

Specification MOSA/CV2872 Issue 3 Dated 17.3.53 To be read in conjunction with K.1001	<u>SECURITY</u>	
	<u>Specification</u>	<u>Valve</u>
	UNCLASSIFIED	UNCLASSIFIED

→ Indicates a change

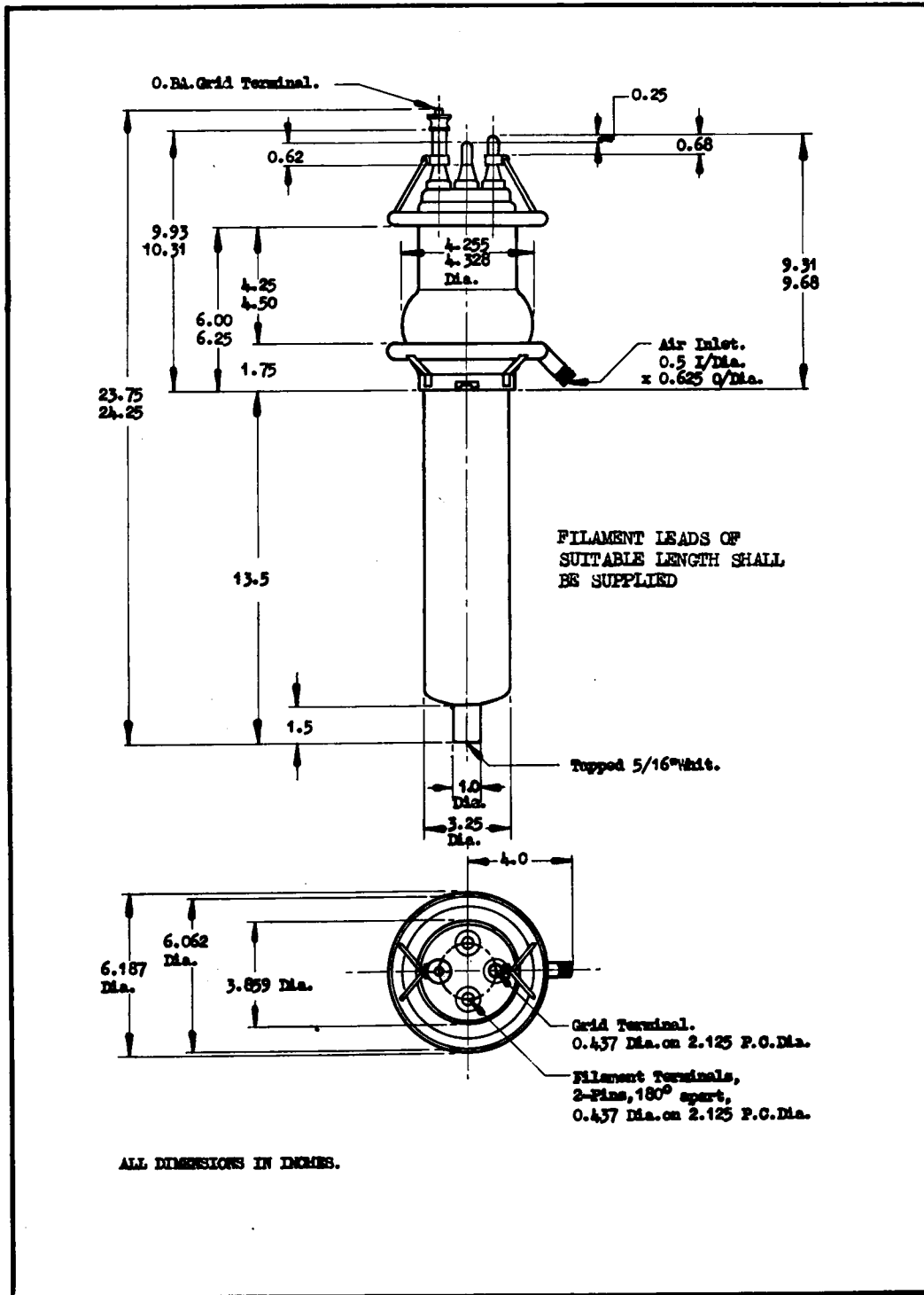
TYPE OF VALVE - Water Cooled, Transmitting Triode  CATHODE - Directly Heated Tungsten Filament  ENVELOPE - Metal-glass  PROTOTYPE - CAT.9, BW153	<u>MARKING</u>  See K.1001/4. Additional markings required (See Notes B & C) Serial No. .... Filament Volts .....																																												
<table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2" style="text-align: center;"><u>RATING</u></th> <th colspan="2" style="text-align: center;">Note</th> </tr> </thead> <tbody> <tr> <td>Filament Voltage (V)</td> <td style="text-align: center;">As marked</td> <td style="text-align: center;">A</td> <td></td> </tr> <tr> <td>Nominal Filament Current (A)</td> <td style="text-align: center;">100</td> <td></td> <td></td> </tr> <tr> <td>Max. Anode Voltage (kV)</td> <td style="text-align: center;">15.0</td> <td></td> <td></td> </tr> <tr> <td>Max. Anode Current (A)</td> <td style="text-align: center;">2.0</td> <td></td> <td></td> </tr> <tr> <td>Max. Continuous Anode Dissipation (kW)</td> <td style="text-align: center;">18</td> <td></td> <td></td> </tr> <tr> <td>Total Emission at 90% Saturation (A)</td> <td style="text-align: center;">12.0</td> <td></td> <td></td> </tr> <tr> <td>Amplification Factor</td> <td style="text-align: center;">45</td> <td style="text-align: center;">D</td> <td></td> </tr> <tr> <td>Anode Impedance (Ω)</td> <td style="text-align: center;">4,500</td> <td style="text-align: center;">D</td> <td></td> </tr> <tr> <td>Max. Operating Frequency at Full Ratings (Mc/s)</td> <td style="text-align: center;">3.0</td> <td></td> <td></td> </tr> <tr> <td>Max. Operating Frequency at Reduced Ratings (Va = 9 kV) (Mc/s)</td> <td style="text-align: center;">20.0</td> <td></td> <td></td> </tr> </tbody> </table>	<u>RATING</u>		Note		Filament Voltage (V)	As marked	A		Nominal Filament Current (A)	100			Max. Anode Voltage (kV)	15.0			Max. Anode Current (A)	2.0			Max. Continuous Anode Dissipation (kW)	18			Total Emission at 90% Saturation (A)	12.0			Amplification Factor	45	D		Anode Impedance (Ω)	4,500	D		Max. Operating Frequency at Full Ratings (Mc/s)	3.0			Max. Operating Frequency at Reduced Ratings (Va = 9 kV) (Mc/s)	20.0			<u>DIMENSIONS AND CONNECTIONS</u>  See drawings on pages 3 & 4
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<u>NOTES</u>  A. In operation, the anode must be surrounded by a suitable jacket to contain the circulating liquid, whose rate of flow should not be less than 4 1/2 gallons per minute. The filament seal and the anode seal require to be cooled, the former with 2 to 3 cu. ft. of air per minute and the latter with 5 to 10 cu. ft. of air per minute.  B. The marked voltage is defined in test clause "g" on page 2.  C. It is not essential that the additional marking shall appear within the frame.  D. Measured at Va = 12.0 kV, Vg = 0.																																													

