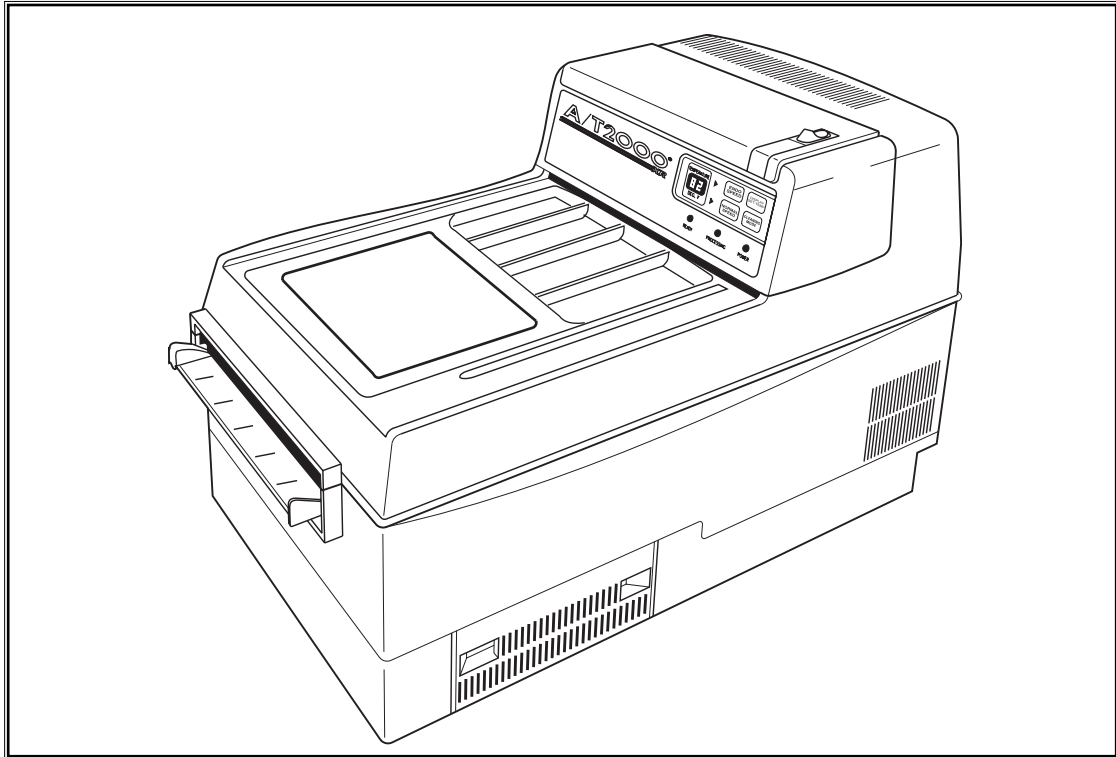


A/T2000[®]

XR

AUTOMATIC FILM PROCESSOR OPERATOR'S MANUAL



**AIR
TECHNIQUES**
INC.

 ALLPRO IMAGING

ISO
9001
ISO 13485
FDA-GMP COMPLIANT

TABLE OF CONTENTS

<u>Description</u>	<u>Page</u>
Congratulations . . . . .	.2
Air Techniques Warranty . . . . .	.2
On-Line Warranty Registration . . . . .	.2
External Key Parts Identification . . . . .	.4
Internal Key Parts Identification . . . . .	.5
Operator Controls . . . . .	.6
Know Your Processor . . . . .	.7
Daily Operation . . . . .	.8
Processed Film Testing . . . . .	.10
Avoiding Chemistry Contamination . . . . .	.11
Weekly Maintenance . . . . .	.12
Monthly Maintenance . . . . .	.13
Quarterly Maintenance . . . . .	.15
Specifications . . . . .	.17
Plumbing Connections - Option 1 . . . . .	.18
Plumbing Connections - Option 2 . . . . .	.19
Trouble Shooting . . . . .	.20
Optional Accessories . . . . .	.29
A/T 2000XR, PN 45009 (with Water Recirculation) . . . . .	.30

CONGRATULATIONS

You have purchased a new, easy to use, easy to maintain A/T2000®XR Automatic Dental Film Processor!

Your new processor is manufactured by Air Techniques, Inc., manufacturer of dental equipment since 1962. All Air Techniques products - ACCENT™ Intraoral Digital X-ray Image System, Acclaim® Intraoral Digital Video Camera System, AirStar® Dental Air System, VacStar™ and STS® Dental Vacuum Systems, Peri-Pro® and A/T2000®XR film processors, A/T ScanX® phosphor storage plate scanner, Guardian™ Amalgam Collector, Provecta 70™ X-ray. - are designed to meet the exacting quality standards of modern dentistry.

A/T2000®XR processes all intraoral, occlusal, TMJ, panoramic, cephalometric, and duplicating film sizes. The operator can choose between a "quick-look" 2½ minute ENDO SPEED cycle or a full 5½ minutes NORMAL SPEED cycle. The active mode is clearly indicated with an illuminated arrow.

Simply select the speed and insert a film into the film inlet and the processing cycle automatically starts. When processing is complete, the film exits into the film receptacle tray, and the A/T2000®XR automatically returns to stand-by.

A/T2000®XR takes the guesswork out of chemistry replenishment - a micro-computer counts film and automatically replenishes chemistry proportional to film load for the best processing results. Your new A/T2000®XR is also designed with the environment in mind - used chemistry is easily captured for disposal in accordance with local codes. For locations where local codes require or the user opts for water conservation, Air Techniques offers an A/T2000®XR Model 45009 with built-in water recirculation.

A/T2000®XR incorporates modular components for easy maintenance and service. To make sure your A/T2000®XR gives you the highest level of service, please review and follow the operation and maintenance procedures outlined in this OPERATOR'S MANUAL.

WARRANTY

The A/T2000®XR Automatic Dental Film Processor is warranted to be free from defects in material and workmanship from the date of installation for a period of twelve (12) months.

Any item returned to our factory through an Air Techniques' Authorized Dealer, will be repaired or replaced at our option at no charge provided that our inspection shall indicate it to have been defective. Dealer labor, shipping and handling charges are not covered by this warranty.

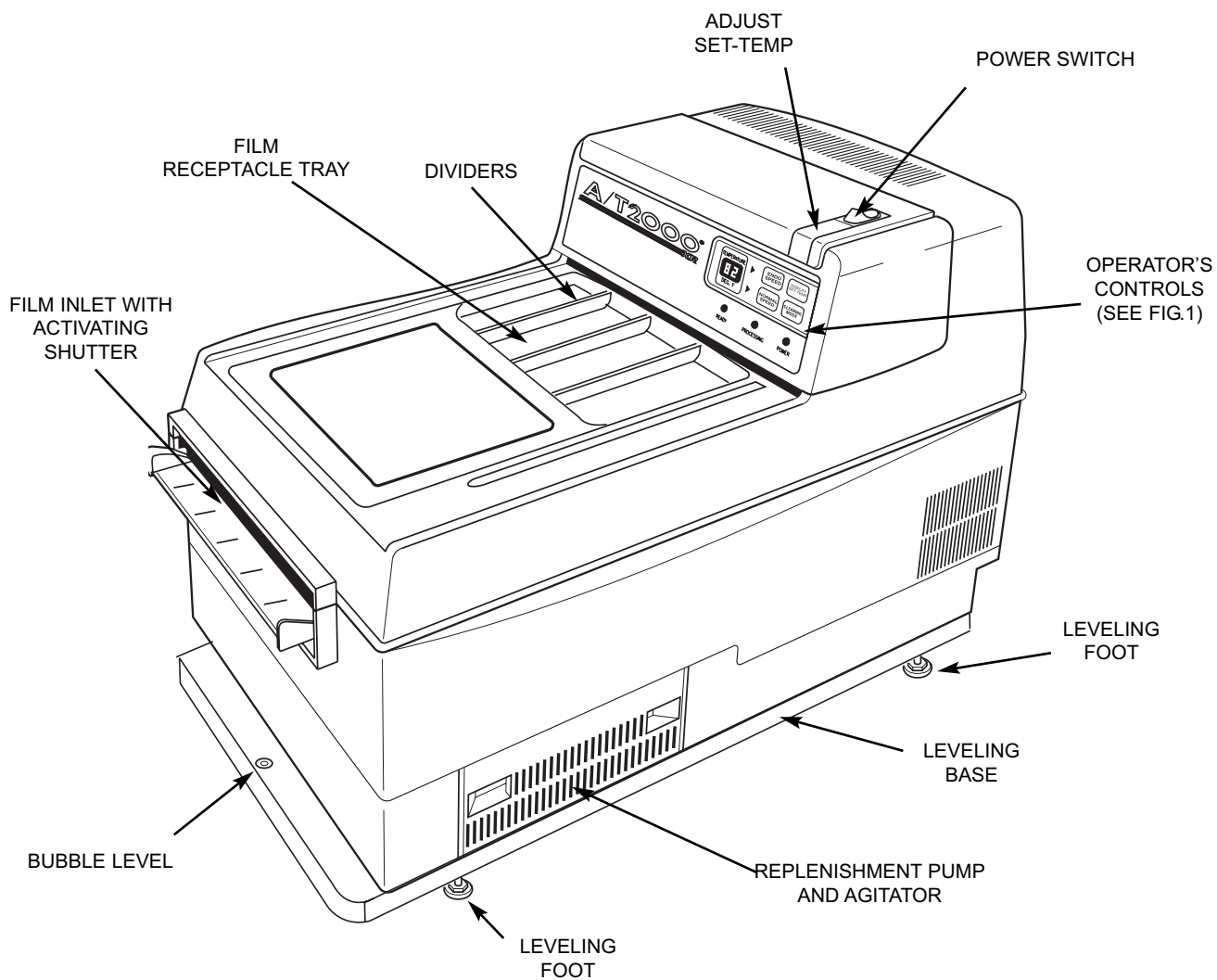
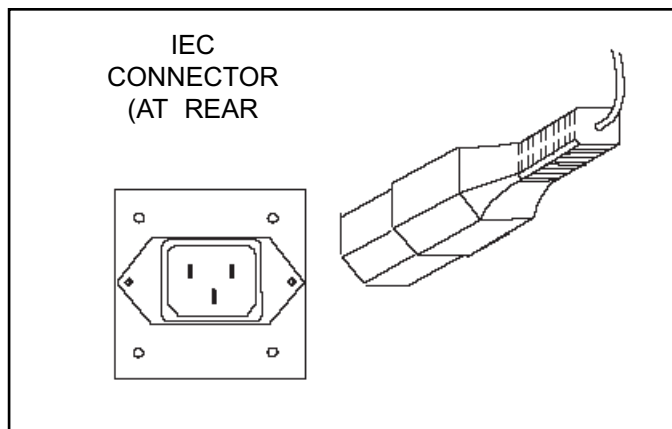
This warranty does not apply to damage due to shipping, misuse, careless handling or repairs by other than authorized service personnel. Warranty void if installed or serviced by other than Authorized Air Techniques' Dealer service personnel. Air Techniques, Inc. is not liable for indirect or consequential damages or loss of any nature in connection with this equipment.

