

Specification AD/CV 2792 incorporating Jan-2K25 Issue No. 1 dated 10th February 1955 To be read in conjunction with K1006	<u>SECURITY</u>	
	<u>Specification</u> Unclassified	<u>Valve</u> Unclassified

<u>TYPE OF VALVE:</u> Velocity Modulated Oscillator		<u>MARKING</u> K1001/4	
<u>CATHODE:</u> Indirectly Heated		Add:- 2K25	
<u>PROTOTYPE:</u> 2K25		Serial No.	
<u>RATINGS</u>		Note	<u>BASE</u> B8-0
Heater Voltage (V)	6.3	B <i>Supercath</i>	Modified to take output lead as shown on Page 4 of attached Specification JAN-2K25
Heater Current (A)	0.41 to 0.65		
Mechanical Tuning Range (Mc/s)	8500 to 9700		
Max. Resonator Voltage (V)	330	A	1 Resonator and Shell
Max. Cathode Current (mA)	37	A	2 Heater
Min. Power Output (mW)	20	B	3 -
Max. Negative Reflector Voltage (V)	400	A	4 Output Lead
Nominal Reflector Voltage Range (V)	-55 to -220		5 -
			6 -
Min. Electronic Tuning Range (Mc/s)	28		7 Heater
Max. Heater to Cathode Voltage (V)	50	A	8 Cathode
			T.C. Reflector
		<u>TOP CAP</u> CT1 B.S.448	
		<u>DIMENSIONS</u> See Page 4 of attached JAN Specification	

A. Absolute maximum value.

B. Over the frequency range 8500 to 9660 Mc/s the Output Power exceeds 20 mW.
Over the range 9660 to 9700 the Output Power exceeds 10 mW.

TESTS

Additional to or modifying those specified in the attached JAN Specification

<u>Ref.</u>	<u>Test</u>	<u>Conditions</u>	<u>Min.</u>	<u>Max.</u>
F-6i	Heater Current:		If: 410	650 mA
F-12c	Power Output (4):	As for Power Output (1) but F=9700 Mc	Po: 10	- mW
Superseded				

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THIS SHEET OF TEST LIMITS IS A PART OF SPECIFICATION JAN-1A

Description: Klystron, Integral Cavity

<u>Ratings:</u>	Ef	Ers	Er	Ik	F	Ehk
Absolute	V	Vdc	Vdc	mAdc	Mc	V
Maximum:	6.3+8%	330	-400	37	---	50

Test Cond.: 6.3 300 -55 to -220 --- 9660+0.3% --- Note 2

Dimensions: As per Outline

**Cathode: Coated Unipotential ←

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

<u>Ref.</u>	<u>Test</u>	<u>Conditions</u>	<u>Min.</u>	<u>Max.</u>
D-2	Type Approval:	Required for JAN Marking		
F-6a	Drop:			
F-6b(2)	*Vibration:	No voltage; 10G; t=120; F=50; Note 3		
F-2	*Electrode Insulation:	300Vdc; Tube cold	Rk-rs: 2.0 Rh-rs: 2.0	--- Meg. --- Meg.
F-6i	*Heater Current:		If: 410	470 mA
F-6q	*Insulation:	Ehk=+45Vdc	Ihk: 0	100 uAdc
F-6g(7a)	† Total Reflector Current:	Er=-143 to -200Vdc	Ir: ---	7.0 uAdc
F-6g(7b)	† Reflector Leakage Current:	Er=-143 to -200Vdc	Ir: ---	5.0 uAdc
F-6g(7c)	† Reflector Gas Current:	Er=-143 to -200Vdc	Ir: ---	2.0 uAdc
F-6f(6)	Cathode Current:	Er(Mode A)/max. Po	Ik: ---	32 mAdc
F-6b(5)	Bump:	Ef=5.8; Er(Mode A)/ Δ Po/Po; max. Po	---	+10%
F-12c	Power Output (1):	Ef=5.8; Note 4; Er(Mode A)/max. Po; F=8500 to 9660Mc	Po: 20	--- mW
F-12c	*Power Output (2):	Er(Mode B); F=9370 +0.3%Mc; Ef=5.8	Po: 15	--- mW

