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SERVICE MANUAL

for the

KODAK RP X-OMAT PROCESSOR, Model M6B

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CAUTION

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

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CHAPTER 1
Specifications

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SECTION 1
Introduction

This publication is part of a series of instruction books that provides technical support information on the KODAK *RP* X-OMAT Processor. For the ease of referencing and reordering the other publications, the following chart provides the part numbers for each of the X-OMAT M6B publications.

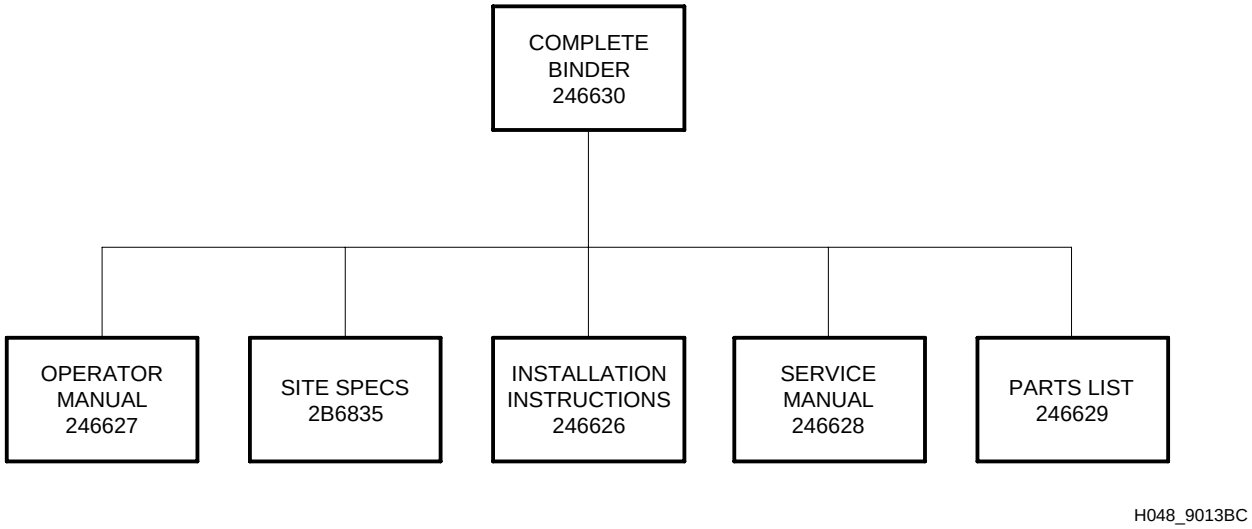

Figure 1 Related M6B Publications for Processors Having a Serial Number of 20,000 or Above.

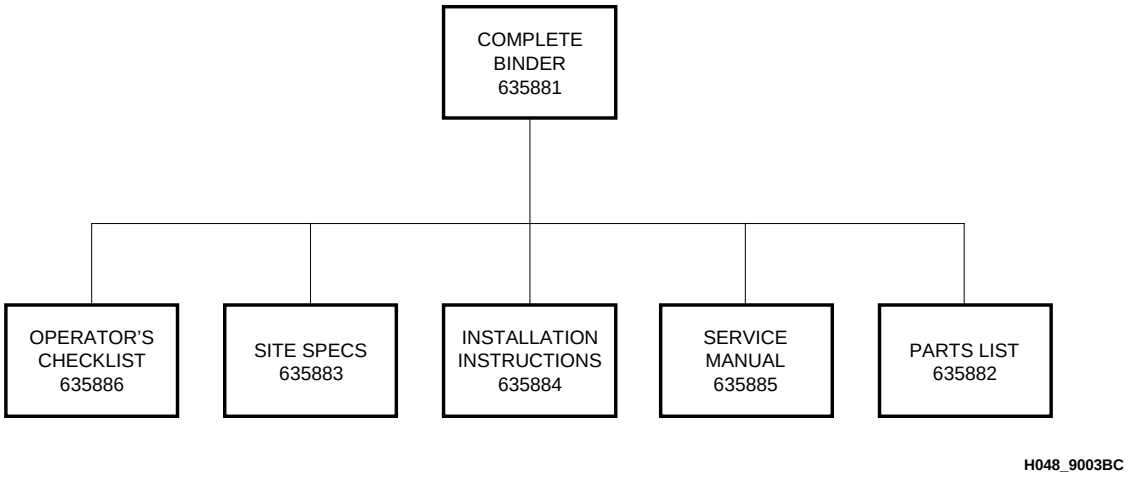

Figure 2 Related M6B Publications for Processors Having a Serial Number Below 20,000.

It is recommended that these publications be kept in the binder provided. If an individual document is misplaced or destroyed, reorder a copy from your Eastman Kodak Representative.

SECTION 2
Dimensions and Weights

Table 1 Dimensions and Weight of the Processor

Description	Crated	Uncrated
Length	90.2 cm (35.5 in.)	63.5 cm (25 in.) Without feed tray 97.8 cm (38.5 in.) With feed tray
Width	72.4 cm (28.5 in.)	76.2 cm (30 in.)
Height	152.4 cm (60 in.)	123.2 cm (48.5 in.)
Weight (Tanks Empty)	223.2 kg (492 lb)	201 kg (442 lb)
Weight (Tanks Full)	Not Applicable	235 kg (519 lb)
Approximate Solution Height from the Floor	Not Applicable	107.2 cm (42.5 in.)

Table 2 Maintenance and Operation Access Requirements

Description	Recommendation
Dryer End of Processor	91.4 cm (36 in.)
Feed End of Processor	91.4 cm (36 in.)
Drive Side of Processor	91.4 cm (36 in.)
Non-Drive Side of Processor	91.4 cm (36 in.)
Top of Processor	91.4 cm (36 in.)

SECTION 3
Electrical Requirements

Basic Requirements

- 30 A, single-phase or three-phase, 2- or 3-wire service, earth ground required.
- Main Power Disconnect (wall-mounted, not furnished).

The main power disconnect switch must consist of a minimum 2-pole thermo-magnetic circuit breaker with solid neutral and common trip, or a fused disconnect switch. This switch must be:

- located on a wall adjacent to the processor in the lighted area
- easily accessible from the processor site
- visible from the processor site.

IMPORTANT

In addition, all electrical services, *including* **earth ground**, must comply with local and national electrical code.

Standard Service Options

Table 3 Service Options

Voltage Volts	Frequency Hz	Service
100/200	50/60	Single-phase, N, 3-wire and earth ground
120/208	60	Three-phase, N, 3-wire and earth ground
120/240	60	Single-phase, N, 3-wire and earth ground
127/220	50	Three-phase, N, 3-wire and earth ground
220/380	50	Three-phase, N, 3-wire and earth ground
240/415	50	Three-phase, N, 3-wire and earth ground
220	50/60	Single-phase, 2-wire and earth ground
240	50/60	Single-phase, 2-wire and earth ground

SECTION 4
Water and Drain Requirements

Water Supply

NOTE

If the upper limit of the water supply temperature to the processor is exceeded, the developer temperature may not be controlled correctly. A water chiller may be required.

a. Processor Supply
   (1) Temperature: 4° to 32°C (40° to 90°F)
   (2) Pressure: 172.35 to 448.11 kPa (25 to 65 psi) Install regulator if required.
   (3) Volume: Controlled within the processor to 5.7 L/min. (1.5 gal/min.)
   (4) Filtration: A 50-micron filter is required.
b. Water service must comply with local codes.
c. Tempered water service is suggested for processor cleaning and for mixing chemicals manually.
d. A molded adapter and washer are provided to adapt the processor garden hose fitting to the 1/2 in. N.P.T. (male).

Drain

- Capacity: 15 L/min. (4 gal/min.)
- Connection: Open drain; avoid solid connection

NOTE

Do not use brass or copper for the drain lines. Drain service must comply with local codes.

SECTION 5
Environmental Requirements

Room Temperature-Ambient

- Temperature: 15° to 30°C (59° to 86°F)
- Humidity: 15% to 76%

NOTE

If the upper limit of the room ambient temperature is exceeded, the developer temperature may not be controlled correctly. A water chiller may be required.

Air and Heat

a. Air Exhaust (full load)
   (1) Volume: 1.9 m^3/min. (65 ft^3/min.)
   (2) Temperature: 66°C (150°F) maximum
   (3) Moisture>300 gr/min. or 121 gr/kg (55 gr/lb) of air
b. Heat load to room: 4220 kJ/hr (4000 Btu/hr)

To protect the processor and equipment directly interfaced with the processor, the dryer must be vented according to the following specifications. Failure to properly vent the dryer exhaust can cause corrosion within the processor and interfaced equipment. In addition, the probability of processor-related film artifacts is increased.

[1] The processor exhaust duct must be connected to the building exhaust ducting system. Disposal of effluent air must comply with prevailing environmental codes.

[2] Use Table 4 to determine the proper amount of negative air within the duct at the end to be connected to the processor. To prevent venturi effect at the duct opening, all measurements should be made at a point 30.5 cm (12 in.) from the open end of the duct to be attached to the processor.

Compare the average reading with the table below.

Table 4 Static Pressures

Duct Diameter	Negative Static Pressure, (Water Head)	
	MIN	MAX
76 mm (3 in.)	0.76 mm (0.03 in.)	1.02 mm (0.04 in.)
102 mm (4 in.)	0.25 mm (0.01 in.)	0.51 mm (0.02 in.)

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CHAPTER 2
Servicing Procedures

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SECTION 1
Roller Transport

Overview

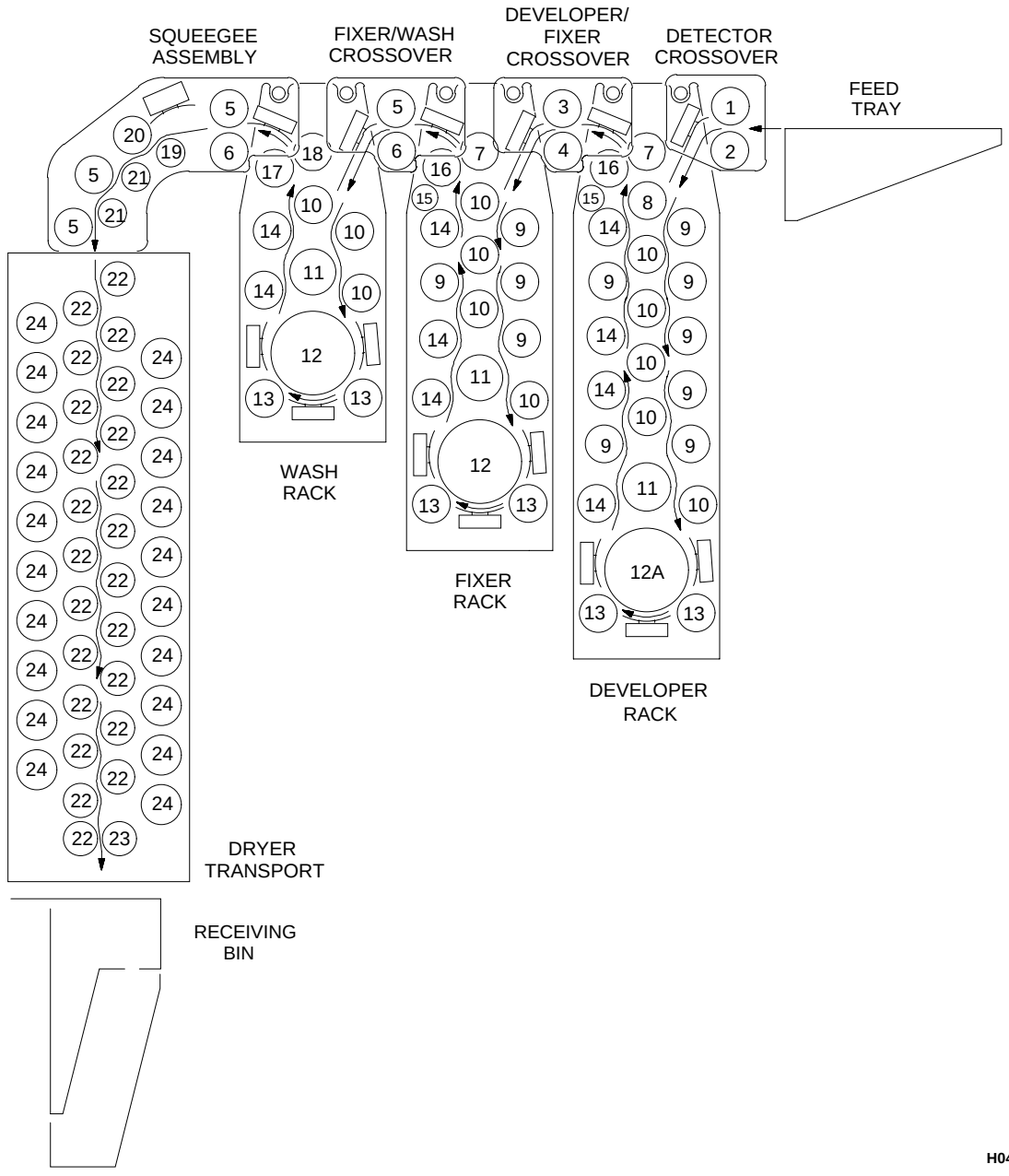

Figure 3 Drive-side View of Roller Transport

Feed Shelf and Film Guide

Adjusting the Height of the Feed Shelf

[1] Loosen the 5 SCREWS. See Figure 5.

[2] Adjust the FEED SHELF for the correct height. See Figure 4.

[3] Tighten the 5 SCREWS.

Aligning the Film Guide

[1] Check that the height adjustment of the FEED SHELF is correct.

[2] Loosen the 3 WING NUTS.

[3] Insert a sheet of 35 x 43 cm film. See Figure 5.

[4] Use the edges of the film to align the FILM GUIDE with the DETECTOR CROSSOVER ROLLERS for squareness.

[5] Tighten the WING NUTS.

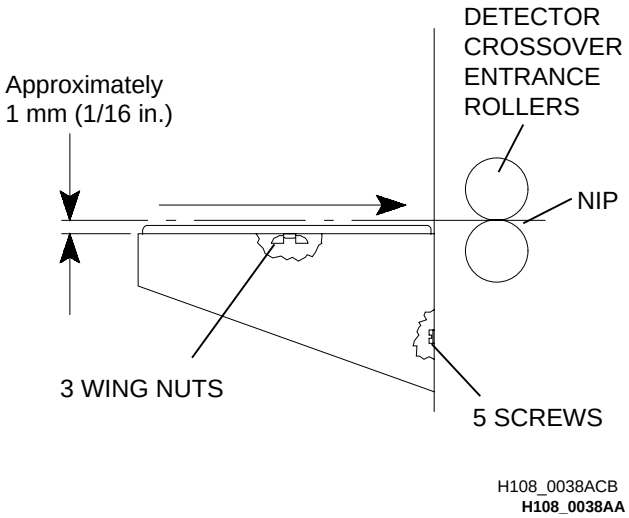

Figure 4 Adjusting the Height of the Feed Shelf

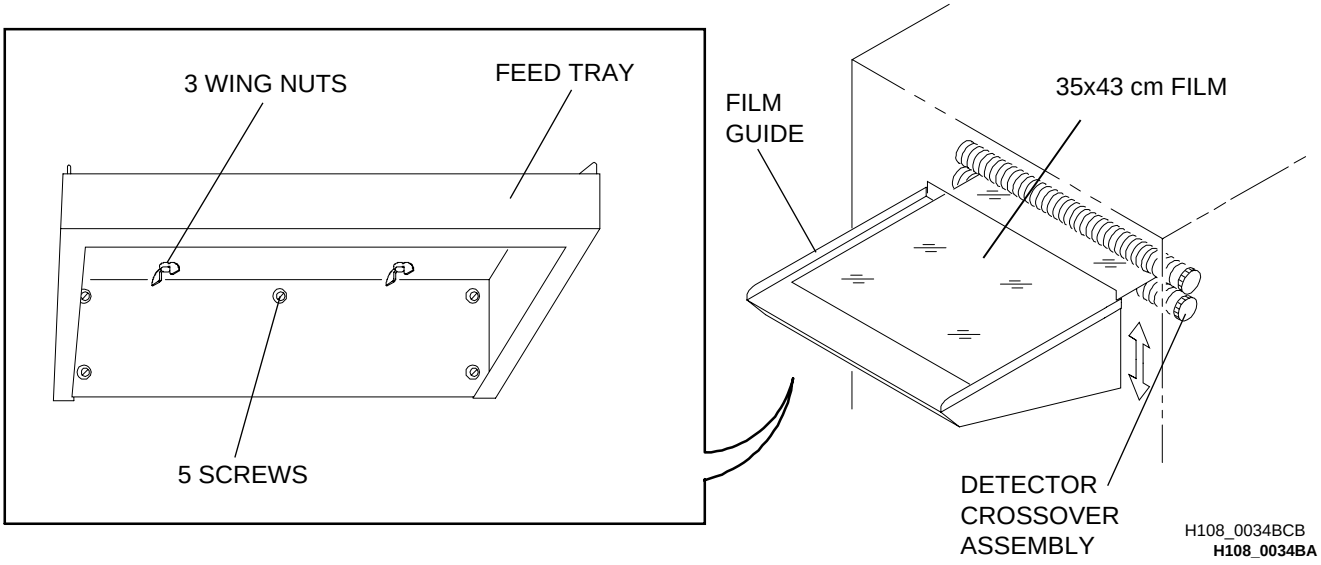

Figure 5 Aligning the Feed Shelf and Film Guide

Crossover Assemblies

Adjusting the Side Plates for Squareness

[1] Remove the DETECTOR CROSSOVER ASSEMBLY from the processor.

[2] Set the DETECTOR CROSSOVER ASSEMBLY on a flat surface as shown.

[3] Loosen the SCREWS and the NUTS of the TIE RODS.

[4] Check the SIDE PLATES for squareness against the flat surface.

[5] Tighten the SCREWS and the NUTS.

NOTE

The GUIDE SHOES are not adjustable. Check that the longer TIPS of the GUIDE SHOES are in the direction of the film travel.

[6] Repeat the procedure for the other CROSSOVER ASSEMBLIES.

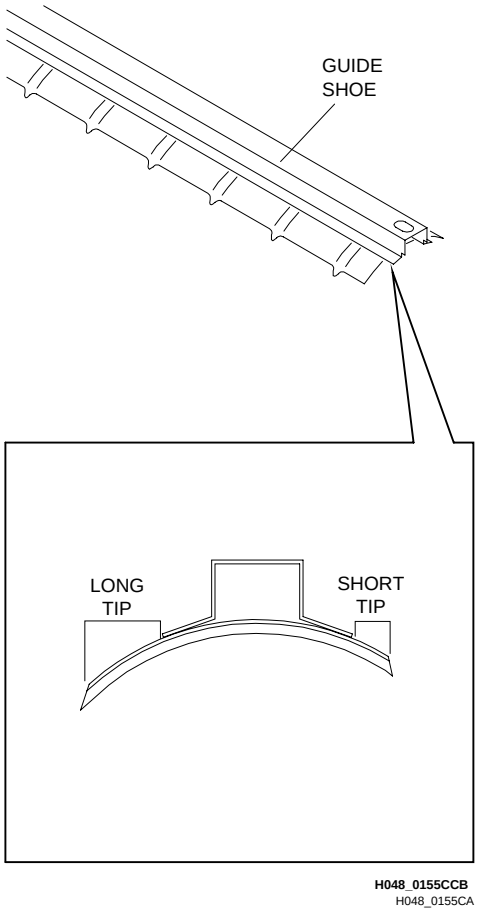

Figure 6 Checking the Guide Shoes

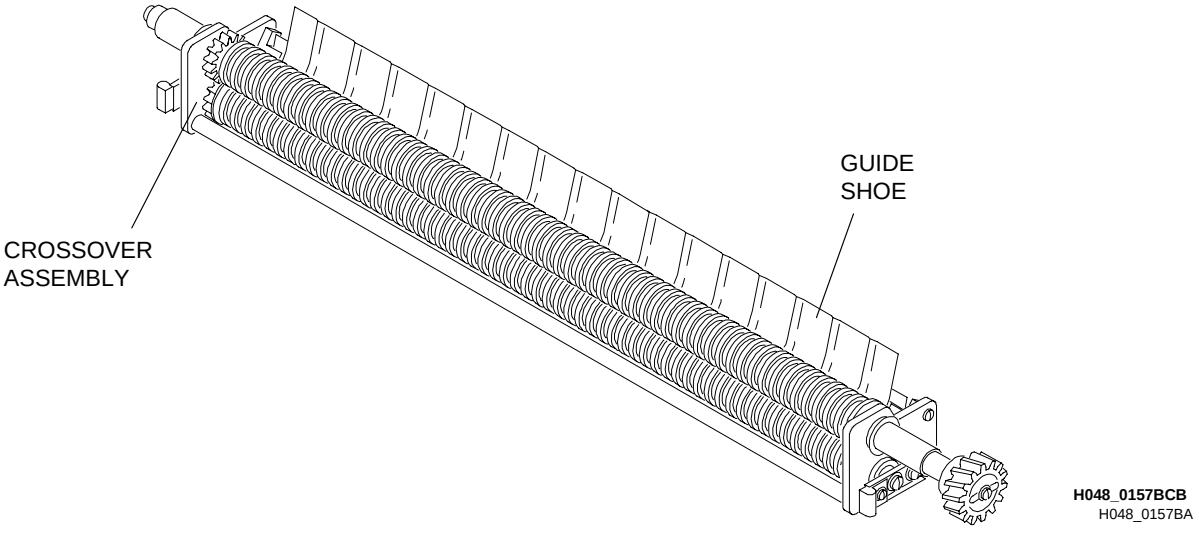

Figure 7 Adjusting the Side Plates of the Detector Crossover Assembly

Installing the Detector Switches

[1] Install the new DETECTOR SWITCH into the same position.

Checking the Clearance

[1] Check the clearance between the MAGNET and the DETECTOR SWITCH S7. The clearance should be 1.6 - 3.2 mm (1/16 - 1/8 inch).

[2] Loosen the SCREW, and adjust the MAGNET as necessary on the DETECTOR ASSEMBLY.

[3] If the DETECTOR SWITCH is not within specification, do the following adjustment:

Adjusting the Switch

[1] Loosen the MOUNTING SCREWS.

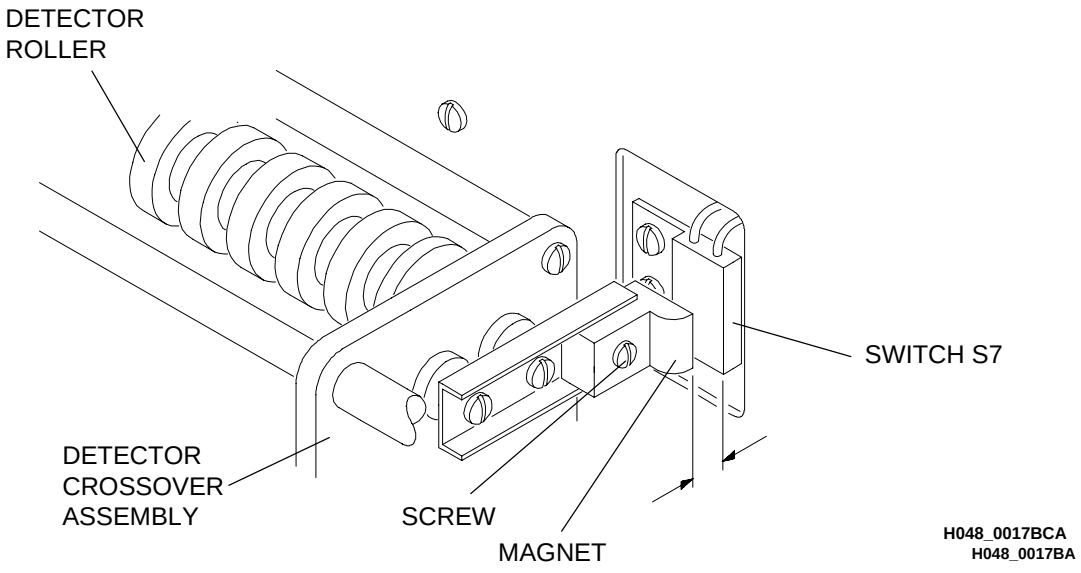

Figure 8 Adjusting the Detector Switch

[2] Lower the BRACKET and SWITCH ASSEMBLY until the REPLENISHER PUMP begins to operate. The REPLENISHER INDICATORS show replenishment solution moving.

[3] Raise the BRACKET and SWITCH ASSEMBLIES until the REPLENISHMENT PUMP stops.

[4] Raise the BRACKET and SWITCH ASSEMBLIES an additional 3.2 mm (⅛ inch).

[5] Check that the REPLENISHER PUMP does not operate unless film is fed.

[6] Tighten the MOUNTING SCREWS.

[7] Repeat this procedure for DETECTOR SWITCH S8.

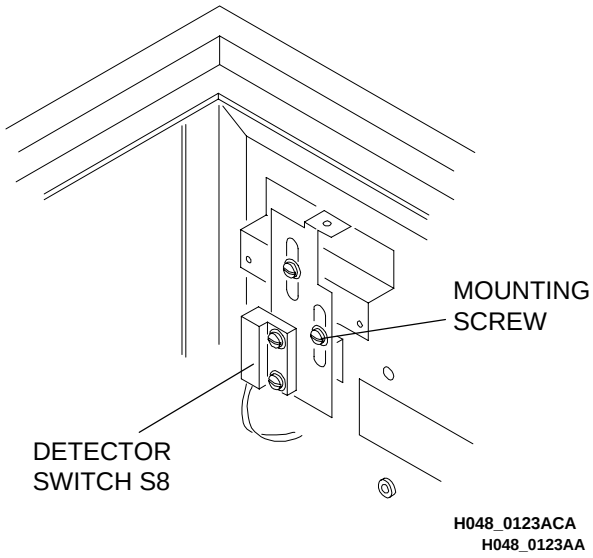

Figure 9 Adjusting the Drive Side Switch Assembly

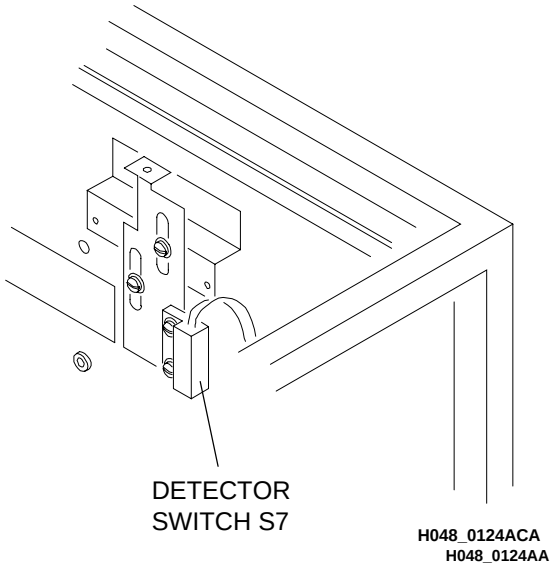

Figure 10 Adjusting the Non-Drive Side Switch Assembly

Rack Assemblies

Adjusting the Tension of the Chain

[1] Check the CHAIN tension after the RACK has been immersed in solution.

[2] Check that the RACK is at relatively the same temperature as the solutions in the tanks.

[3] Loosen the 4 HOLDING SCREWS.

[4] Hold the RACK assembly above the work surface. (This will allow the TURNAROUND to move by gravity to the correct CHAIN tension.)

[5] Rotate the DRIVE GEAR one full turn. Tighten the 2 HOLDING SCREWS on the drive side first.

[6] Set the RACK down on the work surface.

[7] Use the ADJUSTING SCREWS. Make the distance between the RACKS SIDE PLATE and the TURNAROUND SIDE PLATE on the non-drive Side equal to that of the drive side.

[8] Tighten the 2 HOLDING SCREWS on the non-drive Side.

NOTE

Remove LINKS of the CHAIN as necessary to provide the correct length.

Installing a Chain

[1] To open the CHAIN, insert a SCREWDRIVER under each open end of the LINK.

[2] Turn the SCREWDRIVER.

[3] Install the CROSSBAR of each LINK in the direction of travel, with the LINKS opening outward. See Figure 11.

[4] Attach the new CHAIN to the existing CHAIN.

[5] Pull the existing CHAIN through the RACK until the new CHAIN is in the correct position.

[6] Disconnect the existing CHAIN from the new CHAIN.

[7] Fasten the ends of the new CHAIN together.

[8] Do the Chain Adjustment above.

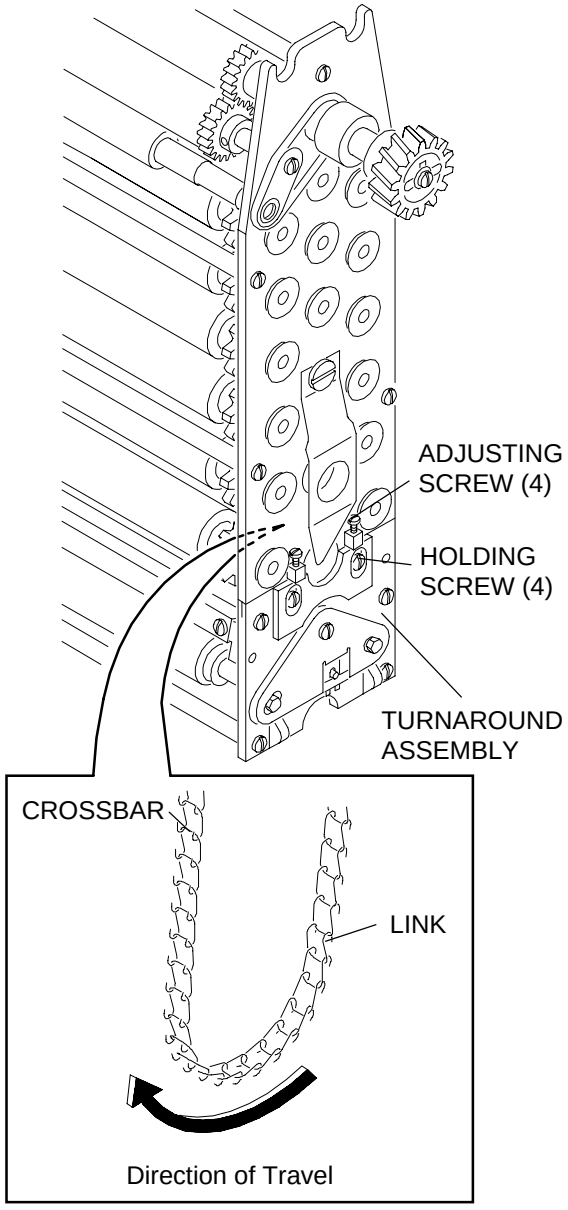

Figure 11 Adjusting the Tension of the Chain

Resilient G Roller (Developer and Fixer Racks)

Removing and Replacing the G Roller

[1] Remove the SPRING from both ends on the top of the RACK. See Figures 12 and 13.

[2] Remove the SCREWS, WASHERS, GEAR, SPACERS, and BEARINGS from the outside of both SIDE PLATES.

[3] Rotate the SHAFT so that the KEYWAY is in the up position. See Figure 13.

[4] Pull the ROLLER to the non-drive side and remove the KEY from the SPROCKET.

[5] Pull the SHAFT to the non-drive side to be free of the SIDE PLATE.

[6] Remove the THRUST WASHER, SPROCKET, and SPACER.

[7] Continue to pull the SHAFT to the non-drive side.

[8] Remove the ROLLER.

[9] Reverse the procedure to assemble.

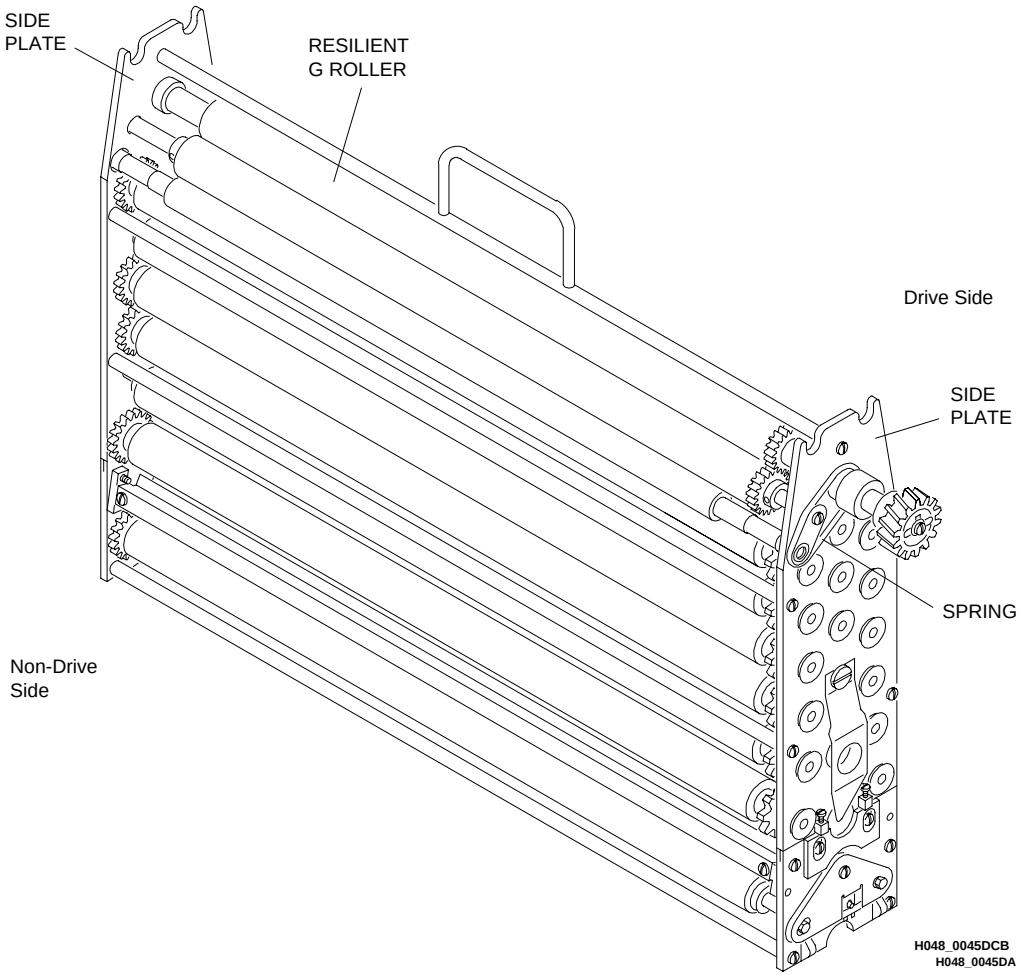

Figure 12 Removing the Resilient G Roller from the Developer or Fixer Rack

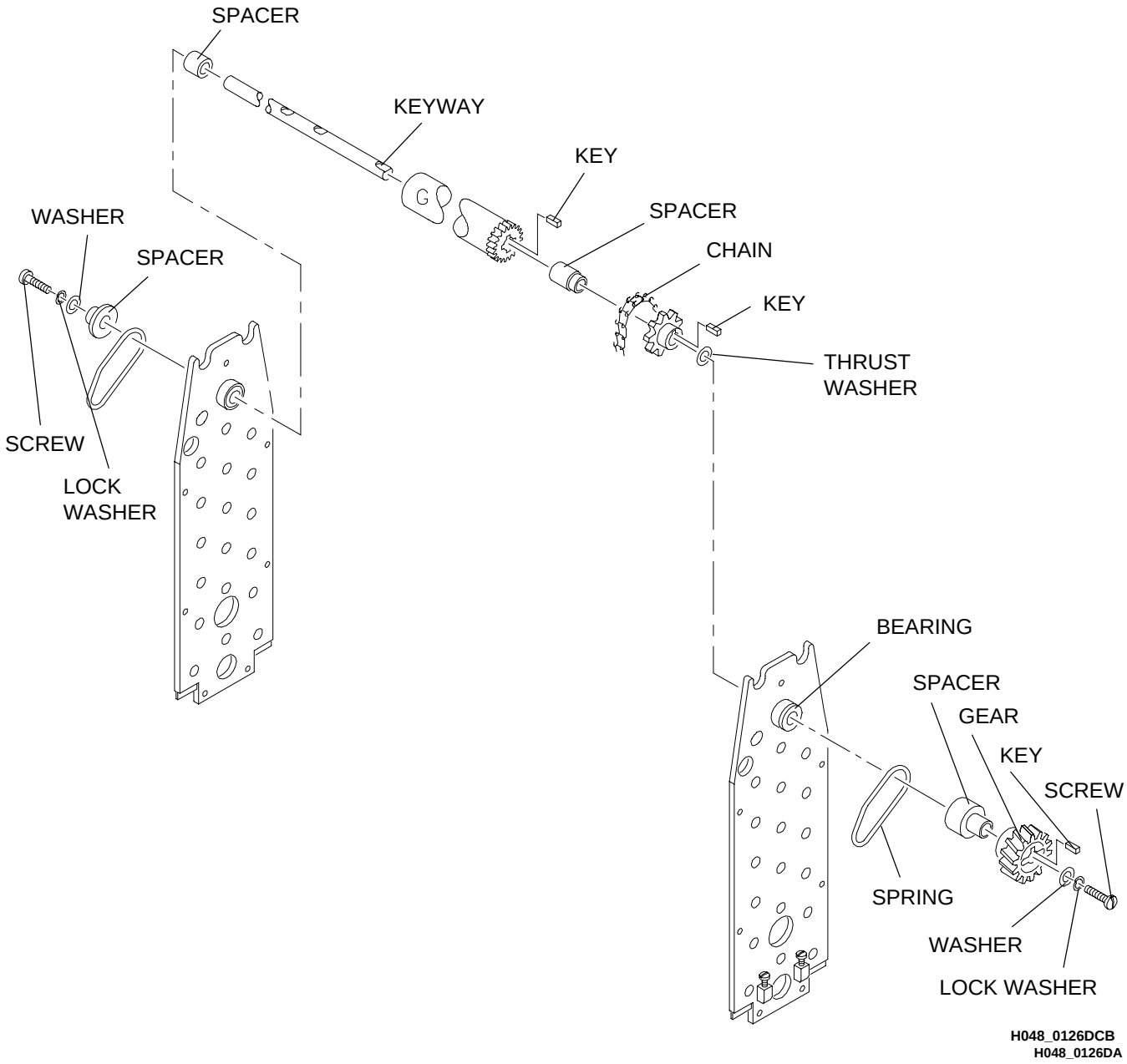

Figure 13 Disassembling the G Roller

Resilient Pressure Drive Roller (Wash Rack)

Removing and Replacing the Drive Roller

[1] Remove the following:

- TIE ROD SHAFTS
- SCREWS, WASHERS, GEAR, SPACERS, and BEARINGS from the outside of both SIDE PLATES. See Figure 14.

[2] Rotate the KEYWAY to the up position. See Figure 14.

[3] Pull the ROLLER to the non-drive side and remove the KEY from the SPROCKET.

[4] Remove the 2 SPRINGS.

[5] Pull the ROLLER to the drive side. Flex the SIDE PLATE to allow removal of the ROLLER.

[6] Reverse the procedure to assemble.

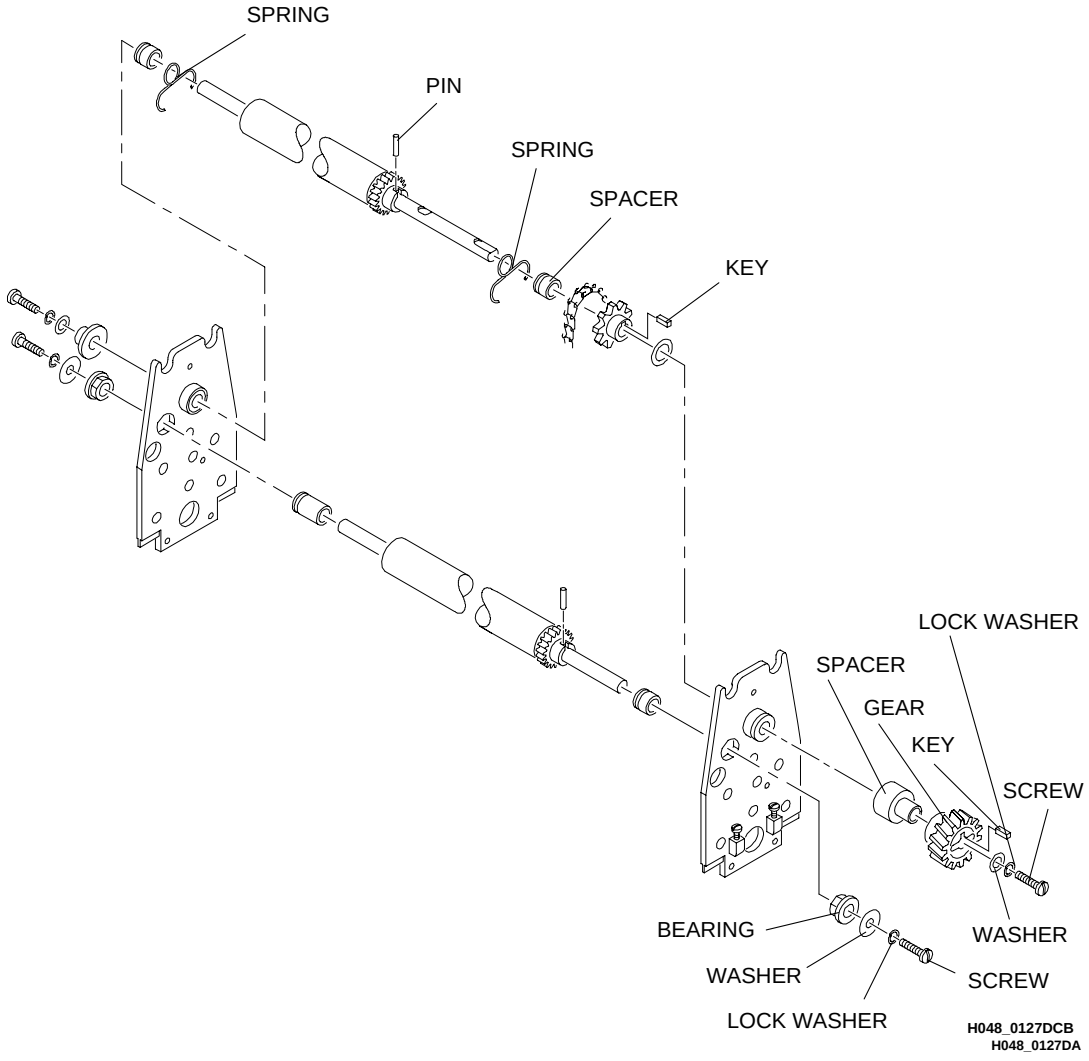

Figure 14 Disassembling the Resilient Pressure Drive Roller from the Wash Rack

Turnaround Assembly

Disassembling the Turnaround Assembly

NOTE

Figure 15 shows a WASH RACK; however, the procedure is the same for the disassembly of all RACKS.

[1] Remove: See Figures 15 and 16.

- EXIT GUIDE SHOE and the BRACKETS
- The ROLLER above the GUIDE SHOE
- 2 SPRINGS and LOCKING PLATE from the TURNAROUND
- Both ‘‘A’’ ROLLERS.

[2] From the non-drive side, pull the SHAFT from the ‘‘B’’ ROLLER.

[3] Remove the CHAIN from the ‘‘B’’ ROLLER.

[4] Remove the 4 HOLDING SCREWS.

[5] Remove the TURNAROUND ASSEMBLY.

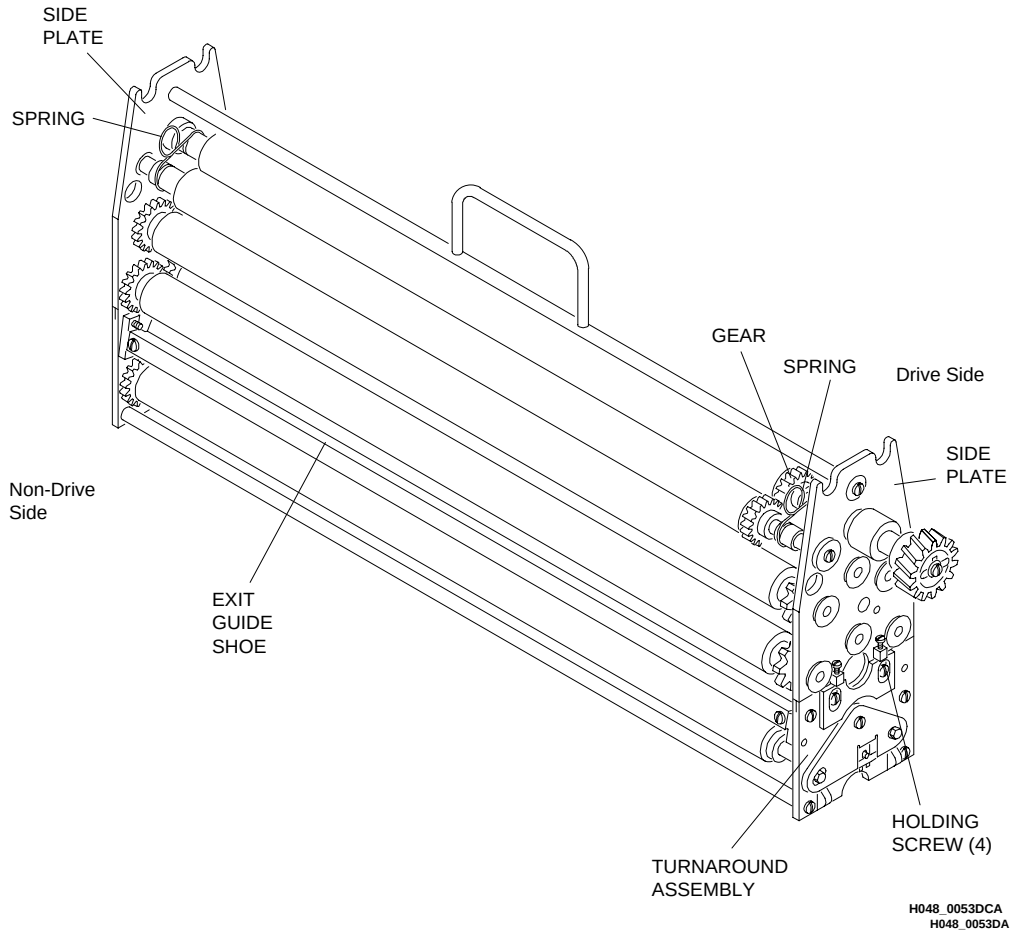

Figure 15 Disassembling the Rack Assembly

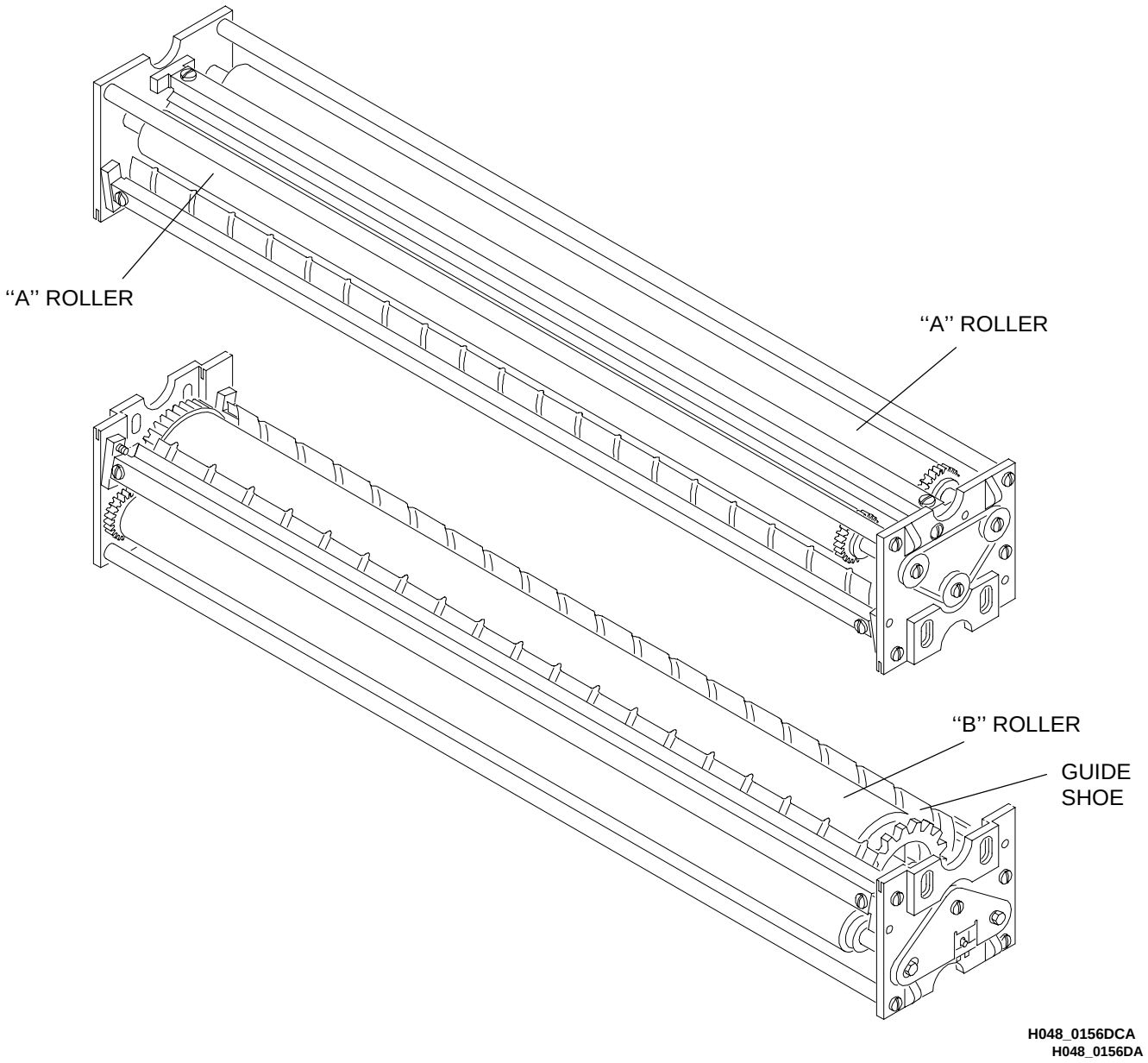

Figure 16 Disassembling the Turnaround Assembly

B Roller

Removing and Replacing the B Roller

[1] Remove the ROLLER from the SHAFT. Pull the BEARING with the SHAFT.

[2] Install the ROLLER onto the SHAFT.

[3] Check that the CHAIN has the correct tension. See Figure 18.

Checking the Guide Shoes

[1] Check that the LONGER TIPS, are in the direction of film travel. See Figure 17.

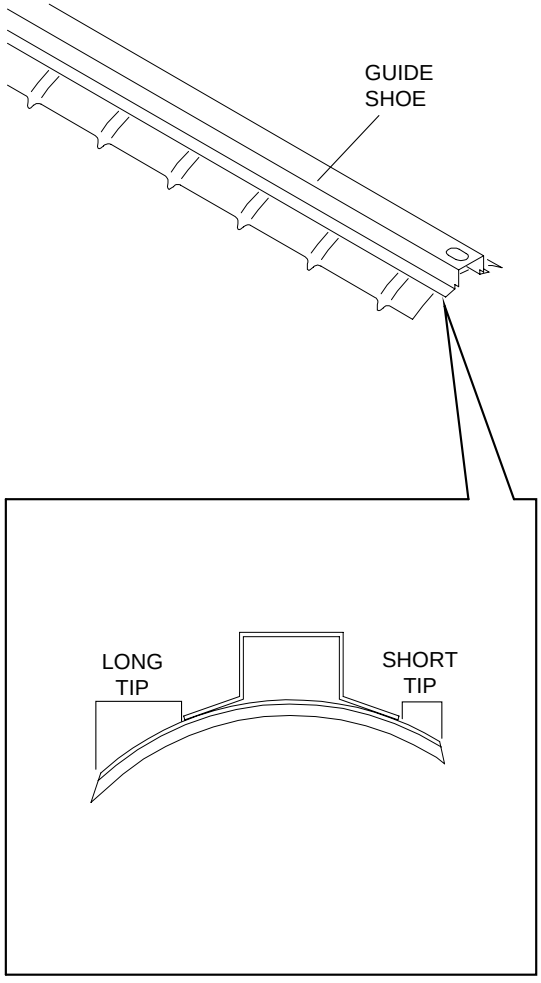

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Figure 17 Checking the Guide Shoes

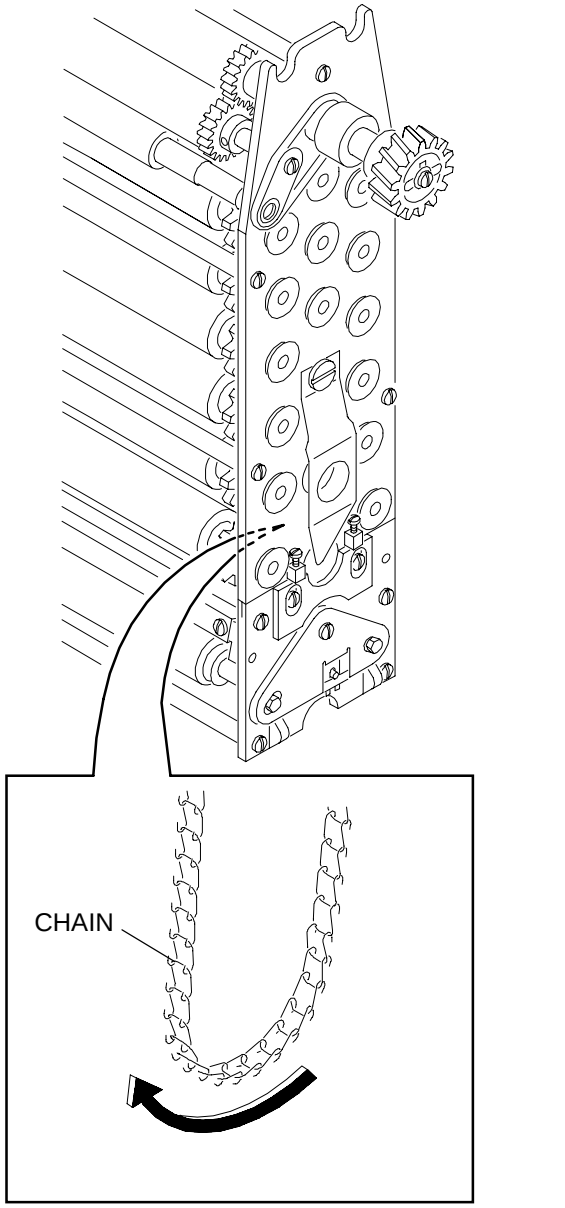

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Figure 18 Checking the Tension of the Chain

Main Drive Chain

WARNING

Moving parts.

Aligning the Drive Chain

[1] Disconnect the main power.

[2] Loosen the 2 SETSCREWS on the MOTOR SHAFT SPROCKET.

[3] Move the SPROCKET into alignment with the DRIVE SHAFT SPROCKET.

[4] Tighten the 2 SETSCREWS.

Adjusting the Tension of the Drive Chain

[1] Loosen the 2 MOTOR MOUNTING BOLTS.

[2] Move the MOTOR to adjust the CHAIN for the correct tension, allowing a deflection of 3.2 - 6.4 mm (1/8 - 1/4 inch).

NOTE

Do not make the CHAIN too tight.

Lubricating the Drive Chain

See Lubrication Table on page 3-9.

CAUTION

Do not allow the DRIVE CHAIN to operate without lubrication.

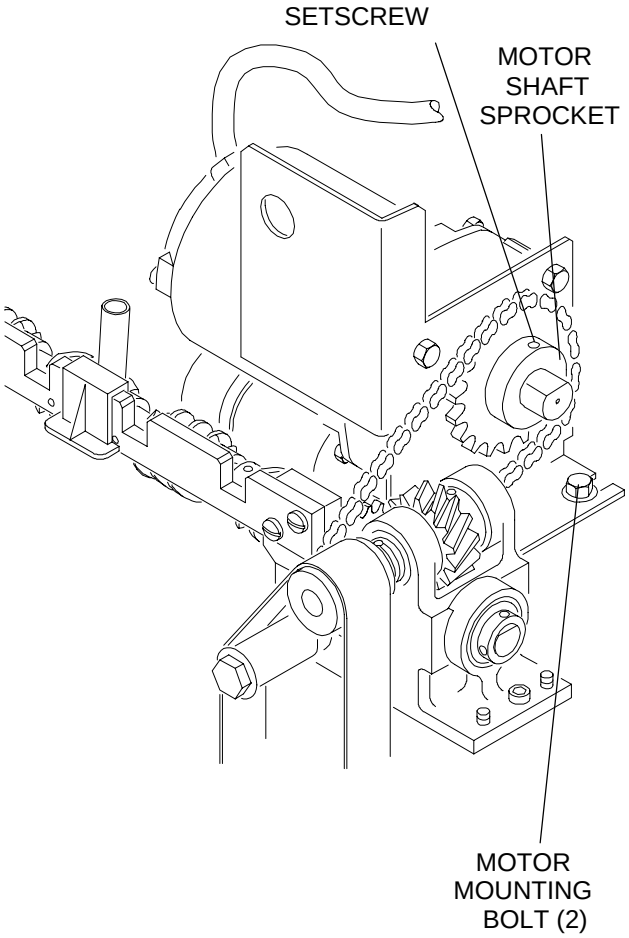

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Figure 19 Adjusting the Main Drive Chain

Main Drive Motor

WARNING

Dangerous voltage.