This warranty is in lieu of all other warranties express or implied. No representative or person is authorized to assume for us any liability in connection with the sale of our equipment.

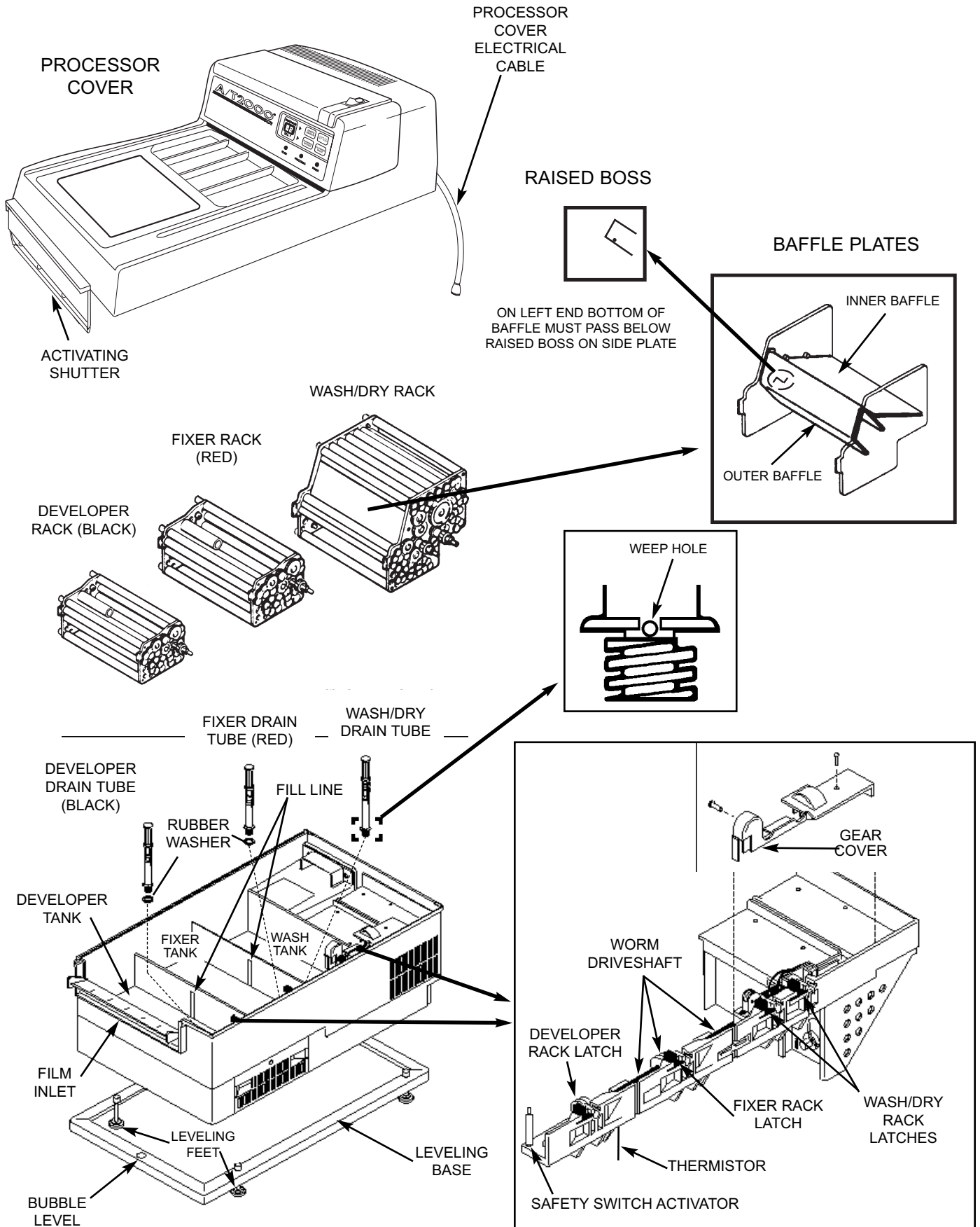
ON-LINE WARRANTY REGISTRATION

Quickly and easily register your new A/T2000®XR on-line. Just have your product model number and serial number available and log onto **www.airtechniques.com**. When at the Air Techniques website, select the Warranty Registration link and complete the registration form. This on-line registration ensures a record for the warranty period and helps Air Techniques keep you informed of product updates and other valuable information.

EXTERNAL KEY PARTS IDENTIFICATION



INTERNAL KEY PARTS IDENTIFICATION



OPERATOR CONTROLS

Before processing films, we recommend familiarizing yourself with the operator controls (Fig. 1):

INDICATOR LIGHTS

POWER

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

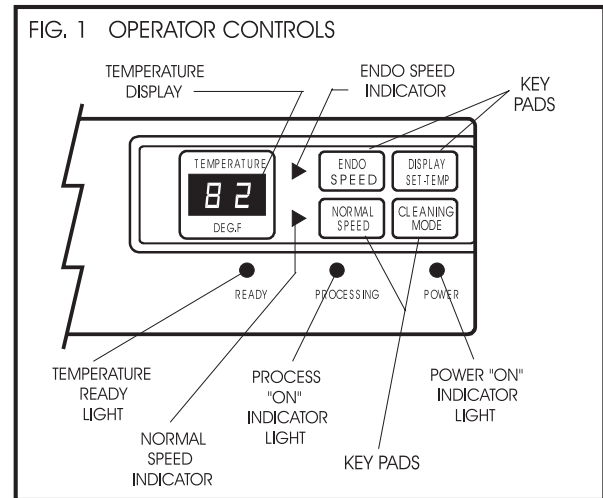
READY

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, PROCESSING will not be illuminated. When the CLEANING MODE is selected, the PROCESSING light flashes (short-long...).



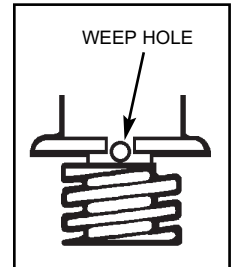
KEY PADS

- 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 2½ minutes.
- NORMAL SPEED: The arrow indicator to the left of the keypad illuminates steady when the A/T 2000XR is in the NORMAL SPEED mode. Film is processed in 5½ 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.

KNOW YOUR PROCESSOR

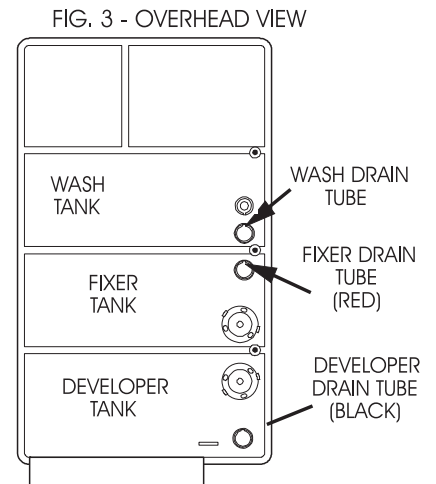
The A/T 2000®XR is designed with modular parts that can be removed and reinstalled with ease, making maintenance relatively effortless. Get to know the inside of your processor before processing film and before following the recommended procedures in the Maintenance section of this manual.

1. The A/T 2000®XR uses a standard dedicated 115V outlet.
2. Rack Assembly end plates, latches, and drain tubes are color coded for easy identification: Developer is black and Fixer is red.
3. The wash tank drain tube is different from the other drain tubes. It has a "weep" hole to prevent algae growth in the wash tank. When cleaning the Wash tank with Formula 2000, it is necessary to cover the drain tube weep hole with a washer that comes with the processor. This washer is the same as the ones on the Developer and Fixer drain tubes. After cleaning, this washer **MUST** be removed and saved for reuse. (Fig. 2 & 3)



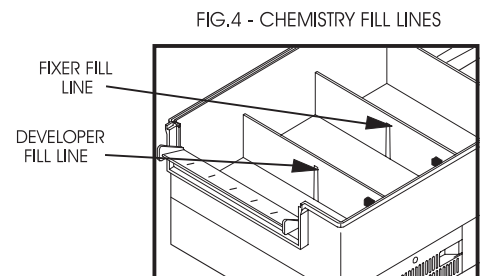
5. To remove a rack assembly, first slide the latches to the open position. Be sure to slide latches back into the lock position after reinstalling the rack assemblies.
6. The Wash / Dry Rack Assembly comes with two baffle plates installed: an inner baffle and an outer baffle. If these slide out accidentally during cleaning, be sure to reinstall them in exactly the same way. See the illustration in Internal Key Parts Identification, pg. 5. The inner baffle is installed first. On the left end, the bottom of the outer baffle must pass below raised boss on side plate.

7. Make sure your processor is level. Check the bubble level on the leveling base at the front of the processor. The bubble should be in the middle. If it is not, level the processor by adjusting the leveling feet. The processor should be on as flat a surface as possible.



8. With rack assemblies removed, fill the tanks with chemistry to the fill line only. (Fig. 4)
9. Replace replenishment chemistry bottles every two weeks or when there is 1" or less left in the bottom of the bottles, whichever comes first. Do not mix chemistry brands. Do not use the 1" of chemistry left in the bottles.

