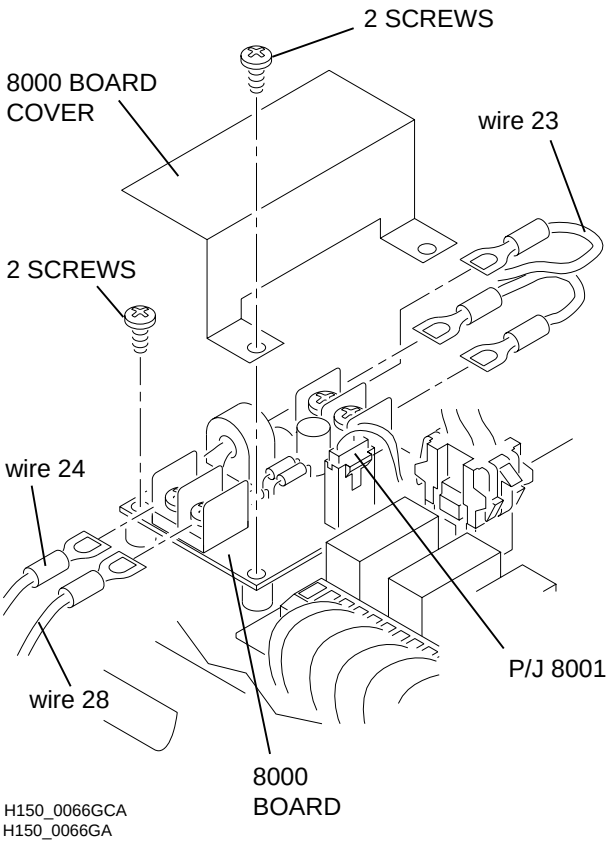
[5] Remove:

- CONNECTOR P/JA1C1
- 2 SCREWS that hold the BOARD to the BRACKET
- MOTOR CONTROLLER BOARD

[6] When you install the new BOARDS and the BRACKET, route the wires from CONNECTORS 7001 and 7002 through the notch in the BRACKET.

[7] Assemble the PROCESSOR.

Removing the 8000 BOARD



H150_0066GCA
H150_0066GA

Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

[2] Lift the TOP COVER.

[3] Remove the DRYER END PANEL.

[4] Pull out the ELECTRICAL BOX and open the COVER.

[5] Remove the 2 SCREWS that secure the 8000 BOARD COVER.

[6] Disconnect the 5 wires from the BOARD.

[7] Disconnect the CONNECTOR P/J8001.

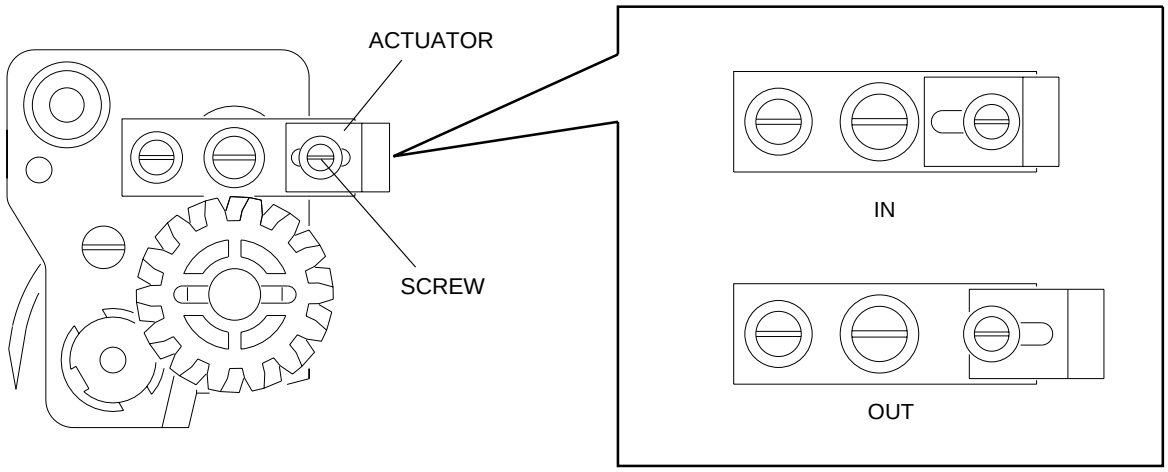
[8] Remove the remaining 2 SCREWS that hold the BOARD in position.