Removing the Main Drive Motor

[1] Disconnect the main power.

[2] Loosen the 2 MOTOR MOUNTING BOLTS. See Figure 21 on page 2-16.

[3] Remove the DRIVE SPROCKET and CHAIN.

[4] Disconnect CONNECTOR P18 from J18. See Figure 20.

[5] Remove the 2 MOUNTING BOLTS.

[6] Lift the MOTOR and BRACKET ASSEMBLY out.

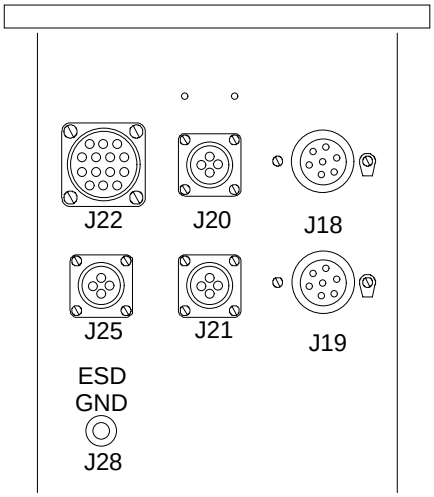

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Figure 20 Disconnecting Connector P18

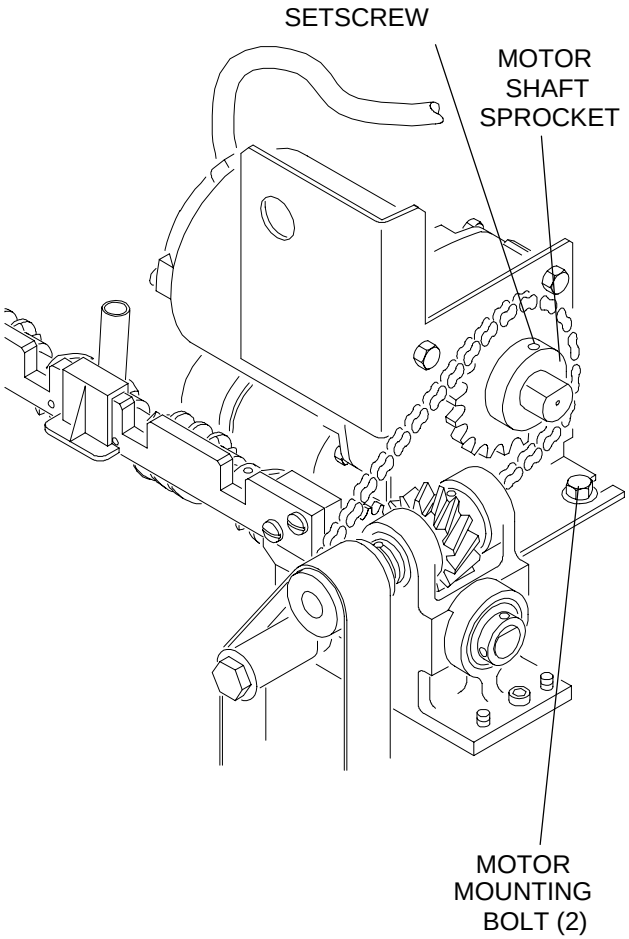

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Figure 21 Adjusting the Main Drive Chain

Drive Shaft Assembly

Removing the Drive Shaft Assembly

WARNING

Moving parts.

[1] Disconnect the main power.

[2] Remove the GUARDS.

[3] Release the tension of the DRYER DRIVE BELT. See the figure.

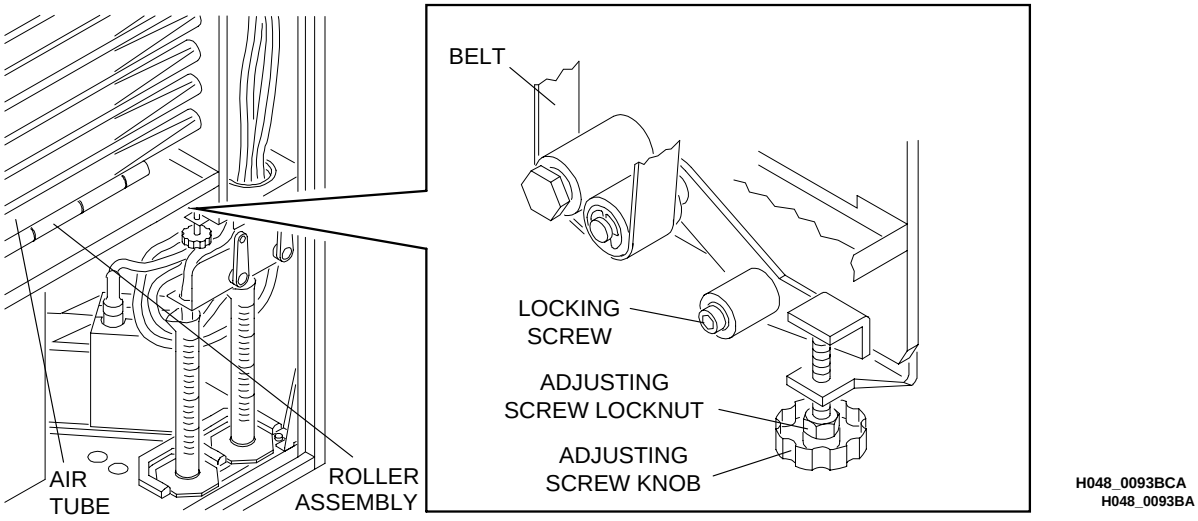

Figure 22 Adjusting the Tension of the Dryer Belt

[4] Remove the SCREWS that hold each BEARING SUPPORT.

NOTE

Do not remove or adjust the 4 SETSCREWS on the BEARING SUPPORT.

[5] Lift the CHAIN off the MOTOR SPROCKET.

[6] Remove the MAIN DRIVE ASSEMBLY from the processor.

[7] Remove the COLLAR from each end of the DRIVE SHAFT.

[8] Remove the 2 BEARING SUPPORTS.

[9] Reassemble in reverse order.

NOTE

Be sure to maintain approximately .020 inch end play in the DRIVE SHAFT.

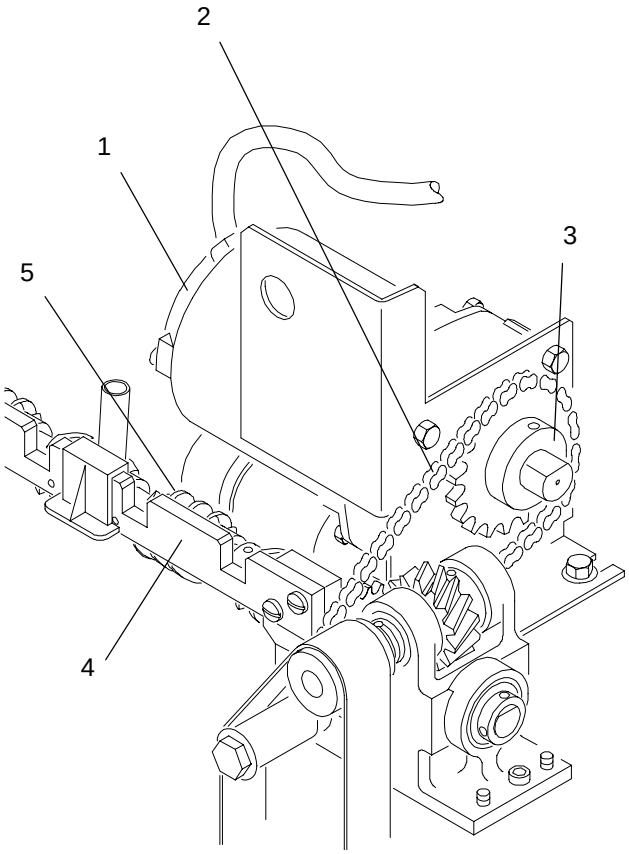

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Figure 23 Replacing the Main Drive Shaft Assembly

Blower Assembly

Removing the Blower Assembly

[1] Remove the BLOWER MOTOR COVER from the BLOWER DRIVE MOTOR.

[2] Remove the 3 MOUNTING BOLTS from the BLOWER ASSEMBLY.

[3] Remove the BLOWER DRIVE BELT.

[4] Remove the BLOWER ASSEMBLY.

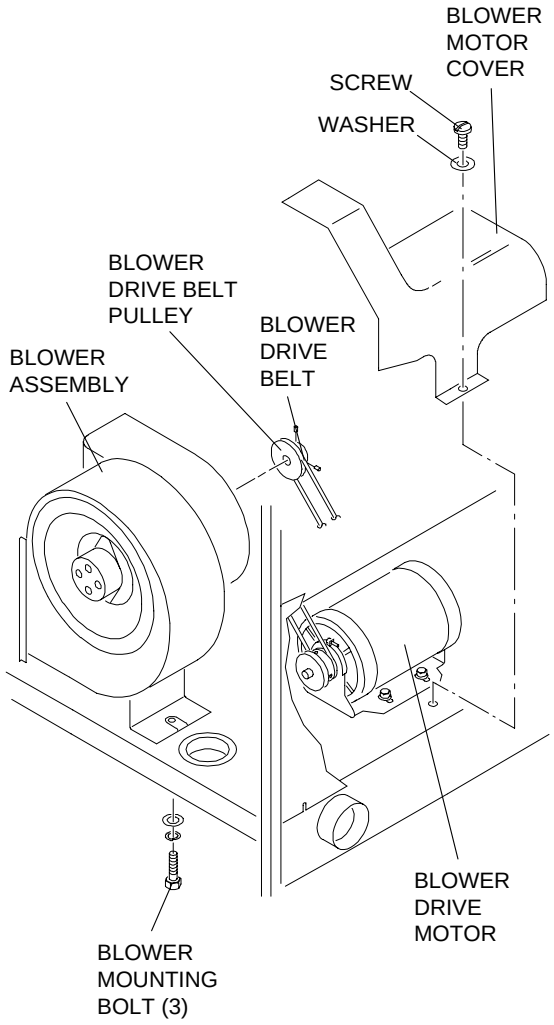


Figure 24 Removing the Blower Assembly

[5] Loosen the 2 SETSCREWS to remove the PULLEY from the BLOWER ASSEMBLY.

[6] Install the PULLEY onto the new BLOWER ASSEMBLY.

[7] Install the new BLOWER ASSEMBLY using the 3 MOUNTING BOLTS from Step 2.

[8] Loosen the BLOWER DRIVE MOTOR MOUNTING BOLTS.

[9] Install the BLOWER DRIVE BELT.

[10] Adjust the position of the BLOWER DRIVE MOTOR to obtain the correct tension and alignment of the BLOWER DRIVE BELT. See Figure 25.

[11] Install the BLOWER MOTOR COVER.

NOTE

Correct tension is achieved when the BLOWER DRIVE BELT does not make loud noises when you energize the processor.

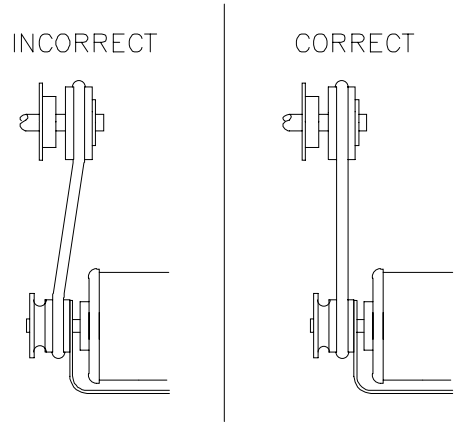


Figure 25 Adjusting for Correct Tension and Alignment of the Blower Drive Belt

Inner and Outer Bearings

Removing the Inner Bearings

WARNING

Moving parts.

[1] Disconnect the main power.

[2] Remove the BLOWER MOTOR COVER.

[3] Loosen the BLOWER DRIVE MOTOR MOUNTING BOLTS.

[4] Remove the BLOWER DRIVE BELT.

[5] Loosen the 2 SETSCREWS on the BLOWER DRIVE BELT PULLEY.

[6] Remove the BLOWER DRIVE BELT PULLEY.

[7] Loosen the 2 SETSCREWS on the INNER BEARING.

[8] Remove the 2 NUTS, 2 LOCK WASHERS, and 2 WASHERS.

[9] Remove the INNER BEARING.

[10] Reverse the procedure to install a new INNER BEARING.

[11] Ensure that the SETSCREWS align with the FLATS on the SHAFT.

[12] Set the tension and alignment of the DRIVE COMPONENTS.

[13] Check the operation of the DRIVE COMPONENTS.

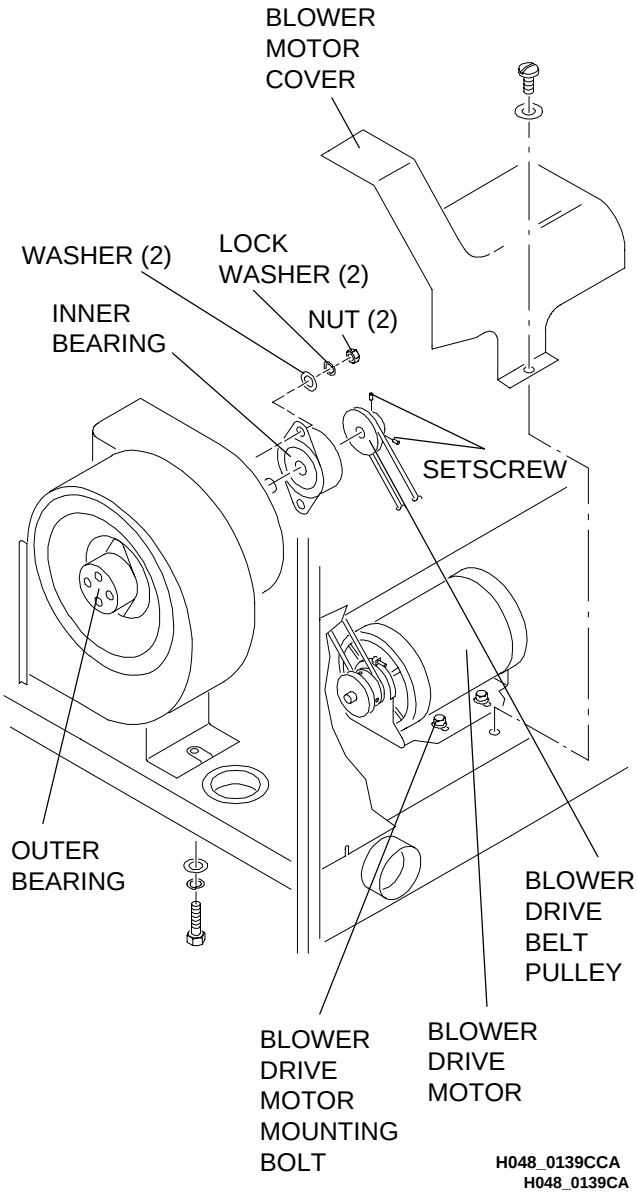


Figure 26 Removing the Inner Bearing

Removing the Outer Bearing

WARNING

Moving parts.

[1] Disconnect the main power.

[2] Remove the OUTER BEARING COVER.

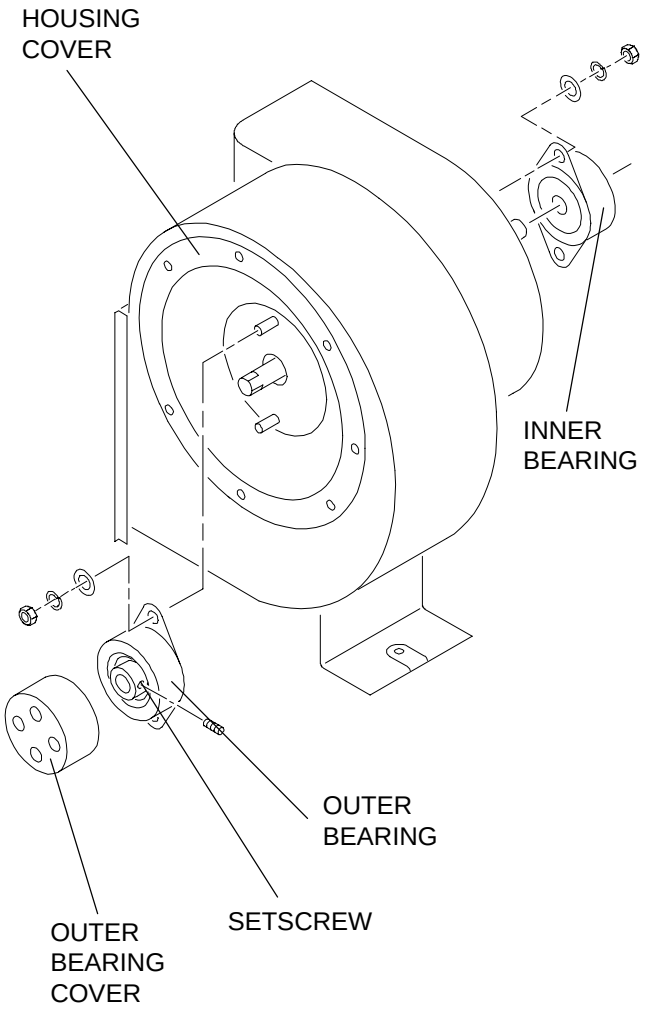
[3] Loosen the 2 SETSCREWS on the OUTER BEARING.

[4] Remove the 2 NUTS, 2 WASHERS, and 2 LOCK WASHERS.

[5] Remove the OUTER BEARING.

[6] Reverse the procedure to install a new OUTER BEARING.

[7] Ensure that the SETSCREWS align with the FLATS on the SHAFT.



H108_0082CCA
H108_0082CA

Figure 27 Removing the Outer Bearing

Removing and Replacing the Blower Impeller Shaft

WARNING

Moving parts.

[1] Disconnect the main power.

[2] Loosen the BLOWER MOTOR and remove the BLOWER BELT.

[3] Loosen the 2 SETSCREWS on the BLOWER DRIVE BELT PULLEY.

[4] Remove the BLOWER DRIVE BELT PULLEY.

[5] Loosen the INNER BEARING SETSCREWS.

[6] Remove the OUTER BEARING COVER and loosen the OUTER BEARING SETSCREWS. See Figure 27 on page 2-21.

[7] Remove the 7 SCREWS and 7 WASHERS and the HOUSING COVER.

[8] Remove the SHAFT and IMPELLER ASSEMBLY.

[9] Loosen the 2 IMPELLER SETSCREWS.

[10] Remove the IMPELLER from the SHAFT.

[11] Install the IMPELLER on the new SHAFT.

[12] Reverse the procedure to reassemble the BLOWER ASSEMBLY.

[13] Ensure that the SETSCREWS align with the FLATS on the SHAFT.

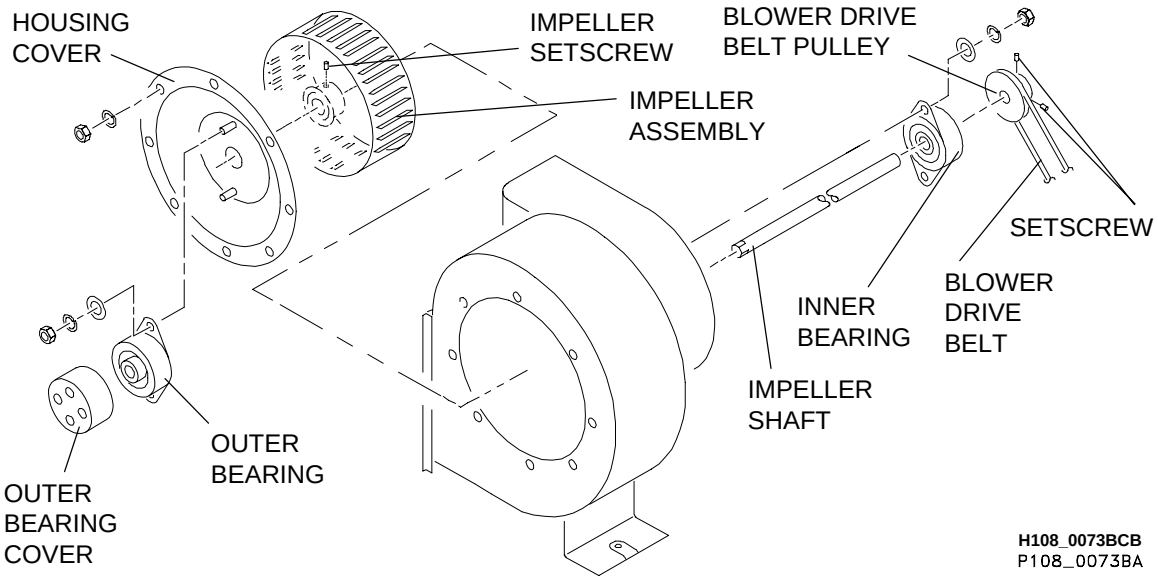


Figure 28 Removing the Blower Impeller Shaft

Removing the Blower Drive Belt

WARNING

Moving parts.

[1] Disconnect the main power.

[2] Loosen the 3 MOTOR MOUNTING BOLTS.

[3] Move the MOTOR to loosen the BLOWER BELT.

[4] Install the new BLOWER BELT, and adjust the alignment and tension of the BLOWER BELT by doing the following procedures.

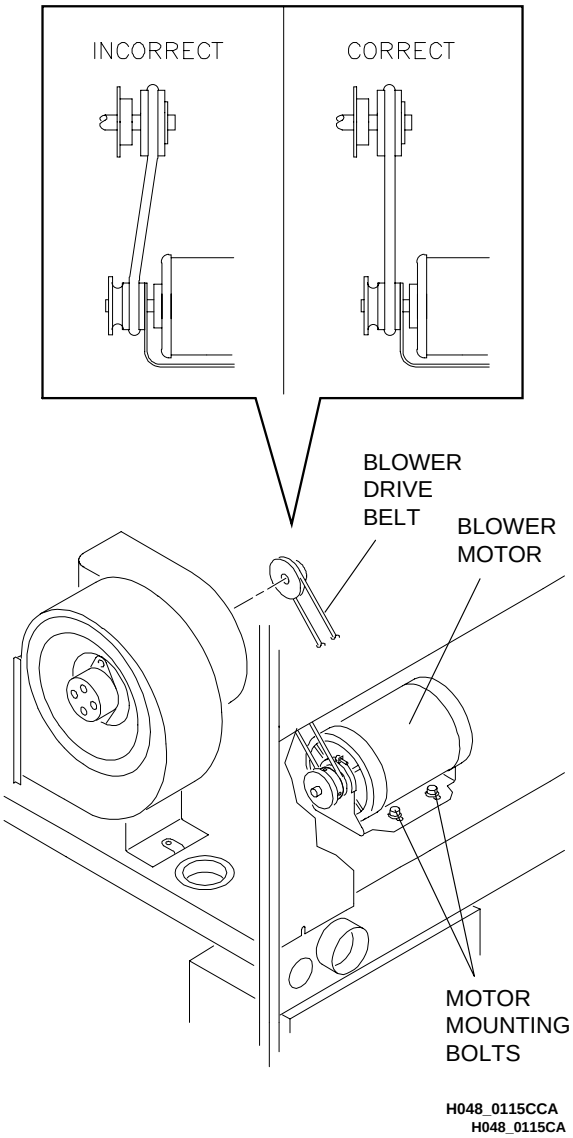


Figure 29 Removing the Blower Drive Belt

Aligning the Blower Drive Belt

WARNING

Moving parts.

[1] Disconnect the main power.

[2] Loosen the 2 BLOWER DRIVE BELT PULLEY SETSCREWS.

[3] Move the PULLEY to provide the correct alignment. See Figure 29 on page 2-23.

[4] Tighten the 2 PULLEY SETSCREWS.

Adjusting the Blower Drive Belt

WARNING

Moving parts.

[1] Disconnect the main power.

[2] Loosen the 3 MOTOR MOUNTING BOLTS. See Figure 29 on page 2-23.

[3] Adjust the position of the BLOWER DRIVE MOTOR for the correct tension of the BLOWER DRIVE BELT.

[4] When you obtain the correct tension of the BLOWER DRIVE BELT, tighten the 3 MOTOR MOUNTING BOLTS.

NOTE

Correct tension is achieved if the BLOWER DRIVE BELT does not make loud noises when you energize the processor.

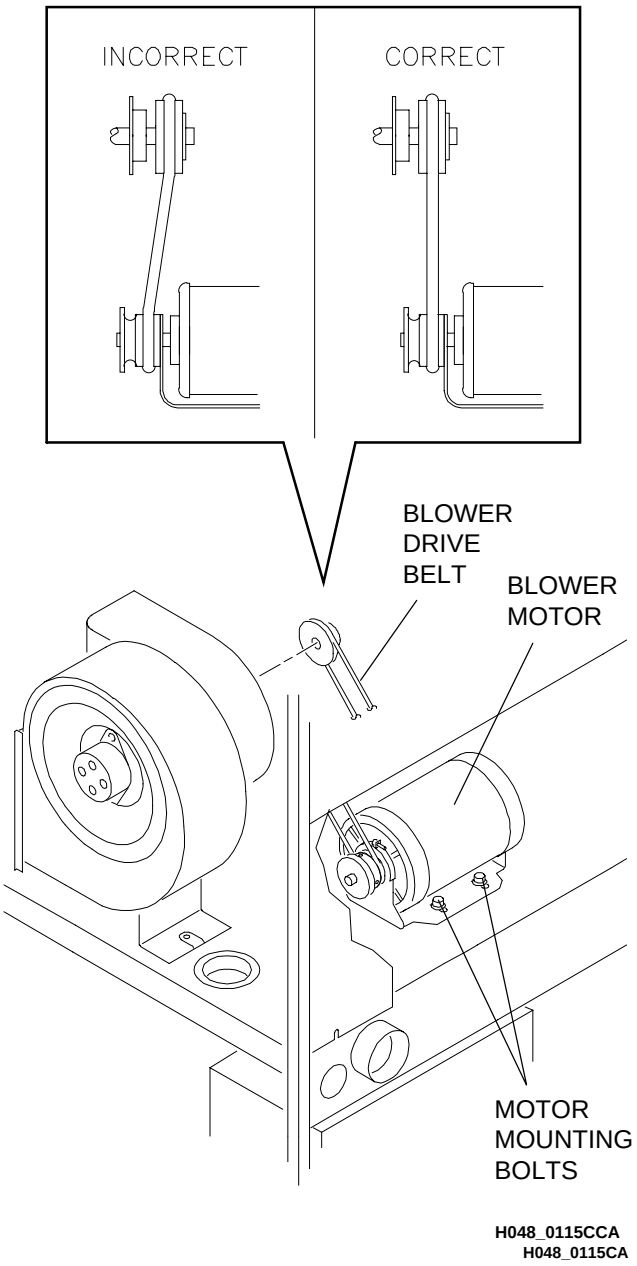


Figure 30 Aligning the Blower Drive Belt

Air Plenum

Removing and Replacing the Air Plenum

[1] Remove:

- THERMISTOR
- EXHAUST HOSE
- AIR PLENUM.

[2] Install:

- AIR PLENUM
- EXHAUST HOSE
- THERMISTOR ASSEMBLY use *SILASTIC SEALANT RTV 102* or equivalent.

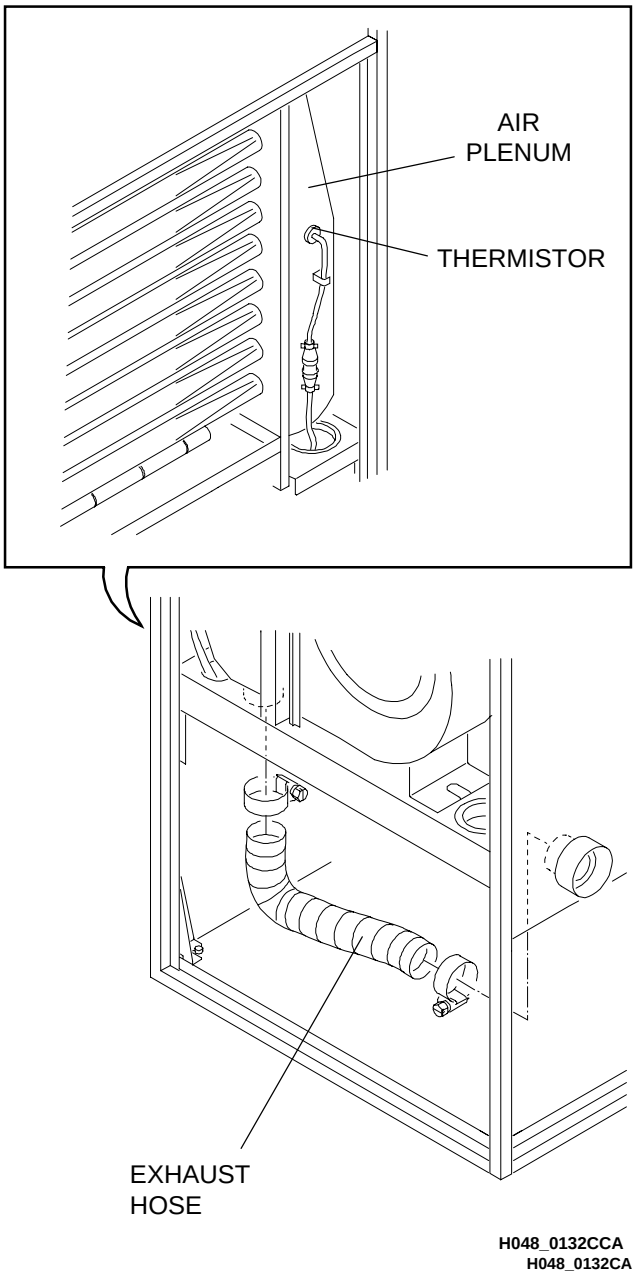


Figure 31 Removing the Thermistor, Exhaust Hose, and Air Plenum

Dryer Temperature Control Knob

Setting the Dryer Temperature Control Knob

[1] Unlock the DRYER TEMPERATURE CONTROL KNOB by rotating the LOCKING RING counterclockwise ↶ approximately ¼ turn.

[2] Rotate the DRYER TEMPERATURE CONTROL KNOB fully counterclockwise ↶.

[3] Loosen the 2 SETSCREWS on the DRYER TEMPERATURE CONTROL KNOB.

[4] Remove the DRYER TEMPERATURE CONTROL KNOB.

[5] Align the POINTER of the KNOB with the OFF position.

[6] Tighten the 2 SETSCREWS on the DRYER TEMPERATURE CONTROL KNOB.

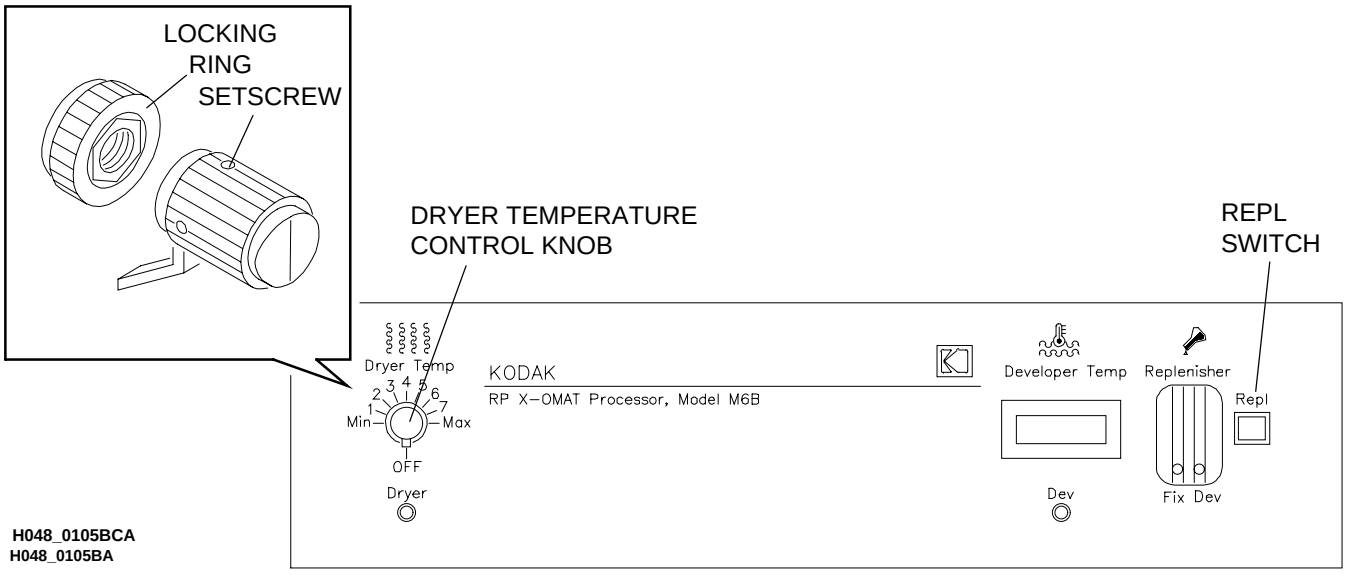


Figure 32 Setting the Dryer Temperature Control Knob

Dryer Transport Pulleys

WARNING

Moving parts.

Removing and Replacing the Dryer Transport Pulley

[1] Disconnect the main power.

[2] Note the position of the PULLEY on the SHAFT and remove the PULLEY.

[3] Wet the new PULLEY with hot water.

[4] Install the new PULLEY onto the SHAFT into the same position as noted in Step 2.

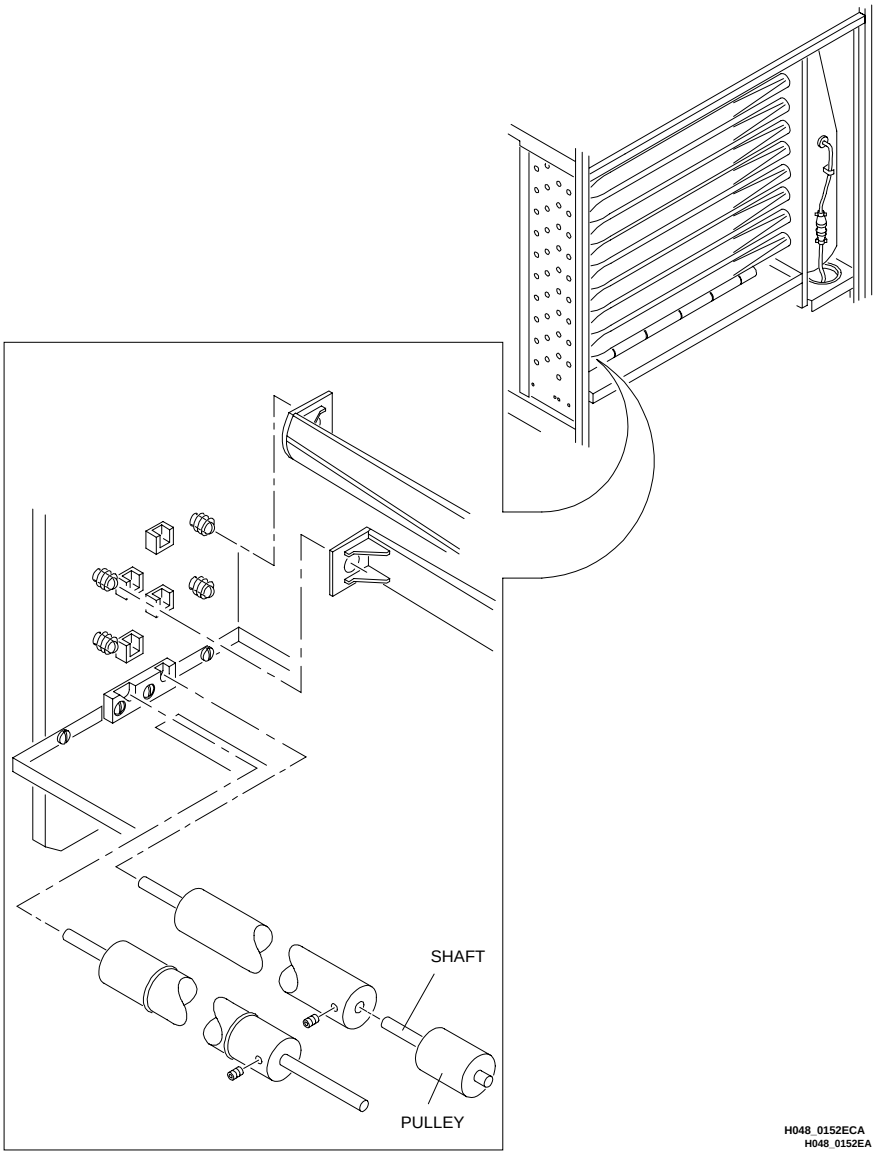


Figure 33 Aligning the Transport Pulley

Drive Pulley

WARNING

Moving parts.

Removing the Drive Pulley

[1] Disconnect the main power.

[2] Loosen the LOCK NUT on the ADJUSTING SCREW. See Figure 35 on page 2-30.

[3] Loosen the LOCKING PIVOT SCREW.

[4] Rotate the ADJUSTING SCREW to remove the tension from the DRIVE BELT.

[5] Slide the BELT off the DRIVE PULLEY and remove the PIN and the DRIVE PULLEY.

[6] Reverse the procedure to install the parts.

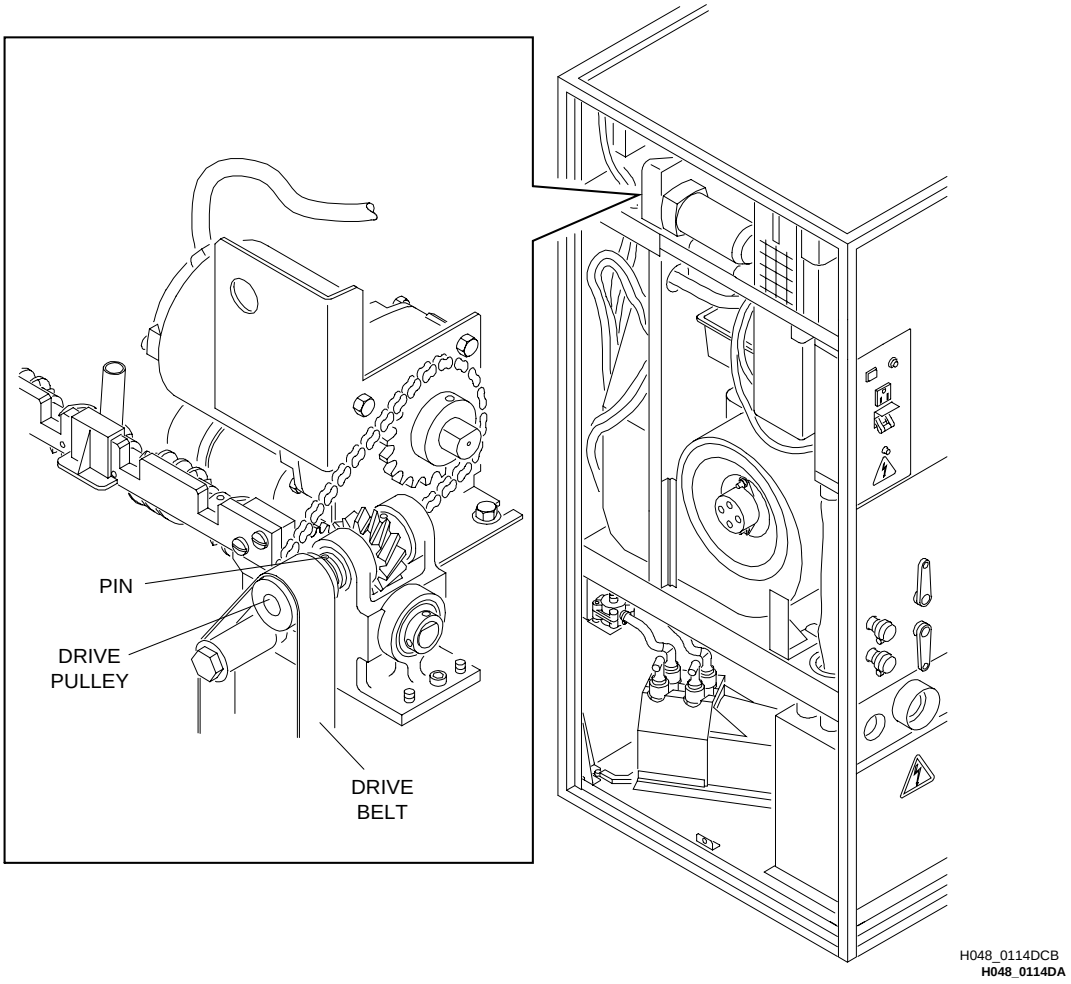


Figure 34 Removing the Drive Pulley

Dryer Drive Belt

WARNING

Moving parts.

Removing the Dryer Drive Belt

[1] Disconnect the main power.

[2] Loosen the LOCK NUT on the ADJUSTING SCREW.

[3] Loosen the LOCKING PIVOT SCREW.

[4] Rotate the ADJUSTING SCREW to remove the tension from the DRYER DRIVE BELT.

[5] Remove the AIR TUBES.

[6] Remove the ROLLER ASSEMBLIES.

[7] Remove the DRYER DRIVE BELT.

[8] Reverse the procedure to install the parts.

[9] Check the DRYER DRIVE BELT adjustment by doing the adjustment procedure on page 2-31.

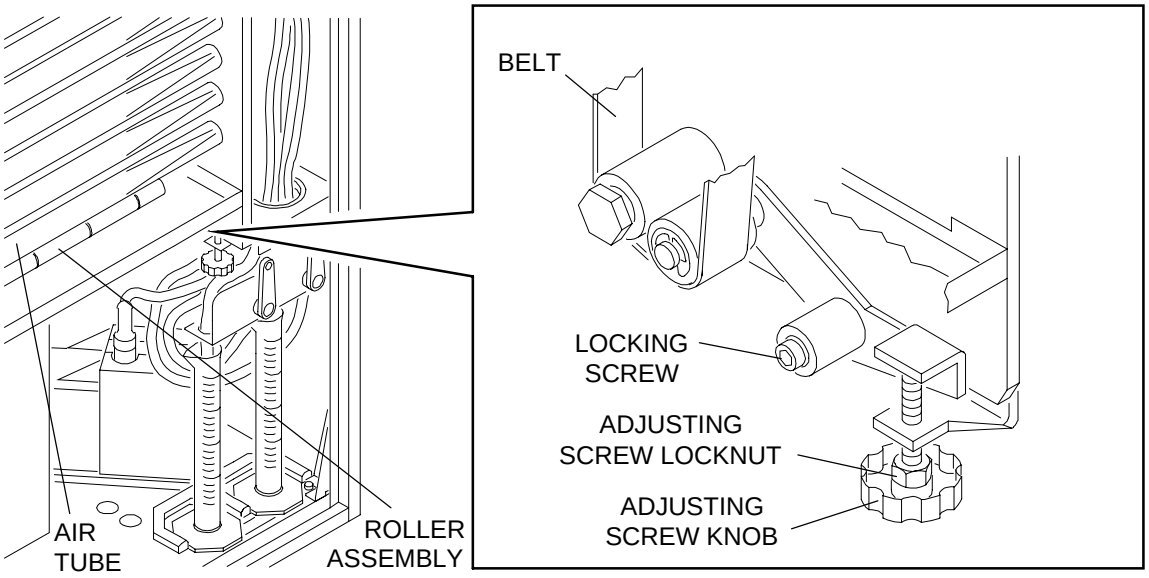


Figure 35 Removing the Dryer Drive Belt

Adjusting the Tension of the Dryer Drive Belt

WARNING

Moving parts.

[1] Check that:

- the processor is operating
- the DRYER TEMPERATURE CONTROL KNOB is in the full counterclockwise ↶ position
- the DRYER is cool.

[2] Adjust the tension of the DRYER DRIVE BELT by doing the following:

- Disconnect the main power.
- Loosen the LOCKING PIVOT SCREW.
- Loosen the ADJUSTING SCREW LOCK NUT.
- Rotate the ADJUSTING SCREW to tighten the DRYER DRIVE BELT until the ROLLERS just begin to rotate.
- Rotate the ADJUSTING SCREW an additional 1 rotation.
- Tighten the LOCKING PIVOT SCREW.
- Tighten the ADJUSTING SCREW LOCK NUT.

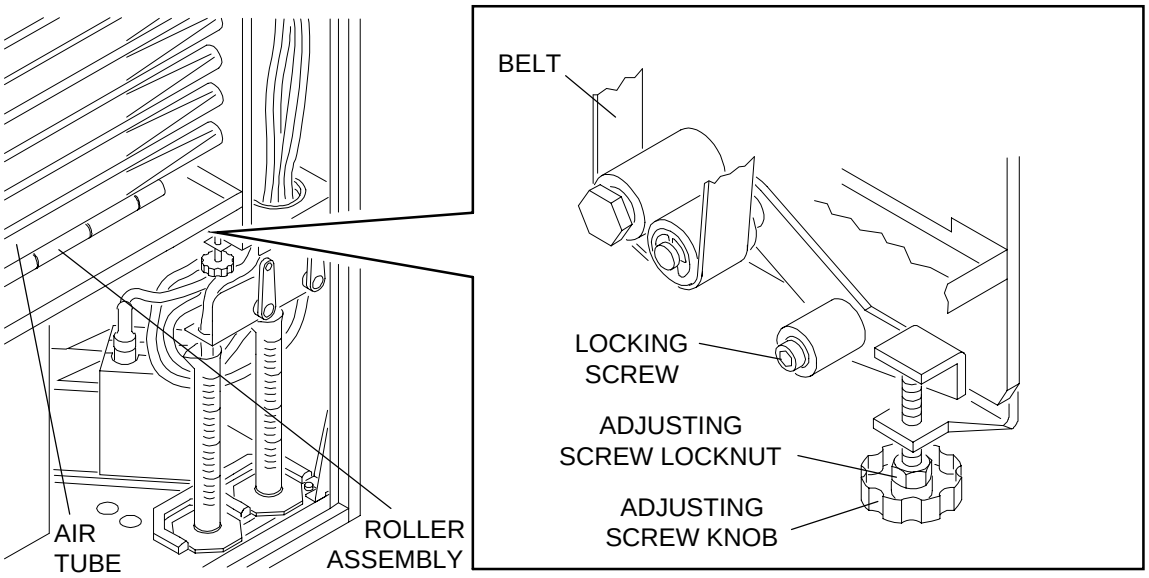


Figure 36 Adjusting the Tension of the Dryer Drive Belt

Roller Support

WARNING

Moving parts.

Removing a Roller Support

[1] Disconnect the main power.

[2] Remove the necessary AIR TUBES and ROLLER ASSEMBLIES.

[3] Rotate the SUPPORT as you pull it from the SIDE PLATE.

[4] To remove a broken SUPPORT, use a PUNCH to drive it out.

[5] DRIVE-SIDE SUPPORTS: Install the SUPPORTS with the openings toward the BELT and facing each other.

[6] NON-DRIVE SIDE SUPPORTS: Install the SUPPORT with the opening toward the top of the processor.

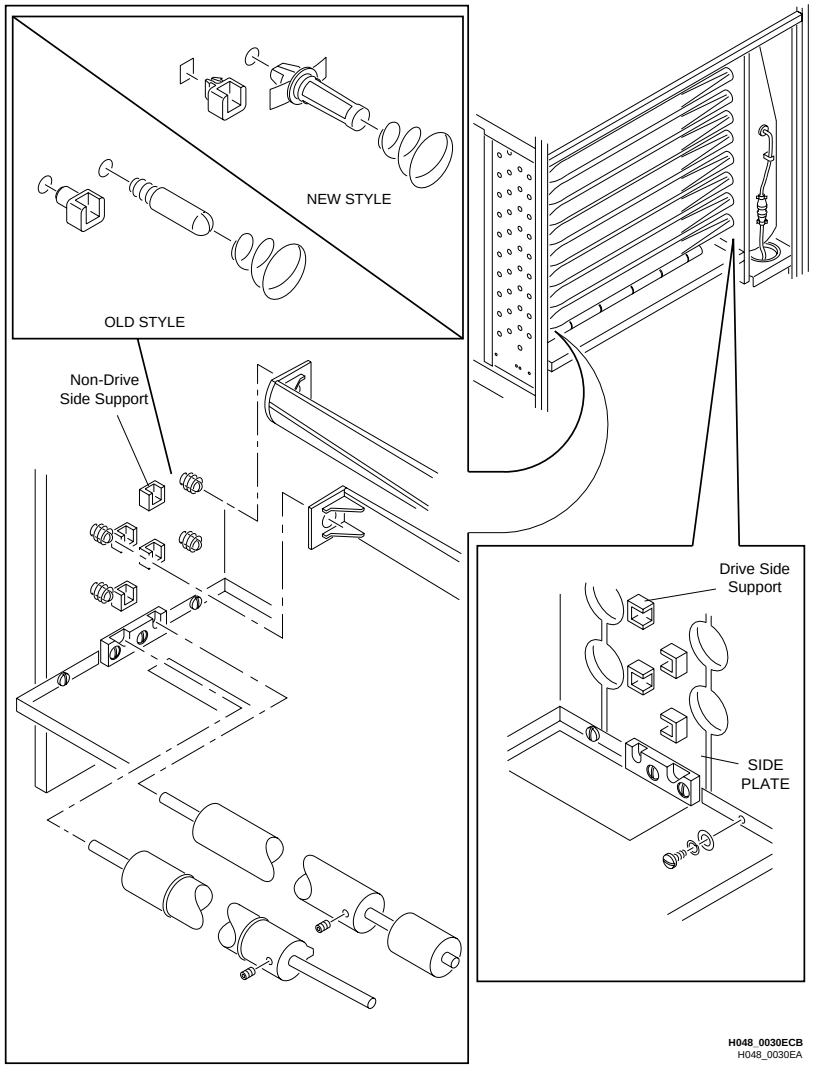


Figure 37 Removing a Roller Support

Heater

WARNING

Dangerous voltage.

Removing and Replacing the Heater

[1] Disconnect the main power.

[2] See Figure 38 on page 2-34. Remove:

- AIR TUBES
- ROLLERS
- GRILL ASSEMBLY
- HEATER ASSEMBLY.

[3] Disconnect the WIRES.

[4] Replace the defective HEATER.

[5] Reverse the procedure to install the HEATER ASSEMBLY.

NOTE

When first turned on, the HEATER will give off an odor. This is normal.

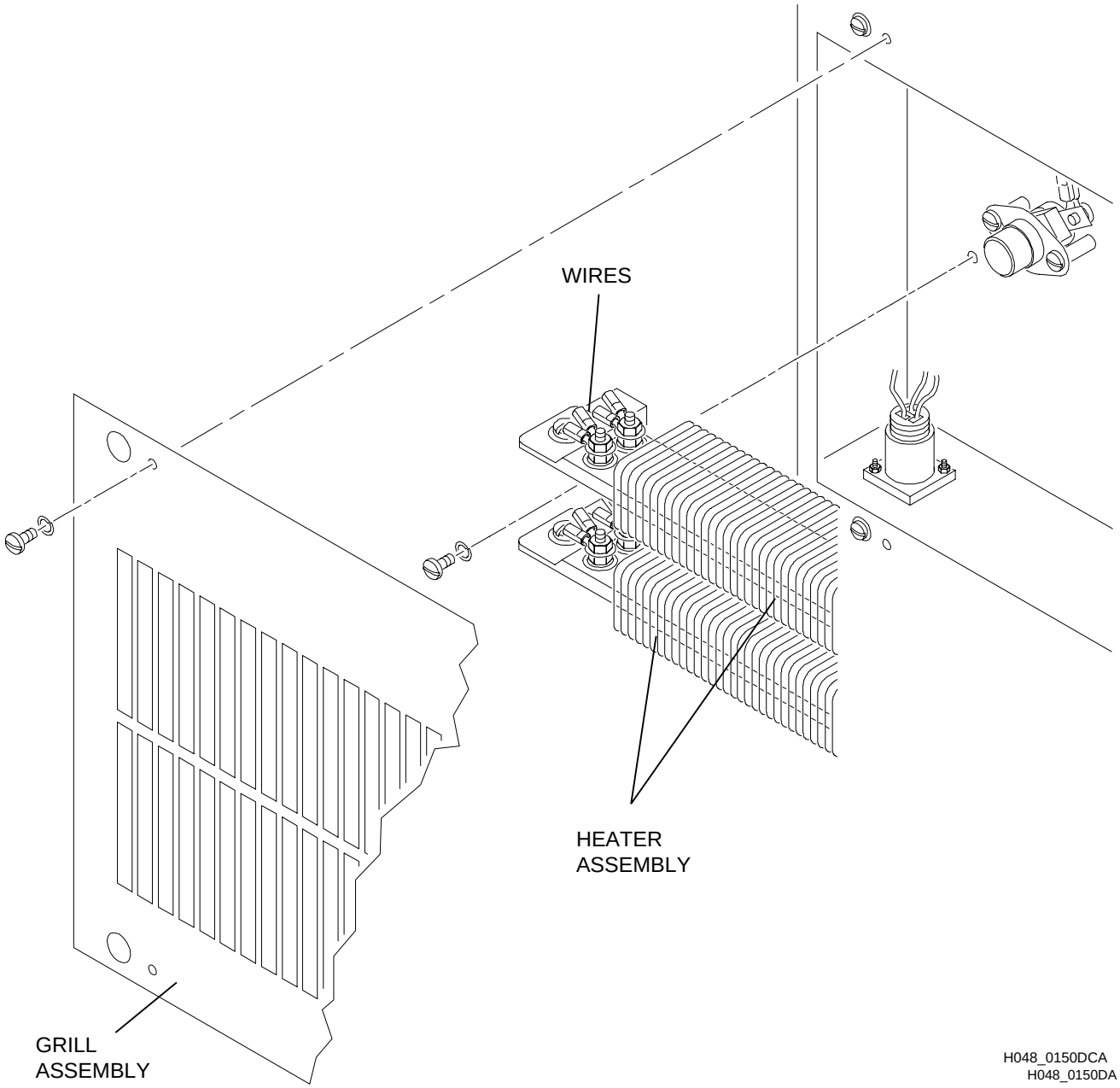


Figure 38 Removing the Heater

Recirculation Pump

WARNING

Dangerous voltage.

Removing and Replacing the Recirculation Pump

[1] Disconnect the main power.

[2] Remove the SPLASH COVER over the PUMP. See Figure 39 on page 2-36.

[3] Disconnect the CONNECTOR P11 from the ELECTRICAL BOX.

[4] Use PINCH CLAMPS on the TUBING to prevent solution from leaking.

[5] Disconnect the TUBING from the RECIRCULATION PUMP.

[6] Remove the MOUNTING BOLTS and the RECIRCULATION PUMP.

[7] Reverse the above procedure to install the RECIRCULATION PUMP.

Installing an O-Ring

[1] Use PINCH CLAMPS on the TUBING to prevent solution from LEAKING.

[2] Remove the WING NUTS and OUTER PUMP HOUSING. See Figure 39 on page 2-36.

[3] Install a new O-RING SEAL.

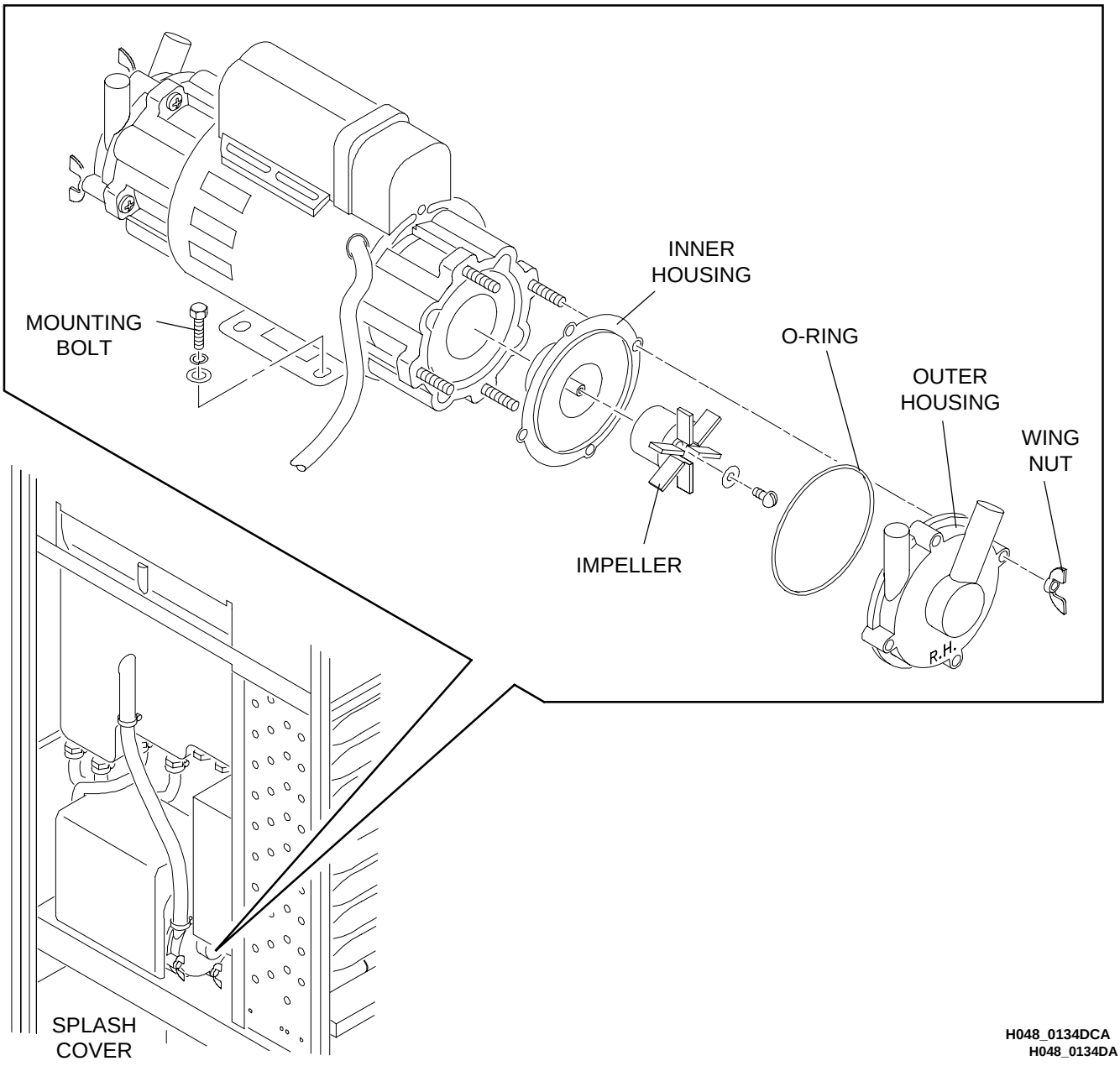


Figure 39 Removing the Recirculation Pump

Replenishment Check Tubes and Valves

Setting the Replenishment Rate

[1] Remove the RECEIVING-END ACCESS PANEL from the processor.

