



## Congratulations!

You have made an excellent choice acquiring the new NOVA film processor, part of the proven GE Inspection Technologies industrial X-ray film processor range.

The Nova film processor is especially designed and built for the industrial NDT testing environment. It combines the latest electronics with proven rack design and transport system. Thus, offering NOVA film processor the quality and features for which this processor range is renown.

In addition to the convenient compact size and lightweight construction, the NOVA film processor offers you – as operator – the following advantages:

- **Ease of use**
  - External chemistry and water connections
  - Automatic chemical replenishment according to film surface scanning
  - Control display allows visual reference and easy setting of all process parameter
  - 'OK' light indicates when the next film can be inserted
  
- **Ease to service**
  - Easy access to all parts for possible exchange are conveniently positioned at sides e.g. circulation pumps are easy accessible and can be exchanged by yourself
  - Racks are light, easy to remove and clean
  - On-site or remote monitoring and diagnosis
  
- **Upgrading with NOVA Comfort Kit**

The NOVA Comfort Kit is a package that

  - Restrict the water consumption according to the film surface scanned. This, by adding a water saving solenoid valve and water circulation pump.
  - Filter the incoming water into processor. This, by adding an adequate water filter before the water inlet.
  - Provides 2 replenishment tanks of 30 liters, which can be positioned under the table.

## Table of contents

<b>1</b>	<b>CE DECLARATION OF CONFORMITY</b> .....	<b>2</b>
<b>2</b>	<b>SAFETY REGULATIONS</b> .....	<b>3</b>
2.1	INTERNATIONAL STANDARDS AND CERTIFICATES .....	3
<b>3</b>	<b>INSTALLATION</b> .....	<b>4</b>
3.1	FACTORY SETTING .....	4
<b>4</b>	<b>COMPONENTS AND FUNCTIONS</b> .....	<b>5</b>
<b>5</b>	<b>BRINGING THE NOVA FILM PROCESSOR INTO SERVICE</b> .....	<b>6</b>
5.1	PREPARATION OF THE CHEMICALS .....	6
5.2	FILLING THE MACHINE TANKS.....	6
5.3	BEFORE STARTING TO WORK.....	8
5.4	BEFOR USING .....	8
<b>6</b>	<b>OPERATION</b> .....	<b>9</b>
6.1	WARM-UP PHASE AND FILM INSERTION.....	9
6.2	FILMS THAT MAY BE PROCESSED .....	10
6.3	DISPLAY FUNCTIONS.....	11
<b>7</b>	<b>SETTING THE PROCESS PARAMETERS</b> .....	<b>12</b>
7.1	GENERAL .....	12
7.2	MODIFICATION OF PROCESS PARAMETERS.....	12
7.3	SETTING RANGE OF PROCESS PARAMETERS.....	12
<b>8</b>	<b>TROUBLESHOOTING</b> .....	<b>13</b>
8.1	OVERHEAT PROTECTION .....	13
8.2	ERROR CODES.....	13
8.2.1	OVERVIEW OF THE POSSIBLE ERROR CODES.....	14
8.3	TROUBLESHOOTING LIST .....	15
<b>9</b>	<b>MAINTENANCE AND CLEANING</b> .....	<b>16</b>
9.1	MAINTENANCE.....	16
9.2	TIME PERIODS FOR CLEANING AND MAINTENANCE.....	17
9.3	MAINTENANCE CHECKLIST.....	18
9.4	CLEANING .....	19
9.4.1	EMPTYING THE MACHINE TANKS .....	19
9.4.2	CLEANING THE TRANSPORT RACKS .....	20
9.4.3	CLEANING PRODUCTS.....	20
9.4.4	DRAINAGE OF CLEANING PRODUCTS.....	21
9.4.5	ALGAE PROTECTION.....	21
9.4.6	CLEANING THE FEED TABLE.....	21
9.5	USEFUL TIPS.....	22
9.6	APPLICATION REFERENCES.....	23
<b>10</b>	<b>ACCESSORIES, PERIPHERAL AND OPTIONAL KIT</b> .....	<b>24</b>
10.1	ACCESSORIES .....	24
10.2	PERIPHERAL EQUIPMENT .....	24
10.3	OPTIONAL KIT.....	24
<b>11</b>	<b>TECHNICAL DATA</b> .....	<b>25</b>
<b>12</b>	<b>WARRANTY INFORMATION</b> .....	<b>27</b>

## 1 CE DECLARATION OF CONFORMITY



GE  
Inspection Technologies

### DECLARATION OF CONFORMITY CE

Name and Address: GE Inspection Technologies GmbH, Robert-Bosch-Strasse 3, D 50354 Hürth  
declares that the product

Name: Film Processor

Type: NOVA 7070/100

Serial number: all

Complies with the requirements of the Directives 89/336 EEC; Electromagnetic Compatibility, 73/23 EEC; 93/68/EEC; Low Voltage

The following standards apply:

EN 60950	Safety of information technology equipment
EN 61000-4-2	EMC: Electrostatic discharge immunity test
EN 61000-4-3	EMC: Radiated, radio frequency electromagnetic field immunity test
EN 61000-4-4	EMC: Electrical fast transient/burst immunity test
EN 61000-4-5	EMC: Surge immunity test
EN 61000-4-8	EMC: Power frequency magnetic field immunity test
EN 61000-4-11	EMC: Voltage dips, short interruptions and voltage variation immunity tests
EN 55022	Limits and methods of measurement of radio disturbance characteristics

The Development & Production departments of equipment of GE Inspection Technologies are certified according ISO 9001.

In case of product changes not accepted in writing by GE Inspection Technologies this declaration will expire.

An CB-report is available on request

General Manager Film & CR Products

Signature

02-10-2005

Manager Quality

Signature

General Electric Company

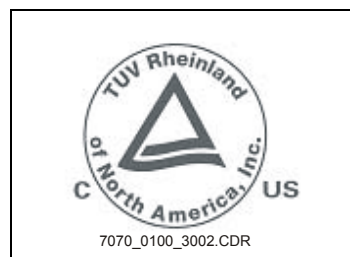
## 2 SAFETY REGULATIONS

Always observe the following safety regulations:

- The machine must be set up in a place where it is continually under supervision and where improper use, especially by children, is excluded.
- The processor may not be installed in direct sunlight (max. 2500 lux).
- The machine must be set up perfectly level.
- Installation, troubleshooting and repairs of electrical or mechanical nature may only be carried out by an authorized GE Inspection Technologies service technician.
- When handling chemicals, the safety regulations must be strictly observed. In this regard carefully read the instructions in and on the packaging. Protect your eyes from splashing chemicals by wearing safety goggles. Always wear the prescribed protective clothing.
- When draining or dumping chemicals and wash water, you must abide by the local regulations and environmental legislation.
- The process chemicals must be collected separately.
- GE Inspection Technologies reserves the right to adapt the equipment to the latest technical specifications at any time.

