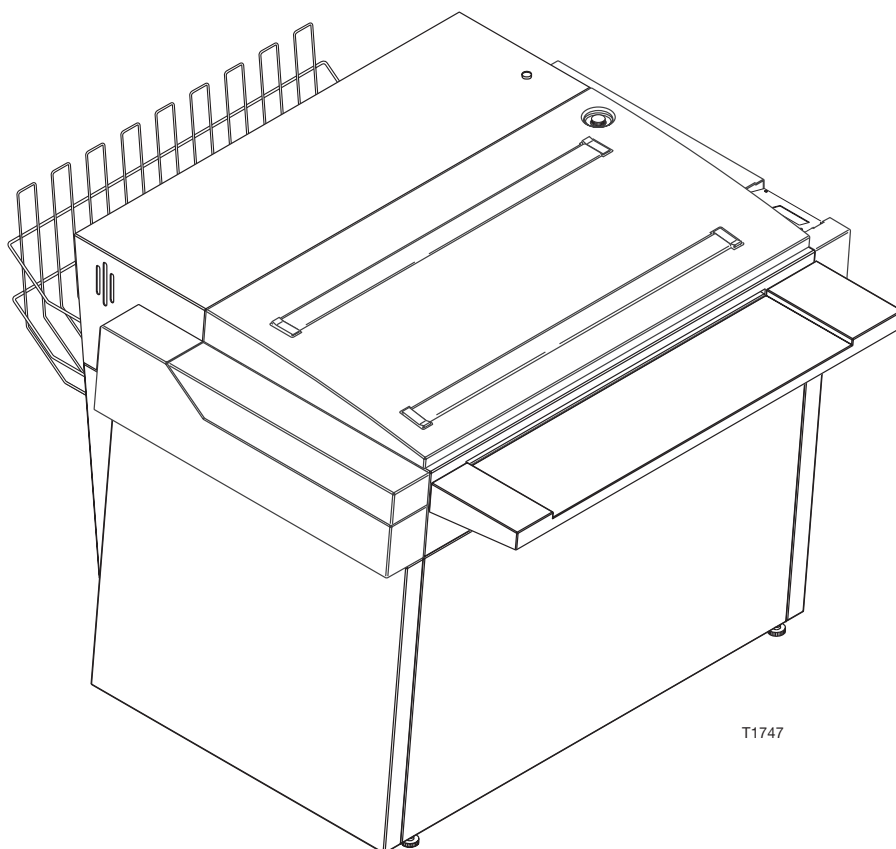


# **USER MANUAL**

**MultiLine Pro 55/72/86**  
**MultiLine Pro 21/28/34**



# MultiLine Pro 55/72/86 MultiLine Pro 21/28/34



T1747

This manual is for daily users of the equipment. Always read the ***Safety Instruction Manual part No 21741*** before starting up the equipment and keep the manuals with the machine for reference at all times.

---

## GENERAL INFORMATION

This manual is published by: **Glunz & Jensen A/S**  
13 - 15 Haslevvej, DK - 4100 Ringsted, Denmark  
Phone: +45 5768-8181  
Fax: +45 5768-8340

**Glunz & Jensen Inc.**  
21405 Airpark Drive, P.O. Box 97, Elkwood, Virginia 22718, USA  
Phone: 1 540-825-7300  
Fax: 1 540-825-7525

Copyright © 2000 by Glunz & Jensen A/S

The serial number is specified on the processor name plate located underneath the upper side panel on the right side of the processor.

The manual was written and illustrated using the best possible information available at the time of publication.

Any differences between the manual and the equipment reflect improvements introduced after the publication of the manual.

Changes, technical inaccuracies, and typographic errors will be corrected in subsequent editions.

As a part of our policy of continuous improvement, we reserve the right to alter design and specifications without further notice.

**IMPORTANT!**

- **Approvals:** The equipment is manufactured according to legal demands. For compliance with the requirements the equipment is tested by Underwriters Laboratories or other accredited authority. Approvals will appear from the labels attached to the name plate or the frame part of the equipment.
- **Intended use of the equipment:** Development of photographic materials as specified in chapter 1 "PROCESSING MATERIALS" in the Film Processor Service Manual.
- **Installation:** It is the responsibility of the owner and operator/s of the equipment , that the installation is made in accordance with local regulations, and by engineers authorized to carry out plumbing and electrical installations. Installation, service and repair must be performed only by service technicians who are trained in servicing the equipment. The installation procedure is described in chapter 4 "INSTALLATION" in the Film Processor Service Manual. The manufacturer cannot be held responsible for any damage caused by incorrect installation of the equipment.
- **Technical data:** Observe technical data from the name plate located as specified on page 0.2 in the Film Processor Service Manual.

**WARNINGS, CAUTIONS AND NOTES!**

Throughout the manual warnings, cautions, and notes are written in italics on a grey background like the example below:

***CAUTION! Make sure that .....***

**Explanation:**

**NOTE!**

The operator should observe and/or act according to the information in order to obtain the best possible function of the equipment.

**CAUTION!**

The operator must observe and/or act according to the information in order to avoid any mechanical or electrical damage to the equipment.

**WARNING!**

The operator must observe/and or act according to the information in order to avoid any personnel injury.

---

TABLE OF CONTENTS

---

	PAGE
<b>GENERAL INFORMATION</b>	<b>0.2</b>
IMPORTANT! .....	0.3
WARNINGS, CAUTIONS AND NOTES! .....	0.3
<b>1. FUNCTIONS AND FEATURES</b>	<b>1.1</b>
<b>GENERAL</b> .....	<b>1.1</b>
<b>MAIN COMPONENTS OVERVIEW</b> .....	<b>1.3</b>
<b>FUNCTIONAL DESCRIPTION</b> .....	<b>1.11</b>
DEVELOPER/FIXER SECTIONS .....	1.11
THE REPLENISHMENT SYSTEM .....	1.11
WASH SECTION .....	1.12
DRYER SECTION .....	1.13
TRANSPORT SYSTEM .....	1.14
ECOLOGICAL UNITS .....	1.15
<b>2. OPERATING PROCEDURES</b>	<b>2.1</b>
<b>GENERAL</b> .....	<b>2.1</b>
<b>DAILY START-UP</b> .....	<b>2.3</b>
<b>PROCESSING FROM THE FEED TABLE</b> .....	<b>2.5</b>
<b>PROCESSING FROM THE DAYLIGHT CASSETTE</b> .....	<b>2.7</b>
<b>PROCESSING FROM THE DAYLIGHT SLOT</b> .....	<b>2.9</b>
<b>USING THE REWASH SLOT</b> .....	<b>2.9</b>
<b>ADJUSTING FILM TRAY</b> .....	<b>2.11</b>
<b>SHUT-DOWN PROCEDURE</b> .....	<b>2.13</b>
MANUAL SHUT-DOWN .....	2.13
AUTOMATIC SHUT-DOWN .....	2.13
<b>"GFCI" Ground Fault Circuit Interrupter</b> .....	<b>2.15</b>
USING THE GFCI RELAY .....	2.15

---

TABLE OF CONTENTS

---

	PAGE
<b>3. CLEANING AND MAINTENANCE</b>	<b>3.1</b>
<b>GENERAL</b>	<b>3.1</b>
<b>PREPARATIONS BEFORE CLEANING</b>	<b>3.2</b>
DRIP TRAY	3.2
HOLDER FOR WASTE HOSES	3.2
REMOVING A WET RACK	3.3
REMOVING THE DRYER RACK	3.4
FLOATING ANTI-OXIDATION LIDS	3.5
RACK ANTI-OXIDATION LIDS	3.5
<b>ROLLERS</b>	<b>3.6</b>
ROLLER POSITIONS	3.6
ROLLER BEARINGS	3.9
DAYLIGHT GUIDE	3.9
<b>CLEANING</b>	<b>3.10</b>
GENERAL	3.10
DAILY CLEANING	3.10
WEEKLY CLEANING	3.11
MONTHLY CLEANING	3.12
<b>MAINTENANCE</b>	<b>3.13</b>
REMOVING FILTERS	3.13
<b>REPLENISHMENT</b>	<b>3.14</b>
CHECK OF DEVELOPER REPLENISHMENT	3.14
CHECK OF FIXER REPLENISHMENT	3.14
CHECK OF OXIDATION REPLENISHMENT	3.14

550, 720, 860  
55/21, 72/28, 86/34

- GB -

FILM PROCESSOR

---



# 1. FUNCTIONS AND FEATURES

## GENERAL

The processor contains 4 major sections (see figure below): Developer (A), fixer (B), wash (C), and dryer section (D). Each section performs a basic function to change the exposed film into a fully developed and dry film, ready for handling.

The operation of the processor is handled by the control box (E).

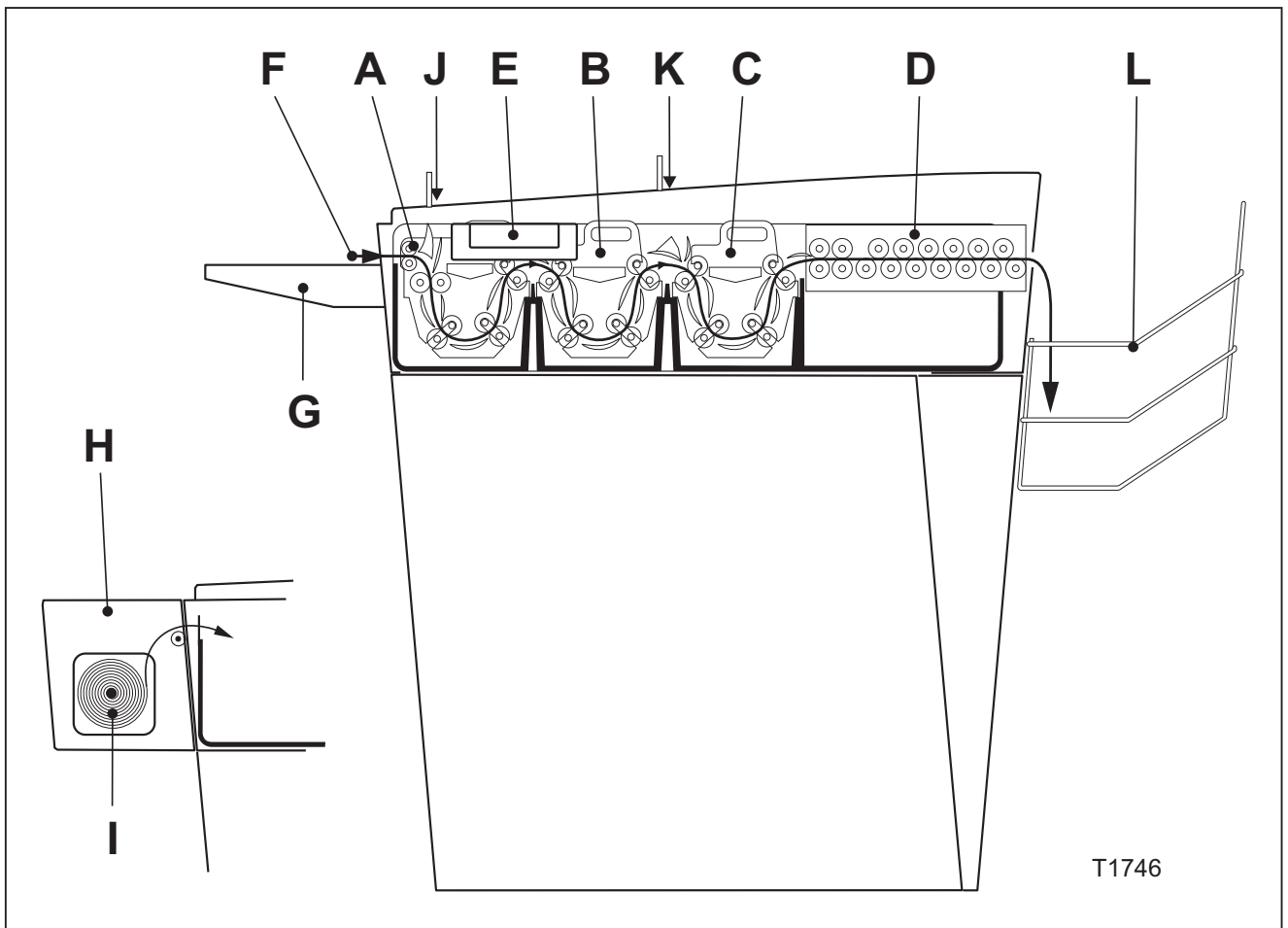
The film material (F) is fed into the processor from the feed-table (G).

If the processor is equipped with a daylight cassette (H) both film sheets and film rolls from PTS/Imagesetting-cassettes (I) can be processed.

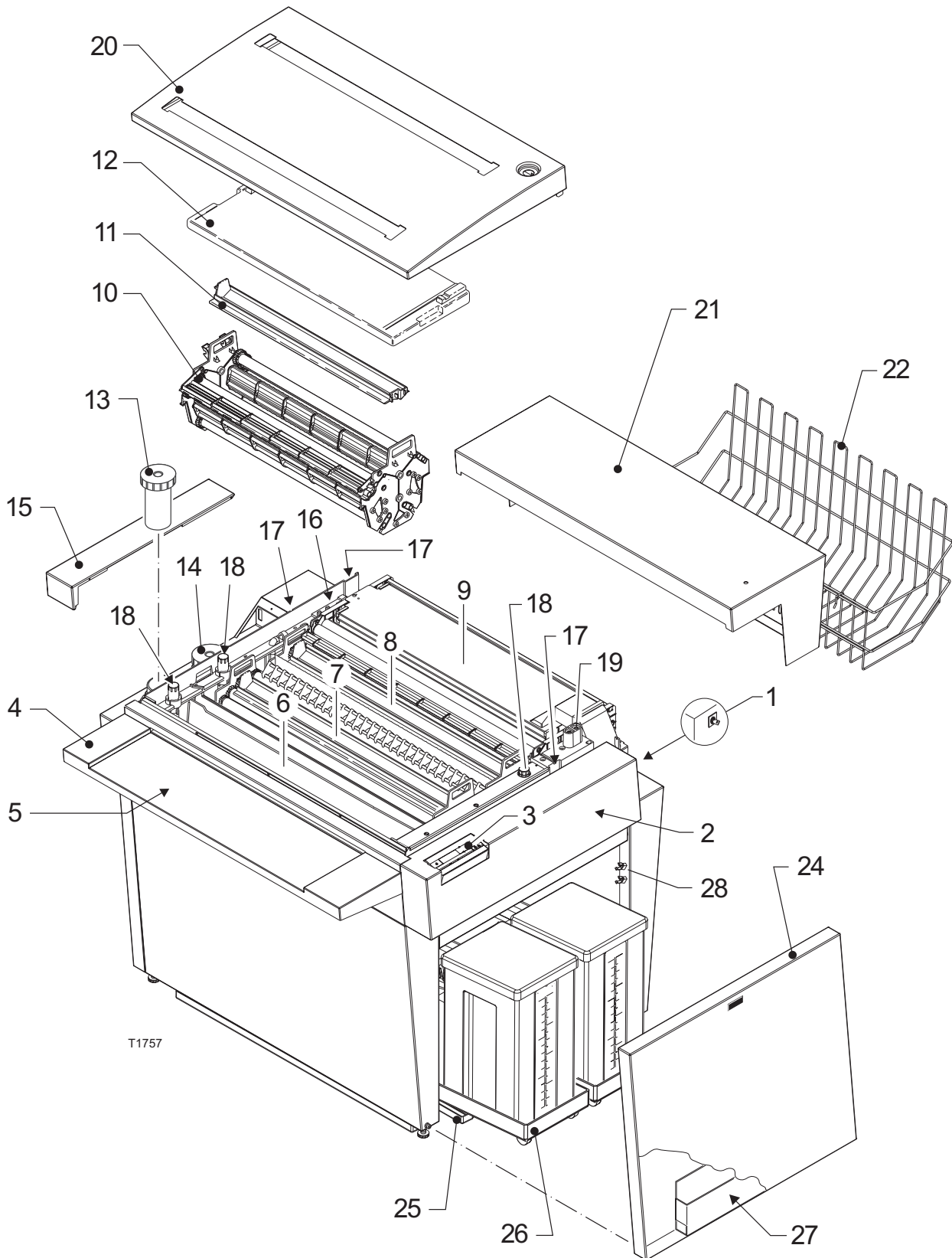
Some processors are also equipped with a daylight slot (J) and a rewash slot (K) which make it possible to use the processor outside the darkroom when installed as a "Two-room" installation.

At the processor entrance the transport roller system takes over and leads the film safely through each of the four sections at a uniform speed and special guides make sure that it passes smoothly from one section to another.

When the film leaves the processor, it lands in the film basket (L).



T1746



T1757

## MAIN COMPONENTS OVERVIEW

(See illustration opposite)

### MAIN SWITCH (1)

Switches the power to the processor ON/OFF. The main switch is also a lock, and cannot be turned on without the key delivered with the processor.

