

ADMIRALTY SIGNAL ESTABLISHMENT

Specification AD/CV363/Issue 4. Dated 18.12.46. To be read in conjunction with K1001.		<u>SECURITY</u> Specn. Restricted Valve Unclassified	
<u>TYPE OF VALVE:-</u> Gas filled ATR cell for X-band.		<u>MARKING</u> See K1001/4.	
<u>CONSTRUCTION:-</u> Resonant metal cavity with glass "window", soldered to gas reservoir.		<u>DIMENSIONS</u> See Fig.3. (Page 3).	
For "RATING" see "TESTS"			
<u>REQUIREMENTS</u>			
<u>GAS FILLING:-</u> The filling shall consist of equal volumes of water vapour and a mixture of 80% Argon and 20% Helium, at a total pressure of 20 mm. mercury.			

TESTS

To be performed in addition to those applicable in K1001.

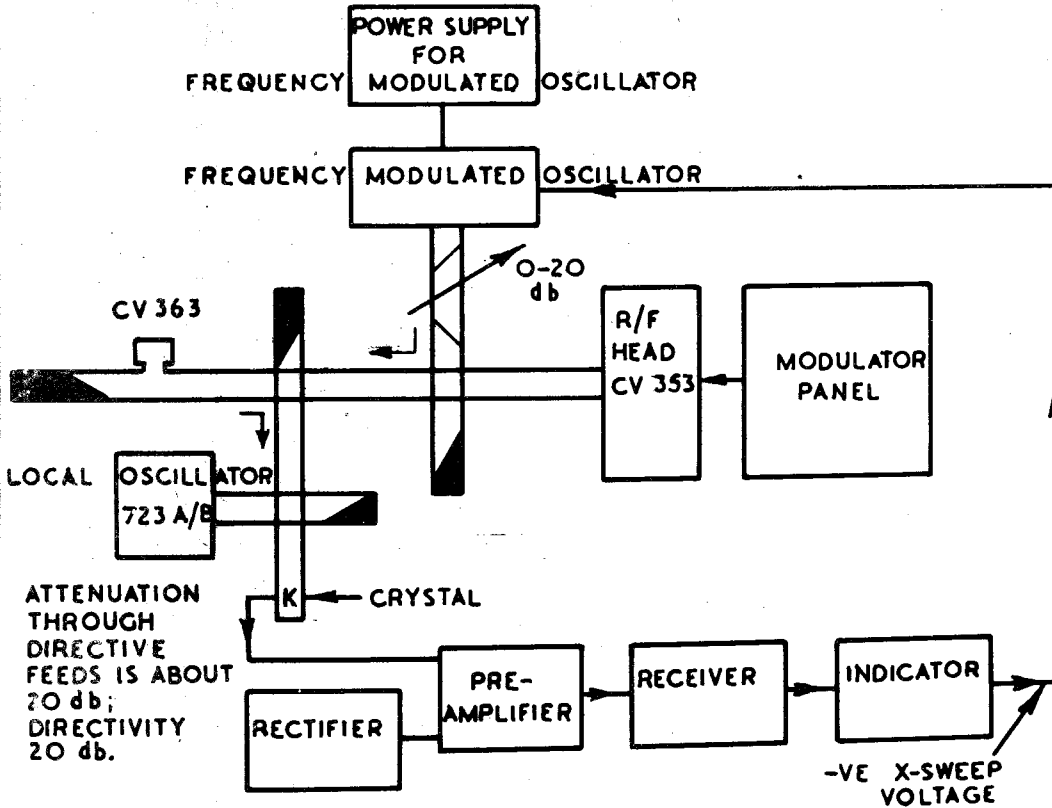
	Test Conditions	Test	Limits		No. Tested	Note
			Min.	Max.		
a	Operate the cell in an approved circuit of the kind shown in Fig.1. Increase the oscillation amplitude in the waveguide until the gas in the cell ionises.	Striking Power (kW)	-	3	100%	1
b	As in test 'a'. Observe de-ionisation time. (Time from the end of the transmitter current pulse taken for signal power reflected from ATR to rise to 6 db below the signal level when fully de-ionised.)	De-ionisation ("recovery") time (µs)	-	3	10%	1
c		Insertion loss (db)	-	0.5	5%	1
d	Observe the frequency band over which the V.S.W.R. due to the resistive component of the cell impedance is not less than 7.5:1. This test is to be made in the approved mount of an approved circuit of the kind shown in Fig.2. The re-active component of the cell impedance being balanced out at each frequency by means of the terminating plunger "P", i.e. "P" is adjusted for a minimum reading on the meter "M" at each frequency.	Band Width (Mc/s)	Min. Range:- 9425-9525		100%	1

NOTE

1. For this test, the valve must be operated in a mount of the type shown in Figs. 4 and 5.

→ Indicates a change.

