

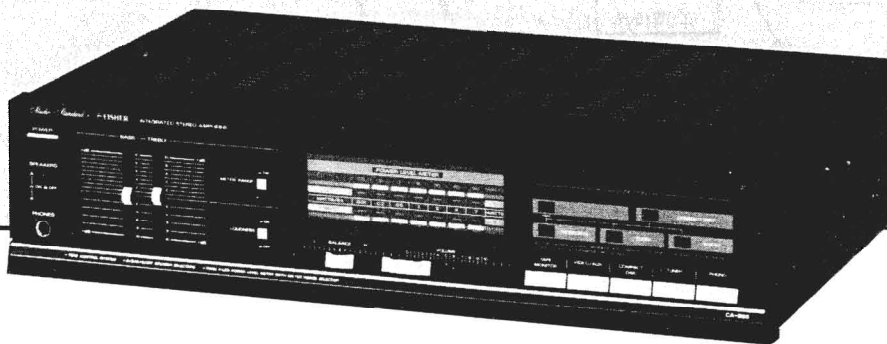
SERVICE MANUAL



FISHER

CA-866

**Integrated
Stereo Amplifier
(EUROPE)**



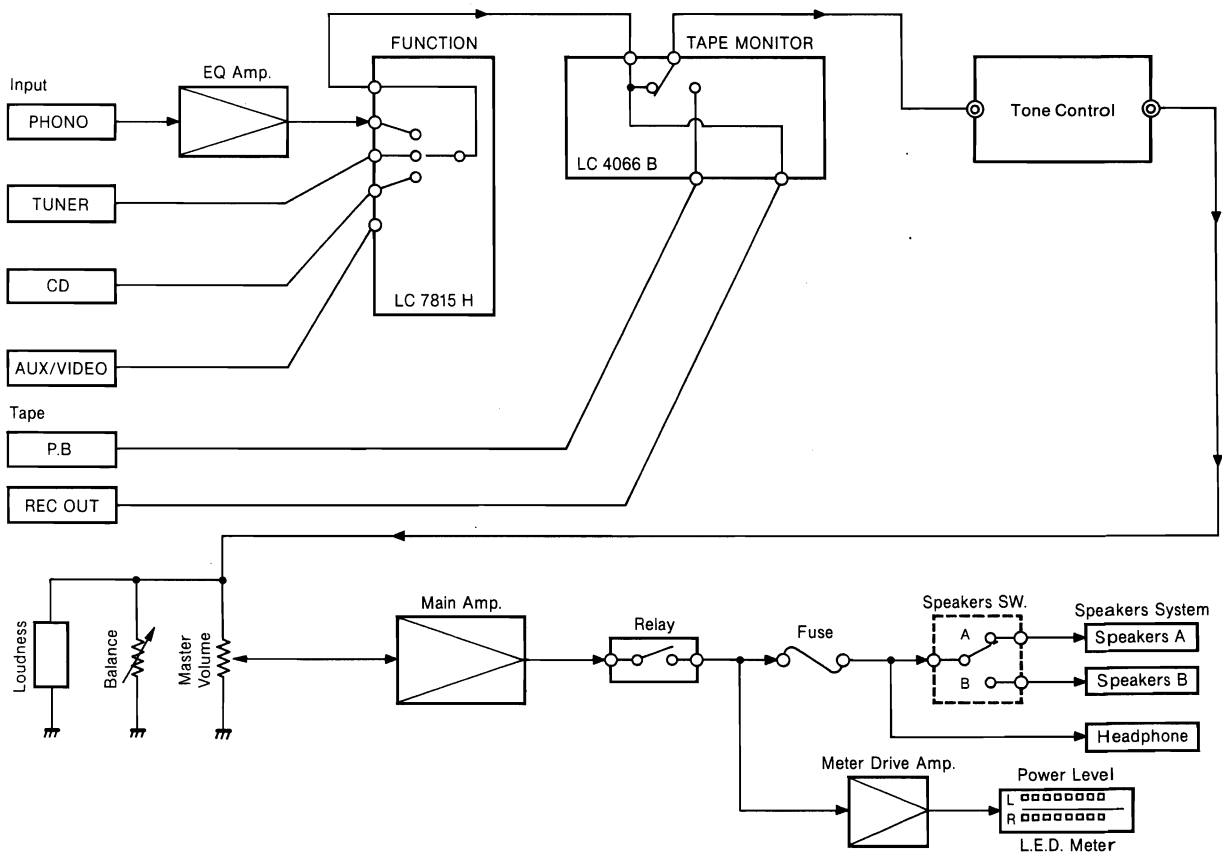
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WM-16839