### ELECTRONICS CABINET (2)

The electronics cabinet holds the main control electronics and the fuses for all functions. See description later in this chapter. The cabinet is fitted with a cover inside to protect the electronics.

### CONTROL PANEL (3)

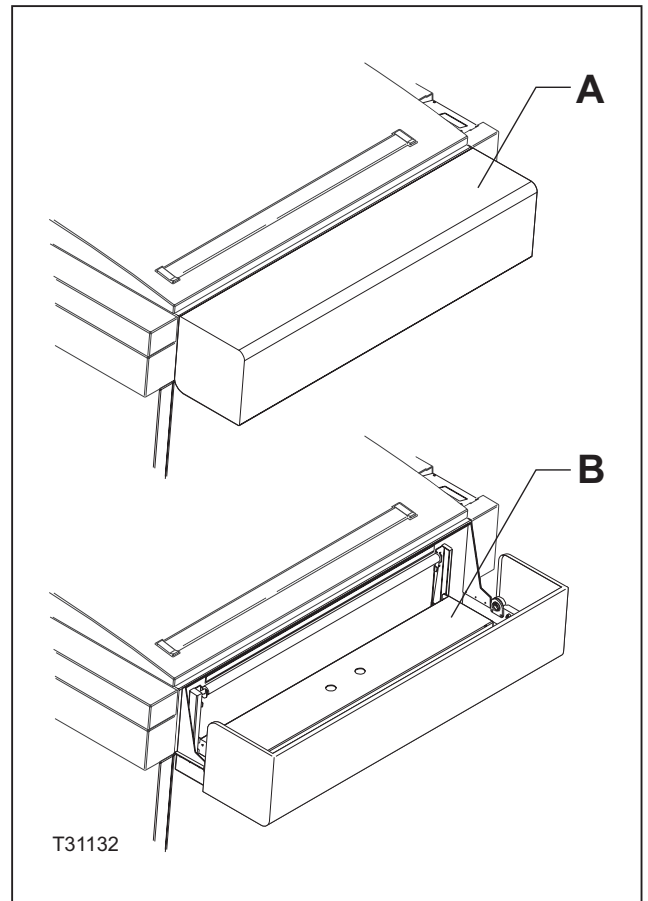
The processor is operated from the control panel. See description in the "FMA Control Panel" manual.

### FEED TABLE (4)

As standard the processor is equipped with a feed table. Alternatively the processor can be ordered with a daylight cassette **(A)** (see figure opposite). The cassette is equipped with a specially designed shelf **(B)** that makes it easy to handle both small and big PTS/Imagesetting cassettes. The shelf can also be used as a feed table.

### INPUT SENSORS (5)

A number of input sensors are placed at the processor entrance (4 pcs : 55/21, 6 pcs : 72/28 and 7 pcs: 86/34). When film is inserted, the input sensors automatically starts the processor provided that the processor is switched on by the main switch **(1)** and the ON-button on the control panel **(3)**.



### DEVELOPER SECTION (6)

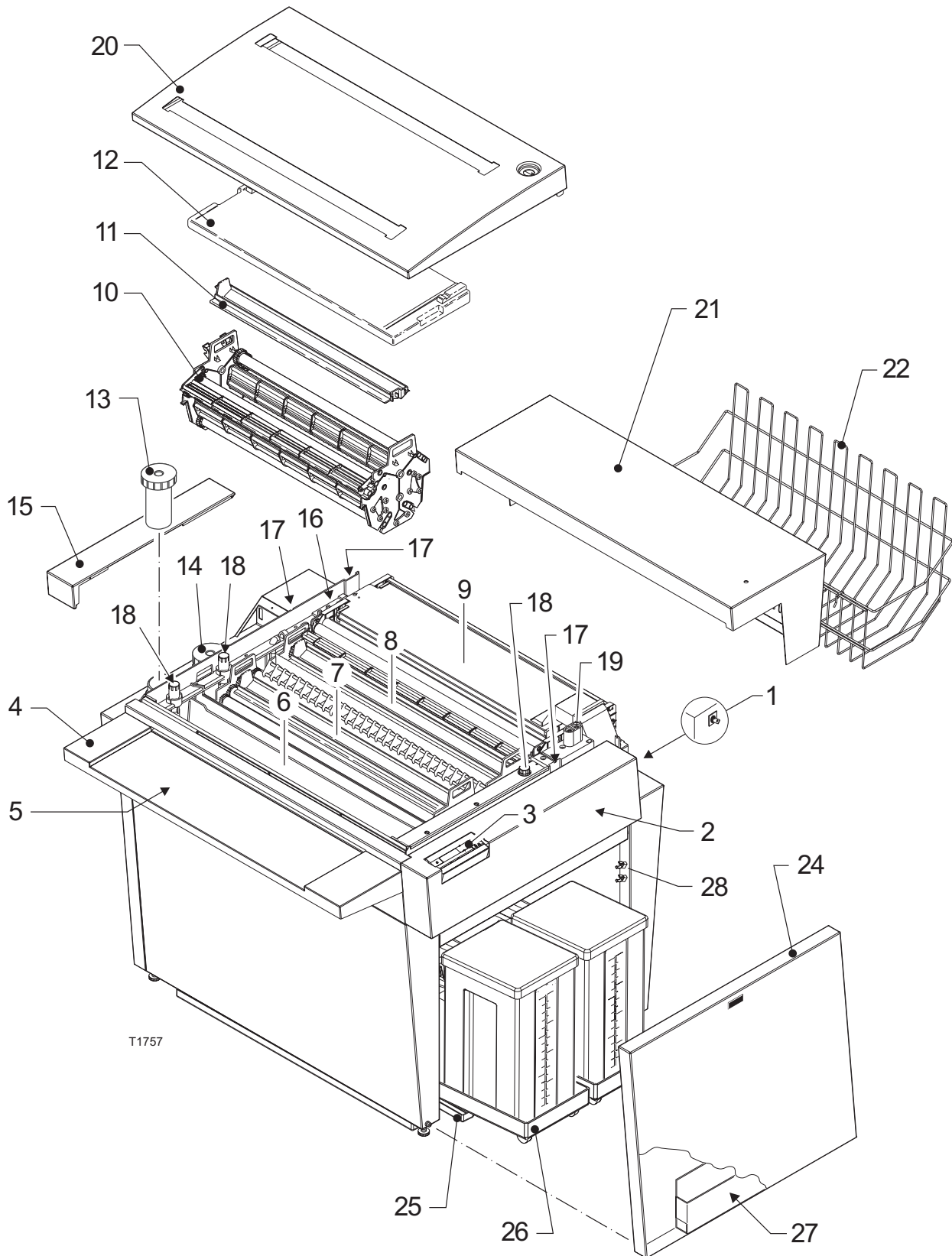
See description in "DEVELOPER SECTION".

The developer rack is different from the fixer and wash racks regarding roller configuration, entrance roller bearings and daylight guide.

### FIXER SECTION (7)

See description in "FIXER SECTION".

The roller configuration is identical to the wash rack.



T1757

**WASH SECTION (8)**

See description in "WASH SECTION".

The roller configuration is identical to the fixer rack. Models with rewash slot have a special crossover guide in the wash rack.

**DRYER SECTION (9)**

See description in "DRYER SECTION".

**RACKS (10)**

The racks are a combination of rollers and guides that smoothly transport the film through the wet sections and the dryer section of the film processor. Roller configuration is shown in chapter 3 "ROLLERS".

**ANTI-OXIDATION LIDS (11)**

Each rack in the wet section is equipped with an anti-oxidation lid. The anti-oxidation lids reduce the oxidation from the chemical baths as well as it minimizes build-up of condensate underneath the condensation lid/drip tray (12) and the top cover (20).

**CONDENSATION LID/DRIP TRAY (12)**

The processor is equipped with a condensation lid underneath the top cover to prevent that fixer condensation drips into the developer section and opposite.

The lid is also a drip tray on which racks can be carried away for cleaning without spilling of chemicals.

**DEVELOPER FILTER (13)**

**NOTE! Some models only.**

The developer tank is equipped with a filter that removes mechanical impurities and floating particles from the developer solution. The filter unit has its own circulation pump.

**FIXER FILTER (14)**

**NOTE! Some models only.**

Like the developer tank, the fixer tank also is equipped with a filter that removes mechanical impurities and floating particles from the developer solution. The filter unit has its own circulation pump.

**COVER FOR FILTERS (15)**

**NOTE! Some models only.**

The filters (13) and (14) are covered with a small cover which is easily removed without removing the top cover.

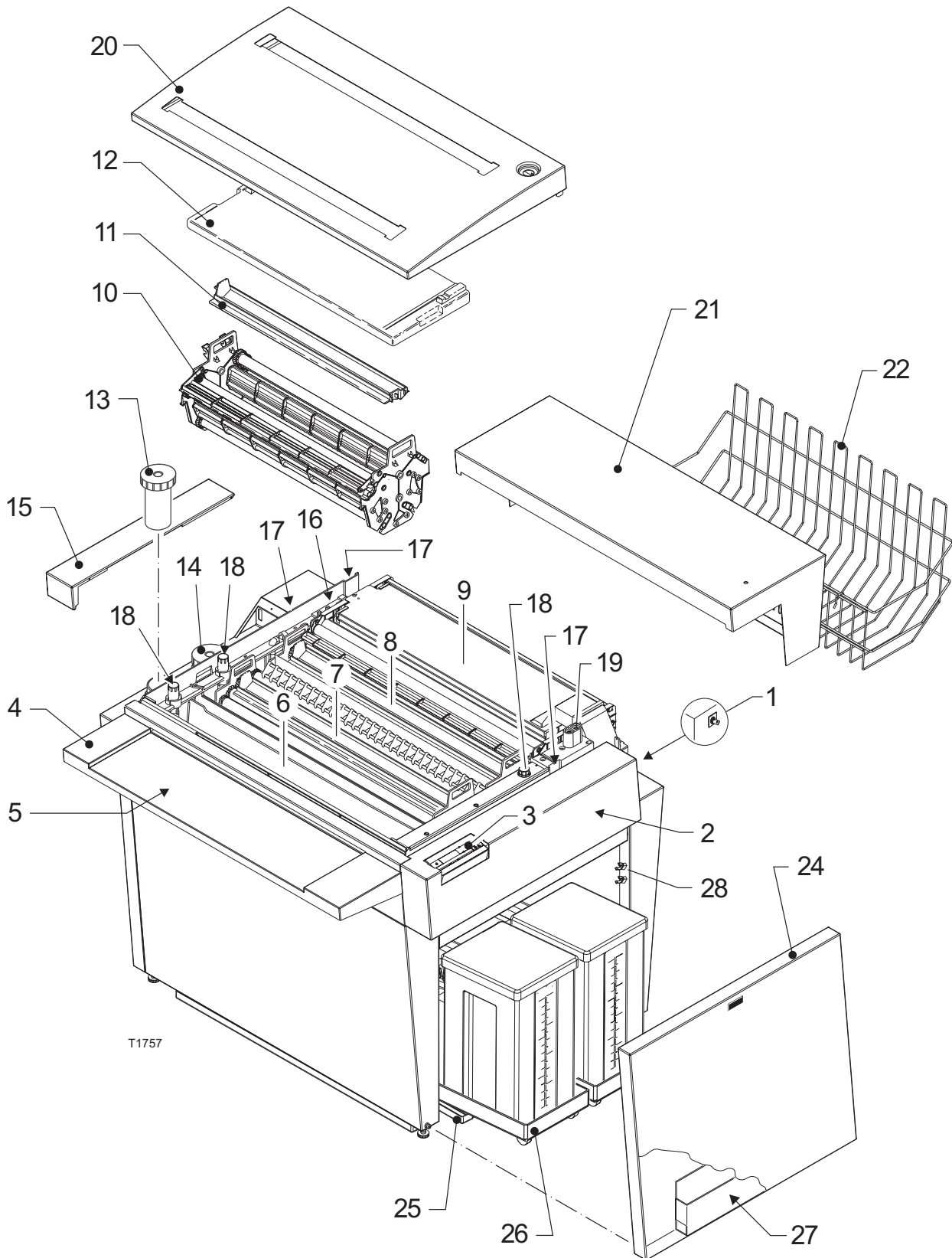
**SCAVENGER FAN (16)**

In the left tank side is mounted a fan for removal of chemical vapours from inside of the wet sections.

**INTERLOCK SWITCHES (17)**

The processor is equipped with 3 interlock switches. If either the top cover (20), the dryer cover (21), or the filters cover (15) (some models only) are removed from the processor e.g. for servicing, the related switch will switch the processor to a safe mode. In the safe mode pumps and moving parts cannot be activated.

**WARNING! Never activate the safety switches without the covers mounted as this will make the processor start in jog mode and activate pumps and moving parts.**



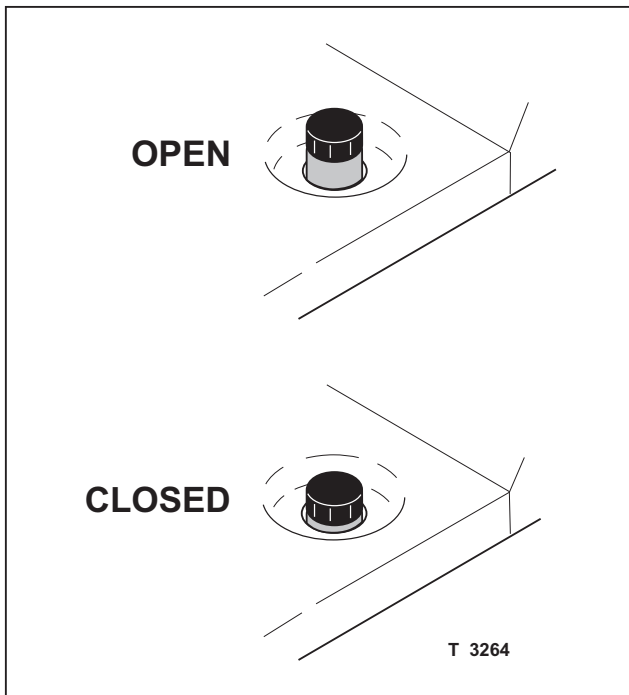
T1757

**OVERFLOW/DRAIN TUBE (18)**

Each bath is equipped with a combined overflow and drain tube. In the developer section and in the fixer section the tubes are placed underneath the top cover in the left-hand side. The tube for the wash water is placed through the top cover in the right-hand side of the processor.

To empty the baths the tubes must be turned 90° counterclockwise.

As shown on the figure below it is easily observed if the drain for the wash tank is opened or closed.



**PROCESS LAMP (19)**

**NOTE! Some models only.**

The lamp has a busy/alarm function for some models. See detailed description in the "FMA Control Panel" manual.

**TOP COVER WITH DAYLIGHT AND REWASH SLOTS (20)**

Some models are designed for two-room installation. For those models the top cover is delivered with daylight and rewash slots which make it possible to use the processor outside the darkroom.

**DRYER COVER (21)**

**FILM BASKET (22)**

When leaving the processor the film material is collected in the film basket.

