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1. INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 2252 Stereophonic Receiver.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operations in the receiver.

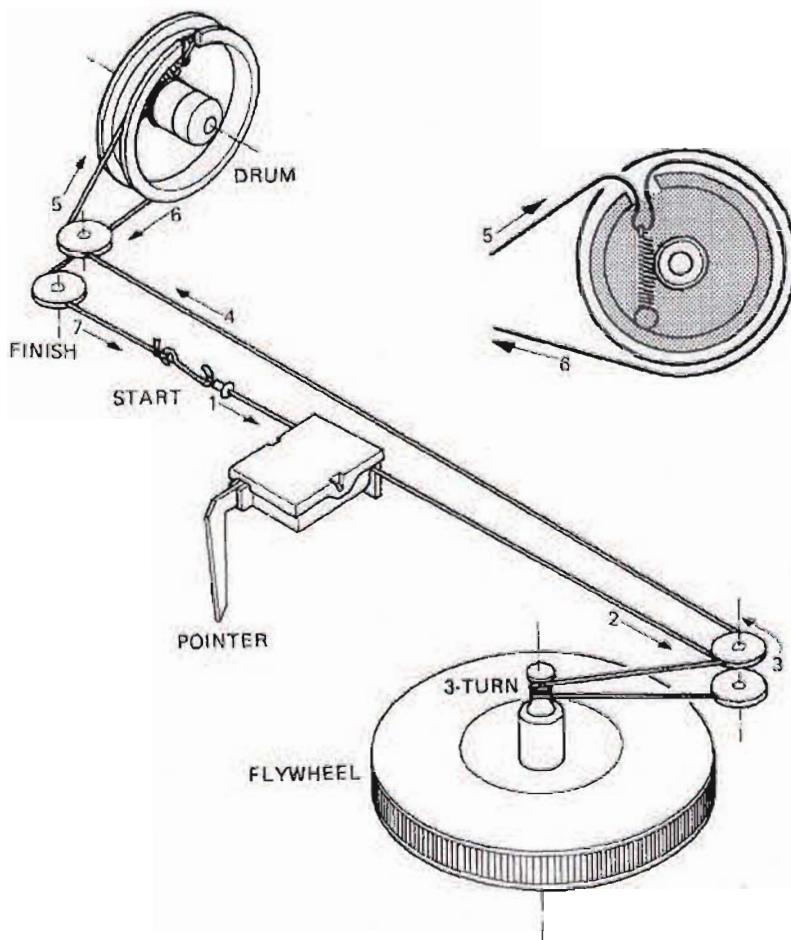
The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can usually be obtained through local suppliers.

2. SERVICE NOTES

As can be seen from the circuit diagram, the chassis of Model 2252 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. FM Front End mounted on P.W.B. P 100
2. FM and AM Tuner mounted on P.W.B. P 200
3. EQ Amplifier mounted on P.W.B. P 400
4. Tone Amplifier mounted on P.W.B. PE 01
5. Dolby FM, Tape Monitor, Mono and High Filter Switch Unit mounted on P.W.B. PH 01
6. Loudness, Muting and Speaker Switch Unit mounted on P.W.B. PT 01
7. Power Amplifier mounted on P.W.B. P 700
8. Power Supply mounted on P.W.B. P 800
9. Dial Lamp Unit mounted on P.W.B. PZ 01

● DIAL STRINGING



3. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the Model 2252 Receiver.

Item	Manufacturer and Model No.	Use
AM Signal Generator		Signal source for AM alignment
Test Loop		Use with AM Signal Generator
FM Signal Generator MPX Signal Generator	Sound Technology Model 1000A	Signal source for FM alignment Stereo separation alignment and trouble shooting
Distortion Analyzer		Distortion measurements
Audio Oscillator AC VTVM	Sound Technology Model 1700A	Sinewave and squarewave signal source voltage measurements (AC)
Oscilloscope	Tektronix Model T932 Philips Model 3232	Waveform analysis and trouble shooting and ASO alignment
Frequency Counter	Fluke Model 1900A	MPX Oscillator adjustment (VCO)
Circuit Tester		Trouble shooting
DC VTVM	Fluke Model 8000 "Digital" Simpson Model 313, Triplet Model 801	Voltage measurements (DC)
AC Wattmeter	Simpson Model 1379	Monitors primary power to amplifier
AC Ammeter	Commercial Grade (1-10A)	Monitors amplifier output under short circuit condition
Line Voltmeter	Simpson Model 1359	Monitors potential of primary power to amplifier
Variable Autotransformer	Superior Electronic Co., Powerstat Model 116B-10A	Adjusts level of primary power to amplifier
Shorting Plug	Use phono plug with 600 ohm across center pin and shell	Shorts amplifier input to eliminate noise pickup
Output Load (8 ohms, 0.5%, 100W)	Commercial Grade	Provides 8-ohm load for amplifier output termination
Output Load (4 ohms, 0.5% 100W)	Commercial Grade	Provides 4-ohm load for amplifier output termination

4. AM ALIGNMENT PROCEDURE

4.1 AM IF ALIGNMENT

1. Connect a sweep generator to the L153 and an alignment scope to the resistor R162 (out side).
2. Rotate each core of IF transformers L155 and L156 for the maximum height and flat top symmetrical response.

4.2 AM FREQUENCY RANGE AND TRACKING ALIGNMENT

1. Set AM signal generator to 515 kHz. Turn the tuning capacitor fully closed (place the tuning pointer at the low end) and adjust the oscillator coil L154 for maximum audio output.
2. Set the signal generator to 1650 kHz. Place the tuning pointer in the high frequency end and adjust the oscillator trimmer on the oscillator tuning capacitor for maximum audio output.

3. Repeat steps 1 and 2 until no further adjustment is necessary.
4. Set the generator to 600 kHz, tune the receiver to the same frequency and adjust a slug core of AM ferrite rod antenna for maximum output.
5. Set the generator to 1400 kHz and tune the receiver to the same frequency and adjust the trimming capacitor on the antenna tuning capacitor for maximum output.
6. Repeat procedures 4 and 5 until no further adjustment is necessary.

NOTE

During tracking alignment reduce the signal generator output as necessary to avoid AGC action.

5. FM ALIGNMENT PROCEDURE

1. Connect an FM signal generator to the FM antenna terminals and an oscilloscope and an audio distortion analyzer to the tape output jack on the rear panel.
2. Set the FM SG to 87.4 MHz and provide about 3 to 5 μ V. Place the tuning pointer at the low frequency end by rotating the tuning knob and adjust the pitch of oscillator coil L107 to obtain maximum audio output.
3. Set the FM SG to 109 MHz and provide about 3 to 5 μ V. Rotate the tuning knob and place the tuning pointer at the high frequency end and adjust the trimming capacitor C121 for maximum output.
4. Repeat steps 2 and 3 until no further adjustment is necessary.
5. Set the FM SG to 90 MHz and tune the receiver to the same frequency. Decrease signal generator output until the audio output level decreases with the decreasing generator output. Adjust the pitch of ANTENNA coil L102 and RF coil L104 for maximum output.
6. Set the FM SG to 106 MHz and tune the receiver to the same frequency. Decrease the signal generator output until the audio output level decreases with the decreasing generator output. Adjust the trimming capacitors of ANTENNA and RF tuning circuits for maximum output.
7. Repeat steps 5 and 6 until no further adjustment is necessary.
8. Adjust the primary core (lower core) of discriminator transformer L202 so that the center tuning meter pointer indicates its center at no signal applied. Set the FM SG to 98 MHz and increase its output level 1K μ V and tune the receiver to the same frequency so

that the center tuning meter pointer indicates its center. Adjust the secondary core (upper core) of L202 for minimum distortion.

6. STEREO SEPARATION ALIGNMENT

1. Set the FM SG to provide 1 K μ V at 98 MHz. Tune the receiver to the same frequency so that the center tuning meter pointer indicates its center. Then turn off the modulation of the FM SG, connect a frequency counter to test point J229 and adjust R301 so that the frequency counter may precisely read 76 kHz.
2. Modulate the FM SG with stereo composite signal consisting of only L or R channel (of course a pilot signal must be included).
3. Adjust the trimming resistor R317 for maximum and same separation in both channels.

7. MUTING THRESHOLD ADJUSTMENT

Set the FM SG output to provide 12.5 μ V(IHF) at 98 MHz and tune receiver to the same frequency. Adjust the trimming resistor R212 for the threshold level of 12.5 μ V. (During this adjustment turn the MUTING pushswitch "on".)

8. FM DOLBY LEVEL ADJUSTMENT

1. Set the FM SG to provide a 400 Hz, 50% modulated 98 MHz mono signal, at 1 K μ V output. Precisely tune the receiver to 98 MHz.
2. Depress the FM DOLBY pushswitch, and adjust R215 until the outputs of both channels are 580mV.

9. POWER AMPLIFIER ADJUSTMENT

Connect a VTVM between J726(+) and J723(-) and adjust the trimming resistor R731 until the VTVM reads 8mV DC. And next, connect a VTVM between J723 and J709 (GROUND) and adjust the trimming resistor R711 until the VTVM reads 0 mV DC. Do over again. For the other channel, connect the VTVM between J727(+) and J722(-) and adjust the R732 for the same reading, and connect the VTVM between J722 and J709 and adjust the R712 for the same reading. Do over again.

10. POWER SUPPLY ADJUSTMENT

Connect a VTVM between J805(+) and J814(-) and adjust R808 until the VTVM reads 35.0 V under no signal condition.

● EUROPEAN MODEL ONLY

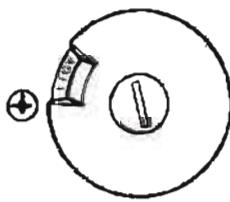
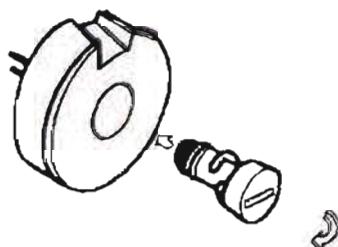
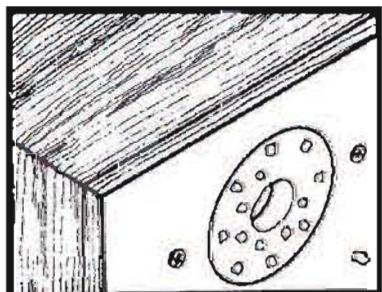
11. VOLTAGE CONVERSION

This Model is equipped with a universal power transformer to permit operation at 110, 120, 220 and 240 V AC 50/60 Hz.

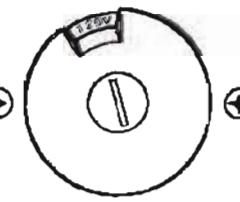
To convert the unit to the required voltage, set the plug as illustrated so that you can adjust the voltage as required.