10. DO NOT, UNDER ANY CIRCUMSTANCES, USE SOAP, DETERGENTS OR OVER-THE-COUNTER CLEANSERS TO CLEAN RACK ASSEMBLIES OR TANKS. Use only approved cleaners designed for cleaning X-ray film processors.



NOTES:

1. To prevent damage always raise front first when lifting cover.
2. If the cover is opened during processing, the safety switch opens and the drive motor stops. That is a safety feature of the A/T 2000®XR.

DAILY OPERATION

BEFORE PROCESSING FILM

CAUTION: Developer and Fixer tanks must contain chemistry before processing film. See Monthly Maintenance for chemistry filling procedure.

1. CHECK FLUID LEVELS IN THE CHEMISTRY REPLENISHMENT BOTTLES.
 - Replace replenishment chemistry bottles every two weeks or when there is 1" or less left in the bottom of the bottles, whichever comes first. Do not mix chemistry brands. Do not use the last 1" of chemistry left in the bottles.
2. TURN ON MAIN WATER SUPPLY.
3. TURN ON POWER SWITCH
 - Automatically, approximately 4 1/4 oz. (125 ml) of chemistry is pumped into each of the developer and fixer tanks to compensate for oxidation.
 - POWER, TEMPERATURE display, and the NORMAL SPEED lights illuminate.
 - READY light illuminates when chemistry reaches SET-TEMP (factory set at 82°F/28°C) in approximately 15 to 35 minutes, depending on initial chemistry temperature.
4. READY TO PROCESS
 - When the READY light is on, A/T2000@XR is at the factory SET-TEMP of 82°F (28°C) and ready to process film.
5. INSERT CLEANING FILM
 - Insert a new cleaning film after the READY light illuminates.
 - The cleaning film picks up condensate and/or dried chemistry deposits which may be on the rollers. Use a new cleaning film every time to avoid contaminating the chemistry. (A previously used cleaning film has residual fixer on it which will contaminate the developer.)
 - After the cleaning film exits, the processor will return to stand-by automatically.

IMPORTANT: If the processor is idle (no films processed) for more than 2 hours, insert a new cleaning film before resuming processing.

PROCESSING FILM

1. SELECT PROCESS MODE

ENDO SPEED

- For non-archival "quick-look" 2½ min. #2 intraoral film processing only, press ENDO SPEED when the processor is in the stand-by mode (when PROCESSING light is not illuminated). ENDO SPEED is for intraoral films only and must not be used with panoramic or cephalometric films.
- The indicator light next to ENDO SPEED flashes as a reminder that the processor is in the ENDO SPEED mode.
- Insert ONE #2 film only, as described on pg. 9. Wait until the film exits and unit stops processing before inserting the next endo film. If you do not wait, the insertion of another film will override the ENDO SPEED mode and the processor will automatically switch to NORMAL SPEED.
- When the endo cycle finishes, the processor automatically returns to stand-by and NORMAL SPEED.

PROCESSING FILM (continued)

NORMAL SPEED

- For archival quality films, 5½ min. processing of all size films, use NORMAL SPEED mode. If the processor is not in this mode, press NORMAL SPEED. NOTE: If an ENDO film is processing, its exit will be delayed if NORMAL SPEED is pressed.
- Insert film as described below.

NOTE: When processing film in ENDO SPEED, it is possible to change to NORMAL SPEED before the film exits. But when processing film in NORMAL SPEED, it is not possible to change to ENDO SPEED until the film has exited and the processing light has extinguished. This feature is designed to protect archival quality films.

2. INSERT FILM

Follow the film manufacturer's exposure guidelines to obtain quality radiographs.

If radiographs processed at NORMAL SPEED and 82°F (28°C) are too dark, reduce the x-ray exposure/time setting.

- Insert a film in the film inlet: processing starts automatically. A/T 2000®XR has 6 tracks for intra-oral film. Feed film in lengthwise, into alternating tracks to prevent overlapping. For example, insert 1 film each into tracks 1,3,5: then 1 film each into tracks 2,4,6. (Tracks are clearly marked on the film inlet.)
- Feed in large films lengthwise and straight. Be sure to wait until the PROCESSING light stops flashing, approximately 5 sec. after the film is in the processor, before inserting the next film. Wait approximately 20 sec. before turning on the lights or opening the darkroom door.
- When loading intraoral film, always make sure the marker point enters last.
BE SURE TO STRAIGHTEN BENT FILMS BEFORE INSERTING IN FILM INLET.

3. CLEANING MODE

- ONLY push CLEANING MODE to activate processing when executing recommended maintenance procedures (SEE MAINTENANCE).

4. AT END OF THE DAY

- Turn off the POWER switch and the external water supply valve. (If you have an A/T 2000®XR with water recirculation, refer to pg. 30.)

PROCESSED FILM TESTING

PROCESSED FILM TESTING

1. TESTING PROCESSED FILM QUALITY

- Turn on the POWER switch and wait for the READY light to illuminate.
- Insert a new cleaning film. Run it through at NORMAL SPEED.
- Insert an unexposed film and process at NORMAL SPEED. The processed film should be completely clear if the film was handled under darkroom conditions with the lights off.
- Expose a film to room light for 3-5 sec. and then process at NORMAL SPEED. The processed film should be completely black. If the results differ from the above, consult TROUBLE SHOOTING, pages. 20-28 for suggestions on how to correct.

2. TESTING PROCESSED FILM CONSISTENCY

- At NORMAL SPEED process a double film packet that has been exposed as part of a regular X-ray examination.
- Mount one of these properly processed films in the corner of a view box, and retain it as an index film.
- Periodically, place a film next to this index film for comparison. When comparing, make sure the film was processed at NORMAL SPEED and has been exposed using the identical technique factors as the index film. Compare the density and clarity of the two films.

NOTE: Consult TROUBLE SHOOTING, pages 20 through 28 in this manual for suggestions on how to correct film density and clarity.

AVOID 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, (Part Number: 43965). See Quarterly Cleaning, pages. 15 & 16 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 when cleaning rack assemblies.
5. Use of soap, detergents, etc. to clean racks or tanks. Only use recommended cleaner.
6. Use of Spray 2000 to clean the Developer tank. Only use on racks since it is very difficult to thoroughly rinse Spray 2000 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, including forgetting to run developer agitator while rinsing.
13. Failing to purge replenishment lines after using Formula 2000.
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. 15 & 16.

WEEKLY MAINTENANCE

Cleaning your A/T 2000®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 and Formula 2000 cleansers especially Formulated for the A/T 2000®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.

NOTE: Dripping just a few drops of Fixer into the Developer tank will contaminate the Developer and result in poor film quality.

2. CLEAN RACK ASSEMBLIES (Do not soak overnight)

- Place the rack assemblies in a large sink; thoroughly moisten with Spray 2000 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.

NOTE: 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 brush or sponge for each rack. Color coded sponges are supplied with each case of Air Techniques Developer & 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.
- Replace the cover and reattach the electrical cable to the base.

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 (see Quarterly Maintenance pages. 15 & 16). See Avoiding Chemistry Contamination, pg. 11 and TROUBLE SHOOTING, pages. 20-28 for causes and solutions.

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

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 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 Fig. 5. 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.

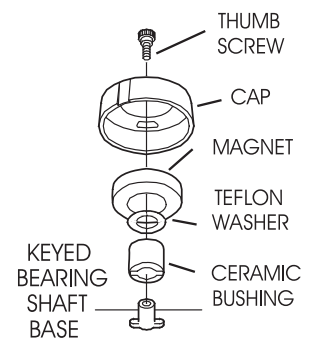


FIG. 5 - AGITATOR

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 will prevent initial replenishment from occurring.
- 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.

MONTHLY MAINTENANCE

5. CLEAN RACK ASSEMBLIES

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

NOTE: 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 the 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, matching color-coded rack end plates to color-coded latches and color coded drain tubes. Do not splash fixer into Developer tank when installing Fixer rack.
- Close all 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 MAINTENANCE

QUARTERLY...Clean with Formula 2000

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

CAUTION: Turn POWER switch OFF before removing the cover, the rack assemblies, or disconnecting any electrical cables. USE FORMULA 2000 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

- 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
 - If the Wash tank is not dirty or shows no evidence of contamination, reinstall the drain tube and the Wash/Dry rack assembly.
 - If the Wash tank is dirty or contaminated, cleaning with Formula 2000 is recommended. 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 (See Fig. 2). When cleaning is completed, remember to remove the washer and save it for reuse.
- Fixer tank
 - Install the Fixer tank drain tube, fill the Fixer tank with water, install the rack assembly.
 - NEVER USE FORMULA 2000 IN THE FIXER TANK.
- Developer tank
 - Install the drain tube.
 - Pour Formula 2000, Component 1, into the empty Developer tank.
 - Fill the tank with cold water to the fill line.
 - Cut open the Formula 2000 Component 2 powder packet, and sprinkle the contents evenly over the tank. The effervescent action of Formula 2000 will begin as soon as Component 2 is added. Some odor and vapor will be evident. Do this in a well ventilated area.
 - Before placing the Developer rack in the tank, dip each end into the Formula 2000 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.

NOTE: 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/T 2000®XR.

QUARTERLY MAINTENANCE

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 first 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 to avoid contaminating the fresh chemistry!

6. PRELIMINARY RINSE (flushing Formula 2000)

- 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.

<p>CAUTION: Do not turn on the power when the Developer and Fixer tanks are empty.</p>

- 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 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 pg. 14.)

