

Specification MOS (A)/CV2282 Issue 1 Dated 7.6.55 To be read in conjunction with K1001 and BS.448		<u>SECURITY</u> Specification      Valve UNCLASSIFIED      UNCLASSIFIED	
TYPE OF VALVE - Velocity Modulated Oscillator CATHODE      - Indirectly-heated PROTOTYPE    - VX9042		<u>MARKING</u> See K1001/4	
<u>RATING</u>		<u>BASE</u> Octal See BS.448 : B8-0	
		<u>CONNECTIONS</u>	
		Pin	Electrode
Heater Voltage (V)	6.3	1	No connection
Heater Current (A)	0.565	2	Heater
Max Resonator Voltage (V)	400	3	Pin omitted
Max Resonator Dissipation (W)	20	4	Pin omitted
Reflector Voltage Range (V)	-140 to -220	5	Resonator
Min RF Power Output (mW)	12	6	Pin omitted
Mechanical Tuning Range (Mc/s)	8805 to 8885	7	Heater and cathode
Min Electronic Tuning Range (Mc/s)	25 *	8	No connection
Nom Reflector Voltage Change to give 25 Mc/s electronic tuning (V)	15	TC	Reflector
Max Total Impedance in the reflector cathode circuit (megohm)	0.5		
			<u>TOP CAP</u> CT1 See BS.448 : 6/1.1
			<u>DIMENSIONS</u> See Drawing on Page 4
			<u>MOUNTING POSITION</u> Any
<u>NOTES</u>			
A. Each valve shall be marked with the value of reflector voltage at which the valve will oscillate and give a power output of at least 10 mW over the whole band.			
B. The reflector voltage must always remain negative with respect to the cathode. If during AFC working there is any chance of the reflector voltage becoming equal to or more positive than that of the cathode a protective diode shall be used.			
C. The reflector voltage shall be capable of varying $\pm 30$ volts about the DC level in order to accommodate the total electronic tuning.			

\* See Note 4

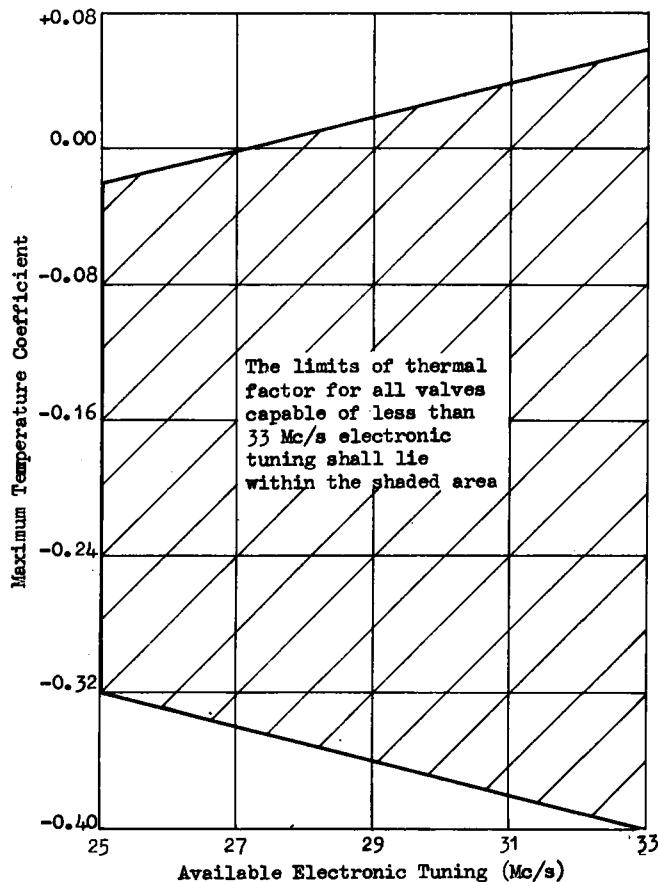
To be performed in addition to those applicable in K1001

Test Conditions - unless otherwise specified							
	Vh (V) 6.3	Vres (V) 350	Vref (V) Adjusted to give max power output				
Test	Test Conditions	AQL %	Insp. Level	Sym- bol	Limits		Units
					Min.	Max.	
a Heater Current			100%	Ih	0.52	0.61	A
b <u>Power Oscillation</u> (1) 1. RF Power Output 2. Reflector Voltage	Note 1		100%	Pout Vref	12 -140	- -220	mW V
c <u>Power Oscillation</u> (2) 1. RF Power Output 2. Reflector Voltage 3. Electronic Tuning	f = 8805 Mc/s  Measured at 3 db points		100%	Pout Vref Δf	25 -140 25	- -220 -	mW V Mc/s
d <u>Power Oscillation</u> (3) 1. RF Power Output 2. Reflector Voltage 3. Beam current during oscillation	f = 8845 ± 20 Mc/s		100%	Pout Vref Ib	25 -140 20	- -220 44	mW V mA
e <u>Power Oscillation</u> (4) 1. RF Power Output 2. Reflector Voltage 3. Electronic Tuning	f = 8885 Mc/s  Measured at 3 db points		100%	Pout Vref Δf	25 -140 25	- -220 -	mW V Mc/s
f <u>Power Oscillation</u> (5) 1. RF Power Output 2. Reflector Voltage 3. Decrease in beam current during oscillation	Vh=5.7V for 2 mins min; f = 8845 ± 20 Mc/s  Note 2		100%	Pout Vref ΔIb	10 -140 -	- -220 30	mW V %
g RF Power Output	Note 3		100%	Pout	10	-	mW
h Mechanical Tuning Range			100%	f	8805	8885	Mc/s
j <u>Thermal Factor</u> Change in frequency during oscillation	f = 8845 ± 20 Mc/s Note 4		TA	TF	-0.02	-0.32	Mc/s°C

