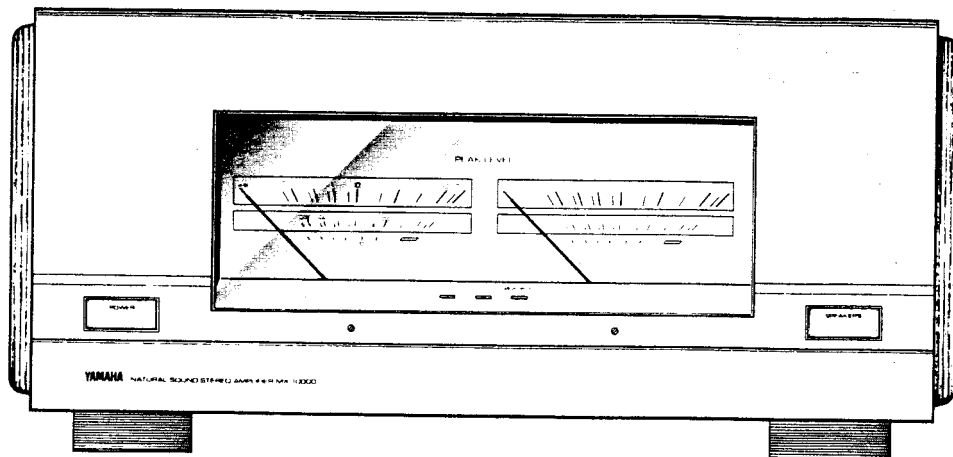


STEREO POWER AMPLIFIER MX-10000

SERVICE MANUAL

EUROPEAN VERSION



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.

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100090

SINCE 1887



YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

1.82K-243 Printed in Japan '87.8

■ TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
2. 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 $0.15\mu\text{F}$.
 - Leakage current must not exceed 0.5mA.
 - Be sure to test for leakage with the AC plug in both polarities.

■ SPECIFICATIONS

■ AUDIO SECTION

Minimum RMS Output Power Per Channel

20Hz ~ 20kHz	
0.001% THD 8 ohms	250W
0.001% THD 6 ohms	300W
0.002% THD 4 ohms	400W

Dynamic Power Per Channel

(by IHF Dynamic Headroom measuring method)

8 ohms	350W
6 ohms	450W
4 ohms	600W
2 ohms	900W
1 ohm	1200W

Power Band Width

0.01% THD, 125W, 8 Ω	10Hz ~ 100kHz
-----------------------------	---------------

Damping Factor

1kHz 8 ohms	1000
-------------	------

Input Sensitivity/Impedance

MAIN IN	1.5V/25k Ω
---------	-------------------

Frequency Response

MAIN IN	+0, -2dB
2Hz ~ 300kHz	

Total Harmonic Distortion

MAIN IN (125W/8 Ω)	0.0005%
----------------------------	---------

Signal to Noise Ratio (IHF-A-Network)

MAIN IN (Shorted)	132dB
-------------------	-------

Channel Separation

MAIN IN (1kHz/20kHz)	100dB/90dB
Slew Rate	500V/ μsec

Power Supply

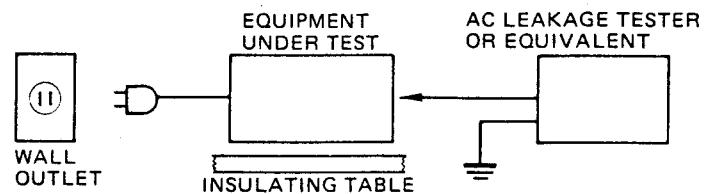
AC 120V
60Hz (U)
AC220V
50Hz (G)

Power Consumption

600W

AC Outlet Unswitched

100W (max) (U)



● POLARIZATION (U model only)

This amplifier product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.

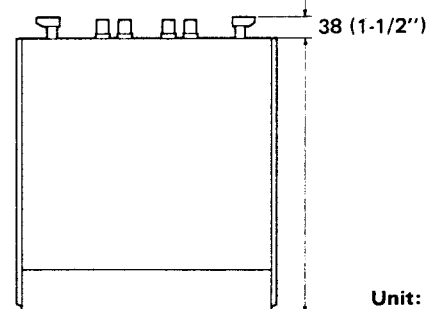
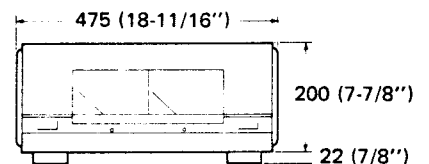
Dimensions (W x H x D)	475 x 220 x 543 mm (18-11/16") x (8-3/4") x (21-3/8")
Weight	43 kg (94 lbs 13 oz)
Accessories	Control Cable x 1 Slotted Screwdriver x 1 Polishing Cloth x 1

*Specifications subject to change without notice.

(U) U.S.A. model

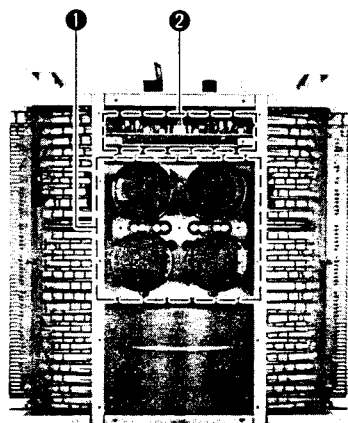
(G) European model

● DIMENSIONS

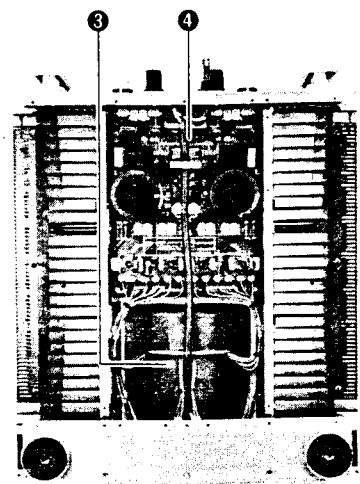


Unit: mm (inch)

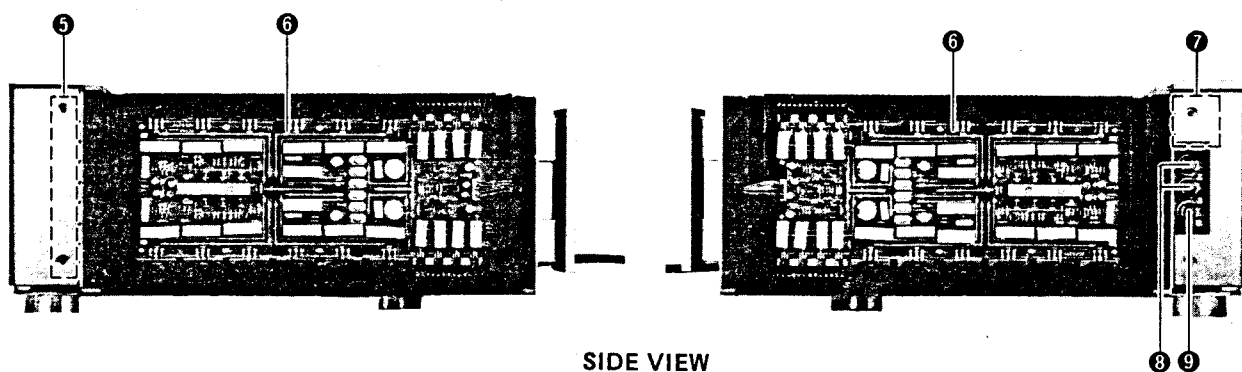
■ INTERNAL VIEW



TOP VIEW



BOTTOM VIEW



❶ Electrolytic Cap. (22000 μ F 100V): VC475100

❷ Relay Circuit Board (Amp.)

❸ Power Transformer Ass'y: VC800800 (U)
VC801000 (G)

❹ Center Circuit Board

❺ Relay Circuit Board (Amp.)

❻ Main Circuit Board

❼ Sub Transformer: XB998002 (U)
XB999002 (G)

❽ Fuse (10A 250V): KB001390 (U)

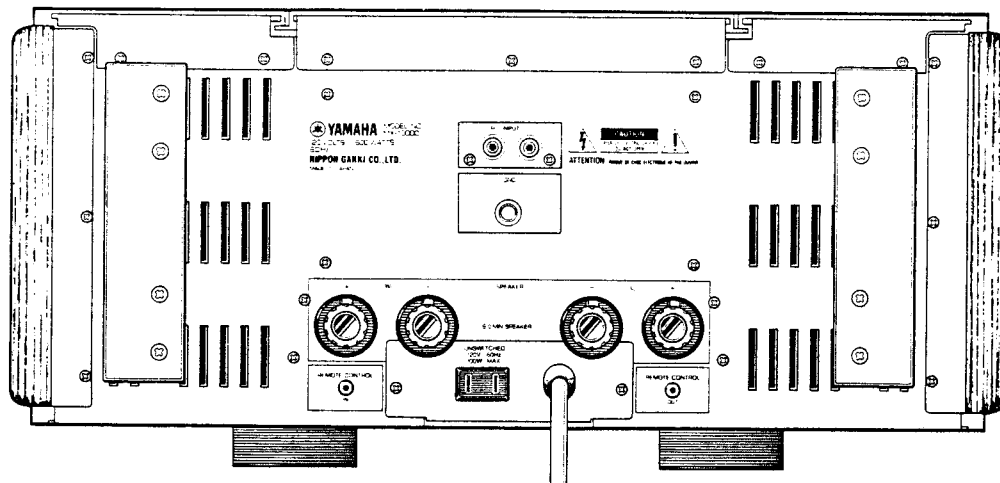
Fuse (T4.0A 250V): KB000790 (G)

❾ Fuse (2.0A 250V): KB001030 (U)

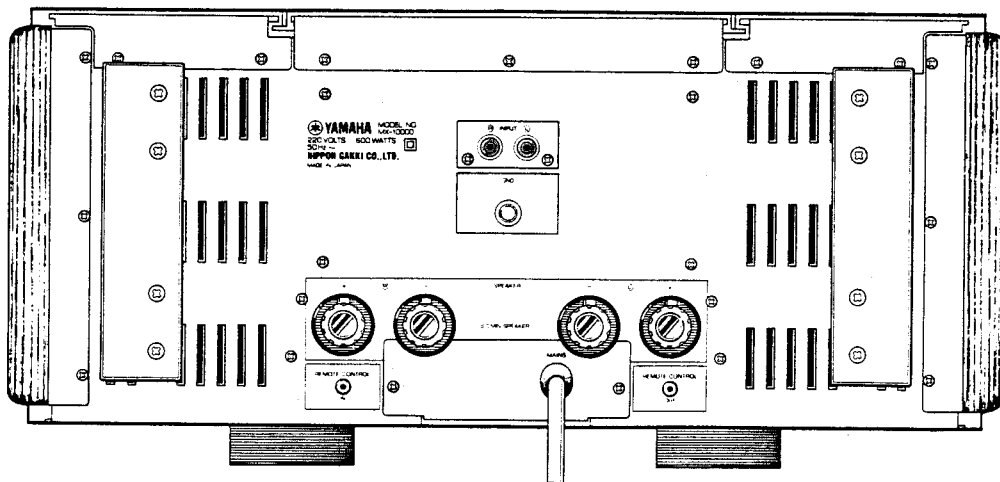
Fuse (T1.0A 250V): KB000730 (G)

