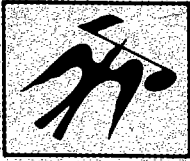




For more Hi-Fi manuals and set-up information
please visit www.hifiengine.com

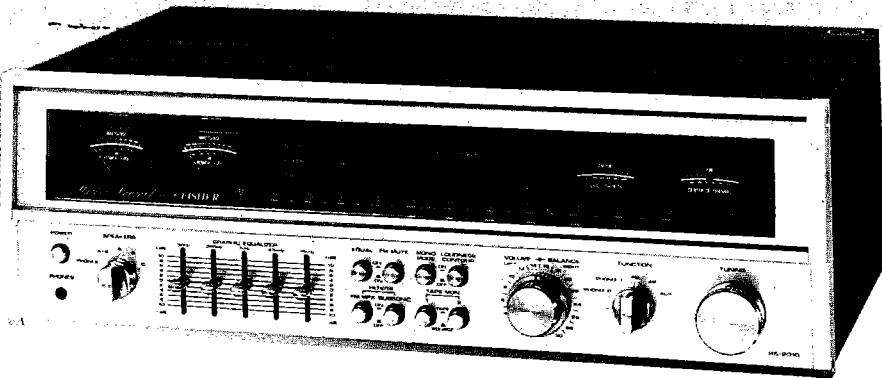
SERVICE MANUAL



FISHER

RS-2010

Stereo Receiver



The first name in high fidelity

U.S.

TABLE OF CONTENTS

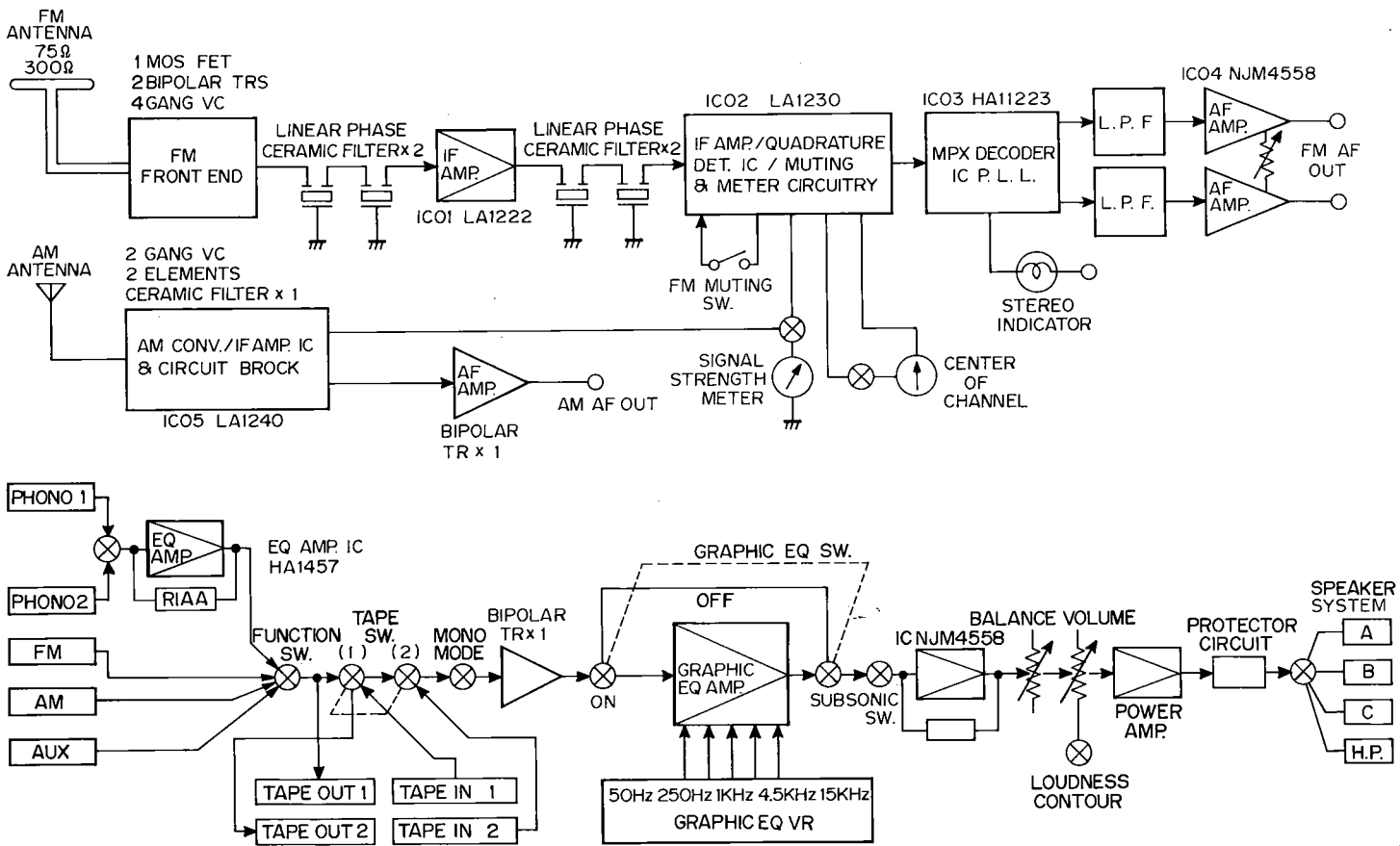
Specifications	3
Functional Block Diagram	4
Dial Cord Stringing	4
Required Test Equipment	5
Harmonic Distortion Test	5
Disassembly Instructions	6
Exploded View of Cabinet And Chassis	
Front Mounted Assemblies	7
Exploded View of Chassis	
and Rear Mounted Assemblies	8
Parts List	9
FM IF IC LA1230 Signal Flow	10
FM MPX IC HA11223 Signal Flow	10
AM RF IF IC LA1240 Signal Flow	10
FM Tuner Alignment	11
FM Tuner Alignment (Continued)	12
AM Tuner Alignment	12
AM-FM Tuner Board Layout (Top View)	13,14
AM-FM-RF/IF MPX P.C.Board (Bottom View)	15,16
FM IF IC LA1222 Signal Flow and Equivalent Diagram	15
Pilot Lamp P.C.Board (Bottom View)	15
Tone Volume P.C.Board (Bottom View)	16
EQ AMP P.C.Board (Bottom View)	17
Pre-Tone P.C.Board (Bottom View)	18
Volume P.C.Board & Switch P.C.Board (1) (2) (Bottom View)	17,18
Power AMP P.C.Board (Bottom View)	19,20
Power Supply P.C.Board (Bottom View)	19,20
RF IF MPX P.C.B. Assy Parts List	21
EQ AMP P.C.B. Assy & Pre-Tone P.C.B. Assy Parts List	22
Switch P.C.B. Assy (1) (2) Parts List	23
Volume P.C.B. Assy Parts List	23
Power AMP P.C.B. Assy Parts List	23
Power Supply P.C.B. Assy Parts List	24
Pilot Lamp P.C.B. Assy & Tone Volume P.C.B. Assy Parts List	24
Schematic Diagram	25,26
	27,28
	29,30
Point to Point Wiring Diagram (Top View)	31,32
Point to Point Wiring Diagram (Bottom View)	33,34
Transistor Lead Identification	35
IC Equivalent Circuit & Block Diagram (NJM4558D)	35

Nominal Specifications For Informations Only.

RECEIVER	RS-2010	
POWER AMPLIFIER SECTION		
Continuous RMS sine wave power per channel within stated bandwidth at no more than stated distortion and with an 8 ohm load.	100 W x 2	
Power Bandwidth	20 Hz/20 kHz	
Total Harmonic Distortion	0.06 %	
I.M. Distortion	0.06 %	
PRE AMPLIFIER SECTION		
Input sensitivity and Impedance at rated output 8-ohms at 1 kHz		
Phono	2 mV/50k ohm	
Phono (max. input capability 1 kHz)	200 mV (THD 0.06 %)	
Auxiliary	150 mV/100k ohm	
Tape Monitor	150 mV/100k ohm	
Hum & Noise (below rated output)		
Phono	76 dB	
Auxiliary	90 dB	
Tape Monitor	90 dB	
Frequency Response		
Phono (RIAA EQUALIZED ± 1 dB)	30 Hz - 15 kHz	
Auxiliary input ± 1 dB	20 Hz - 20 kHz	
Tone Control (GRAPHIC EQUALIZER)	50 Hz	± 10 dB
	250 Hz	± 10 dB
	1 kHz	± 10 dB
	4.5 kHz	± 10 dB
	15 kHz	± 10 dB
Loudness Contour (at 30 dB volume attenuation)		
	+8 dB at 100 Hz	
	+4 dB at 10 kHz	
FM TUNER SECTION		
Usable sensitivity	Mono	1.7 μ V/9.8 dBf
	Stereo	4.3 μ V/17.9 dBf
50 dB Quieting Sensitivity	Mono	2.5 μ V/13.2 dBf
	Stereo	34 μ V/35.9 dBf
Signal-to-Noise Ratio	Mono	75 dB
	Stereo	70 dB
Capture Ratio	0.8 dB	
Alt Channel Selectivity (± 400 kHz)	80 dB	
Image Response Ratio	90 dB	
Spurious Response Ratio	100 dB	
AM Suppression Ratio	65 dB	
Total Harm. Distortion (Mono & Stereo) at 65 dBf	0.1/0.2 %	
T.H.D. at 50 dB Quieting Sensitivity	Mono	0.3 %
	Stereo	0.4 %
Stereo Separation (1 kHz/10 kHz)	50/40 dB	
Sub-Carrier Suppression (19/38 kHz)	65/75 dB	
AM TUNER SECTION		
Usable Sensitivity	300 μ V/m	
Selectivity (± 10 kHz)	40 dB	
Signal-to-Noise Ratio	55 dB	
Image Response Ratio	50 dB	
IF Response Ratio	45 dB	
GENERAL SECTION		
Power Requirements (50/60 Hz)	120 V AC ± 10 %	
Power Consumption	400 W/500 VA	
AC Outlets	2	
Dimensions H x W x D (inches)	20-5/16"x14-1/4"x6-11/16"	
Weight (lbs.)	36	

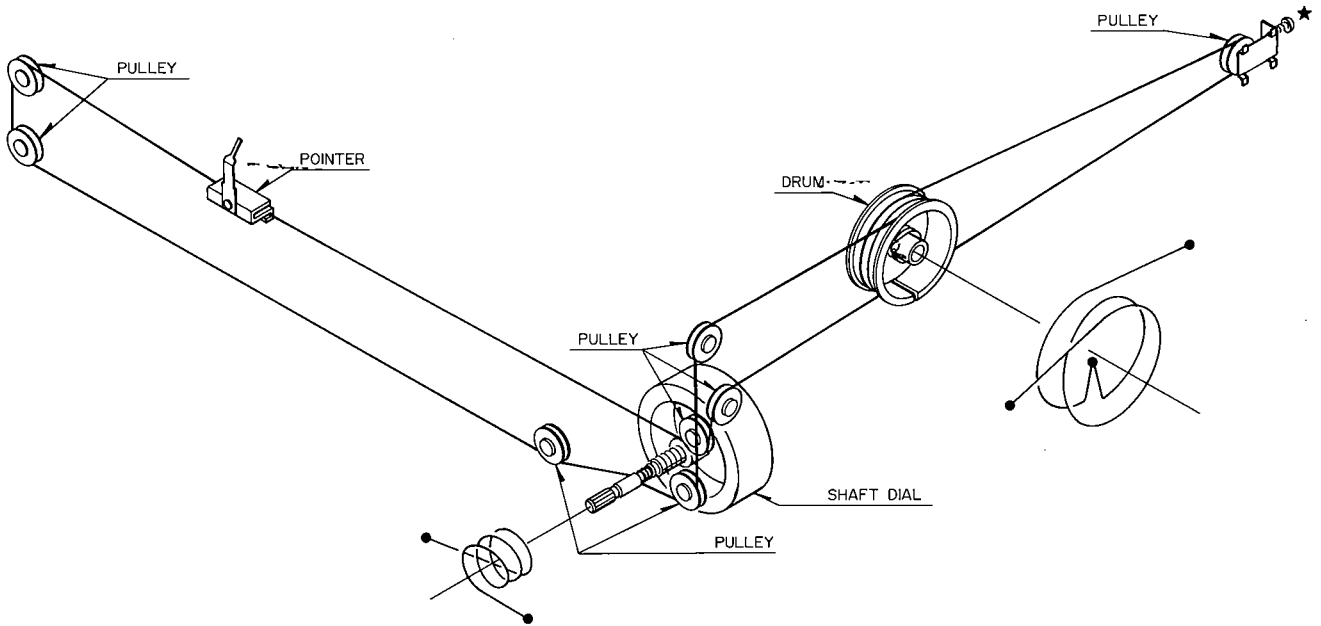
Because Fisher products are subject to continuous improvement, Fisher reserves the right to modify, change, or alter any design or specifications without notice and without incurring any obligation. Fisher reserves the right to make changes and improvements upon its products without any obligation to install such changes upon any of its products previously manufactured.

FUNCTIONAL BLOCK DIAGRAM



DIAL CORD STRINGING

★ Adjustment screw of dial cord tension.



NOTE: Check to see that the dial cord is correctly strung by turning the dial.

REQUIRED TEST EQUIPMENT

The following test equipments are required to completely test and align the Receiver:

- Line Voltage Isolation Transformer
- AC DC Multimeter
- Accurately Calibrated AC Voltmeter
- Oscilloscope (Flat to 100 kHz Minimum)
- Low-Distortion Audio Sine-Wave Generator
- Harmonic Distortion Analyzer
- Two (2) Load Resistors, 8-ohms, 250 watts (Minimum Rating)
- Low-Distortion AM-FM Signal Generator
- 10.7 MHz Sweep Generator
- Multiplex Generator
- 455 kHz Sweep Generator

CAUTION: Limit the following tests to no more than ten minutes each. Use 8-ohm resistors with a minimum power rating of 250 watts when connecting a load across the SPEAKERS terminals.

HARMONIC DISTORTION TEST

CONTROL SETTINGS:

POWER Switch to OFF
GRAPHIC EQUALIZER switch to OFF
TAPE MONITOR to SOURCE
LOUDNESS CONTOUR switch to OFF
VOLUME control to MINIMUM position
BALANCE control fully to LEFT position
FUNCTION switch to AUX
LEFT CHANNEL DRIVEN

ONE CHANNEL DRIVEN:

- 1) Connect a low distortion audio generator to LEFT AUX IN jack. Set generator frequency to 1 kHz and output to minimum.
- 2) Connect an 8-ohm load resistor between SPEAKERS MAIN LEFT and COM terminals. Connect a Harmonic Distortion Analyzer and an AC VTVM in parallel across the 8-ohm load.
- 3) Connect the AC power cord and set SPEAKERS switch to MAIN. Turn VOLUME control to MAX.
- 4) Increase generator output for 100W RMS (28.3V across the 8-ohm load). Harmonic Distortion Analyzer should measure 0.06% distortion or less.
- 5) Repeat steps 1 through 4 for RIGHT CHANNEL.

BOTH CHANNELS DRIVEN

Connect 8-ohm load resistors across LEFT and RIGHT MAIN SPEAKERS terminals. Check for distortion of 0.06% or less at 100 watts sine-wave power (28.3 volts RMS across the 8-ohm loads) on each channel with both channels driven simultaneously.

CAUTION:

This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transistor equipment and printed circuitry.

DISASSEMBLY INSTRUCTIONS

Removal of Chassis from Cabinet

1. Remove 4 screws from left and right sides of cabinet.
2. Separate cabinet from chassis.
3. Remove 22 screws from bottom of cabinet. (Do Not Remove Legs.)
4. Separate bottom of cabinet from chassis.

Removal of Decorative Panel Assembly

1. Remove all knobs except push buttons.
2. Remove 3 screws from top of panel.
3. Remove nuts from Function and Speaker switches.
4. Separate Decorative Panel Assembly from chassis.

Removal of Meters

1. Pull Dial Pointer off Dial Rail and push it down. (Do Not Remove Cord from Pointer.)
2. Remove Dial Plate by unscrewing 3 screws from it.
3. Push each meter out from back of Front Panel and unsolder leads. Then, remove meters.

Replacement of Dial Lamps

1. Remove Dial Filter by unscrewing a screw.
2. Pull out each Lamp from Filter to replace.

It is not necessary to remove all component parts for testing and troubleshooting any of the P.C.Boards since all parts are top-board mounted. For underneath board inspection purposes or when a defective component is to be unsoldered and replaced, the P.C.Board can be sufficiently turned over by only removing the screws of each P.C.B. If complete removal of any individual board is necessitated, proceed as follows:

Removal of AM-FM RF/IF MPX P.C.Board

1. Unscrew 6 screws from P.C.B.
2. Unwrap 5 clamp wires to free leads.
3. Unsolder leads from Pin Nos. 15, 16, 17, 18, 19, and Earth Pin.

