

Specification M.O.A./CV.370  Issue 1, Reprint B, dated 23rd November, 1964.  To be read in conjunction with K1001, ignoring clauses 5.2, 5.3, 5.8.	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

—————> Denotes a change.

<u>TYPE OF VALVE</u> : Package Magnetron.  <u>CATHODE</u> : Indirectly Heated.  <u>PROTOTYPE</u> : Vx.9043	<u>MARKING</u>  As K1001/4, with the addition of a serial number.
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<u>RATING</u>	<u>DIMENSIONS AND CONNECTIONS</u>																														
Not for inspection purposes <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td style="text-align: right;">Note</td> </tr> <tr> <td>Max.Heater voltage. Volts RMS</td> <td style="text-align: right;">6.9 A</td> </tr> <tr> <td>Min.heater voltage. Volts RMS</td> <td style="text-align: right;">5.7 A</td> </tr> <tr> <td>Max.peak anode voltage. (kV)</td> <td style="text-align: right;">6.0 A</td> </tr> <tr> <td>Min.peak anode voltage. (kV)</td> <td style="text-align: right;">5.0 A</td> </tr> <tr> <td>Max.peak anode current. (A)</td> <td style="text-align: right;">5.5</td> </tr> <tr> <td>Min.peak anode current. (A)</td> <td style="text-align: right;">3.5</td> </tr> <tr> <td>Max.peak input power. (kW)</td> <td style="text-align: right;">33</td> </tr> <tr> <td>Min.peak input power. (kW)</td> <td style="text-align: right;">17.5</td> </tr> <tr> <td>Max.anode input power. (W)</td> <td style="text-align: right;">82.5</td> </tr> <tr> <td>Max.duty cycle for above rating.</td> <td style="text-align: right;">.0025</td> </tr> <tr> <td>Max.pulse duration. (<math>\mu</math>.sec)</td> <td style="text-align: right;">2.5</td> </tr> <tr> <td>Max.anode temperature. (<math>^{\circ}</math>C)</td> <td style="text-align: right;">140</td> </tr> <tr> <td>Nom.frequency. (Mc/s)</td> <td style="text-align: right;">924.0</td> </tr> </table>		Note	Max.Heater voltage. Volts RMS	6.9 A	Min.heater voltage. Volts RMS	5.7 A	Max.peak anode voltage. (kV)	6.0 A	Min.peak anode voltage. (kV)	5.0 A	Max.peak anode current. (A)	5.5	Min.peak anode current. (A)	3.5	Max.peak input power. (kW)	33	Min.peak input power. (kW)	17.5	Max.anode input power. (W)	82.5	Max.duty cycle for above rating.	.0025	Max.pulse duration. ( $\mu$ .sec)	2.5	Max.anode temperature. ( $^{\circ}$ C)	140	Nom.frequency. (Mc/s)	924.0	See Drawing, Page 5. <table border="1" style="margin-top: 20px;"> <tr> <td style="text-align: center;"><u>JOINT SERVICES CATALOGUE NO.</u></td> </tr> <tr> <td style="text-align: center;">5960-99-000-0370</td> </tr> </table>	<u>JOINT SERVICES CATALOGUE NO.</u>	5960-99-000-0370
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NOTE

