MINISTRY OF SUPPLY (D.C.D.) VALVE ELECTRONIC **CV179**

Specification MAP/CV179/Issue 3 Dated 16.11.49 To be read in conjunction with K1001 ignoring clause:- 5.2.	SECURITY	
	Specification	Valve
	RESTRICTED	UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE: Gas filled resonator spark-gap

PROTOTYPE: As CV157 for different frequency

REQUIREMENTS

Gas Filling - Water vapour with a pressure equivalent to 6 mm. of mercury

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

Resonant Frequency - The nominal frequency on which the spark gap will operate is 3300 Mc/s.

MARKING
See K.1001/4

PACKING
See K.1005

BASE
None

TOP CAP
See K.1001/A1/D5.4

DIMENSIONS AND CONNECTIONS
See drawing on page 5

TESTS

To be performed in addition to those applicable in K.1001.

	Test	Limits Min.	Limits Max.	No. Tested
a	Frequency tuning range obtained by the adjustment of two tuners. The test shall be done by an approved method; one method, together with the test apparatus, is described on pages 3 and 4. (Mc/s)	3225	3380	100%
b	After a shelf life of 48 hours, the valve shall be tested with a Tessla coil for air-leak. The colour of the resulting discharge shall be whitish blue. A tendency to a reddish purple discharge indicating too high an air content, shall cause the valve to be rejected.			100%

This valve type is obsolete and this specification is for record purposes only.

CV179

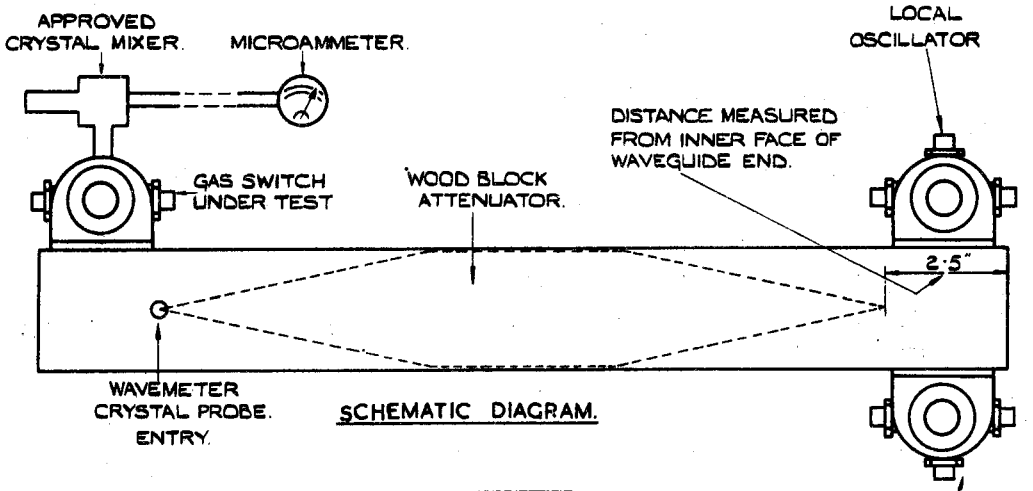
APPROVED METHOD OF TESTING FOR FREQUENCY RANGE

The apparatus of which a schematic diagram appears on page 4, consists of a 22-inch length of rectangular waveguide of internal cross section 2 1/2" x 1" having closed ends. Two local oscillators are mounted against flanges let into opposite sides of one end of the waveguide. The position of these flanges and their apparatus is shown in Detail 2. The gas switch to be tested is mounted against a flange similar to the oscillator flanges and positioned similarly to one of the oscillator flanges but with respect to the other end of the waveguide. All three flanges have their inner faces flush with the inner surface of the side of the waveguide.

Inside the waveguide is a wood block attenuator as shown in Detail 1. The shape of the wedge-shaped end sections is such that the two points both lie on an extended centre line of one of the 4" x 2 1/2" faces of the centre section. The block is positioned as shown in the schematic diagram. Any fixing pins must be in a plane parallel to the 2 1/2" side of the waveguide.

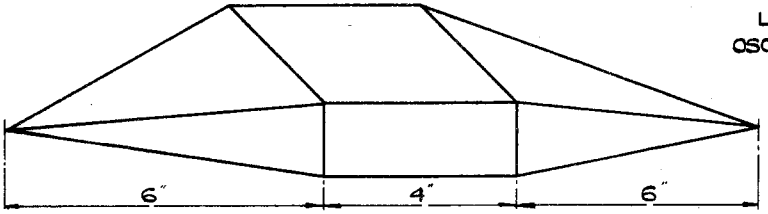
The crystal probe for the wavemeter should be approximately over the point of the wood block at the gas switch end of the wave-guide and may enter the waveguide for a max. depth of 1.0 cm.

The output from the gas switch under test is fed into an approved crystal mixer and the rectified current is read on a microammeter. The two oscillators are tuned to oscillate respectively at the extreme frequencies of the range required from the gas switch and when the gas switch is tuned with two tuning plungers it must resonate at both these frequencies.

