

SERVICE  
MANUAL **PM-84**

**marantz®**

**model PM-84**

*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

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

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

MARANTZ S.A.  
326 Avenue Louise Bte 32  
1050 Bruxelles  
Belgium

MARANTZ AUDIO U.K. LTD  
Unit 15/16  
Saxon Way Industrial Estate  
Moor Lane  
Harmondsworth U87 OLW  
Great Britain

MARANTZ AUSTRIA Ge.M.B.H.  
25 Franz Lisztgasse  
2380 Perchtoldsdorf  
Austria

MARANTZ BELGIUM  
45 Rue Auguste Van Zande  
1080 Brussels  
Belgium

MARANTZ DENMARK  
Bregnerødvej 132b  
3460 Birkerød  
Denmark

MARANTZ FRANCE  
4 Rue Bernard Palissy  
92600 Asnières  
France

MARANTZ GERMANY  
G.M.B.H.  
Max Planckstrasse 22  
6072 Dreieich 1  
Germany

MARANTZ ITALIANA S.p.A.  
Via Monte Napoleone 10  
20121 Milano  
Italy

MARANTZ NEDERLAND B.V.  
Wagenmackersweg 3  
3449 H.V. Woerden  
Netherlands

#### AUSTRALIA

MARANTZ AUSTRALIA PTY  
19 Chard Road  
Brookvale, NSW 2100  
Australia

#### U.S.A.

MARANTZ COMPANY, INC.  
National Service Dept.  
P.O. Box 577  
Chatsworth, CA 91311  
U.S.A.

#### JAPAN

MARANTZ JAPAN, INC.  
35-1, 7-chome, Sagami-cho  
Sagamihara-shi, Kanagawa  
Japan

MARANTZ SVENSKA A.B.  
Svartviksvägen 56  
Traneberg  
Bromma  
Sweden

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.

### NOTE—FOR U.S.A. ONLY

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.

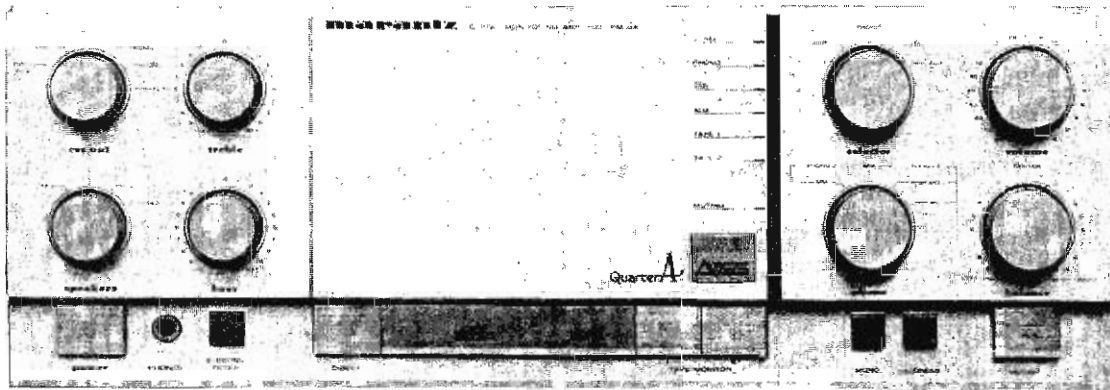
Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from SUPERSCOPE NATIONAL PARTS DEPARTMENT.

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## MODEL PM-84 STEREO PRE MAIN AMPLIFIER



### INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz Model PM-84 Stereo Pre Main 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.

### 1. SHOCK, FIRE HAZARD SERVICE TEST:

**CAUTION:** After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit be repaired or corrected before AC power is applied, and verified before return to user/customer.

Ref. UL standard NO. 1270. Para. 66. 3. D (Mandatory Test after servicing Electrical Appliances, effective 7-1-83).

### 2. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of Model PM-84 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. Phono Amp . . . . . mounted on P.W. Board P400
2. Voltage Amp . . . . . mounted on P.W. Board P700
3. Main Amp . . . . . mounted on P.W. Board P701
4. Bias TR. . . . . mounted on P.W. Board P702
5. Bias TR. . . . . mounted on P.W. Board P703
6. Tone . . . . . mounted on P.W. Board PE00
7. Tone Volume . . . . . mounted on P.W. Board PE01
8. Volume . . . . . mounted on P.W. Board PG00
9. Filter . . . . . mounted on P.W. Board PH00
10. Fuse . . . . . mounted on P.W. Board PP00
11. Switch . . . . . mounted on P.W. Board PS00
12. Speaker Switch . . . . . mounted on P.W. Board PT00
13. Speaker Terminal . . . . . mounted on P.W. Board PT50
14. Headphone Jack . . . . . mounted on P.W. Board PW00
15. Function LED . . . . . mounted on P.W. Board PY00

### 3. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model PM-84 Stereo Pre Main Amplifier.

Item	Use
AM Signal Generator	Signal source for AM alignment
Test Loop	Use with AM Signal Generator
FM Signal Generator MPX Signal Generator	Signal source for FM alignment Stereo separation alignment and trouble shooting
Distortion Analyzer Audio Oscillator AC VTVM	Distortion measurements Sinewave and squarewave signal source Voltage measurements (AC)
Oscilloscope	Waveform analysis and trouble shooting
Frequency Counter	MPX Oscillator adjustment (VCO)
Circuit Tester	Trouble shooting
DC VTVM	Voltage measurements (DC)
AC Wattmeter	Monitors primary power to tuner
Line Voltmeter	Monitors potential of primary power to tuner
Variable Autotransformer	Adjusts level of primary power to tuner
DC Digital Voltmeter	Adjust the DC offset of main amplifier output. Adjust the center meter of FM tuner.

### 4. ALIGNMENT PROCEDURES

#### 4.1 Idling Adjustment

1. Set the speaker terminal load in open condition.
2. Connect a digital voltmeter between TP-1 and TP-2 and short-circuit TP-5 to ground.
3. Adjust R733 so that the output of the digital voltmeter becomes 15mV. (Class AB)
4. Disconnect TP-5 from ground and adjust R729 so that the digital voltmeter output becomes 270mV. (Class A LOW)
5. Short-circuit TP-5 and TP-6 and adjust R725 so that the digital voltmeter output becomes 700mV. (Class A HIGH)
6. In the same manner, insert a digital voltmeter between TP-3 and TP-4 and adjust R734 (Class AB), R730 (Class A LOW) and R726 (Class A HIGH) using TP-5, TP-6.

Note: Please carry out adjustments in the order Class AB, then Class A LOW, and finally Class A HIGH.

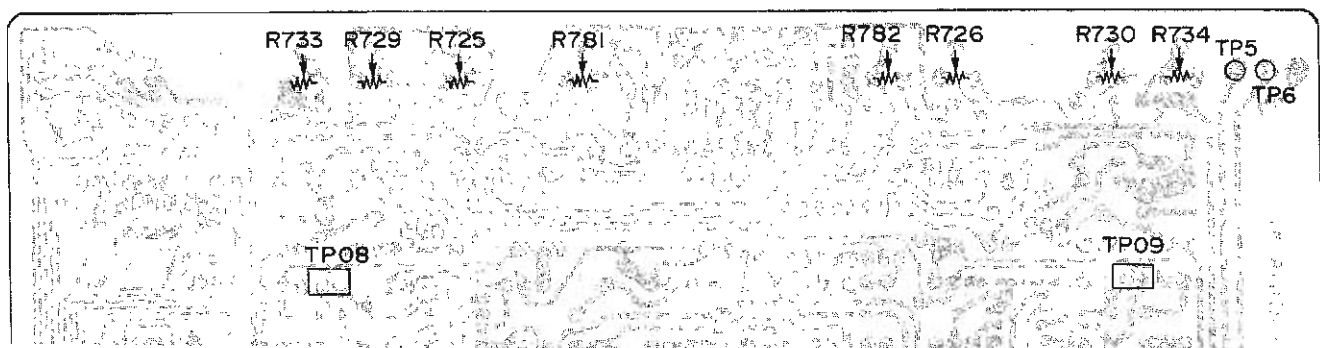
#### 4.2 DC Offset Adjustment

1. Set the speaker terminal load in open condition.
2. Connect a digital voltmeter to J604-2 and apply 1k ohm across both terminals of TP-8.
3. Adjust R781 so that the output of the digital voltmeter becomes 0V.
4. In the same manner, adjust JP604-1 using TP-8 and R782.

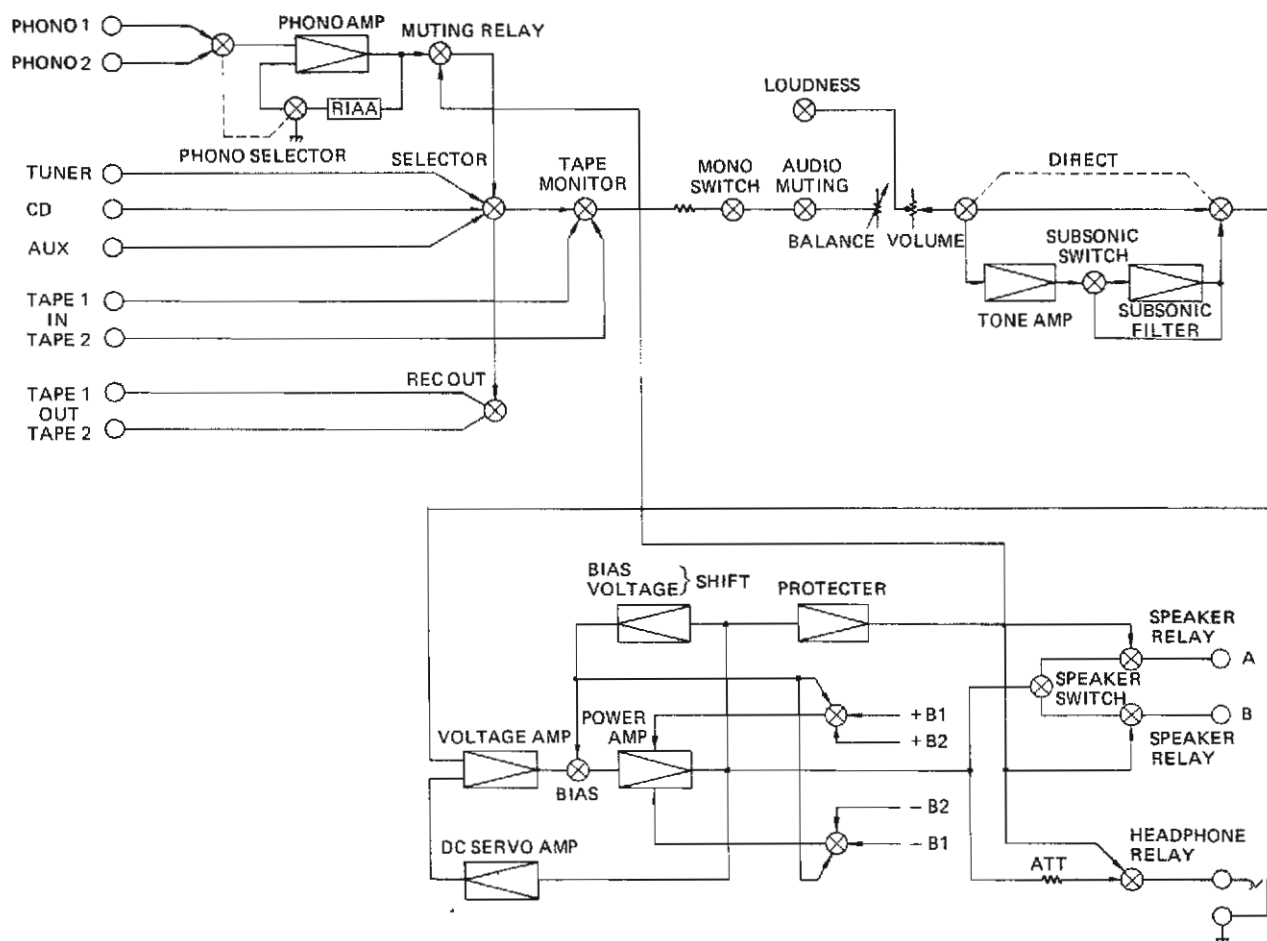
Note: After adjustment, please be sure to disconnect the 1k ohm resistor.