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FUNCTIONAL BLOCK DIAGRAM

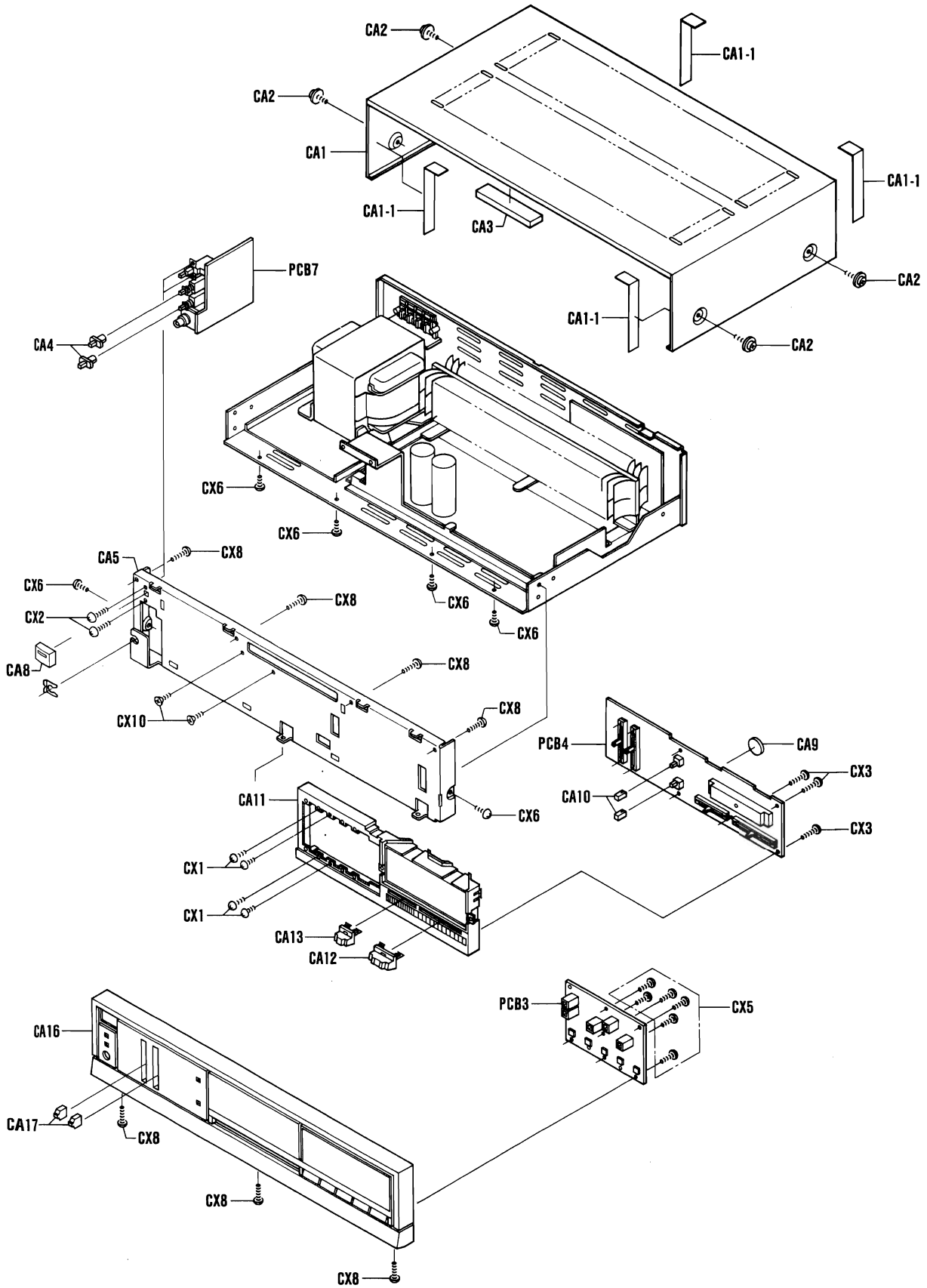


SPECIFICATIONS

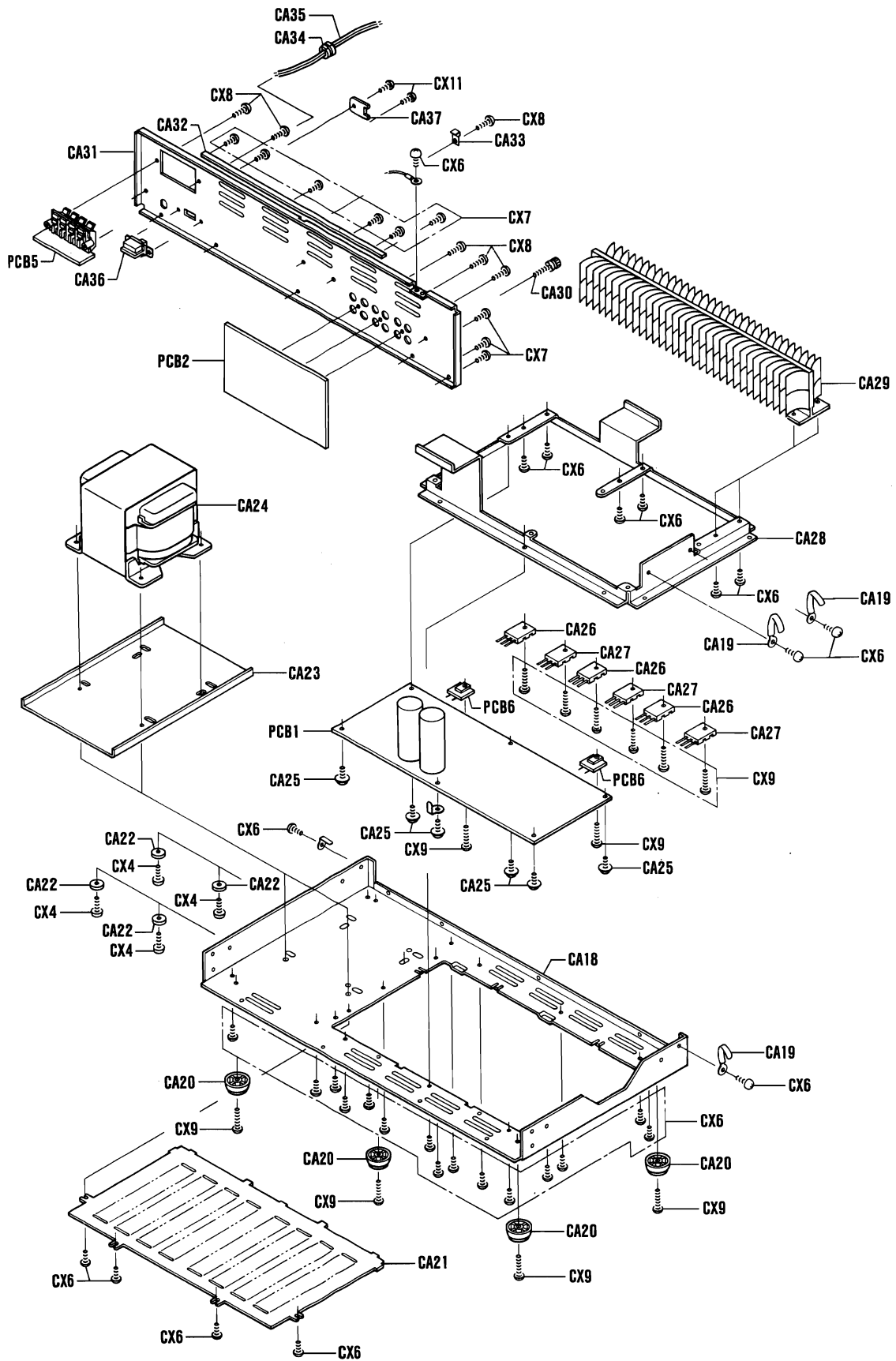
| AMPLIFIER | CA-866 |
|---|--------------------|
| POWER AMPLIFIER SECTION | |
| Minimum RMS sine wave power per channel within stated bandwidth at no more than stated distortion and with 8-ohm load | 100 Watts |
| Power Bandwidth | 20 Hz – 20 kHz |
| Total Harmonic Distortion | 0.05 % |
| I.M. Distortion | 0.05 % |
| Speaker Damping | > 20 |
| PREAMPLIFIER SECTION | |
| Frequency Response | |
| Phono (RIAA) | ±1 dB |
| Aux (20 Hz – 20 kHz) | ±1 dB |
| Input Sensitivity and Impedance | |
| Phono | 2.5 mV/50 kΩ |
| Tape Monitor | 150 mV/50 kΩ |
| Tuner/Auxiliary | 150 mV/50 kΩ |
| Phono Max. Input Capability | |
| Phono | 125 mV |
| Tone Controls | |
| Bass (100 Hz) | ±10 dB |
| Treble (10 kHz) | ±10 dB |
| Loudness Contour (100 Hz/10 kHz) | +8 dB/+4 dB |
| Hum & Noise (IHF Short Circuit, A Network) | |
| Phono | 70 dB |
| Tape Monitor | 90 dB |
| Tuner/Auxiliary | 90 dB |
| GENERAL | |
| Power Requirements (50 Hz) | 110 / 220 V AC |
| Power Consumption | 480 Watts |
| Dimensions (W x D x H) | 440 x 270 x 110 mm |
| Weight (approx.) | 8.4 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)



PARTS LIST

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|---|------------------|--|------|---|------------------|--|------|
| PACKING PARTS LIST | | | | | | | |
| | 3-9415-10300 | Bag Polyethylene | 1 | CA31 | 141-2-1219-34803 | Panel Rear | 1 |
| | 131-6-3069-16350 | Patching Sheet | 1 | CA32 | 241-2-5205-15800 | Cushion | 1 |
| | 131-6-9459-00300 | Rubber Band | 1 | CA33 | 141-2-3159-03301 | Bracket Cover | 1 |
| | 141-6-1139-86236 | Outer Cor Carton | 1 | CA34 | 131-2-6111-14200 | Bushing (Power Cord) | 1 |
| | 141-6-1469-00400 | Pad Top | 1 | CA35 | △ 4-2432-00200 | Power Cord | 1 |
| | 141-6-1469-04000 | Case Styrofoam (Left) | 1 | CA36 | △ 4-2312-01020 | Switch Slide (AC Selector) [SW411] | 1 |
| | 141-6-1469-04001 | Case Styrofoam (Right) | 1 | CA37 | 131-2-7104-00500 | Plate Pad Switch | 1 |
| | 141-6-2519-22290 | Sheet Polyethylene | 1 | P.C.B. ASSY PARTS LIST | | | |
| | 141-6-4559-03300 | Serial No. Sheet | 1 | PCB1 | 141-0-1939-09162 | Main P.C.B. Assy | 1 |
| ACCESSORIES PARTS LIST | | | | PCB2 | 141-0-1939-09131 | Input P.C.B. Assy | 1 |
| | 131-6-2719-10401 | Bag Fan | 1 | PCB3 | 141-0-1939-09140 | Function P.C.B. Assy | 1 |
| | 142-6-4119-32895 | Explanatory Booklet | 1 | PCB4 | 141-0-1939-09151 | Tone Control P.C.B. Assy | 1 |
| CABINET & CHASSIS PARTS LIST | | | | PCB5 | 141-0-1939-09172 | Speaker Terminal P.C.B. Assy | 1 |
| | 4-2379-21520 | Terminal Lug | 2 | PCB6 | 141-0-1939-09180 | Transistor P.C.B. Assy | 2 |
| | 141-2-1219-03300 | Serial No. Sheet | 1 | PCB7 | 141-0-1939-09193 | Switch P.C.B. Assy | 1 |
| CA1 | 131-2-1410-33100 | Cover | 1 | SCREW PARTS LIST | | | |
| CA1-1 | 131-2-3202-13400 | Metal Reinf | 4 | CX1 | 101-3-1302-00311 | Screw, Pan Hd. +M2.0x3 | 4 |
| CA2 | 141-2-4219-38400 | Screw, Bind Hd. Tapping-B Sems +M4.0x8 | 4 | CX2 | 101-3-1303-00611 | Screw, Pan Hd. +M3.0x6 | 2 |
| CA3 | 131-2-5205-33300 | Cushion | 1 | CX3 | 143-3-1302-60611 | Screw, Pan Hd. Tapping-B, +M2.6x6 | 3 |
| CA4 | 131-2-1601-69601 | Knob (Speaker Selector) | 2 | CX4 | 143-3-1704-00811 | Screw, Bind Hd. Tapping-B, +M4.0x8 | 4 |
| CA5 | 141-2-2149-24300 | Panel Front | 1 | CX5 | 143-3-1902-60611 | Screw, Brazier Hd. Tapping-B, +M2.6x6 | 6 |
| CA8 | 131-2-1601-91600 | Knob Power | 1 | CX6 | 143-3-1903-00611 | Screw, Brazier Hd. Tapping-B, +M3.0x6 | 36 |
| CA9 | 131-2-5205-33500 | Cushion | 1 | CX7 | 143-3-1903-00618 | Screw, Brazier Hd. Tapping-B, +M3.0x6 | 9 |
| CA10 | 131-2-1601-91700 | Knob Push | 2 | CX8 | 143-3-1903-00818 | Screw, Brazier Hd. Tapping-B, +M3.0x8 | 13 |
| CA11 | 141-0-3519-24401 | Mount P.C.B. Assy | 1 | CX9 | 143-3-1903-01011 | Screw, Brazier Hd. Tapping-B, +M3.0x10 | 12 |
| | 141-2-3519-74300 | Mount P.C.B. | 1 | CX10 | 143-3-1203-00611 | Screw, Flat Hd. Tapping-B, +M3.0x6 | 2 |
| | 141-2-1449-65105 | Screen LED | 1 | CX11 | 101-3-1303-00618 | Screw, Pan Hd., +M3.0x6 | 2 |
| CA12 | 131-2-1701-91900 | Knob Volume | 1 | NOTES: | | | |
| CA13 | 131-2-1601-92000 | Knob Balance | 1 | 1. Parts order must contain Model Number, Part Number and Description. | | | |
| CA16 | 131-0-1016-44502 | Panel Decorate Assy | 1 | 2. Ordering quantity of screws and resistors must be multiple of 10 pcs. | | | |
| | 131-2-1205-28800 | Decorate Plate Dial | 1 | <p align="center">PRODUCT SAFETY NOTICE</p> <p>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.</p> | | | |
| | 131-2-1601-91800 | Knob Function | 1 | | | | |
| | 141-2-1129-15801 | Cabinet Front | 1 | | | | |
| | 141-2-1449-61243 | Plate Front | 1 | | | | |
| | 141-2-1449-65006 | Plate Decorate | 1 | | | | |
| | 141-2-2899-43500 | Adhesive Film | 2 | | | | |
| | 141-2-2899-43600 | Adhesive Film | 2 | | | | |
| CA17 | 141-2-1659-35900 | Knob Slide | 5 | | | | |
| CA18 | 141-2-3119-25400 | Chassis | 1 | | | | |
| CA19 | 131-0-3016-10400 | Cramp Wire Assy | 3 | | | | |
| CA20 | 131-2-1801-14100 | Leg | 4 | | | | |
| CA21 | 141-2-1259-08100 | Plate Bottom | 1 | | | | |
| CA22 | 131-2-4203-84200 | Washer, 4.2x12x1.0 Z | 4 | | | | |
| CA23 | 131-2-3101-99900 | Metal Mount Trans | 1 | | | | |
| CA24 | △ 4-2512-24121 | Power Trans | 1 | | | | |
| CA25 | 131-2-4201-25201 | Screw, Brazier Hd. Tapping-B, Sems +M3.0x8 | 6 | | | | |
| CA26 | 4-2039-71961 | Transistor, 2SA 1302 [Q115, Q215, Q505] | 3 | | | | |
| or | 4-2039-72121 | Transistor, 2SA 1301 [Q115, Q215, Q505] | 3 | | | | |
| CA27 | 4-2039-71971 | Transistor, 2SC 3281 [Q114, Q214, Q506] | 3 | | | | |
| or | 4-2039-72111 | Transistor, 2SC 3280 [Q114, Q214, Q506] | 3 | | | | |
| CA28 | 141-2-3129-05800 | Sub Chassis | 1 | | | | |
| CA29 | 141-2-3689-14300 | Plate Heat Sink | 1 | | | | |
| CA30 | 131-2-4201-17800 | Screw Ground | 1 | | | | |

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:

- TONE control to center position.
- BALANCE control to center position.
- POWER switch to OFF
- SPEAKERS switch to OFF
- FUNCTION switch to AUX/VIDEO
- 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 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 ON position. Turn VOLUME control to MAX.
- 4) Increase generator output for 100 Watts RMS (28.2 volts across the 8-ohm load). Harmonic Distortion Analyzer should measure 0.05 % 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 100 watts at Left and Right Channels (28.2 volts across the 8-ohm loads). Harmonic Distortion Analyzer should measure 0.05 % 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

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

- Power switch to the OFF position.
- Set the SPEAKERS switch to the OFF position.
- Turn the MASTER VOLUME control to the position marked 0 (minimum).
- IDLING CURRENT ADJUSTMENT VR101/VR201 (on the Main P.C.Board) setting to mechanical center position.
- Connect the AC power cord and Power switch to the ON position.

IDLING CURRENT ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 5 minutes before attempting this adjustment.