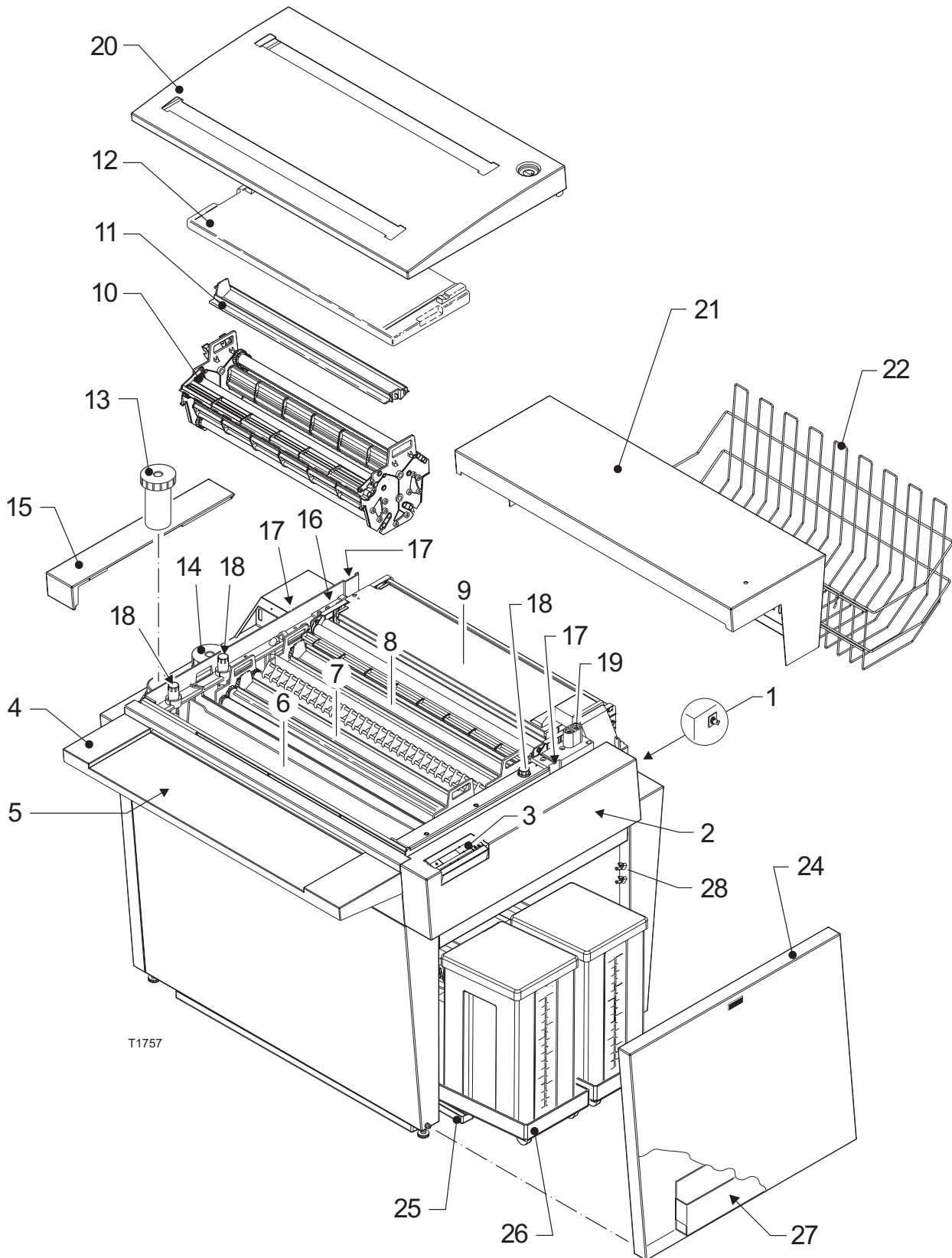
**STAND (23)**

The processor is delivered with either an open or a closed stand. Inside the stand there is room for trolleys (26) with containers for replenishment and/or waste chemicals.

**REMOVABLE SIDE PANELS (24)**

**NOTE! Some models only.**

The side panels of a closed stand are very easy to remove. It gives the processor a tidy look when hoses and containers can be stored inside a closed stand.



T1757



**LARGE DRIP TRAY (25)**

**NOTE! Some models only.**

The large drip tray fits inside the stand and is designed specially for easy handling of the trolleys (26).

**TROLLEYS WITH CONTAINERS (26)**

**NOTE! Some models only.**

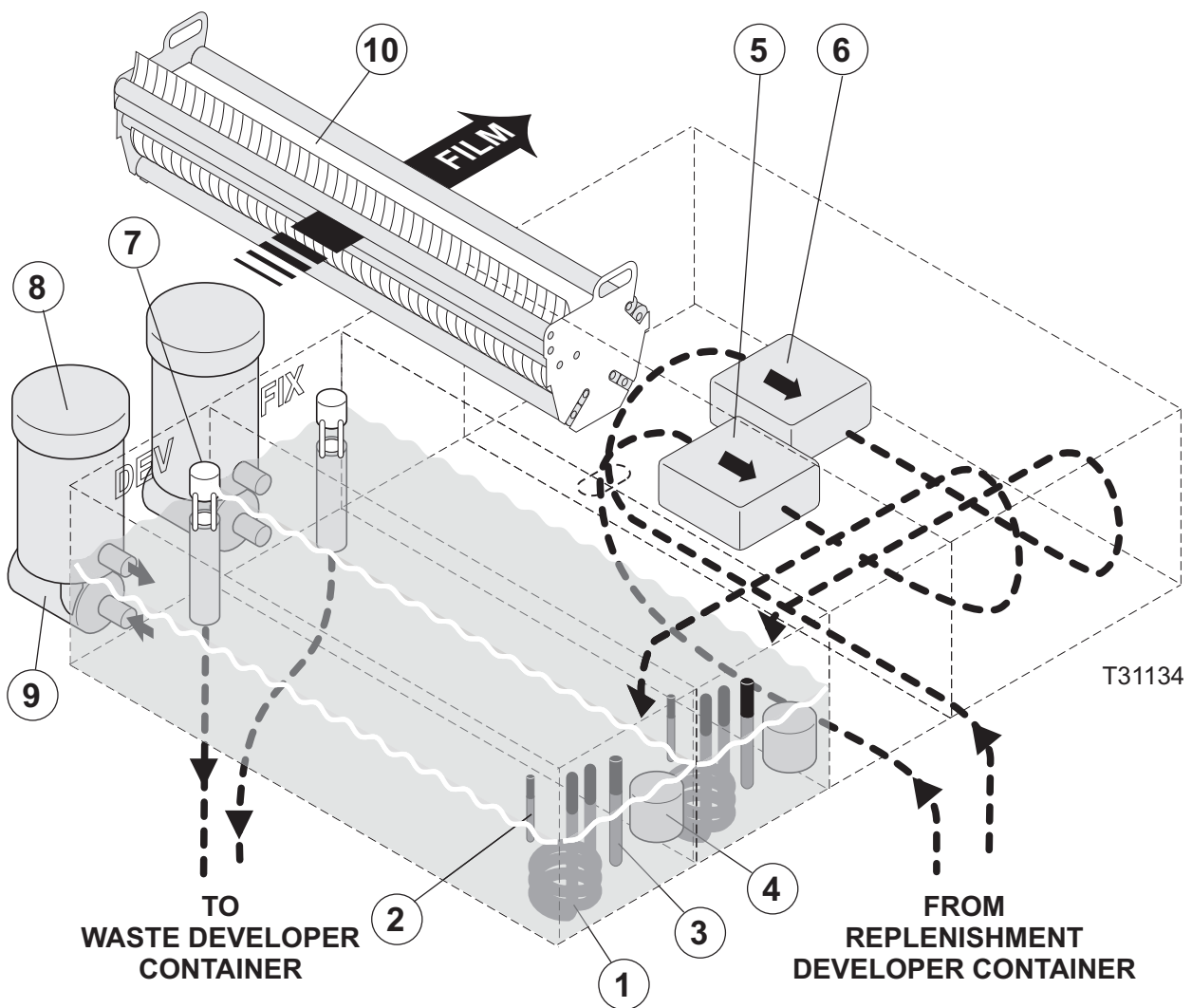
A pair of trolleys fit inside both the open and the closed stand and make it easy to handle both replenishment containers and containers for waste chemicals when changing, emptying, refilling etc.

**HOLDER FOR MANUALS (27)**

On the inside of the right side panel is mounted a holder for the manuals and the spareparts box. Always keep the manuals and spareparts box with the machine for reference at all times.

**HOLDER FOR WASTE HOSES (28)**

Inside the stand is mounted two holders for waste hoses. When waste containers are removed for emptying the waste hoses can be attached to the holders to avoid chemical spills on the floor.



---

## FUNCTIONAL DESCRIPTION

---

### DEVELOPER/FIXER SECTIONS

---

(See illustration opposite).

In the developer (**DEV**) section the latent image created during exposure is developed and in the fixer (**FIX**) section the developing process is stopped and unexposed silver halide is dissolved.

The developer and fixer sections are identical, except for racks.

- The developer and fixer sections consist of a processing tank with a heater (**1**) and a thermostat (**2**) to keep the temperature constant.
- A level detector (**3**) in each tank prevents operation of the processor with insufficient amount of chemicals.
- A pump (**4**) in each tank recirculates the solution to maintain a uniform temperature of the chemicals.
- Bellows pumps for developer (**5**) and fixer (**6**) connected to two external replenishment containers automatically add developer and fixer to the tanks to compensate for chemicals used during actual film processing.  
**Some models only:** Level detectors in the replenishment containers give an alarm when containers need refilling.
- The waste chemicals leaves the tank through combined overflow and drain tubes (**7**).  
**Some models only:** A level detector prevents that waste chemical containers overflow.
- **Some models only:** Filters (**8**) remove mechanical impurities and floating particles from the chemicals. Each filter unit has its own circulation pump (**9**).

- The developer and fixer racks are equipped with anti-oxidation lids (**10**). The lids prevent condensation underneath the top cover and minimize oxidation of chemicals.

The rack configuration is described in chapter 3, "ROLLERS".

**NOTE! Some models are equipped with special racks for polyester plates.**

### THE REPLENISHMENT SYSTEM

---

The system automatically adds developer and fixer to compensate for chemicals used during actual film processing.

The system also supplies additional developer to compensate for lost activity caused by normal oxidation.

It is possible to operate the replenishment pumps manually (to "top up" the tank levels) on the control panel. See also the "FMA Control Panel" manual. Film sensors at the entrance of the processor start the replenishment control circuit when film is entered. The replenishment control circuit also starts when the daylight slot is opened, but not when the rewash slot is opened.

### WASH SECTION

(See illustration below).

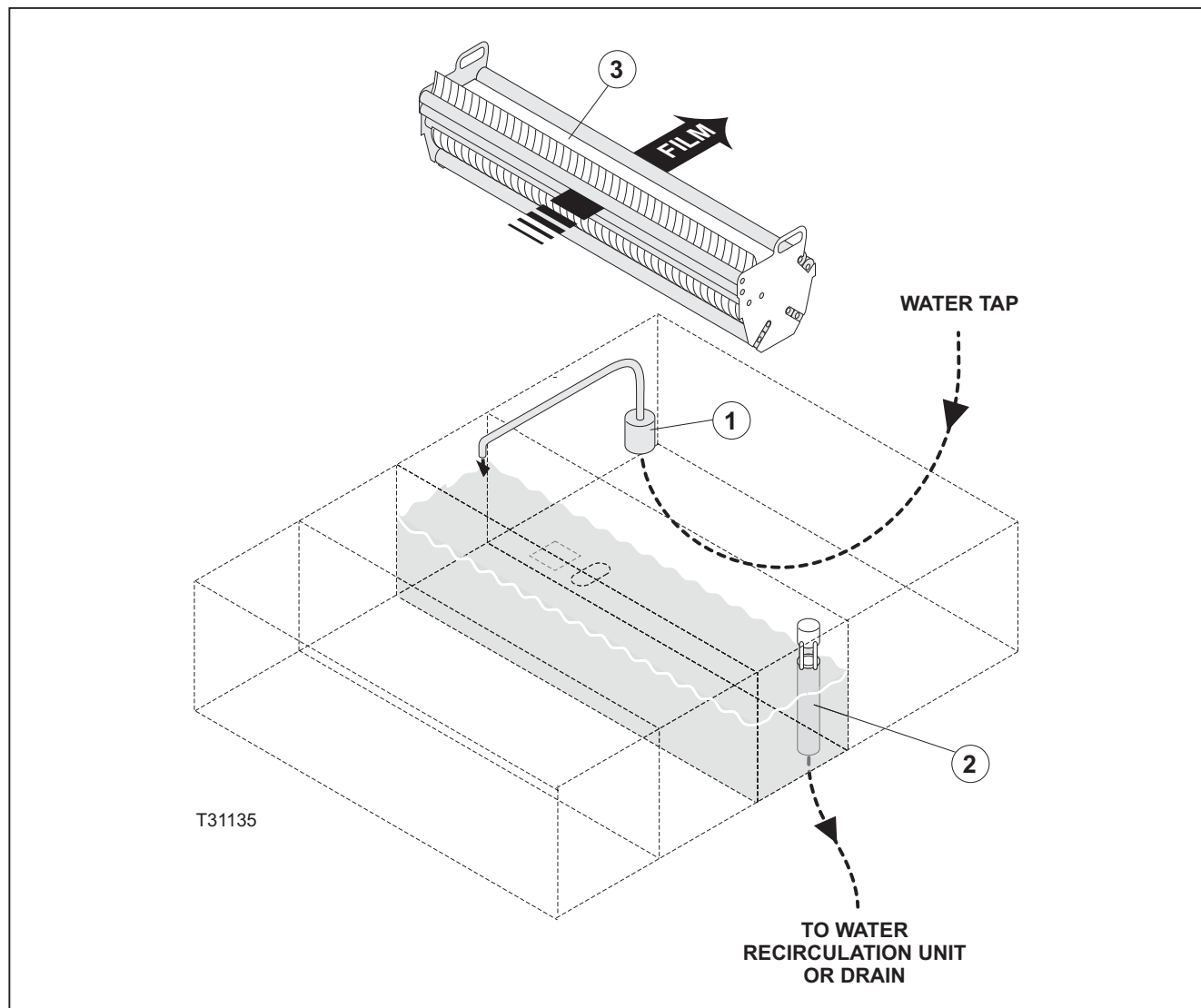
In the wash section (**WASH**) any residual chemicals are washed off the film material.

- Fresh water is added from an external water supply.
- The water inlet is controlled by a solenoid valve (1).

- The wash water overflows into a combined overflow/drain tube (2) which is accessible through the top cover (see "MAIN COMPONENTS OVERVIEW").

WASH rack configuration is described in chapter 3, "ROLLERS".

**NOTE!** Some models are equipped with special racks for polyester plates.



**DRYER SECTION**

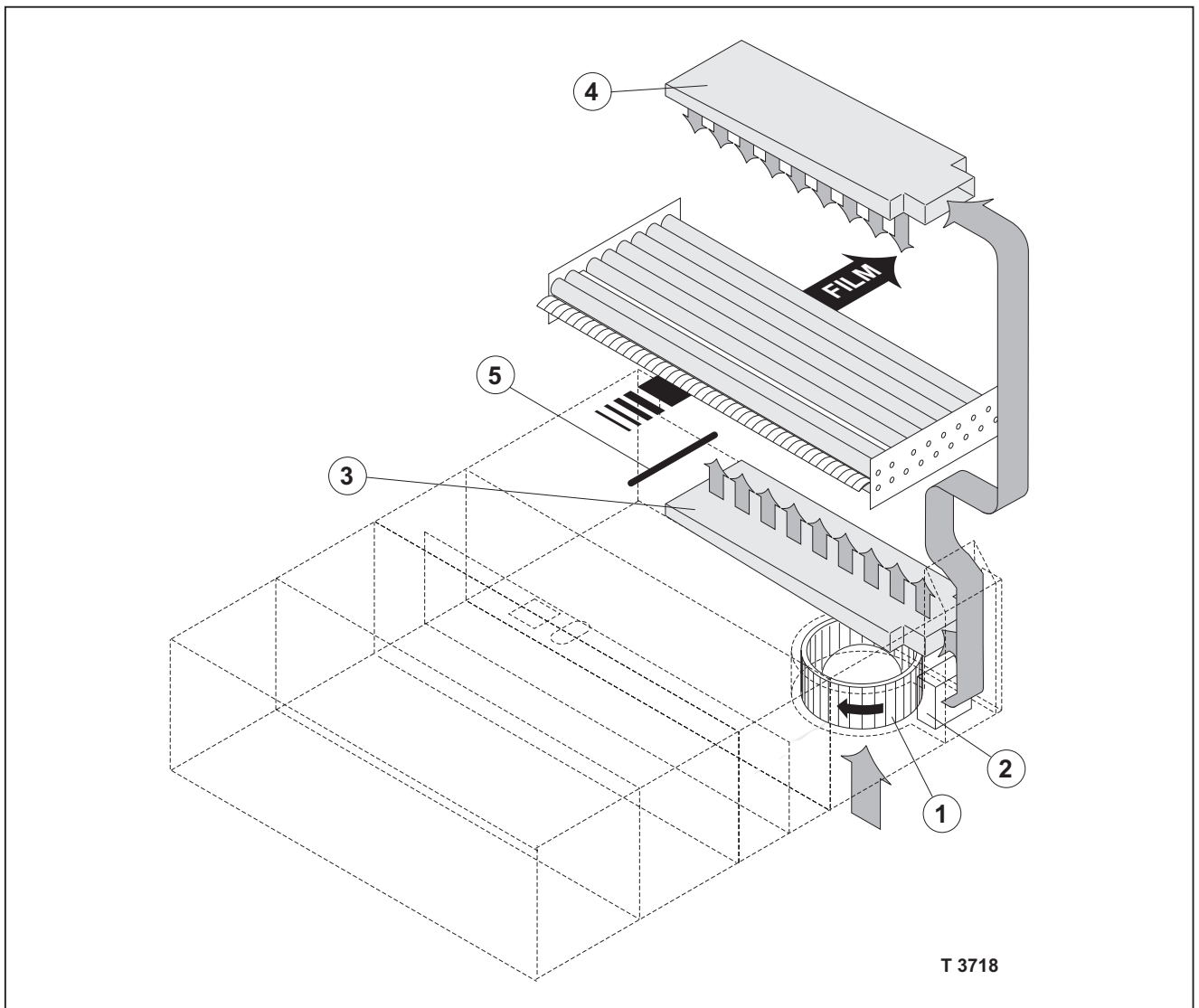
DRYER rack configuration is described in chapter 3, "ROLLERS".

