MINISTRY OF SUPPLY D.L.R.D.(A)/R.A.E.

VALVE ELECTRONIC

CV393

Specification MOSA/CV393 Issue 2 Dated 14.1.1954. To be read in conjunction with K.1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Velocity modulated magnetically focussed local oscillator

CATHODE - Indirectly heated

ENVELOPE - Copper/Glass

PROTOTYPE - CV299

MARKING

See K.1001/4.

BASE

B7G

RATING			Note
Heater Voltage	(V)	6.3	D
Heater Current	(A)	0.3	D
Nominal Tuning Range	(cm)	8 to 16	A
Minimum Output Power between 9 and 11 cm	(mW)	300	
Minimum Output Power between 8 and 16 cm	(mW)	50	
Nominal Anode Voltage Range	(V)	100 to 360	B
Nominal Resonator Voltage Range	(V)	100 to 360	B
Maximum Screen Voltage	(V)	400	C
Maximum Screen Dissipation	(W)	1.5	
Maximum Resonator Dissipation	(W)	12	
Maximum Anode and Resonator Dissipation	(W)	15	

CONNECTIONS

Pin	Electrode
1	Grid 1
2	Cathode
3	Heater
4	Heater
5	Anode
6	Resonator
7	Grid 2

DIMENSIONS

See page 4.

NOTES

A. A permanent magnet is used to focus the electron beam, and is orientated so that the maximum current flows to the anode. Locating holes are provided so that the magnet alignment position is the same for all valves. The magnet should have a uniform field strength of approximately 1,000 oersteds, the service magnet being A.P. 58079.

B. The anode voltage should never be less than, but preferably approximately 20 volts positive to the resonator voltage.

C. The screen voltage should preferably not exceed the resonator voltage.

D. The valve normally has a 1,000 c/s heater supply.

To be performed in addition to those applicable in K.1001

	Test Conditions						Test	Limits		No. Tested	Note
	Vh (V)	Vg1 (V)	Va (V)	Vr (V)	Vg2 (V)	Ic (mA)		Min.	Max.		
a	6.3	0	0	0	0	0	Ih (A)	0.27	0.33	100%	2
b	6.6	-200	235 to 245	225	150	-	Reverse Ig1 (μA)	-	30	100%	
c	6.6	0	235 to 245	225	Adjust	65	(i) Vg2 (V) (ii) Ig2 (mA)	80 -	200 7	100%	
Tests 'd', 'e' and 'f' to be carried out in the test circuit on page 3.											
d	6.0	Vg2 (V): Adjust and record potentiometer position (P1)		Ia + r (mA): 24.5	X (ins.): 0.030 ±.002		(i) Range of R to maintain oscillation (kΩ)	12.5	13.3	100%	
							(ii) Max. detector current within above range (mA)	0.2	-	100%	
		R initially adjusted between 12.5 and 13.5 kΩ for max. crystal current at Ia + r = 24.5 mA.					(iii) Frequency of oscillation (fi) (Mc/s)	-	1875	100%	
e	6.0	Leave potentiometer at (P1)		-	0.350 ±.003		Range of R to maintain oscillation shall be at least 600 ohms within the limits 7.0 - 10.0 K ohms.	-	-	100%	
f	6.0	Leave potentiometer at (P1)		-	0.900 ±.005		(i) Range of R to maintain oscillation (kΩ)	2.4	3.0	100%	
							(ii) Max. detector current within the above range (mA)	1.5	-	100%	
							(iii) Frequency of oscillation (Mc/s)	3580 or 2 fi whichever is greater			

NOTES

1. Tests 'd', 'e' and 'f' to be carried out with DC supply conditions as shown in figure 1 (Page 3), and in an approved tuning cavity fitted with an approved detector unit (an approved tuning cavity is given in MAP drawing BTR91428 and an approved crystal detector unit is given in MAP drawing DTR88502). The crystal output circuit is to be 1000 resistive inclusive of meter.

   Dimension 'X' is from the inside surface of the valve end of the cavity to the most forward part of the plunger. (Fig. 2, Page 3).

