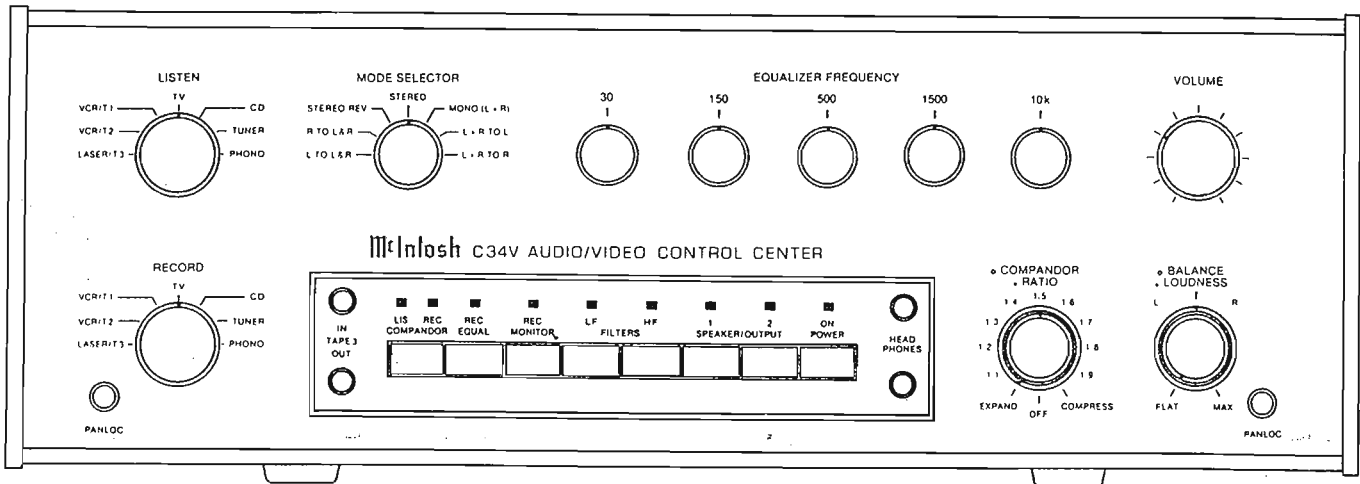


# C34V

## AUDIO/VIDEO CONTROL CENTER



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# McIntosh<sup>®</sup> Service Manual

# Performance Specifications

## Preamplifier Section

### FREQUENCY RESPONSE

+0, -0.5dB from 20Hz to 20,000Hz

### MAXIMUM VOLTAGE OUTPUT

10 volts from 20Hz to 20,000Hz

### TOTAL HARMONIC DISTORTION

0.01% maximum from 20Hz to 20,000Hz at rated output

### SENSITIVITY

Phono — 2mV for 2.5V rated output (0.4mV IHF)  
High Level — 250mV for 2.5V rated output (50mV IHF)

### SIGNAL TO NOISE RATIO, A-WEIGHTED

Phono — 90dB below 10mV input (84dB IHF)  
High Level — 100dB below rated output (86dB IHF)

### MAXIMUM INPUT SIGNAL

Phono — 100mV  
High Level — 20 volts

### INPUT IMPEDANCE

Phono — 47k ohms and 65pf capacitance  
High Level — 50k ohms

### EQUALIZATION CONTROLS

Variable 12dB boost to 12dB cut at center frequencies of 30, 150, 500, 1500, 10k Hz

### COMPANDER RATIOS

From 1:2 compression to 2:1 expansion

### LF FILTER

Flat or roll-off at 12dB per octave below 50 Hz.

### HF FILTER

Flat or roll-off at 12dB per octave above 7,000 Hz.

## Monitor Amplifier Section

### CONTINUOUS AVERAGE POWER OUTPUT

20 watts per channel into 8 ohms, from 20 Hz to 20 kHz, at 0.01% maximum harmonic distortion

### FREQUENCY RESPONSE

+0, -0.2dB from 20Hz to 20,000Hz

### SENSITIVITY

750mV for rated output (170mV IHF), input impedance is 27K ohms

### SIGNAL TO NOISE RATIO, A-WEIGHTED

100dB below rated output (87dB IHF)

## General Information

### SEMICONDUCTOR COMPLEMENT

31 Bipolar Transistors  
76 Field Effect Transistors  
35 Integrated Circuits  
107 Diodes  
1 Silicon Controlled Rectifier

### AC POWER OUTLETS

1 green turntable current sensing, 100 watts  
2 red unswitched  
3 black switched  
1440 watts total capacity

### POWER REQUIREMENTS

120 volts, 50/60 Hz, 25 to 85 watts

## Mechanical Information

### SIZE:

16-1/8 inches wide (40.6 cm) by 5-7/16 inches high (13.8 cm) by 13 inches deep (33 cm), from the mounting surface, including PANLOC shelf and back panel connectors. Knob clearance required is 1-1/4 inches (3.2 cm) in front of the mounting panel.

### WEIGHT:

26 pounds (11.8 kg) net, 38 pounds (17.2 kg) in shipping carton.

# Top and Front Views

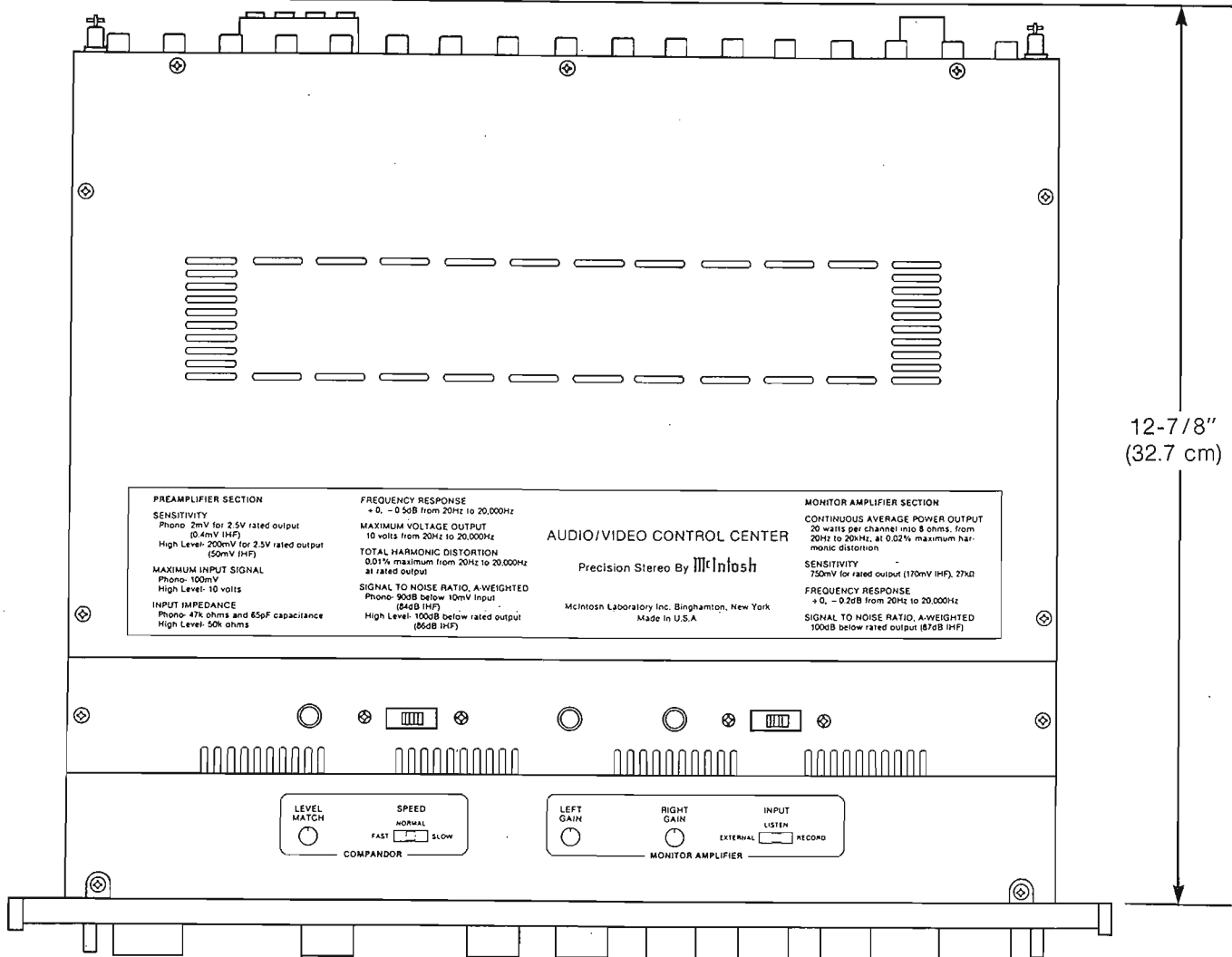


Fig. 1. Top view

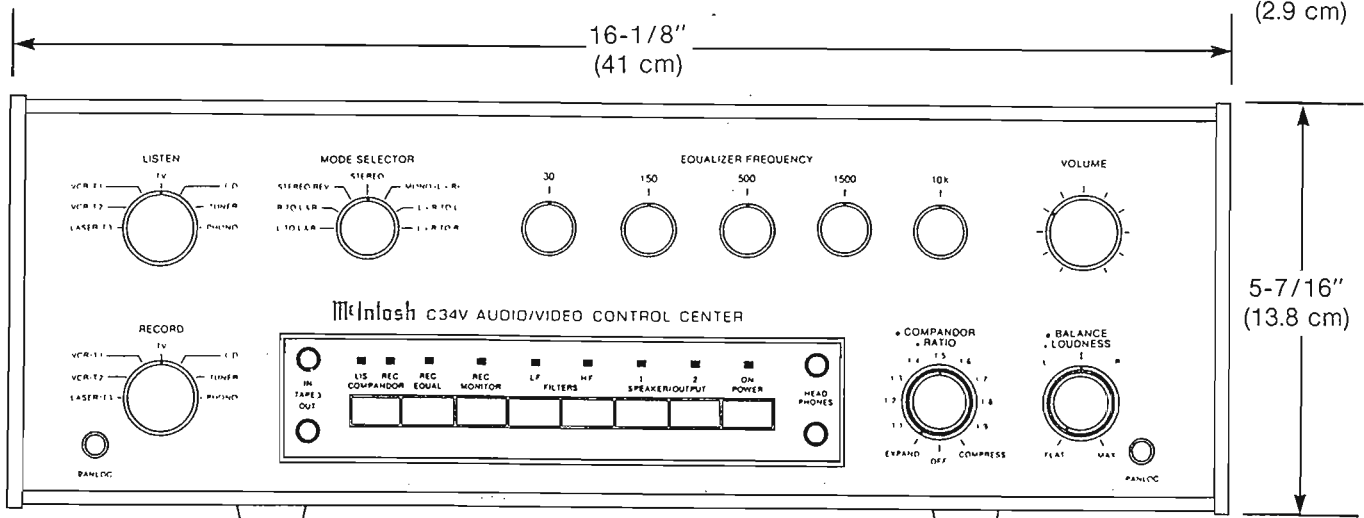


Fig. 2. Front view

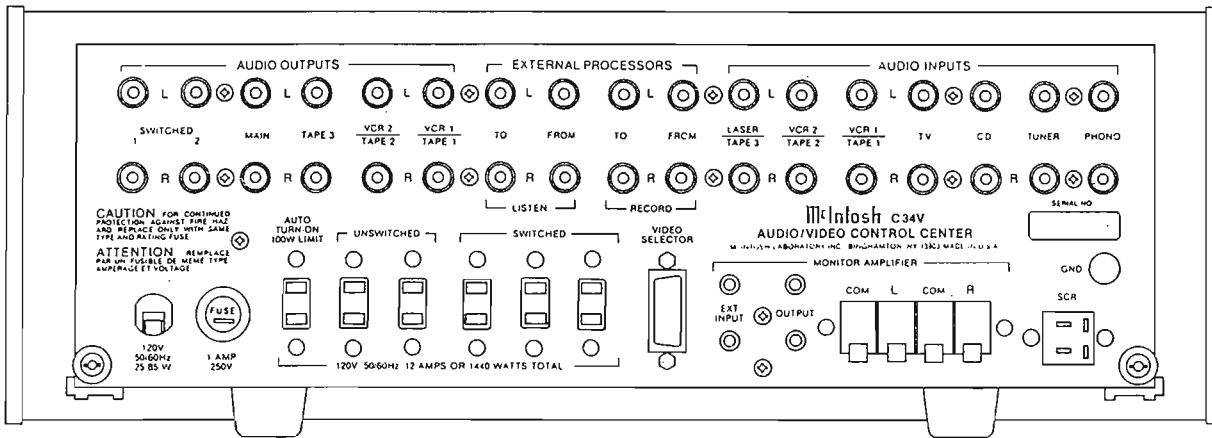


Fig. 3. Rear view

## General Notes

1. Unless otherwise noted, all voltages indicated on the following schematics are measured under the following conditions:
  - a. AC input at 120 volts, 50/60Hz.
  - b. All voltages are  $\pm 10\%$  with respect to ground. A high impedance (10 megohm) voltmeter must be used.
2. Unless otherwise specified:
  - a. Resistor values are in ohms.
  - b. Capacitor values smaller than 1 are microfarads ( $\mu F$ ), and capacitor values greater than 1 are in picofarads (pF).
  - c. Inductor values are in microhenries ( $\mu H$ ).

# Section Locations

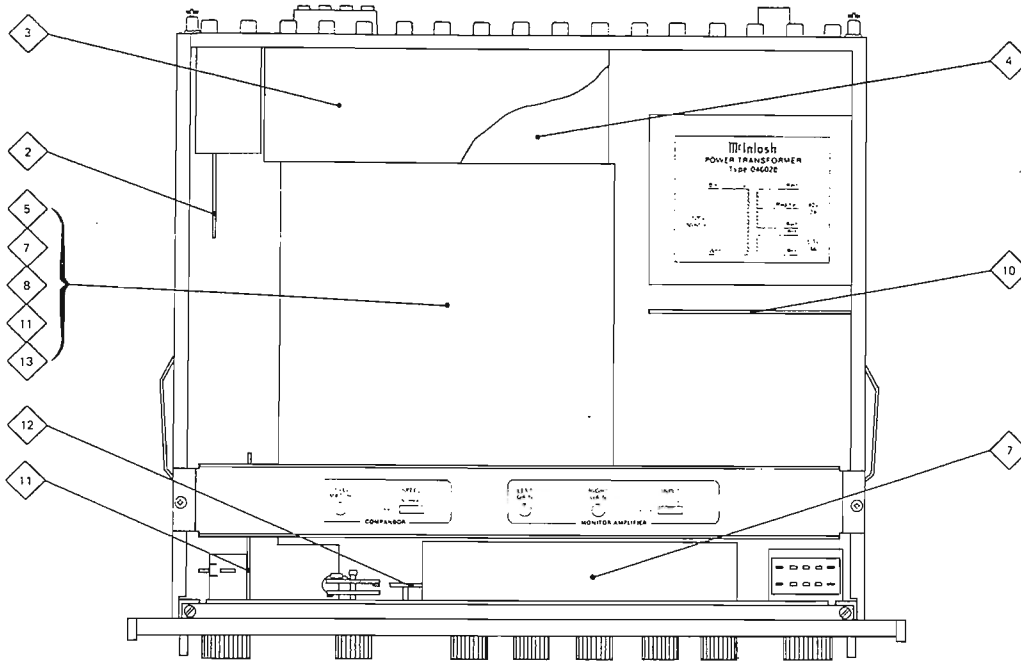


Fig. 4. Top view with cover removed

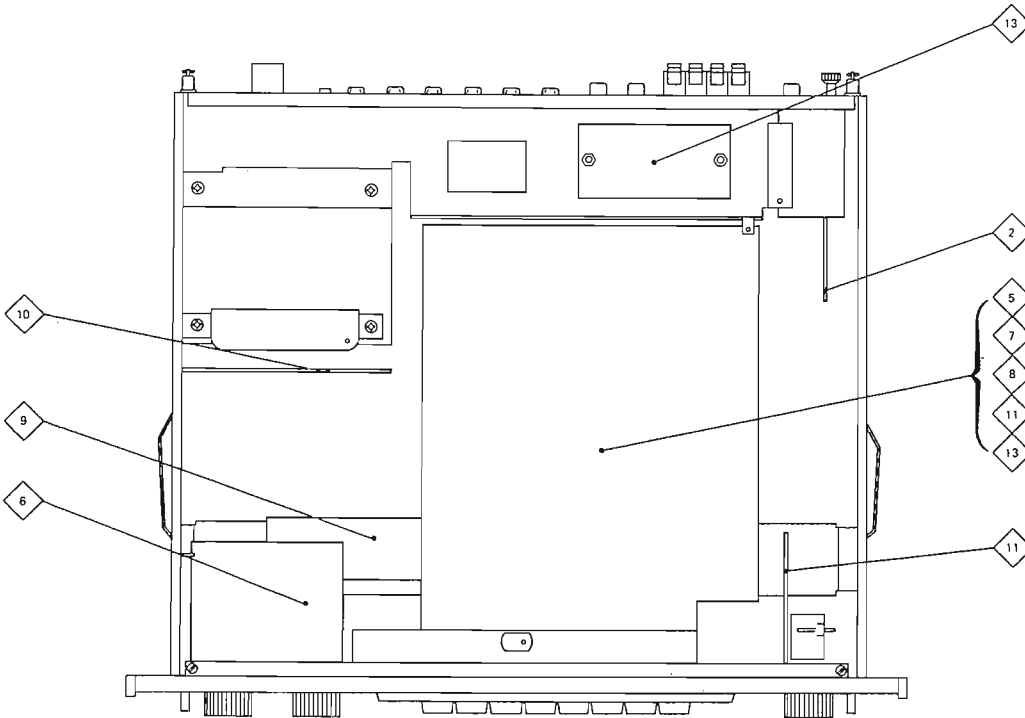
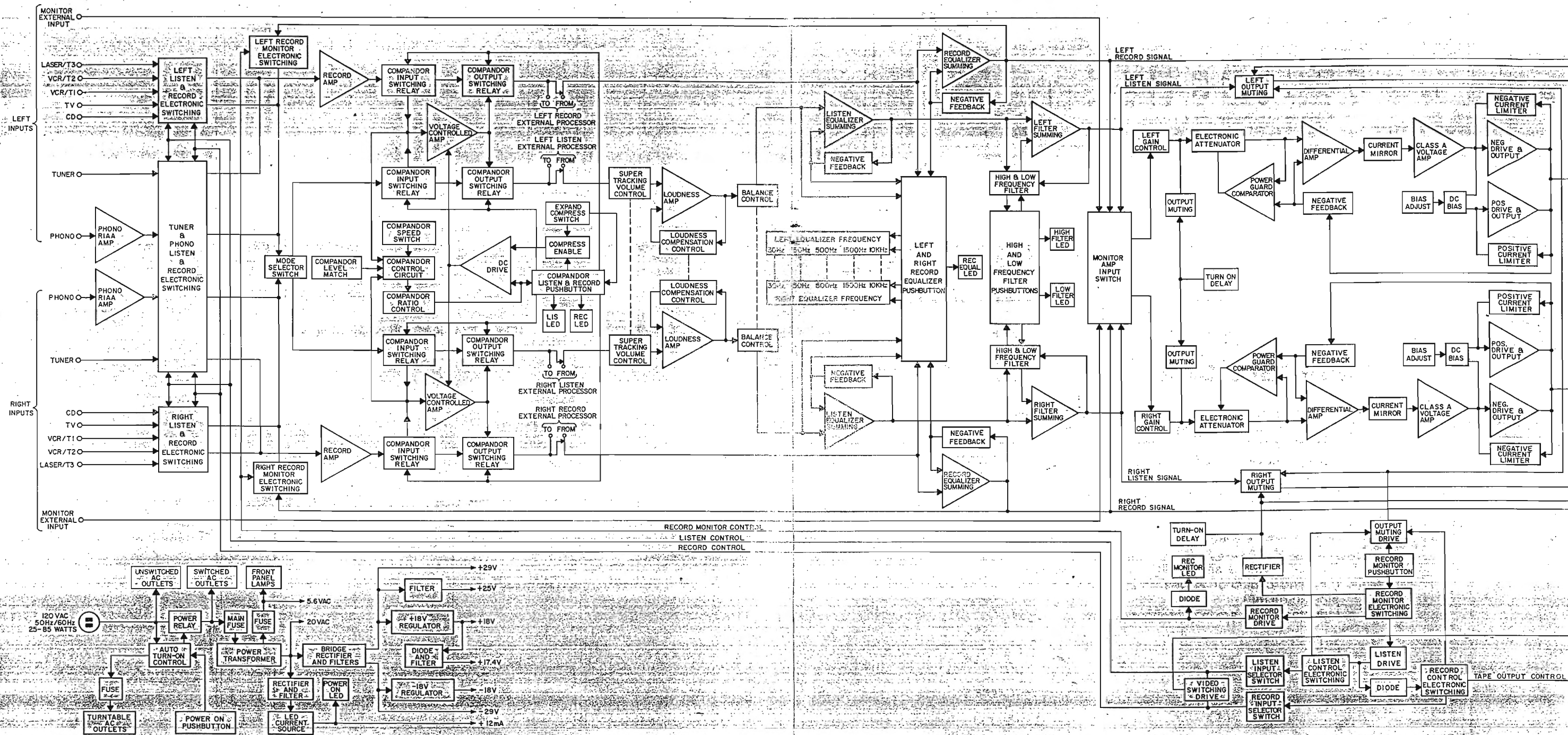