[9] Remove the BOARD.

[10] Install a new BOARD and assemble the PROCESSOR.

Adjusting the ACTUATORS and FILM DETECTOR SWITCHES

Adjusting the ACTUATORS



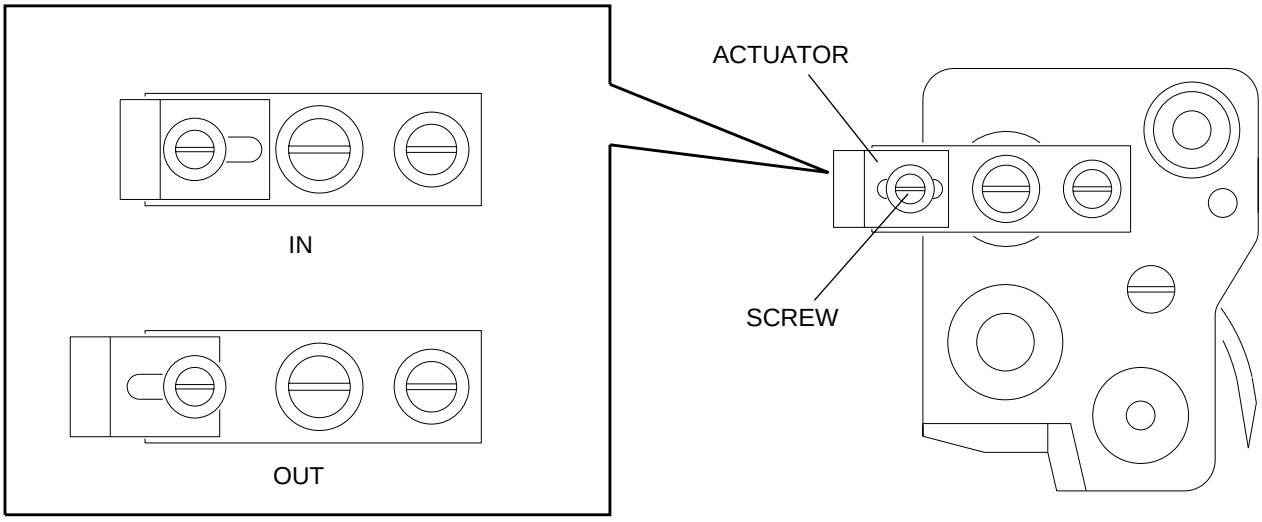
H104_0376BCA
H104_0376BA

[1] Lift the TOP COVER.

[2] Remove the DETECTOR CROSSOVER.

[3] Place the DETECTOR CROSSOVER on a flat surface with the drive side toward you. See the graphic for the correct orientation of the DETECTOR CROSSOVER.

[4] Locate the ACTUATOR on the drive side of the DETECTOR CROSSOVER.



H150_0115BCA
H150_0115BA

[5] The ACTUATOR can be adjusted side-to-side. Check that the ACTUATOR is in the “IN” position. See the graphic to determine the “IN” and “OUT” positions.

