CarestreamNDT

INDUSTREX M37 Plus and M43ic Processors for Non-Destructive Testing

Two powerful innovations for producing high-quality NDT radiographs. Choose the INDUSTREX M43ic for high-volume output or the INDUSTREX M37 Plus for space-saving design and mid-volume output.

High-Performance Processors

Quality images, efficient output, energy and water savings.

These feature-rich processors include state-of-the-art microprocessor control, to automatically monitor and regulate:

- Developer temperature
- Drying temperature
- Developing time
- Replenishment rates

FEATURES INCLUDE:

- Automatic stand-by mode for low water and power consumption, environmental friendly
- Filtered developer processing solutions
- High Capacity, ranging from 33-58 35cm x 43cm sheets/hour based on model
- Automatic tank solution replenishment. Microprocessor calculates amount of film entering processor based on the input of sensors; it then uses the data to precision-measure the replenishment fluid needed.
- Anti-oxidation standby mode. This function prevents oxidation and chemical breakdown by automatically injecting developer solution into the tank when unit is not in use.
- Superior film-drying system. Processors dry film thoroughly without the use of damaging infra-red technology.
- Specialized transport rollers protect film. Eliminate crystallization of chemicals on rollers, and minimize dirt and debris deposited on film. Processor rollers remain submerged in solution when not in use – keeping them clean and running smoothly.

INDUSTREX M43ic Processor

Designed for the needs of high-volume Non-Destructive Testing customers, the INDUSTREX M43ic provides multiple processing cycles and dry-to-dry processing in as little as five minutes.

This processor also comes standard with an integrated closed-loop chiller to ensure consistent temperature in hot environments or when water supply is not temperature controlled to further enhance capability and image quality in harsh NDT environments.

THE INDUSTREX M43ic PROCESSOR HAS A ROBUST FEATURE SET THAT INCLUDES:

- Up to nine programmable-controlled processing channels for maintaining preferred settings such as processing speed, developer temperature, fixer temperature, dryer temperature and replenishment rates
- High processing capacity of up to 58 sheets/hour (35cm x 43cm) in the recommended processing cycle for improved productivity
- An intermediate fix rinse system that enhances process uniformity to both sides of the film
- Feed-tray cover that allows for room light operation
- Filtered developer solution that reduces film artifacts
- Integrated chiller unit that maintains developer temperature uniformity in hot environments
- Two 50-liter replenisher storage tanks
- Low level monitoring of all tank solutions
- Automatic tank solution “Top-Up” control that maintains correct solution levels upon processor start up
- Work-in-progress monitoring
- Integrated connectors to an external exhaust air system

M43IC AND M37 Plus INTERFACE DISPLAY FEATURES

Both processors include an intuitive keypad interface simplifies operation, and allows new users to become experts in a hurry. Touch a few buttons, and you can pre-program up to nine different settings to automatically accommodate your most frequent applications. Install these processors for free-standing operation in darkroom or for convenient through-the-wall feeding – load exposed film in darkroom, collect processed films in normal room light.

INDUSTREX M37 Plus Processor

The tabletop INDUSTREX M37 Plus is ideal for automatic processing in mid-volume facilities. While compact, it offers the output you need and the excellent image quality and reliability you demand.

The new INDUSTREX M37 Plus film processor incorporates all the experience and features you've come to expect from the INDUSTREX line of products for NDT applications. The processor ensures totally automatic film handling and supports nine programmable-controlled processing channels that allows for flexibility in your day-to-day NDT film production.

THE INDUSTREX M37 Plus PROCESSOR FEATURE SET INCLUDES:

- Ease of operation with nine programmable-controlled processing channels
- 43cm processing width
- Economical medium-range processor with capacity of 33 sheets/hour (35cm x 43cm) in the recommended processing cycle
- Compact design for smaller labs or environments
- Filtered developer solution that reduces film artifacts
- Intermediate rinse rack bath system
- Can be used in stand-alone darkroom or through-the-wall installations
- Automatic film-in detection utilizing a pulsed infra-red sensor bar
- Automatic replenishment system for developer and fixer
- Automatic heating for developer and fixer
- Automatic anti-oxidation and anti-crystallization cycles
- Separate drainage for developer, fixer and wash chemicals
- Factory fitted replenisher tank level control assemblies with a plug connection into the processor
- Incoming water temperature sensor - beeper alarm when wash water temperature is outside programmed range
- Enhanced cold water cooling system
- Unit pre-configured with connection fittings to simplify installation of optional external chiller
- Automatic wash water top off at start-up

STANDARD ACCESSORIES INCLUDE:

- Two 30-liter replenisher storage tanks
- Light tight feed-tray cover
- Table stand
- Re-locatable controller unit for operator convenience
- Spare part kit

