

SERVICE
MANUAL **1530/MR230/MR235**



marantz

model 1530/MR230/MR235

Stereophonic Receiver

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ Company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

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

ORDERING PARTS

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

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

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

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

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

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

CANADA

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

AUSTRALIA

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

JAPAN

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

EUROPE

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

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

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

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

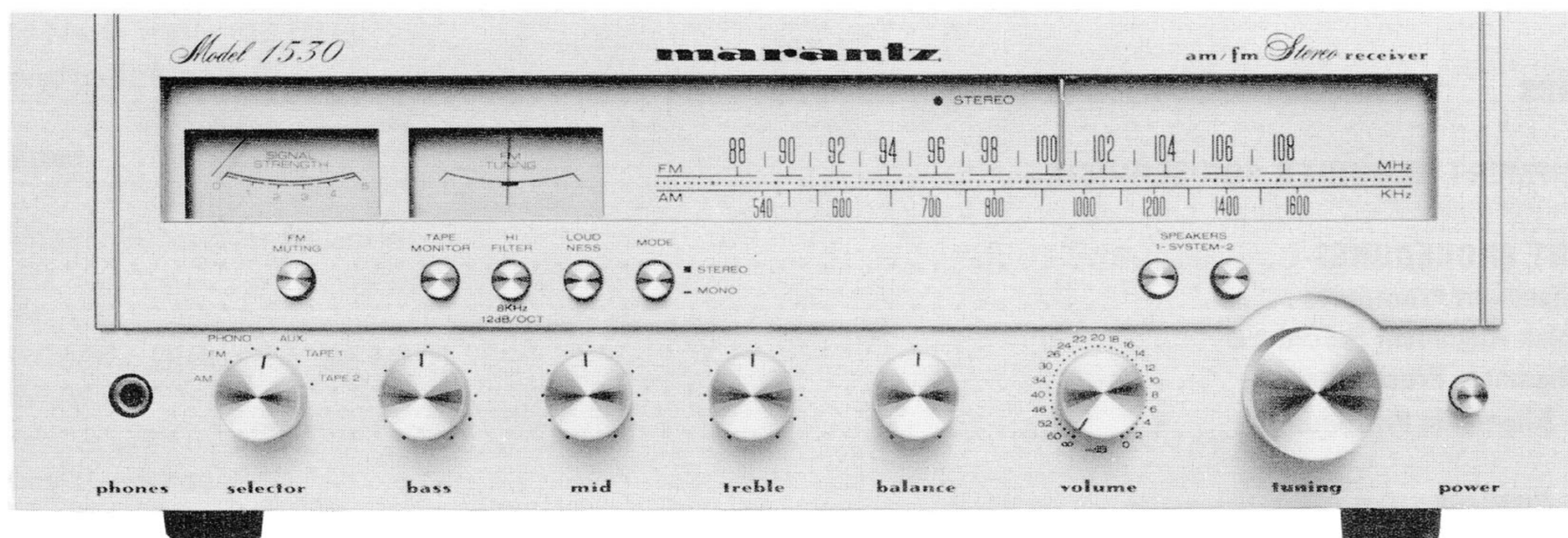
All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your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

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We sound better.

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MODEL 1530/MR230/MR235 STEREOPHONIC RECEIVER



INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 1530/MR230/MR235 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 operation of 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.

1. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of Model 1530/MR230/MR235 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. Tuner mounted on P.W. Board P100
2. Phono Amp mounted on P.W. Board P400
3. Main Amp &
Power Supply mounted on P.W. Board P700
4. Antenna Input mounted on P.W. Board PC00
5. Tone Amp mounted on P.W. Board PE00
6. Power Transistor mounted on P.W. Board PN01
7. Fuse mounted on P.W. Board PP01
8. Filter & Switch mounted on P.W. Board PS00
9. LED mounted on P.W. Board PY01

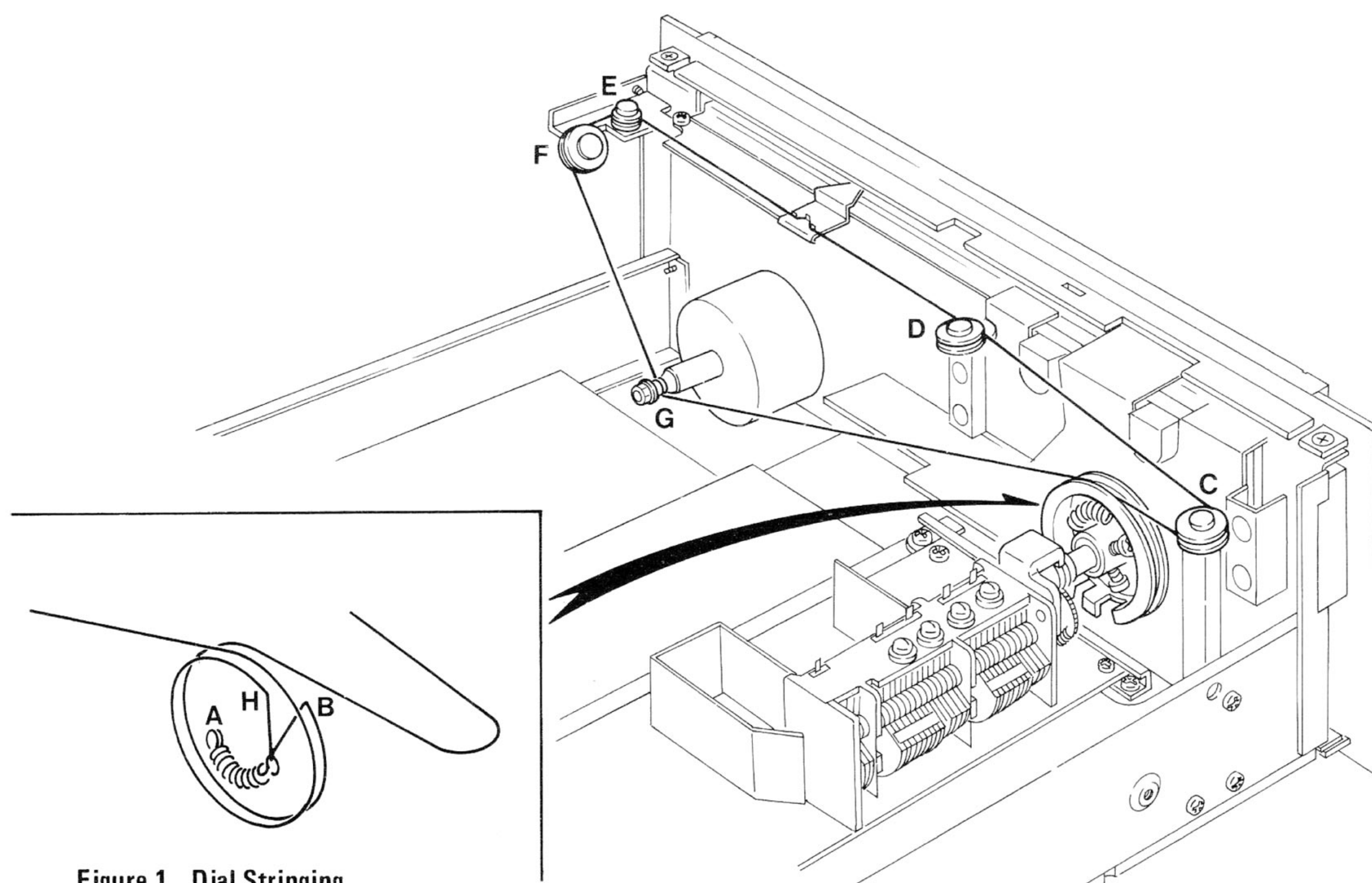


Figure 1. Dial Stringing

2. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model 1530/MR230/MR235 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 Audio Oscillator AC VTVM	Sound Technology Model 1700A	Distortion measurements 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

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 vorherrschend 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 Oszillatorspule (in der Abbildung mit "FTZ" gekennzeichnet) so zu korrigieren, dass er den Bestimmungen entspricht.

3. ALIGNMENT PROCEDURES

* A dummy resistor of 47 kohms must be connected across the tape output terminals before alignment.

3.1 FM ALIGNMENT PROCEDURES
(Selector switch in the "FM" position)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set Dial Pointer to:	Adjust:
FM IF ALIGNMENT					
1	Sweep generator to point (B) through 5pF capacitor	10.7 MHz market at 10.6, 10.7 and 10.8 MHz	Oscilloscope to point (C)	Quiet point on band.	L104 for maximum and symmetric response.
2			Oscilloscope to point (D)		L201 for straight and symmetric "S" curve response.
3	Repeat steps 1 and 2.				
FM RF ALIGNMENT					
1	RF generator to FM antenna terminals (A) through matching network (300 ohms, balanced) Maintain RF level below limit.)	87.4 MHz	VTVM to L or R channel output (W002)	87.4 MHz with tuning gang closed.	L103 for maximum output.
2		100 MHz		109 MHz with tuning gang open.	C119 for maximum output.
3		90 MHz		90 MHz	L101, L102 for maximum output.
4		106 MHz		106 MHz	Ant. RF trimmer for maximum output.
5	Repeat steps 1 to 4.				
6	Check overall response curve and repeat above steps as necessary to obtain maximum sensitivity.				
7	No connection	No signal	DC VTVM 1-volt range to (D)	—	L201 primary core (bottom) for "0" voltage reading.
8	RF generator 1 mV output to FM antenna terminals (A) through matching network (300 ohms, balanced)	98 MHz	Distortion meter to (D)	98 MHz	L201 secondary core (upper) for minimum distortion.
9			—		R232 so that signal strength meter M001 may read 85%.
MUTING CIRCUIT ALIGNMENT					
1	RF generator 12.5μV output to FM antenna terminals (A) through matching network (300 ohms, balanced)	98 MHz	VTVM to R or L channel output (W002)	98 MHz	R233 for 12.5μV threshold level. (During the adjustment turn the muting pushswitch "ON").

3.2 MULTIPLEX ALIGNMENT PROCEDURES

(Selector switch in the "FM" position)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set Dial Pointer to:	Adjust:
1	RF generator to FM antenna terminals (A) through matching network (300 ohms, balanced), with 1mV FM stereo simulator RF level and 100% modulation (pilot 9%)	No modulation	Frequency counter to point (E) (J140)	98 MHz	R326 so that frequency counter may precisely read 19 kHz.
2		Stereo, left (1,000 Hz)	VTVM to right channel output (W002, White)		R316 for maximum output and same separation in both channels.
3		Stereo, right (1,000 Hz)	VTVM to left channel output terminal (H) (J123) (W002, Red)		
4	Repeat steps 2 and 3.				

3.3 AM ALIGNMENT PROCEDURES

(Selector switch in the "AM" position)

Step	Signal Source Connection	Signal Frequency	Indicator Connection	Set Dial Pointer to:	Adjust:
AM IF ALIGNMENT					
1	No connection	No signal	—	—	R228 to that signal strength meter M001 may read 0.
2	Sweep generator to point ⑥	455 kHz marker	Oscilloscope to point ⑦ (J141)	Quiet point on band.	L154 for maximum and symmetric response.
AM RF ALIGNMENT					
1	RF generator to AM antenna terminals through IHF dummy	515 kHz	VTVM to L or R channel output (W002)	515 kHz with tuning gang closed.	L153 for maximum output.
2		1,650 kHz		1,650 kHz with tuning gang open.	OSC. trimmer for maximum output.
3		600 kHz		600 kHz	L001 for maximum output.
4		1,400 kHz		1,400 kHz	Ant. trimmer for maximum output.
5	Repeat steps 1 to 4 as necessary to obtain maximum sensitivity.				

3.4 AUDIO ALIGNMENT PROCEDURES
 (Selector switch in the "AUX" position)

	Signal Source Connection	Signal	Indicator Connection	Adjustment
Distortion meter used	AF oscillator to AUX jack	20 kHz	Distortion meter to SPK OUT terminals with 4Ω load.	Wait 2 min. after power has been on. Adjust R717 and R718 until distortion for 0.25W output is minimum. CAUTION: After adjustment, disconnect input signal, and make certain that current flowing from R741 to R744 is 10 to 30 mA.
Voltmeter used	—	—	DC voltmeter in 100 mV or 50 mV range to R741 (R743) and R742 (R744).	Adjust R717 and R718 until current is 10 mA.

4. VOLTAGE CONVERSION

The Model 1530/MR230/MR235 is equipped with a universal power transformer that may be adjusted to operate at 110 V, 120 V, 220 V, or 240 V AC at 50 to 60 Hz. To convert the unit to a different power source voltage, reposition conversion plug at shown in Figure 2.

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

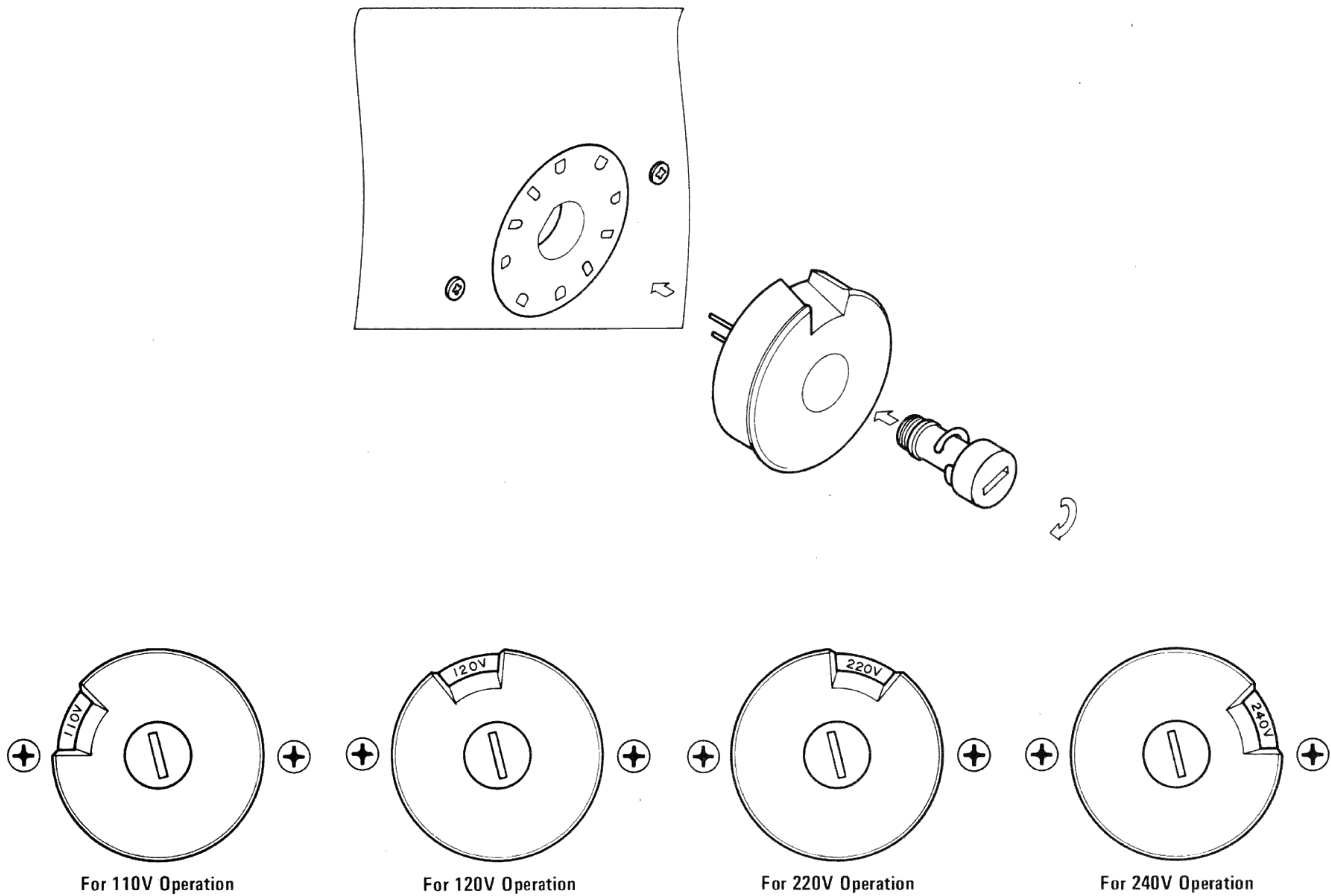
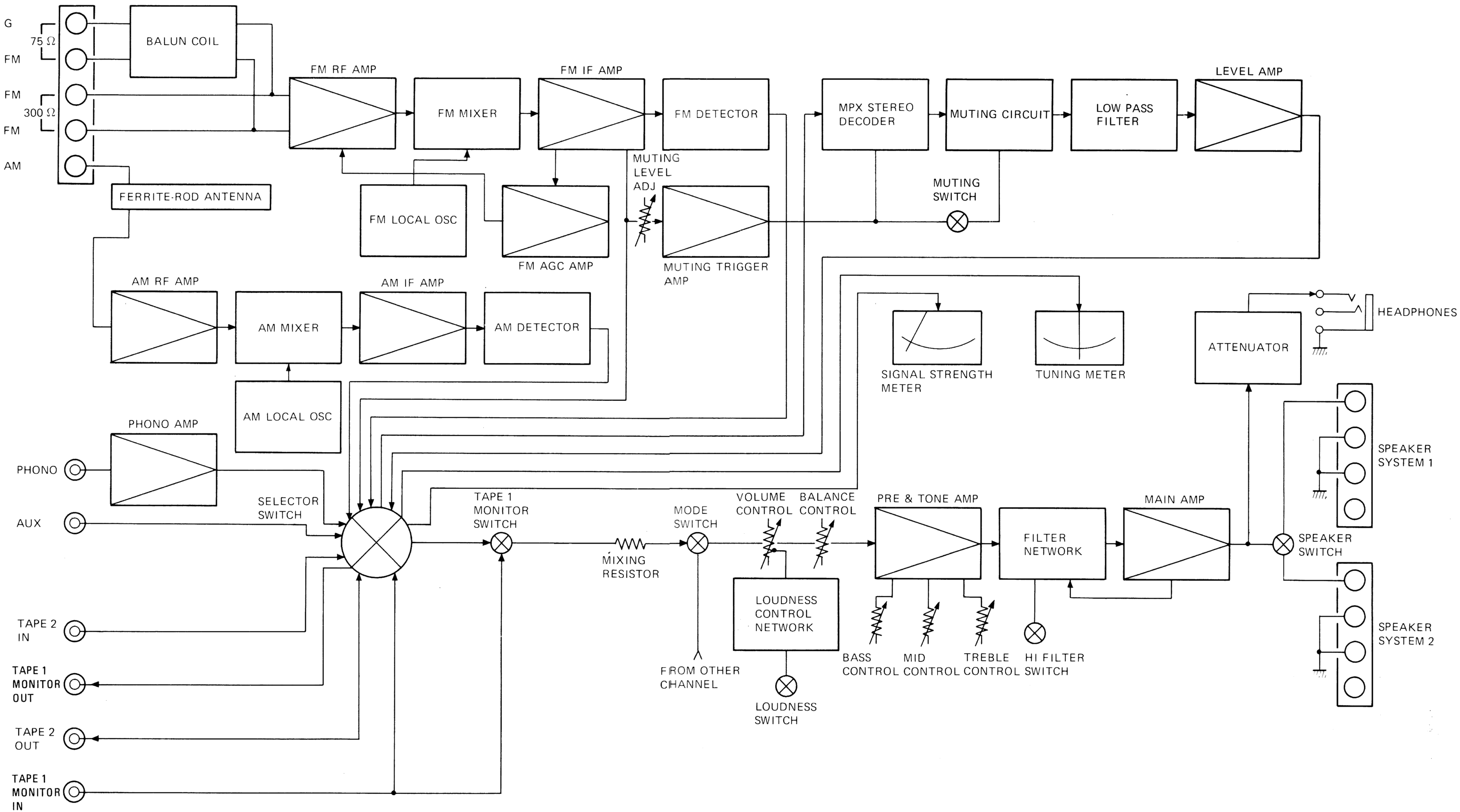


