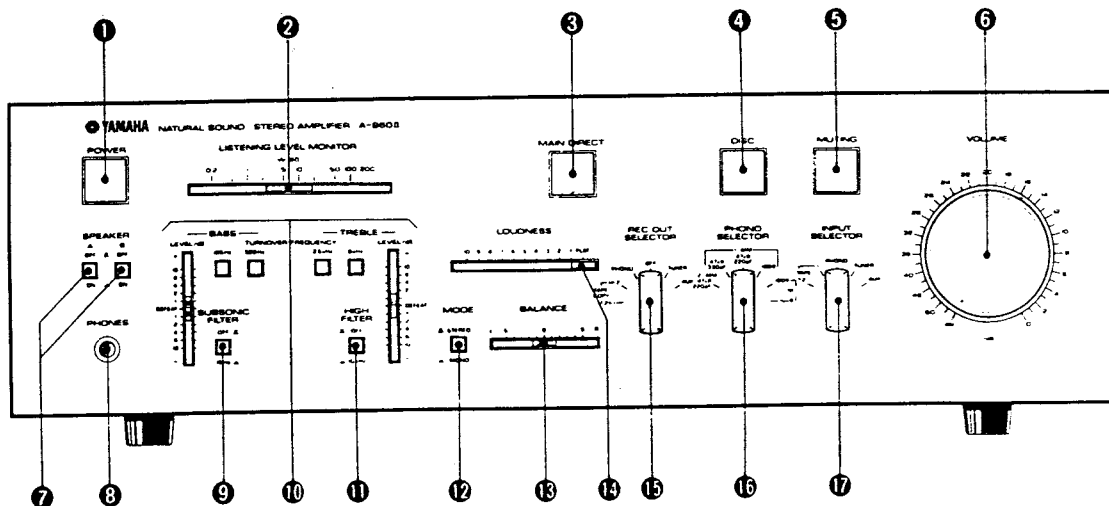


A-9660II

SERVICE MANUAL

FRONT PANEL



- 1 Power Switch (POWER)
- 2 Listening Level Monitor (LISTENING LEVEL MONITOR)
- 3 Main Direct Switch (MAIN DIRECT)
- 4 Disc Switch (DISC)
- 5 Muting Switch (MUTING)
- 6 Volume Control (VOLUME)
- 7 Speaker Switch (SPEAKER)
- 8 Headphone Jack (PHONES)
- 9 Subsonic Filter (SUBSONIC FILTER)
- 10 Bass, Treble Tone Controls (BASS, TREBLE)
- 11 High Filter Switch (HIGH FILTER)
- 12 Mode Switch (MODE)
- 13 Balance Control (BALANCE)
- 14 Loudness Control (LOUDNESS)
- 15 Rec Out Selector (REC OUT SELECTOR)
- 16 Phono Selector (PHONO SELECTOR)
- 17 Input Selector (INPUT SELECTOR)

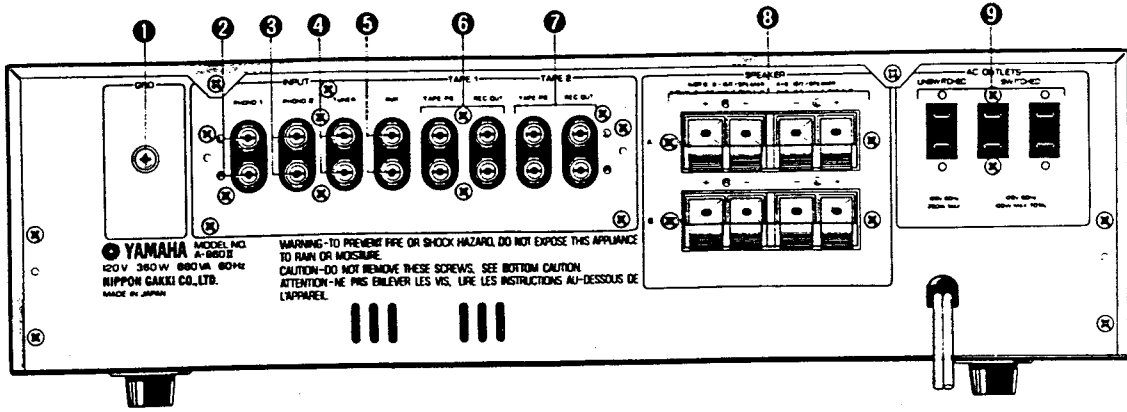
CONTENTS

Rear Panel	1
Names of the Parts	2
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Specifications	7
Printed Circuit Board Pattern-side Layout	8
Printed Circuit Board Parts-side Components Layout/Wiring	9
Complete Circuit Diagram	10

004467

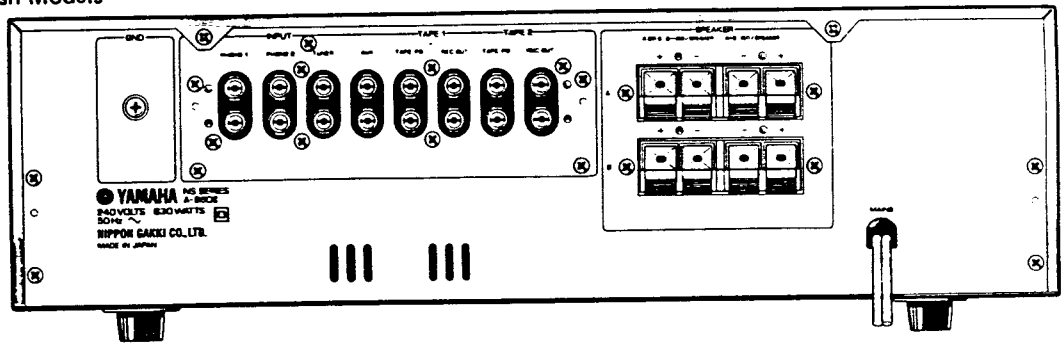
REAR PANEL

U.S.A. and Canadian Models

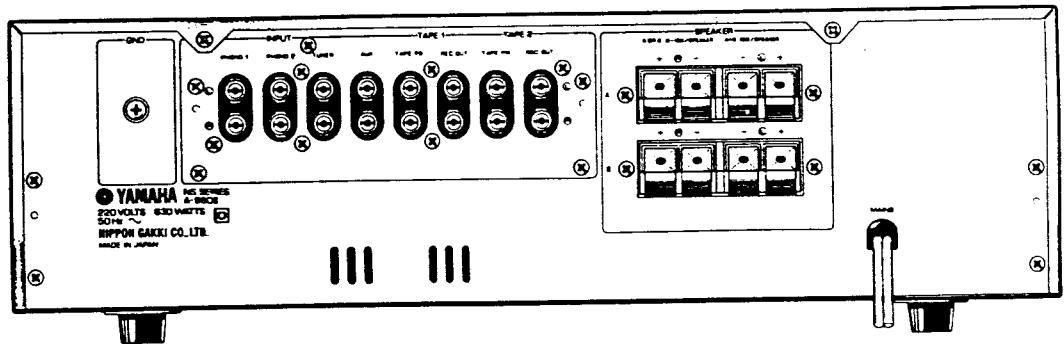


- ① Ground Connection (GND)
- ② Phono Input Jacks 1 (PHONO 1)
- ③ Phono Input Jacks 2 (PHONO 2)
- ④ Tuner Input Jacks (TUNER)
- ⑤ Aux Input Jacks (AUX)
- ⑥ Tape Play/Record Jacks 1 (TAPE 1)
- ⑦ Tape Play/Record Jacks 2 (TAPE 2)
- ⑧ Speaker Terminals A/B (SPEAKER)
- ⑨ Convenience AC Outlets (AC OUTLETS)

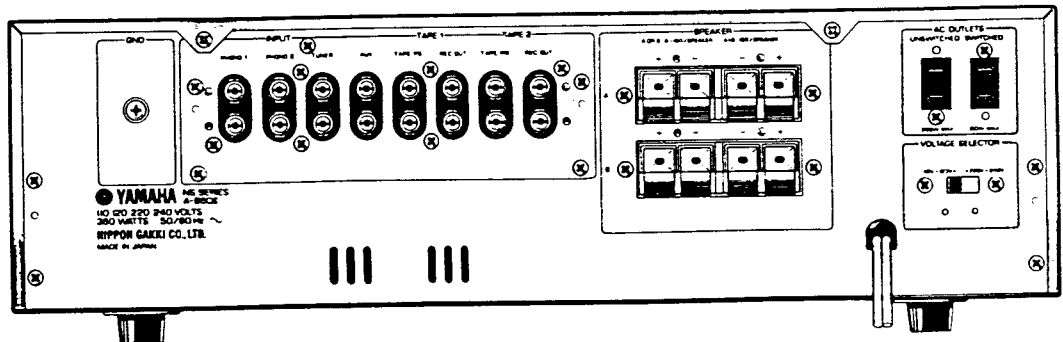
Australian and British Models



European Model

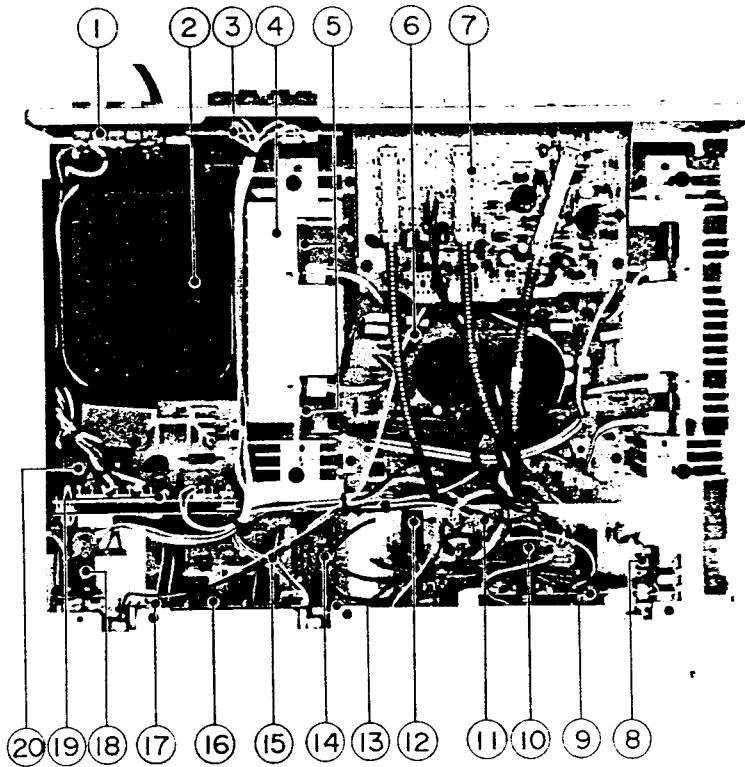


General Model



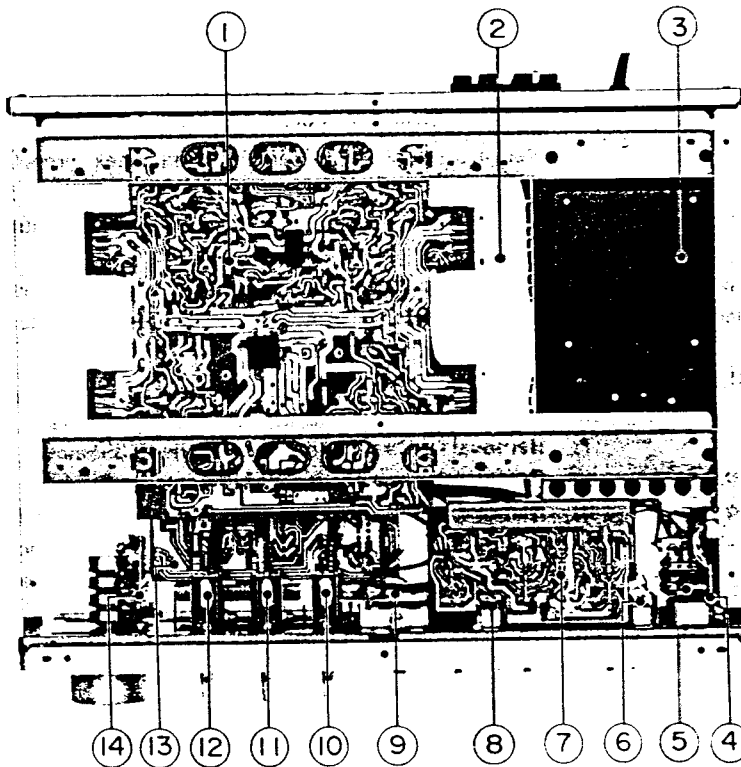
NAMES OF THE PARTS

Top View



- ① AC outlets
- ② Power transformer
- ③ Main circuit board (2)
- ④ Heat sink
- ⑤ Power transistor
- ⑥ Main circuit board (1)
- ⑦ Function circuit board
- ⑧ Tone control circuit board (3)
- ⑨ Muting switch
- ⑩ Disc switch
- ⑪ Tone control circuit board (1)
- ⑫ Main direct switch
- ⑬ Tone control circuit board (6)
- ⑭ Tone control circuit board (2)
- ⑮ Tone control circuit board (3)
- ⑯ Main circuit board (4)
- ⑰ Tone control circuit board (5)
- ⑱ Power switch
- ⑲ Primary circuit board (2)
- ⑳ Primary circuit board (1)

Bottom View



- ① Main circuit board (1)
- ② Heat sink
- ③ Power transformer
- ④ Main circuit board (3)
- ⑤ Main circuit board (6)
- ⑥ Tone control circuit board (5)
- ⑦ Tone control circuit board (2)
- ⑧ Tone control circuit board (4)
- ⑨ Tone control circuit board (7)
- ⑩ REC OUT selector
- ⑪ PHONO selector
- ⑫ INPUT selector
- ⑬ Tone control circuit board (1)
- ⑭ Tone control circuit board (9)

DISASSEMBLY INSTRUCTIONS

1. Removal of Top Cover

- a) Remove screws ① and ② shown in photo 1 (2 screws each right and left) and remove screws ⑤ and ⑥.
- b) The top cover can now be removed by sliding it backwards.

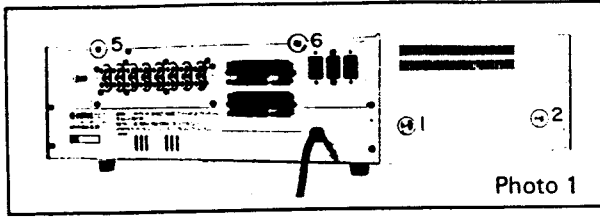


Photo 1

2. Removal of Bottom Cover

Turn the unit upside down and remove screws ① ~ ⑨ shown in photo 2. The bottom cover can now be removed.