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

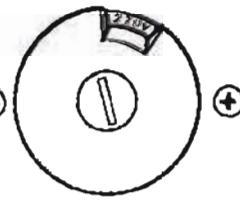
11.1 VOLTAGE CONVERSION CHART



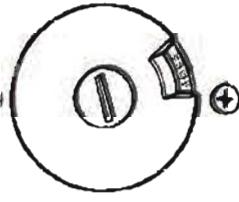
For 110V Operation



For 120V Operation



For 220V Operation



For 240V Operation

12. FTZ REGULATION

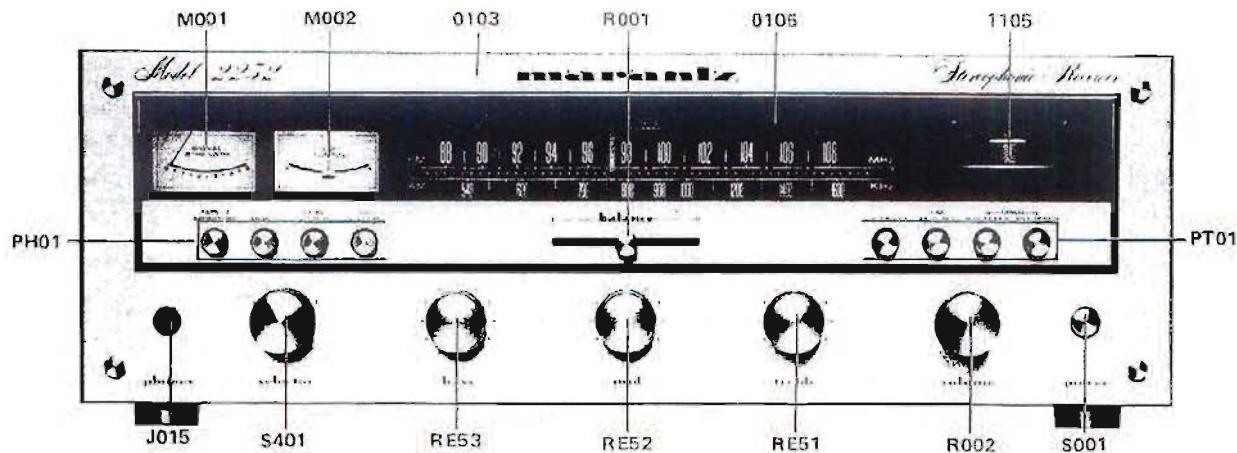
Instruction for the use in the range other than specified in FTZ codes.

Achtung für die Leute, die in dem Gebiet wohnen,
wo die FTZ-Bestimmungen vorherrschen sind.

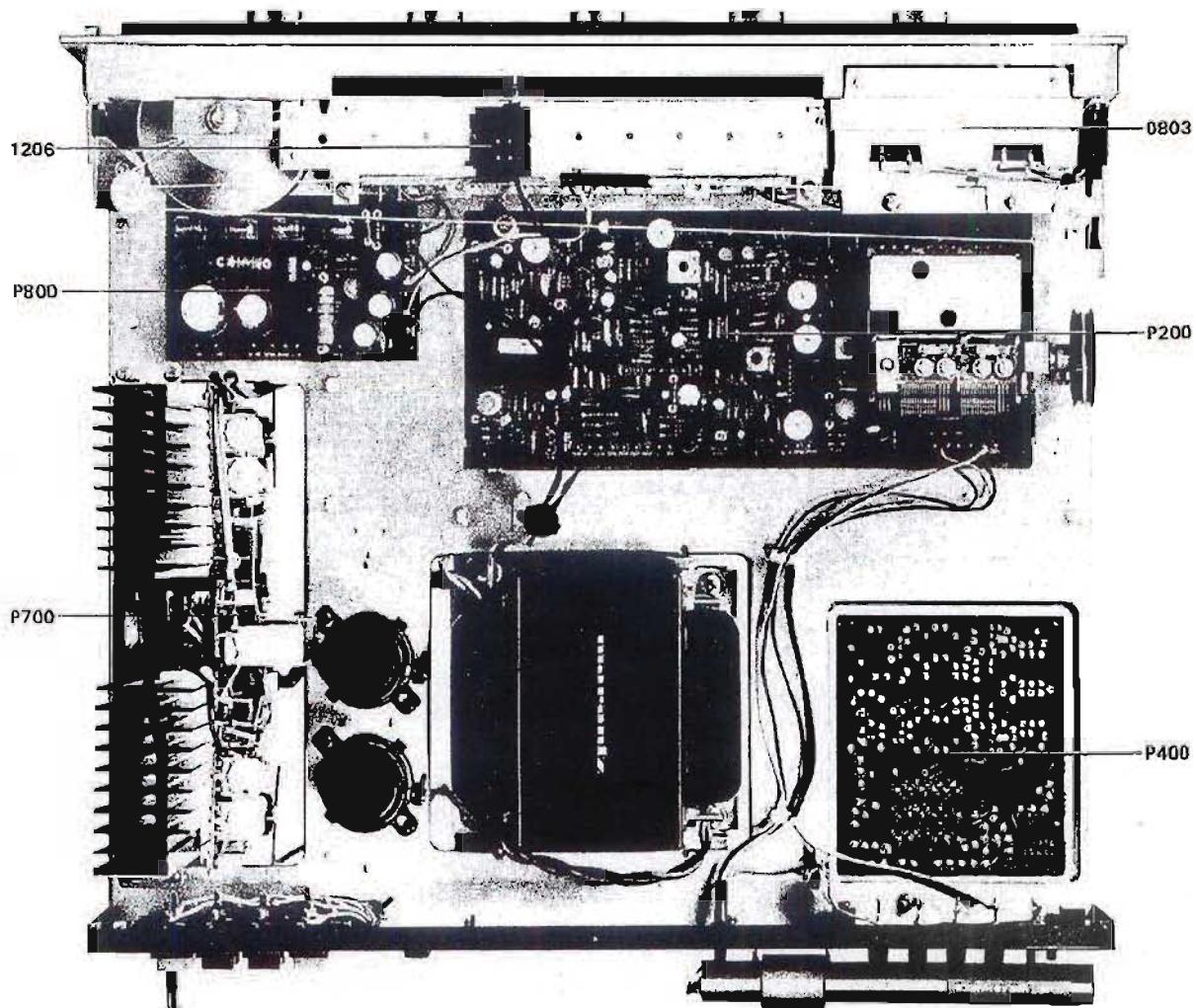
Sollte das Gerät auch für Frequenzen ausserhalb des in den FTZ-Bestimmungen angegebenen Bereiches empfangebereit sein, bitten wir, den Bereich durch Nachstellen des Kernes in der Oszillatospule (in der Abbildung mit "FTZ" gekennzeichnet) so zu korrigieren, dass er den Bestimmungen entspricht.

13. MAJOR COMPONENT LOCATIONS

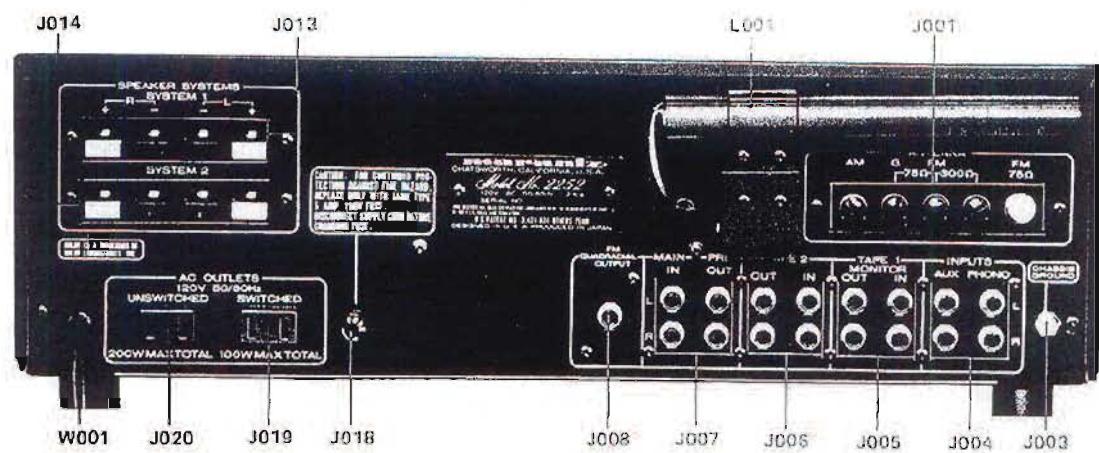
13.1 FRONT PANEL ADJUSTMENT AND COMPONENT LOCATIONS



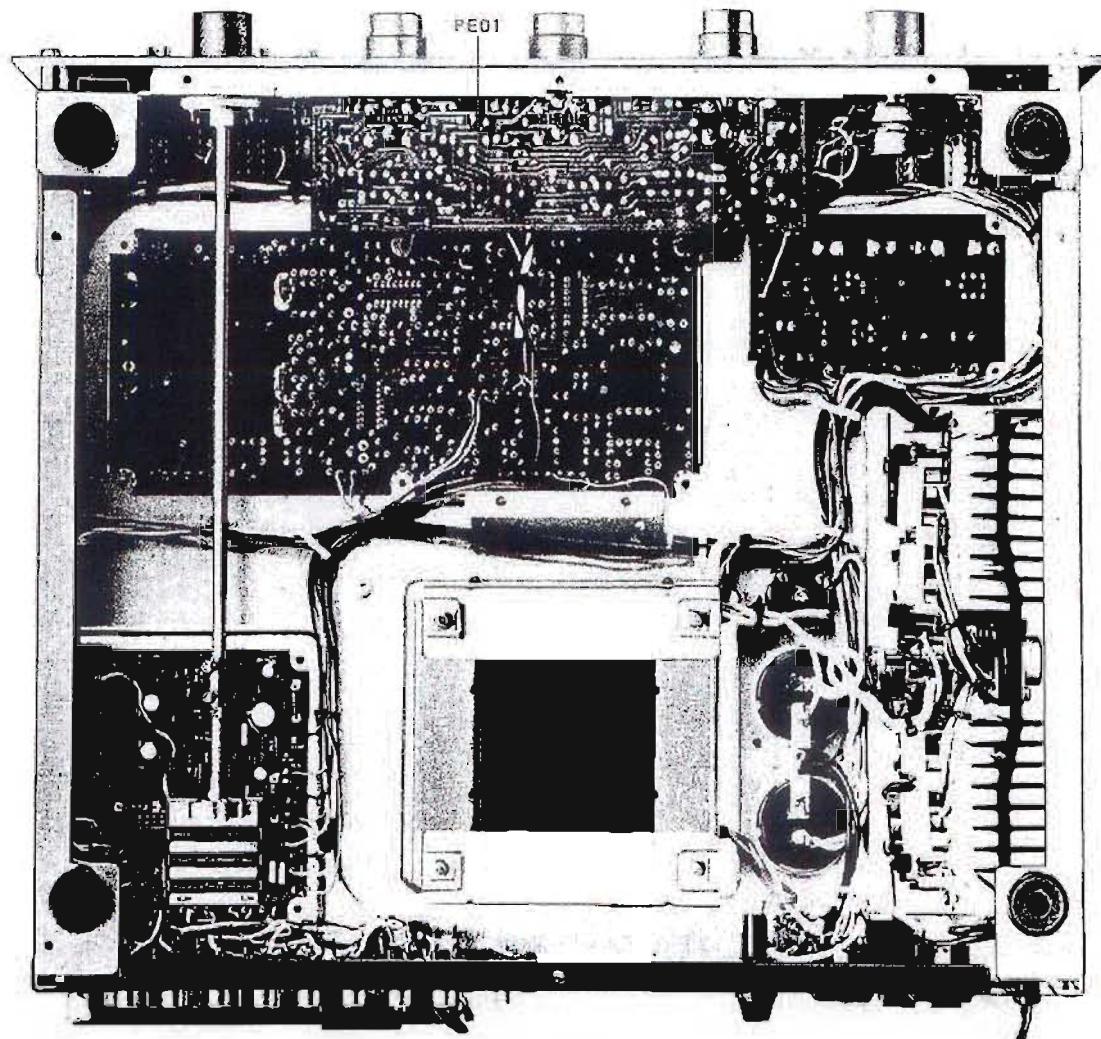
13.2 MAIN CHASSIS COMPONENT LOCATIONS (TOP VIEW)