SCHEMATIC OF HIGH LEVEL TEST GEAR FIG. 1.



SCHEMATIC OF LOW LEVEL TEST GEAR FIG. 2.

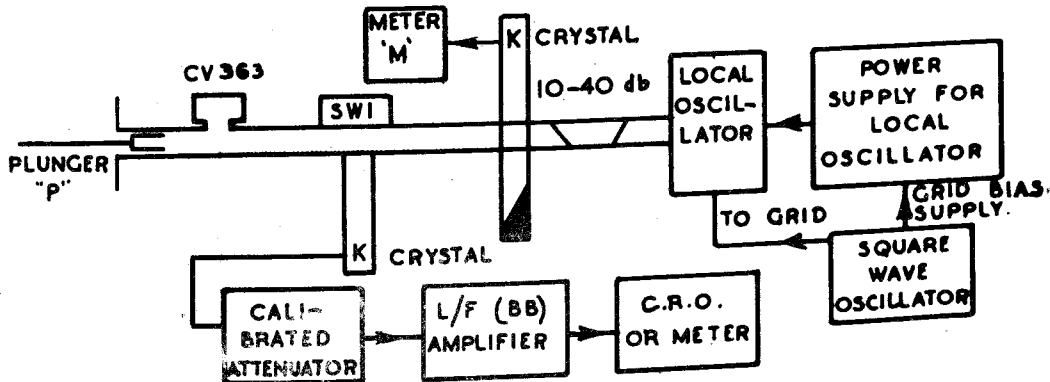
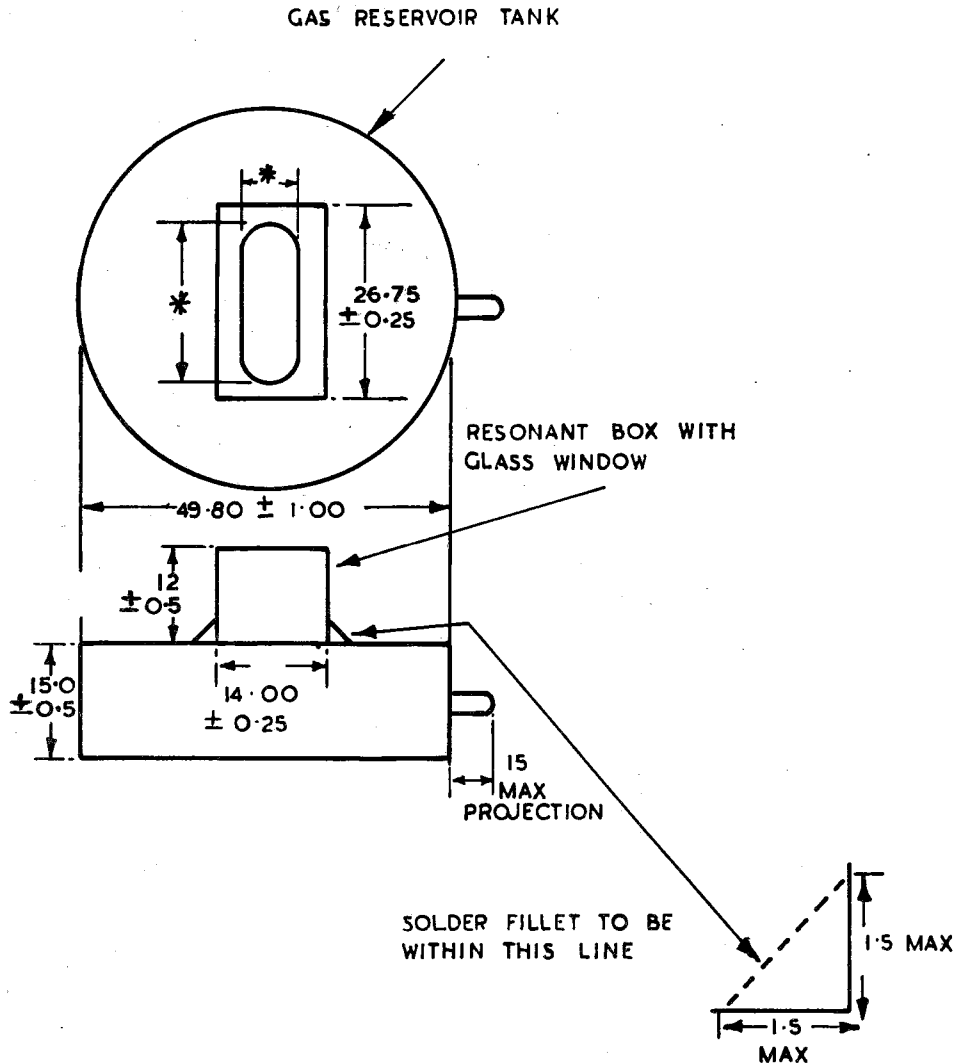


