



SERVICE
MANUAL **PM330**



marantz®

model **PM330**

Stereo Pre Main Amplifier



MARANTZ DESIGN AND SERVICE

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

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

PARTS ORDERING:

Parts may be ordered from the following addresses:

EUROPE

MARANTZ S.A.
European Parts Department
2, Avenue Léopold III
B-7120 Péronnes-lez-Binche
Belgium
Telex: 57589

MARANTZ NORSKE A.S.
Refstadalleen 13
Oslo 5
Norway
Telex: 19659

MARANTZ DENMARK
Bregnerødvej 132b
3460 Birkerød
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Telex: 39137

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Wiedner Hauptstrasse 98
1050 Wien
Austria
Telex: 113583

MARANTZ S.A.
326 Avenue Louise Bte 32
1050 Brussels
Belgium
Telex: 26602

MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

MARANTZ BELGIUM
45 Rue Auguste Van Zande
1080 Brussels
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MARANTZ SVENSKA A.B.
Svartviksvangen 56
Traneberg - Box 12016
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Max Planckstrasse, 22
6072 DREIEICH 1
West Germany
Telex: 4185316

MARANTZ AUDIO U.K. LTD.
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
Great Britain
Telex: 935196

AUSTRALIA

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

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

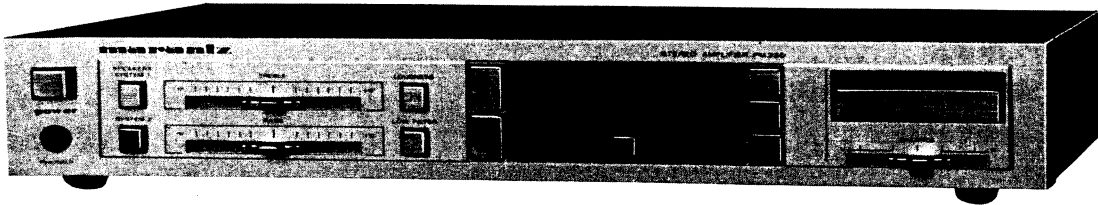
In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

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MODEL PM330 STEREO AMPLIFIER



INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz Model PM330 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.

1. FUNCTION SWITCH

The function switches control a high voltage (25 V) type switching IC (LC7185H) to select one of the four inputs and the tape monitor channel which is selected with the TAPE OUT/MONITOR switch. The TAPE OUT/MONITOR switch controls a high voltage-type switching IC (LC4066 BH).

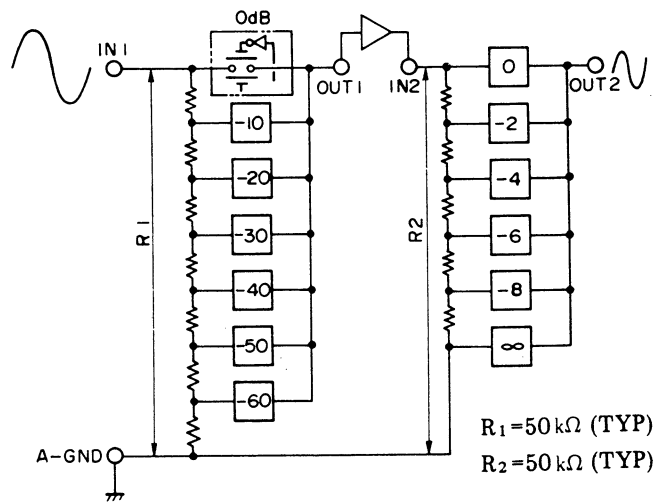
The source which is selected when the power switch was turned off is automatically reselected when the power is turned on.

The signals from the AUX, TUNER and TAPE (1) input terminals are applied to electronic switch QS01. The signal from the PHONO input terminals are amplified (35 dB) and equalized by equalizer amplifier Q401, then applied to electronic switch QS01.

The signals from the TAPE (2) IN terminals are applied to electronic switch QS02, then applied to QS01. The circuits to the TAPE (1) OUT terminals are switched with QS03 so that the signals are not fed back to TAPE (1) when TAPE (1) is selected with the function switch.

2. ELECTRONIC VOLUME CONTROL

Resistors connected in series which are switched by means of analog switches are used for the attenuator. The attenuator consists of two sections: one varies the degree of attenuation in 10 dB steps; the other varies it in 2 dB steps. With this attenuator, the degree of overall attenuation can be varied from 0 dB to -60 dB in 2 dB steps. The analog switches are controlled by an internal oscillator, and the degree of attenuation is automatically set to -40 dB when the power is turned on.



The volume level indicators are controlled by the volume control IC: this IC outputs a DC current at one of 13 levels (a multiple of 50 μ A) depending on the degree of attenuation.

A remote volume control terminal is provided on the rear panel so that the volume can be remotely controlled.

3. PREAMPLIFIER

The first stage of the preamplifier uses op-amplifier NJM 4560DD (selected for internal noise) (QE01) and has a gain of about 20 dB. Loudness control elements are inserted in the NF circuit of this stage so that frequency response is increased by 6 dB at 100 Hz.

The second stage is an NF type tone control circuit using op-amplifier NJM4558D (QE02). The frequency response can be varied with slide type potentiometers as shown below.

TREBLE ± 10 dB at 10 kHz
BASS ± 10 dB at 100 Hz

4. MODE SWITCH CONTROLLER

The loudness control uses a slide switch with a stroke of 1.5 mm to control the loudness elements in stage 1 of the preamplifier.

The low filter circuit follows the 2nd stage of the pre-amplifier and has an attenuation of 3.5 dB at 50 Hz. The muting circuit following the low filter has an attenuation of -20 dB and is controlled by a slide switch with a stroke of 1.5 mm.

5. POWER AMPLIFIER

Hybrid IC STK-3042-IIA is used for the voltage amplifier, and the power amplifier stage uses discrete transistors. STK-3042-IIA is an improved version of STK-3042 and it shows good performance with pop noises. Thus, no muting relay is required for the PM330. The input stage of the power amplifier uses 2SD1302 (QK03 and QK04), which features low V_{ce} saturation so that the output signal is muted when the function switch is operated or the power is turned on and off. (The gain is about 30 dB.) LED driver AN6886 (QX01) is used to indicate the power level in 5 steps.

6. SPEAKER

Two sets of speaker systems can be connected and selected with speaker switches 1 and 2. The headphone jack is always connected to the power amplifier.

7. P.W. BOARDS

As can be seen from the circuit diagram the chassis of Model PM330 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./
Input Terminal mounted on P.W. Board P400
2. Main mounted on P.W. Board P700
3. Tone Amp. mounted on P.W. Board PE00
4. Tone Volume mounted on P.W. Board PE01
5. Low Filter mounted on P.W. Board PE02
6. Tone Amp.
Volume Control mounted on P.W. Board PE03
7. Balance Volume mounted on P.W. Board PG02
8. Elect Volume Switch mounted on P.W. Board PG03
9. Power Switch mounted on P.W. Board P000
10. Speaker Switch mounted on P.W. Board PT00
11. Speaker Terminal mounted on P.W. Board PV00
12. Phone Jack mounted on P.W. Board PW00
13. Function
Power Disply mounted on P.W. Board PX00
14. Elect Volume LED mounted on P.W. Board PY00

8. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model PM330 Stereo Pre Main Amplifier.

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

9. ADJUSTMENT PROCEDURES

1. Volume indicator level adjustment

- 1) Apply an 1 kHz, 100 mV signal to the TUNER IN terminal. Leave the speaker terminal unloaded.
- 2) Depress the UP side of the VOLUME UP/DOWN control until the output level stops increasing.
- 3) Depress the DOWN side until the volume level decreases by 2 steps (about -4 dB).
- 4) Adjust RG24 (3 kΩ) to where 5 (green) LEDs of the volume indicator light.
- 5) Turn the power switch off and turn it on again. Confirm that 2 LEDs of the volume indicator light. Maximize the volume level and confirm that 5 LEDs of the volume indicator light.

2. Idling adjustment

- 1) Open all input and output terminals on the unit.
- 2) Connect a digital voltmeter between the + and - terminals of TP-1 for the L channel or between the + and - terminals of TP-2 for the R channel.
- 3) Adjust R729 (channel L) or R730 (channel R) so that the voltmeter reads 7 mV about 1 minute after the power has been turned on. (Note that the idling current is about 20 mA after the unit has warmed up.)

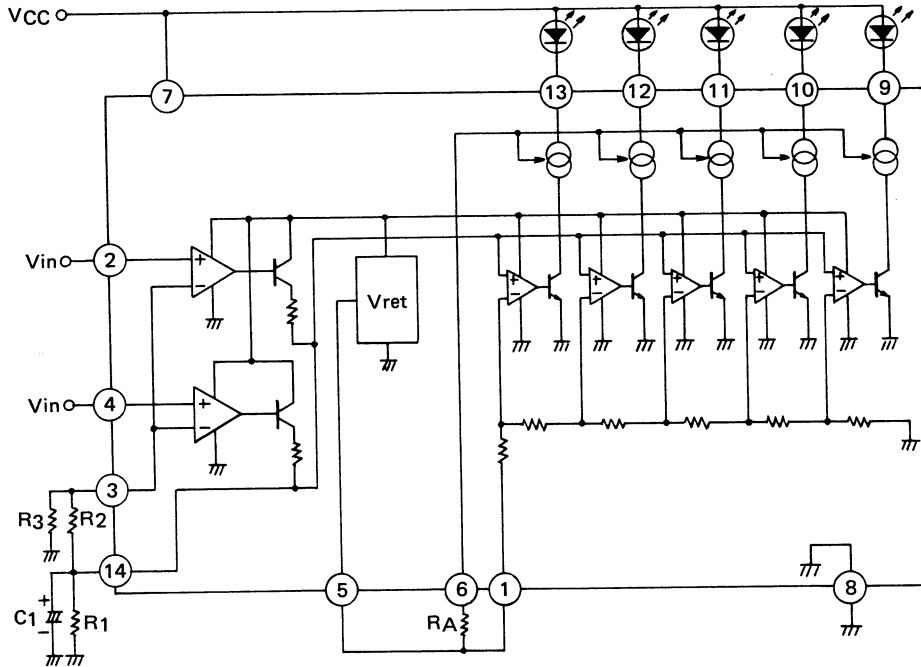
3. Power level indicator adjustment

- 1) Apply a 1 kHz, 170 mV signal to the TUNER IN (R) terminal. Connect an 8-ohm load to the speaker terminals.
- 2) Increase the volume until 5 LEDs of the volume indicator light. Adjust RX05 so that the power level indicator reads 30 W (15.5 V).

10. CIRCUIT DESCRIPTION

10.1 AN6886 LED driver (QX01)

● Block diagram



● Absolute rating (Ta=25°C)

Item	Symbol	Rating	Unit
Supply voltage	V _{CC}	18	V
LED drive terminal voltage	V _{9,10,11,12,13-8}	18	V
LED drive terminal current	I _{9,10,11,12,13}	30	mA
Circuit voltage	V ₁₄₋₈	12	V
Reference voltage terminal output current	I ₅	10	mA
RA Terminal Input current	I ₆	10	mA
Allowable power dissipation	P _D	480	mW
Operating temperature	T _{opr}	-30 ~ +75	°C
Storage temperature	T _{stg}	-55 ~ +150	°C

● Electrical characteristics (V_{CC}=6V, Ta=25°C)

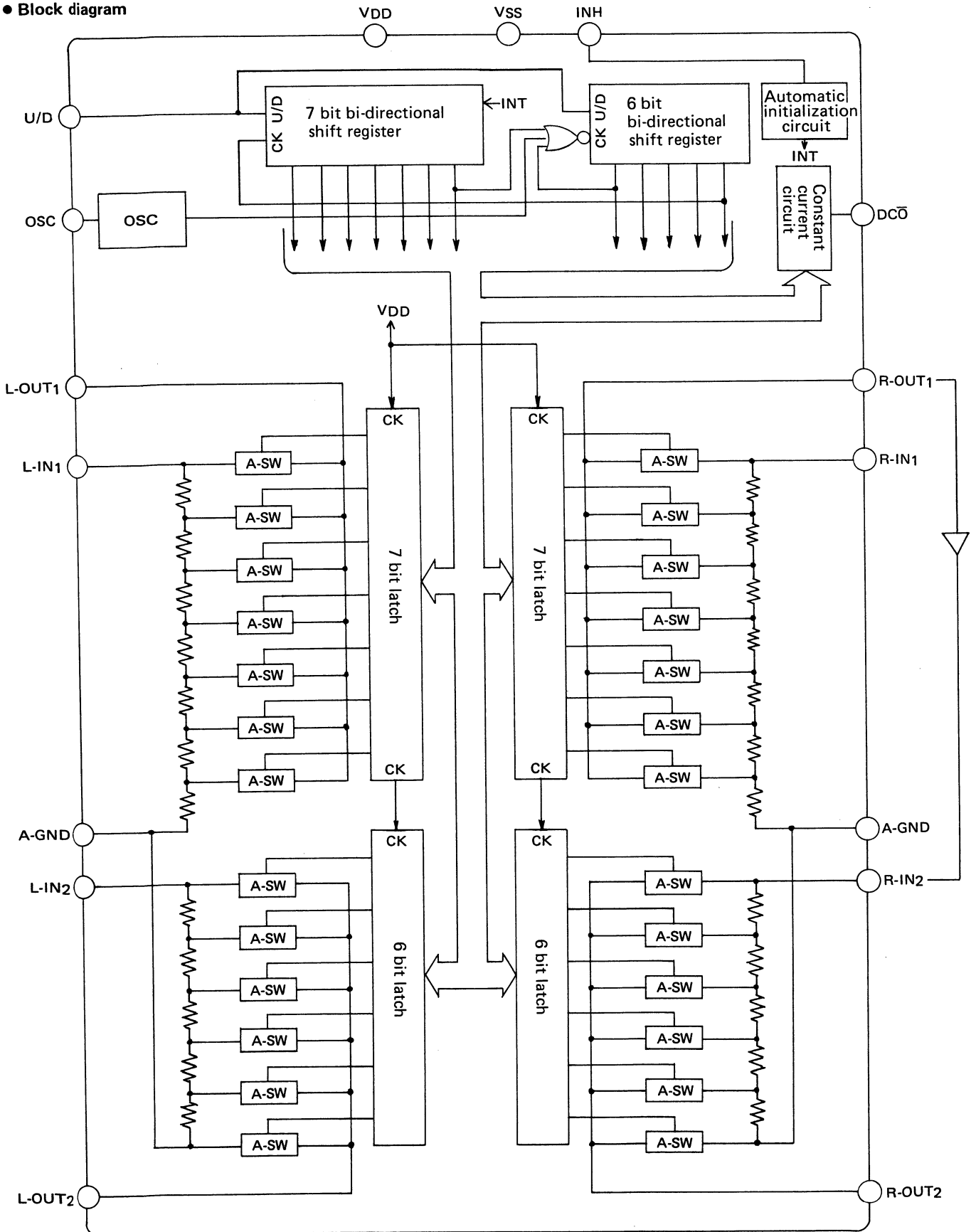
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Current consumption	I _{CC}	RA=Open, Vin=0V		5	10	mA
Input bias current	I _{2,4}	-1	-1		0	μA
Reference voltage	V _{ref}	V _{CC} =4 ~ 16V	2.6	2.8	3.0	V
Output current	I _{9~13}	RA=Open,	4		8	mA
Gain of amplifier	G _{V1}	V ₂ =50mV, R ₁ =10kΩ R ₂ =90kΩ, R ₃ =10kΩ		20		dB
Gain of amplifier	G _{V2}	V ₄ =50mV, R ₁ =10kΩ R ₂ =90kΩ, R ₃ =10kΩ		20		dB

