

# TELEVISION MONITOR TUBE

# MW43-67

Direct viewing television tube with 17-in. diagonal rectangular metal-backed grey-glass screen. Primarily intended for use as a television studio monitor tube.

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS—CATHODE RAY TUBES, included in this volume of the handbook.

## HEATER

Suitable for series or parallel operation.

$V_h$	6.3	V
$I_h$	300	mA

**Note** (applies to series operation only). The surge heater voltage must not exceed  $9.5V_{r.m.s.}$  when the supply is switched on. When used in a series heater chain a current limiting device may be necessary in the circuit to ensure that this voltage is not exceeded.

## EXTERNAL CONDUCTIVE COATING

This tube has an external conductive coating, M, and the capacitance of this to the final anode may be used to provide smoothing for the e.h.t. supply. The tube marking and warning labels are on the side of the cone opposite the final anode connector and this side should not be used for making contact to the external conductive coating.

## CAPACITANCES

$C_{g-a11}$	<8	pF
$C_{k-a11}$	<8	pF
$C_{a2-M}$	1100	pF

## SCREEN

Metal-backed		
Fluorescent colour	White	
Light transmission	66	%
Useful screen area	See drawing on p. 3	

## FOCUSING

Magnetic

## DEFLECTION

Double magnetic

## REFERENCE LINE GAUGE

See 'General operational recommendations—cathode ray tubes'

## MOUNTING POSITION

Any, except vertical with screen downward and the axis of the tube making an angle of less than  $20^\circ$  with the vertical.

The tube socket should not be rigidly mounted but should have flexible leads and be allowed to move freely. The bottom circumference of the base shell will fall within a circle having a diameter of 55mm which is centred upon the perpendicular from the centre of the face.

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### TYPICAL OPERATING CONDITIONS

$V_{a_2}$	14	kV
$V_{a_1}$	300	V
* $V_g$ for cut-off	-30 to -70	V
Recommended distance of centre of magnetic length of focus unit from reference line	100	mm

### LIMITING VALUES (Absolute ratings)

** $V_{a_2}$ max.	15	kV
$V_{a_2}$ min.	9.0	kV
$V_{a_1}$ max.	500	V
$V_{a_1}$ min.	250	V
* $-V_g$ max.	150	V
† $V_{h-k}$ max. (cathode negative)	125	V
† $V_{h-k}$ max. (cathode positive)	200	V
†† $V_{h-k(pk)}$ max. (cathode positive)	410	V
$R_{g-k}$ max.	1.5	M $\Omega$
$Z_{g-k}$ max. ( $f=50c/s$ )	500	k $\Omega$
$R_{h-k}$ max.	See note §	
Max. $a_1$ supply source impedance	1.5	M $\Omega$

\*The d.c. value of grid bias must not be allowed to become positive with respect to the cathode, except during the period immediately after switching the equipment on or off when it may be allowed to rise to +1V. The maximum positive grid excursion of the video signal may reach 2V and at this voltage the grid current may be expected to be approximately 2mA.

\*\*The product of  $V_{a_2}$  and  $I_t$  (average value for the whole screen) must not exceed 6W.

†In order to avoid excessive hum the a.c. component of  $V_{h-k}$  should be as low as possible ( $<20V_{r.m.s.}$ ).

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

§When the heater is in a series chain, or earthed,  $Z_k$  max. is 100k $\Omega$ , where  $Z_k$  is the 50c/s impedance between earth and the cathode. When the heater is supplied from a separate transformer  $R_{h-k}$  max. is 1M $\Omega$ .

