VALVE ELECTRONIC **CV 41**

MINISTRY OF SUPPLY (S.R.D.E.)

Specification: MOS/CV41/Issue 6 Dated: 21.4.48 To be read in conjunction with K1001 ignoring clauses 5.2, 5.3, 5.7 and 5.8	SECURITY Unclass Specification ~~Restricted~~	Valve Unclassified ←

→ indicates a change

TYPE OF VALVE:- Resonant magnetron air-cooled. CATHODE:- Indirectly heated. ENVELOPE:- Metal-Glass. PROTOTYPE:- E1267	MARKING See K1001/4 ← Additional marking:- Serial No ..... (Note A)

RATING			Note	BASE
				None
Heater voltage	(V)	6.0		CONNECTIONS & DIMENSIONS
Heater current	(A)	7.0		
Max. anode dissipation	(W)	1000		
Wavelength	(cms)	10.70 ±0.2	A	
Typical Operating Conditions.				See
Peak anode voltage	(KV)	25	B	Drawings
Peak anode current	(A)	40	B	
Average output peak power	(KW)	170	B	Pages
Magnetic field.	(oersteds)	860	B	
Approximate Air blast	(cub.ft /min)	100	B	4 & 5

NOTES

A: The valve shall be marked according to the wave-length band in which it falls, viz:-

Wavelength.	Marking
10.56 ± 0.07 cms.	CV41A
10.70 ± 0.07 cms	CV41B
10.84 ± 0.07 cms	CV41C

where CV41 is specified without qualification, valves with any of these markings will be accepted.

B: These operation conditions refer to a sensibly square pulse shape, 1 microsec duration, repetition rate 500 cycles per second (max), and during operating and testing air must be blown through a fitting surrounding the fins. In no case shall the temperature of the anode exceed 140° C.

TESTS

To be performed in addition to those applicable in K1001

	Test conditions	Test	Limits Min.	Limits Max.	No. tested	Notes
a	Filament voltage 6.0 V.	If (A)	6.3	7.7	100%	
b	Peak Ia 40A, magnetic field 860 oersteds	Peak Va (KV)	-	27	100%	1
c	Peak Ia 40A, magnetic field 860 oersteds	(i) Value of wavelength (ohms)	10.49	10.91	100%	1a
		(ii) Presence of one wavelength	With matching adjustments as in Note 1 below, only 1 wavelength shall be generated either during each pulse or during successive pulses, and this wavelength shall be within the limits of wavelength laid down in C(i)		100%	1
d	Peak Ia 40A, magnetic field 860 oersteds	Value of power output (KW)	100	220	100%	1
e	(a) Peak Ia 40A. Magnetic field varied from 820 to 900 oersteds. (b) Magnetic field 860 oersteds. Peak Ia varied from 30 to 50A	Wavelength continuity	Wavelength shall show no sudden discontinuities		5%	1 2

NOTES

1. The test equipment is to be subject to approval by R.R.D.E., Ministry of Supply. The modulator is required to give sensibly square pulses of 1 microsec duration and a repetition frequency of 420 ± 40 c.p.s. and modulators type A453 or AS442 are recommended as giving a suitable waveform. In all tests (a) filament voltage = 6 volts, (b) air is to be blown through the anode fins to maintain the anode temperature below 140° C, (c) serious or continued flashing (external or internal) must not occur.

