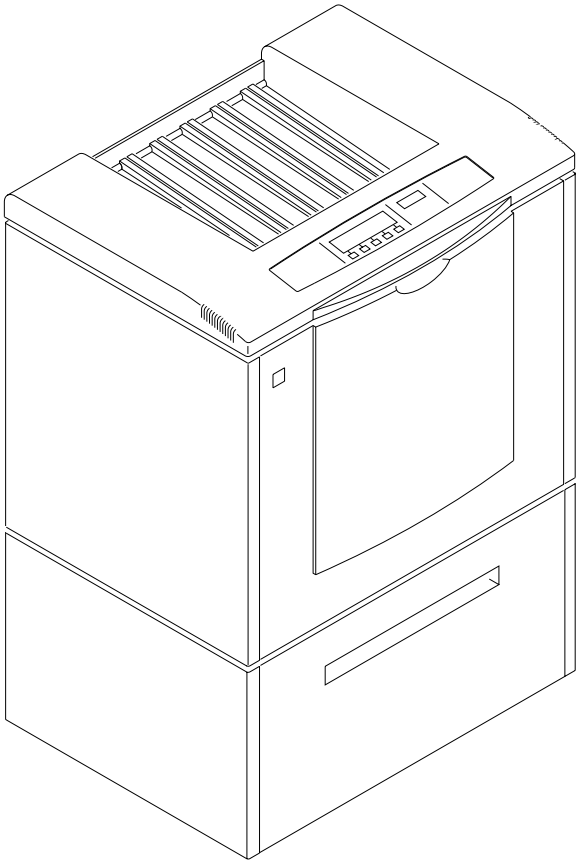
Publication No. 5B6330
30SEP98
Supersedes 5B6330
NOV95

HEALTH IMAGING

INSTALLATION INSTRUCTIONS
for the
Kodak X-Omat 3000 RA PROCESSOR
Service Code: 3434



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

Important

Only qualified personnel should install this equipment.

Table of Contents

Section 1: General Information

Electrostatic Discharge

Overview

ESD, electrostatic discharge, is a primary source of:

- product downtime
- lost productivity
- costly repairs

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

Effective ESD control requires following these guidelines.

Personnel Awareness

Everyone within the organization needs to be aware of ESD, because partial ESD control is no ESD control at all. Please note:

- ESD is a primary source of frustrating equipment failures and intermittent malfunctions.
- ESD affects productivity and profitability.
- ESD can be controlled.

General Precautions

- Do not store trash near static-sensitive equipment.
- Do not place plastic materials near electronic components. Trash-can liners and Styrofoam cups generate static electricity, which can damage or destroy electronic components.

Preventive Measures

- Always look for an ESD warning label before doing any procedure involving static-sensitive components such as CIRCUIT BOARDS. All static-sensitive components are marked with bright graphic labels, which frequently include instructions. Follow all label instructions.
- If the work area is carpeted, spray the carpet with an antistatic solution. In low-humidity environments, spray carpets periodically with an antistatic preparation, available at local stores or through Kodak as TL-3832.
- Wear a grounding strap when handling static-sensitive components. Always make certain that the clip remains attached to a properly grounded, unpainted, clean surface.
- Repair static-sensitive components at an ESD-protected work station or use a portable grounding mat. For help in setting up an ESD-protected work station, contact your Kodak representative.
- When moving static-sensitive components from one area to another, insert and transport the components in ESD-protective packaging. Transparent antistatic bags are available from a variety of manufacturers and will help shield components from ESD damage.

Parts

Warning

In Europe, use the approved IEC PLUG on the SAFELIGHT RECEPTACLE.
Do no tuse the ADAPTER that converts the IEC PLUG to a NEMA PLUG.

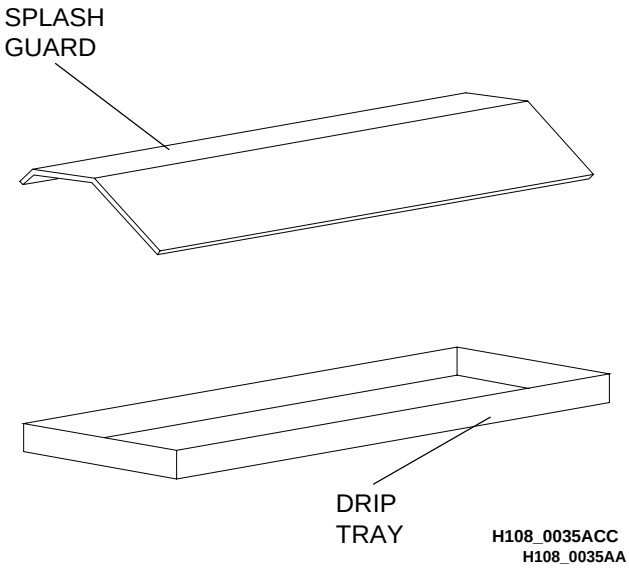
Check that you have all the parts included on the Packing List.

Special Tools

Tool No.	Description
TL-1434	12-INCH BENCH LEVEL
TL-2431	AIR METER

Section 2: Assembling the PROCESSOR

Unpacking the PROCESSOR



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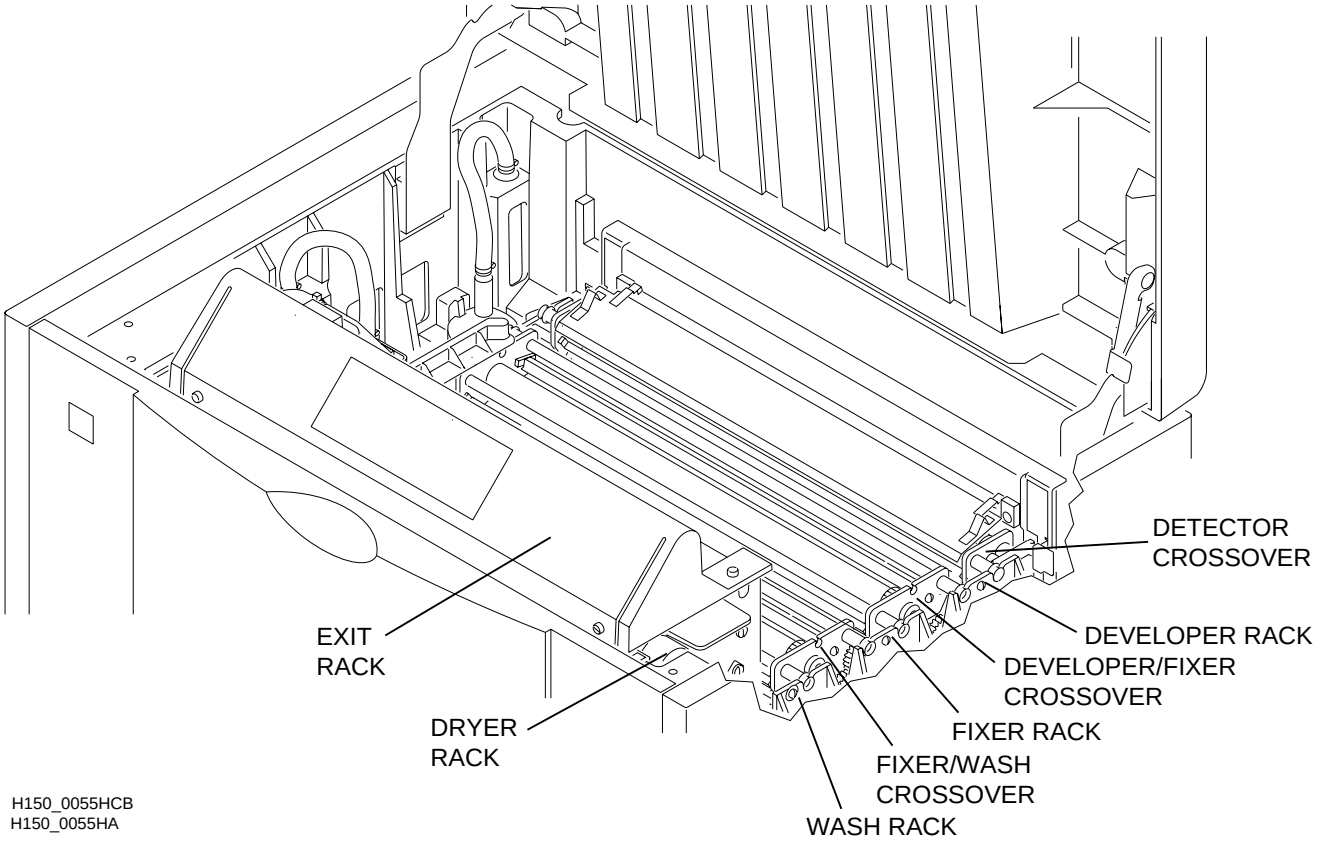
[1] Remove and discard all visible packing material. Remove and keep:

- publications
- carton of miscellaneous parts
- SPLASH GUARD
- DRIP TRAY

[2] Remove:

- 3 CROSSOVERS
- 5 RACKS



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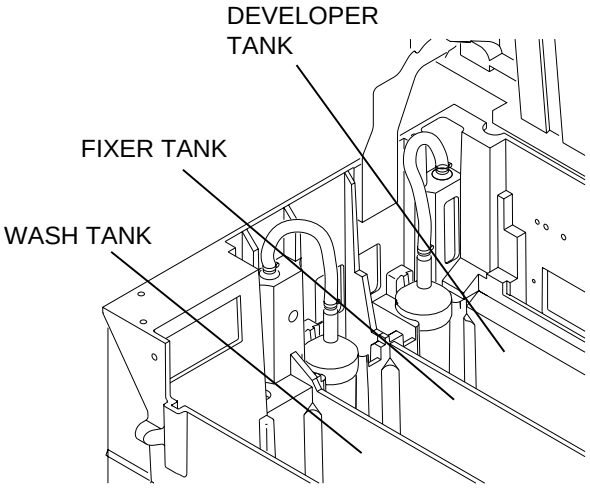
[3] Remove all packing material from the 3 TANKS.



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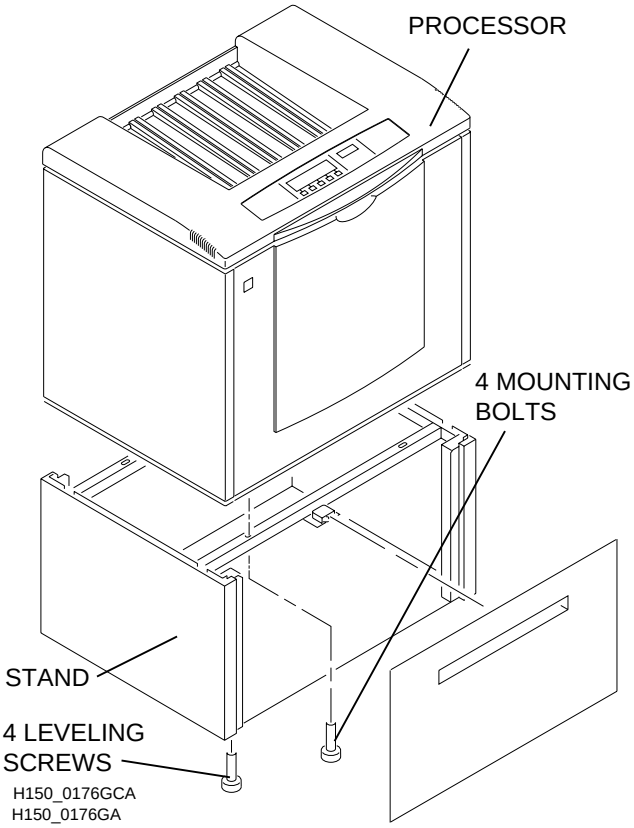
Installing the LEVELING SCREWS



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Warning

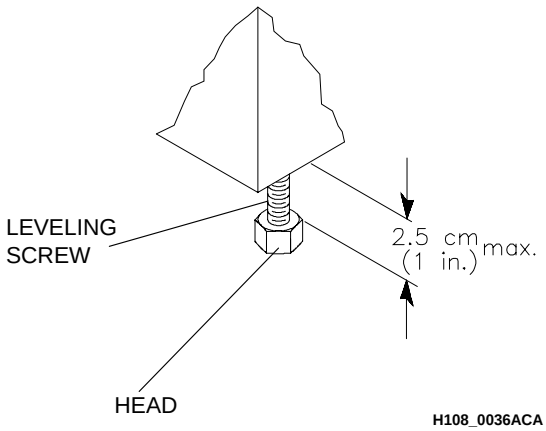
The weight of the PROCESSOR is 125 kg (275 lb).