A. The heater voltage shall be applied at least two minutes before the application of HF voltage.

TESTS

To be performed in addition to those applicable in K1001

Test Conditions					Test	Limits		No Tested	Note
Vh Volts RMS	Pulse Length ( $\mu$ -sec)	Rep. Freq. (per sec)	Mean Ia (mA)	Min		Max			
a	6.3	0	0	0	Ih Amps RMS	0.5	0.6	100% or S	2
b	6.3	1.0	1000	4.5	Va peak. (kV)	5.3	5.7	100%	3,4
c	6.3	1.0	1000	4.5	Frequency (Mc/s)	9210	9270	100%	3,4
d	6.3	1.0	1000	4.5	Efficiency	27.5%	-	100%	3,4
e	6.3	1.0	1000	4.5	Frequency pulling (Mc/s)	-	15	100%	3,5
f	6.3	1.0	1000	3.5 4.5 6.0	<u>Bandwidth</u> (Mc/s) 1. 2. 3.	- - -	3 3 3	100%	3,4, 6,
g	6.3	1.0	1000	Peak current varied over range 3.5 to 6.0 A.	There shall be no Mode Change	-	-	100%	3,4, 7,
h	6.3	2.5	400	Peak current varied over range 3.5 to 6.0 A.	There shall be no Mode Change	-	-	Q.A.	3,4, 7,
j	6.3	1.0	1000	Varied over the range 3.5 to 6.0 A.	<u>Dynamic Input Impedance</u> Change in Va peak (kV)	-	0.2	Q.A.	

<u>TESTS (Cont'd)</u>									
Test Conditions					Test	Limits		No Tested	Note
	Vh (V)	Pulse Length ( $\mu$ -sec)	Rep. Freq. (per sec)	Mean Ia (mA)		Min	Max		
k	6.3	1.0	1000	4.5	<u>Permanent Magnet Stability</u> Reduction in Va peak (kV)	-	0.1	Q.A.	8
l	6.3	1.0	1000	4.5	<u>Thermal Factor</u> Change in frequency (Mc/ $^{\circ}$ C)	-	0.25	Q.A.	
m	6.3	1.0	1000	4.5	<u>Low Temperature Operation</u> The valve shall operate satisfactorily at $-55^{\circ}$ C not more than 180 secs. between the application of Vh and Va. Valve to be at $-55^{\circ}$ C initially.			Q.A.	

NOTES

- For the above tests the temperature of the anode block shall not exceed  $140^{\circ}$ C.
- The valve shall be run with the heater on for not more than 2 minutes before the application of HF.  
The rate of rise of the voltage pulse shall exceed 60 kV/usec, when the valve is operating at 4.5A peak, the actual value above this minimum to be at the discretion of the manufacturer. The time of fall of the current pulse shall be less than 0.4  $\mu$ .sec., when measured between the points where the amplitude is 20% and 80% of the average amplitude over 80% of the flat portion of the top of the pulse.
- The valve shall be coupled by means of Flange Choke, Joint Services Catalogue No. 5985-99-083-0051 to wave guide of internal dimensions 0.4" x 0.9", which shall be terminated in a resistive load giving a standing wave voltage ratio better than 1.1