13. 3 REAR PANEL ADJUSTMENT AND COMPONENT LOCATIONS

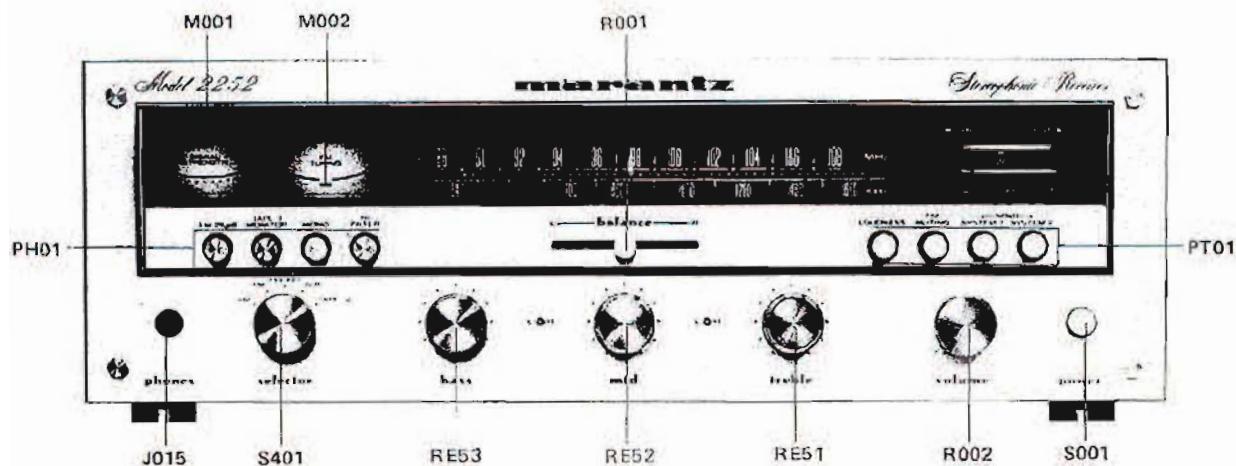


13. 4 MAIN CHASSIS COMPONENT LOCATIONS(BOTTOM VIEW)

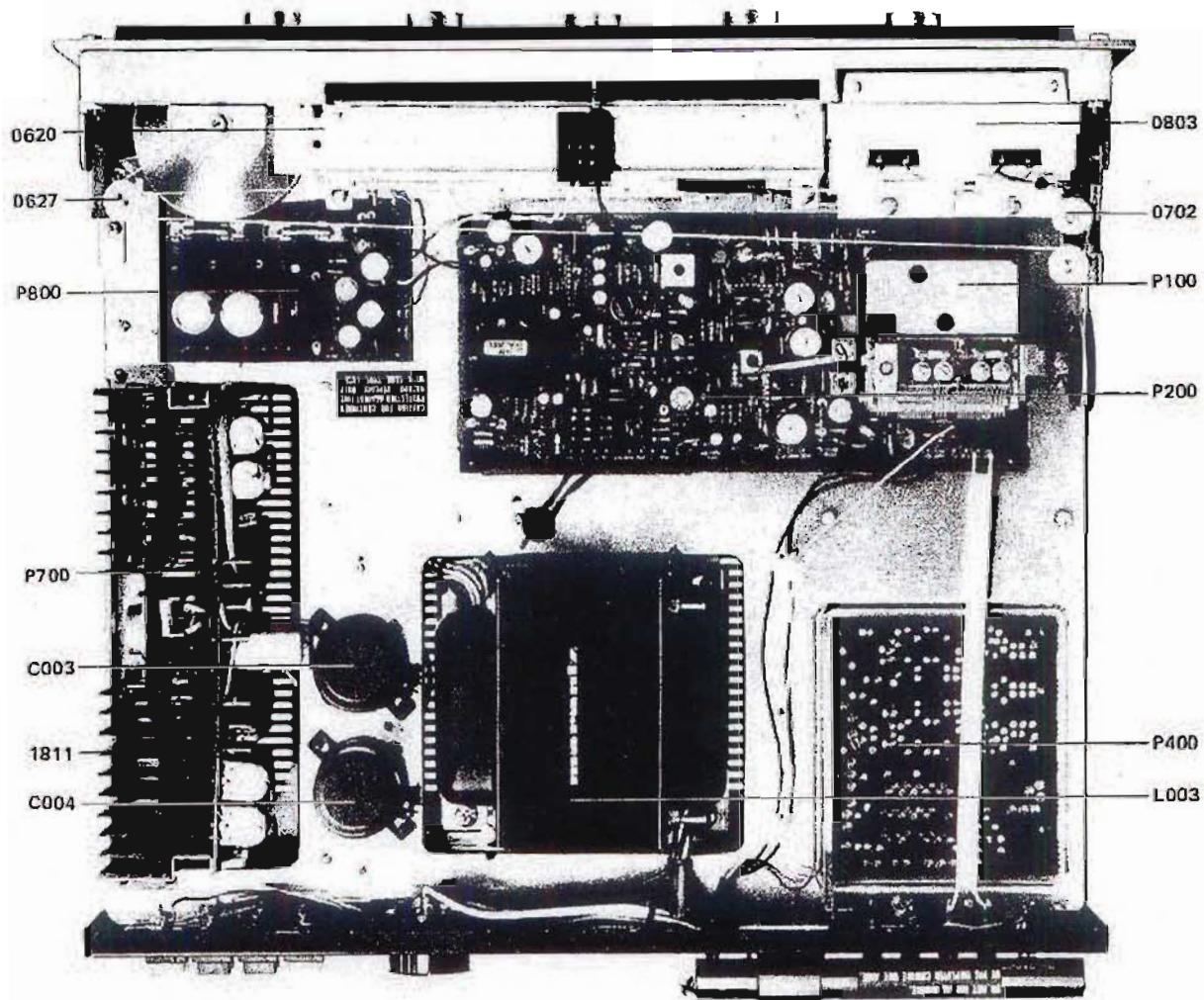


● EUROPEAN MODEL

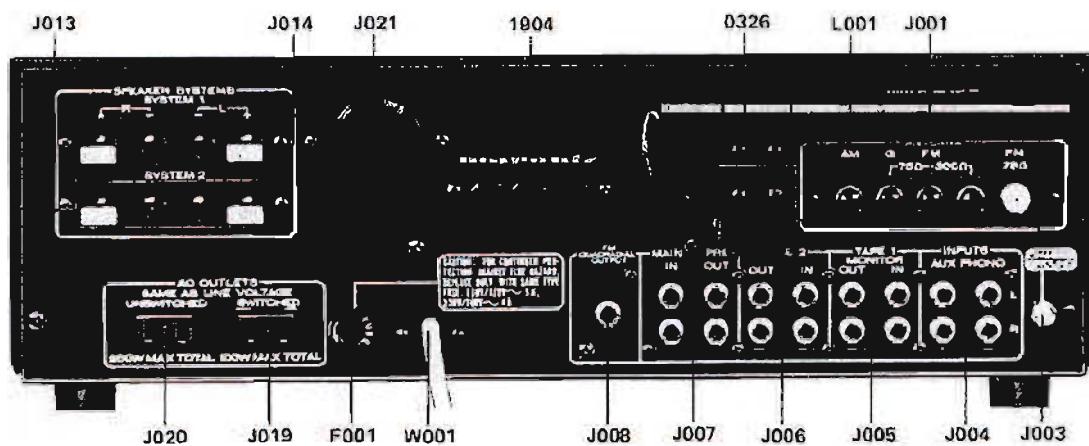
13.5 FRONT PANEL ADJUSTMENT AND COMPONENT LOCATIONS



13.6 MAIN CHASSIS COMPONENT LOCATIONS(TOP VIEW)

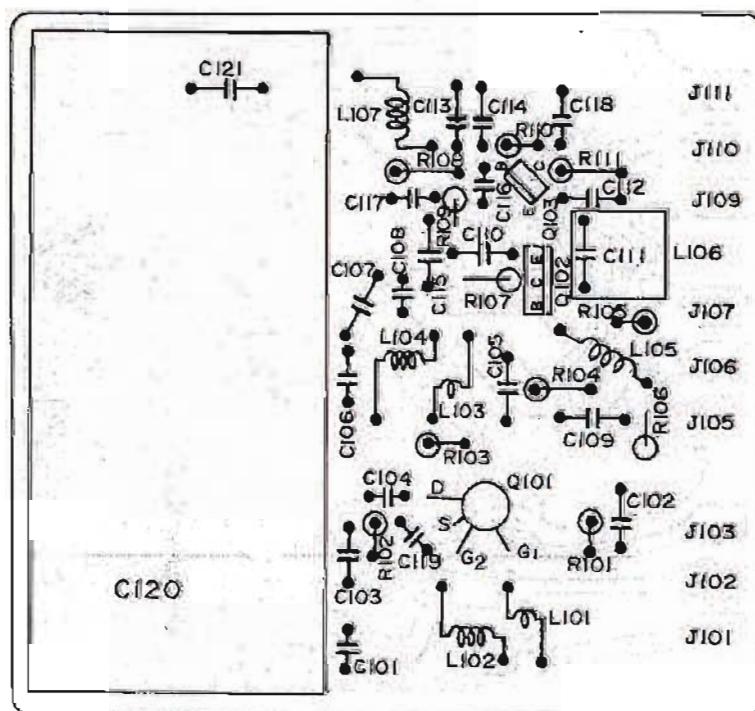
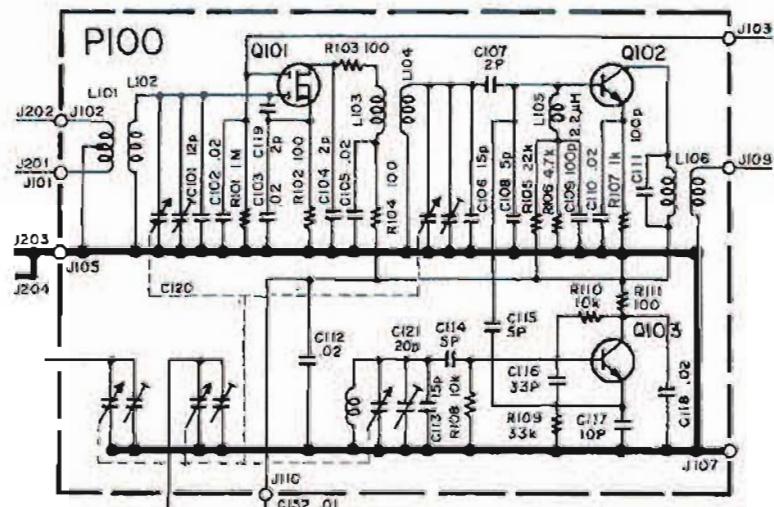


