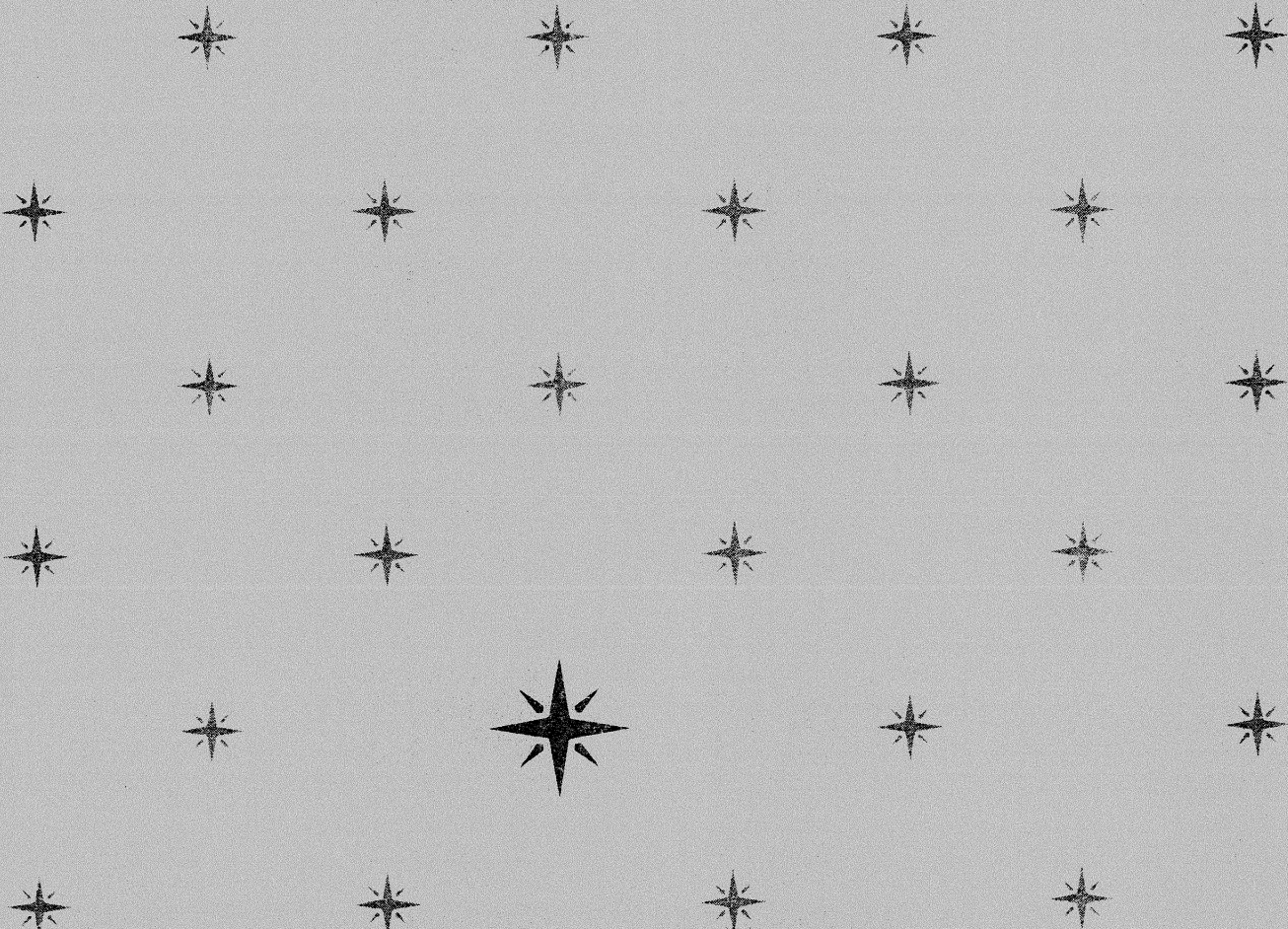


**SERVICE
MANUAL**

PM630



marantz®

model PM630

Stereo Pre Main Amplifier

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, MARANTZ part number has to be specified. If you order by mail, fulfil MARANTZ order forms.

MARANTZ S.A.
EUROPEAN PARTS DEPARTMENT
2, Avenue Léopold III
B-7120 PERONNES-lez-BINCHE
BELGIUM
TWX: 57589 SEPLT B

The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING:

Parts may be ordered from the following addresses:

EUROPE

| | | | |
|--|---|---|--|
| MARANTZ S.A. European Parts Department 2, Avenue Léopold III B-7120 Péronnes-lez-Binche Belgium Telex: 57589 | MARANTZ NORSE A.S. Refstadalleen 13 Oslo 5 Norway Telex: 19659 | MARANTZ DENMARK Bregnerødvej 132b 3460 Birkerød Denmark Telex: 39137 | MARANTZ GMBH AUSTRIA Wiedner Hauptstrasse 98 1050 Wien Austria Telex: 113583 |
| MARANTZ S.A. 326 Avenue Louise Bte 32 1050 Brussels Belgium Telex: 26602 | MARANTZ FRANCE 4 Rue Bernard Palissy 92600 Asnières France Telex: 611651 | MARANTZ BELGIUM 45 Rue Auguste Van Zande 1080 Brussels Belgium | MARANTZ SVENSKA A.B. Svartviksvängen 56 Traneberg - Box 12016 16112 Bromma Sweden Telex: 13449 |
| MARANTZ GERMANY GMBH Max Planckstrasse, 22 6072 DREIEICH 1 West Germany Telex: 4185316 | MARANTZ AUDIO U.K. LTD. Unit 15/16 Saxon Way Industrial Estate Moor Lane Harmondsworth UB7 OLW Great Britain Telex: 935196 | | |

AUSTRALIA

MARANTZ AUSTRALIA PTY., LTD.
32 Cross Street
Brookvale, N.S.W. 2100
Australia
Telex: 24121

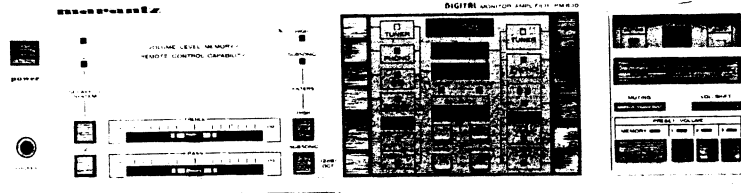
All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

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MODEL PM630 STEREO PRE MAIN AMPLIFIER



INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz Model PM630 Stereo Pre Main Amplifier.

Service information and voltage data included in this manual are intended for use by knowledgeable and experienced personnel only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of circuitry operation.

The parts list furnishes complete ordering information. Most replacement parts should be ordered from the Marantz Company. However, a simple description is included for parts which can be obtained locally.

1. P.W. BOARDS

As can be seen from the circuit diagram the chassis of Model PM630 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. Main Amp mounted on P.W. Board P700
2. Tone Control Amp mounted on P.W. Board PE00
3. Function/Volume mounted on P.W. Board PS00
4. Logic Control mounted on P.W. Board PL00
5. Speaker Output mounted on P.W. Board PW00
6. Speaker Switch mounted on P.W. Board PT00
7. Speaker LED mounted on P.W. Board PT50
8. Power Switch mounted on P.W. Board P000
9. Head Phone mounted on P.W. Board PW50
10. Front LED Switch mounted on P.W. Board PY00
11. Fuse mounted on P.W. Board P850.

2. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model PM630 Stereo Pre Main Amplifier.

| Item | Use |
|---|--|
| Distortion Analyzer | Distortion measurements |
| Audio Oscillator | Sinewave and squarewave signal source |
| AC VTVM | Voltage measurements (AC) |
| Oscilloscope | Waveform analysis and trouble shooting and ASO alignment |
| Circuit Tester | Trouble shooting |
| DC VTVM | Voltage measurements (DC) |
| AC Wattmeter | Monitors primary power to amplifier |
| Line Voltmeter | Monitors potential of primary power to amplifier |
| Variable Autotransformer (0 ~ 140V AC, 10A) | Adjust level of primary power to amplifier |
| Shorting Plug | Shorts amplifier input to eliminate noise pickup |

3. MICRO COMPUTER

- a. Apart from the power switch, speaker selector switch, tone control and volume control, all the functions on the front panel are controlled via a microcomputer consisting of 2 parts — LN6416E (QL11) and LC6502 (QL09).
The EASY/REMOTE signals are also processed by the microcomputer.
- b. By backing up the microcomputer with capacitor, it is possible to maintain the unit in the condition it was prior to switching the power OFF for approx. 2 hours. If the back-up voltage drops below V2/2 (approx.

2.5 V), the unit returns to its original condition (Position: Tuner Direct, Volume: "00" and all other functions OFF).

- c. There are 2 built-in volume memories — a relative volume memory which makes use of the special features of the microcomputer, and an absolute volume memory:

Relative volume memory —
Can compensate the level difference between PHONO, TUNER and CD.

Absolute volume memory —
Can memorize 3 arbitrary points on the volume scale.

4. LED MATRIX ARRANGEMENT TABLE

| SEG SCAN | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------|-------------------------|--------------------------|-------------------|--------------------|------------------------|------------------------|-----------------------|
| 0 | 1' DIGIT a | 1' DIGIT b | 1' DIGIT c | 1' DIGIT d | 1' DIGIT e | 1' DIGIT f | 1' DIGIT G |
| 1 | 10' DIGIT a | 10' DIGIT b | 10' DIGIT c | 10' DIGIT d | 10' DIGIT e | 10' DIGIT f | 10' DIGIT G |
| 2 | FUNCTION TUNER | FUNCTION PHONO | FUNCTION AUX | FUNCTION TAPE 1 | FUNCTION TAPE 2 | | |
| 3 | REC MODE DIRECT | REC MODE TUNER | REC MODE PHONO | REC MODE AUX | REC MODE COPY 1 → 2 | REC MODE COPY 2 → 1 | |
| 4 | | MUTING ON | LEVEL MEMORY | LEVEL PRESET 1 | LEVEL PRESET 2 | LEVEL PRESET 3 | |
| 5 | | | | | | BALANCE CENTER | |
| 6 | LACTH OUT LOW FILTER | LACTH OUT HIGH FILTER | TACTH OUT MONO | | LACTH OUT MM | LACTH OUT MC | LACTH OUT LOUDNESS |

5. KEY MATRIX ARRANGEMENT TABLE

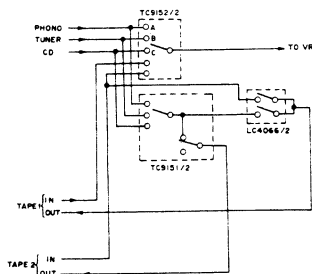
| DIN SCAN | 0 | 1 | 2 | 3 | 4 | 5 |
|-------------|------------------------|------------------------|-------------------------|--------------------------|-------------------|--------------------|
| 0 | BALANCE L | BALANCE R | | VOLUME UP | | VOLUME DOWN |
| 1 | MUTING | | LEVEL MEMORY | LEVEL PRESET 1 | LEVEL PRESET 2 | LEVEL PRESET 3 |
| 2 | FUNCTION TAPE 2 | | FUNCTION TUNER | FUNCTION PHONO | FUNCTION AUX | FUNCTION TAPE 1 |
| 3 | REC MODE COPY 1 → 2 | REC MODE COPY 2 → 1 | REC MODE DIRECT | REC MODE TUNER | REC MODE PHONO | REC MODE AUX |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | LATCH OUT MM/MC | LATCH OUT LOUDNESS | LATCH OUT LOW FILTER | LATCH OUT HIGH FILTER | LATCH OUT MONO | |

6. PHONO AMP

An FET differential input stage is installed in the primary stages of the OP Amp in order to improve the S/N ratio. For MC/MM selection, input impedance and gain is varied by means of a plunger switch.

7. INPUT SELECTOR SECTION

- This section, as shown in the diagram below, consists of 3 analog switches — TC9152P (QS02) for the input selector, TC9151P (SQ01) and LC4066 (QS06) for the Rec selector.
- When the Rec Selector Direct is ON, contacts A, B, C of TC9152P and TC9151P are interlocked, and the mode can be selected by means of the Input Selector Switch.
- An additional back-up is provided at Tape Out, which protects the analog switches when the output terminals are shorted and nullifies the effect of tape deck impedance on the unit.
- When changing the input selector, the Mute signal from pin 5 of TC9152P mutes the volume circuit in the next stage.



8. VOLUME SECTION

- Consists of 3 IC's — electronic volume TC9154 (QG01), analog switch LC4066 (QG03) and the OP Amp NJM4560 (QG02, QG04). The level diagram for the max. peak signal at this stage is given in Fig A. As the electronic volume has a low breakdown voltage (± 6 V), there is an attenuation of 10dB in the input stage so as to avoid applying a signal greater than the power supply voltage to the electronic volume, but this is later compensated by an arrangement which economizes 10dB in sensitivity. Also, when listening at low output levels, the S/N ratio is improved with the volume shift OFF.
- The electronic volume is controlled by a serial code from the microcomputer. Balance is controlled by operating left and right channels separately in the microcomputer.

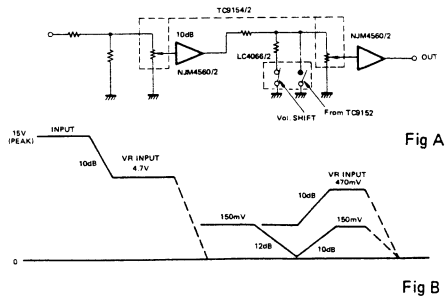


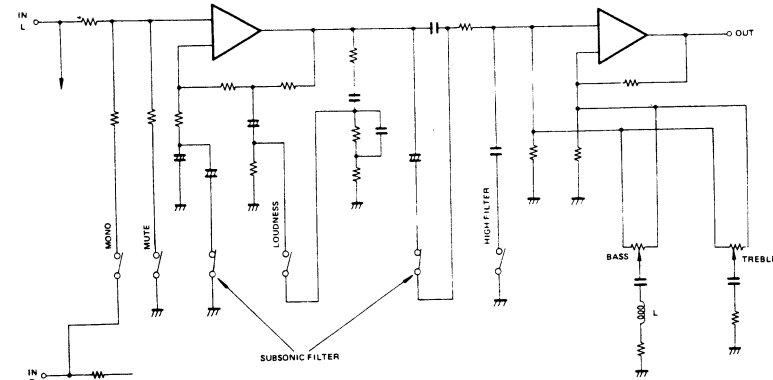
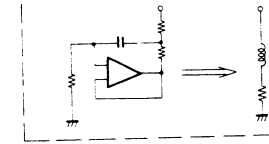
Fig A

Fig B

9. TONE CONTROL SECTION

In this stage, MONO, HIGH FILTER, SUBSONIC FILTER, LOUDNESS, MUTE, TREBLE and BASS are controlled by the OP Amp and analog switches. For the circuit diagram, refer to figure below. The SUBSONIC FILTER consists of 2 stages in order to obtain 12 db/oct. The BASS L consist of a simulated inductor which uses the OP Amp.

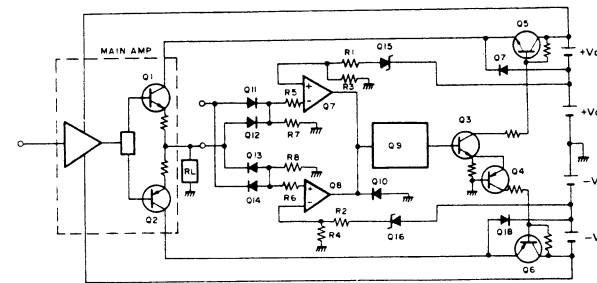
SIMULATED INDUCTOR



10. MAIN AMP SECTION

In the main amp circuit, IC's are used for the voltage amplification stage and transistors for the current amplification stage. The basic circuit, as shown below consists of a comparator, Q15 and Q16, which compares a reference voltage to the

output. If the output rises, multivibrator Q9 emits a pulse at fixed intervals of about 400 ms. This drives Q5 and Q6, and applies a high voltage to the current amplifier stage. Q9 is a re-trigger type multivibrator, and if an output higher than the comparator reference voltage appears within 400 ms, the high voltage is maintained.



- Q1, Q2 Main output transistor
- Q3, Q4 Switching Transistor
- Q5, Q6 High Voltage Transistor
- Q7, Q8 Comparator
- Q9 Mono Multivibrator
- Q10 Clamp Diode
- Q11 ~ Q14 Rectifying Diode
- Q15, Q16 Level Comparator Diode
- Q17, Q18 Power Supply Switching Diode
- +Vc1, 2 Power Supply
- R1 ~ R8 Voltage Dividing Resistor

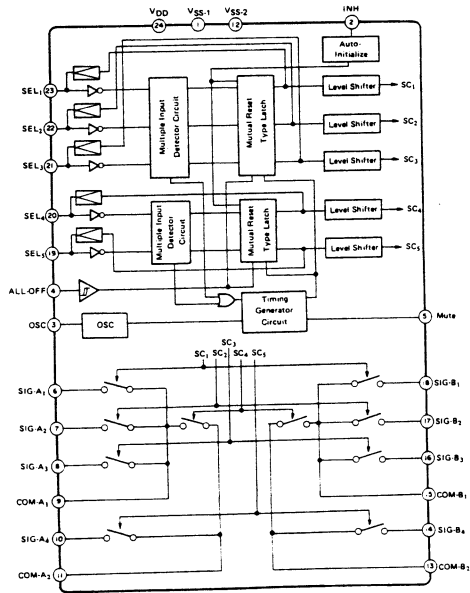
11. C-MOS DIGITAL IC TC9151P/TC9152P

This IC is used for feather-touch function selectors, and incorporates analog switches with a high breakdown voltage.