Figure 2. Voltage Conversion Chart

5. DIAGRAMS

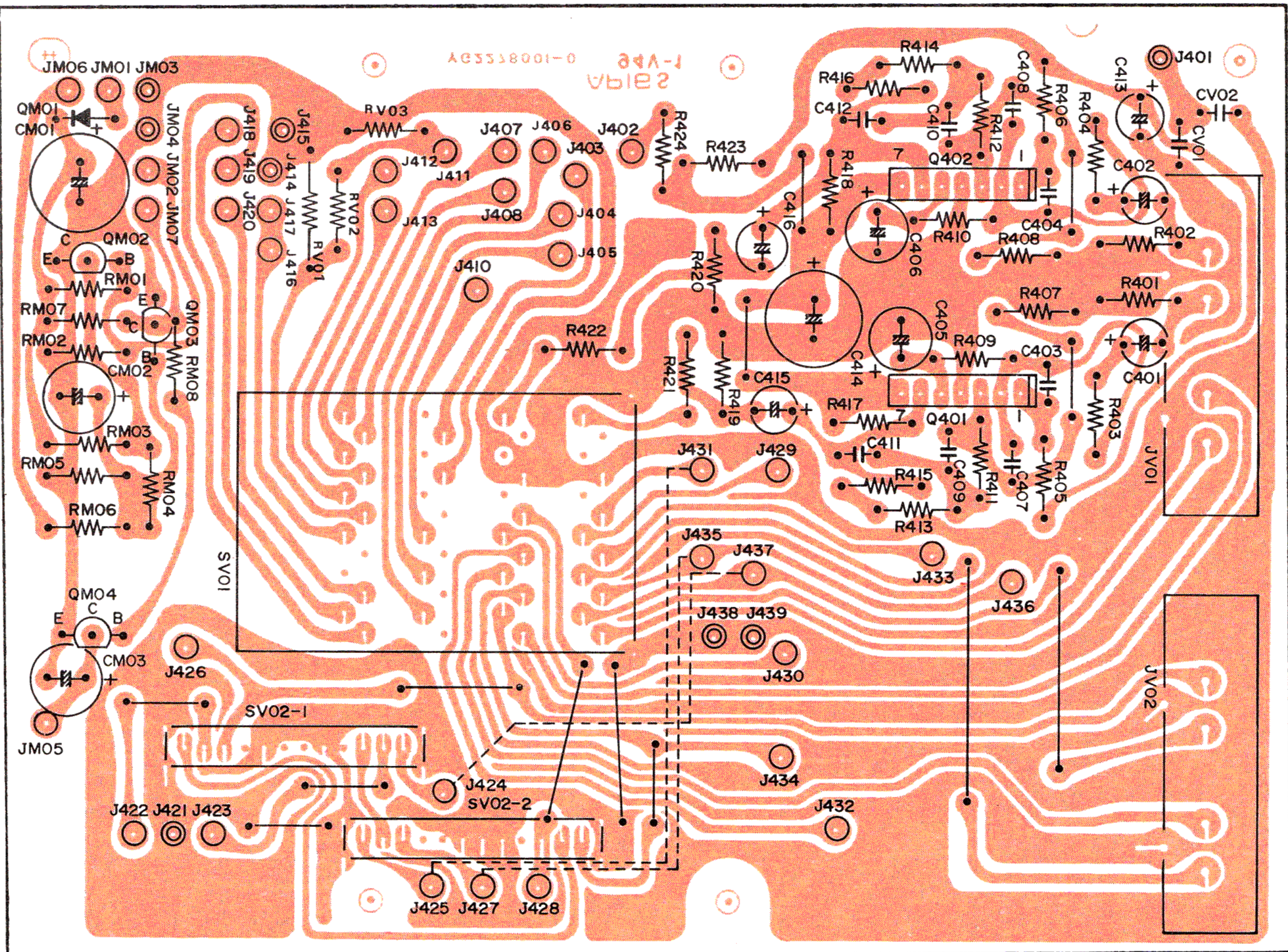
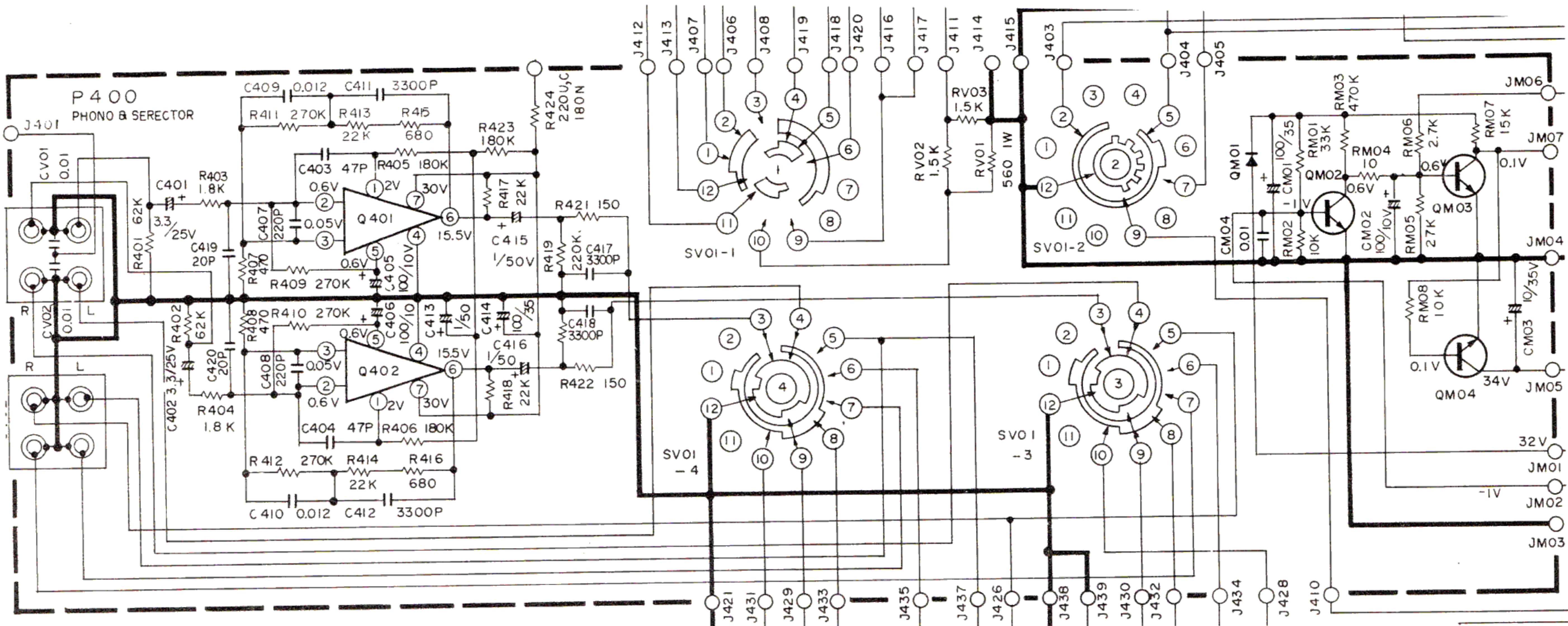
5.1 BLOCK DIAGRAM



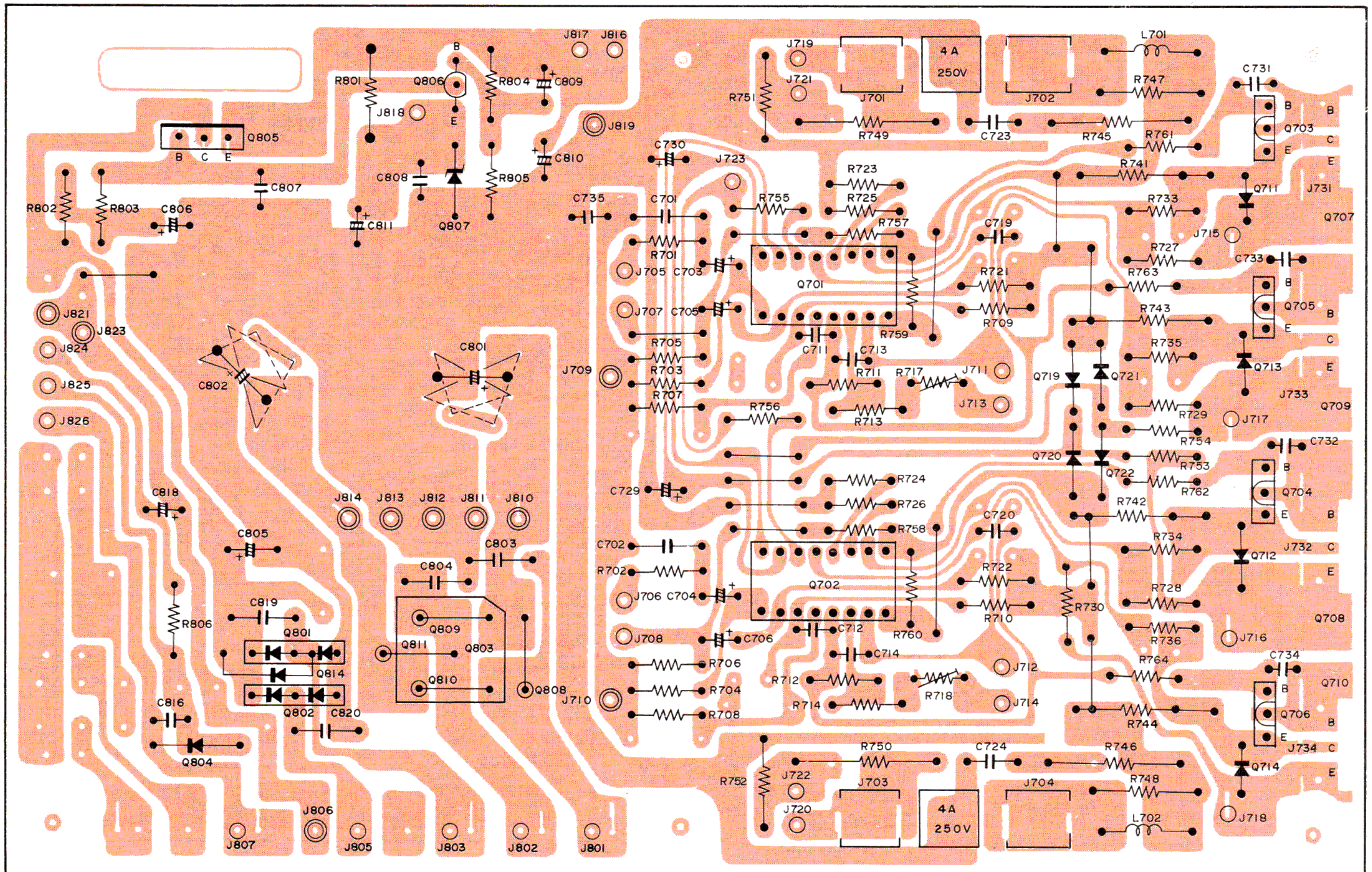
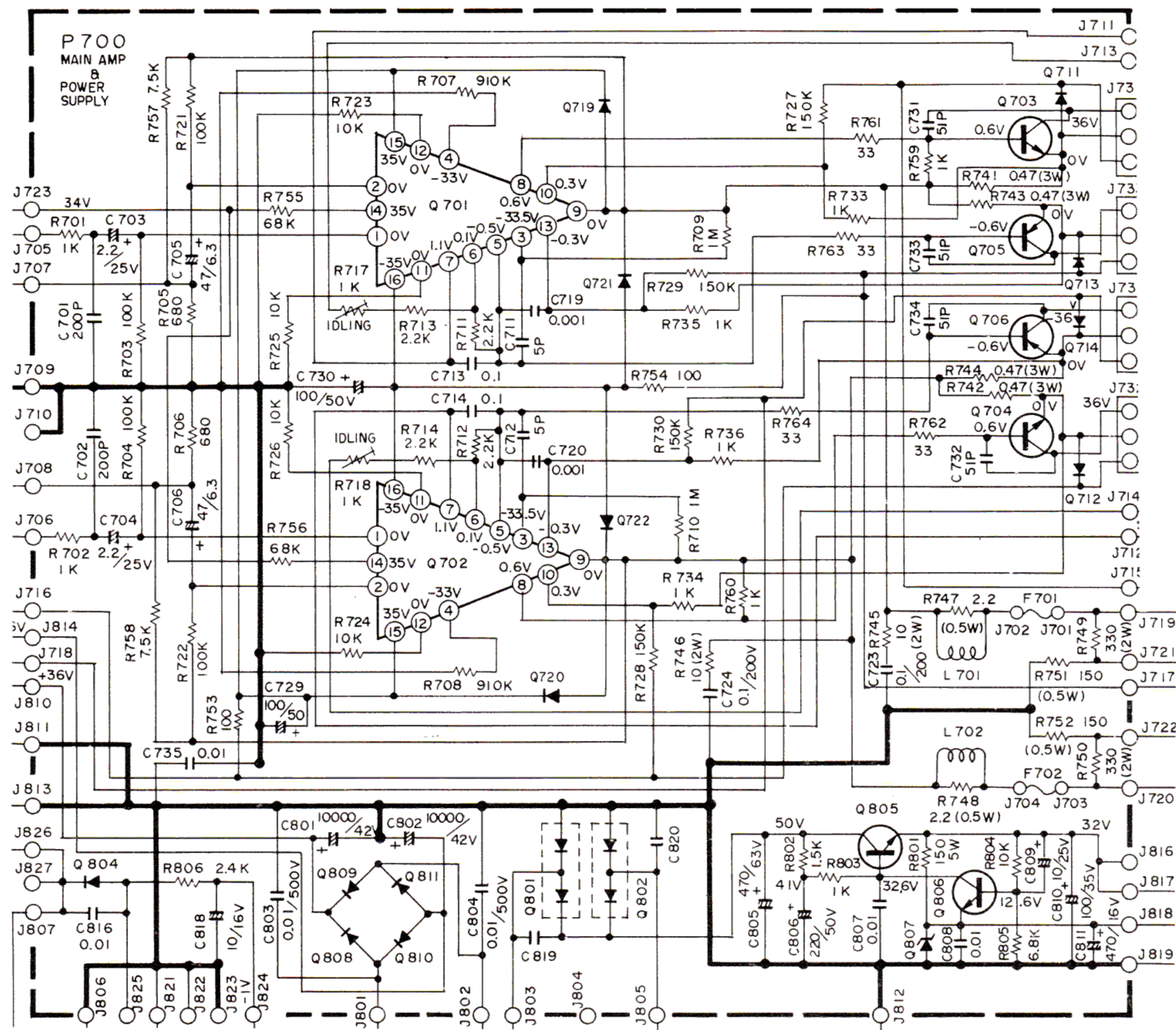
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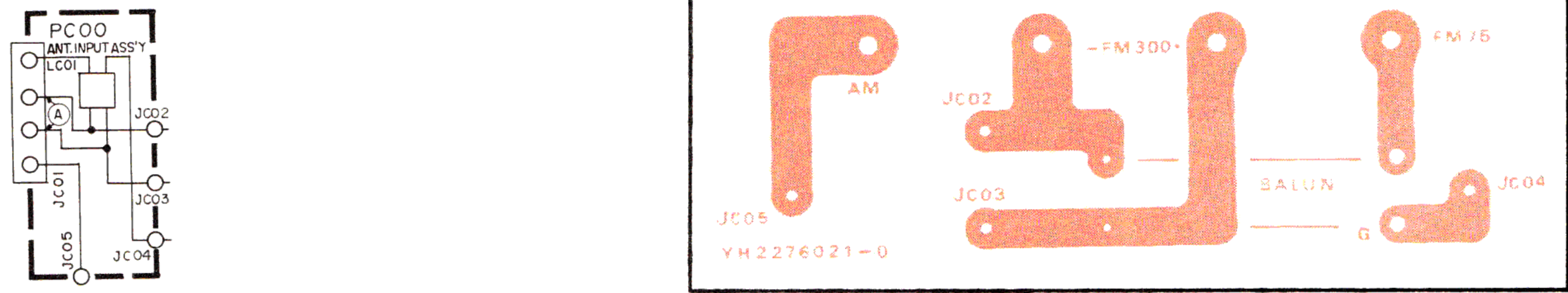
5.3 PHONO AMP BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P400