Fig. 5. Bottom view with cover removed

# Block Diagram



**INTERCONNECTION DIAGRAM  
PARTS LIST**

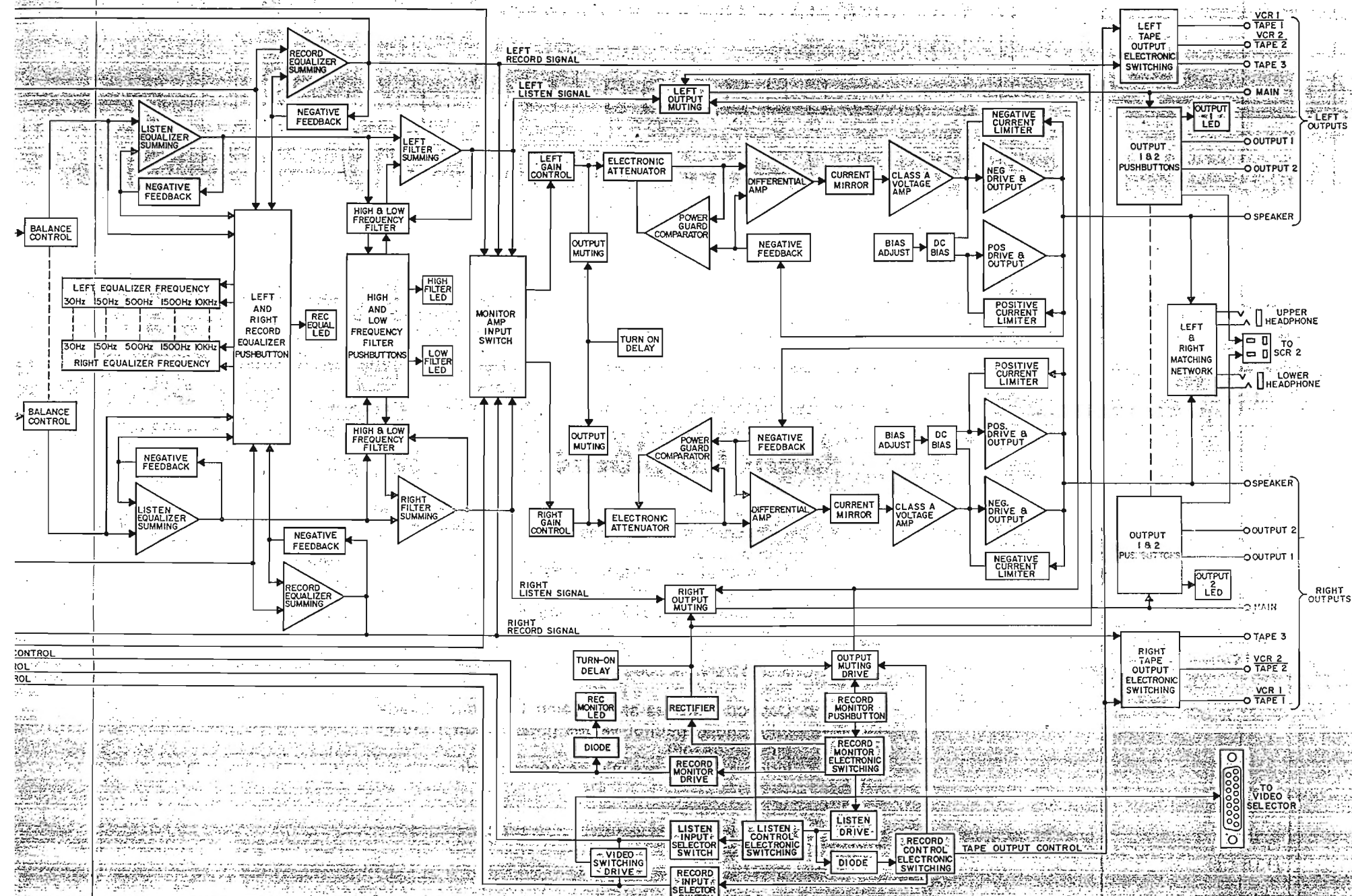
Symbol No.	Part No.	Description
<b>CAPACITORS</b>		
C1-C2	061276	CD, .0047 $\mu$ F, 400V, UL/CSA
<b>LIGHTING DEVICES</b>		
DS1-DS5	058069	INC, 6.3V, 8610
<b>FUSES</b>		
F1	089007	Fuse, SB, 5A, 125V, MDL-5
F2	089003	Fuse, SB, 1.5A, 125V, MDL-1.5
F3	089002	Fuse, FA, 1A, 250V, AGC-1
	178122	Fuseholder
<b>RESISTORS</b>		
R3	134395	POT, 100K $\Omega$ , Volume Control
<b>SWITCHES</b>		
S1	146228	Mode Selector Switch
<b>TRANSFORMERS</b>		
T1	045807	Power

**FRONT PANEL AND TRIM  
PARTS LIST**

Part No.	Description
017230	Pushbutton, Black
017244	Pushbutton, Red
018155	Top Panel Rail, Secure w/100007 Screws
018348	End Cap, Secure w/101042 Screws
043410	Bottom Panel Rail, Secure w/100103 Screws
045828	Pushbutton Bezel, w/Adhesive
046550	Front Panel, Glass
046551	Front Panel, Complete
090217	Ratio Knob (Front)
090187	Compandor Knob (Rear)
090217	Loudness Knob (Front)
090187	Balance Knob (Rear)
090214	Mode Selector Knob
090215	Listen Knob
090215	Record Knob
090215	Volume Knob
090216	Equalizer Frequency Knob
101054	Tapping Screws, 6-32 x 1/4, Phillips, Black
104017	Knob Felt Washers, 3/4 Dia.
104073	Knob Felt Washers, 5/8 Dia.

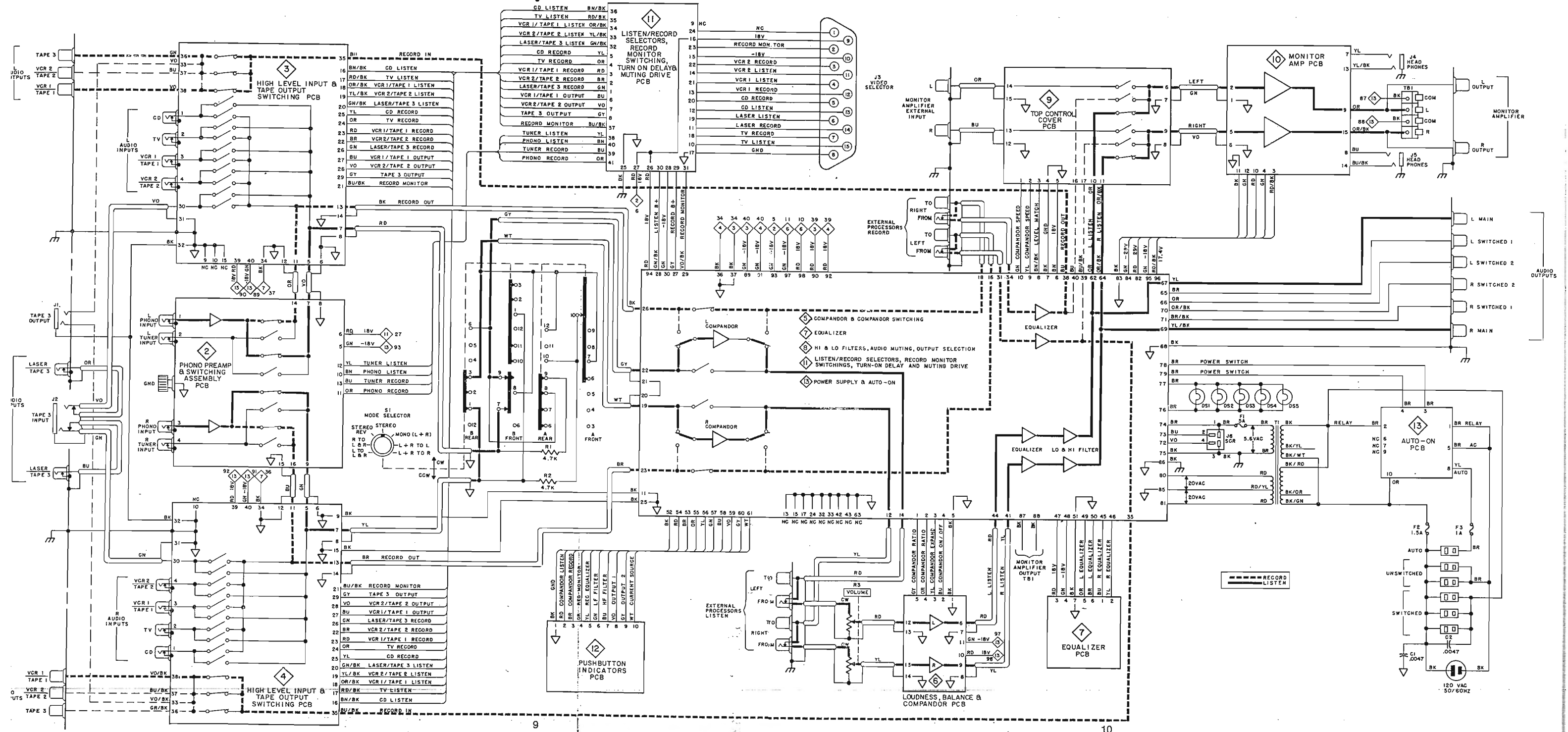
**INSTALLATION HARDWARE  
PARTS LIST**

Part No.	Description
017156	Plastic Feet, Secure w/100160 Screws
038179	Mounting Template
043401	Mounting Strip
043622	Panloc Shelf Bracket, Right
043623	Panloc Shelf Bracket, Left
045142	Hardware Pkg.



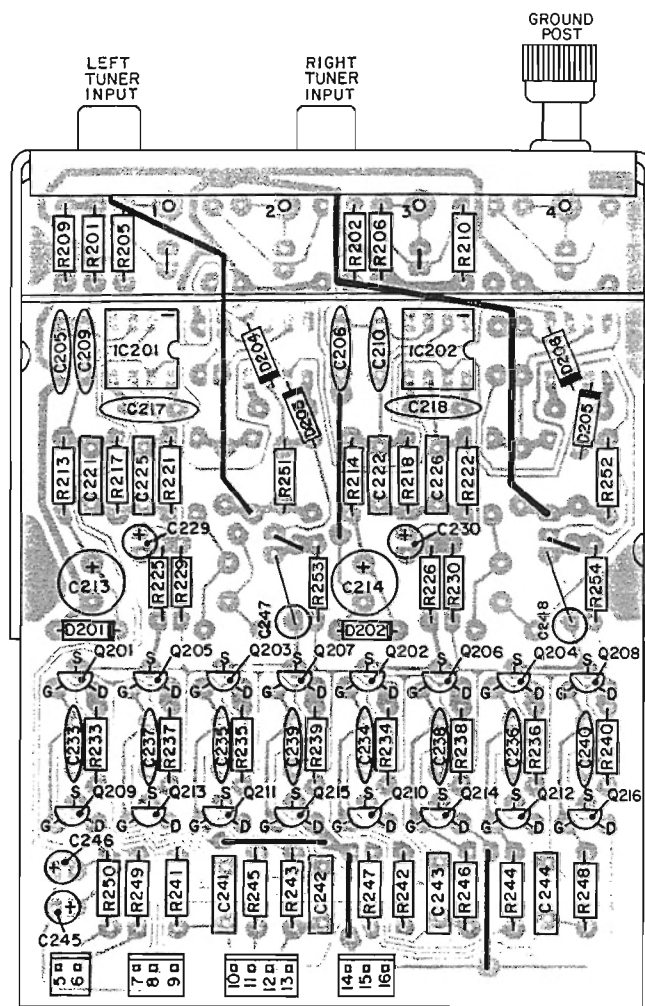
# Interconnection Diagram

1

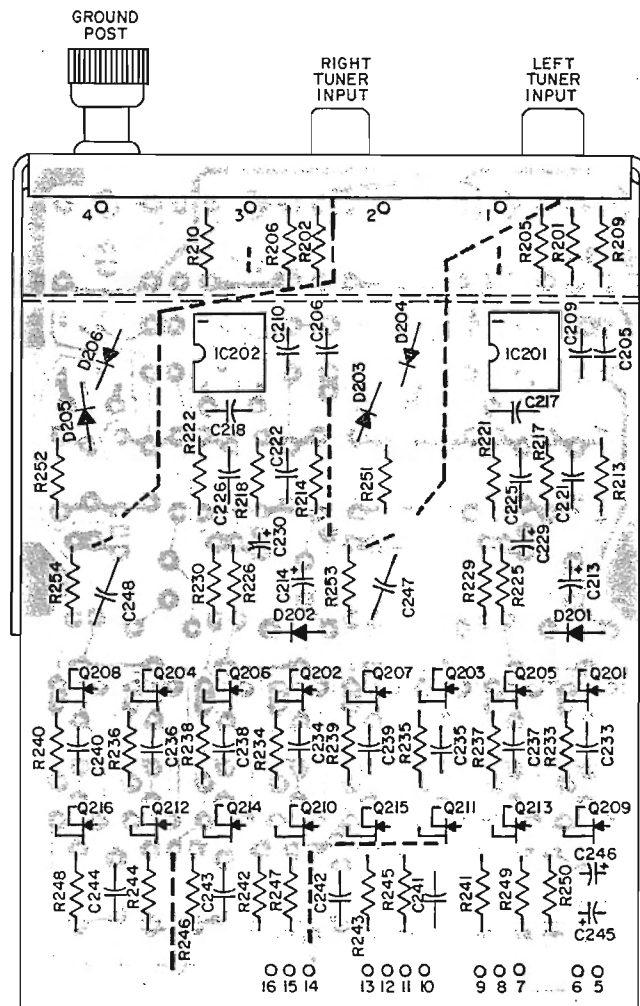








COMPONENT  
SIDE

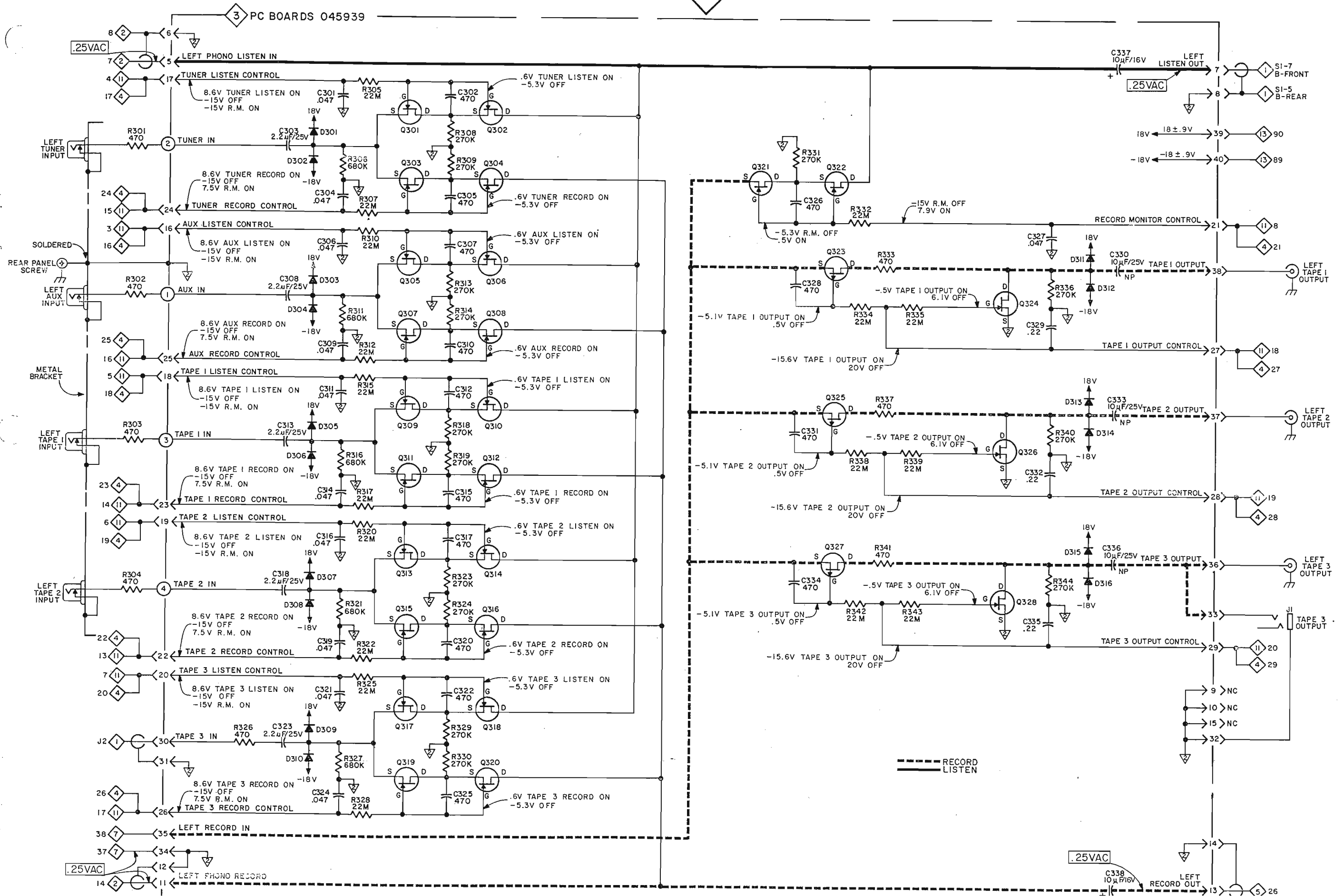


CIRCUIT  
SIDE

PHONO PREAMP AND SWITCHING ASSEMBLY PCB 046545

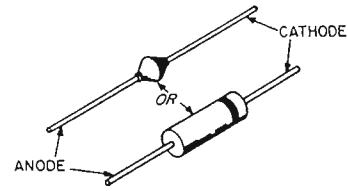
# High Level Input and Tape Switching (Left)

3

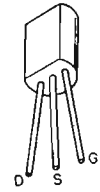


**HIGH LEVEL INPUT AND TAPE SWITCHING (LEFT) PARTS LIST**

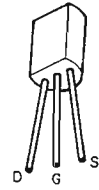
Symbol No.	Part No.	Description
<b>DIODES</b>		
D301-D316	070047	SIG, 75V, 10mA, 1N4148
<b>TRANSISTORS</b>		
Q301-Q322, Q324, Q326, Q328	132193	N, JFET, 2N4392
Q323, Q325, Q327	132226	P, JFET, J174