### 5. ADJUSTMENT POINT

P700



## 6. BLOCK DIAGRAM

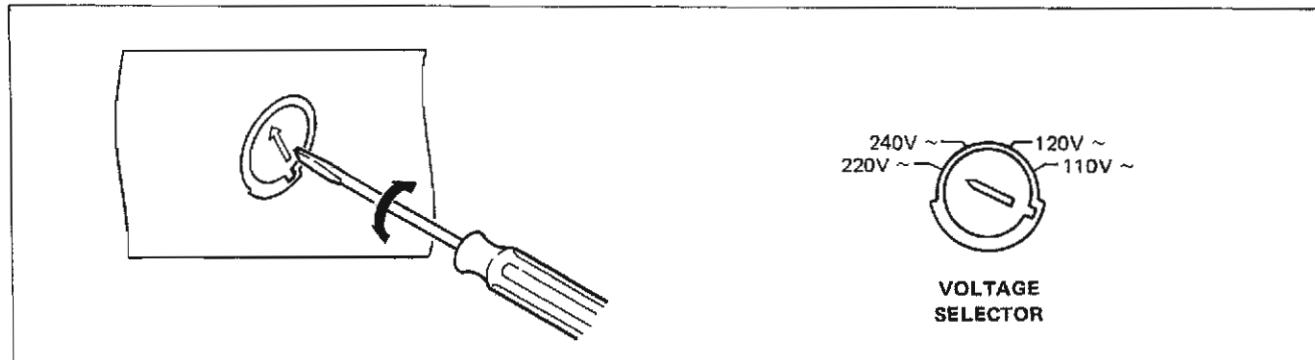


## 7. VOLTAGE CONVERSION

● EUROPEAN MODEL ONLY

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

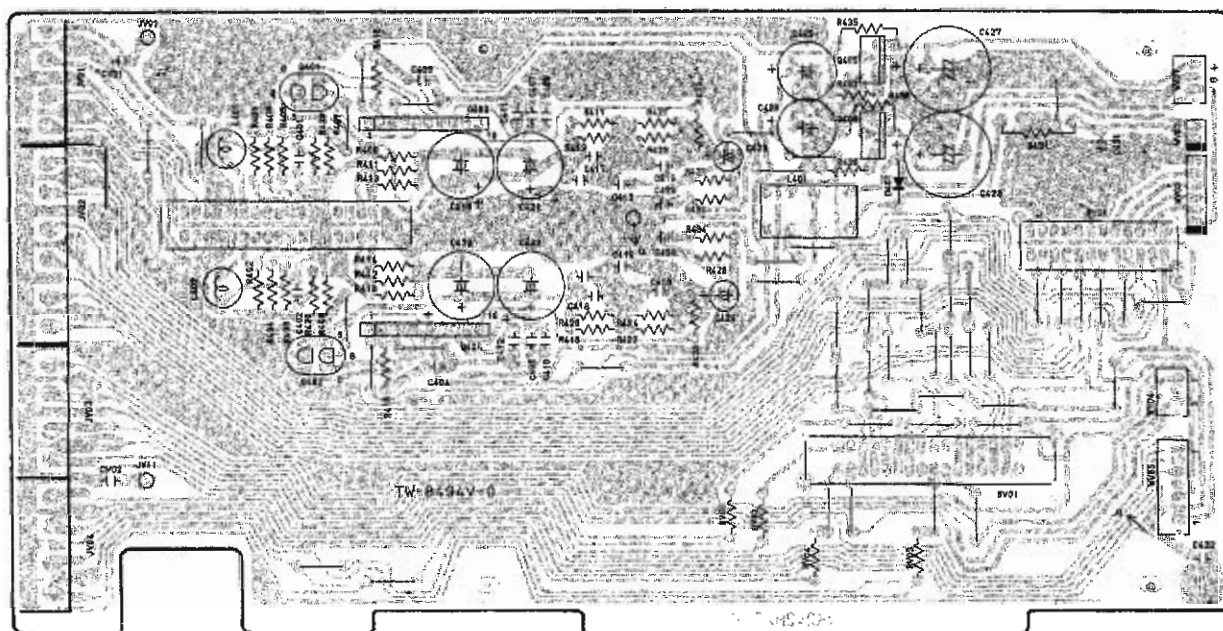
### Voltage Conversion Chart



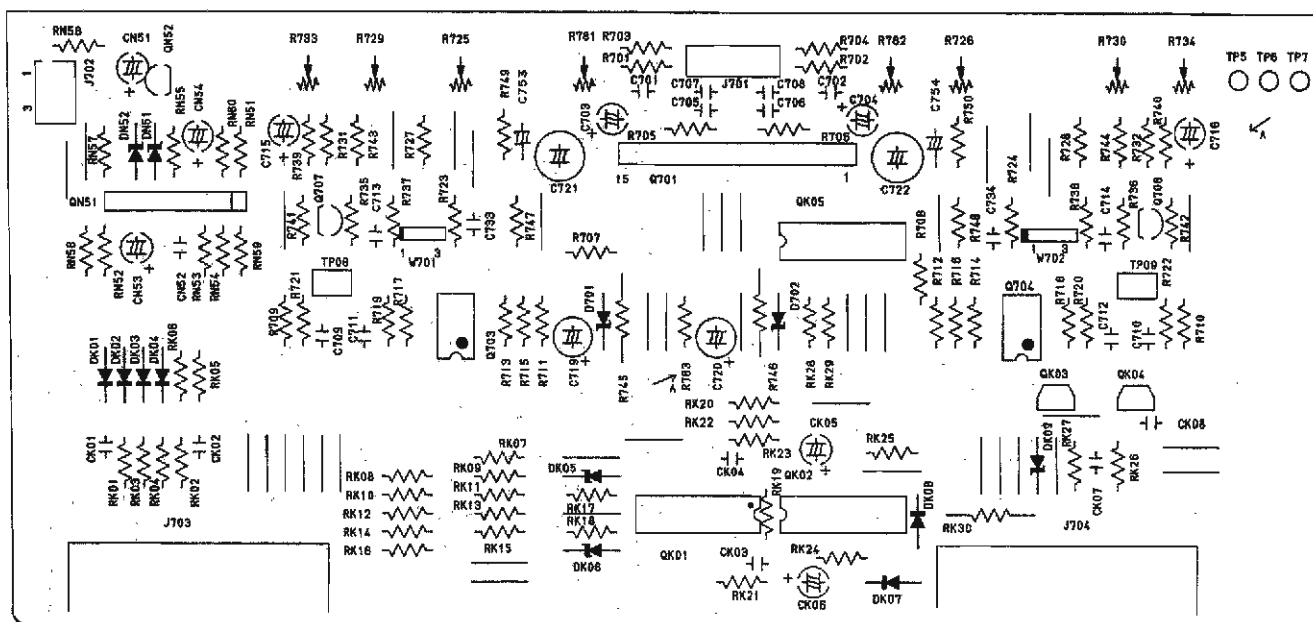
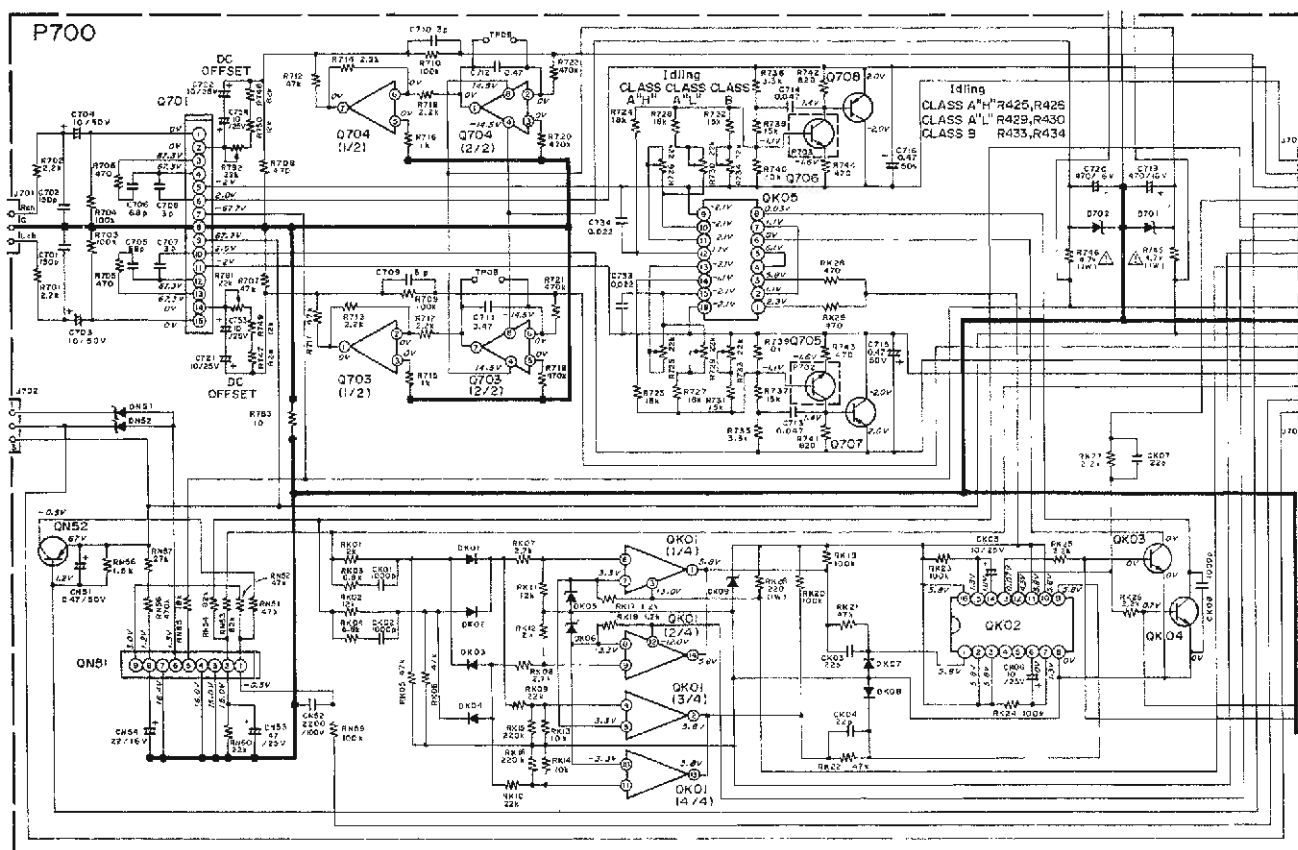
**Note on safety:**

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

### 8. 1. Phono Amp (P400) Schematic Diagram and Component Locations

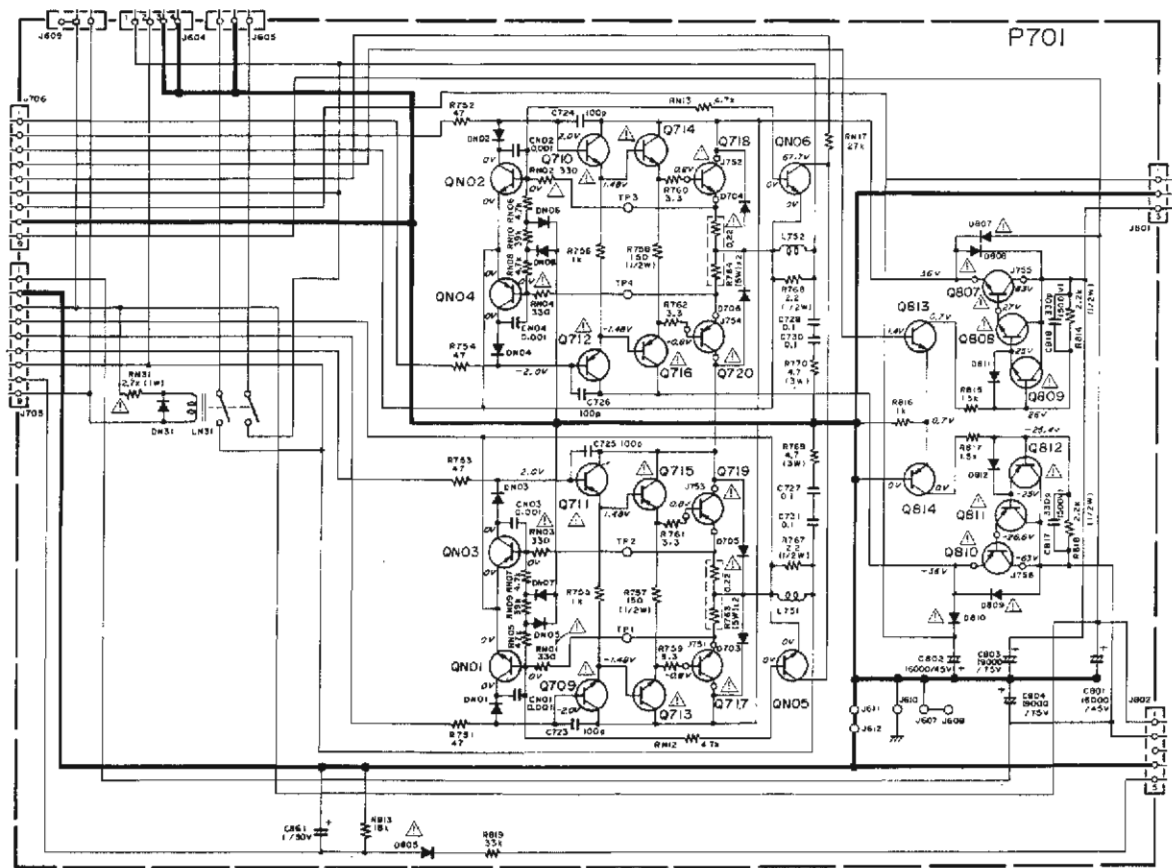


## 8.2. Voltage Amp (P700) Schematic Diagram and Component Locations

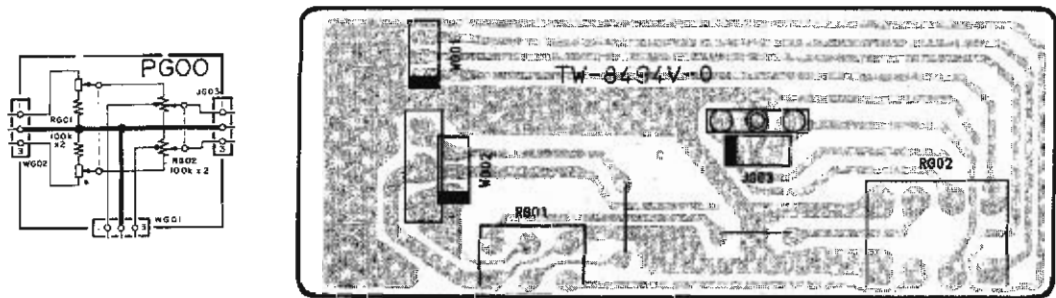




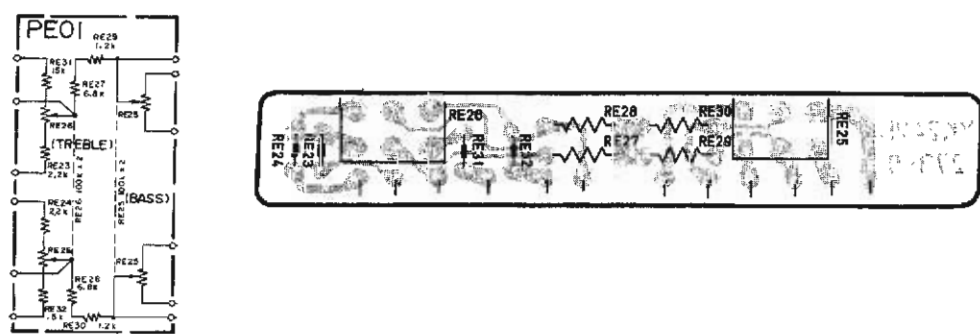
8. 3. Main Amp (P701) Schematic Diagram and Component Locations

