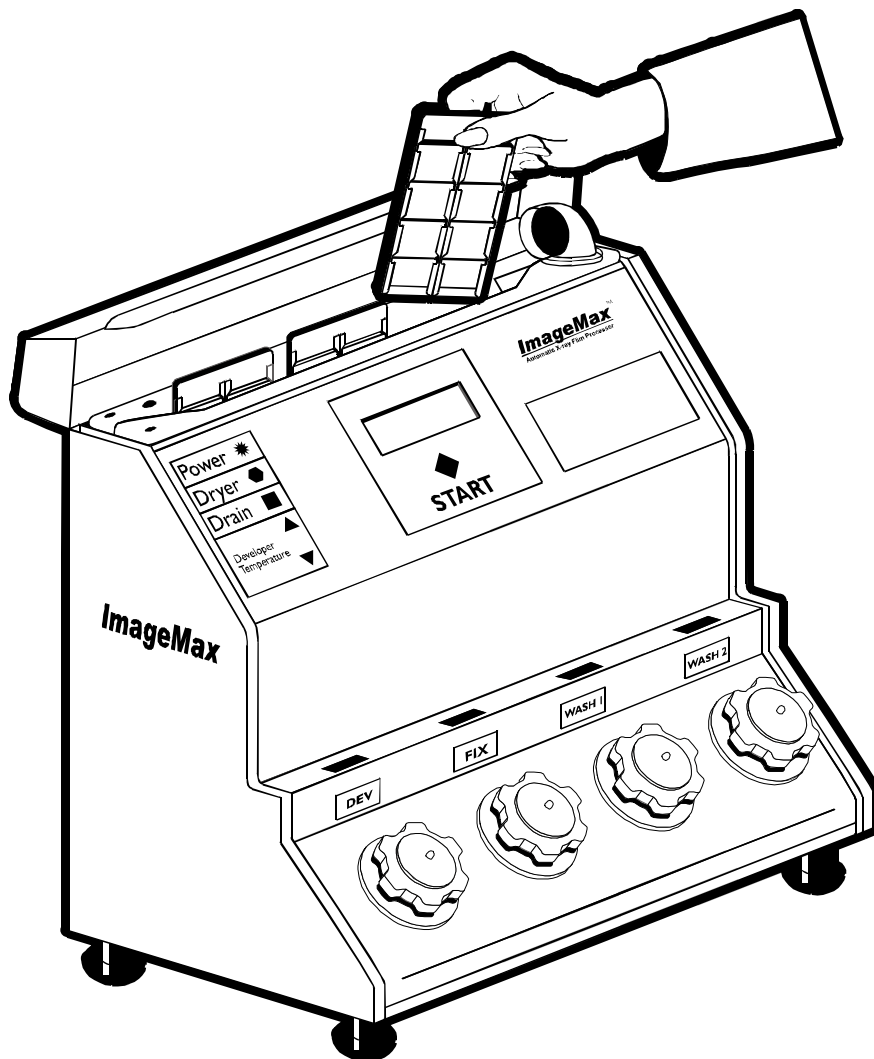


# ***ImageMax***<sup>TM</sup>

**Automatic X-Ray Film Processor**

## **OWNER'S MANUAL**



Designed & Manufactured by  
***X-Ray Support, Inc.***

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# PROCESSOR FEATURES

Thank you for purchasing the ImageMax<sup>TM</sup> Automatic Film Processor!

We sincerely appreciate your business!

ImageMax solves X-Ray processing problems by moving the chemistry, not the film!

## Features:

- ◆ **Virtually self-cleaning.** No need to take the machine apart and clean roller racks or tracks. Simply rinse out the solution holding tanks, then refill with fresh chemistry and water.
- ◆ **Correctly processes intra-oral and pan/ceph films - Automatically.** These two film types have very different types of emulsion and process very differently. The ImageMax is the first automatic processor ever to process them with the correct times.
- ◆ **ImageMax has the ability to both heat and cool the developer.** ImageMax is the only processor that gives you complete control over film detail and processing speed. It's unique Thermal-Electric-Chip (TEC) heating and cooling system allows you to select any developing temperature from 72 to 83 degrees. You set the temperature based on the film quality you desire, then based on the **Kodak**® time and temperature chart, ImageMax selects the timing – lower temperatures more film detail, higher temperatures faster developing.
- ◆ **No roller marks.** No rollers means no roller marks! Only the chemistry touches the film.
- ◆ **No need for cleaning films.** No rollers, no belts, no tracks to clean!
- ◆ **No wasteful replenishment.** ImageMax adjusts processing time based on the amount of film processed.
- ◆ **Little to no warm up time.** Power On. Ready to use when the developer is within 68 to 85 degrees.
- ◆ **The processor tells you when to change the water and chemistry.** No guesswork!
- ◆ **Simple and quick, electronic push button drain.** No corks to pull or unscrew, just push the drain button.
- ◆ **Separate drain for fixer.** Ready to be properly disposed of.
- ◆ **Extremely economical chemical and water usage.** Holding tanks are just 1 quart each and no replenishment!
- ◆ **Sealed solution containers.** No fumes or spills! No oxidation resulting in significantly longer chemistry life.
- ◆ **Eliminate low solution levels and ruined film.** Each tank has a fluid level sensor.
- ◆ **Reduce patient radiation.** You can now use "E" or "F" high-speed (inherently grainy) film by lowering the developer temperature and get improved results over a standard roller processor.
- ◆ **Never lose an intra-oral film again.** Easy to load film holders securely lock intra-oral films in-place.
- ◆ **Pans and Cephs load instantly.** No more slow feed! Extra-oral films fit directly into the processing tank.
- ◆ **Virtually mistake proof.** The 2 line display and simple controls make the processor very easy to use.
- ◆ **Stay informed.** The display provides a count down timer and a constant status of the processor.
- ◆ **Special Endo processing.** Quick to view feature. No more sacrificing quality.
- ◆ **Automatic system shut off.** The processor shuts down if not used in 5 hours.
- ◆ **Very low maintenance.** No gears, belts, rollers, tracks, or pumps in the solutions to break. ImageMax uses air pressure and vacuum to move the solutions through our exclusive long-life pinch valve system.
- ◆ **Fully self-contained and compact.** Add our daylight loader and put it practically anywhere.
- ◆ **Built to last.** Cabinet is constructed with high-impact plastic, powder coat aluminum and stainless steel. All tanks, fluid pathways, and air system are non-corrosive and designed for years of heavy usage.

# SPECIFICATIONS

- Solution Capacity Four - 1 quart holding tanks
- Power Requirements 6 amps @ 120 VAC (50 or 60 cycle)
- Physical Dimensions: 18" wide, 12.5" deep, 19" high  
(Daylight loader adds 5" to the height and 1.5" to width)
- Weight 26 lbs dry - 4 quarts of liquid add 8 lbs  
Separate air supply, APV, adds 4 lbs
- Room Operating Temperature No warmer than 85° Fahrenheit
- Air pump pressure & vacuum Regulated to 6 PSI & 7" Hg
- Film Handling
  - Intra-oral: Sizes 0, 1, 2, 3, and 4
  - Extra-oral: Pan 5 x 12 inch,  
Pan 15 x 30 centimeter,  
Ceph 8 x 10 inch
  - Irregular shapes: By use of a binder clip  
(see pg. 13)

# IN THE BOX

Be sure you received all of these items! Please call us right away if anything is missing.

- ❑ **ImageMax™** Model 950 Automatic X-Ray Film Processor
- ❑ **ImageMax Concentrate** Chemistry – 2 sets of developer and fixer

## ACCESSORY BOX:

- ❑ **APV** - Separate air pump unit **APV = Air Pressure Vacuum**
- ❑ AC power cord
- ❑ **WaterFlo PLUS™** Additive for Wash 1 and Wash 2 holding tanks
- ❑ Film holders (each holder holds 8 films)
  - 1 size #0 (Pedo) **IMPORTANT: Do not expose Film Holders to temperatures > 175° F**
  - 3 size #2 (Std)
  - Sizes 1, 3, and 4 are also available (see order form, back of this manual)
- ❑ “Black Box” intra-oral film holder light-tight staging box with flashing red LED
  - *Not included (not needed) when processor is sold with a daylight loader*
  - *Uses a 9 volt battery – included – Replace when flashing light is dim or not working*
- ❑ Intra-oral film “light-tight” staging jar
- ❑ Two drain lines:
  - Use the RED tube for the developer and water
  - Use the BLUE tube for the fixer (We recommend that you drain into a **SilverMax**)
- ❑ **ImageMax** Owner’s Manual
- ❑ **ImageMax** Quick Reference wall chart
- ❑ **ImageMax Developer Cleaner** – 1 bottle
- ❑ Long handled cleaning brush
- ❑ Intra-Oral Film Retrieval Tool
  - Tool for retrieving a lost intra-oral film in the black film processing tank. Shouldn’t ever happen, but just in case!

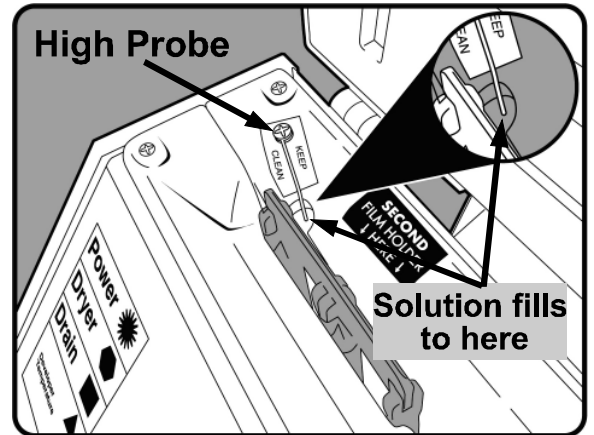
# SETTING THE PROCESSING TANK PANORAMIC FILM SIZE

The ImageMax can be configured to accept either size of panoramic film, 5 by 12 inch or 15 by 30 centimeter.

