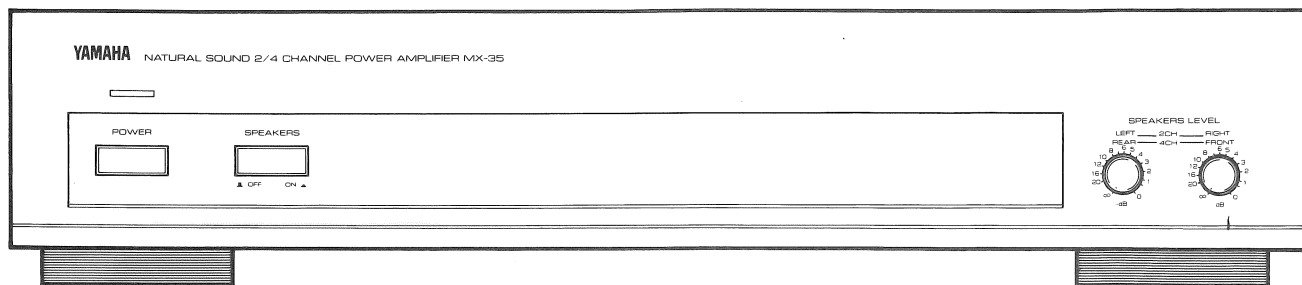


# 2/4 CHANNEL POWER AMPLIFIER MX-35

## SERVICE MANUAL



### IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

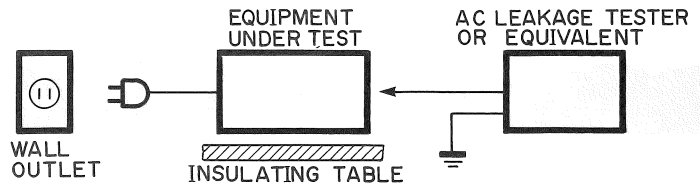
**IMPORTANT:** Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

### CONTENTS

TO SERVICE PERSONNEL . . . . .	1	WIRING . . . . .	4
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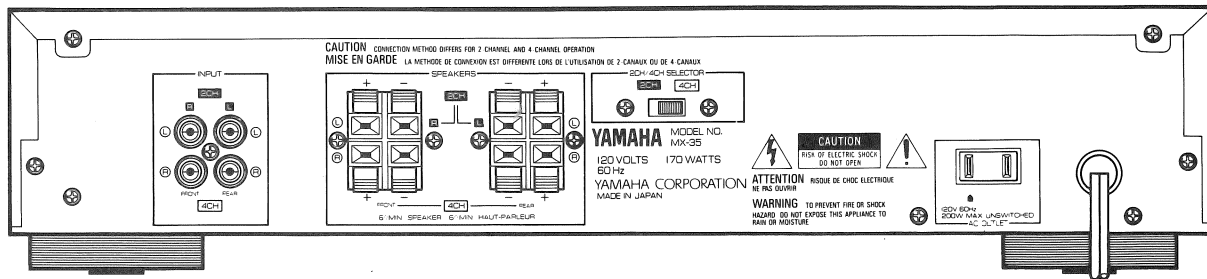
## TO SERVICE PERSONNEL

- Critical Components Information.**  
Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.
- Leakage Current Measurement (For 120V Model Only).**  
When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.
  - Meter impedance should be equivalent to 1500 ohm shunted by 0.15µF.
  - Leakage current must not exceed 0.5mA.
  - Be sure to test for leakage with the AC plug in both polarities.

