

MARANTZ

PM250/400/410

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MODEL

---

SERVICE MANUAL

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## 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 stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

### ORDERING PARTS

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT  
20525 Nordhoff Street  
Chatsworth, California 91311  
Phone: 1-800-423-5108  
1-213-998-9333

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

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

### OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

#### CANADA

Superscope Canada, Ltd.  
3710 Nashua Drive  
Mississauga  
Ontario, Canada L4V1M5

#### AUSTRALIA

Superscope (Australasia) Pty., Ltd.  
32 Cross Street (P.O. Box 604)  
Brookvale 2100 N.S.W.  
Australia

#### JAPAN

Marantz Japan, Inc.  
3622 Kamitsuruma  
Sagamihara Shi  
Kanagawa, Japan

#### EUROPE

Superscope Europe, S.A.  
Avenue Leopold III, 2  
7120 Perennes-Lez-Binche  
Belgium

Marantz France  
Rue Louis Armand 9  
92600 Asnieres  
Hauts-de-Seine  
France

Marantz Audio U.K. Ltd.  
London Road, 203  
Staines  
Middlesex  
England

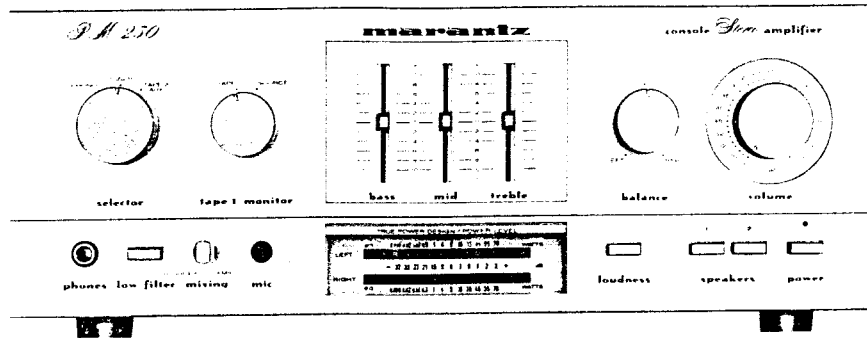
Superscope GmbH  
Max-Planck-Strasse 22  
D-6072 Dreieich 1  
West Germany

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.

**marantz.**  
We sound better.

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## 1. INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz PM250/PM400 Stereo Console Amplifier. Servicing 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.

## 2. PRE-AMPLIFIER

Signals from the TUNER and AUX terminals are taken to the SELECTOR SWITCH (SV01).

Signals from the PHONO terminals pass through the phono amplifier (Q401, Q403) where they are amplified by 36 dB and at the same time undergo RIAA equalization, before going to the SELECTOR SWITCH (SV01). (In the case of the PM400, signals coming in from the PHONO 1 and PHONO 2 terminals are selected by means for the SELECTOR SWITCH and then taken the PHONO amplifier).

After being selected by the SELECTOR SWITCH, the incoming signals are taken to the TAPE MONITOR switch and TAPE OUT terminals.

Signals which enter from the TAPE IN terminals are taken to the TAPE MONITOR SWITCH.

Signals which are selected by the TAPE MONITOR SWITCH are taken to the MONO SWITCH BALANCE and VOLUME potentiometers, and then enter the pre-amplifier (QE01 and QE03). The preamplifier has a gain of 22 dB. The signals from the preamplifier enter TONE AMP (QF01 and QF03) and the frequency response is controlled by the BASS, MID and TREBLE controls. After passing through the TONE preamplifier, the signals enter the main amplifier.

## TROUBLESHOOTING ANALYSIS

1. Excessive line consumption
  - a. Check for shorted Q806 through Q809.
  - b. Check for shorted transistor Q715, through Q718.
  - c. Check for open Q709, Q710, R717, R718.
2. No line consumption or zero bias voltage
  - a. Check line cord, fuse, check for shorted Q709, Q710, Q717, Q718.
  - b. Check for open rectifiers Q806 through Q809 or open L001.
3. High hum and noise level
  - a. Check filter capacitors C808, C809, C801, C803, Q801.

## 4. POWER AMPLIFIER ADJUSTMENT

### ADJUSTMENT OF IDLING CURRENT

Connect a DC voltmeter to between emitters Q715 and Q717. Adjust R717 until 11 mV is reached. Likewise, adjust Q716, Q718 and R718.

## 5. POWER METER ADJUSTMENT

Connect the speaker terminal output to the rated output voltage (15.5 V, 1 kHz), and then so adjust by RX07 (LCH) that the POWER METER registers 25W PM250/35W PM400. Adjust in the same manner by RX08 (RCH).

## 6. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the PM250/PM400 Stereo Console Amplifier. The wattmeter, AC voltmeter, and variable autotransformer may be assembled as a test fixture as shown schematically in Figure 1. The load resistors and AC ammeter may be assembled into a second test fixture as shown in Figure 2.

|                          |                      |
|--------------------------|----------------------|
| Line Switch              | OFF                  |
| Variable-line switch     | Variable             |
| Wattmeter Switch         | ON                   |
| Variable Autotransformer | 0 V (fully CCW)      |
| Load                     | 8 ohms (0.5 mfd—OFF) |
| Audio Generator          | 1 kHz                |
| Output                   | 5 V range            |
| Gain                     | Minimum              |
| AC Voltmeter             | 30 V range           |

## 7. PERFORMANCE VERIFICATION

### TEST PROCEDURE

#### A. TEST EQUIPMENT

Refer to Table 1 for required test equipment.

#### B. PRELIMINARY PROCEDURES

1. Make the test setup shown in Figure 1 with the instrument controls set in the following positions:

2. Make sure that connections between the resistive load and the system terminals of the PM250/PM400 have negligible resistance when compared with the resistance of the load itself. Appreciable resistance in wiring adds to the total load, resulting in inaccurate measurements of output power.

3. Connect amplifier output to load and connect AC cord to line power. Connect shorting plugs to the Phono input jacks of the PM250/PM400.

| Item  | Manufacturer and Model No.   | Use   |
|---|--|---|
| Distortion Analyzer<br>Audio Oscillator<br>AC Voltmeter | Sound Technology Model 1700B                                       | Distortion measurements<br>Sinewave and squarewave signal source<br>voltage measurements (AC) |
| Oscilloscope  | Tektronix Model T932<br>Philips Model 3232                         | Waveform analysis and trouble shooting and<br>ASO alignment                                   |
| Circuit Tester  |  | Trouble shooting  |
| DC Voltmeter  | Fluke Model 8000 "Digital" Simpson<br>Model 313, Triplet Model 801 | Voltage measurements (DC)   |
| AC Wattmeter  | Simpson Model 1379   | Monitors primary power to amplifier   |
| AC Ammeter  | Commercial Grade (1 ~ 10 A)  | Monitors amplifier output under short circuit<br>condition                                    |
| Line Voltmeter  | Simpson Model 1359   | Monitors potential of primary power to<br>amplifier   |
| Variable Autotransformer                                | Superior Electronic Co.,<br>Powerstet Model 116B-10A               | Adjusts level of primary power to amplifier   |
| Shorting Plug   | Use phono plug with 600 ohm<br>across center pin and shell         | Shorts amplifier input to eliminate noise<br>pickup   |
| Output Load<br>(8 ohms, $\pm 0.5\%$ 100 W)              | Commercial Grade   | Provides 8-ohm load for amplifier output<br>termination                                       |
| Output Load<br>(4 ohms, $\pm 0.5\%$ 100 W)              | Commercial Grade   | Provides 4-ohm load for amplifier output<br>termination                                       |
| Output Load Capacitor<br>(0.5 mfd)                      | Mylar  | Provides capacitive load for instability checks   |
| AC Power Control Box                                    | Optional Item. Fabricate in<br>accordance with Figure 1            | Monitors and controls primary power for<br>amplifier  |
| Amplifier Output Load Box                               | Optional Item. Fabricate in<br>accordance with Figure 2            | Provides various amplifier loads and can<br>monitor shorted output                            |

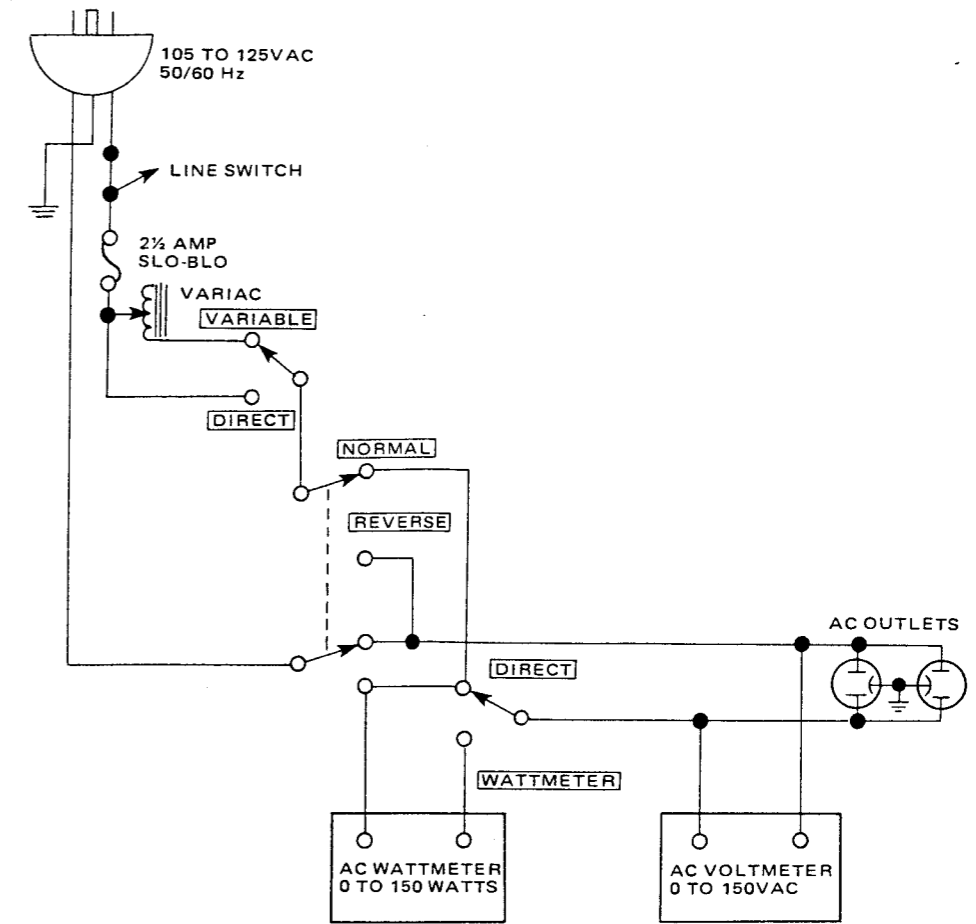


Figure 1. AC Power Control Box Simplified Schematic

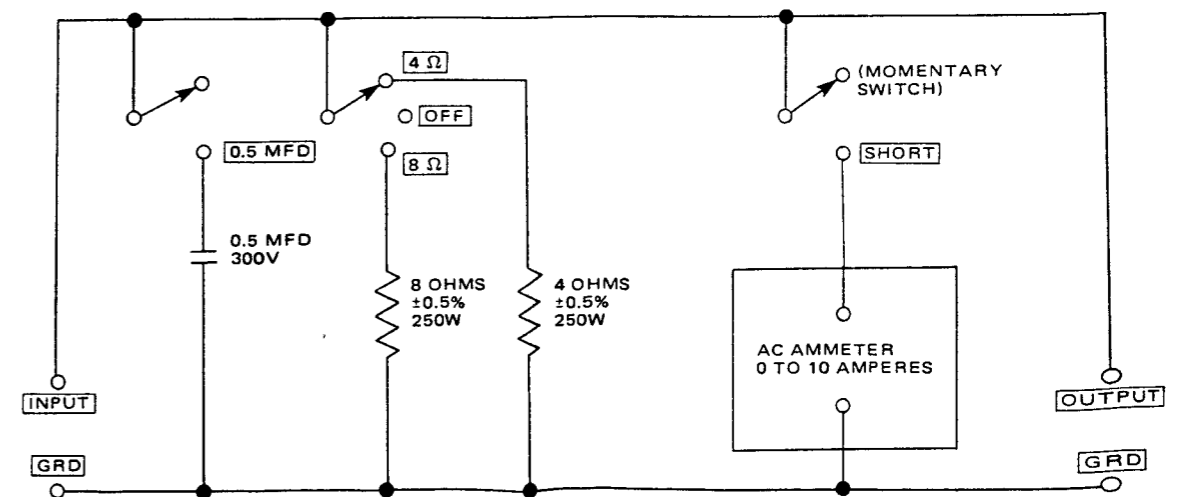


Figure 2. Amplifier Output Load Box Simplified Schematic

### C. TOTAL HUM AND NOISE TEST

1. With shorting plugs connected to the Phono input jacks and an 8 ohm resistive load connected across the speaker system output terminals, connect a distortion analyzer across the load.

**NOTE:**

If the distortion analyzer does not contain a built-in voltmeter, an AC VTVM may be substituted.

2. Set the distortion analyzer controls for voltage measurements and apply power to the amplifier. Set the volume control fully CCW. Set the SELECTOR switch to PHONO.
3. If the distortion analyzer indicates more than 2.0 mV refer to the trouble analysis section of this manual.
4. Set the volume control fully CW. If the distortion analyzer indicates more than 20 mV, refer to the trouble analysis section of this manual.

### D. MAXIMUM POWER OUTPUT

1. Connect the audio oscillator to the AUX input. Set audio oscillator frequency to 1 kHz. Set SELECTOR switch to AUX.
2. With the distortion analyzer connected across the output load (8-ohm), set the analyzer on the 30 VAC scale.
3. Turn the analyzer on and increase the audio oscillator output to 150 mV. The AC VTVM should read 17 VAC (14.1 VAC For Model PM250 only) or more.

### E. HARMONIC DISTORTION TEST

1. Set the frequency of the audio oscillator and the distortion analyzer to 20 kHz.
2. Set the controls of the analyzer for voltage measurement on the 30 volt scale.
3. Adjust the audio oscillator output level until the analyzer meter indicates 17 VAC. (14.1 VAC For Model PM250 only)
4. Switch the distortion analyzer to Set Level and adjust SENSITIVITY for full scale reading on 0 ~ 1% scale.
5. Measure the total harmonic distortion with the analyzer and verify it is less than 0.05%.

**NOTE:**

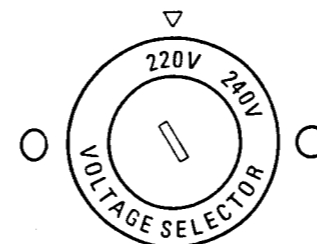
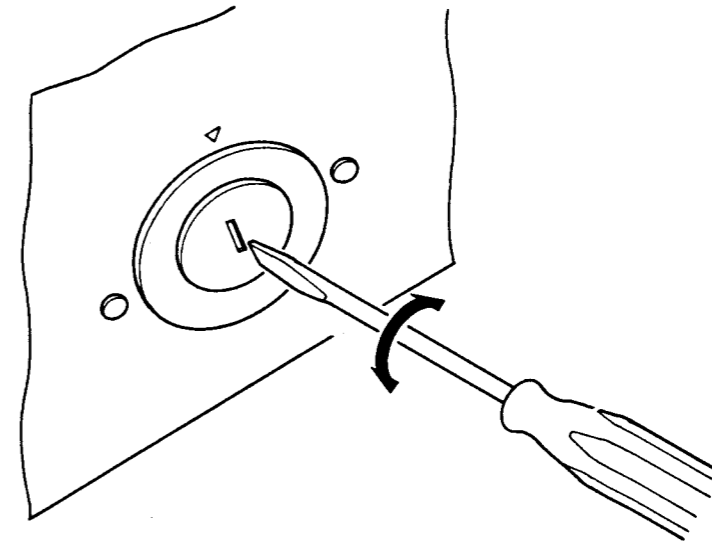
Any parasitic oscillation in the amplifier will be displayed on the oscilloscope when capacitance is switched into the load.

6. Switch the distortion analyzer back to SET LEVEL. (Do not readjust sensitivity of analyzer.)
7. Change the frequency of the audio oscillator and distortion analyzer to 1 kHz. Adjust audio oscillator output for a full scale reading on the 0 ~ 1% scale.
8. Measure the distortion, verifying it is no greater than 0.05%.
9. Repeat steps 7 and 8, changing frequency to 20 Hz. Distortion should be no more than 0.05%.
10. Check for parasitic oscillation; there should be none.

