VALVE ELECTRONIC

CV2358

GENERAL POST OFFICE: E-IN-C (S)

Specification: GPO/CV.2358..../Issue 1. Dated: **February 1955.** To be read in conjunction with K 1001	SECURITY Specification: **Unclassified** Valve: **Unclassified**

TYPE OF VALVE: **Travelling wave amplifier**

CATHODE: **Indirectly heated**

ENVELOPE: **Glass**

PROTOTYPE: **W7/1D. & VX7039**

MARKING: See K 1001/4

BASE: **I.O.**

RATING			Note
Heater Voltage	(V)	6.3	
Heater current	(A)	~~0.85~~ 0.76	
First anode voltage Va 1	(kV)	0.85	A
Helix voltage (max.) Va 2	(kV)	1.6	B
Collector voltage Va 3	(kV)	Va2+50	
Cathode current (max.)	(mA)	6	
Collector current	(mA)	4	
First anode current (max.)	(uA)	250	
Second anode & helix current (max.)	(mA)	2	
Output (max.)	(mW)	120	
Bandwidth (min)	(Mc/s)	1000	C
Wavelength	(cms)	6.5 to 8.5	
Amplification (min).	(db)	19.5	D

CONNECTIONS

Pin	Electrode
1	No connection
2	Heater
3	No pin
4	1st anode
5	No pin
6	2nd anode & helix
7	No pin
8	Heater & cathode
Top Cap.	3rd anode.

DIMENSIONS

See drawing on Page 3

NOTES A. **The first anode draws negligible current and may be supplied by a potentiometer connected between the helix supply & cathode**

B. **The optimum helix voltage for individual valves lies between 1.3 & 1.5 KV.**

C. **Between 3 db power points.**

D. **For small signal levels. At maximum output it is approximately 3 db lower.**

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TESTS.

To be performed in addition to those applicable in K1001

	Test condition						Test	Limits		No. tested	Note
	Vh (V)	Va1 (V)	Va2 (V)	Va3 (V)	IC (mA)	Ia3 (mA)		Min	Max		
a	Physical inspection						All valves shall conform to the dimensions stated on drawing on Page 3	-	-	100%	
b	6.3	-	-	-	-	-	Heater current (A)	0.64 ~~0.73~~	~~0.88~~ ~~0.97~~	100%	1,2
c	6.3		1400	1450	6		1st anode voltage (V)	480	1220	100%	1.
d	6.3		1400	1450		4	Cathode current (focusing) (mA)	-	6.5	100%	1,3
e	6.3		1400	1450		4	1st anode current (mA)	-	250	100%	1.
f	6.3			Va2 +50		4	Optimum 2nd anode voltage (V)	1280	1520	100%	1,4
g	6.3		Opt.	Va2 +50		4	Amplification at not more than 10 uW input at 7.5cms(db)	19.5	-	100%	1,5
h	6.3		Opt.	Va2 +50		4	Maximum power output (mW)	90	-	100%	1,6
j	~~4.5~~ 5.5	As in test C	1400	1450			Cathode current (emission) (mA)	3.8	-	100%	1,7
k	2nd anode & helix to 1st anode + cathode + heater						Inter electrode capacitance (pF)	6.0	7.5	100%	1.

Notes 1. The tests are to be performed in an approved circuit.

2. The heater current shall be read not less than one minute after switching on heater.

3. At a cathode current of 2 mA, the valve shall be first focused by adjustment of the deflector coil current, such that Ia3 is maximum.

4. Va2 shall be adjusted to give maximum gain at a wavelength of 7.5cms.

5. The tuning pistons shall be adjusted for maximum gain.

6. IA3 shall be adjusted to 4 mA and the helix voltage to its optimum valve using an input signal of less than 100 uW. The standing-wave ratio in the output waveguide shall be less than two to one.

7. The reading of Ic shall not be taken until 1 min. after reducing Vh to ~~4.5~~ 5.5 volts.

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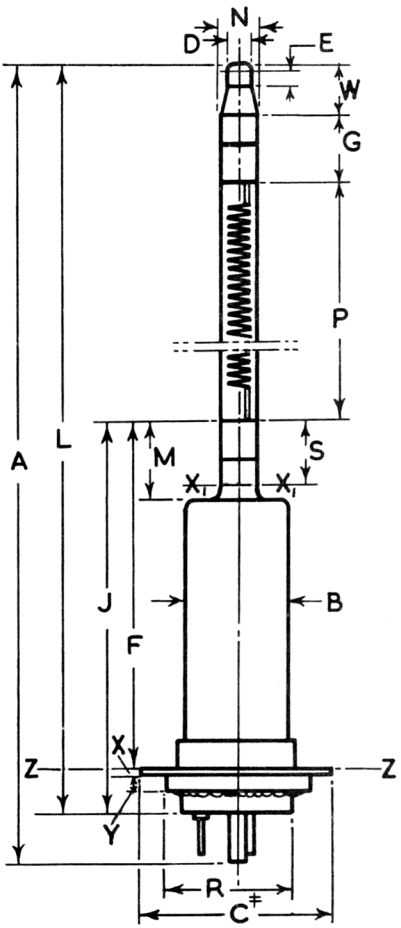

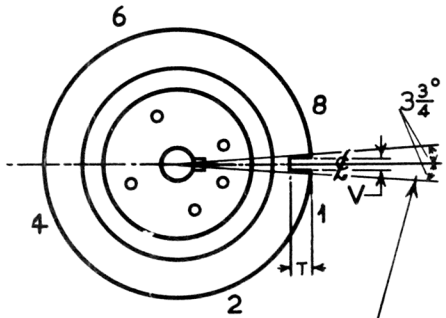

RING KEYWAY & BASE KEY SHALL NOT DEVIATE FROM A COMMON ℄ BY MORE THAN 3¾° IN EITHER DIRECTION.

NOTE 1:–

‡ ALIGNMENT RING (DIM. C) SHALL NOT FOUL A CYLINDER OF 2·651" INT. DIA. WHICH IS CONCENTRIC WITH AXIS OF TUBULAR PORTION 'P'

NOTE 2:–

PERIPHERY OF ALIGNMENT RING (DIM C) SHALL NOT DEVIATE FROM PLANE Z–Z BY MORE THAN ± 0·015."

DIM	MILLIMETRES	DIM	MILLIMETRES
A	350·8 MAX.	N	9·83 MAX.
B	30·2 MAX.	P	190·50 ± 0·51
C	66·52 ± 0·05	R	46 ± 0·8
D	7·92 ± 0·05	S	9·5 MIN.
E	5·5 ± 1·6	T	3·18 ± 0·25
F	87·31 ± 0·38	V	1·65 + 0·25 − 0·00
G	19·1 ± 2·4		
J	104·8 ± 3·2	W	14·3 ± 1·6
L	336·6 MAX.	X	4·75 ± 0·12
M	20·6 ± 3·2	Y	7·92 ± 0·25

SOECIFICATION VALVE ELECTRONIC CV.2358, ISSUE 1
DATED: FEBRUARY 1955
AMENDMENT NO.1

PAGE 1.

Rating

Change heater current from 0.85A to 0.76A

PAGE 2.

Tests

(b) Change minimum from 0.73A to 0.64A
and maximum from 0.97A to 0.88A

(j) Change Vh = 4.5V to Vh = 5.5V

Note 7 Change Vh to 5.5 Volts

T.V.C. Office
for G.P.O.

10th September, 1958
N.43712R