

Automatic X-Ray Film Processor

Intra - X MK V



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.



Machine serial number to be	
quoted on all correspondence:	

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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Velopex Processor - Exterior



Machine Accessories and Extras Supplied



- Silicone Grease
- Film Collecting Tray
- Cleaning Brush
- Turning Tool
- UK Electricity Supply Cord
- USA Electricity Supply Cord
- Continental Electricity Supply Cord

Table of Symbols

Symbol	Description
~	Alternating Current
0	Off
- 1	On
\triangle	Attention / Warning - Refer to Manual
4	Attention / Warning - High Voltage

Symbols used within Manual

T	Tip
<u> </u>	Attention / Warning
1))	Bleep / Attention Signal

Contents

Specification	V
Pre Installation Instructions	1
Daylight Loader Installation (if not installed)	3
Operation	9
Maintenance	13
Display Error Codes	17
Trouble Shooting	18
Service Log	23

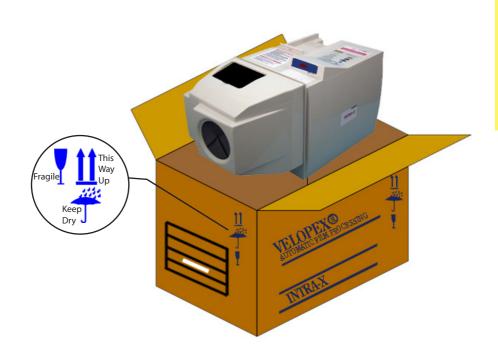
Specification



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 / 2½lmp Pints each
Operating Temp	perature:	Water- should not exceed 82.4°F
		(28°C)
	Developer	77°F (25°C)
	Fixer	86°F (30°C)
Electric Supply		100-120V, 200-240V, 50/60Hz
Warm-up time		10 min. approx.
Film Feed Speed	d	470mm / 18½" per min.
Max film width		65mm / 2½″
Processing time	e: Dry	4.5 min. approx.
	Wet-Endodontic	2.5 min. approx.
Input Power		1000W
Environmenta	Conditions:	Indoor use only
Environment Te	mperature	5°C-26°C (41°F-78.8°F)
Maximum Relat	ive 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



Unpacking the VELOPEX

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

The machine comes in a single carton containing:

Machine, Operator's Manual, Silicone Grease, Electrical Cord, Transport Module Turning Tool, Cleaning Brush, Chemical Change Chart and a box of Cleaning Tablets (UK only), and Daylight Loader.

- 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.)

Siting 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 78.8°F (26°C).

NB: If the machine has been shipped or stored in excessive heat, allow time for it to cool to below 78.8°F (26°C) before installation. Otherwise the safety trip will close the unit down.

Prevent siting 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

- a. Use a stable and level counter that will support a weight of at least 100 lbs. (50 Kg.).
- b. 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

- a. Refer to specification table, page v.
- b. The power source must be within three (3) feet (1m) 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)



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.



Remove Side Panels by Sliding them Upwards in their Runners.



(Images for instruction ONLY)

3a.

جرم

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.

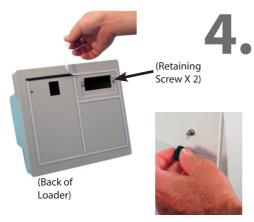
Daylight Loader Installation (cont.)







WARNING: When Removing the Fixer and Developer modules, slide tanks sideways until completely clear of the immersion heaters mounted on the machine internal wall.



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.



(Front of Loader)

5.

Remove Protective Film from Viewing Window Cover.

Daylight Loader Installation (cont.)



6.

Slide Loader over Film Entry Guide and 'RUN' Sensor, Press the Loader firmly against Machine.

(Images for instruction ONLY)



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– to remove all packing debris, dust etc.



10.

Fill tanks with their respective chemical solutions or water,

Pouring in 1½ quarts (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.)





Fill the tanks up to the lowest edge of the Sight Glass.



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.



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



Plug in electric cord and switch on. The machine will then run through a high speed start up cycle of 2.5 minutes.

TIP: After approx. ten minutes the processor will go into 'stand-by' mode, by which time the chemicals will have reached their correct temperature.

WARNING: Always turn mains electricity switch off at night.





Incorrect temperature is indicated when the message on the LED display 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.).



