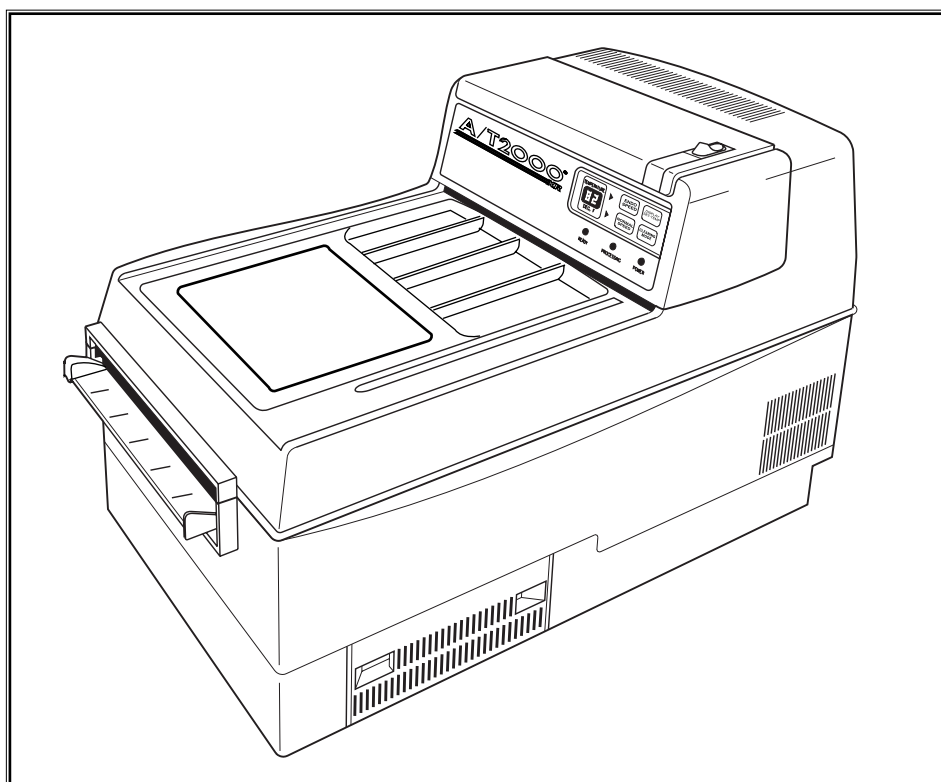


A/T2000[®]

AUTOMATIC FILM PROCESSOR

SERVICE MANUAL



**AIR
TECHNIQUES**
INC.

 **ALLPRO IMAGING**

ISO
9001
ISO 13485
FDA-GMP COMPLIANT

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Purpose

This document provides the instructions necessary to perform repair and maintenance of the AT2000 XR Automatic Film Processor. It is intended for all recognizable field servicing of the unit and includes procedures to disassemble the unit to access internal components as well as steps necessary to perform preventive maintenance, inspection, cleaning, troubleshooting and removal/replacement of defective parts.

This manual is **not** intended for the routine use of the AT2000 XR Film Processor. Refer to the Operator's Manual shipped with the product for all processor operation. It is further understood that repair and maintenance information provided herein is to be performed by a trained servicing technician.

Power Removal

Prior to performing the procedures contained in this document, turn off power switch by placing the rocker switch on the top of the unit to the OFF (0) position. Also disconnect the line cord from the wall outlet and the communication cable from the Scanner.

Warnings and Caution Statements

In these instructions, the following definitions Apply for all WARNINGS and CAUTION Statements:

Warnings: Any operation, procedure or practice, which, if not strictly observed, may result in injury or long term health hazards to personnel or patients.

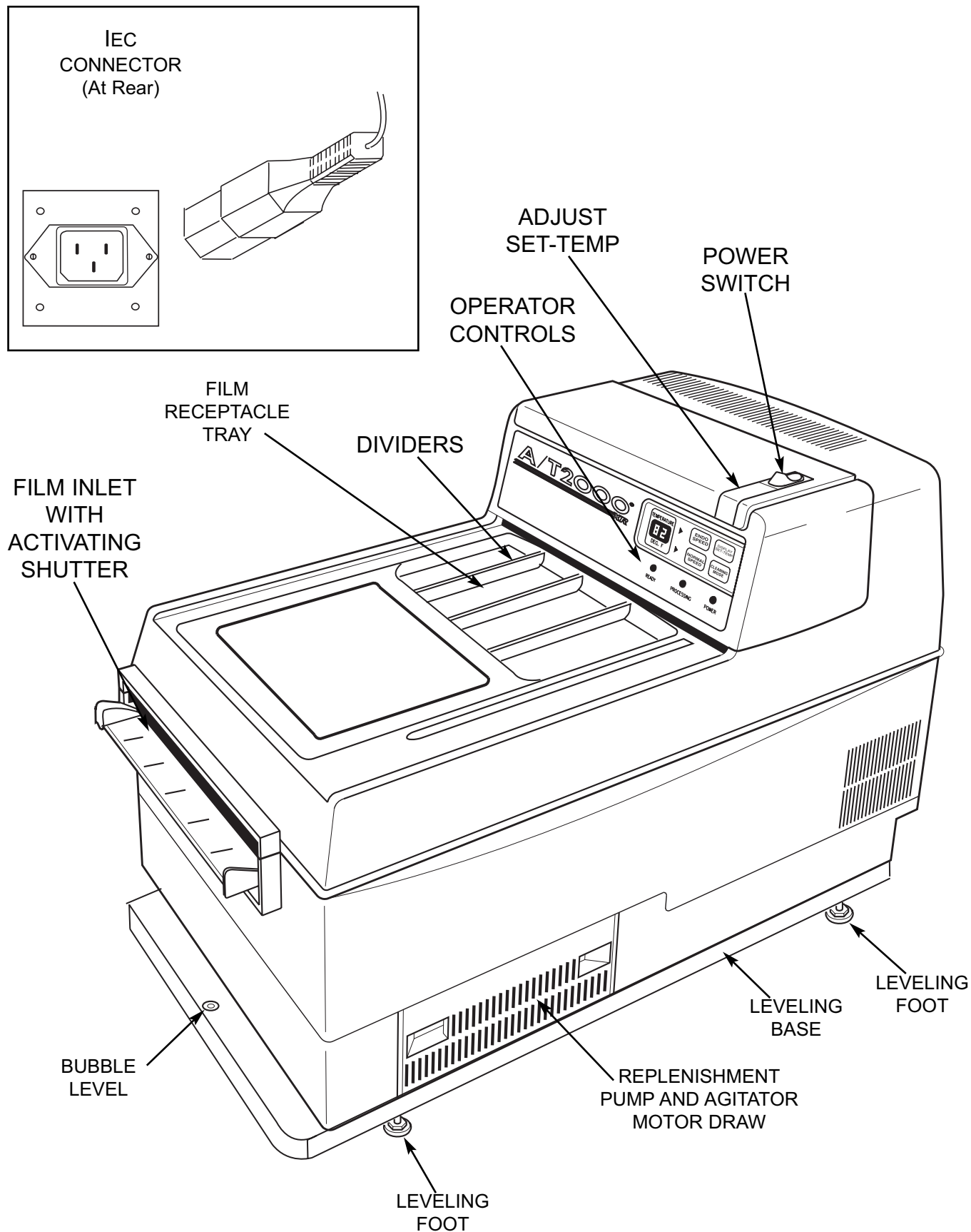
Cautions: Any operation, procedure or practice, which, if not strictly observed, may result in destruction of equipment or loss of treatment effectiveness.

Task Guidelines

Personnel performing maintenance and repair tasks contained in this manual should follow standard industry guidelines for working on electronic equipment as necessary. These include the following:

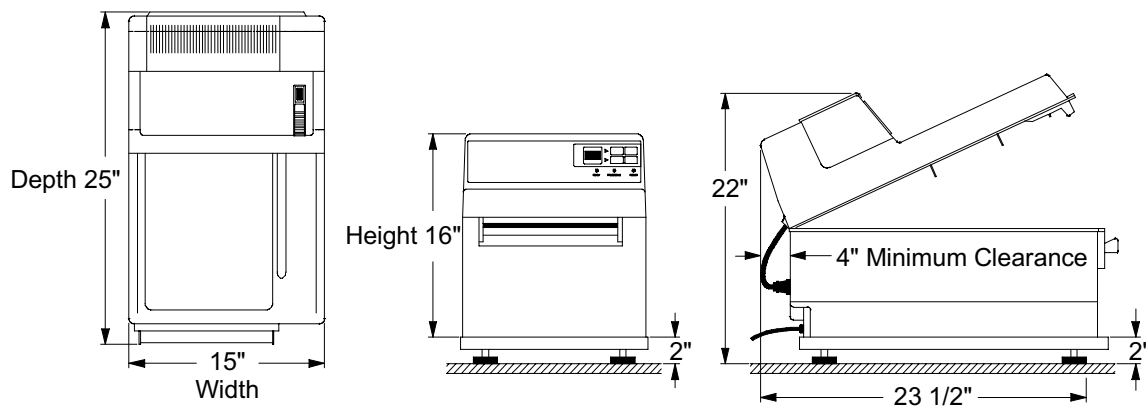
- ☐ Always use a clean well-lit work area with ample space required for the size of the job.
- ☐ Always make sure to protect finished surfaces from scratches or other damage by using cushioning material such as a soft cloth or packaging material between the finished surfaces and the area that may cause damage.
- ☐ Keep all attaching hardware and fastening screws together with the associated removed assembly. If necessary use separate storage containers or envelopes for each hardware group.
- ☐ Prior to removing any part or assembly, note location and orientation of assemblies being removed.
- ☐ Tag wires and associated mating connectors before disconnecting.
- ☐ Use care when disconnecting mating connectors so as not to damage the connector keys and connection to the associated printed circuit board, wire or cable.
- ☐ Be aware of the damage impact of electrostatic discharge (ESD) on electronic devices and use ESD precautions when handling printed circuit boards and wiring comprising the Scanner.

PRODUCT OVERVIEW



SPECIFICATIONS

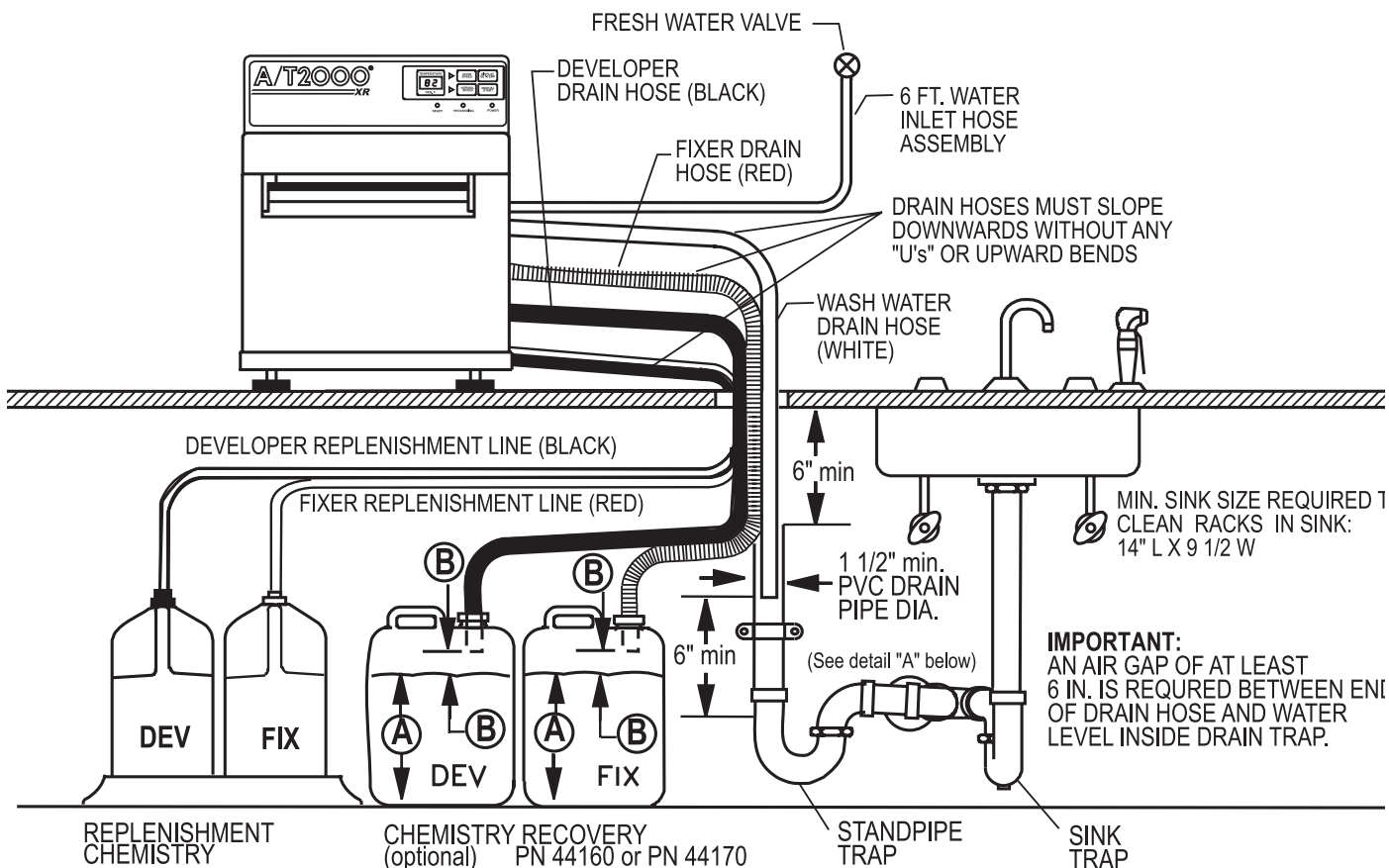
ELECTRICAL	115VAC, 60 Hz, 8 AMPS. Use a 15 AMP, 3 prong, grounded outlet. A separate dedicated 15 AMP line is recommended.
WATER FLOW	1/2 gallon per minute water flow (while processing film).
WATER PRESSURE	80 PSI maximum / 30 PSI minimum. Water source must have a manual shut-off near processor.
WATER CONNECTION	Valved 3/4" male garden hose fitting near rear of processor. 6' hose with standard female garden hose fittings provided.
WATER BACKFLOW PREVENTION	A vacuum breaker is not normally required because the processor has a 1" air gap between water supply inlet and the maximum possible water level height.
WATER TEMP	55° F (13° C) to 80° F (27° C)
DRAIN	1-1/2" vertical PVC standpipe, open at top. DO NOT DRAIN INTO COPPER OR BRASS. The top of the standpipe must be 6" below the bottom of the countertop.
DIMENSIONS	18" (H) x 15" (W) x 25" (D) with leveling base.
WEIGHT	90 lbs. with water and chemistry (75 lbs. empty).
VENTILATION	Room air temperature must be below 80° F (27° C), during processing. Because heat is generated during processing, adequate ventilation is required to maintain darkroom temperature. 8 - 12 volume room air changes per hour.



DIMENSIOND

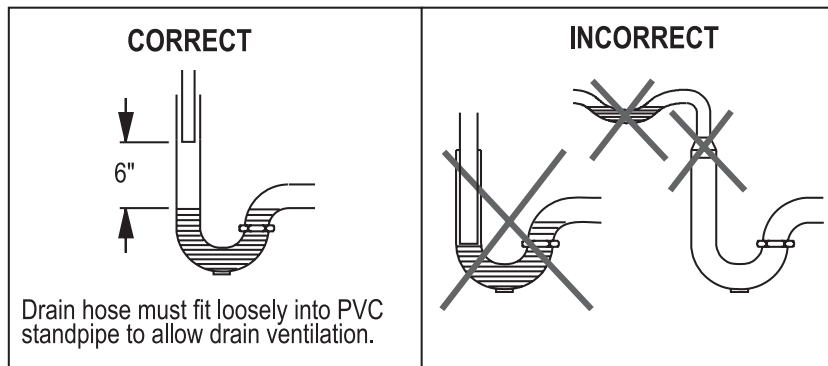
PLUMBING CONNECTIONS - OPTION 1

Chemistry recovery and wash water sewer disposal connection.
(If permitted by local code.)

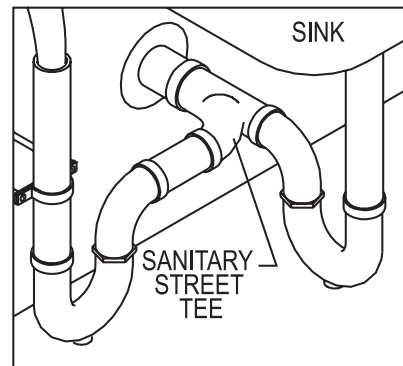


- (A) THE MAXIMUM DISCHARGED FLUID LEVEL
(B) 2" MINIMUM

INDEPENDENT STANDPIPE DRAIN INSTALLATION

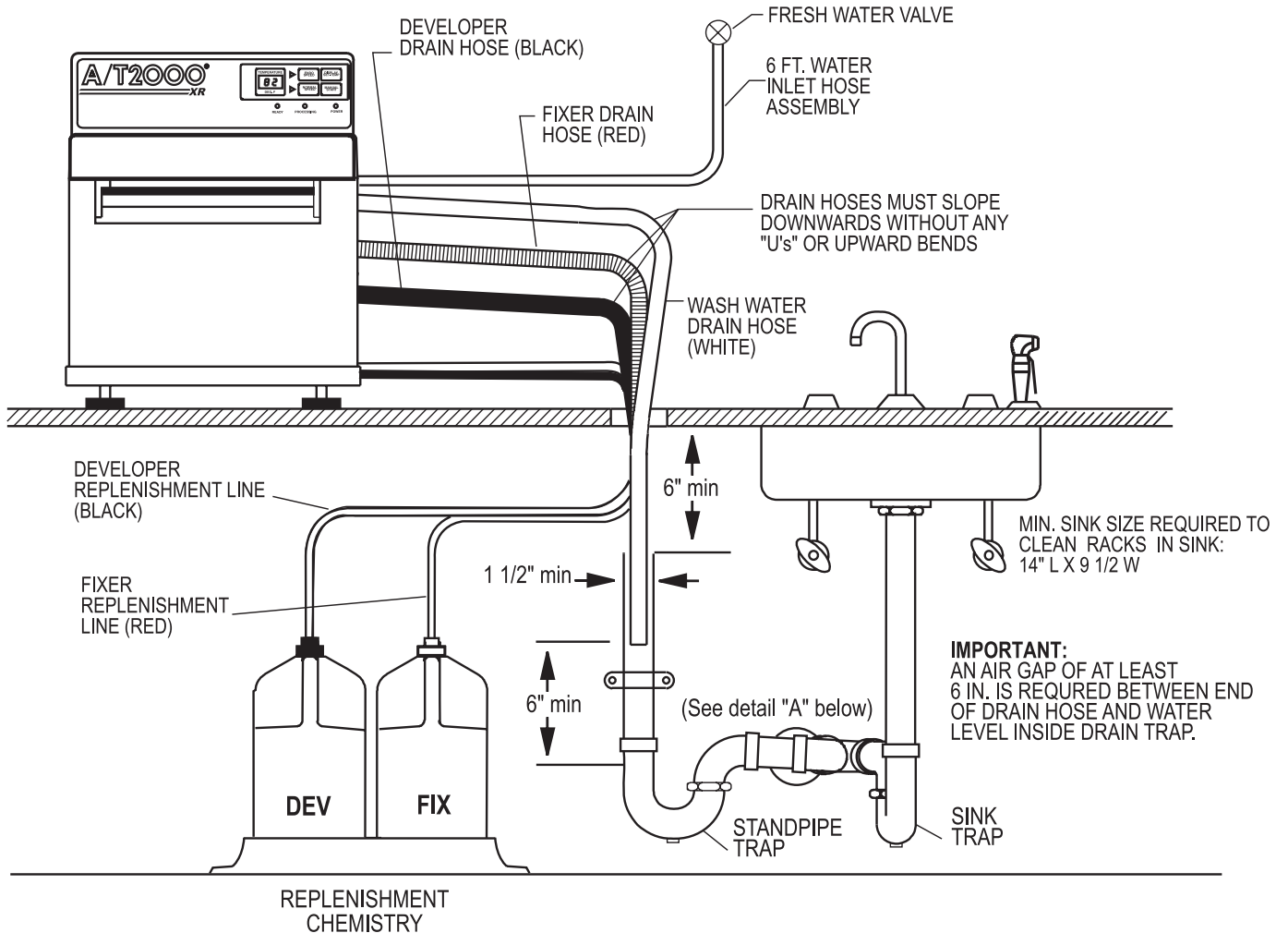


DETAIL "A"

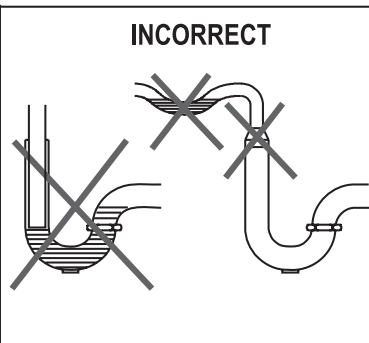
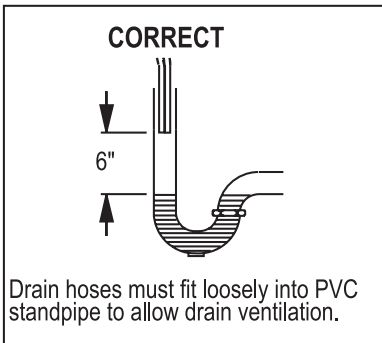


PLUMBING CONNECTIONS - OPTION 2

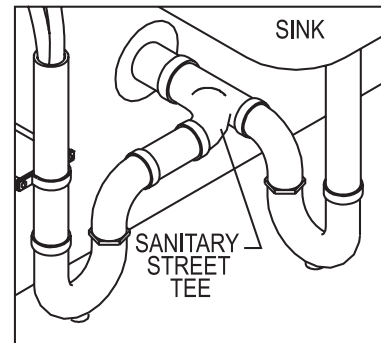
Chemistry recovery and wash water sewer disposal connection.
(If permitted by local code.)



INDEPENDENT STANDPIPE DRAIN INSTALLATION



DETAIL "A"



PLUMBING CONNECTIONS

CONNECT TO PLUMBING

(See Plumbing Connections - OPTIONS 1 & 2)

- ☐ Match color-coded drain hoses to corresponding color-coded label on barbed fittings at the rear of the unit. Mount the hose end onto the barbed fitting by rotating the hose clockwise while pushing. Push the hose flush up against the barbed fitting, leaving no space. If removal of the hose is necessary, rotate clockwise while pulling the hose. No clamps are required as the hose is self clamping.
- ☐ If routing the drain lines, replenishment lines and water inlet hose through the countertop, drill a 2-1/2" diameter hole through the countertop (See Plumbing Connection illustrations). For routing replenishment lines through the counter, unscrew the retaining nut under cap to remove the cap assembly. Cut the replenishment lines to appropriate length.

OPTION 1: Route water (white) drain hose to a vertical 1-1/2" PVC standpipe. Route Developer (black) and Fixer (red) drain hoses to chemistry recovery containers under the counter.

OPTION 2: Route all three drain hoses into a vertical 1-1/2" PVC standpipe.

NOTE: Hoses must always slope downward to drain pipe or recovery containers without any "U's" or upward bends in the hose.

Hoses routed into the drain pipe must be cut so that the ends are at a min. 6" above the standing water in the P-trap at the bottom of the pipe.

Hoses routed into the chemistry recovery containers must be cut so that the ends are 2" above the highest expected solution level in the recovery container.

- ☐ Chemistry recovery & replenishment bottles must be placed below the processor or under the counter.

