



VELOPEX®

Automatic X-Ray Film Processor

Intra - X



USER GUIDE

Operation and Maintenance manual

WARNING:

Do not plug into the electrical mains power supply before reading this manual - or before filling the machine with liquids

Register your machine by returning the Warranty Card to enable full customer support.



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Hi-Tech
Diagnostics
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MAKERS OF DENTAL, VETERINARY AND MEDICAL EQUIPMENT

Machine serial number to be
quoted on all correspondence:

I/LIT0040P Intra-X Manual English Iss.6
Issued: 23/04/11

Introduction

Thank you for purchasing your automatic film processor from Velopex - we certainly appreciate your business.

In order to maintain the quality of our product and your processing it is important that you pay close attention to the instructions contained in this user manual. This will ensure a long life for your processor.

The processor could be dangerous if incorrectly installed or maintained outside the guidelines set out in this manual and the warranty will be voided.

There are no operator serviceable parts inside the machine . This equipment can only be serviced by technically qualified engineers, trained on Velopex machines, and is not designed to be serviced by the end user other than as specified in this manual.

Note: Panel and Label colours and designs may vary.

Caution: Use assistance when unpacking and putting the machine in place.

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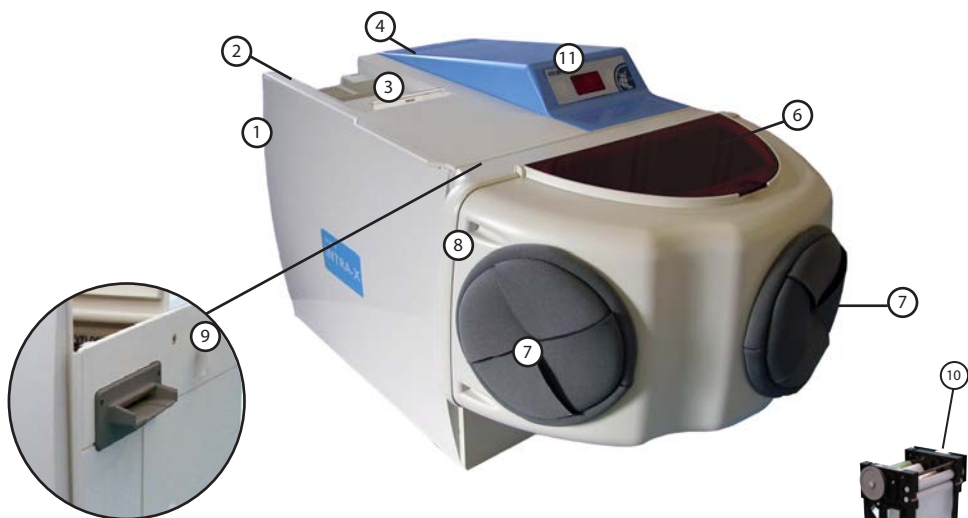
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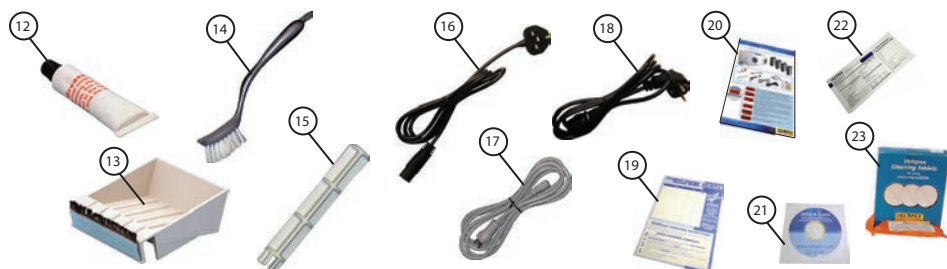
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Velopex Processor - Exterior