Note: If a repair work or a check for each part must be performed with the unit in the functional mode, temporarily connect a jumper from the earth pin to the chassis.

4. Then, each part can be repaired or replaced by going through steps 1, 2, and 3.

Removal of Power AMP P.C.Board

1. Unscrew 3 screws from P.C.B.
2. Remove 4 screws holding Power IC (STK-0105) and 2 screws holding Posistors.

Removal of EQ AMP P.C.Board

1. Unscrew 2 screws holding P.C.B.

Removal of Pre Tone AMP P.C.Board

1. Remove 2 wire connectors from P.C.B.
2. Unwrap clamp wires necessary to free leads.

Removal of Power Supply P.C.Board

1. Unscrew 5 screws holding P.C.B.
2. Unsolder red lead connected to Pin 13.

Removal of Switch P.C.Board (1)

1. Unscrew 2 screws fastening Push Buttons. Then, pull out each knob from shafts of Push Buttons.
2. Pull out P.C.B. and turn it over.

Removal of Switch P.C.B. (2) and Volume P.C.B.

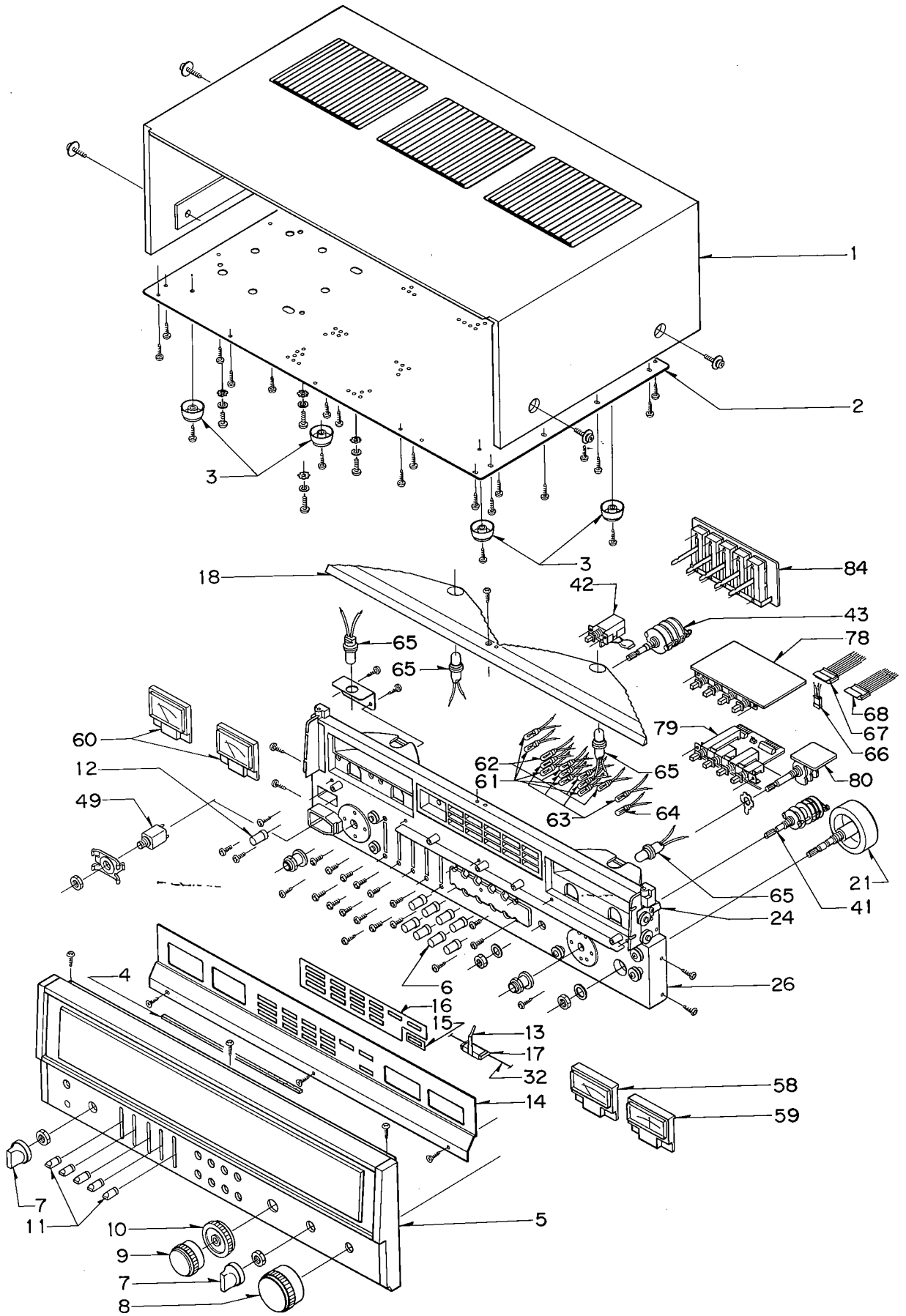
1. Remove 3 wire connectors.
2. Unscrew 2 screws holding P.C.B.
3. Unscrew 2 screws fastening Push Buttons. Then, pull out each knob from shafts.
4. Remove nut from shaft of Volume Control as for removal of Volume P.C.B.

Removal of Tone Volume P.C.Board

1. Unscrew 8 screws holding P.C.B. and pull it out.

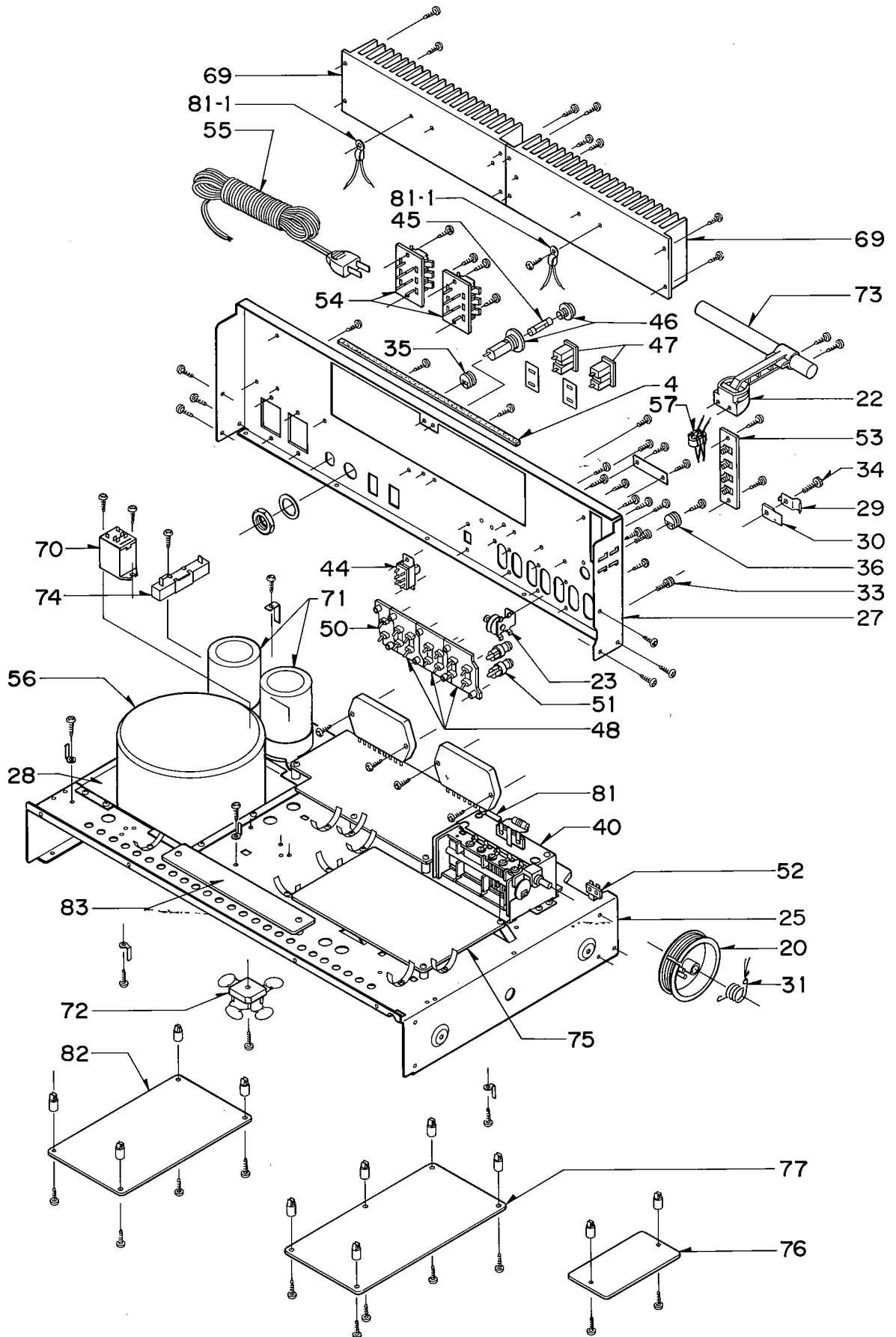
CABINET AND CHASSIS
FRONT MOUNTED ASSEMBLIES

EXPLODED VIEW



**CHASSIS AND REAR
MOUNTED ASSEMBLIES**

EXPLODED VIEW



PARTS LIST

PACKING PARTS LIST

Ref. No.	Parts Number	Description
	131 6 1139 68301	Box Corrugate-EXP
	131 6 2119 01362	Bag Polyethylene-EXP
	131 6 3009 22150	Pad (Right)
	131 6 3009 22160	Pad (Left)
	131 6 3069 16051	Patching Sheet

ACCESSORIES PARTS LIST

Ref. No.	Parts Number	Description
	4 2349 21340	Fuse 10A Slow Blow
	4 2449 20230	Antenna FM
	131 6 4119 69502	Explanatory Booklet
	131 6 4319 10802	Service Station List
	131 6 4519 14400	Guarantee Card

CABINET PARTS LIST

Ref. No.	Parts Number	Description
1	131 0 1101 09900	Cabinet Assy
2	131 2 1105 21300	Plate Bottom
3	131 2 1801 13200	Leg
4	131 2 5205 16700	Cushion (Panel Control Top, Panel Rear Top)

APPEARANCE PARTS LIST

Ref. No.	Parts Number	Description
5	131 0 1016 28301	Decorative Panel Assy
6	131 0 1001 28001	Knob, Push Switch
7	131 0 1001 35500	Knob, Function, Speakers
8	131 0 1001 45400	Knob, Tuning
9	131 0 1001 45500	Knob, Volume
10	131 0 1001 45600	Knob, Balance
11	131 0 1001 45700	Knob, Slide Volume
12	131 0 1001 45800	Knob, Power Switch
13	131 0 3011 18100	Dial Pointer Assy
14	131 2 1201 31401	Dial Plate
15	131 2 1503 12800	Decorative Sign (FM Stereo)
16	131 2 1503 13000	Decorative Sign (Function E.T.C.)
17 *	131 2 5205 19000	Cushion Pointer
18	131 2 6308 17800	Filter, Dial

CHASSIS PARTS LIST

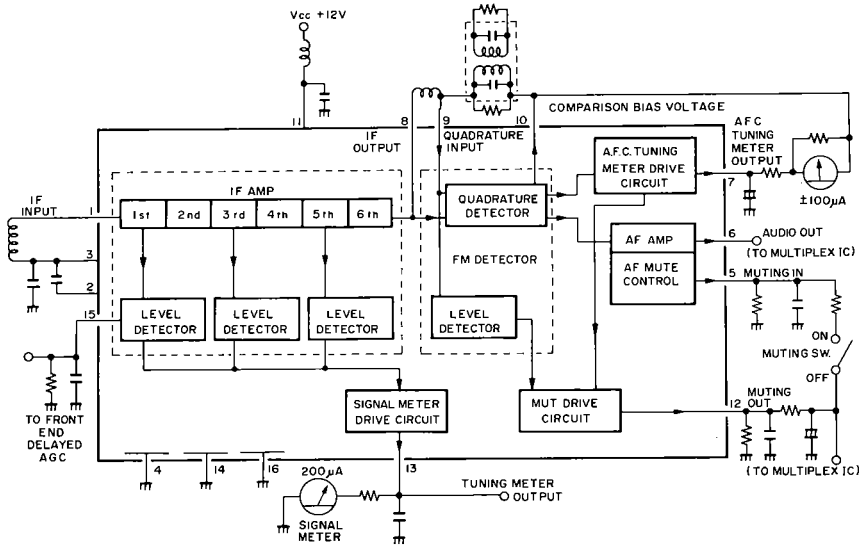
Ref. No.	Parts Number	Description
20	131 0 3002 11100	Drum Assy, Tuning Gang
21	131 0 3003 20600	Tuning Shaft Assy
22	131 0 3008 11900	Support, Antenna Assy
23 *	131 0 3020 05800	Pulley Assy, Panel Rear
24 *	131 0 3020 10200	Pulley Assy, Panel Front (Right)
25 *	131 2 3301 24000	Chassis
26 *	131 2 3305 23900	Front Panel
27 *	131 2 3306 26501	Rear Panel
28	131 2 3617 16800	Metal Mount Transformer
29	131 2 3621 00400	Cramp 75 ohm Coax.
30	131 2 3621 00500	Base Coax. Cramp
31	131 2 4111 00400	Tension Spring
32	131 2 4112 10200	Dial Cord
33	131 2 4201 17800	Screw Ground
34	101 3 1604 01204	Screw (FM ANT)
35	131 2 6111 11300	Bushing, Line Cord
36	131 2 6111 14200	Bushing, AM Antenna Lead

ELECTRICAL PARTS LIST

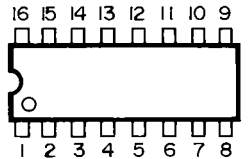
Ref. No.	Parts Number	Description
40	4 1252 00040	Front-End (Component parts used in Front End are not serviceable and available).
41	4 2312 00980	Switch Rotary Function
42	4 2312 00880	Switch Push, Power
43	4 2312 00910	Switch Rotary, Speakers
44	4 2319 22520	Slide Switch De-Emphasis
45	4 2349 21340	Fuse 10A Slow Blow (AC Line)
46	4 2359 21110	Fuse Holder, Line Fuse
47	4 2359 21960	AC Receptacle
48	4 2359 22710	Rear Accessory Jack
49	4 2359 22730	Headphone Jack
50	4 2359 23070	RCA 2P Jack (Tape 2)
51	4 2369 20561	Short Plug (Phono 2)
52	4 2379 20140	Terminal Lug, AM Antenna
53	4 2379 21460	Antenna Terminal
54	4 2379 21570	Speaker Terminal
55 *	4 2439 20720	Line Cord
56	4 2512 04500	Power Transformer
57	4 2599 20300	Balun (75Ω/300Ω)
58	4 5112 00060	Meter, Signal Strength
59	4 5112 00070	Meter, Center of Channel
60	4 5112 00120	Meter, VU Power Level
61	4 6122 00100	Pilot Lamp (8V, 60mA)
62	4 6122 00200	Pilot Lamp (8V, 60mA)
63	4 6122 00300	Pilot Lamp (8V, 60mA)
64	4 6129 20724	Pilot Lamp (Stereo Ind 6V 30mA)
65	4 6129 20771	Pilot Lamp (Meter, Dial 8V 300mA)
66	131 0 4006 15300	Cord Assy SW P.C.B. 3P
67	131 0 4006 15400	Cord Assy SW P.C.B. 8P
68	131 0 4006 15501	Cord Assy SW P.C.B. 8P
69	131 2 6201 25100	Plate Heat Sink
70(LY01)	4 2322 00020	Relay (DC 24V)
C01	C2HYDP103A	Ceramic 0.01 μF 500V +100,-0%
C02,03	C1HYDZ473A	Ceramic 0.047 μF 50V +80,-20%
71(C04,05)	4 2232 00050	Electrolytic 15000 μF 67V
C06,07	C2HYDP103A	Ceramic 0.01 μF 500V +100,-0%
	08,09,13,14,15,16	
C10	C1HYDZ473A	Ceramic 0.047 μF 50V +80,-20%
C11,12	C1HFRK223A	Mylar 0.022 μF 50V ±10%
72(D101)	DDD-S15VB40	Diode, S15VB40
73(L01)	4 2579 25130	AM Antenna
L02	4 2539 20120	IF Trap Coil
R01,02	R2HCPK185A	Solid 1.8M 1/2W ±10%
R03	R2HCPK222A	Solid 2.2k 1/2W ±10%
74(R04)	4 2212 00020	Cement 2 ohm 20W ±10%
R05,06	R2EDPJ472A	Carbon 4.7k 1/4W ±5%
75 *	131 0 4001 94900	RF IF MPX P.C.B. Assy
76 *	131 0 4001 00010	EQ AMP P.C.B. Assy
77 *	131 0 4001 00020	Pre Tone P.C.B. Assy
78 *	131 0 4001 00031	Switch P.C.B. Assy (1)
79 *	131 0 4001 00040	Switch P.C.B. Assy (2)
80 *	131 0 4001 00050	Volume P.C.B. Assy
81 *	131 0 4001 00061	Power AMP P.C.B. Assy
82 *	131 0 4001 00071	Power Supply P.C.B. Assy
83 *	131 0 4001 00081	Pilot Lamp P.C.B. Assy
84 *	131 0 4001 00090	Tone Volume P.C.B. Assy

*—Not a service part.