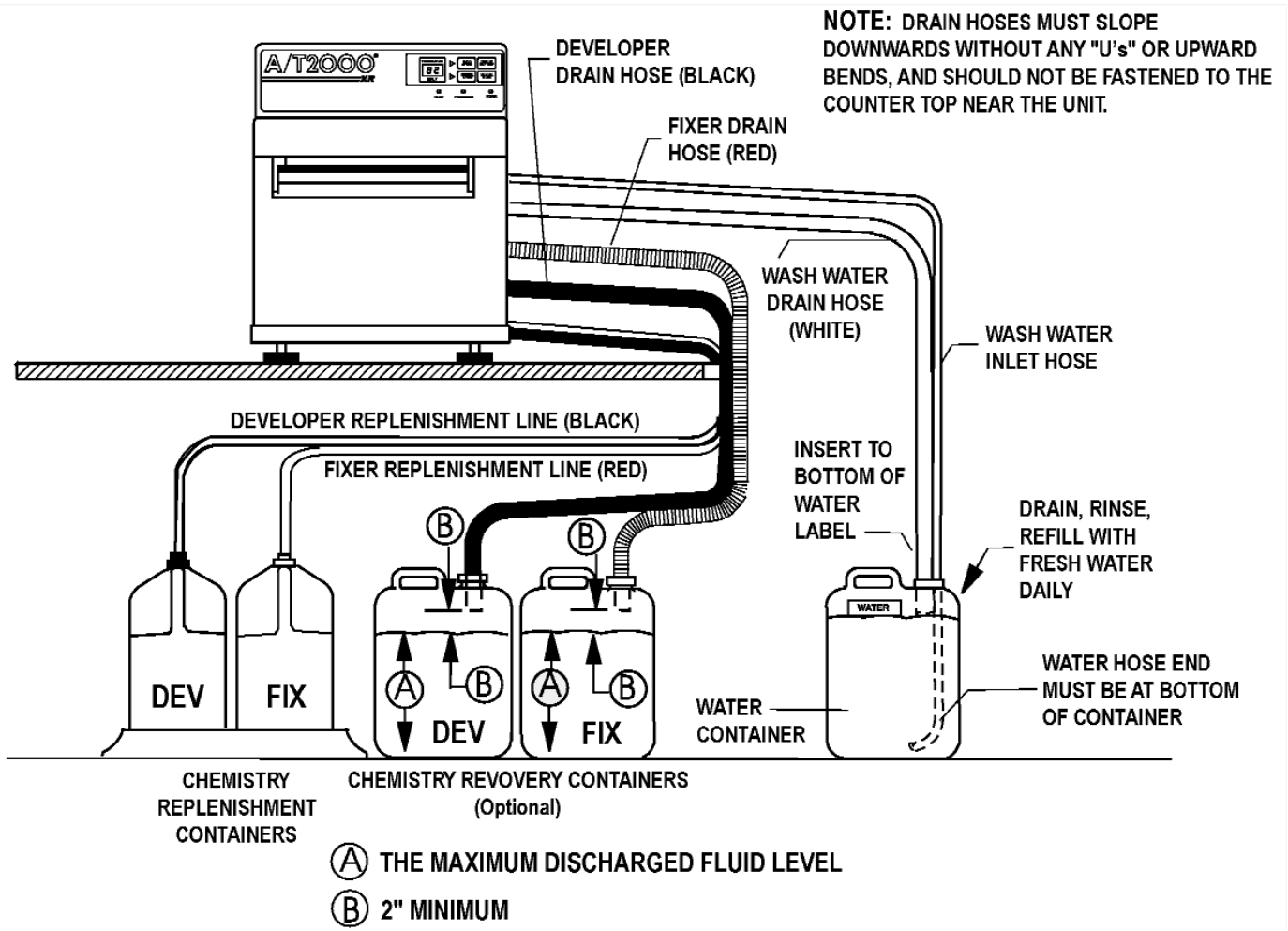
REPLENISHER BOTTLES CANNOT BE ABOVE THE PROCESSOR.

WATER RECIRCULATION OPTION

PLUMBING CONNECTIONS

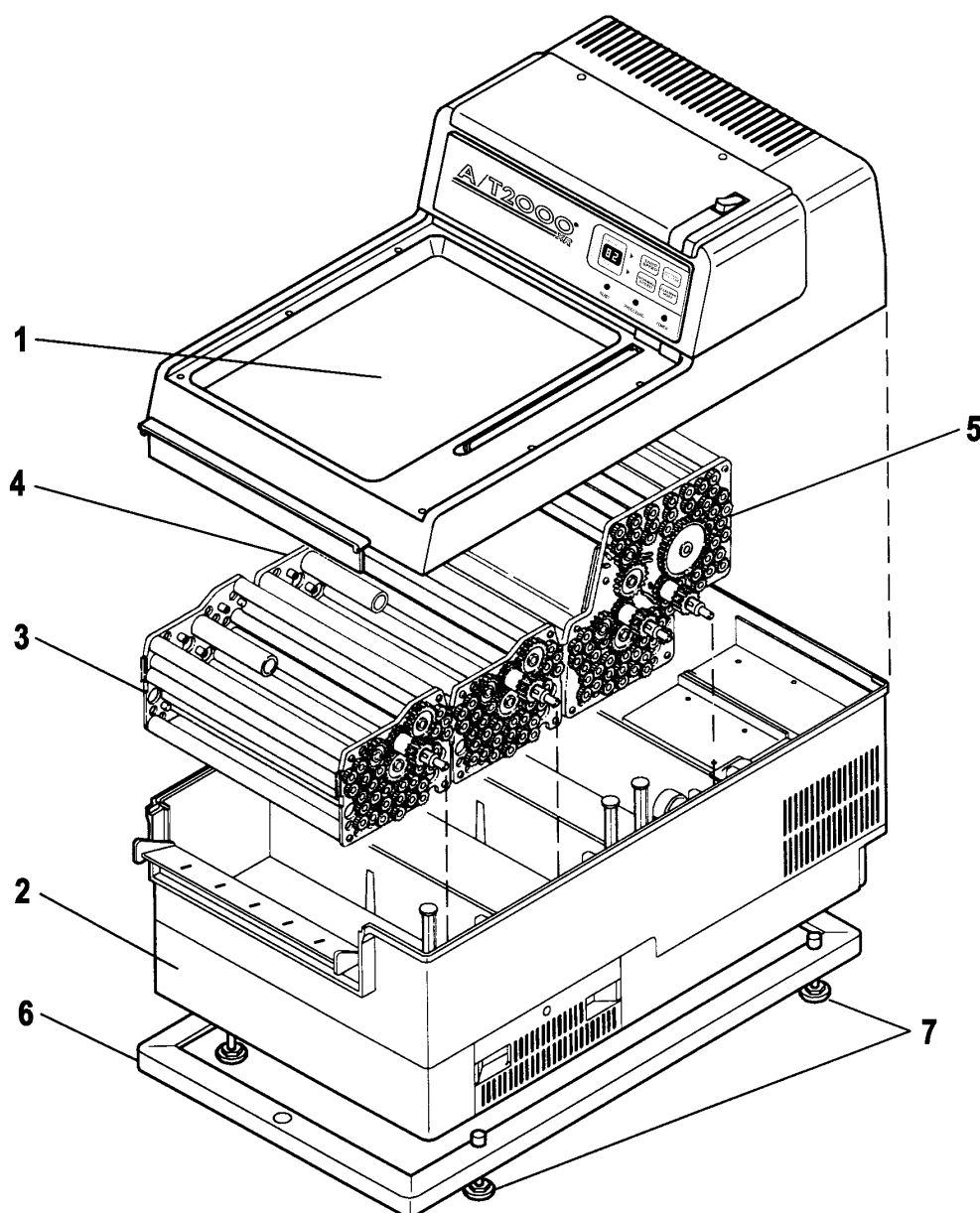
1. Fill the container with fresh water to the bottom of the WATER label.
2. Cut the wash water drain hose so that when it is inserted into the water container it reaches to the bottom of the WATER label. Insert the hose into the container.
3. Insert the wash water inlet hose all the way to the bottom of the water container. See the illustration below for the correct installation.

WARNING: THIS PLUMBING CONFIGURATION **CANNOT** BE CONNECTED TO A FRESH WATER SUPPLY LINE.

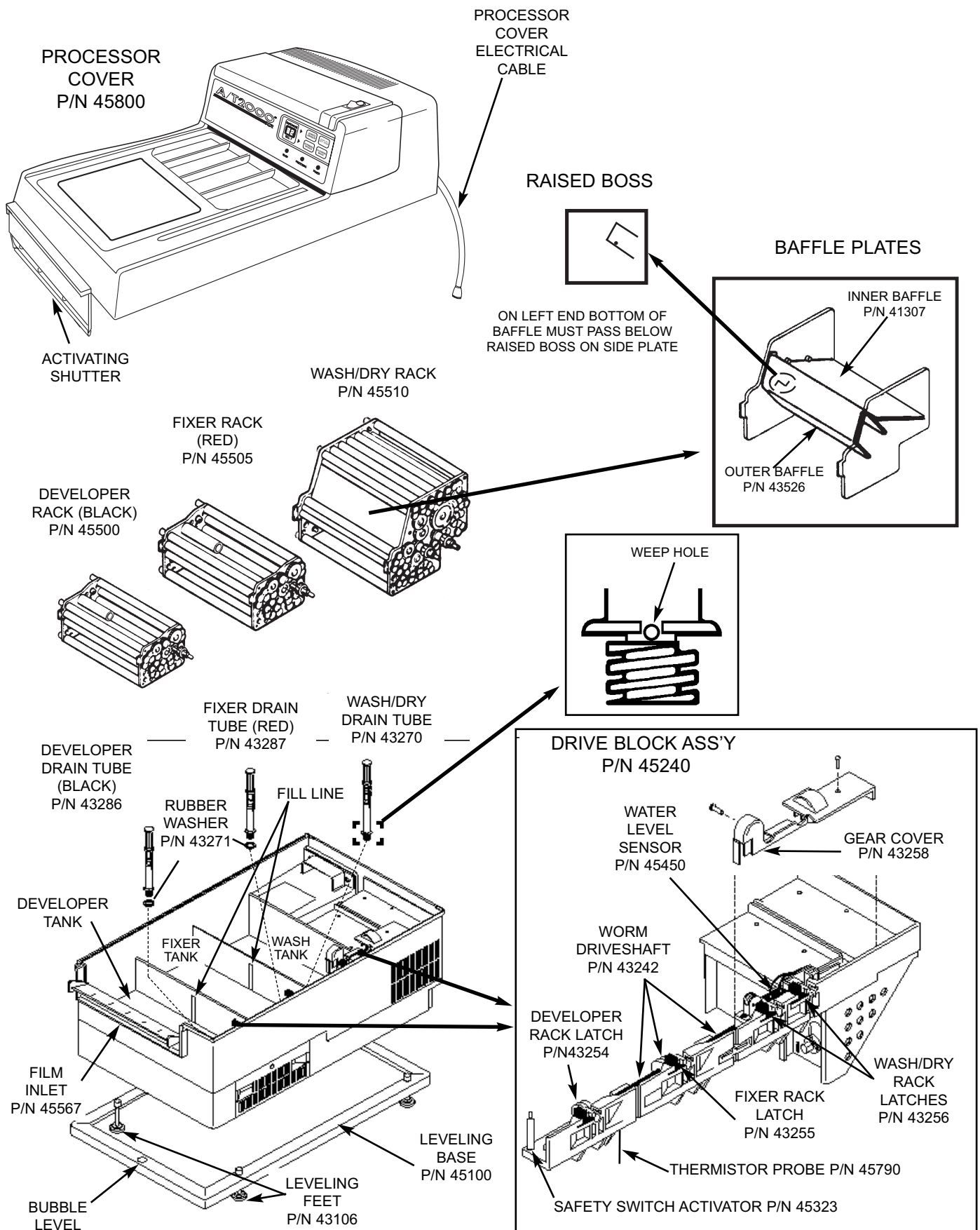


MAJOR ASSEMBLIES AND PARTS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	Cover Assembly with Electronic Module	45800
2	Base Assembly	45200
3	Developer Transport	45500
4	Fixer Transport	45505
5	Wash/ Dry Transport	45510
6	Leveling Base Assembly	45100
7	Leveling Feet	43106



INTERNAL PARTS IDENTIFICATION



OPERATOR CONTROLS

The following provides a brief summary description of the operating controls of the AT2000 XR Film Processor. Refer to the Operator's Manual shipped with the product for detailed operation information for the AT2000 XR Film Processor.

INDICATOR LIGHTS

POWER

Illuminates when the POWER switch (located on top) is in the ON position.

READY

Illuminates when chemistry has reached SET-TEMP operating temperature (factory Pre-set at 82° F (28° C)). When READY illuminates, chemistry is at the proper temperature to process films.

PROCESSING

Illuminates when a film has been inserted and is being transported through the process cycle. PROCESSING flashes regularly when the film is feeding past the film inlet shutter and for 5 seconds after the shutter closes.

When processing extraoral films, wait until PROCESSING stops flashing before inserting the next film to prevent films from overlapping. When the processor is in a stand-by mode, ready to accept films for processing, the PROCESSING light will not be illuminated. When the CLEANING MODE is selected, the PROCESSING light flashes (short - long...)

IMPORTANT: ENDO is intended to process a single periapical size film, and by default, if another film is attempted to process after the shutter closes from the 1st film, the process cycle will change to NORMAL Mode.

KEY PADS

ENDO SPEED

The arrow indicator to the left of the keypad flashes when the A/T 2000XR is in the ENDO SPEED mode. Film is processed in 2-1/2 minutes.

NORMAL SPEED

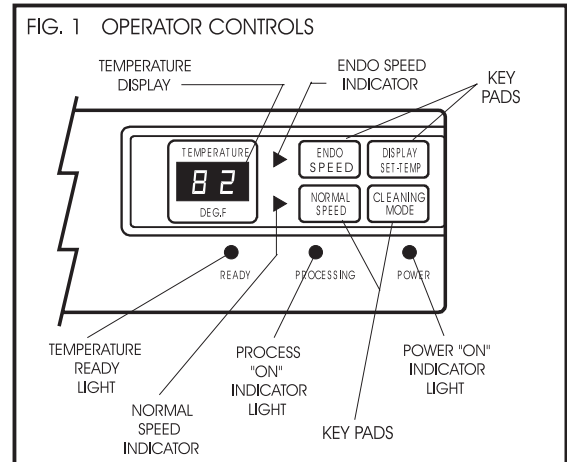
The arrow indicator to the left of the keypad illuminates steady when the A/T 2000XR is in the NORMAL mode. Film is processed in 5-1/2 minutes.

DISPLAY SET - TEMP

The selected chemistry set point temperature flashes on the TEMPERATURE display when the keypad is pressed and held. Otherwise, the TEMPERATURE display indicates actual chemistry temperature. If the keypad is pressed and the display does not flash a different value, the set point and actual chemistry temperatures are the same and READY is illuminated. If this is not the case, see TROUBLE SHOOTING or contact your authorized Air Techniques Dealer. The SET - TEMP is factory pre-set at 82° F (28° C).

CLEANING MODE

Use this keypad only during cleaning procedures. CLEANING MODE activates an extended 10 minute process cycle. PROCESSING indicator light flashes (short - long...) when in this mode.



AT2000 XR FUNCTION & OPERATION CHARTS

The AT2000 XR Film Processor's function and status conditions, as designed, are separated into six categories listed below. The charts associated will provide insight to required processor operation and expedite any trouble-shooting, if applicable. Refer to the appropriate Function Chart, as required, to quickly identify and resolve the issue at hand.

<input type="checkbox"/> FILM SHUTTER FUNCTIONS	13
<input type="checkbox"/> FUNCTIONAL MODES	14
<input type="checkbox"/> CHEMISTRY HEATER ABNORMAL CONDITIONS AND PROTECTION	15
<input type="checkbox"/> TRAILING-EDGE TO TRAILING-EDGE FILM TIMES	15
<input type="checkbox"/> HEATER PAD POWER CONTROL	16
<input type="checkbox"/> REPLENISHER RATES FOR DEVELOPER AND FIXER	17
<input type="checkbox"/> MEASURING REPLENISHER DISPENSING	18

FILM SHUTTER FUNCTIONS

PROCESSING STATE	SHUTTER STATE	MODE (Speed) CHANGE or RESULT
Stand By	CLOSED	NORMAL to ENDO to NORMAL
Stand By	CLOSED , then OPEN for 4 seconds or more	Process starts, then stops at shutter closed and stays in selected mode.
Stand By	CLOSED , then OPEN for 4 seconds or more	Process starts, and continues to operate in selected mode.
Operating	OPEN	NORMAL to ENDO to NORMAL
Operating	CLOSED	ENDO to NORMAL only
Operating ENDO Cycle	CLOSED , then OPEN for 4 seconds or more	ENDO will default to NORMAL then starts a new cycle.
Operating Normal Cycle	CLOSED , then OPEN for 4 seconds or more	Remains in NORMAL mode , and starts a new cycle.
Cleaning (Manual)	CLOSED or OPEN	NORMAL mode only. Inhibits initial replenishment. Shutter Action: 1. Accumulates film length for replenishment. 2. Does not initiate process cycle.
End of ENDO Cycle	CLOSED	Restes to NORMAL mode
End of Normal Cycle	CLOSED	Stays in NORMAL mode
Power On	CLOSED or OPEN	Is in NORMAL mode
Power On	OPEN	Inhibits initial replenishment

FUNCTION CHARTS

FUNCTIONAL MODES

MODE	DEV TEMP	DISPLAY	READY LIGHT	NORM ARROW	ENDO ARROW	PROC LIGHT	SHUTTER	HEATER POWER	DRYER & RECIRC	REPLEN PUMP
Turn ON	> -15° F	Developer Temperature Heatup	OFF	ON	OFF	OFF	Closed	100%	OFF	ON (90 sec)
Turn ON	< 77° F	Developer Temperature Heatup	OFF	ON	OFF	OFF	Closed	100%	OFF	ON (90 sec)
Turn ON	< 77° F	Developer Temperature Heatup	OFF or ON	ON	OFF	OFF	Closed	100% (1st min) <100% (to OFF)	OFF	ON (90 sec)
Normal Temperature Rise	77 to 81° F	Developer Temperature Heatup	OFF	ON	OFF	OFF	Closed	90 to 20%	OFF	OFF
Fast Temperature Rise	77 to 81° F	Developer Temperature Heatup	OFF	ON	OFF	OFF	Closed	45 to 10%	OFF	OFF
At Set Point	82° F	82° F	ON	ON	OFF	OFF	Closed	OFF	OFF	OFF
In Control Loop (Guard Band) SEE NOTE 1	81 to 84° F 80 to 83° F	82° F (ADC=118) (ADC=118) SEE NOTE 2	ON	ON	OFF	OFF	Closed	OFF to 20% & 100% for 1 min every ADC change if temp drops. SEE NOTE 3	OFF	OFF
Developer Hot	> 83° F	Developer Temperature	OFF	ON	OFF	OFF	Closed	OFF	OFF	OFF
Processing NORMAL	80 to 84° F	84° F (Set Point)	ON	ON	OFF	Flashing	Open (+5 sec)	Off to 20%	ON	ON as long as shutter is open SEE NOTE 4
Processing NORMAL	80 to 84° F	84° F (Set Point)	ON	ON	OFF	ON	Closed	Off to 20%	ON	ON as long as shutter is open SEE NOTE 4
Processing ENDO	80 to 84° F	84° F (Set Point)	ON	ON	OFF	Flashing	Open (+5 sec)	Off to 20%	ON	ON as long as shutter is open SEE NOTE 4
Processing ENDO	80 to 84° F	84° F (Set Point)	ON	ON	OFF	ON	Closed	Off to 20%	ON	ON as long as shutter is open SEE NOTE 4
Processing CLEANING	80 to 84° F	84° F (Set Point)	ON	ON	OFF	Flashing (short/long)	Closed	Off to 20%	ON	OFF
Processing CLEANING	80 to 84° F	84° F (Set Point)	ON	ON	OFF	Flashing (short/long)	Open	Off to 20%	ON	OFF
Processing CLEANING (shutter open fail)	80 to 84° F	84° F (Set Point)	ON	ON	OFF	Flashing (short/long)	Open, but no signal = Closed	Off to 20%	ON	OFF

Notes:

- Control loop 80 to 84°F during heat up and from above 84°F upon cool down.
- Set point temperature range is between 79 and 86°F (ADC = Analog to Digital Count).
- 100% HEATER POWER for 1 minute when processor power is turn ON each time the ADC changes (increases) as temperature drops and every 4 minutes if temperature is below set point and ADC does not change.
- See page 17 for pump on times.

CHEMISTRY HEATER ABNORMAL CONDITIONS AND PROTECTION

DEVICE	DEVICE STATE or TEMPERATURE	DISPLAY	HEATER CONTROL	HEATER
Thermistor (SEE NOTE 1)	OPEN	-15°F (SEE NOTE 2)	OFF	OFF
Thermistor	SHORT or > 99°F	99°F	OFF	OFF
Thermistor	< -15°F	Developer Temp (SEE NOTE 3)	OFF	OFF
Thermistor	Set Point to 99°F	Thermistor Condition (SEE NOTE 5)	OFF	OFF
Thermistor	> 99 to 130°F	99°F	OFF	OFF
Plate Thermal Switches (Dev or Fix)	> 130°F (SEE NOTE 4)	Thermistor Condition (SEE NOTE 5)	By Thermistor	OFF (Resetable)
Plate Thermal Fuse (Plate Center)	>305°F (SEE NOTE 6)	Thermistor Condition (SEE NOTE 5)	By Thermistor	OFF (Blown Thermal Fuse)

Notes:

1. There is only a developer thermistor, There is no monitoring or control of the fixer temperature.
2. A sensed temperature of <-15°F produces a voltage that looks like an open circuit and the heater control turns off.
3. At 32°F the display shows approximately 37°F due to zener diode conduction.
4. This condition occurs only if there is no chemistry in one or both of the developer or fixer tanks for the tank(s) containing no chemistry and the developer thermistor senses a temperature below the set point (typically 82°F) for the heating control system has failed into being continuously on.
5. The thermistor condition is the temperature that the thermistor senses or to which it defaults based on abnormal conditions.
6. This condition occurs only if there both tanks and both thermal switches fail in the closed position and the developer thermistor is sensing a temperature below the set point (typically 82°F) or the heating control system has failed into being continuously on.

TRAILING EDGE TO TRAILING EDGE FILM TIMES

MODE	SHUTTER to DEV (min:sec)	IN DEV (min:sec)	X-OVER to FIX (min:sec)	IN FIX (min:sec)	X-OVER to WASH (min:sec)	IN WASH (min:sec)	X-OVER to DRYER (min:sec)	IN DRYER (min:sec)	OVER-RUN TIME (min:sec)	TOTAL PROCESS (min:sec)
NORMAL	0:19	0:37	0:37	0:37	0:40	0:37	0:20	01:39	01:00	05:30
ENDO	0:08	0:16	0:18 (SEE NOTE 1)	0:28 (SEE NOTE 1)	0:17	0:16	0:09	0:33	0:33	02:33
ENDO (Cul)	0:08	0:16	0:17	0:16	0:17	0:16	0:09	0:33	0:46	02:20
CLEANING (SEE NOTE 2)	0:19	0:37	0:37	0:37	0:40	0:37	0:20	01:39	04:30	05:30

Notes:

1. Trailing edge not in fixer by approximately 1/4 inch when speed goes slow and leading edge out of fixer by a 1/16 inch when speed goes to fast.
2. CLEANING Mode is formally known as MANUAL Mode (Keypad has changed).