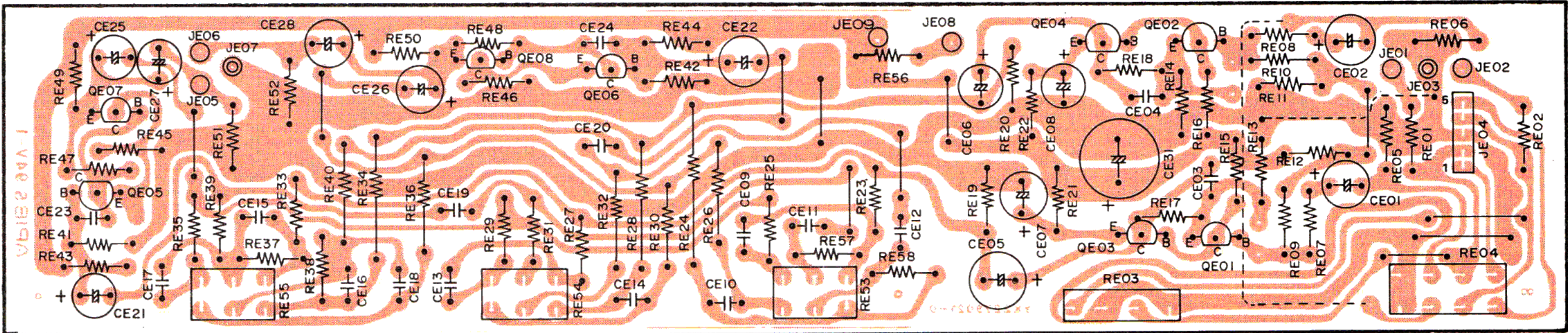
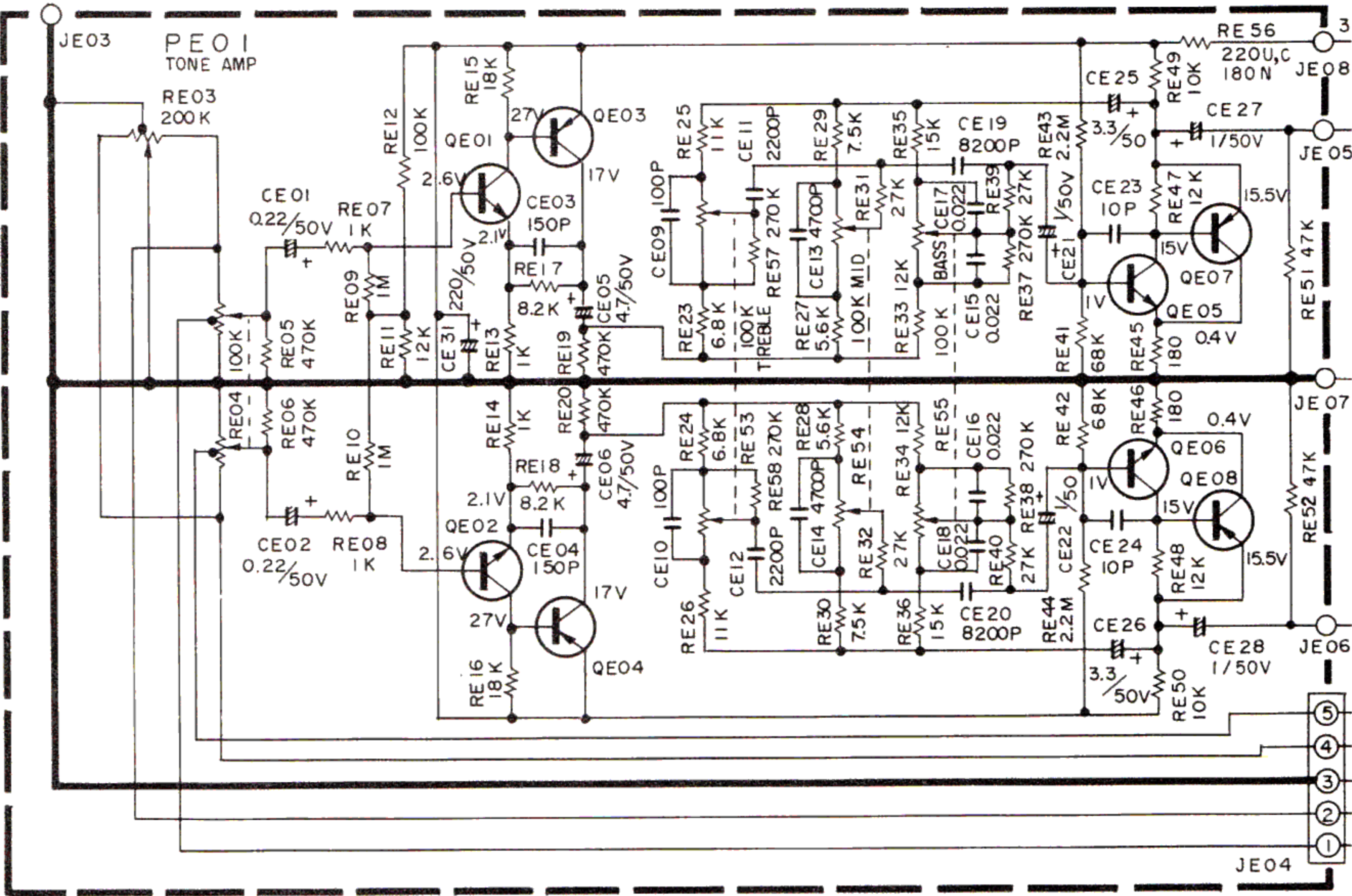
5.4 MAIN AMP & POWER SUPPLY BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P700



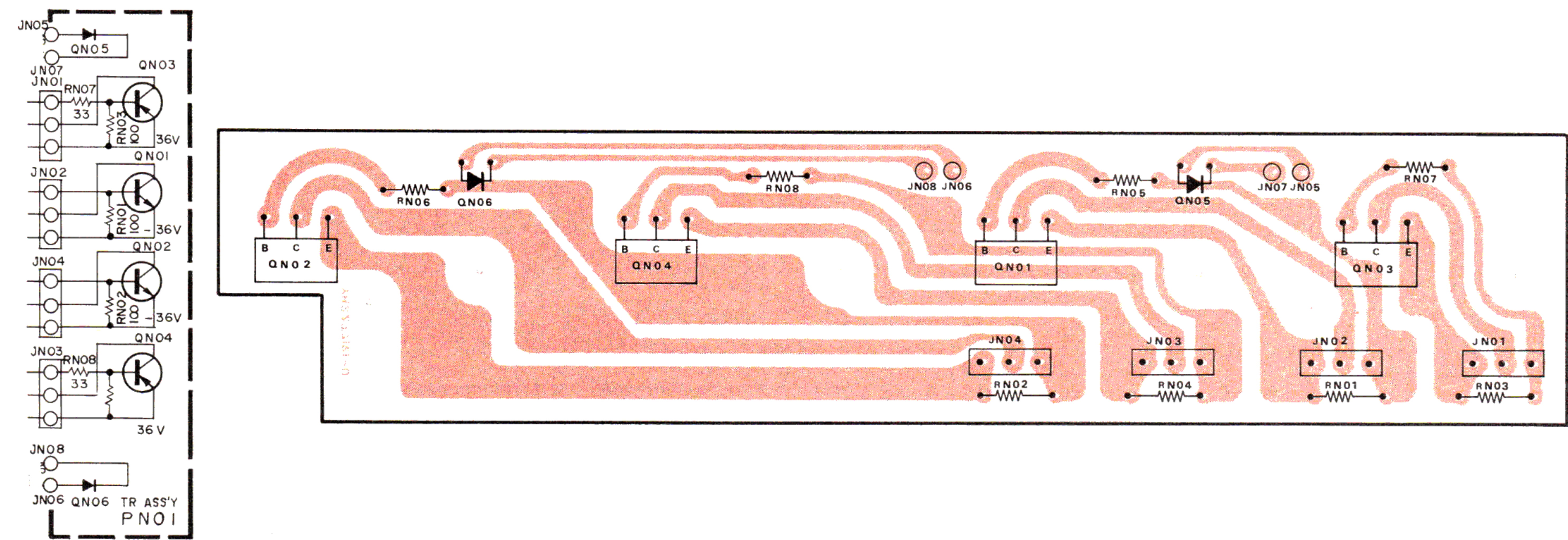
5.5 ANTENNA INPUT BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PC00



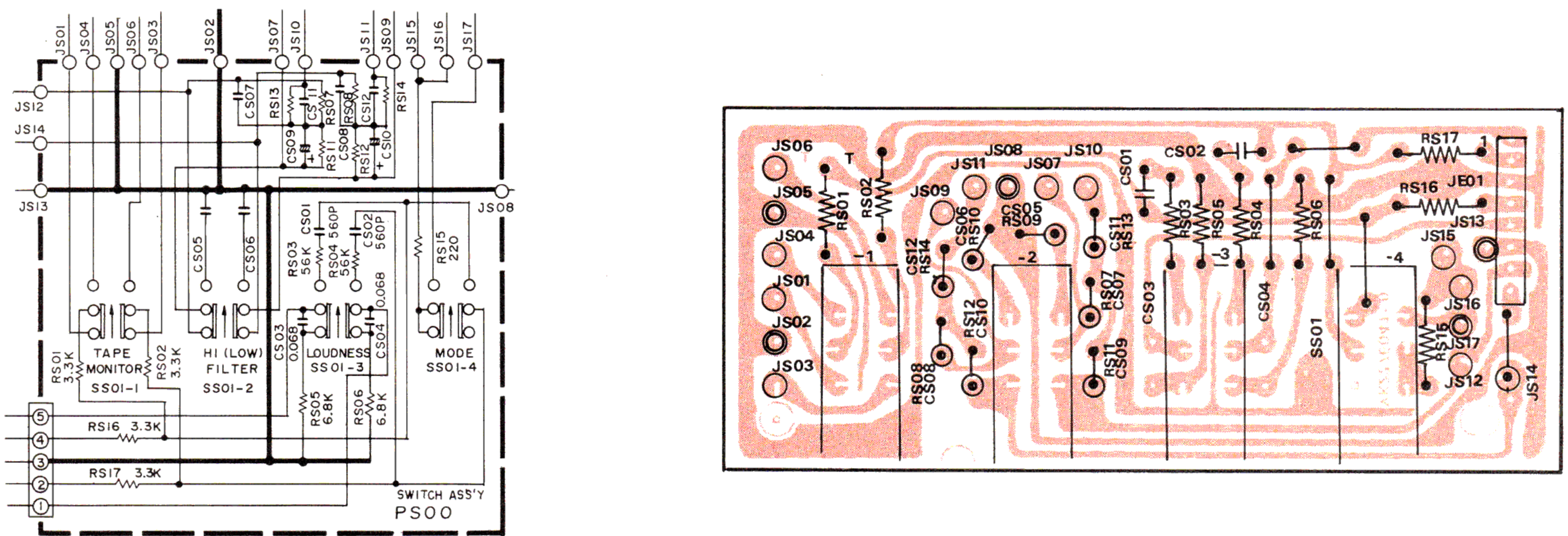
5.6 TONE AMP BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PE00