● Typical input levels for driving LEDs

LED	1	2	3	4	5
Level (dB)	-10	-5	0	3	6

10.2 Electronic Volume Control IC TC9153P (QG02)

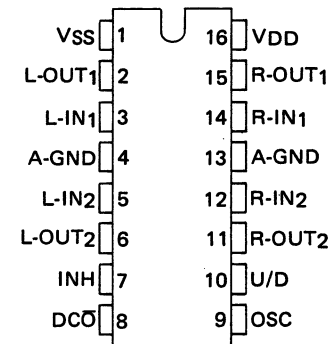
● Block diagram



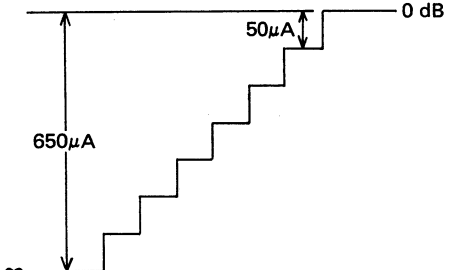
● Absolute ratings

Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	14	V
Input voltage	V _{IN}	-0.3 ~ V _{DD} +0.3	V
Input voltage	V _{IN}	V _{SS} -0.3 ~ V _{DD} +0.3	V
Analog input voltage	V _{IN}	4.0	V _{rms}
Allowable power dissipation	P _D	150	mW
Operating temperature	T _{opr}	-30 ~ 75	°C
Storage temperature	T _{stg}	-55 ~ 125	°C

● Pin configuration



● Pin functions

Pin No.	Symbol	Function
2 15	L-OUT1 R-OUT1	10 dB step attenuator output. The input signal is attenuated from 0 to 60 dB in 10 dB steps.
3 14	L-IN1 R-IN1	10 dB step attenuator input.
4 13	A-GND	Ground terminal
5 12	L-IN2 R-IN2	2 dB step attenuator input.
6 11	L-OUT2 R-OUT2	2 dB step attenuator output. The input signal is attenuated from 0 to 8 dB in 2 dB steps.
7	INH	Inhibit terminal. When a low level signal is applied to this terminal, all input and output is inhibited; otherwise, the IC operates normally.
8	DCO	Attenuation indicator drive output. This terminal outputs a DC current at one of 13 levels (a multiple of 50 μA) depending on the degree of attenuation. 
9	OSC	CR terminal for OSC. The time constant of the capacitor and resistor connected to this terminal determines the up/down speed of volume control.
10	U/D	Up/down control signal input terminal. When a high level signal is applied to this terminal, the volume increases at the rate determined by the oscillator; otherwise, it is reduced at that rate.

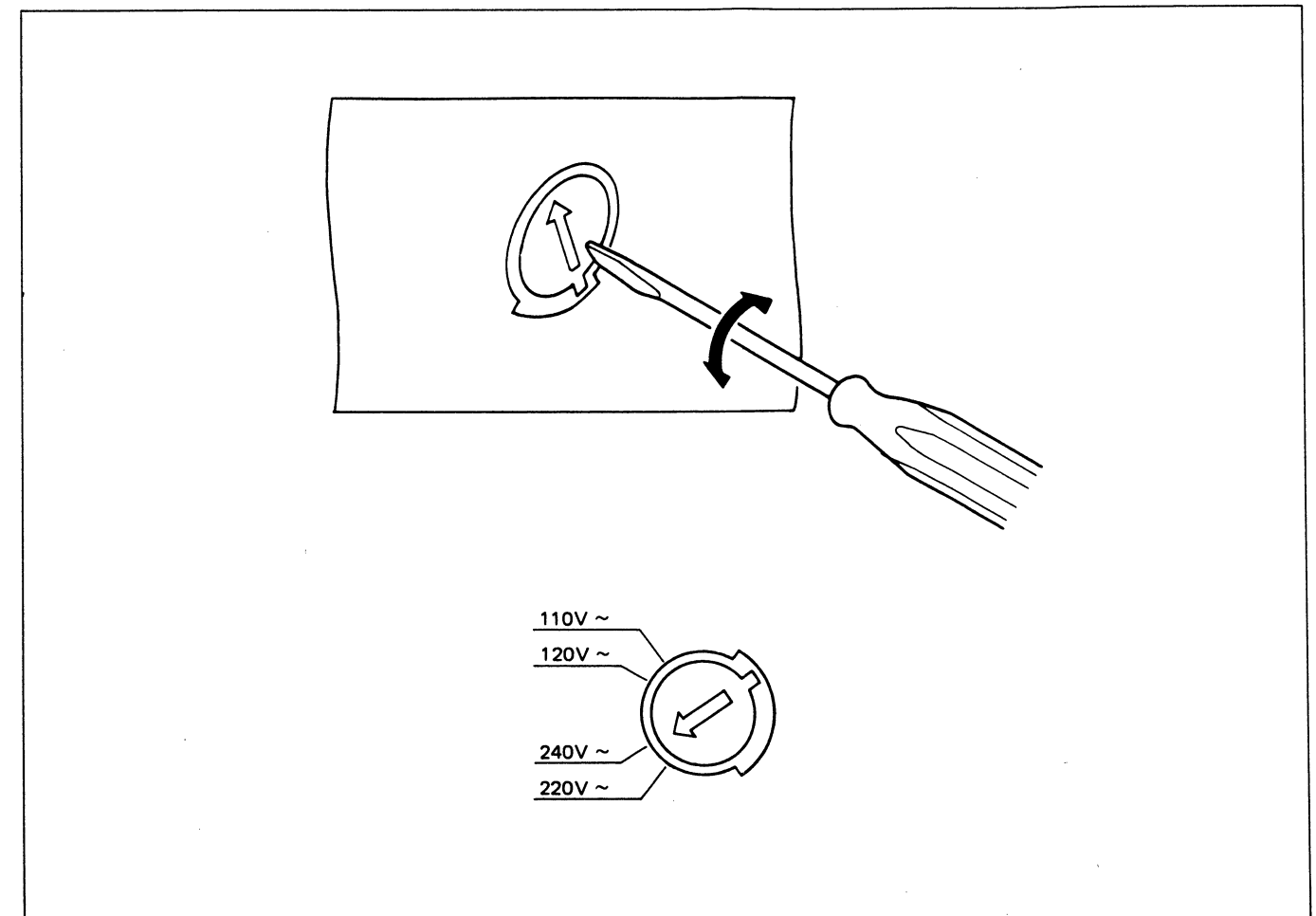
11. VOLTAGE CONVERSION

● EUROPEAN MODEL ONLY

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

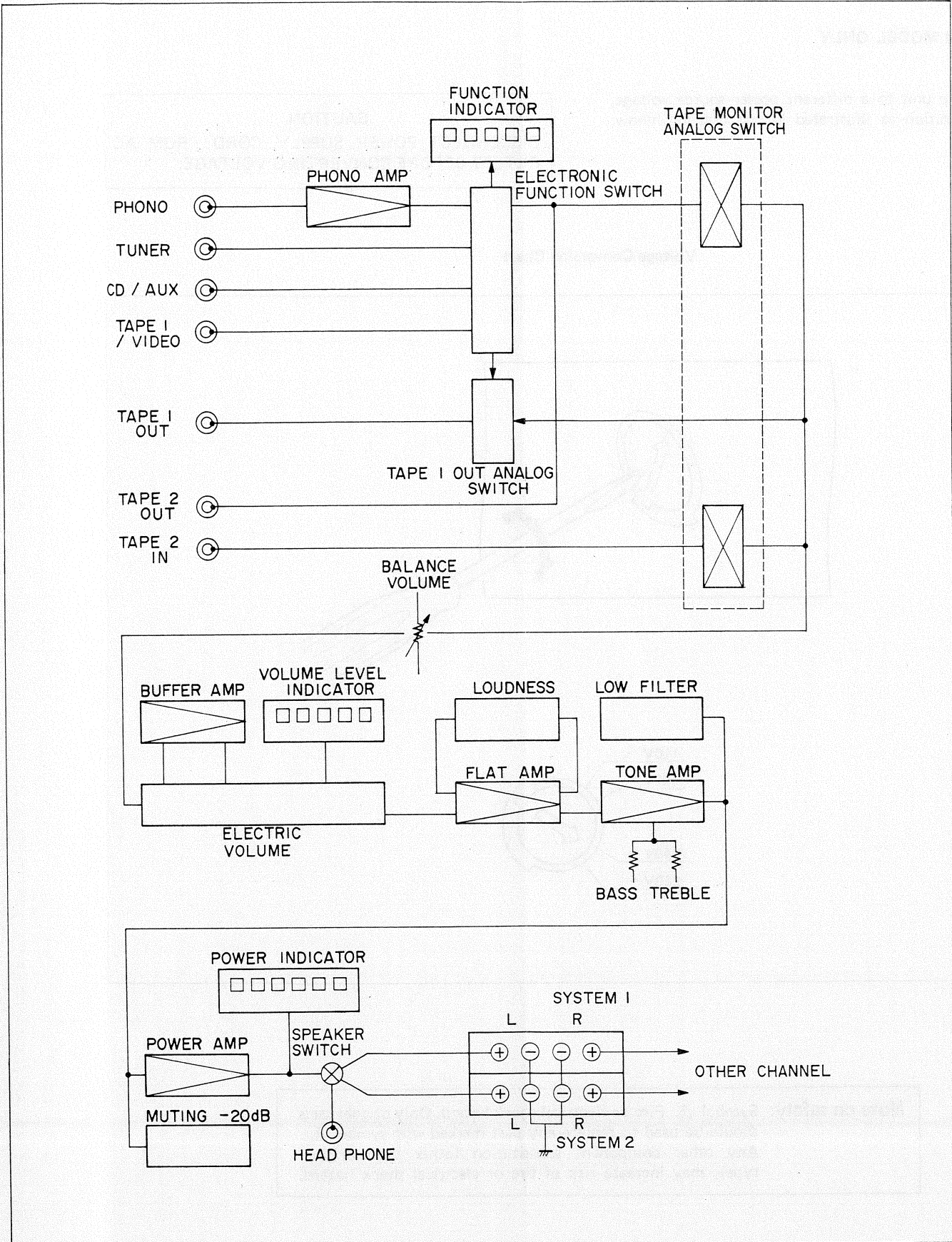
CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

Voltage Conversion Chart



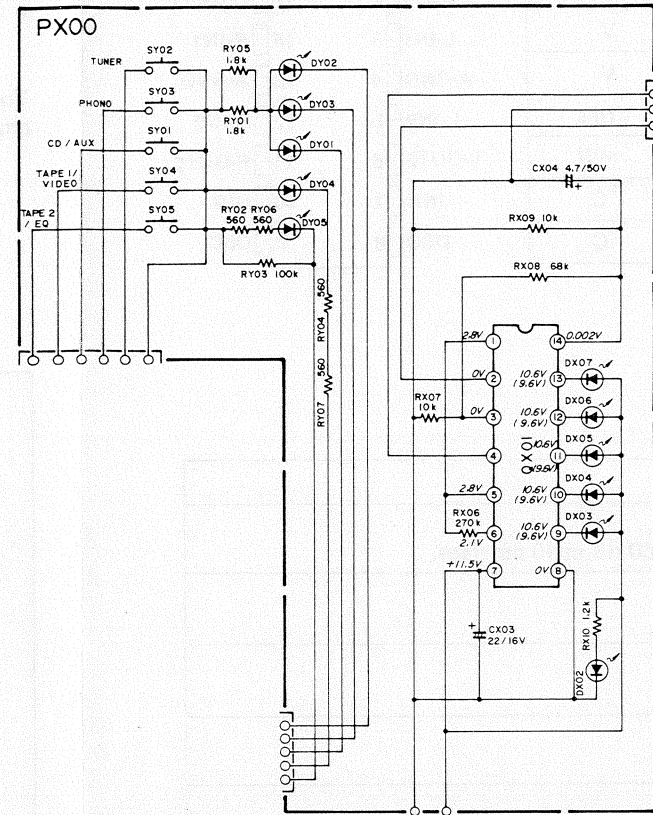
Note on safety: Symbol \triangle Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol \triangle . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

12. BLOCK DIAGRAM

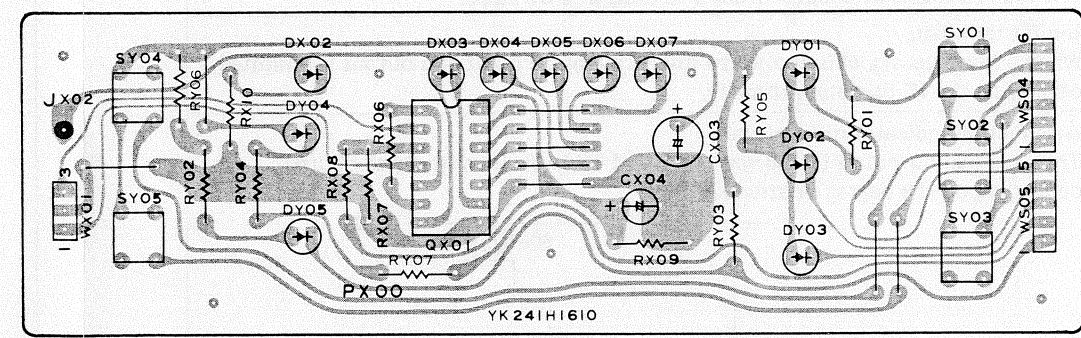
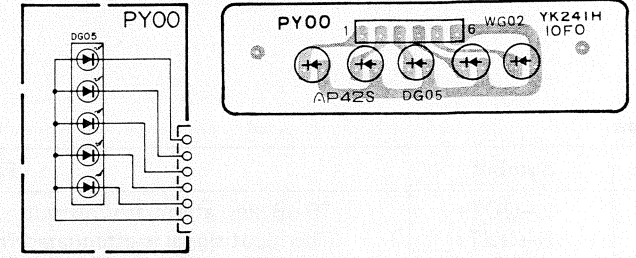