[6] If the ACTUATOR is in the “OUT” position:

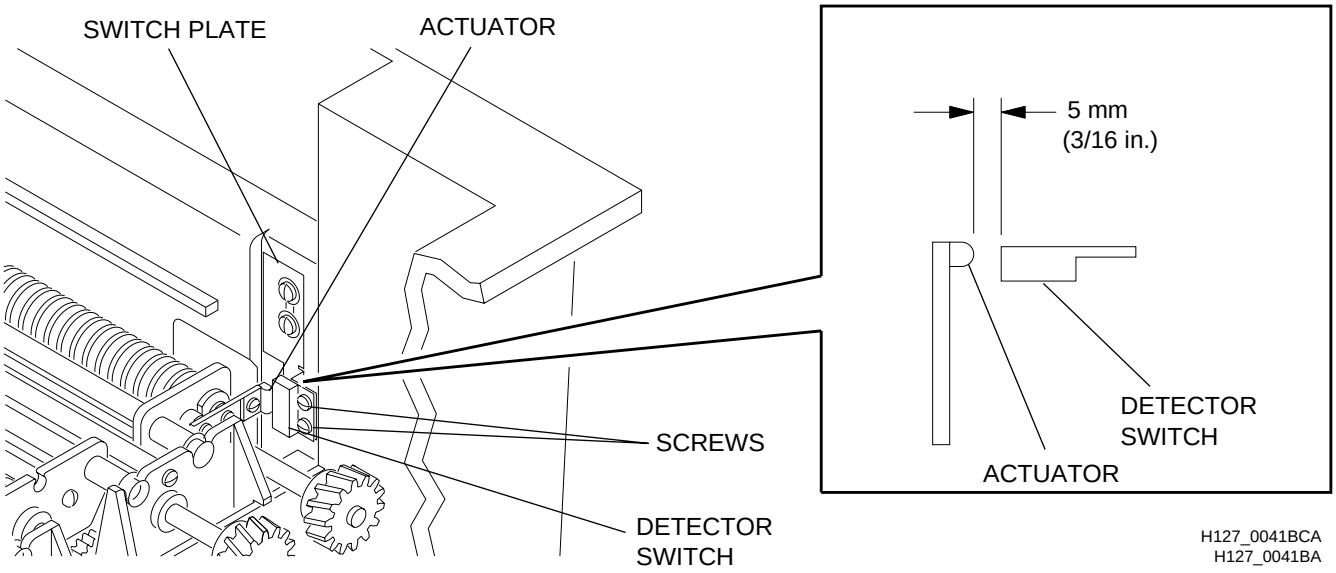
(a) Loosen the SCREW that holds the ACTUATOR.

(b) Move the ACTUATOR to the “IN” position.

(c) Tighten the SCREW that holds the ACTUATOR.

[7] Do Steps 1 - 5 again for the non-drive side ACTUATOR.

Adjusting the DETECTOR SWITCHES from Side to Side



Important

Steps 1 - 4 are for adjusting the DETECTOR SWITCH on the drive side of the PROCESSOR. Use the same steps for the non-drive side DETECTOR SWITCH.

[1] Locate the DETECTOR SWITCH on the drive side of the PROCESSOR.

