

EQUIP. TYPE R-300A/URR EXP. NO.

Coll 540-5884-002

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH THEY WERE ORIGINALLY INTENDED, THE USER ASSUMES ALL RESPONSIBILITY FOR ANY INADEQUACIES, OMISSIONS, OR ERRORS THAT MAY BE REVEALED BY SUCH USE. THIS NOTICE IS NOT TO BE REGARDED BY THE USER AS A WARRANTY, ENDORSEMENT, OR OTHER STATEMENT OF OPINION BY THE GOVERNMENT OR ANY AGENCY THEREOF. THE GOVERNMENT MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, OR QUALITY OF ANY INFORMATION, DATA, OR MATERIAL FURNISHED HEREUNDER. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY, COMPLETENESS, AND QUALITY OF ANY INFORMATION, DATA, OR MATERIAL FURNISHED HEREUNDER. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND AUTHORIZATIONS FOR THE USE OF ANY INFORMATION, DATA, OR MATERIAL FURNISHED HEREUNDER. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND AUTHORIZATIONS FOR THE USE OF ANY INFORMATION, DATA, OR MATERIAL FURNISHED HEREUNDER.

*THIS DOCUMENT HAS BEEN PURCHASED BY THE GOVERNMENT AND MAY BE REPRODUCED AND USED IN CONNECTION WITH ANY GOVERNMENT PROCUREMENT OR MAINTENANCE OPERATION.

