

NDT S eco Ecological Film Processor

The NDT S eco is the best way forward to become ecologically responsible. This machine is specially designed to meet the strictest standards for silver content in wash water. The secret lies in the double fixing tank with which the NDT S is equipped.

The „cascade fixing“ system ensures that the amount of silver in the wash water is only 40 mg/m², thus remaining within the limit < 50 mg/m² which we expect to be introduced as the European norm in the future.

However the NDT S eco goes even further with significant reduction in the amount of replenishment.

With the NDT S eco, ecology goes hand-in-hand with economy.



Cascade fixing

The cascade fixing system is an entirely new concept for processing X-ray films. The NDT S eco processor is built with two successive fixing tanks replenished on the counterflow principle. The result is nothing less than revolutionary in terms of the amount of silver in the wash water.

The cascade fixing principle is basically very simple: the exposed film is first developed in the developer tank and then washed in the intermedi-

ate washing tank. The intermediate washing system ensures that there is hardly any carry-over of developer into the fixing tanks, thus keeping the fixer bath in optimum condition. The intermediate washing also prevents development faults occurring on the film.

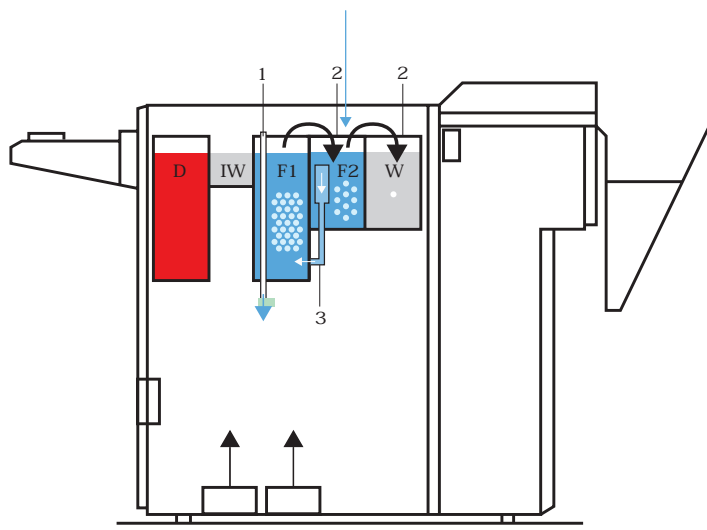
The film is then 100% fixed in the first fixer tank and then rinsed once more in the second fixer tank. Since fixer replenishment is carried out in the second fixer tank, the concentration of silver in this tank remains very low. There is also very little carry-over of silver into the water tank, so that the waste water complies with the most stringent standards.

Fixer replenishment works on the counterflow principle, with the first fixer tank being replenished from the overflow of the second fixer tank.

An added advantage of this is that nearly all the silver released in the fixing stage ends up in the overflow from the first fixing tank. This ensures optimum silver recovery.

This unique film processing system ensures that the amount of silver in the wash water from the NDT S eco processor is 15 or even 25 times lower than in a conventional processing system.





- AGFA NDT G 335 - Replenishment rate 700 - 1200 ml/m².
- Ecological performance with regards to silver in the wash water (depending on requirements):
 - at fixer replenishment of 700 ml/m² an Ag content of 40 mg/m² (complying with standard < 50 mg/m²), corresponding to a concentration of 3 ppm.
 - at fixer replenishment of 1200 ml/m² a concentration of maximum 1 ppm is reached.

- D Developer tank
- IW Intermediate wash tank
- F1 Fixer tank 1
- F2 Fixer tank 2
- W Final wash tank
- 1 Overflow F1
- 2 Transfer of residues
- 3 Link between F1 and F2 in the direction of F1

When set to the 5 minute cycle, the NDT S eco processes no less than 51 cm of film per minute. It is in this cycle that the basis is formed for the "Supreme eco Film System". The only system in which the AGFA NDT film, chemistry and processor are all carefully matched and tailored to ensure the best possible ecological results in terms of silver in the wash water and low chemistry consumption and waste products.

Processing cycles

The microprocessor has 7 pre-programmed processing cycles, varying between 1.5 to 12 minutes. These standard cycles can be set quickly and easily.

Simply select the required cycle time on the display and the other processing parameters such as development temperature, dryer level, fixing temperature and replenishment rates are adjusted automatically.

Another feature is "customised processing"; in addition to the standard cycles, you can manually adjust the processing speed from 5 to 12.5 minutes, in steps of 30 seconds.

Furthermore the processing parameters can be locked, and protected by a special password.

Reliable electronics

The NDT S eco is equipped with highly reliable electronics, designed to give security of operation.

All processing parameters including temperature, speed, replenishment quantities and drying capacity are controlled by a microprocessor.



