

ReproSet™



User Manual

18-1125-68

Edition AA



Important user information



Meaning: Consult the instruction manual to avoid personal injury or damage to the product or other equipment.

CAUTION!

The Caution sign is used to call attention to instructions or conditions that shall be followed to avoid damage to the product or other equipment. Be sure not to proceed until the instructions are clearly understood and all stated conditions are met.

Note

The Note sign is used to indicate information important for trouble-free or optimal use of the product.

Should you have any comments on this instruction, we will be pleased to receive them at:

Amersham Biosciences
S-751 84 Uppsala
Sweden

Warranty and liability

Amersham Biosciences guarantees that the product delivered has been thoroughly tested to ensure that it meets its published specifications. The warranty included in the conditions of delivery is valid only if the product has been installed and used according to the instructions supplied by Amersham Biosciences.

Amersham Biosciences shall in no event be liable for incidental or consequential damages, including without limitations, lost profits, loss of income, loss of business opportunities, loss of use and other related exposures, however caused, arising from the faulty and incorrect use of the product.

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1. Introduction

ReproSet is a laboratory instrument that emits UV-light. It is intended for use during the photopolymerisation of Amersham Biosciences ReproGel. The unit is designed for gel cassettes from the ALF family of DNA sequencers.

ReproSet is equipped with 4 fluorescence lamps that have the major part (more than 99%) of their light content in the UV-A region (315-400 nm). This region is not considered harmful to the skin or eye in normal use and thus permits an “open design” with easy access to the gel cassette and convenient working conditions for the user.

2. Safety information

ReproSet complies with Safety Standard EN61010-1/IEC 1010-1.



Even though the light from ReproSet is not considered harmful to the skin or eye at moderate exposures, we still recommend the user to avoid unnecessary exposure from close range. For this reason, ReproSet is equipped with a switch that cuts off the light when the lamp housing lid is raised to its upright position.

3. Product description

Figure 1 shows the parts of ReproSet that are referred to in the description, installation and maintenance sections of this manual.

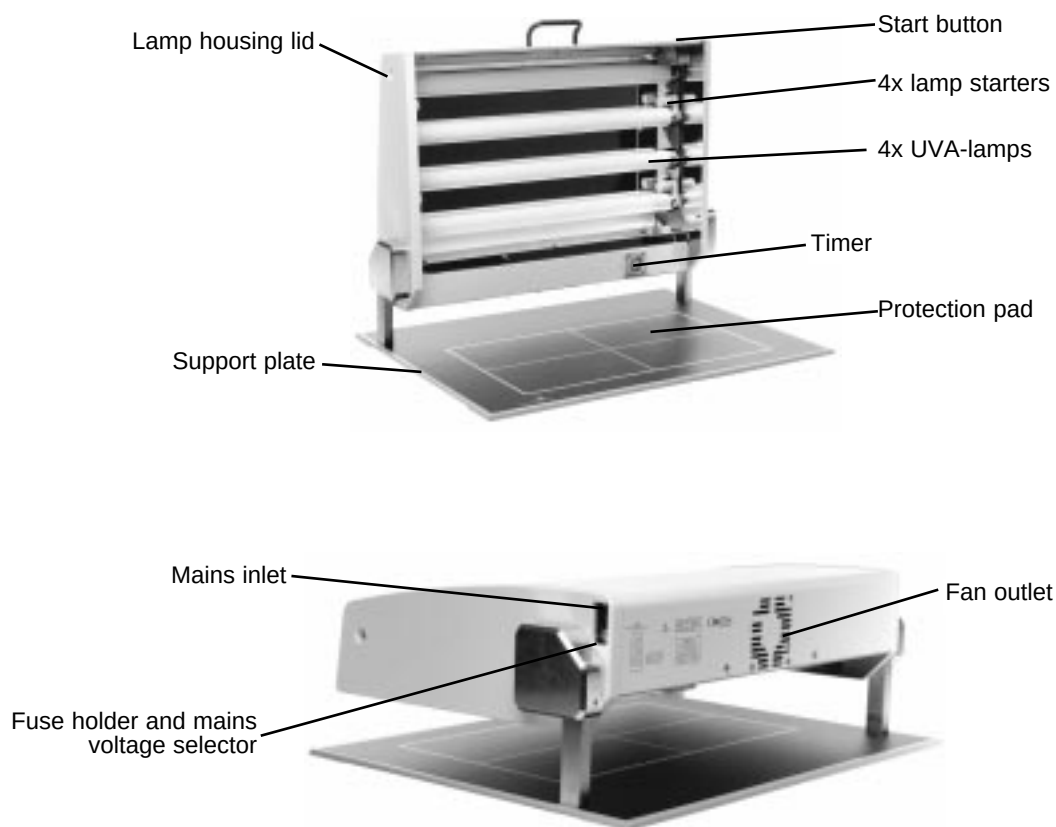


Fig. 1. ReproSet parts referred to in this User Manual.

