VALVE ELECTRONIC **C.V.539.**

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

Specification AD/CV539 incorporating MIL-E-1/21 Issue No. 1 dated 11. 6. 56. To be read in conjunction with K1006	SECURITY Specification: Unclassified	Valve: Unclassified

TYPE OF VALVE: T.R. Switch
Separate Cavity Type.

PROTOTYPE: 1B23

MARKING

See K1001/4

RATINGS

Max. Open Circuit Ignitor Voltage (V)	-1000
Min. Open Circuit Ignitor Voltage (V)	-800
Max. Ignitor Current (μA)	200
Nominal Operating Frequency (Mc/s)	945

DIMENSIONS

See Drawing on Page 3

N O T E

A. All limiting values are absolute.

CV539

Ratings:	Iz	Open Circuit Ignitor Voltage Vdc	Alt. ft.
Absolute Maximum:	uAdc 200	-1000	10,000
Minimum:	—	-800	
*Dimensions:	Per Outline		

Pack in sealed moisture resistant bag or approved equivalent. If opaque bag is used, the tube type number shall be stamped thereon.

Ref.	Test	Conditions	Min.	Max.
3.1	Qualification Approval:	Required for JAN Marking		
4.9.18.1.8 F-6a(3h)	Carton Drop:	(d) Package Group 1; Carton Size F		
4.9.19.1	*Vibration:	G=10;F=50;t=60;Note 1		
4.9.8 F-5h	Salt Spray:	Omit		
4.9.6 F-5g	*Glass Strain:			
4.18.1	Ignitor Firing Time:	Ebb=800Vdc;R=3.25megohms	t: —	5.0 sec
4.18.2	Ignitor Voltage Drop:	Iz=100uAdc	Ez: 375	525 Vdc
4.18.3	*Ignitor Oscillation:	Note 2	Iz: —	70 uAdc
4.18.7	Tuning:	Note 1	F:936.5	955.5 Mc
4.18.4.3	Insertion Loss:	Note 3;F=950Mc	Li: —	1.6 db
4.18.5.1	*Ignitor Interaction:	Iz=200uAdc	ALi: —	0.2 db
4.18.23	High Level Protection:	Note 4	P: —	100%
4.18.22	Water Vapor Content:	Note 5	Po2/Pol : —	0.55
4.11 F-4	Life Test	Group C;Iz=200uAdc;Note 6	t: 500	— hr
4.11.4 F-4b	Life Test End Point:	Ignitor Interaction	ALi: —	0.2 db
		Water Vapor Content	Po2/Pol: —	0.8

Note 1: This measurement shall be made with the tube mounted in test cavity per drawing 162-JAN or approved equivalent.

Note 2: No tube shall require more than the stated maximum ignitor current to prevent relaxation oscillations when tested in the standard circuit.

Note 3: This measurement shall be made in test cavity per drawing 162-JAN or approved equivalent. With the cavity calibrator in position the cavity shall be tuned to resonance and the relative transmitted power level noted. With the tube inserted, the cavity shall then be tuned to resonance and the transmitted power noted. The db loss in transmitted power due to the insertion of the tube shall not be more than the specified amount.