### 2.1 INTERNATIONAL STANDARDS AND CERTIFICATES

The **NOVA** film processor meets the specifications of the international standards, regulations and guidelines. This equipment is tested by TÜV Rheinland, Germany. The report could be delivered on your request.



### 3 INSTALLATION

The **NOVA** film processor, including any options, must be installed by an authorized GE Inspection Technologies service technician.



**IMPORTANT:**

During **NOVA** film processor installation local safety regulations must be followed!



**IMPORTANT:**

The “Technical data and installation instructions” for the **NOVA** film processor contain all necessary information on the bringing into service and assembly of the machine.

#### 3.1 FACTORY SETTING

Factory setting and customization at installation

	Standard version	Configuration modification 1	Configuration modification 2
<b>Mains cable</b>	Europe cable with plug CEE 7/7		UL (US) cable with plug NEMA 5-15
<b>Mains voltage</b>	230 V - 240 V	230 V - 240 V	120 V
	The cable is included in the scope of delivery.	The cable is included in the scope of delivery.	The cable is included in the scope of delivery.

	Standard version	Configuration modification	Execution of the modification
<b>Basic replenishment quantities in ml / min for D and F</b>	Typically for 50 Hz mains frequency: - Dev. = 200 ml/min - Fixer = 200 ml/min	Typically for 60 Hz mains frequency: - Dev. = 240 ml/min. - Fixer = 240 ml/min	See installation instructions
<b>Temperature indication / control</b>	Degrees Celsius	Degrees Fahrenheit	See installation instructions

## 4 COMPONENTS AND FUNCTIONS

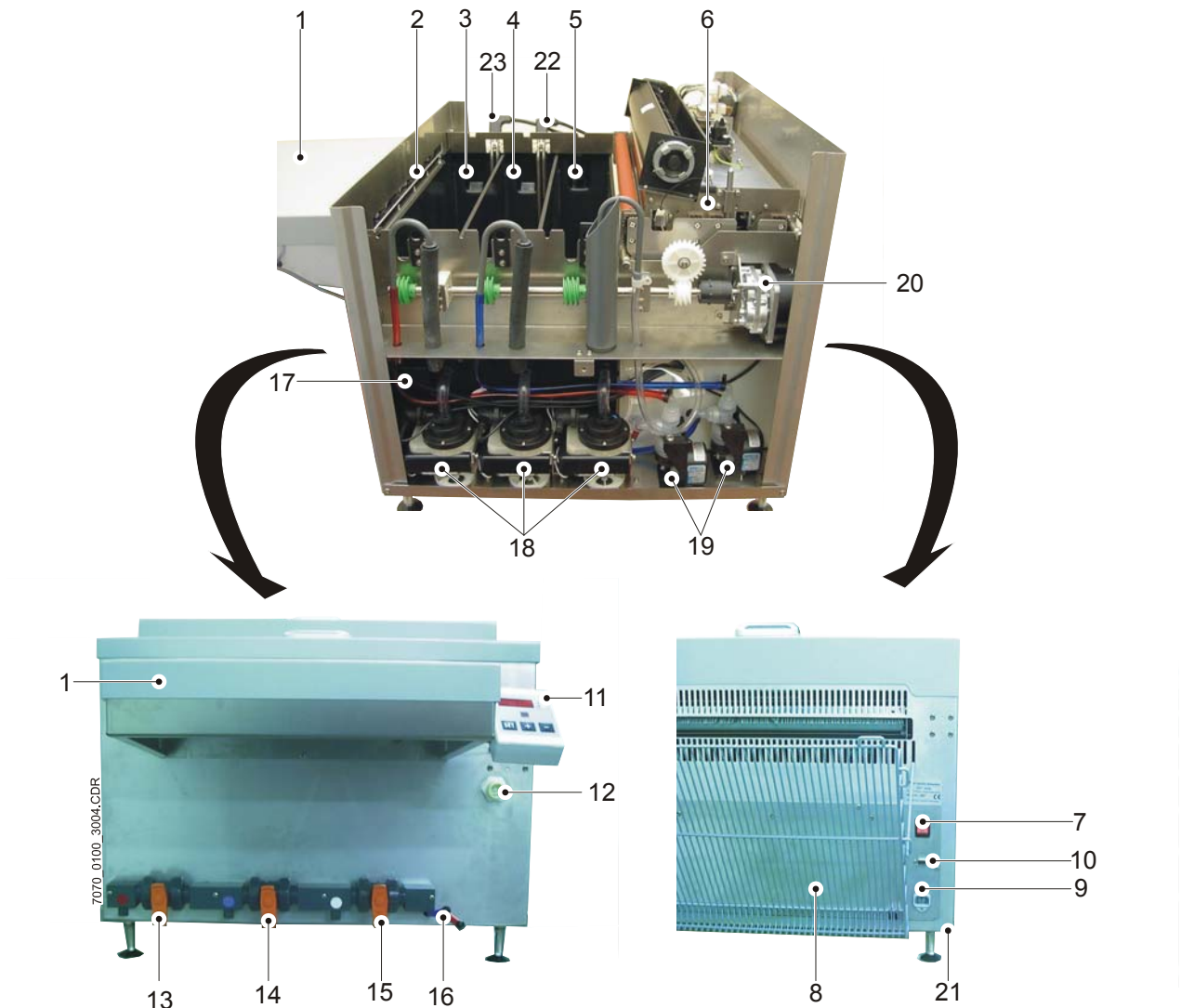


Fig. 1

- |    |                       |    |  |
|----|-----------------------|----|--|
| 1  | Film feed table       | 13 | Drain valve for developer                                |
| 2  | Film detection        | 14 | Drain valve for fixer                                    |
| 3  | Developer tank        | 15 | Drain valve for water                                    |
| 4  | Fixer tank            | 16 | Replenishment supply (Developer / Fixer)                 |
| 5  | Wash tank             | 17 | Solenoid valve for water supply (NOVA Comfort Kit)       |
| 6  | Infrared dryer        | 18 | Circulation pumps (Water pump incl. in NOVA Comfort Kit) |
| 7  | On/Off switch         | 19 | Replenishment pumps (Developer / Fixer)                  |
| 8  | Film receiving tray   | 20 | Drive motor  |
| 9  | Mains connection      | 21 | Overheat protection for developer and fixer              |
| 10 | RS 232 interface plug | 22 | Fixer heating  |
| 11 | Control panel         | 23 | Developer heating  |
| 12 | Water supply          |    |  |

## 5 BRINGING THE NOVA FILM PROCESSOR INTO SERVICE



### IMPORTANT:

Do not switch on the machine prior to filling. The bath heating will immediately switch on, thus activating the overheat protection switch. Moreover, the developer and fixer pumps run dry.