(See illustration below).

In the dryer section the moisture is removed from the film to allow for handling immediately after processing.

The dryer section consists of a centrifugal fan (1) with an integrated heater (2) and two air distributing-boxes, one underneath (3) and one above (4) the dryer rack.

A thermostat (5) keeps the drying temperature in range.

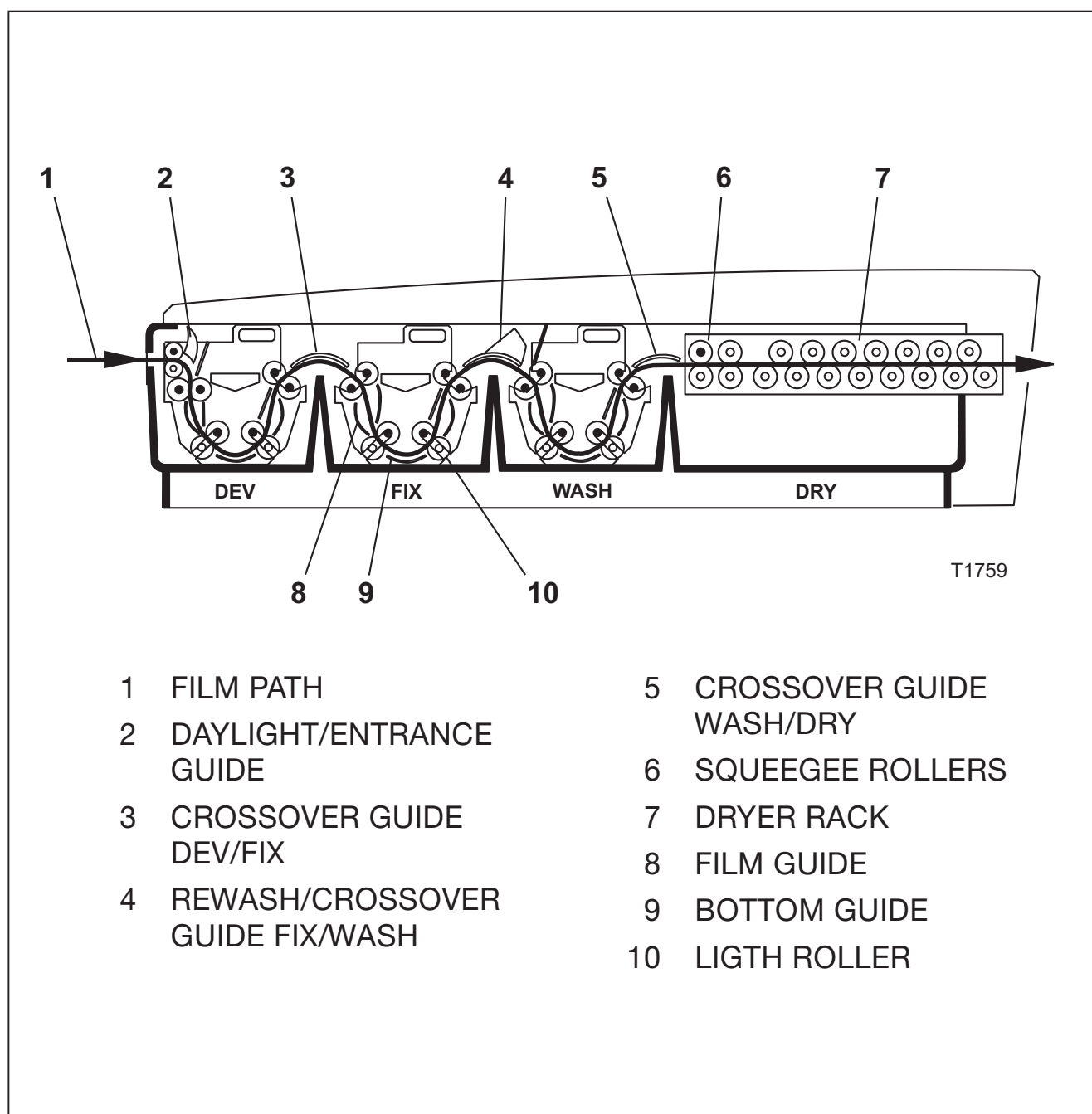


**TRANSPORT SYSTEM**

(See illustration below).

The transport system consists of a main drive-motor connected to a worm gear drive system. The drive system turns the rollers in each rack which, in conjunction with the film guides and crossovers, directs the film through the processor.

Squeegee rollers at the entrance of the dryer section remove surface moisture from the film and divert water to the wash section.



- |   |                                 |    |                          |
|---|---------------------------------|----|--------------------------|
| 1 | FILM PATH                       | 5  | CROSSOVER GUIDE WASH/DRY |
| 2 | DAYLIGHT/ENTRANCE GUIDE         | 6  | SQUEEGEE ROLLERS         |
| 3 | CROSSOVER GUIDE DEV/FIX         | 7  | DRYER RACK               |
| 4 | REWASH/CROSSOVER GUIDE FIX/WASH | 8  | FILM GUIDE               |
|   |                                 | 9  | BOTTOM GUIDE             |
|   |                                 | 10 | LIGHT ROLLER             |

**ECOLOGICAL UNITS**

---

The processor is prepared for connections to ecological units for the developer, fixer, and wash sections, and chemical vapours exhaust.

Ask your local dealer for more information about the ecological units and chemical vapours exhaust kit.

550, 720, 860  
55/21, 72/28, 86/34

- GB -

FILM PROCESSOR

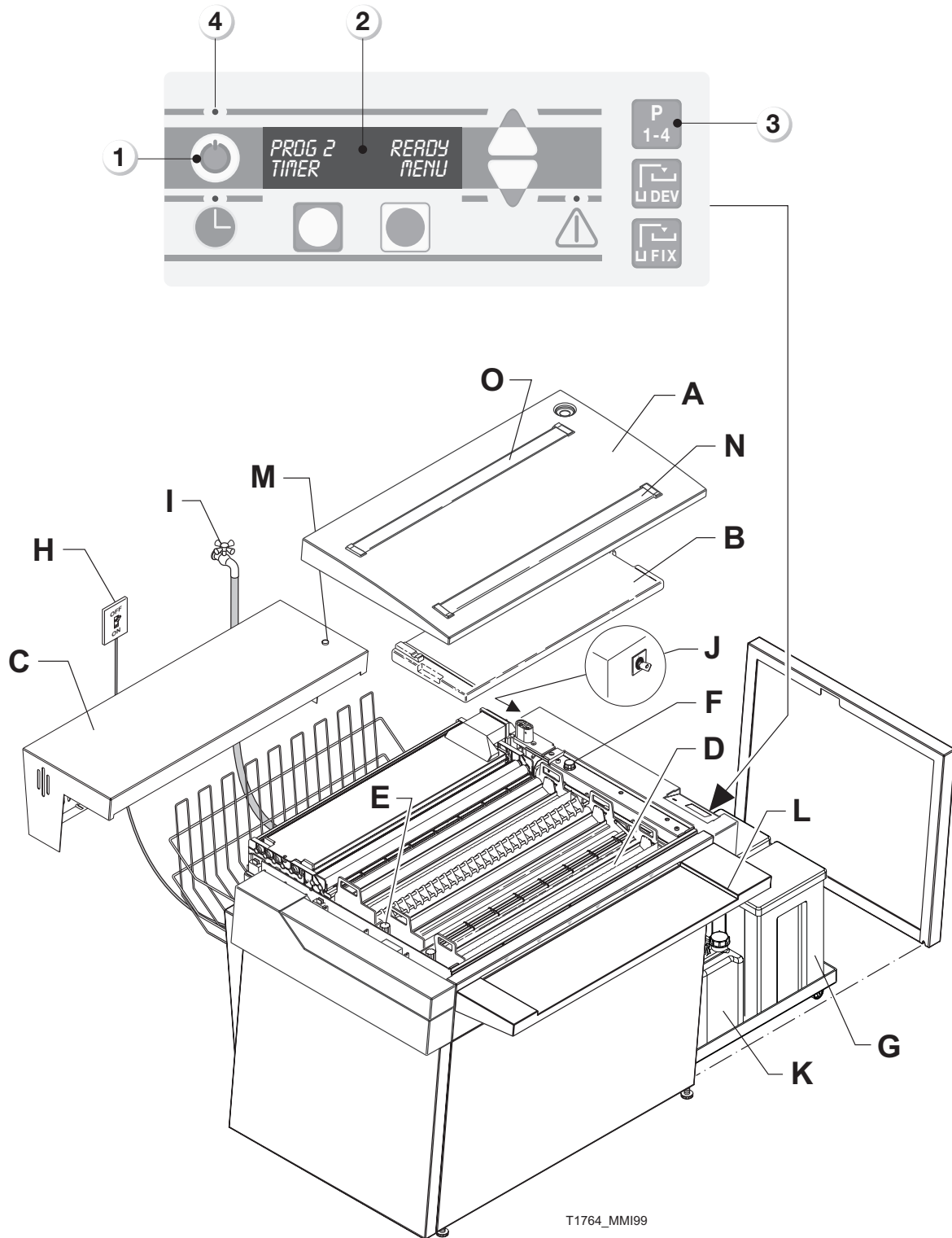
---



## **2. OPERATING PROCEDURES**

### **GENERAL**

Procedures for daily operation of the processor are described on the following pages.



T1764\_MMI99

---

## DAILY START-UP

---

(See illustration opposite)

- Before starting up the processor follow the procedure for daily cleaning as described in chapter 3.
- Open external water supply valve **(I)**.

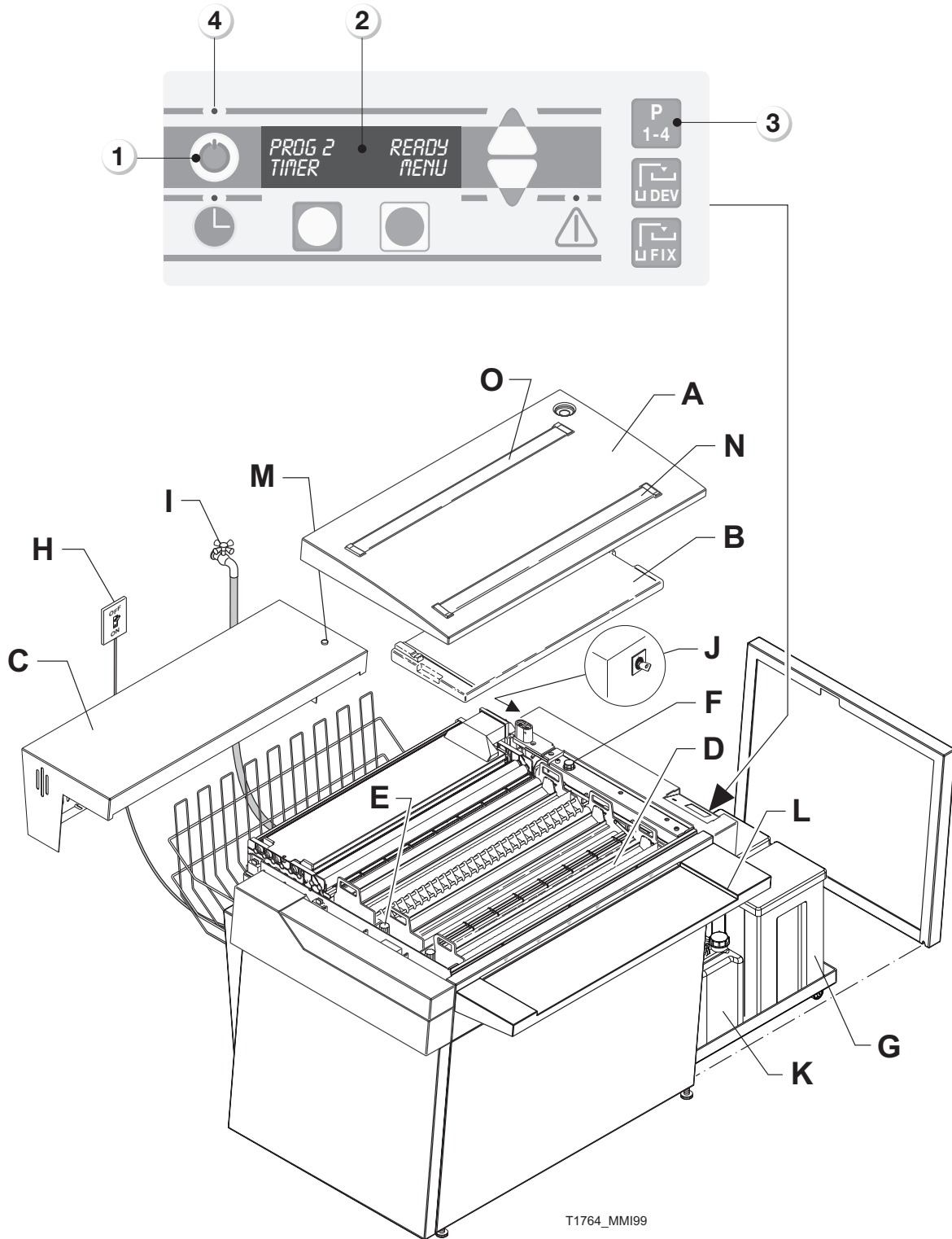
**NOTE! Make certain that the wash tank drain tube (F) is closed (see figure below). Do not operate the processor with an empty wash tank.**

- **Models with GFCI relay only:**  
Activate the **reset** button/switch on the GFCI relay. The indicator on the GFCI will turn red or light up depending on which model is installed. (See also "GFCI RELAY" later in this chapter).
- Turn the main switch **(J)** to ON/I.
- The "power on" indicator **(4)** is lit and the display **(2)** shows "Initializing, Please wait...".

- When the processor is in off-mode, display **(2)** is black, press the stand-by key **(1)** on the control panel. The processor turns into stand-by mode and the display **(2)** will show the latest employed program. See the "FMA Control Panel" manual for more information about the control panel functions and operation.
- To fill the wash tank push "start" in the wash replenish function and the wash tank will be filled up automatically.

**NOTE! Only push "START" for fill wash when the wash tank is empty.**

- Feed some sheets of film through the processor to clean it.
- Your processor is now ready for processing.
- Shut-down is described later in this chapter.



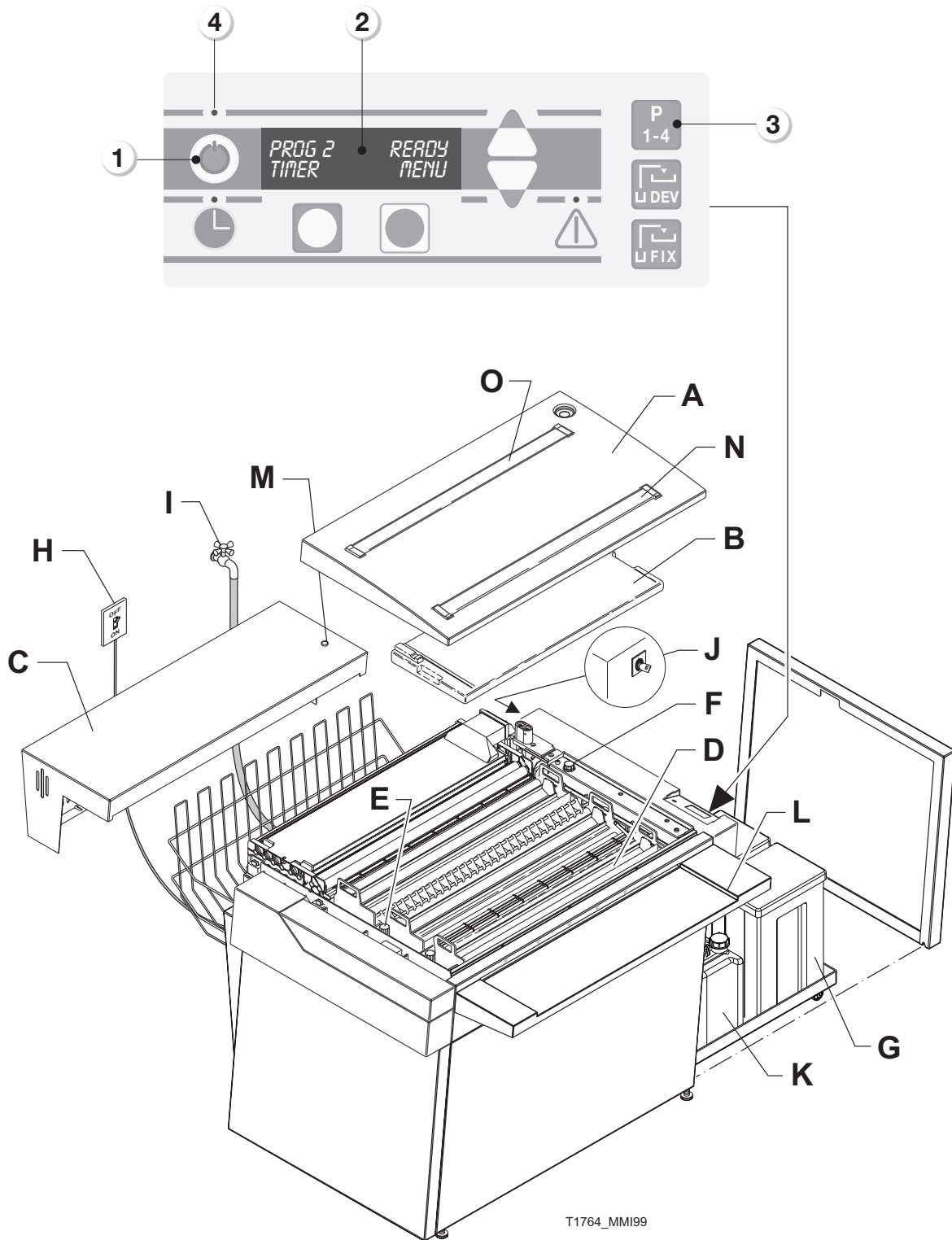
T1764\_MMI99

---

## PROCESSING FROM THE FEED TABLE

(See illustration opposite).

