MINISTRY OF AIRCRAFT PRODUCTION (D.C.D.)

CV 1114

VALVE TYPE **VT114**

Test Specification No.	Date	To be read in conjunction with
D.C.D., W.T. 1147 Issue No.3	18th July 1943.	K1001, ignoring clauses :- 5.2, 5.8.

TYPE OF VALVE : Transmitting Tetrode
CATHODE : Directly Heated - Thoriated Tungsten
ENVELOPE : Metal-Glass Construction
COMMERCIAL PROTOTYPE : E.1024.

MARKING
VT114
10E/168
Serial Number

RATING		Note
Filament Voltage (volts)	10.0	A
Filament Current (amps.)	70.0	A
Maximum Anode Dissipation (watts)	200	B
Maximum Operating Frequency (Mc/s)	60	

CAPACITANCES (pF)	
Anode to all other electrodes	20
Grid to all other electrodes	35
Anode to grid (max.)	2

DEGREE OF SECRECY OF VALVE
NON-SECRET

DIMENSIONS & CONNECTIONS
See Fig.1

PACKING
See clause 7.3 of K1001
Additional marking :-
"Glass - Fragile"

NOTES

A:- Cooling of the filament leads and adjacent re-entrant portion of the envelope shall be provided by not less than 10 cu.ft. of air per minute with a pressure drop of the order of 2 inches of water.

B:- For this dissipation forced air cooling shall be provided by not less than 85 cu.ft. of air per minute with a pressure drop across the valve of the order of 2 inches of water.

TESTS

To be performed in the order specified, and are additional to those applicable in K1001.

Clause	Test Conditions					Test	Limits Min.	Limits Max.	No. Tested
	Forced air cooling for the filament leads and the anode shall be provided by not more than 10 cu. ft. and 85 cu. ft. of air per minute, respectively, with a pressure drop across the valve of the order of 2 inches of water.								
	Vf	Va	Vg2	Vg1	Ia(mA)				
a	10.0	Raised slowly to 27.5 kV and maintained till flashing ceases. See Note 1	Strapped		a trace	Hot Flash Process Anode voltage maintained at 27.5 kV for a period of 5 mins. without further flashing. See Note 1.			100%
b	10.0	0	0	0	-	Filament Current (amps.)	66.5	73.5	100%
c	10.0	1 kV	1 kV	-	200	Reverse Control grid current (milliamps)	-	1.0	100%
d	10.0	1 kV	1 kV	-	200	Grid Voltage (volts)	-85	-120	100%
e	10.0	1 kV to 700V.	1 kV to 700V.	-	Main tained at 200	Grid Voltage change (volts)	48	64	100%
f	-	300	300	300	Total cathode current 0.5amp	Filament Voltage (volts)	-	6.0	100%
g	10.0	150	150	150	-	Total Cathode current (amps.)	0.9	1.5	100%
h	10.0	Strapped pulse of peak value 6 kV., half sine wave shape, duration 2 μ secs. and recurrence frequency 50 c.p.s. to be applied.			-	Emission Current (amps.)	70	-	5% (4)

(Tests continued on page 2).

	Test Conditions Vf	Va	Vg2	Vg1	Ia(mA)	Test	Limits Min.	Max.	No. Tested
j	See Appendix III of K1001					Capacitances (pF) 1. Ca - all. 2. Cg - all. 3. Cag.	16 26.3 -	24 43.7 2	2% (1)
k	Life - A minimum life of 4000 hours is expected, life failure being considered to occur when the emission of the valve has fallen below 0.5 amp. at Vf = 6.6 volts, other conditions as in test clause (f)								

NOTE 1. Once the conditions specified in test clause (a) have been met, the test conditions need not be repeated for acceptance testing. For this hot flash process there shall be a 300 ohms resistor in series with the applied volts and a capacitance of 0.25 µF in parallel with the supply volts on the supply side of the resistor.

OUTLINE DIMENSIONS FIG 1.