

No. 104-A AMPLIFIER

COMMERCIAL PRODUCTS
APPARATUS REFERENCE SHEET

NO	1-50
AMPLIFIER	
104 A	
2-6-39	

GENERAL

THE 104A AMPLIFIER IS A SINGLE STAGE AMPLIFIER INTENDED FOR USE AS A PREMIXING OR LOW LEVEL AMPLIFIER IN SPEECH INPUT EQUIPMENTS FOR RADIO TELEPHONE BROADCASTING.

ELECTRICAL CHARACTERISTICS

GAIN..... 29.5DB
GAIN CONTROL..... NONE
OPERATES FROM..... 30 OHMS, TERMINALS 1-2.
250 OHMS, TERMINALS 1-3.
INTERNAL INPUT IMPEDANCE. OPEN CIRCUIT
OPERATES INTO..... 30 OHMS, TERMINALS 7-8. 500 TO
600 OHMS, TERMINAL 7 & BL WIRE.
INTERNAL OUTPUT IMPEDANCE. 30 OR 330 OHMS
OUTPUT POWER..... 60 MICROWATTS (-20 DB)
OUTPUT NOISE..... APPROX. -110 DB WEIGHTED, -100 DB UN-
WEIGHTED (0 DB = 6 MW)
POWER SUPPLY..... FIL'T. 0.32 AMP. AT 10±0.3 V. AC OR DC
PLATE 0.6 MA AT 375 V. DC.
COMPLETE POWER SUPPLY MAY BE OBTAINED FROM FOLLOWING EQUIPMENT:

EQUIPMENT

701A S.I. BAY.....	SIX
105A AMPLIFIER.....	SIX
106A AMPLIFIER PLUS 221A RETARD. COIL AND 8 MF COND.	SIX
15A RECTIFIER.....	TWELVE

SUPPLIES 104 TYPE AMPLIFIERS

VACUUM TUBE

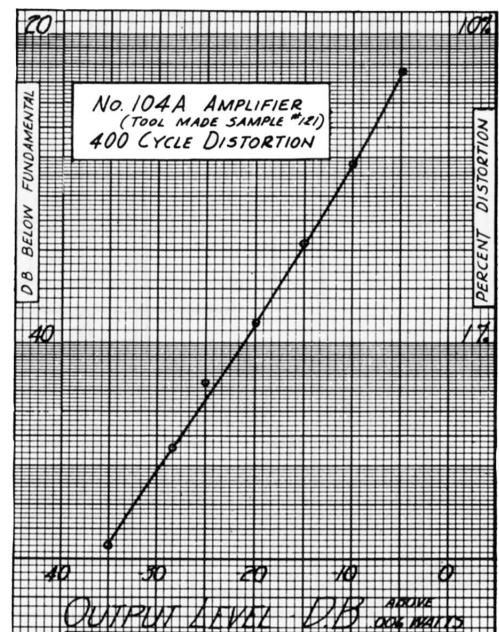
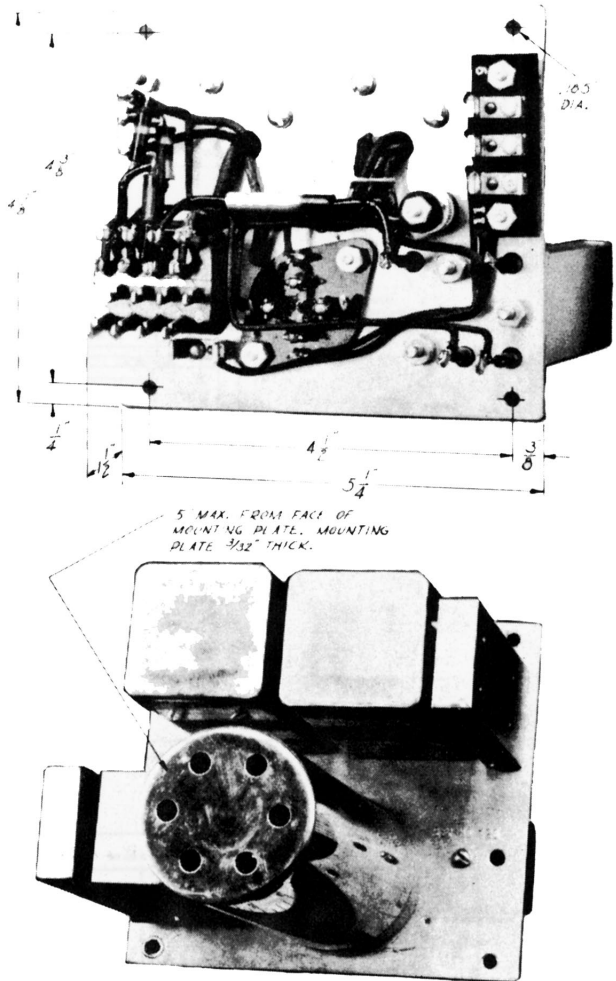
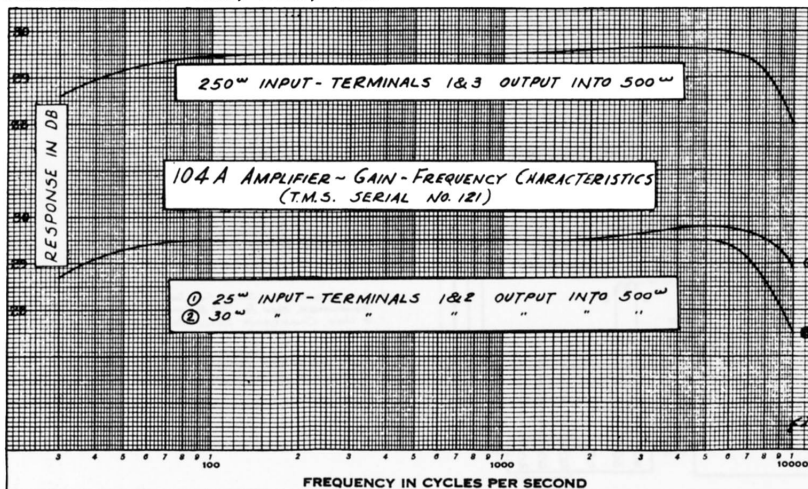
ONE 262B VACUUM TUBE IS REQUIRED.(MUST BE ORDERED SEPARATELY)

