

# 3

# CONTROLS

See figure 2.2.

All the controls necessary to operate the MULTIGRADE 500 system are located on the control unit, except for the power control switch which is located on the power supply. This switch incorporates a neon indicator, and controls power to the system.

## 3.1 Contrast selection

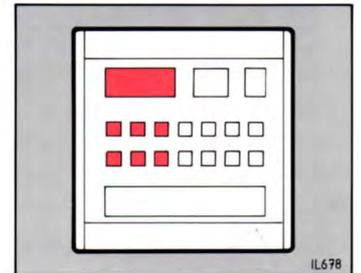
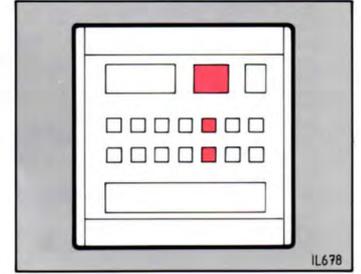
Grade is displayed in the centre display. Selection of the required grade is controlled by a pair of up (▲) and down (▼) buttons, located below the 'grade' display. The buttons control the selection of eleven grades in half-grade steps from 0 (lowest grade) to 5 (highest grade). Short presses of the buttons increases or decreases the grade displayed in half-grade steps. Holding the buttons down causes the display to roll sequentially in increments of half-grades.

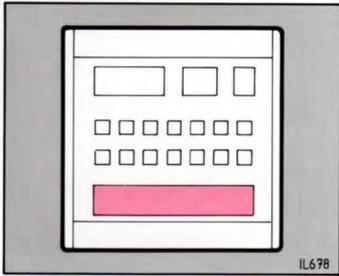
The whole grades 0, 1, 2, 3, 4 and 5 provide contrasts that correspond closely to those obtained with conventional ILFOSPEED graded paper.

## 3.2 Electronic timer

Exposure time is displayed in the left hand display. The electronic timer is extremely accurate and measures time in tenth-second increments over the range 0.1 to 99.9 seconds. The display counts down to zero during main exposures, or up from zero during manual burning-in operations.

Selection of the required exposure time is controlled by three pairs of up (▲) and down (▼) buttons located below the 'time-prints' display. Reading from the left, the three pairs control units of ten seconds, units of seconds and units of tenths of seconds. Short presses of the buttons add or subtract one unit to the corresponding display. Holding the buttons down causes the corresponding display to roll sequentially from 0 to 9 or from 9 to 0.

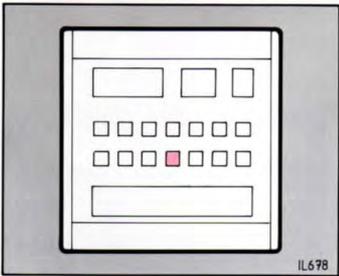




### 3.3 Expose-cancel

With the time and grade selected, start the main exposure by pressing the 'expose-cancel' bar. The time display will count down to zero.

Exposures can be cancelled at any time by pressing the 'expose-cancel' bar. The time display automatically resets to the initial display.

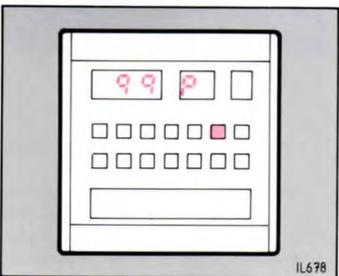


### 3.4 Focus

To obtain a continuous light suitable for focusing and composition, press the 'focus' button. To cancel the 'focus' mode, press the 'expose-cancel' bar (or press the 'focus' button again).

#### Note

If the control unit is inadvertently left in the 'focus' mode, the control unit automatically cancels the mode after 100 seconds.



### 3.5 Prints counter

The control unit automatically counts the number of exposure cycles (ie main exposure plus any additional memory sequence), and can display this information in the 'time-prints' and 'grade' displays. This is particularly useful if a run of identical prints are made from one negative. To obtain the display, press the 'prints' button. For example, 99 exposure cycles is displayed '9 9 P'.

#### Note

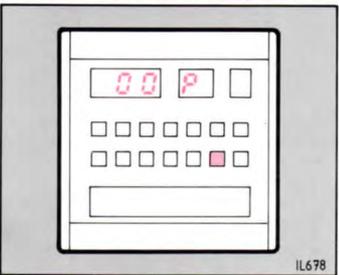
The maximum number of exposure cycles that can be counted is 999.

