MINISTRY OF SUPPLY (S.R.D.E.)

VALVE ELECTRONIC **CV251**

Specification No. MOS/CV251/6 Dated : 25.9.45. To be read in conjunction with K1001, ignoring clauses 5.2, 5.3, 5.8.	SECURITY Specification: SECRET Valve: RESTRICTED

→ Indicates a change

TYPE OF VALVE : Magnetron CATHODE : Indirectly Heated ENVELOPE : Metal Glass (This valve is the CV209 with special tests)	MARKING As in K1001/4, also the word "Cathode" and an arrow shall be marked on the valve in such a position as to indicate to which of the filament terminals the cathode is connected. ←

RATING		Notes
Filament Voltage (Volts)	6.3	
Filament Current (Amps)	0.8	
Nominal Frequency (Mc/s)	9475	
Nominal Wavelength (cms)	3.17	
Mean Power Input (Max) (Watts)	160	
TYPICAL OPERATING CONDITIONS		
Peak Anode Voltage (kV)	18	A & B
" " Current (A)	25	A & B
Field Strength (Gauss)	3520	
Peak Power Output (kW)	150	A & B

BASE
None

DIMENSION AND ELECTRODE CONNECTIONS
See Page 3

PACKING
See K1001/7.3

NOTES

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

B. The operating conditions apply only to pulse lengths between 0.1 and 0.15 μS.

CV251

TESTS

To be performed in addition to those applicable in K1001

	Test Conditions			Test	Limits		No. Tested	Note
	Field Strength (gauss)	Vf	Magnetron Peak Current (amps)		Min.	Max.		
a	0	6.3	0	If (amps)	0.7	0.9	100%	
b	3250± 50	3.0	30	Peak Va(kV)	17	20	100%	2 & 3
c	3250± 50	3.0	30	Output Frequency Mc/s	9350	9600	100%	3 & 4
d	3250± 50	3.0	30	Peak Power Output (kW)	120	-	100%	3

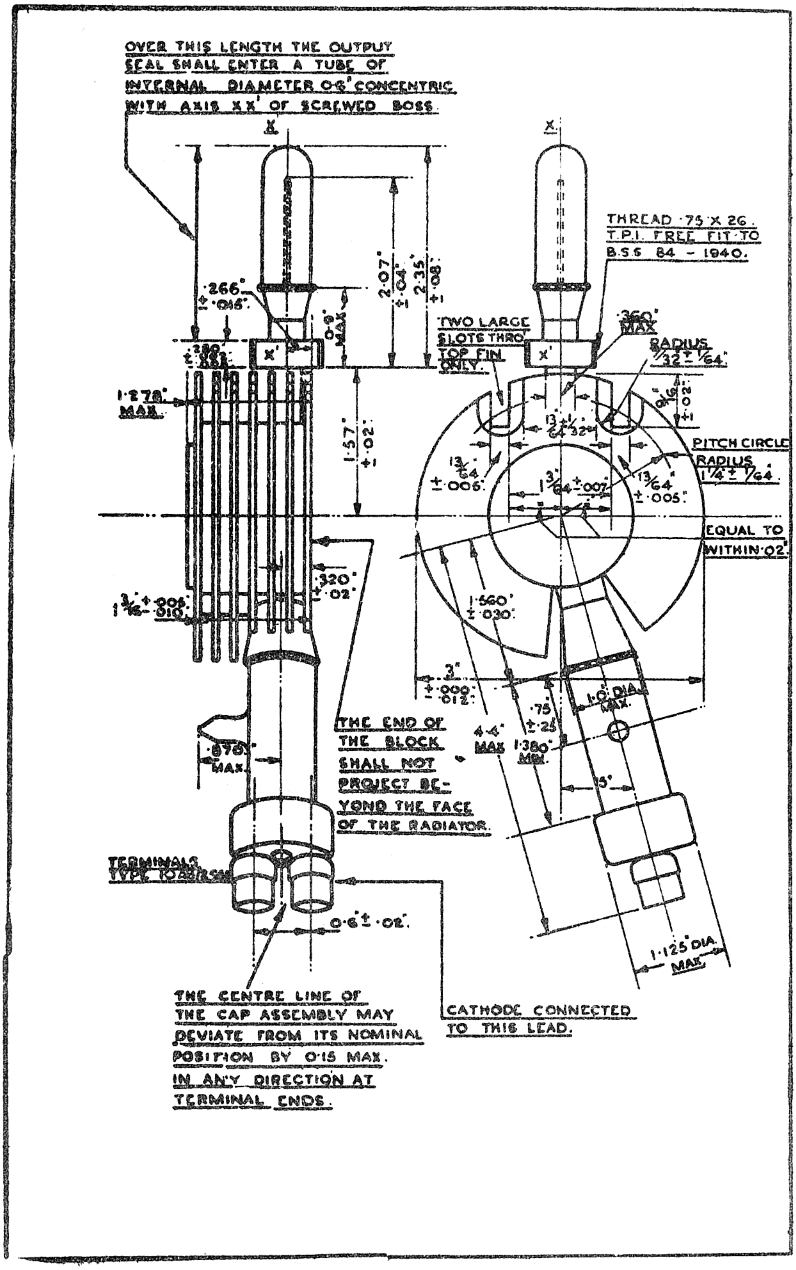
NOTES

1. For the above tests the temperature of the anode block shall not exceed 140°C.

2. The valve shall run for a period of one minute with Vf = 6.3. At the end of that time, the H.T. voltage shall be switched on and the filament voltage shall be switched down simultaneously. All subsequent tests shall be carried out with Vf = 3.0.

3. This test shall be carried out with a Modulator Type ZC.22278 or one of design approved by R.R.D.E., and a standard output unit Type ZC.22272 terminated in a resistive load giving less than 1.1 standing wave voltage ratio. The matching shall be adjusted for maximum power consistent with Note 4.

4. The current waveform and R.F. envelope shall be a clearly defined single trace.


OVER THIS LENGTH THE OUTPUT SEAL SHALL ENTER A TUBE OF INTERNAL DIAMETER 0·8" CONCENTRIC WITH AXIS XX' OF SCREWED BOSS.
THREAD ·75 X 26. T.P.I. FREE FIT TO B.S.S 84 - 1940.
TWO LARGE SLOTS THRO' TOP FIN ONLY.
·360" MAX
RADIUS 1/32 ± 1/64"
PITCH CIRCLE RADIUS 1 1/4 ± 1/64
EQUAL TO WITHIN ·02"
·266" ± ·015"
0·9 MAX
2·07" ± ·04"
2·35" ± ·08"
1·278" MAX
1·57" ± ·02"
·320" ± ·02"
1·660" ± ·030"
3" + ·000 - ·012
1·0" DIA. MAX
·75 ± ·25
4·4" MAX
1·380" MIN
·876" MAX
1·125" DIA. MAX
THE END OF THE BLOCK SHALL NOT PROJECT BEYOND THE FACE OF THE RADIATOR.
TERMINALS
0·6 ± ·02
THE CENTRE LINE OF THE CAP ASSEMBLY MAY DEVIATE FROM ITS NOMINAL POSITION BY 0·15 MAX. IN ANY DIRECTION AT TERMINAL ENDS.
CATHODE CONNECTED TO THIS LEAD.