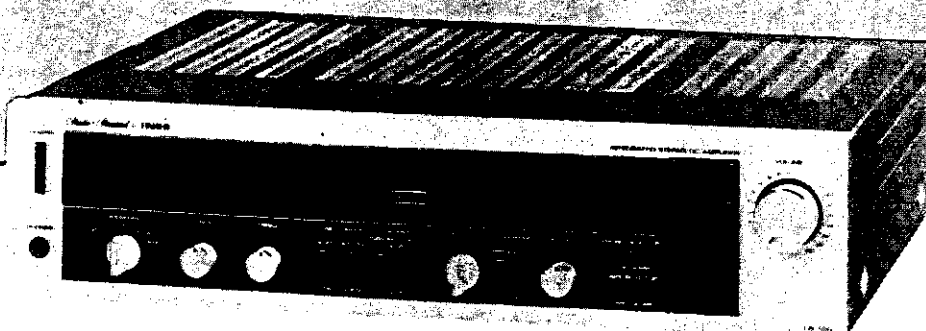


SERVICE MANUAL

FISHER

CA-550

Integrated Stereo
DC Amplifier
(EUROPE)

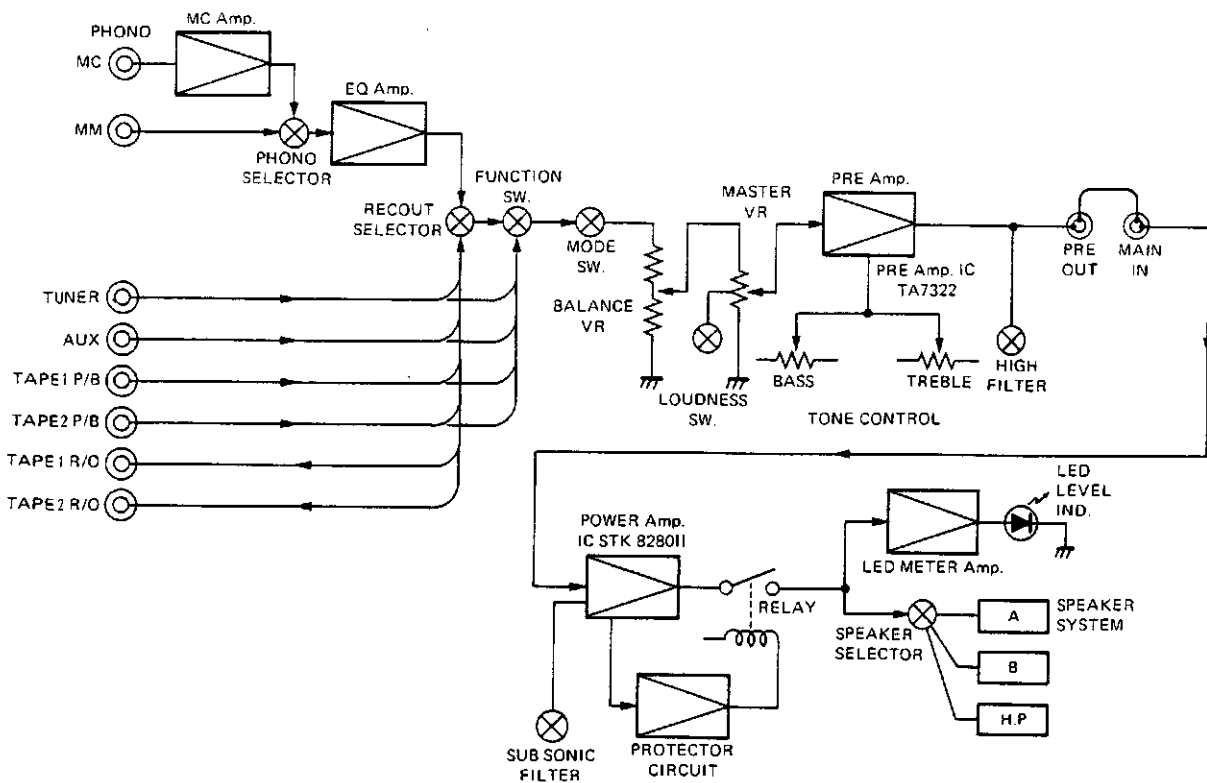


The first name in high fidelity

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FUNCTIONAL BLOCK DIAGRAM

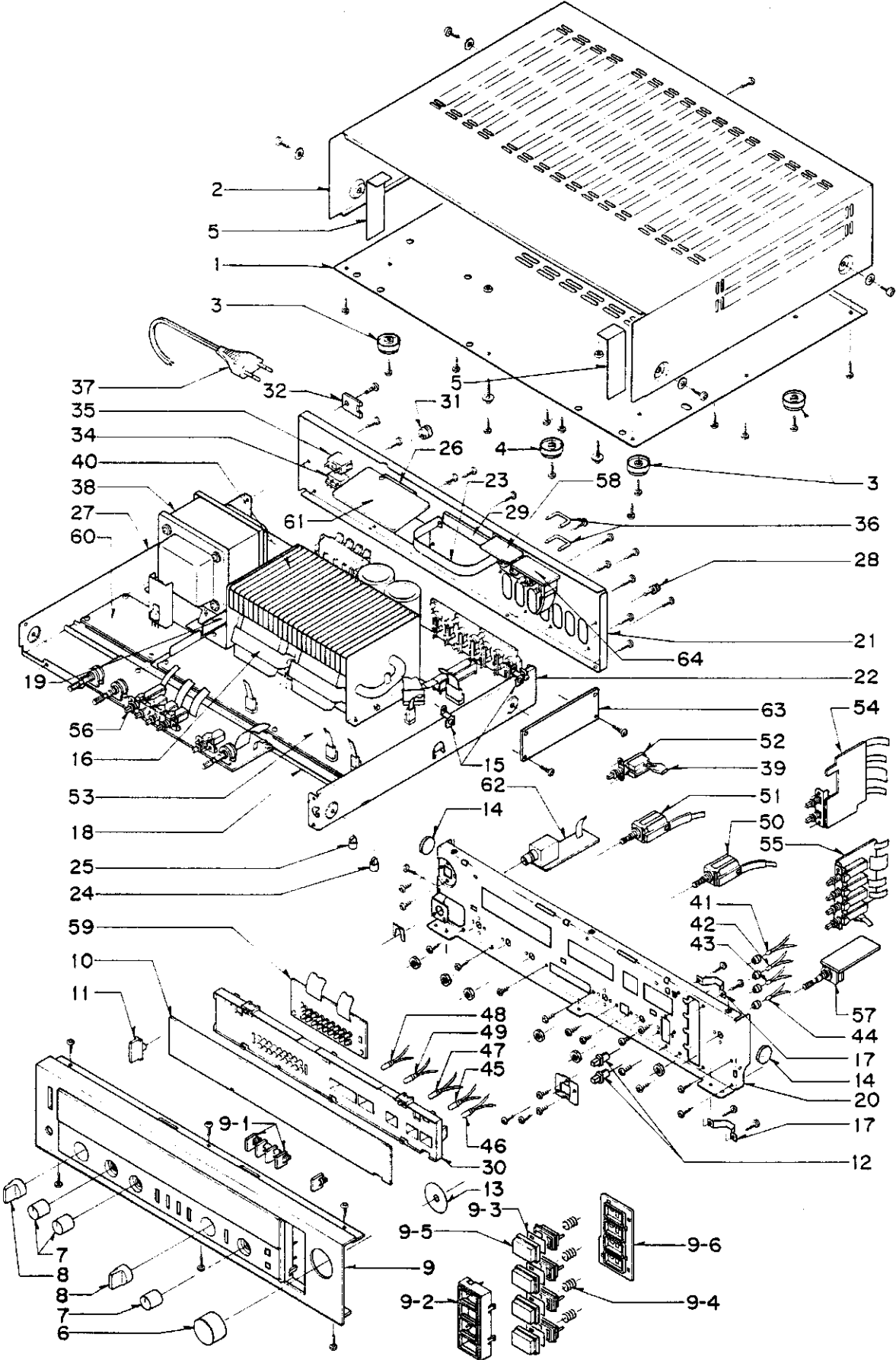


SPECIFICATIONS

| AMPLIFIER | CA-550 |
|-------------------------------------|-----------------------------------|
| Sine Wave Power | at 1000 Hz (8 ohms) 2 x 80 W |
| | 20 to 20,000 Hz (8 ohms) 2 x 70 W |
| Music Power (8 ohms) | 2 x 90 W |
| THD (rated output) | 0.009 % |
| IM (rated output) | 0.009 % |
| Power Bandwidth | 20 Hz – 20 kHz |
| Frequency Response (20 Hz – 20 kHz) | ±0.5 dB |
| Damping Factor (8 ohms) | > 50 |
| Input Sensitivity and Impedance | |
| Phono (MM) | 2.5 mV/50 kohms |
| Phono (MC) | 250 μ V/22 ohms |
| Tape | 150 mV/50 kohms |
| Tuner | 150 mV/50 kohms |
| Auxiliary | 150 mV/50 kohms |
| Main Amp. | 1000 mV/100 kohms |
| S/N Ratio (DIN) | |
| Phono (MM) | 75 dB |
| Phono (MC) | 65 dB |
| Tape/Tuner/Aux | 95 dB |
| Main Amp. | 100 dB |
| Treble Control (10 kHz) | ±10 dB |
| Bass Control (100 Hz) | ±10 dB |
| Loudness Control (100 Hz/10 kHz) | +8 dB/+4 dB |
| Subsonic Filter (below 10 Hz) | 12 dB/Oct. |
| High Filter (above 6 kHz) | 6 dB/Oct. |
| Voltage and Impedance Pre Amp. Out | 1000 mV/2.2 kohms |
| Power Requirements | AC: 110/220 V, 50/60 Hz |
| Power Consumption | 320 W |
| Dimensions (W x D x H) | 440 x 370 x 110 mm |
| Weight (approx.) | 8.1 kg |

* Specifications are subject to change without notice.