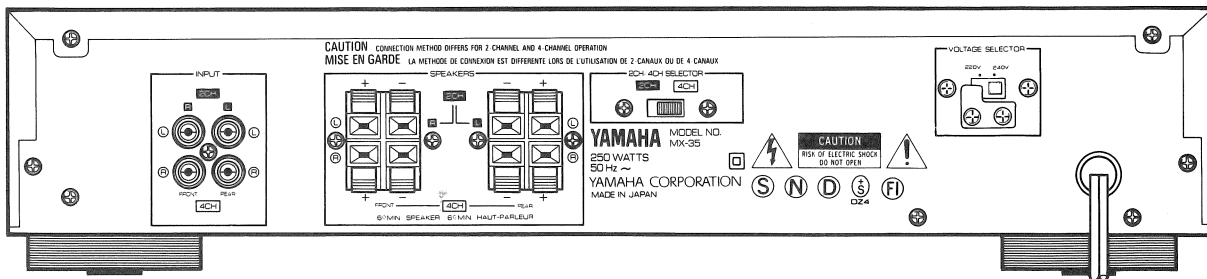


## REAR PANELS

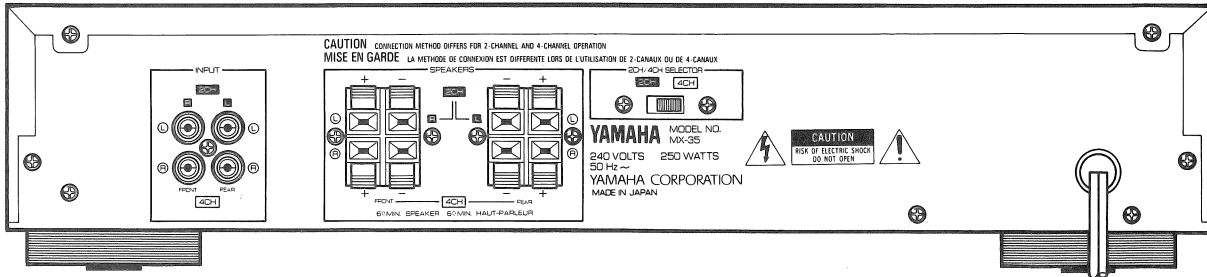
### U.S.A. & Canadian models



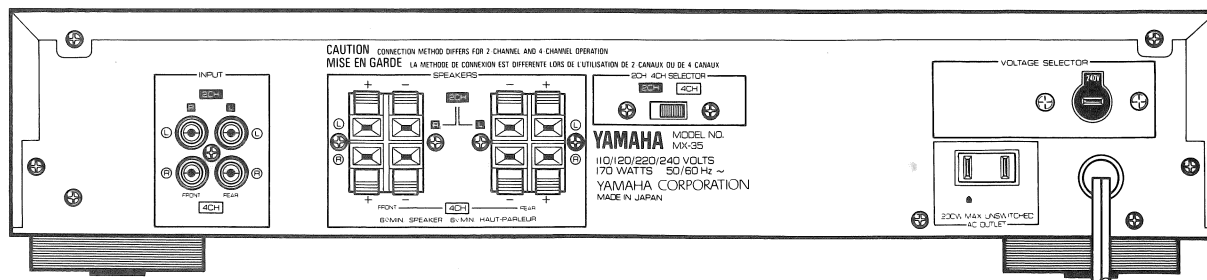
### British & European models



### Australian model



### General model



**SPECIFICATIONS**

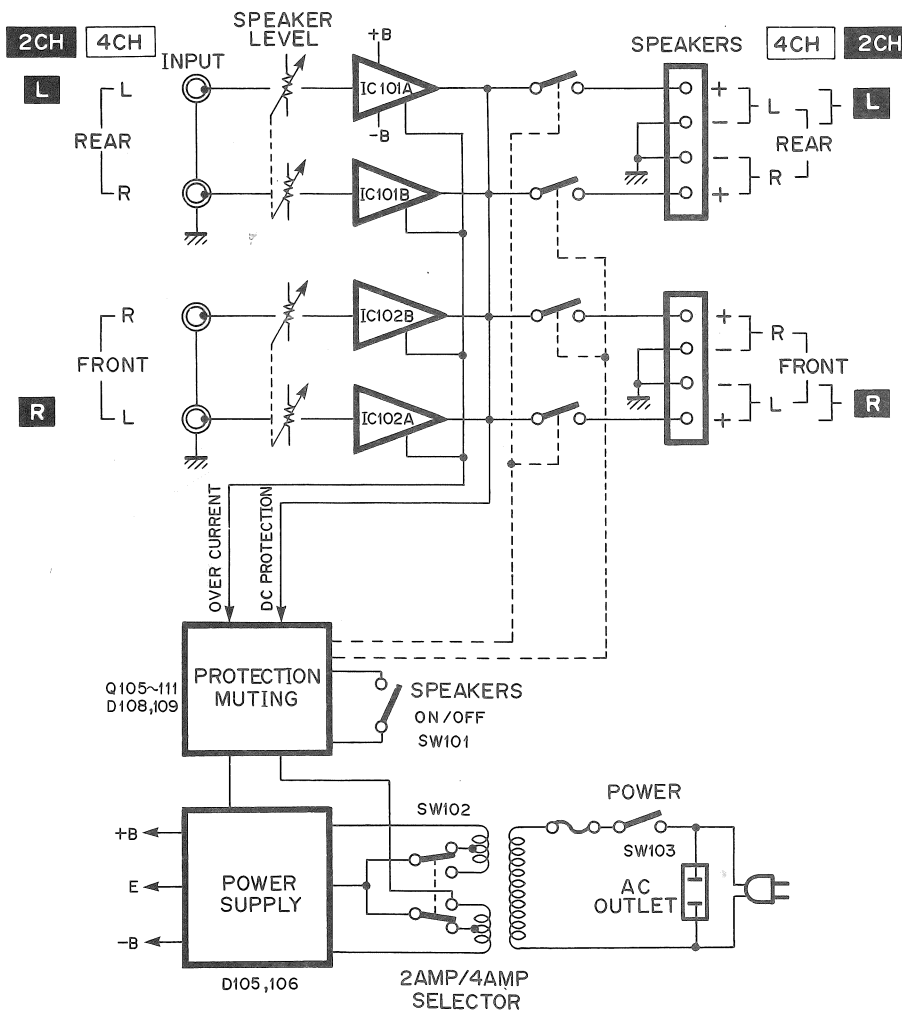
<b>Rated Output</b>				
<b>Minimum RMS Output Power Per Channel</b>				
		(U)(C)(R)	(A)(G)(B)	
2ch (20Hz to 20kHz)	0.05% THD, 8 ohms	40W	40W	
	0.06% THD, 6 ohms	43W	—	
4ch (20Hz to 20kHz)	0.07% THD, 8 ohms	20W	20W	
	0.08% THD, 6 ohms	22W	—	
<b>Dynamic Power Per Channel</b>				
2ch (1kHz, 8 ohms/6 ohms)		57W/70W		
4ch (1kHz, 8 ohms/6 ohms)		32W/37W		
<b>DIN Standard Output Power Per Channel (G)</b>				
4ch (1kHz 1% THD, 4 ohms)		28W		
<b>Dynamic Headroom (U)(C)(R)</b>				
2ch (8 ohms)		1.54dB		
4ch (8 ohms)		2.04dB		
<b>Power Band width</b>				
2ch (0.18% THD, 20W/8 ohms)		10Hz ~ 50kHz		
4ch (0.18% THD, 10W/8 ohms)		10Hz ~ 40kHz		
<b>Damping Factor (1kHz, 8 ohms)</b>				
		70		
<b>Input Sensitivity/Input Impedance</b>				
2ch		1.0V/20k-ohms		
4ch		0.7V/20k-ohms		
<b>Frequency Response (20Hz to 20kHz)</b>				
		+0		
		-0.3 dB		
<b>Total Harmonic Distortion</b>				
2ch (1KHz, 20W/8 ohms)		0.008%		
4ch (1KHz, 10W/8 ohms)		0.015%		
<b>Signal to Noise Ratio (IHF-A-Network, Input Short-circuited)</b>				
2ch		120dB		
4ch		113dB		
<b>Residual Noise (IHF-A-Network)</b>				
		18 $\mu$ V		

<b>Channel Separation (1kHz, Input 5.1k<math>\Omega</math> terminated Vol. -30dB)</b>	
2ch	70dB
4ch	55dB
<b>Power Supply</b>	
U.S.A. & Canadian models	AC120V 60Hz
Australian & British models	AC240V 50Hz
European model	AC220V 50Hz
General model	AC110/120/220/240V, 50/60Hz
<b>Power Consumption</b>	
U.S.A. & Canadian models	170W
Australian, British & European models	250W
General model	170W
<b>AC Outlet (U)(C)(R)</b>	
Unswitched x 1	200W max
<b>Dimensions (W x H x D)</b>	
	435 x 92.5 x 286.7 mm
	(17-1/8" x 3-11/16" x 11-5/16")
<b>Weight</b>	
	5.0kg (11 lb)

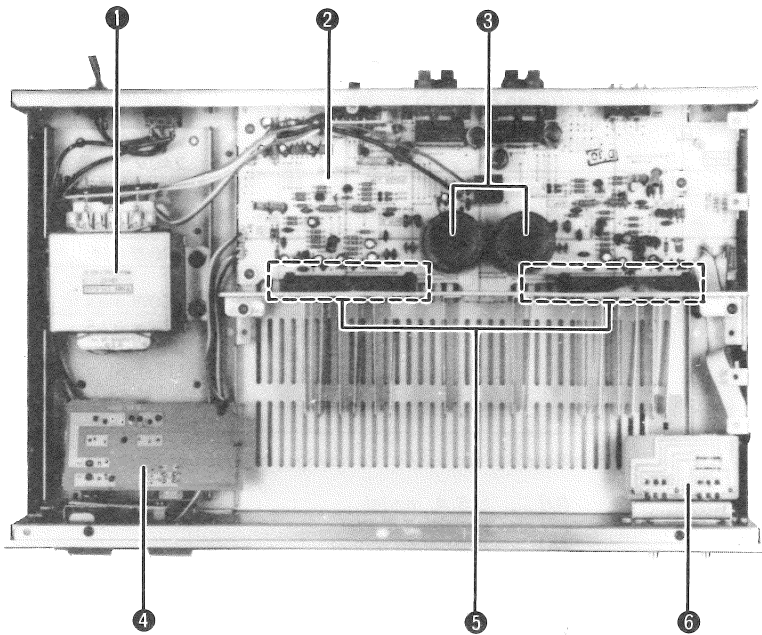
Specifications are subject to change without notice.

