Specification: G.P.O./CV 5293 Issue: 1, April 1964 To be read in conjunction with K 1001, BS 1409.	Security Specification: Unclassified Valve: Unclassified

← Indicates a change

Type of Valve: Travelling wave amplifier
Cathode: Indirectly heated
Envelope: Glass
Prototype: W7/3G

Marking
See K 1001/4

RATINGS and CHARACTERISTICS

(Not for Inspection purposes)
All limiting values are absolute

			Notes
Heater Voltage	(V)	6.3	
Heater Current (nom)	(A)	0.85	
First Anode Voltage, Va1 (nom)	(kV)	2	
Helix Voltage, Vhel (max)	(kV)	3.2	
Collector Voltage, Vcol (nom)	(kV)	Va2 + 0.05	
Collector Current, Icol (max)	(mA)	40	
First Anode Current, Ia1 (max)	(μA)	500	
Helix Current, Ihel (max)	(mA)	3	
Pre-heating time (min)	(Sec)	120	
Power Output	(W)	5	A
Cold Transmission Loss (min)	(db)	50	
Air Cooling	(cu.ft/min)	15	
Min Frequency range of operation	(Mc/s)	3600 -4200	

Base (Flying Leads)

Connections

Lead	Colour	Electrode
1	Yellow	1st Anode
2	Black	Heater and Cathode
3	-	I.C. to base flange
4	Green	Heater
Base Flange	-	2nd Anode and Helix
T.C.	-	Collector

Dimensions

See Drawing on Page 4

NOTES A. With a 15 mW Input or less

CV5293

TESTS

To be performed in addition to those applicable to K 1001

Test Clause	Test Conditions					Test & Units	Limits		Insp. Level
	Vh (Volts)	Va2 (Volts)	Va3 (Volts)	Ia3 (mA)	Deflector coils current ILA, ILB(mA)		Min	Max	
a See Note 1	6·3					Heater Current (amps)	0·7	0·9	100%
b See Notes 1, 2, 9	6·3	3000	3050	40	I optimum < 70 mA	Ia2 Focusing current (mA)	-	3·0	100%
c See Notes 1 & 9	6·3	3000	3050	40	I optimum	Ia1 current (mA)	-	300	100%
d See Notes 1, 9	6·3	3000	3050	40	I optimum	Gun impedance (Volts)	1750	2250	100%
e See Notes 1, 3, 9	6·3	3000	3050	47	I optimum	No oscillation should be detected	-	-	100%
f See Notes 4, 5	6·3	Record	Va2 +50	40	I optimum	Optimum Va2 (Volts)	2800	3100	100%
g See Notes 1, 9	6·3	Va2 Opt.	Va2 + 50	40	I optimum	Input for 5W output (mW)	-	15	100%
h See Notes 1, 6, 9	6·3	Va2 Opt.	Va2 + 50	40	I optimum	Max. power output (Watts)	7·0	-	100%
j See Notes 1, 7, 9	6·3	Va2 Opt.	Va2 + 50	40	I optimum	Band of output match to 5% Voltage reflection points	15 Mc/s	-	100%
k See Notes 1, 9	6·3	Va2 Opt	Va2 + 50	40	I optimum	Band of Input match to 5% Voltage reflection points	15 Mc/s	-	Q.A. only
l See Notes 1, 8, 9	0	0	0	0		Cold attenuation (db)	50	-	100%

NOTES

1. Tests a to l inclusive to be carried out in a circuit approved by the Type Approval Authority. Tests should not commence until 2 minutes after the valve heater has been switched on.

2. With Va1 set to give 2/3rds of Va2, Va2 should be gradually increased to 3000V, ILA and ILB being adjusted for minimum Ia2 and Va1 being finally adjusted to give Ia3 = 40 mA. Ia2 should not be permitted to be greater than 4 mA.

3. On making this test Va2 and Va3 shall be swept at 50 c/s by 200 V.R.M.S. and the output from a crystal shall be viewed on an oscilloscope as the vertical deflection, with a voltage of the same phase and frequency providing the horizontal deflection. Ia3 shall be adjusted to 47 mA and the matching flags mistuned. Oscillations, if present, are apparent on the oscilloscope trace. During this test the circuit shall be lightly tapped with a 5/8" diameter paxolin rod 6" long. The free end of the rod must travel a distance of 3".

4. Valves shall satisfy tests f to l at all frequencies in the band 3600-4200 Mc/s.

5. This test shall be carried out with an input less than 5 mW, with the matching flags adjusted for maximum gain. The output may be viewed on the oscilloscope or as a crystal current.