CABINET & CHASSIS EXPLODED VIEW



PARTS LIST

PACKING PARTS LIST

| Ref. No. | Parts Number | Description |
|----------|------------------|----------------------|
| | 131 6 1139 89703 | Box Corrugate-EXP |
| | 131 6 2119 01362 | Bag Polyethylene-EXP |
| | 131 6 3009 32190 | Pad (Right) |
| | 131 6 3009 32200 | Pad (Left) |
| | 131 6 3009 32440 | Pad (Bottom) |

ACCESSORIES PARTS LIST

| Ref. No. | Parts Number | Description |
|----------|------------------|-----------------------|
| | 131 6 2719 10801 | Bag Fan |
| | 131 6 4119 87402 | Explanatory Booklet |
| | 131 6 4519 15700 | Guarantee Certificate |

CABINET PARTS LIST

| Ref. No. | Parts Number | Description |
|----------|------------------|-------------------------|
| 1 | 131 2 1105 27600 | Plate Bottom |
| 2 | 131 2 1410 26200 | Cover |
| 3 | 131 2 1801 12900 | Leg |
| 4 | 131 2 1801 13300 | Leg |
| 5 | 131 2 3202 13400 | Metal Reinforce (Cover) |

APPEARANCE PARTS LIST

| Ref. No. | Parts Number | Description |
|----------|------------------|------------------------------|
| 6 | 131 0 1001 59100 | Knob (Volume) |
| 7 | 131 0 1001 59200 | Knob (Balance, Bass, Treble) |
| 8 | 131 0 1001 59300 | Knob, Select (SP, Rec Out) |
| 9 | 131 0 1016 38605 | Panel Decorative Assy |
| 9-1 | 131 0 1001 60000 | Knob |
| | 131 2 6113 42000 | Shelter |
| | 131 2 1205 25400 | Decorative Plate Dial |
| 9-2 | 131 2 1116 20200 | Frame |
| | 131 2 1601 69900 | Knob |
| 9-3 | 131 2 1310 37810 | Name Plate (Tuner) |
| | 131 2 1310 37811 | Name Plate (Aux) |
| | 131 2 1310 37812 | Name Plate (Phono) |
| | 131 2 1310 37813 | Name Plate (Tape) |
| 9-4 | 131 2 5101 19500 | Spring |
| 9-5 | 131 2 1601 70000 | Knob (Base) |
| 9-6 | 131 2 6110 30000 | Shelter Light |
| 10 | 131 2 1201 36302 | Plate Dial |
| 11 | 131 2 1601 69500 | Knob (Power SW) |
| 12 | 131 2 1601 69600 | Knob (Tape, MC) |
| 13 | 131 2 6113 31800 | Shelter (Volume) |

CHASSIS PARTS LIST

| Ref. No. | Parts Number | Description |
|----------|--------------------|---------------------------|
| 14 | 131 2 1801 13900 | Leg |
| 15 | * 131 2 3101 54600 | Metal Mount (P.C.B.) |
| 16 | * 131 2 3101 78000 | Metal Mount (IC) |
| 17 | * 131 2 3101 78100 | Metal Mount (Panel Front) |

CHASSIS PARTS LIST

| Ref. No. | Parts Number | Description |
|----------|--------------------|-------------------------|
| 18 | * 131 2 3202 13700 | Metal Reinforce |
| 19 | * 131 2 3202 13900 | Metal Reinforce |
| 20 | * 131 2 3305 31200 | Panel Front |
| 21 | * 131 2 3306 34600 | Panel Rear |
| 22 | * 131 2 3315 10300 | Panel Side |
| 23 | * 131 2 3605 10600 | Metal Mount |
| 24 | * 131 2 3614 20300 | Mount P.C.B. |
| 25 | * 131 2 3614 22900 | Mount P.C.B. |
| 26 | * 131 2 3614 24400 | Mount P.C.B. |
| 27 | * 131 2 3617 18400 | Metal Mount Transformer |
| 28 | 131 2 4201 17800 | Screw (GND) |
| 29 | 131 2 5205 26000 | Cushion |
| 30 | 131 2 6110 30100 | Shelter Light |
| 31 | 131 2 6111 14200 | Bushing |
| 32 | 131 2 7104 00500 | Plate Pad Switch |

ELECTRICAL PARTS LIST

| Ref. No. | Parts Number | Description |
|----------|--------------------|-------------------------------|
| 34 | △ 4 2312 01020 | Switch Slide |
| 35 | △ 4 2352 00450 | AC Outlet |
| 36 | 4 2369 21220 | Short Plug |
| 37 | △ 4 2432 00070 | Power Cord |
| 38 | △ 4 2512 14320 | Power Transformer |
| 39 | 131 2 6114 00200 | Cover Safety |
| 40 | 131 2 6203 00100 | Heat Pipe |
| 41 | 4 6122 02500 | Pilot Lamp (8 V, 40 mA) |
| 42 | 4 6122 02600 | Pilot Lamp (8 V, 40 mA) |
| 43 | 4 6122 02500 | Pilot Lamp (8 V, 40 mA) |
| 44 | 4 6122 02600 | Pilot Lamp (8 V, 40 mA) |
| 45 | 4 6122 00100 | Pilot Lamp (8 V, 60 mA) |
| 46 | 4 6122 00200 | Pilot Lamp (8 V, 60 mA) |
| 47 | 4 6122 00300 | Pilot Lamp (8 V, 60 mA) |
| 48 | 4 6122 00130 | Pilot Lamp (8 V, 60 mA) |
| 49 | 4 6122 01310 | Pilot Lamp (8 V, 60 mA) |
| 50 | 4 2312 02570 | Switch Rotary/Joint |
| 51 | 4 2312 02590 | Switch Rotary/Joint |
| 52 | △ 4 2312 02520 | Switch Push Power |
| 53 | * 131 0 4001 07055 | Main, EQ, Power P.C.B. Assy |
| 54 | * 131 0 4001 07110 | Tape Select P.C.B. Assy |
| 55 | * 131 0 4001 07100 | Function P.C.B. Assy |
| 56 | * 131 0 4001 07090 | Pre Amp P.C.B. Assy |
| 57 | * 131 0 4001 07161 | Volume P.C.B. Assy |
| 58 | * 131 0 4001 07063 | RCA Pin P.C.B. Assy |
| 59 | * 131 0 4001 07130 | L.E.D. P.C.B. Assy |
| 60 | * 131 0 4001 07124 | Level Ind. P.C.B. Assy |
| 61 | * 131 0 4001 07140 | Fuse P.C.B. Assy |
| 62 | * 131 0 4001 07081 | Headphone Jack P.C.B. Assy |
| 63 | * 131 0 4001 07500 | MM/MC Select P.C.B. Assy |
| 64 | * 131 0 4001 07150 | DIN P.C.B. Assy |
| C01 | △ C2GYDP103A-S | Ceramic 0.01 μF 400V +100,-0% |

*--Not a service part.

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF AN UNIT. COMPONENTS INDICATED BY A MARK △ IN THIS PARTS LIST AND THE SCHEMATIC DIAGRAM SHOW COMPONENTS WHOSE VALUE HAS SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE FOLLOWING PARTS LIST BE USED FOR COMPONENT REPLACEMENT POINTED OUT BY THE MARK.

RECOMMENDED TEST EQUIPMENTS

The following test equipments are recommended to completely test and align the Amplifier:

- 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)

HARMONIC DISTORTION TEST

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 terminal.

CONTROL SETTINGS:

Unplug the AC power cord and set the front panel controls as follows:

- BALANCE controls to center positions
- POWER switch to OFF
- SPEAKERS switch to OFF
- FUNCTION switch to AUX
- MODE switch to STEREO
- TAPE MONITOR switch to SOURCE
- TONE CONTROLS switch to OFF
- FILTERS switch to OFF
- LOUDNESS switch to OFF
- VOLUME control to MINIMUM position
- 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 70 Watts RMS (23.6 V across the 8-ohm load). Harmonic Distortion Analyzer should measure 0.009% 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. Set MODE switch to "MONO". Adjust generator output and "BALANCE" control for 70 Watts at Left and Right Channels (23.6 volts across the 8-ohm loads). Harmonic Distortion Analyzer should measure 0.009% distortion or less at each channel.

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

ADJUSTMENT OF POWER AMPLIFIER P.C.BOARD

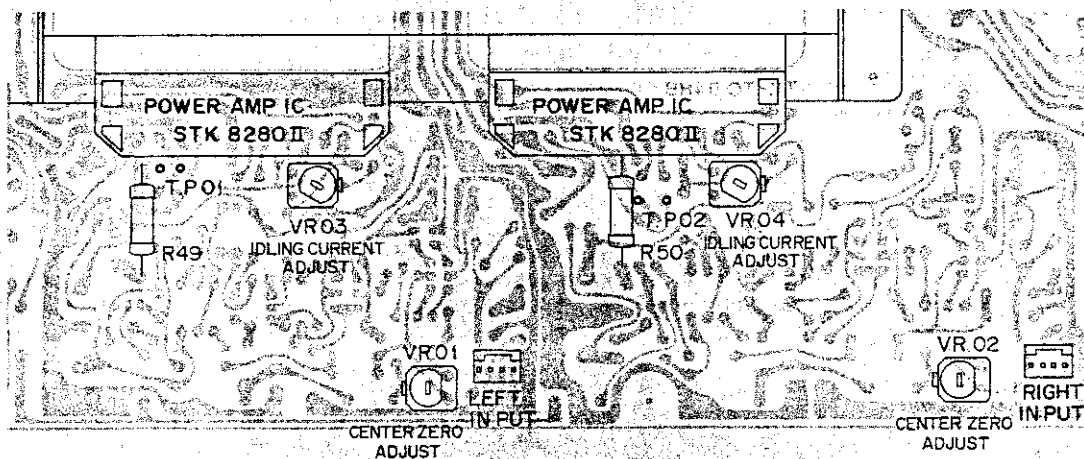
BEFORE ADJUSTMENT

- 1) After the power switch is turned ON, allow a few minutes before making adjustment, to be sure of the most stable operation.
- 2) Connect dummy load resistors (8 ohms) to the SPEAKERS terminals.
- 3) Use a DC V.T.V.M. (input impedance: More than 50k ohms/V).
- 4) Keep VR01 and VR02 in the mechanical center position.
- 5) Set the unit under no-signal condition by turning down the volume control of the unit.

ZERO BALANCE ADJUSTMENT

- Connect DC V.T.V.M. to the Speaker output terminal and turn the volume control fully to the minimum position. Turn VR01 (left), VR02 (right) in P.C.B. under the above condition until the output voltage becomes 0 V.

POWER AMP BOARD LAYOUT (TOP VIEW)



IDLING CURRENT ADJUSTMENT

- 1) Connect the DC Voltmeter to TP01 (left) and TP02 (right) in the Power Amplifier P.C.Board. Then, adjust VR03 (left) and VR04 (right) until the DC Voltmeter indicates 7 mV, so that the idling current is set to 35 mA.
 - 2) Repeat steps (1) for optimum results.
- Note: a. Turn the semi-fixed variable resistor slowly during adjustment.
b. Be careful of the polarity of each measurement point.

EXPLANATION OF PROTECTIVE CIRCUITS

*For about 5 seconds after the power switch is turned on, the speakers remain silent because the power muting circuit operates during this time.

*If the speaker terminals are short-circuited or the ventilation holes at the cabinet top are blocked during long periods of operation, the internal temperature may rise abnormally. At about 90°C, the thermal sensor (temperature detection) circuit becomes activated and will interrupt the signal. If the cause is removed and the internal temperature is back to normal, the unit automatically resets itself to restore normal operation.