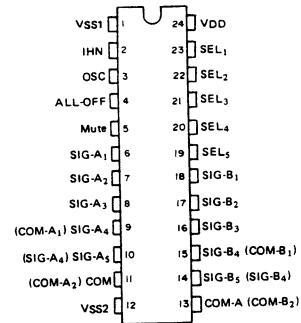
Maximum Ratings (Ta = 25°C)

| Item | Symbol | Rating | Unit |
|-----------------------|-------------|------------------|------|
| Supply Voltage (1) | VDD VSS1 | 16 | V |
| Supply Voltage (2) | VDD VSS2 | 32 | V |
| Input Voltage (VSS1) | VIN(1) | -0.3 ~ VDD + 0.3 | V |
| Input Voltage (VSS2) | VIN(2) | -0.3 ~ VDD + 0.3 | V |
| Power Dissipation | PD | 800 | mw |
| Operating Temperature | Topr | -30 ~ 75 | °C |
| Storage Temperature | Tstg | -55 ~ 125 | °C |

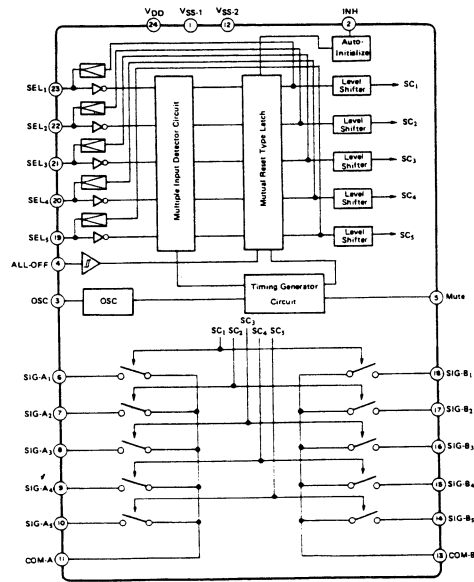
BLOCK DIAGRAM TC9151P



PIN CONNECTION



TC9152P



12. PINS AND THEIR FUNCTIONS

TC9151P & TC9152P

| Pin No. | Symbol | Functional Description |
|---------|---------|--|
| 2 | INH | Inhibit input terminal. With "H" Level signals, permits normal operation. With "L" Level signals, inhibits operation. |
| 3 | OSC | C, R connection terminal for oscillator. The frequency of this oscillator determines muting time and analog switch selection timing. |
| 4 | ALL-OFF | "ALL ANALOG SWITCHES OFF" command input terminal. If an "H" Level signal is input to this terminal, all analog switches go OFF. |
| 5 | MUTE | Muting signal output terminal. When an "H" Level signal is received at the selector input terminals (SEL-1 ~ SEL-5), this terminal goes "H" for a certain time during which the analog switches change over. Muting output time can be set freely by the oscillator frequency. |
| 24 | VDD | Power supply voltage terminal. |
| 1 | VSS1 | For the control system, connect VDD - VSS1. |
| 12 | VSS2 | For the analog switch system, connect VDD - VSS2. |
| 19 | SEL-5 | Analog switch selector input terminals. If an "H" Level signal is applied to terminals SEL-1 ~ SEL-5, the analog switch selected goes ON. In TC9151P, SEL-1, SEL-2, SEL-3, and SEL-4, SEL-5, are in a mutual reset arrangement, so that in the absence of the selecting input they are OFF. In TC9152P, SEL-1 ~ SEL-5 are all in a mutual reset arrangement. This I/O terminal is also used for the display driver output. |
| 20 | SEL-4 | |
| 21 | SEL-3 | |
| 22 | SEL-2 | |
| 23 | SEL-1 | |

TC9151P

| Pin No. | Symbol | Function Description |
|---------|------------------|---|
| 6, 18 | SIG-A1 SIG-B1 | Signal input terminal 1. When SEL-1 is selected, analog switch 1 goes ON, and this terminal and terminal COM-1 then become conducting. |
| 7, 17 | SIG-A2 SIG-B2 | Signal input terminal 2. When SEL-2 is selected, analog switch 2 goes ON, and this terminal and terminal COM-1 then become conducting. |
| 8, 16 | SIG-A3 SIG-B3 | Signal input terminal 3. When SEL-3 is selected, analog switch 3 goes ON, and this terminal and terminal COM-1 then become conducting. |
| 9, 15 | COM-A1 COM-B1 | Analog switch common terminal 1. This is a common terminal for analog switches SIG1 ~ SIG3 above. |
| 10, 14 | SIG-A4 SIG-B4 | Signal input terminal 4. When SEL-5 is selected, analog switch 5 goes ON, and this terminal and terminal COM-2 then become conducting. When SEL-4 is selected, analog switch 4 goes ON, and analog switch 5 goes OFF. |
| 11, 13 | COM-A2 COM-B2 | Analog switch common terminal 2. This is a common terminal for analog switches 4, 5 above. |

TC9152P

| Pin No. | Symbol | Function Description |
|---------|------------------|--|
| 6, 18 | SIG-A1 SIG-B1 | Same as for TC9151P. |
| 7, 17 | SIG-A2 SIG-B2 | |
| 8, 16 | SIG-A3 SIG-B3 | |
| 9, 15 | SIG-A4 SIG-B4 | Signal input terminal 4. When SEL-4 is selected, analog switch 4 goes ON, and this terminal and terminal COM-4 then become conducting. |
| 10, 14 | SIG-A5 SIG-B5 | Signal input terminal 5. When SEL-5 is selected, analog switch 5 goes ON, and this terminal and terminal COM-5 then become conducting. |
| 11, 13 | COM-A COM-B | Analog switch common terminal. |

13. ADJUSTING PROCEDURES

• IDLING ADJUSTMENT

1. Input and output are adjusted with the unit in the OPEN condition.
2. Adjust both left and right channels to give 8 mV DC (idling current 3.5 mA).

| | Measuring points | Parts to be adjusted |
|-----------|------------------------|----------------------|
| L channel | L ch output and T.P.I. | R715 |
| R channel | R ch output and T.P.I. | R716 |

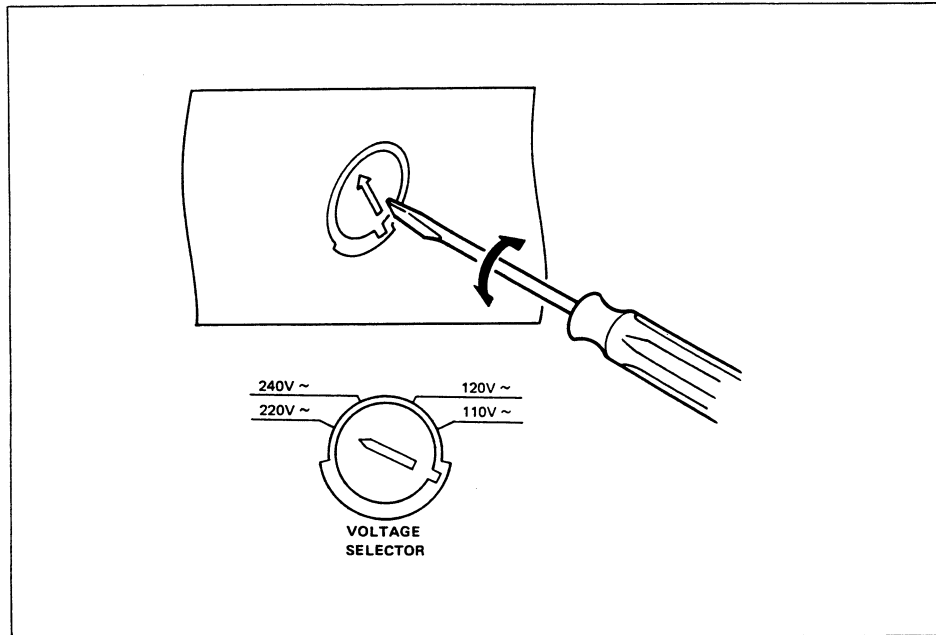
14. VOLTAGE CONVERSION

• EUROPEAN MODEL ONLY

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

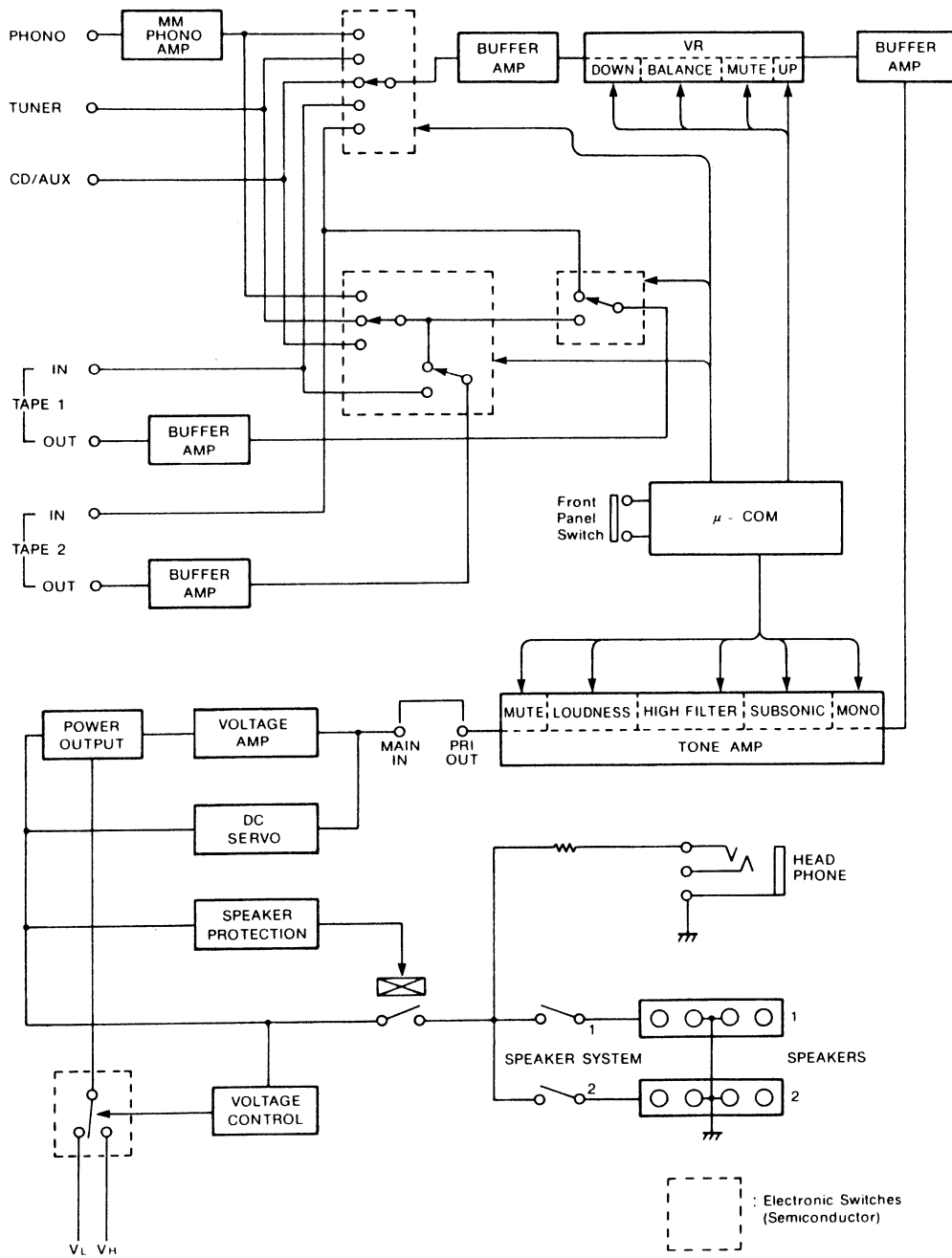
Voltage Conversion Chart



Note on safety:

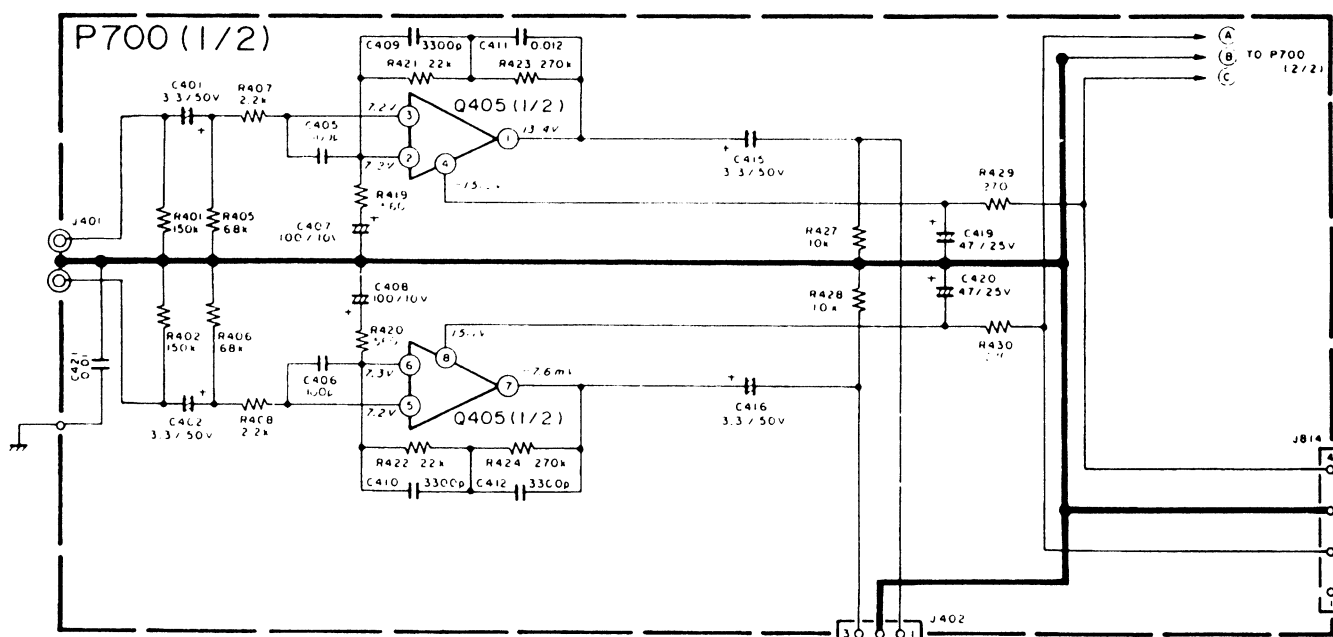
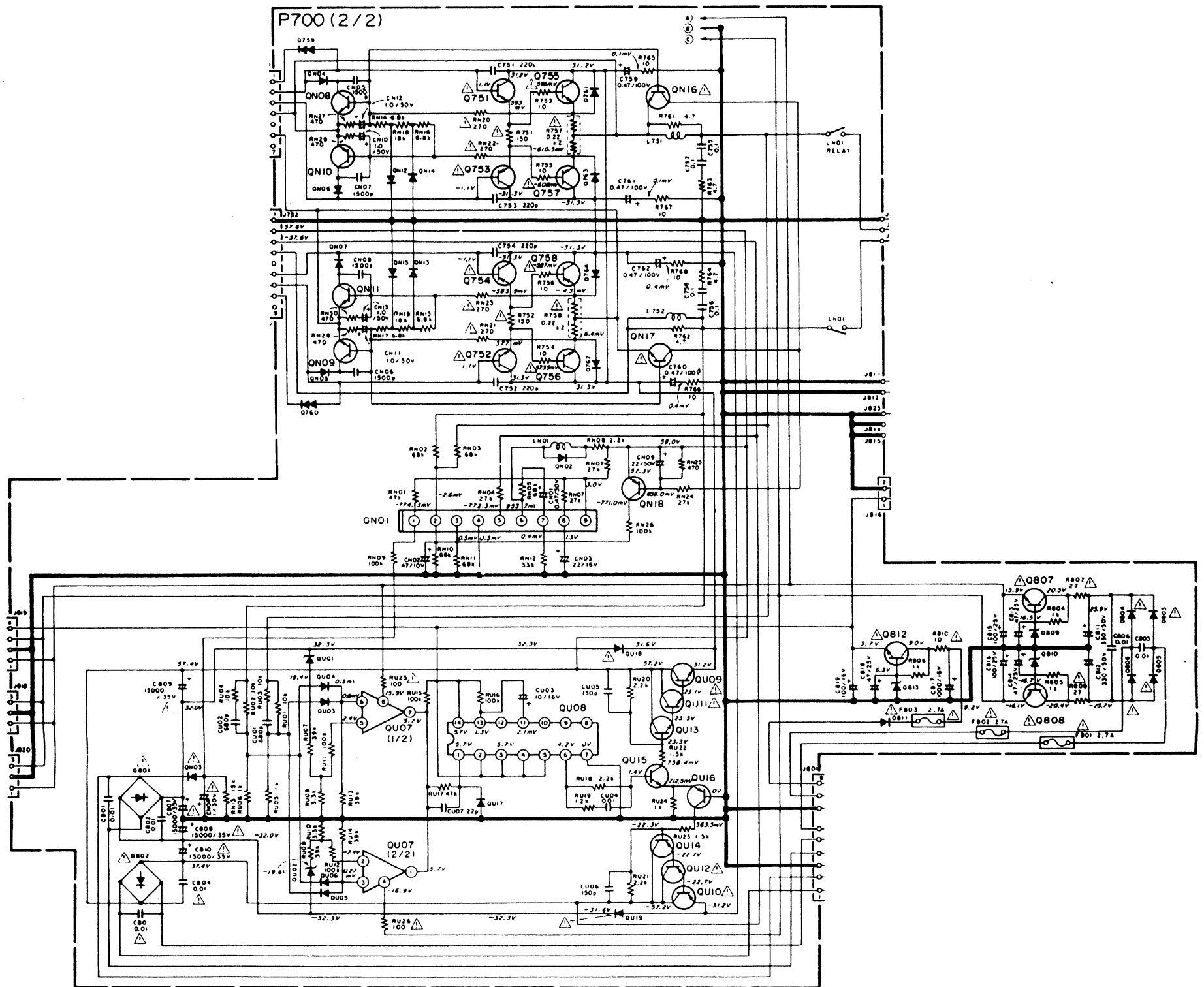
Symbol \triangle Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol \triangle . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