3 Product description

Functional description of the timer

Figure 2 shows the different settings and indicators on the timer. These are: The 'timer range' (A), the 'time unit' (B), the 'out indicator' (C), the 'power indicator' (D), the 'mode selector' (E) and the 'time set dial' (F).

The 'out indicator' (C) will give a steady light when the lamps are on and the 'power indicator' (D) will flicker when the time count function is active.

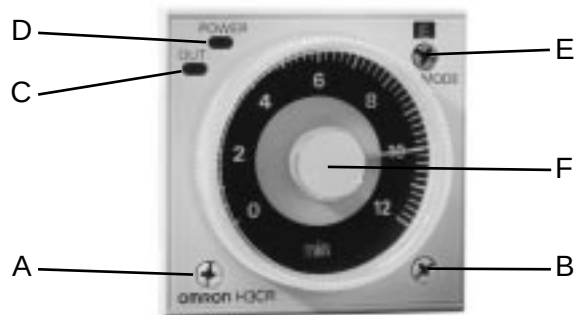


Fig. 2. Settings and indicators on the ReproSet timer. Do not alter the factory-set setting of E.

Note: The factory settings of (A), (B) and (E) are '0-12', 'min' and 'E' respectively. Do not alter the 'mode selector' (E) from this setting.

Alter the time setting by turning the setting dial (F) to the selected time (from 1 to 12 minutes).

4. Installation

Check the contents against the enclosed packing list and inspect all parts for damage that may have occurred during transport. Report deviations or damage to your local Amersham Biosciences representative and the transport company concerned.

Unpack and install the lamps according to the separately enclosed instructions (see also Section 6. Maintenance).

Place ReproSet on a bench of suitable height within reach of a grounded mains outlet. Check that the bench top is level. This will allow even distribution of gel solution when filling the cassette.

Position ReproSet so that the fan outlet is not blocked or restricted when the lamp housing lid is in a horizontal position. Before connecting the unit to mains, ensure that the fuse holder/mains voltage selector (Fig. 3) is equipped with the correct fuse and placed so that the appropriate mains voltage marking is positioned next to the arrow symbol (see Table 1).

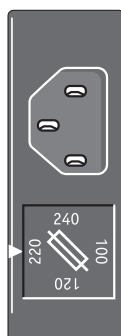


Fig. 3. Fuse holder/mains voltage selector.

Table 1. Ensure that the fuse holder/mains voltage selector is equipped with the correct fuse.

Mains voltage	Frequency	Selector setting	Fuse
100 V	50 or 60 Hz	100	2.5 AT
110, 115, 120 V	60 Hz	120	2.5 AT
220, 230, 240 V	50 Hz	220 or 240	1.6 AT

For correct function, place the protection pad on the support plate so that the logotype shows towards you.

5. Operation

This section describes the procedure for UV polymerisation of sequencing gels for the ALF family of automated DNA sequencers.

Placement of ReproSet



During use, place ReproSet on a horizontal bench top to allow even distribution of the gel solution over the cassette surface. Position the ReproSet out of sunlight to avoid exposing the gel solution to UV light during casting. For the same reason, polymerise the gel in ReproSet immediately after pouring.

Cleaning the cassette

Clean and assemble the cassette according to the instrument user manual. ALFexpress Recommended Operating Procedure (ROP:s) are available at Internet web site <http://www.amershambiosciences.com>.

When using ReproSet for polymerisation, clean both sides of the glassplates, since dirt on the surface will affect the light reaching the gel solution and result in uneven polymerisation.

With the lamp housing lid in the upright position, make sure the timer display scale is set to minutes and range to 0-12. Turn the setting dial to the appropriate time, for ALFexpress see ROP “Starting the run”. Available at Internet web site <http://www.amershambiosciences.com>.