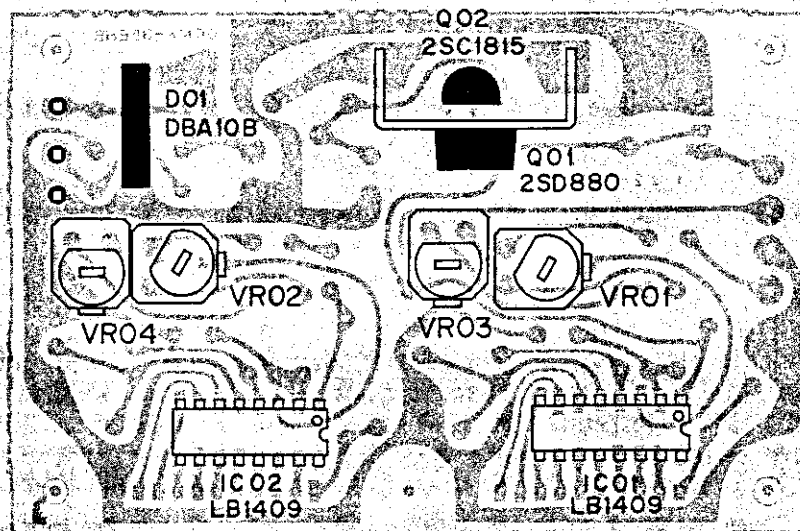
ADJUSTMENT OF POWER LEVEL IND. P.C.BOARD

POWER LEVEL INDICATOR ADJUSTMENT

When IC01 (LB1409) and IC02 (LB1409) in the P.C.Board and a component in the Power Amplifier P.C.Board are replaced, perform the readjustment by the following steps.

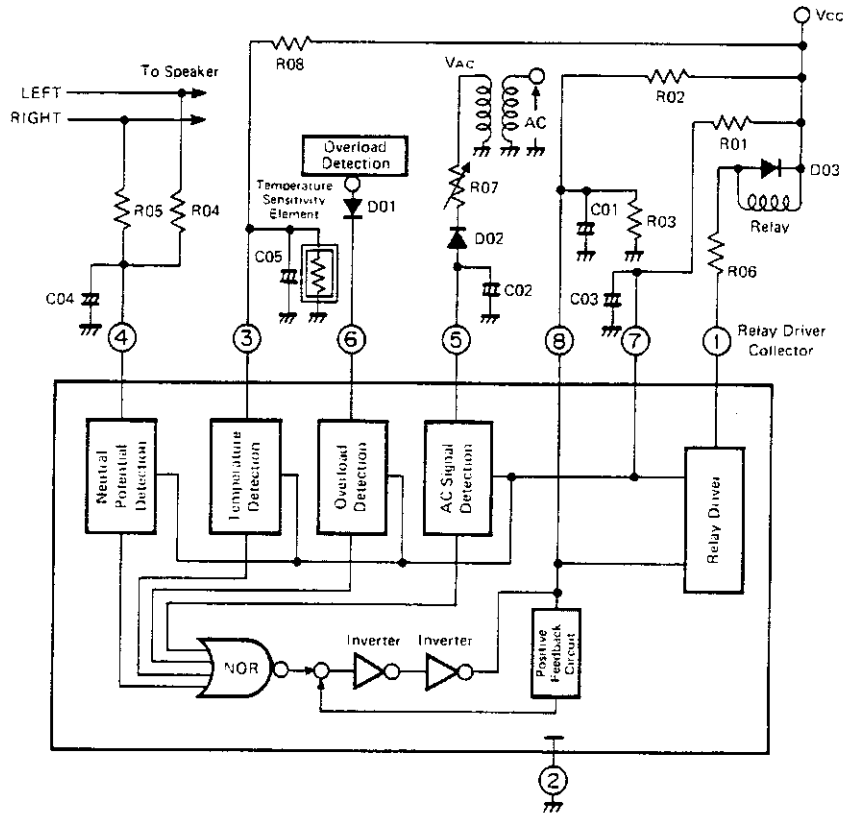
- 1) Set VR01 and VR02 to the maximum position (fully turned counter-clockwise).
- 2) Connect the low frequency oscillator to "AUX", and the oscilloscope, V.T.V.M., and 8-ohm load resistance to the speaker terminals.
- 3) Feed the 1 kHz input signal into "AUX" and adjust the master volume until the output voltage becomes 0.28 V.
- 4) Adjust VR03 and VR04, so that the first L.E.D. lights up in the L.E.D. P.C.Board.
- 5) Change the input level and adjust the master volume for 23.6 V.
- 6) Adjust VR01 and VR02, so that the ninth L.E.D. lights up in the L.E.D. P.C.Board.

LEVEL IND. P.C.BOARD LAYOUT (TOP VIEW)

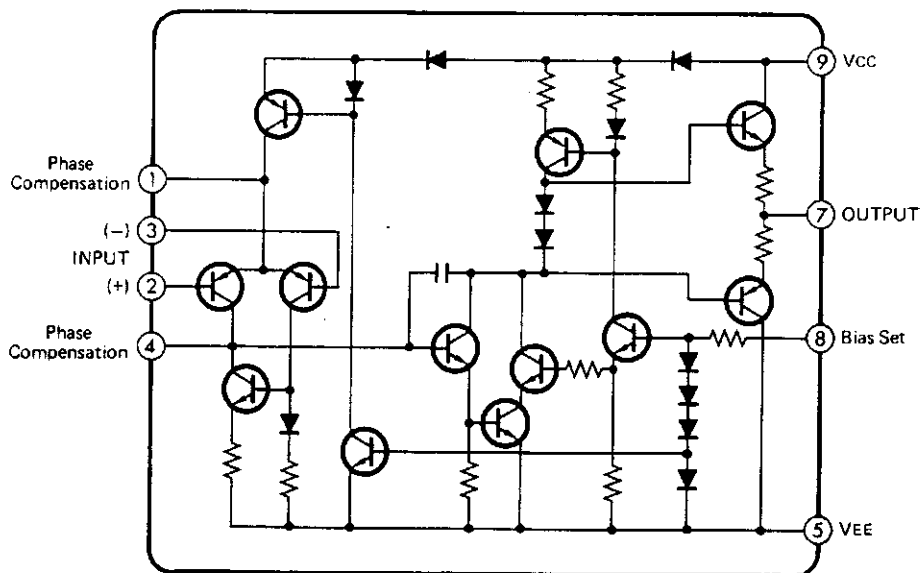


IC EQUIVALENT CIRCUIT & BLOCK DIAGRAM (Continued)

