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SERVICE MANUAL PM243/143

marantz®

model PM243/143

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, correct part number has to be specified. If you order by mail, fulfil MARANTZ order forms.

The following information must be supplied to eliminate delays in processing your order:
1. Complete address
2. Complete part numbers and quanties 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.

TECHNICAL ASSISTANCE

Should you require any other technical support, do not hesitate to contact the Technical Department of
MARANTZ EUROPE & Co.
Avenue Louise 326 - Bte. 32
B-1050 Brussels
Belgium
Telephone: (02) 6407830 (10 l)
Telex: 26602
Fax.: (02) 649.29.20

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA
HORNYPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

AUSTRALIA
MARANTZ AUSTRALIA
PTY., Ltd.
19 Chard Road
Brookvale, NSW 2100
Australia
Telex: 24121

BELGIUM
SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE
MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

DENMARK
MARANTZ
DIVISION OF PHILIPS
SERVICE A/S
Prags Boulevard 80
Postbox 1919
DK-2300 København S
Denmark
Telex: 31201

EIRE
MARANTZ IRELAND Ltd.
Newstead
Glonkeagh
Dublin 4
Telex: 25200

FINLAND
MARANTZ
DIVISION OF OY PHILIPS Ab
Kaivokatu 8
00100 Helsinki
Finland
Telex: 124811

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

GERMANY
MARANTZ GERMANY GmbH
Max-Planck-Strasse 22
6072 Dreieich 1
Germany
Telex: 529821

THE NETHERLANDS
MARANTZ
De Limiet 3
4131 NR Vianen
The Netherlands
Telex: 47679

NORWAY
MARANTZ
DIVISION OF PHILIPS A/S
Sandstuveien 40
Oslo 6
Norway
Telex: 72640

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

GREECE
ADAMCO S.A.
P.O.Box 21025
Hippocratus Street 188
Athens 11410
Greece
Telex: 216.795

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

JAPAN
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 201530

SOUTH AFRICA
MARANTZ
DIVISION OF PHILIPS S.A.
Rainer House
Ove Street, 10
Doornfontein
Johannesburg
Telex: 483.456

SPAIN
PHONO S.A.
Ignacio Iglesias 10
Badalona (Barcelona)
Spain
Telex: 59355

SWEDEN
MARANTZ
DIVISION OF PHILIPS
Försäljning AB
Tegeluddsvägen 1
S-115 84 Stockholm
Sweden
Telex: 14060

SWITZERLAND
DYNAVOX ELECTRONICS
Route de Villars 105
1701 Fribourg
Switzerland
Telex: 942377

TURKEY
DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

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

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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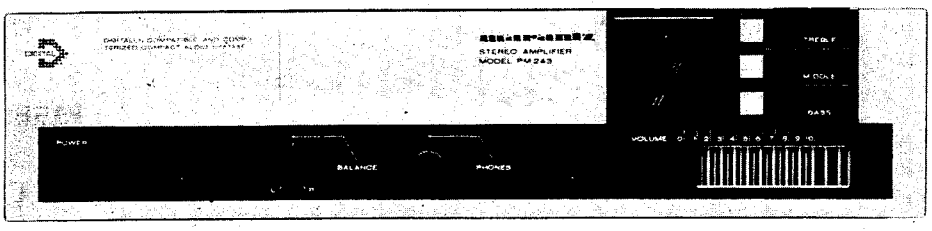
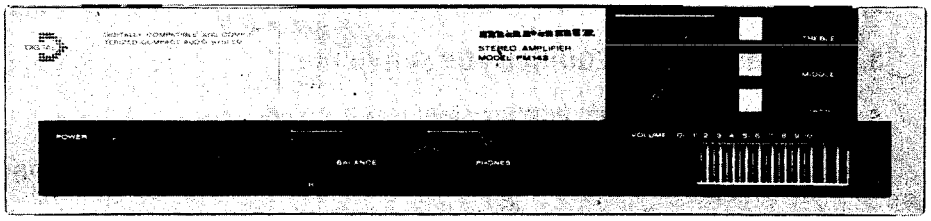
MODEL PM243/143 STEREO PRE MAIN AMPLIFIER



PM243



PM143

INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz Model PM243/143 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. P.W. BOARDS

As can be seen from the circuit diagram the chassis of Model PM243/143 consists of the following units. Each unit mounted on a printed circuit board is discribed within the square enclosed by a bold dotted line on the circuit diagram.

1. Main Amp . . . . . mounted on P.W. Board P700
2. Power Switch . . . . . mounted on P.W. Board PG00
3. Indicator . . . . . mounted on P.W. Board PS00
4. 16P Connector . . . . . mounted on P.W. Board PV00
5. 6P Connector . . . . . mounted on P.W. Board PV50

2. FUNCTION OF EACH PART:

(1) TREBLE/BASS/MIDDLE SWITCH

By using the loudness circuit and setting the tap position on each VR to 70%, 100 Hz and 10 kHz are boosted. A TR impedance element is inserted in the NF lines of the main amplifier to achieve boosting of the middle range.

100 Hz + 6 dB, 1 kHz + 4 dB, 10 kHz + 3 dB

(2) POWER AMPLIFIER

For voltage amplifier, monolithic IC μPC1270H covering as far as the driving step is used; and for the final step, a discrete transistor is used, making up the power amplifier. No idling adjustment is required; if it is needed according to varistor diode's rank, it is done by changing the serial resistance. The 0 rank is used for this unit.

(3) MUTING/LIMITER

Muting is enabled when the power is turned ON/OFF by controlling the voltage at pin 2 of μPC1270H (the + side of the front step) with QN01 – QN03. An abnormal voltage caused by short-circuiting of the speaker system, etc., is detected by QN06 and QN07 so that the above muting circuit is driven by QN05 and QN10.

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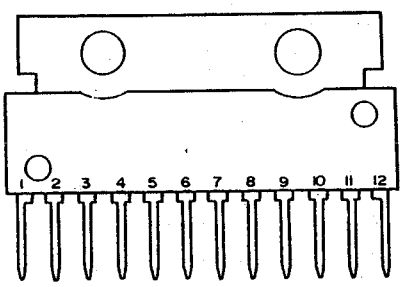
3. TEST EQUIPMENT REQUIRED FOR SERVICING

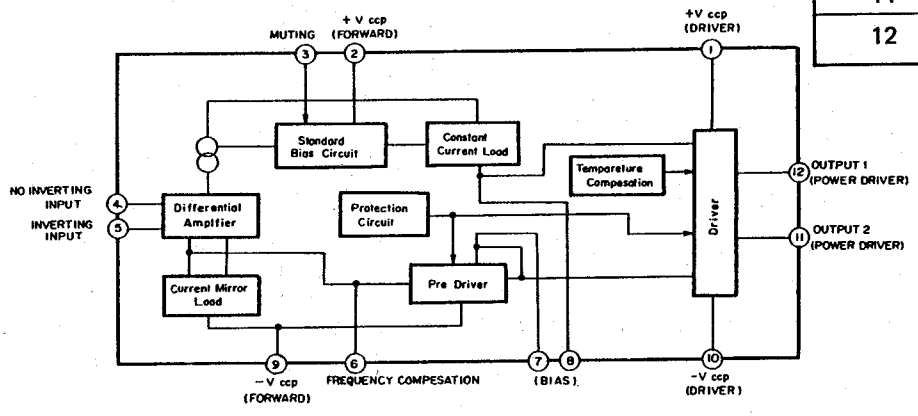
This table lists the test equipment required for servicing the Model PM243/143 Stereo Pre Main Amplifier.

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 primery power to amplifier
Shorting Plug	Shorts amplifier input to eliminate noise pickup

4. μPC1270H (Q701, Q792) POWER AMPLIFIER DRIVE

μPC1270H is a semiconductor integrated circuit developed for driving stereo Hi-Fi power amplifier.
The internal circuits consist of a voltage amplifying circuit, pre-drive circuit, drive circuit, and protection circuit. It has an external shape of a 12-pin small-size single in-line package.





Pin Connections

Pin No.	Connection
1	+Vccp (Pre Driver Regulator)
2	+Vccp (Pre Driver Regulator)
3	MUTING
4	INPUT
5	NFB
6	PHASE COMP
7	BIAS
8	BIAS
9	–Vccp (Pre Driver Regulator)
10	–Vccd (Drive Regulator)
11	LOWER OUTPUT
12	UPPER OUTPUT

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Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rated	Units
No-Operating Supply Current	Vcc_1	±50	V
Operating Supply Current	Vcc_2	±45	V
Circuit Current	Icc (peak)	200	mA
Package Power Dissipation	P_D	4.1*	W
Operating Temperature	Topt	−20 ~ +75	°C
Storage Temperature	Tstg	−40 ~ +150	°C

* Ta = 75°C
100mm x 100mm x 1mm
Alminium Heat Sink

Recommended operating range

Characteristics	Symbol	MIN.	TYP.	MAX.	Units	Remarks
Operating Supply Current	Vcc_3	±18		±36	V	Rated power
Input Bias Resistor	R_{IN}	1	50	100	kΩ	
Power Transistor h_{FE}	h_{FE}	50				Full Power h_{FE}
Closed Loop Voltage Gain	Av	26	30		dB	

Electrical Characteristics

Characteristics	Symbol	Test Conditions	MIN.	TYP.	MAX.	Units
Output Offset Voltage	V_{OFF}	Test Circuit 1.		±5	±100	mV
No-Operating Supply Current	Icc	V_{IN} = 0		20	40	mA
Maximum Output Voltage	V_{OM}	T.H.D. = 0.05%, f = 20Hz ~ 20kHz	20	23		V
Open Loop Voltage Gain	A_{VO}	V_O = 1.5V, f = 1kHz	80	95		dB
Output Noise Voltage	V_{NO}	R = 10k		0.07	0.14	mV
Band Width	P.B.W.	V_O = 1.5V, −3dB		900		kHz
Hum Rejection Ratio	S.V.R.	R_G = 2kΩ, f = 100Hz	55	70		dB
Mute ON Output Offset Voltage	$V_{OFF\ (MUTE)}$	Vcc = ±50V, Test Circuit 7.			±50	mV

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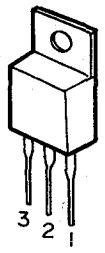
5. NJM7815 (Q801) – 3-TERMINAL CONSTANT-VOLTAGE REGULATED POWER SUPPLY

NJM7815 is a regulator IC with 3 positive output terminals, integrating series regulator circuits on 1 chip.