D301-D316

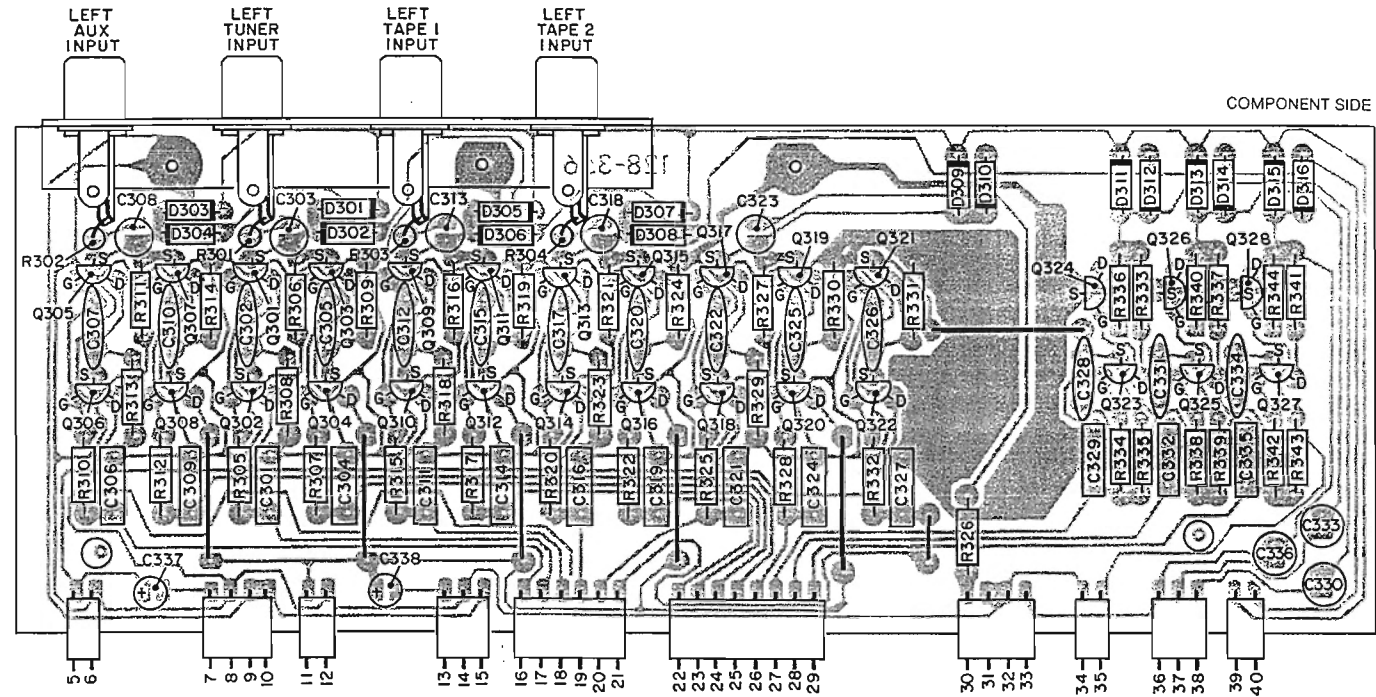


Q301-Q322, Q324, Q326, Q328

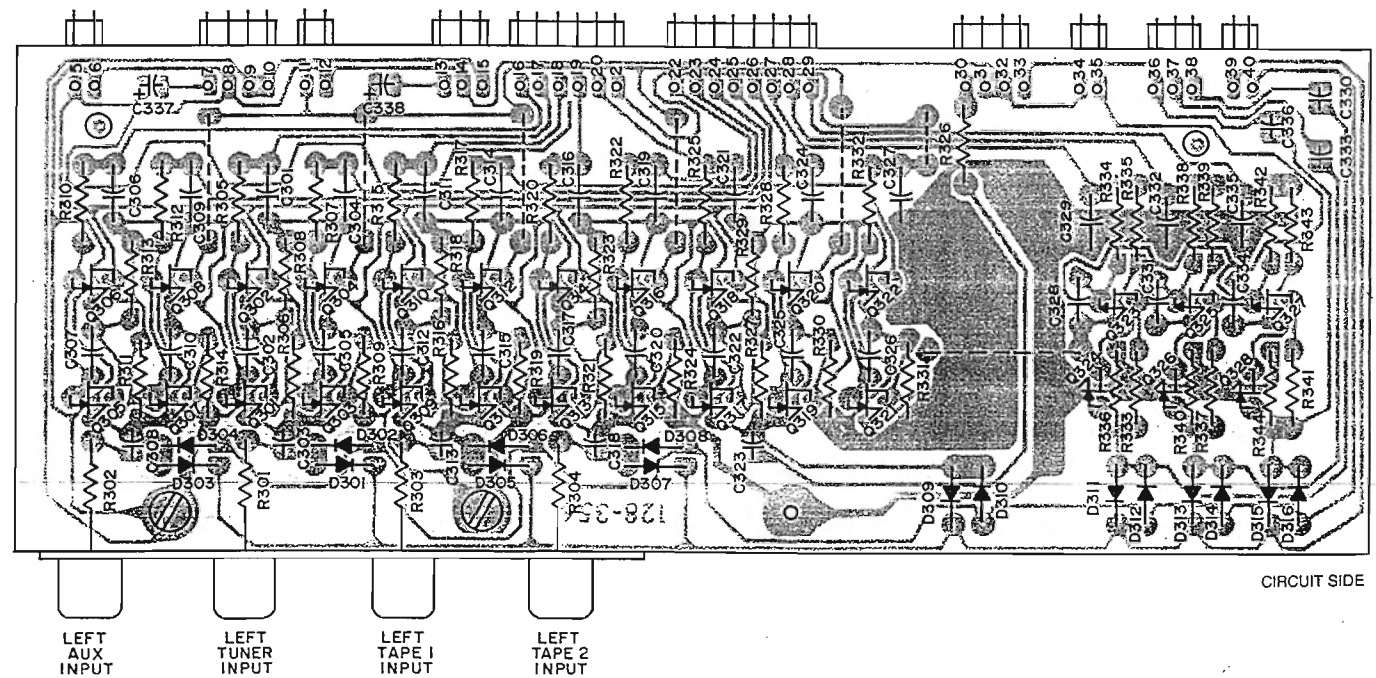


Q323, Q325, Q327

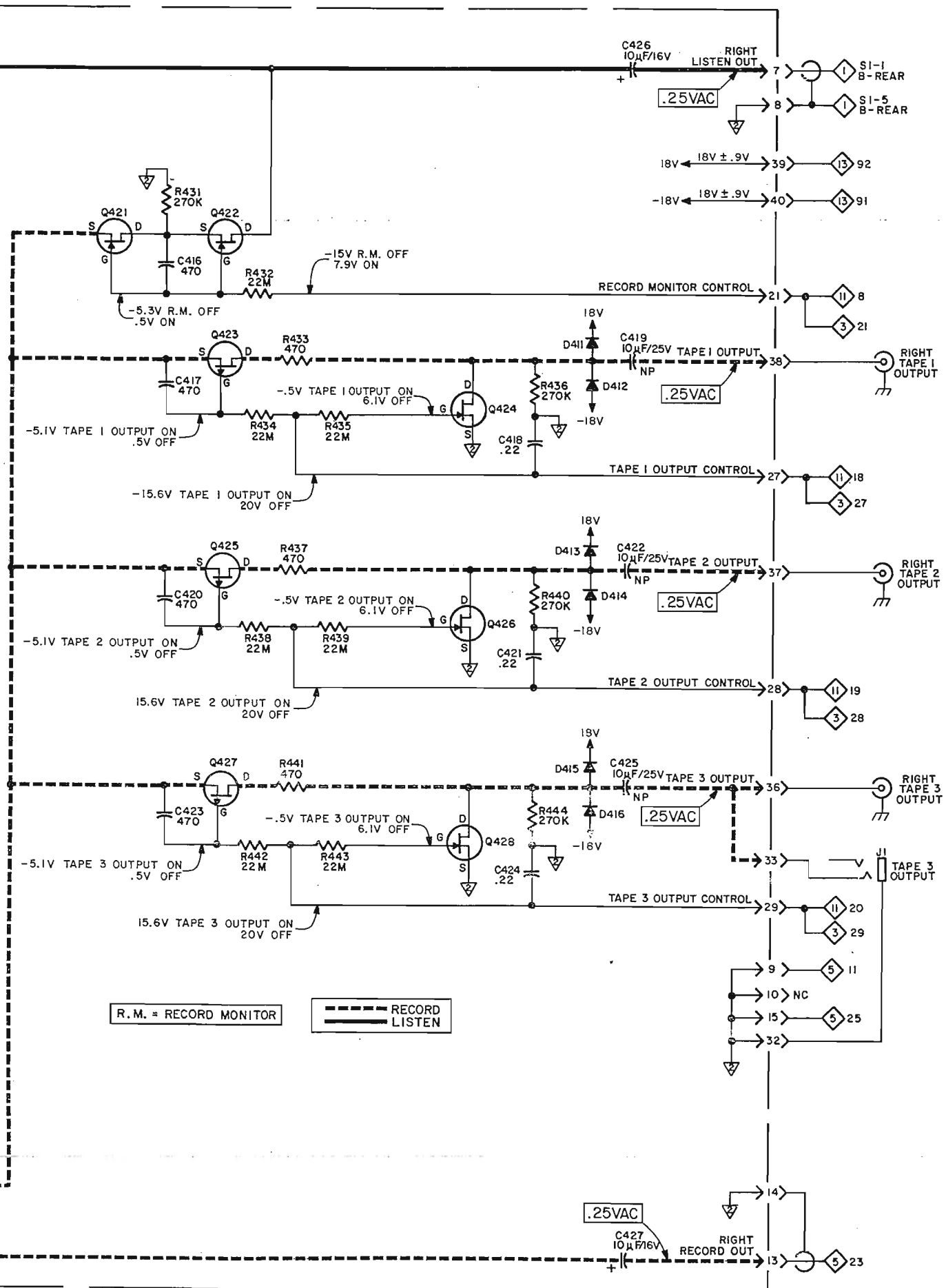
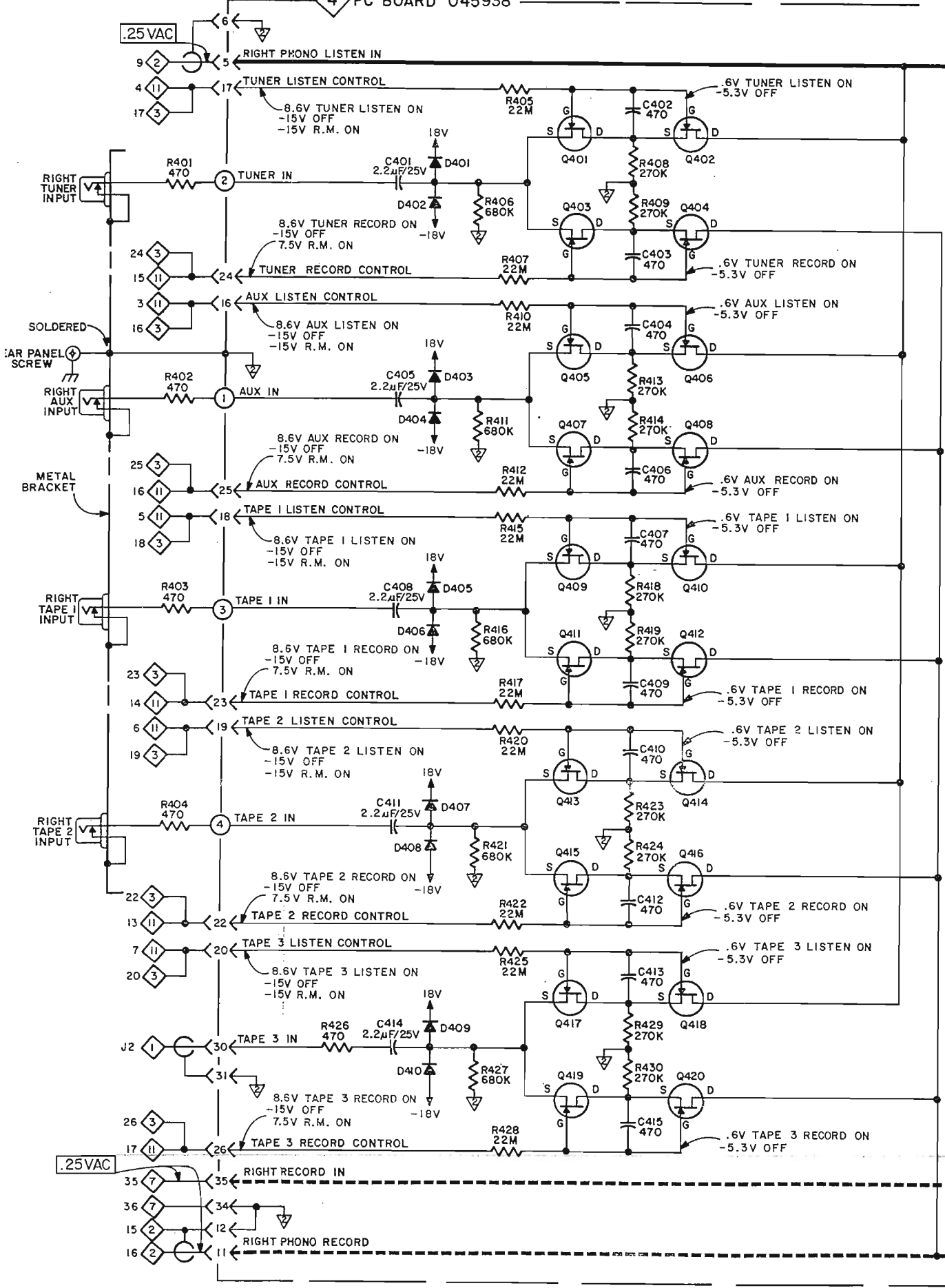
3



