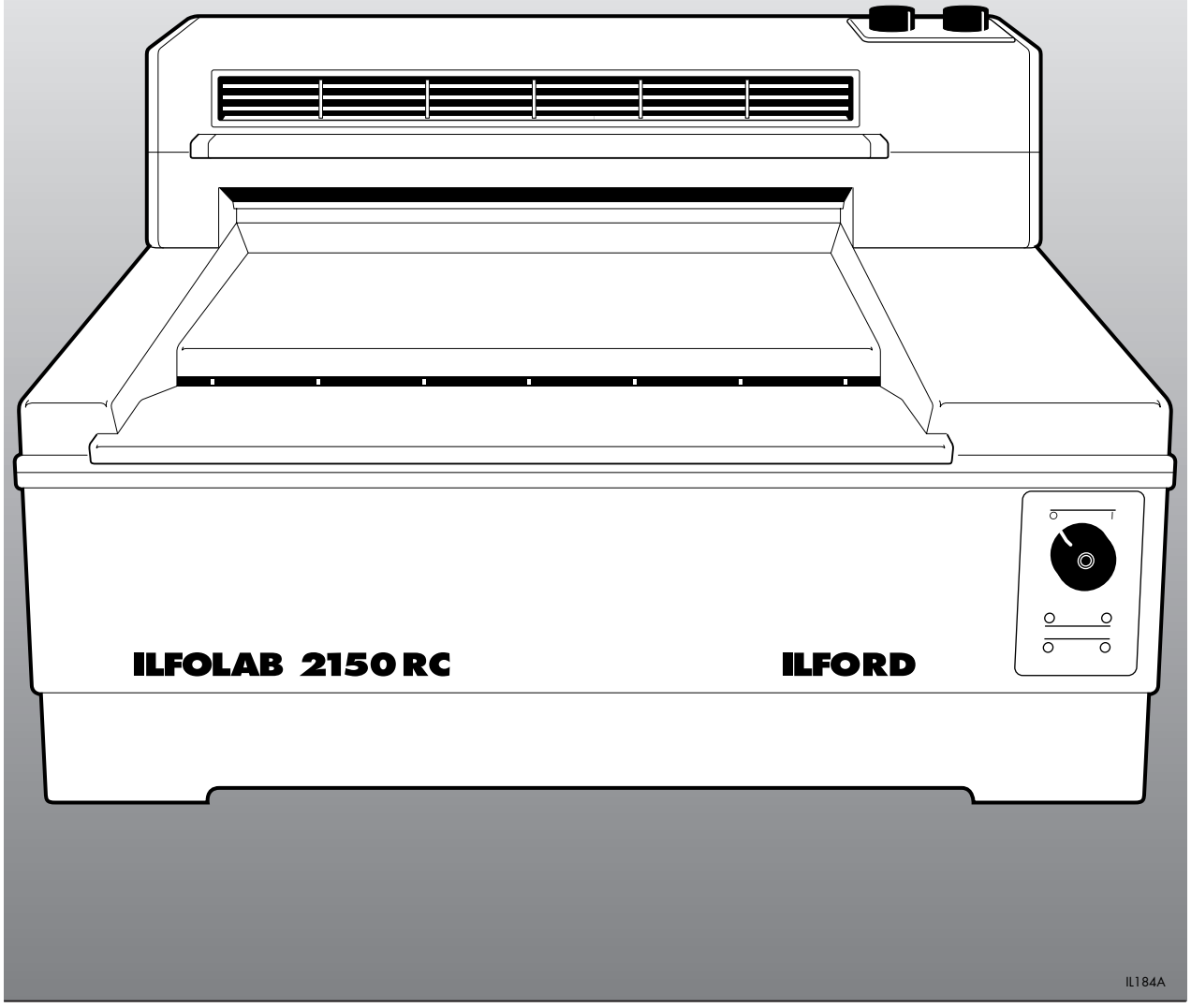
ILFORD

50/60Hz

OPERATING MANUAL

ILFOLAB 2150RC

TABLE TOP AUTOMATIC PROCESSING SYSTEM FOR HIGH QUALITY BLACK AND WHITE PRINT MAKING



SAFETY PRECAUTIONS

Your photographic equipment is powered by mains electricity, and is designed to comply with international electrical safety standards. However, basic safety precautions must always be followed when operating electrical equipment, including the following, where applicable:

1 Read and understand all instructions and equipment labels.

2 Close supervision is necessary when the equipment is being used by inexperienced personnel.

3 Take care to avoid burns. Some internal parts of the equipment can become very hot with continuous use.

4 Do not operate equipment that has been dropped or damaged, or has damaged electrical leads. Have the equipment examined by qualified personnel.

5 Do not allow any electrical lead to touch hot surfaces.

6 Ensure the leads are arranged such that they cannot be pulled or tripped over.

7 Ensure extension leads are of a suitable current rating to prevent the lead overheating.

8 Always unplug or isolate the equipment when it is not in use. Never pull plugs out by holding the lead.

9 For equipment connected to the electrical mains supply by a plug and socket arrangement, ensure the socket is installed near to the equipment and is easily accessible at all times.

10 Do not touch electrical components with wet or damp hands.

11 Ensure the air flow through the vents is not obstructed when equipment is switched on.

12 Do not dismantle the equipment unless you are qualified to do so. Incorrect assembly can cause hazards both to yourself and to the equipment.

13 All equipment, no matter how well made, can break down and, therefore, must not be left unattended for long periods of time while it is switched on.

14 Always unplug or isolate the equipment before connecting or disconnecting any plugs supplying electrical power to or from the equipment.

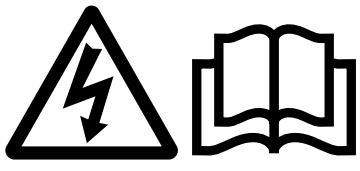
15 Always obey local codes of practice, particularly for installation requirements.

Do not destroy these instructions

CONTENTS

PICTOGRAMS

The following pictograms are used on labels fixed to the ILFOLAB 2150RC processing system. Please ensure you understand their meaning.



Electrical hazard - refer to manual

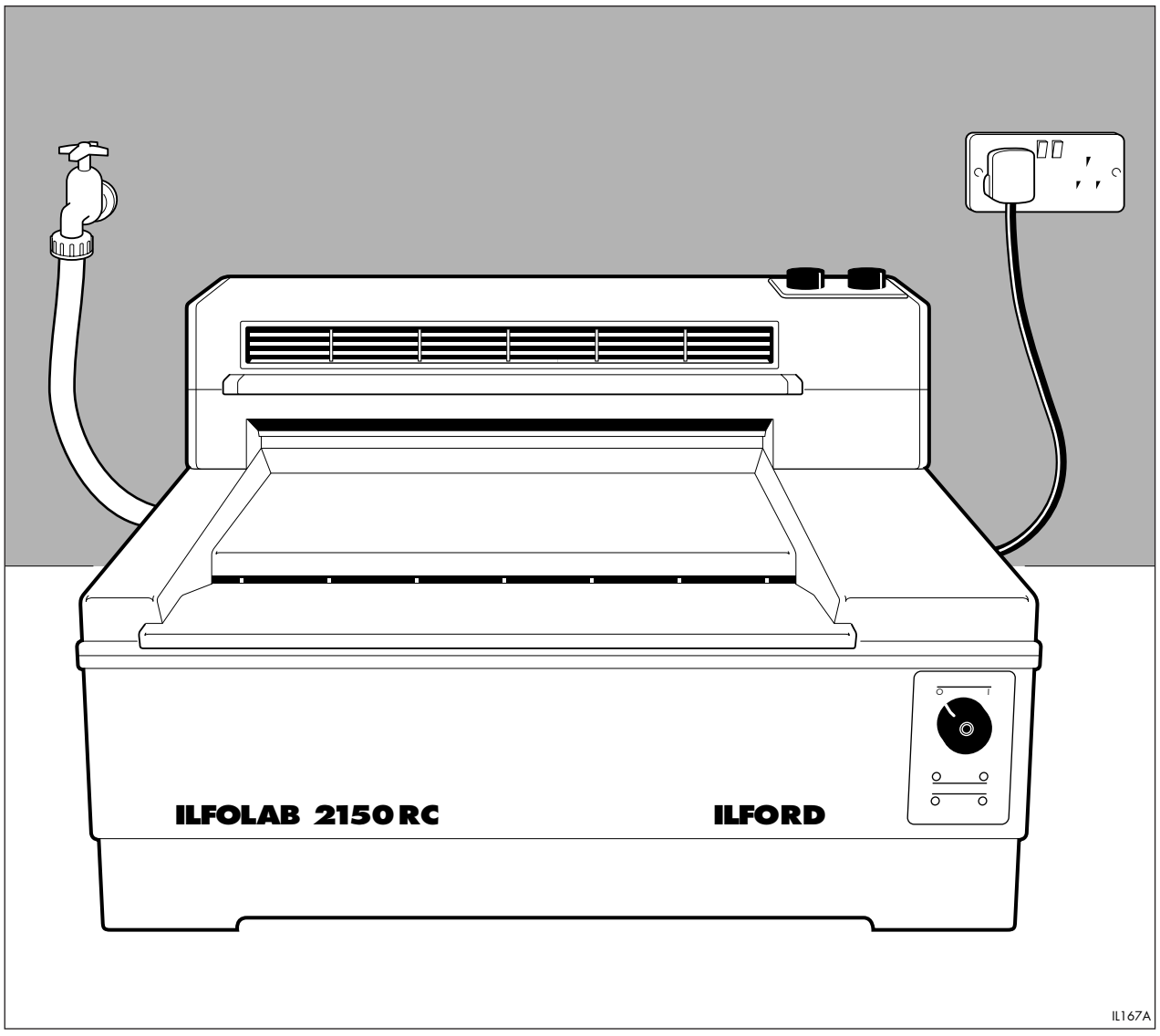


Figure 1.1 ILFOLAB 2150RC processing system - typical installation

1
INTRODUCTION

See figure 1.1.

The ILFOLAB 2150RC table-top processing system is designed for low to medium volume users of paper. Typically, up to 1000 20·3x25·4cm (8x10 inch) prints can be processed on one fill of chemicals. The system is very easy to install, operate and maintain, and provides black and white prints on resin coated papers up to a maximum width of 50·8cm (20 inches). The prints are fully processed and dried to a very high standard.

This manual gives full instructions for installing and operating the complete system. By disregarding all references to the dryer, this manual also describes the processor when used alone.

For ease of description, it is assumed the left and right hand sides of the processor are determined when facing the processor at the paper feed (front) end. The left and right hand sides of the dryer module are determined with the dryer module removed from the processor and the paper feed side facing (ie the side normally facing away from the operator). Unless otherwise stated, the 50Hz system is shown.

1.1 IMPORTANT INFORMATION

Chemicals
For optimum results always use recommended ILFORD chemicals.

Before handling ILFORD chemicals please ensure you are familiar with the information detailed in the ILFORD Photochemical Safety Data Sheets supplied as part of the chemicals pack.

Automatic rinsing
This is a feature designed to simplify regular cleaning operations and, therefore, to keep major strip-down cleaning to a minimum.

Colour coding
Roller racks are colour coded: red for developer, green for fixer and white for wash water. Do not interchange the roller racks for any reason. The same colour coding is used on the drain outlets at the rear of the processor, the standpipes in the working and front tanks and the covers on the front tanks.

Operation
A wall chart, which summarises the regular operating procedures, is supplied with this manual.