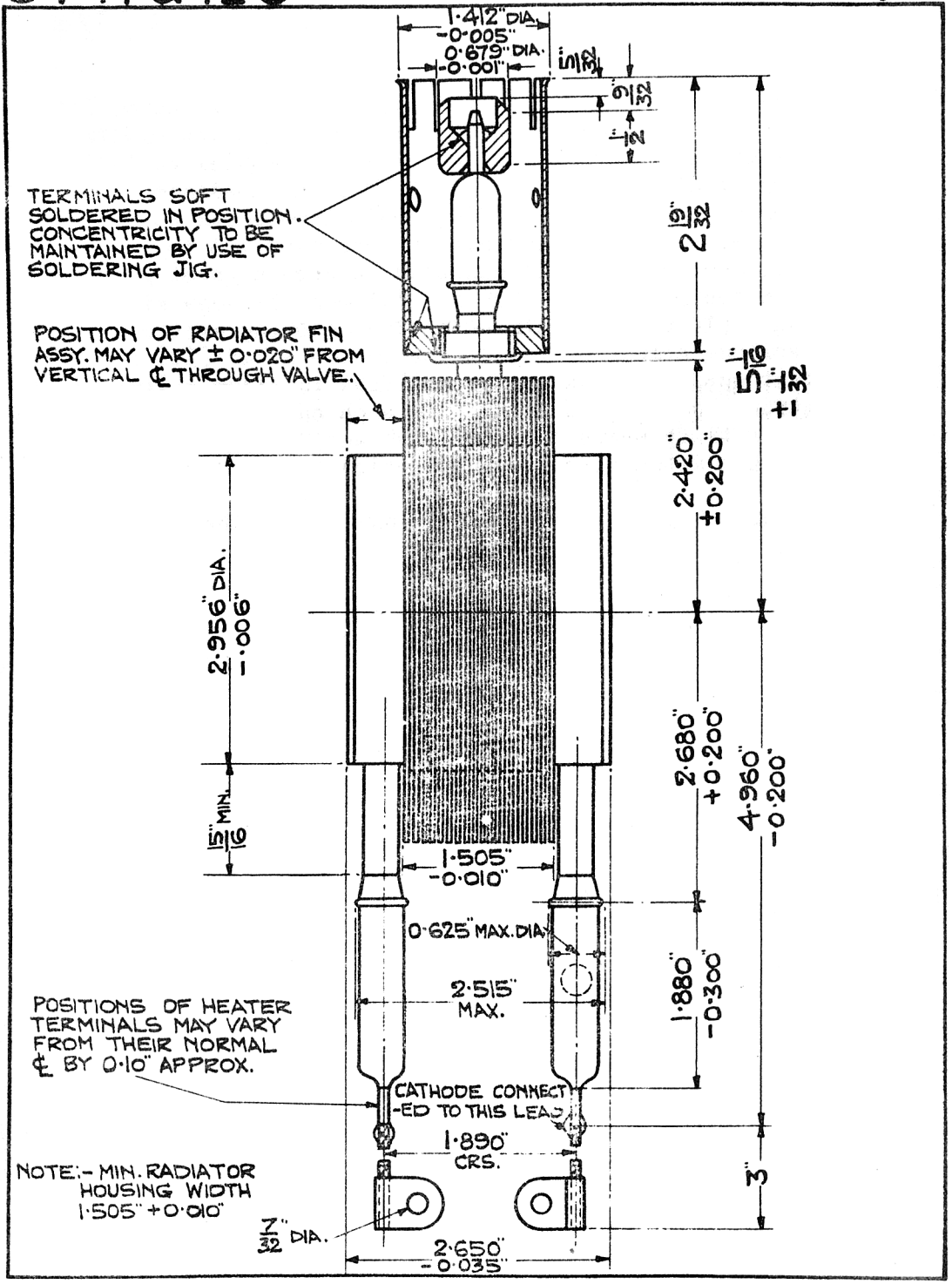
CV41

NOTES (Cont)