### 5.1 PREPARATION OF THE CHEMICALS

- Use only chemicals intended for automatic processing.

The AGFA NDT system is totally co-ordinated. Optimal film results can therefore only be attained by using AGFA NDT chemicals.

- We strongly recommend that the chemicals be prepared in the NDT MIXER or in separate replenishment tanks (see Accessories – 10.1).
- Carefully adhere to the preparation data on the packaging of the chemicals.
- First fill the fixer tank, then the developer tank.
- Avoid any mixing of fixer with developer.

### 5.2 FILLING THE MACHINE TANKS

- Close the drain valves.



Fig. 2

- Remove the machine cover.



Fig. 3



### IMPORTANT:

For safety reasons the machine is turned off automatically when the cover is opened.

- Remove the racks by lifting them up by the handles on the sides and releasing the fastener clip (Fig. 4).

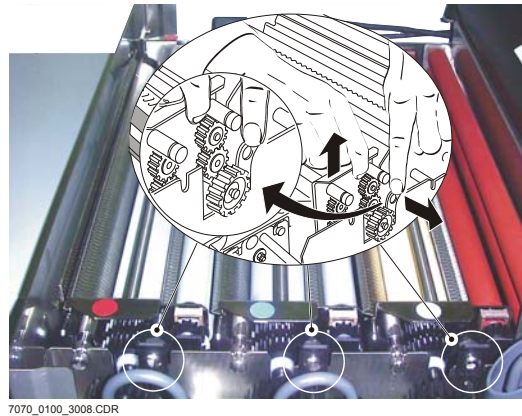


Fig. 4

- Fill the fixer tank with ready-to-use fixer up to the marker line (Fig. 5).

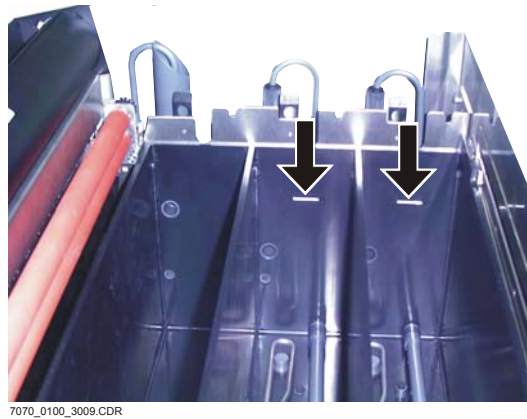


Fig. 5

**IMPORTANT:**

Be careful that no fixer gets in the developer tank. If this should happen, the developer tank must be completely cleaned after disposing of the spoilt chemicals.

- Fill the developer tank with ready-to-use developer up to the marker line.
- Add starter solution (volume as recommended on the packaging) to the developer in the tank, while stirring constantly.
- Carefully put the racks back into the corresponding tanks (Fig. 6).

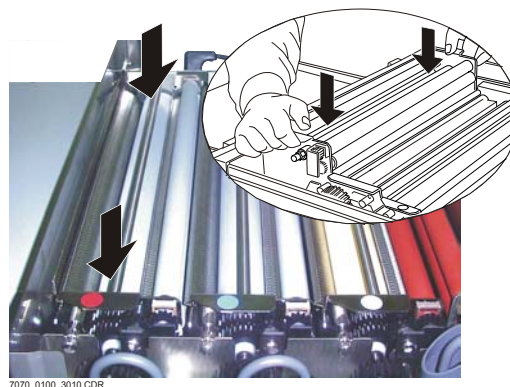


Fig. 6

**IMPORTANT:**

Note the corresponding color indicators of the racks:

Developer	=	red
Fixer	=	blue
Water	=	white

- Check before inserting film that the racks are correctly positioned. Replace the machine cover.
- Open the cold water supply.
- Switch on the machine.

**5.3 BEFORE STARTING TO WORK**

- Check that the developer and the fixer tanks are filled.
- Check that the cold water tap is opened.
- Place the On/Off switch in position I (ON).
- The wash tank is automatically filled with water. At the same time, the warm-up phase of the developer and fixer begins.
- The current developer temperature appears on the display.  
(All other active parameters can be recalled on the display (see 5.3).)

**5.4 BEFORE USING**

Before using the machine, each day check that:

- the replenishment tanks or the mixer tanks are sufficiently filled,
- the waste tanks still have sufficient receiving capacity,
- the cold water tap is opened,
- the racks are placed correctly in the machine,
- the machine cover is correctly closed,
- the film feed table is clean and dry,
- the film receiving tray is correctly positioned.

## 6 OPERATION

### 6.1 WARM-UP PHASE AND FILM INSERTION

- The current developer temperature is indicated on the display (Fig. 7).
- The OK light of the **NOVA** film processor (1, Fig. 7) will light once the selected developer and fixer temperature have been reached and the wash tank is filled.

#### OK light (1) function:

On = film insertion (OK)

Off = film is being processed  
film insertion not (OK)

Flashing = film is being processed  
film insertion (OK)

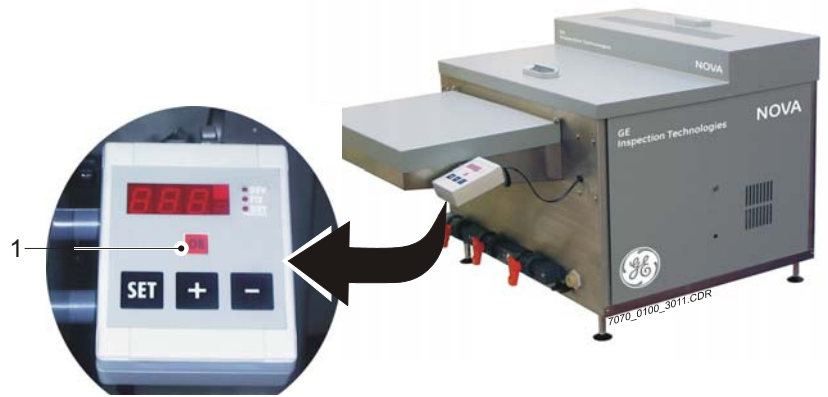


Fig. 7



- Insert one or two large sheets of cleaning film before processing the first actual exposure. As cleaning films, undeveloped AGFA NDT films should be used.
- Film sheets are laid with the large side in front on the feed table while holding the end of the film with two fingers (in the middle). With a forward motion applying slight pressure, the film is guided straight into the insertion slot. Release the film when it is grabbed by the transport system of the processor (Fig. 8).