5.7 POWER TRANSISTOR BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PN01



5.8 FILTER & SWITCH BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PS00

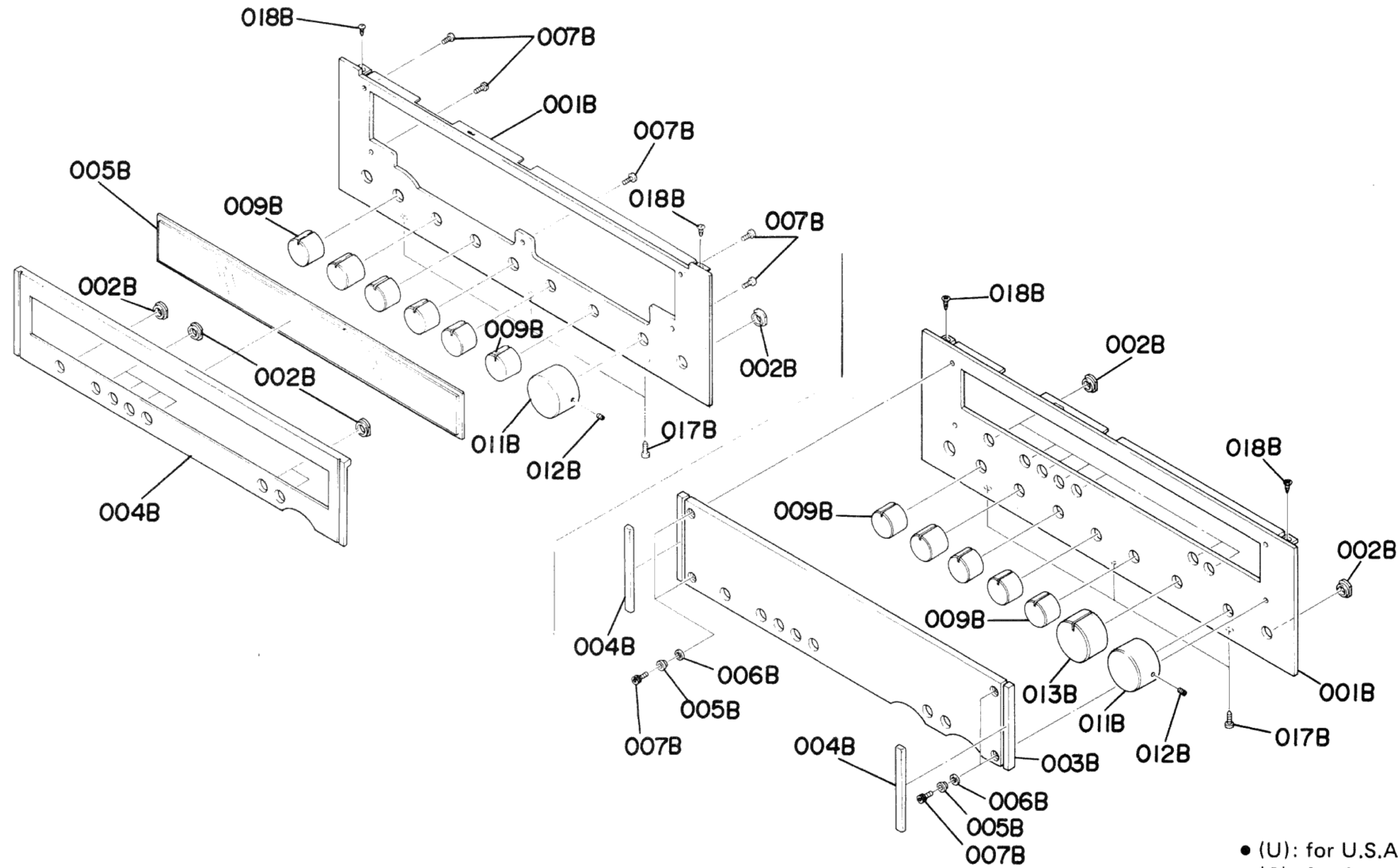


5.9 LED BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PY01



6. EXPLODED VIEWS AND PARTS LIST

6.1 [C01-99] FRONT PANEL

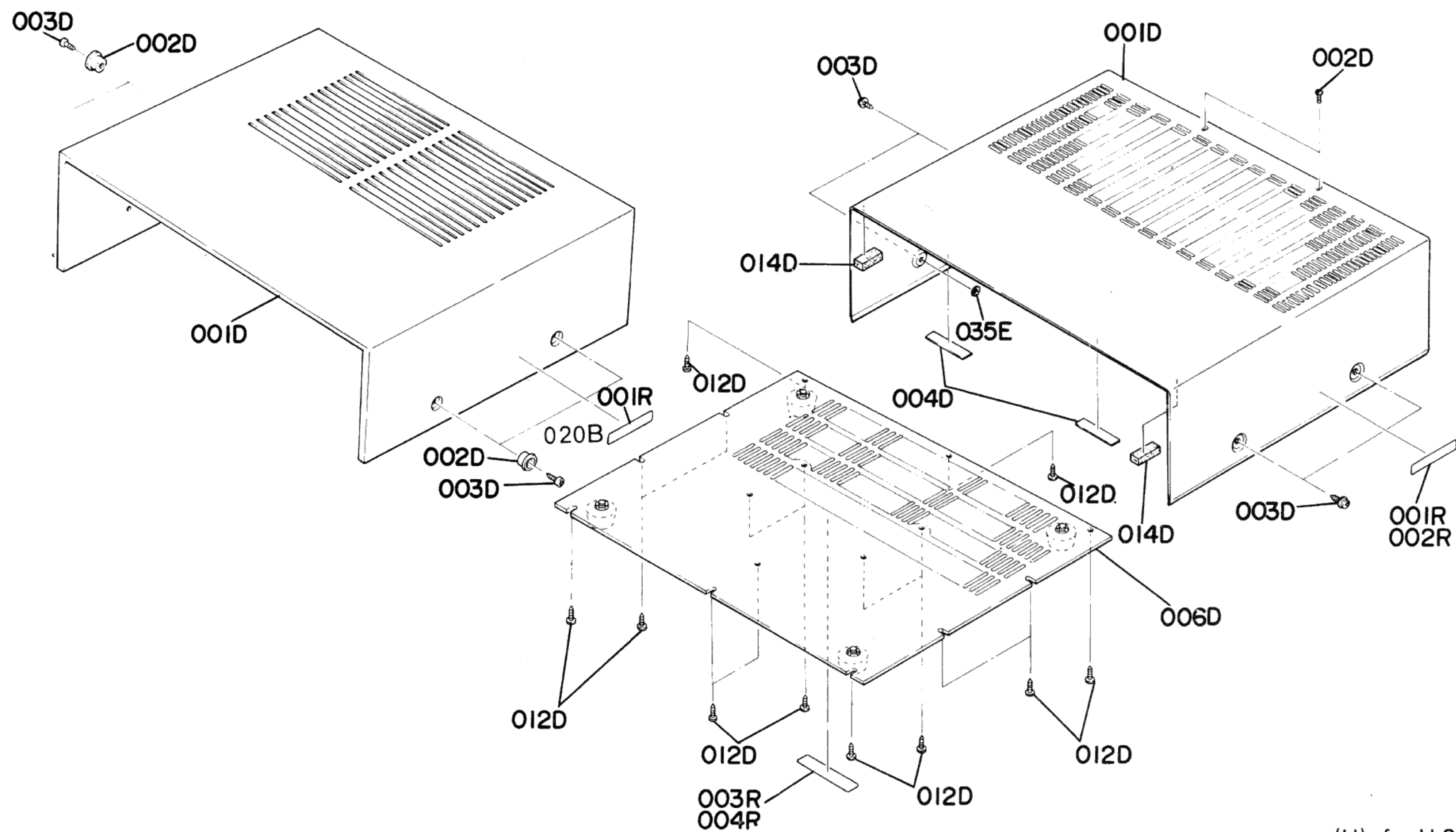


• (U): for U.S.A.
• (C): for Canada
• (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
A	1	1		2277063400	M1530, ONLY Front Panel Assembly
A1			1	2277063410	Front Panel Assembly
001B	1	1	1	2278063012	Escutcheon, Main
002B	8	8	8	2978259012	Bush
004B	1	1		2277063122	Escutcheon, Sub
004B			1	2277063220	Escutcheon, Sub
005B	1	1	1	2211158110	Window
007B	5	5	5	51100305A9	B.H.M. Screw B3 x 5
A			1	2469063400	MR230, ONLY Front Panel Assembly
001B			1	2469063012	Escutcheon
002B			8	2978259012	Bushing
003B			1	2469158012	Window
004B			2	2276067010	Cap
005B			4	2470055010	Collar
006B			4	4214107010	Sheet
007B			4	52730308S9	H.S. Head Bolt H3 x 8
A	1			2277063420	MR235, ONLY Front Panel Assembly
001B	1			2278063012	Escutcheon Main
002B	8			2978259012	Bushing
004B	1			2277063130	Escutcheon, Sub
005B	1			2211158110	Window
007B	5			51100305A9	B.H.M. Screw B3 x 5

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
009B	6	6	6	2276154010	Knob (M1530, ONLY)
009B			5	2276154010	Knob (MR230, ONLY)
011B	1	1	1	2279154040	Knob, Tuning
012B	1	1	1	51690306Q9	Socket Screw, HP 3 x 6
013B			1	2276154030	Knob, Volume (MR230, ONLY)
017B	3	3	3	51280308U0	B.H. Tapped Screw B3 x 8
018B	2	2	2	51340306B0	F.H. Tapped Screw B3 x 6
					M1530 (U)(C)(N) MR230 (N), ONLY MR235 (U), ONLY

6.2 [C02-99] LID (TOP COVER)

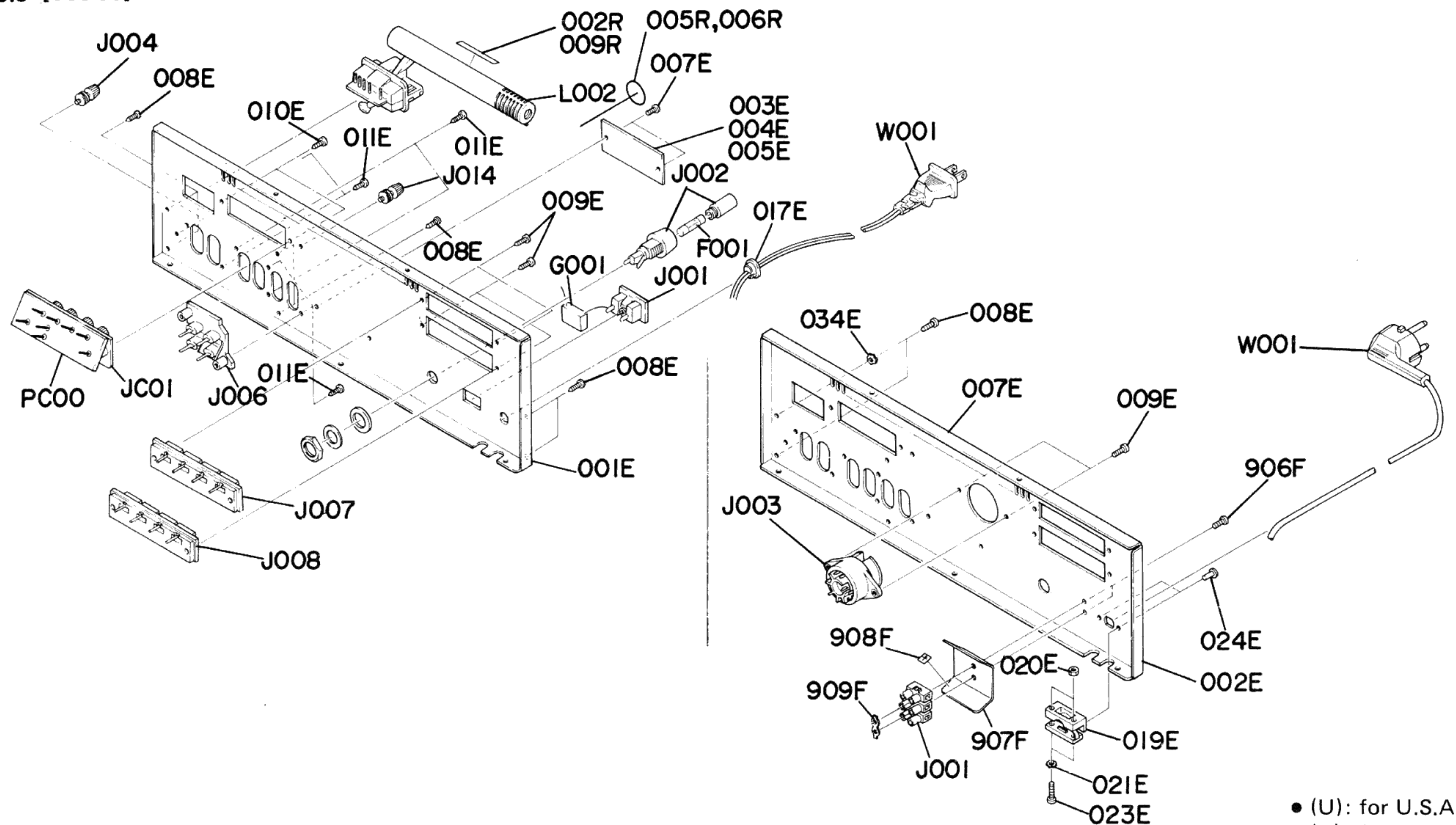


- (U): for U.S.A.
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
001D	1	1	1	2278257020	M1530, ONLY Lid, Metal Case B.H. Tapped Screw B3 x 6 F. Washer Screw F4 x 8 Spacer Spacer
002D	2	2	2	51280306U0	
003D	4	4	4	51260408U0	
004D	2	2	2	2965118010	
014D	2	2	2	3358118080	
001D	1		1	2278064012	MR230(N), MR235 (U) Case, Wood Bushing B.H. Tapped Screw B4 x 12 Label
002D	4		4	3906259010	
003D	4		4	51280412U0	
020B	1			2818861010	

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
006D	1	1	1	2278257503	Lid, Bottom B.H. Tapped Screw B4 x 10
012D	15	15	15	51280410U0	
001R	1		1	2932861012	Label
002R		1		2911861143	Label
003R	1		1	2578861010	Label
004R		1		2911861112	Label
035E			1	54050400R0	T.L. Washer OR (M1530, ONLY)
					M1530 (U)(C)(N) MR230 (N), ONLY MR235 (U), ONLY

6.3 [C03-99] REAR PANEL

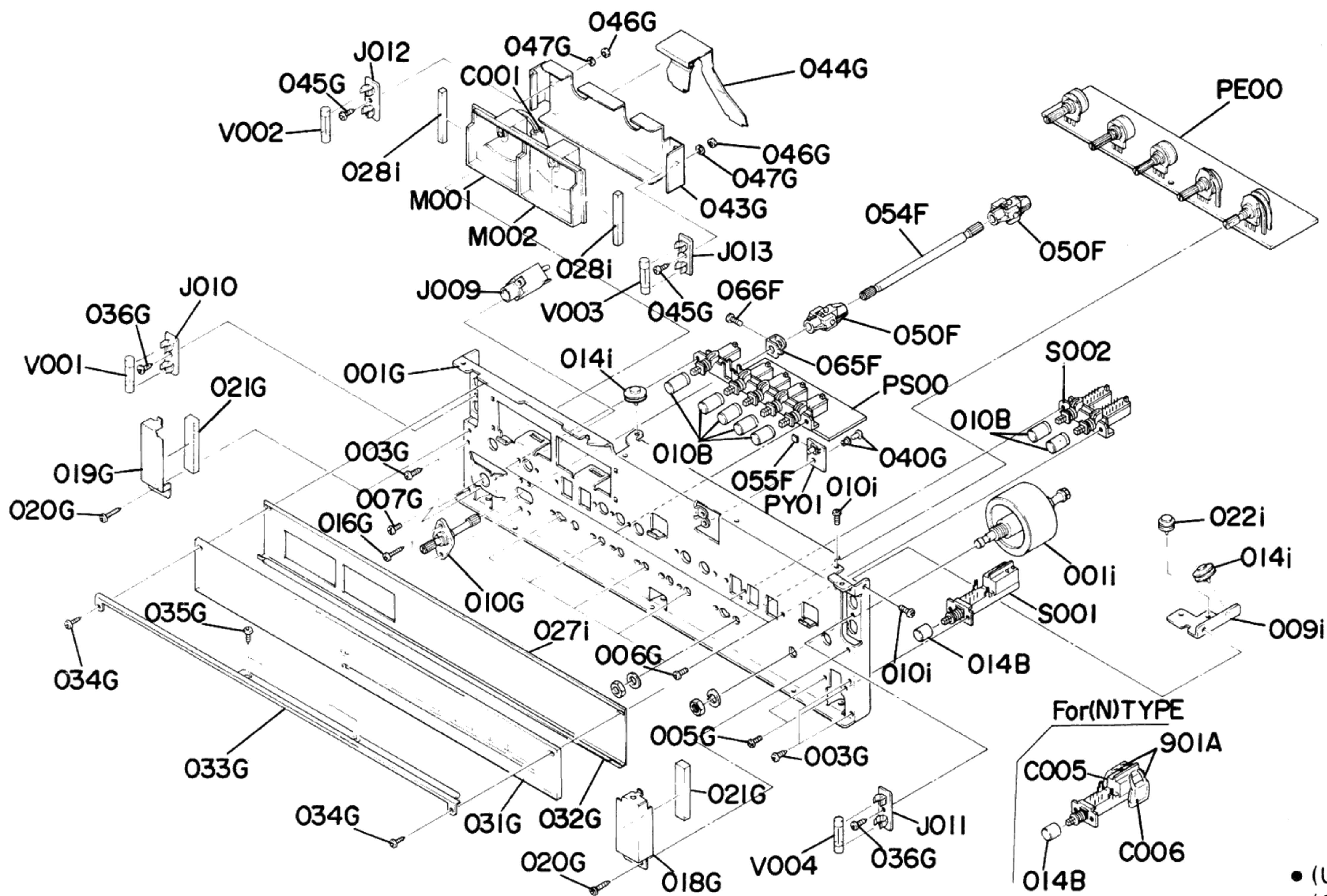


• (U): for U.S.A.
• (C): for Canada
• (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
001E	1	1		2277160212	Bracket, Rear Panel
002E			1	2469160224	Bracket, Rear Panel
003E	1			2277265010	Indicator
003E	1			2277265040	Indicator (MR-235 ONLY)
004E		1		2277265020	Indicator
005E			1	2277265030	Indicator (M1530, ONLY)
005E			1	2469265010	Indicator (MR230, ONLY)
007E	2	2	2	51760306B0	OS. Tapped Screw 3 x 6
008E	6	6	6	51280308U0	B.H. Tapped Screw B3 x 8
009E	4	4	4	51280308U0	B.H. Tapped Screw B3 x 8
010E	2	2	2	51280308U0	B.H. Tapped Screw B3 x 8
011E	6	6	6	51280308U0	B.H. Tapped Screw B3 x 8
012E			2	51100308S9	B.H.M. Screw B3 x 8
017E	1	1		1455259030	Bushing
019E			1	2821259010	Bushing
020E			2	53110303A9	Hexagon Nut
021E			2	54050300R0	T.L. Washer OR
023E			2	51060316A9	P.H.M. Screw P3 x 16
024E			2	55060305S0	T.R. Rivet
034E			1	54050300R0	T.L. Washer OR
906F			2	51100316S9	B.H.M. Screw B3 x 16
907F			1	3953120030	Insulator
908F			1	2882861020	Label
909F			1	2970005010	Clamper
					M1530 (U)(C)(N) MR230 (N), ONLY MR235 (U), ONLY