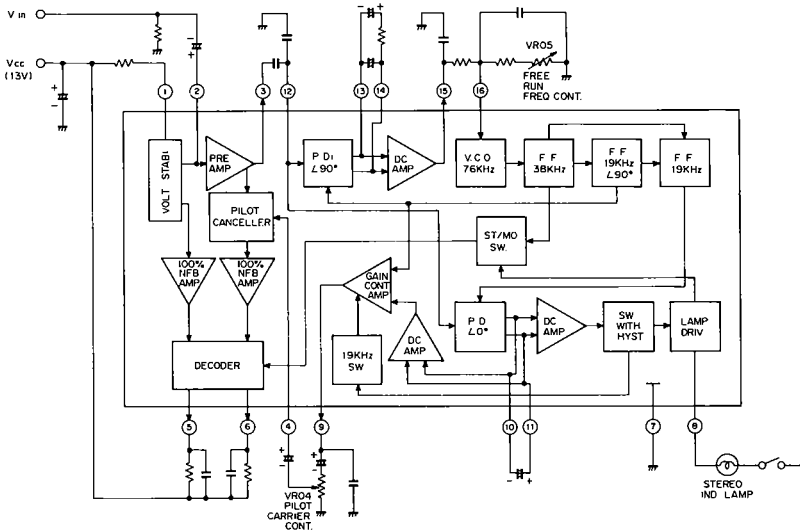
FM IF IC LA1230 SIGNAL FLOW



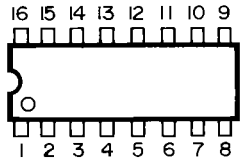
IC TOP VIEW



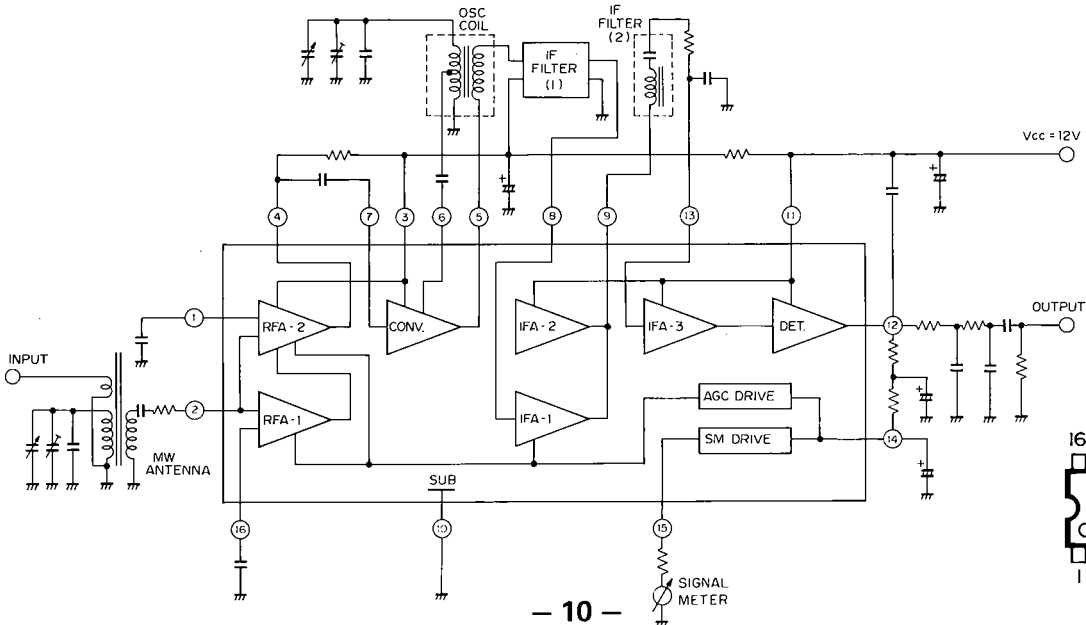
FM MPX IC HA11223 SIGNAL FLOW



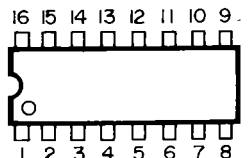
IC TOP VIEW



-AM- RF IF IC LA1240 SIGNAL FLOW



IC TOP VIEW



FM TUNER ALIGNMENT

FM ALIGNMENT – FUNCTION switch to FM, MUTING switch to OFF,
VOLUME control to minimum.

Maintain generator output as low as possible for suitable indications.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
<p>Note: The FM IF circuit utilizes a non-turnable ceramic filter which establishes the IF bandpass. To insure symmetrical tuning and selectivity, the IF must be aligned precisely to the center of the filter bandpass, rather than to 10.7 MHz as in conventional LC circuits.</p>				
1. IF ALIGNMENT	Connect 10.7 MHz Sweep Generator to VC2 and, ground lead to chassis. Markers are not required. Set generator output to -12dB (250mV).	Position of non-interference	Scope vertical input to TP1 and connect ground lead to chassis. Set vertical sensitivity to 0.5V/cm.	Adjust T01 (in the Front End IFT) for maximum gain and best symmetry. See Figure 1 for FM IF ALIGNMENT.
2. PRELIMINARY DETECTOR ALIGNMENT	Generator connections are the same as above. Adjust for S-curve display. Set generator output to -20dB . (100mV)	Position of non-interference	Scope vertical input to TP2	Adjust IFT01 (bottom slug) for minimum gain and best linearity. Adjust IFT01 (top slug) for maximum gain and best linearity. See Figure 2 for FM DETECTOR ALIGNMENT. NOTE: Harmonic Distortion test must be performed as part of detector alignment.
<p>Note: Connect 120-ohm composition resistors in series with each lead from the RF generator to match the 50-ohm output to the 300-ohm input impedance. Generator output voltage is reduced to one-half at antenna terminals. Signal voltages specified in this table are generator output levels, <i>not</i> antenna voltages.</p>				
3. FRONT END ALIGNMENT		Tuning knob fully counterclockwise		Center dial pointer on "0" (zero) and cement
4. FRONT END ALIGNMENT (90 MHz)	Connect FM RF generator through two 120-ohm resistors to FM ANT screw terminals. Set generator to 90 MHz, modulate with 400 Hz to provide $\pm 75\text{ kHz}$ deviation. Adjust output for approximately 20% on Signal Strength meter.	Center of 90 MHz calibration mark on dial	Front panel Signal Strength meter (M1) and Center of Channel meter (M2)	Adjust L05 (OSC), L04, L03, L02, and L01 for maximum deflection on M1 and zero deflection of M2. Reduce generator output to keep M1 indication at approximately 20%. NOTE: It is almost unnecessary to adjust L01 - 05 in Front End as perfectly adjusted.
5. FRONT END ALIGNMENT (106 MHz)	Change generator setting to 106 MHz.	Center of 106 MHz calibration mark on dial	Same as above	Adjust TC4 (OSC), TC3, TC2, and TC1 for maximum deflection on M1 and zero deflection of M2. Reduce generator output to keep M1 indication at approximately 20%. Repeat steps 4 and 5 for optimum alignment.
6. DETECTOR ALIGNMENT	Set generator to receiver frequency. Modulate with 400 Hz $\pm 75\text{ kHz}$ deviation. Connect generator to FM ANT terminals.	Position of non-interference near 100 MHz.	Scope vertical input to LEFT TAPE-1 output jack.	Reduce generator output for noise to be visible on sine wave. Readjust generator frequency to center noise on positive and negative half cycles. See Figure 3 for SYMMETRICAL TUNING RESPONSE.
7. FINAL DETECTOR ADJUSTMENT (MINIMUM T.H.D.)	Same as above. Increase generator output to 2mV.	Same as in Step 6	AC Voltmeter and Harmonic Distortion Analyzer to LEFT TAPE-1 output jack	Adjust IFT01 (bottom slug) for center of channel indication on M2 and minimum distortion. (THD 0.2% typically).

FM TUNER ALIGNMENT

— continued —

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
8. PLL IC F.R.F. (76 kHz)	Do not connect generator.	Same as in Step 6	Connect frequency counter to TP3.	Adjust VR03 (4.7k) in Multiplex circuit to obtain 76 kHz±200 Hz on counter. See Figure 4 for SAW TOOTH WAVE FORM. NOTE: Connect Buffer Amp of a high input impedance (over 500k-ohm) to TP3 and then, to the frequency counter through 220 k-ohm.
9. PILOT CANCEL ADJUSTMENT	Set generator to receiver frequency. Modulate with 19 kHz ±7.5 kHz deviation (Pilot Signal). Connect generator to FM ANT terminals.	Position of non-interference near 100 MHz.	Scope vertical input to LEFT TAPE-1 output jack. Same as above for RIGHT channel	Adjust VR04 (47k) until the residue of pilot signal in R and L channels becomes minimum.
10. FM STEREO SIGNAL SEPARATION CONTROL	Connect FM stereo SG to FM ANT terminals. 19 kHz signal ON. Main channel, sub channel signal ON. Apply 1000 Hz signal from L Ch.	Same as above	Scope and AC-VTVM to RIGHT TAPE-1 output jack.	Adjust VR05 (22k) for minimum output.
	Same as above for RIGHT channel.		Scope and AC-VTVM to LEFT TAPE-1 output jack.	
11. FM MUTING LEVEL ADJUSTMENT	Same as above Set generator output to 2 ~ 5 μV (11 - 19 dB).	Same as above	Same as above	Set Muting switch to ON and adjust VR01 (47k) until STEREO IND LAMP flashes.
12. AM/FM SIGNAL STRENGTH METER (M1) LEVEL ADJUSTMENT	Same as above Set generator output to 100mV (100 dB).	Same as above	Same as above	Adjust VR02 (47k) until M1 indication swings to maximum position (100%).

AM TUNER ALIGNMENT

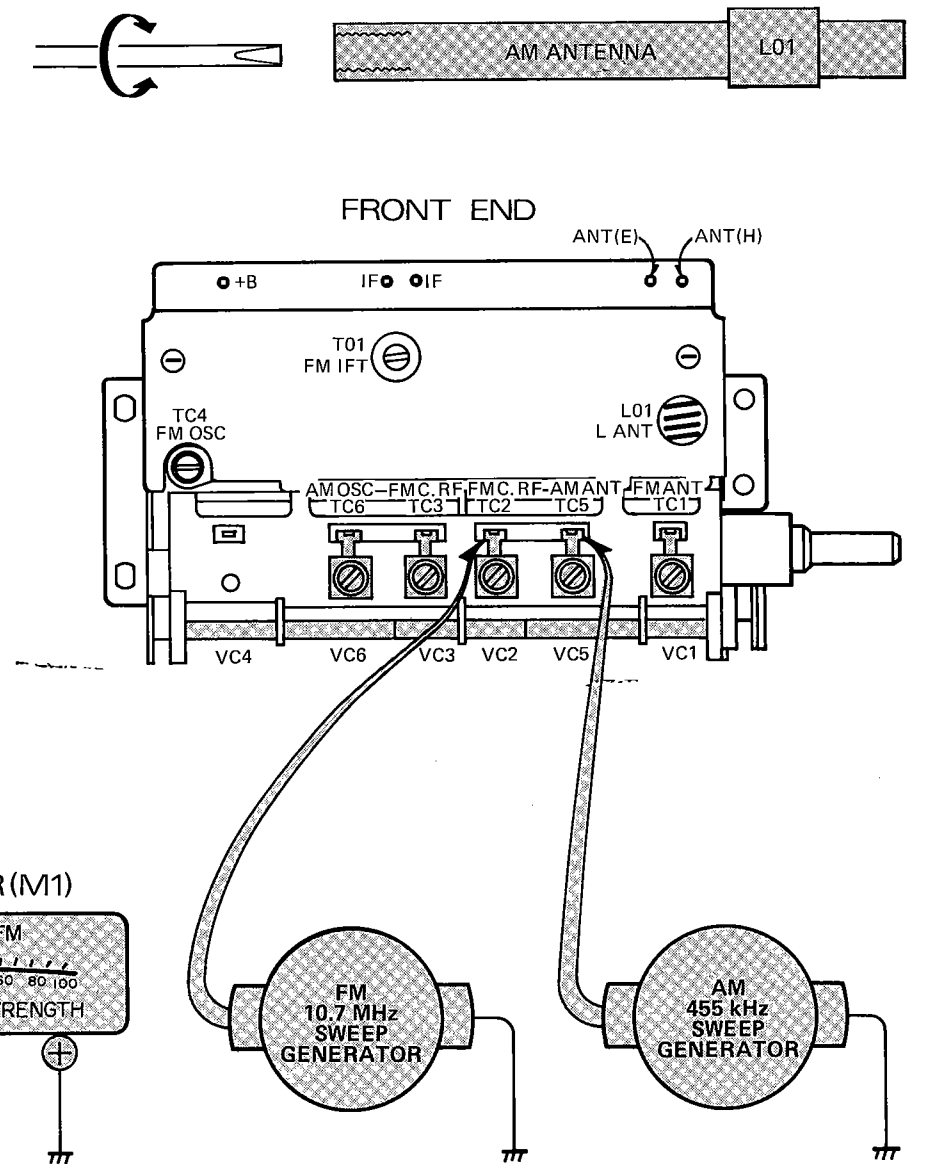
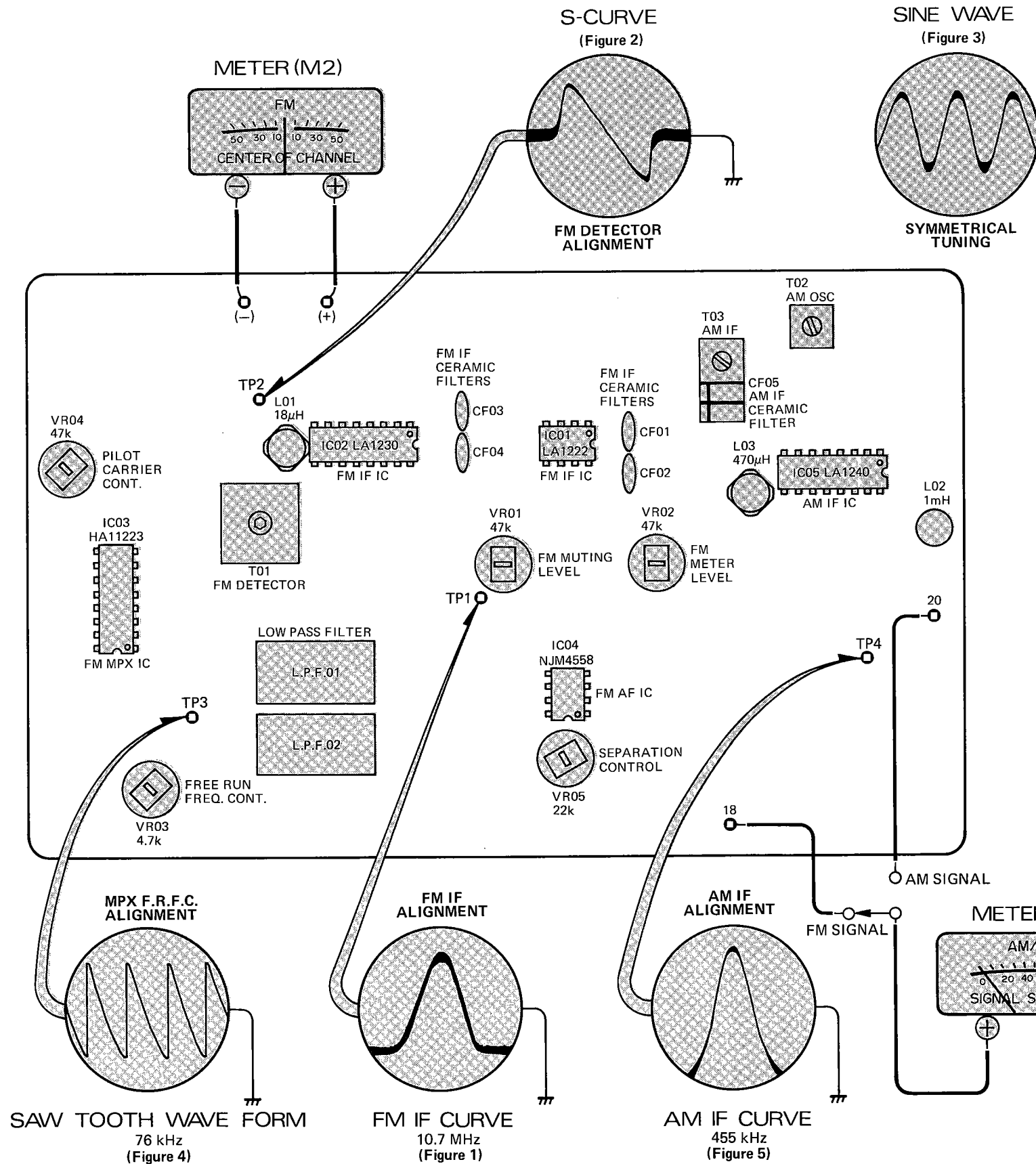
AM ALIGNMENT — GRAPHIC EQUALIZER switch to OFF, SPEAKERS switch to —PHONES position, FUNCTION switch to AM position, and VOLUME to MIN.