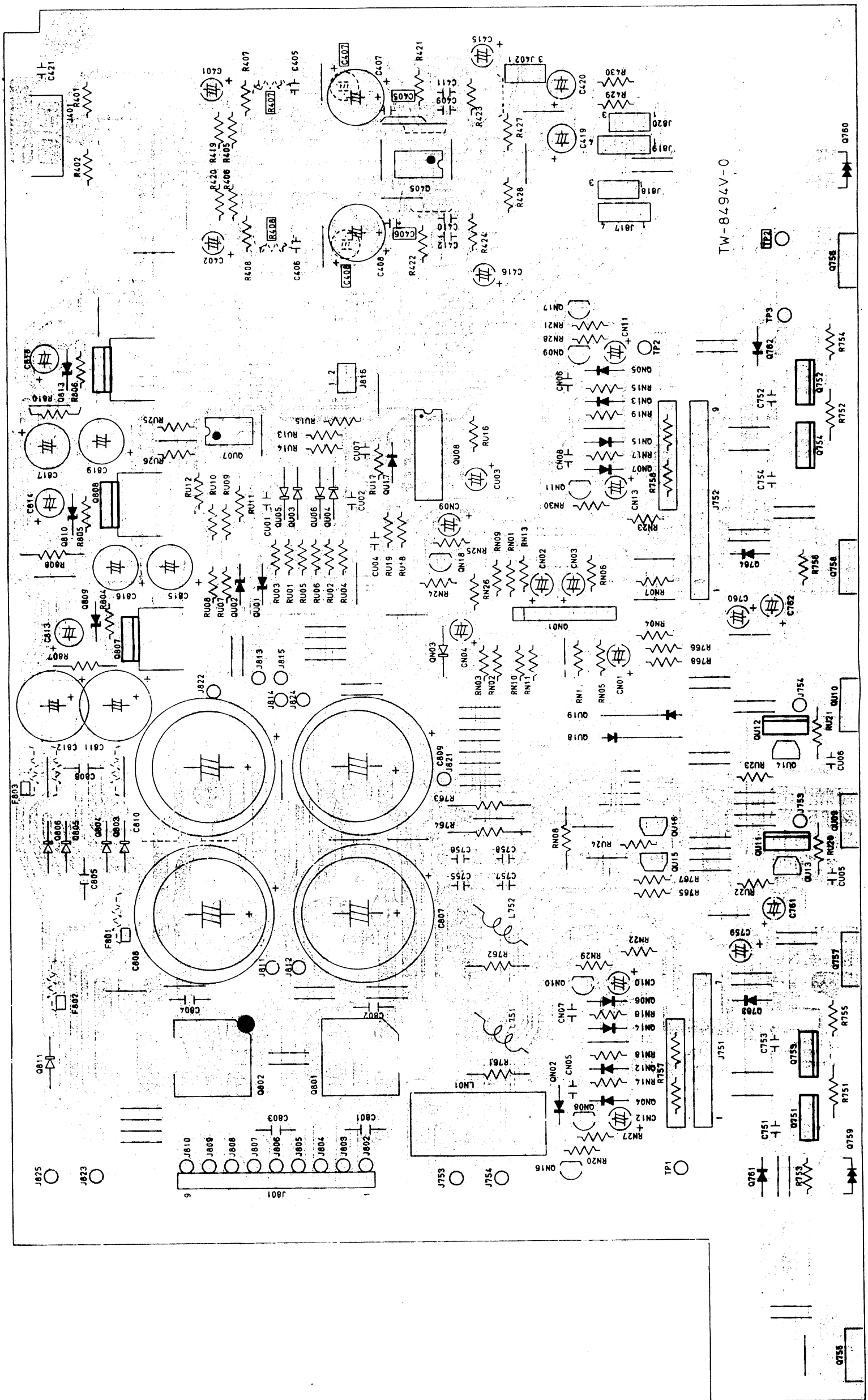
15. FUNCTIONAL BLOCK DIAGRAM



16. SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

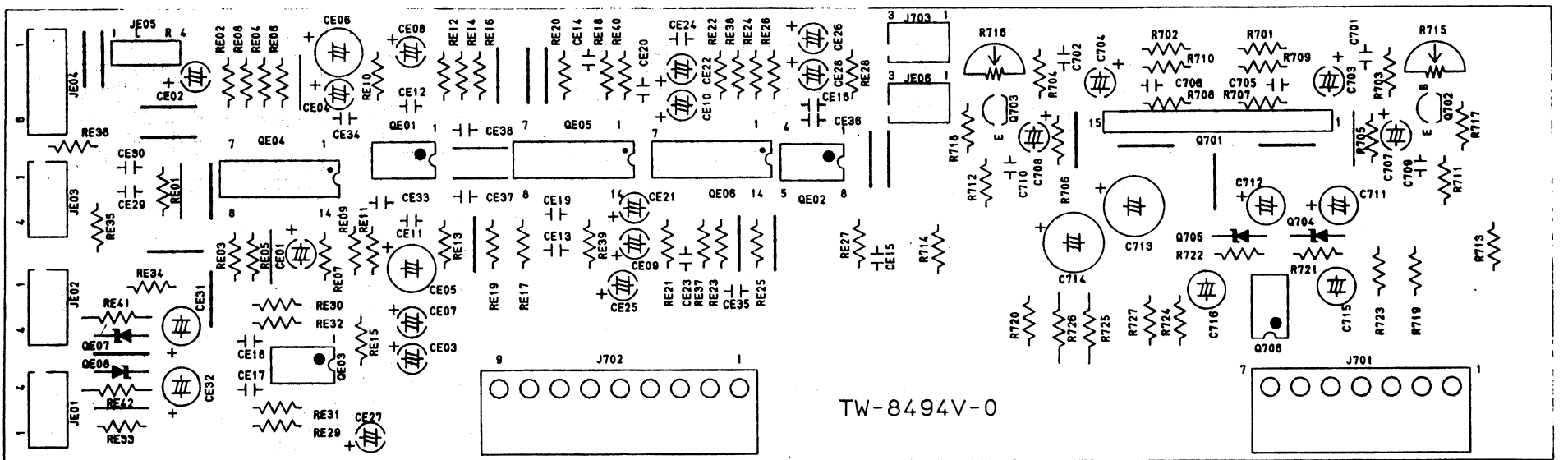
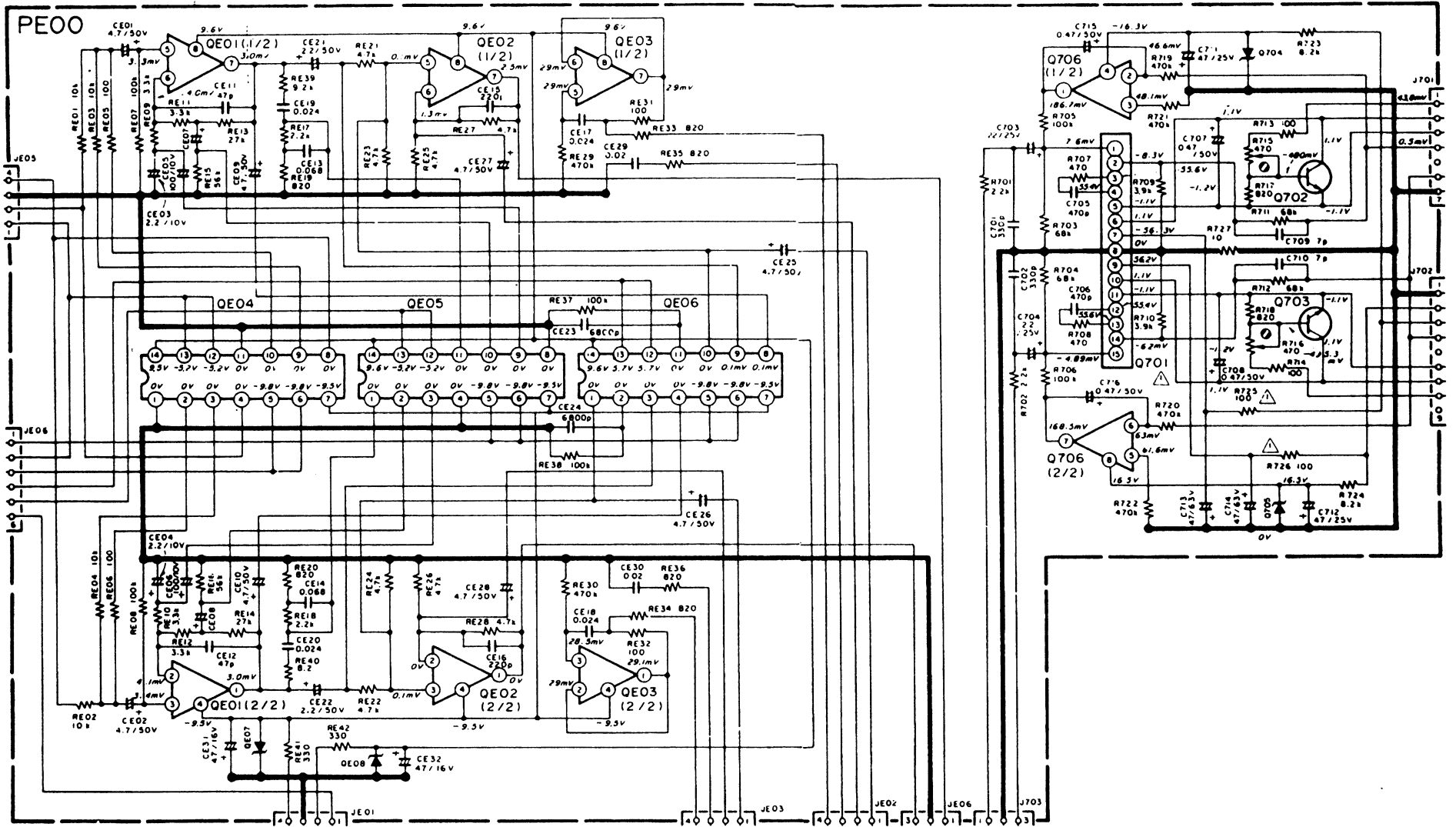
16.1 MAIN AMP. Assembly (P700) Schematic Diagrams and Component Location



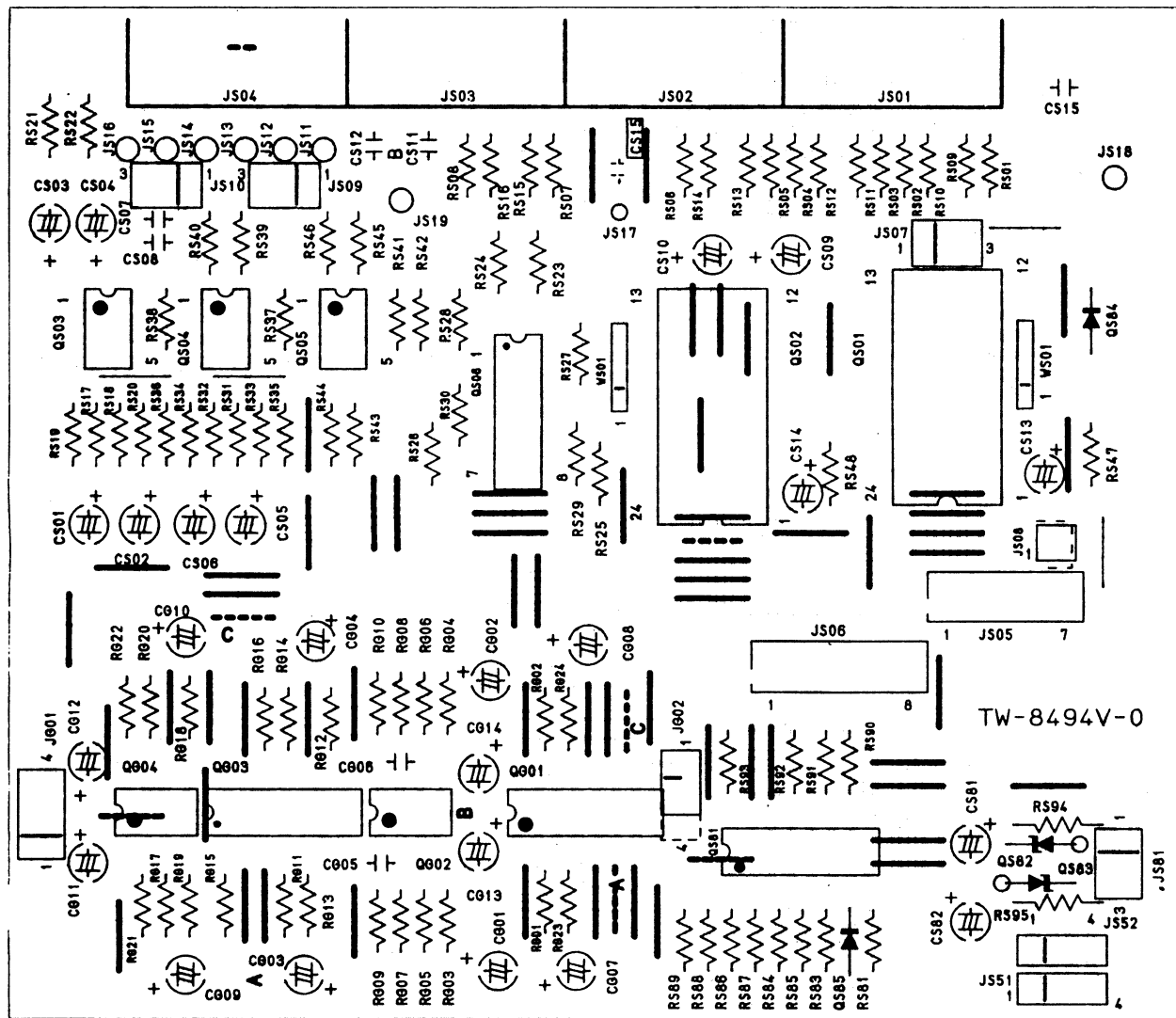
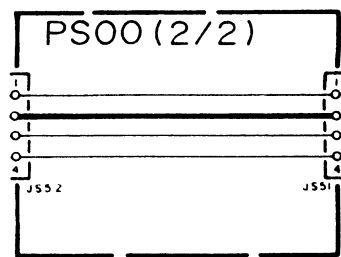
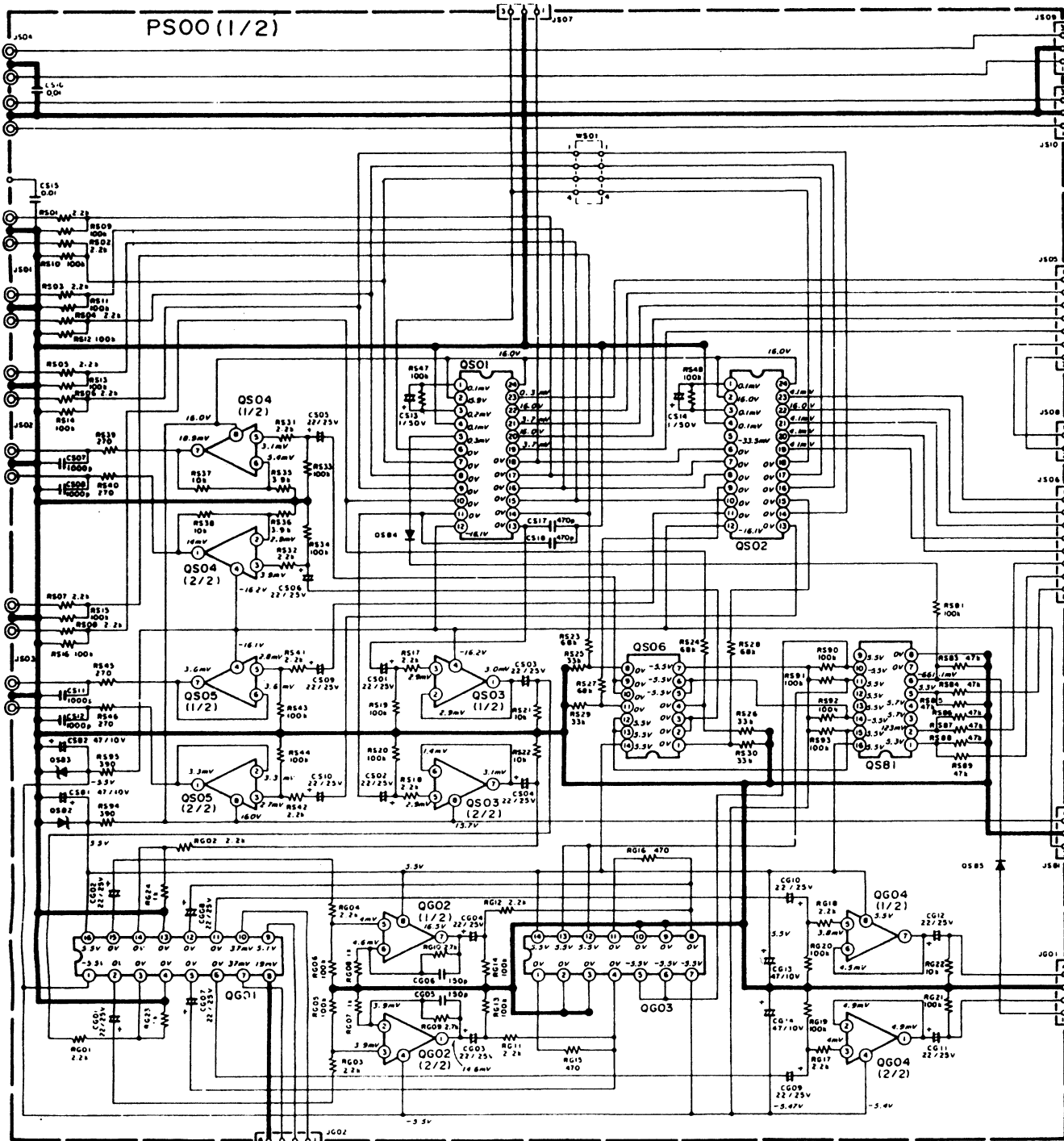


