

SERVICE
MANUAL

2215B

marantz

model 2215B

Stereophonic Receiver

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INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 2215B 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. Board

As can be seen from the circuit diagram, the chassis of Model 2215B 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/AM Tuner	.....	mounted on P.W. Board P100
2. Phono Amplifier	.....	mounted on P.W. Board P400
3. Power Amplifier	.....	mounted on P.W. Board P700
4. Power Supply	.....	mounted on P.W. Board P800
5. Dial Lamp	.....	mounted on P.W. Board PZ01
6. Monitor, Switch	.....	mounted on P.W. Board PT01
7. Muting, Switch	.....	mounted on P.W. Board PH01
8. Tone Amplifier	.....	mounted on P.W. Board PE01

2. Test Equipment Required for Servicing

Table 1 lists the test equipment required for servicing the Model 2215B Receiver.

Item	Manufacturer and Model No.	Use
AM Signal Generator		Signal source for AM alignment.
Test Loop		Used with AM signal generator.
FM Signal Generator	Less than 0.3% distortion	Signal source for FM alignment.
Stereo Modulator	Less than 0.3% distortion	Stereo separation alignment and trouble shooting.
Frequency Counter		MPX oscillator adjustment (VCO).
Audio Oscillator	Weston Model CVO-100P, less than 0.02% residual distortion is required.	Sinewave and squarewave signal source.
Oscilloscope	High sensitivity with DC horizontal and vertical amplifiers.	Waveform analysis and trouble shooting, and ASO alignment.
VTVM	With AC, DC, RF range	Voltage measurements.
Circuit Tester		Trouble shooting.
AC Wattmeter	Simpson, Model 390	Monitors primary power to amplifier.
AC Ammeter	Commercial Grade (1-10A)	Monitors amplifier output under short circuit condition.
Line Voltmeter	Commercial Grade (0-150VAC)	Monitors potential of primary power to amplifier.
Variable Autotransformer (0-140VAC, 10 amps.)	Powerstat, Model 116B	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.

Table 1. Test Equipment Required for Servicing

3. AM Alignment Procedure

3.1 AM IF Alignment

1. Connect a sweep generator to the test point A or J105 and an alignment scope to J112.
2. Rotate each core of IF transformer L203 and L204 for maximum height and flat top symmetrical response.

3.2 AM Frequency Range and Tracking Alignment

1. Set AM signal generator to 525 kHz. Turn the tuning capacitor fully closed (place the tuning pointer at the low end) and adjust the oscillator coil L202 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 (CA-2) for maximum audio output.
3. Repeat steps 1 and 2 until no further adjustment is necessary.
4. Set the generator 600 kHz and tune the receiver to the same frequency and adjust a slug core of AM ferrite antenna for maximum output.
5. Set the generator to 1400 kHz and tune the receiver to the same frequency and adjust the trimming capacitors of Antenna (CA-1) for maximum output.
6. Repeat steps 4 and 5 until no further adjustment is necessary.

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

4. 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 jacks on the rear panel.
2. Set the FM SG to 87.5 MHz and provide about 3 to 5 μV . Place the tuning pointer at the low frequency end by rotating the tuning knob and adjust the core of oscillator coil L103 to obtain maximum audio output.
3. Set the FM SG to 108.5 MHz and provide about 3 to 5 μV output. Rotate the tuning knob and place the tuning pointer at the high frequency end and adjust the trimming capacitor CF-3 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 antenna coil L101, RF coil L102 and IF transformer L105 for minimum audio distortion.
6. Set the FM SG to 106 MHz and tune the receiver to the same frequency. Adjust the trimming capacitor CF-1, CF-2 for minimum distortion.
7. Repeat steps 5 and 6 until no further adjustment is necessary.
8. Connect a DC VTVM with ± 0.5 volt range selected to the test point (E) (J116) and adjust the secondary core (upper) of discriminator transformer L106 so that no voltage reading is obtained on the VTVM at no signal.
Next set the FM SG to 98 MHz and increase the output level to 1 μV , then tune the receiver to the same frequency so that no deflection is obtained.
Adjust primary core (bottom) of L106 for minimum distortion, and adjust the L107 for the maximum reading on the VTVM connected to the J114.

5. STEREO Separation Alignment

1. Set the FM SG to provide 1 μV at 98 MHz.
Tune the receiver to the same frequency perfectly.
2. Turn the FM SG modulation off (with the pilot signal turned off), connect a frequency counter to test point J120, and adjust R302 so that the frequency counter may precisely read 19 kHz.
3. Modulate the FM SG with stereo composite signal consisting of only subchannel signal (of course a pilot signal must be included).
4. Adjust the trimming resistor R301 for maximum and same separation in both channels.

6. Muting Circuit Alignment

Set the FM SG output to provide $25 \mu\text{V}$ (IHF) at 98 MHz and tune the receiver to the same frequency.

Adjust the trimming resistor R161 for the threshold level of $25 \mu\text{V}$ (during this adjustment turn the MUTING pushswitch "on").

7. Audio Adjustment

Connect a VTVM across the resistor R735 and adjust the trimming resistor R727 until the VTVM reads 10.0 mV DC.

For the other channel connect the VTVM across the R736 and adjust the R728 for the same reading.

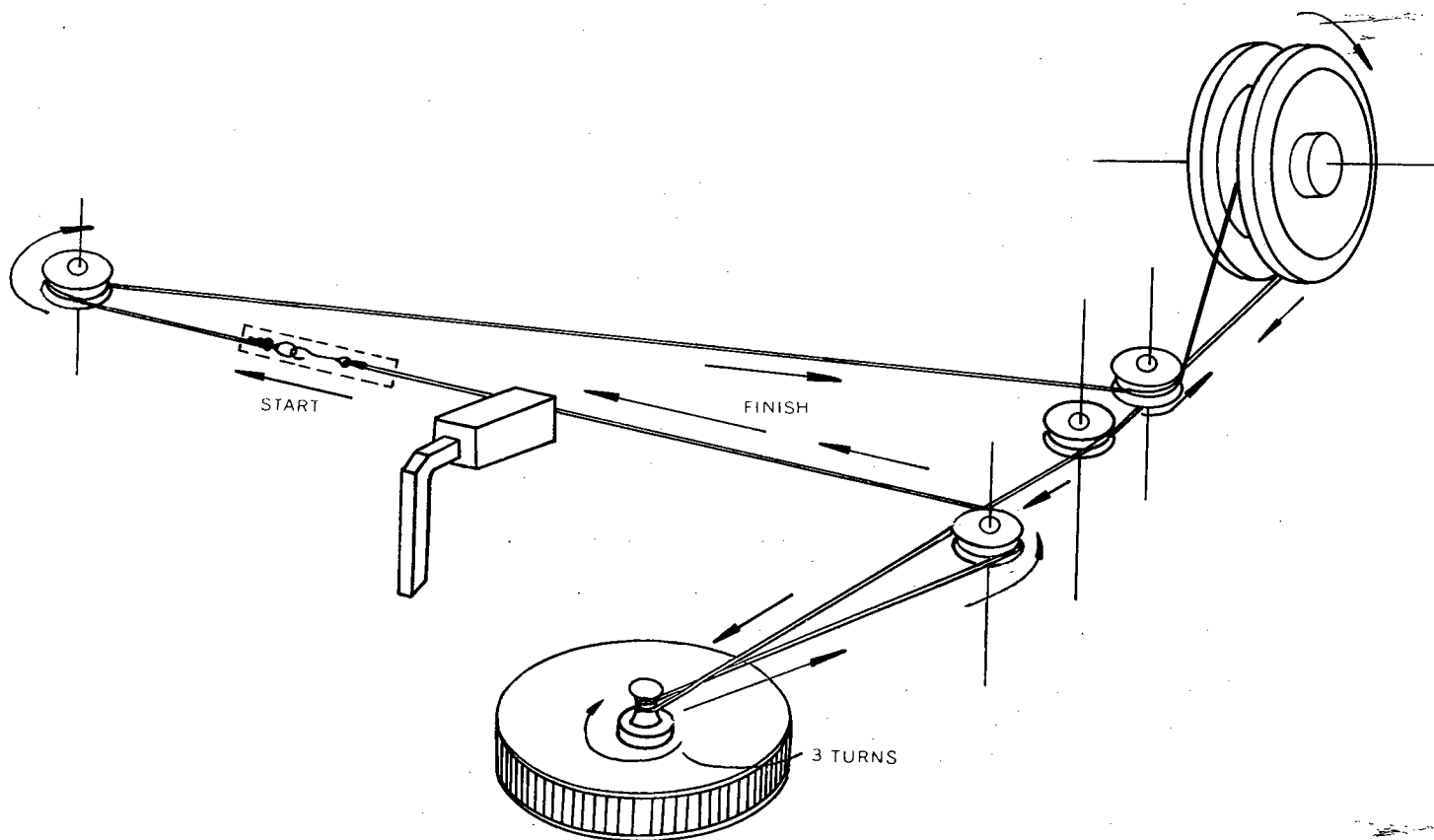


Figure 1. Dial Stringing

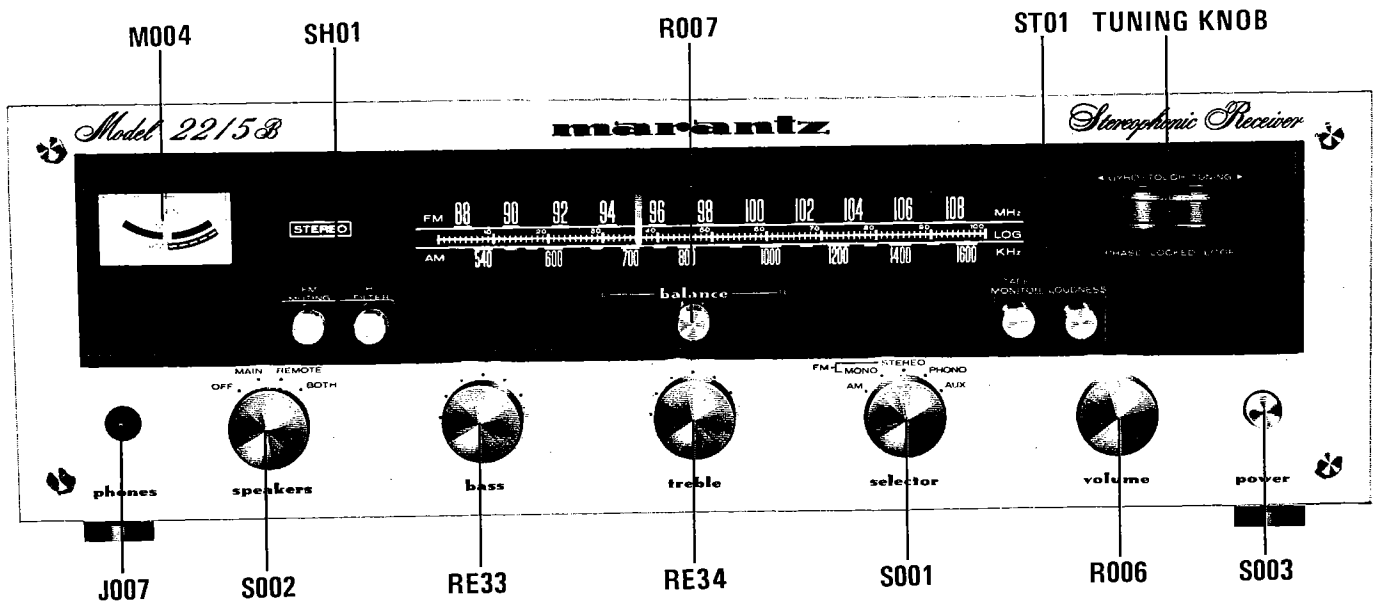


Figure 2. Front Panel Adjustment and Component Locations

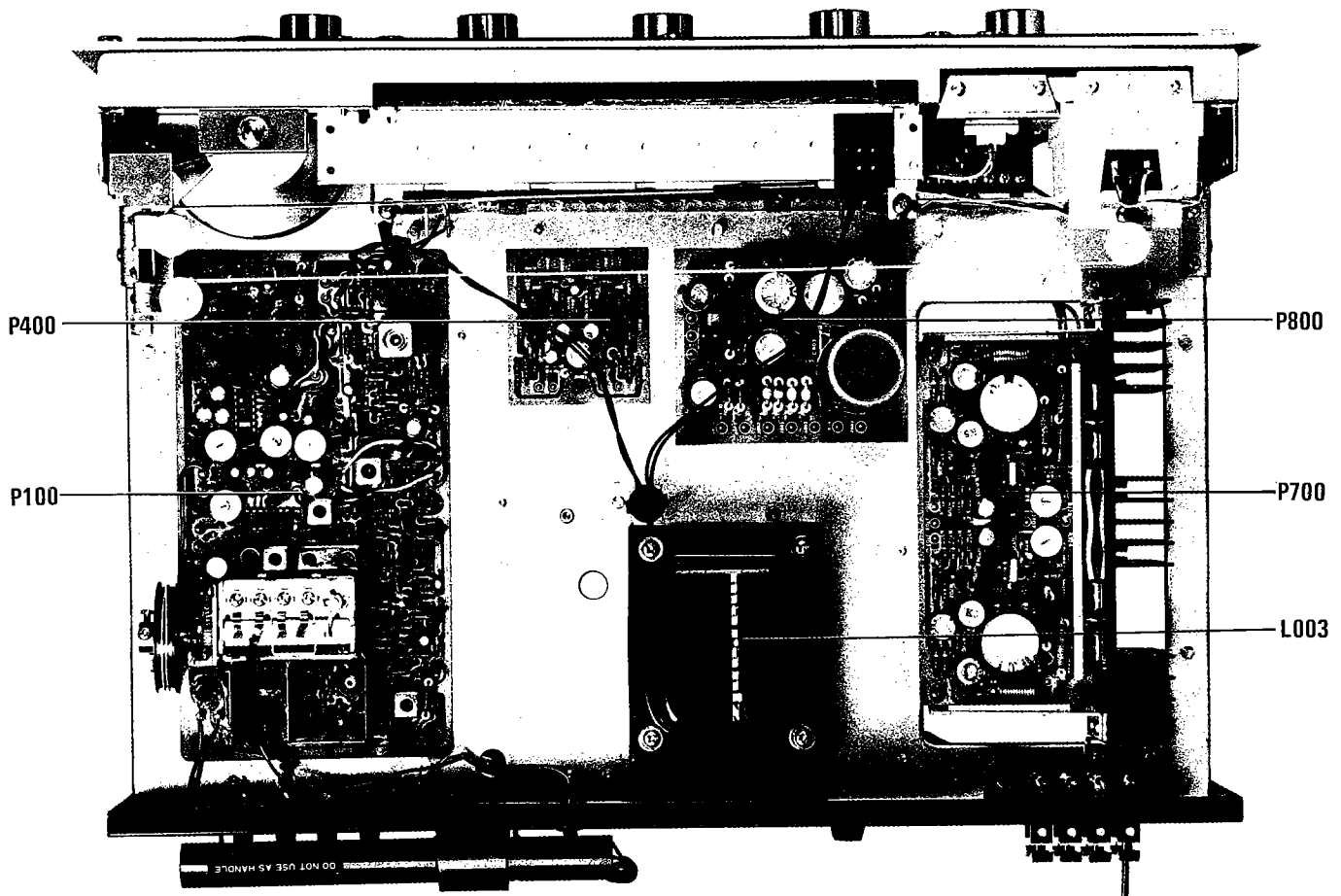


Figure 3. Main Chassis Component Locations (Top View)

