

5.1 GENERAL

The instrument is electrically protected by two fuses as follows:-

1. The supply line fuse, FS51, mounted on the rear panel by the line voltage switch. The rating is 500mA Slo-Blo (Part No.33685) for 220/240 volt supplies and 1A Slo-Blo (Part No.34790) for 115 volt supplies.
2. The + 170V fuse, FS501, mounted on the Power Supply board at the rear of the instrument. Access is by removing the bottom cover and the fuse rating is 250mA (Part No.32338).

The following sections give information allowing access to, and removal of, the various printed circuit boards and assemblies as may be found necessary during fault finding procedures.

If during fault finding, a component needs replacing it may be cut from the printed circuit board as close as possible to the component, leaving the wires protruding through to the component side of the board. The new component can then be soldered into position by attaching it to these protruding wires. This protects the copper track from damage.

If a fault on a printed circuit board cannot be cleared, it is recommended that the instrument is returned to the manufacturer for repair. When faults have been cleared it is recommended that the test procedure be implemented to ensure that the instrument conforms to the specification.

5.2 MECHANICAL ASSEMBLY

5.2.1 LAYOUT

Figures 14 and 15 illustrate the internal layout of the instrument and show the positions of the majority of preset components when the top and bottom covers have been removed. Each cover is retained in position by four latch fasteners. Each fastener is released by turning it one quarter of a turn clockwise or counter clockwise.

The POWER SUPPLY board contains the low voltage power supplies and also the blanking amplifiers. It is mounted across the rear frame of the instrument behind the c.r.t.

There are two identical Y PRE-AMPLIFIER boards (note that components have identical circuit reference numbers on each of these boards) mounted as 'daughter' boards at the front of the large ANALOGUE TO DIGITAL CONVERTOR (ADC) board. This board is secured underneath the c.r.t. and has two other 'daughter' boards associated with it: the CURRENT SOURCE board which is on the left hand side nearest the frame, and the DECODING LOGIC board on the right hand side.

The E.H.T. board incorporates the high voltage power supplies for the c.r.t. and also the Y OUTPUT AMPLIFIER. The INTENSITY, SCALE and FOCUS controls are directly mounted on this board, which is adjacent to the c.r.t. and one of four boards mounted vertically.

The STORE LOGIC is next to the EHT board.

The TIMING LOGIC board contains also the DOT JOINER circuit and is the third vertical board.

The TIMEBASE BOARD is mounted on the right hand

side of the instrument and includes also the INTERNAL CALIBRATOR circuit.

The construction of the instrument has been arranged so that individual boards and assemblies can be checked and components changed so far as possible without completely removing the assemblies from the mainframe or disconnecting cableforms. In the case of the two logic boards this has been achieved by making them easily withdrawn from inside the mainframe to be mounted on top of the instrument, as shown in Fig.16. The instrument is then still fully functional

The following description details the method for removing the individual assemblies:-

5.2.2 STORE AND TIMING LOGIC BOARDS

The two logic boards are withdrawn as a unit:-

1. Remove the caps from the STORE, RELEASE and the two LOCK STORE pushbuttons. Remove the knobs from the MODE, STORED TRIGGER POINT and DISPLAY MODE lever switches.
2. Remove the 8 screws marked 'A' in Figs.14 and 15.
3. Swing the rear fixing brackets upwards to allow them to clear the rear mounting plate as the boards are withdrawn from the front panel. When the unit has been moved far enough to enable the lever switches and pushbuttons to clear the frame, withdraw the assembly from the top of the instrument with the various cableforms still attached.
4. Remove the screens from each board, and also unscrew the screen mounting pillars. This will allow the two boards to be separated. The two 'L' shaped fixing brackets should be removed from the top corner of each board and remounted on the bottom corner using the rearmost hole and a single nut and screw. The boards can now be fixed to the top of the instrument as shown in Fig.16, using the original fixing holes at the rear, and a single screw through a convenient hole in the frame at the front. Check that all the connectors are firmly in position.

Refitting is the reverse of the removal procedure.

Ensure that the 16 way ribbon cable plugs are fully pushed home after fixing the assembly inside the instrument.

5.2.3 TUBE AND REAR COVER

Removal of the tube is straightforward and provides access to the track side of the Analogue to Digital Convertor and E.H.T. boards. Note that access to the rear of the tube may be gained by removing the moulded plastic cover which is retained by four fixing screws. The tube is removed together with its magnetic shield in the following manner:-

1. Disconnect the E.H.T. lead at the cavity cap connector at the front of the tube.
2. Disconnect the two trace rotation coil leads at the top of the power supply board. Mark one of these leads so that they may be reconnected in the correct order. Disconnect the lead from the tube base to the pin marked GRID on the power supply board.
3. Remove the tube clamp, secured by three screws.