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

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

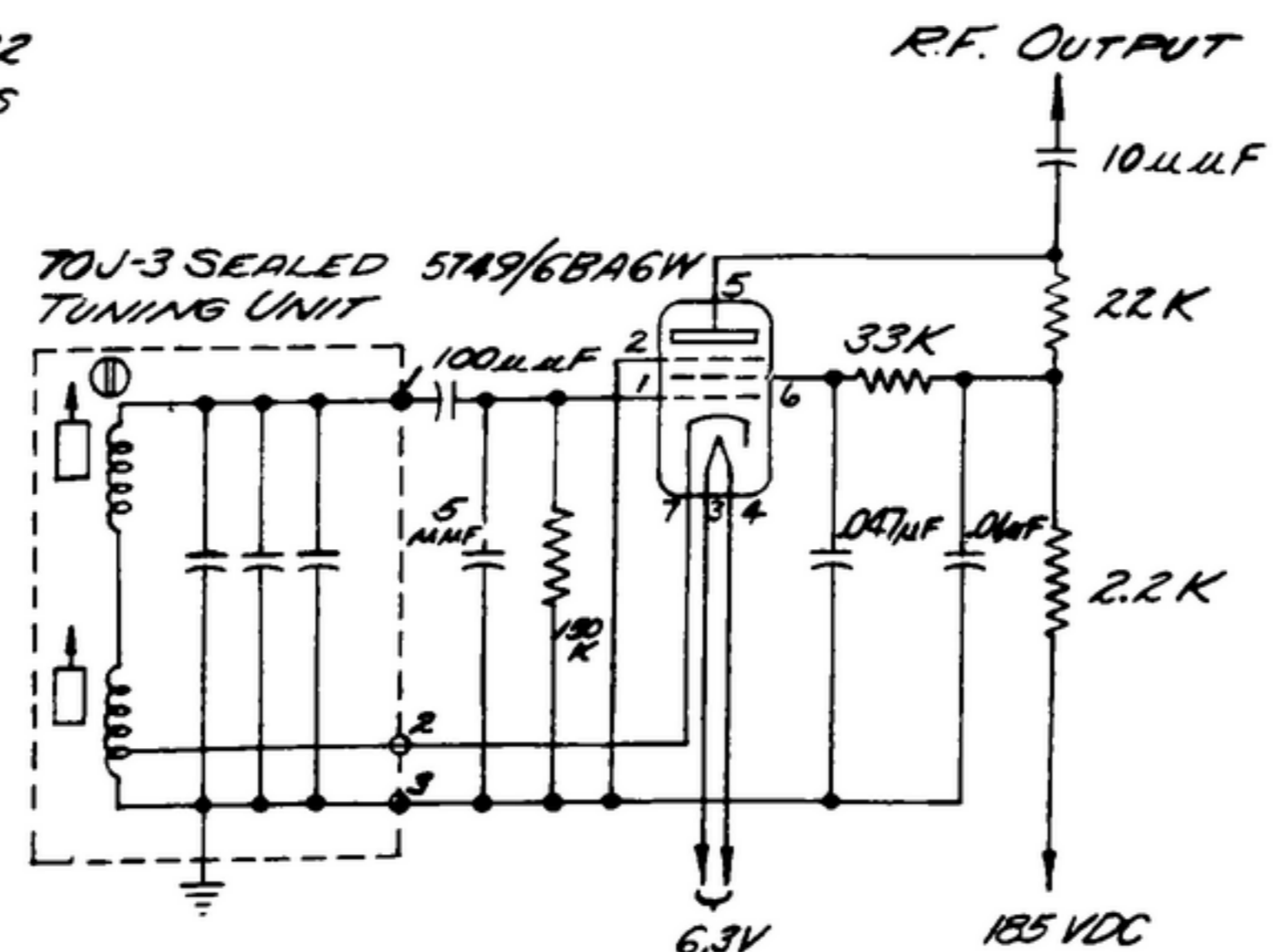
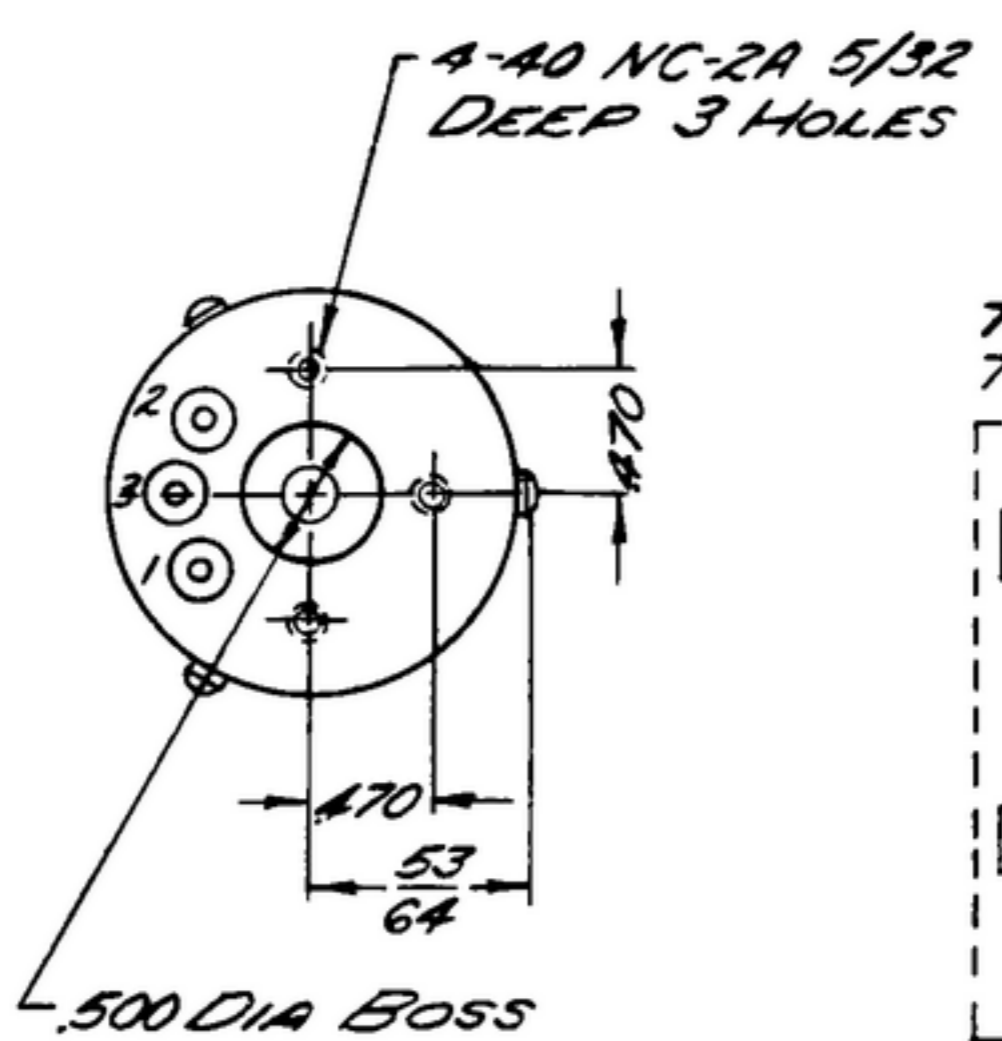
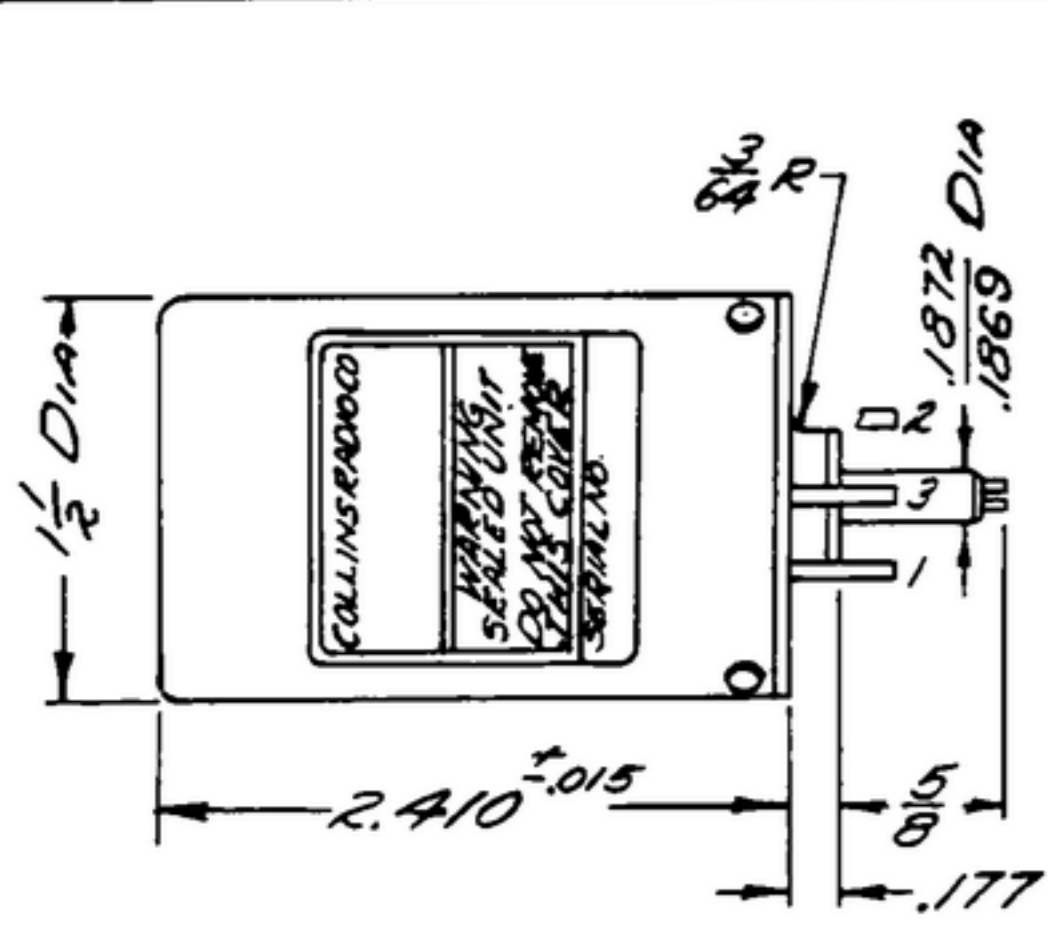