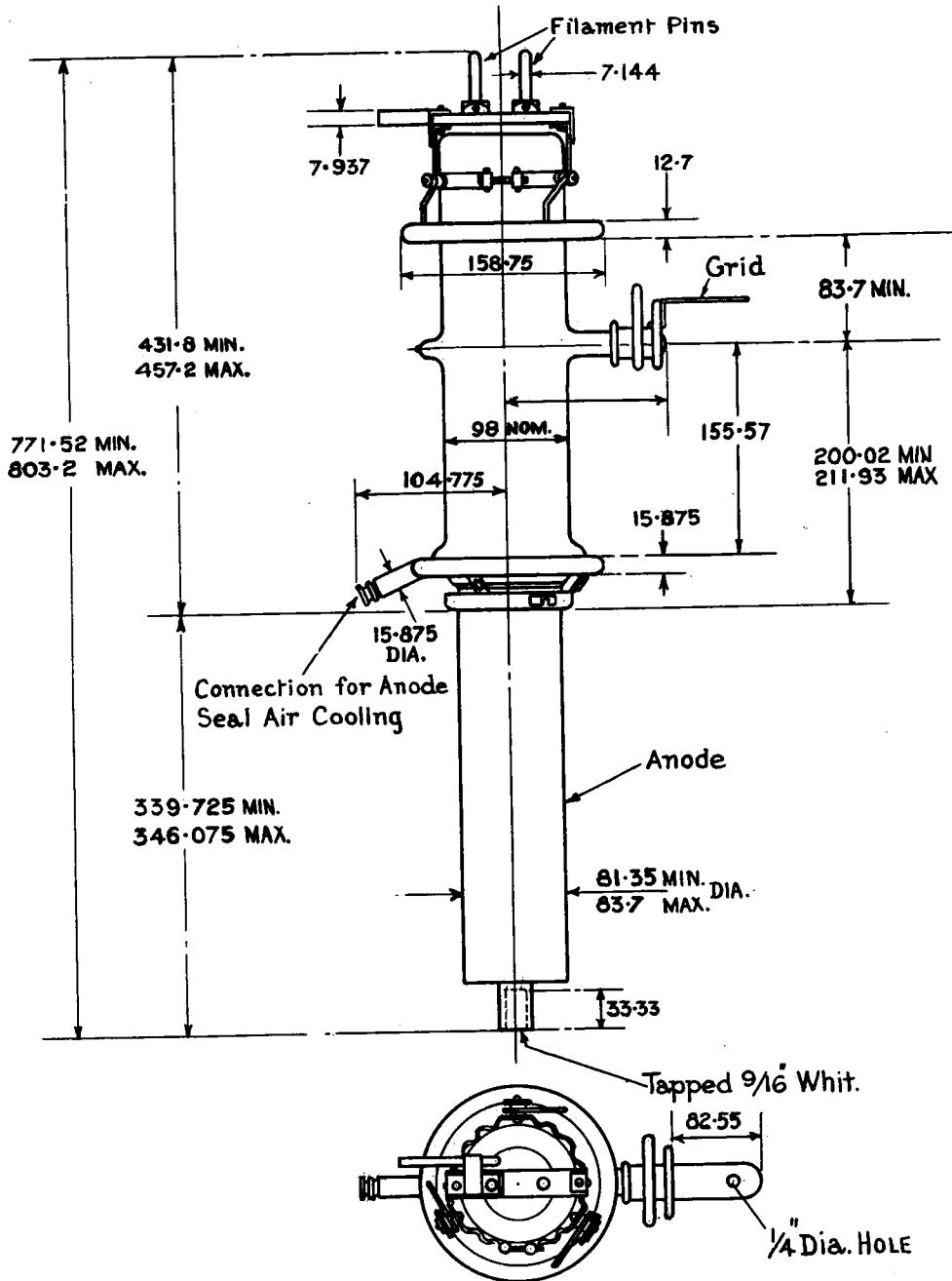
To be performed in addition to those applicable in K1001