**HIGH LEVEL INPUT AND TAPE OUTPUT SWITCHING (LEFT) PCB 045939**



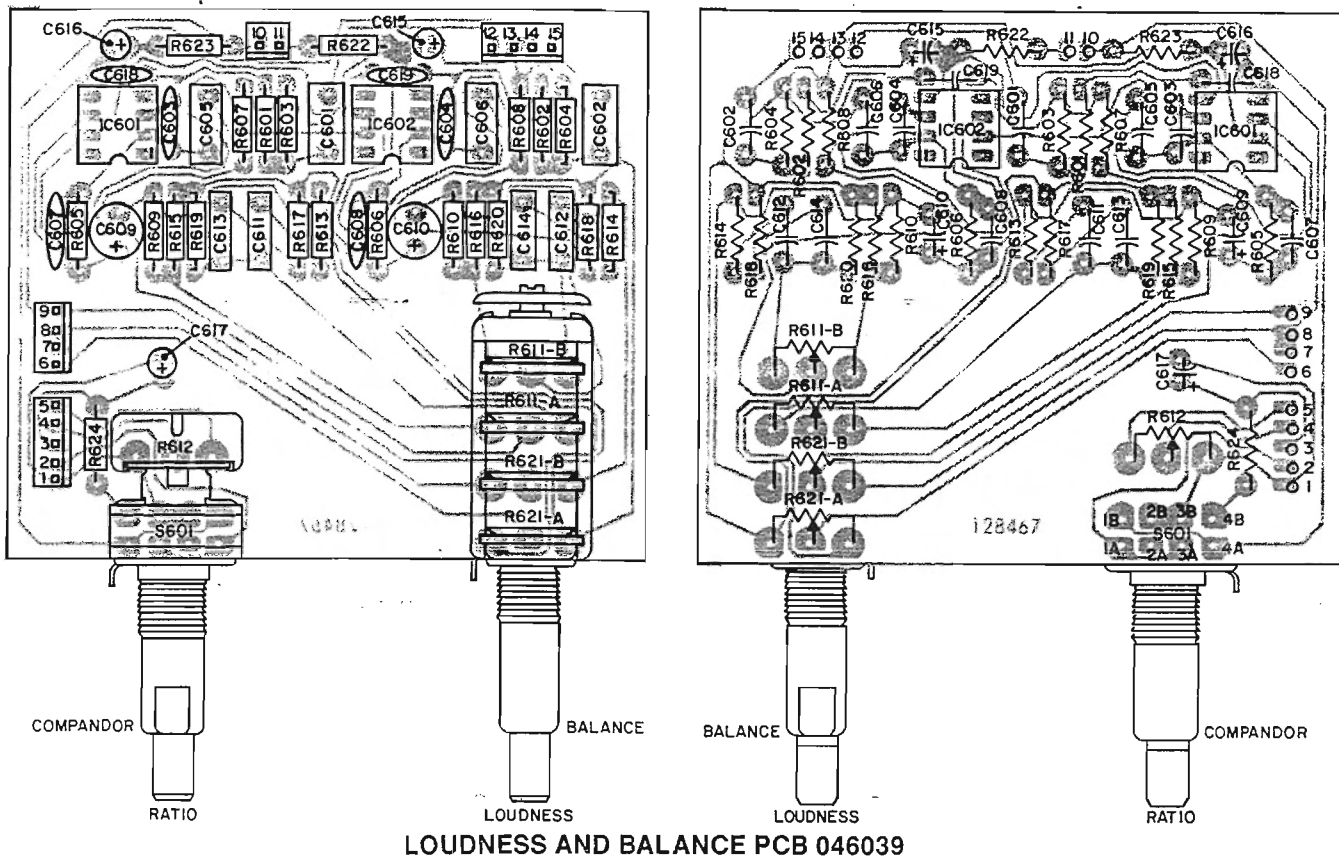
4 PC BOARD 045938



4 High Level Input and Tape Output Switching (Right)

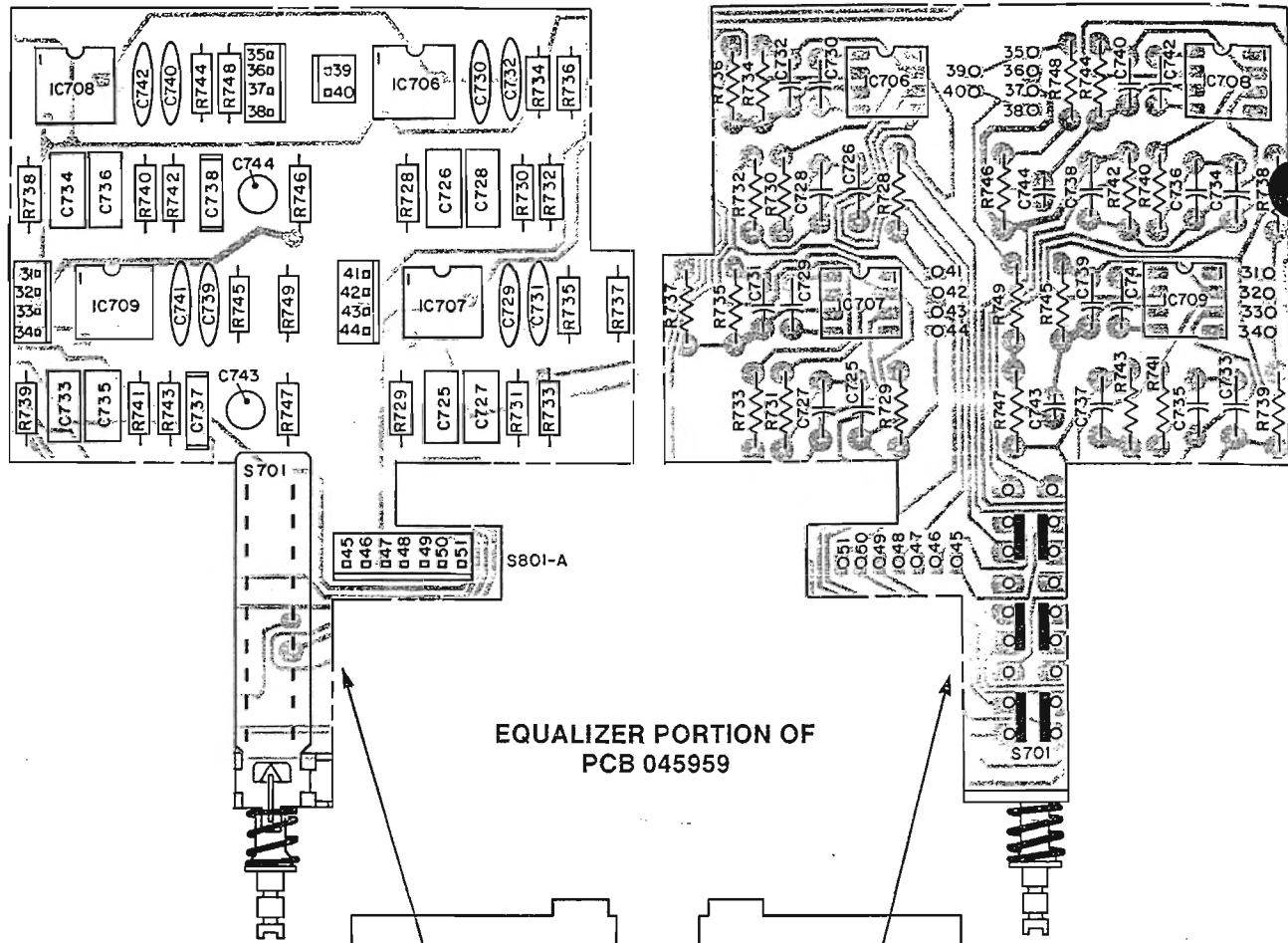
COMPONENT SIDE

CIRCUIT SIDE



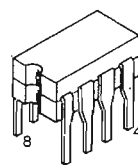
COMPONENT SIDE

CIRCUIT SIDE

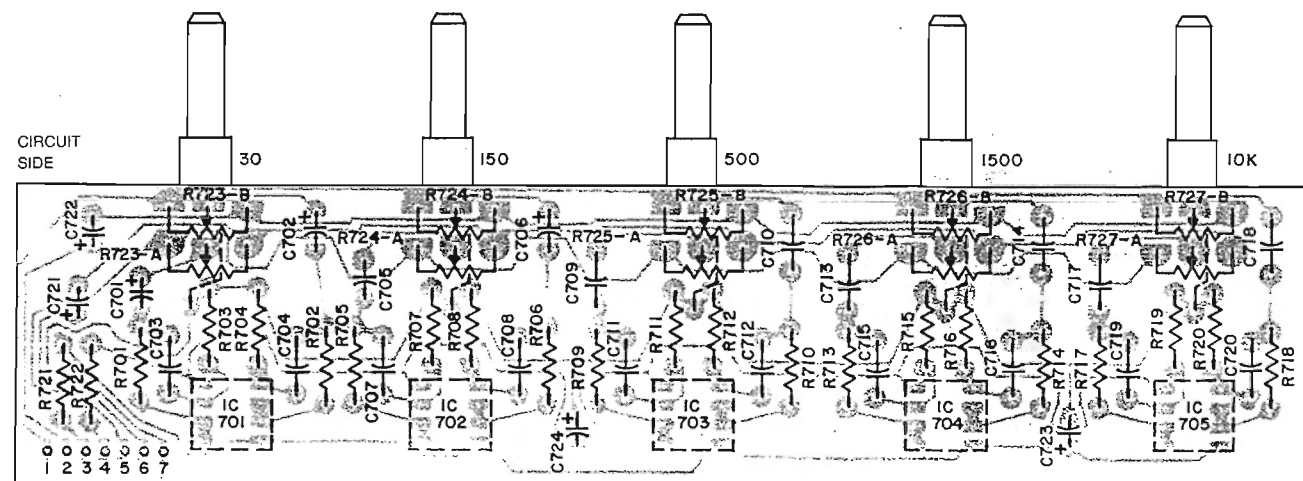
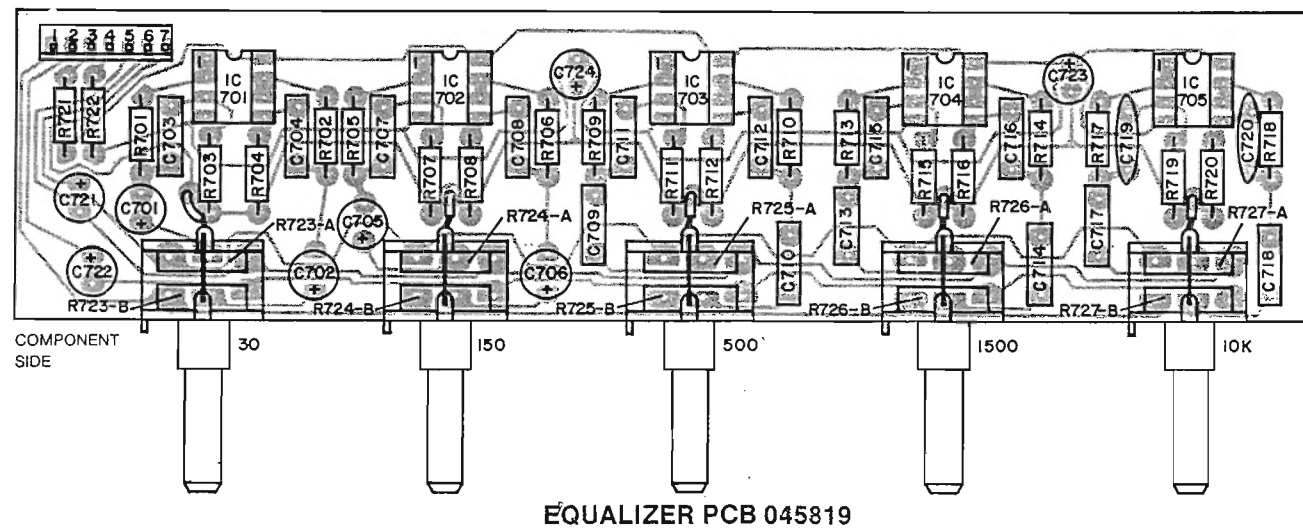


**LOUDNESS AND BALANCE PARTS LIST**

Symbol No.	Part No.	Description
<b>INTEGRATED CIRCUITS</b>		
IC601-IC602	133066	Operational Amp, NE5534N
<b>RESISTORS</b>		
R611, R621	134397	POT, Balance/Loudness
R612/S601	134398	POT, Compandor/Ratio Control
<b>SWITCHES</b>		
S601/R612	134398	POT, Compandor/Ratio Control

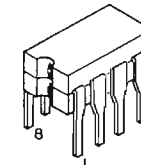


IC601-IC602



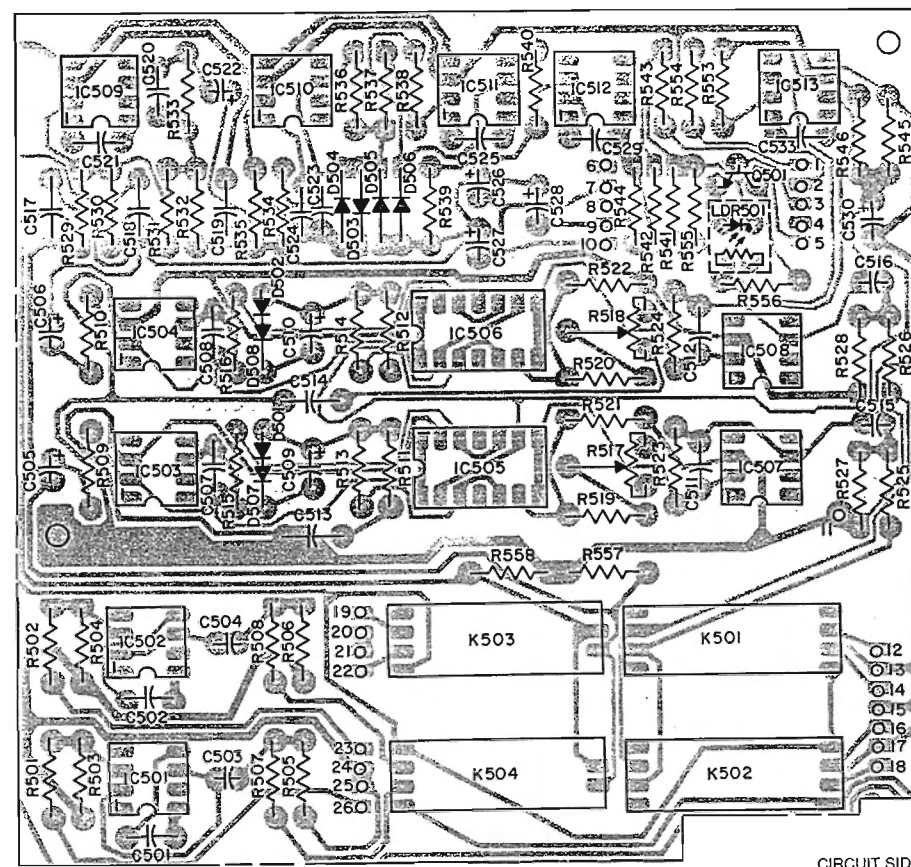
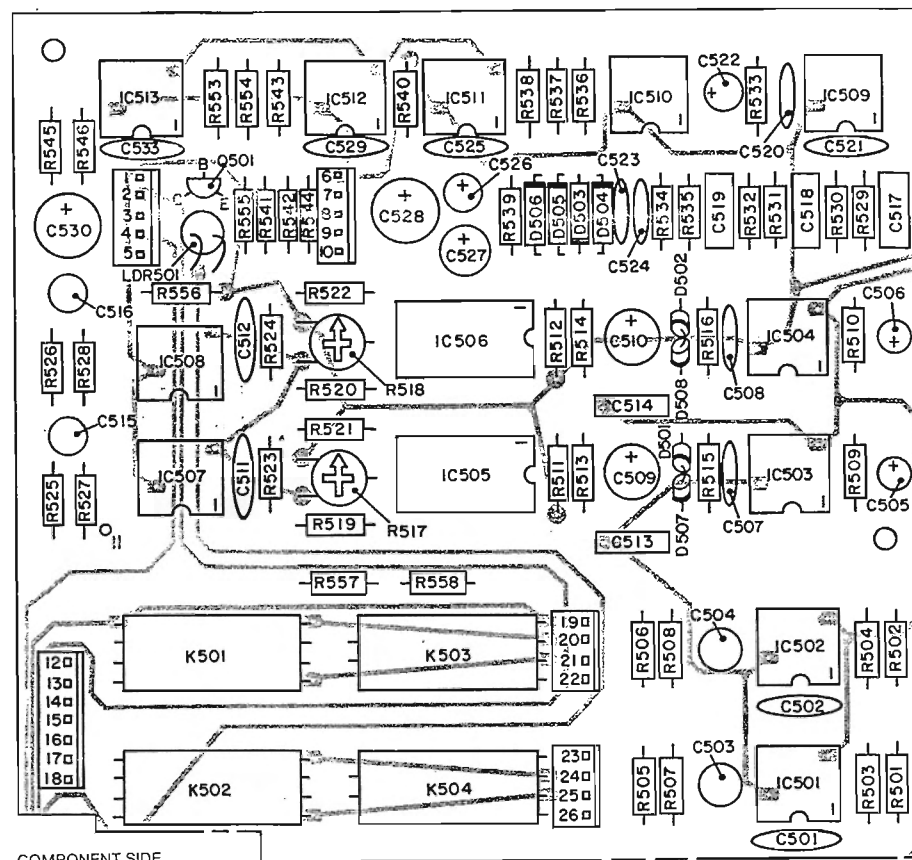
**EQUALIZER PARTS LIST**

Symbol No.	Part No.	Description
<b>INTEGRATED CIRCUITS</b>		
IC701-IC705	133028	Dual Hi-Speed Operational Amp, MC4558CP1
IC706-IC709	133066	Operational Amp, NE5534N
<b>RESISTORS</b>		
R723-R727	134316	POT, 100KΩ/100KΩ, Equalizer
<b>SWITCHES</b>		
S701	150038	Pushbutton Switch (8)

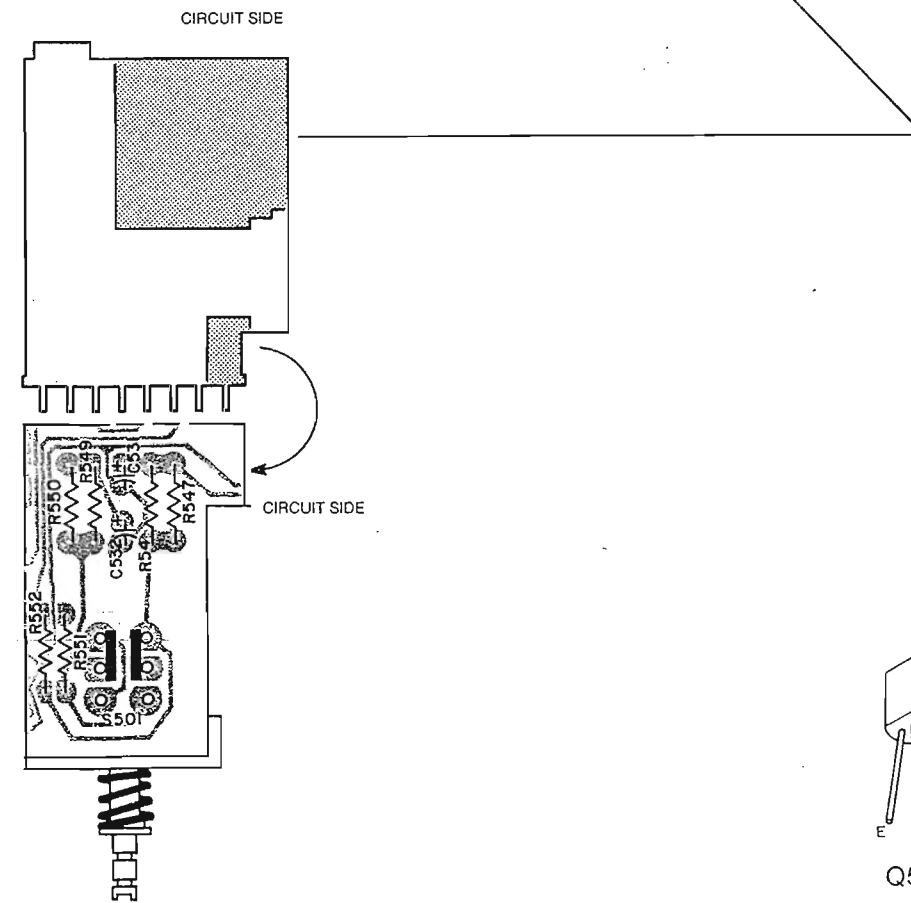
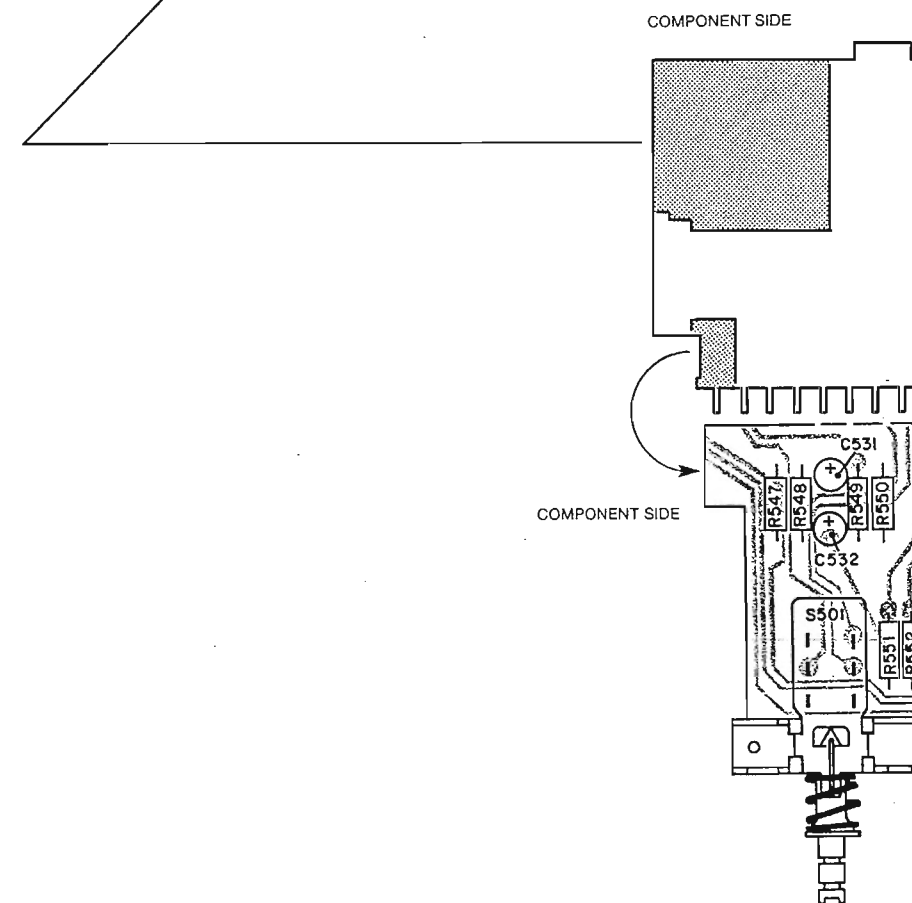


IC701-IC709

# Compandor and Compandor Switching

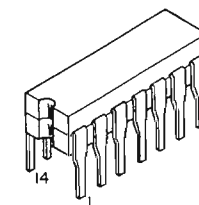


COMPANDOR AND COMPANDOR SWITCHING PORTION OF PCB 045959

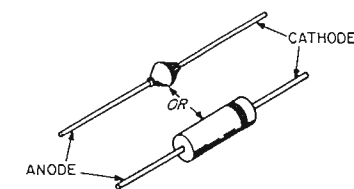


## COMPANDOR AND COMPANDOR SWITCHING PARTS LIST

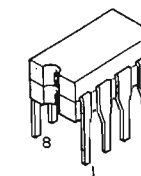
Symbol No.	Part No.	Description
<b>DIODES</b>		
D501-D508	070047	SIG, 75V, 10mA, 1N4148
<b>LIGHT DEPENDENT RESISTORS</b>		
LDR501	144070	LDR, CLM6000
<b>INTEGRATED CIRCUITS</b>		
IC501, IC502	133066	Operational Amp, NE5534N
IC503, IC504, IC507, IC508	133131	Operational Amp, MC34081P
IC505, IC506	133040	Quad Complementary Transistor Array, MPQ6100A
IC509-IC513	133066	Operational Amp, LM201AN
<b>RELAYS</b>		
K501-K502	087034	DPDT, 12VDC
K503-K504	087024	DPST, 12VDC
<b>TRANSISTORS</b>		
Q501	132223	NPN, MPS4124
<b>SWITCHES</b>		
S501	150038	Pushbutton Switch (8)