PIN LOCATION
1. OUTPUT
2. GND
3. INPUT

Maximum Rating

Characteristics	Symbol	Typical		Unit
Input Voltage	V_{IN}	7805 ~ 7809	35	V
		7812 ~ 7815	35	
		7818 ~ 7824	40	
Storage Temperature	Tstg	–40 ~ +125		°C
Operating Temperature	Operating Junction Temperature	Topr (j)	–30 ~ +125	°C
	Operating Temperature	Topr (a)	–30 ~ +75	
Device Dissipation	P_D	16 (Tc ≦ 45°C)		W

Temperature Characteristics

Temperature Resistance	Junction-Circumference	θ ja	70	°C/W
	Junction-Case	θ jc	5	

Electric Caracteristics

Characteristics	Symbol	Conditions	MIN.	TYP.	MAX.	Units
Output Voltage	V_O	V_{IN} = 23V, I_O = 0.5A	14.4	15.0	15.6	V
Reactove Current	I_Q	V_{IN} = 23V, I_O = 0mA	–	4.4	6.0	mA
Load Reguration	$\Delta V_O - I_O$	V_{IN} = 23V, I_O = 0.05 ~ 1.5A	–	57	180	mV
Line Reguration	$\Delta V_O - V_{IN}$	V_{IN} = 17.5 ~ 30V, I_O = 0.5A	–	11	150	mV
Ripple Rejection Ratio	R.R.	V_{IN} = 23V, ein = 2Vp-p · f = 120Hz	60	70	–	dB
Noise Voltage	V_N	V_{IN} = 23V, I_O = 0.5A	–	90	–	μV
Output Voltage	ΔV_O ΔT	V_{IN} = 23V, I_O = 5mA	–	–1.5	–	mV/°C

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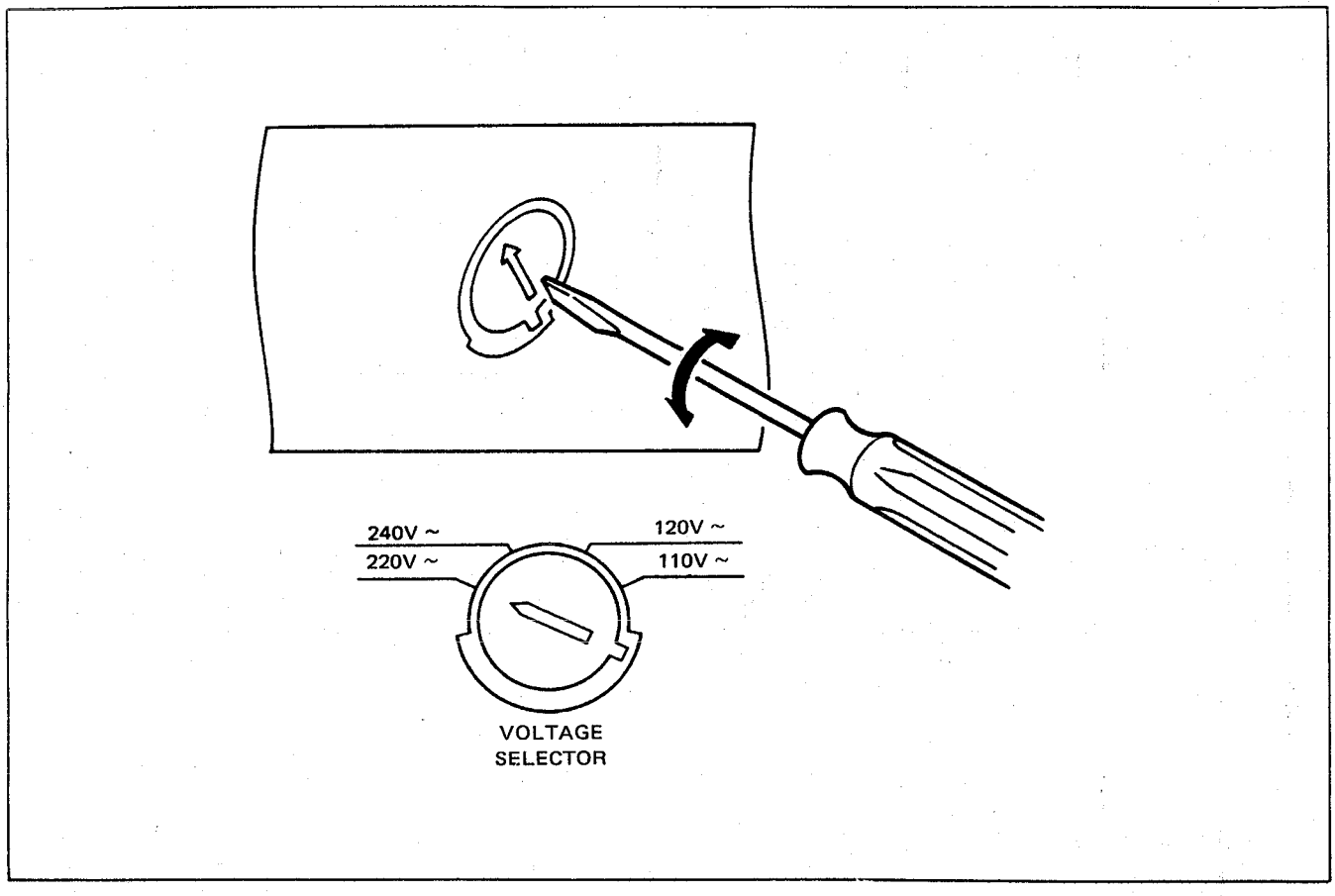
6. VOLTAGE CONVERSION

- **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 ⚠ 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.

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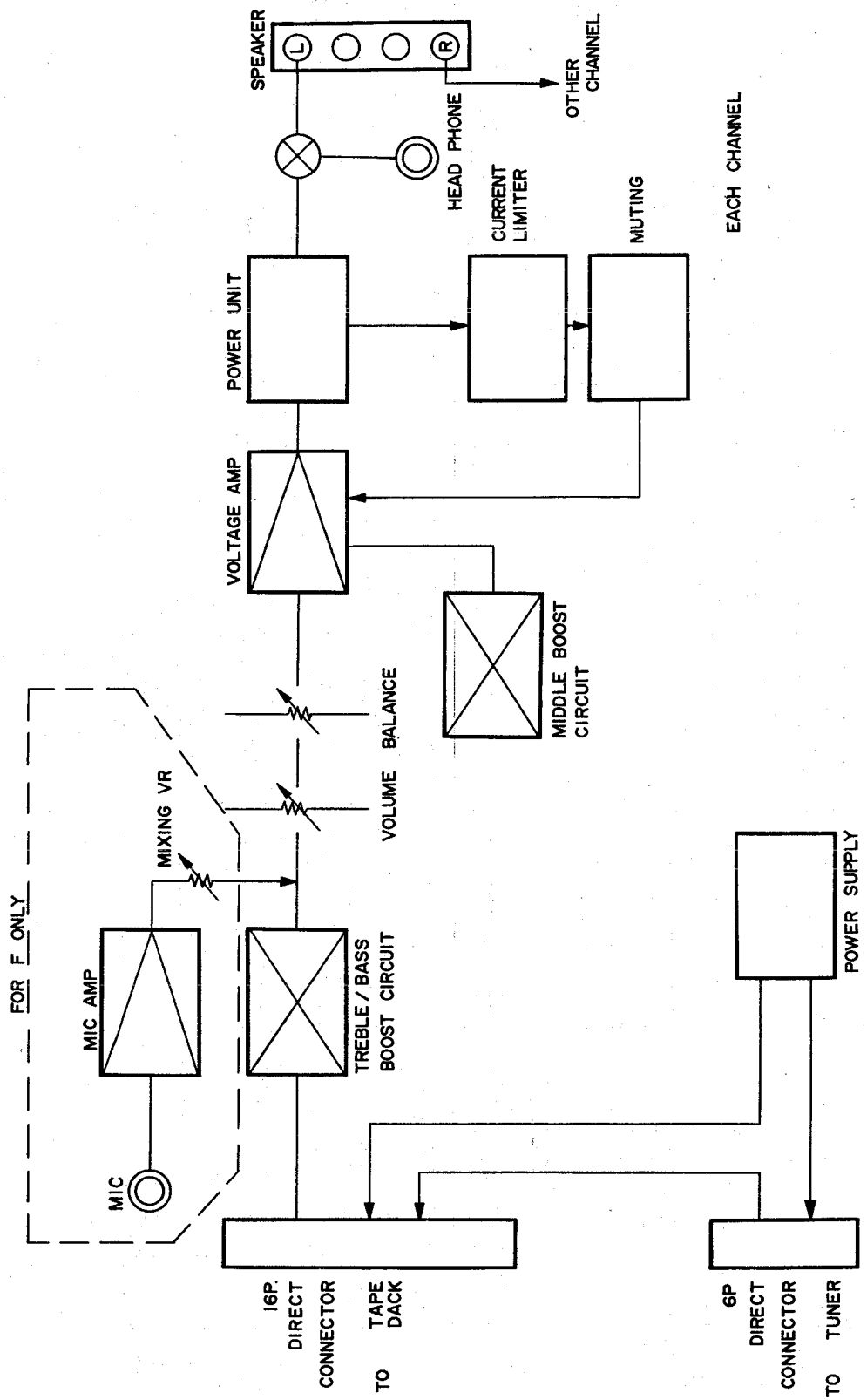
7. BLOCK DIAGRAM



