

DIVISION 57
TECHNICAL MANUAL
INSTRUMENT AMPLIFIER

ORIGINAL VERSION

FILING INSTRUCTION

File this page in numerical order by Model in
the Div. 57 Radio Technical Manual.MODEL NUMBER
257.14313200

SCHEMATIC LOCATION	PART NUMBER	DESCRIPTION
RESISTORS (All resistors 1/2w., 10% unless otherwise noted)		
R1	120-102232	1K ohm, 1w.
R2	120-103222	10K ohm
R3	120-153222	15K ohm
R4	120-334222	330K ohm
R5	120-474222	470K ohm
R6	120-393222	39K ohm
R7, R14	120-471222	470 ohm
R8, R25, R26	120-222222	2.2K ohm
R9	122-14-2042	200K ohm, Volume Control Reverse Audio Taper
R10	122-15-1052	1 Megohm, Bass Control Reverse Audio Taper
R11	120-225222	2.2 Megohm
R12	122-16-1041	100K ohm, Treble Control Audio Taper
R13	120-562222	5.6K ohm
R15	120-472222	4.7K ohm
R16	120-102222	1K ohm
R17, R18	120-682222	6.8K ohm
R19	120-270222	27 ohm
R20, R24, R27, R29 R21	120-101222	100 ohm Factory Selected. Value varies between 10 ohms and 39 ohms. See Note 2 under Schematic Diagram on Page 5.
R22	120-333222	33K ohm
R23	120-331222	330 ohm
R28	120-278222	2.7 ohm
R30, R32	123-7	.27 ohm, 5w.
R31, R34	123-6	.51 ohm, 5w.
R33	120-100232	10 ohm, 1w.
R35	120-100222	10 ohm
CAPACITORS		
C1	114-22405022	.22 Mfd., 50v., Mylar, 10%
C2	118-0500251	5 Mfd., 25v., Elect.
C3	118-2000161	20 Mfd., 16v., Elect.
C4	118-2500351	25 Mfd., 35v., Elect.
C5	114-10305022	.01 Mfd., 50v., Mylar, 10%
C6	118-0100251	1 Mfd., 25v., Elect.
C7, C15	114-10405022	.1 Mfd., 50V., Mylar, 10%
C8, C14	114-47205022	.0047 Mfd., 50v., Mylar, 10%
C9	118-802	2 Mfd., 25v., N.P., Elect.
C10	118-2500251	25 Mfd., 25v., Elect.
C11	112-50005032	50pf., 50v., Disc, 20%
C12	118-801	25 Mfd., 25v., N.P. Elect.

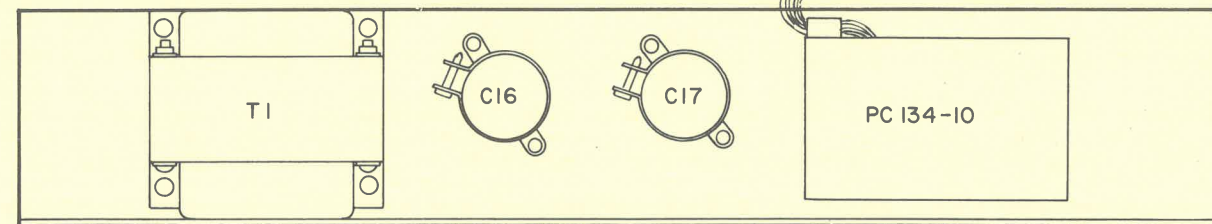
SCHEMATIC LOCATION	PART NUMBER	DESCRIPTION
C13	118-5000251	50 Mfd., 25v., Elect.
C16	118-820	5500 Mfd., 45v., Elect., Can Neg
C17	118-825	5500 Mfd., 45v., Elect., Can Insul.
C18	117-3	.0068 Mfd., 1.4Kv.
C19	117-1	.047 Mfd., 150v.
TRANSISTORS & DIODES		
Q1, Q2	127-6080	N.P.N. Signal
Q3, Q4	127-7030	N.P.N. Signal
Q5	128-7020	P.N.P. Pre-Driver
Q6	128-9080	N.P.N. Driver
Q7, Q8, Q10, Q11	128-9050	N.P.N. - OUTPUT
Q9	128-9070	P.N.P. - DRIVER
D1	126-4	Diode-Biasing
D2, D3, D4, D5 D6, D7, D8, D9	126-2	Diode
	126-1	Diode
MISCELLANEOUS PARTS		
C0	108-8	Convenience Outlet
	107-1	Amp. Connector, Female
	107-2	Amp. Connector, Male
	152-9	Cabinet, Amp., W/Handle & Bumper
	152-10	Cabinet, Spkr., W/Handle & Casters
	139-2	Cord, Power
	147-24	Cover, Transistors
F1	130-1	Fuse, 3 Amp., 250v., 3AG
	131-2	Fuse Holder, w/Cap & Hardware
	131-3	Fuse Holder Cap
	148-10	Grille Cloth & Frame
	144-2	Handle, Amp. Cabinet
	144-4	Handle, Spkr. Cabinet
J2	108-3	Jack, 2 Circuit
J1	108-4	Jack, 1 Circuit
J3	108-1	Jack, Speaker
	142-8	Knob
	180-28	Owners Manual
PL1	130-9	Pilot Light
	234-10	Printed Circuit Bd., W/Components
	234-11	Printed Circuit Bd., W/Components
	138-10	Speaker, 12", 16 ohm
	138-11	Speaker, 15", 16 ohm
	139-3	Speaker Cable w/Plug
	140-1	Speaker Cable only
	107-3	Speaker Plug only
S1	125-2	Switch, Power
	180-30	Technical Manual
T1	135-8-2	Transformer, Power