- | | | |
|--|----------------------------------|--------------------|
| ① Velopex X-Ray Film Processor - Left Side | ⑤ Viewer Cover | ⑩ Transport Module |
| ② Film Collector | ⑥ Daylight Loader viewing Window | ⑪ Display |
| ③ Endo Slide | ⑦ Hand entry port/Glove | |
| ④ On/Off Power Switch | ⑧ Daylight Loader - Left Side | |
| | ⑨ Film Entry Guide | |

Machine Accessories and Extras Supplied



- | | | |
|-------------------|------------------------|---|
| ⑫ Silicone Grease | ⑬ Film Collecting Tray | ⑯ Chemical Change Record Sheet |
| ⑭ Cleaning Brush | ⑮ Turning Tool | ⑰ UK - Electricity Supply Cord |
| | | ⑱ USA - Electricity Supply Cord |
| | | ⑲ Continental - Electricity Supply Cord |
| | | ⑳ Quick Start Guide |
| | | ㉑ CD Manual |
| | | ㉒ Warranty Registration |
| | | ㉓ Cleaning Tablets |

Table Of Symbols

Symbol	Description
	Alternating Current
	Off
	On
	Attention / Warning - Refer to Manual
	Attention / Warning - High Voltage

Symbols used within Manual

	Tip
	Attention / Warning
	Bleep / Attention Signal
	Attention / Biohazard

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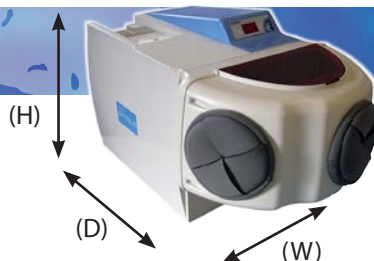
INSTALLATION

OPERATION

MAINTENANCE

TROUBLE SHOOTING

Specification



Width (W)	290mm / 11½"
Depth (D)	435mm / 17"
Inc. Loader	635mm / 25"
Height (H)	315mm / 12½"
Weight: Empty	9.5Kg / 21lb
Full Tanks	13.7Kg / 30lb
Tank Capacity	1.4litres / 2½Imp Pints each
Operating Temperature:	Water - <i>should not exceed</i> 28°C (82.4°F)
Developer	25°C (77°F)
Fixer	27.5°C (81.5°F)
Electric Supply	100-120V, 200-240V, 50/60Hz
Warm-up time	10 min. approx.
Film Feed Speed	470mm / 18½" per min.
Max film width	65mm / 2½"
Processing time: Dry	4.5 min. approx.
Wet-Endodontic	2.5 min. approx.
Input Power	1000W
Environmental Conditions:	Indoor use only
Environment Temperature	5°C-26°C (41°F-78.8°F)
Maximum Relative Humidity:	80%

- * in the unit's first few cycles, processing time can vary between four and five minutes. Then the process time will stabilise around four and a half minutes.

Pre-Installation Instructions



INSTALLATION

• Unpacking the VELOPEX

NOTE: For unpacking and lifting the machine into position it is important to have assistance.

Check contents of the box, see page ii.

1. Familiarise yourself with the layout of the machine by referring to the images as you progress through the manual.
2. Lift the machine from the carton and position on counter top. Remove outer and inner packaging. The transport modules are protected by internal packing pieces: these must be discarded.

Pre-Installation Instructions (Cont.)

• Sitting of the VELOPEX

When using the machine in daylight or a darkroom, avoid sources of intense light. Do not mount the unit under a window, fluorescent light or flood lamp.



IMPORTANT NOTE: A well ventilated position is mandatory.

The ambient temperature must be below 26°C (78.8°F).

NB: If the machine has been shipped or stored in excessive heat, allow time for it to cool to below 26°C (78.8°F) before installation. Temperatures above 57°C will cause an E14 safety message.

Prevent sitting the machine above or near other electrical or mechanical equipment. Surfaces susceptible to water or chemical damage should be avoided, such as carpeted areas.

1. COUNTER

- Use a stable and level counter that will support a weight of at least 50 Kg (100lbs).
- When the machine is filled with chemicals, make sure the stand does not rock or shake. NEVER move the machine with chemicals in the tanks.

