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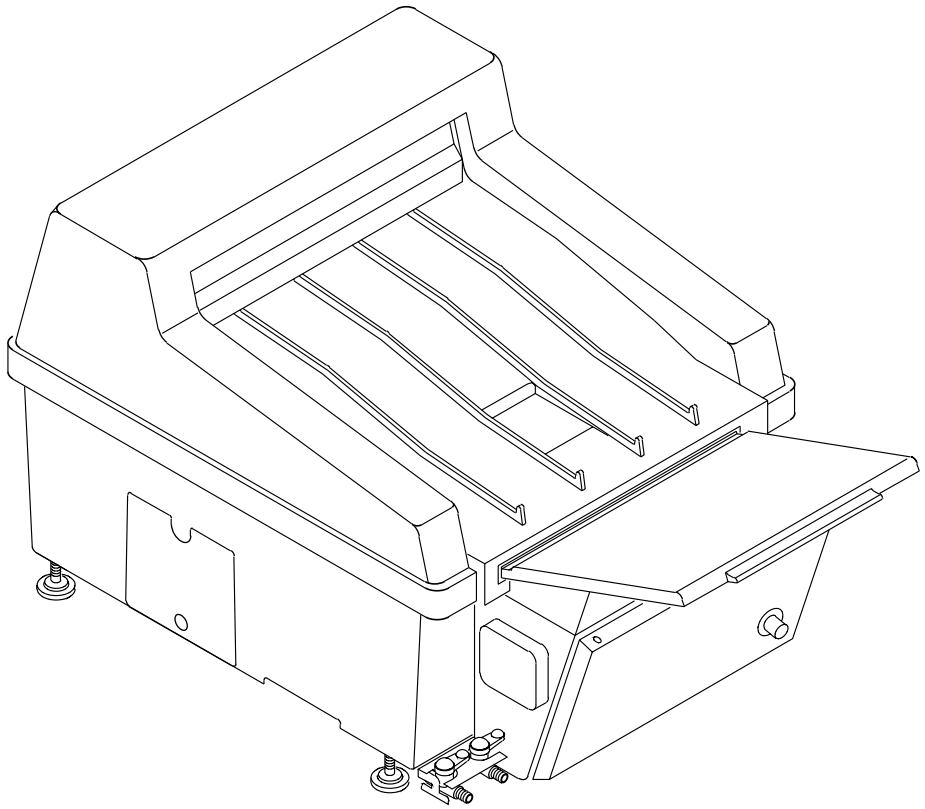
HEALTH IMAGING

INSTALLATION INSTRUCTIONS
for the
Kodak X-Omat 1000, 1000A and 1000J PROCESSOR



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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.

Warning

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

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Section 1: General Information

Electrostatic Discharge

Overview

ESD, electrostatic discharge, can damage sensitive electronic parts and assemblies. You cannot detect a static charge of 3,500 Volts, but a static charge of only 30 Volts can damage some electronic components.

Preventive Procedures

- Check for ESD warnings on all static sensitive components, such as CIRCUIT BOARDS, before doing any procedures.
- Use a GROUNDING STRAP when handling static sensitive components.

Special Tools

- LEVEL
- MAGNETS

Section 2: Unpacking the PROCESSOR

The Processor and accessories are packed in 2 cartons. Before unpacking, check the cartons for damage. If the cartons are damaged contact the Dealer before unpacking the cartons.

Important

When removing packing material, be careful not to cut through the wrapping material which can cause damage to components.

[1] Open the cartons and remove the packing material.

[2] Remove the contents of the carton.

[3] Use the packing list to check that all contents are included.

