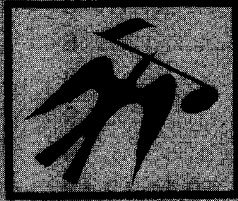


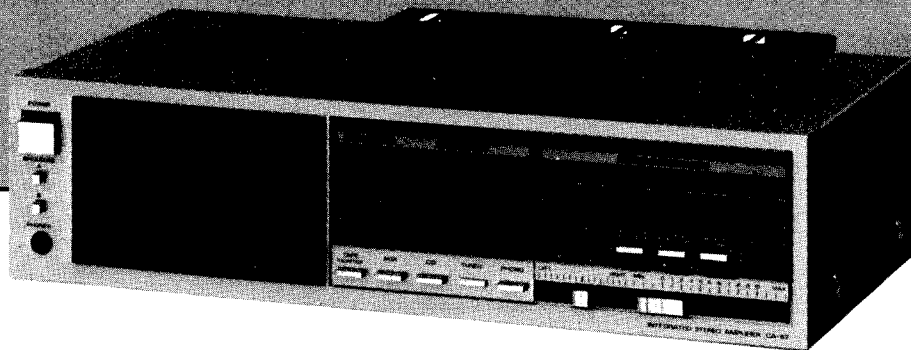
SERVICE MANUAL



FISHER

CA-67

**Integrated
Stereo Amplifier
(EUROPE)**



CONTENTS

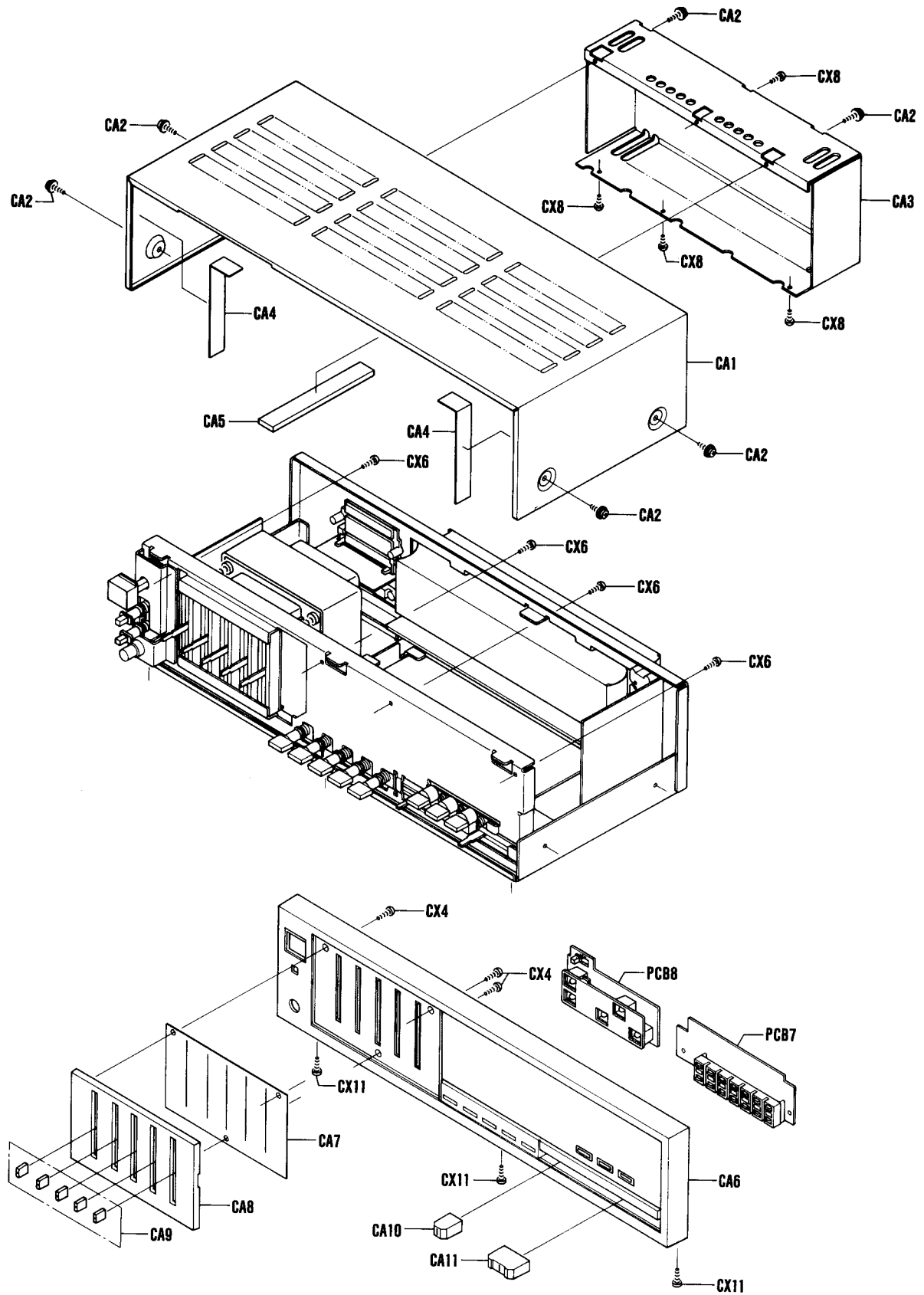
| | |
|---|-------------|
| Specifications | 3 |
| Cabinet & Chassis Exploded View (1) | 4 |
| Cabinet & Chassis Exploded View (2) | 5 |
| Cabinet & Chassis Exploded View (3) | 6 |
| Parts List | 7 |
| Recommended Test Equipments | 8 |
| Harmonic Distortion Test | 8 |
| Power Amplifier Adjustment | 9 |
| Important Note | 9 |
| Functional Block Diagram | 9 |
| Printed Circuit Board Parts List | 10,11,12,13 |
| IC Equivalent Circuit & Block Diagram | 14 |
| Phono Equalizer Amp IC NJM072D | |
| Graphic Equalizer Amp IC LA6458S | |
| Meter Drive Amp IC IR2E29 | |
| Phono P.C.Board (Bottom View) | 15 |
| Graphic Equalizer P.C.Board (Bottom View) | 15 |
| Volume P.C.Board (Bottom View) | 16 |
| Power Switch P.C.Board (Bottom View) | 16 |
| Speaker Terminal P.C.Board (Bottom View) | 17 |
| Power Meter P.C.Board (Bottom View) | 17 |
| LED Indicator P.C.Board (Bottom View) | 17 |
| Main Amplifier P.C.Board (Bottom View) | 18 |
| Point To Point Wiring Diagram | 19,20 |
| Schematic Diagram | 21,22 |
| Semiconductor Lead Identification | 23 |

SPECIFICATIONS

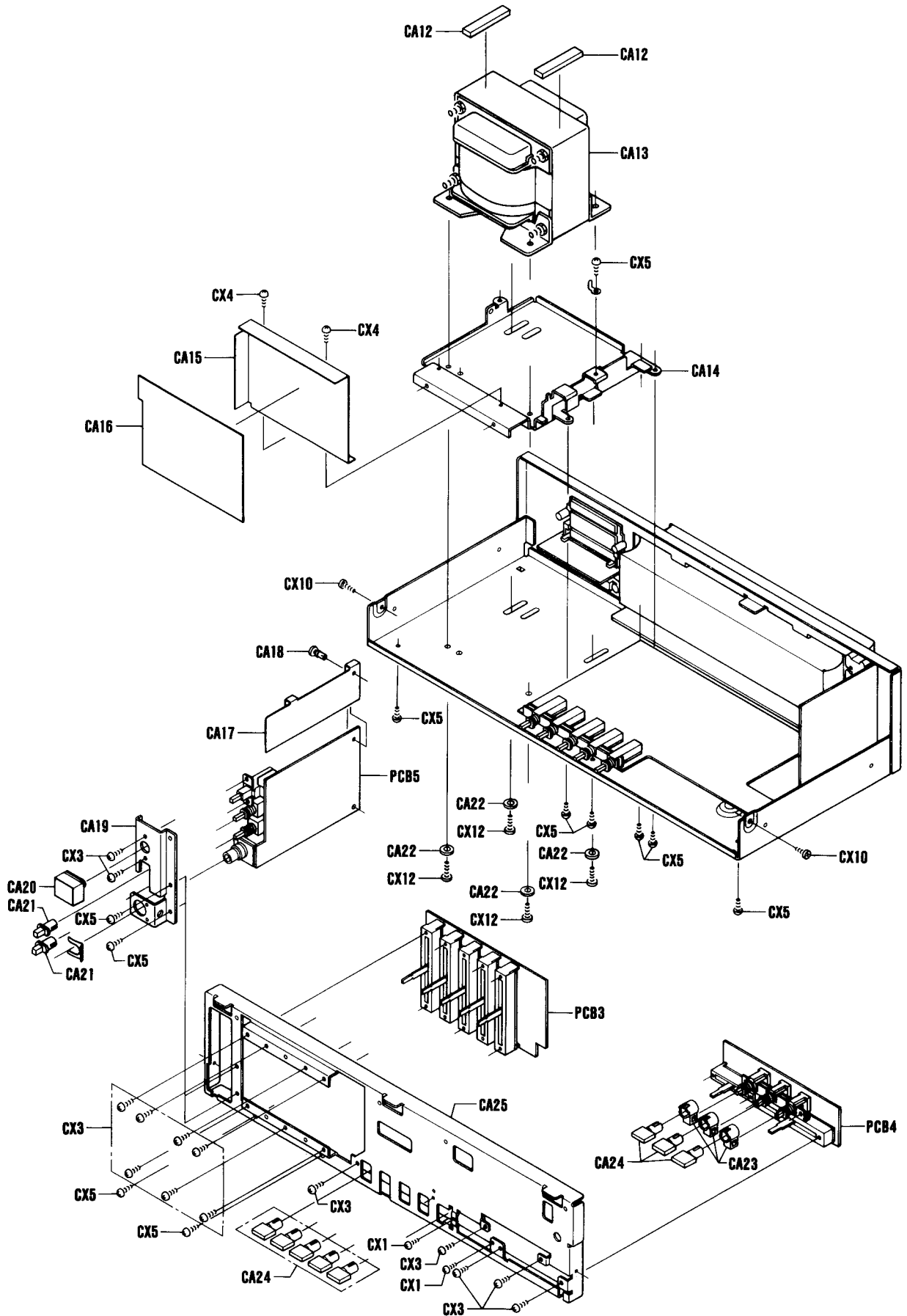
| AMPLIFIER | CA-67 |
|---|--------------------|
| POWER AMPLIFIER SECTION Minimum RMS sine wave power per channel no more than stated distortion and with 8-ohm load at 1 kHz (DIN) | 70 Watts |
| Total Harmonic Distortion | 0.2 % |
| I.M. Distortion | 0.2 % |
| Speaker Damping | > 20 |
| PREAMPLIFIER SECTION Frequency Response | |
| Phono MM (RIAA) | ±0.5 dB |
| Aux (20 Hz – 20 kHz) | ±0.5 dB |
| Input Sensitivity and Impedance | |
| Phono MM | 2.5 mV/50 kΩ |
| Tape Monitor | 150 mV/50 kΩ |
| Tuner | 150 mV/50 kΩ |
| Auxiliary/CD | 150 mV/50 kΩ |
| Phono Max. Input Capability | 150 mV |
| Graphic Equalizer | |
| 63 Hz | ±10 dB |
| 250 Hz | ±10 dB |
| 1 kHz | ±10 dB |
| 4 kHz | ±10 dB |
| 16 kHz | ±10 dB |
| Hum & Noise (IHF Short Circuit, A Network) | |
| Phono MM | 65 dB |
| Tape Monitor | 85 dB |
| Tuner | 85 dB |
| Auxiliary/CD | 85 dB |
| GENERAL | |
| Power Requirements (50 Hz) | 110/220 V AC |
| Power Consumption | 340 Watts |
| Power Supply Socket | 2 (FM-67, CR-67) |
| Dimensions (W x H x D) | 400 x 105 x 243 mm |
| Weight (approx.) | 6.3 kg |