APPROVED 5 Feb 1953 REVISED

CUSTODIANS:
Army–Signal Corps
Navy–Bureau of Ships
Air Force

PROCUREMENT SPECIFICATION
MIL-E-1

SPECIFICATION SHEET

GAS SWITCHING TUBE, TR,
SEPARATE CAVITY TYPE

1B23

MIL-E-1/21

SHEET 1 OF 3

Other interest: Army -CMOT Navy - AMCMdOrS

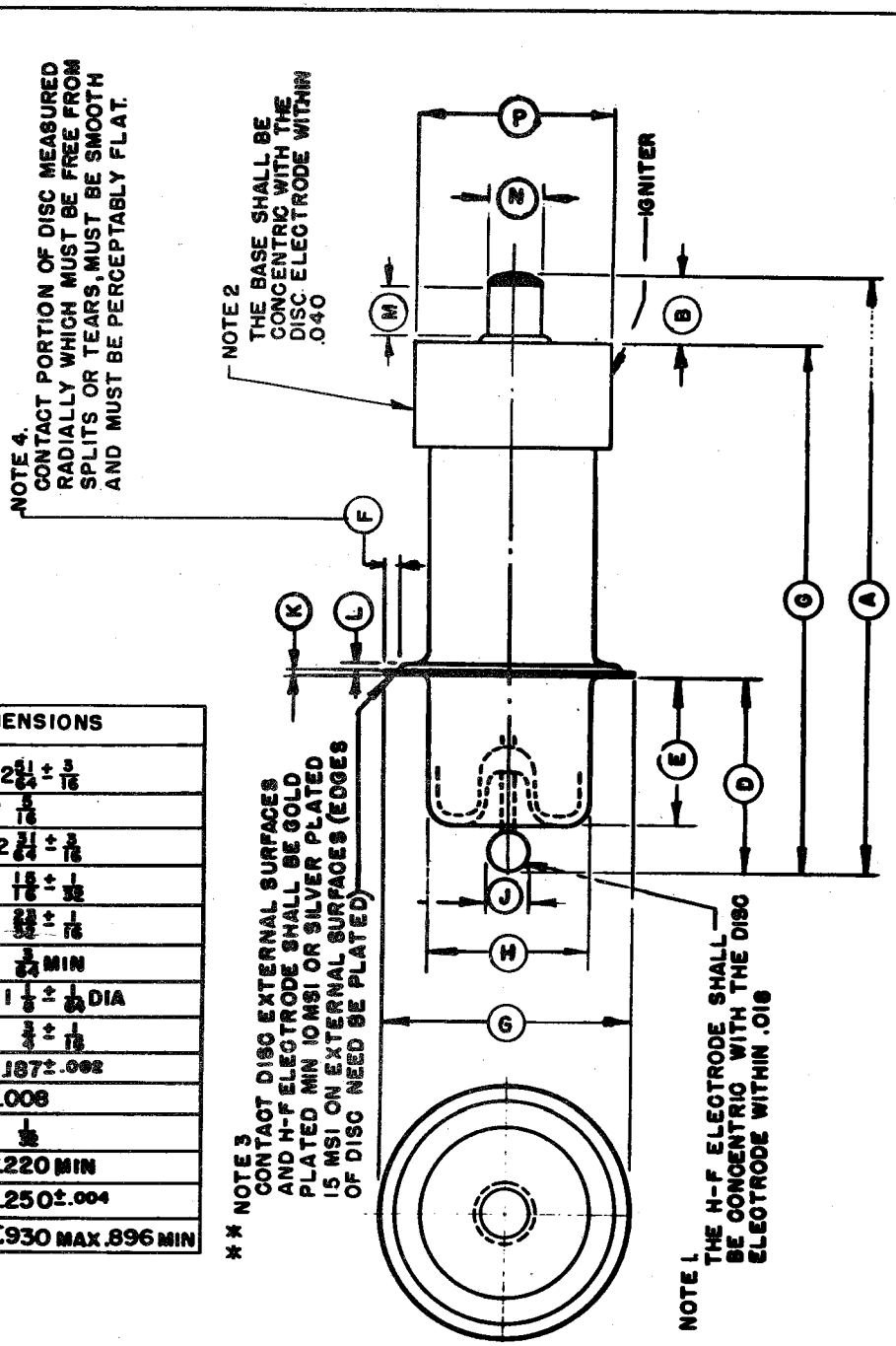
Note 4: When the tube is fired by the application of high power in cavity per drawing 162-JAN or approved equivalent which is at resonance, the transmitted power obtained shall be less than that of a standard tube filled with pure hydrogen to a pressure of 25 millimeters of mercury. The power level at the input shall be sufficient to fire the rf gap of the tube and to insure that the measurement is being made on the flat part of the "power in the gap vs. leakage power" characteristic. If the main discharge gap does not fire it is caused to be fired by a short application of ignitor voltage.

Note 5: With the tube operating as outlined in Note 4, a small portion of the tube envelope shall be cooled by the application of solid CO_2. The ratio of the minimum reading of the output meter (Po2) to that obtained before the application of solid CO_2 (Po1) shall be less than the given value, and the Final reading shall be less than the initial one.

Note 6: The specified life is based on ignitor life only. This will be reduced if the tube is operated under full rated rf conditions.

Note 7: Referenced specification shall be of the issue in effect on the date of invitation for bids.

APPROVED 5 Feb 1953 REVISED



REF	DIMENSIONS
A	** $2\frac{51}{64} \pm \frac{3}{16}$
B	** $\frac{3}{16}$
C	$2\frac{51}{64} \pm \frac{3}{16}$
D	$\frac{15}{16} \pm \frac{1}{32}$
E	$\frac{29}{32} \pm \frac{1}{64}$
F	$\frac{3}{64}$ MIN
G	* $1\frac{1}{64} \pm \frac{1}{64}$ DIA
H	* $\frac{29}{32} \pm \frac{1}{16}$
J	* .187 ± .002
K	** .008
L	** $\frac{1}{32}$
M	* .220 MIN
N	* .250 ± .004
P	* .930 MAX .896 MIN

APPROVED 5 Feb 1953 REVISED

CUSTODIANS:
Army–Signal Corps
Navy–Bureau of Ships
Air Force

PROCUREMENT SPECIFICATION
MIL-E-1

SPECIFICATION SHEET

GAS SWITCHING TUBE, TR, SEPARATE CAVITY TYPE

1B23

MIL-E-1/21

SHEET 3 OF 3

Other interest: Army – CMOT Navy – AMCMdOrS