

No. 104-B AMPLIFIER

COMMERCIAL PRODUCTS
APPARATUS REFERENCE SHEET

NO	1-51
AMPLIFIER	
104 B	
2-6-39	

GENERAL

THE 104B AMPLIFIER IS A SINGLE STAGE AMPLIFIER INTENDED FOR USE AS A PREMIXING OR LOW LEVEL AMPLIFIER IN SPEECH INPUT EQUIPMENTS FOR RADIO TELEPHONE BROADCASTING. IT IS INTERCHANGEABLE WITH THE 104A AMPLIFIER AND SIMILAR IN DESIGN EXCEPT THAT THE 104B AMPLIFIER HAS A BETTER SHIELDED INPUT TRANSFORMER, IS PROVIDED WITH TERMINALS FOR OPERATING FROM PLATE VOLTAGES OF 200 AND 250, IN ADDITION TO THE 375 VOLTS REQUIRED FOR THE 104A AMPLIFIER AND IS SUPPLIED WITH FOUR FLEXIBLE MOUNTINGS.

ELECTRICAL CHARACTERISTICS

GAIN.....	28 DB
GAIN CONTROL.....	NONE
OPERATES FROM.....	30 OHMS, TERM'S. 1-2, 250 OHMS, TERM'S. 1-3.
INTERNAL INPUT IMPEDANCE..	OPEN CIRCUIT
OPERATES INTO.....	30 OHMS, TERM'S. 7-8, 500-600 OHMS, TERM'S. 6-7.
INTERNAL OUTPUT IMPEDANCE.	30 OR 330 OHMS
OUTPUT NOISE.....	APPROX. -110 DB WTD. -100 DB UNWTD. (0 DB = 6 MW)
OUTPUT POWER.....	60 MICROWATTS (-20 DB)
POWER SUPPLY.....	FILAMENT 0.32 AMP. AT 10 ± 0.3 V. AC OR DC, TERM'S. 15-16. PLATE 0.6 MA AT 375 V. DC, TERM. 9, 250 V. TERM. 10, 200 V. TERM. 11. NEGATIVE PLATE VOLTAGE, TERM. 12.

COMPLETE POWER SUPPLY MAY BE OBTAINED FROM FOLLOWING EQUIPMENT:

EQUIPMENT	SUPPLIES 104 TYPE AMPLIFIERS
701A SPEECH INPUT BAY.....	SIX
105A AMPLIFIER.....	SIX
106A AMPLIFIER PLUS 221A RETARD. COIL AND 8 MF COND..	SIX
15A RECTIFIER.....	TWELVE