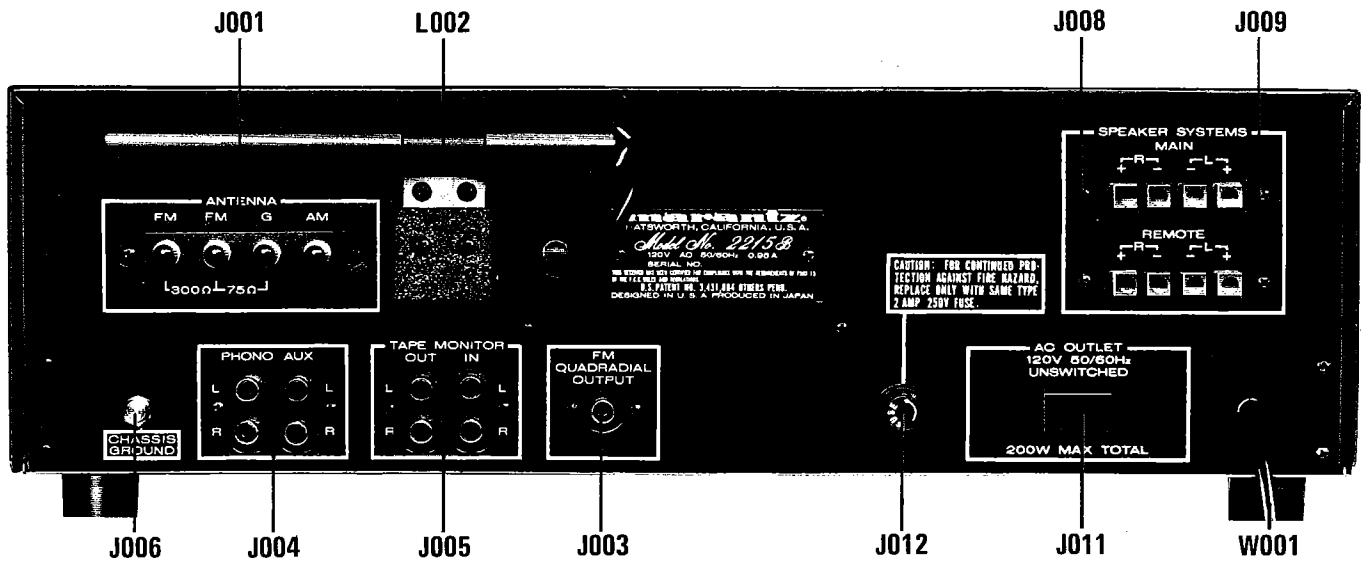


Figure 4. Rear Panel Adjustment and Component Locations

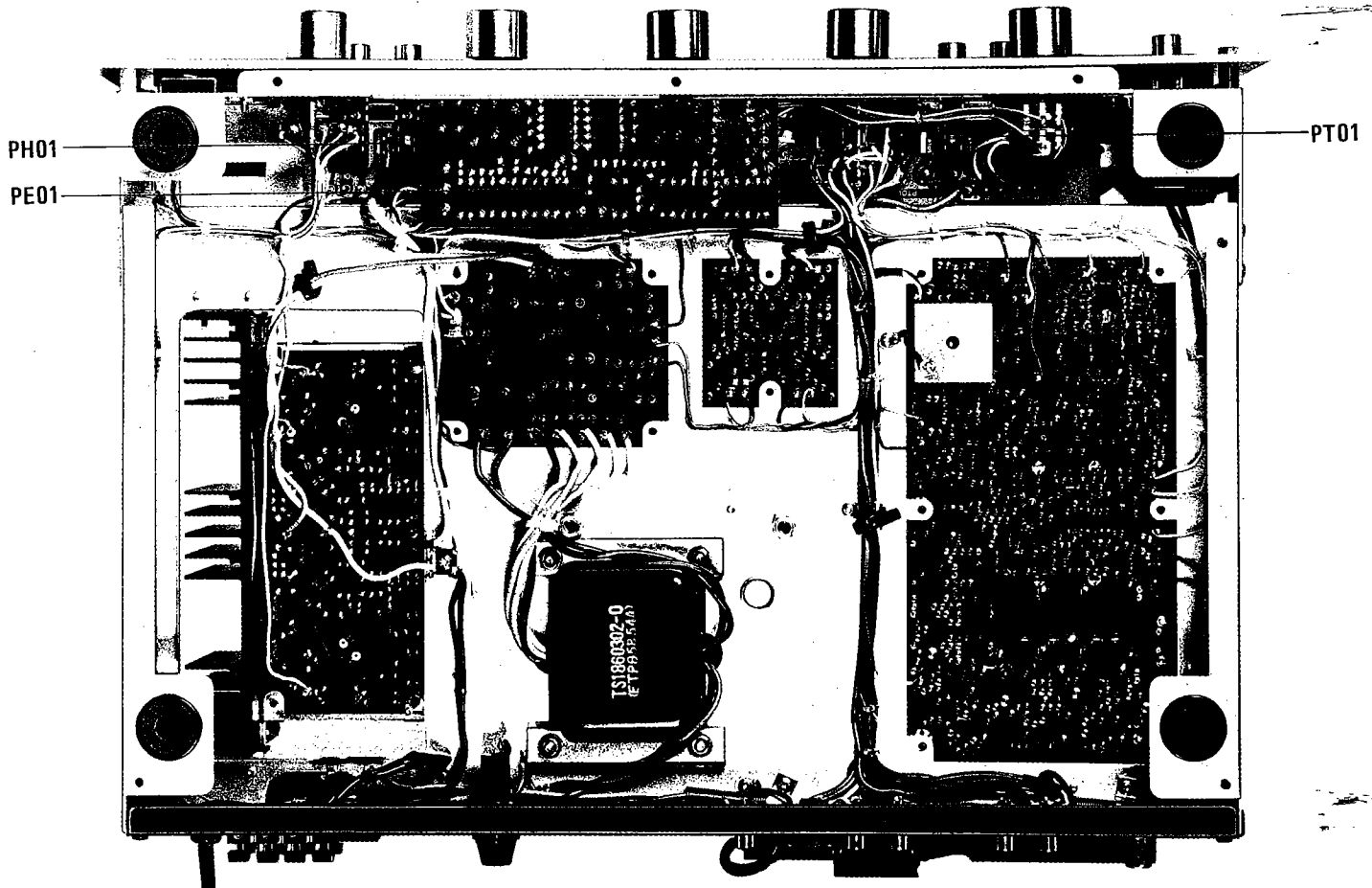


Figure 5. Main Chassis Component Locations (Bottom View)