EQUIPMENT CHARACTERISTICS

WEIGHT..... APPROX. 4-3/4 LBS.
DIMENSIONS..... SEE ILLUSTRATION.
MOUNTING..... 998A, 998B OR 998C MOUNTING PLATES WILL EACH
MOUNT THREE 104 TYPE AMPLIFIERS.
FINISH..... CADMIUM.

REFERENCES

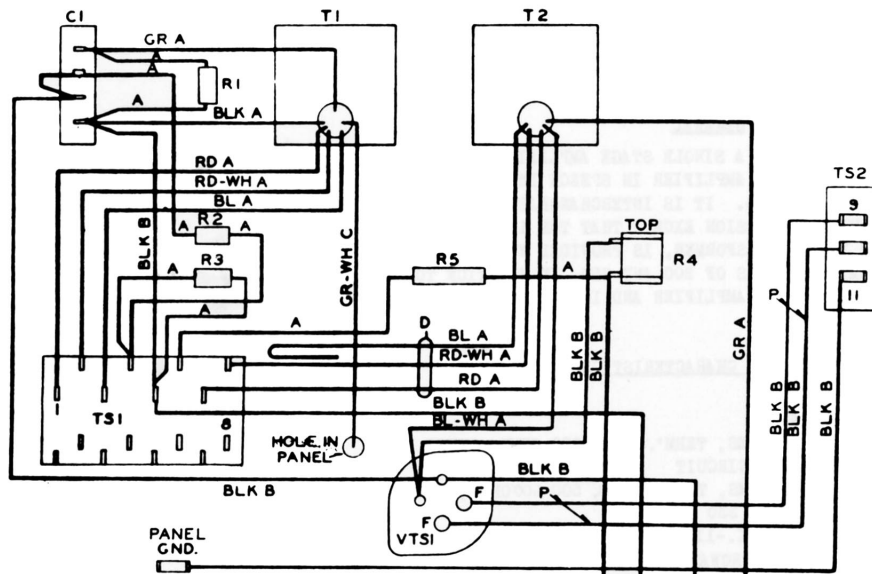
INSTRUCTION BULLETIN NO. 869
ES0-744337..... PUBLICATION SCHEMATIC AND WIRING DIAGRAM
ES0-611721, ISS. 2.. MANUFACTURING SCHEMATIC AND WIRING DIAGRAM
ES0-611795..... ASSEMBLY
ESL-611456..... APPARATUS LIST OF 104A AMPLIFIER AND 998B
MOUNTING PLATE FOR CUSTOMERS USE
ES-743563..... GAIN VS. FREQUENCY CHARACTERISTIC
ES-745050..... POWER OUTPUT VS. TOTAL HARMONIC DISTORTION
PHOTOGRAPHS NOS. 73147, 73148, 73149