General Notes:

1. Drive motor gearbox has 21-tooth gear for ENDO and a 52-tooth gear for NORMAL.
2. Drive motor gearbox and worm shaft have 12-tooth sprockets.
3. Drive motor has grade A insulation and a 1.8 uF capacitor.
4. Shutter close to speed change (fast to slow) = 41 seconds and speed change (slow to fast) is 23 or 64 seconds after shutter closes.

FUNCTION CHARTS

HEATER PAD POWER CONTROL

General Note: The theoretical heating rate of the chemistry is approximately 0.7°F/min (~1°F/min). The actual heating of chemistry may be different due to thermal inertia.

DEVELOPER TEMPERATURE (A/D Count)	HEATER POWER PERCENTAGE For Heating rate (SEE NOTE 1)		NEON TEST LAMP Placed Across Leads of Heater
	< 0.44°F/min.	> 0.44°F/min.	
84 (114)	0	0	LAMP OFF
84 (115)	0	0	LAMP OFF
83 (116)	0	0	LAMP OFF
83 (117)	0	0	LAMP OFF
82 (118) (SEE NOTE 2)	0	0	LAMP OFF
82 (119)	20 (SEE NOTE 4)	10	LAMP FLASHES (SEE NOTE 3)
81 (120)	20 (SEE NOTE 4)	10	LAMP FLASHES
80 (121)	30 (SEE NOTE 4)	15	LAMP FLASHES
80 (122)	40 (SEE NOTE 4)	20	LAMP FLASHES
79 (123)	50 (SEE NOTE 4)	25	LAMP FLASHES
79 (124)	60 (SEE NOTE 4)	30	LAMP FLASHES
78 (125)	70 (SEE NOTE 4)	10	LAMP FLASHES
78 (126)	80 (SEE NOTE 4)	15	LAMP FLASHES
77 (127)	90 (SEE NOTE 4)	20	LAMP FLASHES
77 (128)	100	25	LAMP ON STEADY
76 to 32	100	30	LAMP ON STEADY

Notes:

- 0.44°F/min = 1°F/min is a selected reduced power control condition to prevent temperature overshoot.
- Set point = 82°F (A/D count) = 118 = 1 Volt.
- ON flash duration is proportionate to the HEATING POWER percentage.
- 100% HEATER POWER for 1 minute when processor power is turn ON each time the ADC changes (increases) as temperature drops and every 4 minutes if temperature is below set point and ADC does not change.

REPLENISHER RATES FOR DEVELOPER AND FIXER**STANDARD (DOMESTIC) AT2000 XR FILM PROCESSOR**

MODE	FILM LENGTH	SHUTTER Open Time	PUMP On Time	FLUID VOLUME	
				(ml)	(oz)
POWER Turn ON	0 inch	0 min 0 sec	90 sec	126	4.26
POWER Turn ON - CLEANING Mode (SEE NOTE 1)	0 inch	0 min 0 sec	0 sec	0	0
SHUTTER OPEN - NORMAL Mode	15 inch	2 min 15 sec	35 sec	49	1.66
SHUTTER OPEN - ENDO Mode	32 inch	2 min 15 sec	35 sec	49	1.66
SHUTTER OPEN - CLEANING Mode (SEE NOTE 1)	15 inch	2 min 15 sec	35 sec	49	1.66

CANADIAN (CUL) AT2000 XR FILM PROCESSOR

MODE	FILM LENGTH	SHUTTER Open Time	PUMP On Time	FLUID VOLUME	
				(ml)	(oz)
POWER Turn ON	0 inch	0 min 0 sec	0 sec	126	4.26
POWER Turn ON - CLEANING Mode (SEE NOTE 1)	0 inch	0 min 0 sec	0 sec	0	0
SHUTTER OPEN - NORMAL Mode	15 inch	2 min 15 sec	35 sec	49	1.66
SHUTTER OPEN - ENDO Mode	32 inch	2 min 15 sec	35 sec	49	1.66
SHUTTER OPEN - CLEANING Mode (SEE NOTE 1)	15 inch	2 min 15 sec	35 sec	49	1.66

Notes:

1. CLEANING Mode is formally known as MANUAL Mode (Keypad has changed).

General Notes:

1. There is no replenishment in CLEANING Mode, but standard replenishment occurs if the shutter is opened for the prescribed times
2. Algorithm for replenisher turn-on time is:
Replenisher start time = NORMAL shutter OPEN time + 2 X ENDO shutter OPEN time.

MEASURING REPLENISHER DISPENSING

The following provides an approach to verifying the replenisher pump output flow rate for developer and fixer chemistry. This technique will aid in solving replenisher related problems.

Equipment needed: 250ml Graduated Beaker and Stopwatch

Initial Procedure

1. Verify the electronics are operating as required before starting a replenishment rate examination. Upon powering up the processor an initial replenishment of chemistry lasts 90 seconds, this can be confirmed by listening for the pump sound near the circulator drawer (will be the only sound heard from the processor).
2. Ready the stopwatch, turn the power switch ON and start the stopwatch together. Allow the initial replenishment (pumping) of chemistry to be completed. The replenishers must pump for a time period between 88 and 92 seconds, discontinued this test procedure if it is not within that range.
3. Turn the unit's power switch OFF and unplug the processor from the outlet.

Important: Avoid spillage or cross contamination of chemistry.

4. Gain access to the processor chemistry drain lines; each will have to be removed from respective drain catches to perform this procedure, and then reinstalled upon completion.
5. Confirm that there is an adequate amount of replenishment chemistry in the replenishment containers (bottles), and that the processor chemistry level is at or near the overflow tube weir level before proceeding. If any of the levels are low, fill to required levels.

Check Developer Pumping rate

1. Remove the developer (black) drain hose from its drain catch and position it where the sample to be measured can be collected with the beaker. Be sure that the drain hose does not have any uphill bends in it, the hose should be on a continuous downward slope or at worst lying horizontally flat between the processor and the open drain hose end.
2. Plug the processor line cord into the outlet and position the open end of the drain hose into the 250ml beaker.
3. Turn the power switch ON and wait for the initial replenishment (pumping) of chemistry to be completed. This takes 90 seconds. This ensures that the liquid in the processor is at its high and overflow level, and the liquid in the drain line has been primed. Turn power switch OFF, discard the chemistry in the beaker, and prepare to sample the replenishment rate with the stopwatch.
4. Position the end of the drain hose into the 250ml beaker, ready the stopwatch, turn the power switch ON and start the stopwatch together.
5. At the end of the initial replenishment cycle (90 seconds) turn power switch OFF and view the liquid volume in the beaker. The replenished volume must be between 120ml to 130ml.
6. Reinstall the developer drain hose in its catch.

Check Fixer Pumping rate

1. Repeat the developer replenishment procedure, except use the fixer (red) drain hose.
2. The replenished volume must be between 120ml and 130ml.

DONE

ELECTRICAL DIAGRAMS AND TEST POINTS

AT2000 XR Electrical Diagrams & Test Points

Wiring, test point and thermistor resistance information for the AT2000 XR Film Processor is provided in this section. The associated charts/diagrams identify all serviceable features and provide the required parameters to facilitate equipment troubleshooting. Refer to the appropriate information as required to quickly identify and resolve the equipment fault issue.

<input type="checkbox"/> TEST POINT CHART	19
<input type="checkbox"/> SYSTEM SCHEMATIC	20
<input type="checkbox"/> CONNECTOR DIAGRAMS	21
<input type="checkbox"/> THERMISTOR RESISTANCE CHART	22

The following test point chart lists the test point and expected voltage and resistance value for the associated component of the AT 2000 XR Film Processor. Use the tables along with the system schematic to check the operating values of each listed component.

Note: All values listed are the normal operating parameters for that component. Any different values measured during testing implies a problem with that component.

COMPONENT (Being Evaluated)	TESTPOINT CONNECTOR	TESTPOINT PIN No's	VOLTAGE RANGE (VAC)	RESISTANCE RANGE (Ohms)
WATER SENSOR (Shorted Contacts)	J1	4 & 12	N/A	500 - 600
	J2 (component side)	2 & 3	N/A	500 - 600
DRIVE MOTOR	J1	3 & 5 (Endo)	103.5 - 126.5	245 - 300
	J1	3 & 6 (Endo)	103.5 - 126.5	245 - 300
	J3 (component side)	1 & 2	N/A	500 - 600
	J3 (harness side)	1 & 3 (Endo)	165 - 175	245 - 300
	J3 (harness side)	2 & 3 (Norm)	165 - 175	245 - 300
HEATER PAD	J1	3 & 10	N/A	52.5 - 60.5
	J4 (harness side)	1 & 2	103.5 - 126.5	N/A
	J4 (component side)	1 & 2	N/A	52.5 - 60.5
THERMISTOR	J1	13 & 14	N/A	See Resistance Chart, page 22
	J5 (component side)	1 & 3	N/A	
REPLENISHERS	J1	2 & 3	103.5 - 126.5	1225 - 1500
	J9 (harness side)	1 & 2	103.5 - 126.5	N/A
	J9	1 & 2	103.5 - 126.5	1225 - 1500
WATER SOLENOID OR WATER RECIRCULATION PUMP	J1	3 & 9	103.5 - 126.5	505 - 615
	J1	3 & 9	103.5 - 126.5	92 - 140
RECIRCULATORS	J1	3 & 8	103.5 - 126.5	11 - 13
	TB4	1 & 2	103.5 - 126.5	N/A

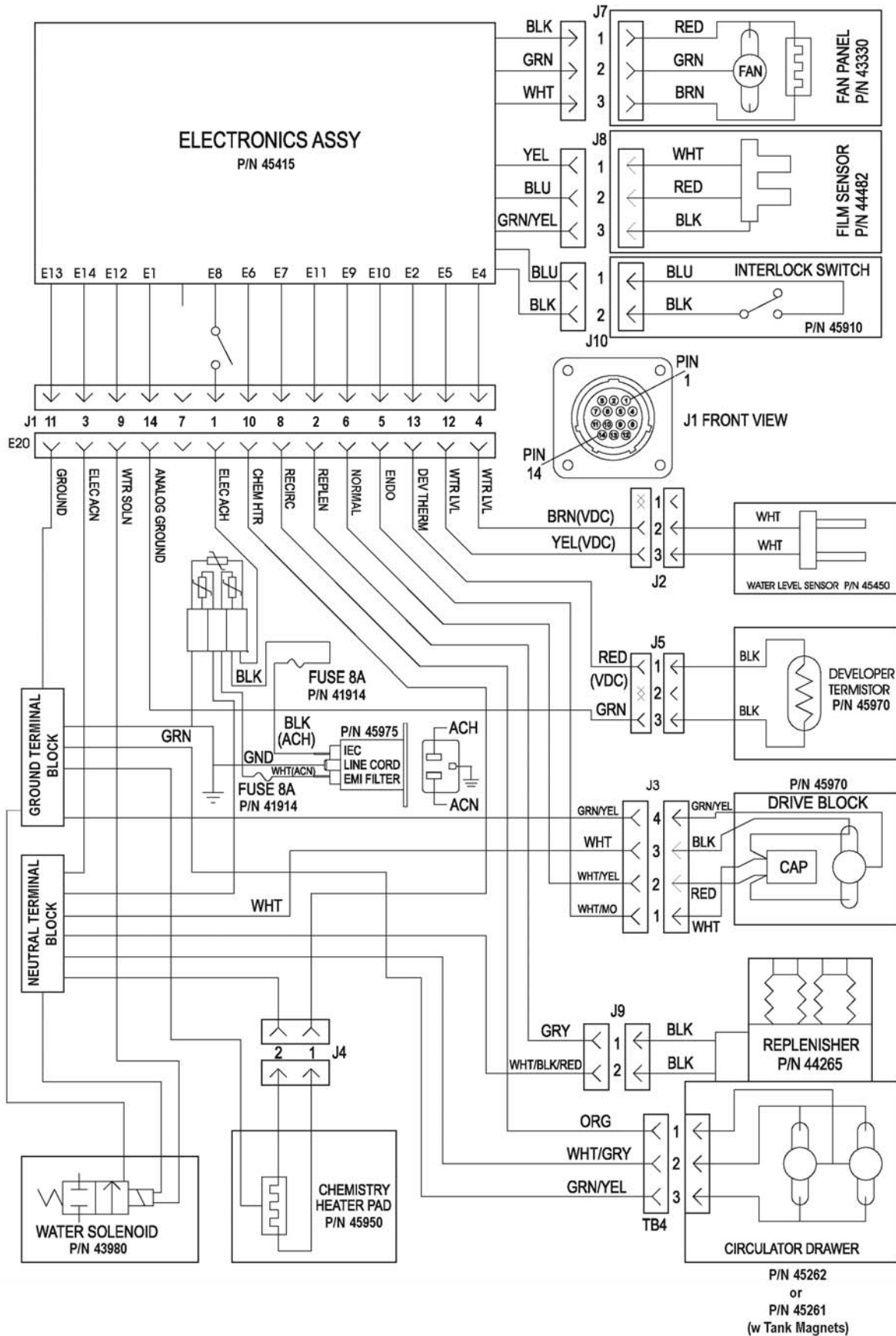
Note: All J1 measurements are made relative to base harness, inside processor while module is connected. Use needle nose probes when for measurements.

COMPONENT CONNECTOR LIST

J1 = MODULE CONNECTOR (14 PIN ROUND CONNECTOR ON REAR OF PROCESSOR)	J5 = DEVELOPER THERMISTOR PROBE
J2 = WATER LEVEL SENSOR	J9 = REPLENISHER PUMPS
J3 = DRIVE MOTOR	TB4 = CIRCULATOR DRAWER
J4 = CHEMISTRY HEATER PAD	

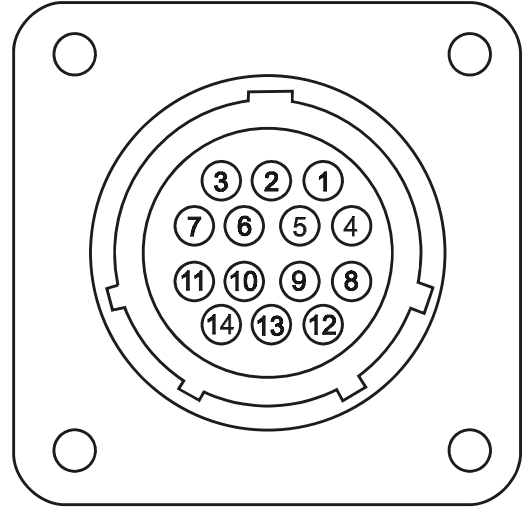
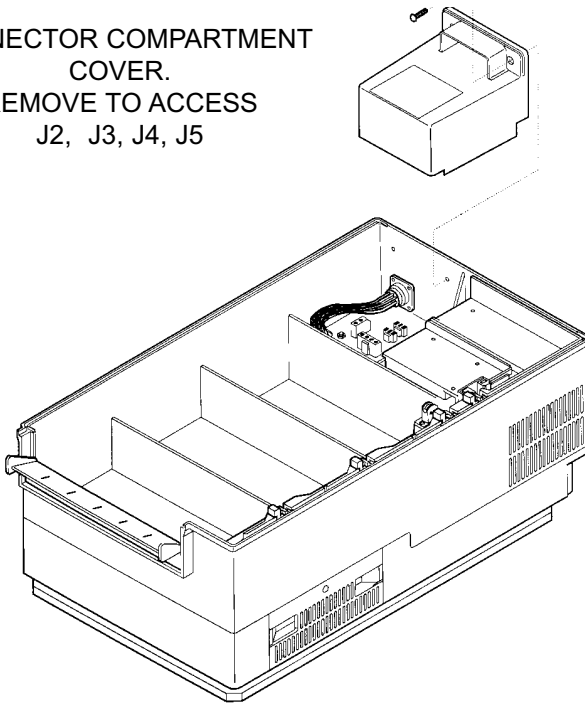
SYSTEM SCHEMATIC

AT2000XR SYSTEM SCHEMATIC

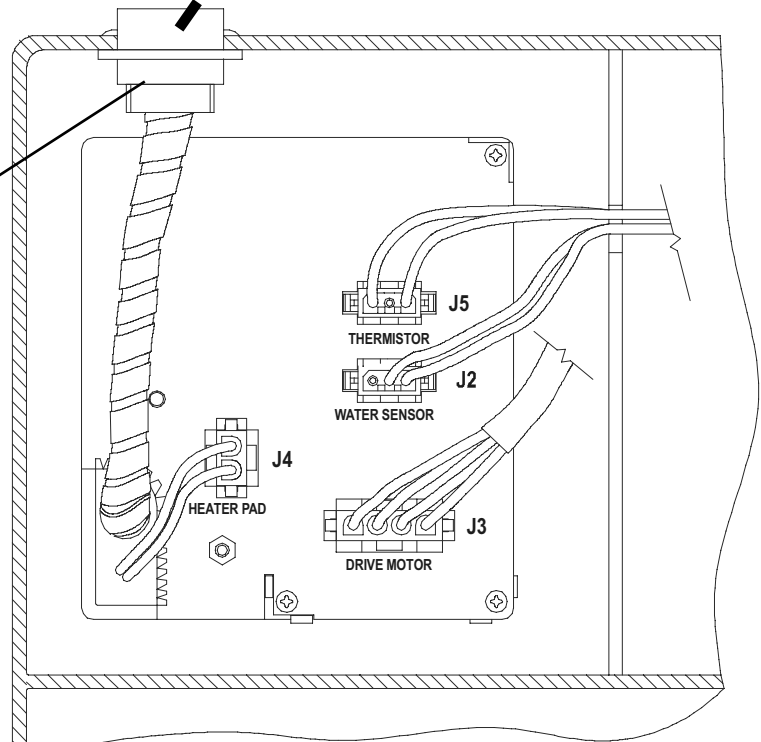


CONNECTOR DIAGRAMS

CONNECTOR COMPARTMENT
COVER.
REMOVE TO ACCESS
J2, J3, J4, J5



TAKE J1 MEASUREMENTS
HERE TO TEST COMPONENT
VOLTAGE / RESISTANCE PER
TEST POINT CHART.



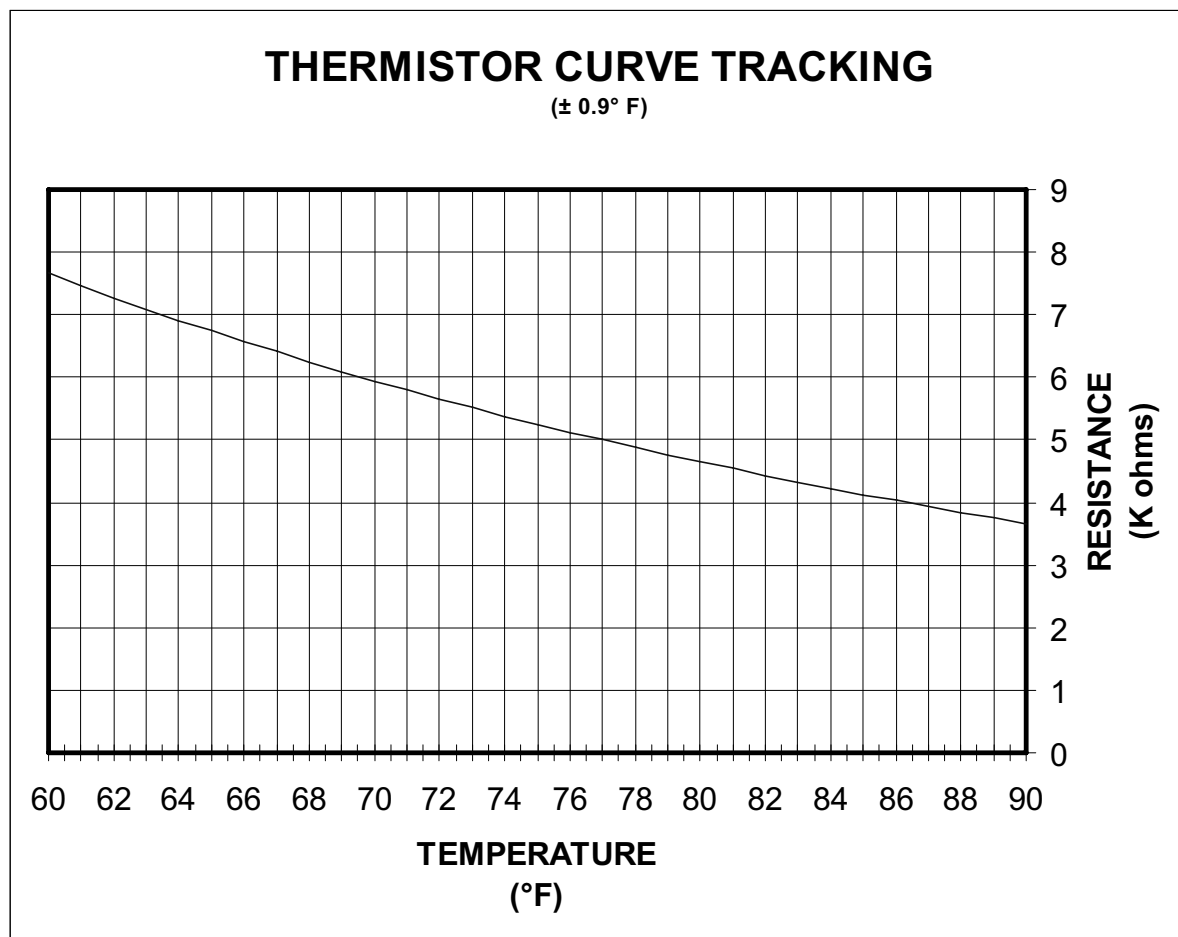
THERMISTOR RESISTANCE CHART

Bath Temp (°F)	Thermistor Resistance	Bath Temp (°F)	Thermistor Resistance	Bath Temp (°F)	Thermistor Resistance	Bath Temp (°F)	Thermistor Resistance
60	7658	70	5941	80	4651	90	3668
61	7642	71	5797	81	4540	91	3583
62	7274	72	5655	82	4432	92	3501
63	7089	73	5516	83	4328	93	3420
64	6911	74	5382	84	4225	94	3343
65	6739	75	5251	85	4126	95	3266
66	6569	76	5125	86	4029	96	3193
67	6406	77	5000	87	3936	97	3120
68	6245	78	4882	88	3844	98	3050
69	6092	79	4765	89	3755	99	2982

Notes:

To accurately measure the thermistor's resistance (Ohms), immerse the probe into a bath of water with a known temperature. A minimum of 2 minutes immersion time is required to acclimate the probe to the bath. Measure the resistance at the connector points.

Any other resistance value found at the corresponding temperature which is not within the high and low limit curves is considered Out of Spec and deemed faulty.



AT2000 XR troubleshooting guide is provided in two categories for quick access to problems that are specifically electro-mechanical in nature, and problems specifically relating to film quality. Other equipment faults can also be resolved using the troubleshooting section provided in the processor User's Manual.

Section 1: Intended for the diagnosis and/or repair of faults relating to electro-mechanical operation/function for the AT2000 XR Film Processor. The itemized list below is a summary of those issues considered, for the complete diagnosis and/or repair of the issue exhibiting refer to the subsequent pages as identified.

Section 2: Intended for the diagnosis and/or corrective actions of film quality, component staining, and chemistry issues. Refer to page 29 for a summary of section 2 film troubleshooting.

SECTION 1. AT2000 XR Operation & Function Troubleshooting Diagnosis of Electro-Mechanical Components

Note: To assure proper diagnosis and servicing of the AT2000XR, it is strongly recommended that the use of all charts and diagrams provided in this manual accompany the service performed as required.