The pan size setting was preset at the factory per your request when you ordered the ImageMax. See your invoice or packing list for the setting requested.

## Verifying the Pan Setting:

Referring to the processing tank Hi Probe diagram to the right, during a process cycle, solutions fill the tank to the tip of the high probe pointed to. Insert a pan film into the black processing tank. The edge of the film should be approximately 1/8" of an inch below the solution level. See page 11 regarding how to insert pano/ceph film.



## Changing the panoramic film setting:

1. Disconnect the AC power plug.
2. Remove the 5 back panel screws (pointed at in the diagram to the right) using a #2 Phillips screw driver. Remove the back panel.
3. On the black tank, locate the 2 vertical sets of "film selector" screws (bottom figure). The red screw is the long screw (3/4" long). It determines the pan film size configuration.

- Red screws in top position = 5 x 12 inch pan film.
- Red screws in bottom position = 15 x 30 centimeter pan film.

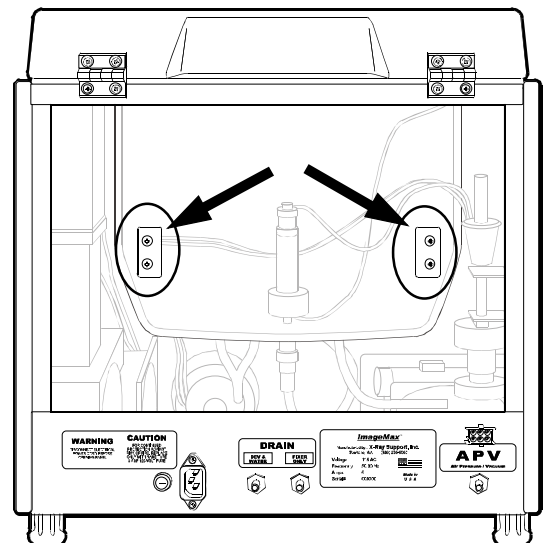
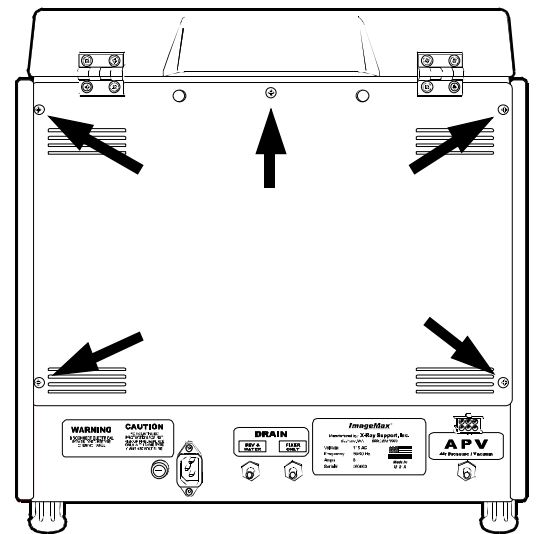
The short, non-red screw (3/8" long) is a filler screw.

4. Remove the four selector screws, then gently reinsert the screws for your pan size.

**IMPORTANT: Do not over tighten screws.**

5. Test fit a pan film to make sure the screws are set properly. The edge of the film should be just under the liquid line (the tip of the stainless steel high probe on the left side of the film processing tank indicates where the liquid level is).
6. Replace the back panel / lid assembly with the 5 screws. Put all screws in loosely, open and close the lid to make sure it "seats" correctly, then tighten the screws.

**IMPORTANT: Do not over tighten screws.**



# SETUP

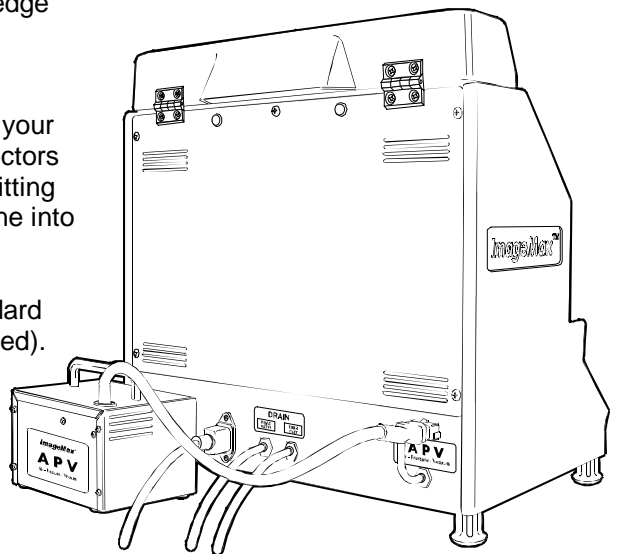
## IMPORTANT: Check The Darkroom

**Eliminate ALL light.** Turn off all lights, including your safelight. Then with your eyes open, stay in the darkroom for at least 3 minutes and look for any light. Move around and check different angles. Even the smallest amount of light will cause light fog – especially pan/ceph film.

1. The processor location must:
  - a) be at least 18" wide, 15" deep, and 24" high.
  - b) be level. Correct minor leveling problems by lifting one side of the processor up and adjusting the cabinet legs by turning them – adjust no more than ¼ inch. Use shims if the surface is significantly out of level.
  - c) allow all 4 rubber feet of the processor to equally support the processor.
  - d) be able to hold about 40 pounds (processor plus APV actually weighs 31 pounds plus 8 pounds of liquid).
  - e) get no warmer than 85°F.

**NOTE:** It is best to locate the processor forward near the front edge of the counter in order to allow easy filling of the solution holding tanks.

2. Find the **APV** (separate air pump – Air Pressure Vacuum unit) in your accessory box. On the back of the **ImageMax**, locate the connectors labeled **APV**. Remove and discard the rubber plug from the air fitting (usually yellow or green). Push the **APV** electrical plug and air line into and onto the **ImageMax** connectors.
3. Plug the AC power cord first into the **ImageMax** then into a standard grounded, 6 amp, 120 volt AC, 3-prong outlet (GFCI recommended). If an extension cord is necessary, be sure that it has at least a 10 amp rating. Position the power cord so that it will not be tripped over, pulled, or contact any hot surfaces.
4. Push the drain tubes onto the **ImageMax** fittings located on the back of the processor.
  - > The RED labeled tube is for developer and water.
  - > The BLUE labeled tube is for the fixer.
5. Route the other end of the drain tubes into a sink, waste container, or install into a plastic drain pipe (see the diagram bottom right and the tip below). We recommend using our **SilverMax** for the fixer drain.



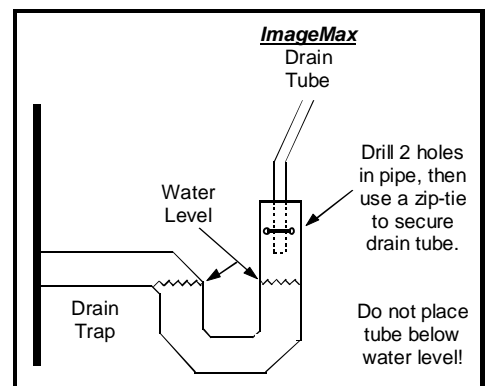
**IMPORTANT:** Check your local state and county regulation regarding proper disposal of processed chemicals.

**IMPORTANT:** Be careful not to “kink” the vinyl tubes against a back wall.

**NOTE:** Because **ImageMax** uses air pressure to push the solutions out, the pressurized drain will create a small “kick” as the liquid changes to air. Be sure to secure the ends of the drain tubes.

**TIP:** Use a tie-wrap through two small holes in a drain pipe (diagram to the right), or drill a 3/8” hole in the drain pipe (for the 3/8” OD vinyl tubing), then push the drain tube through that hole.

**IMPORTANT:** Do not extend drain tubes into standing water. Air pressure is used to push solutions out of the processor holding tanks and will cause bubbling.



# PROCESSING TIME & TEMPERATURE

The ***ImageMax*** gives you the choice between developing speed and film detail. With its exclusive Thermal-Electric-Chip (TEC) heating and cooling system, ***ImageMax*** can not only heat the developer, but cool it as well. Warmer developer temperatures allow faster processing. But because heat enlarges film grain size, the image will appear to be more “grainy”. Cooler developer temperatures provide more film detail, but take a bit more time.

## Choosing a developer temperature

Experiment with different developer temperatures **starting with 83°**. This temperature provides high quality film and fast processing. As time permits, drop the temperature to 80°, then note the film detail difference. This drop in temperature will take an additional 1-1/2 minutes for intra-orals, and 2-1/2 minutes more for extra-orals. If you like the detail at 80°, try even lower temperatures. However, don’t process any cooler than you can see a difference in film detail.