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

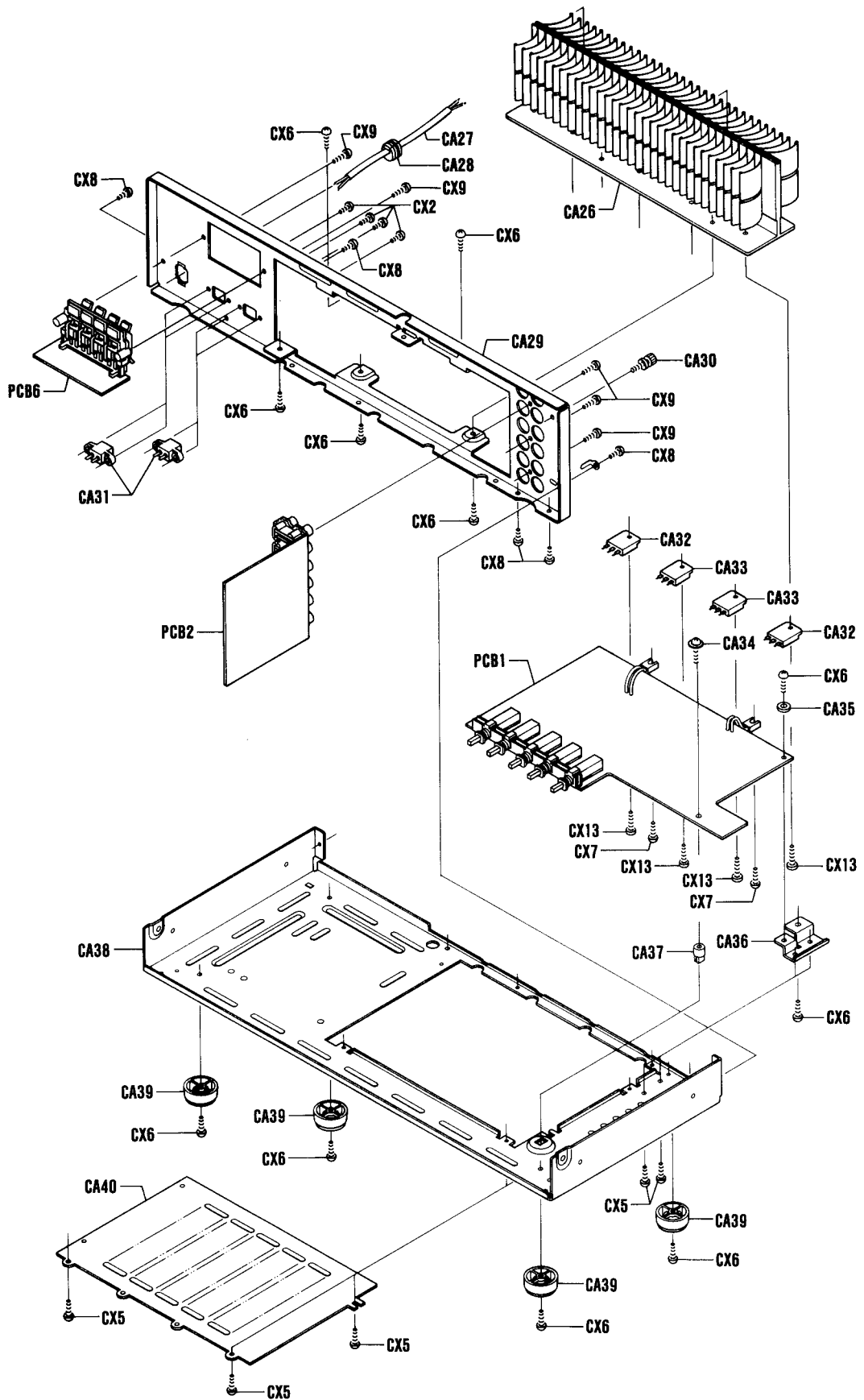
CABINET & CHASSIS EXPLODED VIEW (1)



CABINET & CHASSIS EXPLODED VIEW (2)



CABINET & CHASSIS EXPLODED VIEW (3)



PARTS LIST

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|---|------------------|---|------|--|------------------|--|------|
| PACKING PARTS LIST | | | | CA30 | 131 2 4201 17800 | Screw Ground | 1 |
| | 3 9415 10300 | Bag Polyethylene | 1 | CA31 | △ 4 2359 74032 | 2P Socket With/Nut | 2 |
| 131 6 1169 15401 | | Box Corrugate-Exp. | 1 | CA32 | 4 2039 71310 | Transistor, 2SC 3182 (Q113, Q213) | 2 |
| 131 6 2119 02130 | | Bag Polyethylene-Exp. | 1 | CA33 | 4 2039 71320 | Transistor, 2SA 1265 (Q114, Q214) | 2 |
| 131 6 3009 35400 | | Pad (Right) | 1 | CA34 | 131 2 4201 25204 | +BRTS-B 3.0x12 Z SMS | 1 |
| 131 6 3009 35410 | | Pad (Left) | 1 | CA35 | 131 2 4203 83201 | S Kowa, 3.2x10x0.5 Z1 | 1 |
| 131 6 3069 16350 | | Patching Sheet | 1 | CA36 | 131 2 3101 98100 | Metal Mount (Main Amp P.C.B.) | 1 |
| 131 6 4559 10900 | | Manufacturing No. | 2 | CA37 | 131 2 3614 22900 | Mount P.C.B. | 1 |
| ACCESSORIES PARTS LIST | | | | CA38 | 131 2 3301 31100 | Chassis | 1 |
| 131 6 2719 10801 | | Bag Fan | 1 | CA39 | 131 2 1801 14100 | Leg | 4 |
| 131 6 4519 15700 | | Guarantee Certificate | 1 | CA40 | 131 2 1410 32000 | Cover (Bottom) | 1 |
| 131 6 4559 10900 | | Manufacturing No. | 1 | PCB1 | 141 0 1939 04750 | Main Amplifier P.C.B. Assy | 1 |
| 142 6 4119 32053 | | Explanatory Booklet | 1 | PCB2 | 141 0 1939 04760 | Phono P.C.B. Assy | 1 |
| CABINET & CHASSIS PARTS LIST | | | | PCB3 | 141 0 1939 04770 | Graphic Equalizer P.C.B. Assy | 1 |
| CA1 | 131 2 1410 32200 | Cover | 1 | PCB4 | 141 0 1939 04780 | Volume P.C.B. Assy | 1 |
| CA2 | 141 2 4219 33100 | +BTS-B 3.0x8 Sems CR | 6 | PCB5 | 141 0 1939 04790 | Power Switch P.C.B. Assy | 1 |
| CA3 | 131 2 1410 32101 | Cover (Heat Sink) | 1 | PCB6 | 141 0 1939 04800 | Speaker Terminal P.C.B. Assy | 1 |
| CA4 | 131 2 3202 13400 | Metal Reinf | 2 | PCB7 | 141 0 1939 04810 | Power Meter P.C.B. Assy | 1 |
| CA5 | 131 2 5205 32600 | Cushion | 1 | PCB8 | 141 0 1939 04820 | LED Ind. P.C.B. Assy | 1 |
| CA6 | 131 0 1016 44301 | Panel Decorate Assy | 1 | CX1 | 101 3 1302 00411 | Screw, Pan Hd., +M2.0x4 | 2 |
| | 131 2 1203 62500 | Panel Control | 1 | CX2 | 101 3 1302 60618 | Screw, Pan Hd., +M2.6x6 | 4 |
| | 131 2 1203 62801 | Panel Control | 1 | CX3 | 101 3 1303 00611 | Screw, Pan Hd., +M3.0x6 | 14 |
| | 141 2 1539 16800 | Decorate (Power) | 1 | CX4 | 143 3 1902 60611 | Screw, Brazier Hd. Tapping-B, +M2.6x6 | 5 |
| CA7 | 131 2 6113 51400 | Shelter | 1 | CX5 | 143 3 1903 00611 | Screw, Brazier Hd. Tapping-B, +M3.0x6 | 16 |
| CA8 | 131 2 1203 62600 | Panel Control | 1 | CX6 | 143 3 1903 00811 | Screw, Brazier Hd. Tapping-B, +M3.0x8 | 15 |
| CA9 | 131 2 1601 71001 | Knob (Equalizer) | 5 | CX7 | 143 3 1903 01211 | Screw, Brazier Hd. Tapping-B, +M3.0x12 | 2 |
| CA10 | 131 2 1601 90200 | Knob Slide (Balance) | 1 | CX8 | 143 3 1903 00618 | Screw, Brazier Hd. Tapping-B, +M3.0x6 | 9 |
| CA11 | 131 2 1601 90100 | Knob Slide (Master Volume) | 1 | CX9 | 143 3 1903 00818 | Screw, Brazier Hd. Tapping-B, +M3.0x8 | 5 |
| CA12 | 131 2 5205 32500 | Cushion | 2 | CX10 | 143 3 1703 00611 | Screw, Bind Hd. Tapping-B, +M3.0x6 | 2 |
| CA13 | △ 4 2512 23120 | Power Trans | 1 | CX11 | 143 3 1703 00818 | Screw, Bind Hd. Tapping-B, +M3.0x8 | 3 |
| CA14 | 131 2 3101 98000 | Metal Mount (Trans) | 1 | CX12 | 143 3 1704 00811 | Screw, Bind Hd. Tapping-B, +M4.0x8 | 4 |
| CA15 | 141 2 3229 48500 | Cover Shield | 1 | CX13 | 143 3 1703 01211 | Screw, Bind Hd. Tapping-B, +M3.0x12 | 4 |
| CA16 | 141 2 4359 37200 | Plate Sever | 1 | NOTES: | | | |
| CA17 | 141 2 4359 36100 | Plate Sever | 1 | 1. Parts order must contain Model Number, Part Number and Description. | | | |
| CA18 | 131 2 4221 00600 | Rivet | 1 | 2. Ordering quantity of screws and resistors must be multiple of 10 pcs. | | | |
| CA19 | 131 2 3101 98200 | Metal Mount (Power Speaker P.C.B.) | 1 | | | | |
| CA20 | 131 2 1601 86200 | Knob (Power Switch) | 1 | | | | |
| CA21 | 131 2 1601 69600 | Knob (Speaker Selector) | 2 | | | | |
| CA22 | 131 2 4203 84200 | S Kowa 4.2x12x1.0 Z | 4 | | | | |
| CA23 | 131 2 4219 19000 | Shaft (Loudness, Subsonic, High Filter) | 3 | | | | |
| CA24 | 131 2 1601 70100 | Knob (Function) | 8 | | | | |
| CA25 | 131 2 3305 36000 | Panel Front | 1 | | | | |
| CA26 | 141 2 3689 12300 | Plate Heat Sink | 1 | | | | |
| CA27 | △ 4 2432 00140 | Line Cord | 1 | | | | |
| CA28 | 131 2 6111 14200 | Bushing (Line Cord) | 1 | | | | |
| CA29 | 131 2 3306 39700 | Panel Rear | 1 | | | | |

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

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:

- GRAPHIC EQUALIZER to center positions.
- POWER switch to OFF
- SPEAKERS switch to SYSTEM-B
- FUNCTION switch to AUX
- TAPE MONITOR switch to SOURCE
- 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 SYSTEM-A 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 SYSTEM-A. Turn VOLUME control to MAX.
- 4) Increase generator output for 70 Watts RMS (23.6 volts across the 8-ohm load). Harmonic Distortion Analyzer should measure 0.2 % distortion or less.
- 5) Repeat steps 1 through 4 for RIGHT CHANNEL.