Maintain generator output as low as possible for suitable indications.

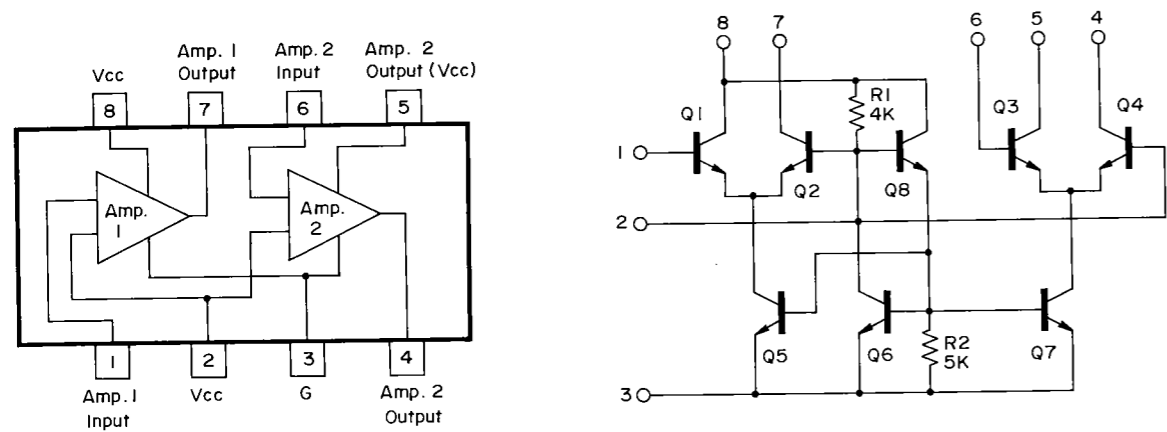
ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. IF ALIGNMENT	Connect 455 kHz sweep generator to VC5 and ground lead to chassis. Use 0.1 μF capacitor in series with generator lead.	Position of non-interference near 1400 kHz.	Scope vertical input to TP4 and ground lead to chassis. Set vertical sensitivity to 0.2 V/cm	Adjust T03 (IFT) (top slug) for maximum gain and best symmetry. Keep signal low enough for noise on response as shown in Figure 5.
2. FRONT END ALIGNMENT (600 kHz)	AM generator to EXT AM ANT and GND terminals. Set to 600 kHz. Modulate with 400 Hz (30% modulation).	Center of 600 kHz calibration mark on dial	Front panel Signal Strength meter (M1)	Adjust T02 (OSC) and L01 (AM ANTENNA) for maximum M1 indication. Reduce generator output to keep meter reading below 3.
3. FRONT END ALIGNMENT (1400 kHz)	Change generator setting to 1400 kHz.	Center of 1400 kHz calibration mark on dial.	Front panel Signal Strength meter (M1)	Adjust TC5 and TC6 (OSC) for maximum deflection. Keep meter reading below 3. Repeat steps 2 and 3 until optimum alignment is reached.

AM-FM TUNER BOARD LAYOUT

WITH OSCILLOSCOPE TIME BASE SETTINGS
(TOP VIEW)



FM IF IC LA1222 SIGNAL FLOW AND EQUIVALENT DIAGRAM



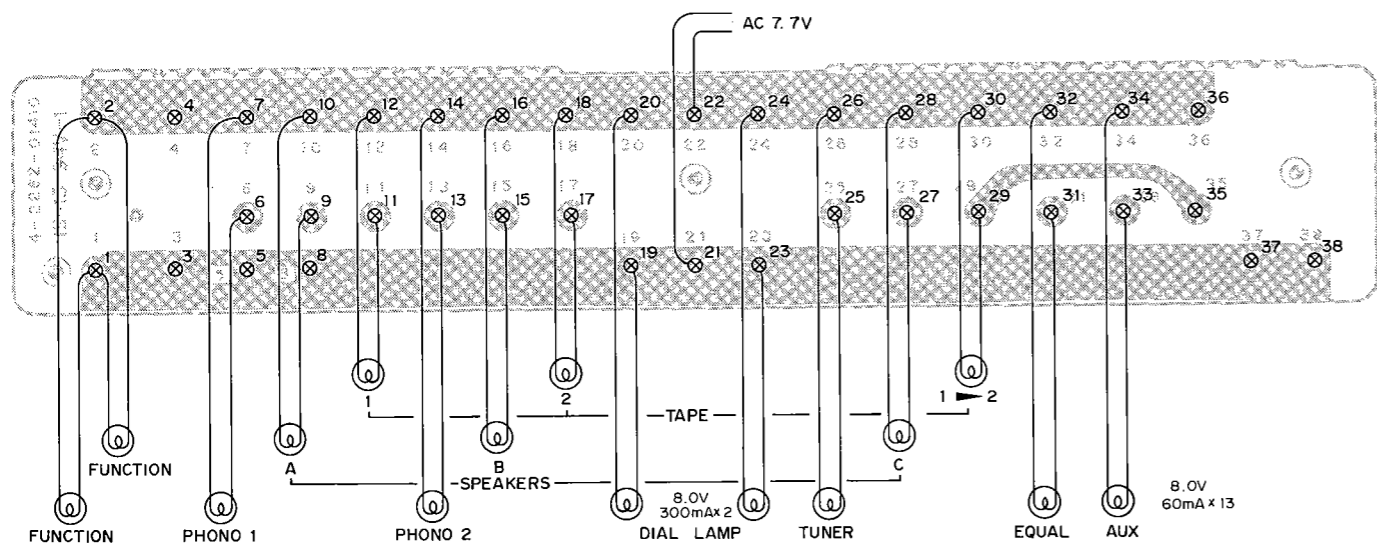
TRANSISTOR DC VOLTAGES

SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q01	2SC536	0.5V	2.9V	0V	Q04,05	2SC536	0.58V	12.1mV	0V
Q02	2SC536	51.5mV	14.6V	51mV	Q06	2SC1571	3.2V	8.3V	2.6V
Q03	2SC536	0.6V	51mV	0V					

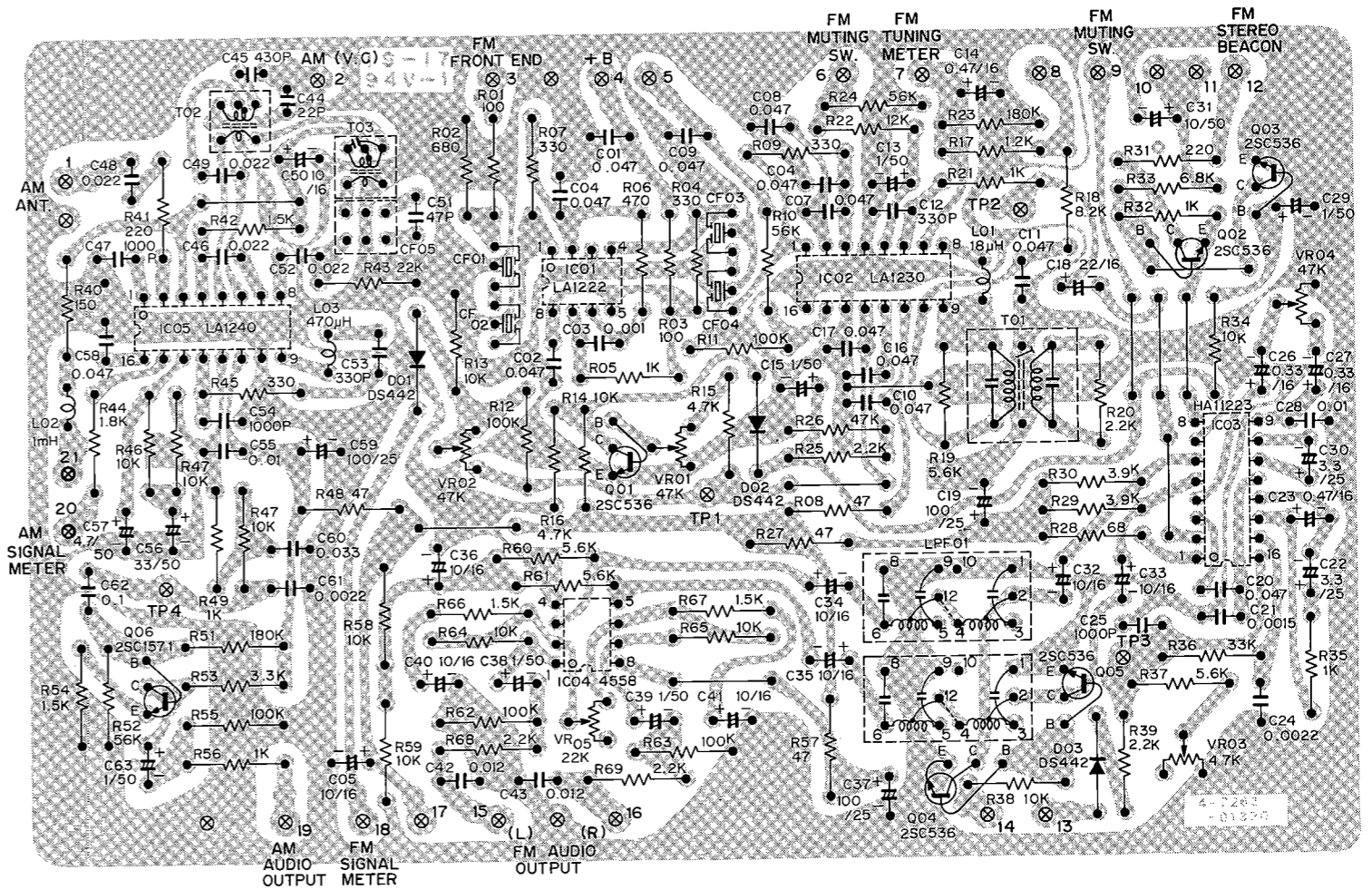
IC PIN NUMBER VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC01	LA1222	1.3V	1.3V	0V	12.7V	13.5V	1.3V	11.2V	13.5V								
IC02	LA1230	2.8V	2.8V	2.8V	0V	1.7V	5.6V	5.7V	5.6V	5.6V	5.6V	13.5V	2.4V	0.9V	0V	5.1V	0V
IC03	HA11223	12.9V	3.5V	4.9V	0.7V	10.5V	10.5V	0V	51mV	5.7V	2.8V	2.8V	2.8V	2.8V	2.8V	4.3V	3.1V
IC05	LA1240	4.6V	1.7V	13.6V	11.3V	13.6V	3.3V	1.3V	2.6V	11.4V	0V	14.1V	1.9V	0.6V	1.9V	0.13V	1.1V

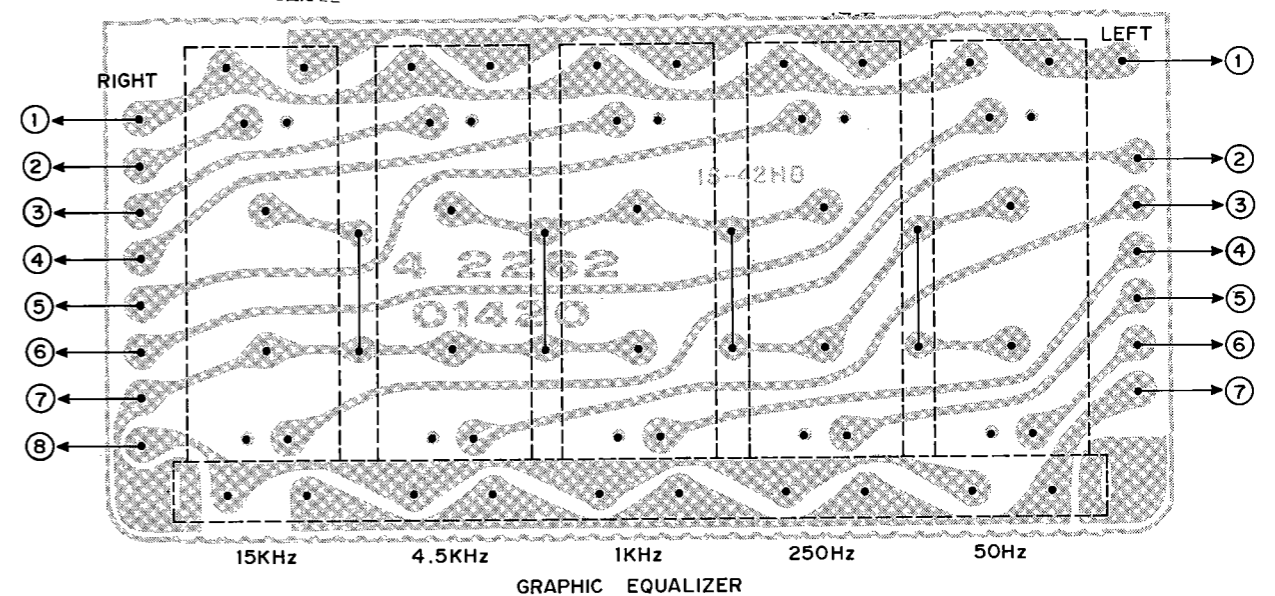
PILOT LAMP P.C.BOARD (BOTTOM VIEW)



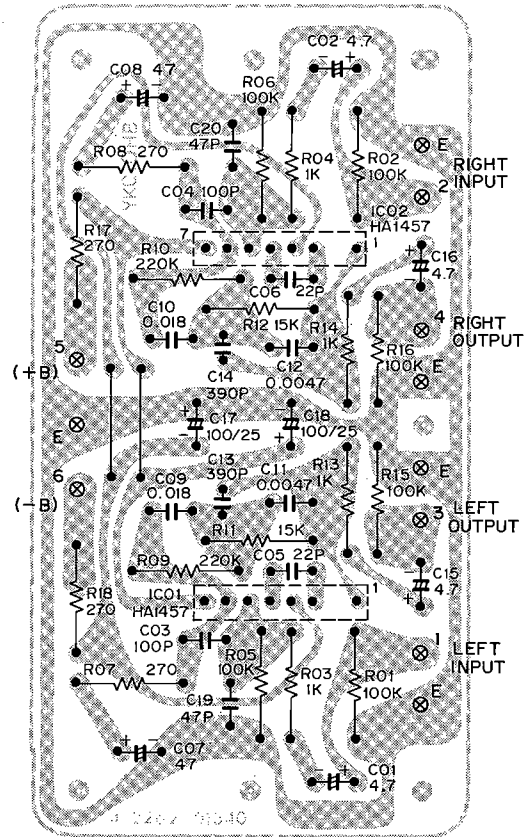
RF IF MPX P.C.BOARD (BOTTOM VIEW)



TONE VOLUME P.C.BOARD (BOTTOM VIEW)



EQ AMP P.C.BOARD (BOTTOM VIEW)



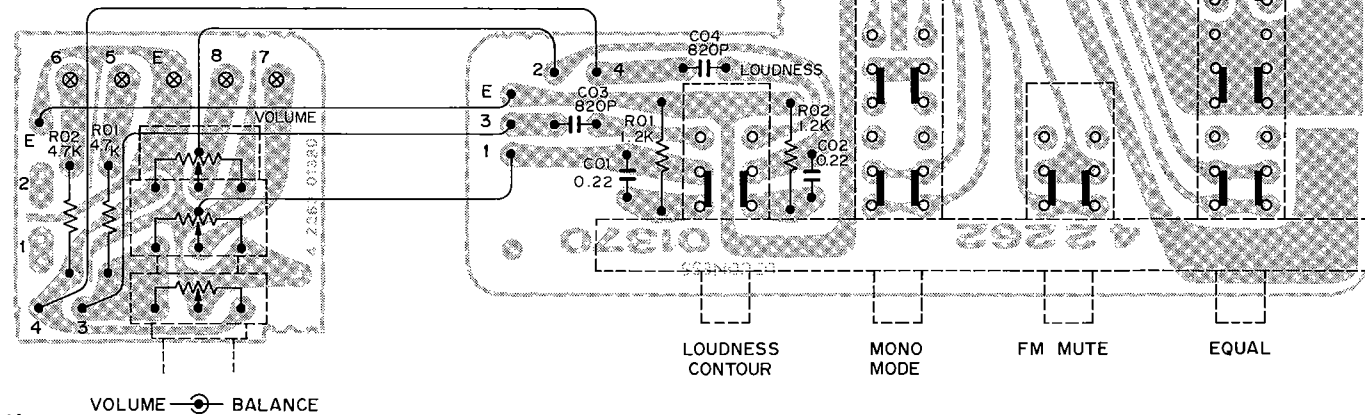
EQ AMP P.C.BOARD IC PIN NUMBERS VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC01,02	HA1457	21mV	-	-88.3mV	-22.3V	-21.1V	-42.7mV	-81.8mV	22.1V