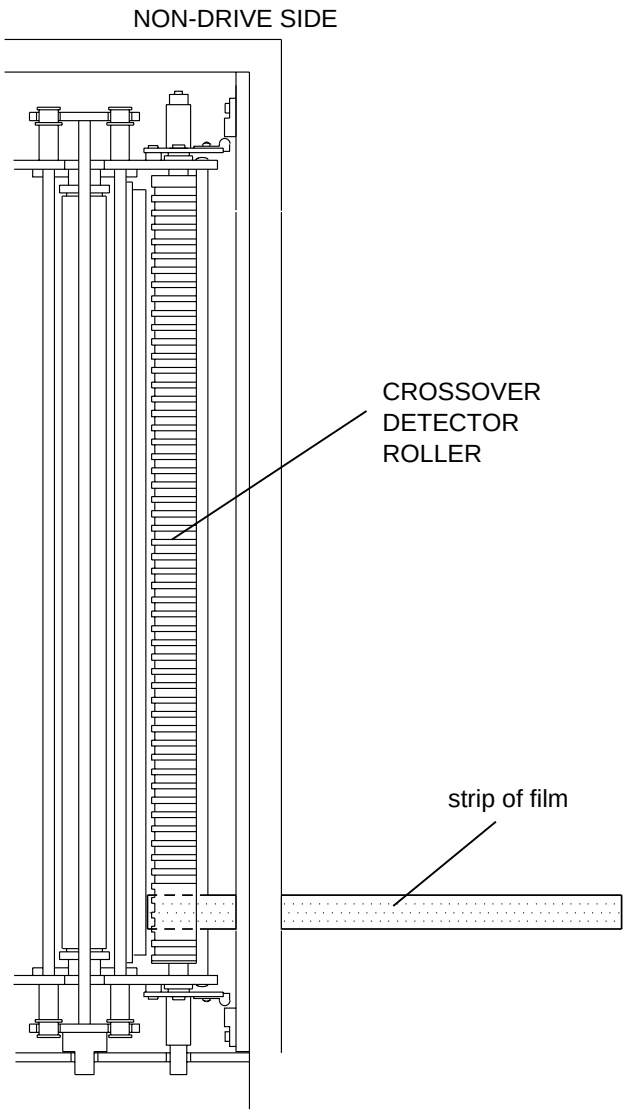
[2] Loosen the 2 SCREWS that hold the DETECTOR SWITCH to the SWITCH PLATE.

[3] Move the DETECTOR SWITCH until the DETECTOR SWITCH is 5 mm (3/16 in.) from the edge of the ACTUATOR.

[4] Check that the DETECTOR SWITCH remains in the vertical position while you tighten the 2 SCREWS that hold the DETECTOR SWITCH to the SWITCH PLATE.

[5] Do Steps 1 - 4 for the DETECTOR SWITCH on the non-drive side of the PROCESSOR.

Adjusting the DETECTOR SWITCH Up and Down



H127_0155CCB
H127_0155CC

Warning

Dangerous Voltage

[1] Energize the PROCESSOR.

[2] Press the “FILM DETECT” key on the internal diagnostics menu. See the Diagnostics Manual, Publication Number 5B6333.

[3] Press the “DRIVE SIDE” key to monitor the drive side DETECTOR SWITCH.

Note

An audible ALARM will sound whenever film is detected by the selected DETECTOR SWITCH.

[4] Manually, separate the DETECTOR CROSSOVER ROLLERS.

[5] With the DETECTOR CROSSOVER ROLLERS separated, feed a 2.5 cm (1 in.) wide strip of film between the DETECTOR CROSSOVER ROLLERS on the drive side of the PROCESSOR.

[6] Loosen the 2 SCREWS that hold the SWITCH PLATE to the FILM ACCUMULATOR HOUSING on the drive side of the PROCESSOR.

[7] Move the SWITCH PLATE ASSEMBLY to the “UP” position.

[8] Slowly, move the SWITCH PLATE down until the internal diagnostics indicate a “Film Detected” message for the drive side DETECTOR SWITCH.

[9] Move the SWITCH PLATE down approximately another 1 - 2 mm (0.04 - 0.08 in.).