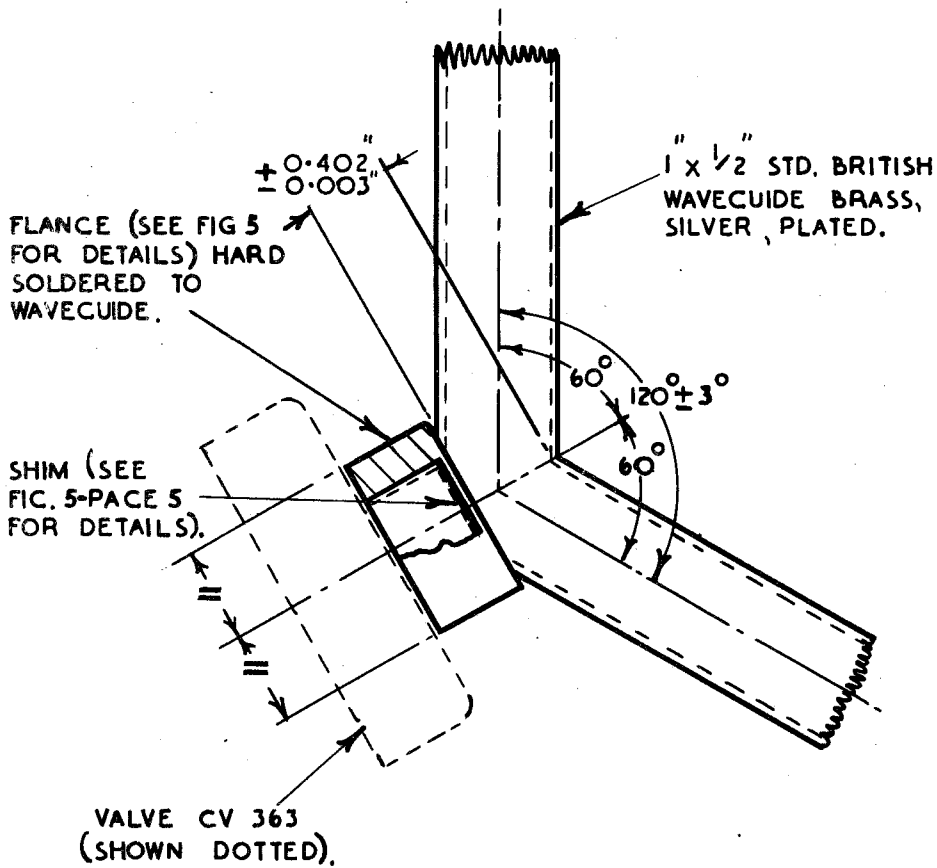
FIG. 3.



NOTES

1. * ACTUAL DIMENSIONS OF WINDOW CONTROLLED BY ELECTRICAL REQUIREMENTS BUT MUST NOT EXCEED THE MINIMUM DIMENSIONS OF THE HOLE IN THE FLANGE. (SEE FIG 5 PAGES)
2. ALL DIMENSIONS IN MILLIMETRES.