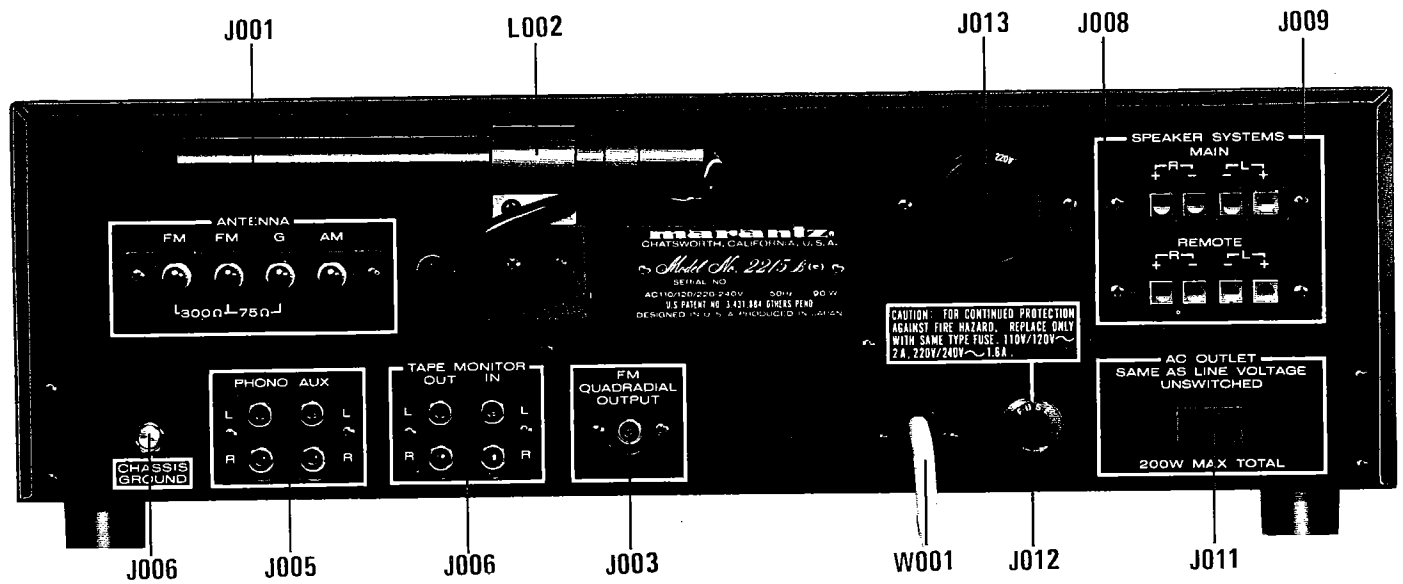


Figure 6. Rear Panel Adjustment and Facilities Locations for European Model

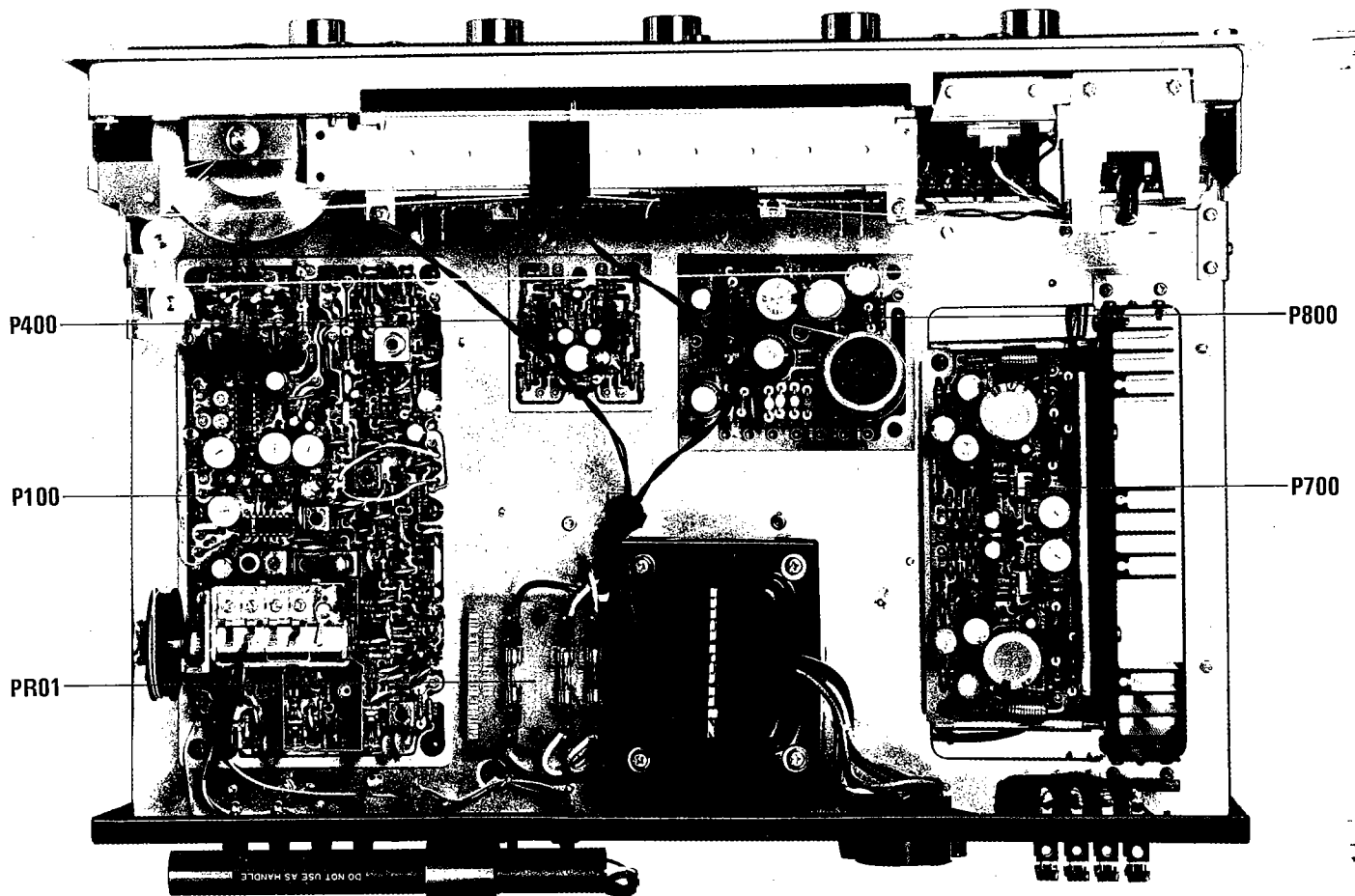


Figure 7. Main Chassis Component Locations (Top View) for European Model

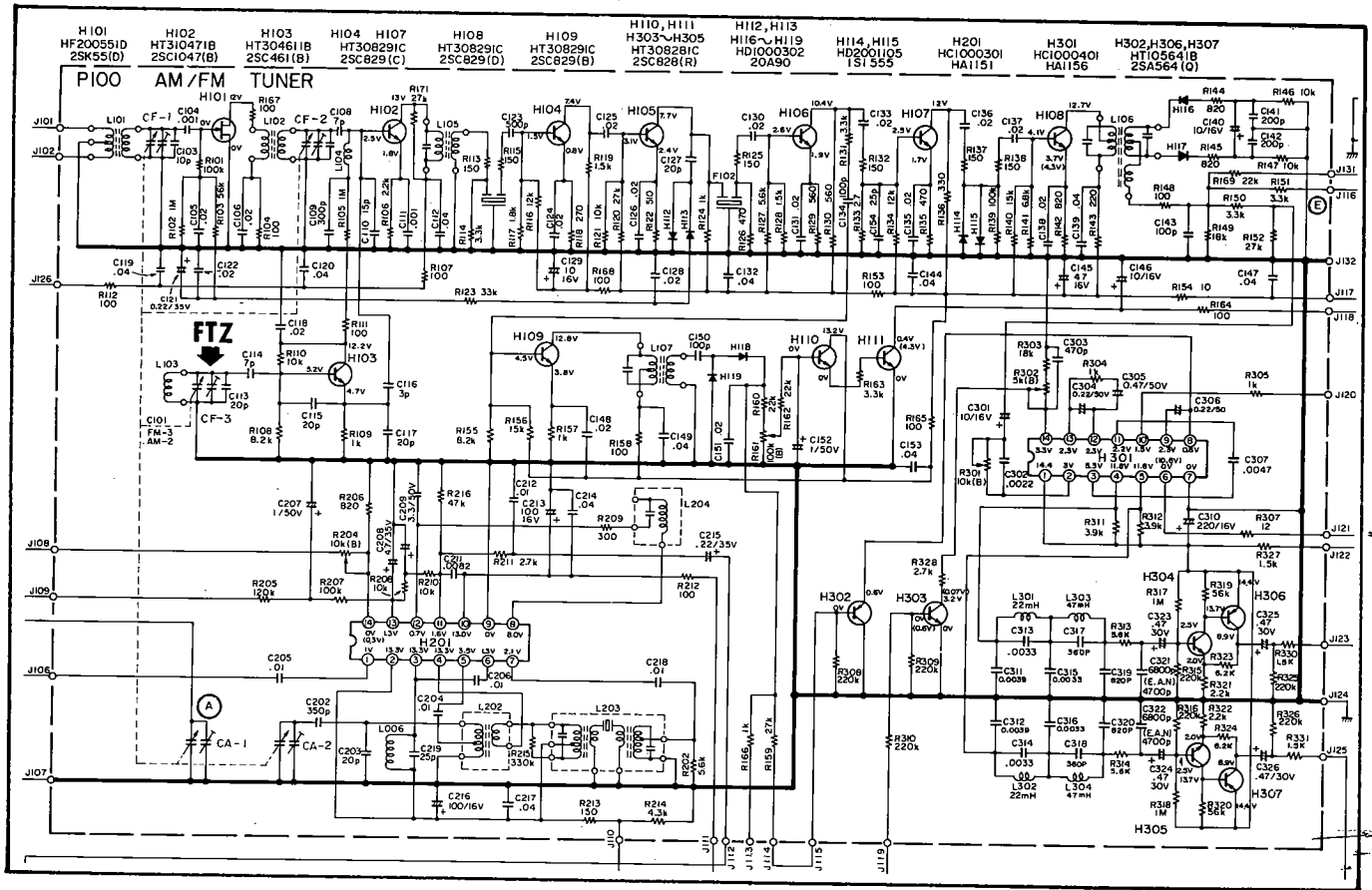


Figure 8. FM/AM Tuner Assembly (P100) Schematic Diagram

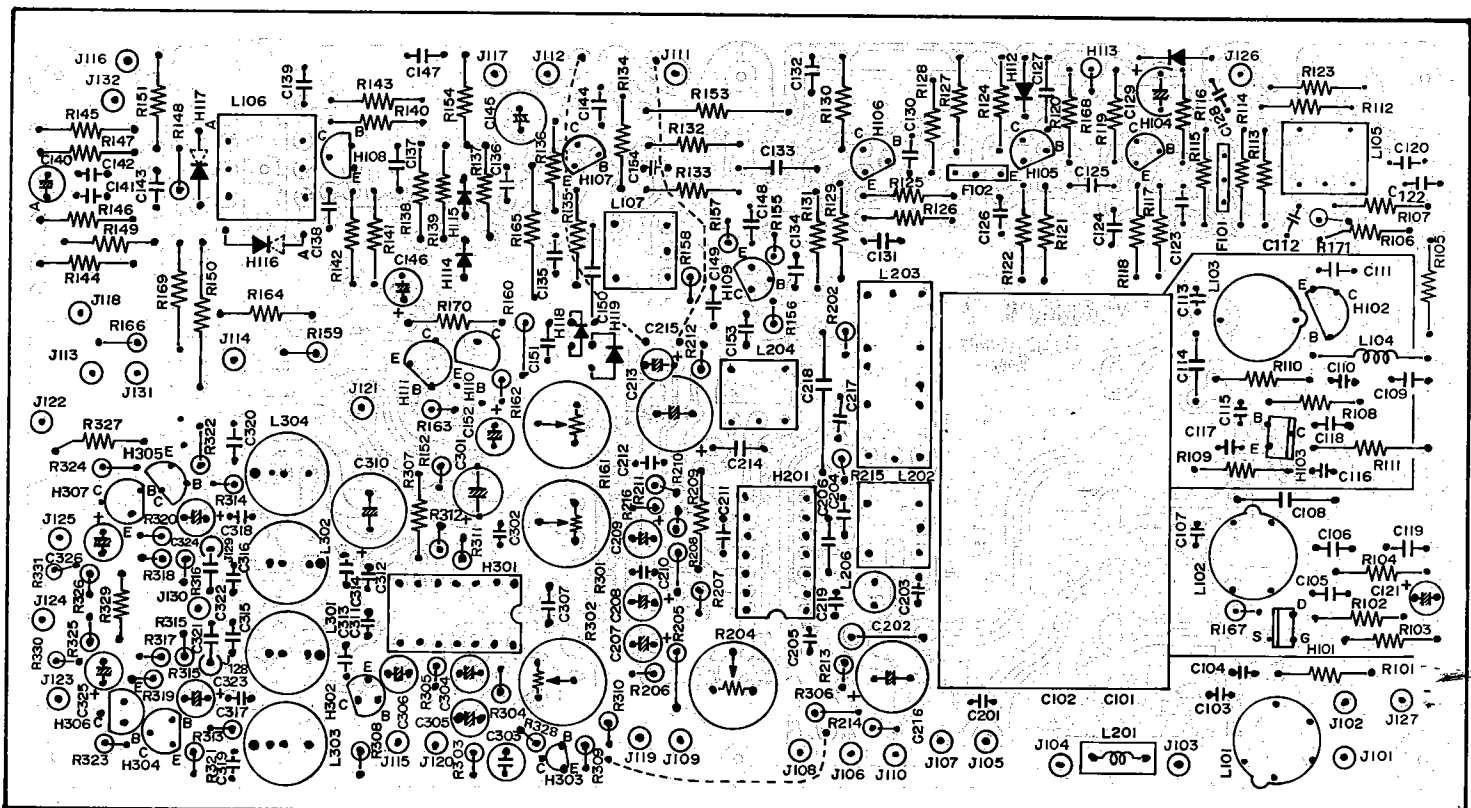


Figure 9. FM/AM Tuner Assembly (P100) Component Locations

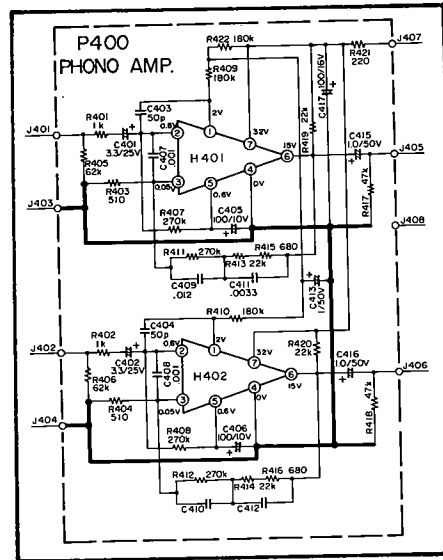


Figure 10. EQ Amplifier (P400) Schematic Diagram

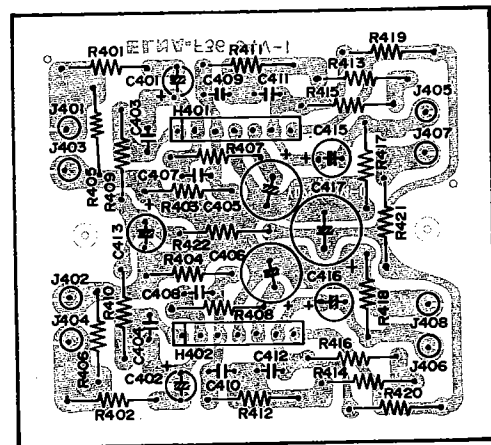


Figure 11. EQ Amplifier (P400) Component Locations

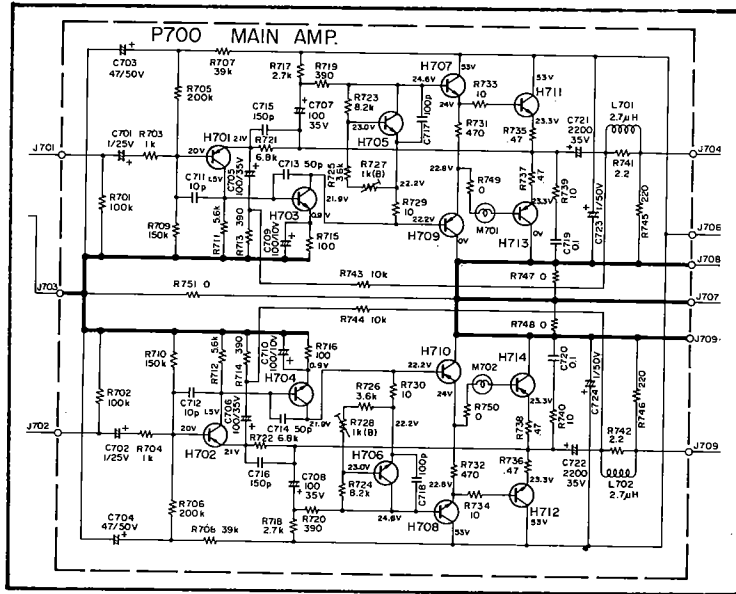


Figure 12. Main Amplifier (P700) Schematic Diagram

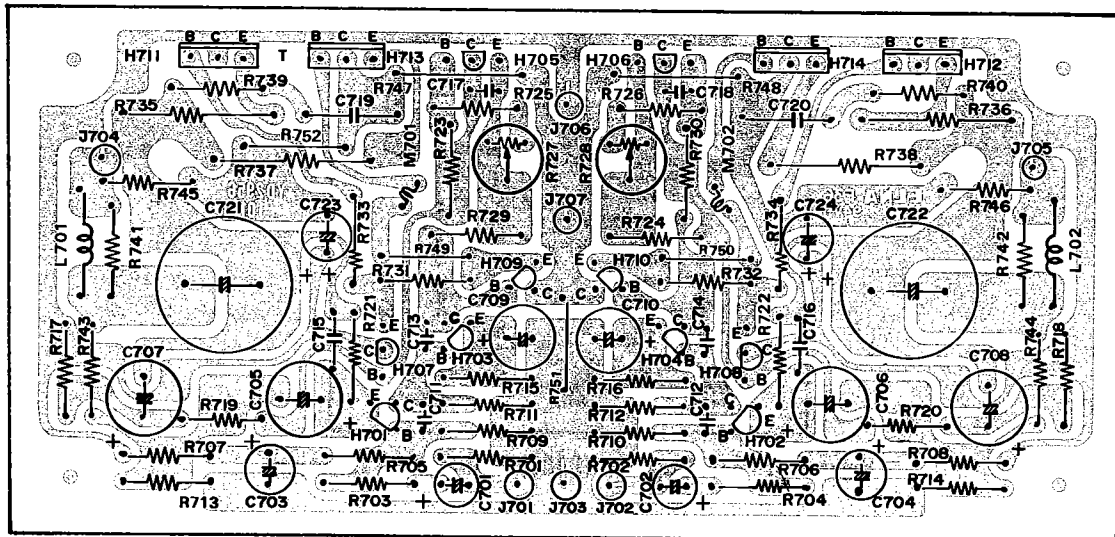


Figure 13. Main Amplifier (P700) Component Locations

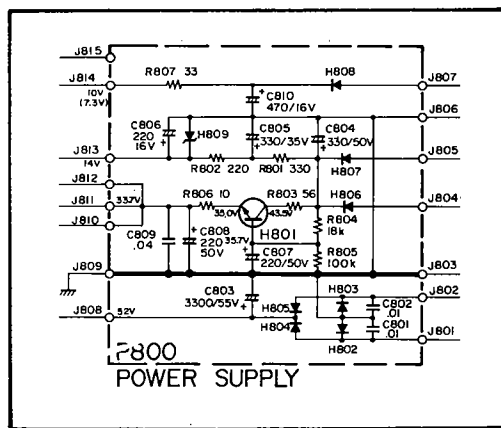


Figure 14. Power Supply Assembly (P800) Schematic Diagram

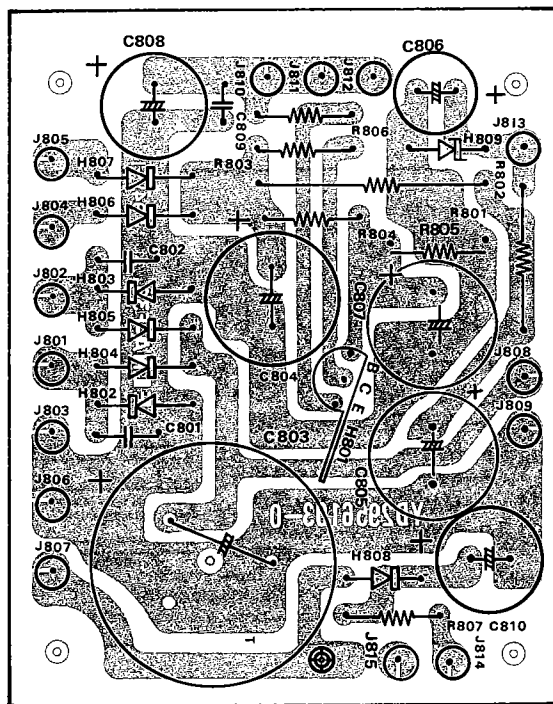


Figure 15. Power Supply Assembly (P800) Component Locations

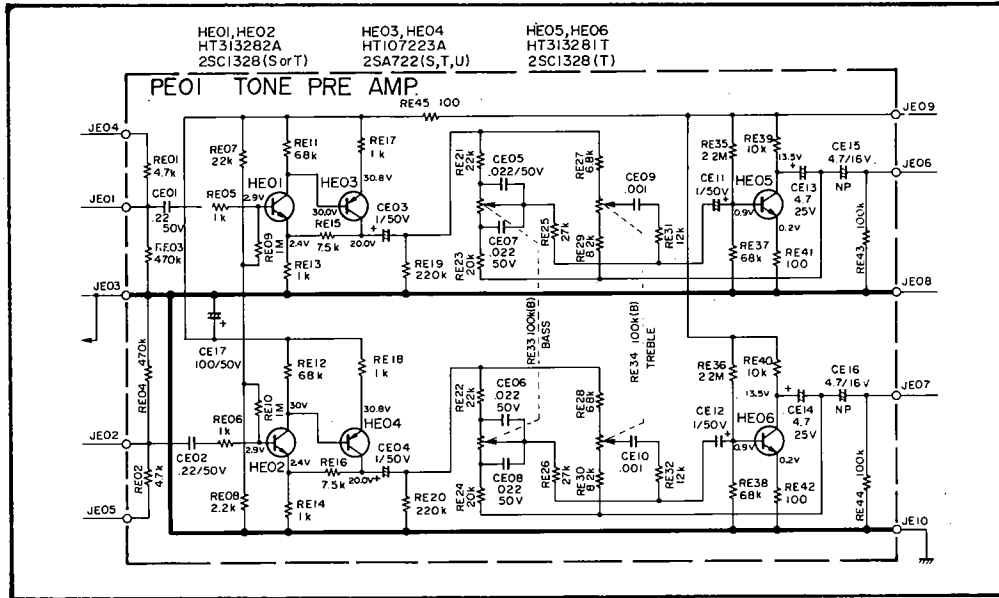


Figure 16. Tone Amplifier (PE01) Schematic Diagram

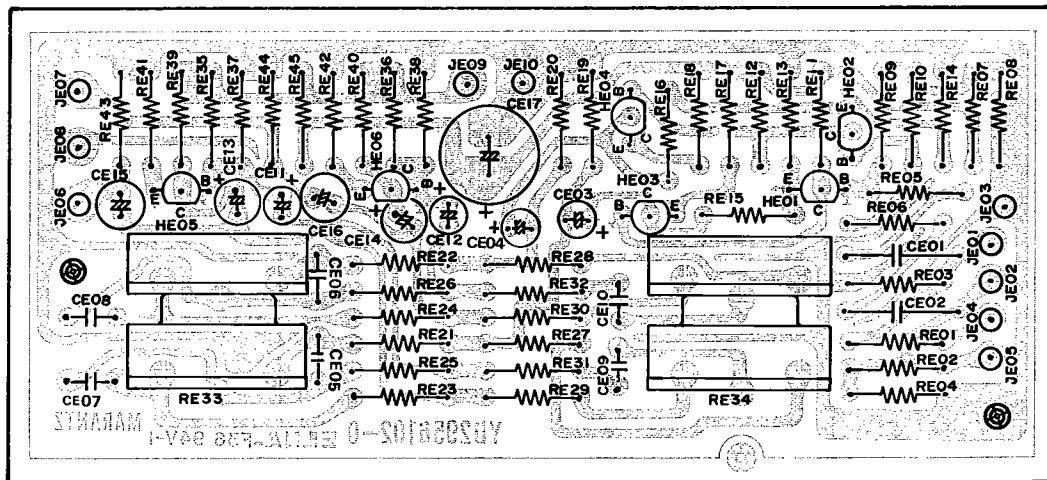


Figure 17. Tone Amplifier (PE01) Component Locations

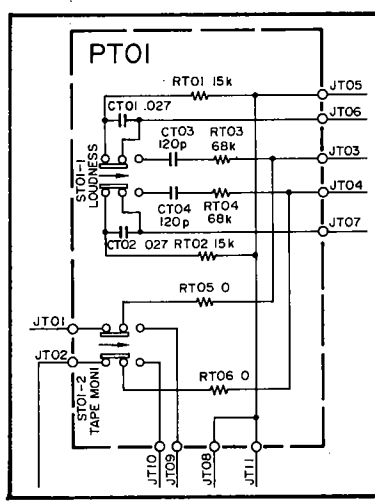


Figure 20. Loudness and Monitor Assembly (PT01) Schematic Diagram

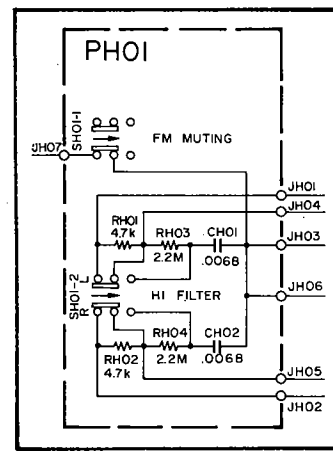


Figure 18. Muting Hi Filter Assembly (PH01) Schematic Diagram

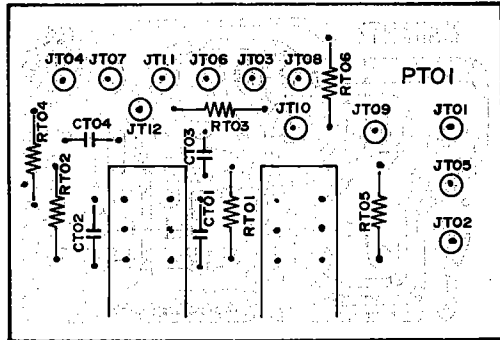


Figure 21. Loudness and Monitor Assembly (PT01) Component Locations

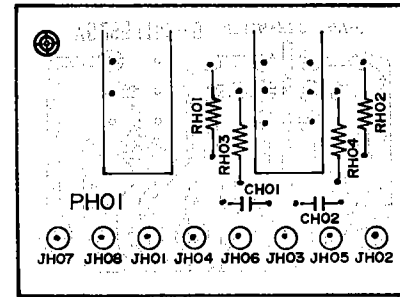


Figure 19. Muting Hi Filter Assembly (PH01) Component Locations

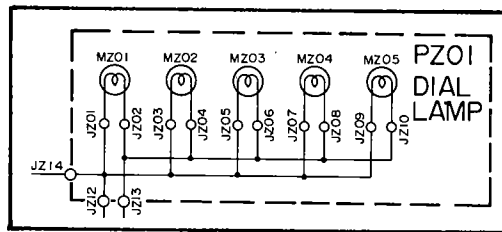


Figure 22. Dial Lamp Assembly (PZ01) Schematic Diagram

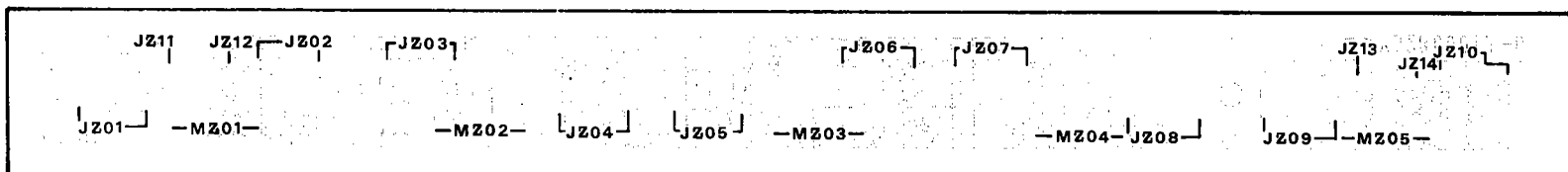


Figure 23. Dial Lamp Assembly (PZ01) Component Location

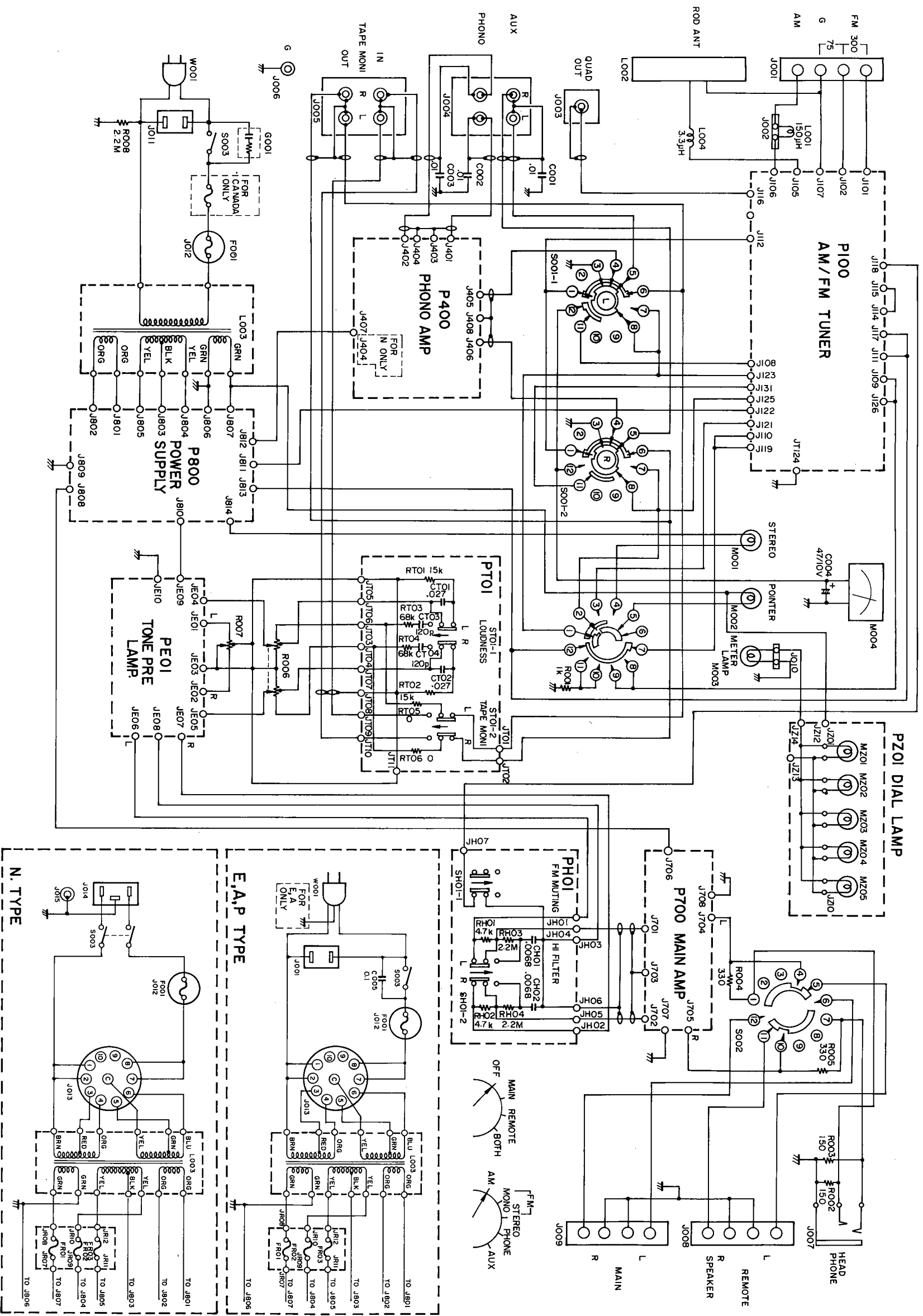


Figure 24. Wiring Diagram

U: For U.S.A.
 C: For Canada
 E: For Europe
 N: For Scandinavia

PARTS LIST

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	C	E	N				U	C	E	N		
A	1	1	1	1	295606340	Front Panel Assembly	0222	4	4	4	4	51440410S	P.H.M. Screw S, P4x10
0104	1	1	1	1	295606301	Escutcheon	0304	1	1	1	1	285015401	Knob, Slide Volume
0105	1	1	1	1	285340101	Frame	0305	4	4	4	4	288615403	Knob, Push Switch
0106	1	1	1	1	295615801	Window	0306	1	1	1	1	290415404	Knob, Power Switch
0107	4	4	4	4	288625901	Bushing	0308	5	5	5	5	281815403	Knob
0108	1	1	1	1	285425901	Bushing	0402	1				295626501	Indicator
0110	1	1	1	1	281825905	Bushing	0403		1			295626502	Indicator
0111	1	1	1	1	291510701	Sheet	0404			1		295626503	Indicator
0115	1	1	1	1	291505301	Cover	0410				1	295626509	Indicator
							0411	2	2	2	2	51100305S	B.H.M. Screw, B3x5
B	1	1	1	1	295625740	Lid Assembly, Upper	0412	1	1	1	1	257886101	Label, UL Caution