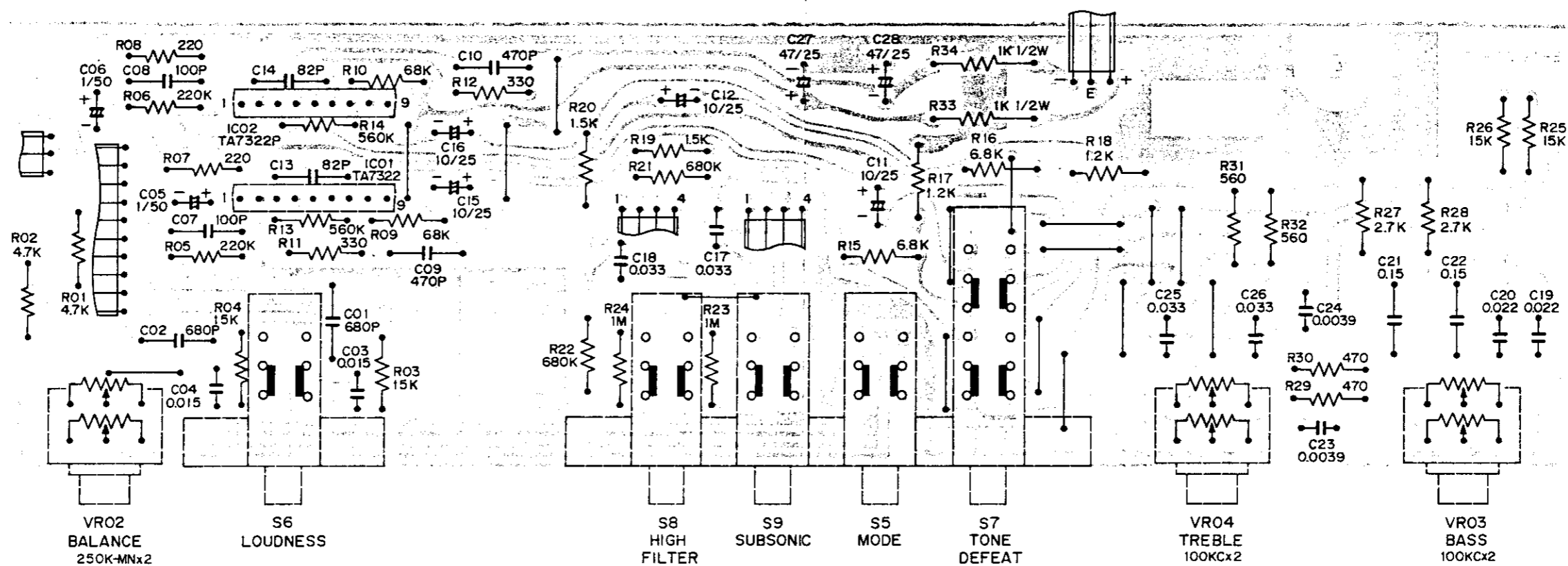
PROTECTOR CIRCUIT MONO AMP IC HA12002



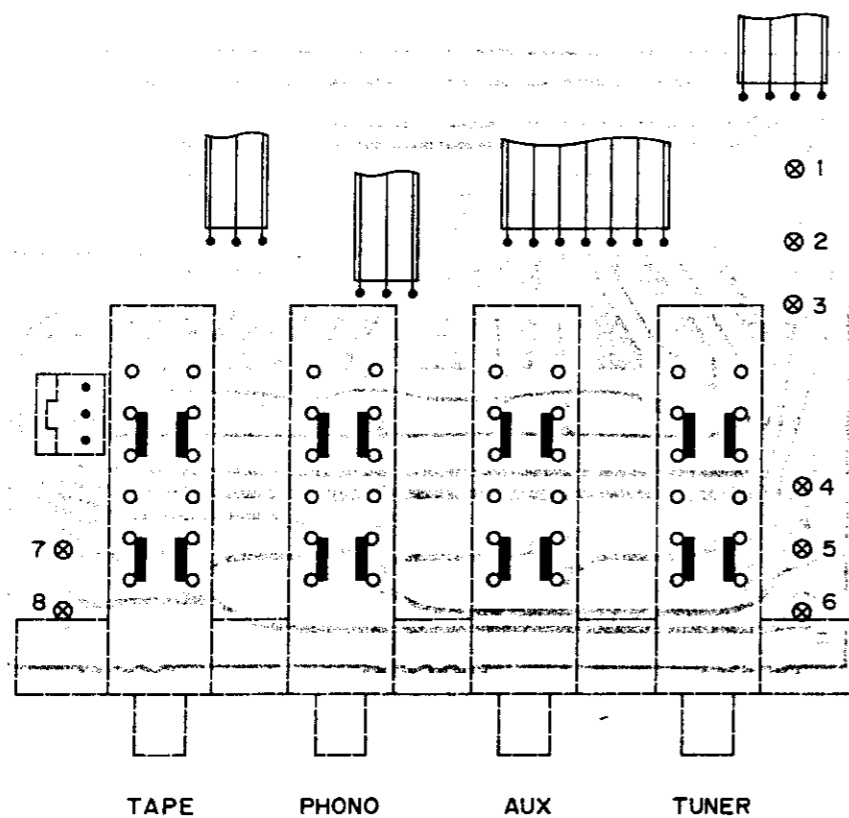
TONE AMP IC TA7322P



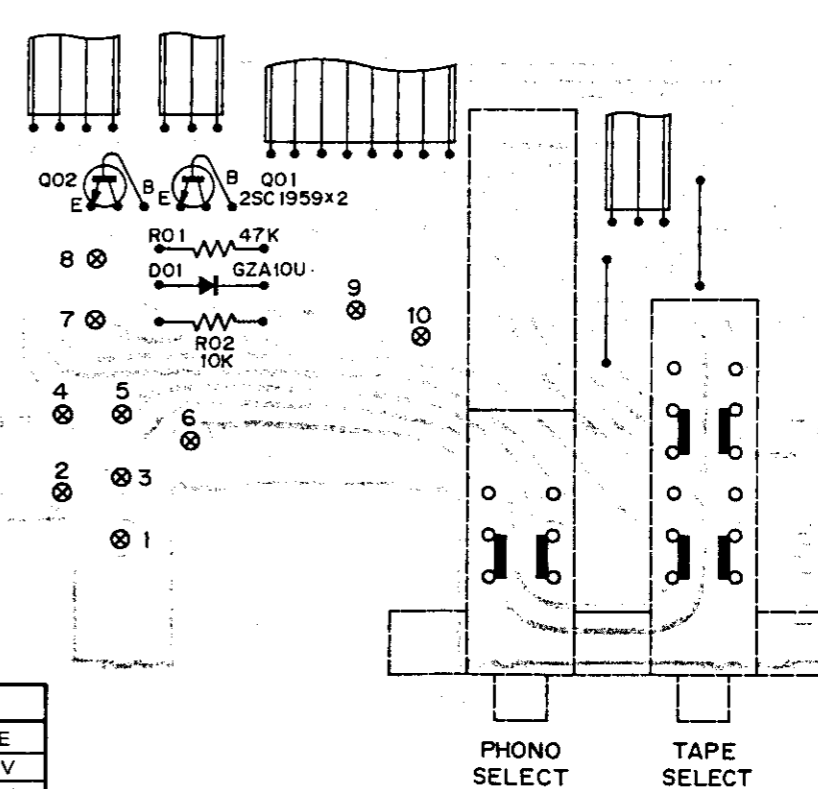
PRE AMPLIFIER P.C.BOARD (BOTTOM VIEW)



FUNCTION P.C.BOARD (BOTTOM VIEW)

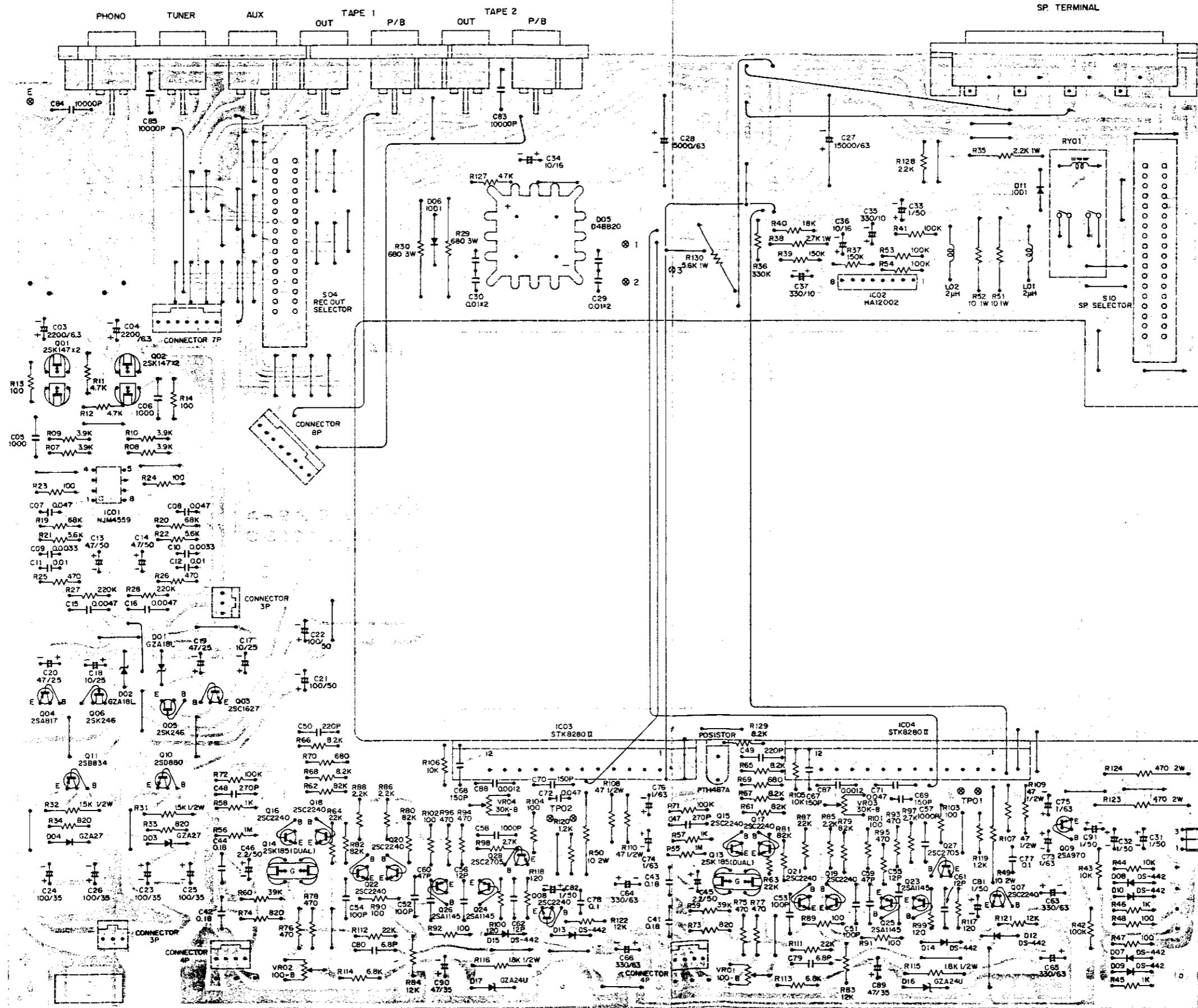


PHONO/TAPE SELECT P.C.BOARD (BOTTOM VIEW)



| TRANSISTOR DC VOLTAGES | | | | |
|------------------------|---------|------|--------|----|
| SYMBOL No. | DEVICE | B | C | E |
| Q01 | 2SC1959 | 0.4V | 7.6V | 0V |
| Q02 | 2SC1959 | 0.7V | 162 mV | 0V |

MAIN, EQ, POWER SUPPLY P.C.BOARD (BOTTOM VIEW)



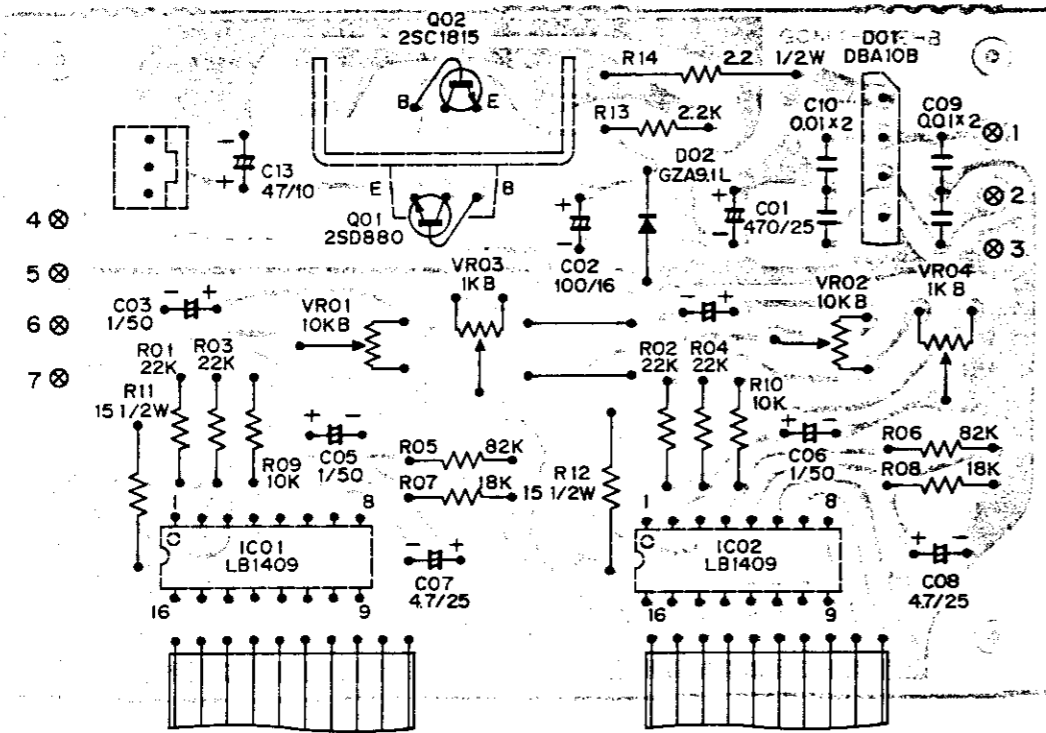
IC PIN NUMBERS DC VOLTAGES

| SYMBOL No. | IC PIN NUMBERS DC VOLTAGES | | | | | | | | | | | |
|------------|----------------------------|-------|-------|--------|-------|--------|-------|-------|---------|------|------|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| IC01 | 17 mV | 10.5V | 10.3V | -17.0V | 10.3V | 10.5V | 17 mV | 17.3V | - | - | - | - |
| IC02 | 0.8V | 0V | 0.2V | -7 mV | -4.0V | 23 mV | 7.1V | 4.8V | - | - | - | - |
| IC03,04 | 48.7V | 1.0V | 1.0V | 1.0V | - | -48.6V | 1.2V | 48 mV | -180 mV | 0.5V | 1.3V | 1.5 |