Superior image quality

The NDT S eco is perfectly suited to applications that demand the highest image quality. The technology in terms of rack construction and roller configurations has proved its worth in our previous processors.

A microprocessor provides "smart" control of all the process functions. Among other things, this results in perfect, even drying of your films in all ambient conditions.

Whether you want to develop slowly or quickly, whether you want to process roll films or sheet film of different sizes ... with the NDT S eco it doesn't make any difference: the film quality remains consistently high.

Precise replenishment

The surface area of the film is accurately measured on entry by 11 detection rollers. This unique method of area scanning controls the replenishment far more precisely than a length only measurement. Thus keeping replenishment usage to a minimum.

Minimum processing costs

It goes without saying that this precise control of replenishment usage also ensures lower chemistry consumption, and therefore lower costs.

Also the water consumption is related to the film surface scanned with consequent benefits to the environment. When all the films have left the processor, it automatically switches to standby. This together with less replenisher motor use and infrared drying means less consumption of electricity.

The NDT S eco also has a "drive cycle", which in standby mode activates the roller transport mechanism sporadically for short periods of time.

This drive cycle keeps the energy consumption to an absolute minimum and increases the life of your processor considerably.

Large capacity

The NDT S eco can be set to either a 5 or an 8 minute cycle. In both cases, the throughput of the NDT S eco is sufficient to meet the needs of large film users or companies with high production peaks.

User comfort

- Multifunctional drainage system

As a totally new and future-oriented feature, the NDT S eco is equipped with three-way drainage valves. This makes it simple for photochemicals and cleaning chemicals to be directed to the correct collection tank. It also prevents the formation of toxic fumes in the waste chemical collection tank.

- Easy maintenance

NDT S eco only needs an absolute minimum of maintenance.

The top parts of the racks can easily be removed and cleaned separately, without having to take the racks out of the tanks.

The film sensor rollers on the feed tray need to be cleaned regularly, and the construction of the NDT S eco is specially designed to facilitate this task. The rollers can easily be reached by removing the feed tray.

In order to prevent algae growth, the wash water is automatically drained when the machine is switched off.

- Clear operating panel

The operating panel provides visual information about the processing parameters, including the current processing temperature, the cycle time, the dryer setting, the replenishment quantities, the OK indication for film input and the remaining cycle time.

As befits such a universal machine, there is a choice of 12 languages for the display messages. The temperature of the developer and dryer can be incrementally adjusted on the control panel, to suit the processing program chosen.



- Adjustable receiving tray

The film receiving tray of the NDT S eco is ideal: it can easily be adjusted to suit sheet film, welding formats (from 6x12 cm upwards) and roll film.

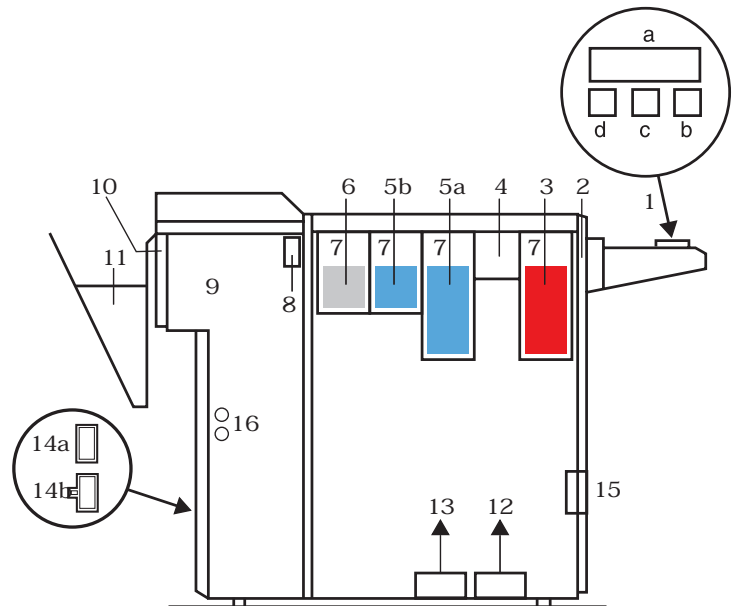
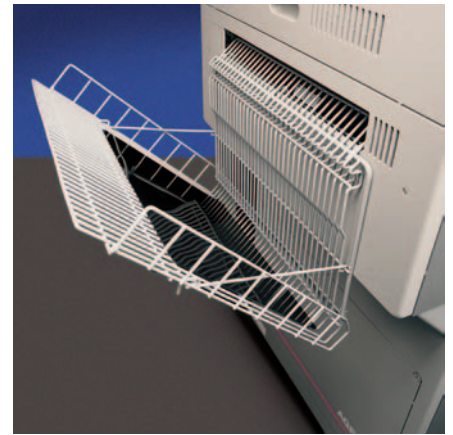
Your processed films will always be collected in the tray in the correct order.