13. DIAGRAM AND COMPONENT LOCATIONS

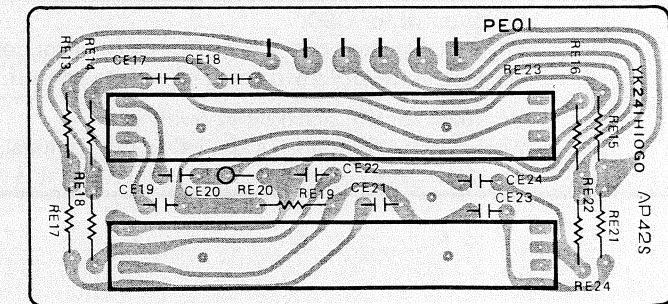
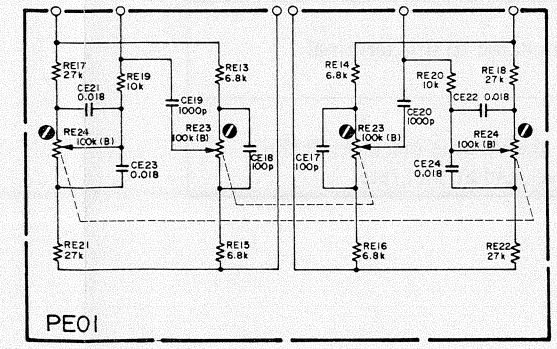
13.1 Function Power Disply Assembly (PX00) Schematic Diagram and Component Locations



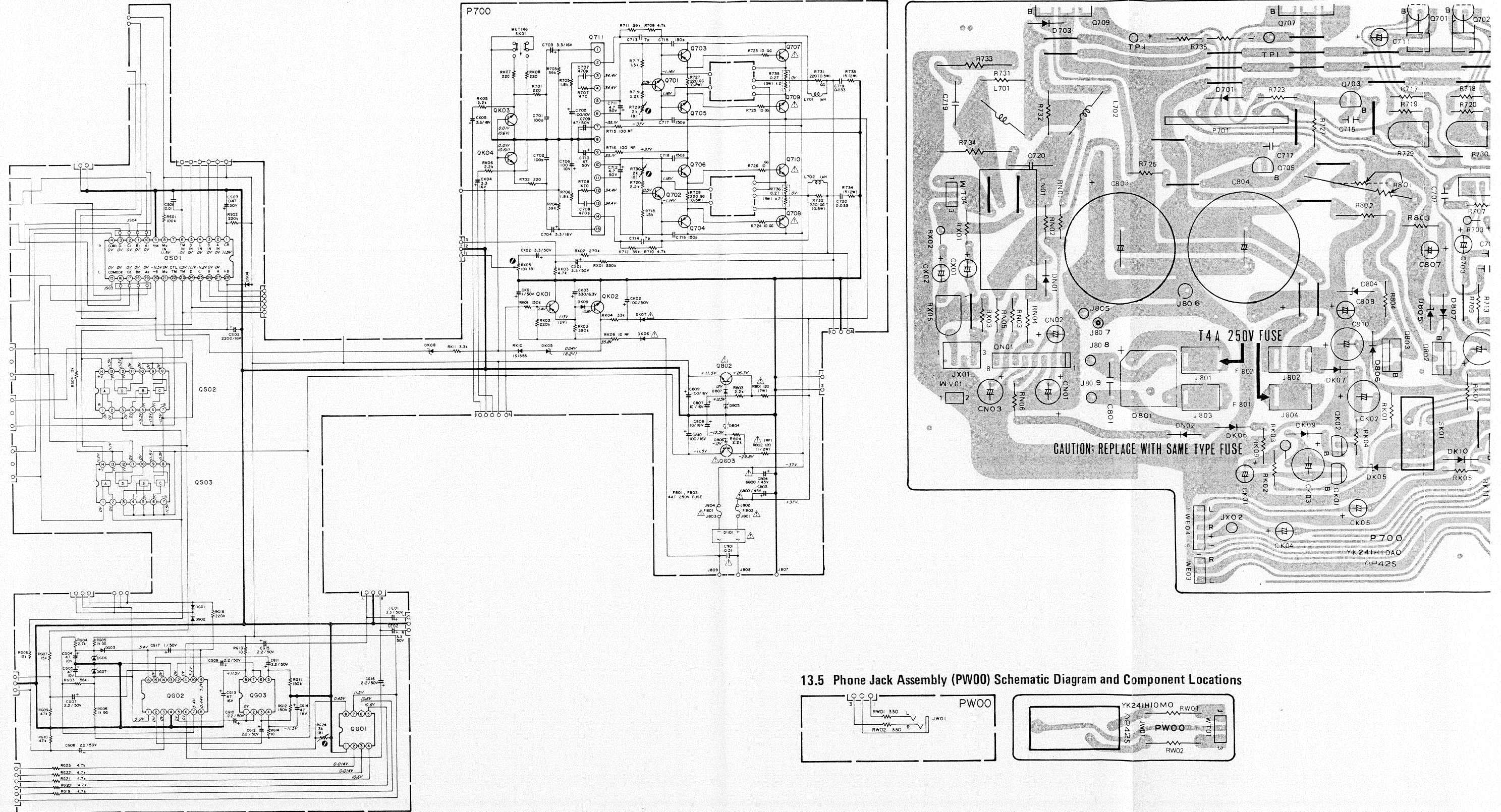
13.2 Elect Volume LED Assembly (PY00) Schematic Diagram and Component Locations



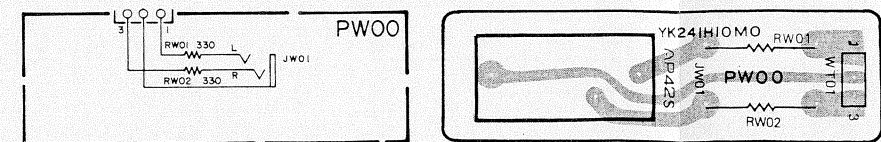
13.3 Tone Volume Assembly (PE01) Schematic Diagram and Component Locations

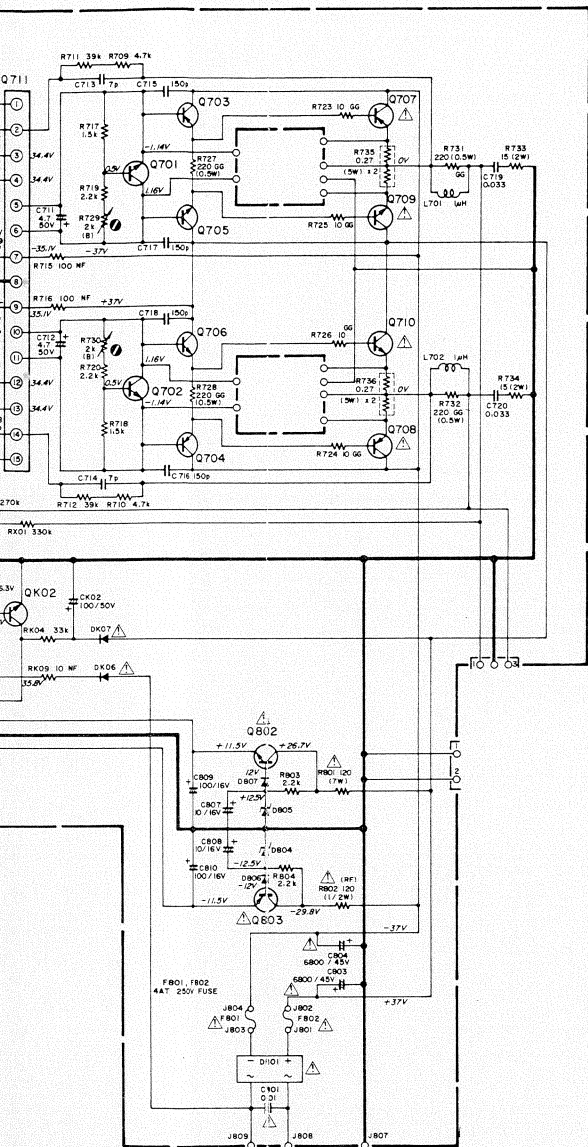


13.4 Main Assembly (P700) Schematic Diagram and Component Locations

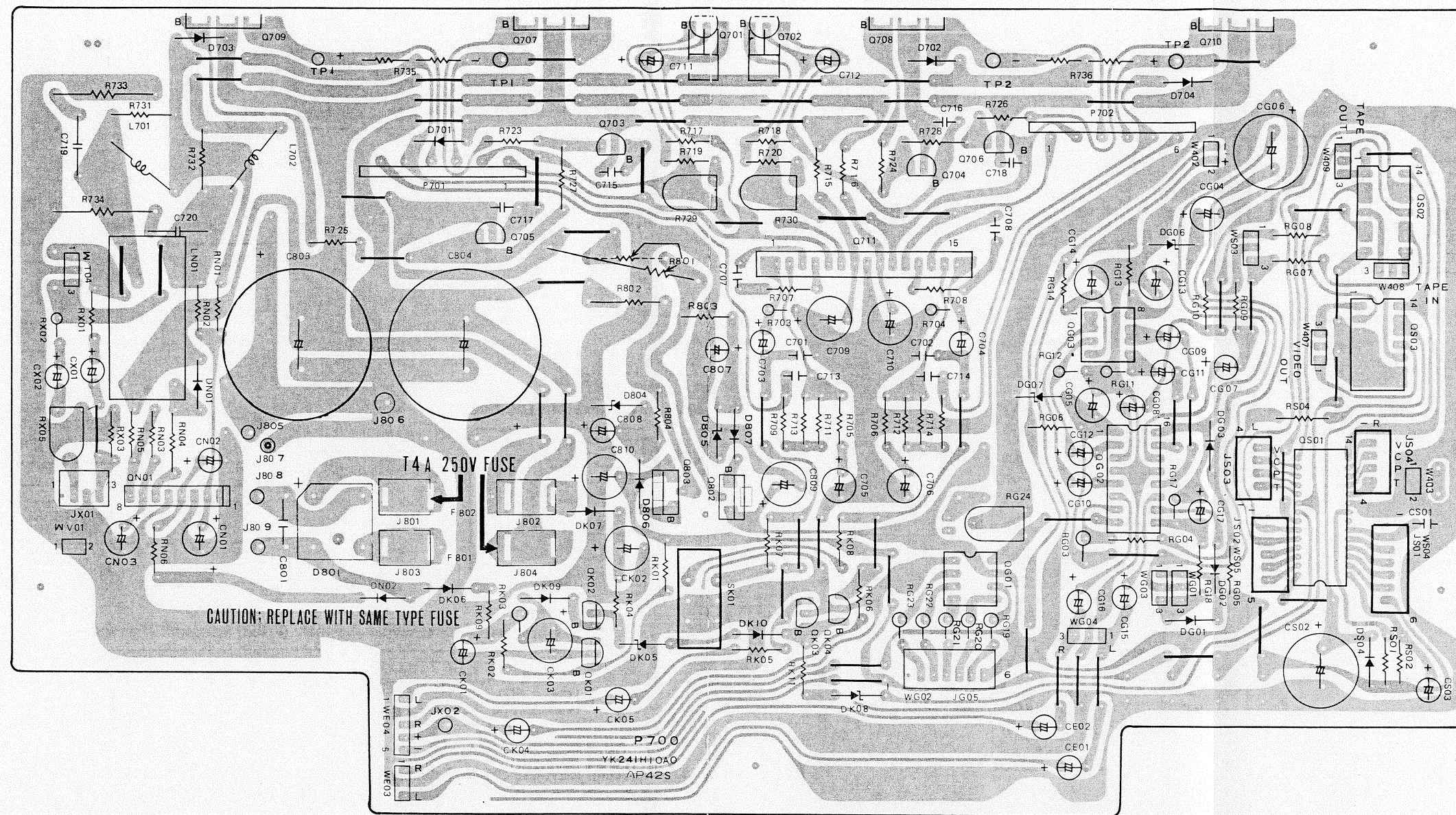
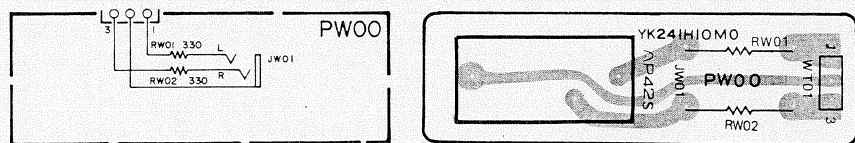