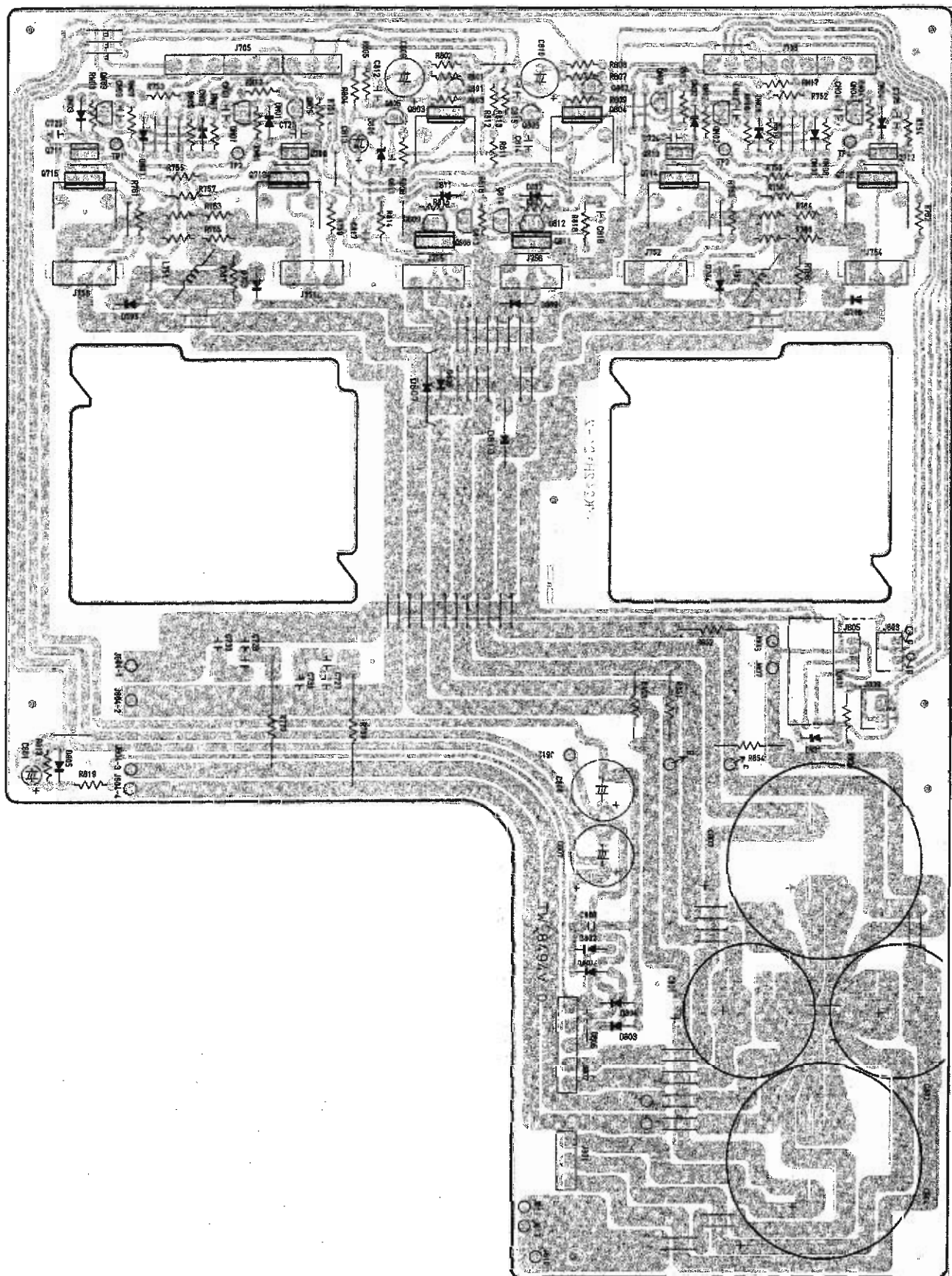


8. 4. Volume (PG00) Schematic Diagram and Component Locations

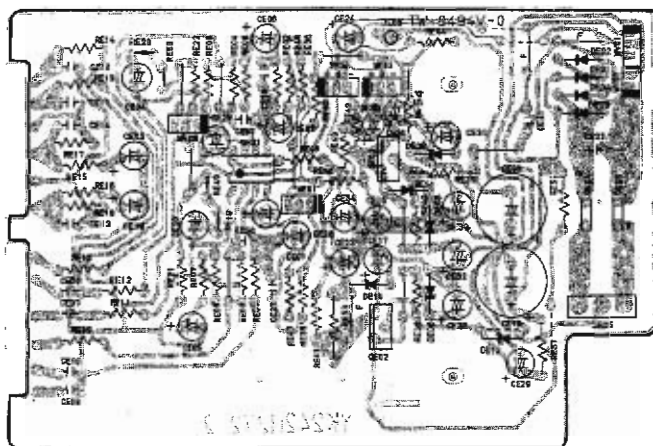
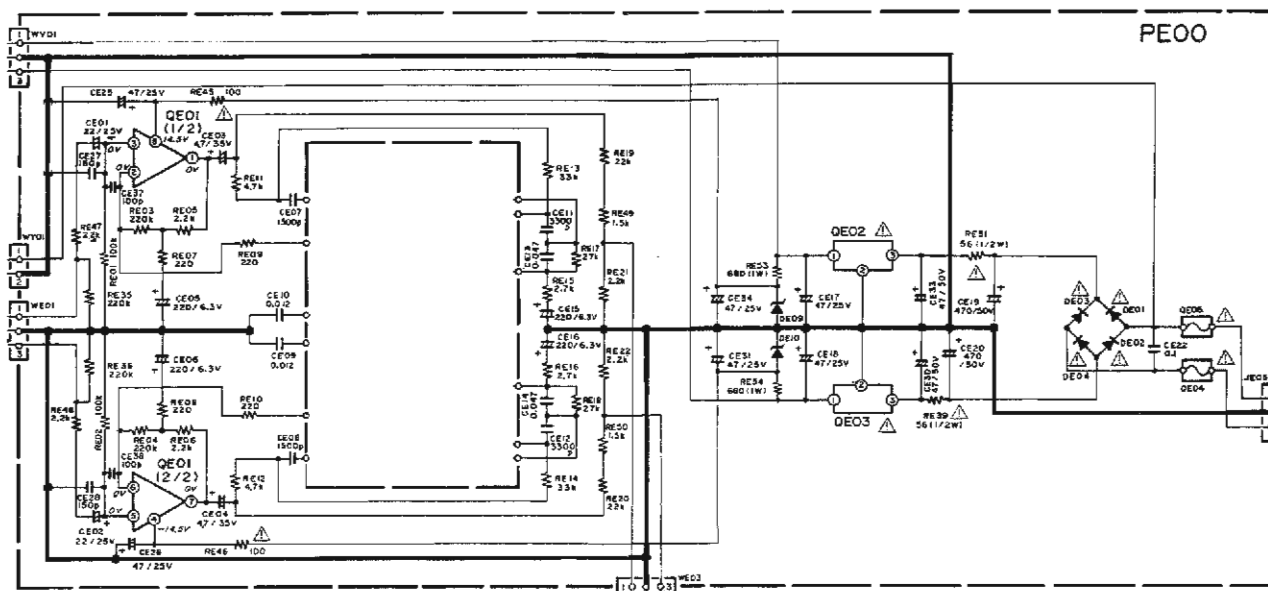


8. 5. Tone Volume (PE01) Schematic Diagram and Component Locations

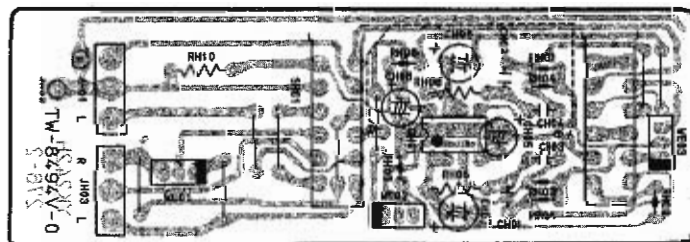
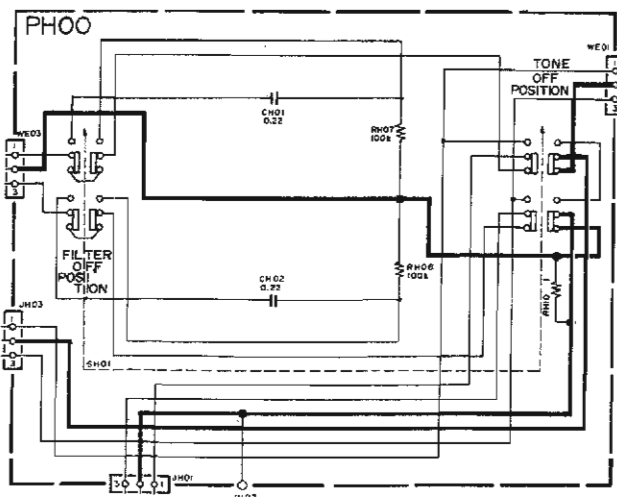




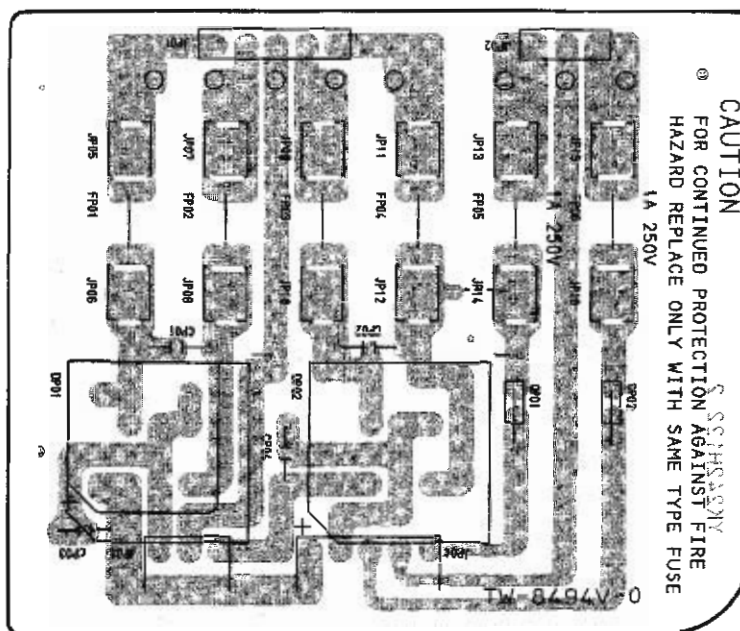
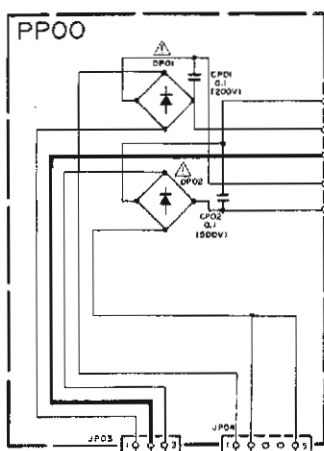
## 8. 6. Tone (PE00) Schematic Diagram and Component Locations



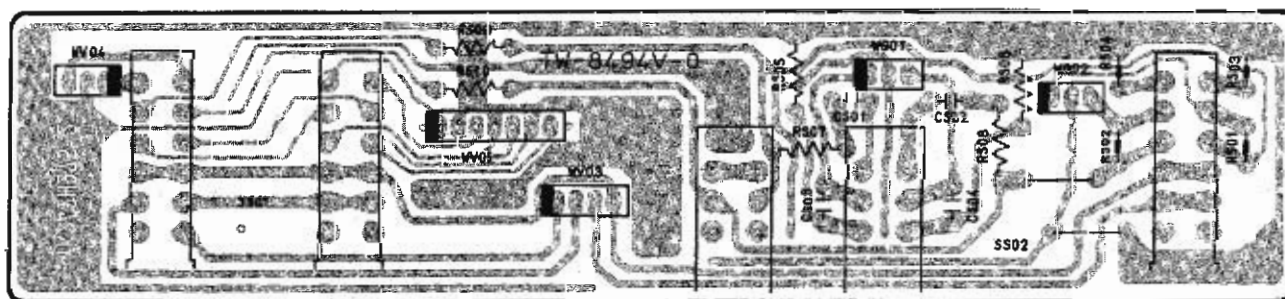
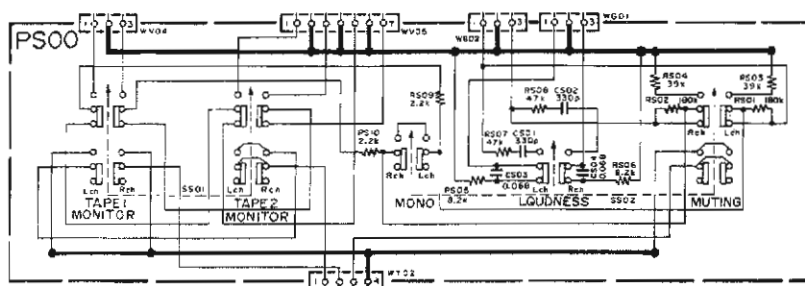
## 8. 7. Filter (PH00) Schematic Diagram and Component Locations



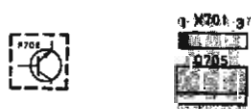
### 8.8. Fuse (PP00) Schematic Diagram and Component Locations



### 8. 9. Switch (PS00) Schematic Diagram and Component Locations



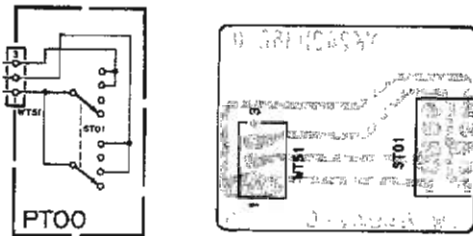
### 8. 10. Bias (P702) Schematic Diagram and Component Locations



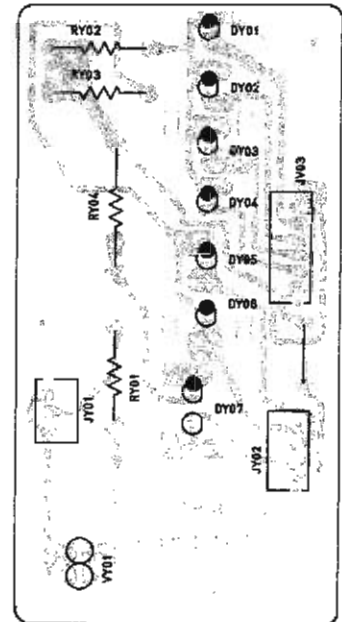
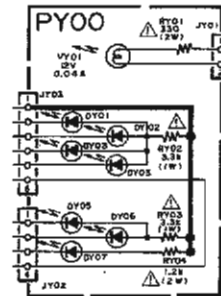
### 8. 11. Bias (P703) Schematic Diagram and Component Locations