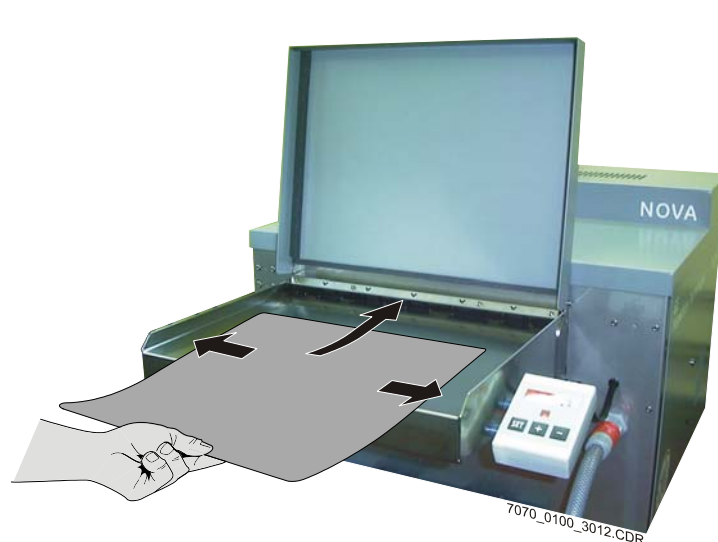


Fig. 8

Films having a width of less than 9 cm can be inserted side by side underneath the arrows indicating the position of the five film surface sensors (Fig. 9).

- e.g.: 5 films of 6 cm width, underneath the 5 arrows  
4 films of 10 cm width



Fig. .9

Roll film is always inserted with the curl facing down.

A few recommendations:

1. Always insert film under the arrows.
2. A maximum of five films can be inserted simultaneously side by side provided the film width does not exceed 9 cm.
3. Guide the film on the feed table (always insert straight).
4. Make sure that the leading edge of the film has rounded corners.

## 6.2 FILMS THAT MAY BE PROCESSED

The **NOVA** film processor can process industrial X-ray films of all common makes that are suitable for machine processing. Both sheet films and roll films can be developed.

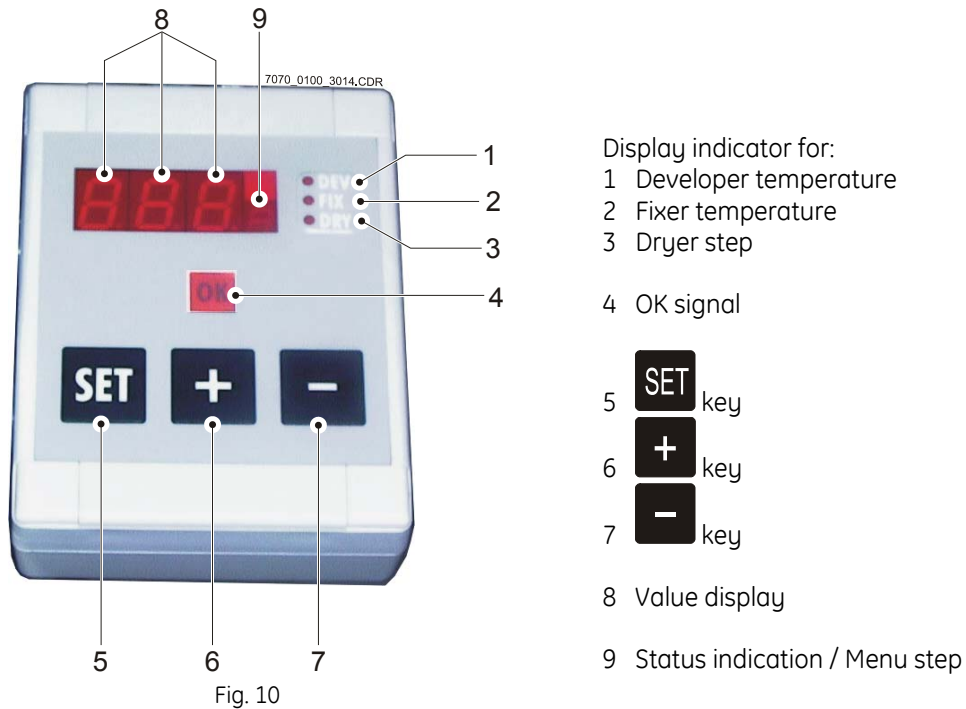
- smallest format 6 x 12 cm (2.4" x 4.7")
- minimum width 3,5 cm (1.4")
- minimum length 12 cm (4.7")
- maximum width 43,2 cm (17")
- film curl: min. diameter 30 cm (11.8")



**Attention!** Processed films must be regularly removed from the receiving tray in order to avoid film jams and damage to the films resulting from this.

### 6.3 DISPLAY FUNCTIONS

All functions and parameters of the **NOVA** film processor can be set and recalled on the display at the feed table.



The following parameters can be recalled on the display (standard factory settings):

Menu 1	Developer temperature (°C)	28.1c	DEV FIX DRY
Menu 2	Fixer temperature (°C)	28.0c	DEV FIX DRY
Menu 3	Dryer step	033	DEV FIX DRY
Menu 4	Process setting	084	DEV FIX DRY
Menu 5	Developer replenishment (x10 ml/m <sup>2</sup> )	905	DEV FIX DRY
Menu 6	Fixer replenishment (x10 ml/m <sup>2</sup> )	1206	DEV FIX DRY
Menu 7	Water feed rate (l/m <sup>2</sup> )	1137	DEV FIX DRY

7070\_0100\_3015.CDR

By pressing the **+** or **-** key the different parameters can be shown on the display in ascending or descending order.

The water feed rate can only be indicated when using the Comfort Kit (see 10.3). Without a Comfort Kit this menu item is skipped.

Fig. 11

## 7 SETTING THE PROCESS PARAMETERS

### 7.1 GENERAL

The **NOVA** film processor is supplied with the standard process setting 8.0, corresponding to 100 seconds of developing and fixing immersion time with a developer temperature of  $T^\circ = 28\text{ }^\circ\text{C}$ .

### 7.2 MODIFICATION OF PROCESS PARAMETERS

The process parameters of the **NOVA** film processor can be modified using the operation display at the feed table.