13.5 Phone Jack Assembly (PW00) Schematic Diagram and Component Locations



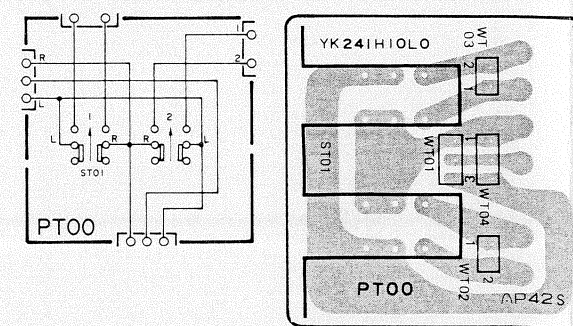


13.5 Phone Jack Assembly (PW00) Schematic Diagram and Component Locations



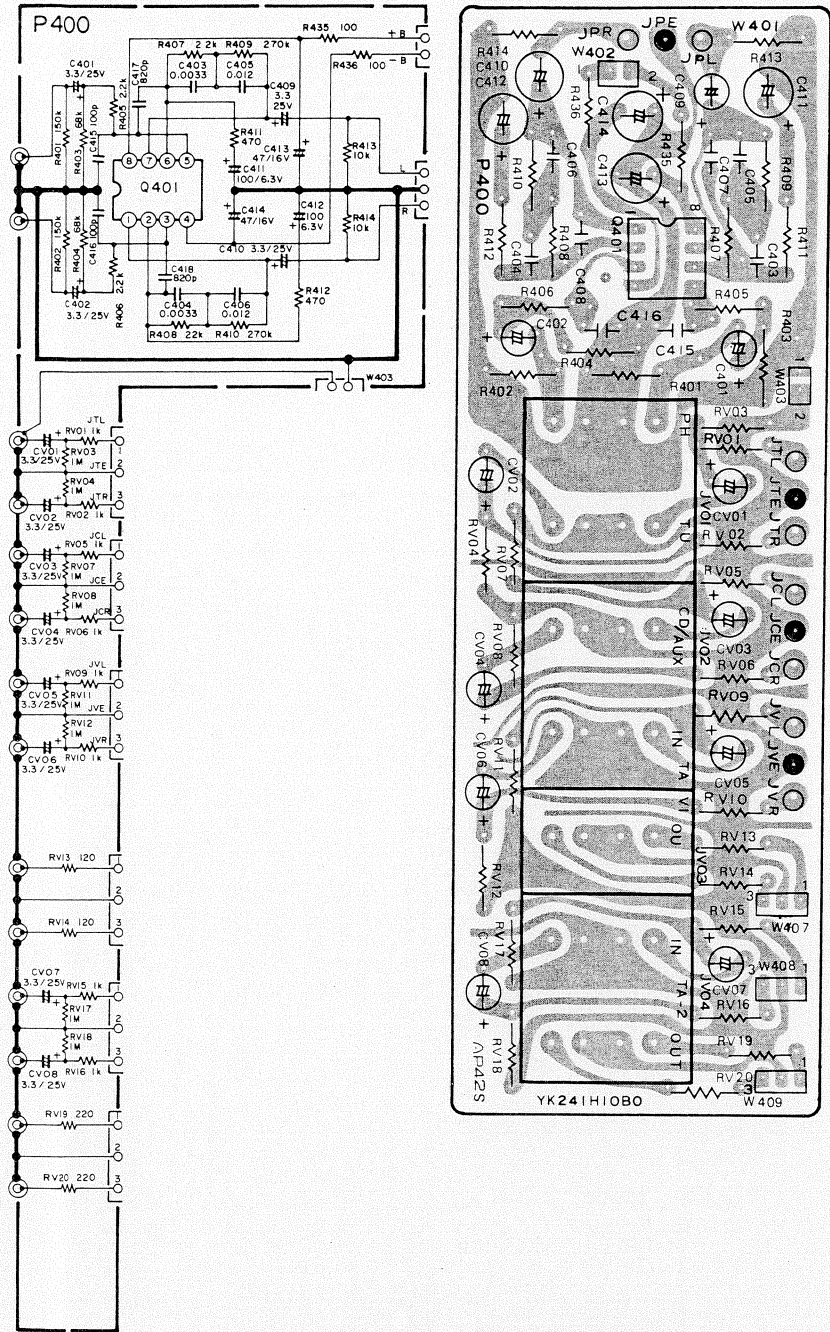
CAUTION: REPLAGE WITH SAME TYPE FUSE

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

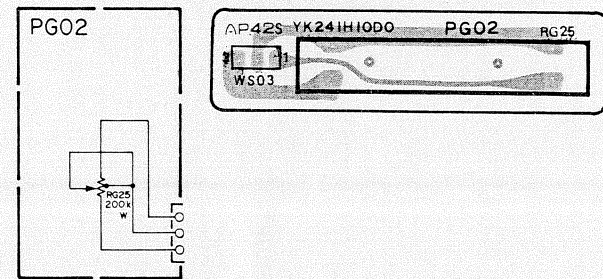


• [C01-99] Front F

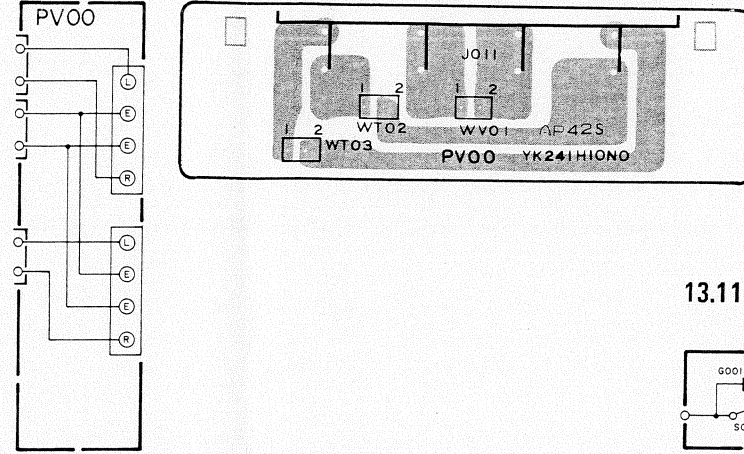
13.7 Phono Amp./Input Terminal Assembly (P400) Schematic Diagram and Component Locations



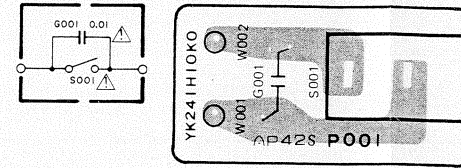
13.8 Balance Volume Assembly (PG02) Schematic Diagram and Component Locations



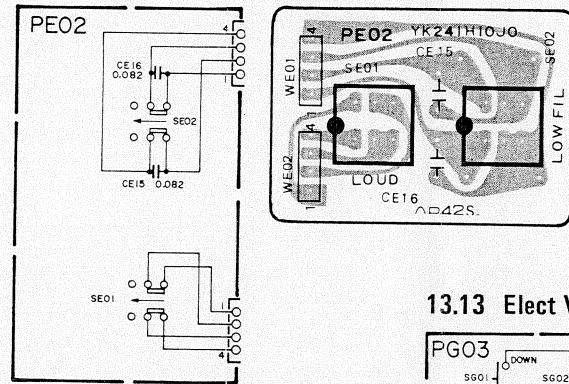
13.9 Speaker Terminal Assembly (PV00) Schematic Diagram and Component Locations



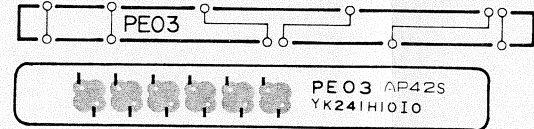
13.11 Power Switch Assembly (P001) Schematic Diagram and Component Locations



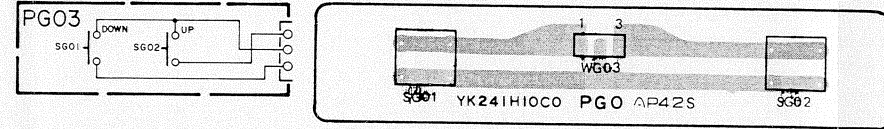
13.10 Low Filter Load. Assembly (PE02) Schematic Diagram and Component Locations



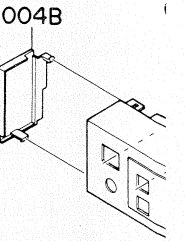
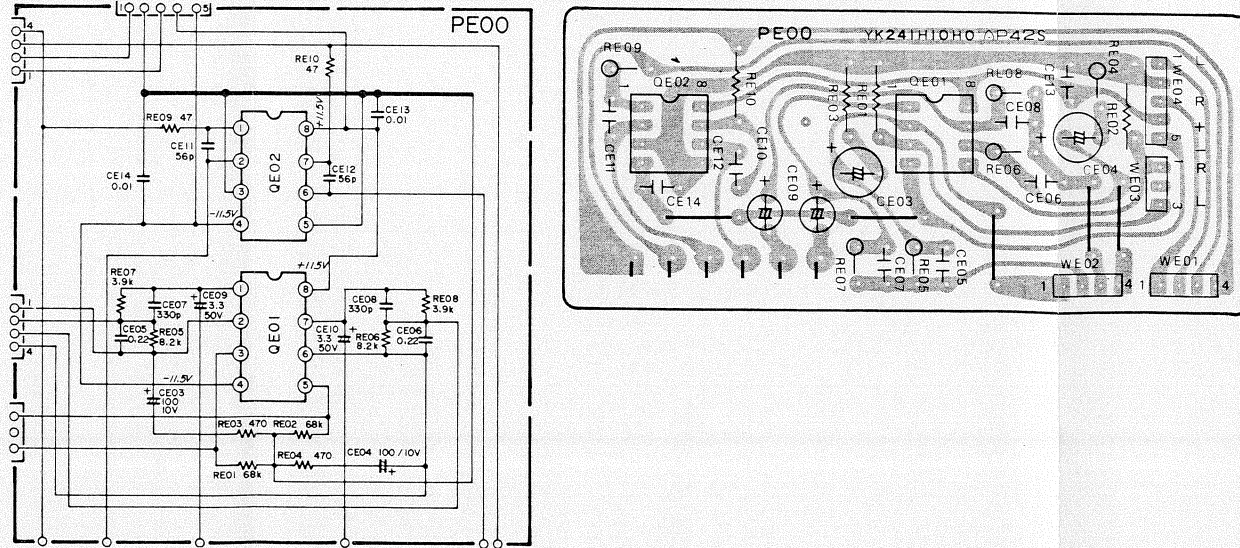
13.12 Tone Amp./Volume Control Assembly (PE03) Schematic Diagram and Component Locations



13.13 Elect Volume Switch Assembly (PG03) Schematic Diagram and Component Locations



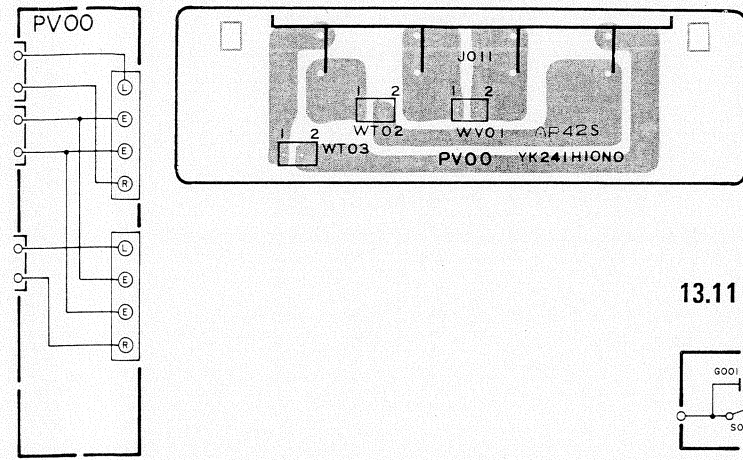
13.14 Tone Amp. Assembly (PE00) Schematic Diagram and Component Locations



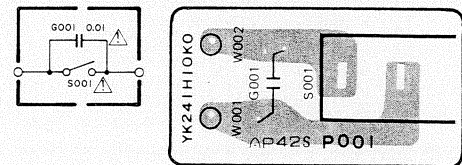
OC

REF. DESIG.	QTY	PART NC
	N A	
A	1 1	241H0634C
002B	1 1	241H06301
003B	1 1	415H06721
004B	1 1	415H06722
008B	1 1	415H25921
009B	2 2	241H2590E
010B	1 1	241H25903
011B	1 1	241H25902
012B	1 1	241H25901
013B	1 1	241H25904
015B	1 1	241H15801
020B	2 2	416H15422
021B	3 3	420H15421
022B	5 5	416H11501
025B	1 1	241H15401
005B	2 2	51280308B
006B	2 2	51280308B
019B	3 3	141T15405
026B	2 2	51282608B

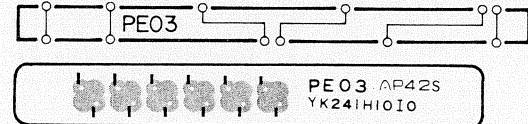
13.9 Speaker Terminal Assembly (PV00) Schematic Diagram and Component Locations



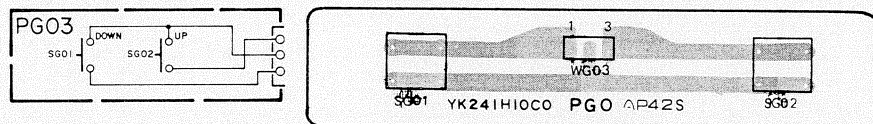
13.11 Power Switch Assembly (P001) Schematic Diagram and Component Locations



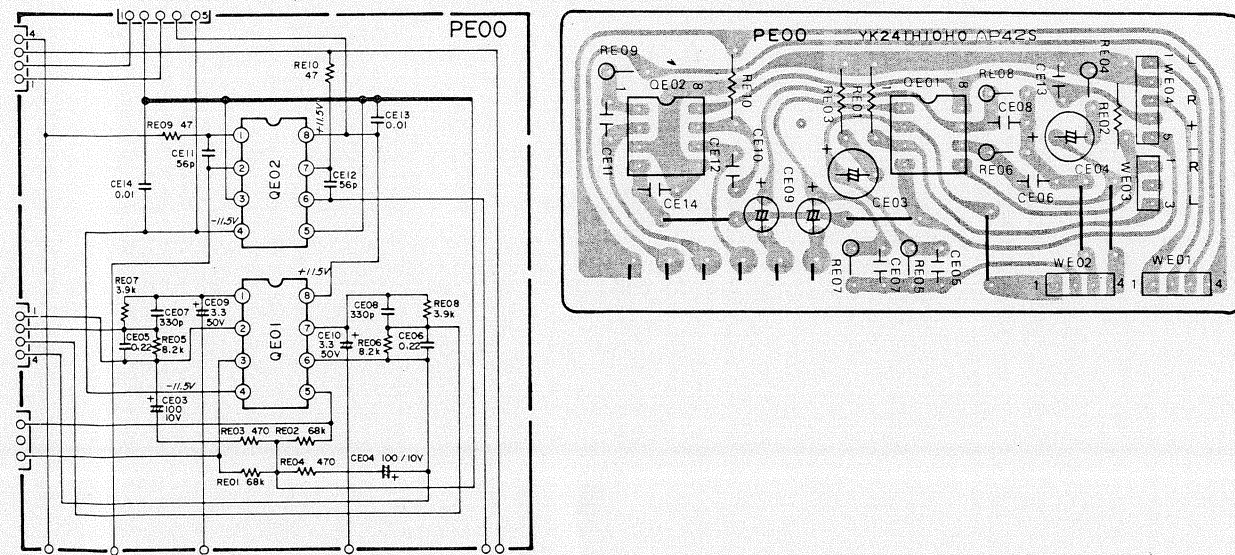
13.12 Tone Amp./Volume Control Assembly (PE03) Schematic Diagram and Component Locations