BOTH CHANNELS DRIVEN

Connect 8-ohm load resistors across LEFT and RIGHT SPEAKERS SYSTEM-A terminals. Adjust generator output and "VOLUME" control for 70 watts at Left and Right Channels (23.6 volts across the 8-ohm loads). Harmonic Distortion Analyzer should measure 0.2 % 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.

POWER AMPLIFIER ADJUSTMENT

BEFORE ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 10 minutes before attempting this adjustment.

IDLING CURRENT ADJUSTMENT

1. Set the SPEAKER switch to off position.
2. Turn VOLUME control to minimum.
3. Connect DC VTVM between R151 left leg and R152 right leg on the Power Amplifier P.C.Board.
4. Adjust VR101 for an indication of 15–25 mV on the DC VTVM.
5. Connect DC VTVM between R252 left leg and R251 right leg on the Power Amplifier P.C.Board.
6. Adjust VR201 for an indication of 15–25 mV on the DC VTVM.

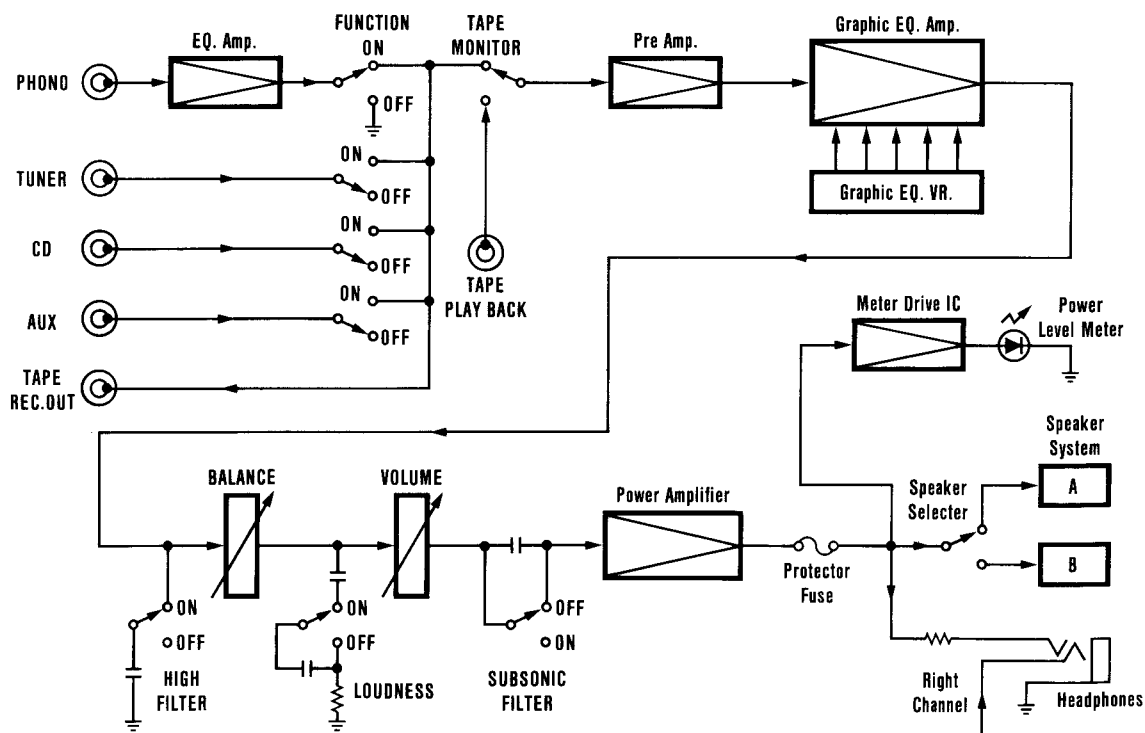
IMPORTANT NOTE

The amplifier has been Factory-adjusted for operation on 220V AC. The voltage can be changed for operation on 110V AC by making the following changes on the amplifier inside.

1. Remove the AC plug from the wall outlet.
2. Remove the screws securing the cover.
3. Disconnect Gray lead from Power switch P.C.Board Terminal No.T15, and then connect it to Power switch P.C.Board Terminal No.T13.
4. Disconnect Yellow lead from Power switch P.C.Board Terminal No.T15, and then connect it to Power switch P.C.Board Terminal No.T14.

The amplifier is now ready 110V operation. DO NOT attempt to operate the amplifier on 220V. Damage will result !

FUNCTIONAL BLOCK DIAGRAM



P.C.BOARD PARTS LIST

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|-----------------------------------|------------------|--|---------|-----------------------|--------------------|------------------------|------|
| MAIN AMPLIFIER P.C.B. ASSY | | | | SEMICONDUCTORS | | | |
| PCB1 | 141 0 1939 04750 | Main Amplifier P.C.B. Assy | 1 | D101 | 205 5 9020 43010 | Diode, DS 430 | 1 |
| | 4 2262 19030 | Main Amplifier P.C.B. | 1 | D102 | 202 5 3210 22012 | Zener Diode, GZA 22Y | 1 |
| | 4 2319 77190 | Switch Push 5Key (Phono/Tuner/CD/Aux/Tape) | 1 | D103 | 202 5 3160 00110 | Diode, GMA 01 | 1 |
| | △ 4 2349 20380 | Fuse T 1.0A | 2 | D104 | 202 5 3160 00110 | Diode, GMA 01 | 1 |
| | △ 4 2349 21470 | Fuse T 5.0A | 2 | D105 | DAA - STV- 3H-0 | Diode, STV 3 H | 1 |
| | 4 2352 00200 | Fuse Holder | 8 | D201 | 205 5 9020 43010 | Diode, DS 430 | 1 |
| J06 | 4 2362 00370 | 6P Plug | 1 | D202 | 202 5 3210 22012 | Zener Diode, GZA 22Y | 1 |
| | 111 2 6220 11100 | Wire Wrap Terminal | 7 | D203 | 202 5 3160 00110 | Diode, GMA 01 | 1 |
| | 131 2 6201 21500 | Plate Heat Sink | 1 | D204 | 202 5 3160 00110 | Diode, GMA 01 | 1 |
| L101 | 4 2532 00422 | RF Coil (5μH) | 1 | D205 | DAA - STV- 3H-0 | Diode, STV 3 H | 1 |
| L201 | 4 2532 00422 | RF Coil (5μH) | 1 | D301 | △ 202 5 2720 04015 | Bridge Diode, DBA 40 C | 1 |
| VR101 | 4 2222 01450 | Semi-fixed 200Ω-B | 1 | D302 | 202 5 3210 20012 | Zener Diode, GZA 20Y | 1 |
| VR201 | 4 2222 01450 | Semi-fixed 200Ω-B | 1 | D303 | 202 5 3210 20012 | Zener Diode, GZA 20Y | 1 |
| CAPACITORS | | | | | | | |
| C128 | CC2 2 1500 KD00C | Ceramic | 220pF | 50V | ±10% | 1 | |
| C129 | CC2 2 1500 KD00C | Ceramic | 220pF | 50V | ±10% | 1 | |
| C130 | CD4 7 4500 0001V | Electrolytic | 0.47μF | 50V | | 1 | |
| C131 | CD4 7 4500 0001V | Electrolytic | 0.47μF | 50V | | 1 | |
| C133 | CC4 7 1500 KD00C | Ceramic | 470pF | 50V | ±10% | 1 | |
| C134 | CC4 7 1500 KD00C | Ceramic | 470pF | 50V | ±10% | 1 | |
| C135 | CC4 7 0500 KD00C | Ceramic | 47pF | 50V | ±10% | 1 | |
| C136 | CD2 2 7630 0001V | Electrolytic | 220μF | 63V | | 1 | |
| C137 | CD1 0 5500 0001V | Electrolytic | 1μF | 50V | | 1 | |
| C138 | CD1 0 763A 0001V | Electrolytic | 100μF | 6.3V | | 1 | |
| C139 | CD1 0 6630 0001V | Electrolytic | 10μF | 63V | | 1 | |
| C140 | CC4 7 3500 ZG00C | Ceramic | 0.047μF | 50V | +80,-20% | 1 | |
| C228 | CC2 2 1500 KD00C | Ceramic | 220pF | 50V | ±10% | 1 | |
| C229 | CC2 2 1500 KD00C | Ceramic | 220pF | 50V | ±10% | 1 | |
| C230 | CD4 7 4500 0001V | Electrolytic | 0.47μF | 50V | | 1 | |
| C231 | CD4 7 4500 0001V | Electrolytic | 0.47μF | 50V | | 1 | |
| C233 | CC4 7 1500 KD00C | Ceramic | 470pF | 50V | ±10% | 1 | |
| C234 | CC4 7 1500 KD00C | Ceramic | 470pF | 50V | ±10% | 1 | |
| C235 | CC4 7 0500 KD00C | Ceramic | 47pF | 50V | ±10% | 1 | |
| C236 | CD2 2 7630 0001V | Electrolytic | 220μF | 63V | | 1 | |
| C237 | CD1 0 5500 0001V | Electrolytic | 1μF | 50V | | 1 | |
| C238 | CD1 0 763A 0001V | Electrolytic | 100μF | 6.3V | | 1 | |
| C239 | CD1 0 6630 0001V | Electrolytic | 10μF | 63V | | 1 | |
| C240 | CC4 7 3500 ZG00C | Ceramic | 0.047μF | 50V | +80,-20% | 1 | |
| C302 | 4 2232 00680 | Ceramic | 0.047μF | 150V | | 1 | |
| C303 | 4 2232 00680 | Ceramic | 0.047μF | 150V | | 1 | |
| C304 | 4 2232 00680 | Ceramic | 0.047μF | 150V | | 1 | |
| C305 | 4 2232 00680 | Ceramic | 0.047μF | 150V | | 1 | |
| C306 | 4 2239 72000 | Electrolytic | 4700μF | 63V | | 1 | |
| C307 | 4 2239 72000 | Electrolytic | 4700μF | 63V | | 1 | |
| C308 | CD4 7 6350 0001V | Electrolytic | 47μF | 35V | | 1 | |
| C309 | CD4 7 6350 0001V | Electrolytic | 47μF | 35V | | 1 | |
| C310 | CD1 0 5500 0001V | Electrolytic | 1μF | 50V | | 1 | |
| C311 | CD1 0 5500 0001V | Electrolytic | 1μF | 50V | | 1 | |
| C321 | CD3 3 6630 0001V | Electrolytic | 33μF | 63V | | 1 | |
| C331 | CD4 7 6630 0001V | Electrolytic | 47μF | 63V | | 1 | |
| C332 | CD2 2 7250 0001V | Electrolytic | 220μF | 25V | | 1 | |
| C401 | CD4 7 7250 0001V | Electrolytic | 470μF | 25V | | 1 | |
| C402 | CD4 7 6100 0001V | Electrolytic | 47μF | 10V | | 1 | |
| C403 | CD4 7 6250 0001V | Electrolytic | 47μF | 25V | | 1 | |
| C404 | CC4 7 3500 ZG00C | Ceramic | 0.047μF | 50V | +80,-20% | 1 | |
| C405 | CD1 0 5500 0001V | Electrolytic | 1μF | 50V | | 1 | |
| | | | | RESISTORS | | | |
| | R136 | RD1 0 2161 JH000 | Carbon | 1kΩ | 1/6W | ±5% | 1 |
| | R137 | RD5 6 3161 JH000 | Carbon | 56kΩ | 1/6W | ±5% | 1 |
| | R138 | RD5 6 1161 JH000 | Carbon | 560Ω | 1/6W | ±5% | 1 |
| | R139 | RD5 6 1161 JH000 | Carbon | 560Ω | 1/6W | ±5% | 1 |
| | R140 | RF8 2 0251 JK000 | Mold | 82Ω | 1/4W | ±5% | 1 |
| | R141 | RF3 3 0251 JH000 | Mold | 33Ω | 1/4W | ±5% | 1 |
| | R142 | RD4 7 3161 JH000 | Carbon | 47kΩ | 1/6W | ±5% | 1 |
| | R143 | RD2 2 3161 JH000 | Carbon | 22kΩ | 1/6W | ±5% | 1 |
| | R144 | RD6 8 2251 JM000 | Carbon | 6.8kΩ | 1/4W | ±5% | 1 |
| | R145 | RD2 2 1161 JH000 | Carbon | 220Ω | 1/6W | ±5% | 1 |
| | R146 | RD5 6 3161 JH000 | Carbon | 56kΩ | 1/6W | ±5% | 1 |
| | R147 | RD3 3 3161 JH000 | Carbon | 33kΩ | 1/6W | ±5% | 1 |
| | R148 | RF8 2 0251 JH000 | Mold | 82Ω | 1/4W | ±5% | 1 |
| | R149 | RF3 3 0251 JK000 | Mold | 33Ω | 1/4W | ±5% | 1 |
| | R150 | RF3 3 1251 JK000 | Mold | 330Ω | 1/4W | ±5% | 1 |
| | R151 | RH2 2 B202 JH003 | Metal | 0.22Ω | 2W | ±5% | 1 |