TRANSISTOR DV VOLTAGES

| SYMBOL No. | TRANSISTOR DV VOLTAGES | | | | | | | | | | | |
|------------|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | B | C | E | B | C | E | B | C | E | B | C | E |
| Q03,04 | 18.0V | 26.9V | 17.3V | 17.3V | 18.0V | 26.9V | 17.3V | 17.3V | 18.0V | 26.9V | 17.3V | 17.3V |
| Q05,06 | 18.0V | 26.9V | 18.0V | 18.0V | 18.0V | 26.9V | 18.0V | 18.0V | 18.0V | 26.9V | 18.0V | 18.0V |
| Q07,08 | 0.8V | 1.0V | 1.0V | 1.0V | 1.0V | 1.0V | 1.0V | 1.0V | 1.0V | 1.0V | 1.0V | 1.0V |
| Q09 | - | - | - | - | - | - | - | - | - | - | - | - |
| Q10 | 27.5V | 35.7V | 26.9V | 26.9V | 27.5V | 35.7V | 26.9V | 26.9V | 27.5V | 35.7V | 26.9V | 26.9V |

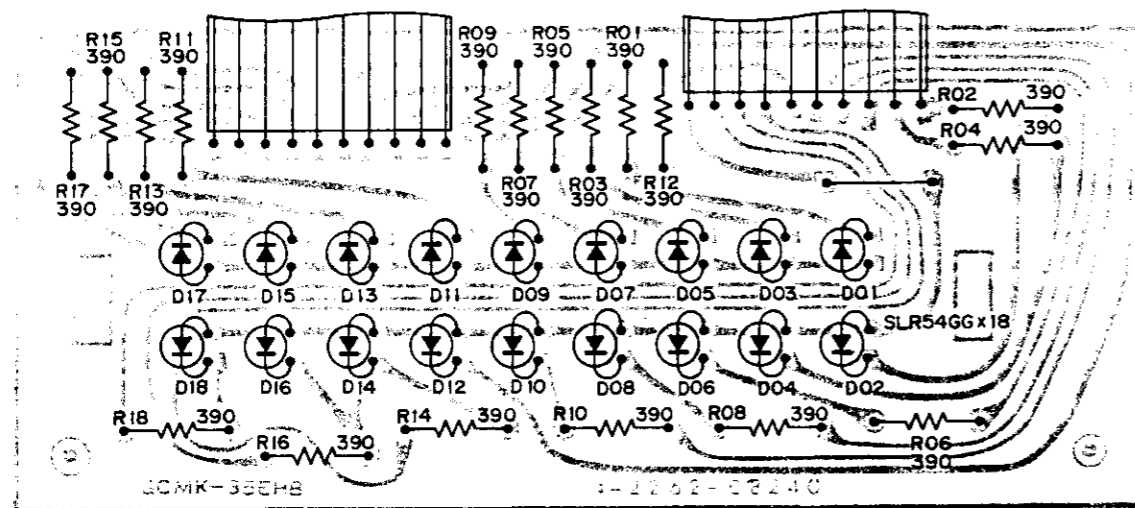
LEVEL IND. P.C.BOARD (BOTTOM VIEW)



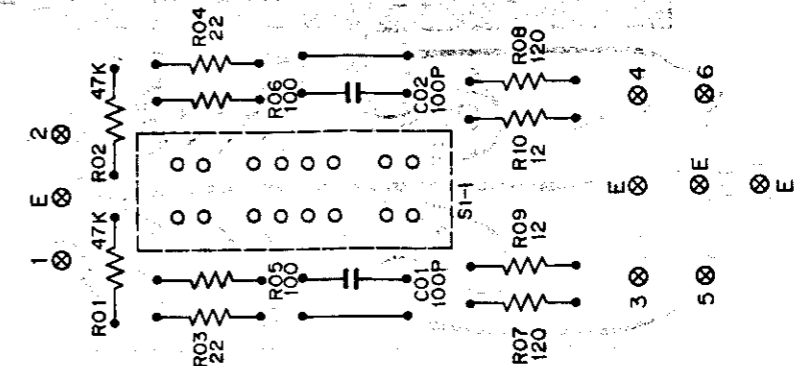
| TRANSISTOR DC VOLTAGES | | | | |
|------------------------|---------|------|-------|------|
| SYMBOL No. | DEVICE | B | C | E |
| Q01 | 2SD880 | 8.2V | 10.9V | 7.6V |
| Q02 | 2SC1815 | 8.8V | 10.9V | 8.2V |

| IC PIN NUMBERS DC VOLTAGES | | | | | | | | | | | | | | | | | |
|----------------------------|--------|------|------|-------|------|------|----|------|------|------|------|------|------|------|------|------|----|
| SYMBOL No. | DEVICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| IC01,02 | LB1409 | 7.6V | 2.7V | 56 mV | 0.3V | 1.9V | 0V | 0.3V | 0.3V | 0.3V | 0.3V | 0.3V | 0.3V | 0.3V | 0.3V | 4.8V | - |

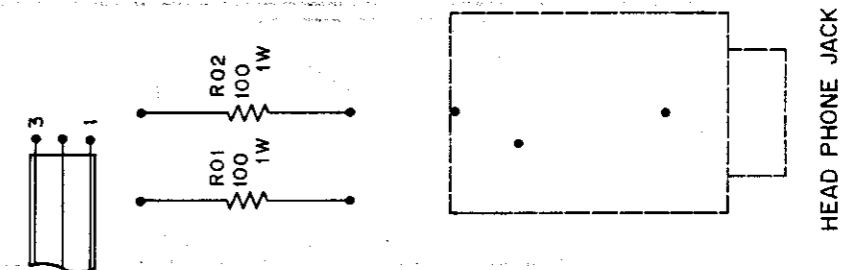
L.E.D. P.C.BOARD (BOTTOM VIEW)



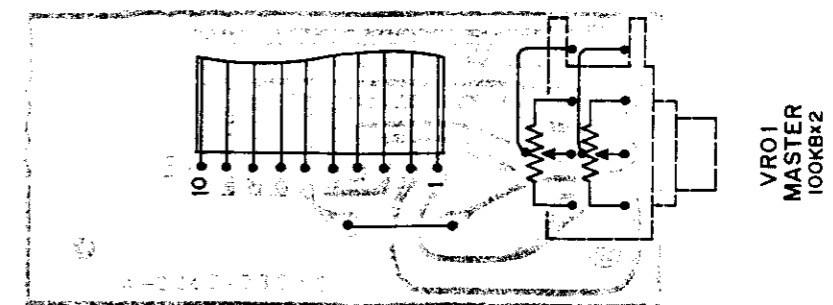
MM/MC SELECT P.C.BOARD (BOTTOM VIEW)



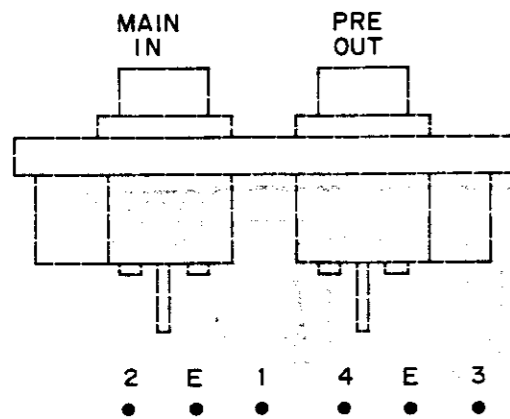
HEADPHONE JACK P.C.BOARD (BOTTOM VIEW)



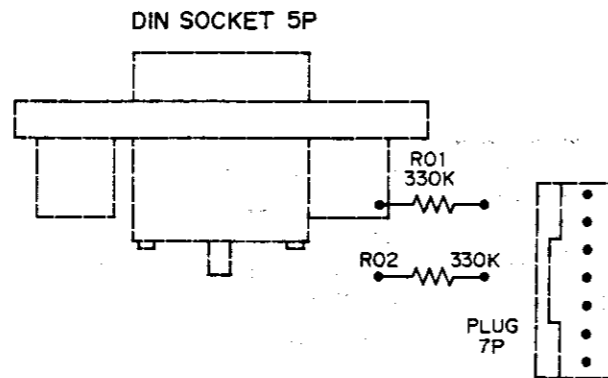
VOLUME CONTROL P.C.BOARD (BOTTOM VIEW)



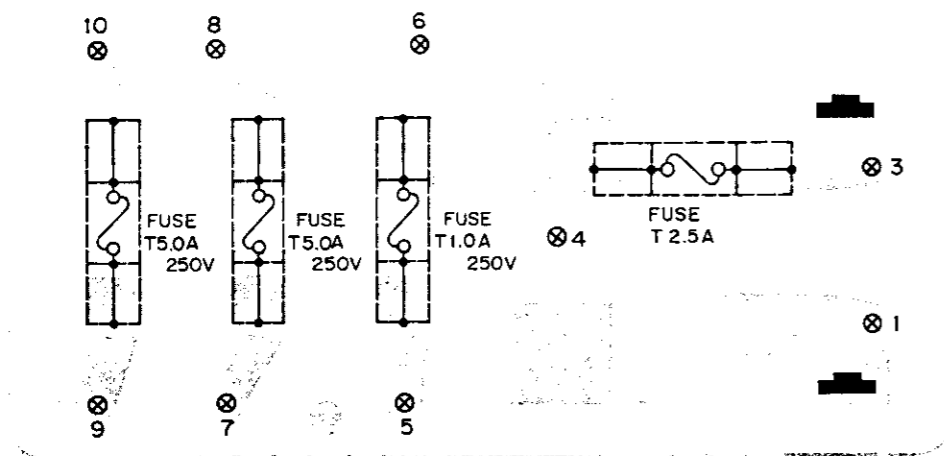
RCA PIN P.C.BOARD (BOTTOM VIEW)



DIN P.C.BOARD (BOTTOM VIEW)



FUSE P.C.BOARD (BOTTOM VIEW)



PARTS LIST

MAIN, EQ, POWER P.C.B. Assy
131 0 4001 07055

| Ref. No. | Parts Number | Description |
|----------|----------------|----------------------------------|
| | 4 2359 23180 | Socket 4P |
| | 4 2359 23220 | RCA 6P Jack |
| | 4 2362 00360 | Plug 4P |
| | 4 2362 00400 | Plug 7P |
| | 4 2362 00410 | Plug 8P |
| | 4 2362 00440 | Plug 3P |
| | 4 2372 00900 | Earth Terminal |
| | 4 2372 00960 | Terminal 8P |
| RY01 | 4 2322 00170 | Relay |
| S04 | 4 2312 02580 | Switch Slide 4-6 |
| S10 | 4 2312 02600 | Switch Slide 6-4 |
| L01,02 | 4 2532 00180 | RF Filter Coil |
| VR01 | 4 2222 01280 | VR 100-B (Center Zero Adjust) |
| VR02 | 4 2222 01280 | VR 100-B (Center Zero Adjust) |
| VR03 | 4 2222 02120 | VR 30k-B (Idling Current Adjust) |
| VR04 | 4 2222 02120 | VR 30k-B (Idling Current Adjust) |
| | HLL-PTH487A-8E | Posistor PTH487A-B |

