



Broadcast Equipment

BA-36A

Stereophonic Preamplifier Equalizer

MI-11441-B

IB-31221-2



Broadcast Equipment

Instructions

BA-36A

Stereophonic

Preamplifier Equalizer

MI-11441-B

Commercial Electronic Systems Division/Front and Cooper Streets/Camden, New Jersey, U.S.A., 08102

BP6118M

IB-31221-2

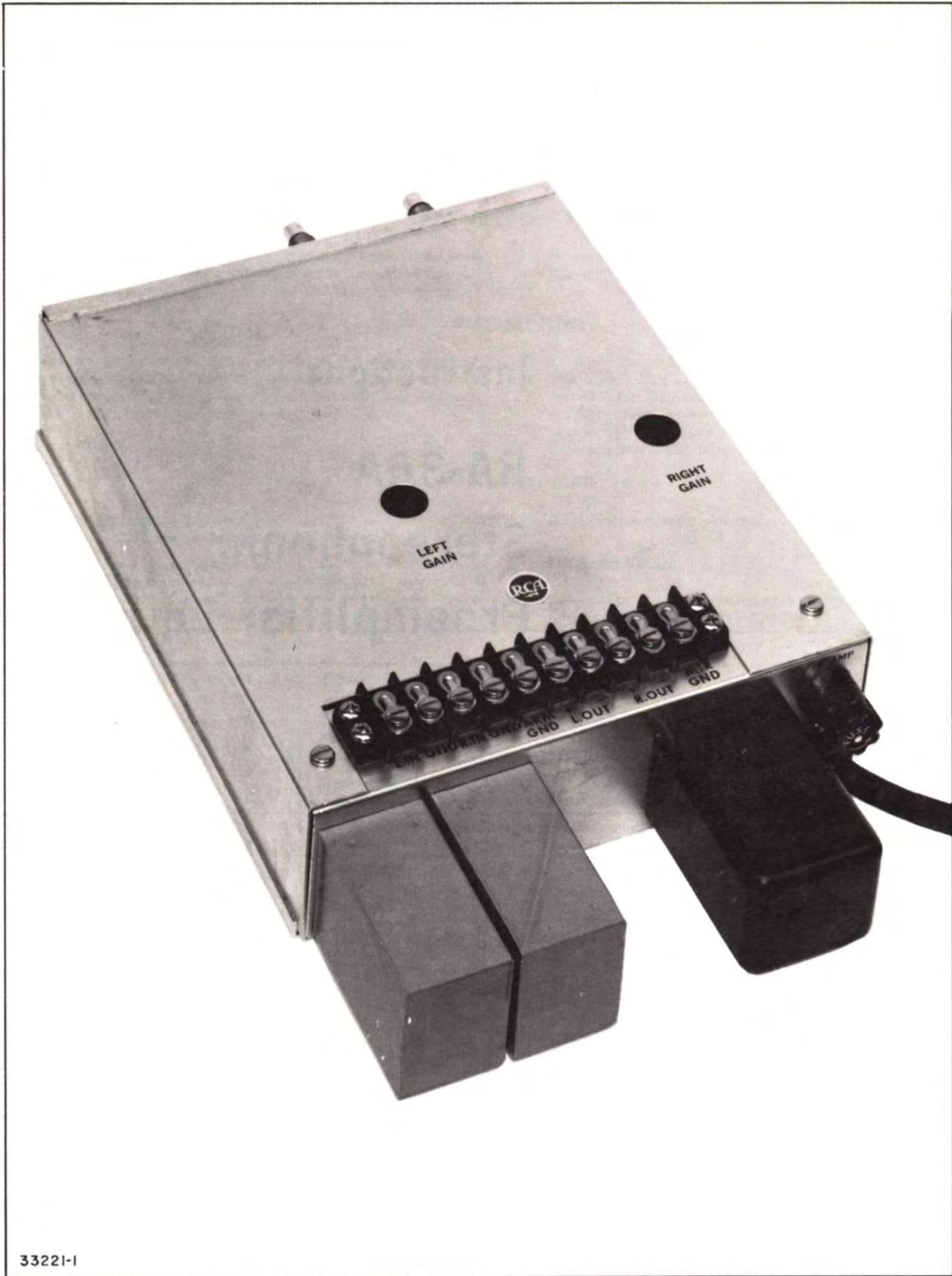


Figure 1—Type BA-36A Stereophonic Preamplifier Equalizer

TECHNICAL DATA

*Input Impedance

47,000 ohms shunted by approx. 100 pf.
(for MI-11865 cartridge, stereophonic connection)
Up to 60,000 ohms available by changing shunt resistor.

*Output Impedance

150/600 ohms (600 ohms as shipped)

*Load Impedance

150/600 ohms

*Sensitivity at 1000 cps

3.9 cm/sec (45°) for -20 dbm output level
5.5 cm/sec (lateral) for -20 dbm output level
(with any magnetic cartridge and GAIN, LEFT and RIGHT adjusted per instructions)

*Input Voltage for -20 dbm Output Level (1000 cps)

.0016 v to .013 v (approx.)
.004 volts (as shipped)

*Output Level

Program: -20 VU (average record)
Maximum: -5 dbm

Transistors and Rectifier

2 2N220
6 2N404
2 1N3193

Overall Dimensions and Weight

Length: 10 $\frac{3}{4}$ inches
Width: 6 $\frac{5}{8}$ inches
Depth: 2 $\frac{1}{2}$ inches
Weight: 5 pounds, 4 ounces

*High Frequency Compensation

(See figure 3)
0, -3.5, or -10 db at 10,000 cps
by means of the EQUALIZER switch

*Distortion

At -20 dbm Output Level:
Intermodulation: Less than 1%
(40/4000 cps or 400/4000 cps 4:1)
Harmonic: Less than 0.25%
At -5 dbm Output Level:
Intermodulation: Less than 4%
Harmonic: Less than 1%

*Frequency Response

(See figure 2)
NAB/RIAA: Meets NAB specifications
Flat: ± 0.5 db 20 to 20,000 cps

*Hum and Noise Level

-78 dbm maximum (30 to 15,000 cps)
5 microvolts (equivalent 1000 cps signal at input)
(600 ohm input termination NAB/RIAA strapping,
GAIN, LEFT, and RIGHT, as shipped)

Crosstalk Between Channels

Below Noise Level, 30 to 15,000 cps

Fuse

1/16 amp 3AG

Power Requirements

117V AC 50/60 cycles; taps 105, 115 and 125V
230V AC 50/60 cycles; taps 210, 230 and 250V
1 watt

Accessories

Transistor and Diode Kit MI-11783

✦ Applicable for each channel.

DESCRIPTION

The Type BA-36A Stereophonic Preamplifier Equalizer MI-11441-A is designed primarily to provide equalization of the recreated audio frequencies of stereophonic records and transcriptions before introduction into the audio system of broadcast and television stations. The BA-36A is designed for both stereophonic and monophonic recordings. The unit may be mounted inside the cabinet of BQ51 turntables and may be used with any professional quality magnetic cartridge and tone arm.

As shown in figure 1, the equalizer has a terminal board for making input and output connections. A six-foot AC cord with plug is attached to the unit. The fuse holder for F1 is mounted beside it. Two openings are provided on the cover of the chassis

through which the GAIN controls for LEFT and RIGHT channels may be adjusted by a screwdriver when the unit is mounted in the turntable cabinet. Three printed circuit boards PW1, PW2 and PW3, two amplifiers and a power supply, are mounted on the chassis as shown in figure 7. Three degrees of high frequency response compensation are selected at EQUALIZER switch S2: NORM, -HIGHS, ROLL-OFF. The MODE switch S1 selects the mode of operation, STEREO or MONO.