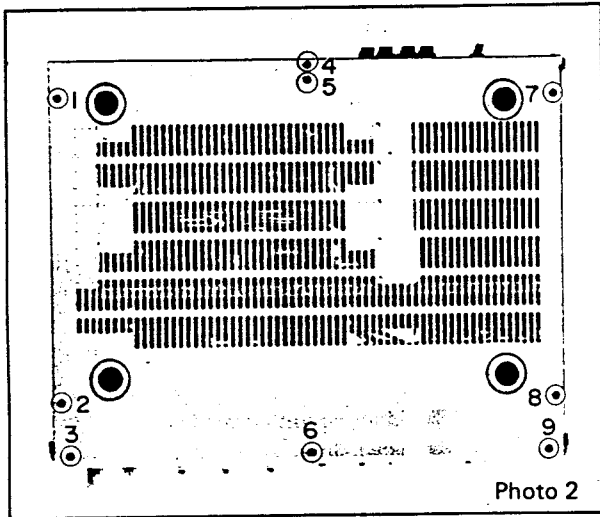


Photo 2

3. Removal of Front Panel

- a) Remove the top and bottom covers according to steps 1. and 2.
- b) Use a 1.5 φ hex wrench to loosen the set screws of the REC OUT, PHONO and INPUT selector knobs. Pull the knobs off.
- c) Carefully pull out the POWER, MAIN DIRECT, DISC and MUTING indicator lights from their holders in the rear of the switches.
- d) Remove screws ① ~ ③ shown in photo 3. Remove the front panel by pulling it forward.

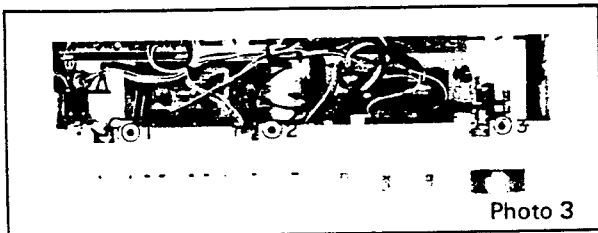


Photo 3

4. Removal of Rear Panel

- a) Remove the top and bottom covers according to steps 1. and 2.
- b) Disconnect the power cord wiring at the AC OUTLETS.
- c) Remove screws ① ~ ⑳ shown in photo 4, and remove the rear panel.

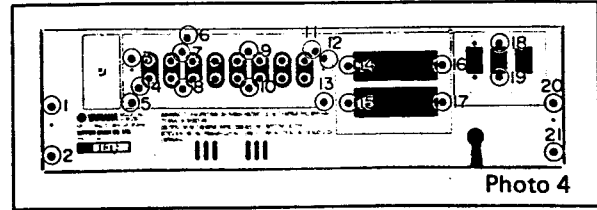


Photo 4

5. Removal of Function Circuit Board

- a) Remove the top cover according to step 1.
- b) Remove the connecting wires and connectors, and remove the flexible wires from the switches with a screwdriver or the like. (Fig. 1)
- c) Remove screws ③ ~ ⑬ shown in photo 4, and remove the circuit board.

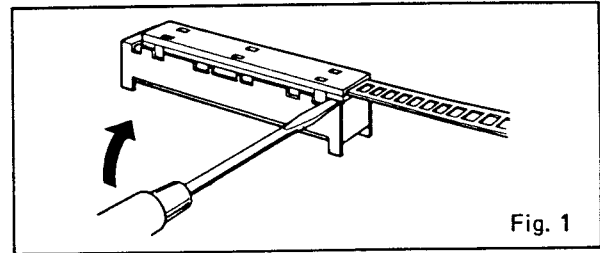


Fig. 1

6. Removal of Sub Panel

- a) Remove the top and bottom covers and the front panel according to steps 1., 2. and 3.
 - b) Remove the VOLUME knob, using a hex wrench.
 - c) Remove screws ⑤ and ⑥ shown in photo 5, and remove the power switch. Next, remove nuts ① ~ ④.
 - d) After removing screws ① ~ ④ shown in photo 5, the sub panel can be removed with the circuit boards attached to it.
- * In this condition, proceed to step 7.

7. Removal of Circuit Boards from the Sub Panel

- a) Remove the sub panel according to step 6.
- b) Remove screws ⑦ and ⑧ shown in photo 5, and the shielding plate. When the phone jack fastener ① is pulled out in the arrowed direction, the main circuit board 3 can be removed.
- c) After removing screws ⑨ and ⑩ shown in photo 5, the main circuit board 6 can be removed. When screws ⑪ and ⑫ are removed and the listening level monitor knob is pulled out, the main circuit board 4 and the tone control circuit

board 8 can be removed.

- d) After removing screws ⑬ and ⑭ shown in photo 5, the tone control circuit board 5 can be removed. After removing screws ⑮ and ⑯, the tone control circuit board 3 can be removed. After removing screws ⑰ ~ ⑳, the tone control circuit board 2 can be removed.
- e) When screws ㉑ and ㉒ shown in photo 5 are removed, the tone control circuit board 4 can be removed. After screws ㉓ and ㉔ are removed, the tone control circuit board 6 can be removed. After removing screws ㉕ and ㉖, the tone control circuit board 7 can be removed.
- f) When screws ㉗ ~ ㉚ shown in photo 5 are removed, the tone control circuit board 1 can be removed. After removing screw ㉛ and nut ⑤, the tone control circuit board 9 can be removed.

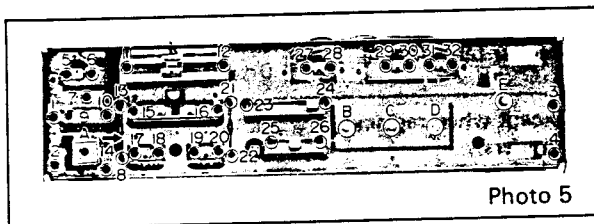


Photo 5

8. Removal of Main Circuit Boards and Heat Sink

- a) Remove the top and bottom covers according to steps 1. and 2.
 - b) Remove the function circuit board according to step 5.
 - c) Unsolder the power transistors TR335 ~ TR338.
 - d) Disconnect all connecting wires and connectors. After removing screws ① ~ ⑤ shown in photo 6, the main circuit board 1 can be removed.
 - e) After removing screws ⑥ ~ ⑨ shown in photo 6, the heat sink can be removed.
- * When inserting the main circuit board, take care to re-establish the heat drain connection of transistors TR 321 and TR 322.

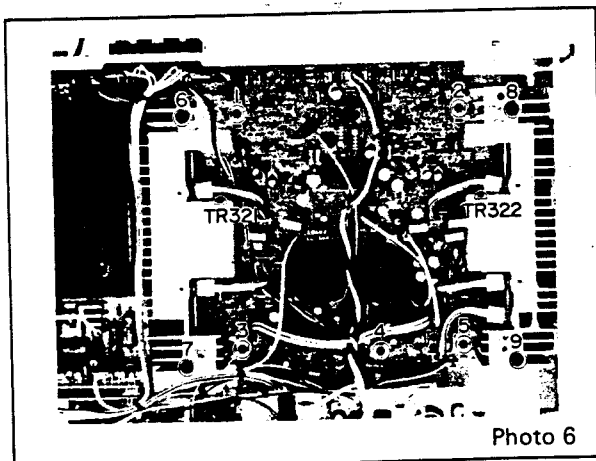


Photo 6

9. Removal of Control Circuit Boards 1 and 2 and Power Transformer

- a) Remove the top cover according to step 1.
- b) Disconnect the wiring from the control circuit boards.
- c) When screw ① shown in photo 7 is removed and the boards are pulled out the circuit board holders ① and ②, the control circuit boards 1 and 2 can be removed.
- d) Remove screws ③ ~ ⑤ shown in photo 7, and remove the power transformer cover.
- e) Remove screws ① ~ ④ shown in photo 8, and remove the power transformer.

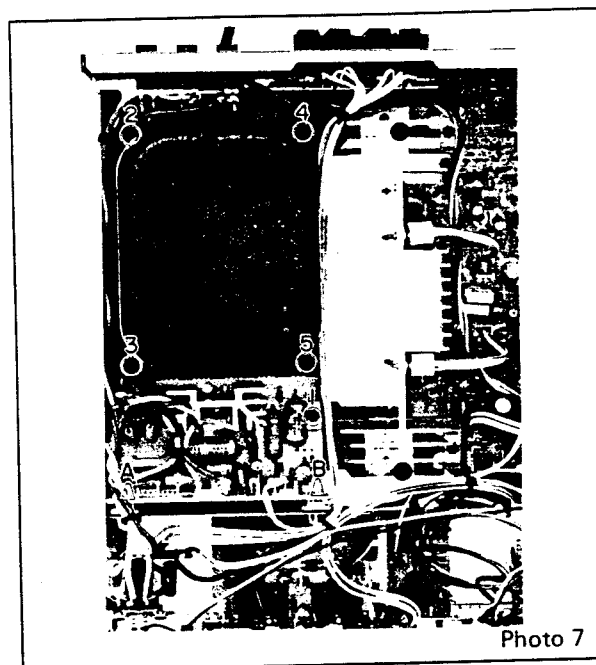


Photo 7

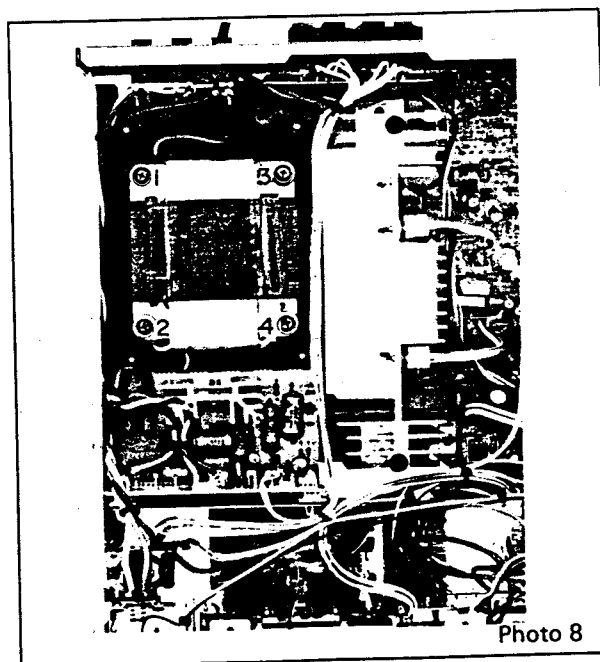


Photo 8

GENERAL ADJUSTMENTS

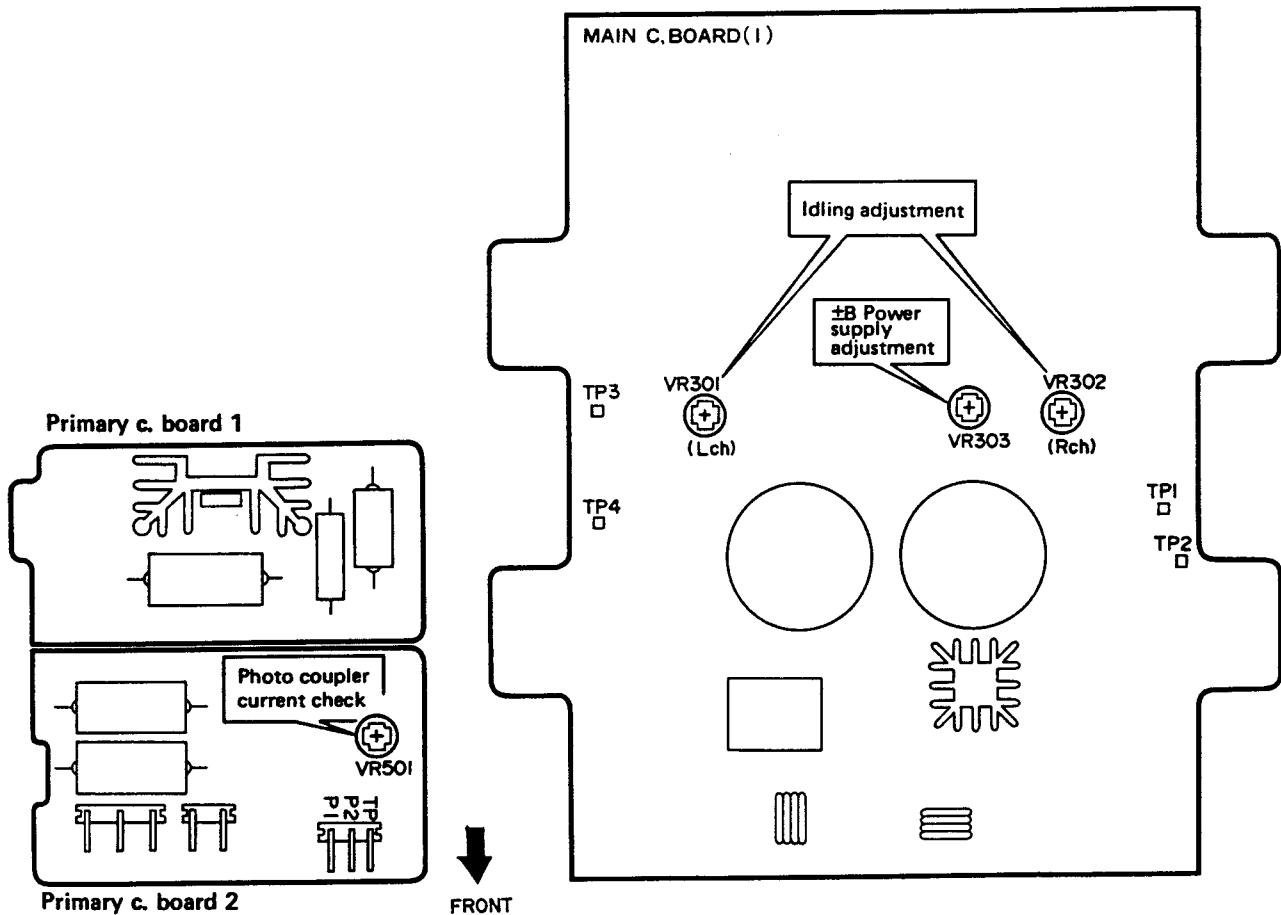
Before adjustment

- Make sure that the AC line is $\pm 10\%$
- Wait 5 minutes after power-on to stabilize amplifier operation