0203	1	1	1	1	295625701	Lid	0413	1	1	1	1	293286101	Label, Do not remove
0204	4	4	4	4	257711803	Spacer	0415	1	1	1	1	250626506	Indicator, Do not use as.....
0205	4	4	4	4	285605601	Buffer	0419		1			951091101	Label, LL No.
C	1	1	1	1	295625741	Lid Assembly, Lower	0420		1			282186102	Label, Fuse Caution
0213	1	1	1	1	295625702	Lid	0421	1				951091102	Label, UL Factory No.
0214	1	1	1	1	288812001	Insulator	0423	1				281886101	Label, FTC
D				1	295616040	Rear Panel Assembly	0424	1				951110101	Label, UL
0505				1	295616022	Bracket	0425		1			245786104	Label, CSA
0516				1	282125901	Bushing	0430	1	1	1	1	288686101	Label, on Power Transformer
0517				2	55060305S	T.R. Rivet	0432		1	1		951061102	Label, 2A
E	1	1	1	1	285327340	Flywheel Assembly	0433				1	288286102	Label,
1104	2	2	2	2	257706302	Escutcheon	0434				2	951260102	Label, 2.5 AT 250V
1105	1	1	1	1	257727301	Flywheel	0503	1	1			295616021	Bracket
1106	1	1	1	1	285311201	Shaft	0506				1	295616023	Bracket
1110	1	1	1	1	53110603E	Hexagon Nut	0510	6	6	6	6	51100306S	B.H.M. Screw, B3x6
1112	1	1	1	1	54020601E	Flat Washer, P	0513	1	1			145525903	Bushing
F	1	1	1	1	291510340	Pointer Assembly	0518			2		54050300R	T.L. Washer, OR
1406	1	1	1	1	291510301	Pointer	0519			2		51060316A	P.H.M. Screw, P3x16
1407	1	1	1	1	281810302	Pointer	0520			2		53110303A	Hexagon Nut
1408	1	1	1	1	291510302	Pointer	0525	1	1	1	1	54050400R	T.L.Washer, OR
1409	1	1	1	1	291526703	Heatsink	0531	4	4	4	4	51100308S	B.H.M. Screw, B3x8
M002	1	1	1	1	IN1008030	Lamp	0532	4	4	4	4	53110303A	Hexagon Nut
G	1	1	1	1	281915941	Drum Assembly	0603	6	6	6	6	51100308S	B.H.M. Screw, B3x8
1908	1	1	1	1	281915901	Drum	0604	6	6	6	6	53110303A	Hexagon Nut
1910	1	1	1	1	71101569M	Spring	0607	2	2	2	2	51100308S	B.H.M. Screw, B3x8
1913	2	2	2	2	51064019A	Set Screw	0608	1	1	1	1	53110303E	Hexagon Nut
H	1	1	1	1	120200640	Hook Assembly	0610	3	3	3	3	51100306S	B.H.M. Screw, B3x6
2004	1	1	1	1	120225801	Hook	0614	1	1	1	1	145525903	Bushing
2006	1	1	1	1	72080802A	String	0615				1	145525907	Bushing
0118	4	4	4	4	52017039J	Bolt	0616				1	318827102	Holder
0122	1	1	1	1	289205502	Collar	0618				2	51100308S	B.H.M. Screw, B3x8
0207	4	4	4	4	51480406S	B.H.M. Screw F, B4x6	0621				1	54050400R	T.L. Washer, OR
0216	11	11	11	11	51100406S	B.H.M. Screw, B4x6	0622				2	51100308S	Holder
0221	4	4	4	4	293205701	Leg	0623				2	54050300R	T.L. Washer, OR
							0624				2	53110303E	Hexagon Nut
							0705	1	1	1	1	281927103	Holder
							0706	1	1	1	1	257816052	Bracket, K
							0711	2	2	2	2	51100310S	B.H.M. Screw, B3x10
							0712	2	2	2	2	54050300R	T.L. Washer, OR
							0713	2	2	2	2	53110303E	Hexagon Nut
							0716	2	2	2	2	51100310S	B.H.M. Screw, B3x10
							0718	2	2	2	2	53110303E	Hexagon Nut
							0803	1	1	1	1	291516050	Bracket, K
							0809	1	1	1	1	291516006	Bracket
							0810	2	2	2	2	51100306A	B.H.M. Screw, B3x6
							0811	1	1	1	1	289610701	Sheet