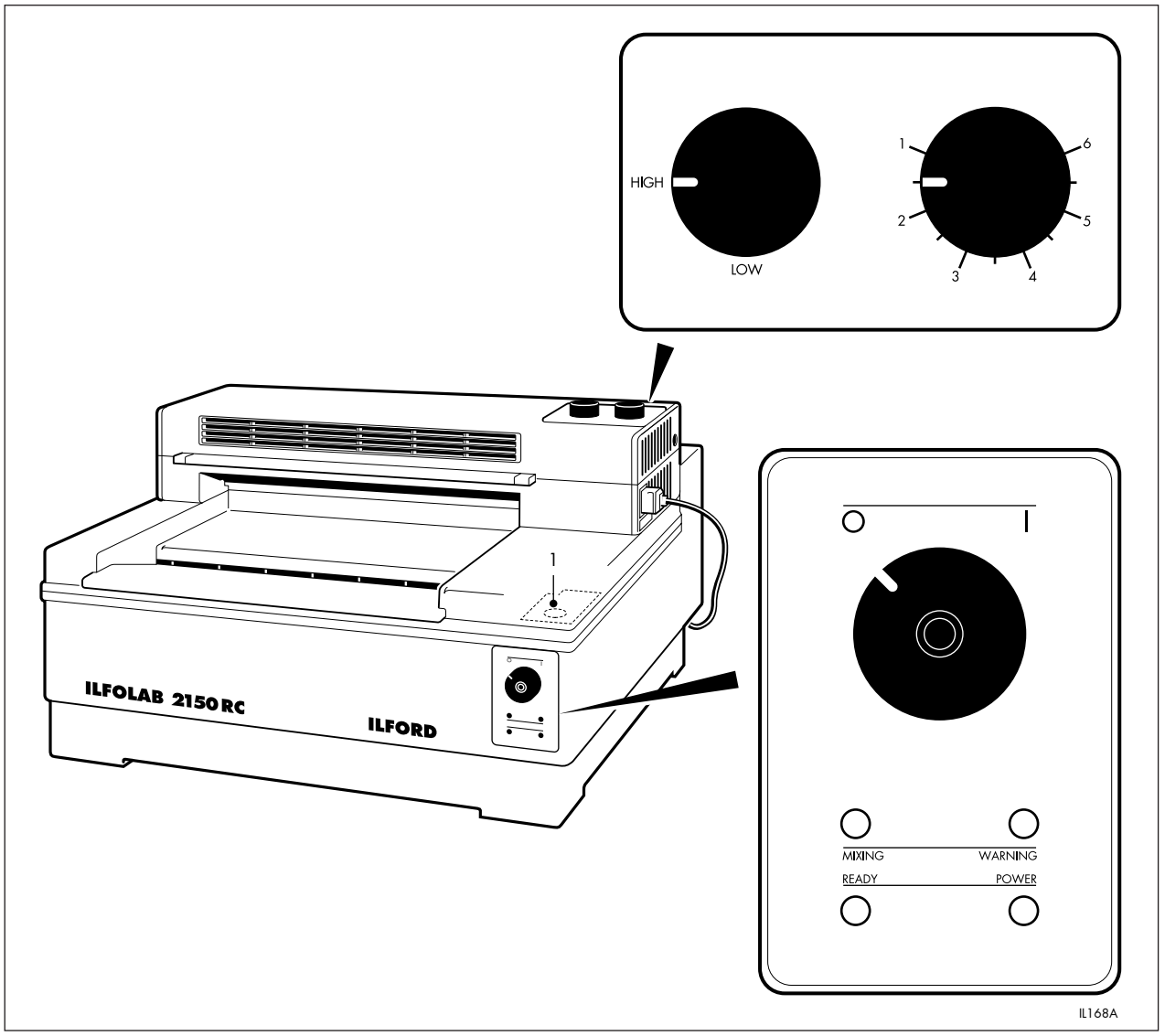


Figure 2.1 Controls and indicators

2

CONTROLS AND INDICATORS

Figure 2.1
1 Water feed button

See figure 2.1.

2.1 PROCESSOR

1 Control switch
The control switch has two positions:

Position '0'
The processor and dryer are switched off.

Position '|'
The processor and dryer are switched on.

2 'Mixing' light
Illuminates when the processor is automatically mixing fresh chemicals.

3 'Ready' light
Provides two indications:

Flashing
Indicates the system is not ready for use (chemicals are being mixed or heated).

Steady on
Indicates the system is ready.

Note
The 'ready' light switches off when a sheet is fed into the processor, and switches on when the processor is ready to accept the next sheet. In this way, the 'ready' light serves as a visual feed indicator, and is synchronised with the audible feed indicator (see *7* Audible signals).

4 'Power' light
Illuminates when the processor control switch is set to position |'.

5 'Warning' light
Illuminates when the solution level in either of the front tanks is low. Under normal operating conditions, the levels will not fall sufficiently for the 'warning' light to switch on.

6 Water feed button
See figure 2.2.

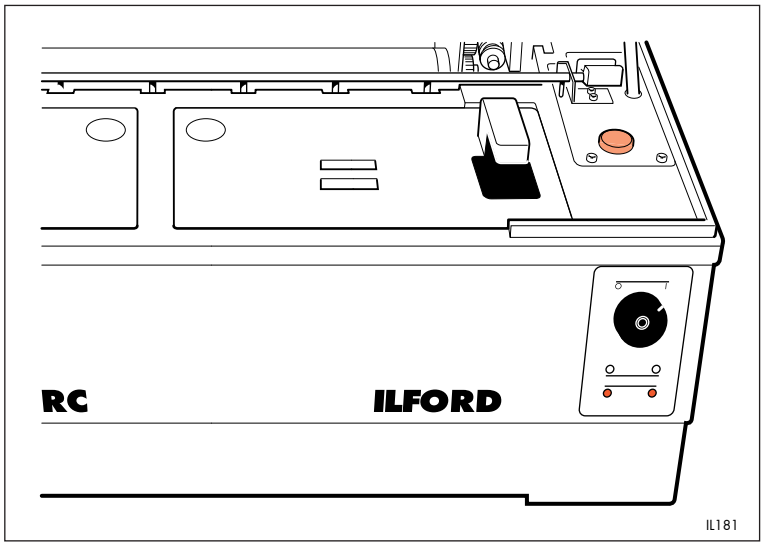


Figure 2.2 Water feed button

Located on the processor to the right of the front tanks under the processor lid. The water feed button controls the water supply for diluting chemical concentrates, and for rinsing the processor.

7 Audible signals
There are four different signals:

Feed indicator
A single audible signal is made indicating the processor is ready to accept the next sheet. This signal is synchronised with the 'ready' light (see 3 'Ready' light).

Incorrect feed
A continuous audible signal is made lasting the length of a sheet. This signal indicates that a sheet has been fed before the 'ready' light has stopped flashing (see 3 'Ready' light).

Rinsing cycle complete
Three audible signals are made indicating the rinsing cycle is complete (see section 7).

Warning indicator
A series of audible signals are made. The warning signal sounds if the processor lid remains open 30 seconds after pressing the water feed button, or if the solution level in either of the front tanks is low. If left unchecked, the signal continues for three minutes and the processor is then automatically switched off.

8 Thermal cut-out light
See figure 2.3.

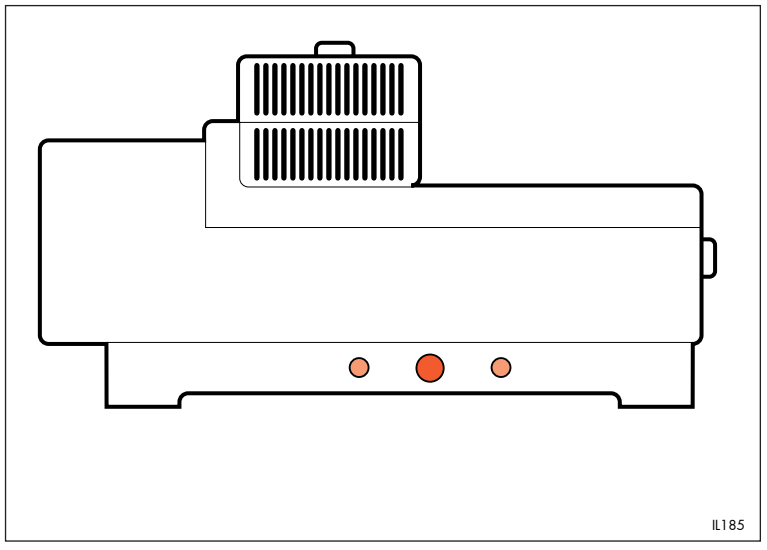


Figure 2.3 Thermal cut-out

Located between the two thermal cut-out resets in the processor skirt. The light is switched on if either cut-out is tripped.

2.2 DRYER

See figure 2.4.

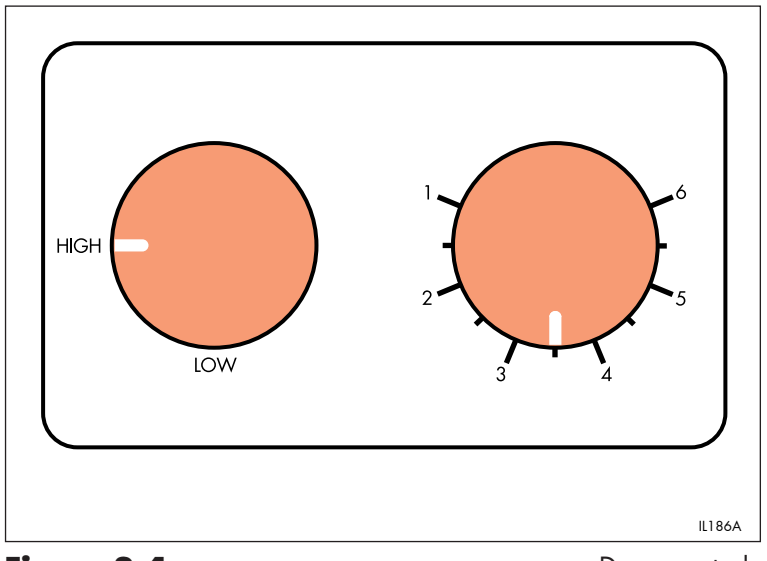


Figure 2.4 Dryer controls

1 Dryer control switch
The dryer control switch has two positions, High and Low.

2 Temperature control
Adjustable over the range 1 (minimum) to 6 (maximum).

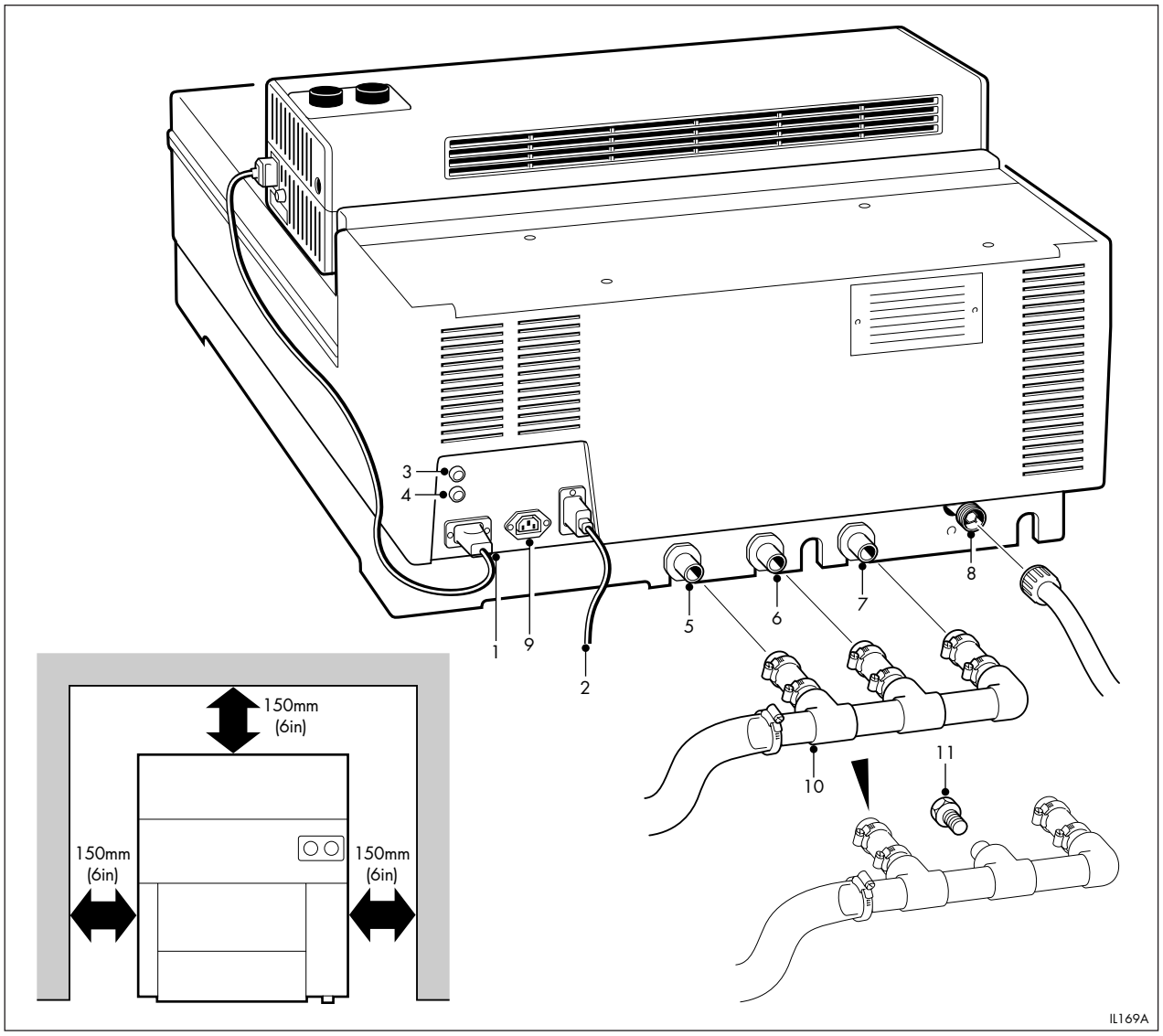


Figure 3.1 Installation - general

3
INSTALLATION

Figure 3.1

1 Dryer electrical connection
2 Electrical mains supply to processor
3 Processor mains fuse
4 Dryer supply fuse
5 Developer drain connection
6 Fixer drain connection
7 Wash water drain connection
8 Wash water supply connection
9 Auxiliary power supply
10 Drain manifold
11 Blanking plug - fixer drain

3.1 PROCESSOR

See figure 3.1.