2. ELECTRICAL SUPPLY

- Refer to specification table, page v.
- The power source must be within one metre (3 feet) of the machine. It should be easily accessible for operation and maintenance.

WARNING: X-ray radiation can be harmful to patient, technician and dentist. Inadequate lead shielding of the darkroom or film storage area will also cause fogging from exposure of films to stray x-ray radiation. Consult your local codes, Health Department or Dental Equipment Dealer for proper construction of darkroom or placement of film processing equipment in the vicinity of x-ray radiation sources.

NOTE: Pictures are for instruction only and are not necessarily identical to product.

Daylight Loader Installation (if not installed)



1.

Bring the Lid to the upright position. When operating, indication of the opened lid is displayed as: "Lid". Unscrew the retaining screw at the back of the machine above the plug and lift the Display Panel.



2.

Remove Side Panels by sliding them Upwards in their runners.



3a.

Remove All Packing / Wrapping Material and Modules.



TIP: Start with the Dryer Module, then the Water Module followed by the Fixer and Developer Modules. Those should be removed by sliding the tanks out.

(Images for instruction ONLY)

Daylight Loader Installation (Cont.)



3b.



WARNING: When removing the fixer and developer modules, slide tanks sideways until completely clear of the immersion heaters mounted on the machine internal wall.



4.

Unscrew the two retaining screws and remove white protective strip from sealing material on the back of the loader. Remove black covers from the studs on the front panel.



5.

Remove protective film from viewing window cover.

Daylight Loader Installation (Cont.)



6. Slide Loader over Film Entry Guide. Press the Loader firmly against machine.



7. Secure Loader with the two retaining screws. Return side panels and lid panel. Secure loader with black knob screwed onto the Stud now positioned inside the Loader.



Filling with Chemicals



8.



Remove modules (see installation sections 1-3b)

WARNING: Ensure machine is disconnected from mains power supply whilst filling. NEVER turn on the machine with the tanks empty.



9.



Lift the transport modules from their respective tanks.

WARNING: BEFORE filling with chemicals run the machine with clean water in the Developer, Fixer and Water Tanks with Transport Modules in position for a complete running cycle - this will remove all packing debris, dust, etc.



10.



Fill tanks with their respective chemical solutions or water, pouring in 1400ml of fluid.

TIP: Use VELOPEX chemicals designed for your unit. If unobtainable use ONLY another proprietary chemical & always read and follow instructions on bottle.

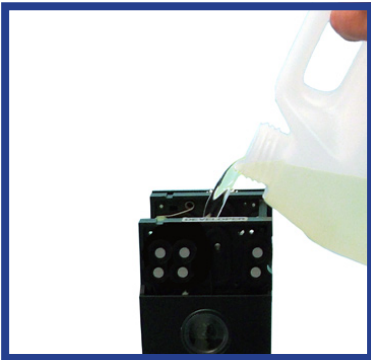


WARNING: DO NOT use chemistry or film designed for manual processing.

Filling with Chemicals (Cont.)



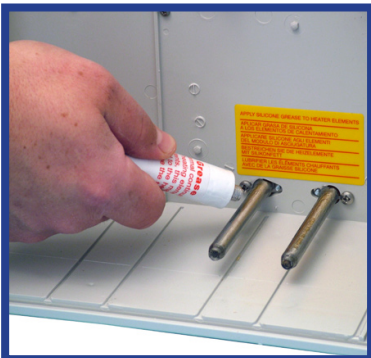
- 11.** Fill the tanks up to the lowest edge of the Sight Glass.



- 12.** Lower Transport Modules carefully into their respective tanks. Top up - the correct liquid level will show half way up the sight glass.



WARNING: This liquid level should be maintained at all times.



- 13.** Grease immersion heaters for developer and fixer tanks with the lubricant provided.



TIP: Spread a thin smear of lubricant over the two projecting metal heating elements.



WARNING: Do NOT over grease.

Filling with Chemicals (Cont.)



14.