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
002R			1	2506265062	Indicator
005R	1			9511101020	Label
006R		1		2457861040	Label
009R	1			2506265062	Indicator
009R		1		2911861172	Indicator
F001	1	1		FS10500040	Fuse 5A 250V
F001			1	FS10125800	Fuse 1.25AT 250V
G001	1			BF10400030	Cap. Comp 0.1μF + 120Ω
G001		1		BF10400050	Cap. Comp 0.1μF + 120Ω
J001	1	1		YJ04000560	Jack, AC Outlet
J001			1	YL09030010	Terminal (3P)
J002	1			YJ08000120	Jack, Fuse Holder
J002		1		YJ08000230	Jack, Fuse Holder
J002			1	YJ08000220	Jack, Fuse Holder
J003			1	BY03110010	Plug, Voltage Selector
J004	1	1	1	YL03010240	Terminal, Ground
J006	1	1	1	YT02040140	Terminal, Tape 2
J007	1	1	1	YT03040160	Terminal, Speaker
J008	1	1	1	YT03040160	Terminal, Speaker
J014	1	1	1	YL03010240	Terminal, Ant, Ground
L002	1	1	1	LF11200620	Antenna Coil
W001	1	1		YC02000150	A.C. Power Cord
W001			1	YC01900030	A.C. Power Cord
PC00	1	1	1	YH22760210	P.W. Board, Antenna
	1	1	1	ZZ22760210	P.W. Board Assembly
JC01	1	1	1	YT01040182	Terminal

6.4 [P01-99] FRONT CHASSIS AND GENERAL PARTS

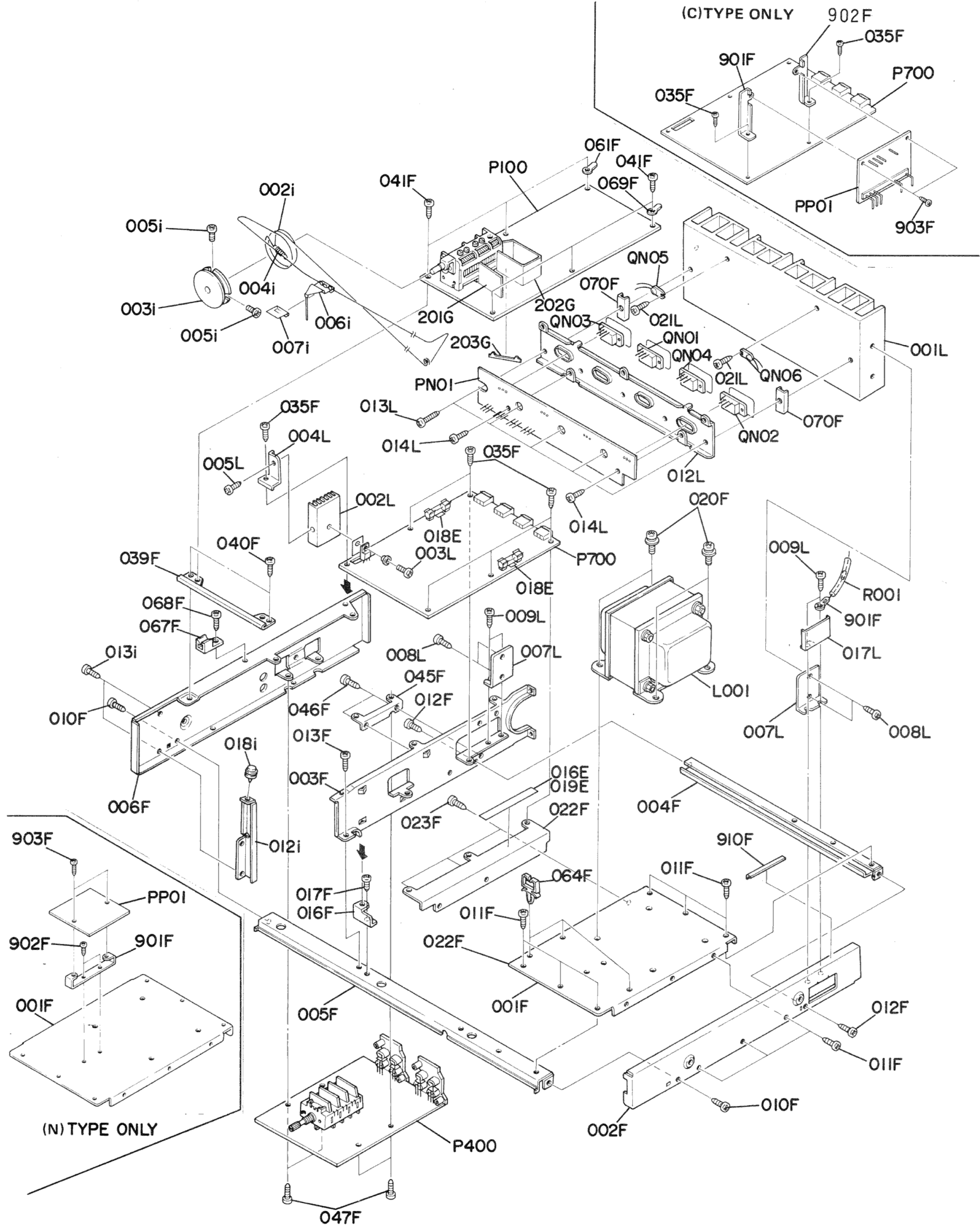


- (U): for U.S.A.
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
010B	7	7	7	2276154120	Knob
014B	1	1	1	2276154040	Knob, Power
050F	2	2	2	2258125510	Joint
054F	1	1	1	2278112010	Shaft
055F	1	1	1	2481118020	Spacer
065F	1	1	1	2278114010	Stopper
066F	1	1	1	51064019A9	P.H.M. Screw
001G	1	1	1	2276160012	Bracket
003G	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
005G	2	2	2	51100306A9	B.H.M. Screw B3 x 6
006G	4	4	4	51100306A9	B.H.M. Screw B3 x 6
007G	2	2	2	51100306A9	B.H.M. Screw B3 x 6
010G	1	1	1	2276112510	Shaft
016G	2	2	2	51280314B0	B.H. Tapped Screw B3 x 14
018G	1	1	1	2276053010	Cover, Dial Lamp (R)
019G	1	1	1	2276053020	Cover, Dial Lamp (L)
020G	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
021G	2	2	2	2276118010	Spacer
031G	1	1	1	2276302014	Dial
032G	1	1	1	2276063022	Escutcheon
033G	1	1	1	2276005020	Clamper
034G	2	2	2	51280310B0	B.H. Tapped Screw B3 x 10
035G	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
036G	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
040G	1	1	1	2276005050	Clamper
043G	1	1	1	2276063030	Escutcheon
044G	1	1	1	2276005010	Clamper

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION		
	U	C	N				
045G	2	2	2	51100306A9	B.H.M. Screw	B3 x 6	
046G	2	2	2	53110303A9	Hexagon Nut		
047G	2	2	2	54040302A0	Spring Washer		
001 i	1	1	1	2276273503	Flywheel		
009 i	1	1	1	2276160020	Bracket		
010 i	2	2	2	51100306A9	B.H.M. Screw	B3 x 6	
014 i	2	2	2	2259262500	Pulley		
022 i	1	1	1	2259262520	Pulley		
027 i	1	1	1	2276107010	Sheet		
028 i	2	2	2	2276118030	Spacer		
901A			2	3926120010	Insulator		
C001	1	1	1	EA47700690	Elect Cap. 470 μ F	6.3V	
C005			1	DF17223800	Film Cap. 0.022 μ F $\pm$ 20%	1000V	
C006			1	DF17223800	Film Cap. 0.022 μ F $\pm$ 20%	1000V	
J009	1	1	1	YJ01001200	Jack, Headphone		
J010	1	1	1	YJ08000190	Jack		
J011	1	1	1	YJ08000190	Jack		
J012	1	1	1	YJ08000190	Jack		
J013	1	1	1	YJ08000190	Jack		
M001	1	1	1	IM11055230	D.C. Meter, Signal		
M002	1	1	1	IM11055220	D.C. Meter, Tuning		
S001	1	1		SP01010240	Push Switch, Power		
S001			1	SP02010330	Push Switch, Power		
S002	1	1	1	SP04020200	Push Switch, Speaker		
V001	1	1	1	IN10080420	Lamp 0.2A	8V	
V002	1	1	1	IN10080420	Lamp 0.2A	8V	
V003	1	1	1	IN10080420	Lamp 0.2A	8V	
V004	1	1	1	IN10080420	Lamp 0.2A	8V	

6.5 [P02-99] ASSEMBLED P.W. BOARD AND OTHER PARTS

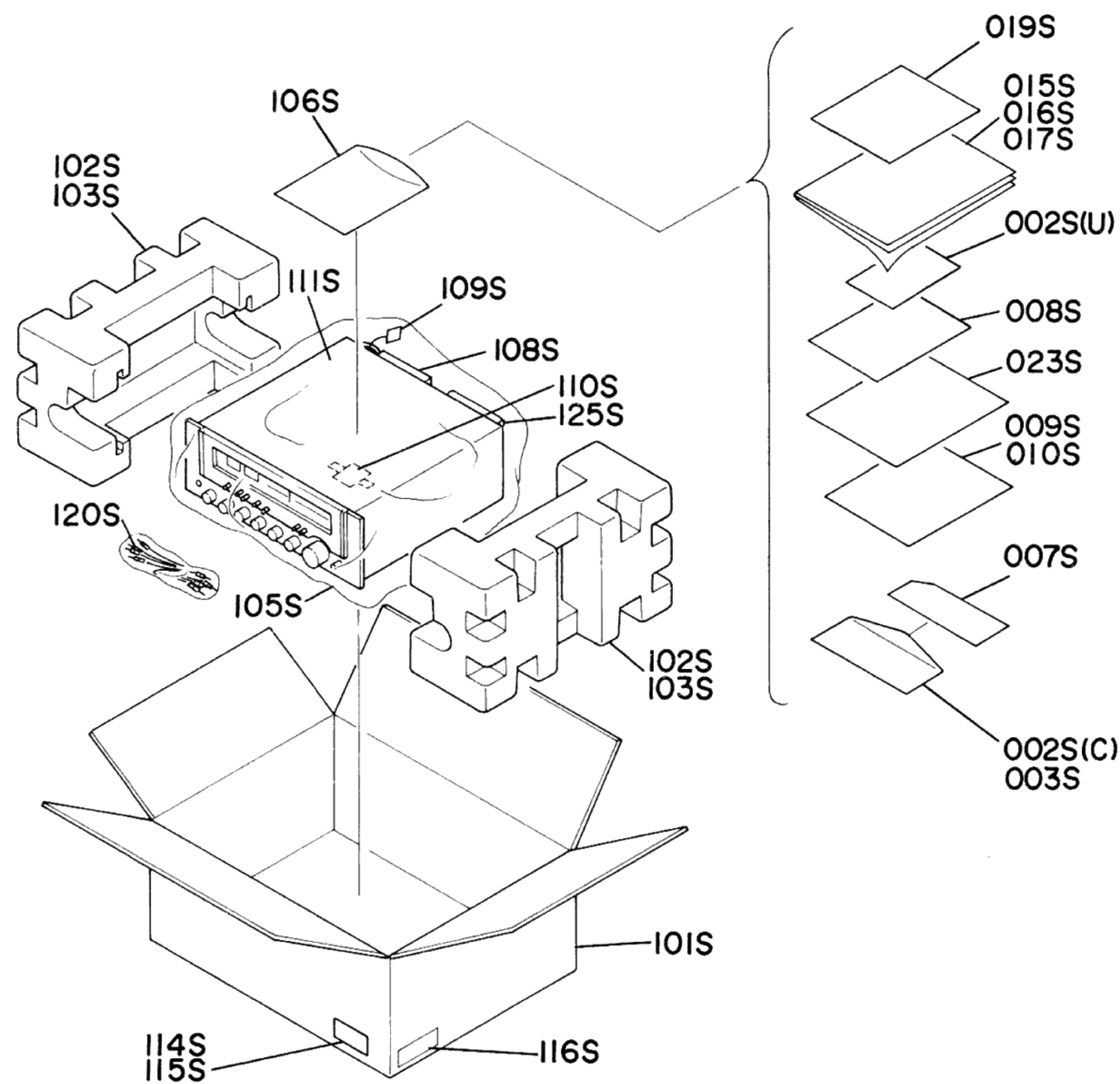


- (U): for U.S.A
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
016E			1	2205861010	Label
018E			2	2471861010	Label
019E	1			2205861010	Label
019E		1		2225861010	Label
001F	1	1	1	2277105013	Chassis, Transformer
002F	1	1	1	2278105043	Chassis, (R)
003F	1	1	1	2278105030	Chassis, Main
004F	1	1	1	2278105020	Chassis
005F	1	1	1	2276105040	Chassis, Front
006F	1	1	1	2277105022	Chassis, (L)
010F	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
011F	9	9	9	51280308B0	B.H. Tapped Screw B3 x 8
012F	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
013F	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
016F	1	1	1	2278160042	Bracket
017F	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
020F	4	4	4	51490514A9	L. Washer Screw L5 x 14
022F	1	1	1	2277160010	Bracket
023F	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
035F	6	6	6	51280308B0	B.H. Tapped Screw B3 x 8
039F	1	1	1	2276160050	Bracket
040F	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
041F	6	6	6	51280308B0	B.H. Tapped Screw B3 x 8
045F	1	1	1	2276160060	Bracket
046F	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
047F	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
061F	1	1	1	62030049W0	Lug
064F	3	3	3	2886005050	Clamper
067F	1	1	1	2887005012	Clamper
068F	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
069F	1	1	1	62030049W0	Lug
070F	2	2	2	2922005010	Clamper
901F	1	1	1	62030049W0	Lug
901F		1		2276160070	Bracket
902F		1		2276160080	Bracket
903F		2		51280308B0	B.H. Tapped Screw B3 x 8
901F			1	2963160150	Bracket
902F			2	51280308B0	B.H. Tapped Screw B3 x 8
903F			2	51280308B0	B.H. Tapped Screw B3 x 8
910F			1	2218259020	Bushing

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
B	1	1	1	2276159400	Drum Assembly
003i	1	1	1	2276159010	Drum
004i	1	1	1	71101689L0	Spring
005i	2	2	2	51064019A9	P.H.M. Screw
002i	1	1	1	72071605A0	String (150)
006i	1	1	1	2259103010	Pointer
007i	1	1	1	2259118010	Spacer
012i	1	1	1	2276160030	Bracket
013i	2	2	2	51100306A9	B.H.M. Screw B3 x 6
018i	1	1	1	2276262500	Pulley
001L	1	1	1	2277267010	Heatsink
001L			1	2469267010	Heatsink, (M1530, ONLY)
002L	1	1	1	2276270240	Heatsink
003L	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
004L	1	1	1	2276160090	Bracket
005L	1	1	1	51280306B0	B.H. Tapped Screw B3 x 6
007L	2	2	2	2276160040	Bracket
008L	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
009L	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
012L	1	1	1	2278160010	Bracket
013L	5	5	5	51280314B0	B.H. Tapped Screw B3 x 14
014L	2	2	2	51280306B0	B.H. Tapped Screw B3 x 6
017L	1	1	1	2278160060	Bracket
021L	2	2	2	51280318B0	B.H. Tapped Screw B3 x 10
201G	1	1	1	2259109040	Shield
202G	1	1	1	2259109053	Shield
203G	1	1	1	2259109062	Shield
L001	1			TS18610010	Power Transformer
L001		1		TS18610020	Power Transformer
L001			1	TS18610032	Power Transformer
R001	1	1		RC10225120	Resistor 2.2MΩ ±10% ½W
QN01	1	1	1	HT407182A0	Transistor 2SD718 (R or O)
QN02	1	1	1	HT407182A0	Transistor 2SD718 (R or O)
QN03	1	1	1	HT206882A0	Transistor 2SB688 (R or O)
QN04	1	1	1	HT206882A0	Transistor 2SB688 (R or O)
QN05	1	1	1	HV00008120	Varistor MV-1Y
QN06	1	1	1	HV00008120	Varistor MV-1Y