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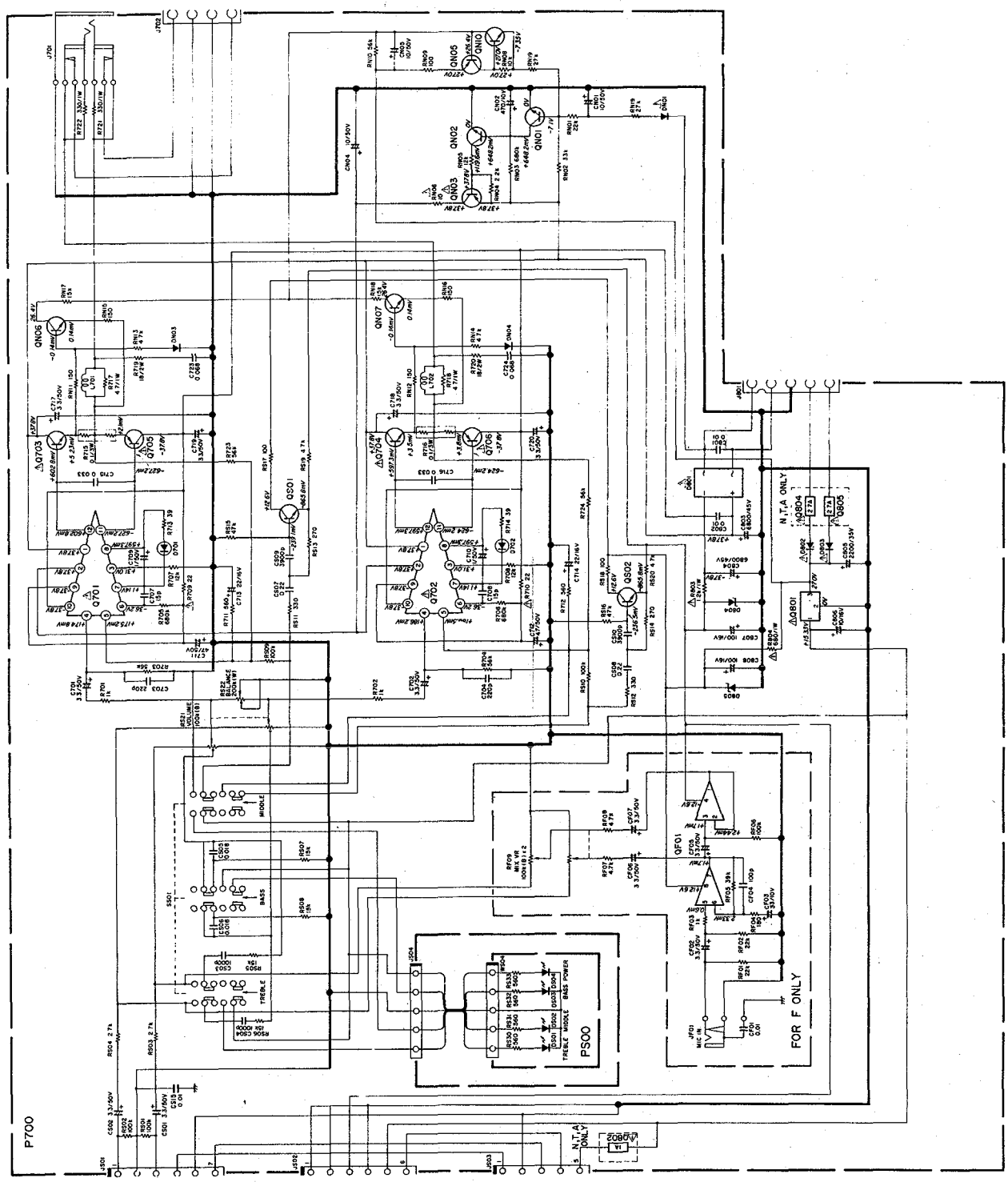
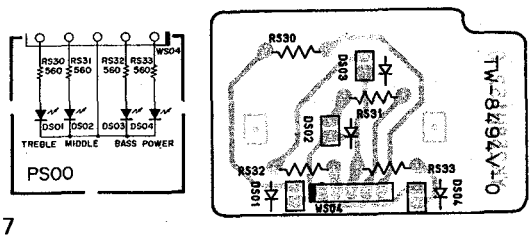
8. SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

8.1 Main Amp Assembly (P700) Schematic Diagram and Component Locations



8.2 Indicator Assembly (PS00) Schematic Diagram and Component Locations



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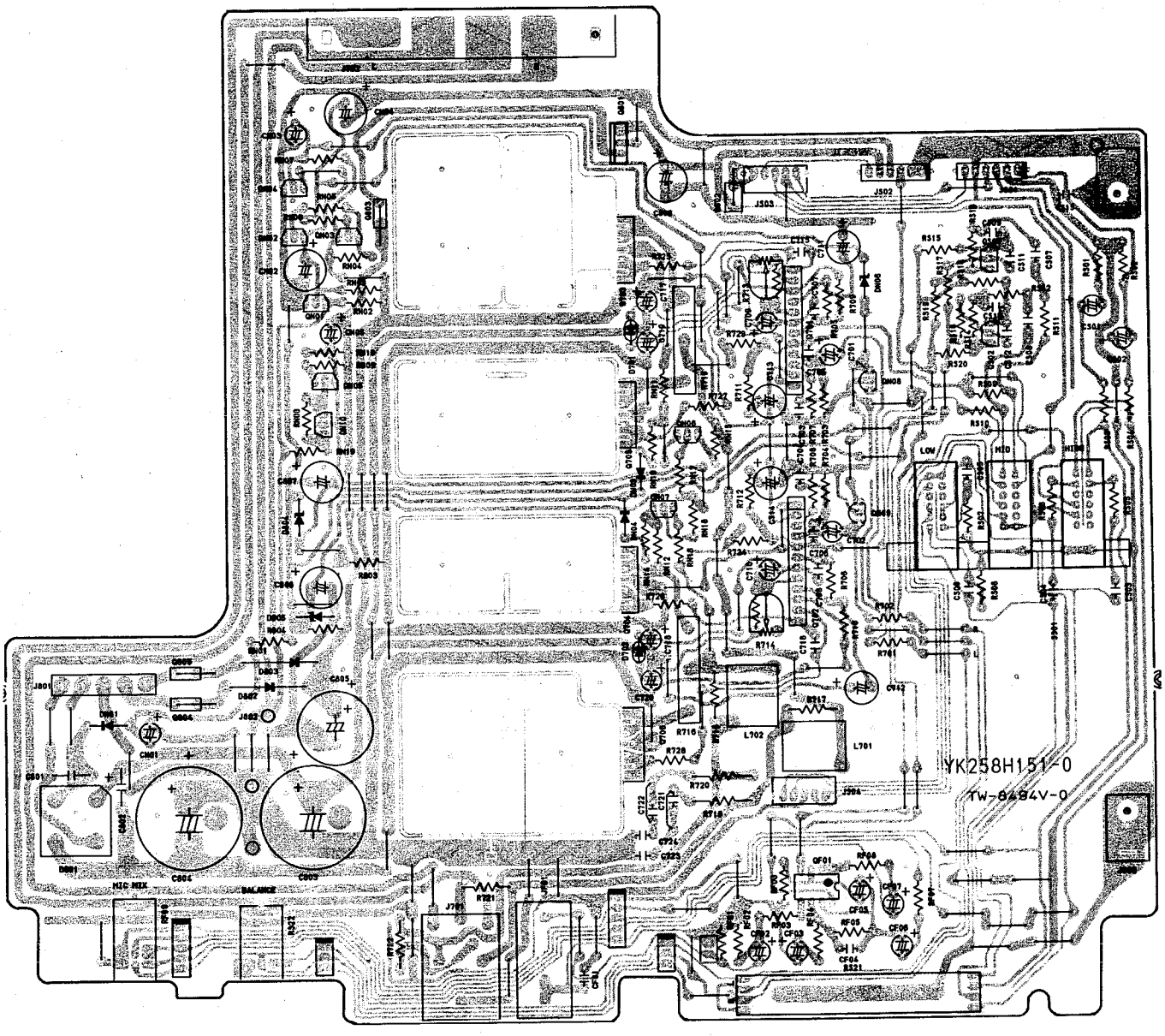
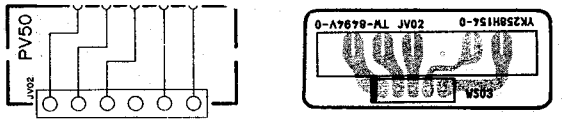
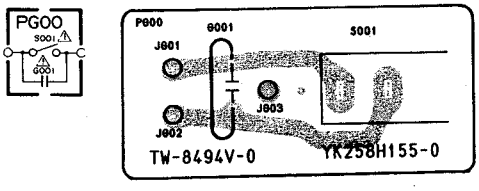