To avoid spillage, carefully return tanks to the machine. Start with the Developer tank followed by the Fixer, Water and finally the Dryer tanks. Engage the module drive pins into the drive dogs, working from right to left.

TIP: Slide the developer and fixer tanks sideways onto the immersion heaters till backed up fully against the machine internal wall.



15a.



Return side panel and lid.

WARNING: Wipe dry any spilled solution.



15b.



The machine may now be switched on.

TIP: Check that all modules are engaged and running smoothly by passing a 'clean-up film' through the machine. If it fails to exit the machine, check engagement of modules.

WARNING: The machine will not operate with the lid open.

Operating the Processor



1.

Plug in electric cord and switch on. The machine will then run through a high speed start up cycle.



WARNING: Always turn mains electricity switch off at night.



2.

Incorrect temperature is indicated when the message on the LED displays reads "tLo". Ready to use is indicated by three horizontal central lines, and cooling down is indicated in the lines descending from left to right.



TIP: The time taken to achieve the correct temperature depends on the room temperature (usually 10-15 min.)



3.

The Velopex is equipped with automatic stand-by mode. Touch the Film Entry Slot to initiate processing.



WARNING: Before placing in the machine, Intra oral film packets should be wiped clean of all mouth contaminants.

(Images for instruction ONLY)

Operating the Processor (Cont.)



- 4.** Put hands through loading ports and place film inside Daylight Loader.



WARNING: Always remove old film wrappers from the loader.



- 5.** Put hands through Loading Gloves and strip wrapping from film, insert film into Entry Slot. Touch the Film Entry Slot to initiate processing. A bleep will indicate film detected.

(Images for instruction ONLY)



- 6.** When liquid levels are below the sight glass, top up Chemicals and/or water (See Installation Sections 10, 11 and 12)



TIP: Before processing, run through "clean-up film" or any spare strip of extra oral film. This helps to clean the transport system.



WARNING: The same film may be used for this purpose for one week, after which discard the old film and use a fresh one.

Operating the Processor (Cont.)



7. All films are collected in the Film Catcher at the rear of the machine.



WARNING: At the end of the day turn off mains power switch.



8. For quick viewing of X-rays use the Endo Slide. To use: press the Endo slide **FULLY** down, by pressing the latch and lowering the slide.



WARNING: The Endo Slide must be returned to the 'UP' position for normal processing.

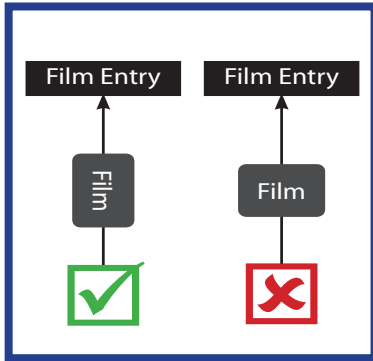


9. Remove film from ENDO slot.



WARNING: Make sure film does not fall back into the Velopex - remove it as soon as it emerges.

Operating the Processor (Cont.)



10.

Film Feeding direction.



TIP: Centre the film on the guide provided to post the film through the processor.



WARNING: Make sure the film is fed in squarely, and in the centre of the entry slot, short edge leading.



11.

For Reference, the machine will display a countdown in seconds from the start to the end of the process.



TIP: If the Lid is opened during a cycle, closing it will initiate a "350 cycle" (test only).

Velopex Processor Changing Chemistry



1.

It is suggested that the **VISCHECK Quality Manager** be used to ensure consistent quality X-Rays.



TIP: Regular use of this product will ensure that the quality of the film processing is maintained and reduce the risk of retakes. Visccheck will also tell you when to change the chemicals. VISCHECK is available from your Velopex stockist.



2.

Open Lid, remove side cover, tanks & modules (see Installation sections 1-3b & 8-9).



WARNING: Carry out the cleaning routine at each chemical change, approx. once every three to four weeks, according to use.



3.

Empty tanks and dispose of chemistry.



TIP: Drain modules over the tanks before removing them.