- (U) ..... U.S.A. model
- (C) ..... Canadian model
- (A) ..... Australian model
- (B) ..... British model
- (G) ..... European model
- (R) ..... General model

**BLOCK DIAGRAM**



**INTERNAL VIEW**



- ① POWER TRANSFORMER  
 U.S.A. model : XB109001  
 Canadian model : XB111001  
 Australian, British & European models : XB110001  
 General model : XB108001
- ② MAIN CIRCUIT BOARD (1)
- ③ ELECTROLYTIC CAPACITOR
- ④ MAIN CIRCUIT BOARD (2)
- ⑤ POWER IC
- ⑥ MAIN CIRCUIT BOARD (3)

**DISASSEMBLY PROCEDURES**

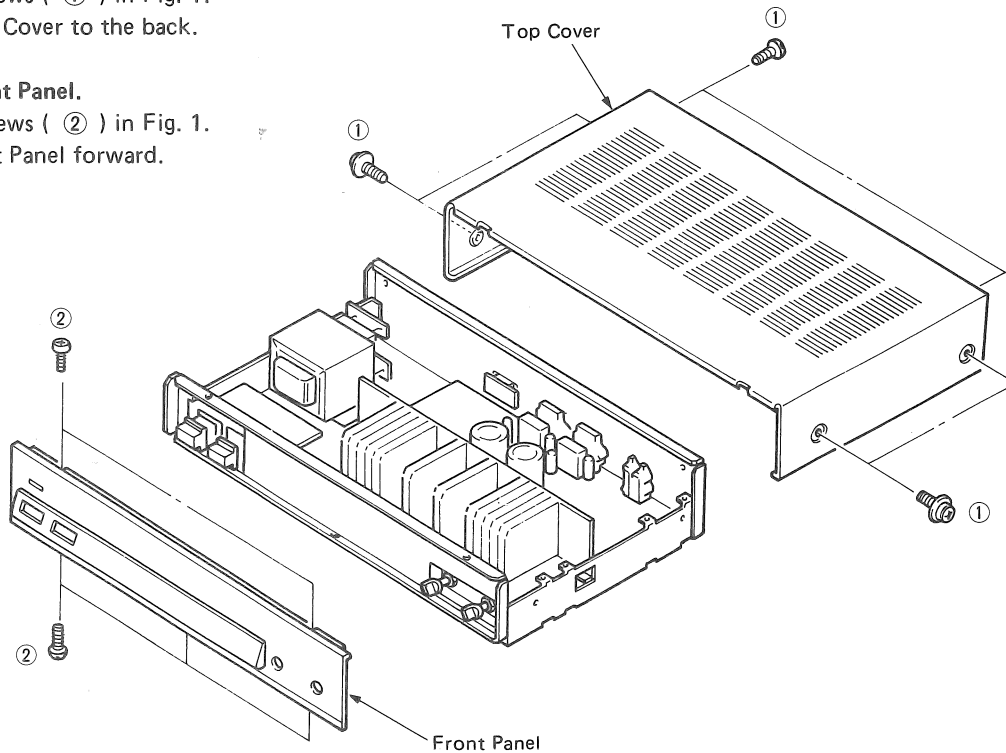
(Remove parts in disassembly order as numbered.)