[2] Place a GRADUATED CYLINDER under the REPLENISHMENT CHECK TUBE.

[3] Turn the REPLENISHMENT VALVE to the ‘‘ON’’ position.

[4] Press the REPLENISHMENT SWITCH for 13 seconds.

NOTE

This is the length of time that a sheet of film 14 inches long, causes the REPLENISHMENT PUMP to operate.

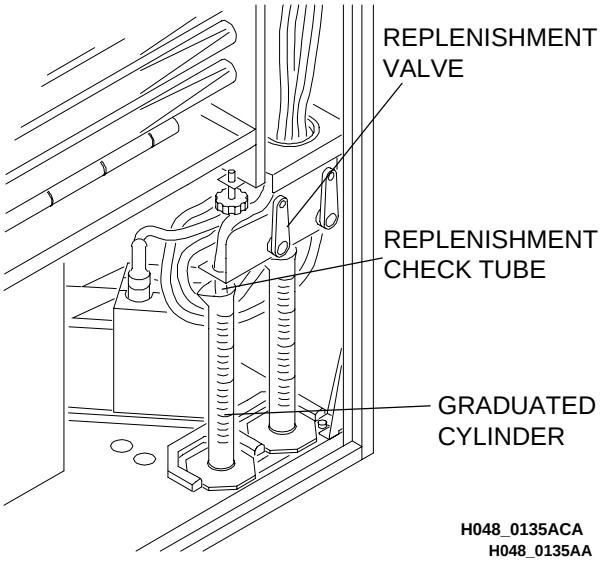


Figure 40 Setting the Replenishment Rate

Figure 41 Pressing the Replenishment Switch

[5] Compare the average of 2 or more measurements with the film and chemical specifications of the manufacturer.

[6] If necessary, adjust the rate by doing the following steps:

CAUTION

Do **not** adjust the SETSCREW or the LOCK NUT.

a. Remove the PUMP COVER by loosening the 2 SCREWS on the top of the PUMP and lifting the PUMP COVER off.

b. Rotate the CRANK by hand to access the ADJUSTING SCREW.

c. Rotate the appropriate DEVELOPER or FIXER ADJUSTING SCREW to obtain the correct replenishment rate.

[7] Install the PUMP COVER onto the PUMP.

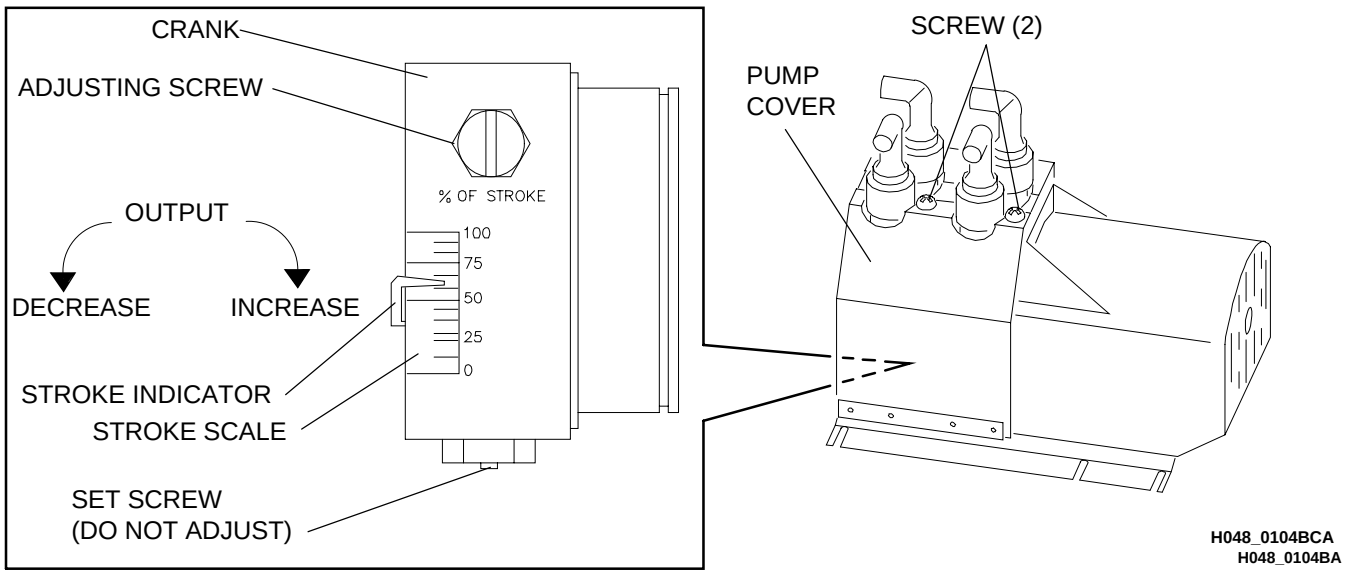


Figure 42 Adjusting the Replenishment Rate

NOTE

Refer to the manufacturer's specifications, for the film and chemicals being used. For operating temperatures and replenishment rates, refer to the KODAK RP X-OMAT Processor Service Bulletin No. 30 in this manual.

Replenishment Pump

WARNING

Dangerous voltage.

Removing the Replenishment Pump

[1] Disconnect the main power.

[2] Use PINCH CLAMPS on the TUBING to prevent the solution from draining.

[3] Disconnect PLUG P19 at J19.

[4] Remove the MOUNTING SCREWS and the MOTOR.

[5] Disassemble the PUMP as shown in Figure 43. Replace parts as necessary.

[6] Reverse the procedure to install the REPLENISHMENT PUMP.

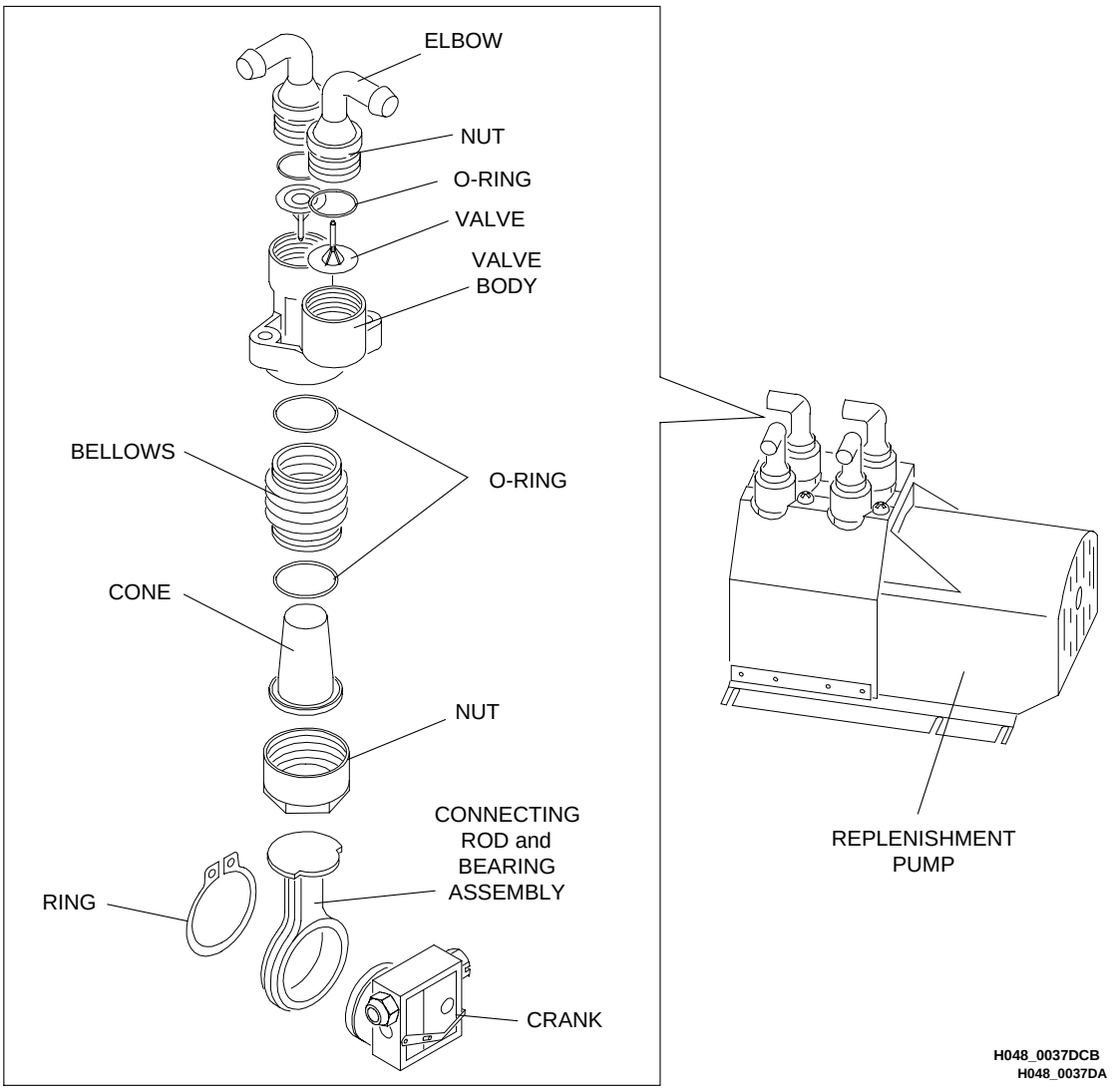


Figure 43 Removing the Replenishment Pump

Developer Temperature Control System

WARNING

Dangerous voltage.

Removing and Replacing the Developer Heater

[1] Disconnect the main power.

[2] Drain the DEVELOPER TANK or use PINCH CLAMPS on the 2 TUBES to the THERMOWELL.

[3] Disconnect the CONNECTOR P12 at the ELECTRICAL BOX.

CAUTION

A small amount of liquid may spill.

[4] Remove the DEVELOPER HEATER from the THERMOWELL.

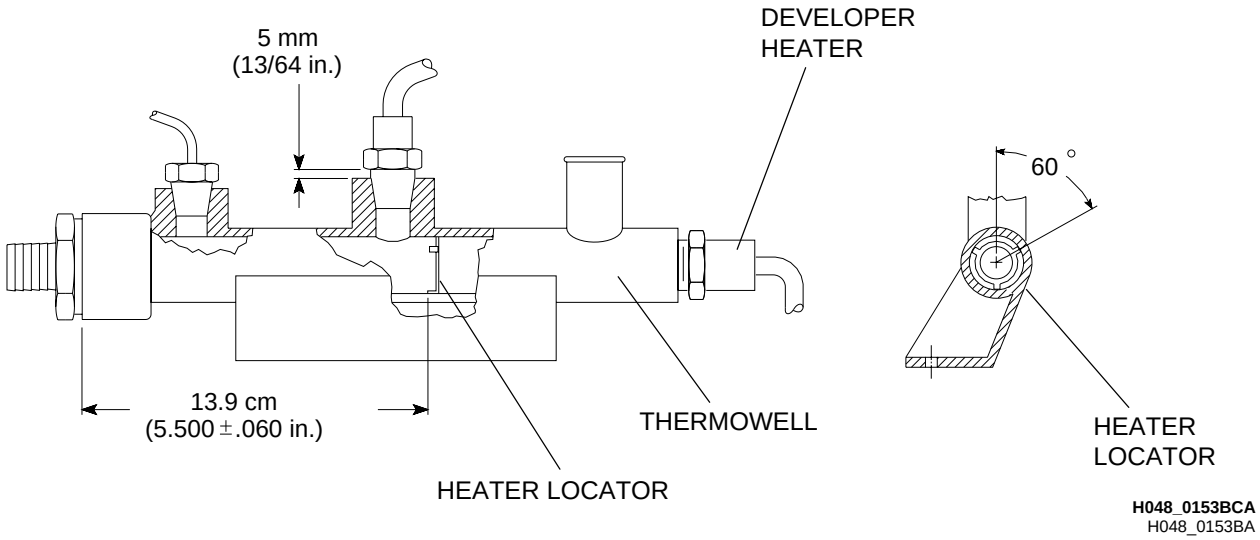


Figure 44 Removing the Developer Heater from the Thermowell

[5] Check that the HEATER LOCATOR is in the correct location.

CAUTION

Over-tightening may cause damage to the THERMOWELL.

[6] To install the new HEATER, use *SILASTIC SEALANT RTV 102*, or equivalent on the THREADS. Hand tighten, plus one-half turn.

Removing and Replacing the Developer Over-Temperature Thermostat

[1] Drain the DEVELOPER TANK or use PINCH CLAMPS on the 2 TUBES to the THERMOWELL.

[2] Disconnect the DEVELOPER OVER-TEMPERATURE THERMOSTAT at CONNECTOR P16 at the ELECTRICAL BOX.

CAUTION

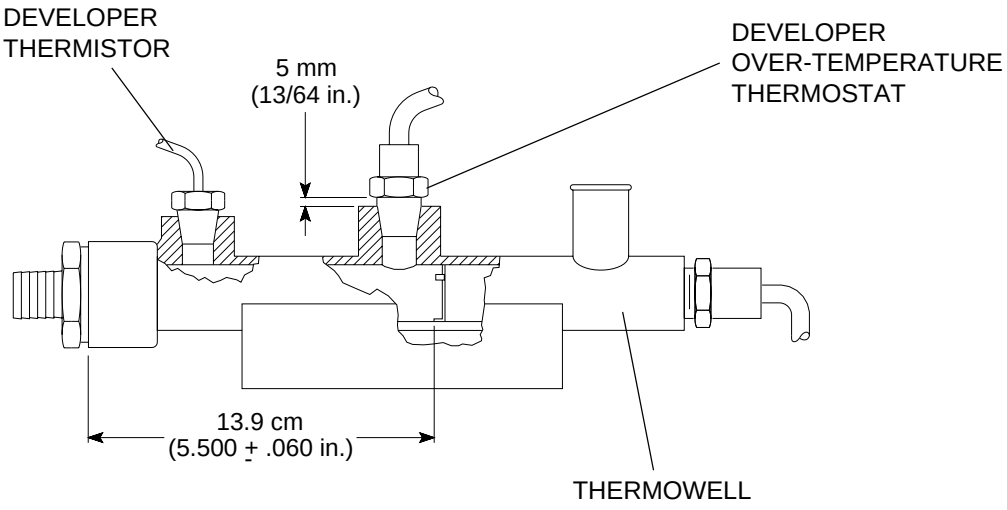
A small amount of liquid may spill.

[3] Remove the DEVELOPER OVER-TEMPERATURE THERMOSTAT from the THERMOWELL. See the figure.

[4] Install a new DEVELOPER OVER-TEMPERATURE THERMOSTAT. Use *SILASTIC SEALANT RTV 102*, or equivalent on the THREADS.

CAUTION

For proper operation of the DEVELOPER OVER-TEMPERATURE THERMOSTAT, allow 4.06 mm (5/32 inch) clearance between the end of the THERMOWELL BODY and the NUT on the DEVELOPER OVER-TEMPERATURE THERMOSTAT when replacing or tightening the THERMOSTAT.



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H048_0162BA

Figure 45 Removing the Developer Over-Temperature Thermostat from the Thermowell

Removing the Developer Thermistor

[1] Drain the DEVELOPER TANK or use PINCH CLAMPS on the 2 TUBES to the THERMOWELL.

[2] Disconnect the DEVELOPER THERMISTOR at CONNECTOR P17 at the ELECTRICAL BOX.

CAUTION

A small amount of liquid may spill.

[3] Remove the DEVELOPER THERMISTOR from the THERMOWELL. See the figure.

[4] Install a new DEVELOPER THERMISTOR. Use *SILASTIC SEALANT RTV 102*, or equivalent on the THREADS.

CAUTION

To prevent cracking of the THERMOWELL body, assemble the DEVELOPER THERMISTOR hand-tight plus one-half turn. See the figure.

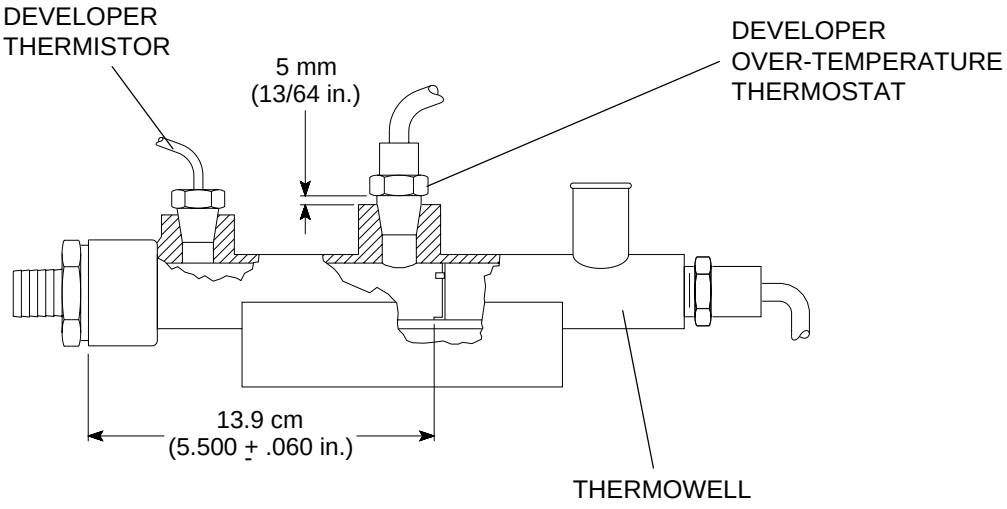

Figure 46 Removing the Developer Thermistor from the Thermowell

Developer Filter

WARNING

The DEVELOPER FILTER CANISTER is pressurized when the processor is energized.

Removing and Replacing the Developer Filter

[1] Deenergize the processor before proceeding.

[2] Turn the CAP counterclockwise ↶ until it stops.

[3] Rotate the TABS counterclockwise ↶ to disengage the LOCKS.

[4] Lift off the CAP.

[5] Remove and discard the old FILTER.

[6] Install the new FILTER.

[7] Wet the O-RING with water.

[8] Install the CAP by rotating the TABS to engage the LOCKS. Then tighten the CAP.

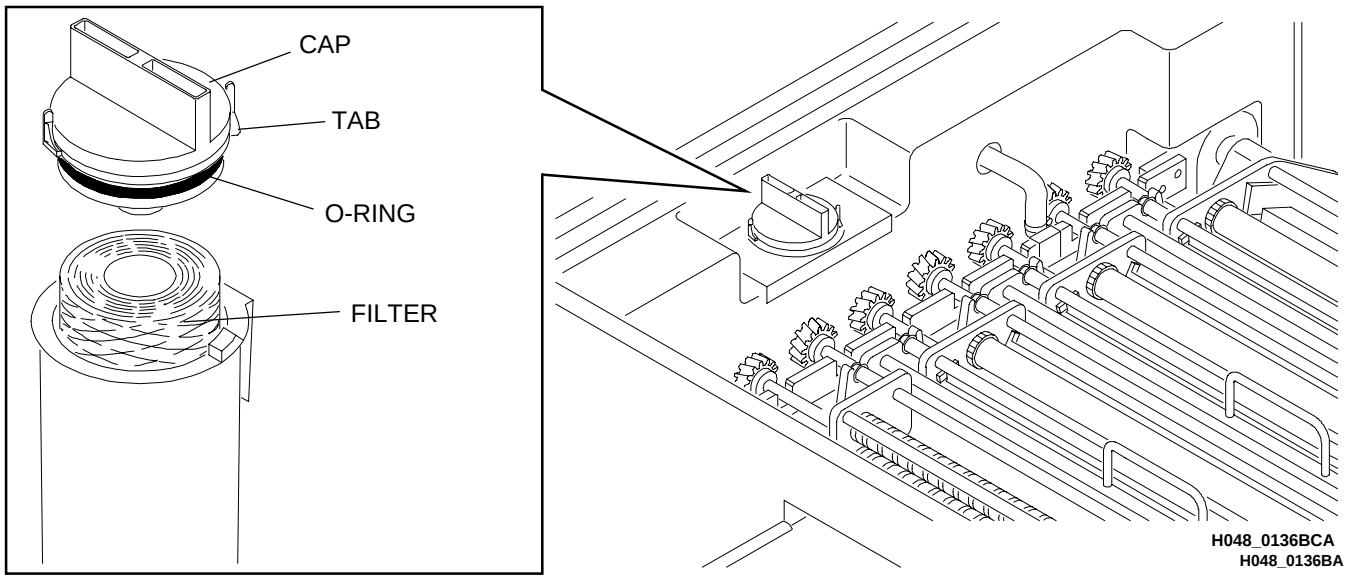

Figure 47 Replacing the Developer Filter

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Developer Temperature Control

Adjusting the Developer Temperature

[1] Remove the RECEIVING BIN ACCESS PANEL to gain access to the ELECTRICAL BOX.

CAUTION

Possible damage from electrostatic discharge. Use an ESD wrist strap.

See Figure 48 on page 2-47.

[2] Do the following to check for 9 ±0.1 V dc between TP5 and TP10:

- If necessary, adjust POTENTIOMETER R63 to obtain 9 V dc.
- **Turn clockwise ↷ to increase the voltage, or counterclockwise ↶ to decrease the voltage.**

Do the following adjustment by measuring the voltage between TP-7 and TP-10.

[3] **Adjust DEV TEMP potentiometer R82 clockwise ↷ to increase, or counterclockwise ↶ to decrease the voltage.** Refer to the Table below for approximate values.

Table 5 Approximate Values for Pre-setting the Developer Temperature

Desired Temperature		Measure Voltage between TP7 and TP10
°C	°F	
34.0	93.2	3.10 V dc
34.5	94.1	3.06 V dc
35.0	95.0	3.03 V dc
35.5	95.9	3.00 V dc
36.0	96.8	2.96 V dc

[4] Install the RECEIVING BIN ACCESS PANEL.

[5] Energize the processor.

[6] Allow 20 - 30 minutes for the processor to stabilize at the set-point temperature. The DEVELOPER INDICATOR will flash as the processor approaches operating temperature.

IMPORTANT

All PANELS and COVERS must be installed on the processor and the developer temperature allowed to stabilize between **each** adjustment.

[7] Using a THERMOMETER of **known accuracy**, measure the temperature of the DEVELOPER, 150 mm (6 in.) below the surface.

NOTE

Measure the temperature in the same place each time you do this procedure.

[8] If the temperature is not correct, do the following:

- Remove the RECEIVING BIN ACCESS PANEL.
- Open the ELECTRICAL BOX.
- Adjust DEVELOPER TEMPERATURE POTENTIOMETER R82 clockwise ↷ to increase, or counterclockwise ↶ to decrease the temperature.

[9] If the measured temperature in the TANK does not match the reading on the processor DEVELOPER TEMPERATURE METER, do the ‘‘Calibrating the Meter-To-Tank Temperature’’ procedure on page 2-50.

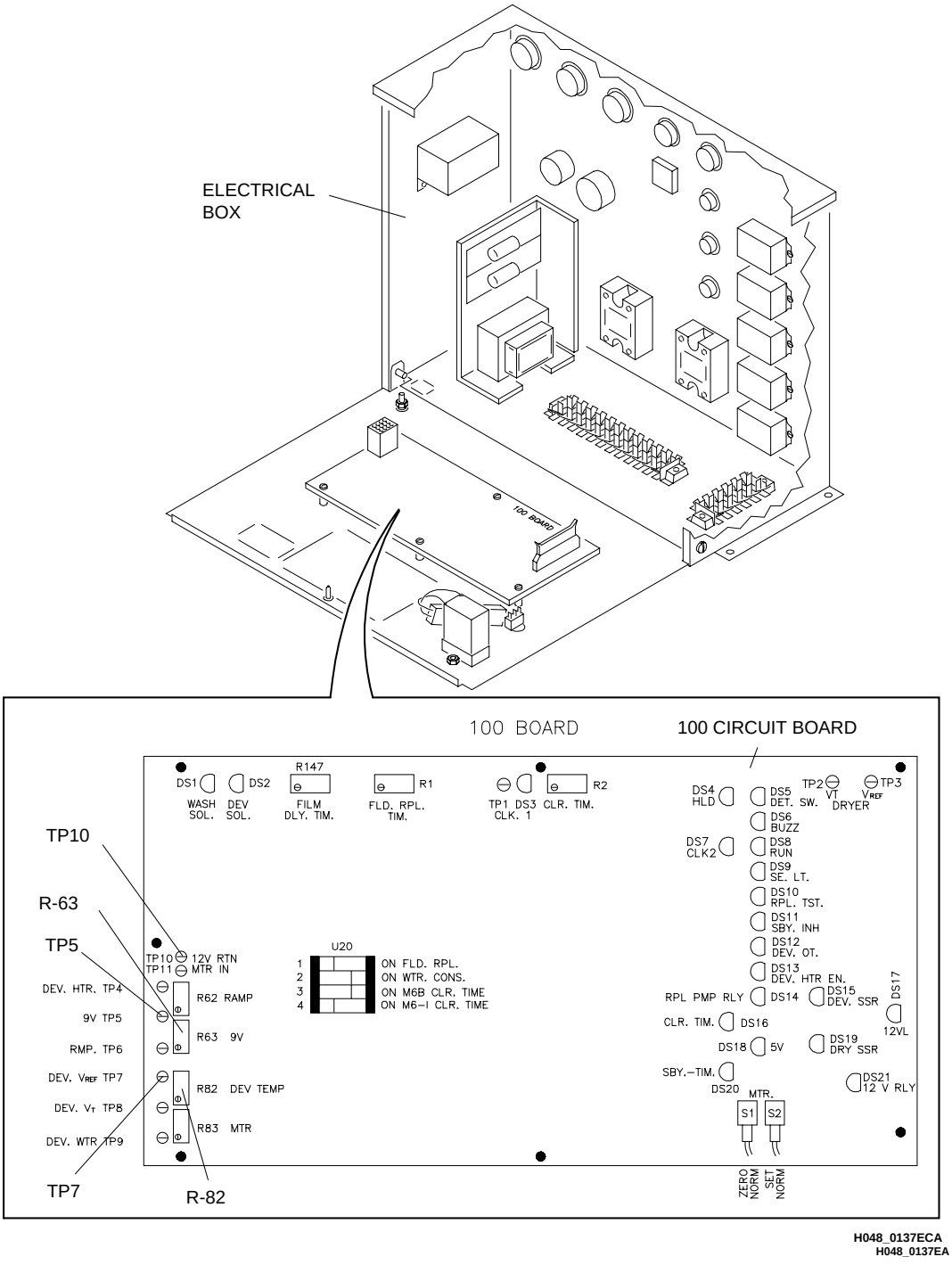

Figure 48 Adjusting the Developer Temperature Potentiometer, R82

Developer Temperature Meter

Zero Adjustment of the Developer Temperature Meter

CAUTION

Possible damage from electrostatic discharge. Use an ESD wrist strap.

See Figures 49 and 50.

[1] On the 100 CIRCUIT BOARD, do the following:

- Move the MTR SWITCH S1 to the ZERO position

[2] Check that the DEVELOPER TEMPERATURE METER reads 00.0. If it does not:

- Lift the COVER from the DEVELOPER TEMPERATURE METER on the FRONT PANEL of the processor.
- Adjust R1 on the DEVELOPER TEMPERATURE METER until the DEVELOPER TEMPERATURE METER reads 00.0.

NOTE

Rotate R1 clockwise ↷ to increase the reading, and counterclockwise ↶ to decrease the reading on the DEVELOPER TEMPERATURE METER.

[3] Install the COVER onto the DEVELOPER TEMPERATURE METER on the FRONT PANEL of the processor.

[4] On the 100 CIRCUIT BOARD, set MTR SWITCH S1 to NORM.

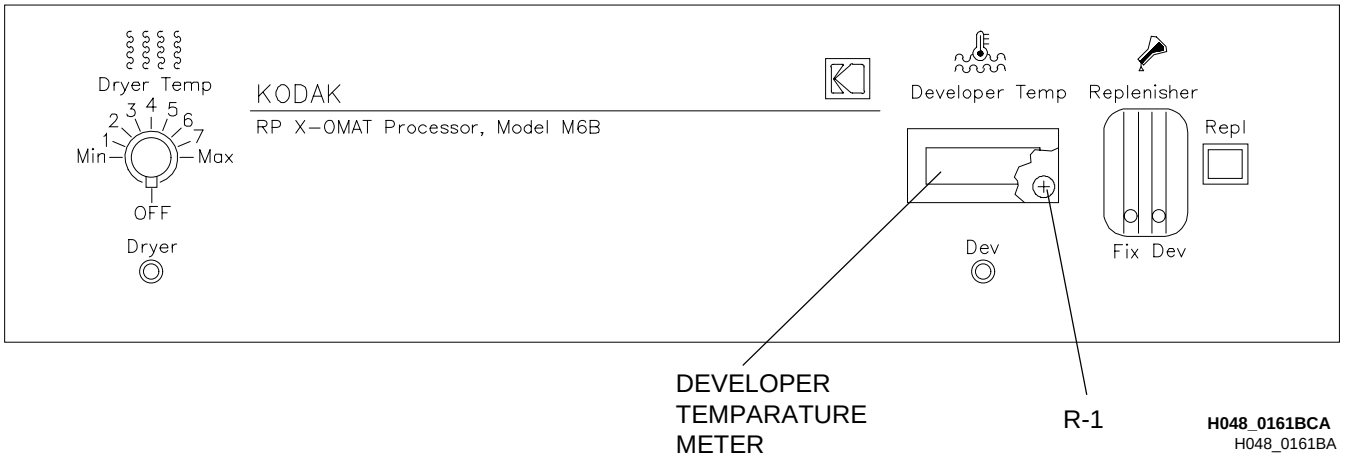

Figure 49 Rotating Potentiometer R-1

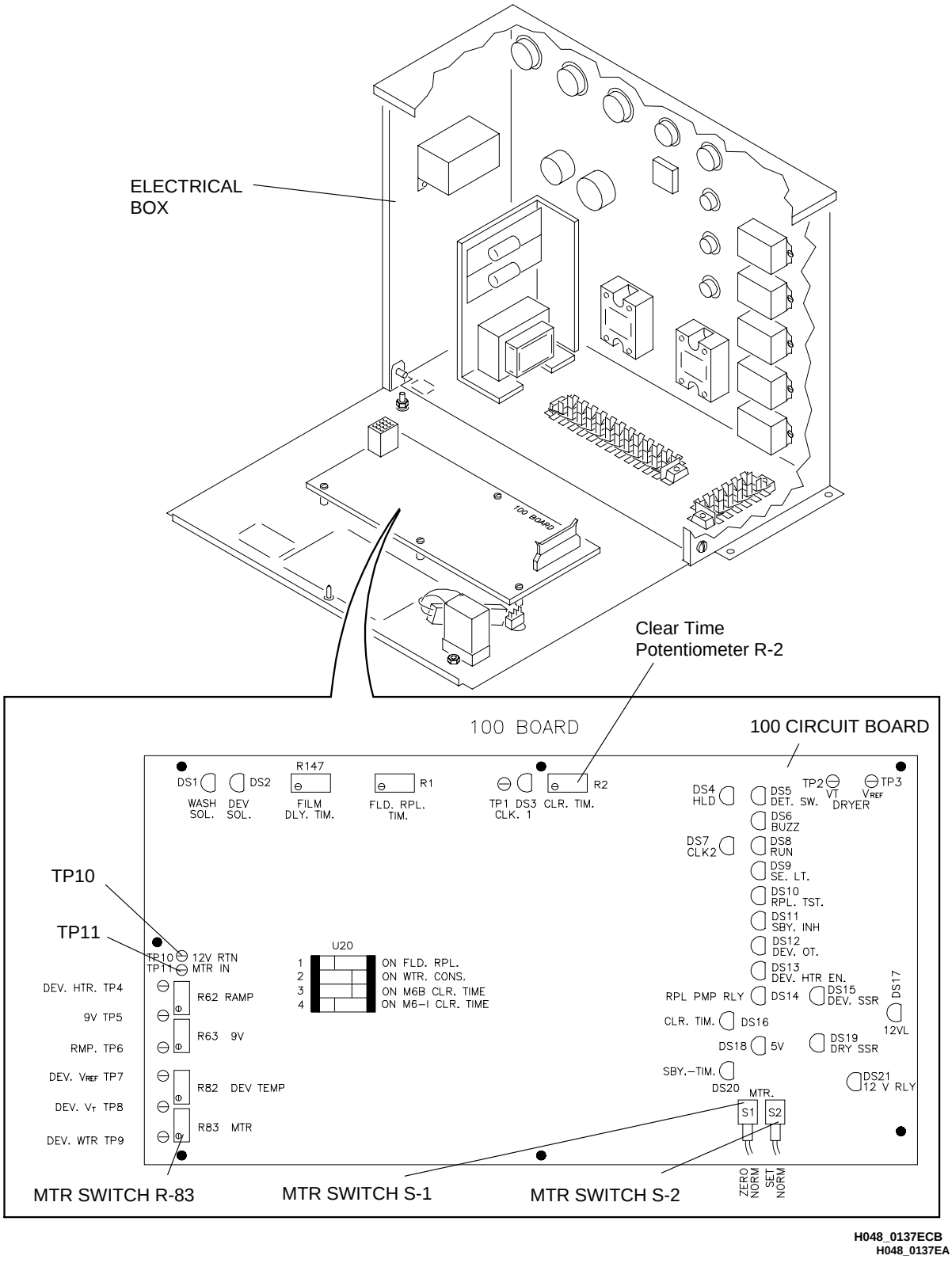

Figure 50 Setting Switches S1 and S2, Rotating Potentiometer R-83 and R-2

Calibrating the Meter-To-Tank Temperature

CAUTION

Possible damage from electrostatic discharge. Use an ESD wrist strap.

[1] Check that the DEVELOPER TEMPERATURE METER zero adjustment is correct. See the previous procedure.

[2] Turn the DRYER TEMPERATURE CONTROL KNOB fully counterclockwise ↶.

[3] Allow 20 - 30 minutes for the processor to stabilize at the set-point temperature. reach its normal operating temperature. The DEVELOPER INDICATOR will flash as the processor approaches operating temperature.

IMPORTANT

All PANELS and COVERS must be installed on the processor and the developer temperature allowed to stabilize between **each** adjustment.

[4] Using a THERMOMETER of **known accuracy**, measure the temperature of the DEVELOPER, 150 mm (6 in.) below the surface.

[5] Move MTR SWITCH S2 to SET. See Figure 50 on page 2-49.

[6] Rotate MTR POTENTIOMETER R83 until the reading on the DEVELOPER TEMPERATURE METER matches the reading on the THERMOMETER in the DEVELOPER TANK.

[7] Remove the THERMOMETER from the DEVELOPER TANK.

[8] Move MTR SWITCH S2 to the NORM position. See Figure 50 on page 2-49.

[9] Turn the DRYER TEMPERATURE CONTROL KNOB to the desired position.

Film Clear Time Circuit

Film Clear Time is the minimum operation time before the processor operates in STANDBY mode.

IMPORTANT

The FILM CLEAR TIME SWITCHES are factory set as follows:

- U20-3 is set to the right ‘‘ON’’ position.
- U20-4 is set to the left ‘‘OFF’’ position.

Do not change the position of these switches.

CAUTION

Possible discharge from electrostatic discharge. Use an ESD wrist strap.

Setting the Film Clear Time

[1] Rotate the DRYER TEMPERATURE CONTROL KNOB fully counterclockwise ↶.

[2] Press and release the RUN SWITCH or the REPLENISHMENT SWITCH.

NOTE

The processor is adjusted at the factory to operate in the RUN mode for approximately 2.0 minutes. The total film clear time adjustment range is 1 minute 12 seconds to 3 minutes 30 seconds. The processor will not go into standby until the clear time elapses.

[3] Adjust POTENTIOMETER R2 to provide the desired FILM CLEAR TIME. Rotating the POTENTIOMETER clockwise ↷ lengthens the FILM CLEAR TIME. Rotating the POTENTIOMETER counterclockwise ↶ shortens the FILM CLEAR TIME. See Figure 50 on page 2-49.

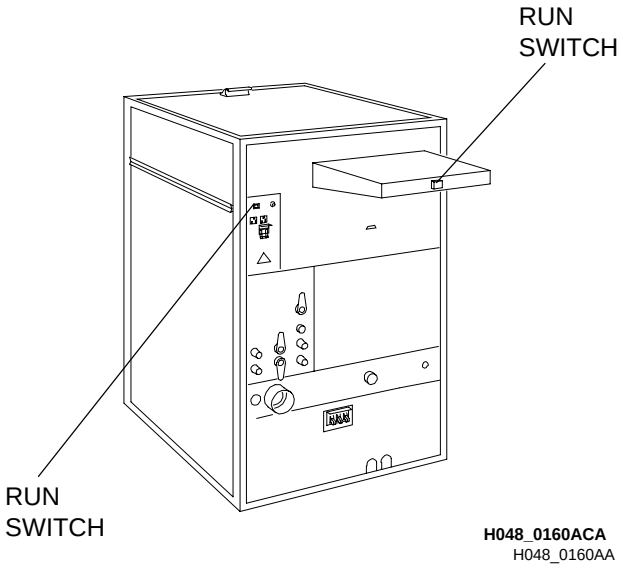

Figure 51 Pressing the Run Switch

Figure 52 Rotating the Dryer Temperature Knob

Flooded Replenishment

This feature is designed for low film usage. It allows for replenishment of the developer and fixer solutions each time the processor comes out of the STANDBY mode.

CAUTION

Possible damage to electronics from electrostatic discharge. Use an ESD wrist strap.

Adjusting the Settings of the Replenishment Switches

NOTE

- Flooded Replenishment (U20 SWITCH 1) is set at the factory to ''OFF''.
- Regardless of the switch position, when the processor is in the STANDBY mode, wash water will not flow to the WASH TANK unless the processor requires developer cooling.
- Water Conservation (U20 SWITCH 2) is set at the factory to ''ON''.

[1] Set U20 SWITCH 1 to ''ON'' for flooded replenishment. See Figure 53 on page 2-53.

[2] The 100 Circuit Board is set at the factory for 9.6 seconds of replenishment time. The range of adjustment is 4.4 - 17.5 seconds.

[3] Rotate R1 Potentiometer clockwise ↷ to increase and counterclockwise ↶ to decrease the replenishment time. See Figure 53 on page 2-53.

Water Conservation

Understanding Water Conservation

- When the processor cycles into the STANDBY mode, and U20-SWITCH 2 is in the ''ON'' position, no water will flow to the WASH TANK. As film is processed, water will flow to the WASH TANK.
- When the processor is not in use, it will continue to cycle in and out of the STANDBY mode **without** water flowing to the WASH TANK.
- When U20-SWITCH 2 is set to the ''OFF'' position (non-water conservation), water will flow to the WASH TANK whenever the processor comes out of the STANDBY mode.

Film Feed Signal

Adjusting the Film Feed Signal

The 100 CIRCUIT BOARD is set at the factory for 3 seconds. The range of adjustment is 3 - 13 seconds.

If adjustment of the FILM FEED SIGNAL is necessary, rotate R147 clockwise ↷ to increase, and counterclockwise ↶ to decrease. See Figure 53 on page 2-53.

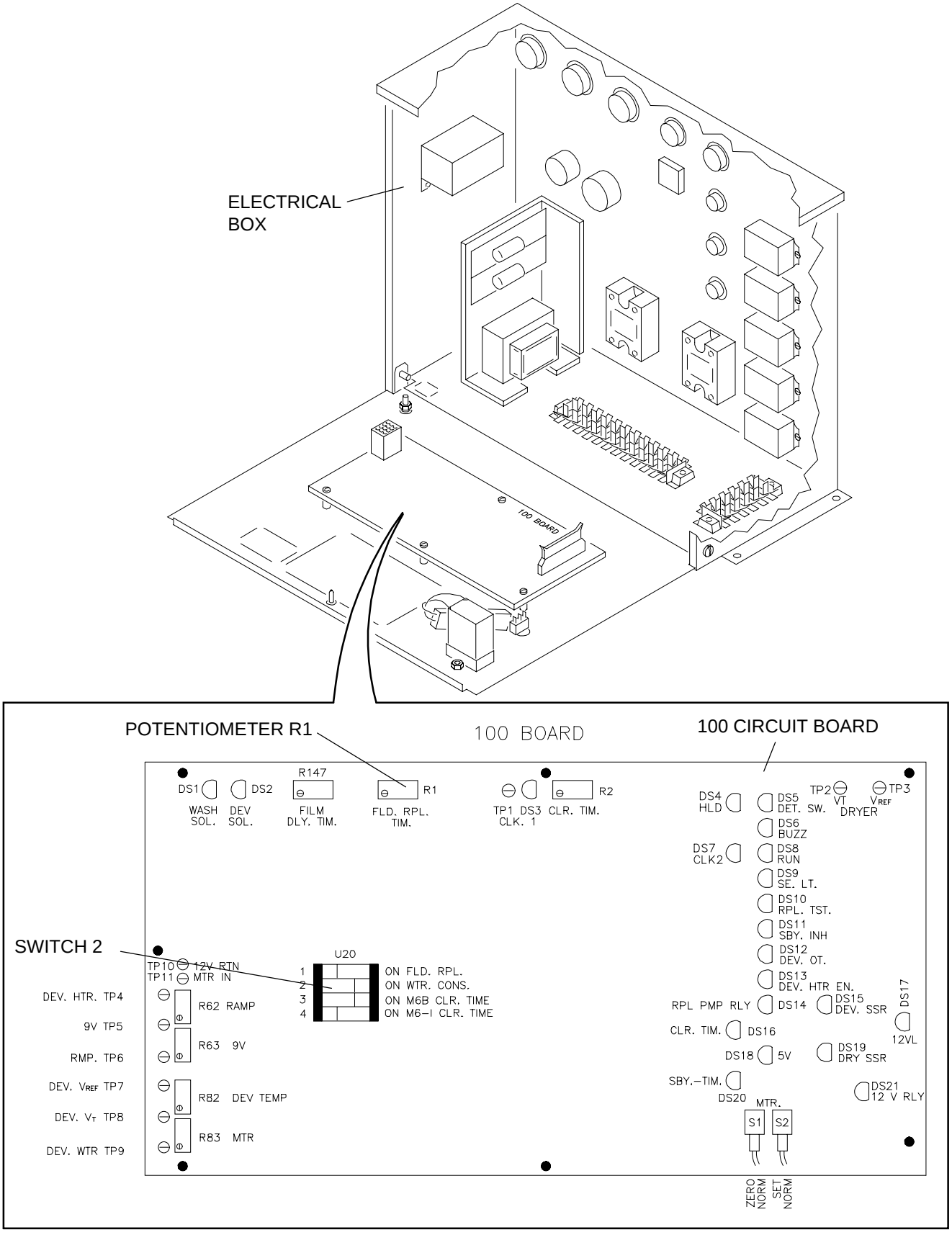

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Figure 53 Setting Switches on the 100 Circuit Board

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CHAPTER 3
Periodic Maintenance

Table of Contents

SECTION 1
Preventive Maintenance Procedures

Maintaining Your Processor

To provide for maximum operation of the processor, it is important that you check all parts of the processor for:

- Condition
- Cleanliness
- Adjustment
- Lubrication.

This section provides you with additional care and cleaning instructions that are not in the Operator Manual.

Make sure that you follow all the care and cleaning, and preventive maintenance procedures in the Operator Manual.

See the publication ‘‘Care and Maintenance of Stainless Steel Processing Equipment’’ for further information.

How often you need to do the periodic maintenance procedures outlined in this manual, depends upon your usage of the processor. As your usage of the processor increases, so should the frequency with which you do the periodic maintenance procedures.

After you do the periodic maintenance procedures, process a number of films to check that:

- films are being transported through the processor correctly
- the quality of the film after processing is good.

WARNING

Before you adjust, install, or remove any electrical component, **disconnect the main power**. Electrical connections should only be done by qualified personnel.

CAUTION

When you use caustic solutions to clean, use rubber gloves and protective glasses. Always use these solutions in a room that is correctly vented.

SECTION 2
Preventive Maintenance Schedule

For more details on how to adjust parts for position, alignment, and tension, see Section 2 of this manual.

ITEM TO CHECK	WEEKLY	MONTHLY
Film Guide Assembly		X
Detector/Crossover Assemblies Rollers Gears Guide Shoes Bearings Brackets Nuts	X	
Squeegee Assembly Rollers Gears Guide Shoes Bearings Brackets Nuts	X	
Rack Assemblies Rollers Sprockets Chain Springs Rewet Rollers		X
Turnaround Assemblies Rollers Springs		X
Main Drive Assembly		X
Plumbing Connections Tubing		X
Recirculation System Filter		X Or after 5000 films
Developer Temperature	X	
Water Flow to the Processor		X
Chemical Replenishment	X	
Strainer Assemblies		X
Dryer Sections Drive Belt Bearings Air Tubes Rollers O-Rings Supports Dryer Temperature	 X X	X

SECTION 3
Preventive Maintenance Checklist

Component	Checkout Procedure
.	
Film Guide Assembly	(1) Check the bottom of the FILM GUIDE ASSEMBLY for corrosion and dirt. Remove all corrosion or dirt found. (2) Check the top of the FEED STAND for corrosion and dirt. Remove all corrosion or dirt found. (3) Check that the FILM GUIDE ASSEMBLY is correctly aligned with the DETECTOR CROSSOVER ROLLERS.
Detector Crossover and Crossover Assemblies	 When you remove the CROSSOVER ASSEMBLIES from the processor, set the top side on a flat, smooth surface. This prevents twisting them out of square or changing the setting of the GUIDE SHOE.
Rollers	(1) Check that the ROLLERS are clean and smooth.
Gears	(1) Check that the GEARS of the ROLLERS for broken TEETH. Install new ROLLERS if necessary. (2) Check the DRIVE GEAR for wear or burrs. Install new GEARS if necessary. (3) Check the DETECTOR CROSSOVER ASSEMBLY for the correct alignment by doing the following steps. a. Remove the DETECTOR CROSSOVER ASSEMBLY from the processor. b. Place the top side of the DETECTOR CROSSOVER ASSEMBLY on a flat, smooth surface. c. Check that the SIDE PLATES are square against the flat, smooth surface. d. Check that the DETECTOR CROSSOVER ASSEMBLY seats correctly when you install it.
Guide Shoes	(1) Check that the LONGER TIPS are in the direction of the film travel.
Bearing, Brackets, and Nuts	(1) Check the BEARINGS, BRACKETS, and NUTS for wear and broken parts. Install new parts if necessary.

Component	Checkout Procedure
.	
Squeegee Assembly	
Rollers	(1) Check that the DRIVEN ROLLERS and IDLER ROLLERS rotate freely. (2) Check that the ROLLERS are clean and smooth.
Gears	(1) Check the GEARS of the ROLLERS for broken TEETH. Install new ROLLERS if necessary. (2) Check the ROLLERS for wear and burrs. Install new ROLLERS if necessary. (3) Check the SQUEEGEE ASSEMBLY for the correct alignment by doing the following steps. a. Remove the SQUEEGEE ASSEMBLY from the processor. b. Place the top side of the SQUEEGEE ASSEMBLY on a flat, smooth surface. c. Check that the SIDE PLATES are square against the flat, smooth surface. d. Check that the SQUEEGEE ASSEMBLY seats correctly when you install it. (4) Check that the LONGER TIPS are in the direction of the film travel.
Bearing, Brackets, and Nuts	(1) Check the BEARINGS, BRACKETS, and NUTS for wear and broken parts. Install new parts if necessary.
Rack Assemblies	**CAUTION** To prevent contamination of the DEVELOPER, use the SPLASH GUARD and the DRIP TRAY when you remove the FIXER RACK. (1) Check the RACKS for cleanliness.
Rollers	(1) Check that the ROLLERS are clean and smooth.
Sprockets	(1) Check that the SPROCKETS are correctly engaged in the RACK CHAIN. (2) Check that the RACK is square.
Chain	(1) Check that the LINKS of the CHAIN are not damaged. Rotate the DRIVE GEAR so that the entire CHAIN makes one complete revolution over the DRIVE SPROCKETS. (2) Check that the tension of the CHAIN is correct. A CHAIN that is not adjusted correctly may cause the ROLLERS to rotate incorrectly and may cause the BEARINGS to wear excessively.

Component	Checkout Procedure
Springs	(1) Check the SPRINGS for cleanliness and wear. Install new SPRINGS if necessary. (2) Check that the SPRINGS are correctly positioned. (3) Check that the SPRINGS are adjusted for the correct tension.
Rewet Rollers	(1) Check that the REWET ROLLER touches the ROLLERS above and below it.
Turnaround Assemblies	
Rollers	(1) Check that the ROLLERS are clean and smooth.
Springs	(1) Check the SPRINGS for cleanliness and wear. Install new SPRINGS if necessary. (2) Check that the SPRINGS are correctly positioned. (3) Check that the SPRINGS are adjusted for the correct tension.
Main Drive Assembly	
Drive Chain	(1) Check the CHAIN for wear. Install a new CHAIN if necessary. (2) Check that the CHAIN is adjusted for the correct tension. (3) Lubricate the CHAIN as necessary. See the Lubrication Table on page 3-9.
Bearings and Sprockets	(1) Check the BEARINGS AND SPROCKETS for wear. Install new BEARINGS and SPROCKETS if necessary. (2) Check whether the TEETH of the SPROCKETS have become too sharp due to wear. If the TEETH are too sharp, install new SPROCKETS. (3) Remove all burrs from the WORM GEARS.
Plumbing Connections	(1) Check all connections for leaks.
Recirculation System	**NOTE** In addition to checking the system during the periodic maintenance procedures, check the system when you change solution.
Developer and Fixer Recirculation	(1) Check the RECIRCULATION SYSTEM by operating the PUMPS. If you see movement on the surface of the solution, the RECIRCULATION SYSTEM is operating.
Developer Temperature	(1) Check that the DEVELOPER temperature is within the specified range by inserting a THERMOMETER of known accuracy into the DEVELOPER TANK.

Component	Checkout Procedure
.	
Flow of Water to the Processor	(1) Check the flow of water. It should take approximately 2 minutes and 30 seconds to fill the WASH TANK with the RACK ASSEMBLY installed.
Chemical Replenishment	(1) Check for the correct replenishment rates. See Service Bulletin No. 30.
Tubing	(1) Check that all TUBING is not kinked or damaged.
Strainer Assemblies	(1) Check the STRAINER ASSEMBLY for dirt by doing the following steps. a. Place a CLAMP on the TUBING. b. With a BRUSH and warm water clean the STRAINER ASSEMBLY to remove all dirt and chemical deposits from the SCREENS.
Dryer	
Drive Belt	(1) Check the DRIVE BELT for wear. Install a new DRIVE BELT if necessary. (2) Check that the DRIVE BELT is adjusted for the correct tension.
Bearings	(1) Check the BEARINGS in the upper and lower PULLEY ASSEMBLIES for wear.
Air Tubes	(1) Check that the AIR TUBES are clean.
Rollers	(1) Check that the ROLLERS are clean and smooth. (2) Check that the ROLLERS are correctly seated.
O-Rings	(1) Check the O-RINGS for wear and cracking. Install new O-RINGS if necessary.
Supports	(1) Check that the SUPPORTS are clean.
Dryer Temperature	(1) Check the drying temperature to make sure it is set within the specified range. If the film is not drying, adjust the temperature.
Blower Belt	(1) Check the BLOWER BELT for wear. Install a new BLOWER BELT if necessary. (2) Check that the BLOWER BELT is adjusted for the correct tension.
Pulleys, Blower, and Blower Motor	(1) Check the PULLEYS for clicking noises. If clicking noises are heard, tighten the 2 setscrews on the MOTOR or BLOWER PULLEYS. (2) Check the alignment of the BLOWER BELT. Adjust the alignment if necessary.

SECTION 4
Lubrication Table

Part	Lubricant	Frequency	Procedure
MAIN DRIVE CHAIN	NLG1-No. 2 Lithium Ball and Roller Bearing Grease TL-2324*	As necessary	Add to the surface of the CHAIN. Keep your fingers and clothing free of moving CHAINS and SPROCKETS.
RECIRCULATION (B3) and REPLENISHER (B4) PUMPS	†Light oil, such as SAE No. 20 MOTOR OIL TL-2199	6 months	Add a number of drops in the OIL holes.
BLOWER MOTOR (B1) BEARINGS	Not necessary	—	—
MOTOR (B2) GEAR HOUSING	Not necessary	—	—
MAIN DRIVE SHAFT ASSEMBLY	Not necessary	—	—
MAIN DRIVE MOTOR (B2)	Not necessary	—	—

*12-ounce tubes of GREASE TL-2324 may be ordered from Parts Services, Eastman Kodak Company, 800 Lee Road, Rochester, New York 14650.

†One-ounce of SAE No. 20 MOTOR OIL TL2199 may be ordered from Parts Services, Eastman Kodak Company, 800 Lee Road, Rochester, New York 14650.

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CHAPTER 4
Diagnostics

Table of Contents

SECTION 1
Flowcharts

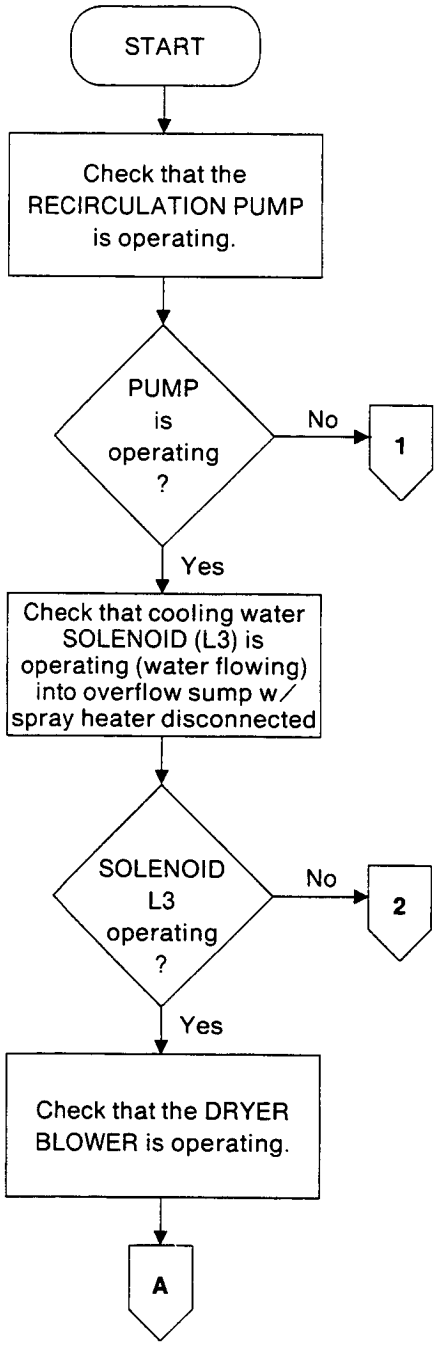
Cycle of Operations

Conditions:

Power is connected.
WASH WATER — Set in "MODE 2", water conservation.
"No" FLOODED REPLENISHMENT.
DRYER TEMPERATURE is correct.
PROCESSOR ready for operation.
WATER is flowing into the PROCESSOR.

CAUTION

This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution and wrist-strap provided to prevent damage during all service procedures. Wrist-strap must be in contact with skin.

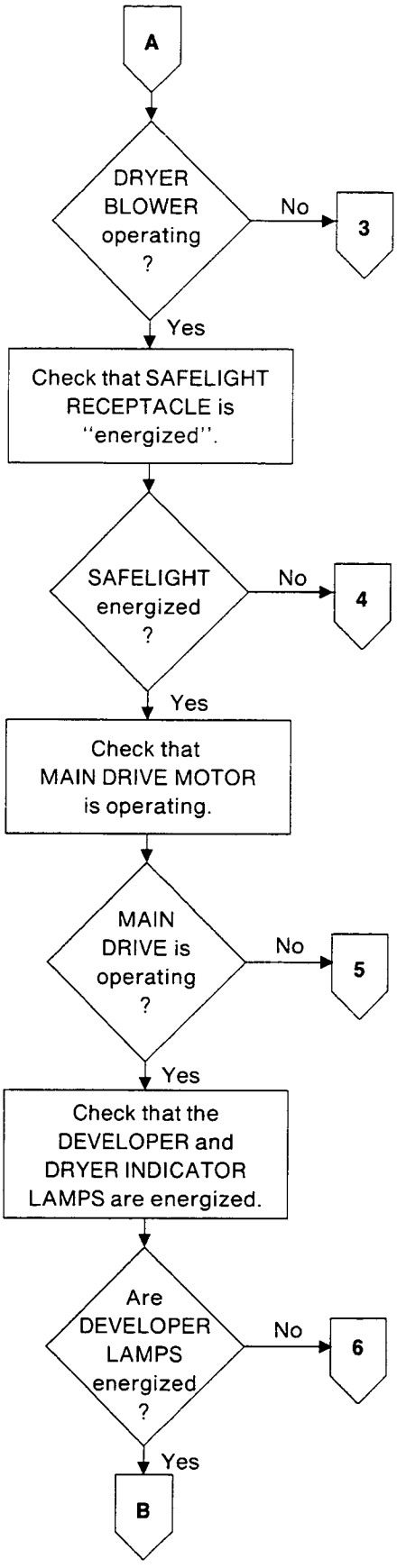


Note:

Disconnect spray header hose – water (cooling) comes in – check overflow.