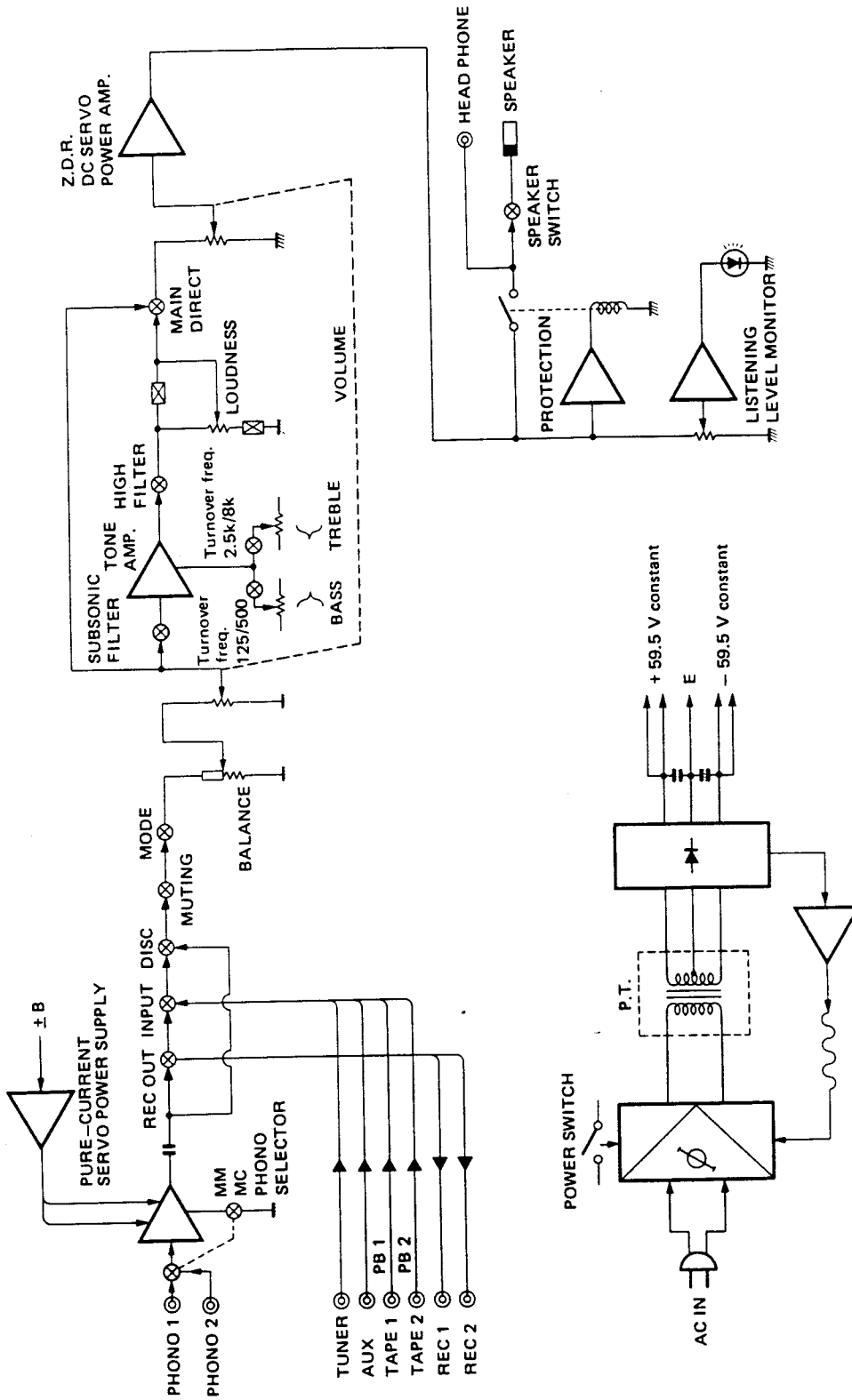
Step	Adjustment	Conditions	Location	Test Point	Value	Test Equipment
1	Main B+, B- voltage adjustment	No load	Main board 1 VR303	Between chassis ground and P1 terminal of primary board	$55.7 \pm 0.3V$ ($53.3 \pm 0.3V$ G model only)	Digital Voltmeter (tester)
2	Photo coupler current check	Minimum volume, no load	Between P1 and TP3 of the primary board (if out of range, turn VR501 and VR303 around and adjust B+, B- and P-TP3 for rated voltages)		$1.2V \pm 0.1V$	same as above
3	Idling adjustment	Minimum volume	Main board 1, VR301 (L ch), VR302 (R ch)	TP3 - TP4 (L), TP1 - TP2 (R)	$9 \pm 3 mV$	same as above
4	Output offset check	Minimum volume		Speaker terminals	L, R within $0 \pm 30 mV$	same as above

* It is not necessary to check the photo-coupler current of step 2 except when replacing the photo-coupler. Also, perform steps 1 and 2 simultaneously (with two digital voltmeters).

ADJUSTMENT LOCATION DIAGRAM



BLOCK DIAGRAM



SPECIFICATIONS

Minimum RMS Output Power

8 ohms, 20 to 20,000Hz (Main Direct ON)	
0.005% THD	105 W + 105 W
8 ohms, 1 kHz 0.002%	
THD	105 W + 105 W

4 ohms clipping power

1 kHz 0.5% THD	180 W + 180 W
----------------	---------------

Total Harmonic Distortion (20 Hz to 20 kHz)

Phono MM to Rec Out (10 V output)	0.003%
Phono MC to Rec Out (7 V output)	0.006%

Aux/Tape/Tuner to Sp

Out (50 W, Main Direct ON)	0.005%
-------------------------------	--------

IM Distortion Ratio (60 Hz : 7 kHz = 4 : 1)

Aux/Tape/Tuner to Sp Out	
8 ohms, 105 W	0.002%
8 ohms, 1 W	0.01%

Power Bandwidth (Main Direct ON)

(8 ohms, 50 W, 0.02% THD)	10 Hz to 100 kHz
------------------------------	------------------

Damping Factor

(8 ohms, 50 Hz, 1 kHz)	Better than 65
------------------------	----------------

Frequency Response (Main Direct ON, 8 ohms)

(Aux/Tape/Tuner to Sp Out)	1 Hz to 100 kHz (+0, -2 dB)
-------------------------------	--------------------------------

RIAA Deviation

Phono MM	±0.2 dB
Phono MC	±0.3 dB

Input Sensitivity/Impedance

Phono MM	2.5 mV/47 kohms 220 pF 47 kohms 330 pF 100 ohms
Phono MC	160 μV/10k, 100 ohms
Aux/Tape/Tuner	150 mV/47 kohms

Maximum Input Level (1 kHz)

Phono MM	250 mV RMS
Phono MC	15 mV RMS

Tone Control Characteristics

Bass	±10 dB at 20 Hz
Treble	±10 dB at 20 kHz
Turnover Frequencies	
Bass	500 Hz
Treble	2.5 kHz

Output Level/Impedance

Rec Out	150 mV/470 ohms
---------	-----------------

Signal-to-Noise Ratio

(IHF A Network, Input
Shorted)

Phono MM (10 mV)	98 dB
Phono MC (500 μV)	77 dB
Aux/Tape/Tuner	106 dB (Main Direct ON)

Signal-to-Noise Ratio (NEW IHF)

Phono MM	84.5 dB
Phono MC	75.5 dB
Aux/Tape/Tuner	86.5 dB (Main Direct ON)

Residual Noise

(IHF A Network)	65 μV
-----------------	-------

Input Equivalent Noise

Phono MM	-138 dBV
Phono MC	-142 dBV

Filter Characteristics

Low (Subsonic)	15 Hz, -12 dB/oct.
High	10 kHz, -12 dB/oct.

Channel Separation

(1 kHz, vol. -30 dB, Shorted)

Aux, Tuner to Sp Out	70 dB
Phono MM to Sp Out	70 dB
Phono MC to Sp Out	70 dB

Continuous Loudness Control

(Level-Related Equalization)

Max. Attenuation	20 dB at 1 kHz
------------------	----------------

Audio Muting

	-20 dB
--	--------

Gain Tracking Error

(0 to -60 dB)	2 dB
---------------	------

Headphone Output/Impedance

(0.01% THD)	0.81 V/8 ohms 7.64 V/100 ohms
-------------	----------------------------------

Power Supplies

120 V, 60 Hz (U,C)
220 V, 50 Hz (G,W)
240 V, 50 Hz (A, B)
110/120/220/240 V, 50/60 Hz (R)

Power Consumption

360 W/880 VA (C)
360 W (U,R)
630 W (A, G, B)

AC Outlets

Switched x 2	100 W max total
Unswitched x 1	200 W max

Dimensions (W x H x D)

435 x 132 x 365 mm (17-1/8" x 5-1/4" x 14-3/8")

Weight

10.6 kg (23 lbs., 6 oz.)

Specifications subject to change without notice.

U : U.S.A. Model

C : Canadian Model

R : General Model

A : Australian Model

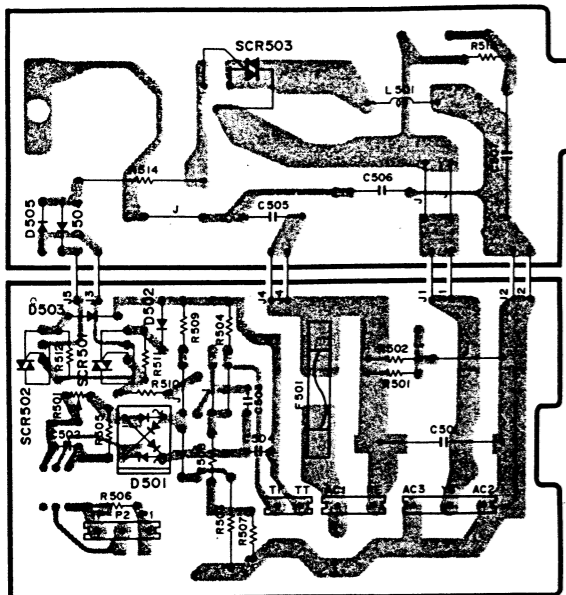
B : British Model

G : North European Model

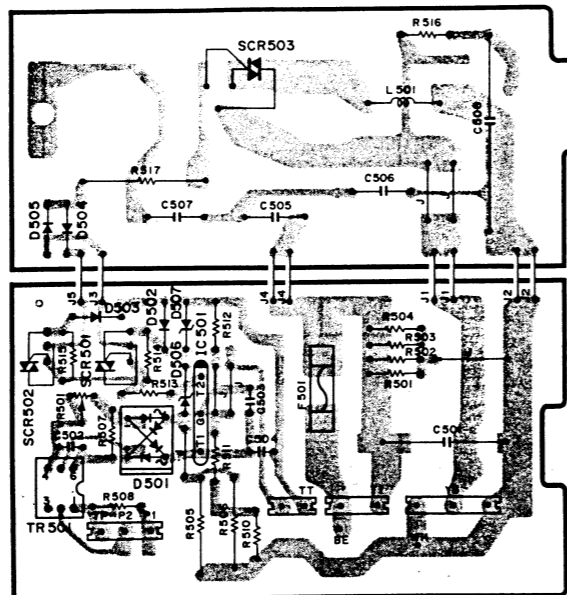
W : European Model

PRINTED CIRCUIT BOARD PATTERN-SIDE LAYOUT

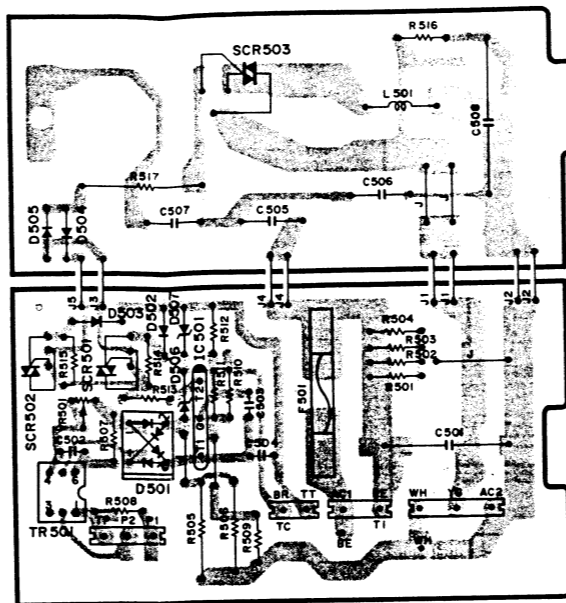
Primary C. Board
(U.S.A and Canadian Models)



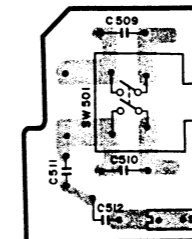
Primary C. Board
(Australian, British and European Models)



Primary C. Board
(General Model)

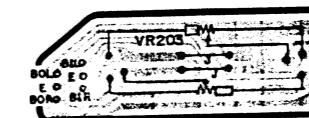


Primary C. Board (3)
(Except U.S. and Canadian Models)



Tone Control C. Board

(7)



(8)

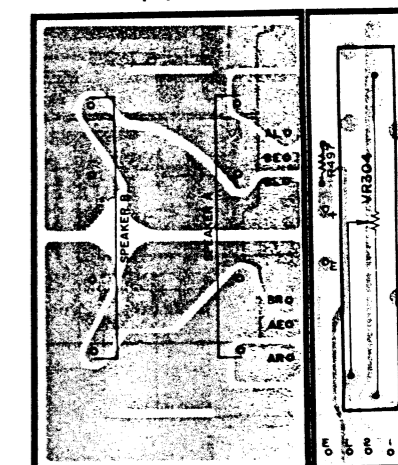


(8)



Main C. Board

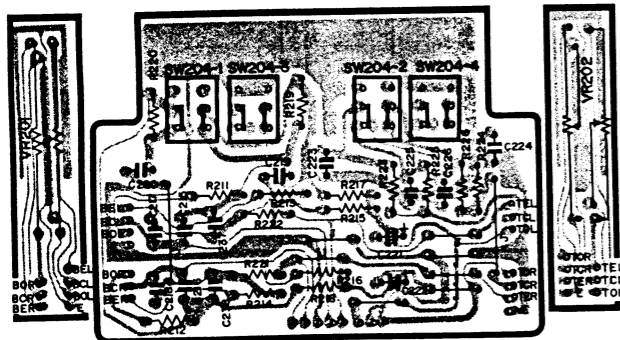
(2)



(4)

Tone Control C. Board

(5)

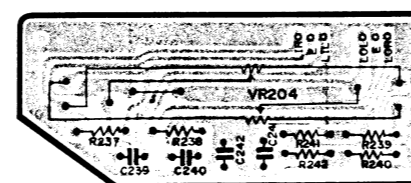


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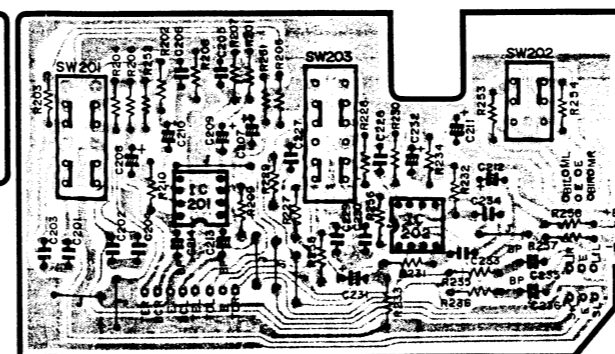
(4)

Tone Control C. Board

(6)



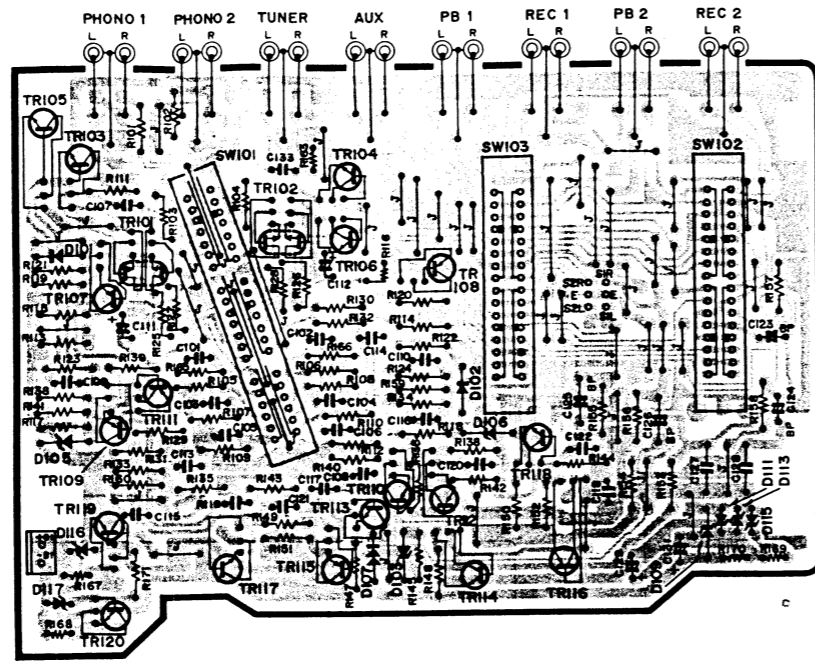
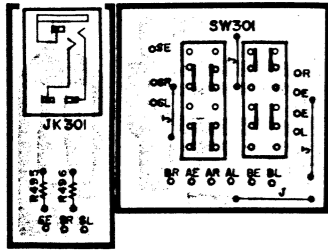
(2)