Position the processor on a firm, level bench or table, at a convenient working height. Leave a space of at least 15cm (6 inches) between the processor and any wall to allow adequate air circulation, to ensure the electrical and plumbing installations are not impeded and to gain access to the thermal cut-out resets.

Note
The processor lid support can be fitted to either side of the lid to suit the installation and ease removal of the roller racks.

3.1a Levelling adjustments

CAUTION
For correct operation, it is essential to level the processor accurately.

With the processor positioned, level the processor by placing a spirit level first along the dividing wall between two of the working tanks and then along the left and right hand sides of the processor. Height adjustments are made by turning the four levelling feet.

3.2 ELECTRICAL SUPPLY

See figure 3.1.

Connect the processor to the electrical mains with the lead supplied. The lead is supplied with plugs, and fits one way only.

60Hz processors only:
The mains supply must be a correctly wired, grounded, 120 volt, 20 amp supply, with a socket suitable to accept the 20 amp plug fitted to the mains lead. Do not remove the plug from the lead.

3.3 PLUMBING

The plumbing can be installed in one of two ways:

a By the use of proprietary fittings (see table 3.1 for the dimensions of the processor connections).

b By the use of the ILFOLAB 2150RC installation kit (see section 3.4).

Table 3.1 Plumbing connections

Description	Dimension
Developer drain (red) connection	21mm
Fixer drain (green) connection	21mm
Wash water drain connection	21mm
Wash water supply connection	$^{3}/_{4}$ inch BSP

3.4 ILFOLAB 2150RC INSTALLATION KIT (OPTIONAL)

See figure 3.1.

An installation kit is available as an optional extra to simplify the plumbing installation. This kit (part number 6171-4-073 or QY6714073 in North America) is supplied with full fitting instructions.

There are four connections at the rear of the processor:
Wash water supply;
Wash water drain;
Developer drain (front and working tanks combined);
Fixer drain (front and working tanks combined).

The wash water drain takes the normal excess from the wash water tank during processing. The wash water standpipe (see figure 8.1) is fitted for emergency water overflow, and must be used when draining the tank.

3.4a Drain connections

CAUTION
Ensure your drain arrangements comply with local regulations.

The drain manifold supplied with the installation kit has a maximum of three inlets. These are connected to the processor drain outlets by the short lengths of flexible pipe.

The fixer drain inlet on the manifold can be sealed using the plug provided. If it is necessary for the fixer to be drained separately, fit the blanking plug to the manifold and connect one of the 2m (6·5 feet) lengths of flexible pipe supplied to the processor fixer drain outlet.

Connect the manifold to the service drain with the other 2m (6·5 feet) length of flexible pipe. Secure all pipe connections with the pipe clips supplied.

CAUTION
To prevent air locks and consequential flooding of the wash water tank, ensure all drains fall continuously to the service drain.

When using the drain manifold, drain each tank separately and always drain the fixer before the developer.

3.4b Water supply

Note
The processor automatically regulates the flow of water at all times.

Secure the water pressure pipe supplied to the processor water supply connection by tightening the outer ring.

If the water supply contains a high proportion of suspended solids, connect the water supply via a filter unit.

3.5 DRYER

See figure 3.2.

1 Position the dryer on the processor lid, with the paper feed end of the dryer facing towards the rear of the processor.

2 Align the holes in the base of the dryer with the holes in the processor lid.

3 Carefully open and support the processor lid.

4 Secure the dryer by inserting the two fixing screws from the underside of the processor lid.

5 Plug the dryer into the power socket (marked 'dryer') at the rear of the processor.

WARNING
Do not plug the dryer into any other power supply. The processor socket is wired via the processor lid interlock, ensuring the dryer heaters are automatically switched off when the processor lid is raised.

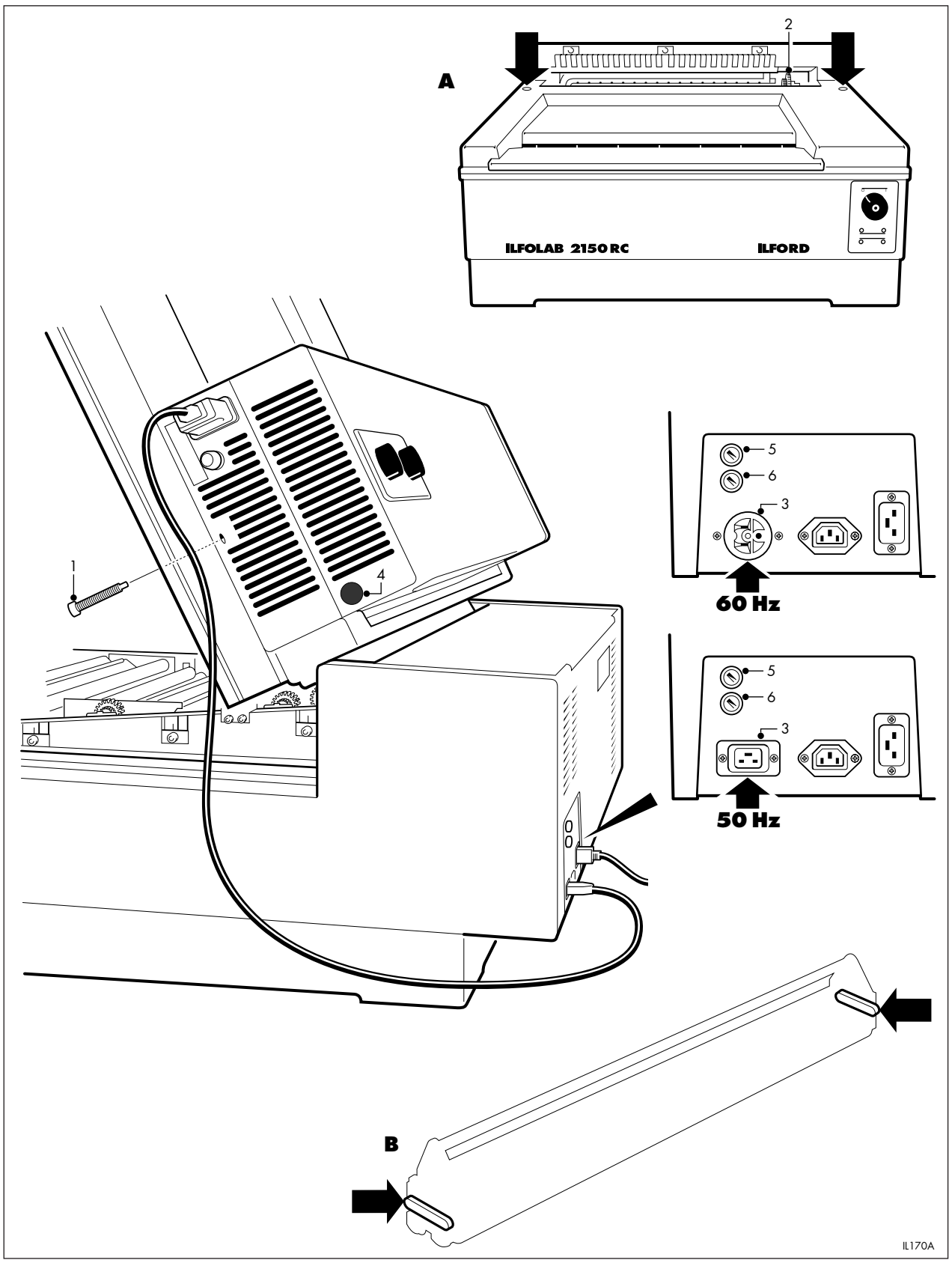


Figure 3.2 Installation - dryer

Figure 3.2

1 Fixing screw
2 Processor to dryer drive gear
3 Socket - dryer electrical supply
4 Release button - dryer lid
5 Fuse - processor
6 Fuse - dryer

Detail **A**
Location of fixing points

Detail **B**
Location of transit wedges

3.5a Removing yellow transit wedges

See figures 3.2 and 3.3.

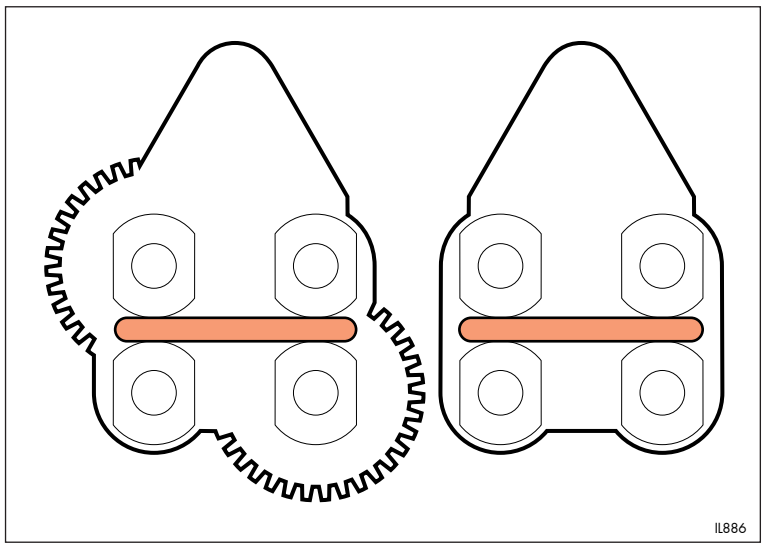


Figure 3.3 Location of transit wedges

CAUTION
To enable the dryer to operate correctly, it is important to remove the two yellow transit wedges prior to use.

Removing transit wedges can be done before or after the dryer is installed.

1 Press the release button and open the dryer until the lid is held securely by the restraining arm.

2 Lift the four-roller assembly away.

3 Remove the two transit wedges from between the roller bearings.

4 Re-assemble the dryer and close the lid.

3.6 ILFOLAB 2150RC PRINT EXIT COVER ASSEMBLY

See figures 3.4 and 3.5.

The ILFOLAB 2150RC print exit cover assembly is supplied if the processor is to be operated without the dryer.

1 Position the print exit cover on the processor lid, as shown, with the holes in the base of the cover aligned with the holes in the processor lid.

2 Carefully open and support the processor lid.

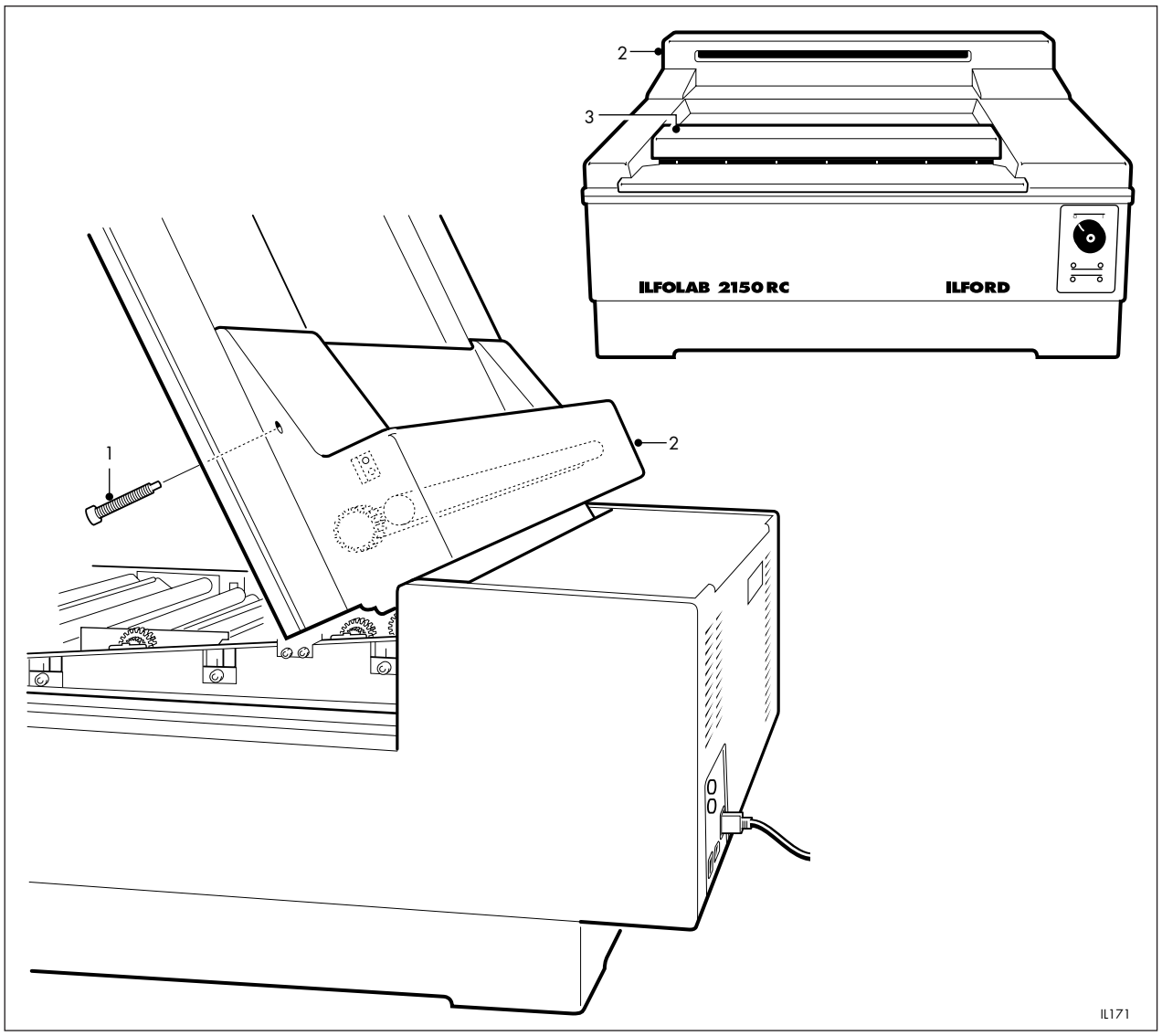


Figure 3.4 Installation - print exit cover

3 Secure the print exit cover by inserting the two fixing screws from the underside of the processor lid.

4 Position the dish support at the front edge of the recess in the processor lid, as shown. To secure the dish support, peel the backing paper away from the tape fixed to the dish support.