Two control knobs and a dial plate are supplied with the necessary mounting hardware as well as the parts required for adaptation to the special features of the turntables. These parts are identified by item numbers as listed in the following chart:

Item	Qty.	Description
1	1	Stereophonic Preamplifier Equalizer Assembly
2	2	Knob
3	1	Dial Plate
4	1	Spacer
5	2	Shaft Extension $\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$
6	2	Bushing
7	1	Container for hardware:
	2	A screw, flat head #8-32 x $1\frac{1}{4}$ long
	2	B setscrew, Allen #8-32 x $\frac{3}{16}$ long
	2	C nut, hex, $\frac{3}{8}$ -32
	2	D lockwasher, $\frac{3}{8}$
	1	E screw, flat head, #10-32 x $1\frac{1}{4}$ long
	2	F screw, hex head, #8-32 x $\frac{3}{8}$ long

Circuits

The BA-36A Preamplifier Equalizer consists of two four stage feedback amplifiers, PW1 and PW2, and a self-contained power supply, PW3, which are mounted inside the chassis, and output transformers, T1 and T2, power transformer, T3, and two switches, S1 and S2, which are mounted at the ends of the chassis.

Either MONO or STEREO mode of operation is selected by switch S1 which is connected to the input terminals of the amplifiers, PW1 and PW2. For monophonic mode of operation the inputs of PW1 and PW2 are paralleled; for stereophonic operation, each channel is fed to its respective amplifier. The amplifiers PW1 and PW2 are identical and the following description applies to either.

Resistor R1, together with the input impedance of Q1, provides correct pickup termination. Transistor

Q1, a common emitter amplifier, is RC coupled to Q2. The input impedance of Q2 is low so that most of the signal current from the collector of Q1 flows into the base of Q2. The signal at the collector of Q2 is coupled to the emitter of Q1 through the feedback networks C5, C7, and R12 or C6 and R13. The first network provides NAB/RIAA response; the second, provides flat response. The 1000 cps gain is the same for either network. Either may be selected by a strapping change on the amplifier board.

The collector of Q2 is direct-coupled through resistor R14 to the base of Q3, an emitter follower stage. Resistor R14 provides a convenient method for varying the high frequency response in conjunction with capacitors C1 and C2. The impedance of this response compensation network is high compared to the output impedance of Q2 so that the same degrees of rolloff are obtained with either the NAB/RIAA or flat response networks. Bleeder resistors are provided on S2 to suppress switch clicks.

The GAIN control and output stage Q4 are isolated from the equalizing and compensation stages Q1 and Q2, by Q3 which is an emitter follower. The gain control R16 provides a range of gain adjustment to obtain the required output level with pickups of widely varying output levels. Sufficient range of adjustment is provided for nearly all pickups presently available. The dynamic range of stages Q1 to Q3 is such that distortion does not increase at minimum gain setting and the noise level at maximum setting is still below the noise generated by the pickup when reproducing a record. The gain control is isolated by two capacitors, C8 and C10 to

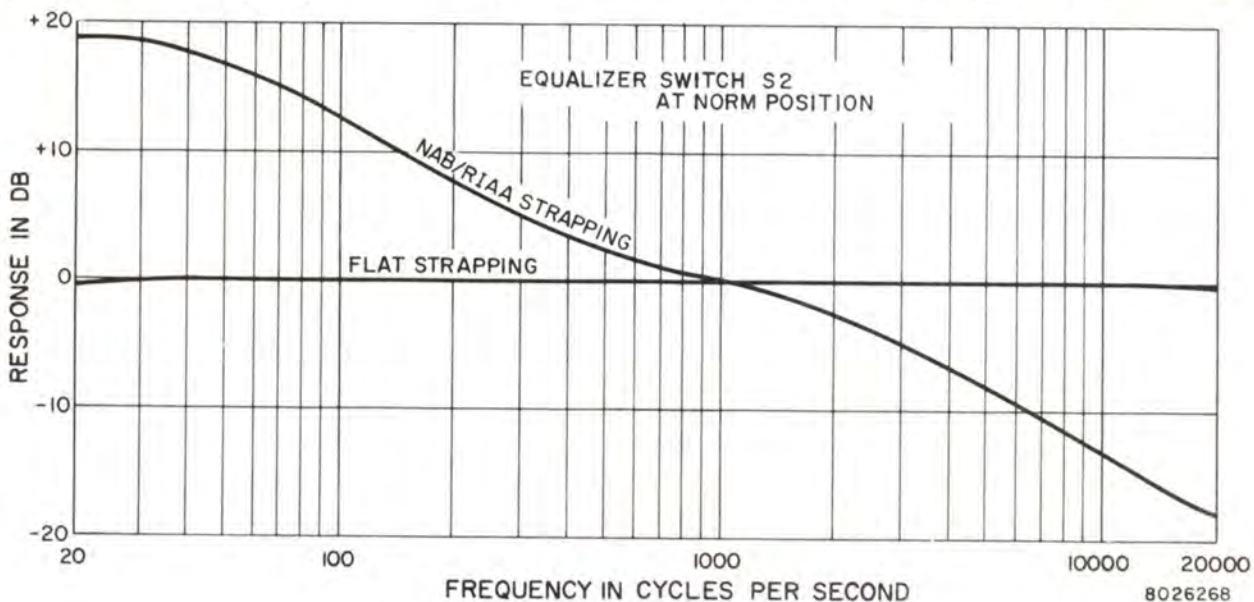


Figure 2—Frequency Response

reduce noise during adjustment. The common emitter output stage Q4 has an output impedance of 600 ohms. The transformers T1 and T2 provide for isolation of the output signal and the selection of output impedances for each amplifier, PW1 and PW2 respectively. The 1 to 1 turns ratio assures excellent frequency response.

DC power is provided by the self contained AC operated power supply PW3. The circuit consists of two silicon rectifiers, CR1 and CR2, and RC filter sections.

Frequency Response

The curves in figure 2 show the response of each channel of the equalizer to a constant voltage at the input terminals with a matched load (150 or 600 ohms) at the output terminals. The EQUALIZER switch S2 is in the NORM position. The unit as shipped is connected for NAB/RIAA standard equalization as shown. The flat response characteristic may be obtained for special purposes by changing a link on each amplifier board. Refer to *Flat Response* under *INSTALLATION*.

High Frequency Compensation

The EQUALIZER switch S2 controls the degree of high frequency attenuation simultaneously for each channel. When S2 is at NORM position, the response is as shown in figure 2. The -HIGHS and ROLLOFF positions result in approximately 3.5 and 10 db attenuation at 10,000 cps, as shown in figure 3, with respect to the normal response. The same response compensation is also obtained when the unit is strapped for flat response.

Intermodulation Distortion

Intermodulation distortion is a measure of non-linearity of a system at the lower (larger amplitude)

test frequency. The typical distortion curve shown in figure 4 may be obtained in each channel with frequencies of 40/4000 or 400/4000 cps from a low impedance source, and with NAB/RIAA or Flat response connection. With NAB/RIAA response, the ratio at the output is adjusted to 4:1. A typical distortion curve of the MI-11865 universal pickup is included in figure 4 for reference. The input is the RCA Lateral I.M. Test Record 12-5-39.

Ten percent distortion is normally not noticeable, but as low as five percent distortion can be detected by direct comparison with a clean signal by a trained listener. This method is used for testing disc reproducing systems since harmonic distortion methods are not practical. Therefore the preamplifier is described on the same basis, so that the performance of the pickup and equalizer may be directly compared. The preamplifier output corresponds directly to the input velocity as shown, since the gain is adjusted with a test record as described in the *Gain Adjustment Procedure, INSTALLATION*.

Harmonic Distortion

As shown in figure 5, the harmonic distortion curve, using a test frequency of 400 cps, corresponds to the intermodulation distortion curve in figure 4. The curves are nearly identical except that the distortion scale is magnified four times. The curve was obtained with flat response strapping with the input connected to a low impedance source. The same horizontal scale is used since the gain was adjusted as in figure 4. Since the peak level of most records does not exceed 17.5 cm/sec, in the lateral direction, figures 4 and 5 show that both the pickup and amplifier distortion remain well within acceptable limits for each channel.