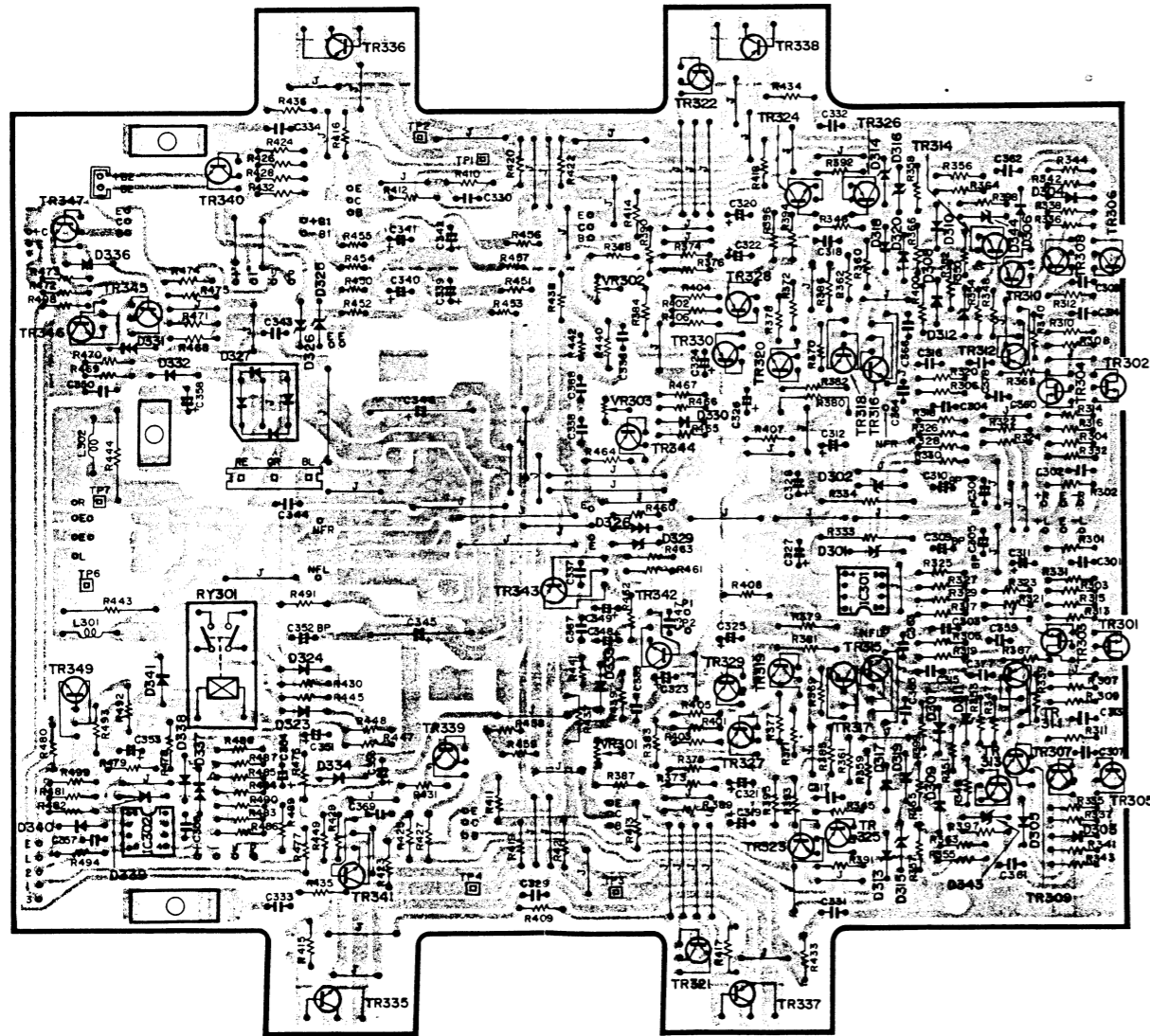
Function C. Board

Main C. Board

(3) (6)

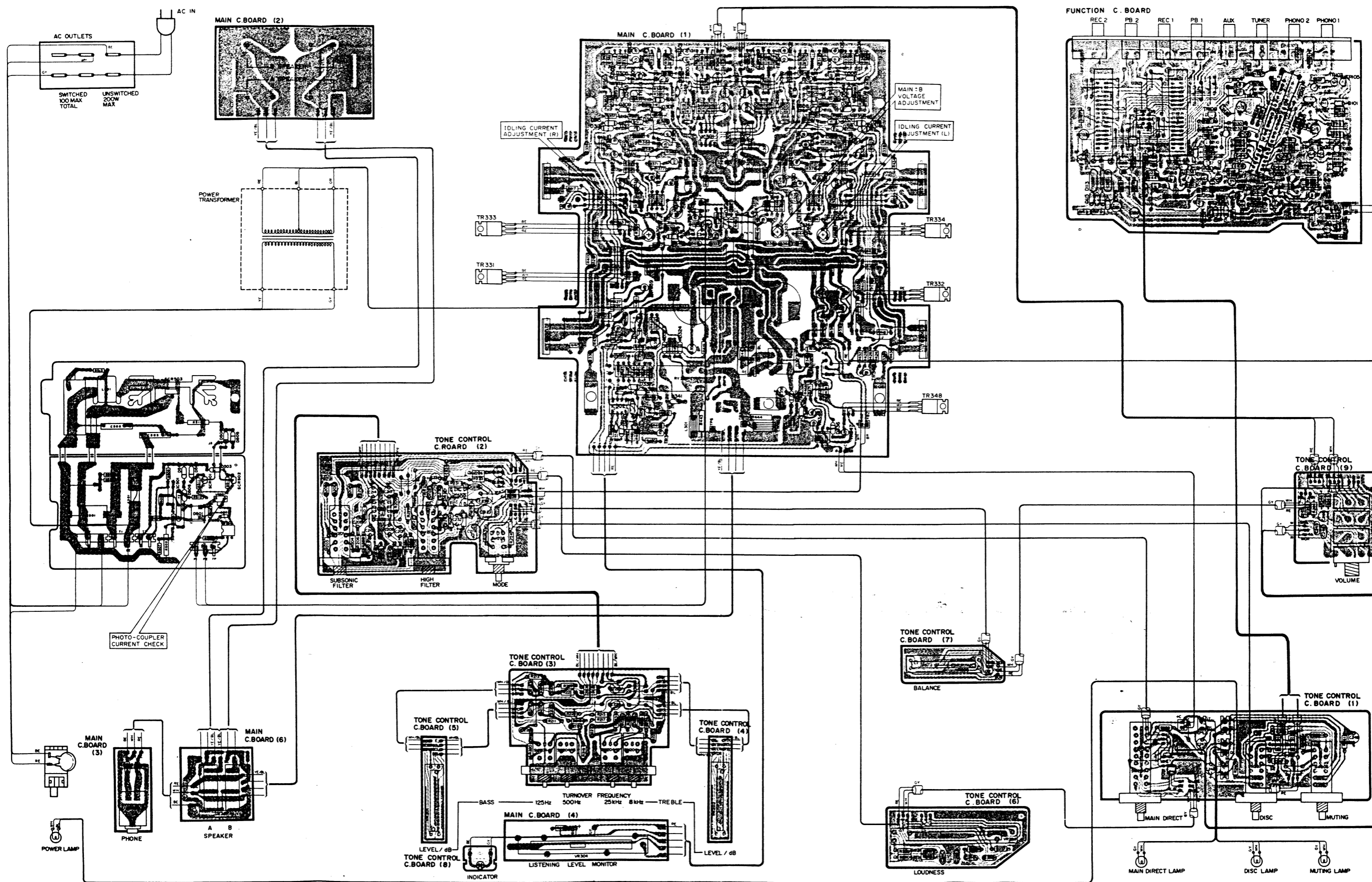


Main C. Board (1)

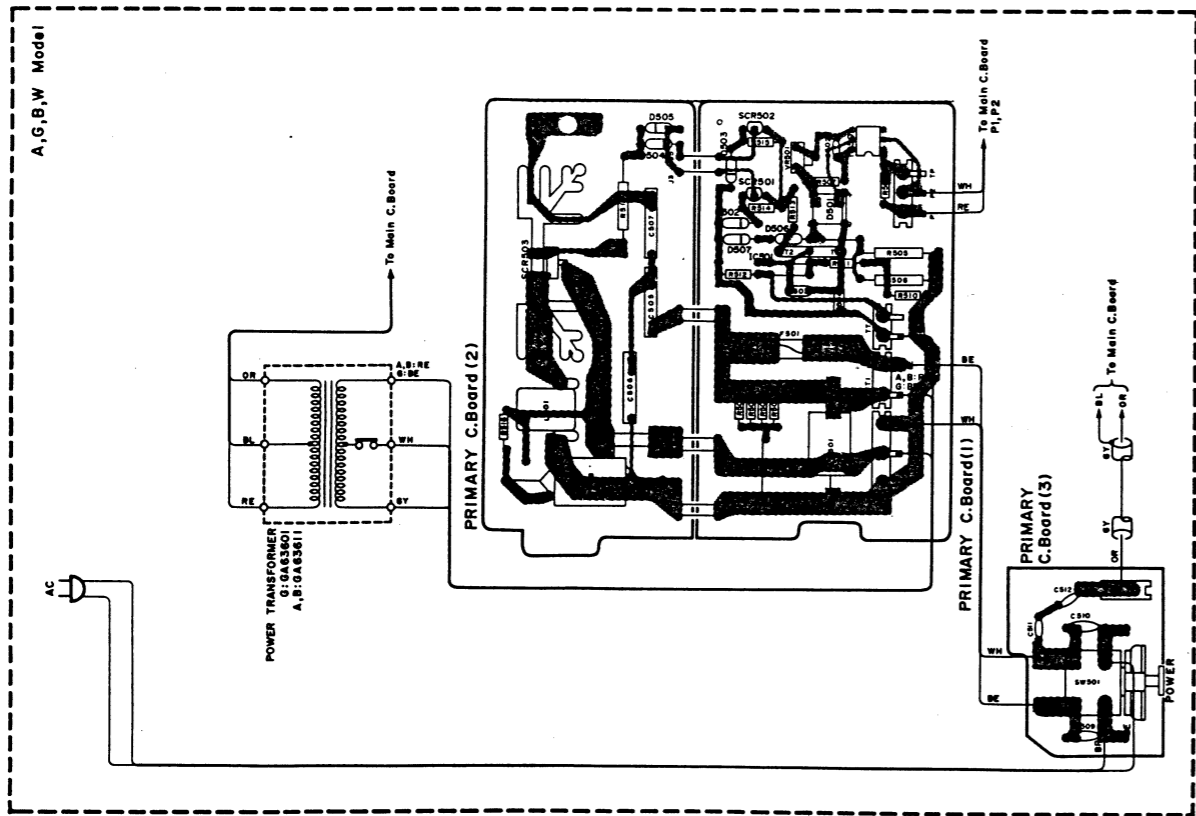
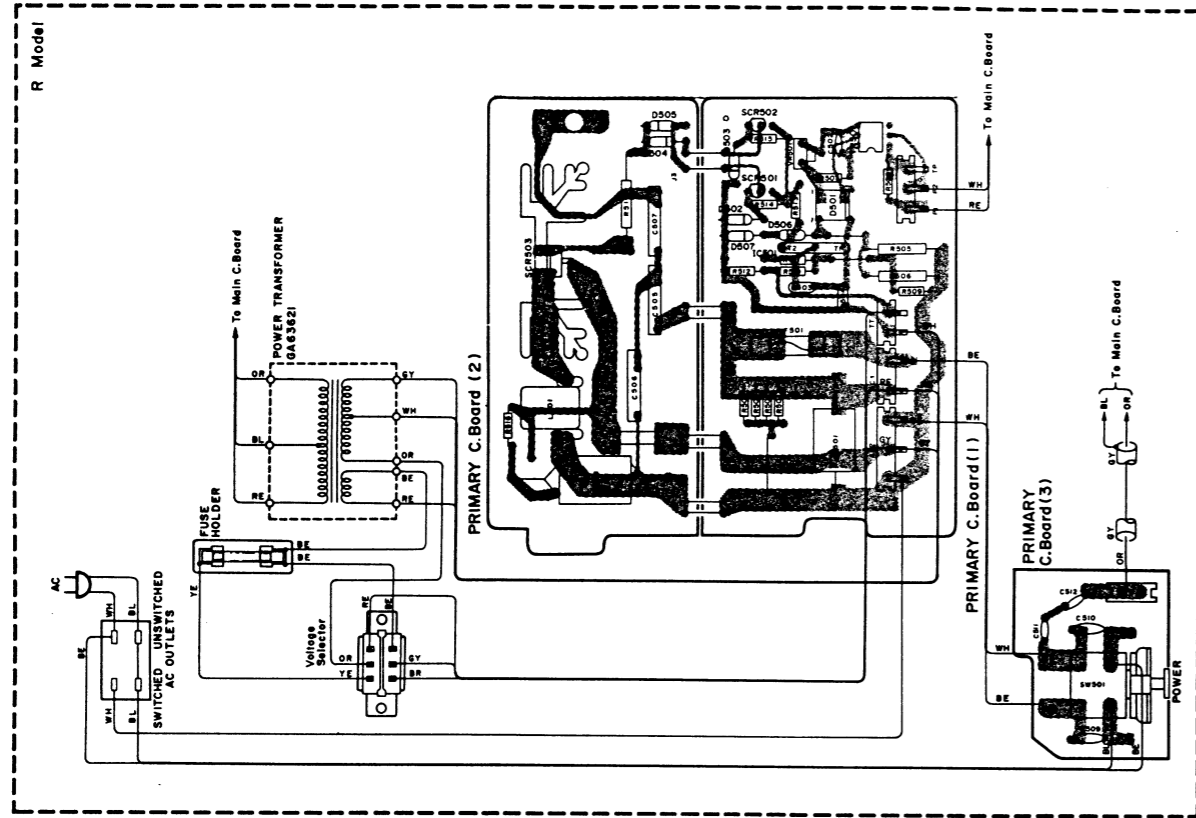