FOR WIRING DIAGRAM AND SCHEMATIC SEE REAR OF THIS SHEET

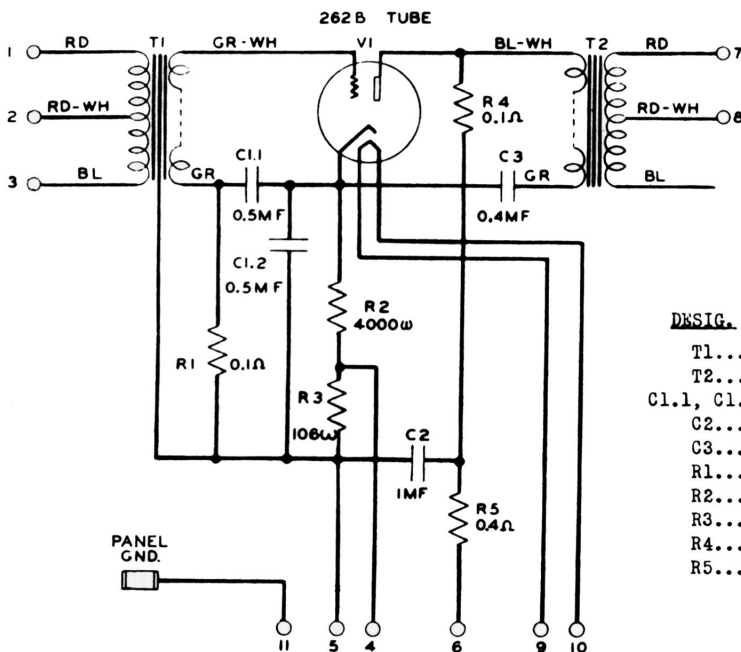
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WIRING DIAGRAM



- NOTES.
1. WIRES MARKED "A" ARE FURNISHED AS PART OF APPARATUS.
 2. WIRES MARKED "B" ARE NO. 18 A.W.G. SOLID WIRE PER K5-7612.
 3. WIRE MARKED "C" SHALL BE 6 1/2 LONG PASSED THROUGH HOLE IN PANEL AND ITS END EQUIPPED WITH GRID CLIP ITEM 12 ESO-611795
 4. WIRE MARKED "D" SHALL BE OF SUFFICIENT LENGTH TO REACH TERMINAL NO. 8 ON TSI, ITS END FOLDED OVER, TAPED AND SECURED TO TRANSFORMER LEADS AS INDICATED.
 5. WIRES MARKED "P" ARE TWISTED PAIRS.
 6. APPARATUS DESIGNATIONS ARE FOR REFERENCE ONLY AND DO NOT APPEAR ON APPARATUS.

SCHEMATIC



APPARATUS LIST

DESIG.

APPARATUS

T1.....	285F INPUT TRANSFORMER
T2.....	170B OUTPUT TRANSFORMER
C1.1, C1.2.....	141C CONDENSER 0.5-0.5 MF.
C2.....	229C CONDENSER 1.0 MF.
C3.....	230A CONDENSER 0.4 MF.
R1.....	0.1 MEGOHM (I.R.C. TYPE BT-1/2
R2.....	4000 OHMS) RESISTANCES
R3.....	I.R.C. TYPE BW-1/2 RES. 106 OHMS $\pm 5\%$
R4.....	I.R.C. TYPE WW3 RES. 0.1 MEGOHM $\pm 5\%$
R5.....	I.R.C. TYPE BT1 RES. 0.4 MEGOHM