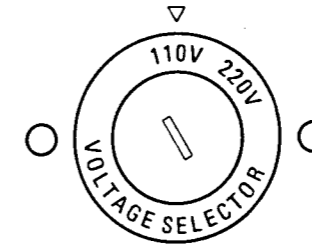
### 8. VOLTAGE CONVERSION

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

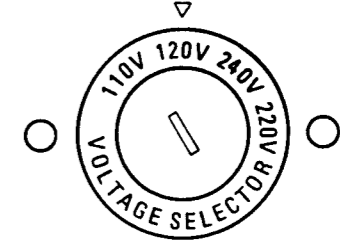
**CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE. PLEASE DO NOT DISASSEMBLE THE VOLTAGE SELECTOR ABSOLUTELY.**



(T) (A) Versions



(N) Version

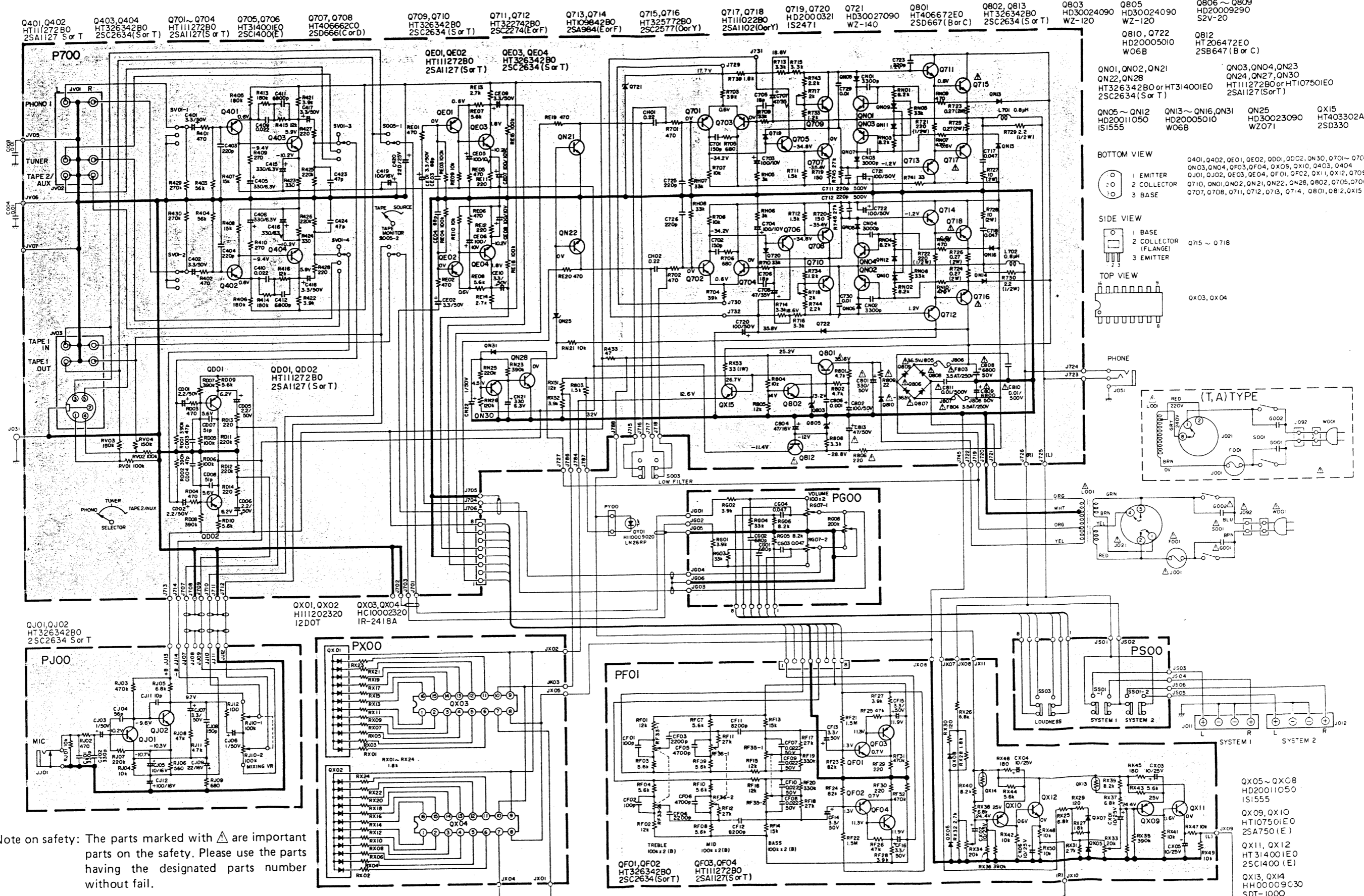


(P) Version

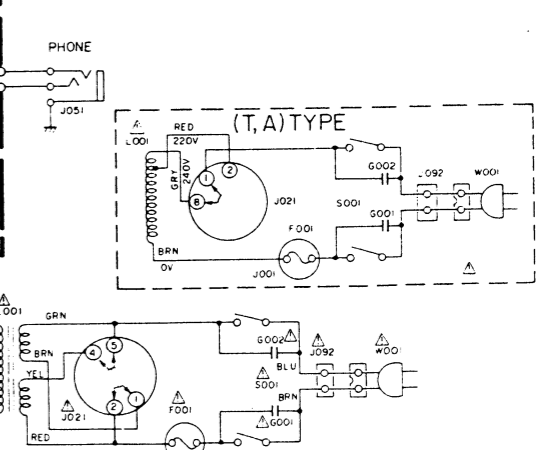
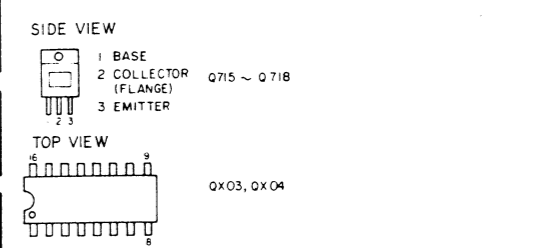
Note on safety: The parts marked with  $\triangle$  are important parts on the safety. Please use the parts having the designated parts number without fail.

9. SCHEMATIC DIAGRAM (PM250 and PM400)

Model PM250



- Q401, Q402 HT11272B0 2SA1127 (S or T)
- Q403, Q404 HT326342B0 2SC2634 (S or T)
- Q701 ~ Q704 HT11272B0 2SA1127 (S or T)
- Q705, Q706 HT314001E0 2SC1400 (E)
- Q707, Q708 HT406662C0 2SD666 (C or D)
- Q709, Q710 HT326342B0 2SC2634 (S or T)
- Q711, Q712 HT322742B0 2SC2274 (E or F)
- Q713, Q714 HT109842B0 2SA964 (E or F)
- Q715, Q716 HT325772B0 2SC2577 (O or Y)
- Q717, Q718 HT111022B0 2SA1102 (O or Y)
- Q719, Q720 HD2000321 IS2471
- Q721 HD30027090 WZ-140
- Q801 HT406672E0 2SD667 (B or C)
- Q802, Q813 HT326342B0 2SC2634 (S or T)
- Q803 HD30024090 WZ-120
- Q805 HD30024090 WZ-120
- Q810, Q722 HD20005010 W06B
- Q812 HT206472E0 2SB647 (B or C)
- Q806 ~ Q809 HD20009290 S2V-20
- Q801, Q802, Q821 QN01, QN02, QN21 QN22, QN28 HT326342B0 or HT314001E0 2SC2634 (S or T)
- Q803, QN03, QN04, QN23 QN24, QN27, QN30 HT11272B0 or HT107501E0 2SA1127 (S or T)
- Q805 ~ QN12 QN13 ~ QN16, QN31 QN25 HD20011050 HD20005010 W06B
- Q806, QN15 QX15 HT403302A0 2SD330

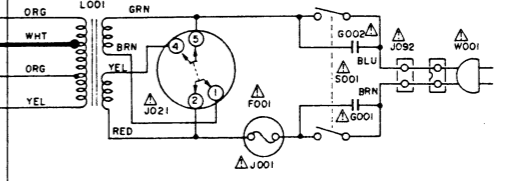
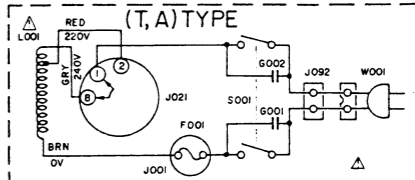
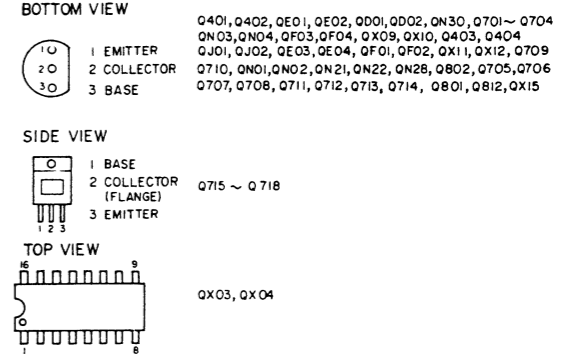
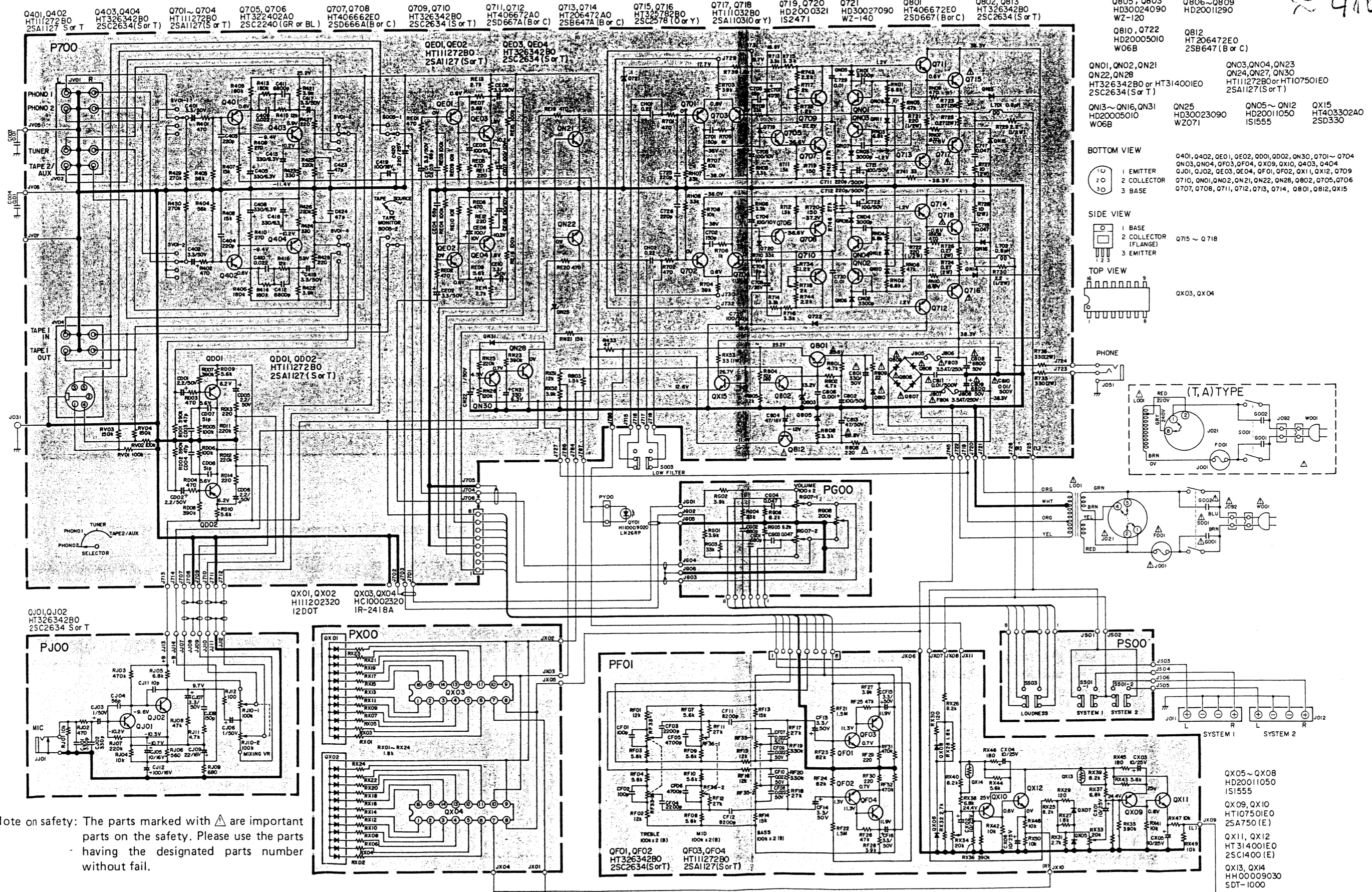


Note on safety: The parts marked with  $\Delta$  are important parts on the safety. Please use the parts having the designated parts number without fail.



# Model PM400

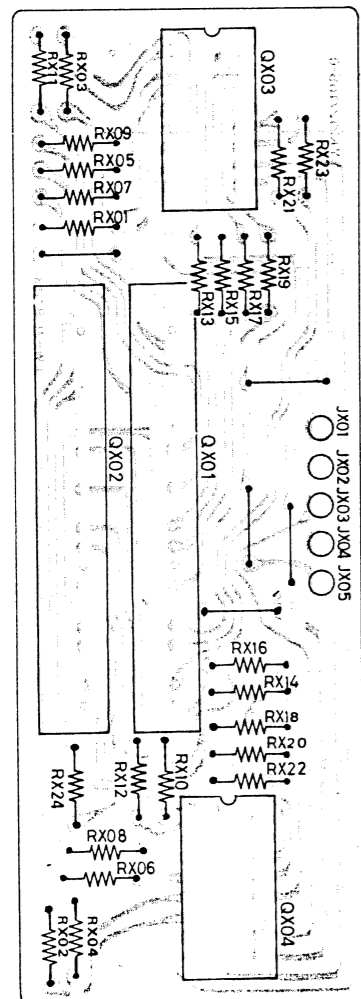
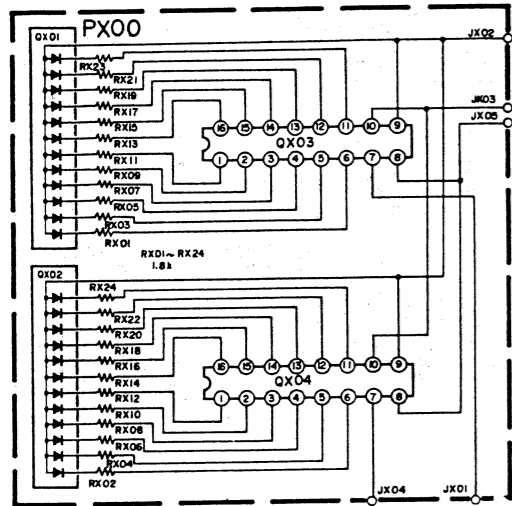
~ 410



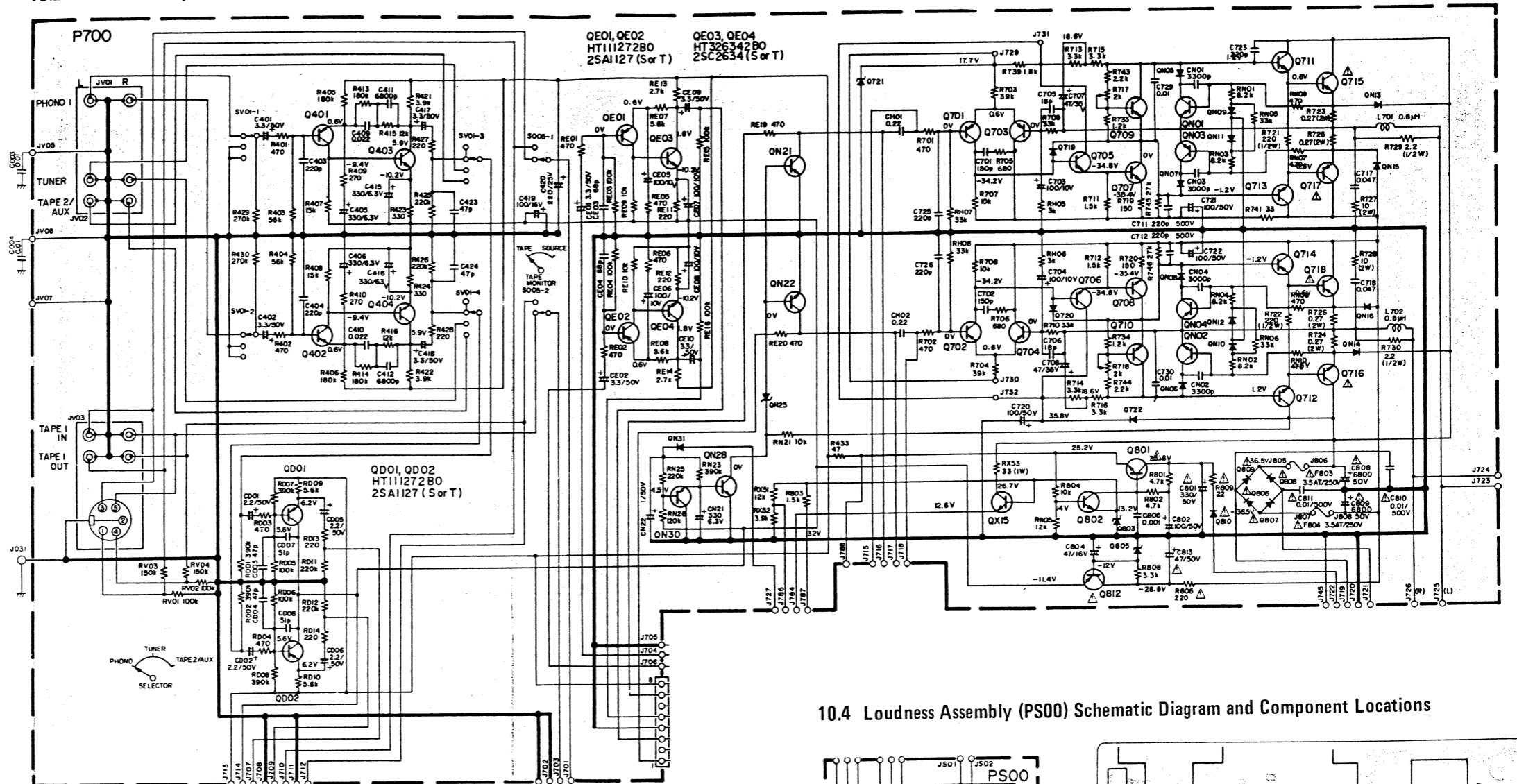
Note on safety: The parts marked with  $\Delta$  are important parts on the safety. Please use the parts having the designated parts number without fail.