- Select the program suitable for the processing material by means of the program key (3). The display (2) shows which program is active at any time.
- Slowly enter the film into the processor using the film feed guide **(L)** until it engages the drive system. Activating the input sensors the processor will start at the speed specified in the selected program.
- Verify that the display **(2)** changes between the messages "PROCESSING" and "WAIT PRC". When the message "WAIT PRC" disappears you can insert another film.
- When the film exits, the display returns to stand-by mode.

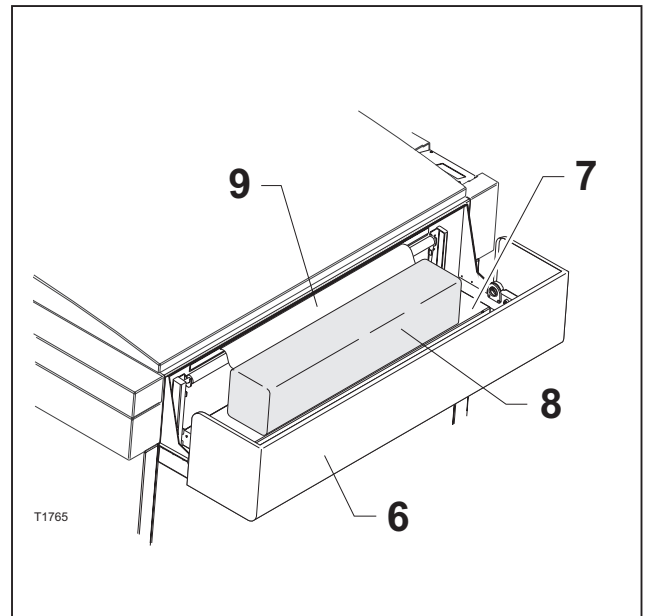


T1764\_MMI99

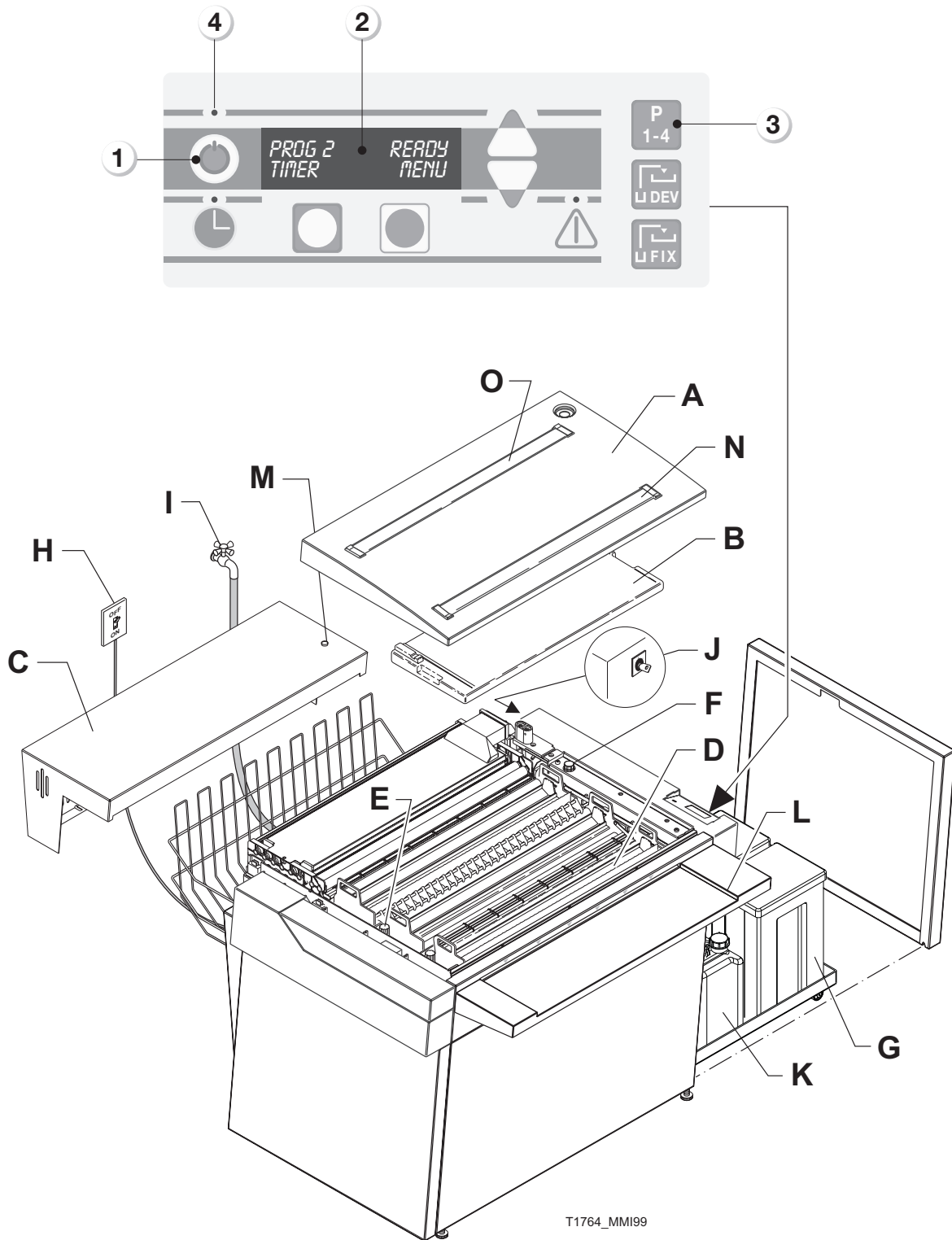
## PROCESSING FROM THE DAYLIGHT CASSETTE

(See also figure to the right).

- Verify that the processor is not busy (display **(2)** messages change between "PROCESSING" and "WAIT PRC" when busy). When the message "WAIT PRC" disappears you can insert another film.
- Open the cassette cover **(6)**.
- Adjust the shelf **(7)** to fit the cassette size or remove it, whatever is necessary.
- Select processing program by means of the program key **(3)**. The display **(2)** shows which program is active at any time.
- Place the cassette **(8)** on the shelf and enter the film/paper **(9)** into the processor until it engages the drive system. The input roller ensures that the material enters the processor without scratches. When the input sensors are activated, the processor starts and the display **(2)** message change between "PROCESSING" and "WAIT PRC".
- Close the cassette cover **(6)** and **do not open until the message "WAIT PRC" in the display disappears.**
- When the message "WAIT PRC" disappears the processor is ready to process another cassette.



The shelf can also be used as feed table. In that case adjust the shelf to upper position and follow the procedure described in "PROCESSING FROM THE FEED TABLE". Feed paper between the white marks on the shelf.



T1764\_MMI99



---

## PROCESSING FROM THE DAYLIGHT SLOT

(See illustration opposite).

**NOTE! Some models only.**

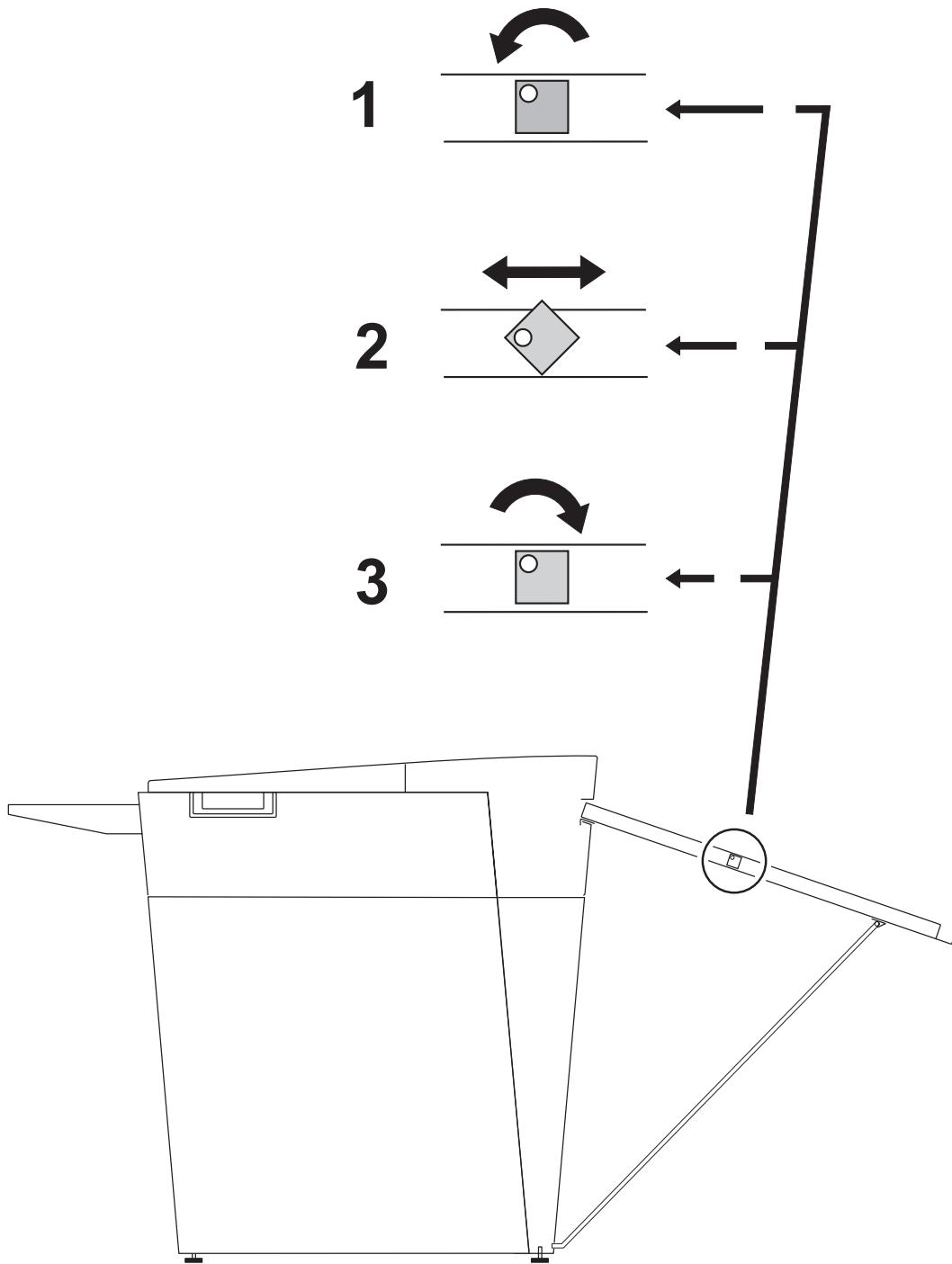
- Verify that the processor is not busy. The process lamp **(M)** is not lit.
- Open the daylight slot **(N)**. The process lamp **(M)** is lit and the messages in the display **(2)** change between "PROCESSING" and "WAIT PRC".
- Feed paper into the processor and close the daylight slot.
- When the process lamp **(M)** flashes and the message "WAIT PRC" disappears from the display, the processor is ready to receive another film through the daylight slot.

## USING THE REWASH SLOT

(See illustration opposite).

**NOTE! Some models only.**

- Verify that the processor is not busy. The process lamp **(M)** is not lit.
- Open the rewash slot **(O)**. The process lamp **(M)** is lit and the messages in the display **(2)** change between "PROCESSING" and "WAIT PRC".
- Feed paper into the processor and close the rewash slot.
- When the process lamp **(M)** flashes and the message "WAIT PRC" disappears from the display, the processor is ready to receive another film through the rewash slot.



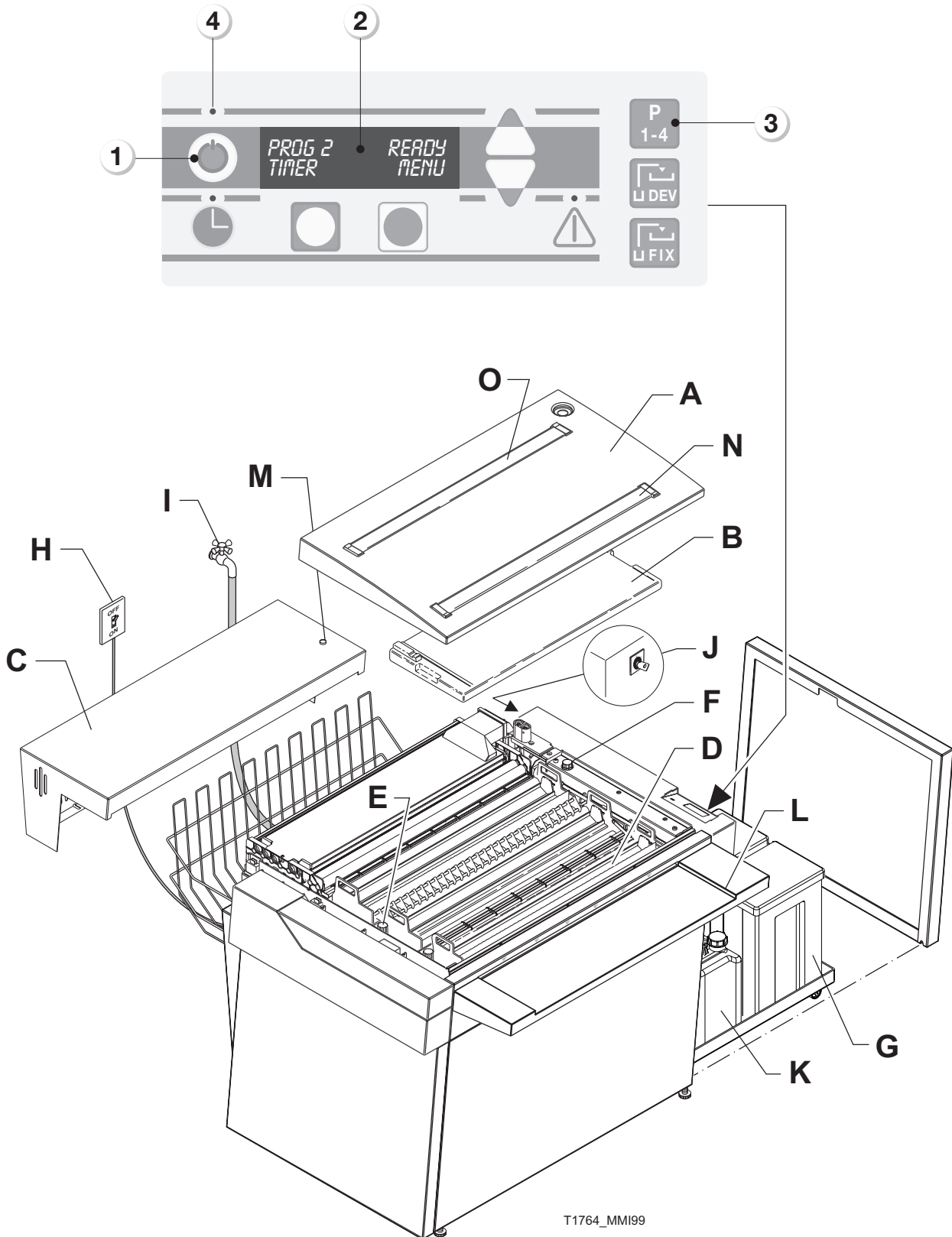
T31451

## ADJUSTING FILM TRAY

(See illustration opposite).

**NOTE! Some models only.**

When processing short sheets it is recommended to adjust the stop bar to make the film tray fit the actual size of the film materials.



T1764\_MM199

---

## SHUT-DOWN PROCEDURE

---

(See illustration opposite).