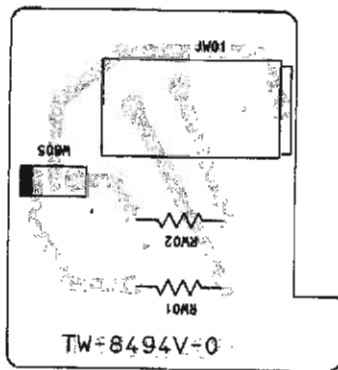
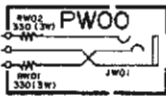
8. 12. Speaker Switch (ST00) Schematic Diagram and Component Locations



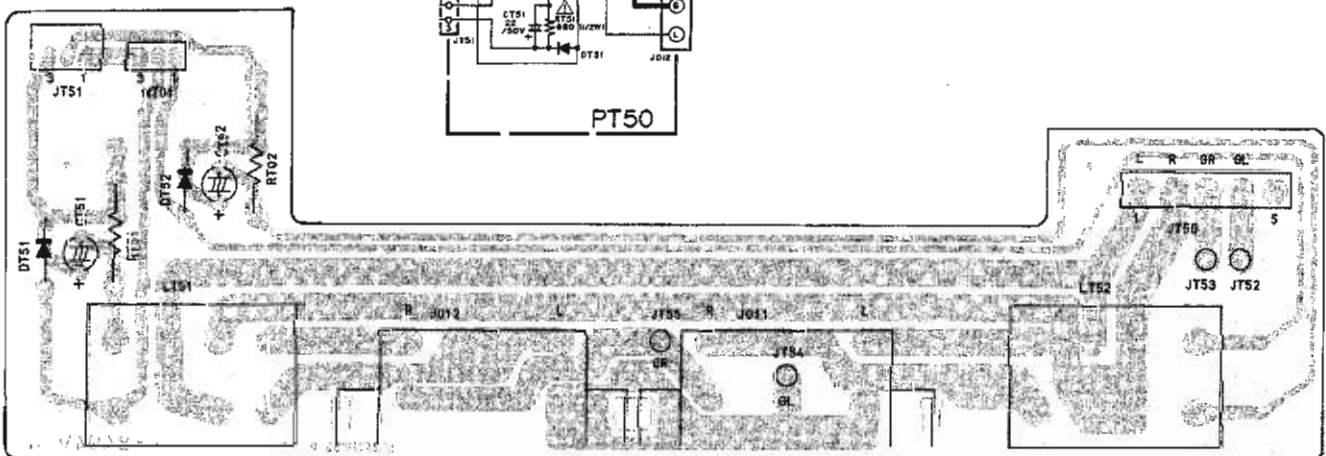
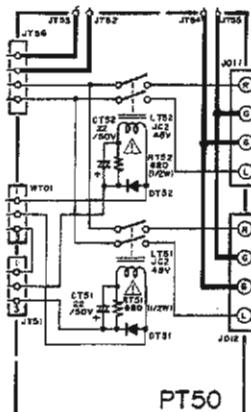
8. -14. Function LED (PY00) Schematic Diagram and Component Locations



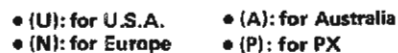
8. 13. Headphone Jack (PW00) Schematic Diagram and Component Locations



8. 15. Speaker Terminal (PT50) Schematic Diagram and Component Locations

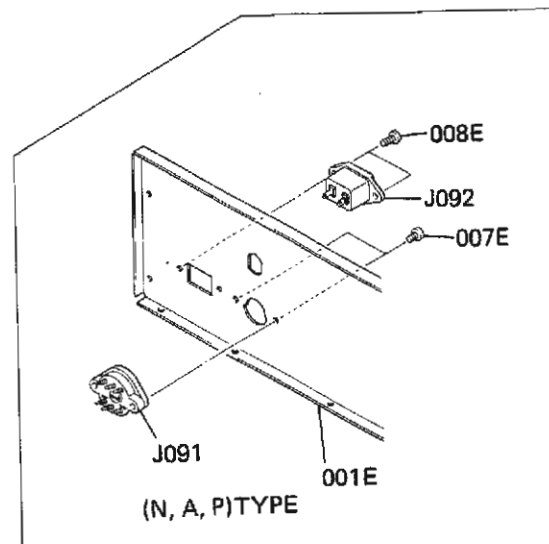
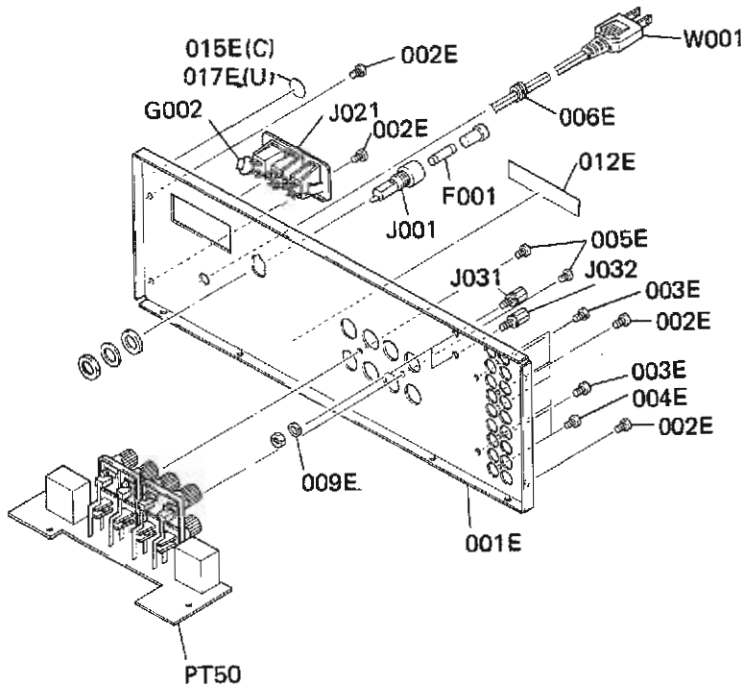


### [P01-99] Front Panel



REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
016E	1				105H861010	Label 3 Year ESC
001G	1	1	1	1	242H105010	Chassis Front
002G	4	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
003G	6	6	6	6	51100306A9	B.H.M. Screw B3 x 8
005G	2	2	2	2	2276005050	Clamper
006G	3	3	3	3	2276005050	Clamper
007G	2	2	2	2	51100306Z9	B.H.M. Screw B3 x 8
039G	1	1	1	1	242H051010	L.E.D. Guide
△ G001	1	1	1	1	DK18103840	Ceramic - - 0.01μF Spark Killer
△ S001	1	1	1	1	SP01010820	Push Switch Power

[P02-99] Rear Panel



- (U): for U.S.A.
- (A): for Australia
- (N): for Europe
- (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
001E	1				242H250040	Rear Panel
001E		1	1		242H250020	Rear Panel
001E				1	242H250030	Rear Panel
002E	4	4	4	4	51280308U0	B.H. Tapped Screw B3 x 8
003E	2	2	2	2	51280308U0	B.H. Tapped Screw B3 x 8
004E	5	5	5	5	51280308U0	B.H. Tapped Screw B3 x 8
005E	2	2	2	2	51280308U0	B.H. Tapped Screw B3 x 8
006E	1			1	1455259090	Bushing, AC Cord
007E		2	2	2	51280308U0	B.H. Tapped Screw B3 x 8
008E		2	2		51280308U0	B.H. Tapped Screw B3 x 8
009E	2	2	2	2	54060400R0	Lug, Ground
012E	1				2112265010	Indicator, Serial No.
012E		1	1	1	2112265110	Indicator, Serial No.
015E	1				2457861040	Label, CSA
017E	1				9511101070	Label, UL

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
△ F001	1				FS10800500	Fuse 8A
△ F001		1	1		FS10400800	Fuse 4A
△ F001				1	FS10400700	Fuse 4A
△ J001	1				YJ08000300	Jack, Fuse Holder
△ J001		1	1	1	YJ08000290	Jack, Fuse Holder
△ J021	1			1	YJ04001100	Jack, AC Outlet
J092		1	1	1	YP04000610	AC Inlet
J031	1	1	1	1	YT01010050	Terminal, Ground
J032	1	1	1	1	YT01010050	Terminal, Ground
△ J091		1	1	1	BY05080050	Voltage selector
△ W001	1				YC02000160	A.C. Power Cord
△ W001				1	YC02400180	A.C. Power Cord

**Lid and General Parts**

001D, 002D, 003L, 004L, 005L, 006D, 007D, 008L, 009L, 010L, 011L, 012D(N, A), 013D(U), 014G, 015G, 016G, 017G, 020G, 021G, 022G, 026G, 027G, 028G, 029G, 030G, 031G, 032G, 033G, 034G, 037G, 040G, 041G, 042G, 043G, 044G, 045G, 046G, 047G, 048G, 049G, 050G, 051G, 052G, 053G, 054G, 055G, 056G, 057G, 058G, 059G, 060G, 061G, 062G, 063G, 064G, 065G, 066G, 067G, 068G, 069G, 070G, 071G, 072G, 073G, 074G, 075G, 076G, 077G, 078G, 079G, 080G, 081G, 082G, 083G, 084G, 085G, 086G, 087G, 088G, 089G, 090G, 091G, 092G, 093G, 094G, 095G, 096G, 097G, 098G, 099G, 100G, 101G, 102G, 103G, 104G, 105G, 106G, 107G, 108G, 109G, 110G, 111G, 112G, 113G, 114G, 115G, 116G, 117G, 118G, 119G, 120G, 121G, 122G, 123G, 124G, 125G, 126G, 127G, 128G, 129G, 130G, 131G, 132G, 133G, 134G, 135G, 136G, 137G, 138G, 139G, 140G, 141G, 142G, 143G, 144G, 145G, 146G, 147G, 148G, 149G, 150G, 151G, 152G, 153G, 154G, 155G, 156G, 157G, 158G, 159G, 160G, 161G, 162G, 163G, 164G, 165G, 166G, 167G, 168G, 169G, 170G, 171G, 172G, 173G, 174G, 175G, 176G, 177G, 178G, 179G, 180G, 181G, 182G, 183G, 184G, 185G, 186G, 187G, 188G, 189G, 190G, 191G, 192G, 193G, 194G, 195G, 196G, 197G, 198G, 199G, 200G, 201G, 202G, 203G, 204G, 205G, 206G, 207G, 208G, 209G, 210G, 211G, 212G, 213G, 214G, 215G, 216G, 217G, 218G, 219G, 220G, 221G, 222G, 223G, 224G, 225G, 226G, 227G, 228G, 229G, 230G, 231G, 232G, 233G, 234G, 235G, 236G, 237G, 238G, 239G, 240G, 241G, 242G, 243G, 244G, 245G, 246G, 247G, 248G, 249G, 250G, 251G, 252G, 253G, 254G, 255G, 256G, 257G, 258G, 259G, 260G, 261G, 262G, 263G, 264G, 265G, 266G, 267G, 268G, 269G, 270G, 271G, 272G, 273G, 274G, 275G, 276G, 277G, 278G, 279G, 280G, 281G, 282G, 283G, 284G, 285G, 286G, 287G, 288G, 289G, 290G, 291G, 292G, 293G, 294G, 295G, 296G, 297G, 298G, 299G, 300G, 301G, 302G, 303G, 304G, 305G, 306G, 307G, 308G, 309G, 310G, 311G, 312G, 313G, 314G, 315G, 316G, 317G, 318G, 319G, 320G, 321G, 322G, 323G, 324G, 325G, 326G, 327G, 328G, 329G, 330G, 331G, 332G, 333G, 334G, 335G, 336G, 337G, 338G, 339G, 340G, 341G, 342G, 343G, 344G, 345G, 346G, 347G, 348G, 349G, 350G, 351G, 352G, 353G, 354G, 355G, 356G, 357G, 358G, 359G, 360G, 361G, 362G, 363G, 364G, 365G, 366G, 367G, 368G, 369G, 370G, 371G, 372G, 373G, 374G, 375G, 376G, 377G, 378G, 379G, 380G, 381G, 382G, 383G, 384G, 385G, 386G, 387G, 388G, 389G, 390G, 391G, 392G, 393G, 394G, 395G, 396G, 397G, 398G, 399G, 400G, 401G, 402G, 403G, 404G, 405G, 406G, 407G, 408G, 409G, 410G, 411G, 412G, 413G, 414G, 415G, 416G, 417G, 418G, 419G, 420G, 421G, 422G, 423G, 424G, 425G, 426G, 427G, 428G, 429G, 430G, 431G, 432G, 433G, 434G, 435G, 436G, 437G, 438G, 439G, 440G, 441G, 442G, 443G, 444G, 445G, 446G, 447G, 448G, 449G, 450G, 451G, 452G, 453G, 454G, 455G, 456G, 457G, 458G, 459G, 460G, 461G, 462G, 463G, 464G, 465G, 466G, 467G, 468G, 469G, 470G, 471G, 472G, 473G, 474G, 475G, 476G, 477G, 478G, 479G, 480G, 481G, 482G, 483G, 484G, 485G, 486G, 487G, 488G, 489G, 490G, 491G, 492G, 493G, 494G, 495G, 496G, 497G, 498G, 499G, 500G, 501G, 502G, 503G, 504G, 505G, 506G, 507G, 508G, 509G, 510G, 511G, 512G, 513G, 514G, 515G, 516G, 517G, 518G, 519G, 520G, 521G, 522G, 523G, 524G, 525G, 526G, 527G, 528G, 529G, 530G, 531G, 532G, 533G, 534G, 535G, 536G, 537G, 538G, 539G, 540G, 541G, 542G, 543G, 544G, 545G, 546G, 547G, 548G, 549G, 550G, 551G, 552G, 553G, 554G, 555G, 556G, 557G, 558G, 559G, 560G, 561G, 562G, 563G, 564G, 565G, 566G, 567G, 568G, 569G, 570G, 571G, 572G, 573G, 574G, 575G, 576G, 577G, 578G, 579G, 580G, 581G, 582G, 583G, 584G, 585G, 586G, 587G, 588G, 589G, 590G, 591G, 592G, 593G, 594G, 595G, 596G, 597G, 598G, 599G, 600G, 601G, 602G, 603G, 604G, 605G, 606G, 607G, 608G, 609G, 610G, 611G, 612G, 613G, 614G, 615G, 616G, 617G, 618G, 619G, 620G, 621G, 622G, 623G, 624G, 625G, 626G, 627G, 628G, 629G, 630G, 631G, 632G, 633G, 634G, 635G, 636G, 637G, 638G, 639G, 640G, 641G, 642G, 643G, 644G, 645G, 646G, 647G, 648G, 649G, 650G, 651G, 652G, 653G, 654G, 655G, 656G, 657G, 658G, 659G, 660G, 661G, 662G, 663G, 664G, 665G, 666G, 667G, 668G, 669G, 670G, 671G, 672G, 673G, 674G