10. DIAGRAM AND COMPONENT LOCATIONS

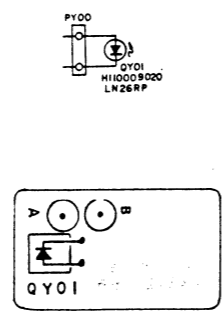
10.1 LED Power Meter Assembly (PX00) Schematic Diagram and Component Locations



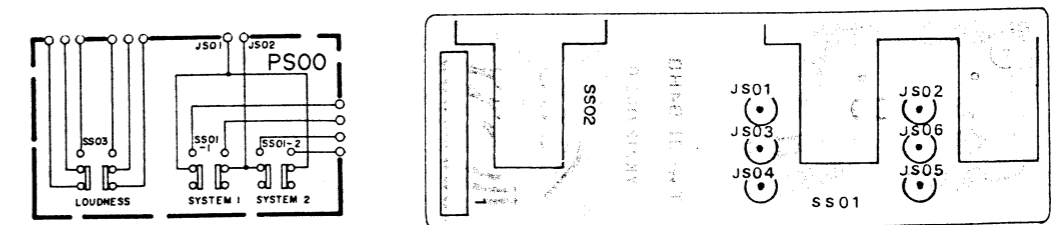
10.2 Main Assembly (P700) Schematic Diagram and Component Locations



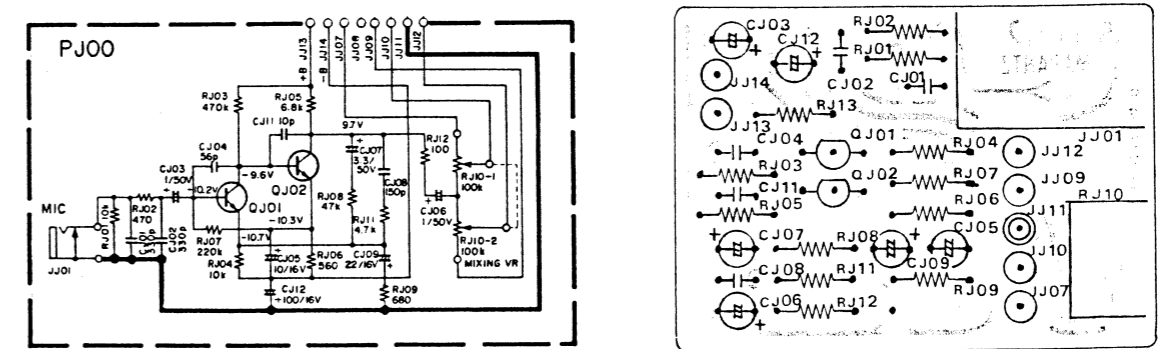
10.3 LED Lamp Assembly (PY00) Schematic Diagram and Component Locations



10.4 Loudness Assembly (PS00) Schematic Diagram and Component Locations

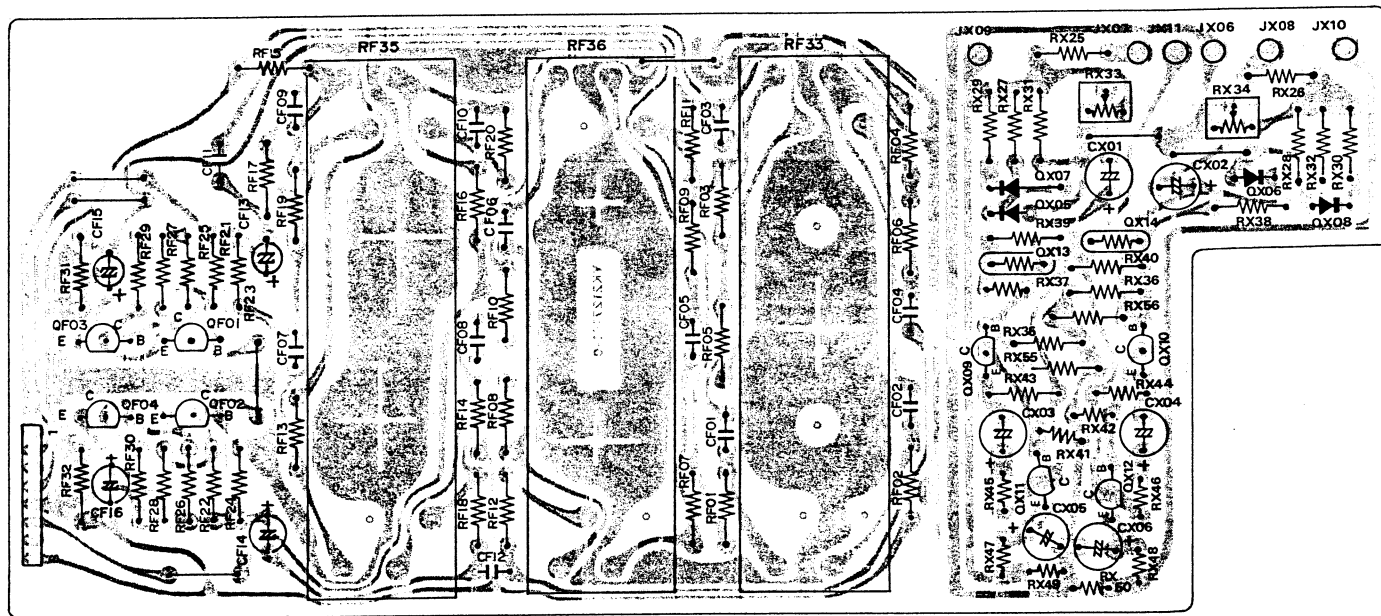
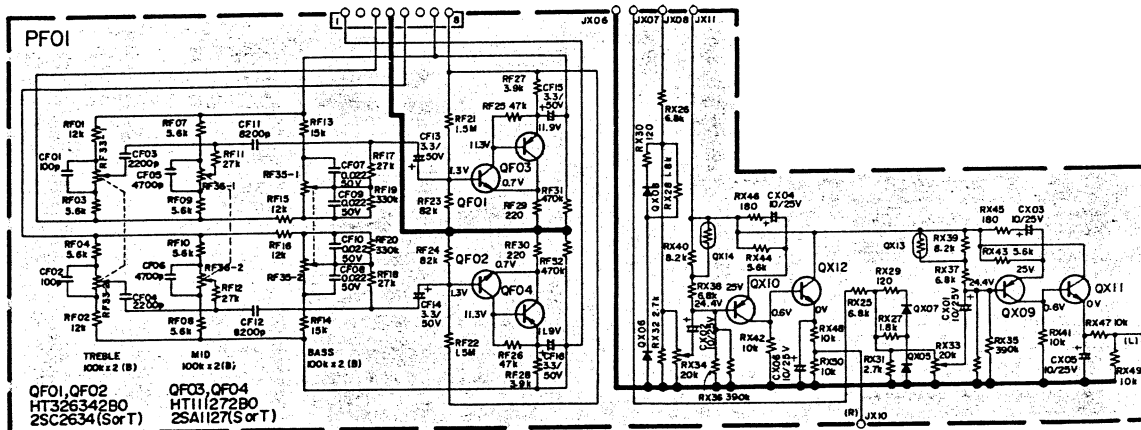


10.5 Microphone Amp. Assembly (PJ00) Schematic Diagram and Component Locations

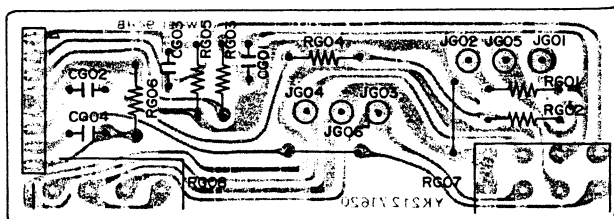
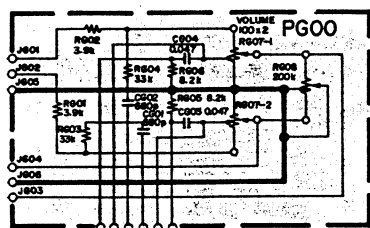




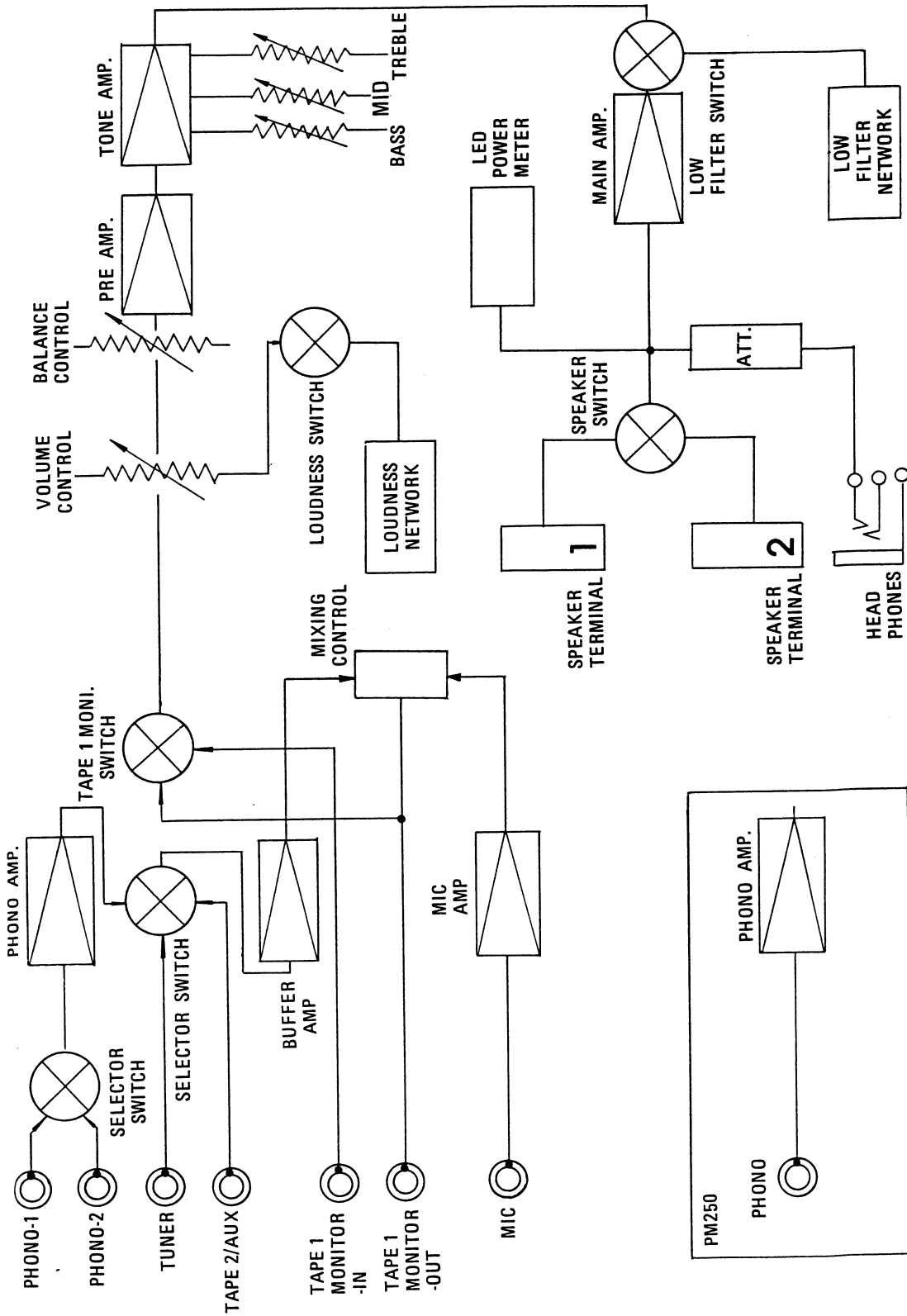
### 10.6 Tone Assembly (PF00) Schematic Diagram and Component Locations