TRANSISTOR MOUNTING INFORMATION

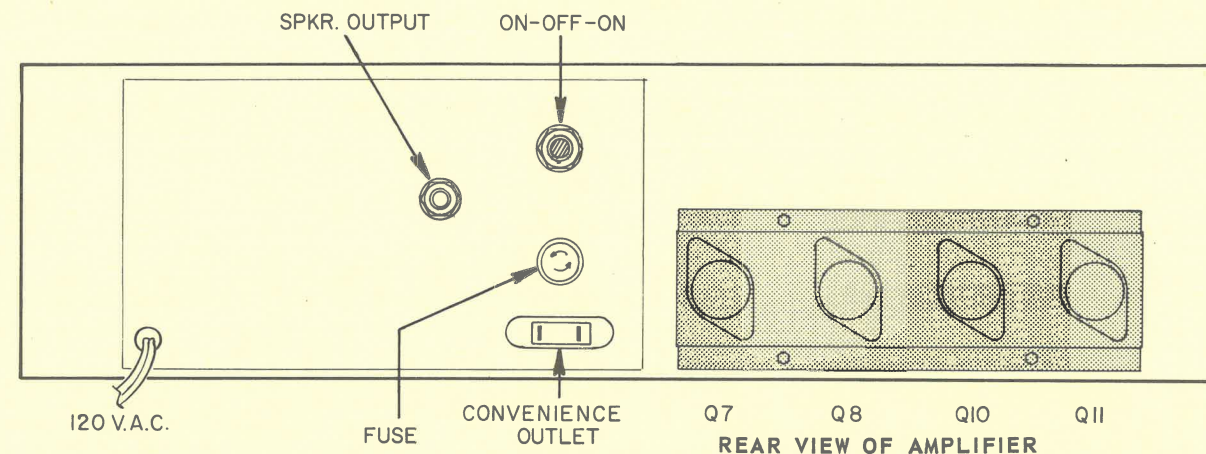
Silicone Grease must be used when mounting output Transistors on either side of the mica insulator.

Refer to the Div. 57 Authorized Price List 257.00 for current selling prices, availability and ordering information.
Service Flash References