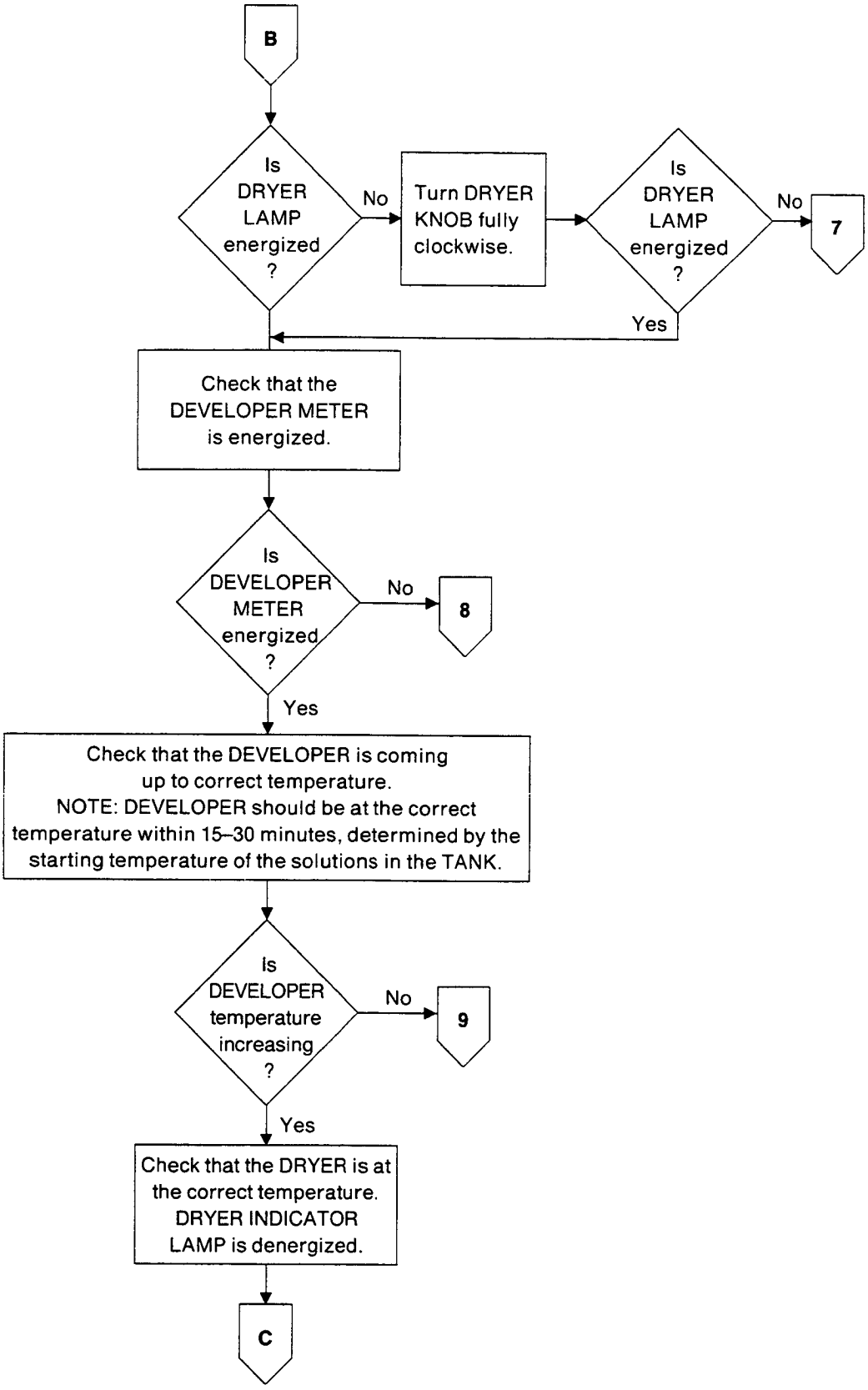
Note:

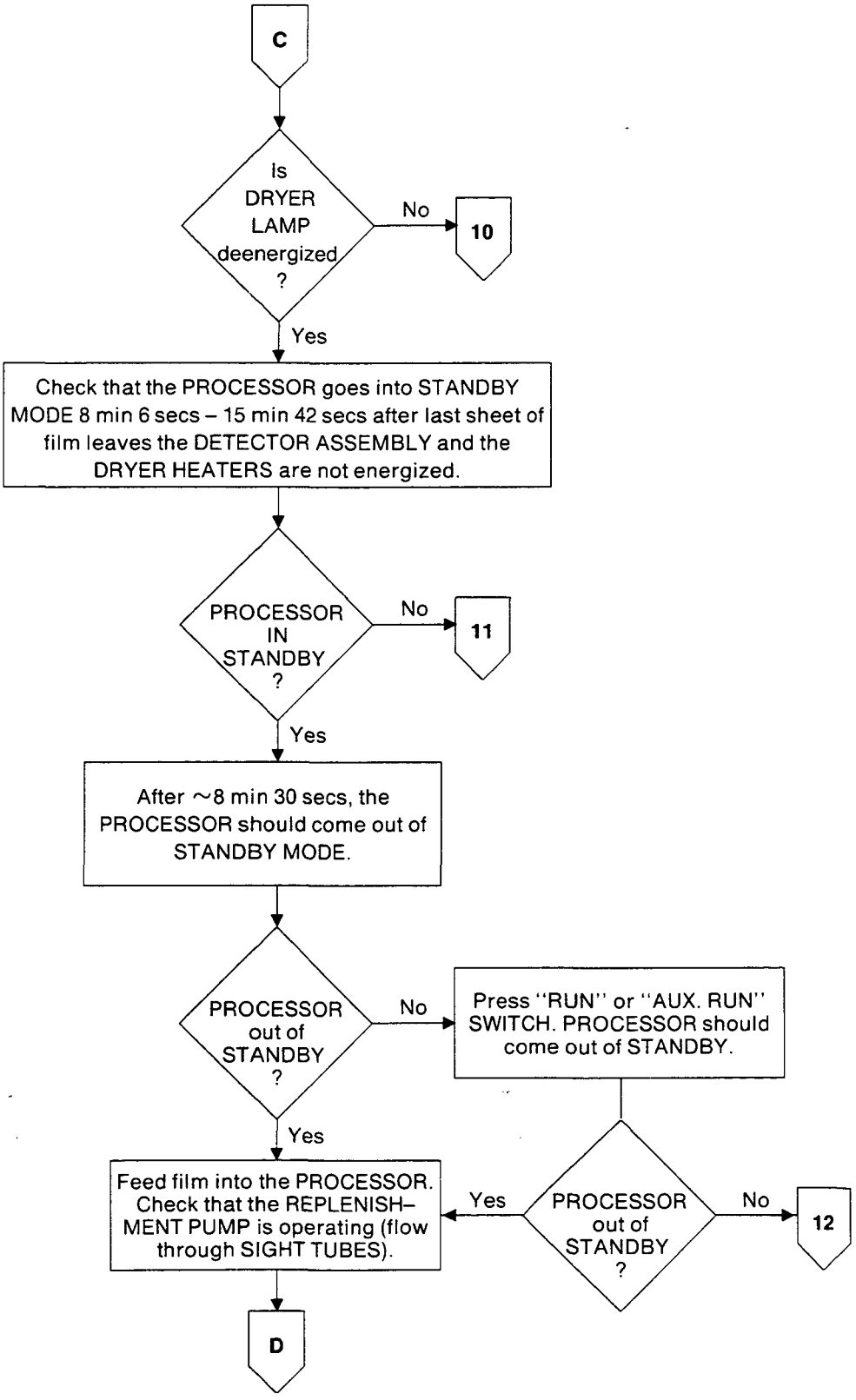
After approximately 6 secs, check that the following are operating:

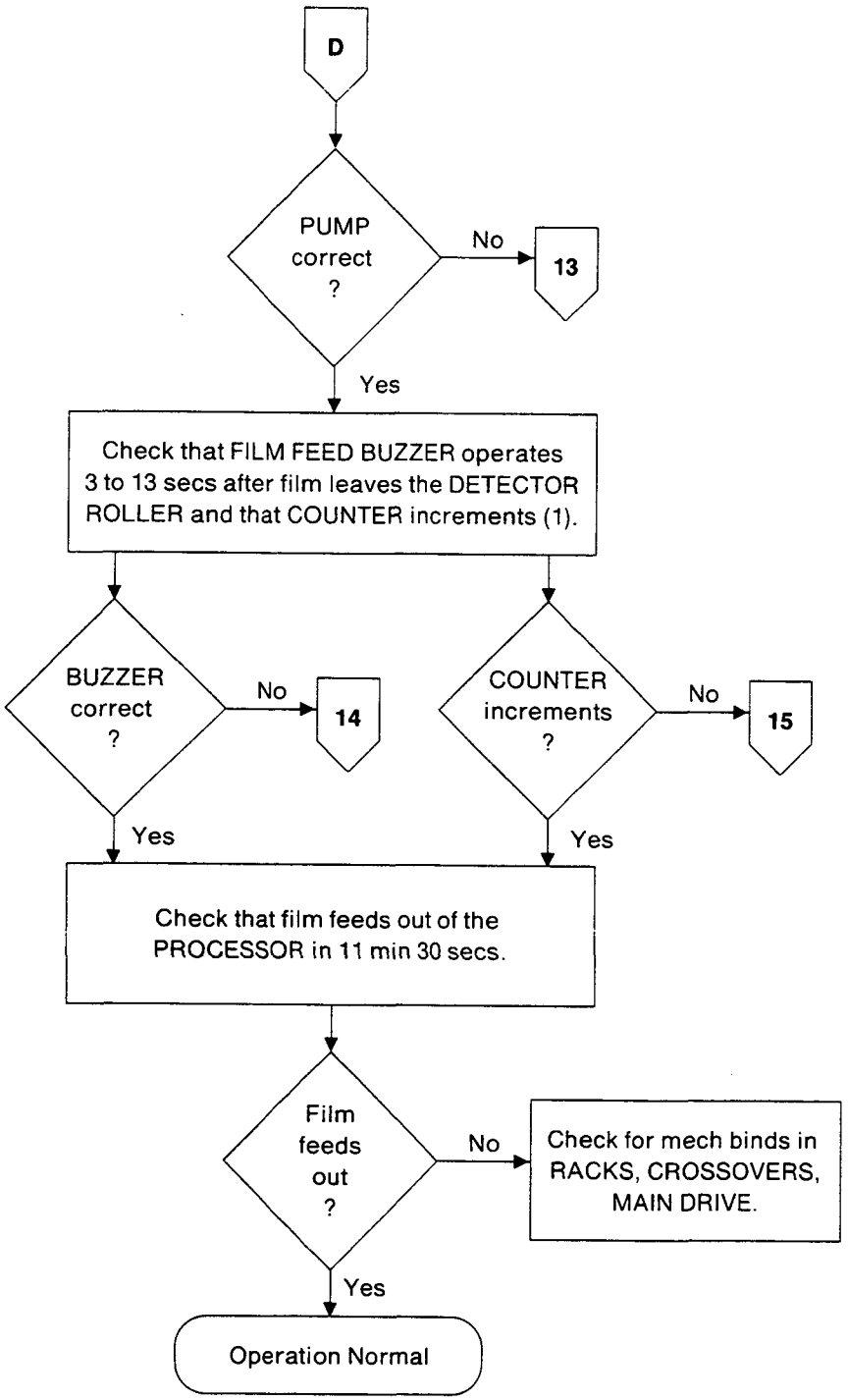


Note:

Remove DRYER PANEL or SIDE PANEL to check for DRYER BELT MOVEMENT or GEAR MOVEMENT on WASH RACK.


B
Is DRYER LAMP energized ?
No
Turn DRYER KNOB fully clockwise.
Is DRYER LAMP energized ?
No
7
Yes
Check that the DEVELOPER METER is energized.
Is DEVELOPER METER energized ?
No
8
Yes
Check that the DEVELOPER is coming up to correct temperature.
NOTE: DEVELOPER should be at the correct temperature within 15–30 minutes, determined by the starting temperature of the solutions in the TANK.
Is DEVELOPER temperature increasing ?
No
9
Yes
Check that the DRYER is at the correct temperature. DRYER INDICATOR LAMP is denergized.
C

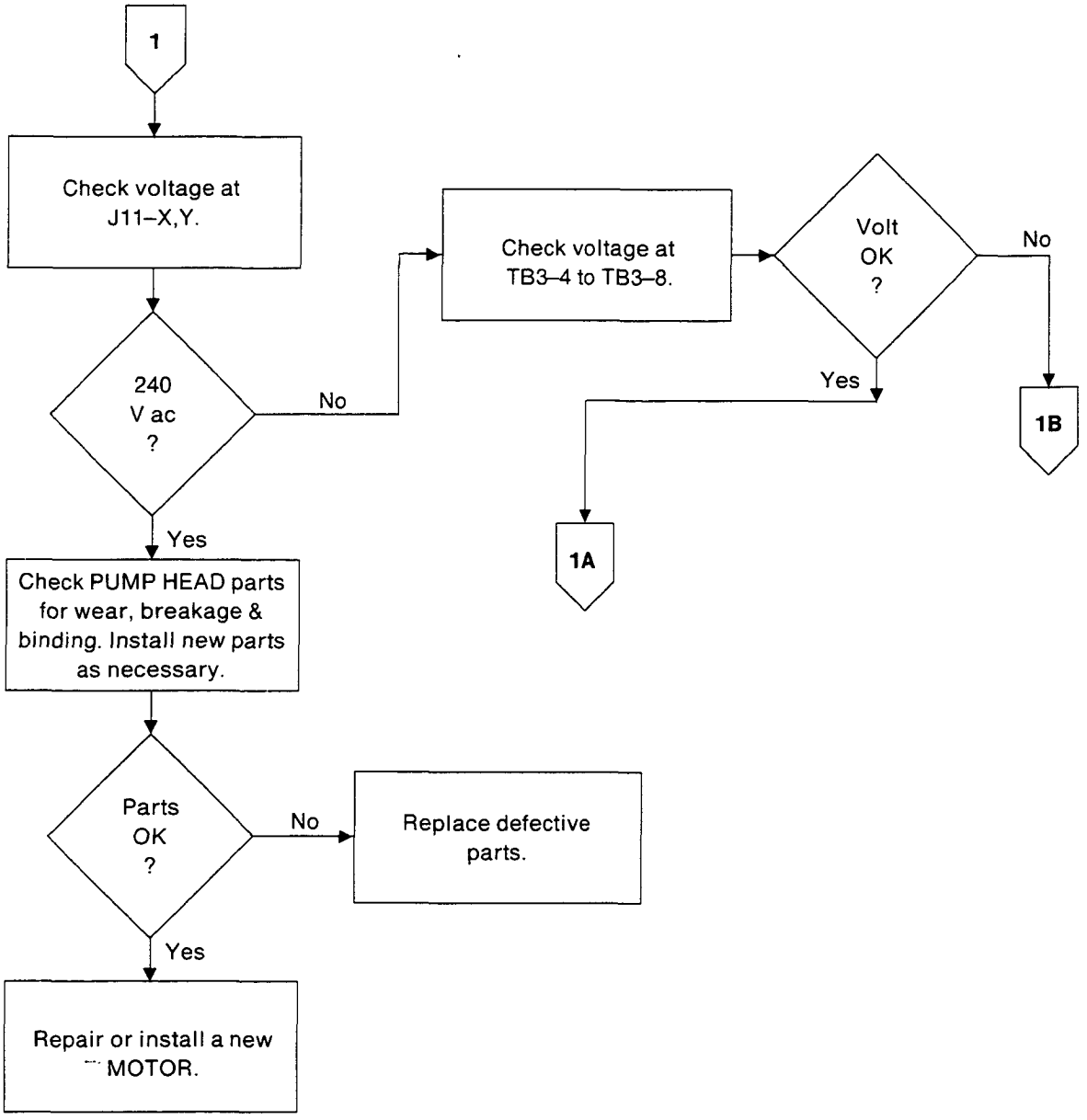

C
Is DRYER LAMP deenergized ?
No
10
Yes
Check that the PROCESSOR goes into STANDBY MODE 8 min 6 secs – 15 min 42 secs after last sheet of film leaves the DETECTOR ASSEMBLY and the DRYER HEATERS are not energized.
PROCESSOR IN STANDBY ?
No
11
Yes
After ~8 min 30 secs, the PROCESSOR should come out of STANDBY MODE.
PROCESSOR out of STANDBY ?
No
Press "RUN" or "AUX. RUN" SWITCH. PROCESSOR should come out of STANDBY.
Yes
PROCESSOR out of STANDBY ?
Yes
No
12
Feed film into the PROCESSOR. Check that the REPLENISHMENT PUMP is operating (flow through SIGHT TUBES).
D

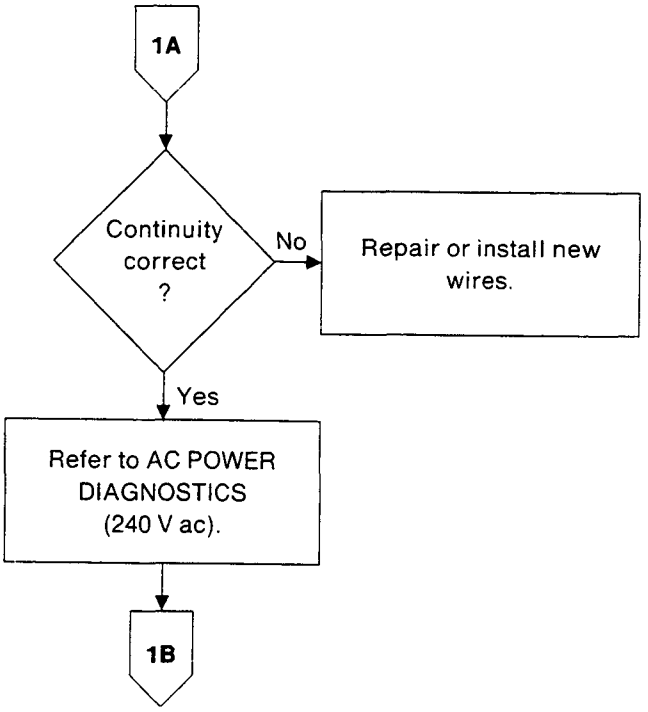

D
PUMP correct ?
No
13
Yes
Check that FILM FEED BUZZER operates 3 to 13 secs after film leaves the DETECTOR ROLLER and that COUNTER increments (1).
BUZZER correct ?
No
14
Yes
COUNTER increments ?
No
15
Yes
Check that film feeds out of the PROCESSOR in 11 min 30 secs.
Film feeds out ?
No
Check for mech binds in RACKS, CROSSOVERS, MAIN DRIVE.
Yes
Operation Normal

No Recirculation — Recirculation Pump (B5) Is Not Operating

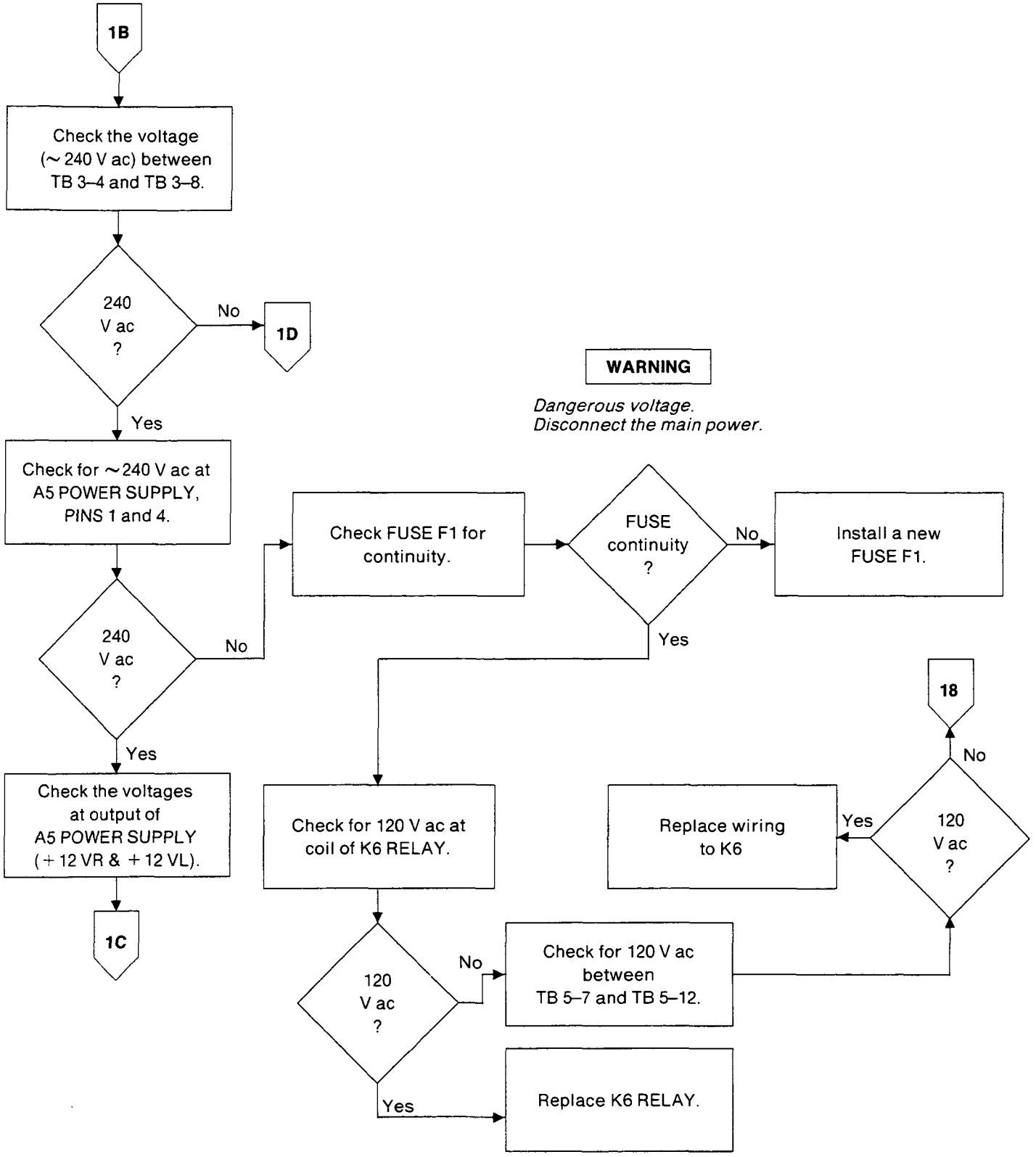
Conditions: All COMPONENTS operating except B5

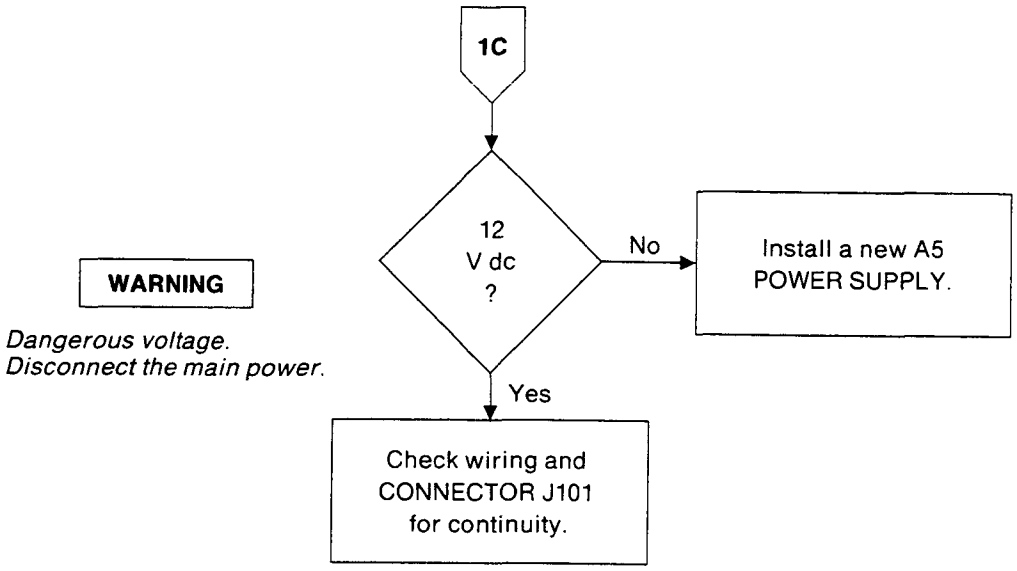
CAUTION: *Check that the PLUG P/J11 is connected correctly before starting electrical diagnostic procedures.*




1A
Continuity correct ?
No
Repair or install new wires.
Yes
Refer to AC POWER DIAGNOSTICS (240 V ac).
1B

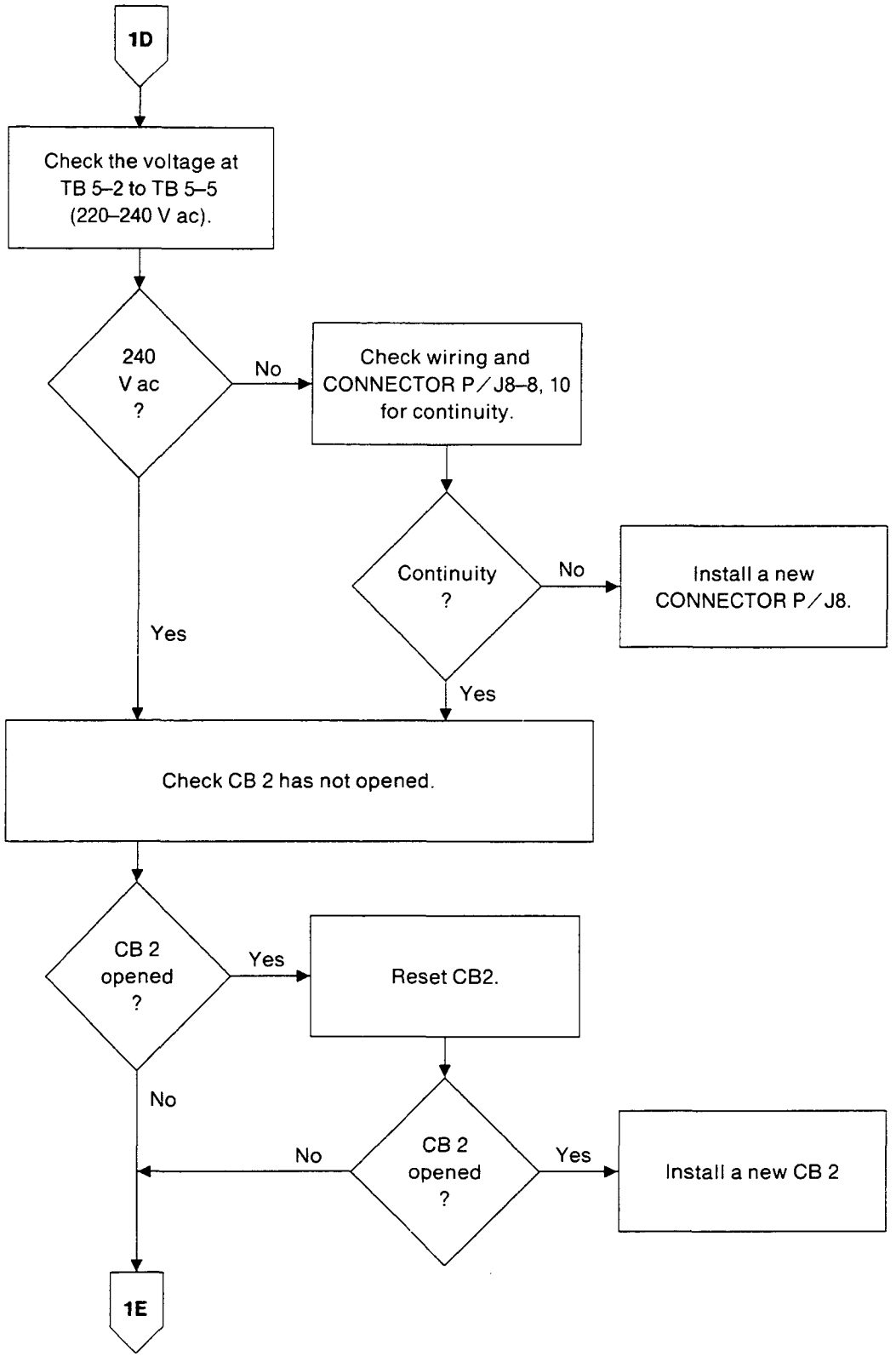
AC Power Distribution Diagnostic Flowchart (240 V ac)

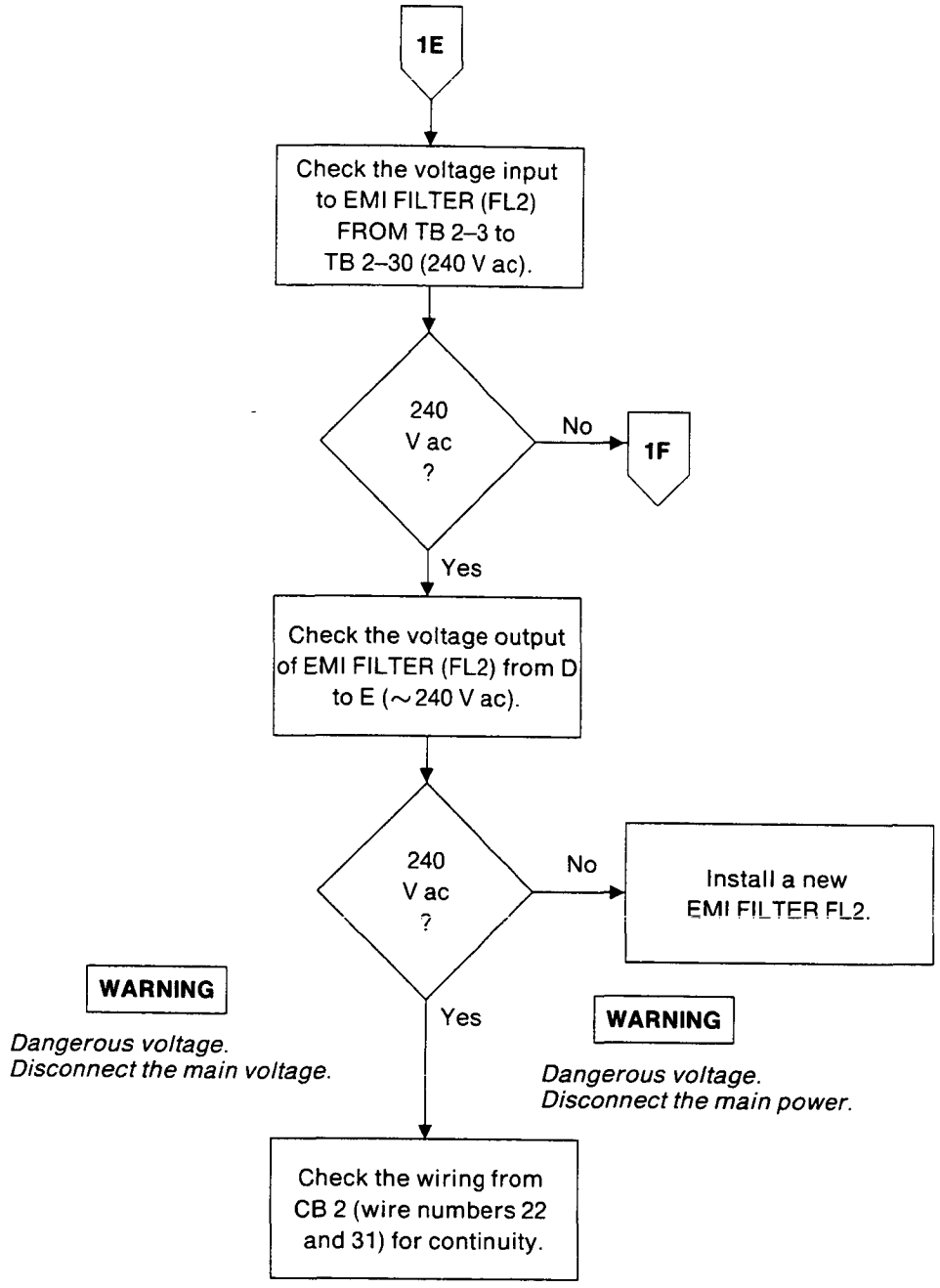


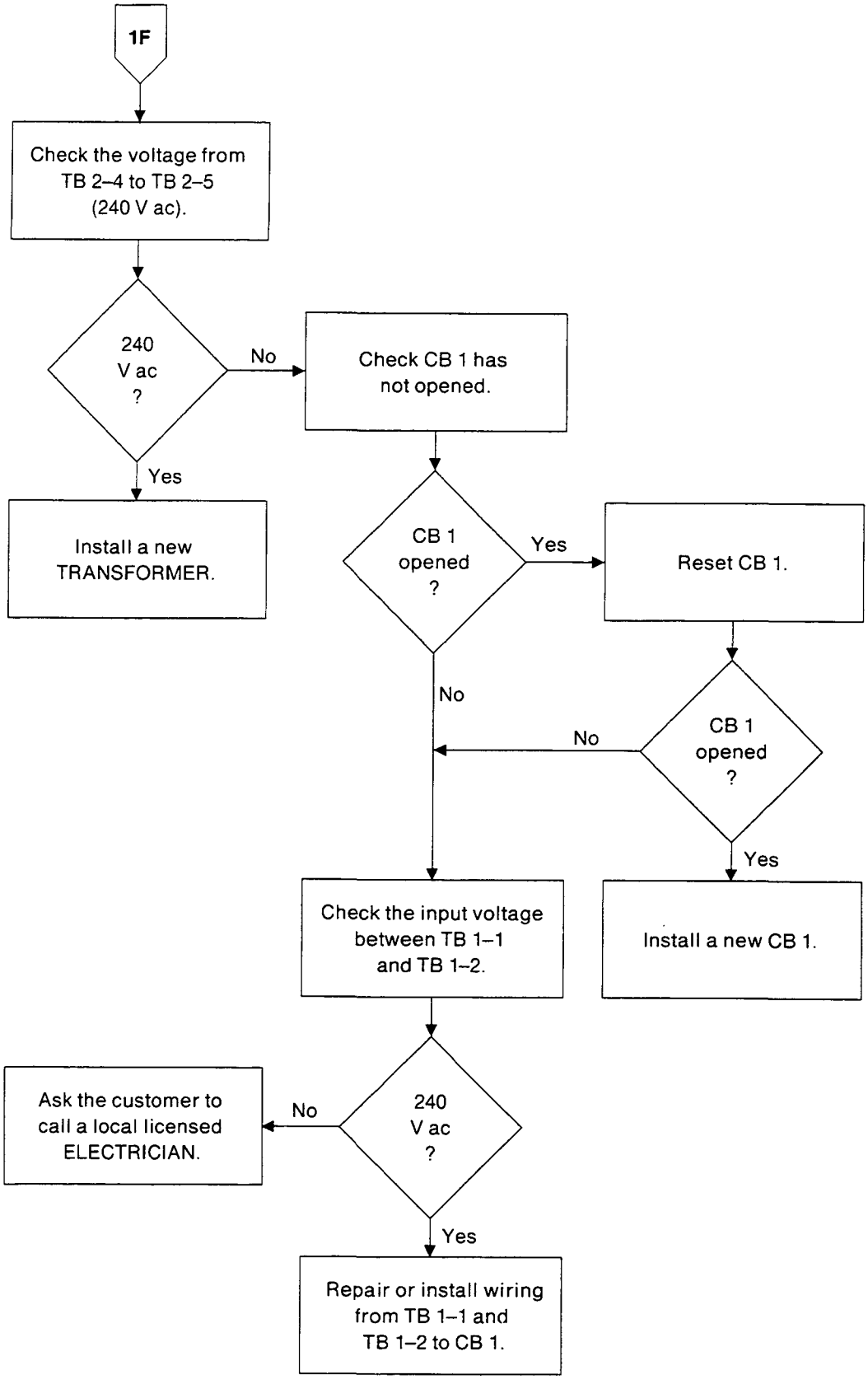


WARNING

Dangerous voltage.
Disconnect the main power.

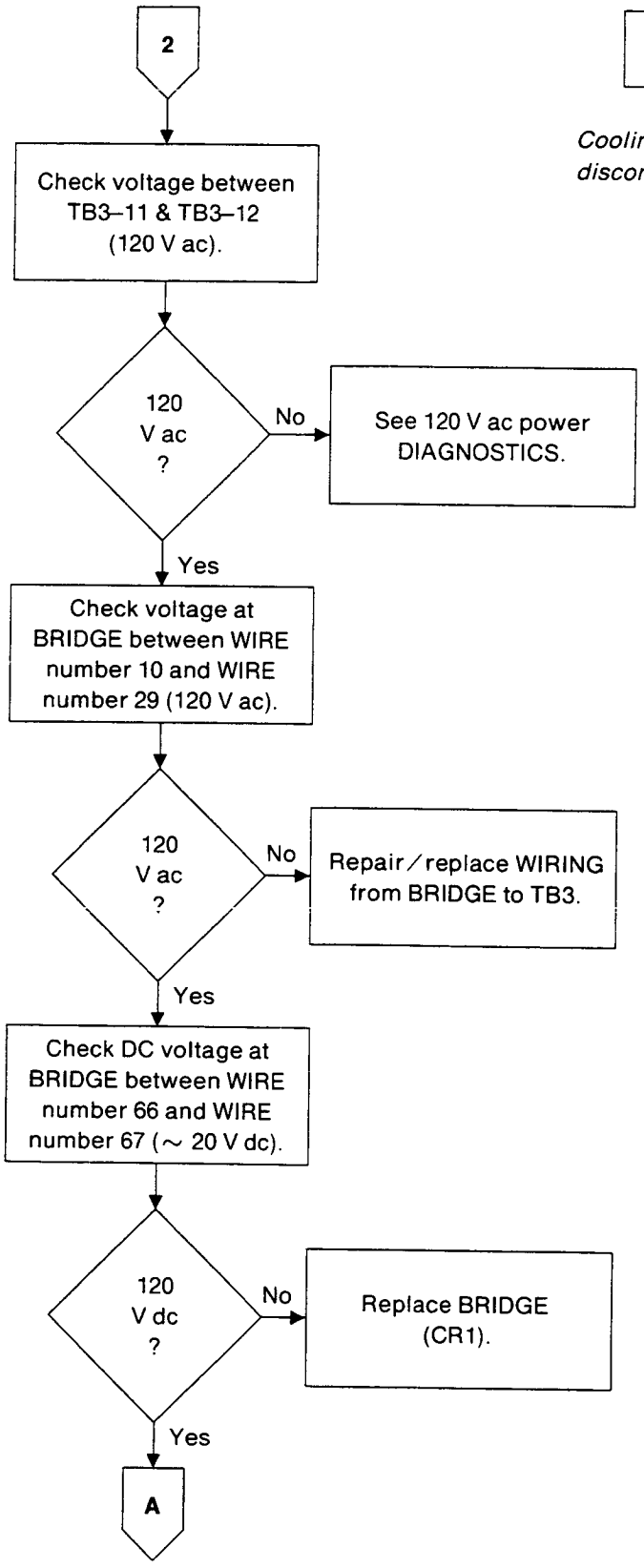

1D
Check the voltage at TB 5–2 to TB 5–5 (220–240 V ac).
240 V ac ?
No
Check wiring and CONNECTOR P/J8–8, 10 for continuity.
Continuity ?
No
Install a new CONNECTOR P/J8.
Yes
Yes
Check CB 2 has not opened.
CB 2 opened ?
Yes
Reset CB2.
No
No
CB 2 opened ?
Yes
Install a new CB 2
1E


1E
Check the voltage input to EMI FILTER (FL2) FROM TB 2–3 to TB 2–30 (240 V ac).
240 V ac ?
No
1F
Yes
Check the voltage output of EMI FILTER (FL2) from D to E (~240 V ac).
240 V ac ?
No
Install a new EMI FILTER FL2.
WARNING
Dangerous voltage. Disconnect the main voltage.
Yes
WARNING
Dangerous voltage. Disconnect the main power.
Check the wiring from CB 2 (wire numbers 22 and 31) for continuity.


1F
Check the voltage from TB 2–4 to TB 2–5 (240 V ac).
240 V ac ?
No
Yes
Check CB 1 has not opened.
Install a new TRANSFORMER.
CB 1 opened ?
Yes
Reset CB 1.
No
No
CB 1 opened ?
Yes
Check the input voltage between TB 1–1 and TB 1–2.
Install a new CB 1.
Ask the customer to call a local licensed ELECTRICIAN.
No
240 V ac ?
Yes
Repair or install wiring from TB 1–1 and TB 1–2 to CB 1.

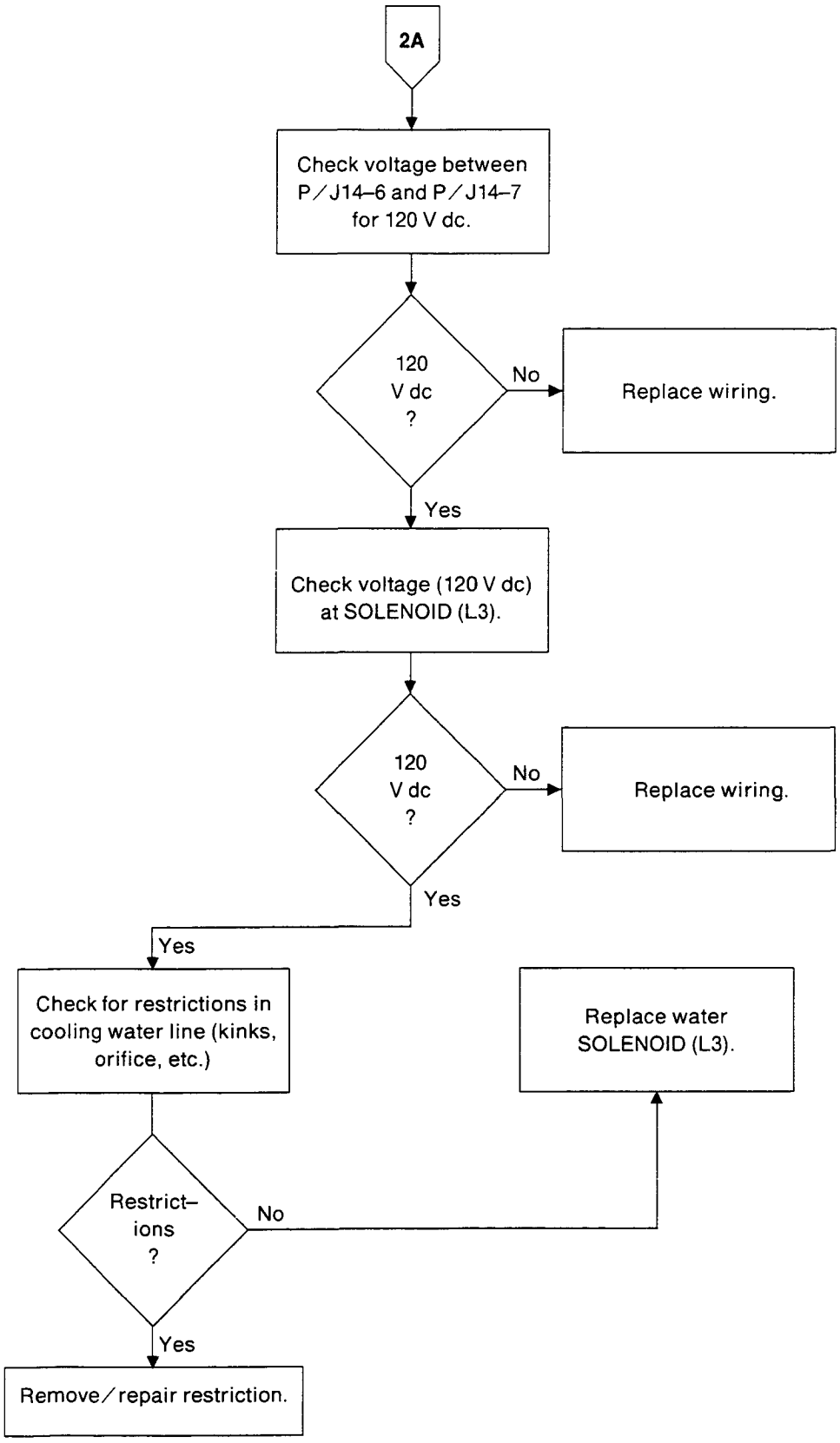
Cooling Water Solenoid (L3) Inoperative

Condition: Water is turned on and wash tank is full of water.



DISCLAIMER

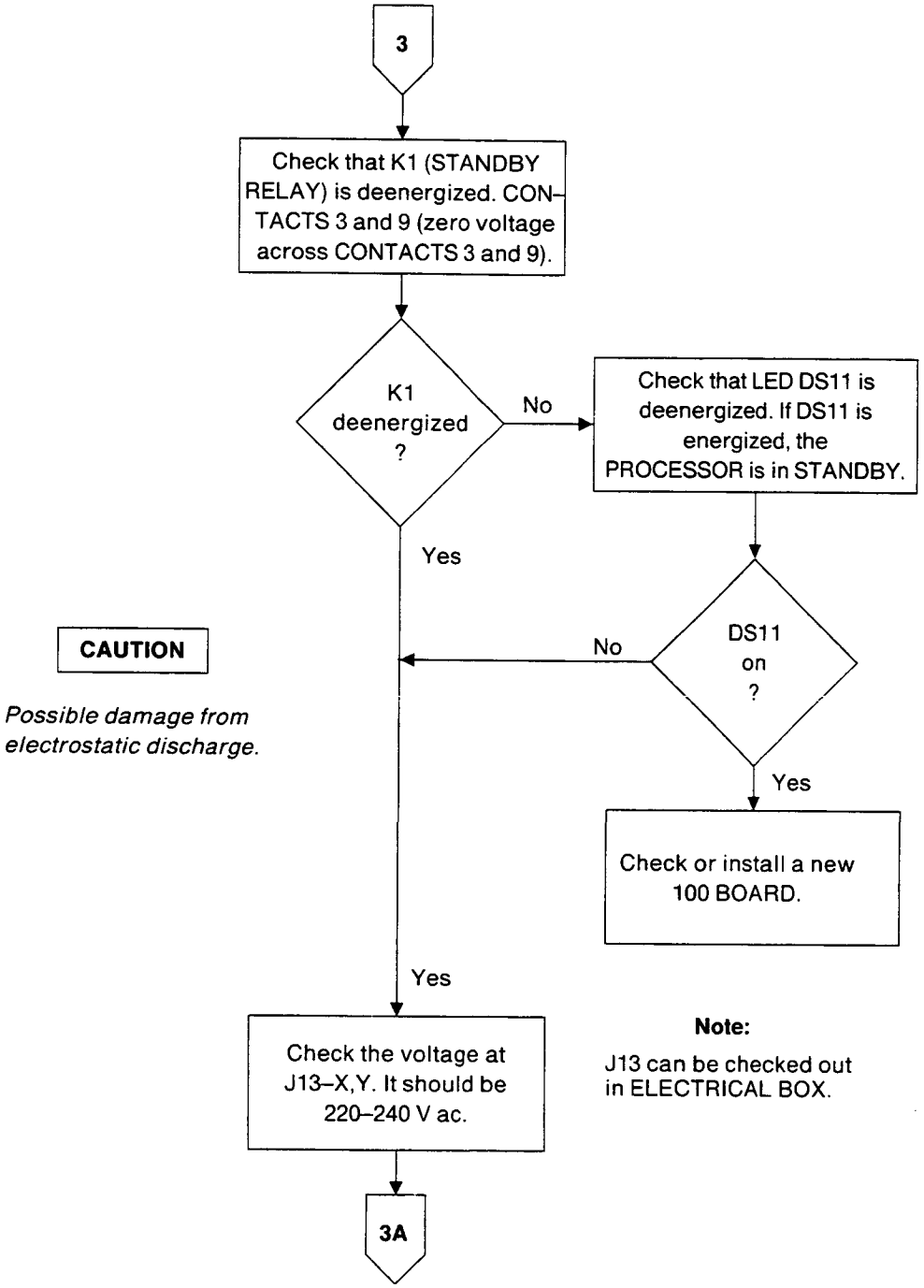
Cooling water solenoid is disconnected on M6B X–OMAT.


2A
Check voltage between P/J14–6 and P/J14–7 for 120 V dc.
120 V dc ?
No
Replace wiring.
Yes
Check voltage (120 V dc) at SOLENOID (L3).
120 V dc ?
No
Replace wiring.
Yes
Yes
Check for restrictions in cooling water line (kinks, orifice, etc.)
Replace water SOLENOID (L3).
Restrict–ions ?
No
Yes
Remove/repair restriction.

Dryer Blower (B1) Is Not Operating

Condition: PROCESSOR is not in STANDBY MODE

CAUTION *Check that PLUG P/J13 is connected correctly before starting electrical diagnostic procedures.*

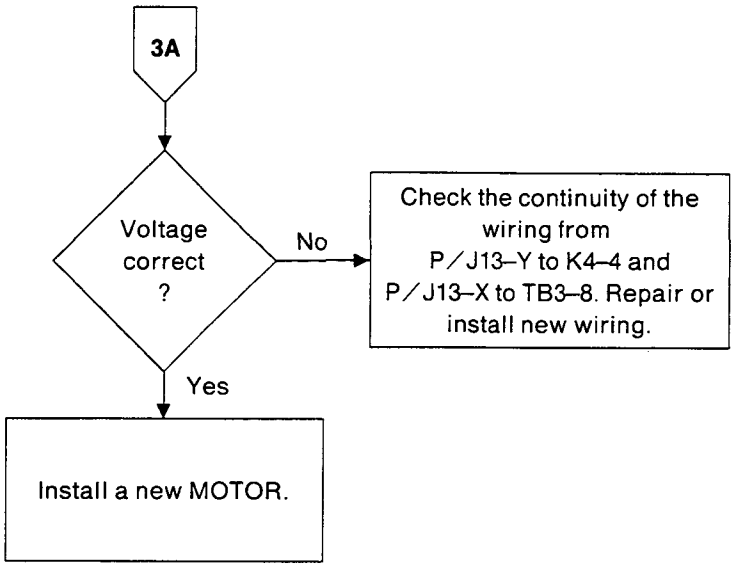


CAUTION

Possible damage from electrostatic discharge.

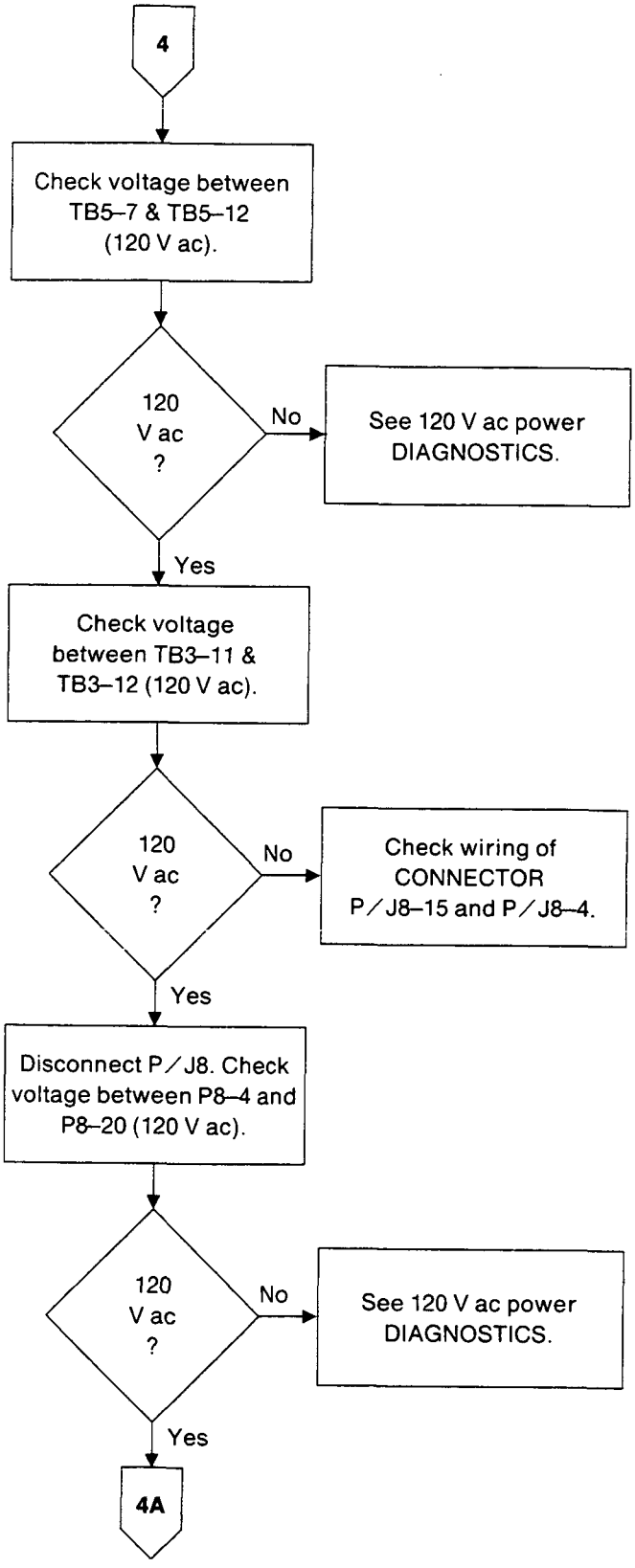
Note:

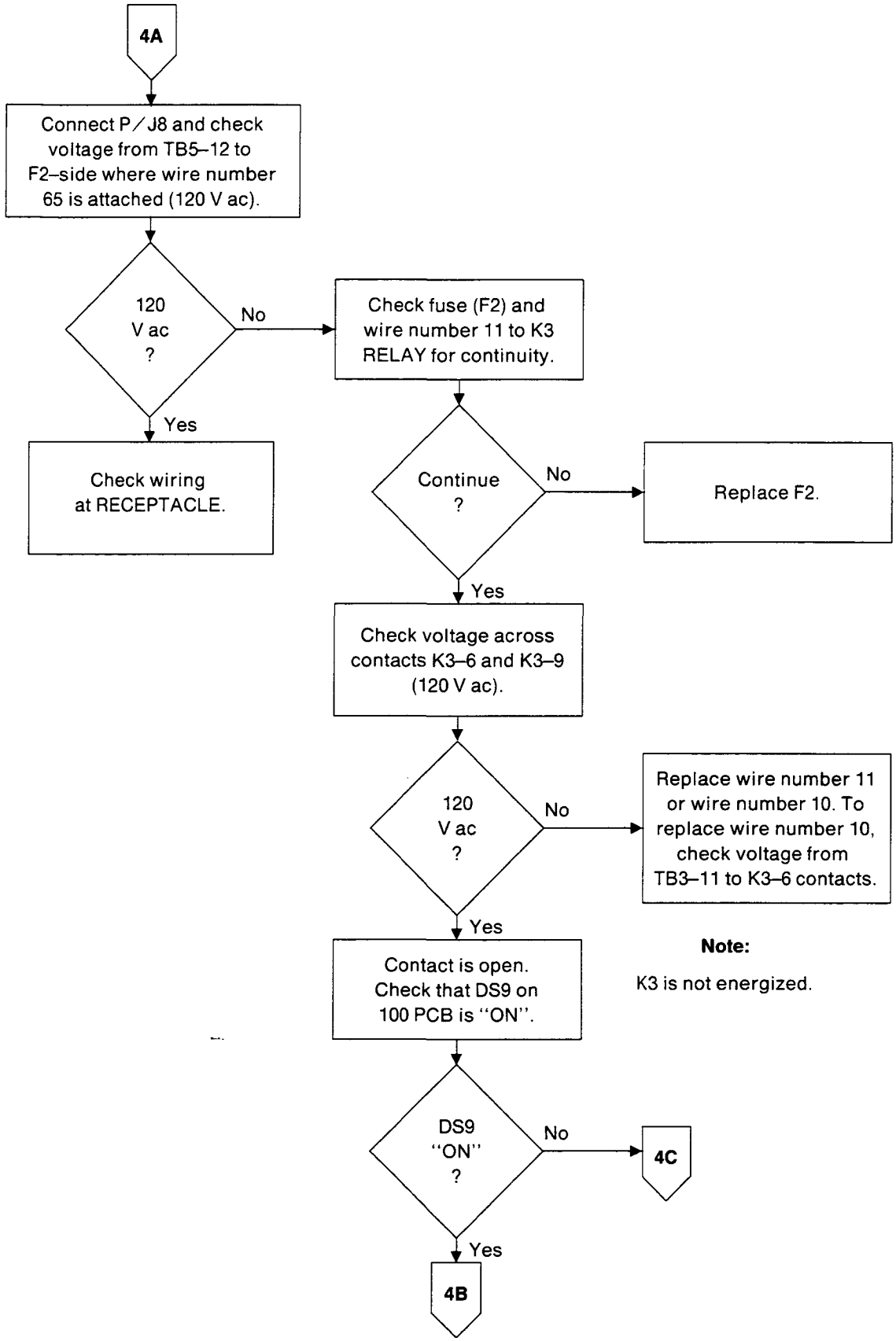
J13 can be checked out in ELECTRICAL BOX.