[1] For a PROCESSOR with a STAND:

- **(a)** Unpack the STAND.
- **(b)** Install the 4 LEVELING SCREWS on the bottom of the STAND.
- **(c)** Place the PROCESSOR on the STAND.
- **(d)** Install the 4 MOUNTING BOLTS.

[2] For a PROCESSOR without a STAND:

- **(a)** Install the 4 LEVELING SCREWS on the bottom of the PROCESSOR.



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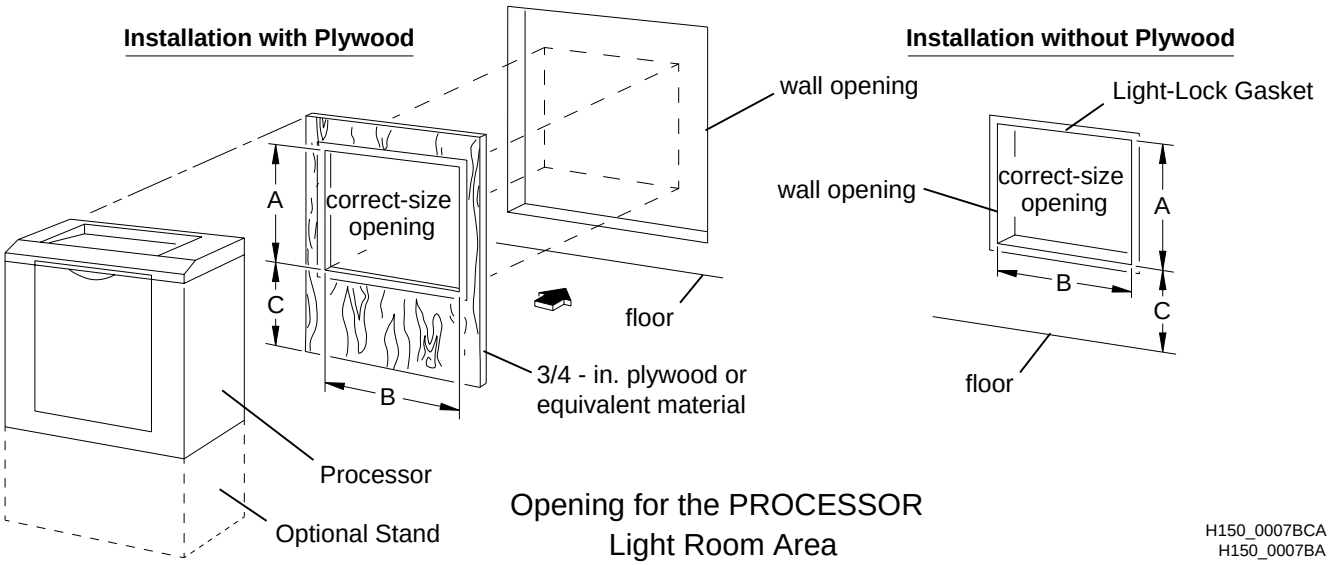
Installing the PROCESSOR Through a Wall



Opening for the PROCESSOR
Light Room Area

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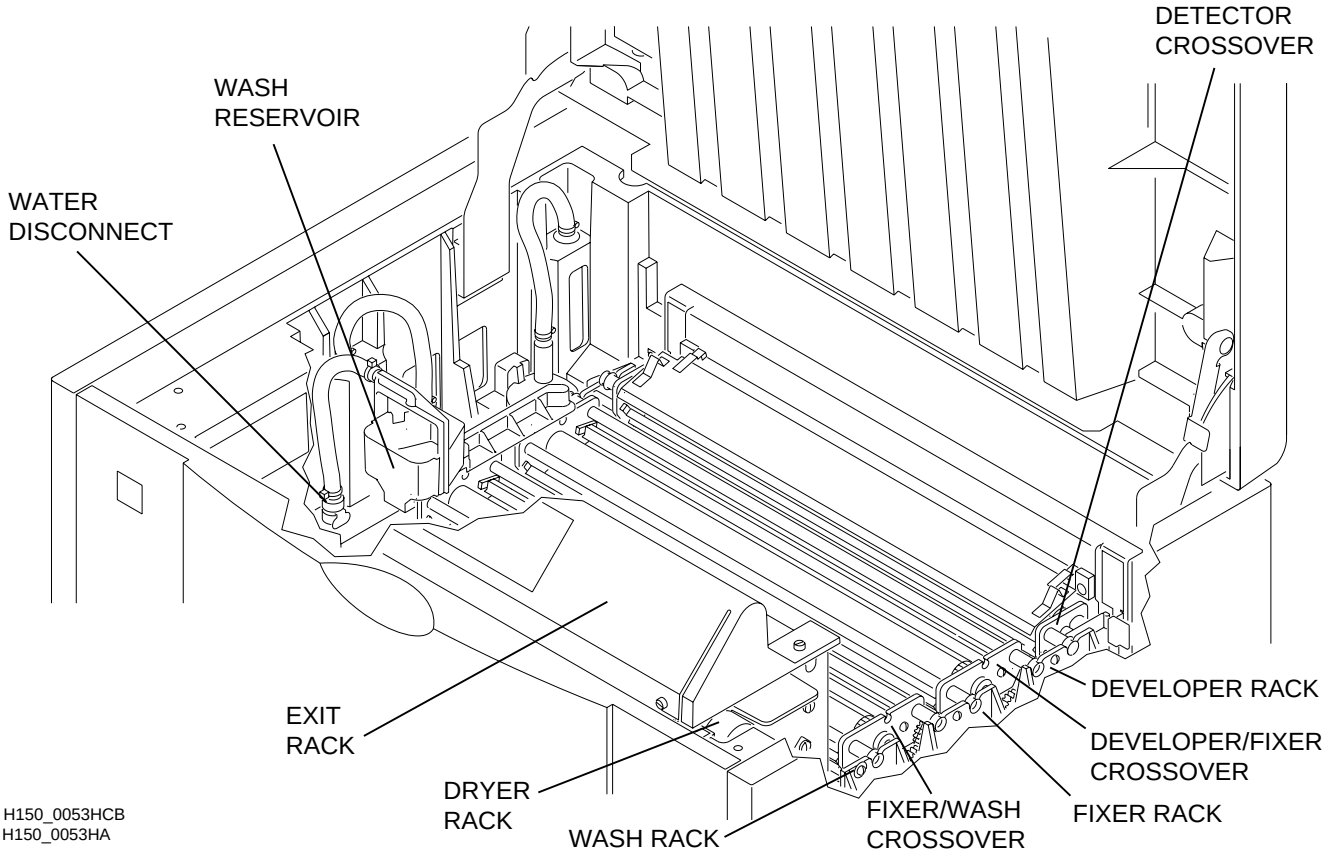
Note

The customer is responsible for the correct-size opening in the wall.

[1] Install the LIGHT-LOCK GASKET around the opening.

Distance	Specification
A	52.2 cm 0.6 cm (22⅛ in. ¼ in.)
B	68.9 cm 0.6 cm (27⅛ in. ¼ in.)
C for a PROCESSOR with a STAND and the LEVELING FEET in the middle position	47.8 cm (18 13/16 in.)
C for a PROCESSOR without a STAND and the LEVELING FEET in the middle position	6.2 cm (2 7/16 in.)

Installing the RACKS, CROSSOVERS, and WASH RESERVOIR



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[1] Install:

- 5 RACKS
- 3 CROSSOVERS

[2] Install the WASH RESERVOIR. Connect the WATER DISCONNECT.

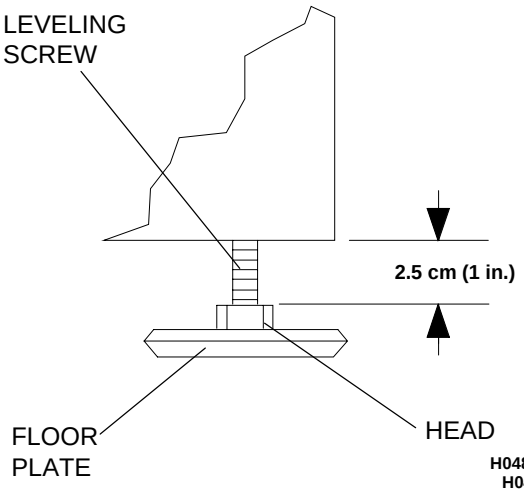
[3] Check that all parts are seated correctly.

Caution

The HOSE CLAMPS may be loose after shipment.

[4] Tighten all metal HOSE CLAMPS.

Leveling the PROCESSOR



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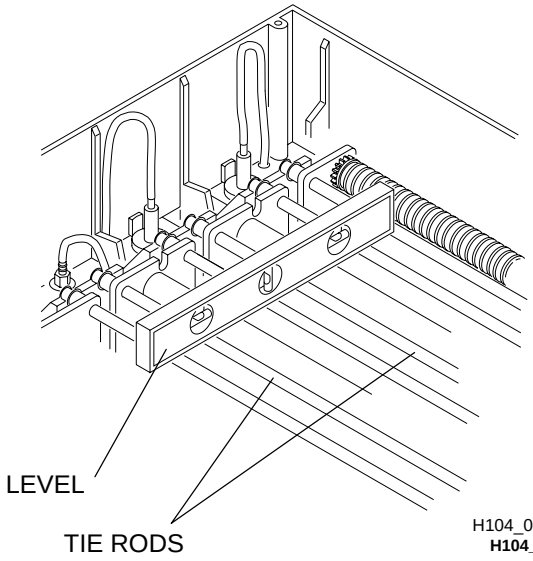

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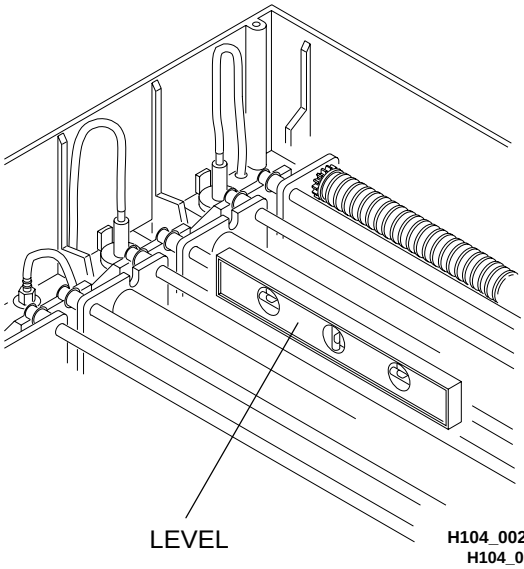

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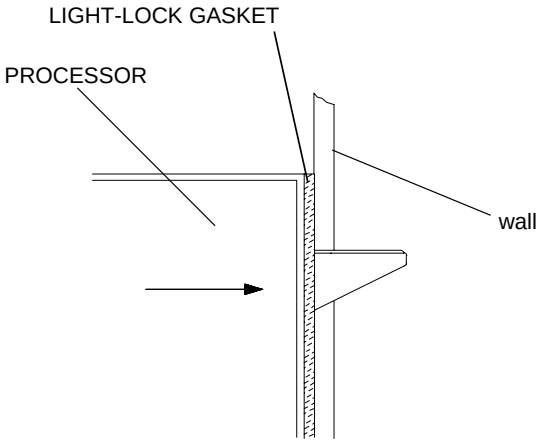
Warning

The weight of the PROCESSOR is 125 kg (275 lb).

[1] After you move the PROCESSOR to the permanent location, install the 4 FLOOR PLATES under the LEVELING SCREWS.

[2] Check that the LIGHT-LOCK GASKET is tight between the PROCESSOR and the wall.