Below is a time-temperature chart showing how ***ImageMax*** exactly follows Kodak® film processing guidelines:

		INTRA – ORALS			EXTRA-ORALS (PAN / CEPH)		
		Kodak®	<b><i>ImageMax</i></b> Processing		Kodak®	<b><i>ImageMax</i></b> Processing	
Developer Temp	Film Detail	Time In Developer Solution	Time in Developer Solution	Total Processing Time *	Time In Developer Solution	Time in Developer Solution	Total Processing Time *
72°	Most	4 Min	4 Min	8 Min	7 Min	7 Min	10 Min
76°		3 Min	3 Min	7 Min	5-1/2 Min	5-1/2 Min	8-1/2 Min
80°	Better	2-1/2 Min	2-1/2 Min	6-1/2 Min	4 Min	4 Min	7 Min
83°	Good	65 Sec	65 Sec	4-1/2 Min	70 Sec	70 Sec	4-1/2

***ImageMax*** is the ONLY processor to exactly follow Kodak’s® entire time and temperature chart.

\* Total ***ImageMax*** processing time based on chemistry count = zero (C: 0). Does not include dry time.

**NOTE:** As the chemistry gets older, ***ImageMax*** automatically compensates by slightly extending the length of developing and fixing time. For example, when the chemistry count (C: on the display) is 200, ***ImageMax*** will add approximately 20% more time to the developer and fixer time. This unique automatic time-shift-adjustment feature provides consistently high quality film throughout the use of the same batch of chemistry, and avoids the need for costly and wasteful replenishment.

**NOTE:** As you change the target temperature on the ***ImageMax*** control panel, notice that the times displayed for both “I:” (intra-oral) “P:” (pan/ceph) change on the display. This time also takes into account the current chemistry usage time offset, “C:” (chemistry count).

# RUNNING ImageMax FOR THE FIRST TIME

## Follow these steps:

1. Follow the setup instructions on page 7.
2. The display will show `* POWER OFF *` when the ImageMax is plugged into a standard grounded 120 volt AC outlet.
3. Push the POWER button on the main control panel. The display will display the software version, then display the alternating message:

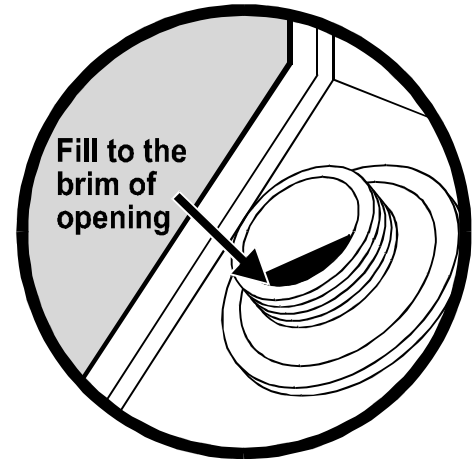
`All Tanks Full?`

`All Caps On?`

4. Remove the developer (DEV) holding tank cap. Leave the other 3 caps on to prevent cross contamination.

5. Pour in **ImageMax Developer Concentrate**, then water.

**IMPORTANT:** Fill the holding tank completely to the brim.



6. Replace the developer cap.

**NOTE:** Caps have an o-ring seal and require just 1-½ turns. No need to fully tighten the caps.

7. Repeat steps 4 thru 6 for Fixer, Wash 1, and Wash 2.

**RECOMMENDED:** Before adding water to Wash 1 and Wash 2, add **WaterFlo PLUS**.  
Your films will look and dry even better.

Fill water tanks with hot water (not greater than 130°F). Helps dry film faster.

**NOTE:** Tap water is usually okay. However, if your water quality is not good, use purified.

8. When all 4 holding tanks are full and the caps are on, press START. The processor will then verify the liquid levels by testing the air system.

If the holding tanks are not full enough, the display will read, `All Tanks Full?`  
Double check that all tanks are completely full to the brim.  
Then, press START again.

`Check Each Tank`

# RUNNING ImageMax FOR THE FIRST TIME

9. When the system air test is successful, the top line of the display will indicate one of the following:
- a.) Heating... if the developer is cooler than 68 degrees.
  - b.) Cooling... if the developer is hotter than 85 degrees (cooling fan will be running).
  - c.) LID OPEN if the processing tank lid is open.
  - d.) READY if the developer temperature is within the dental temperature range of 68° to 85°.

The bottom line of the display will display the current developer temperature on the left and your target (set) developer temperature on the right.

**EXAMPLE:** 74°->83° Read as, the developer is currently at 74° degrees and heating to 83°.

10. Insert one intra-oral Film Holder (no films) into the far right film processing tank position – always load this position first. Take note of the processing tank labeling for all 3 film holder positions.
11. Close the lid. The display should now read: READY FH W: 0, press START.

**NOTE:** In the middle of the top line of the display, “FH” means that a Film Holder was inserted.

12. Press START. Display: Processing: DEV. The time remaining for the liquid portion of processing is displayed on the 2<sup>nd</sup> line.

**NOTE:** To verify processor operation and understand how the ImageMax works, open the film tank lid and watch as the developer rises up to fill the film processing tank.

**IMPORTANT:** Do not remove holding the tank caps while ImageMax is processing!

13. When the developer has filled the processing tank and the APV air pump has turned off, verify that the processor is level. Sight across the tank. If the processor is not level, note which end needs to be adjusted. Make the adjustment later after the processor has completed all 4 solutions by lifting up the processor and turning the feet under the processor.

Push and hold the START button. The display will change to Quick Finish:DEV.

**NOTE:** This technique is not the normal way you will operate the ImageMax, it is simply a diagnostic mode that zeros the processing hold times and provides a quicker test.

The processor will now pull the developer back into the developer holding tank. Next, watch to see that the fixer, wash 1, and wash 2 each rise and fall.

14. Upon completing the test cycle, the display will show FILM READY, then read:

Line #1 W: 1 Indicating that the water has rinsed one batch of films.

Line #2 C: 5 Indicating that an intra-oral film batch has been processed.

**NOTE:** Each intra-oral batch adds 5 to the “C:” count. A pan or cephalometric cycle adds 10. For more information about these counts, please see the section on changing solutions (pg. 16)

15. Your new ImageMax film processor is now ready to process patient films.

# PROCESSING X-RAY FILM

The **ImageMax** automatically detects what type of film is being processed, intra-oral or extra-oral (pan / ceph), then it adjusts the timing accordingly for proper development according to Kodak™ film charts. See the section on processing time & temperature for more details.

## Follow these steps:

1. Set the target temperature using the up & down arrows on the control panel. The **ImageMax** will allow film to be processed when the developer temperature is within the dental range of 68° to 83°.

**NOTE:** See the section on processing time and temperature, page 8, for tips on how to set the temperature.

2. Insert a pan film directly into the processing tank (no film holder necessary) with the long dimension of the film horizontal across the tank. A ceph film inserts centered with the 10" dimension across the tank.



Extra-Oral



**Intra-oral** films insert first into a film holder, as shown below, then the film holder into the processing tank.



**TIP:** To load film, place the film holder lower tab (magnet) into one of the 4 slots over the holding tanks as shown. Then, load intra-oral films into the film holder with a light touch. Load the bottom first, then work up to the top.

**RECOMMEND:** Practice with sample films and lights on before working with exposed film in the darkroom or daylight loader.

**IMPORTANT:** Be aware of the labels on the black tank indicating the film holder positions. If you're processing just one holder, insert it into the far right position. If you have two holders to process, insert them on both ends. For three holders, fill each of the 3 processing tank slots. This positioning is for film drying purposes and intra-oral film sensing (the far right position is where the sensor is).

# PROCESSING X-RAY FILM

3. Close the lid to the processing tank once the films are loaded.

**NOTE:** Once the processing lid is closed, it is now safe to turn on the darkroom lights or open the door. **However**, it is still best to keep the room lighting low until the film has seen the fixer – watch the display. When the fixer has reached the film, it is now completely light safe – you can even open the tank lid.

4. When the display reads , push the START button on the control panel.
5. Each solution will rise, hold, then fall. Check the display for processing status.

**IMPORTANT:** Do not remove holding the tank caps while ***ImageMax*** is processing!

6. When the film is ready, the processor will display  and a 3-beep tone will sound. The 3-beep, film ready tone will repeat every 3 minutes until the processing tank lid is opened.

**TIP:** See the operating tips section on how to improve processor throughput and speed.

The display water count “**W:**” will have added 1, and the chemistry count “**C:**” will have added either 5 for an intra-oral film batch or 10 for an extra-oral (pan / ceph) film processed. For more information on these counts, please see the section on changing solutions and also in the technical details for information on how the ***ImageMax*** maintains image quality through the use of time offsets.

**TIP:** Routinely check the wash & chemistry count information displayed on the LCD panel. See the section on changing solutions for details on when to replace the chemistry and how to interpret the counts.

7. Open the film processing tank lid,  to get your film.
8. The processor is now ready for more film.

**TIP:** In a hurry and need your films quickly? You can interrupt the dry cycle  by simply opening up the processing tank lid. Then, easily restart the dry cycle by closing the film processing tank lid and pushing the DRYER button.

# PROCESSING COPY FILM

Copy film will develop the same as regular extra-oral film (pans & cephs) using the same time and temperature chart.

The ***ImageMax*** is designed to accept film 8" by 10" ceph, and either 5" x 12" inch or 15 x 30 centimeter panoramic-size depending on the tank setting (see pg. 6).

**IMPORTANT:** Be sure to use the same size copy film as your panoramic X-Ray machine uses.

**RECOMMENDATION:** Do not cut your pan or ceph copy sheets when you need to copy a small number of intra-orals. The film will not be properly supported when inserted into the processing tank. Instead, buy #2 copy film. This intra-oral sized copy film is easy to use, and also less expensive than a full sheet of copy film. In addition, you won't have to spend time cutting the film, and you'll avoid finger prints.