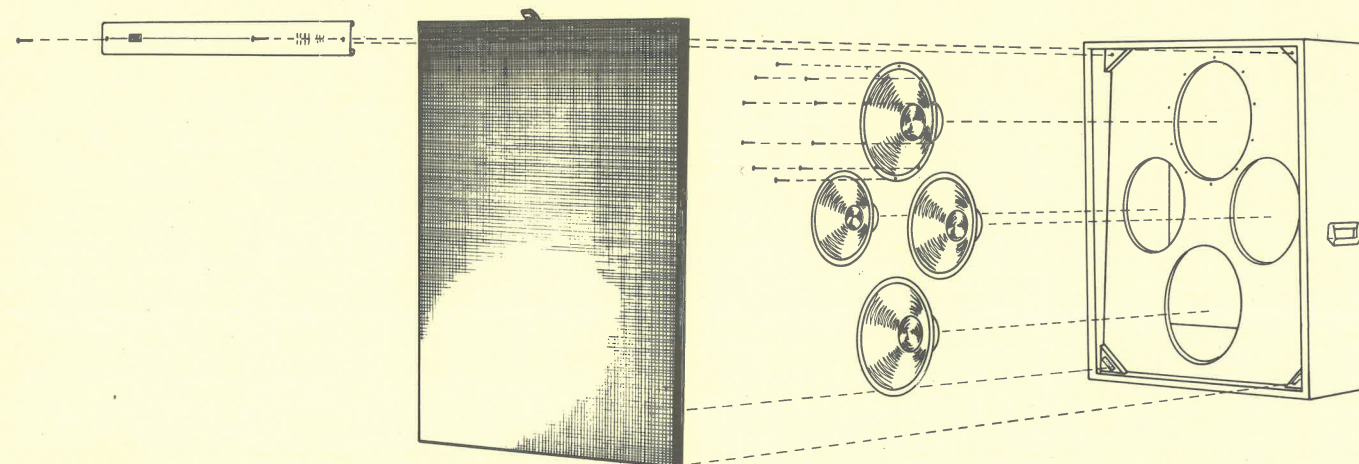
MODEL NUMBER 257.14313200



TOP VIEW CHASSIS

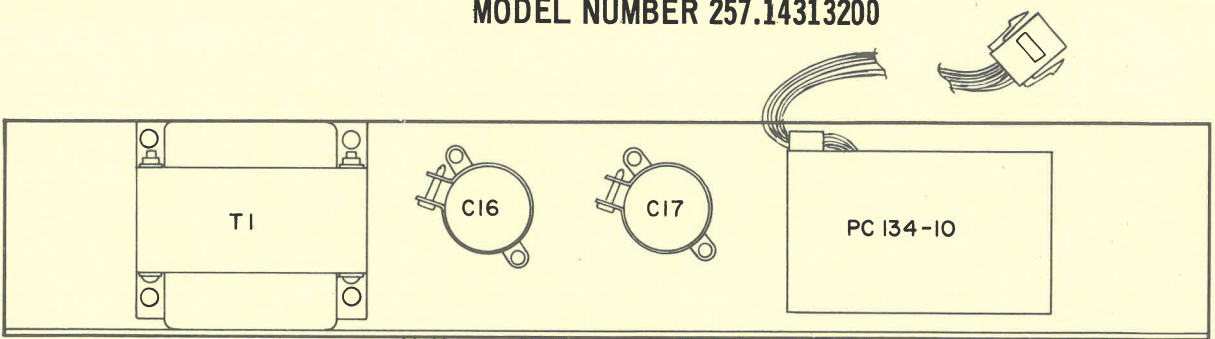


SPEAKER DISASSEMBLY INSTRUCTIONS

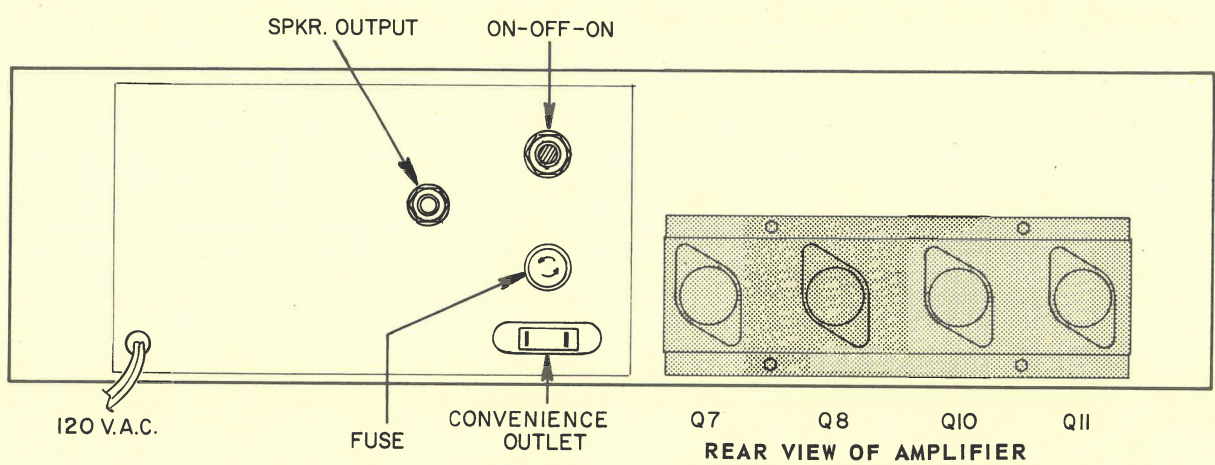
IMPORTANT: READ ALL DISASSEMBLY INSTRUCTIONS
BEFORE ATTEMPTING TO SERVICE THIS UNIT.

DISASSEMBLY OF SPEAKER ENCLOSURE:

1. FIVE SCREWS, ONE AT EACH CORNER AND ONE IN THE CENTER OF THE ESCUTCHEON, SECURES GRILL. REMOVE THESE SCREWS AND GRILL CAN BE TAKEN OFF.
2. PULL TAB AT TOP OF GRILL IN ORDER TO REMOVE GRILL FROM CABINET. WHEN REPLACING GRILL MAKE SURE THAT TAB IS AT TOP.
3. REMOVE SCREWS AROUND EDGE OF SPEAKER. BE CAREFUL WHEN LIFTING SPEAKER OUT OF CABINET TO DISCONNECT WIRES. SEE "SPEAKER HOOK-UP DIAGRAM" ON PG. 3.