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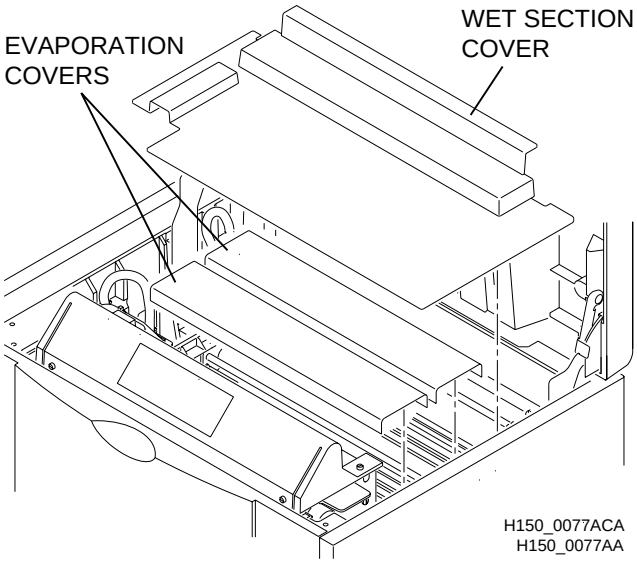
Caution

To prevent damage, do not allow the:

- LEVEL TL-1434 to cause a scratch on the ROLLERS.
- distance between the bottom of the equipment and the HEAD of the LEVELING SCREW to be more than 2.5 cm (1.0 in.).

[3] Place the LEVEL TL-1434 on the TIE RODS and adjust the LEVELING SCREWS until the PROCESSOR is level in all directions.

Installing the COVERS



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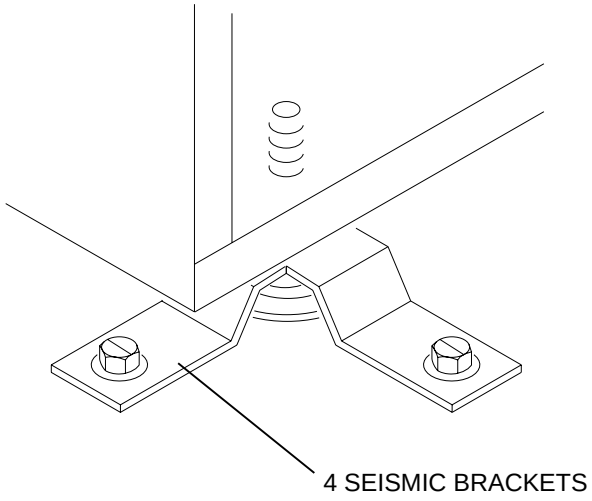
[1] Install the 3 COVERS.

Installing the SEISMIC BRACKETS



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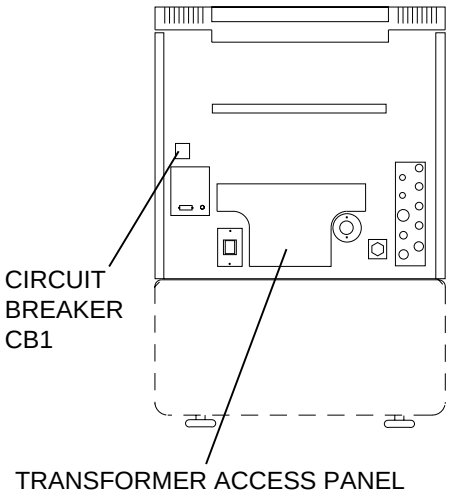
[1] If local codes require SEISMIC BRACKETS, install the BRACKETS. See the instructions included with the BRACKETS.

Kit with SEISMIC BRACKETS and installation instructions	Part No.
PROCESSOR with a STAND	14894
PROCESSOR without a STAND	914895

Section 3: Connecting the PROCESSOR

Making the Electrical Connections



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Warning
Dangerous Voltage

All electrical services, including ground, must comply with local and national codes.

[1] De-energize the main power. Move the MAIN POWER DISCONNECT SWITCH to the “O” position and lock it.

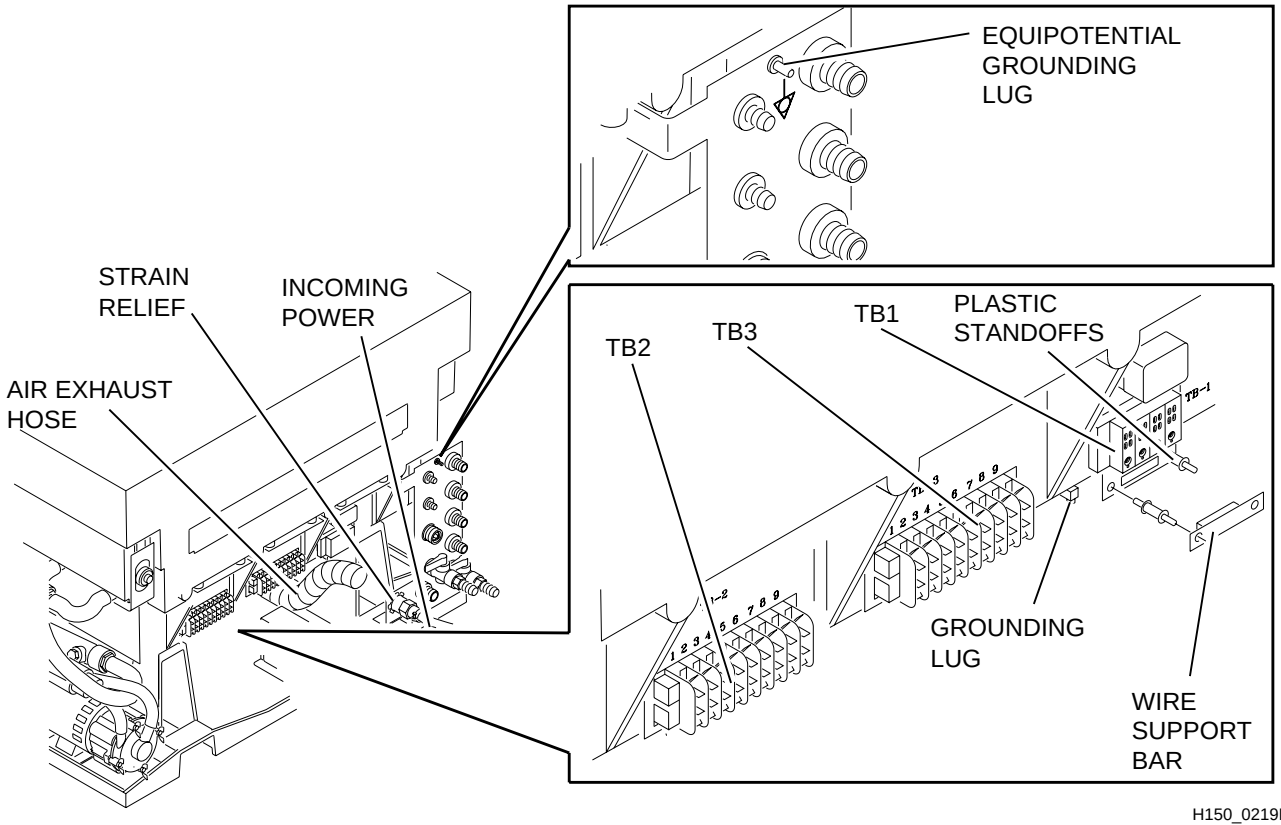
[2] Check that the CIRCUIT BREAKER CB1 on the PROCESSOR is in the “O” position.

[3] Install the INCOMING POWER.

(a) Remove the TRANSFORMER ACCESS PANEL.

(b) Install the STRAIN RELIEF.

(c) Insert the INCOMING POWER through the STRAIN RELIEF.



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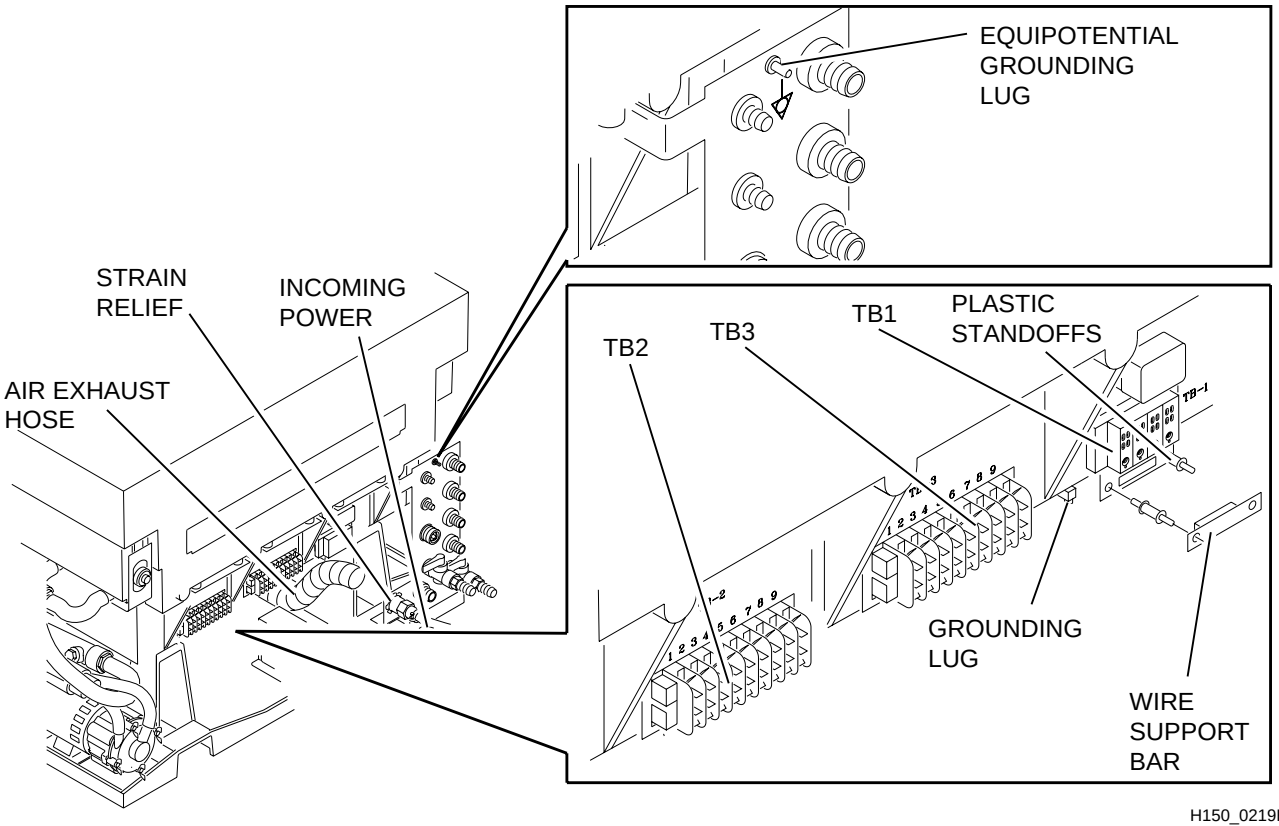
Warning

For safety, use the STUBBY SLOTTED SCREWDRIVER TL-1465 to tighten the GROUNDING LUG.

[4] On the following diagrams, locate the type of power service the customer has. Using this information, connect the following wires tightly.

	from	to
wires	INCOMING POWER	TB1
ground wire	INCOMING POWER	GROUNDING LUG
4 wires	PROCESSOR	TB1
JUMPERS	miscellaneous carton of parts	TB2 and TB3



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[5] Attach the WIRE SUPPORT BAR to the 2 PLASTIC STANDOFFS.

[6] For European installations, or, where appropriate, install the EQUIPOTENTIAL GROUNDING PLUG on the EQUIPOTENTIAL GROUNDING LUG.

[7] Check that the AIR EXHAUST HOSE is connected correctly.

[8] See the information on the following Connection Diagrams to determine which UL/CSA or TUV LABEL to use. Apply the correct LABEL.