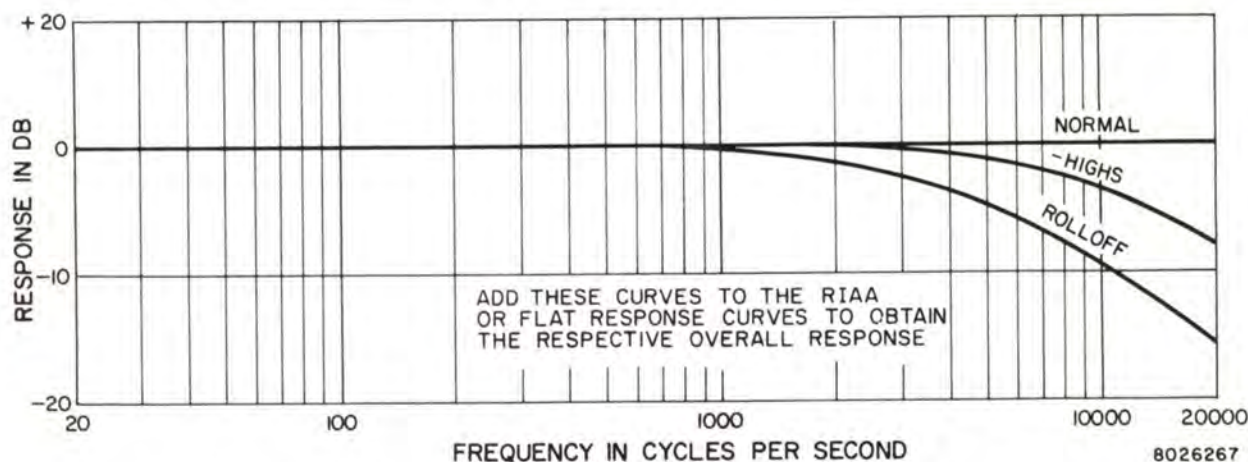


Figure 3—Response Characteristics of EQUALIZER Switch S2

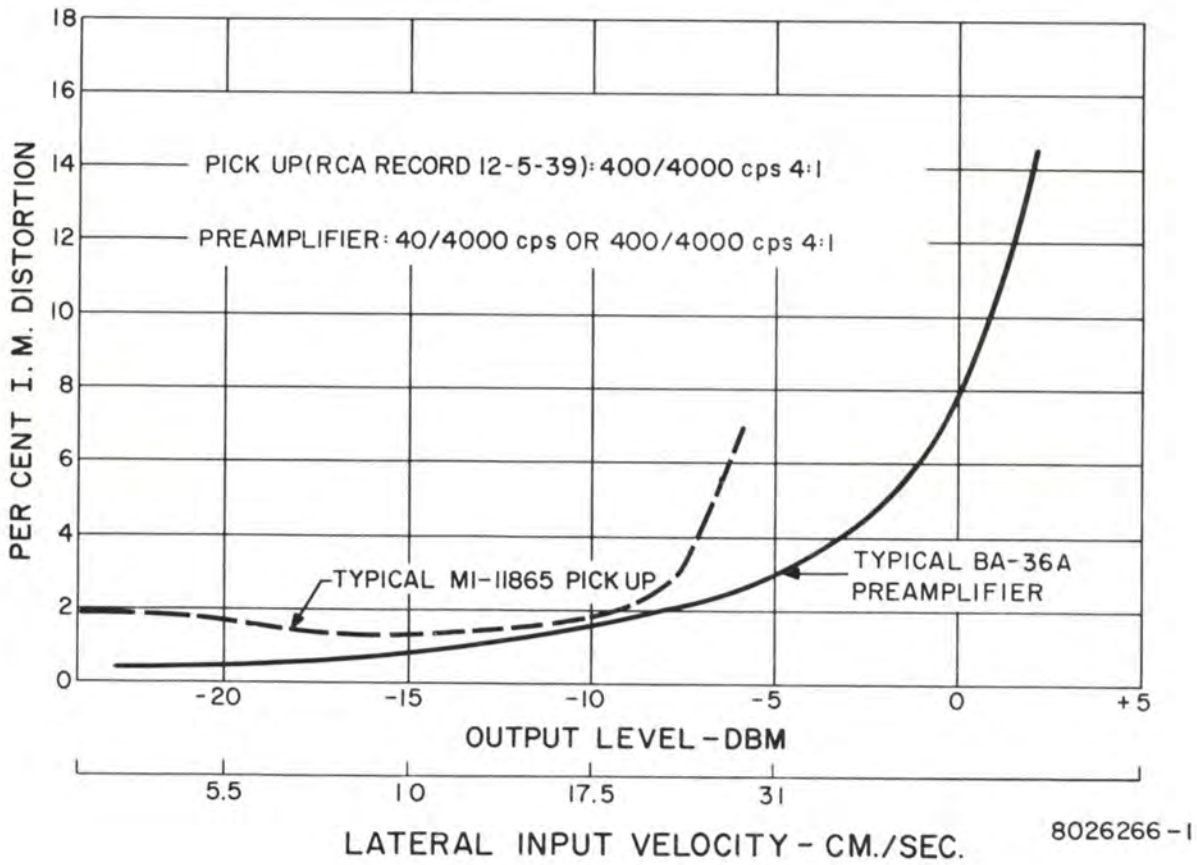


Figure 4—Intermodulation Distortion

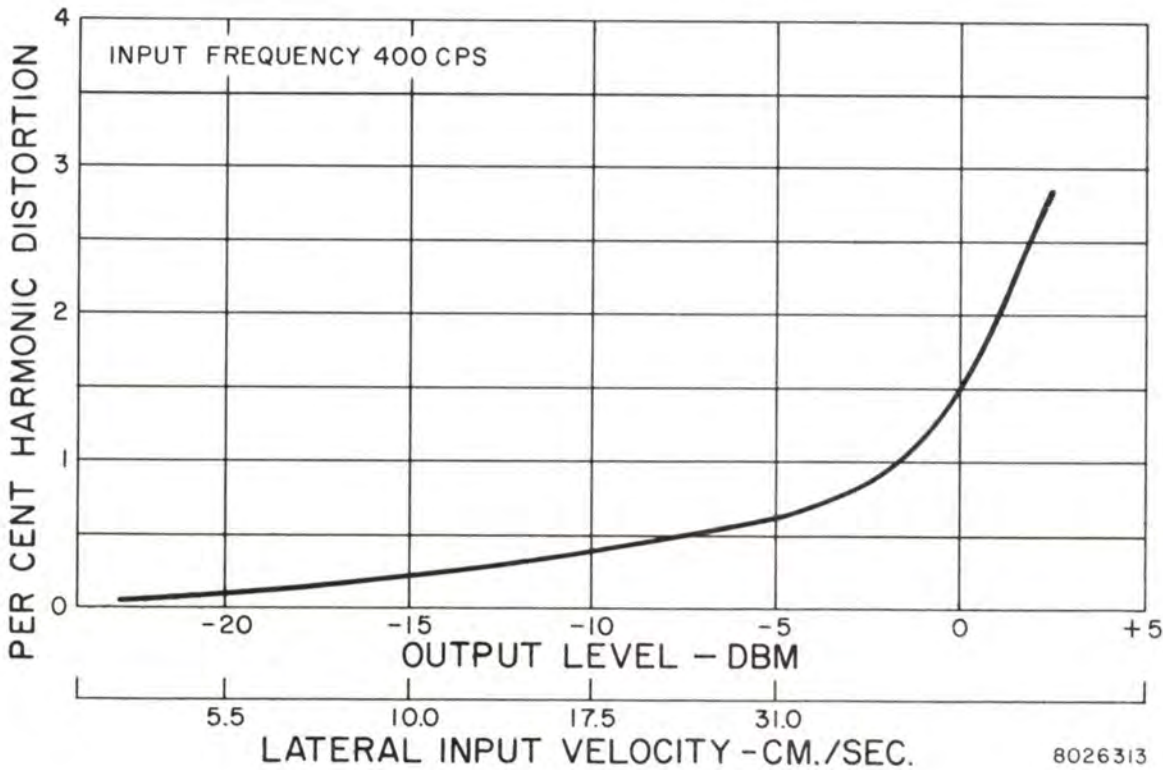


Figure 5—Harmonic Distortion

INSTALLATION

Unpacking

Unpack the unit carefully and check to be certain that all accessories and mounting hardware are supplied according to the packing list. The transistors are supplied mounted on the circuit boards.

Mounting

The unit may be mounted in the BQ-51 Turntable Cabinet directly on the cabinet bracket. The bracket has the proper holes to accommodate the BA-36A mounting. To mount the unit in any other cabinet, turntable or custom installation, use the template shown in figure 10 to drill the proper mounting holes.