5 Position the print receive dish in front of the print exit cover so that the front of the dish rests on the dish support.

6 Fill the print receive dish with clean, fresh water.

Figure 3.4

1 Fixing screw
2 Print exit cover
3 Dish support

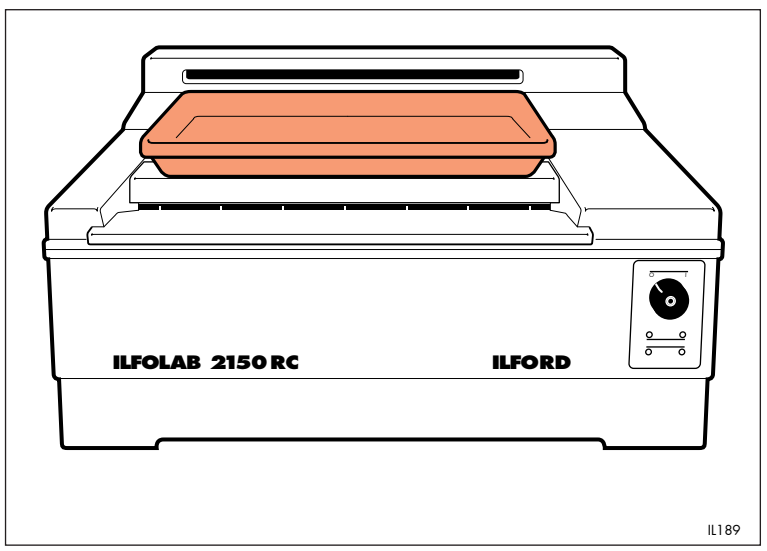


Figure 3.5 Location of print receive dish

3.7 COMMISSIONING A NEW MACHINE

See figure 3.6.

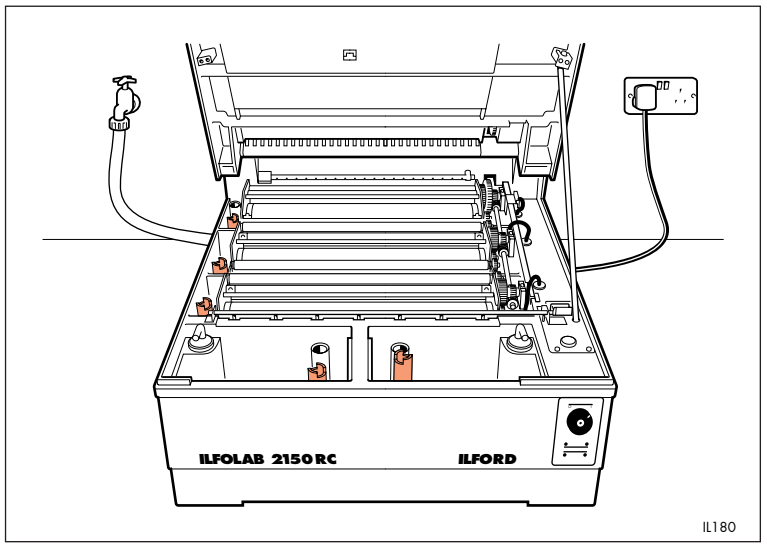


Figure 3.6 Internal view of processor

1 Ensure all packing material has been removed.

2 Remove the roller rack assemblies from their packaging and install the racks into the processor. Follow the colour coding (see section 1.1) and ensure the racks are held secure by the shaft retainers (see figure 8.1).

3 With the processor empty, turn on the water and electrical supplies.

Note
The 'warning' light will switch on. This is normal with the front tanks empty.

4 Carry out the automatic rinsing procedure (see section 7).

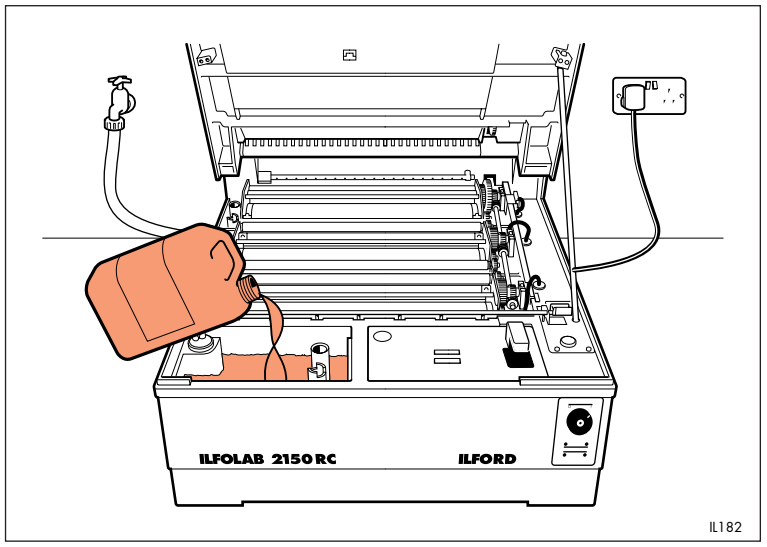
5 Switch the processor off (see section 6).

6 Drain the processor by releasing the five standpipes (see figure 8.1), using the standpipe key supplied.

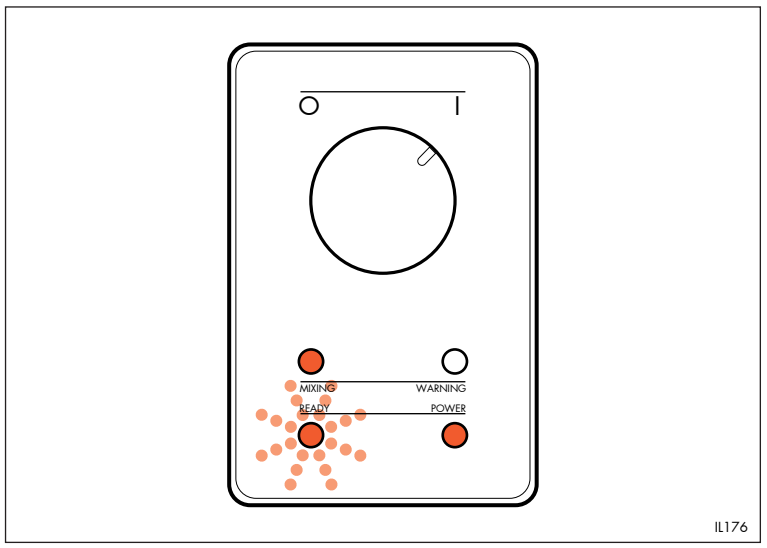
7 Check for leaks, particularly from the water supply and drain connections at the rear of the processor.

4
ADDING CHEMICALS

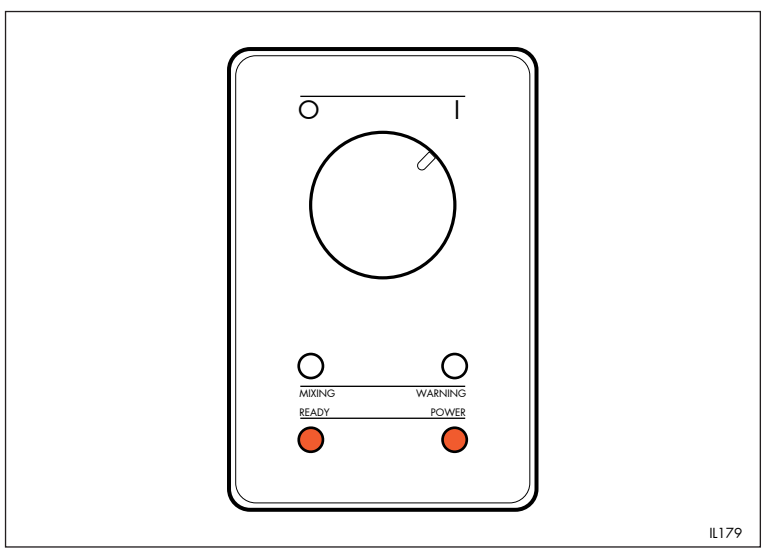
1 Pour the contents of one container of each of the developer and fixer concentrates into the appropriate front tanks. Switch the processor on (see section 5 operations 1 and 2). Raise the processor lid. Press the water feed button and hold for 3 seconds, until water flows. Lower the processor lid.



2 The processor automatically dilutes, mixes and heats the solutions.

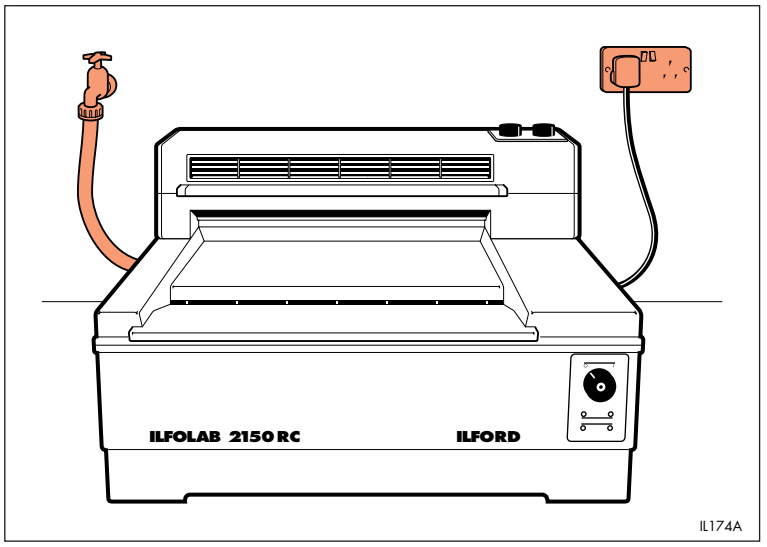


3 The processor is ready for use when the 'ready' light changes from flashing to steady on, and an audible signal is given. This will take, typically, 30 minutes.