However, if you still would like to cut the copy film, you can hang the film in the processing tank using a paper binder clip shown below available from most office supply stores. This also works well for 5" x 7" TMG film.



Paper Binder Clip – Medium 1-1/4" wide

Shown approximate size.

Using the binder clip shown above, attach it to the middle of your film, then place the copy film into the ***ImageMax*** processing tank directly in the center. The clip will be supported by the side walls of the black processing tank.

**NOTE:** These binder clips are not corrosion resistant and may rust. Since they're not expensive, we recommend that you replace them often.

**TIP:** To produce a darker copy, use a shorter light exposure time.  
For lighter copies, use longer times. See the film box for more details.

# ENDO PROCESSING

## “Quick View”

The ***ImageMax*** allows a variation to the usual automatic endo processing. Because the film does not move, the film is always accessible. So, instead of having to wait until the film completely fixes, washes and dries, the processor allows you to take the film holder out as soon as the fixer has “cleared” the image. When you take the film holder out of the processor, the ***ImageMax*** will go into a “pause” mode. Keep in mind that fixer has two functions; first to “clear” the image, and second to “harden” (archive). It takes twice as long to harden as it took to clear. All other automatic processors at endo speed miss this important “hardening” step. After you have your reading, return the film to the processor and close the tank lid. ***ImageMax*** will finish fixing, washing, and drying the film.

The warmer the developer, the faster the ***ImageMax*** will develop the film. Set the developer temperature to 83°.

### **Follow these steps:**

1. Place the film to be processed in a film holder.
2. Place the film holder in the far right position of the processing tank.
3. Close the processing tank lid and push START.
4. Developer will rise then hold for the developer temperature amount of time, then fall (listen for suction noise).
5. Then, fixer will rise and hold. Check the display: Processing: FIX .
6. When you hear the air pump turn off, the fixer will have filled the film processing tank. The film is now light safe. Open the lid and check the film by lifting the film holder up. If the film has not fully “cleared”, put the film holder back into the tank for a few seconds, then lift and check again.
7. When you’re satisfied that the film has fully “cleared”, put a paper towel under the film holder and fully remove it from the processing tank and take to the doctor for review.

**NOTE:** The display will now read “PAUSE, Replace Holder”. The processor is waiting for the film holder to return to the processing tank to complete the hardening portion of the fixer cycle.

**TIP:** If possible, review the film right next to the processor. It can then be quickly inserted back into the processor so that the processor is not delayed and fixer doesn’t have a chance to dry on the film holder.

8. Re-insert the film holder back into the processing tank in the far right position and close the lid. The processor will automatically resume when the film holder returns.

**TIP:** If you don’t want the processor to delay, insert a “dummy – no film” film holder in the far right position to finish the cycle. The processor needs to rinse out the fixer in the tank with water. Leave the lid open so that the dryer doesn’t start at the end of the cycle.

**IMPORTANT:** If the film holder that was removed from the processor for review by the doctor is not reinserted back into the processor, it must be rinsed off before using again!

# CHANGING THE WATER

After every process cycle, the processor will add one to the water count, "W:". When the count is between 10 and 20 a reminder to change the water will be shown on the display after each completed cycle.

At "W: 21" the processor will display   requiring that both water tank be drained.

**RECOMMENDED:** Drain the water every day. You'll find it's quick and simple to do. Make it part of your office shut-down and startup procedures – drain at night, refill in the morning. Clean water will produce better film quality and extend the life of the chemistry.

Refill with warm water (not greater than 130°F). Improves film drying.

## Follow these steps to drain the water:

1. Be sure your drain lines are connected and routed to an appropriate container or drain.
2. Press the DRAIN button twice to select , then press START.

**ImageMax** will drain both water tanks, then display:  .

3. Remove the Wash 1 cap.

**IMPORTANT:** If there is sediment on the bottom of a holding tank, fill with hot water, then use the brush to agitate the bottom of the tank, replace the cap, and drain again.

4. Refill with tap or purified water (Tap water is usually good enough).

**RECOMMENDED:** Add 3-6 drops of **WaterFlo PLUS** before adding water.

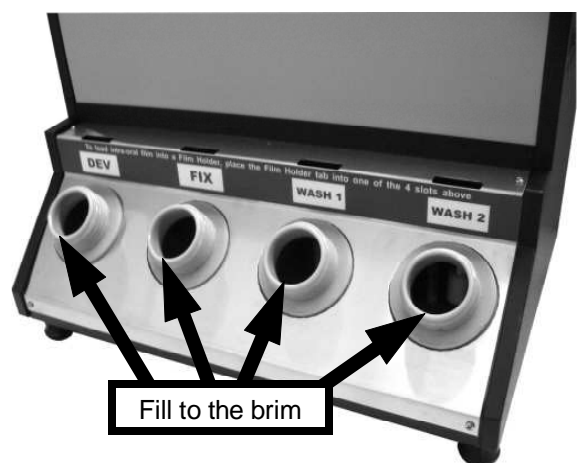
**NOTE:** Fill the holding tanks all the way to the brim  
- one more drop spills out the front.

5. Replace the cap.

**NOTE:** Caps have an o-ring seal and require just 1-½ turns. There is no need to fully tighten!

6. Repeat steps 3 thru 6 for Wash 2.
7. Press START to test the system.

**NOTE:**  is reset to zero, but the chemistry count, "C:", did not reset.



# CHANGING THE CHEMISTRY

When processing intra-oral film, **ImageMax** adds 5 to the "C:" displayed on the screen. When a pan or cephalometric is processed, 10 is added to "C:". We recommend changing the chemistry at , or once a week.

However, these are simply estimates. Many factors effect the longevity of chemistry. Your specific usage may allow the chemistry to last even longer. Through the first few batches of chemistry, watch the film quality. When you see a drop in film quality, note the number, then change the chemistry. You should see that the "C:" number is about the same each time you see the drop in film quality. Use that number to predict when to change chemistry.

**RECOMMENDATIONS:** To avoid a poorly developed X-Ray, on the last day of the work week, drain the chemistry. Then refill on the first day of the next week. Makes a nice routine and insures great films.

For limited users, leave chemistry in the processor no longer than 4 weeks.

**NOT RECOMMENDED:** Gallon sized chemistry. **ImageMax** uses just one quart of chemistry. The 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quart of a gallon jug will oxidize before you've had a chance to use the entire gallon. The resulting images will be light. For best results, use **ImageMax Concentrate**.

## Follow these steps to drain, then refill all four holding tanks:

1. Press the DRAIN button once to select , then press START.

The system will drain all 4 tanks, then display:  .

2. Remove the cap of the developer holding tank ONLY and look inside. Pour hot tap water into the holding tank about ¾ full. Gently stir up the sediment in the tank with the brush that shipped with the processor. Replace the cap, push the DRAIN button 3 times , push START. Repeat if necessary.

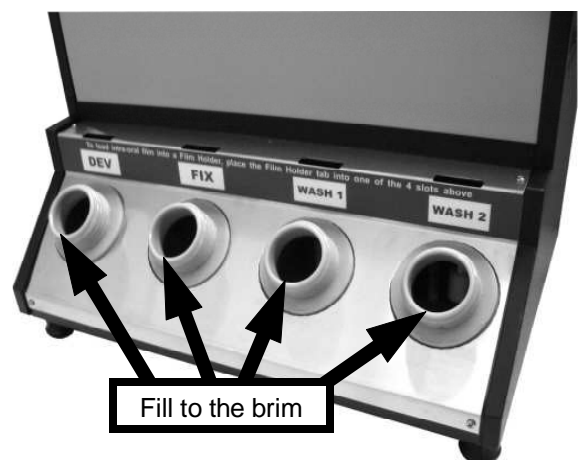
**IMPORTANT:** Each holding tank **MUST BE CLEAN** before refilling! **Do not "dry mop" the holding tanks with a paper towel or gauze. Fill with warm water, agitate, then drain! Rinse the inside of the cap before replacing.**

3. Pour in the developer solution. Fill right to the brim.
4. Replace the cap. Caps have an o-ring seal and require just 1-½ turns - No need to fully tighten!
5. Repeat steps 3 thru 6 for Fixer, Wash 1, and Wash 2.

**TIP:** Add 3-6 drops of **WaterFlo PLUS** to both Wash 1 and 2 prior to filling the tank with water. This allows the **WaterFlo PLUS** to mix with the water.

6. When all 4 holding tanks are filled and caps on, push START. **ImageMax** is ready to go!

Note that on the display, "C:" (Chemistry count) and "W:" (Water count) have reset to zero.



**IMPORTANT:** Fill holding tanks to the brim, however **NEVER tip the processor back to add more solutions!**

**IMPORTANT:** When changing chemistry, always change the Developer, Fixer, **AND** the both waters.

**RECOMMENDED:** Fill water tanks with hot water (not greater than 130°F). Improves film drying.

# MAINTENANCE

## Replenishment

Between **complete** chemistry changes, if any of the four holding tanks are low, simply **add water** to replenish.

