EUROTHERM CHESSELL

Backlight replacement instructions
Models 4180G/4181G/4250D/4250G

These instructions are intended for use with recorders/display units with status levels equal to or higher (later) than those shown in table 1. (The status level is the last section of the recorder's serial number and takes the form of a letter followed by one or two numbers e.g. B1, C11). For recorders with status levels prior to those shown, a different kit is required. Please contact the manufacturer's local representative for advice.

Model	Status level
4250D	G6
4250G	O12
4180G	P10
4181G	A1

Table 1 Effectivity

Notes:

It is recommended that the display unit be returned for the manufacturer for service. Users should consider the following before attempting to follow the procedure below:

1. Users who replace the backlight do so at their own risk. The manufacturer will not assume any liability for modules, and will not warrant any modules which have been modified by the user, including the replacement of the backlight using the procedure below. If it becomes necessary to return the module to the manufacturer after an attempted repair, the cost of repairs will be charged to the user.
2. The work can cause a lowering of quality (performance). The manufacturers do not guarantee that full quality will be obtained even if the procedure below is followed exactly.
3. Even the smallest particle of dust can cause shadowing, giving non-uniform brightness across the area of the display. It is recommended that a clean-room or clean bench (at class C level) be used.
4. To prevent damage caused by electro-static discharge the use of an 'ion shower' ioniser is recommended.

WARNING!

Replacement of the backlight involves the handling of high voltage circuits. If replacement is not carried out correctly, the module can present a shock, fire or other hazard, both during and after replacement.

SAFETY PRECAUTIONS

Ensure that the recorder is isolated from line power for at least 10 minutes before starting work. This will allow the high voltages associated with the inverter to dissipate safely. Such a time period also allows the fluorescent tube and high voltage circuitry to cool down after use, although the user should be aware that areas of high temperature might still exist even after this period has expired.

In the case where the tube is physically damaged, adequate care must be taken to avoid personal injury. It is also likely that pieces of broken tube will not be extricable, resulting in lighting evenness quality problems once the new tube is installed.

QUALITY CONSIDERATIONS

The display can be damaged by discharge of static electricity. Ensure that all suitable precautions are taken.

Finger contact with connectors may cause bad electrical contact to develop. It is recommended that finger cots or plastic or latex gloves are used when carrying out this procedure.

1. DOOR REMOVAL

a Open the recorder door (250mm recorder shown, other models are similar).
b Remove the earth lead and the cover (figure 1a), retaining the fixings for later re-assembly.
c Disconnect the ribbon cable headers.
d Using a small screwdriver, or similar, press down on the sprung pin at the top of the door as shown in figure 1b.
e Carefully, ensuring that the sprung pin is not ejected, ease the top of the door outwards, and lift the door away from the case.

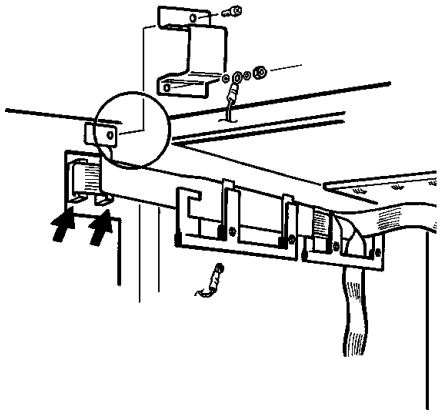

Figure 1a Earth lead and ribbon cable connectors (250mm recorders)

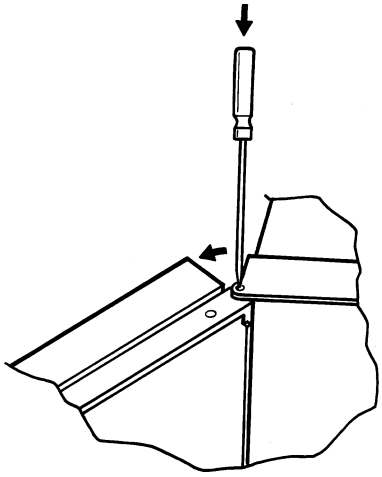

Figure 1b door hinge pin location

2. REMOVAL OF THE DISPLAY UNIT ASSEMBLY

a Release the door inner cover by undoing and removing the fixing screws (‘A’ in figure 2a). Remove the plastic door guide if fitted (‘B’ in figure 2A) and keep safely for later re-assembly. Remove the door latches ('C' in figure 2b) if fitted (depends on model).
b Carefully remove the door inner cover, by lifting the cover and disconnecting the connector as it become accessible (figure 2c). swing the cover over to reveal the display unit (figure 2d).
c Remove the four display unit securing screws ('D' in figure 2d) and lift the display unit out and layit on the inner cover (figure 2e).