**1. Removal of Top Cover**

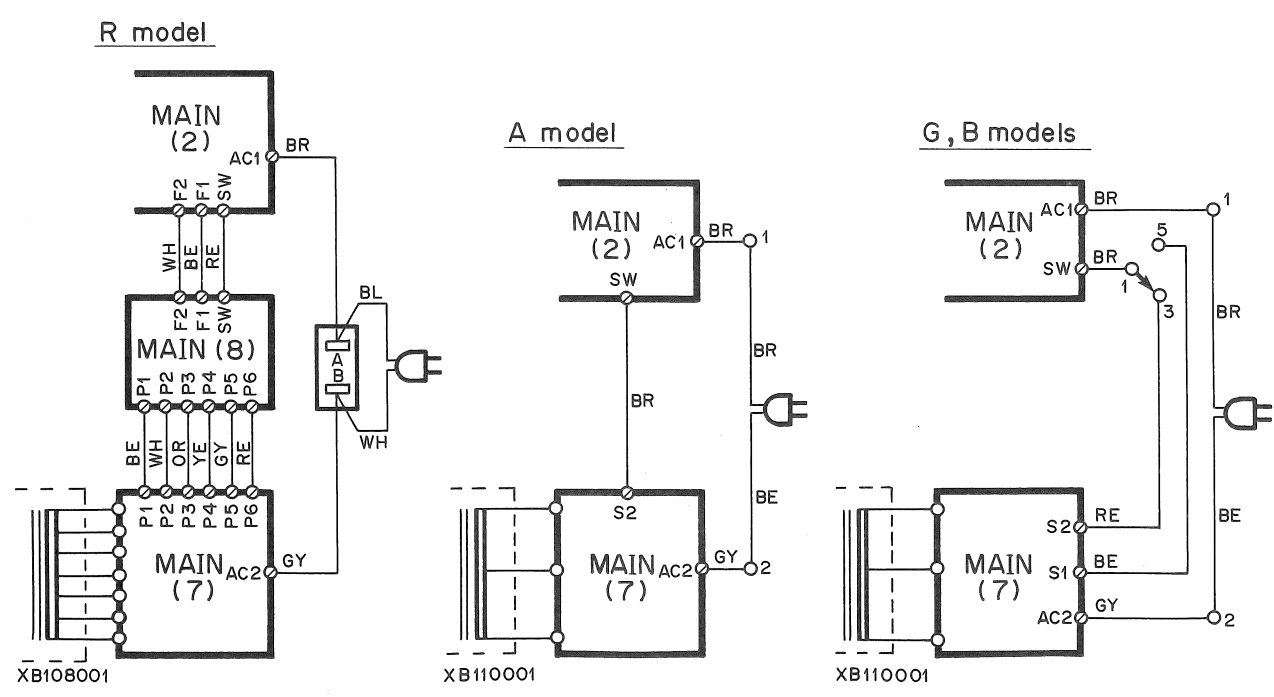
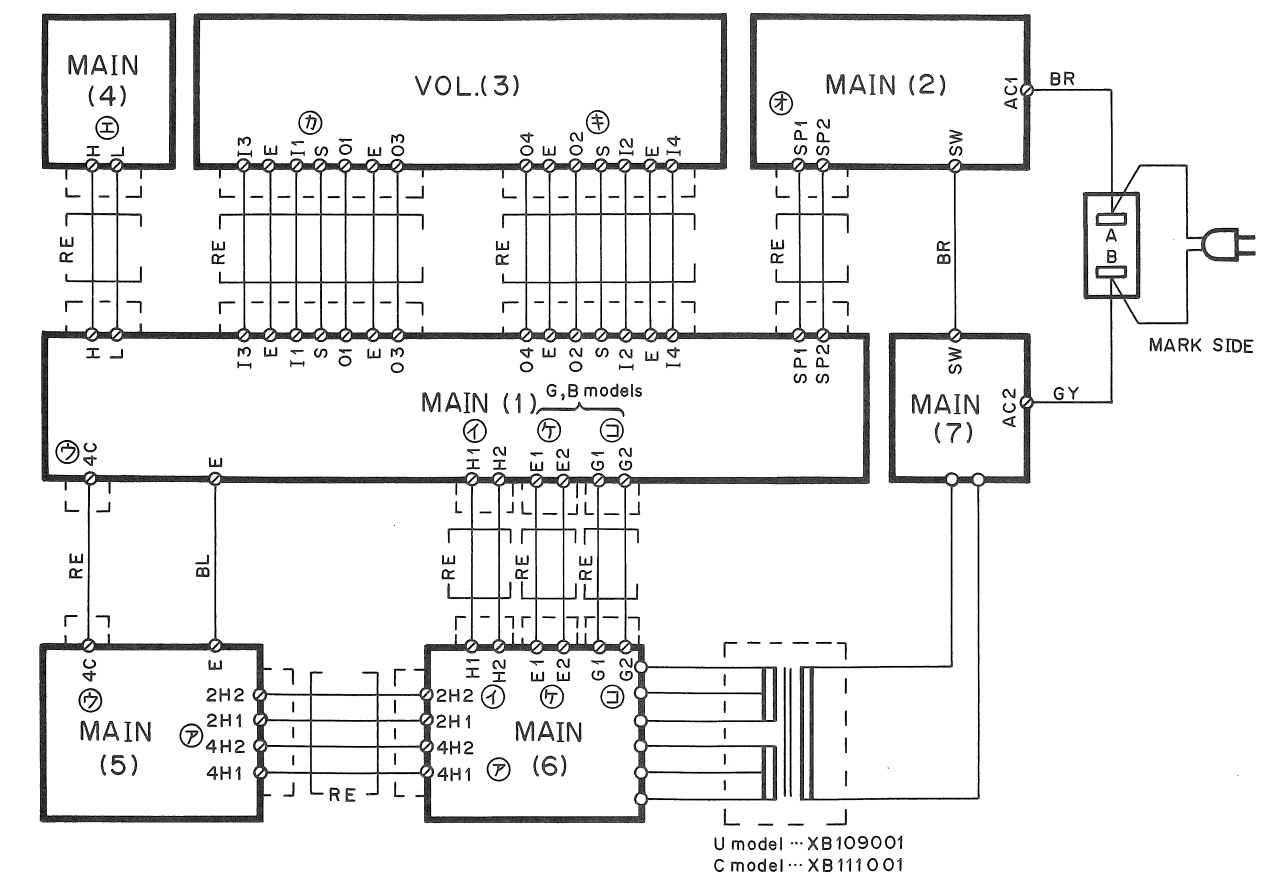
- a. Remove 6 screws ( ① ) in Fig. 1.
- b. Slide the Top Cover to the back.

**2. Removal of Front Panel.**

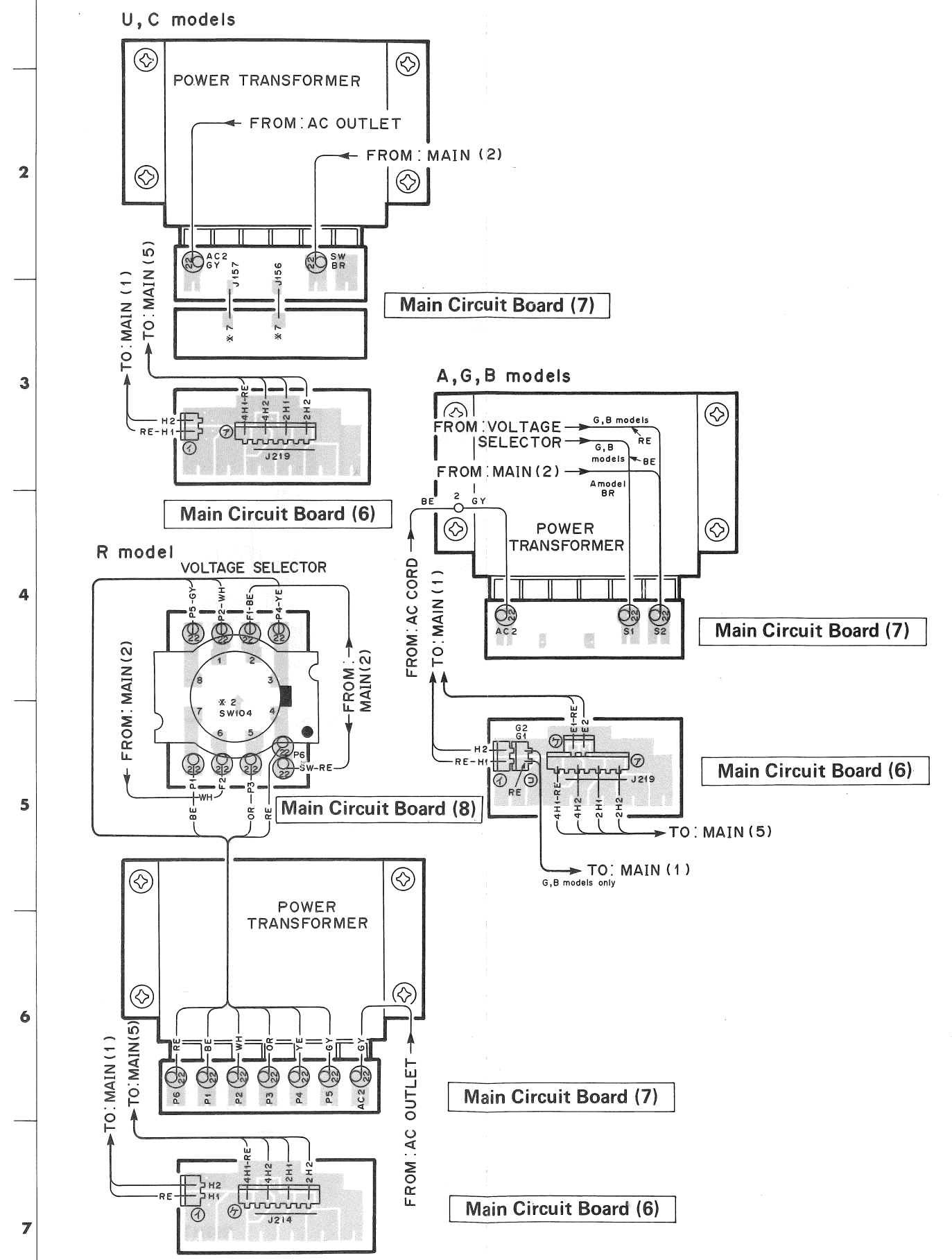
- a. Remove 5 screws ( ② ) in Fig. 1.
- b. Pull the Front Panel forward.