TW-8494V-0

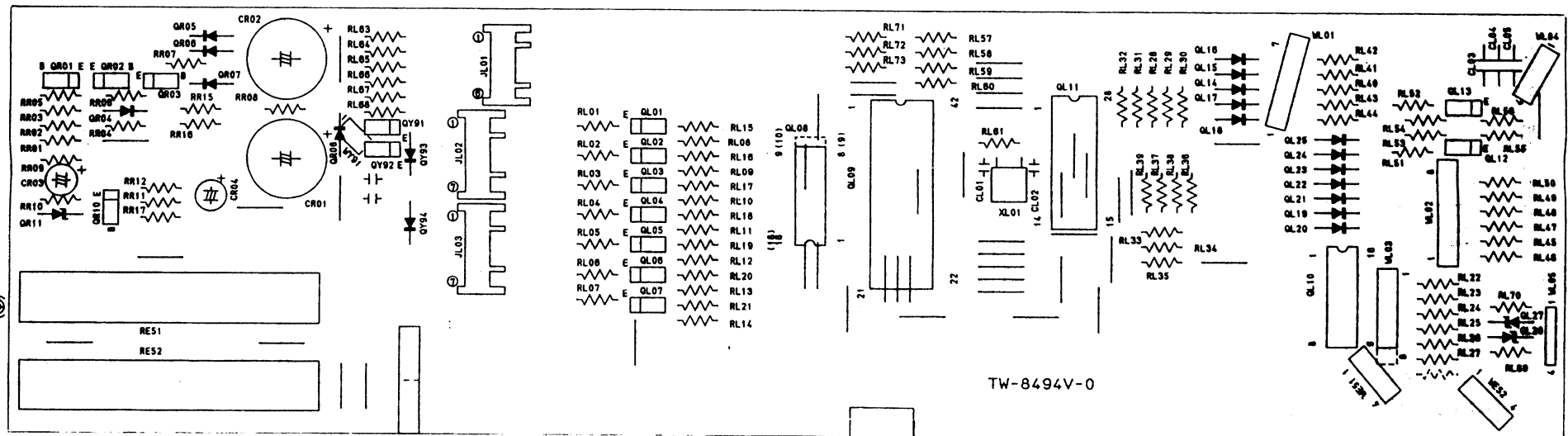
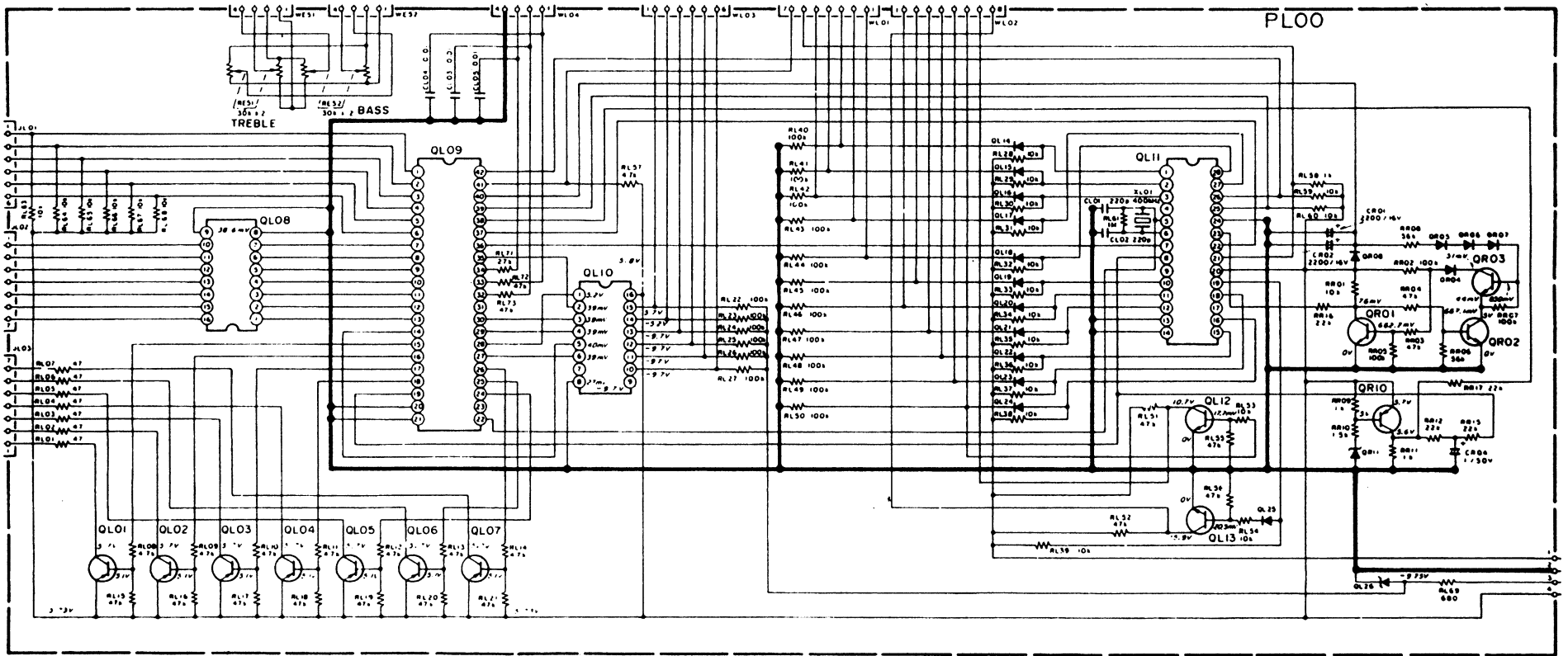
16.2 TONE CONTROL AMP. Assembly (PE00) Schematic Diagram and Component Locations



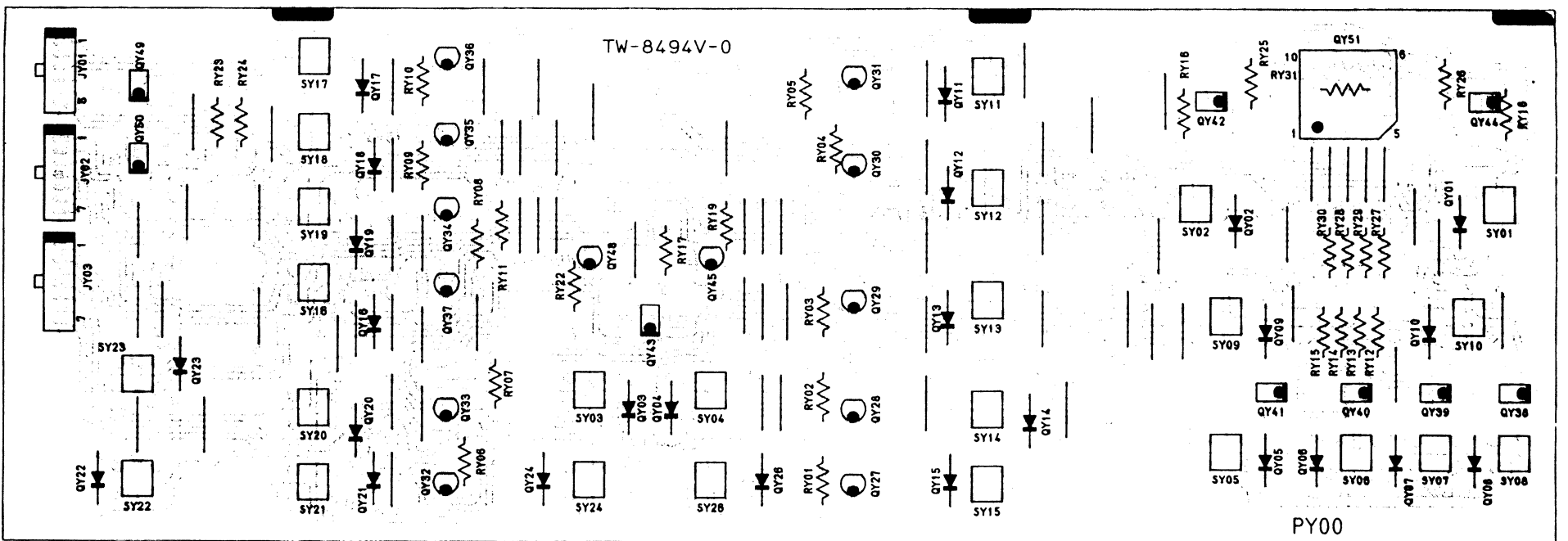
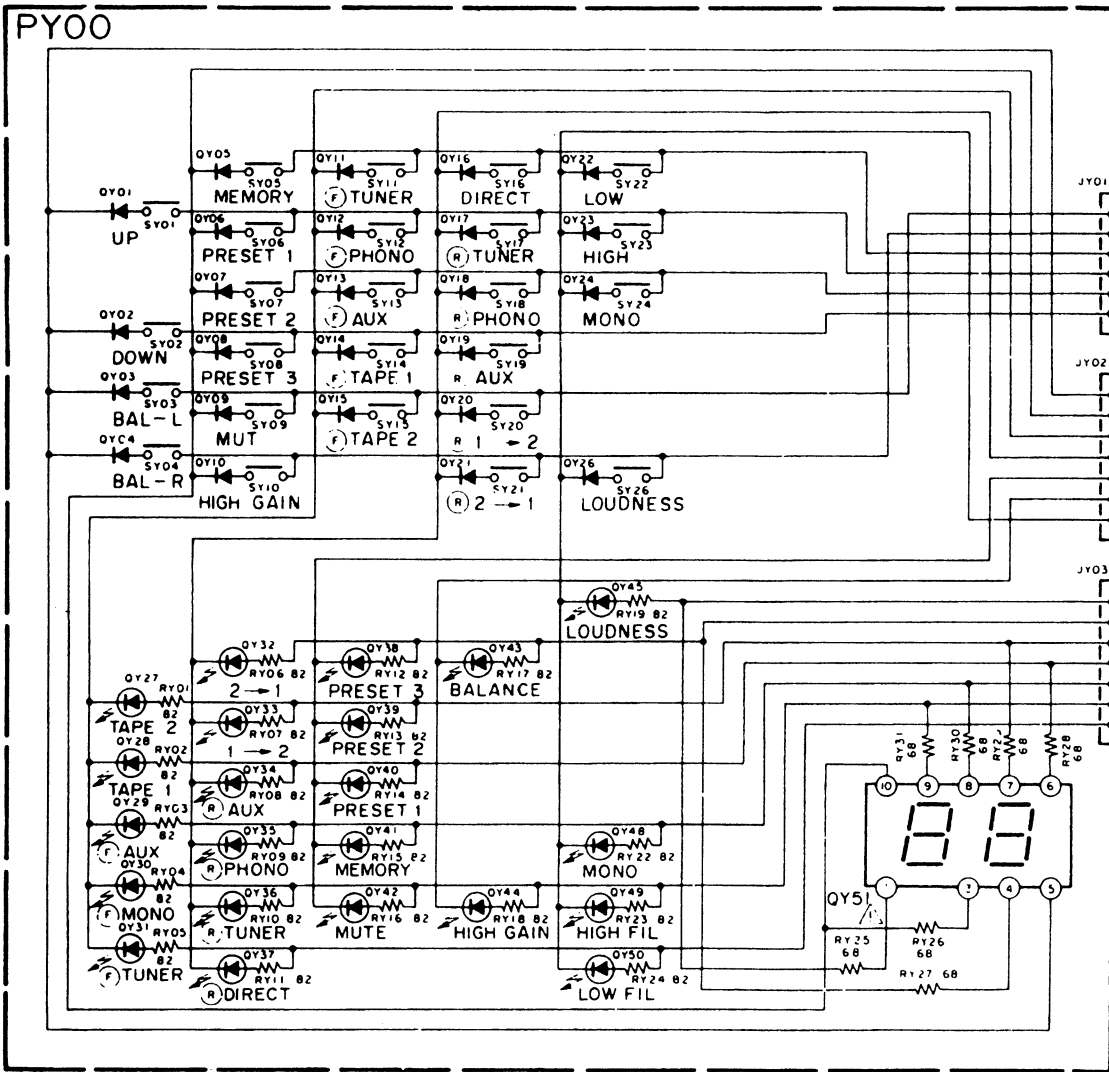
16.3 FUNCTION/VOLUME AMP. Assembly (PS00) Schematic Diagram and Component Locations



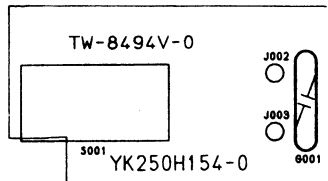
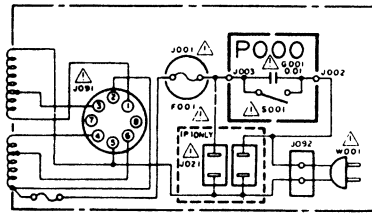
16.4 LOGIC CONTROL CIRCUIT Assembly (PL00) Schematic Diagram and Component Locations



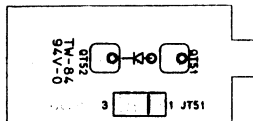
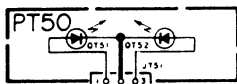
16.5 FRONT LED Switch Assembly (PY00) Schematic Diagram and Component Locations



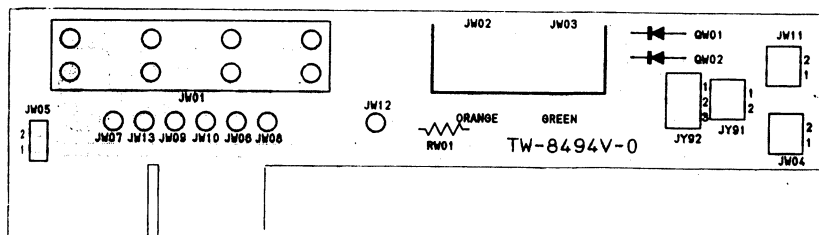
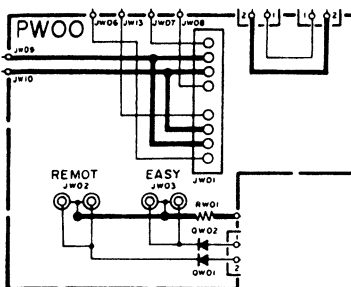
16.6 POWER Switch Assembly (PO00)
Schematic Diagram and Component Locations



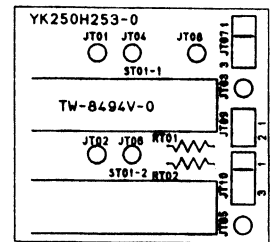
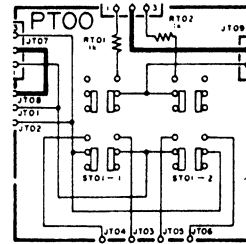
16.7 Speaker LED Assembly (PT50)
Schematic Diagram and Component Locations



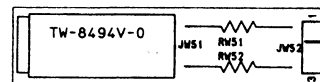
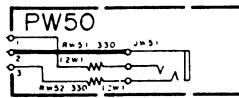
16.8 Speaker Output Assembly (PW00)
Schematic Diagram and Component Locations



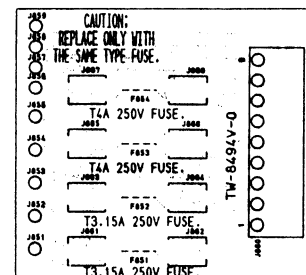
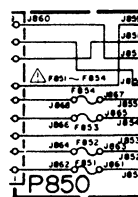
16.9 Speaker Switch Assembly (PT00)
Schematic Diagram and Component Locations