### 10.7 Volume Assembly (PG00) Schematic Diagram and Component Locations

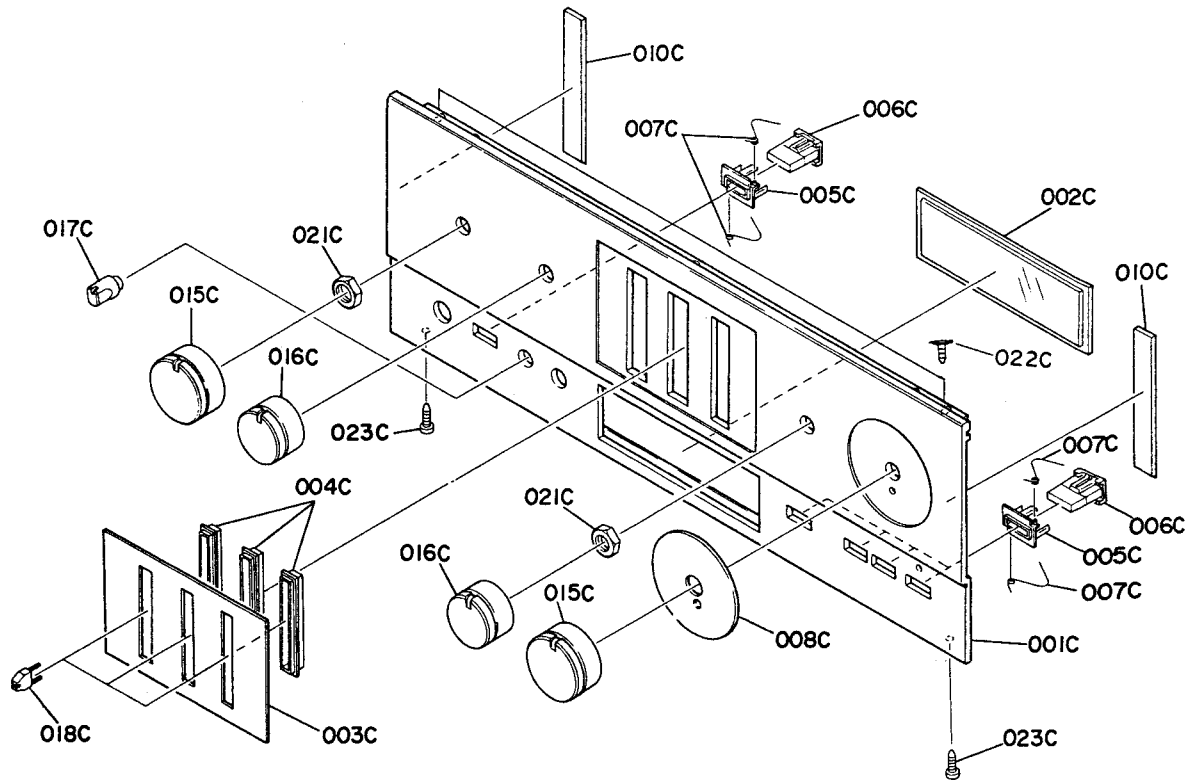


# 11. BLOCK DIAGRAM



## 12. EXPLODED VIEW AND PARTS LIST

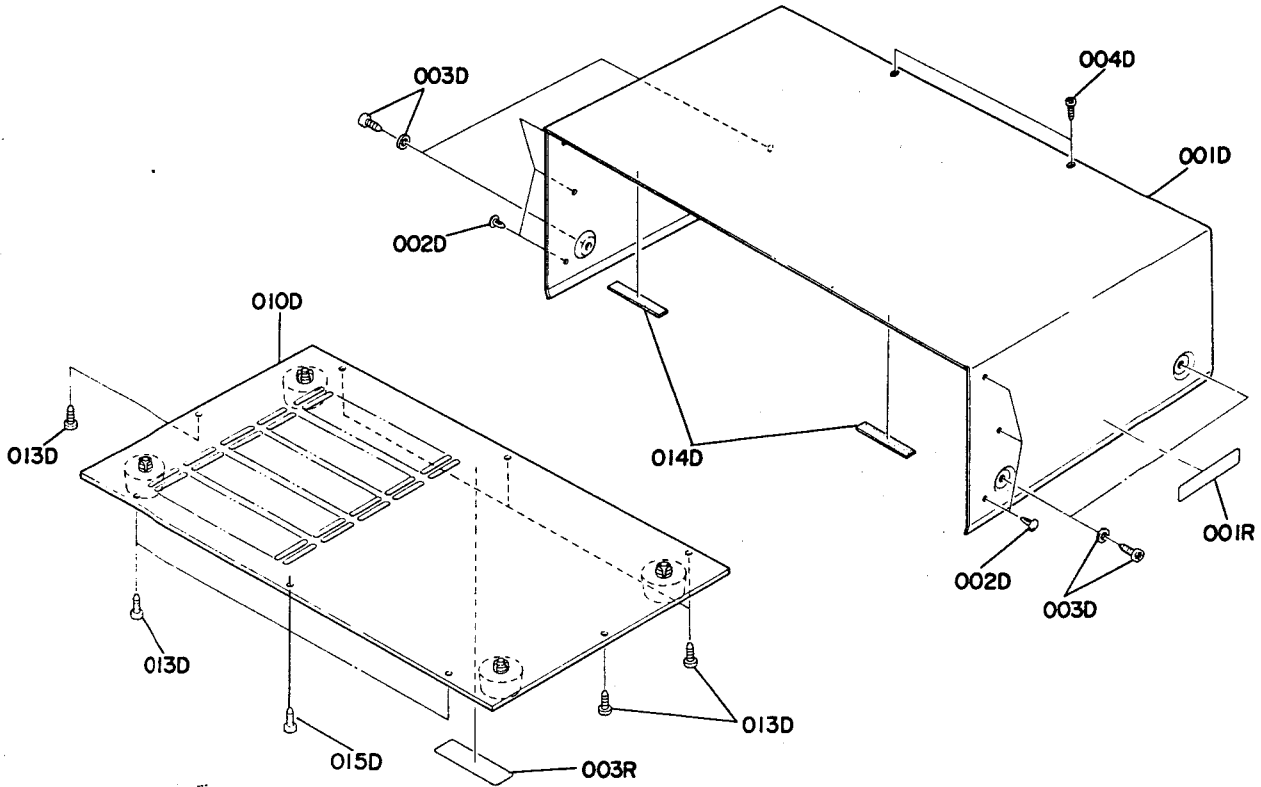
### • [C01-99] Front panel



| REF. DESIG. | QTY N | PART NO.   | DESCRIPTION          |
|-------------|-------|------------|----------------------|
|             |       |            | <b>(PM400, ONLY)</b> |
| A           | 1     | 2129063400 | Front Panel Assembly |
| 001C        | 1     | 2129063010 | Escutcheon           |
| 002C        | 1     | 2129158020 | Window               |
| 003C        | 1     | 2129063020 | Escutcheon           |
| 004C        | 3     | 2129259020 | Bushing              |
| 005C        | 5     | 2127259010 | Bushing              |
| 008C        | 1     | 2129063030 | Escutcheon           |
| 010C        | 2     | 2128118010 | Spacer               |
|             |       |            | <b>(PM250, ONLY)</b> |
| A           | 1     | 2127063400 | Front Panel Assembly |
| 001C        | 1     | 2127063010 | Escutcheon           |
| 002C        | 1     | 2129158010 | Window               |
| 003C        | 1     | 2129063020 | Escutcheon           |
| 004C        | 3     | 2129259020 | Bushing              |
| 005C        | 5     | 2127259010 | Bushing              |
| 008C        | 1     | 2129063030 | Escutcheon           |
| 010C        | 2     | 2128118010 | Spacer               |

| REF. DESIG. | QTY N | PART NO.   | DESCRIPTION              |
|-------------|-------|------------|--------------------------|
| 006C        | 5     | 2127154010 | Knob                     |
| 007C        | 10    | 2127115010 | Spring                   |
| 015C        | 2     | 2129154010 | Knob                     |
| 016C        | 2     | 2129154020 | Knob                     |
| 017C        | 1     | 4276154010 | Knob                     |
| 018C        | 3     | 2129154040 | Knob                     |
| 021C        | 2     | 53118169A0 | Hexagon Nut              |
| 022C        | 2     | 51340308A0 | F.H. Tapped Screw B3 x 8 |
| 023C        | 2     | 51280308B0 | B.H. Tapped Screw B3 x 8 |

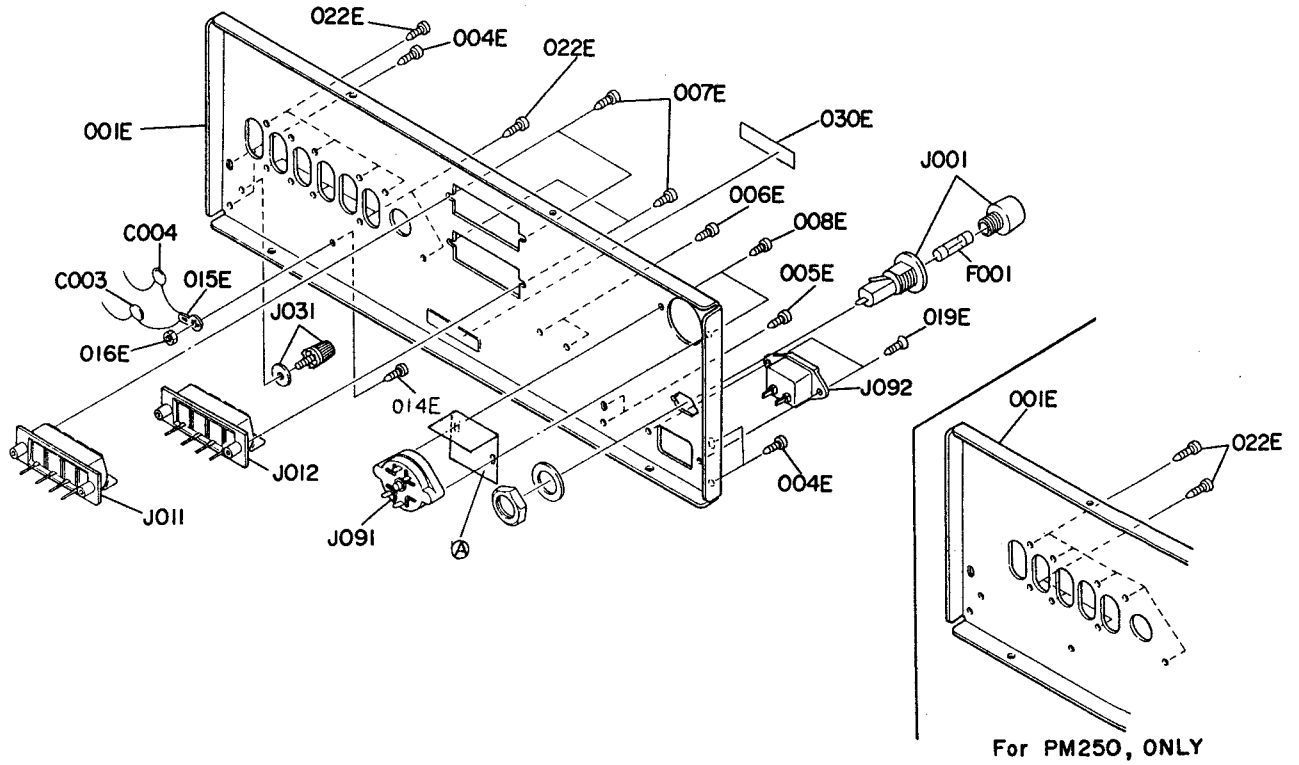
• [C0299] Top cover



| REF. DESIG. | QTY | PART NO.   | DESCRIPTION              |
|-------------|-----|------------|--------------------------|
|             | N   |            |                          |
| 001D        | 1   | 2128257010 | Lid, Top Cover           |
| 002D        | 6   | 2991259010 | Bushing                  |
| 003D        | 4   | 51260408U0 | F. Washer Screw F4 x 8   |
| 004D        | 2   | 51280308U0 | B.H. Tapped Screw B3 x 8 |

| REF. DESIG. | QTY | PART NO.   | DESCRIPTION                |
|-------------|-----|------------|----------------------------|
|             | N   |            |                            |
| 010D        | 1   | 2128257500 | Lid, Bottom Cover Assembly |
| 013D        | 7   | 51280410U0 | B.H. Tapped Screw B4 x 10  |
| 014D        | 2   | 2965118010 | Spacer                     |
| 015D        | 1   | 51280408U0 | B.H. Tapped Screw B4 x 8   |

• [C03-99] Rear panel



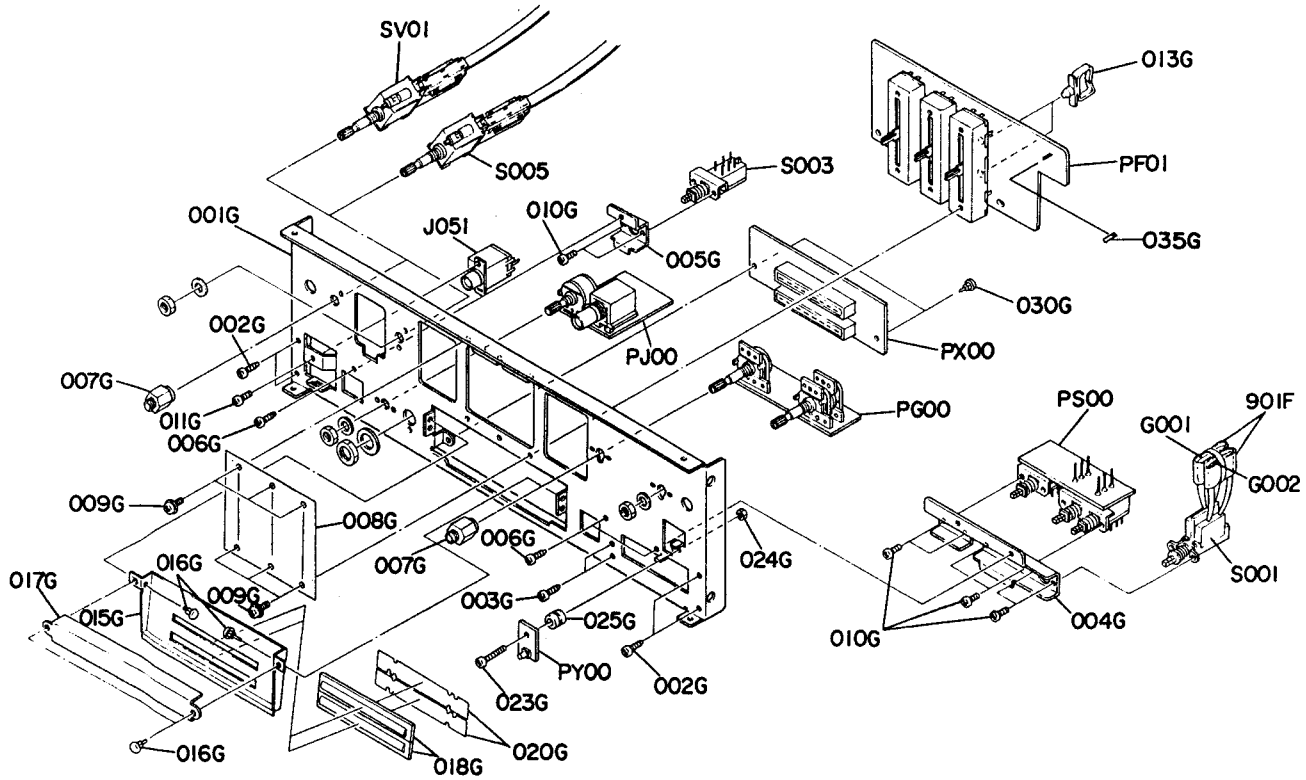
For PM250, ONLY

| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION                       |
|-------------|--------|------------|-----------------------------------|
| 001E        | 1      | 2129160210 | Bracket, Rear Panel (PM400, ONLY) |
| 001E        | 1      | 2127160210 | Bracket, Rear Panel (PM250, ONLY) |
| 004E        | 4      | 51280308U0 | B.H. Tapped Screw B3 x 8          |
| 005E        | 2      | 51280308U0 | B.H. Tapped Screw B3 x 8          |
| 006E        | 2      | 51280308U0 | B.H. Tapped Screw B3 x 8          |
| 007E        | 4      | 51280308U0 | B.H. Tapped Screw B3 x 8          |
| 008E        | 2      | 51280308U0 | B.H. Tapped Screw B3 x 8          |
| 014E        | 1      | 51100306S9 | B.H.M. Screw B3 x 6               |
| 015E        | 1      | 62030049W0 | Lug                               |
| 016E        | 1      | 53110303A9 | Hexagon Nut                       |
| 019E        | 2      | 51420308T0 | O.C.H. Tapped Screw 3 x 8         |
| 022E        | 10     | 51280308U0 | B.H. Tapped Screw (PM400, ONLY)   |
| 022E        | 8      | 51280308U0 | B.H. Tapped Screw (PM250, ONLY)   |
| 030E        | 1      | 2112265010 | Indicator                         |
| (A)         | 1      | 2129120010 | Insulator                         |

| REF. DESIG.   | Q'TY N | PART NO.   | DESCRIPTION                          |
|---------------|--------|------------|--------------------------------------|
| C003          | 1      | DK18103310 | Ceramic Cap. 0.01 $\mu$ F +80% - 20% |
| C004          | 1      | DK18103310 | Ceramic Cap. 0.01 $\mu$ F +80% -20%  |
| $\Delta$ F001 | 1      | FS10080800 | Fuse 800mAT (PM400, ONLY)            |
| $\Delta$ F001 | 1      | FS10063800 | Fuse 630mAT (PM250, ONLY)            |
| $\Delta$ J001 | 1      | YJ08000290 | Jack, Fuse Holder                    |
| J011          | 1      | YT03040170 | Terminal, Speaker                    |
| J012          | 1      | YT03040170 | Terminal, Speaker                    |
| J031          | 1      | YL03010240 | Terminal, Ground                     |
| $\Delta$ J091 | 1      | BY05060010 | Voltage Selector (110/220)           |
| $\Delta$ J092 | 1      | YP04000590 | Plug, A.C. Inlet                     |