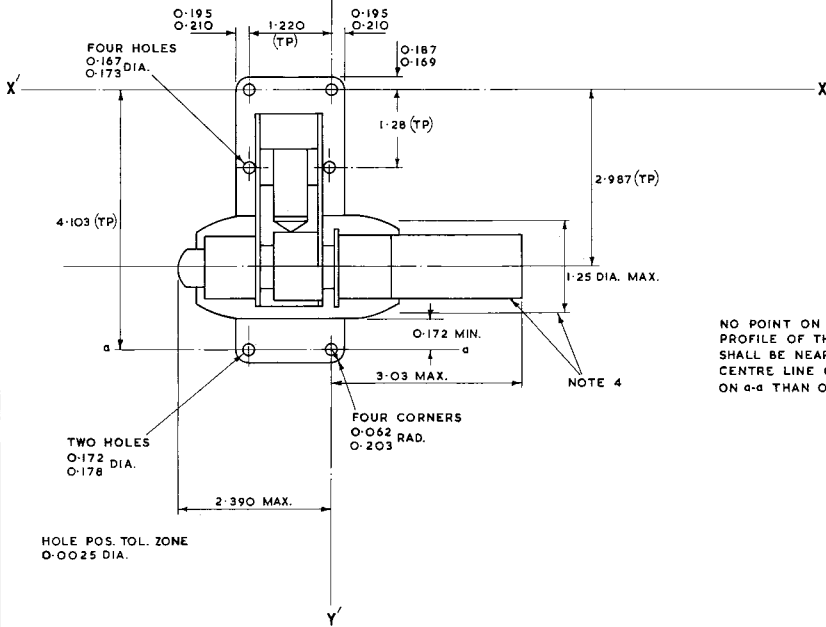
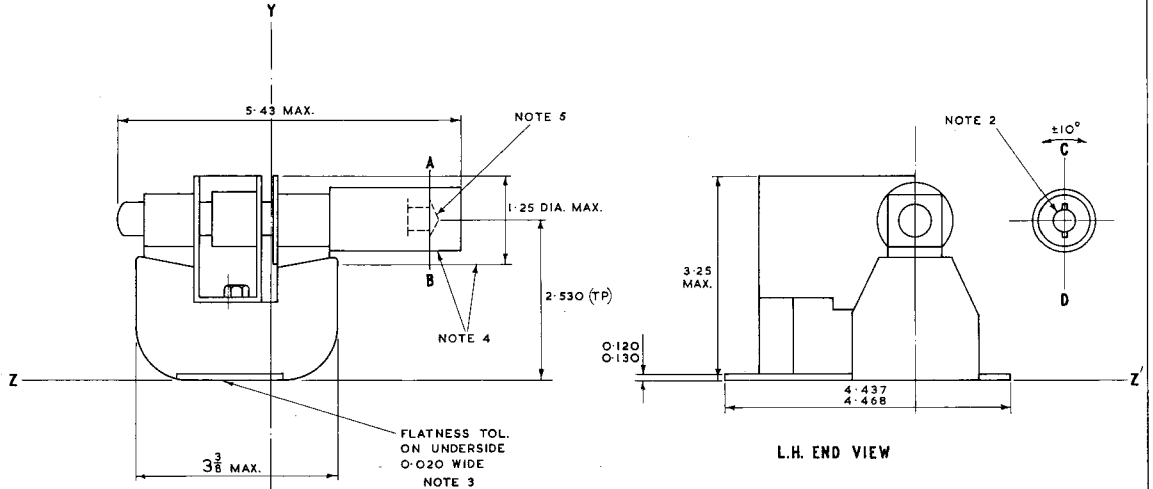
NOTES

5. Measured with the standing wave voltage ratio of 1.5 to 1.0 varied through all phases.
6. The RF bandwidth shall be measured at one quarter power by means of an RF Spectrometer.
7. No pulse shall be missing as viewed on a spectrum analyser. No double traces of voltage and current shall appear during a 5 sec. interval, as the peak current is varied over the specified range. A missing pulse meter may also be used at the discretion of the approving authority.
8. To be performed in apparatus described on Page 6 .
9. Frequency to decrease with increasing temperature.

