

NOTES: THESE DIMENSIONS INCLUDE TOLERANCES UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. DIMENSIONS IN PARENTHESES ARE FOR INFORMATION ONLY. DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY. DIMENSIONS IN PARENTHESES ARE FOR INFORMATION ONLY. DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY.

THIS DOCUMENT HAS BEEN PREPARED BY THE CONTRACTOR AND IS NOT TO BE USED FOR THE DESIGN OF ANY OTHER EQUIPMENT WITHOUT THE WRITTEN APPROVAL OF THE CONTRACTOR.

NOTE: *FOR INFORMATION ONLY. CONTRACTOR MAY AT HIS OPTION DEVIATE FROM THESE PROCESS DETAILS

SYN		DESCRIPTION	DATE	APPROVAL
A		A. REVISED & REDRAWN	21 DEC 59	42428-PC-59-A-151 REV 1

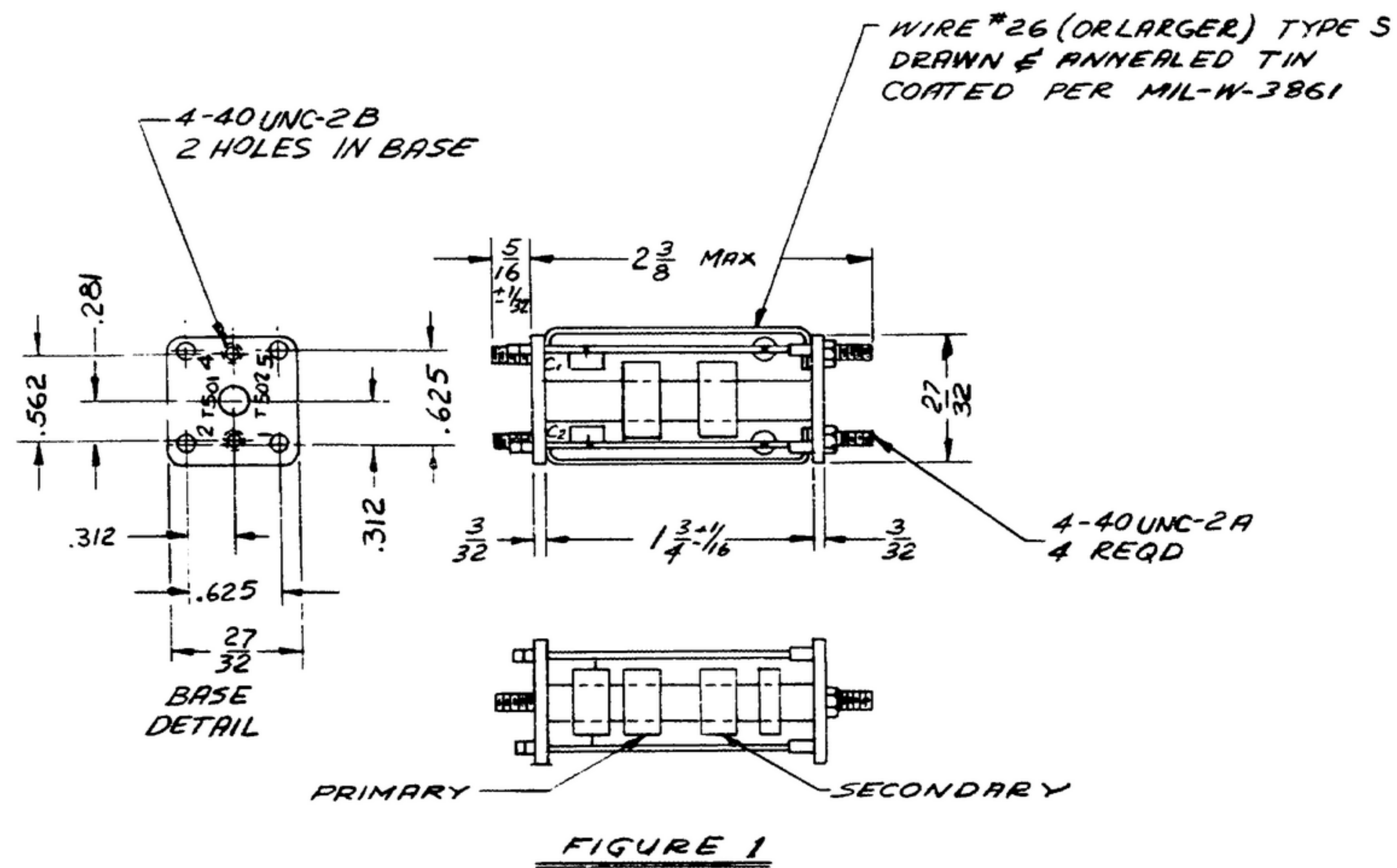


FIGURE 1

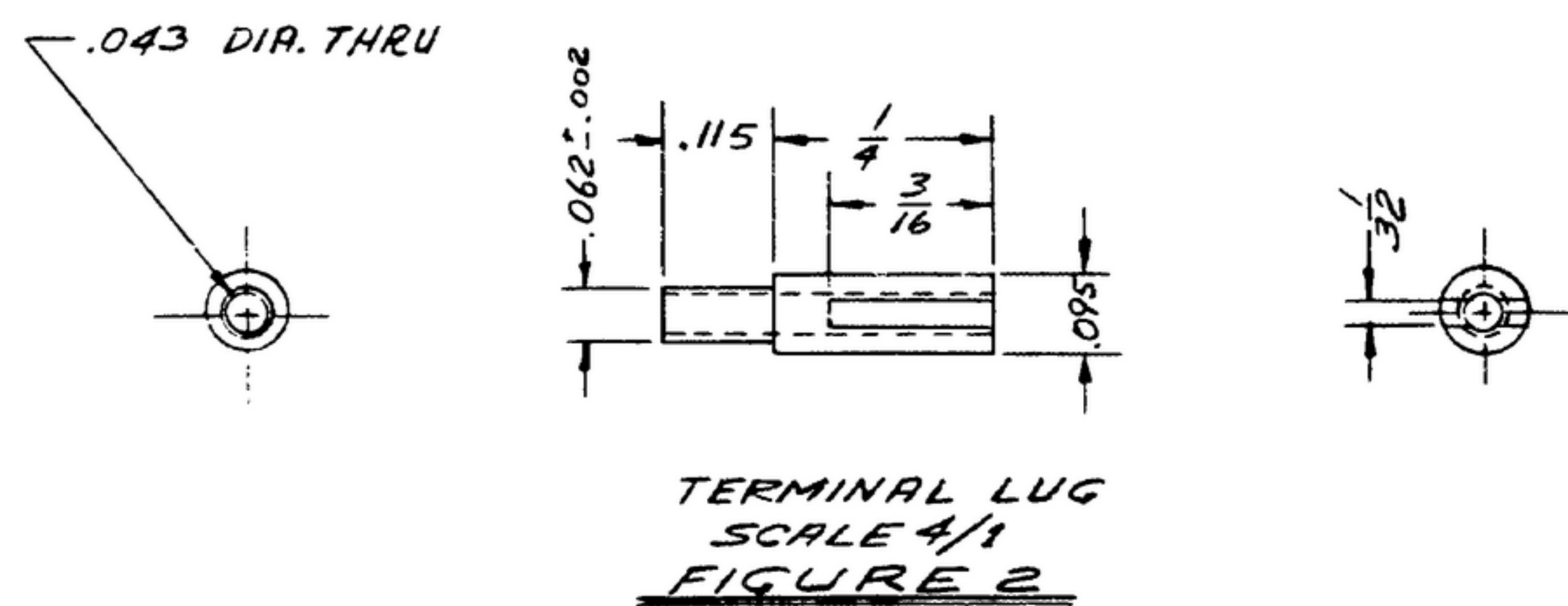


FIGURE 2

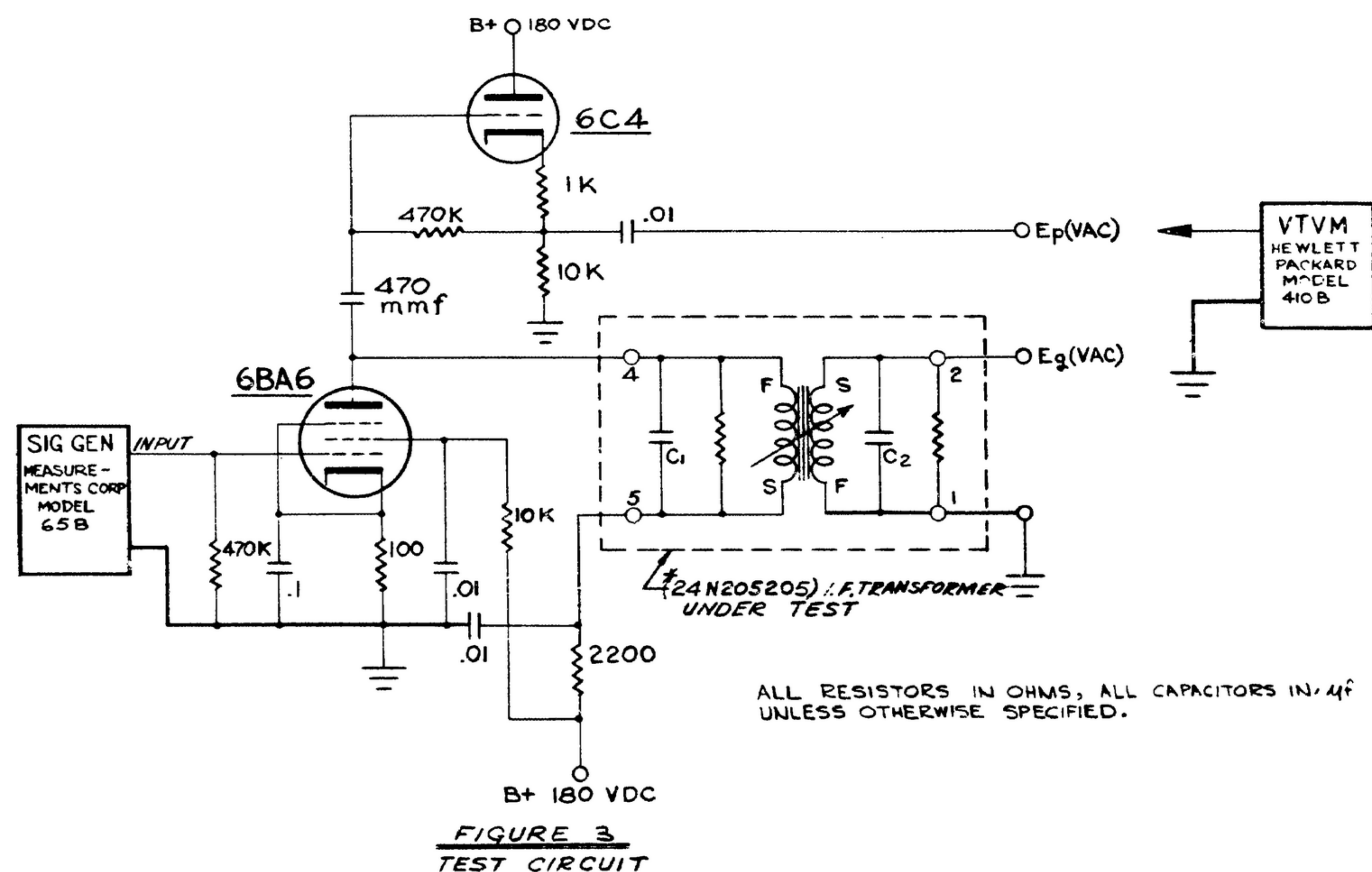


FIGURE 3 TEST CIRCUIT

ALL RESISTORS IN OHMS, ALL CAPACITORS IN .4F UNLESS OTHERWISE SPECIFIED.

NOTES:

1. PART MAY BE NO. 24N205205 AS SUPPLIED BY STEWART-WARNER ELECTRONICS, CHICAGO, ILL., OR EQUAL, PROVIDING IT MEETS THE FOLLOWING REQUIREMENTS AND DIMENSIONS SHOWN.

DESCRIPTION: 455 KC DOUBLE TUNED I.F. TRANSFORMER.

ELECTRICAL CHARACTERISTICS:
CENTER FREQUENCY: 455 KC.

Q: PRIMARY Q: THE PRIMARY Q SHALL EQUAL 20 ±10% WHEN MEASURED ON BOONTON Q-METER TYPE 160A, AS SUPPLIED BY BOONTON RADIO CORP., BOONTON, N.J. OR EQUAL, WITH TERMINAL 5 AND SHIELD CAN GROUND. A RESISTOR MAY BE CONNECTED ACROSS THE COIL TO BRING THE "Q" WITHIN THE PRESCRIBED LIMITS.
SECONDARY Q: THE SECONDARY Q SHALL BE 20 ±10% MEASURED ON A BOONTON Q-METER TYPE 160A, WITH TERMINAL 1 AND THE SHIELD CAN GROUND. A RESISTOR MAY BE CONNECTED ACROSS THE COIL TO BRING THE "Q" WITHIN THE PRESCRIBED LIMITS.
COUPLING: CRITICAL, +15% -10% MEASURED IN THE TEST CIRCUIT OF FIGURE 3.
PRODUCTION MEASUREMENT OF COUPLING: COUPLING SHALL BE DETERMINED USING THE TEST CIRCUIT OF FIGURE 3.