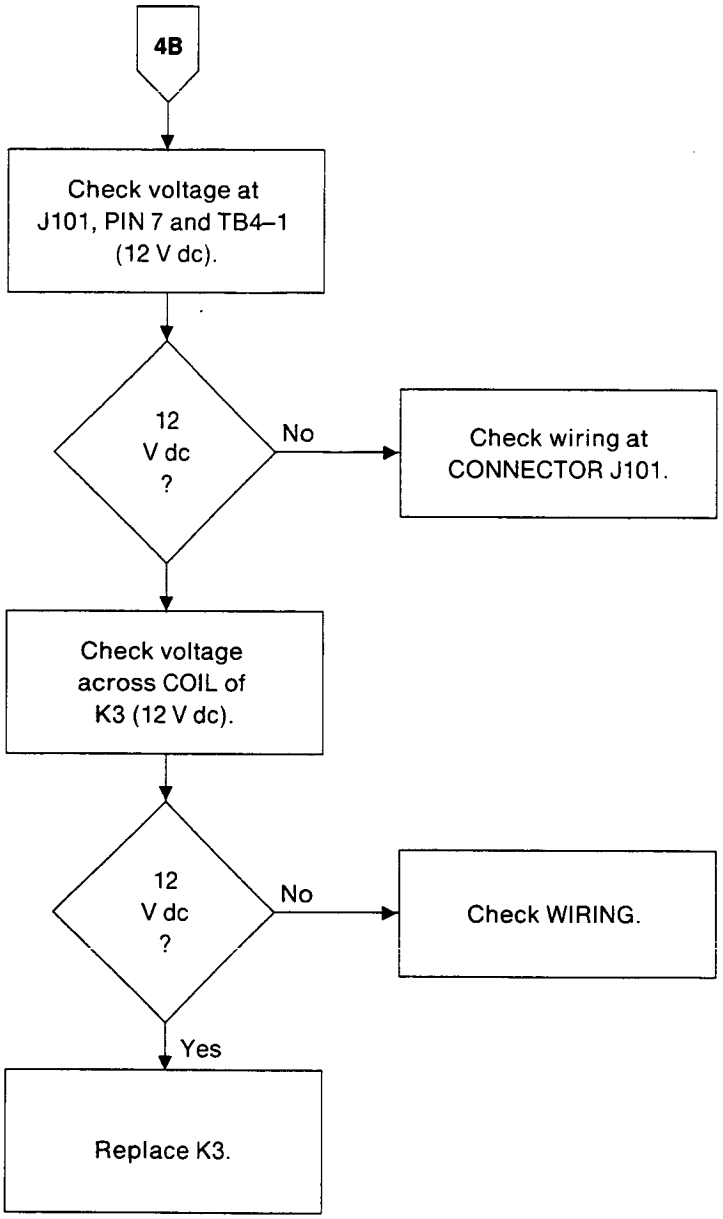

3A
Voltage correct ?
No
Check the continuity of the wiring from P/J13–Y to K4–4 and P/J13–X to TB3–8. Repair or install new wiring.
Yes
Install a new MOTOR.

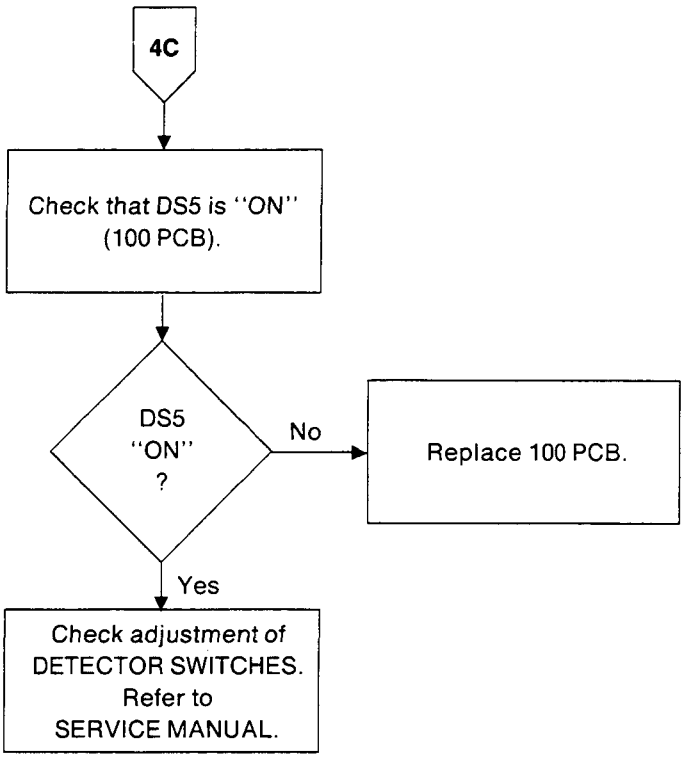
Safelight Not Energized

Condition: DETECTOR SWITCHES adjusted properly and not feeding film.



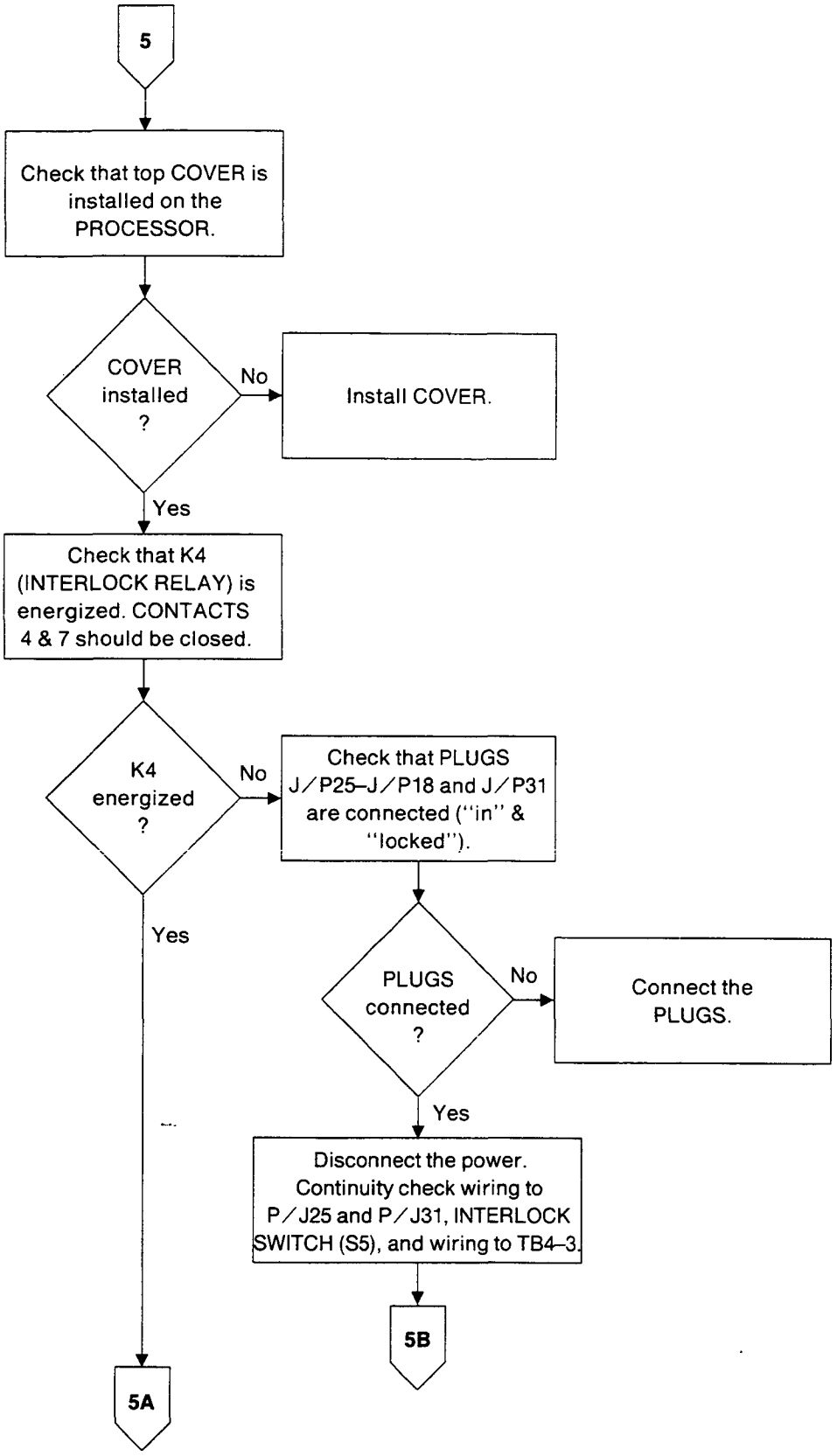

4A
Connect P/J8 and check voltage from TB5–12 to F2–side where wire number 65 is attached (120 V ac).
120 V ac ?
No
Check fuse (F2) and wire number 11 to K3 RELAY for continuity.
Yes
Check wiring at RECEPTACLE.
Continue ?
No
Replace F2.
Yes
Check voltage across contacts K3–6 and K3–9 (120 V ac).
120 V ac ?
No
Replace wire number 11 or wire number 10. To replace wire number 10, check voltage from TB3–11 to K3–6 contacts.
Yes
Contact is open. Check that DS9 on 100 PCB is "ON".
Note:
K3 is not energized.
DS9 "ON" ?
No
4C
Yes
4B

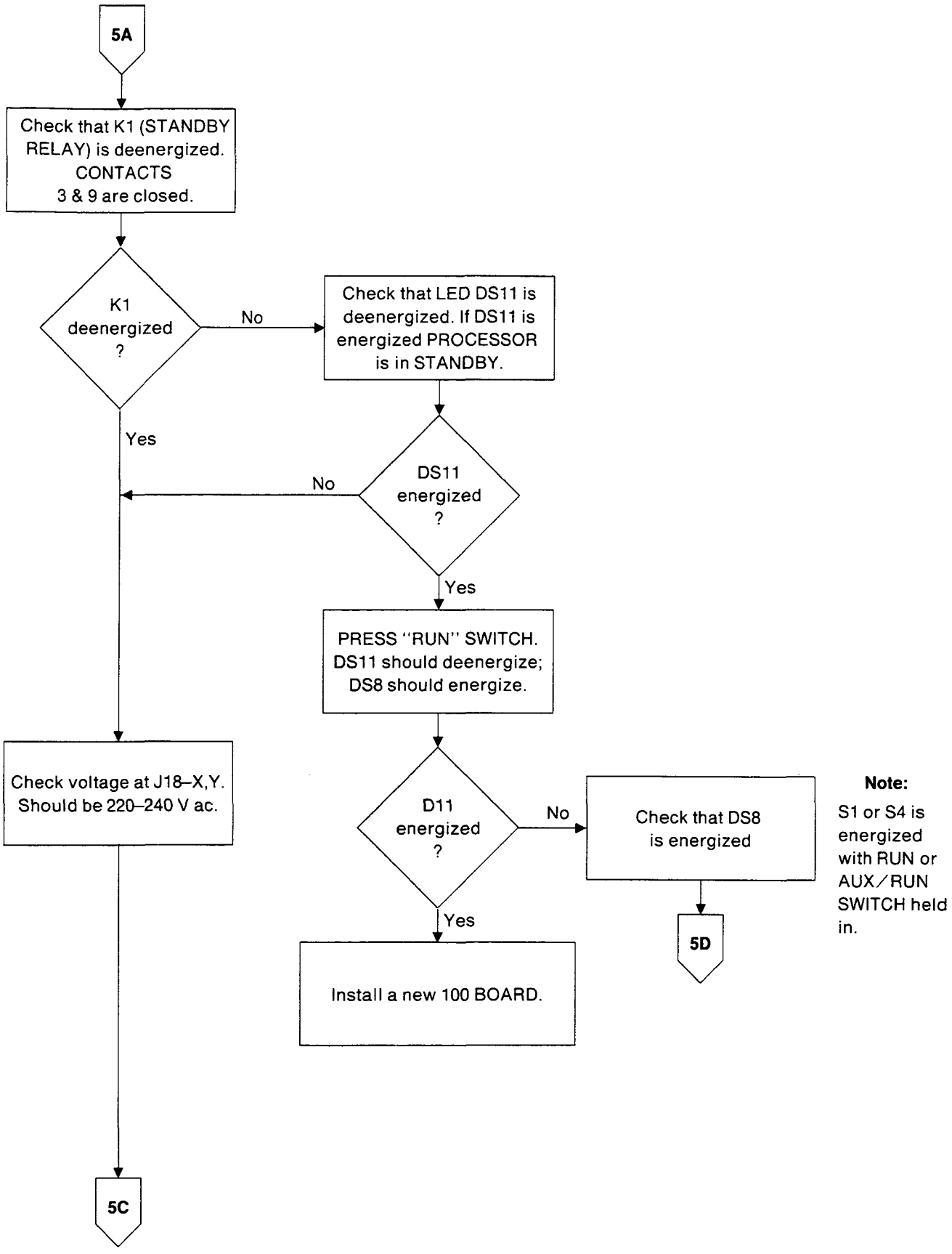

4B
Check voltage at J101, PIN 7 and TB4–1 (12 V dc).
12 V dc ?
No
Check wiring at CONNECTOR J101.
Check voltage across COIL of K3 (12 V dc).
12 V dc ?
No
Check WIRING.
Yes
Replace K3.

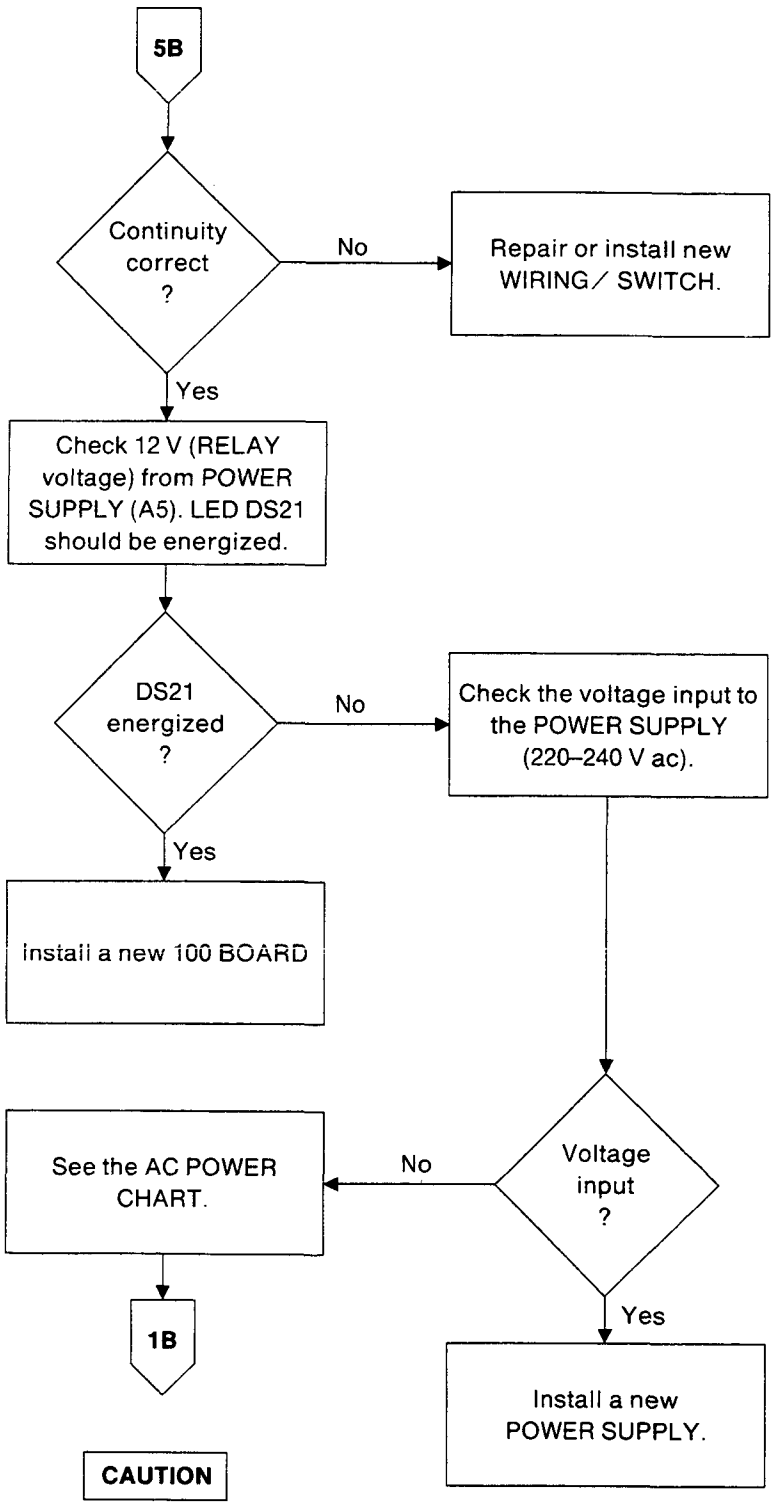

4C
Check that DS5 is "ON" (100 PCB).
DS5 "ON" ?
No
Replace 100 PCB.
Yes
Check adjustment of DETECTOR SWITCHES. Refer to SERVICE MANUAL.

No Main Drive (B2)

Condition: PROCESSOR not in STANDBY MODE

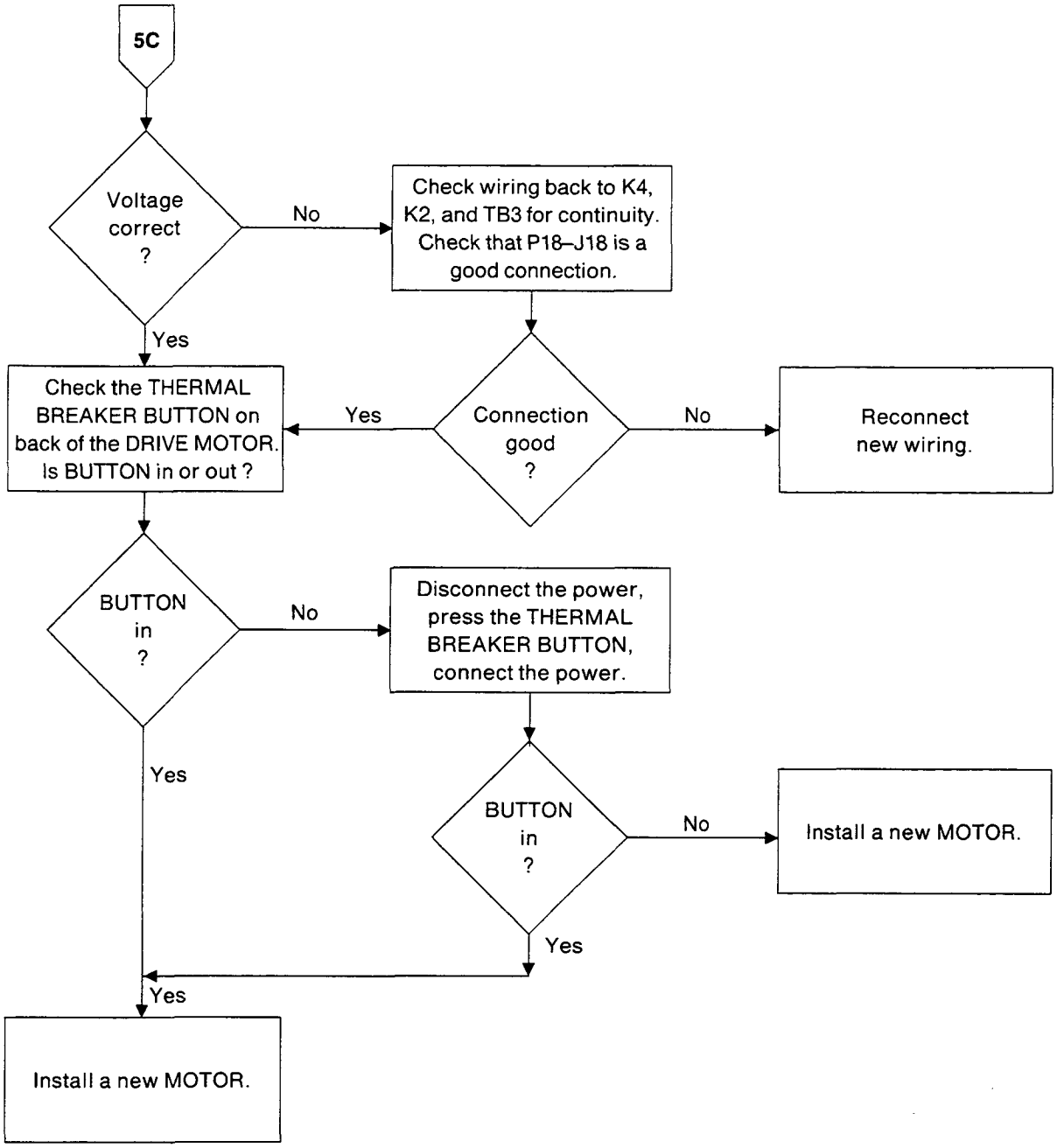


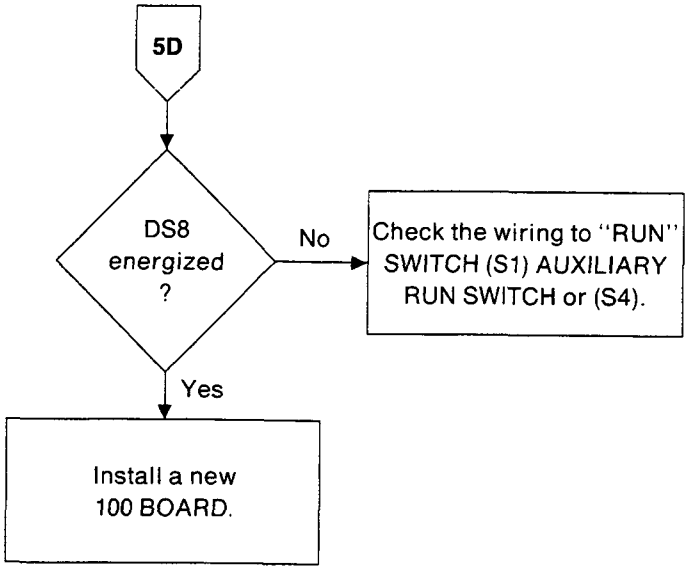

5A
Check that K1 (STANDBY RELAY) is deenergized. CONTACTS 3 & 9 are closed.
K1 deenergized ?
No
Check that LED DS11 is deenergized. If DS11 is energized PROCESSOR is in STANDBY.
Yes
DS11 energized ?
No
Yes
PRESS "RUN" SWITCH. DS11 should deenergize; DS8 should energize.
Check voltage at J18–X,Y. Should be 220–240 V ac.
D11 energized ?
No
Check that DS8 is energized
5D
Yes
Install a new 100 BOARD.
5C
Note:
S1 or S4 is energized with RUN or AUX/RUN SWITCH held in.



CAUTION

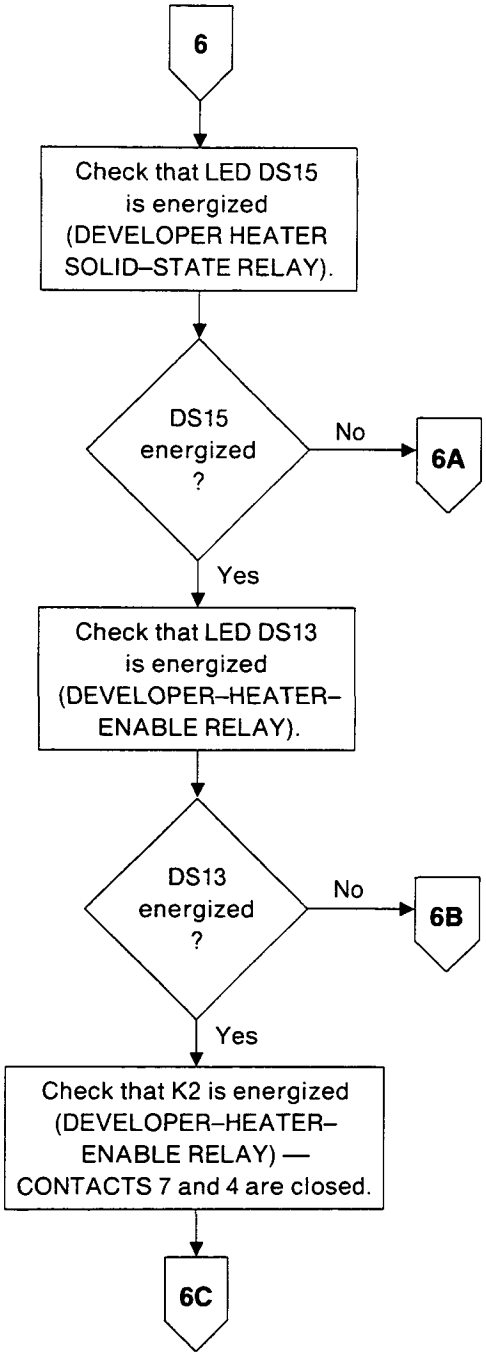
Possible damage from electrostatic discharge.


5C
Voltage correct ?
No
Check wiring back to K4, K2, and TB3 for continuity. Check that P18–J18 is a good connection.
Yes
Check the THERMAL BREAKER BUTTON on back of the DRIVE MOTOR. Is BUTTON in or out ?
Yes
Connection good ?
No
Reconnect new wiring.
BUTTON in ?
No
Disconnect the power, press the THERMAL BREAKER BUTTON, connect the power.
Yes
BUTTON in ?
No
Install a new MOTOR.
Yes
Yes
Install a new MOTOR.


5D
DS8 energized ?
No
Check the wiring to "RUN" SWITCH (S1) AUXILIARY RUN SWITCH or (S4).
Yes
Install a new 100 BOARD.

Developer Lamps Deenergized (DS1 or DS4)

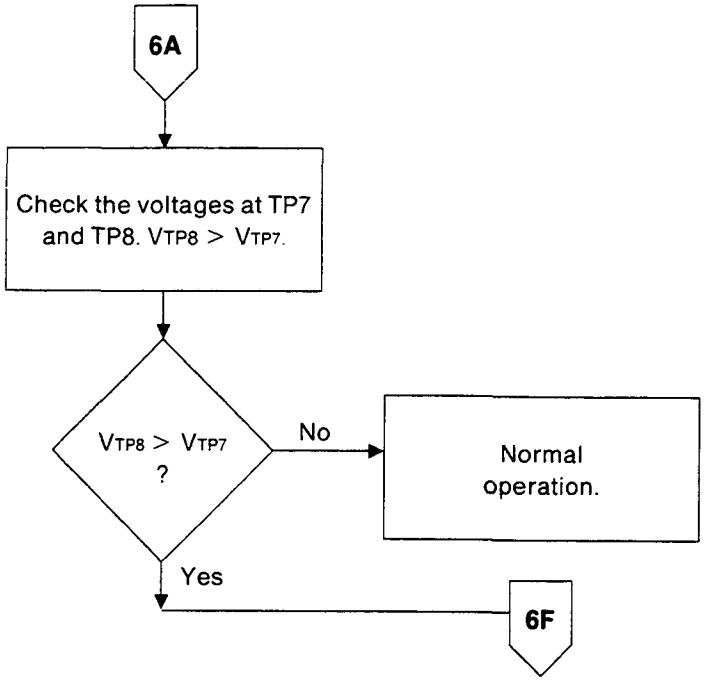
Condition: DEVELOPER LIGHT is off (getting proper heating).



CAUTION

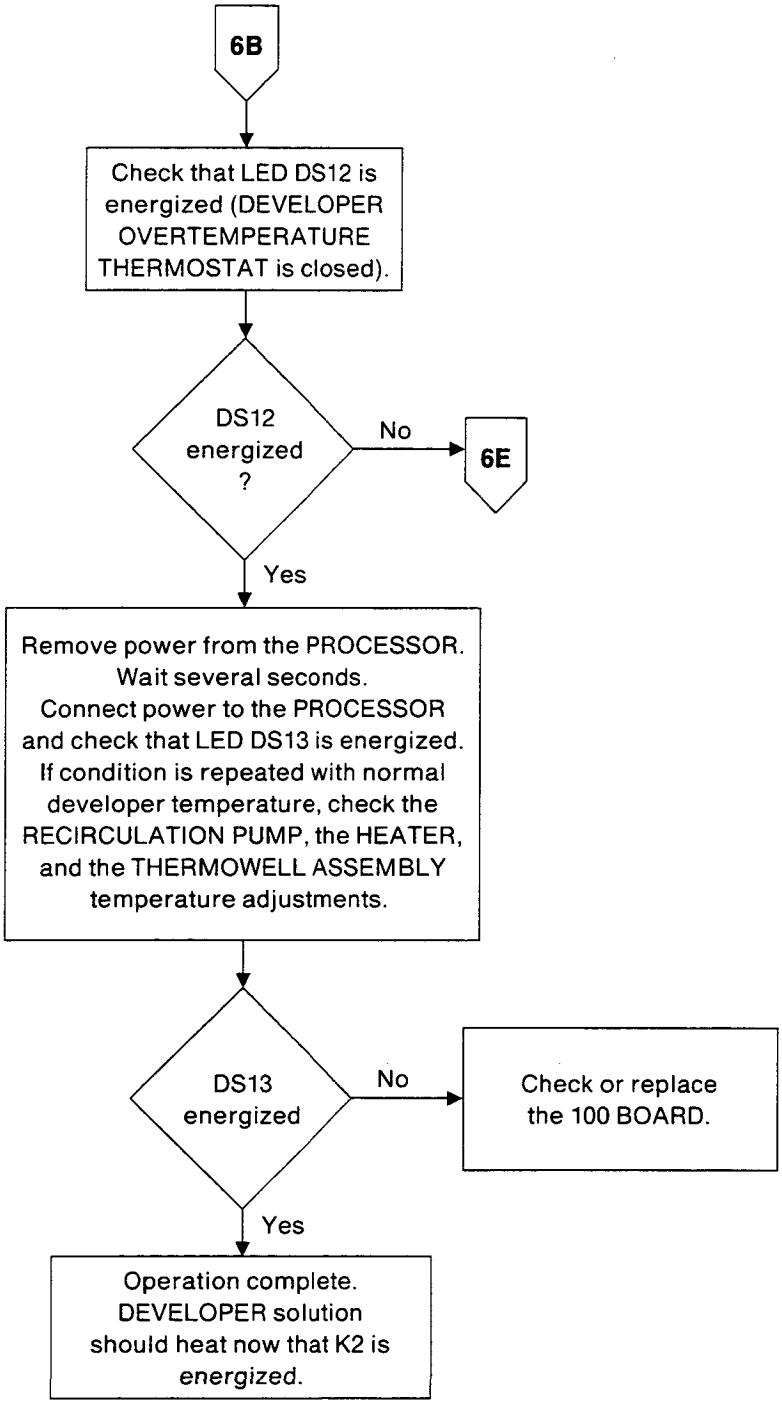
Check that the following PLUGS are connected and locked before starting the electrical diagnostic procedures:
P/J12 and P/J20

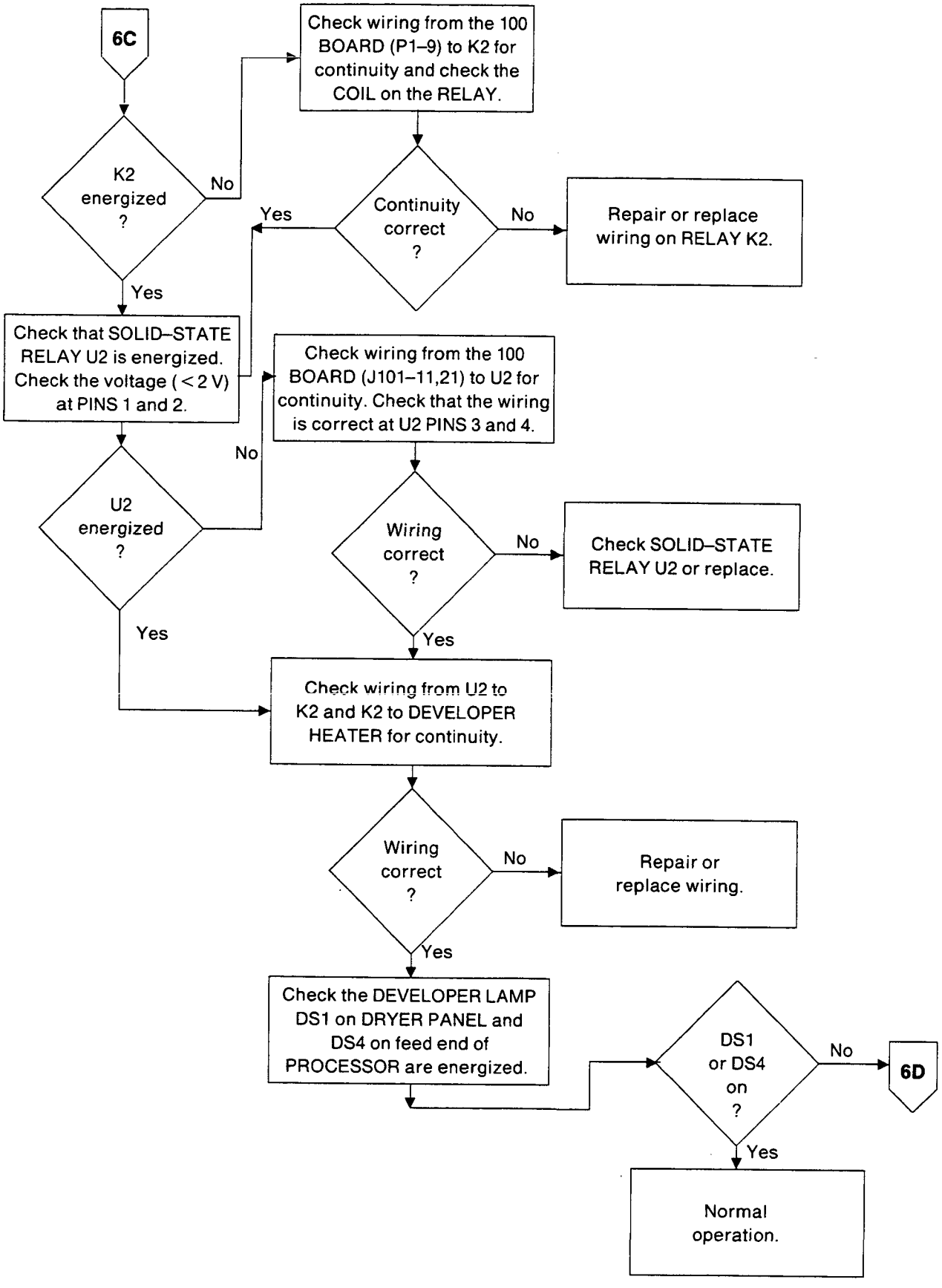
Note:
SOLID–STATE RELAY is not turned on.

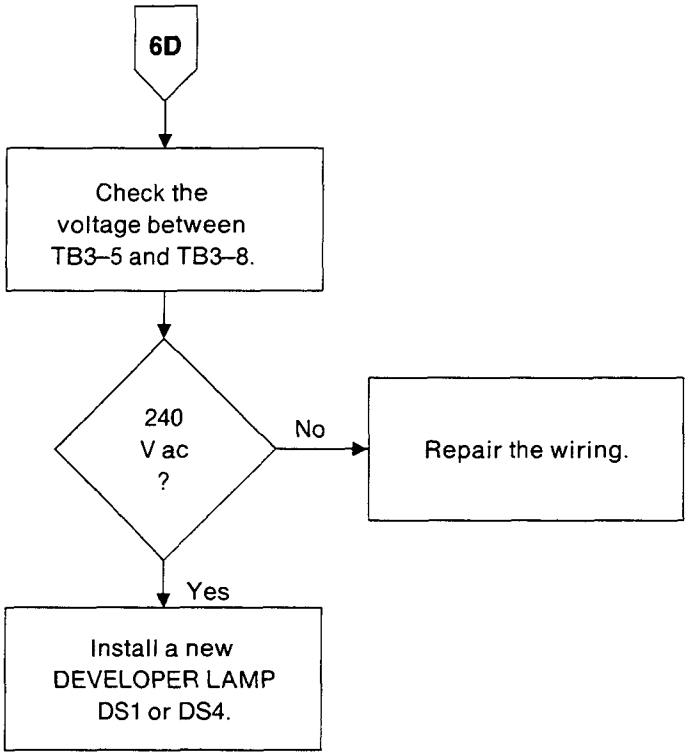


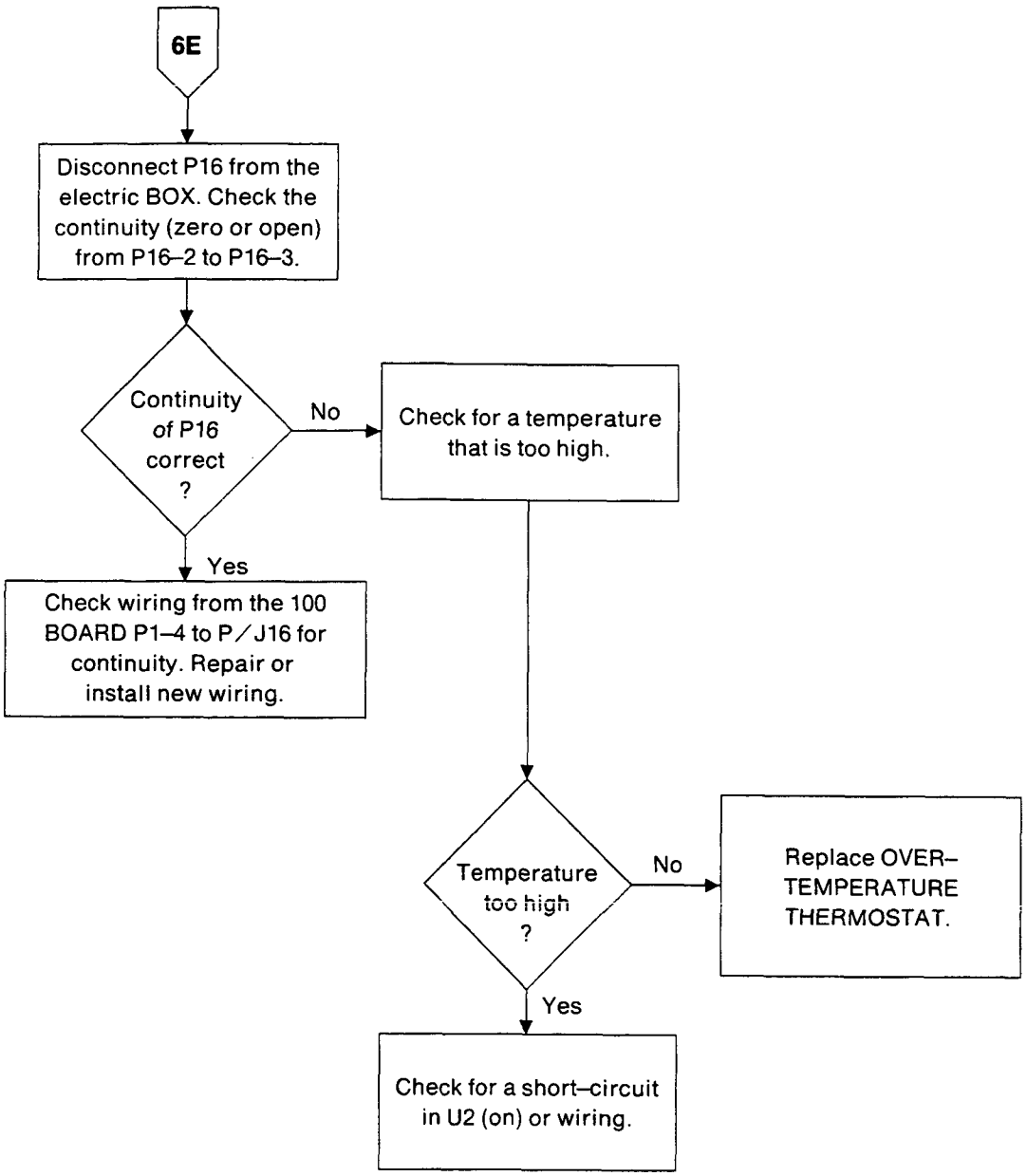
CAUTION

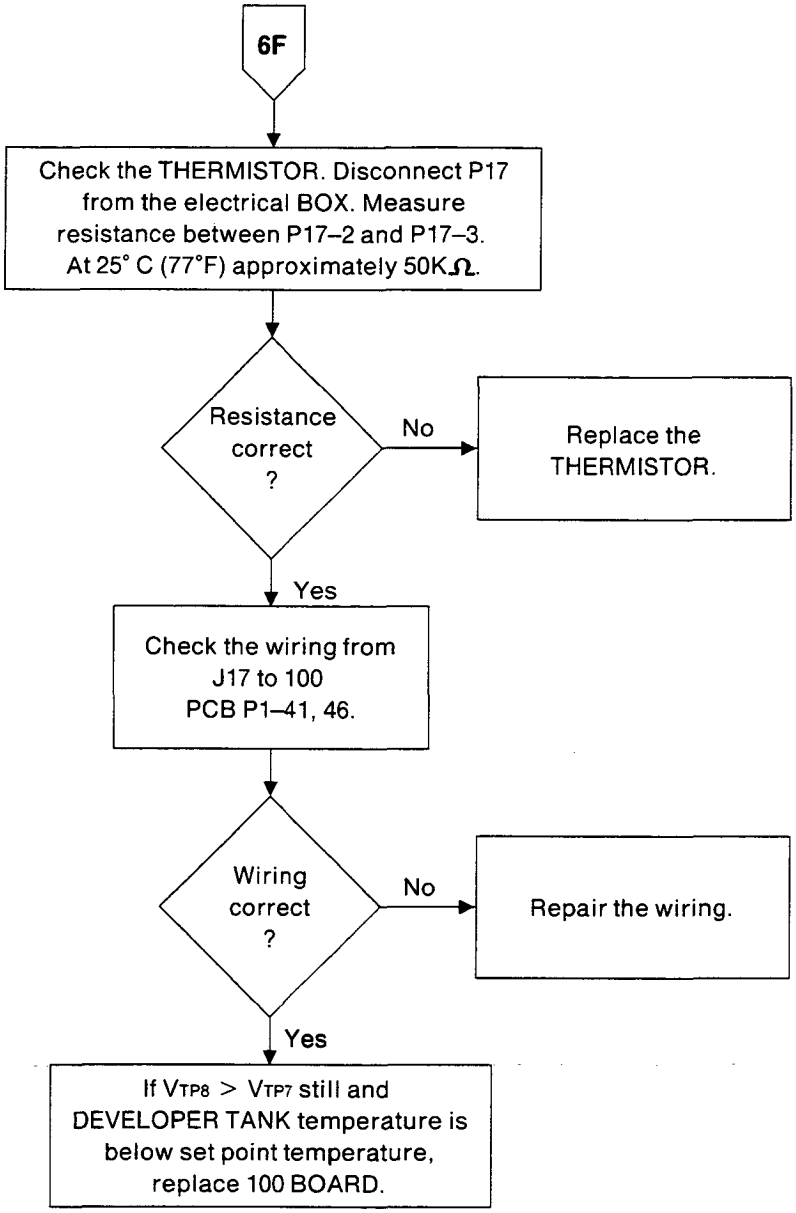
Possible damage from electrostatic discharge.


6B
Check that LED DS12 is energized (DEVELOPER OVERTEMPERATURE THERMOSTAT is closed).
DS12 energized ?
No
6E
Yes
Remove power from the PROCESSOR. Wait several seconds. Connect power to the PROCESSOR and check that LED DS13 is energized. If condition is repeated with normal developer temperature, check the RECIRCULATION PUMP, the HEATER, and the THERMOWELL ASSEMBLY temperature adjustments.
DS13 energized
No
Check or replace the 100 BOARD.
Yes
Operation complete. DEVELOPER solution should heat now that K2 is energized.


6C
K2 energized ?
No
Yes
Check wiring from the 100 BOARD (P1–9) to K2 for continuity and check the COIL on the RELAY.
Continuity correct ?
Yes
No
Repair or replace wiring on RELAY K2.
Check that SOLID–STATE RELAY U2 is energized. Check the voltage (< 2 V) at PINS 1 and 2.
Check wiring from the 100 BOARD (J101–11,21) to U2 for continuity. Check that the wiring is correct at U2 PINS 3 and 4.
U2 energized ?
No
Yes
Wiring correct ?
No
Check SOLID–STATE RELAY U2 or replace.
Yes
Check wiring from U2 to K2 and K2 to DEVELOPER HEATER for continuity.
Wiring correct ?
No
Repair or replace wiring.
Yes
Check the DEVELOPER LAMP DS1 on DRYER PANEL and DS4 on feed end of PROCESSOR are energized.
DS1 or DS4 on ?
No
6D
Yes
Normal operation.

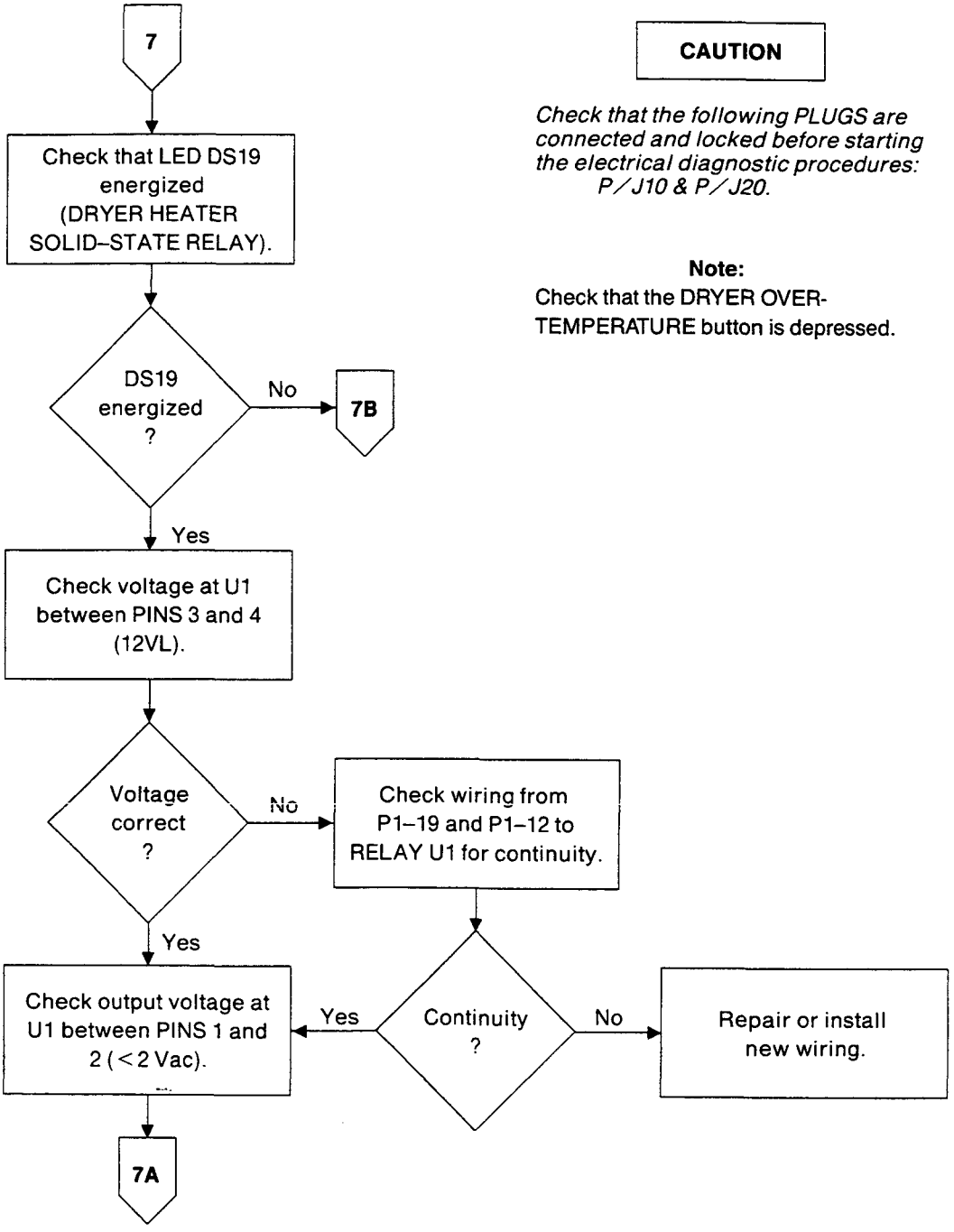

6D
Check the voltage between TB3–5 and TB3–8.
240 V ac ?
No
Repair the wiring.
Yes
Install a new DEVELOPER LAMP DS1 or DS4.


6E
Disconnect P16 from the electric BOX. Check the continuity (zero or open) from P16–2 to P16–3.
Continuity of P16 correct ?
No
Check for a temperature that is too high.
Yes
Check wiring from the 100 BOARD P1–4 to P/J16 for continuity. Repair or install new wiring.
Temperature too high ?
No
Replace OVER–TEMPERATURE THERMOSTAT.
Yes
Check for a short–circuit in U2 (on) or wiring.


6F
Check the THERMISTOR. Disconnect P17 from the electrical BOX. Measure resistance between P17–2 and P17–3. At 25° C (77°F) approximately 50KΩ.
Resistance correct ?
No
Replace the THERMISTOR.
Yes
Check the wiring from J17 to 100 PCB P1–41, 46.
Wiring correct ?
No
Repair the wiring.
Yes
If VTP8 > VTP7 still and DEVELOPER TANK temperature is below set point temperature, replace 100 BOARD.

Dryer Lamp Off (DS2)

Assumption: DRYER temperature below set point.



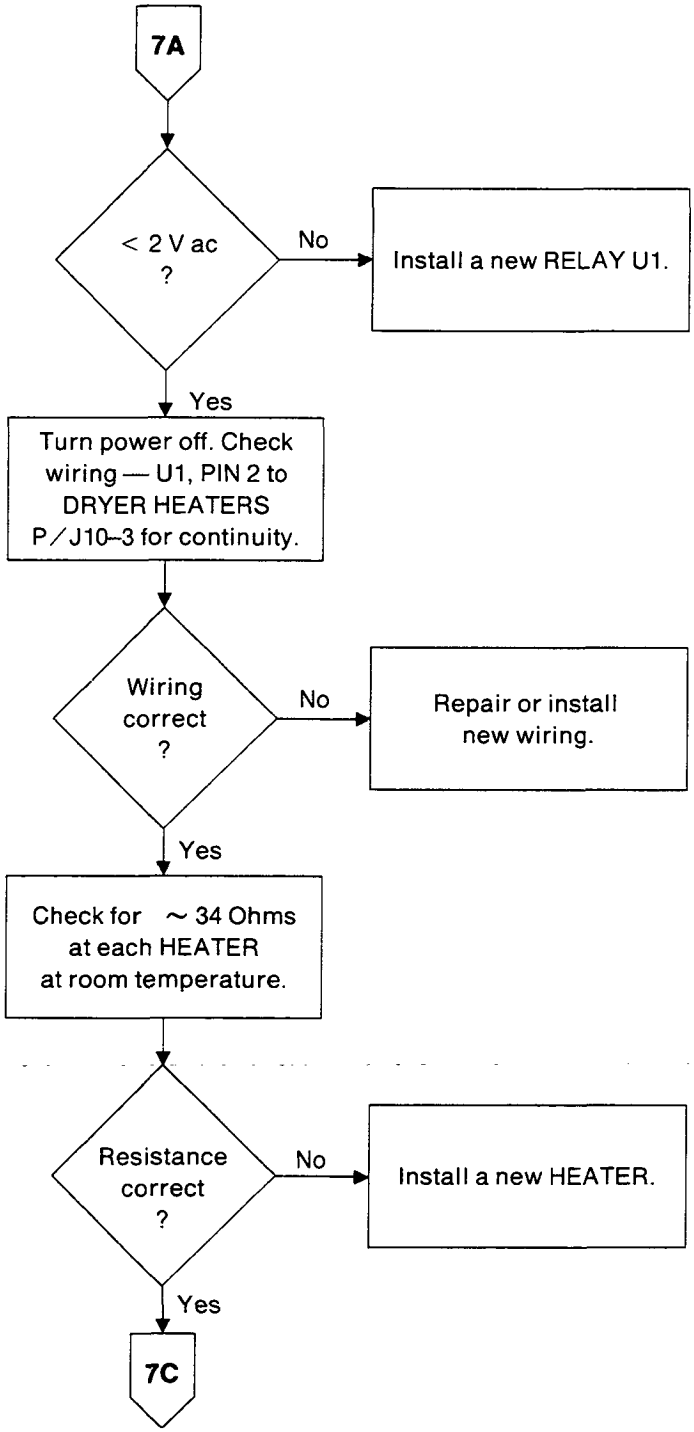
CAUTION

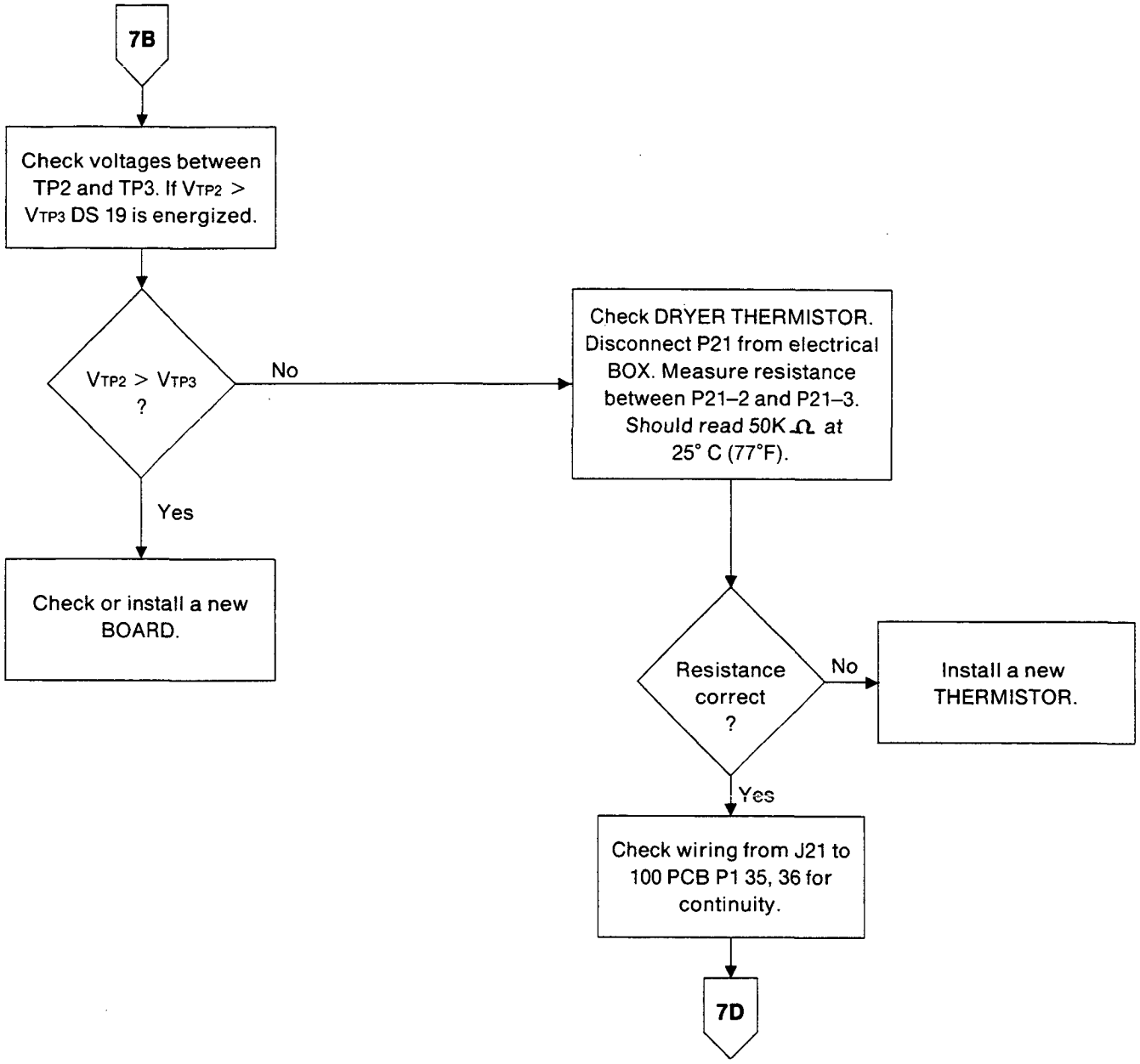
Check that the following PLUGS are connected and locked before starting the electrical diagnostic procedures: P/J10 & P/J20.