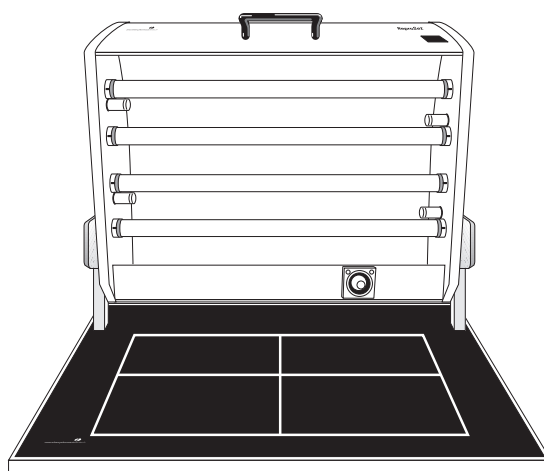


Fig. 4. ReproSet with the lamp housing lid in its upright position.

Placing the cassette in ReproSet

Place the gel cassette in ReproSet according to Figures 5 or 6. Make sure that the cassette is positioned in the centre using the position guide marks on the protection pad.

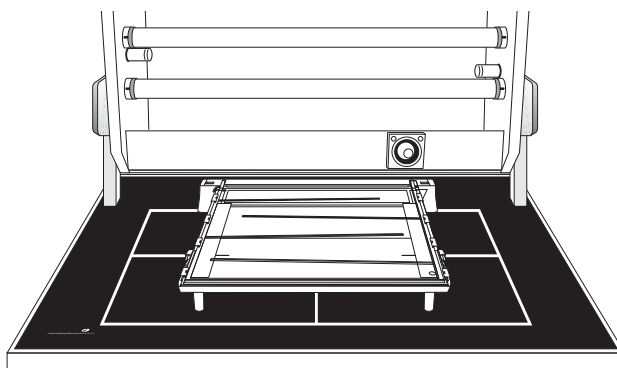


Fig. 5. Placing the ALFexpress cassette in ReproSet.

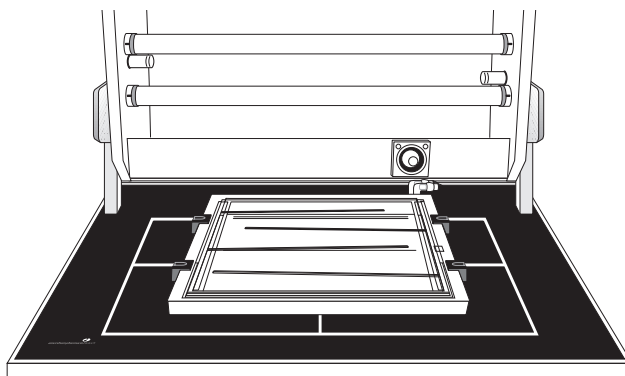


Fig. 6. Placing the ALF cassette standing on its clamps in ReproSet.

Note: Make sure the solution is at room temperature before casting the gel.

Preparing the gel solution

The gel solution is prepared according to instructions on the package insert.



CAUTION: Use gloves and avoid skin contact with the solutions.

5 Operation

Casting an ALFexpress gel

Remove the top from the nozzle. Pour the solution slowly and evenly back and forth along the open slit between the glass plates at the bottom of the gel cassette. Keep a steady pressure on the bottle during this procedure.

Note: Lowering the pressure on the bottle can let air in and cause bubbles in the gel. This can be avoided by first turning the nozzle upwards before releasing the pressure on the bottle.

Tap the glass plate if the gel solution tends to stick to certain spots. This tendency to stick may be due to dirty glass plates and/or the glass plates not being treated with sufficient amounts of ethanol before casting, and can cause bubbles in the gel.

Unlike chemically polymerised gels, there is no need to hurry when removing air bubbles. If bubbles do occur, carefully remove them with a bubble chaser. Remove the comb first, if necessary. If you use the bubble chaser, apply some more gel solution to the bottom of the cassette. This ensures that there is

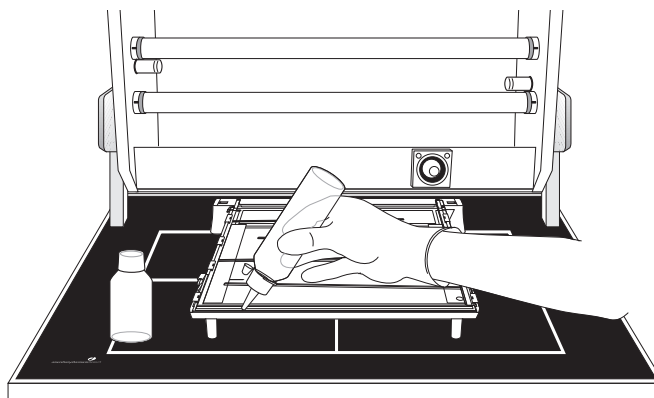


Fig. 7. Casting the gel.

sufficient solution in the cassette. Let the filled cassette stand for a minute so that the capillary movement of gel solution in the cassette ceases. Uncap the large bottle with the remaining gel solution and leave it under the UV light during exposure of the gel. This prevents unpolymerised hazardous gel solution being left in the bottle.