	Test Conditions				Test	Limits		No. Tested	Notes
	Vf (A.C)	Va (KV)	Ia (A)	Vg		Min.	Max.		
a	18.5	0	0	0	If (A)	95	105	100%	
b	18.5	14.0	1.5	Adjust	1) Vg to be noted 2) Ig initially (μA) 3) Ig after conditions have been maintained for 10 mins. (μA)	-	150	100%	1
c	18.5	17.0	-	-	Oscillation efficiency	6%	-	100%	1&2
d	18.5	14.0	1.5	Adjust	1) Difference in output between Vg have read as recorded in test 'b' 2) Ig initially (μA) 3) Ig after conditions have been maintained for 10 mins. (μA)	-	4	100%	1
e	18.5	read	1.0	0	μ	40	50	100%	
		read	1.0	-100					
f	18.5	11.0	read	0	Ra (Ω)	4,000	5,250	100%	
		13.0	read	0					
g	Read	450V. applied to anode and grid strapped. Vf adjusted to give an emission current of 2.0A.			Recorded Vf ± 1.25 (V) (This is the marked voltage).	18.1	19.7	100%	3
h	18.5	4.0	-	See Note 4	Ig (A)	See Note 4			4

**Notes**

1. Test 'b', 'c' and 'd' must be performed in the order in which they appear in the test schedule, i.e. test 'b' shall be followed by test 'c' and test 'c' shall be followed immediately by test 'd'.
2. The oscillation test shall be performed in a suitable circuit with wavelength of oscillation not greater than 450 metres. The input power shall be approximately 25 kW., and the duration of the test shall be 20 mins. During the test the valve shall be free of flash arcs and hot spot heating of the glass and the output shall be steady.
3. This 'marked voltage' is the minimum value for 2.0A emission at 90% saturation.
4. Ig is measured at Vg = +200, +300, and +400 Volts respectively, the graphical representation of the results obtained show a sensibly linear curve.





ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED

CV2872/3/4