VACUUM TUBE

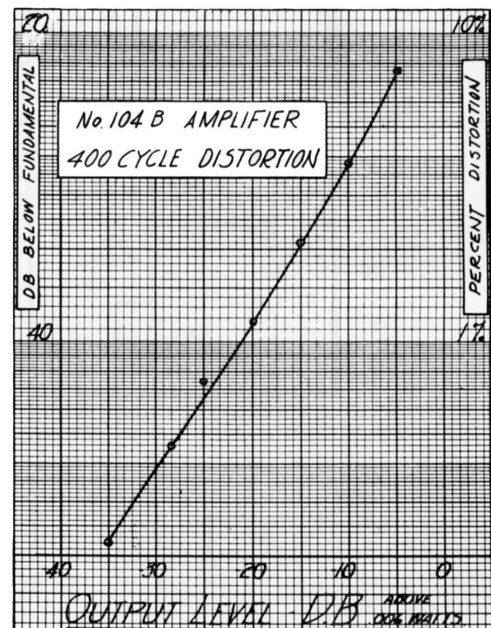
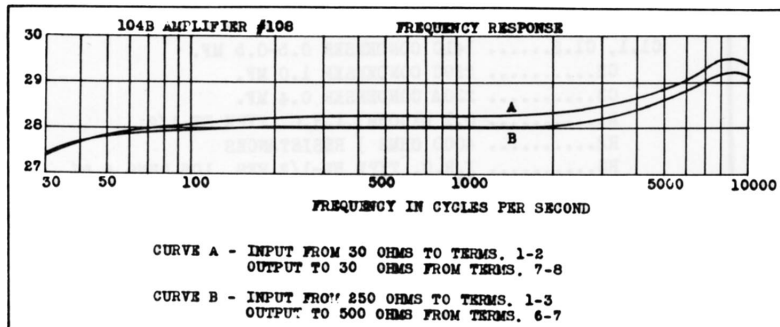
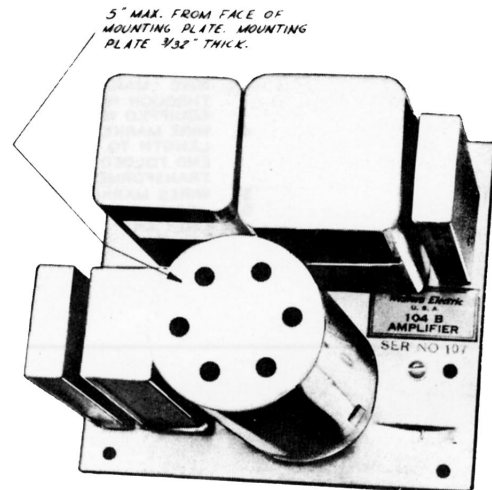
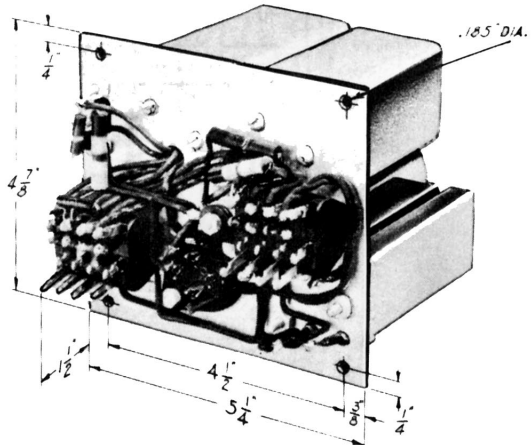
ONE 262B VACUUM TUBE IS REQUIRED. (MUST BE ORDERED SEPARATELY)

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

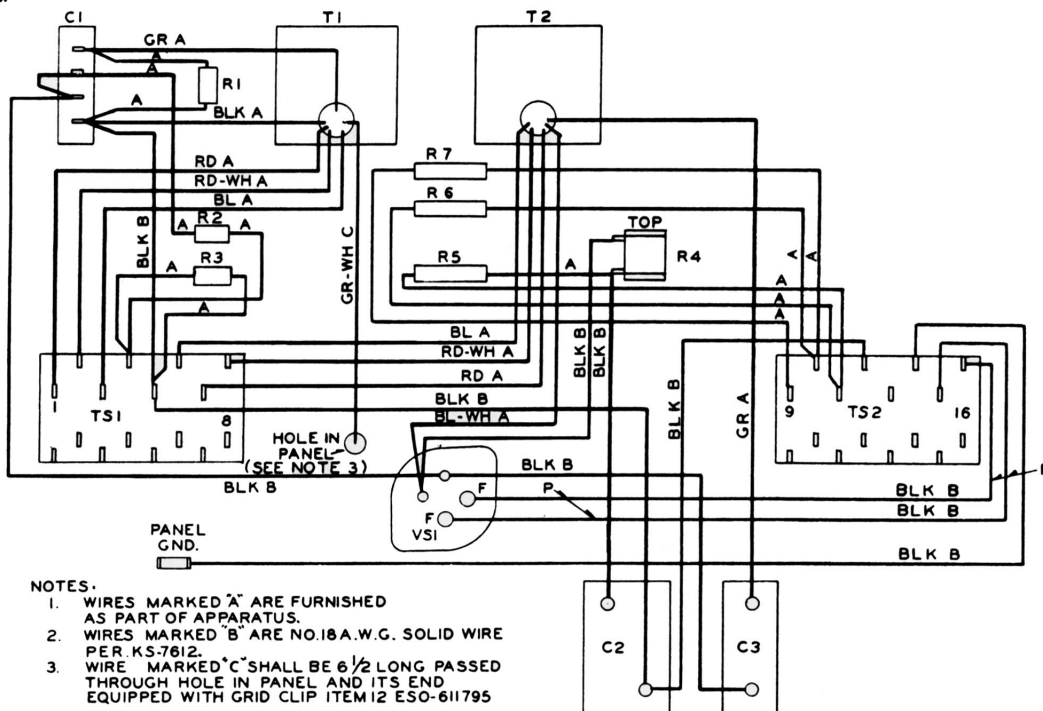
INSTRUCTION BULLETIN NO. 869
 ESO-611721..... SCHEMATIC AND WIRING DIAGRAM
 ESO-611795..... ASSEMBLY AND STOCK LIST
 ESL-613876..... APPARATUS LIST FOR CUSTOMERS USE
 ESA-744992..... GAIN VS. FREQUENCY CHARACTERISTIC
 ES-745050..... POWER OUTPUT VS. TOTAL HARMONIC DISTORTION
 PHOTOGRAPH NO. 81751, 83116.