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	
	U	C	E	N				U	C	E	N			
0816	1	1	1	1	281816003	Bracket	1616	4	4	4	4	51380306P	P.H. Tapped Screw, P3x6	
0817	1	1	1	1	281816004	Bracket	1617	4	4	4	4	51100306S	B.H.M. Screw, B3x6	
0818	4	4	4	4	51100405A	B.H.M. Screw, B4x5	1619	1	1	1	1	295600501	Clamper	
0819	10	10	10	10	51570306B	P.H. Tapped Screw, P3x6	1620	2	2	2	2	287411801	Spacer	
0821	4	4	4	4	51100306A	B.H.M. Screw, B3x6	1621	2	2	2	2	51100312A	B.H.M. Screw, B3x12	
0822	2	2	2	2	51100306A	B.H.M. Screw, B3x6	1623	2	2	2	2	295616004	Bracket	
0825	1	1	1	1	291516005	Bracket	1624	4	4	4	4	51380306P	P.H. Tapped Screw, P3x6	
0827	2	2	2	2	51100306A	B.H.M. Screw, B3x6	1625	4	4	4	4	51570306B	P.H. Tapped Screw, P3x6	
0828	2	2	2	2	51060306A	B.H.M. Screw, B3x6	1627	1	1	1	1	391711801	Spacer	
							1629	2	2	2	2	295616005	Bracket	
0832	2	2	2	2	51470306A	B.H.M. Screw S, B3x6	1630	4	4	4	4	54020401A	Flat Washer, P	
0834	2	2	2	2	233612002	Insulator	1631	4	4	4	4	54040402A	Spring Washer	
0835	2	2	2	2	291612001	Insulator	1632	4	4	4	4	53110403A	Hexagon Nut	
0902	2	2	2	2	292705502	Collar	1703	6	6	6	6	51100306S	P.H. Tapped Screw, P3x6	
0908	1	1	1	1	287127401	Reflector	1704	1	1	1	1	59030810P	Washer	
0910	1	1	1	1	287127101	Holder	1707	4	4	4	4	51570306S	P.H. Tapped Screw, P3x6	
0911	2	2	2	2	51570306B	P.H. Tapped Screw, P3x6	1708	2	2	2	2	51570306S	P.H. Tapped Screw, P3x6	
0913	2	2	2	2	51480306A	B.H.M. Screw F, B3x6	1709		2	2	2	51100306S	B.H.M.Screw, B3x6	
0918	1	1	1	1	287105102	Guide	1711					1	295616007	Bracket
0920	2	2	2	2	51042608A	F.H.M. Screw, F2.6x8	1712					1	51570306B	P.H. Tapped Screw, P3x6
							1713					2	51062606B	P.H.M. Screw, P2.6x6
0925	1	1	1	1	285427401	Reflector	1716	1	1	1	1	292716005	Bracket	
0928	1	1	1	1	295626250	Pulley, K	1717	1	1	1	1	51570306B	P.H. Tapped Screw, P3x6	
1002	1	1	1	1	51480308A	B.H.M. Screw F, B3x8	1718	1	1	1	1	290825901	Bushing	
1004	1	1	1	1	285427101	Holder	1721	1	1	1	1	282110901	Shield	
1006	1	1	1	1	51570305B	P.H. Tapped Screw, P3x5	1722	1	1	1	1	389610903	Shield	
1009	2	2	2	2	51570306B	P.H. Tapped Screw, P3x6	1723	1	1	1	1	285010902	Shield	
1010	2	2	2	2	54050300R	T.L. Washer, OR	1726	1	1	1	1	288210901	Shield	
1012	1	1	1	1	288610701	Sheet	1727	2	2	2	2	295600502	Clamper	
1015	1	1	1	1	291516004	Bracket	1728	2	2	2	2	51570306B	P.H. Tapped Screw, P3x6	
1016	2	2	2	2	51570306B	P.H. Tapped Screw, P3x6								
							1731	1	1	1	1	295626251	Pulley, K	
1019	1	1	1	1	291225901	Bushing	1735	2	2	2	2	51570306B	P.H. Tapped Screw, P3x6	
1026	1	1	1	1	291626251	Pulley, K	1803	7	7	7	7	288600506	Clamper	
1030	2	2	2	2	51100305A	B.H.M. Screw, B3x5	1804	1	1	1	1	288600505	Clamper	
1203	1	1	1	1	285310650	Bearing, K	1807	1	1	1	1	291012301	Contacto	
1208	1	1	1	1	51640410D	Set Screw, C.P.	1808	1	1	1	1	51570306B	P.H. Tapped Screw, P3x6	
1209	1	1	1	1	54040402N	Spring Washer	1809	1	1	1	1	54050300R	T.L.Washer, OR	
1210	1	1	1	1	53110403E	Hexagon Nut	2008	1	1	1	1	56382540G	Eyelet	
1303	1	1	1	1	257710602	Bearing	2104	2	2	2	2	62030039W	Lug, Tuner	
1304	1	1	1	1	141511801	Spacer	2106	6	6	6	6	51570306B	P.H. Tapped Screw, P3x6	
1305	2	2	2	2	51040306A	F.H.M. Screw, F3x6	2109	1	1	1	1	62041760W	Lug, Phono	
							2110					1	62041760W	Lug
1310	1	1	1	1	285011202	Shaft	2111					1	54050400R	T.L. Washer, OR
1311	1	1	1	1	54040402N	Spring Washer	2112	1	1	1	1	62030039W	Lug	
1503	1	1	1	1	295630201	Dial	2113	1	1	1	1	62030039W	Lug	
1506	1	1	1	1	285310701	Sheet	2114	1	1	1	1	62030039W	Lug	
1508	1	1	1	1	285326901	Protector	2115	1	1	1	1	62030039W	Lug	
1509	2	2	2	2	51570305B	P.H. Tapped Screw, P3x5	2116	1	1			62030039W	Lug	
1512	1	1	1	1	291526901	Protector	2117					1	62030039W	Lug
1513	2	2	2	2	51570305B	P.H. Tapped Screw, P3x5	2205	3	3	3	3	138200503	Clamper	
1515	1	1	1	1	287105302	Cover	2206	2	2	2	2	51570306B	P.H. Tapped Screw, P3x6	
1520	1	1	1	1	281912005	Insulator								
							2209	1	1	1	1	287100501	Clamper	
1603	1	1	1	1	295610550	Chassis, K	2210	1	1	1	1	51570306B	P.H. Tapped Screw, P3x6	
1606					285416003	Bracket	2302	1				295685101	Instructions, Set	
1607					51570306B	P.H. Tapped Screw, P3x6	2303		1	1	1	295685131	Instructions, Set	
1610	1	1	1	1	288925901	Bushing	2306					1	295685103	Instructions, Leaflet
1613	1	1	1	1	389926701	Heatsink	2307		1			288685110	Instructions, Leaflet	
1614	1	1	1	1	295616002	Bracket	2313	1	1	1	1	295685605	Schematic	
1615	1	1	1	1	295616003	Bracket	2314	1	1	1	1	281885108	Instructions, Accessories	
							2316					1	291585102	Instructions, Accessories
							2317	1	1	1	1	281885104	Instructions, Packing	

U: For U.S.A.
 C: For Canada
 E: For Europe
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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	C	E	N				U	C	E	N		
2323	1				281885402	Guarantee Card	R126	1	1	1	1	RT0547114	Resistor, 470Ω ±5% ¼W
2324	1	1	1	1	257785401	Guarantee Card	R127	1	1	1	1	RT0556214	Resistor, 5.6KΩ ±5% ¼W
2325	1	1	1	1	257785102	Instructions, Red Tag	R128	1	1	1	1	RT0515214	Resistor, 1.5KΩ ±5% ¼W
2326	1				257781301	Envelope	R129	1	1	1	1	RT0556114	Resistor, 560Ω ±5% ¼W
2327			1	1	281881301	Envelope	R130	1	1	1	1	RT0556114	Resistor, 560Ω ±5% ¼W
2329		1			291881301	Envelope	R131	1	1	1	1	RT0533214	Resistor, 3.3KΩ ±5% ¼W
2402	1	1	1		295680101	Packing Case, Inner	R132	1	1	1	1	RT0515114	Resistor, 150Ω ±5% ¼W
2403	1	1	1		295680102	Packing Case, Outer	R133	1	1	1	1	RT0527214	Resistor, 2.7KΩ ±5% ¼W
2406				1	295680105	Packing Case, Inner	R134	1	1	1	1	RT0512314	Resistor, 12KΩ ±5% ¼W
2407				1	295680106	Packing Case, Outer	R135	1	1	1	1	RT0547114	Resistor, 470Ω ±5% ¼W
2408	1	1	1		344880301	Cushion, Upper	R136	1	1	1	1	RT0533114	Resistor, 330Ω ±5% ¼W
2409	1	1	1		344880301	Cushion, Lower	R137	1	1	1	1	RT0515114	Resistor, 150Ω ±5% ¼W
2411	1	1	1		291810715	Sheet, Upper Lid	R138	1	1	1	1	RT0515114	Resistor, 150Ω ±5% ¼W
2412	1	1	1		901453835	Polyethylene Bag, Set	R139	1	1	1	1	RT0510414	Resistor, 100KΩ ±5% ¼W
2414	1	1	1	1	901302501	Polyethylene Bag, Printed Matter	R140	1	1	1	1	RT0515314	Resistor, 15KΩ ±5% ¼W
2415	1	1	1	1	901302501	Polyethylene Bag, Accessories	R141	1	1	1	1	RT0568214	Resistor, 6.8KΩ ±5% ¼W
2416		2			951090102	Label, On Packing Case	R142	1	1	1	1	RT0582114	Resistor, 820Ω ±5% ¼W
2417	1	1	1		102980401	Sleeve	R143	1	1	1	1	RT0522114	Resistor, 220Ω ±5% ¼W
2418				1	956000004	Hang Tag	R144	1	1	1	1	RT0582114	Resistor, 820Ω ±5% ¼W
2419	1	1	1	1	273182101	Silicagel	R145	1	1	1	1	RT0582114	Resistor, 820Ω ±5% ¼W
2420	1	1	1	1	281905601	Buffer	R146	1	1	1	1	RT0510314	Resistor, 10KΩ ±5% ¼W
2421				1	344880701	Reinforcing	R147	1	1	1	1	RT0510314	Resistor, 10KΩ ±5% ¼W
2422	4				952281501	Serial No. Card	R148	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
2423		4			952301512	Serial No. Card	R149	1	1	1	1	RT0518314	Resistor, 18KΩ ±5% ¼W
2424				4	952301511	Serial No. Card	R150	1	1	1	1	RT0533214	Resistor, 3.3KΩ ±5% ¼W
2425				4	952301513	Serial No. Card	R151	1	1	1	1	RT0533214	Resistor, 3.3KΩ ±5% ¼W
2430				1	288286101	Label, on Packing Case	R152	1	1	1	1	RT0527314	Resistor, 27KΩ ±5% ¼W
2432	1	1	1	1	ZA0200007	Ext. Antenna	R153	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
						P100 TUNER BOARD	R154	1	1	1	1	RT0510014	Resistor, 10Ω ±5% ¼W
P100	1	1	1	1	YD2886019	P.W. Board	R155	1	1	1	1	RT0582214	Resistor, 8.2KΩ ±5% ¼W
	1	1			ZZ2956119	P.W. Board Assembly	R156	1	1	1	1	RT0515314	Resistor, 15KΩ ±5% ¼W
				1	ZZ2956819	P.W. Board Assembly	R157	1	1	1	1	RT0510214	Resistor, 1KΩ ±5% ¼W
P108	8	8	8	8	293311802	Spacer, R112, R164, R327, R154	R158	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
P107	1	1	1	1	344411805	Spacer, R212	R159	1	1	1	1	RT0527314	Resistor, 27KΩ ±5% ¼W
R101	1	1	1	1	RT0510414	Resistor, 100KΩ ±5% ¼W	R160	1	1	1	1	RT0522314	Resistor, 22KΩ ±5% ¼W
R102	1	1	1	1	RT0510514	Resistor, 1MΩ ±5% ¼W	R161	1	1	1	1	RA0104018	Trimming Resistor, 100KΩ(B)
R103	1	1	1	1	RT0556314	Resistor, 56KΩ ±5% ¼W	R162	1	1	1	1	RT0522314	Resistor, 22KΩ ±5% ¼W
R104	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W	R163	1	1	1	1	RT0533214	Resistor, 3.3KΩ ±5% ¼W
R105	1	1	1	1	RT0510514	Resistor, 1MΩ ±5% ¼W	R164	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
R106	1	1	1	1	RT0522214	Resistor, 2.2KΩ ±5% ¼W	R165	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
R107	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W	R166	1	1	1	1	RT0510214	Resistor, 1KΩ ±5% ¼W
R108	1	1	1	1	RT0582214	Resistor, 8.2KΩ ±5% ¼W	R167	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
R109	1	1	1	1	RT0510214	Resistor, 1KΩ ±5% ¼W	R168	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
R110	1	1	1	1	RT0510314	Resistor, 10KΩ ±5% ¼W	R169	1	1	1	1	RT0522314	Resistor, 22KΩ ±5% ¼W
R111	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W	R170	1	1	1	1	RC0000012	Resistor, 0Ω
R112	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W	R171	1	1	1	1	RT0527314	Resistor, 27KΩ ±5% ¼W
R113	1	1	1	1	RT0515114	Resistor, 150Ω ±5% ¼W	R202	1	1	1	1	RT0556214	Resistor, 5.6KΩ ±5% ¼W
R114	1	1	1	1	RT0533214	Resistor, 3.3KΩ ±5% ¼W	R204	1	1	1	1	RA0103025	Trimming Resistor, 10KΩ(B)
R115	1	1	1	1	RT0515114	Resistor, 150Ω ±5% ¼W	R205	1	1	1	1	RT0512414	Resistor, 120KΩ ±5% ¼W
R116	1	1	1	1	RT0512314	Resistor, 12KΩ ±5% ¼W	R206	1	1	1	1	RT0582114	Resistor, 820Ω ±5% ¼W
R117	1	1	1	1	RT0518214	Resistor, 1.8KΩ ±5% ¼W	R207	1	1	1	1	RT0510414	Resistor, 100KΩ ±5% ¼W
R118	1	1	1	1	RT0527114	Resistor, 270Ω ±5% ¼W	R208	1	1	1	1	RT0510314	Resistor, 10KΩ ±5% ¼W
R119	1	1	1	1	RT0515214	Resistor, 1.5KΩ ±5% ¼W	R209	1	1	1	1	RT0530114	Resistor, 300Ω ±5% ¼W
R120	1	1	1	1	RT0527314	Resistor, 27KΩ ±5% ¼W	R210	1	1	1	1	RT0510314	Resistor, 10KΩ ±5% ¼W
R121	1	1	1	1	RT0510314	Resistor, 10KΩ ±5% ¼W	R211	1	1	1	1	RT0527214	Resistor, 2.7KΩ ±5% ¼W
R122	1	1	1	1	RT0551114	Resistor, 510Ω ±5% ¼W	R212	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
R123	1	1	1	1	RT0533314	Resistor, 33KΩ ±5% ¼W	R213	1	1	1	1	RT0515114	Resistor, 150Ω ±5% ¼W
R124	1	1	1	1	RT0510214	Resistor, 1KΩ ±5% ¼W	R214	1	1	1	1	RT0543214	Resistor, 4.3KΩ ±5% ¼W
R125	1	1	1	1	RT0515114	Resistor, 150Ω ±5% ¼W	R215	1	1	1	1	RT0533414	Resistor, 330KΩ ±5% ¼W
							R216	1	1	1	1	RT0547314	Resistor, 47KΩ ±5% ¼W