CAPACITORS

| | | |
|--------|--------------|--------------------------------------|
| C03,04 | C0JRE-228A | Electrolytic 2200 μ F 6.3V |
| C05,06 | C1HCZK102BPA | Ceramic 1000 pF 50V \pm 10% |
| C07,08 | C1HFYK473APA | Mylar 0.047 μ F 50V \pm 10% |
| C09,10 | C1HFYK332APA | Mylar 0.0033 μ F 50V \pm 10% |
| C11,12 | C1HFRK103A | Mylar 0.01 μ F 50V \pm 10% |
| C13,14 | C1HRY-475APA | Electrolytic 4.7 μ F 50V |
| C15,16 | C1HCZN472XPA | Ceramic 0.0047 μ F 50V \pm 30% |
| C17,20 | C1ERY-106APA | Electrolytic 10 μ F 25V |
| C18,19 | C1ERY-476APA | Electrolytic 47 μ F 25V |
| C21,22 | C1HRE-107A | Electrolytic 100 μ F 50V |
| C23,24 | C1VRE-107A | Electrolytic 100 μ F 35V |
| 25,26 | | |
| C27,28 | 4 2232 00600 | Electrolytic 15000 μ F 63V |
| C29,30 | 4 2232 00430 | Ceramic 0.01 μ F x2 250V |
| C31,32 | C1HRY-105APA | Electrolytic 1 μ F 50V |
| 33 | | |
| C34 | C1CRY-106APA | Electrolytic 10 μ F 16V |
| C35 | C1ARE-337A | Electrolytic 330 μ F 10V |
| C36 | C1CRY-106APA | Electrolytic 10 μ F 16V |
| C37 | C1ARE-337A | Electrolytic 330 μ F 10V |
| C41,42 | C1HFRJ184ML | Mylar 0.18 μ F 50V \pm 5% |
| 43,44 | | |
| C45,46 | C1HRY-225APA | Electrolytic 2.2 μ F 50V |
| C47,48 | C1HCZK271BPA | Ceramic 270 pF 50V \pm 10% |
| C49,50 | C1HCZK221BPA | Ceramic 220 pF 50V \pm 10% |
| C51,52 | C1HCZJ101SPA | Ceramic 100 pF 50V \pm 5% |
| 53,54 | | |
| C55,56 | C1HCZJ120CPA | Ceramic 12 pF 50V \pm 5% |
| C57,58 | C1HCZK102BPA | Ceramic 1000 pF 50V \pm 10% |
| C59,60 | C1HCZJ470SPA | Ceramic 47 pF 50V \pm 5% |
| C61,62 | C1HCZJ120CPA | Ceramic 12 pF 50V \pm 5% |
| C63,64 | C1JRE-337A | Electrolytic 330 μ F 63V |
| 65,66 | | |
| C67,68 | C1HCZK151BPA | Ceramic 150 pF 50V \pm 10% |
| 69,70 | | |
| C71,72 | C1HFYK473APA | Mylar 0.047 μ F 50V \pm 10% |
| C73,74 | C1JRY-105APA | Electrolytic 1 μ F 63V |
| C75,76 | C1JRE-105A | Electrolytic 1 μ F 63V |
| C77,78 | C1HFRK104A | Mylar 0.1 μ F 50V \pm 10% |
| C79,80 | C1HCZK6R8CPA | Ceramic 6.8 pF 50V \pm 10% |

Ref. No. Parts Number Description

CAPACITORS

| | | |
|--------|--------------|--------------------------------------|
| C81,82 | C1HRY-105APA | Electrolytic 1 μ F 50V |
| C83,84 | C1ECZM103XPA | Ceramic 10000 pF 25V \pm 20% |
| 85 | | |
| C87,88 | C1HCZM122DPA | Ceramic 0.0012 μ F 50V \pm 20% |
| C89,90 | C1VRE-476A | Electrolytic 47 μ F 35V |
| C91 | C1HRE-105A | Electrolytic 1 μ F 50V |

SEMICONDUCTORS

| | | |
|-------------------|------------------|----------------------------|
| D01,02 | 202 5 3210 18010 | Zener Diode, GZA18L |
| D03,04 | 202 5 3220 27010 | Zener Diode, GZA27 |
| D05 | DDD-D48B20 | Bridge Diode, D48B20 |
| D06 | DCC-10D1 | Diode, 10D1 |
| D07,08 | 205 5 9040 44210 | Diode, DS-442 |
| 09,10 | | |
| D11 | DCC-10D1 | Diode, 10D1 |
| D12,13 | 205 5 9040 44210 | Diode, DS-442 |
| 14,15 | | |
| D16,17 | 202 5 3210 24020 | Zener Diode, GZA24U |
| IC01 | IJJ-NJM4559DX | IC, NJM4559DX |
| IC02 | IKK-HA12002 | IC, HA12002 (Protector) |
| IC03,04 | 206 5 5898 28010 | IC, STK9280-II (Power Amp) |
| Q01,02 | TTT-2SK147-B | FET 2SK147 |
| Q03 | TTT-2SC1627AY | TR 2SC1627A Y |
| Q04 | TTT-2SA817-Y | TR 2SA817-Y |
| Q05,06 | TTT-2SK246-GR | FET 2SK246 |
| Q07,08 | TTT-2SC2240-BL | TR 2SC2240 BL |
| Q09 | TTT-2SA970-BL | TR 2SA970 BL |
| Q10 | TTT-2SD880-GR | TR 2SD880 GR |
| Q11 | TTT-2SB834-GR | TR 2SB834 GR |
| Q13,14 | TVV-2SK185 | FET (Dual) 2SK185 |
| Q15,16 | TTT-2SC2240-BL | TR 2SC2240 BL |
| 17,18,19,20,21,22 | | |
| Q23,24 | TTT-2SA1145-Y | TR 2SA1145 Y |
| 25,26 | | |
| Q27,28 | TTT-2SC2705-Y | TR 2SC2705 Y |

RESISTORS

| | | |
|--------|--------------|-------------------------------------|
| R07,08 | R2EDZJ392APA | Carbon 3.9k 1/4W \pm 5% |
| 09,10 | | |
| R11,12 | R2EDZJ472APA | Carbon 4.7k 1/4W \pm 5% |
| R13,14 | R2EDZJ101APA | Carbon 100 1/4W \pm 5% |
| R19,20 | R2EDZJ683APA | Carbon 68k 1/4W \pm 5% |
| R21,22 | R2EDZJ562APA | Carbon 5.6k 1/4W \pm 5% |
| R23,24 | R2EDZJ101APA | Carbon 100 1/4W \pm 5% |
| R25,26 | R2EDZJ471APA | Carbon 470 1/4W \pm 5% |
| R27,28 | R2EDZJ224APA | Carbon 220k 1/4W \pm 5% |
| R29,30 | R3WEPK681A | Cemen 680 3W \pm 10% |
| R31,32 | R2HXB152A | Oxide Metal Film 1.5k 1/2W \pm 5% |
| R33,34 | R2EDZJ821APA | Carbon 820 1/4W \pm 5% |
| R35 | R3AXB1222A | Oxide Metal Film 2.2k 1W \pm 5% |
| R36 | R2EDZJ334APA | Carbon 330k 1/4W \pm 5% |
| R37 | R2EDZJ154APA | Carbon 150k 1/4W \pm 5% |
| R38 | R3AXB1272A | Oxide Metal Film 2.7k 1W \pm 5% |
| R39 | R2EDZJ154APA | Carbon 150k 1/4W \pm 5% |
| R40 | R2EDZJ183APA | Carbon 18k 1/4W \pm 5% |
| R41,42 | R2EDZJ104APA | Carbon 100k 1/4W \pm 5% |
| R43,44 | R2EDZJ103APA | Carbon 10k 1/4W \pm 5% |
| R45,46 | R2EDZJ102APA | Carbon 1k 1/4W \pm 5% |

PARTS LIST (Continued)

FUNCTION P.C.B. Assy 131 0 4001 07100

| Ref. No. | Parts Number | Description |
|------------------|--------------|--------------------------------|
| RESISTORS | | |
| R47,48 | R2EDZJ101APA | Carbon 100 1/4W ±5% |
| R49,50 | R3DXPK100A | Oxide Metal Film 10 2W ±10% |
| R51,52 | R3AXBJ100A | Oxide Metal Film 10 1W ±5% |
| R53,54 | R2EDZJ104APA | Carbon 100k 1/4W ±5% |
| R55,56 | R2EDZJ105APA | Carbon 1M 1/4W ±5% |
| R57,58 | R2EDZJ102APA | Carbon 1k 1/4W ±5% |
| R59,60 | R2EDZJ393APA | Carbon 39k 1/4W ±5% |
| R61,62 | R2EDZJ823APA | Carbon 82k 1/4W ±5% |
| R63,64 | R2EDZJ223APA | Carbon 22k 1/4W ±5% |
| R65,66 | R2EDZJ822APA | Carbon 8.2k 1/4W ±5% |
| 67,68 | | |
| R69,70 | R2EDZJ681APA | Carbon 680 1/4W ±5% |
| R71,72 | R2EDZJ104APA | Carbon 100k 1/4W ±5% |
| R73,74 | R2EDZJ821APA | Carbon 820 1/4W ±5% |
| R75,76 | R2EDZJ471APA | Carbon 470 1/4W ±5% |
| 77,78 | | |
| R79,80 | R2EDZJ823APA | Carbon 82k 1/4W ±5% |
| 81,82 | | |
| R83,84 | R2EDZJ123APA | Carbon 12k 1/4W ±5% |
| R85,86 | R2EDZJ222APA | Carbon 2.2k 1/4W ±5% |
| 87,88 | | |
| R89,90 | R2EDZJ101APA | Carbon 100 1/4W ±5% |
| 91,92 | | |
| R93,94 | R2EDZJ471APA | Carbon 470 1/4W ±5% |
| 95,96 | | |
| R97,98 | R2EDZJ272APA | Carbon 2.7k 1/4W ±5% |
| R99,100 | R2EDZJ121APA | Carbon 120 1/4W ±5% |
| R101,102 | R2EDZJ101APA | Carbon 100 1/4W ±5% |
| 103,104 | | |
| R105,106 | R2EDZJ103APA | Carbon 10k 1/4W ±5% |
| R107,108 | R2HZPK470A | Fuse 47 1/2W ±10% |
| 109,110 | | |
| R111,112 | R2EDZJ223APA | Carbon 22k 1/4W ±5% |
| R113,114 | R2EDZJ682APA | Carbon 6.8k 1/4W ±5% |
| R115,116 | R2HXBJ182A | Oxide Metal Film 1.8k 1/2W ±5% |
| R117,118 | R2EDZJ121APA | Carbon 120 1/4W ±5% |
| R119,120 | R2EDPJ122A | Carbon 1.2k 1/4W ±5% |
| R121,122 | R2EDZJ123APA | Carbon 12k 1/4W ±5% |
| R123,124 | R3DXBJ471A | Oxide Metal Film 470 2W ±5% |
| R127 | R2EDZJ472APA | Carbon 4.7k 1/4W ±5% |
| R128 | R2EDZJ222APA | Carbon 2.2k 1/4W ±5% |
| R129 | R2EDZJ822APA | Carbon 8.2k 1/4W ±5% |
| R130 | R3AXBJ562A | Oxide Metal Film 5.6k 1W ±5% |