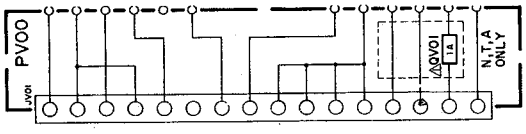
8.3 6P Connector Assembly (PV50) Schematic Diagram and Component Locations

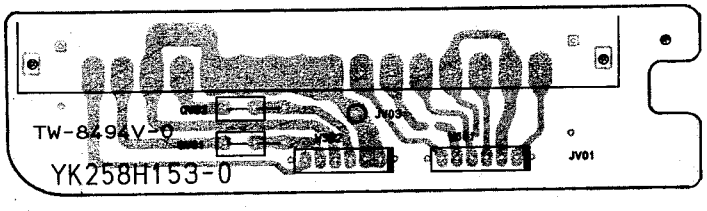


8.5 Power Switch Assembly (PG00) Schematic Diagram and Component Locations



8.4 16P Connector Assembly (PV00) Schematic Diagram and Component Locations





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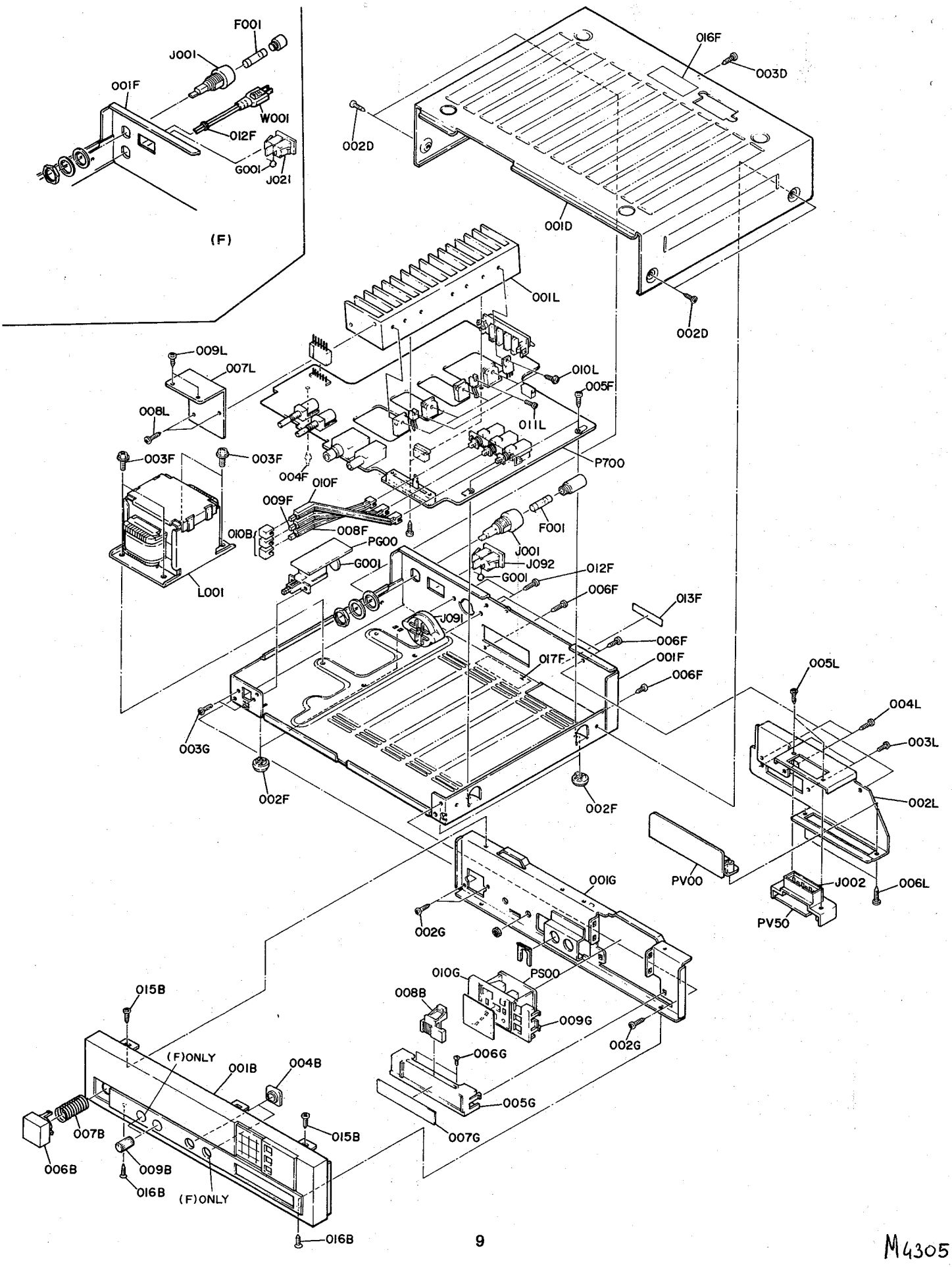
9. EXPLODED VIEW AND PARTS LIST



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- (N):for Europe
- (A):for Australia
- (F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					(PM243 ONLY)
A	1	1		258H248400	Front Panel Assembly
A_1			1	258H248410	Front Panel Assembly
001B	1	1		258H248520	Front Panel (K)
001B			1	258H248500	Front Panel (K)
004B	1	1	2	258H259010	Bushing, Phones
006B	1	1	1	258H270010	Button, Power
007B	1	1	1	258H115010	Spring, Power
					(PM143 ONLY)
A	1	1		257H248400	Front Panel Assembly
A_1			1	257H248410	Front Panel Assembly
001B	1	1		257H248520	Front Panel (K)
001B			1	257H248500	Front Panel (K)
004B	1	1	2	258H259010	Bushing, Phones
006B	1	1	1	258H270010	Button, Power
007B	1	1	1	258H115010	Spring, Power
008B	1	1	1	258H154010	Knob, Volume
009B	1	1	2	258H154020	Knob, Ballance
010B	3	3	3	258H270020	Button, High, Mid, Low
015B	2	2	2	51280308B0	B.H. Tapped Screw B3×8
016B	2	2	2	51500308B0	F.H. Tapped Screw
001D	1	1		258H267010	Lid
001D			1	258H267110	Lid
002D	4	4	4	51280308U0	B.H. Tapped Screw B3×8
003D	1	1	1	51280308B0	B.H. Tapped Screw B3×8
001F	1	1		258H105030	Chassis (PM243)
001F			1	258H105020	Chassis (PM243)
001F	1	1		257H105030	Chassis (PM143)
001F			1	257H105020	Chassis (PM143)
002F	4	4	4	258H057010	Leg
003F	4	4	4	52040406A0	H. Head Bolt, Trans
004F	1	1	1	429H005010	Clamper
005F	2	2	2	51280308B0	B.H. Tapped Screw B3×8
006F	4	4	4	51280308B0	B.H. Tapped Screw B3×8
008F	1	1	1	258H121010	Link (Low)
009F	1	1	1	258H121020	Link (Mid)
010F	1	1	1	258H121030	Link (High)
012F	2	2		51280308B0	B.H. Tapped Screw B3×8
012F			1	1455259030	Bushing
013F	1	1	1	2112265110	Indicator, Serial No.
016F	1	1		258H861030	Label (Tuner Socket)
016F			1	258H861010	Label (Tuner Socket)
017F	1	1		258H861040	Label (Deck Socket)
017F			1	258H861020	Label (Deck Socket)

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
001G	1	1	1	258H105010	Chassis
002G	3	3	3	51280308B0	B.H. Tapped Screw B3×8
003G	2	2	2	51100306A0	B.H.M. Screw
005G	1	1	1	258H051010	Guide
006G	2	2	2	51100203A0	B.H.M. Screw
007G	1	1	1	258H063010	Escutcheon
009G	1	1	1	258H051020	Guide
010G	1	1	1	258H265010	Indicator
001L	1	1	1	258H267010	Heatsink
002L	1	1	1	258H160010	Bracket
003L	2	2	2	51280308B0	B.H. Tapped Screw B3×8
004L	2	2	2	51280308B0	B.H. Tapped Screw B3×8
005L	2	2	2	51280308B0	B.H. Tapped Screw B3×8
006L	2	2	2	51280308B0	B.H. Tapped Screw B3×8
007L	1	1	1	258H160020	Bracket
008L	2	2	2	51280308B0	B.H. Tapped Screw B3×8
009L	2	2	2	51280308B0	B.H. Tapped Screw B3×8
010L	7	7	7	51780312B0	Fin Neck B.T.
⚠ F001	1	1		FS10080800	Fuse 800mA (PM243)
⚠ F001			1	FS10200600	Fuse 2A 250V (PM243)
⚠ F001			1	FS10150600	Fuse 1.5A 250V (PM143)
⚠ F001	1	1		FS10063800	Fuse 630mA (PM143)
G001	1	1		DK18103840	Ceramic 0.01μF +80% −20%
G001			1	DK18103850	Ceramic 0.01μF +80% −20%
⚠ J001	1	1		YJ08000290	Jack, Fuse
⚠ J001			1	YJ08000300	Jack, Fuse
J002	1	1		YJ06001050	Jack, 5P
⚠ J021			1	YJ04001070	Jack, A.C. Outlet
⚠ J091	1	1		BY05080050	Volt Selector
⚠ J092	1	1		YP04000580	Plug, Inlet
⚠ L001	1	1		TS16801010	Power Transfer (PM243)
⚠ L001			1	TS16801020	Power Transfer (PM243)
⚠ L001	1	1		TS16801050	Power Transfer (PM143)
⚠ L001			1	TS16801060	Power Transfer (PM143)
⚠W001			1	YC01800190	A.C. Power Cord