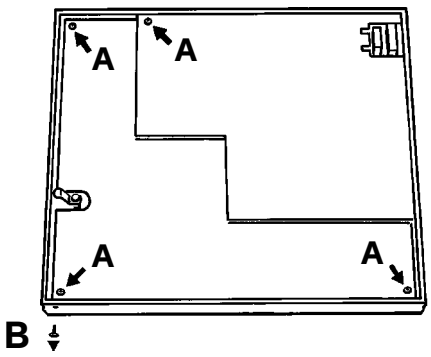

Figure 2a Inner cover securing screws (250mm recorder - other models similar)

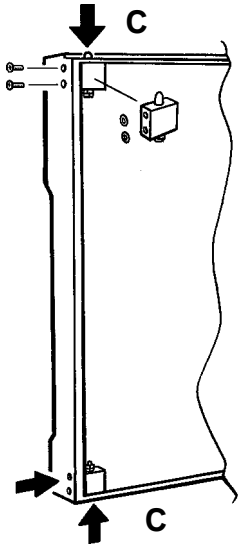

Figure 2b Door catches (not all models)

2 REMOVAL OF THE DISPLAY UNIT ASSEMBLY (Cont.)

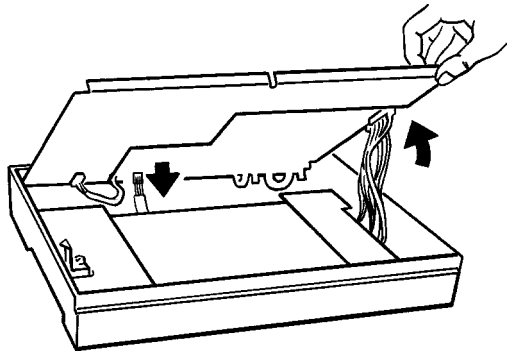

Figure 2c Lift inner cover and disconnect connector

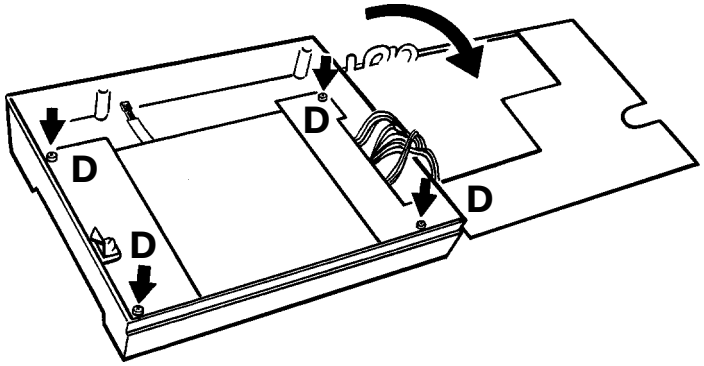

Figure 2d Cover open

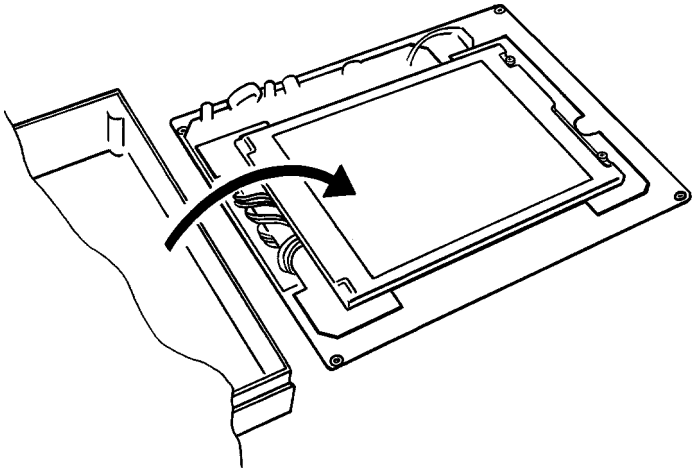

Figure 2e Display unit removal

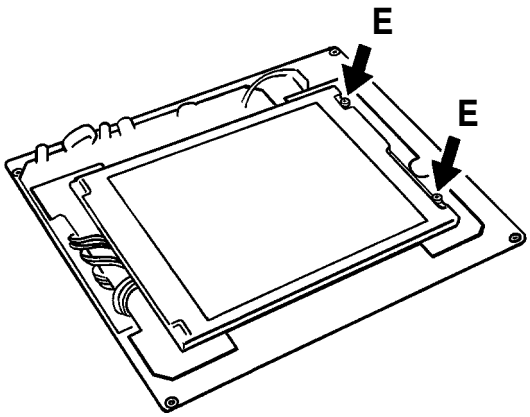

Figure 3a Remove securing screws

3 ILLUMINATION TUBE ACCESS

a Remove securing screws ('E' in figure 3a) and turn the display unit over to reveal the circuit board (figure 3b).
b Gently lift the wires out of their channels (F in figure 3b), rmove the flexi-cable ('G') and remove the circuit board retaining screws ('H').
c. Taking all necessary precautions against static discharge, gently work the circuit board out, carefully avoiding damaging any of its components. Disconnect the illumination tube connector (figure 3c).
d. Undo the tube securing screw ('J' in figure 3d) and carefully extract the lamp.

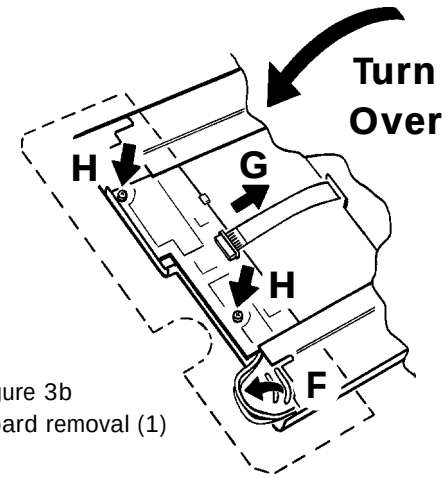