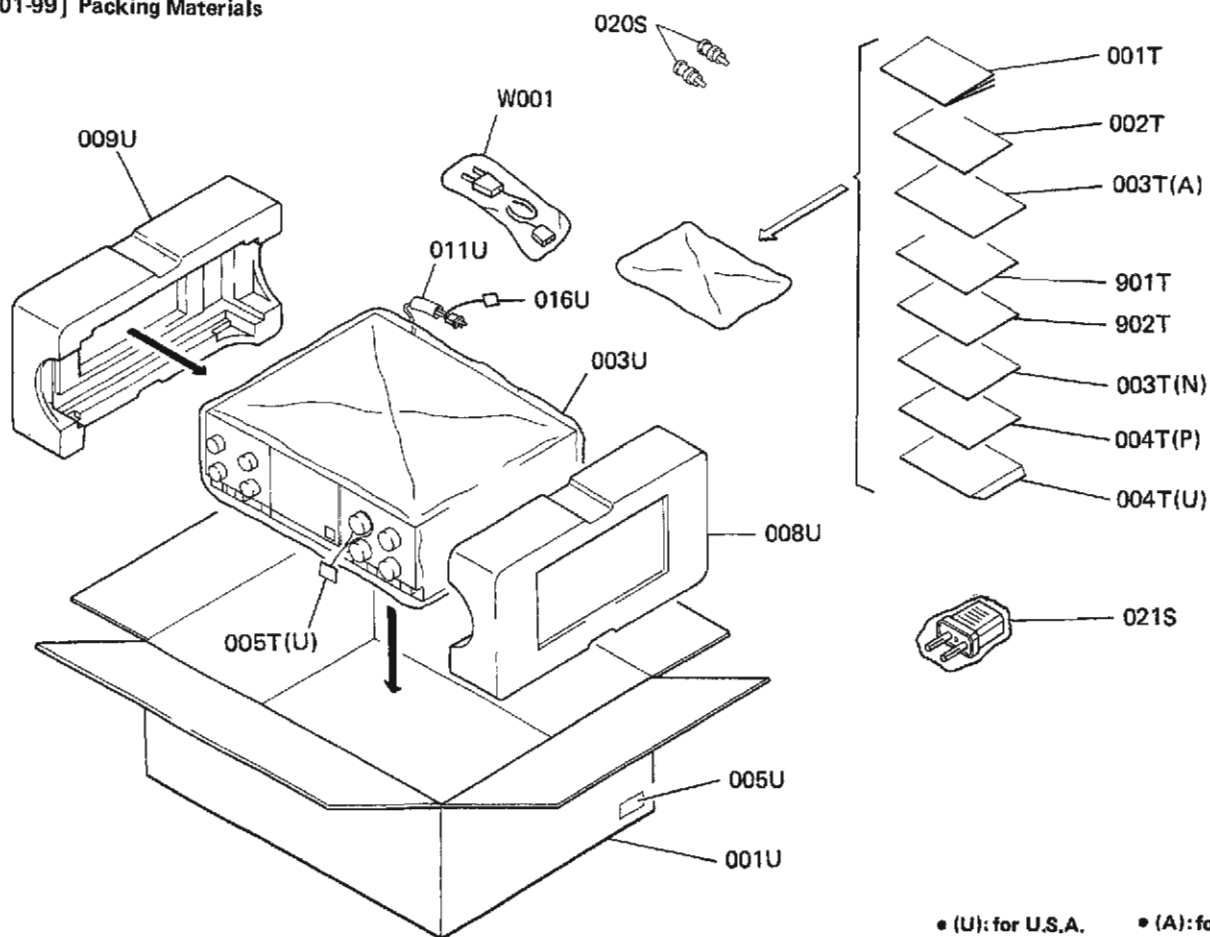


• (U): for U.S.A.      • (A): for Australia  
• (N): for Europe      • (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
003C	3	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
001D	1	1	1	1	242H257040	Top Cover (Gold)
002D	8	8	8	8	51260408U0	B.T. Screw B4 x 8
003D	1	1	1	1	242H257020	Bottom Cover
004D	7	7	7	7	51280308B0	B.H. Tapped Screw B3 x 8
005D	6	6	6	6	51280308B0	B.H. Tapped Screw B3 x 8
006D	4	4	4	4	2759057010	Leg
007D	4	4	4	4	51280410B0	B.H. Tapped Screw B4 x 10
009D	1	1	1	1	222H861020	Label
010D	4	4	4	4	2965118010	Spacer
011D	1	1	1	1	2911861140	Label
012D	1	1	1	1	2911861110	Label
013D	2	2	2	2	117H861010	Label UL
015D	2	2	2	2	242H118010	Spacer
016D	2	2	2	2	51280308Z0	B.H. Tapped Screw B3 x 8
001F	1	1	1	1	221H160010	Bracket
002F	1	1	1	1	221H067010	Cap
008G	1	1	1	1	242H105020	Chassis (Right)
009G	2	2	2	2	51280308Z0	B.H. Tapped Screw B3 x 8
010G	2	2	2	2	51260308B0	B.T. Screw B3 x 8
011G	2	2	2	2	2276000050	Clamper
014G	1	1	1	1	242H105030	Chassis (Left)
015G	2	2	2	2	51280308Z0	B.H. Tapped Screw B3 x 8
016G	3	3	3	3	51280408Z0	B.H. Tapped Screw B4 x 8
017G	1	1	1	1	51280308Z0	B.H. Tapped Screw B3 x 8
020G	1	1	1	1	242H105040	Chassis, Trans
021G	6	6	6	6	51280408Z0	B.H. Tapped Screw B4 x 8

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
022G	4	4	4	4	52040408A0	H. Head Bolt
026G	2	2	2	2	242H104010	Retainer
027G	1	1	1	1	242H104020	Retainer
028G	4	4	4	4	51280308Z0	B.H. Tapped Screw B3 x 8
029G	4	4	4	4	2276000050	Clamper
030G	3	3	3	3	51260308Z0	B.T. Screw B3 x 8
031G	3	3	3	3	51280308Z0	B.H. Tapped Screw B3 x 8
032G	1	1	1	1	51260308Z0	B.T. Screw B3 x 8
033G	1	1	1	1	242H109010	Shield
034G	4	4	4	4	51280308Z0	B.H. Tapped Screw B3 x 8
037G	2	2	2	2	3896101010	Support
001L	1	1	1	1	242H267010	Heatsink
002L	2	2	2	2	242H104030	Retainer
003L	6	6	6	6	51280308B0	B.H. Tapped Screw B3 x 8
004L	6	6	6	6	51280308Z0	B.H. Tapped Screw B3 x 8
005L	10	10	10	10	51780312Z0	Fin Neck B.T. Screw B3 x 12
008L	2	2	2	2	2231160040	Bracket
009L	2	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
010L	2	2	2	2	51260308Z0	B.T. Screw B3 x 8
013L	6	6	6	6	238H267010	Heatsink
014L	6	6	6	6	51100308A9	B.H.M. Screw B3 x 8
△ L001	1				TS60508140	Power Transformer
△ L001		1	1	1	TS60508130	Power Transformer

[H01-99] Packing Materials



• (U): for U.S.A.      • (A): for Australia  
• (N): for Europe    • (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
020S	2	2	2	2	Y001000020	Short Plug Jack
021S				1	YJ04000240	
001T	1				242H851210	User Manual
001T		1	1	1	242H851310	User Manual
002T	1				242H851220	User Manual
002T		1	1	1	242H851320	User Manual Spec
003T	1				103H854010	Warranty Card
003T		1			242H856010	Circuit Diagram
003T			1		9631000090	Warranty Card
004T	1				2225813010	Envelope
004T				1	3435851210	User Manual Flysheet
005T	1				9560000100	Hang Tag
901T	1				9650000050	Service Station Card (Canada)
902T	1				101K854210	Warranty Card (Canada)

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
001U	1				242H801030	Packing Case
001U		1	1		242H801010	Packing Case
001U				1	242H801020	Packing Case
003U	1	1	1	1	9091111030	Polyethy Sheet
005U	1				9526019010	Serial NO Card
005U		1			9526019060	Serial NO Card
005U			1		9526019030	Serial NO Card
005U				1	9526019050	Serial NO Card
008U	1	1	1	1	242H809010	Cushion (R)
009U	1	1	1	1	242H809020	Cushion (L)
011U	1			1	2864804010	Sleeve, AC Cord
016U	1	1	1	1	242H863020	Hang Tag
△ W001		1			ZC01805030	AC Power Cord
△ W001			1		ZC02006030	AC Power Cord

# 10. ELECTRICAL PART LIST

• (U): for U.S.A.      • (A): for Australia  
• (N): for Europe      • (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
P400	1	1	1	1	YK242H2710 ZZ242H2710	<b>P400-PHONO SELECTOR CIRCUIT BOARD</b> P.W. Board Phono Amp P.W. Board Assembly
C401	1	1	1	1	DD15331370	<b>P400-CAPACITORS</b> Ceramic 330pF ±5%
C402	1	1	1	1	DD15331370	Ceramic 330pF ±5%
C403	1	1	1	1	DF15122310	Film 1200pF ±5%
C404	1	1	1	1	DF15122310	Film 1200pF ±5%
C407	1	1	1	1	DD10050370	Ceramic 5pF ±0.5pF
C408	1	1	1	1	DD10050370	Ceramic 5pF ±0.5pF
C409	1	1	1	1	DD10050370	Ceramic 5pF ±0.5pF
C410	1	1	1	1	DD10050370	Ceramic 5pF ±0.5pF
C411	1	1	1	1	DD15121370	Ceramic 120pF ±5%
C412	1	1	1	1	DD15121370	Ceramic 120pF ±5%
C413	1	1	1	1	DF15122310	Film 1200pF ±5%
C414	1	1	1	1	DF15122310	Film 1200pF ±5%
C415	1	1	1	1	DF74513030	Film 0.051μF ±2%
C416	1	1	1	1	DF74513030	Film 0.051μF ±2%
C417	1	1	1	1	DF74153030	Film 0.015μF ±2%
C418	1	1	1	1	DF74153030	Film 0.015μF ±2%
C419	1	1	1	1	EA22800630	Elect 2200μF 6.3V
C420	1	1	1	1	EA22800630	Elect 2200μF 6.3V
C421	1	1	1	1	EA22800630	Elect 2200μF 6.3V
C422	1	1	1	1	EA22800630	Elect 2200μF 6.3V
C423	1	1	1	1	EA10602530	Elect 10μF 25V
C424	1	1	1	1	EA10602530	Elect 10μF 25V
C425	1	1	1	1	EA47702530	Elect 470μF 25V
C426	1	1	1	1	EA47702530	Elect 470μF 25V
C427	1	1	1	1	EA33702530	Elect 330μF 25V
C428	1	1	1	1	EA33702530	Elect 330μF 25V
C429	1	1	1	1	DF15332350	Film 3300pF ±5%
C430	1	1	1	1	DF15332350	Film 3300pF ±5%
C431	1	1	1	1	DF15103550	Film 0.01μF ±5%
C432	1	1	1	1	DK18103300	Ceramic 0.01μF +80% -20%
CV01	1	1	1	1	DK18103310	Ceramic 0.01μF +80% -20%
CV02	1	1	1	1	DK18103310	Ceramic 0.01μF +80% -20%
R401	1	1	1	1	GD05102140	<b>P400-RESISTORS</b> (All Resistors are ±5% & ¼W) 1kΩ
R401	1	1	1	1	GD05102140	1kΩ
R403	1	1	1	1	GD05101140	100Ω
R404	1	1	1	1	GD05101140	100Ω
R405	1	1	1	1	GD05100140	10Ω
R406	1	1	1	1	GD05100140	10Ω
R407	1	1	1	1	GD05473140	47kΩ
R408	1	1	1	1	GD05473140	47kΩ
R409	1	1	1	1	GD05101140	100Ω
R410	1	1	1	1	GD05101140	100Ω

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
R413	1	1	1	1	GD05100140	10Ω
R414	1	1	1	1	GD05100140	10Ω
R415	1	1	1	1	GD05681140	680Ω
R416	1	1	1	1	GD05681140	680Ω
R417	1	1	1	1	GD05562140	5.6kΩ
R418	1	1	1	1	GD05562140	5.6kΩ
R419	1	1	1	1	GD05563140	56kΩ
R420	1	1	1	1	GD05563140	56kΩ
R421	1	1	1	1	GD05684140	680kΩ
R422	1	1	1	1	GD05684140	680kΩ
R423	1	1	1	1	GD05683140	68kΩ
R424	1	1	1	1	GD05683140	68kΩ
R425	1	1	1	1	GD05221140	220Ω
R426	1	1	1	1	GD05221140	220Ω
R427	1	1	1	1	GD05104140	100kΩ
R428	1	1	1	1	GD05104140	100kΩ
Δ R431	1	1	1	1	GA05222010	2.2kΩ 1W
R433	1	1	1	1	GD05221140	220Ω
R434	1	1	1	1	GD05221140	220Ω
R435	1	1	1	1	RF05101140	100Ω
R436	1	1	1	1	RF05101140	100Ω
RV01	4	4	4	4	GD05271140	270Ω
RV04						
D401	1	1	1	1	HD20014010	<b>P400-SEMICONDUCTORS</b> Diode 1S2471
Q401	1	1	1	1	HF203691G0	F.E.T. 2SK369(GR)
Q402	1	1	1	1	HF203691G0	F.E.T. 2SK369(GR)
Q403	1	1	1	1	HC10028090	IC NJM2037
Q404	1	1	1	1	HC10028090	IC NJM2037
JV01	1	1	1	1	YT02040480	<b>P400-MISCELLANEOUS</b> Terminal Phono 1,2
JV02	1	1	1	1	YT02060180	Terminal Tuner CD Aux
JV03	1	1	1	1	YT02040470	Terminal Tape 1 In/out
JV04	1	1	1	1	YT02040470	Terminal Tape 2 In/out
JV05	1	1	1	1	YJ06002460	Jack (7P)
JV06	1	1	1	1	YJ06002430	Jack (3P)
JV07	1	1	1	1	YJ06002430	Jack (3P)
WV02	1	1	1	1	YU02380260	Jumper Lead
WV03	1	1	1	1	YU06240260	Jumper Lead
WV04	1	1	1	1	YU03300260	Jumper Lead
WV05	1	1	1	1	YU04260260	Jumper Lead
L401	1	1	1	1	LY20420230	Relay SZ-2104
SV01	1	1	1	1	SS04060020	Slide Switch Tape Out Selector
SY01	1	1	1	1	SS04040100	Slide Switch Function
S401	1	1	1	1	SS06040040	Slide Switch Phono Selector