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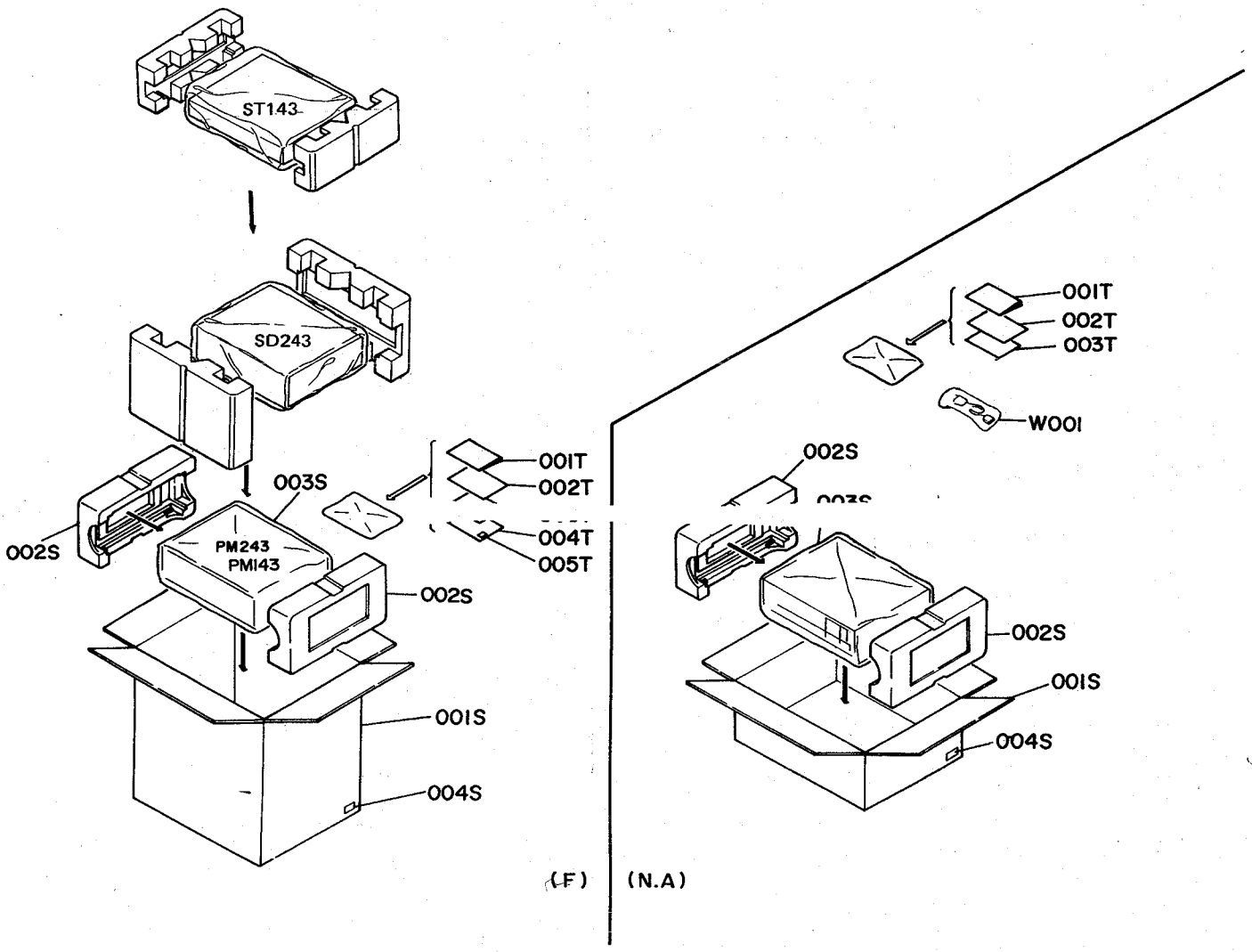


- (N):for Europe
- (A):for Australia
- (F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
001S	1	1		258H801020	Packing Case (PM243)
001S			1	258H801010	Packing Case (PM243)
001S	1	1		257H801020	Packing Case (PM143)
001S			1	257H801010	Packing Case (PM143)
002S	2	2	2	258H809010	Cushion
003S	1	1	1	9090808030	Polyethy Sheet
004S	4			9526019060	Serial No Card
004S		4		9526019030	Serial No Card
004S			4	9526019040	Serial No Card

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
001T	1	1		258H851310	User Manual (PM243)
001T			1	258H851110	User Manual (PM243)
001T			1	257H851110	User Manual (PM143)
002T	1	1		258H851320	User Manual (Spec)
002T			1	9631000130	Warranty Card
003T		1		9631000090	Warranty Card
003T			1	128T854010	Warranty Card
004T			1	128T854010	Warranty Card
005T			1	9540000010	License
⚠W001	1			ZC01805010	A.C. Power Cord
⚠W001		1		ZC02006020	A.C. Power Cord

M 4307

- (N):for Europe
- (A):for Australia
- (F):for Japan

10. ELECTRICAL PARTS LIST

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					P700-MAIN AMP CIRCUIT BOARD
P700	1	1	1	YK258H1510	P.W. Board Main Amp
	1	1		ZZ258H8510	P.W. Board Assembly
					P700-CAPACITORS
C701	1	1	1	EA33505030	Elect 3.3μF 50V
C702	1	1	1	EA33505030	Elect 3.3μF 50V
C703	1	1	1	DK16221300	Ceramic 220pF ±10%
C704	1	1	1	DK16221300	Ceramic 220pF ±10%
C707	1	1	1	DD15150370	Ceramic 15pF ±5%
C708	1	1	1	DD15150370	Ceramic 15pF ±5%
C709	1	1	1	EA10505030	Elect 1μF 50V
C710	1	1	1	EA10505030	Elect 1μF 50V
C711	1	1	1	EA47605030	Elect 47μF 50V
C712	1	1	1	EA47605030	Elect 47μF 50V
C713	1	1	1	EA22601630	Elect 22μF 16V
C714	1	1		EA22601630	Elect 22μF 16V
C715	1	1	1	DF16333310	Film 0.033μF ±10%
C716	1	1	1	DF16333310	Film 0.033μF ±10%
C717 ~ C720	4	4	4	EA33505030	Elect 3.3μF 50V
C723	1	1	1	DF16683310	Film 0.068μF ±10%
C724	1	1	1	DF16683310	Film 0.068μF ±10%
C801	1	1	1	DK18103560	Ceramic 0.01μF +80% −20%
C802	1	1	1	DK18103560	Ceramic 0.01μF +80% −20%
C803	1	1	1	EB68804540	Elect 6800μF 45V
C804	1	1	1	EB68804540	Elect 6800μF 45V
C805	1	1	1	EA22803530	Elect 2200μF 35V
C806	1	1	1	EA10601630	Elect 10μF 16V
C807	1	1	1	EA10701630	Elect 100μF 16V
C808	1	1	1	EA10701630	Elect 100μF 16V
CF01			1	DK18103310	Ceramic 0.01μF +80% −20%
CF02			1	EA33505030	Elect 3.3μF 50V
CF03			1	EA33601630	Elect 33μF 16V
CF04			1	DD15101370	Ceramic 100pF ±5%
CF05 ~ CF07			3	EA33505030	Elect 3.3μF 50V
CN01	1	1	1	EA10605030	Elect 10μF 50V
CN02	1	1	1	EA47701030	Elect 470μF 10V
CN04	1	1	1	EA10605030	Elect 10μF 50V
CN05	1	1	1	EA10605030	Elect 10μF 50V
CS01	1	1	1	EA33505030	Elect 3.3μF 50V
CS02	1	1	1	EA33505030	Elect 3.3μF 50V
CS03	1	1	1	DF16102310	Film 1000pF ±10%
CS04	1	1	1	DF16102310	Film 1000pF ±10%
CS05	1	1	1	DF16183310	Film 0.018μF ±10%
CS06	1	1	1	DF16183310	Film 0.018μF ±10%
CS06	1	1	1	DF16183310	Film 0.018μF ±10%
CS07	1	1	1	DF16224310	Film 0.22μF ±10%
CS08	1	1	1	DF16224310	Film 0.22μF ±10%
CS09	1	1	1	DF16392310	Film 0.0039μF ±10%
CS10	1	1	1	DF16392310	Film 0.0039μF ±10%
CS15	1	1	1	DK18103310	Ceramic 0.01μF 50V