16.10 Head Phone Assembly (PW50)
Schematic Diagram and Component Locations

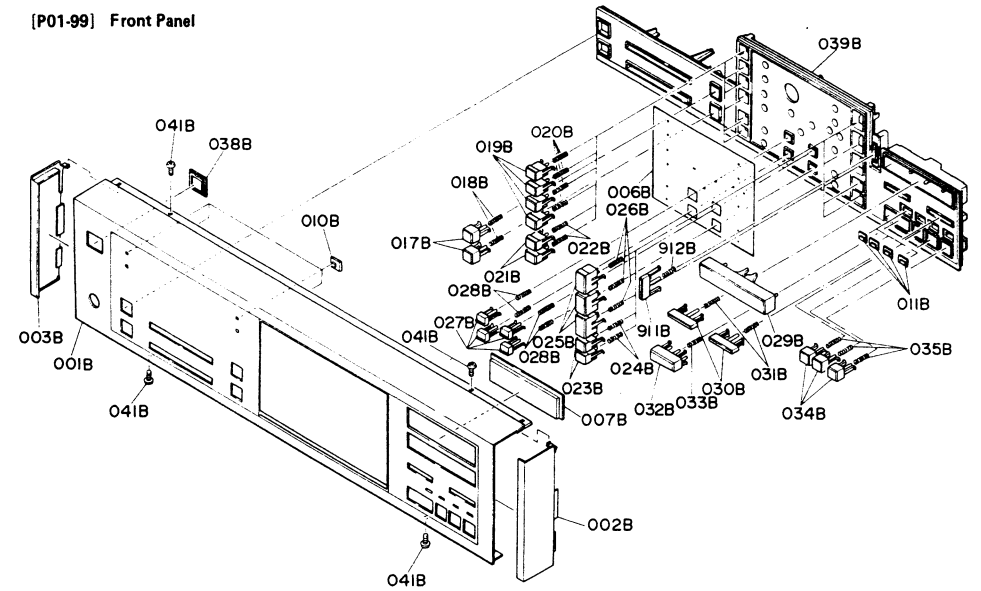


16.11 Fuse Assembly (P850)
Schematic Diagram and Component Locations



17. EXPLODED VIEW AND PARTS LIST

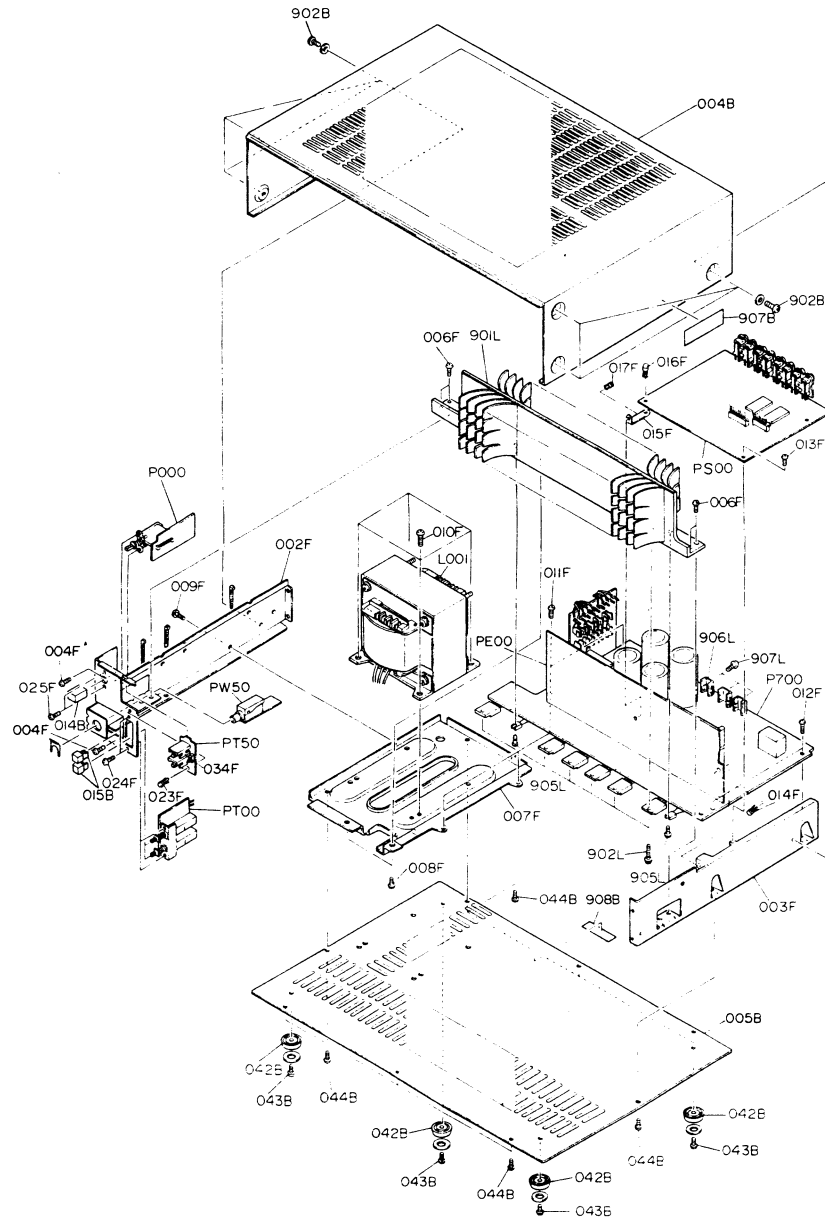
[P01-99] Front Panel



• (N):for Europe
• (A):for Australia
• (P):for PX

| REF. DESIG. | Q'TY | | | PART NO. | DESCRIPTION | REF. DESG. | QTY | | | PART NO. | DESCRIPTION |
|-------------|------|---|---|------------|------------------------------------|------------|-----|---|---|------------|--------------------------------|
| | N | A | P | | | | N | A | P | | |
| A | 1 | 1 | 1 | 249H063400 | Front Panel Assembly | 029B | 1 | 1 | 1 | 249H154030 | Knob, Volume |
| 001B | 1 | 1 | 1 | 249H063010 | Escutcheon, Front Panel | 030B | 2 | 2 | 2 | 431H154010 | Knob, Muting/Volume Shift |
| 002B | 1 | 1 | 1 | 229H067010 | Cap (Right) | 031B | 2 | 2 | 2 | 132T115010 | Spring, Muting/Vol. Shift Knob |
| 003B | 1 | 1 | 1 | 229H067020 | Cap (Left) | 032B | 1 | 1 | 1 | 249H154020 | Knob, Memory |
| 006B | 1 | 1 | 1 | 249H127010 | Control Board | 033B | 1 | 1 | 1 | 249H115010 | Spring, Memory Knob |
| 007B | 1 | 1 | 1 | 249H158010 | Window, Clear Plate | 034B | 3 | 3 | 3 | 249H154010 | Knob, Volume Preset |
| 010B | 4 | 4 | 4 | 125H158010 | Window, Speaker/Filter | 035B | 3 | 3 | 3 | 249H115010 | Spring, Volume Preset Knob |
| 011B | 4 | 4 | 4 | 249H355010 | Lens, Memory | 038B | 1 | 1 | 1 | 415H259210 | Bushing, Power Switch |
| 017B | 2 | 2 | 2 | 249H154010 | Knob, Filter Switch | 039B | 1 | 1 | 1 | 249H259010 | Bushing, Front |
| 018B | 2 | 2 | 2 | 249H115010 | Spring, Filter Knob | | | | | | |
| 019B | 4 | 4 | 4 | 420H154210 | Knob, Rec Selector | 041B | 4 | 4 | 4 | 5128030880 | B.H. Tapped Screw B3 x 8 |
| 020B | 4 | 4 | 4 | 249H115010 | Spring, Rec Selector Knob | | | | | | |
| 021B | 2 | 2 | 2 | 420H154210 | Knob, Tape Copy | | | | | | |
| 022B | 2 | 2 | 2 | 249H115010 | Spring, Tape Copy Knob | | | | | | |
| 023B | 2 | 2 | 2 | 420H154210 | Knob, Tape Monitor | | | | | | |
| 024B | 2 | 2 | 2 | 249H115010 | Spring, Tape Monitor Knob | | | | | | |
| 025B | 3 | 3 | 3 | 416H154220 | Knob, Input Selector | | | | | | |
| 026B | 3 | 3 | 3 | 249H115010 | Spring, Input Selector Knob | | | | | | |
| 027B | 4 | 4 | 4 | 141T154010 | Knob, Mono/Loudness/Balance | | | | | | |
| 028B | 4 | 4 | 4 | 249H115010 | Spring, Mono/Loudness/Balance Knob | | | | | | |

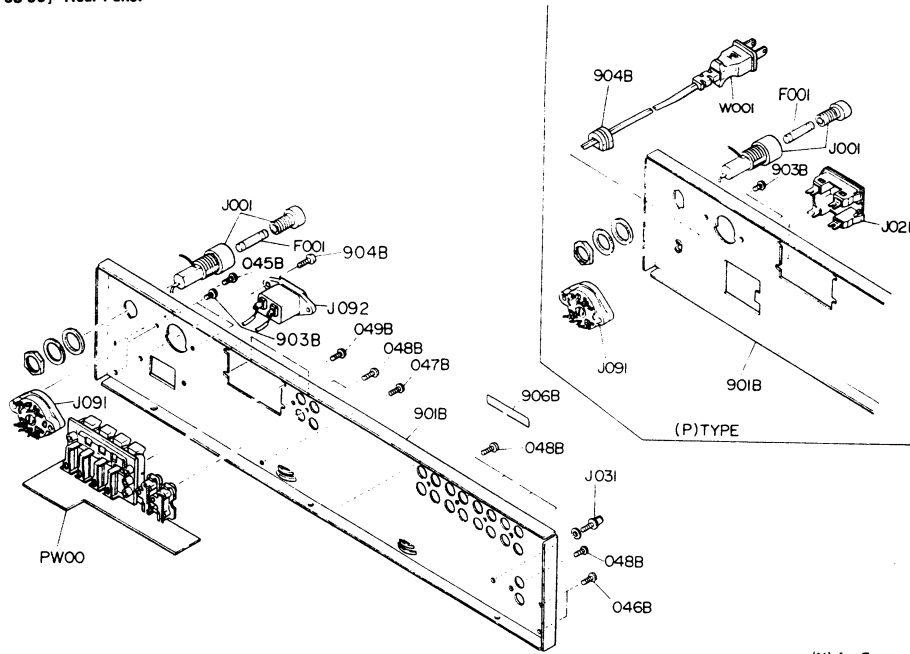
[P02-99] Lid and General Parts



• (N): for Europe
 • (A): for Australia
 • (P): for PX

| REF. DESIG. | QTY | | | PART NO. | DESCRIPTION | REF. DESIG. | QTY | | | PART NO. | DESCRIPTION |
|-------------|-----|---|---|------------|--------------------------|-------------|-----|---|---|------------|-------------------------------|
| | N | A | P | | | | N | A | P | | |
| 004B | 1 | 1 | 1 | 229H257010 | Lid, Top Cover | 002F | 1 | 1 | 1 | 249H126010 | Stay, Left |
| 005B | 1 | 1 | 1 | 249H257010 | Lid, Bottom Cover | 003F | 1 | 1 | 1 | 249H126020 | Stay, Right |
| 014B | 1 | 1 | 1 | 415H154210 | Knob, Power | 004F | 2 | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 015B | 2 | 2 | 2 | 241H154030 | Knob, Speaker | 006F | 4 | 4 | 4 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 042B | 4 | 4 | 4 | 416H057010 | Leg | 007F | 1 | 1 | 1 | 249H004010 | Table, Transformer |
| 043B | 4 | 4 | 4 | 51280408U0 | B.H. Tapped Screw B4 x 8 | 008F | 2 | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 044B | 8 | 8 | 8 | 51280308B0 | B.H. Tapped Screw B3 x 8 | 009F | 1 | 1 | 1 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 902B | 6 | 6 | 6 | 51260408U0 | B.T. Screw B4 x 8 | 010F | 4 | 4 | 4 | 51260408U0 | B.T. Screw B4 x 8 |
| 907B | 1 | 1 | 1 | 2911861140 | Label, Caution (Top) | 011F | 2 | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 908B | 1 | 1 | 1 | 2911861110 | Label, Caution (Bottom) | 012F | 2 | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| | | | | | | 013F | 2 | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| | | | | | | 014F | 1 | 1 | 1 | 2276005050 | Clamper |
| | | | | | | 015F | 1 | 1 | 1 | 249H160020 | Bracket |
| | | | | | | 016F | 1 | 1 | 1 | 2276005050 | Clamper |
| | | | | | | 017F | 1 | 1 | 1 | 2276005050 | Clamper |
| | | | | | | 023F | 1 | 1 | 1 | 2276005050 | Clamper |
| | | | | | | 024F | 2 | 2 | 2 | 51100306A9 | B.H.M. Screw B3 x 6 |
| | | | | | | 025F | 2 | 2 | 2 | 51100306A9 | B.H.M. Screw B3 x 6 |
| | | | | | | 034F | 2 | 2 | 2 | 249H051020 | Guide L.E.D. Speaker |
| | | | | | | 901L | 1 | 1 | 1 | 250H267010 | Heat Sink |
| | | | | | | 902L | 6 | 6 | 6 | 51780312B0 | B.T. Screw Transistor B3 x 12 |
| | | | | | | 905L | 2 | 2 | 2 | 51260310B0 | B.T. Screw |
| | | | | | | 906L | 3 | 3 | 3 | 250H267020 | Heat Sink |
| | | | | | | 907L | 3 | 3 | 3 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| | | | | | | L001 | 1 | 1 | 1 | TS19620030 | Power Transformer |

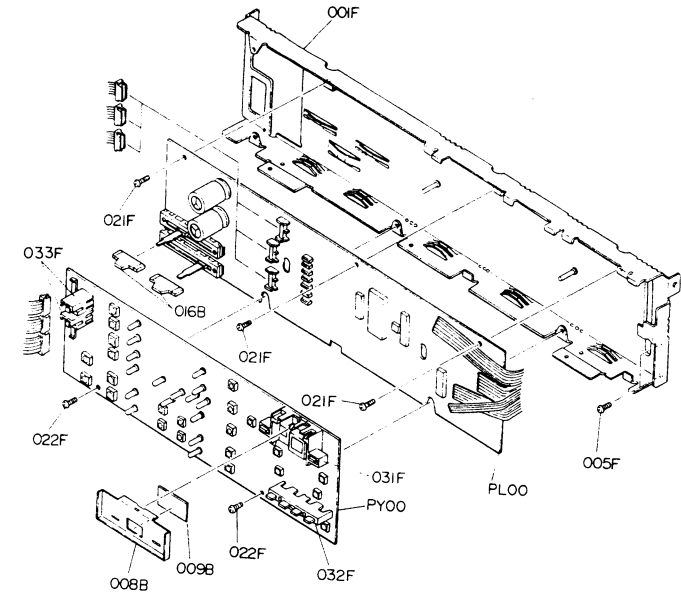
[P03-99] Rear Panel



- (N):for Europe
- (A):for Australia
- (P):for PX

| REF. DESIG. | QTY | | | PART NO. | DESCRIPTION | REF. DESIG. | QTY | | | PART NO. | DESCRIPTION |
|-------------|-----|---|---|------------|--------------------------|-------------|-----|---|---|------------|--------------------|
| | N | A | P | | | | N | A | P | | |
| 045B | 2 | 2 | 2 | 5128030880 | B.H. Tapped Screw B3 x 8 | △ F001 | 1 | 1 | 1 | FS10140800 | Fuse 1.4A |
| 046B | 2 | 2 | 2 | 5128030880 | B.H. Tapped Screw B3 x 8 | △ F001 | 1 | 1 | 1 | FS10315800 | Fuse 3.15A |
| 047B | 1 | 1 | 1 | 5128030880 | B.H. Tapped Screw B3 x 8 | △ F001 | 1 | 1 | 1 | FS10140800 | Fuse 1.4A (PG) |
| 048B | 7 | 7 | 7 | 5128030880 | B.H. Tapped Screw B3 x 8 | △ J001 | 1 | 1 | 1 | YJ08000290 | Jack, Fuse Holder |
| 049B | 4 | 4 | 4 | 5128030880 | B.H. Tapped Screw B3 x 8 | △ J021 | 1 | 1 | 1 | YJ04001010 | Jack, AC Outlet 2P |
| 901B | 1 | 1 | 1 | 249H160210 | Bracket, Rear Panel | J031 | 1 | 1 | 1 | YJ03010250 | Terminal, Ground |
| 901B | 1 | 1 | 1 | 249H160230 | Bracket, Rear Panel | △ J091 | 1 | 1 | 1 | BY05080050 | Volt. Selector |
| 903B | 2 | 2 | 2 | 5128030880 | B.H. Tapped Screw B3 x 8 | △ J091 | 1 | 1 | 1 | BY05080040 | Volt. Selector |
| 904B | 2 | 2 | 2 | 51870308U0 | O.H.C. Tapped Screw | △ J092 | 1 | 1 | 1 | YP04000610 | Plug Inlet |
| 904B | 1 | 1 | 1 | 1455259090 | Bushing, AC Cord | W001 | 1 | 1 | 1 | YC01900070 | A.C. Power Cord |
| 906B | 1 | 1 | 1 | 2112265010 | Indicator, Serial No. | | | | | | |

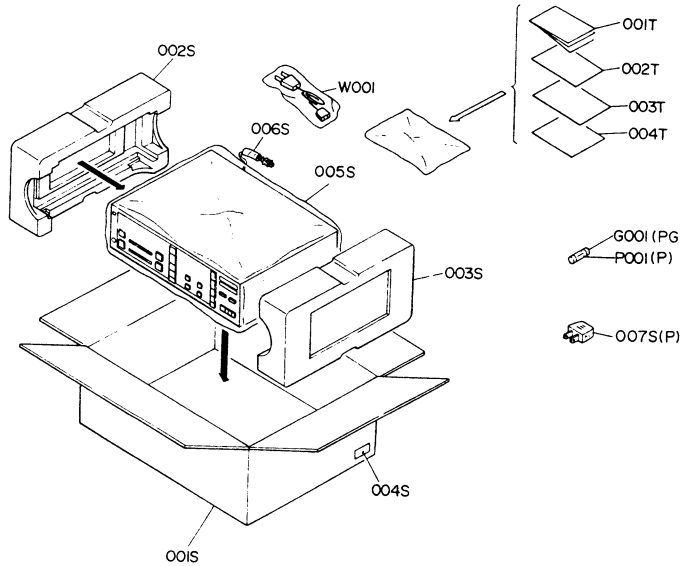
[P04-99] Front Chassis



- (N):for Europe
- (A):for Australia
- (P):for PX

| REF. DESIG. | QTY | | | PART NO. | DESCRIPTION | REF. DESIG. | QTY | | | PART NO. | DESCRIPTION |
|-------------|-----|---|---|------------|----------------------------|-------------|-----|---|---|------------|--------------------------|
| | N | A | P | | | | N | A | P | | |
| 008B | 1 | 1 | 1 | 249H302010 | Dial Plate, Volume Display | 001F | 1 | 1 | 1 | 249H105010 | Chassis, Front |
| 009B | 1 | 1 | 1 | 013H158000 | Window, Volume Display | 005F | 2 | 2 | 2 | 5128030880 | B.H. Tapped Screw B3 x 8 |
| 016B | 1 | 1 | 1 | 141T154050 | Knob, Tone | 021F | 3 | 3 | 3 | 5128030880 | B.H. Tapped Screw B3 x 8 |
| | | | | | | 022F | 2 | 2 | 2 | 5128030880 | B.H. Tapped Screw B3 x 8 |
| | | | | | | 031F | 1 | 1 | 1 | 249H104010 | Retainer, Volume Display |
| | | | | | | 032F | 1 | 1 | 1 | 249H051010 | Guide, Led Memory |
| | | | | | | 033F | 2 | 2 | 2 | 249H051020 | Guide, Led Filters |

[H01-99] Packing Materials



| REF. DESG. | QTY | | | PART NO. | DESCRIPTION | REF. DESG. | QTY | | | PART NO. | DESCRIPTION |
|------------|-----|---|---|------------|--------------------|------------|-----|---|------------|-----------------|-------------|
| | N | A | P | | | | N | A | P | | |
| O01S | 1 | 1 | | 249H801010 | Packing Case | P001 | | 1 | FS10140800 | Fuse 220V | |
| O01S | | | 1 | 249H801030 | Packing Case | G001 | | 1 | FS10315800 | Fuse 120V (PG) | |
| O02S | 1 | 1 | 1 | 229H809010 | Cushion, Left | | | | | | |
| O03S | 1 | 1 | 1 | 229H809020 | Cushion, Right | | | | | | |
| O04S | 4 | | | 9526019060 | Serial No. Card | W001 | 1 | 1 | ZC01805030 | A.C. Power Cord | |
| O04S | | 4 | | 9526019030 | Serial No. Card | W001 | | | ZC02006030 | A.C. Power Cord | |
| O04S | | | 4 | 9526019050 | Serial No. Card | | | | | | |
| O05S | 1 | 1 | 1 | 9090808030 | Polyethy Sheet | | | | | | |
| O06S | 1 | 1 | 1 | 2918107370 | Sheet AC Cord | | | | | | |
| O07S | 1 | | | YJ04000240 | Jack Socket | | | | | | |
| O01T | 1 | 1 | 1 | 250H851310 | Instructions | | | | | | |
| O02T | 1 | 1 | 1 | 249H851320 | Instructions Spec. | | | | | | |
| O03T | 1 | | | 249H856010 | Circuit Diagram | | | | | | |
| O03T | | | 1 | 9631000090 | Guarantee Card | | | | | | |
| O03T | | | 1 | 416H854010 | Guarantee Card | | | | | | |
| O04T | | | 1 | 3435851210 | Instructions | | | | | | |