• (U): for U.S.A.    • (A): for Australia  
• (N): for Europe    • (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
PE00	1	1	1	1	YK242H2720 ZZ242H2720 ZZ242H8720 ZZ242H7720	<b>PE00-TONE AMP CIRCUIT BOARD</b> P.W. Board, Tone Amp P.W. Board Assembly P.W. Board Assembly P.W. Board Assembly
CE01	1	1	1	1	EA22602530	<b>PE00-CAPACITORS</b> Elect 22 $\mu$ F 25V
CE02	1	1	1	1	EA22602530	Elect 22 $\mu$ F 25V
CE03	1	1	1	1	EA47503530	Elect 4.7 $\mu$ F 35V
CE04	1	1	1	1	EA47503530	Elect 4.7 $\mu$ F 35V
CE05	1	1	1	1	EA22700630	Elect 220 $\mu$ F 6.3V
CE06	1	1	1	1	EA22700630	Elect 220 $\mu$ F 6.3V
CE07	1	1	1	1	DF15152310	Film 1500pF $\pm$ 5%
CE08	1	1	1	1	DF15152310	Film 1500pF $\pm$ 5%
CE09	1	1	1	1	DF15123310	Film 0.012 $\mu$ F $\pm$ 5%
CE10	1	1	1	1	DF15123310	Film 0.012 $\mu$ F $\pm$ 5%
CE11	1	1	1	1	DF15332310	Film 3300pF $\pm$ 5%
CE12	1	1	1	1	DF15332310	Film 3300pF $\pm$ 5%
CE13	1	1	1	1	DF15473310	Film 0.047 $\mu$ F $\pm$ 5%
CE14	1	1	1	1	DF15473310	Film 0.047 $\mu$ F $\pm$ 5%
CE15	1	1	1	1	EA22700630	Elect 220 $\mu$ F 6.3V
CE16	1	1	1	1	EA22700630	Elect 220 $\mu$ F 6.3V
CE17	1	1	1	1	EA47602530	Elect 47 $\mu$ F 25V
CE18	1	1	1	1	EA47602530	Elect 47 $\mu$ F 25V
CE19	1	1	1	1	EA47705030	Elect 470 $\mu$ F 50V
CE20	1	1	1	1	EA47705030	Elect 470 $\mu$ F 50V
CE22	1	1	1	1	DK16103550	Ceramic 0.1 $\mu$ F $\pm$ 10%
CE25	1	1	1	1	DK18153300	Ceramic 0.015 $\mu$ F $\pm$ 80% -20%
CE26	1	1	1	1	DK18153300	Ceramic 0.015 $\mu$ F $\pm$ 80% -20%
CE27	1	1	1	1	DD15151370	Ceramic 150pF $\pm$ 5%
CE28	1	1	1	1	DD15151370	Ceramic 150pF $\pm$ 5%
CE30	1	1	1	1	EA47605030	Elect 47 $\mu$ F 50V
CE31	1	1	1	1	EA47602530	Elect 47 $\mu$ F 25V
CE33	1	1	1	1	EA47605030	Elect 47 $\mu$ F 50V
CE34	1	1	1	1	EA47602530	Elect 47 $\mu$ F 25V
CE37	1	1	1	1	DD15101300	Ceramic 100pF $\pm$ 5%
CE38	1	1	1	1	DD15101300	Ceramic 100pF $\pm$ 5%
RE01	1	1	1	1	GD05104140	<b>PE00-RESISTORS</b> (All Resistors are $\pm$ 5% & 1/4W) 100k $\Omega$
RE02	1	1	1	1	GD05104140	100k $\Omega$
RE03	1	1	1	1	GD05224140	220k $\Omega$
RE04	1	1	1	1	GD05224140	220k $\Omega$
RE05	1	1	1	1	GD05222140	2.2k $\Omega$
RE06	1	1	1	1	GD05222140	2.2k $\Omega$
RE07	1	1	1	1	GD05221140	220 $\Omega$
RE08	1	1	1	1	GD05221140	220 $\Omega$
RE09	1	1	1	1	GD05221140	220 $\Omega$
RE10	1	1	1	1	GD05221140	220 $\Omega$

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
RE11	1	1	1	1	GD05472140	4.7k $\Omega$
RE12	1	1	1	1	GD05472140	4.7k $\Omega$
RE13	1	1	1	1	GD05333140	33k $\Omega$
RE14	1	1	1	1	GD05333140	33k $\Omega$
RE15	1	1	1	1	GD05272140	2.7k $\Omega$
RE16	1	1	1	1	GD05272140	2.7k $\Omega$
RE17	1	1	1	1	GD05273140	27k $\Omega$
RE18	1	1	1	1	GD05273140	27k $\Omega$
RE19	1	1	1	1	GD05223140	22k $\Omega$
RE20	1	1	1	1	GD05223140	22k $\Omega$
RE21	1	1	1	1	GD05222140	2.2k $\Omega$
RE22	1	1	1	1	GD05222140	2.2k $\Omega$
RE35	1	1	1	1	GD05224140	220k $\Omega$
RE36	1	1	1	1	GD05224140	220k $\Omega$
RE39	1	1	1	1	RF05560120	Fusible 56 $\Omega$ 1/4W
RE43	1	1	1	1	GG05101140	100 $\Omega$
RE44	1	1	1	1	GG05101140	100 $\Omega$
RE45	1	1	1	1	GG05101140	100 $\Omega$
RE47	1	1	1	1	GD05222140	2.2k $\Omega$
RE48	1	1	1	1	GD05222140	2.2k $\Omega$
RE49	1	1	1	1	GD05152140	1.5k $\Omega$
RE50	1	1	1	1	GD05152140	1.5k $\Omega$
RE51	1	1	1	1	RF05560120	Fusible 56 $\Omega$ 1/4W
RE53	1	1	1	1	GA05681010	680 $\Omega$ 1W
RE54	1	1	1	1	GA05681010	680 $\Omega$ 1W
DE01	1	1	1	1	HD20022030	<b>PE00-SEMICONDUCTORS</b> Diode DSF10C
DE02	1	1	1	1	HD20022030	Diode DSF10C
DE03	1	1	1	1	HD20022030	Diode DSF10C
DE04	1	1	1	1	HD20022030	Diode DSF10C
DE09	1	1	1	1	HD30013010	Zener HZ15L-2
DE10	1	1	1	1	HD30013010	Zener HZ15L-2
QE01	1	1	1	1	HC10021090	IC NJM4560D-D
QE02	1	1	1	1	HC38524090	IC NJM78M24
QE03	1	1	1	1	HC39524090	IC NJM79M24
QE04	1	1	1	1	FU80115010	Protector Unit ICP-F20
QE05	1	1	1	1	FU80115010	Protector Unit ICP-F20
FE01	1	1	1	1	FS10100500	<b>PE00-MISCELLANEOUS</b> Fuse 1A 250V
FE01	1	1	1	1	FS10100800	Fuse 1A 250V
FE01	1	1	1	1	FS10100600	Fuse 1A 250V
FE02	1	1	1	1	FS10100500	Fuse 1A 250V
FE02	1	1	1	1	FS10100800	Fuse 1A 250V
FE02	1	1	1	1	FS10100600	Fuse 1A 250V
JE05	1	1	1	1	YP06001040	Plug (3P)
JE06	1	1	1	1	YJ06001240	Jack (3P)
WE01	1	1	1	1	YU03160260	Jumper Lead
WE02	1	1	1	1	YU03140260	Jumper Lead
WE03	1	1	1	1	YU03180260	Jumper Lead
WV01	1	1	1	1	YU03400260	Jumper Lead
WY01	1	1	1	1	YU02120260	Jumper Lead

• (U): for U.S.A.      • (A): for Australia  
• (N): for Europe      • (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
PE01	1	1	1	1	YK242H2730 ZZ242H2730	<b>PE01-TONE VOLUME CIRCUIT BOARD</b> P.W. Board, Tone Volume P.W. Board Assembly
RE23	1	1	1	1	GD05222140	<b>PE01-RESISTORS</b> 2.2k $\Omega$
RE24	1	1	1	1	GD05222140	2.2k $\Omega$
RE25	1	1	1	1	RM01040780	Variable 100k $\Omega$
RE26	1	1	1	1	RM01040780	Variable 100k $\Omega$
RE27	1	1	1	1	GD05682140	6.8k $\Omega$
RE28	1	1	1	1	GD05682140	6.8k $\Omega$
RE29	1	1	1	1	GD05122140	1.2k $\Omega$
RE30	1	1	1	1	GD05122140	1.2k $\Omega$
RE31	1	1	1	1	GD05153140	15k $\Omega$
RE32	1	1	1	1	GD05153140	15k $\Omega$
PG00	1	1	1	1	YK242H2740 ZZ242H2740	<b>PG00-VOLUME CIRCUIT BOARD</b> P.W. Board, Volume P.W. Board Assembly
RG01	1	1	1	1	RM01040770	<b>PG00-RESISTORS</b> Variable 100k $\Omega$
RG02	1	1	1	1	RM01040790	Variable 100k $\Omega$
JG03	1	1	1	1	YP06001040	<b>PG00-MISCELLANEOUS</b> Plug (3P)
WG01	1	1	1	1	YU03140260	Jumper Lead
WG02	1	1	1	1	YU03140260	Jumper Lead
PH00	1	1	1	1	YK242H2760 ZZ242H2760	<b>PH00-FILTER CIRCUIT BOARD</b> P.W. Board, Filter P.W. Board Assembly
CH01	1	1	1	1	DF15224350	<b>PH00-CAPACITORS</b> Film 0.22 $\mu$ F $\pm$ 5%
CH02	1	1	1	1	DF15224350	Film 0.22 $\mu$ F $\pm$ 5%
RH07	1	1	1	1	GD05104140	<b>PH00-RESISTORS</b> (All Resistors are $\pm$ 5% & $\frac{1}{4}$ W) 100k $\Omega$
RH08	1	1	1	1	GD05104140	100k $\Omega$
RH10	1	1	1	1	GD05010140	1 $\Omega$
JH01	1	1	1	1	YP06001040	<b>PH00-MISCELLANEOUS</b> Plug (3P)
JH03	1	1	1	1	YP06001040	Plug (3P)
SH01	1	1	1	1	SP04020410	Push Switch
PP00	1	1	1	1	YK242H1220 ZZ242H1220 ZZ242H8220 ZZ242H7220	<b>PP00-FUSE CIRCUIT BOARD</b> P.W. Board, Fuse P.W. Board Assembly P.W. Board Assembly P.W. Board Assembly
CP01	1	1	1	1	DF16103550	<b>PP00-CAPACITORS</b> Film 0.01 $\mu$ F $\pm$ 10%
CP02	1	1	1	1	DF16103550	Film 0.01 $\mu$ F $\pm$ 10%

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
$\Delta$ DP01	1	1	1	1	HE20009290	<b>PP00-SEMICONDUCTORS</b> Diode S5VB20
$\Delta$ DP02	1	1	1	1	HE20013290	Diode D5FB20
JP03	1	1	1	1	YJ06001240	<b>PP00-MISCELLANEOUS</b> Jack (3P)
JP04	1	1	1	1	YJ06001250	Jack (5P)
PS00	1	1	1	1	YK242H2750 ZZ242H2750	<b>PS00-SWITCH CIRCUIT BOARD</b> P.W. Board, Switch P.W. Board Assembly
CS01	1	1	1	1	DD15331370	<b>PS00-CAPACITORS</b> Ceramic 330pF $\pm$ 5%
CS02	1	1	1	1	DD15331370	Ceramic 330pF $\pm$ 5%
CS03	1	1	1	1	DF15683310	Film 0.068 $\mu$ F $\pm$ 5%
CS04	1	1	1	1	DF15683310	Film 0.068 $\mu$ F $\pm$ 5%
RS01	1	1	1	1	GD05184140	<b>PS00-RESISTORS</b> (All Resistors are $\pm$ 5% & $\frac{1}{4}$ W) 180k $\Omega$
RS02	1	1	1	1	GD05184140	180k $\Omega$
RS03	1	1	1	1	GD05393140	39k $\Omega$
RS04	1	1	1	1	GD05393140	39k $\Omega$
RS05	1	1	1	1	GD05822140	8.2k $\Omega$
RS06	1	1	1	1	GD05822140	8.2k $\Omega$
RS07	1	1	1	1	GD05473140	47k $\Omega$
RS08	1	1	1	1	GD05473140	47k $\Omega$
RS09	1	1	1	1	GD05222140	2.2k $\Omega$
RS10	1	1	1	1	GD05222140	2.2k $\Omega$
SS01	1	1	1	1	SP04020420	<b>PS00-MISCELLANEOUS</b> Push Switch Tape Monitor 1-2
SS02	1	1	1	1	SP04030300	Push Switch Mono/Loud Muting
WY02	1	1	1	1	YU04120260	Jumper Lead
PT00	1	1	1	1	YK242H3660 ZZ242H3660	<b>PT00-SPEAKER SWITCH CIRCUIT BOARD</b> P.W. Board Speaker Switch P.W. Board Assembly
ST01	1	1	1	1	SR02040170	<b>PT00-MISCELLANEOUS</b> Rotary Switch Speaker
WT51	1	1	1	1	YU03680260	Jumper Lead
PT50	1	1	1	1	YK242H3620 ZZ242H3620	<b>PT50-SPEAKER TERMI- NAL CIRCUIT BOARD</b> P.W. Board Speaker Terminal P.W. Board Assembly
CT51	1	1	1	1	EA22605030	<b>PT50-CAPACITORS</b> Elect 22 $\mu$ F 50V
CT52	1	1	1	1	EA22605030	Elect 22 $\mu$ F 50V
$\Delta$ RT51	1	1	1	1	GG05681120	<b>PT50-RESISTORS</b> (All Resistors are $\pm$ 5% & $\frac{1}{4}$ W) 680 $\Omega$
$\Delta$ RT52	1	1	1	1	GG05681120	680 $\Omega$