6.6 [H01-99] PACKING MATERIALS



- (U): for U.S.A.
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
002S	1			2225813010	Envelope
002S		1		2918813012	Envelope
003S			1	2818813010	Envelope
007S		1	1	9630000180	Guarantee Card
008S		1		9650000053	S. Station Card
009S	1			2818854024	Guarantee Card
010S		1		2818854042	Guarantee Card
015S	1			2276851012	Instructions
016S			1	2276851310	Instructions (M1530, ONLY)
016S			1	2468851310	Instructions (MR230, ONLY)
017S		1		2276851012	Instructions
019S	1	1		2277851020	Instructions
019S			1	2469851030	Instructions
023S		1		2886851100	Instructions
101S	1		1	2277801010	Packing Case
101S		1		2277801150	Packing Case
101S			1	2469801010	Packing Case (MR230, ONLY)
102S			2	2276809020	Cushion (M1530, ONLY)
102S			2	2276809010	Cushion (MR230, ONLY)
103S	2	2		2276809020	Cushion
103S	2			2276809010	Cushion (MR235, ONLY)
019S	1			2277851122	Instruction (MR225, ONLY)
101S	1			2277801020	Packing Case (MR235, ONLY)

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
105S	1	1	1	9014838380	Polyethy Bag
106S	1	1	1	9013025010	Polyethy Bag
108S	1	1	1	2864804010	Sleeve
109S			1	9560000043	Hang Tag
110S			1	2731821010	Silicagel
111S	1	1	1	2918107130	Sheet
114S	3			9526019010	Serial No. Card
114S		3		9526019020	Serial No. Card
115S			3	9526019060	Serial No. Card
116S		2		9510901020	Label
120S	1	1	1	ZA02000070	EXT. Antenna
125S	1	1	1	2819056010	Buffer
					M1530 (U)(C)(N) MR230 (N), ONLY MR230 (U), ONLY

6.7 ELECTRICAL PARTS

- (U): for U.S.A.
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
P100	1	1	1	YG22590012	M1530, ONLY
	1	1		ZZ22590010	P100-TUNER CIRCUIT BOARD
			1	ZZ22778010	P.W. Board, Tuner P.W. Board Assembly P.W. Board Assembly
P100			1	YG22590012	MR230, ONLY
			1	ZZ24698010	P100-TUNER CIRCUIT BOARD
					P.W. Board, Tuner P.W. Board Assembly
					P100-CAPACITORS
C101	1	1	1	DD11070370	Ceramic 7pF ±0.5pF
C102	1	1	1	DK16102300	Ceramic 0.001μF ±10%
C104	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C105	1	1	1	DD15180370	Ceramic 18pF ±5%
C106	1	1	1	DD10030370	Ceramic 3pF ±0.5pF
C107	1	1	1	DD10050370	Ceramic 5pF ±0.25pF
C108	1	1	1	DD15301360	Ceramic 300pF ±5%
C109	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C110	1	1	1	DD15200330	Ceramic 20pF ±5%
C111	1	1	1	DD11100300	Ceramic 10pF ±0.5pF
C112	1	1	1	DD15150300	Ceramic 15pF ±5%
C113	1	1	1	DD15150300	Ceramic 15pF ±5%
C114	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C115	1	1	1	DD10020370	Ceramic 2pF ±0.25pF
C116	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C117	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C118	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C119	1	1	1	CT11000080	Trimming 10pF ±0.5pF
C120	1	1	1	CA32400090	Variable C752J
C122	1	1		DD11100370	Ceramic 10pF ±0.5pF
C151	1	1	1	DF55361090	Film 360pF ±5%
C152	1	1	1	DD10050370	Ceramic 5pF ±0.25pF
C153	1	1	1	EA10701690	Elect 100μF 16V
C154	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C155	1	1	1	EA33601690	Elect 33μF 16V
C156	1	1	1	DK18223310	Ceramic 0.022μF +80% -20%
C157	1	1	1	DD15820370	Ceramic 82pF ±5%
C201	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C202	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C203	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C204	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C205	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C206	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C207	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C208	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C209	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C210	1	1	1	DD15201360	Ceramic 200pF ±5%
C211	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C212	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C213	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C214	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C215	1	1	1	EA33502590	Elect 3.3μF 25V
C216	1	1	1	DK18223310	Ceramic 0.022μF +80% -20%
C217	1	1	1	EA47503590	Elect 4.7μF 35V
C218	1	1	1	EA22701690	Elect 220μF 16V
C219	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C220	1	1	1	DK18104020	Ceramic 0.01μF ±20%

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
C221	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C222	1	1	1	EA10505090	Elect 1μF 50V
C223	1	1	1	EA47405090	Elect 0.047μF 50V
C224	1	1	1	EA10601690	Elect 10μF 16V
C225	1	1	1	DF15182300	Film 1800pF ±5%
C226	1	1	1	EA10601690	Elect 10μF 16V
C227	1	1	1	EA10505090	Elect 1μF 50V
C228	1	1	1	DK18403320	Ceramic 0.04μF +80% -20%
C229	1	1	1	DF55102090	Film 1000pF ±5%
C230	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C231	1	1	1	EA10601690	Elect 10μF 16V
C233	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C234	1	1	1	DK17103300	Ceramic 0.01μF ±20%
C235	1	1	1	EA22701690	Elect 220μF 16V
C301	1	1	1	EE10505050	Elect 1μF 50V
C302	1	1	1	EE10505050	Elect 1μF 50V
C303	1	1	1	DF15332300	Film 0.0033μF ±5%
C304	1	1	1	DF15332300	Film 0.0033μF ±5%
C305	1	1	1	EA22502590	Elect 2.2μF 25V
C306	1	1	1	EA22502590	Elect 2.2μF 25V
C307	1	1	1	EE47502590	Elect 4.7μF 25V
C308	1	1	1	EE47502590	Elect 4.7μF 25V
C309	1	1	1	EA10701690	Elect 100μF 16V
C311	1	1	1	EE10505050	Elect 1μF 50V
C312	1	1	1	EE10405050	Elect 0.1μF 50V
C313	1	1	1	EA10505090	Elect 1μF 50V
C314	1	1	1	EA22601690	Elect 22μF 16V
C315	1	1	1	EA10601690	Elect 10μF 16V
					P100-RESISTORS
					(All Resistors are ±5% and ¼W)
R101	1	1	1	GD05105140	1MΩ
R102	1	1	1	GD05101140	100Ω
R103	1	1	1	GD05101140	100Ω
R104	1	1	1	GD05472140	4.7KΩ
R105	1	1	1	GD05223140	22KΩ
R106	1	1	1	GD05102140	1KΩ
R107	1	1	1	GD05103140	10KΩ
R108	1	1	1	GD05103140	10KΩ
R109	1	1	1	GD05152140	1.5KΩ
R110	1	1	1	GD05101140	100Ω
R111	1	1	1	GD05273140	27KΩ
R112	1	1	1	GG05101140	100Ω
R113	1	1	1	GD05221140	220Ω
R114	1	1	1	GD05104140	100KΩ
R151	1	1	1	GD05202140	2KΩ
R201	1	1	1	GD05151140	150Ω
R202	1	1	1	GD05272140	2.7KΩ
R203	1	1	1	GD05153140	15KΩ
R204	1	1	1	GD05471140	470Ω
R205	1	1	1	GD05331140	330Ω
R206	1	1	1	GD05331140	330Ω
R207	1	1	1	GD05272140	2.7KΩ
R208	1	1	1	GD05153140	15KΩ
R209	1	1	1	GD05471140	470Ω
R210	1	1	1	GD05331140	330Ω
R211	1	1	1	GD05331140	330Ω
R212	1	1	1	GD05151140	150Ω
R213	1	1	1	GD05472140	4.7KΩ
R214	1	1	1	GD05103140	10KΩ
R215	1	1	1	GD05102140	1KΩ

- (U): for U.S.A.
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION	
	U	C	N			
R216	1	1	1	GD05202140	2K Ω	
R217	1	1	1	GD05563140	56K Ω	
R218	1	1	1	GD05333140	33K Ω	
R219	1	1	1	GD05224140	220K Ω	
R220	1	1	1	GD05470140	47 Ω	
R221	1	1	1	GD05470140	47 Ω	
R222	1	1	1	GD05221140	220 Ω	
R223	1	1	1	GD05391140	390 Ω	
R224	1	1	1	GD05562140	5.6K Ω	
R225	1	1	1	GD05332140	3.3K Ω	
R226	1	1	1	GD05823140	82K Ω	
R227	1	1	1	GD05333140	33K Ω	
R228	1	1	1	RA02030060	Trimming	20K Ω
R229	1	1	1	GD05472140	4.7K Ω	
R230	1	1	1	GD05822140	8.2K Ω	
R231	1	1	1	GD05391140	390 Ω	
R232	1	1	1	RA03020030	Trimming	3K Ω (B)
R233	1	1	1	RA05020160	Trimming	5K Ω
R235	1	1	1	GD05473140	47K Ω	
R236	1	1	1	GD05151140	150 Ω	
R237	1	1	1	GD05561140	560 Ω	
R238	1	1	1	GD05563140	56K Ω	
R239	1	1	1	GD05104140	100K Ω	
R240	1	1	1	GD05104140	100K Ω	
R241	1	1	1	GD05152140	1.5K Ω	
R242	1	1	1	GD05473140	47K Ω	
R243	1	1	1	GD05104140	100K Ω	
R244	1	1	1	GD05153140	15K Ω	
R245	1	1	1	GD05153140	15K Ω	
R246	1	1	1	GD05104140	100K Ω	
R248	1	1	1	GD05222140	2.2K Ω	
R250	1	1	1	GD05123140	12K Ω	
R251	1	1	1	GD05244140	240K Ω	
R252	1	1	1	GD05104140	100K Ω	
R255	1	1	1	GD05100140	10 Ω	
R256	1	1	1	GD05153140	15K Ω	
R257	1	1	1	GD05103140	10K Ω	
R258	1	1	1	GD05271140	270 Ω	
R301	1	1	1	GD05472140	2.7K Ω	
R302	1	1	1	GD05472140	2.7K Ω	
R303	1	1	1	GD05472140	2.7K Ω	
R304	1	1	1	GD05472140	2.7K Ω	
R305	1	1	1	GD05303140	30K Ω	
R305	1	1	1	GD05183140	18K Ω	
R306	1	1	1	GD05303140	30K Ω	
R306	1	1	1	GD05183140	18K Ω	
R307	1	1	1	GD05105140	1M Ω	
R308	1	1	1	GD05105140	1M Ω	
R309	1	1	1	GD05204140	200K Ω	
R309	1	1	1	GD05154140	150K Ω	
R310	1	1	1	GD05204140	200K Ω	
R310	1	1	1	GD05154140	150K Ω	
R311	1	1	1	GD05472140	4.7K Ω	
R312	1	1	1	GD05472140	4.7K Ω	
R313	1	1	1	GD05301140	300 Ω	
R313	1	1	1	GD05241140	240 Ω	
R314	1	1	1	GD05301140	300 Ω	
R314	1	1	1	GD05241140	240 Ω	
R315	1	1	1	GD05102140	1K Ω	
R316	1	1	1	RA01030260	Trimming	10K Ω

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION	
	U	C	N			
R317	1	1	1	GD05473140	47K Ω	
R318	1	1	1	GD05473140	47K Ω	
R319	1	1	1	GD05101140	100 Ω	
R320	1	1	1	GD05101140	100 Ω	
R321	1	1	1	GD05101140	100 Ω	
R325	1	1	1	GD05562140	5.6K Ω	
R326	1	1	1	RA04720050	Trimming	4.7K Ω (B)
R327	1	1	1	GD05103140	10K Ω	
R328	1	1	1	GD05102140	1K Ω	
R329	1	1	1	GD05102140	1K Ω	
R330	1	1	1	GD05103140	10K Ω	
R331	1	1	1	GD05101140	100 Ω	
R332	1	1	1	GD05103140	10K Ω	
R333	1	1	1	GD05104140	100K Ω	
R334	1	1	1	GD05104140	100K Ω	
P100-SEMICONDUCTORS						
Q101	1	1	1	HF400451B0	F.E.T.	3SK45 (B)
Q102	1	1	1	HT305352B0	Transistor	2SC535 (B or C)
Q103	1	1	1	HT308291C0	Transistor	2SC829 (C)
Q151	1	1	1	HD20001210	Diode	1S2473C
Q152	1	1	1	HD20001210	Diode	1S2473C
Q201	1	1	1	HT308291C0	Transistor	2SC829 (C)
Q202	1	1	1	HT308291C0	Transistor	2SC829 (C)
Q203	1	1	1	HT308291C0	Transistor	2SC829 (C)
Q204	1	1	1	HD10003020	Diode	20A90M
Q205	1	1	1	HD10003020	Diode	20A90M
Q206	1	1	1	HC10009020	IC	AN7000
Q207	1	1	1	HT308291C0	Transistor	2SC829 (C)
Q208	1	1	1	HD10003020	Diode	20A90M
Q209	1	1	1	HD20001210	Diode	1S2473C
Q210	1	1	1	HT308281D0	Transistor	2SC828 (S)
Q211	1	1	1	HT308281D0	Transistor	2SC828 (S)
Q212	1	1	1	HT107222A0	Transistor	2SA722 (S or T)
Q214	1	1	1	HD10003020	Diode	20A90M
Q301	1	1	1	HT308281D0	Transistor	2SC828 (S)
Q302	1	1	1	HT308281D0	Transistor	2SC828 (S)
Q310	1	1	1	HD10003020	Diode	20A90M
Q311	1	1	1	HT107222A0	Transistor	2SA722 (S or T)
P100-MISCELLANEOUS						
F151	1	1	1	FF10045180	Ceramic Filter	AM
F201	1	1	1	FF11070050	Ceramic Filter	FM SFE10.7MD1
F202	1	1	1	FF11070050	Ceramic Filter	FM SFE10.7MD1
F203	1	1	1	FF11070050	Ceramic Filter	FM SFE10.7MD1
L101	1	1	1	LA12028040	Ant. Coil	FM
L102	1	1	1	LA12028050	Ant. Coil	FM
L103	1	1	1	LO12036010	OSC Coil	FM
L104	1	1	1	LI10016010	I.F.T.	FM
L105	1	1	1	LC13320020	Choke Coil	3.3 μ H
L106	1	1	1	LC17510010	Choke Coil	0.75 μ H
L151	1	1	1	LC13320020	Choke Coil	3.3 μ H
L152	1	1	1	LC13320020	Choke Coil	3.3 μ H
L153	1	1	1	LO10013150	OSC Coil	AM
L154	1	1	1	LI10013200	I.F.T.	AM