REAR PANELS

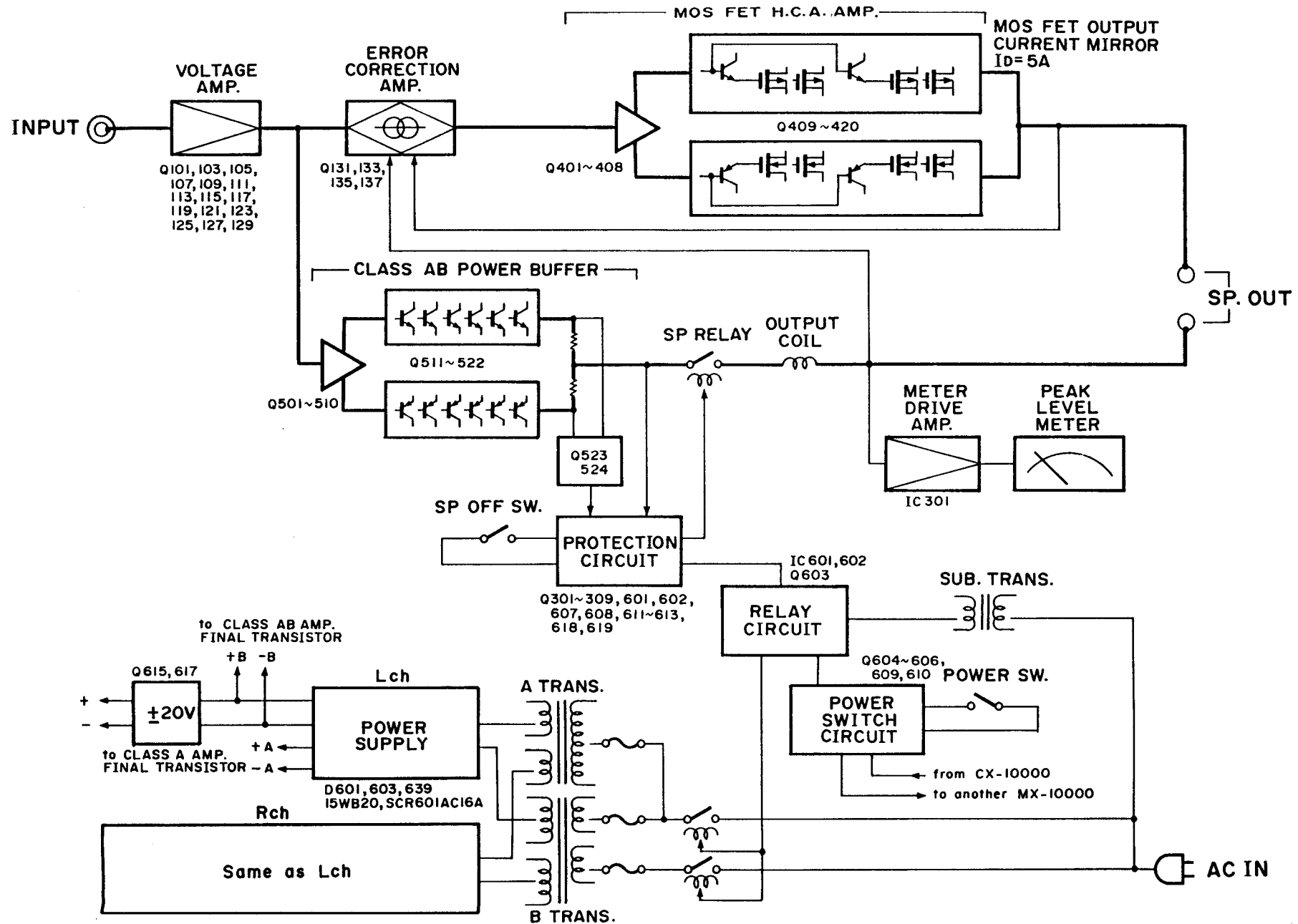
▼ U model



▼ G model



BLOCK DIAGRAM



DISASSEMBLY PROCEDURES

1. Removal of Top Cover

- Remove 3 screws (①) and slide the Top Cover back.

2. Removal of Side Top Panel and Side Wood Panel

- Remove 10 screws (②).
- Remove 10 screws (③).
- Remove 14 screws (④) and remove the Side Top Panel and Side Wood Panel.

3. Removal of Input Circuit Board Cover

- Remove 4 screws (⑤) and remove the Input Circuit Board Cover.

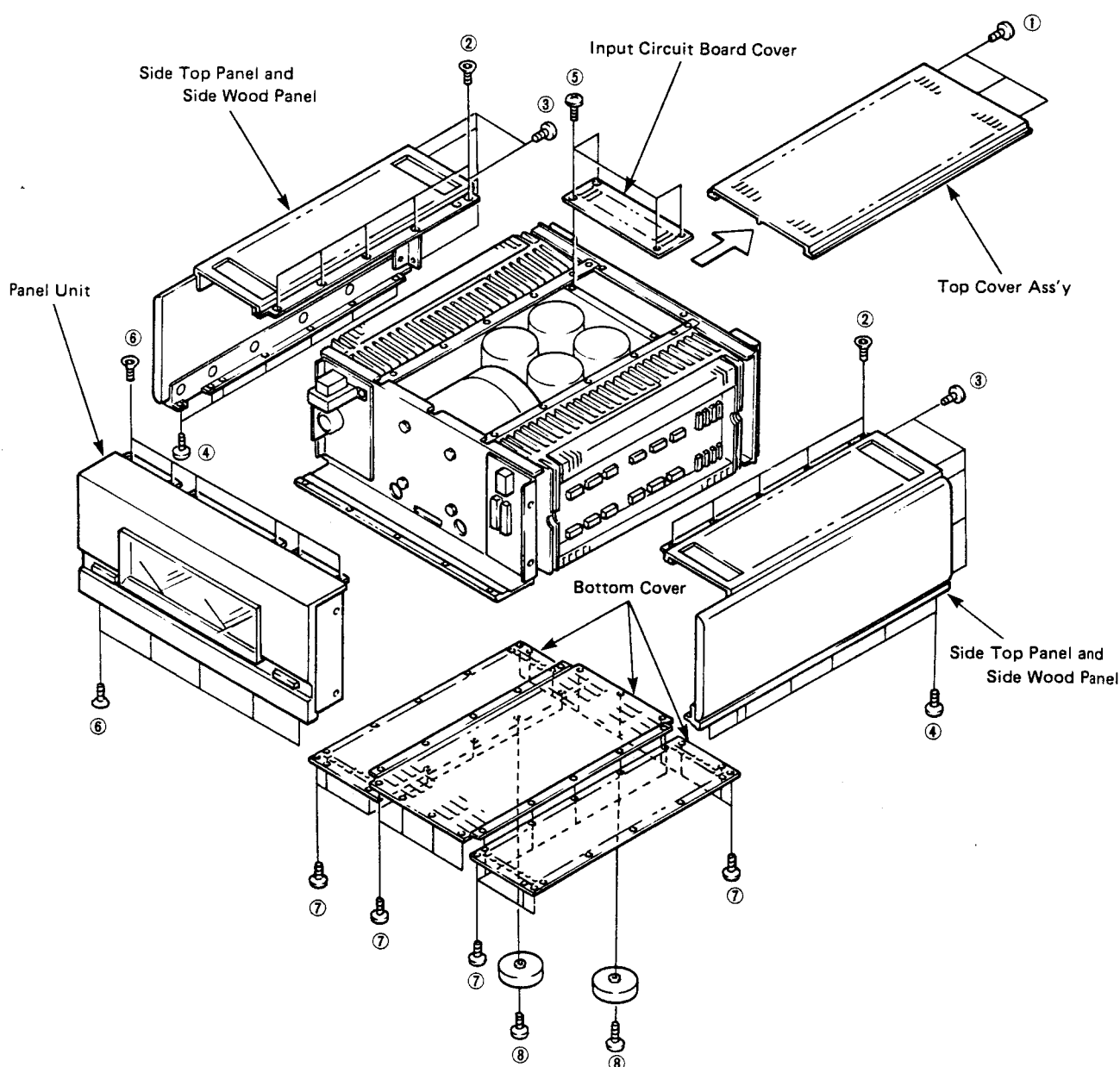
*With this much disassembly done, adjustments can be made.

4. Removal of Panel Unit

- Remove 11 screws (⑥).
- Remove the Panel Unit toward the front, being cautions of the 14 pin connector of the Meter Ass'y.

5. Removal of Bottom Cover

- Remove 25 screws (⑦).
- Remove 2 screws (⑧) and remove the Bottom Cover.



■ ADJUSTMENTS

• BEFORE ADJUSTMENT

1. Make sure that primary supply voltage comes within *AC120V $\pm$ 10% (U model).
*AC220V $\pm$ 10% (G model)
2. Before turning the power ON, check to ensure that the idle current control VR501 (both L and R) in the Main Circuit Board is at its minimum position (turned counterclockwise fully).
3. Wait 3 minutes after power ON to stabilize amplifier operation without signal.

Main Circuit Board

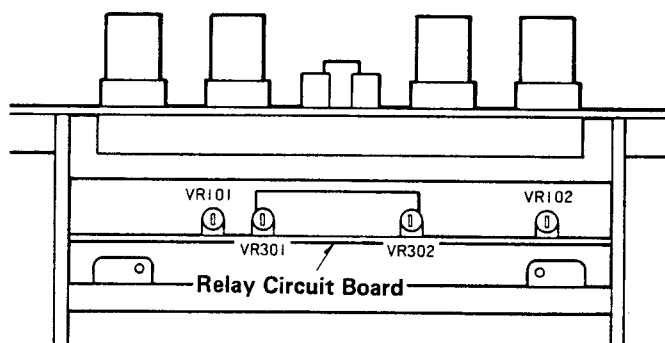
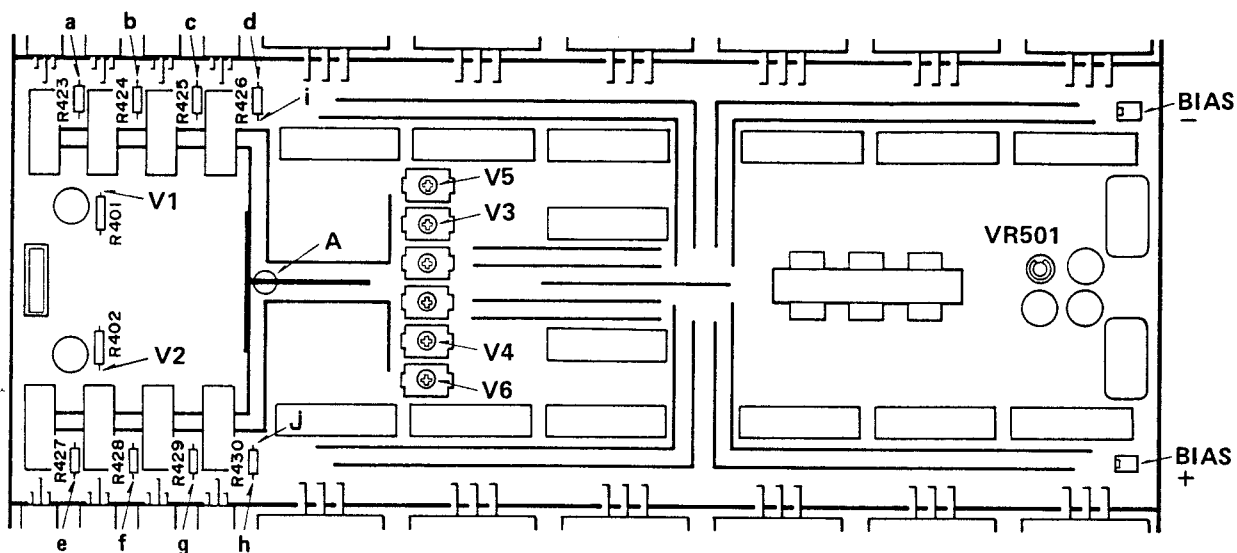
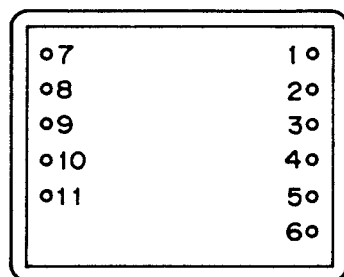