### MANUAL SHUT-DOWN

---

- Push the stand-by key (1). The processor turns into off mode: The power on indicator (4) is lit and the display (2) is black. The exhaust fan and the time-replenishment circuits will still work.
- Close the external water supply valve (B).
- Open the wash tank drain tubes (A) by turning them 90° counterclockwise.

**NOTE!** *It is recommended to drain the wash tank at least once every 24 hours to prevent growth of algae and thereby consequent reduction in processing quality.*

**NOTE!** *The wash tank can be filled again automatically by pushing "start" in the fill wash function (see the "FMA Control Panel" manual). Only push "START" for fill wash when the wash tank is empty.*

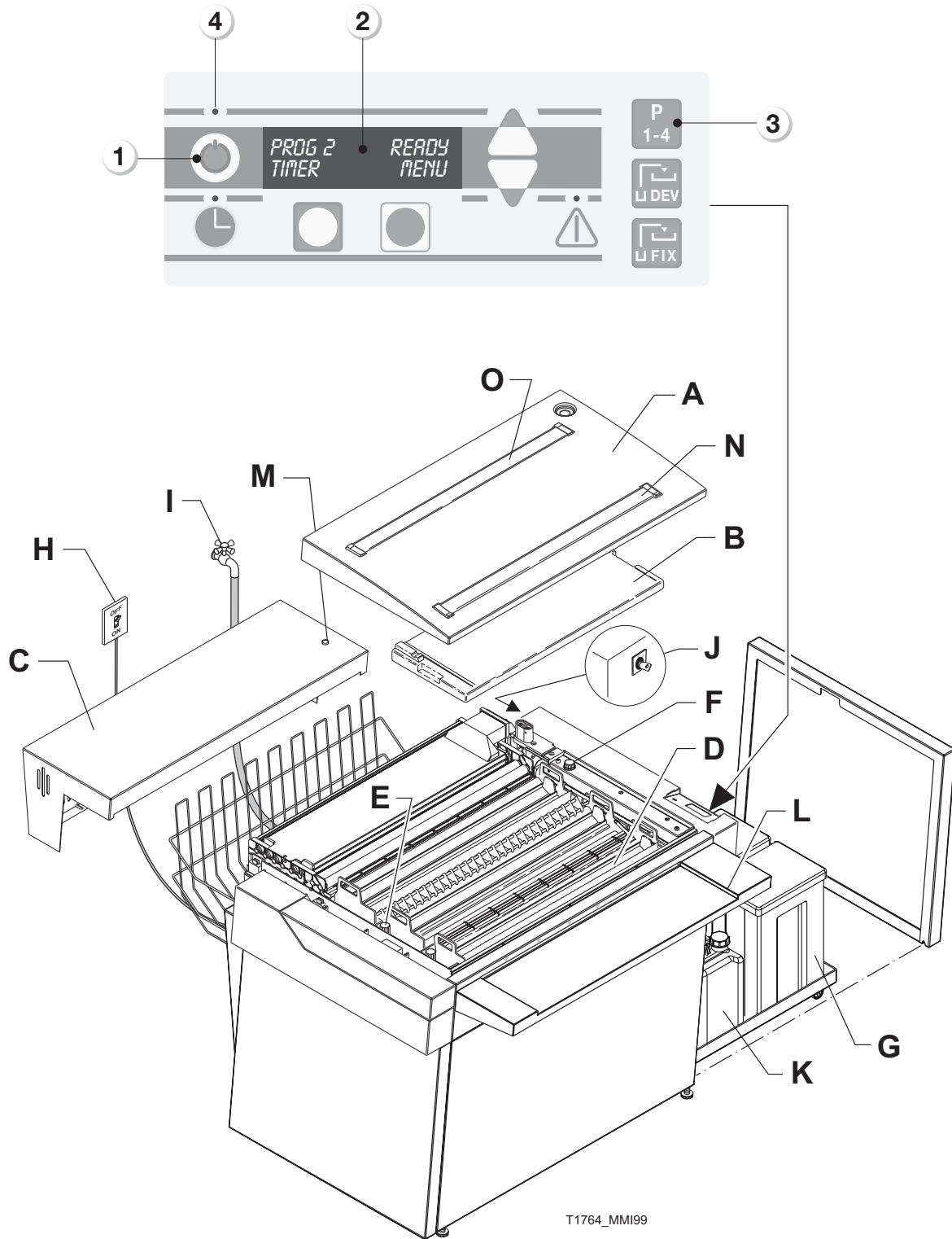
- Do **not** turn the main switch off ("0") during the night, if:
  - Time-replenishment is wanted.
  - Removal of exhaust is wanted
  - Automatic start-up is wanted.

### AUTOMATIC SHUT-DOWN

---

The auto-start function enables automatic start-up and shut-down of the processor.

***The auto-start function is described in the "FMA Control Panel" manual "STARTING THE PROCESSOR" and "AUTO MODE".***



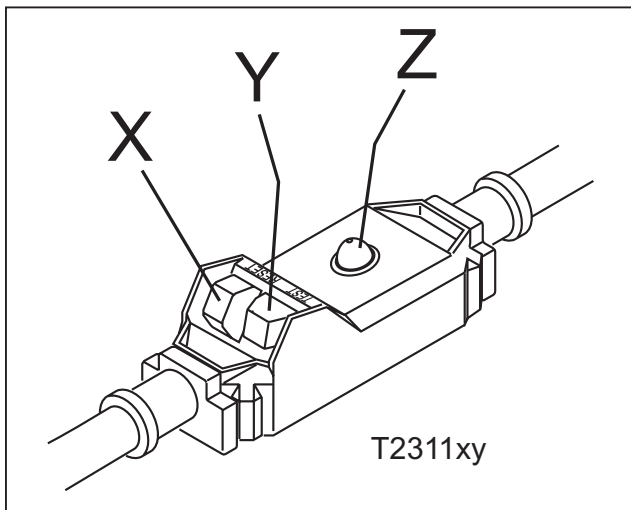
T1764\_MMI99

## "GFCI" Ground Fault Circuit Interrupter

### Some models only!

#### USING THE GFCI RELAY

The processor should be started as described in "DAILY START-UP" earlier in this chapter. In "power off" situations the GFCI must be operated as follows (see also figure below):



#### POWER SUPPLY DISCONNECTED AT WALL SOCKET

- Switch main power supply on (**H**).
- Make sure that main switch (**J**) is **off**.
- Press the reset button (**X**). The red indicator (**Z**) will light up.
- Turn the main switch (**J**) on.

**CAUTION!** Always activate the **RESET** button (**X**) each time the main power supply is switched on.

**CAUTION!** Never use the **TEST** button (**Y**) on the GFCI relay as power-off switch.

#### CURRENT LEAKAGE

- GFCI relay will switch power off and the red indicator (**Z**) will turn off.
- Turn main switch (**J**) off.
- Press the reset button (**X**). GFCI relay will reconnect power to the processor.
- Turn the main switch (**J**) on.

**CAUTION!** If GFCI relay do not reconnect power to the processor call service technician.

#### TEST BUTTON (Y)

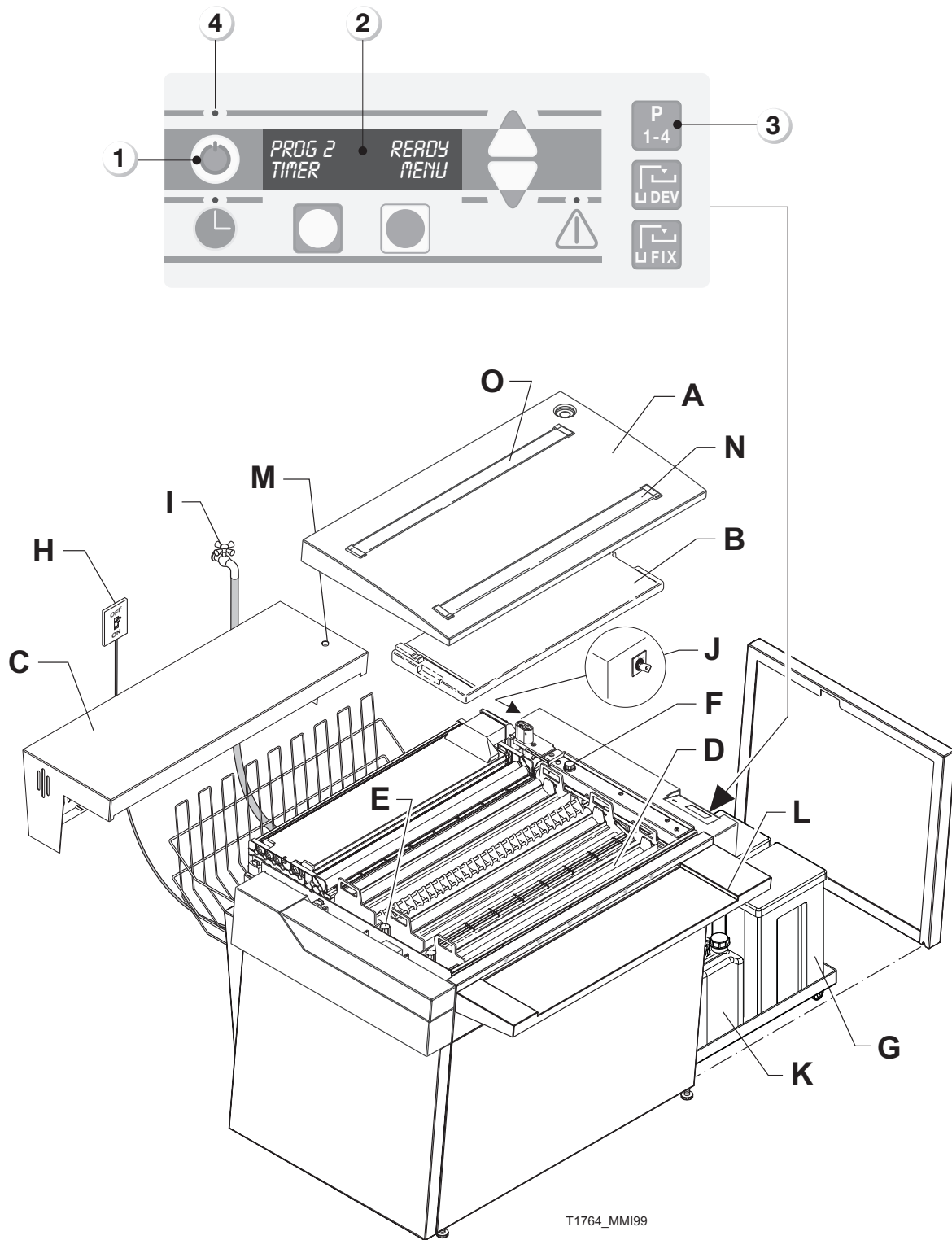
The test button (**Y**) is for testing reliability of the GFCI relay. Make a test approx. once a year:

- Press the test button (**Y**). The GFCI relay must cut power off (red indicator (**Z**) turns off).

**CAUTION!** If GFCI relay do not cut power off (red indicator (**Z**) turns off) the GFCI relay must be changed. Call service technician.

- If test of GFCI has been successful turn main switch (**J**) off.
- Press the reset button (**X**). The GFCI relay will reconnect power to the processor. The red indicator (**Z**) will light up.
- Turn main switch (**J**) on.

SEE ALSO DESCRIPTION OF GFCI RELAY ON THE NEXT PAGE.



T1764\_MMI99

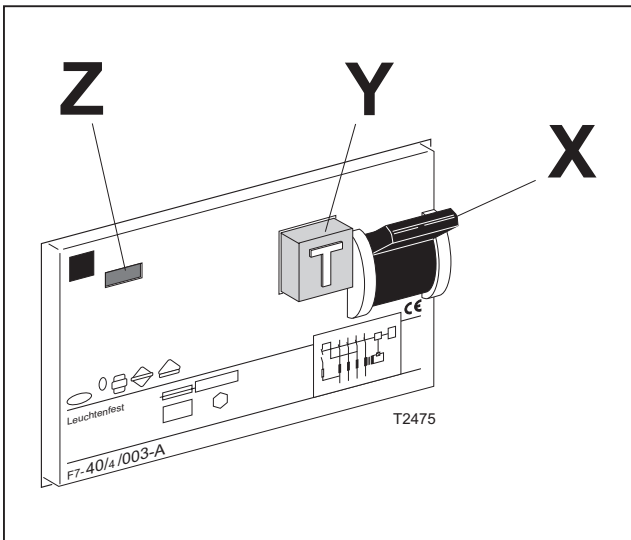


**"GFCI" Ground Fault Circuit Interrupter**

**Some models only!**

**USING THE GFCI RELAY**

The processor should be started as described in "DAILY START-UP" earlier in this chapter. In "power off" situations the GFCI must be operated as follows (see also figure below):



**CURRENT LEAKAGE**

- GFCI relay will switch power off and the indicator **(Z)** will turn green.
- Turn main switch **(J)** off.
- Push the reset switch **(X)** upwards. The indicator will turn red and the GFCI relay reconnects power to the processor.
- Turn the main switch **(J)** on.

**CAUTION!** If GFCI relay do not reconnect power to the processor call service technician.

**TEST BUTTON (Y)**

The test button **(Y)** is for testing reliability of the GFCI relay. Make a test approx. once a year:

- Press the test button **(Y)**. The GFCI relay must cut power off (indicator **(Z)** must turn green).

**CAUTION!** If GFCI relay do not cut power off (indicator **(Z)** does not turn green) the GFCI relay must be changed. Call service technician.

**POWER SUPPLY DISCONNECTED AT WALL SOCKET**

- Switch main power supply on **(H)**.
- Make sure that main switch **(J)** is **off**.
- Push the reset switch **(X)** upwards. The indicator **(Z)** will turn red.
- Turn the main switch **(J)** on.

**CAUTION!** Never use the **TEST** button **(Y)** on the GFCI relay as power-off switch.

- If test of GFCI has been successful turn main switch **(J)** off.
- Push the reset switch **(X)** upwards. The GFCI relay will reconnect power to the processor. The indicator **(Z)** will turn red.
- Turn main switch **(J)** on.

**SEE ALSO DESCRIPTION OF GFCI RELAY ON THE PREVIOUS PAGE.**

550, 720, 860  
55/21, 72/28, 86/34

- GB -

FILM PROCESSOR

---

## 3. CLEANING AND MAINTENANCE

### GENERAL

Performing maintenance on a scheduled basis reduces the possibilities of equipment failure and the loss of processing quality. Only one person should be responsible for performing the preventive maintenance program. That person should be familiar with the equipment as well as its operational characteristics and maintenance requirements.

A periodic major clean-up of the equipment is important to maintain the processing quality and reliability of the processor.

This clean-up should be performed either monthly or after processing approx. 1000m<sup>2</sup> (10.000 ft<sup>2</sup>) of film.

The major clean-up procedure can be performed in 2 to 4 hours depending on the condition of the processor and on the proficiency of the person cleaning it.

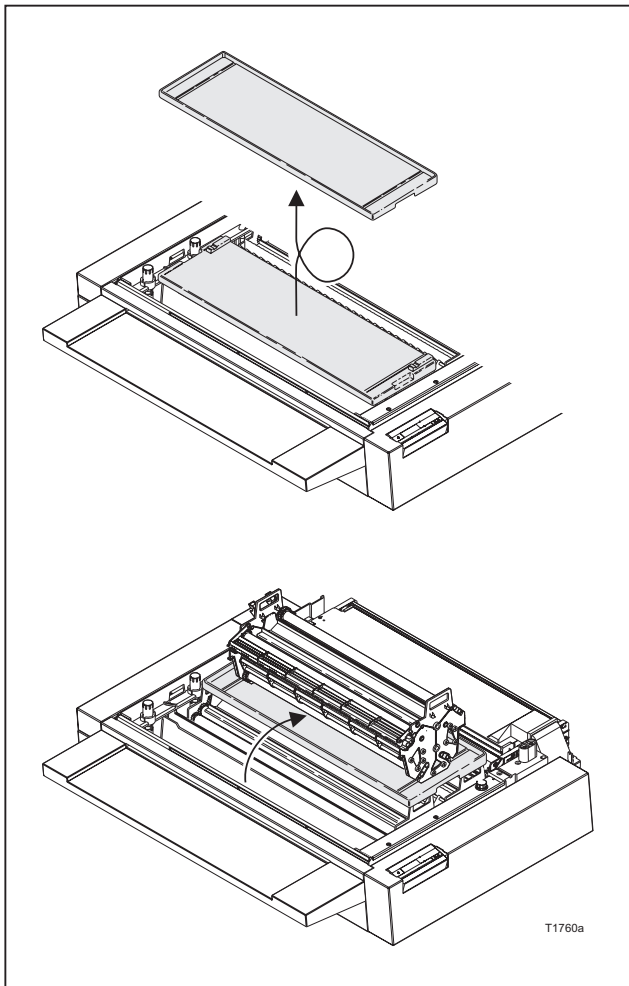
***NOTE! Before attempting any maintenance or clean-up procedures the personnel must familiarize themselves with the safety instructions and environmental protection described in the SAFETY INSTRUCTIONS MANUAL delivered with the processor.***

***WARNING! BE SURE TO DISCONNECT ELECTRICAL POWER BEFORE PERFORMING ANY CLEANING OR MAINTENANCE.***

## PREPARATIONS BEFORE CLEANING

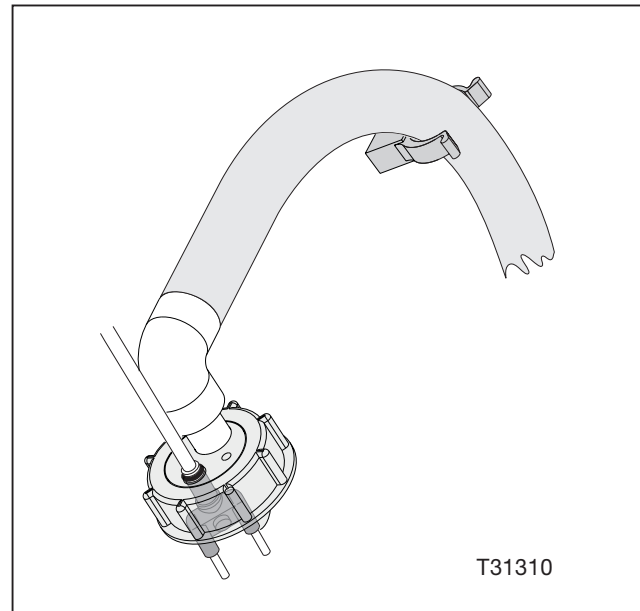
### DRIP TRAY

(See figure below).  
The condensation lid underneath the top cover is also designed as a drip tray. Use the drip tray when carrying away the racks for cleaning etc.