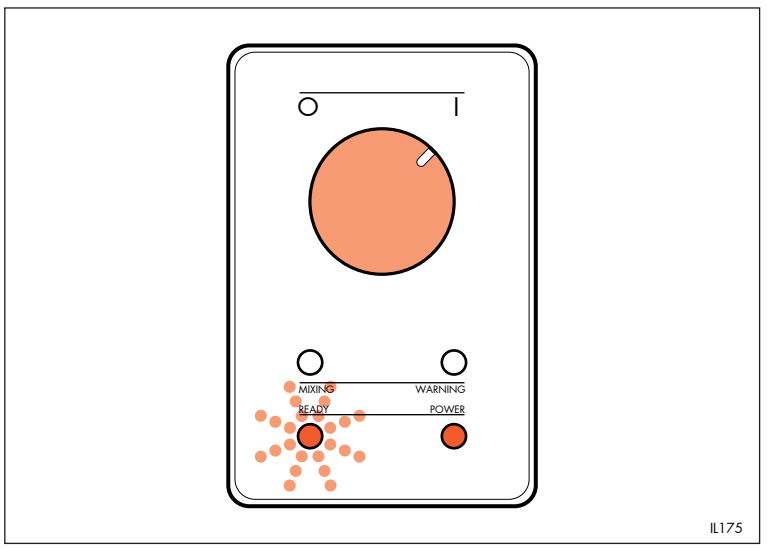


5
PROCESSING

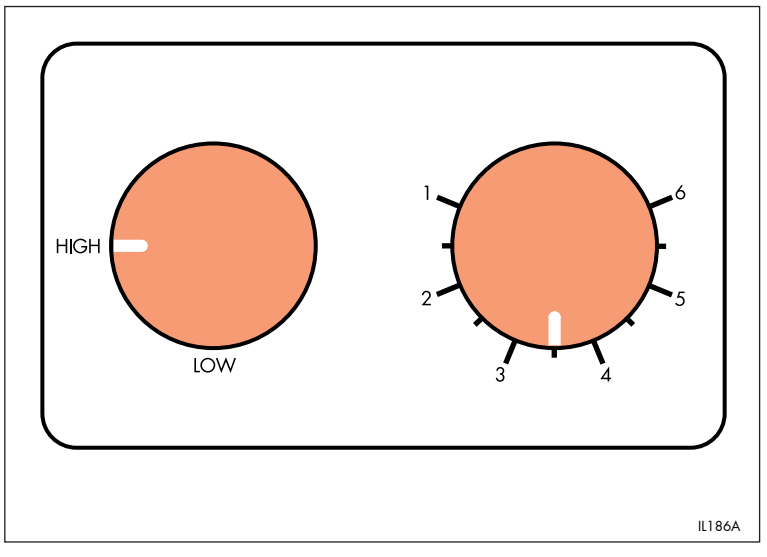
1 Ensure the processor lid is closed. Turn on the water and electrical supplies



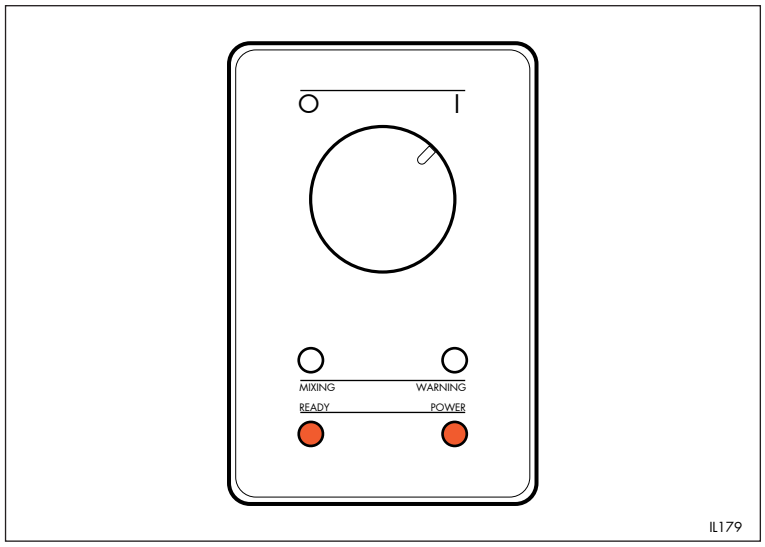
2 Turn the processor control switch to '|'. The 'ready' light flashes, indicating the processor is not ready for use.



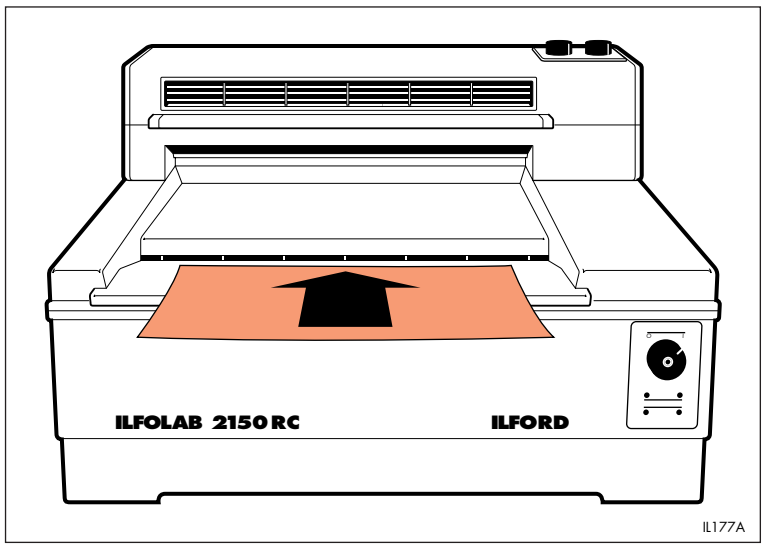
3 Check the dryer temperature to establish the optimum settings for your working conditions. For resin coated gloss papers, select High, start at a mid-point setting (between position 3 and 4) and work from there. For resin coated matt or pearl papers, select Low, and start at a mid-point setting (between position 3 and 4).



4 The processor is ready for use when the 'ready' light is steady on.

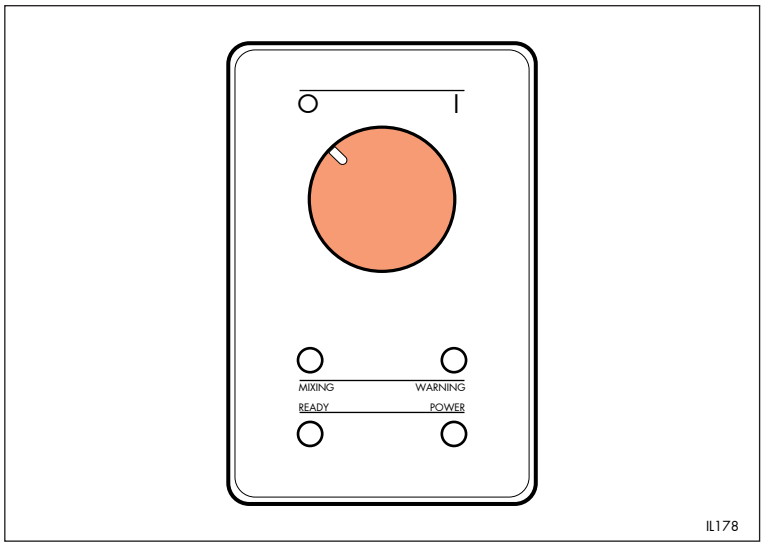


5 Feed sheets emulsion side down with long edge leading. Wait for the audible signal before feeding in the next sheet.

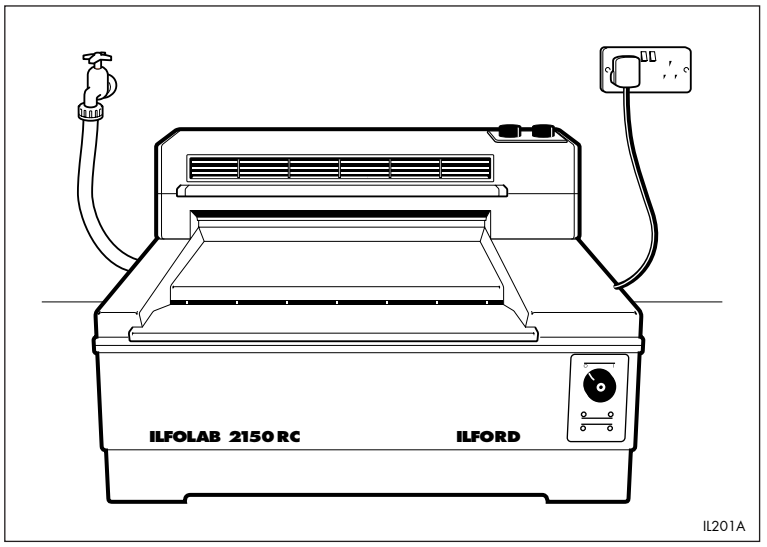


6
SWITCHING OFF

1 At the end of the working period, turn the processor control switch to '0'.

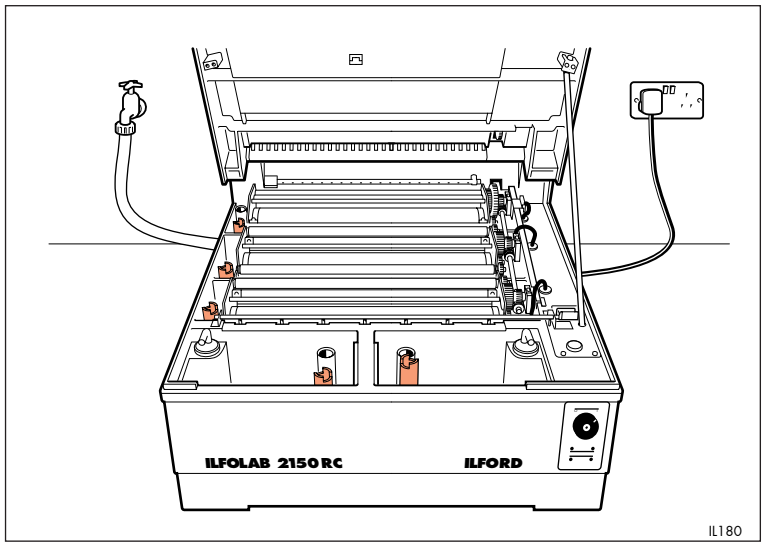


2 Turn off the water and electrical supplies.



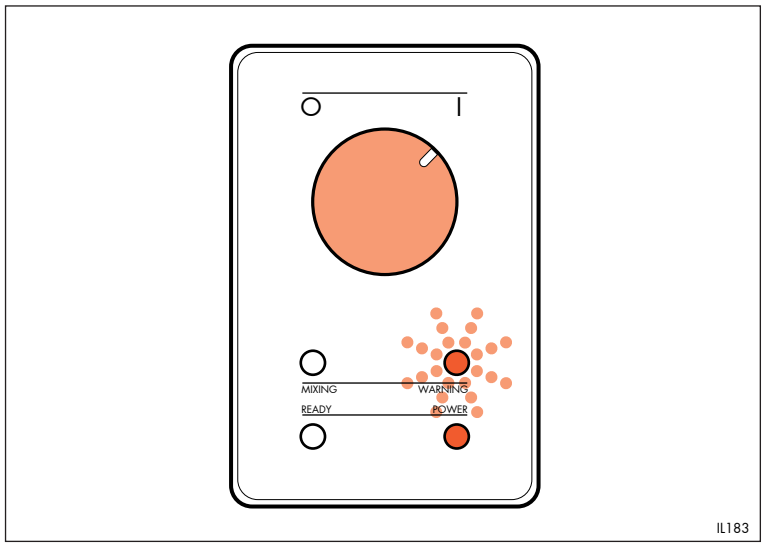
7
DRAINING AND RINSING

1 **Draining**
Drain the developer, fixer and wash water by releasing the five standpipes. Drain one tank at a time, and drain the fixer before the developer. Re-tighten the standpipes.

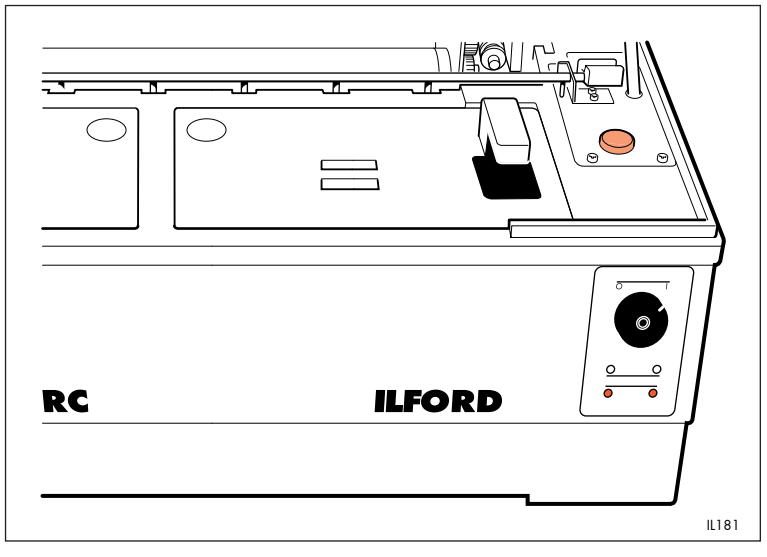


2 Switch the processor on.

Note
The 'warning' light will remain on during the initial systems check.



3 **Automatic rinsing**
Raise the processor lid. Press the water feed button and hold for 3 seconds, until water flows. Lower the processor lid. The processor automatically fills with water, runs for 2 minutes and then gives 3 audible signals and stops. Switch the processor off. Drain the processor.