LEFT AMPLIFIER

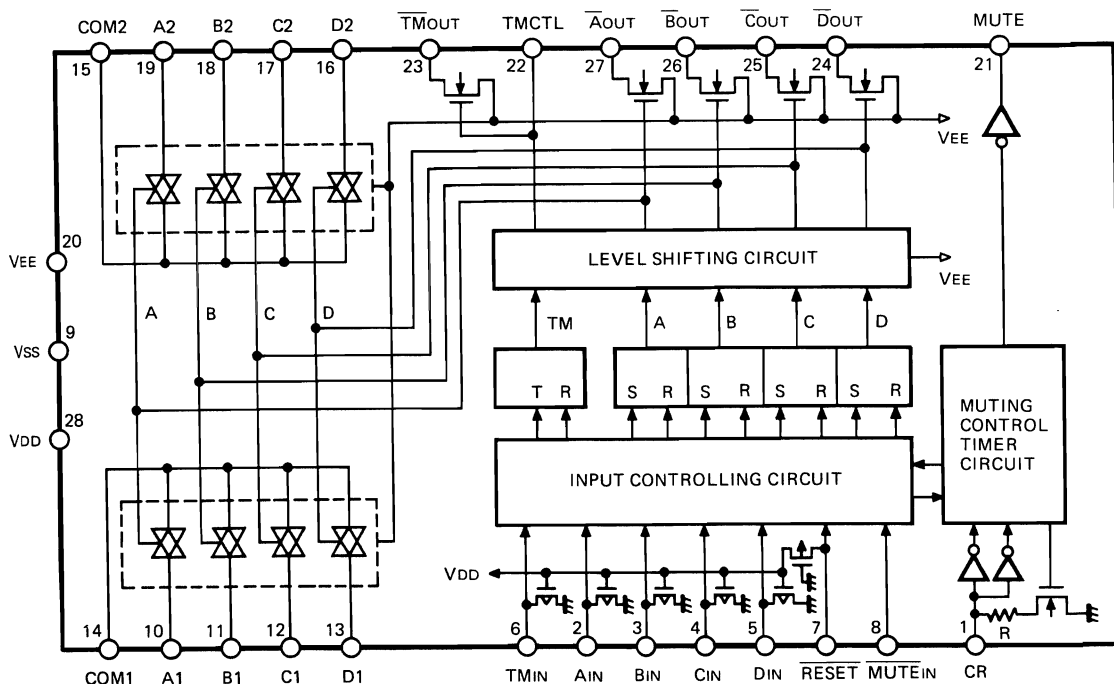
- 1) Connect the DC VTVM between Pins No.21 and No.22 on the Main P.C.Board.
- 2) Adjust the VR101 for an indication of 7mV on the DC VTVM.

RIGHT AMPLIFIER

- 1) Connect the DC VTVM between Pins No.23 and No.24 on the Main P.C.Board.
- 2) Adjust the VR201 for an indication of 7mV on the DC VTVM.

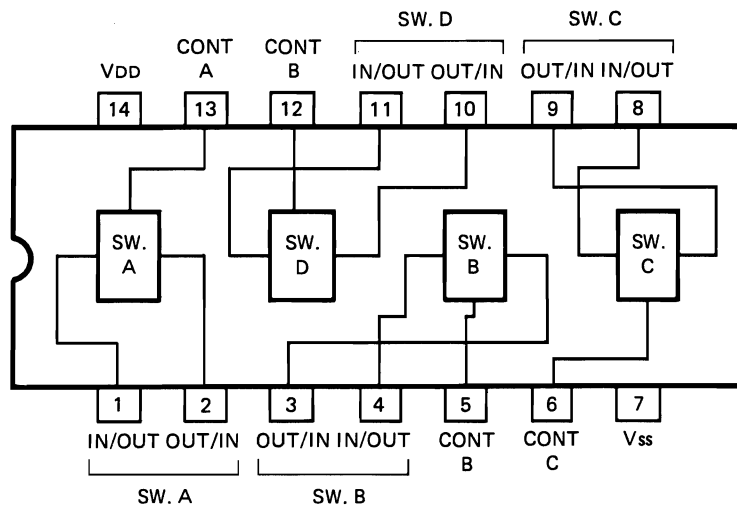
INTEGRATED CIRCUIT BLOCK DIAGRAM

FUNCTION ANALOG SWITCH IC LC 7815 H

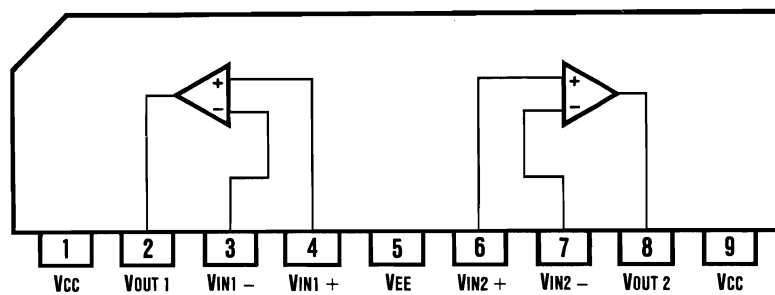


INTEGRATED CIRCUIT BLOCK DIAGRAM (Continued)