SPECIFICATIONS

ELECTRICAL	115V, 60Hz, 8 Amp. Use a 15 Amp, 3 prong, grounded outlet. A separate dedicated 15 Amp line is recommended.
WATER FLOW	½ gallon per minute (while processing film). Water softeners should not be used.
WATER PRESSURE	80 psi maximum/30 psi minimum. If water pressure is high, above 60 psi, install pressure regulator available on PN 45550. Water source must have a manual shut-off near processor.
WATER CONNECTION	Valved 3/4" male straight pipe or standard male garden hose fitting at rear of processor.
WATER BACKFLOW PREVENTION	An air break is not required because the processor has a 1" air gap between water supply inlet and top of operating water level in wash tank.
WATER TEMP	55°F (13°C) to 80°F (27°C). A mixing valve is not required if water temperature is within this range.
DRAIN	1½" vertical PVC standpipe, open at top, connected to 1½" PVC trap. 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. (See below for required clearances.)
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.
CHEMISTRY REPLENISHMENT (approximate)	
Initial Power On	4-1/4 ounces in 90 seconds
Every 13-3/4 inch Linear film	1-2/3 ounces in 35 seconds

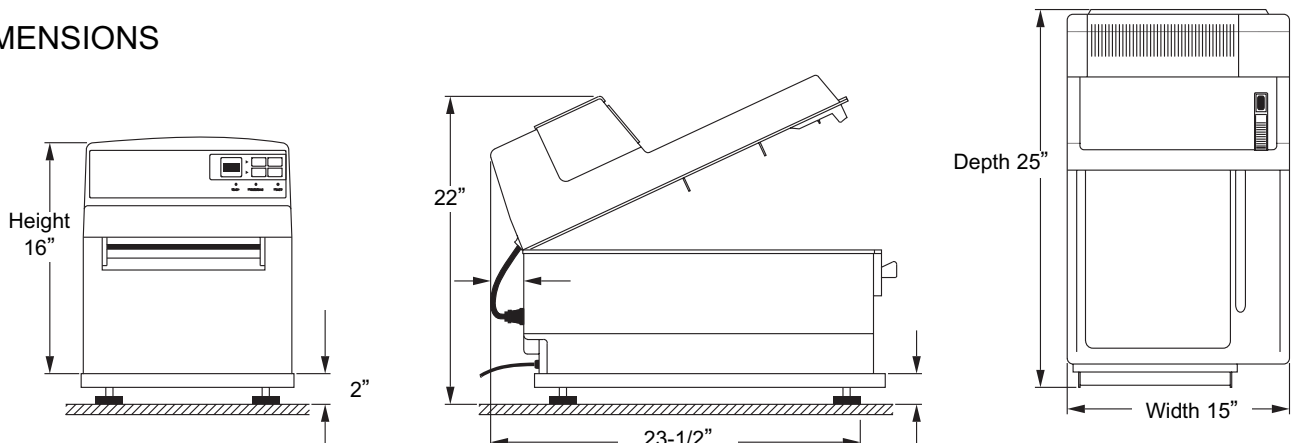
FILM FEED AND PROCESSING TIMES*

MODE	FILM SIZE	FEED TIME**		PROCESS TIME		TOTAL TIME	CYCLE*** RUN TIME Min. (Sec)
		"Leading Edge in" to "Trailing Edge in" Min. (Sec.)	()	"Trailing Edge in" to "Trailing Edge out" Min. (Sec)	()	"Leading Edge in" to "Trailing Edge in" ()	
ENDO	#2 (Intraoral)	1/8	(7)	2 ½	(150)	2 5/8 (157)	3:06 (186)
ENDO (CUL)	#2 (Intraoral)	1/8	(7)	2 1/3	(140)	2 ½ (147)	3:06 (186)
NORMAL	#2 (Intraoral)	1/4	(15)	5 ½	(330)	5 3/4 (345)	6:30 (390)
	10" (Ceph)	1 2/3	(100)	5 ½	(330)	7 1/6 (430)	
	12" (Pan)	2	(120)	5 ½	(330)	7 1/2 (450)	

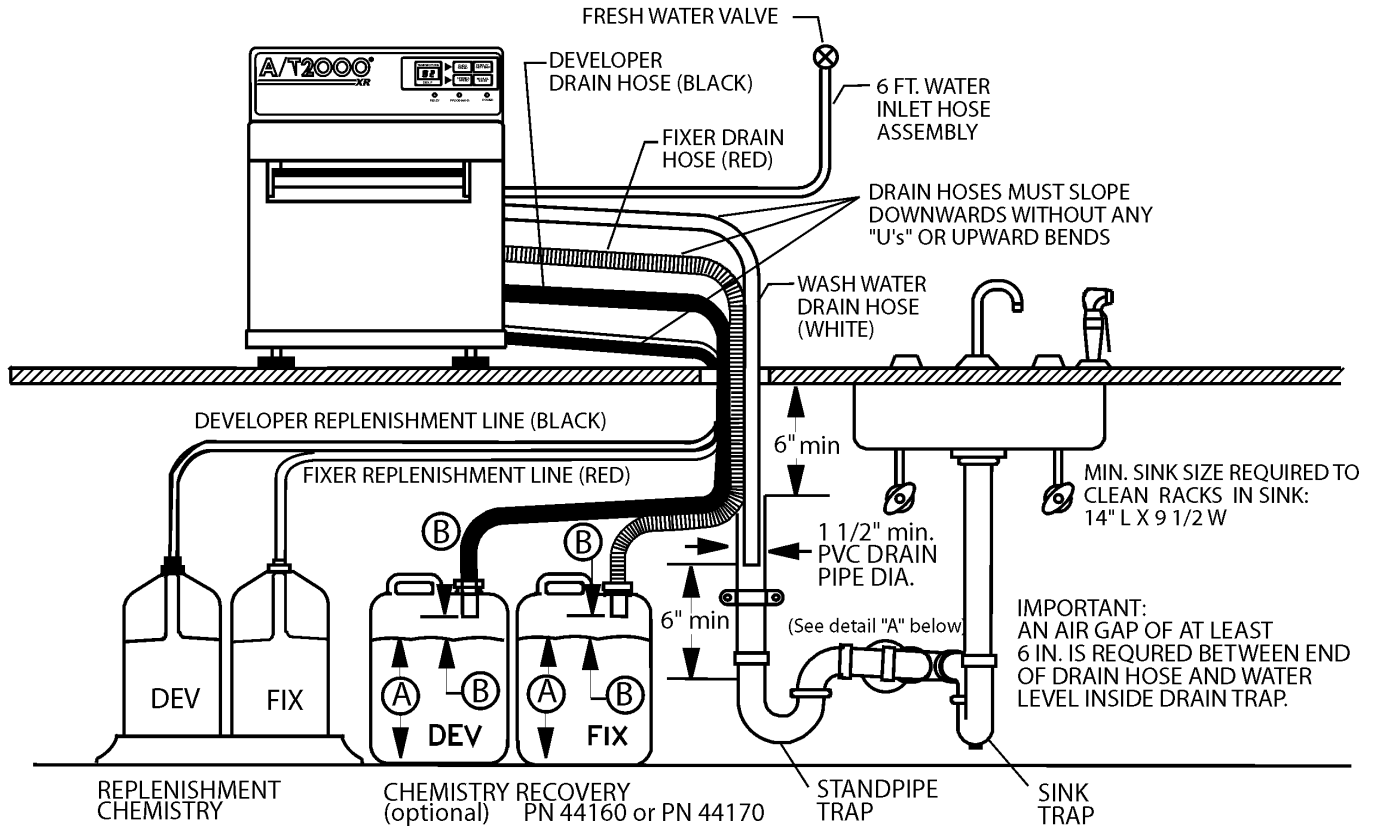
*Times are approximate. ** Time varies slightly with other size intraoral films, depending on film length.