Fig. 1

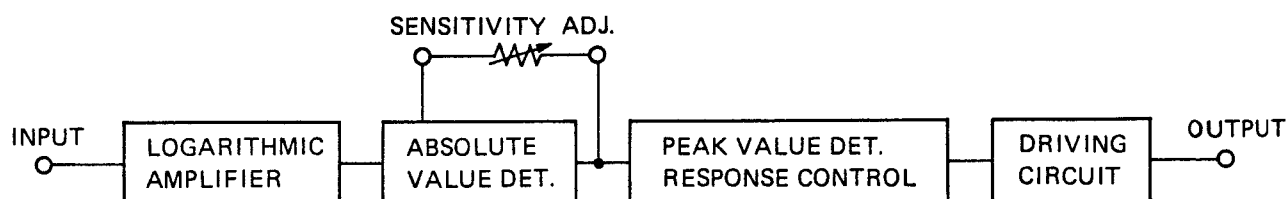
Step	Item	Adjustment/Confirmation	Reference
1	DC voltage check (1)	With negative input terminal of Digital Multi Meter connected to GND terminal in rear panel of unit and positive input terminal to V1 to V6 in Main Circuit Board, check voltage at each terminal. (Do the same for both L and R of Main Circuit Board.)	V1 = +20V $\pm$ 1V V2 = -20V $\pm$ 1V V3 = +4.5V $\pm$ 0.5V V4 = -4.5V $\pm$ 0.5V V5 = -85V $\pm$ 3V V6 = +85V $\pm$ 3V
2	DC voltage check (2)	Check DC voltage as follows to confirm "A" class power primary stage idle current. (Do the same for both L and R of Main Circuit Board.) With negative input terminal of Digital Multi Meter connected to A in Fig. 1 ("A" class power primary stage output bus bar), check voltage of "a" to "j" in Main Circuit Board.	a, b, c, d = +50mV $\sim$ +170mV e, f, g, h = -50mV $\sim$ -170mV i = +105mV $\pm$ 30mV j = -105mV $\pm$ 30mV
3	"A", "B" class power primary stage idle current	Adjust voltage between BIAS+ terminal and BIAS- terminal in Main Circuit Board with VR501. (Do the same for both L and R of Main Circuit Board.)	25mV $\pm$ 5mV *2-pin connectors are used for BIAS+ and BIAS- terminals. Their two pins have the same electric potential.
4	DC offset adjustment	Using VR101 and VR102 in Relay Circuit Board, adjust DC offset voltage at Speaker terminal.	$\pm$ 10mV or less
5	Meter adjustment	a) Make Meter "0" point adjustment without input signal. (Both L and R) b) With 1kHz input signal applied to input terminal, adjust input level so that output at Speaker terminal becomes 8 Ω 100W (28.3V) and check that meter pointer aligns with 100W scale. c) If meter pointer does not align as in b), adjust with VR301 and VR302 in Relay Circuit Board.	

■ IC BLOCK DIAGRAM

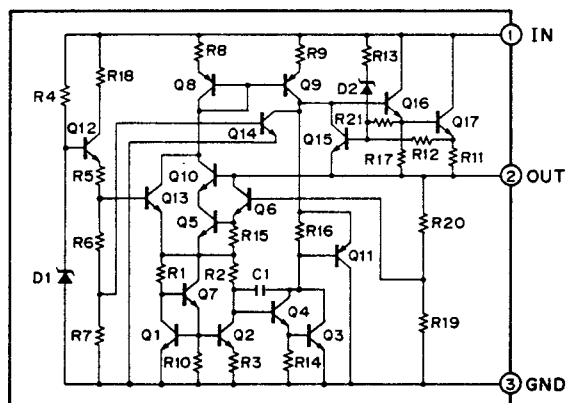
IC301: iG09910 (Meter Driver)



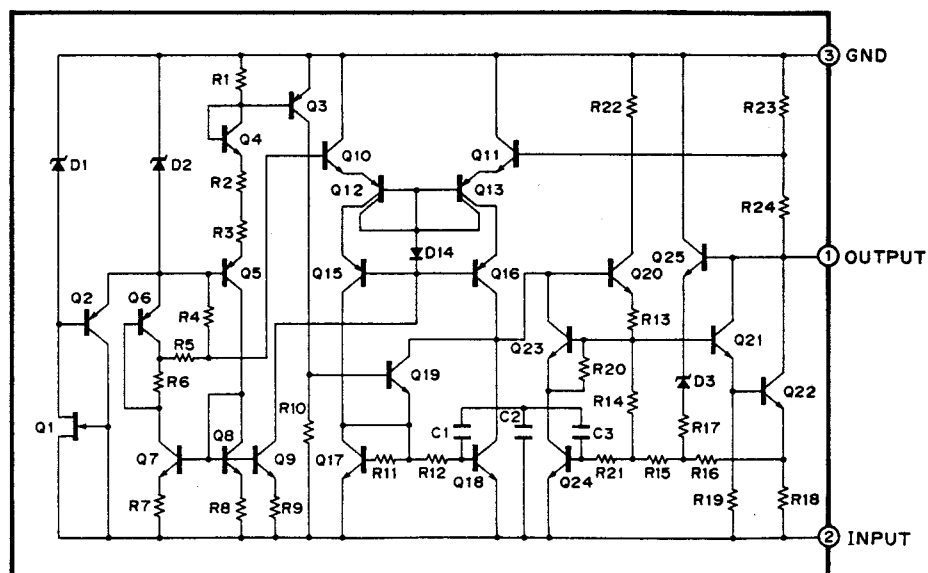
- | | |
|-------------------------------|-------------------------------|
| 1. INPUT A | 7. INPUT B |
| 2. -12V | 8. +12V |
| 3. ADJUSTMENT TERMINAL (VR A) | 9. ADJUSTMENT TERMINAL (VR B) |
| 4. ADJUSTMENT TERMINAL | 10. ADJUSTMENT TERMINAL |
| 5. OUTPUT A (METER R) | 11. OUTPUT B (METER L) |
| 6. GND | |



IC601: μ PC78M12H (Regulator)



IC602: NJM79M12A (Regulator)



■ PRINTED CIRCUIT BOARD (Pattern side)

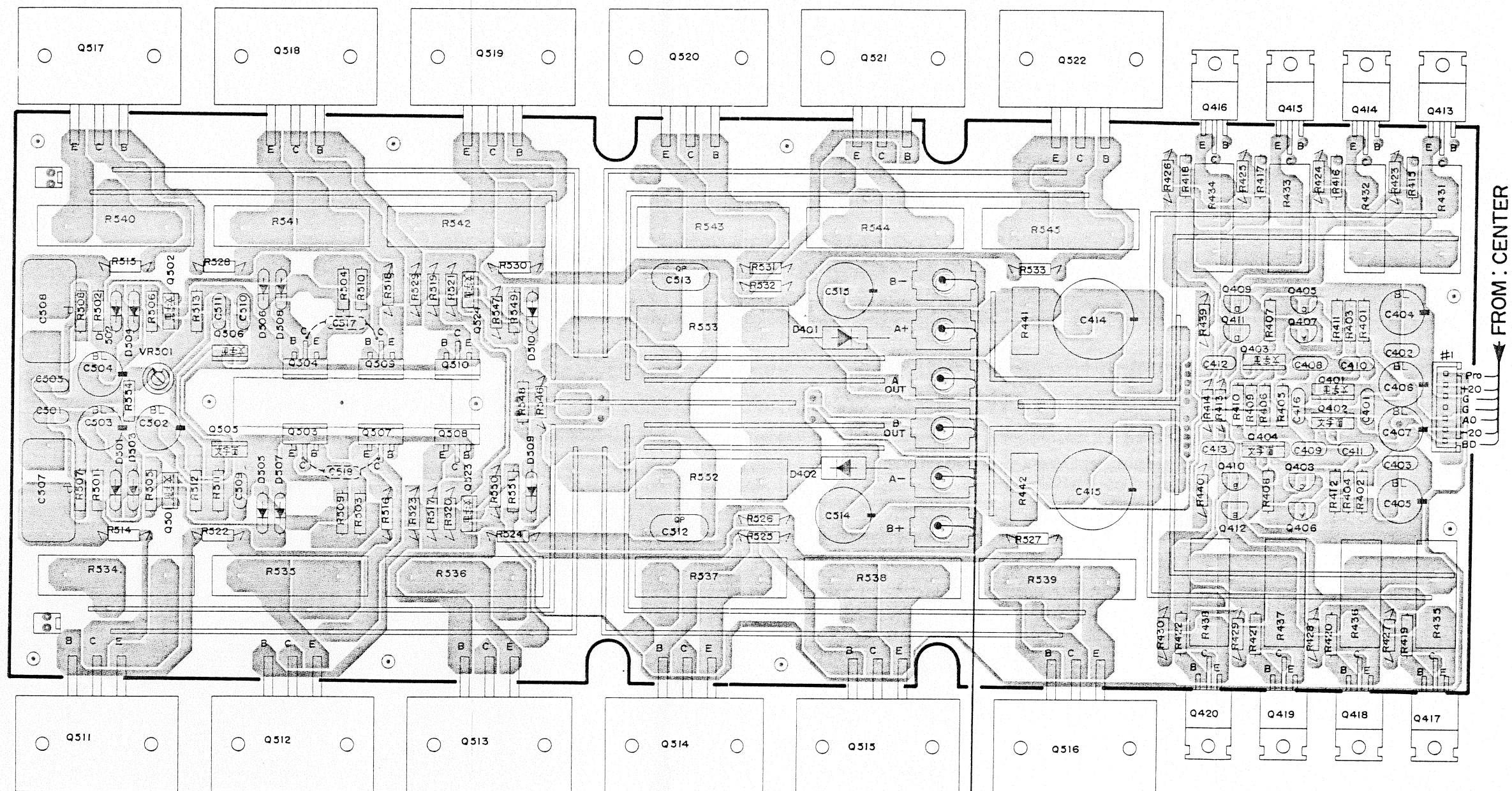
 : Pattern of part side

 : Pattern of solder side

● : Through hole

Note) 文字面 : Component side

Main Circuit Board (L channel is the same as R channel)