P.C.BOARD PARTS LIST (Continued)

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty | |
|----------|------------------|-------------|----------------|----------|--------------------------|---------------------------------------|------------------------------|---|
| R152 | RH2 2 B202 JH003 | Metal | 0.22Ω 2W ±5% | 1 | PHONO P.C.B. ASSY | | | |
| R153 | RH1 0 0102 JZ003 | Metal | 10Ω 1W ±5% | 1 | PCB2 141 0 1939 04760 | Phono P.C.B. Assy | 1 | |
| R154 | RH1 0 0501 JZ003 | Metal | 10Ω 1/2W ±5% | 1 | 4 2262 19040 | Phono P.C.B. | 1 | |
| R155 | RD1 5 3161 JH000 | Carbon | 15kΩ 1/6W ±5% | 1 | 4 2352 01650 | Pin Jack 4P (Phono,Tuner,CD/Aux,Tape) | 3 | |
| R156 | RD4 7 2251 JM000 | Carbon | 4.7kΩ 1/4W ±5% | 1 | CAPACITORS | | | |
| R157 | RD4 7 2161 JH000 | Carbon | 4.7kΩ 1/6W ±5% | 1 | C101 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R171 | RF2 2 A251 JH000 | Mold | 2.2Ω 1/4W ±5% | 1 | C102 | CD4 7 5160 0001V | Electrolytic 4.7μF 16V | 1 |
| R172 | RF2 2 A251 JH000 | Mold | 2.2Ω 1/4W ±5% | 1 | C103 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R236 | RD1 0 2161 JH000 | Carbon | 1kΩ 1/6W ±5% | 1 | C104 | CD4 7 663A 0001V | Electrolytic 47μF 6.3V | 1 |
| R237 | RD5 6 3161 JH000 | Carbon | 56kΩ 1/6W ±5% | 1 | C105 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R238 | RD5 6 1161 JH000 | Carbon | 560Ω 1/6W ±5% | 1 | C106 | CM1 8 3500 K00SV | Mylar 0.018μF 50V ±10% | 1 |
| R239 | RD5 6 1161 JH000 | Carbon | 560Ω 1/6W ±5% | 1 | C107 | CM47 2500 K00SV | Mylar 0.0047μF 50V ±10% | 1 |
| R240 | RF8 2 0251 JK000 | Mold | 82Ω 1/4W ±5% | 1 | C108 | CD1 0 5500 0001V | Electrolytic 1μF 50V | 1 |
| R241 | RF3 3 0251 JH000 | Mold | 33Ω 1/4W ±5% | 1 | C109 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R242 | RD4 7 3161 JH000 | Carbon | 47kΩ 1/6W ±5% | 1 | C146 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R243 | RD2 2 3161 JH000 | Carbon | 22kΩ 1/6W ±5% | 1 | C147 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R244 | RD6 8 2251 JM000 | Carbon | 6.8kΩ 1/4W ±5% | 1 | C148 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R245 | RD2 2 1161 JH000 | Carbon | 220Ω 1/6W ±5% | 1 | C149 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R246 | RD5 6 3161 JH000 | Carbon | 56kΩ 1/6W ±5% | 1 | C150 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R247 | RD3 3 3161 JH000 | Carbon | 33kΩ 1/6W ±5% | 1 | C151 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R248 | RF8 2 0251 JK000 | Mold | 82Ω 1/4W ±5% | 1 | C201 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R249 | RF3 3 0251 JK000 | Mold | 33Ω 1/4W ±5% | 1 | C202 | CD4 7 5160 0001V | Electrolytic 4.7μF 16V | 1 |
| R250 | RF3 3 1251 JK000 | Mold | 330Ω 1/4W ±5% | 1 | C203 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R251 | RH2 2 B202 JH003 | Metal | 0.22Ω 2W ±5% | 1 | C204 | CD4 7 663A 0001V | Electrolytic 47μF 6.3V | 1 |
| R252 | RH2 2 B202 JH003 | Metal | 0.22Ω 2W ±5% | 1 | C205 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R253 | RH1 0 0102 JZ003 | Metal | 10Ω 1W ±5% | 1 | C206 | CM1 8 3500 K00SV | Mylar 0.018μF 50V ±10% | 1 |
| R254 | RH1 0 0501 JZ003 | Metal | 10Ω 1/2W ±5% | 1 | C207 | CM47 2500 K00SV | Mylar 0.0047μF 50V ±10% | 1 |
| R255 | RD1 5 3161 JH000 | Carbon | 15kΩ 1/6W ±5% | 1 | C208 | CD1 0 5500 0001V | Electrolytic 1μF 50V | 1 |
| R256 | RD4 7 2251 JM000 | Carbon | 4.7kΩ 1/4W ±5% | 1 | C209 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R257 | RD4 7 2161 JH000 | Carbon | 4.7kΩ 1/6W ±5% | 1 | C246 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R271 | RF2 2 A251 JK000 | Mold | 2.2Ω 1/4W ±5% | 1 | C247 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R272 | RF2 2 A251 JH000 | Mold | 2.2Ω 1/4W ±5% | 1 | C248 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R302 | RH1 5 1302 JZ003 | Metal | 150Ω 3W ±5% | 1 | C249 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R303 | RH8 2 1202 JZ003 | Metal | 820Ω 2W ±5% | 1 | C250 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R304 | RF1 0 2251 JH000 | Mold | 1kΩ 1/4W ±5% | 1 | C251 | CC2 2 1500 KD00C | Ceramic 220pF 50V ±10% | 1 |
| R305 | RD5 6 1251 JS000 | Carbon | 560Ω 1/4W ±5% | 1 | C316 | CD4 7 6250 0001V | Electrolytic 47μF 25V | 1 |
| R306 | RD5 6 1251 JS000 | Carbon | 560Ω 1/4W ±5% | 1 | C317 | CD4 7 6250 0001V | Electrolytic 47μF 25V | 1 |
| R307 | RD4 7 1251 JS000 | Carbon | 470Ω 1/4W ±5% | 1 | C318 | CC4 7 3500 ZG00C | Ceramic 0.047μF 50V +80,-20% | 1 |
| R308 | RF1 0 1251 JH000 | Mold | 100Ω 1/4W ±5% | 1 | C319 | CC4 7 3500 ZG00C | Ceramic 0.047μF 50V +80,-20% | 1 |
| R309 | RD1 0 1251 JS000 | Carbon | 100Ω 1/4W ±5% | 1 | C403 | CC4 7 3500 ZG00C | Ceramic 0.047μF 50V +80,-20% | 1 |
| R313 | RD5 6 1251 JM000 | Carbon | 560Ω 1/4W ±5% | 1 | SEMICONDUCTOR | | | |
| R314 | RD1 2 2251 JM000 | Carbon | 1.2kΩ 1/4W ±5% | 1 | IC401 | IJJ - NJM072D-E | IC, NJM 072D E | 1 |
| R401 | RD2 2 3161 JH000 | Carbon | 22kΩ 1/6W ±5% | 1 | RESISTORS | | | |
| R402 | RD1 0 3161 JH000 | Carbon | 10kΩ 1/6W ±5% | 1 | R101 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| R403 | RD4 7 2251 JM000 | Carbon | 4.7kΩ 1/4W ±5% | 1 | R102 | RD1 0 4161 JH000 | Carbon 100kΩ 1/6W ±5% | 1 |
| R404 | RD3 9 2161 JH000 | Carbon | 3.9kΩ 1/6W ±5% | 1 | R103 | RD1 0 4161 JH000 | Carbon 100kΩ 1/6W ±5% | 1 |
| R405 | RD1 0 4161 JH000 | Carbon | 100kΩ 1/6W ±5% | 1 | R104 | RD2 7 1161 JH000 | Carbon 270Ω 1/6W ±5% | 1 |
| R406 | RD2 2 3161 JH000 | Carbon | 22kΩ 1/6W ±5% | 1 | R105 | RD2 2 4161 JH000 | Carbon 220kΩ 1/6W ±5% | 1 |
| R407 | RD1 0 4161 JH000 | Carbon | 100kΩ 1/6W ±5% | 1 | R106 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| R408 | RD1 0 3161 JH000 | Carbon | 10kΩ 1/6W ±5% | 1 | R107 | RD1 0 4161 JH000 | Carbon 100kΩ 1/6W ±5% | 1 |
| R409 | RD1 0 2161 JH000 | Carbon | 1kΩ 1/6W ±5% | 1 | R108 | RD2 2 2161 JH000 | Carbon 2.2kΩ 1/6W ±5% | 1 |
| | | | | | R201 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| | | | | | R202 | RD1 0 4161 JH000 | Carbon 100kΩ 1/6W ±5% | 1 |
| | | | | | R203 | RD1 0 4161 JH000 | Carbon 100kΩ 1/6W ±5% | 1 |
| | | | | | R204 | RD2 7 1161 JH000 | Carbon 270Ω 1/6W ±5% | 1 |
| | | | | | R205 | RD2 2 4161 JH000 | Carbon 220kΩ 1/6W ±5% | 1 |
| | | | | | R206 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| | | | | | R207 | RD1 0 4161 JH000 | Carbon 100kΩ 1/6W ±5% | 1 |
| | | | | | R208 | RD2 2 2161 JH000 | Carbon 2.2kΩ 1/6W ±5% | 1 |
| | | | | | R310 | RD1 0 2251 JS000 | Carbon 1kΩ 1/4W ±5% | 1 |
| | | | | | R311 | RD1 0 2251 JS000 | Carbon 1kΩ 1/4W ±5% | 1 |

P.C.BOARD PARTS LIST(Continued)