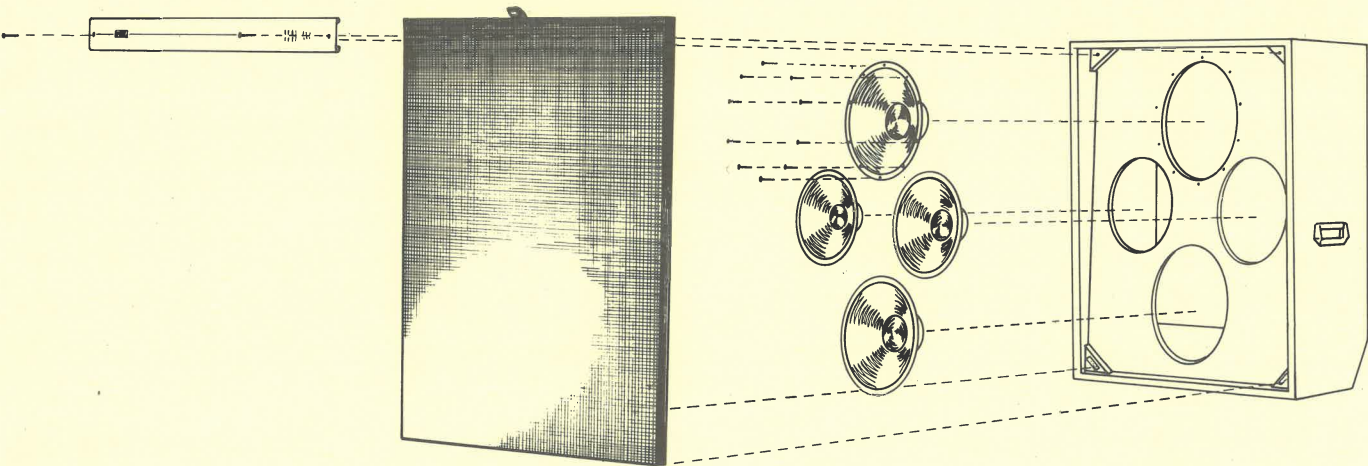
TOP VIEW CHASSIS



REAR VIEW OF AMPLIFIER

SPEAKER DISASSEMBLY INSTRUCTIONS

IMPORTANT: READ ALL DISASSEMBLY INSTRUCTIONS BEFORE ATTEMPTING TO SERVICE THIS UNIT.



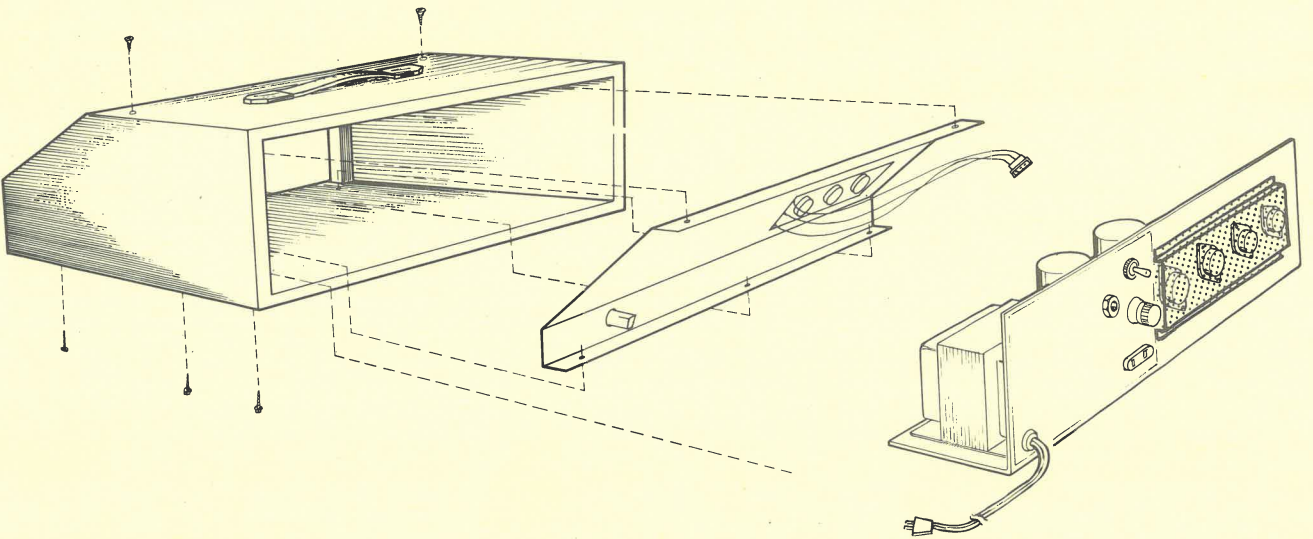
DISASSEMBLY OF SPEAKER ENCLOSURE:

1. FIVE SCREWS, ONE AT EACH CORNER AND ONE IN THE CENTER OF THE ESCUTCHEON, SECURES GRILL. REMOVE THESE SCREWS AND GRILL CAN BE TAKEN OFF.
2. PULL TAB AT TOP OF GRILL IN ORDER TO REMOVE GRILL FROM CABINET. WHEN REPLACING GRILL MAKE SURE THAT TAB IS AT TOP.
3. REMOVE SCREWS AROUND EDGE OF SPEAKER. BE CAREFUL WHEN LIFTING SPEAKER OUT OF CABINET TO DISCONNECT WIRES. SEE "SPEAKER HOOK-UP DIAGRAM" ON PG. 3.