### HOLDER FOR WASTE HOSES

On the left side of the rear panel, inside the stand is mounted two holders for waste hoses. Empty the waste hoses and attach the hoses to the holders as shown in the figure below when emptying waste containers and thus avoid chemical spills on the floor.



**REMOVING A WET RACK**

Follow the procedure below when taking racks out for cleaning etc.

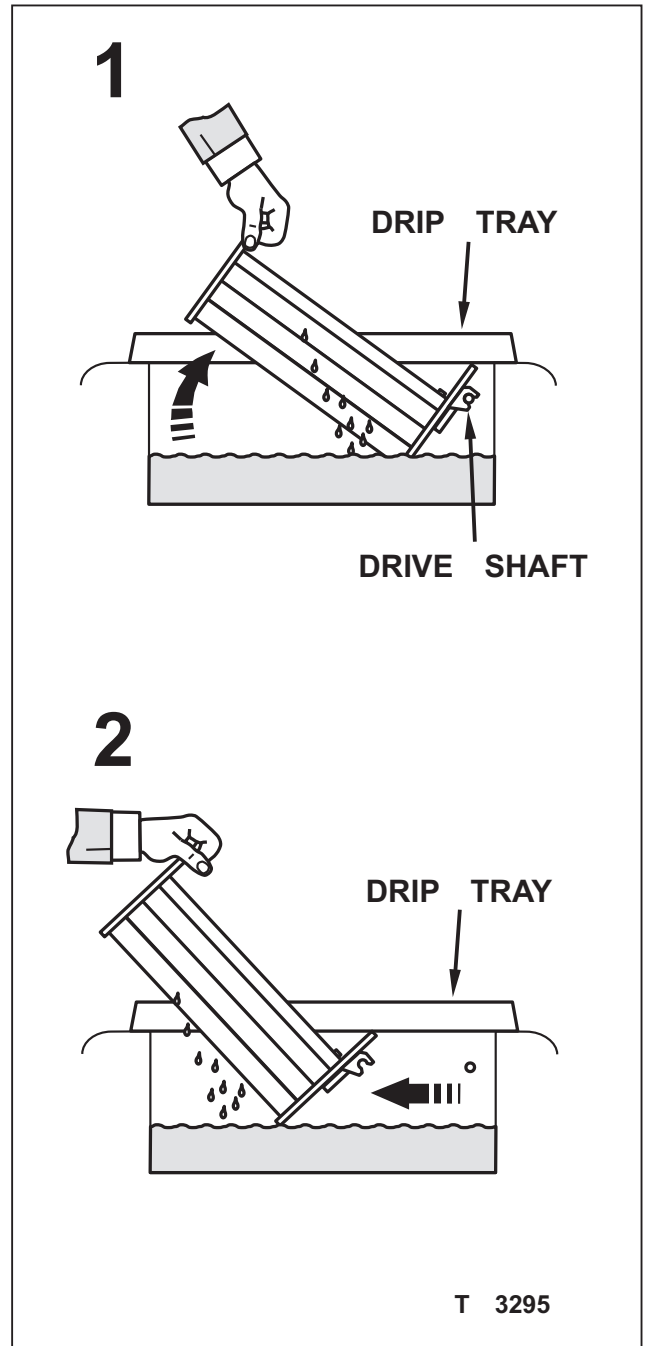
See figure opposite.

- Switch the processor off on the control panel.
- **Developer and fixer racks:** Remove top cover and condensation lid/drip tray.
- **Wash rack:** Remove top cover, condensation lid/drip tray and dryer cover.
- Place the drip tray across the processor as close to the bath as possible.
- **Step 1:** Turn the crossover guide on the neighbour rack up. Grab the rack in the handle opposite the drive shaft and tilt it upwards while the bearings are still resting on the drive shaft. Hold the rack in this position for a few seconds to let chemicals drip off.
- **Step 2:** Pull the rack off the drive shaft and pull it towards yourself (away from the drive shaft).
- Lift the rack out and place it on the drip tray.
- Carry the tray and rack away for cleaning etc. Be careful not to drip chemicals onto the cover for electrical parts etc. in the left side of the tank.
- Reinstall the rack in the reverse order. If the bath contains chemicals when the rack is inserted, lower the rack very carefully to avoid that chemicals flow over into the other baths.

**NOTE!** Make sure that the bearings catch the drive shaft and the drive gears mesh with the worm gears.

**NOTE!** Make sure to wash off chemicals from the drip tray before reinstalling it.

- Reinstall condensation lid/drip tray and covers.



### REMOVING THE DRYER RACK

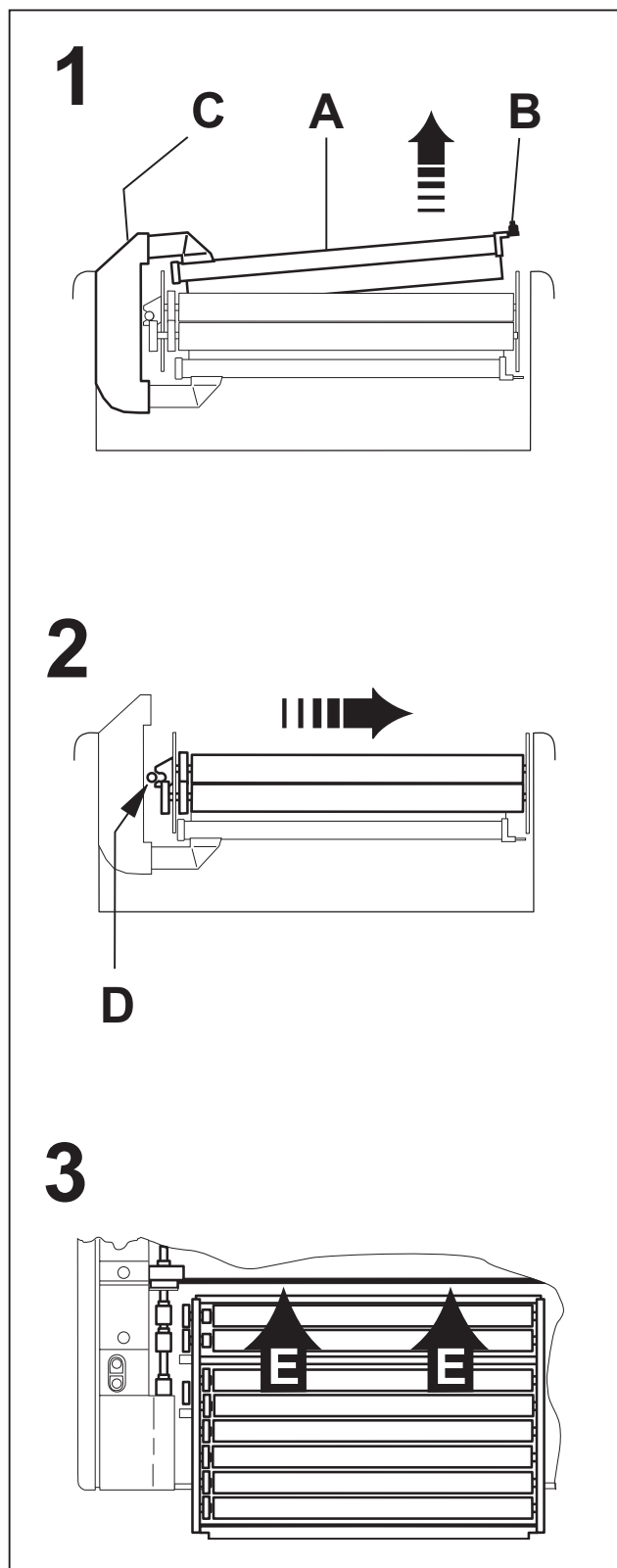
Follow the procedure below when taking the dryer rack out for cleaning etc.

See figure opposite.

- Switch the processor off on the control panel.
- Remove top cover and dryer cover.
- Stand at the rear side of the processor.
- **Step 1:** On the upper dryer cassette (A) is a black knob (B) on the right-hand side. Press the knob down and turn it 90° counterclockwise.
- Remove the upper dryer cassette by lifting it up a little and pull it to the right, out of the flange (C).
- **Step 2:** Push the dryer rack to the right in order to release the bearings from the drive shaft (D), and lift it out of the processor.

**CAUTION!** Always lift the rack in the side plates.

- After cleaning, it is very important that the rack is reinstalled correctly according to step 3.
- **Step 3:** Place the rack in the processor and make sure that it flush with the wash-tank wall (E). Then push the rack to the left (F) until the bearings catch the drive shaft and the drive gears mesh with the worm gears.
- Reinstall upper dryer cassette, dryer cover and top cover.



**FLOATING ANTI-OXIDATION LIDS**

In the left and right side of each bath is a floating lid which is installed to prevent oxidation of chemicals.

**RIGHT SIDE**

The floating lid in the right side of the bath section has a cutout for the drain tube. Follow the procedure below when removing the lid for cleaning etc.

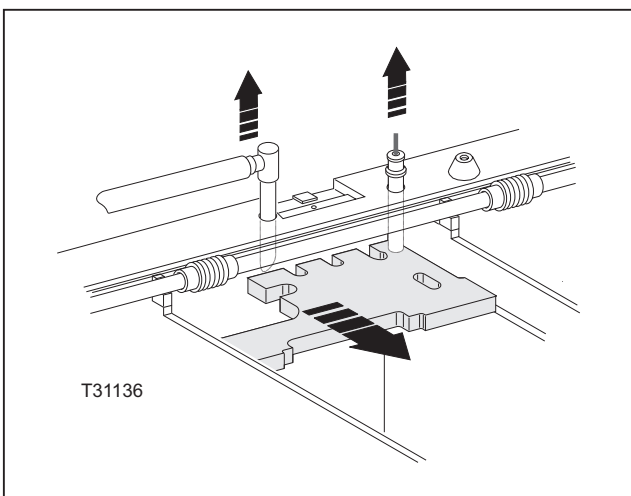
- Remove the rack as described earlier in this chapter.
- Remove the drain tube and then the floating lid.

**LEFT SIDE**

(See figure below).

The floating lid in the left side of the bath section has holes through which level sensor, temperature sensor, heater element and tube for replenishment are mounted. Follow the procedure below when removing the lid for cleaning etc.

- Remove the rack as described earlier in this chapter.
- Lift up the replenishment tube and the temperature sensor as shown on the figure below.

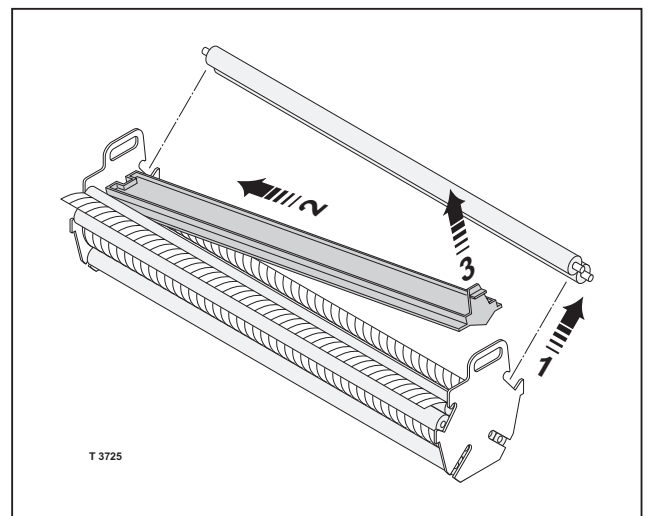


**RACK ANTI-OXIDATION LIDS**

Each rack is equipped with an anti-oxidation lid. Follow the procedure below when taking out the lids for cleaning etc.

(See figure below).

- Remove the rack as described earlier in this chapter.
- Remove the pair of top rollers in the rack exit (1).
- Push the anti-oxidation lid out of the attachment in the rack (2) and lift it out (3).
- Reinstall in reverse order.



---

## ROLLERS

### ROLLER POSITIONS

---

When racks have been disassembled for cleaning or servicing purposes it very important that the rollers are reinstalled in their correct positions.

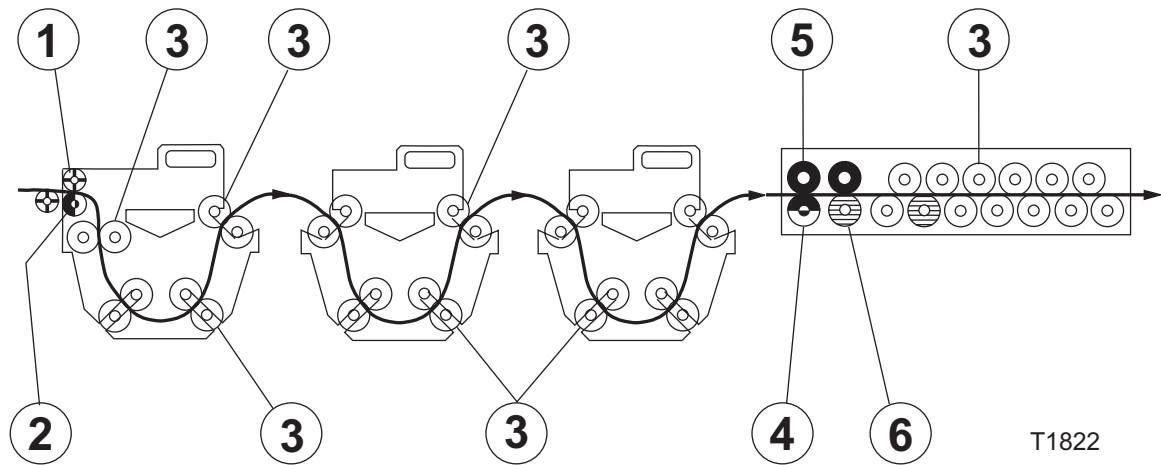
The illustration opposite shows the type, part No and correct position of each roller in a processor with rollers for film materials.

On the next page are shown rollers for polyester materials.