13.7 REAR PANEL ADJUSTMENT AND COMPONENT LOCATIONS

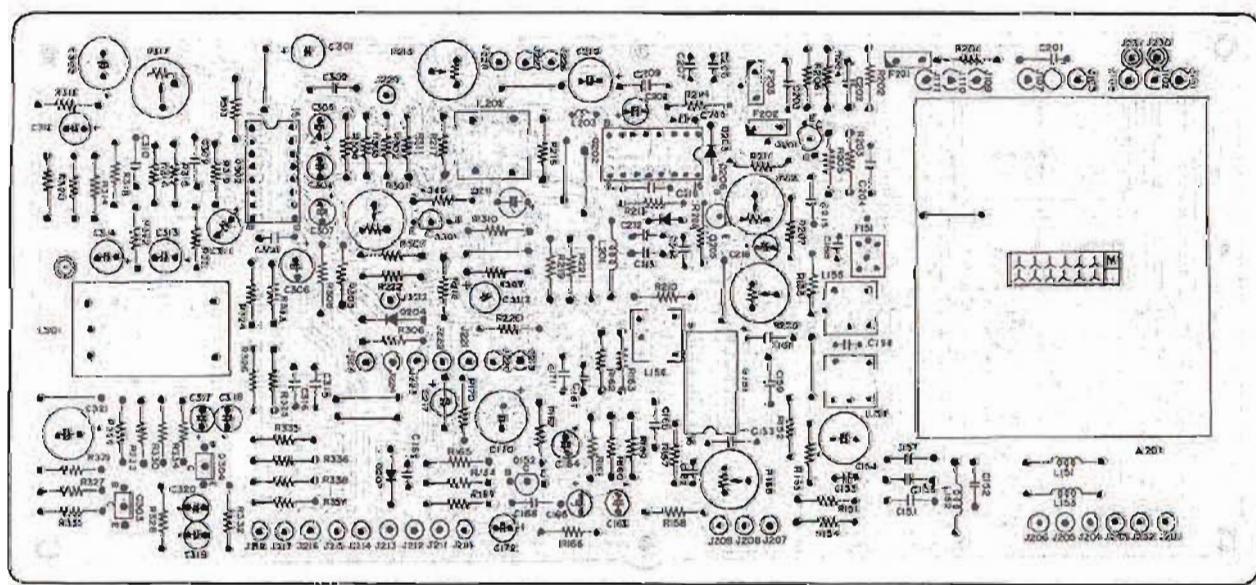
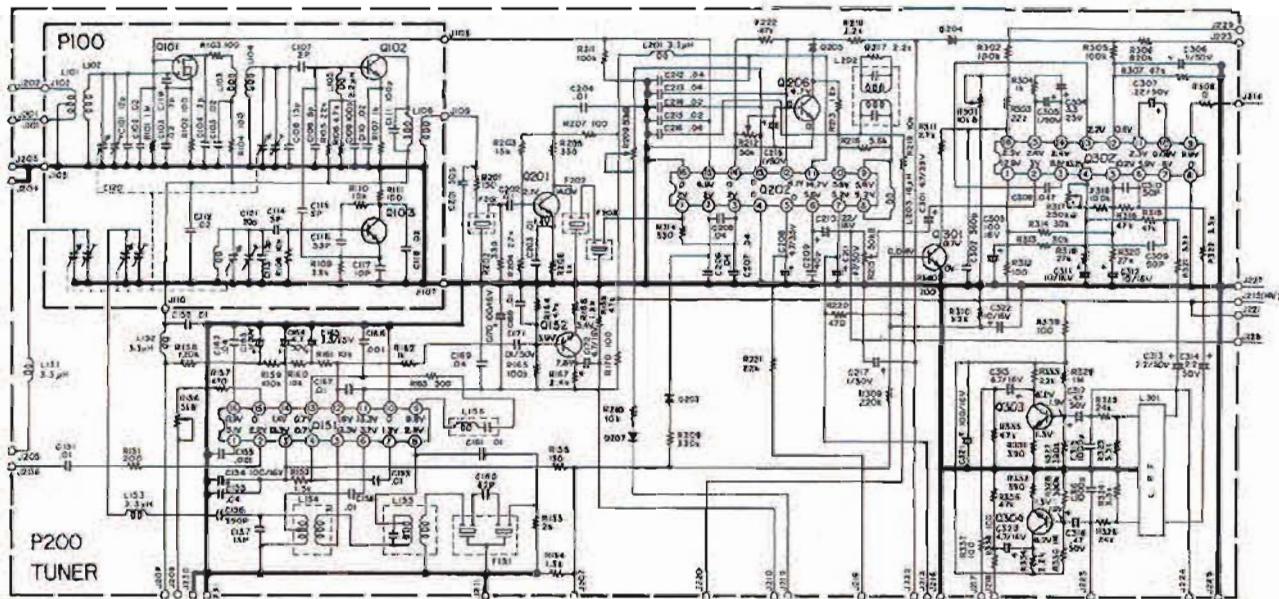


14. DIAGRAM AND COMPONENT LOCATIONS

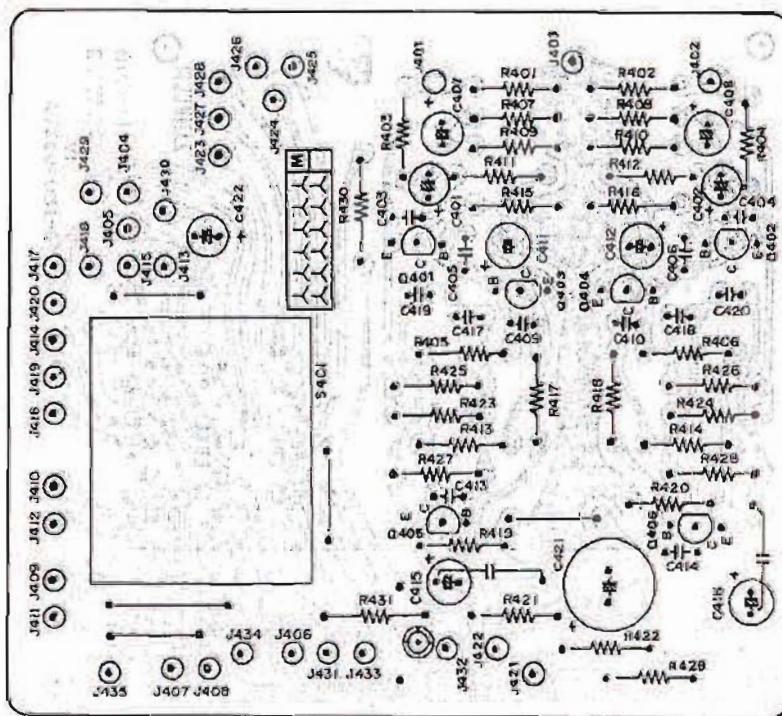
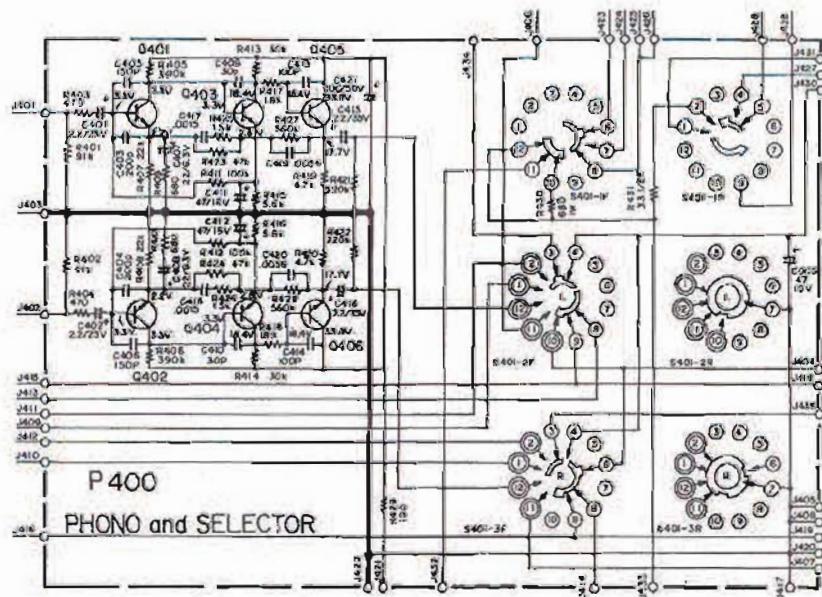
14. 1 FM FRONT END ASSEMBLY(P100) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



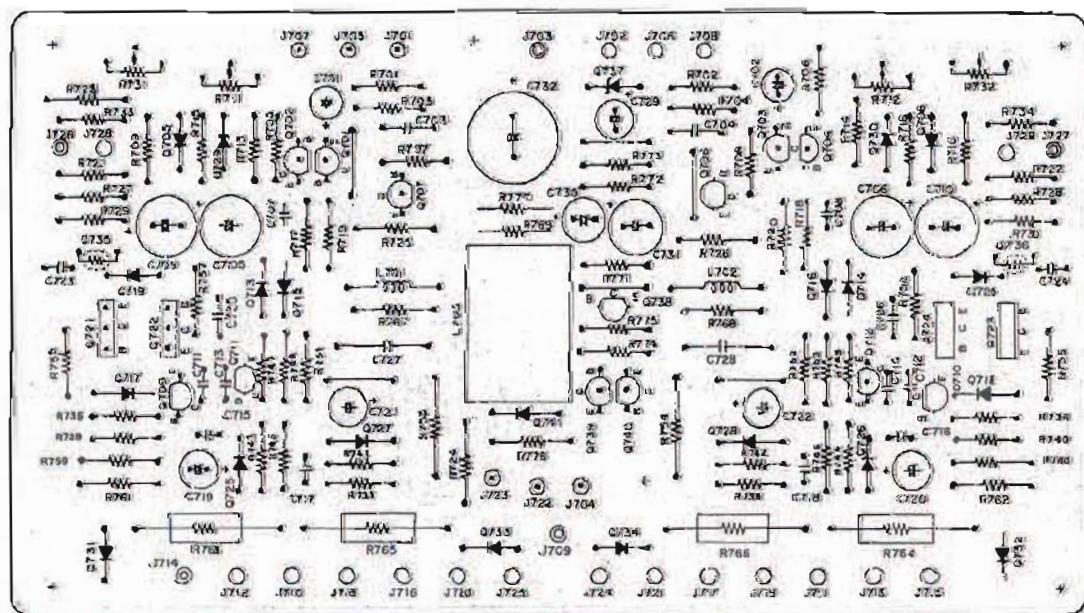
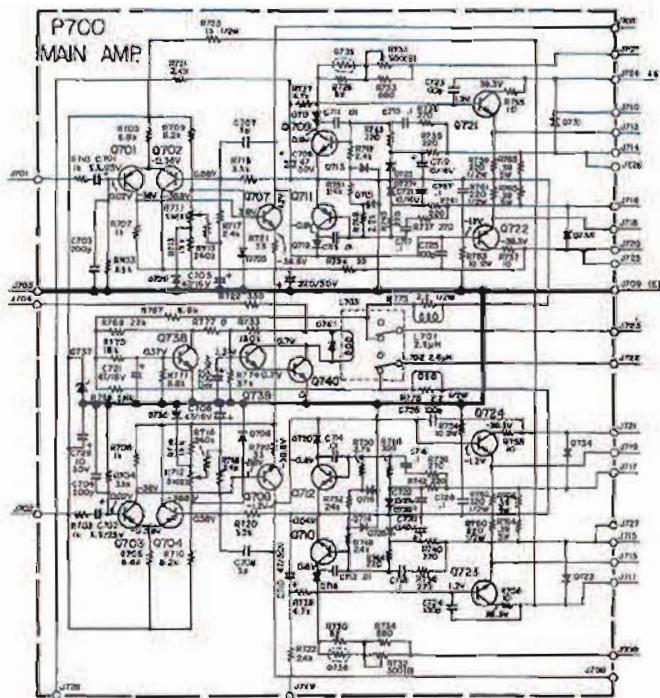
14. 2 TUNER ASSEMBLY(P200) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