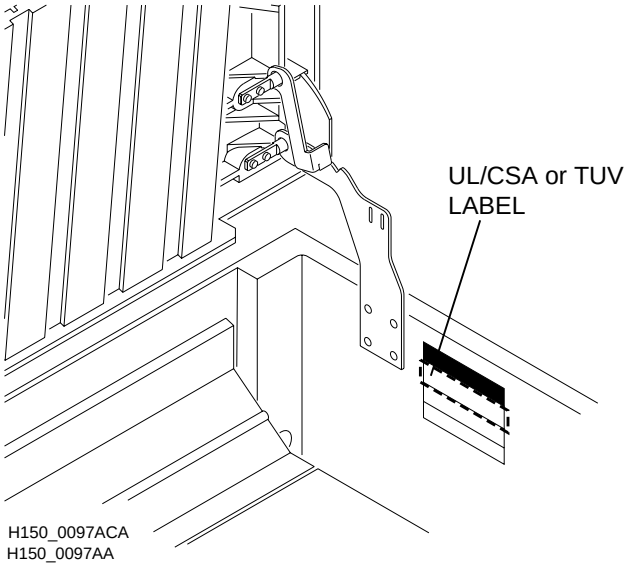
UL/CSA or TUV
LABEL
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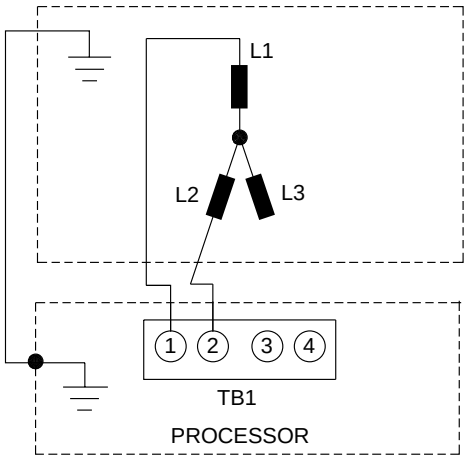
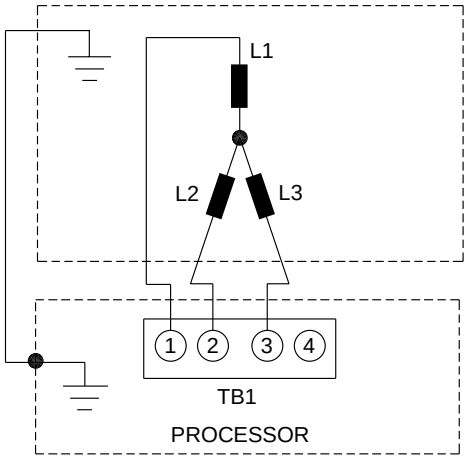
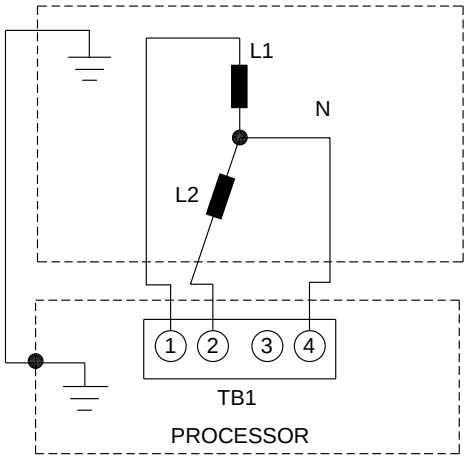
Figure 1 **Determining the Power System**

Power System	Nominal Supply Voltage	Connection Diagram
	120 / 208 3 Wires (Line 1, Line 2, and Ground) 208 V Line to Line	A
	127 / 220 3 Wires (Line 1, Line 2, and Ground) 220 V Line to Line	K
	120 / 208 4 Wires (Line 1, Line 2, Line 3, and Ground) 208 V Line to Line	B
	127 / 220 4 Wires (Line 1, Line 2, Line 3, and Ground) 220 V Line to Line	S
	120 / 208 4 Wires (Line 1, Line 2, Neutral, and Ground) 120 V Line to Neutral / 208 V Line to Line	C
	127 / 220 4 Wires (Line 1, Line 2, Neutral, and Ground) 127 V Line to Neutral / 220 V Line to Line	R
	220 / 380 4 Wires (Line 1, Line 2, Neutral, and Ground) 220 V Line to Neutral / 380 V Line to Line	M
	230 / 400 4 Wires (Line 1, Line 2, Neutral, and Ground) 230 V Line to Neutral / 400 V Line to Line	N
	240 / 415 4 Wires (Line 1, Line 2, Neutral, and Ground) 240 V Line to Neutral / 415 V Line to Line	O

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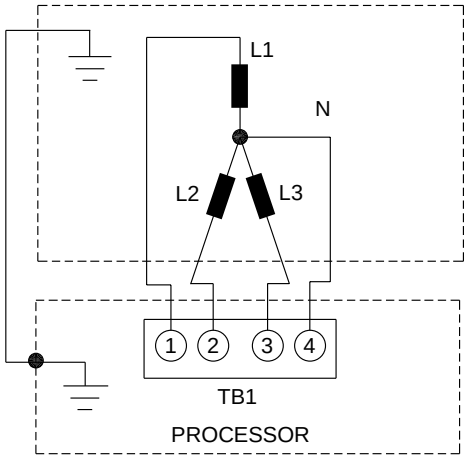
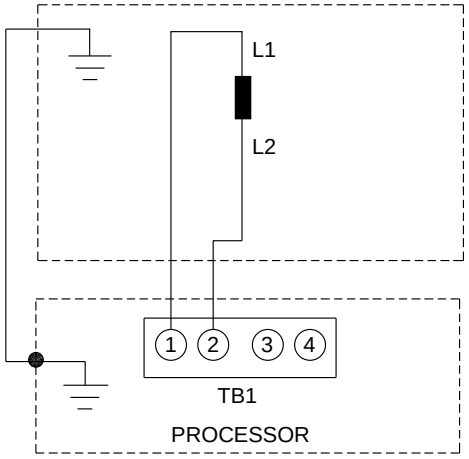
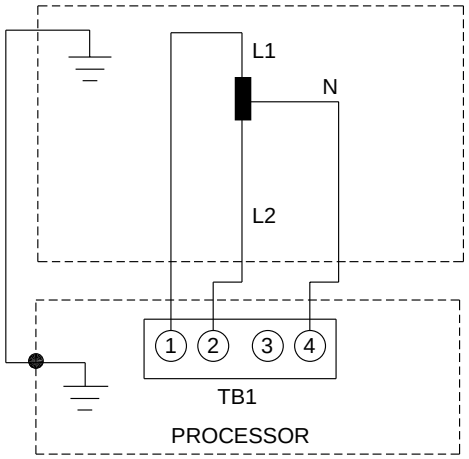
Power System	Nominal Supply Voltage	Connection Diagram
	120 / 208 5 Wires (Line 1, Line 2, Line 3, Neutral, and Ground) 120 V Line to Neutral / 208 V Line to Line	D
	127 / 220 5 Wires (Line 1, Line 2, Line 3, Neutral, and Ground) 127 V Line to Neutral / 220 V Line to Line	T
	220 / 380 5 Wires (Line 1, Line 2, Line 3, Neutral, and Ground) 220 V Line to Neutral / 380 V Line to Line	U
	230 / 400 5 Wires (Line 1, Line 2, Line 3, Neutral, and Ground) 230 V Line to Neutral / 400 V Line to Line	V
	240 / 415 5 Wires (Line 1, Line 2, Line 3, Neutral, and Ground) 240 V Line to Neutral / 415 V Line to Line	W
	200 3 Wires (Line 1, Line 2, and Ground) 200 V Line to Line	I
	220 3 Wires (Line 1, Line 2, and Ground) 220 V Line to Line	J
	240 3 Wires (Line 1, Line 2, and Ground) 240 V Line to Line	L
	100 / 200 4 Wires (Line 1, Line 2, Neutral, and Ground) 100 V Line to Neutral, 200 V Line to LIne	X
	120 / 240 4 Wires (Line 1, Line 2, Neutral, and Ground) 120 V Line to Neutral, 240 V Line to LIne	Q

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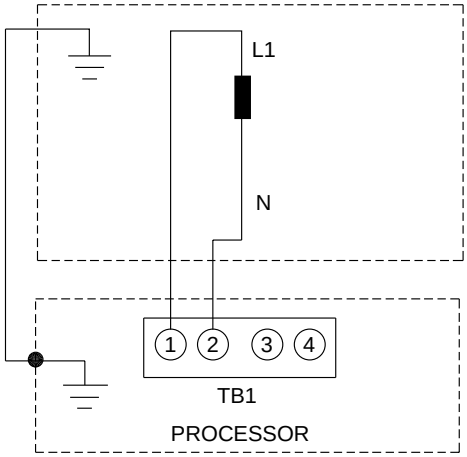
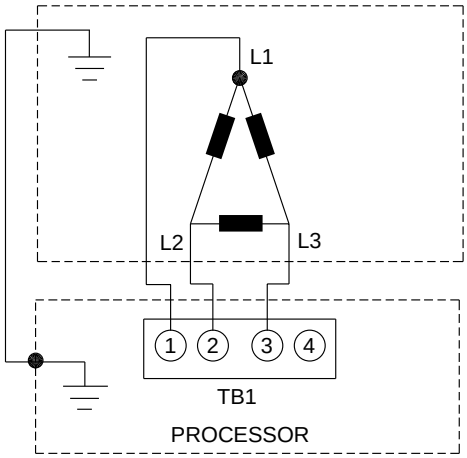
Power System	Nominal Supply Voltage	Connection Diagram
	200 3 Wires (Line 1, Neutral, and Ground) 200 V Line to Neutral	E
	220 3 Wires (Line 1, Neutral, and Ground) 220 V Line to Neutral	F
	230 3 Wires (Line 1, Neutral, and Ground) 230 V Line to Neutral	G
	240 3 Wires (Line 1, Neutral, and Ground) 240 V Line to Neutral	H
	200 4 Wires (Line 1, Line 2, Line 3, and Ground) 200 V Line to Line	P

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Figure 2 **Connections for Typical U.S. Power Systems**

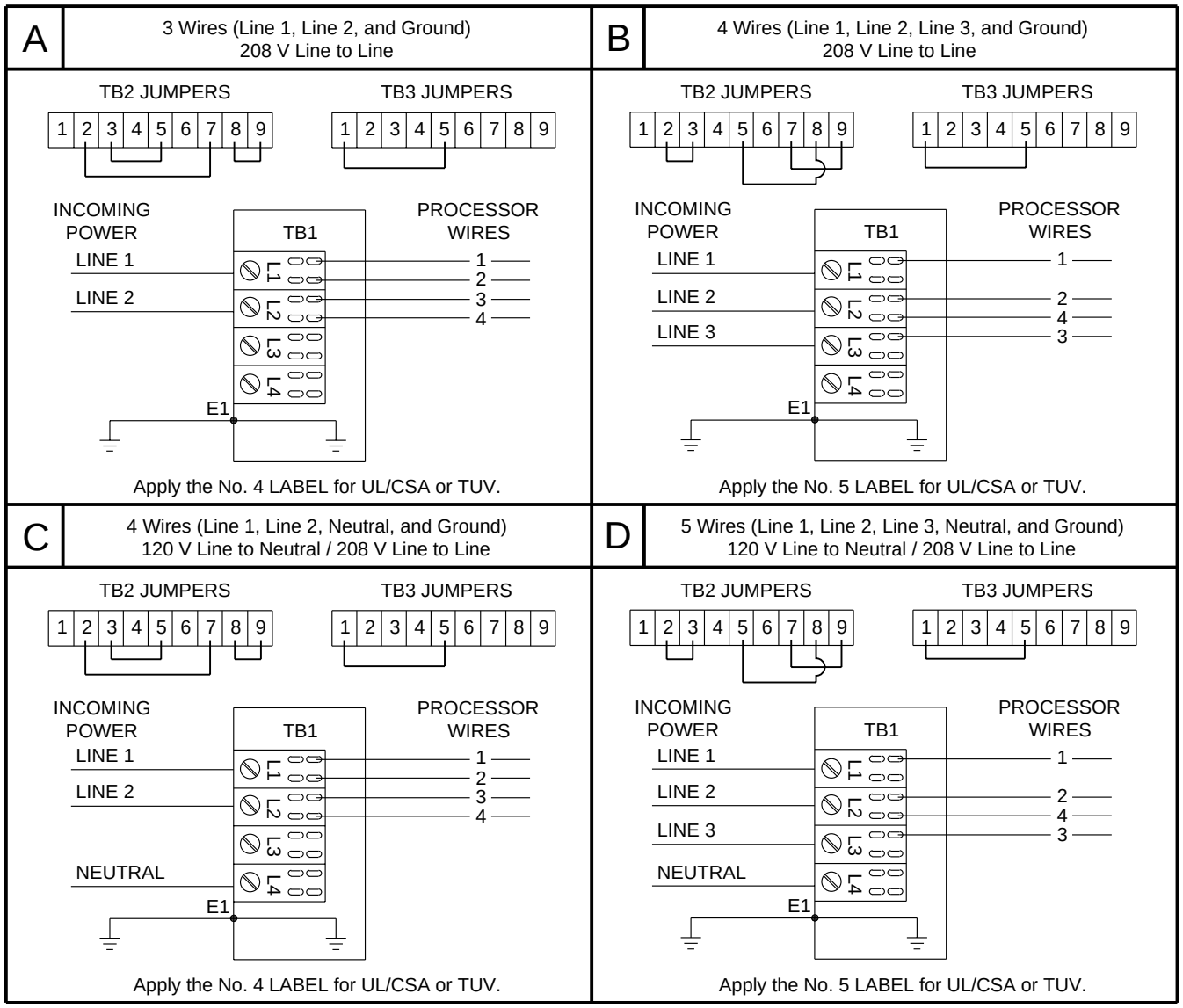

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Figure 3 **Connections for Other Power Systems**