TO: CENTER

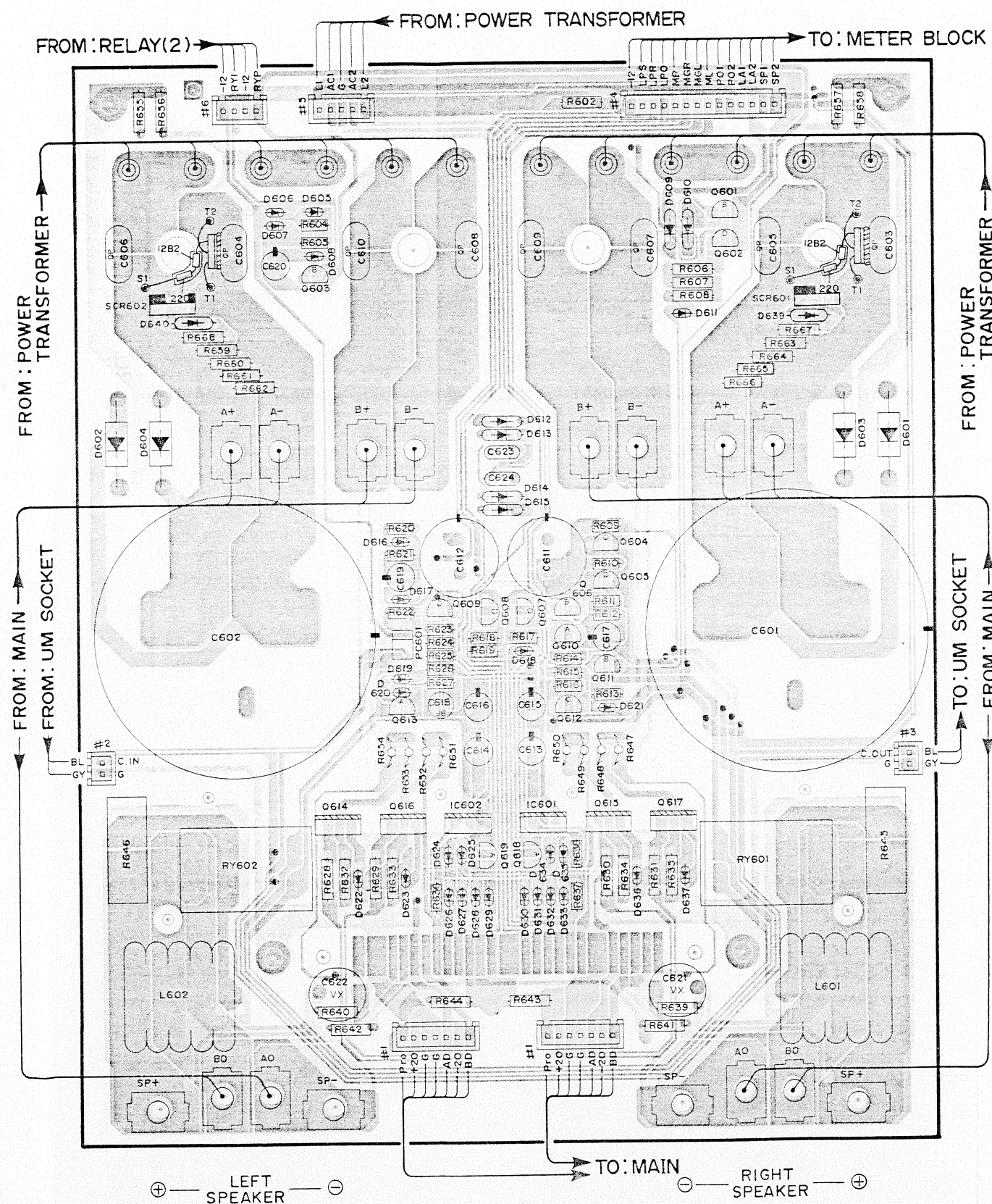
FROM: CENTER

PRINTED CIRCUIT BOARD(Pattern side)

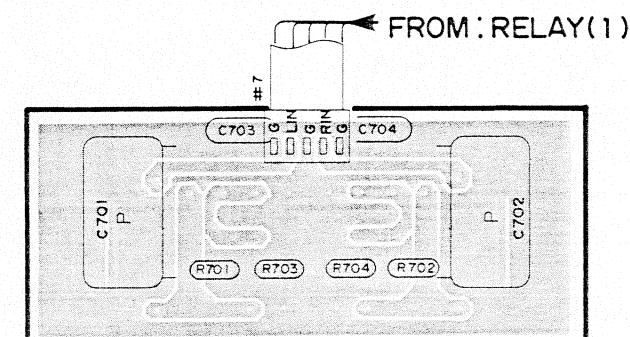
- Pattern of part side
- Pattern of solder side
- Through hole

Note) 文字面 : Component side

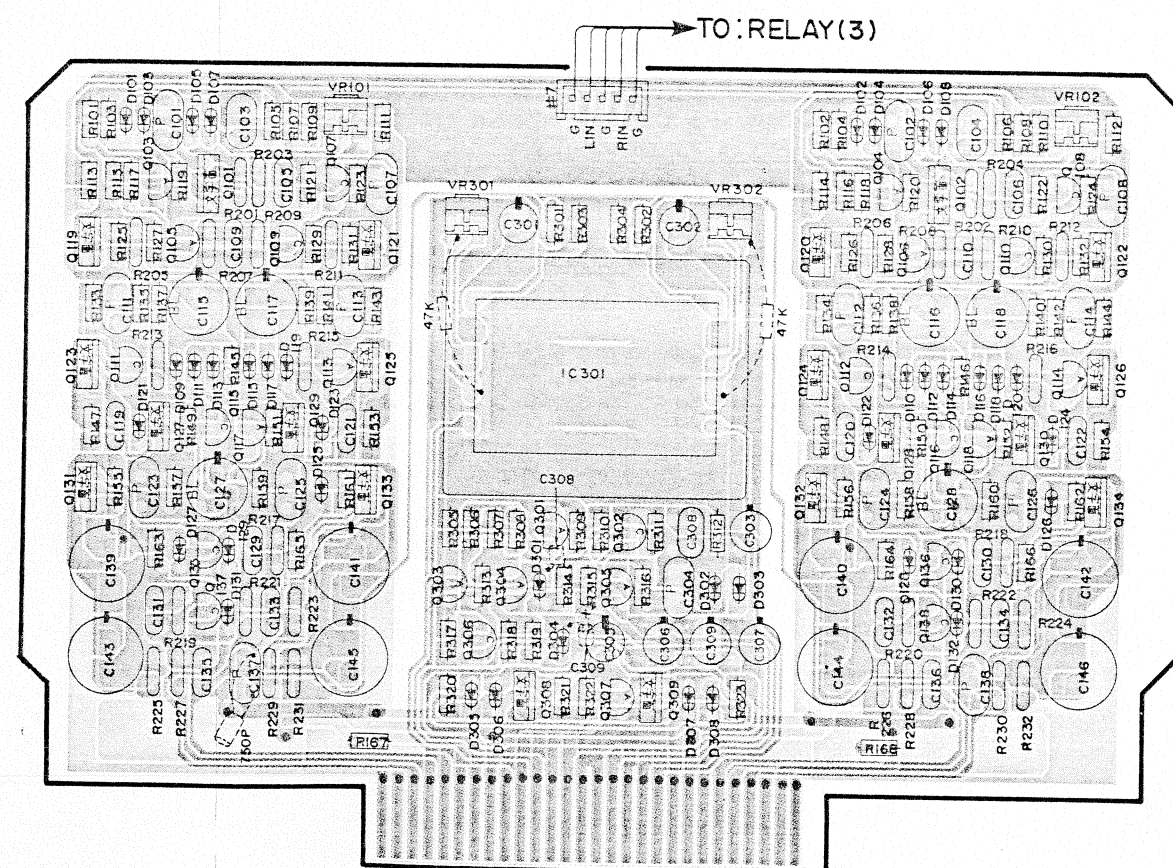
Center Circuit Board



Relay Circuit Board (3)



Relay Circuit Board (1)

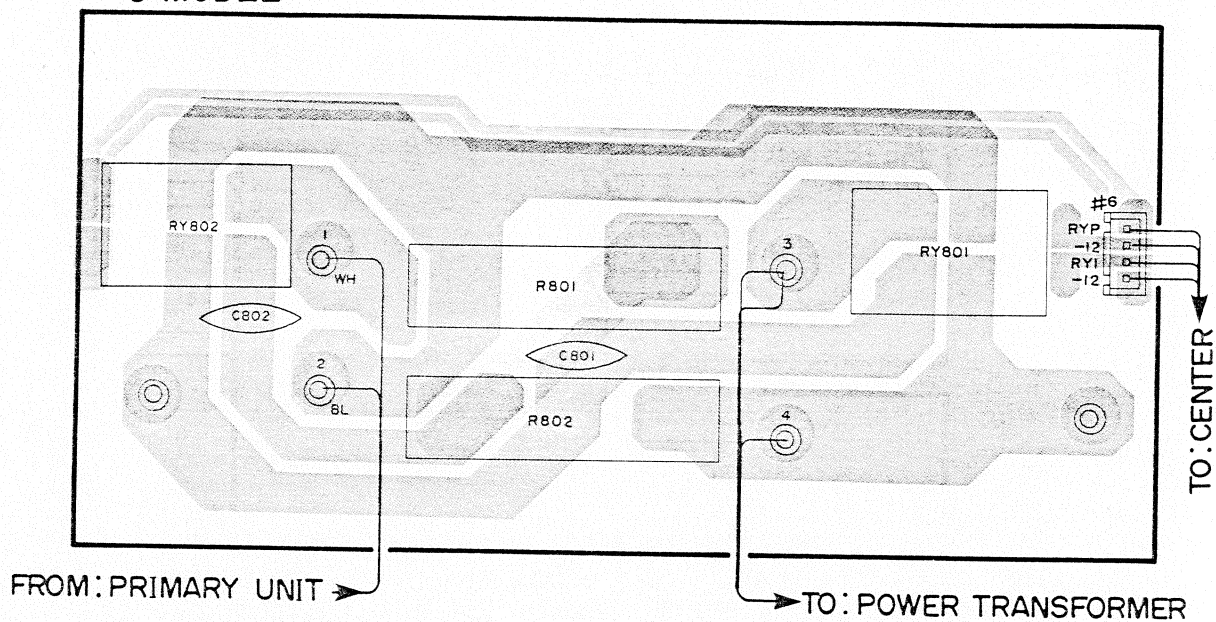


PRINTED CIRCUIT BOARD(Pattern side)

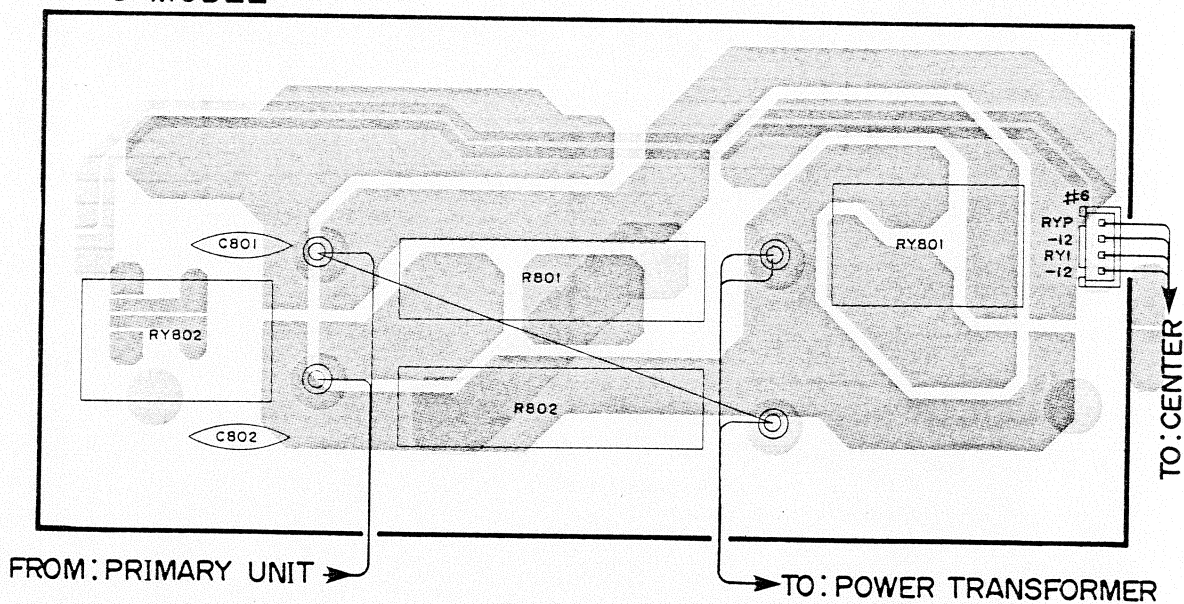
- : Pattern of part side
- : Pattern of solder side
- : Through hole

Relay Circuit Board (2)