- (U): for U.S.A.
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
L201	1	1	1	LI14016240	I.F.T. FM Det
L202	1	1	1	LC11830020	Choke Coil 18 μ H
L203	1	1	1	LC23960020	Choke Coil 39mH
L204	1	1	1	LC12250030	Choke Coil 2200 μ H
L205	1	1	1	LC11030020	Choke Coil 10 μ H
L301	1	1	1	LS20013010	M.P.X. Coil
L302	1	1	1	LS20013010	M.P.X. Coil
P400-PHONO CIRCUIT BOARD					
P400	1	1	1	YG22780010	P.W. Board, Phono (M1530, ONLY)
	1	1	1	ZZ22780010	P.W. Board Assembly (MR230, ONLY)
			1	ZZ24696010	P.W. Board Assembly
P400-CAPACITORS					
CV01	1	1	1	DK17103300	Ceramic 0.01 μ F $\pm$ 20%
CV02	1	1	1	DK17103300	Ceramic 0.01 μ F $\pm$ 20%
C401	1	1	1	EE33502550	Elect 3.3 μ F 25V
C402	1	1	1	EE33502550	Elect 3.3 μ F 25V
C403	1	1	1	DD15470360	Ceramic 47pF $\pm$ 5%
C404	1	1	1	DD15470360	Ceramic 47pF $\pm$ 5%
C405	1	1	1	EA10701090	Elect 100 μ F 10V
C406	1	1	1	EA10701090	Elect 100 μ F 10V
C407	1	1	1	DK16221300	Ceramic 220pF $\pm$ 10%
C408	1	1	1	DK16221300	Ceramic 220pF $\pm$ 10%
C409	1	1	1	DF15123300	Film 0.012 μ F $\pm$ 5%
C410	1	1	1	DF15123300	Film 0.012 μ F $\pm$ 5%
C411	1	1	1	DF15332300	Film 3300pF $\pm$ 5%
C412	1	1	1	DF15332300	Film 3300pF $\pm$ 5%
C413	1	1	1	EA10505090	Elect 1 μ F 50V
C414	1	1	1	EA10703590	Elect 100 μ F 35V
C415	1	1	1	EA10505090	Elect 1 μ F 50V
C416	1	1	1	EA10505090	Elect 1 μ F 50V
C417	1	1	1	DD15220360	Ceramic 22pF $\pm$ 5%
C418	1	1	1	DD15220360	Ceramic 22pF $\pm$ 5%
C419	1	1	1	DK16332300	Ceramic 0.0033 μ F $\pm$ 10%
C420	1	1	1	DK16332300	Ceramic 0.0033 μ F $\pm$ 10%
CM01	1	1	1	EA10703590	Elect 100 μ F 35V
CM02	1	1	1	EA10701090	Elect 100 μ F 10V
CM03	1	1	1	EA33605090	Elect 3.3 μ F 50V
CM04	1	1	1	DK17103300	Ceramic 0.01 μ F $\pm$ 20%
P400-RESISTORS (All Resistors are $\pm$ 5% and $\frac{1}{4}$ W)					
RV01	1	1	1	GA05561010	560 Ω 1W
RV02	1	1	1	GD05152140	1.5K Ω
RV03	1	1	1	GD05272140	2.7K Ω
R401	1	1	1	GD05623140	62K Ω
R402	1	1	1	GD05623140	62K Ω
R403	1	1	1	GD05182140	1.8K Ω
R404	1	1	1	GD05182140	1.8K Ω
R405	1	1	1	GD05184140	180K Ω
R406	1	1	1	GD05184140	180K Ω
R407	1	1	1	GD05471140	470 Ω
R408	1	1	1	GD05471140	470 Ω
R409	1	1	1	GD05274140	270K Ω
R410	1	1	1	GD05274140	270K Ω
R411	1	1	1	GD05274140	270K Ω
R412	1	1	1	GD05274140	270K Ω
R413	1	1	1	GD05223140	22K Ω
R414	1	1	1	GD05223140	22K Ω
R415	1	1	1	GD05681140	680 Ω
R416	1	1	1	GD05681140	680 Ω
R417	1	1	1	GD05223140	22K Ω

REF. DESIG	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R418	1	1	1	GD05223140	22K Ω
R419	1	1	1	GD05224140	220K Ω
R420	1	1	1	GD05224140	220K Ω
R421	1	1	1	GD05151140	150 Ω
R422	1	1	1	GD05151140	150 Ω
R423	1	1	1	GD05184140	180K Ω
R424	1	1	1	GG05181140	180 Ω
RM01	1	1	1	GD05333140	33K Ω
RM02	1	1	1	GD05103140	10K Ω
RM03	1	1	1	GD05474140	470K Ω
RM04	1	1	1	GD05100140	10 Ω
RM05	1	1	1	GD05273140	27K Ω
RM06	1	1	1	GD05272140	2.7K Ω
RM07	1	1	1	GD05153140	15K Ω
P400-SEMICONDUCTORS					
Q401	1	1	1	HC10012060	IC μ PC1024H
Q402	1	1	1	HC10012060	IC μ PC1024H
QM01	1	1	1	HD20011050	Diode 1S1555
QM02	1	1	1	HT309452A0	Transistor 2SC945 (Q or R)
QM03	1	1	1	HT309452A0	Transistor 2SC945 (Q or R)
QM04	1	1	1	HT309452A0	Transistor 2SC945 (Q or R)
P400-MISCELLANEOUS					
JV01	1	1	1	YT02040260	Terminal, Phono Aux
JV02	1	1	1	YT02040260	Terminal, Tape 1
SV01	1	1	1	SR10060180	Rotary Switch
P700-MAIN AMP./POWER SUPPLY CIRCUIT BOARD					
P700	1	1	1	YG22770010	P.W. Board, Main Amp/Power Supply
	1	1		ZZ22770010	P.W. Board Assembly M1530, ONLY
			1	ZZ22778110	P.W. Board Assembly MR230, ONLY
			1	ZZ24695010	P.W. Board Assembly
P700-CAPACITORS					
C701	1	1	1	DD15201360	Ceramic 200pF $\pm$ 5%
C702	1	1	1	DD15201360	Ceramic 200pF $\pm$ 5%
C703	1	1	1	EE22502550	Elect 2.2 μ F 25V
C704	1	1	1	EE22502550	Elect 2.2 μ F 25V
C705	1	1	1	EE47600650	Elect 47 μ F 6.3V
C706	1	1	1	EE47600650	Elect 47 μ F 6.3V
C711	1	1	1	DD10050360	Ceramic 5pF $\pm$ 0.25pF
C712	1	1	1	DD10050360	Ceramic 5pF $\pm$ 0.25pF
C713	1	1	1	DF17104300	Film 0.1 μ F $\pm$ 20%
C714	1	1	1	DF17104300	Film 0.1 μ F $\pm$ 20%
C719	1	1	1	DK16102300	Ceramic 0.001 μ F $\pm$ 10%
C720	1	1	1	DK16102300	Ceramic 0.001 μ F $\pm$ 10%
C723	1	1	1	DF17104570	Film 0.1 μ F $\pm$ 20%
C724	1	1	1	DF17104570	Film 0.1 μ F $\pm$ 20%
C729	1	1	1	EA10705090	Elect 100 μ F 50V
C730	1	1	1	EA10705090	Elect 100 μ F 50V
C731	1	1	1	DD15500500	Ceramic 50pF $\pm$ 5% 200V
C732	1	1	1	DD15500500	Ceramic 50pF $\pm$ 5% 200V
C733	1	1	1	DD15500500	Ceramic 50pF $\pm$ 5% 200V
C734	1	1	1	DD15500500	Ceramic 50pF $\pm$ 5% 200V

- (U): for U.S.A.
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION	
	U	C	N			
C735	1	1	1	DK17103300	Ceramic	0.01 μ F $\pm$ 20%
C801	1	1	1	EB10904210	Elect	10000 μ F 42V
C802	1	1	1	EB10904210	Elect	10000 μ F 42V
C803	1	1	1	DK18103510	Ceramic	0.01 μ F +80%—0
C804	1	1	1	DK18103510	Ceramic	0.01 μ F +80%—0
C805	1	1	1	EA47706310	Elect	470 μ F 63V
C806	1	1	1	EA22705090	Elect	220 μ F 50V
C807	1	1	1	DK17103300	Ceramic	0.01 μ F $\pm$ 20%
C808	1	1	1	DK17103300	Ceramic	0.01 μ F $\pm$ 20%
C809	1	1	1	EA10603590	Elect	10 μ F 35V
C810	1	1	1	EA10703590	Elect	100 μ F 50V
C811	1	1	1	EA47701690	Elect	470 μ F 16V
C816	1	1	1	DK17103300	Ceramic	0.01 μ F $\pm$ 20%
C818	1	1	1	EQ10601610	Elect	10 μ F 16V
C819	1	1	1	DK18103510	Ceramic	0.01 μ F +80%—0
C820	1	1	1	DK18103510	Ceramic	0.01 μ F +80%—0
P700-RESISTORS (All Resistors are $\pm$ 5% and $\frac{1}{4}$ W)						
R701	1	1	1	GD05102140	1K Ω	
R702	1	1	1	GD05102140	1K Ω	
R703	1	1	1	GD05104140	100K Ω	
R704	1	1	1	GD05104140	100K Ω	
R705	1	1	1	GD05681140	680 Ω	
R706	1	1	1	GD05681140	680 Ω	
R707	1	1	1	GD05914140	910K Ω	
R708	1	1	1	GD05914140	910K Ω	
R709	1	1	1	GD05105140	1M Ω	
R710	1	1	1	GD05105140	1M Ω	
R711	1	1	1	GD05222140	2.2K Ω	
R712	1	1	1	GD05222140	2.2K Ω	
R713	1	1	1	GD05222140	2.2K Ω	
R714	1	1	1	GD05222140	2.2K Ω	
R717	1	1	1	RA01020160	Trimming	1K Ω (B)
R718	1	1	1	RA01020160	Trimming	1K Ω (B)
R721	1	1	1	GD05104140	100K Ω	
R722	1	1	1	GD05104140	100K Ω	
R723	1	1	1	GD05103140	10K Ω	
R724	1	1	1	GD05103140	10K Ω	
R725	1	1	1	GD05912140	9.1K Ω	
R726	1	1	1	GD05912140	9.1K Ω	
R727	1	1	1	GD05154140	150K Ω	
R728	1	1	1	GD05154140	150K Ω	
R729	1	1	1	GD05154140	150K Ω	
R730	1	1	1	GD05154140	150K Ω	
R733	1	1	1	GG05102140	1K Ω	
R734	1	1	1	GG05102140	1K Ω	
R735	1	1	1	GG05102140	1K Ω	
R736	1	1	1	GG05102140	1K Ω	
R741	1	1	1	GN10472030	0.47 Ω	3W
R742	1	1	1	GN10472030	0.47 Ω	3W
R743	1	1	1	GN10472030	0.47 Ω	3W
R744	1	1	1	GN10472030	0.47 Ω	3W
R745	1	1	1	GA05100020	10 Ω	2W
R746	1	1	1	GA05100020	10 Ω	2W
R747	1	1	1	RC10022120	2.2 Ω	$\pm$ 10% $\frac{1}{2}$ W
R748	1	1	1	RC10022120	2.2 Ω	$\pm$ 10% $\frac{1}{2}$ W
R749	1	1	1	GA05331020	330 Ω	2W
R750	1	1	1	GA05331020	330 Ω	2W

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION	
	U	C	N			
R751	1	1	1	GG05151120	150 Ω	$\frac{1}{2}$ W
R752	1	1	1	GG05151120	150 Ω	$\frac{1}{2}$ W
R753	1	1	1	GG05101140	100 Ω	
R754	1	1	1	GG05101140	100 Ω	
R755	1	1	1	GD05683140	68K Ω	
R756	1	1	1	GD05683140	68K Ω	
R757	1	1	1	GD05752140	7.5K Ω	
R758	1	1	1	GD05752140	7.5K Ω	
R759	1	1	1	GD05102140	1K Ω	
R760	1	1	1	GD05102140	1K Ω	
R761	1	1	1	GG05330140	33 Ω	
R762	1	1	1	GG05330140	33 Ω	
R763	1	1	1	GG05330140	33 Ω	
R764	1	1	1	GG05330140	33 Ω	
R765	1	1	1	GD05122140	1.2K Ω	
R766	1	1	1	GD05122140	1.2K Ω	
R801	1	1	1	GP05151030	150 Ω	3W
R802	1	1	1	GG05152140	1.5K Ω	
R803	1	1	1	GG05102140	1K Ω	
R804	1	1	1	GD05103140	10K Ω	
R805	1	1	1	GD05682140	6.8K Ω	
R806	1	1	1	GD05242140	2.4K Ω	
P700-SEMICONDUCTORS						
Q701	1	1	1	HC10003360	IC	LM391-80
Q702	1	1	1	HC10003360	IC	LM391-80
Q703	1	1	1	HT404152B0	Transistor	2SD415 (Q or R)
Q704	1	1	1	HT404152B0	Transistor	2SD415 (Q or R)
Q705	1	1	1	HT205492B0	Transistor	2SB549 (Q or R)
Q706	1	1	1	HT205492B0	Transistor	2SB549 (Q or R)
Q711	1	1	1	HD20005010	Diode	W06B
Q712	1	1	1	HD20005010	Diode	W06B
Q713	1	1	1	HD20005010	Diode	W06B
Q714	1	1	1	HD20005010	Diode	W06B
Q719	1	1	1	HD20003210	Diode	1S2471
Q720	1	1	1	HD20003210	Diode	1S2471
Q721	1	1	1	HD20003210	Diode	1S2471
Q722	1	1	1	HD20003210	Diode	1S2471
Q801	1	1	1	HE10001030	Diode	DS133B
Q802	1	1	1	HE10001030	Diode	DS133B
Q804	1	1	1	HD20022100	Diode	10E1
Q805	1	1	1	HT403131Q0	Transistor	2SD313E
Q806	1	1	1	HT309452A0	Transistor	2SC945 (Q or R)
Q807	1	1	1	HD30022090	Zener	BZ-1201W
Q808	1	1	1	HD20010290	Diode	S3V-20
Q809	1	1	1	HD20010290	Diode	S3V-20
Q810	1	1	1	HD20010290	Diode	S3V-20
Q811	1	1	1	HD20010290	Diode	S3V-20
P700-MISCELLANEOUS						
J731	1	1	1	YJ06001870	Jack	
J732	1	1	1	YJ06001870	Jack	
J733	1	1	1	YJ06001870	Jack	
J734	1	1	1	YJ06001870	Jack	
L701	1	1	1	LL23915120	Choke Coil	
L702	1	1	1	LL23915120	Choke Coil	
F701	1	1		FS10400050	Fuse	4A 250V
F701			1	FS10400800	Fuse	4AT 250V
F702	1	1		FS10400050	Fuse	4A 250V
F702			1	FS10400800	Fuse	4AT 250V

- (U): for U.S.A.
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REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
J701 J704 J701 J704	4	4		YJ08000170	Jack, Fuse Holder
			4	YJ08000270	Jack, Fuse Holder
PC00	1	1	1	YH22760210	PC00-ANTENNA CIRCUIT BOARD P.W. Board, Antenna
	1	1	1	ZZ22760210	P.W. Board Assembly
JC01	1	1	1	YT01040182	Terminal
LC01	1	1	1	LB30075260	Balun Coil
PE00	1	1	1	YK22780210	PE00-TONE AMP. CIRCUIT BOARD P.W. Board, Tone Amp.
	1	1	1	ZZ22780210	P.W. Board Assembly
CE01	1	1	1	EE22405050	PE00-CAPACITORS Elect 0.22 μ F 50V
CE02	1	1	1	EE22405050	Elect 0.22 μ F 50V
CE03	1	1	1	DD15151370	Ceramic 150pF $\pm$ 5%
CE04	1	1	1	DD15151370	Ceramic 150pF $\pm$ 5%
CE05	1	1	1	EE47502550	Elect 4.7 μ F 25V
CE06	1	1	1	EE47502550	Elect 4.7 μ F 25V
CE09	1	1	1	DD15101370	Ceramic 100pF $\pm$ 5%
CE10	1	1	1	DD15101370	Ceramic 100pF $\pm$ 5%
CE11	1	1	1	DF16222300	Film 2200pF $\pm$ 10%
CE12	1	1	1	DF16222300	Film 2200pF $\pm$ 10%
CE13	1	1	1	DF16472300	Film 4700pF $\pm$ 10%
CE14	1	1	1	DF16472300	Film 4700pF $\pm$ 10%
CE15	1	1	1	DF16223300	Film 0.022 μ F $\pm$ 10%
CE16	1	1	1	DF16223300	Film 0.022 μ F $\pm$ 10%
CE17	1	1	1	DF16223300	Film 0.022 μ F $\pm$ 10%
CE18	1	1	1	DF16223300	Film 0.022 μ F $\pm$ 10%
CE19	1	1	1	DF16822300	Film 8200pF $\pm$ 10%
CE20	1	1	1	DF16822300	Film 8200pF $\pm$ 10%
CE21	1	1	1	EE10505050	Elect 1 μ F 50V
CE22	1	1	1	EE10505050	Elect 1 μ F 50V
CE23	1	1	1	DD11100370	Ceramic 10pF $\pm$ 0.5pF
CE24	1	1	1	DD11100370	Ceramic 10pF $\pm$ 0.5pF
CE25	1	1	1	EE33505050	Elect 3.3 μ F 50V
CE26	1	1	1	EE33505050	Elect 3.3 μ F 50V
CE27	1	1	1	EE10505050	Elect 1 μ F 50V
CE28	1	1	1	EE10505050	Elect 1 μ F 50V
CE31	1	1	1	EA22703590	Elect 220 μ F 35V
RE03	1	1	1	RK02040072	PE00-RESISTORS (All Resistors are $\pm$ 5% and 1/4W) Variable 200K Ω (B)
RE04	1	1	1	RM01040200	Variable 100K Ω (B)
RE05	1	1	1	GD05474140	470K Ω
RE06	1	1	1	GD05474140	470K Ω
RE07	1	1	1	GD05102140	1K Ω
RE08	1	1	1	GD05102140	1K Ω
RE09	1	1	1	GD05105140	1M Ω
RE10	1	1	1	GD05105140	1M Ω
RE11	1	1	1	GD05103140	10K Ω
RE12	1	1	1	GD05104140	100K Ω