***CAUTION! The processor is equipped with either rollers for film materials or for polyester materials. It is very important to refer to the correct table.***



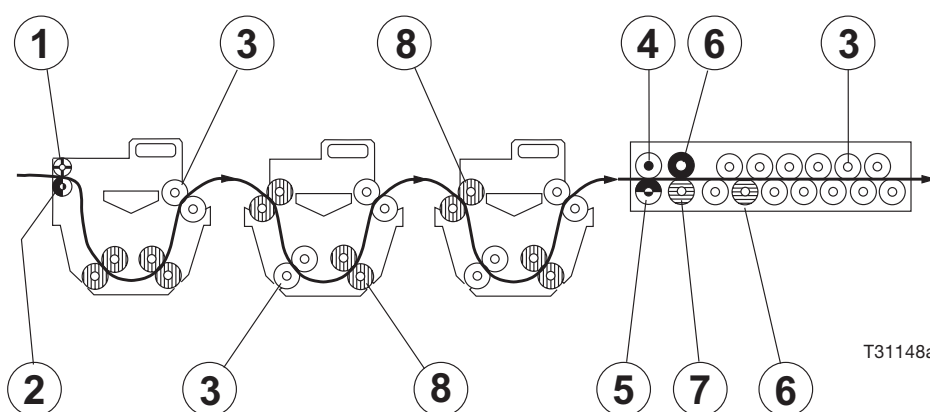
ROLLERS FOR FILM MATERIALS











T1822

NO/SYMBOL		ROLLER DESCRIPTION	MODEL 55/21	MODEL 72/28	MODEL 86/34
<b>1</b>	 1 pcs	PUR, D22, HEAVY, SHORT WHITE TAP	PART NO 13427	PART NO 13453	PART NO 33546
<b>2</b>	 1 pcs	RUBBER, D22, LONG STEEL TAP	PART NO 13426	PART NO 13452	PART NO 33557
<b>3</b>	 36 pcs	D30, MATTED LIGHT, GREEN TAP	PART NO 43764	PART NO 43763	PART NO 53029
<b>4</b>	 1 pcs	RUBBER, D30, LONG STEEL TAP	PART NO 13445	PART NO 13458	PARTNO 33556
<b>5</b>	 2 pcs	RUBBER, D30, SHORT STEEL TAP	PART NO 13444	PART NO 3347	PART NO 33558
<b>6</b>	 2 pcs	PUR, D30, MATTED, HEAVY, LONG STEEL TAP	PART NO 43744	PART NO 43745	PART O 33811

ROLLERS FOR POLYESTER MATERIALS

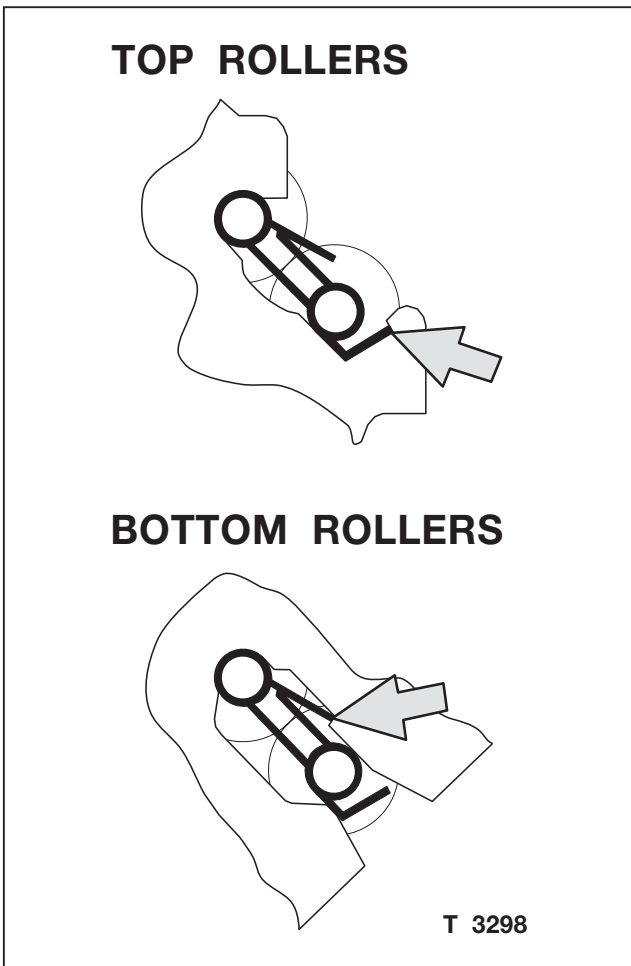


T31148a

NO/SYMBOL		ROLLER DESCRIPTION	MODEL 55/21	MODEL 72/28	MODEL 86/34
<b>1</b>	 1 pcs	RUBBER, D22, SHORT TAP	PART NO 33938	PART NO 33939	PART NO 33940
<b>2</b>	 1 pcs	RUBBER, D22, LONG TAP	PART NO 43082	PART NO 43081	PART NO 43080
<b>3</b>	 22 pcs	PUR, D30, MATTED LIGHT, GREEN TAP	PART NO 43743	PART NO 43742	PART NO 33810
<b>4</b>	 1 pcs	PUR, D30, HEAVY, SHORT WHITE TAP	PART NO 13424	PART NO 3345	PARTNO 33545
<b>5</b>	 1 pcs	RUBBER, D30, LONG STEEL TAP	PART NO 13445	PART NO 13458	PART NO 33556
<b>6</b>	 1 pcs	D30, RUBBER, SHORT STEEL TAP	PART NO 13444	PART NO 3347	PART O 33558
<b>7</b>	 2 pcs	PUR, D30, MATTED, HEAVY, LONG STEEL TAP	PART NO 13472	PART NO 13474	PART NO 33548
<b>8</b>	 12 pcs	RUBBER, SHORT TAP	PART NO 33855	PART NO 33860	PART NO 33856

**ROLLER BEARINGS**

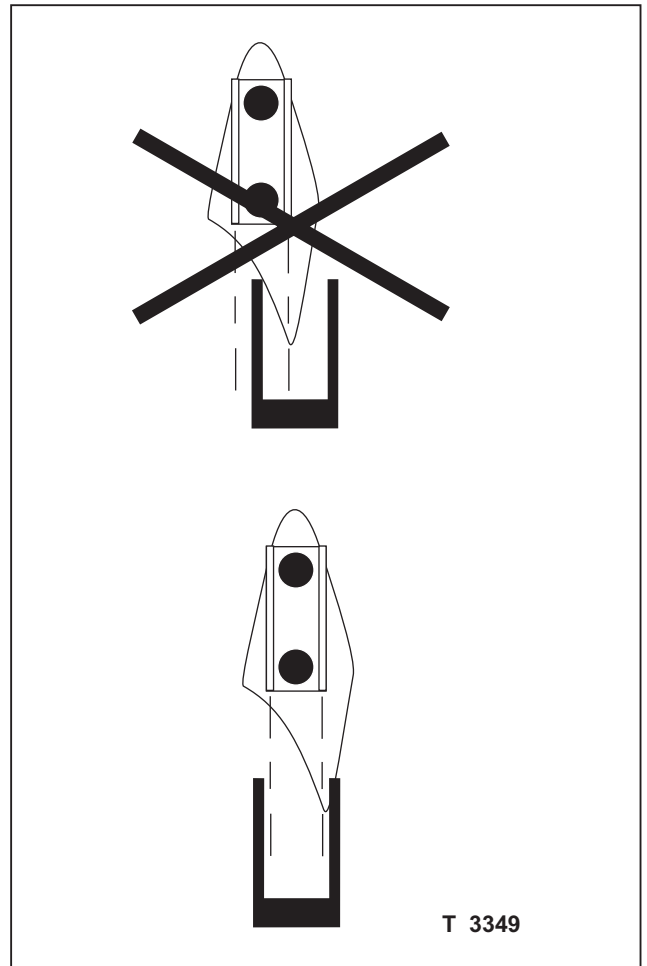
When reinstalling the roller pairs in the racks, be very careful that the bearings are locked properly in the respective slots as indicated in the figure below.



**DAYLIGHT GUIDE**

When the daylight guide has been removed for cleaning or servicing purposes it is very important that it is reinstalled correctly.

The figure below shows how to install the daylight guide.



---

## CLEANING

---

### GENERAL

---

When using water for cleaning purposes, use warm water 35 - 40°C (95 - 104°F).

### DAILY CLEANING

---

It is recommended to clean the processor each day before you start processing. Follow the procedure below:

- Clean the feed table with a moist cloth.  
Do not use abrasive materials on the processor.
- Drain the wash tank and close the drain-tube at the end of each shift.
- Check the level in both replenishment containers and refill if needed.
- Empty the waste-chemicals tanks.

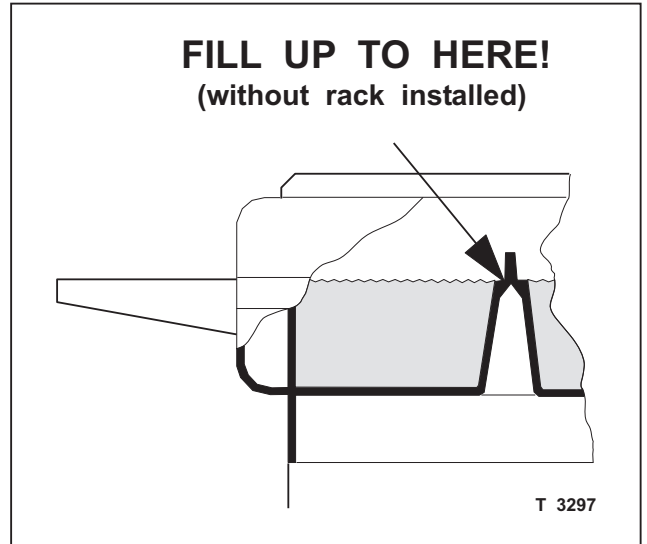
***CAUTION! Never cover the processor with a cloth or piece of plastic to protect it from dust, as this prevents free circulation around the processor and can lead to overheating and increased condensation.***

**WEEKLY CLEANING**

**CAUTION!** *Never use any hard tool or abrasive materials when handling and cleaning the rollers.*

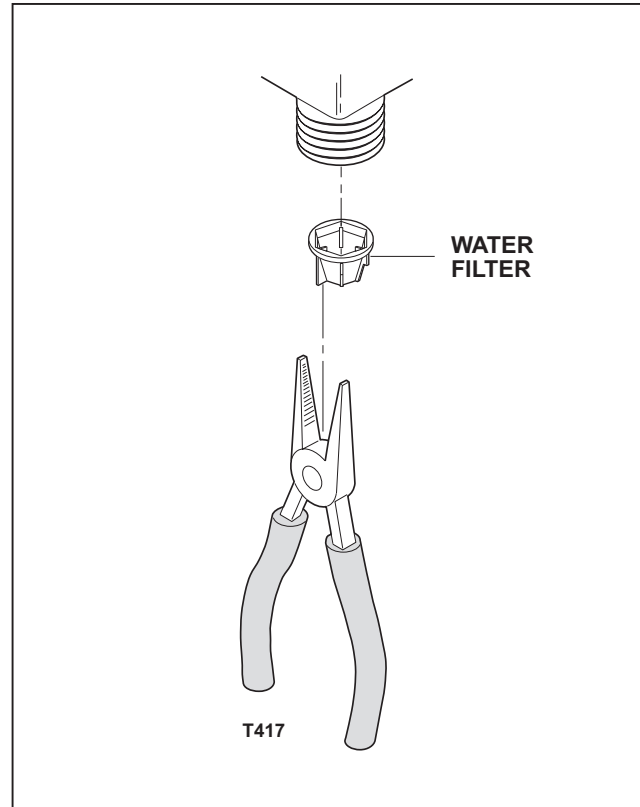
- Carefully lift the developer rack out as described earlier in this chapter and rinse it with water. Be sure to rinse off possible crystallization on film guides.
- When needed, empty the tank and clean both tank and rack with tank-cleaner. Ask your dealer of chemicals for advice. Be careful not to get any of this cleaner into the fixer section. It is important to get all of the cleaner out of the developer tank after cleaning and to rinse the rack in plenty of water.
- Carefully lift the wash rack out and rinse it with water.
- Empty the wash water tank and clear off algae.
- Cleaning of fixer rack is described in "MONTHLY CLEANING".
- Remove the oxidation lids from all three racks, see earlier in this chapter, and rinse the lids with water.
- When refilling the developer tank, use the level mark in the right side of the tank as guide, see figure opposite. Be careful not to get developer into the fixer section.

**NOTE!** *If tanks are not filled before the processor is turned on, the auto-filling feature will fill empty tanks automatically.*



### MONTHLY CLEANING

- Carefully lift the fixer rack out as described earlier in this chapter and rinse it with water. Be sure to rinse off possible crystallization on film guides.
- Remove dryer rack as described earlier in this chapter and rinse rubber rollers with water.
- Clean residual chemicals off all worm gears.
- Locate the water solenoid valve under the processor. Disconnect the hose from the valve by unscrewing the union nut, and remove the water filter with a pair of pliers (see the figure below).  
Clean the filter and reinstall it.



## MAINTENANCE

### REMOVING FILTERS

**NOTE! Some models only.**

The filters for developer and fixer are placed underneath a separate cover in the upper left side panel.

When removing the filters for change or cleaning follow the description below.

See the figure opposite.

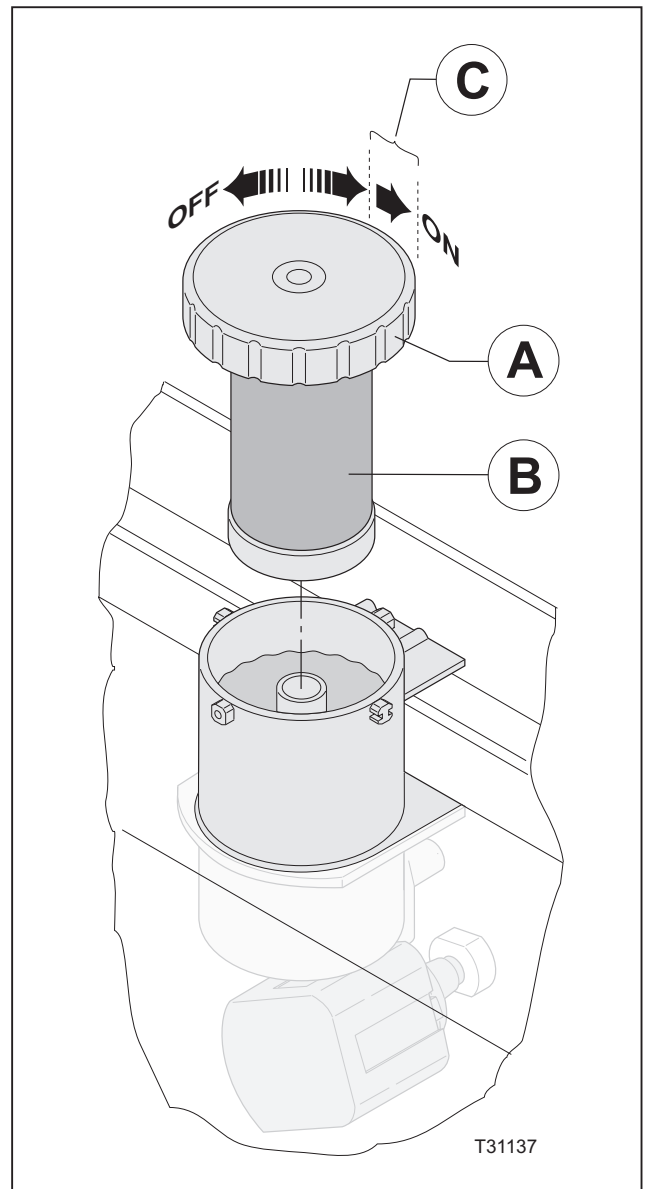
- Turn the main switch off.
- Remove the cover for filters.
- If the filter is removed for exchange with a new one, unpack the replacement filter and keep a plastic bag ready for the dirty filter.
- Unscrew the filter lid (A) by turning it counterclockwise and slowly lift it off. The filter element (B) will hang on to the filter lid.
- Change the filter element (B). Be careful not to drip chemicals. Put the dirty filter into the plastic bag.
- Mount the filter element (B) underneath the cover (A) and lower it **slowly** into the filter housing to avoid splashing.
- Tighten the cover (A) (clockwise). The lid is tightened in two steps (C) as illustrated on the figure. When it feels tight, turn it a little more.

**CAUTION! Make sure the lid is tightened properly, otherwise chemicals may be pressed out of the filter housing when the replenishment system starts.**

- Mount the cover for the filters.
- Turn the main switch on and press the stand-by key on the control panel.

- Reset filter account by pressing "OK" on display message "REPLACE DEV FILT" (or FIX) if any. See also "ALARMS" in the "FMA Control Panel" manual.

**NOTE! Disposal of dirty filter elements must be done in accordance with local authorities regulations.**



T31137

---

## REPLENISHMENT

---

### **CHECK OF DEVELOPER REPLENISHMENT**

---

The efficiency of the developer can either be checked with a testing strip (ask your dealer of chemicals) or you can use a well exposed and well processed film as reference. If, after a week's work, the density of your film has decreased the replenishment has probably been too low and a higher setting of the replenishment rate should be selected. If, however, the density is good, the replenishment is sufficient. If desired, a lower setting can then be tried, until it is established which setting of the control is enough for satisfactory replenishment.

### **CHECK OF FIXER REPLENISHMENT**

---

While the processor is working at its normal temperature and speed, feed an unexposed film into the processor. The film should be absolutely transparent and without whitish spots or areas spread at random over the film when it comes out of the processor, otherwise the efficiency of the fixer is too low and a higher setting of the replenishment rate should be selected. The efficiency of the fixer and the silver contents of the fixer can also be tested with a special testing strip. Ask your local specialist for application of testing strip.

### **CHECK OF OXIDATION REPLENISHMENT**

---

If the processor is left in stand by for longer periods, this feature can be used. At the start of a new working period, check the efficiency of the developer as described above, and adjust the time replenishment rate correspondingly.