**WEIGHT** Tube alone

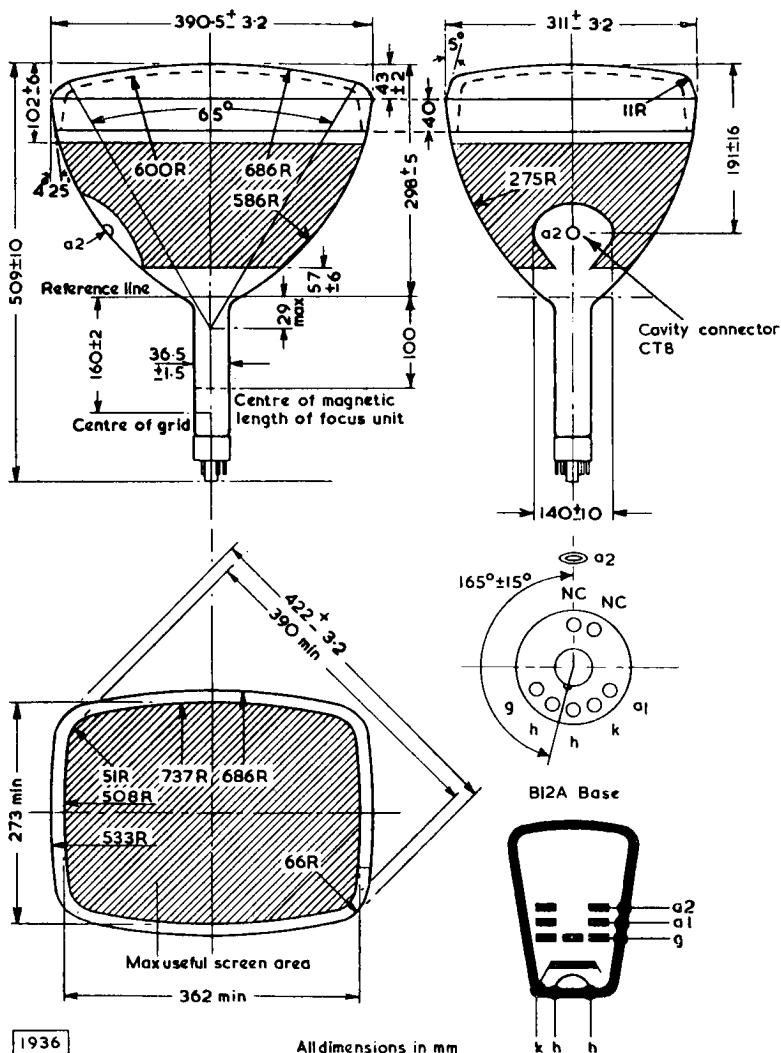
{ 7.7 kg  
17 lb



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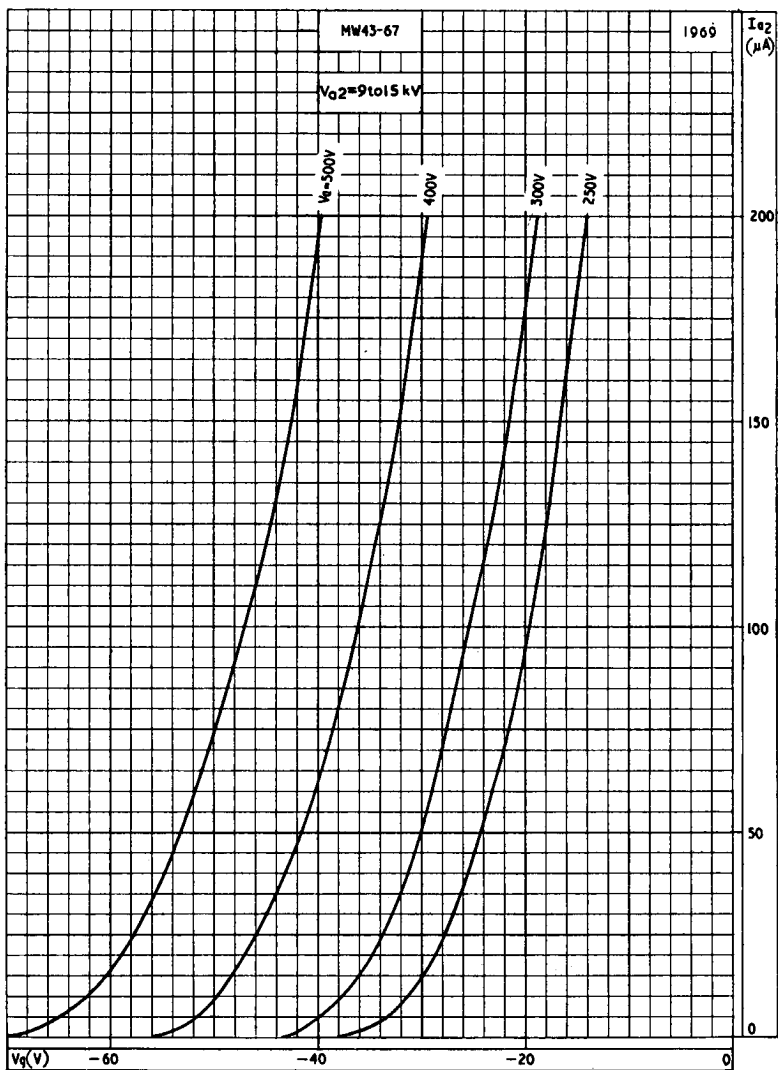


The indicated radius of faceplate curvature is not an exact but an average value.