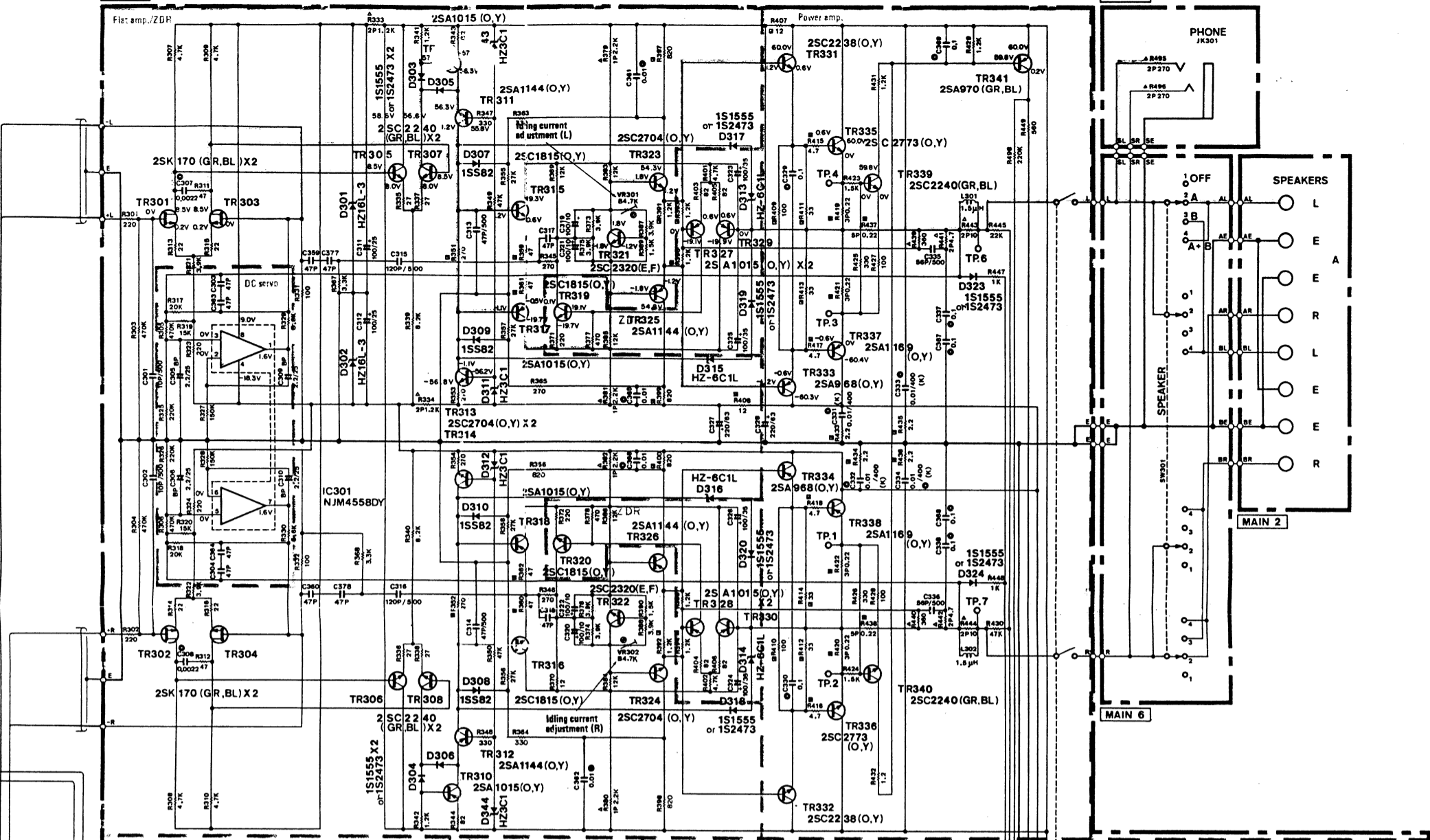
A-960 II A-960 II

PRINTED CIRCUIT BOARD PARTS-SIDE COMPONENTS LAYOUT/WIRING



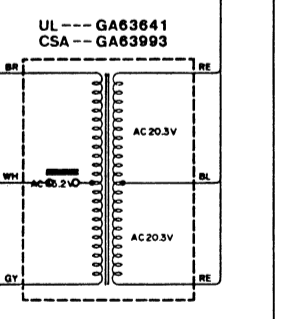
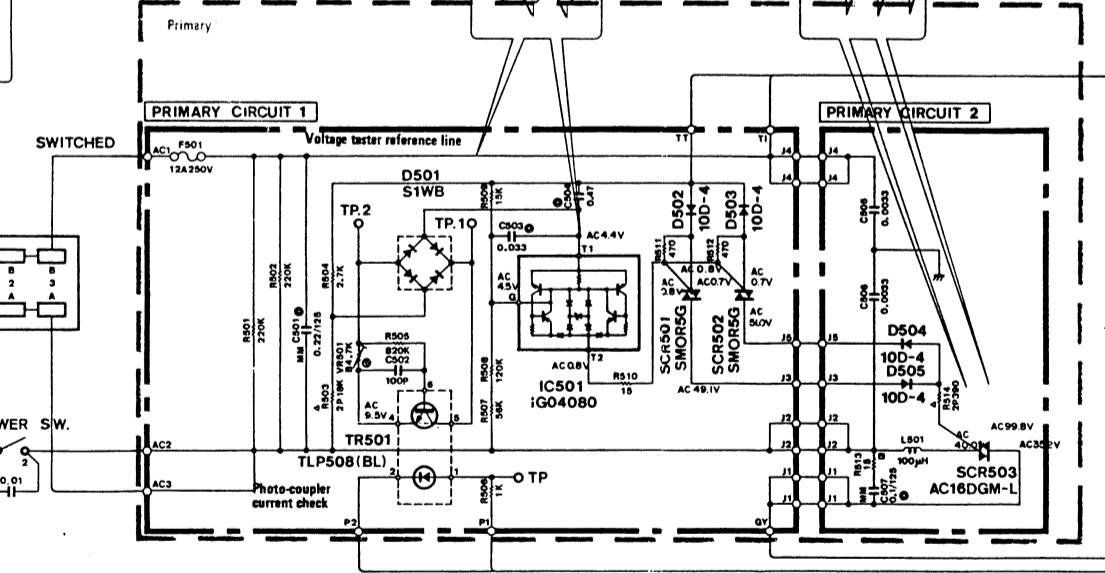
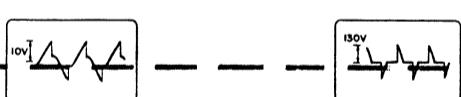
A-960 II





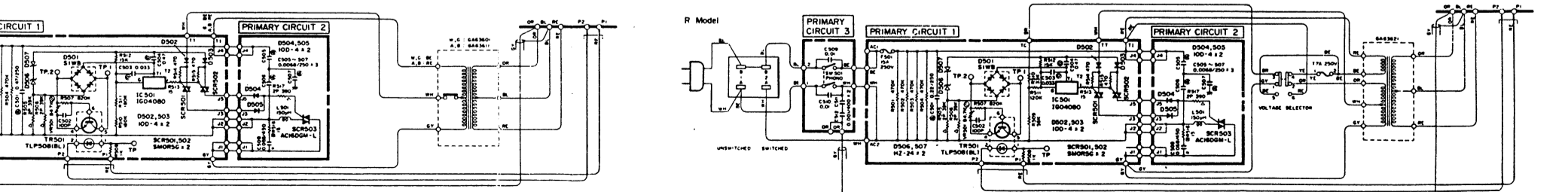
Caution:
Avoid touching the emitter of TR344 in the main board amplifier with a test probe.

- Caution:
1. Do not touch conductive parts of the oscilloscope body, etc. while observing the control board waveforms. Do not connect to ground, either.
 2. Make sure to perform the control board tester check within the range of the voltage tester reference line.
 3. To check the Triac, confirm the waveform at both sides of R515 (3P 1.2 k-ohms). The waveforms should match the diagram.



CAPACITOR	
SYMBOL	PARTS NAME
NO MARK	CERAMIC CAPACITOR
●	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊙	MICA CAPACITOR
⊕	POLYPROPYLENE CAPACITOR
PS	P. S. CAPACITOR
NO MARK	ELECTROLYTIC CAPACITOR

RESISTOR	
SYMBOL	PARTS NAME
NO MARK	CARBON FILM RESISTOR
△	METAL FILM RESISTOR
▲	METAL OXIDE FILM RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
■	METAL PLATE RESISTOR
□	CEMENT MOLDED RESISTOR
⊙	SEMI VARIABLE RESISTOR



PARTS LIST

A-960II

STEREO AMPLIFIER

■ CONTENTS	Page.
■ EXPLODED VIEW (Allover).....	1
■ PARTS LIST (Allover).....	2
■ PARTS LIST (Circuit Board)·	
Function Circuit Board.....	4
Tone Control Circuit Board.....	6
Main Circuit Board.....	8
Control Circuit Board.....	13

Notes

DESTINATION ABBREVIATIONS

U.....	U.S.A
C.....	CANADIAN
G.....	NORTH EUROPEAN
B.....	BRITISH
R.....	GENERAL
A.....	AUSTRALIAN
J.....	JAPAN

SINCE 1887

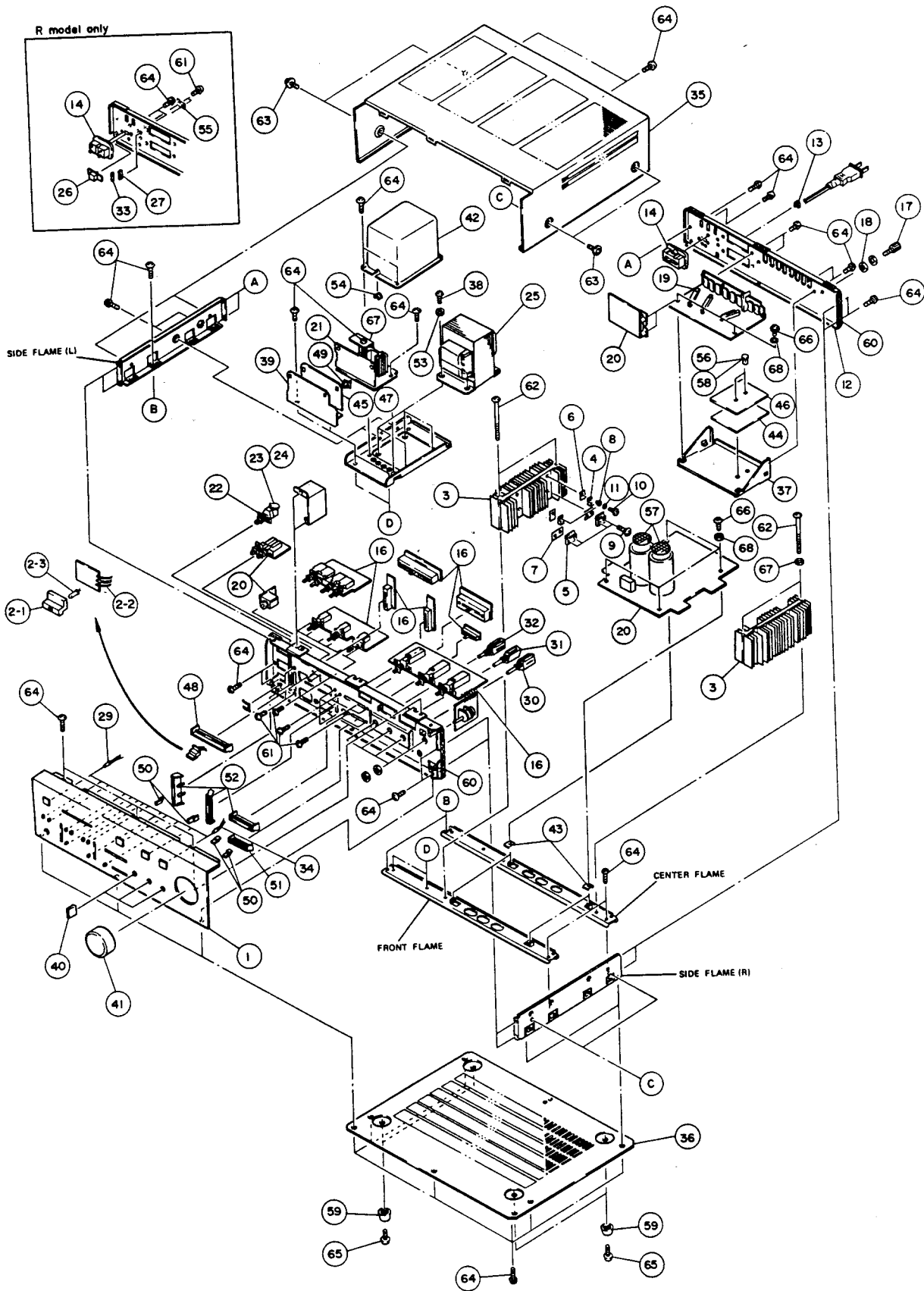


YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

Printed in Japan 6.82 ㄱ 2.65K

004467



Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
* 1	NB:60:64:00	Front Panel Unit	フロントパネルユニット			J
* "	NB:60:64:10	"	"			R,U,A,G,C,B
2-1	NB:60:42:90	Knob Ass'y	ツマミ Ass'y		A-760II	
2-2	Mi:06:99:50	Wire	L=80 2P リボンワイヤー指針用			
2-3	iF:00:24:40	LED (RED)	SLR-34URC3 LED (アカ)	D201		
* 3	BA:80:57:20	Heat Sink	放熱板			
4	iA:09:68:00	Transistor	2SA968(O,Y) トランジスタ	TR333,TR334		
"	iC:22:38:00	"	2SC2238(O,Y) "	TR331,TR332		
5	iA:11:69:00	"	2SA1169(O,Y) "	TR337,TR338		
"	iC:27:73:00	"	2SC1773(O,Y) "	TR335,TR336		
6	iL:00:02:70	Mica Base	AC-229 マイカベース			
7	iL:00:06:00	"	MT-200 "			
8	CB:07:28:80	Bush	絶縁ブッシュ		CR-400	
9	Ei:33:01:20	Bind Head Tapping Screw	3×12(FCM3-BI) 鉄バインドタッピングネジ			
10	ED:82:61:00	Bind Head Screw	2.6×10 鋼バインド小ネジ			
11	EV:20:32:60	Spring Washer	M2.6(FCM3-BI) スプリングワッシャー			
* 12	AA:61:13:90	Rear Panel	リヤパネル			J
* "	AA:61:14:00	"	"			R
* "	AA:61:14:10	"	"			U,C
* "	AA:61:14:20	"	"			A,B
* "	AA:61:14:30	"	"			C
13	CB:07:27:50	Cord Stopper	SR-4N-4 コードストッパー			
14	LB:40:10:00	AC Socket	M7013-A ACアウトレット			R
"	LB:60:48:10	"	M7026-B "			J,U,C
15	MG:00:06:80	AC Cord	Black 2.2m 15A125V 電源コード			J
"	MG:00:07:80	"	" 2m 6A250V "			R
* "	MG:00:13:60	"	" " 13A125V "			U,C
"	MG:00:09:10	"	" " 6A250V "			G
"	MG:00:09:20	"	Gray 2.5m 7.5A250V "			A
"	MG:00:10:00	"	Black 2m 6A300/500V "			B
* 16	NA:07:94:90	Tone Control Circuit Board	トーンコントロールシート			
17	EZ:00:14:00	Screw, for Ground Terminal	⊕3×13.5(MFNI-II) アース端子ネジ			
18	EV:90:13:60	Semes Flat Washer	φ3.6×φ10×t0.8 FNM3-3g) 鉄セムス平座金			
* 19	NA:07:94:30	Function Circuit Board	ファンクションシート			J
* "	NA:07:96:50	"	"			R,U,A,G,C,B
* 20	NA:07:90:30	Main Circuit Board	メインシート			J
* "	NA:07:90:40	"	"			R,A,G,B
* "	NA:07:90:50	"	"			U
* "	NA:07:90:60	"	"			C
* 21	NA:07:97:10	Control Circuit Board	制御シート			J
"	NA:07:86:60	"	"		A-760II	R
"	NA:07:86:70	"	"		"	U,C
"	NA:07:86:80	"	"		"	A,G,B
22	KA:80:23:10	Push Switch	SDV3P E5A125V ブッシュSW			J
"	KA:80:23:20	"	SDV3P TV-5 "		A-760II	U
"	KA:80:24:30	"	Z-33-6 TV-8 "		"	C
23	Fi:16:41:00	Ceramic Capacitor	0.01 150VACE(P) セラコン			J
"	Fi:34:41:00	"	0.01 MY(DE) "			R,U,A,G,C,B
24	CB:09:52:60	Cover for Capacitor	SB-0833 コンデンサーカバー丸型			J
"	CB:60:08:10	"	HY-0102 コンデンサーカバー半丸型			R,U,A,G,C,B