To return to the exposure time and grade display, press 'prints' again.

To reset the prints counter to zero, press and hold the 'prints clear' button until '0 0 P' is displayed. The need to retain pressure on the 'prints clear' button prevents inadvertent resetting of the prints counter.

#### Notes

- 1 The prints counter does not record a cancelled exposure cycle.



- 2 Exposures can be made while the control unit is displaying the prints counter. The exposure time and grade are displayed, as normal, during the exposure. The prints counter records all completed exposure cycles during the prints display mode, and the revised number is displayed at the end of the exposure cycle.
- 3 While the control unit is in the prints display mode, the 'prints', 'prints clear' and 'expose-cancel' bar are the only controls that remain active.
- 4 The prints counter resets to zero when the equipment is switched off.

### 3.6 Audible signal ('bleep')

An audible signal in the control unit is controlled by the 3-position 'bleep' switch, located on the rear panel of the control unit. The three positions are:

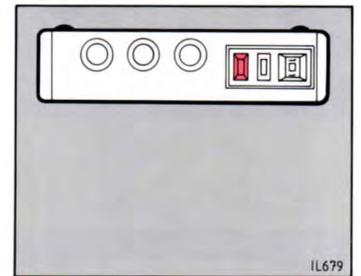
- 1 Position '1'. The signal sounds every time a button or the 'expose-cancel' bar is pressed, to confirm positive selection.
- 2 Position '2'. The signal operates as detailed in position '1', with the addition of signals once a second during exposures or manual burning-in operations. In this position, the end of an exposure is indicated by a continuous signal over the last half-second.
- 3 Position '0'. The audible signal is switched off at all times.

### 3.7 Manual burning-in

For these operations, use the 'burn' button as described in section 6.

### 3.8 Burning-in operations using the memory facility

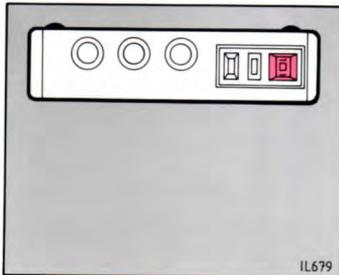
The control unit incorporates a memory store, capable of storing a maximum of eight memories in addition to the main exposure. The memory store is particularly useful for programming a sequence of additional exposures to



follow the main exposure. Each additional exposure can be made at a different grade. Once the memory has been programmed, the control unit steps through the sequence of exposures each time the 'expose-cancel' bar is pressed. The operating procedure is detailed in sections 7, 8 and 9.

**Note**

The stored memories are lost when the equipment is switched off. Use the memory record sheet supplied to record important memory sequences.



**3.9 'Program' selector switch**

The 'program' selector, located on the rear panel of the control unit, is used to compensate for any variations in light output due to manufacturing tolerances of individual lamps. It also allows the operator to make fine adjustments to the density matching of prints across the contrast range.

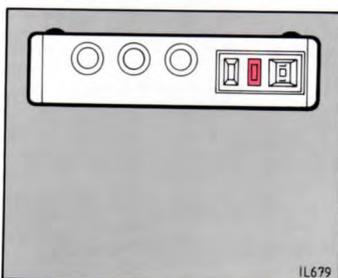
As figure 3.1 shows, the 'program' selector controls the intensity of green light only. Programs 1 to 7 are for use with the MULTIGRADE 500H enlarger head, fitted with ELH type lamps. Each step up or down increases or decreases the intensity of green light by approximately 10%. The normal setting is position 4.

Programs 8, 9 and 0 are for use with the small format MULTIGRADE 500HLZ enlarger head fitted with ELB type lamps. In this case, the normal setting is position 9.