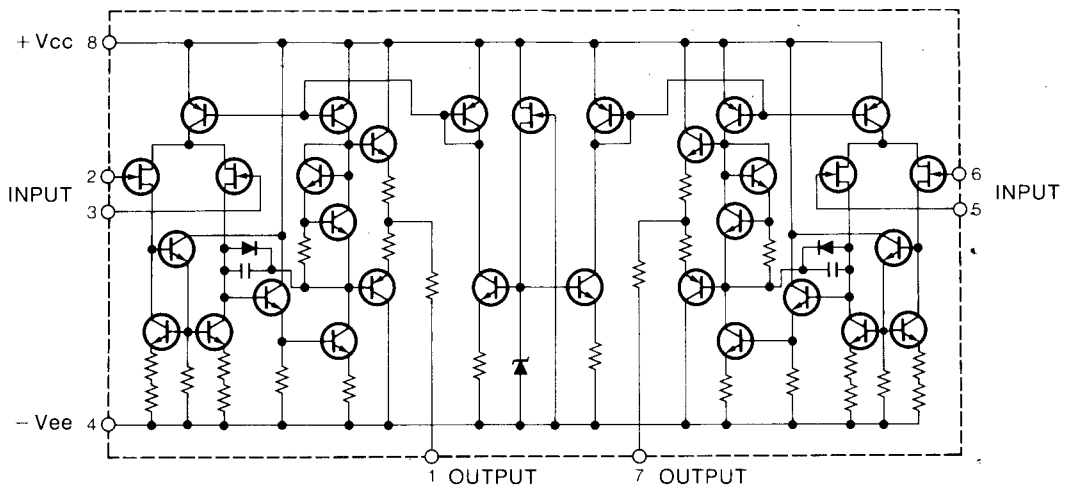
| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|--------------------------------------|------------------|-------------------------------|------|---------------------------|------------------|---|------|
| GRAPHIC EQUALIZER P.C.B. ASSY | | | | | | | |
| PCB3 | 141 0 1939 04770 | Graphic Equalizer P.C.B. Assy | 1 | R114 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| | 4 2262 19050 | Graphic Equalizer P.C.B. | 1 | R115 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| VR403 | 4 2229 75140 | Slide VR 250kΩ -Wx2 (63Hz) | 1 | R116 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| VR404 | 4 2229 75140 | Slide VR 250kΩ -Wx2 (250Hz) | 1 | R117 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| VR405 | 4 2229 75140 | Slide VR 250kΩ -Wx2 (1kHz) | 1 | R118 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| VR406 | 4 2229 75140 | Slide VR 250kΩ -Wx2 (4kHz) | 1 | R119 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| VR407 | 4 2229 75140 | Slide VR 250kΩ -Wx2 (16kHz) | 1 | R120 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| CAPACITORS | | | | | | | |
| C110 | CD1 0 5500 0001V | Electrolytic 1μF 50V | 1 | R121 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| C111 | CC1 0 1500 KD00C | Ceramic 100pF 50V ±10% | 1 | R122 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| C112 | CC6 8 0500 KD00C | Ceramic 68pF 50V ±10% | 1 | R123 | RD1 2 2161 JH000 | Carbon 1.2kΩ 1/6W ±5% | 1 |
| C113 | CC1 0 0500 DD00C | Ceramic 10pF 50V ±0.5% | 1 | R124 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C114 | CD2 2 6250 0001V | Electrolytic 22μF 25V | 1 | R125 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C115 | CM1 8 3500 K00SV | Mylar 0.018μF 50V ±10% | 1 | R126 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C116 | CM8 2 2500 K00SV | Mylar 0.0082μF 50V ±10% | 1 | R127 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C117 | CM4 7 2500 K00SV | Mylar 0.0047μF 50V ±10% | 1 | R128 | RD1 5 4161 JH000 | Carbon 150kΩ 1/6W ±5% | 1 |
| C118 | CM1 5 2500 K00SV | Mylar 0.0015μF 50V ±10% | 1 | R129 | RD1 0 4161 JH000 | Carbon 100kΩ 1/6W ±5% | 1 |
| C119 | CC6 8 1500 KE00C | Ceramic 680pF 50V ±10% | 1 | R130 | RD3 9 3161 JH000 | Carbon 39kΩ 1/6W ±5% | 1 |
| C120 | CD2 2 5500 0001V | Electrolytic 2.2μF 50V | 1 | R131 | RD3 3 3161 JH000 | Carbon 33kΩ 1/6W ±5% | 1 |
| C121 | CD3 3 4500 0001V | Electrolytic 0.33μF 50V | 1 | R132 | RD2 2 3161 JH000 | Carbon 22kΩ 1/6W ±5% | 1 |
| C122 | CM8 2 3500 J00TV | Mylar 0.082μF 50V ±5% | 1 | R209 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C123 | CM2 2 3500 K00SV | Mylar 0.022μF 50V ±10% | 1 | R210 | RD5 6 3161 JH000 | Carbon 56kΩ 1/6W ±5% | 1 |
| C124 | CM4 7 2500 K00SV | Mylar 0.0047μF 50V ±10% | 1 | R211 | RD4 7 2161 JH000 | Carbon 4.7kΩ 1/6W ±5% | 1 |
| C210 | CD1 0 5500 0001V | Electrolytic 1μF 50V | 1 | R212 | RD5 6 2161 JH000 | Carbon 5.6kΩ 1/6W ±5% | 1 |
| C211 | CC1 0 1500 KD00C | Ceramic 100pF 50V ±10% | 1 | R213 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| C212 | CC6 8 0500 KD00C | Ceramic 68pF 50V ±10% | 1 | R214 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| C213 | CC1 0 0500 DD00C | Ceramic 10pF 50V ±0.5% | 1 | R215 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| C214 | CD2 2 6250 0001V | Electrolytic 22μF 25V | 1 | R216 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| C215 | CM1 8 3500 K00SV | Mylar 0.018μF 50V ±10% | 1 | R217 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 |
| C216 | CM8 2 2500 K00SV | Mylar 0.0082μF 50V ±10% | 1 | R218 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| C217 | CM4 7 2500 K00SV | Mylar 0.0047μF 50V ±10% | 1 | R219 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| C218 | CM1 5 2500 K00SV | Mylar 0.0015μF 50V ±10% | 1 | R220 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| C219 | CC6 8 1500 KE00C | Ceramic 680pF 50V ±10% | 1 | R221 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| C220 | CD2 2 5500 0001V | Electrolytic 2.2μF 50V | 1 | R222 | RD1 5 3161 JH000 | Carbon 15kΩ 1/6W ±5% | 1 |
| C221 | CD3 3 4500 0001V | Electrolytic 0.33μF 50V | 1 | R223 | RD1 2 2161 JH000 | Carbon 1.2kΩ 1/6W ±5% | 1 |
| C222 | CM8 2 3500 J00TV | Mylar 0.082μF 50V ±5% | 1 | R224 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C223 | CM2 2 3500 K00SV | Mylar 0.022μF 50V ±10% | 1 | R225 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C224 | CM4 7 2500 K00SV | Mylar 0.0047μF 50V ±10% | 1 | R226 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C312 | CD4 7 6250 0001V | Electrolytic 47μF 25V | 1 | R227 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 |
| C313 | CD4 7 6250 0001V | Electrolytic 47μF 25V | 1 | R228 | RD1 5 4161 JH000 | Carbon 150kΩ 1/6W ±5% | 1 |
| C314 | CC4 7 3500 ZG00C | Ceramic 0.047μF 50V +80,-20% | 1 | R229 | RD1 0 4161 JH000 | Carbon 100kΩ 1/6W ±5% | 1 |
| C315 | CC4 7 3500 ZG00C | Ceramic 0.047μF 50V +80,-20% | 1 | R230 | RD3 9 3161 JH000 | Carbon 39kΩ 1/6W ±5% | 1 |
| SEMICONDUCTORS | | | | | | | |
| IC402 | 206 5 1696 45810 | IC, LA 6458 S | 1 | R231 | RD3 3 3161 JH000 | Carbon 33kΩ 1/6W ±5% | 1 |
| Q101 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | R232 | RD2 2 3161 JH000 | Carbon 22kΩ 1/6W ±5% | 1 |
| Q102 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | VOLUME P.C.B. ASSY | | | |
| Q103 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | PCB4 | 141 0 1939 04780 | Volume P.C.B. Assy | 1 |
| Q104 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | | 4 2262 19060 | Volume P.C.B. | 1 |
| Q105 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | | 4 2319 77160 | SW. Push 3Key (Loudness/Subsonic/Hi Filter) | 1 |
| Q201 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | VR401 | 4 2229 75150 | Slide VR 250kΩ -Wx1 (Balance) | 1 |
| Q202 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | VR402 | 4 2229 75160 | Slide VR 100kΩ -Ax2 (Volume) | 1 |
| Q203 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | CAPACITORS | | | |
| Q204 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | C125 | CM3 3 2500 K00SV | Mylar 0.0033μF 50V ±10% | 1 |
| Q205 | 203 5 5000 53660 | Transistor, 2SC 536 | 1 | C126 | CM3 9 3500 K00SV | Mylar 0.039μF 50V ±10% | 1 |
| RESISTORS | | | | C127 | CC2 7 1500 KE00R | Ceramic 270pF 50V ±10% | 1 |
| R109 | RD1 5 2161 JH000 | Carbon 1.5kΩ 1/6W ±5% | 1 | C132 | CD1 0 6160 0002V | Electrolytic 10μF 16V | 1 |
| R110 | RD5 6 3161 JH000 | Carbon 56kΩ 1/6W ±5% | 1 | C225 | CM3 3 2500 K00SV | Mylar 0.0033μF 50V ±10% | 1 |
| R111 | RD4 7 2161 JH000 | Carbon 4.7kΩ 1/6W ±5% | 1 | C226 | CM3 9 3500 K00SV | Mylar 0.039μF 50V ±10% | 1 |
| R112 | RD5 6 2161 JH000 | Carbon 5.6kΩ 1/6W ±5% | 1 | C227 | CC2 7 1500 KE00R | Ceramic 270pF 50V ±10% | 1 |
| R113 | RD3 9 1161 JH000 | Carbon 390Ω 1/6W ±5% | 1 | C232 | CD1 0 6160 0002V | Electrolytic 10μF 16V | 1 |

P.C.BOARD PARTS LIST(Continued)

