

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	<u>SECURITY</u>	
	<u>Specification</u> Unclassified	<u>Valve</u> Unclassified

<u>TYPE OF VALVE:</u> T.R. Switch Separate Cavity Type.	<u>MARKING</u> See K1001/4
<u>PROTOTYPE:</u> 1B23	
<u>RATINGS</u> Max. Open Circuit Ignitor Voltage (V) -1000 Min. Open Circuit Ignitor Voltage (V) -800 Max. Ignitor Current (uA) 200 Nominal Operating Frequency (Mc/s) 94.5	<u>DIMENSIONS</u> See Drawing on Page 3

N O T E

A. All limiting values are absolute.

CV539

<u>Ratings:</u>	Iz	Open Circuit Ignitor Voltage	Alt. ft.
Absolute	uAdc	Vdc	10,000
Maximum:	200	-1000	
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 Water Vapor Content	ALi: —	0.2 db 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.

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

SPECIFICATION SHEET

GAS-SWITCHING TUBE, TR,
SEPARATE CAVITY TYPE

MIL-E-1/21

PROCUREMENT SPECIFICATION
MIL-E-1

1B23

SHEET 1 OF 3

Other interest: Army -CMOT Navy - AMCMdGrS

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APPROVED 5 Feb 1953
REVISED

- 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 CO₂. The ratio of the minimum reading of the output meter (Po2) to that obtained before the application of solid CO₂ (Pol) 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.

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SEPARATE CAVITY TYPE

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MIL-E-1/21

SHEET

2

OF

3

PROCUREMENT SPECIFICATION
MIL-E-1

Other interest: Army -CMOT Navy - AMCMdGrS

CY539

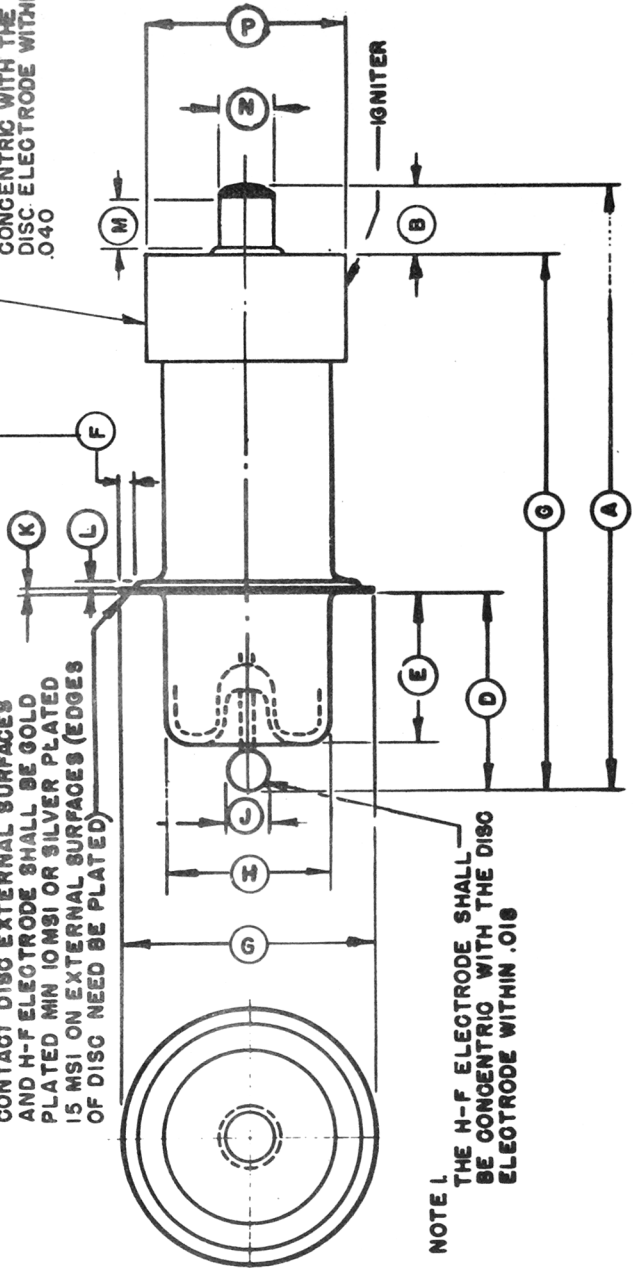
NOTE 4.
CONTACT PORTION OF DISC MEASURED
RADIALLY WHICH MUST BE FREE FROM
SPLITS OR TEARS, MUST BE SMOOTH
AND MUST BE PERCEPTABLY FLAT.

— NOTE 2
THE BASE SHALL BE
CONCENTRIC WITH THE
DISC. ELECTRODE WITHIN
.040

*** NOTE 3: CONTACT DISC EXTERNAL SURFACES AND H-F ELECTRODE SHALL BE GOLD PLATED MIN 10MSI OR SILVER PLATED 15 MSI ON EXTERNAL SURFACES (EDGES OF DISC NEED BE PLATED)

NOTE 1 THE H-F ELECTRODE SHALL BE CONCENTRIC WITH THE DISC ELECTRODE WITHIN .010

REF	DIMENSIONS
A—	** $2\frac{51}{64} \pm \frac{3}{16}$
B—	** $\frac{5}{16}$
C—	$2\frac{31}{64} \pm \frac{3}{16}$
D—	$\frac{15}{16} \pm \frac{1}{32}$
E—	$\frac{23}{32} \pm \frac{1}{16}$
F—	$\frac{3}{4}$ MIN
G—	* $1\frac{1}{8} \pm \frac{1}{16}$ DIA
H—	* $\frac{3}{4} \pm \frac{1}{16}$
J—	* $.187 \pm .002$
K—	** $.008$
L—	** $\frac{1}{32}$
M—	* $.220$ MIN
N—	* $.250 \pm .004$
P—	* $.930$ MAX $.896$ MIN



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GAS SWITCHING TUBE, TR, SEPARATE CAVITY TYPE

MIL-E-1/21

SHEET 3 OF 3

1B23

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Navy-Bureau of Ships
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PROCUREMENT SPECIFICATION

MIL-E-1

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