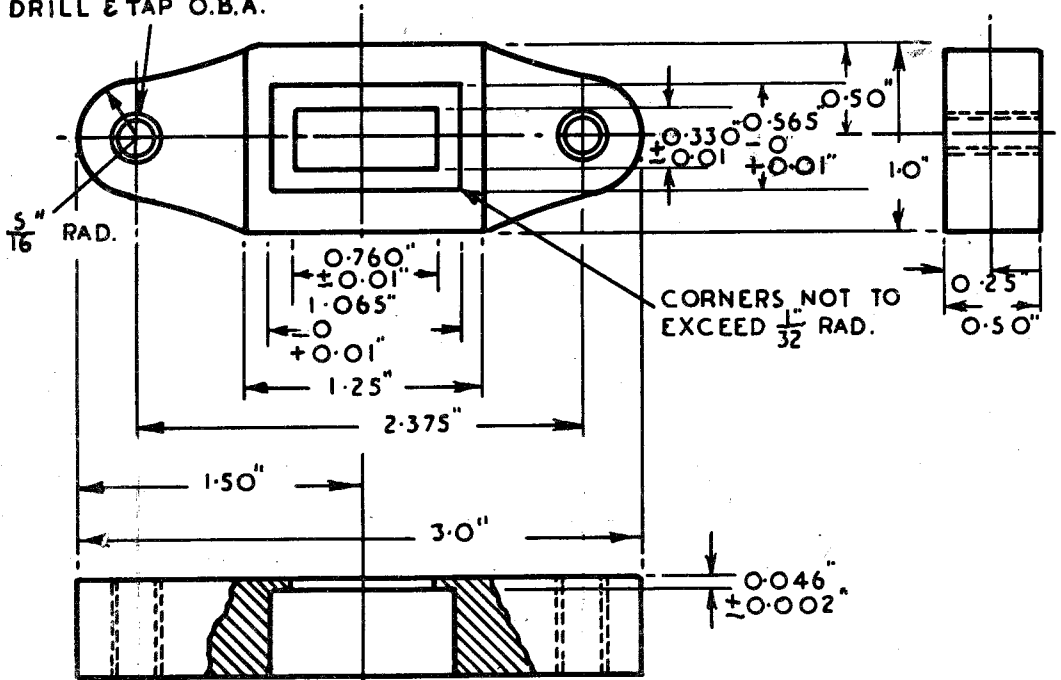
ASSEMBLED VIEW OF MOUNT
SHOWING VALVE IN POSITION.



FLANGE.

HOLES 2 INN^o
DRILL & TAP O.B.A.

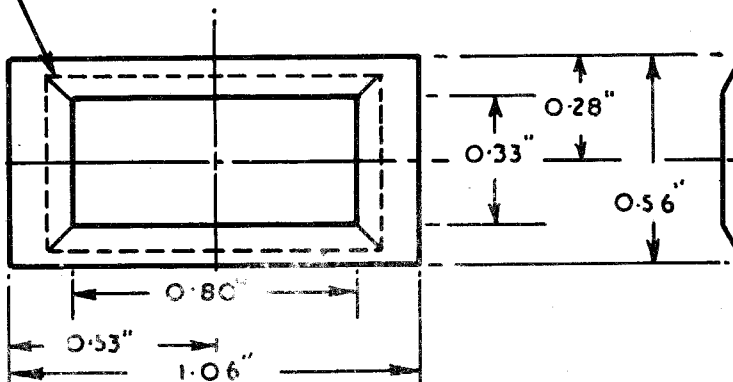
BRASS, SILVER PLATED.



SHIM

BERYLLIUM COPPER 0.004" THICK.

CORNERS CUT AT 45^o TO ALLOW 1/16" FLANGE TO BE BENT APPROX 1/32" TO ONE SIDE ALL ROUND.



NOTE :-
ACTUAL DIMENSIONS OF SHIM TO BE CONTROLLED SO THAT INNER EDGE CANNOT PROJECT OVER CENTRAL HOLE IN THE PARTICULAR FLANGE WITH WHICH IT IS USED.