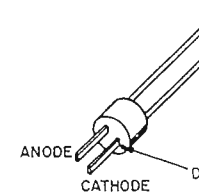
IC505, IC506



D501-D508



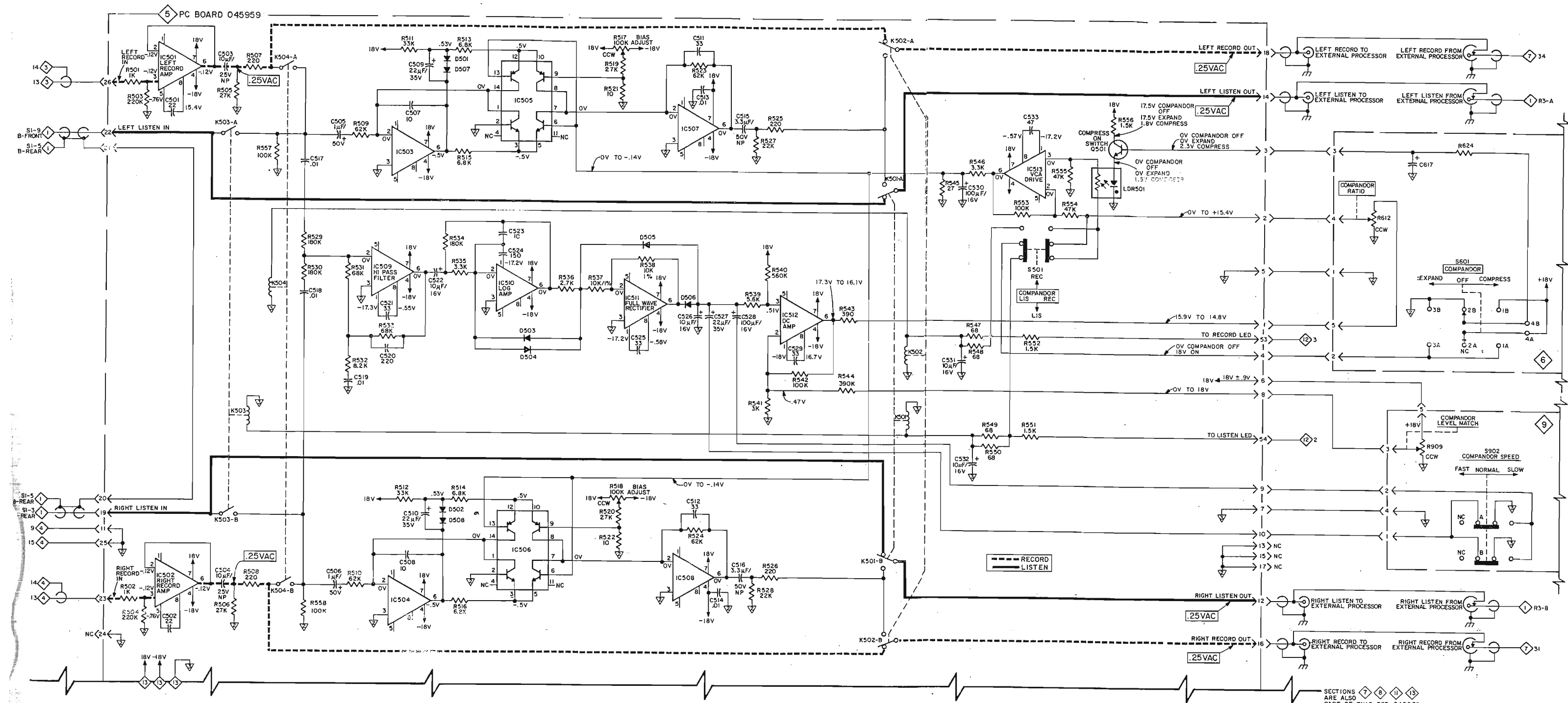
Q501



LDR501

# Compor and Compor Switching

5

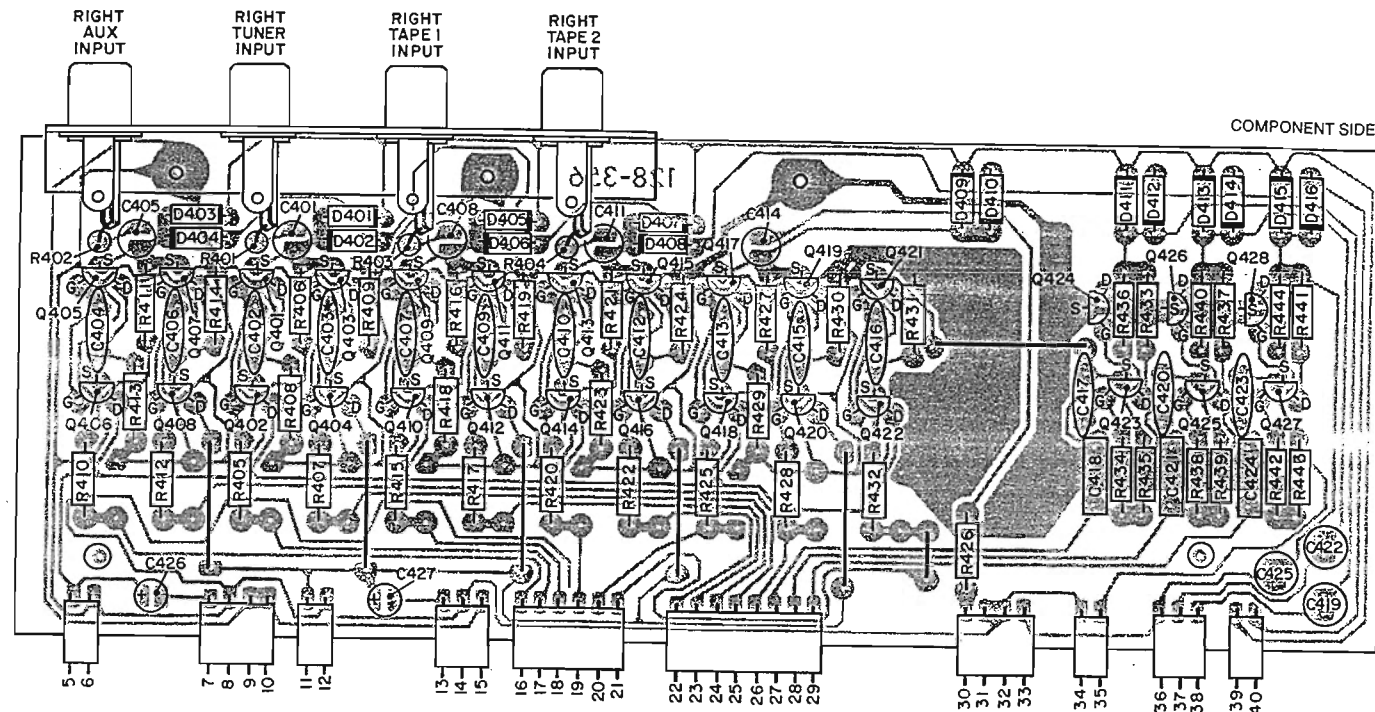


SECTIONS 7 8 11 13 ARE ALSO PART OF THIS PCB 045959

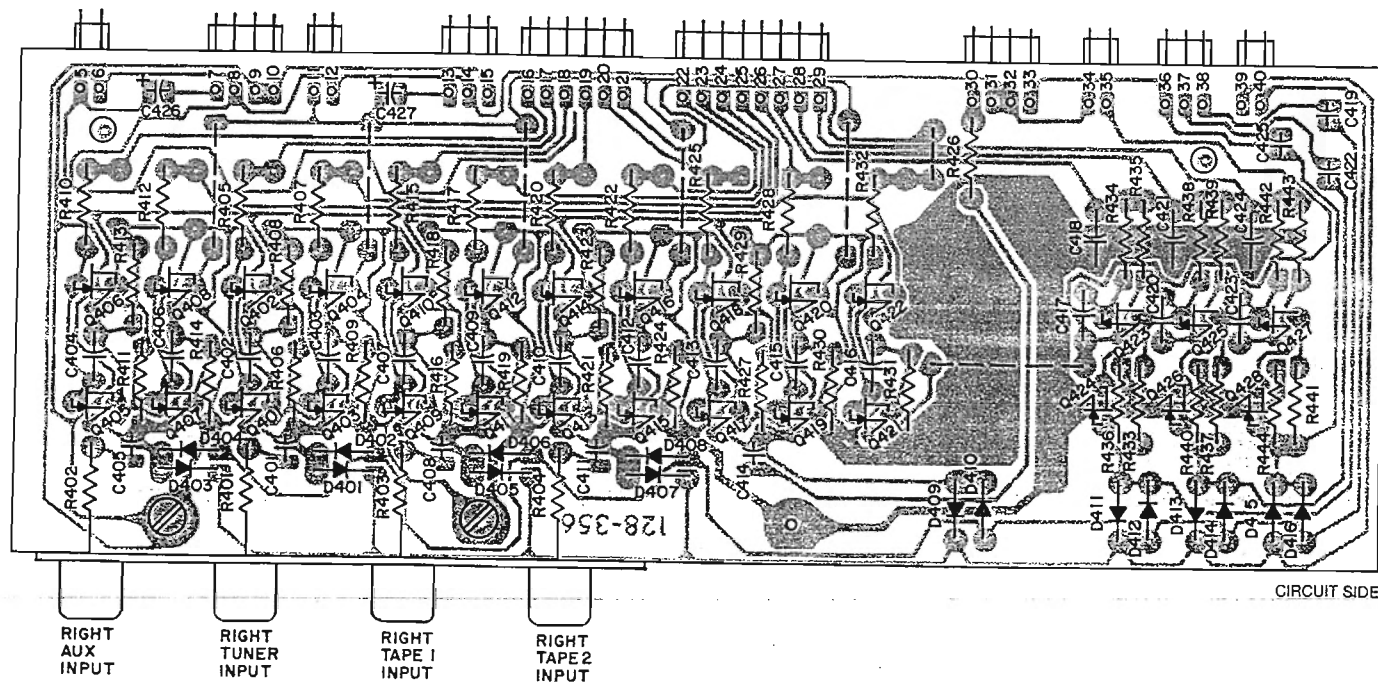


# High Level Input and Tape Output Switching (Right)

4



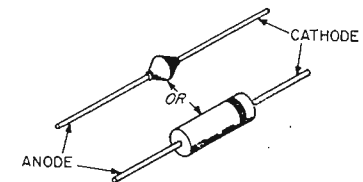
HIGH LEVEL INPUT AND TAPE OUTPUT SWITCHING (RIGHT) PCB 045938



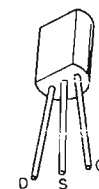
CIRCUIT SIDE

## HIGH LEVEL INPUT AND TAPE OUTPUT SWITCHING (RIGHT) PARTS LIST

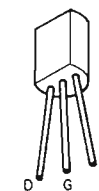
Symbol No.	Part No.	Description
<b>DIODES</b>		
D401-D416	070047	SIG, 75V, 10mA, 1N4148
<b>TRANSISTORS</b>		
Q401-Q422, Q424, Q426, Q428	132193	N, JFET, 2N4392
Q423, Q425, Q427	132226	P, JFET, J174