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					P700-RESISTORS (All Resistors are ±5% & 1/4W)
R701	1	1	1	GD05102140	1kΩ
R702	1	1	1	GD05102140	1kΩ
R703	1	1	1	GD05563140	56kΩ
R704	1	1	1	GD05563140	56kΩ
R705	1	1	1	GD05684140	680kΩ
R706	1	1	1	GD05684140	680kΩ
R707	1	1	1	GD05123140	12kΩ
R708	1	1	1	GD05123140	12kΩ
⚠ R709	1	1		RF05220140	22Ω
⚠ R709			1	GG05220140	22Ω
⚠ R710	1	1		RF05220140	22Ω
⚠ R710			1	GG05220140	22Ω
R711	1	1	1	GD05561140	560Ω
R712	1	1	1	GD05561140	560Ω
R713	1	1	1	GD05039140	39Ω
R714	1	1	1	GD05039140	39Ω
R715	1	1	1	BW10000090	0.1Ω
R716	1	1	1	BW10000090	0.1Ω
R717	1	1	1	NK05047010	4.7Ω
R718	1	1	1	NK05047010	4.7Ω
R719	1	1	1	NK05180020	18Ω 2W
R720	1	1	1	NK05180020	18Ω 2W
R721	1	1	1	NK05331010	330Ω
R722	1	1	1	NK05331010	330Ω
R723	1	1	1	GD05563140	56kΩ
R724	1	1	1	GD05563140	56kΩ
⚠ R803	1	1	1	NK05122010	1.2kΩ
⚠ R804	1	1	1	NK05681010	680Ω
RF01			1	GD05223140	22kΩ
RF02			1	GD05223140	22kΩ
RF03			1	GD05102140	1kΩ
RF04			1	GD05181140	180Ω
RF05			1	GD05393140	39kΩ
RF06			1	GD05104140	100kΩ
RF07			1	GD05472140	4.7kΩ
RF08			1	GD05472140	4.7kΩ
RF09			1	RM01040800	100kΩ Variable Mic Mix
RN01	1	1	1	GD05223140	22kΩ
RN02	1	1	1	GD05333140	33kΩ
RN03	1	1	1	GD05684140	680kΩ
RN04	1	1	1	GD05222140	2.2kΩ
RN05	1	1	1	GD05123140	12kΩ
⚠ RN06	1	1		RF05100140	10Ω
RN06			1	GG05100140	10Ω
RN08	1	1	1	GD05103140	10kΩ
RN09	1	1	1	GD05101140	100Ω
RN10	1	1	1	GD05563140	56kΩ

M4308

- (N):for Europe
- (A):for Australia
- (F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
RN11	1	1	1	GD05151140	150Ω
RN12	1	1	1	GD05151140	150Ω
RN13	1	1	1	GD05472140	4.7kΩ
RN14	1	1	1	GD05472140	4.7kΩ
RN15	1	1	1	GD05151140	150Ω
RN16	1	1	1	GD05151140	150Ω
RN17	1	1	1	GD05153140	15kΩ
RN18	1	1	1	GD05153140	15kΩ
RN19	1	1	1	GD05273140	27kΩ
RS01	1	1	1	GD05104140	100kΩ
RS02	1	1	1	GD05104140	100kΩ
RS03	1	1	1	GD05272140	2.7kΩ
RS04	1	1	1	GD05272140	2.7kΩ
RS05 ~ RS08	4	4	4	GD05153140	15kΩ
RS09	1	1	1	GD05104140	100kΩ
RS10	1	1	1	GD05104140	100kΩ
RS11	1	1	1	GD05331140	330Ω
RS12	1	1	1	GD05331140	330Ω
RS13	1	1	1	GD05271140	270Ω
RS14	1	1	1	GD05271140	270Ω
RS15	1	1	1	GD05473140	47kΩ
RS16	1	1	1	GD05473140	47kΩ
RS17	1	1	1	GD05101140	100Ω
RS18	1	1	1	GD05101140	100Ω
RS19	1	1	1	GD05472140	4.7kΩ
RS20	1	1	1	GD05472140	4.7kΩ
RS21	1	1	1	RS01040310	100kΩ Variable Volume
RS22	1	1	1	RK02040230	200kΩ Variable Balance
					P700-SEMICONDUCTORS
D701	1	1	1	HV00006080	Varistor STV-3H
D702	1	1	1	HV00006080	Varistor STV-3H
⚠ D801	1	1	1	HD20008290	Diode S4VB-20
⚠ D802	1	1	1	HD20009290	Diode S2V-20
⚠ D803	1	1	1	HD20009290	Diode S2V-20
D804	1	1	1	HD30009010	Zener HZ12-2L
D805	1	1	1	HD30009010	Zener HZ12-2L
⚠ DN01	1	1	1	HD20022030	Diode DSF-10C
DN03	1	1	1	HD20002210	Diode IS2472
DN04	1	1	1	HD20002210	Diode IS2472
DN05	1	1	1	HD20002210	Diode IS2472
DS01	1	1	1	HI10034320	L.E.D. GL-9EG14
DS02	1	1	1	HI10034320	L.E.D. GL-9EG14
DS03	1	1	1	HI10034320	L.E.D. GL-9EG14
DS04	1	1	1	HI10038030	L.E.D. SLP-281F50U
Q701	1	1	1	HC10097060	IC MPC-1270H
Q702	1	1	1	HC10097060	IC MPC-1270H
⚠ Q703	1	1	1	HT326652B0	Transistor 2SC2665 (O or Y)
⚠ Q704	1	1	1	HT326652B0	Transistor 2SC2665 (O or Y)
⚠ Q705	1	1	1	HT111352B0	Transistor 2SC1135 (O or Y)
⚠ Q706	1	1	1	HT111352B0	Transistor 2SC1135 (O or Y)

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
⚠ Q801	1	1	1	HC38915090	IC NJM-7815
⚠ Q802	1	1	1	FU60115010	Protector Unit ICP-F15
⚠ Q804	1	1	1	FU27215010	Protector Unit ICP-F75
⚠ Q805	1	1	1	FU27215010	Protector Unit ICP-F75
QF01			1	HC10008090	IC NJM4558D-D
QN01	1	1	1	HT327852B0	Transistor 2SC2785 (J or H)
QN02	1	1	1	HT327852B0	Transistor 2SC2785 (J or H)
⚠ QN03	1	1	1	HT111752B0	Transistor 2SC2785 (J or H)
QN05	1	1	1	HT111752B0	Transistor 2SA1175 (J or H)
QN06	1	1	1	HT327852B0	Transistor 2SC2785 (J or H)
QN07	1	1	1	HT327852B0	Transistor 2SC2785 (J or H)
QN10	1	1	1	HT327852B0	Transistor 2SC2785 (J or H)
QS01	1	1	1	HT333122B0	Transistor 2SC3312 (S or T)
QS02	1	1	1	HT333122B0	Transistor 2SC3312 (S or T)
QV01	1	1		FU10215010	Protector Unit ICP-F25
					P700-MISCELLANEOUS
J701	1	1	1	YJ01002090	Jack, Head Phone
J702	1	1	1	YT03040230	Terminal, Speaker
J801	1	1	1	YP06001050	Plug, 5P
JF01			1	YJ01002110	Jack, Mic
JS03	1	1	1	YJ06002390	Jack, 5P
JS04	1	1	1	YJ06002390	Jack, 5P
JS05	1	1	1	YL01010110	Terminal, Earth Lug
JS06	1	1	1	YL01010110	Terminal, Earth Lug
L701	1	1	1	LL23905120	Coil 1μH
L702	1	1	1	LL23905120	Coil 1μH
SS01	1	1	1	SP04030320	Push Switch
					PG00-POWER SWITCH CIRCUIT BOARD
PG00	1	1	1	YK258H1550	P.W. Board Power Switch
	1	1		ZZ258H8550	P.W. Board Assembly
					PG00-CAPACITORS
⚠ G001	1	1		DK18103840	Ceramic 0.01μF +80% −20%
⚠ G001			1	DK18103850	Ceramic 0.01μF +80% −20%
					PG00-MISCELLANEOUS
⚠ S001	1	1	1	SP01010650	Push Switch
					PS00-INDICATOR CIRCUIT BOARD
PS00	1	1	1	YK258H1520	P.W. Board Indicator
	1	1		ZZ258H8520	P.W. Board Assembly
					PS00-RESISTORS
RS30 ~ RS33	4	4	4	GD05561140	560Ω

M4309

- (N):for Europe
- (A):for Australia
- (F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					PS00-SEMICONDUCTORS
DS01 ~ DS03	3	3	3	HI10034320	L.E.D. GL-9EG14
DS04	1	1	1	HI10038030	L.E.D. SLP-281F50U
					PS00-MISCELLANEOUS
WS04	1	1	1	YU05100260	Jumper Lead 5P 100 mm
					PV00-16P CONNECTORS CIRCUIT BOARD
PV00	1	1	1	YK258H1530	P.W. Board 16P Connector
	1	1		ZZ258H8530	P.W. Board Assembly
					PV00-SEMICONDUCTORS
⚠ QV01	1	1	1	FU10215010	Protector Unit ICP-F25
					PV00-MISCELLANEOUS
JV01	1	1	1	YP10002590	Plug 16P
WS01	1	1	1	YU06080260	Jumper Lead 6P 80 mm
WS02	1	1	1	YU06080260	Jumper Lead 6P 80 mm
					PV50-6PIN CONNECTOR CIRCUIT BOARD
PV50	1	1	1	YK258H1540	P.W. Board 6Pin Connector
	1	1		ZZ258H8540	P.W. Board Assembly
					PV50-MISCELLANEOUS
JV02	1	1	1	YP10002600	Plug 6P
WS03	1	1	1	YU05100260	Jumper Lead 5P 100 mm

(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.

