Specification CV.239 - Issue 2 - dated 2.7.57.

Amendment No. 1

Page 2

Under Test Conditions (B)

Amend running voltage 350 volts min.
450 volts max. to read 250 volts min.
450 volts max.

July 1957

T.V.C.
for R.R.E.

N88359

VALVE ELECTRONIC **CV239**

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

Specification MOS/CV239/Issue 2 Dated:- 27.10.48. To be read in conjunction with K1001, ignoring clauses 5.2 and 5.8.	SECURITY Specification: Restricted Valve: Restricted

→ indicates a change

TYPE OF VALVE:- Gas filled resonator spark gap PROTOTYPE:- As CV59, but with increased pressure of gas filling ENVELOPE:- Glass COMMERCIAL PROTOTYPE:- None	MARKING CV239
	DIMENSIONS AND CONNECTIONS See page 4
→ PRIMER:- Running Current 0.1 mA Series resistance 1 MΩ min.	TOP CAP See K.1001/A.1/5.4

REQUIREMENTS

Resonant and Frequency Range - the normal range over which the spark gap will operate is 3,000 - 3,124 Mc/s - (9.6 to 10 cms. approximately).

Gas filling - water vapour at a pressure equivalent to 10 mms. of mercury.

Copper parts - the internal and external copper parts shall be carefully cleaned with acid.

Other metal parts - the resonator is to be plated first with copper, then with silver and then gold.

Primer - to be of the 'spike' type.

TESTS

To be performed at least two days after the valve has been sealed off, in addition to those applicable in K1001.

	Test Conditions	Test	Limits		No. Tested	Notes
			Min.	Max.		
a	Frequency tuning range (Mc/s) obtained by adjustment of two tuners. The test to be done by an approved method. One method, together with test apparatus, is described in Valve Circuit Unit Design F, Admiralty Pattern W.5600.	Minimum Frequency Range (Mc/s)	3124	3000	100%	
b	The voltage between primer and resonator to be smoothly increased to 800V. maximum. A discharge must occur and the value of voltage across the gap is to be noted. The test to be done as shown in Fig. 1, or by another approved method.	Voltage between primer and resonator during discharge (volts)	350	450	100%	
c	The valve to be set up in apparatus as described in Note 1.	Percentage change in transmitted power by changing primer current from 0 to 0.1mA		3	T.A.	1 and 2

CV239

NOTES

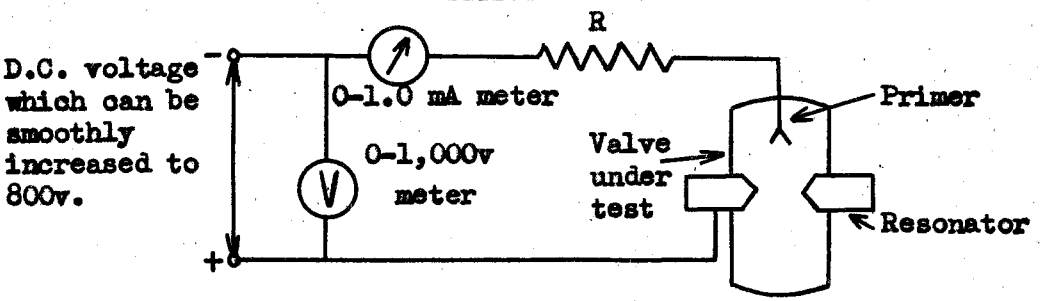
1. Two coaxial cables are coupled to the valve resonator by means of loops. The first is connected via a resistive attenuator of at least 10 db attenuation, to a local oscillator operating at 3062 Mc/s. The second is connected to a matched power indicator, e.g. a thermistor mount and bridge.

The degree of coupling of the two loops is adjusted to be equal and such that the resonator has a loaded Q of 300.

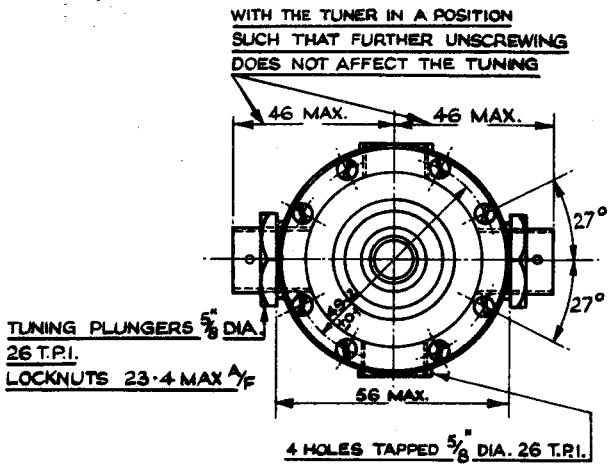
With no primer current flowing the valve is tuned for maximum power transmission and the reading of the power indicator noted. With a primer current of 0.1 mA the power reading is again noted.

2. This is also a design test to ascertain the minimum primer electrode to resonator spacing. For this dimension a 3% change in transmitted power will be obtained as outlined above.

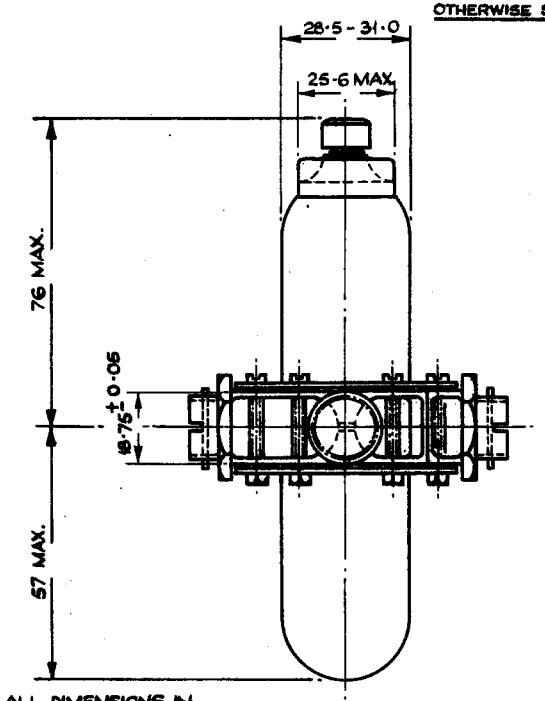
Fig. 1.



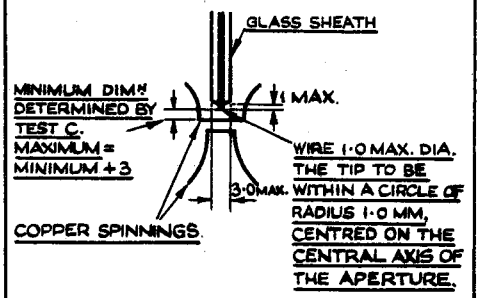
Note: The resistance R to be fixed at such a value that 500 µA is passed by a normal valve, e.g. 0.8 MΩ for a valve which needs 400V on primer.



DIMENSIONS IN M/M UNLESS OTHERWISE STATED.



ALL DIMENSIONS IN M/M UNLESS OTHERWISE STATED.



DETAILS OF IGNITER ELECTRODE

ALL DIMENSIONS IN MILLIMETRES