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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	C	E	N				U	C	E	N		
R330	1	1	1	1	RT0568114	Resistor, 680Ω ±5% ¼W	C130	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R331	1	1	1	1	RT0568114	Resistor, 680Ω ±5% ¼W	C131	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R301	1	1	1	1	RA0103025	Trimming Resistor, 10KΩ (B)	C132	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%
R302	1	1	1	1	RA0502020	Trimming Resistor, 5KΩ (B)	C133	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R303	1	1	1	1	RT0518314	Resistor, 18KΩ ±5% ¼W	C134	1	1	1	1	DD1610101	Ceramic Cap., 100pF ±10%
R304	1	1	1	1	RT0510214	Resistor, 1KΩ ±5% ¼W	C135	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R305	1	1	1	1	RT0510214	Resistor, 1KΩ ±5% ¼W	C136	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R307	1	1	1	1	RT0512014	Resistor, 12Ω ±5% ¼W	C137	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R308	1	1	1	1	RT0522414	Resistor, 220KΩ ±5% ¼W	C138	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R309	1	1	1	1	RT0522414	Resistor, 220KΩ ±5% ¼W	C139	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%
R310	1	1	1	1	RT0522414	Resistor, 220KΩ ±5% ¼W	C140	1	1	1	1	EA1060169	Electrolytic Cap., 10μF 16V
R311	1	1	1	1	RT0539214	Resistor, 3.9KΩ ±5% ¼W	C141	1	1	1	1	DD1620101	Ceramic Cap., 200pF ±10%
R312	1	1	1	1	RT0539214	Resistor, 3.9KΩ ±5% ¼W	C142	1	1	1	1	DD1620101	Ceramic Cap., 200pF ±10%
R313	1	1	1	1	RT0556214	Resistor, 5.6KΩ ±5% ¼W	C143	1	1	1	1	DD1610101	Ceramic Cap., 100pF ±10%
R314	1	1	1	1	RT0556214	Resistor, 5.6KΩ ±5% ¼W	C144	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%
R313	1	1	1	1	RT0556214	Resistor, 5.6KΩ ±5% ¼W	C145	1	1	1	1	EA4760169	Electrolytic Cap., 47μF 16V
R314	1	1	1	1	RT0556214	Resistor, 5.6KΩ ±5% ¼W	C146	1	1	1	1	EA1060169	Electrolytic Cap., 10μF 16V
R315	1	1	1	1	RT0522414	Resistor, 220KΩ ±5% ¼W	C147	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%
R316	1	1	1	1	RT0522414	Resistor, 220KΩ ±5% ¼W	C148	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R317	1	1	1	1	RT0510514	Resistor, 1MΩ ±5% ¼W	C149	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%
R318	1	1	1	1	RT0510514	Resistor, 1MΩ ±5% ¼W	C150	1	1	1	1	DD1610101	Ceramic Cap., 100pF ±10%
R319	1	1	1	1	RT0556314	Resistor, 56KΩ ±5% ¼W	C151	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%
R320	1	1	1	1	RT0556314	Resistor, 56KΩ ±5% ¼W	C152	1	1	1	1	EA1050509	Electrolytic Cap., 1μF 50V
R321	1	1	1	1	RT0522214	Resistor, 2.2KΩ ±5% ¼W	C153	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%
R322	1	1	1	1	RT0522214	Resistor, 2.2KΩ ±5% ¼W	C154	1	1	1	1	DD1525002	Ceramic Cap., 25pF ±5%
R323	1	1	1	1	RT0575214	Resistor, 7.5KΩ ±5% ¼W	C202	1	1	1	1	DF6535101	Film Cap., 350pF ±5%
R324	1	1	1	1	RT0575214	Resistor, 7.5KΩ ±5% ¼W	C203	1	1	1	1	DD1520001	Ceramic Cap., 20pF ±5%
R325	1	1	1	1	RT0522414	Resistor, 220KΩ ±5% ¼W	C204	1	1	1	1	DF1710301	Film Cap., 0.01μF ±20%
R326	1	1	1	1	RT0522414	Resistor, 220KΩ ±5% ¼W	C205	1	1	1	1	DF1710301	Film Cap., 0.01μF ±20%
R327	1	1	1	1	RT0515214	Resistor, 1.5KΩ ±5% ¼W	C206	1	1	1	1	DF1710301	Film Cap., 0.01μF ±20%
R328	1	1	1	1	RT0527214	Resistor, 2.7KΩ ±5% ¼W	C207	1	1	1	1	EA1050509	Electrolytic Cap., 1μF 50V
R329	1	1	1	1	RC0000012	Resistor, 0 Ω	C208	1	1	1	1	EA4750359	Electrolytic Cap., 4.7μF 35V
C101	1	1	1	1	CA3250002	Variable Cap., FM-3 AM-2	C209	1	1	1	1	EA3350509	Electrolytic Cap., 3.3μF 50V
C103	1	1	1	1	DD1210001	Ceramic Cap., 10pF ±1pF	C210	1	1	1	1	DK1710201	Ceramic Cap., 0.001μF ±20%
C104	1	1	1	1	DK1710201	Ceramic Cap., 0.001μF ±20%	C211	1	1	1	1	DF1682201	Film Cap., 0.0082μF ±10%
C105	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%	C212	1	1	1	1	DF1710301	Film Cap., 0.01μF ±20%
C106	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%	C213	1	1	1	1	EA1070169	Electrolytic Cap., 100μF 16V
C107	1	1	1	1	DD1210001	Ceramic Cap., 10pF ±1pF	C214	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%
C108	1	1	1	1	DD1207003	Ceramic Cap., 7pF ±1pF	C215	1	1	1	1	EV2240356	Electrolytic Cap., 0.22μF 35V
C109	1	1	1	1	DD1530101	Ceramic Cap., 300pF ±5%	C216	1	1	1	1	EA1070169	Electrolytic Cap., 100μF 16V
C110	1	1	1	1	DD1615003	Ceramic Cap., 15pF ±10%	C217	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%
C111	1	1	1	1	DK1710201	Ceramic Cap., 0.001μF ±20%	C218	1	1	1	1	DK1710301	Ceramic Cap., 0.01μF ±20%
C112	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%	C219	1	1	1	1	DD1525002	Ceramic Cap., 25pF ±5%
C113	1	1	1	1	DD1520002	Ceramic Cap., 20pF ±5%	C301	1	1	1	1	EA1060169	Electrolytic Cap., 10μF 16V
C114	1	1	1	1	DD1207003	Ceramic Cap., 7pF ±1pF	C302	1	1	1	1	DF1622201	Film Cap., 0.0022μF ±10%
C115	1	1	1	1	DD1520001	Ceramic Cap., 20pF ±5%	C303	1	1	1	1	DF5547101	Film Cap., 470pF ±5%
C116	1	1	1	1	DD1103001	Ceramic Cap., 3pF ±0.5pF	C304	1	1	1	1	EQ2240501	Electrolytic Cap., 0.22μF 50V
C117	1	1	1	1	DD1520001	Ceramic Cap., 20pF ±5%	C305	1	1	1	1	EQ4740501	Electrolytic Cap., 0.47μF 50V
C118	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%	C306	1	1	1	1	EQ2240501	Electrolytic Cap., 0.22μF 50V
C119	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%	C307	1	1	1	1	DF1747301	Film Cap., 0.047μF ±20%
C120	1	1	1	1	DK1840302	Ceramic Cap., 0.04μF ±100%	C310	1	1	1	1	EA2270169	Electrolytic Cap., 220μF 16V
C121	1	1	1	1	EV2240356	Electrolytic Cap., 0.22μF 35V	C311	1	1	1	1	DF1639201	Film Cap., 0.0039μF ±10%
C122	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%	C312	1	1	1	1	DF1639201	Film Cap., 0.0039μF ±10%
C123	1	1	1	1	DD1650101	Ceramic Cap., 500pF ±10%	C313	1	1	1	1	DF1533201	Film Cap., 0.0033μF ±5%
C124	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%	C314	1	1	1	1	DF1533201	Film Cap., 0.0033μF ±5%
C125	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%	C315	1	1	1	1	DF1633201	Film Cap., 0.0033μF ±10%
C126	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%	C316	1	1	1	1	DF1633201	Film Cap., 0.0033μF ±10%
C127	1	1	1	1	DD1620001	Ceramic Cap., 20pF ±10%	C317	1	1	1	1	DD1536101	Ceramic Cap., 360pF ±5%
C128	1	1	1	1	DK1820302	Ceramic Cap., 0.02μF ±100%	C318	1	1	1	1	DD1536101	Ceramic Cap., 360pF ±5%
C129	1	1	1	1	EA1060169	Electrolytic Cap., 10μF 16V	C319	1	1	1	1	DF5582101	Film Cap., 820pF ±5%

U: For U.S.A.
 C: For Canada
 E: For Europe
 N: For Scandinavia

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	C	E	N		
R705	1	1	1	1	RT0520414	Resistor, 200KΩ ±5% ¼W
R706	1	1	1	1	RT0520414	Resistor, 200KΩ ±5% ¼W
R707	1	1	1	1	RT0539314	Resistor, 39KΩ ±5% ¼W
R708	1	1	1	1	RT0539314	Resistor, 39KΩ ±5% ¼W
R709	1	1	1	1	RT0515414	Resistor, 150KΩ ±5% ¼W
R710	1	1	1	1	RT0515414	Resistor, 150KΩ ±5% ¼W
R711	1	1	1	1	RT0556214	Resistor, 5.6KΩ ±5% ¼W
R712	1	1	1	1	RT0556214	Resistor, 5.6KΩ ±5% ¼W
R713	1	1	1	1	RT0539114	Resistor, 390Ω ±5% ¼W
R714	1	1	1	1	RT0539114	Resistor, 390Ω ±5% ¼W
R715	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
R716	1	1	1	1	RT0510114	Resistor, 100Ω ±5% ¼W
R717	1	1	1	1	RT0527214	Resistor, 2.7KΩ ±5% ¼W
R718	1	1	1	1	RT0527214	Resistor, 2.7KΩ ±5% ¼W
R719	1	1	1	1	RT0539114	Resistor, 390Ω ±5% ¼W
R720	1	1	1	1	RT0539114	Resistor, 390Ω ±5% ¼W
R721	1	1	1	1	RT0568214	Resistor, 6.8KΩ ±5% ¼W
R722	1	1	1	1	RT0568214	Resistor, 6.8KΩ ±5% ¼W
R723	1	1	1	1	RT0582214	Resistor, 8.2KΩ ±5% ¼W
R724	1	1	1	1	RT0582214	Resistor, 8.2KΩ ±5% ¼W
R725	1	1	1	1	RT0536214	Resistor, 3.6KΩ ±5% ¼W
R726	1	1	1	1	RT0536214	Resistor, 3.6KΩ ±5% ¼W
R727	1	1	1	1	RA0102021	Resistor, 1KΩ (B)
R728	1	1	1	1	RA0102021	Resistor, 1KΩ (B)
R729	1	1	1	1	RT0510014	Resistor, 10Ω ±5% ¼W
R730	1	1	1	1	RT0510014	Resistor, 10Ω ±5% ¼W
R731	1	1	1	1	GF0547114	Resistor, 470Ω ±5% ¼W
R732	1	1	1	1	GF0547114	Resistor, 470Ω ±5% ¼W
R733	1	1	1	1	GF0510014	Resistor, 10Ω ±5% ¼W
R734	1	1	1	1	GF0510014	Resistor, 10Ω ±5% ¼W
R735	1	1	1	1	GK0547202	Resistor, 0.47Ω ±5% 2W
R736	1	1	1	1	GK0547202	Resistor, 0.47Ω ±5% 2W
R737	1	1	1	1	GK0547202	Resistor, 0.47Ω ±5% 2W
R738	1	1	1	1	GK0547202	Resistor, 0.47Ω ±5% 2W
R739	1	1	1	1	RC1010012	Resistor, 10Ω ±10% ¼W
R740	1	1	1	1	RC1010012	Resistor, 10Ω ±10% ¼W
R741	1	1	1	1	RC1002212	Resistor, 22Ω ±10% ¼W
R742	1	1	1	1	RC1002212	Resistor, 22Ω ±10% ¼W
R743	1	1	1	1	RT0510314	Resistor, 10KΩ ±5% ¼W
R744	1	1	1	1	RT0510314	Resistor, 10KΩ ±5% ¼W
R745	1	1	1	1	RC1022112	Resistor, 220Ω ±10% ¼W
R746	1	1	1	1	RC1022112	Resistor, 220Ω ±10% ¼W
C701	1	1	1	1	EV1050256	Electrolytic Cap., 1μF 25V
C702	1	1	1	1	EV1050256	Electrolytic Cap., 1μF 25V
C703	1	1	1	1	EA4760509	Electrolytic Cap., 47μF 50V
C704	1	1	1	1	EA4760509	Electrolytic Cap., 47μF 50V
C705	1	1	1	1	EE1070355	Electrolytic Cap., 100μF 35V
C706	1	1	1	1	EE1070355	Electrolytic Cap., 100μF 35V
C707	1	1	1	1	EA1070359	Electrolytic Cap., 100μF 35V
C708	1	1	1	1	EA1070359	Electrolytic Cap., 100μF 35V
C709	1	1	1	1	EA1070109	Electrolytic Cap., 100μF 10V
C710	1	1	1	1	EA1070109	Electrolytic Cap., 100μF 10V
C711	1	1	1	1	DD1610001	Ceramic Cap., 10pF±10%
C712	1	1	1	1	DD1610001	Ceramic Cap., 10pF±10%
C713	1	1	1	1	DD1650001	Ceramic Cap., 50pF±10%
C714	1	1	1	1	DD1650001	Ceramic Cap., 50pF±10%
C715	1	1	1	1	DD1615101	Ceramic Cap., 150pF±10%