FIGURE 1
SCHEMATIC OF 70J-3 TUNING UNIT
AND RECOMMENDED CIRCUIT

NOTES:
 1. PART MAY BE TYPE 70J-3 (NO. 522 0196 004), AS SUPPLIED BY COLLINS RADIO CO., CEDAR RAPIDS, IOWA OR EQUAL, PROVIDING IT MEETS THE FOLLOWING REQUIREMENTS AND DIMENSIONS SHOWN.

DESCRIPTION: THE 70J-3 IS A TUNED CIRCUIT CONSISTING OF TWO INDUCTORS, ONE FIXED AND ONE VARIABLE, ONE SEALED CAPACITOR WHICH PROVIDES THE MAJOR TUNING CAPACITANCE. IN PARALLEL WITH THE SEALED CAPACITOR ARE VARIOUS TEMPERATURE COMPENSATING CAPACITORS THAT MINIMIZE TEMPERATURE FREQUENCY DRIFT. THE UNIT IS SEALED TO ATMOSPHERIC CHANGES.

CIRCUIT: TO OBTAIN THE CORRECT OPERATIONAL CHARACTERISTICS THE FIGURE 1 CIRCUITRY SHOULD BE PROVIDED. IT SHOULD BE RUGGEDLY BUILT WITH CAREFUL ATTENTION TO SHORT LEADS AND MINIMUM STRAY CAPACITANCES ESPECIALLY IN THE GRID CIRCUIT.

PERFORMANCE:
TUNING: THE CENTER FREQUENCY IS 455 KC. ROTATION OF THE LEADSHAFT BY 126 DEGREES EITHER CW OR CCW FROM CENTER WILL PRODUCE FREQUENCY SHIFT OF FROM 2.4 TO 3.6 KC FROM 455 KC. THE FREQUENCY WILL INCREASE WITH CLOCKWISE ROTATION WHEN FACING LEADSHAFT. THE FREQUENCY SHIFT IS BALANCED BETWEEN OPPOSITE 126° ROTATIONAL EXTREMES WITH 500 CYCLES.
FREQUENCY-TEMPERATURE: FREQUENCY VARIATIONS FROM 0°C TO 30°C WILL BE 150 CPS OR LESS; FREQUENCY VARIATIONS FROM 30°C TO 60°C WILL BE 100 CPS OR LESS. FREQUENCY VARIATION FROM 30°C TO 80°C WILL BE 125 CPS OR LESS. THE UNIT WILL PERFORM SATISFACTORILY AT TEMPERATURES TO -40°C WITH GREATER FREQUENCY SHIFT.
FREQUENCY-VOLTAGE: FREQUENCY VARIATION WITH A B+ SUPPLY CHANGE OF ±10% FROM NOMINAL WILL BE 15 CPS OR LESS. FREQUENCY VARIATION WITH A FILAMENT SUPPLY CHANGE OF ±10% FROM NOMINAL WILL BE 10 CPS OR LESS.
RF VOLTAGE OUTPUT: WHEN MEASURED AT THE INDICATED CONNECTION WITH A PEAK READING RMS CALIBRATED VACUUM TUBE VOLTMETER THE RF OUTPUT WILL BE 15 VOLTS OR MORE.
TORQUE: TORQUE TO TURN THE TUNING SHAFT WILL MEASURE FROM 4 TO 24 INCH OUNCES.
CAUTION--DO NOT EMPLOY MORE THAN 36 INCH OUNCES TO TURN THE TUNING SHAFT!
SHOCK AND VIBRATION: THE UNIT IS CAPABLE OF WITHSTANDING SHOCK UP TO 15 G'S AND VIBRATION OF 10 G'S FROM 5 TO 55 CPS.
FINISHES:
 ALUMINUM--EXPOSED SURFACES E513, PER SPEC MIL-F-14072.
 BRASS--EXPOSED SURFACES M220, PER SPEC MIL-F-14072.
 STAINLESS STEEL--E300, PER SPEC MIL-F-14072.
 SHAFT MOVES .0625 INCHES PER TURN.

COLLINS PART NO.	ITEM	REQD.	PART NO.	DESCRIPTION	MATL.	MATL. QTY.
------------------	------	-------	----------	-------------	-------	------------

LIST OF MATERIAL COLLINS PART NO. 558-0222-003

DRAWN BG	CHECKED 	APPROVED 	COLLINS RADIO CO. CEDAR RAPIDS, IOWA 14214-PH- 51-93	70J-3 TUNING UNIT	DEPARTMENT OF THE ARMY SIGNAL CORPS ENGINEERING LABORATORIES FORT MONMOUTH NEW JERSEY
UNLESS OTHERWISE SPECIFIED: DECIMAL DIMENSIONS INCLUDING HOLE SIZES MAY VARY ±.005 FRACTIONAL DIMENSIONS INCLUDING HOLE SIZES MAY VARY ±1/64 MACHINED ANGLES MAY VARY ±1° SHEARED ANGLES MAY VARY ±.25° BROKEN ANGLES MAY VARY ±1° ECCENTRICITY BETWEEN ANY DIAMETERS ON THE SAME CENTERLINE SHALL NOT EXCEED .010 TOTAL INDICATOR READING. ALL DIMENSIONS ARE FINISH DIMENSIONS INCLUDING APPLIED FINISH AND ARE GIVEN IN INCHES.			SIGNAL CORPS REVIEWED PME APPROVED HLY PME		
558-0363-001 COLLINS NO. QTY NEXT ASSY USED ON	SM-D-248874 SC-DL-248775	APPLICATION	DATE 7 MAY 56 SCALE 1/1	SM-C-248874	