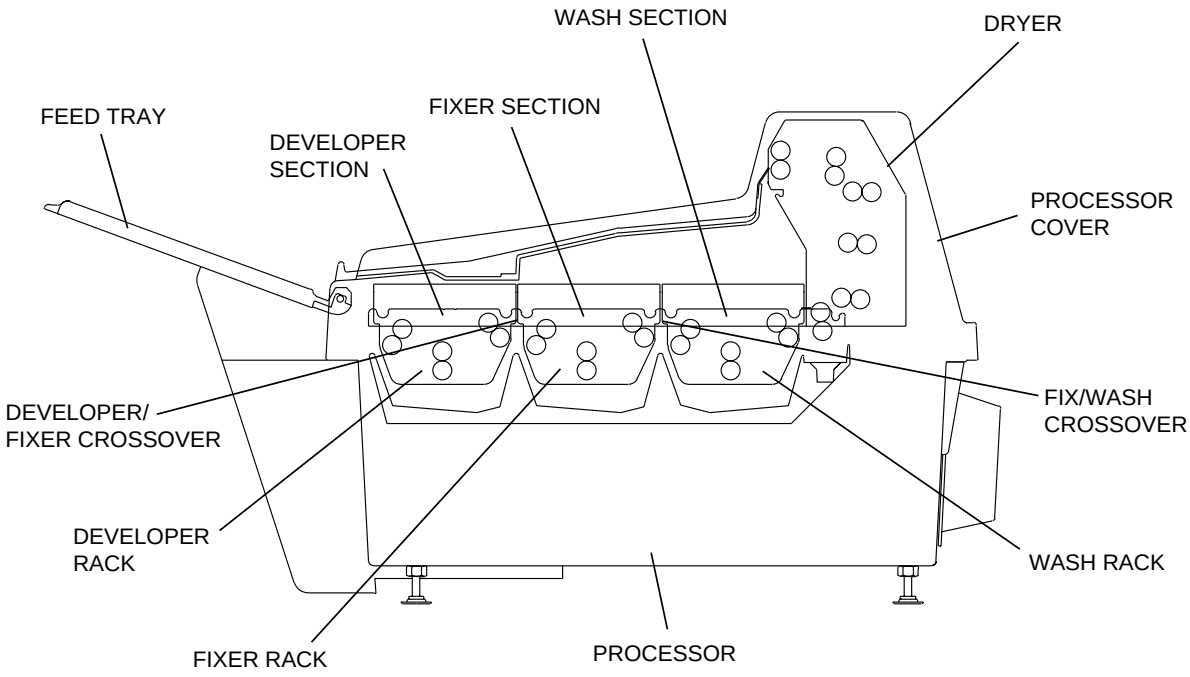
Note

There might be parts packed with the PROCESSOR which are not used in the installation.

Section 3: Components

Components of the processing systems are identified by different color LABELS:

- Developer components have red LABELS.
- Fixer components have blue LABELS.
- Wash components either have white LABELS, or they are unlabeled.



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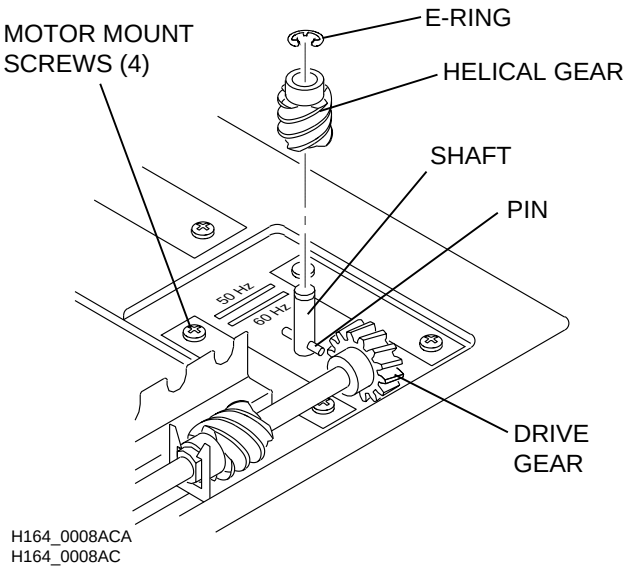
Section 4: PROCESSOR Frequency

Changing the PROCESSOR Frequency

Check the frequency of the main power at the site. The PROCESSOR must be set for the same frequency as the main power.

The PROCESSOR has two HELICAL GEARS:

- The 50 Hz HELICAL GEAR is white.
- The 60 Hz HELICAL GEAR is black.



[1] If the correct HELICAL GEAR is installed on the PROCESSOR, advance to Step 10. If the correct HELICAL GEAR is not installed on the PROCESSOR, use this procedure to replace the Gear.

[2] Remove the E-Ring from the Shaft. Keep the E-RING.

[3] Pull the HELICAL Gear up to remove it from the Shaft.

[4] Loosen, but do not remove, the 4 Motor MOUNT Screws.

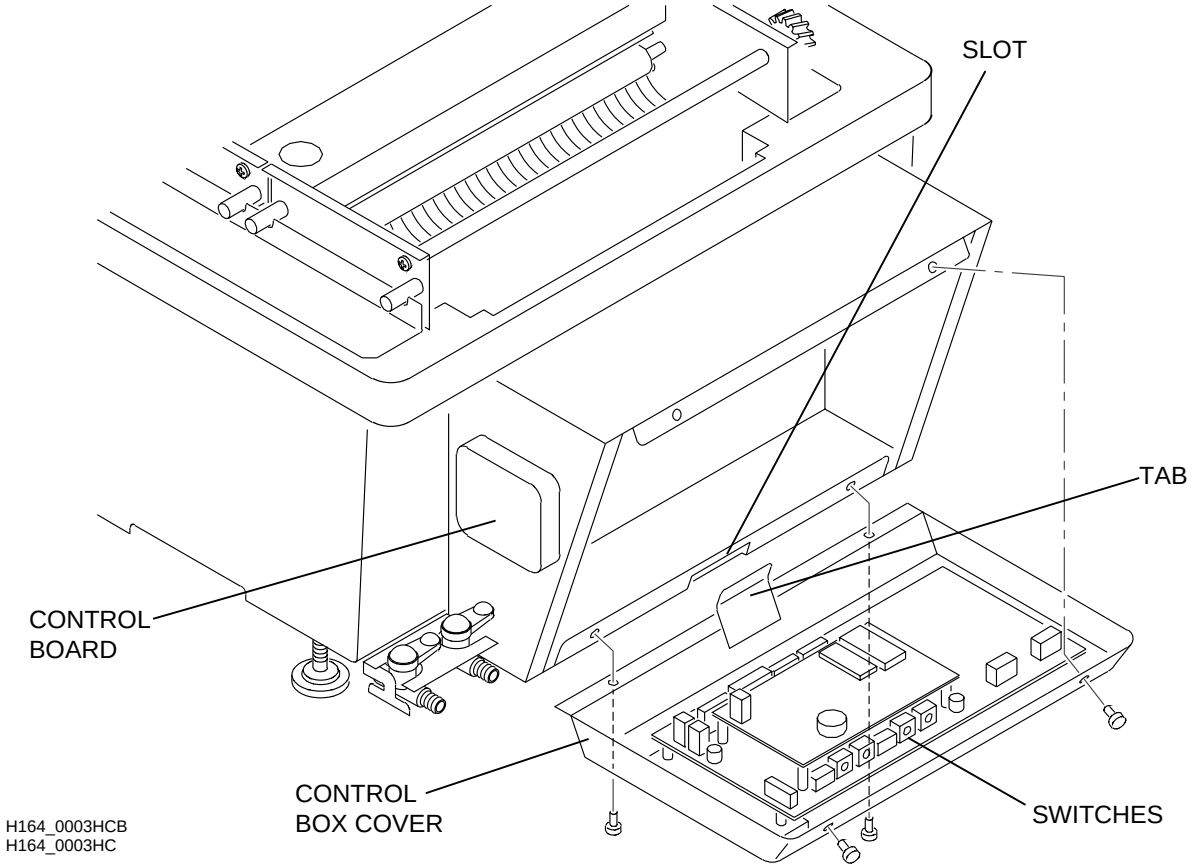
[5] Place the new HELICAL Gear on the Shaft.