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	C	E	N		
C716	1	1	1	1	DD1615101	Ceramic Cap., 150pF ±10%
C717	1	1	1	1	DD1610101	Ceramic Cap., 100pF ±10%
C718	1	1	1	1	DD1610101	Ceramic Cap., 100pF ±10%
C719	1	1	1	1	DF1610405	Film Cap., 0.1μF ±10%
C720	1	1	1	1	DF1610405	Film Cap., 0.1μF ±10%
C721	1	1	1	1	EB2280355	Electrolytic Cap., 2200μF 35V
C722	1	1	1	1	EB2280355	Electrolytic Cap., 2200μF 35V
C723	1	1	1	1	EA1050509	Electrolytic Cap., 1μF 50V
C724	1	1	1	1	EA1050509	Electrolytic Cap., 1μF 50V
L701	1	1	1	1	LC2272001	Choke Coil, 2.7μH ±20%
L702	1	1	1	1	LC2272001	Choke Coil, 2.7μH ±20%
M701	1	1	1	1	IN1006035	Lamp, 6V
M702	1	1	1	1	IN1006035	Lamp, 6V
J701	9	9	9	9	YP1000113	Plug
J709	1	1	1	1	RC0000012	Resistor, 0Ω
R752	1	1	1	1	RC0000012	Resistor, 0Ω
R747	1	1	1	1	RC0000012	Resistor, 0Ω
R748	1	1	1	1	RC0000012	Resistor, 0Ω
R749	1	1	1	1	RC0000012	Resistor, 0Ω
R750	1	1	1	1	RC0000012	Resistor, 0Ω
R751	1	1	1	1	RC0000012	Resistor, 0Ω
H701	1	1	1	1	HT105641K	Transistor, 2SA564AC
H702	1	1	1	1	HT105641K	Transistor, 2SA564AC
H703	1	1	1	1	HT313842C	Transistor, 2SC1384 R or S
H704	1	1	1	1	HT313842C	Transistor, 2SC1384 R or S
H705	1	1	1	1	HT308281D	Transistor, 2SC828 S
H706	1	1	1	1	HT308281D	Transistor, 2SC828 S
H707	1	1	1	1	HT313842B	Transistor, 2SC1384 Q or R
H708	1	1	1	1	HT313842B	Transistor, 2SC1384 Q or R
H709	1	1	1	1	HT106842B	Transistor, 2SA684 Q or R
H710	1	1	1	1	HT106842B	Transistor, 2SA684 Q or R
H711	1	1	1	1	HT403131D	Transistor, 2SD313D or E
H712	1	1	1	1	HT403131D	Transistor, 2SD313D or E
H713	1	1	1	1	HT205071D	Transistor, 2SB507D or E
H714	1	1	1	1	HT205071D	Transistor, 2SB507D or E
P800	1	1	1	1	YD2956103	P.W. Board
	1	1	1	1	ZZ2956103	P.W. Board Assembly
P808	10	10	10	10	293311802	Spacer, R802, R807, H806,808
P809	10	10	10	10	293311801	Spacer, R801, R802~H805
R801	1	1	1	1	GJ0533103	Resistor, 330Ω ±5% 3W
R802	1	1	1	1	GJ0522102	Resistor, 220Ω ±5% 2W
R803	1	1	1	1	RC1056012	Resistor, 56Ω ±10% ½W
R804	1	1	1	1	RT0518314	Resistor, 18KΩ ±5% ¼W
R805	1	1	1	1	RT0510414	Resistor, 100KΩ ±5% ¼W
R806	1	1	1	1	RC1010012	Resistor, 10Ω ±10% ¼W
R807	1	1	1	1	GF0533012	Resistor, 33Ω ±5% ½W
C801	1	1	1	1	DK1810351	Ceramic Cap., 0.01μF ±20%
C802	1	1	1	1	DK1810351	Ceramic Cap., 0.01μF ±20%
C803	1	1	1	1	EB3380552	Electrolytic Cap., 3300μF 55V
C804	1	1	1	1	EA3370509	Electrolytic Cap., 330μF 50V
C805	1	1	1	1	EA3370359	Electrolytic Cap., 330μF 35V
C806	1	1	1	1	EA2270169	Electrolytic Cap., 220μF 16V
C807	1	1	1	1	EA2270509	Electrolytic Cap., 220μF 50V
C808	1	1	1	1	EA1070509	Electrolytic Cap., 220μF 50V
C809	1	1	1	1	DK1840301	Ceramic Cap., 0.04μF ±20%
C810	1	1	1	1	EA4770169	Electrolytic Cap., 470μF 16V
H801	1	1	1	1	HT314072B	Transistor, 2SC1407 (Q or B)

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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION	REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	C	E	N				U	C	E	N		
H802	1	1	1	1	HD2000901	Diode, U05B	CE01	1	1	1	1	DF1722405	Film Cap., 0.22 μ F,50V \pm 20%
H803	1	1	1	1	HD2000901	Diode, U05B	CE02	1	1	1	1	DF1722405	Film Cap., 0.22 μ F,50V \pm 20%
H804	1	1	1	1	HD2000901	Diode, U05B	CE03	1	1	1	1	EE1050501	Electrolytic Cap., 1 μ F,50V \pm 20%
H805	1	1	1	1	HD2000901	Diode, U05B	CE04	1	1	1	1	EE1050501	Electrolytic Cap., 1 μ F,50V \pm 20%
H806	1	1	1	1	HD2000501	Diode, W06B	CE05	1	1	1	1	DF1622305	Film Cap., 0.022 μ F,50V \pm 10%
H807	1	1	1	1	HD2000501	Diode, W06B	CE06	1	1	1	1	DF1622305	Film Cap., 0.022 μ F,50V \pm 10%
H808	1	1	1	1	HD2000501	Diode, W06B	CE07	1	1	1	1	DF1622305	Film Cap., 0.022 μ F,50V \pm 10%
H809	1	1	1	1	HD3002709	Diode, WZ140	CE08	1	1	1	1	DF1622305	Film Cap., 0.022 μ F,50V \pm 10%
J801	1	1	1	1	HD3002709	Diode, WZ140	CE09	1	1	1	1	DF1610205	Film Cap., 0.001 μ F,50V \pm 10%
J815	16	16	16	16	YP1000113	Plug	CE10	1	1	1	1	DF1610205	Film Cap., 0.001 μ F,50V \pm 10%
PE01	1	1	1	1	YD2956102	P.W. Board	CE11	1	1	1	1	EE1050501	Electrolytic Cap., 1 μ F,50V \pm 20%
	1	1	1	1	ZZ2956102	P.W. Board Assembly	CE12	1	1	1	1	EE1050501	Electrolytic Cap., 1 μ F,50V \pm 20%
PE08	2	2	2	2	293311802	Spacer, RE45	CE13	1	1	1	1	EE4750251	Electrolytic Cap.,4.7 μ F,25V \pm 20%
RE01	1	1	1	1	RT0547214	Resistor, 4.7K Ω \pm 5% $\frac{1}{4}$ W	CE14	1	1	1	1	EE4750251	Electrolytic Cap.,4.7 μ F,25V \pm 20%
RE02	1	1	1	1	RT0547214	Resistor, 4.7K Ω \pm 5% $\frac{1}{4}$ W	CE15	1	1	1	1	EQ4750161	Electrolytic Cap.,4.7 μ F,16V \pm 30%
RE03	1	1	1	1	RT0547414	Resistor, 470K Ω \pm 5% $\frac{1}{4}$ W	CE16	1	1	1	1	EQ4750161	Electrolytic Cap.,4.7 μ F,16V \pm 30%
RE04	1	1	1	1	RT0547414	Resistor, 470K Ω \pm 5% $\frac{1}{4}$ W	CE17	1	1	1	1	EA1070509	Electrolytic Cap.,100 μ F,50V \pm 20%
RE05	1	1	1	1	RT0510214	Resistor, 1K Ω \pm 5% $\frac{1}{4}$ W	HE01	1	1	1	1	HT313282A	Transistor, 2SC1328(S or T)
RE06	1	1	1	1	RT0510214	Resistor, 1K Ω \pm 5% $\frac{1}{4}$ W	HE02	1	1	1	1	HT313282A	Transistor, 2SC1328(S or T)
RE07	1	1	1	1	RT0522314	Resistor, 22K Ω \pm 5% $\frac{1}{4}$ W	HE03	1	1	1	1	HT107223A	Transistor, 2SA722(S,T,U)
RE08	1	1	1	1	RT0522214	Resistor, 2.2K Ω \pm 5% $\frac{1}{4}$ W	HE04	1	1	1	1	HT107223A	Transistor, 2SA722(S,T,U)
RE09	1	1	1	1	RN0510514	Resistor, 1M Ω \pm 5% $\frac{1}{4}$ W	HE05	1	1	1	1	HT313281T	Transistor, 2SC1328 (T)
RE10	1	1	1	1	RN0510514	Resistor, 1M Ω \pm 5% $\frac{1}{4}$ W	HE06	1	1	1	1	HT313281T	Transistor, 2SC1328 (T)
RE11	1	1	1	1	RT0568314	Resistor, 68K Ω \pm 5% $\frac{1}{4}$ W	JE01	10	10	10	10	YP1000113	Plug
RE12	1	1	1	1	RT0568314	Resistor, 68K Ω \pm 5% $\frac{1}{4}$ W	JE10	10	10	10	10	YP1000113	Plug
RE13	1	1	1	1	RT0510214	Resistor, 1K Ω \pm 5% $\frac{1}{4}$ W							
RE14	1	1	1	1	RT0510214	Resistor, 1K Ω \pm 5% $\frac{1}{4}$ W							
RE15	1	1	1	1	RT0575214	Resistor, 7.5K Ω \pm 5% $\frac{1}{4}$ W							
RE16	1	1	1	1	RT0575214	Resistor, 7.5K Ω \pm 5% $\frac{1}{4}$ W							
RE17	1	1	1	1	RT0510214	Resistor, 1K Ω \pm 5% $\frac{1}{4}$ W							
RE18	1	1	1	1	RT0510214	Resistor, 1K Ω \pm 5% $\frac{1}{4}$ W							
RE19	1	1	1	1	RT0522414	Resistor, 220K Ω \pm 5% $\frac{1}{4}$ W							
RE20	1	1	1	1	RT0522414	Resistor, 220K Ω \pm 5% $\frac{1}{4}$ W							
RE21	1	1	1	1	RT0522314	Resistor, 22K Ω \pm 5% $\frac{1}{4}$ W							
RE22	1	1	1	1	RT0522314	Resistor, 22K Ω \pm 5% $\frac{1}{4}$ W							
RE23	1	1	1	1	RT0520314	Resistor, 20K Ω \pm 5% $\frac{1}{4}$ W							
RE24	1	1	1	1	RT0520314	Resistor, 20K Ω \pm 5% $\frac{1}{4}$ W							
RE25	1	1	1	1	RT0527314	Resistor, 27K Ω \pm 5% $\frac{1}{4}$ W							
RE26	1	1	1	1	RT0527314	Resistor, 27K Ω \pm 5% $\frac{1}{4}$ W							
RE27	1	1	1	1	RT0568214	Resistor, 6.8K Ω \pm 5% $\frac{1}{4}$ W							
RE28	1	1	1	1	RT0568214	Resistor, 6.8K Ω \pm 5% $\frac{1}{4}$ W							
RE29	1	1	1	1	RT0582214	Resistor, 8.2K Ω \pm 5% $\frac{1}{4}$ W							
RE30	1	1	1	1	RT0582214	Resistor, 8.2K Ω \pm 5% $\frac{1}{4}$ W							
RE31	1	1	1	1	RT0512314	Resistor, 12K Ω \pm 5% $\frac{1}{4}$ W							
RE32	1	1	1	1	RT0512314	Resistor, 12K Ω \pm 5% $\frac{1}{4}$ W							
RE33	1	1	1	1	RM0104005	Variable Resistor, 100K(B)							
RE34	1	1	1	1	RM0104005	Variable Resistor, 100K(B)							
RE35	1	1	1	1	RT0522514	Resistor, 2.2M Ω \pm 5% $\frac{1}{4}$ W							
RE36	1	1	1	1	RT0522514	Resistor, 2.2M Ω \pm 5% $\frac{1}{4}$ W							
RE37	1	1	1	1	RT0568314	Resistor, 68K Ω \pm 5% $\frac{1}{4}$ W							
RE38	1	1	1	1	RT0568314	Resistor, 68K Ω \pm 5% $\frac{1}{4}$ W							
RE39	1	1	1	1	RT0510314	Resistor, 10K Ω \pm 5% $\frac{1}{4}$ W							
RE40	1	1	1	1	RT0510314	Resistor, 10K Ω \pm 5% $\frac{1}{4}$ W							
RE41	1	1	1	1	RT0510114	Resistor, 100 Ω \pm 5% $\frac{1}{4}$ W							
RE42	1	1	1	1	RT0510114	Resistor, 100 Ω \pm 5% $\frac{1}{4}$ W							
RE43	1	1	1	1	RT0510414	Resistor, 100K Ω \pm 5% $\frac{1}{4}$ W							
RE44	1	1	1	1	RT0510414	Resistor, 100K Ω \pm 5% $\frac{1}{4}$ W							
RE45	1	1	1	1	RT0510114	Resistor, 100 Ω \pm 5% $\frac{1}{4}$ W							
							PH01	1	1	1	1	YD2956106	P.W. Board
								1	1	1	1	ZZ2956106	P.W. Board Assembly
							RH01	1	1	1	1	RT0547214	Resistor, 4.7K Ω \pm 5% $\frac{1}{4}$ W
							RH02	1	1	1	1	RT0547214	Resistor, 4.7K Ω \pm 5% $\frac{1}{4}$ W
							RH03	1	1	1	1	RT0522514	Resistor, 2.2M Ω \pm 5% $\frac{1}{4}$ W
							RH04	1	1	1	1	RT0522514	Resistor, 2.2M Ω \pm 5% $\frac{1}{4}$ W
							CH01	1	1	1	1	DF1668205	Film Cap., 0.0068 μ F
							CH02	1	1	1	1	DF1668205	Film Cap., 0.0068 μ F
							SH01	1	1	1	1	SP0202008	Push Switch
							JH01	7	7	7	7	YP1000113	Plug
							JH07	7	7	7	7	YP1000113	Plug
							PT01	1	1	1	1	YD2956105	P.W. Board
								1	1	1	1	ZZ2956105	P.W. Board Assembly
							RT01	1	1	1	1	RT0515314	Resistor, 15K Ω \pm 5% $\frac{1}{4}$ W
							RT02	1	1	1	1	RT0515314	Resistor, 15K Ω \pm 5% $\frac{1}{4}$ W
							RT03	1	1	1	1	RT0568314	Resistor, 68K Ω \pm 5% $\frac{1}{4}$ W
							RT04	1	1	1	1	RT0568314	Resistor, 68K Ω \pm 5% $\frac{1}{4}$ W
							RT05	1	1	1	1	RC0000012	Resistor, 0 Ω
							RT06	1	1	1	1	RC0000012	Resistor, 0 Ω
							CT01	1	1	1	1	DF1627305	Film Cap., 0.027 μ F
							CT02	1	1	1	1	DF1627305	Film Cap., 0.027 μ F
							CT03	1	1	1	1	DD1612101	Ceramic Cap., 120pF
							CT04	1	1	1	1	DD1612101	Ceramic Cap., 120pF
							JT01	11	11	11	11	YP1000113	Plug
							JT11	11	11	11	11	YP1000113	Plug
							ST01	1	1	1	1	SP0202008	Push Switch