VOLUME P.C.B. Assy 131 0 4001 07161

| Ref. No. | Parts Number | Description |
|----------|--------------|-------------|
| VR01 | 4 2222 02240 | VR 100k-Bx2 |

RCA PIN P.C.B. Assy 131 0 4001 07063

| Ref. No. | Parts Number | Description |
|----------|--------------|-------------|
| | 4 2359 23180 | Socket 4P |

| Ref. No. | Parts Number | Description |
|----------|------------------|------------------|
| | 4 2312 02540 | Switch Push 4Key |
| | 4 2362 00440 | Plug 3P |
| | 131 0 4006 22231 | Cord Assy |
| | 131 0 4006 22244 | Cord Assy |

PRE AMP P.C.B. Assy 131 0 4001 07090

| Ref. No. | Parts Number | Description |
|----------|------------------|------------------------|
| | 4 2312 02530 | Switch Push 4Key |
| J01 | 131 0 4006 22237 | Cord Assy |
| J02 | 131 0 4006 22214 | Cord Assy |
| J03 | 131 0 4006 22200 | Cord Assy |
| J04 | 131 0 4006 22213 | Cord Assy |
| S06 | 4 2312 03910 | Switch Push 1Key |
| VR02 | 4 2222 01351 | VR 250k-MNx2 (Balance) |
| VR03 | 4 2222 01341 | VR 100k-Cx2 (Bass) |
| VR04 | 4 2222 01341 | VR 100k-Cx2 (Treble) |

CAPACITORS

| | | |
|--------|---------------|--------------------------|
| C01,02 | C1HCZK681BPA | Ceramic 680 pF 50V ±10% |
| C03,04 | C1HFKYK153APA | Mylar 0.015 μF 50V ±10% |
| C05,06 | C1HRY-105APA | Electrolytic 1 μF 50V |
| C07,08 | C1HCZJ101SPA | Ceramic 100 pF 50V ±5% |
| C09,10 | C1HCZK471BPA | Ceramic 470 pF 50V ±10% |
| C11,12 | C1ERY-106APA | Electrolytic 10 μF 25V |
| C13,14 | C1HCZJ820SPA | Ceramic 82 pF 50V ±5% |
| C15,16 | C1ERY-106APA | Electrolytic 10 μF 25V |
| C17,18 | C1HFKYK333APA | Mylar 0.033 μF 50V ±10% |
| C19,20 | C1HFKYK223APA | Mylar 0.022 μF 50V ±10% |
| C21,22 | C1HFRK154A | Mylar 0.15 μF 50V ±10% |
| C23,24 | C1HFKYK392APA | Mylar 0.0039 μF 50V ±10% |
| C25,26 | C1HFKYK333APA | Mylar 0.033 μF 50V ±10% |
| C27,28 | C1ERY-476APA | Electrolytic 47 μF 25V |

SEMICONDUCTORS

| | | |
|---------|-------------|-------------|
| IC01,02 | ITT-TA7322P | IC, TA7322P |
|---------|-------------|-------------|

RESISTORS

| | | |
|--------|--------------|------------------------------|
| R01,02 | R2EDZJ472APA | Carbon 4.7k 1/4W ±5% |
| R03,04 | R2EDZJ153APA | Carbon 15k 1/4W ±5% |
| R05,06 | R2EDZJ224APA | Carbon 220k 1/4W ±5% |
| R07,08 | R2EDZJ221APA | Carbon 220 1/4W ±5% |
| R09,10 | R2EDZJ683APA | Carbon 68k 1/4W ±5% |
| R11,12 | R2EDZJ331APA | Carbon 330 1/4W ±5% |
| R13,14 | R2EDZJ564APA | Carbon 560k 1/4W ±5% |
| R15,16 | R2EDZJ682APA | Carbon 6.8k 1/4W ±5% |
| R17,18 | R2EDZJ122APA | Carbon 1.2k 1/4W ±5% |
| R19,20 | R2EDZJ152APA | Carbon 1.5k 1/4W ±5% |
| R21,22 | R2EDZJ684APA | Carbon 680k 1/4W ±5% |
| R23,24 | R2EDZJ105APA | Carbon 1M 1/4W ±5% |
| R25,26 | R2EDZJ153APA | Carbon 15k 1/4W ±5% |
| R27,28 | R2EDZJ272APA | Carbon 2.7k 1/4W ±5% |
| R29,30 | R2EDZJ471APA | Carbon 470 1/4W ±5% |
| R31,32 | R2EDZJ561APA | Carbon 560 1/4W ±5% |
| R33,34 | R2HXBJ102A | Oxide Metal Film 1k 1/2W ±5% |

PARTS LIST (Continued)

FUSE P.C.B. Assy 131 0 4001 07140

| Ref. No. | Parts Number | Description |
|----------|--------------|-------------|
| △ | 4 2349 20380 | Fuse T 1.0A |
| △ | 4 2349 20570 | Fuse T 2.5A |
| △ | 4 2349 21470 | Fuse T 5.0A |
| | 4 2352 00200 | Fuse Clip |

HEADPHONE JACK P.C.B. Assy 131 0 4001 07081

| Ref. No. | Parts Number | Description |
|----------|--------------|-------------------|
| | 4 2352 00970 | Headphone Jack 3P |

RESISTORS

| | | |
|--------|------------|-----------------------------|
| R01,02 | R3AXBJ101A | Oxide Metal Film 100 1W ±5% |
|--------|------------|-----------------------------|

MM/MC SELECT P.C.B. Assy 131 0 4001 07500

| Ref. No. | Parts Number | Description |
|----------|--------------|------------------|
| S01 | 4 2312 02560 | Switch Slide 4-2 |

CAPACITORS

| | | |
|--------|--------------|------------------------|
| C01,02 | C1HCZJ101SPA | Ceramic 100 pF 50V ±5% |
|--------|--------------|------------------------|

RESISTORS

| | | |
|--------|--------------|---------------------|
| R01,02 | R2EDZJ473APA | Carbon 47k 1/4W ±5% |
| R03,04 | R2EDZJ220APA | Carbon 22 1/4W ±5% |
| R05,06 | R2EDZJ101APA | Carbon 100 1/4W ±5% |
| R07,08 | R2EDZJ121APA | Carbon 120 1/4W ±5% |
| R09,10 | R2EDZJ120APA | Carbon 12 1/4W ±5% |

L.E.D. P.C.B. Assy 131 0 4001 07130

| Ref. No. | Parts Number | Description |
|----------|--------------|-------------|
|----------|--------------|-------------|

SEMICONDUCTOR

| | | |
|--------|-------------------------|--------------------------|
| D01,02 | DYY-SLR-54GG | L.E.D., SLR-54GG (Green) |
| | 03,04,05,06,07,08,09,10 | |
| | 11,12,13,14,15,16,17,18 | |

RESISTORS

| | | |
|--------|-------------------------|---------------------|
| R01,02 | R2EDZJ391APA | Carbon 390 1/4W ±5% |
| | 03,04,05,06,07,08,09,10 | |
| | 11,12,13,14,15,16,17 | |
| R18 | R2EDPJ391A | Carbon 390 1/4W ±5% |

TAPE SELECT P.C.B. Assy 131 0 4001 07110

| Ref. No. | Parts Number | Description |
|----------|------------------|------------------|
| | 4 2312 02551 | Switch Joint |
| | 131 0 4006 22229 | Cord Assy |
| | 131 0 4006 22237 | Cord Assy |
| S02 | 4 2312 02550 | Switch Push 2Key |

| Ref. No. | Parts Number | Description |
|----------|--------------|-------------|
|----------|--------------|-------------|

SEMICONDUCTORS

| | | |
|--------|------------------|---------------------|
| D01 | 202 5 3210 10020 | Zener Diode, GZA10U |
| Q01,02 | TTT-2SC1959-Y | TR 2SC1959 Y |

RESISTORS

| | | |
|-----|--------------|---------------------|
| R01 | R2EDZJ473APA | Carbon 47k 1/4W ±5% |
| R02 | R2EDZJ103APA | Carbon 10k 1/4W ±5% |

LEVEL IND. P.C.B. Assy 131 0 4001 07124

| Ref. No. | Parts Number | Description |
|----------|--------------|-------------|
|----------|--------------|-------------|

| | | |
|------|--------------|----------|
| | 4 2362 00440 | Plug 3P |
| VR01 | 4 2222 01400 | VR 10k-B |
| VR02 | 4 2222 01400 | VR 10k-B |
| VR03 | 4 2222 00990 | VR 1k-B |
| VR04 | 4 2222 00990 | VR 1k-B |

CAPACITORS

| | | |
|--------|--------------|--------------------------|
| C01 | C1ERE-477A | Electrolytic 470 μF 25V |
| C02 | C1CRE-107A | Electrolytic 100 μF 16V |
| C03,04 | C1HRY-105APA | Electrolytic 1 μF 50V |
| | 05,06 | |
| C07,08 | C1ERY-475APA | Electrolytic 4.7 μF 25V |
| C09,10 | 4 2232 00430 | Ceramic 0.01 μF x 2.250V |
| C13 | C1ARY-476APA | Electrolytic 47 μF 10V |

SEMICONDUCTORS

| | | |
|---------|------------------|----------------------|
| D01 | 202 5 4610 01010 | Diode, DBA-10B |
| D02 | 202 5 3210 09110 | Zener Diode, GZA9.1L |
| IC01,02 | 206 5 2441 40910 | IC, LB1409 |
| Q01 | TTT-2SD880--GR | TR 2SD880 GR |
| Q02 | TTT-2SC1815-BL | TR 2SC1815 BL |

RESISTORS

| | | |
|--------|--------------|-------------------------------|
| R01,02 | R2EDZJ223APA | Carbon 22k 1/4W ±5% |
| | 03,04 | |
| R05,06 | R2EDZJ823APA | Carbon 82k 1/4W ±5% |
| R07,08 | R2EDZJ183APA | Carbon 18k 1/4W ±5% |
| R09,10 | R2EDZJ103APA | Carbon 10k 1/4W ±5% |
| R11,12 | R2HXB150A | Oxide Metal Film 15 1/2W ±5% |
| R13 | R2EDZJ222APA | Carbon 2.2k 1/4W ±5% |
| R14 | R2HXB2R2A | Oxide Metal Film 2.2 1/2W ±5% |