13.13 Elect Volume Switch Assembly (PG03) Schematic Diagram and Component Locations

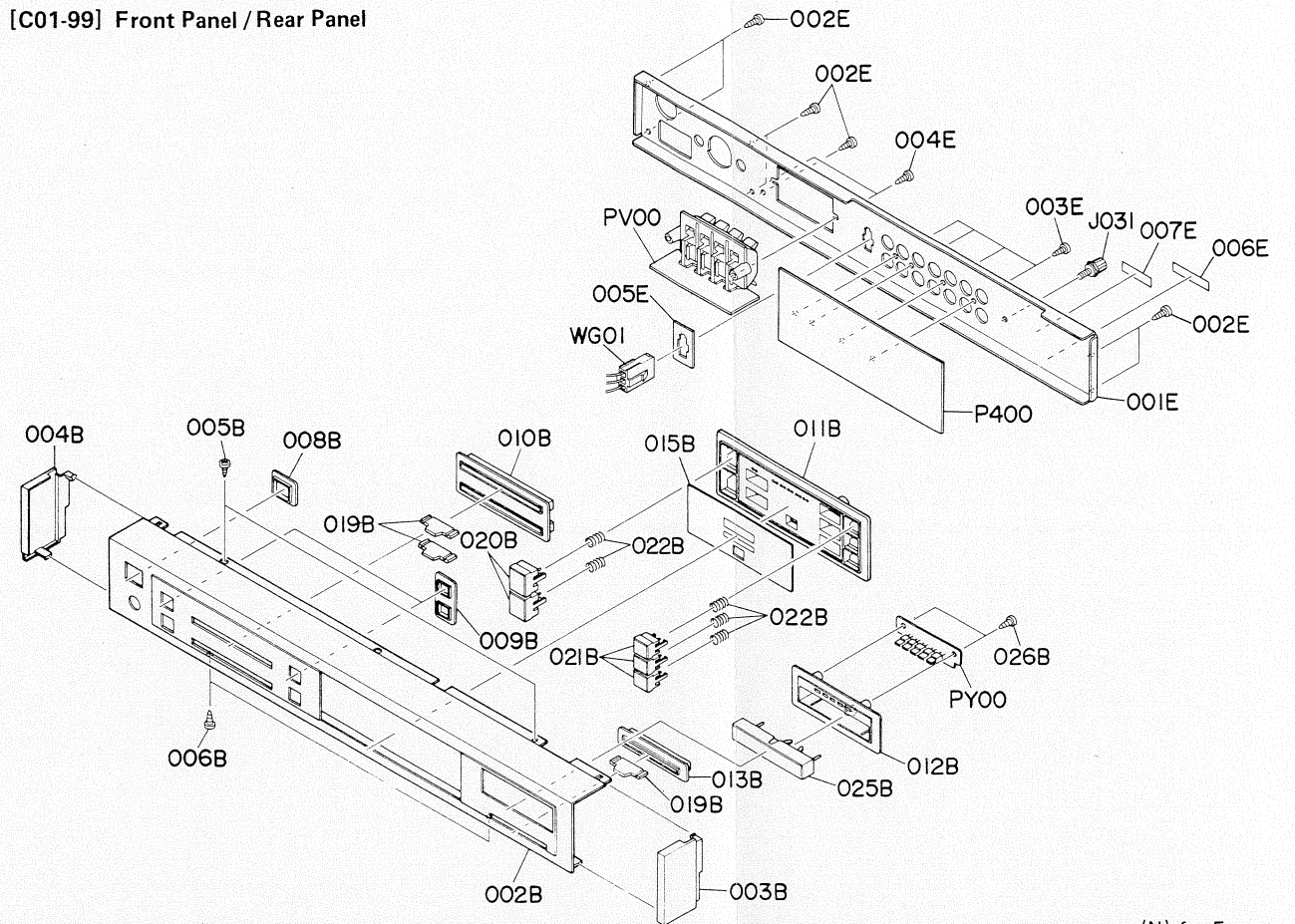


13.14 Tone Amp. Assembly (PE00) Schematic Diagram and Component Locations



14. EXPLODED VIEW AND PARTS LIST

• [C01-99] Front Panel / Rear Panel

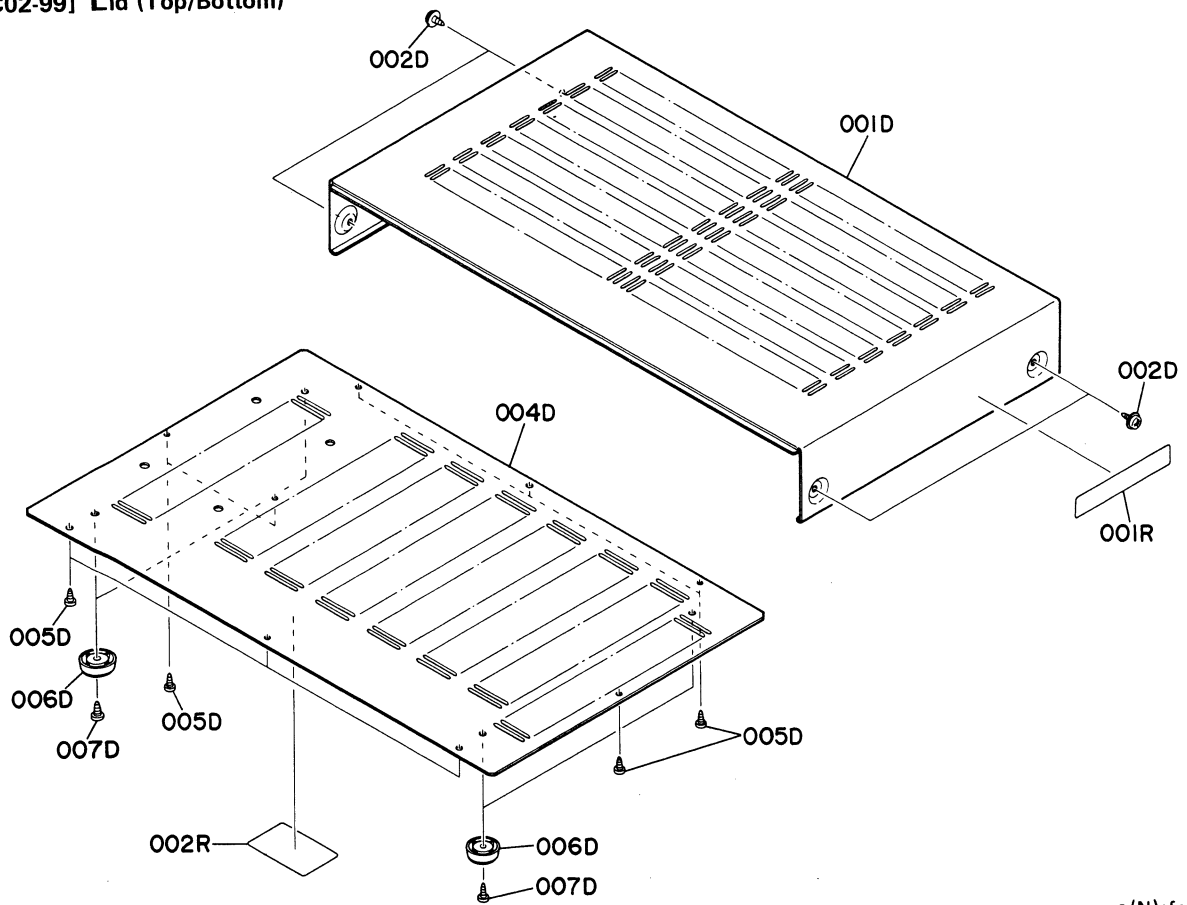


•(N):for Europe
•(A):for Australia

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	N	A		
A	1	1	241H063400	Front Panel Assembly
002B	1	1	241H063010	Escutcheon, Front Panel
003B	1	1	415H067210	Cap (R)
004B	1	1	415H067220	Cap (L)
008B	1	1	415H259210	Bushing, Power Switch
009B	2	2	241H259050	Bushing, Push Switch
010B	1	1	241H259030	Bushing, Tone Control
011B	1	1	241H259020	Bushing, Function Switch
012B	1	1	241H259010	Bushing, Volume
013B	1	1	241H259040	Bushing, Balance
015B	1	1	241H158010	Window
020B	2	2	416H154220	Knob, Tape1/Tape2
021B	3	3	420H154210	Knob, Phone/Tuner/CD
022B	5	5	416H115010	Spring, Function
025B	1	1	241H154010	Knob, Volume
005B	2	2	51280308B0	B.H. Tapped Screw B3 x 8
006B	2	2	51280308B0	B.H. Tapped Screw B3 x 8
019B	3	3	141T154050	Knob, Tone Cont./Balance
026B	2	2	51282608B0	B.H. Tapped Screw B2.6 x 8

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	N	A		
001E	1	1	241H160220	Bracket, Rear Panel
002E	7	7	51280308B0	B.H. Tapped Screw B3 x 8
003E	4	4	51280308B0	B.H. Tapped Screw B3 x 8
004E	2	2	51280308B0	B.H. Tapped Screw B3 x 8
005E	1	1	228H118030	Spacer
006E	1	1	2112265010	Indicator, Serial No.
007E	1	1	4581861010	Label, Made in Japan
J031	1	1	YL03010250	Terminal, GND
WG01	1	1	YB00300720	Connective Cord, (3P)

● [C02-99] Lid (Top/Bottom)

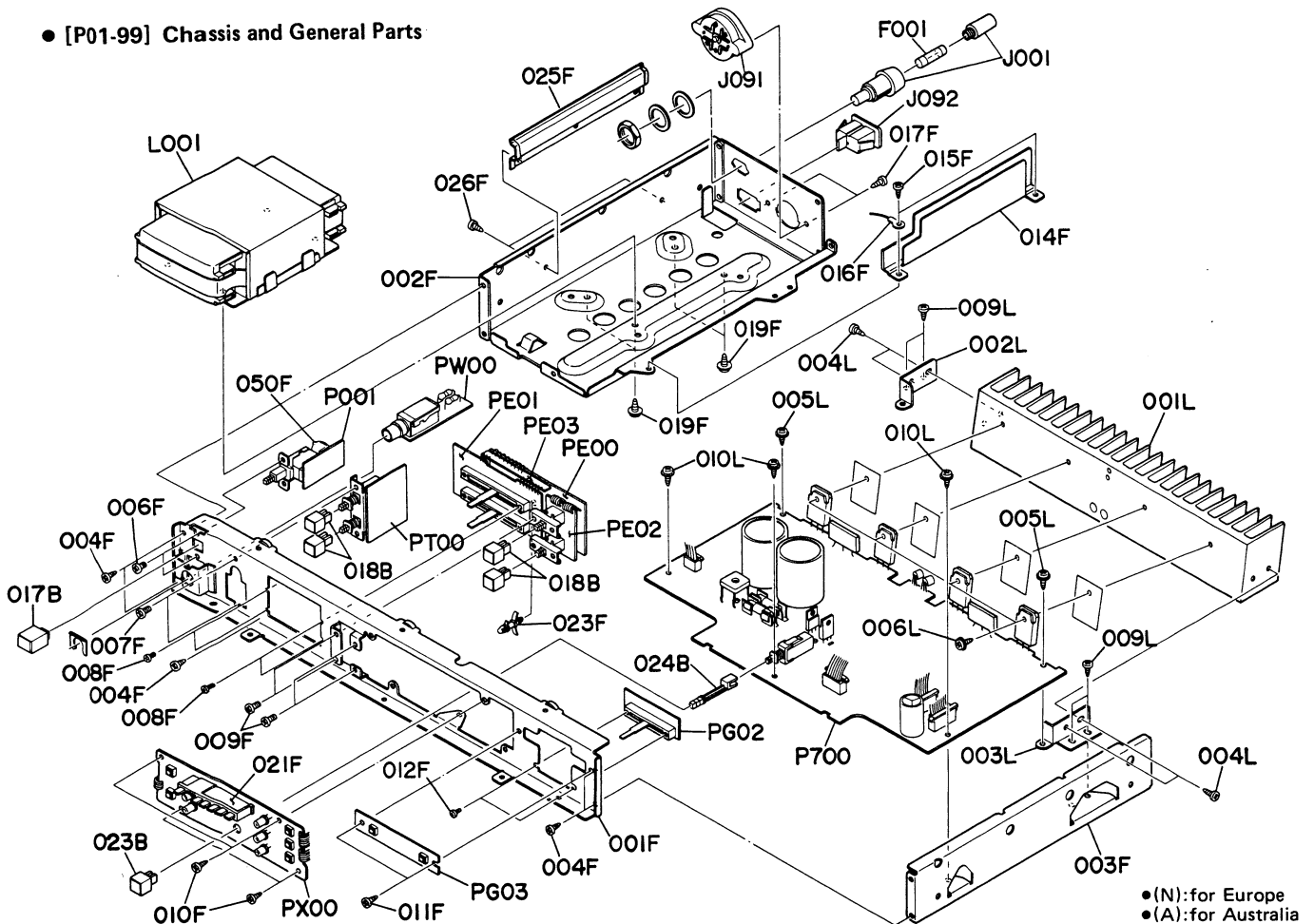


●(N):for Europe
●(A):for Australia

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	N	A		
001D	1	1	241H257010	Lid, Top Cover
002D	4	4	51260408U0	B.T. Screw B4 x 8
004D	1	1	241H257020	Lid, Bottom Cover
005D	9	9	51280308B0	B.H. Tapped Screw B3 x 8
006D	4	4	416H057010	Leg
007D	4	4	51280406U0	B.H. Tapped Screw B4 x 6

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	N	A		
001R	1	1	2911861140	Label
002R	1	1	2911861110	Label

● [P01-99] Chassis and General Parts

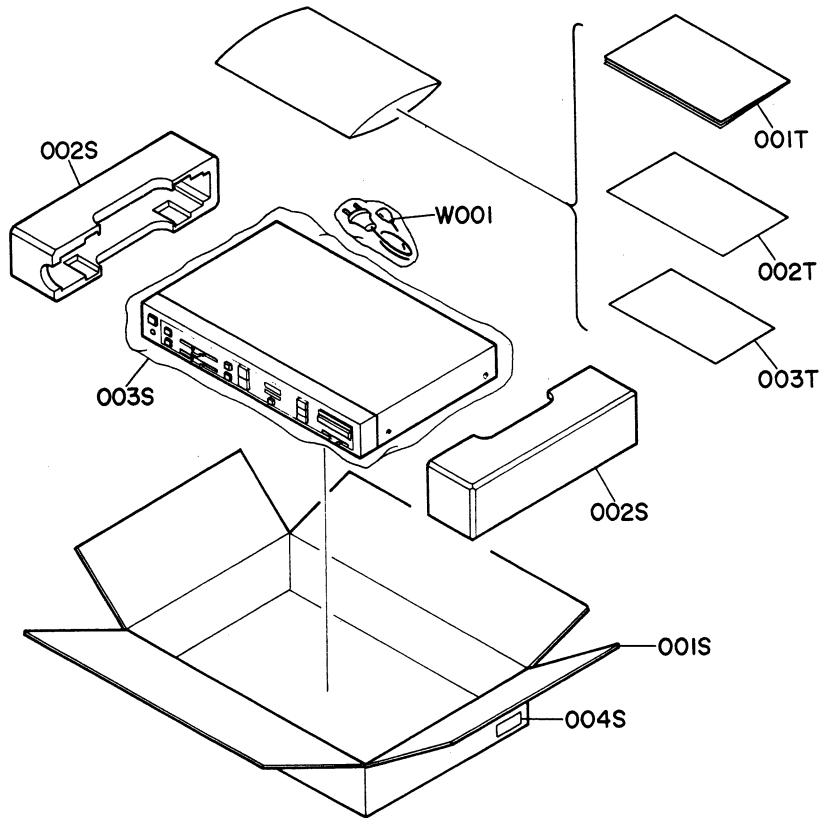


●(N):for Europe
●(A):for Australia

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	N	A		
017B	1	1	415H154210	Knob, Power Switch
018B	4	4	241H154030	Knob, Push Switch
023B	1	1	241H154040	Knob, Muting Switch
024B	1	1	241H112010	Shaft
001F	1	1	241H160010	Bracket, Front Chassis
002F	1	1	241H160020	Bracket, Transformer
003F	1	1	241H160030	Bracket, Stay; (R)
004F	5	5	51280308B0	B.H. Tapped Screw B3 x 8
006F	2	2	51100306A9	B.H.M. Screw B3 x 6
007F	2	2	51100306A9	B.H.M. Screw B3 x 6
008F	4	4	51100203A0	B.H.M. Screw B2 x 3
009F	4	4	51100306A9	B.H.M. Screw B3 x 6
010F	4	4	51280308B0	B.H. Tapped Screw B3 x 8
011F	2	2	51280308B0	B.H. Tapped Screw B3 x 8
012F	2	2	51100203A0	B.H.M. Screw B2 x 3
014F	1	1	240H109010	Shield
015F	2	2	51280308B0	B.H. Tapped Screw B3 x 8
016F	1	1	62030049W0	Lug
017F	2	2	51280308B0	B.H. Tapped Screw B3 x 8