• (U): for U.S.A.  
• (N): for Europe

• (A): for Australia  
• (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
DT51	1	1	1	1	HD20014010	<b>PT50-SEMICONDUCTORS</b> Diode 1S2471
DT52	1	1	1	1	HD20014010	Diode 1S2471
JT51	1	1	1	1	YJ06002430	Jack (3P)
JT56	1	1	1	1	YP06001050	Plug (4P)
J011	1	1	1	1	YT01040330	Terminal, System A
J012	1	1	1	1	YT01040330	Terminal, System B
LT51	1	1	1	1	LY20480060	Relay
LT52	1	1	1	1	LY20480060	Relay
WT01	1	1	1	1	YU03120260	Jumper Lead
PW00	1	1	1	1	YK242H2770	<b>PW00-HEADPHONE JACK CIRCUIT BOARD</b> P.W. Board, Headphone Jack
	1	1	1	1	ZZ242H2770	P.W. Board Assembly
RW01	1	1	1	1	GP05331030	<b>PW00-RESISTORS</b> (All Resistors are $\pm 5\%$ & 3W) 330 $\Omega$
RW02	1	1	1	1	GP05331030	330 $\Omega$
W605	1	1	1	1	YU03180260	Jumper Lead
JW01	1	1	1	1	YJ01001790	<b>PW00-MISCELLANEOUS</b> Jack, Headphone
PY00	1	1	1	1	YK242H3650	<b>PY00-FUNCTION L.E.D. CIRCUIT BOARD</b> P.W. Board, Function L.E.D.
	1	1	1	1	ZZ242H3650	P.W. Board Assembly
RY01	1	1	1	1	GA05331020	<b>PY00-RESISTORS</b> (All Resistor are $\pm 5\%$ ) 330 $\Omega$ 2W
RY02	1	1	1	1	GA05332010	3.3k $\Omega$ 1W
RY03	1	1	1	1	GA05332010	3.3k $\Omega$ 1W
RY04	1	1	1	1	GA05122020	1.2k $\Omega$ 2W
DY01	6	6	6	6	HI10028320	<b>PY00-SEMICONDUCTORS</b> L.E.D. GL9HD4
DY06	1	1	1	1	HI10042030	L.E.D. SLF202B-01
JY01	1	1	1	1	YJ06002430	<b>PY00-MISCELLANEOUS</b> Jack (3P)
JY02	1	1	1	1	YJ06002440	Jack (4P)
JY03	1	1	1	1	YJ06002450	Jack (6P)
VY01	1	1	1	1	IN10120150	Lamp
P700	1	1	1	1	YK242H3610	<b>P700-VOLTAGE AMP CIRCUIT BOARD</b> P.W. Board, Voltage Amp
	1	1	1	1	ZZ242H3610	P.W. Board Assembly

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
C701	1	1	1	1	DD15151370	<b>P700-CAPACITORS</b> Film 150pF $\pm 5\%$
C702	1	1	1	1	DD15151370	Film 150pF $\pm 5\%$
C703	1	1	1	1	EA33505030	Elect 10 $\mu$ F 25V
C704	1	1	1	1	EA33505030	Elect 10 $\mu$ F 25V
C705	1	1	1	1	DD15680370	Ceramic 68pF $\pm 5\%$
C706	1	1	1	1	DD15680370	Ceramic 68pF $\pm 5\%$
C707	1	1	1	1	DD10030370	Ceramic 3pF $\pm 0.25\text{pF}$
C708	1	1	1	1	DD10030370	Ceramic 3pF $\pm 0.25\text{pF}$
C709	1	1	1	1	DD10030370	Mica 3pF $\pm 0.5\%$
C710	1	1	1	1	DD10030370	Mica 3pF $\pm 0.5\%$
C711	1	1	1	1	DF16474310	Film 0.47 $\mu$ F $\pm 10\%$
C712	1	1	1	1	DF16474310	Film 0.47 $\mu$ F $\pm 10\%$
C713	1	1	1	1	DF16473310	Film 0.047 $\mu$ F $\pm 10\%$
C714	1	1	1	1	DF16473310	Film 0.047 $\mu$ F $\pm 10\%$
C715	1	1	1	1	EA10605030	Elect 10 $\mu$ F 50V
C716	1	1	1	1	EA10605030	Elect 10 $\mu$ F 50V
C717	1	1	1	1	EA10710030	Elect 100 $\mu$ F 100V
C718	1	1	1	1	EA10710030	Elect 100 $\mu$ F 100V
C719	1	1	1	1	EA47701630	Elect 470 $\mu$ F 16V
C720	1	1	1	1	EA47701630	Elect 470 $\mu$ F 16V
C721	1	1	1	1	EQ47505030	Elect 4.7 $\mu$ F 50V
C722	1	1	1	1	EQ47505030	Elect 4.7 $\mu$ F 50V
C733	1	1	1	1	DF16223310	Film 0.022 $\mu$ F $\pm 10\%$
C734	1	1	1	1	DF16223310	Film 0.022 $\mu$ F $\pm 10\%$
CK01	1	1	1	1	DF15332350	Film 3300pF $\pm 5\%$
CK02	1	1	1	1	DF15332350	Film 3300pF $\pm 5\%$
CK03	1	1	1	1	DD15220370	Ceramic 22pF $\pm 5\%$
CK04	1	1	1	1	DD15220370	Ceramic 22pF $\pm 5\%$
CK05	1	1	1	1	EA10602530	Elect 10 $\mu$ F 25V
CK06	1	1	1	1	EA10602530	Elect 10 $\mu$ F 25V
CK07	1	1	1	1	DD15220370	Ceramic 22pF $\pm 5\%$
CK08	1	1	1	1	DK16102300	Ceramic 1000pF $\pm 10\%$
CN51	1	1	1	1	EA47405030	Elect 0.47 $\mu$ F 50V
CN52	1	1	1	1	DF16222310	Film 2200pF $\pm 10\%$
CN53	1	1	1	1	EA47602530	Elect 47 $\mu$ F 25V
CN54	1	1	1	1	EA22601630	Elect 22 $\mu$ F 16V
R701	1	1	1	1	GD05222140	<b>P700-RESISTORS</b> (All Resistors are $\pm 5\%$ & $\frac{1}{4}$ W) 2.2k $\Omega$
R702	1	1	1	1	GD05222140	2.2k $\Omega$
R703	1	1	1	1	GD05104140	100k $\Omega$
R704	1	1	1	1	GD05104140	100k $\Omega$
R705	1	1	1	1	GD05471140	470 $\Omega$
R706	1	1	1	1	GD05471140	470 $\Omega$
R707	1	1	1	1	GD05471140	470 $\Omega$
R708	1	1	1	1	GD05471140	470 $\Omega$
R709	1	1	1	1	GD05104140	100k $\Omega$
R710	1	1	1	1	GD05104140	100k $\Omega$
R711	1	1	1	1	GD05473140	47k $\Omega$
R712	1	1	1	1	GD05473140	47k $\Omega$
R713	1	1	1	1	GD05222140	2.2k $\Omega$
R714	1	1	1	1	GD05222140	2.2k $\Omega$
R715	1	1	1	1	GD05102140	1k $\Omega$
R716	1	1	1	1	GD05102140	1k $\Omega$
R717	1	1	1	1	GD05222140	2.2k $\Omega$
R718	1	1	1	1	GD05222140	2.2k $\Omega$
R719	1	1	1	1	GD05474140	470k $\Omega$
R720	1	1	1	1	GD05474140	470k $\Omega$

• (U): for U.S.A.      • (A): Australia  
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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
R721	1	1	1	1	GD05474140	470kΩ
R722	1	1	1	1	GD05474140	470kΩ
R723	1	1	1	1	GD05183140	18kΩ
R724	1	1	1	1	GD05183140	18kΩ
R725	1	1	1	1	RA02230020	Trimming 22kΩ
R726	1	1	1	1	RA02230020	Trimming 22kΩ
R727	1	1	1	1	GD05183140	18kΩ
R728	1	1	1	1	GD05183140	18kΩ
R729	1	1	1	1	RA02230020	Trimming 22kΩ
R730	1	1	1	1	RA02230020	Trimming 22kΩ
R731	1	1	1	1	GD05153140	15kΩ
R732	1	1	1	1	GD05153140	15kΩ
R733	1	1	1	1	RA02230020	Trimming 22kΩ
R734	1	1	1	1	RA02230020	Trimming 22kΩ
Δ R735	1	1	1	1	GD05332140	3.3kΩ
Δ R736	1	1	1	1	GD05332140	3.3kΩ
R737	1	1	1	1	GD05153140	15kΩ
R738	1	1	1	1	GD05153140	15kΩ
R739	1	1	1	1	GD05103140	10kΩ
R740	1	1	1	1	GD05103140	10kΩ
R741	1	1	1	1	GD05821140	820Ω
R742	1	1	1	1	GD05821140	820Ω
R743	1	1	1	1	GD05471140	470Ω
R744	1	1	1	1	GD05471140	470Ω
Δ R745	1	1	1	1	GA05271020	270Ω 2W
Δ R746	1	1	1	1	GA05821010	820Ω 1W
R747	1	1	1	1	GD05823140	82kΩ
R748	1	1	1	1	GD05823140	82kΩ
R749	1	1	1	1	GD05123140	12kΩ
R750	1	1	1	1	GD05123140	12kΩ
R781	1	1	1	1	RA02230020	Trimming 22kΩ (B)
R782	1	1	1	1	RA02230020	Trimming 22kΩ (B)
R783	1	1	1	1	GD05100140	10Ω
R785	1	1	1	1	RF05470140	Fusible 47Ω
R786	1	1	1	1	RF05470140	Fusible 47Ω
RK01	1	1	1	1	GD05123140	12kΩ
RK02	1	1	1	1	GD05123140	12kΩ
RK03	1	1	1	1	GD05102140	1kΩ
RK04	1	1	1	1	GD05102140	1kΩ
RK05	1	1	1	1	GD05473140	47kΩ
RK06	1	1	1	1	GD05473140	47kΩ
RK07	1	1	1	1	GD05272140	2.7kΩ
RK08	1	1	1	1	GD05272140	2.7kΩ
RK09	1	1	1	1	GD05223140	22kΩ
RK10	1	1	1	1	GD05223140	22kΩ
RK11	1	1	1	1	GD05123140	12kΩ
RK12	1	1	1	1	GD05123140	12kΩ
RK13	1	1	1	1	GD05103140	10kΩ
RK14	1	1	1	1	GD05103140	10kΩ
RK15	1	1	1	1	GD05224140	220kΩ
RK16	1	1	1	1	GD05224140	220kΩ
RK17	1	1	1	1	GD05122140	1.2kΩ
RK18	1	1	1	1	GD05122140	1.2kΩ
RK19	1	1	1	1	GD05104140	100kΩ
RK20	1	1	1	1	GD05104140	100kΩ

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
RK21	1	1	1	1	GD05473140	47kΩ
RK22	1	1	1	1	GD05473140	47kΩ
RK23	1	1	1	1	GD05104140	100kΩ
RK24	1	1	1	1	GD05104140	100kΩ
RK25	1	1	1	1	GD05222140	2.2kΩ
RK26	1	1	1	1	GD05222140	2.2kΩ
RK27	1	1	1	1	GD05222140	2.2kΩ
RK28	1	1	1	1	GD05471140	470Ω
RK29	1	1	1	1	GD05471140	470Ω
RK30	1	1	1	1	GD05221010	220Ω 1W
RN51	1	1	1	1	GD05473140	47kΩ
RN52	1	1	1	1	GD05473140	47kΩ
RN53	1	1	1	1	GD05823140	82kΩ
RN54	1	1	1	1	GD05823140	82kΩ
RN55	1	1	1	1	GD05183140	18kΩ
RN56	1	1	1	1	GD05474140	470kΩ
RN57	1	1	1	1	GD05273140	27kΩ
RN58	1	1	1	1	GD05152140	1.5kΩ
RN59	1	1	1	1	GD05104140	100kΩ
RN60	1	1	1	1	GD05223140	22kΩ
<b>P700-SEMICONDUCTORS</b>						
D701	1	1	1	1	HD30020090	Zener BZ-150
D702	1	1	1	1	HD30020090	Zener BZ-150
DK01	1	1	1	1	HD20001210	Diode 1S2473
DK02	1	1	1	1	HD20001210	Diode 1S2473
DK03	1	1	1	1	HD20001210	Diode 1S2473
DK04	1	1	1	1	HD20001210	Diode 1S2473
DK05	1	1	1	1	HD30001020	Zener MA1033
DK06	1	1	1	1	HD30001020	Zener MA1033
DK07	1	1	1	1	HD20001210	Diode 1S2473
DK08	1	1	1	1	HD20001210	Diode 1S2473
DK09	1	1	1	1	HD30036010	Zener HZ6LA-1
DN51	1	1	1	1	HD30007020	Zener MA1091M
DN52	1	1	1	1	HD30017090	Zener BZ090
Q701	1	1	1	1	HC10141030	IC STK3122
Q703	1	1	1	1	HC10008090	IC NJM4558
Q704	1	1	1	1	HC10008090	IC NJM4558
Q707	1	1	1	1	HT110152A0	Transistor 2SA1015 (O or Y)
Q708	1	1	1	1	HT110152A0	Transistor 2SA1015 (O or Y)
QK01	1	1	1	1	HC10009090	IC NJM2901
QK02	1	1	1	1	HC712301A0	IC HD74LS123
QK03	1	1	1	1	HT327852C0	Transistor 2SC2785 (HF or FF)
QK04	1	1	1	1	HT327852C0	Transistor 2SC2785 (HF or FF)
QK05	1	1	1	1	HW10005320	Photo Unit
QN51	1	1	1	1	HC10042050	IC TA7317P
QN52	1	1	1	1	HT109701A0	Transistor 2SA970 GR
<b>P700-MISCELLANEOUS</b>						
J701	1	1	1	1	YP06001040	Plug (3P)
J702	1	1	1	1	YJ06002430	Jack (3P)
J703	1	1	1	1	YJ06001430	Jack (9P)
J704	1	1	1	1	YJ06001430	Jack (9P)
TP08	1	1	1	1	YJ07000850	Jack (2P)
TP09	1	1	1	1	YJ07000850	Jack (2P)