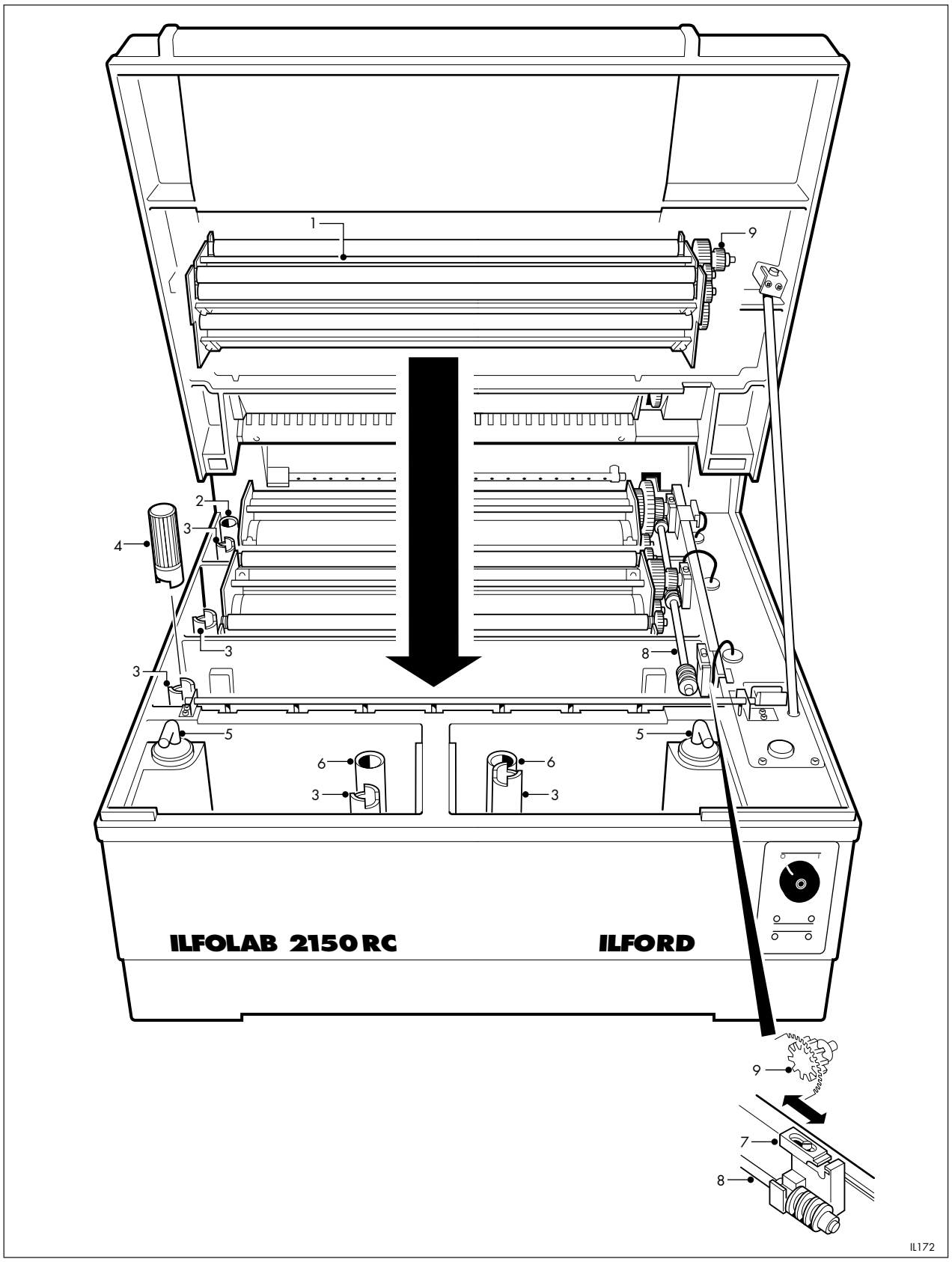


Figure 8.1 Internal view of processor

8

CLEANING AND SIMPLE REPAIRS

Figure 8.1
1 Lifting bar
2 Wash water drain
3 Standpipe (five)
4 Standpipe key
5 Water feed pipe
6 Solution transfer pipe (two)
7 Shaft retainer
8 Processor main drive
9 Roller rack drive gear

Cleaning is the only regular maintenance required on the ILFOLAB 2150RC processing system. Regular cleaning will ensure correct operation and consistently high print quality.

⚠ **CAUTION**
During the following procedures do not allow water to enter areas of the processor or dryer containing electrical components. Please refer to the Safety Precautions at the front of this manual.

8.1 DAILY ROUTINE

Clean the rollers by processing a few sheets of fogged paper. If the last of the sheets is returned free of deposits or marks, the processor is ready for use. If there are any significant marks on the sheets, carry out the three monthly procedure detailed in section 8.4.

If the processor is being used without the dryer, change the water in the print receive dish at least once a day.

8.2 ROUTINE PROCEDURE BETWEEN CHEMICAL CHANGES

Chemicals must be changed after a maximum of two weeks in the processor, or sooner if the recommended processing capacity is reached (see section 10.1).

To ensure the strip-down cleaning is limited to three monthly intervals, it is important to carry out the automatic rinsing procedure, detailed in section 7, prior to adding fresh chemicals. By doing this, the build up of chemical deposits is kept to a minimum.

8.3 MONTHLY ROUTINE

To prevent a build up of algae in the wash water tank, clean the wash roller rack and tank (see section 8.4).

8.4 THREE MONTHLY ROUTINE

8.4a Processor - cleaning roller racks

See figure 8.1.

1 Switch the system off (see section 6).

2 Raise and support the processor lid.

3 Drain the processor (see section 7).

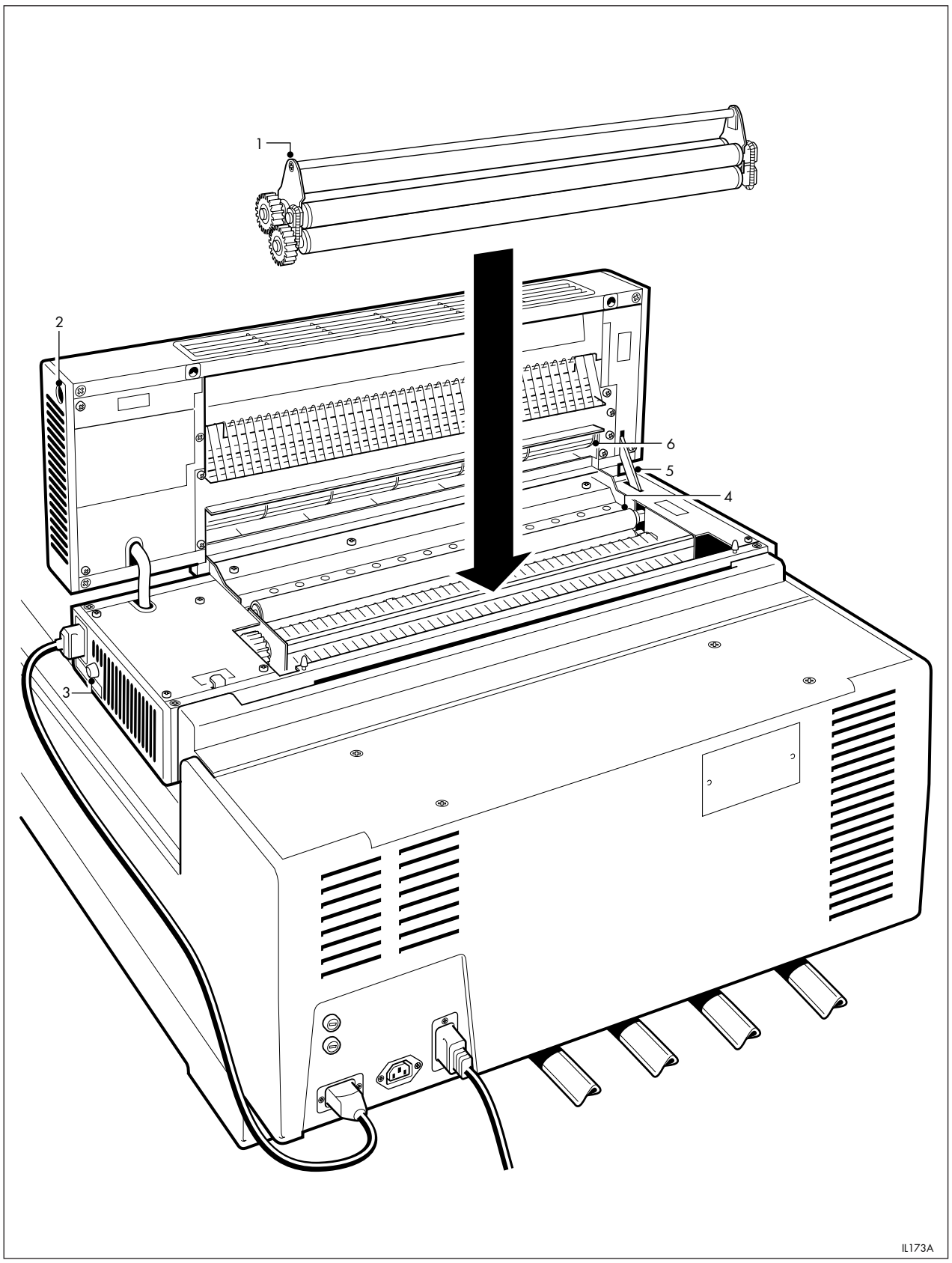


Figure 8.2 Internal view of dryer

Figure 8.2

1 Four-roller assembly
2 Release button
3 Mains fuse
4 Two-roller assembly
5 Restraining arm
6 Fan

4 Carefully remove each roller rack by releasing the shaft retainer and pushing the retainer towards the rear of the processor. Lift the rack by holding the colour coded lifting bar, and allow surplus solution to drain back into the processing tank. Do not allow the solution from one roller rack to contaminate any other tank.

5 Thoroughly clean the rack with a soft, lint free cloth and warm water. More stubborn chemical deposits on metal and plastic surfaces can be removed using a soft bristle brush and warm water.

CAUTION
When cleaning roller racks, always take extreme care not to damage the roller surfaces. Damaged roller surfaces will cause marks on subsequent prints.

6 Refit the roller racks following the colour coding (see section 1.1). Ensure the roller rack drive gear is engaged with the worm gear on the processor drive shaft. Secure the racks with the shaft retainers.

7 Lower the processor lid.

8 Rinse the processor (see section 7).

9 Add new chemicals (see section 4).

10 Carry out the daily routine detailed in section 8.1.

8.4b Dryer - cleaning the four-roller assembly

See figure 8.2.

CAUTION
When cleaning the four-roller assembly, always take extreme care not to damage the roller surfaces. Damaged roller surfaces will cause marks on subsequent prints.

If the four-roller assembly at the front of the dryer becomes contaminated, remove and clean it as follows:

1 Switch the system off (see section 6).

2 Press the release button and open the dryer until the lid is held securely by the restraining arm.

3 Lift the four-roller assembly away, and inspect the rollers for marks or stains.

4 If necessary, clean the roller assembly in the same way as the processor roller racks, described above.

CAUTION
To prevent a reduction in the quality of drying, particularly on glossy surfaces, do not use soap solutions or other cleaning agents on the rollers.

5 Refit the four-roller assembly and close the dryer.

6 Carry out the daily routine detailed in section 8.1.

8.5 REPLACING A MAINS FUSE

See figures 8.3 and 3.2.

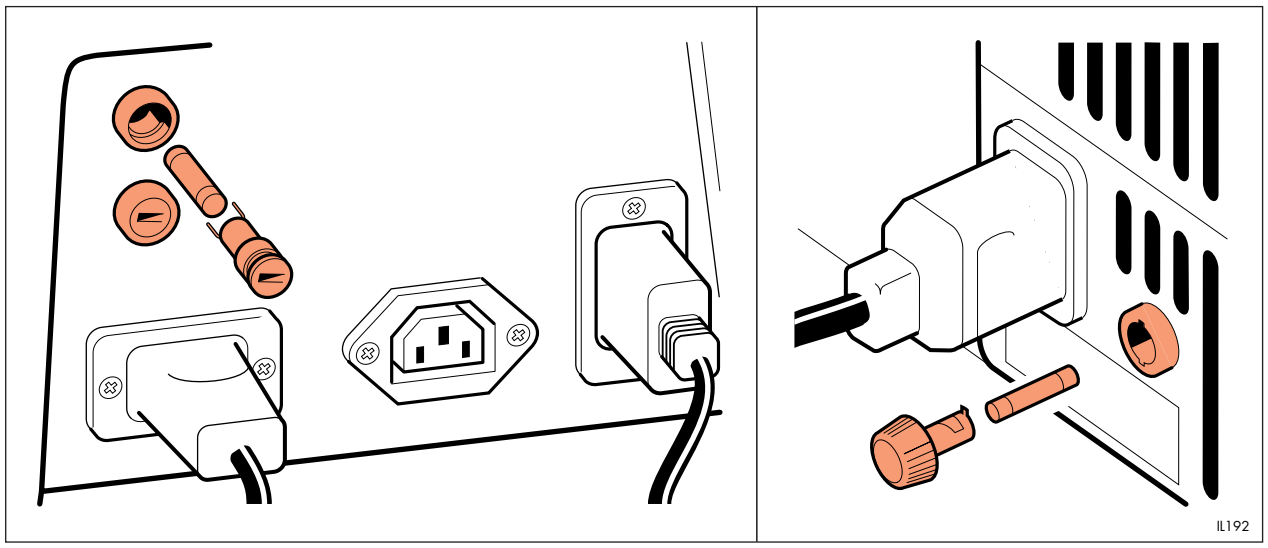


Figure 8.3 Replacing a mains fuse

Both processor fuses and the dryer fuse are replaced in the same way as follows:

1 Switch the system off (see section 6).

2 Remove the fuse by turning the fuse holder anti-clockwise, using a screwdriver if required.

3 Replace the fuse with one of the correct value (see section 10).

4 Refit the fuse by turning the fuse holder clockwise, using a screwdriver if required.

8.6 RESETTING THE THERMAL CUT-OUTS

It is not necessary to switch the system off, but before resetting the cut-outs, ensure there is solution in both the processing tanks. To reset, push the thermal cut-out reset into the processor until it clicks, and the thermal cut-out light is switched off.