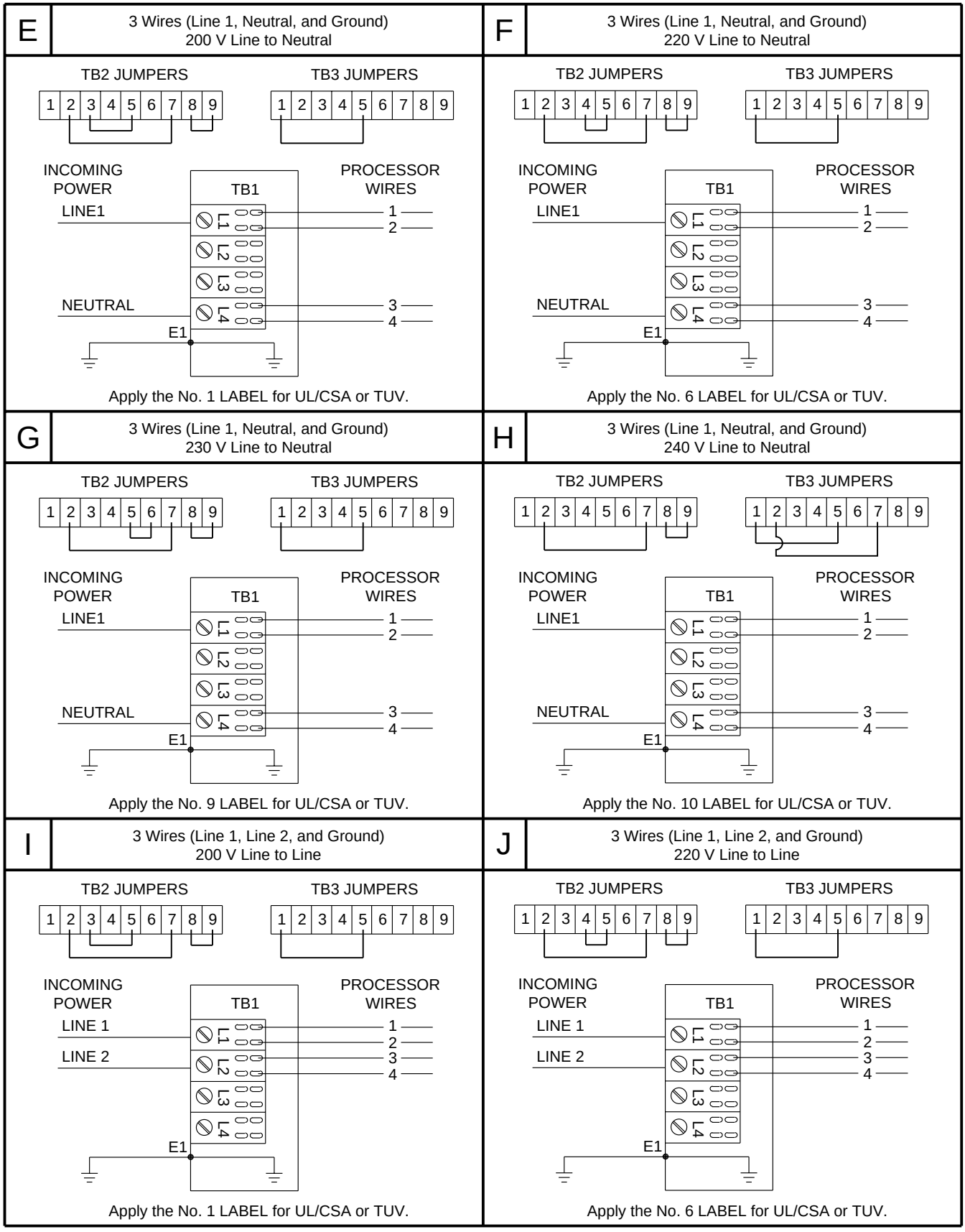

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Figure 4 **Connections for Other Power Systems**

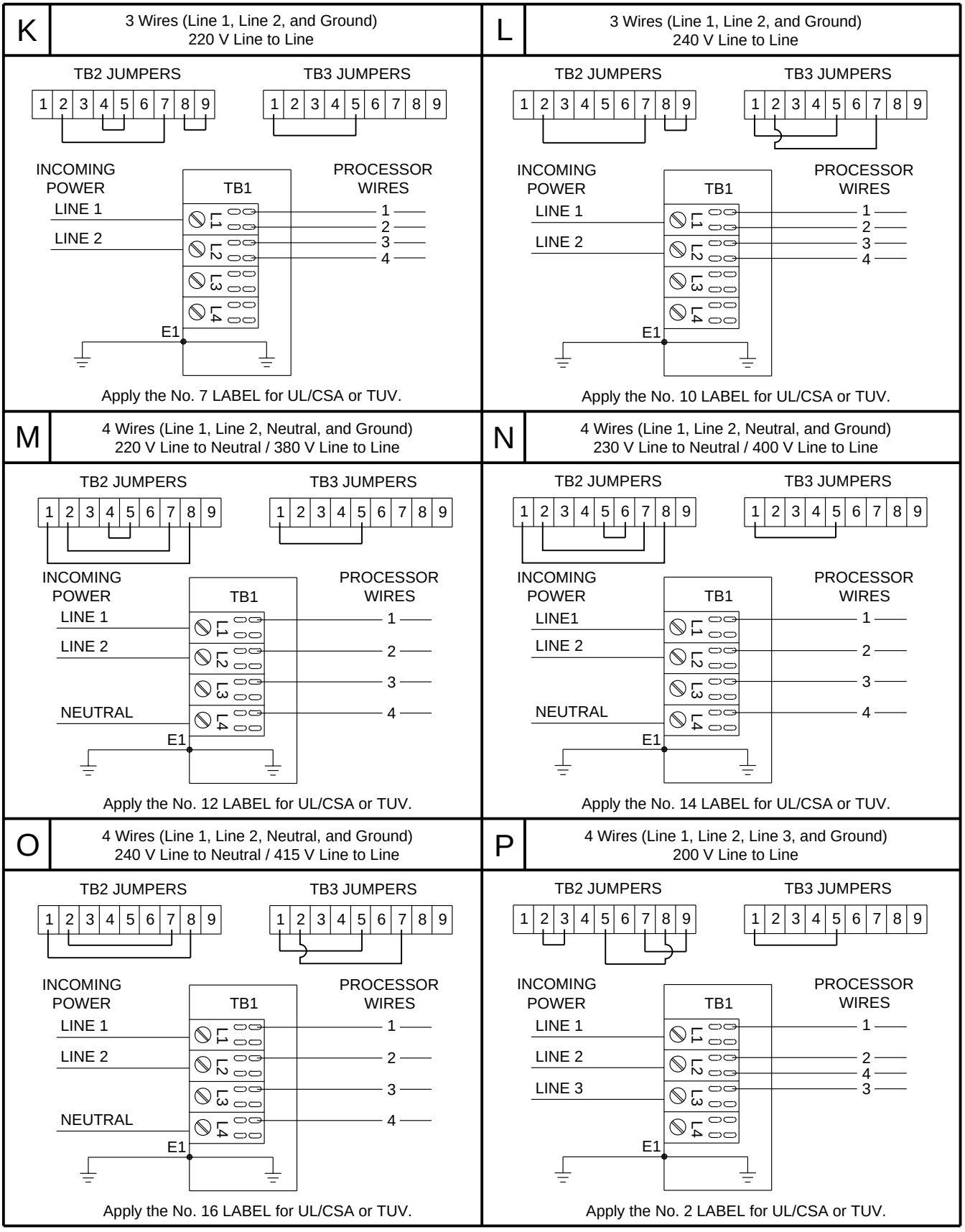

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Figure 5 **Connections for Other Power Systems**

