

(MECHANICALLY TUNED)



The Bendix® Type TK-61 Tube is a ruggedized, low voltage, reflex oscillator designed for use as a CW power source at a frequency of $10,525 \pm 25$ Mc./sec. A trimming screw for limited frequency adjustment is located at the top of the envelope. This screw is set and locked at the factory, but may be adjusted by the user for small frequency changes, should this be desired. The tube is ideally suited for application in speed control Doppler radar systems. The tube has relatively excellent frequency stability with respect to ambient temperature changes. In addition, the power output shows only minor variation when cavity tuning is changed throughout its assigned band.

The ruggedization feature of the tube permits it to be operated under severe vibration environments without sacrifice of frequency stability. Under vibration conditions of 10g acceleration at 50 cycles, the maximum frequency variation is ± 1.3 Mc./sec.

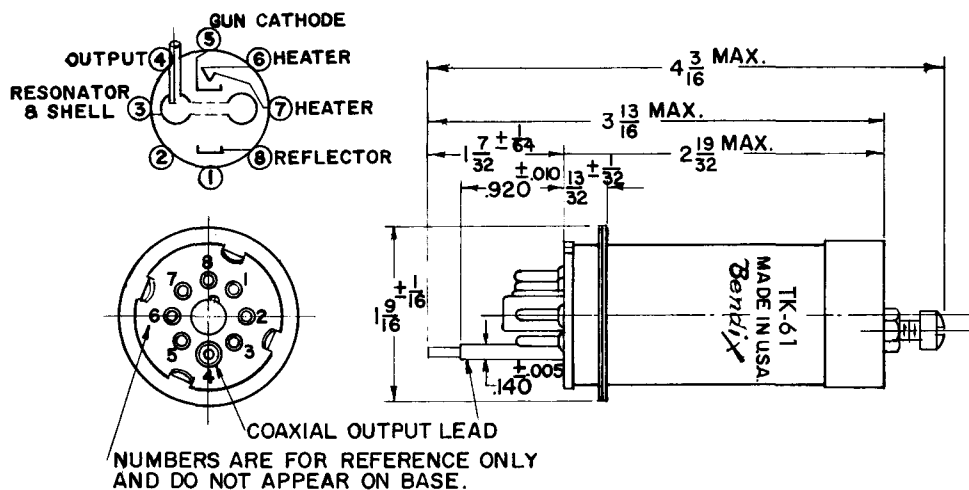
The tube has coaxial output and is coupled to the waveguide circuit through a transducer identical to that used for type 2K45, 2K25, and 6116 klystrons. Details of this transducer are covered in Military Drawing Number 227-JAN.

- **Base:** Small octal 8-pin, B8-21, Low Loss Phenolic Wafer, Modified for coaxial output lead as shown on outline drawing.
- **Coupling to Wave Guide:** Coaxial output fits standard transducer per 227-JAN.
- **Cooling:** Convection.
- **Mounting Position:** Any.
- **Cavity:** Integral with tube.
- **Bulb:** Metal.

(ABSOLUTE VALUES)

Resonator Voltage.....	350 volts D.C.
Reflector Voltage	—350 volts D.C.
Filament Voltage	6.3 $\pm$ 8% volts
Gun Cathode Current.....	32 ma. D.C.
Heater-Cathode Voltage	$\pm$ 100 volts D.C.

Frequency	10,525 Mc./sec. ± 25 Mc./sec.
Resonator Voltage	300 volts D.C.
Reflector Voltage	
@ 10,525 Mc./sec....	—70 to —145 volts D.C.
Filament Voltage	$6.3 \pm 8\%$ volts
Gun Cathode Current....	32 mA D.C. (max.)



NUMBERS ARE FOR REFERENCE ONLY
AND DO NOT APPEAR ON BASE.

THE *Bendix* CORPORATION

Red Bank DIVISION, EATONTOWN, NEW JERSEY

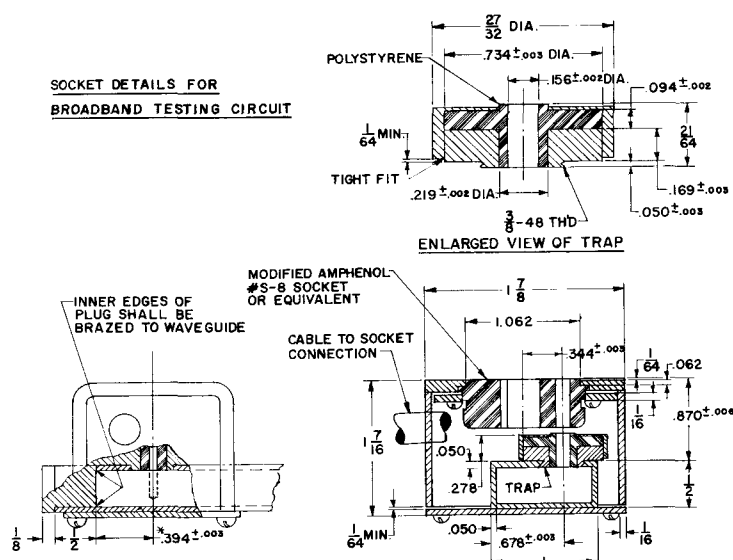
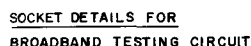
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Bendix Type TK-61

ELECTRICAL CHARACTERISTICS & TEST CONDITIONS

Test Conditions and Specification Limits

TEST	CONDITIONS	SYMBOL	LIMITS		UNITS
			MIN.	MAX.	
PRODUCTION TESTS:					
Total Reflector Current:	$E_r = -150 \text{ Vdc}$ $t = 120 \text{ sec. (min)}$	I_r :	—	5.0	μAdc
Reflector Leakage:	$E_r = -150 \text{ Vdc}$	I_r :	—	3.0	μAdc
Reflector Gas Current:	$E_r = -150 \text{ Vdc}$	I_r :	—	2.0	μAdc
Cathode Current:	$E_r = -150 \text{ Vdc}$	I_k :	—	32	mAdc
Reflector Voltage:	$E_r \text{ Max. Po}$ $@ 10,525 \pm 0.3\% \text{ Mc./sec.}$	E_r :	-70	-130	Vdc
Mechanical Tuning Range:	$E_r \text{ Max. Po}$	Max. F:	10,550	—	Mc
		Min. F:	—	10,500	Mc
Bump:	$E_f = 5.8$; $E_r \text{ Max. Po}$ $@ 10,525 \pm 0.3\% \text{ Mc./sec.}$	$\Delta P_o/P_o$:	—	0.15	
Emission:	$E_f = 5.8$; $E_r = -150 \text{ Vdc}$	$\Delta I_k/I_k$:	—	0.15	
Vibration:	$E_r \text{ Max. Po at } 10,525 \text{ Mc./sec.}$ Total Displacement = 0.080"	F:	—	± 1300	Kc
Power Output:	F = 50 cps, Position Y1 and X1 $E_f = 5.8$; F 10,525 $\pm 25 \text{ Mc./sec.}$	P_o :	20	—	mW
DESIGN TESTS:					
Electrode Insulation:	300 Vdc Tube Cold	R_{k-rs} :	2.0	—	Meg.
Heater Current:		R_{f-rs} :	2.0	—	Meg.
Insulation:	$E_h - K = \pm 45 \text{ Vdc}$	I_f :	465	570	mA
Electrical Tuning Range:	$E_r \text{ (Mode)}/50\% \text{ Max.}$ P_o : F 10,525 $\pm 25 \text{ Mc./sec.}$	I_{hK} :	—	100	μAdc
		F:	35	—	Mc.



SOCKET DETAIL