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	N	A		
019F	4	4	51260408B0	B.T. Screw B4 x 8
021F	1	1	241H051010	Guide, LED Spacer
023F	1	1	240H101010	Support
025F	1	1	241H053010	Cover
026F	2	2	51280308B0	B.H. Tapped Screw B3 x 8
050F	1	1	139T120200	Insulator
001L	1	1	241H267010	Heatsink
002L	1	1	241H160060	Bracket, (L)
003L	1	1	241H160070	Bracket, (R)
004L	4	4	51280308B0	B.H. Tapped Screw B3 x 8
005L	2	2	51260308B0	B.H. Screw B3 x 8
006L	4	4	51260310B0	B.H. Screw B3 x 10
009L	4	4	51280308B0	B.H. Tapped Screw B3 x 8
010L	3	3	51260308B0	B.T. Screw B3 x 8
△ F001	1	1	FS10080800	Fuse, 800mAT 250V
J001	1	1	YJ08000290	Jack, Fuse Holder
△ J091	1	1	BY05080050	Voltage Selector
△ J092	1	1	YP04000580	Plug, AC Inlet
△ L001	1	1	TS17802010	Power Transformer

● [H01-99] Packing Materials



●(N):for Europe
●(A):for Australia

REF. DESIG.	QTY		PART NO.	DESCRIPTION
	N	A		
001S	1	1	241H801010	PACKING Packing Case
002S	2	2	241H809010	Cushion
003S	1	1	9090808030	Polyethylene Sheet
004S	4		9526019060	Serial No. Card
004S		4	9526019030	Serial No. Card
001T	1	1	241H851310	Instructions
002T	1	1	241H851320	Instructions, Spec
003T	1		241H856010	Circuit Diagram
003T		1	9631000090	Guarantee Card

REF. DESIG.	QTY		PART NO.	DESCRIPTION
	N	A		
△W001	1		ZC01805010	A.C. Power Cord
△W001		1	ZC02006020	A.C. Power Cord

15. ELECTRICAL PARTS LIST

•(N):for Europe
•(A):for Australia

REF. DESIG.	QTY		PART NO.	DESCRIPTION
	N	A		
P400	1	1	YK241H10B0	P400-PHONO INPUT CIRCUIT BOARD P.W. Board, Phono Input
	1	1	ZZ241H80B0	P.W. Board Assembly
				P400-CAPACITORS
CV01	1	1	EJ33502510	Elect 3.3μF 25V
CV02	1	1	EJ33502510	Elect 3.3μF 25V
CV03	1	1	EJ33502510	Elect 3.3μF 25V
CV04	1	1	EJ33502510	Elect 3.3μF 25V
CV05	1	1	EJ33502510	Elect 3.3μF 25V
CV06	1	1	EJ33502510	Elect 3.3μF 25V
CV07	1	1	EJ33502510	Elect 3.3μF 25V
CV08	1	1	EJ33502510	Elect 3.3μF 25V
C401	1	1	EJ33502510	Elect 3.3μF 25V
C402	1	1	EJ33502510	Elect 3.3μF 25V
C403	1	1	DF15332310	Film 3300pF ±5%
C404	1	1	DF15332310	Film 3300pF ±5%
C405	1	1	DF15123310	Film 0.012μF ±5%
C406	1	1	DF15123310	Film 0.012μF ±5%
C409	1	1	EJ33502510	Elect 3.3μF 25V
C410	1	1	EJ33502510	Elect 3.3μF 25V
C411	1	1	EJ10700610	Elect 100μF 6.3V
C412	1	1	EJ10700610	Elect 100μF 6.3V
C413	1	1	EJ47601610	Elect 47μF 16V
C414	1	1	EJ47601610	Elect 47μF 16V
C415	1	1	DD15101370	Ceramic 100pF ±5%
C416	1	1	DD15101370	Ceramic 100pF ±5%
C417	1	1	DD15821370	Ceramic 820pF ±5%
C418	1	1	DD15821370	Ceramic 820pF ±5%
				P400-RESISTORS (All Resistors are ±5% and ¼W)
RV01	1	1	GD05102140	1KΩ
RV02	1	1	GD05102140	1KΩ
RV03	1	1	GD05105140	1MΩ
RV04	1	1	GD05105140	1MΩ
RV05	1	1	GD05102140	1KΩ
RV06	1	1	GD05102140	1KΩ
RV07	1	1	GD05105140	1MΩ
RV08	1	1	GD05105140	1MΩ
RV09	1	1	GD05102140	1KΩ
RV10	1	1	GD05102140	1KΩ
RV11	1	1	GD05105140	1MΩ
RV12	1	1	GD05105140	1MΩ
RV13	1	1	GD05121140	120Ω
RV14	1	1	GD05121140	120Ω
RV15	1	1	GD05102140	1KΩ
RV16	1	1	GD05102140	1KΩ
RV17	1	1	GD05105140	1MΩ
RV18	1	1	GD05105140	1MΩ
RV19	1	1	GD05221140	220Ω
RV20	1	1	GD05221140	220Ω
R401	1	1	GD05154140	150KΩ
R402	1	1	GD05154140	150KΩ
R403	1	1	GD05683140	68KΩ
R404	1	1	GD05683140	68KΩ
R405	1	1	GD05222140	2.2KΩ
R406	1	1	GD05222140	2.2KΩ
R407	1	1	GD05223140	22KΩ
R408	1	1	GD05223140	22KΩ
R409	1	1	GD05274140	270KΩ
R410	1	1	GD05274140	270KΩ

REF. DESIG.	QTY		PART NO.	DESCRIPTION
	N	A		
R411	1	1	GD05471140	470Ω
R412	1	1	GD05471140	470Ω
R413	1	1	GD05103140	10KΩ
R414	1	1	GD05103140	10KΩ
R435	1	1	GG05101140	100Ω
R436	1	1	GG05101140	100Ω
Q401	1	1	HC10008090	P400-SEMICONDUCTOR IC NJM4558D-D
JV01	1	1	YT02020330	P400-MISCELLANEOUS Terminal, (2P) RCA Jack
JV02	1	1	YT02060200	Terminal, (6P) RCA Jack
JV03	1	1	YT02060200	Terminal, (6P) RCA Jack
W401	1	1	YU03340260	Jumper Lead, (3P)
W402	1	1	YU02260260	Jumper Lead, (2P)
W403	1	1	YU02280260	Jumper Lead, (2P)
W404	?	5	YU03340260	Jumper Lead, (3P)
W408				
W409	1	1	YU03340260	Jumper Lead, (3P)
P700	1	1	YK241H10A0	P700-MAIN CIRCUIT BOARD P.W. Board, Main
	1	1	ZZ241H80A0	P.W. Board Assembly
CE01	1	1	EA33505030	P700-CAPACITORS Elect 3.3μF 50V
CE02	1	1	EA33505030	Elect 3.3μF 50V
CG04	1	1	EA47601030	Elect 47μF 10V
CG05	1	1	EA47601030	Elect 47μF 10V
CG07	1	1	EA22505030	Elect 2.2μF 50V
CG08	1	1	EA22505030	Elect 2.2μF 50V
CG09	1	1	EA22505030	Elect 2.2μF 50V
CG10	1	1	EA22505030	Elect 2.2μF 50V
CG11	1	1	EA22505030	Elect 2.2μF 50V
CG12	1	1	EA22505030	Elect 2.2μF 50V
CG13	1	1	EA47601630	Elect 47μF 16V
CG14	1	1	EA47601630	Elect 47μF 16V
CG15	1	1	EA22505030	Elect 2.2μF 50V
CG16	1	1	EA22505030	Elect 2.2μF 50V
CG17	1	1	EA10505030	Elect 1μF 50V
CK01	1	1	EA10505030	Elect 1μF 50V
CK02	1	1	EA10705030	Elect 100μF 50V
CK03	1	1	EA33700630	Elect 330μF 6.3V
CK04	1	1	EA33505030	Elect 3.3μF 50V
CK05	1	1	EA33505030	Elect 3.3μF 50V
CS01	1	1	DK17103300	Ceramic 0.01μF ±20%
CS02	1	1	EA22801630	Elect 2200μF 16V
CS03	1	1	EA47405030	Elect 0.47μF 50V
CX01	1	1	EA33505030	Elect 3.3μF 50V
CX02	1	1	EA33505030	Elect 3.3μF 50V
C701	1	1	DK16101300	Ceramic 100pF ±10%
C702	1	1	DK16101300	Ceramic 100pF ±10%
C703	1	1	EA33505030	Elect 3.3μF 50V
C704	1	1	EA33505030	Elect 3.3μF 50V
C705	1	1	EA10701030	Elect 100μF 10V
C706	1	1	EA10701030	Elect 100μF 10V
C707	1	1	DD15471370	Ceramic 470pF ±5%
C708	1	1	DD15471370	Ceramic 470pF ±5%
C709	1	1	EA47605030	Elect 47μF 50V
C710	1	1	EA47605030	Elect 47μF 50V

●(N):for Europe
●(A):for Australia

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	N	A		
C711	1	1	EA47505030	Elect 4.7 μ F 50V
C712	1	1	EA47505030	Elect 4.7 μ F 50V
C713	1	1	DD11070300	Ceramic 7pF \pm 0.5pF
C714	1	1	DD11070300	Ceramic 7pF \pm 0.5pF
C715	1	1	DK16151550	Ceramic 150pF \pm 10%
C716	1	1	DK16151550	Ceramic 150pF \pm 10%
C717	1	1	DK16151550	Ceramic 150pF \pm 10%
C718	1	1	DK16151550	Ceramic 150pF \pm 10%
C719	1	1	DF15333550	Film 0.033 μ F \pm 5%
C720	1	1	DF15333550	Film 0.033 μ F \pm 5%
Δ C801	1	1	DK18103510	Ceramic 0.01 μ F
Δ C803	1	1	EB68804570	Elect 6800 μ F 45V
Δ C804	1	1	EB68804570	Elect 6800 μ F 45V
C807	1	1	EA10601630	Elect 10 μ F 16V
C808	1	1	EA10601630	Elect 10 μ F 16V
C809	1	1	EA10701630	Elect 100 μ F 16V
C810	1	1	EA10701630	Elect 100 μ F 16V
P700-RESISTORS (All Resistors are \pm 5% and 1/4W)				
RG03	1	1	GD05563140	56K Ω
RG04	1	1	GD05272140	2.7K Ω
RG05	1	1	GG05102140	1K Ω
RG06	1	1	GG05102140	1K Ω
RG07	1	1	GD05153140	15K Ω
RG08	1	1	GD05153140	15K Ω
RG09	1	1	GD05473140	47K Ω
RG10	1	1	GD05473140	47K Ω
RG11	1	1	GD05154140	150K Ω
RG12	1	1	GD05154140	150K Ω
RG13	1	1	GG05100140	10 Ω
RG14	1	1	GG05100140	10 Ω
RG18	1	1	GD05224140	220K Ω
RG19	1	1	GD05472140	4.7K Ω
RG20	1	1	GD05472140	4.7K Ω
RG21	1	1	GD05472140	4.7K Ω
RG22	1	1	GD05472140	4.7K Ω
RG23	1	1	GD05472140	4.7K Ω
RG24	1	1	RA03020800	3K Ω (B), Trimming
RK01	1	1	GD05154140	150K Ω
RK02	1	1	GD05224140	220K Ω
RK03	1	1	GD05394140	390K Ω
RK04	1	1	GD05333140	33K Ω
RK05	1	1	GD05222140	2.2K Ω
RK06	1	1	GD05222140	2.2K Ω
RK07	1	1	GD05221140	220 Ω
RK08	1	1	GD05221140	220 Ω
RK09	1	1	GG05100140	10 Ω
RK11	1	1	GD05392140	3.9K Ω
RS01	1	1	GD05104140	100K Ω
RS02	1	1	GD05224140	220K Ω
RS04	1	1	GD05103140	10K Ω
RX01	1	1	GD05334140	330K Ω
RX02	1	1	GD05274140	270K Ω
RX03	1	1	GD05472140	4.7K Ω
RX05	1	1	RA01030800	10K Ω (B), Trimming

REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	N	A		
R701	1	1	GD05221140	220 Ω
R702	1	1	GD05221140	220 Ω
R703	1	1	GD05393140	39K Ω
R704	1	1	GD05393140	39K Ω
R705	1	1	GD05182140	1.8K Ω
R706	1	1	GD05182140	1.8K Ω
R707	1	1	GD05471140	470 Ω
R708	1	1	GD05471140	470 Ω
R709	1	1	GD05472140	4.7K Ω
R710	1	1	GD05472140	4.7K Ω
R711	1	1	GD05393140	39K Ω
R712	1	1	GD05393140	39K Ω
R715	1	1	NF02101140	100 Ω
R716	1	1	NF02101140	100 Ω
R717	1	1	GD05152140	1.5K Ω
R718	1	1	GD05152140	1.5K Ω
R719	1	1	GD05222140	2.2K Ω
R720	1	1	GD05222140	2.2K Ω
R723	1	1	GG05100140	10 Ω
R724	1	1	GG05100140	10 Ω
R725	1	1	GG05100140	10 Ω
R726	1	1	GG05100140	10 Ω
R727	1	1	GG05221120	220 Ω 1/4W
R728	1	1	GG05221120	220 Ω 1/4W
R729	1	1	RA02020800	2K Ω (B), Trimming
R730	1	1	RA02020800	2K Ω (B), Trimming
R731	1	1	GG05221120	220 Ω 1/4W
R732	1	1	GG05221120	220 Ω 1/4W
R733	1	1	GA05150020	15 Ω 2W
R734	1	1	GA05150020	15 Ω 2W
R735	1	1	BW10000030	0.27 Ω x 2 5W, Compo.
R736	1	1	BW10000030	0.27 Ω x 2 5W, Compo.
Δ R801	1	1	RF05121070	120 Ω 7W, Fusible
Δ R802	1	1	RF05121120	120 Ω 1/2W, Fusible
R803	1	1	GD05222140	2.2K Ω
R804	1	1	GD05222140	2.2K Ω
P700-SEMICONDUCTORS				
DG01	1	1	HD20001000	Diode 1S1555
DG02	1	1	HD20001000	Diode 1S1555
DG03	1	1	HD20001000	Diode 1S1555
DG06	1	1	HD30023010	Zener HZ6C1L
DG07	1	1	HD30023010	Zener HZ6C1L
DK05	1	1	HD30023090	Zener WZ071
Δ DK06	1	1	HD20015030	Diode DS135D
Δ DK07	1	1	HD20015030	Diode DS135D
DK08	1	1	HD30023010	Zener HZ6C1L
DK09	1	1	HD20001000	Diode 1S1555
DK10	1	1	HD20001000	Diode 1S1555
DS04	1	1	HD20001000	Diode 1S1555
Δ D801	1	1	HD20008290	Diode S4VB20
D804	1	1	HD30009010	Zener HZ12A2L
D805	1	1	HD30009010	Zener HZ12A2L
D806	1	1	HD20002210	Diode 1S2472
D807	1	1	HD20002210	Diode 1S2472
QG01	1	1	HC10008370	IC TL489C
QG02	1	1	HC10085050	IC TC9153P
QG03	1	1	HC10008090	IC NJM4558DD