$$k = \frac{E_x}{E_y} - 1 = 1, +15\% \quad E_x = E_p \text{ WITH SECONDARY SHORTED}$$

$$k = \frac{E_x}{E_y} - 1 = 1, -10\% \quad E_y = E_p \text{ WITH SECONDARY OPEN}$$

E_x & E_y MEASURED AT CATNOE FOLLOWER OUTPUT

BANDWIDTH: 32 KC AT 3 DB DOWN BANDWIDTH TOLERANCE, ±10%.
PRODUCTION MEASUREMENT OF BANDWIDTH: ADJUST GENERATOR TO 455 KC. ADJUST LEVEL FOR E_y REFERENCE VALUE OF 1 VAC. VARY THE FREQUENCY TO VALUES ABOVE AND BELOW THE RESONANT FREQUENCY AT WHICH THE A.C. OUTPUT VOLTAGE DROPS TO .707 VAC. BANDWIDTH IS DEFINED AS THE DIFFERENCE BETWEEN THE UPPER AND LOWER FREQUENCIES.

MATERIALS AND COMPONENTS:

SHIELD CAN--29/32" X 29/32" OUTSIDE X .018 THICK, INSIDE DEPTH 2.044" ±.015. ALUMINUM, FINISH ES13 PER SPEC MIL-F-14072.

PHENOLIC:

TUBING--MAY BE TORCRITE AS SUPPLIED BY CLEVELAND CONTAINER CO., CLEVELAND, OHIO, OR CONTRACTOR'S APPROVED EQUIVALENT: .283 IN. ±.003 IN. OD. TAPPED FOR 1/4 X 28 SHALLOW THREAD IN ACCORDANCE WITH MPA-11-56T.

SHEET STOCK--PLASTIC TYPE PBE-P PER SPEC MIL-P-3115.

CORE: THREADED CORE PER MPA-11-56T 1/4 X 28 SHALLOW THREAD X 3/8 LONG.

ALL POWDERED IRON PARTS SHALL BE IMPREGNATED TO WITHSTAND THE SERVICE CONDITIONS TEST LISTED BELOW.

TERMINALS: DETAILED, BRASS, FINISH, M351 PER SPEC MIL-F-14072 AS SUPPLIED BY LECO ELECTRONIC INC., BURBANKS, CALIF.

CAPACITOR, COIL TUNING: CH15C21G05 CAPACITOR SHALL BE IN ACCORDANCE WITH SPEC MIL-C-5 EXCEPT WHERE AMENDED: SILVER WICA, STYLE CM15, TOTAL CAPACITANCE 200 mF ±2%, TEMPERATURE RANGE -55°C TO +125°C; AMENDED CHARACTERISTIC (E) -20 TO +100 PPM/°C. AS SUPPLIED BY: CORNELL-DUBILIER ELECTRIC CORP., SO. PLAINFIELD, N.J. OR EQUAL.

CC22UJ390G CAPACITOR SHALL BE IN ACCORDANCE WITH SPEC MIL-C-20 EXCEPT WHERE AMENDED: CERAMIC, STYLE CC22, TEMPERATURE COEFFICIENT -750 PPM/°C, TEMPERATURE COEFFICIENT TOLERANCE J, TOTAL CAPACITY 39 mF, ±2%; AMENDED TEMPERATURE RANGE -55°C TO +125°C. AS SUPPLIED BY: ERIE RESISTOR CORP., ERIE, PENN. OR EQUAL.

RESISTOR, COIL TUNING: RC20GF39SJ RESISTOR SHALL BE IN ACCORDANCE WITH SPEC MIL-R-11: 39K OHMS ±5%, 1/2 WATT, COMPOSITION WIRE: 6 X .41 SMP LITZ, AS SUPPLIED BY CHICAGO WIRE INSULATING & MFG. CO., CHICAGO, ILL. OR EQUAL.

WIRE: 6 X .41 SMP LITZ, AS SUPPLIED BY CHICAGO WIRE INSULATING & MFG. CO., CHICAGO, ILL. OR EQUAL.

IMPREGNATION: COILS SHALL BE IMPREGNATED WITH POLYSTYRENE LACQUER, TYPE POLYMED #912 AS SUPPLIED BY AMPHENOL ELECTRONICS CORP., CHICAGO, ILL. OR CONTRACTOR'S APPROVED EQUIVALENT.