1. PROCESSOR IS TOTALLY INACTIVE24
 - ◆ No Lights or activity with power switch ON
2. PROCESS CYCLE WILL NOT START24
 - ◆ Film shutter not activating when inserting a film - No Drive, Dryer, Etc..
3. PROCESSOR DOES NOT STOP24
 - ◆ Process cycle continues indefinitely
4. PROCESSOR STOPS MID-CYCLE25
 - ◆ Process cycle stops before film exits
5. DRIVE MOTOR NORMAL SPEED DOES NOT RUN25
 - ◆ Motor does not function in NORMAL speed mode
6. DRIVE MOTOR ENDO SPEED DOES NOT RUN25
 - ◆ Motor does not function in ENDO speed mode
7. DRYER FAN / AIR HEATER PROBLEMS26
 - ◆ Fan motor not working or blows cool air
8. REPLENISHER PUMP PROBLEMS26
 - ◆ Replenisher not operating, not suctioning, using too much chemistry
9. CHEMISTRY AGITATOR PROBLEMS26
 - ◆ Agitators not spinning (clogged / motors not running)
10. CHEMISTRY TEMPERATURE CONTROL PROBLEMS27
 - ◆ Chemistry not at 82° and/or display reads error code
11. KNOCKING / THUMPING NOISES DURING PROCESS CYCLE27
 - ◆ Transport and/or drive train is jammed or out of adjustment
12. WASH WATER PROBLEMS28
 - ◆ Water solenoid does not turn ON, or OFF, or intermittent ON & OFF

TROUBLESHOOTING

AT2000 XR Operation & Function Troubleshooting

1. PROCESSOR IS TOTALLY INACTIVE (No Lights)

- A. Check that the power switch is turned **ON**.
- B. Check that the line cord is connected @ both the Base & wall outlet.
- C. Check that the Electronics Module cable @ connector J1 is properly attached.
- D. Check the fuse; If blown, replace with 8A / 250V 5mm Slow-Blow type (p/n 41914).
- E. Check for loose connections and/or wires in Base, and using the TEST POINT CHART on page 19;
 - 1. Check the voltage at connector J1, pins 1 & 3, on the Base – If the voltage is between 103.5 and 126.5VAC, replace Electronics Module (p/n 45415).
 - 2. If no voltage is detected, check the output side of the IEC/RFI filter for voltage. Unplug the line cord from the processor, remove the two fastening screws, and slide out the IEC/RFI filter. Plug line cord back into the filter and check for voltage across the black (hot) and white (neutral) leads;
 - a. If the measured voltage is between 103.5 and 126.5VAC, unplug line cord and check for continuity between black (hot) on filter & pin 1 @ J1, and continuity between white (neutral) on filter and pin 3 at J1.
 - b. If the measured voltage is NOT between 103.5 and 126.5VAC, replace IEC/RFI filter (p/n 45975)

2. PROCESS CYCLE WILL NOT START (When inserting a film into film inlet - No drive, dryer, etc...)

- A. Check that the Top Cover assembly is seated squarely on the Base – If not, the interlock switch may not be engaged which will prevent the transport drive motor from running.
- B. Check the Film Shutter assembly freely pivots and is not jammed – Remove Cover Tray for service;
 - 1. If difficult to pivot, clean shutter hinges with a moist sponge and thoroughly dry.
 - 2. If jammed or abnormally bent, try to re-shape the shutter flag and align as depicted by DETAIL “B” and DETAIL “C” in the COVER ASSEMBLY section (page 46). With shutter in closed position, the flag must be fully inserted into the PCB optic sensor. With shutter in open position, the flag must be fully out of the PCB optic sensor. If Film Shutter is uncorrectable, replace the component (p/n 43584)
- C. Check electronics function and using the SYSTEM SCHEMATIC – Remove Electronics Module from top cover but leave connected @ J1. Disconnect J8 (green, blue, yellow wires) & depress the CLEANING CYCLE button on keypad;
 - 1. If difficult to pivot, clean shutter hinges with a moist sponge and thoroughly dry.
 - 2. If processor DOES NOT start, replace Electronics Module (p/n 45415)

3. PROCESS CYCLE WILL NOT STOP (Process cycle continues indefinitely)

- A. Check the Film Shutter assembly is not stuck on the Developer Transport rack entry roller, if so;
 - 1. Inspect transport for squareness
 - 2. If Shutter Guard is bent and contacts the transport, restore as required to eliminate contact.
- B. Check the Film Shutter assembly freely pivots and is not jammed – Remove Cover Tray for service;
 - 1. If difficult to pivot, clean shutter hinges with a moist sponge and thoroughly dry.
 - 2. If jammed or abnormally bent, try to re-shape the shutter flag and align as depicted by DETAIL “B” and DETAIL “C” in the COVER ASSEMBLY section (page 46). With shutter in closed position, the flag must be fully inserted into the PCB optic sensor. With shutter in open position, the flag must be fully out of the PCB optic sensor.
 - 3. If Film Shutter is uncorrectable, replace the component (p/n 43584)
- C. Check the PROCESS LED; If it's flashing, refer to troubleshooting item 2C above.

AT2000 XR Operation & Function Troubleshooting

4. PROCESSOR STOPS IN MID-CYCLE (Stops before film exits the dryer)

- A. Check for a low voltage condition due to another large motor (i.e.; refrigerator, compressor) on the same circuit – If the other motor starts during a process cycle, it can draw too much voltage and interrupt the cycle causing the AT2000XR to reset to stand-by.
If on a shared circuit, relocate to another circuit / dedicated circuit to eliminate problem.
- B. Check for a temporary power outage – End results will be same as in item A
- C. Check all the transport racks for squareness and inspect the gears for any broken parts;
 - 1. If NOT square, place on level surface and loosen the tie rod screws but don't remove. Firmly hold down the rack plates so they sit flat against the surface and retighten the screws.
 - 2. If any gears are broken, replace the appropriate gear if feasible or the affected transport.
- D. Check the cleanliness of the transport racks – Failure to maintain the processor per the requirements can cause the transport rollers to become “slimy” and allow the films to slip during processing.
If at all questionable, clean the transports and reiterate that the AT2000XR requires routine maintenance, which is fully described in detail in the USER'S MANUAL.
- E. Reiterate if films are not fed straight when inserting into film inlet, they can get caught in the transports.
NOTE: Pedo films must be processed lengthwise
- F. Check the process time for both speeds – Hold Film Shutter open for 5 seconds then release;
 - 1. If ENDO speed processing time after releasing the shutter is LESS THAN 2 min 40 sec, replace Electronics Module (p/n 45415)
 - 2. IF NORMAL speed processing time after releasing the shutter is LESS THAN 5 min 55 sec, replace Module (p/n 45415)

5. DRIVE MOTOR “NORMAL” SPEED DOES NOT RUN

- A. Check that the Top Cover assembly is seated squarely on the Base – If not, the interlock switch may not be engaged which will prevent the transport drive motor from running.
- B. Check all the transport racks gears for any broken parts;
If any gears are broken, replace the appropriate gear if feasible or the affected transport.
- C. Check that the Drive Motor connector J3 is properly attached inside the connector compartment.
- D. Check electronics function and using the TEST POINT CHART, page 19, Connect a voltmeter to J3, pins 2 & 3, and depress the CLEANING CYCLE button on keypad;
 - 1 If voltage is 103.5 – 126.5VAC, replace the Drive Motor (p/n 45472)
 - 2 If voltage is NOT 103.5 – 126.5VAC, replace Electronics Module (p/n 45415)
- E. Check the interlock switch functionality by verifying continuity between the switch leads when tripped. Refer to the SYSTEM SCHEMATIC, page 20, to test at J10, pins 1 & 2

6. DRIVE MOTOR “ENDO” SPEED DOES NOT RUN

- A. Check that the Top Cover assembly is seated squarely on the Base – If not, the interlock switch may not be engaged which will prevent the transport drive motor from running.
- B. Check all the transport racks gears for any broken parts;
 - 1 If any gears are broken, replace the affected transport, or the appropriate gear if feasible.
- C. Check that the Drive Motor connector J3 is properly attached inside the connector compartment.
- D. Check electronics function and using the TEST POINT CHART, page 19, Connect a voltmeter to J3, pins 1 & 3, and depress the CLEANING CYCLE button on keypad;
 - 1 If voltage is 103.5 – 126.5VAC, replace the Drive Motor (p/n 45472)
 - 2 If voltage is NOT 103.5 – 126.5VAC, replace Electronics Module (p/n 45415)
- E. Check the interlock switch functionality by verifying continuity between the switch leads when tripped. Refer to the SYSTEM SCHEMATIC, page 20, to test at J10, pins 1 & 2.

AT2000 XR Operation & Function Troubleshooting

7. DRYER FAN / AIR HEATER PROBLEMS

- A. Fan motor is not operating – Check the electronics function and using the SYSTEM SCHEMATIC, page 20,
Remove Electronics Module from top cover but leave connected @ J1.
Disconnect J7 (black, white, green wires) connector and measure voltage output;
 - 1 If voltage is 103.5 – 126.5VAC, replace the Fan Panel Assembly (p/n 43330)
 - 2 If voltage is NOT 103.5 – 126.5VAC, replace Electronics Module (p/n 45415)
 - B. Fan is operating but blows cool air – Check connections between Air Heater & Fan by removing the Fan Panel Assembly as depicted in the COVER ASSEMBLY section, (page 45).
 - 1 If connections are valid, replace the Air Heater (p/n 43811)
-

8. REPLENISHER PUMP PROBLEMS

- A. Replenisher pumps not pumping – Remove the Circulator Drawer screw and slide the assembly out of the Base, and using the TEST POINT CHART & SYSTEM SCHEMATIC check if it functions as follows;
Turn power OFF, wait 5 seconds, then turn power ON - Pump is intended to run for 90 seconds (see REPLENISHER RATES FUNCTION CHART, page 17)
 - 1 If pump does NOT operate, check the J9 connector is properly attached and continue on.
 - 2 Check voltage @ J9, if voltage is 103.5 – 126.5VAC, replace the replenisher pump (p/n 44265)
 - 3 If voltage is NOT 103.5 – 126.5VAC, replace the Electronics Module (p/n 45415)
 - B. Replenisher pumps are running but no suction to pull chemistry from bottles, or pumps are using chemistries at different rates (uneven dispensing) from bottles;
 - 1 Check that the pick-up tubing in the bottles reach down BELOW the chemistry level.
 - 2 Check that the bottle caps are loose, a tight cap will diminish suction capability.
 - 3 Check that the tubing is not crimped, if so replace as required.
 - 4 Check the poppet valves on the pumps, if worn, or broken replace with kit (p/n 49793)
 - 5 If all prior checks are satisfactory, replace the replenisher pump (p/n 44265)
-

9. CHEMISTRY AGITATOR PROBLEMS

- A. Agitators are not spinning (no chemistry circulation) – Disassemble the agitator assemblies as shown by the BASE ASSEMBLY section, (page 48).
 - 1 Check the condition of the magnet, bushing, and the teflon washer. If any of the component conditions is/are suspect (i.e.; worn, black specs flaking, broken, etc...) replace as required.
 - 2 Clean all items with Spray 2000 Plus and warm water, then thoroughly rinse and reassemble.
 - 3 Check the Circulator Drawer assembly is fully closed & fastened in the Base.
 - 4 If all prior checks are satisfactory, remove the Circulator Drawer screw and slide the assembly out of the Base. Using the TEST POINT CHART & SYSTEM SCHEMATIC, page 19;
 - a. Check that the fan blade(s) are not stuck on the motor(s), release if there is interference.
 - b. Check that the motors operate when the CLEANING / MANUAL mode is started, if NOT;
 - c. Check for power at circulator terminal block. If voltage is 103.5 – 126.5VAC @ TB4, pins 1 & 2, replace the Circulator Drawer (p/n 45262)
 - d. If voltage is NOT 103.5 – 126.5VAC, replace the Electronics Module (p/n 45415)

AT2000 XR Operation & Function Troubleshooting

10. CHEMISTRY TEMPERATURE CONTROL PROBLEMS

- A. Verify the wash water temperature is 55°F – 80°F, if NOT, adjust as required and continue.
 - 1 Cooler than 55°F water results in thermal heat transfer from the adjacent Fixer tank.
 - 2 Warmer than 80° water results in damaged film and temperature rise in chemistry.
- B. Check the room temperature - Above 82°F air temperature adds to processor chemistry heating.
 - 1 If higher than 82°F exists, advise that additional ventilation is required to lower room temp.
 - 2 Advise a minimum of 10 (room volume) air changes per hour are required.
- C. Chemistry temperature is either too HOT or too COLD (optimum temp. setting of 82°F NOT achieved) – Preview the processor's temperature setting as follows; POWER ON, push and hold the DISPLAY SET-TEMP button on the keypad. The value displayed will start flashing, if NOT 82° then readjust as follows;
Open the flip lid on the top side of the Electronics Module, push and hold the DISPLAY SET-TEMP button on the keypad and rotate the potentiometer until 83 is displayed. Once reaching 83, slowly rotate counterclockwise until 82° is achieved. (The processor's heat control and display can be reviewed FUNCTION MODES FUNCTION CHART, page 14)
- D. Chemistry temperature is either too HOT or too COLD and the display pre-set is 82°F – Analyze the heat control components one-by-one using the TEST POINT CHART, CONNECTOR DIAGRAMS and the SYSTEM SCHEMATIC, page 19;
 - 1 Check the resistance value of the THERMISTOR PROBE @ J5, pins 1 & 3 on thermistor's connector side, and refer to the resistance vs. temperature chart. The measured value on the probe must be within 1% of the chart value. If not, replace Thermistor probe (p/n 45970)
 - 2 Check the resistance value of the wiring harness for continuity @ J1, pins 13 & 14 and refer to the resistance vs. temperature chart. The measured value must be within 1% of the chart value. If NOT, inspect the wiring harness for corrosion on connector pins or poor lugging.
 - 3 Check the resistance value of the HEATER PAD @ J4, pins 1 & 2 on the heater's connector side. The measured value must be 52.5 – 60 ohms, if NOT, replace Heater Pad (p/n 45950) as shown-by the BASE ASSEMBLY- HEATER PAD section, (page 54).
 - 4 Check the resistance value of the wiring harness for continuity @ J1, pins 3 & 10. The measured value must be 52.5 – 60 ohms. If NOT, inspect the wiring harness for corrosion on connector pins or poor lugging.
 - 5 Check voltage @ J4, pins 1 & 2. If voltage is NOT 103.5 – 126.5VAC, or if all prior checks are satisfactory, replace the Electronics Module (p/n 45415)

11. KNOCKING/ THUMPING NOISES DURING PROCESS CYCLE

- A. Transport and / or drive train is jammed or out of adjustment - Remove the transport rack assembly as depicted in the ROLLER TRANSPORT section, (page 57).
 - 1 Check the baffles in the Wash/Dry rack, verify they are installed correctly. Refer to the detail view of assembly in the Roller Transport Parts illustration (page 58). Note the inner baffle is installed before the outer baffle.
 - 2 Check transport racks for;
 - a. Properly seated on worm gear & latched in place. Reseat & latch if dertermined so.
 - b. Transport racks do not have broken gears. Replace rack if broken gears are found.
 - c. Latches are broken or dislodged from the drive block. Rectify problem as required.
 - d. Racks are square (not twisted) when resting on a flat surface, if not then adjust as mentioned in Film Sreaking Troubleshooting (page 32)
 - 3 Check for thumping sounds coming from the front top of the processor, if so then check shutter guard, it may be bent inward slightly and is rubbing against the inlet rollers of the Developer Transport Rack. If this is the case, re-adjust as necessary to alleviate the interference by loosening the retaining screws & pivoting the bar. Re-tighten the screws when adjustment is complete.
 - 4 Check for film jams (films stuck in racks), if so; Allieviate the jam as necessary to get the rack('s) working.

TROUBLESHOOTING

AT2000 XR Operation & Function Troubleshooting

12. WASH WATER PROBLEMS

- A. Wash water does not fill into tank in process mode –
 - 1. Standard Processor
 - a Check that the water hose is connected & water supply is opened to processor.
 - b Check solenoid valve filter screen. Turn OFF water supply & disconnect the water hose to check. If clogged or dirty, clean as required.
 - c Check the Water Sensor integrity using the TEST POINT CHART & CONNECTOR DIAGRAMS. Remove the J9 connector, turn POWER ON, and depress the Film Shutter. If the water begins to flow, replace Water Sensor (p/n 45450), otherwise;
 - d Check the Solenoid Valve integrity using the TEST POINT CHART as follows. Check voltage @ J1, pins 3 & 9. If voltage is 103.5 – 126.5VAC, replace the Solenoid Valve (p/n 43980),
 - e If voltage is NOT 103.5 – 126.5VAC, replace the Electronics Module (p/n 45415)
 - 2. Internal Water Recirculator Processor (45009 & 45009CUL)
 - a Check that the water inlet hose reaches down BELOW the water level in the container.
 - b Check that the water drain hose is properly installed in drain (see PLUMBING, page 9).
 - c Check the Water Recirculation Pump integrity using the TEST POINT CHART as follows. Check voltage @ J1, pins 3 & 9. If voltage is 103.5 – 126.5VAC, replace the Recirculation Pump (p/n 45070),
 - d If voltage is NOT 103.5 – 126.5VAC, replace the pump Starter Circuit PCB (p/n 45985)
- B. Wash water intermittently runs ON and OFF - Standard Processor
 - 1. Standard Processor
 - a Check that the water drain hose is properly installed in drain (see PLUMBING, page 6). Improper drainage causes water to rise setting off water level sensor fault and turning the water off. As water partially drains, the water level sensor fault clears and water flow resumes.
 - b Check solenoid valve filter screen. Turn OFF water supply before inspecting. If clogged or dirty, clean as required.
 - c Check that the water drain hose and/or drain tube is NOT clogged.
 - d Check the water drain tube DOES NOT have a rubber washer.
 - e Check the water supply pressure. If above 60psi, install pressure regulator (p/n 45550)
- C. Wash water does not fill in 2 minutes from empty tank -
 - 1. Standard Processor -Check the water supply pressure. If below 30psi a LOW pressure condition exists which will not dispense 2 gal/min rate requirement.
 - 2. Internal Water Recirculator Processor (45009 & 45009CUL)
 - a Check that the water drain hose is properly installed in drain (see PLUMBING, page 9).
 - b Refer to Electrical Diagrams and Test Points on page 19 and check the Water Recirculation Pump integrity as follows.
 - Check voltage @ J1, pins 3 & 9. If voltage is 103.5 - 126.5VAC, replace the Recirculation Pump (p/n 45070).
 - If voltage is NOT 103.5 - 126.5VAC, replace the pump Starter Circuit PCB (p/n 45985).
- D. Wash water runs all the time in STAND BY mode –
 - 1. Standard Processor
 - a Check for any dirt or debris buildup in the coil of the solenoid and clean the parts as required in order to allow proper solenoid functioning.
 - b Check the electronics integrity using the TEST POINT CHART as follows. Check voltage @ J1, pins 3 & 9.
 - c If voltage is 103.5 – 126.5VAC, replace the Electronics Module (p/n 45415)
 - 2. Internal Water Recirculator Processor (45009 & 45009CUL)
 - a Check and verify there is NOT a fresh water supply hose connected. The water lines are designed to operate from a water container for recirculation (page 9)

SECTION 2. AT2000 XR Film Quality Troubleshooting

This trouble shooting section is intended for the diagnosis issues relating to film processing anomalies for the AT2000XR film processors. The itemized list below is a summary of issues, for the complete diagnosis and/or repair of the issue exhibiting refer to the subsequent pages as identified.

NOTE: A major problem contributing to poor film processing quality is the contamination of the processor chemistry. See AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.

1. FILMS ARE TOO DARK or GRAINY30
 - ◆ Exposure setting incorrect, chemistry's not within usage range
2. FILMS ARE TOO LIGHT31
 - ◆ Exposure setting incorrect, chemistry's not within usage range
3. FILM DENSITY / CONTRAST IS POOR32
 - ◆ X-RAY setting, chemistry's not within range
4. FILM HAS STREAKING AT ONE END ONLY32
 - ◆ Developer rack not square or wet inlet rollers, processor not level
5. FILM HAS STREAKING CONSISTENTLY REPEATING33
 - ◆ Developer rack not square or needs cleaning, processor not level
6. FILM HAS STREAKING RANDOMLY33
 - ◆ Chemistry agitators not operating, inadequate chemistry's
7. FILM HAS SPOTS / APPEARS DIRTY34
 - ◆ Film handling, processor cleanliness, inadequate wash water
8. FILM HAS "BRANCH-LIKE" ARTIFACTS / SMUDGES34
 - ◆ Static electricity discharge
9. FILM HAS SILVER / GREEN / BROWN COLOR35
 - ◆ Liquid levels low, fixer agitator not operating, premature processing and chemistry replenishment
10. FILMS IS WET / TACKY AFTER PROCESSING35
 - ◆ Poor room venting, dryer baffles, chemistry's not within usage range
11. FILM EMULSION IS PEELING OFF36
 - ◆ Wash water too hot, chemistry's not within usage range, wrong film type
12. DEVELOPER TRANSPORT STAINING / DEPOSITS36
 - ◆ Contaminated chemistry
13. FIXER TRANSPORT STAINING / DEPOSITS36
 - ◆ Contaminated chemistry
14. WASH/DRY TRANSPORT STAINING / DEPOSITS36
 - ◆ Dryer baffles missing / misaligned, wash water inadequate

AT2000 XR Film Quality Troubleshooting

1. FILMS ARE TOO DARK or GRAINY

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Proper X-Ray exposure setting, overexposure will create dark films.
 - 2. Film is not outdated (within manufacturer's recommended processing life) or defective.
 - 3. Film is stored in a warm environment - Too hot conditions will increase base fog.
 - 4. Film used is not Automatic Processing type.
 - 5. Film/screen combination is correct per manufacturer's specifications.
 - 6. Intensifying screens are not worn, outdated, and/or dirty.
 - 7. Chemistry is not contaminated and within recommended useful life. Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.
 - 8. Chemistry listed is designed for roller transport processors.

- B. Confirm the DARKROOM requirements are met;
 - 1. Room temperature is below 80°F
 - 2. Room has no light leaks. Fogging is manifested from light leaking.
 - 3. Room SAFELIGHT is correct for automatic processing (15 watt Ruby Red safelite & minimum 4 feet from AT2000XR).

- C. If films initially are dark immediately after chemical changing, the cause can be attributed to high levels of chemical activity. Add Starter to developer as needed (See chemistry manufacturer's recommendation).

- D. Check the chemistry temperature for being too HOT (optimum temp. setting of 82°F NOT achieved) - Preview the processor's temperature setting as follows; POWER ON, push and hold the DISPLAY SET-TEMP button. The value displayed will start flashing, if NOT 82° then a readjust;
 - 1. Open the flip lid on the top side of the Electronics Module, push and hold the DISPLAY SET-TEMP button on the keypad and rotate the potentiometer until 83 is displayed. Once reaching 83, slowly rotate counterclockwise until 82° is achieved. (The processor's heat control & display can be reviewed on FUNCTIONAL MODES FUNCTION CHART, page 15)
 - 2. If chemistry temperature is above 82°F, and the display pre-set is 82°F - Analyze the heat control components per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1-CHEMISTRY TEMPERATURE CONTROL PROBLEMS, Item D provided on page 27.

- E. If this is a Daylight Loader application, check the DLL for light leaks;
 - 1. Confirm the view glass is closed when the user handles films.
 - 2. Check the condition of the cuffs (Worn, torn, loose, etc...)
 - 3. Check the mounting onto the processor.
 - 4. Check the seal around the lid (Cover w/ view glass)

AT2000 XR Film Quality Troubleshooting

2. FILMS ARE TOO LIGHT

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Proper X-Ray exposure setting, underexposure will create light films.
 - 2. Film is not outdated (within manufacturer's recommended processing life) or defective.
 - 3. Film used is designed for Automatic Processing
 - 4. Film / screen combination is correct per manufacturer's specifications.
 - 5. Films are PROCESSED AFTER READY LIGHT ILLUMINATES.
 - 6. Chemistry used is designed for roller transport processors.