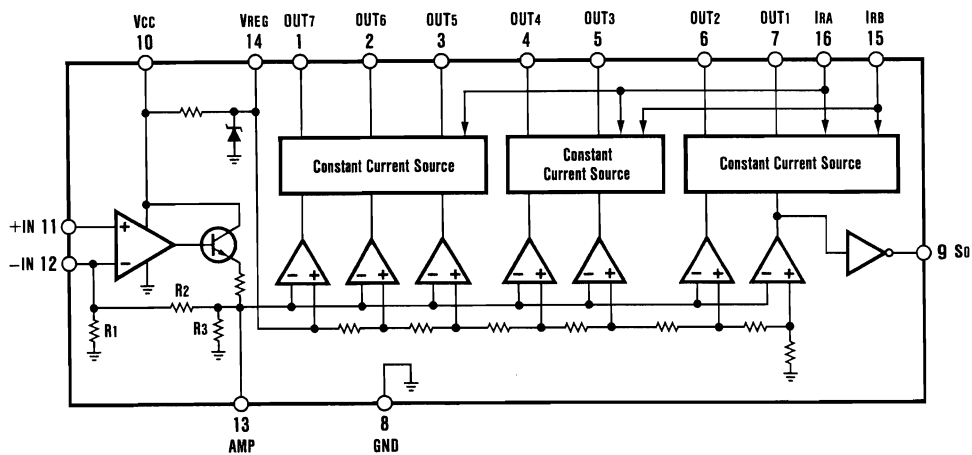
TAPE INPUT ANALOG SWITCH IC LC 4066 B



PHONO / GRAPHIC EQUALIZER AMP IC LA 6458 S



LED METER DRIVE AMP IC IR 2E19



P.C.BOARD PARTS LIST

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|-------------------------|------------------|-------------------------------|------|-----------------------|------------------|-------------------------------|------|
| MAIN P.C.B. ASSY | | | | | | | |
| PCB1 | 141-0-1939-09162 | Main P.C.B. Assy | 1 | C311 | CC4-7-3151-ZG00C | Ceramic 0.047μF 150V +80,-20% | 1 |
| | 4-2262-22070 | Main P.C.B. | 1 | C312 | CC4-7-3151-ZG00C | Ceramic 0.047μF 150V +80,-20% | 1 |
| | 4-2329-70440 | Relay | 1 | C313 | 4-2239-72190 | Electrolytic 4700μF 40V ±20% | 1 |
| | △ 4-2342-00340 | Fuse F5.0A | 2 | C314 | 4-2239-72190 | Electrolytic 4700μF 40V ±20% | 1 |
| | △ 4-2349-20580 | Fuse T3.15A | 2 | C315 | CD1-0-7250-0001V | Electrolytic 100μF 25V | 1 |
| | △ 4-2349-21570 | Fuse T6.3A | 2 | C316 | CD1-0-7250-0001V | Electrolytic 100μF 25V | 1 |
| | 4-2352-00200 | Fuse Holder | 12 | C317 | CD1-0-6250-0001V | Electrolytic 10μF 25V | 1 |
| L101 | 4-2552-00650 | AF Coil | 1 | C318 | CD1-0-6250-0001V | Electrolytic 10μF 25V | 1 |
| L201 | 4-2552-00650 | AF Coil | 1 | C328 | CD2-2-5500-0001V | Electrolytic 2.2μF 50V | 1 |
| VR101 | 4-2222-01450 | Potentiometer (B-200Ω) | 1 | C408 | CD2-2-763A-0001V | Electrolytic 220μF 6.3V | 1 |
| VR201 | 4-2222-01450 | Potentiometer (B-200Ω) | 1 | C503 | CC1-2-1500-JD00R | Ceramic 120pF 50V ±5% | 1 |
| D | 4-2369-73130 | Connector 3P | 1 | C504 | CC1-2-1500-JD00R | Ceramic 120pF 50V ±5% | 1 |
| E | 4-2369-73410 | Connector 7P | 1 | C505 | CC2-2-1500-KD00C | Ceramic 220pF 50V ±10% | 1 |
| | 111-2-6220-11100 | Wire Wrap Terminal | 15 | C506 | CC2-2-1500-KD00C | Ceramic 220pF 50V ±10% | 1 |
| | 131-2-6201-29800 | Heat Sink (For Q301,Q302) | 2 | SEMICONDUCTORS | | | |
| | 131-2-7103-50801 | Label Fuse | 1 | D101 | 205-5-9040-44210 | Diode, DS 442 | 1 |
| CAPACITORS | | | | D102 | 205-5-9040-44210 | Diode, DS 442 | 1 |
| C140 | CD4-7-5250-0001V | Electrolytic 4.7μF 25V | 1 | D201 | 205-5-9040-44210 | Diode, DS 442 | 1 |
| C141 | CC2-2-1500-KE00R | Ceramic 220pF 50V ±10% | 1 | D202 | 205-5-9040-44210 | Diode, DS 442 | 1 |
| C142 | CC1-0-1500-KD00C | Ceramic 100pF 50V ±10% | 1 | D301 | 212-5-5990-03020 | Stack Diode, 30 DC 1S | 1 |
| C143 | CC1-0-1500-KD00C | Ceramic 100pF 50V ±10% | 1 | D302 | 212-5-5990-03010 | Stack Diode, 30 DC 1RS | 1 |
| C144 | CC8-0-A500-DD00C | Ceramic 8pF 50V ±0.5% | 1 | D303 | 202-5-3210-18011 | Zener Diode, GZA 18 X | 1 |
| C145 | CC8-0-A500-DD00C | Ceramic 8pF 50V ±0.5% | 1 | D304 | 4-2029-73840 | Diode, 30D 2 | 1 |
| C146 | CC2-2-1500-KE00R | Ceramic 220pF 50V ±10% | 1 | D305 | 4-2029-73840 | Diode, 30D 2 | 1 |
| C147 | CM1-0-4500-J00TV | Mylar 0.1μF 50V ±5% | 1 | D306 | 4-2029-73840 | Diode, 30D 2 | 1 |
| C148 | CD4-7-6101-0001V | Electrolytic 47μF 100V | 1 | D307 | 4-2029-73840 | Diode, 30D 2 | 1 |
| C149 | 4-2239-71190 | Capacitor 27pF 500V ±10% | 1 | D308 | 202-5-3210-18011 | Zener Diode, GZA 18 X | 1 |
| C150 | 4-2239-72020 | Ceramic 3pF 500V ±0.5pF | 1 | D309 | 202-5-3210-18011 | Zener Diode, GZA 18 X | 1 |
| C151 | CD2-2-763A-0001V | Electrolytic 220μF 6.3V | 1 | D310 | 202-5-3210-05112 | Zener Diode, GZA 5.1 Y | 1 |
| C152 | 4-2239-72120 | Ceramic 220pF 500V ±10% | 1 | D313 | 202-5-0220-01010 | Diode, DSF 10 C | 1 |
| C153 | CD1-0-5500-0001V | Electrolytic 1μF 50V | 1 | or | 4-2029-73870 | Diode, 11E 2 | 1 |
| C154 | 4-2239-71120 | Capacitor 18pF 500V ±10% | 1 | D410 | 205-5-9040-44210 | Diode, DS 442 | 1 |
| C155 | 4-2239-72120 | Ceramic 220pF 500V ±10% | 1 | D411 | 202-5-0220-01010 | Diode, DSF 10 C | 1 |
| C156 | CD4-7-6101-0001V | Electrolytic 47μF 100V | 1 | or | 4-2029-73870 | Diode, 11E 2 | 1 |
| C157 | CM3-9-3500-K00SV | Mylar 0.039μF 50V ±10% | 1 | D501 | 202-5-9600-44610 | Diode, DS 446 | 1 |
| C240 | CD4-7-5250-0001V | Electrolytic 4.7μF 25V | 1 | D502 | 202-5-9600-44610 | Diode, DS 446 | 1 |
| C241 | CC2-2-1500-KE00R | Ceramic 220pF 50V ±10% | 1 | D503 | 202-5-9600-44610 | Diode, DS 446 | 1 |
| C242 | CC1-0-1500-KD00C | Ceramic 100pF 50V ±10% | 1 | D504 | 202-5-9600-44610 | Diode, DS 446 | 1 |
| C243 | CC1-0-1500-KD00C | Ceramic 100pF 50V ±10% | 1 | D505 | 4-2029-73840 | Diode, 30D 2 | 1 |
| C244 | CC8-0-A500-DD00C | Ceramic 8pF 50V ±0.5% | 1 | D506 | 4-2029-73840 | Diode, 30D 2 | 1 |
| C245 | CC8-0-A500-DD00C | Ceramic 8pF 50V ±0.5% | 1 | Q106 | 203-5-4921-01270 | Transistor, 2SD 1012 | 1 |
| C246 | CC2-2-1500-KE00R | Ceramic 220pF 50V ±10% | 1 | or | 203-5-4570-73470 | Transistor, 2SD 734 | 1 |
| C247 | CM1-0-4500-J00TV | Mylar 0.1μF 50V ±5% | 1 | Q107 | 203-5-5393-06560 | Transistor, 2SC 3065 | 1 |
| C248 | CD4-7-6101-0001V | Electrolytic 47μF 100V | 1 | Q108 | 203-5-5613-06470 | Transistor, 2SC 3064 | 1 |
| C249 | 4-2239-71190 | Capacitor 27pF 500V ±10% | 1 | Q109 | 203-5-6931-20985 | Transistor, 2SA 1209 | 1 |
| C250 | 4-2239-72020 | Ceramic 3pF 500V ±0.5pF | 1 | Q110 | 203-5-5632-91185 | Transistor, 2SC 2911 | 1 |
| C251 | CD2-2-763A-0001V | Electrolytic 220μF 6.3V | 1 | Q111 | 203-5-5143-11782 | Transistor, 2SC 3117 | 1 |
| C252 | 4-2239-72120 | Ceramic 220pF 500V ±10% | 1 | or | 203-5-8122-34450 | Transistor, 2SC 2344 | 1 |
| C253 | CD1-0-5500-0001V | Electrolytic 1μF 50V | 1 | Q112 | 203-5-4711-24982 | Transistor, 2SA 1249 | 1 |
| C254 | 4-2239-71120 | Capacitor 18pF 500V ±10% | 1 | or | 203-5-8631-01150 | Transistor, 2SA 1011 | 1 |
| C255 | 4-2239-72120 | Ceramic 220pF 500V ±10% | 1 | Q206 | 203-5-4921-01270 | Transistor, 2SD 1012 | 1 |
| C256 | CD4-7-6101-0001V | Electrolytic 47μF 100V | 1 | or | 203-5-4570-73470 | Transistor, 2SD 734 | 1 |
| C257 | CM3-9-3500-K00SV | Mylar 0.039μF 50V ±10% | 1 | Q207 | 203-5-5393-06560 | Transistor, 2SC 3065 | 1 |
| C302 | CC4-7-3151-ZG00C | Ceramic 0.047μF 150V +80,-20% | 1 | Q208 | 203-5-5613-06470 | Transistor, 2SC 3064 | 1 |
| C303 | CC4-7-3151-ZG00C | Ceramic 0.047μF 150V +80,-20% | 1 | Q209 | 203-5-6931-20985 | Transistor, 2SA 1209 | 1 |
| C304 | CC4-7-3151-ZG00C | Ceramic 0.047μF 150V +80,-20% | 1 | Q210 | 203-5-5632-91185 | Transistor, 2SC 2911 | 1 |
| C305 | CC4-7-3151-ZG00C | Ceramic 0.047μF 150V +80,-20% | 1 | Q211 | 203-5-5143-11782 | Transistor, 2SC 3117 | 1 |
| C306 | 4-2239-72180 | Electrolytic 6800μF 72V ±20% | 1 | or | 203-5-8122-34450 | Transistor, 2SC 2344 | 1 |
| C307 | 4-2239-72180 | Electrolytic 6800μF 72V ±20% | 1 | Q212 | 203-5-4711-24982 | Transistor, 2SA 1249 | 1 |
| C308 | CD1-0-6250-0001V | Electrolytic 10μF 25V | 1 | or | 203-5-8631-01150 | Transistor, 2SA 1011 | 1 |
| C309 | CC4-7-3151-ZG00C | Ceramic 0.047μF 150V +80,-20% | 1 | Q301 | 203-5-7330-61261 | Transistor, 2SD 612 | 1 |
| C310 | CC4-7-3151-ZG00C | Ceramic 0.047μF 150V +80,-20% | 1 | Q302 | 203-5-7320-63261 | Transistor, 2SB 632 | 1 |
| | | | | Q401 | 203-5-7230-60870 | Transistor, 2SA 608 | 1 |

P.C. BOARD PARTS LIST (Continued)