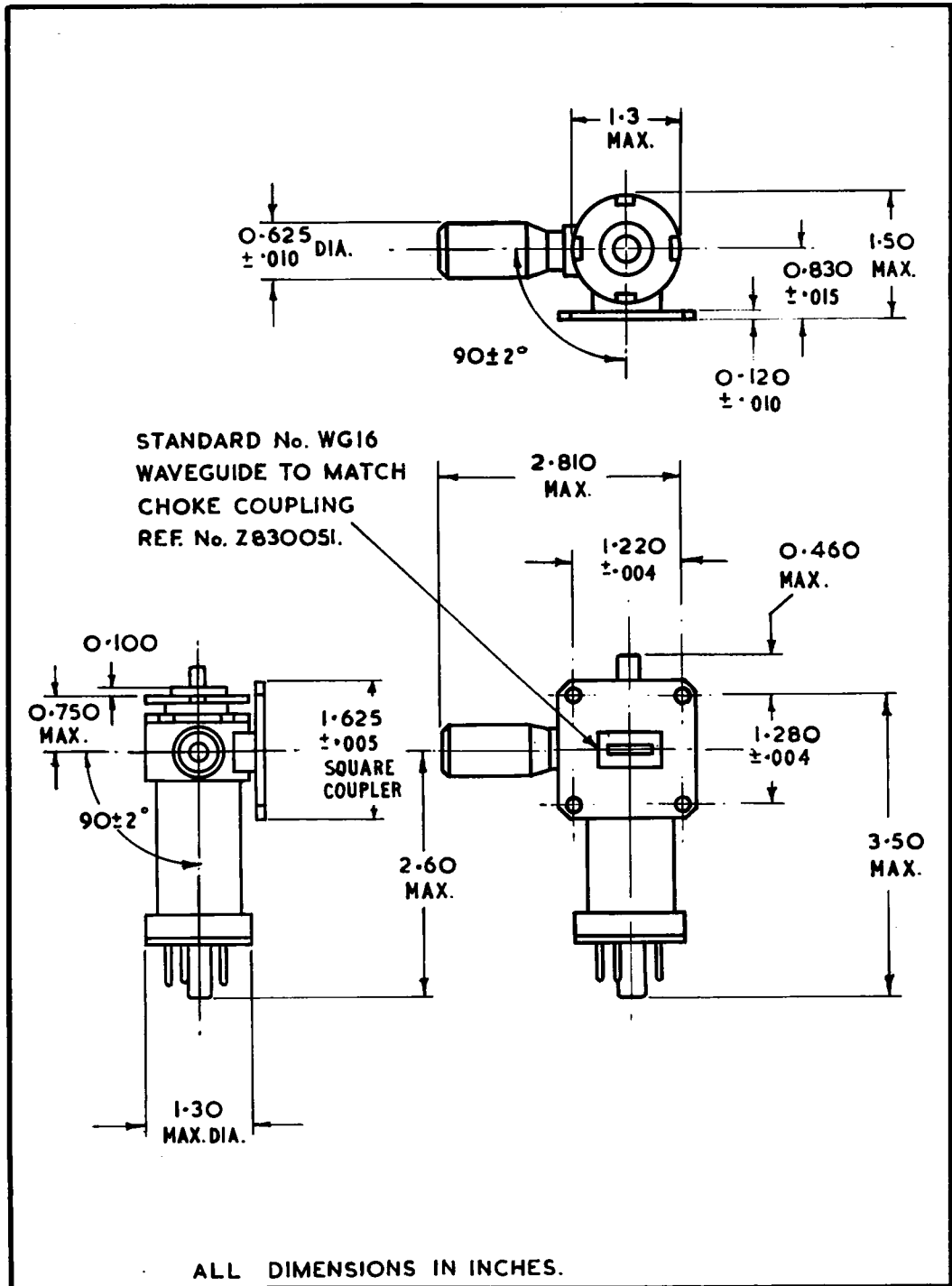
## NOTES

1. The power output shall be measured at a random point in the band 3805-3885 Mc/s within 3 minutes of switching on all supplies.
2. The beam current shall not have decreased by more than 30% from the value determined in Test (a).
3. The power output shall be measured at a random point in the band 3805-3885 Mc/s. The reflector voltage shall be adjusted to that value marked on the valve.
4. All valves giving less than 33 Mc/s electronic tuning shall be tested for thermal factor and shall be found acceptable if their factors fall within the shaded area shown in the graph below.

During this test the temperature shall be taken to be that of the resonator body. The test shall be performed within the ambient temperature range 0 to 100°C.



LIMITS OF ELECTRONIC TUNING  
AND THERMAL FACTOR



CV.2282/1/4