- B. Check the chemistry agitators freely spins (chemistry circulation) - Disassemble the agitator assemblies as depicted in the BASE ASSEMBLY section, (page 48). Analyze the agitator per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - CHEMISTRY AGITATOR PROBLEMS

- C. Check the chemistry temperature for being too COLD (temp. setting of 82°F NOT achieved) - Preview the processor's temperature setting as follows; POWER ON, push and hold the DISPLAY SET-TEMP button on the keypad. The value displayed will start flashing, if NOT 82° then a readjustment must be made as follows;
 - 1. Open the flip lid on the top side of the Electronics Module, push and hold the DISPLAY SET- TEMP button on the keypad and rotate the potentiometer until 83 is displayed.
 - 2. Once reaching 83, slowly rotate counterclockwise until 82°F is achieved. (The processor's heat control & display can be reviewed FUNCTION MODES FUNCTION CHART, page 15)
 - 3. If chemistry temperature is below 82°F, and the display pre-set is 82°F - Analyze the heat control components per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - CHEMISTRY TEMPERATURE CONTROL PROBLEMS, Item D provided on page 27.

- D. Check the CHEMISTRY REPLENISHMENT level control and pumping rate;
 - 1. Inspect the both developer & fixer Drain Tube washer condition - Must be in good condition
 - 2. Confirm that both developer & fixer Drain Tubes firmly seat in their drain sockets.
 - 3. Analyze the chemistry replenishment for insufficient amounts per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - REPLENISHER PUMP PROBLEMS provided on page 26.

AT2000 XR Film Quality Troubleshooting

3. FILM DENSITY / CONTRAST IS POOR

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Proper X-Ray exposure setting
 - 2. Film is not outdated (within manufacturer's recommended processing life) or defective.
 - 3. Film used is designed for Automatic Processing
 - 4. Film / screen combination is correct per manufacturer's specifications.
 - 5. Intensifying screens are not worn, outdated, and/or dirty.
 - 6. Chemistry used is designed for roller transport processors.
 - 7. Chemistry is not contaminated. Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.
 - 8. Check the developer chemistry is at 82° F .
 - 9. Check the Replenisher Pumps are adding chemistry when the Film Shutter opens.
 - 10. Check the wash water temperature is between 55° F and 80° F.
-

4. FILM HAS STREAKING AT ONE END ONLY

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Chemistry is not contaminated and within recommended useful life. Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.
 - 2. Film used is designed for Automatic Processing
 - 3. Shutter Bar & Guard, and Film Inlet are dry, if not then wipe dry.
 - 4. Inlet rollers of Developer Transport are dry, if not then process a CLEANING FILM after the READY light illuminates.

NOTE: For offices with DAYLIGHT LOADERS, verify the lid is partially open whenever the unit is not being used (any anticipated long periods of no use). This prevents condensation onto the inlet rollers of the Developer Transport Rack. Open lid no more than 1/4" in order to prevent chemistry oxidation

- B. Check the levelness of the processor by making sure that the Leveling frame "Bubble" indicates proper level of unit. Adjust feet as necessary to position the "Bubble" in the center of the sight (use 2Ft level across frame to check).
- C. Check the squareness of the Transport Racks as follows;

Place a transport rack (independently) onto a FLAT & LEVEL surface, the rack should rest evenly on it's side plates. If it does not, loosen (but don't remove) the screws and twist the rack assembly to get the assembly to sit flush. Once attained, re-tighten the screws and verify the rack assembly is still sitting flush. (re-perform procedure if req.). Check all TRANSPORT RACKS in this manner to verify squareness.
- D. Check the Baffle Plates in the Wash/Dry Rack & verify they are installed correctly as follows;
 - Refer to the detail view of assembly in the ROLLER TRANSPORT PARTS illustration (page 50) and note that the Inner Baffle is installed before the Outer Baffle

AT2000 XR Film Quality Troubleshooting

5. FILM HAS STREAKING CONSISTENTLY REPEATING

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Chemistry is not contaminated and within recommended useful life. Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.
 - 2. Film used is designed for Automatic Processing
 - 3. Confirm that a CLEANING FILM has been processed after the READY light illuminates. This is done at the daily start up, and every 2 hours of idle time.
 - 4. Check the wash drain tube and verify it DOES NOT have a rubber washer.
 - 5. Check the solution levels are at the proper height.
 - 6. Check & verify the drive motor continually runs during a processing cycle.
- B. Check the levelness of the processor by making sure that the leveling frame "Bubble" indicates proper level of unit, adjust feet as necessary.
- C. Check the cleanliness of the Transport Racks. Clean the racks, if necessary, per the MAINTENANCE requirements in the USER'S MANUAL.
- D. Check the squareness of the Transport Racks;
 - 1. Place a transport rack (independently) onto a FLAT & LEVEL surface, the rack should rest evenly on it's side plates. If it does not, loosen (but don't remove) the screws and twist the rack assembly to get it to sit flush. Once attained, re-tighten the screws and verify the rack assembly is still sitting flush (re-perform procedure if necessary). Check all TRANSPORT RACKS in this manner to verify squareness.
 - 2. Check for damaged gears & rollers on rack assemblies - Replace (if feasible) as required

6. FILM HAS STREAKING RANDOMLY

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Chemistry is not contaminated and within recommended useful life. Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.
 - 2. Film used is designed for Automatic Processing
 - 3. Chemistry used is designed for roller transport processors.
 - 4. Check the wash drain tube and verify it DOES NOT have a rubber washer.
 - 5. Check the solution levels are at the proper height.
- B. Check the CHEMISTRY REPLENISHMENT level control and pumping rate;
 - 1. Inspect the both developer & fixer Drain Tube washer condition - Must be in good condition
 - 2. Confirm that both developer & fixer Drain Tubes firmly seat in their drain sockets.
 - 3. Analyze the chemistry replenishment for insufficient amounts per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - REPLENISHER PUMP PROBLEMS provided on page 26.
- C. Check the Agitators freely spin (chemistry circulation) - Disassemble the agitator assemblies as shown by the BASE ASSEMBLY section, (page 48). Analyze the agitator per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 CHEMISTRY-AGITATOR PROBLEMS provided on page 26.

AT2000 XR Film Quality Troubleshooting

7. FILM HAS SPOTS / APPEAR DIRTY

- A. Confirm the following initial requirements for AT2000XR Automatic film processing. Make sure to use the proper handling of pre-processed films - The films must not come in contact with any wet surface (ie; hands, counter surface, etc...) and should be handled along edges.
 - 1. Intensifying screens are not worn, outdated and/or dirty.
 - 2. Film used is designed for Automatic Processing
 - 3. Confirm that a CLEANING FILM has been processed after the READY light illuminates. This done at the daily start up, and every 2 hours of idle time.
 - 4. Chemistry used is designed for roller transport processors.
 - 5. Check the wash drain tube DOES NOT have a rubber washer.
 - 6. Check the solution levels are at the proper height.

- B. Check the TRANSPORT ASSEMBLIES for "Caked" deposits;
 - 1. Deposits only on DEVELOPER TRANSPORT Rack - Silver and/or gray staining on gears
 - 2. Developer chemistry is contaminated - Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to clean.
 - 3. Deposits only on FIXER TRANSPORT Rack - Silver deposits present
 - 4. Fixer chemistry is exhausted - Change the chemistry
 - 5. Thoroughly clean the rack assembly per the MAINTENANCE requirements in the USER'S MANUAL.
 - 6. Confirm the Replenishment Bottles did not run dry, if so then change the chemistry and reiterate - Monitoring of levels in the bottle are necessary, and the chemistry level should never be below 1" from the bottom of it's respective bottle.
 - 7. Deposits on either FIXER TRANSPORT or WASH/DRY TRANSPORT Rack for any white staining on Fixer Rack exit or Wash/Dry entry rollers
 - 8. Check the baffles in the Wash/Dry rack, verify they are installed correctly. Refer to the detail view of assembly in the Roller Transport Parts illustration (page 58). Note the inner baffle is installed before the outer baffle.

- C. Check the CHEMISTRY REPLENISHMENT level control and pumping rate by analyzing the chemistry replenishment for insufficient amounts per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1- REPLENISHER PUMP PROBLEMS provided on page 26.

- D. Check the WASH WATER for inadequate, or no flow of water into wash tank by analyzing the wash water for insufficient amounts per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - WASH WATER PROBLEMS provided on page 28.

8. FILM HAS "BRANCH-LIKE" ARTIFACTS / SMUDGES

- A. Static electricity discharges onto the film and imposes an artifact - Reiterate safeguards;
 - 1. Removal of films and film wrappers slowly from cassettes and boxes.
 - 2. The room should have appropriate floor covering.
 - 3. Increase the humidity level in the room.

AT2000 XR Film Quality Troubleshooting

9. FILM HAS SILVER / GREEN / BROWN COLOR

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Film is not outdated (within manufacturers recommended processing life) or defective.
 - 2. Film used is designed for Automatic Processing.
 - 3. Chemistry is not contaminated & within recommended useful life. Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.
 - 4. WASH WATER is above 55°F.
 - 5. WASH WATER is ON (valve is open)
- B. Check the chemistry temperature for being too COLD (optimum temp. setting of 82°F NOT achieved) - Preview the processor's temperature setting as follows; POWER ON, push and hold the DISPLAY SET-TEMP button on the keypad. The value displayed will start flashing, if NOT 82° then perform re-adjustment as follows;
 - 1. Open the flip lid on the top side of the Electronics Module, push and hold the DISPLAY SET- TEMP button on the keypad and rotate the potentiometer until 83 is displayed.
 - 2. Once reaching 83, slowly rotate counterclockwise until 82°F is achieved. (The processor's heat control & display can be reviewed FUNCTION MODES FUNCTION CHART, page 15)
 - 3. If chemistry temperature is below 82°F, and the display pre-set is 82°F - Analyze the heat control components per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - CHEMISTRY TEMPERATURE CONTROL PROBLEMS, Item D provided on page 27.
- C. Check the CHEMISTRY REPLENISHMENT level control and pumping rate;
 - 1. Inspect the fixer Drain Tube washer condition - Must be in good condition & seats well.
 - 2. Analyze the chemistry replenishment for insufficient amounts per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - REPLENISHER PUMP PROBLEMS provided on page 26.
- D. Check the FIXER Agitator freely spins (chemistry circulation)
 - 1. Disassemble the agitator assemblies as shown by the BASE ASSEMBLY section, (page 48).
 - 2. Analyze the agitator per the check sequence listed in the TROUBLESHOOTING GUIDE SECTION 1 - CHEMISTRY AGITATOR PROBLEMS provided on page 26.

10. FILM IS WET / TACKY AFTER PROCESSING

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Film is not outdated (within manufacturer's recommended processing life) or defective.
 - 2. Film used is designed for Automatic Processing.
 - 3. Chemistry is not contaminated & within recommended useful life. Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.
 - 4. Chemistry used is designed for roller transport processors.
 - 5. The room should be properly vented, and below 80°F.
 - 6. Verify there is a minimum of 10 (room volume) air changes per hour in the room.
- B. Check the baffles in the Wash/Dry rack, verify they are installed correctly. Refer to the detail view of assembly in the ROLLER TRANSPORT PARTS illustration (page 50) and note that the Inner Baffle is installed before the Outer Baffle
- C. Check the WASH WATER for inadequate, or no flow of water into wash tank by analyzing the wash water for insufficient amounts per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - WASH WATER PROBLEMS provided on page 28.
- D. Check the CHEMISTRY REPLENISHMENT level control and pumping rate;
 - 1. Inspect the fixer Drain Tube washer condition - Must be in good condition & seats well. Analyze the chemistry replenishment for insufficient amounts per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1- REPLENISHER PUMP PROBLEMS provided on page 26.
- E. Check the air temperature and air movement exiting the dryer at the film exit by verifying that the air exiting is warm and blowing out. If not, perform procedures listed in TROUBLESHOOTING GUIDE SECTION 1- DRYER FAN / AIR HEATER PROBLEMS provided on page 26.

AT2000 XR Film Quality Troubleshooting

11. FILM EMULSION IS PEELING OFF

- A. Confirm the following initial requirements for AT2000XR Automatic film processing;
 - 1. Film is not outdated (within manufacturer's recommended processing life) or defective.
 - 2. Chemistry is not contaminated & within recommended useful life.
 - 3. WASH WATER temperature is below 55 to 80°F.
 - 4. Film used is designed for Automatic Processing.
- B. Check the CHEMISTRY REPLENISHMENT level control and pumping rate;
 - 1. Inspect the both developer & fixer Drain Tube washer condition - Must be in good condition - Rubber washers present & in good shape, and inner bore is unobstructed.
 - 2. Confirm the both developer & fixer Drain Tubes firmly seat in their drain sockets.
 - 3. Analyze the chemistry replenishment for insufficient amounts per the check sequence listed in TROUBLESHOOTING GUIDE SECTION 1 - REPLENISHER PUMP PROBLEMS provided on page 26

12. DEVELOPER TRANSPORT STAINING / DEPOSITS

- A. Deposits only on DEVELOPER TRANSPORT Rack - Silver and/or gray staining on gears
 - 1. Check developer chemistry for contamination. Refer to AVOIDING CHEMISTRY CONTAMINATION provided on page 37 to prevent problems.
 - 2. Clean per the MAINTENANCE requirements in the USER'S MANUAL.

13. FIXER TRANSPORT STAINING / DEPOSITS

- A. Deposits only on FIXER TRANSPORT Rack - Silver deposits present
 - 1. Fixer chemistry is exhausted - Change the chemistry
 - 2. Thoroughly clean the rack per the MAINTENANCE requirements in the USER'S MANUAL.
 - 3. Confirm the Replenishment Bottles did not run dry, if so then change the chemistry and reiterate - Monitoring of levels in the bottles are necessary, and the chemistry level should never be below 1" from the bottom of it's respective bottle.

14. WASH/DRY or FIXER TRANSPORT DEPOSITS

- A. Problem with deposits on either FIXER TRANSPORT or WASH/DRY TRANSPORT Rack or white staining on the Fixer Rack exit or Wash/Dry entry rollers indicate a transport assembly problem. Check the baffles in the Wash/Dry rack, verify they are installed correctly. Refer to the detail view of assembly in the ROLLER TRANSPORT PARTS illustration (page 58) and note that the Inner Baffle is installed before the Outer Baffle

AVOIDING CHEMISTRY CONTAMINATION

Contamination of developer chemistry is one of the most common problems associated with x-ray film processors. The source of contamination must be identified to prevent this problem from happening again. Once contaminated developer is diagnosed, tanks and rack assemblies must be cleaned with Formula 2000 Plus, (Part Number: 43965). See Quarterly Cleaning, pages. 63 and 64 for proper cleaning procedure.

How To Diagnose Contaminated Developer

One or more of these symptoms indicates contamination:

- ☐ Ammonia smell
- ☐ Dark or black developer
- ☐ Black deposits on bottom of developer tank
- ☐ Gray stains on white gears on side of developer rack
- ☐ Black streaks or smudges on films
- ☐ Poor film density (blacks are only dark gray)
- ☐ Poor film clarity

Sources of Contaminated Developer

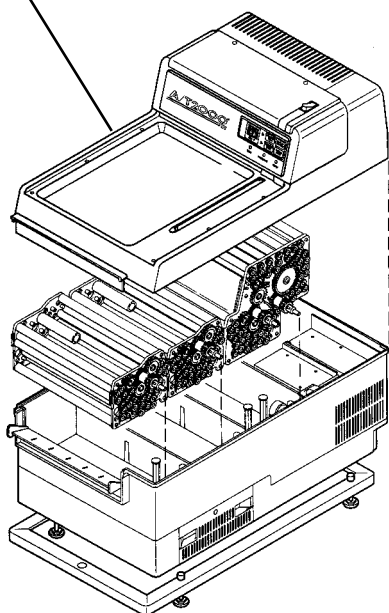
One or more of these actions can cause contamination:

1. Splashing a drop of fixer into Developer tank when filling Fixer tank.
2. Dripping a drop of fixer into the Developer tank when removing racks for cleaning.
3. Washing both Developer and Fixer tanks with the same sponge or same brush. (Use separate sponges or brushes for each tank.)
4. Failing to thoroughly rinse off Spray 2000 Plus when cleaning rack assemblies.
5. Use of soap, detergents, etc. to clean racks or tanks. Only use recommended cleaner.
6. Use of Spray 2000 Plus to clean the Developer tank. Only use on racks since it is very difficult to thoroughly rinse Spray 2000 Plus out of tanks, thereby contaminating new chemistry.
7. Running of endo films back through the processor. Endo films are never properly washed and contain enough fixer residue to contaminate the Developer tank.
8. Use of a cleaning film more than once or use of one that looks dirty - do not reuse cleaning film.
9. Scrubbing of cleaning film with soap and water so it can be used again. - do not reuse cleaning film.
10. Running of cleaning film at ENDO speed, then reusing cleaning film - do not reuse cleaning film.
11. Running of cleaning film with wash water turned OFF, then reusing cleaning film - do not reuse cleaning film.
12. Failing to thoroughly rinse developer tank after using Formula 2000 Plus, including forgetting to run developer agitator while rinsing.
13. Failing to purge replenishment lines after using Formula 2000 Plus.
14. Incorrectly installed drain lines.
15. Accidentally bumping processor, causing fixer to spill over into the Developer tank.
16. Interchanging replenishment bottles, connecting fixer to developer and developer to fixer. (Use 4 gallons of warm water to clean out pumps and lines).
17. Mixing different brands of chemistry together. Example: Brand A in the tanks, Brand B in replenishment bottles.

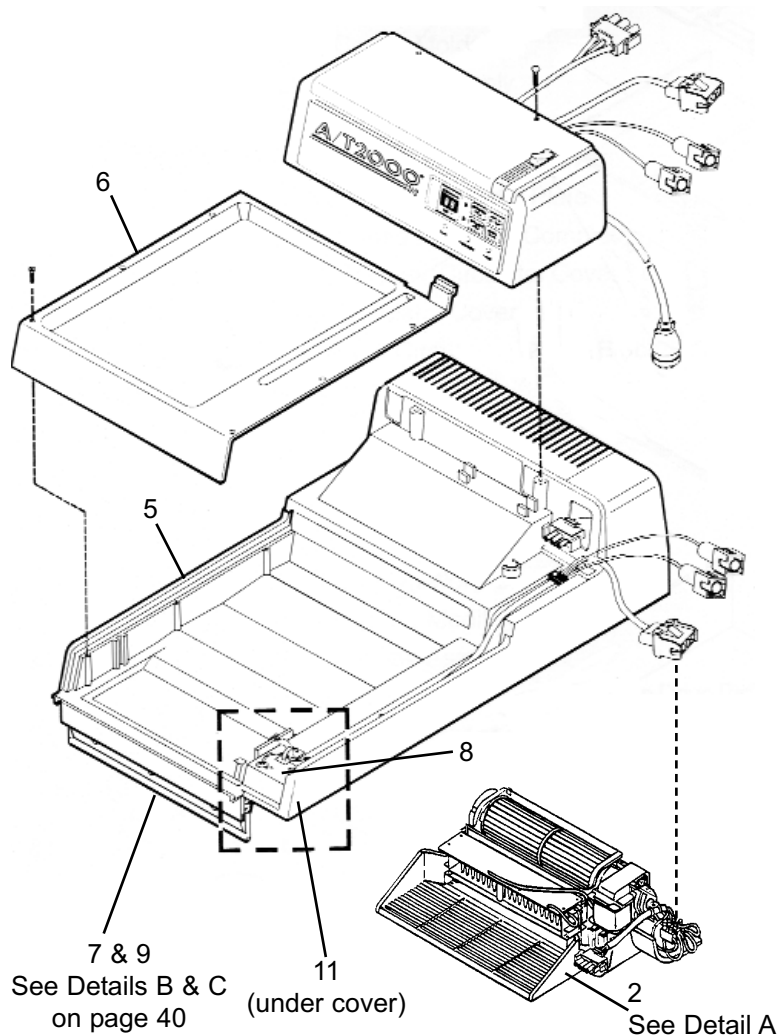
NOTE: IF CHEMISTRY IS Contaminated, FOLLOW CLEANING PROCEDURE DETAILED IN QUARTERLY CLEANING, PAGES. 55 and 56.

COVER ASSEMBLY

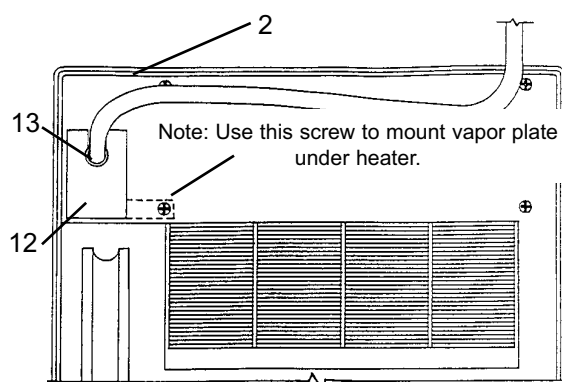
COVER ASSEMBLY 45800



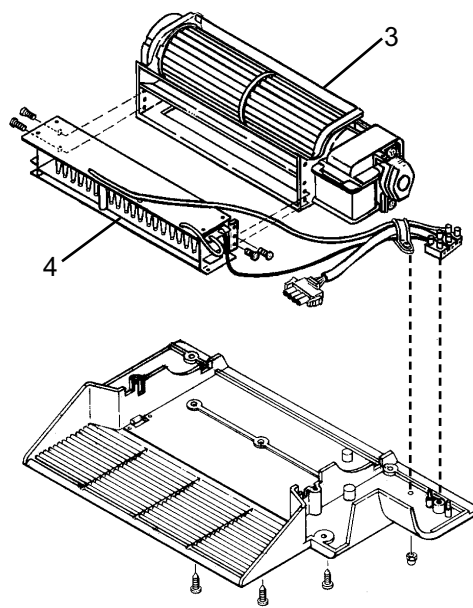
ITEM	DESCRIPTION	PART NUMBER
1	Electronics Module	45415
2	Dryer Heater Assembly	43330
3	Dryer Fan	43530
4	Air Heater Assembly	43811
5	Molded Cover	45360
6	Cover Insert w/ Light Seal	45351
7	Shutter Assembly	43584
8	Film Sensor Assembly	44482
9	Shutter Guard	43658
10	Hinge Block	43587
11	Interlock Switch Assembly	45910
12	Vapor Barrier	43121
13	Grommet	43122