2. The valve normally has a 1,000 c/s heater supply.

CV393

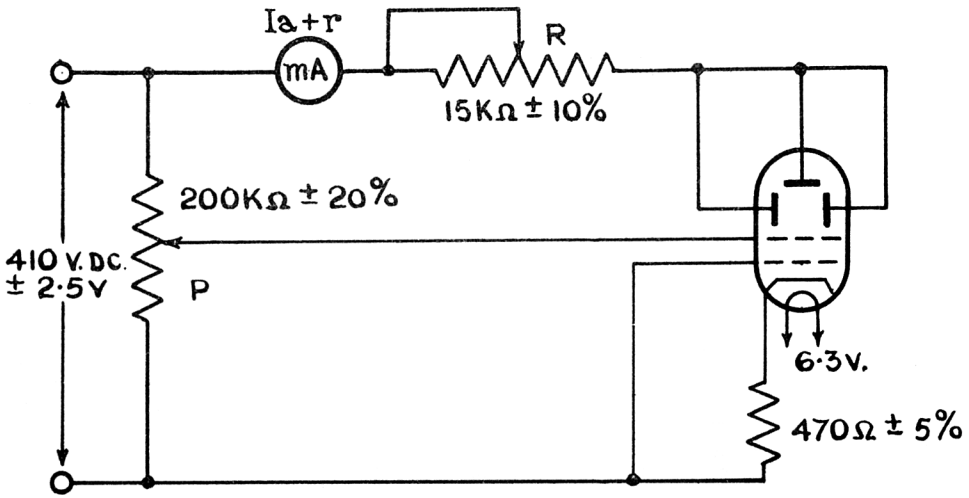


FIG.1

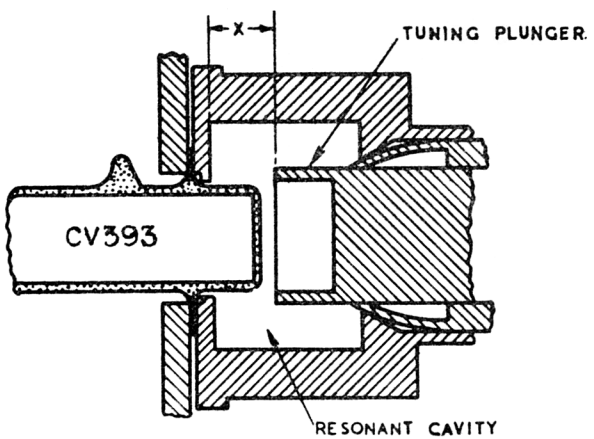
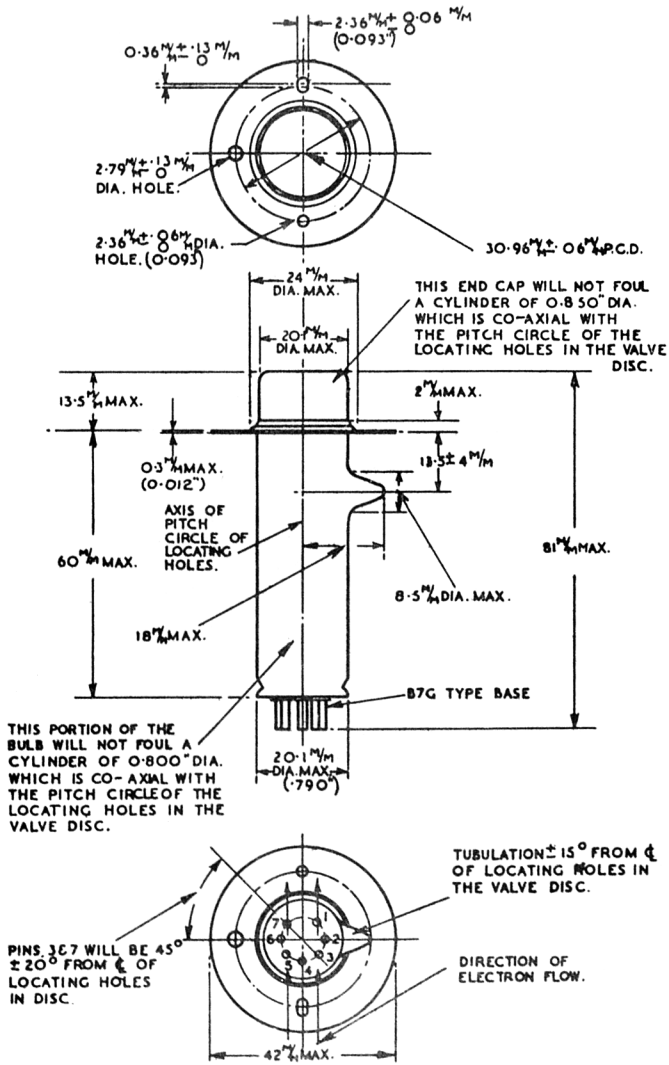


FIG.2


2·36 M/M ± 0·06 M/M (0·093")
0·36 M/M ± ·13 M/M
2·79 M/M ± ·13 M/M DIA. HOLE.
2·36 M/M ± ·06 M/M DIA. HOLE. (0·093")
30·96 M/M ± ·06 M/M P.C.D.
24 M/M DIA. MAX.
20·7 M/M DIA. MAX.
THIS END CAP WILL NOT FOUL A CYLINDER OF 0·850" DIA. WHICH IS CO-AXIAL WITH THE PITCH CIRCLE OF THE LOCATING HOLES IN THE VALVE DISC.
13·5 M/M MAX.
2 M/M MAX.
0·3 M/M MAX. (0·012")
13·5 ± 4 M/M
AXIS OF PITCH CIRCLE OF LOCATING HOLES.
60 M/M MAX.
81 M/M MAX.
8·5 M/M DIA. MAX.
18 M/M MAX.
B7G TYPE BASE
THIS PORTION OF THE BULB WILL NOT FOUL A CYLINDER OF 0·800" DIA. WHICH IS CO-AXIAL WITH THE PITCH CIRCLE OF THE LOCATING HOLES IN THE VALVE DISC.
20·1 M/M DIA. MAX. (·790")
TUBULATION ± 15° FROM ℄ OF LOCATING HOLES IN THE VALVE DISC.
PINS 3 & 7 WILL BE 45° ± 20° FROM ℄ OF LOCATING HOLES IN DISC.
DIRECTION OF ELECTRON FLOW.
42 M/M MAX.