

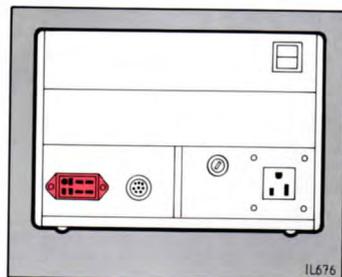
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# 4 INSTALLATION

See figure 4.1.

## CAUTION

Installation of the MULTIGRADE 500 system is very straightforward. However, if you are in any doubt about making any of the electrical connections, consult a competent electrician.



### 4.1 Enlarger head

For information on fitting the enlarger head to your particular enlarger, refer to the separate leaflet supplied with the adaptor kit.

With the enlarger head fitted, ensure the air vents are not obstructed. Connect the head to the appropriate socket on the power supply.

### 4.1a Changing light mixing boxes

See figure 4.2.

For diffuser kits, select the correct size of box for the negative format to be printed, then carry out the following procedure. The sequence is the same for condenser kits except that only one light mixing box is supplied.

## CAUTION

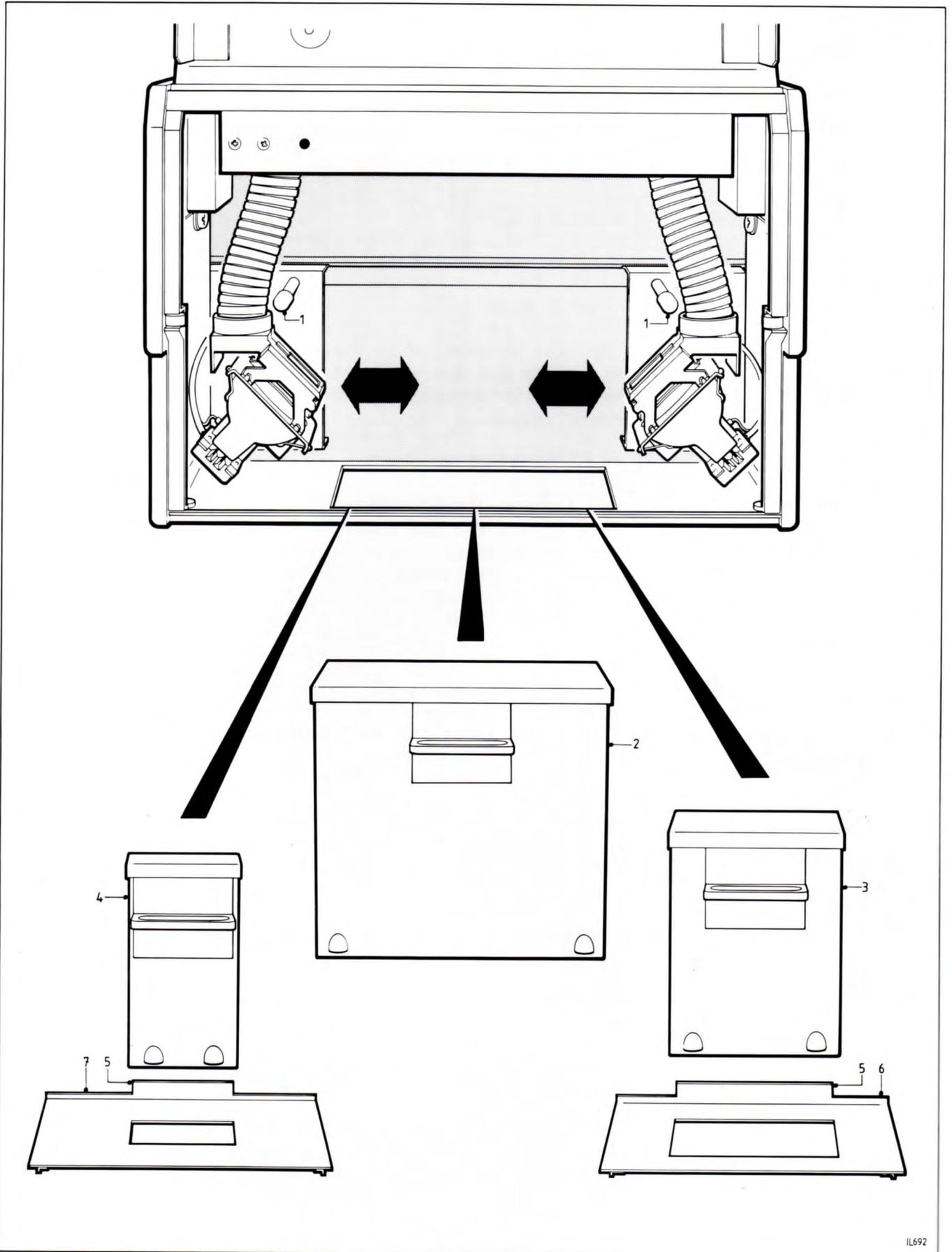
To prevent damaging the lamps when removing or fitting light mixing boxes, ensure the lamps are switched off and have been allowed to cool.