To modify the parameter settings, recall the desired parameters with the **+** or **-** key. After pressing the **SET** key, a dot appears on the right side of the display (Fig. 12).

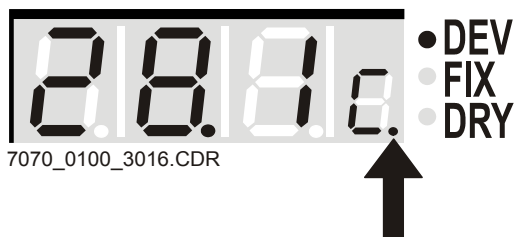


Fig. 12

The parameter value can now be changed using the **+** or **-** key. After 10 sec or by pressing the **SET** key again the changed value is saved and the operation display returns to the DEV temperature indication function.

All process parameters of the **NOVA** film processor can be modified according to this procedure.

### 7.3 SETTING RANGE OF PROCESS PARAMETERS

	Standard settings	Setting range
Developer temperature	28 °C	22 - 37 °C
Fixer temperature	28 °C	22 - 37 °C
Dryer step	4	1 - 6 Step
Process setting	8'	1,5' - 12'
Developer replenishment	900 ml/m <sup>2</sup>	200 - 950 ml/m <sup>2</sup>
Fixer replenishment	1200 ml/m <sup>2</sup>	500 - 1250 ml/m <sup>2</sup>
Water replenishment	13 l/m <sup>2</sup> *	0 - 15 l/m <sup>2</sup>

The setting of the water feed rate is an optional feature which can only be made when using the NOVA Comfort Kit (see 10.3).

\* = Standard delivery with continuous water replenishment.

By using the NOVA Comfort Kit water replenishment will be depend of qm of film process.

## 8 TROUBLESHOOTING

### IMPORTANT:



Electrical or mechanical malfunctions may only be repaired by an authorized GE Inspection Technologies service technician.

### 8.1 OVERHEAT PROTECTION

If the developer or fixer bath cannot be heated, this may be due to the triggering of the overheat protection.

Both the developer and the fixer bath of the **NOVA** film processor are equipped with an overheat protection. When the protector turns off a heating element, it can be turned on again by pressing the release switch of the overheat protection. Both switches are located on the left side of the **NOVA** film processor in film feed direction (Fig. 12). The release switches are to be operated from below through the bottom plate.

### IMPORTANT:



In case of permanent malfunction please contact a GE Inspection Technologies service technician.



- 1 Overheat protection for developer (red)
- 2 Overheat protection for fixer (blue)

Fig. 13

### 8.2 ERROR CODES

If the **NOVA** film processor is out of its standard condition, an error code will be send to the display. Error codes will be displayed flashing as the format **XXE** :

**XX** is the error number

**E** indicates that an error has occurred

The display of an error code always comes with an acoustic signal. To stop the signal, press the **SET** button.

**SET**



If the **NOVA** film processor is in its standard condition again, the error codes will disappear.



To check the process parameters see 7.2.

### 8.2.1 Overview of the possible error codes

Display error codes	Description	Actions to be taken
01E	Developer temperature set point not reached and film was inserted	Wait until OK-lamp is on before inserting a film
03E	Developer heat up-time is too long	Reset the temperature overheat protection.
08E	Developer temperature is more than 10 °C/°F above temperature set point	If no change, call technician Check room temperature. If room temperature is 10° higher than developer temperature set point , use a cooling unit or install an airconditioner.
09E	Developer temperature is below 0°C or above 60°C	In all other cases , call technician. Room temperature too low or too high for operation or developer temperature sensor defect. Call technician.
11E	Fixer temperature set point not reached and film was inserted	Wait until OK-lamp is on before inserting a film
13E	Fixer heat up-time is too long	Reset the temperature overheat protection.
18E	Fixer temperature is more than 10 °C/°F above temperature set point	If no change, call technician Check room temperature. If room temperature is 10° higher than fixer temperature set point , use a cooling unit or install an airconditioner.
19E	Fixer temperature is below 0°C or above 60°C	In all other cases , call technician. Room temperature too low or too high for operation or fixer temperature sensor defect. Call technician.
21E	Actual speed differs from set processing speed (menu 4)	Call technician
23E	No film transport	Call technician
33E	Water level is too low	Check water supply. In all other cases, call technician.

## 8.3 TROUBLESHOOTING LIST

Problem	Question	what to do
No display	Do we have power at the mains Is the ON/OFF switch illuminated Is the communication cable plugged in Is the power cable plug in	Call local electrician Activate ON/OFF switch Plug in the communication cable at the display Plug in mains connection - wall and machine side
No film transport	Is the top cover (with safety switch) in the correct position Is the mains supply plug in Is the ON/OFF switch illuminated Is error code 23E displayed	check correct position of top cover Plug in mains connection - wall and machine side Activate ON/OFF switch Call the service technician
No replenishment	Is the scanner bar working properly Is the replenishment hose in the machine tank Are the chemicals in the replenishment tanks Is the hose between machine and replenishment tanks intact Is the hose open, free	Remove the feed table and clean the rollers test each roller separate with film Open the top cover and check the position of the hose Check the level in replenishment tanks Check the hose connections and for leakages Check for obstructions in the hose
Scanner bar is not working	Is the communication cable plugged in Are the scanner rollers turning freely	Plug in the communication cable between feed table / display Remove the feed table, dismantle the bar and clean shaft and rollers
Developer tank is not heating (Temperature on display is NOT changing)	Is there developer in the tank Is the drain valve closed Is the overheat protection switched out Is error code 03E displayed	Open the top cover and check the level Check, close the drain valve Activate - push in - the overheat protection (try max 3 times. If no activation is possible, call the service technician) Activate - push in - the overheat protection (try max 3 times. If no activation is possible, call the service technician)
Fixer tank is not heating (Temperature on display is NOT changing)	Is there Fixer in the tank Is the drain valve closed Is the overheat protection switched out Is error code 13E displayed	Open the top cover and check the level Check, close the drain valve Activate - push in - the overheat protection (try max 3 times. If no activation is possible, call the service technician) Activate - push in - the overheat protection (try max 3 times. If no activation is possible, call the service technician)
Film is wet	Is the film detection by the scanner bar Is the fuse of the IR lamps OK Is the correct dryer step used for this type of film Is the correct process speed use for this film	see "scanner bar is not working" Open the top cover and activate - push in - the red knob of the fuse Change to the right dryer step via the display Change to the right process speed via the display
Film shows a pattern in the process direction	Is the correct drying step used for this .lm type	Change to the right dryer step via display

## 9 MAINTENANCE AND CLEANING

Film processing systems such as the **NOVA** film processor are, as all user systems, exposed to various types of dirt and contamination.