18. ELECTRICAL PARTS LIST

• (N): for Europe
• (A): for Australia
• (P): for PX

| REF. DESG. | QTY | | | PART NO. | DESCRIPTION | REF. DESG. | QTY | | | PART NO. | DESCRIPTION |
|------------|-----|---|---|------------|--|------------|-----|---|---|------------|-------------|
| | N | A | P | | | | N | A | P | | |
| PE00 | 1 | 1 | 1 | YK250H1510 | PE00-TONE CONTROL CIRCUIT BOARD P.W. Board, Tone Control | R711 | 1 | 1 | 1 | GD05683140 | 68kΩ |
| | 1 | 1 | 1 | ZZ250H1510 | P.W. Board Assembly | R712 | 1 | 1 | 1 | GD05683140 | 68kΩ |
| C701 | 1 | 1 | 1 | DF15331550 | Film 330pF ±5% | R713 | 1 | 1 | 1 | GD05101140 | 100Ω |
| C702 | 1 | 1 | 1 | DF15331550 | Film 330pF ±5% | R714 | 1 | 1 | 1 | GD05101140 | 100Ω |
| C703 | 1 | 1 | 1 | EA22602530 | Elect 22μF 25V | R715 | 1 | 1 | 1 | RA04710040 | 470Ω |
| C704 | 1 | 1 | 1 | EA22602530 | Elect 22μF 25V | R716 | 1 | 1 | 1 | RA04710040 | 470Ω |
| C705 | 1 | 1 | 1 | DK16471300 | Ceramic 470pF ±10% | R717 | 1 | 1 | 1 | GD05821140 | 820Ω |
| C706 | 1 | 1 | 1 | DK16471300 | Ceramic 470pF ±10% | R718 | 1 | 1 | 1 | GD05821140 | 820Ω |
| C707 | 1 | 1 | 1 | EA47405030 | Elect 0.47μF 50V | R719 | 1 | 1 | 1 | GD05474140 | 470kΩ |
| C708 | 1 | 1 | 1 | EA47405030 | Elect 0.47μF 50V | R720 | 1 | 1 | 1 | GD05474140 | 470kΩ |
| C709 | 1 | 1 | 1 | DD11100370 | Ceramic 10pF | | | | | | |
| C710 | 1 | 1 | 1 | DD11100370 | Ceramic 10pF | R721 | 1 | 1 | 1 | GD05474140 | 470kΩ |
| C711 | 1 | 1 | 1 | EA47602530 | Elect 47μF 25V | R722 | 1 | 1 | 1 | GD05474140 | 470kΩ |
| C712 | 1 | 1 | 1 | EA47602530 | Elect 47μF 25V | R723 | 1 | 1 | 1 | GD05822140 | 8.2kΩ |
| C713 | 1 | 1 | 1 | EA47606330 | Elect 47μF 63V | R724 | 1 | 1 | 1 | GG05822140 | 8.2kΩ |
| C714 | 1 | 1 | 1 | EA47606330 | Elect 47μF 63V | Δ R725 | 1 | 1 | 1 | RF05101120 | 100Ω ½W |
| C715 | 1 | 1 | 1 | EQ47405030 | Elect 0.47μF 50V | Δ R726 | 1 | 1 | 1 | RF05101120 | 100Ω ½W |
| C716 | 1 | 1 | 1 | EQ47405030 | Elect 0.47μF 50V | R727 | 1 | 1 | 1 | GG05100140 | 10Ω |
| CE01 | 1 | 1 | 1 | EA47505030 | Elect 4.7μF 50V | RE01 | 1 | 1 | 1 | GD05103140 | 10kΩ |
| CE02 | 1 | 1 | 1 | EA47505030 | Elect 4.7μF 50V | RE02 | 1 | 1 | 1 | GD05103140 | 10kΩ |
| CE03 | 1 | 1 | 1 | EA22505030 | Elect 2.2μF 50V | RE03 | 1 | 1 | 1 | GD05103140 | 10kΩ |
| CE04 | 1 | 1 | 1 | EA22505030 | Elect 2.2μF 50V | RE04 | 1 | 1 | 1 | GD05103140 | 10kΩ |
| CE05 | 1 | 1 | 1 | EA10701030 | Elect 100μF 10V | RE05 | 1 | 1 | 1 | GD05101140 | 100Ω |
| CE06 | 1 | 1 | 1 | EA10701030 | Elect 100μF 10V | RE06 | 1 | 1 | 1 | GD05101140 | 100Ω |
| CE07 | 1 | 1 | 1 | EA22605030 | Elect 2.2μF 50V | RE07 | 1 | 1 | 1 | GD05104140 | 100kΩ |
| CE08 | 1 | 1 | 1 | EA22605030 | Elect 2.2μF 50V | RE08 | 1 | 1 | 1 | GD05104140 | 100kΩ |
| CE09 | 1 | 1 | 1 | EA47505030 | Elect 4.7μF 50V | RE09 | 1 | 1 | 1 | GD05332140 | 3.3kΩ |
| CE10 | 1 | 1 | 1 | EA47505030 | Elect 4.7μF 50V | RE10 | 1 | 1 | 1 | GD05332140 | 3.3kΩ |
| CE11 | 1 | 1 | 1 | DD15470370 | Ceramic 47pF ±5% | RE11 | 1 | 1 | 1 | GD05332140 | 3.3kΩ |
| CE12 | 1 | 1 | 1 | DD15470370 | Ceramic 47pF ±5% | RE12 | 1 | 1 | 1 | GD05332140 | 3.3kΩ |
| CE13 | 1 | 1 | 1 | DF15683310 | Film 0.068μF ±5% | RE13 | 1 | 1 | 1 | GD05273140 | 27kΩ |
| CE14 | 1 | 1 | 1 | DF15683310 | Film 0.068μF ±5% | RE14 | 1 | 1 | 1 | GD05273140 | 27kΩ |
| CE15 | 1 | 1 | 1 | DK16221300 | Ceramic 220pF ±10% | RE15 | 1 | 1 | 1 | GD05563140 | 56kΩ |
| CE16 | 1 | 1 | 1 | DK16221300 | Ceramic 220pF ±10% | RE16 | 1 | 1 | 1 | GD05563140 | 56kΩ |
| CE17 | 1 | 1 | 1 | DF15243310 | Film 0.024μF ±5% | RE17 | 1 | 1 | 1 | GD05222140 | 2.2kΩ |
| CE18 | 1 | 1 | 1 | DF15243310 | Film 0.024μF ±5% | RE18 | 1 | 1 | 1 | GD05222140 | 2.2kΩ |
| CE19 | 1 | 1 | 1 | DF15243310 | Film 0.024μF ±5% | RE19 | 1 | 1 | 1 | GD05821140 | 820Ω |
| CE20 | 1 | 1 | 1 | DF15243310 | Film 0.024μF ±5% | RE20 | 1 | 1 | 1 | GD05821140 | 820Ω |
| CE21 | 1 | 1 | 1 | EA22505030 | Elect 2.2μF 50V | RE21 | 1 | 1 | 1 | GD05472140 | 4.7kΩ |
| CE22 | 1 | 1 | 1 | EA22505030 | Elect 2.2μF 50V | RE22 | 1 | 1 | 1 | GD05472140 | 4.7kΩ |
| CE23 | 1 | 1 | 1 | DF15682310 | Film 6800pF ±5% | RE23 | 1 | 1 | 1 | GD05472140 | 4.7kΩ |
| CE24 | 1 | 1 | 1 | DF15682310 | Film 6800pF ±5% | RE24 | 1 | 1 | 1 | GD05472140 | 4.7kΩ |
| CE25 | 1 | 1 | 1 | EA47505030 | Elect 4.7μF 50V | RE25 | 1 | 1 | 1 | GD05472140 | 4.7kΩ |
| CE26 | 1 | 1 | 1 | EA47505030 | Elect 4.7μF 50V | RE26 | 1 | 1 | 1 | GD05472140 | 4.7kΩ |
| CE27 | 1 | 1 | 1 | EA47505030 | Elect 4.7μF 50V | RE27 | 1 | 1 | 1 | GD05472140 | 4.7kΩ |
| CE28 | 1 | 1 | 1 | EA47505030 | Elect 4.7μF 50V | RE28 | 1 | 1 | 1 | GD05472140 | 4.7kΩ |
| CE29 | 1 | 1 | 1 | DF15203310 | Film 0.02μF ±5% | RE29 | 1 | 1 | 1 | GD05474140 | 470kΩ |
| CE30 | 1 | 1 | 1 | DF15203310 | Film 0.02μF ±5% | RE30 | 1 | 1 | 1 | GD05474140 | 470kΩ |
| CE31 | 1 | 1 | 1 | EA47601630 | Elect 47μF 16V | RE31 | 1 | 1 | 1 | GD05101140 | 100Ω |
| CE32 | 1 | 1 | 1 | EA47601630 | Elect 47μF 16V | RE32 | 1 | 1 | 1 | GD05101140 | 100Ω |
| R701 | 1 | 1 | 1 | GD05222140 | 2.2kΩ | RE33 | 1 | 1 | 1 | GD05821140 | 820Ω |
| R702 | 1 | 1 | 1 | GD05222140 | 2.2kΩ | RE34 | 1 | 1 | 1 | GD05821140 | 820Ω |
| R703 | 1 | 1 | 1 | GD05683140 | 68kΩ | RE35 | 1 | 1 | 1 | GD05821140 | 820Ω |
| R704 | 1 | 1 | 1 | GD05683140 | 68kΩ | RE36 | 1 | 1 | 1 | GD05821140 | 820Ω |
| R705 | 1 | 1 | 1 | GD05104140 | 100kΩ | RE37 | 1 | 1 | 1 | GD05104140 | 100kΩ |
| R706 | 1 | 1 | 1 | GD05104140 | 100kΩ | RE38 | 1 | 1 | 1 | GD05104140 | 100kΩ |
| R707 | 1 | 1 | 1 | GD05471140 | 470Ω | RE39 | 1 | 1 | 1 | GD05822140 | 8.2kΩ |
| R708 | 1 | 1 | 1 | GD05471140 | 470Ω | RE40 | 1 | 1 | 1 | GD05822140 | 8.2kΩ |
| R709 | 1 | 1 | 1 | GD05392140 | 3.9kΩ | RE41 | 1 | 1 | 1 | GG05331120 | 330Ω |
| R710 | 1 | 1 | 1 | GD05392140 | 3.9kΩ | RE42 | 1 | 1 | 1 | GG05331120 | 330Ω |

● (N): for Europe
● (A): for Australia
● (P): for PX

| REF. DESIG. | QTY | | | PART NO. | DESCRIPTION | REF. DESIG. | QTY | | | PART NO. | DESCRIPTION |
|-------------|-----|---|---|------------|--------------------|---|-----|---|---|------------|------------------------|
| | N | A | P | | | | N | A | P | | |
| C751 | 1 | 1 | 1 | DK16221550 | Ceramic 220pF ±10% | CU01 | 1 | 1 | 1 | DK16661300 | Ceramic 680pF ±10% |
| C752 | 1 | 1 | 1 | DK16221550 | Ceramic 220pF ±10% | CU02 | 1 | 1 | 1 | DK16661300 | Ceramic 680pF ±10% |
| C753 | 1 | 1 | 1 | DK16221550 | Ceramic 220pF ±10% | CU03 | 1 | 1 | 1 | EA10601630 | Elect 10μF 16V |
| C754 | 1 | 1 | 1 | DK16221550 | Ceramic 220pF ±10% | ΔCU04 | 1 | 1 | 1 | DF15103310 | Film 0.01μF ±5% |
| C755 | 1 | 1 | 1 | DF15104300 | Film 0.1μF ±5% | CU05 | 1 | 1 | 1 | DK16151300 | Ceramic 150pF ±10% 50V |
| C756 | 1 | 1 | 1 | DF15104300 | Film 0.1μF ±5% | CU06 | 1 | 1 | 1 | DK16151300 | Ceramic 150pF ±10% 50V |
| C757 | 1 | 1 | 1 | DF15104300 | Film 0.1μF ±5% | CU07 | 1 | 1 | 1 | DD15220370 | Ceramic 22pF ±5% 50V |
| C758 | 1 | 1 | 1 | DF15104300 | Film 0.1μF ±5% | P700-RESISTORS (All Resistors are ±5% & ¼W) | | | | | |
| C759 | 1 | 1 | 1 | EA47410030 | Elect 0.47μF 100V | | | | | | |
| C760 | 1 | 1 | 1 | EA47410030 | Elect 0.47μF 100V | | | | | | |
| C761 | 1 | 1 | 1 | EA47410030 | Elect 0.47μF 100V | | | | | | |
| C762 | 1 | 1 | 1 | EA47410030 | Elect 0.47μF 100V | | | | | | |
| C801 | 1 | 1 | 1 | DK18103560 | Ceramic 0.01μF | | | | | | |
| C802 | 1 | 1 | 1 | DK18103560 | Ceramic 0.01μF | | | | | | |
| ΔC803 | 1 | 1 | 1 | DK18103560 | Ceramic 0.01μF | | | | | | |
| ΔC804 | 1 | 1 | 1 | DK18103560 | Ceramic 0.01μF | | | | | | |
| ΔC805 | 1 | 1 | 1 | DK18103560 | Ceramic 0.01μF | | | | | | |
| ΔC806 | 1 | 1 | 1 | DK18103560 | Ceramic 0.01μF | | | | | | |
| ΔC807 | 1 | 1 | 1 | EB15903510 | Elect 15000μF 35V | | | | | | |
| ΔC808 | 1 | 1 | 1 | EB15903510 | Elect 15000μF 35V | | | | | | |
| ΔC809 | 1 | 1 | 1 | EB15903510 | Elect 15000μF 35V | | | | | | |
| ΔC810 | 1 | 1 | 1 | EB15903510 | Elect 15000μF 35V | | | | | | |
| C811 | 1 | 1 | 1 | EA33703530 | Elect 330μF 35V | | | | | | |
| C812 | 1 | 1 | 1 | EA33703530 | Elect 330μF 35V | | | | | | |
| C813 | 1 | 1 | 1 | EA47602530 | Elect 47μF 25V | | | | | | |
| C814 | 1 | 1 | 1 | EA47602530 | Elect 47μF 25V | | | | | | |
| C815 | 1 | 1 | 1 | EA10702530 | Elect 100μF 25V | | | | | | |
| C816 | 1 | 1 | 1 | EA10702530 | Elect 100μF 25V | | | | | | |
| C817 | 1 | 1 | 1 | EA10801630 | Elect 1000μF 16V | | | | | | |
| C818 | 1 | 1 | 1 | EA47602530 | Elect 47μF 25V | | | | | | |
| C819 | 1 | 1 | 1 | EA10701630 | Elect 100μF 16V | | | | | | |
| CN01 | 1 | 1 | 1 | EA47406030 | Elect 0.47μF 50V | | | | | | |
| CN02 | 1 | 1 | 1 | EA47601030 | Elect 47μF 10V | | | | | | |
| CN03 | 1 | 1 | 1 | EA22601630 | Elect 22μF 16V | | | | | | |
| CN04 | 1 | 1 | 1 | EA10505030 | Elect 1μF 50V | | | | | | |
| CN05 | 1 | 1 | 1 | DF16152300 | Film 1500pF ±10% | | | | | | |
| CN06 | 1 | 1 | 1 | DF16152300 | Film 1500pF ±10% | | | | | | |
| CN07 | 1 | 1 | 1 | DF16152300 | Film 1500pF ±10% | | | | | | |
| CN08 | 1 | 1 | 1 | DF16152300 | Film 1500pF ±10% | | | | | | |
| CN09 | 1 | 1 | 1 | EA22605030 | Elect 22μF 50V | | | | | | |
| CN10 | 1 | 1 | 1 | EA10505030 | Elect 1μF 50V | | | | | | |
| CN11 | 1 | 1 | 1 | EA10505030 | Elect 1μF 50V | | | | | | |
| CN12 | 1 | 1 | 1 | EA10505030 | Elect 1μF 50V | | | | | | |
| CN13 | 1 | 1 | 1 | EA10505030 | Elect 1μF 50V | | | | | | |