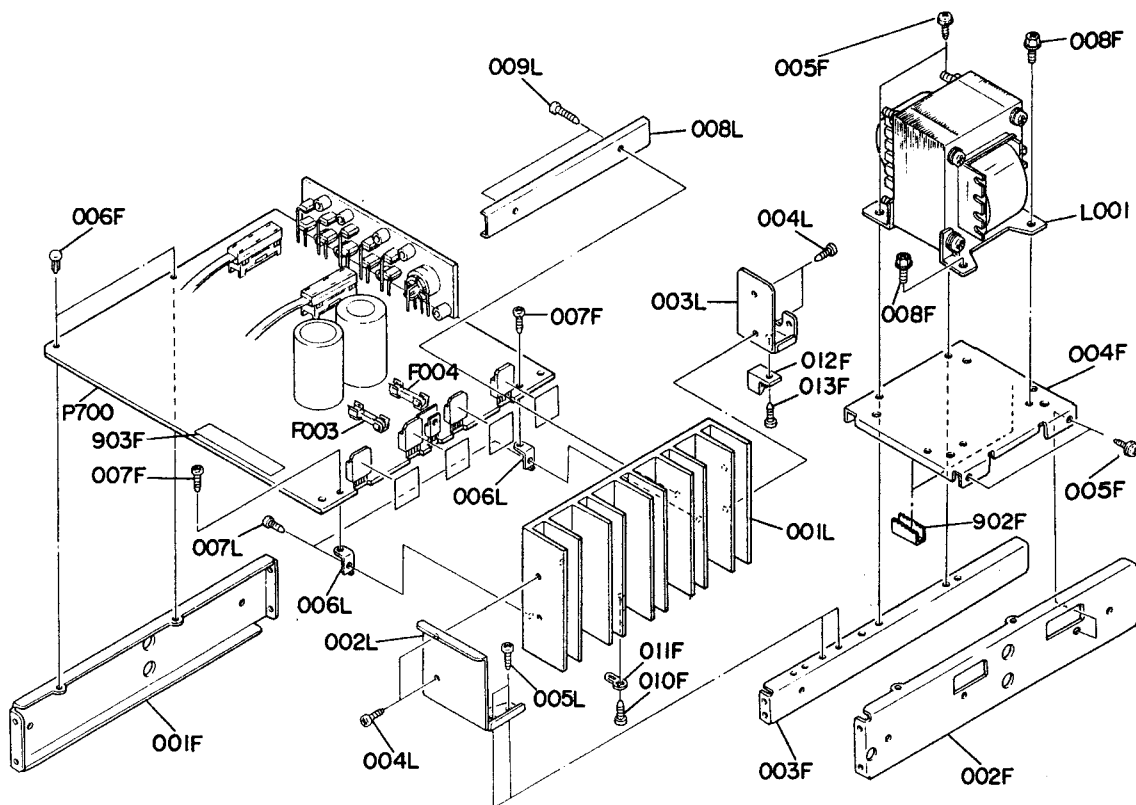
• [P01-99] Chassis and General parts



| REF. DESIG. | QTY N | PART NO.   | DESCRIPTION              |
|-------------|-------|------------|--------------------------|
| 001G        | 1     | 2129160010 | Bracket, Front Chassis   |
| 002G        | 4     | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 003G        | 2     | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 004G        | 1     | 2129160020 | Bracket                  |
| 005G        | 1     | 2129160030 | Bracket                  |
| 006G        | 3     | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 007G        | 2     | 2129114010 | Stopper                  |
| 008G        | 1     | 2129303020 | Mask                     |
| 009G        | 6     | 51480306S9 | F. Washer Screw F3 x 6   |
| 010G        | 8     | 51100306A9 | B.H.M. Screw B3 x 6      |
| 011G        | 1     | 51100306A9 | B.H.M. Screw B3 x 6      |
| 013G        | 2     | 2129005010 | Clamper                  |
| 015G        | 1     | 2129302010 | Dial, (PM400, ONLY)      |
| 015G        | 1     | 2127302010 | Dial, (PM250, ONLY)      |
| 016G        | 4     | 2912259020 | Bushing                  |
| 017G        | 1     | 2129303010 | Mask                     |
| 018G        | 2     | 2127355010 | Lens                     |
| 020G        | 2     | 2129303030 | Mask                     |
| 023G        | 1     | 51570315B0 | P. Taptite Screw B3 x 15 |
| 024G        | 1     | 53110303A9 | Hexagon Nut              |
| 025G        | 1     | 4367259020 | Bushing                  |
| 030G        | 2     | 2276005050 | Clamper                  |
| 035G        | 1     | 2884053020 | Cover                    |

| REF. DESIG. | QTY N | PART NO.   | DESCRIPTION                  |
|-------------|-------|------------|------------------------------|
| 901F        | 2     | 2926120010 | Insulator                    |
| ΔG001       | 1     | DF17223800 | Film Cap. 0.022μF ±20%       |
| ΔG002       | 1     | DF17223800 | Film Cap. 0.022μF ±20%       |
| J051        | 1     | YJ01001200 | Jack, Headphone              |
| ΔS001       | 1     | SP02010440 | Push Switch, Power           |
| S003        | 1     | SP02010260 | Push Switch, Low Filter      |
| S005        | 1     | SR04020180 | Rotary Switch                |
| SV01        | 1     | SR04040170 | Rotary Switch, (PM400, ONLY) |
| SV01        | 1     | SR04030250 | Rotary Switch, (PM250, ONLY) |

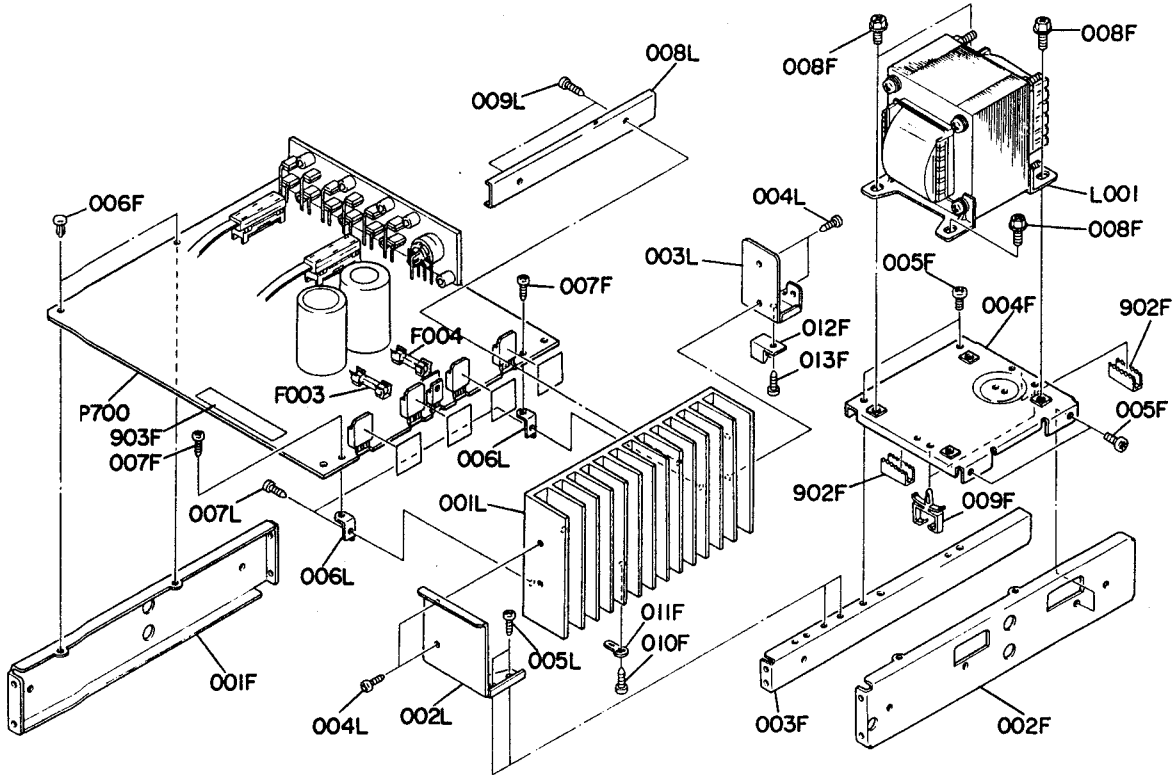
• [P02-99] Main P.W. Board and General parts (PM250 ONLY)



| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION              |
|-------------|--------|------------|--------------------------|
|             |        |            | (PM250, ONLY)            |
| 001F        | 1      | 2258126010 | Stay, (L)                |
| 002F        | 1      | 2258126022 | Stay, (R)                |
| 003F        | 1      | 2258126033 | Stay, Center             |
| 004F        | 1      | 2127160010 | Bracket                  |
| 006F        | 2      | 2276005050 | Clamper                  |
| 007F        | 2      | 51280308B0 | F. Washer Screw F3 x 8   |
| 008F        | 2      | 52040410A0 | H. Head Bolt, S.F        |
| 010F        | 1      | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 011F        | 1      | 62030049W0 | Lug                      |
| 012F        | 1      | 2887005012 | Clamper                  |
| 013F        | 1      | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 902F        | 2      | 2218259020 | Bushing                  |
| 903F        | 1      | 2205861010 | Label                    |
| 005F        | 4      | 51280410B0 | F. Washer Screw F4 x 10  |

| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION               |
|-------------|--------|------------|---------------------------|
| 001L        | 1      | 2127267010 | Heatsink                  |
| 002L        | 1      | 2127160020 | Bracket                   |
| 003L        | 1      | 2258160050 | Bracket                   |
| 004L        | 4      | 51280308B0 | B.H. Tapped Screw B3 x 8  |
| 005L        | 2      | 51280308B0 | B.H. Tapped Screw B3 x 8  |
| 006L        | 2      | 2231160040 | Bracket                   |
| 007L        | 2      | 51280308B0 | B.H. Tapped Screw B3 x 8  |
| 008L        | 1      | 2258005013 | Clamper                   |
| 009L        | 2      | 51280314B0 | B.H. Tapped Screw B3 x 14 |
| ΔL001       | 1      | TS17615020 | Power Transformer         |
| P700        | 1      | YG21270010 | P.W. Board, Main          |
|             | 1      | Z221278010 | P.W. Board Assembly       |
| ΔF003       | 1      | FS10350800 | Fuse 3.5AT                |
| ΔF004       | 1      | FS10350800 | Fuse 3.5AT                |

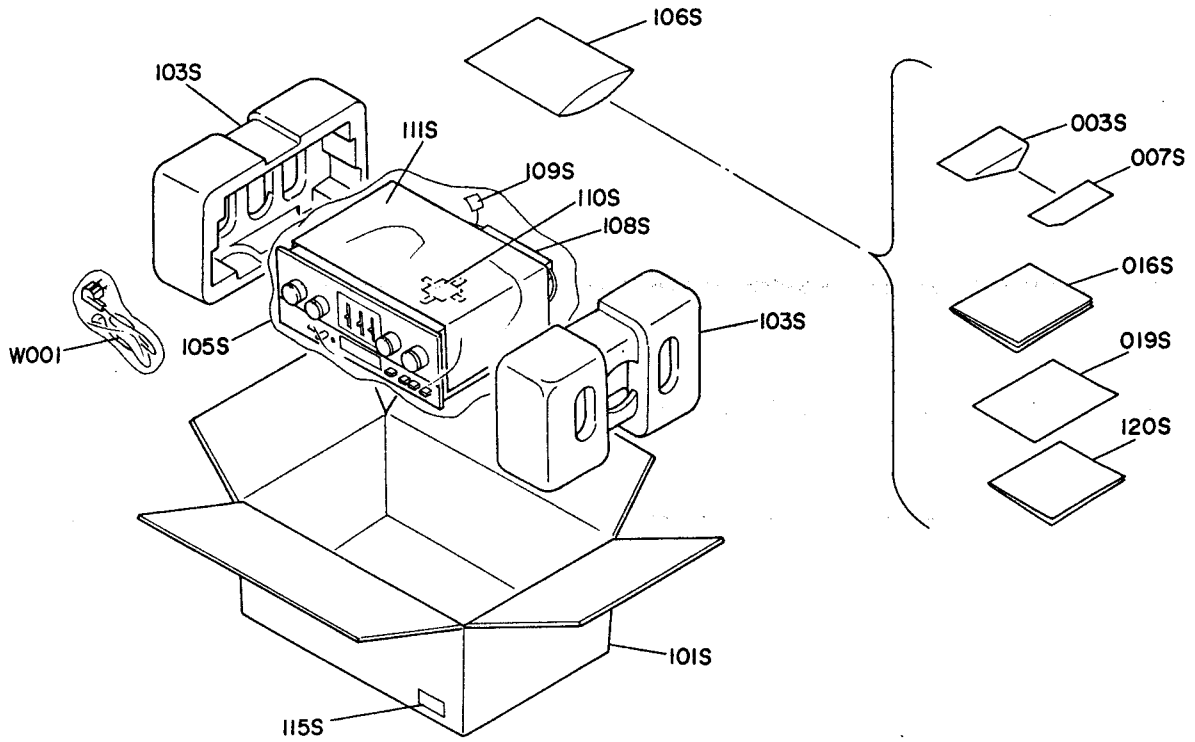
• [P02-99] Main P.W. Board and General parts (PM400 ONLY)



| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION              |
|-------------|--------|------------|--------------------------|
|             |        |            | (MP400, ONLY)            |
| 001F        | 1      | 2258126010 | Stay, (L)                |
| 002F        | 1      | 2258126022 | Stay, (R)                |
| 003F        | 1      | 2258126033 | Stay, Center             |
| 004F        | 1      | 2127160010 | Bracket                  |
| 005F        | 4      | 51280408B0 | B.H. Tapped Screw B3 x 8 |
| 006F        | 2      | 2276005050 | Clamper                  |
| 007F        | 2      | 51280308B0 | F. Washer Screw F3 x 8   |
| 008F        | 4      | 52040510A0 | H. Head Bolt, S.F        |
| 009F        | 2      | 2886005030 | Clamper                  |
| 010F        | 1      | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 011F        | 1      | 62030049W0 | Lug                      |
| 012F        | 1      | 2887005012 | Clamper                  |
| 013F        | 1      | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 902F        | 2      | 2218259020 | Bushing                  |
| 903F        | 1      | 2205861010 | Label                    |

| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION               |
|-------------|--------|------------|---------------------------|
| 001L        | 1      | 2274267012 | Heatsink                  |
| 002L        | 1      | 2127160020 | Bracket                   |
| 003L        | 1      | 2258160050 | Bracket                   |
| 004L        | 4      | 51280308B0 | B.H. Tapped Screw B3 x 8  |
| 005L        | 2      | 51280308B0 | B.H. Tapped Screw B3 x 8  |
| 006L        | 2      | 2231160040 | Bracket                   |
| 007L        | 2      | 51280308B0 | B.H. Tapped Screw B3 x 8  |
| 008L        | 1      | 2258005013 | Clamper                   |
| 009L        | 2      | 51280314B0 | B.H. Tapped Screw B3 x 14 |
| △L001       | 1      | TS18613010 | Power Transformer         |
| P700        | 1      | YG21270010 | P.W. Board, Main          |
|             | 1      | ZZ21277010 | P.W. Board Assembly       |
| △F003       | 1      | FS10350800 | Fuse 3.5AT                |
| △F004       | 1      | FS10350800 | Fuse 3.5AT                |

• [H01-99] Packing Materials



| REF. DESIG. | Q'TY | PART NO.   | DESCRIPTION                |
|-------------|------|------------|----------------------------|
|             | N    |            |                            |
| 003S        | 1    | 2818813010 | Envelope                   |
| 007S        | 1    | 9630000180 | Guarantee Card             |
| 016S        | 1    | 2127851310 | Instructions               |
| 019S        | 1    | 2129851030 | Instructions (PM400, ONLY) |
| 019S        | 1    | 2127851030 | Instructions (PM250, ONLY) |
| 101S        | 1    | 2129801010 | Packing Case (PM400, ONLY) |
| 101S        | 1    | 2127801010 | Packing Case (PM250, ONLY) |
| 103S        | 2    | 4214809013 | Cushion                    |
| 105S        | 1    | 9014335330 | Polyethy Bag               |
| 106S        | 1    | 9013025010 | Polyethy Bag               |

| REF. DESIG. | Q'TY | PART NO.   | DESCRIPTION                   |
|-------------|------|------------|-------------------------------|
|             | N    |            |                               |
| 108S        | 1    | 2864804010 | Sleeve                        |
| 109S        | 1    | 9560000043 | Hang Tag                      |
| 110S        | 1    | 2731821010 | Silicagel                     |
| 111S        | 1    | 2918107160 | Sheet                         |
| 115S        | 3    | 9526019060 | Serial NO. Card               |
| 120S        | 1    | 2129856010 | Circuit Diagram (PM400, ONLY) |
| 120S        | 1    | 2127856010 | Circuit Diagram (PM250, ONLY) |
| ΔW001       | 1    | ZC01805020 | A.C. Power Cord               |