FOR WIRING DIAGRAM AND SCHEMATIC SEE REAR OF THIS SHEET

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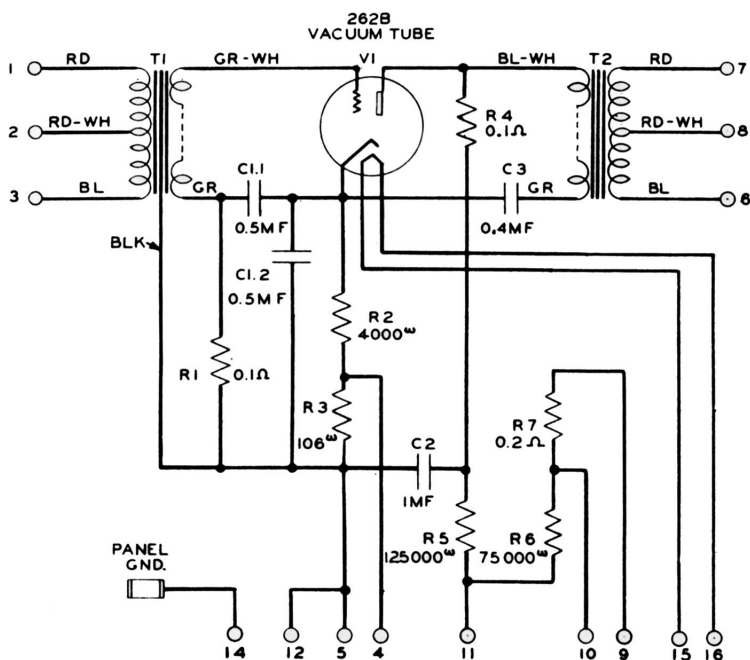
WIRING DIAGRAM



NOTES.

1. WIRES MARKED "A" ARE FURNISHED AS PART OF APPARATUS.
2. WIRES MARKED "B" ARE NO. 18 A.W.G. SOLID WIRE PER KS-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. WIRES MARKED "P" ARE TWISTED PAIRS
5. APPARATUS DESIGNATIONS ARE FOR REFERENCE ONLY AND DO NOT APPEAR ON APPARATUS.

SCHEMATIC



APPARATUS LIST

DESIG.	APPARATUS
T1	615A 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 RESISTANCES
R2	4000 OHMS)
R3	I.R.C. TYPE BW 1/2 RES. 106 OHMS ± 5%
R4	I.R.C. TYPE WW3 RES. 0.1 MEGOHM ± 5%
R5	125,000 OHMS)
R6	75,000 OHMS) I.R.C. TYPE BT1 RESISTANCES
R7	200,000 OHMS)