

Specification MAP/CV64/Issue 6 Dated 14.1.49 To be read in conjunction with K1001 ignoring clauses:- 5.2, 5.3, 5.8.	<table border="1"> <tr> <th colspan="2">SECURITY</th></tr> <tr> <td>Specification</td><td>Valve</td></tr> <tr> <td>UNCLASS.</td><td>UNCLASSIFIED</td></tr> </table>	SECURITY		Specification	Valve	UNCLASS.	UNCLASSIFIED
SECURITY							
Specification	Valve						
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→ Indicates a change

<u>TYPE OF VALVE</u> - Magnetron			<u>MARKING</u>	
<u>CATHODE</u> - Indirectly Heated			See K1001/4	
<u>ENVELOPE</u> - Copper			<u>PACKING</u>	
			See K1005	
<u>RATING</u>			<u>BASE</u>	
			None	
			<u>DIMENSIONS &amp; CONNECTIONS</u>	
			See drawing on page 3	
<u>TYPICAL OPERATING CONDITIONS</u>				
Peak Anode Voltage	(kV)	13.0	A	
Peak Anode Current	(A)	10.0	A	
Field Strength	(gauss)	1350		
Peak Power Output	(kW)	40	A	

NOTE

A:- When operating under these conditions the magnetron must be air-cooled such that the temperature of the block does not exceed 140°C.

To be performed in addition to those  
applicable in K1001

	Test Conditions			Test	Limits		No. Tested	Notes
	Field Strength (gauss)	Vh	Peak Ia (A)		Min.	Max.		
a	0	6.0	0	Ih (A)	1.0	1.5	100%	
b	1350 ± 25	6.0	10	Peak V <sub>a</sub> (kV)	12.0	14.5	100%	2
c	1350 ± 25	6.0	10	Output Frequency (Mc/s)	3288	3312	100%	2 & 3
d	1350 ± 25	6.0	10	Efficiency	20%	-	100%	2 & 4
e	1350 ± 25	6	10	Frequency Pulling (Mc/s)	-	10	T/A	2 & 5

**f COLD IMPEDANCE TEST**

A signal of the frequency of the magnetron as found in test (c) shall be fed into the cold magnetron through the output circuit shown in Fig.2. The position of the first maximum of the standing wave from the electrical reference plane (AA' on Fig1) of the valve shall be  $11.1 \pm 0.6$  cms.

**NOTES**

- For the above tests the temperature of the magnetron block shall not exceed 140°C.
- Test to be carried out with the valve feeding into an output circuit, the dimensions of which are given in Fig.2. The impedance of the line beyond DD' on the drawing shall be 78 ohms. The matching shall be adjusted for maximum power out when the centre line of the matching slug shall lie between the planes BB' and CC'. Modulation conditions shall be:-  
Pulse length 1  $\mu$ sec.  
Repetition frequency 2500 p.p.s.
- If in test (c) there is an unwanted mode, as shown by a continuous base line on the oscilloscope, the valve shall be deloaded to 80% of its maximum power, when the continuous base line shall have disappeared.
- If a valve which has once passed test (d) is re-tested for any reason, it shall be considered satisfactory if the measured output on re-test is within  $\pm 10\%$  of the original value.
- Frequency pulling shall be measured by varying the phase of a standing wave of ratio 1.5:1 through 180°, using the matching slug position found for maximum power.

## FIG 1

## NOTES FOR USERS

1. THE DIA. OF THE CIRCUIT TUBE OVER THIS LENGTH MUST NOT BE LESS THAN 0.667"
2. THE MINIMUM RADIATOR HOUSING WIDTH MUST BE .625"
3. THE NORMAL MAGNET AIR GAP IS 1.496"  $\pm$  0.004"