[6] Engage the groove on the GEAR with the Pin on the Shaft.

[7] Install the E-Ring.

[8] Move the HELICAL GEAR toward the DRIVE GEAR so the GEARS engage with minimum play.

[9] Tighten the Motor MOUNT Screws.



ESD

Possible damage from electrostatic discharge.

[10] Remove the 4 SCREWS and the CONTROL BOX COVER for access to the SWITCHES inside.

[11] Place the TAB on the CONTROL BOX COVER in the SLOT on the PROCESSOR.

[12] Set the PROCESSOR to the correct frequency:

(a) Move SW02-1 to the “ON” Position for 50 Hz operation or “OFF” for 60 Hz.

(b) Check that the SWITCHES are in the “OFF” position:

- SW02-1
- SW02-3
- SW02-4

Note

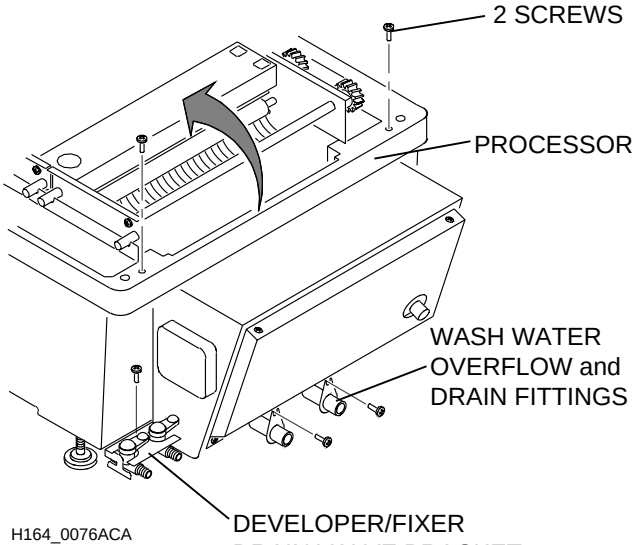
The CONTROL BOARD can be moved to the other end of the CONTROL BOX. If the holes at one end are not used, cover them with TAPE.

Section 5: PROCESSOR Voltage

Checking and setting the PROCESSOR voltage

If the PROCESSOR is a 1000A or 1000J, advance to **Installing the PROCESSOR** on Page 10.

If the PROCESSOR is a 1000, you must check the internal voltage setup and change the voltage setup if necessary:



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[1] Open the PROCESSOR:

- **(a)** Remove the 2 SCREWS on top of the feed end of the PROCESSOR.
- **(b)** Remove the SCREW from the DEVELOPER and FIXER DRAIN VALVE BRACKET.
- **(c)** Remove the SCREWS from the WASH WATER OVERFLOW and WASH WATER DRAIN FITTINGS under the front of the PROCESSOR.