WIRING

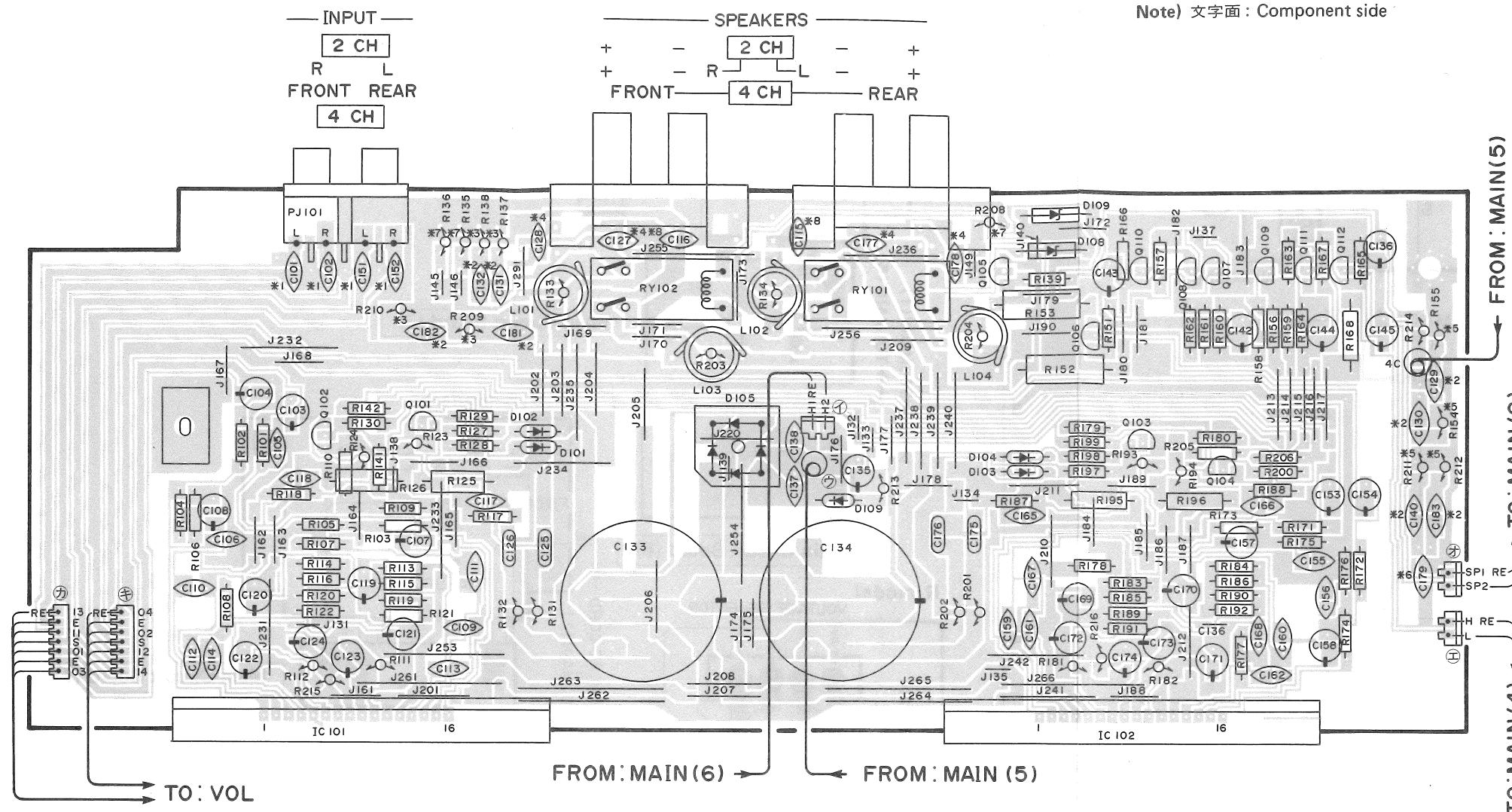


PRINTED CIRCUIT BOARD (Pattern side)



PRINTED CIRCUIT BOARD (Pattern side)

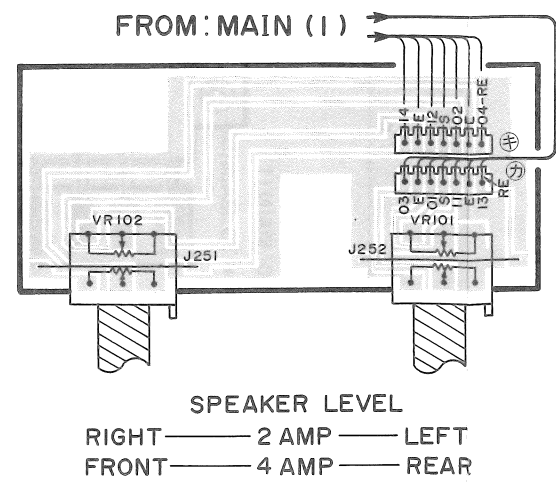
Note) 文字面 : Component side



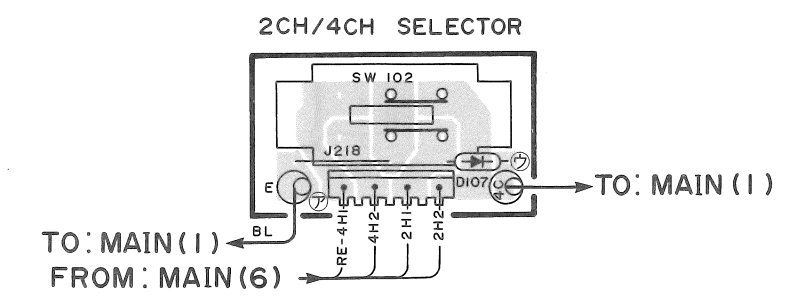
Note) \* marked

Markets	R	U, C	A	G, B
* 1	C141	0.01	0.01	0.01
* 2	SW104	SET	NON-SET	NON-SET
* 3	F102	T1.5A 250V	OPEN	OPEN
* 4	F101	T3.0A 250V	3.0A 250V	T1.6A 250V
* 5	PJ101	LB401030	LB401030	LB401040
* 6	J145, 146, 148, 149	OPEN	OPEN	OPEN
* 7	J156, 157	OPEN	SHORT	OPEN
* 8	C101, 102, 151, 152	OPEN	OPEN	OPEN
* 9	C129 ~ 132, 140, 181 ~ 183	OPEN	OPEN	OPEN
* 10	R137, 138, 209, 210	OPEN	OPEN	OPEN
* 11	C127, 128, 177, 178	OPEN	OPEN	OPEN
* 12	R154, R155, 211, R212	OPEN	OPEN	OPEN
* 13	C179	OPEN	OPEN	OPEN
* 14	R135, 136, 207, 208	OPEN	OPEN	OPEN
* 15	J291	OPEN	OPEN	OPEN
* 16	C115, 116	OPEN	OPEN	OPEN