***Time measurement from shutter closing to drive motor shut-off.

DIMENSIONS

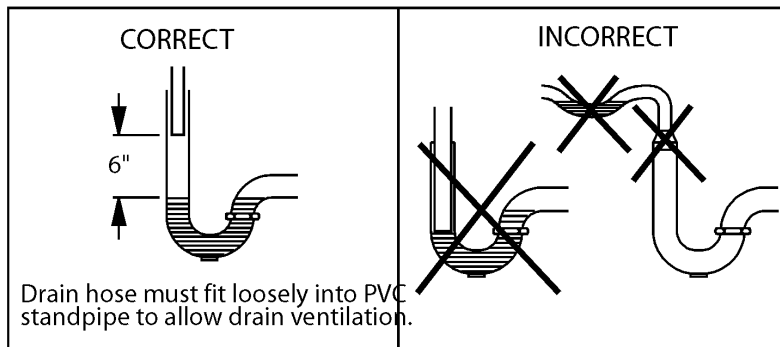


PLUMBING CONNECTIONS - OPTION 1

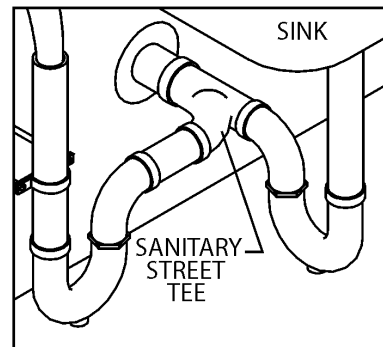


- (A) THE MAXIMUM DISCHARGED FLUID LEVEL
- (B) 2" MINIMUM

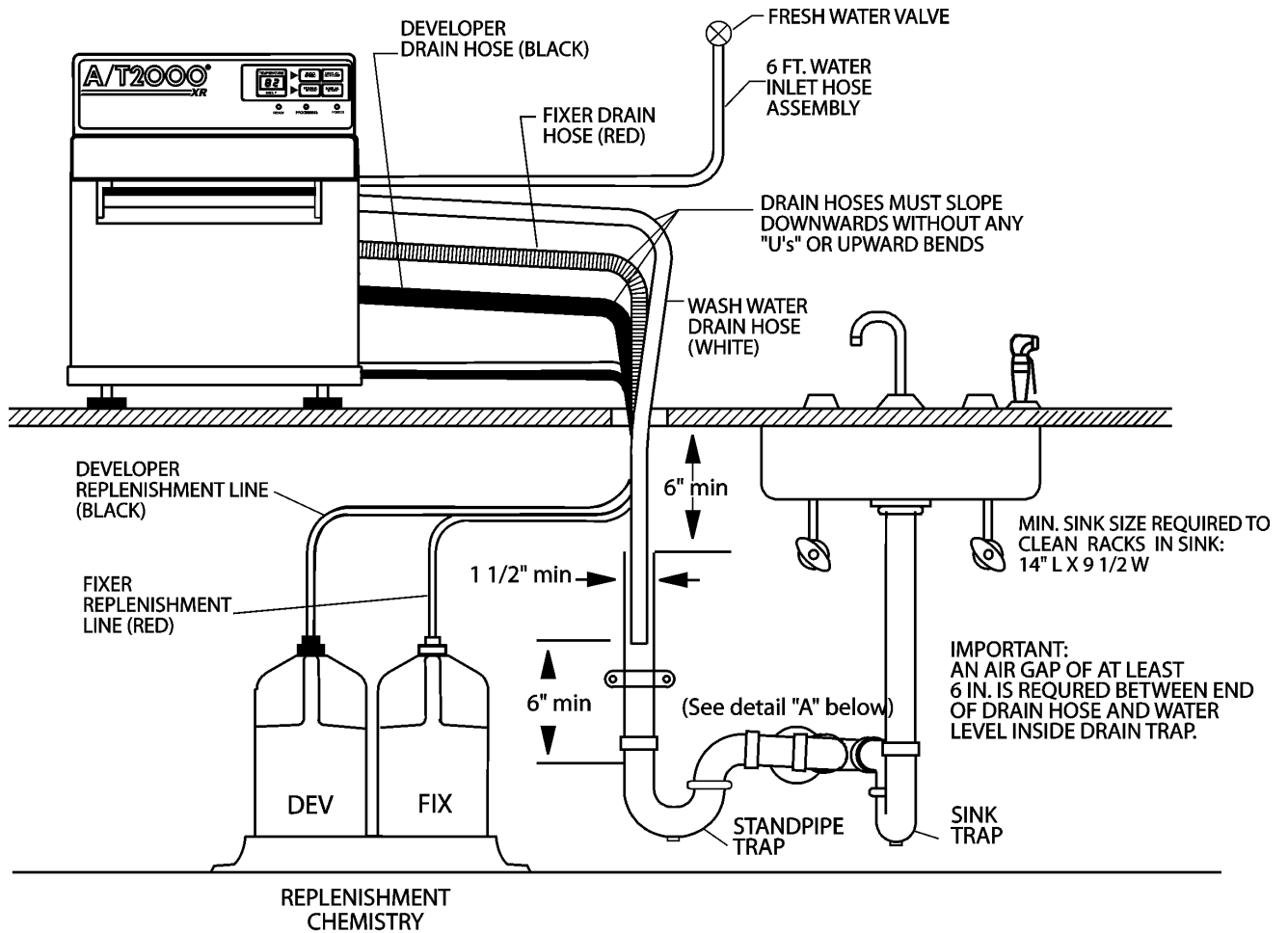
INDEPENDENT STANDPIPE DRAIN INSTALLATION



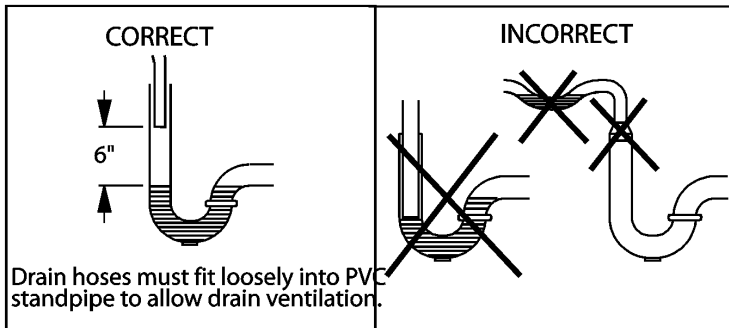
DETAIL "A"



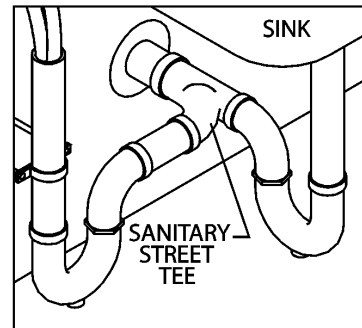
PLUMBING CONNECTIONS - OPTION 2



INDEPENDENT STANDPIPE DRAIN INSTALLATION



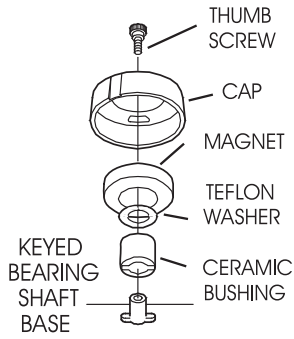
DETAIL "A"



TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
1. Processor totally inactive. No lights when POWER switch is turned on.	<p>A. Line cable is not plugged into wall outlet or IEC connector at the back of the processor.</p> <p>B. Cover electrical cable is not connected to base receptacle..</p> <p>C. No power supplied to Processor, 115V outlet.</p> <p>D. Possible blown fuse.</p>	<p>A. With POWER switch OFF, plug line cable into outlet and check line cable connection at IEC connector.</p> <p>B. Plug cover electrical cable into base receptacle.</p> <p>C. If still no power, try a different outlet. If the processor still does not work, call your authorized Air Techniques dealer for service.</p> <p>D. Locate fuse next to power cable in back of machine. Replace 8 Amp fuse if necessary.</p>
2. Processor won't start when film is inserted.	<p>A. Cover assembly is not engaging interlock switch.</p> <p>B. Shutter assembly at film inlet may be dirty.</p> <p>C. Shutter may be bent or jammed if film is improperly fed into the processor, or if cover assembly has been mishandled.</p>	<p>A. Make sure cover is seated correctly on base.</p> <p>B. If shutter doesn't move up/down freely, clean shutter with a moist sponge and dry.</p> <p>C. Review Daily Operation, Processing Film. If processor still does not work, call your authorized Air Techniques dealer for service.</p>
3. Processor doesn't stop after films exit; processor using excessive amounts of chemistry.	<p>A. Shutter assembly at film inlet may be dirty, bent or jammed.</p>	<p>A. Shutter must move up freely as film enters the processor and must fall down freely once film is past shutter and inside processor. If it does not do this, clean the shutter with a moist sponge and dry.</p> <p>To repair or replace a bent or jammed shutter, call your authorized Air Techniques dealer for service.</p>
4. Processor stops before film exits.	<p>A. A processing cycle may be accidentally interrupted if a large motor, like a compressor, vacuum pump, or refrigerator, is on the same circuit as the processor. When the large motor starts, voltage falls too far causing the processor to interrupt the processing cycle and return to stand-by.</p> <p>B. Voltage from the power company is momentarily interrupted, then restored. The same problem as described above will occur.</p> <p>C. Rack assembly may not be square or may have a broken gear.</p> <p>D. Programmed process time incorrect.</p> <p>E. Film inserted incorrectly.</p>	<p>A. Relocate processor to another circuit or to a dedicated circuit to resolve this problem.</p> <p>B. Relocate processor to another circuit or to a dedicated circuit.</p> <p>C. Place assembly on a level surface. It should rest flat on all four corners. If it does not, loosen (do not remove) screws on end plates. Hold assembly firmly down on surface while retightening screws on end plates. If a gear is broken, call your authorized Air Techniques dealer for service.</p> <p>D. Measure the Electronics Module programmed process time: With the unit in ENDO SPEED, hold the shutter open for 5 seconds and release. The Processor should run for 3:06 after the shutter closes. With the unit in NORMAL SPEED, hold the shutter open for 5 seconds and release. The Processor should run for 6:30 after the shutter closes. If not, call your authorized Air Techniques dealer for service.</p> <p>E. Feed film straight and be sure to straighten bent films before inserting.</p>

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
5. Fan motor runs, but only blows cold air.	A. Defective air heater.	A. Call your authorized Air Techniques dealer for service.
6. Replenishment pumps do not run.	A. Defective replenishment pump motor.	A. Remove screw then slide out the replenishment pump and agitator motor drawer: 1. Turn POWER switch OFF, wait 5 seconds, then turn POWER switch ON to initiate a replenishment cycle. Pump should run approximately 90 seconds. 2. If pumps do not run, call your authorized Air Techniques dealer for service.
7. Replenishment pumps run but do not pull chemistry out of bottles.	A. Solution levels in bottle are below 1". B. Loose tubing connections or crimped tubing. C. Caps on replenishment bottles are too tight	A. Check that pick-up tubing inside the bottle reaches down into the chemistry. When 1" or less of chemistry is left in the bottle, the tubing may not reach far enough down into the solution. Replace with fresh bottles of chemistry. Do not use left over chemistry. B. Check for and correct any loose tubing connections or crimped tubing. If chemistry is still not replenishing, call your authorized Air Techniques dealer for service. C. Loosen caps.
8. Replenishment pumps run but do not empty Developer and Fixer bottles evenly.	A. Solution levels in bottle are below 1". B. Loose tubing connections or crimped tubing.	A. Check that pick-up tubing inside the bottle reaches down into the chemistry. When 1" or less of chemistry is left in the bottle, the tubing may not reach far enough down into the solution. Replace with fresh bottles of chemistry. B. Check for and correct any loose tubing connections or crimped tubing. If chemistry is still not replenishing, call your authorized Air Techniques dealer for service.
9. Chemistry agitators in tanks are not spinning.	A. Dirty or defective magnet. <div style="text-align: center;">  <p>THUMB SCREW CAP MAGNET TEFLON WASHER CERAMIC BUSHING KEYED BEARING SHAFT BASE</p> </div> <p>FIG. 5 - AGITATOR</p> B. Circulator drawer is not completely closed. C. Defective circulator motor.	A. Locate chemistry agitators in the bottom of Developer and Fixer tanks. 1. Remove thumb screw, plastic cap, washer, and ceramic post. 2. Clean all items with Spray 2000 and warm water and rinse thoroughly. Reassemble. 3. If agitators still do not spin, call your authorized Air Techniques dealer for service. B. Close circulator drawer. C. Call your authorized Air Techniques dealer for service.