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<u>Ref.</u>	<u>Test</u>	<u>Conditions</u>	<u>Min.</u>	<u>Max.</u>
F-12c	**Power Output (3):	Er=-40 to -75Vdc; F=9370 $\pm$ 0.3%Mc; Ef=5.8	Po: 3	— mW
---	Frequency Pulling:	σ =8db(min); Note 5; Er(Mode A)/max.Po; Ef=5.8V		
F-6f(11)	Reflector Voltage (1):	Mode A; F=9660 $\pm$ 0.3%Mc	Er: -143	-200 Vdc
F-6f(11)	**Reflector Voltage (2):	Mode A; F=8500 $\pm$ 0.3%Mc	Er: -85	-135 Vdc
F-6f(11)	*Reflector Voltage (3):	Mode B; F=9370 $\pm$ 0.3%Mc	Er: -75	-120 Vdc
F-12d	Emission:	Ef=5.8; Er(Mode A)/ $\Delta I_k/I_k$; max. Po.	—	15 %
F-12e(3)	*Electronic Tuning Range(1):	Mode A; 50%max.Po; F=9370 $\pm$ 0.3%Mc	ΔF : 35	— Mc
F-12e(3)	*Electronic Tuning Range(2):	Mode A; 2.5%max. of max. Po; F=9370 $\pm$ 0.3%Mc	ΔF : —	145 Mc
F-12e(3)	**Electronic Tuning Range(3):	Mode A; 50%max.Po; F=8500 to 9660Mc	ΔF : 28	— Mc
F-12h(2)	**Temperature Compensation:	Mode A; Coefficient: 0.00 F=9370 $\pm$ 0.3%Mc	-0.2C	Mc/°C
F-4	Life Test:	Group B	t: 500	— hrs.
F-4b	Life Test End Point:		Po: 10	— mW

Note 1: Paragraph C-1a of Specification JAN-1A does not apply to this tube.

Note 2: The tube shall be fixed firmly in a suitable socket by clamps which make contact at the base and adjacent platform only. The measurements on the tube in an oscillating state shall be made with the output line coupled into measuring circuits as per attached drawing or equivalent.

Note 3: On evidence of satisfactory quality, the Service Inspector may limit this test to ten (10) tubes per month when in continuous production. If one or more tubes fail in this test, the test conditions shall revert to DESIGN test requirements.

Note 4: The power output shall be above the limit specified throughout the specified frequency range.

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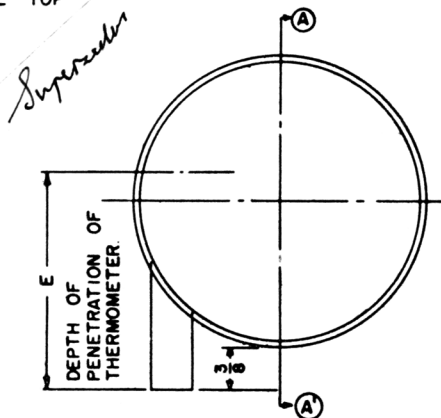
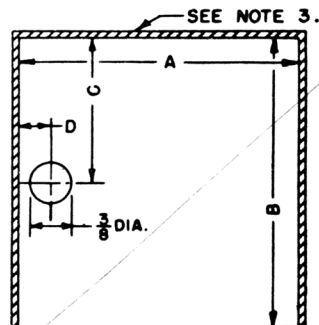
Note 5: The mechanical tuning shall be set for $F=9370+0.3\%Mc$ and sufficient 60 cycle ac voltage superimposed on the direct reflector voltage to suppress oscillation on the ends of the sweep. The crystal current as a function of reflector voltage shall be observed with an amplifier and an oscilloscope having a minimum pass band of 0.1 megacycles. With the standing wave introducer per attached drawing or equivalent, inserted in the guide, there shall be no discontinuity at the maximum power points for any phase of standing wave, when the magnitude of the standing wave is as specified.