### 13. ELECTRICAL PARTS LIST

| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION  |
|-------------|--------|------------|--|
| P700        | 1      | YG21270010 | <b>P700-MAIN CIRCUIT BOARD</b><br>P.W. Board, Main |
|             | 1      | ZZ21277010 | (PM400, ONLY)<br>P.W. Board Assembly               |
|             | 1      | ZZ21278010 | (PM250, ONLY)<br>P.W. Board Assembly               |
|             |        |            | <b>P700-CAPACITORS</b>                             |
| CD01        | 1      | EA22505090 | Elect 2.2 $\mu$ F 50V                              |
| CD02        | 1      | EA22505090 | Elect 2.2 $\mu$ F 50V                              |
| CD03        | 1      | DD15470370 | Ceramic 47pF $\pm$ 5%                              |
| CD04        | 1      | DD15470370 | Ceramic 47pF $\pm$ 5%                              |
| CD05        | 1      | EA22505090 | Elect 2.2 $\mu$ F 50V                              |
| CD06        | 1      | EA22505090 | Elect 2.2 $\mu$ F 50V                              |
| CD07        | 1      | DD15510310 | Ceramic 51pF $\pm$ 5%                              |
| CD08        | 1      | DD15510310 | Ceramic 51pF $\pm$ 5%                              |
| CE01        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V                              |
| CE02        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V                              |
| CE03        | 1      | DD15221370 | Ceramic 220pF $\pm$ 5%                             |
| CE04        | 1      | DD15221370 | Ceramic 220pF $\pm$ 5%                             |
| CE05        | 1      | EA10701030 | Elect 100 $\mu$ F 10V                              |
| CE06        | 1      | EA10701030 | Elect 100 $\mu$ F 10V                              |
| CE08        | 1      | EA10701030 | Elect 100 $\mu$ F 10V                              |
| CE09        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V                              |
| CE10        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V                              |
| CH01        | 1      | DF16224350 | Film 0.22 $\mu$ F $\pm$ 10%                        |
| CH02        | 1      | DF16224350 | Film 0.22 $\mu$ F $\pm$ 10%                        |
| CN01        | 1      | DF16332350 | Film 3300pF $\pm$ 10%                              |
| CN02        | 1      | DF16332350 | Film 3300pF $\pm$ 10%                              |
| CN03        | 1      | DF16332350 | Film 3300pF $\pm$ 10%                              |
| CN04        | 1      | DF16332350 | Film 3300pF $\pm$ 10%                              |
| CN21        | 1      | EA33700690 | Elect 330 $\mu$ F 6.3V                             |
| CN22        | 1      | EA10505030 | Elect 1 $\mu$ F 50V                                |
| C401        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V                              |
| C402        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V                              |
| C403        | 1      | DD15820370 | Ceramic 82pF $\pm$ 5%                              |
| C404        | 1      | DD15820370 | Ceramic 82pF $\pm$ 5%                              |
| C405        | 1      | EA33700690 | Elect 330 $\mu$ F 6.3V                             |
| C406        | 1      | EA33700690 | Elect 330 $\mu$ F 6.3V                             |
| C409        | 1      | DF15223350 | Film 0.022 $\mu$ F $\pm$ 5%                        |
| C410        | 1      | DF15223350 | Film 0.022 $\mu$ F $\pm$ 5%                        |
| C411        | 1      | DF15562350 | Film 5600pF $\pm$ 5%                               |
| C412        | 1      | DF15562350 | Film 5600pF $\pm$ 5%                               |
| C415        | 1      | EA33700690 | Elect 330 $\mu$ F 6.3V                             |
| C416        | 1      | EA33700690 | Elect 330 $\mu$ F 6.3V                             |
| C417        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V                              |
| C418        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V                              |
| C419        | 1      | EA10701630 | Elect 100 $\mu$ F 16V                              |
| C420        | 1      | EA10703590 | Elect 100 $\mu$ F 35V                              |
| C421        | 1      | DD15560370 | Ceramic 56pF $\pm$ 5%                              |
| C422        | 1      | DD15560370 | Ceramic 56pF $\pm$ 5%                              |
| C423        | 1      | DK16392300 | Ceramic 3900pF $\pm$ 10%                           |
| C424        | 1      | DK16392300 | Ceramic 3900pF $\pm$ 10%                           |
| C729        | 1      | DK18103300 | Seramic 0.01 $\mu$ F                               |
| C730        | 1      | DK18103300 | Seramic 0.01 $\mu$ F                               |

| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION   |
|-------------|--------|------------|---|
| C701        | 1      | DD15151370 | Ceramic 150pF $\pm$ 5%  |
| C702        | 1      | DD15151370 | Ceramic 150pF $\pm$ 5%  |
| C703        | 1      | EA10701030 | Elect 100 $\mu$ F 10V   |
| C704        | 1      | EA10701030 | Elect 100 $\mu$ F 10V   |
| C705        | 1      | DD15180370 | Ceramic 18pF $\pm$ 5%   |
| C706        | 1      | DD15180370 | Ceramic 18pF $\pm$ 5%   |
| C707        | 1      | EA47603590 | Elect 47 $\mu$ F 35V  |
| C708        | 1      | EA47603590 | Elect 47 $\mu$ F 35V  |
| C711        | 1      | DK16221510 | Ceramic 220pF $\pm$ 10%   |
| C712        | 1      | DK16221510 | Ceramic 220pF $\pm$ 10%   |
| C717        | 1      | DF16473540 | Film 0.047 $\mu$ F $\pm$ 10%  |
| C718        | 1      | DF16473540 | Film 0.047 $\mu$ F $\pm$ 10%  |
| C720        | 1      | EA10705090 | Elect 100 $\mu$ F 50V   |
| C721        | 1      | EA10705090 | Elect 100 $\mu$ F 50V   |
| C722        | 1      | EA10705090 | Elect 100 $\mu$ F 50V   |
| C801        | 1      | EA47705090 | Elect 470 $\mu$ F 50V   |
| C802        | 1      | EA10701630 | Elect 100 $\mu$ F 16V   |
| C804        | 1      | EA47601630 | Elect 47 $\mu$ F 16V  |
| C805        | 1      | EA33505030 | Elect 3.3 $\mu$ F 50V   |
| C806        | 1      | DF17102350 | Film 0.001 $\mu$ F $\pm$ 20%  |
| C807        | 1      | EA47603590 | Elect 47 $\mu$ F 35V  |
| ΔC808       | 1      | EB68805020 | Elect 6800 $\mu$ F 50V  |
| ΔC809       | 1      | EB68805020 | Elect 6800 $\mu$ F 50V  |
| ΔC810       | 1      | DK18103510 | Ceramic 0.01 $\mu$ F  |
| ΔC811       | 1      | DK18103510 | Ceramic 0.01 $\mu$ F  |
| C812        | 1      | EA10701630 | Elect 100 $\mu$ F 16V   |
| C813        | 1      | EA47605090 | Elect 47 $\mu$ F 50V  |
| C803        | 1      | EA22601630 | (PM250, ONLY)<br>Elect 22 $\mu$ F 16V                                     |
|             |        |            | <b>P700-RESISTORS</b><br>(All Resistors are $\pm$ 5% and $\frac{1}{4}$ W) |
| RD01        | 1      | GD05393140 | 39K $\Omega$  |
| RD02        | 1      | GD05393140 | 39K $\Omega$  |
| RD03        | 1      | GD05471140 | 470 $\Omega$  |
| RD04        | 1      | GD05471140 | 470 $\Omega$  |
| RD05        | 1      | GD05104140 | 100K $\Omega$   |
| RD06        | 1      | GD05104140 | 100K $\Omega$   |
| RD07        | 1      | GD05364140 | 360K $\Omega$   |
| RD08        | 1      | GD05364140 | 360K $\Omega$   |
| RD09        | 1      | GD05562140 | 5.6K $\Omega$   |
| RD10        | 1      | GD05562140 | 5.6K $\Omega$   |
| RD11        | 1      | GD05224140 | 220K $\Omega$   |
| RD12        | 1      | GD05224140 | 220K $\Omega$   |
| RD13        | 1      | GD05221140 | 220 $\Omega$  |
| RD14        | 1      | GD05221140 | 220 $\Omega$  |
| RE01        | 1      | GD05471140 | 470 $\Omega$  |
| RE02        | 1      | GD05471140 | 470 $\Omega$  |
| RE03        | 1      | GD05104140 | 100K $\Omega$   |
| RE04        | 1      | GD05104140 | 100K $\Omega$   |
| RE05        | 1      | GD05471140 | 470 $\Omega$  |
| RE06        | 1      | GD05471140 | 470 $\Omega$  |

| REF. DESIG. | Q'TY | PART NO.   | DESCRIPTION   |               |
|-------------|------|------------|---------------|---------------|
|             | N    |            |               |               |
| RE07        | 1    | GD05562140 | 5.6K $\Omega$ | (PM400, ONLY) |
| RE08        | 1    | GD05562140 | 5.6K $\Omega$ | (PM400, ONLY) |
| RE09        | 1    | GD05103140 | 10K $\Omega$  |               |
| RE10        | 1    | GD05103140 | 10K $\Omega$  |               |
| RE11        | 1    | GD05221140 | 220 $\Omega$  |               |
| RE12        | 1    | GD05221140 | 220 $\Omega$  |               |
| RE13        | 1    | GD05272140 | 2.7K $\Omega$ |               |
| RE14        | 1    | GD05272140 | 2.7K $\Omega$ |               |
| RE15        | 1    | GD05104140 | 100K $\Omega$ |               |
| RE16        | 1    | GD05104140 | 100K $\Omega$ |               |
| RH05        | 1    | GD05302140 | 3K $\Omega$   |               |
| RH06        | 1    | GD05302140 | 3K $\Omega$   |               |
| RH07        | 1    | GD05333140 | 33K $\Omega$  |               |
| RH08        | 1    | GD05333140 | 33K $\Omega$  |               |
|             |      |            | (PM400, ONLY) |               |
| RN01        | 1    | GD05682140 | 6.8K $\Omega$ |               |
| RN02        | 1    | GD05682140 | 6.8K $\Omega$ |               |
| RN03        | 1    | GD05682140 | 6.8K $\Omega$ |               |
| RN04        | 1    | GD05682140 | 6.8K $\Omega$ |               |
| RN05        | 1    | GD05473140 | 47K $\Omega$  |               |
| RN06        | 1    | GD05473140 | 47K $\Omega$  |               |
|             |      |            | (PM250, ONLY) |               |
| RN01        | 1    | GD05822140 | 8.2K $\Omega$ |               |
| RN02        | 1    | GD05822140 | 8.2K $\Omega$ |               |
| RN03        | 1    | GD05822140 | 8.2K $\Omega$ |               |
| RN04        | 1    | GD05822140 | 8.2K $\Omega$ |               |
| RN05        | 1    | GD05333140 | 33K $\Omega$  |               |
| RN06        | 1    | GD05333140 | 33K $\Omega$  |               |
| RN07        | 1    | GG05471140 | 470 $\Omega$  |               |
| RN08        | 1    | GG05471140 | 470 $\Omega$  |               |
| RN09        | 1    | GG05471140 | 470 $\Omega$  |               |
| RN10        | 1    | GG05471140 | 470 $\Omega$  |               |
| RN21        | 1    | GD05153140 | 15K $\Omega$  | (PM400, ONLY) |
| RN21        | 1    | GD05103140 | 10K $\Omega$  | (PM250, ONLY) |
| RN22        | 1    | GD05682140 | 6.8K $\Omega$ |               |
| RN23        | 1    | GD05394140 | 390K $\Omega$ |               |
| RN24        | 1    | GD05224140 | 220K $\Omega$ |               |
| RN25        | 1    | GD05224140 | 220K $\Omega$ |               |
| RN26        | 1    | GD05124140 | 120K $\Omega$ |               |
| RV01        | 1    | GD05104140 | 100K $\Omega$ |               |
| RV02        | 1    | GD05104140 | 100K $\Omega$ |               |
| RV03        | 1    | GD05154140 | 150K $\Omega$ |               |
| RV04        | 1    | GD05154140 | 150K $\Omega$ |               |
| RX51        | 1    | GD05123140 | 12K $\Omega$  |               |
| RX52        | 1    | GD05272140 | 2.7K $\Omega$ |               |
| RX53        | 1    | GA05330010 | 33 $\Omega$   | 1W            |
| R401        | 1    | GD05471140 | 470 $\Omega$  |               |
| R402        | 1    | GD05471140 | 470 $\Omega$  |               |
| R403        | 1    | GD05563140 | 56K $\Omega$  |               |
| R404        | 1    | GD05563140 | 56K $\Omega$  |               |
| R405        | 1    | GD05184140 | 180K $\Omega$ |               |
| R406        | 1    | GD05184140 | 180K $\Omega$ |               |
| R407        | 1    | GD05153140 | 15K $\Omega$  |               |
| R408        | 1    | GD05153140 | 15K $\Omega$  |               |
| R409        | 1    | GD05271140 | 270 $\Omega$  |               |
| R410        | 1    | GD05271140 | 270 $\Omega$  |               |
| R413        | 1    | GD05154140 | 150K $\Omega$ |               |
| R414        | 1    | GD05154140 | 150K $\Omega$ |               |
| R415        | 1    | GD05123140 | 12K $\Omega$  |               |
| R416        | 1    | GD05123140 | 12K $\Omega$  |               |
| R421        | 1    | GD05392140 | 3.9K $\Omega$ |               |
| R422        | 1    | GD05392140 | 3.9K $\Omega$ |               |
| R423        | 1    | GD05331140 | 330 $\Omega$  |               |

| REF. DESIG. | Q'TY | PART NO.   | DESCRIPTION              |                           |
|-------------|------|------------|--------------------------|---------------------------|
|             | N    |            |                          |                           |
| R424        | 1    | GD05331140 | 330 $\Omega$             |                           |
| R425        | 1    | GD05224140 | 220K $\Omega$            |                           |
| R426        | 1    | GD05224140 | 220K $\Omega$            |                           |
| R427        | 1    | GD05221140 | 220 $\Omega$             |                           |
| R428        | 1    | GD05221140 | 220 $\Omega$             |                           |
| R429        | 1    | GD05274140 | 270K $\Omega$            |                           |
| R430        | 1    | GD05274140 | 270K $\Omega$            |                           |
| R431        | 1    | GG05201140 | 220 $\Omega$             |                           |
| R432        | 1    | 75061001P0 | Jumper                   |                           |
| R701        | 1    | GD05471140 | 470 $\Omega$             |                           |
| R702        | 1    | GD05471140 | 470 $\Omega$             |                           |
| R703        | 1    | GD05393140 | 39K $\Omega$             |                           |
| R704        | 1    | GD05393140 | 39K $\Omega$             |                           |
| R705        | 1    | GD05102140 | 1K $\Omega$              |                           |
| R706        | 1    | GD05102140 | 1K $\Omega$              |                           |
| R707        | 1    | GD05103140 | 10K $\Omega$             |                           |
| R708        | 1    | GD05103140 | 10K $\Omega$             |                           |
| R709        | 1    | GD05333140 | 33K $\Omega$             |                           |
| R710        | 1    | GD05333140 | 33K $\Omega$             |                           |
| R711        | 1    | GG05152140 | 1.5K $\Omega$            |                           |
| R712        | 1    | GG05152140 | 1.5K $\Omega$            |                           |
| R713        | 1    | GG05332140 | 3.3K $\Omega$            |                           |
| R714        | 1    | GG05332140 | 3.3K $\Omega$            |                           |
| R715        | 1    | GG05332140 | 3.3K $\Omega$            |                           |
| R716        | 1    | GG05332140 | 3.3K $\Omega$            |                           |
| R717        | 1    | RA02020180 | 2K $\Omega$ (B) Trimming |                           |
| R718        | 1    | RA02020180 | 2K $\Omega$ (B) Trimming |                           |
| R719        | 1    | GG05151140 | 150 $\Omega$             |                           |
| R720        | 1    | GG05151140 | 150 $\Omega$             |                           |
| R721        | 1    | GG05221120 | 220 $\Omega$             |                           |
| R722        | 1    | GG05221120 | 220 $\Omega$             |                           |
| R723        | 1    | GB05272020 | 0.27 $\Omega$            | 2W                        |
| R724        | 1    | GB05272020 | 0.27 $\Omega$            | 2W                        |
| R725        | 1    | GB05272020 | 0.27 $\Omega$            | 2W                        |
| R726        | 1    | GB05272020 | 0.27 $\Omega$            | 2W                        |
| R727        | 1    | GA05100020 | 10 $\Omega$              | 2W                        |
| R728        | 1    | GA05100020 | 10 $\Omega$              | 2W                        |
| R729        | 1    | RC10022120 | 2.2 $\Omega$             | $\pm 10\%$ $\frac{1}{2}W$ |
| R730        | 1    | RC10022120 | 2.2 $\Omega$             | $\pm 10\%$ $\frac{1}{2}W$ |
| R733        | 1    | GD05122140 | 1.2K $\Omega$            |                           |
| R734        | 1    | GD05122140 | 1.2K $\Omega$            |                           |
| R735        | 1    | GA05331020 | 330 $\Omega$             | 2W (PM400, ONLY)          |
| R736        | 1    | GA05331020 | 330 $\Omega$             | 2W (PM400, ONLY)          |
| R739        | 1    | GG05182140 | 1.8K $\Omega$            |                           |
| R741        | 1    | GG05330140 | 330 $\Omega$             |                           |
| R742        | 1    | GG05330140 | 330 $\Omega$             |                           |
| R743        | 1    | GD05222140 | 2.2K $\Omega$            |                           |
| R744        | 1    | GD05222140 | 2.2K $\Omega$            |                           |
| R801        | 1    | GG05472140 | 4.7K $\Omega$            |                           |
| R802        | 1    | GG05472140 | 4.7K $\Omega$            |                           |
| R803        | 1    | GG05152120 | 1.5K $\Omega$            | $\frac{1}{2}W$            |
| R804        | 1    | GD05103140 | 10K $\Omega$             |                           |
| R805        | 1    | GD05123140 | 12K $\Omega$             |                           |
| R806        | 1    | RF05221140 | 220 $\Omega$             | Fusible                   |
| R808        | 1    | GG05332120 | 3.3K $\Omega$            | $\frac{1}{2}W$            |
| R809        | 1    | RF05220120 | 22 $\Omega$              | $\frac{1}{2}W$ Fusible    |
| R745        | 1    | GD05273140 | 27K $\Omega$             |                           |
| R746        | 1    | GD05273140 | 27K $\Omega$             |                           |