WARNING: Use gloves and handle with care. Be aware that chemicals can cause staining or corrosion of surfaces and may cause skin and eye irritation. Wipe away any spillage immediately and flush with copious amounts of water.

Velopex Processor Changing Chemistry (Cont.)



- 4.** Add Velopex Cleaning Tablets, one per tank and leave for one hour.



- 5.** Rinse tanks thoroughly with fresh cold water.



- 6.** Fill up with Chemicals (See Installation sections 10-12, pages 6-7). For best results, use VELOPEX chemicals.



TIP: Use the chart provided and keep a note of the date when chemicals were changed.

Velopex Processor Cleaning



1.

Remove old film wrappers from daylight loader. Wipe clean the interior of loader.



TIP: The interior of the daylight loader should be cleaned with cold sterilising solution. Wipe dry after appropriate period.



WARNING: Wear gloves - contamination Biohazard.



2.

Dryer Module Cleaning - Place Module in container or sink filled with fresh cold water. Add one Velopex Cleaning Tablet and soak for at least 10 minutes. Rinse thoroughly with water to remove all cleaning solution.

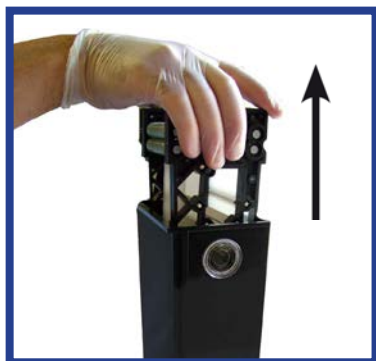


TIP: Add a little domestic fabric softener to the washing water to avoid 'static'. **DO NOT USE FABRIC SOFTENER ON THE OTHER MODULES!**



WARNING: Make sure you drip-dry the module before replacing in the dryer compartment.

Velopex Processor Cleaning (Cont.)



4.

Drain Module over the tank before removing.

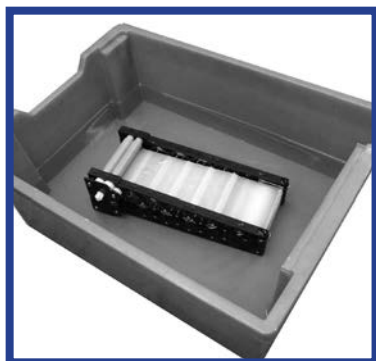


5.



Rinse thoroughly with cold water and lightly scrub gears and rollers.

TIP: Use the turning tool; turn the gears and belts by hand to assist in thorough cleaning.



6.

Place the module in a washing-up bowl with fresh cold water. Add three tablets to each bowl and leave to soak overnight.



WARNING: DO NOT MIX MODULES DURING CLEANING. Ensure that the correct module goes into its corresponding tank.



TIP: Clean one module at a time and leave to soak overnight.

Display Error Codes

Display Characters	Description	Action
E03	Dryer temperature sensor s/c	Call for Service
E04	Dryer temperature sensor o/c or connection to Main PCB	Call for Service
E05	Fixer temperature sensor s/c	Call for Service
E06	Fixer temperature sensor o/c	Call for Service
E07	Developer temperature sensor s/c	Call for Service
E08	Developer temperature sensor o/c	Call for Service
E10	Fan Sensor Inactive	Call for Service
E11	Drive turns count not zero	Call for Service
E12	Drive motor overloaded	1. Switch off the Machine . 2. Clean the Gears on the Modules. 3. Switch on the Machine. 4. If still E12 - Call for Service.
E13	Transport motor Sensor Inactive or Modules seized	1. Switch off the Machine 2. Clean the gears and belts on the Modules. 3. Switch on the machine 4. If still E13 - Call for Service
E14	Excessive Fixer / Developer temperature	Call for Service
E15	Dryer temperature too high	Call for Service
E18	Dryer power duty cycle too low	Call for Service
E33	Watchdog relay test failure (Low)	Call for Service
E34	Watchdog relay test failure (High)	Call for Service
tLO	Either Developer or Fixer tank temperature is low	Wait for the correct temperature
LId	Lid switch open	Close lid

TROUBLE SHOOTING

Troubleshooting (Cont.)