8.7 REPLACING A ROLLER TENSION SPRING

8.7a Processor

See figure 8.4.

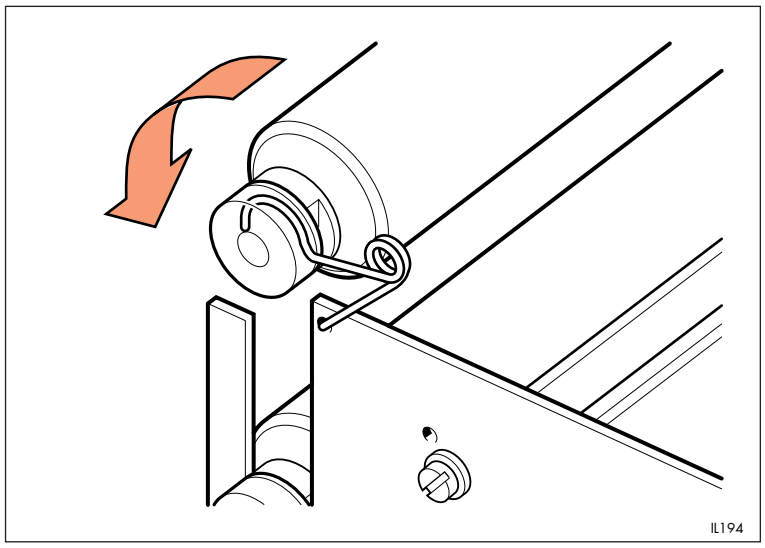


Figure 8.4 Replacing a roller tension spring - processor

All roller pairs are secured in the rack assembly by two springs, one at each end. The normal spring tension retains the rollers in position. If the springs become distorted or weak, the springs should be replaced.

Note
Left and right hand springs are not interchangeable.

Remove the spring as follows:

1 Switch the system off (see section 6).

2 Lift out the appropriate roller rack (see section 8.4, operation 4).

3 Lift the roller, complete with bearings, out of the slot in the rack end plates and disengage the roller from the springs.

4 Unhook the spring from the retaining hole in each end plate.

Fit a new spring as follows:

5 Ensure the spring is the correct type for left or right hand.

6 Locate the small hook into the retaining hole in the rack end plate.

7 Ensure the roller bearing is orientated with the flats to the side, as shown.

8 Locate the large hook in the outer groove in the roller bearing, as shown.

9 Locate the bearing flats in the slot in the rack end plate. Push the bearing into the slot.

10 Refit the roller rack, and carry out the daily routine detailed in section 8.1.

8.7b Dryer

See figure 8.5.

Figure 8.5
1 Roller gear
2 Locating plate
3 Spring

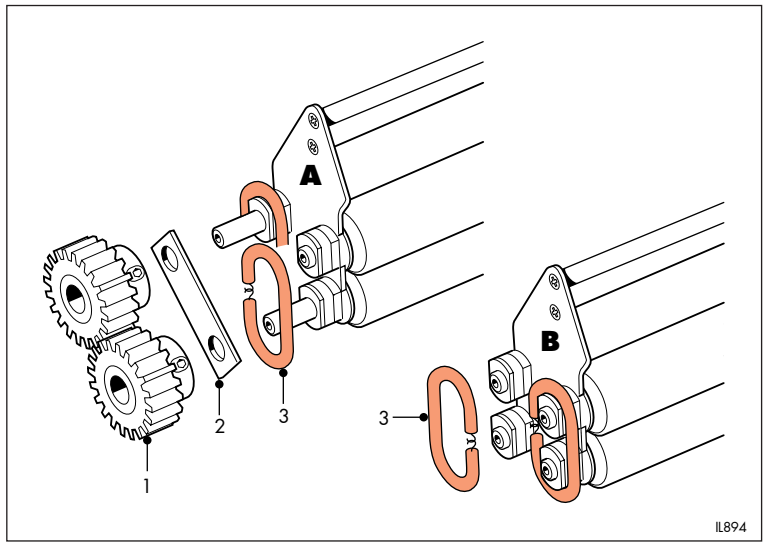


Figure 8.5 Replacing a roller tension spring - dryer

Roller tension springs are fitted on the four-roller assembly only. Springs are fitted to both ends of the roller pairs, as shown.

1 Switch the system off (see section 6).

2 Press the release button and open the dryer until the lid is held securely by the restraining arm.

3 Lift the four-roller assembly away.

4 To remove a left hand tension spring, release the socket set screws and remove the gears and locating plate, as shown on detail **A**.

5 Unhook and remove the spring from the end of the roller pair.

6 Fit a new spring around the roller bearings, as shown.

7 Refit the locating plate and gears. Secure each gear by tightening the socket set screw against the flat on the roller shaft.

8 To remove a right hand tension spring, carry out operations 5 and 6 as shown on detail **B**.

9 Refit the roller assembly, close the dryer and carry out the daily routine detailed in section 8.1.

8.8 REMOVING THE DRYER REAR ROLLERS/ADJUSTING PRINT EXIT GUIDE

See figure 8.6.

The gap between the print exit guide and the rear upper roller is critical to ensure correct paper transport through the dryer. Initially, this gap is factory set. Under normal operating conditions, the print exit guide must not be moved.

If, for any reason, the rear lower roller needs to be removed, the print exit guide must first be moved to clear the way for the roller. This means that, when the rollers are replaced, the gap must be reset as accurately as possible. To help with this operation, the print exit guide has an alignment mark at each end as shown in detail **A**.

To remove the rear rollers, proceed as follows:

CAUTION
This operation requires access to the electrical compartment. Please refer to the Safety Precautions at the front of this manual.

1 Switch the system off (see section 6).

2 Press the release button and open the dryer until the lid is held securely by the restraining arm.

3 Release the four screws and remove the lower left hand cover.

4 Carefully remove the upper roller, complete with bearings.

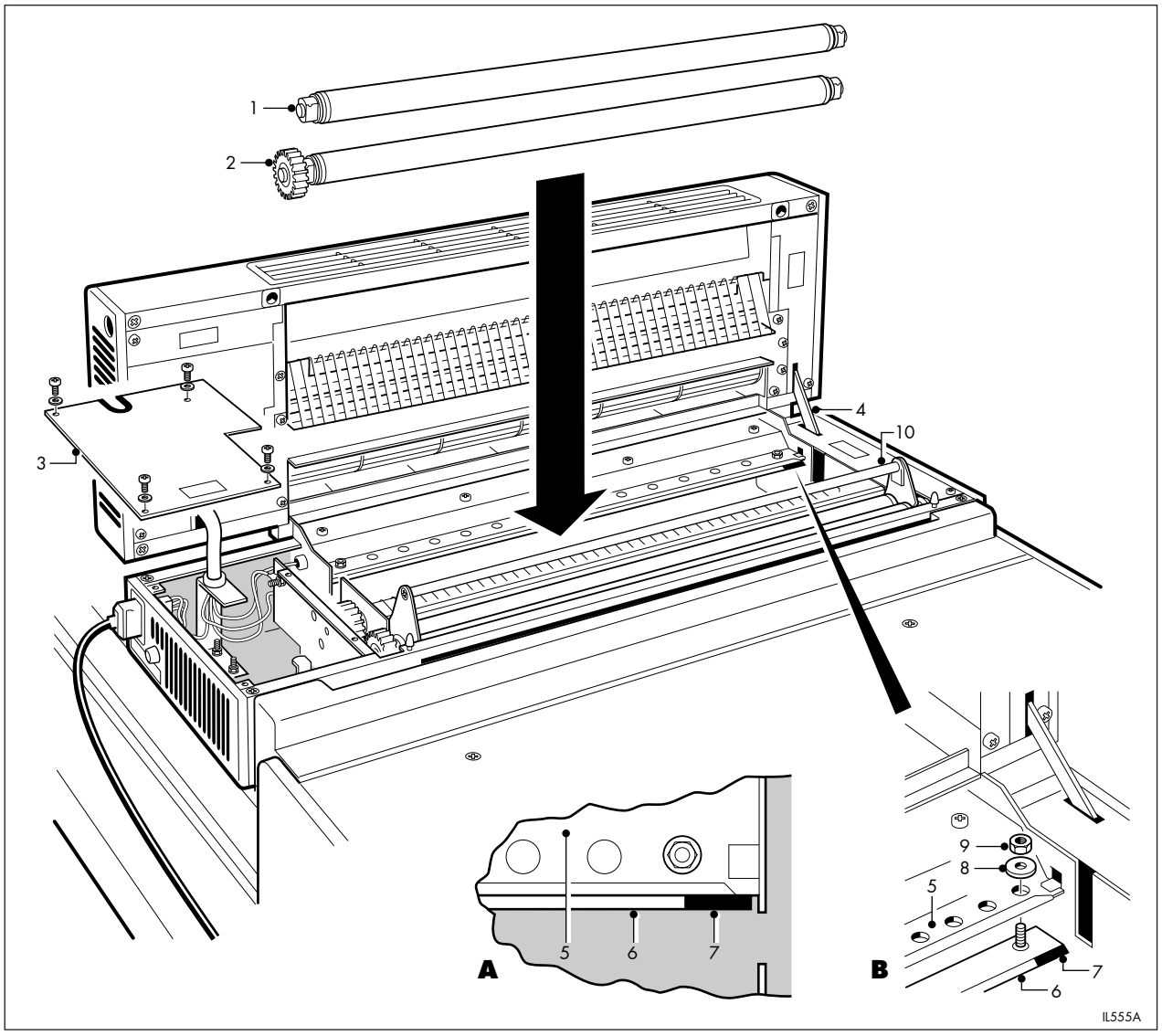


Figure 8.6 Adjusting print exit guide.

Carry out the following operations only if the lower roller is to be removed.

5 Slacken the four nuts securing the print exit guide to the ventilation grille (as shown in detail **B**) and push the exit guide towards the rear of the dryer.

6 Carefully lift the lower roller, complete with bearings and roller drive gear, away.

Figure 8.6

1 Upper roller, rear
2 Lower roller, rear
3 Lower cover, left hand
4 Restraining arm
5 Ventilation grille
6 Print exit guide
7 Alignment mark
8 Washer
9 Nut
10 Front roller assembly

Detail **A**
View from above showing correct alignment

Detail **B**
Assembly of print exit guide

To replace the rear rollers, proceed as follows:

Note
Carry out operations 1, 2, 3, 7 and 8 only if the lower roller is being replaced.

1 Ensure the print exit guide is pushed towards the rear of the dryer and is not obstructing the lower roller.

2 Replace the lower roller, complete with bearings. Ensure the roller drive gear meshes with the idler gear.

3 Carefully move the print exit guide towards the front of the dryer until the rear edge of the mark at each end of the guide is aligned with the front edge of the ventilation grille. Tighten the nuts securing the guide to the ventilation grille. Check the alignment is correct as shown in detail **A**.

4 Replace the upper roller, complete with bearings.

5 Refit the lower left hand cover. Secure the cover with the four screws and washers.

6 Close the dryer.

7 Switch the system on (see section 5).

8 Carry out the daily routine detailed in section 8.1, ensuring the sheets exit the dryer without obstruction. If the sheets do not exit correctly, switch the system off and check the alignment of the print exit guide. Re-adjust the guide if necessary.

9
FAULT FINDING

This section provides a list of checks to make should there be any faults in the processed prints. It is assumed in the following table that there are no faults at the exposing stage. If the problem persists, contact your nearest ILFORD Selling Company, at the address shown on the back cover of this manual.

To avoid faults associated with processing capacity, it may be useful to keep a record of the date chemicals were changed, and a log of the approximate number of processed prints. This will guard against excessive chemical exhaustion and, therefore, a reduction in print quality.

CAUTION
If in doubt about carrying out any of the checks, consult a competent engineer. Any further repair work carried out by unqualified personnel will invalidate any guarantees applicable to the equipment.

9.1 SAFETY FEATURES

There are a number of safety features designed to protect both the operator and the equipment. Understanding these features will prevent unnecessary problems.

1 An interlock prevents the processor main drive and solution heaters from operating without either the dryer or the print exit cover in position.