DRAWING NOTES

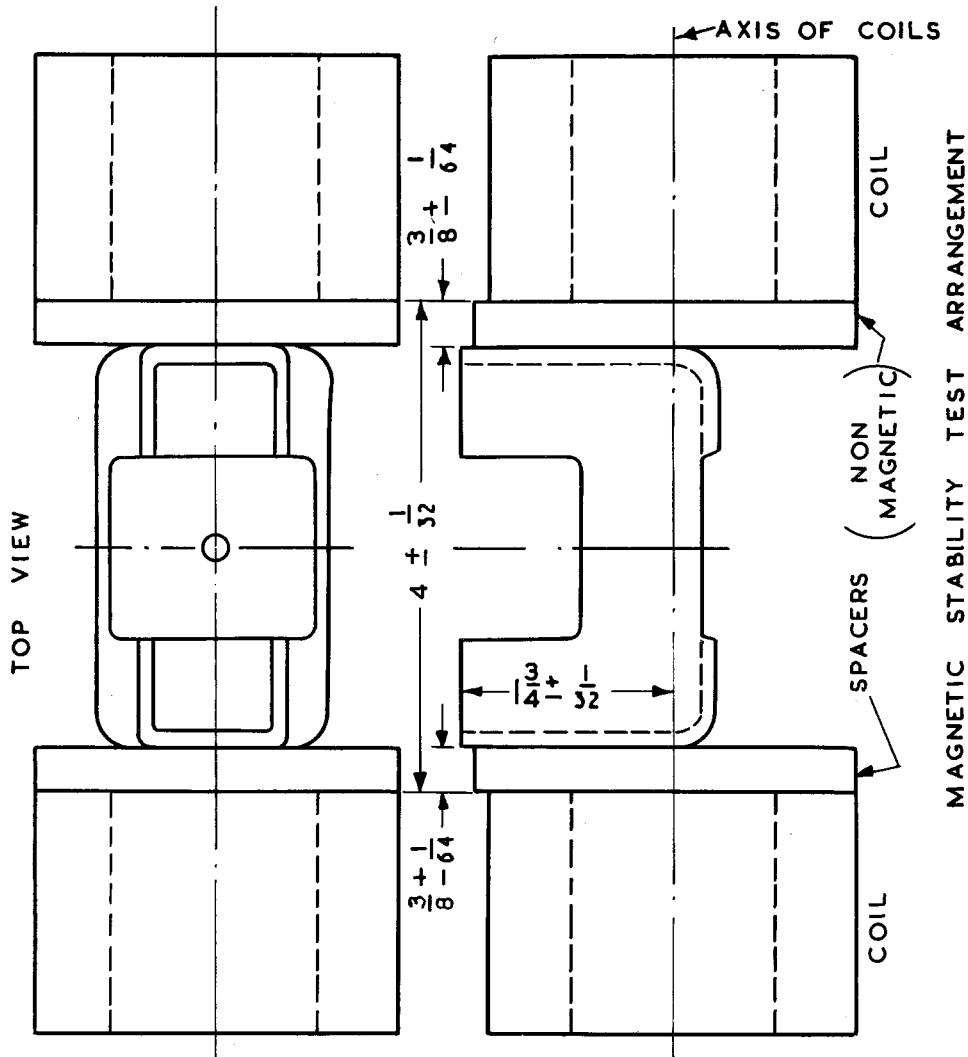
1. The planes XX', YY', ZZ' are mutually perpendicular.
2. Clearance between the inside surface of the cathode protector and the  $\frac{3}{8}$  Dia. bayonet base shall not be less than  $\frac{1}{8}$ ".
3. The mounting surface and interior surfaces of the waveguide shall be plated or otherwise protected against oxidisation in an approved manner.  
  
There shall be no projections out of the surface of the fixing sole.  
Holes for jiggling and magnet fixing are at the discretion of the manufacturer.
4. The cathode protector shall be inside the 1.25" diameter cylinder, defined by the (TP) dimensions 2.530" and 2.987" ; the axis of which lies in the plane XX' and is parallel to the plane ZZ' .
5. 0.84" I/D x 0.56" Deep, (min) with "Lamp Caps Ltd." Bayonet type Lamp Cap No.B9s, inside. Centre line AB thro' pins to be  $+10^{\circ}$  to vertical centre line CD.

OUTLINE NOTE I



NO POINT ON THE PLAN PROFILE OF THE MAGNET SHALL BE NEARER TO THE CENTRE LINE OF THE HOLES ON  $a-a$  THAN 0.172.

DIMENSIONS IN INCHES



THE COILS ARE AIR CORED & CYLINDRICAL, HAVING AN INNER DIAMETER OF  $1 - \frac{11}{16} \pm \frac{1}{64}$ , AND A LENGTH OF  $2 \pm \frac{1}{16}$ , GIVING AN OUTER DIAMETER OF APPROXIMATELY 3".

THE COILS ARE SO WOUND THAT WHEN THEY ARE CONNECTED IN SERIES ATTRACTING & PLACED WITH RESPECT TO THE MAGNET AS SHOWN IN THE DIAGRAM, 50V, 50c/s AD. WILL DEMAGNETISE A CVX370 MAGNET, WITH THE TUBE ON, TO A FIELD STRENGTH BETWEEN 4% & 5% BELOW THE SATURATED VALUE.

DIMENSIONS IN INCHES.