**IMPORTANT:** Do not add more developer and/or fixer until it is time to **completely** drain and refill the processor.

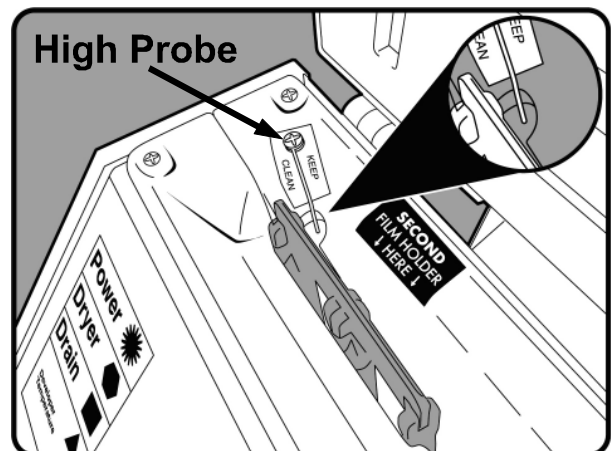
**ImageMax** does not require daily replenishment. It utilizes a time shift adjustment method. The on-board computer constantly monitors the amount of film being processed, and gradually lengthens the time to compensate for weakening chemistry. A pan/ceph film offsets the time by 1.0% (adds 10 on the "C:" display). An intra-oral film batch offsets the time by 0.5% (adds 5 on the "C:" display). On just 1 quart of developer and 1 quart of fixer, you can expect to process about 25 pan/cephs or 50 batches of intra-oral film.

**NOTE:** At 83° each intra-oral batch adds roughly ½ second, and each pan adds about 2 seconds. When the count gets to 250, an intra-oral will take an additional 29 seconds to process and a pan, 32 seconds.

At 72° each intra-oral batch adds roughly 2 seconds, and each pan adds about 6 seconds. When the count gets to 250, an intra-oral will take an additional 1-1/2 minutes and a pan will take about 2 more minutes.

## High Level Probe

The liquid fills to the tip of this probe. The plastic around where the high probe mounts **must be clean** (white label). Clean the tip of the probe. Be sure the probe does not touch the back wall of the processing tank, a film holder inserted into the far left position, and it doesn't touch the bolt located directly below the tip of the probe.



## Tank and Inner Lid

Using a damp sponge or paper towel, regularly clean the surface of the tank and inner lid.

## Complete Internal System Cleaning

**Reason #1:** If you suspect the developer has been contaminated by fixer.  
(Symptoms: dark films, developer smells of ammonia)

**Reason #2:** If you plan to leave the processor unused for an extended period of time (2 or more weeks).

**Follow these steps:**

1. Push the DRAIN button one time for **Drain ALL Tanks**, then push START.
2. Follow the steps on the preceding page for changing the chemistry, but instead of filling with chemistry, fill with luke warm water.
3. Push a standard clean damp sponge (approx. 3" x 5" x ½") down into the black film processing tank, then move it up and down with a hemostat. Clean all 3 processing tank film holder positions in this way.
4. Run a process cycle. **TIP:** Use the "quick finish" mode, described on page 21, to run the cycle faster.
5. Push the DRAIN button one time for **Drain ALL Tanks**, then push START.

# OPERATING TIPS

## Improving Processor Efficiency – Busy Office

The ***ImageMax*** uses a batching method of processing film rather than a continuous feed (roller processor) technique. This batching approach gives the ***ImageMax*** many advantages, but the tradeoff is the following scenario: John has four films running through the processor. Sue comes in two minutes later and sees that the machine is busy for another four minutes. What we have found is that Sue actually didn't need her films immediately, she just didn't want her work flow interrupted!

Here are some ways to solve the situation:

1. **Use the intra-oral film, light-tight, film-holder staging box with flashing red LED.** When Sue comes into the darkroom to develop her films and sees the processor is busy with John's films, she simply loads her films into a film holder, places the film holder into the staging box, and puts on the lid. The red light begins to flash indicating that there is a film holder ready to be processed as soon as the processor is available. Sue returns to her work. When John returns to get his films, he will see the red light flashing on the staging box. He simply inserts Sue's film holder into the processor and pushes START. When Sue returns, she picks up her fully processed films. With this technique, the processor stays busy.
2. **Use the intra-oral film, light-tight staging jar.** When a double film pack, full mouth set is to be processed, the ***ImageMax*** can handle one complete set, but not the second set at the same time. So to handle this situation, as you're removing the film from the packet, put the first film of the double film pack into the film holder and the second film in the black jar. When done, cap the jar and put a note on the top of the jar indicating the owner of the duplicate set of film. Since that second set of film is usually not time critical, develop that set when the processor is not busy.
3. **Staff coordination.** If you have a situation where three members of your staff have 4 bitewings each at the same time, work together to batch all of the bitewings through in the same cycle. For example: Sue would go into the darkroom, load her film holder and place it in the black box. John then comes in and does the same. Mary comes in, loads her 4 films into a third film holder, and places it into the processor. She then takes Sue's and John's film holders out of the black box, loads them into the processor's 2<sup>nd</sup> and 3<sup>rd</sup> positions, and pushes START, which runs the whole batch of films.
4. **Take film out while in the dry mode.** Instead of waiting until the very end of the drying cycle, film can be removed early and allowed to air dry. This allows the next batch of intra-oral films to be inserted up to 3 minutes sooner. The films will "air" dry within just a few minutes.

**TIPS:** Films will dry faster if you gently "pop" the wet film holder in your hand to dislodge water droplets.

Improve film drying time by filling water tanks with warm water - not greater than 130°F.

**IMPORTANT:** Do not insert a pan or cephalometric film into a wet processing tank. Doing so *may* put marks on the film. However, you can dry the top of the tank and especially the two upper film "bumps" between the three film holder positions.

5. **Set the developer temperature to 83 degrees.** The difference in processing time between 83° and 72° is about 3 minutes for intra-orals and 6 minutes pan/ceph film.
6. **Put pan film in the processor before intra-orals.** If you have a pan and intra-orals to take on the same patient, take the pan first. As the patient is transitioning to the chair for the intra-orals, go to the darkroom and start the pan processing. Now, go back to the patient and begin taking the intra-orals. By the time those images are taken and you return to the darkroom, you'll find that the pan is done and the processor is now ready to accept the intra-orals.

# OPERATING TIPS

## Drying Film – Multiple Film Holders

Roller-based film processors literally squeeze out water droplets as the films pass through the rollers which helps dry the film. However, the rollers also permanently press artifacts into the film. ***ImageMax*** does not touch the film - no chance of marks on the film! It instead relies only on hot air to dry the film. We've optimized the ***ImageMax*** dry time to completely dry a pan, a ceph, or intra-oral films in the far right film holder position. However, in certain high humidity conditions, when all 3 film holder positions are filled, the films may not fully dry in the middle and left film holder positions. Solution: After drying is complete and the display indicates film are ready, **remove** the far right film holder. Then, lift up and check the **middle** film holder. Are the films dry? If not, move the middle holder to the far right position. Close the lid, then push the Dryer button to restart the film dryer. Now, begin to mount the films from the film holder you just removed. When done, interrupt the dry cycle by opening the processing tank lid. Even though the dry cycle has only run for a few more seconds, you should find that the films in the other film holders are now dry.

**RECOMMDED:** Add 3 drops of ***WaterFlo PLUS*** before filling water tanks. Fill water tanks with hot tap water.

## Using “E” and “F” speed Intra-Oral Film

We recommend using “D” speed film. It provides the greatest level of detail available. However, ***ImageMax*** will process “E” and “F” speed film with vastly improved detail over standard roller processors. These films have larger crystals in the film emulsion to allow fast exposure characteristics. Warmer developer temperatures will enlarge the already large grain size. So, to produce the maximum image detail with these high speed films, the temperature of the developer needs to be cooler. For these film speeds, we recommend a developer temperature of 80° or less.

## Getting the Best Possible Film Quality

1. Change the water in both holding tanks daily. Make it part of your shut down procedure at night and your start up procedure in the morning.
2. Check the level of all solution holding tanks daily. Be sure they are completely filled to the cap opening brim.
3. Change the chemistry weekly. Even though we recommend about “C: 250” to change the chemistry, if the number reaches approximately C:150 in a week’s time, we recommend that you change the chemistry. Also, a routine of draining the machine at the end of the week, then refilling the first day of the week works well and produces better film. For less than \$6.50 per week for chemistry, it’s just not worth a bad film!

**NOTE:** A weekly change of chemistry with the ***ImageMax*** would equal 1 gallon of each solution per month (1 quart each week) compared to most roller based processors at over 3 gallons of each solution every month – that’s a 2/3 savings in chemistry!

4. Use ***ImageMax Concentrated Chemistry*** which is specifically formulated and proven for the ***ImageMax***.
5. Use ***WaterFlo PLUS*** in the Wash 1 and Wash 2 holding tanks. It’s designed to eliminate water spots on the film and significantly improves film drying.
6. Be sure all 4 solution holding tanks are clean (no sediment) before adding fresh chemistry and water.
7. Use either Kodak, Fuji, or our ***ImageMax*** film. We sell film at huge savings. ***ImageMax*** was designed using the Kodak time/temperature chart. We have found many other brands do not process like Kodak.
8. Keep your chemistry and film stock fresh. Check expiration dates. Store between 50° and 75° F.  
**DO NOT refrigerate.**

# STERILIZATION TIPS

## Intra-Oral Film

To eliminate the possibility of film holder contamination, before loading film holders, we suggest the following technique:

1. Without touching the film itself, eject the film into a cup as shown below:



2. Remove your gloves.
3. Place the films from the cup into your hand.
4. Load the film into the film holders.

## Film Holders

If you do need to disinfect your film holders, we recommend spray disinfectants.

**IMPORTANT:** Film holders are plastic and will be permanently damaged if autoclaved or subjected to temperatures above 175° F.