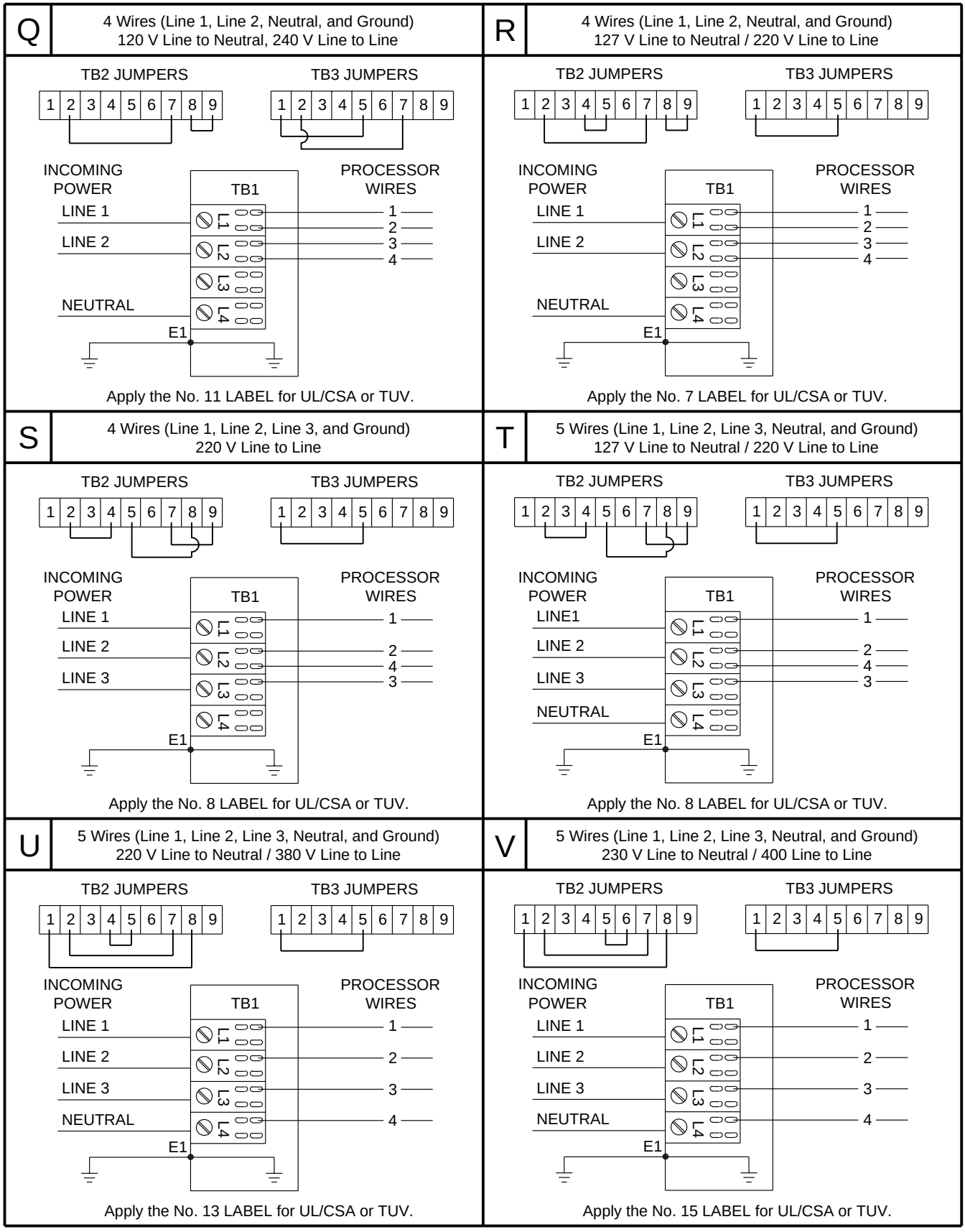

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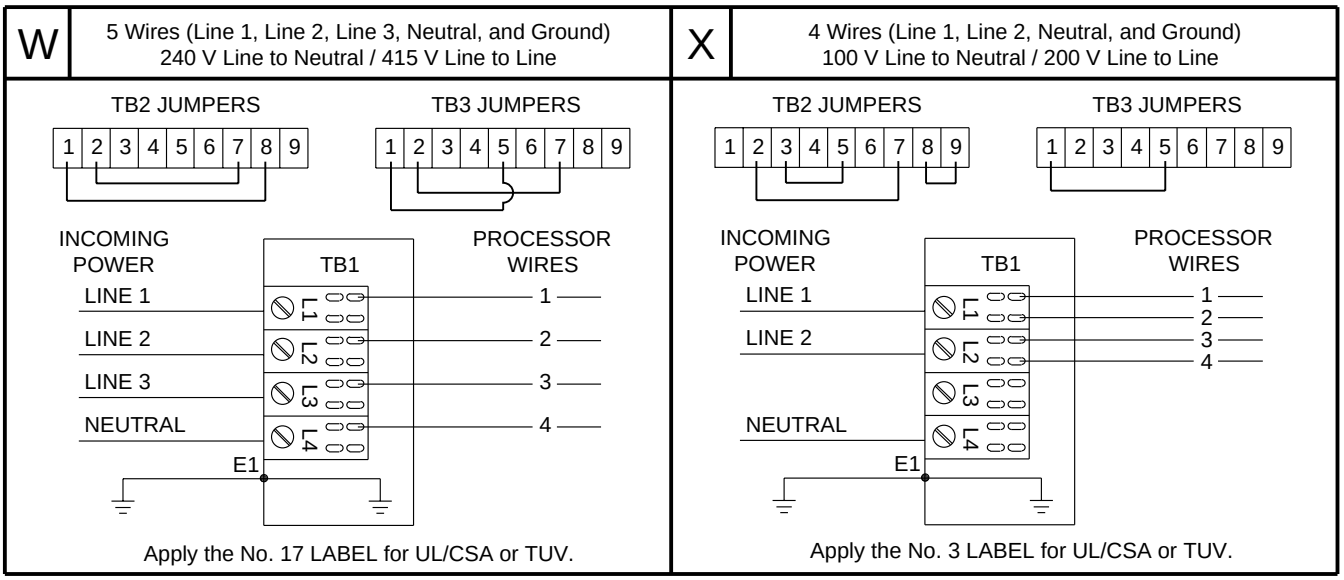
Figure 6 **Connections for Other Power Systems**



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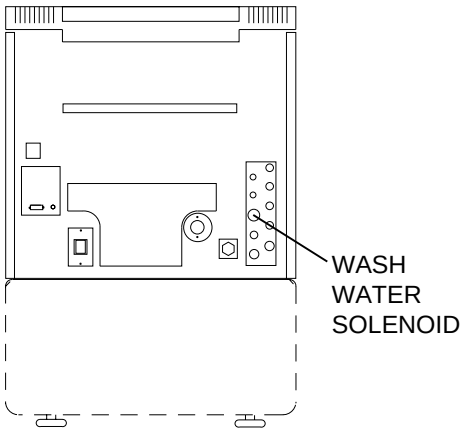
Making the Plumbing Connections

Warning

All plumbing must comply with local and national codes.

Connecting the Water Supply



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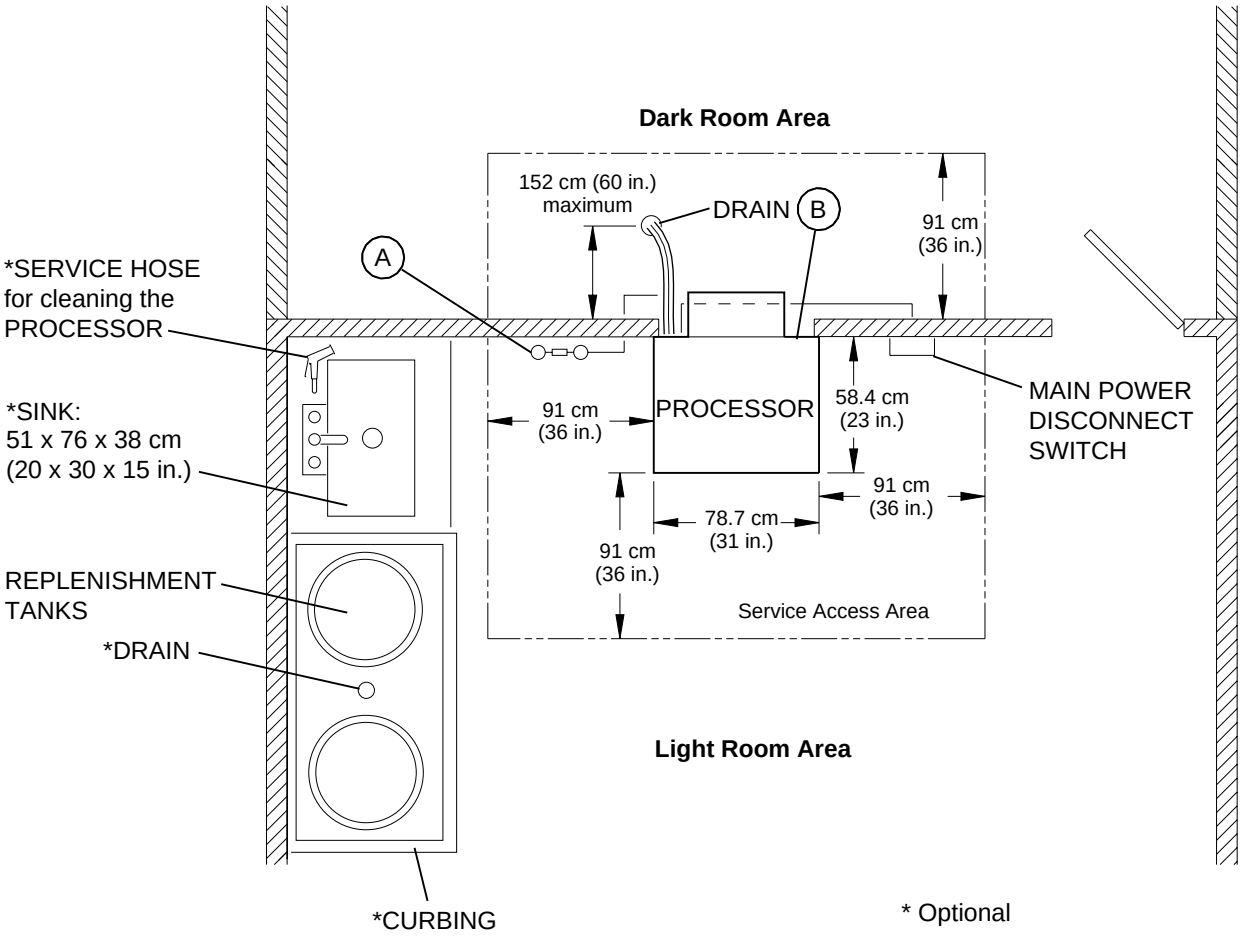
[1] Connect the input water supply to the WASH WATER SOLENOID. Check that:

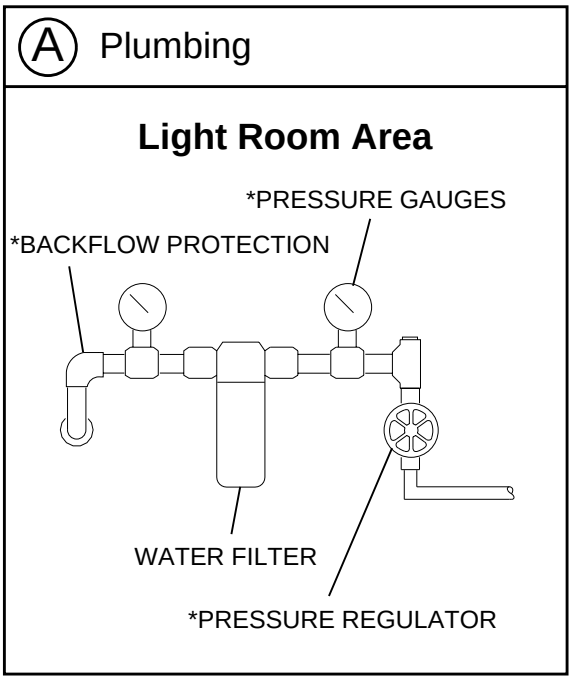
- the customer installed a 50 micron WATER FILTER in the input water line. The FILTER is required. See the next page for an example of a plumbing setup.
- the water pressure is 173 - 448 kPa (25 - 65 psi). If the water pressure is too high, have the customer install a PRESSURE REGULATOR to prevent the WASH WATER SOLENOID from malfunctioning.
- the water temperature is 4.5 - 29C (40 - 84F). The water must be a minimum of 5.5C (10F) below the developer temperature set•point to provide the correct developer temperature control. If the water is too cold, the customer must install a mixing valve.

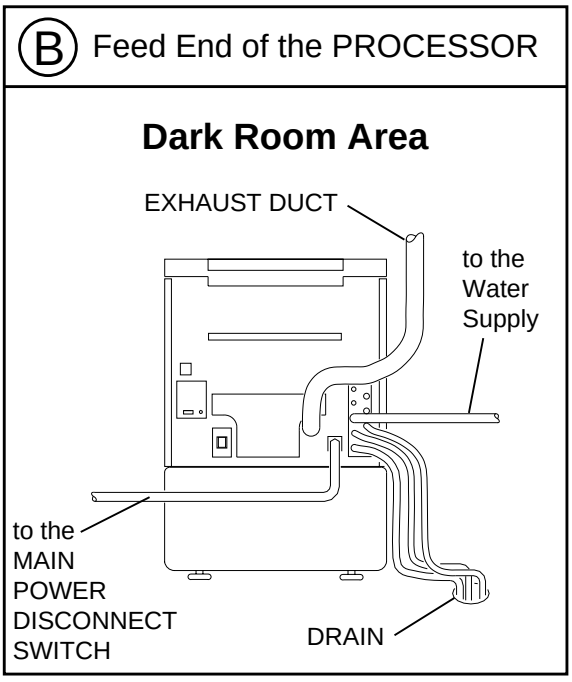
Note

- Kodak suggests a:
  - PRESSURE GAUGE to monitor the water pressure
  - tempered water supply for cleaning the PROCESSOR and for mixing chemicals manually
- The PROCESSOR has an internal 2.54 cm (1.0 in.) water gap in the WASH RESERVOIR. A CHECK VALVE or VACUUM BREAKER should not be necessary, unless local codes require one.

Figure 7 **Suggested Room Layout**







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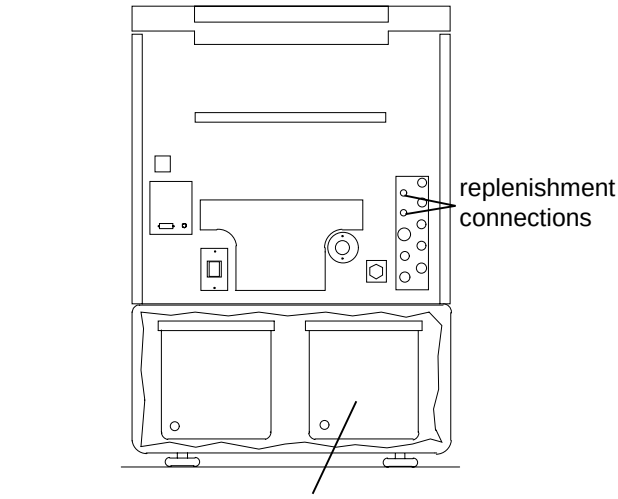
Connecting the REPLENISHMENT TANKS, STRAINERS, and Silver Recovery System

Figure 8 **Internal REPLENISHMENT TANKS**



Note

Customers may use internal or external REPLENISHMENT TANKS or a chemical mixing system. An example of a chemical mixing system is aAUTOMIXER III. To install a chemical mixing system, use the installation instructions for the system.