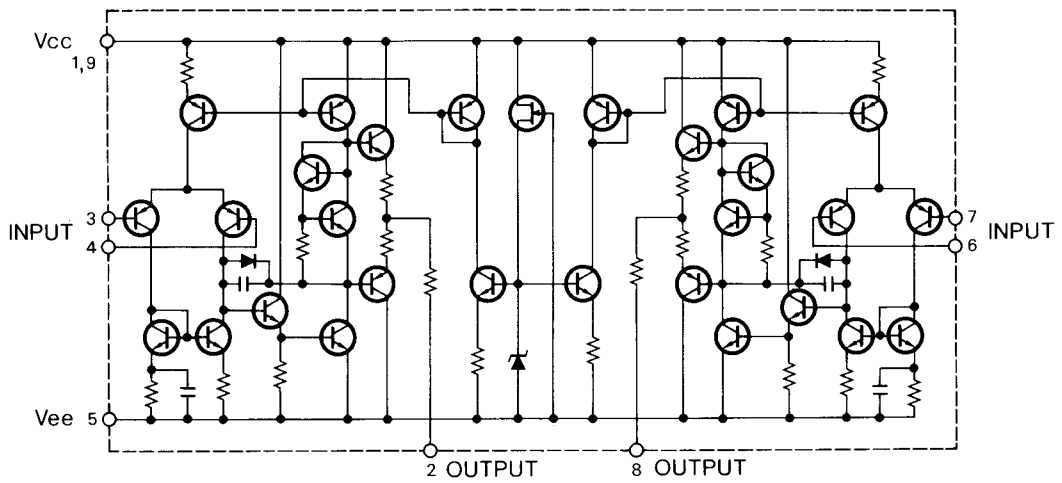
| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty | | |
|-------------------------------------|------------------|--|------------------|-----------------------|---|------------------------------------|-----------------------------------|----------------|---|
| RESISTORS | | | | SEMICONDUCTORS | | | | | |
| R133 | RD4 7 2161 JH000 | Carbon | 4.7kΩ 1/6W ±5% | 1 | D108 | D00 - SLP- 273B- L.E.D., SLP 273 B | 1 | | |
| R134 | RD6 8 2251 JM000 | Carbon | 6.8kΩ 1/4W ±5% | 1 | D109 | D00 - SLP- 273B- L.E.D., SLP 273 B | 1 | | |
| R135 | RD2 2 4161 JH000 | Carbon | 220kΩ 1/6W ±5% | 1 | D110 | D00 - SLP- 273B- L.E.D., SLP 273 B | 1 | | |
| R233 | RD4 7 2161 JH000 | Carbon | 4.7kΩ 1/6W ±5% | 1 | D111 | D00 - SLP- 273B- L.E.D., SLP 273 B | 1 | | |
| R234 | RD6 8 2251 JM000 | Carbon | 6.8kΩ 1/4W ±5% | 1 | D112 | D00 - SLP- 273B- L.E.D., SLP 273 B | 1 | | |
| R235 | RD2 2 4161 JH000 | Carbon | 220kΩ 1/6W ±5% | 1 | D113 | D00 - SLP- 273B- L.E.D., SLP 273 B | 1 | | |
| POWER SWITCH P.C.B. ASSY | | | | RESISTORS | | | | | |
| PCB5 | 141 0 1939 04790 | Power Switch P.C.B. Assy | | 1 | R161 | RD1 0 1161 JH000 | Carbon | 100Ω 1/6W ±5% | 1 |
| | 4 2262 19070 | Power Switch P.C.B. | | 1 | R162 | RD4 7 2161 JH000 | Carbon | 4.7kΩ 1/6W ±5% | 1 |
| | △ 4 2312 05710 | Switch Push Power (Power) | | 1 | R261 | RD1 0 1161 JH000 | Carbon | 100Ω 1/6W ±5% | 1 |
| | 4 2319 77180 | Switch Push 1Key (Speakers A/B) | | 2 | R262 | RD4 7 2161 JH000 | Carbon | 4.7kΩ 1/6W ±5% | 1 |
| | △ 4 2349 20580 | Fuse T 3.15A | | 2 | LED IND. P.C.B. ASSY | | | | |
| | 4 2352 00200 | Fuse Holder | | 4 | PCB8 | 141 0 1939 04820 | LED Ind. P.C.B. Assy | | 1 |
| | 4 2352 00990 | Jack 3P (Headphones) | | 1 | | 4 2262 19100 | LED Ind. P.C.B. | | 1 |
| J08 | 4 2362 00440 | Plug 3P | | 1 | | 131 2 4208 46000 | Spacer (L.E.D.) | | 1 |
| | 4 2372 00830 | EC Terminal 1P | | 2 | J06 | 131 0 4006 22278 | Cord Assy | | 1 |
| | 111 2 6220 11100 | Wire Wrap Terminal | | 4 | SEMICONDUCTORS | | | | |
| | 131 2 6114 01400 | Cover Safty | | 1 | D305 | DYY - SLR- 55URC | L.E.D., SLR 55 URC (Tape Monitor) | | 1 |
| J10 | 4 2439 72191 | Wire 4 Parallel | | 1 | D306 | 4 2029 72580 | L.E.D., SLR 55 MC (Aux) | | 1 |
| CAPACITOR | | | | RESISTOR | | | | | |
| C301 | △ 4 2239 70970 | Ceramic | 0.01μF 400V | 1 | R315 | RD2 2 2251 JM000 | Carbon | 2.2kΩ 1/4W ±5% | 1 |
| RESISTORS | | | | NOTES: | | | | | |
| R158 | RH4 7 1202 JZ000 | Metal | 470Ω 2W ±5% | 1 | 1. Parts order must contain Model Number, Part Number and Description. | | | | |
| R160 | RD1 2 3251 JM000 | Carbon | 12kΩ 1/4W ±5% | 1 | 2. Ordering quantity of screws and resistors must be multiple of 10 pcs. | | | | |
| R258 | RH4 7 1202 JZ000 | Metal | 470Ω 2W ±5% | 1 | PRODUCT SAFETY NOTICE Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol △ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with △, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer. | | | | |
| R260 | RD1 2 3251 JM000 | Carbon | 12kΩ 1/4W ±5% | 1 | | | | | |
| SPEAKER TERMINAL P.C.B. ASSY | | | | | | | | | |
| PCB6 | 141 0 1939 04800 | Speaker Terminal P.C.B. Assy | | 1 | | | | | |
| | 4 2262 19080 | Speaker Terminal P.C.B. | | 1 | | | | | |
| | 4 2372 01160 | Speaker 8P Terminal (Sperker Terminal) | | 1 | | | | | |
| CAPACITORS | | | | | | | | | |
| C144 | CC1 0 2500 KE00R | Ceramic | 0.001μF 50V ±10% | 1 | | | | | |
| C145 | CC1 0 2500 KE00R | Ceramic | 0.001μF 50V ±10% | 1 | | | | | |
| C244 | CC1 0 2500 KE00R | Ceramic | 0.001μF 50V ±10% | 1 | | | | | |
| C245 | CC1 0 2500 KE00R | Ceramic | 0.001μF 50V ±10% | 1 | | | | | |
| POWER METER P.C.B. ASSY | | | | | | | | | |
| PCB7 | 141 0 1939 04810 | Power Meter P.C.B. Assy | | 1 | | | | | |
| | 4 2262 19090 | Power Meter P.C.B. | | 1 | | | | | |
| | 131 2 4208 46100 | Spacer (L.E.D.) | | 1 | | | | | |
| J08 | 131 0 4006 33609 | Cord Assy | | 1 | | | | | |
| CAPACITORS | | | | | | | | | |
| C141 | CD1 0 4500 0002V | Electrolytic | 0.1μF 50V | 1 | | | | | |
| C142 | CD4 7 5350 0002V | Electrolytic | 4.7μF 35V | 1 | | | | | |
| C143 | CD1 0 5500 0002V | Electrolytic | 1μF 50V | 1 | | | | | |
| C241 | CD1 0 4500 0002V | Electrolytic | 0.1μF 50V | 1 | | | | | |
| C242 | CD4 7 5350 0002V | Electrolytic | 4.7μF 35V | 1 | | | | | |
| C243 | CD1 0 5500 0002V | Electrolytic | 1μF 50V | 1 | | | | | |
| C320 | CD1 0 6350 0002V | Electrolytic | 10μF 35V | 1 | | | | | |