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
* 25	GA:65:60:00	Power Transformer	電源トランス			J
* "	GA:65:61:00	"	"			U
* "	GA:65:62:00	"	"			G
* "	GA:65:63:00	"	"			A,B
* "	GA:63:99:30	"	"			C
* "	GA:63:67:30	"	"			R
26	KA:40:07:40	Slide Switch	ESD-3992	スライドSW		R
27	LB:20:13:00	Fuse Holder		ヒューズホルダー		R
28	FR:15:52:20	MP Capacitor	0.22 μ F 250PME271	MPコン		G
* 29	JB:00:11:70	Pilot Lamp	8V 150mA Lead Type	パイロットランブリード式		
* 30	KA:90:30:90	Remote Rotary Switch	Control+Wire	リモートロータリーSW操作 +ワイヤー部	PHONO	
* 31	KA:90:31:00	"	"	"	INPUT	
* 32	KA:90:16:40	"	"	"	REC OUT	
33	KB:00:13:00	Fuse	T7A 250V	ヒューズタイラッシュ		R
* 34	JB:00:11:50	Pilot Lamp	8V 150mA Lead Type	パイロットランブリード式		
* 35	AA:61:13:80	Top Cover		トップカバー		
36	AA:60:36:20	Bottom Cover		ボトムカバー	A-760	
37	AA:60:36:50	Holder, Circuit Board		シートホルダー	"	R,U,A,G,C,B
38	AA:60:38:50	Tight Screw with Steps		段付ネジ	"	
* 39	AA:61:25:90	Holder, CS		CSホルダー		
40	BA:07:94:60	Knob, Switch		SW.ツマミ	A-760	
* 41	BA:08:29:40	Knob, VOL.		VOL.ツマミ		
42	BA:07:96:50	Cover, Transformer		トランスカバー		J,R,A,G,B
"	BA:07:99:00	"		"		U,C
43	BB:06:97:90	Spacer		スペーサー		J
44	BA:08:02:90	Shielded Plate		シールド板	A-960	
45	CB:60:24:30	Isolation Plate		絶縁板		J
46	CB:60:23:20	Isolation Sheet		バリヤ	A-960	
47	CB:60:46:10	Isolation Plate		絶縁板	A-760	R,U,A,G,C,B
48	CB:09:97:40	Slit Cover		スリットカバー	"	
49	CB:09:98:30	Support, P.C		PCサポート	"	
* 50	CB:60:83:70	Slide Knob		スライドツマミ		
51	CB:09:98:50	Slit Cover		スリットカバー	A-960	
52	CB:09:98:60	"		"	"	
53	CB:09:99:10	Rubber, Anti Vibration		防振ゴム	A-760	
54	CB:60:05:70	Bush		リードブッシュ	"	
55	CB:60:14:40	Stopper, Voltage Selector		VSストッパー		R
56	CB:06:88:80	Plastic Rivet	NO.1027	プラスチックリベット		
* 57	CB:61:22:90	Damper		ダンパー		
58	CB:60:32:40	Plastic Rivet		プラスチックリベット		J
59	CB:09:86:00	Leg		脚		
60	CB:60:43:90	Damper		ダンパー	A-960	
61	ED:33:00:60	Bind Head Screw	3 \times 6(FCM3-BI)	鉄バインド小ネジ		
62	EA:34:09:70	Pan Head Screw	4 \times 97(FCM3-BI)	ナベ小ネジ		
63	EZ:00:08:10	B.W Head Screw	4 \times 8 ϕ 10(FNM3-3g)	BWヘッド小ネジ		
64	EN:33:00:10	Bind Head Tapping Screw	3 \times 8(FCM3-BI)	鉄バインドタッピンネジ	type-II	
65	Ei:33:01:20	"	3 \times 12()	"	"	
66	EN:03:00:20	"	3 \times 8(ZMC2-Y)	"	"	
67	EV:20:34:00	Plain Washer	ϕ 4(FCM3-BI)	平座金		
68	EV:20:03:00	"	ϕ 3(ZMC2-Y)	"		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
* NA:07:94:30		Function Circuit Board	ファンクションシート			
* NA:07:96:50						RU.A.G.C.B
C101 C102	FU:35:21:00	Mica Capacitor	100PF FE 500V	マイカコン		
C103 -106	UA:25:41:00	Mylar Capacitor	0.01 μ F 50V(J)	マイラーコン		
C107 C108	FD:11:22:20	Polystyrene Film Capacitor	220PF 50V(K)	スチコン		
C109 C110	FD:11:25:60	"	560PF "	"		
C111 C112	FV:81:92:20	Electrolytic Capacitor	2200 μ F 6.3V	プラスチックケミコン		
C113 C114	FT:76:45:60	Polypropylene Film Capacitor	0.056 μ F 50V(G)	PSコン		
C115 C116	FT:76:41:60	"	0.016 μ F "	"		
C117 C118	FU:35:21:00	Mica Capacitor	100PF FE 500V	マイカコン		
C119 C120	FD:11:22:20	Polystyrene Film Capacitor	220PF 50V(K)	スチコン		
C121 C122	UA:25:41:00	Mylar Capacitor	0.01 μ F 50V(J)	マイラーコン		
C123 C124	FM:11:62:20	Electrolytic Capacitor	2.2 μ F 50V	B.Pコン		
* C125 C126	FZ:00:34:10	Mylar Capacitor	1 μ F VX125V	マイラーコン		
* C127 C128	FC:28:33:90	Polypropylene Film Capacitor	0.0039 μ F QP250V(J)	ポリプロコン		
C129	FV:65:81:00	Electrolytic Capacitor	100 μ F 35V	プラスチックケミコン		
C131	FV:65:81:00	Electrolytic Capacitor	100 μ F 35V	プラスチックケミコン		
C133	UA:25:51:00	Mylar Capacitor	0.1 μ F 50V(J)	マイラーコン		
R101 -104	HJ:35:42:20	Carbon Resistor	22 Ω RD25S	カーボン抵抗		
R105 -108	HJ:35:51:00	"	100 Ω "	"		
R109 R110	HJ:35:71:20	"	12K Ω "	"		
R111 -114	HJ:35:74:70	"	47K Ω "	"		
R115	HJ:35:71:00	"	10K Ω "	"		
R116	HJ:35:71:00	"	10K Ω "	"		
R117 R118	HJ:35:62:20	"	2.2K Ω "	"		
R119 -124	HJ:35:44:70	"	47 Ω "	"		
R125 R126	HJ:35:51:00	"	100 Ω "	"		
R127 R128	HJ:35:36:80	"	6.8 Ω "	"		
R129 R130	HJ:35:64:70	"	4.7K Ω "	"		
R131 R132	HK:36:75:60	"	56K Ω RD25 (G)	"		
R133 R134	HK:36:64:70	"	4.7K Ω "	"		
R135 R136	HJ:35:42:70	"	27 Ω RD25S	"		
R137 R138	HJ:35:63:30	"	3.3K Ω "	"		
R139 R140	HJ:35:76:80	"	68K Ω "	"		
R141 R142	HJ:35:42:20	"	22 Ω "	"		
R143 R144	HJ:35:55:60	"	560 Ω "	"		
R145	HJ:35:72:20	"	22K Ω "	"		
R147 R148	HJ:35:51:50	Carbon Resistor	150 Ω RD25S	カーボン抵抗		
R149 -152	HJ:35:44:70	"	47 Ω "	"		
R153 R154	HJ:35:54:70	"	470 Ω "	"		
R155 -158	HJ:35:81:20	"	120K Ω "	"		
R159 R160	HJ:35:82:20	"	220K Ω "	"		
R163	HJ:35:34:70	Carbon Resistor	4.7 Ω RD25S	カーボン抵抗		
R165 R166	HJ:35:91:00	Carbon Resistor	1M Ω RD25S	カーボン抵抗		
R167 R168	HL:41:51:00	Metal Oxide Film Resistor	100 Ω 1P	膜金抵抗		
R169 R170	HJ:35:72:20	Carbon Resistor	22K Ω RD25S	カーボン抵抗		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
R171	HJ 35 74 70	Carbon Resistor	47KΩ RD25S	カーボン抵抗		
TR101 TR102	iE 10 22 40	FET	2SK146(GR,BL,V)	FET		
TR103 ~ 106	iC 23 20 10	Transistor	2SC2320(E,F)	トランジスタ		
TR107 TR108	iA 10 15 70	"	2SA1015(O,Y)	"		
TR109 TR110	iA 09 99 10	"	2SA999(E,F)	"		
TR111 TR112	iA 10 15 70	"	2SA1015(O,Y)	"		
TR113 TR114	iC 23 20 10	"	2SC2320(E,F)	"		
TR115 TR116	iA 09 65 00	"	2SA965(O,Y)	"		
TR117 TR118	iC 22 35 00	"	2SC2235(O,Y)	"		
* TR119	iA 07 77 00	"	2SA777	"		
TR120	iC 15 09 00	"	2SC1509(P,Q,R,S)	"		
D101 D102	iF 00 00 40	Diode	IS1555	ダイオード	Inter-changeable (併用)	
"	iF 00 06 70	"	IS2473	"		
D103 D104	iF 00 02 20	Zener Diode	WZ-310	ツェナーダイオード		
D105 D106	iF 00 16 80	"	RD9.1EB3	"		
D107	iF 00 07 90	Varistor	MV12	バリスタ		
D109	iF 00 15 20	Zener Diode	HZ-12BIL	ツェナーダイオード		
D111	iF 00 15 20	"	"	"		
D113	iF 00 15 20	"	"	"		
D115	iF 00 15 20	"	"	"		
D116 D117	iF 00 41 60	"	HZ6C1L	"		
* SW101	KA 90 31 70	Remote Rotary Switch	6 circuit 6 Action	リモートロータリーSW		J
"	KA 90 31 40	"	"	"		R,U,A,G,C,B
SW102 SW103	KA 90 12 30	"	4 circuit 6 Action	"		
PJ101	LB 40 06 60	Pin Jack	4P	4Pピンジャック		
PJ102 PJ103	LB 60 19 30	"	6P	6Pピンジャック		
	LB 20 13 90	Base Pin	2.5Pitch TEB2P-SHF	2.5ピッチベースピン		
* Mi 08 13 40		Board in & Connector Ass'y	L=300	2芯Sボードイン& コネクターAss'y		
* CB 06 92 50		Banding Tie	BK-1	インシュロックタイ		
* Mi 08 19 00		Board in & Board Ass'y	1P 70L	ボードイン&ボードインAss'y		
* Mi 08 19 10		"	" 100L	"		
* Mi 08 19 20		"	" 120L	"		
* Mi 08 19 40		"	" 160L	"		
* BB 06 98 20		Shield Plate		シールド板		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
* NA 07:94:90		Tone Control Circuit Board				
* C201 C202	UA:25:45:10	Mylar Capacitor	0.051 μ F 50V(J)	マイラーコン		
C203 C204	UA:25:42:70	"	0.027 μ F "	"		
C205 C206	FG:41:15:60	Ceramic Capacitor	56PF 50V(K)	セラコン		
C207 C208	UW:91:73:30	Electrolytic Capacitor	33 μ F 6.3V	ケミコン		
C209 C210	UW:86:61:00	"	1 μ F 50V	"		
C211 C212	UW:86:73:30	"	33 μ F "	"		
* C213 C214	UK:16:62:20	"	2.2 μ F "	BPコン		
C215 -218	UA:25:32:20	Mylar Capacitor	0.0022 μ F 50V(J)	マイラーコン		
C219 C220	UA:25:51:00	"	0.1 μ F "	"		
C221 C222	UW:91:73:30	Electrolytic Capacitor	33 μ F 6.3V	ケミコン		
C223 C224	UA:25:38:20	Mylar Capacitor	0.0082 μ F 50V(J)	マイラーコン		
C225 C226	UA:25:41:60	"	0.016 μ F "	"		
C227 C228	UA:25:41:20	"	0.012 μ F "	"		
C229 C230	UA:25:35:60	"	0.0056 μ F "	"		
C231 C232	FM:52:61:00	Electrolytic Capacitor	1 μ F 50V	Zコン		
C233 C234	FG:41:21:00	Ceramic Capacitor	100PF 50V(K)	セラコン		
* C235 C236	UK:16:62:20	Electrolytic Capacitor	2.2 μ F 50V	BPコン		
* C237 C238	UA:25:43:00	Mylar Capacitor	0.03 μ F 50V(J)	マイラーコン		
C239 C240	UA:25:38:20	"	0.0082 μ F "	"		
* C241 C242	UA:55:53:90	"	0.39 μ F "	"		
C243 C244	FD:15:21:80	Polystyrene Capacitor	180PF "	スチコン		
C245 C246	FU:35:21:00	Mica Capacitor	100PF FE500V(J)	マイコン		
C247 -249	UW:94:81:00	Electrolytic Capacitor	100 μ F 25V	ケミコン		
R201 R202	HJ:35:52:20	Carbon Resistor	220 Ω RD25S	カーボン抵抗		
R203 R204	HJ:35:92:20	"	2.2M Ω "	"		
R205 R206	HJ:35:82:70	"	270K Ω "	"		
R207 R208	HJ:35:88:20	"	820K Ω "	"		
R209 R210	HJ:35:84:70	"	470K Ω "	"		
R211 -214	HJ:35:62:40	"	2.4K Ω "	"		
R215 R216	HJ:35:84:70	"	470K Ω "	"		
R217 R218	HK:35:67:50	"	7.5K Ω RD25SM-8	"		
R219 R220	HJ:35:92:20	"	2.2M Ω RD25S	"		
R221 R222	HJ:35:67:50	"	7.5K Ω "	"		
R223 R224	HK:35:59:10	"	910 Ω RD25SM-8	"		
R225 R226	HJ:35:92:20	"	2.2M Ω RD25S	"		
R227 R228	HK:35:62:00	"	2K Ω RD25SM-8	"		
R229 R230	HJ:35:92:20	"	2.2M Ω "	"		
R231 R232	HJ:35:55:60	"	560 Ω "	"		
R233 R234	HJ:35:91:00	"	1M Ω "	"		
R235 R236	HJ:35:51:00	"	100 Ω "	"		
R237 R238	HJ:35:64:70	"	4.7K Ω "	"		
R239 R240	HJ:35:58:20	"	820 Ω "	"		
R241 R242	HJ:35:71:50	"	15K Ω "	"		
R243 R244	HJ:35:62:20	"	2.2K Ω "	"		
R245 R246	HJ:35:51:00	"	100 Ω "	"		
R247 R248	HJ:35:74:70	"	47K Ω "	"		
R249 R250	HJ:35:65:60	"	5.6K Ω "	"		
R251 R252	HJ:35:91:00	"	1M Ω "	"		
R253 R254	HJ:35:65:60	"	5.6K Ω "	"		
R255 R256	HJ:35:92:20	"	2.2M Ω "	"		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
R257 R258	HJ:35:51:50	Carbon Resistor	150Ω RD25S	カーボン抵抗		
R259 ~261	HJ:35:41:50	"	15Ω "	"		
VR201	HQ:42:02:10	Slide Variable Resistor	30K×2 30MM	スライドVR		
VR202	HQ:42:02:20	"	5KΩ×2 "	"		
VR203	HQ:42:01:20	"	220KBH×2 30MM	"		
* VR204	HQ:41:00:90	"	10KB×2	ラウドネスVR	LOUDNESS	
VR205	HS:32:06:80	Variable Resistor	60K×2:100K×2	メインVR	MAIN	
IC201 IC202	iG:03:96:00	IC	NJM4559D	IC		
SW201	KA:80:08:70	Push Switch	SUF1-4	プッシュSW	Inter-changeable (併用)	
"	KA:80:16:90	"	4-Circuit NS	"		
SW202	KA:80:17:20	"	NS	"	Inter-changeable (併用)	
"	KA:80:22:30	"	"	"		
SW203	KA:80:08:70	"	SUF1-4	"	Inter-changeable (併用)	
"	KA:80:16:90	"	4-Circuit NS	"		
SW204	KA:80:17:10	"	2-Circuit NS	"	Inter-changeable (併用)	
"	KA:80:24:40	"	"	"		
SW205	KA:80:17:40	"	6-Circuit NS	"	Inter-changeable (併用)	
SW206 SW207	KA:80:08:70	"	SUF1-4	"		
"	KA:80:16:90	"	4-Circuit NS	"		
	LA:00:21:10	Wrapping Terminal	2P P=5	I型ラッピング端子板		
	LB:30:07:30	Base pin	2.5pitch TEB3P-SHF	2.5ピッチベースピン		
	LB:20:13:90	"	TEB2P-SHF	"		
* LB:91:20:30	Plug	3P EMCS0252M type-I	ショートプラグI型			
	CB:06:92:50	Banding Tie	BK-1	インシュロックタイ		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
* NA:07:90:30		Main Circuit Board	メインボード			
* NA:07:90:40						R,A,G,B
* NA:07:90:50						U
* NA:07:90:80						C
C301 C302	FH:61:11:00	Ceramic Capacitor	10PF 500V type-CH	セラコン		
C303 C304	FG:41:14:70	"	47PF 50V(K)	"		
* C305 C306	FZ:00:30:10	Electrolytic Capacitor	2.2μF 25V	B.Pプラスチックケミコン		
C307 C308	UA:25:32:20	Mylar Capacitor	0.0022μF 50V(J)	マイラーコン		
* C309 C310	FZ:00:30:10	Electrolytic Capacitor	2.2μF 25V	B.Pプラスチックケミコン		
* C311 C312	FV:64:81:00	"	100μF "	プラスチックケミコン		J
"	UW:94:81:00	"	100μF "	ケミコン		RUAGCB
C313 C314	FH:61:14:70	Ceramic Capacitor	47PF 500V type-CH	セラコン		
* C315 C316	FH:61:21:20	"	120PF "	"		
C317 C318	FG:41:14:70	"	47PF 50V(K)	"		
* C319 -322	UW:92:81:00	Electrolytic Capacitor	100μF 10V	ケミコン		
C323 -326	UW:85:81:00	"	100μF 35V	"		
C327 C328	UJ:47:82:20	"	220μF 63V	"		
C329 C330	UA:25:51:00	Mylar Capacitor	0.1μF 50V(J)	マイラーコン		
C331 -334	FC:04:41:00	"	0.01μF 400V(K)	"		
* C335 C336	FH:61:15:60	Ceramic Capacitor	56PF 500V type-CH	セラコン		
C337 C338	UA:25:51:00	Mylar Capacitor	0.1μF 50V(J)	マイラーコン		
C339 -342	UW:86:81:00	Electrolytic Capacitor	100μF 50V	ケミコン		
C343 C344	FC:04:41:00	Mylar Capacitor	0.01μF 400V(K)	マイラーコン		
* C345 C346	FZ:00:30:90	Electrolytic Capacitor	15,000μF 63V	ブロックケミコン		
C347	FG:41:21:00	Ceramic Capacitor	100PF 50V(K)	セラコン		
C348	UW:93:72:20	Electrolytic Capacitor	22μF 16V	ケミコン		
C349	UW:96:64:70	"	4.7μF 50V	"		
* C350	FC:04:51:00	Mylar Capacitor	0.1μF 400V(K)	マイラーコン		
C351	UW:56:52:20	Electrolytic Capacitor	0.22μF 50V	ケミコン		
* C352	UK:16:71:00	"	10μF "	B.Pコン		
C353	UW:93:72:20	"	22μF 16V	ケミコン		
C354	FM:39:81:00	"	100μF "	Zコン		
C355	UW:86:71:00	"	10μF 50V	ケミコン		
C356	FG:41:21:00	Ceramic Capacitor	100PF 50V(K)	セラコン		
C357	FG:44:41:00	"	0.01μF 50V(Z)	"		
C358	UW:96:54:70	Electrolytic Capacitor	0.47μF 50V	ケミコン		