D401-D416



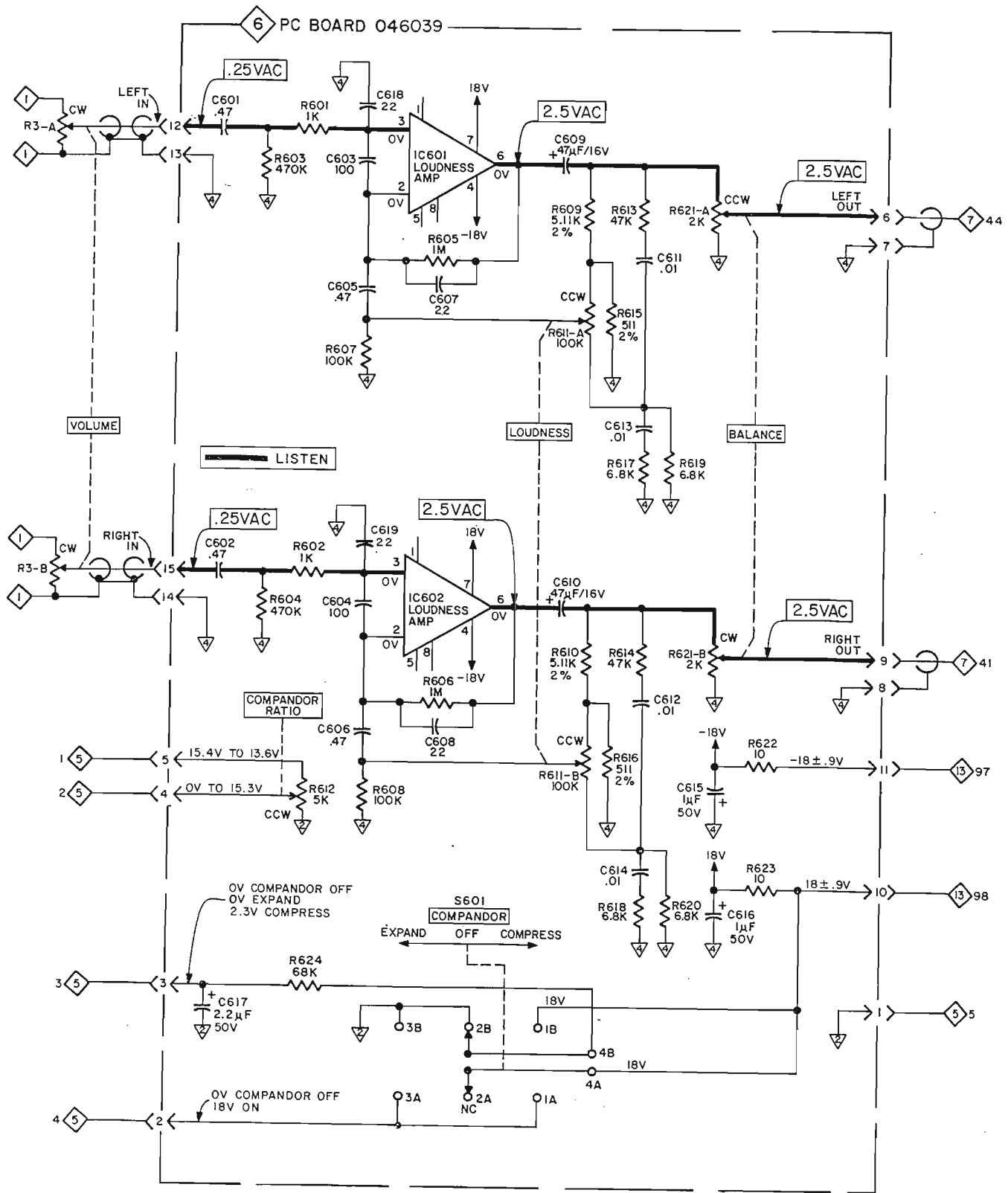
Q401-Q422, Q424, Q426, Q428



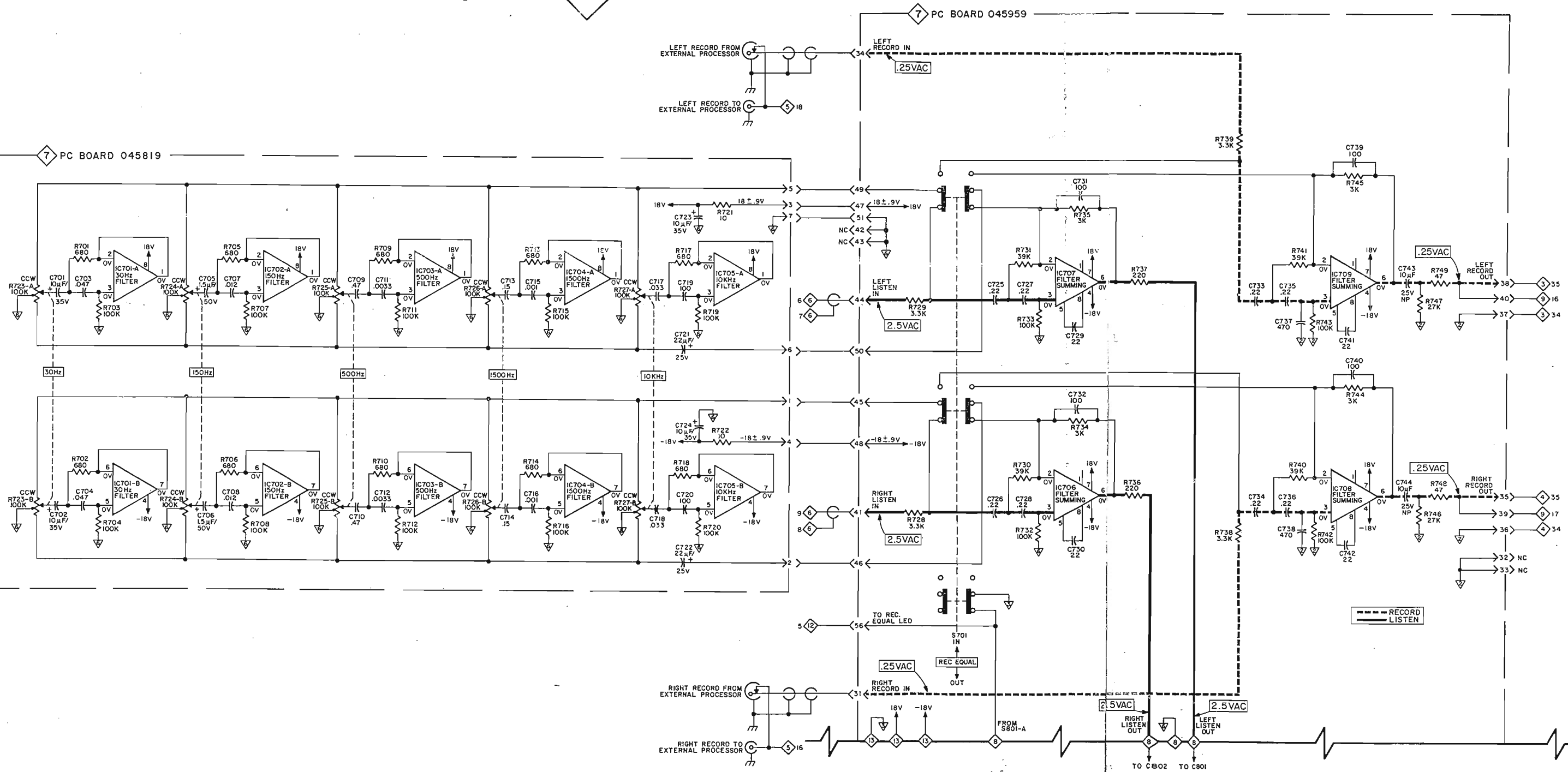
Q423, Q425, Q427

# 6

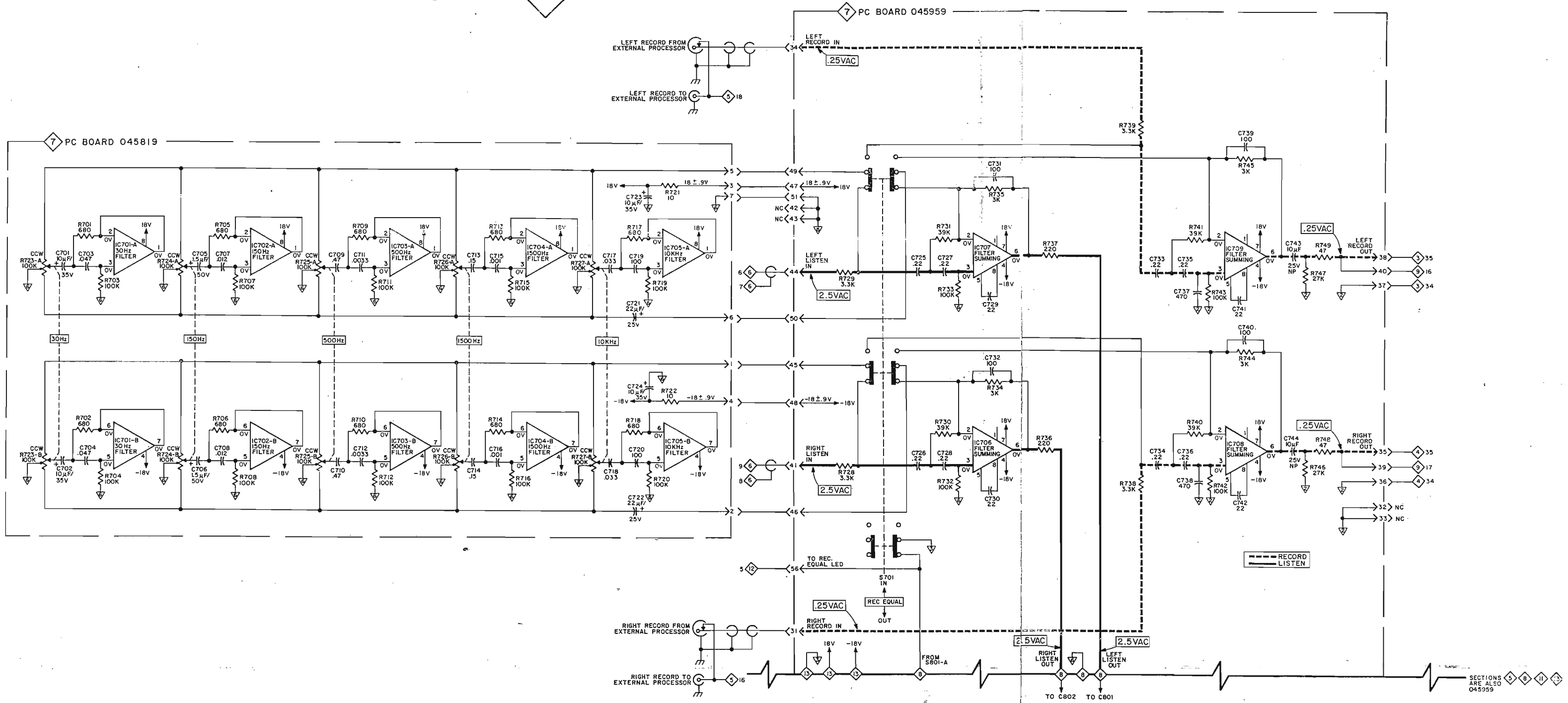
## Loudness and Balance



# Equalizer 7

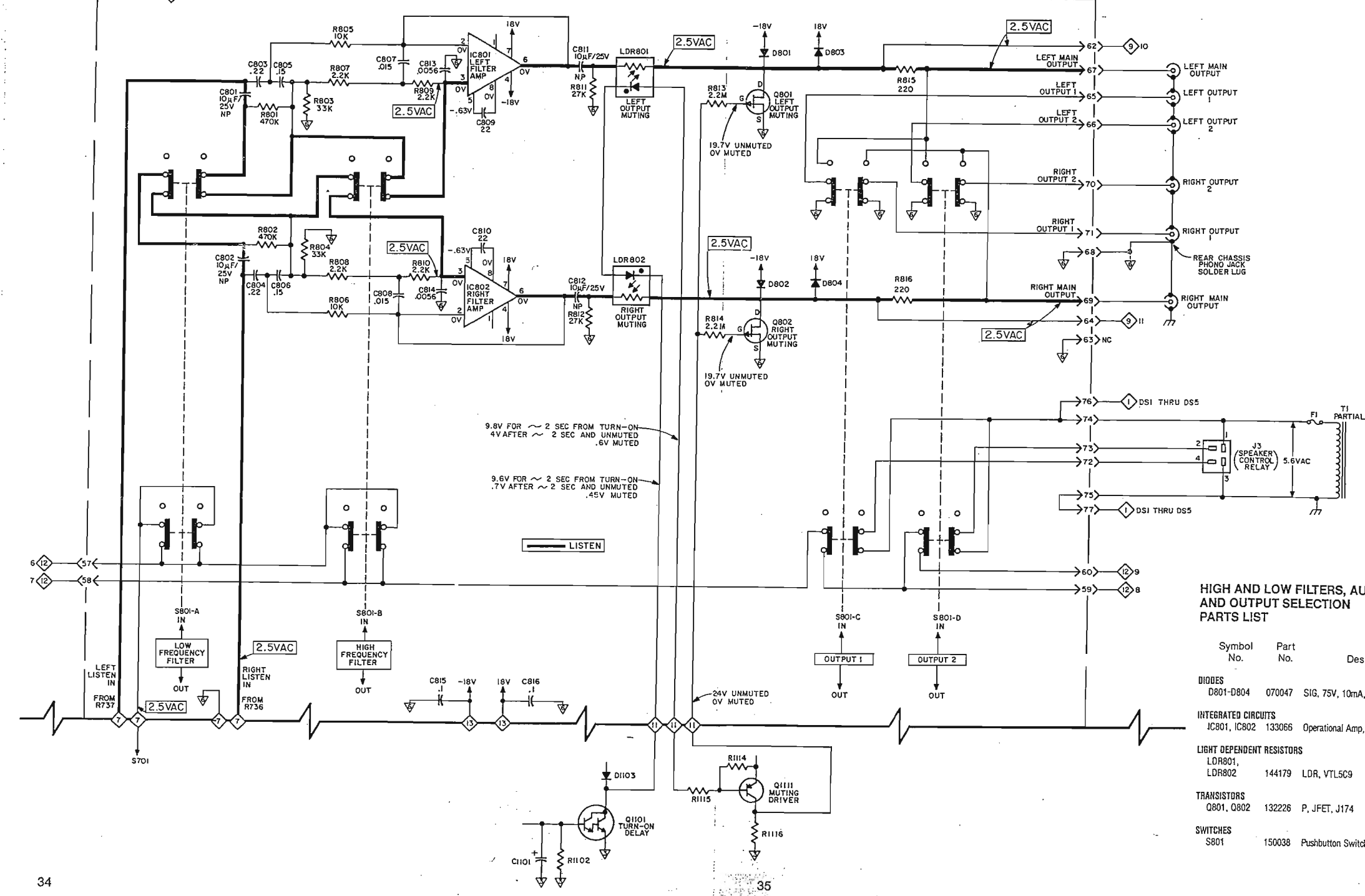


# Equalizer 7



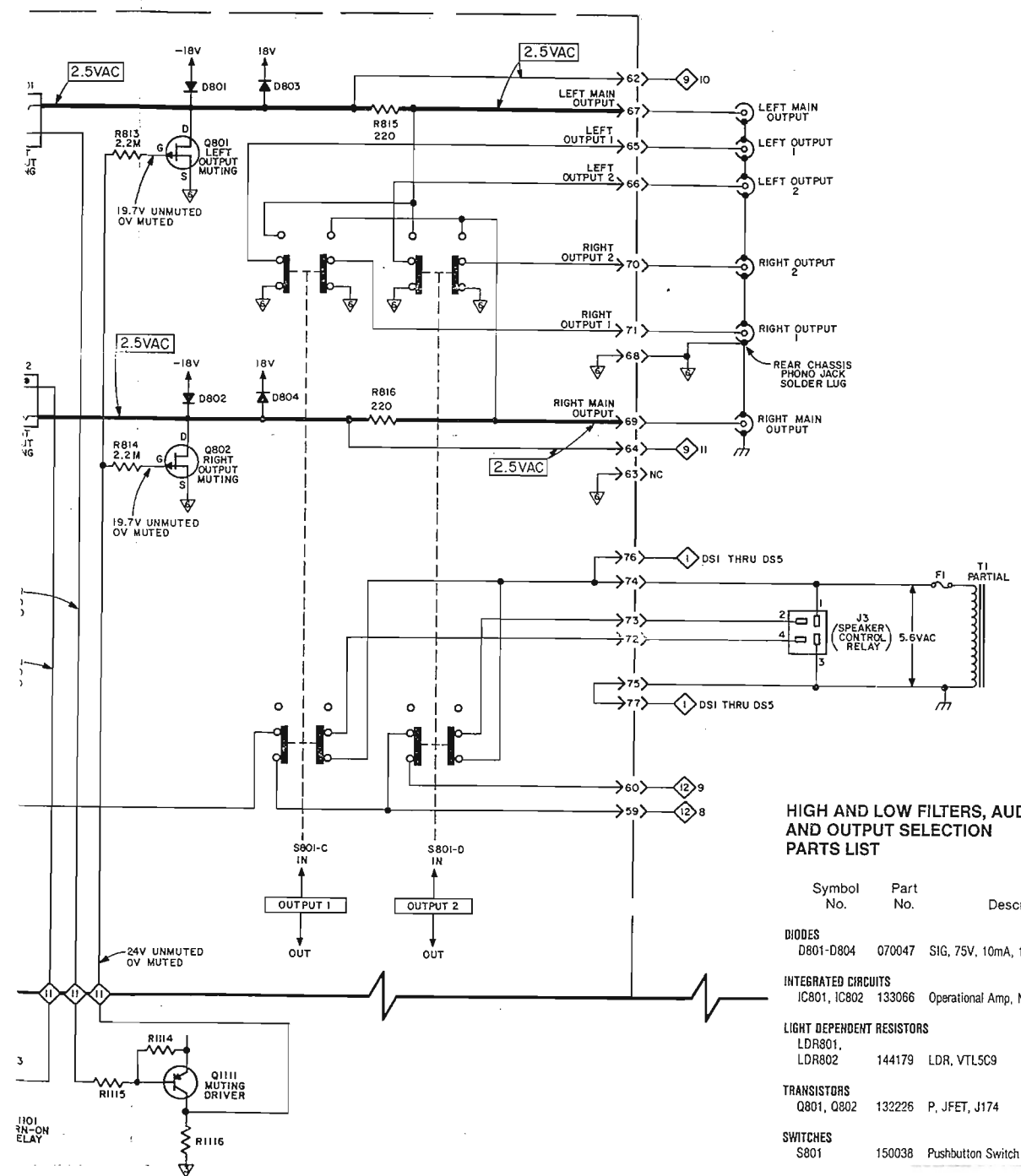
# 8 High and Low Filters, Audio Muting and Output Selection

PC BOARD 045959



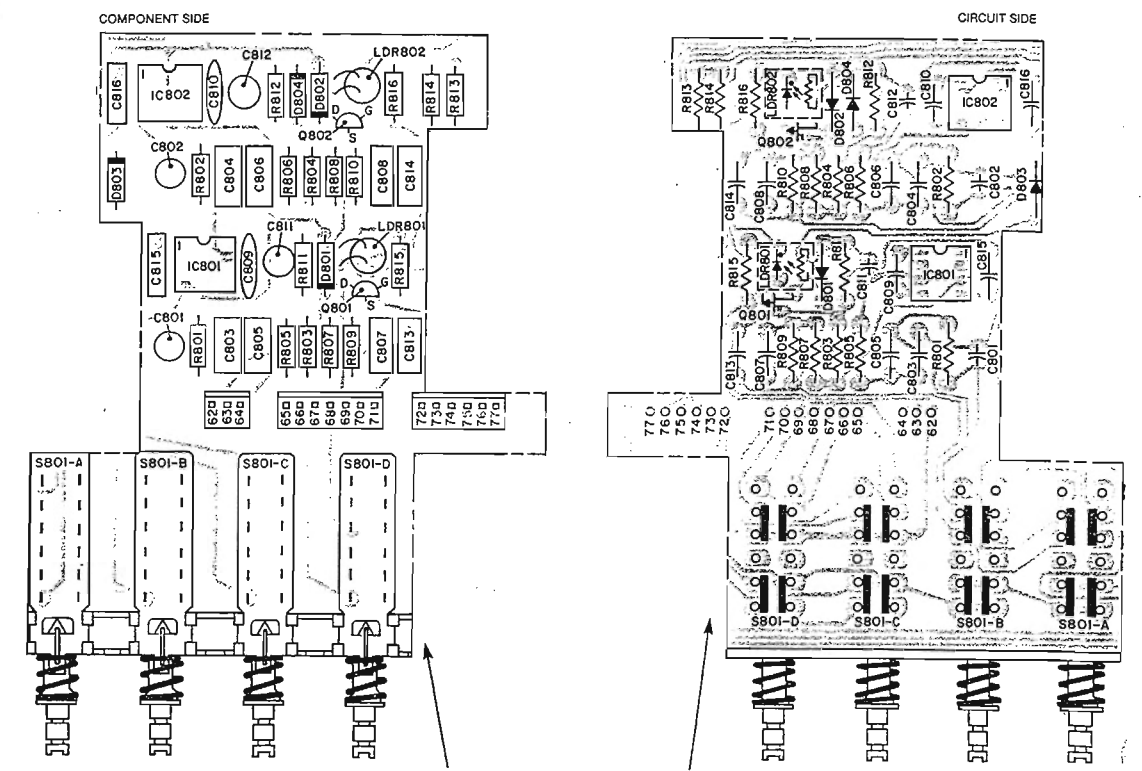
## HIGH AND LOW FILTERS, AUDIO MUT AND OUTPUT SELECTION PARTS LIST

Symbol No.	Part No.	Description
<b>DIODES</b>		
D801-D804	070047	SIG, 75V, 10mA, 1N4148
<b>INTEGRATED CIRCUITS</b>		
IC801, IC802	133066	Operational Amp, NE5534N
<b>LIGHT DEPENDENT RESISTORS</b>		
LDR801, LDR802	144179	LDR, VTL5C9
<b>TRANSISTORS</b>		
Q801, Q802	132226	P, JFET, J174
<b>SWITCHES</b>		
S801	150038	Pushbutton Switch (8)

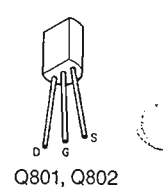
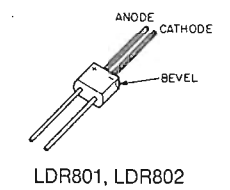
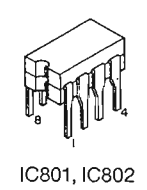
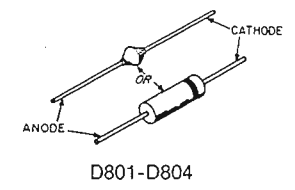
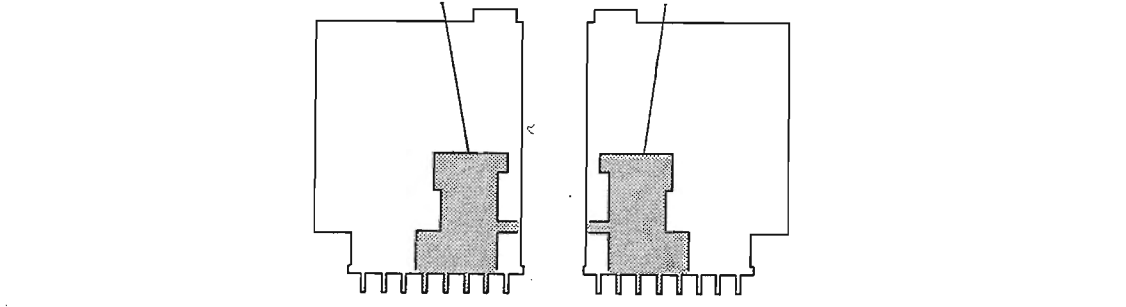


**HIGH AND LOW FILTERS, AUDIO MUTING AND OUTPUT SELECTION PARTS LIST**

Symbol No.	Part No.	Description
<b>DIODES</b>		
D801-D804	070047	SIG, 75V, 10mA, 1N4148
<b>INTEGRATED CIRCUITS</b>		
IC801, IC802	133066	Operational Amp, NE5534N
<b>LIGHT DEPENDENT RESISTORS</b>		
LDR801, LDR802	144179	LDR, VTL5C9
<b>TRANSISTORS</b>		
Q801, Q802	132226	P, JFET, J174
<b>SWITCHES</b>		
S801	150038	Pushbutton Switch (8)

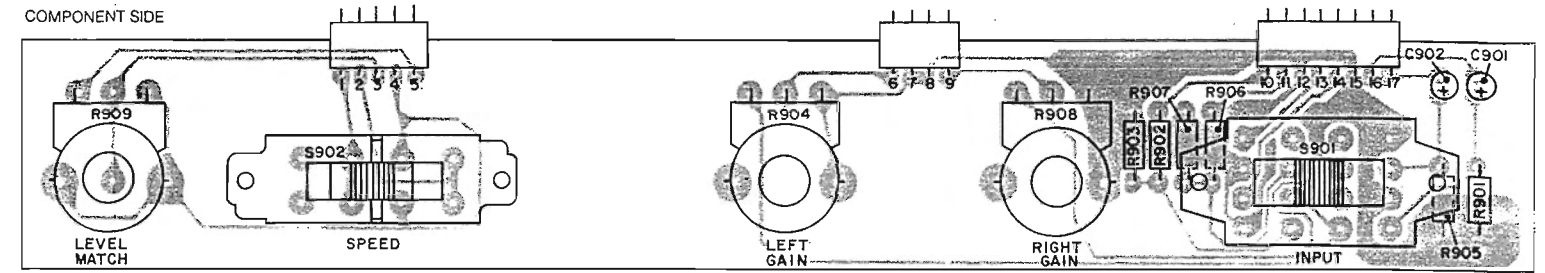
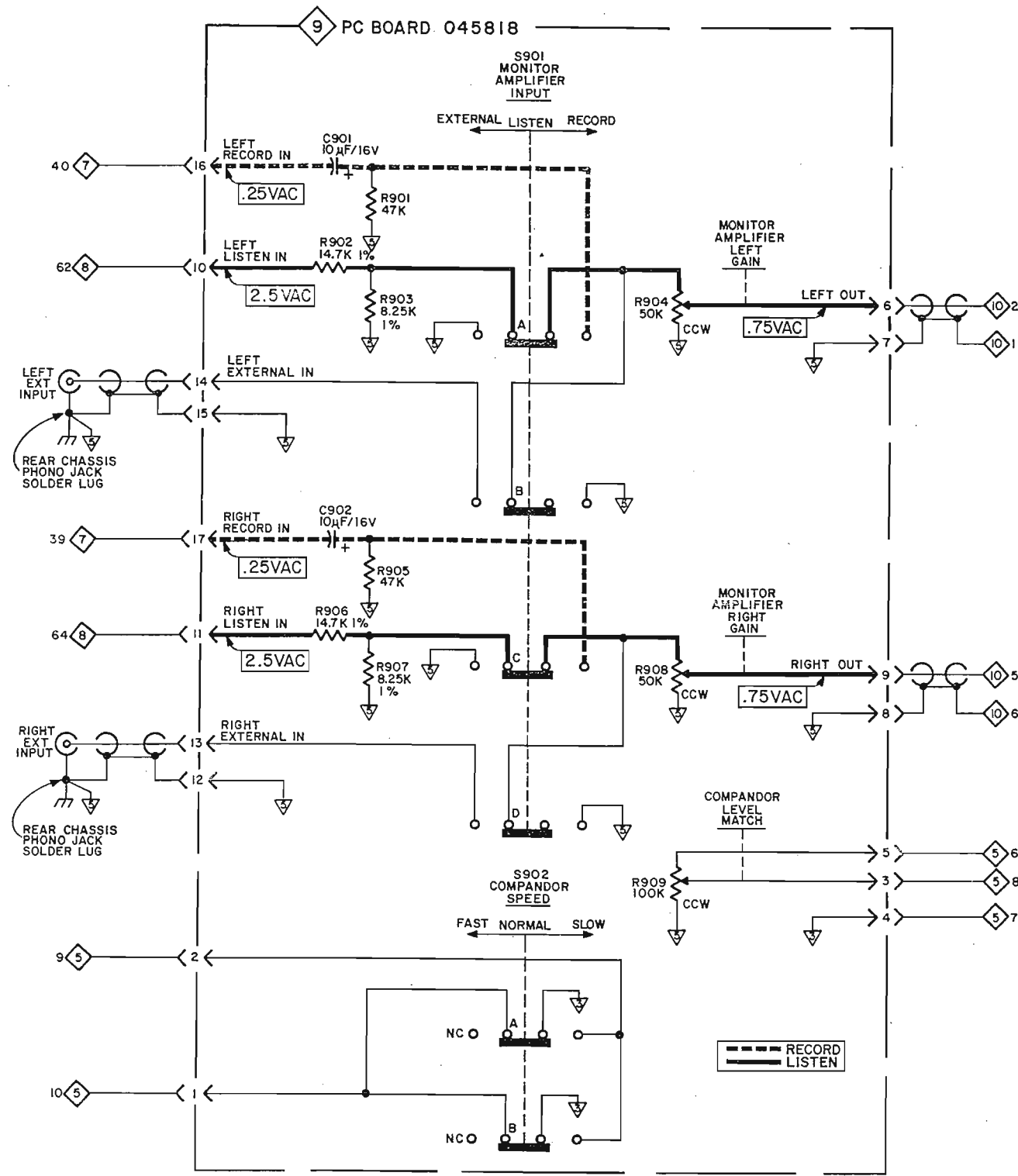