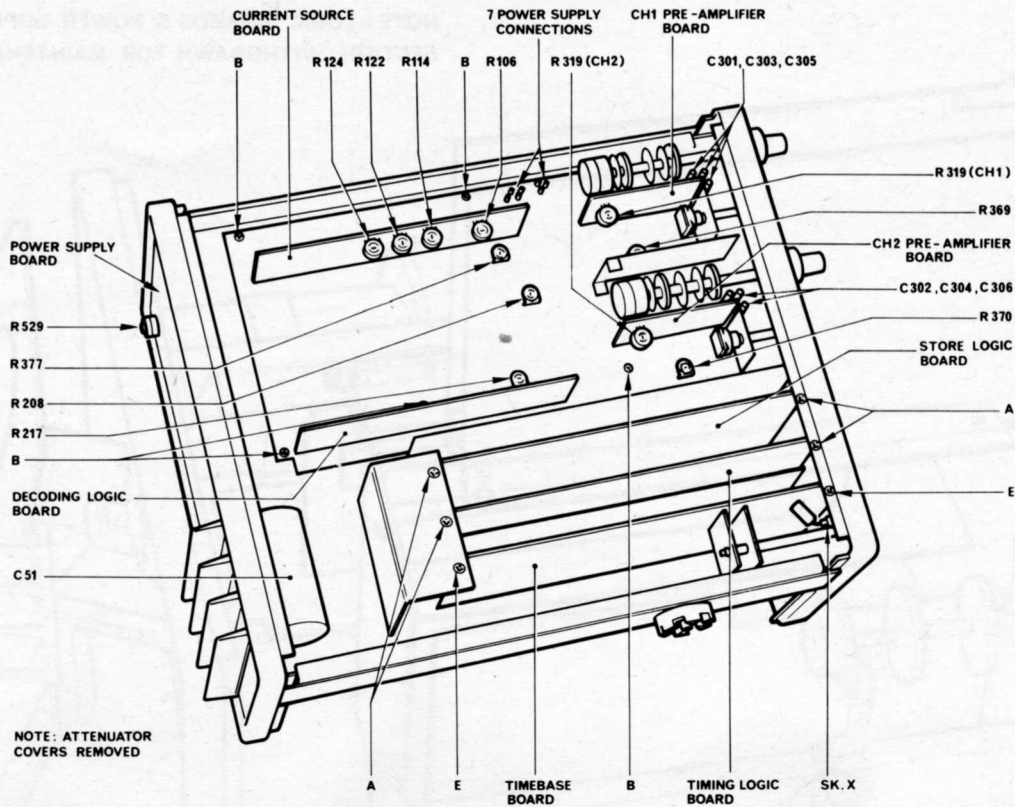


Fig. 14 Bottom View

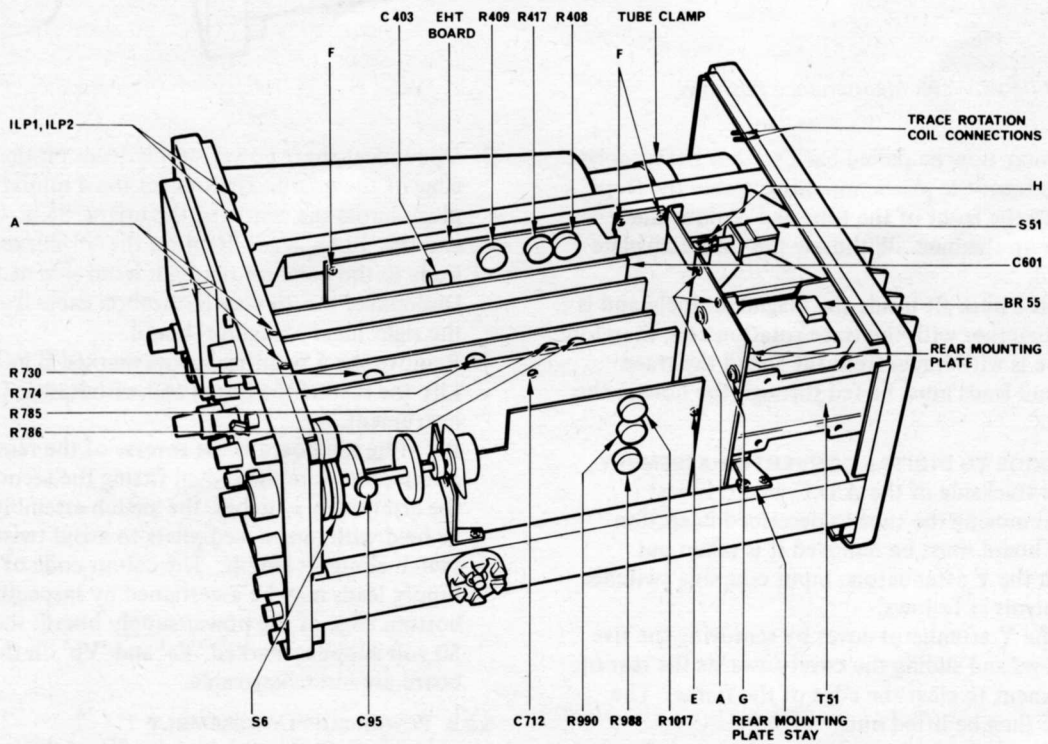


Fig. 15 Right hand View