A perfect film is only obtained by means of a processor which is cleaned at regular intervals.

Please find the maintenance intervals and detailed cleaning instructions below.

### 9.1 MAINTENANCE

By carrying out regular maintenance and cleaning, the **NOVA** film processor will give you the desired film results.

#### Film Volume

Customers with a low daily film consumption (< 5 m<sup>2</sup>) should clean more often.

$$\begin{aligned} 5 \text{ m}^2 &= 33 \text{ films of } 35 \times 43 \text{ cm (14" } \times \text{ 17")} \text{ format} \\ &= 100 \text{ films of } 10 \times 48 \text{ cm (3.9" } \times \text{ 18.9")} \text{ format} \end{aligned}$$

#### Periods of Stoppage

1. After a relatively short stoppage period (1/2 hour to a few hours) it is sufficient to insert a few cleaning films to clean the rollers of the processor.
2. After a stoppage of a few days to a week, the processor must be completely cleaned. If necessary, contact an authorized GE Inspection Technologies service technician for this.

## 9.2 TIME PERIODS FOR CLEANING AND MAINTENANCE

Period	Maintenance / Cleaning
<b>Daily</b>	Before starting to work
	Clean the feed table by means of a moist sponge and wipe it dry after that.
	Close the shut-off valves. Wait until the OK light goes on. Let the 3 cleaning films (14"x17") run through the processor. (cleaning film = non developed film)
	After finishing work
	Turn off the <b>NOVA</b> film processor.
	Open the shut-off valve of the water tank and drain the used water.
	Leave the machine cover open.
<b>Weekly</b>	Clean the racks.
	Remove the feed table and the communication cable and clean the rollers of the film surface detection by means of a moist and soft cloth. Check the operation of the film surface detection.
<b>Every 2 to 6 months</b>	Clean the racks, the tanks, the circulation pumps and the drain piping.
	<ul style="list-style-type: none"> <li>We recommend that the major maintenance should be carried out by an authorized GE Inspection Technologies service technician.</li> </ul>

## 9.3 MAINTENANCE CHECKLIST

Cleaning	
Tanks and racks	Drain the tanks and rinse them with water as well as rinsing the racks. If necessary, clean the tanks and racks with cleaning chemicals. Clean the roller and guide plates <input type="checkbox"/>
Dryer / distributor rollers	Remove all dust from the reflection plates of the IR heaters. Clean the rollers with a damp cloth. <input type="checkbox"/>
Filters	Replace or clean air filters, water filters, replenishment filters. <input type="checkbox"/>
Others	Clean the outside of the machine, replenisher tank or mixer. <input type="checkbox"/>
Inspection	
Transport units	
Film area scanning	Rollers must turn freely. Check with display. Check for tight connection and cable cuts. <input type="checkbox"/>
Rack / crossover / dryer	Check torque and wear of bearings, gears, rollers, and guide plates. <input type="checkbox"/>
Drive shafts (horizontal / vertical)	Check play between worms, gears, bearings, and coupling elements, and grease, if necessary. <input type="checkbox"/>
Feed table	Check for damage and position. <input type="checkbox"/>
Panelling	Check for damage. <input type="checkbox"/>
Dryer	
Blower	Check function of fans and check for noise. <input type="checkbox"/>
IR heaters	Check heater, fuse and reflector. <input type="checkbox"/>
Tank and hose system	
Tank / hoses / connections	Check for tightness, leaks and blockages. <input type="checkbox"/>
Circulation and replenishment pumps	Check for noise, blockages and leaks. <input type="checkbox"/>
Electricity	
General	Check keyboard, display block, switches, plugs for good connection. Check cover and safety switch. <input type="checkbox"/>
Functionality	
Check the functionality of (with service program, if necessary)	Replenishment pumps, circulation pumps <input type="checkbox"/>
	Main motor, drive shafts (horizontal / vertical) <input type="checkbox"/>
	Blower, fans <input type="checkbox"/>
	Bath heating, level sensor, temperature sensor <input type="checkbox"/>
	Dryer function, dryer steps <input type="checkbox"/>
	Film area scanning, solenoid valves, OK signal <input type="checkbox"/>
	Mixer, accessories <input type="checkbox"/>
Adjustments	
Developer bath temp.: °C	Fixer bath temp.: °C
Developer repl. pump: ml / min	Fixer repl. pump: ml / min
Final wash: l / min	Intermediate wash: l / min
Completion test of maintenance	
Test with large and small film sizes	<input type="checkbox"/>

## 9.4 CLEANING

The **NOVA** film processor does not need excessive maintenance and is specially designed for simple and fast cleaning:

This means in practice:

- Drain valves for separate drainage of process chemicals, wash water und cleaning products (see Fig. 13).
- To simplify cleaning, it is necessary for a cleaning basin with a sprayer to be in the vicinity of the **NOVA** film processor (recommended dimensions: 100 x 60 x 15 cm).



### IMPORTANT:

Do not use the sprayer to clean the **NOVA** film processor tanks. Liquid running along the outside of the tanks may cause electrocution.



Do not use hot water when cleaning the machine tanks. (This may cause triggering of the overheat protection.) The maximum allowed temperature is 40 °C (7.1)!



### IMPORTANT:

Always heed the safety and environmental regulations when you handle chemicals. Also always wear the prescribed protective clothing.

### 9.4.1 Emptying the Machine Tanks

When emptying the machine tanks, especially when cleaning, you must take the nature (pH value) of the products into consideration. Empty the machine tanks into the waste tanks provided.