| REF. DESIG.                      | Q'TY | PART NO.   | DESCRIPTION                |
|----------------------------------|------|------------|----------------------------|
|                                  | N    |            |                            |
| <b>P700-SEMICONDUCTORS</b>       |      |            |                            |
| QD01                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QD02                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QE01                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QE02                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QE03                             | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| QE04                             | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| QN01*                            | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| QN02*                            | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| QN03*                            | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QN04*                            | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QN05                             | 1    | HD20011050 | Diode 1S1555               |
| QN06                             | 1    | HD20011050 | Diode 1S1555               |
| QN07                             | 1    | HD20011050 | Diode 1S1555               |
| QN08                             | 1    | HD20011050 | Diode 1S1555               |
| QN09                             | 1    | HD20011050 | Diode 1S1555               |
| QN10                             | 1    | HD20011050 | Diode 1S1555               |
| QN11                             | 1    | HD20011050 | Diode 1S1555               |
| QN12                             | 1    | HD20011050 | Diode 1S1555               |
| QN13                             | 1    | HD20005010 | Diode W06B                 |
| QN14                             | 1    | HD20005010 | Diode W06B                 |
| QN15                             | 1    | HD20005010 | Diode W06B                 |
| QN16                             | 1    | HD20005010 | Diode W06B                 |
| QN21*                            | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| QN22*                            | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| QN23*                            | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QN24*                            | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QN25                             | 1    | HD30023090 | Zener WZ071                |
| QN26                             | 1    | HD30023090 | Zener WZ071                |
| QN27                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QN28*                            | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| QN29                             | 1    | HD20001210 | Diode 1S2473 (PM400, ONLY) |
| QN29                             | 1    | 75060501P0 | Jumper (PM250, ONLY)       |
| QN30*                            | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| QN31                             | 1    | HD20005010 | Diode W06B                 |
| QX15                             | 1    | HT403302A0 | Transistor 2SD330          |
| Q401                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| Q402                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| Q403                             | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| Q404                             | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| Q701                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| Q702                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| Q703                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| Q704                             | 1    | HT111272B0 | Transistor 2SA1127(S or T) |
| Q709                             | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| Q710                             | 1    | HT326342B0 | Transistor 2SC2634(S or T) |
| Q719                             | 1    | HD20003210 | Diode 1S2471               |
| Q720                             | 1    | HD20003210 | Diode 1S2471               |
| Q721                             | 1    | HD30030090 | Zener WZ-177               |
| Q722                             | 1    | HD20005010 | Diode W06B                 |
| <b>Note: * are exchangeable.</b> |      |            |                            |
| QN01                             | 1    | HT314001E0 | Transistor 2SC1400         |
| QN02                             | 1    | HT314001E0 | Transistor 2SC1400         |
| QN21                             | 1    | HT314001E0 | Transistor 2SC1400         |
| QN22                             | 1    | HT314001E0 | Transistor 2SC1400         |
| QN28                             | 1    | HT314001E0 | Transistor 2SC1400         |
| QN03                             | 1    | HT107501E0 | Transistor 2SA750          |
| QN04                             | 1    | HT107501E0 | Transistor 2SA750          |
| QN23                             | 1    | HT107501E0 | Transistor 2SA750          |
| QN24                             | 1    | HT107501E0 | Transistor 2SA750          |
| QN30                             | 1    | HT107501E0 | Transistor 2SA750          |

| REF. DESIG.               | Q'TY | PART NO.   | DESCRIPTION                  |
|---------------------------|------|------------|------------------------------|
|                           | N    |            |                              |
| <b>(PM400, ONLY)</b>      |      |            |                              |
| Q705                      | 1    | HT322402A0 | Transistor 2SC2240(GR or BL) |
| Q706                      | 1    | HT322402A0 | Transistor 2SC2240(GR or BL) |
| Q707                      | 1    | HT406662E0 | Transistor 2SD666A(B or C)   |
| Q708                      | 1    | HT406662E0 | Transistor 2SD666A(B or C)   |
| Q711                      | 1    | HT406672A0 | Transistor 2SD667A(B or C)   |
| Q712                      | 1    | HT406672A0 | Transistor 2SD667A(B or C)   |
| Q713                      | 1    | HT206472A0 | Transistor 2SB647A(B or C)   |
| Q714                      | 1    | HT206472A0 | Transistor 2SB647A(B or C)   |
| ΔQ715                     | 1    | HT325782B0 | Transistor 2SC2578(O or Y)   |
| ΔQ716                     | 1    | HT325782B0 | Transistor 2SC2578(O or Y)   |
| ΔQ717                     | 1    | HT111032B0 | Transistor 2SA1103(O or Y)   |
| ΔQ718                     | 1    | HT111032B0 | Transistor 2SA1103(O or Y)   |
| <b>(PM250, ONLY)</b>      |      |            |                              |
| Q705                      | 1    | HT314001E0 | Transistor 2SC1400(E)        |
| Q706                      | 1    | HT314001E0 | Transistor 2SC1400(E)        |
| Q707                      | 1    | HT406662C0 | Transistor 2SD666(C or D)    |
| Q708                      | 1    | HT406662C0 | Transistor 2SD666(C or D)    |
| Q711                      | 1    | HT322742B0 | Transistor 2SC2274(E or F)   |
| Q712                      | 1    | HT322742B0 | Transistor 2SC2274(E or F)   |
| Q713                      | 1    | HT109842B0 | Transistor 2SA984(E or F)    |
| Q714                      | 1    | HT109842B0 | Transistor 2SA984(E or F)    |
| ΔQ715                     | 1    | HT325772B0 | Transistor 2SC2577(O or Y)   |
| ΔQ716                     | 1    | HT325772B0 | Transistor 2SC2577(O or Y)   |
| ΔQ717                     | 1    | HT111022B0 | Transistor 2SA1102(O or Y)   |
| ΔQ718                     | 1    | HT111022B0 | Transistor 2SA1102(O or Y)   |
| Q801                      | 1    | HT406672E0 | Transistor 2SD667(B or C)    |
| Q802                      | 1    | HT326342B0 | Transistor 2SC2634(S or T)   |
| Q805                      | 1    | HD30024090 | Zener WZ-120                 |
| Q810                      | 1    | HD20005010 | Diode W06B                   |
| Q812                      | 1    | HT206472E0 | Transistor 2SB647(B or C)    |
| Q813                      | 1    | HT326342B0 | Transistor 2SC2634(S or T)   |
| <b>(PM400, ONLY)</b>      |      |            |                              |
| Q803                      | 1    | HD30009010 | Zener Low Noise              |
| Q806                      | 1    | HD20011290 | Diode                        |
| Q807                      | 1    | HD20011290 | Diode                        |
| Q808                      | 1    | HD20011290 | Diode                        |
| Q809                      | 1    | HD20011290 | Diode                        |
| <b>(PM250, ONLY)</b>      |      |            |                              |
| Q803                      | 1    | HD30024090 | Zener WZ-120                 |
| ΔQ806                     | 1    | HD20009290 | Diode S2V-20                 |
| ΔQ807                     | 1    | HD20009290 | Diode S2V-20                 |
| ΔQ808                     | 1    | HD20009290 | Diode S2V-20                 |
| ΔQ809                     | 1    | HD20009290 | Diode S2V-20                 |
| <b>P700-MISCELLANEOUS</b> |      |            |                              |
| JV01                      | 1    | YT02040280 | Terminal (PM400, ONLY)       |
| JV02                      | 1    | YT02040280 | Terminal (PM400, ONLY)       |
| JV03                      | 1    | YT02060140 | Terminal (PM250, ONLY)       |
| JV04                      | 1    | YT02050010 | Terminal                     |
| J805                      | 1    | YJ08000270 | Jack, Fuse Holder            |
| J806                      | 1    | YJ08000270 | Jack, Fuse Holder            |
| J807                      | 1    | YJ08000270 | Jack, Fuse Holder            |
| J808                      | 1    | YJ08000270 | Jack, Fuse Holder            |
| L701                      | 1    | LL23915120 | Choke Coil                   |
| L702                      | 1    | LL23915120 | Choke Coil                   |
| S005                      | 1    | SR04020180 | Rotary Switch                |
| SV01                      | 1    | SR04040170 | Rotary Switch (PM400, ONLY)  |
| SV01                      | 1    | SR04030250 | Rotary Switch (PM250, ONLY)  |

| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION   |
|-------------|--------|------------|---|
|             |        |            | <b>PF01-TONE AMP. CIRCUIT BOARD</b>                     |
| PF01        | 1      | YK21271610 | P.W. Board, Tone Amp.                                   |
|             | 1      | ZZ21278610 | P.W. Board Assembly                                     |
|             |        |            | <b>PF01-CAPACITORS</b>                                  |
| CF01        | 1      | DD15101300 | Ceramic 100pF ±5%                                       |
| CF02        | 1      | DD15101300 | Ceramic 100pF ±5%                                       |
| CF03        | 1      | DF16222350 | Film 2200pF ±10%  |
| CF04        | 1      | DF16222350 | Film 2200pF ±10%  |
| CF05        | 1      | DF16472350 | Film 4700pF ±10%  |
| CF06        | 1      | DF16472350 | Film 4700pF ±10%  |
| CF07        | 1      | DF16223350 | Film 0.022μF ±10%                                       |
| CF08        | 1      | DF16223350 | Film 0.022μF ±10%                                       |
| CF09        | 1      | DF16223350 | Film 0.022μF ±10%                                       |
| CF10        | 1      | DF16223350 | Film 0.022μF ±10%                                       |
| CF11        | 1      | DF16822350 | Film 8200pF ±10%  |
| CF12        | 1      | DF16822350 | Film 8200pF ±10%  |
| CF13        | 1      | EA33505030 | Elect 3.3μF 50V   |
| CF14        | 1      | EA33505030 | Elect 3.3μF 50V   |
| CF15        | 1      | EA33505030 | Elect 3.3μF 50V   |
| CF16        | 1      | EA33505030 | Elect 3.3μF 50V   |
| CX01        | 1      | EA10602590 | Elect 10μF 25V  |
| CX02        | 1      | EA10602590 | Elect 10μF 25V  |
| CX03        | 1      | EA10602590 | Elect 10μF 25V  |
| CX04        | 1      | EA10602590 | Elect 10μF 25V  |
| CX05        | 1      | EA10602590 | Elect 10μF 25V  |
| CX06        | 1      | EA10602590 | Elect 10μF 25V  |
|             |        |            | <b>PF01-RESISTORS</b><br>(All Resistors are ±5% and ¼W) |
| RF01        | 1      | GD05123140 | 12KΩ  |
| RF02        | 1      | GD05123140 | 12KΩ  |
| RF03        | 1      | GD05562140 | 5.6KΩ   |
| RF04        | 1      | GD05562140 | 5.6KΩ   |
| RF05        | 1      | GD05334140 | 330KΩ   |
| RF06        | 1      | GD05334140 | 330KΩ   |
| RF07        | 1      | GD05562140 | 5.6KΩ   |
| RF08        | 1      | GD05562140 | 5.6KΩ   |
| RF09        | 1      | GD05562140 | 5.6KΩ   |
| RF10        | 1      | GD05562140 | 5.6KΩ   |
| RF11        | 1      | GD05273140 | 27KΩ  |
| RF12        | 1      | GD05273140 | 27KΩ  |
| RF13        | 1      | GD05153140 | 15KΩ  |
| RF14        | 1      | GD05153140 | 15KΩ  |
| RF15        | 1      | GD05123140 | 12KΩ  |
| RF16        | 1      | GD05123140 | 12KΩ  |
| RF17        | 1      | GD05273140 | 27KΩ  |
| RF18        | 1      | GD05273140 | 27KΩ  |
| RF19        | 1      | GD05334140 | 330KΩ   |
| RF20        | 1      | GD05334140 | 330KΩ   |
| RF21        | 1      | GD05155140 | 1.5MΩ   |
| RF22        | 1      | GD05155140 | 1.5MΩ   |
| RF23        | 1      | GD05683140 | 68KΩ  |
| RF24        | 1      | GD05683140 | 68KΩ  |
| RF25        | 1      | GD05473140 | 47KΩ  |
| RF26        | 1      | GD05473140 | 47KΩ  |
| RF27        | 1      | GD05472140 | 4.7KΩ   |
| RF28        | 1      | GD05472140 | 4.7KΩ   |
| RF29        | 1      | GD05221140 | 220Ω  |
| RF30        | 1      | GD05221140 | 220Ω  |

| REF. DESIG. | Q'TY N | PART NO.   | DESCRIPTION                              |
|-------------|--------|------------|--|
| RF31        | 1      | GD05474140 | 470KΩ                                    |
| RF32        | 1      | GD05474140 | 470KΩ                                    |
| RF33        | 1      | RS01040130 | 100KΩ(B) x 2 Variable                    |
| RF34        | 1      | RS01040130 | 100KΩ(B) x 2 Variable                    |
| RF35        | 1      | RS01040130 | 100KΩ(B) x 2 Variable                    |
| RX25        | 1      | GD05822140 | 8.2KΩ                                    |
| RX26        | 1      | GD05822140 | 8.2KΩ                                    |
| RX27        | 1      | GD05182140 | 1.8KΩ                                    |
| RX28        | 1      | GD05182140 | 1.8KΩ                                    |
| RX29        | 1      | GD05121140 | 120Ω                                     |
| RX30        | 1      | GD05121140 | 120Ω                                     |
| RX31        | 1      | GD05272140 | 2.7KΩ                                    |
| RX32        | 1      | GD05272140 | 2.7KΩ                                    |
| RX33        | 1      | RA02030140 | 20KΩ(B) Trimming                         |
| RX34        | 1      | RA02030140 | 20KΩ(B) Trimming                         |
| RX35        | 1      | GD05394140 | 390KΩ                                    |
| RX36        | 1      | GD05394140 | 390KΩ                                    |
| RX37        | 1      | GD05682140 | 6.8KΩ                                    |
| RX38        | 1      | GD05682140 | 6.8KΩ                                    |
| RX39        | 1      | GD05822140 | 8.2KΩ                                    |
| RX40        | 1      | GD05822140 | 8.2KΩ                                    |
| RX41        | 1      | GD05103140 | 10KΩ                                     |
| RX42        | 1      | GD05103140 | 10KΩ                                     |
| RX43        | 1      | GD05562140 | 5.6KΩ                                    |
| RX44        | 1      | GD05562140 | 5.6KΩ                                    |
| RX45        | 1      | GD05181140 | 180Ω                                     |
| RX46        | 1      | GD05181140 | 180Ω                                     |
| RX47        | 1      | GD05103140 | 10KΩ                                     |
| RX48        | 1      | GD05103140 | 10KΩ                                     |
| RX49        | 1      | GD05103140 | 10KΩ                                     |
| RX50        | 1      | GD05103140 | 10KΩ                                     |
|             |        |            | <b>PX00-SEMICONDUCTORS</b>               |
| QF01        | 1      | HT326342B0 | Transistor 2SC2634(S or T)               |
| QF02        | 1      | HT326342B0 | Transistor 2SC2634(S or T)               |
| QF03        | 1      | HT111272B0 | Transistor 2SA1127(S or T)               |
| QF04        | 1      | HT111272B0 | Transistor 2SA1127(S or T)               |
| QX05        | 1      | HD20011050 | Diode 1S1555                             |
| QX06        | 1      | HD20011050 | Diode 1S1555                             |
| QX07        | 1      | HD20011050 | Diode 1S1555                             |
| QX08        | 1      | HD20011050 | Diode 1S1555                             |
| QX09        | 1      | HT107501E0 | Transistor 2SA750(E)                     |
| QX10        | 1      | HT107501E0 | Transistor 2SA750(E)                     |
| QX11        | 1      | HT314001E0 | Transistor 2SC1400(E)                    |
| QX12        | 1      | HT314001E0 | Transistor 2SC1400(E)                    |
| QX13        | 1      | HH00009030 | Thermistor SDT-1000                      |
| QX14        | 1      | HH00009030 | Thermistor SDT-1000                      |
|             |        |            | <b>PG00-VOLUME CONTROL CIRCUIT BOARD</b> |
| PG00        | 1      | YK21271620 | P.W. Board, Volume Control               |
|             | 1      | ZZ21278620 | P.W. Board Assembly                      |
|             |        |            | <b>PG00-CAPACITORS</b>                   |
| CG01        | 1      | DK16681300 | Ceramic 680pF ±10%                       |
| CG02        | 1      | DK16681300 | Ceramic 680pF ±10%                       |
| CG03        | 1      | DF16473350 | Film 0.047μF ±10%                        |
| CG04        | 1      | DF16473350 | Film 0.047μF ±10%                        |