PRE TONE P.C.BOARD TRANSISTOR DC VOLTAGES

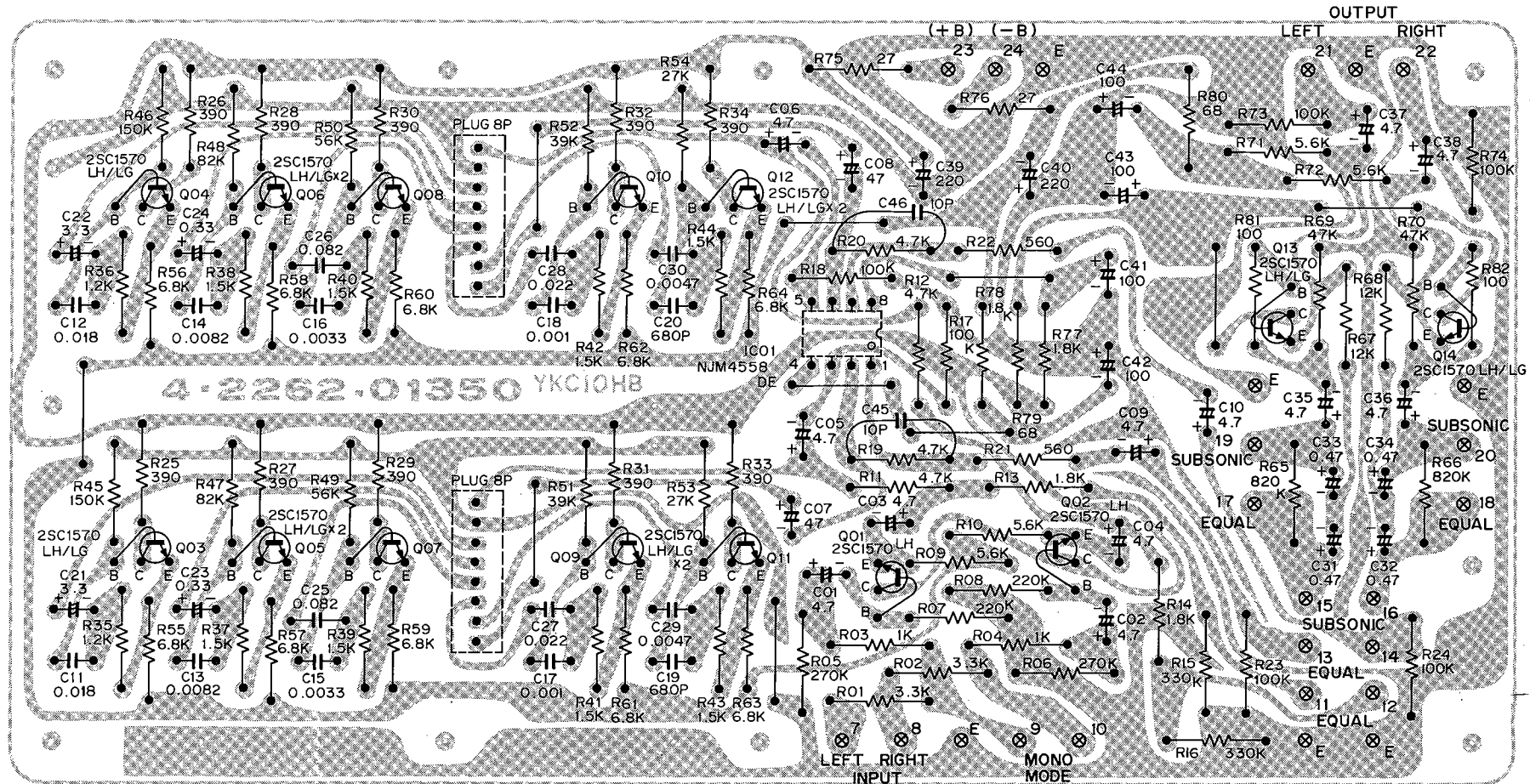
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q01,02	2SC1570	1.0V	23.2V	-1.6V	Q09,10	2SC1570	-0.3V	21.9V	-0.9V
Q03,04	2SC1570	-1.3V	21.9V	-1.9V	Q11,12	2SC1570	-0.2V	21.9V	-0.8V
Q05,06	2SC1570	-0.6V	21.9V	-1.3V	Q13,14	2SC1570	-0.3V	22.7V	-0.9V
Q07,08	2SC1570	-0.3V	21.9V	-0.9V					

VOLUME P.C.BOARD (BOTTOM VIEW)

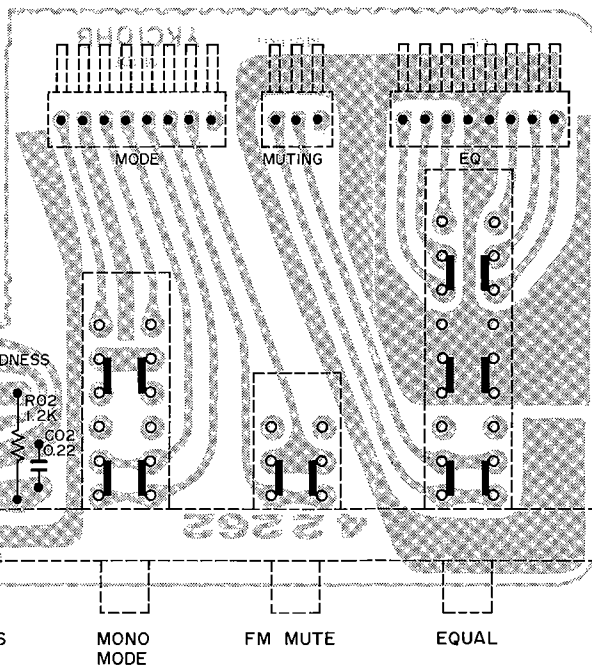


VOLUME — BALANCE

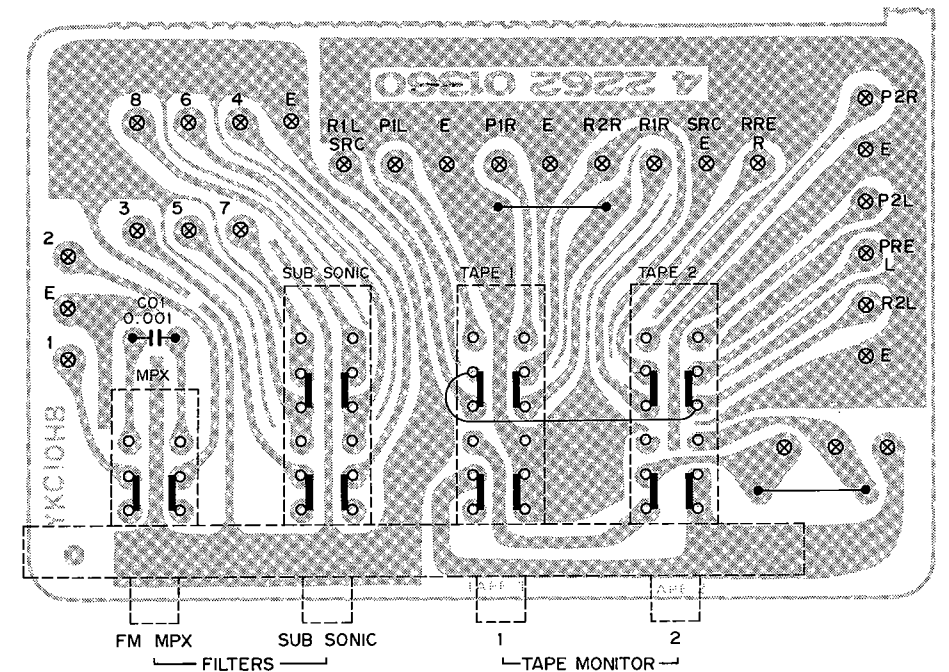
PRE TONE P.C.BOARD (BOTTOM VIEW)



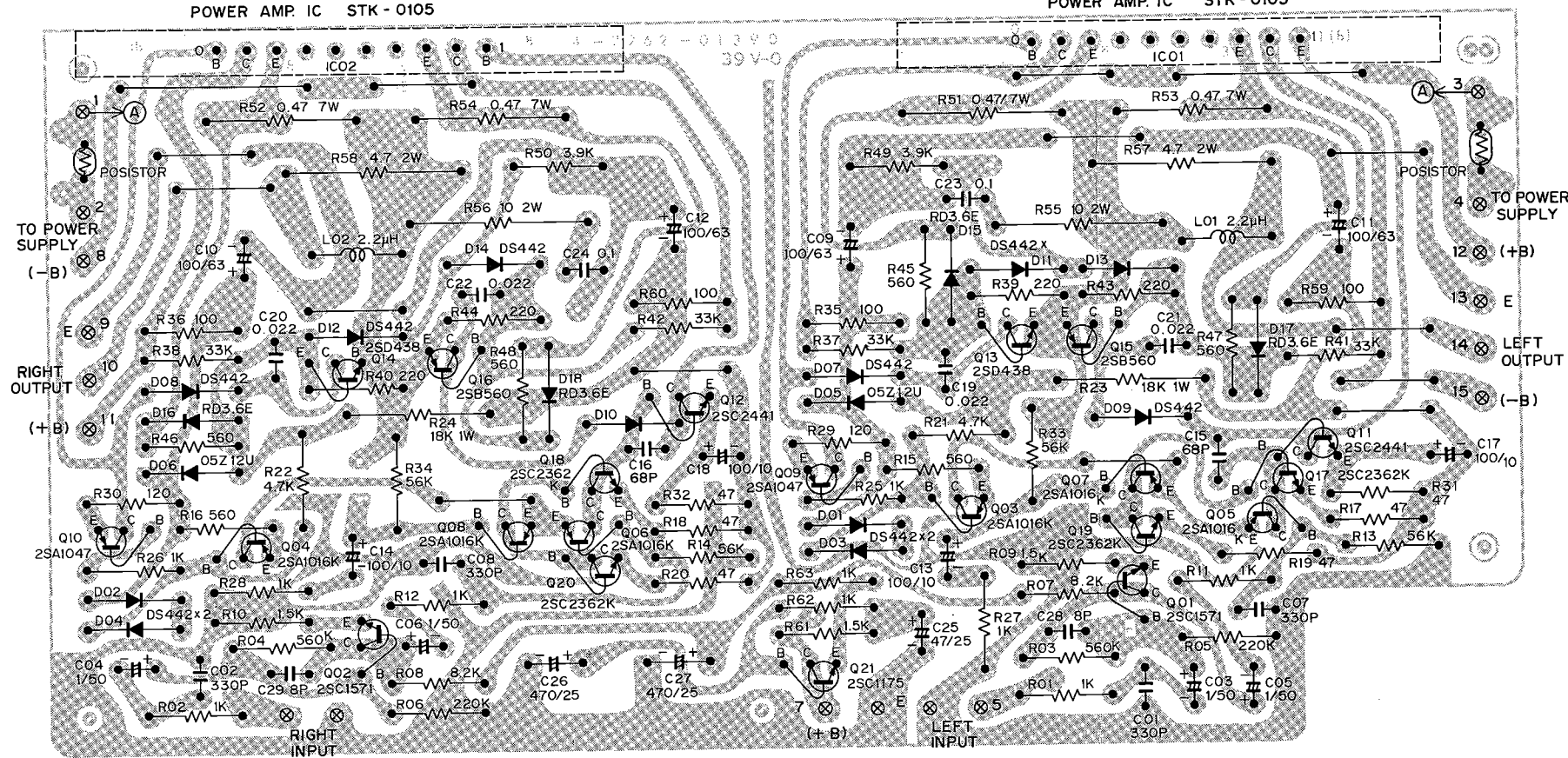
SWITCH P.C.BOARD (2) (BOTTOM VIEW)



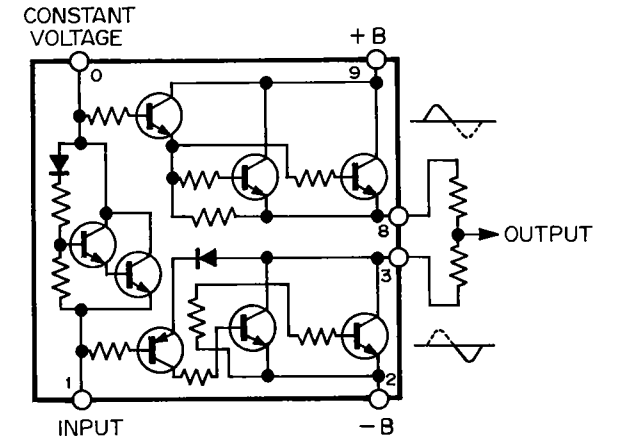
SWITCH P.C.BOARD (1) (BOTTOM VIEW)



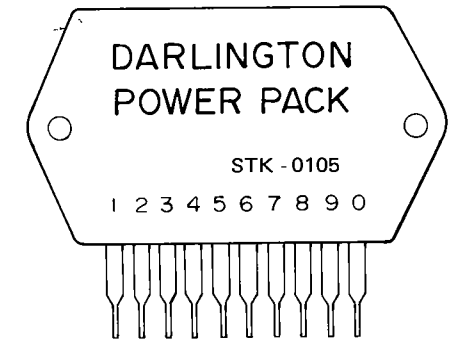
POWER AMP P.C.BOARD (BOTTOM VIEW)



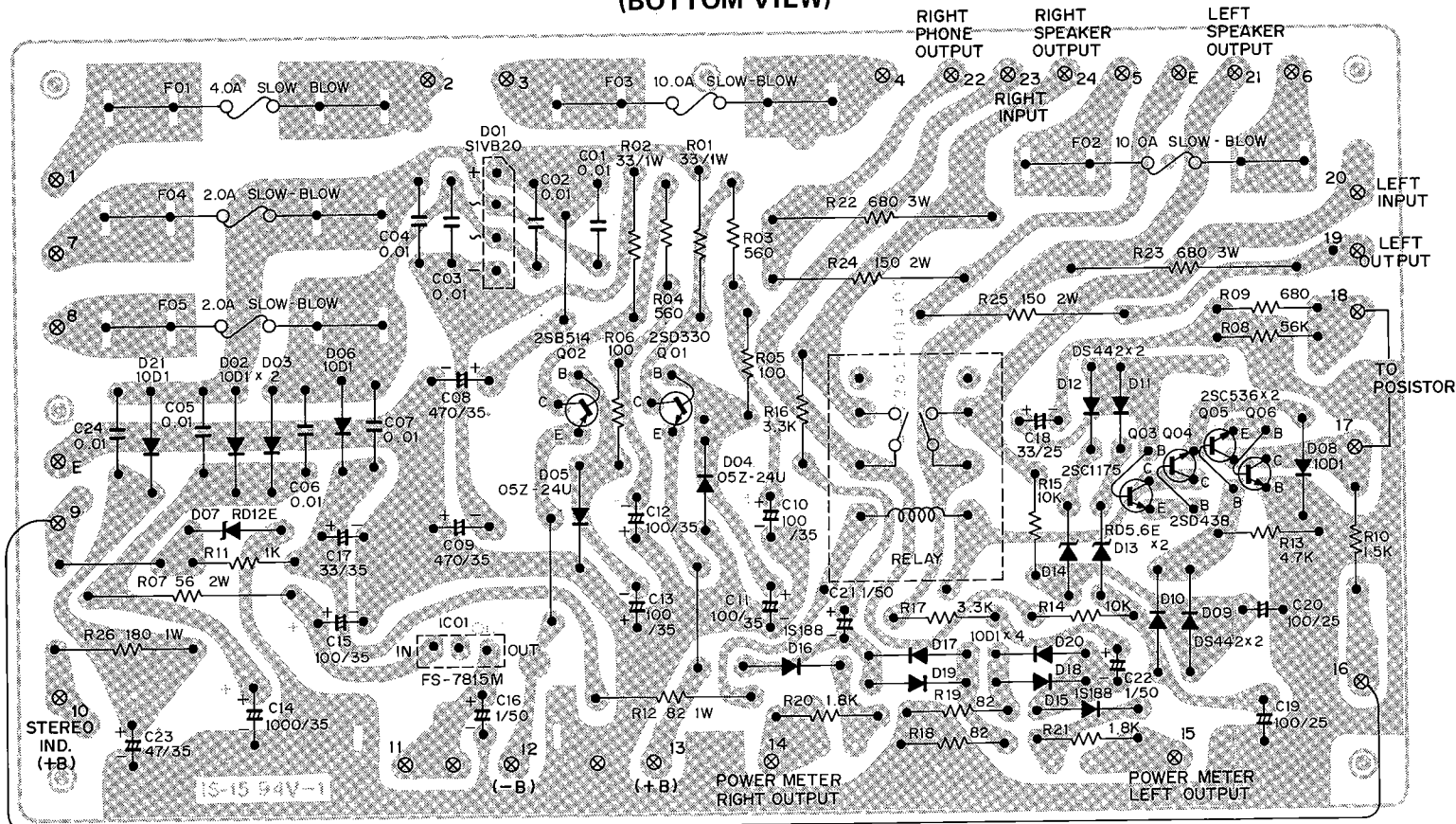
POWER AMP IC STK0105 EQUIVALENT CIRCUIT



IC FRONT VIEW



POWER SUPPLY P.C.BOARD (BOTTOM VIEW)