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|------------------|------------------|------------------------|------|--------------------------|------------------|-----------------------------|------|
| or | 4-2039-72212 | Transistor, 2SA 1115 | 1 | R303 | RH2-2-0102-JZ003 | Metal 22Ω 1W ±5% | 1 |
| Q402 | 203-5-7230-60870 | Transistor, 2SA 608 | 1 | R304 | RH2-2-0102-JZ003 | Metal 22Ω 1W ±5% | 1 |
| or | 4-2039-72212 | Transistor, 2SA 1115 | 1 | R305 | RD1-0-2251-JM000 | Carbon 1kΩ 1/4W ±5% | 1 |
| Q501 | 4-2039-72202 | Transistor, 2SC 2603 | 1 | R306 | RD1-0-2251-JM000 | Carbon 1kΩ 1/4W ±5% | 1 |
| or | 203-5-7252-27460 | Transistor, 2SC 2274 | 1 | R307 | RD3-3-1251-JM000 | Carbon 330Ω 1/4W ±5% | 1 |
| Q502 | 4-2039-72212 | Transistor, 2SA 1115 | 1 | R308 | RD3-3-1251-JM000 | Carbon 330Ω 1/4W ±5% | 1 |
| or | 203-5-6820-98460 | Transistor, 2SA 984 | 1 | R309 | RF2-2-0251-JK000 | Fuse 22Ω 1/4W ±5% | 1 |
| Q503 | 203-5-4910-63160 | Transistor, 2SB 631 | 1 | R310 | RF2-2-0251-JK000 | Fuse 22Ω 1/4W ±5% | 1 |
| Q504 | 203-5-4900-60060 | Transistor, 2SD 600 | 1 | R311 | RF2-7-0501-JZ000 | Fuse 27Ω 1/2W ±5% | 1 |
| RESISTORS | | | | R325 | RD2-2-3251-JM000 | Carbon 22kΩ 1/4W ±5% | 1 |
| R146 | RD1-2-2251-JM000 | Carbon 1.2kΩ 1/4W ±5% | 1 | R328 | RD4-7-2251-JM000 | Carbon 4.7kΩ 1/4W ±5% | 1 |
| R147 | RD3-3-2251-JM000 | Carbon 3.3kΩ 1/4W ±5% | 1 | R405 | RD6-8-1251-JM000 | Carbon 680Ω 1/4W ±5% | 1 |
| R148 | RD6-8-3251-JM000 | Carbon 68kΩ 1/4W ±5% | 1 | R406 | RD4-7-4251-JM000 | Carbon 470kΩ 1/4W ±5% | 1 |
| R149 | RD8-2-2251-JM000 | Carbon 8.2kΩ 1/4W ±5% | 1 | R407 | RD2-2-3251-JM000 | Carbon 22kΩ 1/4W ±5% | 1 |
| R150 | RD2-7-3251-JM000 | Carbon 27kΩ 1/4W ±5% | 1 | R409 | RF3-9-1501-JZ000 | Fuse 390Ω 1/2W ±5% | 1 |
| R151 | RD1-2-2251-JM000 | Carbon 1.2kΩ 1/4W ±5% | 1 | R501 | RD1-0-3251-JM000 | Carbon 10kΩ 1/4W ±5% | 1 |
| R152 | RF1-2-2251-JK000 | Fuse 1.2kΩ 1/4W ±5% | 1 | R502 | RD1-0-3251-JM000 | Carbon 10kΩ 1/4W ±5% | 1 |
| R153 | RD2-7-3251-JM000 | Carbon 27kΩ 1/4W ±5% | 1 | R503 | RD4-7-4251-JM000 | Carbon 470kΩ 1/4W ±5% | 1 |
| R154 | RD1-0-2251-JM000 | Carbon 1kΩ 1/4W ±5% | 1 | R504 | RD4-7-4251-JM000 | Carbon 470kΩ 1/4W ±5% | 1 |
| R155 | RD1-5-3251-JM000 | Carbon 15kΩ 1/4W ±5% | 1 | R505 | RD6-8-1251-JM000 | Carbon 680Ω 1/4W ±5% | 1 |
| R156 | RF8-2-0251-JK000 | Fuse 82Ω 1/4W ±5% | 1 | R506 | RD6-8-1251-JM000 | Carbon 680Ω 1/4W ±5% | 1 |
| R157 | RF4-7-0251-JK000 | Fuse 47Ω 1/4W ±5% | 1 | R507 | RD1-2-2251-JM000 | Carbon 1.2kΩ 1/4W ±5% | 1 |
| R158 | RF4-7-0251-JK000 | Fuse 47Ω 1/4W ±5% | 1 | R508 | RD1-2-2251-JM000 | Carbon 1.2kΩ 1/4W ±5% | 1 |
| R159 | RD6-8-3251-JM000 | Carbon 68kΩ 1/4W ±5% | 1 | R509 | RD1-8-2251-JM000 | Carbon 1.8kΩ 1/4W ±5% | 1 |
| R160 | RD4-7-1251-JM000 | Carbon 470Ω 1/4W ±5% | 1 | R510 | RD1-8-2251-JM000 | Carbon 1.8kΩ 1/4W ±5% | 1 |
| R161 | RD4-7-0251-JM000 | Carbon 47Ω 1/4W ±5% | 1 | R511 | RD5-6-2251-JM000 | Carbon 5.6kΩ 1/4W ±5% | 1 |
| R162 | RD3-3-3251-JM000 | Carbon 33kΩ 1/4W ±5% | 1 | R512 | RD5-6-2251-JM000 | Carbon 5.6kΩ 1/4W ±5% | 1 |
| R163 | RD8-2-0251-JM000 | Carbon 82Ω 1/4W ±5% | 1 | R513 | RH2-2-0102-JZ003 | Metal 22Ω 1W ±5% | 1 |
| R164 | RF1-0-0251-JK000 | Fuse 10Ω 1/4W ±5% | 1 | R514 | RH2-2-0102-JZ003 | Metal 22Ω 1W ±5% | 1 |
| R165 | RF2-2-A251-JK000 | Fuse 2.2Ω 1/4W ±5% | 1 | INPUT P.C.B. ASSY | | | |
| R166 | RF3-3-1501-JZ000 | Fuse 330Ω 1/2W ±5% | 1 | PCB2 | 141-0-1939-09131 | Input P.C.B. Assy | 1 |
| R167 | RF2-2-A251-JK000 | Fuse 2.2Ω 1/4W ±5% | 1 | | 4-2262-22040 | Input P.C.B. | 1 |
| R168 | 4-2219-70370 | Cement 0.22Ωx2 5W ±10% | 1 | | 4-2359-78190 | Pin Jack 4P (Tape) | 1 |
| R169 | RD4-7-A251-JM000 | Carbon 4.7Ω 1/4W ±5% | 1 | | 4-2359-78190 | Pin Jack 4P (AUX/Video, CD) | 1 |
| R170 | RH1-0-0102-JZ003 | Metal 10Ω 1W ±5% | 1 | | 4-2359-78190 | Pin Jack 4P (Tuner, Phono) | 1 |
| R171 | RD1-5-4251-JM000 | Carbon 150kΩ 1/4W ±5% | 1 | A | 4-2369-73675 | Plug 6P | 1 |
| R246 | RD1-2-2251-JM000 | Carbon 1.2kΩ 1/4W ±5% | 1 | B | 4-2369-73674 | Plug 5P | 1 |
| R247 | RD3-3-2251-JM000 | Carbon 3.3kΩ 1/4W ±5% | 1 | C | 4-2369-73675 | Plug 6P | 1 |
| R248 | RD6-8-3251-JM000 | Carbon 68kΩ 1/4W ±5% | 1 | CAPACITORS | | | |
| R249 | RD8-2-2251-JM000 | Carbon 8.2kΩ 1/4W ±5% | 1 | C101 | CC3-3-1500-KD00C | Ceramic 330pF 50V ±10% | 1 |
| R250 | RD2-7-3251-JM000 | Carbon 27kΩ 1/4W ±5% | 1 | C102 | CC3-3-1500-KD00C | Ceramic 330pF 50V ±10% | 1 |
| R251 | RD1-2-2251-JM000 | Carbon 1.2kΩ 1/4W ±5% | 1 | C103 | CD4-7-5250-0001V | Electrolytic 4.7μF 25V | 1 |
| R252 | RF1-2-2251-JK000 | Fuse 1.2kΩ 1/4W ±5% | 1 | C105 | CC3-3-1500-KD00C | Ceramic 330pF 50V ±10% | 1 |
| R253 | RD2-7-3251-JM000 | Carbon 27kΩ 1/4W ±5% | 1 | C106 | CD4-7-6160-0001V | Electrolytic 47μF 16V | 1 |
| R254 | RD1-0-2251-JM000 | Carbon 1kΩ 1/4W ±5% | 1 | C107 | CM1-8-3500-K00SV | Mylar 0.018μF 50V ±10% | 1 |
| R255 | RD1-5-3251-JM000 | Carbon 15kΩ 1/4W ±5% | 1 | C108 | CM4-7-2500-K00SV | Mylar 0.0047μF 50V ±10% | 1 |
| R256 | RF8-2-0251-JK000 | Fuse 82Ω 1/4W ±5% | 1 | C109 | CD4-7-5250-0001V | Electrolytic 4.7μF 25V | 1 |
| R257 | RF4-7-0251-JK000 | Fuse 47Ω 1/4W ±5% | 1 | C110 | CC2-2-1500-KE01R | Ceramic 220pF 50V ±10% | 1 |
| R258 | RF4-7-0251-JK000 | Fuse 47Ω 1/4W ±5% | 1 | C201 | CC3-3-1500-KD00C | Ceramic 330pF 50V ±10% | 1 |
| R259 | RD6-8-3251-JM000 | Carbon 68kΩ 1/4W ±5% | 1 | C202 | CC3-3-1500-KD00C | Ceramic 330pF 50V ±10% | 1 |
| R260 | RD4-7-1251-JM000 | Carbon 470Ω 1/4W ±5% | 1 | C203 | CD4-7-5250-0001V | Electrolytic 4.7μF 25V | 1 |
| R261 | RD4-7-0251-JM000 | Carbon 47Ω 1/4W ±5% | 1 | C205 | CC3-3-1500-KD00C | Ceramic 330pF 50V ±10% | 1 |
| R262 | RD3-3-3251-JM000 | Carbon 33kΩ 1/4W ±5% | 1 | C206 | CD4-7-6160-0001V | Electrolytic 47μF 16V | 1 |
| R263 | RD8-2-0251-JM000 | Carbon 82Ω 1/4W ±5% | 1 | C207 | CM1-8-3500-K00SV | Mylar 0.018μF 50V ±10% | 1 |
| R264 | RF1-0-0251-JK000 | Fuse 10Ω 1/4W ±5% | 1 | C208 | CM4-7-2500-K00SV | Mylar 0.0047μF 50V ±10% | 1 |
| R265 | RF2-2-A251-JK000 | Fuse 2.2Ω 1/4W ±5% | 1 | C209 | CD4-7-5250-0001V | Electrolytic 4.7μF 25V | 1 |
| R266 | RF3-3-1501-JZ000 | Fuse 330Ω 1/2W ±5% | 1 | C210 | CC2-2-1500-KE01R | Ceramic 220pF 50V ±10% | 1 |
| R267 | RF2-2-A251-JK000 | Fuse 2.2Ω 1/4W ±5% | 1 | C321 | CD4-7-6160-0001V | Electrolytic 47μF 16V | 1 |
| R268 | 4-2219-70370 | Cement 0.22Ωx2 5W ±10% | 1 | C322 | CD4-7-6160-0001V | Electrolytic 47μF 16V | 1 |
| R269 | RD4-7-A251-JM000 | Carbon 4.7Ω 1/4W ±5% | 1 | C323 | CD4-7-6250-0006V | Electrolytic 47μF 25V | 1 |
| R270 | RH1-0-0102-JZ003 | Metal 10Ω 1W ±5% | 1 | C324 | CD4-7-6250-0006V | Electrolytic 47μF 25V | 1 |
| R271 | RD1-5-4251-JM000 | Carbon 150kΩ 1/4W ±5% | 1 | | | | |
| R302 | RH4-7-2102-JZ003 | Metal 4.7kΩ 1W ±5% | 1 | | | | |

P.C.BOARD PARTS LIST (Continued)