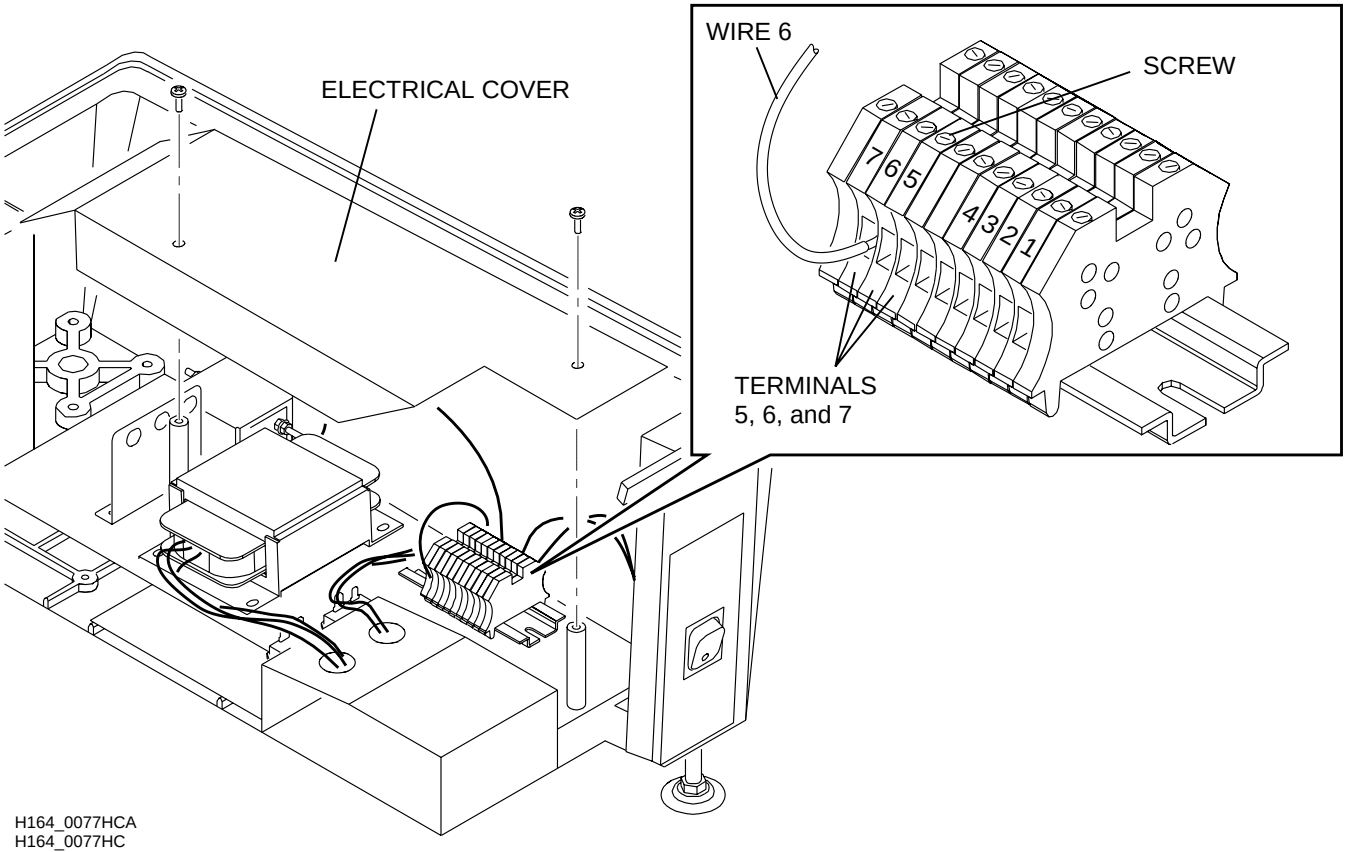
Warning

The top of the PROCESSOR does not automatically remain up. You must hold the top of the PROCESSOR up or it will fall.

- **(d)** Slowly open the top of the PROCESSOR. There is a HINGE at the dryer end.

Note

The HOSES might prevent you from opening the PROCESSOR. Feed the HOSES into the PROCESSOR as you open it.



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[2] Remove the ELECTRICAL COVER.

[3] Determine the voltage of the power source at the site. It must be 220, 230 or 240 V AC.

[4] Locate TERMINAL BLOCK TB51 inside the PROCESSOR.

[5] Use the following table to select the correct voltage setup for the PROCESSOR.

Voltage at site	TERMINAL on TB51
220 V AC	5
230 V AC	6
240 V AC	7

[6] Move WIRE 6 to the correct location.

[7] Install the ELECTRICAL COVER.

[8] Close the PROCESSOR and install the following:

- DEVELOPER and FIXER DRAIN VALVES and BRACKET
- WASH WATER OVERFLOW and WASH DRAIN FITTINGS
- 2 SCREWS on the top of the PROCESSOR

Note

Be careful not to bend the HOSES when you close the PROCESSOR.

[9] Label the DATA PLATE on the back of the PROCESSOR with the internal voltage setup.

[10] Advance to **Installing the PROCESSOR** on Page 10.

Section 6: Installing the PROCESSOR

Connecting the Plumbing

Warning

- Drains must be made of chemically resistant, non-corrosive material. Use PVC or equivalent.
- The Drain must have a minimum diameter of 7.6 cm (3 in.) and be free of obstruction.
- Drain service must comply with local codes.

Components of the processing systems are identified by different color LABELS:

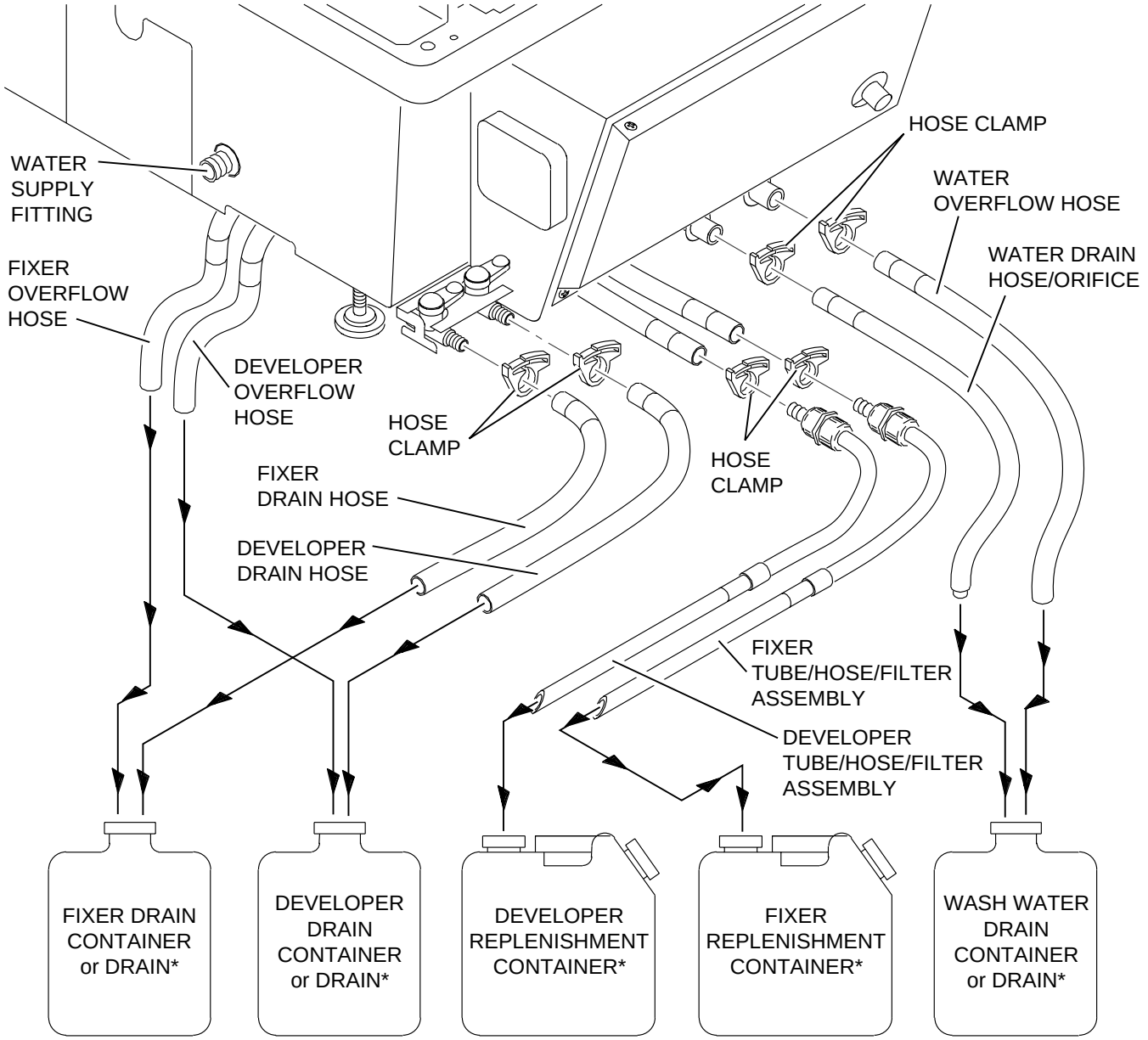
- Developer HOSES have red LABELS.
- Fixer HOSES have blue LABELS.
- Wash HOSES either have white LABELS, or they are unlabeled.

[1] Use the figure to connect the HOSES.

[2] Connect the PROCESSOR to the water supply.

Note

A 50 micron FILTER for the water supply is recommended.



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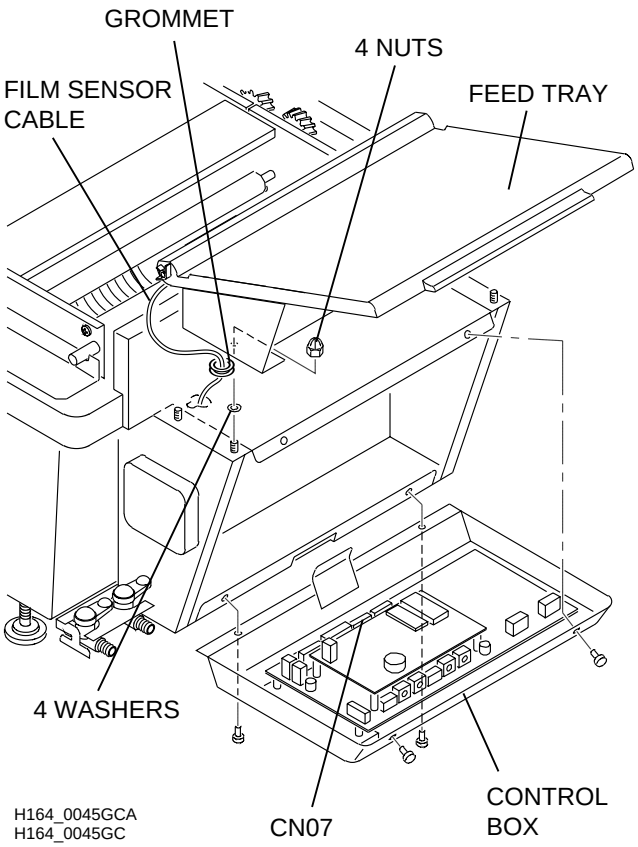
* CONTAINERS NOT SUPPLIED WITH PROCESSOR

Installing the FEED TRAY



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H164_0045GC

ESD
Possible damage from electrostatic discharge.