• (U): for U.S.A.      • (A): for Australia  
• (N): for Europe      • (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
P701	1	1	1	1	YK242H1210 ZZ242H1210 ZZ242H8210 ZZ242H7210	<b>P701-MAIN AMP CIRCUIT BOARD</b> P.W. Board Main Amp P.W. Board Assembly P.W. Board Assembly P.W. Board Assembly
C723	4	4	4	4	DD15101560	<b>P701-CAPACITORS</b> Ceramic 100pF ±5%
C726	1	1	1	1	DF15473550	Film 0.047μF ±5%
C727	1	1	1	1	DF16104310	Film 0.1μF ±10%
C728	1	1	1	1	DF15473550	Film 0.047μF ±5%
C728	1	1	1	1	DF16104310	Film 0.1μF ±10%
C730	1	1	1	1	DF16104310	Film 0.1μF ±10%
C731	1	1	1	1	DF16104310	Film 0.1μF ±10%
C801	1	1	1	1	EC16904520	Elect 16000μF 45V
C802	1	1	1	1	EC16904520	Elect 16000μF 45V
C803	1	1	1	1	EC19907510	Elect 19000μF 75V
C804	1	1	1	1	EC19907510	Elect 19000μF 75V
C817	1	1	1	1	DK16331550	Ceramic 330pF ±10%
C818	1	1	1	1	DK16331550	Ceramic 330pF ±10%
C861	1	1	1	1	EA10505030	Elect 1μF 50V
CN01	4	4	4	4	DF16102310	Film 1000pF ±10%
CN04						
R751	4	4	4	4	GD05470140	<b>P701-RESISTORS</b> (All Resistors are ±5% & ¼W) 47Ω
R754	1	1	1	1	GG05102140	1kΩ
R755	1	1	1	1	GG05102140	1kΩ
R756	1	1	1	1	GG05102140	1kΩ
Δ R757	1	1	1	1	GG05151120	1kΩ ¼W
Δ R758	1	1	1	1	GG05151120	150Ω ¼W
R759	4	4	4	4	GG05033140	3.3Ω
R762						
Δ R763	1	1	1	1	BW10000060	0.47Ω 5W
Δ R764	1	1	1	1	BW10000060	0.47Ω 5W
R767	1	1	1	1	GG05022120	2.2Ω ¼W
R768	1	1	1	1	GG05022120	2.2Ω ¼W
R769	1	1	1	1	GA05047030	4.7Ω 3W
R770	1	1	1	1	GA05047030	4.7Ω 3W
R813	1	1	1	1	GD05183140	18kΩ
R814	1	1	1	1	GG05222120	2.2kΩ ¼W
R815	1	1	1	1	GG05152120	1.5kΩ ¼W
R816	1	1	1	1	GG05102140	1kΩ
R817	1	1	1	1	GG05152120	1.5kΩ ¼W
R818	1	1	1	1	GG05222120	2.2kΩ ¼W
R819	1	1	1	1	GD05333140	33kΩ

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
Δ RN01	4	4	4	4	GG05331140	330Ω
Δ RN04	4	4	4	4	GG05472140	4.7kΩ
RN05	1	1	1	1	GD05393140	39kΩ
RN08	1	1	1	1	GD05393140	39kΩ
RN10	1	1	1	1	GD05472140	4.7kΩ
RN12	1	1	1	1	GD05472140	4.7kΩ
RN13	1	1	1	1	GD05472140	4.7kΩ
RN17	1	1	1	1	GD05273140	27kΩ
Δ RN31	1	1	1	1	GA05272010	2.7kΩ 1W
D703	4	4	4	4	HD20022030	<b>P701-SEMICONDUCTORS</b> Diode DSF10C
D706	1	1	1	1	HD20022030	Diode DSF10C
Δ D805	1	1	1	1	HD20011290	Diode S3V20
Δ D807	1	1	1	1	HD20022030	Diode DSF10C
Δ D808	1	1	1	1	HD20022030	Diode DSF10C
Δ D809	1	1	1	1	HD20011290	Diode S3V20
D810	1	1	1	1	HD20014010	Diode 1S2471
D811	1	1	1	1	HD20014010	Diode 1S2471
D812	1	1	1	1	HD20014010	Diode 1S2471
DN01	8	8	8	8	HD20014010	Diode 1S2471
DN08	1	1	1	1	HD20014010	Diode 1S2471
DN31	1	1	1	1	HT32682280	Transistor 2SC2682 (Q or E)
Δ Q709	1	1	1	1	HT32682280	Transistor 2SC2682 (Q or E)
Δ Q710	1	1	1	1	HT11142280	Transistor 2SA1142 (Q or E)
Δ Q711	1	1	1	1	HT11142280	Transistor 2SA1142 (Q or E)
Δ Q712	1	1	1	1	HT11142280	Transistor 2SA1142 (Q or E)
Δ Q713	1	1	1	1	HT332982D0	Transistor 2SC3298 (Q or Y)
Δ Q714	1	1	1	1	HT332982D0	Transistor 2SC3298 (O or Y)
Δ Q715	1	1	1	1	HT113062D0	Transistor 2SA1306 (O or Y)
Δ Q716	1	1	1	1	HT113062D0	Transistor 2SA1306 (O or Y)
Δ Q717	1	1	1	1	HT329222B0	Transistor 2SC2922 (O or Y)
Δ Q718	1	1	1	1	HT329222B0	Transistor 2SC2922 (O or Y)
Δ Q719	1	1	1	1	HT112162B0	Transistor 2SA1216 (O or Y)
Δ Q720	1	1	1	1	HT112162B0	Transistor 2SA1216 (O or Y)
Δ Q807	1	1	1	1	HT335193A0	Transistor 2SC3519 (O or P or Y)
Δ Q808	1	1	1	1	HT332982D0	Transistor 2SC3298 (O or Y)
Δ Q809	1	1	1	1	HT323622A0	Transistor 2SC2362 (F or G)



• (U): for U.S.A.      • (A): for Australia  
• (N): for Europe      • (P): for PX

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
△ Q810	1	1	1	1	HT113863A0	Transistor 2SA1386 (O or P or Y)
△ Q811	1	1	1	1	HT113062D0	Transistor 2SA1306 (O or Y)
△ Q812	1	1	1	1	HT110162A0	Transistor 2SA1016 (F or G)
Q813	1	1	1	1	HT3278520C0	Transistor 2SC2785 (HF or FF)
Q814	1	1	1	1	HT111752C0	Transistor 2SA1175 (HF or FF)
QN01	1	1	1	1	HT327852C0	Transistor 2SC2785 (HF or FF)
QN02	1	1	1	1	HT327852C0	Transistor 2SC2785 (HF or FF)
QN03	1	1	1	1	HT111752C0	Transistor 2SA1175 (HF or FF)
QN04	1	1	1	1	HT111752C0	Transistor 2SA1175 (HF or FF)
QN05	1	1	1	1	HT322401A0	Transistor 2SC2240 GR
QN06	1	1	1	1	HT322401A0	Transistor 2SC2240 GR
<b>P701-MISCELLANEOUS</b>						
J604	1	1	1	1	YJ06002440	Jack (4P)
J605	1	1	1	1	YJ06002430	Jack (3P)
J609	1	1	1	1	YJ06002430	Jack (3P)
J705	1	1	1	1	YP06001070	Jack (9P)
J706	1	1	1	1	YP06001070	Jack (9P)
J801	1	1	1	1	YP06001040	Plug (3P)
J802	1	1	1	1	YP06001050	Plug (5P)
L751	1	1	1	1	LL23905120	Coil 1mH
L752	1	1	1	1	LL23905120	Coil 1mH
LN31	1	1	1	1	LY20240240	Relay L24

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	N	A	P		
P702	1	1	1	1	YK242H3630 ZZ242H3630	<b>P702-BIAS CIRCUIT BOARD</b> P.W. Board, Bias P.W. Board Assembly
Q705	1	1	1	1	HT315682B0	<b>P702-SEMICONDUCTORS</b> Transistor 2SC1568 (R or S)
P703	1	1	1	1	YK242H3640 ZZ242H3640	<b>P703-BIAS CIRCUIT BOARD</b> P.W. Board, Bias P.W. Board Assembly
Q706	1	1	1	1	HT315682B0	<b>P703-SEMICONDUCTORS</b> Transistor 2SC1568 (R or S)

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

**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.

## 11. TECHNICAL SPECIFICATIONS

### AUDIO SECTION

#### POWER OUTPUT PER CHANNEL

DIN 4 OHMS	180 W
RMS 4 OHMS (20 Hz – 20 kHz)	140 W
DIN 8 OHMS	130 W
RMS 8 OHMS (20 Hz – 20 kHz)	120 W
TOTAL HARMONIC DISTORTION AT RMS 8 OHMS	0.015%
I.M. DISTORTION	0.015%
DAMPING FACTOR 8 OHMS (1 kHz)	90

#### MM CARTRIDGE INPUT

Frequency Response (RIAA)	±0.2 dB
Signal-to-Noise Ratio (A weighted)	92 dB
Input Impedance	47 k ohms
Input Sensitivity	2.5 mV
Equivalent Input Noise	0.07 µV

#### MC CARTRIDGE INPUT

Input Sensitivity	250 µV
Input Impedance MC	(High MC) 1 k ohms (MC) 100 ohms
Signal-to-Noise Ratio (A weighted)	80 dB

#### AUX. INPUT

Input Impedance	25 k ohms
Input Sensitivity	150 mV
Frequency Response (±1 dB)	(Direct Position) 5 Hz – 45 kHz
Signal-to-Noise Ratio (A weighted)	98 dB

#### OUTPUT VOLTAGE

Tape Out [PHONO (MM) 7.75 mV 1 kHz Input]	520 mV
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#### OUTPUT IMPEDANCE

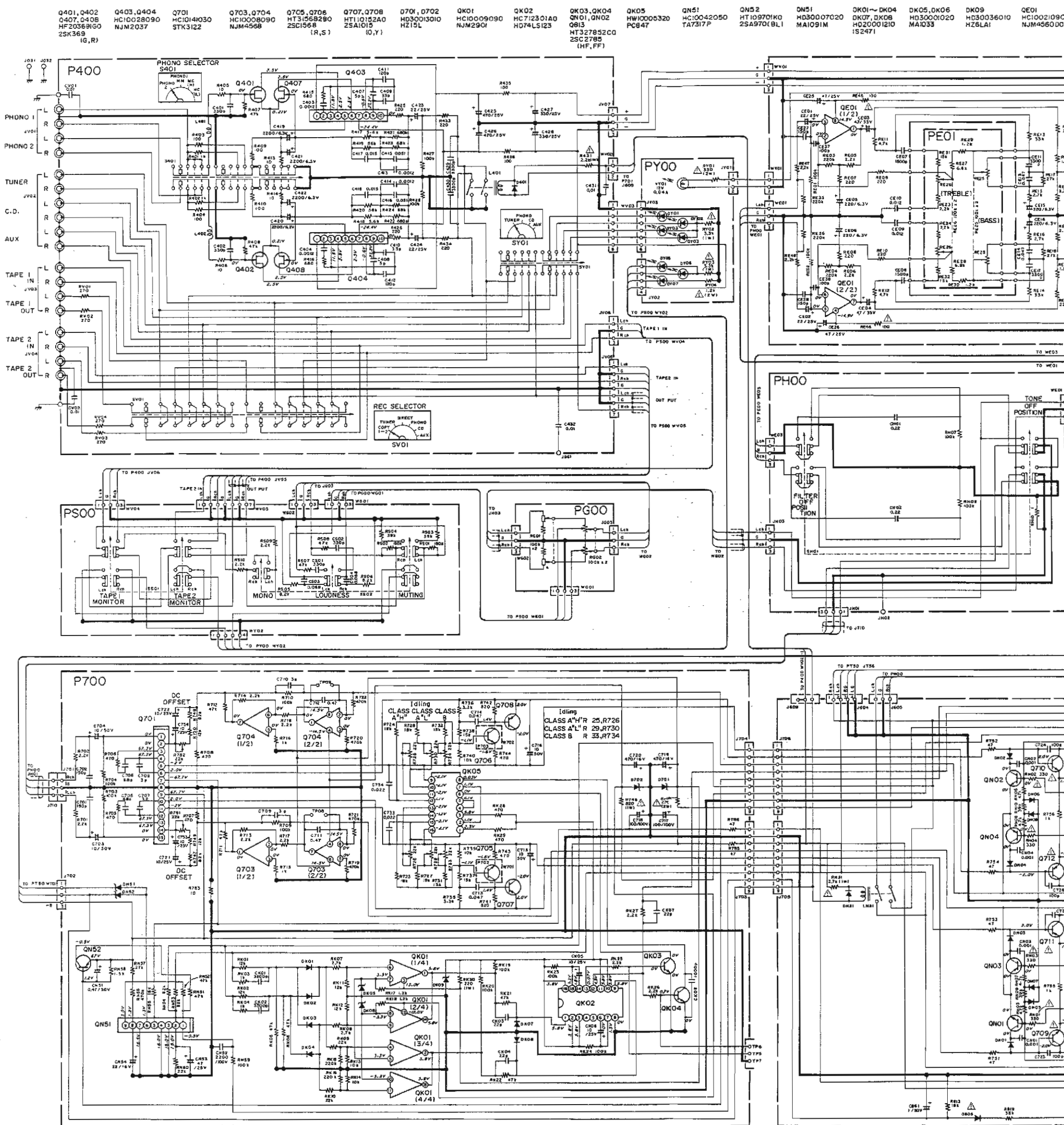
Tape Out (PHONO)	490 ohms
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#### GENERAL

Power Requirements	110/120/220/240 V AC, 50/60 Hz
Power Consumption at Rated Output, both Channels Operating	500 W
Dimensions (W x H x D)	416 x 146 x 410 mm
Weight	18 kg

Specifications and appearance are subject for modification without notice.

## 12. SCHEMATIC DIAGRAM



**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.**

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

