The electron-optical system of the tube (electron gun) consists of an indirectly heated cathode with a nearly point source emissive oxide spot, a Wehnelt cylinder and a disc anode with axial hole. The Wehnelt cylinder is maintained at a negative bias voltage with respect to the cathode and constitutes the pre-focus system. The electrostatic lens formed by the electric field between the Wehnelt cylinder and the disc anode with axial hole, constitutes the main focussing system. An additional focussing effect is exerted on the electron beam by gas constriction - this is convenient and appropriate for cathode ray tubes which are run with low anode voltages. For this purpose, the tube is filled with the inert gas Neon at low pressure (0.01 mm of mercury). The prismatic deflection capacitor consists of two deflector plates 20 mm long and spaced 12 mm apart, positioned between the anode and the fluorescent screen. The fluorescent screen employs zinc silicate as phosphor, emitting green light when struck by the electron beam. For magnetic deflection of the electron beam, three solenoid coils are arranged on a ring such that their positions are variable on this ring. These solenoid coils are in the same plane as the electrostatic deflector plates. The DC resistance of each coil is about 5 Ohms.

Fig. 3 shows the complete circuit diagram of the equipment comprising the tube module and the sawtooth generator module.

Commencing Operation

To power the equipment, a mains power unit is required. This mains power unit must provide an efficiently smoothed DC output voltage of 250 V and a bias voltage which is continuously adjustable from zero to -50 V. The NEVA Mains Power Unit 5211 or the NEVA Stabilised Mains Power Unit 5224 is particularly suitable.

The connecting jacks on the tube panel should be connected to the mains power unit in accordance with the labelling. To avoid any disturbance from the magnetic field of the mains transformer, the distance between the tube and the mains power unit should be at least 50 cm. A ground connection can be made to the jack "+250 V".

CAUTION: Do not touch components or wiring on the tube panel and sawtooth generator module when the equipment is switched on. Voltages up to 250 V with respect to ground are present.