[1] Remove the 4 NUTS and WASHERS from the CONTROL BOX COVER.

[2] Insert the FILM SENSOR CABLE through the hole in the top of the CONTROL BOX.

[3] Press the GROMMET on the CABLE into the hole on the CONTROL BOX.

[4] Install the FEED TRAY on the CONTROL BOX using the 4 NUTS and WASHERS. Do not tighten the NUTS.

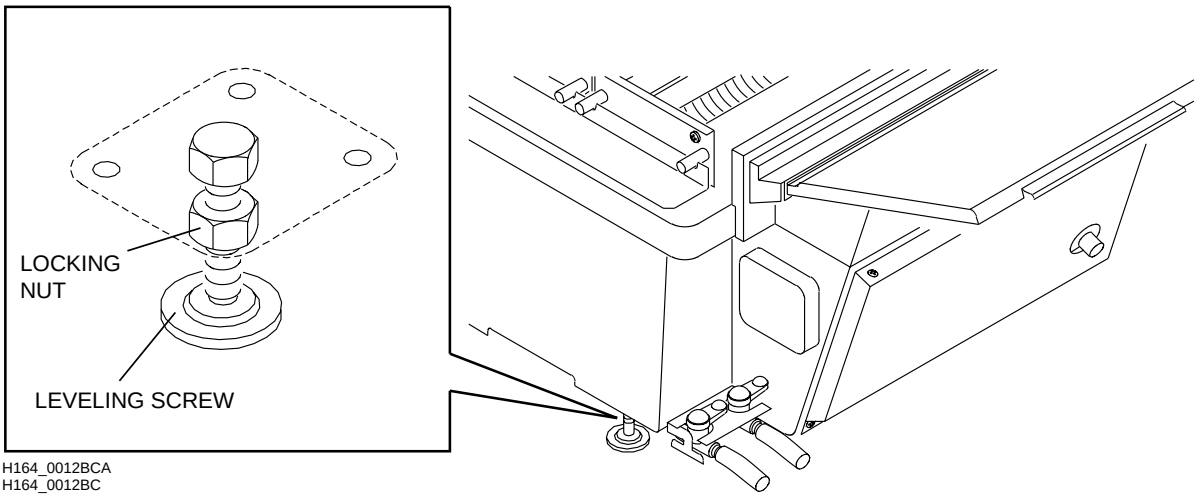
[5] Connect the FILM SENSOR CABLE to the CN07 CONNECTOR on the BOARD in the CONTROL BOX.

[6] Pull the FEED TRAY towards the front of the PROCESSOR.

[7] Tighten the NUTS.

Leveling the PROCESSOR

Important
The PROCESSOR must be leveled for correct operation.



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[1] Place the LEVEL on the non-drive side of the PROCESSOR and adjust the LEVELING SCREWS if necessary.

[2] Place the LEVEL on the back of the PROCESSOR and adjust the LEVELING SCREWS if necessary.

Note
Do not loosen the LEVELING SCREWS excessively or they might fall out.

[3] Remove the tape from the SCREENS in the bottom of the DEVELOPER and FIXER TANKS.

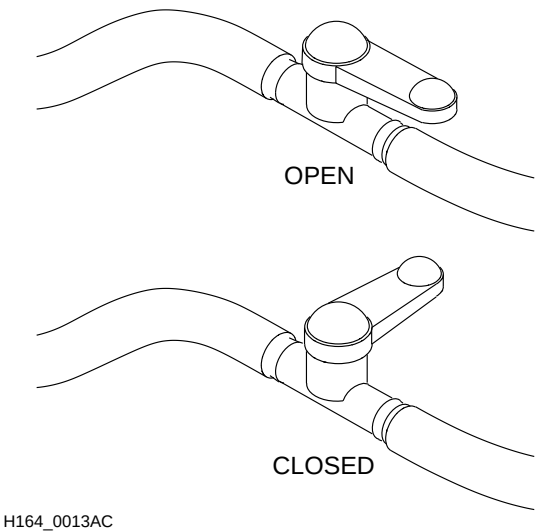
[4] Check the RACKS for squareness. Use the Adjustments and Replacements Section of the SERVICE MANUAL if necessary.

[5] Install all RackS and CROSSOVERS.

Note

Check that the clear EVAPORATION COVER is correctly installed and snapped into position on the DEVELOPER RACK.

[6] Check that the MAIN GEAR on each RACK correctly engages the WORM GEARS.



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[7] Close all of the DRAIN VALVES.

[8] Fill the DEVELOPER and FIXER TANKS on the PROCESSOR with water until the water begins to enter the OVERFLOW HOSES.

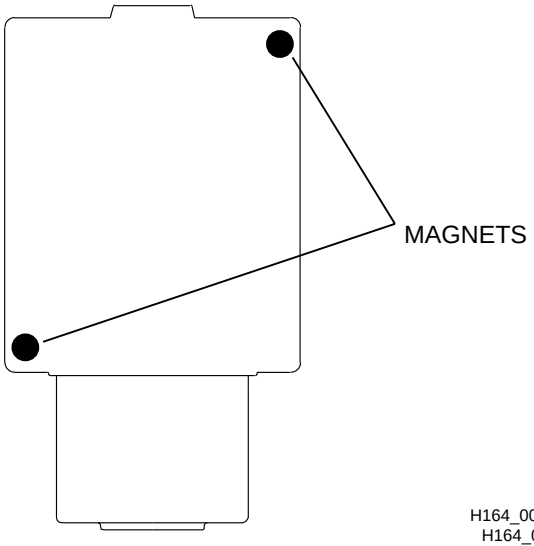
[9] Observe the depth of the water around the RACKS. The ROLLERS should be uniformly immersed in the solutions.