- 1 Open the door.
- 2 Slide both lampholders sideways away from the box, using the lamp slide handles.
- 3 Lift the mixing box, by holding the plastic handle, until the box is clear of the register plate, if fitted. Carefully remove the box from the enlarger head.
- 4 Carefully remove the register plate, if fitted.
- 5 Fit the required register plate and associated light mixing box, as shown.

## Note

The 4x5 inch box fits directly into the enlarger head aperture. No register plate is required.

- 6 Slide the lampholders towards the light mixing box. Stops on the rear of the 35mm and 6x7cm format register plates position



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Fitting light mixing boxes

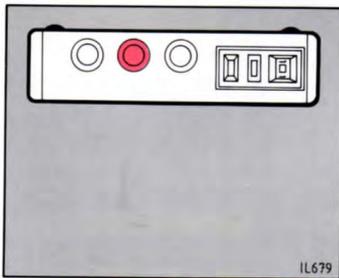
Figure 4.2

**Figure 4.2**

- 1 Handle - lamp slide
- 2 Light mixing box (4x5 inch format)
- 3 Light mixing box (6x7cm format)
- 4 Light mixing box (35mm format)
- 5 Register plate stop
- 6 Register plate (6x7cm format)
- 7 Register plate (35mm format)

the lamps correctly relative to the light mixing box. For the 4x5 inch box, the lamps are positioned correctly when they are at their maximum distance apart.

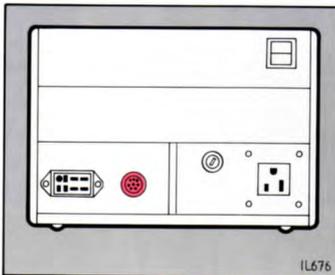
- 7 Close the door. There is no setting up procedure required. Each adaptor kit is designed to suit the particular enlarger.



#### 4.2 Control unit

Connect the 'power' socket to the appropriate socket on the power supply with the cord supplied. Tighten the plug securing ring at both ends.

See section 4.6 for the 'program' selector switch setting up procedure.



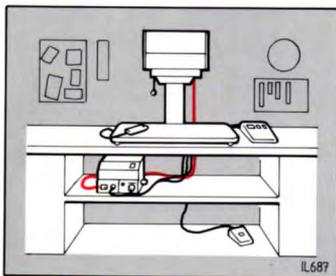
#### 4.3 Power supply

##### 4.3a Supply voltage

To replace a mains input fuse, see section 12.4.

##### 4.3b Working environment

The power supply is totally enclosed and becomes warm with extended use. It is advisable to position the unit so that adequate all round ventilation is provided at all times.



Extension cords are available for connecting to the control unit and enlarger head supply cords. These extension cords enable the power supply to be positioned away from the working area, and are available as optional extras.

**CAUTION**

For safety reasons, do not position the power supply on the floor.

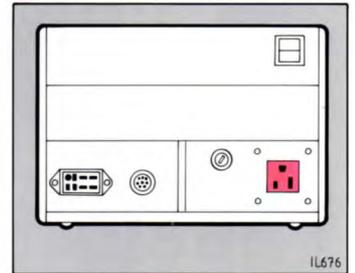
When the power supply has been positioned, ensure there is enough slack in the cord to the enlarger head, to allow full travel of the head on the enlarger column.

**4.3c Connection of safelight**

Connect the plug on your safelight cord to the 'safelight 1 amp' socket.