# SYSTEM OPERATION

## Pressure Test - “Checking System...”

When the **ImageMax** Power button is pushed and all the solution holding tanks are full, the system will do a pressure and vacuum test. It first runs the air pump to build 5 pounds of pressure. If it does not reach 5 PSI within a few seconds, then the processor displays   . If 5 PSI was reached, then it will verify that 5 inches Hg. vacuum can be made. If there's a problem, then a vacuum error will occur. If both pressure and vacuum worked properly and all containers were filled, then the processor will display:  .

Through this test, the **ImageMax** verifies that the air pump, both air valves, plumbing (liquid and air), all internal seals, all four solution holding tanks, and the caps are all functioning and installed correctly.

See the Troubleshooting and System Errors section if you have any problems.

## Suction Sound

One of the **ImageMax** sounds you will become familiar with is the suction sound you will hear every time solution is pulled out of the processing tank and back into the holding tank. These sounds are the guarantee that the processor is properly moving the solutions.

## Developer Heating and Cooling System

**ImageMax** uses a unique Thermal Electric Cooler (TEC) system to heat or cool the developer depending on what temperature you have set on the control panel. When the TEC is cooling the developer, heat is literally being “pumped” away. The small fan that you hear is taking that heat away. When the TEC is heating the developer, or it has reached the set temperature, the fan is off. Normal heating time is approximately 1 degree every 1-2 minutes. Cooling is 1 degree every 2-3 minutes.

## “Quick Finish” Mode

This mode of operation is reached when the processor is running during a normal processing cycle, then either the Power button is pushed or the 110 volt AC power line is interrupted. When AC power is restored and the POWER button is pushed to turn the processor back on, the LCD screen will read , . Upon pushing START, the processor will resume from the holding tank that it was processing, however the developer and fixer hold times are set to zero.

**NOTE:** This mode can also be entered by simply pushing and holding the START button after developer has filled the processing tank.

This mode is great for testing that the processor is functioning correctly without having to wait for normal developer and fixer processing hold times.

# VERIFYING PROCESSOR OPERATION

When trying to identify a film quality problem, it's always best to first start by verifying that the processor is working properly. Use this page as a step by step guide to verify that the ***ImageMax*** is working properly.

## 1. Developer Temperature

With the processor powered up and the display reading, **LID OPEN** or **READY**, take the cap off of the developer holding tank. With a digital thermometer (available from stores that carry kitchen supplies for about \$5-10), stir the developer for 15-20 seconds. Be sure the thermometer probe tip is at least 2" into the ***ImageMax*** developer holding tank. Compare the thermometer reading to the ***ImageMax*** display (left number). The temperature should be within 2 degrees.

## 2. Intra-Oral Film Holder Sensor

Verify that the Film Holder sensor is working correctly by putting a Film Holder in the far right tank position. Be sure the Film Holder label is up and the magnet is down as you insert it into the tank. Close the film processing tank lid. The left side of the display should look like this, **READY FH**, where "FH" indicates that a Film Holder is inserted.

## 3. Drain ALL Tanks and Refill with Fresh Chemistry and Water

If the chemistry count is greater than 100 , **C:100**+, drain, rinse, and refill. See pages: 16 & 17.

**IMPORTANT:** Be sure to thoroughly rinse out the developer holding tank before refilling with fresh chemistry. Fill each holding tank right to the brim.

## 4. Run a Processing Cycle (Have a stop watch or a clock with a second hand ready)

1. Set the developer temperature to 83° (on the ***ImageMax*** display, it's the number on the right), then wait for the actual temperature (number on the left) to warm to that temperature. Display: 83°->83°
2. Open the processing tank lid and insert a film holder (no film) into the far right position.
3. Close the lid. When the display reads "READY", push START.
4. Open the film tank lid and watch the developer rise. Once full, make sure the developer holds in the film processing tank for 65 seconds (C: = 0)
5. The fixer should then rise and hold for 53 seconds (C: = 0).
6. Wash 1 and Wash 2 should rise, hold for a couple of seconds, then fall.

**NOTE:** Hold times will slightly increase as the C: (chemistry count) gets higher. For example at C:100, the processor will add 10% or 6.5 seconds making the developer hold time 72 seconds. For fixer, at C:100, the processor will add 5.3 seconds making the total hold time 58 seconds.

## 5. Check Troubleshooting and System Error Codes

The next 7 pages cover many possible problems, causes, and solutions. Please call us if you need help.

# TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Processor is totally inactive. The LCD does not display the message <b>* POWER OFF *</b> when initially plugged in.	<ul style="list-style-type: none"> <li>a) Line cord is not plugged into the wall outlet.</li> <li>b) No power is being supplied to the 110 volt AC outlet.</li> <li>c) The plug is switched and is off.</li> <li>d) Blown fuse.</li> </ul>	<ul style="list-style-type: none"> <li>a) Plug line cord into the processor and the 120V outlet.</li> <li>b) Try another outlet. Check the power cord. Reset GFCI.</li> <li>c) Use another outlet.</li> <li>d) Replace with an 6 amp fuse.</li> </ul>
Films are not fully drying.  (See the section on OPERATING TIPS, DRYING FILMS for more information)	<ul style="list-style-type: none"> <li>a) Not using <b>WaterFlo PLUS</b></li> <li>b) Chemistry needs to be changed. (fixer not hardening)</li> <li>c) Darkroom has high humidity.</li> <li>d) At least one film holder is not in the far right position.</li> </ul>	<ul style="list-style-type: none"> <li>a) Add 3 drops of <b>WaterFlo PLUS</b> to the Wash 1 &amp; Wash 2 tanks.</li> <li>b) Change Chemistry.</li> <li>c) Improve air circulation to the dark room.</li> <li>d) Place the film holder in the far right position. See page 19.</li> </ul>
Solution holding tanks are not fully draining.	<ul style="list-style-type: none"> <li>a) All 4 caps were not on for the entire drain cycle.</li> <li>b) Vinyl drain lines kinked - processor too close to back wall</li> <li>c) Something floating in holding tank clogging the pickup tube.</li> </ul>	<ul style="list-style-type: none"> <li>a) <u>All caps</u> must be on for the processor to move solutions.</li> <li>b) Move processor away from the back wall.</li> <li>c) Remove the debris from the holding tank.</li> </ul>
Lost an intra-oral film in the film processing tank.  <b>To retrieve a lost film</b> , use the <i>"Intraoral Film Retrieval Tool"</i> . Run the dryer first. Pull off tape. Use a flashlight to find the film. Then use tool to stick to film.	<ul style="list-style-type: none"> <li>a) Wrong Film Holder size.</li> <li>b) Fingers are touching films as the Film Holder is inserted into the processing tank.</li> </ul>	<ul style="list-style-type: none"> <li>a) Verify film size and Film Holder.</li> <li>b) Touch only the top of the Film Holder (Size # - - label).</li> </ul>
The first few intra-oral films loaded into a film holder are dark, while the last ones loaded are okay.	Darkroom or daylight loader has a small light leak or safelight problem.	Check and solve light leaks. Turn your safelight off, fix it, or buy a <b>SafeStik</b> from us.
Black spots on film	Static electricity	Ground yourself before handling film. Work with film <b>slowly</b> . Do not "slide" film out of packet or screen. Pull packet away or fully open screen to remove film.

# TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Processing time is too long.	<ul style="list-style-type: none"> <li>a) Developer temp low. See pg 8.</li> <li>b) The chemistry count "C:" is high. See pg 16.</li> </ul>	<ul style="list-style-type: none"> <li>a) Raise the developer temperature</li> <li>b) Drain the chemistry, "Drain ALL Tanks"</li> </ul>
During mid-cycle the processor turns off and the display reads: <span style="border: 1px solid black; padding: 2px;">** POWER OFF **</span> .	There was a momentary 110 volt AC power drop off in your building.	Install a battery backup – UPS (Uninterrupted Power Supply). Available from office supply stores. Power on, the display will read <span style="border: 1px solid black; padding: 2px;">CYCLE NOT DONE</span> Press <span style="border: 1px solid black; padding: 2px;">START</span> to continue.
Film has water spots.	<ul style="list-style-type: none"> <li>a) Hard water</li> <li>b) Holding tanks not filled to brim.</li> </ul>	<ul style="list-style-type: none"> <li>a) Use <b>WaterFlo PLUS</b> with your tap water. Try using purified water &amp; <b>WaterFlo PLUS</b>.</li> <li>b) Fill tanks to the cap opening brim - one more drop overfills!</li> </ul>
<b>ALL</b> Films are too dark – both pans/cephs and intra-orals.	<ul style="list-style-type: none"> <li>a) Sediment was not cleaned from the bottom of the solution holding tanks before refilling with fresh chemistry.</li> <li>b) Developer is contaminated (ammonia smell). Earlier a film holder was removed with fixer on it (Endo) and not washed off.</li> <li>c) Film has expired or while stored it got too hot or cold.</li> <li>d) Dark room has a light leak. Pan and ceph films will be darker than intra-orals.</li> <li>e) Safelight has cracks allowing white light to escape.</li> <li>f) The light over the daylight loader is too bright.</li> <li>g) After the <b>ImageMax</b> lid is closed and the lights are turned on, the over head light is too bright.</li> <li>h) Old chemistry. Check expiration date.</li> </ul>	<ul style="list-style-type: none"> <li>a) See the Maintenance section on how to clean the sediment.</li> <li>b) See the Maintenance section and Complete internal system cleaning.</li> <li>c) Try a film out of a different package. Store film between 50° - 75° F. Not in refrigerator.</li> <li>d) Turn all lights off in the darkroom. Wait 2 minutes to allow your eyes to adjust. If you see any light, seal the leak.</li> <li>e) Turn your safelight off, then process a film. If okay, replace the lens, or buy our <b>SafeStik!</b></li> <li>f) Turn off the light. Move the processor to a lower light area.</li> <li>g) Keep lighting low until after "Processing Fixer" cycle.</li> <li>h) Use <b>ImageMax</b> concentrate chemistry – <b>guaranteed fresh!</b></li> </ul>