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
1	Machine does not operate	Power Supply	Check Mains Power is plugged in and supply switched on. NOTE - Velopex Machine will run one cycle when switched on and lid in correct position.
		Machine is in 'standby' mode	Check by swiping finger across the Entry guide that machine is not in 'standby' mode.
		Blown Fuse	Call for Service.
		Lid Open - Displayed	If the lid is not correctly closed the safety mechanism will prevent the machine from operating. Check by opening and closing again. Otherwise call for service.
2	Temperature Indicator Displayed	Cord	Check that cord is fully engaged in both plug and socket on the back of the machine. (At normal room temperature average warm-up time is 10-15 minutes; in an unheated environment this time could lengthen): If display stays on for an abnormally long time, call for service.
			DO NOT USE MACHINE - Call for Service.
3	Solution overheating	Machine is in 'standby' mode	Swipe finger across the Entry guide - machine may be in 'standby' mode.
		Transport Modules not in Place	Open machine lid and check correct engagement of transport modules.
4	Films Do Not Enter through Film Entry Guide.	Transport Modules not in Place	Check individual Module by rotating with turning tool to manually feed film. Check that the transport modules are correctly located in their drive dogs and running correctly. If not, re-locate.
		Wrong Positioning of Transport Module Spring	Check the springs on the modules for correct positioning. Use the module turning tool to rotate the belts for inspection, and run a test film through the module using this tool.
		Dirty Transport Modules	Check that all transport modules have been put through the correct cleaning procedure.
		Damaged/Torn Belt	Replace a Module
		ENDO 'interrupt' bar	Check that bar is fully in the 'up' position.
5	Film Lost in the Machine	Static Electricity in the Dryer Section of the Machine	Add a little domestic fabric softener to the washing water when washing dryer module to avoid 'static'. IMPORTANT: Fabric softener should be used on the Dryer Module ONLY - do NOT use it on the Developer, Fixer or Water Modules.

Troubleshooting (Cont.)

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
6	Films too Dark:		
	Test for light fog by feeding an unexposed film through the machine. It should process as a transparent piece of film base and there should be no shadows or blackness on it. REGULAR USE OF VISCHECK IS THE BEST TOOL FOR EARLY DIAGNOSIS OF PROCESSING AND X-RAY PROBLEMS.		
	There is Light Fog	Lid Open	Check that the top lid is firmly in place (no lid display on).
		Dark room not Light-Tight	Check that the dark room is light-tight, and that the safe light is sound (e.g. process a test film with safe light off).
		Daylight Loader not Secured	Check that the daylight loader is firmly secured, including removal of cover tapes from self-adhesive mounting.
			When the Daylight loader is used, ensure that the machine has not been sited in direct sunlight or in intense lighting conditions (e.g. directly under spotlights or strip lights).
		Light Leaks	Do not remove your hands out of the hand entry ports before the film has fed completely into the machine (fog at one end only of the film indicates premature removal of hands from daylight loader).
			Check that window cover on loader has been correctly replaced and check at hand entry ports to ensure there is a good light seal around the wrists – if not, call for service.
	Dark Film	Close to X-ray Source	Check whether films have been stored too close to X-ray source, and re-locate/replace.
		Film Expired	Check Expiry date on film box to ensure films are not out of date. (Keep films in cool, dry place: excessive heat can cause premature ageing of film).
		Chemical Contamination	Check that there has been no chemical mix-up, leading to cross-contamination.
		Mixing of Developer	Check that the Developer has been correctly mixed (if relevant).
		Temperature (XE excluded)	Check temperature of Developer and Fixer tanks. These are generally set at: Developer 77°F (25°C), Fixer 86°F (30°C). If the Developer temperature is significantly higher, it could lead to dark film. Switch off the machine and call for service.

Troubleshooting (Cont.)