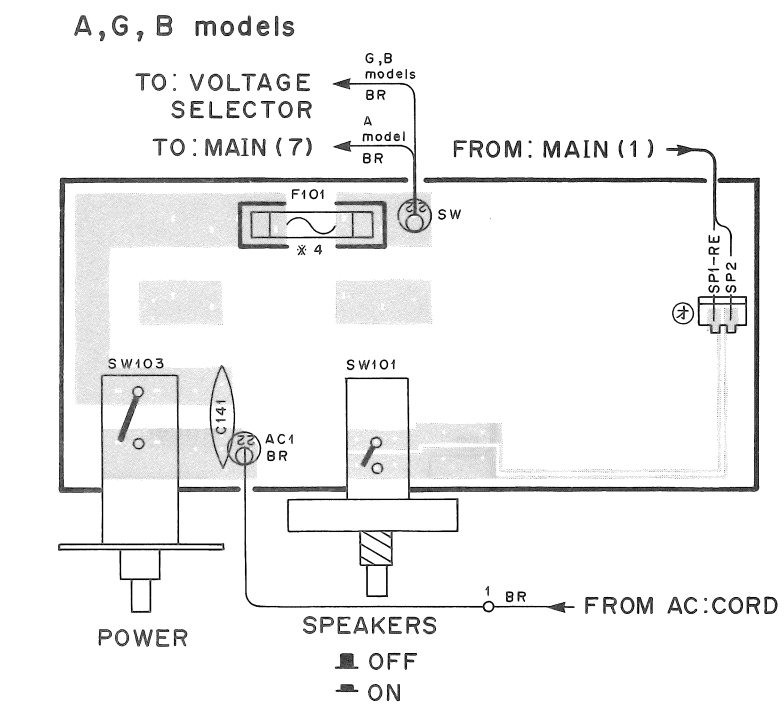
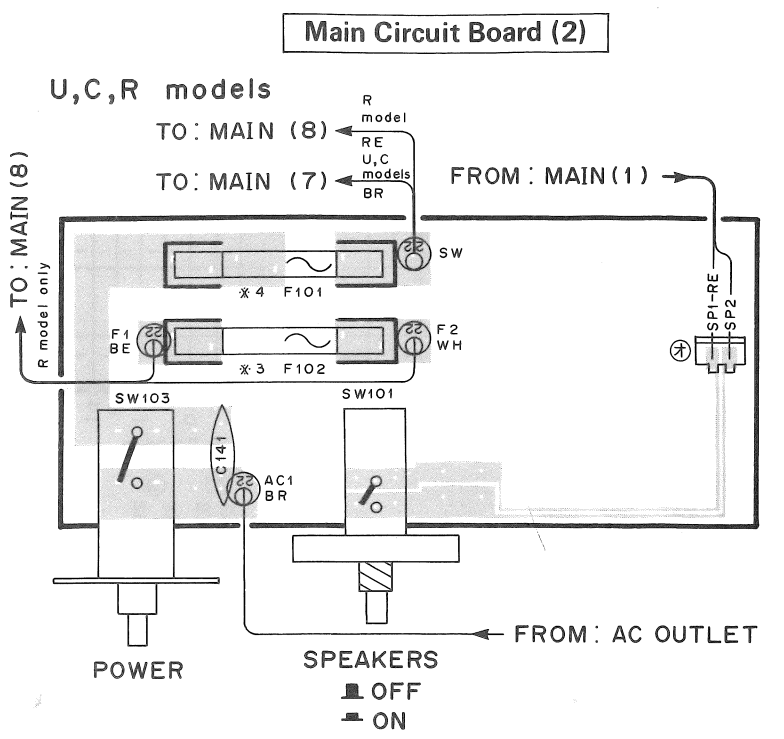
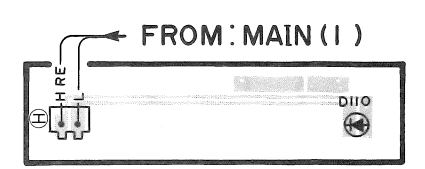
Main Circuit Board (3)



Main Circuit Board (5)



Main Circuit Board (4)



# PARTS LIST

## ■WARNING

Components having special characteristics are marked  $\Delta$  and must be replaced with parts having specifications equal to those originally installed.

● Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to p.14.