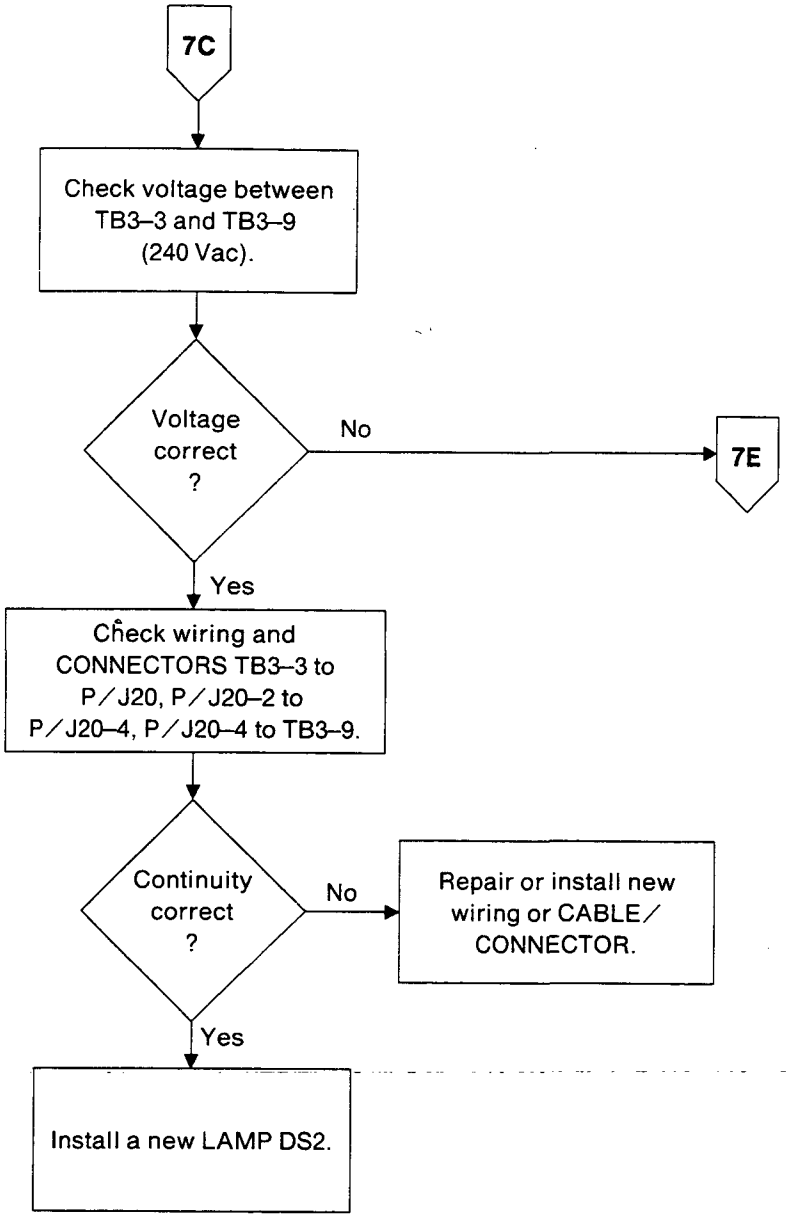
Note:
Check that the DRYER OVER-TEMPERATURE button is depressed.

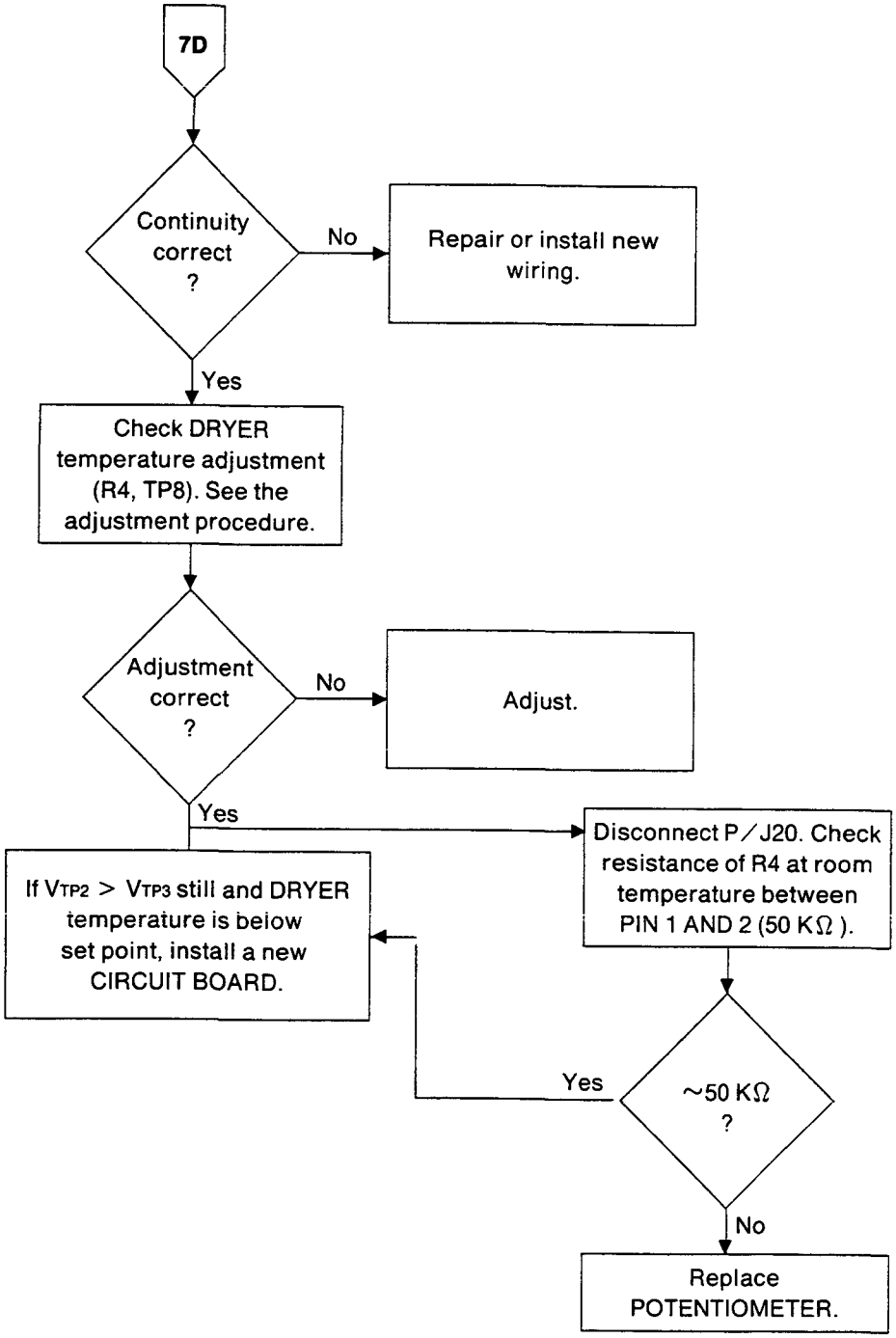
CAUTION

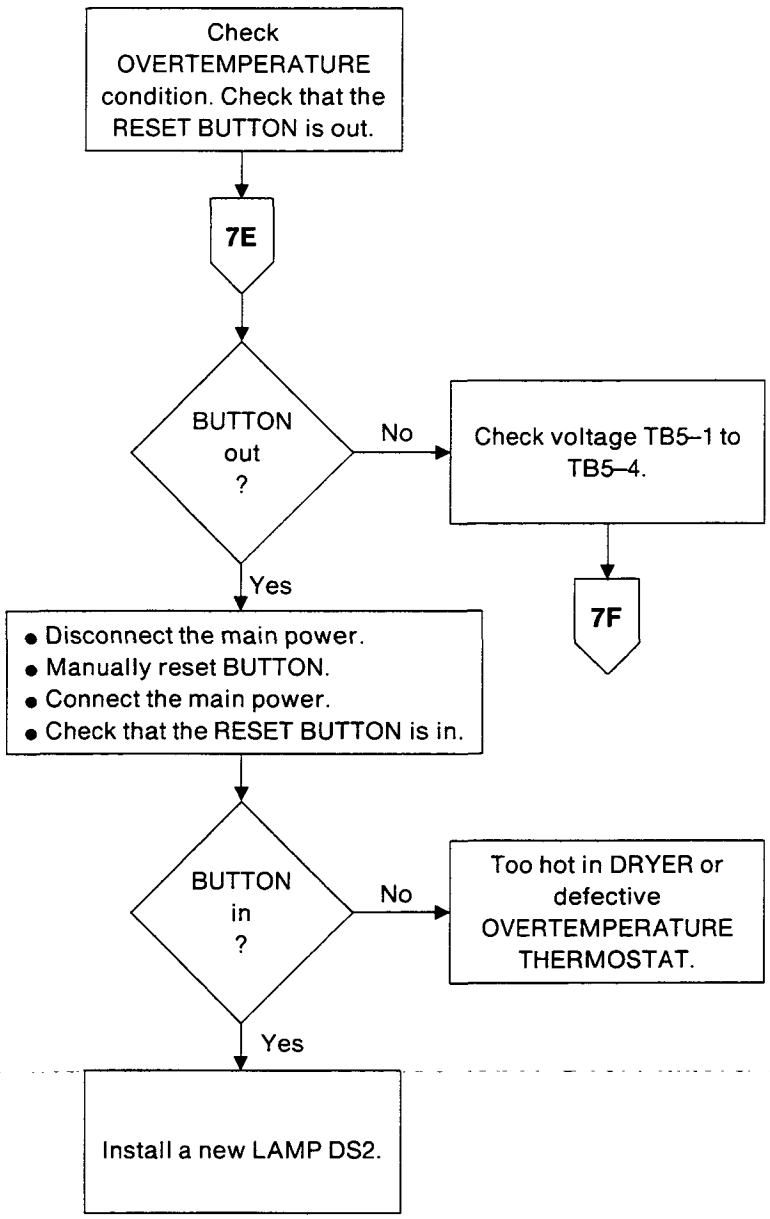
Possible damage from electrostatic discharge.




7B
Check voltages between TP2 and TP3. If VTP2 > VTP3 DS 19 is energized.
VTP2 > VTP3 ?
No
Yes
Check or install a new BOARD.
Check DRYER THERMISTOR. Disconnect P21 from electrical BOX. Measure resistance between P21–2 and P21–3. Should read 50KΩ at 25° C (77°F).
Resistance correct ?
No
Install a new THERMISTOR.
Yes
Check wiring from J21 to 100 PCB P1 35, 36 for continuity.
7D

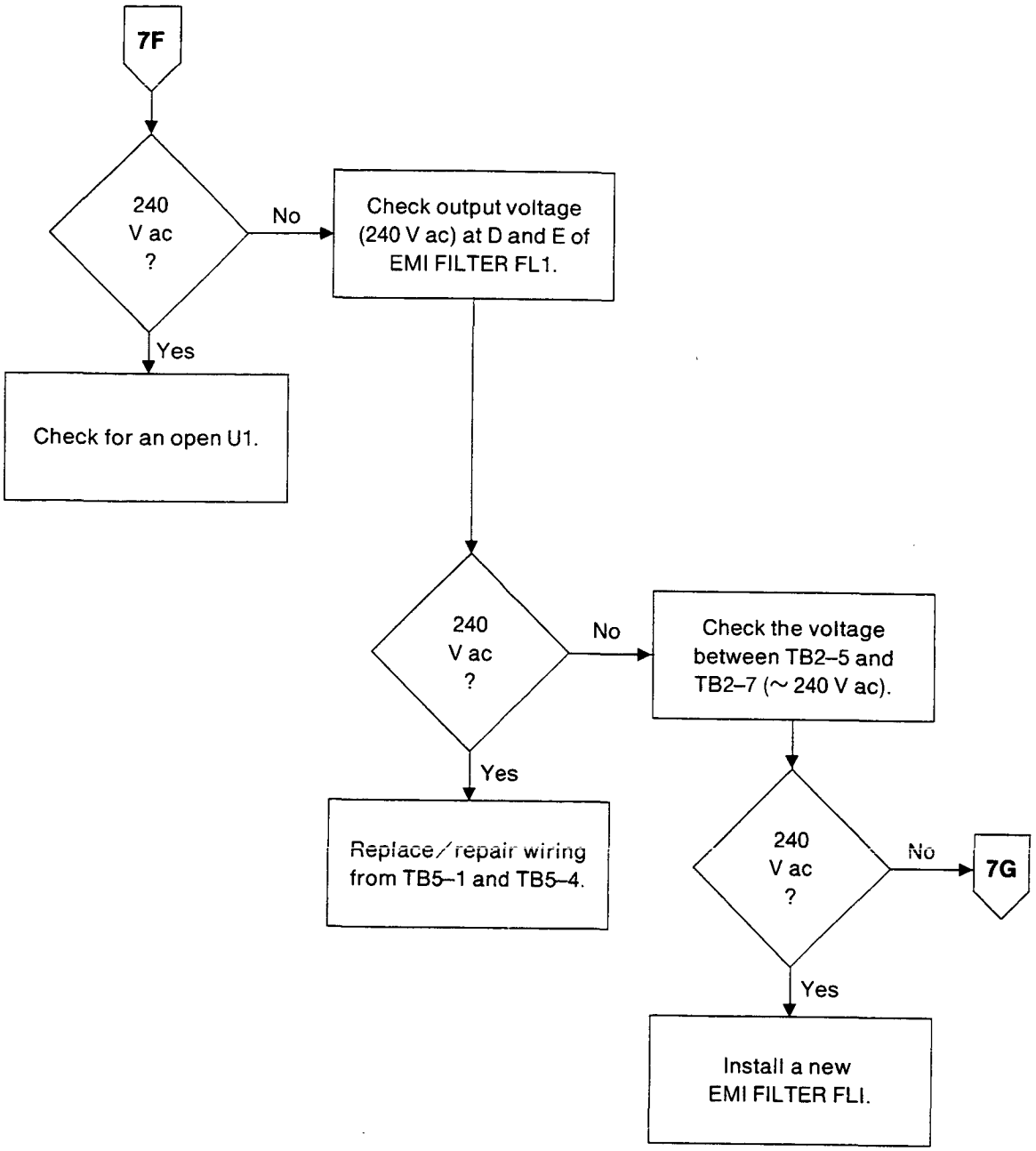

7C
Check voltage between TB3–3 and TB3–9 (240 Vac).
Voltage correct ?
No
7E
Yes
Check wiring and CONNECTORS TB3–3 to P/J20, P/J20–2 to P/J20–4, P/J20–4 to TB3–9.
Continuity correct ?
No
Repair or install new wiring or CABLE/ CONNECTOR.
Yes
Install a new LAMP DS2.

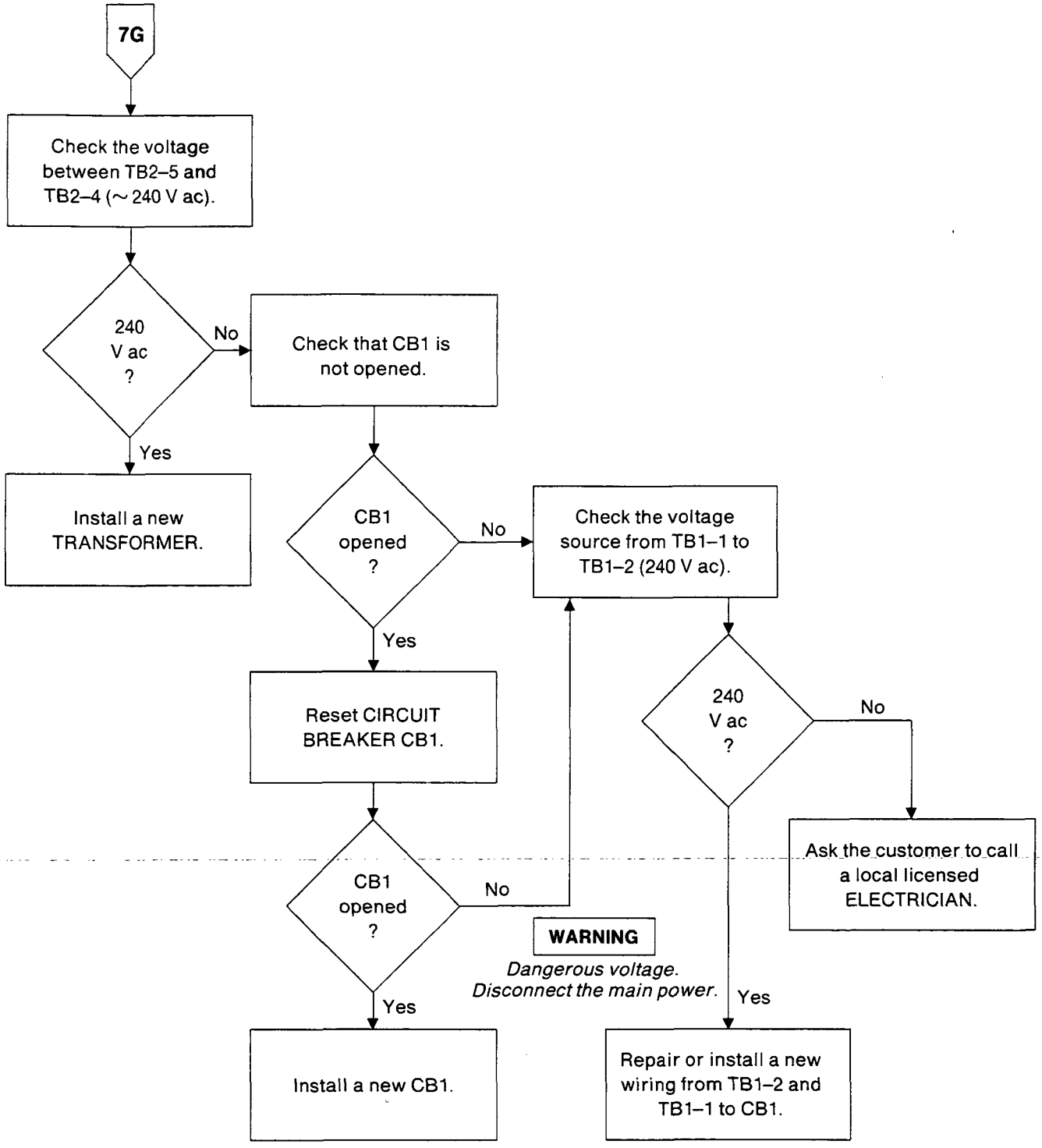

7D
Continuity correct ?
No
Repair or install new wiring.
Yes
Check DRYER temperature adjustment (R4, TP8). See the adjustment procedure.
Adjustment correct ?
No
Adjust.
Yes
Disconnect P/J20. Check resistance of R4 at room temperature between PIN 1 AND 2 (50 KΩ).
If VTP2 > VTP3 still and DRYER temperature is below set point, install a new CIRCUIT BOARD.
Yes
~50 KΩ ?
No
Replace POTENTIOMETER.



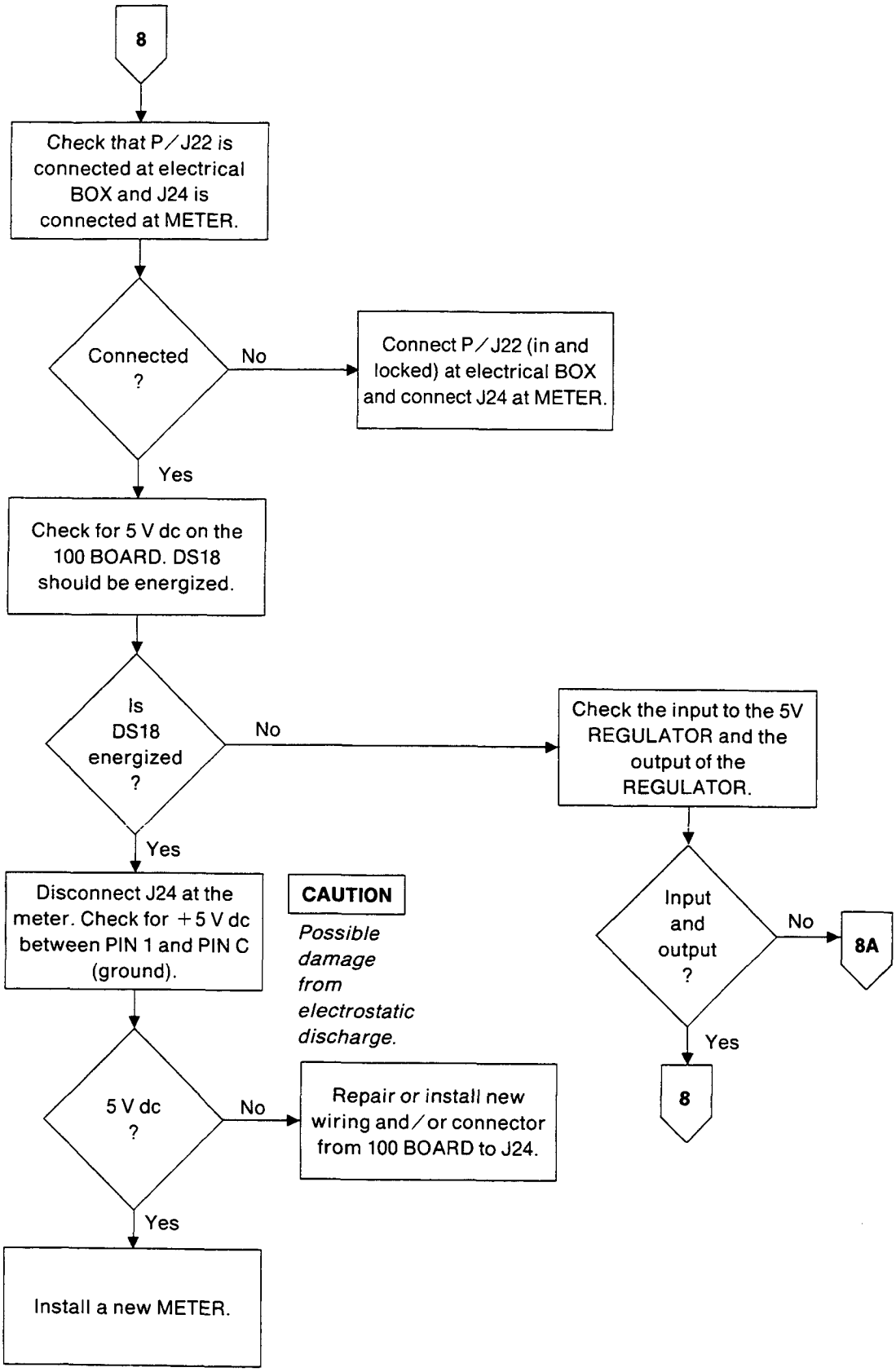
Note:

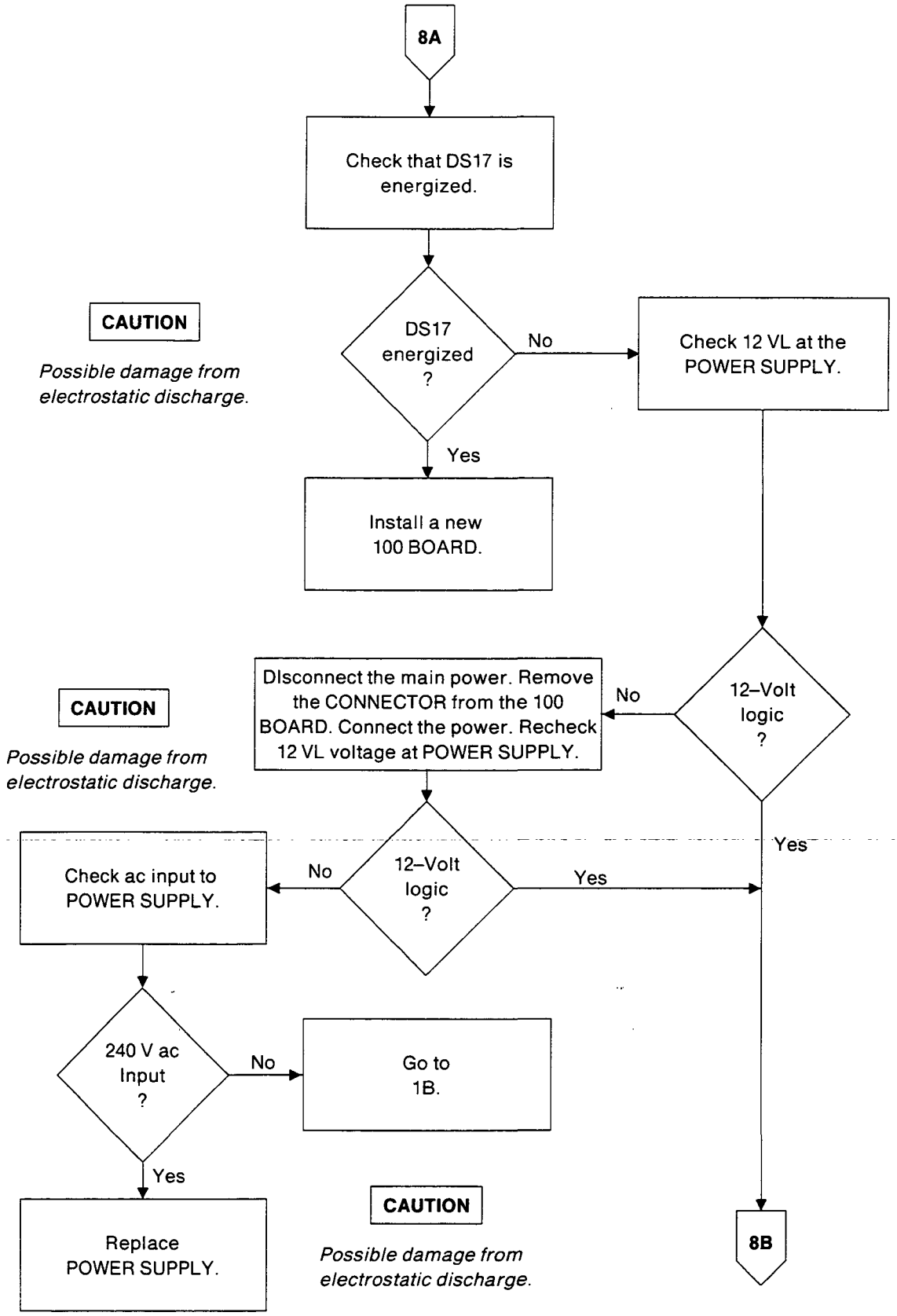
Wait for DRYER to cool down.

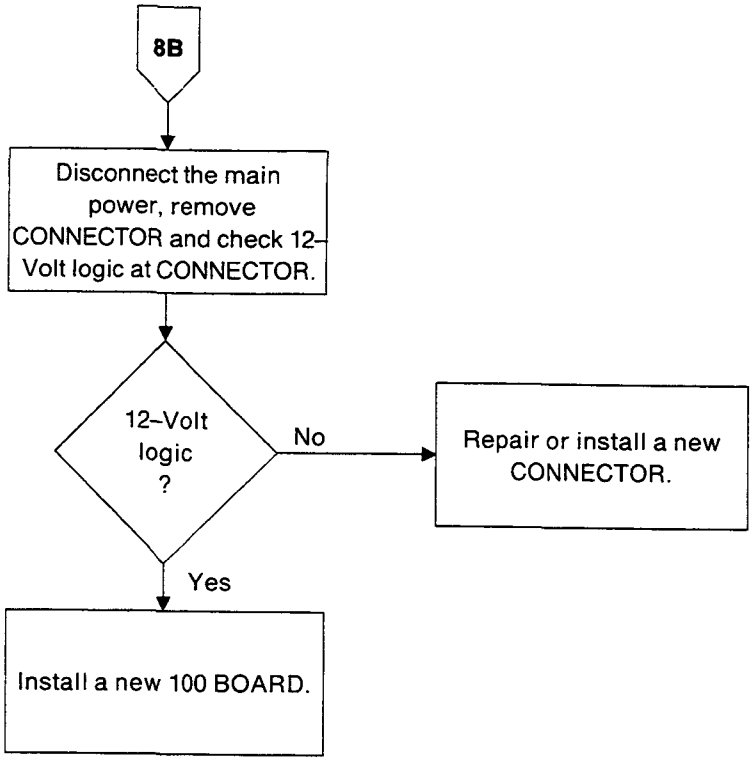

7F
240 V ac ?
No
Check output voltage (240 V ac) at D and E of EMI FILTER FL1.
Yes
Check for an open U1.
240 V ac ?
No
Check the voltage between TB2–5 and TB2–7 (~ 240 V ac).
Yes
Replace/repair wiring from TB5–1 and TB5–4.
240 V ac ?
No
7G
Yes
Install a new EMI FILTER FLI.


7G
Check the voltage between TB2–5 and TB2–4 (~ 240 V ac).
240 V ac ?
No
Yes
Check that CB1 is not opened.
Install a new TRANSFORMER.
CB1 opened ?
No
Yes
Check the voltage source from TB1–1 to TB1–2 (240 V ac).
Reset CIRCUIT BREAKER CB1.
240 V ac ?
No
Yes
Ask the customer to call a local licensed ELECTRICIAN.
CB1 opened ?
No
Yes
WARNING
Dangerous voltage.
Disconnect the main power.
Install a new CB1.
Repair or install a new wiring from TB1–2 and TB1–1 to CB1.

Developer Meter Is Not Energized



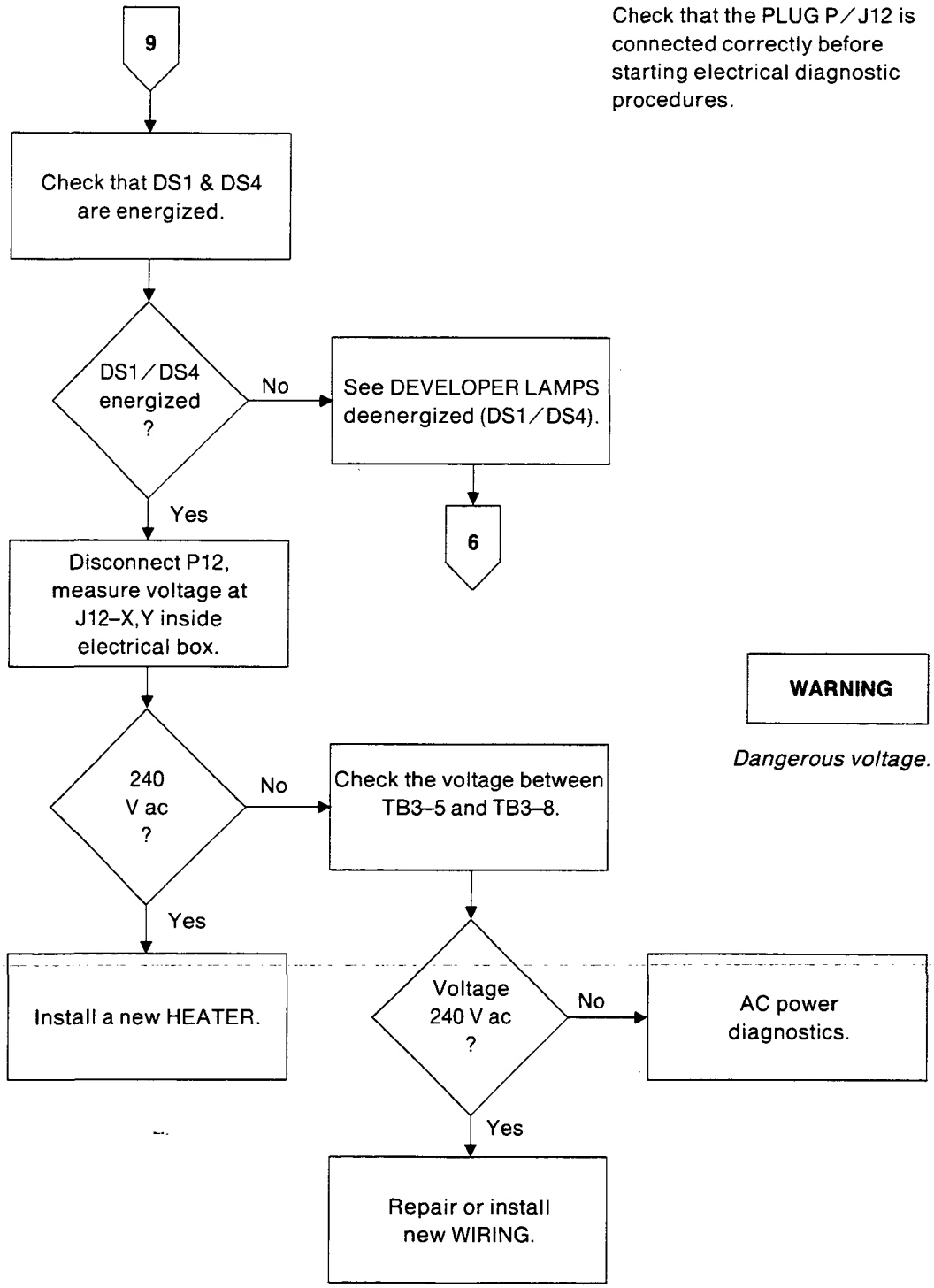

8A
Check that DS17 is energized.
DS17 energized ?
No
Yes
Check 12 VL at the POWER SUPPLY.
Install a new 100 BOARD.
CAUTION
Possible damage from electrostatic discharge.
12–Volt logic ?
No
Yes
DIsconnect the main power. Remove the CONNECTOR from the 100 BOARD. Connect the power. Recheck 12 VL voltage at POWER SUPPLY.
CAUTION
Possible damage from electrostatic discharge.
12–Volt logic ?
No
Yes
Check ac input to POWER SUPPLY.
240 V ac Input ?
No
Yes
Go to 1B.
Replace POWER SUPPLY.
CAUTION
Possible damage from electrostatic discharge.
8B



CAUTION

Possible damage from electrostatic discharge.

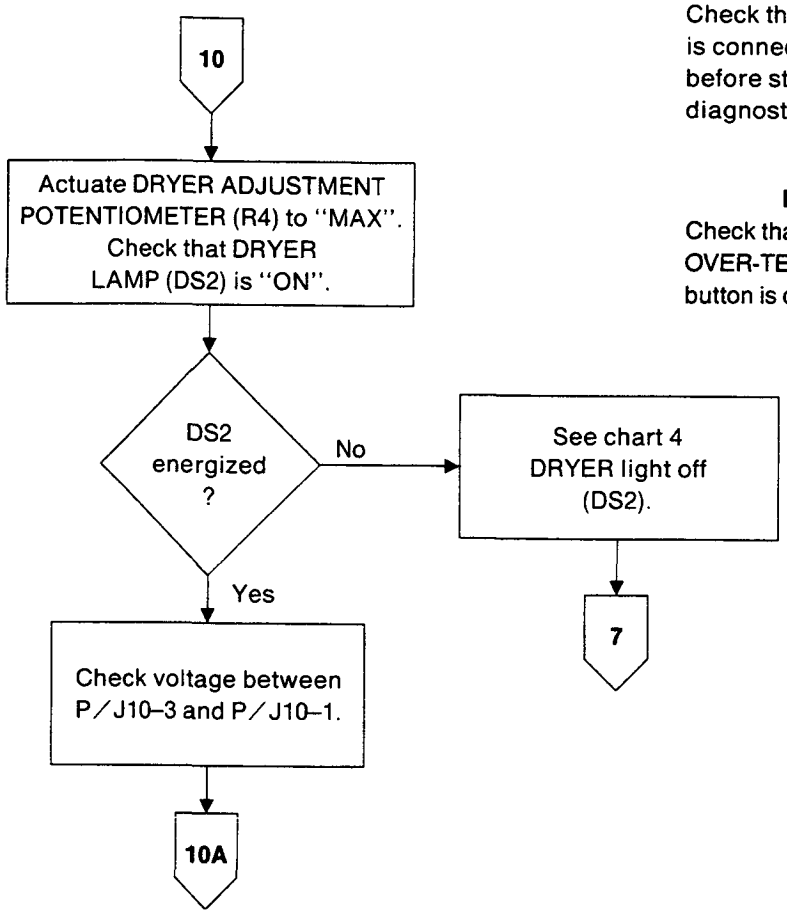
Developer Temperature Is Not Increasing



Check that the PLUG P/J12 is connected correctly before starting electrical diagnostic procedures.

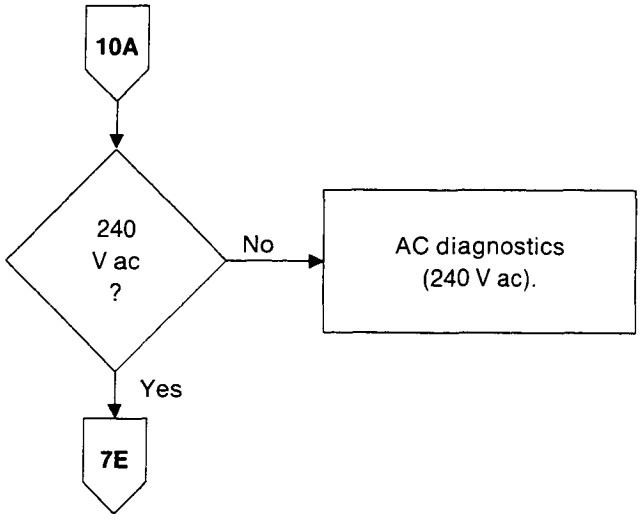
WARNING

Dangerous voltage.



Check that the PLUG P/J10 is connected correctly before starting electrical diagnostic procedures.

Note:
Check that the DRYER OVER-TEMPERATURE button is depressed.

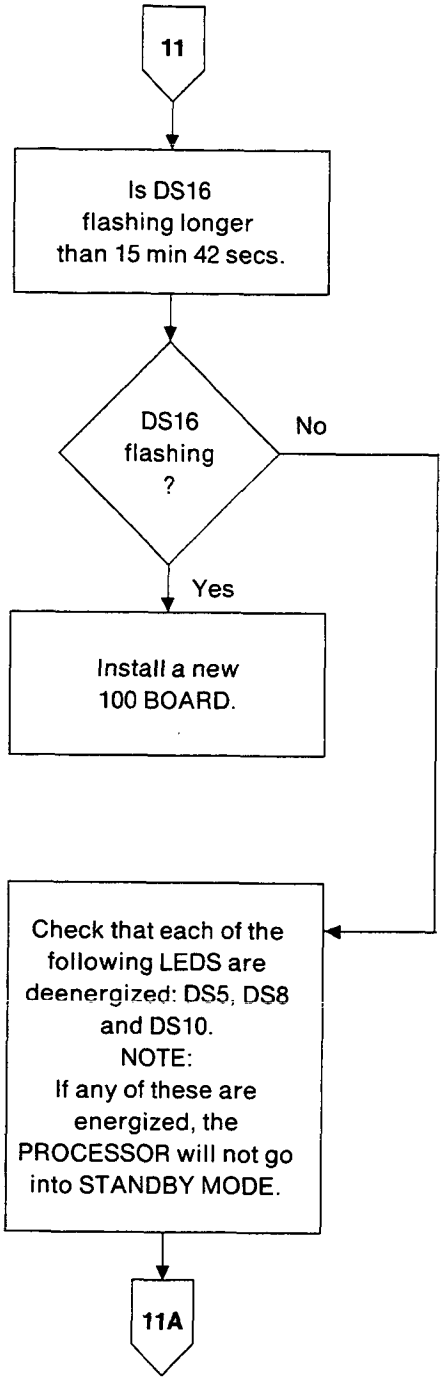


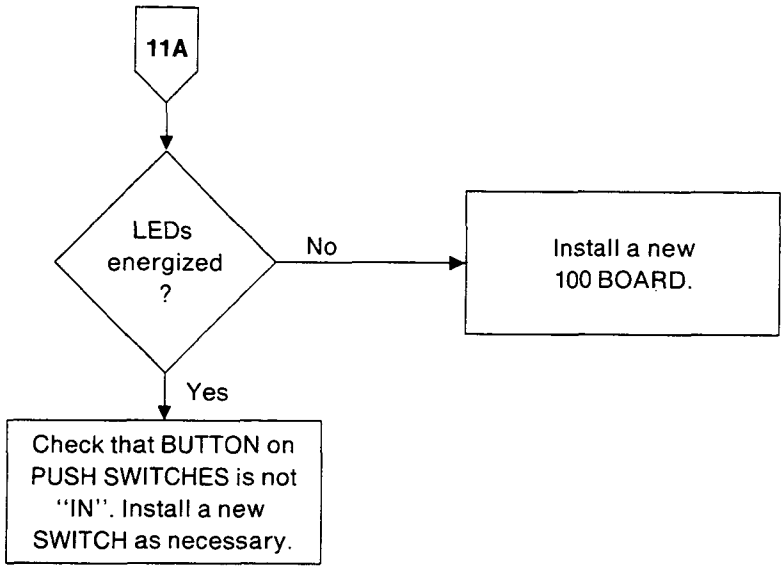
WARNING

Dangerous voltage.

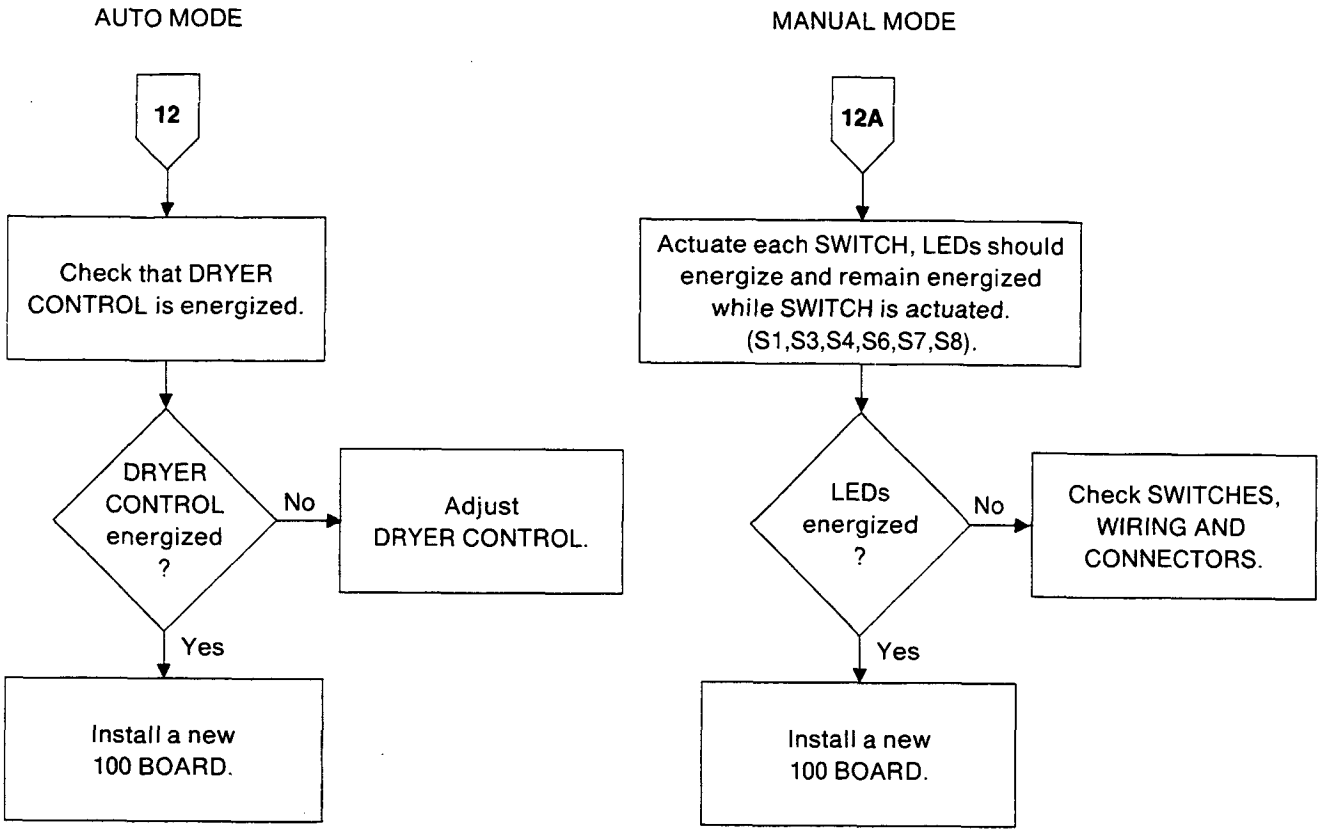
CAUTION

Possible damage from electrostatic discharge.

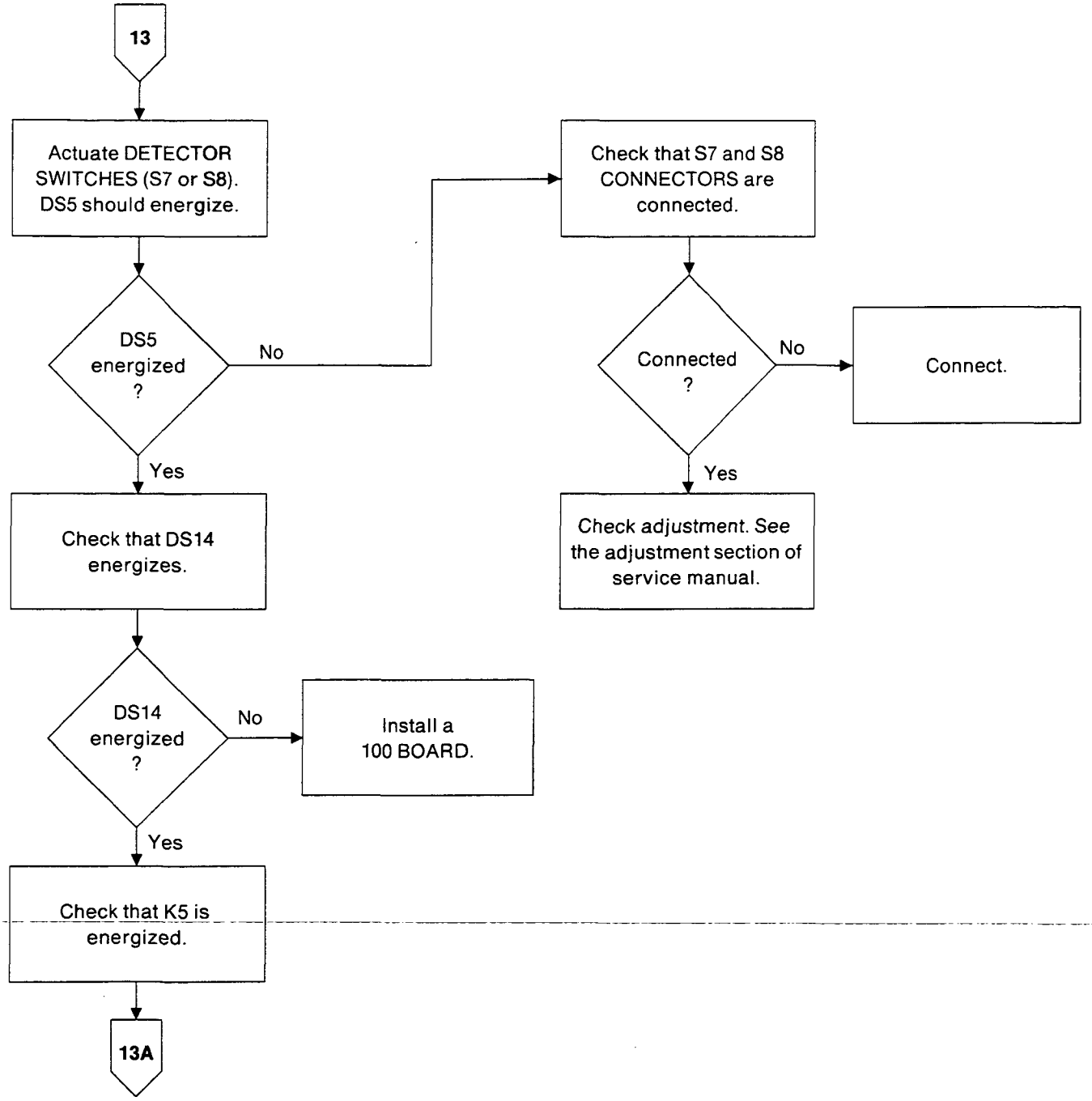


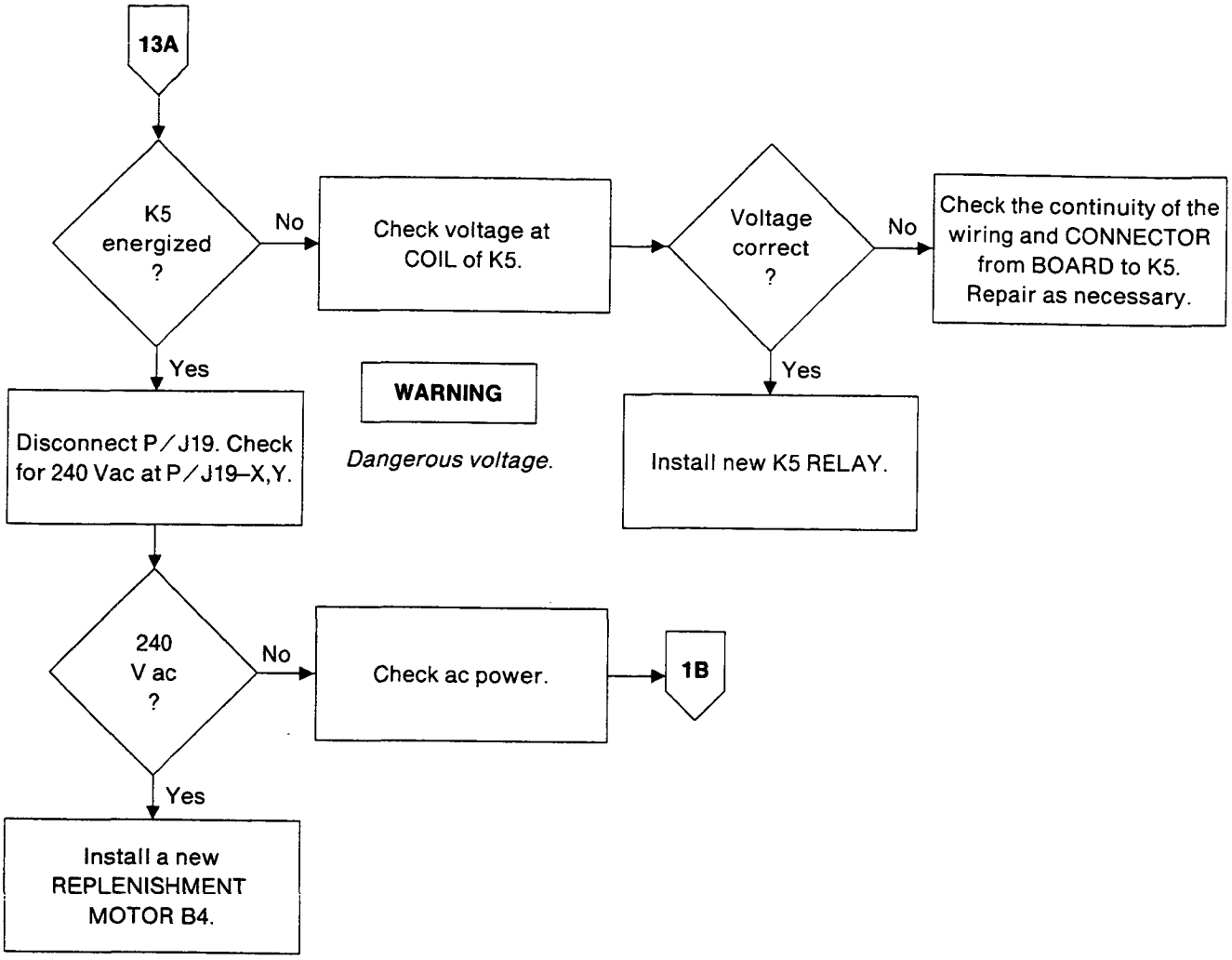

11A
LEDs energized ?
No
Install a new 100 BOARD.
Yes
Check that BUTTON on PUSH SWITCHES is not "IN". Install a new SWITCH as necessary.

Processor Will Not Come Out of "Standby" In Auto Mode After 9 min 30 secs.



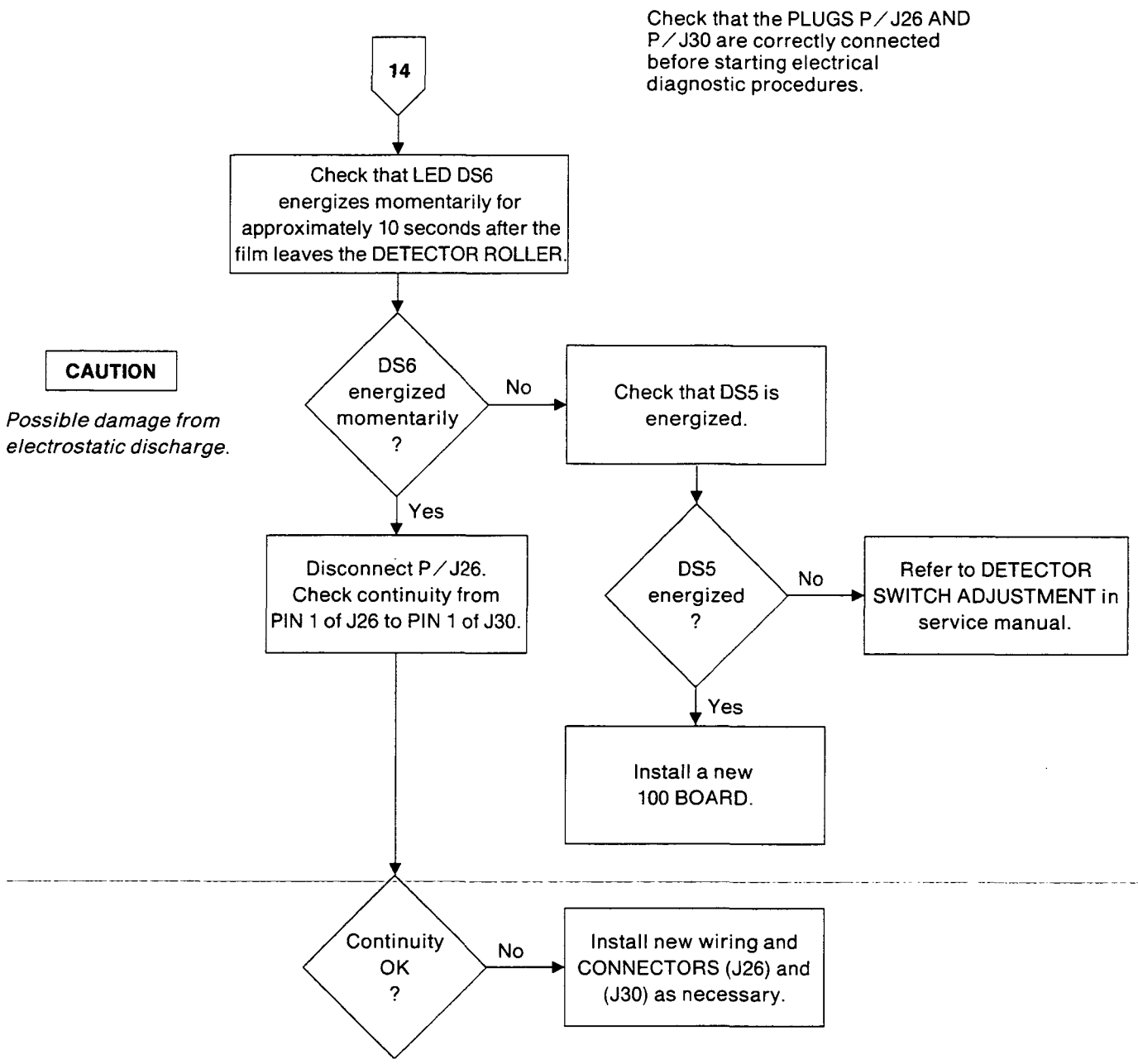
No Replenishment




13A
K5 energized ?
No
Check voltage at COIL of K5.
Voltage correct ?
No
Check the continuity of the wiring and CONNECTOR from BOARD to K5. Repair as necessary.
Yes
WARNING
Dangerous voltage.
Yes
Install new K5 RELAY.
Disconnect P/J19. Check for 240 Vac at P/J19–X,Y.
240 V ac ?
No
Check ac power.
1B
Yes
Install a new REPLENISHMENT MOTOR B4.