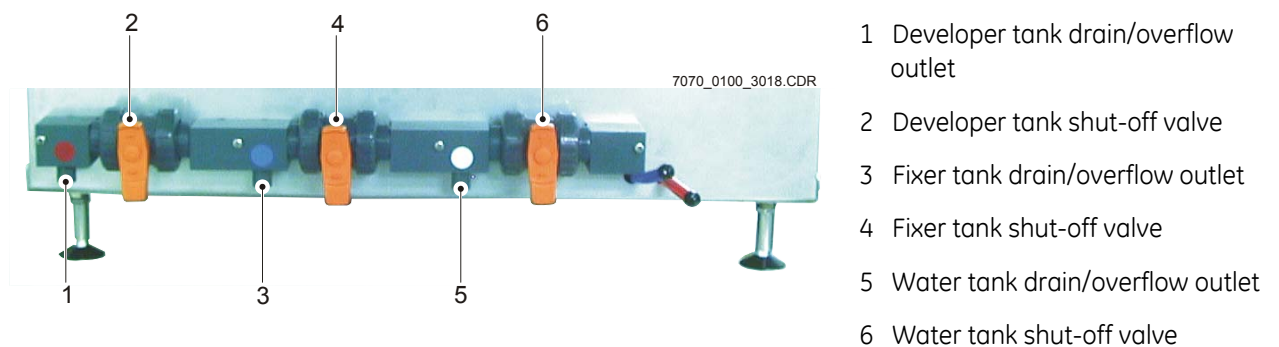


Fig. 14

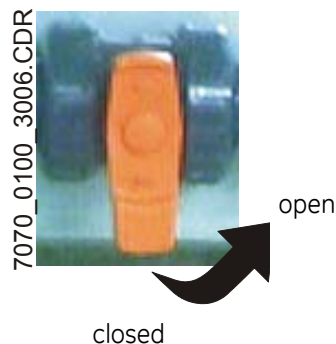


Fig. 15

### 9.4.2 Cleaning the Transport Racks

- Turn off the **NOVA** film processor.
- Remove the machine cover.
- Lift the transport racks carefully out of the tanks.
- Carefully clean the racks with a soft sponge and running water. (In this way, the silver layer that is on the rollers of the developer rack is not removed.)
- When the racks are very dirty you can use special cleaning agents. Only use the recommended cleaning agents, i.e. AGFA NDT DEVCLEAN for the developer area and AGFA NDT FIXCLEAN for the fixer and the wash areas.
- Place the racks carefully back into the corresponding tanks (observe the color codes).

#### IMPORTANT:

Check that the colors of the racks and tanks match:



Developer	=	red
Fixer	=	blue
Wash	=	white



#### Important:

As for photo chemicals, there are also special regulations for cleaning agents with regard to their disposal and local regulations **MUST** be followed.



It is recommended that the tanks be filled before the racks are put back in place (as described in 4.2).

### 9.4.3 Cleaning Products

AGFA supplies the following cleaning products that ensure adequate cleaning:

<b>Developer zone</b>	AGFA NDT DEVCLEAN (ordering code: EBMBU)
<b>Fixer zone</b>	AGFA NDT FIXCLEAN (ordering code: 37S2J)
<b>Wash zone</b>	AGFA NDT FIXCLEAN

#### 9.4.4 Drainage of Cleaning Products

Cleaning product	Must be dumped in ...
AGFA NDT DEVCLEAN	Fixer waste tank
AGFA NDT FIXCLEAN	Developer waste tank



**IMPORTANT:**

Important: After cleaning with DEVCLEAN / FIXCLEAN, the racks and tanks should be thoroughly rinsed with water.

If you use other cleaning products, we advise you to contact your local GE Inspection Technologies representative to discuss the correct waste tank for the cleaning products.

#### 9.4.5 Algae Protection

The **NOVA** film processor is not equipped with an anti-algae valve. To protect the device against algae the water tank must be emptied after use.



**IMPORTANT:**

Please contact your local GE Inspection Technologies representative for information on the use of additives for water tank algae protection.

#### 9.4.6 Cleaning the Feed Table

(to prevent impurities or scratches on the film)

- Clean the feed table with a damp sponge or lint-free cloth.
- Dry the feed table.
- Inspect the film surface detection:
  - Are the detection rollers clean?
  - All magnetic rollers must turn easily and evenly to ensure a correct replenishment volume (the rollers can seize up if liquid is spilled on them).
  - To test the operation of the surface detection use a film strip that is approx. 35 mm wide. Move the film back and forth under one of the 5 detection rollers to activate this roller. The OK light for film insertion will go out. Repeat this procedure for each sensor roller.

These checks will also be carried out by a GE Inspection Technologies technician during regular maintenance procedures.

## 9.5 USEFUL TIPS

Preparing replenishment liquid (diluting concentrates):



The correct dilution method is indicated on the package concerned. If you deviate from these instructions, for example, by adding products in the wrong order or by insufficient stirring, a precipitate might develop that will not dissolve later and could cause problems in the filters and the racks in the machine.



Remove residues of ready-to-use chemicals from receptacles before preparing new chemicals. They can also cause a similar precipitation. The preparation of chemicals is easier when using the NDT MIXER (see 10.2).



Chemicals that have been diluted incorrectly must be discarded. Pour them into the corresponding waste tanks for used chemicals. Cleaning agents can also be dumped in the corresponding waste tanks.