NOTE: The bushings and shaft extensions supplied with the unit are provided to accommodate extended-type mounting for peculiar situations where direct mounting is not possible.

Output Connections

The equalizer is shipped with the output transformers T1 and T2 connected for 600 ohms output. For 150-ohm output, remove the jumper from terminals 2 and 3, then connect jumpers between 1 and 2 and between 3 and 5 on each transformer.

Power Transformer Connections

The power transformer T3 is designed for operation at 105, 115, and 125 volts (primary connected in parallel) and 210, 230, and 250 volts (primary connected in series) 50/60 cycles. The unit is shipped from the factory connected for a 115 volt line. For line voltages other than 115 volt, the line input connections to taps 3 and 3A may have to be changed (for detailed connections, see figure 11).

Flat Response

To obtain a flat response, change the links in the amplifiers PW1 and PW2 from J and H and connect J and K. The 1000 cps gain is the same as with NAB/RIAA response. With the link connected to K, the network provides additional applications for the BA-36A equalizer:

1. A simplified response test may be easily made using an oscillator at the inputs of the system.
2. The preamplifiers PW1 and PW2 may be used as flat amplifiers.
3. Constant velocity test records may be used to test the pickup since the output voltage obtained from the preamplifiers corresponds to the output voltage of the pickup.
4. Harmonic distortion measurements of the preamplifiers may be made using standard methods for flat amplifiers.

5. Intermodulation distortion measurements of the pickup (plus the preamplifiers) may be made using RCA Test Record 12-5-39 and an Intermodulation Distortion Analyzer connected at the preamplifier outputs.

AC Cord

The three-wire, 6-foot cord is connected to the equalizer. It is necessary to plug into a switch-controlled, grounding type AC outlet.

Gain Adjustment Procedure

When the RCA pickup MI-11865 has been connected through the tone arm to the INPUT terminals, the LEFT and RIGHT GAIN controls must be adjusted to obtain the correct output levels. Any other stereo/monophonic pickup may be used which has an output voltage rating from .002 v to .01 v. The levels may be read on the consolette meters or a meter may be connected across the outputs on TB1. Refer to the schematic figure 11. On the 1000 cps reference band of the test record, adjust the LEFT and RIGHT GAIN controls to produce the indicated output level. Any of the following test records may be used, however, the lateral records are recommended to achieve most accurate balance of output levels.

Test Record	Peak Velocity	Output Lev.
RCA 12-5-49 or 12-5-51 (0.7 and 1.0 mil stylii)	5.5 cm/sec lateral	-20 dbm
RCA 12-5-50 (0.7 to 2.5 mil stylii)	5.5 cm/sec lateral	-20 dbm
RCA 12-5-71	3.9 cm/sec (45°)	-20 dbm
CBS STR-100	5.0 cm/sec (45°)	-18 dbm
Westrex 1-A	5.0 cm/sec (45°)	-18 dbm

The gain adjustment procedure results in -20 VU output on average stereo or monophonic recordings. Due to the wide dynamic range of BA-36A, acceptable results may be obtained if the output levels can be set ± 5 db of this above specifications, in the case of pickups having very high or low output levels.

CAUTION: If the recommended output level cannot be obtained, the pickup output voltage should be checked at the input terminals. If the pickup voltage (on the RCA Test Records) is between .002 and .01 volts, the preamplifier is not functioning properly or is improperly connected. If the pickup level is outside of these limits, the preamplifier is functioning properly. Check the manufacturer's specifications to determine if the pickup sensitivity (millivolts/cms/ec) is within its rated limits.

Interconnections

If the RCA pickup MI-11865 is used, no changes are required for shunt resistor R1 in the input circuit of the amplifiers, PW1 and PW2. For other pickups select from the table in figure 11 the value required for R1, in each amplifier, to give the manufacturer's

recommended cartridge load.

The terminal board TB1 is mounted outside the equalizer chassis and the terminal functions are stenciled on the case. The following chart indicates the connections:

<i>Terminal</i>	<i>Function</i>	<i>Connections</i>
L. IN	Left Input	Left channel signal lead from tone arm
GND	Left signal ground	Left channel ground lead from tone arm
R. IN	Right Input	Right channel signal lead from tone arm
GND	Right signal ground	Right channel ground lead from tone arm
ARM GND	Metallic parts of tone arm ground	Electrostatic ground lead from tone arm
+ LEFT - OUT	Left output 150/600 ohms	Connect directly to left mixer buss of consolette*
+ RIGHT - OUT	Right output 150/600 ohms	Connect directly to right mixer buss of consolette*
MTR GND	Turntable motor ground	Connected to motor frame (preamplifier must be connected to ground through its line cord)

*Output of each channel must be loaded with 150 or 600 ohms for proper operation. Connections may be made to low level microphone or transcription inputs. To do this the BA-36A outputs must be attenuated with suitable pads (30 db approx. each.)

MAINTENANCE

Printed circuit boards may be serviced or replaced as required. The following procedures cover the replacement of components. The entire circuit board may be replaced by detaching the connections at all terminals which are lettered in the amplifiers PW1 and PW2 and numbered in the power supply PW3. If the boards must be removed from the equalizer for servicing, replace them in the same orientation. Be sure to position the circuit boards so that the terminals marked A and B on PW1 and PW2 and 1, 2, and 3 on PW3 are in the same location as shown in figure 6.

Be sure to replace the 1/16 amp, 3AG fuse, when required, with a fuse of identical rating and type.

Servicing of the Etched Wiring Board Assemblies

The etched wiring boards are made of .062 inch thick laminated epoxy to one side of which is bonded a thin sheet of copper. The conductor pattern is formed by an etching process. Component leads are threaded through holes which are punched into the board. The ends of the leads extending through the board are bent over against the copper conductors. The complete assembly is subsequently dip-soldered.

Components may be replaced easily by following these simple instructions. Care should be observed not to damage the bonding adhesive by applying too much heat during soldering.

1. Tools Required

- A small (35 watt or less) pencil-type soldering iron.
- A pair of small diagonal cutters.
- A pair of small long nose pliers.
- A scribe or pick.
- A small knife.

2. Emergency Repairs

If it is known which component is defective, it may be replaced without removing the board from its mounting.

- In the case of a small component, such as a ¼ or ½ watt resistor, cut the component in half using diagonal pliers. Crush the body by means of the long nose pliers. This is done to obtain extra lead length. In the case of larger components, clip the leads as close as possible to the component body.
- Using long nose pliers, form a loop of the lead ends as shown in figure 9.