IC EQUIVALENT CIRCUIT & BLOCK DIAGRAM

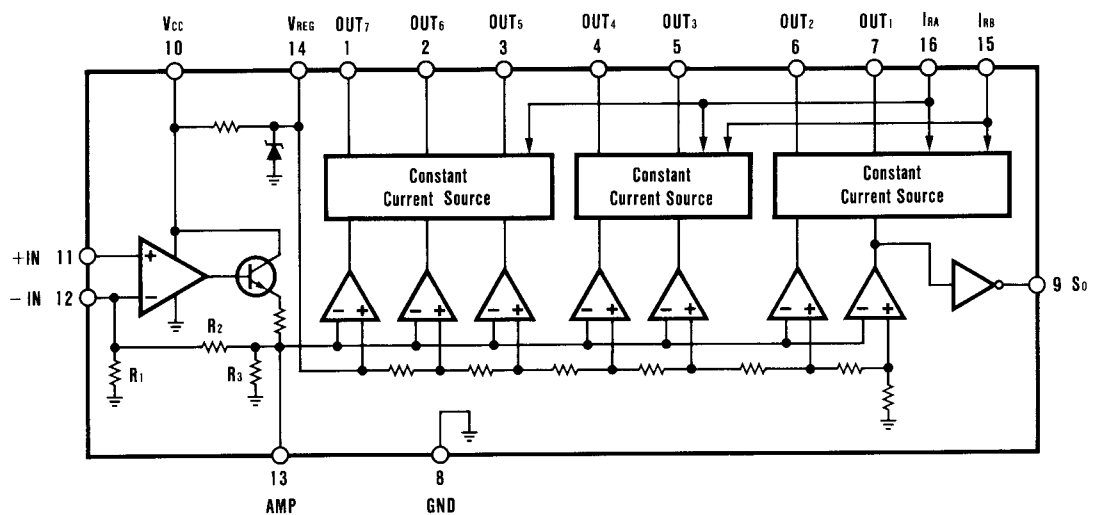
PHONO EQUALIZER AMP IC NJM072D



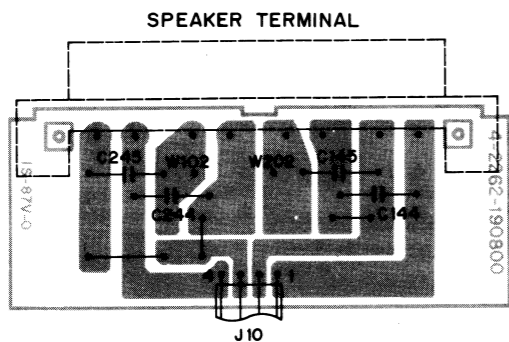
GRAPHIC EQUALIZER AMP IC LA6458S



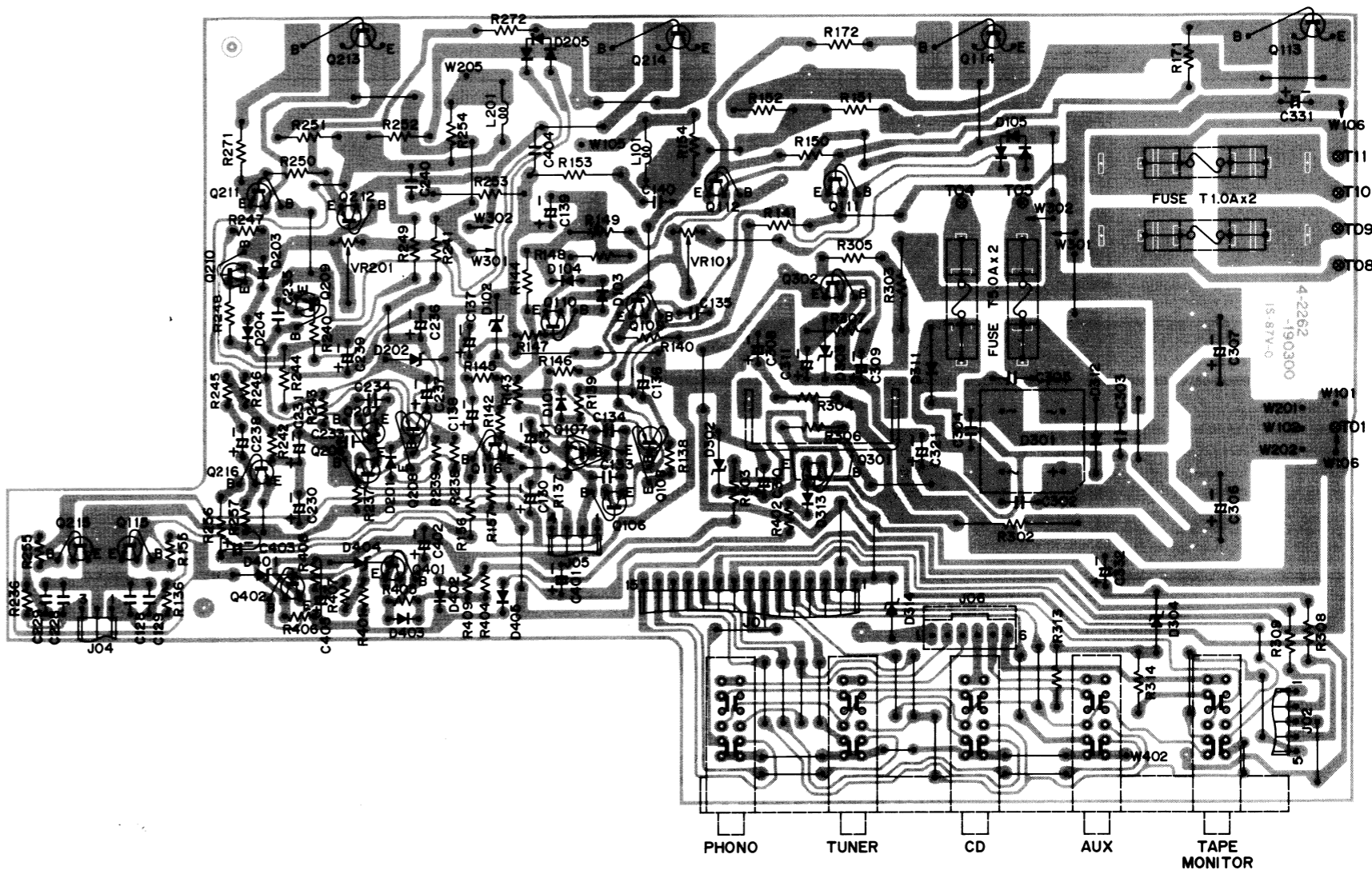
METER DRIVE AMP IC IR2E29



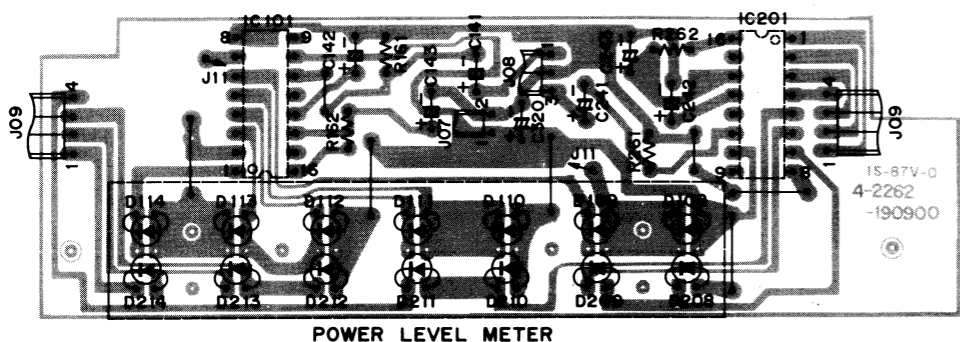
**SPEAKER TERMINAL P.C.BOARD
(BOTTOM VIEW)**



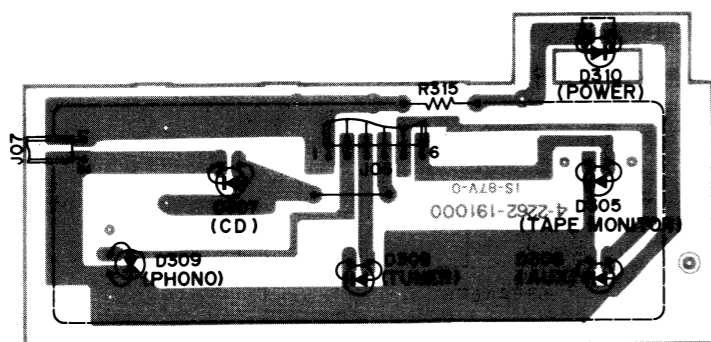
**MAIN AMPLIFIER P.C.BOARD
(BOTTOM VIEW)**



**POWER METER P.C.BOARD
(BOTTOM VIEW)**



**LED INDICATOR P.C.BOARD
(BOTTOM VIEW)**



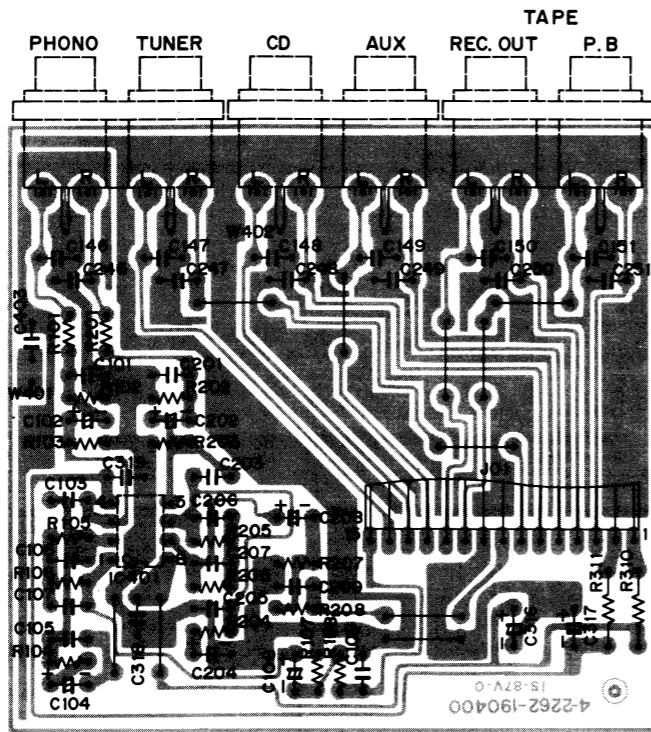
MAIN AMPLIFIER P.C. BOARD

| TRANSISTOR DC VOLTAGES | | | | | | | | | |
|------------------------|----------|--------|--------|--------|------------|----------|--------|--------|--------|
| SYMBOL No. | DEVICE | B | C | E | SYMBOL No. | DEVICE | B | C | E |
| Q106,206 | 2SC 536 | -0.1V | 50.9V | -0.7V | Q114,214 | 2SA 1265 | 0V | -51.9V | -0.6V |
| Q107,207 | 2SC 536 | -0.9V | 50.9V | -0.7V | Q115,215 | 2SD 1012 | 0.1V | 0V | 0V |
| Q108,208 | 2SA 108 | 50.9V | 50.9V | 51.3V | Q116,216 | 2SD 1012 | 0.6V | 0V | 0V |
| Q109,209 | 2SA 1019 | 50.9V | 1.2V | 51.2V | Q301 | 2SD 325 | 22.0V | 46.5V | 21.5V |
| Q110,210 | 2SC 2375 | -51.0V | -1.2V | -51.7V | Q302 | 2SB 560 | -21.2V | -29.1V | -20.6V |
| Q111,211 | 2SC 3416 | 1.2V | 52.4V | 0.6V | Q401 | 2SC 536 | 2.1V | 1.5V | 1.5V |
| Q112,212 | 2SA 1352 | -1.2V | -51.3V | -0.6V | Q402 | 2SC 536 | 0.1V | 2.7V | 0V |
| Q113,213 | 2SC 3182 | 0V | 51.9V | 0.6V | | | | | |

POWER METER P.C. BOARD

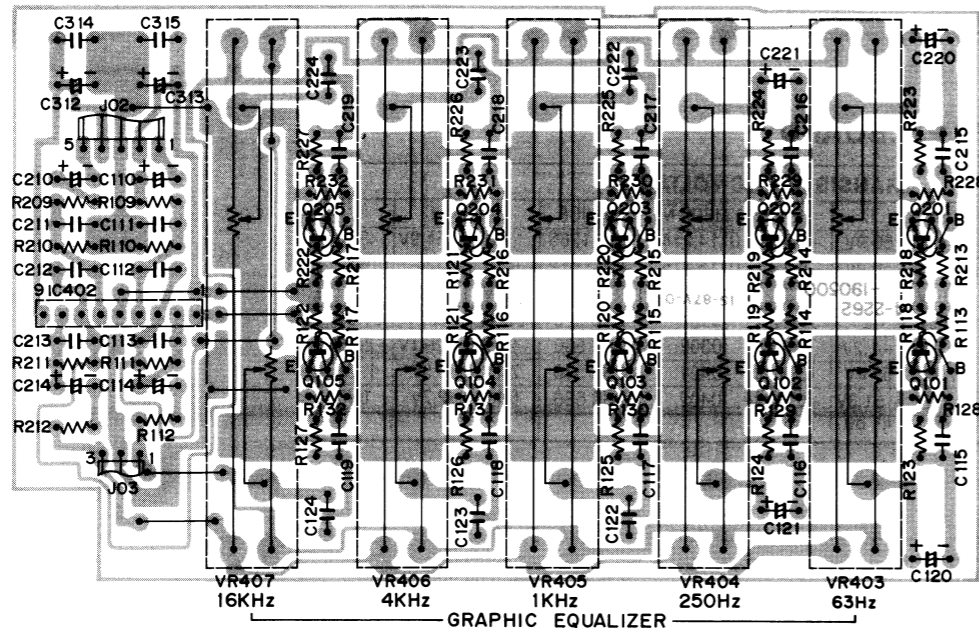
| IC PIN NUMBERS DC VOLTAGES | | | | | | | | | | | | | | | | | |
|----------------------------|--------|-------|-------|-------|-------|-------|-------|-------|----|------|-------|----|----|----|------|------|------|
| SYMBOL No. | DEVICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| IC101,201 | IR2E29 | 13.0V | 14.5V | 16.1V | 14.6V | 16.1V | 14.6V | 16.2V | 0V | 0.2V | 17.8V | 0V | 0V | 0V | 2.6V | 0.2V | 0.9V |

PHONO P.C.BOARD (BOTTOM VIEW)



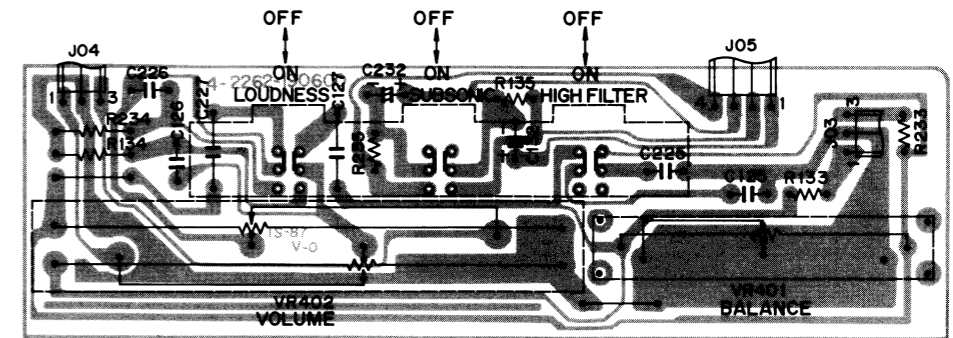
| IC PIN NUMBERS DC VOLTAGES | | | | | | | | | |
|----------------------------|--------|----|----|------|--------|----|----|----|-------|
| SYMBOL No. | DEVICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| IC401 | NJM072 | 0V | 0V | 0.1V | -19.9V | 0V | 0V | 0V | 20.5V |

GRAPHIC EQUALIZER P.C.BOARD (BOTTOM VIEW)

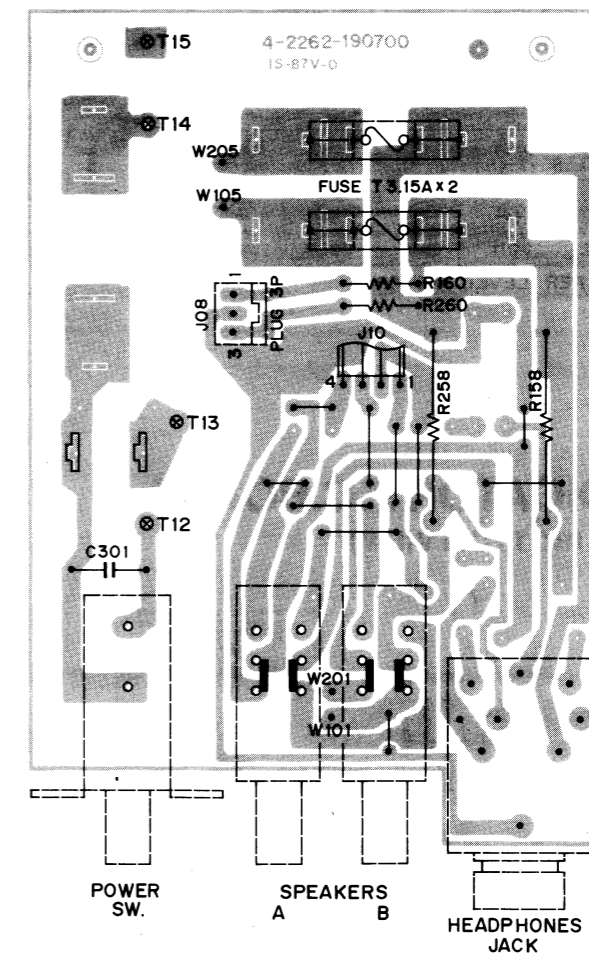


| IC PIN NUMBERS DC VOLTAGES | | | | | | | | | | |
|----------------------------|---------|-------|----|----|----|--------|----|----|----|-------|
| SYMBOL No. | DEVICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| IC402 | LA 6458 | 19.6V | 0V | 0V | 0V | -19.0V | 0V | 0V | 0V | 19.6V |