14. 3 EQL AMP. ASSEMBLY(P400) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

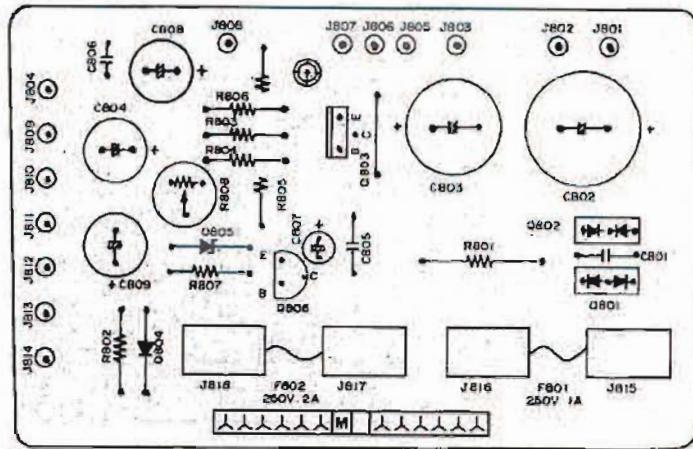
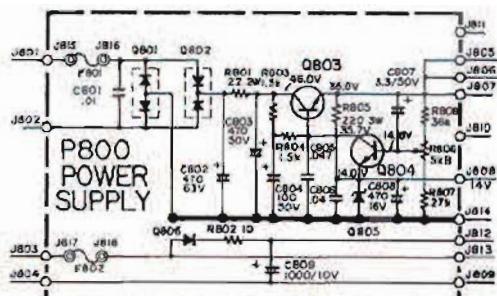


14. 4 MAIN AMP. ASSEMBLY(P700) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS

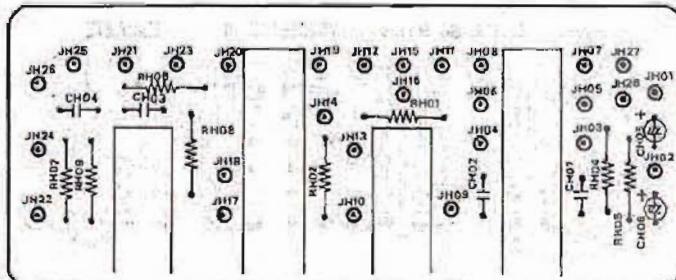
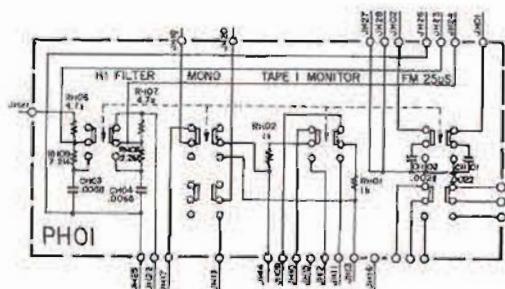


marantz

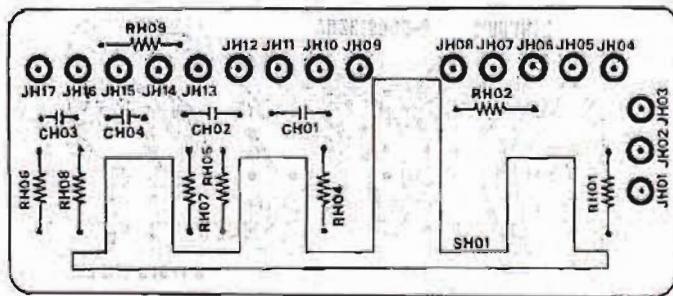
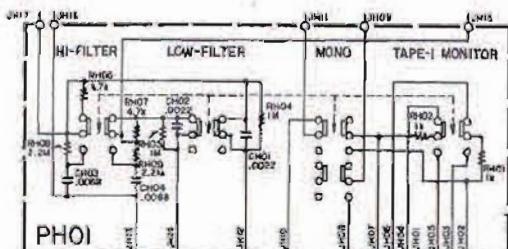
14. 5 POWER SUPPLY ASSEMBLY(P800) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



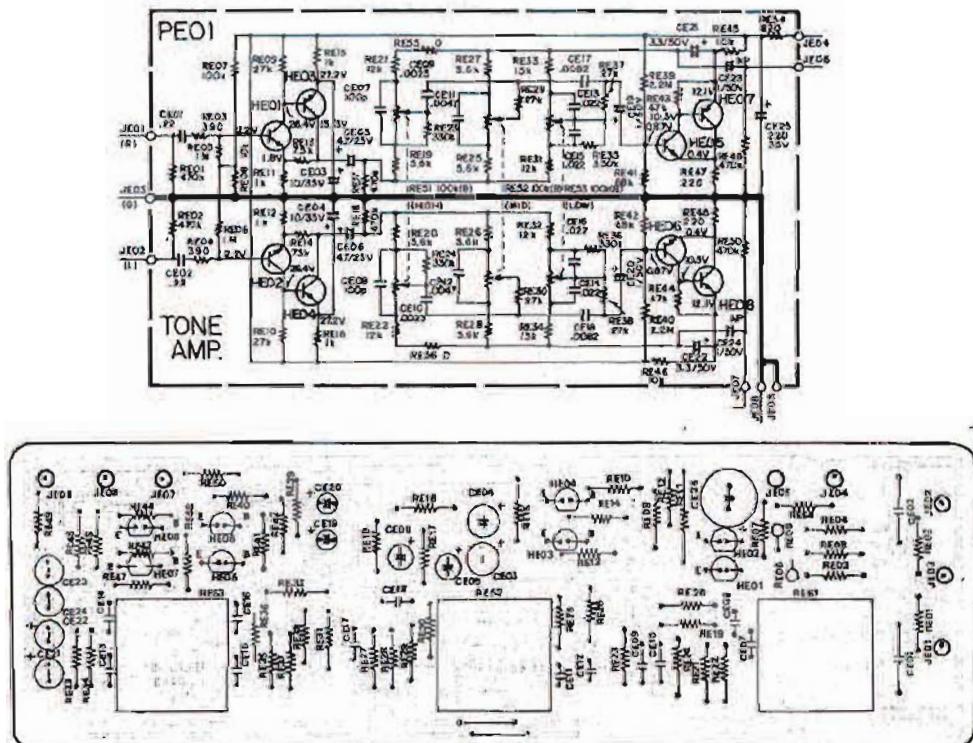
14. 6 FILTER DOLBY ASSEMBLY(PH01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS • for U.S.A., Canada



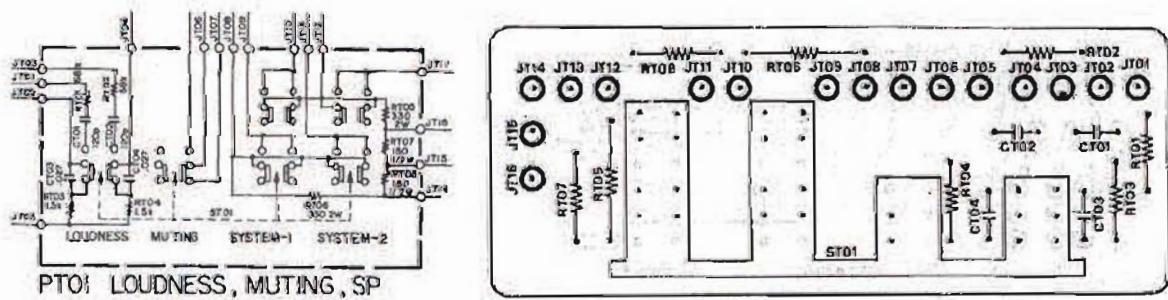
14. 7 LOW-HI FILTER ASSEMBLY(PH01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS • for Europe



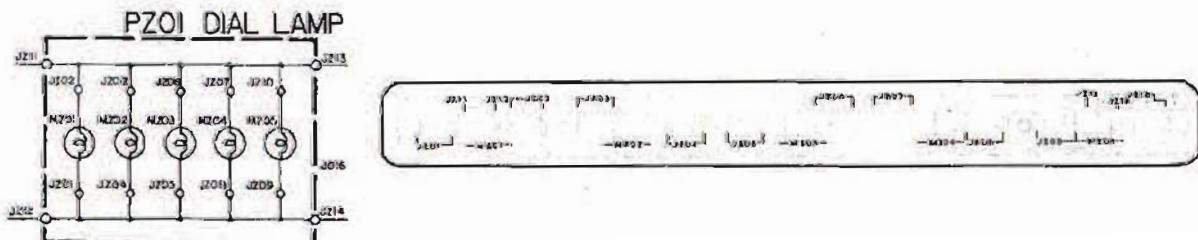
14.8 PRE-TONE AMP. ASSEMBLY (PE01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



