ADMIRALTY SIGNAL ESTABLISHMENT

VALVE ELECTRONIC **CV116**

Specification AD/CV116/Issue 5 Dated 14.11.46. To be read in conjunction with K1001, ignoring clauses:- 5.2.1.2; 5.3.	SECURITY	
	Specn.	Valve
	Restricted	Unclassified

TYPE OF VALVE:- Velocity modulated oscillator.
CATHODE:- Indirectly heated.
ENVELOPE:- Copper/glass with resonator.
PROTOTYPE:- KR6/1.

MARKING
See K1001/4.
Additional Marking
Serial No. .....

RATING			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.3	
Tuning Range	(Mc/s)	3365-3554	
Power Output (min.)	(mW)	100	
Max. Resonator Dissipation	(W)	8	
Resonator Voltage	(V)	250	
Reflector Voltage Range	(V)	-100 to -175	C
Grid Voltage	(V)	0 to 175	
Min. A.F.C. Range	(Mc/s)	20	A
Mean Reflector Voltage change for above frequency change	(V)	35	B
Max. Permissible Series Resistance in Reflector Circuit	(ohms)	25,000	
Max. Resonator Temp. during operation	(°C)	140	

BASE
IO
See K1001/AIV/D1.

Pin	Electrode
1	Grid
2	Heater
3	No connection
4	No connection
5	No connection
6	No connection
7	Heater
8	Cathode
TC	Reflector

TOP CAP
See K1001/AI/D5.2.

DIMENSIONS
See Page 3.

PACKING
See K1001/7.

NOTES

A. By variation of reflector voltage. From ½ power to ½ power at any mean frequency in the range.
B. Superimposed on optimum setting, but not necessarily disposed symmetrically about this setting.
C. This range applies to the 50% loaded condition. With the valve unloaded the reflector volts are about 10 volts higher, and with the valve fully loaded about 5 volts lower.
D. The tuners should not be screwed out more than 5½ turns from the fully screwed-in position, otherwise the retaining clips may become detached and these are difficult to replace. Other means of fixing the tuners, e.g:- by piano wire instead of the retaining clips, may be used, subject to approval on samples.
E. Mounting position: Any.

TESTS

To be performed in addition to those applicable in K1001.

	Test Conditions Vh (V)	Vr (V)	Va (V)	Test	Limits Min.	Limits Max.	No. Tested
a	4.0	-	-	Ih (A)	1.0	1.6	100%
b	C-G voltage 250 V min.			C-G Insulation (MΩ)	1.0	-	100%
c	4.0	Adjusted	250	i. Power output (mW)	100	-	100%
	Vg adjusted to give Wa = 8W, or to zero if only less than 8W is obtainable. Frequency adjusted to 3365 Mc/s by means of "preset" tuners. Valve loaded resistively for max. output. Vr adjusted for max. output power.			ii. Vr (V)	-100	-175	
				iii. Vg (V)	0	Value of Vr found in test 'c, ii'.	
d	4.0	Adjusted	250	i. Power output (mW)	100	-	100%
	Test 'c' repeated at 3554 Mc/s. Note:- It is to be understood that oscillation is maintained over the whole tuning range.			ii. Vr (V)	-100	-175	
				iii. Vg (V)	0	Value of Vr found in test 'c, ii'.	
e	4.0		250	i. Total frequency change (Mc/s)	20	40	100%
	With condition as for test 'd', reduce the resistive loading (e.g. by rotating the coupling loop) so that 50% of the power given with full loading is obtained. Vary Vr from a value less than, to a value more than the optimum to reduce the power at the extremes to not less than 50%. Observe change in frequency and Vr.			ii. Total reflector voltage change (V)	25	50	100%
f	4.0		250	i. Total frequency change (Mc/s)	20	40	5% (10)
	Repeat test 'e' at 3365 Mc/s. beginning with conditions as for test 'c'			ii. Total reflector voltage change (V)	25	50	5% (10)

NOTE

Va = Resonator Volts. Vr = Reflector Volts.

OUTLINE DIMENSIONS.