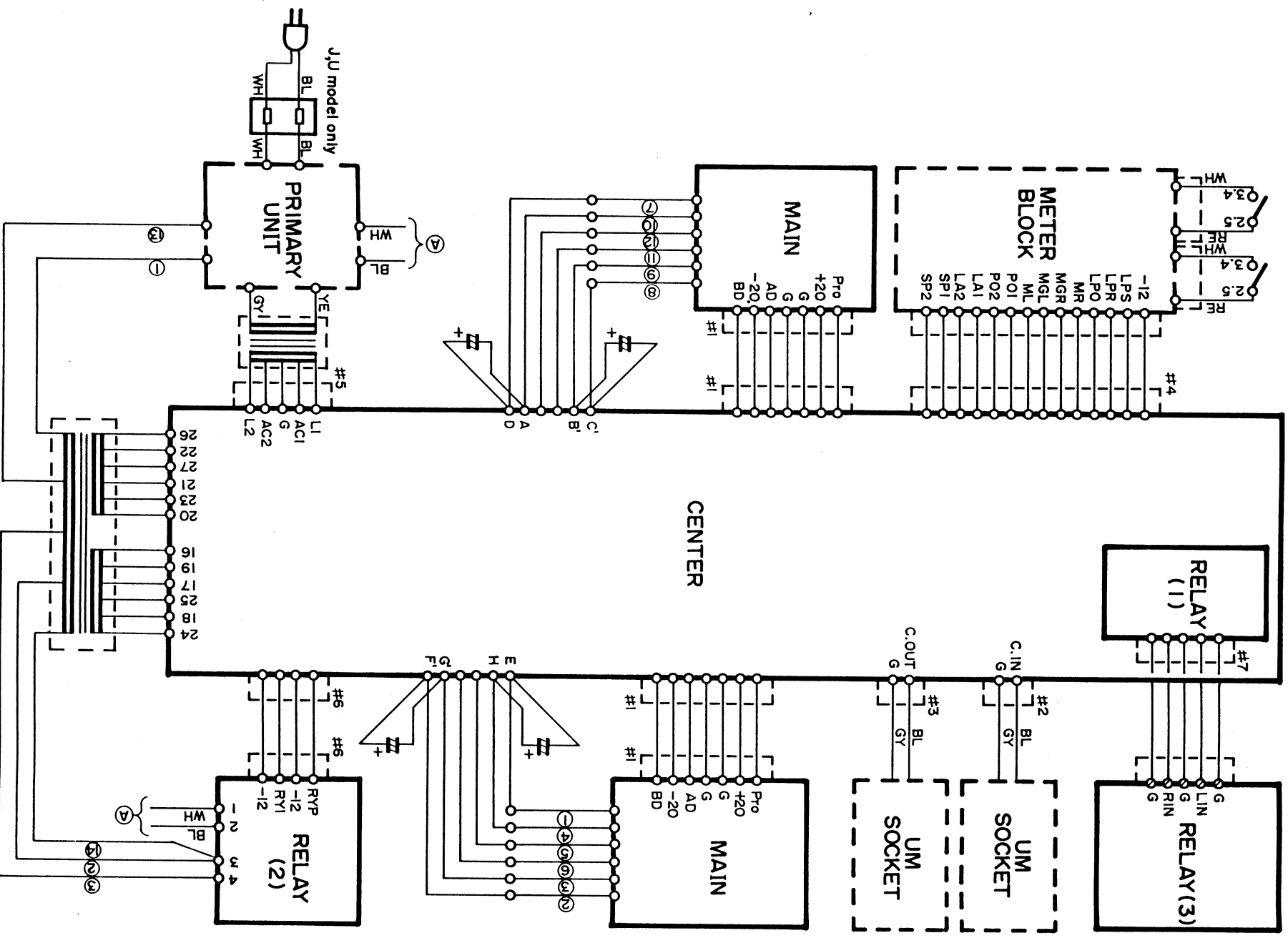
U MODEL



G MODEL



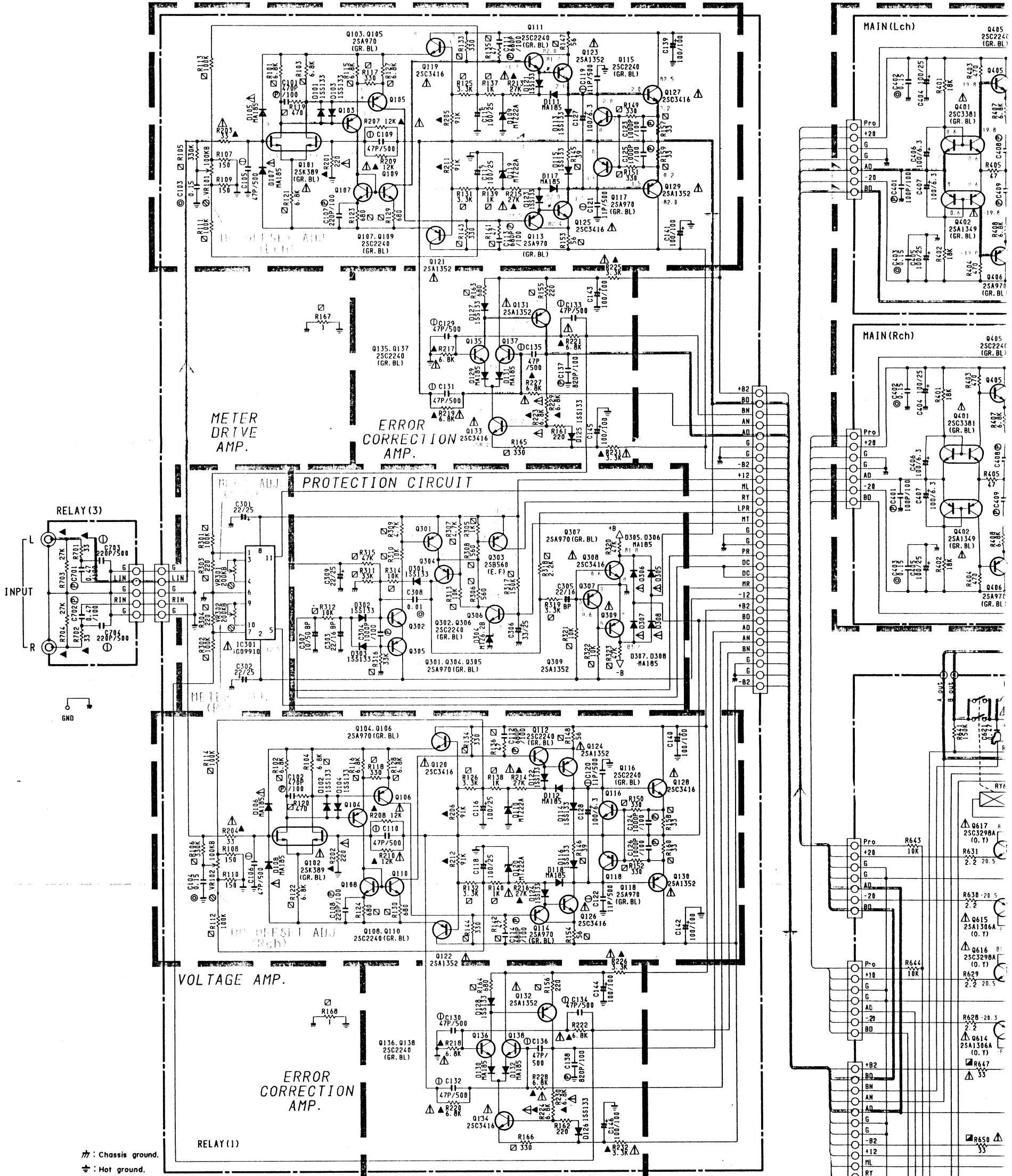
WIRING



SCHEMATIC DIAGRAM

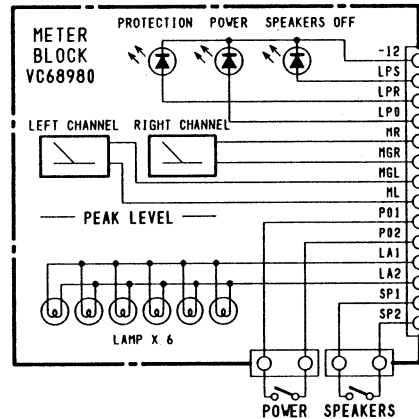
VOLTAGE AMP.

MOS FET H. C. A AMP.

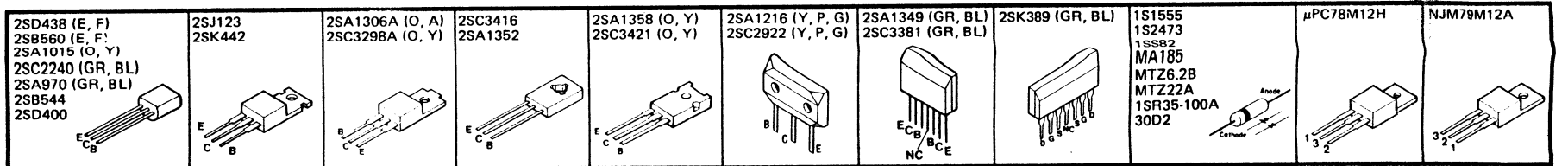


REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
□	CARBON FILM RESISTOR (1/6W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊗	SEMI VARIABLE RESISTOR

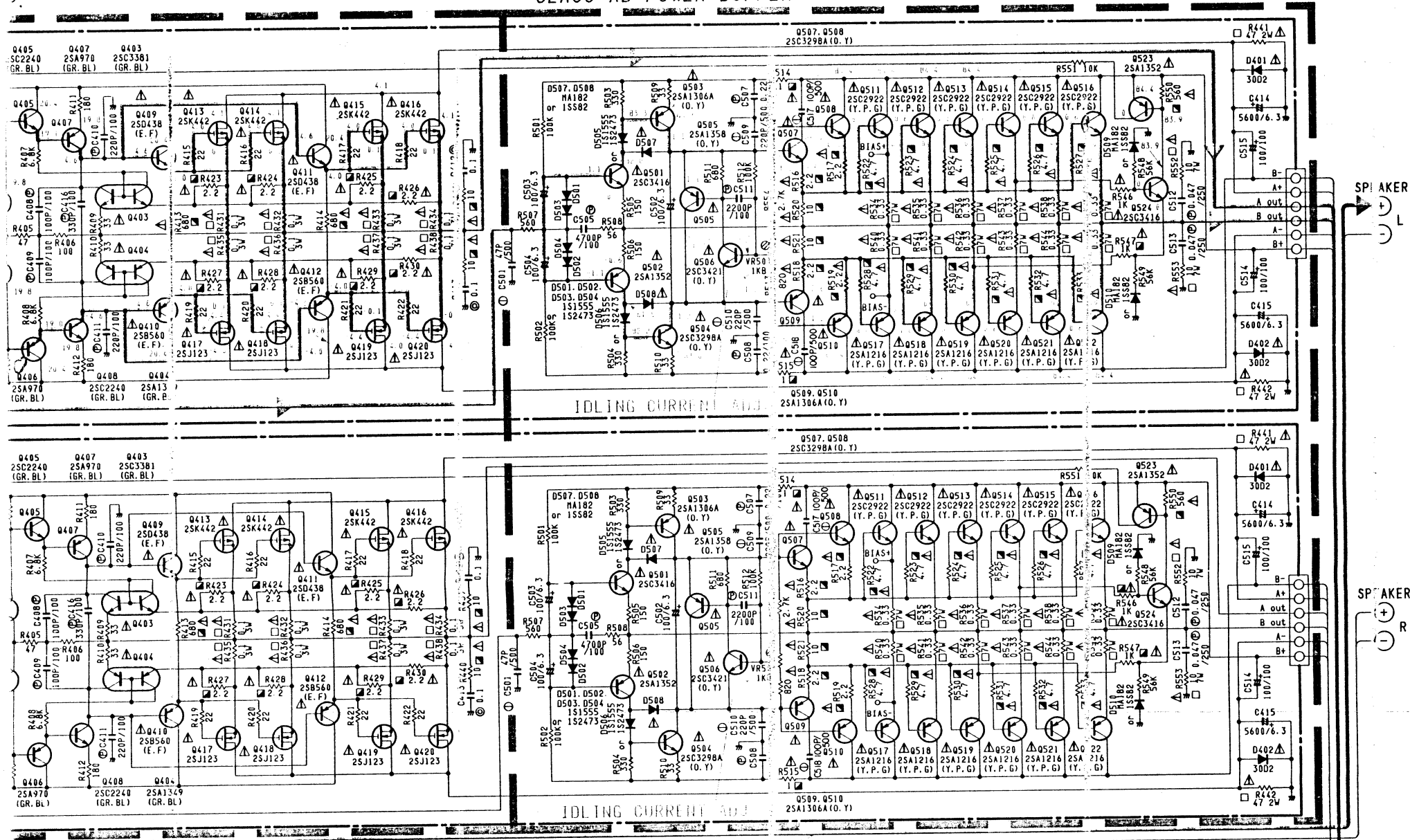
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	CERAMIC CAPACITOR
○	POLYESTER FILM CAPACITOR (Mylar)
⊙	POLYSTYRENE FILM CAPACITOR
⊖	MICA CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



CLASS AB POWER BUFFER



PARTS LIST

ELECTRICAL PARTS

■WARNING

Components having special characteristics are marked Δ 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. 28.