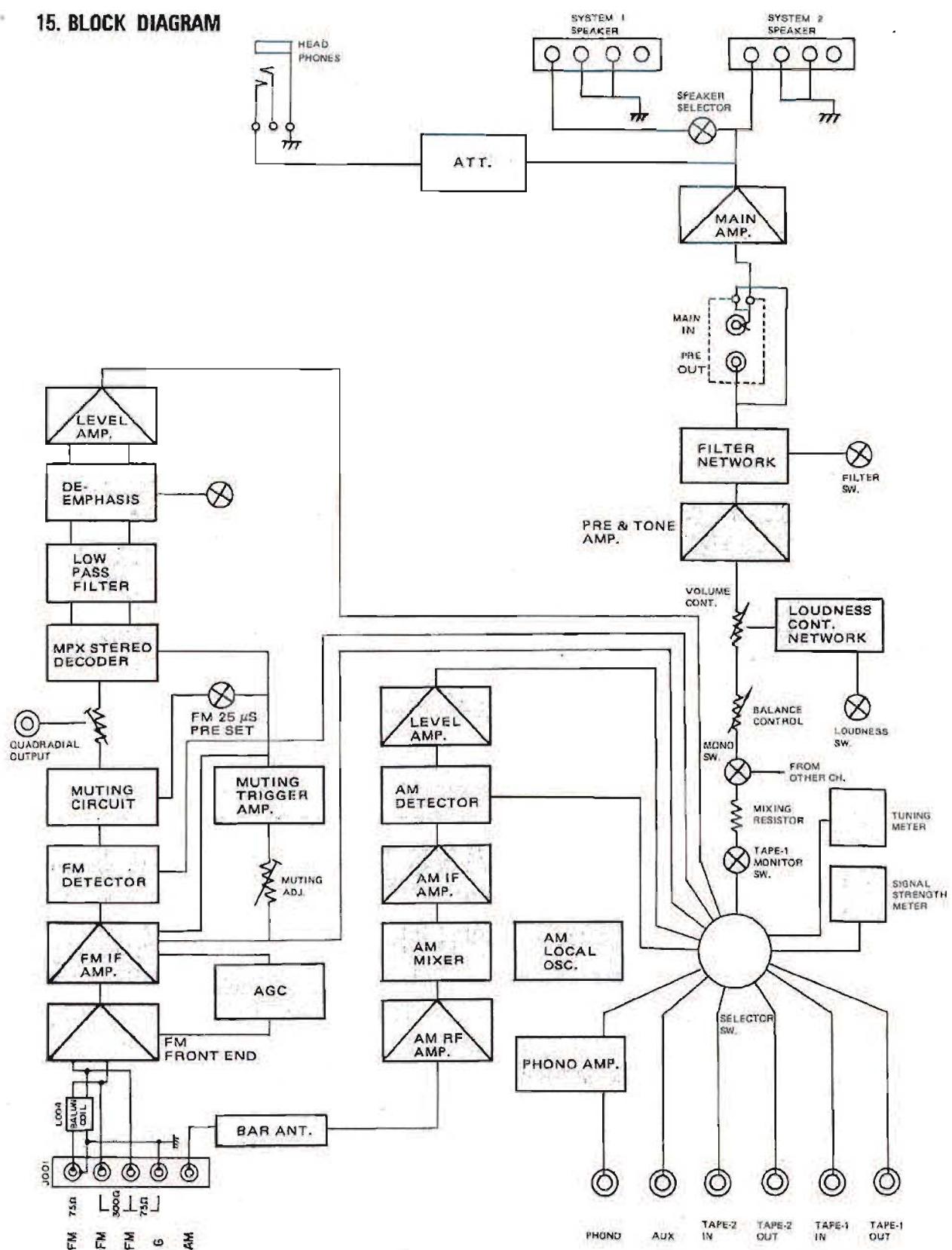
14.9 MAIN REMOTE ASSEMBLY(PT01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



14.10 DIAL LAMP ASSEMBLY(PZ01) SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS



15. BLOCK DIAGRAM



- (U) for U.S.A.
- (C) for Canada
- (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
L003	1	1		TS60505010	Power Transformer
L003		1		TS60505020	Power Transformer
S001	1	1	1	SP02010150	Power Switch
C001	1	1	1	DK18103010	Ceramic Cap., 0.01μF 50V
C002	1	1	1	DK18103010	Ceramic Cap., 0.01μF 50V
C003	1	1	1	EC10905020	Electrolytic Cap., 10000μF 50V
C004	1	1	1	EC10905020	Electrolytic Cap., 10000μF 50V
C006		1		DF17473590	Film Cap., 0.047μF
C006		1		DF17223800	Film Cap., 0.022μF 1000V
C007	1	1	1	DK18103510	Ceramic Cap., 0.01μF 500V
G001	1			BF10400040	Printed Comp.
R001	1	1	1	RS05040050	Variable Resistor, 500kΩ Bal.
R002	1	1	1	RM02540220	Variable Resistor, 250kΩ Vol.
R003	1	1		RC10225120	Resistor, 2.2MΩ ½W
H007	1	1	1	HD20004290	Diode, S5VB
J001	1	1	1	BY04050010	Terminal
J002	1	1	1	YL01020030	Terminal
J003	1	1	1	YT01010050	Terminal
J004	1	1	1	YT02040140	Terminal
J005	1	1	1	YT0204D140	Terminal
J006	1	1	1	YT02040140	Terminal
J007	1	1	1	YT02040170	Terminal
J008	1	1	1	YT02010130	Terminal
J009	1	1	1	YJ05000220	Socket
J010	1	1	1	YJ05000220	Socket
J011	1	1	1	YJ05000220	Socket
J012	1	1	1	YJ05000220	Socket
J013	1	1	1	YT03040160	Terminal
J014	1	1	1	YT03040160	Terminal
J015	1	1	1	YJ01000980	Jack
J016	1	1	1	YJ08000190	Socket
J017	1	1	1	YJ08000190	Socket
J018	1	1		YJ08000120	Socket
J018		1		YJ08000220	Socket
J019	1	1	1	YJ04000560	Socket
J020	1	1	1	YJ04000560	Socket
J021		1		BY03110010	Terminal
H001	1	1	1	HT31343280	Transistor, 2SC1343 B, C
H003	1	1	1	HT10753280	Transistor, 2SA753 B, C
H002	1	1	1	HT313432B0	Transistor, 2SC1343 B, C
H004	1	1	1	HT107532B0	Transistor, 2SA753 B, C
H005	1	1	1	HV00005080	Varistor
H006	1	1	1	HV00005080	Varistor
W001	1	1		YC02400220	AC Cord
W001		1		YC01900030	AC Cord
F001		1		FS10400900	Fuse
F001	1	1		FS10500040	Fuse
F002		1		FS20500900	Fuse

22. TECHNICAL SPECIFICATIONS

Amplifier Section

RATED POWER OUTPUT, MINIMUM CONTINUOUS AVERAGE POWER

PER CHANNEL, BOTH CHANNELS DRIVEN 52 WATTS

POWER BAND 20 Hz to 20 kHz

TOTAL HARMONIC DISTORTION 0.1%

LOAD IMPEDANCE 8 OHMS

Maximum Power Output, DIN 45500 62W
(less than 1% THD, 10 min. test)

Power Bandwidth at 1% THD, DIN 45500 10 Hz ~ 60 kHz

I.M. Distortion (I.H.F. method, 60 Hz and 7 kHz mixed 4:1 at rated power output). 0.1%

Damping Factor 45

Sensitivity (at MAIN IN) 1.5 V

Impedance (at MAIN IN) 30 kOhms

Frequency Response for Power Amp only ±0.2 dB
(at 1 watt output, 20 Hz to 20 kHz)

Preamplifier Section

Phono

Input Overload at 1 kHz 100 mV

Equivalent Input Noise 1.5 µV

Dynamic Range 96 dB

(Dynamic Range is the ratio of input overload to equivalent input noise)

Input Sensitivity 1.8 mV

Input Impedance 47 kOhms

Frequency Response, RIAA 20 Hz to 20 kHz ±0.75 dB

Signal-to-Noise Ratio 76 dB

(at rated output and 7.75 mV input)

Signal-to-Noise Ratio, unweighted (DIN 45500) 45 dB

High Level (Aux and Tape)

Input Sensitivity 180 mV

Input Impedance 85 kOhms

Frequency Response (includes power amp.) 10 Hz to 60 kHz ±1.25 dB

Signal-to-Noise Ratio 88 dB

(ref. to rated output and 775 mV input)

Output Levels

Tape Out (ref. 7.75 mV at Phono inputs) 775 mV

Pre-Out (ref. 180 mV at Aux inputs) 1.5 V

(ref. 500 mV at Aux inputs, main amp disconnected) 4.2 V

Output Impedance

Tape Out 600 Ohms

Pre-Out 900 Ohms

FM Tuner Section

Sensitivity

IHF Usable 10.8 dBf (1.9 µV)

IHF 50 dB Quieting

(Mono) 17.3 dBf (4.0 µV)

(Stereo) 37.2 dBf (40 µV)

DIN Sensitivity

(Mono, 26 dB S/N, 300 ohm input) 1.6 µV

(Stereo, 46 dB S/N, 300 ohm input) 80 µV

Quieting Slope (Mono)

RF Input for 30 dB Quieting 9.8 dBf (1.7 µV)

Quieting at:

20 dBf (5.5 µV) 51 dB

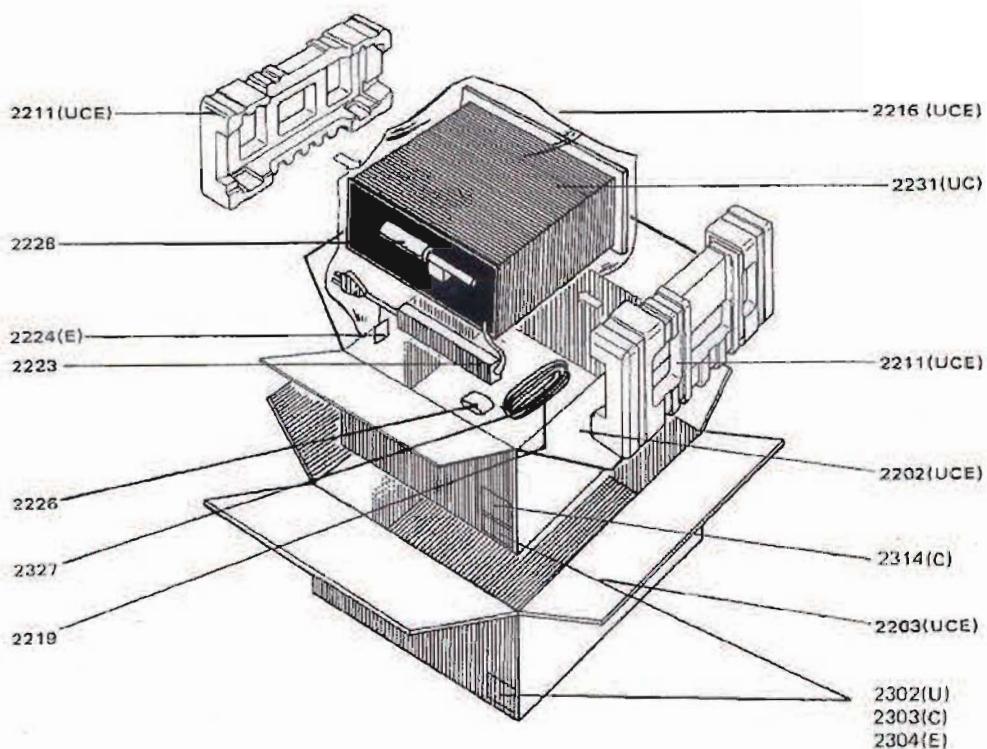
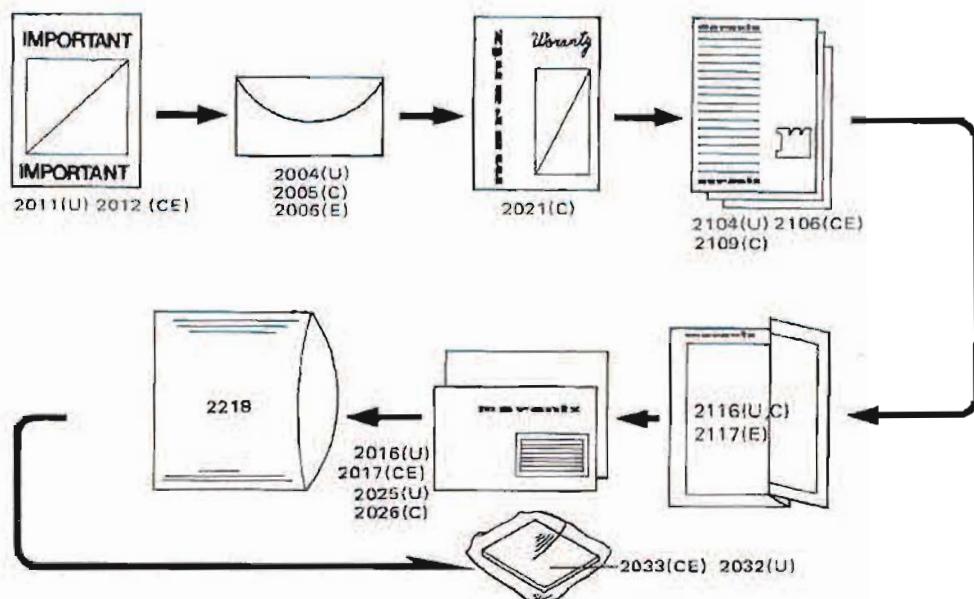
25 dBf (10 µV) 58 dB