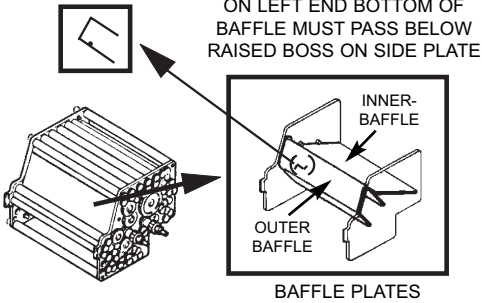
TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
<p>10. Developer/fixer is too hot or too cold.</p>	<p>A. SET-TEMP is not set to 82° F. (Factory pre-set temperature.)</p> <p>B. Wash water is not between 80°F and 55°F.</p> <p>C. Air temperature in the room/darkroom is not below 80°F.</p>	<p>A. TO SET TEMPERATURE: With POWER switch ON, push and hold DISPLAY SET-TEMP to display the set point temperature. If 82° F is not flashing, adjust the set point temperature:</p> <ol style="list-style-type: none"> 1. Lift the lid in front of the POWER switch and locate the SET-TEMP screw. 2. Press the DISPLAY SET-TEMP keypad and hold while turning the SET-TEMP screw with a flat blade screw driver. 3. Rotate the SET-TEMP screw until the DISPLAY reads the desired SET-TEMP value (e.g. 82° F). 4. Slowly rotate the SET-TEMP screw clockwise until the DISPLAY just reads 1° F above the desired SET-TEMP value (e.g. 83° F). Note the screw's position. 5. Slowly rotate the SET-TEMP screw counterclockwise until the DISPLAY just reads 1°F below the desired SET-TEMP value (e.g. 81°F). Note the screw's position. 6. Rotate the SET-TEMP screw clockwise to just above halfway between positions #4 (83°F) and #5 (81°F) so that DISPLAY SET-TEMP again reads the desired SET-TEMP (e.g. 82°F). 7. If necessary, repeat this process to be certain that the setting is just above midway between #4 and #5. 8. If temperature cannot be adjusted, or does not remain at adjusted temperature, call your authorized Air Techniques dealer for service. <p>B. Adjust the temperature of the incoming wash water supply.</p> <p>C. Adequate ventilation must be provided to keep room/darkroom temperature below 80°F (2°F below SET-TEMP), otherwise Developer chemistry may heat to above 82°F (SET-TEMP).</p>

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
<p>11. Wash water does not turn on during a process cycle.</p>	<p>A. Main water supply is not turned on.</p> <p>B. Inlet screen on Water Solenoid may be clogged.</p> <p>C. A blocked or incorrectly installed wash water drain hose.</p> <p>D. Water level sensor wet.</p> <p>E. Defective solenoid or pump.</p>	<p>A. Check that the main water supply is turned ON.</p> <p>B. Locate the water inlet hose that connects to the solenoid at the rear of the processor. Turn OFF the water.</p> <ol style="list-style-type: none"> 1. Disconnect the garden hose fitting. 2. If there is a screen between the hose and the solenoid, remove it and clean. 3. The solenoid fitting also has a permanently inset screen. Clean with a small brush. 4. Reattach the water inlet hose. Turn ON the water. 5. If water still does not turn on, call your authorized Air Techniques dealer for service. <p>C. When drain tube is removed from a wash tank, water at normal level should drain in 30 -75 seconds or faster. If wash tank takes longer than 75 seconds to drain, check drain hose. It must slope down, with-out u's or upward bends, to an open 1½" standpipe. Cut hose to length. If wash water still does not turn on call your authorized Air Techniques dealer for service.</p> <p>D. Remove screws securing molded gear cover to expose top of water level sensor. Dry top and bottom of water level sensor with paper towel.</p> <p>E. Call your authorized Air Techniques dealer for service.</p>
<p>12. Wash water does not turn off at the end of a process cycle.</p>	<p>A. Water solenoid assembly or electronics module may need replacing.</p>	<p>A. Call your authorized Air Techniques dealer for service.</p>
<p>13. Wash water intermittently turns on/off.</p>	<p>A. Improperly installed drain hose.</p> <p>B. Water splashes during filling, or fills too fast. Tank should fill in 1 1/2 to 2 minutes.</p>	<p>A. When drain tube is removed from a full wash tank during Process Cycle, water should drain in 30 -75 seconds or less. If wash tank takes longer than 75 seconds to drain, check drain hose. It must slope down, without u's or upward bends, to an open 1½" standpipe. Cut hose to length. If problem continues call your authorized Air Techniques dealer for service.</p> <p>B. Check water supply pressure. If above 60 psi, install pressure regulator (PN 45550).</p>

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
<p>14. Wash water does not fill wash tank within 2 minutes.</p>	<p>A. Dirty inlet screen.</p> <p>B. Slow fill rate.</p> <p>C. Low water pressure.</p> <p>D. On model 45009 pump is defective.</p>	<p>A. Locate the water inlet hose that connects to the solenoid at the rear of the processor. Turn OFF the water.</p> <ol style="list-style-type: none"> 1. Disconnect the garden hose fitting. 2. If there is a screen between the hose and the solenoid, remove it and clean. 3. The solenoid fitting also has a permanently attached screen. Clean with a small brush. 4. Reattach the water inlet hose. Turn ON the water. <p>B. Check fill rate, which should be ½ gallon per minute. Follow "A" above.</p> <p>C. Check that incoming water pressure is 30 psi, minimum. If wash water is still not filling tank within 2 minutes, call your authorized Air Techniques dealer for service.</p> <p>D. Call your authorized Air Techniques dealer for service.</p>
<p>15. Knocking / thumping noises during processing cycle.</p>	<p>A. Baffles in Wash/Dry rack are installed incorrectly.</p> <p>RAISED BOSS</p>  <p>B. Chemistry agitator magnets in Developer or Fixer tank are dirty or there is no chemistry in the tank(s)</p> <p>C. Rack assembly is not fully seated; latches are not closed; broken gears; damaged worms.</p> <p>D. Thumping sounds come from the front top of the processor. The shutter guard may be bent inward slightly and is rubbing on the inlet rollers of the Developer rack.</p>	<p>A. See illustration, inner baffle is installed first, then outer baffle. Call your authorized Air Techniques dealer for service.</p> <p>B. Clean magnets (see #9); fill tank with fresh chemistry.</p> <p>C. Reseat rack(s); close latches. Check gears, check worms on shaft. If damaged or broken call your authorized Air Techniques dealer for service.</p> <p>D. Lift the processor lid. If the sound is eliminated, reposition the shutter guard by loosening the screws securing it to the lid. Adjust position, retighten the screws.</p>
<p>16. Caked white stains on exit rollers of Fixer rack and entry rollers of Wash/Dry rack.</p>	<p>A. Baffles are either not installed at all or are installed incorrectly in Wash/Dry rack.</p>	<p>A. Check installation. See #15 for correct baffle installation.</p>
<p>17. Heavy silver deposits and/or gray stains on white gears of Developer rack.</p>	<p>A. Developer is contaminated.</p>	<p>A. Clean processor and rack. See Maintenance Section.</p>
<p>18. Heavy silver deposits on Fixer rack.</p>	<p>A. SPRAY 2000 not thoroughly rinsed off rollers.</p> <p>B. Fixer is exhausted. Chemistry type being used is not suitable. Replenishment bottles were accidentally allowed to run empty.</p>	<p>A. Clean and rinse racks thoroughly.</p> <p>B. Change chemistry in tanks. Monitor replenishment bottles. Replace when level is below 1". Use chemistry suitable for roller transport type processors and film type being used. We recommend Air Techniques chemistry.</p>

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
18. Heavy silver deposits on Fixer rack. (cont'd)	C. Chemistry has not been replenished as needed for film loads. Use Air Techniques chemistry for roller processors.	A. Check replenishment: <ol style="list-style-type: none"> 1. Mark the fluid level on the outside of the Fixer and Developer bottles. 2. Turn the processor off. Turn the processor on and listen for replenishment motors. Observe the fluid levels in the chemistry bottles. 3. Check that they drop by an equal amount, approximately 1/4". 4. If chemistry does not drop at all or does not drop by an equal amount, call your authorized Air Techniques dealer for service.
19. Heavy white deposits found throughout entire Wash/Dry rack.	A. Films were processed with the manual fresh water supply inlet valve to the processor turned OFF. B. No wash water. C. Wash water flow is too low. D. Dirty inlet screen.	A. Turn water on, clean rack with spray 2000. B. Solenoid or pump on 45004 is not working. Call you authorized Air Techniques' dealer for service. C. Incoming water pressure is below 30 psi, call your plumber for service. D. Clean screens, see #14.
20. Films are too light.	A. Films are underexposed. B. Chemistry may be outdated, under-replenished or contaminated. C. Chemistry agitator is not turning in Developer tank. D. Developer / Fixer temperature is below 82°F. E. Films are processed before READY light illuminates. F. Developer tank level may be low. G. Films processed in Endo Speed. .	A. Check film manufacturer's exposure guidelines. Check calibration of X-ray machines. Check that the film/screen combination is correct per film/screen manufacturer's specifications. Use film recommended for automatic processing. B. Check chemistry manufacturer for expiration dates. Check Chemistry Replenishment rates in Specifications to determine correct rate. See #6, 7, 8. To diagnose contaminated chemistry, see #33. C. See # 8 - 9 (Solutions). D. Check SET-TEMP, should be 82°F. Check actual developer bath temperature with an accurate thermometer. See #10. E. Wait for READY light. F. Check that drain tube washer is in good condition and that drain tube is firmly seated. To replace damaged drain tubes, call your authorized Air Techniques dealer for service. G. Process films in NORMAL SPEED.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
<p>21. Films are dark and grainy.</p>	<p>A. Film may be overexposed.</p> <p>B. Film may be defective.</p> <p>C. Film may be light-fogged.</p> <p>D. The darkroom may have light leaks.</p> <p>E. Initial films may be too dark immediately after changing processor chemistry due to high levels of chemical activity.</p> <p>F. Developer temperature is too high; SET-TEMP and temperature normally displayed should be 82°F.</p> <p>G. Daylight loader may have leaks. (Do not store film in daylight loader.)</p> <p>H. Room temperature is too hot.</p> <p>I. Chemistry may be contaminated.</p> <p>J. Improper chemistry.</p> <p>K. Safe light incorrectly installed or not compatible with film type.</p>	<p>A. Check film manufacturer's exposure guidelines. Check calibration of X-ray machines. Check that unexposed film is being stored in an area where it cannot accidentally be pre-exposed to scatter radiation. Check that film/screen combination is correct per film/screen manufacturer's specifications. Film maybe outdated. Intensifying screens may be old, worn out, outdated and/or dirty. Use film recommended for automatic processing.</p> <p>B. Try film from a different batch.</p> <p>C. The film box may not be closed properly. Be careful when opening the light-tight wrapper around the film. If the paper is torn, it cannot be completely folded over the film to make a light-tight seal. Also, be sure that the paper itself does not interfere with the lid closing.</p> <p>D. Check room for light leaks. Turn OFF all safe-lights and other lights in the darkroom. Wait 5-10 minutes to adjust to the darkness and look for any light leaks around the door, vents, pass box, etc. Identify and eliminate these sources. Place a film on top of the processor, close to the film inlet, and put several coins on the film. Wait 2-5 min. then process film. If the coin edges are visible after processing, there is a light leak in the darkroom.</p> <p>E. Starter may be added to solution as needed. See Chemistry Manufacturer's recommendation.</p> <p>F. See #10 if temperature control problems are suspected.</p> <p>G. Check that loader is properly mounted to front of processor. Check for worn cuffs. Check seal around lid of Loader. Check that view glass cover is closed when handling films. Use proper procedure for removing hands from cuffs during film handling and loading: move hands down, then out.</p> <p>H. Room air temperature must be below 80 °F during processing.</p> <p>I. See Avoiding Chemistry Contamination, page 11.</p> <p>J. Use Air Techniques Chemistry for roller film processors.</p> <p>K. Safe light must be a minimum of 4 feet from processor's film inlet area and a minimum of 4 feet from the work area. Make sure safe light being used is compatible with film type. See film manufacturer's recommendations.</p>
<p>22. Film density / contrast is poor vs. crisp and sharp.</p>	<p>A. Check radiographic technique. Film/screen combination may be incorrect. Intensifying screens may be old, worn out, or dirty.</p>	<p>A. Check film manufacturer's exposure guidelines.</p>