INDUSTREX M37 Plus and M43ic Processors Specifications

Category Group	Standard Specifications	M37 Plus (Material no. 5314620)	M43ic (Material no. 5147814)
Application	Unit Description	Table-top, medium capacity general NDT radiography	Floor-standing, high capacity general NDT radiography
	Site application	Intended for fixed laboratory installation (Not recommended for mobile lab applications)	Intended for fixed laboratory installation (Not recommended for mobile lab applications)
Film	Film format types	Cut sheet and adaptable for roll lengths	Cut sheet and adaptable for roll lengths
	Recommended development time & temperature	110 sec development time (22 cm/min) @ 28° C	100 sec development time (39cm/min) @ 26°C
	Film sheets processing capacity/hour (35x43 cm)	33 sheets/hr @ 110 sec recommended development time	58 sheets/hr @ 100 sec recommended development time
	Film thickness	0.10 mm–0.18 mm	0.10 mm–0.18 mm
	Material length (minimum)	10 cm minimum	10 cm minimum
	Material width	7.0 cm–43.0 cm Note: For multi-loading of narrow width films, feed tray loading guides are required for film widths 70mm-100mm and are available from the OEM as an accessory	7.0 cm–43.0 cm Note: For multi-loading of narrow width films, feed tray loading guides are required for film widths 70mm-100mm and are available from the OEM as an accessory
Time/speed	Cycle time (dry to dry) (min)	3.9–11 min (7 min @ 110 sec. recommended development time)	2.1–12.6 min (8 min @ 100 sec recommended development time)
	Intake speed (cm/min)	39.6–14 cm/min (22 cm/min @ 110 sec. recommended development time)	128–22 cm/min (39 cm/min @ 100 sec recommended development time)
	Time in developer (sec)	Range: 60–170 sec (22 cm/min @ 110 sec recommended dev time)	Range: 60–184 sec (39 cm/min @ 100 sec recommended dev time)
Transport	Developer to Fixer crossover style	Water rinsed crossover rollers to minimize carryover of developer into fixer	Fixer spray bar style crossover
Processing Solutions	Adjustable Replenishment rates	Yes, set in ml/m2 of film processed	Yes, set in ml/m2 of film processed
	Cooling liquid	Incoming cold water supply	2.5 L chiller fluid
	Cooling system	Enhanced incoming cold water cooling system Note: Requires incoming water supply with temperature range of 7°C–15°C. ✱	Integrated internal chiller with closed loop cooling system (Included accessory)
	Chiller connectivity	Unit is adapted with double cooling system for ease of use with external chiller accessory (not included) ✱	N/A (chiller built in)
	Replenisher tanks	2x30 liter w/dust cover lids and floating lid for developer tank	2x50 liter/dust cover lids and floating lid for developer tank
	Low Replenisher tank solution alarm	Yes ✱	Optional accessory ordered from OEM
	Replenishment type	Automatic IR scanning sensor based on film area	Automatic IR scanning sensor based on film area
	Solution filter elements	Developer filter	Developer filter
	Solution Heating (developer and fixer)	Adjustable in a range of 18°C–43°C (separate in-line 350W heaters)	Adjustable in a range of 18°C–43°C (separate in-line 350W heaters)
	Solution level monitoring	Yes, wash tank standard on M37 Plus unit	Yes, with automatic top off at start up of developer, fixer and wash tanks
Developer	Developer tank size	7.5 L (including developer filter system)	13.4 L (including developer filter system)
	Developer tank recirculation pump	Yes	Yes
Fixer	Fixer tank size	6.7 L	13.3 L
	Fixer tank recirculation pump	Yes	Yes
Wash	Wash tank feature	Enhanced high-power wash rack water injection system for improved archival capability ✱	Deep-tank design for enhanced washing and archival keeping capability
	Wash temperature sensor	Incoming water temperature sensor ✱	No
	Wash tank level sensor	Low level wash tank monitoring sensor ✱	Low level wash tank monitoring sensor
	Wash tank recirculation pump	Yes ✱	No
	Wash Water tank size	6.6 L	11.5 L
	Wash water reduction system	Water used only on demand. 2.5 L/min during process cycle	Water used only on demand. 2.5 L/min during process cycle
	Incoming water supply	Incoming water supply must be filtered. Supplied by user at installation.	Incoming water supply must be filtered. Supplied by user at installation.
Dryer	Dryer range	Adjustable in a range 18°C–60°C	Adjustable in a range 18°C–60°C
	Dryer type	Warm air	Warm air
	Integral warm air exhaust port	Yes. Note: A ventilation duct exhaust booster fan (not included) is necessary to ensure proper air flow through the unit. Supplied by user at installation	Yes. Note: A ventilation duct exhaust booster fan (not included) is necessary to ensure proper air flow through the unit. Supplied by user at installation
Operation	Number of programming channels available	9 Operating Channels (Channels 1-4 pre programmed with standard processing parameter values)	9 Channels (Channel 1 is pre programmed with standard process cycle recommendations)
	Automatic cleaning cycle	Yes	Yes
	Feed tray cover	Included	Included
	Film feed signal	Yes	Yes
	Rack drip tray	Included as standard	Included as standard
	Re-locatable control panel unit	Yes	Yes
	Spare parts kit	Small parts kit included as standard	Small parts kit included as standard
Electrical	Power requirements	230VAC +/-10%, 50-60hz single Phase, 13A, 2.0kW	230VAC +/-10%, 50-60hz single Phase, 16A, 3.6KW
Environmental	Automatic standby	Yes, power and wash water savings	Yes, power and wash water savings
Installation*	Installation configuration options	Free-standing with included table stand or through-the-wall	Free-standing floor model or through-the-wall
	Processor stand	Included as standard	N/A
Weight		Empty: 154kg, with solution: 174kg	Empty: 177 kg, with solution: 215 kg
Safety	Emergency shut off switches	Yes, mainframe mounted with remote interlockwith top cover safety switches	Yes, mainframe mounted safety switch with top cover safety switches
Other Features	Anti-oxidation/cleaning programming	Yes	Yes
	Precision speed control	Yes, motor tachometer pulse regulation	Yes, motor tachometer pulse regulation
	Developer Filter change prompt	Yes	Yes
	Processor Monitoring	Yes, operator displays w/ audible alerts	Yes, operator displays w/ audible alerts

CE * (Note: recommended that only factory trained Service Engineer install unit.) ✱ Unique feature to Carestream

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