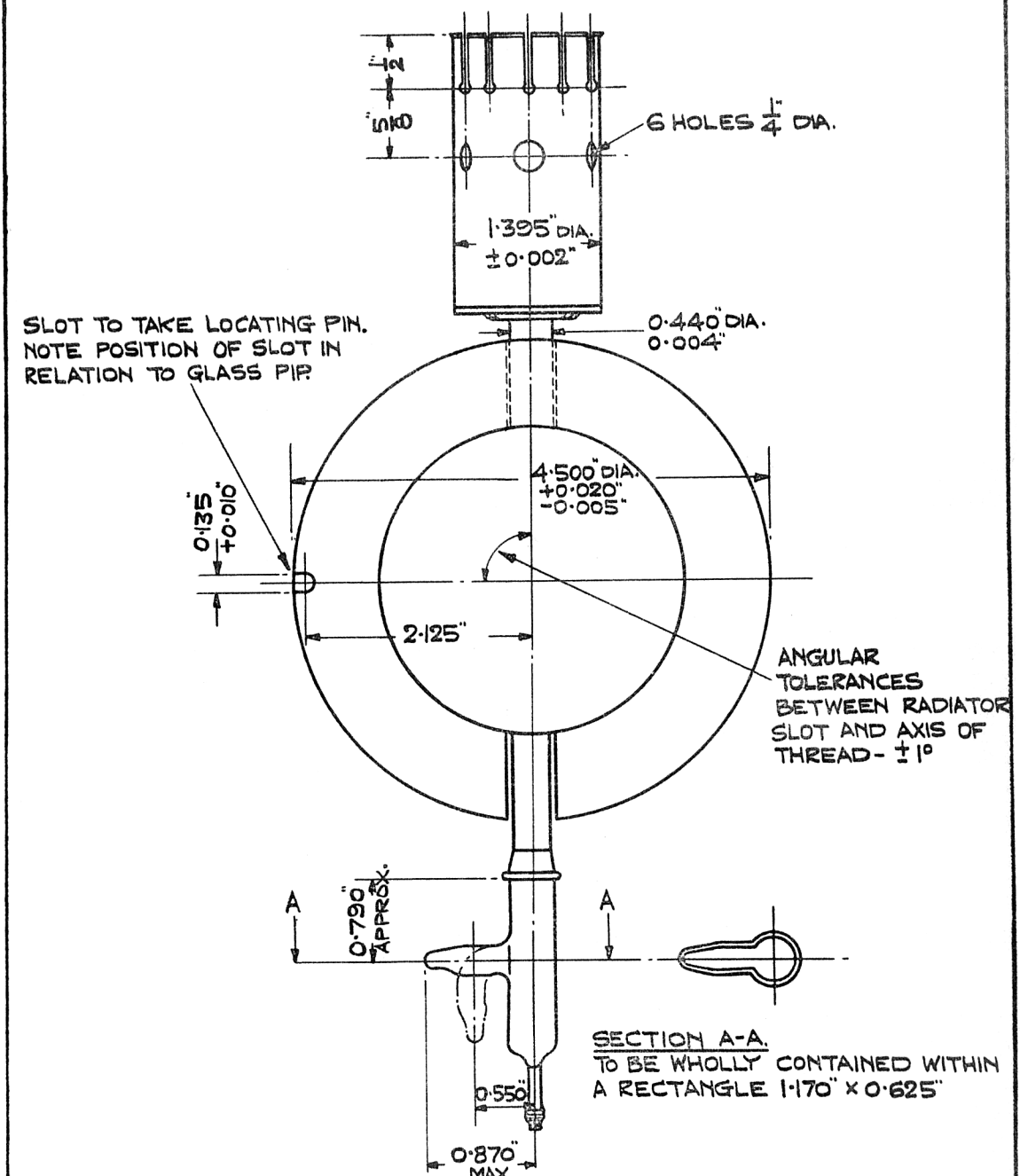
1. The power output shall be measured in a high frequency load system of a type consisting of a matching section electrically similar to that used in A.A. No. 3 Mk. II equipment followed by a length of concentric line of 40 ohms impedance (internal diameter of outer tubing 15/16 inch), terminated to give a standing wave ratio in voltage of less than 1.3 to 1. The matching section shall be adjusted to give highest power output, and tests "b", "c", "d" and "e" must be done with this setting. (If this adjustment of the matching sections leads to a serious number of rejections on tests "c" (ii) and "e", the test specification may be modified to allow a limited variation about this setting. In such cases, the valve would have to satisfy tests "b", "c", "d" and "e" for a single setting of the matching section controls).

2. The figure of 5% may be modified depending on the number of rejects.

CV41 & 120


1·412" DIA. -0·005"
0·679" DIA. -0·001"
TERMINALS SOFT SOLDERED IN POSITION. CONCENTRICITY TO BE MAINTAINED BY USE OF SOLDERING JIG.
POSITION OF RADIATOR FIN ASSY. MAY VARY ± 0·020" FROM VERTICAL ℄ THROUGH VALVE.
2·956" DIA. -·006"
15/16" MIN.
1·505" -0·010"
0·625" MAX. DIA.
2·515" MAX.
POSITIONS OF HEATER TERMINALS MAY VARY FROM THEIR NORMAL ℄ BY 0·10" APPROX.
CATHODE CONNECT -ED TO THIS LEAD
1·890" CRS.
NOTE:- MIN. RADIATOR HOUSING WIDTH 1·505" +0·010"
7/32" DIA.
2·650" -0·035"
2·420" ±0·200"
2·680" +0·200"
4·960" -0·200"
1·880" -0·300"
2 9/32"
5 5/16 -1/32 +1
3"

CV41 & 120


0.12"
0.510"
6 HOLES 1/4" DIA.
1.395" DIA. ±0.002"
SLOT TO TAKE LOCATING PIN. NOTE POSITION OF SLOT IN RELATION TO GLASS PIP.
0.440" DIA. 0.004"
4.500" DIA. +0.020" -0.005"
0.135" +0.010"
2.125"
ANGULAR TOLERANCES BETWEEN RADIATOR SLOT AND AXIS OF THREAD - ±1°
A
A
0.790" APPROX.
0.550"
0.870" MAX.
SECTION A-A.
TO BE WHOLLY CONTAINED WITHIN A RECTANGLE 1.170" × 0.625"