VOLUME P.C.BOARD (BOTTOM VIEW)

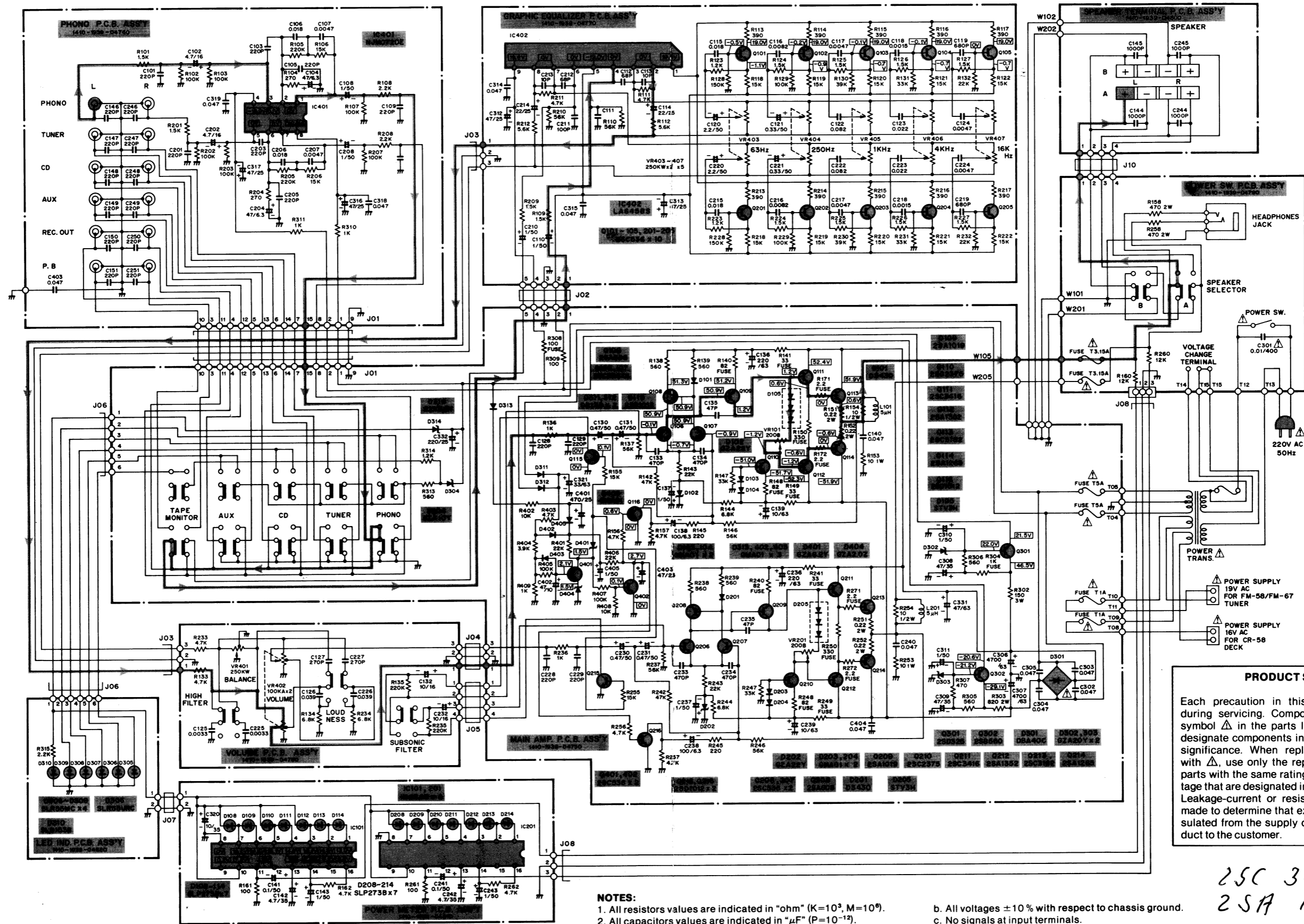


POWER SWITCH P.C.BOARD (BOTTOM VIEW)



| TRANSISTOR DC VOLTAGES | | | | |
|------------------------|---------|-------|-------|-------|
| SYMBOL No. | DEVICE | B | C | E |
| Q101,201 | 2SC 536 | -0.5V | 19.0V | -1.1V |
| Q102,202 | 2SC 536 | -0.2V | 19.0V | -0.9V |
| Q103,203 | 2SC 536 | -0.1V | 19.0V | -0.7V |
| Q104,204 | 2SC 536 | -0.1V | 19.0V | -0.7V |
| Q105,205 | 2SC 536 | 0V | 19.0V | -0.7V |

SCHEMATIC DIAGRAM



PRODUCT SAFETY NOTICE

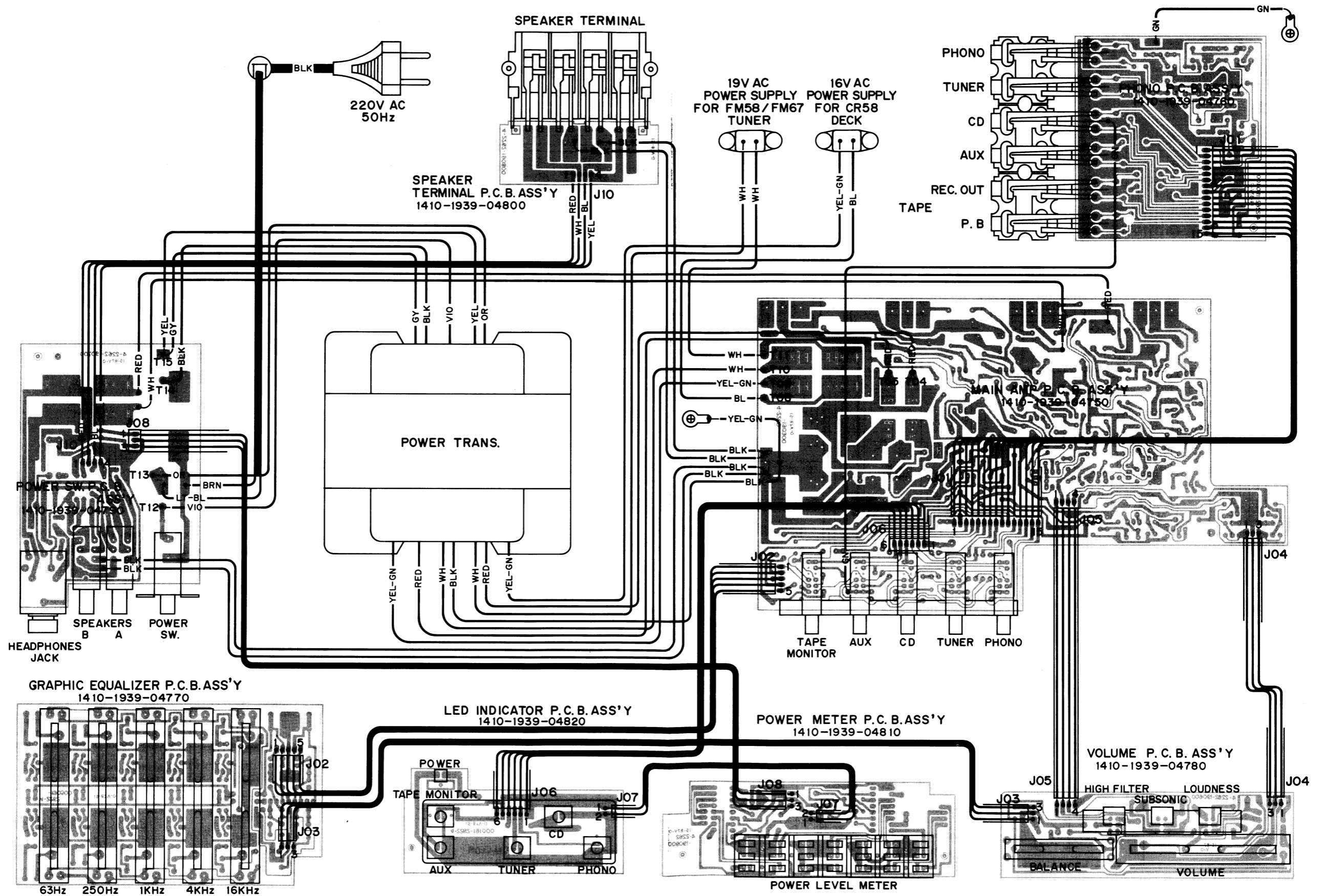
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

- NOTES:**
1. All resistor values are indicated in "ohm" ($K=10^3, M=10^6$).
 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 $\pm 10\%$ with respect to chassis ground.
 - c. No signals at input terminals.
 - d. AC input at 220 volts 50 Hz.
 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.

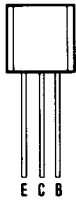
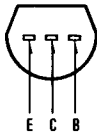
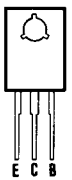
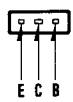
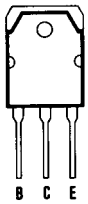

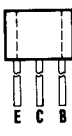
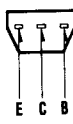
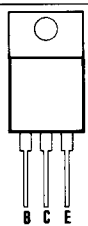
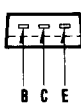
25C 3182
25A 1265
25C 3416
25A 1352

CA 67

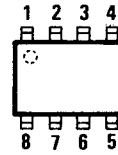
POINT TO POINT WIRING DIAGRAM



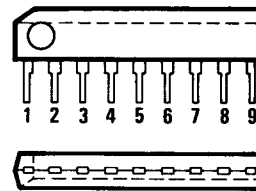
SEMICONDUCTOR LEAD IDENTIFICATION

| TRANSISTOR | FRONT VIEW | BOTTOM VIEW |
|--|---|---|
| 2SA608 2SA1019 2SB560 2SC536 2SC2375 |  |  |
| 2SA1352 2SC3416 |  |  |
| 2SA1265 2SC3182 |  |  |
| 2SD1012 |  |  |
| 2SD325 |  |  |
| TERMINAL NAME | | |
| B → BASE C → COLLECTOR E → EMITTER | | |

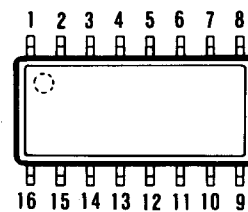
NJM072DE BOTTOM VIEW



LA6458S FRONT/BOTTOM VIEWS



IR2E29 BOTTOM VIEW





FISHER

Service/Ersatzteillager:
FISHER HiFi Europa Vertriebs-GmbH
Shönstraße 80, 8000 München 90
Telefon 0 89/23 79-1
Telex 5-212384 D
Wenden Sie sich bitte mit technischen
Fragen an diese Adresse.

Verwaltung, Verkauf und Auslieferungslager:
FISHER HiFi Europa Vertriebs-GmbH
Truderingerstraße 13, 8000 München 80
Telefon 0 89/41 45-0
Telex 5-24665 D
5-24033 D

PRINTED IN JAPAN
'84/Mar. **WM-1 1629**