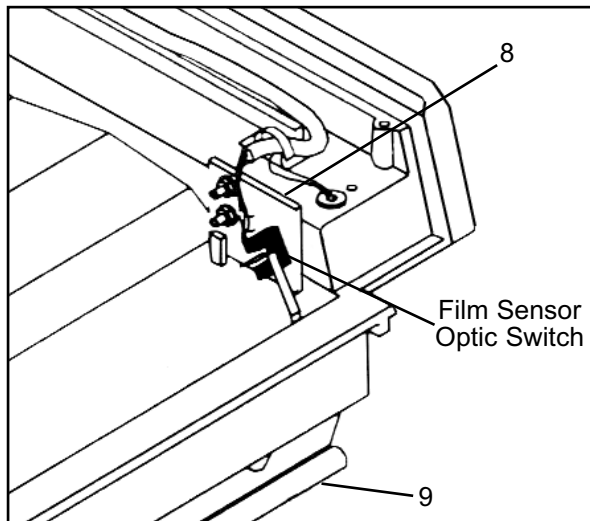
UNDERSIDE VIEW OF COVER



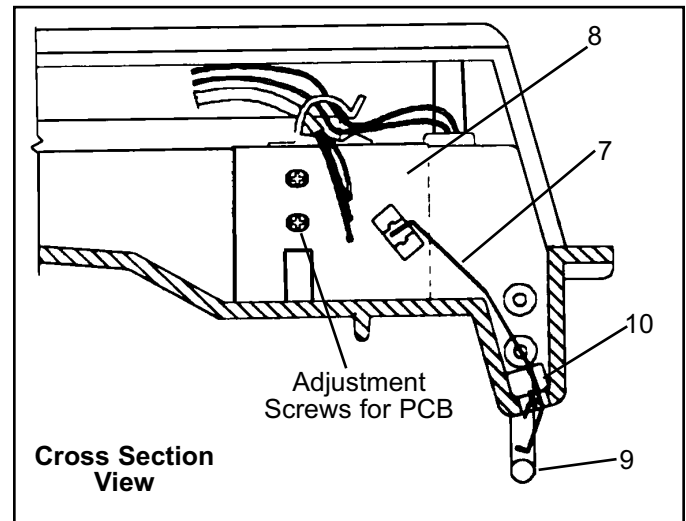
Detail A



DETAIL B

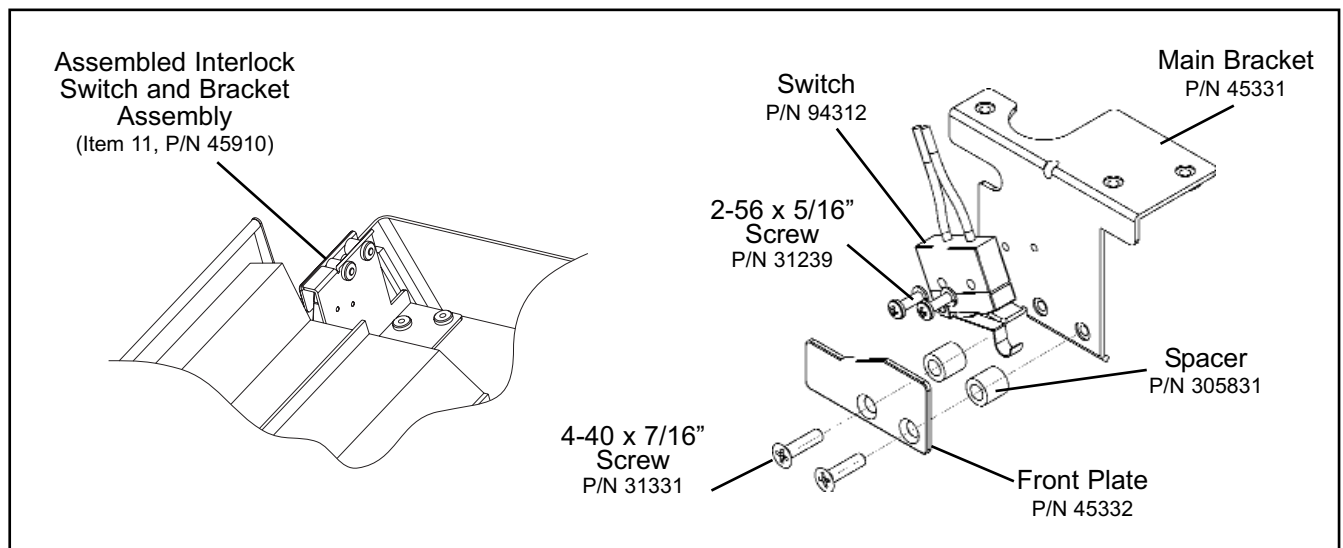


DETAIL C



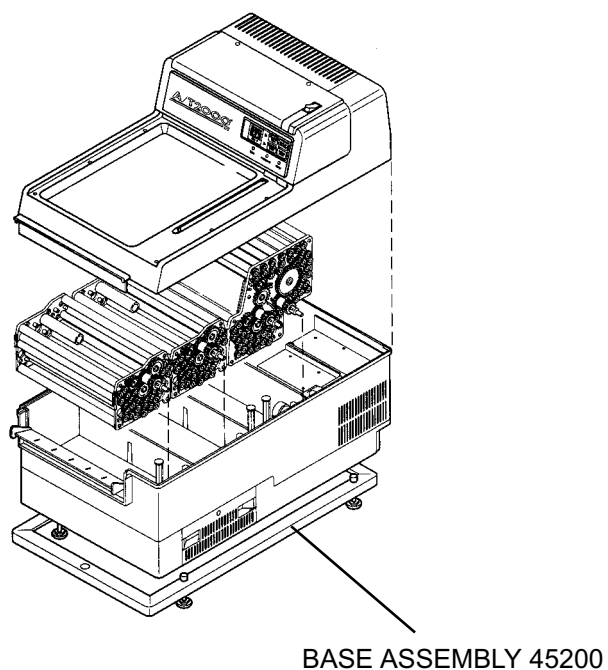
NOTE: Film shutter flag (item 7) must reside in optic sensor (on PCB) when inactive, see detail "C" for view. Improper alignment results in "STAYS INPROCESS MODE"

DETAIL D

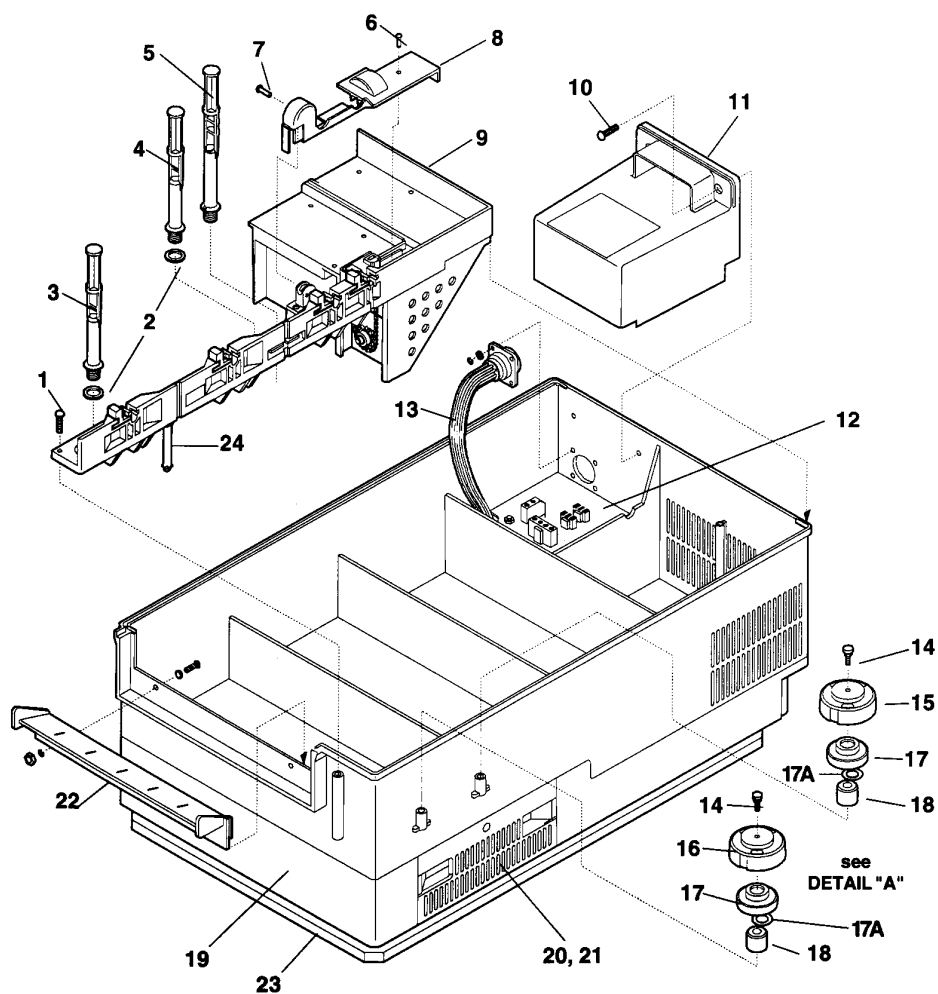
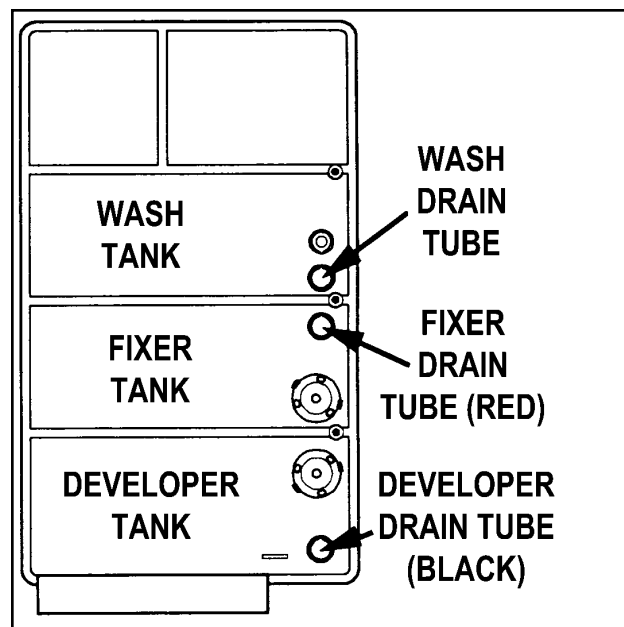


NOTE: The illustrations above represent the Interlock Switch Assembly design for all AT2000XR Film Processors. It supersedes any previous version designed and is a "drop-in" replacement to all vintage units. The actual switch is the same part in all units, only the mounting bracket and hardware may differ.

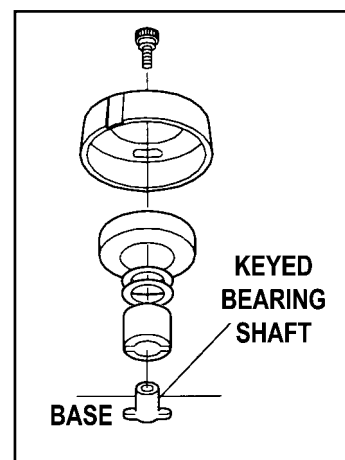
BASE ASSEMBLY - TOP VIEW



OVERHEAD VIEW



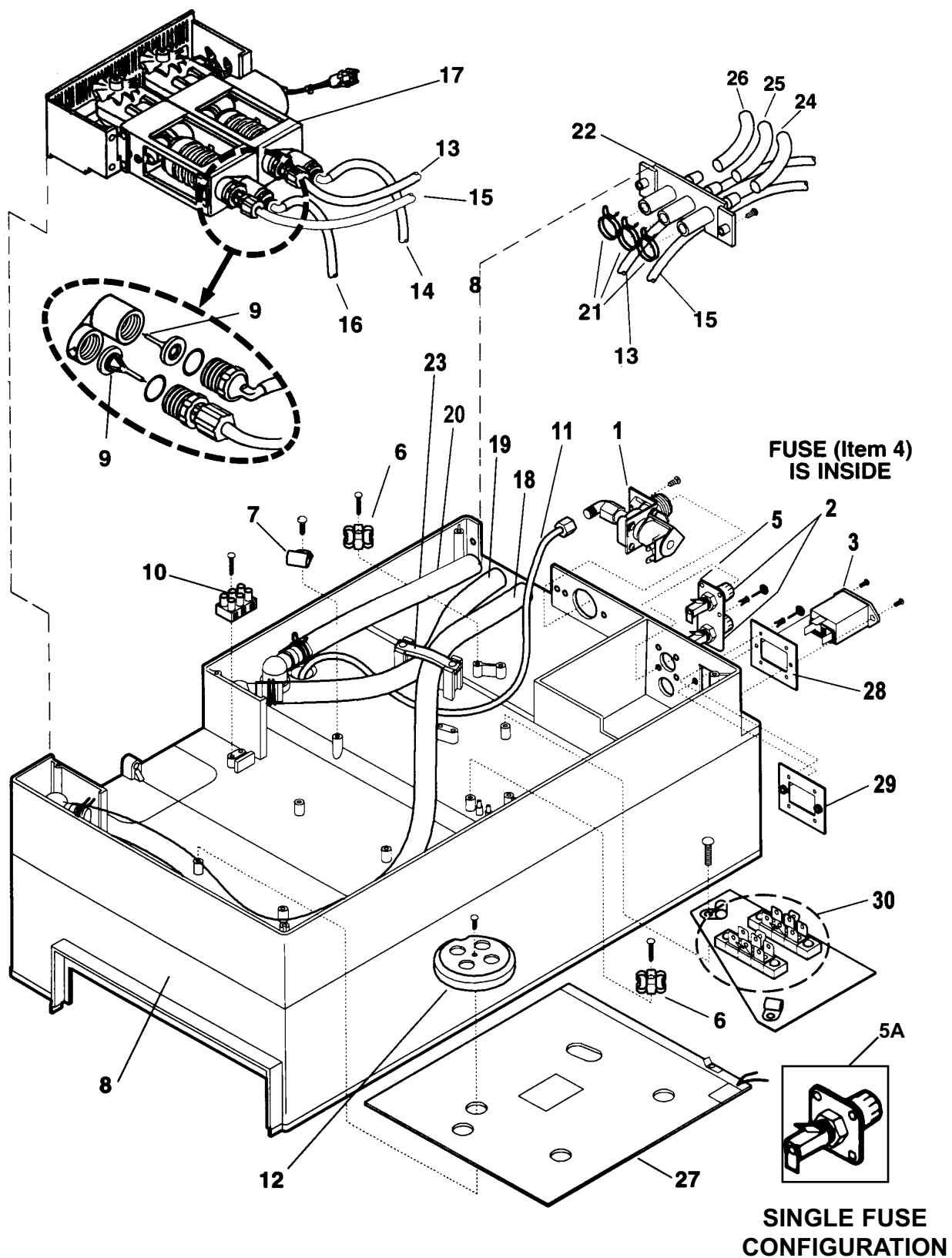
DETAIL A



BASE ASSEMBLY - TOP VIEW

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	Screw - Drive Block Mount	30569
1A	Interlock Post	45323
2	Drain Tube Washer	43271
3	Drain Tube Assembly - Black (includes item 2)	43286
4	Drain Tube Assembly - Red (includes item 2)	43287
5	Drain Tube - Wash	43270
6	Screw - Gear Cover	30568
7	Screw - Gear Cover	30539
8	Gear Cover, Molded	43258
9	Drive Block Assembly	45240
10	Screw, Electrical Cover	30562
11	Electrical Compartment Cover	43259
12	Component Connector Plate	45445
13	Base Wiring Harness, Complete	45440
14	Thumb Screw, Circulator Cover	30552
15	Fixer Circulator Cover - Red	43385
16	Developer Circulator Cover - Black	43384
17	Circulator Magnet	43233
17A	Teflon Washer (Quantity 2 per tank magnet)	41286
18	Bearing, Ceramic	43232
19	Base, Sub - Assembly	45201
20	Circulator Drawer Assembly	45262
21	Circulator Drawer Replacement Kit (Includes tank magnets and washers included)	45691
22	Film Feeder, Modified	45567
23	Bottom Plate Assembly	43885
24	Thermistor Assembly (see Drive Block/Assembly)	45970
N/A	Water Level Sensor (see Drive Block/Component Detail)	45450
N/A	Wash Tank Drain Tube Plug Kit (used during cleaning)	43189

BASE ASSEMBLY - BOTTOM VIEW

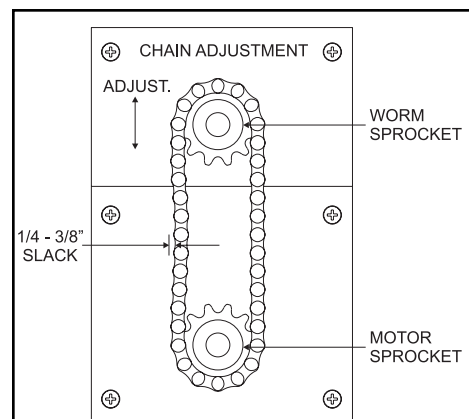
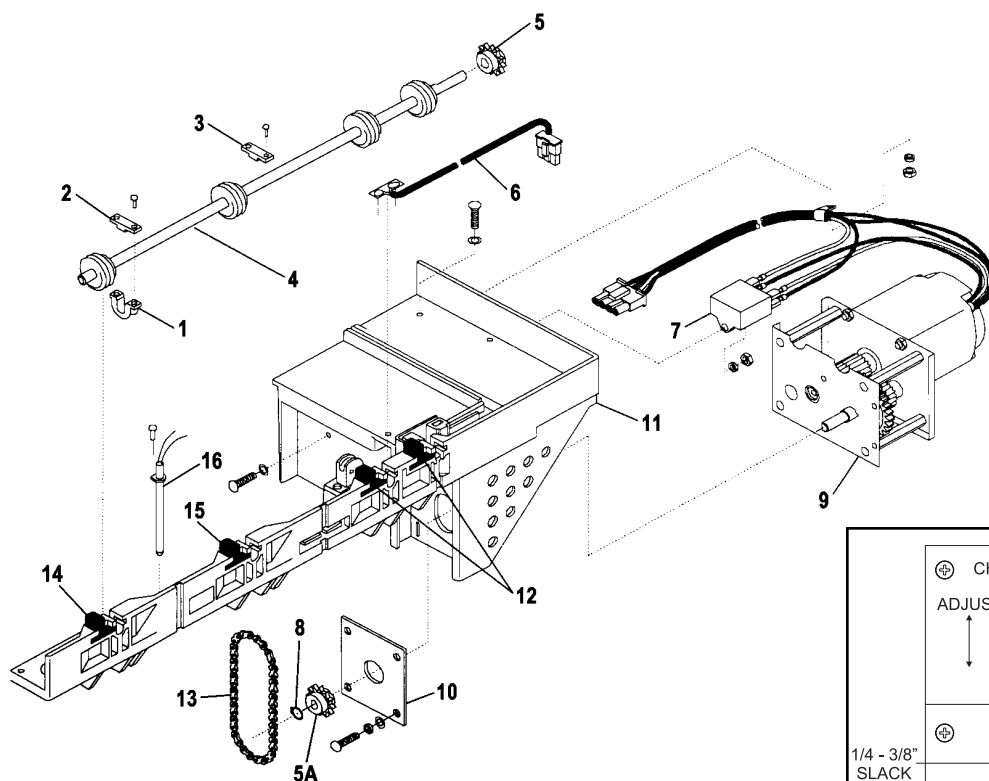


BASE ASSEMBLY - BOTTOM VIEW

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	Solenoid Assembly	43980
2	Fuse Holder	90219
3	Line Cord IEC Connector w. EMI Filter	45975
4	Fuse, Delayed Action, 8 Amp, Box of 5	41914
5	Mounting Panel, Fuse, Double Fuse Mount (s/n 460457 & up)	45278
5A	Mounting Panel, Fuse, Single Fuse Mount (up to s/n 460456)	45258
6	Replenisher Tubing Clamp	44039
7	Cable Clamp	41771
8	Base Sub-Assembly	45201
9	Poppet Valve Kit (includes 2 valves & 2 O-Rings)	49793
10	Receptacle, 3-Pin Connector Plug	43437
11	Water Inlet Tube Assembly	45221
12	Heater Pad Hold Down	43859
13	Replenisher Fixer Inlet Tubing (Red), 96 inches (8 feet)	44043
14	Replenisher Fixer Outlet Tubing (Red), 18 inches	44041
15	Replenisher Developer Inlet Tubing (Black), 96 inches (8 feet)	44044
16	Replenisher Developer Outlet Tubing (Black), 26 inches	44042
17	Replenisher Assembly	44265
18	Tubing, Developer Drain, 36 inches	44209
19	Tubing, Fixer Drain, 12 1/2 inches	44210
20	Tubing, Water Drain, 9 3/4 inches	44211
21	Clamp, Tank Drain	49963
22	Drain Manifold, Molded	44206
23	Drain Hose Strap	43357
N/A	Bottom Plate (not illustrated)	43885
N/A	Screw, Bottom Plate (not illustrated)	30550
24	Drain Hose, Developer (Black), 72 inches (6 feet)	44361
25	Drain Hose, Fixer (Red), 72 inches (6 feet)	44362
26	Drain Hose, Water (White), 72 inches (6 feet)	44363
27	Silicone Heater Pad Assembly	45950
28	Exterior IEC Mounting Plate	45436P
29	Interior IEC Mounting Plate	45437
30	Terminal Block Mounting Plate	45439
31	Screw	30535
32	Nylon Push Rivet	30998
33	Screw	30549
34	Screw	30541
35	Screw	30431
36	Screw	30409
37	Screw	30668
38	Screw	30562
39	Nut, Replenisher Pump	45043
40	Elbow, Replenisher Pump	45042

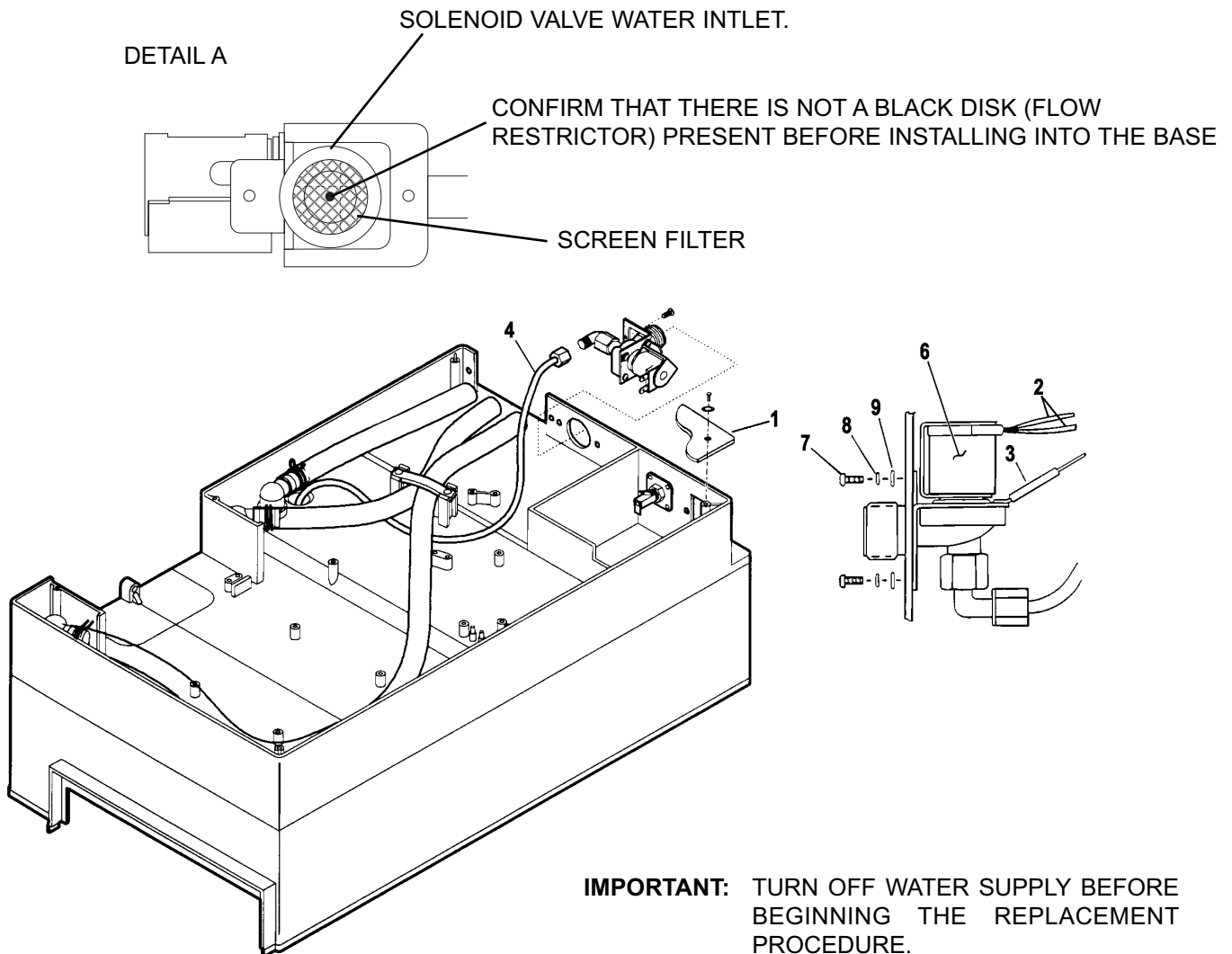
BASE ASSEMBLY - Drive Block Assembly, P/N 45270