AMPLIFIER DISASSEMBLY INSTRUCTIONS

TO REMOVE CHASSIS FROM CABINET:

1. REMOVE THE FOUR SCREWS ON THE UNDERSIDE OF THE CABINET NEAREST THE BACK TO FREE THE CHASSIS.
2. DISCONNECT CIRCUIT CONNECTOR FROM REAR CHASSIS TO RIGHT-HAND CORNER OF FRONT PANEL.
3. CAREFULLY SLIDE THE CHASSIS STRAIGHT OUT FROM THE BACK OF THE CABINET.

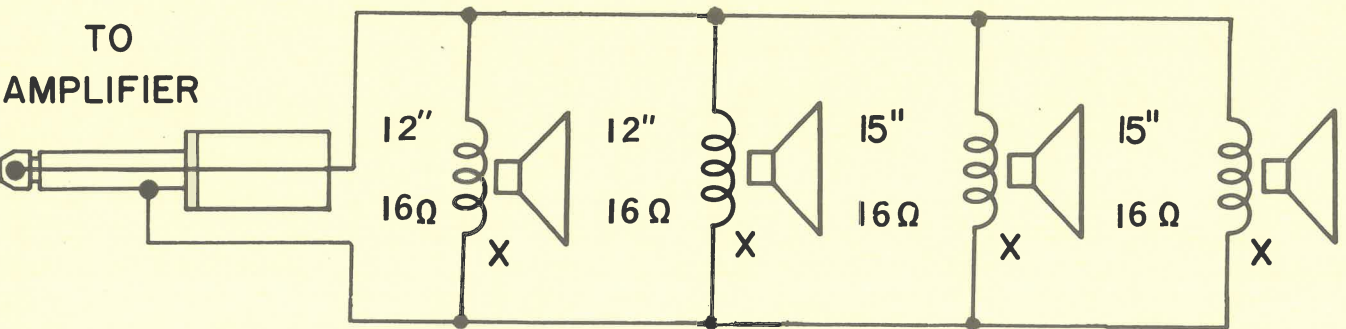


FRONT PANEL REMOVAL:

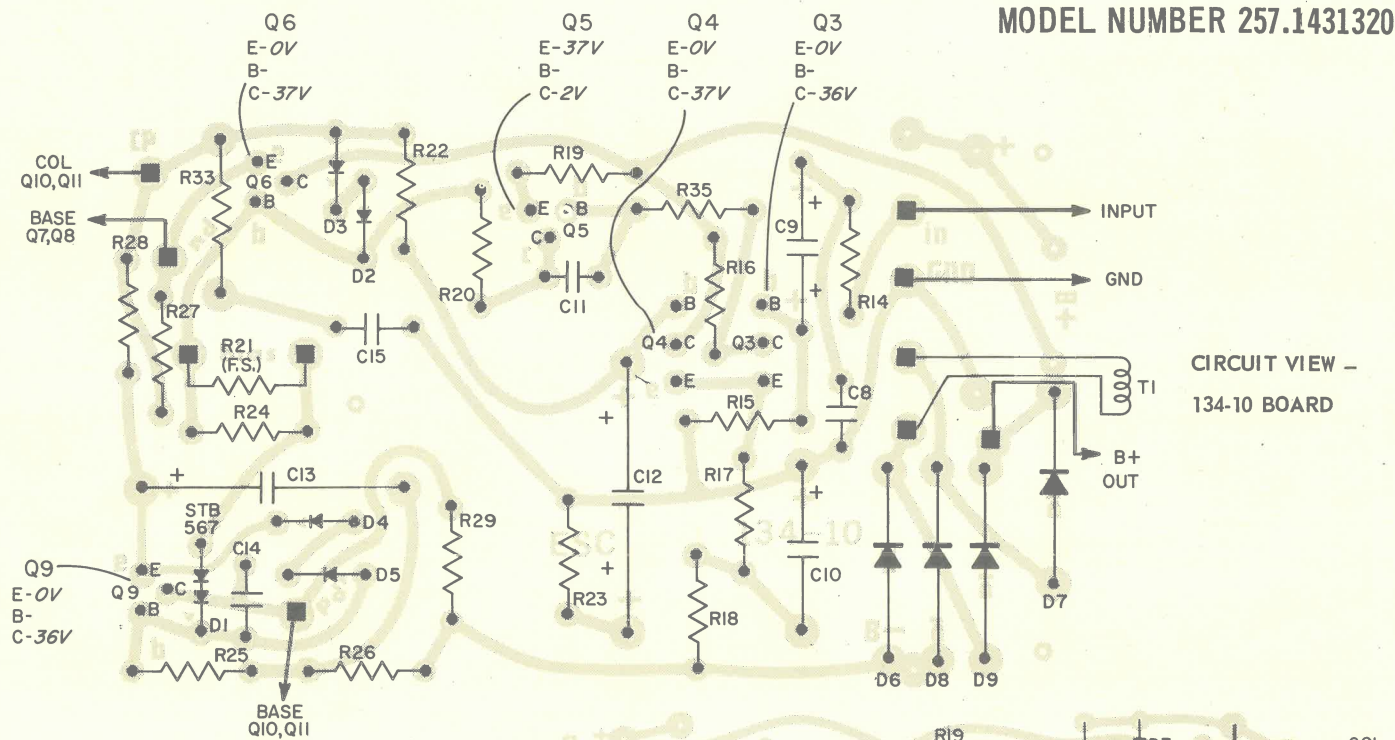
1. REMOVE THE TWO SCREWS ON THE TOP OF CABINET.
 2. REMOVE THE TWO SCREWS ON THE UNDERSIDE, NEAREST THE FRONT.
 3. REMOVE PANEL FROM REAR OF THE CABINET.
 4. TO REMOVE THE CIRCUIT BOARD FROM THE PANEL, CAREFULLY REMOVE THE KNOBS FROM THE FRONT AND REMOVE THE NOW EXPOSED NUTS AND WASHERS.
- NOTE:** TO COMPLETE THE REMOVAL OF THE CIRCUIT BOARD, DISCONNECT THE PILOT LIGHT AND THE INPUT JACKS.