●(N):for Europe
●(A):for Australia

REF. DESIG.	QTY		PART NO.	DESCRIPTION
	N	A		
QK01	1	1	HT111752B0	Transistor 2SA1175(JF or HF)
QK02	1	1	HT327852B0	Transistor 2SC2785(JF or HF)
QK03	1	1	HT413022B0	Transistor 2SD1302(S or T)
QK04	1	1	HT413022B0	Transistor 2SD1302(S or T)
QS01	1	1	HC10110030	IC LC7815H
QS02	1	1	HC406603C0	IC LC4066B-H
QS03	1	1	HC406603C0	IC LC4066B-H
Q701	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q702	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q703	1	1	HT206472F0	Transistor 2SB647(C or D)
Q704	1	1	HT206472F0	Transistor 2SB647(C or D)
Q705	1	1	HT406672F0	Transistor 2SD667(C or D)
Q706	1	1	HT406672F0	Transistor 2SD667(C or D)
△Q707	1	1	HT111032B0	Transistor 2SA1103(O or Y)
△Q708	1	1	HT111032B0	Transistor 2SA1103(O or Y)
△Q709	1	1	HT325782B0	Transistor 2SC2578(O or Y)
△Q710	1	1	HT325782B0	Transistor 2SC2578(O or Y)
Q711	1	1	HC10111030	IC STK3042A
△Q802	1	1	HT412652A0	Transistor 2SD1265(O or P)
△Q803	1	1	HT205072P0	Transistor 2SB507(D or E)
P700-MISCELLANEOUS				
△F801	1	1	FS10400800	Fuse 4.0AT 250V
△F802	1	1	FS10400800	Fuse 4.0AT 250V
JG05	1	1	YJ06002450	Jack, (6P)
JS01	1	1	YJ06002450	Jack, (6P)
JS02	1	1	YJ06002390	Jack, (5P)
JS03	1	1	YJ06002440	Jack, (4P)
JS04	1	1	YJ06002440	Jack, (4P)
JX01	1	1	YJ06002430	Jack, (3P)
J801	1	1	YJ08000270	Jack, Fuse Clip
J802	1	1	YJ08000270	Jack, Fuse Clip
J803	1	1	YJ08000270	Jack, Fuse Clip
J804	1	1	YJ08000270	Jack, Fuse Clip
L701	1	1	LL23905120	Coil
L702	1	1	LL23905120	Coil
SK01	1	1	SP02011030	Push Switch, Muting
WG01	1	1	YB00300720	Connective Cord, (3P)
WG02	1	1	YU06140260	Jumper Lead, (6P)
WG03	1	1	YU03100260	Jumper Lead, (3P)
WS03	1	1	YU03160260	Jumper Lead, (3P)
WS04	1	1	YU06120260	Jumper Lead, (6P)
WS05	1	1	YU05120260	Jumper Lead, (5P)

REF. DESIG.	QTY		PART NO.	DESCRIPTION
	N	A		
PE00	1	1	YK241H10H0	PE00-TONE AMP CIRCUIT BOARD P.W. Board, Tone Amp
	1	1	ZZ241H80H0	P.W. Board Assembly
PE00-CAPACITORS				
CE03	1	1	EA10701030	Elect 100μF 10V
CE04	1	1	EA10701030	Elect 100μF 10V
CE05	1	1	DF15224350	Film 0.22μF ±5%
CE06	1	1	DF15224350	Film 0.22μF ±5%
CE07	1	1	DK16331300	Ceramic 330pF ±10%
CE08	1	1	DK16331300	Ceramic 330pF ±10%
CE09	1	1	EA33505030	Elect 3.3μF 50V
CE10	1	1	EA33505030	Elect 3.3μF 50V
CE11	1	1	DD15560370	Ceramic 56pF ±5%
CE12	1	1	DD15560370	Ceramic 56pF ±5%
CE13	1	1	DK18103310	Ceramic 0.01μF
CE14	1	1	DK18103310	Ceramic 0.01μF
PE00-RESISTORS (All Resistors are ±5% and ¼W)				
RE01	1	1	GD05683140	68KΩ
RE02	1	1	GD05683140	68KΩ
RE03	1	1	GD05471140	470Ω
RE04	1	1	GD05471140	470Ω
RE05	1	1	GD05822140	8.2KΩ
RE06	1	1	GD05822140	8.2KΩ
RE07	1	1	GD05392140	3.9KΩ
RE08	1	1	GD05392140	3.9KΩ
RE09	1	1	GD05470140	47Ω
RE10	1	1	GD05470140	47Ω
PE00-SEMICONDUCTORS				
QE01	1	1	HC10021090	IC NJM4560D-D
QE02	1	1	HC10003090	IC NJM4558D
PE00-MISCELLANEOUS				
WE01	1	1	YU04060260	Jumper Lead, (4P)
WE02	1	1	YU04060260	Jumper Lead, (4P)
WE03	1	1	YU04060260	Jumper Lead, (4P)
WE04	1	1	YU03060260	Jumper Lead, (3P)
PE01-TONE VOLUME CIRCUIT BOARD				
PE01	1	1	YK241H10G0	P.W. Board, Tone Volume
	1	1	ZZ241H80G0	P.W. Board Assembly
PE01-CAPACITORS				
CE17	1	1	DK16101300	Ceramic 100pF ±10%
CE18	1	1	DK16101300	Ceramic 100pF ±10%
CE19	1	1	DF15102300	Film 1000pF ±5%
CE20	1	1	DF15102300	Film 1000pF ±5%
CE21	1	1	DF16183300	Film 0.018μF ±10%
CE22	1	1	DF16183300	Film 0.018μF ±10%
CE23	1	1	DF16183300	Film 0.018μF ±10%
CE24	1	1	DF16183300	Film 0.018μF ±10%

•(N):for Europe
•(A):for Australia

REF. DESIG.	QTY		PART NO.	DESCRIPTION
	N	A		
PE01-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$)				
RE13	1	1	GD05682140	6.8K Ω
RE14	1	1	GD05682140	6.8K Ω
RE15	1	1	GD05682140	6.8K Ω
RE16	1	1	GD05682140	6.8K Ω
RE17	1	1	GD05273140	27K Ω
RE18	1	1	GD05273140	27K Ω
RE19	1	1	GD05103140	10K Ω
RE20	1	1	GD05103140	10K Ω
RE21	1	1	GD05273140	27K Ω
RE22	1	1	GD05273140	27K Ω
RE23	1	1	RS01040230	100K Ω (B) x 2, Variable
RE24	1	1	RS01040230	100K Ω (B) x 2, Variable
PE02-LOW FILTER/LOUDNESS CIRCUIT BOARD				
PE02	1	1	YK241H10J0	P.W. Board, Low Filter Loudness
	1	1	ZZ241H80J0	P.W. Board Assembly
CE15	1	1	DF15823350	Film Cap. 0.082 μ F $\pm 5\%$
CE16	1	1	DF15823350	Film Cap. 0.082 μ F $\pm 5\%$
SE01	1	1	SP02011020	Push Switch, Loudness
SE02	1	1	SP02011020	Push Switch, Low Filter
PE03-CONNECT CIRCUIT BOARD				
PE03	1	1	YK241H10I0	P.W. Board, Connect
PG02-BALANCE VOLUME CIRCUIT BOARD				
PG02	1	1	YK241H10D0	P.W. Board, Balance Volume
	1	1	ZZ241H80D0	P.W. Board Assembly
RG25	1	1	RX02040040	Variable Resistor 200K Ω (W)
PG03-ELECT VOLUME SWITCH CIRCUIT BOARD				
PG03	1	1	YK241H10C0	P.W. Board, Elect Volume Switch
	1	1	ZZ241H80C0	P.W. Board Assembly
SG01	1	1	SP01010570	Push Switch, Down
SG02	1	1	SP01010570	Push Switch, Up
PT00-SPEAKER SWITCH CIRCUIT BOARD				
PT00	1	1	YK241H10L0	P.W. Board, Speaker Switch
	1	1	ZZ241H80L0	P.W. Board Assembly
ST01	1	1	SP02020690	Push Switch, Speaker
WT01	1	1	YU03060260	Jumper Lead, (3P)
WT02	1	1	YU02280240	Jumper Lead, (2P)
WT03	1	1	YU02280240	Jumper Lead, (2P)
WT04	1	1	YU03160240	Jumper Lead, (3P)

REF. DESIG.	QTY		PART NO.	DESCRIPTION
	N	A		
PV00-SPEAKER TERMINAL CIRCUIT BOARD				
PV00	1	1	YK241H10N0	P.W. Board, Speaker Terminal
	1	1	ZZ241H80N0	P.W. Board Assembly
J011	1	1	YT03080020	Terminal, Speaker
WV01	1	1	YU02260240	Jumper Lead, (2P)
PW01-PHONE JACK CIRCUIT BOARD				
PW00	1	1	YK241H10M0	P.W. Board, Phone Jack
	1	1	ZZ241H80M0	P.W. Board Assembly
RW01	1	1	GA05331010	Resistor 330 Ω $\pm 5\%$ 1W
RW02	1	1	GA05331010	Resistor 330 Ω $\pm 5\%$ 1W
JW01	1	1	YJ01001790	Jack, Headphone
PX00-FUNCTION POWER DISPLAY CIRCUIT BOARD				
PX00	1	1	YK241H1610	P.W. Board, Function Power Display
	1	1	ZZ241H8610	P.W. Board Assembly
PX00-CAPACITORS				
CX03	1	1	EA22601630	Elect 22 μ F 16V
CX04	1	1	EA47505030	Elect 4.7 μ F 50V
PX00-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$)				
RX06	1	1	GD05274140	270K Ω
RX07	1	1	GD05103140	10K Ω
RX08	1	1	GD05683140	68K Ω
RX09	1	1	GD05103140	10K Ω
RX10	1	1	GD05122140	1.2K Ω
RY01	1	1	GD05182140	1.8K Ω
RY02	1	1	GD05561140	560 Ω
RY03	1	1	GD05104140	100K Ω
RY04	1	1	GD05561140	560 Ω
RY05	1	1	GD05182140	1.8K Ω
RY06	1	1	GD05561140	560 Ω
RY07	1	1	GD05561140	560 Ω

•(N):for Europe
•(A):for Australia

REF. DESIG.	QTY		PART NO.	DESCRIPTION	
	N	A			
PX00-SEMICONDUCTORS					
DX02 ?	6	6	HI10008320	L.E.D.	GL9PR2
DX07	1	1	HI10017080	L.E.D.	SEL1413E
DY01	1	1	HI10017080	L.E.D.	SEL1413E
DY02	1	1	HI10017080	L.E.D.	SEL1413E
DY03	1	1	HI10017080	L.E.D.	SEL1413E
DY04	1	1	HI10011080	L.E.D.	SEL1213C
DY05	1	1	HI10011080	L.E.D.	SEL1213C
QX01	1	1	HC10051020	IC	AN6886
PX00-SWITCHES					
SY01	1	1	SP01010570	Push Switch, Tuner	
SY03	1	1	SP01010570	Push Switch, Phono	
SY03	1	1	SP01010570	Push Switch, CD/AUX	
SY04	1	1	SP01010570	Push Switch, Video	
SY05	1	1	SP01010570	Push Switch, Tape 1	
PX00-MISCELLANEOUS					
WX01	1	1	YU03200260	Jumper Lead, (3P)	
PY00-ELECT VOLUME LED CIRCUIT BOARD					
PY00	1	1	YK241H10F0	P.W. Board, Elect Volume LED	
	1	1	ZZ241H80F0	P.W. Board Assembly	
DG05	1	1	HI10804050	L.E.D.	TLR205-5

REF. DESIG.	QTY		PART NO.	DESCRIPTION	
	N	A			
P001-POWER SWITCH CIRCUIT BOARD					
P001	1	1	YK241H10K0	P.W. Board, Power Switch	
	1	1	ZZ241H80K0	P.W. Board Assembly	
△G001	1	1	DK18103840	Ceramic Cap. 0.01μF	
△S001	1	1	SP01010560	Push Switch, Power	

(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.

16. TECHNICAL SPECIFICATIONS

AUDIO SECTION

POWER OUTPUT PER CHANNEL

DIN 4 OHMS 1 kHz	49W
RMS 4 OHMS 1 kHz	49W
DIN 8 OHMS 1 kHz	38W
RMS 8 OHMS 1 kHz	37W
TOTAL HARMONIC DISTORTION AT RMS 8 OHMS	0.05%
I.M. DISTORTION	0.05%
DAMPING FACTOR 8 OHMS (1 kHz)	60

MM CARTRIDGE INPUT

Frequency Response (RIAA) 20 Hz ~ 20 kHz	±0.5 dB
Signal-to-Noise Ratio	80 dB
Input Impedance	47k ohms
Input Capacitance	270 pF
Input Sensitivity	2.5 mV
Equivalent Input Noise	1.0 µV

AUX. INPUT

Input Impedance	30 k ohms
Input Sensitivity	150 mV
Frequency Response ±2 dB	10 Hz ~ 40 kHz
Signal-to-Noise Ratio	92 dB

OUTPUT VOLTAGE

Tape Out	460 mV
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OUTPUT IMPEDANCE

Tape Out	290 ohms
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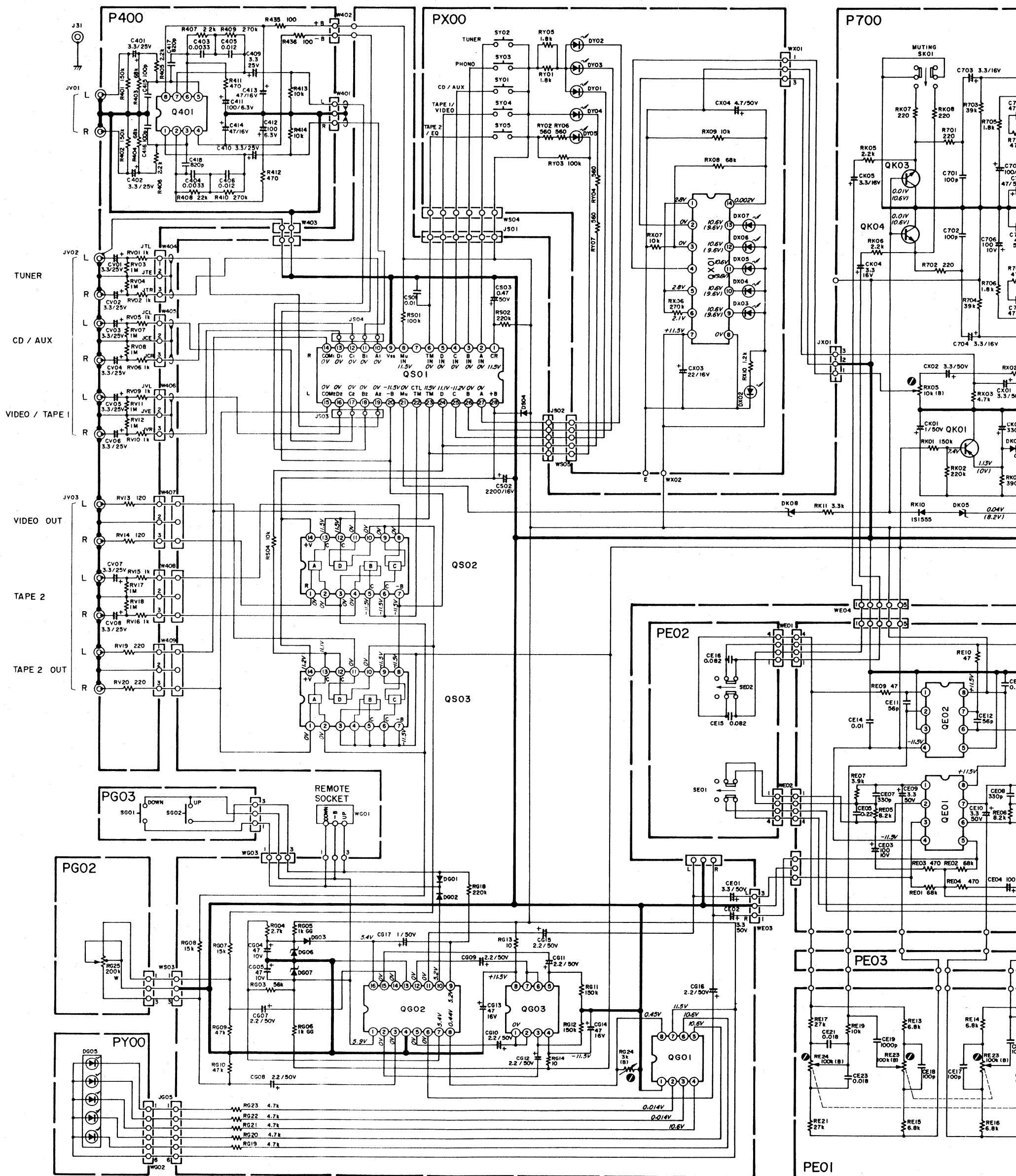
GENERAL