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
RE13	1	1	1	GD05102140	1K Ω
RE14	1	1	1	GD05102140	1K Ω
RE15	1	1	1	GD05183140	18K Ω
RE16	1	1	1	GD05183140	18K Ω
RE17	1	1	1	GD05822140	8.2K Ω
RE18	1	1	1	GD05822140	8.2K Ω
RE19	1	1	1	GD05474140	470K Ω
RE20	1	1	1	GD05474140	470K Ω
RE21	1	1	1	75061001P0	Jumper
RE22	1	1	1	75061001P0	Jumper
RE23	1	1	1	GD05682140	6.8K Ω
RE24	1	1	1	GD05682140	6.8K Ω
RE25	1	1	1	GD05113140	11K Ω
RE26	1	1	1	GD05113140	11K Ω
RE27	1	1	1	GD05562140	5.6K Ω
RE28	1	1	1	GD05562140	5.6K Ω
RE29	1	1	1	GD05752140	7.5K Ω
RE30	1	1	1	GD05752140	7.5K Ω
RE31	1	1	1	GD05273140	27K Ω
RE32	1	1	1	GD05273140	27K Ω
RE33	1	1	1	GD05123140	12K Ω
RE34	1	1	1	GD05123140	12K Ω
RE35	1	1	1	GD05153140	15K Ω
RE36	1	1	1	GD05153140	15K Ω
RE37	1	1	1	GD05274140	270K Ω
RE38	1	1	1	GD05274140	270K Ω
RE39	1	1	1	GD05273140	27K Ω
RE40	1	1	1	GD05273140	27K Ω
RE41	1	1	1	GD05683140	68K Ω
RE42	1	1	1	GD05683140	68K Ω
RE43	1	1	1	GD05225140	2.2M Ω
RE44	1	1	1	GD05225140	2.2M Ω
RE45	1	1	1	GD05181140	180 Ω
RE46	1	1	1	GD05181140	180 Ω
RE47	1	1	1	GD05123140	12K Ω
RE48	1	1	1	GD05123140	12K Ω
RE49	1	1	1	GD05103140	10K Ω
RE50	1	1	1	GD05103140	10K Ω
RE51	1	1	1	GD05473140	47K Ω
RE52	1	1	1	GD05473140	47K Ω
RE53	1	1	1	RM01040210	Variable 100K Ω (B)
RE54	1	1	1	RM01040210	Variable 100K Ω (B)
RE55	1	1	1	RM01040210	Variable 100K Ω (B)
RE56	1	1	1	GG05221140	220 Ω
RE57	1	1	1	GD05274140	270K Ω
RE58	1	1	1	GD05274140	270K Ω
QE01	1	1	1	HT316812A0	PE00-SEMICONDUCTORS Transistor 2SC1681 (GR, BL)
QE02	1	1	1	HT316812A0	Transistor 2SC1681 (GR, BL)
QE03	1	1	1	HT108412A0	Transistor 2SA841 (GR, BL)
QE04	1	1	1	HT108412A0	Transistor 2SA841 (GR, BL)
QE05	1	1	1	HT316812A0	Transistor 2SC1681 (GR, BL)
QE06	1	1	1	HT316812A0	Transistor 2SC1681 (GR, BL)
QE07	1	1	1	HT108412A0	Transistor 2SA841 (GR, BL)
QE08	1	1	1	HT108412A0	Transistor 2SA841 (GR, BL)
JE04	1	1	1	YU05130010	PE00-MISCELLANEOUS Jumper Lead (5P)

- (U): for U.S.A.
- (C): for Canada
- (N): for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
PN01	1	1	1	YH22771210 ZZ22771210	PN01-POWER TRANSISTOR CIRCUIT BOARD P.W. Board, Power Transistor P.W. Board Assembly
	1	1	1		
					PN01-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$)
RN01	1	1	1	GG05101140	100 Ω
RN02	1	1	1	GG05101140	100 Ω
RN03	1	1	1	GG05101140	100 Ω
RN04	1	1	1	GG05101140	100 Ω
RN05	1	1	1	75061001P0	Jumper
RN06	1	1	1	75061001P0	Jumper
RN07	1	1	1	GG05330140	33 Ω
RN08	1	1	1	GG05330140	33 Ω
					PN01-SEMICONDUCTORS
QN01	1	1	1	HT407182A0	Transistor 2SD718 (R or Q)
QN02	1	1	1	HT407182A0	Transistor 2SD718 (R or Q)
QN03	1	1	1	HT206882A0	Transistor 2SB688 (R or Q)
QN04	1	1	1	HT206882A0	Transistor 2SB688 (R or Q)
QN05	1	1	1	HV00008120	Varistor MV-1Y
QN06	1	1	1	HV00008120	Varistor MV-1Y
					PN01-PLUG
JN01 ? JN04	4	4	4	YP06001600	Plug
					PP01-FUSE CIRCUIT BOARD
PP01	1			YF22770020 ZZ22771020	P.W. Board, Fuse P.W. Board Assembly
	1				
					M1530, ONLY
PP01		1		YF22770010 ZZ22778210	P.W. Board, Fuse P.W. Board Assembly
		1			
					MR230, ONLY
PP01		1		YF22760032 ZZ22760030	P.W. Board, Fuse P.W. Board Assembly
		1			
					PP01-FUSE
FP01	1			FS10150900	Fuse 1.5A 125V
FP02	1			FS10100900	Fuse 1A 125V
FP03	1			FS10600900	Fuse 6A 125V
FP04	1			FS10600900	Fuse 6A 125V
FP01		1		FS10160800	Fuse 1.6AT 250V
FP02		1		FS10100800	Fuse 1AT 250V
FP03		1		FS10250800	Fuse 2.5AT 250V
FP04		1		FS10250800	Fuse 2.5AT 250V
					PP01-JACK
JP01 ? JP08 JP09		8	8	YJ08000200	Jack, Fuse Holder
	1	1		YP06001560	Plug

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
PS00	1	1	1	YK22760410 ZZ22770410 ZZ22778410	PS00-SWITCH CIRCUIT BOARD P.W. Board, Switch P.W. Board Assembly P.W. Board Assembly
	1	1	1		
					PS00-CAPACITORS
CS01	1	1	1	DD15561370	Ceramic 560pF $\pm 5\%$
CS02	1	1	1	DD15561370	Ceramic 560pF $\pm 5\%$
CS03	1	1	1	DF17683300	Film 0.068 μ F $\pm 20\%$
CS04	1	1	1	DF17683300	Film 0.068 μ F $\pm 20\%$
CS05	1	1		DF15222300	Film 0.0022 μ F $\pm 5\%$
CS06	1	1		DF15222300	Film 0.0022 μ F $\pm 5\%$
CS07			1	DF17104300	Film 0.1 μ F $\pm 20\%$
CS08			1	DF17104300	Film 0.1 μ F $\pm 20\%$
CS09			1	EE33405040	Elect 0.33 μ F 50V
CS10			1	EE33405040	Elect 0.33 μ F 50V
CS11	1	1		DF15472300	Film 0.0047 μ F $\pm 5\%$
CS12	1	1		DF15472300	Film 0.0047 μ F $\pm 5\%$
					PS00-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$)
RS01	1	1	1	GD05332140	3.3K Ω
RS02	1	1	1	GD05332140	3.3K Ω
RS03	1	1	1	GD05563140	56K Ω
RS04	1	1	1	GD05563140	56K Ω
RS05	1	1	1	GD05622140	6.2K Ω
RS06	1	1	1	GD05622140	6.2K Ω
RS07	1	1		GD05103140	10K Ω
RS08	1	1		GD05103140	10K Ω
RS11	1	1		GD05432140	4.3K Ω
RS12	1	1		GD05432140	4.3K Ω
RS13			1	GD05393140	39K Ω
RS14			1	GD05393140	39K Ω
RS15	1	1	1	GD05221140	220 Ω
RS16	1	1	1	GD05332140	3.3K Ω
RS17	1	1	1	GD05332140	3.3K Ω
					PS00-SWITCH
SS01	1	1	1	SP02050040	Push Switch
					PY01-LED CIRCUIT BOARD
PY01	1	1	1	YH22771220 ZZ22771220	P.W. Board, LED P.W. Board Assembly
	1	1	1		
QY01	1	1	1	HI10009020	L.E.D. LN26RP Stereo Ind.
					M1530 (U)(C)(N) MR230 (N), ONLY

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

7. TECHNICAL SPECIFICATIONS

[U.S.A. & CANADIAN MODELS ONLY]

AMPLIFIER SECTION:

Minimum Continuous Watts per Channel, both Channels Driven	
into 8 ohms	30 W
into 4 ohms	33 W
Power Band	
at 8 ohms	20 Hz - 20 kHz
at 4 ohms	20 Hz - 20 kHz
Total Harmonic Distortion	
at 8 ohms	0.08%
at 4 ohms	0.15%
I.M. Distortion	
(I.H.F. method, 20 Hz and 7 kHz mixed 4:1 at rated power output)	
at 8 ohms	0.08%
Damping Factor at 20 Hz	
	30

PREAMPLIFIER SECTION:

Phono	
Input Overload at 1 kHz	120 mV
Equivalent Input Noise, "A" weighted	2 µV
Input Sensitivity (Input Impedance, 47 kohms)	2.8 mV
Frequency Response (RIAA, 20 Hz to 20 kHz)	±0.75 dB
High Level Inputs (Aux and Tape)	
Input Sensitivity	180 mV
Input Impedance	20 kohms

AM/FM TUNER SECTION:

Sensitivity	
IHF Usable (Mono)	10.8 dBf (1.9 µV)
IHF 50 dB Quieting	
Mono	14.5 dBf (2.9 µV)
Stereo	37.7 dBf (42 µV)
Distortion, Mono and (Stereo) at 65 dBf	
1000 Hz	0.2% (0.35%)
Hum and Noise at 65 dBf (1000 µV)	
Mono	−70 dB
Capture Ratio at 65 dBf (1000 µV)	1.0 dB
Alternate Channel Selectivity	60 dB
Spurious Response Rejection	90 dB
Image Response Rejection	50 dB
IF Rejection (Balanced)	90 dB
AM Suppression	50 dB
Stereo Separation 1000 Hz	45 dB
AM Usable Sensitivity (IHF)	20 µV
AM Distortion (THD) at 30% Modulation	1.0%
AM Signal-to-Noise Ratio	50 dB

GENERAL:

Power Requirements	120 V AC, 60 Hz
Power Consumption at rated output, both channels operating	150 W
Idling Power (Volume Control at zero)	28 W
Dimensions	
Panel Width	17-1/4" (440 mm)
Panel Height	5-3/8" (137 mm)
Depth	14-1/16" (357 mm)
Weight	
Unit alone	10 kg (22 lbs.)
Packed for shipment	11.5 kg (25.3 lbs.)

[FOR EUROPEAN MODEL ONLY]

AUDIO SECTION:

POWER OUTPUT, DIN, 4 OHM, PER CHANNEL	56 W
POWER OUTPUT, FTC AMERICAN STANDARDS, 4 OHM, PER CHANNEL	33 W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT	0.15 %
I.M. DISTORTION AT RATED POWER OUTPUT	
(250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1)	0.15 %
POWER BANDWIDTH	10 Hz ~ 40 kHz
POWER OUTPUT, DIN, 8 OHM, PER CHANNEL	48 W
POWER OUTPUT, FTC AMERICAN STANDARDS, 8 OHM, PER CHANNEL	30 W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT	0.08%
I.M. DISTORTION AT RATED POWER OUTPUT	
(250 Hz AND 8 kHz MIXED, AMPLITUDE RATIO 4:1)	0.08%
POWER BANDWIDTH	10 Hz ~ 40 kHz
	(40 Hz) (1 kHz) (12.5 kHz)
DAMPING FACTOR 8 OHM	66 64 53
Frequency Response	
Phono (RIAA)	±1.0 dB
Aux (±1 dB)	18 Hz ~ 30 kHz
Signal-to-Noise Ratio	
Phono	72 dB
Aux	80 dB
Input Terminals	
Phono: Input Impedance	47 kohms
Input Sensitivity	2.8 mV
Overload Margin	30 dB
Aux: Input Impedance	20 kohms
Input Sensitivity	180 mV
Overload Margin	35 dB
Phono Equivalent Input Noise	1.2 µV
Phono Dynamic Range (Ratio of input overload to equivalent input noise)	100 dB
Channel Balance (0 to -40 dB/40 Hz ~ 16 kHz)	
Phono	2.5 dB
Aux	2.0 dB
Interchannel Crosstalk	
Phono 1 kHz	35 dB
Aux 1 kHz	43 dB
Tape 1 kHz	55 dB
Intersource Crosstalk (Worst Point)	
1 kHz	51 dB
Output Voltage, 1 kHz	
Tape Out	500 mV
Output Impedance, 1 kHz	
Tape Out	200 ohms
Headphone Jack Load Impedance	8 ohms

FM TUNER SECTION:

Frequency Range	87.4 ~ 109 MHz
Usable Sensitivity 40 kHz Deviation, 98 MHz	
Mono, S/N 26 dB	1.7 µV
Stereo, S/N 46 dB	48 µV
Alternate Channel Selectivity, 98 MHz ±300 kHz	36 dB
Image Response Rejection, 98 MHz	50 dB
IF Rejection, 98 MHz	100 dB
Spurious Response Rejection, 98 MHz	110 dB
AM Suppression, 98 MHz	52 dB

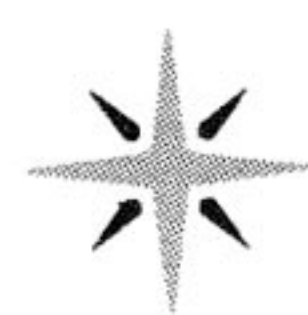
Signal-to-Noise Ratio, 98 MHz	
Unweighted: Mono	62 dB
Stereo	55 dB
Weighted: Mono	66 dB
Stereo	60 dB
Pilot Signal & Subcarrier Rejection	
19 kHz	58 dB
38 kHz	58 dB
Total Harmonic Distortion, 98 MHz	
Mono	0.1%
Stereo	0.2%
Frequency Response	
30 Hz ~ 15 kHz	+0.5 dB, -2.0 dB
Separation	
Stereo	45 dB
Channel Balance	0.5 dB
Output Voltage, 1 kHz	600 μ V
Output Impedance, 1 kHz	4.4 kohms
Acceptable Load Impedance, 1 kHz	47 kohms
Antenna Terminals	
Balanced	300 ohms
Unbalanced	75 ohms

AM TUNER SECTION:

Frequency Range	515 ~ 1650 kHz
Usable Sensitivity (26 dB S/N 30% Mod., 1 MHz)	30 μ V
Selectivity, 1 MHz $\pm$ 9 kHz	20 dB
Image Rejection, 1 MHz	41 dB
IF Rejection, 1 MHz	55 dB
Spurious Response Rejection, 1 MHz	38 dB
Signal-to-Noise Ratio, 1 MHz	43 dB
Frequency Response, 1 MHz $\pm$ 3 dB	40 Hz ~ 2.2 kHz
Total Harmonic Distortion, 1 MHz	1.0%

GENERAL:

Power Requirements	220 V AC, 50 Hz
(N version is 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	150 W
Idling Power	28 W
Semiconductor Complement	
Integrated Circuits	5
Transistors	33
Diodes	28
Field Effect Transistor	1
Dimensions	
Panel Width	17-3/8" (440 mm)
Panel Height	5-3/8" (137 mm)
Depth	14-1/8" (358 mm)
Weight	
Unit alone	24.2 lbs (11.0 kg)
Packed for shipment	27.5 lbs (12.5 kg)



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