(Image for instruction ONLY, Viewing Window is closed when operating machine) The Velopex is equipped with automatic stand-by mode. To initiate processing feed film through Entry Slot. If that fails to work, slide finger over 'RUN' Sensor.

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

Operating the Processor (cont.)



(Image for instruction ONLY, Viewing Window is closed when operating machine)



Put Hands through Loading Ports and place Film inside Daylight Loader.

Strip Wrapping from Film, Insert Film into Entry Slot, a bleep will indicate film

will indicate that the next film can

be inserted into the machine. Do not

remove hands from loading section until the film has completely entered

Exposed films that have already been processed (black) will not be indicated by the sensor and machine

A double bleep

detected. TIP:

will not bleep. **WARNING:**

the machine.

WARNING: Always remove old film wrappers from inside the loader.



(Image for instruction ONLY, Viewing Window is closed when operating machine)















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, which will halve the time of processing. To use: press the Endo Slide FULLY down, by pressing the latch and lowering the slide.

TIP: This procedure is only "Dryto-Wet", which means the film should be washed with water and hung up to dry when needed for archiving.



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



Remove film from ENDO slot.

TIP: After film exits, you can view and then wash it with water and hang it up to dry.

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.

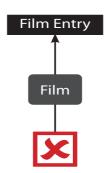


TIP: Centre the film on the guide provided to post the film through the processor.



WARNING: Make sure the film is fed in squarely, and in the centre of the entry slot, short edge leading. A double Bleep will indicate that the film has been fully inserted.







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

The first cycle after switching the machine on will be a fast Test Cycle and will run for 150 seconds. Every cycle thereafter will run for 300 seconds.



TIP: If the Lid is opened during a cycle, closing it will initiate a "150 cycle" (test only).



WARNING: Do not process films in the "150 cycle" - it <u>will not</u> develop the films. This is a "TEST ONLY" cycle for testing the unit and clearing any residues.

Velopex Processor Cleaning



Quality Assurance - for instructions refer to back of VISCHECK X-Ray Quality Control System Manual supplied with your machine.

TIP: Regular use of this product will ensure the quality of the film processing is maintained and reduce the risk of retakes. Vischeck will also tell you when to change the chemicals. If the above has not been provided as part of your package, VISCHECK electronic reader is purchasable through your dealer.



WARNING: When processing Vischeck films, make sure that the Viewer Cover is covered by a light tight top such as the Vischeck box.

Open Lid, remove side cover, and remove 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.



Drain Modules over the tanks before removing them.



TIP: Tip the Module and lean it on the edge of the tank letting it drain before completely removing.



WARNING: The Modules are wet with chemicals; use gloves and handle with care. May cause staining or corrosion of surfaces, skin and eye irritation. Wipe away any spillage immediately and flush with copious amounts of water.





Velopex Processor Cleaning (cont.)



4.

Module cleaning - Immerse the Modules in a tank/sink filled with hot water (80°C approx.) and scrub with the supplied brush around the gears and roller ends.



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



WARNING: DO NOT use boiling water; it will damage the modules. Use ONLY cold water when cleaning the machine tanks.



5.

Clean the Modules using the Velopex Cleaning Tablets: Empty Chemical and Water tanks. Re-fill with fresh cold water.



WARNING: Do not empty cleaning solution into containers containing processing chemicals - FOLLOW INSTRUCTIONS SUPPLIED WITH CLEANING TABLETS.



6.

Replace the modules in their tanks and run for one cycle. Empty tanks again, remove Modules and re-fill with fresh cold water.



WARNING: Always return a Module to the tank it was removed from e.g. Developer-to-Developer.

Velopex Processor Cleaning (cont.)



Add \

Add Velopex Cleaning Tablets one per tank.



8.

Replace Modules and run for TWO cycles at operating temperature.



9.

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.)



Removal of film debris: Open Bottom hatch of Loader.



WARNING: Ensure hatch is securely closed and light - tight.



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.



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

chemicals.



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

Process a Vischeck strip to produce the master reference strip and place in position on the Quality chart (follow Vischeck instruction for use).