C359 C360	FG:41:14:70	Ceramic Capacitor	47PF 50V(K)	セラコン		
C361 C362	UA:25:41:00	Mylar Capacitor	0.01μF 50V(J)	マイラーコン		
C363 C364	FG:41:14:70	Ceramic Capacitor	47PF 50V(K)	セラコン		
C365 C366	UA:25:41:00	Mylar Capacitor	0.01μF 50V(J)	マイラーコン		
C367 -369	UA:25:51:00	"	0.1μF "	"		
C377 C378	FG:41:14:70	Ceramic Capacitor	47PF 50V(J)	セラコン		
L301 L302	GD:90:03:70	Coil, Output	1.5μH	アウトプットコイル		
R301 R302	HJ:35:52:20	Carbon Resistor	220Ω RD25S	カーボン抵抗		
R303 -306	HJ:35:84:70	"	470KΩ "	"		
R307 -310	HJ:35:64:70	"	4.7KΩ "	"		
R311 R312	HJ:35:44:70	"	47Ω "	"		
R313 -316	HJ:35:42:20	"	22Ω "	"		
R317 R318	HJ:35:71:80	"	18KΩ "	"		R,U,A,G,C,B
"	HJ:35:72:00	"	20KΩ "	"		J
R319 R320	HJ:35:71:50	"	15KΩ "	"		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
R321 R322	HJ 35:63:90	Carbon Resistor	3.9KΩ RD25S	カーボン抵抗		
R323 R324	HJ 35:52:20	"	220Ω "	"		
R325 R326	HJ 35:82:20	"	220KΩ "	"		
R327 R328	HJ 35:81:50	"	150KΩ "	"		
R329 R330	HJ 35:65:60	"	5.6KΩ "	"		
R331 R332	HJ 35:51:00	"	100Ω "	"		
R333 R334	HL 72:61:20	Metal Oxide Film Resistor	1.2KΩ 2P	酸化抵抗		R,U,A,G,C,B
R335 -338	HJ 35:42:70	Carbon Resistor	27Ω RD25S	カーボン抵抗		
R339 R340	HJ 35:68:20	"	8.2KΩ "	"		
R341 R342	HJ 35:61:20	"	1.2KΩ "	"		
R343 R344	HJ 35:48:20	"	82Ω "	"		
R345 R346	HJ 35:52:70	"	270Ω "	"		
R347 R348	HJ 35:53:30	"	330Ω "	"		
R349 R350	HJ 35:74:70	"	47KΩ "	"		
R351 R352	HV 35:52:70	Flame Proof Carbon Resistor	270Ω RDF 25SF	不燃化カーボン抵抗		
R353 R354	HJ 35:52:70	Carbon Resistor	270Ω RD25S	カーボン抵抗		
R355 -358	HJ 35:72:70	"	27KΩ "	"		
R359 -362	HV 35:44:70	Flame Proof Carbon Resistor	47Ω RDF 25SF	不燃化カーボン抵抗		
R363 R364	HJ 35:53:30	Carbon Resistor	330Ω RD25S	カーボン抵抗		J
"	HJ 35:61:50	"	1.5KΩ "	"		R,U,A,G,C,B
R365 R366	HJ 35:52:70	"	270Ω "	"		"
"	HJ 35:58:20	"	820Ω "	"		J
R367 R368	HJ 35:63:30	"	3.3KΩ "	"		
R369 R370	HJ 35:71:20	"	12KΩ "	"		
R371 R372	HJ 35:52:20	"	220Ω "	"		
R373 -376	HJ 35:63:90	"	3.9KΩ "	"		
R377 R378	HJ 35:54:70	"	470Ω "	"		
R379 -382	HL 71:61:80	Metal Oxide Film Resistor	1.8KΩ 1P	酸化抵抗		R,U,A,G,C,B
"	HL 31:62:20	"	2.2KΩ 1P	"		J
R383 -386	HJ 35:71:20	Carbon Resistor	12KΩ RD25S	カーボン抵抗		
R387 R388	HJ 35:63:90	"	3.9KΩ "	"		
R389 R390	HJ 35:61:50	"	1.5KΩ "	"		
R391 -396	HV 35:61:20	Flame Proof Carbon Resistor	1.2KΩ RDF 25SF	不燃化カーボン抵抗		
R397 R398	HV 35:52:70	"	270Ω "	"		R,U,A,G,C,B
"	HV 35:58:20	"	820Ω "	"		J
R399 R400	HV 35:58:20	"	820Ω "	"		
R401 R402	HJ 35:64:70	Carbon Resistor	4.7KΩ RD25S	カーボン抵抗		
R403 -406	HJ 35:48:20	"	82Ω "	"		
R407 R408	HV 35:41:20	Flame Proof Carbon Resistor	12Ω RDF 25SF	不燃化カーボン抵抗		
R409 R410	HV 35:51:00	"	100Ω "	"		
R411 -414	HV 35:43:30	"	33Ω "	"		
R415 -418	HV 35:34:70	"	4.7Ω "	"		
* R419 -422	HZ 00:23:90	Metal Plate Resistor	0.22Ω 3P RGC3	金属板抵抗		
R423 R424	HJ 35:61:80	Carbon Resistor	1.8KΩ RD25S	カーボン抵抗		
R425 R426	HJ 35:53:30	"	330Ω "	"		
R427 R428	HJ 35:51:00	"	100Ω "	"		
R429	HJ 35:61:20	"	1.2KΩ "	"		
R430	HJ 35:74:70	"	47KΩ "	"		
R431 R432	HJ 35:61:20	"	1.2KΩ "	"		
R433 -436	HV 35:32:20	Flame Proof Carbon Resistor	2.2Ω RDF 25SF	不燃化カーボン抵抗		
* R437 R438	HZ 00:24:00	Metal Plate Resistor	0.22Ω 5P RGC5	金属板抵抗		
* R439 R440	HU 57:53:60	Metal Film Resistor	360Ω SN14K2E(F)	金属被膜抵抗		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
R441 R442	HL 32:34:70	Metal Oxide Film Resistor	4.7Ω 2P	酸化抵抗		
R443 R444	HL 72:41:00	"	10Ω 2P	"		
R445	HJ 35:72:20	Carbon Resistor	22KΩ RD25S	カーボン抵抗		
* R446	HL 82:73:90	Metal Oxide Film Resistor	39KΩ 2P	酸化抵抗		J
R447 R448	HJ 35:61:00	Carbon Resistor	1KΩ RD25S	カーボン抵抗		
R449	HJ 35:55:60	"	560Ω "	"		
R450	HL 81:56:80	Metal Oxide Film Resistor	680Ω 1P	酸化抵抗		R,U,A,G,C,B
"	HL 82:58:20	"	820Ω 2P	"		J
R451	HL 81:56:80	"	680Ω 1P	"		J
"	HL 82:56:80	"	680Ω 2P	"		R,U,A,G,C,B
R452	HL 81:56:80	"	680Ω 1P	"		R,U,A,G,C,B
"	HL 82:58:20	"	820Ω 2P	"		J
R453	HL 81:56:80	"	680Ω 1P	"		J
"	HL 82:56:80	"	680Ω 2P	"		R,U,A,G,C,B
* R454 R455	HL 82:51:80	"	180Ω 2P	"		
R456 R457	HL 81:51:20	"	120Ω 1P	"		R,U,A,G,C,B
"	HL 82:52:20	"	220Ω 2P	"		J
R459 R459	HL 82:71:50	"	15KΩ 2P	"		
R460	HJ 35:73:90	Carbon Resistor	39KΩ RD25S	カーボン抵抗		
R461	HJ 35:71:00	"	10KΩ "	"		
R462	HJ 35:53:30	"	330Ω "	"		
R463 466	HJ 35:64:70	"	4.7KΩ "	"		
R467	HJ 35:78:20	"	82KΩ "	"		
R468	HJ 35:71:50	"	15KΩ "	"		J,U,C
"	HJ 35:73:30	"	33KΩ "	"		R,A,G,B
R469	HJ 35:83:90	"	390KΩ "	"		
R470	HJ 35:74:70	"	47KΩ "	"		J,U,C
"	HJ 35:76:80	"	68KΩ "	"		R,A,G,B
R471	HJ 35:72:20	"	22KΩ "	"		
R472	HJ 35:68:20	"	8.2KΩ "	"		
R473	HJ 35:64:70	"	4.7KΩ "	"		
R474 R475	HL 82:52:20	Metal Oxide Film Resistor	220Ω 2P	酸化抵抗		
R476	HJ 35:71:20	Carbon Resistor	12KΩ RD25S	カーボン抵抗		
R477	HJ 35:71:50	"	15KΩ "	"		
R478	HJ 35:81:00	"	100KΩ "	"		
R479	HJ 35:76:80	"	68KΩ "	"		
R480	HJ 35:63:00	"	3KΩ "	"		
R481	HJ 35:63:30	"	3.3KΩ "	"		
R482	HJ 35:71:50	"	15KΩ "	"		
R483	HJ 35:63:30	"	3.3KΩ "	"		
R484	HJ 35:81:00	"	100KΩ "	"		
R485	HJ 35:81:20	"	120KΩ "	"		
R486	HJ 35:74:70	"	47KΩ "	"		
R487	HJ 35:82:20	"	220KΩ "	"		
R488	HJ 35:61:80	"	1.8KΩ "	"		
R489	HJ 35:83:90	"	390KΩ "	"		
R490	HJ 35:74:70	"	47KΩ "	"		
R491	HV 35:53:30	Flame Proof Carbon Resistor	330Ω RDF 25SF	不燃化カーボン抵抗		R,U,A,G,C,B
"	HV 35:55:60	"	560Ω "	"		J
R492	HJ 35:68:20	Carbon Resistor	8.2KΩ RD25S	カーボン抵抗		
R493	HJ 35:61:80	"	1.8KΩ "	"		
R494	HJ 35:92:20	"	2.2MΩ "	"		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
R495 R496	HL 82 52 70	Metal Oxide Film Resistor	270Ω 2P	酸化抵抗		
R497	HJ 35 61 50	Carbon Resistor	1.5KΩ RD25S	カーボン抵抗		
R498	HJ 35 82 20	"	220KΩ "	"		
R499	HJ 35 63 90	"	3.9KΩ "	"		
R500 -503	HL 81 56 80	Metal Oxide Film Resistor	680Ω 1P	酸化抵抗		
VR301 VR302	HT 41 00 40	Solid Variable Resistor	B4.7KΩ SR19R	ソリッドFVR		
VR303	HT 41 00 80	"	B22KΩ "	"		
* VR304	HQ 20 02 80	Slide Variable Resistor	200KΩ	スライドFVR		
* TR301 -304	iE 10 24 20	FET	2SK170(GR,BL)	FET		
TR305 -308	iC 22 40 00	Transistor	2SC2240(GR,BL)	トランジスタ		
TR309 TR310	iA 10 15 70	"	2SA1015(O,Y)	"		
* TR311 TR312	iA 11 44 00	"	2SA1144(O,Y)	"		
* TR313 TR314	iC 27 04 00	"	2SC2704(O,Y)	"		
TR315 TR316	iC 18 15 70	"	2SC1815(O,Y)	"		
TR317 TR318	iA 10 15 70	"	2SA1015(O,Y)	"		
TR319 TR320	iC 18 15 70	"	2SC1815(O,Y)	"		
TR321 TR322	iC 23 20 10	"	2SC2320(E,F)	"		
* TR323 TR324	iC 27 04 00	"	2SC2704(O,Y)	"		
* TR325 TR326	iA 11 44 00	"	2SA1144(O,Y)	"		
TR327 -330	iA 10 15 70	"	2SA1015(O,Y)	"		
TR339 TR340	iC 22 40 00	Transistor	2SC2240(GR,BL)	トランジスタ		
TR341	iA 09 70 00	"	2SA970(GR,BL)	"		
TR342	iC 22 40 00	"	2SC2240(GR,BL)	"		
TR343 TR344	iA 09 70 00	"	2SA970(GR,BL)	"		
TR345	iA 09 99 10	"	2SA999(E,F)	"		
TR346 TR347	iC 22 40 00	"	2SC2240(GR,BL)	"		
TR349	iC 27 05 00	Transistor	2SC2705(O,Y)	トランジスタ		
D301 D302	iF 00 20 80	Zener Diode	HZ16L-3	ツェナーダイオード		
D303 -306	iF 00 00 40	Diode	IS1555	ダイオード		
D307 -310	iF 00 14 00	"	ISS82	"		
* D311 D312	iF 00 34 80	Zener Diode	HZ3C-1	ツェナーダイオード		
D313 -316	iF 00 15 10	"	HZ-6CIL	"		
D317 -320	iF 00 00 40	Diode	IS1555	ダイオード		
D323 D324	iF 00 06 70	Diode	IS2473	ダイオード		
D325 D326	iF 00 21 20	Zener Diode	BZ-162	ツェナーダイオード		
D327	iH 00 11 70	Bridge Diode	D4BB20	ダイオードブリッジ		
D328	iF 00 07 90	Varistor	MV12	バリスタ		
D329	iF 00 14 70	Zener Diode	RD6.2EB2	ツェナーダイオード		
D330	iF 00 06 70	Diode	IS2473	ダイオード		
D331	iF 00 07 90	Varistor	MV12	バリスタ		
D332	iH 00 07 10	Diode	W06C	ダイオード		
D333 D334	iF 00 06 70	"	IS2473	"		
D336	iF 00 05 50	Zener Diode	HZ12C	ツェナーダイオード		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
	NA:07:86:70	Control Circuit Board				
C501	FC:24:52:20	Metallized Mylar Capacitor	0.22 μ F 125V ECO-UC(M)	MMコン		
C502	FG:41:21:00	Ceramic Capacitor	100pF 50V(K)	セラコン		
C503	UA:25:43:30	Mylar Capacitor	0.033 μ F 50V(J)	マイラーコン		
C504	UA:55:54:70	"	0.47 μ F "	"		
C505 C506	FI:34:33:30	Ceramic Capacitor	0.0033 μ F MY(DE)	セラコン		
C507	FC:24:51:00	Metallized Mylar Capacitor	0.1 μ F 125V	MMコン		
L501	GD:90:03:60	Coil	100 μ H	雑防コイル		
R501 R502	HJ:35:82:20	Carbon Resistor	220K Ω R28FSL	カーボン抵抗		
R503	HL:82:71:80	Metal Oxide Film Resistor	18K Ω 2P	酸化抵抗		
R504	HJ:35:62:70	Carbon Resistor	2.7K Ω RD25	カーボン抵抗		
R505	HJ:35:88:20	"	820K Ω "	"		
R506	HJ:35:61:00	"	1K Ω "	"		
R507	HJ:35:75:60	"	56K Ω "	"		
R508	HJ:35:81:20	"	120K Ω "	"		
R509	HJ:35:71:50	"	15K Ω "	"		
R510	HJ:35:41:50	"	15 Ω "	"		
R511 R512	HJ:35:54:70	"	470 Ω "	"		
R513	HV:35:41:50	Flame Proof Carbon Resistor	15 Ω RDF25SF	不燃化カーボン抵抗		
R514	HL:82:53:90	Metal Oxide Film Resistor	390 Ω 2P	酸化抵抗		
VR501	HT:41:01:50	Solid Variable Resistor	B4.7K Ω SR29R	ソリッドVVR		
IC501	iG:04:08:00	Triger IC		トリガーIC		
D501	iH:00:08:80	Bridge Diode	SIWB	ダイオードブリッジ		
D502 -505	iH:00:00:60	Diode	10D-4	ダイオード		
SCR 501.502	iH:00:09:00	Triac	SMOR5G0.5A	トライアック		
SCR 503	iH:00:11:10	"	AC16DGM-L 16A	"		
TR501	iK:00:03:30	Photo Coupler	TLP508(BL)	フォトカブラ		
F501	KB:00:15:40	Fuse	12A 250VUL	ヒューズ		
	LB:20:19:70	Fuse Holder Pin	23165081	ヒューズホルダーピン		
	LA:00:23:50	Wrapping Terminal type-L	2P P=5	L型ラッピング端子板		
	LA:00:23:60	"	3P P=5	"		
	LA:00:23:90	"	2P P=7.5	"		
	LA:00:24:00	"	3P P=7.5	"		
	BA:08:24:20	Heat Sink		放熱板		
	BB:06:83:70	Metal Fitting		アース金具		
	CB:07:28:80	Insulating Bush		絶縁ブッシュ		
	CA:07:18:10	Insulating Plate		絶縁板		
	CB:60:14:80	Damper		ダンパー		
	iL:00:02:70	Mica Base	AC-229	マイカベース		
	EN:33:00:90	Bind Head Tapping Screw	3 \times 10(FCM3-B)	鉄バインドタッピングネジ	Type II	
	EN:33:00:10	"	3 \times 8(")	"	"	
	EA:32:60:80	Pan Head Screw	2.6 \times 8(")	ナベ小ネジ		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
C501	FR 15:52:20	MP Capacitor	0.22 μ F 250V PME 271	MPコン		
C502	FG 41:21:00	Metallized Paper Capacitor	100pF 50V(K)	セラコン		
C503	UA 25:43:30	Mylar Capacitor	0.033 μ F 50V(J)	マイラーコン		
C504	UA 55:54:70	"	0.47 μ F "	"		
C505 -507	FR 16:36:80	MP Capacitor	0.0068 μ F 250V PME265	MPコン		
C508	FQ 09:46:80	Oil Capacitor	0.068 μ F 450V ECN-C4A	オイルコン		
C509 C510	Fi 34:41:00	Metallized Paper Capacitor	0.01 μ F MY(DE)	セラコン		
C511 C512	Fi 33:31:00	"	0.001 μ F AC400V KC(DE)	"		
L501	GD 90:03:90	Coil	150 μ H SF-HP-6A	雑防コイル		
R501 -504	HJ 35:84:70	Carbon Resistor	470K Ω RD25	カーボン抵抗		
R505 R506	HL 82:73:90	Metal Oxide Film Resistor	39K Ω 2P	酸化抵抗		
R507	HJ 35:88:20	Carbon Resistor	820K Ω RD25	カーボン抵抗		
R508	HJ 35:61:00	"	1K Ω "	"		
R509	HJ 35:75:60	"	56K Ω "	"		
R510	HJ 35:73:30	"	33K Ω "	"		
R511	HJ 35:81:20	"	120K Ω "	"		
R512	HJ 35:71:50	"	15K Ω "	"		
R513	HJ 35:41:50	"	15 Ω "	"		
R514 R515	HJ 35:54:70	"	470 Ω "	"		
R516	HV 35:41:50	Flame proof Carbon Resistor	15 Ω RDF25SF	不燃化カーボン抵抗		
R517	HL 82:53:90	Metal Oxide Film Resistor	390 Ω 2P	酸化抵抗		
VR501	HT 41:01:50	Solid Variable Resistor	B4.7K Ω SR29R	ソリッドVVR		
IC501	iG 04:08:00	Triger IC		トリガーIC		
D501	iH 00:08:80	Bridge Diode	SIWB	ダイオードブリッジ		
D502 -505	iH 00:00:60	Diode	10D-4	ダイオード		
D506 D507	iF 00:19:40	Zener Diode		ツェナーダイオード		
SCR 501:502	iH 00:09:00	Triac	SMOR5G 0.5A	トライアック		
SCR 503	iH 00:11:10	"	16A AC16DGM-L	"		
TR501	iK 00:03:30	Photo Coupler	TLP508(BL)	フォトカプラー		
SW501	KA 80:21:70	Push Switch	SDS3P 5/80A	プッシュSW	Power	
F501	KB 00:13:80	Fush	15A250V UL	ヒューズ		
LB 20:19:70		Fush Holder Pin	23165081	ヒューズホルダーピン		
LA 00:21:10		Wrapping Terminal	2P P=5 type-i	i型ラッピング端子板		
LA 00:23:50		"	2P P=5 type-L	L型ラッピング端子板		
LA 00:23:60		"	3P P=5 "	"		
LA 00:23:90		"	2P P=7.5 "	"		
LA 00:24:00		"	3P P=3 "	"		
BA 08:24:20		Heat Sink		放熱板		
BB 06:83:70		Metal Fitting		アース金具		
CB 07:28:80		Insulating Bush		絶縁ブッシュ		
CA 07:18:10		Insulating Plate		絶縁板		
CB 60:14:80		Damper		ダンパー		
iL 00:02:70		Mica Base	AC-229	マイカベース		
EN 33:00:90		Bind Head Tapping Screw	3 \times 10(FCM3-B#)	鉄バインドタッピングネジ	Type II	
EN 33:00:10		"	3 \times 8(")	"	"	
EA 32:60:80		Pan Head Screw	2.6 \times 8(")	ナベ小ネジ		