POWER AMP P.C.BOARD TRANSISTOR DC VOLTAGES									
SYMBOL. No.	DEVICE	B	C	E	SYMBOL. No.	DEVICE	B	C	E
Q01,02	2SC1571	2.5V	10.4V	1.9V	Q13,14	2SD438	0.3V	1.0V	36mV
Q03,04	2SA1016	54.7V	0.6V	55.3V	Q15,16	2SB560	-0.3V	-1.0V	-36mV
Q05,06	2SA1016	-	-44.3V	0.6V	Q17,18	2SC2362	-55.3V	-44.3V	-55.9V
Q07,08	2SA1016	83mV	-55.3V	0.6V	Q19,20	2SC2362	-55.3V	-55.3V	-55.9V
Q09,10	2SA1047	54.7V	1.1V	55.4V	Q21	2SC1175	24.7V	24.8V	24.1V
Q11,12	2SC2441	-44.3V	-1.1V	-55.7V					

POWER SUPPLY P.C.BOARD TRANSISTOR DC VOLTAGES									
SYMBOL. No.	DEVICE	B	C	E	SYMBOL. No.	DEVICE	B	C	E
Q01	2SD330	25.2V	28.9V	24.7V	Q04	2SD438	1.4V	2.7V	0.7V
Q02	2SB514	25.3V	29.3V	24.8V	Q05	2SC536	0V	4.9V	50mV
Q03	2SC1175	1.9V	3.8V	1.4V	Q06	2SC536	50mV	4.9V	0V

PARTS LIST

RF IF MPX P.C.B. Assy
131 0 4001 94900

Ref. No.	Parts Number	Description
IFT01	4 2569 21320	IF Transformer FM (Quadrature)
IFT02	4 2582 00050	OSC Coil AM
IFT03	4 2562 00040	IF Transformer AM
L01	4 2532 00030	Choke Coil 18 μ H
L02	4 2539 20170	Choke Coil 1 mH
L03	4 2532 00020	Choke Coil 470 μ H
LPF01,02	4 2522 00020	Low Pass Filter
VR01	4 2229 25100	VR 47k-B (Muting)
VR02	4 2229 25100	VR 47k-B (FM Meter)
VR03	4 2229 23880	VR 4.7k-B (Free Run)
VR04	4 2229 25100	VR 47k-B (Pilot Cancel)
VR05	4 2229 25670	VR 22k-B (Sepa. Cont.)
CF01,02	4 2279 20340	Ceramic Filter (FM IF)
03,04		
CF05	4 2272 00010	Ceramic Filter (AM IF)
CAPACITORS		
C01,02	C1HYYZ473APA	Ceramic 0.047 μ F 50V +80,-20%
C03	C1HYYZ102APA	Ceramic 0.001 μ F 50V +80,-20%
C04	C1HYYZ473APA	Ceramic 0.047 μ F 50V +80,-20%
C05	C1CRE-106A	Electrolytic 10 μ F 16V
C06	C1HYYZ473APA	Ceramic 0.047 μ F 50V +80,-20%
C07	C1HYDZ473A	Ceramic 0.047 μ F 50V +80,-20%
C08,09	C1HYYZ473APA	Ceramic 0.047 μ F 50V +80,-20%
10,11		
C12	C1HCYK331APA	Ceramic 330 pF 50V \pm 10%
C13	C1HRE-105A	Electrolytic 1 μ F 50V
C14	C1CUBX474A	Sint. Alu. 0.47 μ F 16V +40,-20%
C15	C1HRY-105APA	Electrolytic 1 μ F 50V
C16	C1HYDZ473A	Ceramic 0.047 μ F 50V +80,-20%
C17	C1HYYZ473APA	Ceramic 0.047 μ F 50V +80,-20%
C18	C1CRY-226APA	Electrolytic 22 μ F 16V
C19	C1ERE-107A	Electrolytic 100 μ F 25V
C20	C1HFYK473APA	Mylar 0.047 μ F 50V \pm 10%
C21	C1HFRK152A	Mylar 0.0015 μ F 50V \pm 10%
C22	C1EUBM335A	Sint. Alu. 3.3 μ F 25V \pm 20%
C23	C1CUBX474A	Sint. Alu. 0.47 μ F 16V +40,-20%
C24	C1HFYK222APA	Mylar 0.0022 μ F 50V \pm 10%
C25	C1HSEK102A	Styrol 1000 pF 50V \pm 10%
C26,27	C1CUBX334A	Sint. Alu. 0.33 μ F 16V +40,-20%
C28	C1HFYK103APA	Mylar 0.01 μ F 50V \pm 10%
C29	C1HRY-105APA	Electrolytic 1 μ F 50V
C30	C1EUBM335A	Sint. Alu. 3.3 μ F 25V \pm 20%
C31	C1HRE-106A	Electrolytic 10 μ F 50V
C32,33	C1CRY-106APA	Electrolytic 10 μ F 16V
34,35		
36		
C37	C1ERE-107A	Electrolytic 100 μ F 25V
C38	C1HRY-105APA	Electrolytic 1 μ F 50V
C39	C1HRE-105A	Electrolytic 1 μ F 50V
C40,41	C1CRY-106APA	Electrolytic 10 μ F 16V
C42,43	C1HFAJ123A	Mylar 0.012 μ F 50V \pm 5%
C44	C1HCSK220SL	Ceramic 22 pF 50V \pm 10%
C45	C1HSEJ431A	Styrol 430 pF 50V \pm 5%
C46	C1HYYZ223APA	Ceramic 0.022 μ F 50V +80,-20%
C47	C1HYYZ102APA	Ceramic 1000 pF 50V +80,-20%
C48,49	C1HYYZ223APA	Ceramic 0.022 μ F 50V +80,-20%
C50	C1CRY-106APA	Electrolytic 10 μ F 16V
C51	C1HCYK470APA	Ceramic 47 pF 50V \pm 10%
C52	C1HYYZ223APA	Ceramic 0.022 μ F 50V +80,-20%

PARTS LIST

PRE TONE P.C.B. Assy
131 0 4001 00020

Ref. No.	Parts Number	Description
RESISTORS		
R37	R2EDZJ562APA	Carbon 5.6k 1/4W \pm 5%
R38	R2EDZJ103APA	Carbon 10k 1/4W \pm 5%
R39	R2EDSJ222A	Carbon 2.2k 1/4W \pm 5%
R40	R2EDZJ151APA	Carbon 150 1/4W \pm 5%
R41	R2EDZJ221APA	Carbon 220 1/4W \pm 5%
R42	R2EDZJ152APA	Carbon 1.5k 1/4W \pm 5%
R43	R2EDZJ222APA	Carbon 2.2k 1/4W \pm 5%
R44	R2EDZJ182APA	Carbon 1.8k 1/4W \pm 5%
R45	R2EDZJ331APA	Carbon 330 1/4W \pm 5%
R46,47	R2EDZJ103APA	Carbon 10k 1/4W \pm 5%
R48	R2EDZJ470APA	Carbon 47 1/4W \pm 5%
R49	R2EDZJ102APA	Carbon 1k 1/4W \pm 5%
R50	R2EDZJ332APA	Carbon 3.3k 1/4W \pm 5%
R51	R2EDZJ184APA	Carbon 180k 1/4W \pm 5%
R52	R2EDZJ563APA	Carbon 56k 1/4W \pm 5%
R53	R2EDZJ332APA	Carbon 3.3k 1/4W \pm 5%
R54	R2EDZJ152APA	Carbon 1.5k 1/4W \pm 5%
R55	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R56	R2EDZJ102APA	Carbon 1k 1/4W \pm 5%
R57	R2EDZJ470APA	Carbon 47 1/4W \pm 5%
R58,59	R2EDZJ103APA	Carbon 10k 1/4W \pm 5%
R60,61	R2EDZJ562APA	Carbon 5.6k 1/4W \pm 5%
R62,63	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R64,65	R2EDZJ103APA	Carbon 10k 1/4W \pm 5%
R66,67	R2EDZJ152APA	Carbon 1.5k 1/4W \pm 5%
R68,69	R2EDZJ222APA	Carbon 2.2k 1/4W \pm 5%
CAPACITORS		
C01,02	C1HRY-475LPA	Electrolytic 4.7 μ F 50V
C03,04	C1HCYK101APA	Ceramic 100 pF 50V \pm 10%
C05,06	C1HCSK220SL	Ceramic 22 pF 50V \pm 10%
C07,08	C1HERE-476A	Electrolytic 47 μ F 25V
C09,10	C1HFAK183A	Mylar 0.018 μ F 50V \pm 10%
C11,12	C1HFYK472APA	Mylar 0.0047 μ F 50V \pm 10%
C13,14	C1HSEJ391A	Styrol 390 pF 50V \pm 5%
C15,16	C1HRY-475LPA	Electrolytic 4.7 μ F 50V
C17,18	C1ERE-107A	Electrolytic 100 μ F 25V
C19,20	C1HCYK470APA	Ceramic 47 pF 50V \pm 10%
SEMICONDUCTORS		
IC01,02	IKK-HA1457	IC, HA1457
RESESTORS		
R01,02	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R03,04	R2EDZJ102APA	Carbon 1k 1/4W \pm 5%
R05,06	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R07,08	R2EDZJ271APA	Carbon 270 1/4W \pm 5%
R09,10	R2EDZJ224APA	Carbon 220k 1/4W \pm 5%
R11,12	R2EDZJ153APA	Carbon 15k 1/4W \pm 5%
R13,14	R2EDZJ102APA	Carbon 1k 1/4W \pm 5%
R15,16	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R17,18	R2EDZJ271APA	Carbon 270 1/4W \pm 5%
CAPACITORS		
C01	C1HRE-475AL	Electrolytic 4.7 μ F 50V
C02,03	C1HRY-475LPA	Electrolytic 4.7 μ F 50V
04,05		
06		
C07,08	C1ERE-476A	Electrolytic 47 μ F 25V
C09,10	C1HRY-475LPA	Electrolytic 4.7 μ F 50V
C11,12	C1HFAK183A	Mylar 0.018 μ F 50V \pm 10%
C13,14	C1HFAK822A	Mylar 0.0082 μ F 50V \pm 10%
C15,16	C1HFYK332APA	Mylar 0.0033 μ F 50V \pm 10%
C17,18	C1HFYK102APA	Mylar 0.001 μ F 50V \pm 10%
C19,20	C1HYYK681RPA	Ceramic 680 pF 50V \pm 10%
C21,22	C1ETRK335A	Tantalum 3.3 μ F 25V \pm 10%
C23,24	C1VRTK334A	Tantalum 0.33 μ F 35V \pm 10%
C25,26	C1HFAK823A	Mylar 0.082 μ F 50V \pm 10%
C27,28	C1HFYK223APA	Mylar 0.022 μ F 50V \pm 10%
C29,30	C1HFYK472APA	Mylar 0.0047 μ F 50V \pm 10%
C31,32	C1VTRK474A	Tantalum 0.47 μ F 35V \pm 10%
33,34		
C35,37	C1HRE-475AL	Electrolytic 4.7 μ F 50V
C36,38	C1HRY-475LPA	Electrolytic 4.7 μ F 50V
C39,40	C1VRE-227A	Electrolytic 220 μ F 35V
C41,42	C1ERE-107A	Electrolytic 100 μ F 25V
43,44		
C45,46	C1HCDD100SL	Ceramic 10 pF 50V \pm 0.5%
SEMICONDUCTORS		
IC01	IJJ-NJM4558D-E	IC, NJM4558D-E
Q01,02	203 5 5151 57089	TR 2SC1570 LH, LG
03,04		
05,06		
07,08		
09,10		
11,12		
13,14		
RESISTORS		
R01,02	R2EDZJ332APA	Carbon 3.3k 1/4W \pm 5%
R03,04	R2EDZJ102APA	Carbon 1k 1/4W \pm 5%
R05,06	R2EDZJ274APA	Carbon 270k 1/4W \pm 5%
R07,08	R2EDZJ224APA	Carbon 220k 1/4W \pm 5%
R09,10	R2EDZJ562APA	Carbon 5.6k 1/4W \pm 5%
R11,12	R2EDZJ472APA	Carbon 4.7k 1/4W \pm 5%
R13,14	R2EDZJ182APA	Carbon 1.8k 1/4W \pm 5%
R15,16	R2EDZJ334APA	Carbon 330k 1/4W \pm 5%
R17,18	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R19,20	R2EDZJ472APA	Carbon 4.7k 1/4W \pm 5%
R21,22	R2EDZJ561APA	Carbon 560 1/4W \pm 5%
R23,24	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R25,26	R2EDZJ391APA	Carbon 390 1/4W \pm 5%
27,28		
29,30		
31,32		
33,34		
R35,36	R2EDZJ122APA	Carbon 1.2k 1/4W \pm 5%
R37,38	R2EDZJ152APA	Carbon 1.5k 1/4W \pm 5%
39,40		
41,42		
43,44		

EQ AMP P.C.B. Assy
1310 4001 00010

Ref. No. Parts Number Description

CAPACITORS

C01,02	C1HRY-475LPA	Electrolytic 4.7 μ F 50V
C03,04	C1HCYK101APA	Ceramic 100 pF 50V \pm 10%
C05,06	C1HCSK220SL	Ceramic 22 pF 50V \pm 10%
C07,08	C1HERE-476A	Electrolytic 47 μ F 25V
C09,10	C1HFAK183A	Mylar 0.018 μ F 50V \pm 10%
C11,12	C1HFYK472APA	Mylar 0.0047 μ F 50V \pm 10%
C13,14	C1HSEJ391A	Styrol 390 pF 50V \pm 5%
C15,16	C1HRY-475LPA	Electrolytic 4.7 μ F 50V
C17,18	C1ERE-107A	Electrolytic 100 μ F 25V
C19,20	C1HCYK470APA	Ceramic 47 pF 50V \pm 10%

SEMICONDUCTORS

IC01,02 IKK-HA1457 IC, HA1457

RESESTORS

R01,02	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R03,04	R2EDZJ102APA	Carbon 1k 1/4W \pm 5%
R05,06	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R07,08	R2EDZJ271APA	Carbon 270 1/4W \pm 5%
R09,10	R2EDZJ224APA	Carbon 220k 1/4W \pm 5%
R11,12	R2EDZJ153APA	Carbon 15k 1/4W \pm 5%
R13,14	R2EDZJ102APA	Carbon 1k 1/4W \pm 5%
R15,16	R2EDZJ104APA	Carbon 100k 1/4W \pm 5%
R17,18	R2EDZJ271APA	Carbon 270 1/4W \pm 5%

PARTS LIST

POWER AMP P.C.B. Assy 131 0 4001 00061

Ref. No.	Parts Number	Description
RESISTORS		
R45,46	R2EDZJ154APA	Carbon 150k 1/4W ±5%
R47,48	R2EDZJ823APA	Carbon 82k 1/4W ±5%
R49,50	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R51,52	R2EDZJ393APA	Carbon 39k 1/4W ±5%
R53,54	R2EDZJ273APA	Carbon 27k 1/4W ±5%
R55,56	R2EDZJ682APA	Carbon 6.8k 1/4W ±5%
57,58		
59,60		
61,62		
63,64		
R65,66	R2EDZJ824APA	Carbon 820k 1/4W ±5%
R67,68	R2EDZJ123APA	Carbon 12k 1/4W ±5%
R69,70	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R71,72	R2EDZJ562APA	Carbon 5.6k 1/4W ±5%
R73,74	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R75,76	R2EDZJ270APA	Carbon 27 1/4W ±5%
R77,78	R2EDZJ182APA	Carbon 1.8k 1/4W ±5%
R79,80	R2EDZJ680APA	Carbon 68 1/4W ±5%
R81,82	R2EDZJ101APA	Carbon 100 1/4W ±5%

SWITCH P.C.B. Assy (1) 131 0 4001 00031

Ref. No.	Parts Number	Description
C01	4 2312 00940	Switch Push 4Key
	C1HFKYK102APA	Mylar 0.001 μF 50V ±10%

SWITCH P.C.B. Assy (2) 131 0 4001 00040

Ref. No.	Parts Number	Description
	4 2319 00930	Switch Push 4Key
	4 2362 00040	Plug 3P
	4 2369 22760	Plug 8P

CAPACITORS

C01,02	C1HAEK224D	Electrolytic 0.22 μF 50V ±10%
C03,04	C1HYYK821RPA	Ceramic 820 pF 50V ±10%