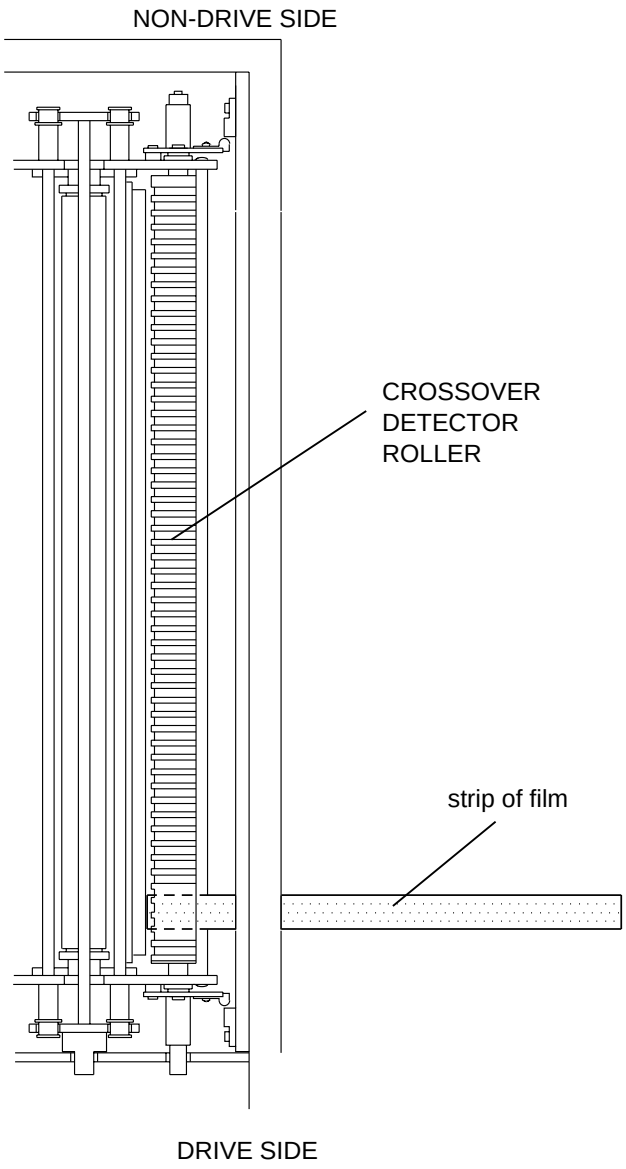
[10] Check that the SWITCH PLATE remains in the vertical position while you tighten the 2 SCREWS that hold the SWITCH PLATE in position.

[11] Remove the strip of film from between the DETECTOR CROSSOVER ROLLERS.

[12] Locate the DETECTOR SWITCH on the non-drive side of the PROCESSOR.

[13] Do Steps 3 - 10 for the SWITCH PLATE on the non-drive side of the PROCESSOR.

Checking the DETECTOR SWITCHES



H127_0155CCB
H127_0155CC

[1] Press the “FILM DETECT” key on the internal diagnostics menu. See the DIAGNOSTICS, Publication Number 5B6333.

[2] Press the “DRIVE SIDE” key to monitor the drive side DETECTOR SWITCH.

Note

An audible ALARM will sound whenever film is detected by the selected DETECTOR SWITCH.

[3] Check that all film is removed from between the DETECTOR SWITCHES.

[4] Check that the internal diagnostics displays the message “No Film Detected” for the drive side.

[5] With the DETECTOR CROSSOVER ROLLERS separated, insert the 2.5 cm (1 in.) strip of film between the DETECTOR ROLLERS on the drive side of the PROCESSOR.

[6] Check that the internal diagnostics displays the message “Film Detected” for the drive side.

[7] Do the procedure for the DETECTOR SWITCH on the non-drive side of the PROCESSOR again.

Publication History Table

Print Date	Pub. No.	ECO No.	Affected Pages	File Name	Description
OCT95	5B6331	2650-030	All Pages	ar3434_1_030.book (.1 through .7)	1st Printing of Manual
NOV95	5B6331	2650-039	Front Cover, 6-23 through 6-30, Back Cover	ar3434_1_039.book (.1 through .7)	Added procedure for Maximizing the Accuracy of the Film Logging Feature Graphic Unification Printing
NOV97	5B6331	N/A	Front Cover, Sections 2, 6 and 7	ar3434_1_nov97.book (.1 through .7)	Developer rack design changes. New procedure for adjusting Dryer Rack Guide Shoe, Section 2.
01JUN99	5B6331	2650-190	All Pages	ar3434_1_01jun99.fm	Updated for patient contact per MDD regulations.

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