Figure 3b
Circuit board removal (1)

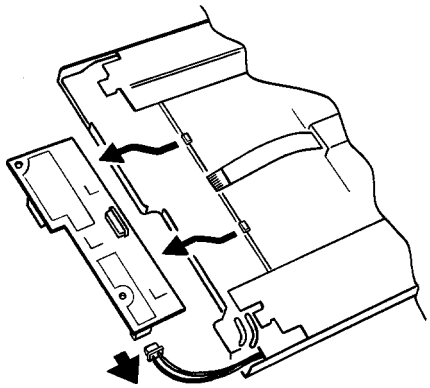

Figure 3c Circuit board removal (2)

3 ILLUMINATION TUBE ACESS (Cont.)

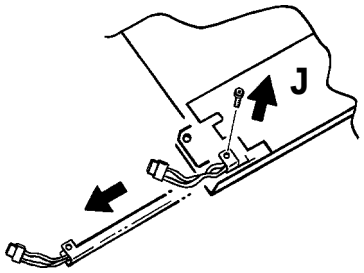

Figure 3d Tube removal

Carefully fit the new tube, ensuring absolute cleanliness.

4 RE-ASSEMBLY

Reassembly is the reverse of the above process. When re-fitting the circuit board, ensure that the wires lie neatly in their channels ('F' in figure 3b above) or early failure will result.

4.1 RECALIBRATION

This process ensures that the image is centred on the display screen.

At switch on, continuously hold a finger somewhere on the display screen until the calibration display appears (approximately 30 secs) as depicted in figure 4.1.

Using a small diameter item (e.g. a fine pencil point) which will not damage the display screen, touch the intersection of the top left crosshairs, as requested by the display.

Once the top left target has been accepted, touch the bottom right target as requested by the screen.

Once both targets have been entered, initialisation continues as normal.

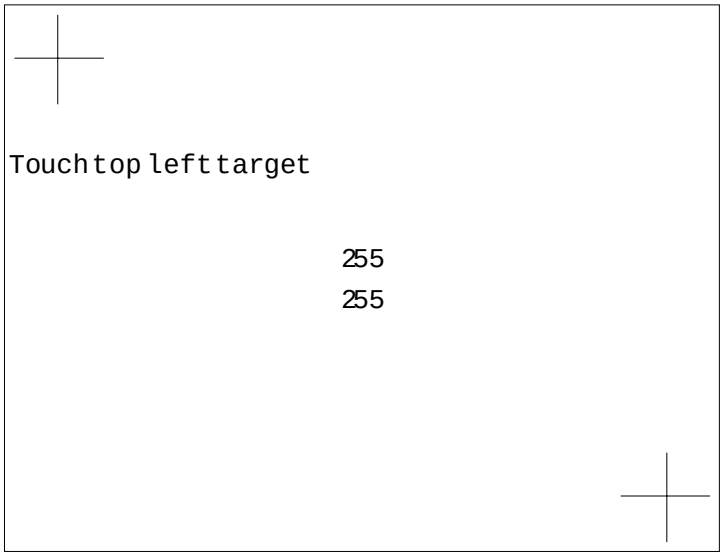

Figure 4.1 Calibration display