- Unique daylight system

When combined with the NDT FEEDER, the NDT S eco becomes a unique and very practical daylight system.

The NDT FEEDER automatically follows the processing speed of the NDT S eco, even when the speed is altered.

In cases where the NDT S eco is used without a NDT FEEDER, an optional light-tight cover can be ordered. Once the films are positioned on the film feed table the cover can be closed and the darkroom illuminated.



- | | |
|-----------------------------|---|
| 1. Film feed table | 8. Distribution rollers |
| a. LCD display | 9. Infrared dryer |
| b. Menu selection | 10. Film output |
| c. Increase setting | 11. Film receiving tray |
| d. Decrease setting | 12. Replenishment pump for developer |
| 2. Film area scanning | 13. Replenishment pump for fixer |
| 3. Developer tank | 14a. On/off switch |
| 4. Intermediate wash tank | 14b. Earth leakage circuit breaker (ELCB) |
| 5a. Fixer tank F1 | 15. Three-way valves for draining the machine tanks |
| 5b. Fixer tank F2 | 16. Overheating protectors for developer and fixer |
| 6. Final wash tank | |
| 7. Removable top rack parts | |

Technical specifications - NDT S eco

The following tables show the standard values (the right to make modifications is reserved)

Filmprocessing	Type	Power supply connection	
NDT S eco	5320/300	208, 230-240 Volt / 50,60 Hz	
Characteristics			
Dimensions	Length (max)	162 cm (including basket 209 cm)	
	Width	71 cm	
Weight	Height (max)	123 cm	
	Footprint	71 x 111 cm	
Electrical connection	Empty	285 kg	
	With tanks full	426 kg	
	Racks	Upper part	complete
	- developer rack	3.5	15.5
	- intermediate wash rack	-	3
	- fixer 1 rack	3.5	14.5
	- fixer 2 rack	3.5	12.5
	- water rack	3.5	12.5
Power supply	Electricity	16 A	
Dryer	Voltage	208 to 240 V	
	Frequency	50/60 Hz	
	Capacity	max. 3.300 W (during film transport)	
Noise level	No. of dryer settings	20	
	Standard setting	setting 1 for 8 min. cycle	
Tank volume	Film transport	63 dB	
	Stand by	50 dB	
Tank volume	Developer	41.5 l	
	Fixer1	41.5 l	
	Fixer2	29 l	
	Final washing	29 l	

The following data apply to film processing with the standard cycle of 8 minutes

Film				
Process time	Standard setting	8 min/28°C		
	Ecological setting	5 min/29°C		
	Limits	1.5 to 12.5 minutes		
Process speed	Standard setting	32 cm/min.		
	Ecological setting	51 cm/min.		
	Limits	20.2 to 168.5 cm/min.		
Film	Types	AGFA NDT and all industrial X-ray films suitable for automatic processing		
	Width	max. 43.2 cm		
	Length	min. 12 cm		
	Smallest format	6 x 12 cm		
	Capacity per hour	6 x 12 cm, 720 films/hour		
		35 x 43 cm, 48 films/hour		
	Liquids			
Water	Connection	Permanent connection 3/4"		
	Standard usage	13 l/m ²		
	Usage limits	1-13 l/m ²		
	Pressure (min/max)	1-6 bar		
	Temperature (min)	5°C		
	pH value	6.5 to 8		
Chemistry	Standard Developer	G 135 + G 135 S (starter)		
	Ecological Developer	ecoDEV		
	Standard Fixer	G 335		
	Ecological Fixer	ecoFIX		
	Standard replen.	Dev.	900 ml/m ²	
		Fix	1200 ml/m ²	
	Ecological replen.	Dev.	550 ml/m ²	
		Fix	700 ml/m ²	
	Replen. limits	Dev/Fix	200-1500 ml/m ²	
	Default temperature setting	Dev/Fix	28°C	
	Ecological temperature setting	Dev/Fix	29°C	
	Temp. limits	Dev/Fix	20-40°C	
	Warm-up time from 18°C to 28°C	22 min.		

Accessories and peripheral equipment

Accessories

- Light tight cover 38KTB
- Darkroom panel 39X91
- Water filter with filter cartridge EM3YK
- Two replenishment tanks of 30 litres with a level sensor 3779N
- Two replenishment tanks of 80 litres with a level sensor 3778L

Peripheral equipment

- NDT MIXER 50 Hz 3U66F
- NDT FEEDER 50/60 Hz 3677A
- UNIVERSAL magazine 368AJ
- FLIPTOP magazine 3679E