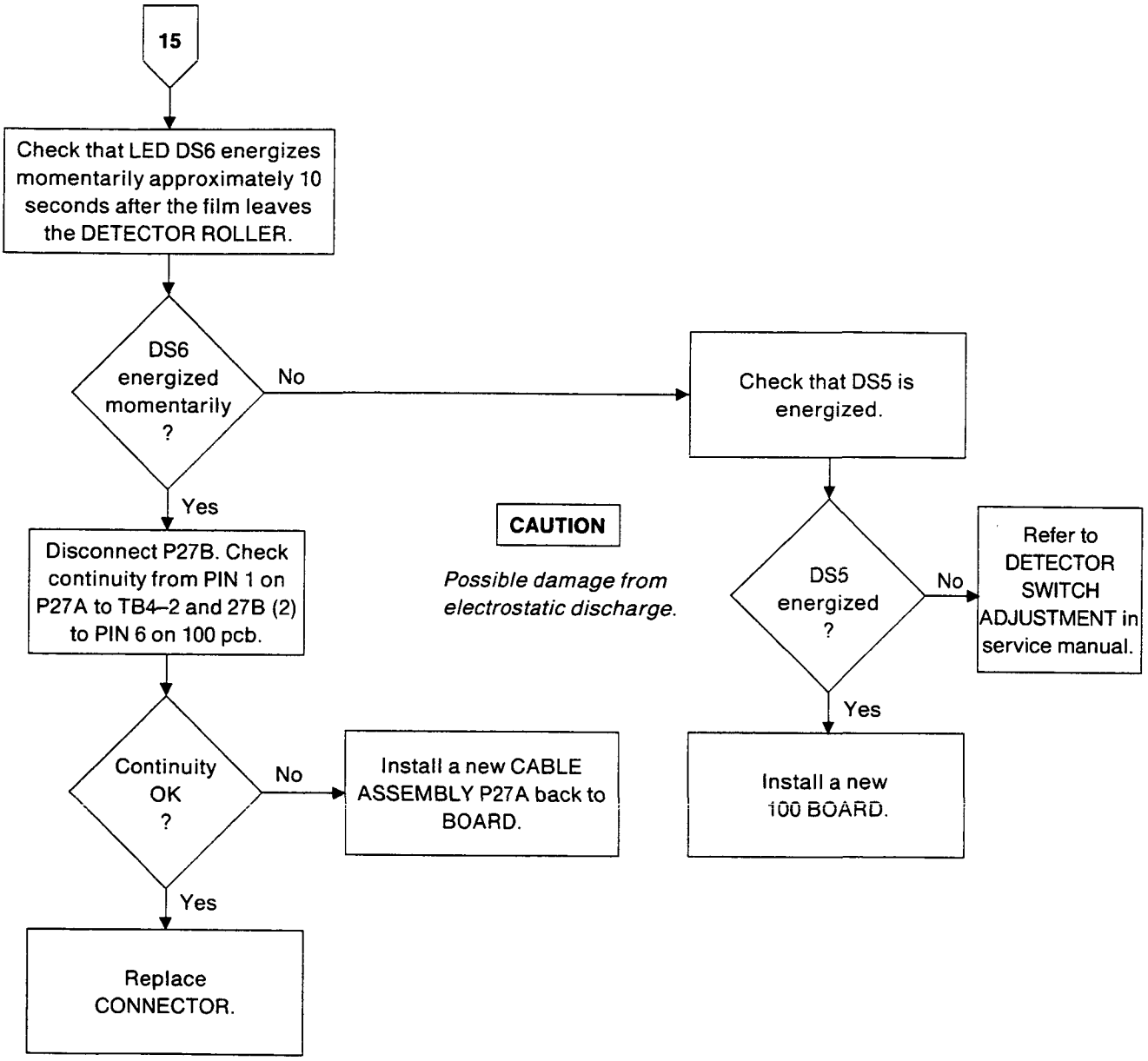
No Buzzer (DS3)

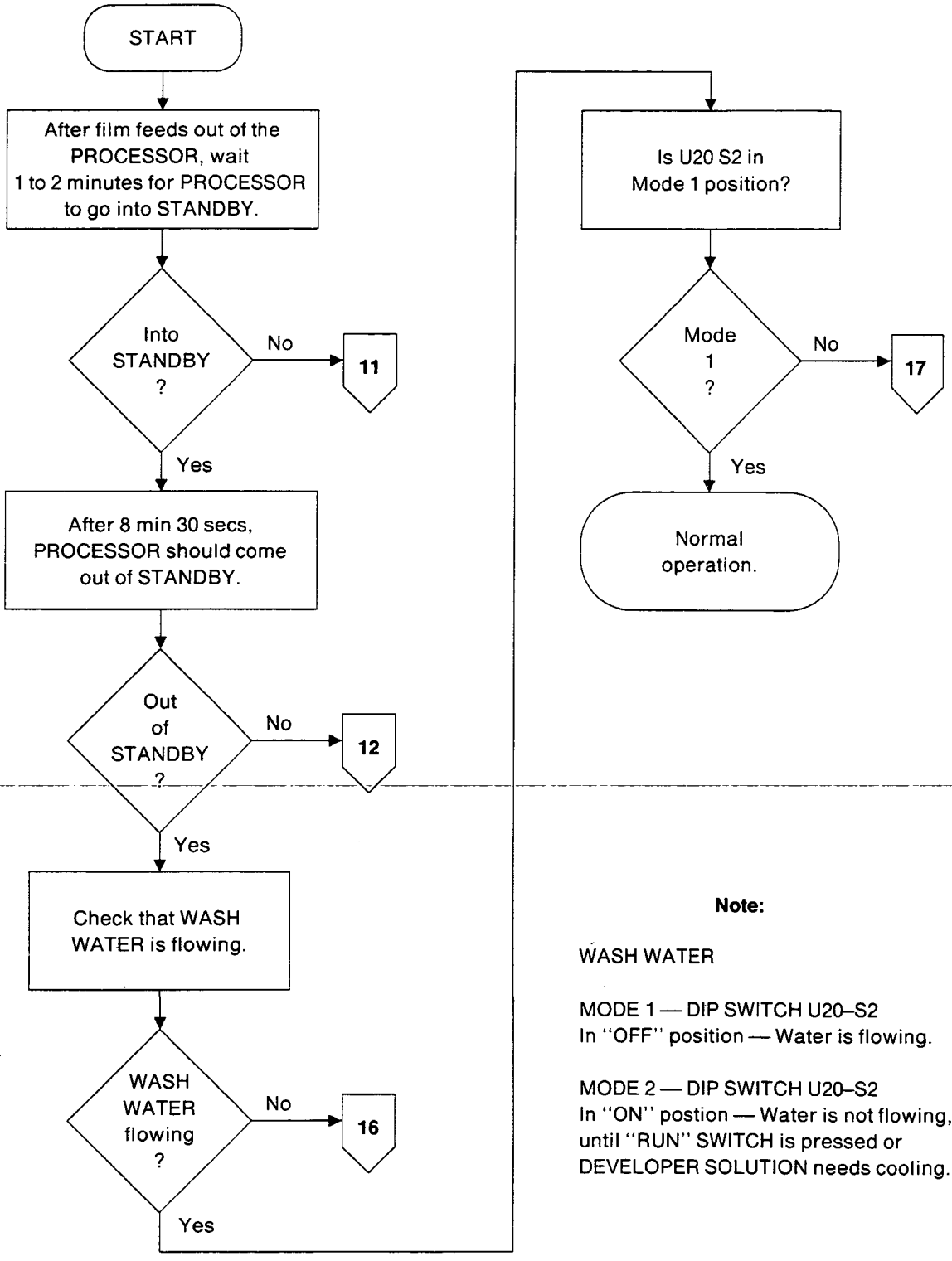
Condition: Film being fed into PROCESSOR.



No Counter (M1)

Condition: Film being fed into PROCESSOR.





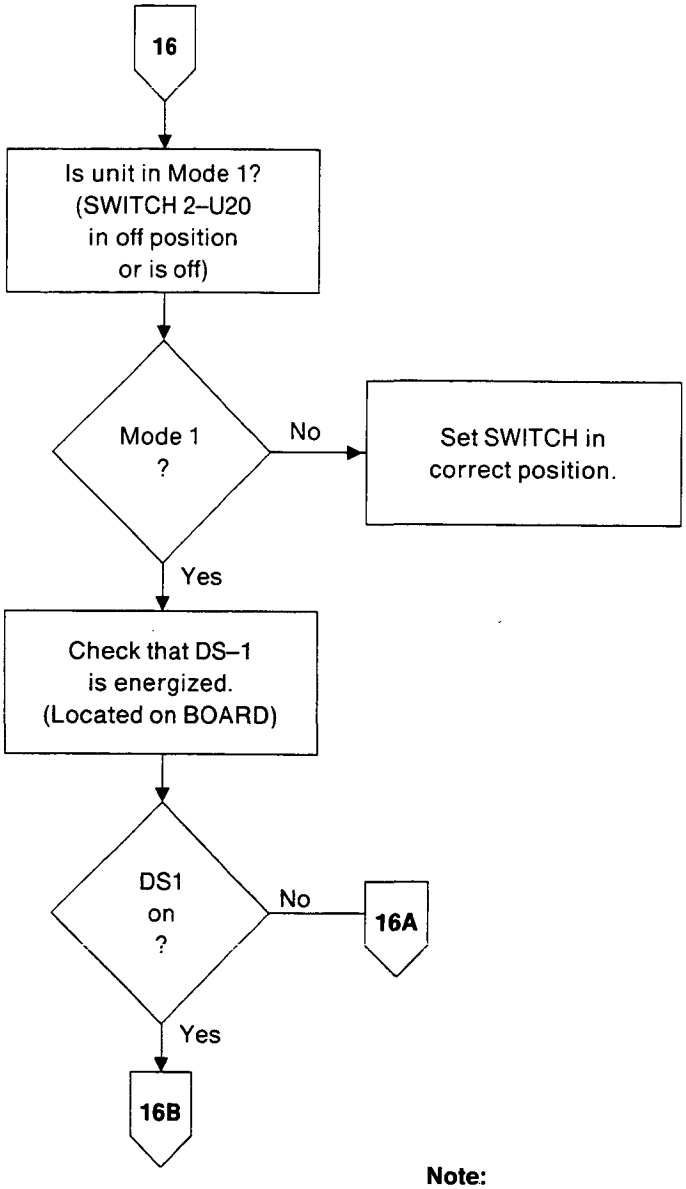
Note:

WASH WATER

MODE 1 — DIP SWITCH U20–S2
In "OFF" position — Water is flowing.

MODE 2 — DIP SWITCH U20–S2
In "ON" postion — Water is not flowing, until "RUN" SWITCH is pressed or DEVELOPER SOLUTION needs cooling.

Wash Water Not Flowing — Mode 1 (Out of Standby)

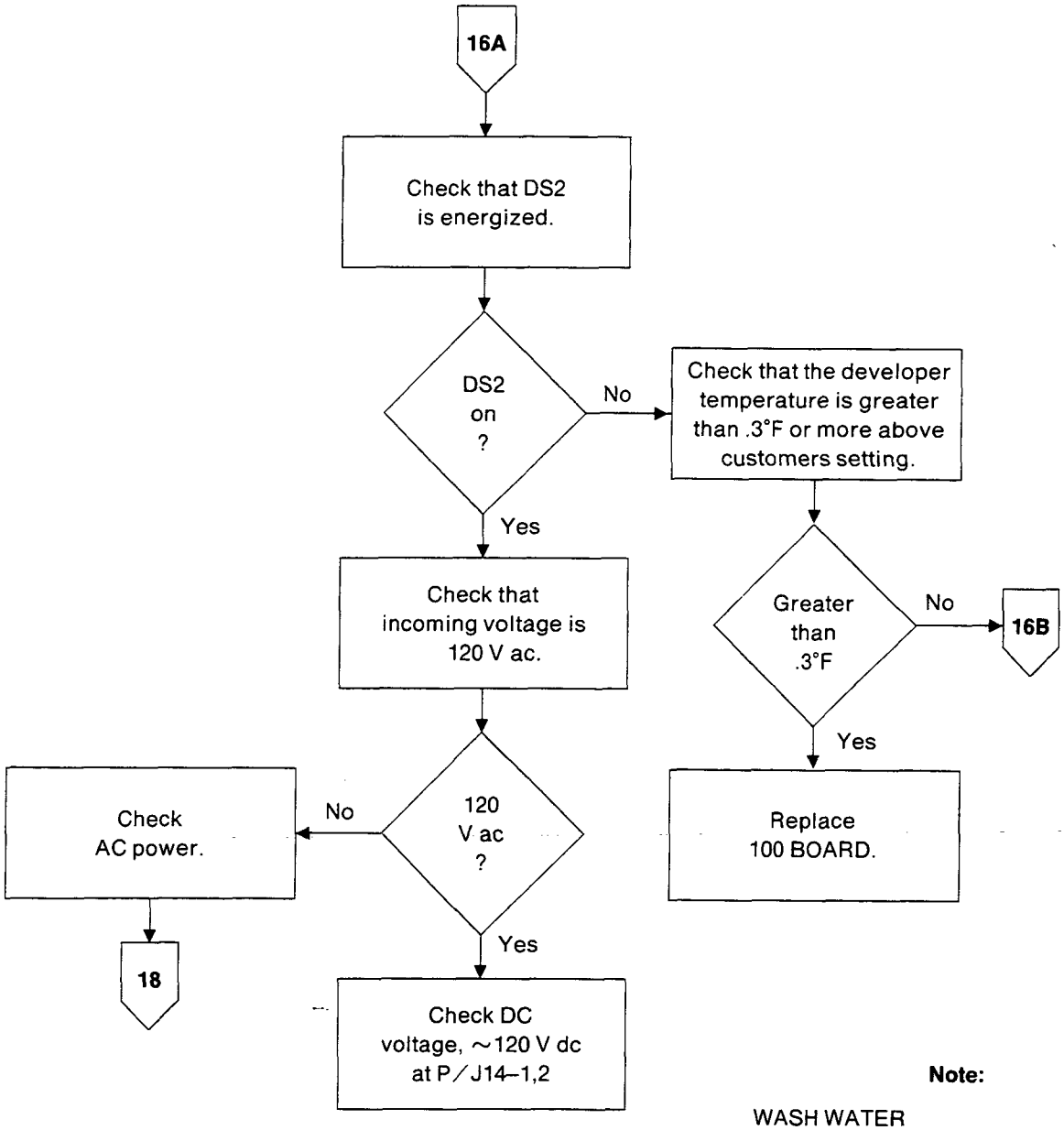


Note:

WASH WATER

MODE 1 — DIP SWITCH U20–S2
In "OFF" position — Water is flowing.

MODE 2 — DIP SWITCH U20–S2
In "ON" position — Water is not flowing,
until "RUN" SWITCH is pressed or
DEVELOPER SOLUTION needs cooling.

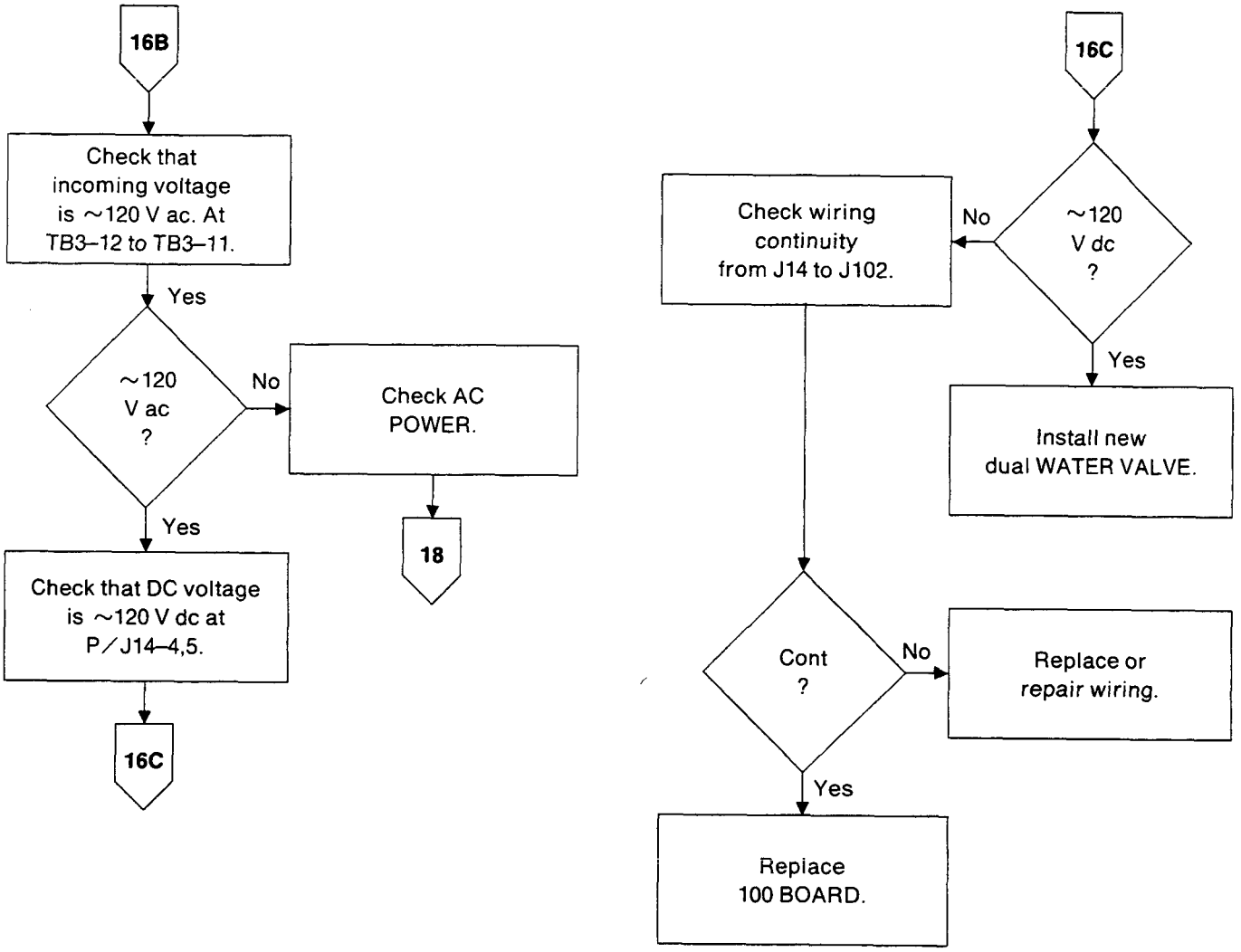


Note:

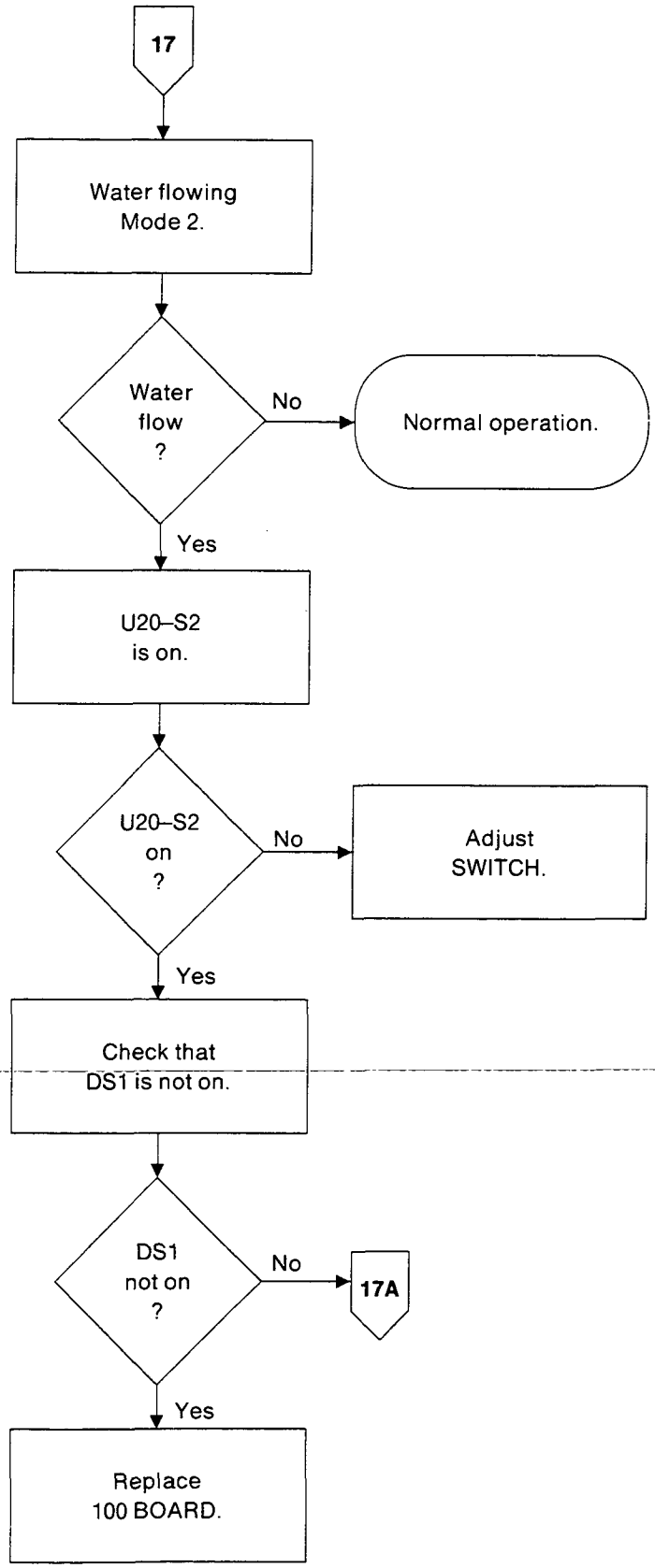
WASH WATER

MODE 1 – DIP SWITCH U20–S2 in "OFF" position – Water is flowing.

MODE 2 – DIP SWITCH U20–S2 is "ON" position – Water is not flowing, until "RUN" SWITCH is pressed or DEVELOPER SOLUTION needs cooling.


16B
Check that incoming voltage is ~120 V ac. At TB3–12 to TB3–11.
Yes
~120 V ac ?
No
Check AC POWER.
18
Yes
Check that DC voltage is ~120 V dc at P/J14–4,5.
16C
16C
~120 V dc ?
No
Check wiring continuity from J14 to J102.
Yes
Install new dual WATER VALVE.
Cont ?
No
Replace or repair wiring.
Yes
Replace 100 BOARD.

Wash Water Not Flowing — Mode 2 (Out of Standby)

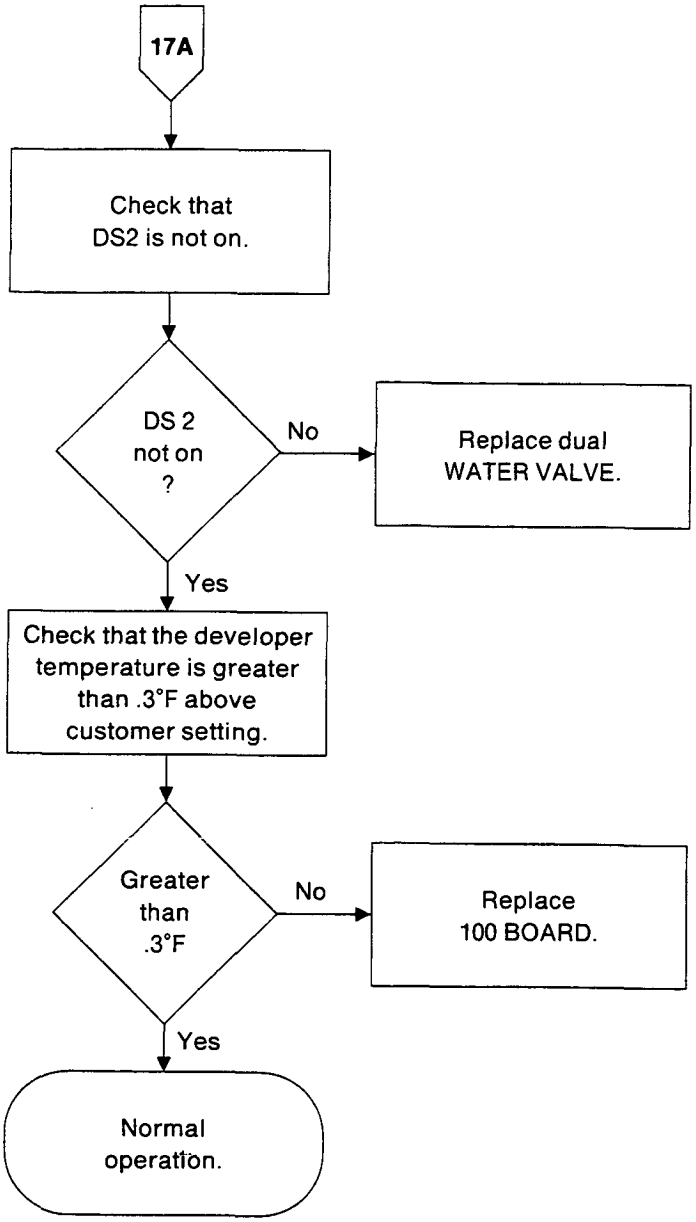


Note:

WASH WATER

MODE 1 – DIP SWITCH U20–S2 in "OFF" position – Water is flowing.

MODE 2 – DIP SWITCH U20–S2 in "ON" position – Water is not flowing, until "RUN" SWITCH is pressed or DEVELOPER SOLUTION needs cooling.

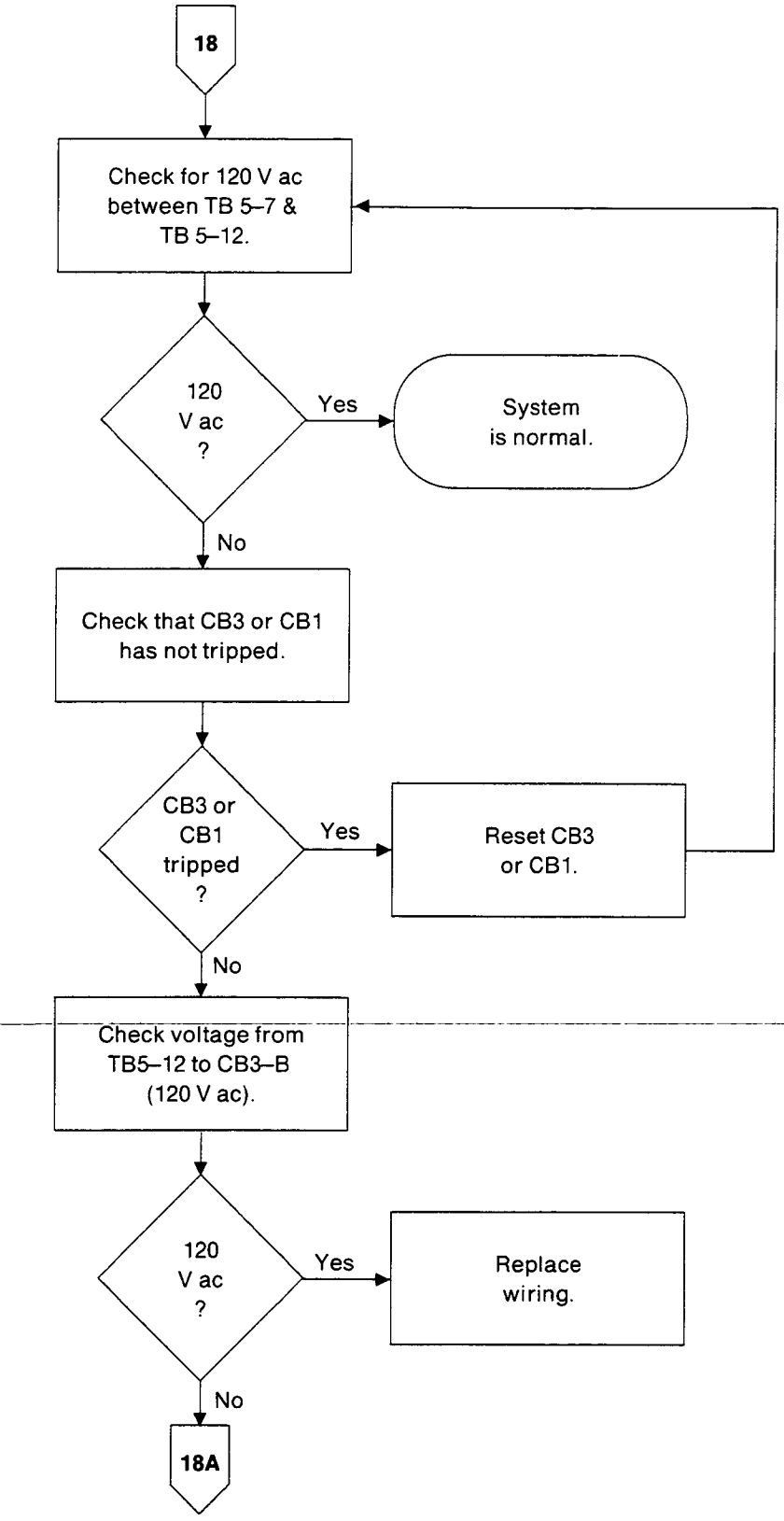


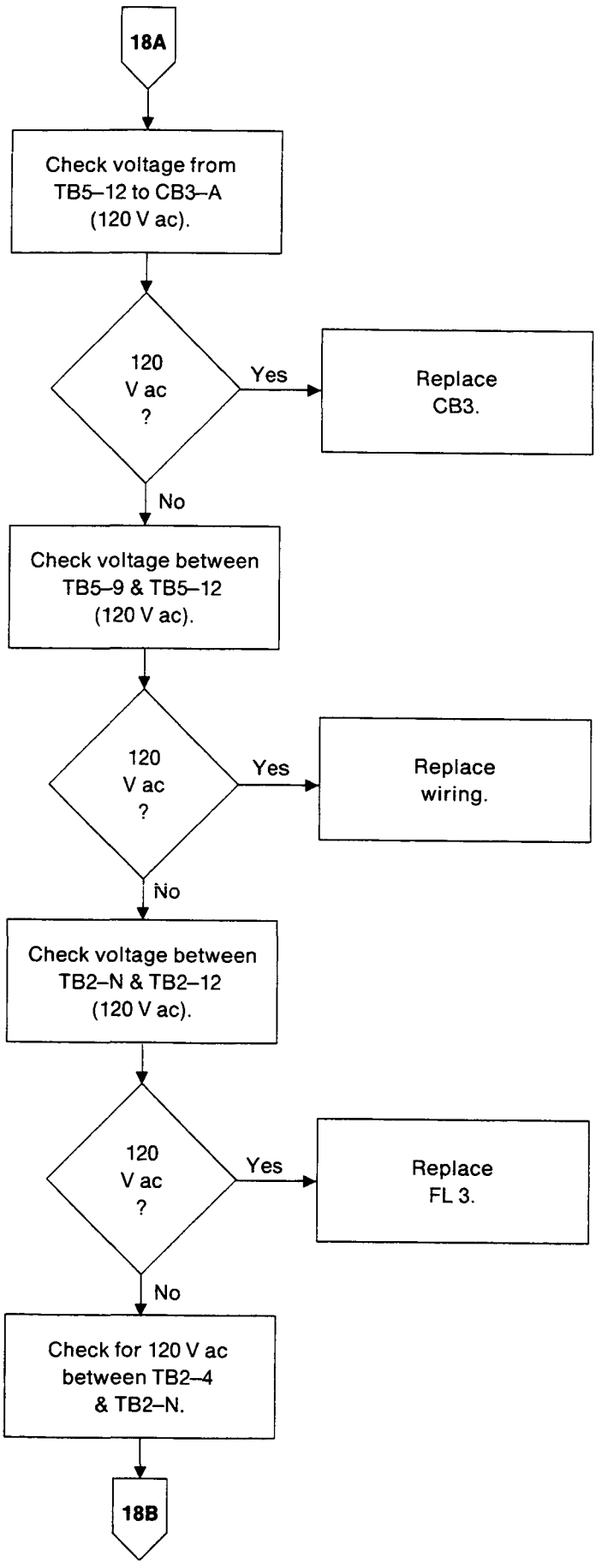
Note:

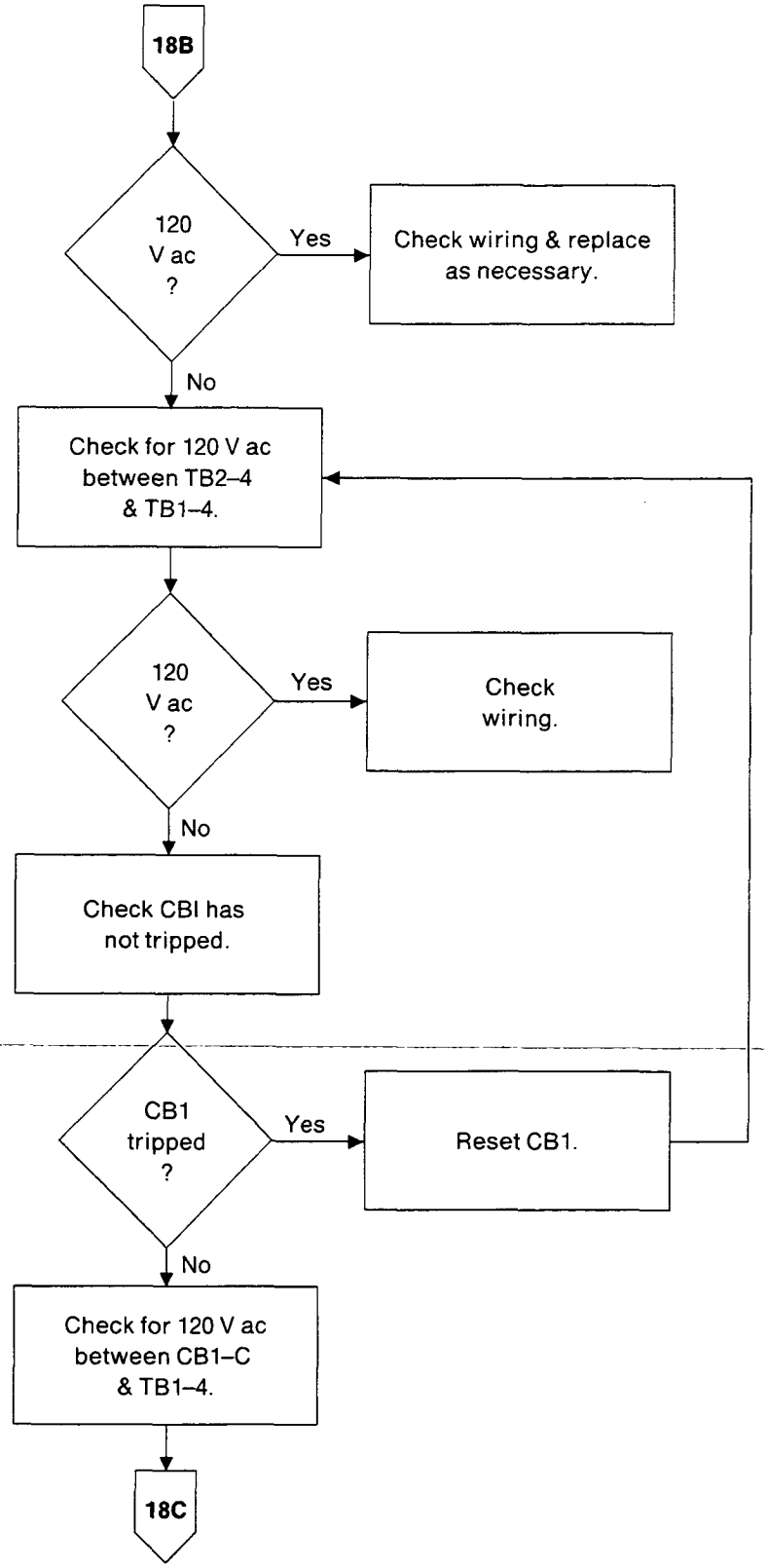
WASH WATER

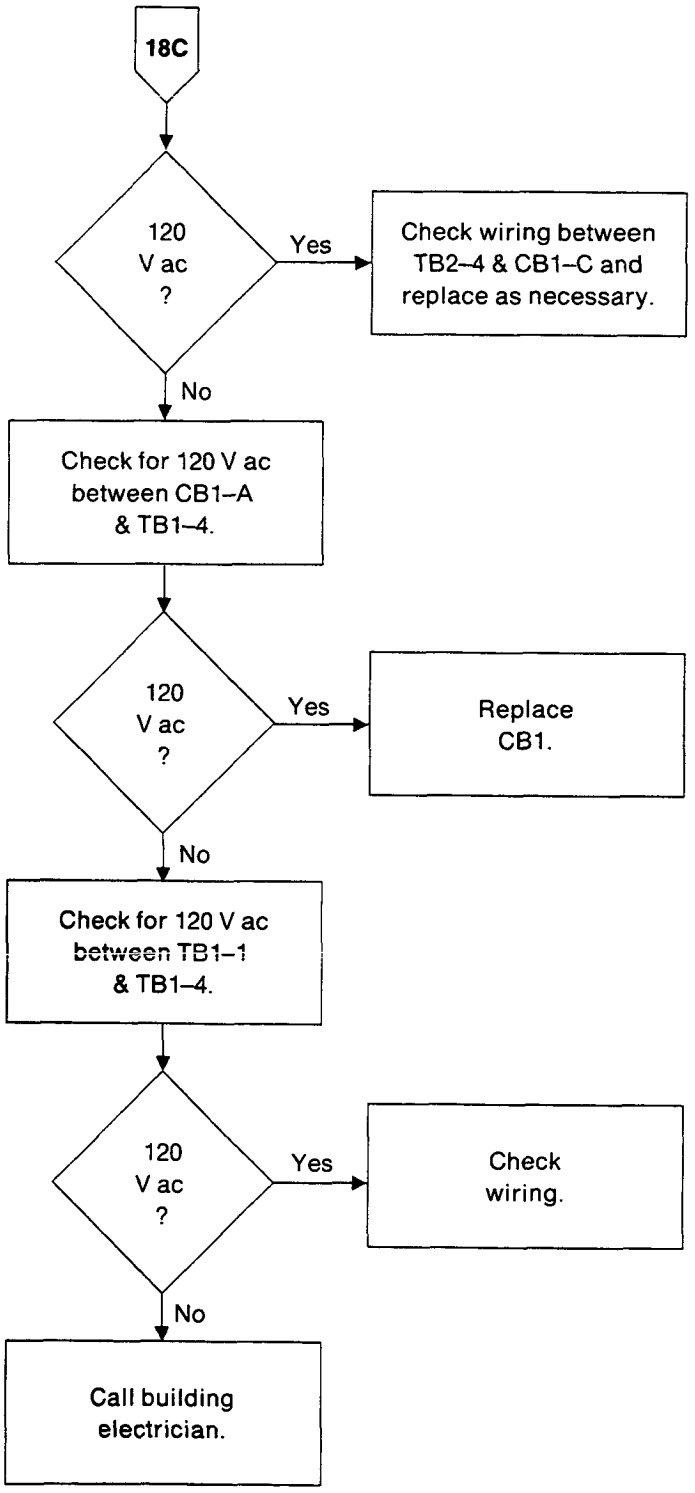
MODE 1 – DIP SWITCH U20–S2 in "OFF" position – Water is flowing.

MODE 2 – DIP SWITCH U20–S2 in "ON" position – Water is not flowing, until "RUN" SWITCH is pressed or DEVELOPER SOLUTION needs cooling.


18
Check for 120 V ac between TB 5–7 & TB 5–12.
120 V ac ?
Yes
System is normal.
No
Check that CB3 or CB1 has not tripped.
CB3 or CB1 tripped ?
Yes
Reset CB3 or CB1.
No
Check voltage from TB5–12 to CB3–B (120 V ac).
120 V ac ?
Yes
Replace wiring.
No
18A

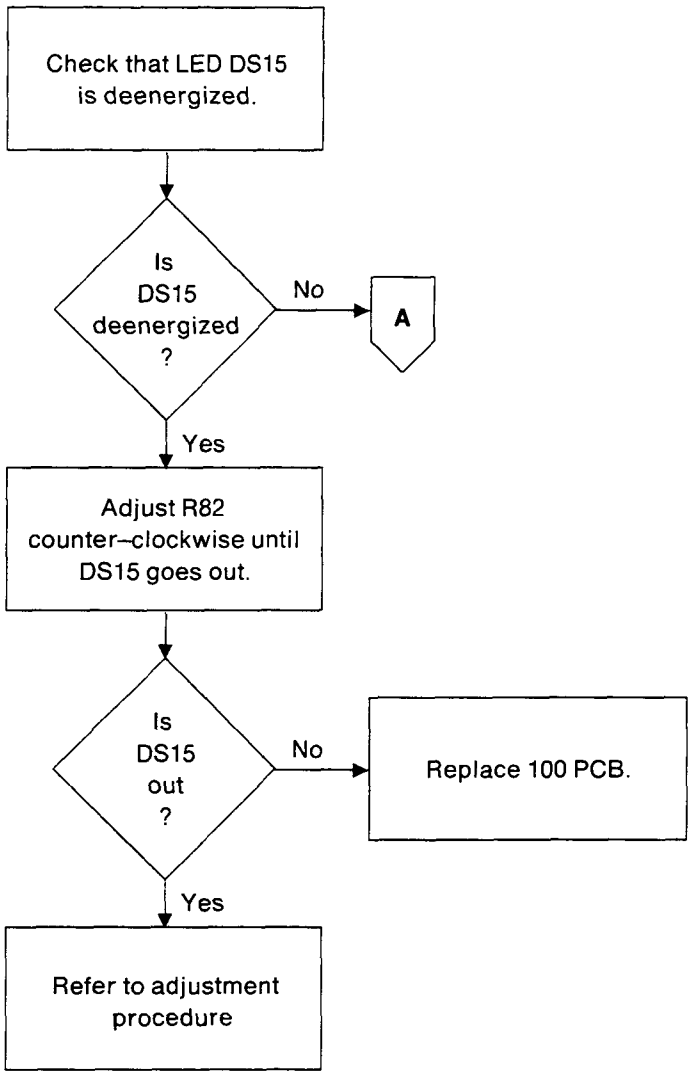

18A
Check voltage from TB5–12 to CB3–A (120 V ac).
120 V ac ?
Yes
Replace CB3.
No
Check voltage between TB5–9 & TB5–12 (120 V ac).
120 V ac ?
Yes
Replace wiring.
No
Check voltage between TB2–N & TB2–12 (120 V ac).
120 V ac ?
Yes
Replace FL 3.
No
Check for 120 V ac between TB2–4 & TB2–N.
18B

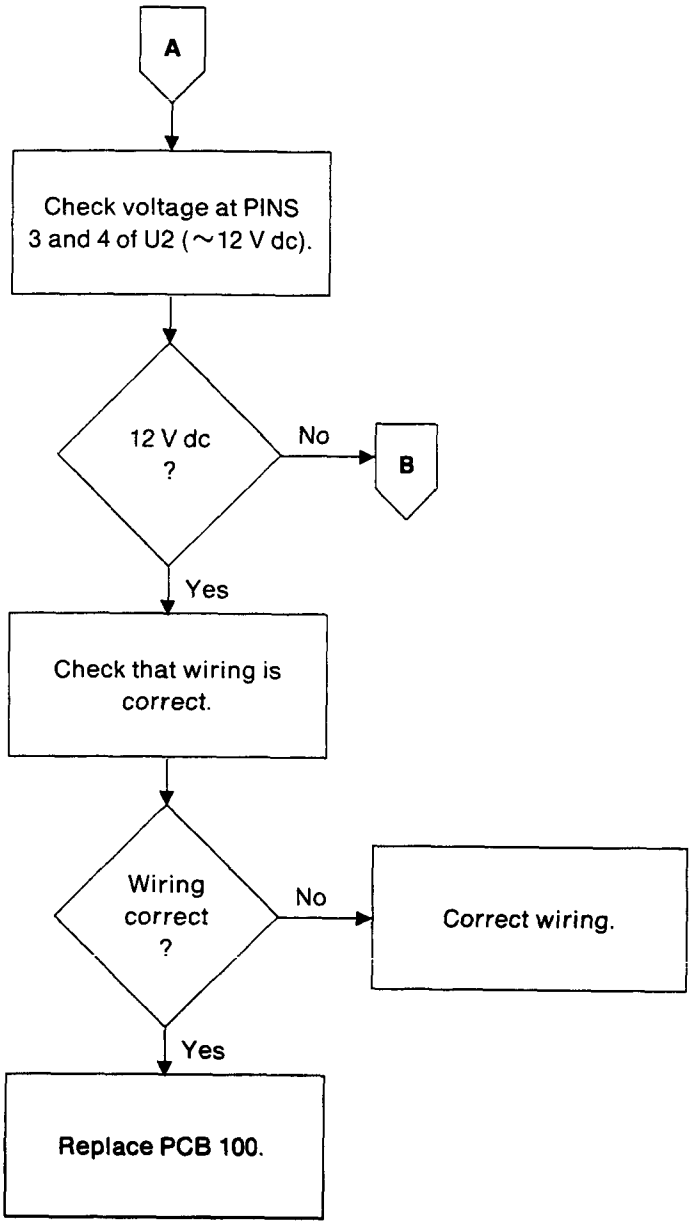

18B
120 V ac ?
Yes
Check wiring & replace as necessary.
No
Check for 120 V ac between TB2–4 & TB1–4.
120 V ac ?
Yes
Check wiring.
No
Check CBI has not tripped.
CB1 tripped ?
Yes
Reset CB1.
No
Check for 120 V ac between CB1–C & TB1–4.
18C

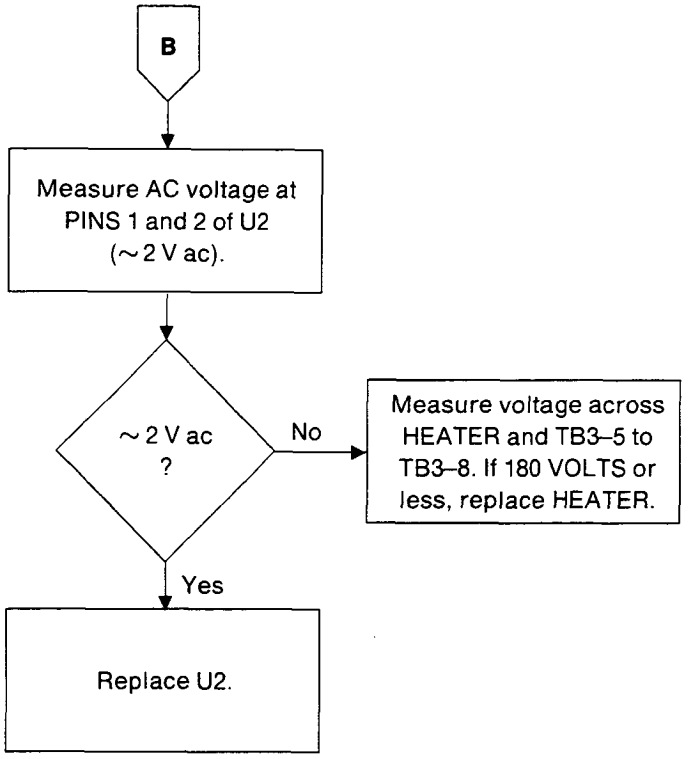

18C
120 V ac ?
Yes
Check wiring between TB2–4 & CB1–C and replace as necessary.
No
Check for 120 V ac between CB1–A & TB1–4.
120 V ac ?
Yes
Replace CB1.
No
Check for 120 V ac between TB1–1 & TB1–4.
120 V ac ?
Yes
Check wiring.
No
Call building electrician.

Developer Heater (R3) And Developer Lamp (DS1) Stays On

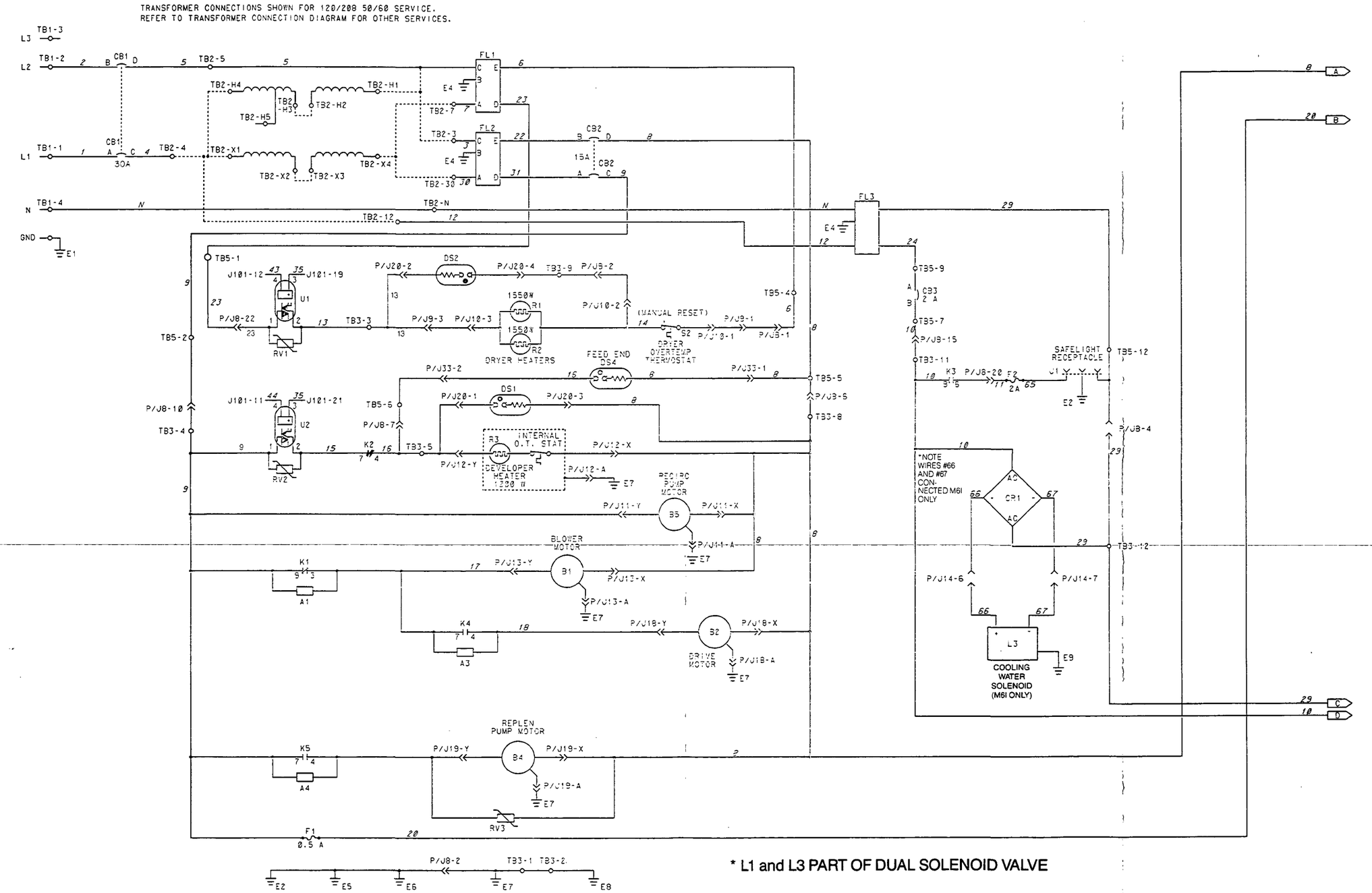
Condition: DEVELOPER LIGHT stays on — "run away."




A
Check voltage at PINS 3 and 4 of U2 (~12 V dc).
12 V dc ?
No
B
Yes
Check that wiring is correct.
Wiring correct ?
No
Correct wiring.
Yes
Replace PCB 100.

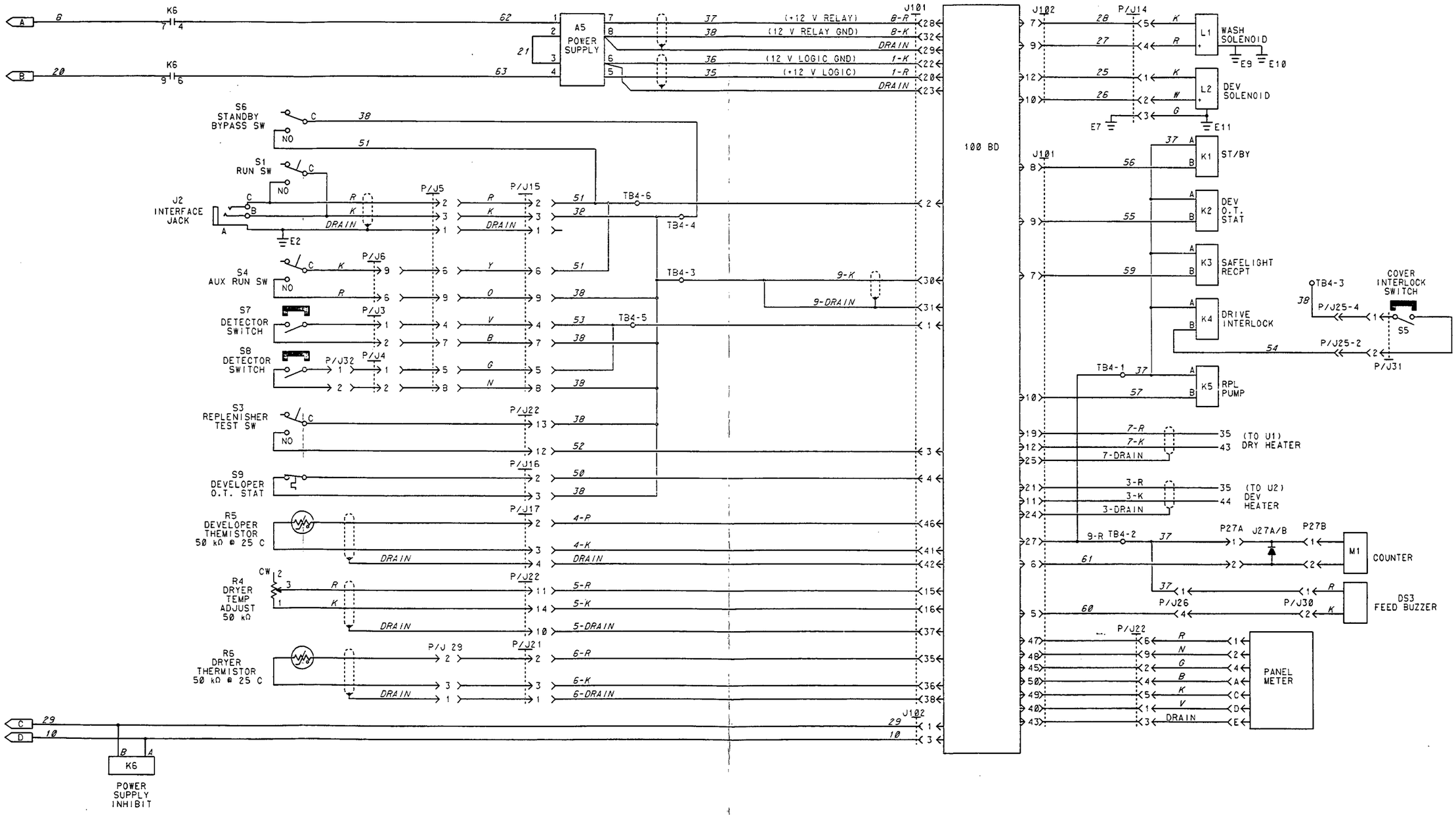

B
Measure AC voltage at PINS 1 and 2 of U2 (~2 V ac).
~2 V ac ?
No
Measure voltage across HEATER and TB3–5 to TB3–8. If 180 VOLTS or less, replace HEATER.
Yes
Replace U2.