MX-10000

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 25 80	Main Circuit Board	メ イ ン シ ー ト				
	FU 35 14 70	Mica Cap.	47pF 500V	マ イ カ コ ン	C501		
	FU 35 21 00	//	100pF 500V	//	C517,518		
	FU 35 22 20	//	220pF 500V	//	C509,510		
	FA 15 51 50	Mylar Cap.	0.15 μ F 50V	マ イ ラ ー コ ン	C402,403		
	FA 15 51 00	//	0.1 μ F 50V	//	C412,413		
※	FC 29 44 70	Polypropylene Film Cap.	0.047 μ F 250V	Q P コ ン	C512,513		
※	FC 27 52 20	//	0.22 μ F 100V	//	C507,508		
	UT 45 21 00	//	100pF 100V	ボ リ プ ロ コ ン	C401,408,409		
	UT 45 22 20	//	220pF 100V	//	C410,411		
	UT 45 23 30	//	330pF 100V	//	C416		
	UT 45 32 20	//	2200pF 100V	//	C511		
	UT 45 34 70	//	4700pF 100V	//	C505		
	FZ 00 54 10	Electrolytic Cap.	100 μ F 6.3V	ブ ラ ッ ク ゲ ー ト コ ン	C406,407,502~504		
	FZ 00 61 40	//	100 μ F 25V	//	C404,405		
	VD 21 57 00	//	100 μ F 100V	ケ ミ コ ン	C514,515		
※	VC 68 92 00	//	5600 μ F 6.3V	オ ー デ ィ オ ケ ミ コ ン	C414,415		
	HJ 35 42 20	Carbon Resistor	22 Ω 1/4W	カ ー ボ ン 抵 抗	R415~422		
	HJ 35 43 30	//	33 Ω 1/4W	//	R409,410,509,510		
	HJ 35 44 70	//	47 Ω 1/4W	//	R405		
	HJ 35 45 60	//	56 Ω 1/4W	//	R508		
	HJ 35 51 00	//	100 Ω 1/4W	//	R406		
	HJ 35 51 50	//	150 Ω 1/4W	//	R505,506		
	HJ 35 51 80	//	180 Ω 1/4W	//	R411,412		
	HJ 35 53 30	//	330 Ω 1/4W	//	R503,504		
	HJ 35 54 70	//	470 Ω 1/4W	//	R403,404		
	HJ 35 55 60	//	560 Ω 1/4W	//	R507		
	HJ 35 56 80	//	680 Ω 1/4W	//	R511		
	HJ 35 58 20	//	820 Ω 1/4W	//	R513		
	HJ 35 62 70	//	2.7k Ω 1/4W	//	R554		
	HJ 35 66 80	//	6.8k Ω 1/4W	//	R407,408		
	HJ 35 71 00	//	10k Ω 1/4W	//	R551		
	HJ 35 71 80	//	18k Ω 1/4W	//	R401,402		
	HJ 35 75 60	//	56k Ω 1/4W	//	R548,549		
	HJ 35 81 00	//	100k Ω 1/4W	//	R501,502,512		
	HV 45 31 00	Flame Proof Carbon Resistor	1 Ω 1/4W	不 燃 化 カ ー ボ ン 抵 抗	R514,515		Δ
	HV 45 32 20	//	2.2 Ω 1/4W	//	R423~430, 516~519		Δ
	HV 45 34 70	//	4.7 Ω 1/4W	//	R522~533		Δ
	HV 45 41 00	//	10 Ω 1/4W	//	R439,440,520,521		Δ
	HV 45 55 60	//	560 Ω 1/4W	//	R550		Δ
	HV 45 56 80	//	680 Ω 1/4W	//	R413,414		Δ
	HV 45 61 00	//	1k Ω 1/4W	//	R546,547		Δ
※	VC 47 38 00	Wire Wound Resistor	47 Ω 2W	セ メ ン ト 抵 抗	R441,442		Δ
※	VC 47 31 00	//	0.1 Ω 3W	セ メ ン ト 無 誘 導 抵 抗	R431~438		Δ
※	VC 47 24 00	//	0.33 Ω 7W	//	R534~545		Δ
※	VC 47 26 00	//	10 Ω 7W	//	R552,553		Δ
※	VC 68 94 00	Pre-Set Potentiometer	81k Ω	半 固 定 抵 抗	VR501		
	IA 09 70 00	Transistor	2SA970 (GR,BL)	ト ラ ン ジ ス タ	Q406,407		
	IB 05 60 10	//	2SB560 (E,F)	//	Q410,412		Δ
	IC 22 40 00	//	2SC2240 (GR,BL)	//	Q405,408		

*New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
iD 04 38 10	Transistor	2SD438(E,F)	ト ラ ン ジ ス タ	Q409,411			
iX 60 85 10	//	2SA1358(O,Y)	//	Q505			
iX 60 85 20	//	2SC3421(O,Y)	//	Q506			
iA 13 52 00	//	2SA1352	//	Q502,523			
iC 34 16 00	//	2SC3416	//	Q501,524			
iA 13 06 00	//	2SA1306A(O,Y)	//	Q503,509,510			
iC 32 98 00	//	2SC3298A(O,Y)	//	Q504,507,508			
iX 60 87 40	//	2SA1216(Y,P,G)	//	Q517~522			
iX 60 87 50	//	2SC2922(Y,P,G)	//	Q511~516			
iA 13 49 00	Dual Transistor	2SA1349(GR,BL)	デュアルトランジスタ	Q402,404			
iC 33 81 00	//	2SC3381(GR,BL)	//	Q401,403			
VC 69 80 00	MOS FET	2SJ123	M O S F E T	Q417~420			
VC 69 44 00	//	2SK442	//	Q413~416			
iF 00 00 40	Diode	1S1555	ダ イ オード	D501~506	} inter- changeable		
iF 00 06 70	//	1S2473	//	//			
iF 00 14 00	//	1SS82	//	D507~510			
VC 68 91 00	//	30D2	//	D401,402			
VC 70 21 00	Heat Sink	4-T0-220	放 熱 シ ー ト				
VD 21 63 00	Base Pin	7P	X H ベースピン				
VC 37 58 00	Terminal Plate		ターミナルプレート				
VC 68 99 00	Bus Bar	IL	バ ス バ ー				
VC 46 88 00	//	IL-L	ベンデッドバスバー				
VC 41 04 00	//	IL-R	//				
VC 46 89 00	//	2L-L	//				
VC 41 05 00	//	2L-R	//				
VC 46 90 00	//	3L-L	//				
VC 41 06 00	//	3L-R	//				
ED 33 00 66	Binding Head Screw	3×6 FCRM3-BI	バインド小ネジ	PACK			
EH 13 00 80	Pan Head Sems Screw	3×8 FNM3-3g	セムスナベ小ネジ				
VC 41 71 00	Transistor Block		トランジスタブロック				
EK 35 00 20	Pan Head Sems Screw	3×8 ZMC2-BI	セムスナベ小ネジ				
ED 33 01 06	Binding Head Screw	3×10 FCRM3-BI	バインド小ネジ	PACK			

※ New Parts (新規部品)

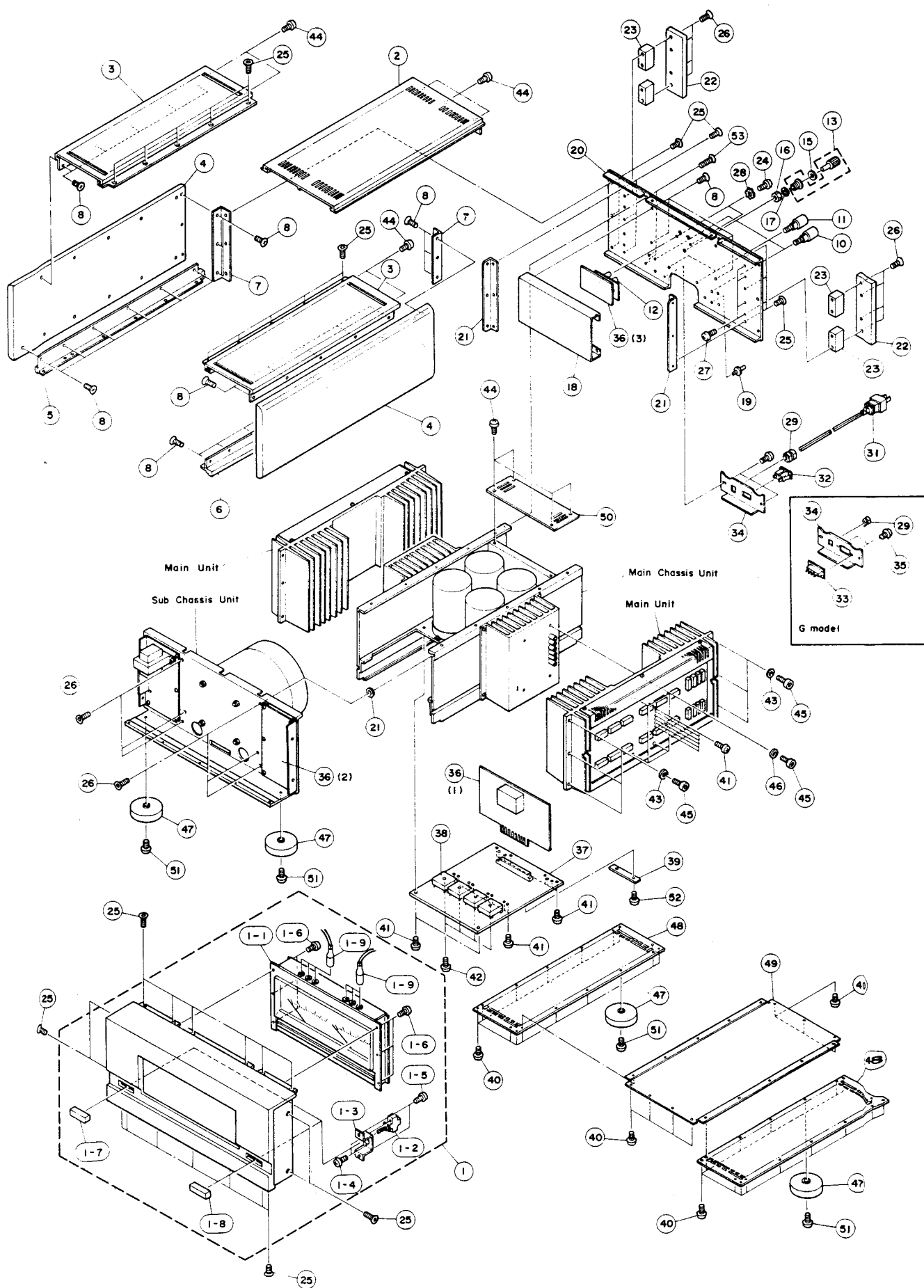
Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 34 00	Relay Circuit Board	リレーシート			J,U	
※	NA 09 34 10	"	"			G	
	Fi 38 41 00	Ceramic Cap.	セラコン	C801,802			△
※	FC 27 54 70	Polypropylene Film Cap.	ポリプロコン	C701,702			
	FU 45 11 10	Mica Cap.	マイカコン	C119~122			
	FU 35 14 70	"	"	C105,106,109,110,129~136			
	FU 35 22 20	"	"	C703,704			
	FA 15 51 50	Mylar Cap.	マイラーコン	C103,104			
	FA 15 41 00	"	"	C308			
	UT 45 28 20	Polypropylene Film Cap.	ポリプロコン	C137,138			
	UT 45 22 20	"	"	C107,108			
	UT 45 24 70	"	"	C101,102			
	UT 45 26 80	"	"	C111~114			
	UT 45 31 00	"	"	C123~126,304			
	UJ 14 72 20	Electrolytic Cap.	ケミコン	C301,302,309			
	UJ 14 73 30	"	"	C306			
	FM 11 71 00	"	B P コン	C307			
	UK 13 72 20	"	"	C303,305			
	VC 69 23 00	"	オーディオケミコン	C139~146			
	FZ 00 54 10	"	ブラックゲートコン	C127,128			
	FZ 00 61 40	"	"	C115~118			
	HU 07 43 30	Metal Film Resistor	金属皮膜抵抗	R203,204,701,702			△
	HU 07 52 20	"	"	R201,202			
	HU 57 63 30	"	"	R225,226,231,232			△
	HU 07 66 80	"	"	R217~224, 227~230			△
	HU 57 71 20	"	"	R207~210			△
※	HU 07 72 70	"	"	R213~216,703,704			△
	HU 07 79 10	"	"	R205,206,211,212			
	VC 68 97 00	Wire Wound Resistor	セメント抵抗	R801,802			△
	VC 68 95 00	Pre-Set Potentiometer	半固定抵抗	VR101,102			
	VD 29 49 00	"	"	VR301,302			
	iA 09 70 00	Transistor	トランジスタ	Q103~106,113,114,117,118,301,304,305,307			△
	iA 13 52 00	"	"	Q121~124, 129~132,309			△
	iB 05 60 10	"	"	Q303			
	iC 22 40 00	"	"	Q107~112,115,116,135~138,302,306			△
	iC 34 16 00	"	"	Q119,120,125~128,133,134,308			△
	iE 10 45 00	Dual FET	デュアル F E T	Q101,102			△
	iF 00 34 50	Diode	ダイオード	D101~104,113~116,121~128,301~303			△
	VC 39 84 00	"	"	D105~108,111,112,117,118,129~132,305~308			△
	iF 01 07 40	Zener Diode	ツェナーダイオード	D304			
	iF 00 90 30	"	"	D109,110,119,120			
	iG 09 91 00	IC	I C	IC301			△
※	VD 45 02 00	Relay	リレー	RY801,802			△
※	VD 21 61 00	Base Pin	X H ベースピン				
	LB 91 80 40	"	4P i-Type				
※	VC 41 07 00	Terminal Post	ターミナルポスト				