METAL COVER FOR TEMPERATURE COMPENSATION TEST

NOTE 1.
THE TUBE SHALL BE MOUNTED WITH AN APPROXIMATE CLEARANCE BETWEEN IT AND THE COVER OF 1/2 INCH. THE PLANE PASSING THROUGH THE TUNING MECHANISM AND THE LONGITUDINAL AXIS OF THE TUBE SHALL BE PARALLEL TO PLANE (A)-(A).

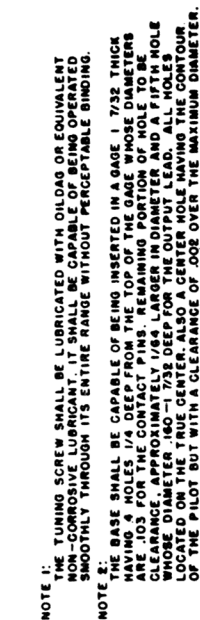
NOTE 2.
ENCLOSE METAL COVER IN CYLINDER TO SHIELD IT FROM EXTERNAL AIR CURRENTS.

NOTE 3.
HEATING AND COOLING ELEMENTS SHALL BE APPLIED TO THE TOP OF COVER.

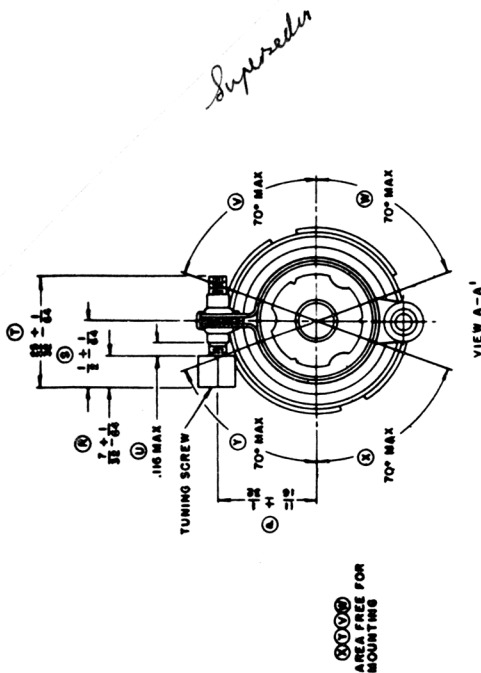


TUBE TYPE DIM.	A	B	C	D	E
2K22, 2K25, 2K26, 2K29 726 A, B, C	$2\frac{5}{8}$	$2\frac{3}{4}$	$1\frac{3}{8}$	$\frac{5}{16}$	$2\frac{1}{16}$
2K41	7	$4\frac{5}{8}$	$2\frac{5}{16}$	$\frac{5}{16}$	$4\frac{1}{4}$
2K45	$2\frac{5}{8}$	$3\frac{1}{16}$	$1\frac{17}{32}$	$\frac{5}{16}$	$2\frac{1}{16}$

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TYPE APPROVAL TEST MEASUREMENT: C, E, T, V, W, X, Y, AB, AND NOTE 3.
DESIGN TEST MEASUREMENTS: A, B, D, F, O, N, R, S, U, AC.
PRODUCTION TEST MEASUREMENTS: ALL OTHER DIMENSIONS AND NOTES.