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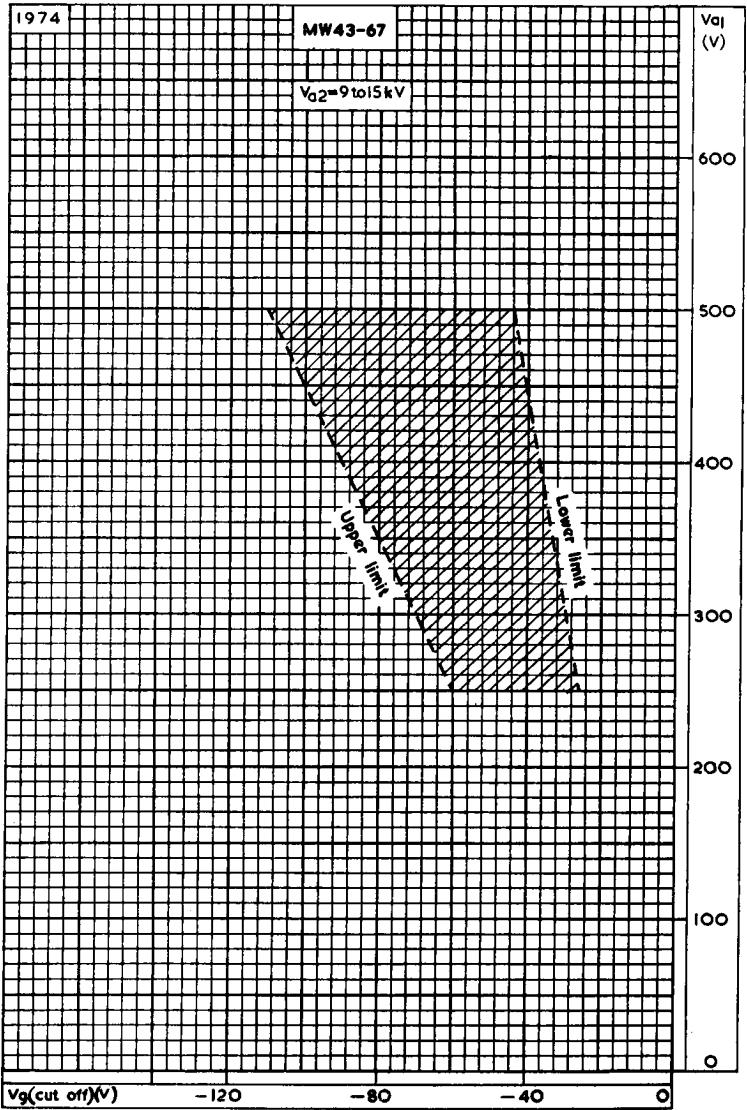


FINAL ANODE CURRENT PLOTTED AGAINST GRID VOLTAGE

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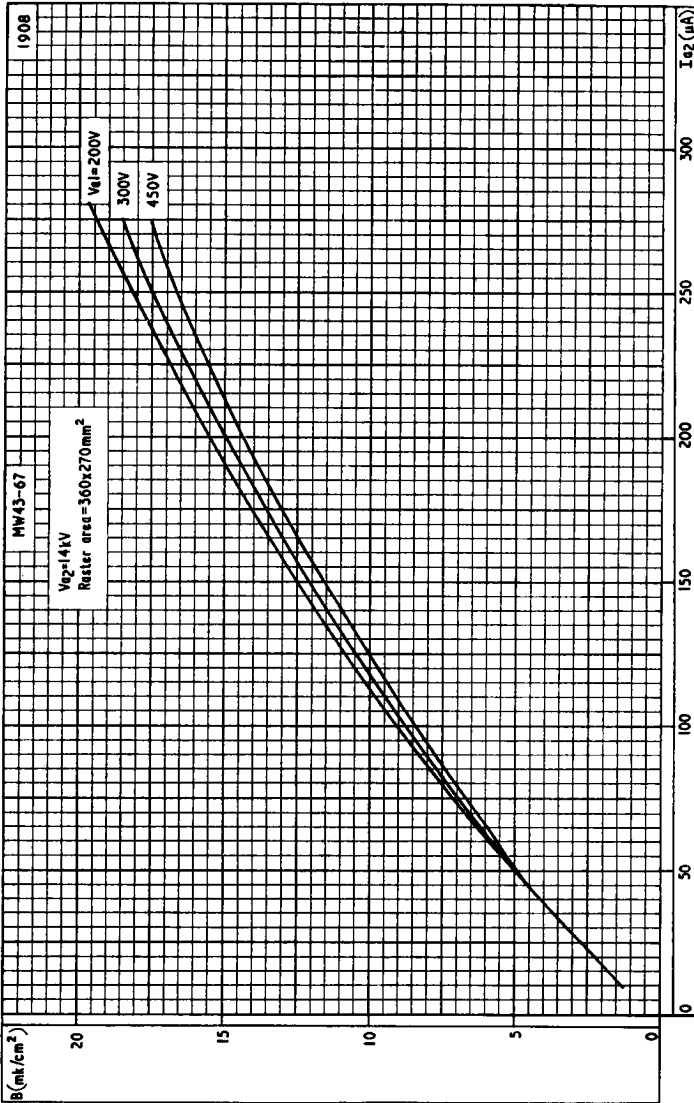


LIMITS OF GRID CUT-OFF VOLTAGE FOR FIRST ANODE VOLTAGES FROM 250 TO 500V

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LIGHT OUTPUT PLOTTED AGAINST FINAL ANODE CURRENT FOR VARIOUS FIRST ANODE VOLTAGES

( $1\text{mk}/\text{cm}^2 = 2.9 \text{ e.f.c.} = 2.9\text{ft.-lambert}$ )