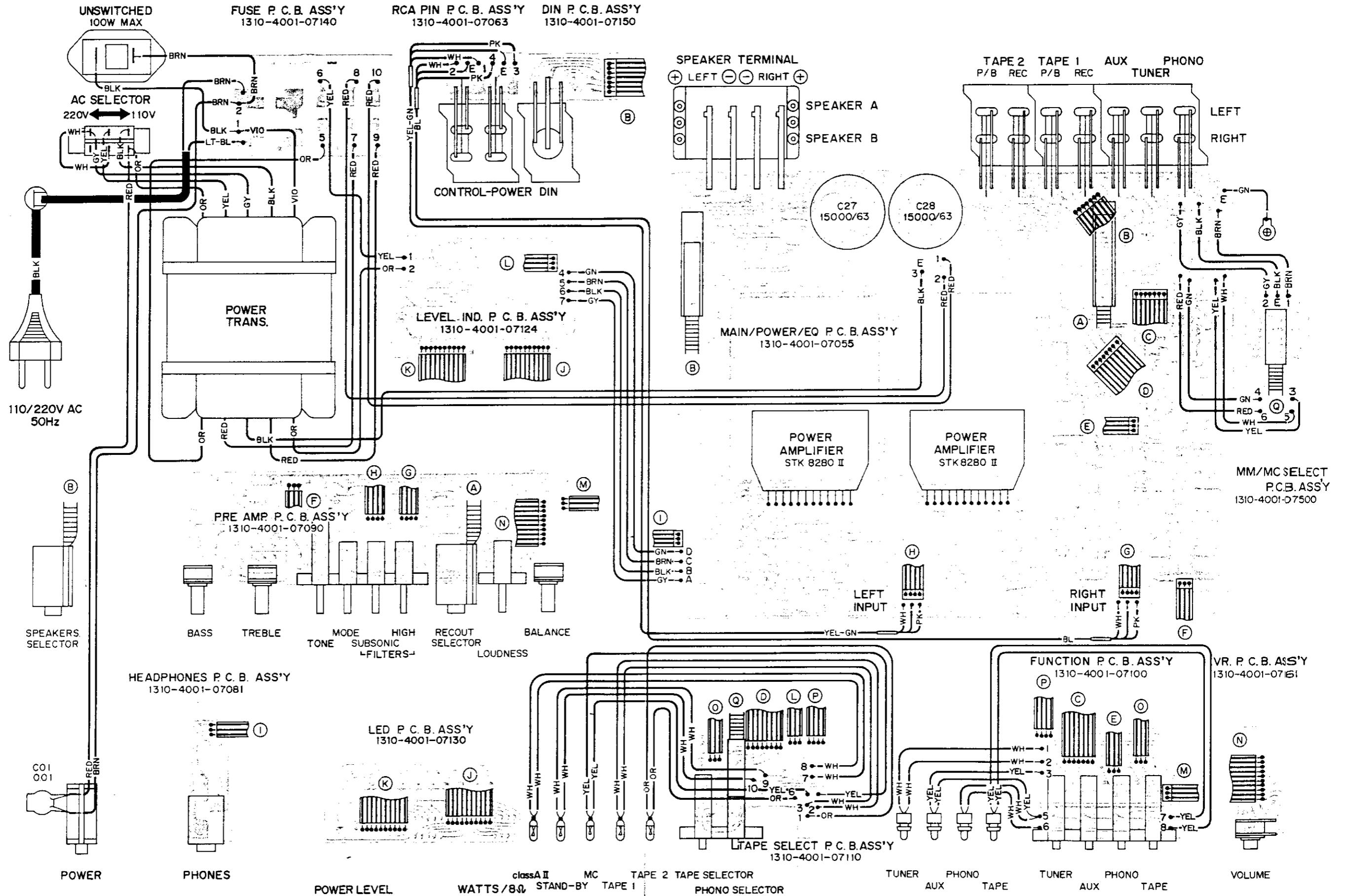
DIN P.C.B. Assy 131 0 4001 07150

| Ref. No. | Parts Number | Description |
|----------|--------------|---------------|
| | 4 2352 00780 | DIN Socket 5P |
| | 4 2362 00400 | Plug 7P |

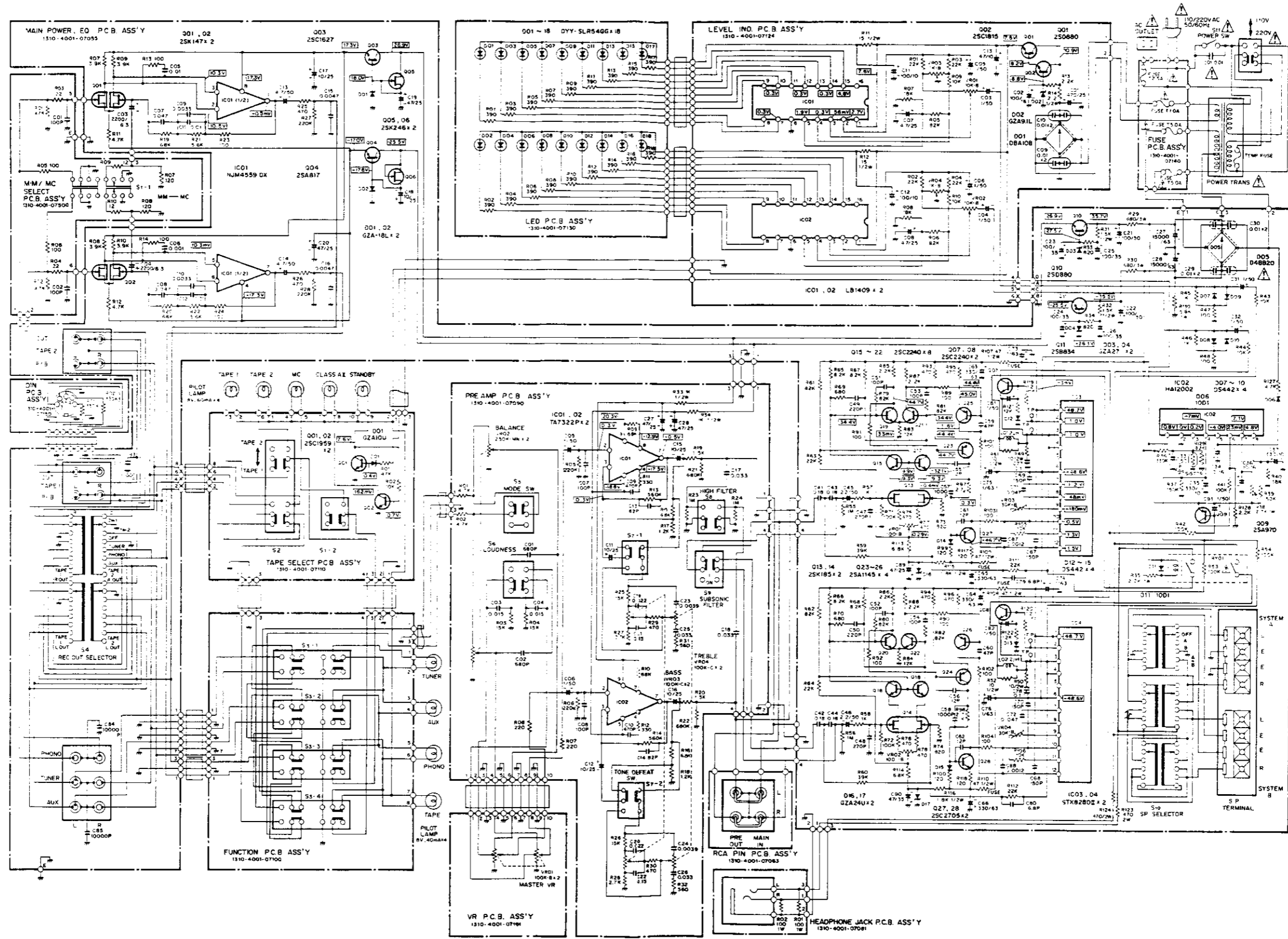
RESISTORS

| | | |
|--------|--------------|----------------------|
| R01,02 | R2EDZJ334APA | Carbon 330k 1/4W ±5% |
|--------|--------------|----------------------|

POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAM



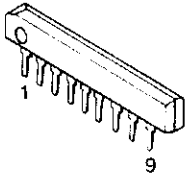
- NOTES:**
1. All resistors values are indicated in "ohm" (K=10³, M=10⁶).
 2. All capacitor values are indicated in "μF" (P=10⁻¹²).
 3. All voltages indicated on the schematics are measured under the following conditions.
 - a. Use a V.T.V.M.
 - b. All voltages ±10% with respect to chassis ground
 - c. No signals at input terminals
 - d. AC input at 220 volts 50Hz
 4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

SEMICONDUCTOR LEAD IDENTIFICATION

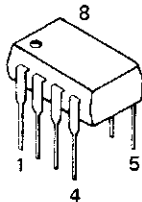
INTEGRATED CIRCUITS

TONE AMP IC



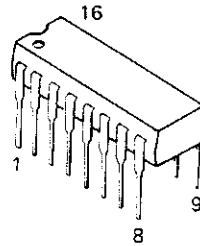
- TA7322P

EQ AMP IC



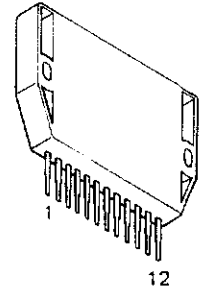
- NJM4559DX

L.E.D. LEVEL METER IC



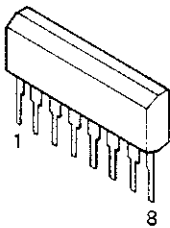
- LB1409

POWER AMP IC



- STK8280II

PROTECTOR CIRCUIT
MONO AMP IC



- HA12002

TRANSISTORS



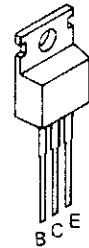
- 2SK185



- 2SA970
- 2SC1815
- 2SC1959
- 2SC2240

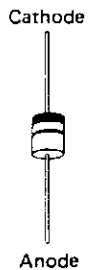


- 2SA817
- 2SA1145
- 2SC1627A
- 2SC2705

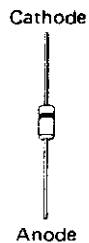


- 2SD880
- 2S8834

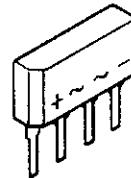
DIODES



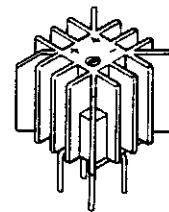
- 10D1



- GZA9.1L
- GZA10U
- GZA18L
- GZA24
- GZA27
- DS-442



- DBA10B



- D48B20

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF AN UNIT. COMPONENTS INDICATED BY A MARK Δ IN THIS SCHEMATIC DIAGRAM SHOW COMPONENTS WHOSE VALUE HAS SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE ATTACHED PARTS LIST BE USED FOR COMPONENT REPLACEMENT POINTED OUT BY THE MARK.