*New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 26 00	Center Circuit Board	セ ン タ ー シ ー ト			J,U	
※	NA 09 56 80	〃	〃			G	
※	FC 31 42 20	Polypropylene Film Cap.	0.022 μ F 400V Q P コ ン	C607~610		J,U	
	VE 01 30 00	Mylar Cap.	0.1 μ F 400V マ イ ラ ー コ ン	〃		G	
※	FC 27 51 00	Polypropylene Film Cap.	0.1 μ F 100V Q P コ ン	C603~606			
	VE 01 29 00	Mylar Cap.	1 μ F 100V マ イ ラ ー コ ン	〃		G	
	FA 15 41 00	〃	0.01 μ F 50V 〃	C623,624			
	FZ 00 37 40	〃	0.47 μ F 〃	C621,622			
	UJ 14 92 20	Electrolytic Cap.	2200 μ F 25V ケ ミ コ ン	C611,612			
	UJ 14 72 20	〃	22 μ F 25V 〃	C613~617,619			
	UJ 42 83 30	〃	330 μ F 10V 〃	C620			
※	VC 47 52 00	〃	100000 μ F 10V 〃	C601,602			
	UK 13 72 20	〃	22 μ F 16V B P コ ン	C618			
	HJ 35 32 20	Carbon Resistor	2.2 Ω 1/4W カ ー ボ ン 抵 抗	R628~631			
	HJ 35 46 80	〃	68 Ω 1/4W 〃	R639,640			
	HJ 35 51 50	〃	150 Ω 1/4W 〃	R606~608			
	HJ 35 52 20	〃	220 Ω 1/4W 〃	R667,668			
	HJ 35 61 20	〃	1.2k Ω 1/4W 〃	R602,655~666			
	HJ 35 71 00	〃	10k Ω 1/4W 〃	R643,644			
	HJ 35 73 30	〃	33k Ω 1/4W 〃	R632~635			
	HJ 35 81 00	〃	100k Ω 1/4W 〃	R642			
	HJ 35 81 50	〃	150k Ω 1/4W 〃	R641			
※	VC 47 27 00	Wire Wound Resistor	4.7 Ω 3W セ メ ン ト 抵 抗	R645,646			△
	HV 45 43 30	Flame Proof Carbon Resistor	33 Ω 1/4W 不 燃 化 カ ー ボ ン 抵 抗	R647~654			△
	GD 90 03 20	Coil	1 μ H 出 カ コ イ ル	L601,602			
	iA 13 06 00	Transistor	2SA1306A(O,Y) ト ラ ン ジ ス タ	Q614,615			△
	iC 32 98 00	〃	2SC3298A(O,Y) 〃	Q616,617			△
	iB 05 44 10	〃	2SB544 〃	Q601			△
	iB 05 60 10	〃	2SB560(E,F) 〃	Q603,606,611			△
	iD 04 00 10	〃	2SD400 〃	Q602			△
	iD 04 38 10	〃	2SD438(E,F) 〃	Q607~609			△
	iA 10 15 21	〃	2SA1015(Y) 〃	Q618,619			
	iA 09 70 00	〃	2SA970(GR,BL) 〃	Q610,613			
	iC 22 40 00	〃	2SC2240(GR,BL) 〃	Q604,605,612			
	iG 04 67 00	IC	μ PC78M12H I C	IC601			△
	XB 25 00 01	〃	NJM79M12A 〃	IC602			△
	iH 00 14 30	Diode	ISR35-100A ダ イ オ ード	D609,610,612~615			△
※	VC 68 91 00	〃	30D2 〃	D601~604			△
	iF 01 07 40	Zener Diode	MT26.2B ツ ェ ナ ー ダ イ オ ード	D608			
	iF 00 90 30	〃	MT222A 〃	D622,623,636,637			
	iF 00 23 50	〃	HZ12B2 〃	D639,640			
	iF 00 34 50	Diode	ISS133 ダ イ オ ード	D605~607,611,616~621,624~635			
※	VC 69 46 00	Photo Coupler	TLP621 フ ォ ト カ プ ラ	PC601			△
	KC 00 16 10	Relay	JC2a-DC24V リ レ ー	RY601,602			△
	iH 00 10 50	Triac	AC16DGML ト ラ イ ア ッ ク	SCR601,602			△

※New Parts (新規部品)

EXPLODED VIEW



MECHANISM PARTS

Note) ϕ : Diameter

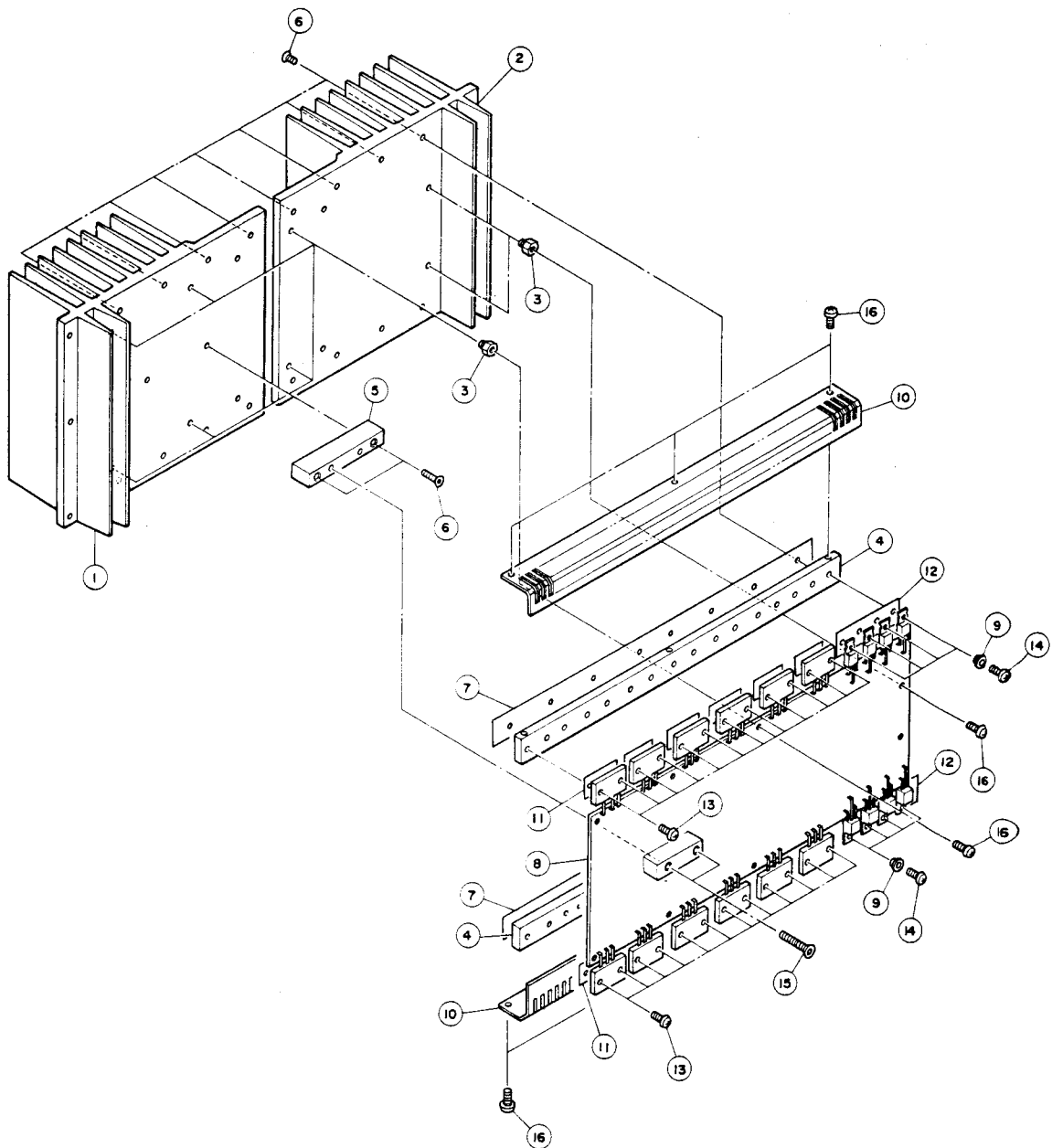
Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 1	VC 54 90 00	Panel Unit	パネルユニット				
※ 1-1	VC 68 98 00	Meter Ass'y	メーター Ass'y				
※ 1-2	VC 78 30 00	Push Switch	ブッシュスイッチ	POWER, SPEAKERS			
※ 1-3	VC 41 24 00	Holder, Switch	スイッチホルダー	POWER, SPEAKERS			
※ 1-4	ED 33 00 66	Binding Head Screw	3×6 FCRM3-BI バインド小ネジ				
※ 1-5	ED 34 00 66	//	4×6 FCRM3-BI //				
※ 1-6	EX 60 05 70	Flat Head Screw with Hex. Hole	4×8 FCRM 六角穴付皿小ネジ	PACK			
※ 1-7	VC 41 13 00	Push Button	ブッシュボタン	POWER			
※ 1-8	VC 41 14 00	//	//	SPEAKERS			
※ 1-9	JB 00 11 00	Lamp, Meter	150mA 8V メーターランプ				
※ 2	VC 54 93 00	Top Cover Ass'y	トップカバー Ass'y				
※ 3	VC 54 92 00	Side Top Panel L & R	サイドトップパネル				
※ 4	VD 30 43 00	Side Wood Panel (L,R set)	サイドウッドパネル (L,R セット)				
※ 5	VC 41 26 00	Side Escutcheon L	サイドエスカッションL				
※ 6	VC 41 27 00	// R	// R				
※ 7	VC 41 15 00	Holder, Side Panel	サイドパネルホルダー				
※ 8	ER 33 11 66	Flat Head Wood Screw	3.1×16 FCRM3 皿 木 ネ ジ				
※ 10	VC 68 39 00	Speaker Terminal +	スピーカーターミナル+				
※ 11	VC 68 40 00	// -	// -				
※ 12	VC 69 49 00	Pin Jack	2P ピンジャック				
※ 13	VC 68 77 00	Ground Terminal Ass'y	アース端子 Ass'y				
※ 15	EX 60 06 00	Plain Washer	ϕ 4 AUメッキ 平 座 金				
※ 16	EX 60 06 20	Hexagonal Nut	8×0.75 AUメッキ 六 角 ナ ッ ト				
※ 17	EX 60 06 40	Toothed Lock Washer	8S AUメッキ 歯 付 座 金				
※ 18	VC 68 42 00	Shield Plate	シールドプレート				
※ 19	VC 78 31 00	UM Socket	U M ソ ケ ッ ト				
※ 20	VC 41 42 00	Rear Panel	リアパネル				
※ //	VC 41 43 00	//	//			J	
※ //	VC 41 45 00	//	//			U	
※ 21	VC 41 48 00	Holder, Heat Sink	ラジエターホルダー			G	
※ 22	VC 86 93 00	Protector, Rear Panel	リアパネルプロテクター				
※ 23	VC 86 95 00	Protector Base	プロテクターベース				
※ 24	EJ 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI バインドタッピングネジ	PACK			
※ 25	EX 60 05 70	Flat Head Screw with Hex. Hole	4×8 FCRM3 六角穴付皿小ネジ				
※ 26	EX 60 05 80	//	4×20 FCRM3 //				
※ 27	ED 34 01 66	Binding Head Screw	4×16 FCRM3-BI バインド小ネジ	PACK			
※ 28	EV 42 20 36	Toothed Lock Washer	ϕ 3 歯 付 座 金	PACK			
※ 29	CB 80 68 50	Cord Stopper	SR-6N3-4 コードストッパー				
※ //	CB 07 27 50	//	SR-4N-4 //			U	
※ 31	VE 01 31 00	Power Cord	13A 125V 電 源 コ ー ド			G	
※ //	MG 00 09 10	//	6A 250V 2m //			U	
※ //	MG 00 21 70	//	15A 125V 2m //			G	
※ 32	LB 20 30 60	AC Outlet	A C アウトレット			J	
※ 33	VB 45 17 00	Lug Terminal	2P ラ グ 端 子			J,U	
※ 34	VC 42 14 00	AC Cord Panel	A C コードパネル			G	
※ //	VC 42 15 00	//	//			J	
※ //	VC 42 17 00	//	//			U	
※ 35	ED 33 00 86	Binding Head Screw	3×8 FCRM3 バインド小ネジ	PACK		G	
※ 36	NA 09 34 00	Relay Circuit Board (Amp.)	リレーシート			J,U	
※ //	NA 09 34 10	//	//			G	
※ 37	NA 09 26 00	Center Circuit Board	センターシート			J,U	
※ //	NA 09 56 80	//	//			G	
※ 38	VC 68 93 00	Diode	15WB20 ダイオード				