**HIGH AND LOW FILTERS, AUDIO MUTING AND OUTPUT SELECTION PORTION OF PCB 045959**

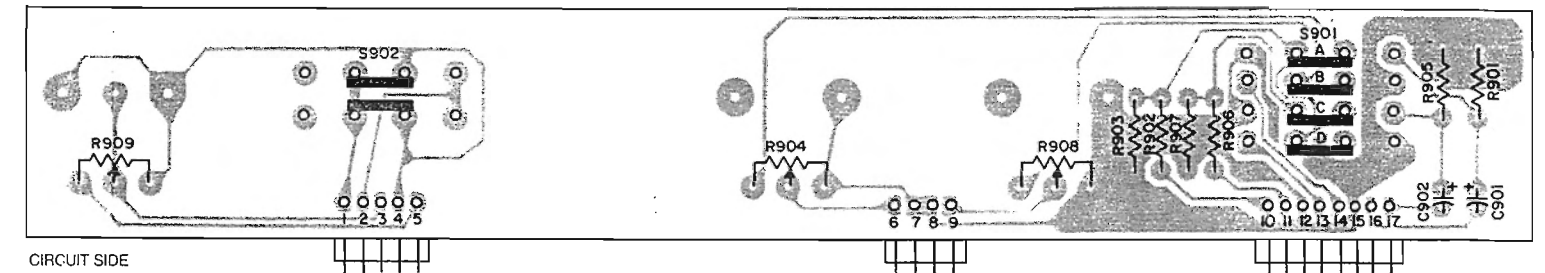


# Top Cover Controls

9



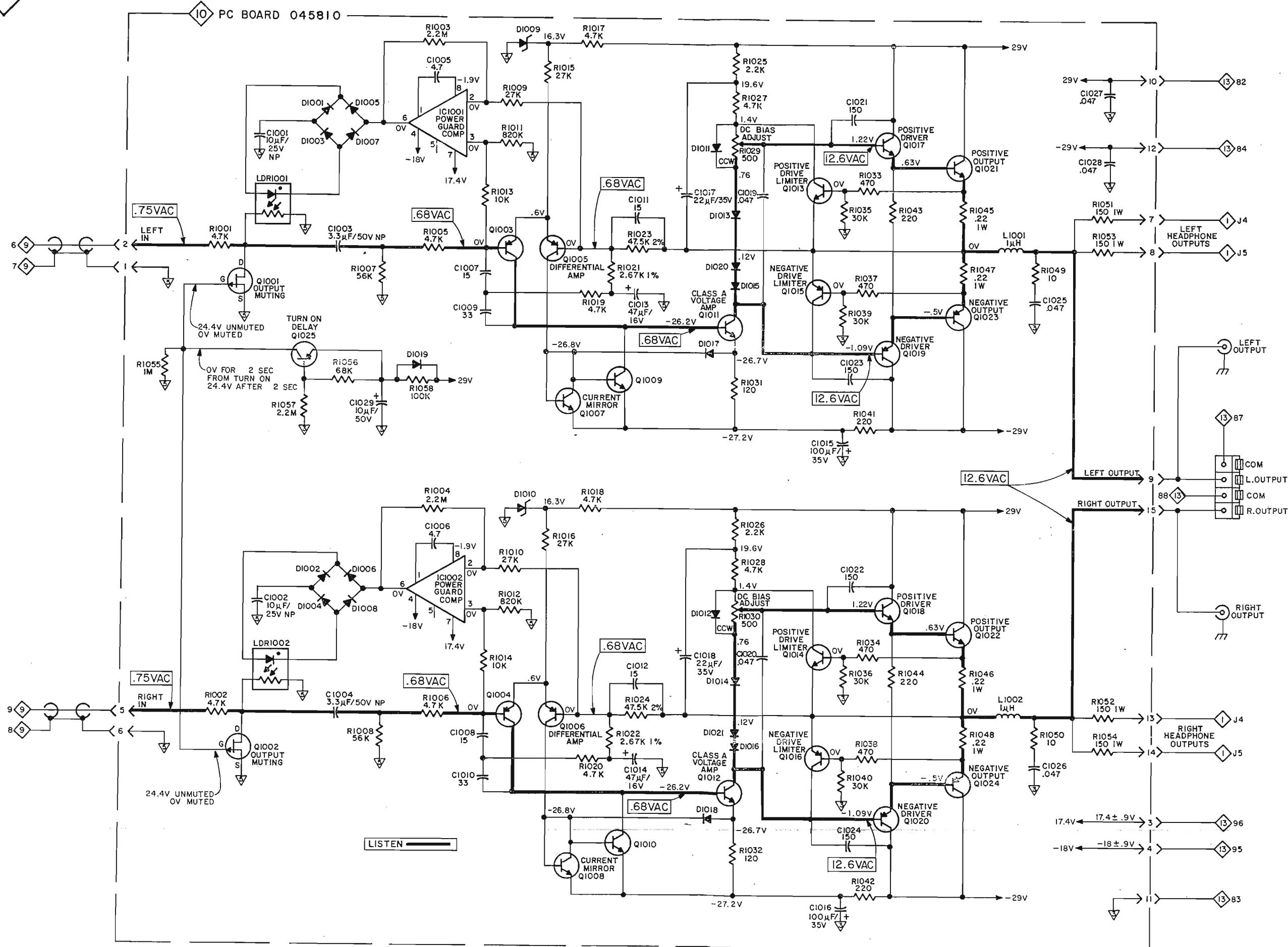
TOP COVER CONTROLS PCB 045818



## TOP COVER CONTROLS PARTS LIST

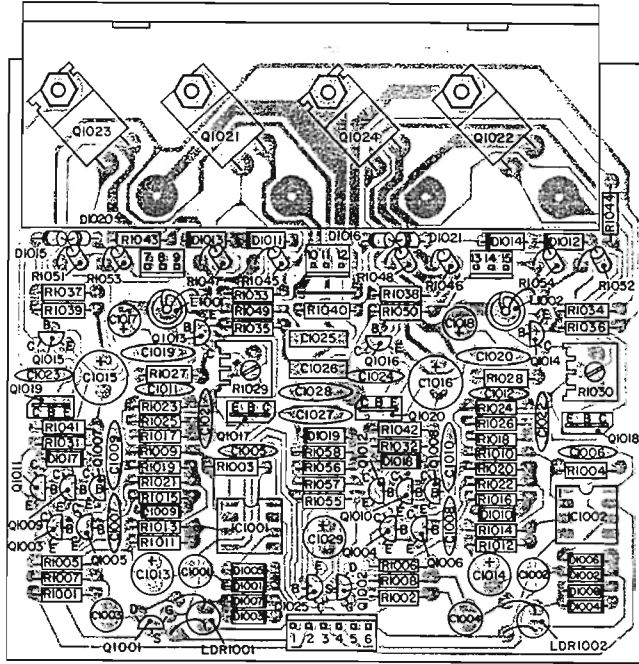
Symbol No.	Part No.	Description
<b>RESISTORS</b>		
R904, R908	134399	POT, 50KΩ
R909	134306	POT, 100KΩ
<b>SWITCHES</b>		
S901	148056	Input Switch
S902	148057	Speed Switch

# 10 Monitor Amplifier

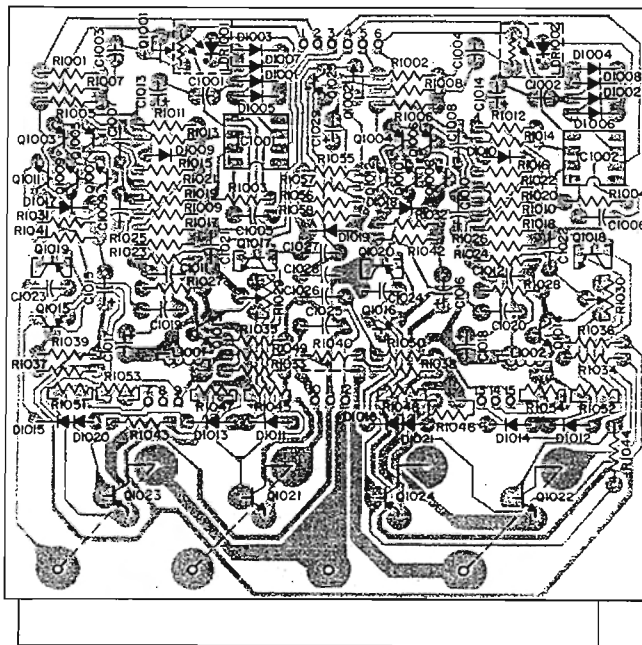




COMPONENT SIDE



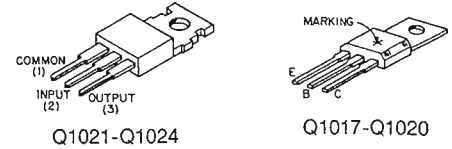
MONITOR AMPLIFIER PCB 045810



CIRCUIT SIDE

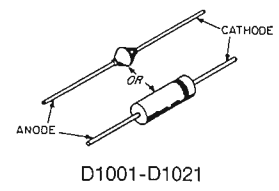
**MONITOR AMPLIFIER PARTS LIST**

Symbol No.	Part No.	Description
<b>DIODES</b>		
D1001-D1008,		
D1011-D1021	070047	SIG, 75V, 10mA, 1N4148
D1009, D1010	070114	ZN, 16V, 5%, 500mW
<b>INTEGRATED CIRCUITS</b>		
IC1001,		
IC1002	133068	Operational Amp, LM201AN
<b>LIGHT DEPENDENT RESISTORS</b>		
LDR1001,		
LDR1002	144070	LDR, CLM6000
<b>TRANSISTORS</b>		
Q1001, Q1002	132226	P, JFET, J174
Q1003-Q1006,		
Q1025	132056	PNP, 2N5087
Q1013, Q1014	132223	NPN, MPS4124
Q1011, Q1012	132235	NPN, 2SC 2240-BL
Q1015, Q1016	132224	PNP, MPS4126
Q1017, Q1018	132149	NPN, MPSV07
Q1019, Q1020	132194	PNP, Selected 2N6556
Q1021, Q1022	132227	NPN, TIP41B
Q1023, Q1024	132228	PNP, TIP42B

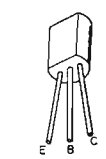


Q1021-Q1024

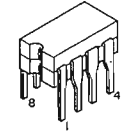
Q1017-Q1020



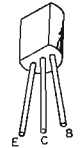
D1001-D1021



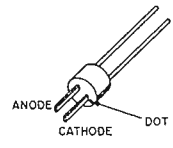
Q1003-Q1010, Q1013-Q1016, Q1025



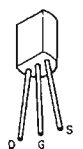
IC1001, IC1002



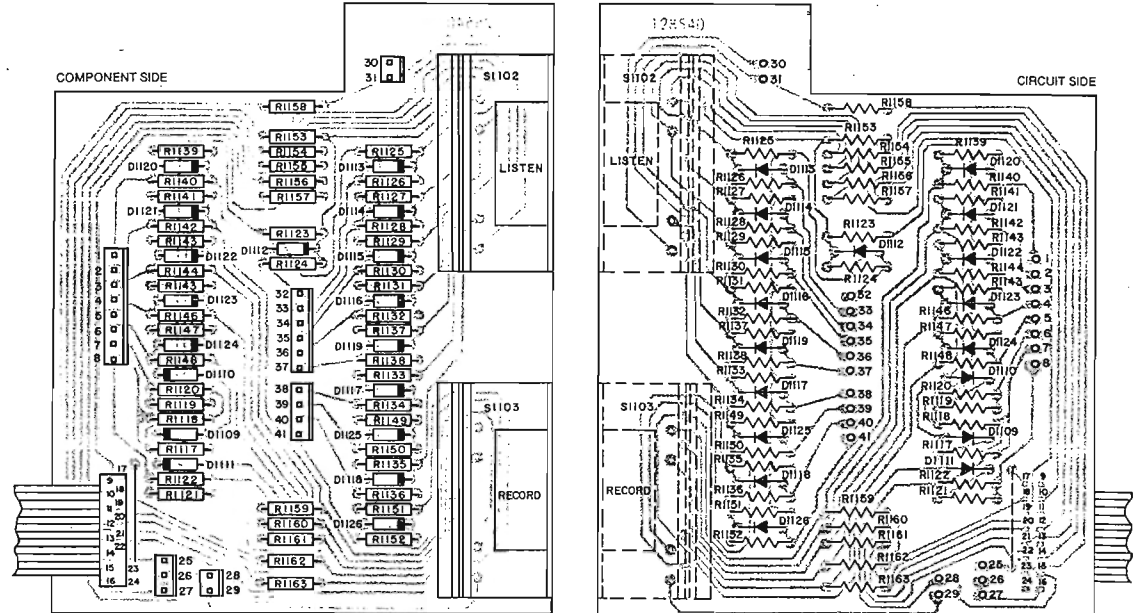
Q1001, Q1002



Q1011, Q1012



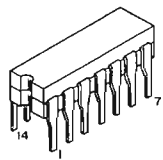
LDR1001, LDR1002



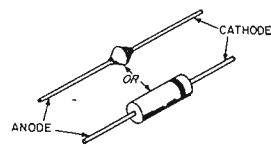
LISTEN/RECORD SELECTORS  
PCB 046544

SECTION II PARTS LIST

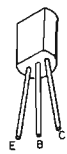
Symbol No.	Part No.	Description
<b>DIODES</b>		
D1101	070085	ZN, 6.2V, 5%, 500mW, 1N5234B
D1102-D1127	070047	SIG, 75V, 10mA, 1N4148
<b>INTEGRATED CIRCUITS</b>		
IC1101	133053	CMOS, Dual Type-DF-F, MC14013AL
<b>TRANSISTORS</b>		
Q1101, Q1110	132090	NPN, DAR, Selected MPSA14
Q1102, Q1104, Q1109, Q1103, Q1105-Q1107, Q1111, Q1108	132171, 132056, 132223	NPN, MPSA05, PNP, 2N5087, NPN, MPS4124
<b>SWITCHES</b>		
S1101	150038	Pushbutton Switch (8)



IC1101



D1101-D1127

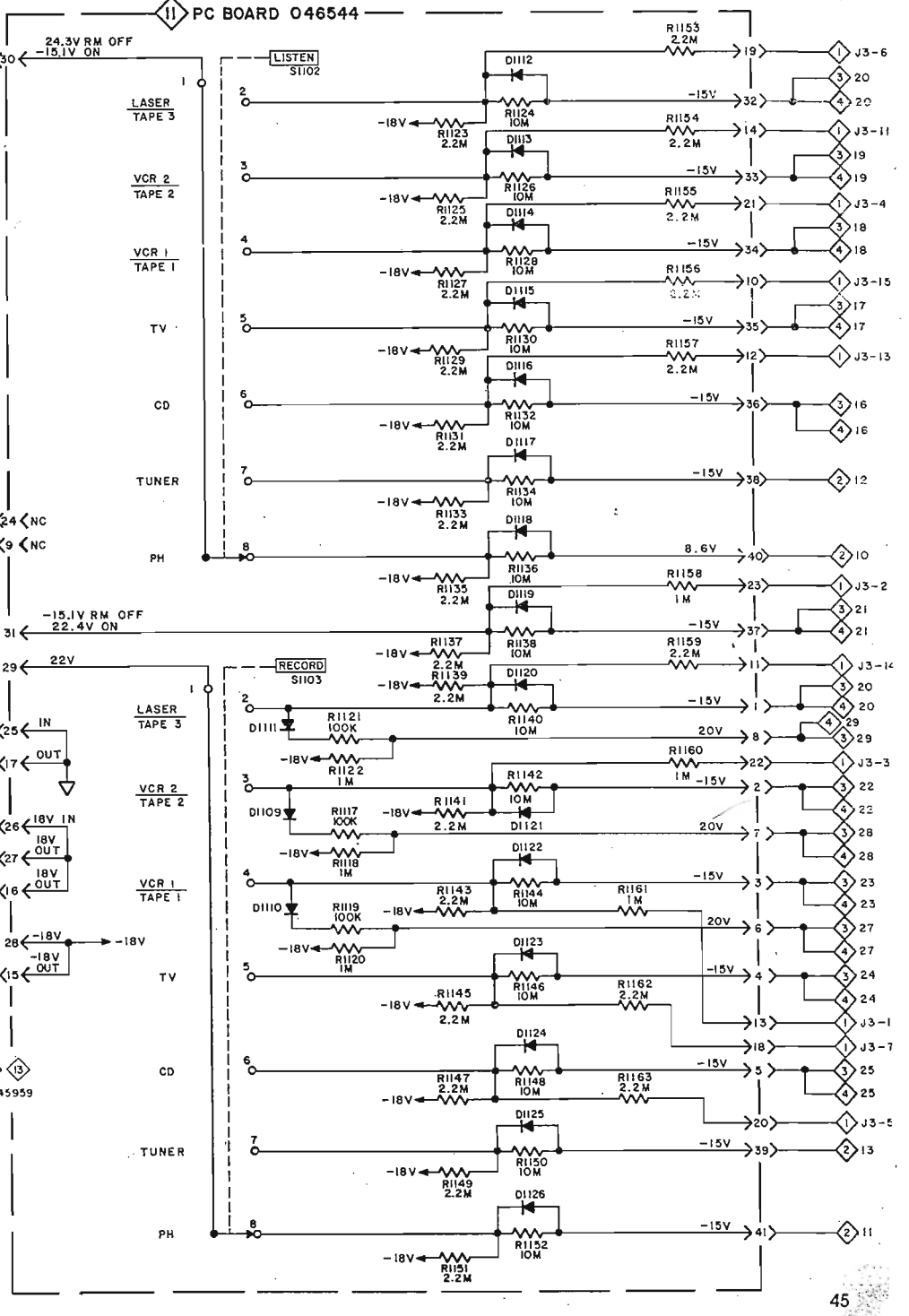
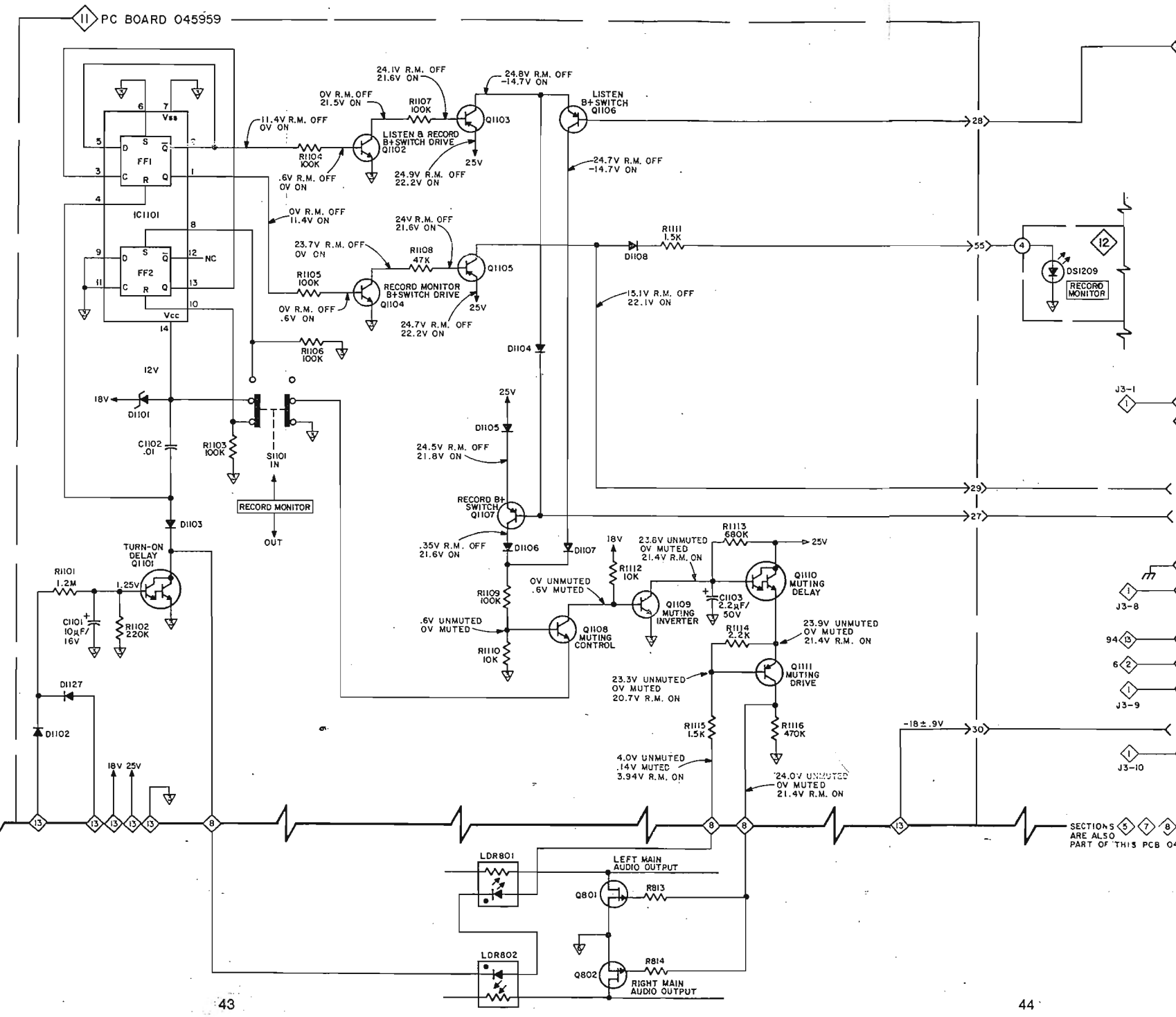
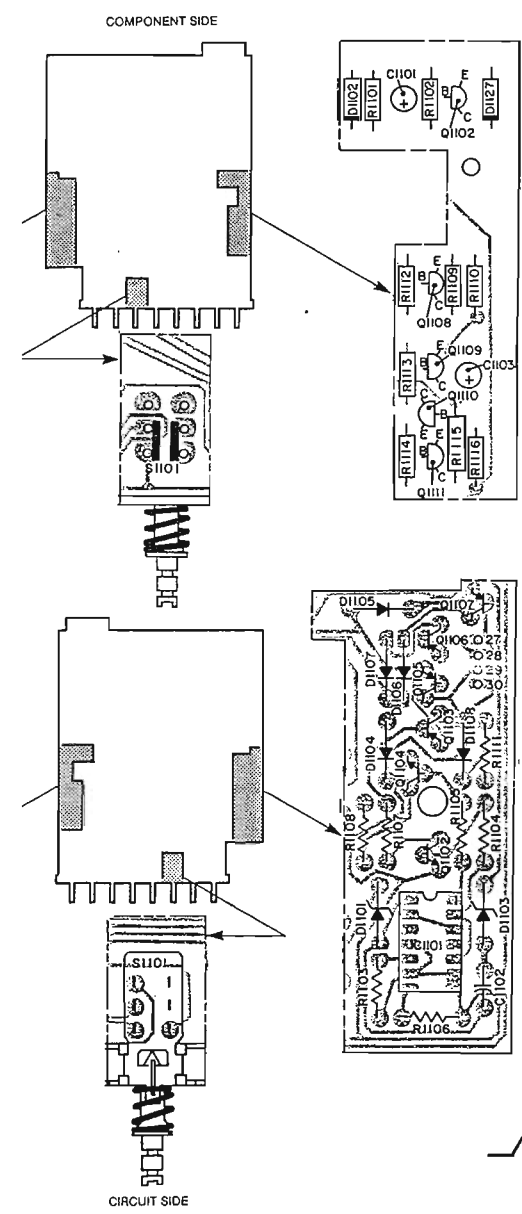