REPLACING PILOT LIGHT:

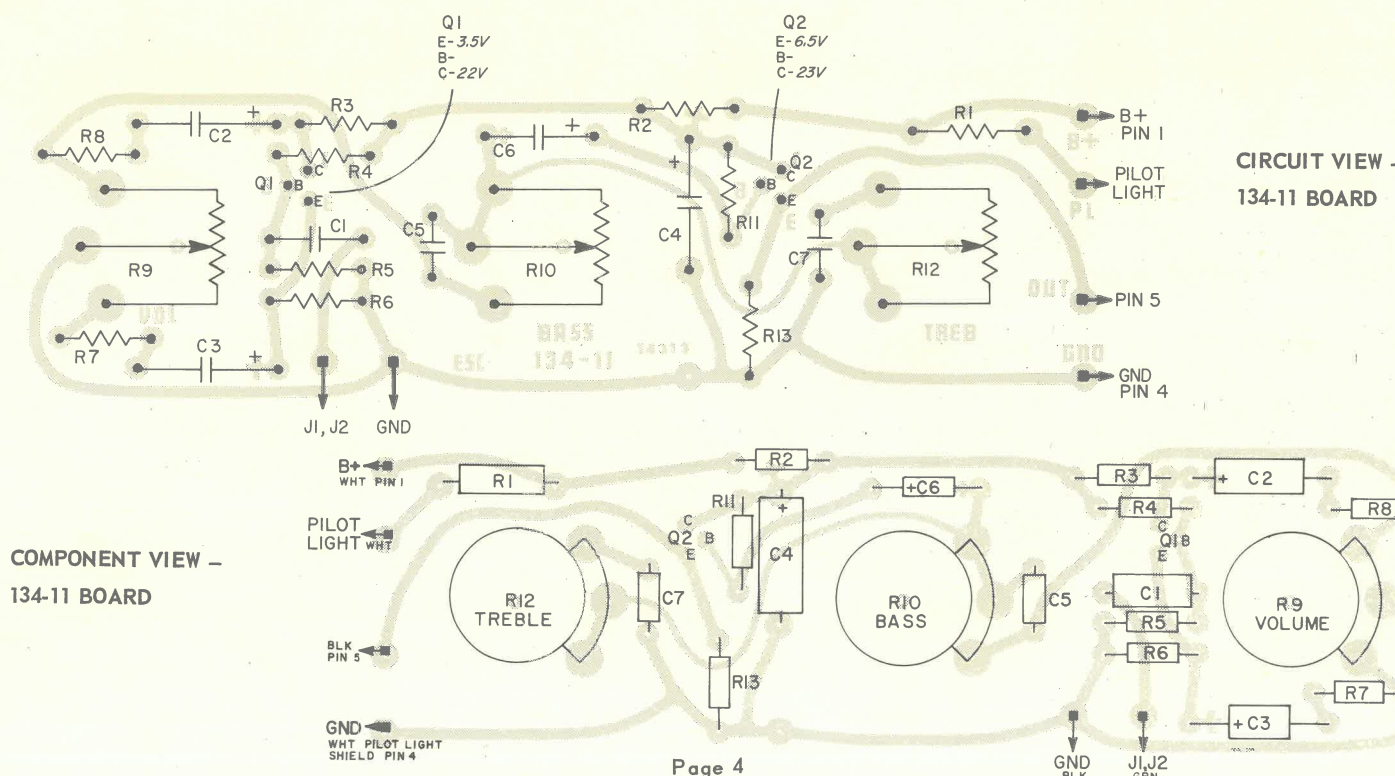
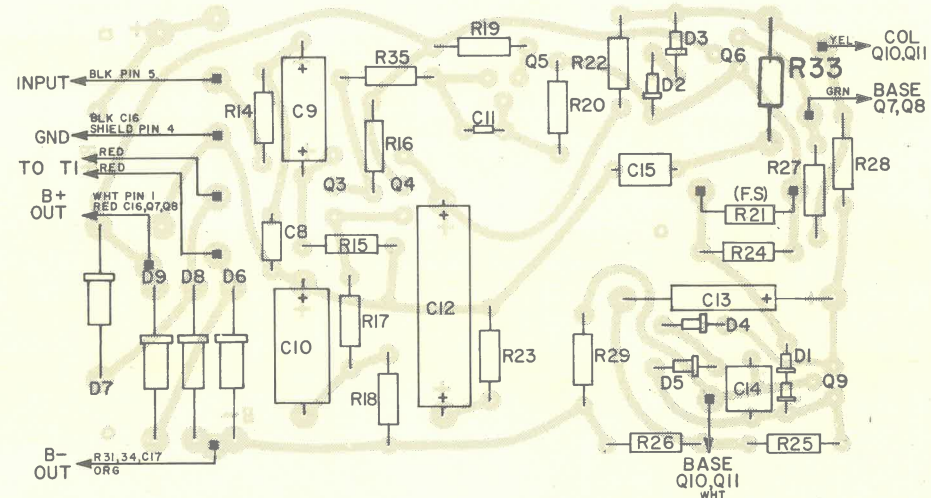
1. REMOVE CHASSIS AND FRONT PANEL AS INSTRUCTED ABOVE.
2. UNSOLDER WIRE CONNECTIONS ON CIRCUIT BOARD.
3. PRY OFF THE TINNEMAN CLIP LOCATED AROUND THE PILOT LIGHT ON THE BACK OF THE PANEL.
4. PUSH PILOT LIGHT THROUGH THE FRONT OF THE PANEL.
5. INSERT THE NEW LIGHT.
6. PRESS THE TINNEMAN CLIP ON SECURELY.
7. SOLDER THE WIRES BACK ON TO THE TERMINALS OF THE CIRCUIT BOARD.