* : New Parts (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
C501	FR 15 54 70	Metallezed Paper Capacitor	0.47 μ F 250V PME271	MPコン		
C502	FG 41 21 00	Cermic Capacitor	100pF 50V(K)	セラコン		
C503	UA 25 43 30	Mylar Capacitor	0.033 μ F 50V(J)	マイラーコン		
C504	UA 55 54 70	"	0.47 μ F "	"		
C505 -507	FR 16 36 80	Metallezed Paper Capacitor	0.0068 μ F 250V PME265	MPコン		
C508	FQ 09 46 80	Oil Capacitor	0.068 μ F 450V ECN-C4A	オイルコン		
C509 C510	FR 16 41 00	Metallezed Paper Capacitor	0.01 μ F 250V	MPコン		
C511 C512	Fi 35 26 80	Ceramic Capacitor	680pF AC400V	セラコン		
L501	GD 90 03 90	Coil	150 μ H SF-HP-6A	雑防コイル		
R501 -504	HJ 35 84 70	Carbon Resistor	470K Ω RD25	カーボン抵抗		
R505 R506	HL 82 73 90	Metal Oxide Film Resistor	39K Ω 2P	酸化抵抗		
R507	HJ 35 88 20	Carbon Resistor	820K Ω RD25	カーボン抵抗		
R508	HJ 35 61 00	"	1K Ω "	"		
R510 R511	HJ 35 81 80	Carbon Resistor	180K Ω RD25	カーボン抵抗		
R512	HJ 35 71 50	"	15K Ω "	"		
R513	HJ 35 41 50	"	15 Ω "	"		
R514 R515	HJ 35 54 70	"	470 Ω "	"		
R516	HV 35 41 50	Flame Proof Carbon Resistor	15 Ω RDF25SF	不燃化カーボン抵抗		
R517	HL 82 53 90	Metal Oxide Film Resistor	390 Ω 2P	酸化抵抗		
VR501	HT 41 01 50	Solid Variable Resistor	B4.7K Ω SR29R	ソリッドVVR		
IC501	iG 04 08 00	Triger IC		トリガーIC		
D501	iH 00 08 80	Bridge Diode	SIWB	ダイオードブリッジ		
D502 -505	iH 00 00 60	Diode	10D-4	ダイオード		
D506 D507	iF 00 19 40	Zener Diode	HZ-24	ツェナーダイオード		
SCR 501,502	iH 00 09 00	Triac	SMOR5G0.5A	トライアック		
SCR 503	iH 00 11 10	"	AC16DGM-L 16A	"		
TR501	iK 00 03 30	Photo Coupler	TLP508(BL)	フォトカブラ		
"	iK 00 03 50	"	4N35	"		ⓈModels
SW501	KA 80 21 70	Push Switch	CDS3P 5/8A	プッシュSW	Power	
F501	KB 00 17 60	Fuse	T6.3A 250V $\text{\textcircled{S}}$	ヒューズ		
	LB 20 10 60	Fuse Holder Pin	YSH403T	ヒューズホルダーピン		
	LA 00 21 10	Wrapping Terminal type-i	2P P=5	i型ラッピング端子板		
	LA 00 23 50	"	2P P=5 type-L	L型ラッピング端子板		
	LA 00 23 50	"	3P P=5 "	"		
	LA 00 23 90	"	2P P=7.5 "	"		
	LA 00 24 00	"	3P P=7.5 "	"		
	BA 08 24 20	Heat Sink		放熱板		
	BB 06 83 70	Metal Fitting		アース金具		
	CB 07 28 80	Insulating Bush		絶縁ブッシュ		
	CA 07 18 10	Insulating Plate		絶縁板		
	CB 60 14 80	Damper		ダンパー		
	iL 00 02 70	Mica Base	AC-229	マイカベース		
	EN 33 00 90	Bind Head Tapping Screw	3 \times 10(FCM3-B4)	鉄バインドタッピングネジ	type-II	
	EN 33 00 10	"	3 \times 8(")	"	"	
	EA 32 60 80	Pan Head Screw	2.6 \times 8(")	ナベ小ネジ		

* : New Parts (新部品)