

MINISTRY OF SUPPLY - DLRD(A)/RRE

Specification KDS(A)/CV3659-62 Issue 1 Dated 29th January 1954 To be read in conjunction with K1001	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

<p>TYPE OF VALVE - Magnetron CATHODE - Indirectly-heated; oxide-coated; (See also Note A) ENVELOPE - Copper and glass PROTOTYPE - CV1479 (Booted version)</p>	<u>MARKING</u> See K1001/4 (See also Note D)																																													
<p style="text-align: center;"><u>RATING</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 20%; text-align: center;">Note</th> </tr> </thead> <tbody> <tr> <td>Heater Voltage (AC or DC)</td> <td style="text-align: center;">(V)</td> <td style="text-align: center;">5.0</td> <td style="text-align: center;">A</td> </tr> <tr> <td>Heater Current</td> <td style="text-align: center;">(A)</td> <td style="text-align: center;">2.6</td> <td style="text-align: center;">A</td> </tr> <tr> <td>Max. Anode Dissipation</td> <td style="text-align: center;">(W)</td> <td style="text-align: center;">600</td> <td style="text-align: center;">B</td> </tr> <tr> <td>Nom. Operating Frequency (Mc/s)</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">- CV3659</td> <td></td> <td style="text-align: center;">3045</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">- CV3660</td> <td></td> <td style="text-align: center;">3017</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">- CV3661</td> <td></td> <td style="text-align: center;">2992</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">- CV3662</td> <td></td> <td style="text-align: center;">2960</td> <td></td> </tr> </tbody> </table> <p><u>TYPICAL OPERATING CONDITIONS</u> (See Note C)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Peak Anode Voltage</td> <td style="text-align: center;">(kV)</td> <td style="text-align: center;">27</td> </tr> <tr> <td>Peak Anode Current</td> <td style="text-align: center;">(A)</td> <td style="text-align: center;">35</td> </tr> <tr> <td>Output Peak Power</td> <td style="text-align: center;">(kW)</td> <td style="text-align: center;">4.50</td> </tr> </tbody> </table>				Note	Heater Voltage (AC or DC)	(V)	5.0	A	Heater Current	(A)	2.6	A	Max. Anode Dissipation	(W)	600	B	Nom. Operating Frequency (Mc/s)				- CV3659		3045		- CV3660		3017		- CV3661		2992		- CV3662		2960		Peak Anode Voltage	(kV)	27	Peak Anode Current	(A)	35	Output Peak Power	(kW)	4.50	<p style="text-align: center;"><u>BASE</u></p> <p style="text-align: center;">See Drawing on Page 3.</p> <hr/> <p style="text-align: center;"><u>CONNECTIONS AND DIMENSIONS</u></p> <p style="text-align: center;">See Drawing on Page 3.</p> <hr/> <p style="text-align: center;"><u>MOUNTING POSITION</u></p> <p style="text-align: center;">Any</p>
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<p><u>NOTES</u></p> <p>A. $V_h = 5V$ for starting only; for normal running $V_h = 0$.</p> <p>B. During operation and testing, the magnetron must be air-cooled to ensure that the temperature of the anode block does not exceed $140^{\circ}C$.</p> <p>C. These figures apply for pulse operation under the following conditions:</p> <p style="text-align: center;">PRF = 500 pps; $T_p = 2$ or $0.7 \mu\text{sec}$; Pulse shape : Sensibly square; Field strength : 2300 ± 100 gauss.</p> <p>The magnetron is expected to operate with any field strength within this range. This point will be checked during Type Approval testing.</p> <p>D. In addition to the requirements of K1001/4, each magnetron shall be marked with a serial number.</p> <p>No technical information shall appear on the valve or its packaging.</p> <p>E. The magnetron shall be processed to ensure, as far as possible, that only brief ageing in the order of 5 mins or less is necessary when it is put into service.</p> <p>F. In use the cathode-lead side of the valve shall be adjacent to the north pole of the magnet.</p>																																														

Z.6402.R.