2 An interlock prevents the processor main drive, solution heaters and dryer from operating if the processor lid or dryer lid is raised. The solutions and dryer will therefore cool. When the lid is subsequently closed, and the solutions have reached operating temperature, a further warm up cycle of 3 minutes 40 seconds is automatically employed to allow time for the dryer to reach operating temperature. During this cycle, the 'ready' light is flashing and the processor must not be used.

3 Thermal cut-outs switch the solution heaters off automatically if the temperature in the processing tanks becomes excessive. The thermal cut-outs are reset manually. To avoid unnecessary tripping of the cut-outs, never use water above 35°C (95°F) when cleaning the solution tanks.

	Symptom	Possible cause	Remedy
1	**Prints too light (low contrast or low maximum density)**	Developer exhausted or contaminated	Check number of processed prints and date chemicals were last changed. Change solutions (see sections 4 and 7)
		Developer over diluted	Ensure mixing cycle is carried out with all racks in position. Tighten developer standpipes. Check water is not overflowing down developer drain standpipe during filling. Check correct amount of developer concentrate was added
		Rapid loss of developer	Tighten developer standpipes. Check there is solution in the front tank. See, also, symptom 19. Ensure the processor is level (see section 3.1a)
		Developer temperature low	Processor or dryer lid is open. Reset thermal cut-outs (see section 8.6) if the thermal cut-out light is switched on
2	**Prints too dark or appear fogged**	Processor switched off during filling cycle resulting in solutions that are too concentrated	Turn the processor control switch to '0', then to '|'. Press the water feed button and hold for 3 seconds, until water flows Lower the processor lid
		Developer temperature high	Check temperature. Temperature must be adjusted by ILFORD service engineers
		Light leakage	Test darkroom safelights. Check for light leaks in darkroom. Darkroom lights were switched on before sheet had completely entered the processor
		Developer contaminated	Change developer solution (see sections 4 and 7). Check for blocked drain (see symptom 14)

Note
When adding chemicals to one front tank, it is good practice to keep the lid in place on the other front tank.

	Symptom	Possible cause	Remedy
3	**Marks or stains**	Developer exhausted or contaminated	See symptom 1
		Developer over diluted	See symptom 1
		Sheet impeded through developer	See roller rack judder (jumping) below
		Fixer contaminated	Change fixer solution (see sections 4 and 7) Check for blocked drain (see symptom 14)
		Note When adding chemicals to one front tank, it is good practice to keep the lid in place on the other front tank.	
		Dirty rollers	Clean processor roller racks and dryer four-roller assembly (see section 8.4)
		Roller rack judder (jumping)	Replace any broken or missing roller tension springs (see section 8.7). Check for free movement of the rollers by removing the roller racks and turning them by hand - equal effort is needed to turn the developer and fixer racks, less effort is needed to turn the wash rack. Clean the roller racks if dirty. Check the orientation of all bearings (see section 8.7)
		Excessive silver suspended in developer and/or fixer	Check number of processed prints and date chemicals last changed. Change solutions (see sections 4 and 7)
4	**Prints not fixed correctly (prints turn brown quite rapidly when in contact with daylight)**	Fixer contaminated	See symptom 4
		Fixer over diluted	Ensure mixing cycle is carried out with all racks in position. Tighten fixer standpipes. Check water is not overflowing down the fixer drain standpipe during filling. Check correct amount of fixer concentrate was added

	Symptom	Possible cause	Remedy
		Processor switched off during filling cycle resulting in solutions that are too concentrated	See symptom 2
		Rapid loss of fixer	Tighten fixer standpipes. Check there is solution in the front tank. See, also, symptom 19. Check the processor is level (see section 3.1)
5	**Wet or damp prints**	Dryer not plugged in	Plug the dryer into the socket in the back of the processor
		Dryer temperature has been set too low	Increase dryer temperature
		Dryer mains fuse blown	Check dryer fuse and dryer socket fuse on processor (see section 8.5). Replace as necessary
		Faulty heater element in dryer	Contact your nearest ILFORD Selling Company
		Rollers operating incorrectly	Replace any damaged or missing roller tension springs on the dryer four-roller assembly (see section 8.7). Clean dryer rollers (see section 8.4b). Ensure the yellow transit wedges have been removed (see section 3.5a)
6	**Excessive curl on prints**	Dryer temperature has been set too high	Reduce dryer temperature
		Dryer fan impeded	Remove any obstructions from dryer air grille. Observe installation procedure. See section 3
7	**Scratches on prints**	Prints pulled from the exit rollers	Leave prints to emerge fully from the dryer before handling them

	Symptom	Possible cause	Remedy
		Sheet fed upside down	Feed sheets emulsion side down
		Dirty paper guides in processor or dryer	Remove roller assemblies and inspect guides. Clean guides as necessary (see section 8.4)
		Dirty feed tray	Clean feed tray
		Paper guides are bent	Contact your nearest ILFORD Selling Company
8	**Imperfect gloss on glossy prints**	Dryer temperature has been set too low	Increase dryer temperature
9	**Surface blistering on prints**	Dryer temperature has been set too high	Reduce dryer temperature
10	**Glossy patches on matt or pearl surfaces**	Dryer temperature has been set too high	Reduce dryer temperature
11	**Dull patches on surface of dried prints**	Dirty front roller assembly in dryer	Clean the four-roller assembly (see section 8.4b)
12	**Prints fail to emerge**	Paper sheet too small	Switch system off. Retrieve sheet. Sheets must be at least 12·7cm (5 inches) long
		Damaged sheet	Switch system off. Retrieve sheet
		Rollers operating incorrectly	Switch system off. Retrieve sheet. See symptom *5*
		Paper guides bent or misaligned	Switch system off. Retrieve sheet. See symptom *7*
		Dryer exit guide misaligned	Check alignment of exit guide. Adjust if necessary. See section 8.8

	Symptom	Possible cause	Remedy
13	**Loss of solution**	Leaks down the drain or onto bench	Tighten standpipes. Check pipework for leaks. See, also, symptom 19
		Processor is not level	Ensure the processor is level (see section 3.1)
14	**Solutions overflowing**	Drain pipe blocked or service drain not of adequate capacity	Check drainage adequate and clear any obstructions
		Processor is not level	See symptom 13
		Air lock in pipes	Check routing of drain pipes to service drain. Ensure there are no kinks or sharp bends. Ensure pipes have a continual fall to the service drain
15	**Solution heaters will not operate, but processor main drive operates**	Thermal cut-outs have operated	Reset thermal cut-outs (see section 8.6) **Note** To avoid unnecessary tripping of the cut-outs, never use water above 35°C (95°C) when cleaning the tanks.
		Faulty heater element in dryer	See symptom 5
16	**Processor 'power' light fails to switch on**	Processor mains fuse blown	Replace processor fuse (see section 8.5)
		'Power' light has failed	Contact your nearest ILFORD Selling Company
17	**Processor main drive will not start**	Processor lid raised or dryer open	Lower processor lid or close dryer
		Dryer or print exit cover installed incorrectly	Interlocks prevent the processor main drive from operating when the print exit cover or dryer are not in position. Check fit of cover or dryer (see section 3)
18	**Dryer heaters and/or fan fail to operate**	Dryer not plugged in	See symptom 5
		Dryer lid not closed correctly	Ensure lid is closed and locked

	Symptom	Possible cause	Remedy
		Dryer mains fuse blown	Replace dryer mains fuse (see section 8.5)
		Faulty heater element in dryer	See symptom 5
19	**'Warning' light switched on**	Solution level in front tanks is low	Check for leaks
20	**Audible warning sounds 30 seconds after water feed is pressed**	Processor lid is open	Close processor lid
21	**Audible signal sounds when sheet is inserted**	System is not ready to accept sheets	Wait until the 'ready' light changes from flashing to steady on before inserting sheets **Note** With the 'ready' light flashing, sheets will be transported through the system, as normal, but may emerge damp (depending on the dryer temperature).
22	**Prints overlap**	Failure to observe feed indicator	Wait for the audible feed signal before feeding in the next sheet
23	**Poor fixing quality**	Fixer over diluted	See symptom 4. Do not change developer solution without changing fixer solution. Always change both solutions. If the developer is changed, but not fixer, water will be added to the fixer during the automatic diluting and mixing cycle to make up any loss of solution. This will result in over dilution of fixer

10
SPECIFICATION

	PERFORMANCE DATA
Processor speed	93cm/min (65 inches/min) at rated voltage
Dryer speed	93cm/min (65 inches/min) at rated voltage
Cycle time	
Processor and dryer	59 seconds
Processor only	49 seconds
Access time	
Processor and dryer	72 seconds
Processor only	62 seconds
Feed-in time	13·5 seconds
Maximum output	460 prints per hour
Rate of heating chemicals	1·25 minutes per 1°C or 2°F (average)
Automatic rinsing time	2 minutes
Diluting and mixing time	15 minutes
Processing temperature	35°C (95°F)

Note
The above data is for processing 20·3x25·4cm (8x10 inch) prints fed with long edge leading, and the system operating at the specified speed.

	PRINT SIZES ACCEPTED
Maximum width	50·8cm (20 inches)
Minimum length	12·7cm (5 inches)

	TANK CAPACITIES
Total volume of developer	14 litres (3·7 US gallons)
Total volume of fixer	14 litres (3·7 US gallons)
Wash tank	12 litres (3·1 US gallons)

	DIMENSIONS
Height (without dryer)	400mm (15·7 inches)
Height (with dryer)	491mm (19·2 inches)
Width	760mm (29·9 inches)
Length	890mm (35·0 inches)

	WEIGHTS
Processor with dryer (with solutions)	130·5kg (288 lbs)
Processor without dryer (with solutions)	113·5kg (250 lbs)
Processor with dryer (without solutions)	88·5kg (195 lbs)
Processor without dryer (without solutions)	71·5kg (158 lbs)
Dryer	19kg (41 lbs)

	ELECTRICAL	
Voltage	230V	120V
Frequency	50Hz	60Hz
Phase	Single	Single
Power consumption		
Warm up	1500W	1500W
Processing		
- processor only	500W	500W
- processor and dryer (maximum)	2000W	2000W
Standby	Full power switched on intermittently	Full power switched on intermittently
Solution heaters		
Developer	800W	800W
Fixer	800W	800W
Dryer heaters	4x375W	4x375W

Fuse values	230V	120V
Processor -		
Mains	T-8A	15A SB
	T-10A	20A
		1A
Dryer module -		
Socket (on processor)	T-8A	15A SB
Mains	T-8A	15A SB
Type	Time delay	Slow blow

	WATER SUPPLY
Flow rate (automatic)	
Processing	2·5 to 3·2 litres/min (0·6 to 0·7 US gallons/min)
Mixing	7·5 litres/min (1·9 US gallons/min)
Pressure	0·2 bar (minimum)
Temperature	25°C (77°F) maximum

	DRAINAGE
Flow rate (maximum)	11 litres/min (2·9 US gallons/min) per tank

	CHEMICALS
Type	ILFORD 2000TL ILFORD 2150XL (North America only)
Quantity	Supplied as a kit consisting of 4 litre containers of developer and fixer concentrates (or 4x1 US gallon containers in North America). Use the complete contents of one container of each when adding fresh chemicals.

10.1 RECOMMENDED PROCESSING CAPACITIES

Chemicals must be changed after two weeks in the processor or after the equivalent of 1000 8x10 inch or 1250 17·8x24 cm prints have been processed. This is equivalent to 50m^2 (540 square feet) of paper. The table below lists the number of sheets (rounded to the most appropriate whole number) contained in one square metre (10·8 square feet) of paper, and can be used to calculate throughput when processing a number of different sizes of paper.

Paper size (cm)	Paper size (inches)	Number of sheets in 1m^2
50·8x61	20x24	3
40·6x50·8	16x20	5
30·5x40·6	12x16	8
24x30·5	9x12	14
20·3x25·4	8x10	20
17·8x24	7x9	24
16·5x21·6	6$^1/_2$ x 8$^1/_2$	28
12·7x17·8	5x7	45
* 8·9x12·7	3$^1/_2$ x 5	89

For example: 3 sheets of 20x24 inch paper is equivalent to 1m^2. This means that 150 (3x50) prints can be processed on one fill of chemicals.

* Feed these sheets short edge leading.

ILFORD

DECLARATION OF CONFORMITY

ILFORD IMAGING UK LIMITED · MOBBERLEY · KNUTSFORD · CHESHIRE WA16 7JL

CE

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ILFOLAB 2150RC processor

NAME · TYPE OR MODEL

TO WHICH THIS DECLARATION RELATES
IS IN CONFORMITY WITH THE FOLLOWING SPECIFICATIONS

SPECIFICATION	NUMBER	EC DIRECTIVE
Electromagnetic compatibility - emissions	EN50081-1:1990	89/336/EEC
Electromagnetic compatibility - immunity	EN50082-1:1991	89/336/EEC
Low voltage directive	EN60950:1988	73/23/EEC

CATEGORY
Domestic, commercial and light industry

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