

FERRANTI TELEVISION TUBE

MW43-69

A 17in. rectangular Television Tube with metal-backed grey glass filter screen and incorporating an ion-trap pentode gun. An external conductive coating provides smoothing for the E.H.T. supply.

Focus	...	...	Magnetic.
Deflection	...	...	Magnetic.
Screen	...	...	Metal-backed
Fluorescence	...	...	White.
Light Transmission	...	...	66%.

PHYSICAL DETAILS.

Base	...	B12A (Duodecal).
Anode Cap	...	CT8 Cavity Type.
Max. Overall Length	...	495mm.
Mounting Position	...	Any.

For other dimensions see drawing.

BASE CONNECTIONS.

Pin 1—Heater.	Pin 7—2nd Anode.
Pin 2—Grid.	Pin 8—No Pin.
Pin 3—No Pin.	Pin 9—No Pin.
Pin 4—No Pin.	Pin 10—1st Anode.
Pin 5—No Pin.	Pin 11—Cathode.
Pin 6—No Connection.	Pin 12—Heater.
Side Contact—3rd Anode.	

HEATER.

*Heater Voltage	...	6.3 volts.
Heater Current	...	0.3 amp.

RATINGS.

Max. 1st Anode Voltage	...	410 volts.
Max. 2nd Anode Voltage	...	410 volts.
**Max. 3rd Anode Voltage	...	16 kV.
Min. 1st Anode Voltage	...	200 volts.
Min. 2nd Anode Voltage	...	-100 volts.
Min. 3rd Anode Voltage	...	10 kV.
†Max. V_{h-k} (Heater positive)	...	125 volts.
†Max. V_{h-k} (Heater negative)	...	200 volts.
††Max. V_{h-k} (peak) (Heater negative)	...	410 volts.
Max. R_{g-k}	...	1.5 MΩ
Max. Z_{g-k} ($f=50$ c/s.)	...	0.5 MΩ
Max. R_{h-k}	...	See note §
Max. 1st Anode supply source Impedance	...	1.5 MΩ
Max. 2nd Anode supply source Impedance	...	1.5 MΩ
‡Nom. V_g for visual cut off	...	$-\frac{V_{a1}}{5}$ volts.

*When used for series operation, the surge heater voltage should not exceed 9.5 volts r.m.s. and a current limiting device should be incorporated in the circuit to limit switching surge.

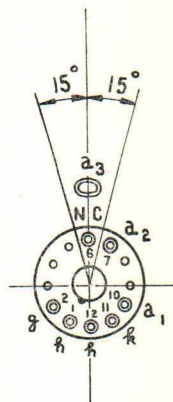
**The product of 3rd Anode Voltage and Beam Current must not exceed 6 watts.

†To avoid excessive hum the A.C. component of V_{h-k} should be as low as possible—in any case not greater than 20 volts (r.m.s.).

††During a warming-up period not exceeding 45 secs.

§When the heater is in a series chain, or earthed, Z_k max. is 0.1 MΩ where Z_k is the 50 c/s. impedance between earth and the cathode. When the heater is supplied from a separate transformer R_{h-k} max. is 1 MΩ

‡The modulator should never be positive with respect to the cathode, except during the period immediately after switching off, when it may be allowed to rise to +1 volt.



**Base
Connections
Underside View
of Base**





TYPICAL OPERATION.

Heater Voltage	...	...	6.3 volts.
1st Anode Voltage	...	...	300 volts.
2nd Anode Voltage	...	...	0 volts.
3rd Anode Voltage	...	...	14 kV.
V_g for visual cut off	...	...	-40 to -86 volts.

PREFOCUSING.

The spot size and uniformity of focus depend upon 2nd Anode Voltage. At 2nd Anode Voltage zero or negative with respect to cathode the spot size at the centre of the screen and the width of the electron beam are such that optimum uniformity of focus is obtained over the whole screen. If the 2nd Anode Voltage is increased, the spot size at the centre of the screen is reduced but the width of the electron beam is increased, resulting in inferior focus at the edges of the screen.

With increased 2nd Anode Voltage the power of the external focusing magnet has to be increased.

ION TRAP.

To accommodate the Ion Trap Magnet the neck of the tube should be kept clear for a distance of 112 mm. from the reference line to the edge of the base. The Ion Trap Magnet should be positioned in such a manner that the south pole is adjacent to the base.

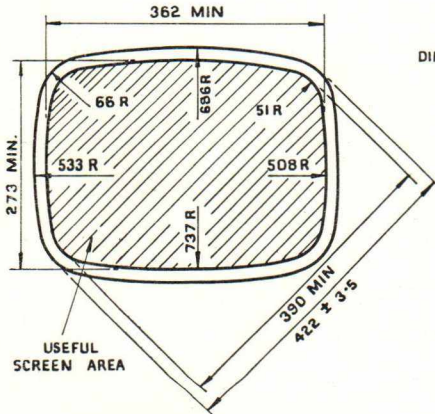
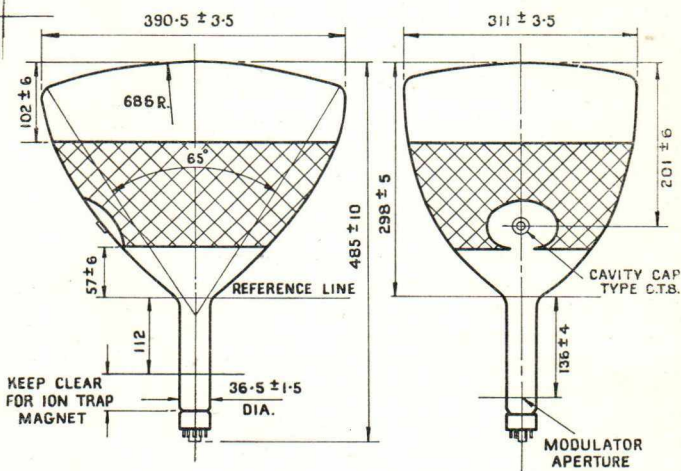
Adjustment of the Ion Trap Magnet should be carried out in accordance with the procedure outlined under "Notes on Operation (Cathode Ray Tubes)" preceding this section of the handbook.

§§ Ion Trap Magnet field strength 59-67 gauss.

CAPACITANCES.

C_{k-all}	...	...	...	< 6.0 pF.
C_g-all	...	...	...	< 8.0 pF.
$C_{k+a2-all}$	...	...	...	< 11 pF.
C_{a3-M}	...	...	...	1100 pF. approx.

§§ The Ion Trap Magnet assembly should be earthed.



DIMENSIONS IN MILLIMETRES