40 dBf (55 µV) 65 dB

65 dBf (1000 µV) 72 dB

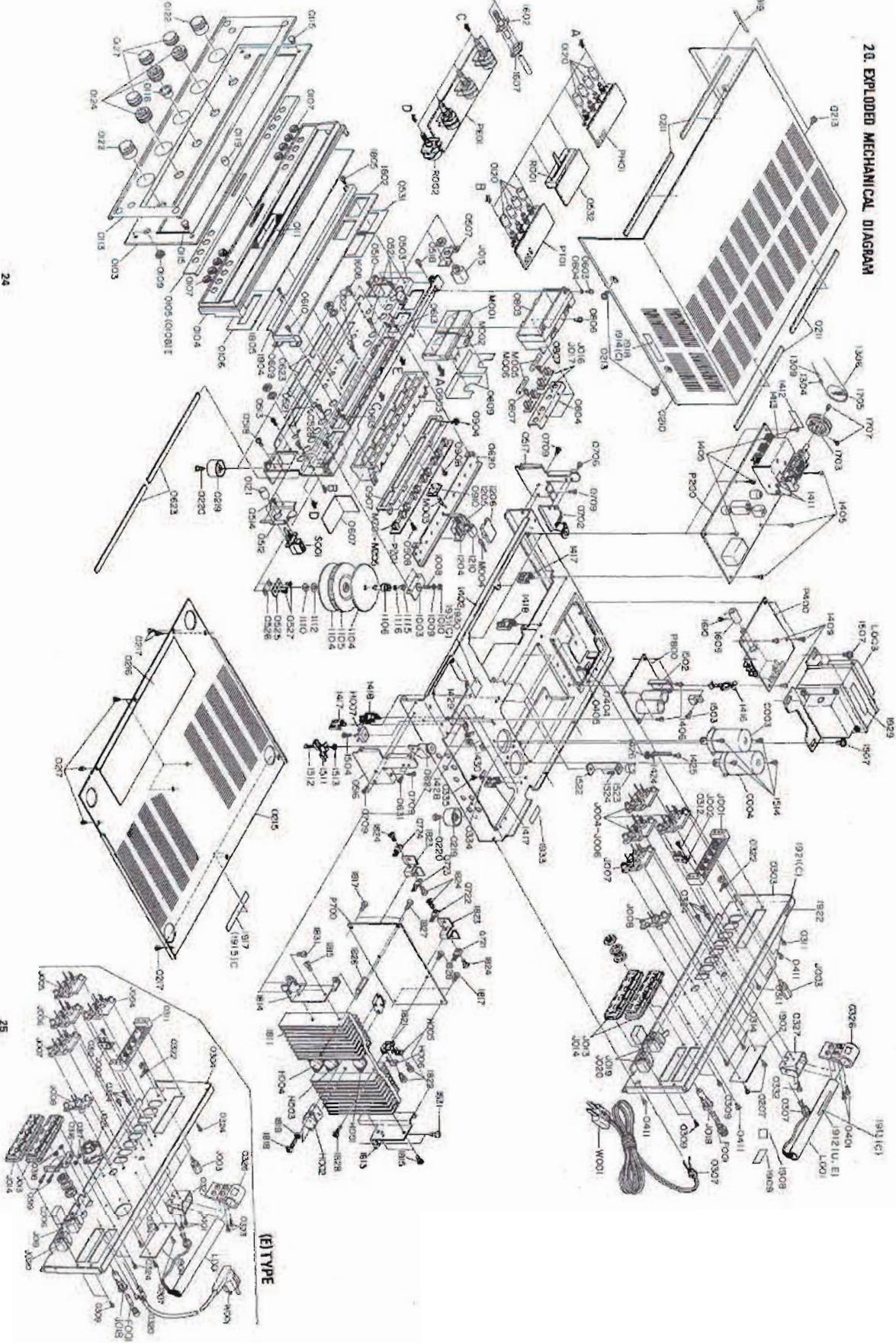
Quieting Slope (Stereo)	
Quieting at:	
30 dBf (17 μ V)	40 dB
40 dBf (55 μ V)	50 dB
50 dBf (173 μ V)	56 dB
65 dBf (1000 μ V)	62 dB
Distortion (Mono)	
at 50 dB Quieting, 1000 Hz	0.6 %
at 65 dBf (1000 μ V), 1000 Hz	0.15%
Hum and Noise	
at 65 dBf (1000 μ V)	
Mono	-70dB
Frequency Response	
30 Hz to 15 kHz	
Mono	+0.2, -2.0 dB
Stereo	\pm 2.0 dB
Capture Ratio	
at 45 dBf (100 μ V)	1.5 dB
at 65 dBf (1000 μ V)	1.0 dB
Alternate Channel Selectivity	
Spurious Response Rejection	70 dB
Image Response Rejection	90 dB
I.F. Rejection (Balanced)	70 dB
A.M. Suppression	95 dB
Stereo Separation	
100 Hz	50 dB
1000 Hz	42 dB
10 kHz	45 dB
Subcarrier Rejection	
1000 Hz	32 dB
AM Tuner Section	
IHF Usable Sensitivity	20 μ V
Distortion (THD), 30% Modulation	0.6%
Signal-to-Noise Ratio	49 dB
Frequency Response (\pm 3 dB)	40 Hz to 2.3 kHz
Alternate Channel Selectivity	46 dB
Image Rejection	45 dB
Spurious Response Rejection	50 dB
I.F. Rejection	40 dB
General	
Power Requirements	220 V ~ 50 Hz
{E and N versions are featuring an external voltage selector for use on 110/120/240 V. Other versions can be converted by a qualified technician to operate on 110/120/240 V.}	
Power Consumption at rated output, both channels operating	220 Watts
Idling Power (Volume Control at zero)	33 Watts
Semiconductor Complement	
Integrated Circuits	3
Transistors	45
Diodes	29
Field Effect Transistors	1
Dimensions	
Panel Width	440 mm (17-1/4 inches)
Panel Height	137 mm (5-3/8 inches)
Depth	365 mm (14-3/8 inches)
Weight	
Unit alone	14 kg (30.8 lbs.)
Packed for shipment	17 kg (37.4 lbs.)

23. PACKING MATERIAL EXPLODED VIEW



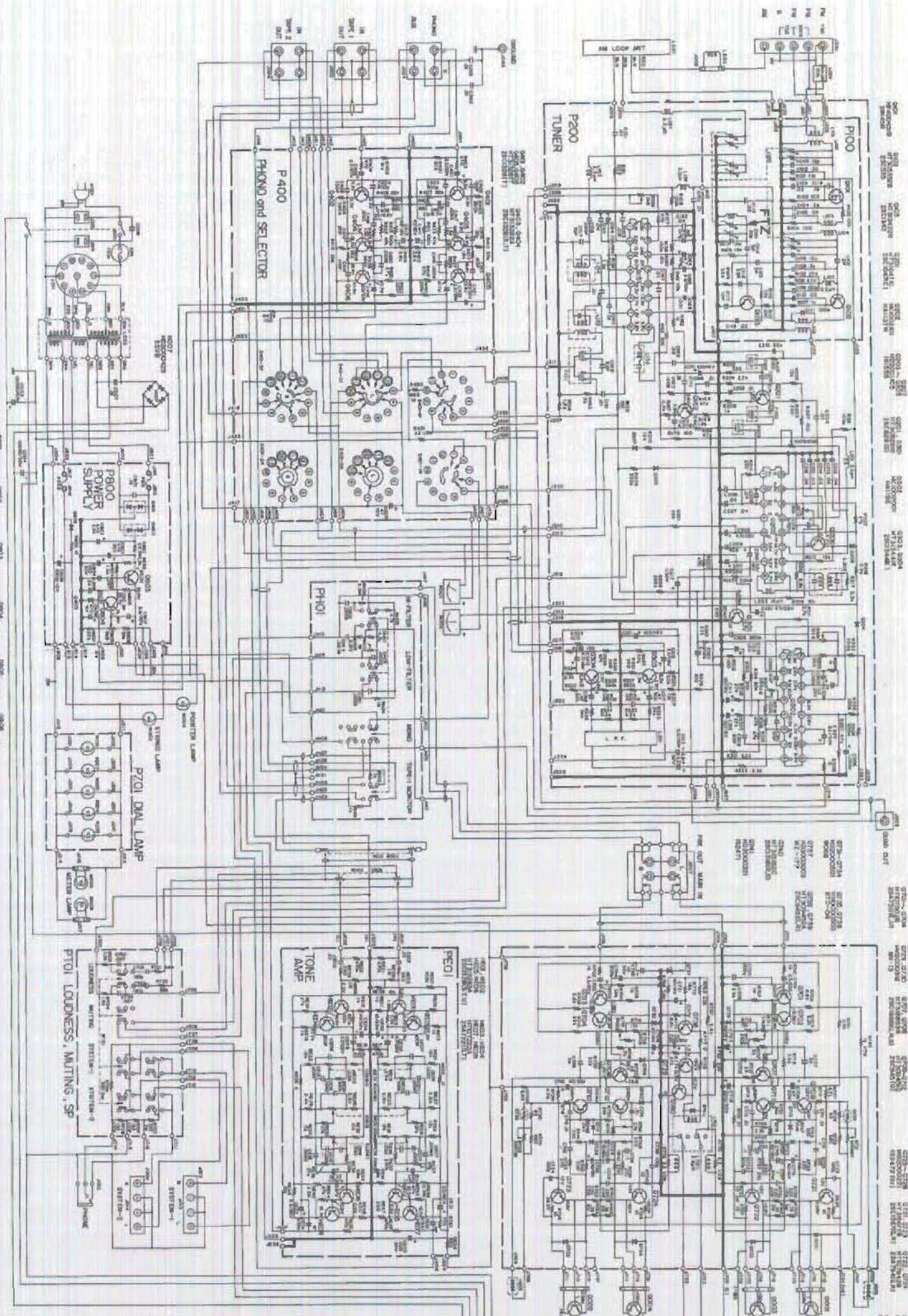
- (U) for U.S.A.
- (C) for Canada
- (E) for Europe