RESISTORS

R01,02	R2EDZJ122APA	Carbon 1.2k 1/4W ±5%
--------	--------------	----------------------

VOLUME P.C.B. Assy 131 0 4001 00050

Ref. No.	Parts Number	Description
	4 2222 00140	VR 50kAx2, 100kW
	4 2372 00030	Ground Terminal (Volume)
	111 2 6220 11100	Wire Wrap Terminal

RESISTORS

R01,02	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
--------	--------------	----------------------

Ref. No.	Parts Number	Description
L01,02	HLL-PTH487A-BE 4 2532 00050	Posistor RF Coil 2.2 μH
CAPACITORS		
C01,02	C1HCYK331APA	Ceramic 330 pF 50V ±10%
C03,04	C1HRY-105LPA	Electrolytic 1 μF 50V
05,06		
C07,08	C1HCYK331APA	Ceramic 330 pF 50V ±10%
C09,10	C1JRB-107A	Electrolytic 100 μF 63V
11,12		
C13,14	C1ARB-107A	Electrolytic 100 μF 10V
C15,16	C1HCSK680SL	Ceramic 68 pF 50V ±10%
C17,18	C1ARB-107A	Electrolytic 100 μF 10V
C19,20	C1HFKYK223APA	Mylar 0.022 μF 50V ±10%
21,22		
C23,24	C1HFAK104A	Mylar 0.1 μF 50V ±10%
C25	C1ERB-476A	Electrolytic 47 μF 25V
C26,27	C1ERB-477A	Electrolytic 470 μF 25V
C28,29	C1HCDD080SL	Ceramic 8 pF 50V ±0.5%

SEMICONDUCTORS

D01,02	205 5 9040 44210	Diode, DS-442
03,04		
D05,06	DTT-05Z12U	Zener Diode 05Z12U
D07,08	205 5 9040 44210	Diode, DS-442
09,10,11,12,13,14		
D15,16	DNN-RD3.6E--B	Zener Diode RD3.6E
17,18		
IC01,02	206 5 7280 10510	Power Amp IC STK-0105
Q01,02	203 5 5151 57189	TR 2SC1571HL
Q03,04	203 5 4551 01661	TR 2SA1016K F, G
05,06,07,08		
Q09,10	203 5 4711 04750	TR 2SA1047 E, F
Q11,12	203 5 4722 44150	TR 2SC2441 E, F
Q13,14	203 5 6920 43840	TR 2SD438 D, E
Q15,16	203 5 6930 56040	TR 2SB560 D, E
Q17,18	203 5 4532 36261	TR 2SC2362K F, G
19,20		
Q21	203 5 6701 17550	TR 2SC1175 E, F

RESISTORS

R01,02	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R03,04	R2EDZJ564APA	Carbon 560k 1/4W ±5%
R05,06	R2EDZJ224APA	Carbon 220k 1/4W ±5%
R07,08	R2EDZJ822APA	Carbon 8.2k 1/4W ±5%
R09,10	R2EDZJ152APA	Carbon 1.5k 1/4W ±5%
R11,12	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R13,14	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R15,16	R2EDZJ561APA	Carbon 560 1/4W ±5%
R17,18	R2EDZJ470APA	Carbon 47 1/4W ±5%
19,20		
R21,22	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R23,24	R3AXB183A	Oxide Metal Film 18k 1W ±5%
R25,26	R2EDZJ102APA	Carbon 1k 1/4W ±5%
27,28		
R29,30	R2EDZJ121APA	Carbon 120 1/4W ±5%
R31,32	R2EDZJ470APA	Carbon 47 1/4W ±5%

PARTS LIST

Ref. No.	Parts Number	Description
RESISTORS		
R33,34	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R35,36	R2EDZJ101APA	Carbon 100 1/4W ±5%
R37,38	R2EDZJ333APA	Carbon 33k 1/4W ±5%
R39,40	R2EDZJ221APA	Carbon 220 1/4W ±5%
R41,42	R2EDZJ333APA	Carbon 33k 1/4W ±5%
R43,44	R2EDZJ221APA	Carbon 220 1/4W ±5%
R45,46	R2EDZJ561APA	Carbon 560 1/4W ±5%
47,48		
R49,50	R2HXB392A	Oxide Metal Film 3.9k 1/2W ±5%
R51,52	4 2219 20420	Metal Plate 0.47 7W ±10%
53,54		
R55,56	R3DXBJ100A	Oxide Metal Film 10 2W ±5%
R57,58	R3DXBJ4R7A	Oxide Metal Film 2.7 2W ±5%
R59,60	R2EDZJ101APA	Carbon 100 1/4W ±5%
R61	R2EDZJ152APA	Carbon 1.5k 1/4W ±5%
R62,63	R2EDZJ102APA	Carbon 1k 1/4W ±5%

POWER SUPPLY P.C.B. Assy 131 0 4001 00071

Ref. No.	Parts Number	Description
	4 2322 00030	Relay DC24V
	4 2379 21410	Fuse Hold Clip
F01	4 2349 20731	Fuse 4A Slow Blow
F02,03	4 2349 21340	Fuse 10A Slow Blow
F04,05	4 2349 20191	Fuse 2A Slow Blow
	131 2 6201 21500	Plate Heat Sink

CAPACITORS

C01,02	C2HYSP103A	Ceramic 0.01 μF 500V +100,-0%
03,04,05,06,07		
C08,09	C1VRB-108A	Electrolytic 1000 μF 35V
C10,11	C1VRB-107A	Electrolytic 100 μF 35V
12,13		
C14	C1VRB-108A	Electrolytic 1000 μF 35V
C15	C1VRB-107A	Electrolytic 100 μF 35V
C16	C1HRY105APA	Electrolytic 1 μF 50V
C17	C1VRE-336A	Electrolytic 33 μF 35V
C18	C1ERY-336APA	Electrolytic 33 μF 25V
C19,20	C1EAEN107A	Electrolytic 100 μF 25V ±30%
C21,22	C1HRE-105A	Electrolytic 1 μF 50V
C23	C1VRE-476A	Electrolytic 47 μF 35V
C24	C2HYSP103A	Ceramic 0.01 μF 500V +100,-0%

SEMICONDUCTORS

D01	DDD-S1VB20	Diode, S1VB20
D02,03	DCC-10D1----NA	Diode, 10D1
D04,05	DTT-05Z24U	Zener Diode 05Z24U
D06	DCC-10D1----NA	Diode, 10D1
D07	DNN-RD12E	Diode, RD12E
D08	DCC-10D1----NA	Diode, 10D1
D09,10	205 5 9040 44210	Diode, DS-442
11,12		
D13,14	DNN-RD5.6E	Zener Diode RD5.6E
D15,16	202 5 9110 18824	Diode, 1S188FM1-AT
D17,18	DCC-10D----NA	Diode, 10D1
19,20		
21		

Ref. No.	Parts Number	Description
SEMICONDUCTORS		
IC01	IAA-FS-7815M	IC, FS-7815M Voltage Regulator
Q01	203 5 8220 33050	TR 2SD330 E, F
Q02	203 5 6460 51450	TR 2SB514E, F
Q03	203 5 6701 17550	TR 2SC1175 E, F
Q04	203 5 6920 43850	TR 2SD438 E, F
Q05,06	203 5 5100 53640	TR 2SC536 D, E

RESISTORS

R01,02	R3AXB330A	Oxide Metal Film 33 1W ±5%
R03,04	R2EDZJ561APA	Carbon 560 1/4W ±5%
R05,06	R2EDZJ101APA	Carbon 100 1/4W ±5%
R07	R3DXBJ560A	Oxide Metal Film 56 2W ±5%
R08	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R09	R2EDZJ681APA	Carbon 680 1/4W ±5%
R10	R2EDZJ152APA	Carbon 1.5k 1/4W ±5%
R11	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R12	R3AXB3820A	Oxide Metal Film 82 1W ±5%
R13	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R14,15	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R16	R2EDPJ332A	Carbon 3.3k 1/4W ±5%
R17	R2HXB3332APA	Carbon 3.3k 1/4W ±5%
R18,19	R2EDZJ820APA	Carbon 82 1/4W ±5%
R20,21	R2EDZJ182APA	Carbon 1.8k 1/4W ±5%
R22,23	R3WEPK681A	Cemen 680 3W ±10%
R24,25	R3DXBJ151A	Oxide Metal Film 150 2W ±5%
R26	R3AXB181A	Oxide Metal Film 180 1W ±5%

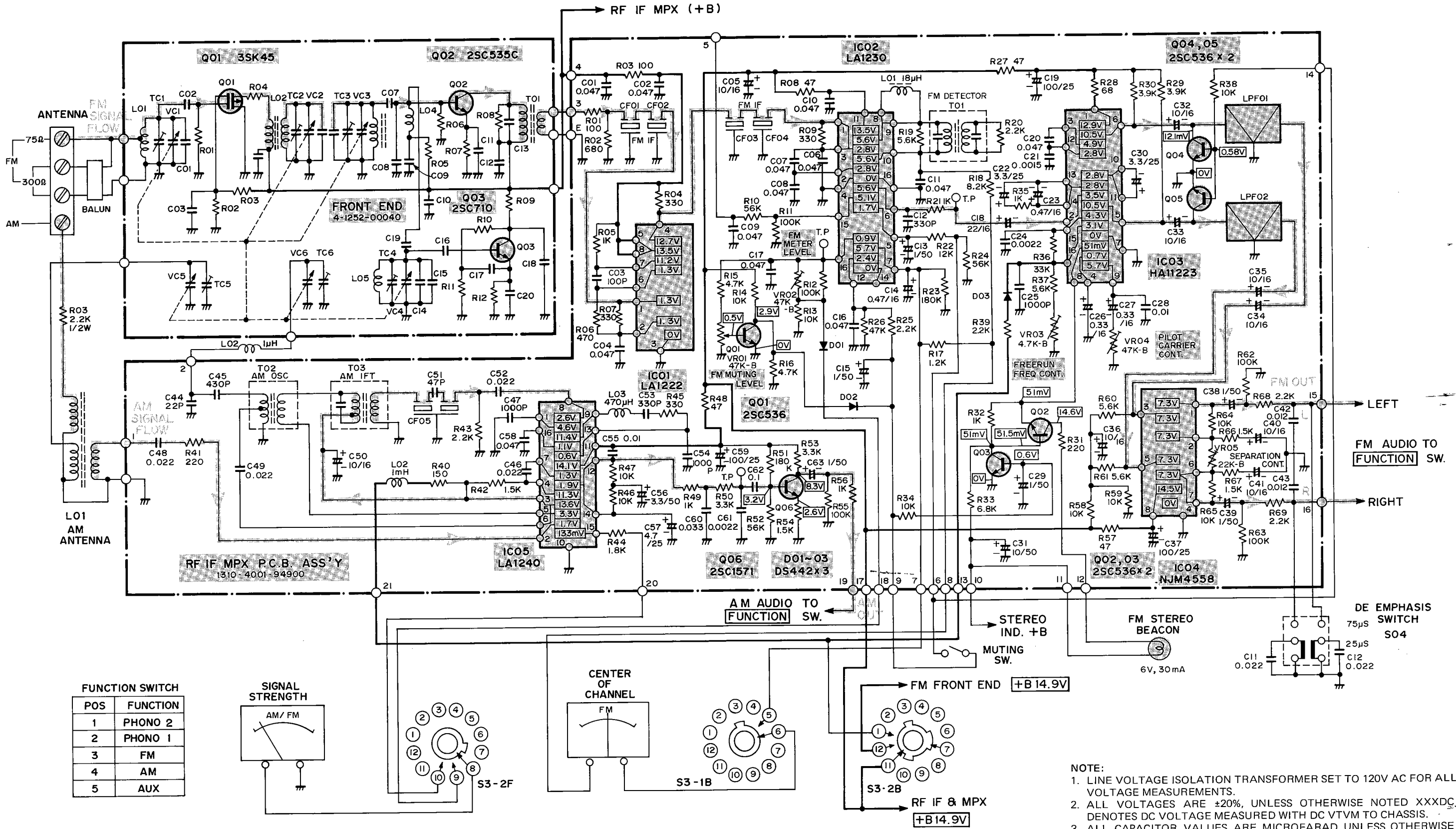
PILOT LAMP P.C.B. Assy 131 0 4001 00081

Ref. No.	Parts Number	Description
	111 2 6220 11100	Wire Wrap Terminal

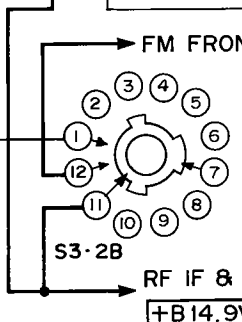
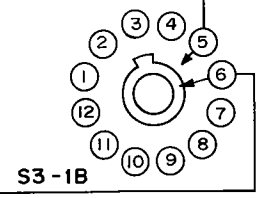
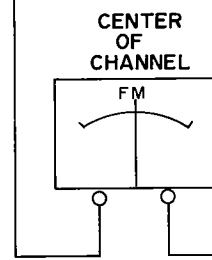
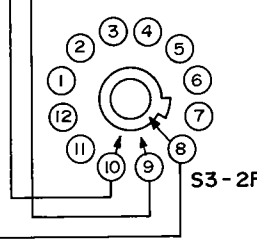
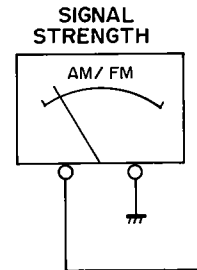
STONE VOLUME P.C.B. Assy 131 0 4001 00090

Ref. No.	Parts Number	Description
	4 2222 00130	VR Slide 250kWx2
	131 0 4006 15100	Cord Assy
	131 0 4006 15200	Cord Assy