CV3659-62/1/1

To be performed in addition to those applicable in K1001

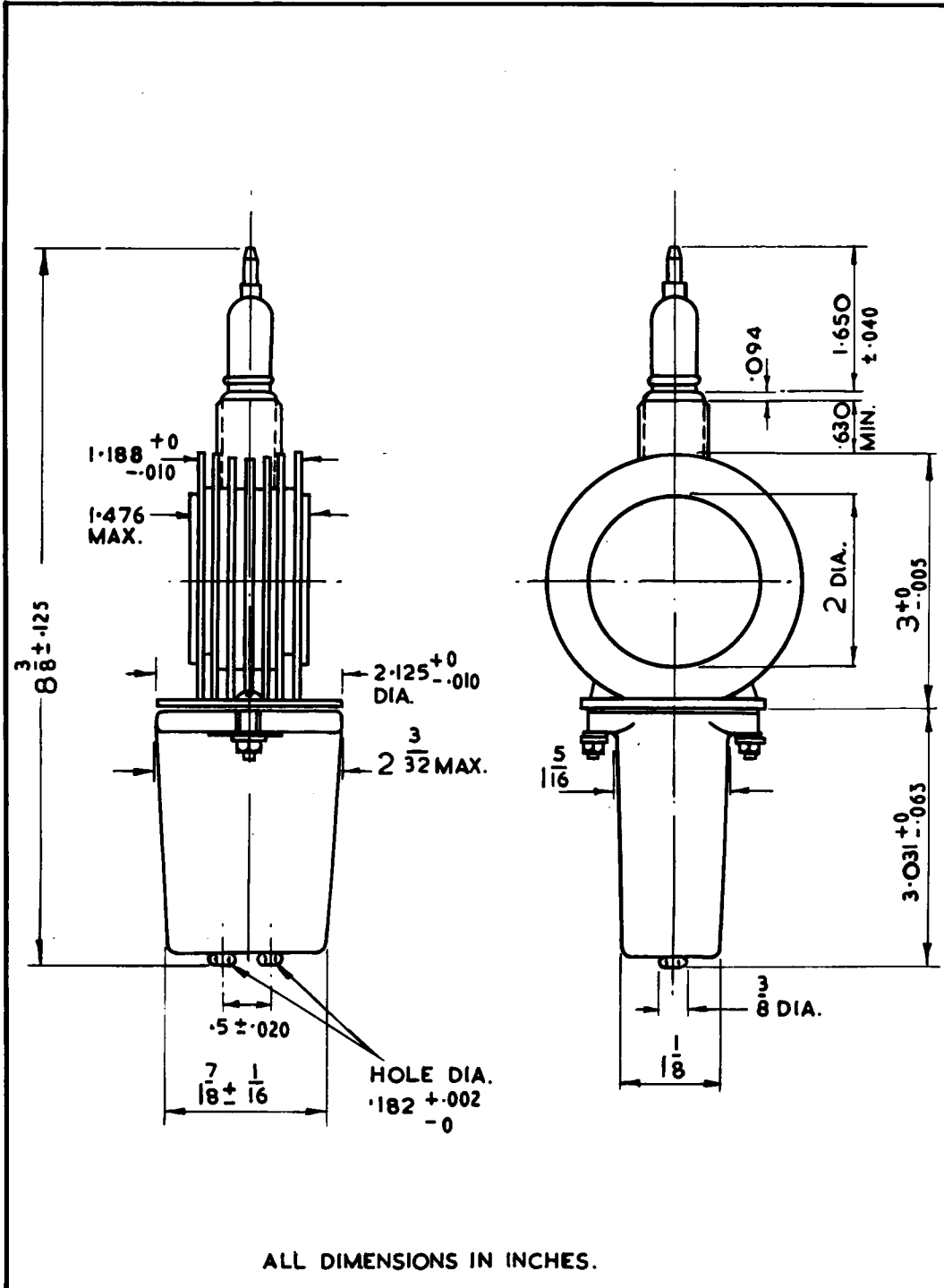
	Test Conditions		Test	Limits		No. Tested	Notes
	Vh (V)	Peak Ia (A)		Min.	Max.		
a	5.0	-	Ih (A)	2.3	2.9	100%	1
b	0	35	1. Peak Va (kV) 2. Frequency (Mc/s) CV3659 CV3660 CV3661 CV3662 3. Peak Output Power (kW)	24 3030 3005 2980 2940 400	30 3060 3030 3005 2980 -	100% 100%	2 2 & 3 2 & 4
c	0	Varied over the range from 30A to 40A Other conditions as for Test (b).	Frequency Continuity Change in frequency (Mc/s)	-	5	100%	2 & 5
d	Waveguide plunger adjusted to produce the maximum possible frequency change.		1. Average batch frequency change (Mc/s) 2. Max. individual frequency change (Mc/s)	- -	28 35	5% or 5	2 6

NOTES

- Vh = 5V for starting only; for normal running Vh = 0.
- The valve is to be pulse-tested in an approved circuit.

No serious or persistent flashing, internally or externally, shall occur during the test.

- Grouping and Re-measurement. If, on a single re-measurement a valve falls within an adjacent group, action shall be taken according to the extent of the discrepancy:
 - by not more than 6 Mc/s, the grouping remains unchanged;
 - by more than 20 Mc/s, re-group accordingly;
 - by an amount between 6-20 Mc/s: make three more re-measurements. If the average of the four measurements shows a discrepancy of less than 6 Mc/s, the grouping remains unchanged; if the average is more than 6 Mc/s, re-group accordingly.
- The output power shall be measured by an approved method.
The apparatus used for the measurement of output power shall be checked after every 500 valves tested, or once a month (whichever is the shorter period), against the calorimetric method of measurement.
- The frequency shall vary smoothly and without discontinuity.
- If the average frequency change over one month of production exceeds 28 Mc/s correcting action shall be taken, and the Approving Authority notified. However, deliveries may continue.



ALL DIMENSIONS IN INCHES.