Power Requirement	110/120/220/240V AC, 50/60 Hz
Power Consumption at Rated Output, both Channels Driven	150 W
Dimensions	
Panel Width	416 mm
Panel Height	55 mm
Depth	260 mm
Weight	
Unit Alone	5.1 kg

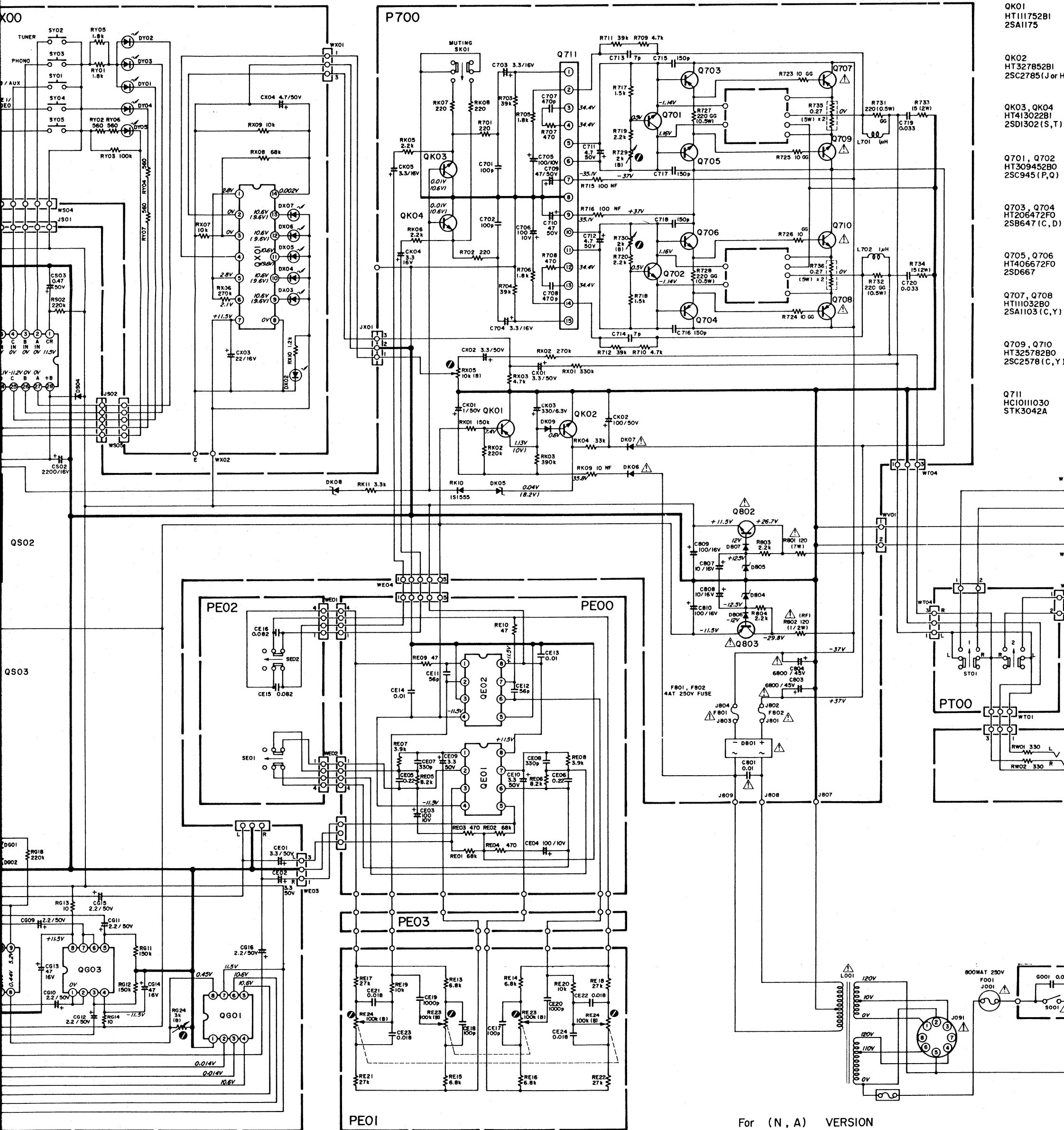
Specifications and appearance are subject to change for modification without notice.

MEMORANDUM

17. 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.



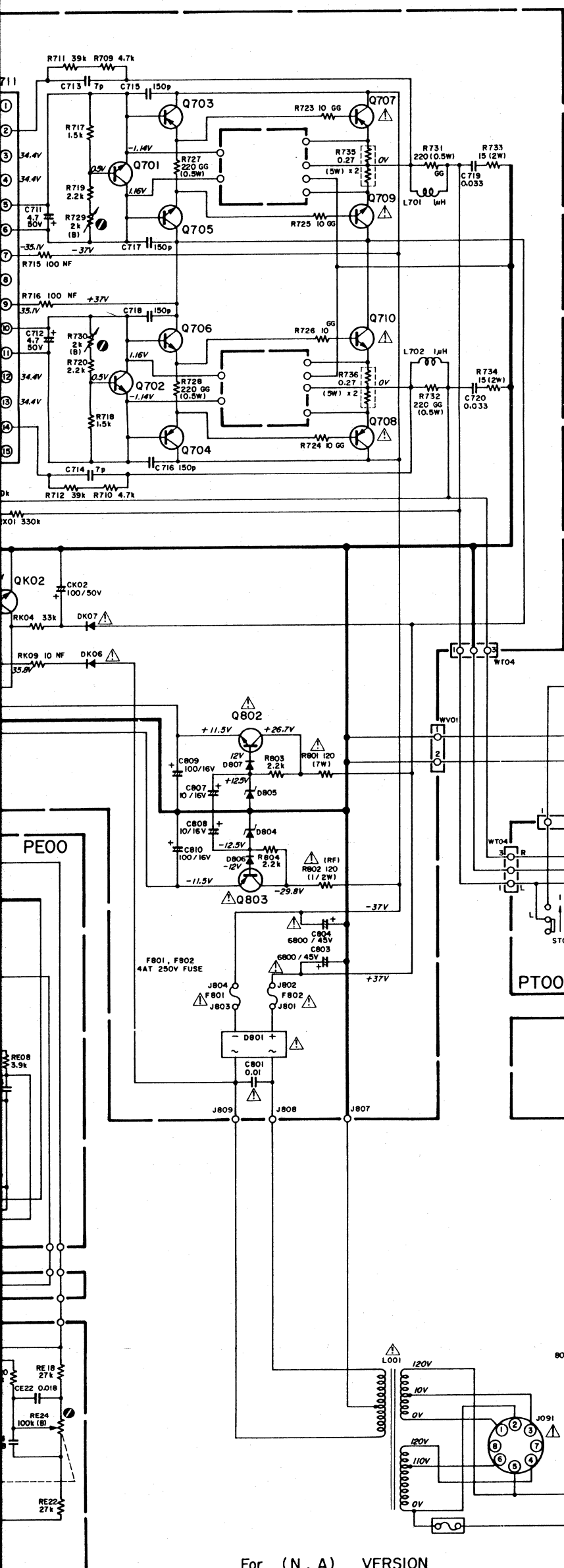
- QK01 HT111752B1 2SA1175
- QK02 HT329452B1 2SC2785 (J or H)
- QK03, QK04 HT413022B1 2SD1302 (S, T)
- Q701, Q702 HT309452B0 2SC945 (F, Q)
- Q703, Q704 HT206472F0 2SB647 (C, D)
- Q705, Q706 HT406672F0 2SD667
- Q707, Q708 HT11032B0 2SA1103 (C, Y)
- Q709, Q710 HT325782B0 2SC2578 (C, Y)
- Q711 HC1011030 STK3042A

For (N, A) VERSION

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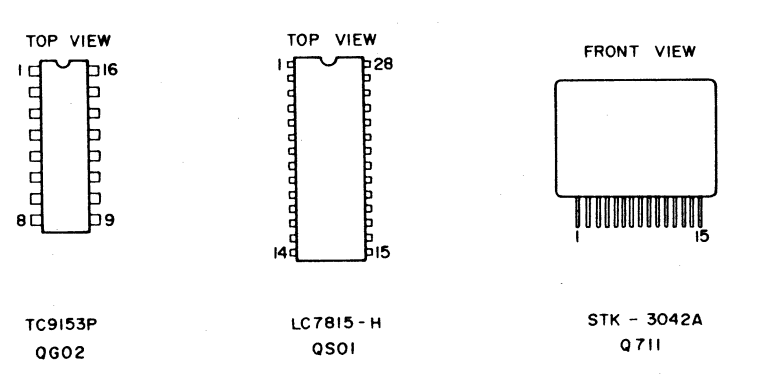
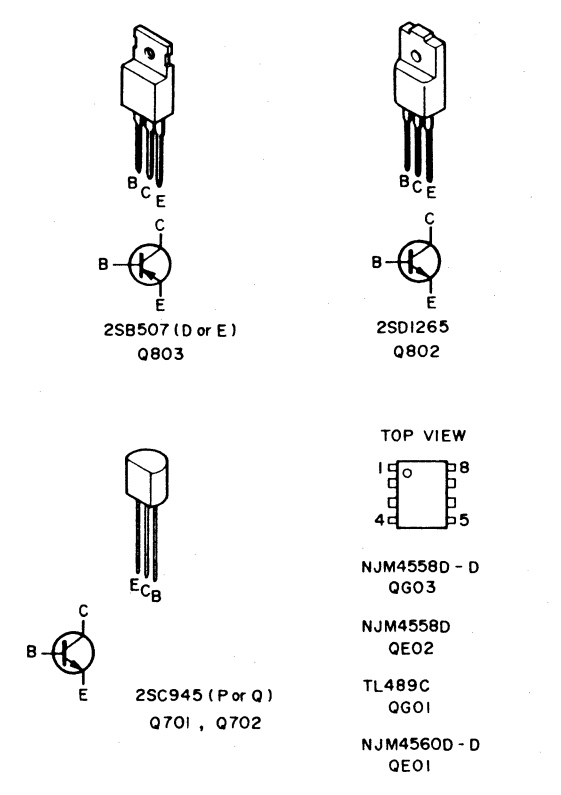
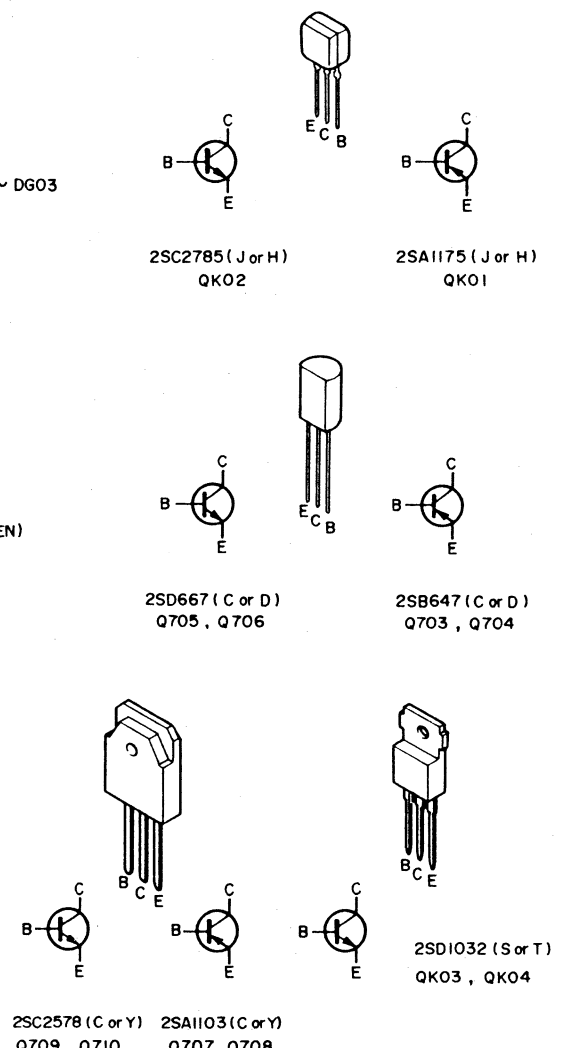
Components and wiring are subject to change for modification with

Model PM330



For (N, A) VERSION

QK01 HT111752B1 2SA1175	QX01 HC10051020 AN6886	QG03 HC10008090 NJM4558 DD	D801 HD20008290 S4VB20
QK02 HT327852B1 2SC2785 (J or H)	Q802 HT412652A0 2SD1265	DK05 HD30023090 WZ071	D804, D805 HD30009011 HZ12A2L
QK03, QK04 HT413022B1 2SD1302 (S, T)	HT205072P0 2SB507	DK06, DK07 HD20015030 DS135D	DS04, DG01 ~ DG03 HD20001001 IS1555
Q701, Q702 HT309452B0 2SC945 (P, Q)	QS01 HC10110030 LC7815H	DK08 HD30023011 HZ6CIL	DG05 H110904050 TLR 205-5
Q703, Q704 HT206472F0 2SB647 (C, D)	QS02, QS03 HC406603C0 LC4066B-H	DK09 HD20001001 IS1555	D806, DG07 HD300023011 HZ6CIL
Q705, Q706 HT406672F0 2SD667	QE01 HC10021090 NJM4560D-D	DX02 ~ DX07 H110008320 GL9PR2	D806, D807 HD20002210 IS2472 (GREEN)
Q707, Q708 HT111032B0 2SA1103 (C, Y)	QE02 HC1003090 NJM4558D	DY01 ~ DY03 H110017080 SEL1413E	
Q709, Q710 HT325782B0 2SC2578 (C, Y)	QG01 HC10008370 TL489C	DY04, DY05 H11001080 SEL1213C	
Q711 HC10111030 STK3042A	QG02 HC10085050 TC9153P		



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