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty | |
|-----------------------|------------------|----------------|-----------------------------|----------|---------------------------------|---|-----------------------------|---|
| C325 | CD1-0-6250-0001V | Electrolytic | 10 μ F 25V | 1 | | | | |
| C326 | CD2-2-5500-0001V | Electrolytic | 2.2 μ F 50V | 1 | | | | |
| C401 | CD1-0-8160-0001V | Electrolytic | 1000 μ F 16V | 1 | | | | |
| C402 | CD1-0-4500-0001V | Electrolytic | 0.1 μ F 50V | 1 | | | | |
| C409 | CC4-7-3500-ZG00C | Ceramic | 0.047 μ F 50V +80,-20% | 1 | | | | |
| SEMICONDUCTORS | | | | | | | | |
| D401 | 202-5-3160-00110 | Diode, GMA 01 | | 1 | | | | |
| D402 | 202-5-3160-00110 | Diode, GMA 01 | | 1 | | | | |
| D403 | 202-5-3160-00110 | Diode, GMA 01 | | 1 | | | | |
| D404 | 202-5-3160-00110 | Diode, GMA 01 | | 1 | | | | |
| IC401 | 4-2069-74450 | IC, M 5218 L-R | | 1 | | | | |
| IC402 | 206-5-8897-81520 | IC, LC 7815 H | | 1 | | | | |
| IC403 | 206-5-8144-06610 | IC, LC 4066 BH | | 1 | | | | |
| RESISTORS | | | | | | | | |
| R101 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R102 | RD1-0-4161-JH000 | Carbon | 100k Ω 1/6W \pm 5% | 1 | | | | |
| R103 | RD1-0-4161-JH000 | Carbon | 100k Ω 1/6W \pm 5% | 1 | | | | |
| R104 | RD3-3-1161-JH000 | Carbon | 330 Ω 1/6W \pm 5% | 1 | | | | |
| R105 | RD2-2-4161-JH000 | Carbon | 220k Ω 1/6W \pm 5% | 1 | | | | |
| R106 | RD1-5-3161-JH000 | Carbon | 15k Ω 1/6W \pm 5% | 1 | | | | |
| R107 | RD1-0-4161-JH000 | Carbon | 100k Ω 1/6W \pm 5% | 1 | | | | |
| R108 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R109 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R110 | RD1-8-4161-JH000 | Carbon | 180k Ω 1/6W \pm 5% | 1 | | | | |
| R111 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R112 | RD1-8-4161-JH000 | Carbon | 180k Ω 1/6W \pm 5% | 1 | | | | |
| R113 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R114 | RD1-8-4161-JH000 | Carbon | 180k Ω 1/6W \pm 5% | 1 | | | | |
| R115 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R116 | RD1-8-4161-JH000 | Carbon | 180k Ω 1/6W \pm 5% | 1 | | | | |
| R117 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R118 | RD8-2-3161-JH000 | Carbon | 82k Ω 1/6W \pm 5% | 1 | | | | |
| R201 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R202 | RD1-0-4161-JH000 | Carbon | 100k Ω 1/6W \pm 5% | 1 | | | | |
| R203 | RD1-0-4161-JH000 | Carbon | 100k Ω 1/6W \pm 5% | 1 | | | | |
| R204 | RD3-3-1161-JH000 | Carbon | 330 Ω 1/6W \pm 5% | 1 | | | | |
| R205 | RD2-2-4161-JH000 | Carbon | 220k Ω 1/6W \pm 5% | 1 | | | | |
| R206 | RD1-5-3161-JH000 | Carbon | 15k Ω 1/6W \pm 5% | 1 | | | | |
| R207 | RD1-0-4161-JH000 | Carbon | 100k Ω 1/6W \pm 5% | 1 | | | | |
| R208 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R209 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R210 | RD1-8-4161-JH000 | Carbon | 180k Ω 1/6W \pm 5% | 1 | | | | |
| R211 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R212 | RD1-8-4161-JH000 | Carbon | 180k Ω 1/6W \pm 5% | 1 | | | | |
| R213 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R214 | RD1-8-4161-JH000 | Carbon | 180k Ω 1/6W \pm 5% | 1 | | | | |
| R215 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R216 | RD1-8-4161-JH000 | Carbon | 180k Ω 1/6W \pm 5% | 1 | | | | |
| R217 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R218 | RD8-2-3161-JH000 | Carbon | 82k Ω 1/6W \pm 5% | 1 | | | | |
| R315 | RD1-0-2251-JM000 | Carbon | 1k Ω 1/4W \pm 5% | 1 | | | | |
| R316 | RD1-0-2251-JM000 | Carbon | 1k Ω 1/4W \pm 5% | 1 | | | | |
| R317 | RD2-2-1251-JM000 | Carbon | 220 Ω 1/4W \pm 5% | 1 | | | | |
| R318 | RD2-7-1251-JM000 | Carbon | 270 Ω 1/4W \pm 5% | 1 | | | | |
| R319 | RD2-7-2161-JH000 | Carbon | 2.7k Ω 1/6W \pm 5% | 1 | | | | |
| R320 | RD2-2-4161-JH000 | Carbon | 220k Ω 1/6W \pm 5% | 1 | | | | |
| R321 | RD1-0-3161-JH000 | Carbon | 10k Ω 1/6W \pm 5% | 1 | | | | |
| R401 | RD4-7-2251-JM000 | Carbon | 4.7k Ω 1/4W \pm 5% | 1 | | | | |
| R402 | RD1-0-3161-JH000 | Carbon | 10k Ω 1/6W \pm 5% | 1 | | | | |
| R403 | RD1-0-2161-JH000 | Carbon | 1k Ω 1/6W \pm 5% | 1 | | | | |
| R404 | RD5-6-3161-JH000 | Carbon | 56k Ω 1/6W \pm 5% | 1 | | | | |
| | | | | | FUNCTION P.C.B. ASSY | | | |
| | | | | PCB3 | 141-0-1939-09140 | Function P.C.B. Assy | 1 | |
| | | | | | 4-2262-22050 | Function P.C.B. | 1 | |
| | | | | | 141-2-2419-33000 | Reflector | 5 | |
| | | | | SW401 | 4-2312-05300 | Keyboard Switch 6mm (Phono) | 1 | |
| | | | | SW402 | 4-2312-05300 | Keyboard Switch 6mm (Tuner) | 1 | |
| | | | | SW403 | 4-2312-05300 | Keyboard Switch 6mm (Compact Disc) | 1 | |
| | | | | SW404 | 4-2312-05300 | Keyboard Switch 6mm (AUX/Video) | 1 | |
| | | | | SW405 | 4-2312-05300 | Keyboard Switch 6mm (Tape Monitor) | 1 | |
| | | | | B | 4-2359-77807 | Connector 5P Assy | 1 | |
| | | | | C | 4-2359-77808 | Connector 6P Assy | 1 | |
| | | | | | CAPACITORS | | | |
| | | | | C403 | CI1-0-3250-MF00R | Boundary | 0.01 μ F 25V \pm 20% | 1 |
| | | | | C404 | CI1-0-3250-MF00R | Boundary | 0.01 μ F 25V \pm 20% | 1 |
| | | | | C405 | CI1-0-3250-MF00R | Boundary | 0.01 μ F 25V \pm 20% | 1 |
| | | | | C406 | CI1-0-3250-MF00R | Boundary | 0.01 μ F 25V \pm 20% | 1 |
| | | | | C407 | CI1-0-3250-MF00R | Boundary | 0.01 μ F 25V \pm 20% | 1 |
| | | | | | SEMICONDUCTORS | | | |
| | | | | D311 | 202-5-3210-10011 | Zener Diode, GZA 10 X | | 1 |
| | | | | D312 | 202-5-3210-10011 | Zener Diode, GZA 10 X | | 1 |
| | | | | D405 | 4-2029-73860 | L.E.D., SEL 1413 E (Phono) | | 1 |
| | | | | D406 | 4-2029-73860 | L.E.D., SEL 1413 E (Tuner) | | 1 |
| | | | | D407 | 4-2029-73860 | L.E.D., SEL 1413 E (Compact Disc) | | 1 |
| | | | | D408 | 4-2029-73860 | L.E.D., SEL 1413 E (AUX/Video) | | 1 |
| | | | | D409 | 4-2029-73850 | L.E.D., SEL 1213 C (Tape Monitor) | | 1 |
| | | | | | RESISTORS | | | |
| | | | | R322 | RD5-6-1251-JM000 | Carbon | 560 Ω 1/4W \pm 5% | 1 |
| | | | | R323 | RD1-2-2251-JM000 | Carbon | 1.2k Ω 1/4W \pm 5% | 1 |
| | | | | R324 | RD1-0-3251-JM000 | Carbon | 10k Ω 1/4W \pm 5% | 1 |
| | | | | | TONE CONTROL P.C.B. ASSY | | | |
| | | | | PCB4 | 141-0-1939-09151 | Tone Control P.C.B. Assy | | 1 |
| | | | | | 4-2262-22060 | Tone Control P.C.B. | | 1 |
| | | | | SW406 | 4-2319-77780 | Swich Push 1 Key (Meter Lange) | | 1 |
| | | | | SW407 | 4-2319-77780 | Swich Push 1 Key (Loudness) | | 1 |
| | | | | VR402 | 4-2229-75600 | Slide Volume (W-250k Ω x2, Bass) | | 1 |
| | | | | VR403 | 4-2229-75600 | Slide Volume (W-250k Ω x2, Treble) | | 1 |
| | | | | VR406 | 4-2229-75590 | Slide Volume (W-200k Ω , Balance) | | 1 |
| | | | | VR407 | 4-2229-75610 | Slide Volume (A-100k Ω x2, Volume) | | 1 |
| | | | | | 141-2-2419-33100 | Mount LED | | 1 |
| | | | | | 141-2-3769-17800 | Spacer LED | | 1 |
| | | | | A | 4-2359-77809 | Connector 6P Assy | | 1 |
| | | | | D | 131-0-4006-31418 | Cord Assy | | 1 |
| | | | | E | 131-0-4006-31423 | Cord Assy | | 1 |
| | | | | | 4-2379-21120 | Terminal | | 2 |
| | | | | | CAPACITORS | | | |
| | | | | C121 | CD4-7-5250-0001V | Electrolytic | 4.7 μ F 25V | 1 |
| | | | | C122 | CC1-0-1500-KE01R | Ceramic | 100pF 50V \pm 10% | 1 |
| | | | | C123 | CC6-8-0500-KD00C | Ceramic | 68pF 50V \pm 10% | 1 |
| | | | | C124 | CC1-0-0500-DD00C | Ceramic | 10pF 50V \pm 0.5% | 1 |
| | | | | C125 | CD1-0-6160-0002V | Electrolytic | 10 μ F 16V | 1 |
| | | | | C126 | CD4-7-5250-0002V | Electrolytic | 4.7 μ F 25V | 1 |
| | | | | C127 | CC2-2-1500-KE01R | Ceramic | 220pF 50V \pm 10% | 1 |
| | | | | C129 | CD1-0-6160-0002V | Electrolytic | 10 μ F 16V | 1 |
| | | | | C130 | CM1-0-3500-J00TV | Mylar | 0.01 μ F 50V \pm 5% | 1 |
| | | | | C134 | CM2-2-3500-J00BV | Mylar | 0.022 μ F 50V \pm 5% | 1 |
| | | | | C135 | CC2-7-1500-KD00C | Ceramic | 270pF 50V \pm 10% | 1 |
| | | | | C138 | CC2-2-1500-KE01R | Ceramic | 220pF 50V \pm 10% | 1 |
| | | | | C139 | CM4-7-3500-J00TV | Mylar | 0.047 μ F 50V \pm 5% | 1 |

P.C. BOARD PARTS LIST (Continued)

| Ref. No. | Part No. | Description | Q'ty |
|------------------|------------------|-------------|------|
| CAPACITOR | | | |
| C301 Δ | 4-2239-70970 | Capacitor | 1 |
| RESISTORS | | | |
| R175 | RH5-6-1202-JZ000 | Metal | 1 |
| R176 | RD2-2-1251-JM000 | Carbon | 1 |
| R177 | RD2-7-1251-JM000 | Carbon | 1 |
| R275 | RH5-6-1202-JZ000 | Metal | 1 |
| R276 | RD2-2-1251-JM000 | Carbon | 1 |
| R277 | RD2-7-1251-JM000 | Carbon | 1 |

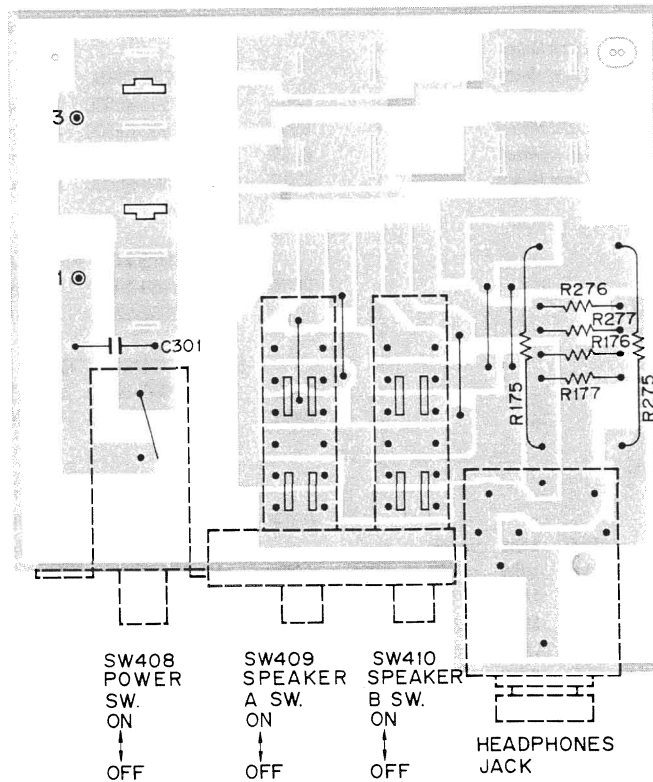
NOTES:

- Parts order must contain Model Number, Part Number and Description.
- Ordering quantity of screws and resistors must be multiple of 10 pcs.