[10] If necessary, level the PROCESSOR using the LEVELING SCREWS.

[11] Tighten the LOCKING NUT on each LEVELING SCREW.

[12] Fill the DEVELOPER and FIXER REPLENISHMENT TANKS with developer and fixer solution. See the OPERATOR MANUAL.

Function Checkout



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H164_0067AC

[1] Connect the PROCESSOR to the main power.

[2] Move the POWER SWITCH to the “ON” or “I” position.

Warning

Be careful of the DRIVE SHAFT, GEARS and other moving parts.

[3] Place MAGNETS on the PROCESSOR over the COVER INTERLOCK SWITCHES so the DRIVE MOTOR will operate without the PROCESSOR COVER. Observe the inside edge of the PROCESSOR COVER and determine the correct position for the MAGNETS on the PROCESSOR.

[4] Allow the PROCESSOR to operate for 10 minutes. Check that the following systems operate correctly:

- The DRIVE SHAFT should operate continually for 5 minutes, then operate intermittently.
- The DRYER BLOWER should operate for 5 minutes.
- The WATER SOLENOID should operate and fill the WASH TANK.
- The “Low t“ INDICATOR should illuminate. This indicates the developer temperature is below the set•point.
- The RECIRCULATION PUMPS should operate for 5 minutes.

[5] Check the flow of developer and fixer solution in the DEVELOPER and FIXER TANKS.

[6] If there is solution flow in both TANKS, advance to Step 8.

[7] If there is no solution flow in a TANK, there might be air in the RECIRCULATION PUMP. Use the following steps to correct the problem:

- **(a)** With the PROCESSOR energized, open the DRAIN VALVE for the TANK to release some of the water from the TANK. Do not drain the TANK.
- **(b)** Observe the TANK for flow.
- **(c)** If there is no flow in the TANK, repeat the steps above. Add more water to the TANK, if necessary, before opening the DRAIN VALVE again. Be careful not to drain the TANK when releasing water.
- **(d)** When the problem is corrected, fill the TANK with solution and advance to the next step.

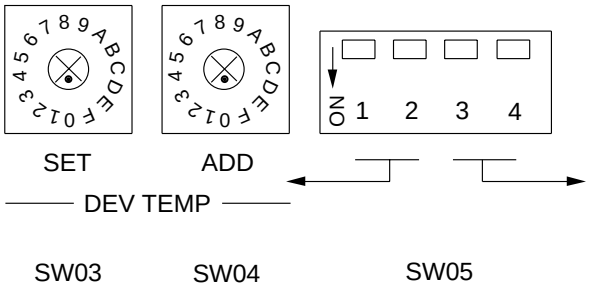
[8] If the PROCESSOR operates correctly, move the POWER SWITCH to the “OFF” or ”O” position.

[9] Remove the MAGNETS from the top of the PROCESSOR.

[10] Drain the DEVELOPER and FIXER TANKS by opening the DRAIN VALVES. The WASH TANK will drain automatically.

[11] Close the DEVELOPER and FIXER DRAIN VALVES.

Setting the Developer Temperature



H164_0038AC

ESD

Possible damage from electrostatic discharge.

[1] To set the developer temperature between 32.0°C and 35.0°C (89.6°F and 95.0°F):

(a) Move SW05-1 to the “OFF” position.

(b) Adjust SW03 using the following table:

Developer Temperature, 32°C - 35°C (89.6°F - 95.0°F)

SW05-1 OFF, Adjust SW03:			
Set• point	Temperature	Set• point	Temperature
0	32.0°C (89.6°F)	8	33.6°C (92.5°F)
1	32.2°C (90.0°F)	9	33.8°C (92.8°F)
2	32.4°C (90.3°F)	A	34.0°C (93.2°F)
3	32.6°C (90.7°F)	B	34.2°C (93.6°F)
4	32.8°C (91.0°F)	C	34.4°C (93.9°F)
5	33.0°C (91.4°F)	D	34.6°C (94.3°F)
6	33.2°C (91.8°F)	E	34.8°C (94.6°F)
7	33.4°C (92.1°F)	F	35.0°C (95.0°F)

[2] To set the developer temperature between 35.0°C and 38.0°C (95.0°F and 100.4°F):

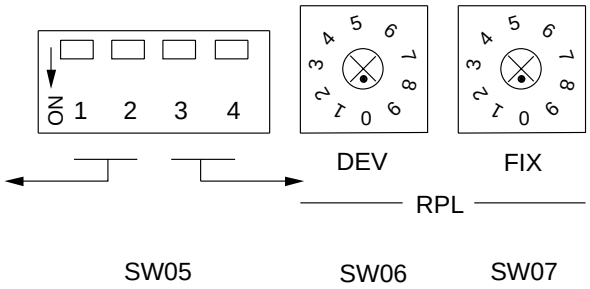
(a) Move SW05-1 to the “ON” position.