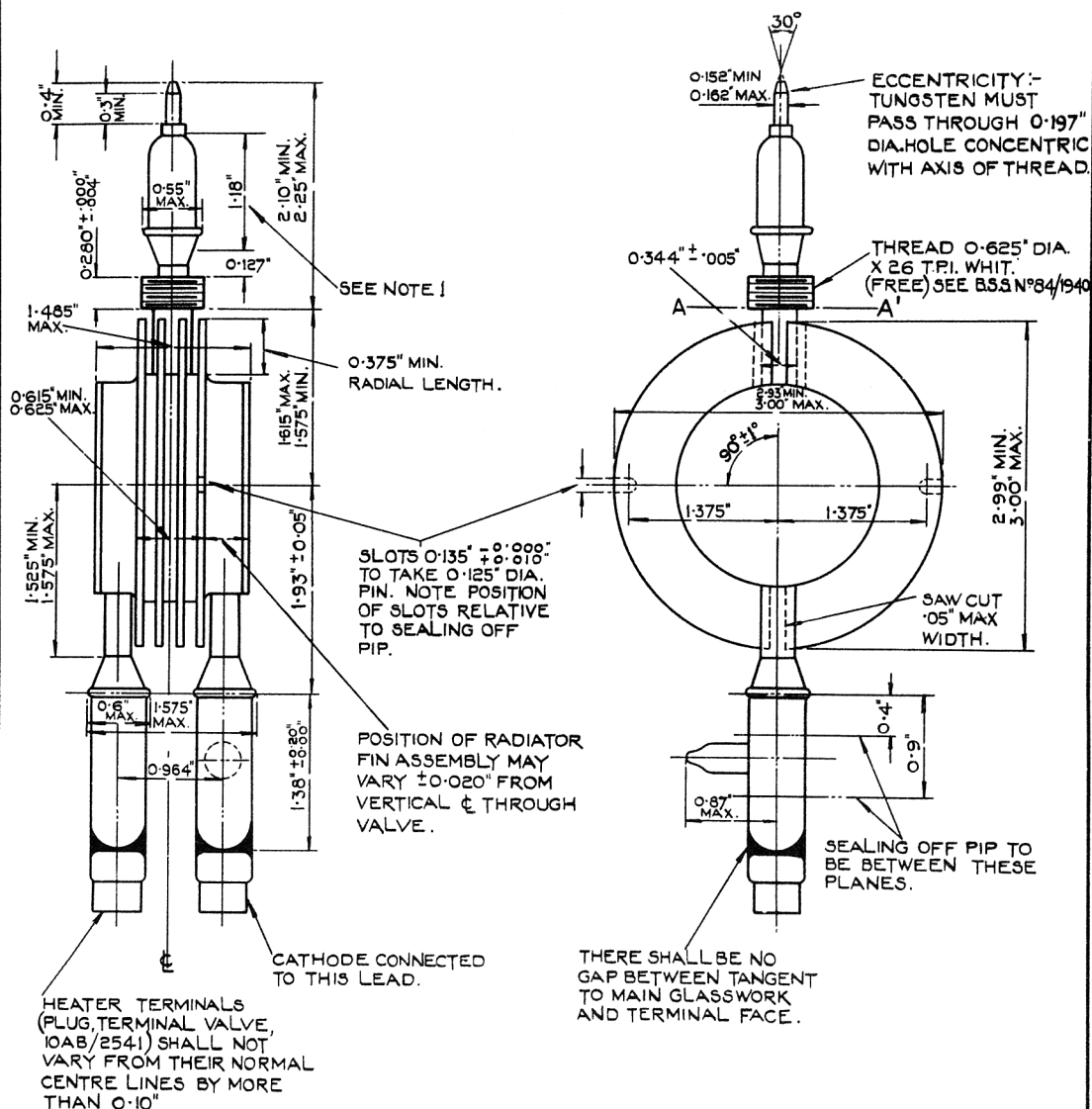
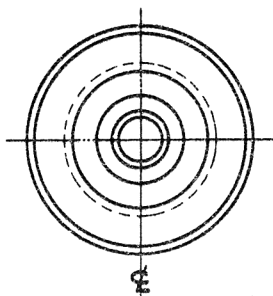
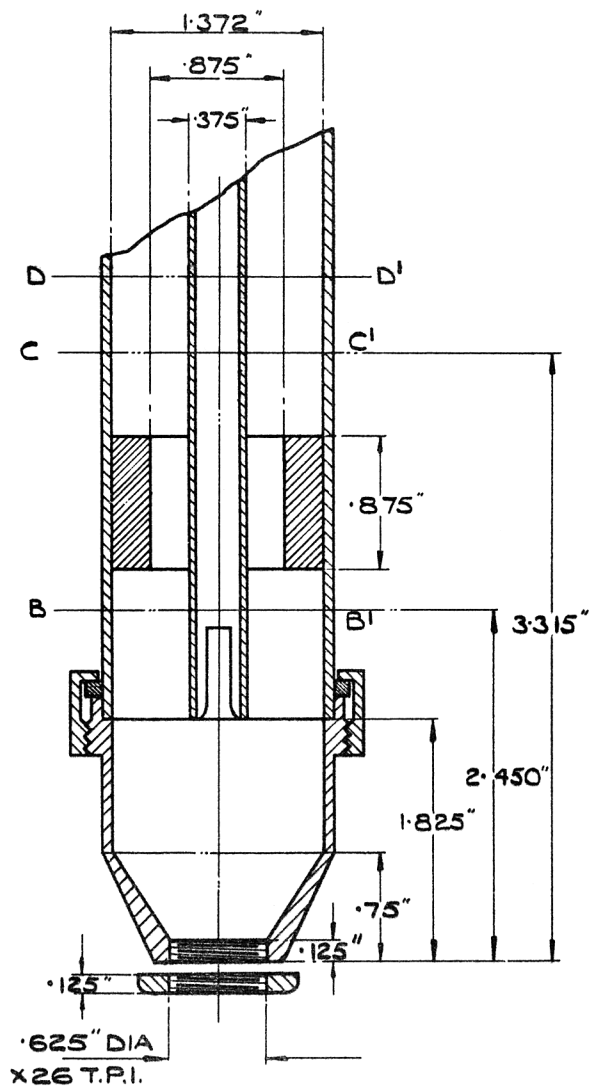


FIG 2.

ALL TOLERANCES ARE  $\pm 0.005"$