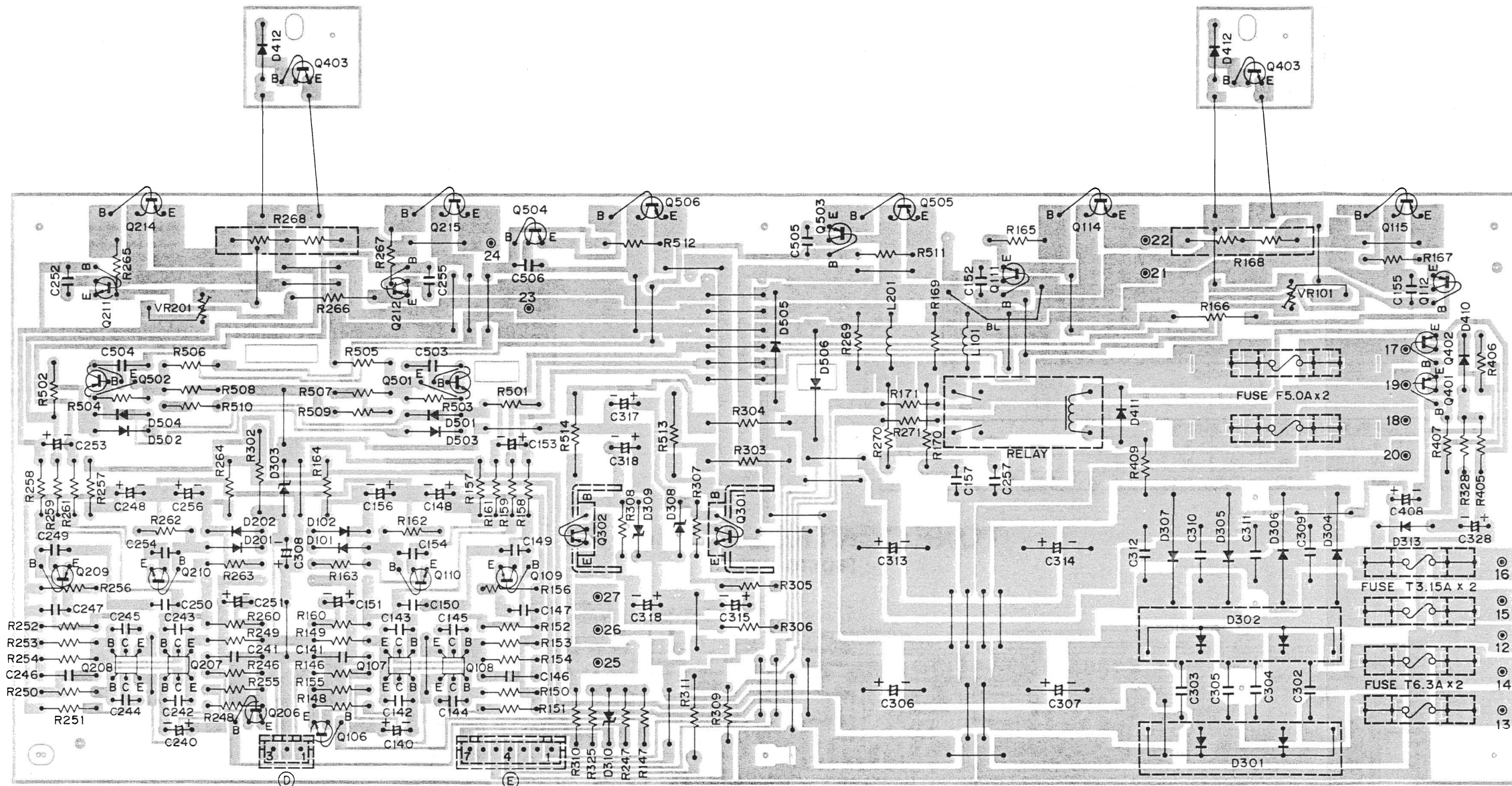
PRODUCT SAFETY NOTICE

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.

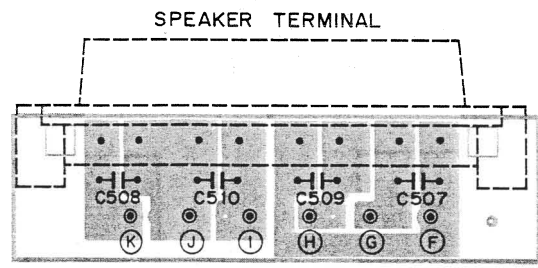
SWITCH P.C. BOARD (BOTTOM VIEW)



MAIN PRINTED CIRCUIT BOARD (BOTTOM VIEW)



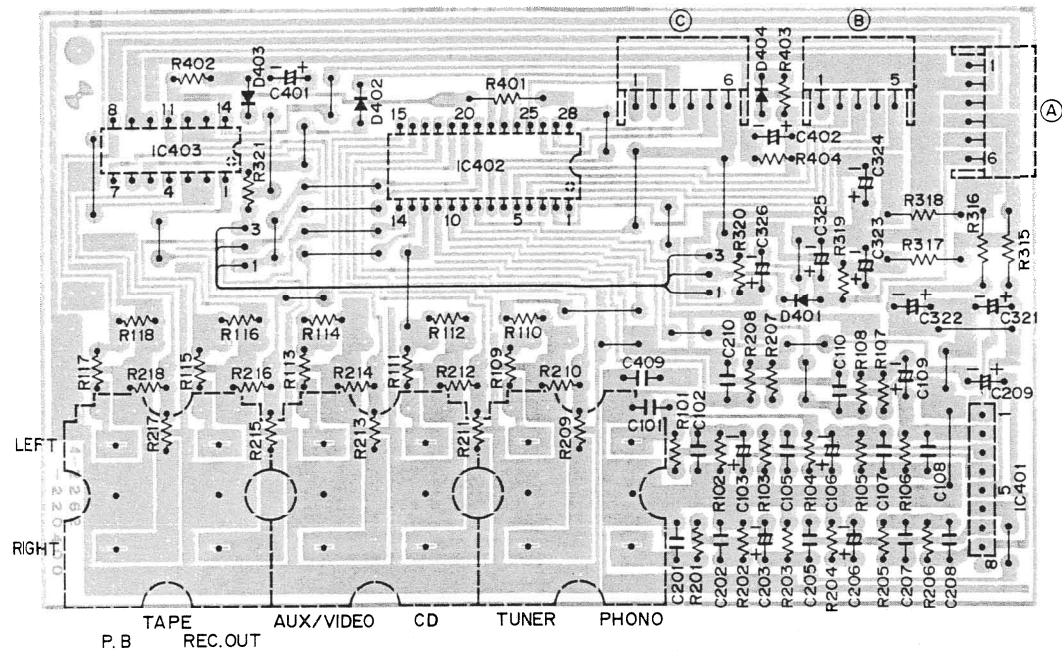
SP TERMINAL P.C. BOARD (BOTTOM VIEW)



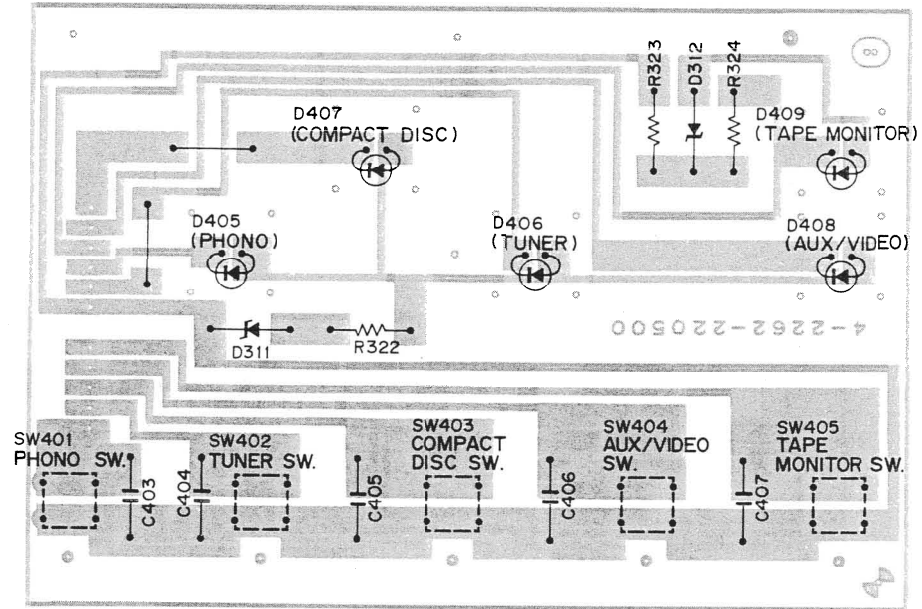
TRANSISTOR DC VOLTAGES

| SYMBOL No. | DEVICE | B | C | E | SYMBOL No. | DEVICE | B | C | E |
|------------|---------|--------|--------|--------|------------|---------|--------|--------|--------|
| Q106,206 | 2SD1012 | -2.8V | 0V | 0V | Q302 | 2SB632 | -18.0V | -26.0V | -17.4V |
| Q107,207 | 2SC3065 | -0.2V | 34.0V | -0.8V | Q401 | 2SA608 | -1.4V | -0.8V | -0.8V |
| Q108,208 | 2SC3064 | 34.0V | 60.5V | 33.3V | Q402 | 2SA608 | -0.8V | 0.1V | 0V |
| Q109,209 | 2SA1209 | 60.8V | 1.5V | 61.0V | Q501 | 2SC2603 | 24.6V | 64.1V | 25.9V |
| Q110,210 | 2SC2911 | -60.5V | -1.5V | -61.0V | Q502 | 2SA1115 | -24.6V | -63.9V | -25.8V |
| Q111,211 | 2SC3117 | 1.1V | 61.5V | -1.1V | Q503 | 2SB631 | 64.3V | 31.8V | 64.0V |
| Q112,212 | 2SA1249 | -0.6V | -61.5V | -1.1V | Q504 | 2SD600 | -64.2V | -31.8V | -63.9V |
| Q114,214 | 2SC3281 | 0.6V | 61.5V | 0V | Q505 | 2SA1302 | 64.0V | 31.8V | 64.0V |
| Q115,215 | 2SA1302 | -0.6V | -61.5V | 0V | Q506 | 2SC3281 | -63.9V | -31.8V | -64.3V |
| Q301 | 2SD612 | 18.4V | 28.2V | 17.8V | | | | | |

INPUT P.C. BOARD (BOTTOM VIEW)