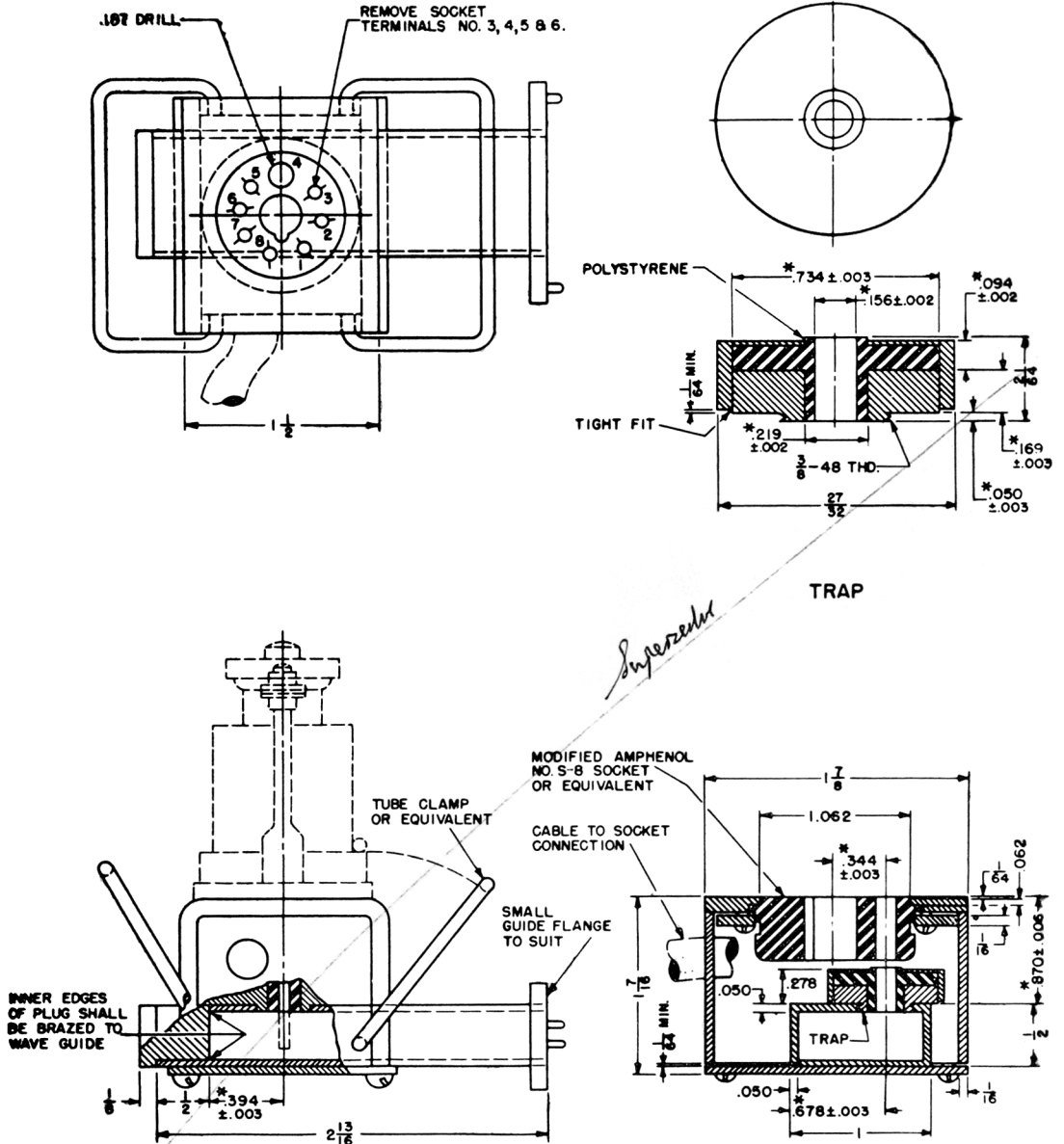


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JAN-2K25, 2K45

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DIMENSIONS INDICATED BY * DETERMINE THE BROAD BAND CHARACTERISTICS OF THE COUPLER AND SHOULD BE HELD TO TOLERANCES SHOWN.