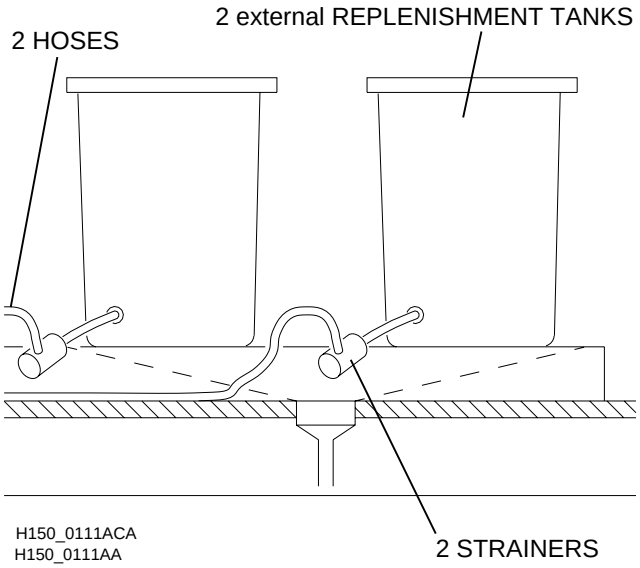
[1] Install and connect the REPLENISHMENT TANKS or chemical mixing system to the PROCESSOR.

(a) Use 3/8-in. ID HOSE.

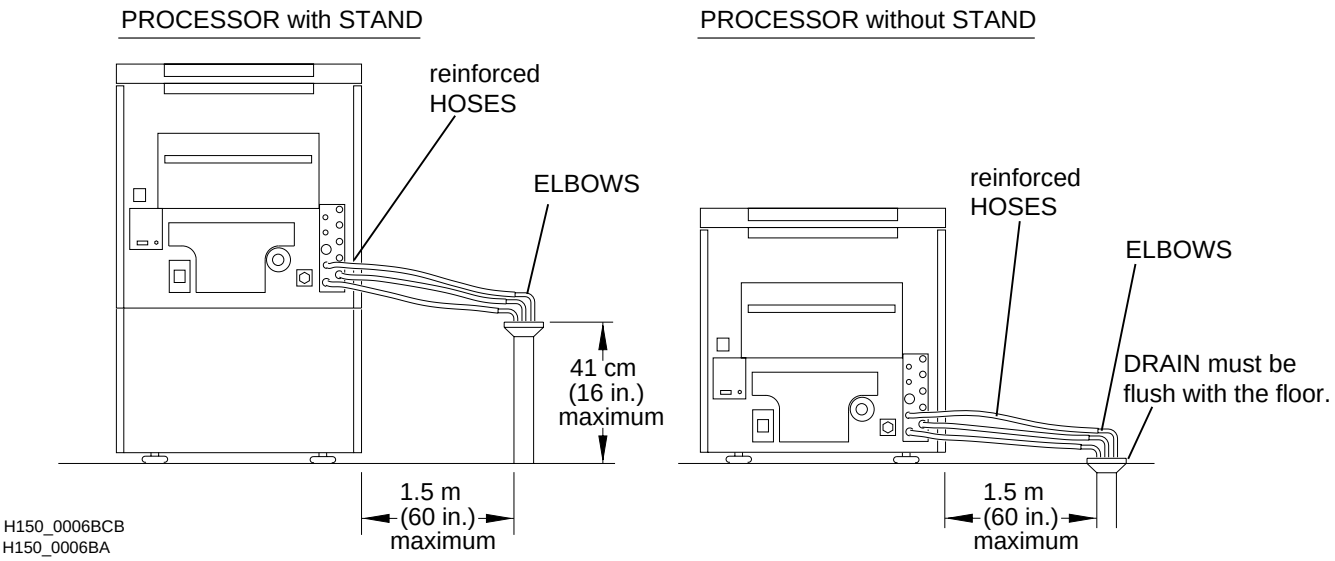
(b) Install the STRAINERS in the HOSES.

[2] If the customer has a Silver Recovery System, install it.

Figure 9 **REPLENISHMENT STRAINERS and External REPLENISHMENT TANKS**



Connecting the DRAINS



Warning

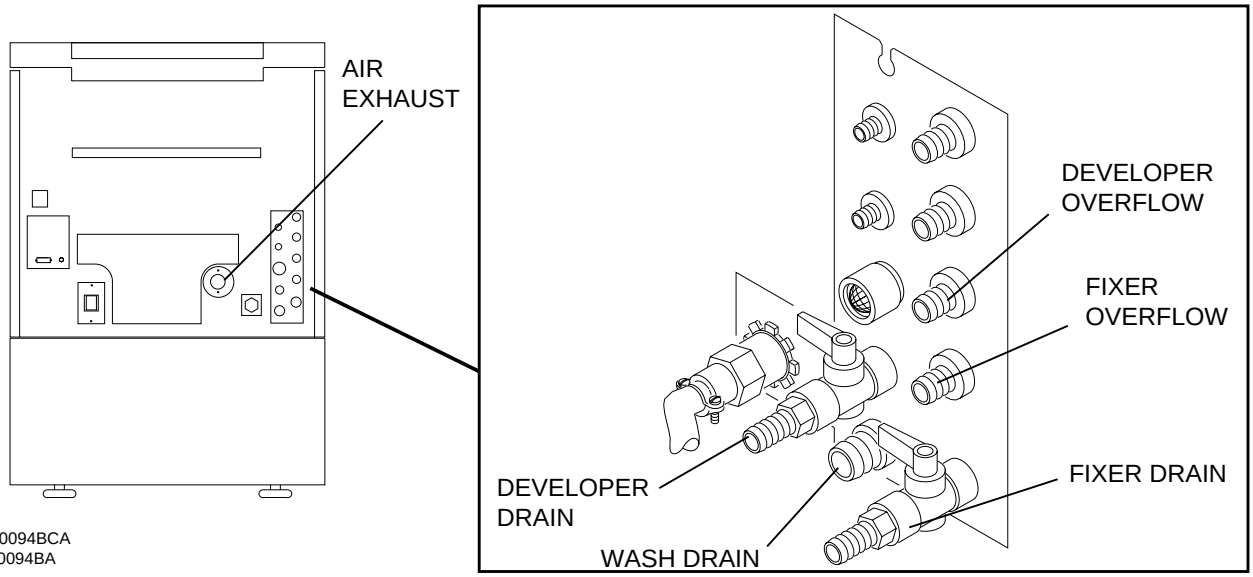
DRAINS must be made of chemically resistant, non-corrosive material. Use PVC or the equivalent.

[1] Check that the DRAINS comply with the following requirements:

Subject	Requirements
Minimum diameter	7.6 cm (3 in.)
Distance from the PROCESSOR	1.5 m (60 in.) maximum
Height from the floor for a PROCESSOR with a STAND	41 cm (16 in.) maximum
Height from the floor for a PROCESSOR without a STAND	flush with the floor
HOSES	Reinforced HOSE that will not kink is recommended.*
Connections to the DRAIN	Corrosive resistent connections should be flexible, not solid. ELBOWS are recommended.*

* The customer can obtain these parts from Kodak. See the Site Specifications, Publication No. 5B6329.

[2] Check that the DEVELOPER and FIXER DRAIN are closed.



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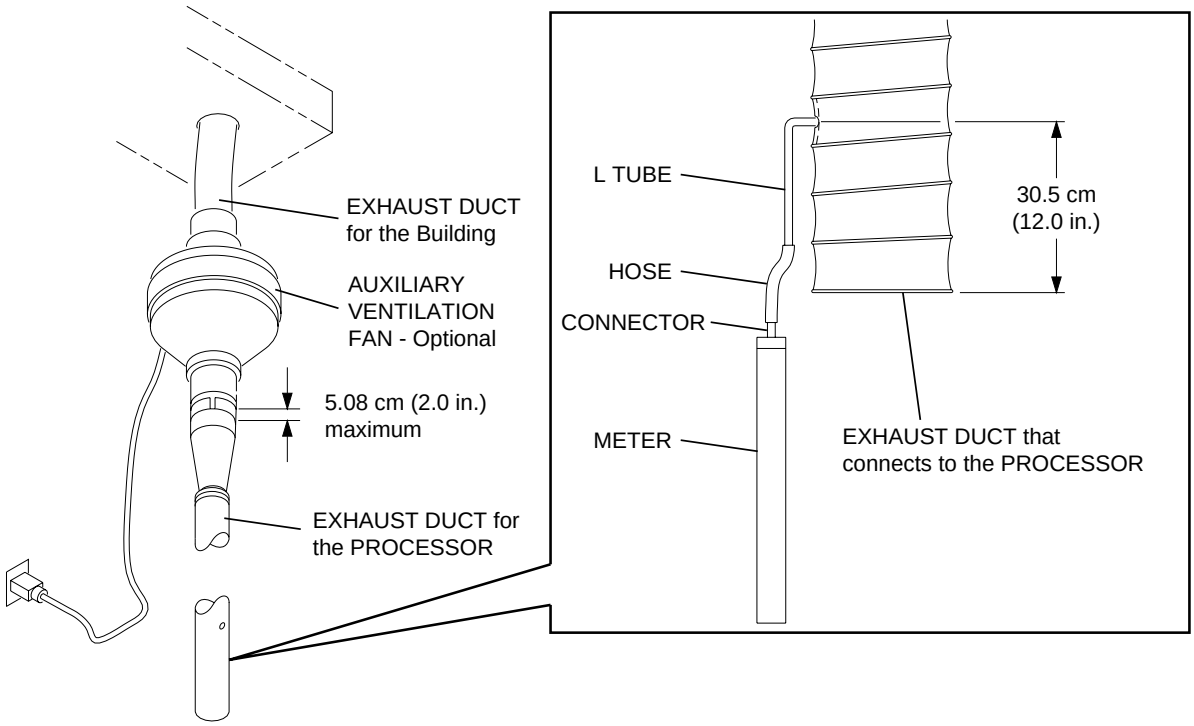
Important

Check that all the HOSES slope toward the DRAIN. Any obstructions or upward slope in the HOSE from the WASH DRAIN will cause the draining wash water to move back into the WASH TANK. If too much water enters the TANK, the water will overflow onto the floor.

[3] Route and connect the following HOSES to the floor DRAIN:

- DEVELOPER OVERFLOW
- DEVELOPER DRAIN
- FIXER DRAIN
- FIXER OVERFLOW to the floor DRAIN or the CHEMICAL RECOVERY CARTRIDGE
- WASH DRAIN

Connecting the Exhaust System



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Important

For maximum reliability and performance, the PROCESSOR must be connected to an exhaust system with the correct negative pressure.

[1] Check that the negative pressure is correct.

Diameter of the DUCT	Negative Pressure
7.6 cm (3.0 in.)	0.76 - 2.54 mm (0.03 - 0.10 in.) of water
10.2 cm (4.0 in.)	0.25 - 1.02 mm (0.01 - 0.04 in.) of water

(a) Connect the rubber HOSE from the AIR METER TL-2431 to the:

- L TUBE
- center CONNECTOR on the METER

(b) Make a 6.4 mm (¼ in.) hole approximately 30.5 cm (12 in.) from the end of the EXHAUST DUCT that will be connected to the PROCESSOR.

(c) Insert the L TUBE into the hole you just made until the end of the TUBE is flush with the inside of the EXHAUST DUCT.

(d) Check that the negative pressure on the METER is correct.

- Do not connect the EXHAUST DUCT to the PROCESSOR.
- Hold the METER vertically.

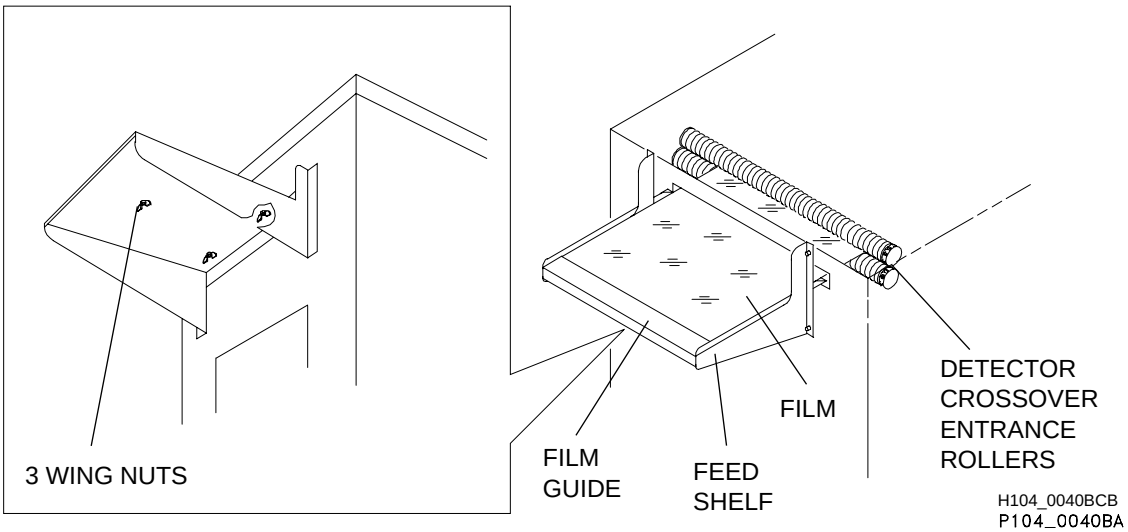
(e) If necessary, adjust the distance between the EXHAUST DUCT for the building and the EXHAUST DUCT for the PROCESSOR until the negative pressure is correct. If you cannot obtain the correct negative pressure, the customer must install an AUXILIARY VENTILATION FAN. See the Site Specifications, Publication No. 5B6329.