● (N): for Europe
● (A): for Australia
● (P): for PX

| REF. DESIG. | QTY | | | PART NO. | DESCRIPTION | REF. DESIG. | QTY | | | PART NO. | DESCRIPTION |
|-------------|-----|---|---|------------|-----------------------------|--|-----|---|---|------------|-------------|
| | N | A | P | | | | N | A | P | | |
| R763 | 1 | 1 | 1 | GA05047020 | 4.7Ω 2W | RU11 | 1 | 1 | 1 | GD05104140 | 100kΩ |
| R764 | 1 | 1 | 1 | GA05047020 | 4.7Ω 2W | RU12 | 1 | 1 | 1 | GD05104140 | 100kΩ |
| R765 | 1 | 1 | 1 | GA05100140 | 10Ω | RU13 | 1 | 1 | 1 | GD05393140 | 39kΩ |
| R766 | 1 | 1 | 1 | GG05100140 | 10Ω | RU14 | 1 | 1 | 1 | GD05393140 | 39kΩ |
| R767 | 1 | 1 | 1 | GG05100140 | 10Ω | RU15 | 1 | 1 | 1 | GD05104140 | 100kΩ |
| R768 | 1 | 1 | 1 | GG05100140 | 10Ω | RU16 | 1 | 1 | 1 | GD05104140 | 100kΩ |
| R804 | 1 | 1 | 1 | GD05102140 | 10kΩ | RU17 | 1 | 1 | 1 | GD05473140 | 47kΩ |
| R805 | 1 | 1 | 1 | GD05102140 | 10kΩ | RU18 | 1 | 1 | 1 | GD05222140 | 2.2kΩ |
| R806 | 1 | 1 | 1 | GD05102140 | 10kΩ | RU19 | 1 | 1 | 1 | GD05152140 | 1.5kΩ |
| R807 | 1 | 1 | 1 | RF05270120 | Fusible 27Ω ¼W | RU20 | 1 | 1 | 1 | GG05222120 | 2.2kΩ ¼W |
| R808 | 1 | 1 | 1 | RF05270120 | Fusible 27Ω ¼W | RU21 | 1 | 1 | 1 | GG05222120 | 2.2kΩ ¼W |
| R810 | 1 | 1 | 1 | GG05100120 | 10Ω ¼W | RU22 | 1 | 1 | 1 | GG05152140 | 1.5kΩ |
| RN01 | 1 | 1 | 1 | GD05473140 | 47kΩ | RU23 | 1 | 1 | 1 | GG05152140 | 1.5kΩ |
| RN02 | 1 | 1 | 1 | GD05683140 | 68kΩ | RU24 | 1 | 1 | 1 | GG05102140 | 1kΩ |
| RN03 | 1 | 1 | 1 | GD05683140 | 68kΩ | RU25 | 1 | 1 | 1 | GG05101140 | 100Ω |
| RN04 | 1 | 1 | 1 | GG05273140 | 27kΩ | RU26 | 1 | 1 | 1 | GG05101140 | 100Ω |
| RN05 | 1 | 1 | 1 | GD05683140 | 68kΩ | P700-SEMICONDUCTORS IC NJM-2041-DD | | | | | |
| RN06 | 1 | 1 | 1 | GD05224140 | 220kΩ | | | | | | |
| RN07 | 1 | 1 | 1 | GD05273140 | 27kΩ | | | | | | |
| RN08 | 1 | 1 | 1 | GA05222010 | 2.2kΩ | | | | | | |
| RN09 | 1 | 1 | 1 | GD05104140 | 100kΩ | | | | | | |
| RN10 | 1 | 1 | 1 | GD05683140 | 68kΩ | | | | | | |
| RN11 | 1 | 1 | 1 | GD05683140 | 68kΩ | | | | | | |
| RN12 | 1 | 1 | 1 | GD05333140 | 33kΩ | | | | | | |
| RN13 | 1 | 1 | 1 | GD05153140 | 15kΩ | | | | | | |
| RN14 | 1 | 1 | 1 | GG05682140 | 6.8kΩ | | | | | | |
| RN15 | 1 | 1 | 1 | GG05682140 | 6.8kΩ | | | | | | |
| RN16 | 1 | 1 | 1 | GG05682140 | 6.8kΩ | | | | | | |
| RN17 | 1 | 1 | 1 | GG05682140 | 6.8kΩ | | | | | | |
| RN18 | 1 | 1 | 1 | GG05682140 | 6.8kΩ | | | | | | |
| RN19 | 1 | 1 | 1 | GG05682140 | 6.8kΩ | | | | | | |
| RN20 | 1 | 1 | 1 | GG05221140 | 220Ω | | | | | | |
| RN21 | 1 | 1 | 1 | GG05221140 | 220Ω | | | | | | |
| RN22 | 1 | 1 | 1 | GG05221140 | 220Ω | | | | | | |
| RN23 | 1 | 1 | 1 | GG05271140 | 270Ω | | | | | | |
| RN24 | 1 | 1 | 1 | GD05273140 | 27kΩ | | | | | | |
| RN25 | 1 | 1 | 1 | GD05222140 | 2.2kΩ | | | | | | |
| RN26 | 1 | 1 | 1 | GD05104140 | 100kΩ | | | | | | |
| RN27 | 1 | 1 | 1 | GD05471140 | 470Ω | | | | | | |
| RN28 | 1 | 1 | 1 | GD05471140 | 470Ω | | | | | | |
| RN29 | 1 | 1 | 1 | GD05471140 | 470Ω | | | | | | |
| RN30 | 1 | 1 | 1 | GD05471140 | 470Ω | | | | | | |
| RU01 | 1 | 1 | 1 | GD05103140 | 10kΩ | | | | | | |
| RU02 | 1 | 1 | 1 | GD05103140 | 10kΩ | | | | | | |
| RU03 | 1 | 1 | 1 | GD05103140 | 10kΩ | | | | | | |
| RU04 | 1 | 1 | 1 | GD05103140 | 10kΩ | | | | | | |
| RU05 | 1 | 1 | 1 | GD05102140 | 1kΩ | | | | | | |
| RU06 | 1 | 1 | 1 | GD05102140 | 1kΩ | | | | | | |
| RU07 | 1 | 1 | 1 | GD05393140 | 39kΩ | | | | | | |
| RU08 | 1 | 1 | 1 | GD05393140 | 39kΩ | | | | | | |
| RU09 | 1 | 1 | 1 | GD05332140 | 3.3kΩ | | | | | | |
| RU10 | 1 | 1 | 1 | GD05332140 | 3.3kΩ | | | | | | |
| Q405 | 1 | 1 | 1 | HC10026090 | IC NJM-2041-DD | | | | | | |
| Q751 | 1 | 1 | 1 | HT323442A0 | Transistor 2SC2344 (D or E) | | | | | | |
| Q752 | 1 | 1 | 1 | HT323442A0 | Transistor 2SC2344 (D or E) | | | | | | |
| Q753 | 1 | 1 | 1 | HT110112A0 | Transistor 2SA1011 (D or E) | | | | | | |
| Q754 | 1 | 1 | 1 | HT110112A0 | Transistor 2SA1011 (D or E) | | | | | | |
| Q755 | 1 | 1 | 1 | HT325802B0 | Transistor 2SC2580 (O or Y) | | | | | | |
| Q756 | 1 | 1 | 1 | HT325802B0 | Transistor 2SC2580 (O or Y) | | | | | | |
| Q757 | 1 | 1 | 1 | HT111052B0 | Transistor 2SA1105 (O or Y) | | | | | | |
| Q758 | 1 | 1 | 1 | HT111052B0 | Transistor 2SA1105 (O or Y) | | | | | | |
| Q759 | 1 | 1 | 1 | HV00009080 | Varistor STV-3HR (O or Y) | | | | | | |
| Q760 | 1 | 1 | 1 | HV00009080 | Varistor STV-3HR (O or Y) | | | | | | |
| Q761 | 1 | 1 | 1 | HD20005010 | Diode W06B | | | | | | |
| Q762 | 1 | 1 | 1 | HD20005010 | Diode W06B | | | | | | |
| Q763 | 1 | 1 | 1 | HD20005010 | Diode W06B | | | | | | |
| Q764 | 1 | 1 | 1 | HD20005010 | Diode W06B | | | | | | |
| ΔQ801 | 1 | 1 | 1 | HD20008290 | Diode S4VB20 | | | | | | |
| ΔQ802 | 1 | 1 | 1 | HE20009290 | Diode S5VB20 | | | | | | |
| Q803 | 1 | 1 | 1 | HD20015030 | Diode DS135D | | | | | | |
| Q804 | 1 | 1 | 1 | HD20015030 | Diode DS135D | | | | | | |
| Q805 | 1 | 1 | 1 | HD20015030 | Diode DS135D | | | | | | |
| Q806 | 1 | 1 | 1 | HD20015030 | Diode ES135D | | | | | | |
| Q807 | 1 | 1 | 1 | HT403132P0 | Transistor 2SD313 (D or E) | | | | | | |
| Q808 | 1 | 1 | 1 | HT205072P0 | Transistor 2SB507 (D or E) | | | | | | |
| Q809 | 1 | 1 | 1 | HD30014010 | Zener HZ16L | | | | | | |
| Q810 | 1 | 1 | 1 | HD30014010 | Zener HZ16L | | | | | | |
| Q811 | 1 | 1 | 1 | HD20015030 | Diode DS135D | | | | | | |
| Q812 | 1 | 1 | 1 | HT403132P0 | Transistor 2SD313 (D or E) | | | | | | |
| Q813 | 1 | 1 | 1 | HD30044010 | Zener HZ6L-3C | | | | | | |

- (N) for Europe
- (A) for Australia
- (P) for PX

| REF. DESIG. | QTY | | | PART NO. | DESCRIPTION | REF. DESIG. | QTY | | | PART NO. | DESCRIPTION |
|-------------|-----|---|---|------------|-------------------------------|-------------|-----|---|------------|-----------------------------|-------------------------|
| | N | A | P | | | | N | A | P | | |
| QN01 | 1 | 1 | 1 | HC10042050 | IC TA7317P | | | | | | P850-FUSE |
| QN02 | 1 | 1 | 1 | HD20003210 | Diode 1S2471 | | | | | | CIRCUIT BOARD |
| QN03 | 1 | 1 | 1 | HD20015030 | Diode DS1350 | P850 | 1 | 1 | YK250H1550 | P.W. Board, Fuse | |
| QN04 | 1 | 1 | 1 | HD20001000 | Diode 1S1555 | | 1 | 1 | Z2249H7550 | P.W. Board Assembly | |
| QN05 | 1 | 1 | 1 | HD20001000 | Diode 1S1555 | | | | | | P850-MISCELLANEOUS |
| QN06 | 1 | 1 | 1 | HD20001000 | Diode 1S1555 | | | | | | Fuse, 3.15A |
| QN07 | 1 | 1 | 1 | HD20001000 | Diode 1S1555 | F851 | 1 | 1 | FS10315800 | Fuse, 3.15A | |
| QN08 | 1 | 1 | 1 | HT313181R0 | Transistor 2SC1318R | F852 | 1 | 1 | FS10315800 | Fuse, 3.15A | |
| QN09 | 1 | 1 | 1 | HT313181R0 | Transistor 2SC1318R | F853 | 1 | 1 | FS10400800 | Fuse, 4.0A | |
| QN10 | 1 | 1 | 1 | HT107201R0 | Transistor 2SA720R | | | | | | |
| QN11 | 1 | 1 | 1 | HT107201R0 | Transistor 2SA720R | J801 | 1 | 1 | YJ06001070 | Plug (9P) | |
| QN12 | 1 | 1 | 1 | HD20002210 | Diode 1S2472 | J860 | 1 | 1 | YJ06001430 | Plug (9P) | |
| QN13 | 1 | 1 | 1 | HD20002210 | Diode 1S2472 | J861 | 1 | 1 | YJ08000270 | Jack, 20mm Fuse Clip | |
| QN14 | 1 | 1 | 1 | HD20002210 | Diode 1S2472 | J862 | 1 | 1 | YJ08000270 | Jack, 20mm Fuse Clip | |
| QN15 | 1 | 1 | 1 | HD20002210 | Diode 1S2472 | J863 | 1 | 1 | YJ08000270 | Jack, 20mm Fuse Clip | |
| QN16 | 1 | 1 | 1 | HT313181R0 | Transistor 2SC1318R | J864 | 1 | 1 | YJ08000270 | Jack, 20mm Fuse Clip | |
| QN17 | 1 | 1 | 1 | HT313181R0 | Transistor 2SC1318R | J865 | 1 | 1 | YJ08000270 | Jack, 20mm Fuse Clip | |
| QN18 | 1 | 1 | 1 | HT107201R0 | Transistor 2SA720R | J866 | 1 | 1 | YJ08000270 | Jack, 20mm Fuse Clip | |
| | | | | | | J867 | 1 | 1 | YJ08000270 | Jack, 20mm Fuse Clip | |
| | | | | | | J868 | 1 | 1 | YJ08000270 | Jack, 20mm Fuse Clip | |
| QU01 | 1 | 1 | 1 | HD30044010 | Zener HZ6L-3C | | | | | | P.W. BOARD WIRE PARTS |
| QU02 | 1 | 1 | 1 | HD30044010 | Zener HZ6L-3C | | | | | | Jumper Lead (JE01-JE17) |
| QU03 | 1 | 1 | 1 | HD10003030 | Diode 1S188FM | WE01 | 1 | 1 | YU04100260 | Jumper Lead (WE01-JE03) | |
| QU04 | 1 | 1 | 1 | HD10003030 | Diode 1S188FM | WE51 | 1 | 1 | YU04220260 | Jumper Lead (WE51-JE02) | |
| QU05 | 1 | 1 | 1 | HD10003030 | Diode 1S188FM | WE52 | 1 | 1 | YU04220260 | Jumper Lead (WE52-JE02) | |
| QU06 | 1 | 1 | 1 | HD10003030 | Diode 1S188FM | | | | | | |
| QU07 | 1 | 1 | 1 | HC10022090 | IC NJM2903D | WG01 | 1 | 1 | YU04200260 | Jumper Lead (JG01-JE05) | |
| QU08 | 1 | 1 | 1 | HC712200A0 | IC HD74LS122P | | | | | | |
| QU09 | 1 | 1 | 1 | HT410652B0 | Transistor 2SD1065 | WL01 | 1 | 1 | YU07320260 | Jumper Lead (WL01-JS05) | |
| QU10 | 1 | 1 | 1 | HT208292B0 | Transistor 2SB829 | WL02 | 1 | 1 | YU08300260 | Jumper Lead (WL02-JS06) | |
| | | | | | | WL03 | 1 | 1 | YU06240260 | Jumper Lead (WL03-JE04) | |
| | | | | | | WL04 | 1 | 1 | YU04280260 | Jumper Lead (WL04-JG02) | |
| | | | | | | WL05 | 1 | 1 | YU04200260 | Jumper Lead (WL05-JS52) | |
| QU11 | 1 | 1 | 1 | HT323441D0 | Transistor 2SC2344D | WS01 | 1 | 1 | YU04080260 | Jumper Lead (WS01-WS01) | |
| QU12 | 1 | 1 | 1 | HT110111D0 | Transistor 2SA1011D | WS07 | 1 | 1 | YU03200260 | Jumper Lead (JS07-J402) | |
| QU13 | 1 | 1 | 1 | HT327852C0 | Transistor 2SC2785 (HF or FF) | WS08 | 1 | 1 | YU02200260 | Jumper Lead (JS08-JW11) | |
| QU14 | 1 | 1 | 1 | HT111752C0 | Transistor 2SA1175 (HF or FF) | WS09 | 1 | 1 | YU03260260 | Jumper Lead (JS09-JE06) | |
| QU15 | 1 | 1 | 1 | HT327852C0 | Transistor 2SC2785 (HF or FF) | WS10 | 1 | 1 | YU03240260 | Jumper Lead (JS10-J703) | |
| QU16 | 1 | 1 | 1 | HT111752C0 | Transistor 2SA1175 (HF or FF) | WS11 | 1 | 1 | YU04120260 | Jumper Lead (JS11-J819) | |
| QU17 | 1 | 1 | 1 | HD20001000 | Diode 1S1555 | WS81 | 1 | 1 | YU03240260 | Jumper Lead (JS81-J818) | |
| QU18 | 1 | 1 | 1 | HD20011290 | Diode S3V20 | | | | | | |
| QU19 | 1 | 1 | 1 | HD20011290 | Diode S3V20 | | | | | | |
| | | | | | | | | | | | P700-MISCELLANEOUS |
| △F801 | 1 | 1 | 1 | FU27215010 | Protector Unit (2.7A) | WT07 | 1 | 1 | YU03150260 | Jumper Lead (JT07-JW52) | |
| △F802 | 1 | 1 | 1 | FU27215010 | Protector Unit (2.7A) | WT09 | 1 | 1 | YU02400260 | Jumper Lead (JT09-JW05) | |
| △F803 | 1 | 1 | 1 | FU27215010 | Protector Unit (2.7A) | WT10 | 1 | 1 | YU03120260 | Jumper Lead (JT10-JT51) | |
| J401 | 1 | 1 | 1 | YT2020290 | Terminal RCA Pin Jack (2P) | WW04 | 1 | 1 | YU02180260 | Jumper Lead (JW04-J806) | |
| J751 | 1 | 1 | 1 | YP06001060 | Plug (7P) | WY01 | 1 | 1 | YB00050100 | Connective Cord (JY01-JL01) | |
| J752 | 1 | 1 | 1 | YP06001070 | Plug (9P) | WY02 | 1 | 1 | YB00050110 | Connective Cord (JY02-JL02) | |
| | | | | | | WY03 | 1 | 1 | YB00050110 | Connective Cord (JY03-JL03) | |
| L751 | 1 | 1 | 1 | LL23905120 | Coil, Choke | | | | | | |
| L752 | 1 | 1 | 1 | LL23905120 | Coil, Choke | | | | | | |
| LN01 | 1 | 1 | 1 | LY20240190 | Relay | | | | | | |

19. TECHNICAL SPECIFICATIONS

MODEL PM630

AUDIO SECTION

POWER OUTPUT PER CHANNEL

| | |
|-------------------------------------|--------|
| DIN 4 OHMS | 75 W |
| RMS 4 OHMS 1 kHz | 70 W |
| DIN 8 OHMS 1 kHz | 65 W |
| RMS 8 OHMS 1 kHz | 55 W |
| TOTAL HARMONIC DISTORTION AT 8 OHMS | 0.03 % |
| I.M. DISTORTION | 0.03 % |
| DAMPING FACTOR 8 OHMS (1 kHz) | 70 |

| | |
|--------------------------------|----------------|
| MAIN IN Sensitivity | 1.2 V |
| MAIN IN Impedance | 40 k ohms |
| Frequency Response, ±1 dB | 10 Hz ~ 50 kHz |
| Signal to Noise Ratio, MAIN IN | 95 dB |

MM CARTRIDGE INPUT

| | |
|---------------------------|-----------|
| Frequency Response (RIAA) | ±0.3 dB |
| Signal to Noise Ratio | 85 dB |
| Input Impedance | 47 k ohms |
| Input Capacitance | 200 pF |
| Input Sensitivity | 2.5 mV |
| Equivalent Input Noise | 1.0 μV |

AUX. INPUT

| | |
|---------------------------|----------------|
| Input Impedance | 27 k ohms |
| Input Sensitivity | 150 mV |
| Frequency Response, ±1 dB | 10 Hz ~ 50 kHz |
| Signal to Noise Ratio | 92 dB |

OUTPUT VOLTAGE

| | |
|---------------------|--------|
| Tape Out | 460 mV |
| Preamplifier Output | 1.2 V |

OUTPUT IMPEDANCE

| | |
|---------------------|----------|
| Tape Out | 270 ohms |
| Preamplifier Output | 270 ohms |