(b) Adjust SW03 using the following table:

Developer Temperature, 35°C - 38°C (95.0°F - 100.4°F)

SW05-1 ON, Adjust SW03:			
Set• point	Temperature	Set• point	Temperature
0	35.0°C (95.0°F)	8	36.6°C (97.9°F)
1	35.2°C (95.4°F)	9	36.8°C (98.2°F)
2	35.4°C (95.7°F)	A	37.0°C (98.6°F)
3	35.6°C (96.1°F)	B	37.2°C (99.0°F)
4	35.8°C (96.4°F)	C	37.4°C (99.3°F)
5	36.0°C (96.8°F)	D	37.6°C (99.7°F)
6	36.2°C (97.2°F)	E	37.8°C (100.0°F)
7	36.4°C (97.5°F)	F	38.0°C (100.4°F)

Setting the Developer and Fixer Replenishment Rates



H164_0039AC

ESD

Possible damage from electrostatic discharge.

[1] Use the following table to select the correct replenishment rate:

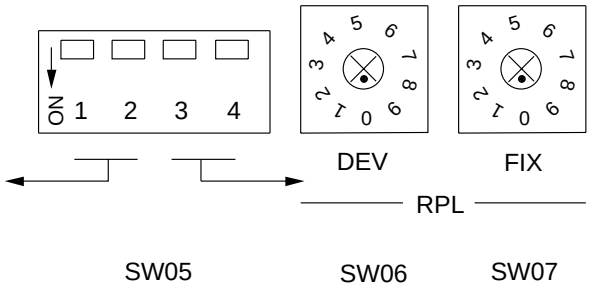
- **(a)** Adjust SW06 to set the developer replenishment rate.
- **(b)** Adjust SW07 to set the fixer replenishment rate.

Note

SW08 is not used.

SWITCH Set•point	Volume, cc*	60 Hz, SW02-1 OFF. PUMP ON Time, seconds	50 Hz, SW02-1 ON. PUMP ON Time, seconds
0	50	7.0	8.4
1	60	8.4	10.0
2	70	9.8	11.6
3	80	11.2	13.4
4	90	12.6	15.0
5	100	14.0	16.6
6	110	15.2	18.4
7	120	16.6	20.0
8	130	18.0	21.6
9	140	19.4	23.4
* Volume for film size 35 x 43 cm (11 x 14 in.)			

Setting the Processor to the “Regular” Replenishment Mode



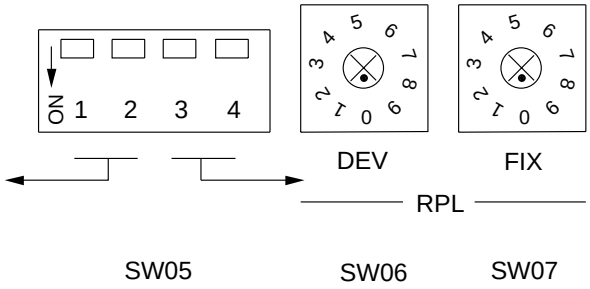
H164_0039AC

ESD
Possible damage from electrostatic discharge.

[1] Move SW05-3 to the “OFF” position.

[2] Install the CONTROL BOX COVER.

Setting the Processor to the “Flooded” Replenishment Mode



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ESD
Possible damage from electrostatic discharge.

[1] Move SWITCH SW05-3 to the “ON” position.

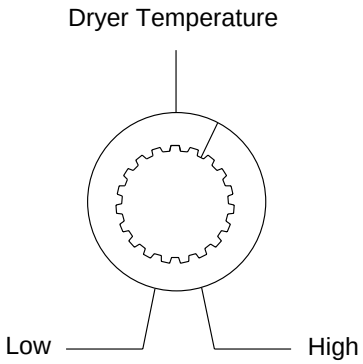
[2] Select the replenishment for the “Flooded” Mode:

- **(a)** Move SW05-4 to the “ON” position for “Flooded” replenishment at 50% of the operating mode rate.
- **(b)** Move SW05-4 to the “OFF” position for “Flooded” replenishment at 25% of the operating mode rate.

Note
When replenishment for the “Flooded” Mode is selected, the REPLENISHMENT PUMPS will operate every 20 minutes.

[3] Install the CONTROL BOX COVER.

Setting the DRYER Temperature



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[1] Use the following table to select and set the DRYER temperature. Count the increments between the “LOW” and “HIGH” positions.

DRYER Temperature

Position	Temperature	Position	Temperature
LOW	35°C (95°F)	8	51°C (124°F)
1	37°C (99°F)	9	53°C (127°F)
2	39°C (102°F)	10	55°C (131°F)
3	41°C (106°F)	11	57°C (135°F)
4	43°C (109°F)	12	59°C (138°F)
5	45°C (113°F)	13	61°C (142°F)
6	47°C (117°F)	14	63°C (145°F)
7	49°C (120°F)	HIGH	65°C (149°F)

Final Pre-Operation Checks

[1] Use the OPERATOR MANUAL to complete the setup of the PROCESSOR:

(a) Mix the developer and fixer solutions.

(b) Do the Procedure “Filling the Tanks in the PROCESSOR”.

[2] Process test films to check the operation of the PROCESSOR.

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