(f) Remove the L TUBE from the EXHAUST DUCT and seal the remaining hole.

[2] Connect the EXHAUST DUCT to the AIR EXHAUST on the PROCESSOR.

Section 4: Completing the Installation

Installing the FEED SHELF and FILM GUIDE



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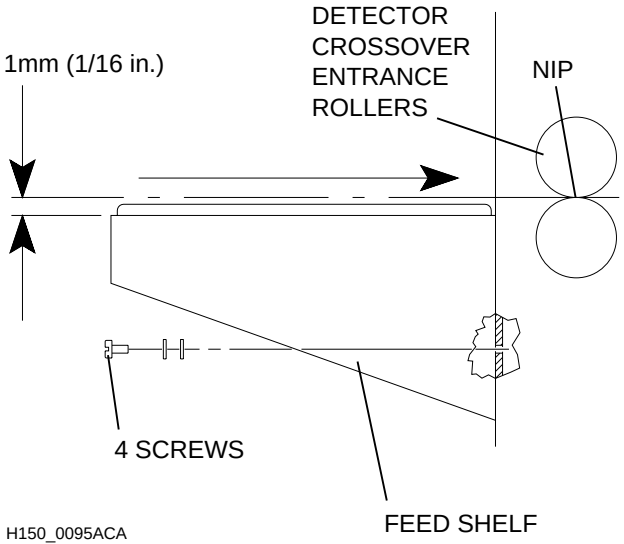

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[1] Loosely install the FEED SHELF onto the PROCESSOR. Use:

- 4 SCREWS
- 4 LOCK WASHERS
- 4 WASHERS

Do not tighten the SCREWS.

[2] Loosely install the FILM GUIDE onto the FEED SHELF. Use:

- 3 WING NUTS
- 3 WASHERS

Do not tighten the WING NUTS.

[3] Adjust the FEED SHELF until it is approximately 1 mm (1⁄16 in.) below the NIP of the DETECTOR CROSOVER ENTRANCE ROLLERS. Tighten the 4 SCREWS.

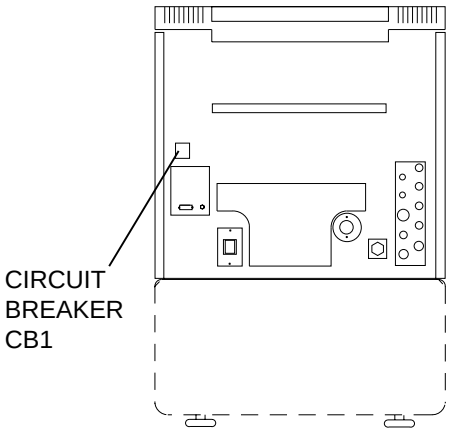
[4] Adjust the FILM GUIDE until it is perpendicular to the DETECTOR CROSSOVER ENTRANCE ROLLERS.

(a) Place a 35 x 43 cm (14 x 17-in.) sheet of film on the FILM GUIDE.

(b) Hold the film against the left edge of the FILM GUIDE and adjust the FILM GUIDE until the leading edge of the film is parallel to the DETECTOR CROSSOVER ENTRANCE ROLLERS.

(c) Tighten the 3 WING NUTS.

Checking the Operation of the PROCESSOR



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[1] Remove the remaining external PANELS from the PROCESSOR and open the TOP COVER

[2] To allow correct operation of the LEVEL SENSORS, add 500 mL (8 fl oz) of:

- developer to the DEVELOPER TANK
- fixer to the FIXER TANK

[3] Slowly fill the DEVELOPER and FIXER TANKS with water to the overflow limit.

Warning
Dangerous Voltage

[4] Energize the main power.

(a) Unlock the MAIN POWER DISCONNECT SWITCH and move it to the “1” position.

(b) Move the CIRCUIT BREAKER CB1 to the “1” position.

[5] Use the internal diagnostics to check the operation of the following components. If necessary, see the Diagnostics, Publication No. 5B6333.

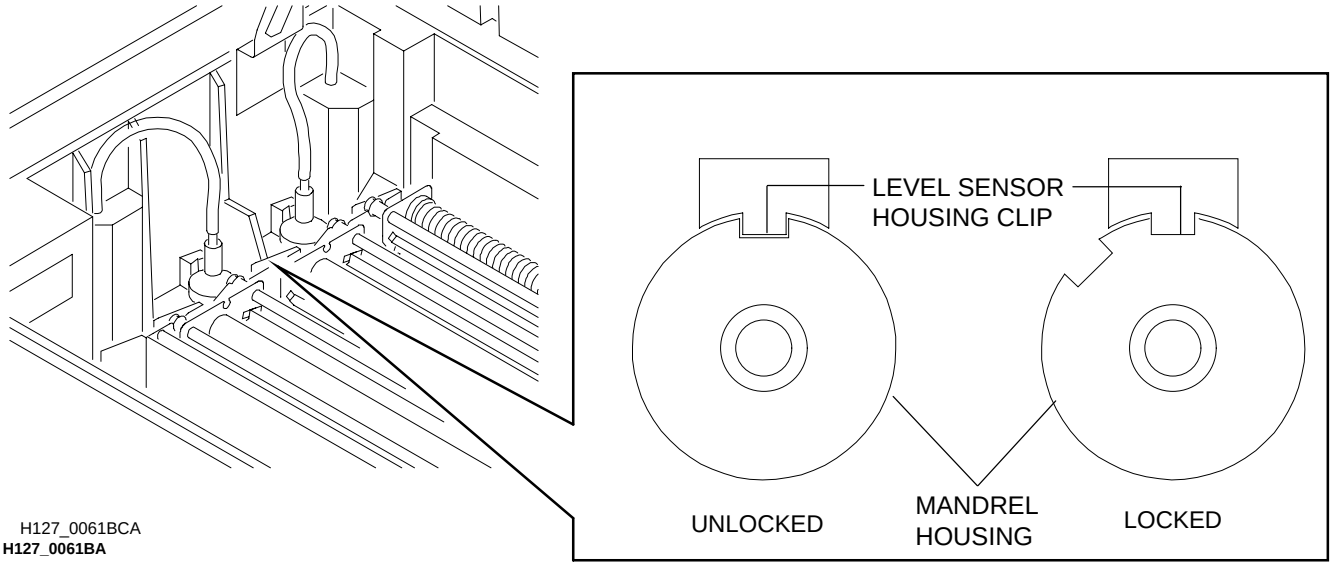
- DRYER BLOWER
- REPLENISHMENT PUMPS
- RECIRCULATION PUMP
  - Operate the PUMP for a minimum of 10 seconds to remove any air in the system.
- WASH WATER SOLENOID
- DEVELOPER COOLING SOLENOID
- FILM DETECTOR SWITCHES
- COVER INTERLOCK SWITCH
- DEVELOPER and FIXER SENSORS

[6] Check:

- that the water drains smoothly
- that the plumbing system has no leakage

[7] Move CB1 to the “O” position.

Installing the DEVELOPER FILTER



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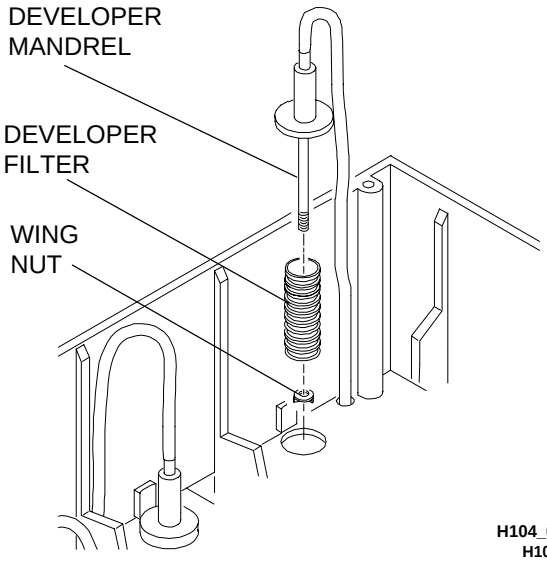

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[1] Rotate the MANDREL HOUSING to the unlocked position and remove the DEVELOPER MANDREL.

Note

The DEVELOPER HOUSING is in the unlocked position when the notch aligns with the LEVEL SENSOR HOUSING CLIP.

[2] Remove the WING NUT.

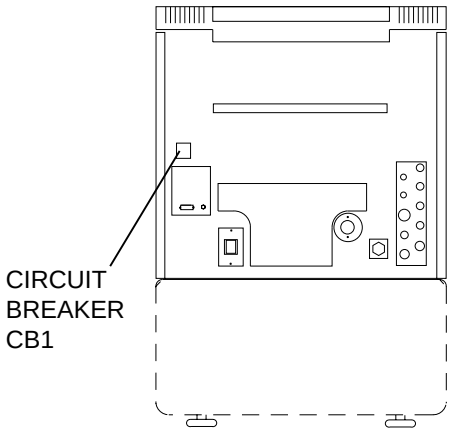
[3] Install:

- DEVELOPER FILTER
- WING NUT
- DEVELOPER MANDREL

[4] Check that the:

- DEVELOPER MANDREL is seated correctly
- MANDREL HOUSING is in the locked position

Checking the Transport System



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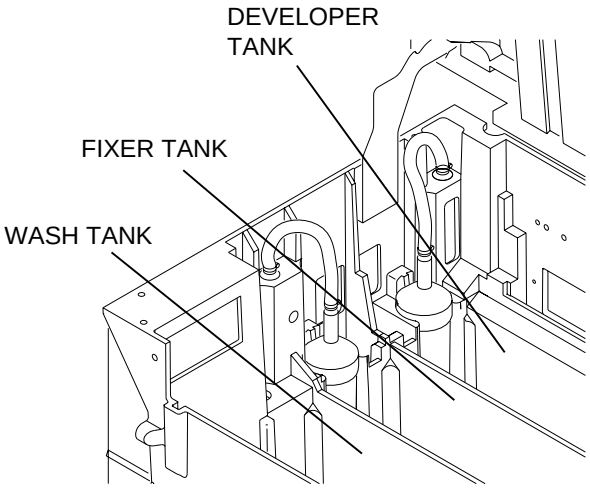
[1] Install the external PANELS and close the TOP COVER.

[2] Move CIRCUIT BREAKER CB1 to the “1” position.

[3] Wait approximately 15 minutes for the PROCESSOR to reach the correct operating temperature.

[4] Check that the transport system operates correctly. Feed 5 sheets of processed film into the PROCESSOR.

Installing the Chemicals



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Important

The REPLENISHMENT PUMPS must be calibrated correctly to:

- obtain the correct image quality and performance
- save chemicals and money

[1] Calibrate the REPLENISHMENT PUMPS. See Calibrating the Replenishment System under the Basic Setup Options in the Operator Manual, Publication No. 5B6328.

[2] Drain the water from the TANKS.

[3] Mix the chemicals and fill the processing TANKS.

Publication History Table

Print Date	Pub. No.	ECO No.	Affected Pages	File Name	Description
OCT95	5B6330	2650-030	All Pages	ii3434_1_030.doc	1st Printing of Manual
NOV95	5B6330	2650-039	Front and Back Covers	ii3434_1_039.doc	Graphic Unification Printing
JAN98	5B6330	2650-039	All Pages	ii343400.fm	First CD-ROM printing. Content is identical to November 1995 version; formatting may vary from print version.
SEP98	5B6330	2650-190	All Pages	ii3434_1_30sep98.fm	Updated for patient contact per MDD regulations. This printing supersedes the November 1995 paper copy version.

Printed in U.S.A. • ii3434_1.fm

EASTMAN KODAK COMPANY
Rochester, NY 14650

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