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
7	Films too Light:	Chemicals Exhausted	Replace with fresh (this will depend on volume of film being processed and length of time since last chemical change).
		Chemicals Contaminated	Clean machine, replace chemicals with fresh solutions.
		Developer Incorrectly Mixed	Replace with fresh (if relevant).
		Chemical Level too Low	Top up.
		Temperature too Low (XE excluded)	If display message does not go out, check with a thermometer - generally set at: Developer 77°F (25°C), Fixer 86°F (30°C) - if significantly below these temperatures, call for service.
		Film Exposure	Check films have been exposed correctly.
		Water Tank Dirty	Clean module thoroughly and change water daily (insufficient cleaning can lead to a build-up of algae).
8	Films Dirty or Marked	Transport Modules Dirty	Check transport modules are being cleaned correctly (see cleaning instructions above).
		Chemical Level too Low	Top up.
		Wrong Positioning of Modules	If found in wrong order, contamination will have occurred. Thoroughly clean modules and tanks; re-fill with fresh chemicals.
		Light Leaks	Check for stray light entering machine - proceed as for fogging (see symptom # 6).
9	Sudden Change in Image Density	Wrong Solutions	Make sure solutions are in correct tanks.
		Developer Contamination	Replace Developer if contaminated with Fixer.
		Temperature	Check Developer temperature.
		X-ray Unit.	Check X-ray unit.

Troubleshooting (Cont.)

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
10	Film not Drying	Dryer	Make sure Dryer is working and blowing hot air.
		Humidity	Look for poor air circulation or HIGH humidity in processing area.
		Electrical Component	Switch off machine. Switch on again after 10 seconds. If still not drying call for Service.
11	Deposits on Film:		
	White Marks	Fixer	Check for contaminated or wrongly mixed Fixer.
		Fixer Deposits	Check for Dryer Module contaminated by fixer deposits.
	Black Parallel Lines		Clean entry slot or feed guides
		Dirt	Clean bridge-over rollers.
			Clean Modules.
12	Dark Areas on Film	Belts Jammed	Check belts are turning properly.
		Static Damage	Takes the form of dots, fern-like lines or lightening strikes; check for LOW ambient humidity in processing area. Clean area with anti static solution.
		Light Areas on Film:	
13	White Opaque Patches on Low Density Areas (Indicates Lack of Fixing)	Temperature	Check Fixer temperature.
		Fixer	Check for exhausted Fixer.

Troubleshooting (Cont.)

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
14	Mottle	Dirty Transport Modules	Clean Modules.
		Film Expired	Check age and storage conditions of film.
		Light Fogging	See above, Symptom # 6.
15	Films coming Out Wet	Air Coming Out of the Vent is NOT Warm.	After the processor has been running for two minutes, check that the air coming out of the vent over the Dryer module is warm. If not, switch the processor off at the Mains Power Switch for two minutes and switch it on again. If that does not correct the fault, call for service.
16	Contamination	Chemicals	When changing Chemicals, make sure the tanks are completely empty and rinsed out. Fresh chemical will be spoiled by contamination, leading to poor results.
17	Vischeck film foggy / dark	Light Leak	Make sure that the Viewer Cover on the Daylight Loader is covered with a light tight top, such as the supplied Vischeck Quality Manager Cardboard Box or any other material that would block the light.
18	Abnormal Odour, Overheated or Unusual Noises		Immediately switch processor off and unplug from Mains Power Supply. Contact your supplier.

[illegible]

**ETL LISTED/ENREGISTRÉ ETL
CONFORMS TO/CONFORME À
UL 61010-1**

**THIS PRODUCT HAS BEEN TESTED
TO THE REQUIREMENTS OF
CAN/CSA-C22.2 No. 61010-1
SECOND EDITION INCLUDING AMENDMENT 1
OR A LATER VERSION OF THE SAME STANDARD
INCORPORATING THE SAME LEVEL OF TESTING
REQUIREMENTS. C No. 113778
ETL Testing Laboratories**