**Note**

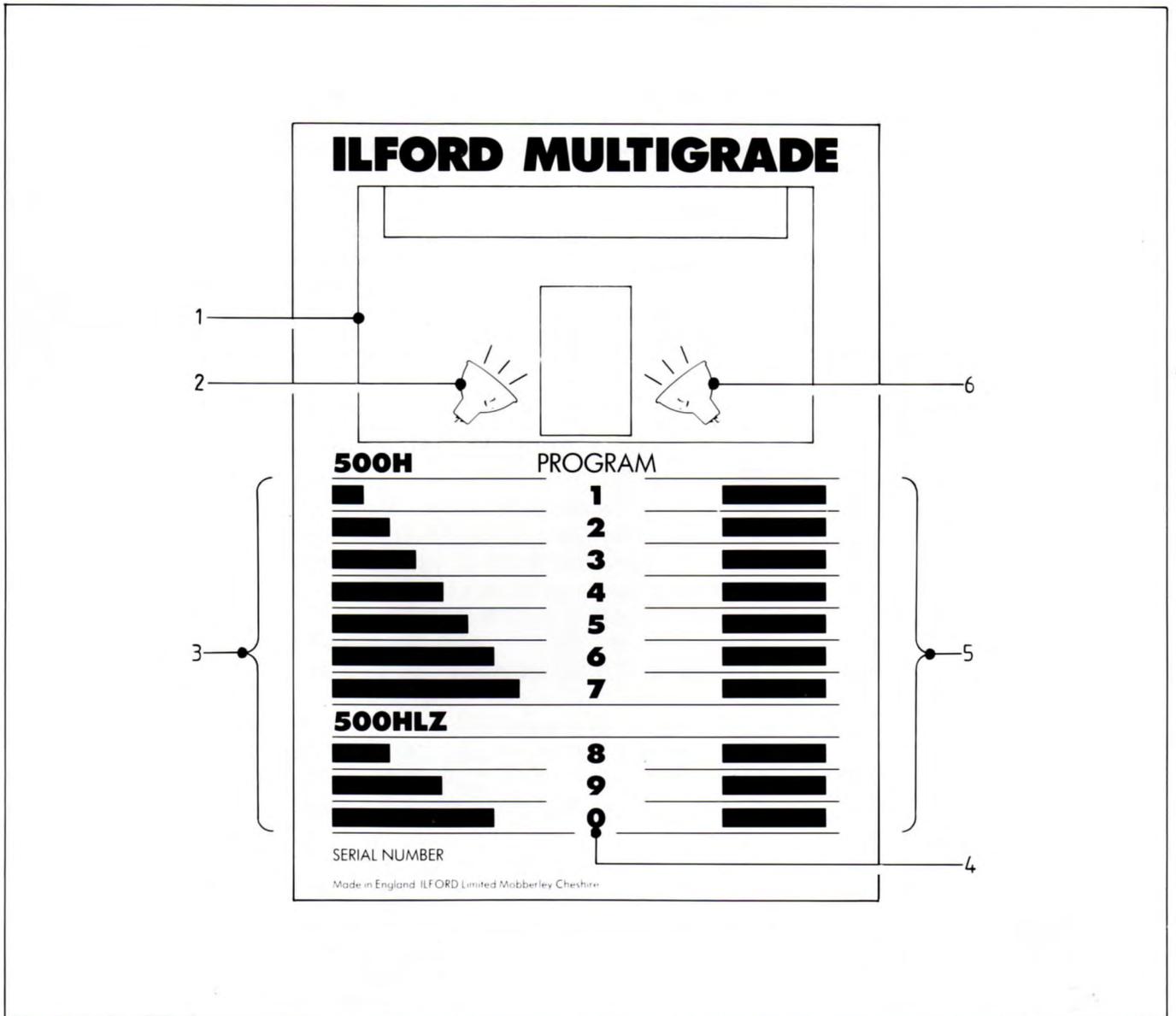
Programs 8, 9 and 0 should not be used with the MULTIGRADE 500H enlarger head, since print density will not be matched across the range of contrasts.

See section 4.6 for a detailed description of the 'program' selector switch setting up procedure.



**3.10 Voltage compensation switch**

The voltage compensation switch ('VC') is located on the rear panel of the control unit and controls the automatic voltage stabilization circuitry (see section 2.2b).



Light output related to program switch

Figure 3.1

**Figure 3.1**

- 1 MULTIGRADE 500H enlarger head
- 2 'Green' lamp
- 3 Green light output
- 4 Program switch setting
- 5 Blue light output
- 6 'Blue' lamp

It is important to note that the control unit is supplied with the 'VC' switch set in the '1' (on) position. If an external voltage stabilizer is to be used (see section 4.3e), the 'VC' switch must be set to the '0' (off) position. The switch is moved by using a small screwdriver or similar tool.