ITEM	DESCRIPTION	PART NUMBER
1	Bearing, Shaft	43244
2	Drive Shaft Clamp - Black	43223
3	Drive Shaft Clamp - Red	43246
4	Main Drive Shaft	43242
5	Drive Gear Sprocket (12 tooth)	43243
6	Water Level Sensor	45450
7	Capacitor, Drive Motor	44275
8	Snap Ring	41127
9	Drive Motor Assembly	45472
10	Drive Motor Mounting Plate	43253
11	Molded Drive Block	43239
13	Drive Chain	43247
12,14,15	Rack Latch - Black	43254
16	Thermistor	45970
17	Screw	30539
18	Hex Nut	30249
19	Screw	30463
20	Lockwasher	30263
21	Flatwasher	30052



BASE ASSEMBLY - Solenoid, P/N 43980

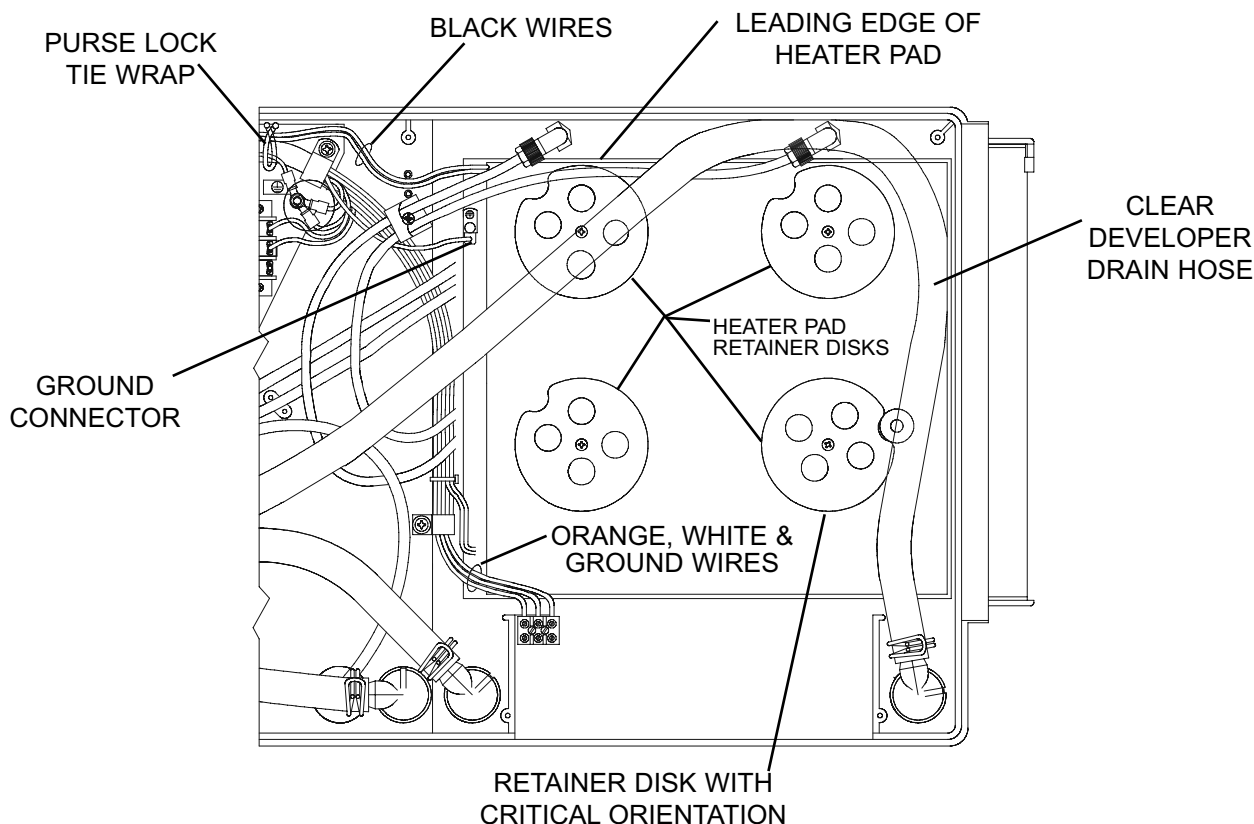
INSTRUCTIONS FOR WATER SOLENOID REPLACEMENT (Phillips screwdriver required)



BASE ASSEMBLY - Heater Pad, P/N 45950

EVALUATION AND CHECKING OF HEATER PAD

- A. If there is a heating problem with the processor, and a defective Heater Pad is suspected, be sure that the Heater Pad assembly (45950) is **actually defective** before replacing it. Perform the followsteps below.
- B. Steps to take to check if Heater Pad is defective.
 1. Remove cover from processor.
 2. Carefully remove transport wash dry rack, avoiding contamination of chemistry.
 3. Remove the black cover (unscrew two (2) Phillips head screws) in the left rear compartment.
 4. In the left rear compartment. Unplug the white connector (with the two (2) black wires) labeled "HEATER PAD" - pinch the two side tabs while pulling on the connector.
 5. Measure the resistance across the two metal terminals in the white connector. The value must be between 52.5 and 60.0 Ohms.
 6. If the resistance is within this range, the Heater Pad is good, and the source of the heating problem is something else. If the resistance falls outside of this range, it is defective.
 7. Once the Heater Pad assembly is shown defective, perform the procedures provided on page 47 to replace the Heater Pad assembly. If the problem is not the Heater Pad, reconnect wires removed above and replace racks and covers.
 8. Perform the procedures of TROUBLESHOOTING GUIDE SECTION 1 - CHEMISTRY TEMPERATURE CONTROL PROBLEMS provided on page 27 as necessary.



Note: Above illustration shows bottom view of Base Assembly See illustration on page 42, item 27, for Heater Pad location.

Notes: Perform the Evaluation and Checking of Heating Pad procedure (page 46) prior to replacing Heater Pad.
The covers and racks have been removed and the Heater Pad plug disconnected from the J4 header per the Evaluation and Checking of Heating Pad procedure.

Heater Pad Removal Procedure

1. Drain and rinse chemistry compartments, carefully turn the unit over to expose the base assembly and remove the Base Assembly to access the Heater Pad (see page 42, item 27).
2. Slip the blackwires out of the "purse lock" tie wrap (leave fastener in place to use to hold the black wires of the replacement Heater Pad).
3. Disconnect the Circulator/ Replenisher Drawer (remove one (1) Phillips screw) flip drawer upside down and lay it to the left onto the internal clear drain hose.
4. Disconnect the ground connector (green/yellow wire) from the ground lug on the Heater Pad.
5. Remove the four (4) Heater Pad retainer discs (unscrew the four (4) Phillips screws). Each retainer disk may or may not have a flat washer between it and the post to which it is attached. Discard these washers (if present) and use the washers supplied in the kit when reinstalling the retainer discs.
6. Pull the clear developer drain hose up, and the orange, white and ground wires to the side so that the Heater Pad can easily be removed. Note: The orientation of the Heater Pad so that the replacement Heater Pad is installed the same way.

Heater Pad Installation

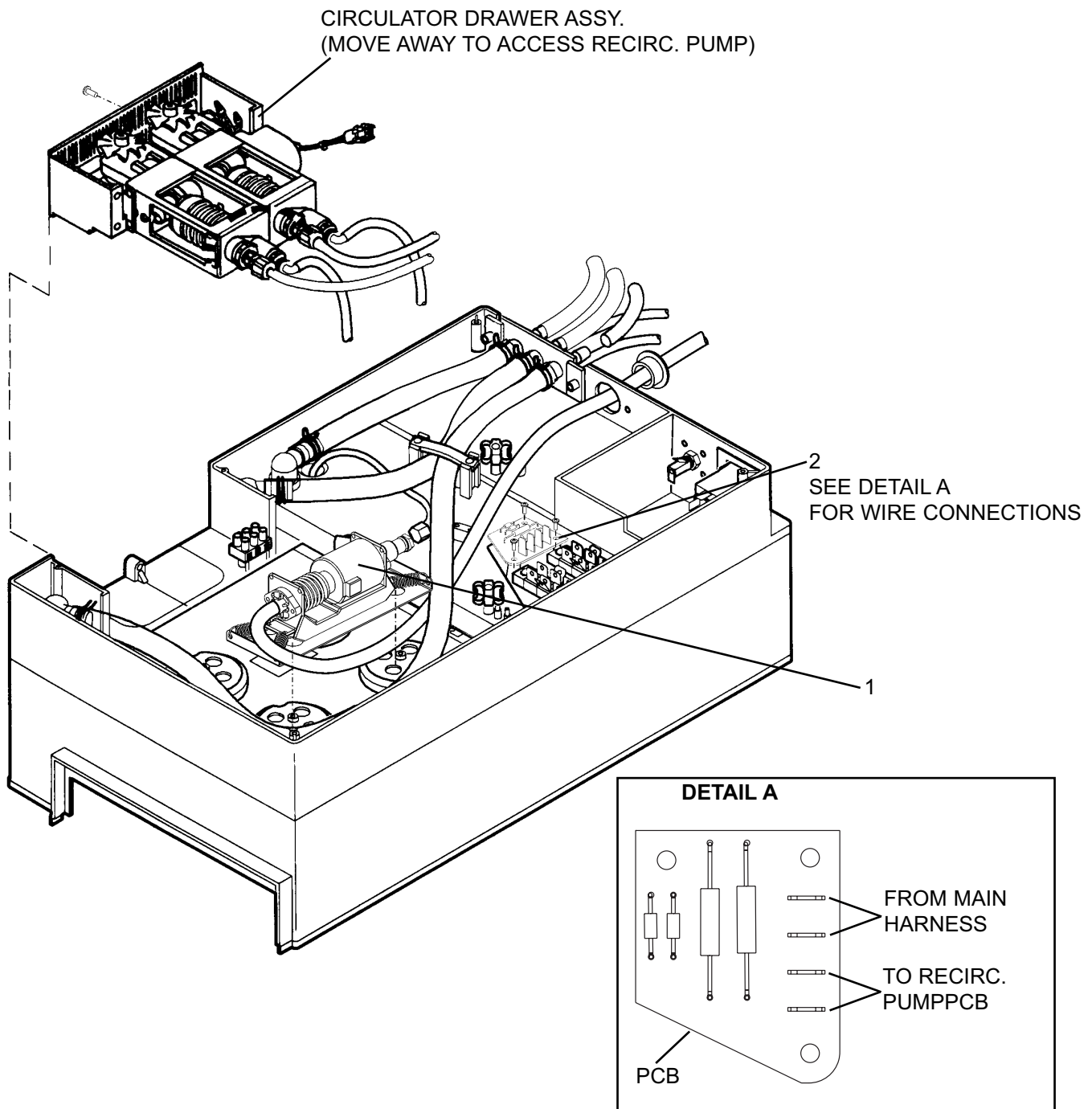
Note: Prior to installing the new Heater Pad, inspect its electrical resistance. It must be between 52.5 and 60 ohms.

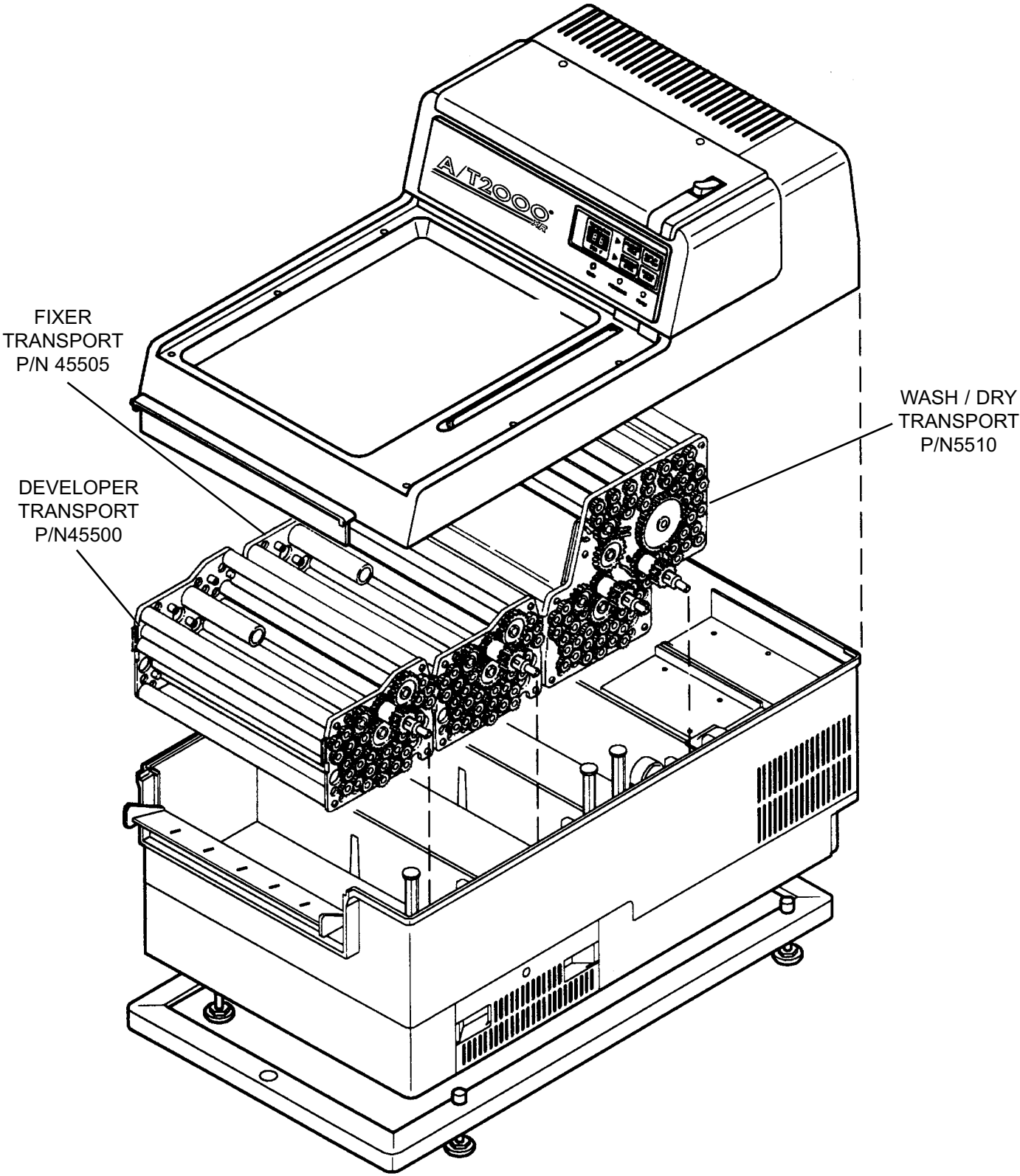
If necessary, clean and wipe the tank surfaces that will be in contact with the Heater Pad to be sure that the Heater Pad lies flat on these surfaces for optimum heat transfer.

1. Install the replacement Heater Pad in the reverse sequence that the old one was removed . Be sure first to slip the "leading edge" under the chemistry replenishment fittings, and avoid bending or flexing the Heater Pad. Pull the clear developer drain hose up and work the orange, white and ground wires around the Heater Pad corner, to allow the Heater Pad to be lowered into place without bending or flexing it. The "leading edge" is the one that has the black wires and ground lug to its left when viewed from the orange side.
2. Carefully place the four (4) washers supplied with the kit on the four (4) attachment posts, and then reinstall the four (4) Heater Pad retainer discs onto the posts with the washers. Be sure that washers do not fall off while installing the retaining discs. The only disc whose orientation is critical is the one nearest the developer drain elbow. Rotate the disc so that the notch aligns with the gate on the molded base (and the corresponding hole in the Heater Pad).
3. Reinstall and securely tighten the four (4) Phillips screws holding the Heater Pad retaining discs.
4. Reinstall ground wire to ground lug on Heater Pad.
5. Secure the two (2) black wires into the "purse lock" tie wrap. Install Base Assembly.
6. Reconnect the Heater Pad plug into the J4 header (located on the Connector Mounting Plate, page 21). Refill tanks with chemistry and replace racks and covers.

BASE ASSEMBLY - Internal Water Recirculation

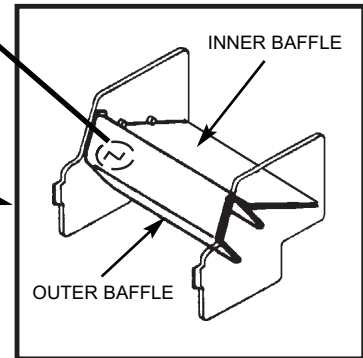
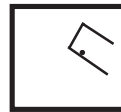
<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	Pump Oscillating	45070
2	PCB, Internal Recirc. Pump Starter	45985
3	Tubing, Clear	47347
4	Bushing Grommet	49144





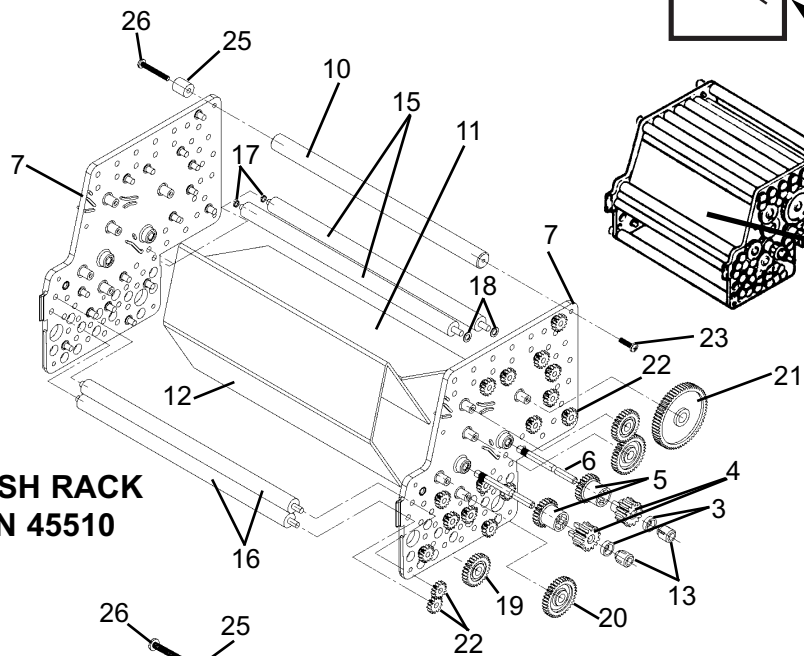
ROLLER TRANSPORT PARTS

RAISED BOSS - ON LEFT END BOTTOM OF BAFFLE MUST PASS BELOW RAISED BOSS ON SIDE PLATE

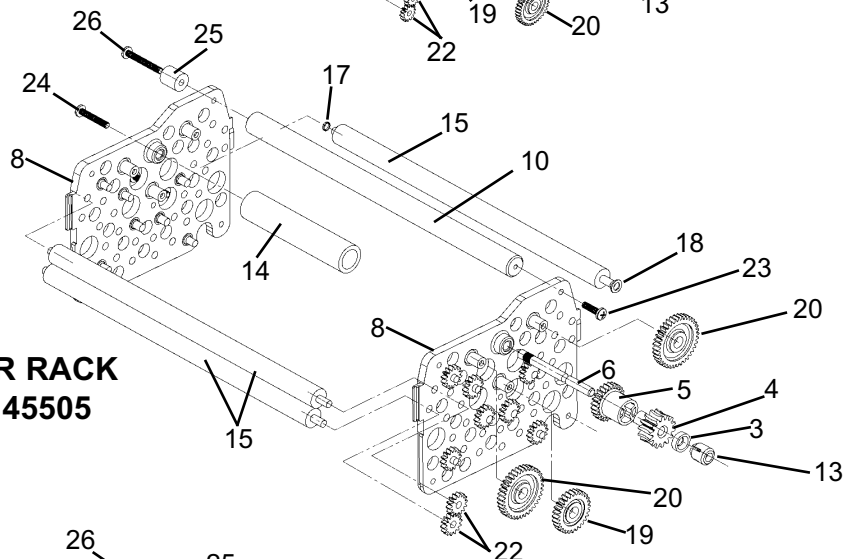


BAFFLE PLATES

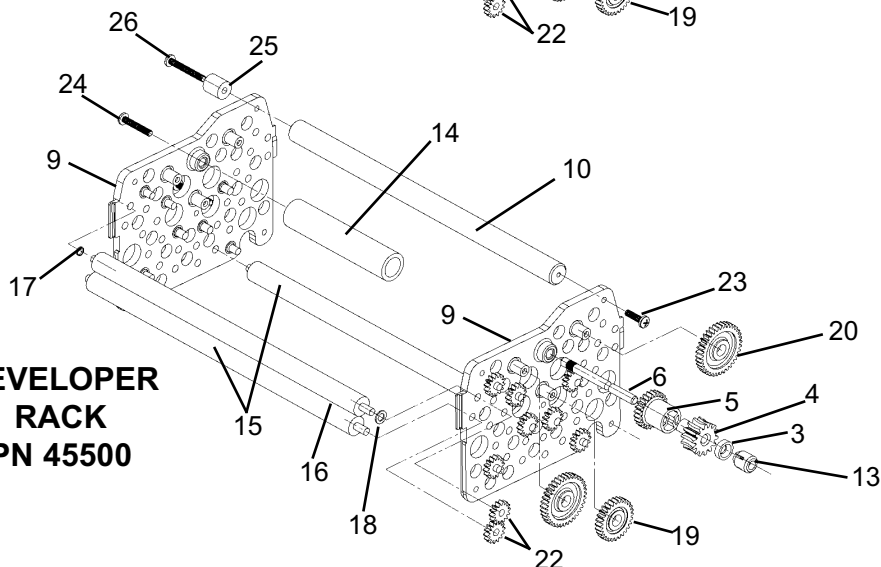
**WASH RACK
PN 45510**



**FIXER RACK
PN 45505**



**DEVELOPER
RACK
PN 45500**



ROLLER TRANSPORT PARTS

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	Solenoid Assembly	43980
3	Spacer Washer	43524
4	Drive Gear (14 Tooth) 3/16" Thick	43513
5	Shaft Gear	43509
6	Axel Shaft	43508
7	End Plate, Modified	43512
8	End Plate, Red	43507
9	End Plate, Black	43502
10	Space Bar	41285
11	Baffle Plate, Flat	43852
12	Baffle Plate, "U" Shaped	43851
13	Spacer Retainer	43517
14	Handle	43516
15	Roller, Plastic	43518
16	Roller, Rubber	43519
17	Washer, White	41284
18	Washer, Black	41821
19	Gear (28 Tooth)	43503
20	Gear (36 Tooth)	43504
21	Gear (60 Tooth)	43520
22	Idler Gear (14 Tooth)	43514
23	Screw	30567
24	Screw	30595
25	Nylon Spacer	45501
26	Screw	31006

MAINTENANCE - WEEKLY

Cleaning the A/T2000 XR on a weekly, monthly, and quarterly basis is critical in maintaining quality processor performance. We recommend the maintenance procedure outlined below using Spray 2000 Plus and Formula 2000 Plus cleansers especially formulated for the A/T2000 XR. This suggested maintenance schedule may have to be modified if your processor requires more frequent cleaning.

WEEKLY...Clean Rack Assemblies

Caution: Turn POWER switch OFF before removing the cover, the rack assembly or disconnecting any electrical cables.