# TROUBLESHOOTING

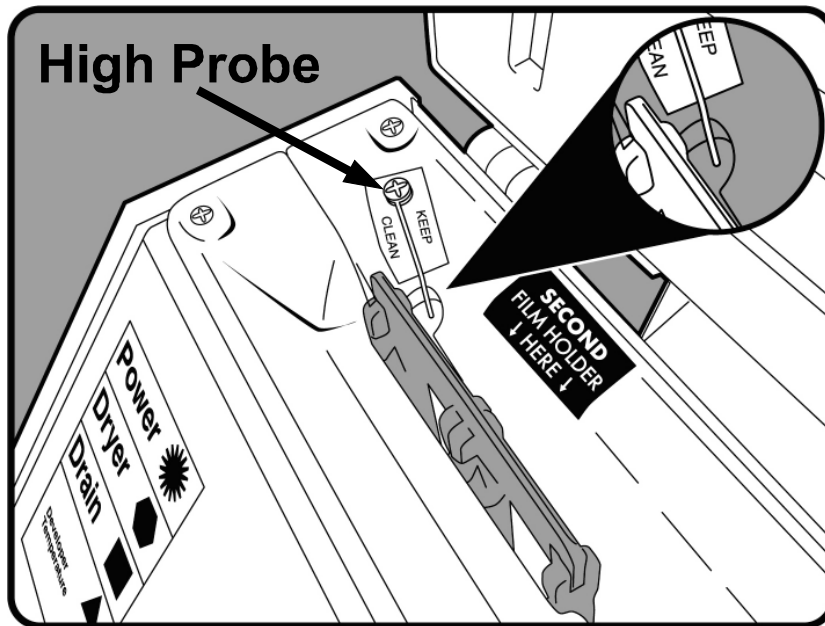
PROBLEM	POSSIBLE CAUSE	SOLUTION
<p>Pan films too dark, but intra-orals are okay.</p> <p><b>NOTE:</b> Pan and cephalometric films are much more light sensitive than intra-orals film. We recommend total darkness when processing pans and cephs.</p>	<ul style="list-style-type: none"> <li>a) Small darkroom light leak.</li> <li>b) Safelight too close to film, or it has a crack in the lens allowing white light to escape.</li> <li>c) Daylight loader light leak.</li> <li>d) The light over the daylight loader is too bright.</li> <li>e) Too much radiation.</li> <li>f) Wrong screen/film combination.</li> <li>g) Not using Kodak or Fuji film.</li> <li>h) Film has expired or while stored it got too hot or cold.</li> </ul>	<ul style="list-style-type: none"> <li>a) Turn off lights. Wait 2 minutes. Check for light. Seal if found.</li> <li>b) Move or aim it away. Get a new lens. Use our <b>SafeStik</b>.</li> <li>c) Use a flashlight from the outside while looking on the inside to identify. Seal if found.</li> <li>d) Turn off the light. Move the processor to a lower light area. Call XRS for a solid cover over the view window.</li> <li>e) Turn radiation down.</li> <li>f) Use correct combination.</li> <li>g) Use either Kodak or Fuji extra-oral film. Many other brands do not process at lower temps according to the Kodak time and temperature chart. Try raising the temperature to 83.</li> <li>h) Try a film out of a different package. Store film between 50° - 75°F. Not in refrigerator.</li> </ul>
<p>Intra-orals too dark, but pans okay.</p>	<ul style="list-style-type: none"> <li>a) Too much radiation for type of film being used.</li> <li>b) Film is being affected by scatter radiation.</li> <li>c) Film holder not in far right position.</li> <li>d) Film holder upside down.</li> <li>e) The <b>ImageMax</b> temperature probe is not working properly</li> </ul>	<ul style="list-style-type: none"> <li>a) Reduce radiation.</li> <li>b) Move all exposed film at least 10 feet away from tube head or put the film in a lead lined box.</li> <li>c) First film holder must be in far right position otherwise processor thinks cycle is pan.</li> <li>d) Be sure film holder label is up and magnet is down.</li> <li>e) Check the developer temp with an external thermometer. Stir for 10-20 seconds. Call us if reports a different temp than the <b>ImageMax</b> display.</li> </ul>

# TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Films are too light	<ul style="list-style-type: none"> <li>a) Chemistry is old.</li> <li>b) Not enough exposure.</li> <li>c) Wrong film.</li> <li>d) The <b><i>ImageMax</i></b> temperature probe is not working properly.</li> </ul>	<ul style="list-style-type: none"> <li>a) Change the chemistry. - Use <b><i>ImageMax</i></b> Concentrate Chemistry for best results. <b>Our chemistry is dated and guaranteed to be fresh!</b></li> <li>b) Increase the radiation</li> <li>c) Check film box. For extra-orals, check your film - screen combination.</li> <li>d) Check the developer temperature with an external thermometer. Stir for 10-20 seconds. If it reports a different temperature than the <b><i>ImageMax</i></b> display, call us.</li> </ul>
Chemistry is not lasting as long as expected.  * See Changing Chemistry, pg 16 and maintenance on pg 17.	<ul style="list-style-type: none"> <li>a) Chemistry has not been changed for more than 3 weeks yet C: is still low.</li> <li>b) Sediment is not being cleaned out of the developer tank before new developer is poured in.</li> <li>c) Improper chemistry.</li> <li>d) A Film Holder had fixer on it. (See Endo processing section for possible handling errors) See if the developer holding tank has an ammonia smell.</li> <li>e) Processor is not level.</li> </ul>	<ul style="list-style-type: none"> <li>a) Select <span style="border: 1px solid black; padding: 2px;">Drain ALL Tanks</span> and change the chemistry. We recommend once / week.</li> <li>b) See the section on MAINTENANCE for details.</li> <li>c) For best results, use <b><i>ImageMax</i></b> concentrate chemistry.</li> <li>d) Select <span style="border: 1px solid black; padding: 2px;">Drain ALL Tanks</span>, fill with lukewarm water, run a normal processor cycle, drain again, and refill with fresh solutions.</li> <li>e) Level the processor by running a test cycle. Open the film tank lid after you press Start, then sight across the processing tank when it is full of liquid. Adjust the cabinet legs.</li> </ul>
Brown / metallic Sheen on film	<ul style="list-style-type: none"> <li>a) Sediment in the developer tank from last batch of chemistry was not rinsed out thoroughly.</li> <li>b) Chemistry is worn out.</li> </ul>	<ul style="list-style-type: none"> <li>a) Rinse out developer holding tank after draining. See pg 16.</li> <li>b) Change chemistry. Be sure to thoroughly clean the holding tanks <b>before</b> refilling with fresh chemistry.</li> </ul>

# TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Brown, algae-like sediment in the water tanks.	Using non-chlorinated water.	Add 3 drops of <b>WaterFlo PLUS</b> to both water holding tanks before filling with water. Not only does it prevent water spots & improve film drying, it also <b>stops algae growth</b> .
Films do not appear to be properly processed (films are green, purple, or metallic looking), and the processor does not report any error messages.	<p>Check the stainless steel high probe on the black tank, left side top of tank. The black plastic around the probe may be wet or dirty (may be hard to see), or the probe itself may be pushed back against the plastic wall of the tank.</p> <p style="text-align: center;"><b>See the picture below.</b></p>	<p>a) Be sure the probe tip is centered in the formed well. Insert a film holder. Make sure it doesn't touch anything. Bend it if necessary.</p> <p>b) Using alcohol and a paper towel, clean under and all around where the high probe mounts to the black tank. Check the level of the processor by opening the tank lid during a fix or wash cycle. Site across the tank. Adjust the rubber feet to level if necessary.</p> <p>c) Run the processor. See item 4 on page 22. Make sure the solutions rise and fall normally.</p>



**IMPORTANT:** Keep the area around the high probe clean and the high probe centered in the well that's formed into the black plastic tank.