| REF. DESIG. | Q'TY |   | PART NO.   | DESCRIPTION   |
|-------------|------|---|------------|---|
|             |      | N |            |   |
|             |      |   |            | <b>PG00-RESISTORS</b><br>(All Resistors are ±5% and ¼W) |
| RG01        | 1    |   | GD05392140 | 3.9KΩ   |
| RG02        | 1    |   | GD05392140 | 3.9KΩ   |
| RG03        | 1    |   | GD05333140 | 33KΩ  |
| RG04        | 1    |   | GD05333140 | 33KΩ  |
| RG05        | 1    |   | GD05822140 | 8.2KΩ   |
| RG06        | 1    |   | GD05822140 | 8.2KΩ   |
| RG07        | 1    |   | RM01040270 | 100KΩ Variable  |
| RG08        | 1    |   | RK02040080 | 200KΩ Variable  |
|             |      |   |            | <b>PJ00-MIC AMP. CIRCUIT BOARD</b>                      |
| PJ00        | 1    |   | YK21271640 | P.W. Board, Mic Amp.                                    |
|             | 1    |   | ZZ21278640 | P.W. Board Assembly                                     |
|             |      |   |            | <b>PJ00-CAPACITORS</b>                                  |
| CJ01        | 1    |   | DD15331370 | Ceramic 330pF ±5%                                       |
| CJ02        | 1    |   | DD15331370 | Ceramic 330pF ±5%                                       |
| CJ03        | 1    |   | EA10505030 | Elect 1μF 50V   |
| CJ04        | 1    |   | DD15560370 | Ceramic 56pF ±5%  |
| CJ05        | 1    |   | EA10601630 | Elect 10μF 16V  |
| CJ06        | 1    |   | EA10505030 | Elect 1μF 50V   |
| CJ07        | 1    |   | EA33505030 | Elect 3.3μF 50V   |
| CJ08        | 1    |   | DD15151370 | Ceramic 150pF ±5%                                       |
| CJ09        | 1    |   | EA22601630 | Elect 22μF 16V  |
| CJ10        | 1    |   | DK18103300 | Ceramic 0.01μF +100%-0                                  |
| CJ11        | 1    |   | DD11100370 | Ceramic 10pF ±0.5pF                                     |
| CJ12        | 1    |   | EA10701630 | Elect 100μF 16V   |
|             |      |   |            | <b>PJ00-RESISTORS</b><br>(All Resistors are ±5% and ¼W) |
| RJ01        | 1    |   | GD05103140 | 10KΩ  |
| RJ02        | 1    |   | GD05471140 | 470Ω  |
| RJ03        | 1    |   | GD05474140 | 470KΩ   |
| RJ04        | 1    |   | GD05103140 | 10KΩ  |
| RJ05        | 1    |   | GD05682140 | 6.8KΩ   |
| RJ06        | 1    |   | GD05561140 | 560Ω  |
| RJ07        | 1    |   | GD05224140 | 220KΩ   |
| RJ08        | 1    |   | GD05473140 | 47KΩ  |
| RJ09        | 1    |   | GD05681140 | 680KΩ   |
| RJ10        | 1    |   | RM01040280 | 100KΩ(B) x 2 Variable                                   |
| RJ11        | 1    |   | GD05472140 | 4.7KΩ   |
| RJ12        | 1    |   | GD05101140 | 100Ω  |
|             |      |   |            | <b>PJ00-SEMICONDUCTORS</b>                              |
| QJ01        | 1    |   | HT326342B0 | Transistor 2SC2634(S or T)                              |
| QJ02        | 1    |   | HT326342B0 | Transistor 2SC2634(S or T)                              |
|             |      |   |            | <b>PJ00-JACK</b>  |
| JJ01        | 1    |   | YJ01001340 | Jack, Mic   |
|             |      |   |            | <b>PS00-LOUDNESS CIRCUIT BOARD</b>                      |
| PS00        | 1    |   | YK21271630 | P.W. Board, Loudness                                    |
|             | 1    |   | ZZ21278630 | P.W. Board Assembly                                     |
|             |      |   |            | <b>PS00-SWITCHES</b>                                    |
| SS01        | 1    |   | SP02020420 | Push Switch, Spk. System 1, 2                           |
| SS02        | 1    |   | SP02010260 | Push Switch, Loudness                                   |

| REF. DESIG. | Q'TY |   | PART NO.   | DESCRIPTION   |
|-------------|------|---|------------|---|
|             |      | N |            |   |
|             |      |   |            | <b>PX00-LED CIRCUIT BOARD</b>                           |
| PX00        | 1    |   | YK21271650 | P.W. Board, Led   |
|             | 1    |   | ZZ21278650 | P.W. Board Assembly                                     |
|             |      |   |            | <b>PX00-RESISTORS</b><br>(All Resistors are ±5% and ¼W) |
| RX01        | 1    |   | GD05182140 | 1.8KΩ   |
| RX02        | 1    |   | GD05182140 | 1.8KΩ   |
| RX03        | 1    |   | GD05182140 | 1.8KΩ   |
| RX04        | 1    |   | GD05182140 | 1.8KΩ   |
| RX05        | 1    |   | GD05182140 | 1.8KΩ   |
| RX06        | 1    |   | GD05182140 | 1.8KΩ   |
| RX07        | 1    |   | GD05182140 | 1.8KΩ   |
| RX08        | 1    |   | GD05182140 | 1.8KΩ   |
| RX09        | 1    |   | GD05182140 | 1.8KΩ   |
| RX10        | 1    |   | GD05182140 | 1.8KΩ   |
| RX11        | 1    |   | GD05182140 | 1.8KΩ   |
| RX12        | 1    |   | GD05182140 | 1.8KΩ   |
| RX13        | 1    |   | GD05182140 | 1.8KΩ   |
| RX14        | 1    |   | GD05182140 | 1.8KΩ   |
| RX15        | 1    |   | GD05182140 | 1.8KΩ   |
| RX16        | 1    |   | GD05182140 | 1.8KΩ   |
| RX17        | 1    |   | GD05182140 | 1.8KΩ   |
| RX18        | 1    |   | GD05182140 | 1.8KΩ   |
| RX19        | 1    |   | GD05182140 | 1.8KΩ   |
| RX20        | 1    |   | GD05182140 | 1.8KΩ   |
| RX21        | 1    |   | GD05182140 | 1.8KΩ   |
| RX22        | 1    |   | GD05182140 | 1.8KΩ   |
| RX23        | 1    |   | GD05182140 | 1.8KΩ   |
| RX24        | 1    |   | GD05182140 | 1.8KΩ   |
|             |      |   |            | <b>PX00-SEMICONDUCTORS</b>                              |
| QX01        | 1    |   | HI11202320 | L.E.D. 12DOT  |
| QX02        | 1    |   | HI11202320 | L.E.D. 12DOT  |
| QX03        | 1    |   | HC10002320 | IC IR-2418A   |
| QX04        | 1    |   | HC10002320 | IC IR-2418A   |
|             |      |   |            | <b>PY00-PILOT LAMP CIRCUIT BOARD</b>                    |
| PY00        | 1    |   | YK21271660 | P.W. Board, Pilot Lamp                                  |
|             | 1    |   | ZZ21278660 | P.W. Board Assembly                                     |
| QY01        | 1    |   | HI10009020 | L.E.D. LN26RP   |

|          |                     |
|----------|---------------------|
| (W01-99) | Assembly and Wiring |
| (T01-99) | Adjustment          |
| (X01-00) | Correction          |

## 14. TECHNICAL SPECIFICATIONS

MODEL PM250

### AUDIO SECTION

|  |                |
|--|----------------|
| POWER OUTPUT, DIN, 4 OHM, PER CHANNEL .....  | 50W            |
| POWER OUTPUT, FTC AMERICAN STANDARDS, 4 OHM, PER CHANNEL .....                               | 32W            |
| TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT .....  | 0.1%           |
| I.M. DISTORTION AT RATED POWER OUTPUT<br>(250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1) ..... | 0.1%           |
| POWER OUTPUT, DIN, 8 OHM, PER CHANNEL .....  | 39W            |
| POWER OUTPUT, FTC AMERICAN STANDARDS, 8 OHM, PER CHANNEL .....                               | 25W            |
| TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT .....  | 0.05%          |
| I.M. DISTORTION AT RATED POWER OUTPUT<br>(250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1) ..... | 0.05%          |
| POWER BANDWIDTH .....  | 20 Hz ~ 50 kHz |
| DAMPING FACTOR 8 OHM .....   | 100            |

### Frequency Response

|                    |                |
|--------------------|----------------|
| Phono (RIAA) ..... | ±0.5 dB        |
| Aux (±1 dB) .....  | 20 Hz ~ 50 kHz |

### Input Terminals

|                              |           |
|------------------------------|-----------|
| Phono: Input Impedance ..... | 47 k ohms |
| Input Capacitance .....      | 250 pF    |
| Input Sensitivity .....      | 2.8 mV    |
| Overload Margin .....        | 35 dB     |
| Aux: Input Impedance .....   | 25 k ohms |
| Input Sensitivity .....      | 150 mV    |

### Phono Equivalent Input Noise

|   |        |
|---|--------|
| Phono Dynamic Range (Ratio of input overload to equivalent input noise) ..... | 109 dB |
|---|--------|

### Channel Balance (0 to -40 dB/40 Hz ~ 16 kHz)

|             |        |
|-------------|--------|
| Phono ..... | 3.0 dB |
| Aux .....   | 3.0 dB |

### Interchannel Crosstalk

|                    |       |
|--------------------|-------|
| Phono, 1 kHz ..... | 47 dB |
| Aux, 1 kHz .....   | 62 dB |
| Tape, 1 kHz .....  | 62 dB |

### Intersource Crosstalk (Worst Point), 1 kHz

|                             |        |
|-----------------------------|--------|
| Output Voltage, 1 kHz ..... | 415 mV |
|-----------------------------|--------|

### Output Voltage, 1 kHz

|                |        |
|----------------|--------|
| Tape Out ..... | 415 mV |
|----------------|--------|

### Output Impedance, 1 kHz

|                |          |
|----------------|----------|
| Tape Out ..... | 220 ohms |
|----------------|----------|

### GENERAL

|                          |                 |
|--------------------------|-----------------|
| Power Requirements ..... | 220 V AC, 50 Hz |
|--------------------------|-----------------|

(E and N versions are featuring an external voltage selector for use on 110 V.)

|   |           |
|---|-----------|
| Power Consumption at Rated Output, both Channels Driven ..... | 140 ± 20W |
|---|-----------|

|                    |          |
|--------------------|----------|
| Idling Power ..... | 18W ± 5W |
|--------------------|----------|

### Semiconductor Complement

|                           |    |
|---------------------------|----|
| Transistors .....         | 47 |
| Diodes .....              | 29 |
| Integrated Circuits ..... | 2  |

### Dimensions

|                    |                         |
|--------------------|-------------------------|
| Panel Width .....  | 416 mm (16-3/8 inches)  |
| Panel Height ..... | 146 mm ( 5-3/4 inches)  |
| Depth .....        | 243 mm ( 9-9/16 inches) |

### Weight

|                           |                   |
|---------------------------|-------------------|
| Unit Alone .....          | 6.5 kg (14.3 lbs) |
| Packed for Shipment ..... | 8.0 kg (17.6 lbs) |

**AUDIO SECTION**

|  |                |
|--|----------------|
| POWER OUTPUT, DIN, 4 OHM, PER CHANNEL .....  | 66W            |
| POWER OUTPUT, FTC AMERICAN STANDARDS, 4 OHM, PER CHANNEL .....                               | 45W            |
| TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT .....  | 0.1%           |
| I.M. DISTORTION AT RATED POWER OUTPUT<br>(250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1) ..... | 0.1%           |
| POWER OUTPUT, DIN, 8 OHM, PER CHANNEL .....  | 54W            |
| POWER OUTPUT, FTC AMERICAN STANDARDS, 8 OHM, PER CHANNEL .....                               | 36W            |
| TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT .....  | 0.05%          |
| I.M. DISTORTION AT RATED POWER OUTPUT<br>(250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1) ..... | 0.05%          |
| POWER BANDWIDTH .....  | 15 Hz ~ 60 kHz |
| DAMPING FACTOR 8 OHM .....   | 100            |

Frequency Response

|                    |                |
|--------------------|----------------|
| Phono (RIAA) ..... | ±0.5 dB        |
| Aux (±1 dB) .....  | 20 Hz ~ 50 kHz |

Input Terminals

|                              |           |
|------------------------------|-----------|
| Phono: Input Impedance ..... | 47 k ohms |
| Input Capacitance .....      | 250 pF    |
| Input Sensitivity .....      | 2.8 mV    |
| Overload Margin .....        | 35 dB     |
| Aux: Input Impedance .....   | 25 k ohms |
| Input Sensitivity .....      | 150 mV    |

Phono Equivalent Input Noise

|   |        |
|---|--------|
| Phono Dynamic Range (Ratio of input overload to equivalent input noise) ..... | 109 dB |
|---|--------|

Channel Balance (0 to -40 dB/40 Hz ~ 16 kHz)

|             |        |
|-------------|--------|
| Phono ..... | 3.0 dB |
| Aux .....   | 3.0 dB |

Interchannel Crosstalk

|                    |       |
|--------------------|-------|
| Phono, 1 kHz ..... | 47 dB |
| Aux, 1 kHz .....   | 62 dB |
| Tape, 1 kHz .....  | 62 dB |

Intersource Crosstalk (Worst Point), 1 kHz

|       |       |
|-------|-------|
| ..... | 55 dB |
|-------|-------|

Output Voltage, 1 kHz

|                |        |
|----------------|--------|
| Tape Out ..... | 415 mV |
|----------------|--------|

Output Impedance, 1 kHz

|                |          |
|----------------|----------|
| Tape Out ..... | 220 ohms |
|----------------|----------|

**GENERAL**

|   |                 |
|---|-----------------|
| Power Requirements .....  | 220 V AC, 50 Hz |
| (E and N versions are featuring an external voltage selector for use on 110 V.) |                 |

|   |            |
|---|------------|
| Power Consumption at Rated Output, both Channels Driven ..... | 160W ± 20W |
|---|------------|

|                    |          |
|--------------------|----------|
| Idling Power ..... | 14W ± 5W |
|--------------------|----------|

Semiconductor Complement

|                           |    |
|---------------------------|----|
| Transistors .....         | 47 |
| Diodes .....              | 29 |
| Integrated Circuits ..... | 2  |

Dimensions

|                    |                         |
|--------------------|-------------------------|
| Panel Width .....  | 416 mm (16-3/8 inches)  |
| Panel Height ..... | 146 mm ( 5-3/4 inches)  |
| Depth .....        | 243 mm ( 9-9/16 inches) |

Weight

|                           |                   |
|---------------------------|-------------------|
| Unit Alone .....          | 7.0 kg (15.4 lbs) |
| Packed for Shipment ..... | 8.5 kg (18.7 lbs) |