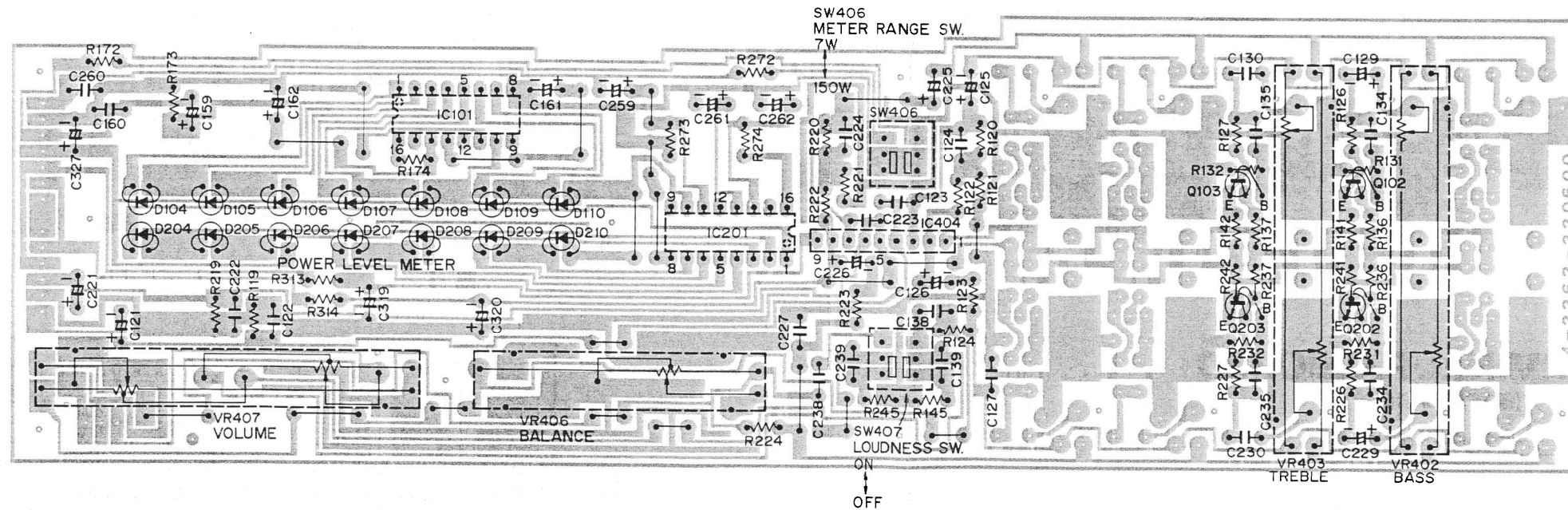


FUNCTION P.C. BOARD (BOTTOM VIEW)



| IC PIN NUMBERS DC VOLTAGES | | | | | | | | | | | | | | | |
|----------------------------|--------|-------|----|----|----|--------|-------|--------|----|----|----|----|-------|-------|-------|
| SYMBOL No. | DEVICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| IC401 | M5218L | 11.8V | 0V | 0V | 0V | -11.6V | 0V | 0V | 0V | | | | | | |
| IC403 | LC4066 | 0V | 0V | 0V | 0V | -9.1V | -9.1V | -11.0V | 0V | 0V | 0V | 0V | 11.5V | 11.5V | 11.5V |

TONE CONTROL P.C. BOARD (BOTTOM VIEW)

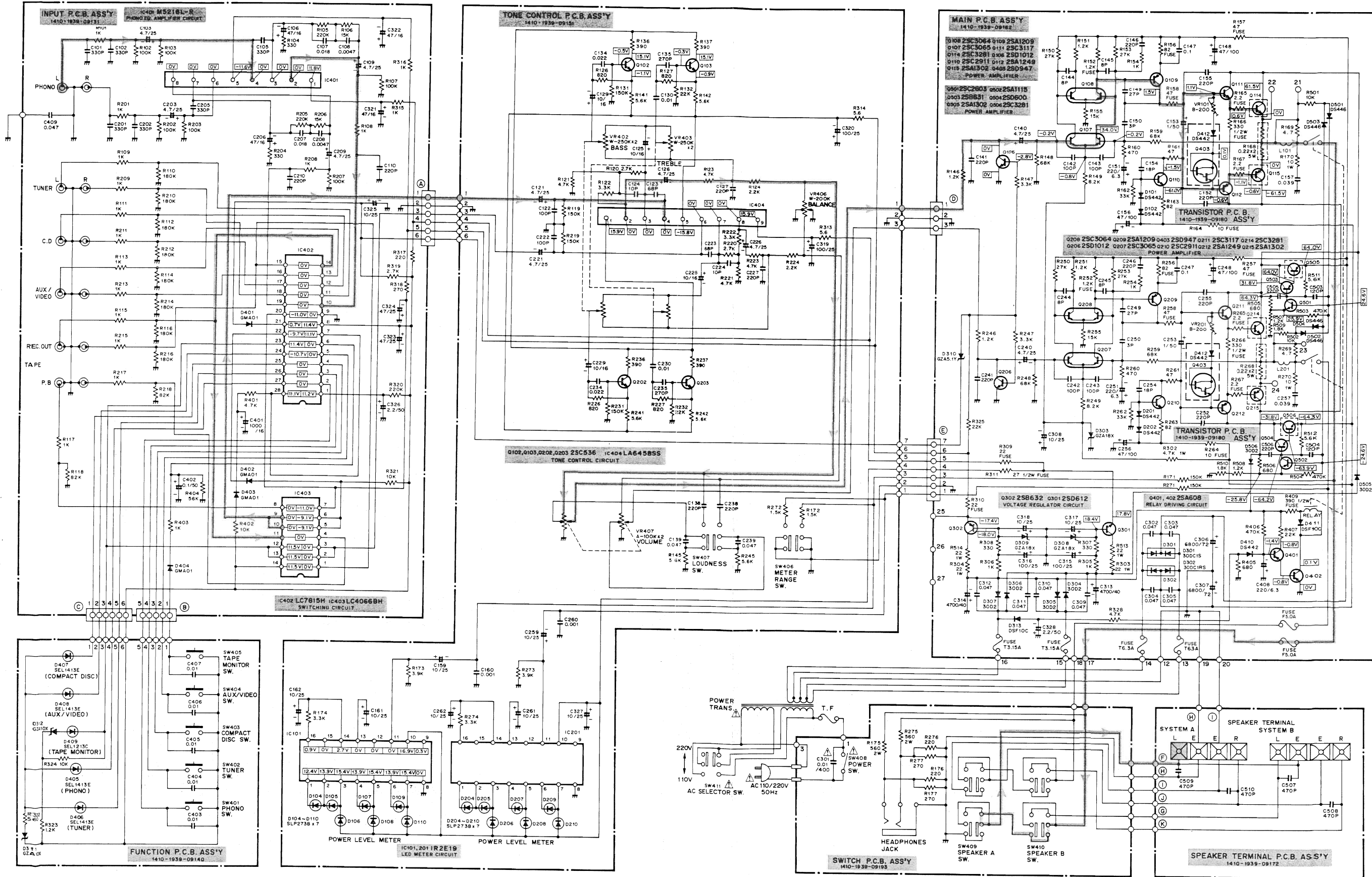


| IC PIN NUMBERS DC VOLTAGES | | | | | | | | | | | | | | | | | |
|----------------------------|--------|-------|-------|-------|-------|--------|-------|-------|----|-------|-------|----|----|----|------|----|------|
| SYMBOL No. | DEVICE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| IC101,102 | IR2E19 | 12.4V | 13.9V | 15.4V | 13.9V | 15.4V | 13.9V | 15.4V | 0V | 0.3V | 16.9V | 0V | 0V | 0V | 2.7V | 0V | 0.9V |
| IC404 | LA6458 | 15.9V | 0V | 0V | 0V | -15.8V | 0V | 0V | 0V | 15.9V | | | | | | | |

| TRANSISTOR DC VOLTAGES | | | | |
|------------------------|--------|-------|-------|-------|
| SYMBOL No. | DEVICE | B | C | E |
| Q102,202 | 2SC536 | -0.5V | 15.1V | -1.1V |
| Q103,203 | 2SC536 | -0.3V | 15.1V | -0.9V |

| No. | Name | Position | No. | Name | Position |
|-------|---------------------|----------|-------|--------------------|----------|
| SW401 | PHONO Switch | OFF | SW407 | LOUDNESS Switch | OFF |
| SW402 | TUNER Switch | OFF | SW408 | POWER Switch | OFF |
| SW403 | COMPACT DISC Switch | OFF | SW409 | SPEAKER A Switch | OFF |
| SW404 | AUX/VIDEO Switch | OFF | SW410 | SPEAKER B Switch | OFF |
| SW405 | TAPE MONITOR Switch | OFF | SW411 | AC SELECTOR Switch | 220V |
| SW406 | METER RANGE Switch | 150W | | | |

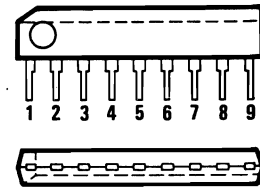
SCHEMATIC DIAGRAM



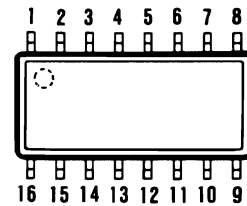
SEMICONDUCTOR LEAD IDENTIFICATION

| TRANSISTOR | FRONT VIEW | BOTTOM VIEW |
|--|------------|-------------|
| 2SC536 2SA608 2SA1115 2SC2603 | | |
| 2SA1209 2SA1249 2SC2911 2SC3117 2SB631 2SB632 2SD600 2SD612 | | |
| 2SA1302 2SC3281 | | |
| 2SD1012 | | |
| 2SC3064 2SC3065 | | |
| TERMINAL NAME | | |
| B → BASE C → COLLECTOR E → EMITTER | | |

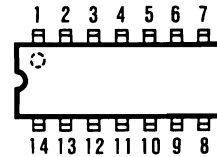
LA6458S FRONT / BOTTOM VIEWS



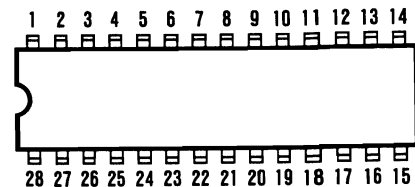
IR2E19 BOTTOM VIEW





LC4066B BOTTOM VIEW



LC7815 BOTTOM VIEW



PRODUCT SAFETY NOTICE

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NOTES:

1. All resistors values are indicated in "ohm" (K=10³, M=10⁶).
2. All capacitors 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.

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

- b. All voltages ±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.



FISHER

CORRECTION NOTICE

Date: December, 10, 1986

Please add this notice to the Service Manuals listed below

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|--|
| <p>INTEGRATED STEREO AMPLIFIER</p> <p>CA-866</p> <p>(EUROPE) REF:WM-16839 Issue Number 1</p> |
|--|

The following items were misprinted. Please make the necessary revision as indicated in the Service Manual Listed above.

| No. | Page or Section | | Ref. No. | Parts No. | Description | Q'ty | Remarks |
|-----|----------------------|------|----------|------------------|-------------|------|---------|
| 1 | Parts List Page 6 | from | CA12 | 131-2-1701-91900 | Knob Volume | 1 | |
| | | to | CA12 | 131-2-1601-91900 | Knob Volume | 1 | |