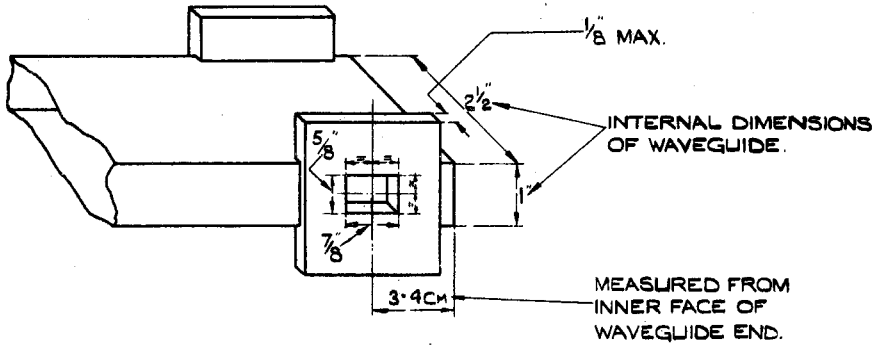


SCHEMATIC DIAGRAM.

DETAIL. 1.



DETAIL. 2.



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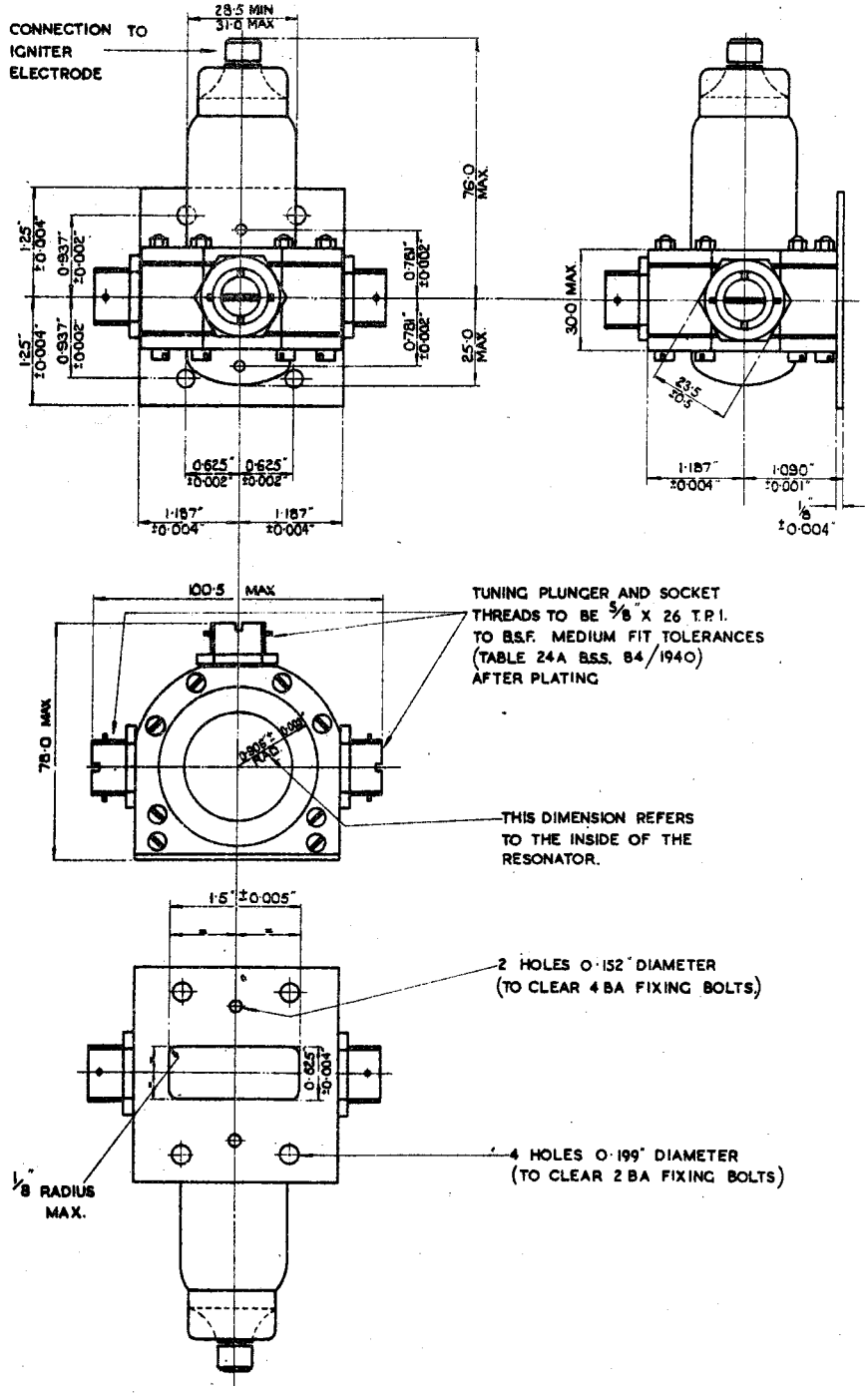

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.