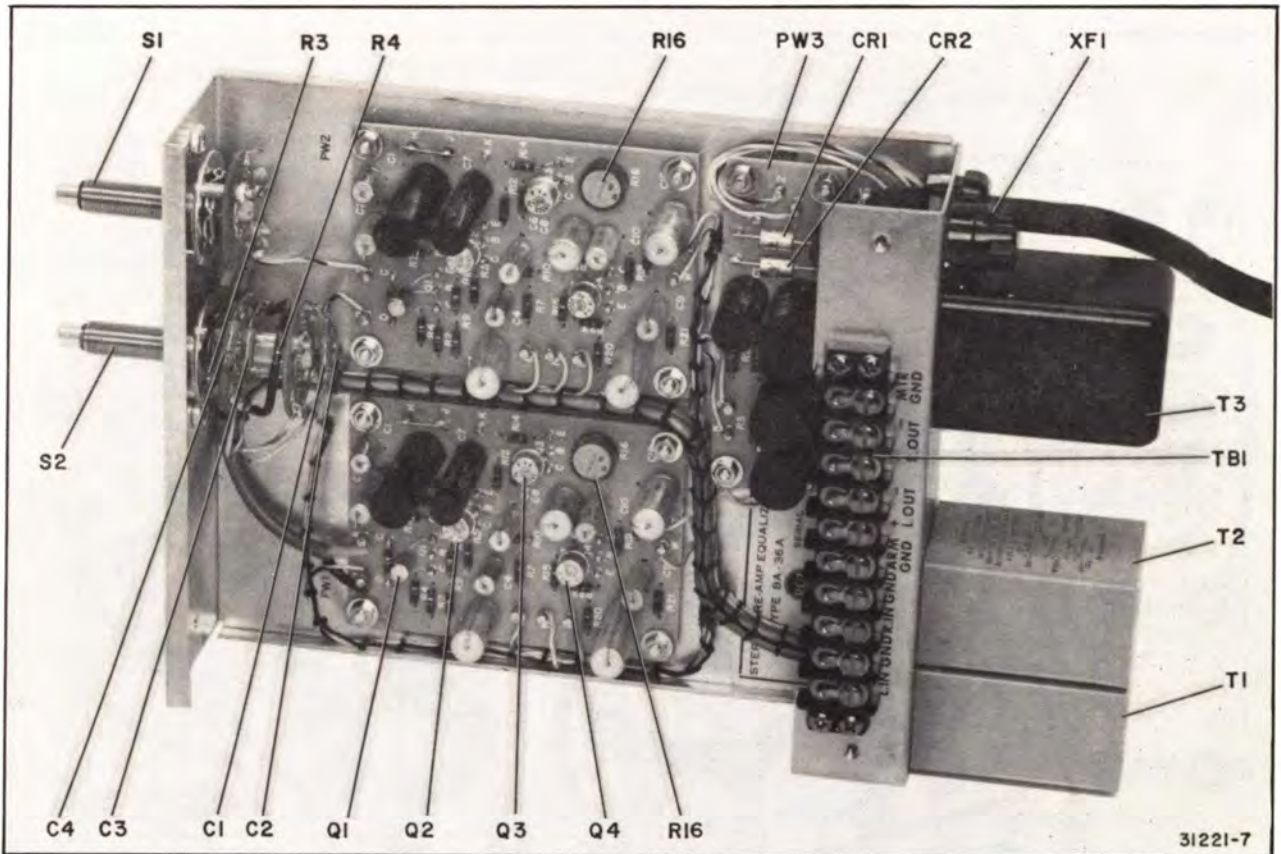


Figure 6—Type BA-36A Preamplifier with Cover Removed

c. Thread the leads of the new components through these loops. Cut off the excess lead, crimp and solder the connection.

3. Permanent Repairs

a. Remove the hardware fastening the board to the chassis and tilt board up.

b. Isolate the defective component. If it is necessary to disconnect a component from the circuit for test, heat the junction of the component lead and the etched wiring with the soldering iron. The heat should be concentrated on the component lead rather than the etched wiring pattern. Pry up and straighten the bent-over portion of the component lead with a knife blade, then pull lead through the hole with pliers.

c. To remove the defective component, snip the leads off at the component side of the board. See figure 9.

d. Using a small soldering iron (35 watt or less) heat the leads and remove them from the printed wiring side of the board. Be careful not to apply too much heat or force to avoid damage to the copper conductors.

e. Clean and preform the leads of the new com-

ponent and insert through the holes until the component body is tight against the board.

f. On the circuit side, grasp the component lead and bend it over in the direction of the circuit pattern.

g. Crimp the wire tightly against the board (see figure 9), and cut off the excess component leads. Leave about 1/16-inch of wire protruding from the edge of the hole.

h. Heat the lead and apply rosin core solder. **DO NOT USE PASTE OR ACID FLUX.** Remove excess rosin from the joints with alcohol.

i. Replace the circuit board, using the original hardware.

4. Vertically Mounted Capacitors

The vertically mounted capacitors are designed with both leads protruding from one end. On the electrolytic capacitors, the negative lead is slightly larger than the positive lead. The two holes on the etched wiring board correspond in size so that the electrolytic capacitors may be mounted only one way thus assuring correct polarity. Refer to the component assemblies figures 7 and 8.