2.0. EXPLODED MECHANICAL DIAGRAM

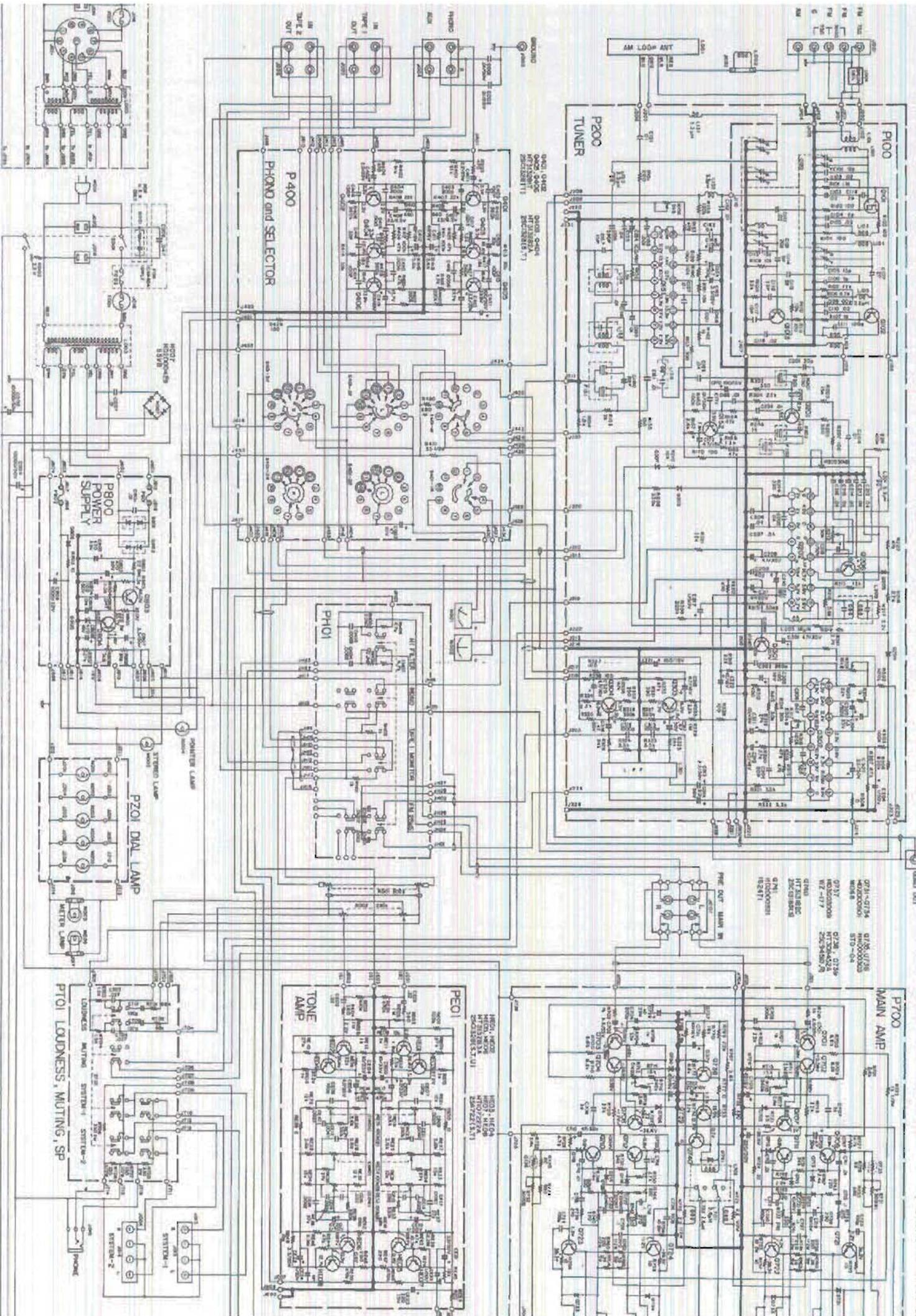


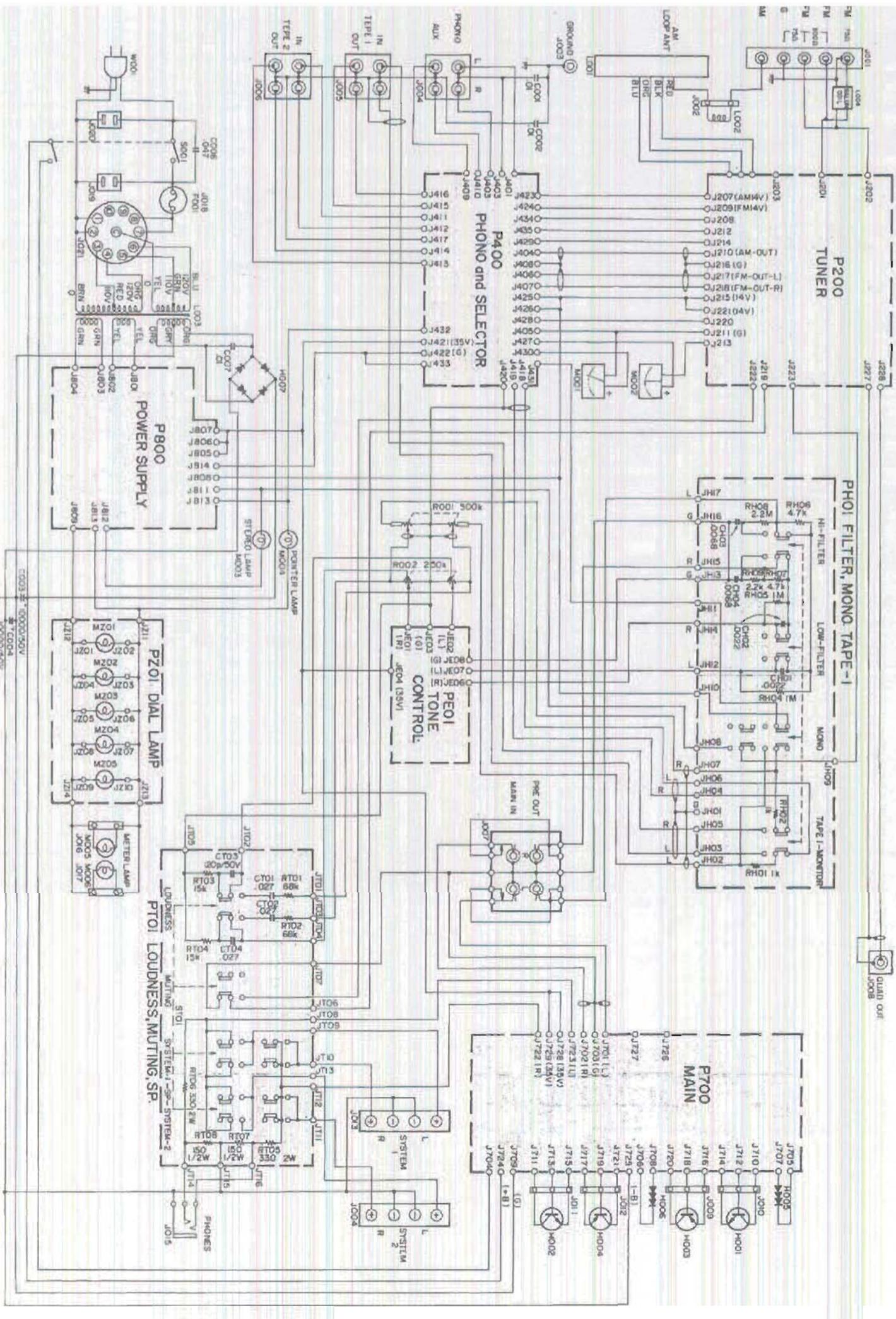
19. SCHEMATIC DIAGRAM (for Europe)

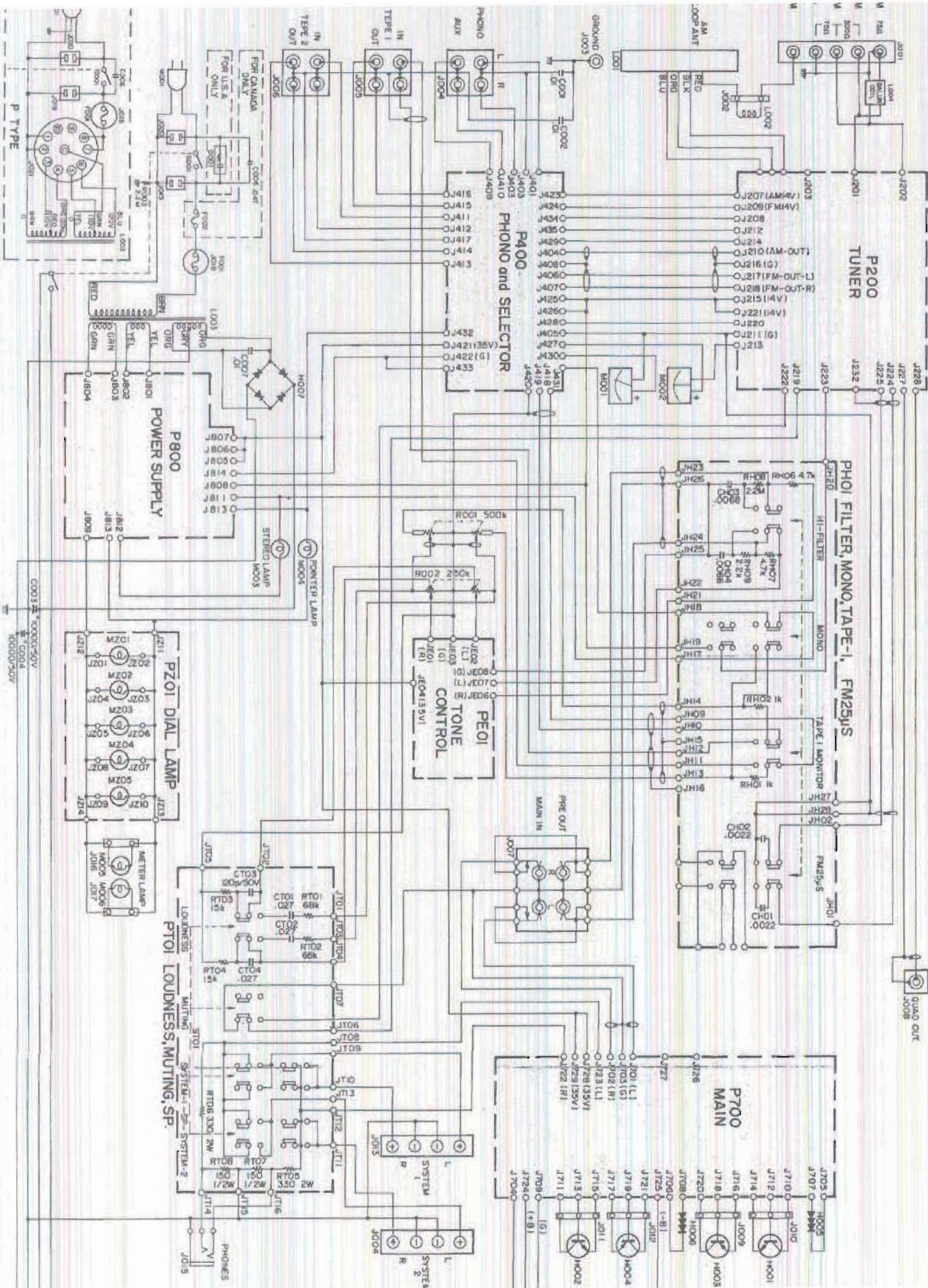
Mode



IC DIAGRAM (for U.S.A. & Canada)







50

SERVICE MANUAL

marantz

model 2252

Stereophonic Receiver