U: For U.S.A.
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REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	C	E	N		
PZ01	1	1	1	1	YD2886016	PZ01 DIAL LAMP BOARD P.W. Board
	1	1	1	1	ZZ2889116	P.W. Board Assembly
MZ01	5	5	5	5	IN1008007	Lamp
?						
MZ05	10	10	10	10	YJ0800017	Socket
JZ01						
JZ10	4	4	4	4	YP1000113	Plug
JZ11						
JZ14						
PR01 FUSE BOARD						
PR01				1	YD2975001	P.W. Board
				1	ZZ2975001	P.W. Board Assembly
JR07				6	YP1000113	Plug
?						
JR12				6	YJ0800020	Socket
JR01						
JR06				1	FS1035080	Fuse
FR01						
FR02				1	FS1010080	Fuse
FR03				1	FS1010080	Fuse
PR01 FUSE BOARD						
PR01				1	YD2960103	P.W. Board
				1	ZZ2960303	P.W. Board Assembly
JR01				6	YJ0800020	Jack
?						
JR06				6	YP1000113	Plug
JR07						
JR12				1	FS1040006	Fuse, 4A 20mm
FR01						
FR02				1	FS1010007	Fuse, 1A 20mm
FR03				1	FS1010007	Fuse, 1A 20mm
J001	1	1	1	1	YT0104015	Terminal, Ant.
J002	1	1	1	1	YL0102003	Terminal, 2P
J003	1	1	1	1	YT0201009	Terminal, Quad. Out.
J004	1	1	1	1	YT0204008	Terminal, Aux, Phono
J005	1	1	1	1	YT0204008	Terminal, Tape
J006	1	1	1	1	YT0101005	Terminal, Ground
J007	1	1	1	1	YJ0100098	Socket, Headphone
J008	1	1	1	1	YT0304006	Terminal, Speaker
J009	1	1	1	1	YT0304006	Terminal, Speaker
J010	1	1	1	1	YJ0800019	Socket, Meter Lamp
J011	1	1	1		YJ0400056	Jack, AC Outlet
J012	1	1			YJ0800012	Socket, Fuse Holder
J012				1	YJ0800022	Socket, Fuse Holder
J013				1	BY0311001	Selector, Voltage
J014				1	YP0400056	Socket, Inlet
J015				1	YT0101005	Terminal, Ground
J016				1	YL0102003	Terminal, 2P
J017				1	YJ0800009	Socket, Fuse Holder
S001	1	1	1	1	SR1005011	Rotary Switch, Selector
S002	1	1	1	1	SR0204007	Rotary Switch, Speaker

REF. DESIG.	Q'TY				PART NO.	DESCRIPTION
	U	C	E	N		
S003	1	1	1		SP0201015	Push Switch, Power
S003				1	SP0201017	Push Switch, Power
J018				1	YJ0800009	Socket, Fuse Holder
R001	1	1	1	1	GF0510212	Resistor, 1K Ω \pm 5% $\frac{1}{2}$ W
R002	1	1	1	1	GF0515112	Resistor, 150 Ω \pm 5% $\frac{1}{2}$ W
R003	1	1	1	1	GF0515112	Resistor, 150 Ω \pm 5% $\frac{1}{2}$ W
R004	1	1	1	1	GJ0533101	Resistor, 330 Ω \pm 5% 1W
R005	1	1	1	1	GJ0533101	Resistor, 330 Ω \pm 5% 1W
R006	1	1	1	1	RM0254022	Variable Resistor, Master
R007	1	1	1	1	RX0504003	Variable Resistor, Balance
R008	1	1			RC1022512	Resistor, 2.2M Ω \pm 10% $\frac{1}{2}$ W
C001	1	1	1	1	DK1710301	Ceramic Cap., 0.01 μ F \pm 20%
C002	1	1	1	1	DK1710301	Ceramic Cap., 0.01 μ F \pm 20%
C003	1	1	1	1	DK1710301	Ceramic Cap., 0.01 μ F \pm 20%
C004	1	1	1	1	EA4760109	Electrolytic Cap., 40 μ F 10V
L001	1	1	1	1	LC1154004	Choke Coil, 150 μ H
L002	1	1	1	1	LF1120043	Ant. Coil, AM
L003	1	1			TS1860302	Power Transformer
L003				1	TS1860303	Power Transformer
L004	1	1	1	1	LC1332002	Choke Coil, 3.3 μ H
G001	1	1			BF1040004	Printed Comp., 0.1 μ F +120 Ω
C005				1	DF1747351	Film Cap. 0.0047 μ \pm 20%
M001	1	1	1	1	IN1008034	Lamp, Stereo
M003	1	1	1	1	IN1008007	Lamp, Meter
M004	1	1	1	1	IM1104208	Meter, Tuning
F001	1	1			FS1020006	Fuse, 30mm UL
F001				1	FS1016002	Fuse, 20mm
F001				1	FS1016080	Fuse, SEMKO
F002				1	FS2020091	Fuse, 30mm UL
F003				1	FS1025080	Fuse, 20mm SEMKO
F004				1	FS1025080	Fuse, 20mm SEMKO
W001	1	1			YC0240022	AC Cord UL. CSA
W001				1	YC0190003	AC Cord

SPECIFICATIONS

Amplifier Section:

RATED POWER OUTPUT, MINIMUM	15 WATTS
CONTINUOUS AVERAGE POWER PER CHANNEL, BOTH CHANNELS DRIVEN	
POWER BAND	40 Hz to 20 kHz
TOTAL HARMONIC DISTORTION	0.8%
LOAD IMPEDANCE	8 OHMS
I.M. Distortion	0.8%
(I.H.F. method, 60 Hz and 7 kHz mixed 4:1 at rated power output)	
Damping Factor	40

Preamplifier Section:

Phono

Input Overload at 1 kHz	100 mV
Equivalent Input Noise	2.5 μ V
Dynamic Range	92 dB
(Dynamic Range is the ratio of input overload to equivalent input noise)	
Input Sensitivity	2.2 mV
Input Impedance	47 k Ω
Frequency Response, RIAA	\pm 1 dB
Signal-to-Noise Ratio (at rated output and 7.75 mV input)	74 dB
High Level (Aux and Tape)	
Input Sensitivity	150 mV
Input Impedance	100 k Ω
Frequency Response (includes power amp.)	20 Hz to 60 kHz \pm 1.5 dB 40 Hz to 20 kHz \pm 0.5 dB
Signal-to-Noise Ratio (ref. to rated output and 775 mV input)	85 dB
Output Levels	
Tape Out (ref. 7.75 mV at Phono inputs)	525 mV
Output Impedance	
Tape Out	3 k Ω

FM Tuner Section:

Sensitivity	
IHF 50 dB Quieting (mono)	4.0 μ V (17.3 dBf)
(stereo)	50 μ V (39.2 dBf)
Quieting Slope (Mono)	
RF Input for 30 dB Quieting	2.2 μ V (12 dBf)
5 μ V (19 dBf)	48 dB
10 μ V (25 dBf)	55 dB
50 μ V (39 dBf)	63 dB
1000 μ V (65 dBf)	68 dB
Distortion (Mono)	
at 50 dB Quieting, 1000 Hz	0.7%
at 65 dBf (1000 μ V), 1000 Hz	0.4%
Distortion (Stereo)	
at 50 dB Quieting, 1000 Hz	0.8%
at 65 dBf (1000 μ V), 1000 Hz	0.7%
Hum and Noise	
at 65 dBf (1000 μ V)	
Mono	68 dB
Stereo	55dB

Frequency Response	
30 Hz to 15 kHz	
Mono	±1.5 dB
Stereo	±2.0 dB
Capture Ratio	
at 45 dBf (100 μV)	4.0 dB
at 65 dBf (1000 μV)	3.0 dB
Alternate Channel Selectivity	50 dB
Spurious Response Rejection	80 dB
Image Response Rejection	50 dB
I.F. Rejection (Balanced)	70 dB
A.M. Suppression	45 dB
Stereo Separation	
100 Hz	35 dB
1000 Hz	38 dB
10 kHz	30 dB
Subcarrier Rejection	55 dB

AM Tuner Section:

IHF Usable Sensitivity	25 μV
Distortion (THD), 30% Modulation	0.7%
Signal-to-Noise Ratio	49 dB
Frequency Response (±3 dB)	40 Hz to 2.3 kHz
Alternate Channel Selectivity	40 dB
Image Rejection	37 dB
Spurious Response Rejection	67 dB
I.F. Rejection	40 dB

General

Power Requirements	120 V AC, 50/60 Hz
Power Consumption at rated output, both channels operating (8 ohm loads)	95 Watts
Idling Power (volume control at zero)	25 Watts
Dimensions:	
Panel Width	17-3/8 Inches
Panel Height	5-3/8 Inches
Depth	11-1/2 Inches
Weight:	
Unit alone	20.90 lbs.
Packed for shipment	26.84 lbs.

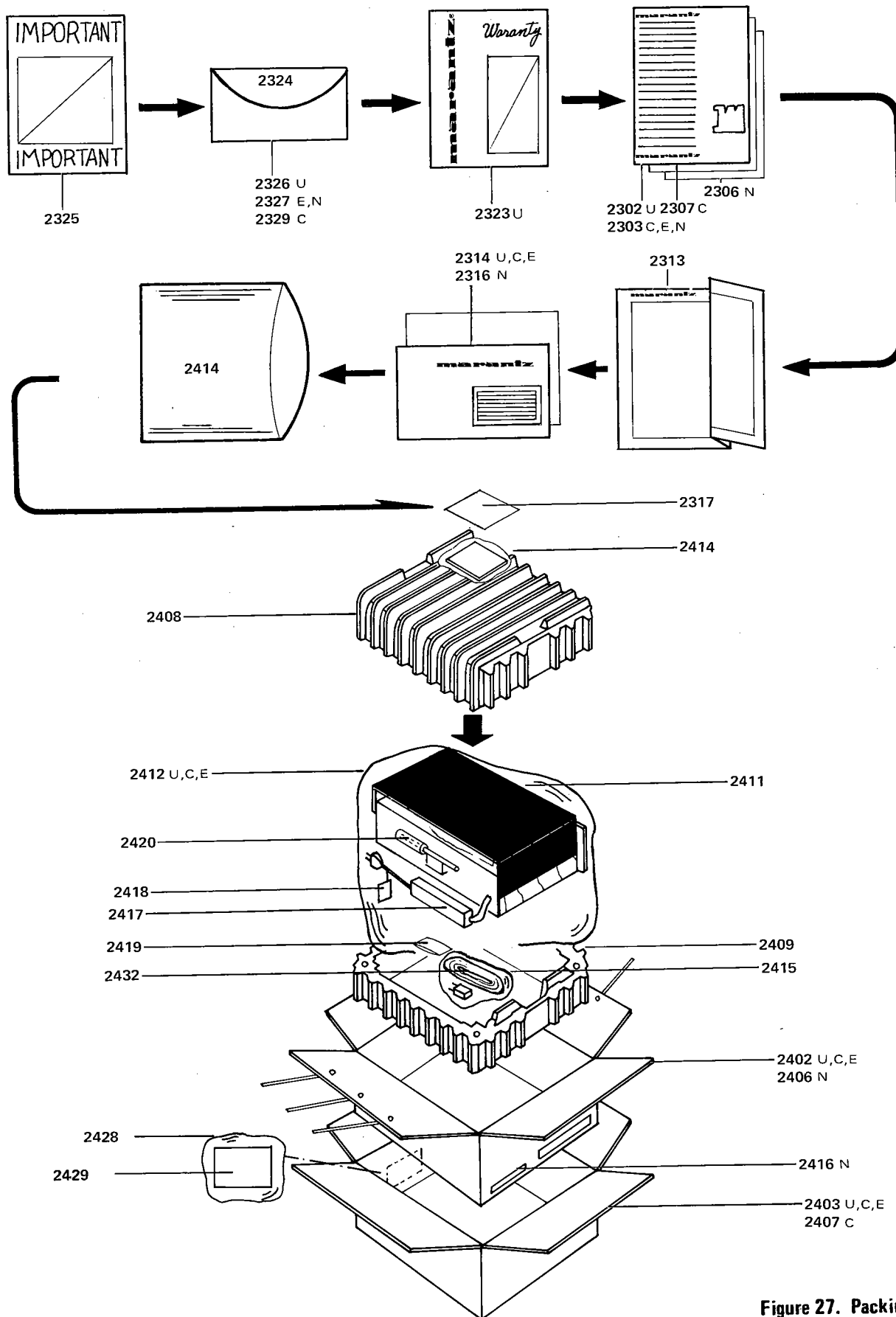


Figure 27. Packing





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