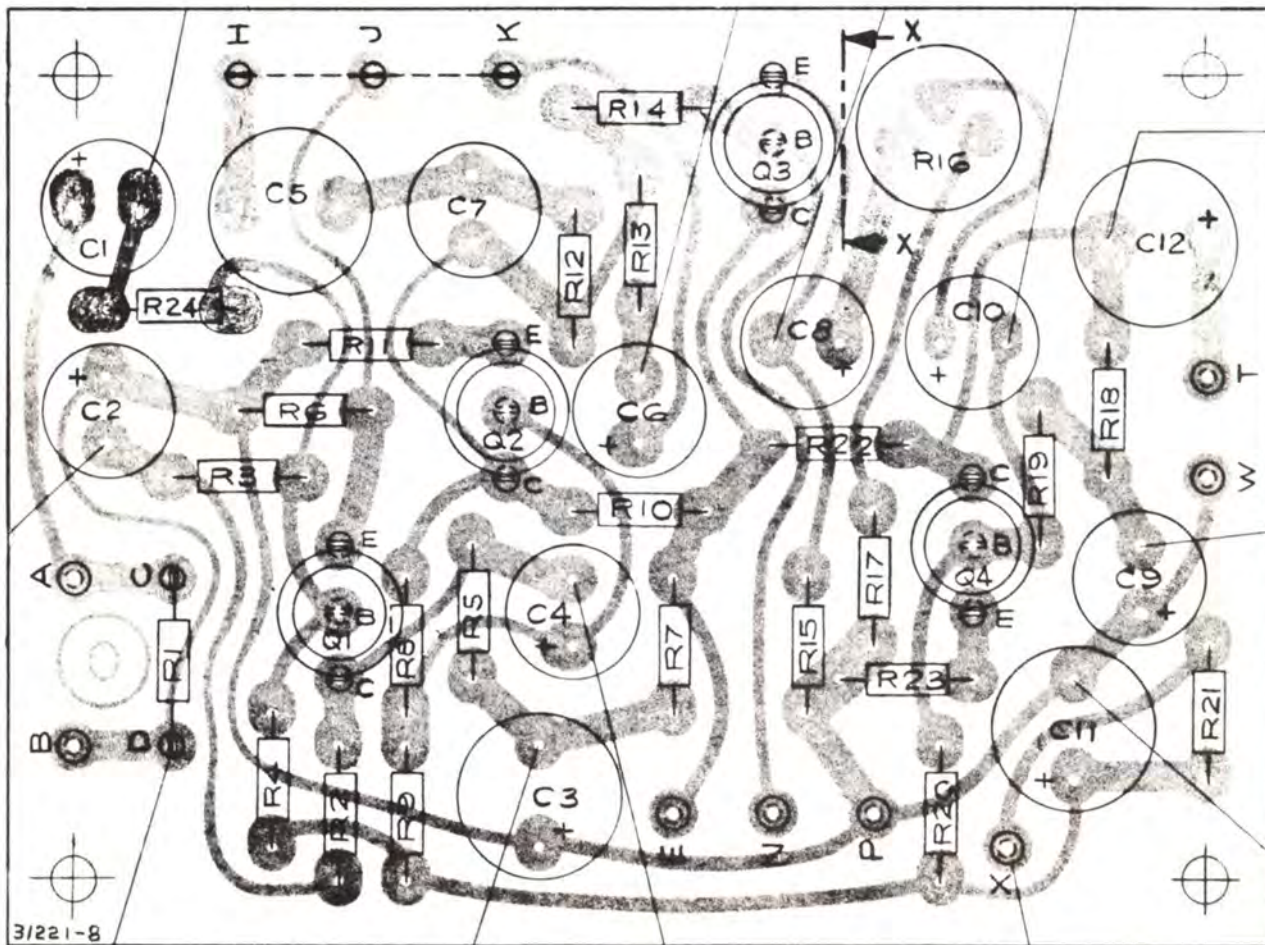


Figure 7—Component Assembly for PW1 and PW2

8760933

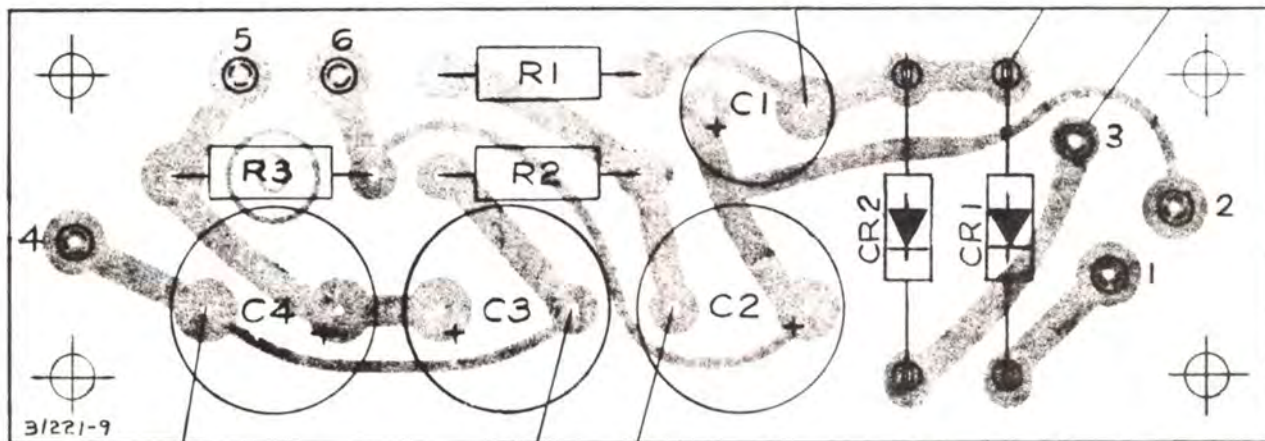


Figure 8—Component Assembly for PW3

8760935

5. Transistors

To replace transistors on the circuit boards, unsolder the lead at each of the three slotted terminals. Each terminal is identified with the letters C, B, E (collector, base, emitter) stenciled beside them. Refer to figure 11 for the bottom view of the two types of transistors and the basic schematic. To mount a new transistor, cut the leads to $\frac{1}{2}$ inch. Tack solder the corresponding lead in the slot of each terminal. Then bend the transistor to an upright position. **DO NOT WRAP LEAD.**

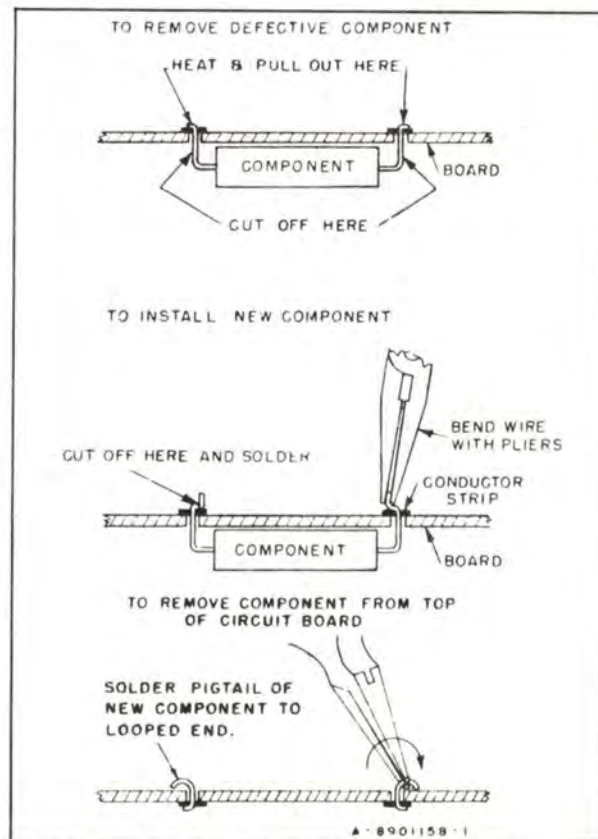


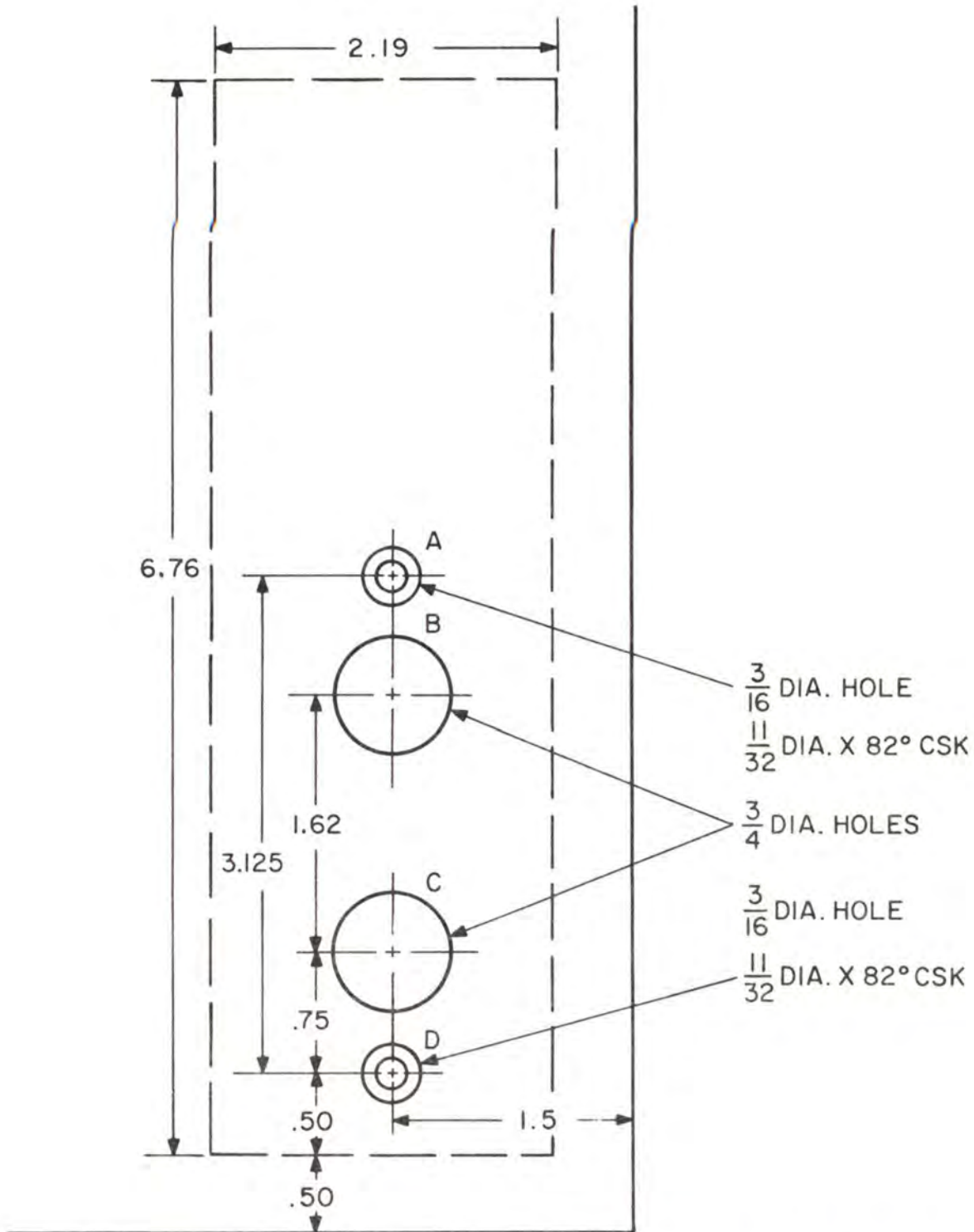
Figure 9—Replacement of Components in Printed Circuit