M4310

11. TECHNICAL SPECIFICATIONS

PM243

POWER OUTPUT PER CHANNEL
- DIN 8 OHMS 1 kHz . . . . . 40 W
- RMS 8 OHMS 1 kHz . . . . . 35 W

TOTAL HARMONIC DISTORTION AT RMS 8 OHMS 0.05%

Signal-to-Noise Ratio (IHF-A Network)
- Phono (MM) . . . . . 80 dB
- Aux . . . . . 90 dB

Dimensions (W x H x D) . . . . . 320 x 73 x 260 mm

Weight . . . . . 4.2 kg

PM143

POWER OUTPUT PER CHANNEL
- DIN 8 OHMS 1 kHz . . . . . 30 W
- RMS 8 OHMS 1 kHz . . . . . 25 W

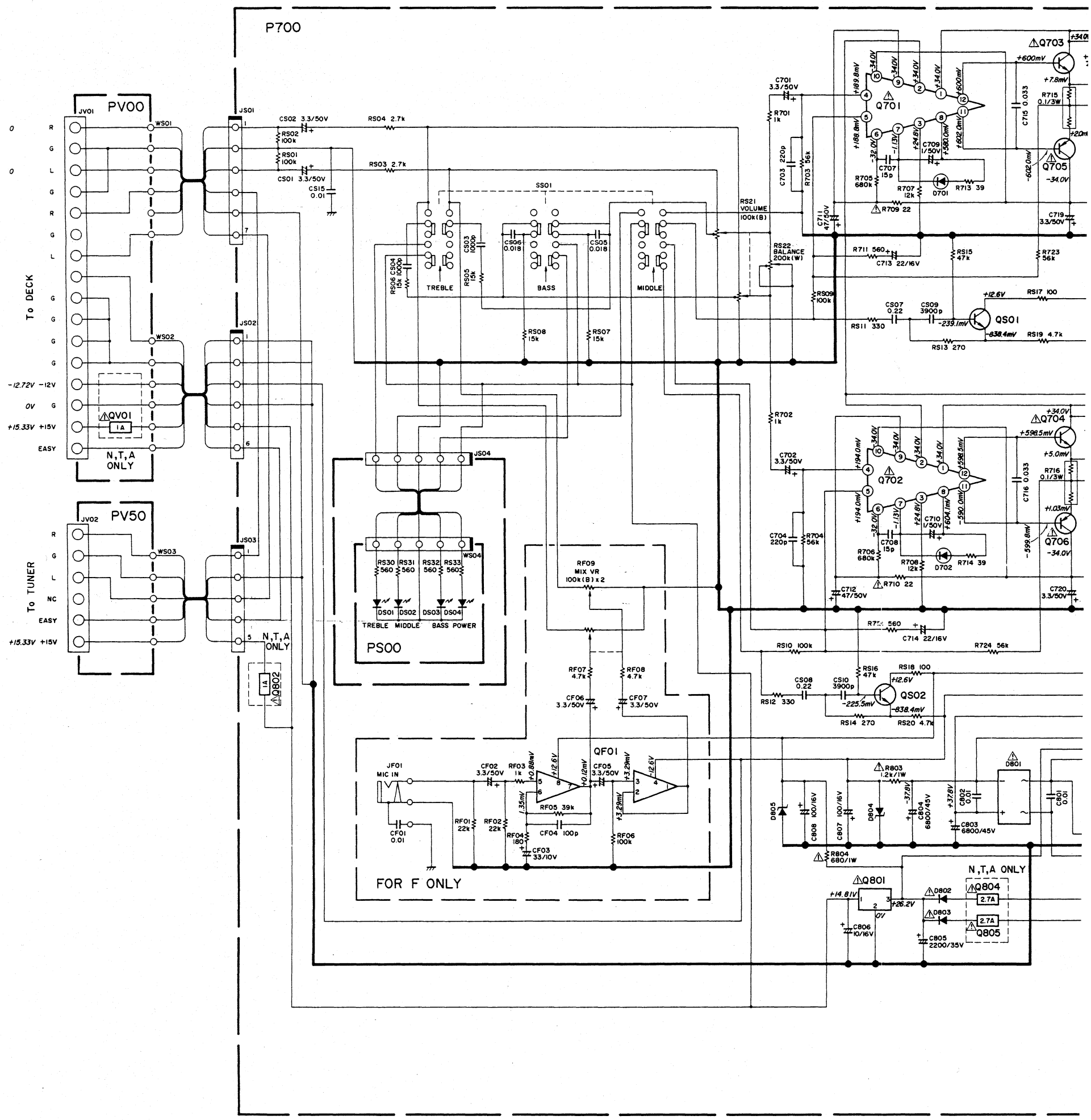
TOTAL HARMONIC DISTORTION AT RMS 8 OHMS 0.05%

Signal-to-Noise Ratio (IHF-A Network)
- Phono (MM) . . . . . 78 dB
- Aux . . . . . 90 dB

Dimensions (W x H x D) . . . . . 320 x 73 x 260 mm

Weight . . . . . 3.8 kg

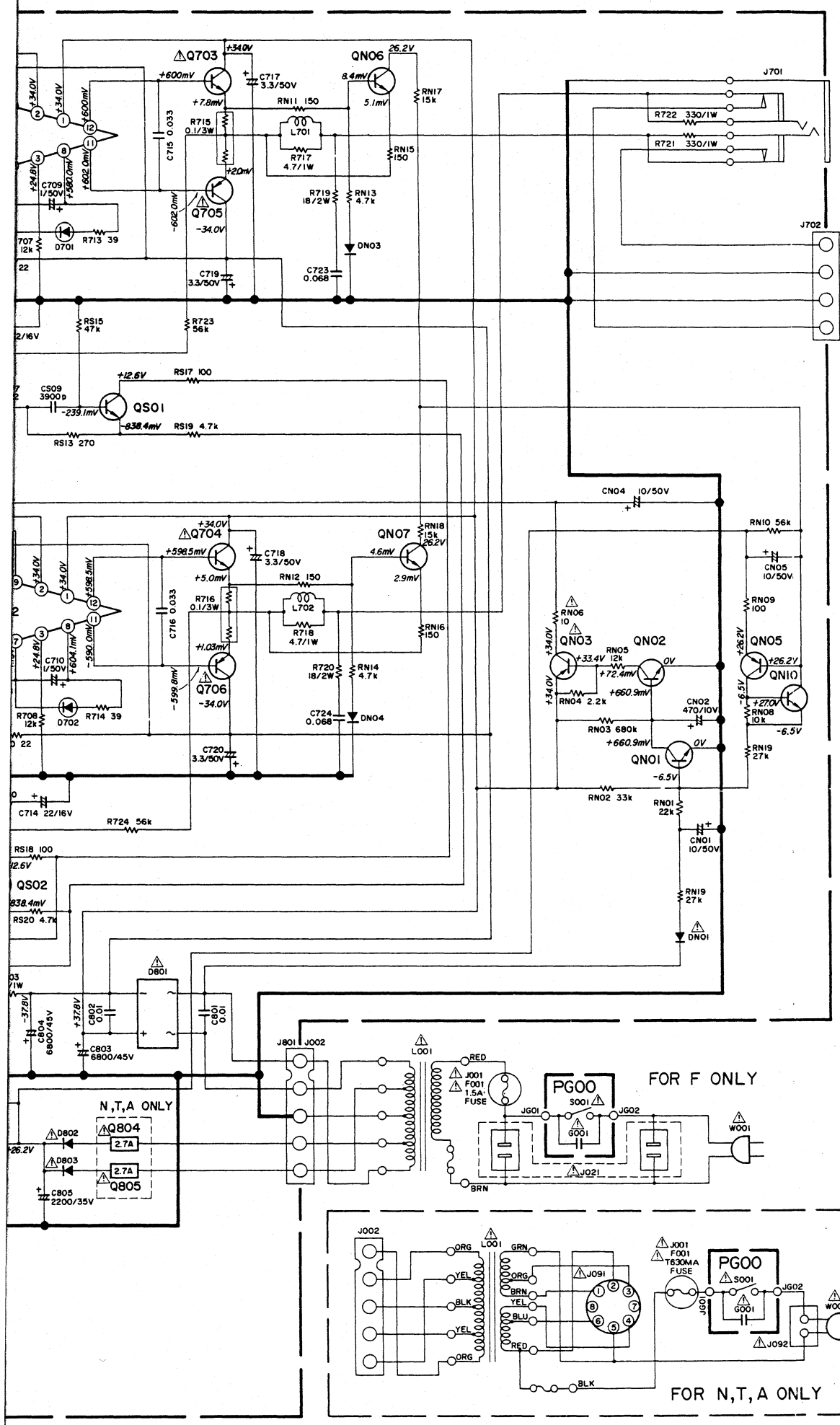
M431



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.