MANUFACTURER'S RECOMMENDED INSTRUCTIONS FOR IMPREGNATING COIL:

A. DRY OUT COIL AT 100°C FOR MINIMUM OF 2 HOURS.

B. THIN POLYMED TO BRUSHING CONSISTENCY AND APPLY ONTO COIL THOROUGHLY.

C. AIR DRY FOR 30 MINUTES OR BAKE DRY AT 50°C FOR 15 MINUTES.

D. REPEAT STEPS B & C.

FUNGICIDAL MATERIALS: ALL ORGANIC MATERIALS SHALL BE FUNGUS INERT OR TREATED TO BE FUNGUS RESISTANT WITH VARNISH, TYPE 1 PER SPEC MIL-Y-173.

MARKINGS: WINDINGS SHALL BE CONNECTED TO BASE TERMINALS AS INDICATED. CONTRACTOR'S PART NO. SHALL BE AFFIXED ON THE SIDE OF CASE IN A THOROUGHLY LEGIBLE HAMMER. ALL CHARACTERS & MARKINGS IN VERTICAL GOTHIC 3/32 INCHES HIGH IN ACCORDANCE WITH AND TO MEET THE TEST REQUIREMENTS OF SPEC MIL-N-13231.

THE SYMBOLS T501 & T502 SHALL APPEAR ON THE TOP OF THE SHIELD CAN.

SERVICE CONDITIONS:

TEMPERATURE RANGE: -40°C TO +95°C, STORAGE TO -62°C.

HUMIDITY: UP TO 95% R.H.

STABILITY: THE RESONANT FREQUENCY OF THE TUNED CIRCUIT SHALL NOT VARY MORE THAN 2 KC OVER THE TEMPERATURE RANGE -40°C TO +95°C.

SERVICE CONDITIONS TEST: UNITS SHALL OPERATE WITHIN REQUIRED SPECIFICATION OVER ANY NORMAL COMBINATION OF SPECIFIED SERVICE CONDITIONS. UNITS SHALL SHOW NO EVIDENCE OF CORROSION OR MALFUNCTIONING AFTER SUBJECTION TO FIVE CYCLES NON-OPERATING OF HUMIDITY CYCLING SPECIFIED ON DWG. SC-D-1626F PLUS A 4-HOUR DRYING PERIOD.

VIBRATION: THE UNIT SHALL BE SUBJECTED TO VIBRATION TEST IN ACCORDANCE WITH SPEC MIL-STD-202, METHOD 201, 30 MINUTES IN EACH PLANE. AT THE CONCLUSION OF THE TEST, UNIT SHALL SHOW NO EVIDENCE OF BREAKAGE, PERMANENT DEFORMATION OR LOOSENING OF PARTS.

CORE TORQUE: CORE SHALL BE ADJUSTED USING TUNING TOOL NO. 8606 AS SUPPLIED BY GENERAL CEMENT CO., ILL. OR EQUAL. TURNING TORQUE SHALL BE 3/4 TO 6 INCH OUNCES FOLLOWING PRELIMINARY POSITIONING AS FOLLOWS: ROTATE CORE 1/2 REVOLUTION IN EACH DIRECTION FROM CENTER FREQUENCY POSITION. RETURN TO CENTER FREQUENCY AND REPEAT FOR A TOTAL OF 5 CYCLES.

REQD	PART NO.	DESCRIPTION	MATL	NATL SPEC
LIST OF MATERIAL				
				24N205205

UNLESS OTHERWISE SPECIFIED		GOLINS RADIO CO.	DEPARTMENT OF THE ARMY	
DIMENSIONS ARE IN INCHES		66 DAR RAPIDS IOWA	SIGNAL CORPS ENGINEERING	
TOLERANCES ON FRACTIONS DECIMALS ANGLES		14214-PH-51-93	LABORATORIES	
±1/4 ±.005 ±1°		SIGNAL CORPS	FORT MONMOUTH NEW JERSEY	
SM-D-343620	SC-DL-248775	REVIEWED P.M.E.	TRANSFORMER I.F.	
SM-D-248818	SC-DL-248775	APPROVED H.L.Y.		
NEXT ASSY	USED ON	Checked By E.G.		
APPLICATION		DATE 20 MAR 58	SCALE 1/1	SM-D-249238

WHEN REFERRING TO THIS DRAWING STATE DRAWING NO., APPLICABLE ISSUE SYMBOL, IF ANY, AND DATE.