REPLACEMENT PARTS

Symbol	Stock No.	Drawing No.	Description
		-	STEREOPHONIC PRE-AMP-EQUALIZER
		-	MI-11441-B (BA-36A)
		-	CAPACITORS
C1	232342	3462014-212	FILM, 3900 PF $\pm 5\%$ 6 V
C2	232343	3462014-217	FILM, 10,000 PF $\pm 5\%$ 200 V
C3	232342	3462014-212	FILM, 3900 PF $\pm 5\%$ 6 V
C4	232343	3462014-217	FILM, 10,000 PF $\pm 5\%$ 200 V
F1	52664	990157- 2	FUSE - 1/16 A 3AG
PW1	227728	8760933-503	CIRCUIT BOARD ASSEMBLY (PRE AMP)
PW2	227728	8760933-503	CIRCUIT BOARD ASSEMBLY (PRE-AMP)
PW3	227729	8760935-503	CIRCUIT BOARD ASSEMBLY (POWER SUPPLY)
		-	RESISTORS - FIXED COMPOSITION, UNLESS NOTED
R1	227358	99206-255	10 MEGOHMS $\pm 10\%$ 1/4 W
R2	227358	99206-255	10 MEGOHMS $\pm 10\%$ 1/4 W
R3	227358	99206-110	10 MEGOHMS $\pm 10\%$ 1/4 W
R4	227358	99206-110	10 MEGOHMS $\pm 10\%$ 1/4 W
S1	226961	8486010- 1	SWITCH - ROTARY
S2	227727	8486009- 2	SWITCH - ROTARY
T1	226965	8469304- 2	TRANSFORMER - AUDIO
T2	226965	8469304- 2	TRANSFORMER - AUDIO
T3	232335	3463052- 1	TRANSFORMER - POWER
XF1	205914	8811104- 1	HOLDER - FUSE
		-	COMPONENT BOARD ASSEMBLY-PW1-PW2
		-	CAPACITORS
C1	232336	3462363- 4	ELECTROLYTIC, 2.2 MF $\pm 20\%$ 6 V
C2	232337	3462363- 5	ELECTROLYTIC, 33 MF $\pm 20\%$ 6 V
C3	232188	3462363- 3	ELECTROLYTIC, 100 MF $\pm 20\%$ 15 V
C4	232338	3462363- 6	ELECTROLYTIC, 4.7 MF $\pm 20\%$ 15 V
C5	227356	8974499- 75	PAPER, 0.1 MF $\pm 10\%$, 200 V
C6	232339	3462363- 7	ELECTROLYTIC, 22 MF $\pm 20\%$ 15 V
C8	232340	3462363- 8	ELECTROLYTIC 47 MF $\pm 20\%$ 12 V
C7	227357	8974499- 69	PAPER, 0.033 MF $\pm 10\%$, 200 V
C9	232337	3462363- 5	ELECTROLYTIC, 33 MF $\pm 20\%$ 6 V
C10	232337	3462363- 5	ELECTROLYTIC, 33 MF $\pm 20\%$ 6 V
C11	232341	3462363- 9	ELECTROLYTIC, 220 MF $\pm 20\%$ 6 V
C12	232188	3462363- 3	ELECTROLYTIC, 100 MF $\pm 20\%$ 15 V
Q1	224696	-	TRANSISTOR - TYPE 2N220
Q2	223366	-	TRANSISTOR - TYPE 2N404
Q3	223366	-	TRANSISTOR - TYPE 2N404
Q4	223366	-	TRANSISTOR - TYPE 2N404
		-	RESISTORS - FIXED COMPOSITION, UNLESS NOTED
R1	227755	99206- 90	220,000 OHM $\pm 10\%$, 1/4 W
R2	219467	99206- 79	27,000 OHM $\pm 10\%$, 1/4 W
R3	223770	99206- 88	150,000 OHM $\pm 10\%$, 1/4 W
R4	223770	99206- 88	150,000 OHM $\pm 10\%$, 1/4 W
R5	219465	99206- 73	8200 OHM $\pm 10\%$, 1/4 W
R6	219458	99206-147	330 OHM $\pm 5\%$, 1/4 W
R7	108866	99206- 66	2200 OHM $\pm 10\%$, 1/4 W
R8	108871	99206- 82	47,000 OHM $\pm 10\%$, 1/4 W
R9	285404	99206- 80	33,000 OHM $\pm 10\%$, 1/4 W
R10	300739	99206-175	4700 OHM $\pm 5\%$, 1/4 W
R11	226975	99206- 45	39 OHM $\pm 10\%$, 1/4 W
R12	219461	99206-169	2700 OHM $\pm 5\%$, 1/4 W
R13	285403	99206-172	3600 OHM $\pm 5\%$, 1/4 W
R14	300739	99206-175	4700 OHM $\pm 5\%$, 1/4 W
R15	219461	99206- 67	2700 OHM $\pm 10\%$, 1/4 W
R16	226979	8537146- 1	VARIABLE, 5000 OHM $\pm 5\%$, 1/4 W
R17	108865	99206-159	1000 OHM $\pm 5\%$, 1/4 W

REPLACEMENT PARTS (cont)

Symbol	Stock No.	Drawing_No.	Description
R18	219464	99206- 71	5600 OHM $\pm 10\%$, 1/4 W
R19	226971	99206-178	6200 OHM $\pm 5\%$, 1/4 W
R20	108867	99206- 72	6800 OHM $\pm 10\%$, 1/4 W
R21	108865	99206-159	1000 OHM $\pm 5\%$, 1/4 W
R22	285442	99206-155	680 OHM $\pm 5\%$, 1/4 W
R23	226972	99206-128	51 OHM $\pm 5\%$, 1/4 W
R24	227741	99026- 59	560 OHM $\pm 10\%$, 1/4 W
		-	COMPONENT BOARD ASSEMBLY-PW3
		-	CAPACITORS
C1	232332	3465828- 1	ELECTROLYTIC, 50 MF 50 V
C2	232333	3465828- 2	ELECTROLYTIC, 100 MF 50 V
C3	232334	3465828- 3	ELECTROLYTIC, 500 MF 15 V
C4	232334	3465828- 3	ELECTROLYTIC, 500 MF 15 V
CR1	255726	-	DIODE - TYPE 1N3193
CR2	255726	-	DIODE - TYPE 1N3193
		-	RESISTORS - FIXED COMPOSITION
R1	502151	82283-152	510 OHM $\pm 5\%$, 1/2 W
R2	502147	82283-151	470 OHM $\pm 5\%$, 1/2 W
R3	502116	82283-140	160 OHM $\pm 5\%$, 1/2 W
		-	MISCELLANEOUS
	226962	8537126- 2	ESCUTCHEON
	250203	712336-507	KNOB
	226688	8529047- 3	TERMINAL - TRANSISTOR (3 PER STOCK NUMBER)



NOTE: DRILL HOLES A, B, C AND D AS SHOWN FOR INSTALLATION OF THE PREAMPLIFIER EQUALIZER IN TURNTABLE NOT RCA MODEL, ALLOW MINIMUM OF .05 INCH CLEARANCE ON TWO SIDES AS SHOWN. LEFT HAND SIDE MUST BE OPEN FOR ACCESS TO GAIN CONTROLS.

8026340

Figure 10—Template for Mounting Preamplifier Equalizer

NOTES:

1- ALL RESISTORS ARE IN OHMS, 1/4W ±10% & ALL CAPACITOR VALUES LESS THAN 1.0 IN MF & 1.0 ABOVE IN MMF UNLESS OTHERWISE SPECIFIED.

2- FOR PW1 & PW2 SELECT R1 FROM TABLE TO GIVE MFGRS. RECOMMENDED CARTRIDGE LOAD (R_{LH}) 220K SUPPLIED FOR MI-11865 CARTRIDGE STEREO CONN.

R _{LH}	60K	47K	33K	24K
R ₁	∞	220K	75K	39K

3- FLAT RESPONSE OBTAINABLE FOR TEST PURPOSES BY MOVING JUMPER TO J-K.