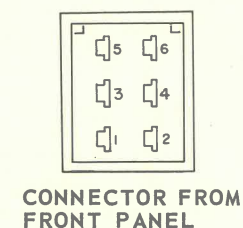
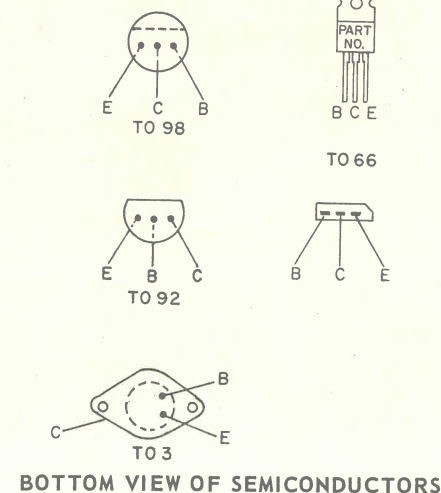
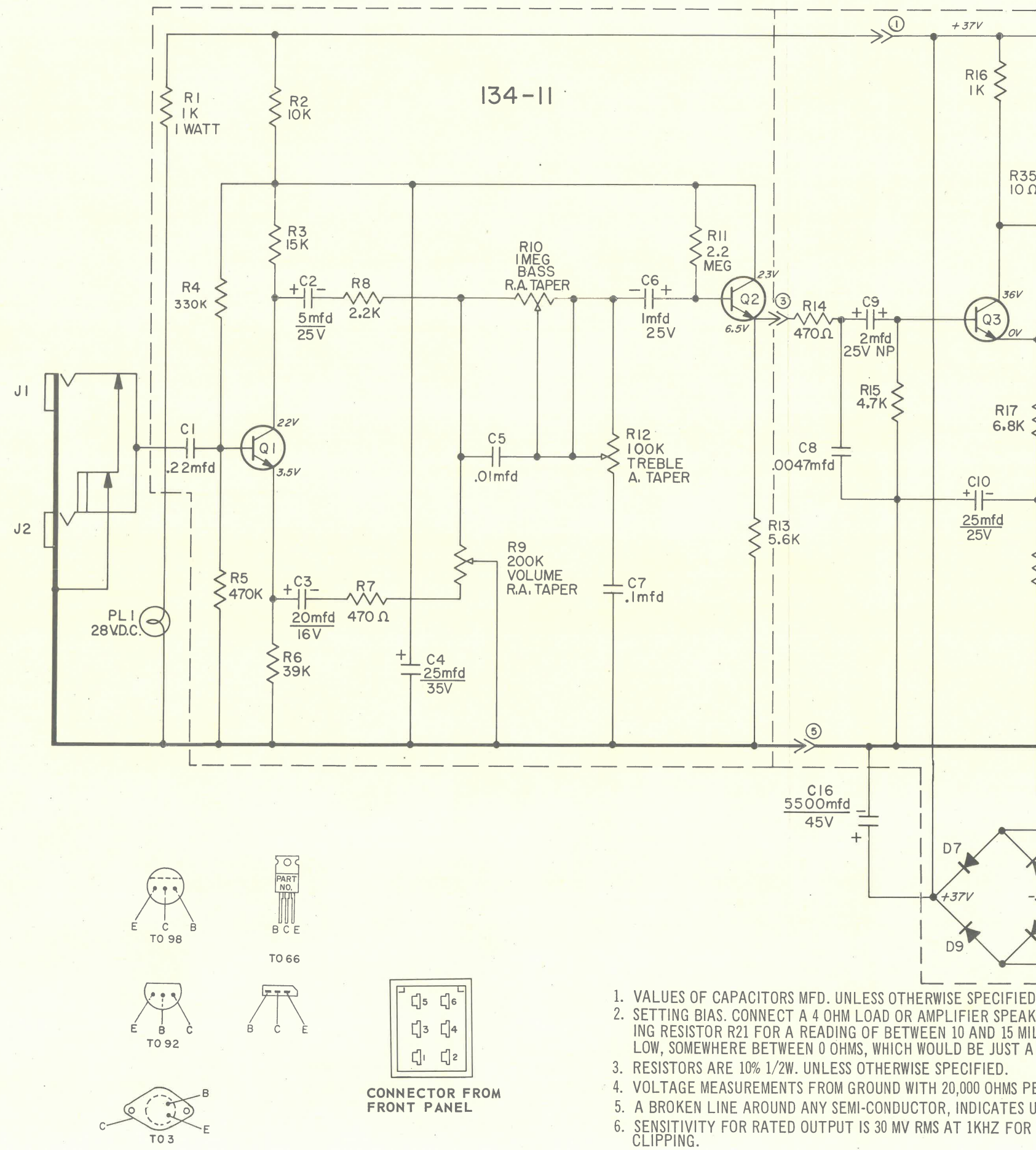
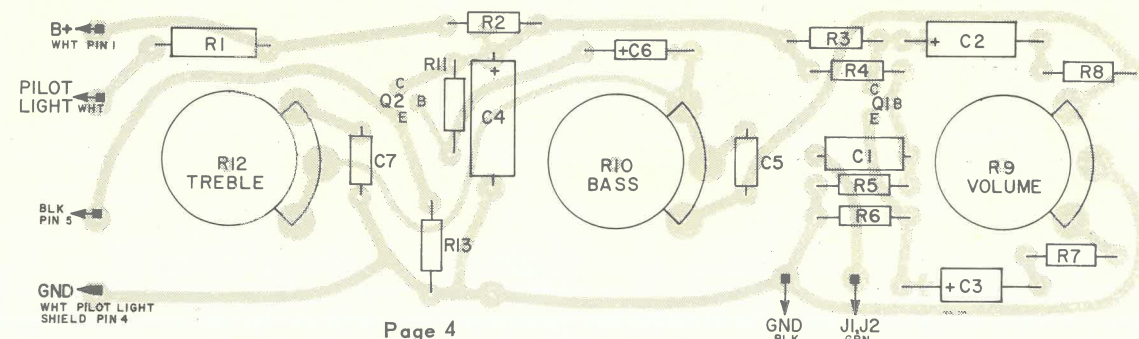
TO
AMPLIFIER



COMPONENT VIEW - 134-10 BOARD



COMPONENT VIEW - 134-11 BOARD



1. VALUES OF CAPACITORS MFD. UNLESS OTHERWISE SPECIFIED.
2. SETTING BIAS. CONNECT A 4 OHM LOAD OR AMPLIFIER SPEAKING RESISTOR R21 FOR A READING OF BETWEEN 10 AND 15 MIL. LOW, SOMEWHERE BETWEEN 0 OHMS, WHICH WOULD BE JUST A I
3. RESISTORS ARE 10% 1/2W. UNLESS OTHERWISE SPECIFIED.
4. VOLTAGE MEASUREMENTS FROM GROUND WITH 20,000 OHMS PE
5. A BROKEN LINE AROUND ANY SEMI-CONDUCTOR, INDICATES UN
6. SENSITIVITY FOR RATED OUTPUT IS 30 MV RMS AT 1KHZ FOR 1 CLIPPING.



- ### SCHEMATIC DIAGRAM