TROUBLE SHOUTING

Display Error Codes

Display Characters	Description	Action
E03	Dryer temperature sensor s/c	Call for Service
E04	Dryer temperature sensor o/c	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	 Switch off the Machine. Clean the Gears on the Modules. Switch on the Machine. If still E12 - Call for Service.
E13	Transport motor Sensor Inactive	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

Troubleshooting

TROUBLE SHOOTING

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
		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 does not	Machine is in 'standby' mode	Check by swiping finger across the 'RUN' switch that machine is not in 'standby' mode.
	operate	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.
		Cord	Check that cord is fully engaged in both plug and socket on the back of the machine.
2	Temperature Indicator Displayed		(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.
3	Solution overheating		DO NOT USE MACHINE - Call for Service.
	Films Do Not Enter	Machine is in 'standby' mode	Swipe finger across the 'Run' switch - machine may be in 'standby' mode.
	unougn Film Entry Guide.	Transport Modules not in Place	Open machine lid and check correct engagement of transport modules.
		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, relocate.
		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.
Ŋ	Film Lost in the Machine Dirty Transport Modules	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.
		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.

TROUBLE SHOUTING

Troubleshooting (Cont.)

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
<u>E</u>	Films too Dark:		
<u> </u>	est for light fog by feedii hadows or blackness on	ng an unexposed film th it. REGULAR USE OF VISC	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.
		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).
<u> </u>	There is Light Fog	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.
		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).
	Dark Film	Temperature (XE excluded)	Check temperature of Developer and Fixer tanks. These are generally set at: Developer 77ºF (25°C), Fixer 86ºF (30ºC). If the Developer temperature is significantly higher, it could lead to dark film. Switch off the machine and call for service.

TROUBLE SHOOTING

Troubleshooting (Cont.)

No.	SYMPTOM SYMPTOM	POSSIBLE CAUSE	ACTIONS
		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.
7	Films too Light:	Developer Incorrectly Mixed	Replace with fresh (if relevant).
		Chemical Level too Low Top up.	Top up.
		Temperature too Low (XE excluded)	If display message does not go out, check with a thermometer - generally set at: Developer 77ºF (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).
		Transport Modules Dirty	Check transport modules are being cleaned correctly (see cleaning instructions above).
∞	Films Dirty or Marked	Chemical Level too Low Top up.	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).
		Wrong Solutions	Make sure solutions are in correct tanks.
6		Developer Contamination	Replace Developer if contaminated with Fixer.
	iiiiage Density	Temperature	Check Developer temperature.
		X-ray Unit.	Check X-ray unit.

Check for exhausted Fixer.

Temperature

Light Areas on Film: White Opaque Patches

3

on Low Density Areas (Indicates Lack of Fixing) Fixer

TROUBLE SHOUTING

Troubleshooting (Cont.) Takes the form of dots, fern-like lines or lightening strikes; check for LOW ambient humidity in Switch off machine. Switch on again after 10 seconds. If still not drying call for Service. ook for poor air circulation or HIGH humidity in processing area. Check for Dryer Module contaminated by fixer deposits. ACTIONS processing area. Clean area with anti static solution. Make sure Dryer is working and blowing hot air. Check for contaminated or wrongly mixed Fixer. Check belts are turning properly. Clean entry slot or feed guides Check Fixer temperature. Clean bridge-over rollers. Clean Modules.

Electrical Component

Humidity

Film not Drying

2

Fixer Deposits

Dirt

Black Parallel Lines

Ξ

Fixer

White Marks

Deposits on Film:

Belts Jammed
Static Damage

Dark Areas on Film

POSSIBLE CAUSE

SYMPTOM

Š.

TROUBLE SHOOTING

SYMPTOM

Modules

14 Mottle

Troubleshooting (Cont.) After the processor has been running for two minutes, check that the air coming out of the vent Make sure that the Viewer Cover on the Daylight Loader is covered with a light tight top, such over the Dryer module is warm. If not, switch the processor off at the Mains Power Switch for When changing Chemicals, make sure the tanks are completely empty and rinsed out. Fresh mmediately switch processor off and unplug from Mains Power Supply. Contact your as the supplied Vischeck Quality Manager Cardboard Box or any other material that would wo minutes and switch it on again. If that does not correct the fault, call for service. chemical will be spoiled by contamination, leading to poor results. ACTIONS Check age and storage conditions of film. see above, Symptom # 6. Clean Modules. olock the light. supplier. Air Coming Out of the POSSIBLE CAUSE Vent is NOT Warm. Dirty Transport ight Fogging ilm Expired Chemicals Light Leak

15 Films coming Out Wet

Overheated or Unusual

Noises

Abnormal Odour,

Vischeck film foggy /

dark

17

Contamination

16

Service Log

Date	Service Description	Serviced By
/ /	Machine Installation	
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