**WARNING**

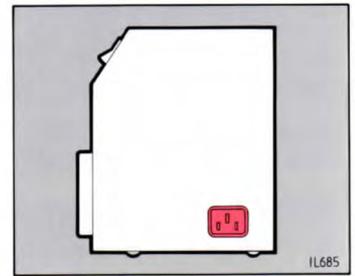
The recommended maximum current of 1 amp must not be exceeded.



**4.3d Connection to mains supply**

If a moulded plug is not fitted to the mains cord provided, connect a plug of at least 10 amp rating as follows:

- 1a Brown wire to the live pin (marked L).
- 1b Blue wire to the neutral pin (marked N).
- 1c Green/yellow wire to the earth pin (marked E or  $\perp$ ).
- 2 If a fused plug is used, fit a 5 amp fuse.
- 3 Connect the other end of the mains cord to the 'mains input' socket. Ensure the plug is pushed fully into the socket.



**4.3e External voltage stabilization**

Certain installations may be subject to large variations in mains voltage. If these variations are regular and larger than the range that is compensated for by the control unit (see section 2.2b), it will be necessary to connect the power supply to the electrical mains supply via a voltage stabilizer. If an external voltage stabilizer is used, the automatic voltage stabilization circuitry in the control unit must be switched off (see section 3.10).

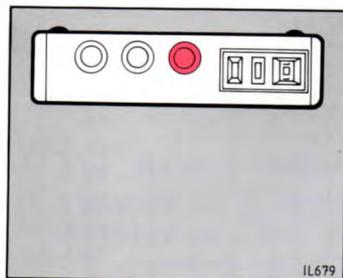
Voltage stabilizers used in some darkrooms are not suitable for the MULTIGRADE 500 system. It is important that the voltage stabilizer has a pure sine wave output and is rated at least 750 watts. Typical examples of suitable voltage stabilizers are the Rayco SOS750 or the Claude Lyons MS300.

#### 4.3f Interference on the mains supply

Certain installations may be subject to severe interference on the mains supply, causing incorrect operation of the MULTIGRADE 500 system. If the problem persists (see section 13.2) it will be necessary to connect the power supply to the electrical mains supply via a mains interference filter.

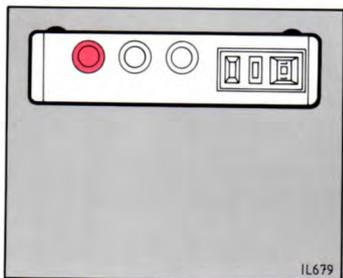
##### Note

Many voltage stabilizers (see section 4.3e) incorporate interference filters. Check the manufacturer's specification.



#### 4.4 Footswitch

Connect the footswitch to the appropriate socket on the control unit, and tighten the plug securing ring.



#### 4.5 Exposure probe

Connect the probe to the appropriate socket on the control unit, and tighten the plug securing ring.

#### 4.6 Setting up procedure

To obtain the best performance from the MULTIGRADE 500 system, the following setting up procedure must be carried out after installing the equipment and after all lamp replacements.

The procedure should be carried out using a negative that prints with some areas of even grey tone, that can be matched in density to the ILFORD Mid-tone density card supplied with this manual. For consistently good results, the negative chosen should be retained as a standard for subsequent setting up procedures.

The procedure compares the density of mid-tones at the two extremes of contrast, for each of the 'program' selector switch settings 1 to 7 (MULTIGRADE 500H enlarger heads) or 8 to 0 (MULTIGRADE 500HLZ enlarger heads). See also section 5.

- 1 Using the chosen negative, make a print at grade 5. Adjust the exposure until an area of mid-tone on the print matches the ILFORD Mid-tone density card. Visual assessment is adequate. Note the area of mid-tone selected.

**Note**

The density of the rest of the print is unimportant for this procedure.

- 2 Using the same exposure, make prints at grade 0 for each of the 'program' selector switch settings 1 to 7 (MULTIGRADE 500H enlarger heads) or 8 to 0 (MULTIGRADE 500HLZ enlarger heads). Mark each print with the switch setting used.
- 3 Compare the same areas of mid-tones (as in operation 1) on each of the 7 (or 3) prints with the ILFORD Mid-tone density card. Select the print that matches.
- 4 Set the 'program' selector switch to the number indicated on the selected print.