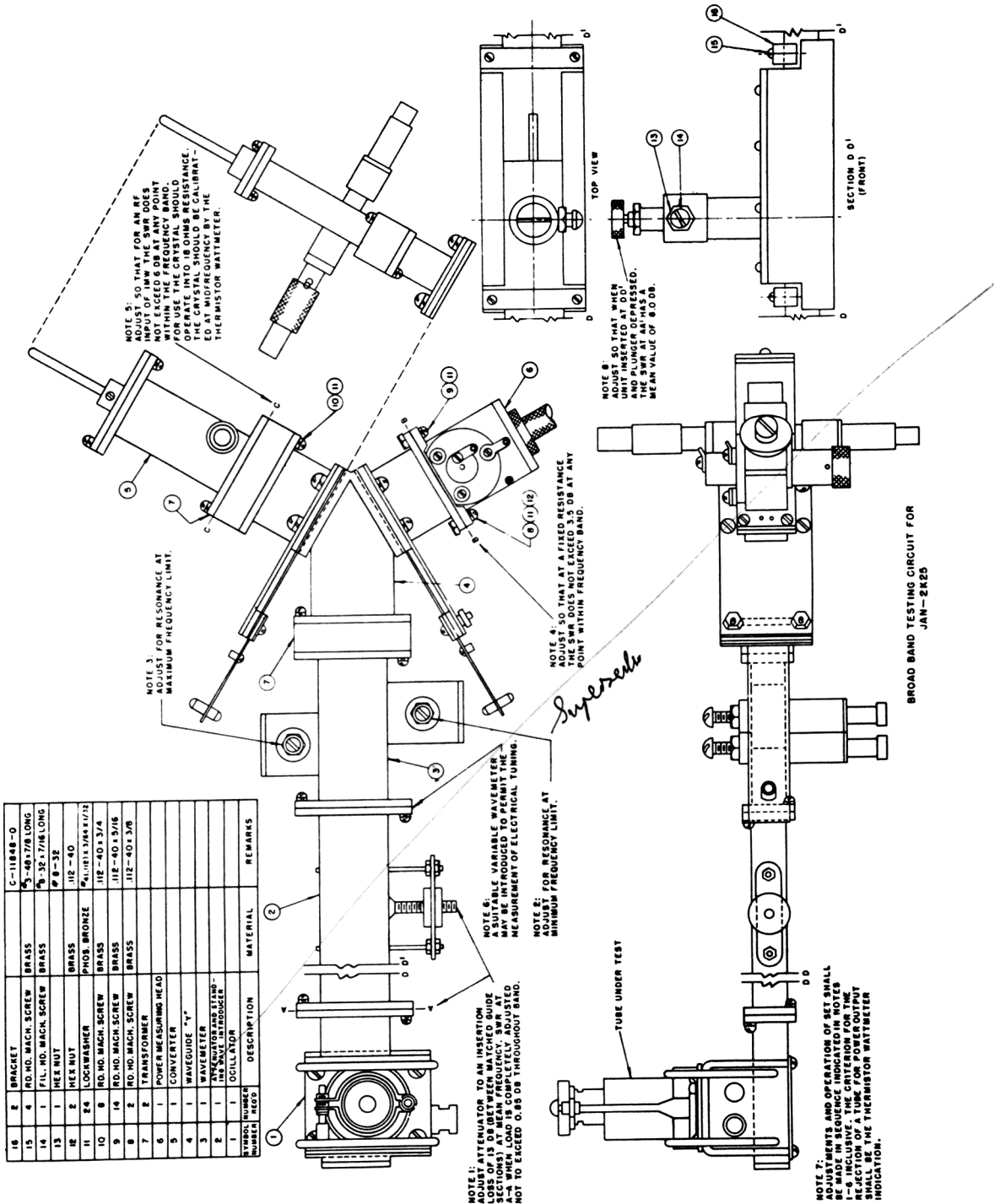
ALL HIGH FREQUENCY SURFACES TO BE SILVER OR GOLD PLATED.

SOCKET DETAILS FOR BROAD BAND TESTING CIRCUIT

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C-11848-O				SYMBOL NUMBER	DESCRIPTION	MATERIAL	REMARKS
16	2	BRACKET					
15	4	RD. NO. MACH. SCREW	BRASS				
14	1	FIL. NO. MACH. SCREW	BRASS				
13	1	HEX NUT	PHOS. BRONZE				
12	24	LOCKWASHER	PHOS. BRONZE				
11	2	HEX NUT	PHOS. BRONZE				
10	8	RD. NO. MACH. SCREW	BRASS				
9	14	RD. NO. MACH. SCREW	BRASS				
8	2	RD. NO. MACH. SCREW	BRASS				
7	2	TRANSFORMER					
6	1	POWER MEASURING HEAD					
5	1	CONVERTER					
4	1	WAVEGUIDE "Y"					
3	1	WAVEGUIDE "T"					
2	1	WAVEGUIDE "T"					
1	1	OCILLATOR					

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