GENERAL

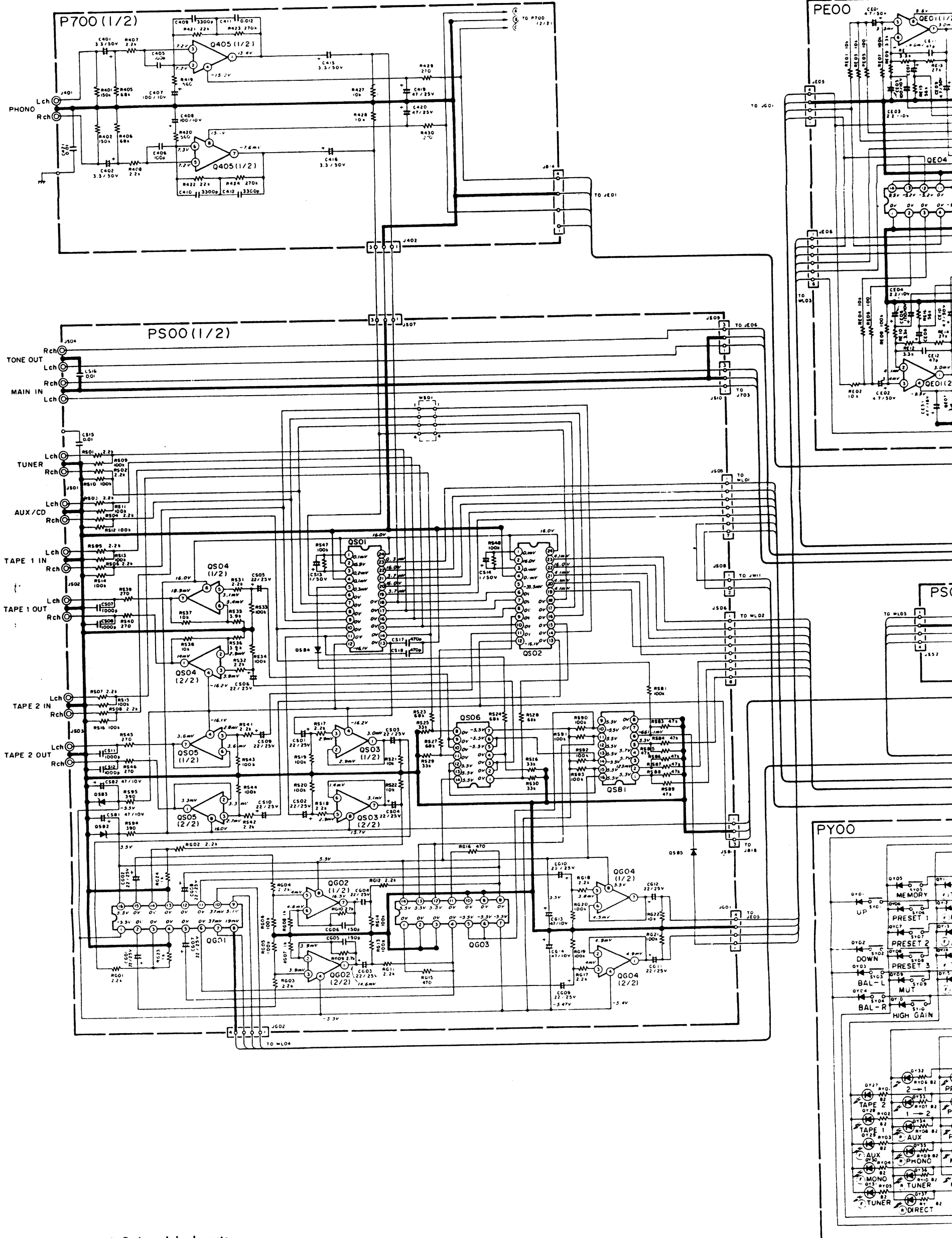
| | |
|---|--------------------------------|
| Power Requirements | 110/120/220/240 V AC, 50/60 Hz |
| Power Consumption at Rated Output, both Channels Driven | 230 W |
| Dimensions | |
| Panel Width | 416 mm |
| Panel Height | 100 mm |
| Depth | 300 mm |
| Weight | |
| Unit Alone | 7.7 kg |

Specifications and appearance are subject to change for modification without notice.

| | | |
|----------|---------------------|---|
| (W01-99) | Assembly and Wiring | NOTE ON SAFETY: Symbol △ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol △. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard. |
| (T01-99) | Adjustment | |
| (X01-00) | Correction | |

CHEMATIC DIAGRAM

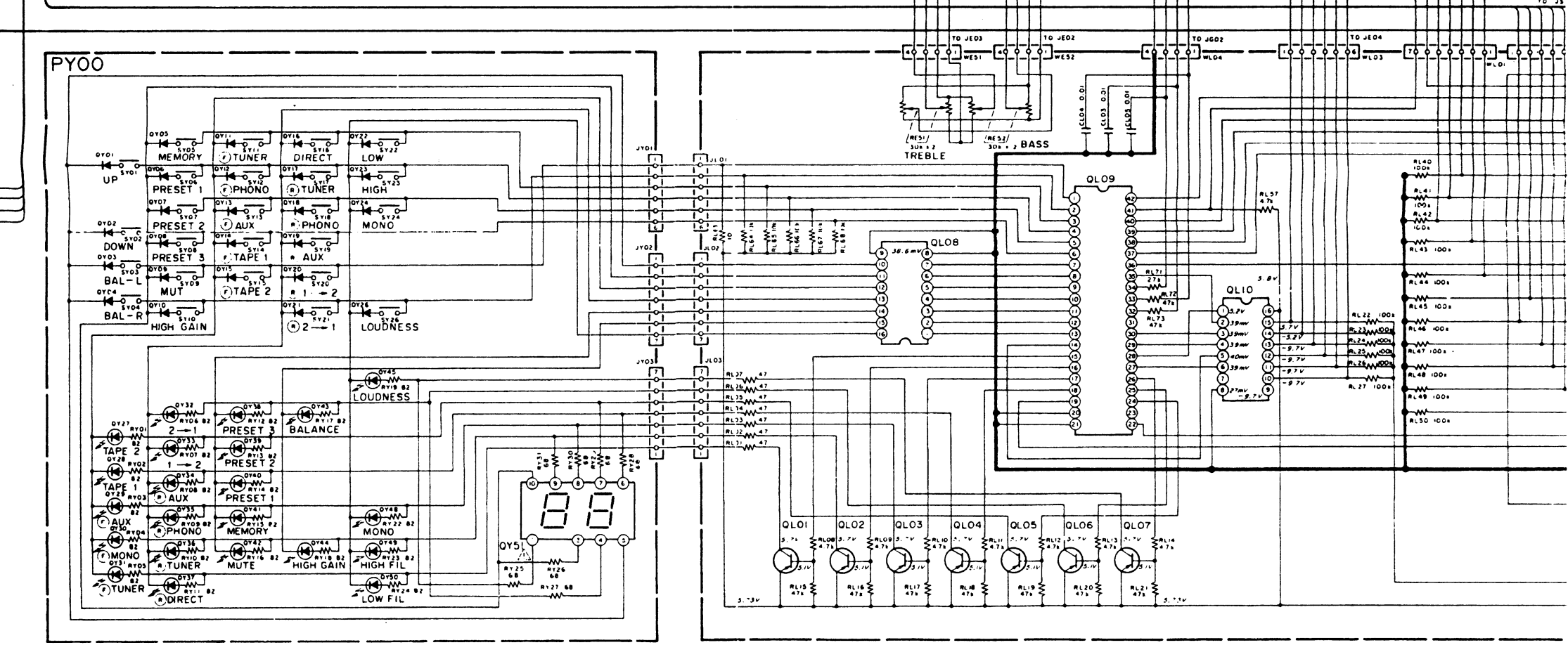
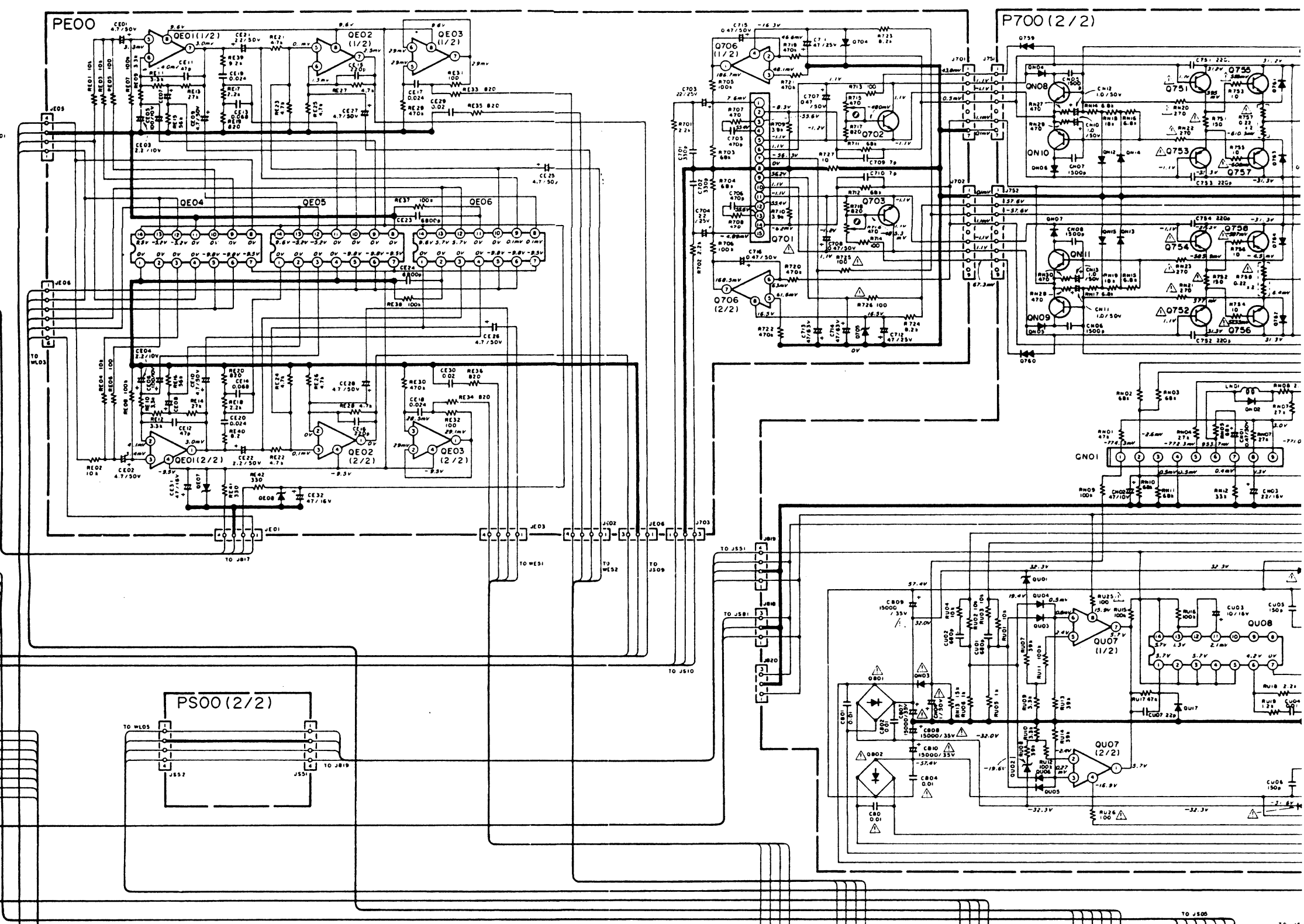
| | | | | | | | | | | | |
|--------------------------------|---------------------------------|-------------------------------------|--|--|--------------------------------|---------------------------------------|-------------------------------|--|----------------------------------|---|---|
| QE03 HC10003090 NJM4558D | Q405 HC10008090 NJM4558DD | QS01, QS02 HC10091050 TC9152P | QS03~QS05 QE01, QE02 QG02, QG04 HC10021090 NJM4560DD | QS06 QE04~QE06 QG03 HC406600B0 IC-4066 | QS81 HC10048050 TC5066BP | QS82, QS83 MD30036010 HZ6L 5.5V | QG01 HC10092052 TC9154P | QE07, QE08 HD30045011 HZ9L-1C 9.3V | Q701 HC10129030 STK306211A | Q702, Q703 QU13, QU15 HT327852C1 25C2785 (HF or FF) | Q704, Q705 QB09, QB0 HC3004010 HZ16L |
|--------------------------------|---------------------------------|-------------------------------------|--|--|--------------------------------|---------------------------------------|-------------------------------|--|----------------------------------|---|---|



NOTE ON SAFETY:
 Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

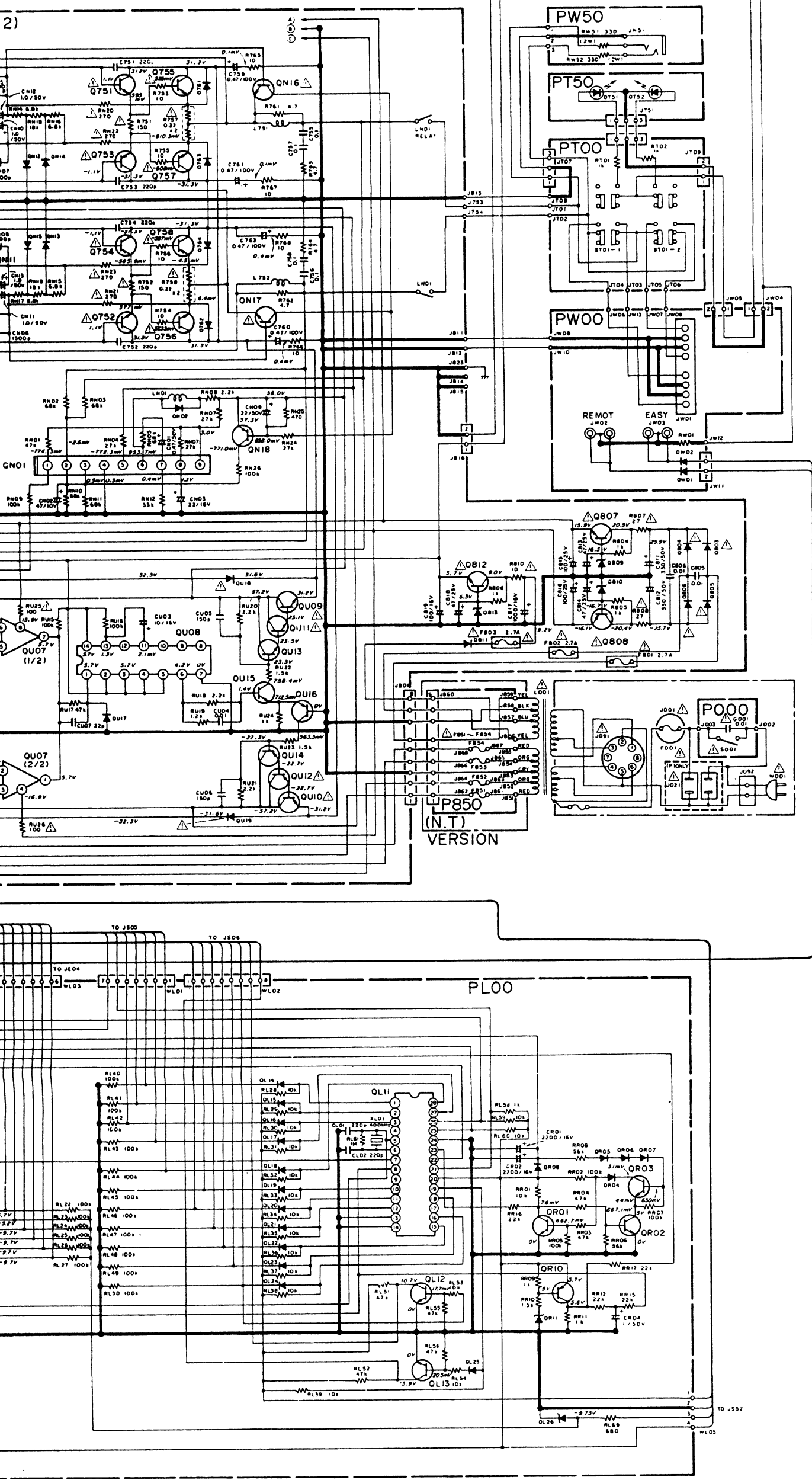
Components and wiring are subject to change for modification without notice.

| | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|--------------------------------|---|---|---|--|---|---------------------------------|-------------------------------|-------------------------------|---|--------------------------------------|-------------------------------------|-----------------------------------|---|---------------------|
| Q701 HC10129030 STK306211A | Q702, Q703 QUI3, QUI5 HT327852C1 2SC2785 (HF or FF) | Q704, Q705 Q809, Q810 HD30014010 HZ16L | Q706 HC10007090 NJM4560D | Q751, Q752 HT323442A0 2SC2344 (D, E) | Q753, Q754 QUI2 HT110112A0 2SA1011(D, E) | Q755, Q756 HT328372B0 2SC2837 (O, Y) | Q757, Q758 HT11862B0 2SA1186 (O, Y) | Q759, Q760 -V000090B0 3TV-3HR (O, Y) | Q761-Q764 HD20005010 W06B | Q801 HC10042050 TA7317P | Q802 HD200032010 IS2471 | Q803-Q806 Q811 HD20015032 DS135D | Q808, Q809 HT313181R0 25C1318R | Q810, Q811 HT107201R0 2SA720R | Q812-Q815 HD20002210 IS2472 | Q901, Q902 Q813 HD30044010 HZ6L-3C | Q903 MD1 IS18 |
|----------------------------------|---|---|--------------------------------|---|---|---|--|---|---------------------------------|-------------------------------|-------------------------------|---|--------------------------------------|-------------------------------------|-----------------------------------|---|---------------------|



MODEL PM630

- QN11 HD2001RO 720R
- QN12~QN15 HD20002210 IS2472
- QU01,QU02 Q813 HD30044010 HZ6L-3C
- QU03~QU06 HD10003030 IS188FM
- QU07 HC10022090 NJM2903D
- QU08 HC712200A0 HD74LS122P
- QU09 HT410652B0 25D1065
- QU10 HT208292B0 25B829
- QU11 HT323441D0 25C2344D
- QU14,QU16 HT111752C1 25A1175 (HF,FF)
- QU18,QU19 HD20011290 S3V20
- Q801 HE20008290 S4V820
- Q802 HE20009290 S5V820
- Q807,Q812 HT403132P0 25D313 (D,E)
- Q808 HT205072P0 25B507 (D,E)
- QY01~QY26,QL14~QL25 QR04~QR08,ON04~ON07 QI7,QS84,QS85,QW01,QW02 HD20001000 IS1555 etc



- QY27~QY32 HI1002320 GL-5NG10
- QY32~QY37 QY43, QY45~QY48 HI1002320 GL-5HD10
- QY38~QY41 HI1002320 LN842RP
- QY42, QY44 HI1002320 GL-9MD24
- QY49, QY50 QY51, QY52 HI10028320 GL-9MD4
- QY51 HQ1020K050 TLG322
- QL01~QL07, QR10 QL01~QL07, QR10 HI1002412C0 25B641
- QL08 HC100094050 TD62104P
- QL09 HC10133030 LC6502C
- QL10 HC10048050 TC5066BP
- QL11 HC10121030 LM6416E
- QL12, QL13 QR01~QR03 HT406362B0 25D636
- QL26 HD30045011 HZ9L-1C
- QR11 HD30025060 RD3.3E-B1
- QN16, QN17 HT318451F0 25C1845F
- QN18 HT109921F0 25A992F
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- QO03 TC9152P
- QO04~QO06 QO08 QO08 HD74LS122P QG03 IC-4066
- QO07 NJM2903D
- QO08 NJM4558D QEO3
- QO09 NJM4560D Q706
- QO10 NJM4560DD QO53~QO55 QEO1, QEO2 QEO2, QEO4
- QO11 TC5066BP
- QO12 TC9154P
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