For more information about gel casting procedures, see ALFexpress User Manual 18-1127-13. Note the ROP “Starting the run”. Available at Internet web site <http://www.amershambiosciences.com>.

Polymerising the gel

When the gel has settled, pull down the lamp housing lid of ReproSet and push the start button. The gel will be exposed to UV light for the time set on the timer.

Note: Unpolymerised gel solution will be polymerised unless it is screened from the UV light and sunlight.

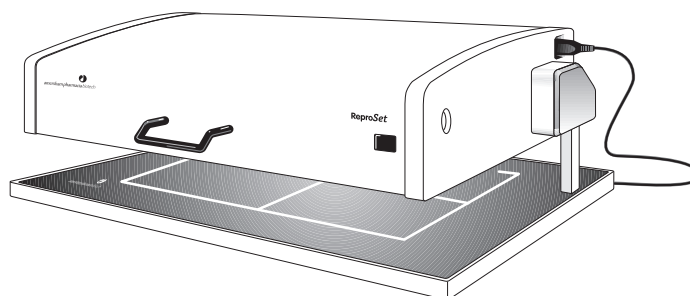


Fig. 8. Polymerising the gel.

Preparing the cassette for the run

The gel is ready for immediate use, but can be stored up to 1 hour at room temperature before starting the run. If necessary, clean the glass plate in the area of the laser beam before mounting the cassette in the instrument.

Mounting the cassette and starting the run

Mount the cassette in the instrument and fill the buffer chambers with buffer. Carefully remove the comb when the temperature has reached running temperature. Rinse the wells with buffer, add the samples and start the run. For more information, see ALFexpress User Manual 18-1127-13. Note the ROP “Starting the run”.

Available at Internet web site

<http://www.amershambiosciences.com>.

Cleaning the ReproSet table

Remove spilled gel solution from the protection pad with water and/or detergent.

6. Maintenance

For correct function, use only the UVA-lamps and lamp starters sold as replacement parts by Amersham Biosciences.



CAUTION: The UVA-lamps contain mercury. When replacing the lamps, follow your local regulations for disposal of this material.

We recommend you to replace all four UVA-lamps and lamp starters if the light starts to flicker or at the latest after one year's use or approximately 2000-3000 exposures. Disconnect ReproSet from the mains before replacing lamps or starters.

Replace old lamps by raising the lamp housing lid to its upright position, turn the lamp 90° and gently pull the lamp towards you from the holder.

Before inserting new lamps, make sure that the slits in the turnable ring-shaped part (A) and the fixed part (B) of the lamp holders are correctly aligned according to Figure 9. Insert the lamp with the two contact pins oriented in line with the slit in the lamp holder. Turn the lamp 90° so that the print on the lamp faces the reflector in the lamp housing/lid.

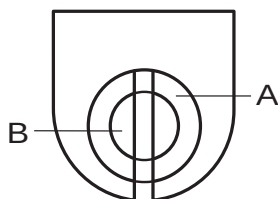


Fig. 9. Align the slits in parts (A) and (B) before inserting new lamps.

Remove the lamp starters by turning them 90° anti-clockwise and pulling straight out from the holder. Insert the replacement starter and turn it clockwise until it snaps into position.

7. Technical specifications

Light source:	4 x 40 W low pressure mercury lamps emitting UV-A
Mains voltage:	100/120 V +/- 10% 50/60 Hz, 230 V +/- 10% 50 Hz
Power consumption:	450 VA
Exposed area:	30 x 52 cm
Timer range (factory setting):	1-12 min
Operating temperature range:	+15 to +40 °C
Operating humidity range:	< 80% relative humidity up to 31 °C, decreasing linearly to 50% at 40 °C (according to EN 61010-1)
Safety:	LVD 73/23/EEC EN 61010-1 (class I, installation category II)
EMC:	89/336/EEC EN 50082-1

8. Ordering information

<i>Designation</i>	<i>Code No.</i>
ReproSet complete	18-1125-64
UVA-lamp (4-pack)	18-1125-67
Protection pad	18-1125-66
Lamp starter (4-pack)	18-1125-69
ALFexpress User manual	18-1127-13
ReproSet User manual	18-1125-68
ReproGel High Resolution	17-6001-08