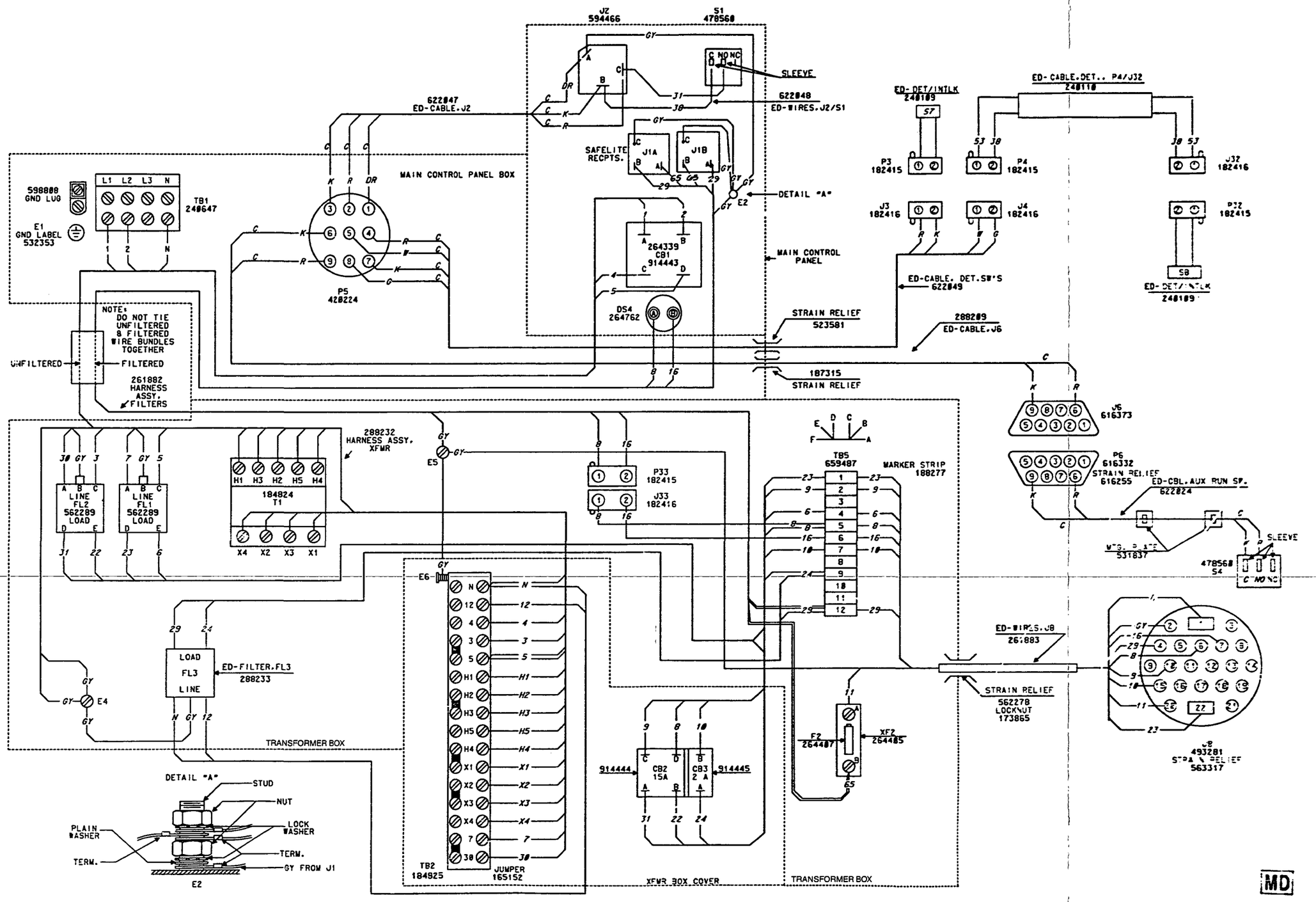
M6B Processor, Schematic Diagram, Sheet 1 of 2



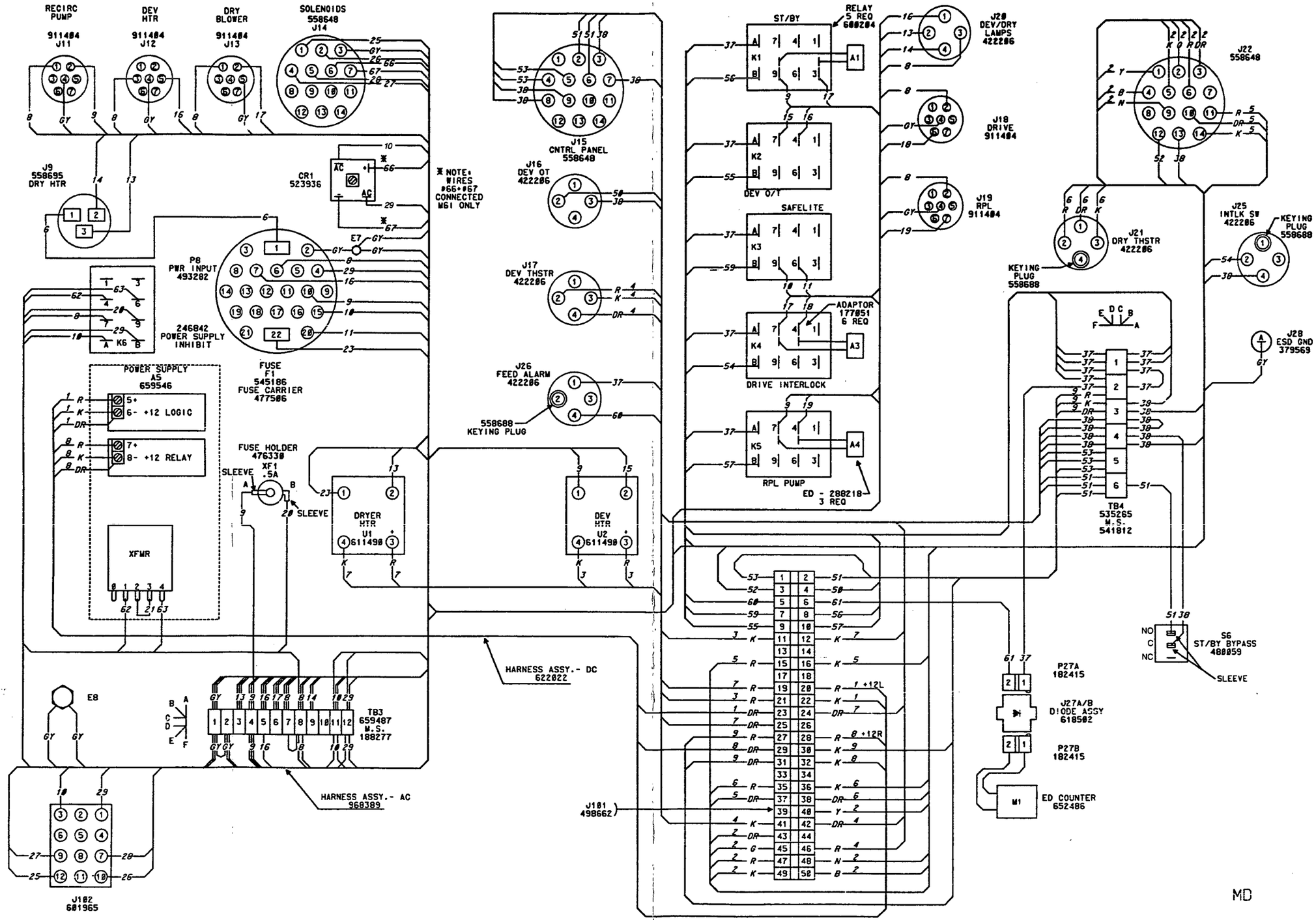
* L1 and L3 PART OF DUAL SOLENOID VALVE

M6B Processor, Schematic Diagram, Sheet 2 of 2

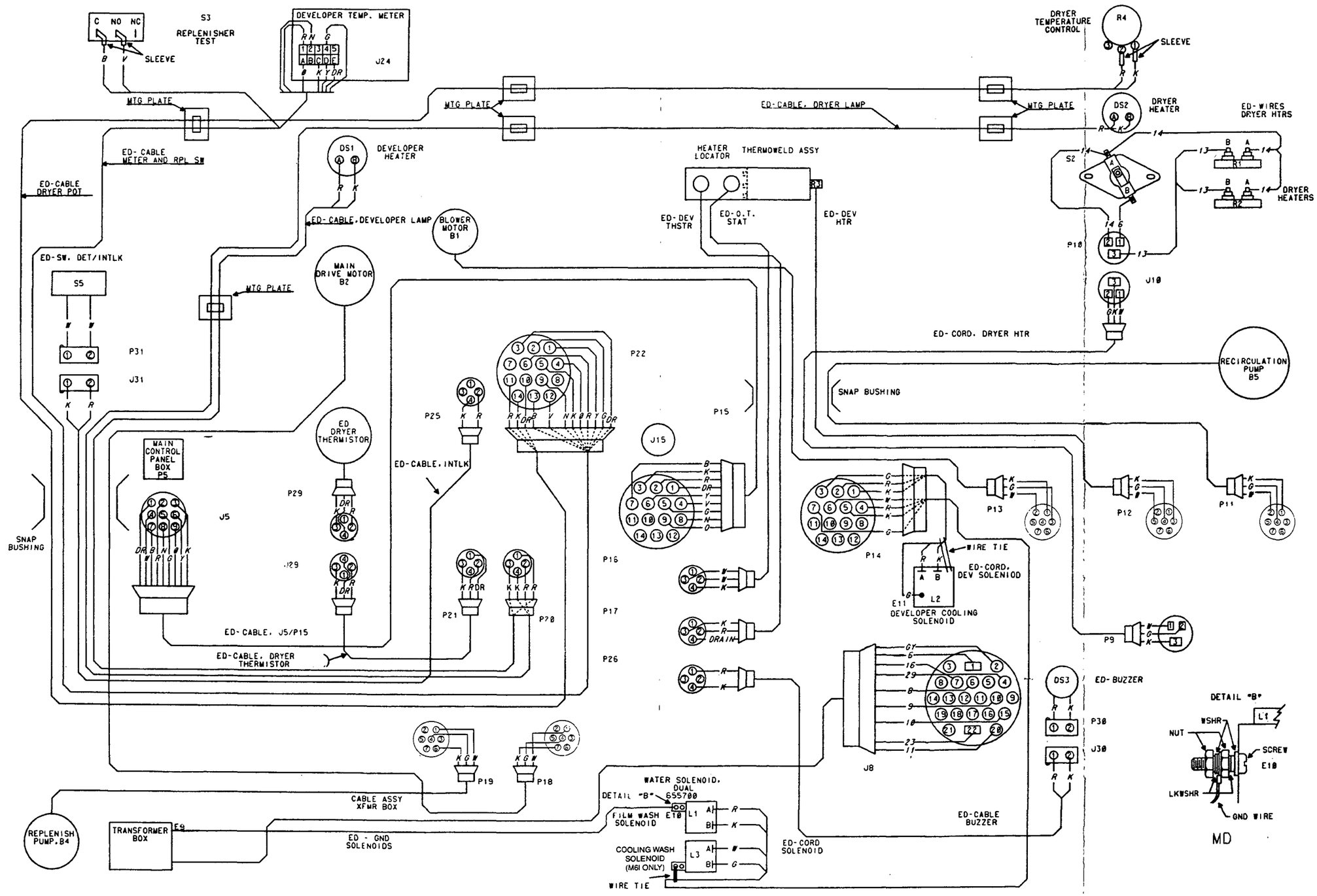


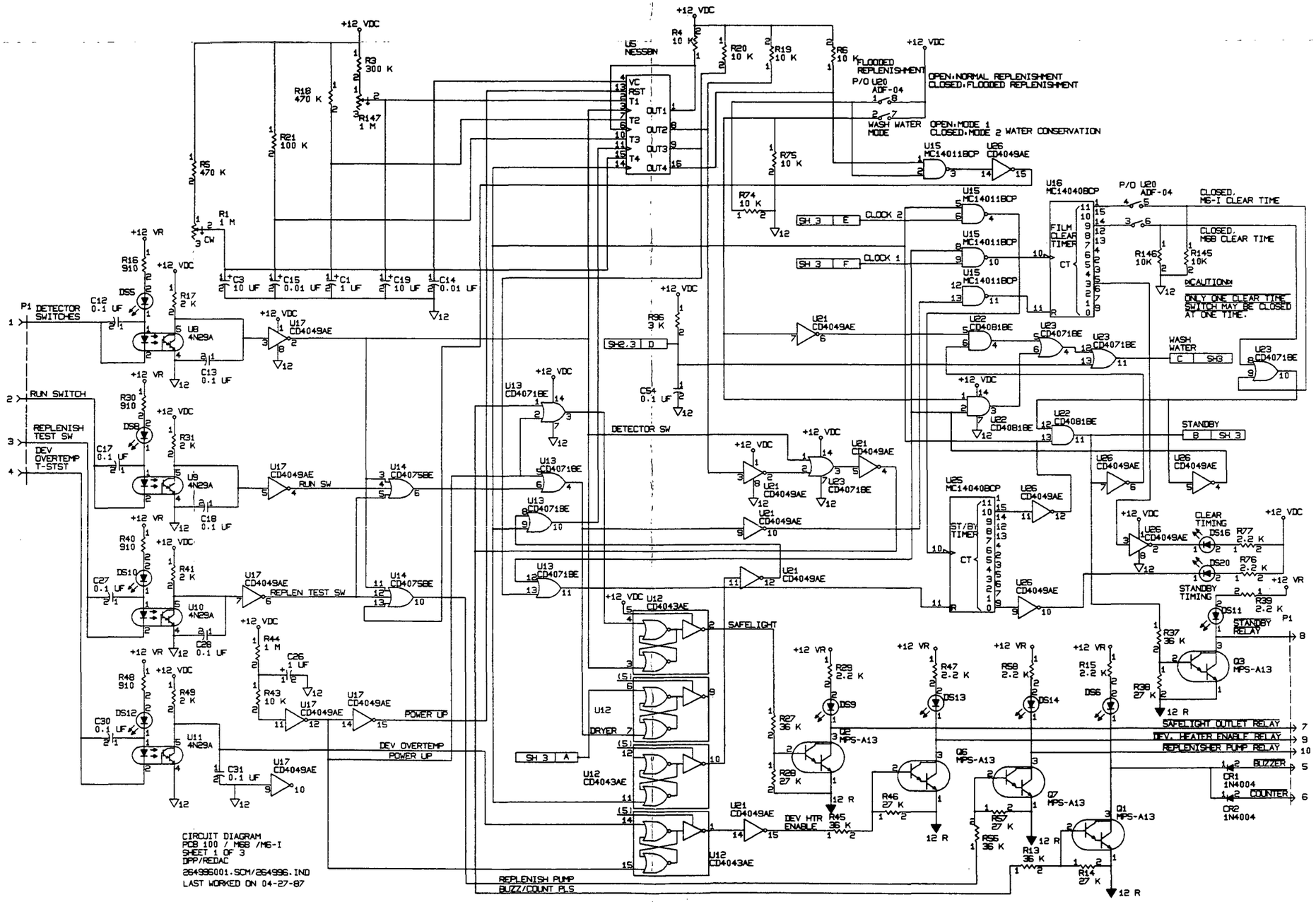

J2
594466
S1
478568
622847
ED-CABLE.J2
622848
ED-WIRES.J2/S1
SLEEVE
SAFELITE
RECPTS.
J1A
J1B
DETAIL "A"
MAIN CONTROL PANEL BOX
MAIN CONTROL
PANEL
598888
GND LUG
E1
GND LABEL
532353
TB1
248647
L1 L2 L3 N
P5
428224
264339
CB1
914443
DS4
264762
ED-DET/INTLK
248189
ED-CABLE.DET., P4/J32
248118
P3
182415
P4
182415
J32
182416
J3
182416
J4
182416
P32
182415
ED-CABLE. DET.SW'S
622849
288289
ED-CABLE.J6
STRAIN RELIEF
523581
187315
STRAIN RELIEF
NOTE:
DO NOT TIE
UNFILTERED
& FILTERED
WIRE BUNDLES
TOGETHER
UNFILTERED
FILTERED
261882
HARNESS
ASSY.
FILTERS
J6
616373
P6
616332
STRAIN RELIEF
616255
ED-CBL.AUX RUN SP.
622824
MTG. PLATE
531837
478568
S4
288232
HARNESS ASSY.
XFMR
LINE
FL2
562289
LOAD
LINE
FL1
562289
LOAD
184824
T1
P33
182415
J33
182416
T85
659487
MARKER STRIP
188277
LOAD
FL3
LINE
ED-FILTER.FL3
288233
E4
E5
E6
TB2
184925
JUMPER
165152
TRANSFORMER BOX
XFMR BOX COVER
CB2
15A
CB3
2 A
914444
914445
F2
264487
XF2
264485
ED-WIRES.J8
261883
STRAIN RELIEF
562278
LOCKNUT
173865
J8
493281
STRAIN RELIEF
563317
DETAIL "A"
STUD
NUT
LOCK
WASHER
PLAIN
WASHER
TERM.
TERM.
GY FROM J1
E2

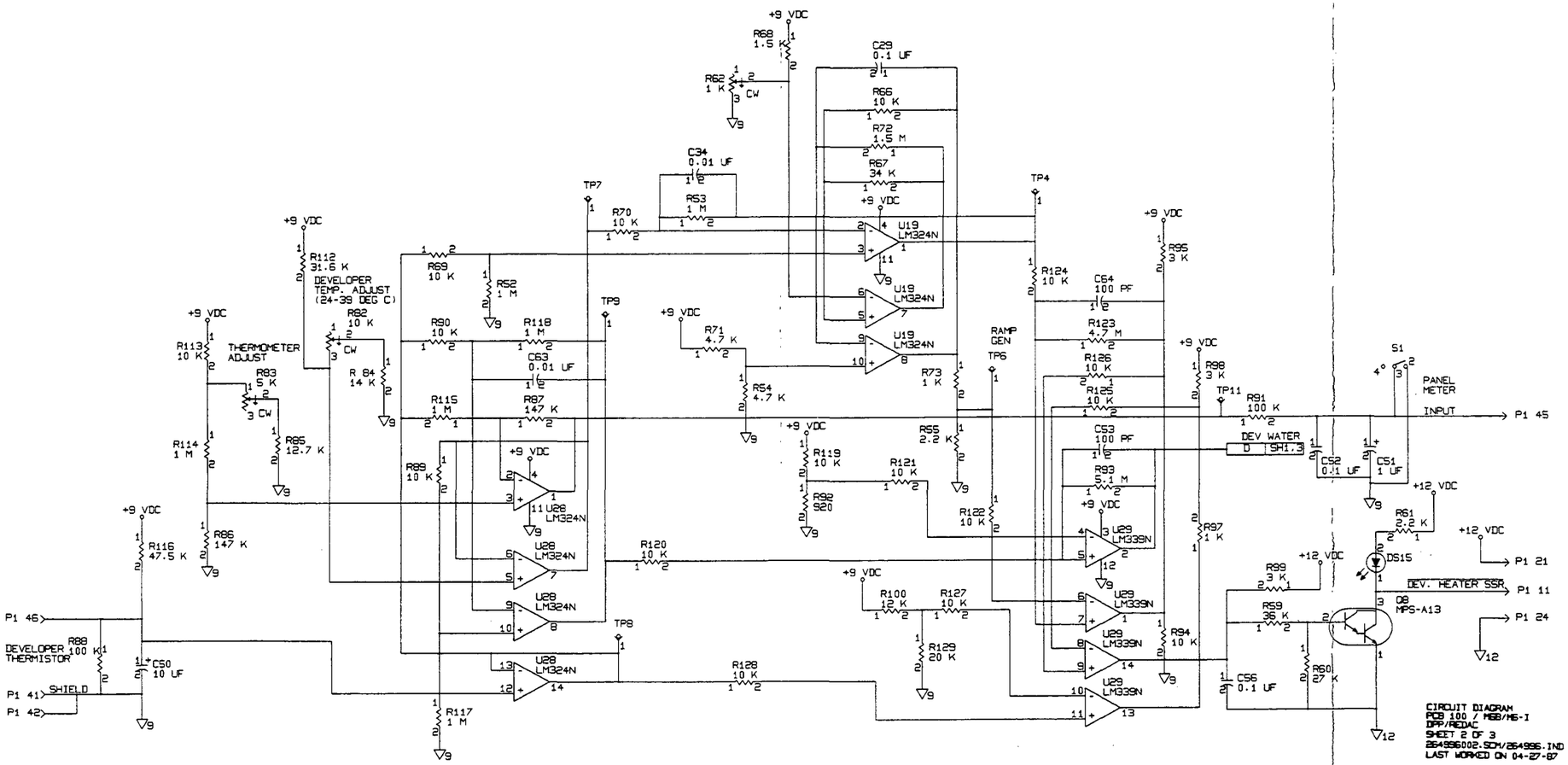
MD

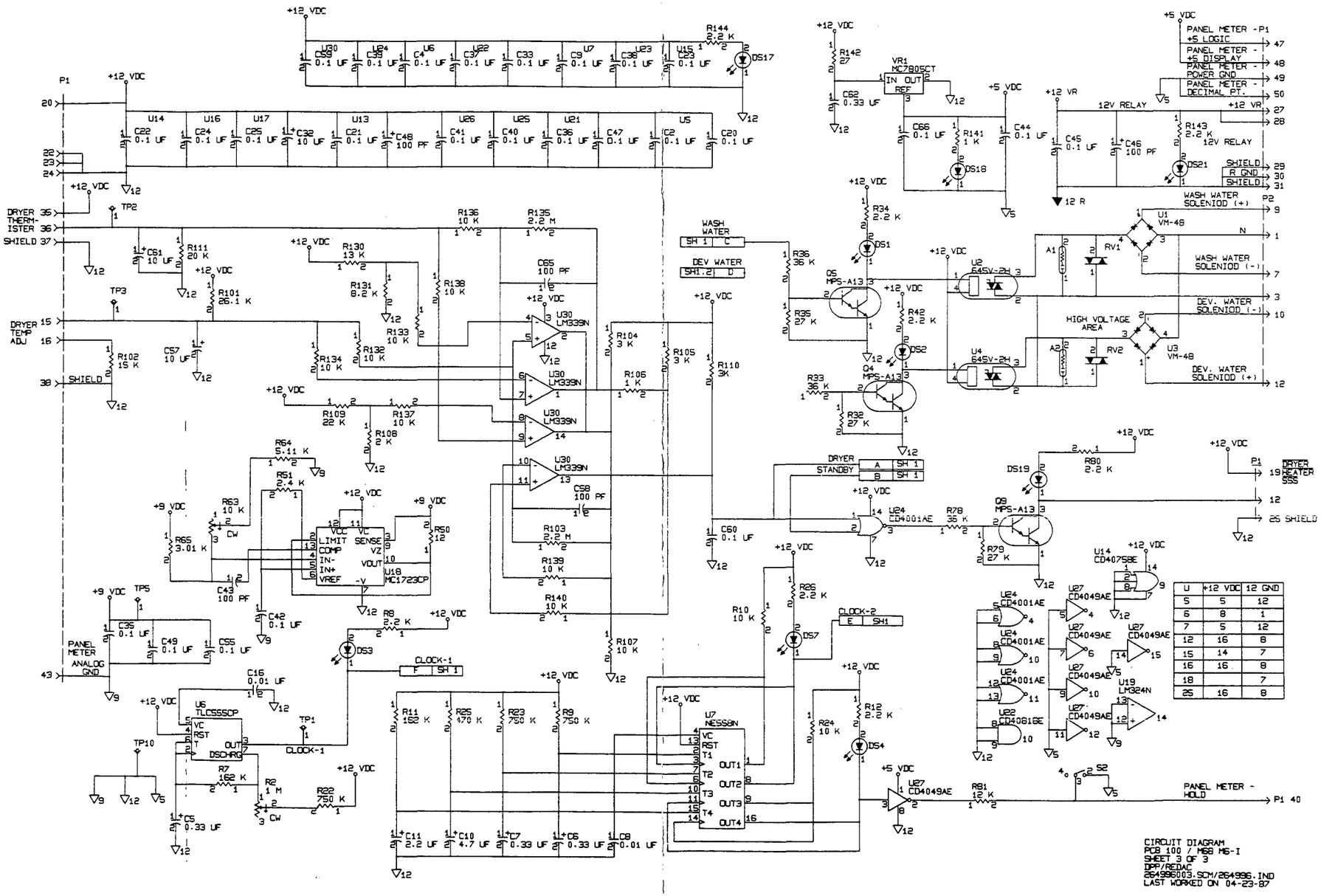

RECIRC PUMP
911484 J11
DEV HTR
911484 J12
DRY BLOWER
911484 J13
SOLENOIDS
558648 J14
J9 558695 DRY HTR
CR1 523936
* NOTE: WIRES #66 & #67 CONNECTED MG1 ONLY
P8 PWR INPUT 493282
246842 POWER SUPPLY INHIBIT
FUSE F1 545186 FUSE CARRIER 477586
POWER SUPPLY A5 659546
5+
6- +12 LOGIC
7+
8- +12 RELAY
FUSE HOLDER 476330
XF1 .5A
SLEEVE
XFMR
DRYER HTR U1 611498
DEV HTR U2 611498
J15 CNTRL PANEL 558648
J16 DEV OT 422286
J17 DEV THSTR 422286
J26 FEED ALARM 422286
558688 KEYING PLUG
ST/BY
RELAY 5 REQ 600284
K1
K2
K3
K4
K5
A1
A3
A4
DEV O/T
SAFELITE
ADAPTOR 177851 6 REQ
DRIVE INTERLOCK
RPL PUMP
ED - 288218 3 REQ
J20 DEV/DRY LAMPS 422286
J18 DRIVE 911484
J19 RPL 911484
J22 558648
J21 DRY THSTR 422286
KEYING PLUG 558688
J25 INTLK SW 422286
KEYING PLUG 558688
J28 ESD GND 379569
TB4 535265 M.S. 541812
HARNESS ASSY.- DC 622022
HARNESS ASSY.- AC 968389
TB3 659487 M.S. 188277
E8
J181 498662
J182 681965
S6 ST/BY BYPASS 488059
SLEEVE
P27A 182415
J27A/B DIODE ASSY 618502
P27B 182415
M1 ED COUNTER 652486

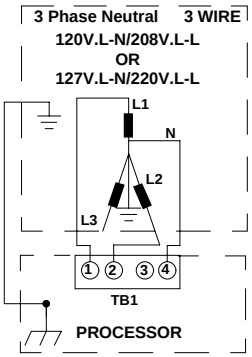
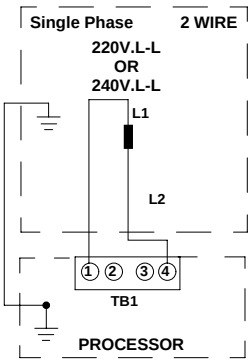
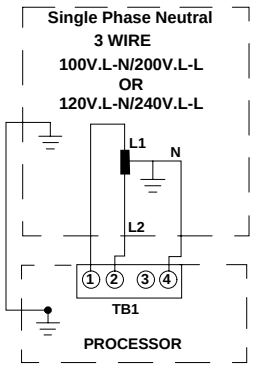
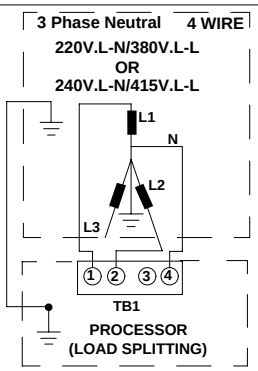
MD


C NO NC
S3
REPLENISHER TEST
SLEEVE
DEVELOPER TEMP. METER
J24
MTG PLATE
ED-CABLE DEVELOPER LAMP
ED-CABLE METER AND RPL SW
ED-CABLE DRYER POT
DS1
DEVELOPER HEATER
HEATER LOCATOR
THERMOWELD ASSY
ED-DEV THSTR
ED-O.T. STAT
ED-DEV HTR
DRYER TEMPERATURE CONTROL
R4
DS2
DRYER HEATER
ED-WIRES DRYER HTRS
S2
R1
R2
DRYER HEATERS
P10
J10
ED-SW. DET/INTLK
S5
P31
J31
MAIN DRIVE MOTOR B2
BLOWER MOTOR B1
ED-CORD. DRYER HTR
RECIRCULATION PUMP B5
SNAP BUSHING
ED DRYER THERMISTOR
MAIN CONTROL PANEL BOX P5
J5
P29
P22
P25
P15
J15
ED-CABLE. INTLK
P16
P17
P26
P21
P28
P14
P13
P12
P11
WIRE TIE
ED-CORD. DEV SOLENIOD
E11
L2
DEVELOPER COOLING SOLENOID
P9
ED-CABLE. J5/P15
ED-CABLE. DRYER THERMISTOR
J8
DS3
ED-BUZZER
P38
J38
DETAIL "B"
WSHR
NUT
LKWSHR
SCREW
E10
GND WIRE
L1
MD
P19
P18
CABLE ASSY XFMR BOX
WATER SOLENOID. DUAL 655700
FILM WASH SOLENOID
COOLING WASH SOLENOID (M6I ONLY)
L3
WIRE TIE
ED-CORD SOLENOID
ED-CABLE BUZZER
REPLENISH PUMP. B4
TRANSFORMER BOX
E9
ED - GND SOLENOIDS


+12 VDC
R3 300 K
R147 1 M
R18 470 K
R21 100 K
R5 470 K
R1 1 M CW
C3 10 UF
C15 0.01 UF
C1 1 UF
C19 10 UF
C14 0.01 UF
U5 NE556N
R4 10 K
R20 10 K
R19 10 K
R6 10 K
FLOODED REPLENISHMENT
P/O U20 ADF-04
OPEN:NORMAL REPLENISHMENT
CLOSED:FLOODED REPLENISHMENT
WASH WATER MODE
OPEN:MODE 1
CLOSED:MODE 2 WATER CONSERVATION
R75 10 K
R74 10 K
U15 MC14011BCP
U26 CD4049AE
U16 MC14040BCP
FILM CLEAR TIMER
CLOSED, M6-I CLEAR TIME
CLOSED, M6B CLEAR TIME
R146 10K
R145 10K
CAUTION
ONLY ONE CLEAR TIME SWITCH MAY BE CLOSED AT ONE TIME.
SH 3 E
CLOCK 2
SH 3 F
CLOCK 1
U21 CD4049AE
U22 CD4081BE
U23 CD4071BE
WASH WATER
STANDBY
P1 DETECTOR SWITCHES
RUN SWITCH
REPLENISH TEST SW
DEV OVERTEMP T-STST
C12 0.1 UF
DS8
U8 4N29A
R16 910
R17 2 K
C13 0.1 UF
R30 910
R31 2 K
C17 0.1 UF
U9 4N29A
C18 0.1 UF
R40 910
R41 2 K
C27 0.1 UF
DS10
U10 4N29A
C28 0.1 UF
R48 910
R49 2 K
C30 0.1 UF
DS12
U11 4N29A
C31 0.1 UF
R44 1 M
C26 1 UF
R43 10 K
U17 CD4049AE
RUN SW
REPLEN TEST SW
POWER UP
DEV OVERTEMP
U14 CD4075BE
U13 CD4071BE
R96 3 K
C54 0.1 UF
SH 2,3 D
DETECTOR SW
U12 CD4043AE
SH 3 A
DRYER
SAFELIGHT
U25 MC14040BCP
ST/BY TIMER
CLEAR TIMING
STANDBY TIMING
R77 2.2 K
R76 2.2 K
R39 2.2 K
DS11
DS16
DS20
STANDBY RELAY
R37 36 K
Q3 MPS-A13
12 R
SAFELIGHT OUTLET RELAY
DEV. HEATER ENABLE RELAY
REPLENISHER PUMP RELAY
BUZZER
COUNTER
CR1 1N4004
CR2 1N4004
R29 2.2 K
R47 2.2 K
R50 2.2 K
R15 2.2 K
DS9
DS13
DS14
DS6
R27 36 K
R28 27 K
Q2 MPS-A13
R46 27 K
Q6 MPS-A13
R57 27 K
R56 36 K
Q7 MPS-A13
R13 36 K
R14 27 K
Q1 MPS-A13
DEV HTR ENABLE
R45 36 K
REPLENISH PUMP
BUZZ/COUNT PLS
CIRCUIT DIAGRAM
PCB 100 / M6B /M6-I
SHEET 1 OF 3
DPP/REDAC
264996001.SCM/264996.IND
LAST WORKED ON 04-27-87

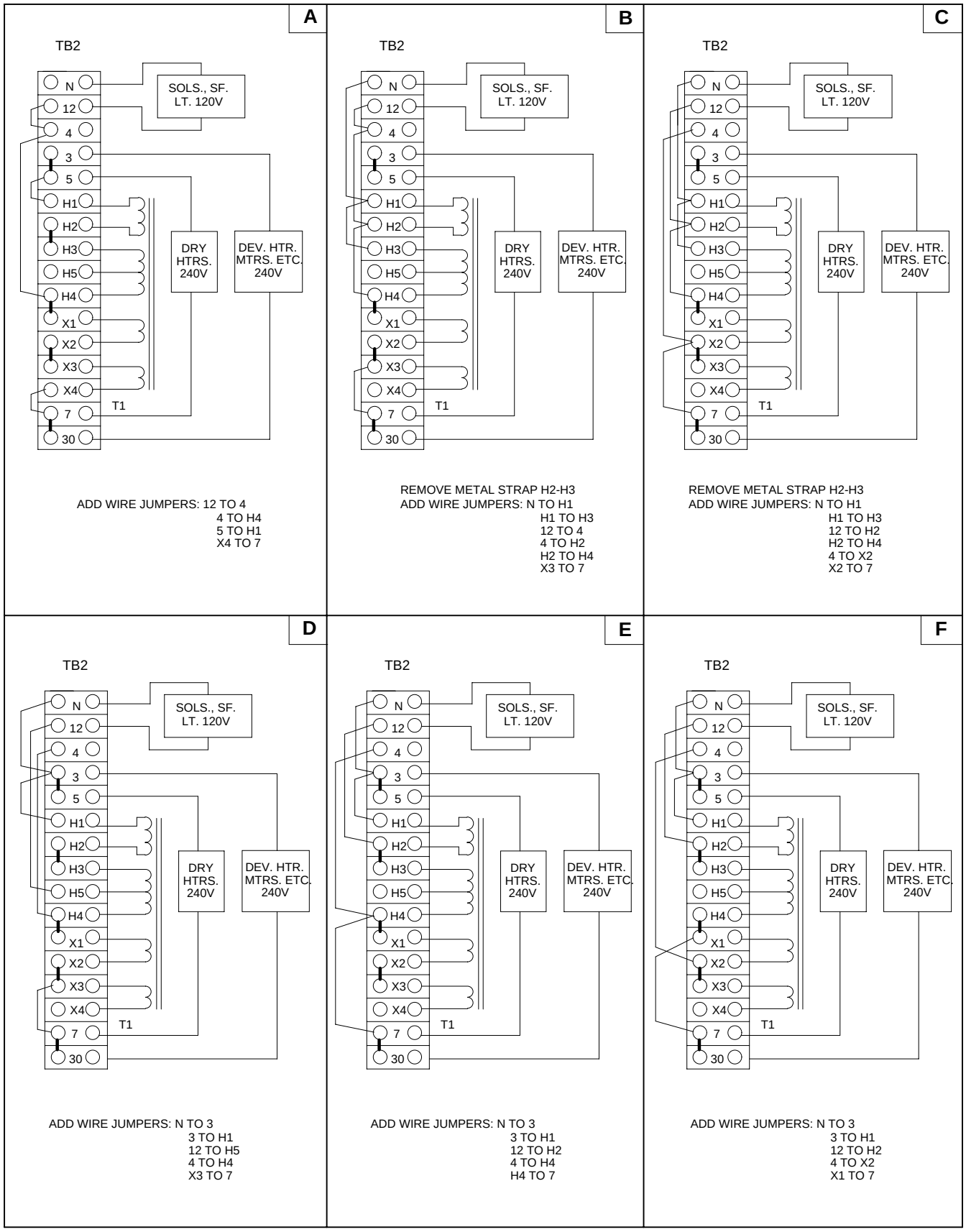

+9 VDC
R68 1.5 K
R62 1 K CW
C29 0.1 UF
R66 10 K
R72 1.5 M
C34 0.01 UF
R67 34 K
R53 1 M
TP7
R70 10 K
U19 LM324N
TP4
R112 31.6 K
DEVELOPER TEMP. ADJUST (24-39 DEG C)
R69 10 K
R52 1 M
R124 10 K
C64 100 PF
R95 3 K
R82 10 K
THERMOMETER ADJUST
R113 10 K
R90 10 K
R118 1 M
TP9
R71 4.7 K
RAMP GEN
TP6
R123 4.7 M
R83 5 K
3 CW
R 84 14 K
C63 0.01 UF
R54 4.7 K
R73 1 K
R126 10 K
R98 3 K
TP11
R91 100 K
S1
PANEL METER
INPUT
P1 45
R114 1 M
R65 12.7 K
R115 1 M
R87 147 K
R55 2.2 K
R125 10 K
C53 100 PF
DEV WATER
D SH1.3
C52 0.1 UF
C51 1 UF
R119 10 K
R121 10 K
R93 5.1 M
R89 10 K
R92 820
R122 10 K
R97 1 K
R61 2.2 K
+12 VDC
P1 21
DS15
DEV. HEATER SSR
P1 11
Q8 MPS-A13
P1 24
R99 3 K
R59 36 K
R60 27 K
C56 0.1 UF
R86 147 K
R116 47.5 K
R120 10 K
R100 12 K
R127 10 K
R94 10 K
P1 46
DEVELOPER THERMISTOR
R88 100 K
C50 10 UF
P1 41
SHIELD
P1 42
TP8
R128 10 K
R129 20 K
R117 1 M
U28 LM324N
U29 LM339N
CIRCUIT DIAGRAM
PCB 100 / M6B/M6-I
DPP/REDAC
SHEET 2 OF 3
264996002.SCM/264996.IND
LAST WORKED ON 04-27-87


+12 VDC
+5 VDC
+9 VDC
P1
P2
TP1
TP2
TP3
TP5
TP10
U30 LM339N
U14
U16
U17
U13
U26
U25
U21
U5
U15
U23
U38
U7
U9
U33
U6
U22
U37
U4
U24
C22 0.1 UF
C24 0.1 UF
C25 0.1 UF
C32 10 UF
C21 0.1 UF
C48 100 PF
C41 0.1 UF
C40 0.1 UF
C36 0.1 UF
C47 0.1 UF
C2 0.1 UF
C20 0.1 UF
C59 0.1 UF
C39 0.1 UF
C4 0.1 UF
C37 0.1 UF
C33 0.1 UF
C9 0.1 UF
C38 0.1 UF
C23 0.1 UF
R144 2.2 K
DS17
R111 20 K
C61 10 UF
R101 26.1 K
R130 13 K
R131 8.2 K
R133 10 K
R132 10 K
R134 10 K
R136 10 K
R135 2.2 M
C65 100 PF
R138 10 K
C57 10 UF
R102 15 K
R109 22 K
R137 10 K
R108 2 K
R64 5.11 K
R51 2.4 K
R63 10 K CW
R65 3.01 K
R50 12
C43 100 PF
C42 0.1 UF
R8 2.2 K
DS3
CLOCK-1
C16 0.01 UF
U6 TLC555CP
R7 162 K
R2 1 M CW
R22 750 K
C5 0.33 UF
C35 0.1 UF
C49 0.1 UF
C55 0.1 UF
R104 3 K
R105 3 K
R106 1 K
R110 3K
R103 2.2 M
C58 100 PF
R139 10 K
R140 10 K
R107 10 K
R11 162 K
R25 470 K
R23 750 K
R9 750 K
C11 2.2 UF
C10 4.7 UF
C7 0.33 UF
C6 0.33 UF
C8 0.01 UF
U7 NE556N
WASH WATER SH 1 C
DEV WATER SH1.2 D
R36 36 K
Q5 MPS-A13
R35 27 K
R33 36 K
Q4 MPS-A13
R32 27 K
R34 2.2 K
DS1
R42 2.2 K
DS2
DRYER STANDBY A SH 1 B SH 1
C60 0.1 UF
R10 10 K
R26 2.2 K
DS7
CLOCK-2 E SH1
R24 10 K
R12 2.2 K
DS4
U27 CD4049AE
R81 12 K
S2
PANEL METER - HOLD
P1 40
VR1 MC7805CT IN OUT REF
C62 0.33 UF
C66 0.1 UF
R141 1 K
DS18
C44 0.1 UF
R142 27
C45 0.1 UF
C46 100 PF
R143 2.2 K
12V RELAY
DS21
12 R
PANEL METER -P1
+5 LOGIC
PANEL METER - +5 DISPLAY
PANEL METER - POWER GND
PANEL METER - DECIMAL PT.
SHIELD
R GND
SHIELD
WASH WATER SOLENIOD (+)
WASH WATER SOLENIOD (-)
DEV. WATER SOLENIOD (-)
DEV. WATER SOLENIOD (+)
HIGH VOLTAGE AREA
U1 VM-48
U3 VM-48
RV1
RV2
U2 645V-2H
U4 645V-2H
A1
A2
DS19
R80 2.2 K
Q9 MPS-A13
R78 36 K
R79 27 K
U24 CD4001AE
U27 CD4049AE
U14 CD4075BE
U19 LM324N
U22 CD4081BE
DRYER HEATER SSS
25 SHIELD
DRYER THERM-ISTER
DRYER TEMP ADJ
SHIELD
PANEL METER ANALOG GND
U | +12 VDC | 12 GND
5 | 5 | 12
6 | 8 | 1
7 | 5 | 12
12 | 16 | 8
15 | 14 | 7
16 | 16 | 8
18 | | 7
25 | 16 | 8
CIRCUIT DIAGRAM
PCB 100 / M6B M6-I
SHEET 3 OF 3
TOP/REDAC
264996003.SCM/264996.IND
LAST WORKED ON 04-23-87

BUILDING POWER SYSTEM	NOMINAL SUPPLY VOLTAGE	MEASURED SUPPLY VOLTAGE	FREQUENCY (Hz)	CONNECTION DIAGRAM
	120/208	104/180-127/220	60	A
	127/220	115/199-123/213	50	B
		124/215-140/242		C
	220	198-216	50	D
		217-242		E
	240	226-254	50/60	F
	120/200	90-98	50/60	G
		99-110		H
	120/240	104/208-127/254	60	J
	230/380 SPLIT LOAD	207/357-233/403	50	K
	240/415 SPLIT LOAD	225/390-254/440	50	L

H108_9020EC

Figure 54 Wiring Diagrams



H108_9021EC

Figure 55 Wiring Diagrams (Cont.)

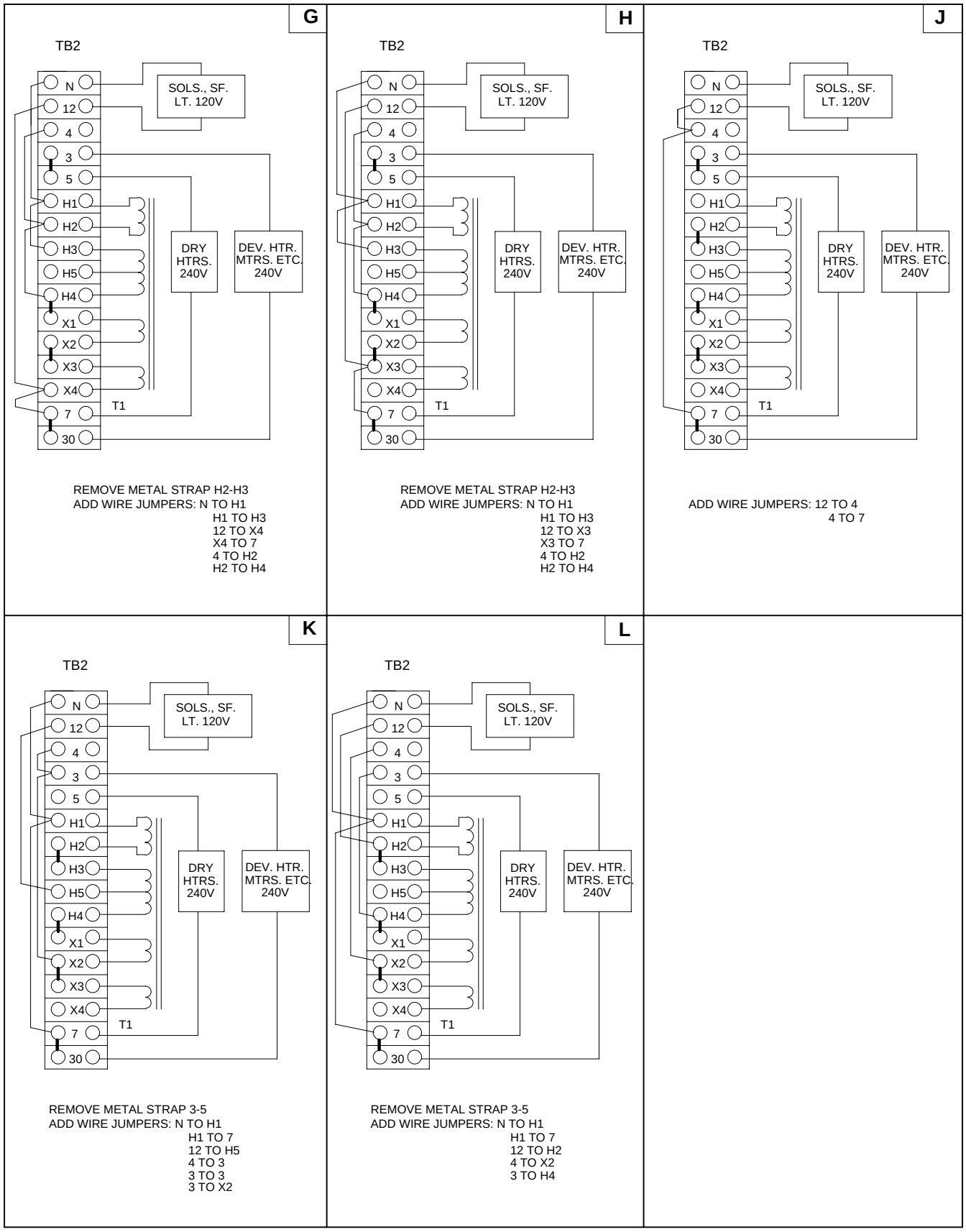


Figure 56 Wiring Diagrams (Cont.)

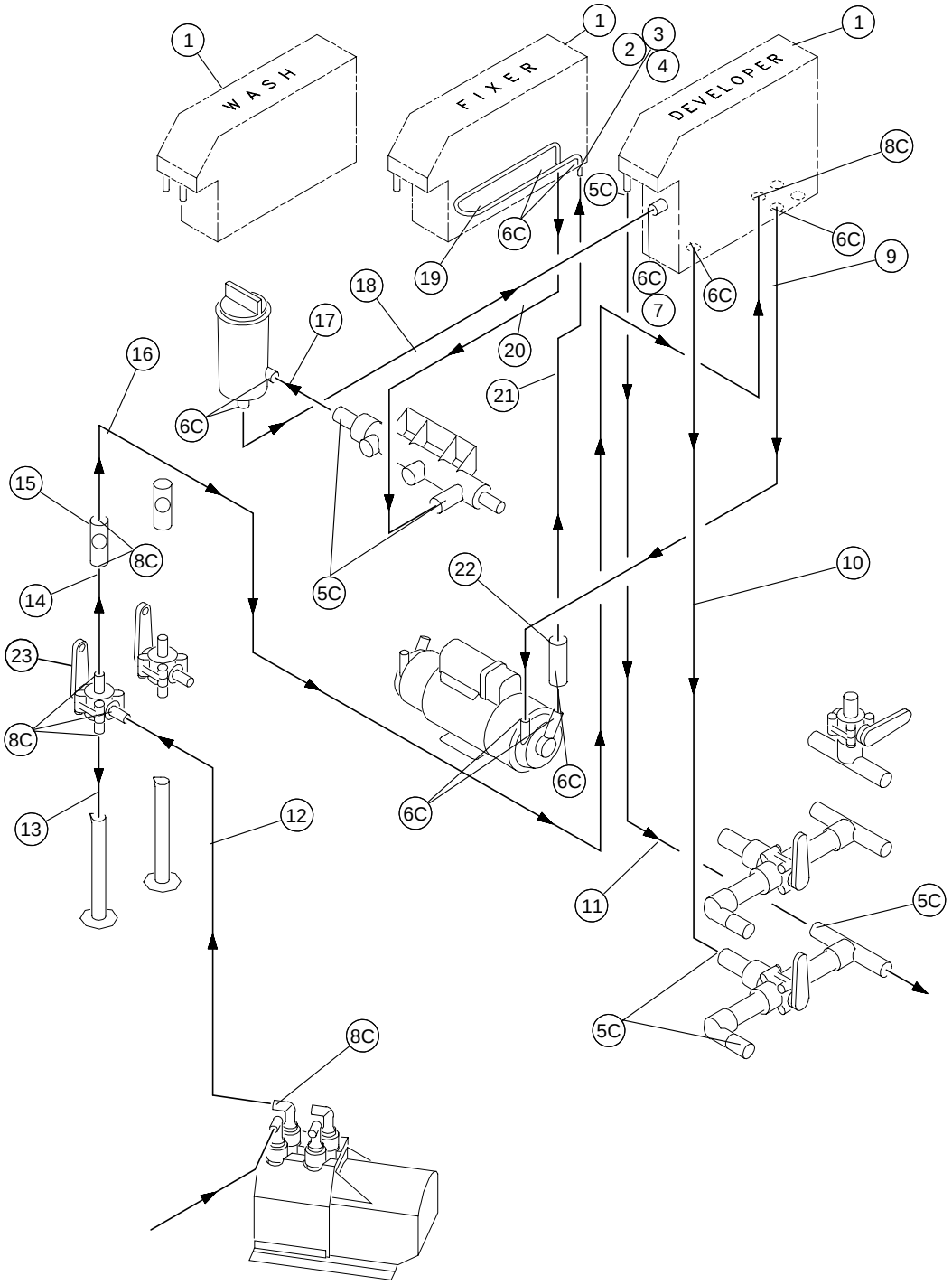
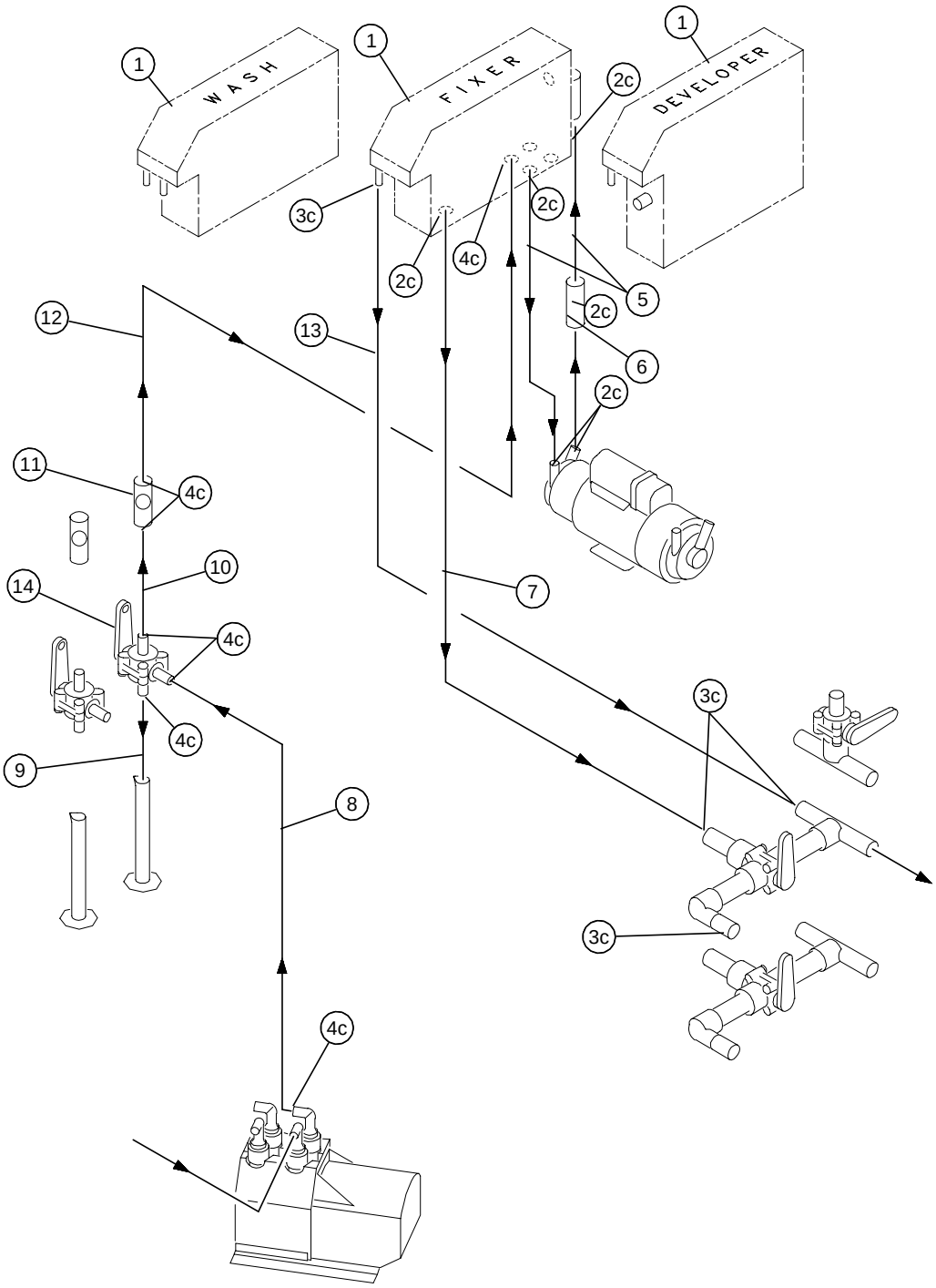


Figure 57 Developer Circulation Plumbing Diagram

Developer Circulation Plumbing Diagram

Item	Part No.	Description	Qty.	Notes
1	240811	Tank Assembly	1	Tanks shown separately here for illustrative purposes only
2	532378	O-Ring	2	
3	532379	Washer	2	
4	562602	Plug - Gland Sealing	2	
5C	246808	Clamp - Hose	6	
6C	246801	Clamp - Hose	1	
7	333961	Clip - Nozzle	1	
8C	246800	Clamp - Hose	7	
9	539420	Tubing	1	
10	246974	Tubing - Formed	1	
11	748430	Tubing - Formed	1	
12C	246802	Clamp - Hose	4	
13	333439	Tubing - Flared	1	
14	333437	Tubing	1	
15	333438	Tubing - Flared	1	
16	621230	Flow Indicator Assembly	1	
17	333441	Tubing - Formed	1	
18	240628	Tubing - Formed	1	
19	333966	Tubing - Formed	1	
20	333465	Tubing - Formed	1	
21	464101	Tubing	1	
22	918889	Orifice - 0.220 ID	1	
23	532095	Exchanger - Heat	1	

Figure 57 Developer Circulation Plumbing Diagram



P048_0033ECA
H048_0033EA

Figure 58 Fixer Circulation Plumbing Diagram

Fixer Circulation Plumbing Diagram

Item	Part No.	Description	Qty.	Notes
1	240811	Tank Assembly	1	Tanks shown separately here for illustrative purposes only
2C	246801	Clamp - Hose	1	
3C	246808	Clamp - Hose	4	
4C	246800	Clamp - Hose	7	
5	464101	Tubing	1	
6	918889	Orifice - 0.220 ID	1	
7C	246802	Clamp - Hose	4	
8	246974	Tubing - Formed	1	
9	333439	Tubing - Flared	1	
10	333437	Tubing	1	
11	333438	Tubing - Flared	1	
12	621230	Flow Indicator Assembly	1	
13	333441	Tubing - Formed	1	
14	246890	Tubing - Flared	1	

Figure 58 Fixer Circulation Plumbing Diagram

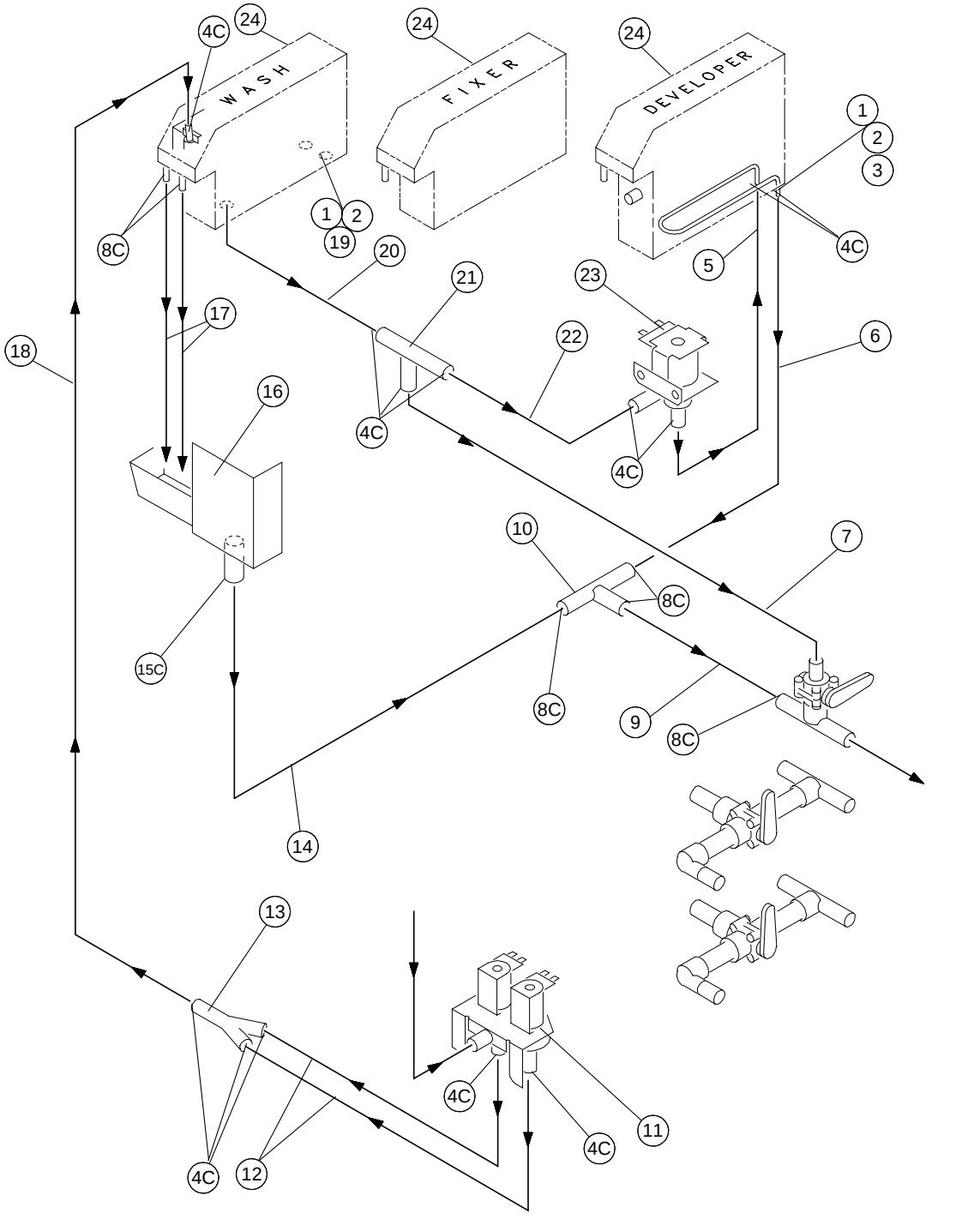


Figure 59 Wash Circulation Plumbing Diagram

Wash Circulation Plumbing Diagram

Item	Part No.	Description	Qty.	Notes
1	532378	O-Ring	4	
2	532379	Washer	4	Metal
3	562602	Plug - Gland Sealing	2	
4	333440	Tubing - Flared	1	
5	333432	Tubing - Formed	1	
6	333973	Tubing - Formed	1	
7C	246808	Clamp - Hose	8	
8	186441	Connector - Tee	1	¾ inch
9	748589	Tubing - Formed	1	
10	655700	Valve - Inlet Solenoid	1	
	748584	Cover - Solenoid	1	
	852807	Screw	2	
	852611	Washer	2	
	852621	Nut	2	
	246802	Clamp - Hose	2	
	264834	Cable	1	
	853100	Washer - Lock	2	
11	468558	Tubing	2	
12	529079	Connector - Hose, Y	1	
13	748430	Tubing - Formed	1	
14	264749	Pan - Drip	1	
15	333956	Tubing - Flared	2	
16	333962	Tubing - Formed	1	
17C	246801	Clamp - Hose	1	
18	240811	Tank Assembly	1	Tanks shown separately here for illustrative purposes only
19	261664	Plug - Sealing	2	
20	333464	Tubing - Formed	1	
21	180281	Connector - Tee	1	
22	333452	Tubing - Flared	1	
23	264484	Valve - Cooling Solenoid	1	
	852683	Screw	2	
	535004	Washer - Lock	2	
	852799	Washer	2	
	264769	Cover	1	
	852682	Screw	2	

Figure 59 Wash Circulation Plumbing Diagram

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