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
22. Film density / contrast is poor vs. crisp and sharp. (cont'd)	<p>B. Films are processed before READY light illuminates.</p> <p>C. Chemistry may be outdated, under-replenished, or contaminated.</p> <p>D. Chemistry temperature is not 82°F.</p> <p>E. Chemistry agitators not rotating.</p>	<p>B. Wait for READY to illuminate.</p> <p>C. Check chemistry manufacturer for expiration dates. Check Chemistry Replenishment rates in Specifications to determine correct rate. See #6, 7, 8. To diagnose contaminated chemistry see #33.</p> <p>D. See #10.</p> <p>E. See #9.</p>
23. Streaks are only on one end of film, rest of film is normal.	<p>A. Developer transport inlet rollers, or film inlet guide shelf, or shutter bar were wet when film was inserted into processor.</p> <p>B. Chemistry may be contaminated.</p> <p>C. Rack(s) not square.</p> <p>D. Processor not level .</p>	<p>A.</p> <ol style="list-style-type: none"> 1. Dry the film guide shelf and/or bar with a clean, dry paper towel. 2. Run a new cleaning film at the start of the day after the READY light illuminates. 3. Run a new cleaning film again during the day if the processor has been idle for 2 or more hours. 4. Offices using a Daylight Loader or a Quick Loader must keep the lid of the Loader open whenever films are not being processed <p>B. Clean processor and racks. See Maintenance. See Avoiding Chemistry Contamination.</p> <p>C. See #4C or #24B.</p> <p>D. Check bubble level on leveling frame. Adjust leveling feet if necessary.</p>
24. Streaks repeat every 1" or 1½" across the film. These streaks are often referred to as "roller marks."	<p>A. Processor may not be level.</p> <p>B. Rack Assembly may not be square.</p> <p>C. Racks need to be cleaned.</p> <p>D. Cleaning film not used before processing</p>	<p>A. Check bubble level on leveling frame and correct if necessary.</p> <p>B. Place assembly on a level surface. It should rest flat on all four corners. If it does not, loosen (do not remove) screws on end plates. Hold assembly firmly down on surface while retightening screws on end plates</p> <p>C. Clean racks. See Maintenance Section.</p> <p>D. Always run a new cleaning film at start of day, after cleaning processor, and when processor has been idle for more than 2 hours.</p>
25. Streaks appear at random across entire film.	<p>A. Chemistry may be outdated, under-replenished, or contaminated.</p> <p>B. Circulator magnets not working.</p>	<p>A. Check chemistry manufacturer for expiration dates. Check Chemistry Replenishment rates in Specifications to determine correct rate. See #6, 7, 8. To diagnose contaminated chemistry see #33. Use Air Techniques Chemistry for roller film processes.</p> <p>B. See # 9.</p>
26. Spots on films or dirty films.	<p>A. Films, before processing, were handled with wet or contaminated fingers/gloves.</p> <p>B. Intensifying screens are dirty or old and worn out.</p> <p>C. Rollers are caked with deposits.</p> <p>D. No wash water.</p> <p>E. Inadequate wash water.</p>	<p>A. Dry hands and gloves prior to handling films. Hold film by the edge.</p> <p>B. Replace or clean screens.</p> <p>C. See # 16, 17, 18.</p> <p>D. See # 11, 13.</p> <p>E. See # 14.</p>
27. Tree branch (looks like lightning across film) or smudge-like artifacts.	<p>A. Static electricity.</p>	<p>A. Remove films and film wrappers very slowly from cassettes and boxes.</p> <p>B. Reduce static electricity in room with appropriate floor covering.</p> <p>C. Increase humidity in room.</p>

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
28. Films are not clearing. Silver, green, brown color on films.	<p>A. Films were processed before READY light illuminated.</p> <p>B. Developer temperature is too low.</p> <p>C. Chemistry may be outdated, under-replenished, or contaminated.</p> <p>D. Fixer tank level may be low.</p> <p>E. Wash water temperature may be too cold (below 55°F).</p> <p>F. Films were processed with wash water supply turned OFF.</p> <p>G. Wash tank is not filling within 2 minutes.</p> <p>H. Fixer agitator magnet is not turning.</p> <p>I. Incorrect process time for film type.</p>	<p>A. Wait for READY to illuminate.</p> <p>B. See #10</p> <p>C. Check chemistry for expiration dates. Check Chemistry Replenishment rates in Specifications to determine correct rate. See #6, 7, 8. To diagnose contaminated chemistry see # 33.</p> <p>D. Check that drain tube washer is in good condition and that drain tube is firmly seated. Do not overtighten. If drain tube or washer is damaged, call your authorized Air Techniques dealer to replace.</p> <p>E. See #10.</p> <p>F. Turn water supply on.</p> <p>G. See #14.</p> <p>H. See #9.</p> <p>I. Check manufacturer's recommended process time.</p>
29. Emulsion is peeling off film.	<p>A. Chemistry may be outdated, under-replenished, or contaminated</p> <p>B. Wash water temperature is too hot (above 100°F).</p>	<p>A. Check chemistry manufacturer for expiration dates. Use film recommended for automatic processing. Check Chemistry Replenishment table, pg.17 to determine correct rate. See #6, 7, 8. To diagnose contaminated chemistry see #33</p> <p>B. SEE #10.</p>
30. Films are wet or tacky.	<p>A. Chemistry may be outdated, under-replenished, or contaminated.</p> <p>B. Room not properly vented.</p> <p>C. Baffles are either not installed at all or are installed incorrectly in the Wash/Dry rack.</p> <p>D. Dryer heater or fan may not be working.</p> <p>E. ENDO SPEED films may be wet.</p> <p>F. Wash tank not filling.</p>	<p>A. See solution for step 29 A above.</p> <p>B. Room air temperature must not exceed 80°F during processing.</p> <p>C. Check installation. See #15 for correct baffle installation.</p> <p>D. Call your authorized Air Techniques dealer for service.</p> <p>E. This is normal.</p> <p>F. See #11, 13, 14.</p>
31. Chemistry is outdated.	<p>A. Chemistry has a limited useful shelf life when stored properly.</p>	<p>A. Consult manufacturer for information on any suspected case of chemistry.</p>
32. Chemistry is exhausted or under replenished	<p>A. Failure to change developer and fixer at recommended intervals.</p> <p>B. Replenishment bottles are empty.</p> <p>C. Replenisher pumps not working.</p>	<p>A. Change chemistry monthly. Consult chemistry manufacturer's guidelines.</p> <p>B. Replace bottles when level is 1" or less.</p> <p>C. Call your authorized Air Techniques dealer for service.</p>
33. Developer chemistry is contaminated if one or more of these symptoms are present: <ul style="list-style-type: none"> • Ammonia smell • Dark or black developer • Black deposits on bottom of developer tank • Gray stains on white gears; side of developer rack • Black streaks or smudges on films • Poor film clarity • Poor film density (blacks are only dark gray) 	<p>A. Fixer was dripped or splashed into Developer tank.</p>	<p>A. Perform a Quarterly cleaning. See Avoiding Chemistry Contamination, See Maintenance, p. 12-16.p. 11.</p>

OPTIONAL ACCESSORIES

WATER PRESSURE REGULATOR

For installations with excessive water pressure, above 60 psi, or water flow rates.

- Kit, pressure regulator

PN45550

CHEMISTRY RECOVERY CONTAINERS

For capture and recovery of Developer and Fixer; one labeled Fixer, one labeled Developer

- 5 gallons, 2 each
- 2.5 gallons, 2 each

PN44160

PN44170

QUICK LOADER COVERED FEED CHUTE

PN 45880

The QUICK LOADER eliminates waiting until the last film is fully inside the processor before leaving the darkroom. The QUICK LOADER mounts to the front of the A/T2000®XR. To load, the operator just lifts the cover, feeds a film into the chute, closes the cover and leaves the darkroom without fear of exposing the film. **Dimensions:** 6" H x 15 3/4" W x 12 3/8" D **Weight:** 3 lbs.