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 39	VC 78 63 00	Holder, Cord	コードホルダー				
※ 40	EC 34 00 86	Truss Head Screw	4×8 ZMC2-BI トラス小ネジ	PACK			
※ 41	EX 60 05 60	Sems Pan Head Screw	4×8 BS-AUメツ セムスナベ小ネジ				
※ 42	EX 60 05 50	//	4×14 BNM3 //				
※ 43	EV 20 30 46	Flat Washer	ϕ 4 皿 ワ ッ シ ャ ー	PACK			
※ 44	EC 34 00 86	Truss Head Screw	4×8 FCRM3-BI トラス小ネジ	PACK			
※ 45	EX 60 06 50	Cap Screw	4×14 クロ染メ キャップスクリュー				
※ 46	EX 60 06 10	Sems Plain Washer	ϕ 4 セムス平座金				
※ 47	VC 41 39 00	Amp. Leg Ass'y	アンブレッグ Ass'y				
※ 48	VC 41 41 00	Bottom Cover (Side)	ボトムカバー				
※ 49	VC 41 40 00	// C	// C				
※ 50	VC 42 20 00	Cover, Input Circuit Board	インプットシートカバー				
※ 51	EX 60 06 80	Cap Screw	4×20 クロ染メ キャップスクリュー				
※ 52	EX 60 04 90	Sems Pan Head Screw	2.6×8 FCRM3-BI セムスナベ小ネジ				
※ 53	EX 60 06 70	Flat Head Screw with Hex. Hole	4×14 FCRM3 六角穴付皿小ネジ				
※ CB 06 92 50		Binding Tie	BK-1 インシュロックタイ				
※ VD 95 90 00		Insulator	インシュレーター				
Accessories				付 属 品			
※ VC 78 13 00		- Slotted Screwdriver	- 時計ドライバー				
※ VC 78 39 00		Control Cable	コントロールケーブル				
※ PB 06 53 30		Polishing Cloth	ポリッシングクロス				

※New Parts (新規部品)

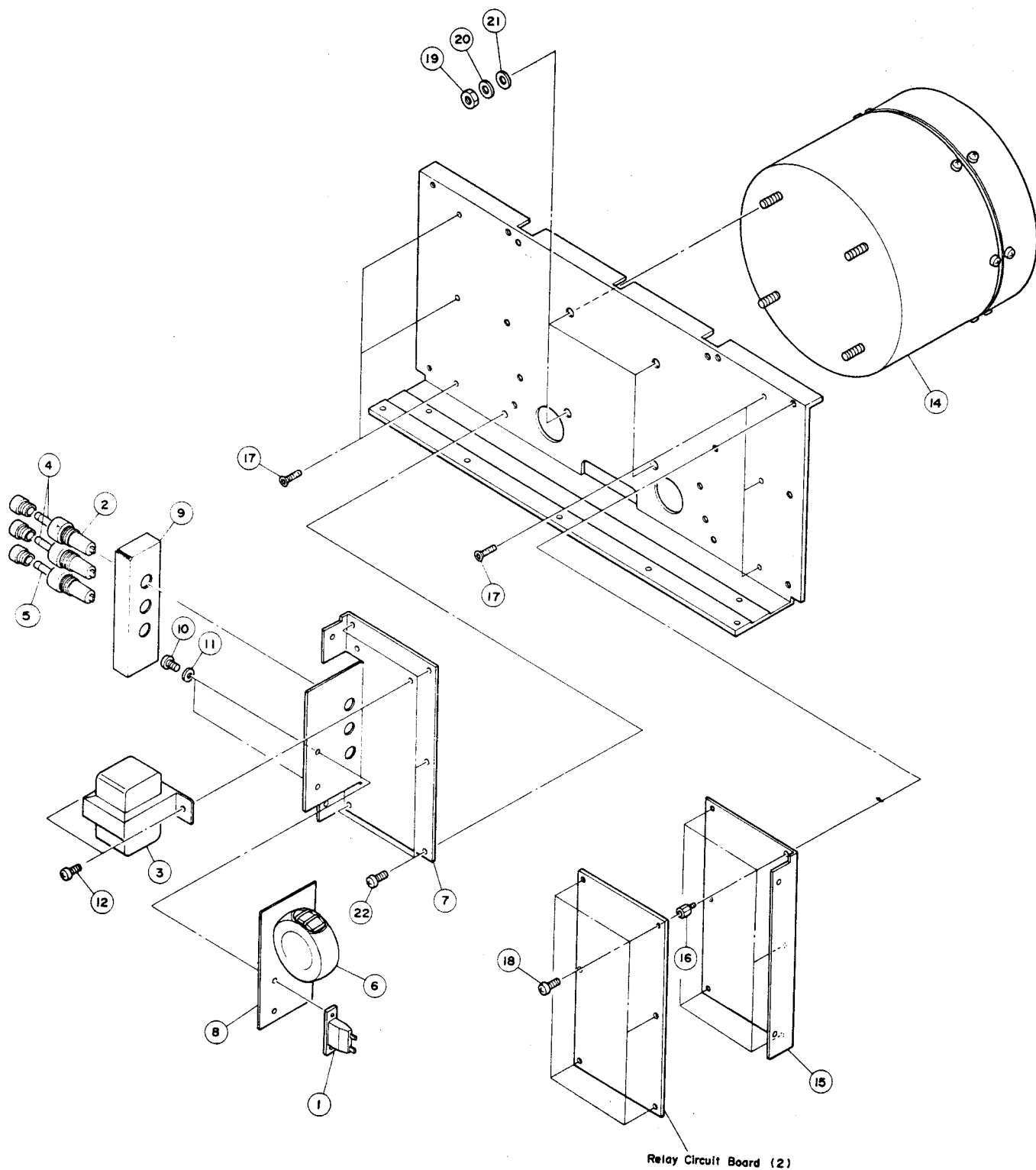
EXPLODED VIEW(Main Unit)



Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
※ 1	VC 41 56 00	Heat Sink A	ラジエター A				
※ 2	VC 41 60 00	// B	// B				
※ 3	VD 03 26 00	P.C.B. Post L=8.4	P. C. B. ポスト				
※ 4	VC 41 70 00	Transistor Block Long	トランジスタブロック				
※ 5	VC 68 41 00	Joint Plate	ジョイントプレート				
※ 6	EX 60 05 90	Flat Head Screw with Hex. Hole 4×10	六角穴付皿小ネジ				
※ 7	VD 30 17 00	Radiation Sheet TR Block	放熱シート				
※ 8	NA 09 25 80	Main Circuit Board	メインシート				
※ 9	CB 62 35 10	Insulation Bush	絶縁ブッシュ				
※ 10	VC 41 76 00	Main Cover	メインカバー				
※ 11	VC 70 22 00	Radiation Sheet TO-3 ジャンボ	放熱シート				
※ 12	VC 70 21 00	// 4-TO-220	//				
※ 13	EX 60 05 40	Sems Pan Head Screw 3×10 BNM3-3g	セムスナベ小ネジ				
※ 14	EX 60 04 90	// 2.6×8 BNM3-3g	//				
※ 15	EB 04 04 06	Flat Head Screw 4×40 ZMC2-Y	皿小ネジ	PACK			
※ 16	ED 33 00 66	Binding Head Screw 3×6 FCRM3-BI	バインド小ネジ	PACK			

※New Parts (新規部品)

1 ■EXPLODED VIEW(Sub Chassis Unit)



MECHANISM PARTS(Sub Chassis Unit)

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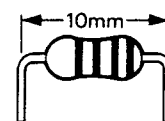
※New Parts (新規部品)

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	HF853100	12K Ω	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	1.0M Ω	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	HF859470
1.0K Ω	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			

1/4W Type

HJ35○○○○



1/6W Type

HF85○○○○