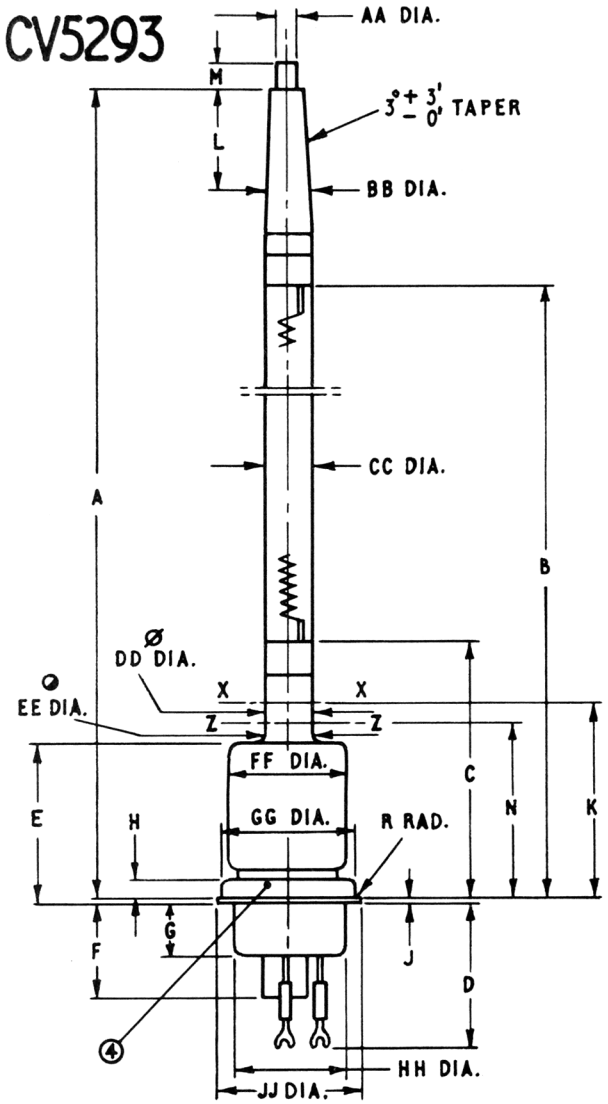
6. Ia2 should be observed during this and the previous test. Should it rise above 3 mA and be impossible to reduce by varying I_{LA} and I_{LB} the tube must be rejected.

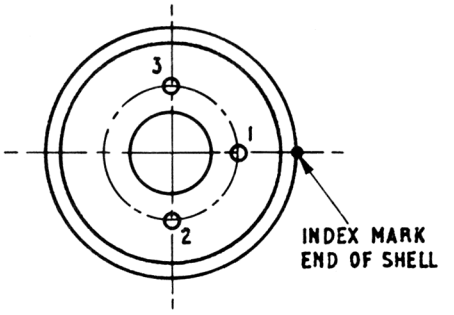
7. For tests j and k, with 25 mW input power, the output and input matches are adjusted for minimum voltage reflection.

8. During this test the circuit shall be lightly tapped with a 5/8" diameter paxolin rod 6" long. The free end of the rod must travel a distance of 3".

9. Focus Coil Current I_L = 300 mA.

CV5293

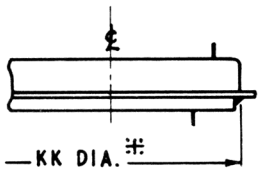




INPUT CHOKE SPIGOT, INDEX MARK & PIN No.1 WILL NOT DEVIATE FROM A COMMON ℄ BY MORE THAN 15° IN EITHER DIRECTION

DIAMETERS AA, CC, DD, EE, FF, LIE ON THE ℄ OF BB & GG AND DEFINE THE MAXIMUM LIMITS OF THE ENVELOPE

⌗ DENOTES:- SOLDER IS RETAINED WITHIN THIS LIMIT
✱ DIM. CC DIA. APPLIES BETWEEN LINE X—X AND COLLECTOR END OF BULB
Ø DIM. DD DIA. APPLIES BETWEEN X—X & Z—Z
◎ DIM EE DIA. APPLIES BETWEEN LINE Z—Z & TOP OF BULB



LEAD	COLOUR	ELECTRODE
1	YELLOW	1ST ANODE
2	BLACK	HEATER & CATHODE
3	GREEN	HEATER
4	———	2ND ANODE & HELIX

NOTE :- BASIC FIGURES ARE INCHES

DIM	MILLIMETRES	INCHES	DIM	MILLIMETRES	INCHES
A	372·54 ± 0·63	14·667 ± 0·025			
B	317·07 ± 0·038	12·483 ± 0·015			
C	72·59 ± 0·89	2·858 ± 0·035	AA	8·25 MAX.	0·328 MAX.
D	50·8 ± 1·58	2·000 ± 0·062	BB	10·92	0·430
E	44·57 MAX.	1·55 MAX.	CC	13·46 MAX.	0·530 MAX.
F	25·4 MAX.	1·000 MAX.	DD	14·47 MAX.	0·570 MAX.
G	19·1 MAX.	3/4 MAX.	EE	15·87 MAX.	0·625 MAX.
H	4·75 MIN	0·187 MIN.	FF	34·67 MAX.	1·365 MAX.
J	0·51 ± 0·08	0·020 ± 0·003	GG	36·20 ± 0·18	1·425 ± 0·007
K	50·69 MAX.	1·990 MAX.	HH	33·3 MAX.	1 5/16 MAX.
L	23·81 ± 1·59	15/16 ± 1/16.	JJ	38·35 ± 0·25	1·510 ± 0·010
M	6·35 ± 0·76	0·250 0·030	KK	36·32 MAX.	1·430 MAX.
N	47·36 MAX.	1·865 MAX.			
R	0·30 MAX.	0·012 MAX.			