1. SLIDE THE LATCHES OPEN

- ☐ Unplug the processor cover electrical cable from the processor base and remove cover. Set aside.
- ☐ Slide the latches open.
- ☐ Lift each rack assembly straight up, and move it directly to the side to avoid dripping chemistry into the adjacent tanks.

2. CLEAN RACK ASSEMBLIES (Do not soak overnight)

- ☐ Place the rack assemblies in a large sink; thoroughly moisten with Spray 2000 Plus or water.
- ☐ Clean with a soft brush or use a sponge for each rack and warm running water to clean rollers and gears. Be sure to rotate gears while cleaning rollers.
- ☐ Rinse each rack assembly thoroughly and allow to dry. When cleaning the gears, a soft brush can be used to loosen and remove stubborn deposits. Do not use soap, detergents, or abrasive cleaners. Be sure to use a separate soft bristle brush or sponge for each rack. Color - coded sponges are supplied with each case of Air Techniques Developer and Fixer.

3. REINSTALL RACK ASSEMBLIES

- ☐ Slowly lower each rack into its tank. Match color - coded end plates to color coded latches.
- ☐ Do not splash fixer into Developer tank when installing Fixer rack.
- ☐ Close all the latches.

4. PROCESS A CLEANING FILM

- ☐ Turn ON the power.
- ☐ Always process a new cleaning film after cleaning the rack assemblies (at NORMAL SPEED), after READY light illuminates.

MONTHLY...CHANGE CHEMISTRY

If the bottom of the Developer tank is coated with black residue and/or the white gears on the side of the Developer rack are stained grey or black, the developer has been contaminated. The Developer tank and rack must be cleaned with Formula 2000 Plus.

Caution: Do not turn ON power when the Developer and Fixer tanks are empty. Turn on the POWER switch OFF before removing the cover, the rack assemblies, or disconnecting any electrical cables.

Important: Do not use Formula 2000 Plus in Fixer Tank.

1. REMOVE COVER

- ☐ Disconnect the cover electrical cable from the processor base and remove the cover.

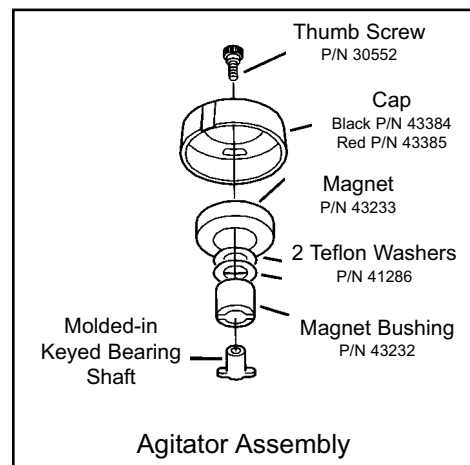
2. REMOVE RACK ASSEMBLIES

- ☐ Remove all the rack assemblies, taking care not to drip fixer into the Developer tank.

3. DRAIN AND CLEAN TANKS

Caution: Be sure to dispose of any chemistry and chemistry laden water in accordance with local codes.

- ☐ Unscrew and remove the Fixer, Developer and Wash tank drain tubes and completely drain the tanks. Replace the color - coded drain tubes, fill all three tanks with warm water, then drain. Repeat this drain/fill drain sequence 4 times all together.
- ☐ Locate the chemistry agitators in the bottom of the Fixer and Developer tanks. These agitators mix the chemistry in the tanks, preventing crystallization and optimizing chemistry performance. To make sure that the agitators move freely and to prevent the agitator screws from seizing, the agitators must be disassembled and cleaned regularly:
 - Remove the thumb screw, plastic cap, magnet, washer and ceramic post.
 - Clean all the parts with Spray 2000 Plus and warm water.
 - Rinse thoroughly and set aside.
- ☐ While the chemistry agitators are disassembled, wipe down the tanks with sponges to eliminate any chemistry residue. Use a separate sponge for each tank.
- ☐ Reassemble the chemistry agitators as shown in Agitator Assembly drawing above.
- ☐ Refill all tanks with warm water to the fill line.
- ☐ Reinstall the drain tubes.
- ☐ Fill all the tanks with warm water to the fill line.



4. FLUSH AGITATORS

- ☐ Replace the processor cover (reconnect the cover electrical cable to the base), press and hold CLEANING MODE and turn ON the power at the same time. When CLEANING MODE is pressed, the agitators rotate and are rinsed by the warm water in the tanks. CLEANING MODE doesn't have initial replenishment.
- ☐ Shut OFF the power after two minutes.
- ☐ Disconnect the cover electrical cable from the base, remove the processor cover and drain all three tanks.
- ☐ Thoroughly wipe up any standing water with a clean paper towel or separate sponges. Any water remaining in the tanks will dilute the chemistry. Reinstall the color - coded drain tubes.

MAINTENANCE - MONTHLY

5. CLEAN RACK ASSEMBLIES

- ☐ Place rack assemblies in a large sink; thoroughly moisten with Spray 2000 Plus or water, then clean with a soft brush or sponge under warm running water.

Important: When cleaning rack assemblies, only use a soft bristle brush. A hard bristle brush may score and scratch the rollers, leaving undesirable markings on the film. Do not use soap, detergents or abrasive cleaners.

- ☐ Rotate the gears and rollers while cleaning.
- ☐ Be sure to use a separate soft brush or sponge for each rack. Color - coded sponges are supplied with each case of Air Techniques Developer and Fixer.
- ☐ Thoroughly rinse the racks and drain.

6. REFILL THE TANKS WITH CHEMISTRY

- ☐ Fill the Fixer tank with fixer to the fill line. POUR SLOWLY! Do not splash or splatter. If fixer is splashed into Developer tank, wipe up completely with clean moistened towel or sponge.
- ☐ Fill the Developer tank with developer to the fill line. POUR SLOWLY! Add 2 oz. of Starter.

7. REINSTALL RACK ASSEMBLIES

- ☐ Slowly lower each rack into its tank. Match color - coded end plates to color coded latches.
- ☐ Do not splash fixer into Developer tank when installing Fixer rack.
- ☐ Close all the latches. Replace the cover and reconnect the cover electrical cable to the processor base.

8. PROCESS A CLEANING FILM

- ☐ Turn ON the power.
- ☐ Process a new cleaning film (at NORMAL SPEED, after READY light illuminates).
- ☐ If chemistry or water splashes onto the film inlet shelf, wipe it up with a paper towel or sponge.

QUARTERLY...CLEAN WITH Formula 2000 Plus

Clean your A/T2000 XR processor with Formula 2000 Plus Tank and Transport Cleanser every three months or whenever a black residue is evident on racks and / or tank. Formula 2000 Plus (Part Number: 43945) is available from your authorized Air Techniques Dealer.

Caution: Turn POWER switch OFF before removing the cover, the rack assembly or disconnecting any electrical cables. Use Formula 2000 Plus IN A WELL VENTILATED AREA.

1. TURN OFF POWER AND CLOSE WATER SUPPLY VALVE

- ☐ Unplug the cover electrical cable from the processor base and remove the cover.

2. REMOVE ALL RACK ASSEMBLIES, RINSE AND SET ASIDE

3. PREPARE PROCESSOR FOR CLEANING WITH FORMULA 2000 Plus

- ☐ Unscrew and remove the Fixer, Developer and Wash tank drain tubes and completely drain the tanks. Replace the color - coded drain tubes, fill all three tanks with warm water, then drain. Repeat this drain / fill drain sequence 4 times all together.

- ☐ Wash tank

1. If the Wash tank is not dirty or shows no evidence of contamination, reinstall the drain tube and the Wash/ Dry rack assembly.
2. If the Wash tank is dirty or contaminated, cleaning with Formula 2000 Plus is recommended.
3. Follow the same procedure as for the Developer tank, as described below, but it is necessary to block the drain tube weep hole with the special washer that is included with the processor. This washer prevents the tank from draining during cleaning. When cleaning is completed, remember to remove the washer and save it for reuse.

Caution: NEVER USE FORMULA 2000 PLUS IN THE FIXER TANK.

- ☐ Fixer Tank

Install the Fixer tank drain tube, fill the Fixer tank with water, install the rack assembly.

- ☐ Developer tank. Install the drain tube.

1. Pour Formula 2000 Plus, Component 1, into the empty Developer tank.
2. Fill the tank with cold water to the fill line.
3. Cut open the Formula 2000 Plus Component 2 powder packet, and sprinkle the contents evenly over the tank. The effervescent action of Formula 2000 Plus will begin as soon as Component 2 is added. Some odor and vapor will be evident. Do this in a well ventilated area.
4. Before placing the Developer rack in the tank, dip each end into the Formula 2000 Plus solution to dissolve any build-up and deposits on the gears and end plates.

- ☐ Replace the cover and reconnect the cover electrical cord to the processor base.

Important: Opening the cover during the processing cycle or during a CLEANING MODE cycle opens the safety switch and stops only the drive motor. The rollers and drive gears stop rotating. This is a safety feature of the A/T2000 XR.

MAINTENANCE - QUARTERLY

4. RUN PROCESSOR

- ☐ Press and hold CLEANING MODE and turn on the power at the same time to activate the 10 minute cleaning cycle. If deeper cleaning is required, press CLEANING MODE again when the cycle ends.
- ☐ Occasionally, while the processor is running, lift the cover and wipe the rollers and drive gears of each rack above the solution with a sponge to loosen any remaining deposits. Use a separate sponge for each tank. Close the cover so that rollers can resume rotating in the cleaning solution.

5. CLEAN THE RACKS

- ☐ Turn OFF the POWER switch, disconnect the cover electrical cable from the processor base and remove the cover.
- ☐ Remove the rack assemblies and place them in a large sink. Clean with a soft brush or sponge under warm water. Rotate the gears and rollers while cleaning. Remove all traces of Formula 2000 Plus to avoid contaminating the fresh chemistry!

6. PRELIMINARY RINSE (flushing Formula 2000 Plus)

- ☐ Make sure the POWER switch is OFF.
- ☐ Remove the drain tubes and drain the tanks. Dispose of the cleaning solution in accordance with local codes. Replace the drain tubes.
- ☐ Fill the tanks with water, replace the cover and reconnect the cover electrical cable. Press and hold CLEANING MODE and turn ON the power at the same time to run the processor for a few minutes, then lift the cover and drain.

CAUTION: Do not turn ON the power when the Developer and Fixer tanks are empty.

Be sure to remove the washer covering the weep hole in the Wash tank drain tube if you cleaned the Wash tank. Save the washer for reuse.

7. FINAL RINSE

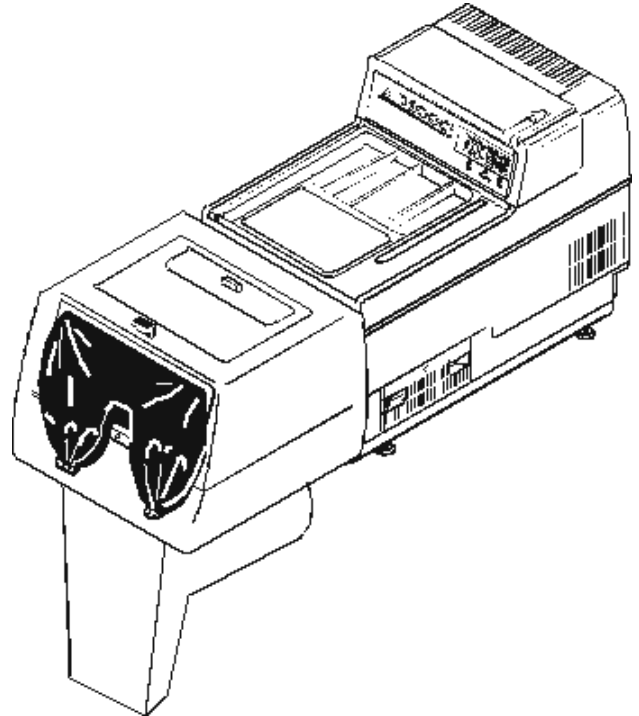
- ☐ Reinstall the drain tubes and fill the tanks with water.
- ☐ Turn ON the processor water supply. Turn ON the POWER switch. The replenisher pumps will run and purge any Formula 2000 Plus that may have gotten in the replenishment lines. Turn OFF the POWER switch after 2 minutes. Lift the cover and drain the tanks.
- ☐ Drain, refill the Developer and Fixer tanks with water, and drain again.
- ☐ Wipe the Developer and Fixer tanks dry with a paper towel. Use a separate towel for each tank.
- ☐ Fill the Fixer and Developer tanks with chemistry, reinstall the rack assemblies and process a new cleaning film. (See MONTHLY MAINTENANCE #6, 7, 8 on page 62)

IMPORTANT:

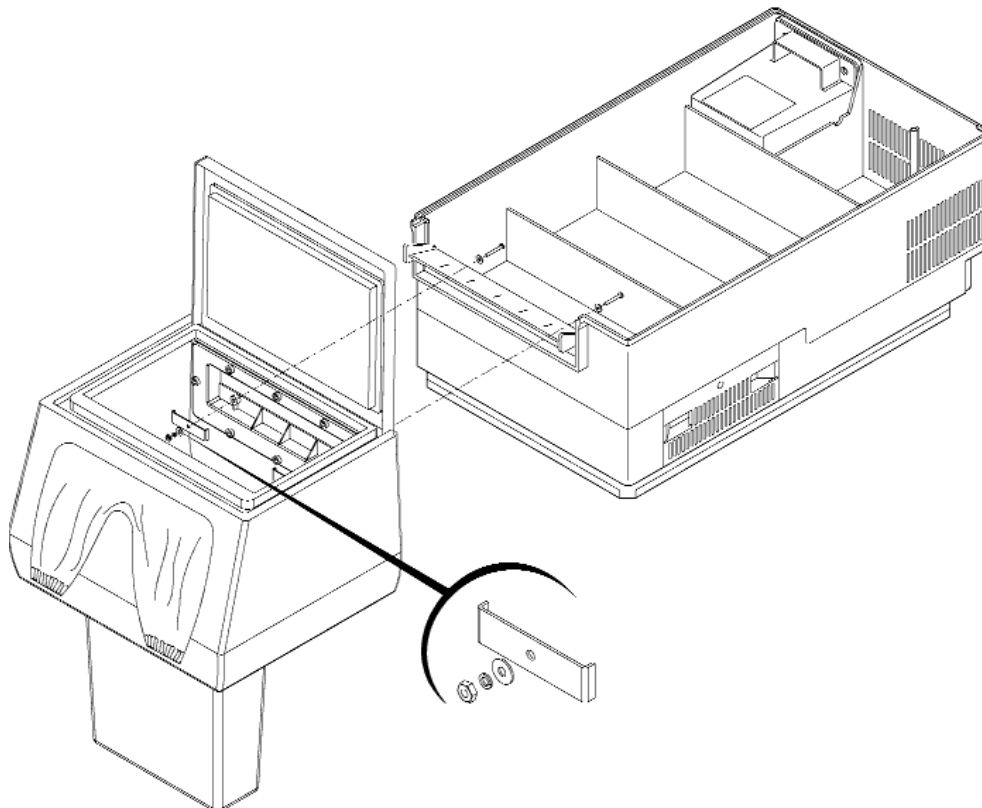
Be sure that the Daylight Loader fits snugly to the front of the processor. Process an unexposed film to test for light leaks. When processing extra-oral films be sure that the sliding cover is closed.

**HARDWARE KIT
P/N 43114****HARDWARE LIST**

<u>Description</u>	<u>QTY.</u>
"C" Brackets	2
Screws 8-32 x 1-1/4"	2
Flat Washer #8	4
Lock Washer #8	2
Nut, 8-32	2

**MOUNTING INSTRUCTIONS**

Remove the existing nuts and screws from the film inlet, discard this hardware and reassemble as shown below with the parts provided.



SPARE PARTS

PART No. DESCRIPTION

29207	CABLE CLAMP
30539	SCREW - GEAR COVER
30550	SCREW- BOTTOM PLATE
30552	THUMB SCREW- CIRCULATOR COVER
30562	SCREW - ELECTRICAL COVER
30568	SCREW- GEAR COVER
30569	SCREW- DRIVE BLOCK MOUNT
41286	TEFLON WASHER
41914	FUSE, SLO-BLO, 8 AMP (PKG. OF 5)
43189	WASH TANK DRAIN TUBE PLUG KIT
43220	MOTOR - CIRCULATOR
43232	AGITATOR BUSHING
43233	AGITATOR MAGNET
43238-1	FILM FEEDER- GUIDE BLOCK
43258	GEAR COVER - MOLDED
43259	ELECTRICAL COMPARTMENT COVER
43270	DRAIN TUBE ASS'Y - WASH
43271	DRAIN TUBE WASHER
43286	DRAIN TUBE ASS'Y- DEVELOPER (BLACK)
43287	DRAIN TUBE ASS'Y - FIXER (RED)
43357	DRAIN HOSE STRAP
43384	DEVELOPER AGITATOR COVER - BLACK
43385	DEVELOPER AGITATOR COVER - BLACK
43578	FAN CIRCULATOR MOTOR
43859	HEATER PAD HOLD DOWN
43885	BOTTOM PLATE
43980	SOLENOID VALVE (NO FLOW RESTRICTOR)
44039	REPLENISHER TUBING CLAMP

COVER ASSEMBLY COMPONENT PARTS

43309-1	FILM RECEPTACLE DIVIDER
43330	DRYER HEATER AND FAN PANEL ASS'Y
43343-1	CABLE ASS'Y, DENTAL FAN PANEL
43530	DRYER FAN
43584	FILM SHUTTER ASS'Y
43587	HINGE BLOCK, MOLDED
43658	SHUTTER GUARD
43811	AIR HEATER ASS'Y
44422	POWER SWITCH
44482	FILM SENSOR ASS'Y
45301	MOLDED COVER W/ HARDWARE INSERTS
45351	COVER INSERT WITH LIGHT SEAL

MAJOR ASS'Y COMPONENT PARTS

45100	LEVELING BASE ASS'Y
45200	BASE ASS'Y, STANDARD AT2000XR
45230	BASE ASS'Y, INTERNAL WATER RECIRC.
45415	ELECTRONICS MODULE, STND AT2000XR
45425	ELECTRONICS MODULE, AT2000XR CUL
45500	DEVELOPER RACK ASS'Y
45505	FIXER RACK ASS'Y
45510	WASH/DRY RACK ASS'Y
45800	COVER ASS'Y, ALL AT2000XR's

PROCESSOR SPARE PART KITS

PART No. DESCRIPTION

45550	PRESSURE REGULATOR KIT
45691	CIRCULATOR DRAWER REPLACE KIT
45920	LINE CORD REPLACE, 115V IEC PLUG
43931	SOLENOID VALVE & FITTING ASSS KIT
45935	REPLENISHER ASSEMBLY WITH CIRCULATOR DRAWER
45950	HEATER PAD ASS'Y REPLACEMENT KIT
45970	THERMISTOR REPLACEMENT KIT
45975	EMI/RFI FILTER REPLACEMENT, IEC POWER ENTRY
49165	WATER HOSE
49793	POPPET VALVE KIT (2 VALVES & 2 O-RINGS)
49963	CLAMP, TANK DRAIN
45910	INTERLOCK SWITCH REPLACE KIT
44041	REPLENISHER FIXER OUTLET TUBING (RED)
44042	REPLENISHER DEVELOPER OUTLET TUBING (BLK)
44043	REPLENISHER FIXER INLET TUBING (RED)
44044	REPLENISHER DEVELOPER INLET TUBING (BLK)
44063	DEVELOPER TUBE & CAP ASS'Y
44064	FIXER TUBE & CAP ASS'Y
44206	DRAIN MANIFOLD. MOLDED
44209	TUBING, DEVELOPER DRAIN
44210	TUBING, FIXER DRAIN
44211	TUBING, WATER DRAIN
44265	REPLENISHER ASS'Y
44361	DRAIN HOSE, DEVELOPER (BLACK)
44362	DRAIN HOSE, FIXER (RED)
44363	DRAIN HOSE, WATER (WHITE)
45042	RIGHT ANGLE CAP, DEVELOPER REPLENISHER
45043	LOCKING RING FOR P/N 45042
45201	BASE W/ HARDWARE INSERTS & DRAIN ELBOWS
45221	WATER INLET "J" TUBE
45240	DRIVE BLOCK ASS'Y
45258	PLATE, SINGLE FUSE HOLDER
45262	CIRCULATOR DRAWER ASS'Y
45278	PLATE, DUAL FUSE HOLDER
45323	STANDOFF, INTERLOCK ACTUATOR
45380	FILM INLET ASS'Y (INCLUDES P/N 45567 & 43238-1)
45440	BASE WIRING HARNESS, COMPLETE
45445	CONNECTOR PLATE, ETCHED
45450	WATER LEVEL SENSOR
45567	FILTER INLET, SILKSCREENED

DRIVE BLOCK COMPONENT PARTS**PART No. DESCRIPTION**

41127	SNAP RING
43223	DRIVE SHAFT CLAMP - BLACK
43241M	DRIVE BLOCK, MACHINED
43242	MAIN DRIVE SHAFT
43243	DRIVER GEAR (12 TOOTH)
43244	BEARING, DRIVE SHAFT
43246	DRIVE SHAFT CLAMP - RED
43247	DRIVE CHAIN
43253	DRIVE MOTOR MOUNTING PLATE
43254	RACK LATCH - BLACK
43255	RACK LATCH - RED
43256	RACK LATCH - NATURAL
44275	CAPACITOR, DRIVE MOTOR
45472	DRIVE MOTOR ASS'Y

RACK ASSEMBY COMMON PARTS**PART No. DESCRIPTION**

30567	SCREW
30595	SCREW- DEVELOPER & FIXER RACKS ONLY
31006	SCREW
41284	RUBBER ROLLER SPACER - WHITE
41285	SPACER BAR
41292	IDLER GEAR (14 TOOTH)
41821	RUBBER ROLLER SPACER- BLACK
43503	GEAR (28 TOOTH)
43504	GEAR (36 TOOTH)
43508	AXLE SHAFT
43509	SHAFT GEAR (24 TOOTH)
43513	DRIVE GEAR (14 TOOTH)
43517	SPACER RETAINER
43518	PLASTIC ROLLER
43519	RUBBER ROLLER
43524	SPACER WASHER
43527	GUIDE ROLLER
45501	NYLON SPACER

RACK ASSEMBY PART KITS

43694	GEAR REPLACEMENT KIT- 14 TOOTH GEAR
43736	GEAR REPLACEMENT KIT- 28, 36, 60 TOOTH GEARS

DEVELOPER RACK DEDICATED PARTS**PART No. DESCRIPTION**

43502	END PLATE, BLACK
43516	HANDLE

FIXER RACK DEDICATED PARTS

43507	END PLATE, RED
43516	HANDLE

WASH/DRY RACK DEDICATED PARTS

41307	INNER AIR BAFFLE, FLAT
43512	END PLATE, GRAY
43518W	PLASTIC ROLLER - WASH/DRY ONLY
43520	GEAR (60 TOOTH)
43526	OUTER AIR BAFFLE, "U" SHAPE

DAYLIGHT LOADER COMPONENT PARTS

40153	CUFF ASS'Y - ONE PER UNIT
40154	CUFF GASKET
40155	CLOTH FILM BAG
43114	HARDWARE PACK - FOR MOUNTING
43117-1	FOAM GASKET
44637	VIEW GLASS - AMBER
44647	VIEW GLASS - RED
45630	COVER W/ RED VIEW GLASS

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- ☐ AirStar®
- ☐ A/T 2000® XR
- ☐ Guardian™ Amalgam Collector
- ☐ Peri-Pro®
- ☐ Provecta 70™
- ☐ Rinsendo Root Canal Disinfection System
- ☐ ScanX®
- ☐ STS™
- ☐ VacStar™



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