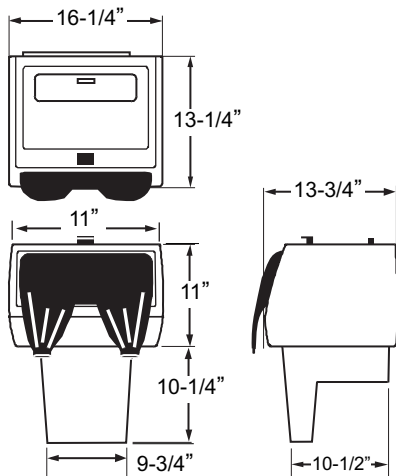
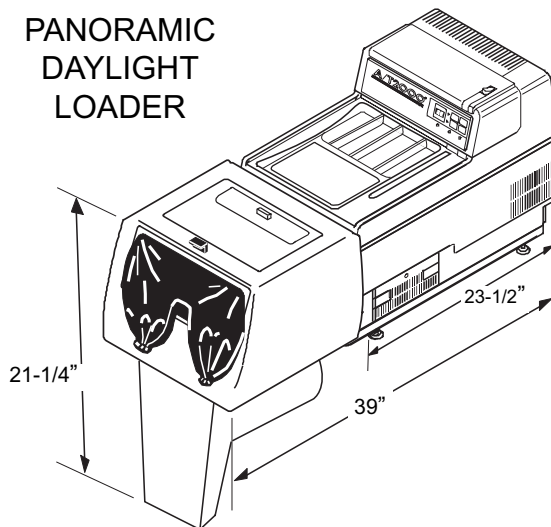
PANORAMIC DAYLIGHT LOADER

PN 45110

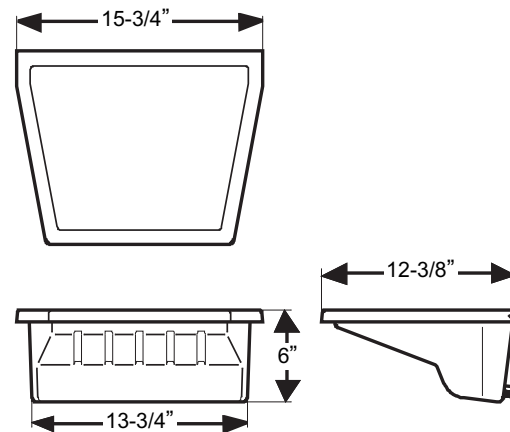
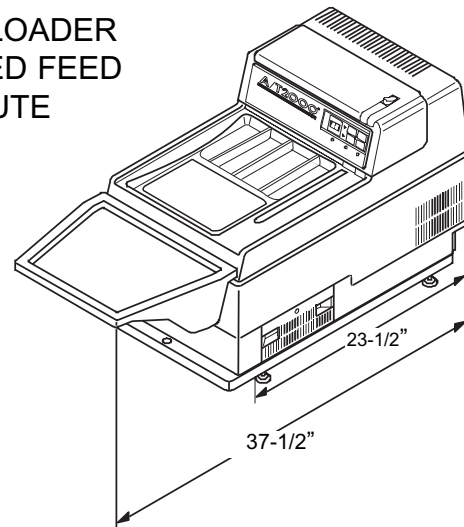
The Panoramic Daylight Loader, mounted to the front of the processor, allows all sizes of dental films to be processed without a darkroom. There is ample interior space to unload and reload panoramic and cephalometric cassettes. A view glass and a sliding opaque cover is provided.

Dimensions: 21 1/4"H x 16 1/4"W x 13 3/4"D **Weight:** 20 lbs.

PANORAMIC
DAYLIGHT
LOADER



QUICK LOADER
COVERED FEED
CHUTE



A/T 2000XR, PN 45009

A/T 2000XR WITH WATER RECIRCULATION, PN 45009

Install the A/T 2000XR with Water Recirculation System when there is no nearby water, when the user opts for water conservation, or when local codes require the capture and recovery of waste water.

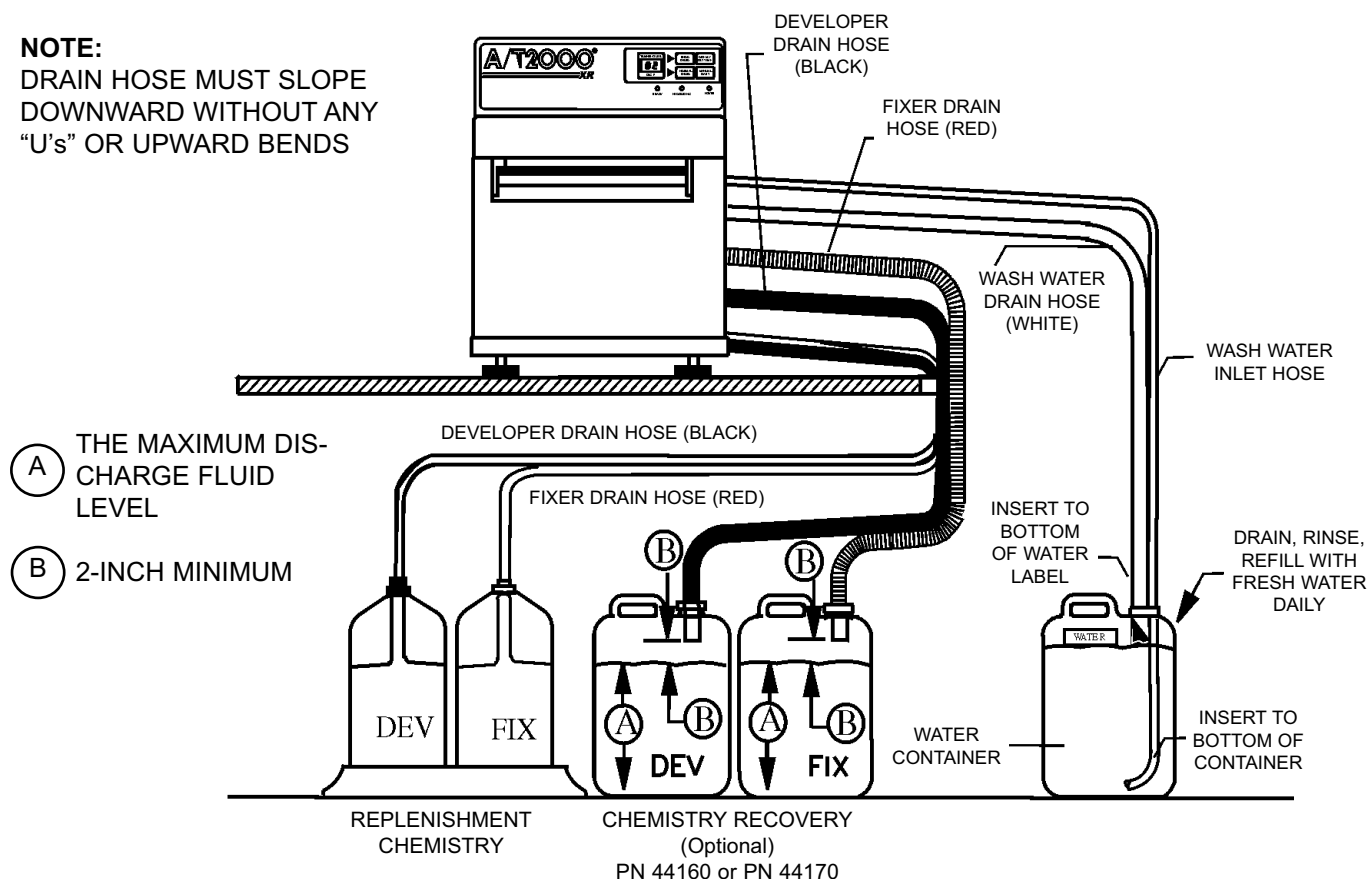
Model #45009 is fitted with an internal water recirculation pump, which replaces the solenoid valve on the regular model, and comes with a 2 ½ gallon water container. The internal pump recirculates water at about the same rate as water is circulated in the regular version of the A/T 2000XR, ensuring the processing of quality films.

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.

NOTE:

DRAIN HOSE MUST SLOPE DOWNWARD WITHOUT ANY "U"s OR UPWARD BENDS



A/T 2000XR WITH WATER RECIRCULATION, PN 45009 (Continued)

OPERATION AND MAINTENANCE

Follow the same Daily Operation procedure detailed on pages 8 & 9 and the same Weekly, Monthly, and Quarterly Maintenance procedures on pages.12-16. In addition change, the wash water daily. Follow these steps:

AT THE END OF THE DAY:

- Turn OFF the POWER switch.
- Lift the processor cover and remove the wash tank drain tube. Completely drain the Wash tank water into the water container. Reinstall the wash tank drain tube.
- Remove the wash water inlet hose and the wash water drain hose from the water container. Dispose of the used wash water in accordance with local codes and thoroughly rinse the container with clean water.
- Fill with 2½ gallons of fresh water (to the bottom of the WATER label).
- Insert the wash water inlet hose until it reaches the bottom of the container. Insert the (white) wash water drain hose until it reaches the bottom of the WATER label. (The end of this drain hose must be above the water level in the bottle).

AT THE BEGINNING OF THE DAY:

- Check that the wash water container is properly filled and connected.

Air Techniques and ALLPRO Imaging are leading manufacturers of fine dental, medical and veterinary equipment from air and vacuum systems and X-ray film processors, to an impressive line of new products incorporating the most recent technological advances. These new products, vital components of the innovative professional practice, include intraoral cameras, digital imaging systems, which utilizes phosphor plate technology and, most recently, an intraoral digital X-ray system using sensor technology.

Air Techniques and ALLPRO Imaging have been manufacturing quality products for the dental, medical and veterinary professional since 1962.

Air Techniques and ALLPRO Imaging products are distributed only through authorized dealers. Refer to www.airtechniques.com or www.allproimaging.com to find a dealer in your area.

- Accent™ Intraoral Digital X-ray Image System
- Acclaim® Intraoral Digital Video Camera System
- Acclaim® USB Only Intraoral Digital Video Camera System
- AirStar®
- A/T 2000® XR
- Guardian™ Amalgam Collector
- Peri-Pro®
- Provecta 70™
- Rinsendo Root Canal Disinfection System
- ScanX®
- STS™
- VacStar™

- 100 Plus
- 2010
- Medscope
- Provecta V
- ScanX® 12
- ScanX® DVM
- ScanX® NDT
- ScanX® 12 EV
- ScanX® 14 Portable
- ScanX® NDT Portable
- ScanX® 14 In-Counter

**AIR
TECHNIQUES**
INC.

1-800-AIR-TECH
(1-800-247-8324)
www.airtechniques.com

 **ALLPRO IMAGING**

1-800-AIR-TECH
(1-800-247-8324)
www.allproimaging.com