SCHEMATIC DIAGRAM

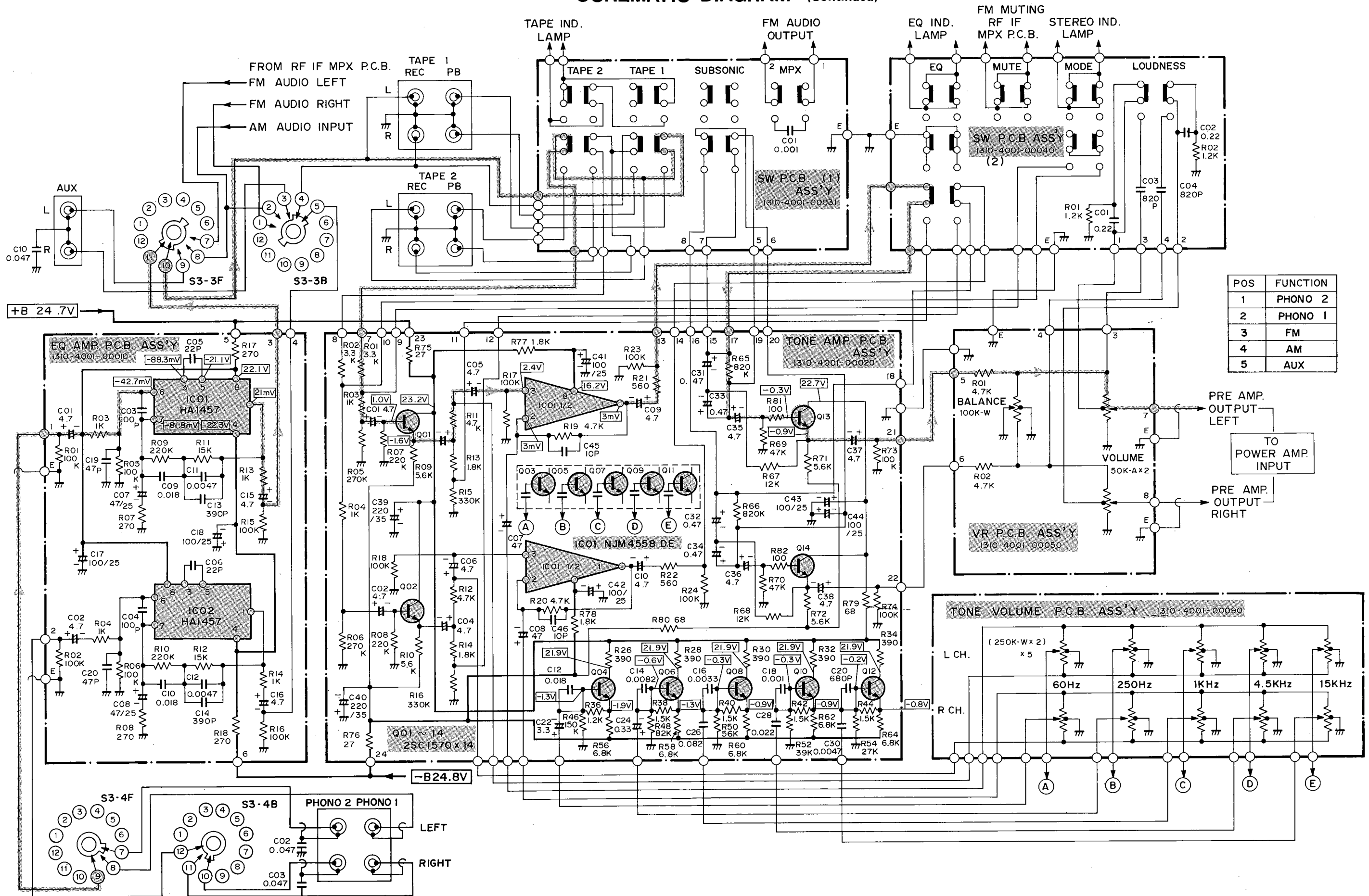


POS	FUNCTION
1	PHONO 2
2	PHONO 1
3	FM
4	AM
5	AUX



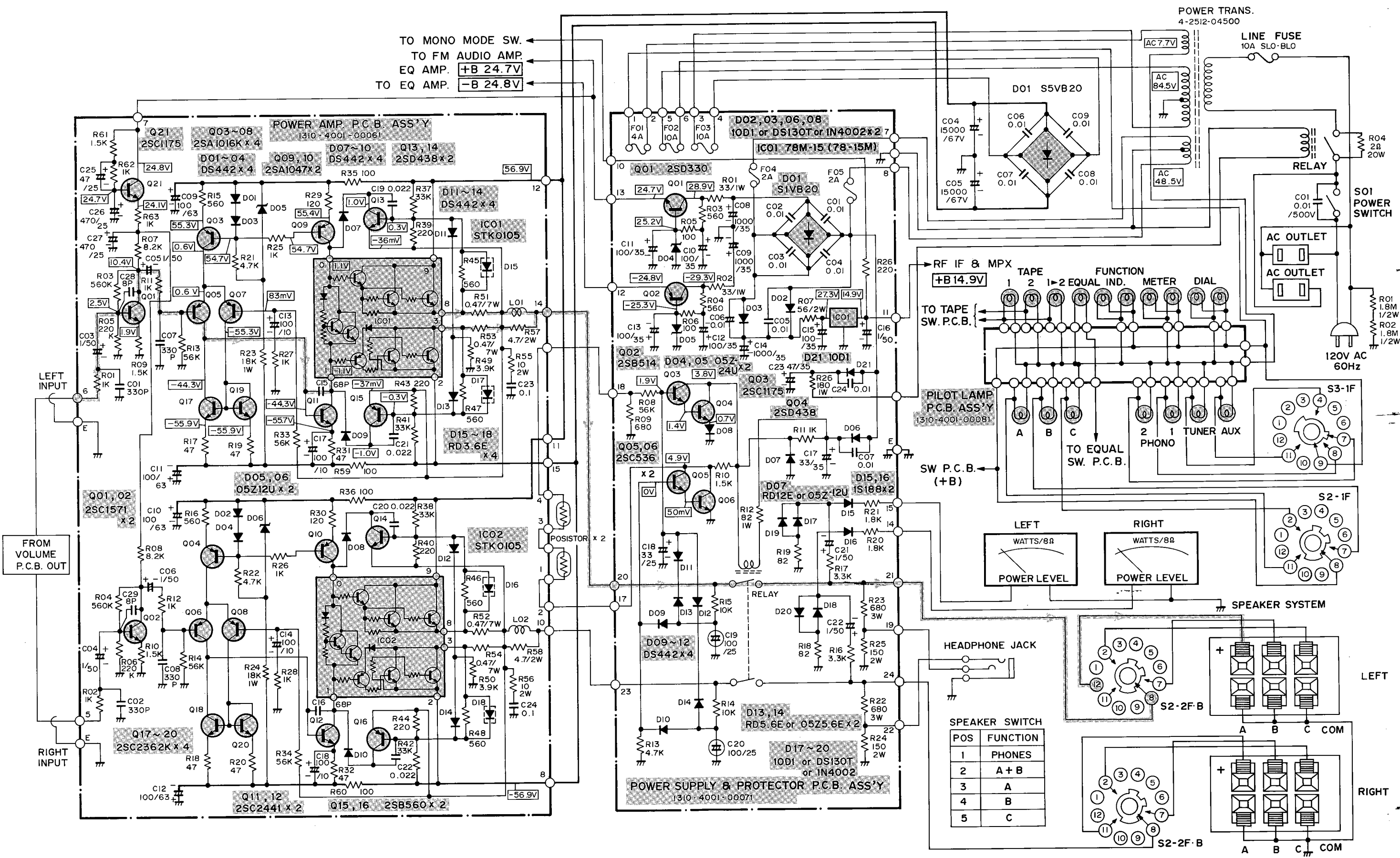
- NOTE:**
1. LINE VOLTAGE ISOLATION TRANSFORMER SET TO 120V AC FOR ALL VOLTAGE MEASUREMENTS.
 2. ALL VOLTAGES ARE ±20%, UNLESS OTHERWISE NOTED XXXDC. DENOTES DC VOLTAGE MEASURED WITH DC VTVM TO CHASSIS.
 3. ALL CAPACITOR VALUES ARE MICROFARAD UNLESS OTHERWISE NOTED.
 4. ALL RESISTOR VALUES ARE OHMS, ±5%, 1/4 WATT UNLESS OTHERWISE NOTED.

SCHEMATIC DIAGRAM (Continued)

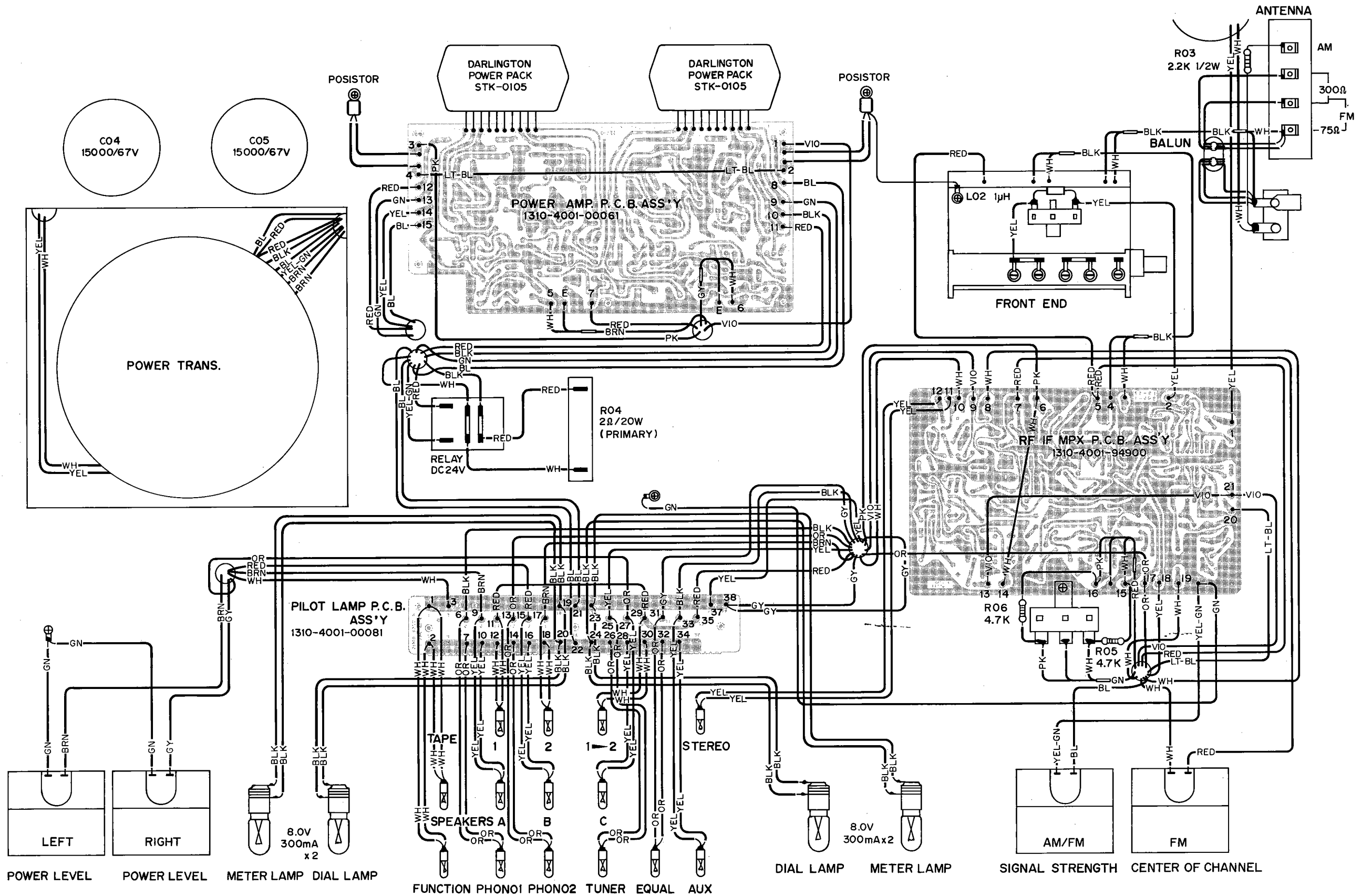


POS	FUNCTION
1	PHONO 2
2	PHONO 1
3	FM
4	AM
5	AUX

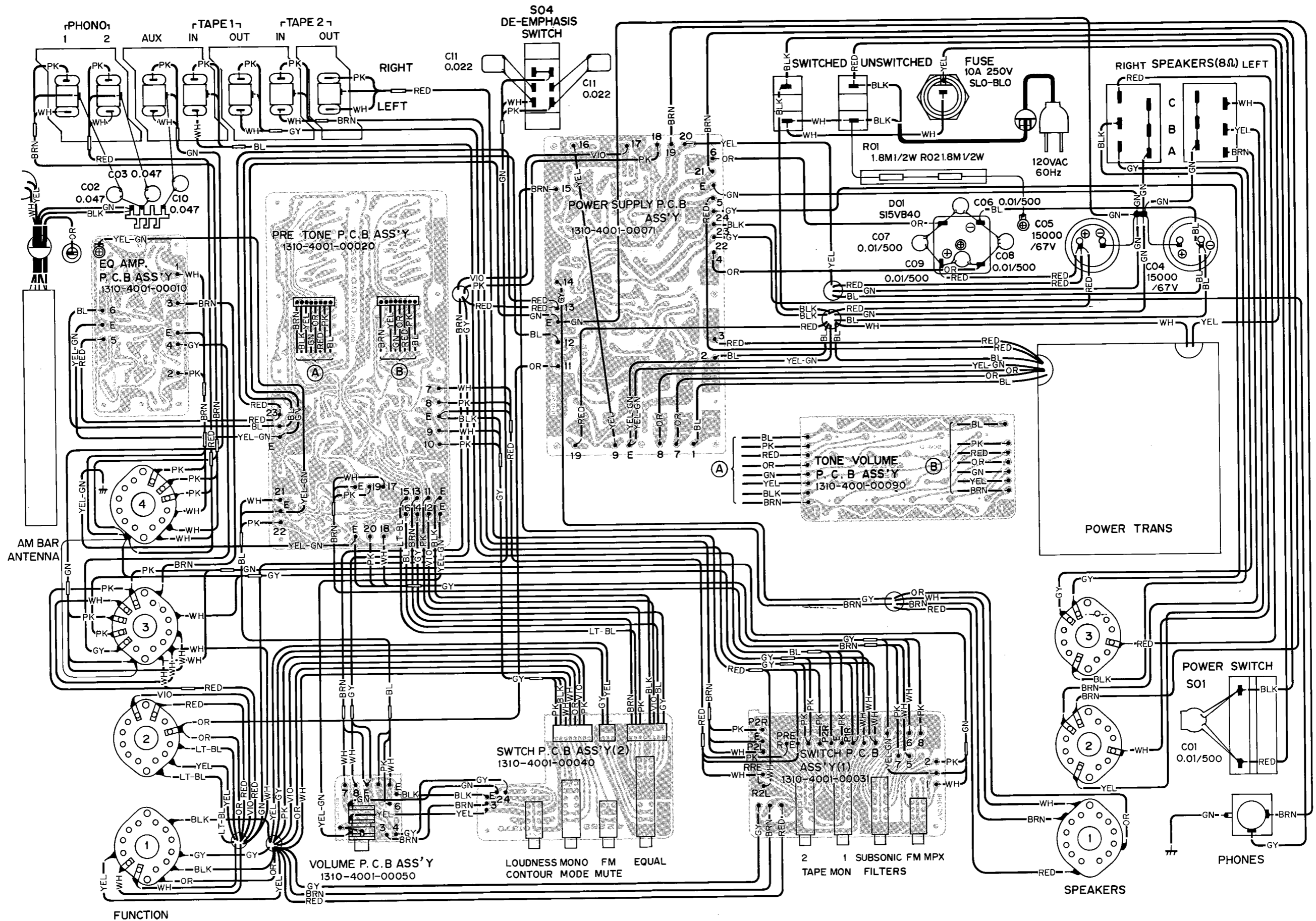
SCHEMATIC DIAGRAM (Continued)



POINT TO POINT WIRING DIAGRAM (TOP VIEW)



POINT TO POINT WIRING DIAGRAM (BOTTOM VIEW)



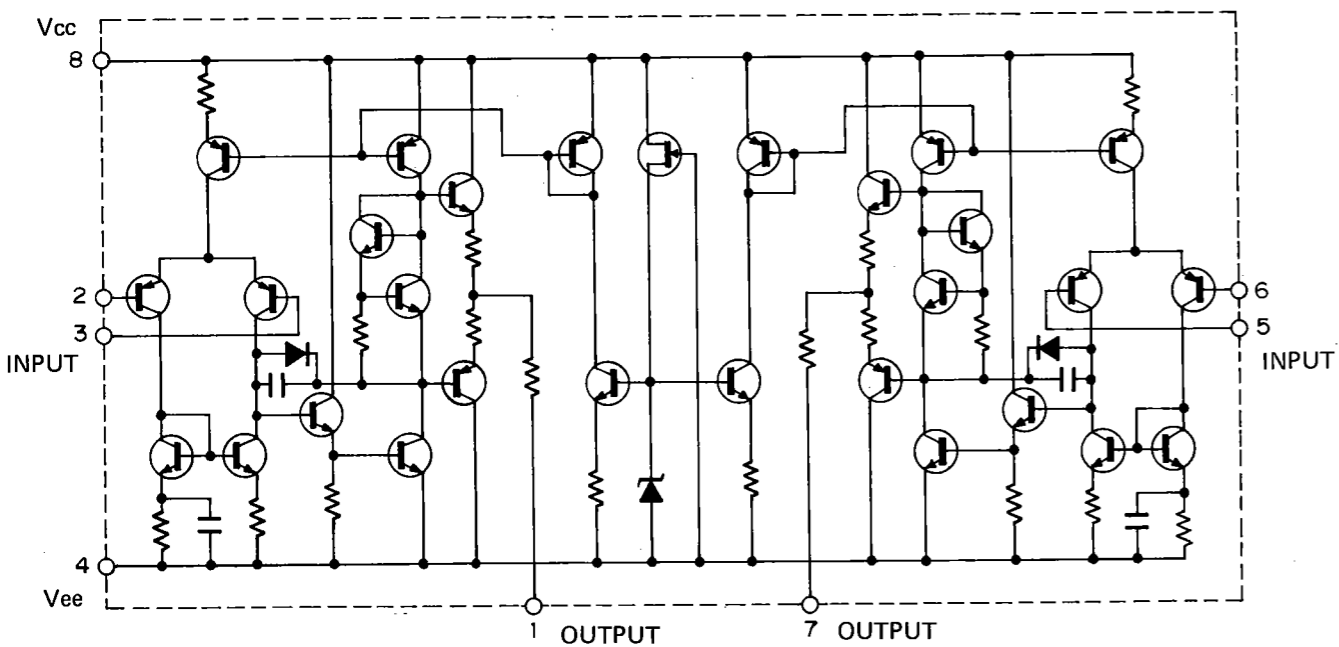
TRANSISTOR LEAD IDENTIFICATION

FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR
		<ul style="list-style-type: none"> • 2SC536 • 2SC1175 • 2SC1570 • 2SC1571 • 2SC2362 • 2SA1016 • 2SB560 • 2SD438 			<ul style="list-style-type: none"> • 2SD330 • 2SD438 • 2SB514
		<ul style="list-style-type: none"> • 2SA1047 • 2SC2441 			<ul style="list-style-type: none"> • FS-7815M
DIODE FRONT VIEW					
	• S15VB40		• S1VB20		<ul style="list-style-type: none"> • DS442 • 1S188 • 10D1 • 05Z12V • 05Z24U • RD3.6E • RD5.6E • RD12E



IC EQUIVALENT CIRCUIT

FM AUDIO AMP AND TONE AMP IC NJM4558D EQUIVALENT CIRCUIT



FISHER
The first name in high fidelity.

FISHER CORPORATION
21314 LASSEN STREET · CHATSWORTH · CALIFORNIA 91311

PRINTED IN JAPAN
78/Jun. WM-3141