**DO NOT remove or turn the screw that holds the High Probe!**

# SYSTEM ERRORS

Error Number	Error Meaning	Possible Causes	Action
2	During a process cycle, the black film processing tank did not drain fast enough.	<ul style="list-style-type: none"> <li>a) A tank cap is loose.</li> <li>b) Debris or clog in film processing tank.</li> <li>c) Pinch valve tube did not fully open.</li> </ul>	<ul style="list-style-type: none"> <li>a) Check all 4 caps.</li> <li>b) Using flashlight, look to bottom of film tank. Clear debris.</li> <li>c) Push START one more time. If problem persists call for service.</li> </ul>
3	During a process cycle, the black processing tank didn't fill and reach the high probe fast enough.	<ul style="list-style-type: none"> <li>a) A tank holding cap is loose.</li> <li>b) Holding tank clog.</li> <li>c) Pinch valve tube did not open fully.</li> </ul>	<ul style="list-style-type: none"> <li>a) Check all 4 caps.</li> <li>b) Check holding tank for debris. Back left corner of tank</li> <li>c) Push Start one more time. If problem persists call for service.</li> </ul>
4	During a process cycle, liquid is not moving from a holding tank to the processing tank.	<ul style="list-style-type: none"> <li>a) Something has clogged the pickup tube in a holding tank.</li> <li>b) Processor not used for more than 3 months.</li> </ul>	<ul style="list-style-type: none"> <li>a) Check the holding tanks. Back left corner of tank. Clear any debris.</li> <li>b) Push START one more time. If error occurs call for service.</li> </ul>
6L or 6H	The temperature probe could not be read.	Bad connection or probe has failed.	Call for service.
7	During a process cycle, after the processing tank filled and is about to return to the holding tank, pre-vacuum could not be produced.	<ul style="list-style-type: none"> <li>a) A cap was removed.</li> <li>b) Wash 1 holding tank too full.</li> </ul>	<ul style="list-style-type: none"> <li>a) Replace the cap. Press START</li> <li>b) Drain option: Wash 1 &amp; Tank. Refill and test machine. If problem persists, call for service.</li> </ul>
8	The processor was trying to cool the developer solution (temperature > 85°) for more than 10 minutes.	<ul style="list-style-type: none"> <li>a) Darkroom too hot.</li> <li>b) The developer tank was filled with water that was too warm.</li> <li>c) Cooling fan air flow blocked or restricted.</li> <li>d) The developer TEC (Thermal-Electric-Chip) cooling fan not working.</li> <li>e) Defective temp probe</li> </ul>	<ul style="list-style-type: none"> <li>a) Room no warmer than 85° F.</li> <li>b) Power off then on. Add an ice cube. Wait for developer to cool. Watch every few minutes to make sure cooling is occurring.</li> <li>c) Clear obstruction. Air flows under processor left side, ½ way back.</li> <li>d) Call for service.</li> <li>e) See page 22 to verify.</li> </ul>

# SYSTEM ERRORS

Error Number	Error Meaning	Possible Causes	Action
9	<p>The black film processing tank is reporting that it is full of liquid when the system expects it to be dry.</p> <p>Open the film tank lid to see if there is liquid in the tank.</p>	<p>a) If there IS NOT liquid in the film tank, the High probe may need to be cleaned and/or repositioned.</p> <p>b) If there IS liquid in the film tank, please call us. We would like to hear the situation that led to this.</p>	<p>a) See page 17 – High Level Probe. Once cleaned and checked for position, power off then back on.</p> <p>b) To clear push DRAIN. The only option available will be: <b>Drain W1 and Tank</b>. This option will drain holding tank Wash 1. Then it will pull the liquid from the film processing tank and put it into the Wash 1 holding tank. Finally, it will push that liquid out of Wash 1 and down the drain.</p> <p>Refill all holding tanks with water. Run a test cycle. If okay, then drain &amp; refill with new chemistry.</p>
13	Pressure Sensor is not working properly	Bad connection or sensor has failed.	Call for service
14	Air system vent error	APV air line kinked	Check and correct.
15	After holding tanks and caps are verified to be on, and after the system has passed the pressure test, 5 inches Hg. vacuum could not be produced.	APV air line kinked	<p>Check and correct</p> <p>If problem persists, call for service.</p>
16	Liquid was detected in the air system	Wash 1 holding tank too full	<p>Select DRAIN option: Wash 1 &amp; Tank. Refill and test machine.</p> <p>If problem persists, call for service.</p>

If you can not solve the problem or an error code is displayed that is not listed in this table, take no further action, call us. **Please have the following information when you call:**

1. **ImageMax** Serial number. (Located back of processor. Also on the front above the DEV holding tank)
2. System error number.
3. Holding tank being accessed if displayed on the screen.
4. Exact circumstances that led to the problem.

**IMPORTANT:** *It will greatly help our ability to quickly solve the problem if you call us when you're standing right by the processor.*

# X-Ray Support, Inc.

Maker of the ImageMax Automatic Film Processor







## PRICE LIST

Order Toll Free: (888) 230-9500

or use our faxable order form

## Huge Savings on film!

ALL Film **GUARANTEED** to be as good or better than Kodak® or your money back!

ITEM CODE	ITEM DESCRIPTION	PRICE
89	Intra-Oral - D Speed - Size #0 - Single Packets - 100 / box	25
88	Intra-Oral - D Speed - Size #2 - Single Packets - 150 / box	29
87	Intra-Oral - D Speed - Size #2 - Double Packets - 130 / box	39
F4	Intra-Oral - F Speed - Size #0 - Single Packets - 100 / box	27
F8	Intra-Oral - F Speed - Size #2 - Single Packets - 150 / box	33
F7	Intra-Oral - F Speed - Size #2 - Double Packets - 130 / box	42
  		
<b>We carry all cardboard and plastic film mounts. Please call for details.</b> 		Please call
K1	5 x 12 inch - Green - 50 / box	25
93	5 x 12 inch - Green - 100 / box Fuji	43
K3	5 x 12 inch - Blue - 50 / box	25
96	5 x 12 inch - Blue - 100 / box Fuji	43
K5	5 x 12 inch - Duplicating - 50 / box	36
99	5 x 12 inch - Duplicating - 100 / box Fuji	63
K2	15 x 30 cm - Green - 50 / box	31
94	15 x 30 cm - Green - 100 / box Fuji	53
K4	15 x 30 cm - Blue - 50 / box	31
97	15 x 30 cm - Blue - 100 / box Fuji	53
K6	15 x 30 cm - Duplicating - 50 / box	43
A0	15 x 30 cm - Duplicating - 100 / box Fuji	72
95	8 x 10 inch - Green - 100 / box Fuji	47
98	8 x 10 inch - Blue - 100 / box Fuji	47
A1	8 x 10 inch - Duplicating - 100 / box Fuji	86
S6	Film Digitizer - <b>Microtek® 2200</b> - 8" x 12" Scanning at 4800 dpi USB 2.0	875

\* Prices subject to change without notice. Effective: 10-25-2010

Sales tax added to Washington state orders. Prices do not include shipping.

**More items on next page!**

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or use our faxable order form

ITEM CODE	ITEM DESCRIPTION	PRICE
85	<b>Chemistry - <u>ImageMax</u> Concentrate</b> Standard Case 8 Dev + 8 Fixer (\$3.25 / quart)	\$ 52
78	<b>Chemistry - <u>ImageMax</u> Concentrate</b> Small Case 3 Dev + 3 Fixer (\$3.67 / quart)	22
WP	<b><u>WaterFlo</u> PLUS!</b> Improves film drying - Crystal clear images - Stops algae growth	7
79	<b>Cleaner for <u>ImageMax</u></b> developer holding tank - Simple and quick to use - Case of 4	32
SM	<b><u>SilverMax</u></b> Fixer recovery system - Filters for 9 months - EPA approved - Shipping & processing included!	72
58	<b><u>SafeStik</u></b> Safelight - 5 LED's spaced over 18" - No Shadowing - Portable - <i>Highly Recommended!</i>	85
S8	<b><u>Staticide</u></b> - Anti-static spray for intensifying screens	7
03	<b>Daylight Loader</b> - Eliminate the need for a darkroom	295
06	Film Holder for Size # 0 (pedo)	12
07	Film Holder for Size # 1	12
08	Film Holder for Size # 2 (standard adult)	12
09	Film Holder for Size # 3	12
10	Film Holder for Size # 4 (occlusal)	12
86	Intraoral Film Retrieval Tool - Allows you to retrieve lost films in ImageMax tank	3
FT	<b>Film Holder Tray</b> - Neatly organizes 10 film holders	19
AE	<b>APV Extension Cable</b> - 3'	34
11	<b>Staging Box</b> with flashing light for 3 film holders	67
12	<b>Staging Jar</b> for intra-oral films	4
C9	Panoramic Flexible Film Cassette - Gendex	31
C8	Panoramic Flexible Film Cassette - Morita / Yoshida	36
C6	Panoramic Flexible Film Cassette - Panoramic Corporation	40
SC	Intensifying Screen 15 x 30 cm Blue	84
SF	Intensifying Screen 15 x 30 cm Green	160
SB	Intensifying Screen 5 x 12 inch Blue	60
SE	Intensifying Screen 5 x 12 inch Green	134
SA	Intensifying Screen 8 x 10 inch Blue	82
SD	Intensifying Screen 8 x 10 inch Green	177
CD	Chairside Darkroom - Great for endo and quick processing	296
D7	Film Duplicator 6" x 12" Kopy Kat®	416
D8	Film Duplicator 10" x 12" Kopy Kat®	459
IE	Illuminator White Enamel Metal	118
IP	Illuminator White Heavy-duty Plastic	84
IS	Illuminator Stainless Steel	126
PS	Panoramic Film Storage Bin - Safely holds up to 300 sheets of pan film	77



Illuminators have a viewable area of 4-3/4" x 13-3/4"  
Units are 6-1/2" high x 15-1/4" wide x 2-1/2" deep

\* Prices subject to change without notice. Effective: 10-25-2010

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Maker of the ImageMax Automatic Film Processor

**FAX:** (509) 242-1012

**CALL:** (888) 230-9500

## FAX ORDER FORM

ITEM CODE	ITEM DESCRIPTION (optional - just need the item code and the price)	QUANTITY	PRICE EACH	LINE TOTAL
Sales tax added to Washington state orders. Prices do not include shipping. Orders shipped UPS ground unless otherwise specified: 1-day 2-day 3-day			<b>SUB TOTAL</b>	

Doctor's Name:

Date:

Office Phone #:

Ordered By:

Special Order Instructions:



Payment: (New Customers, please call us to set up an account)

[ ] Charge the same credit card used on my last order ending \_\_\_\_\_ Expiration Date \_\_\_ / \_\_\_

[ ] Send me an invoice. I'll pay by check.