M4313

MODEL PM143



Q701,Q702
HC10097060
μPC-1270H

Q703,Q704
HT326652E0
2SC2665 O,Y

Q705,Q706
HT111352E0
2SA1135 O,Y

Q801
HC38915090
NJM-7815

QF01
HC10008090
NJM4558D-D

QN01,QN02
QN06,QN07,QN10
HT327852B0
2SC2785 J,H

QN03,QN05
HT111752B0
2SA1175 J,H

QS01,QS02
HT333122B0
2SC3312 S,T

D701,D702
HV00005080
STV-3H (Y)

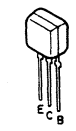
D801
HD20008290
S4VB-20

D802,D803
HD20009290
S2V-20

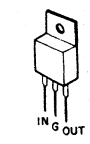
D804,D805
HD30009010
HZ12-2L

DN01
HD20022030
DSF-10C

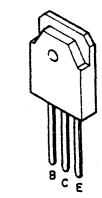
DN03,DN04
HD20002210
1S2472



2SA1175 J,H
2SC2785 J,H
2SC3312 R,S

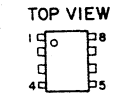


NJM-7815



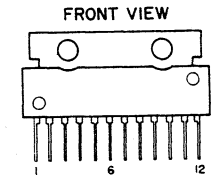
2SA1135 O,Y
2SC2665 O,Y

TOP VIEW



NJM4558D-D

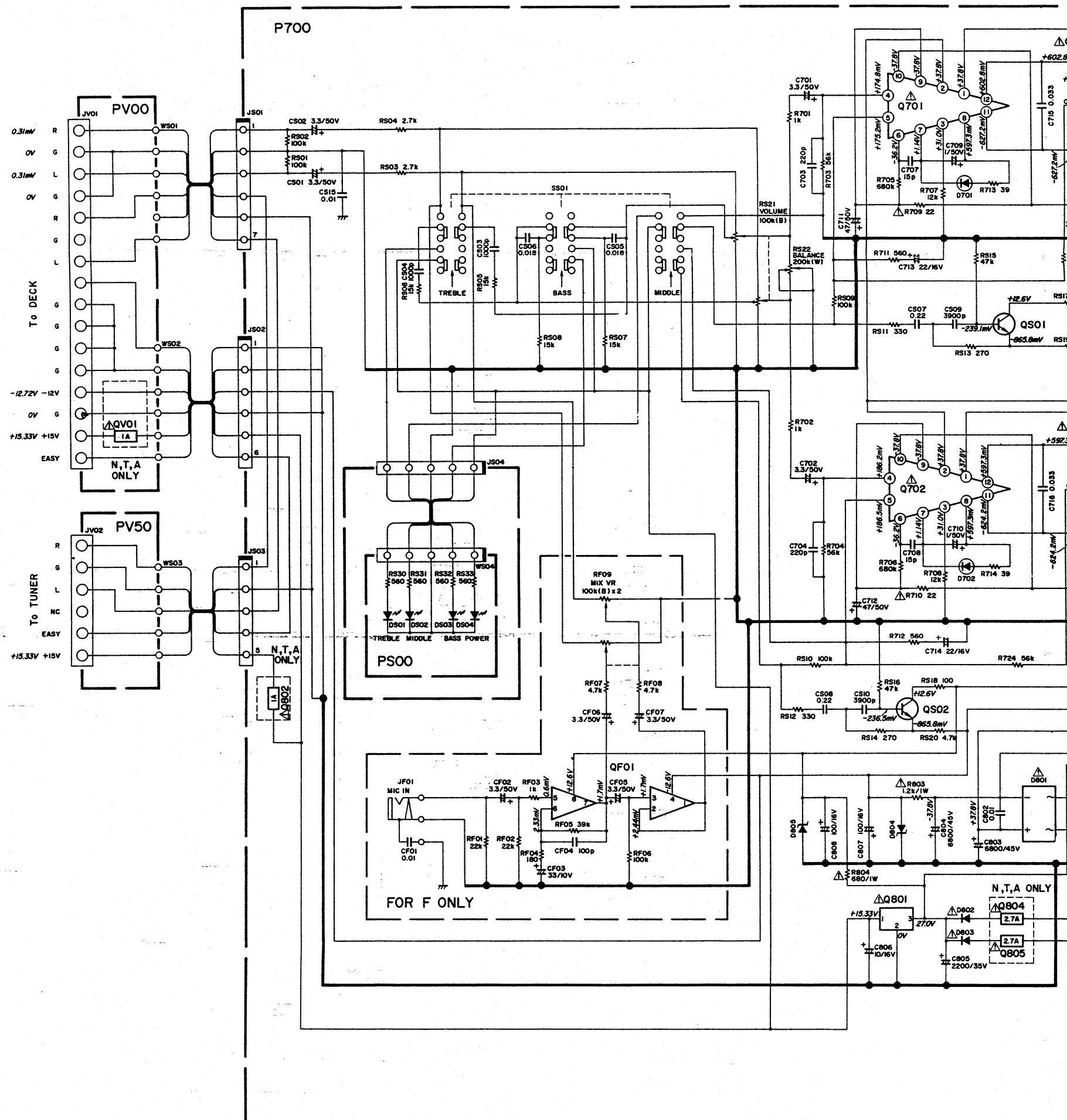
FRONT VIEW



μPC-1270H
NJM-7815

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

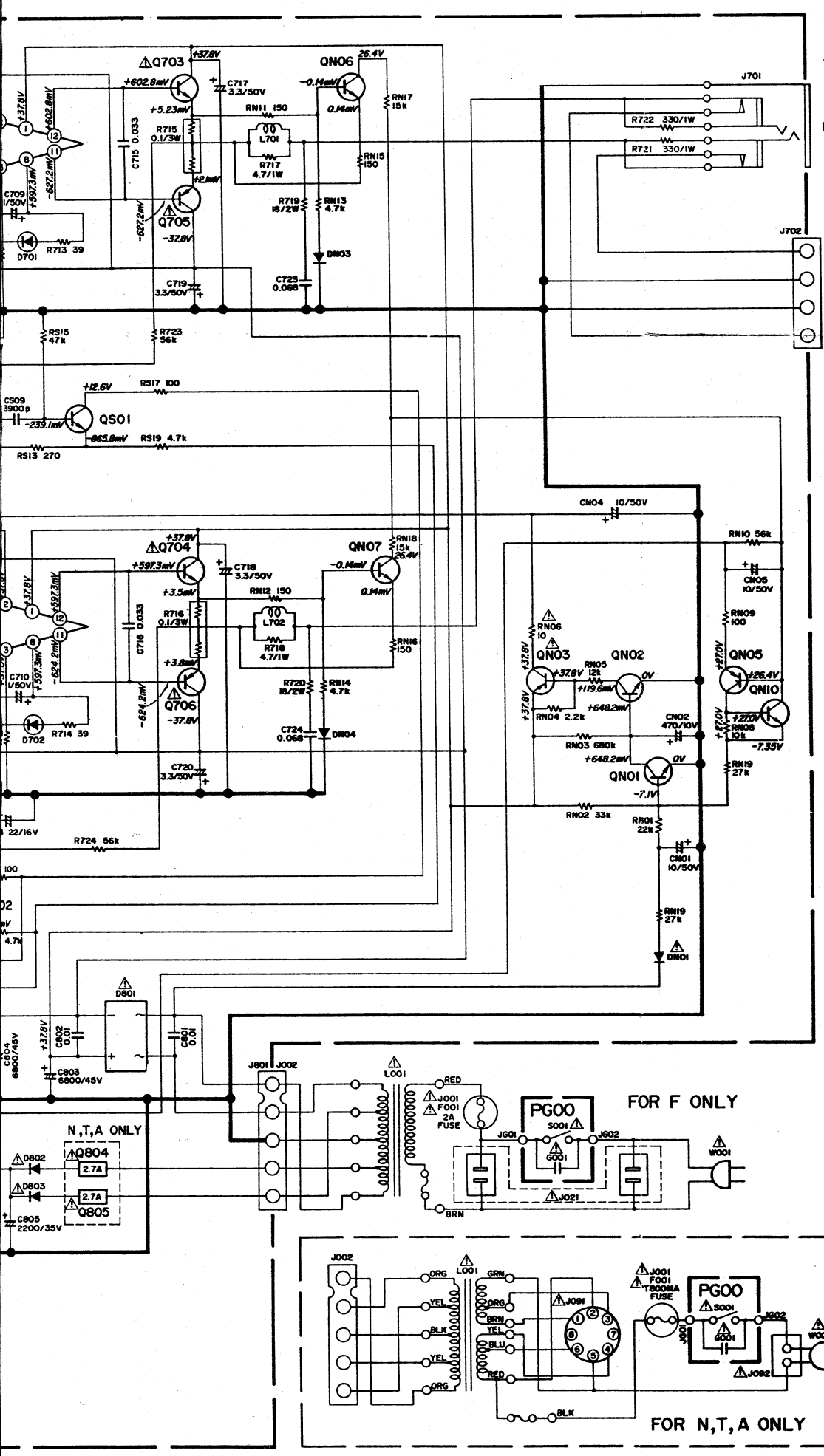
12. SCHEMATIC DIAGRAM



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.

MODEL PM243



Q701,Q702
HC10097060
μPC-1270H

Q703,Q704
HT326652E0
2SC2665 O,Y

Q705,Q706
HT111352E0
2SA1135 O,Y

Q801
HC38915090
NJM-7815

QF01
HC10008090
NJM4558D-D

QN01,QN02
QN06,QN07,QN10
HT327852B0
2SC2785 J,H

QN03,QN05
HT111752B0
2SA1175 J,H

QS01,QS02
HT333122B0
2SC3312 S,T

D701,D702
HV00006080
STV-3H (O)

D801
HD20008290
S4VB-20

D802,D803
HD20009290
S2V-20

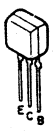
D804,D805
HD30009010
HZ12-2L

DN01
HD20022030
DSF-10C

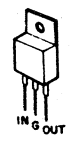
DN03,DN04
HD20002210
1S2472

DS01,DS02,DS03
HI10034320
GL-9EG14

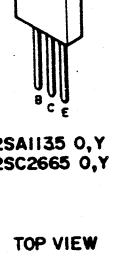
DS04
HI10038030
SLP-281F50U



2SA1175 J,H
2SC2785 J,H
2SC3312 R,S



NJM-7815



2SA1135 O,Y
2SC2665 O,Y

TOP VIEW

NJM4558D-D

FRONT VIEW

μPC-1270H
NJM-7815

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

M4312