## 9.6 APPLICATION REFERENCES

<p><b>AGFA NDT Devclean</b>          Devclean is a highly efficient, two-part maintenance product that thoroughly cleans the developing areas of processors and tanks along with the accessories used for manual film development. Silver deposits and sludge on all parts are dissolved rapidly, effortlessly, and completely.</p>	<p><b>AGFA NDT Fixclean</b>          Fixclean is a one-part maintenance product for the fixing, intermediate rinsing and rinsing areas of processors. It can also be used to clean fixer tanks of mixers and manual film processing systems.</p>
<p><b>Instructions For Use:</b></p> <p><b>DEVCLEAN</b>          NOTE: Devclean, water from the developer tank, and fixer waste can contain enough silver to recover, so Devclean should be treated for silver recovery.</p> <ol style="list-style-type: none"> <li>1. Drain and thoroughly flush the tank, rack, and recirculation system with clean water, removing all traces of fixer.</li> <li>2. Empty the developer solution from the tank of the processor.</li> <li>3. Do not remove the rack.</li> <li>4. Partially fill the tank with water (approx. 35°C/95°F), add part A and part B, and top off with water up to tank overflow. Activate the recirculation pump (for stirring).</li> <li>5. Cleaning time with activated recirculation pump:             <ol style="list-style-type: none"> <li>a. 45 minutes, if bath is ≤ 30°C/86°F</li> <li>b. 30 minutes, if bath is &gt; 30°C/86°F</li> </ol> </li> <li>6. Empty the tank completely. <b>Collect the contaminated Devclean with fixer waste.</b> Used Devclean is acidic and contains silver ions (dissolved silver).</li> <li>7. Before refilling the tank with wash water, rinse both the tank and rack with tap water. <b>Collect the wash water with the fixer waste.</b></li> <li>8. Refill the tank with fresh tap water (approx. 15°C/59°F) and activate the recirculation pump for 10 minutes.</li> <li>9. Empty the tank and <b>collect the wash water with the fixer waste.</b></li> <li>10. Refill the tank with fresh water (approx. 15°C/59°F) and activate the recirculation pump for 5 minutes.</li> <li>11. Empty the tank into the developer drain.</li> <li>12. Cleaning is finished. After closing the tank drain, the developer tank can be refilled with fresh developer solution.</li> </ol>	<p><b>Instructions For Use:</b></p> <p><b>FIXCLEAN</b>          REMEMBER: never mix Fixclean and fixer waste.</p> <ol style="list-style-type: none"> <li>1. Drain and thoroughly flush the tank, rack, and recirculation system with clean water, removing all traces of fixer.</li> <li>2. Do not remove the racks.</li> <li>3. First fill each tank with water up to 80% of its capacity.</li> <li>4. Slowly add the Fixclean concentrate without splashing and activate the recirculation pump (for stirring).</li> </ol> <p>• <b>For a fixer and/or water tank capacity of 10 liters (2.7 gal) or less:</b></p> <ul style="list-style-type: none"> <li>- fill the tank with approx. 5 liters (1.3 gal) of water (approx. 35°C/95°F)</li> <li>- add to the tank 1 liter (.25 gal) of concentrated Fixclean</li> <li>- fill with water up to tank overflow</li> </ul> <ol style="list-style-type: none"> <li>5. An emptied Fixclean bottle should be rinsed with water, which then can be added to the working solution in the tank.</li> <li>6. Add water to fill the tank 100% while activating the recirculation pump.</li> <li>7. Cleaning time with activated recirculation pump:             <ul style="list-style-type: none"> <li>• 45 minutes, if bath &lt; 30 °C/86°F</li> <li>• 30 minutes, if bath &gt; 30 °C/86°F</li> </ul> </li> </ol> <p>If residue in the rinsing area is very high, the concentration of Fixclean may be increased. If necessary, Fixclean may be used as a concentrate.</p> <p><b>Always follow instructions and observe safety measures, especially when using 100% concentrate.</b></p> <ol style="list-style-type: none"> <li>8. When cleaning other fixer containers, Fixclean should be left to work for at least 15 minutes. In these cases, a stronger concentration may be used, depending on the degree of soiling.</li> <li>9. Empty each tank completely. <b>Collect used Fixclean with developer waste.</b></li> <li>10. Before refilling the tank with fresh tap water, (approx. 15°C/57°F), rinse both the tank and the rack with running tap water. <b>Collect the wash water with the developer waste.</b></li> <li>11. Refill each tank with fresh tap water (approx. 15°C/57°F) and activate the recirculation pump for 15 minutes.</li> <li>12. Empty each tank into the fixer drain. If necessary, repeat the cleaning and rinsing until tanks and racks are clean.</li> <li>13. Cleaning is finished. After closing each tank drain, the fixer and rinse water tank can be refilled respectively with fresh fixer solution and tap water.</li> </ol>

## 10 ACCESSORIES, PERIPHERAL AND OPTIONAL KIT

### Ordering Code

#### 10.1 ACCESSORIES

Base table	3BNMQ
Two replenishment tanks of 30 liters	3779N
Water filter with filter cartridge	EM3YK
3 - way - valve	CM+9.8196.7710.0

#### 10.2 PERIPHERAL EQUIPMENT

NDT MIXER (50 Hz) (Type 5280/200)	3U66F
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#### 10.3 OPTIONAL KIT

NOVA COMFORT KIT Contents:  Water supply valve Circulation pump Two replenishment tanks of 30 liters Water filter with filter cartridge	EQPSL
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NOVA film processor with base table



Subject to modification

## 11 TECHNICAL DATA

The following tables show the standard values (subject to modification):

Film processor	Type	Mains connection
NOVA film processor	7070/100	100 / 120 / 200 - 208 / 230 - 240 Volt 50 / 60 Hz
<b>Characteristics</b>		
Dimensions	Length (max.)	119 cm (35 cm + 59 cm unit + 25 cm tray) 46.87" (13.78" table + 23.24" unit + 9.85" tray)
	Width	68 cm (26.78")
	Height (max.)	57 cm (22.45")
	Footprint	approx. 0.40 m <sup>2</sup> (63 cm x 63 cm) approx. 4.3 sq ft (24.81" x 24.81")
Weight	Empty	80 kg (176.37lb)
	With full tanks	110 kg (242.51lb)
Electrical connection		min. 9 A
	In-house fuse protection	max. 16 A
Mains connection	Voltage	100 / 120 / 200 - 208 / 230 - 240 Volt
	Rated current	8.5 / 7.5 / 6.5 / 7.3 Ampere
	Frequency	50/60 Hz
	Capacity	≤1700 W (max.)
Tank capacity	Developer	10 Liter (2.4 gal)
	Fixer	10 Liter (2.4 gal)
	Wash	10 Liter (2.4 gal)

### The following data apply for film processing with the standard setting\*:

\* Standard setting of the **NOVA** film processor corresponds to 100 seconds developer and fixer immersion time.

<b>Film</b>		
Process settings	Default setting	28 °C (82.4°F)
Process speed	Default setting	20 cm/min (7.87"/min)
Warm-up time	20°C → 28°C (68°F → 82.4°F)	approx. 1°C/min (1,8°F/min)
Film types	AGFA NDT and all industrial X-ray films suitable for machine processing	
	Width (max.)	43.2 cm (17")
	Smallest size	6 x 12 cm (2.37" x 4.75")
	Capacity per hour	9 x 12 cm 300 films/hour (3.56" x 4.75") 35 x 43 cm 30 films/hour (14" x 17")

Liquids				
Water	Connection	Permanent connection 3/4 "		
	Pressure (min./max.)	1 - 6 bar *		
	T°(min.)	5 °C (41°F)		
	pH value	6.5 to 8		
Chemicals	Autom. devel.	Developers	G 135 + G 135 s (starter) ecoDEV + ecoSTART (starter)	
		Fixers	G 335 ecoFIX	
	Replenishment	Developer	0.9 l/m <sup>2</sup>	
	Standard setting	Fixer	1.2 l/m <sup>2</sup>	
Temperatures	Standard setting	Developer/Fixer	28 °C (82.4°F)	G135 / G335
	eco setting	Developer/Fixer	27 °C (80.6°F)	ecoDEV / ecoFIX
	Setting range	Developer	22 - 37 °C (71.6 - 98.6°F)	
Fixer		22 - 37 °C (71.6 - 98.6°F)		

\* If the water pressure exceeds 3 bar it is advised to install a pressure control valve.

**Important:**



In case of water pressure deviation malfunctions may occur.

For further information please contact a GE Inspection Technologies service technician.

## 12 WARRANTY INFORMATION

The detailed terms of warranty are available at GE Inspection Technologies on request.