Q1101-Q1111

# Record Selectors, Record Monitor, Turn-on Display and Muting Drive

11

11



RECORD MONITOR SWITCHING, TURN-ON DELAY AND MUTING DRIVE PORTION OF PCB 045959

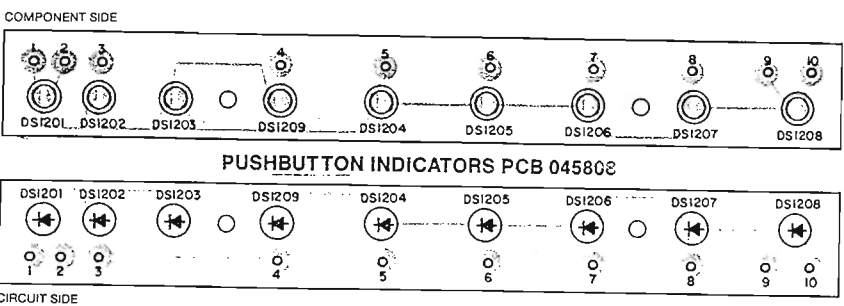
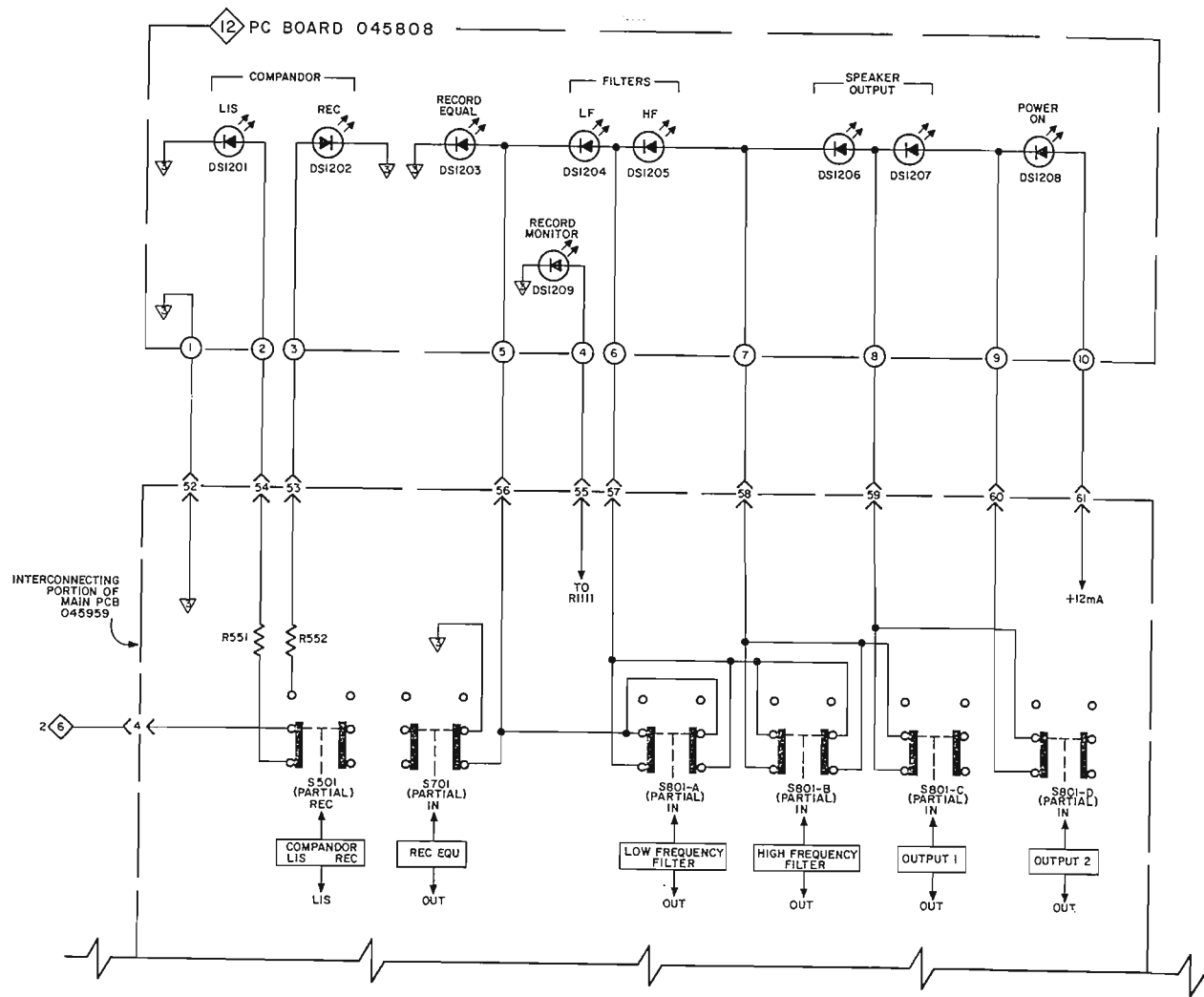
SECTIONS 5, 7, 8, 9, 10 ARE ALSO PART OF THIS PCB 045959

43

44

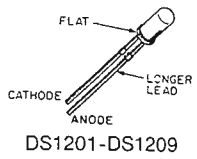
45

# 12 Pushbutton Indicators



**PUSHBUTTON INDICATORS PARTS LIST**

Symbol No.	Part No.	Description
DS1201-DS1209	070093	LED, Red, HP5082-4658



# Repackaging Instructions

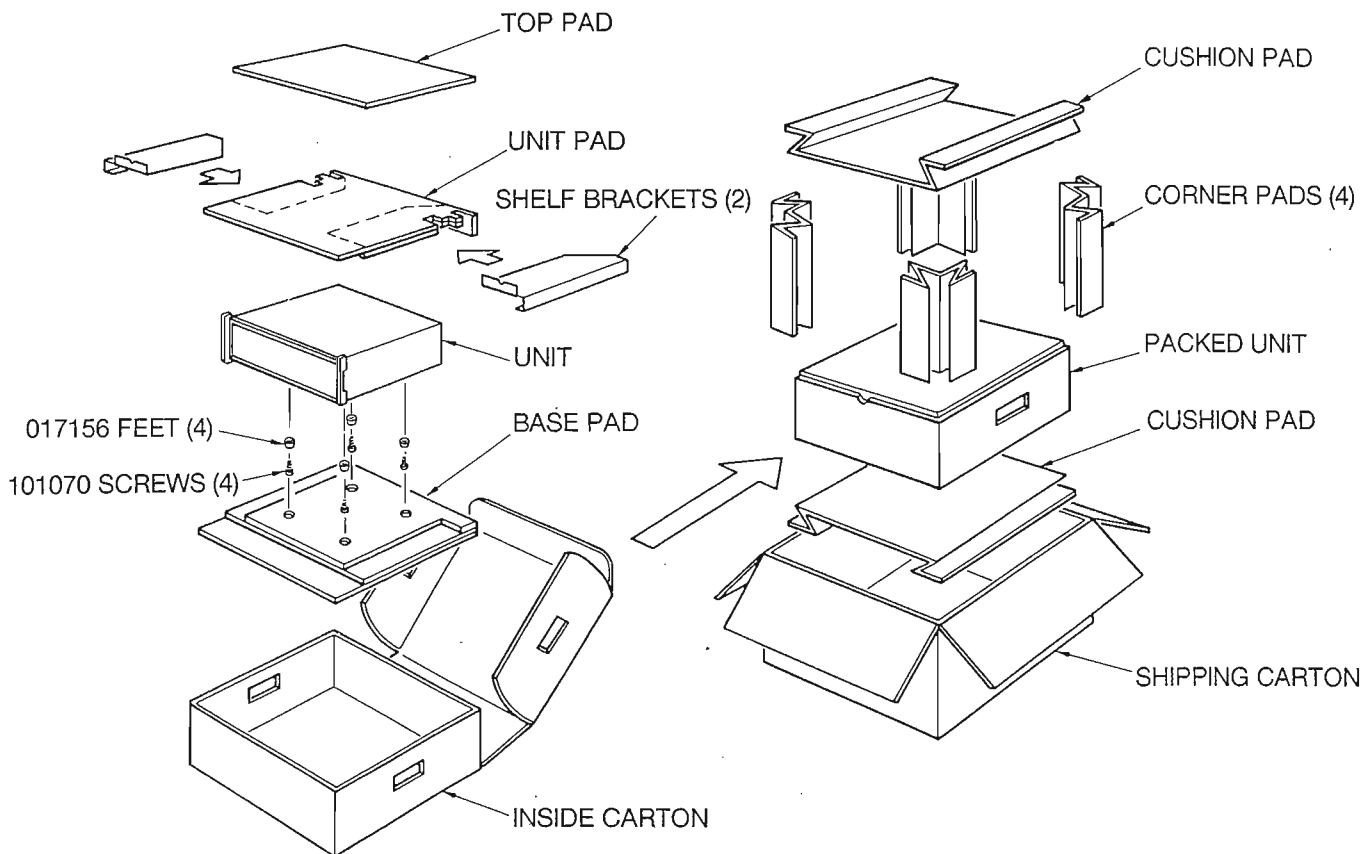
In the event it is necessary to return the C34V to McIntosh Laboratory for service, the unit must be packed exactly as shown below. It is not necessary to return the shelf brackets, although their position in the carton is shown.

The four plastic feet must be attached to the bottom of the C34V so they will locate in the four holes of the base pad.

If a shipping carton is needed, please call or write the Customer Service Department of McIntosh Laboratory. Order using the part numbers on the accompanying list.

Use the original shipping carton only if all pads and cartons are in good serviceable condition.

QTY.	PART NO.	DESCRIPTION
1	033466	Shipping carton only
1	033331	Top pad
1	033330	Unit pad
1	033259	Base pad
1	033118	Inside carton
2	033332	Cushion pad
4	033333	Corner pads
4	017156	Plastic feet
1	046862	Shipping carton complete
4	100160	Screws for feet
4	104080	Washers



# McIntosh

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**McIntosh Laboratory Inc. 2 Chambers Street Binghamton, NY 13903-2699**

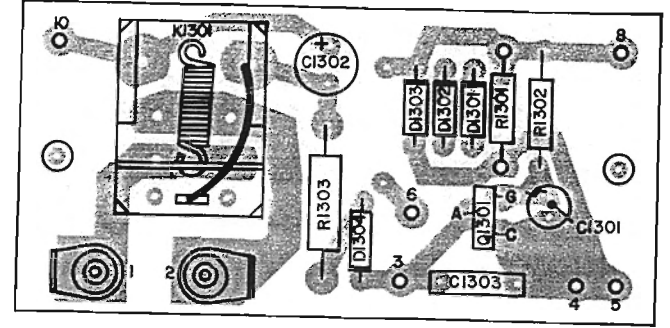
Part No. 039631

Printed in U.S.A.

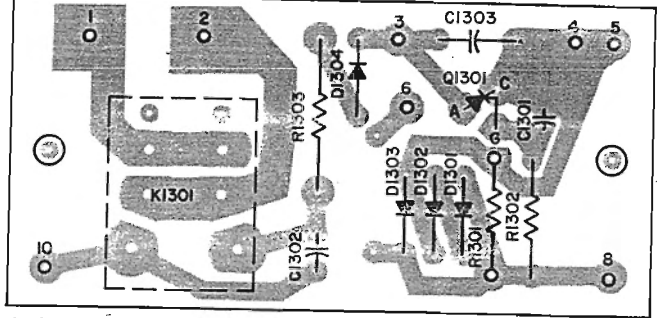
Telephone (607)723-3512

# 13 Power Supply and Auto-On

COMPONENT SIDE

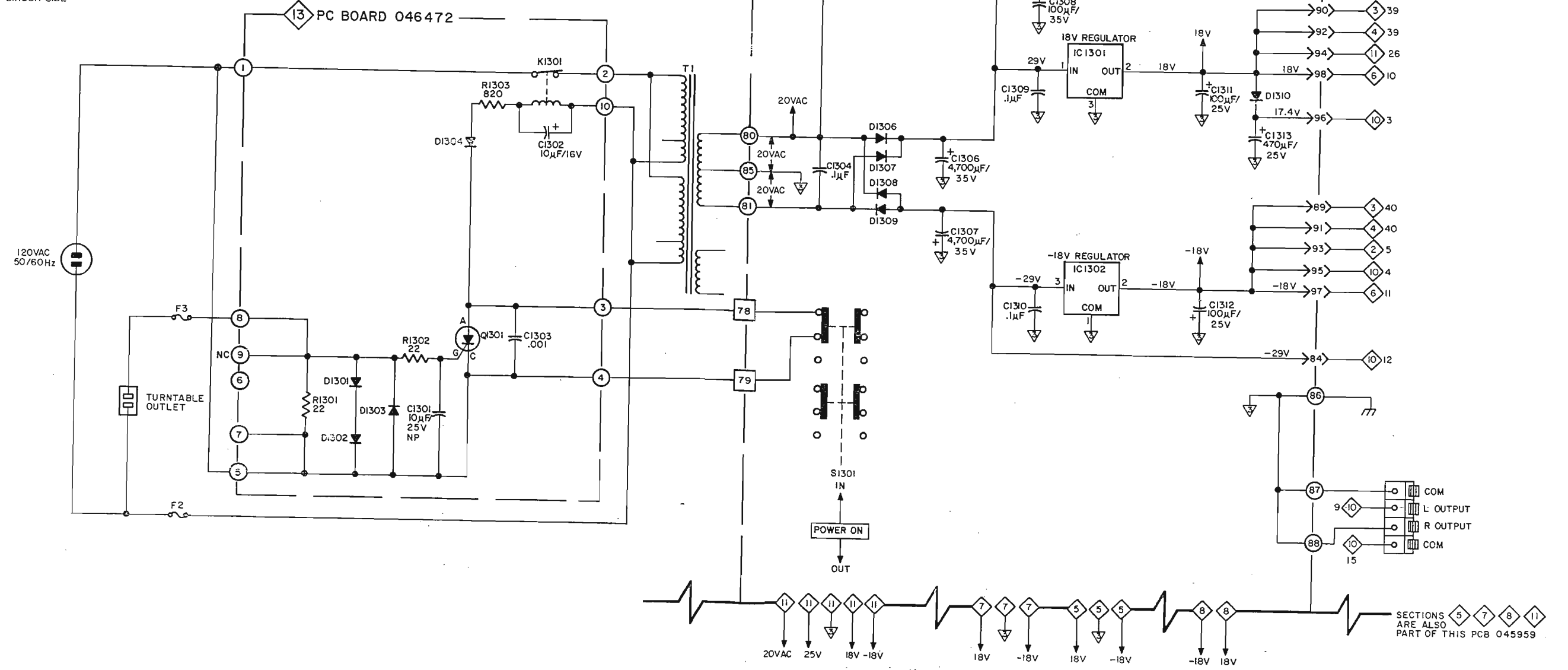
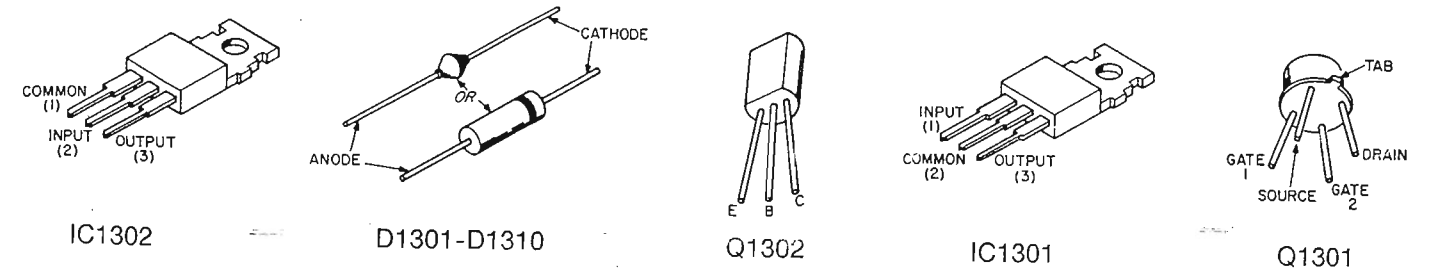


AUTO-ON PCB 046472

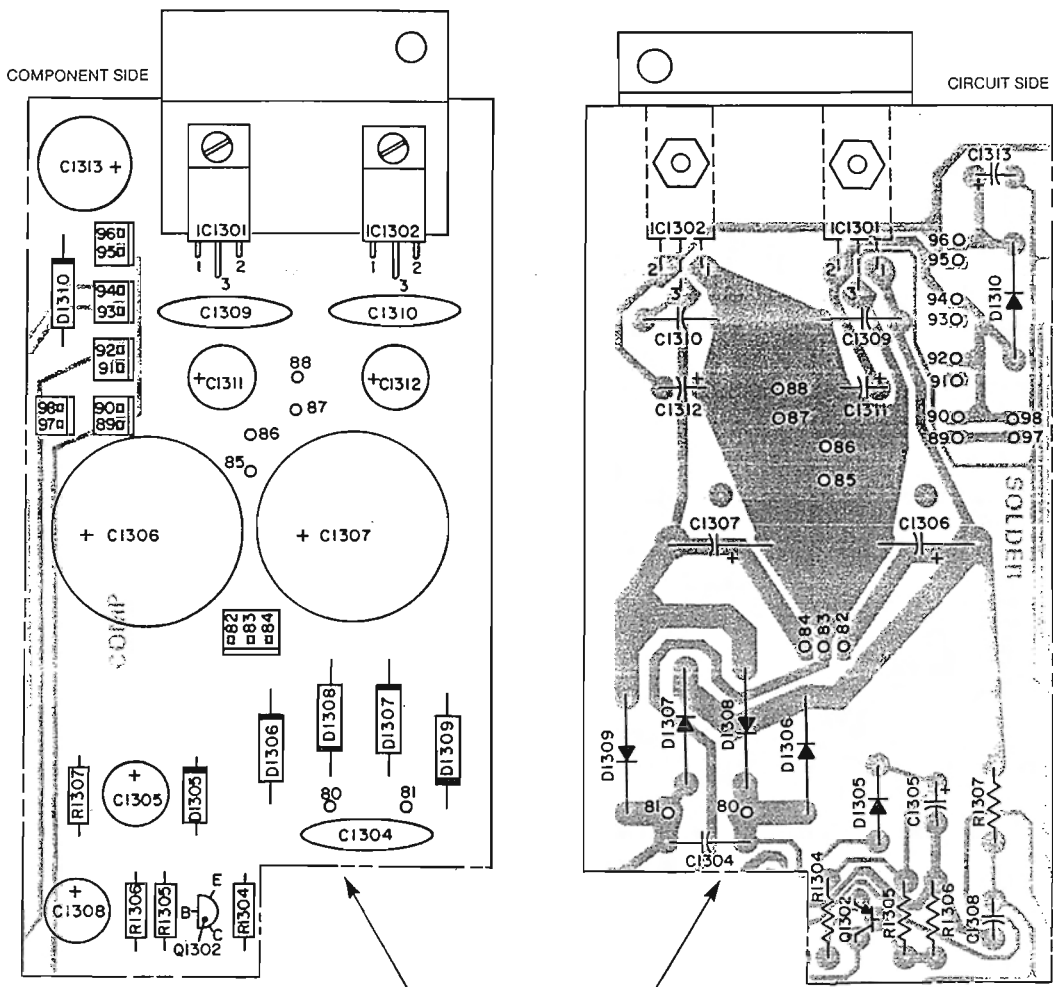


CIRCUIT SIDE

Symbol No.	Part No.	Description
<b>DIODES</b>		
D1301-D1304	070031	RECT, 400V, 1.5A
D1305	070047	SIG, 75V, 10mA, 1N4148
D1306-D1310	070131	RECT, 400V, 1A, 1N4004
<b>INTEGRATED CIRCUITS</b>		
IC1301	133045	+18V Regulator, LM340T-18
IC1302	133044	-18V Regulator, LM320T-18
<b>RELAYS</b>		
K1301	087033	SPDT, 110VDC
<b>TRANSISTORS</b>		
Q1301	131012	SCR, C106M
Q1302	132056	PNP, 2N5087
<b>SWITCHES</b>		
S1301	150038	Pushbutton Switch (8)



SECTIONS 5 7 8 11 ARE ALSO PART OF THIS PCB 045959



POWER SUPPLY PORTION OF PCB 045959