MX-35

## ■ ELECTRICAL PARTS

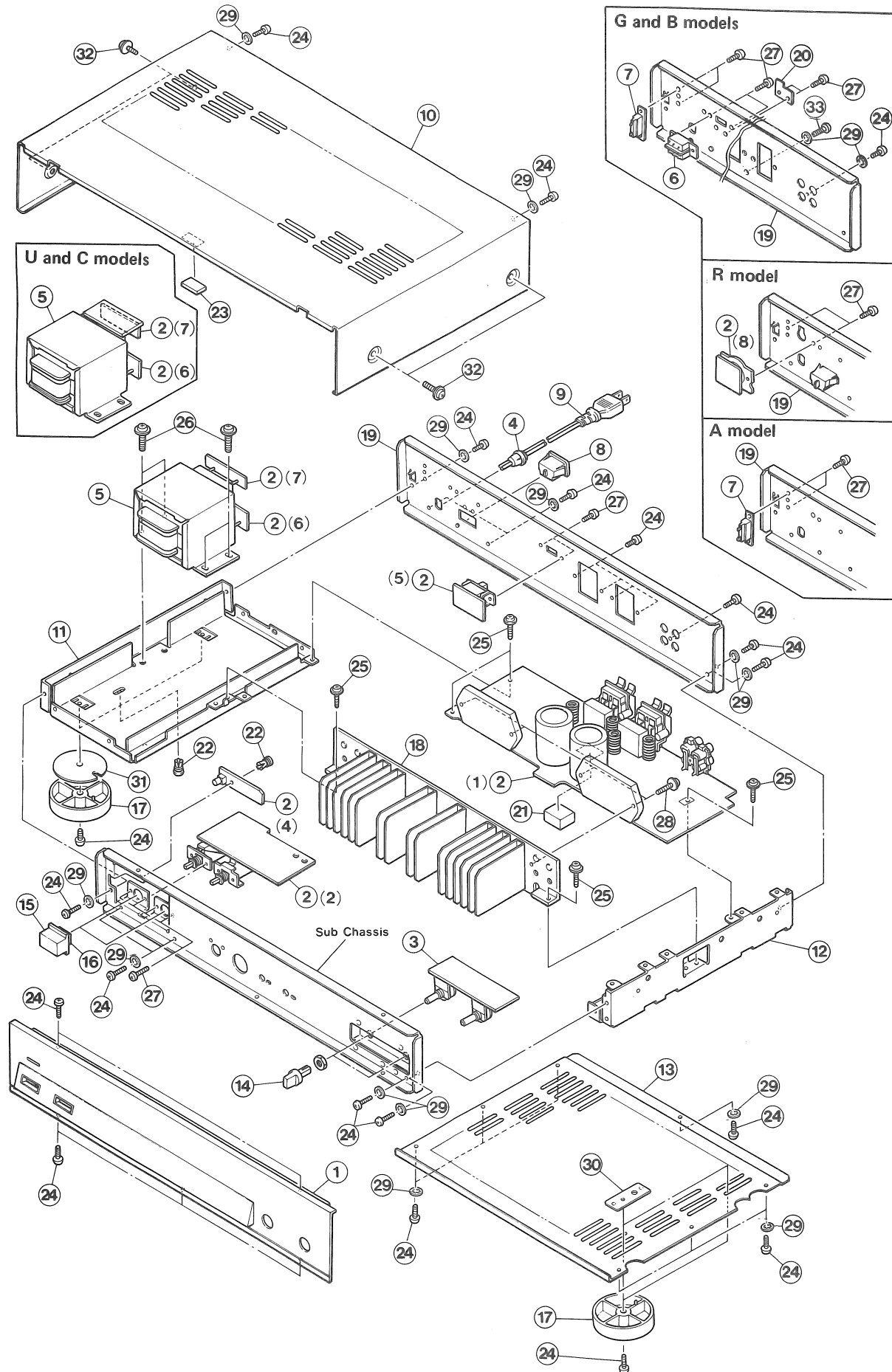
Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
	<b>NA 09 96 10</b>	<b>Main Circuit Board</b>	<b>メインシート</b>				
	Fi 32 41 00	Ceramic Cap	セラコン	C141		J	
	Fi 41 41 00	//	//	//		R,U,A,C	
	Fi 51 41 00	//	//	//		R,U,A,C	
	VA 98 53 00	//	//	//		B,G	
	Fi 55 44 70	//	//	C115,116		B,G	
	FG 20 02 00	//	//	C117,118,165,166			
	FG 21 11 80	//	//	C109,110,159,160			
	FG 21 21 50	//	//	C113,114,161,162			
	FG 21 22 20	//	//	C105,106,155,156			
	FG 21 22 20	//	//	C101,102,151,152		B,G	
	FG 24 36 80	//	//	C179		B,G	
	FG 41 33 30	//	//	C111,112,167,168			
	FG 24 41 00	//	//	C129-132,140,181-183		B,G	
	FG 24 41 00	//	//	C137,138			
	FG 24 42 20	//	//	C127,128,177,178		B,G	
	VB 67 74 00	Electrolytic Cap	ケミコン	C133,134			$\Delta$
	FA 15 44 70	Mylar Cap	マイラーコン	C125,126,175,176			
	UH 11 81 00	Electrolytic Cap	ケミコン	C107,108,143,157,158			
	UJ 14 73 30	//	//	C145			
	UH 14 74 70	//	//	C142			
	UH 16 54 70	//	//	C135			$\Delta$
	UH 16 61 00	//	//	C144			
	UJ 16 71 00	//	//	C103,104,136,153,154			
	UJ 16 72 20	//	//	C123,124,173,174			
	UH 16 74 70	//	//	C119-122,169-172			
	GD 90 04 70	Output Coil	アウトプットコイル	L101-104			
	HV 45 34 70	Flame Proof Carbon Resistor	不燃化カーボン抵抗	R154,155,211,212		B,G	
	HV 45 31 00	//	//	R215,216			
	HV 45 34 70	//	//	R131-134,213,214,201-204			$\Delta$
	HV 45 51 00	//	//	R111,112,181,182			$\Delta$
	HV 45 55 60	//	//	R123,124,193,194			
	HV 45 31 00	//	//	R135,136,208		B,G	
	HV 45 41 00	//	//	R137,138,209,210		B,G	
	VB 12 44 00	Metal Oxide Film Resistor	酸化金抵抗	R125,126,195,196			$\Delta$
	HL 92 21 00	//	//	//			$\Delta$
	HL 31 63 90	//	//	R168			
	HL 32 54 70	//	//	R152,153			
	iA 09 70 00	Transistor	トランジスタ	Q106,111,112			
	iC 18 15 20	//	//	Q105,108-110			$\Delta$
	iC 22 40 00	//	//	Q101-104,107			$\Delta$
	XB 11 20 01	IC	I C	IC101,102			$\Delta$
	iF 00 00 40	//	//	D101-104			
	iF 00 14 00	//	//	D106,107			$\Delta$
	VA 99 39 00	//	//	//			$\Delta$
	iF 00 44 40	LED (Red)	L E D	D110			
	VC 67 48 00	Zener Diode	ツェナーダイオード	D108,109			
	iH 00 11 60	Diode Bridge	ダイオードブリッジ	D105			

※New Parts(新規部品) NR

Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
※	KA 80 28 40	Push Switch	プッシュスイッチ	SW101			
※	KA 80 51 50	Power Switch	パワースイッチ	SW103			$\Delta$
※	VC 41 94 00	Slide Switch	スライドスイッチ	SW102			$\Delta$
	VA 96 18 00	Voltage Selector	電圧切換器	SW104		R	$\Delta$
	KB 00 03 40	Fuse	ヒューズ	F102		R	$\Delta$
	KB 00 03 60	//	//	F101		J,R	$\Delta$
	KB 00 07 40	//	//	//		A,B,G	$\Delta$
	KB 00 26 50	//	//	//		U,C	$\Delta$
	KC 00 20 00	Relay	リレー	RY101,102			
	LB 40 10 30	Pin Jack	ピンジャック	PJ101		J,U,C,R,A	
	LB 40 10 40	//	//	//		B,G	
	LB 20 18 80	Fuse Holder Pin	ヒューズホルダーピン			J,U,C,R,A,B,G	
	VB 57 01 00	Speaker Terminal	スピーカー端子	(L)			
	VB 57 04 00	//	//	(R)			
	CB 64 46 70	Cover	コンデンサーカバー			B,G	
	VD 00 50 00	Conector	PHコネクター				
	BB 06 95 10	Ground Metal	ランド金具				
	VA 82 15 00	Radiator	ラジエター			C	
	BB 07 13 60	Screw Terminal	ネジタンス			G,B	
※	VF 61 96 00	Volume Circuit Board	ボリュームシート				
	VB 57 00 00	Potentiometer	ボリューム	B20k $\Omega$ × 2			