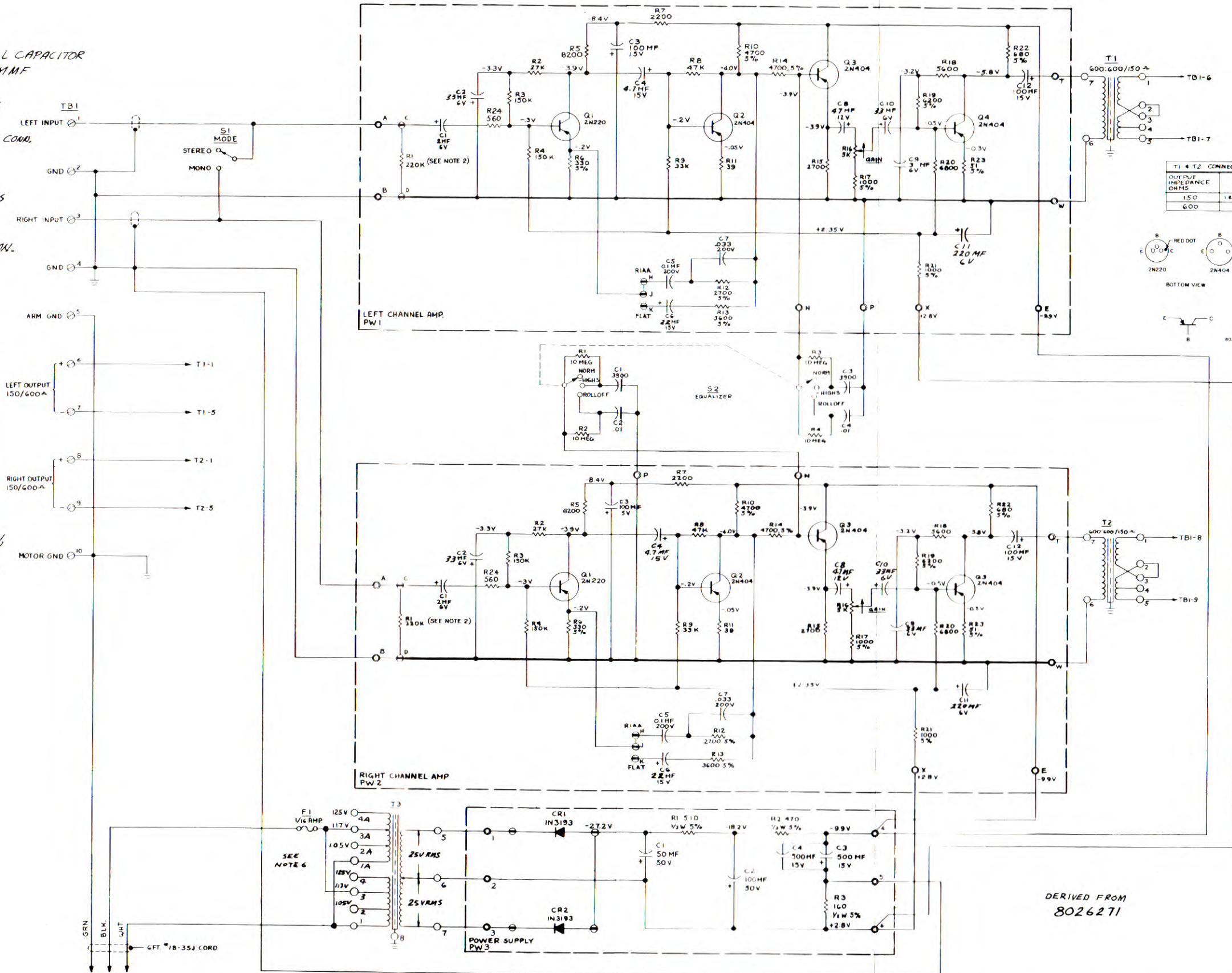
4- DC VOLTAGES MEASURED WITH 20,000 Ω VOLT METER.

5- ALL SWITCHES SHOWN IN MAX. CCW POSITION.

6- FOR LINE VOLTAGES OTHER THAN 115V, REFER TO CHART BELOW FOR T3 CONNECTIONS.

INPUT VOLTAGE	INPUT CONNECTION	JUMPED TERMINALS
105	2A	1 & 1A AND 2 & 2A
115	3A	1 & 1A AND 3 & 3A
125	4A	1 & 1A AND 4 & 4A
210 *	2A	1A & 2
230 *	3A	1A & 3
250 *	4A	1A & 4

* FOR 210, 230, OR 250 VOLT OPERATION, REPLACE THE 1/16 AMP FUSE (F1) WITH A 1/32 AMP FUSE (RCA STOCK #231431).



31221-11

Figure 11—Schematic Diagram for BA-36A Preamp Equalizer

EQUIPMENT LOST OR DAMAGED IN TRANSIT

When delivering the equipment to you, the truck driver or carrier's agent will present a receipt for your signature. Do not sign it until you have (a) inspected the containers for visible signs of damage and (b) counted the containers and compared with the amount shown on the shipping papers. If a shortage or if evidence of damage is noted, insist that notation to that effect be made on the shipping papers before you sign them.

Further, after receiving the equipment, unpack it and inspect thoroughly for concealed damage. If concealed damage is discovered, immediately

notify the carrier, confirming the notification in writing, and secure an inspection report. This item should be unpacked and inspected for damage WITHIN 15 DAYS after receipt. Report all shortages and damages to RCA, Commercial Electronic Systems Division - Camden, New Jersey 08102.

RCA will file all claims for loss and damage on this equipment so long as the inspection report is obtained. Disposition of the damaged item will be furnished by RCA.

FIELD ENGINEERING SERVICE

RCA Field Engineering Service is available at current rates. Requests for field engineering service may be addressed to your RCA Broadcast Field Representative or the RCA Service Company, Incorporated -

Broadcast Service Division - Camden, New Jersey 08102. Telephone 609-963-8000.

WARRANTY ITEMS

Particular parts and/or equipments covered by warranty are specifically stated as such in the warranty or contract given to the customer at the time of sale. The warranty or contract also stipulates the conditions under which the warranty may be exercised.

To obtain new replacement for such warranty items, contact your local RCA sales office and please supply Product Identification (including the Original Invoice Number, MI Number, Type Number, Model Number, and Serial Number) and Replacement Part Identification (including Stock Number and Description). Requests for warranty replacements may be unduly delayed if all this information is not supplied.

REPLACEMENT PARTS

When ordering replacement parts, please give Stock or Master Item (MI) Number, Description, and Symbol of each item ordered.

The part which will be supplied against an order for a replacement item may not be an exact duplicate of the original part. However, it will be a satisfactory replacement differing only in minor mechanical or electrical characteristics. Such differences will in no way impair

the operation of the equipment.

Emergency Service

For emergency services after working hours, contact RCA Parts and Accessories, Telephone 609-963-8000.

LOCATION	ORDERING INSTRUCTIONS
Continental United States, including Alaska and Hawaii	Replacement Parts bearing a STOCK NUMBER should be ordered from RCA Parts and Accessories- 2000 Clements Bridge Road - Deptford, New Jersey 08096. Replacement Parts bearing a MASTER ITEM (MI) NUMBER should be ordered from RCA, Commercial Electronic Systems Division - Attention Commercial Service - Camden, New Jersey 08102 or your nearest RCA Regional Office. Replacement Parts with NO STOCK or MASTER ITEM (MI) NUMBER are standard components. They are not stocked by RCA and should be obtained from your local electronics distributor.
Dominion of Canada	Order from your local RCA Sales Representative or his office or from: RCA Victor Company Limited, 1001 Lenoir Street, Montreal, Quebec.
Outside of Continental United States, Alaska, Hawaii, and the Dominion of Canada	Order from your local RCA Sales Representative or from: RCA International Division, Clark, New Jersey - U. S. A. - Wire: RADIOINTER Emergency: Cable RADIOPARTS, DEPTFORD, N. J.

RETURN OF ELECTRON TUBES

If for any reason it is desired to return tubes, please return them through your local RCA tube distributor, RCA Victor Company Limited, or RCA International Division, depending on your location.

Please do not return tubes directly to RCA without authorization and shipping instructions.

It is important that complete information regarding each tube (including type, serial number, hours of service and reason for its return) be given. When tubes are returned, they should be shipped to the address specified on the Return Authorization form. A copy of the Return Authorization and also a Service Report for each tube should be packed with the tubes.

LOCATION	ORDERING INSTRUCTIONS
Continental United States, including Alaska and Hawaii	Local RCA Tube Distributor.
Dominion of Canada	Order from your local RCA Sales Representative or his office or from: RCA Victor Company Limited, 1001 Lenoir Street, Montreal, Quebec.
Outside of Continental United States, Alaska, Hawaii, and the Dominion of Canada	Local RCA Tube Distributor or from: RCA International Division, Clark, New Jersey, U. S. A., Wire: RADIONTER Emergency: Cable RADIOPARTS, DEPTFORD, N. J.

BTE-M3

RCA Commercial Electronic
Systems Division

Commercial Electronic Systems Division / Front and Cooper Streets / Camden, New Jersey, U.S.A., 08102

If You Didn't Get This From My Site,
Then It Was Stolen From...

www.SteamPoweredRadio.Com

Printed in U.S.A.