※New Parts(新規部品) NR

EXPLODED VIEW



MECHANISM PARTS

Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	リンク
※ 1	VF 61 94 00	Panel Unit	パネルユニット	Black			
※ //	VF 61 95 00	//	//	Titan			
※ 2	NA 09 96 10	Main Circuit Board	メインシート			J	
※ //	NA 09 96 20	//	//			U	
※ //	NA 09 96 30	//	//			C	
※ //	NA 09 96 40	//	//			R	
※ //	NA 09 96 50	//	//			A	
※ //	NA 09 96 60	//	//			B,G	
※ 3	VF 61 96 00	Volume Circuit Board	V O L シート				
4	CB 61 68 10	Cord Stopper	コードストッパー	CM-22A		J	
//	CB 62 01 90	//	//	CM-22B		R,A,B,G	
//	CB 62 02 00	//	//	CM-22C		U,C	
5	XB 10 70 01	Power Transformer	電源トランス		M-35	J	△
//	XB 10 80 01	//	//			R	△
//	XB 10 90 01	//	//			U	△
//	XB 11 00 01	//	//			A,B,G	△
//	XB 11 10 01	//	//			C	△
6	KA 40 12 60	Slide Switch	スライドスイッチ	ESD39198S-F		B,G	△
7	VD 61 41 00	Terminal Plate	中継端子台	2P MA0092A		A,B,G	△
8	LB 20 30 60	AC Outlet	A C アウトレット			J,U,C,R	△
9	MG 00 22 90	Power Cord	電源コード	7A 125V 2m		J	△
//	MG 00 16 30	//	//	6A 250V 2m		R	△
//	MG 00 23 10	//	//	7.5A 250V 2m		A	△
//	MG 00 23 20	//	//	2.5A 250V 2m		G	△
//	MG 00 23 30	//	//	6.0A 300V 2m		B	△
//	MG 00 22 20	//	//	10A 125V 1.98m		U,C	△
10	AA 61 37 70	Top Cover	トップカバー				
※ //	VE 46 16 00	//	//				
11	VC 02 79 00	Frame L. Ass'y	フレームL Ass'y				
12	AA 61 31 80	Side Frame R	サイドフレーム R				
13	AA 60 66 90	Bottom Cover	ボトムカバー				
14	CB 61 37 20	Knob	ツマミ	φ12			
※ //	VD 91 79 00	//	//	φ12			
15	VF 39 71 00	Button	ボタン	10×25			
※ //	VF 39 73 00	//	//	10×25			
16	CB 60 98 50	Flexible Ring	フレキシブルリング				
17	VE 50 53 00	Leg	脚	φ60 16H			
※ //	VE 50 53 00	//	//	φ60 16H			
※ //	VE 50 52 00	//	//	φ60 16H			
18	VB 51 64 00	Radiator	ラジエター				
19	VF 39 54 00	Rear Panel	リアパネル			J	
※ //	VF 39 53 00	//	//			U,C	
※ //	VF 39 56 00	//	//			R	
※ //	VF 39 59 00	//	//			B,G	
※ //	VF 60 96 00	//	//			A	
20	CB 60 14 40	Stopper VS	V S ストッパー			B,G	
21	CB 61 03 70	Anti-Vibration Rubber	防振ゴム				
22	CB 06 88 80	Plastic Rivet	プラスチックリベット				
23	VC 11 62 00	Dumper	ダンパー				
24	Ei 33 00 86	Binding Head Tapping Screw	バインドタッピングネジ	3×8 FCRM3-BI			PACK
25	EK 93 00 10	BW Head Tapping Screw	BWヘッドタッピングネジ	3×8 ZMC2-BI			
26	EZ 00 13 20	Cup Screw	カップネジ	4×8 FCRM3-BI			
27	ED 33 00 66	Binding Head Screw	バインド小ネジ	3×6 FCRM3-BI			PACK

※ New Parts (新規部品) NR





# Parts List for Carbon Resistor

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ353100	※	12KΩ	HJ357120	HF857120
1.8 "	HJ353180	※	15 "	HJ357150	HF857150
2.2 "	HJ353220	HF853220	18 "	HJ357180	HF857180
3.3 "	HJ353330	HF853330	22 "	HJ357220	HF857220
4.7 "	HJ353470	HF853470	27 "	HJ357270	HF857270
5.6 "	HJ353560	HF853560	33 "	HJ357330	HF857330
10 "	HJ354100	HF854100	39 "	HJ357390	HF857390
15 "	HJ354150	HF854150	47 "	HJ357470	HF857470
22 "	HJ354220	HF854220	56 "	HJ357560	HF857560
27 "	HJ354270	HF854270	68 "	HJ357680	HF857680
33 "	HJ354330	HF854330	82 "	HJ357820	HF857820
39 "	HJ354390	HF854390	91 "	HJ357910	HF857910
47 "	HJ354470	HF854470	100 "	HJ358100	HF858100
56 "	HJ354560	HF854560	120 "	HJ358120	HF858120
68 "	HJ354680	HF854680	150 "	HJ358150	HF858150
82 "	HJ354820	HF854820	180 "	HJ358180	HF858180
100 "	HJ355100	HF855100	220 "	HJ358220	HF858220
110 "	HJ355110	HF855110	270 "	HJ358270	HF858270
120 "	HJ355120	HF855120	330 "	HJ358330	HF858330
150 "	HJ355150	HF855150	390 "	HJ358390	HF858390
160 "	HJ355160	※	470 "	HJ358470	HF858470
180 "	HJ355180	HF855180	560 "	HJ358560	HF858560
220 "	HJ355220	HF855220	680 "	HJ358680	HF858680
270 "	HJ355270	HF855270	820 "	HJ358820	HF858820
330 "	HJ355330	HF855330	1.0MΩ	HJ359100	HF859100
390 "	HJ355390	HF855390	1.2 "	HJ359120	※
470 "	HJ355470	HF855470	1.5 "	HJ359150	HF859150
510 "	※	HF855510	1.8 "	HJ359180	HF859180
560 "	HJ355560	HF855560	2.2 "	HJ359220	HF859220
680 "	HJ355680	HF855680	3.3 "	HJ359330	HF859330
820 "	HJ355820	HF855820	3.9 "	HJ359390	※
910 "	HJ355910	HF855910	4.7 "	HJ359470	※
1.0KΩ	HJ356100	HF856100			
1.2 "	HJ356120	HF856120			
1.5 "	HJ356150	HF856150			
1.8 "	HJ356180	HF856180			
2.0 "	HJ356200	HF856200			
2.2 "	HJ356220	HF856220			
2.4 "	HJ356240	HF856240			
2.7 "	HJ356270	HF856270			
3.0 "	HJ356300	HF856300			
3.3 "	HJ356330	HF856330			
3.6 "	HJ356360	HF856360			
3.9 "	HJ356390	HF856390			
4.7 "	HJ356470	HF856470			
5.1 "	HJ356510	HF856510			
5.6 "	HJ356560	HF856560			
6.8 "	HJ356680	HF856680			
8.2 "	HJ356820	HF856820			
9.1 "	HJ356910	HF856910			
10 "	HJ357100	HF857100			

