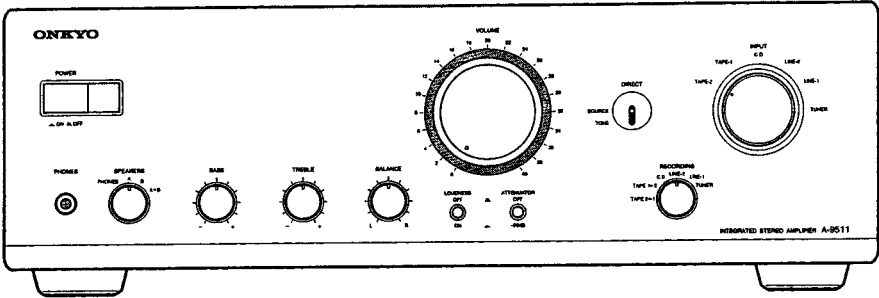


ONKYO® SERVICE MANUAL
Integrated Stereo Amplifier
MODEL A-9511



Black and Silver models

BUP/SUP/GUP	230V AC, 50Hz
BUW/GUW	120V/220-230V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY MARK Δ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.
MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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SPECIFICATIONS

Power output: **60 watts per channel, min RMS, at 8 ohms, both channels driven from 20 Hz to 20 kHz, with no more than 0.06% THD.**
 2 × 100 watts at 4 ohms, 1 kHz(DIN)
 2 × 70 watts at 8 ohms, 1 kHz(DIN)

Total Harmonic Distortion: 0.06% at rated power
 IM Distortion: 0.06% at rated power
 Damping Factor: 90 at 8 ohms
 Frequency and response: 10 Hz—100 kHz ±1 dB
 Input sensitivity/impedance: Tuner/CD/Line: 300 mV/25 kohms
 Tape Play: 300 mV/25 kohms
 Output sensitivity/impedance: Tape Rec: 300 mV/3 kohms
 Bass control: +14 dB -6 dB at 20 Hz
 Treble control: +9 dB -15 dB at 20 kHz
 Loudness control: +6 dB at 20 Hz
 +5 dB at 20 kHz
 Signal to noise ratio (IHF-A):Direct (CD): 109 dB (0.3 V input)

General

Power supply: European models: AC 230V, 50Hz
 Worldwide models: AC 120 and 220V switchable, 50/60Hz

Dimensions: 435 (W) × 145 (H) × 331 (D) mm
 (17-1/8" × 5-11/16" × 13-5/16")

Weight: 8.1 kg, (17.9 lbs.)

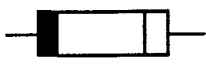
Remote control RC-314S

Transmitter: Infrared
 Signal range: Approx. 5 meters, 16ft
 Power supply: Two "AA" batteries (1.5 V × 2)

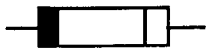
Specifications and features are subject to change without notice.

SERVICE SAFETY PRECAUTIONS

1. Replacing the fuses



This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.



Ce symbole indique que le fusible utilise est a rapide.

Pour une protection permanents, n'utiliser que des fusibles de meme type.

Ce dernier est indique la qu le present symbol est appose.

Circuit No.	Part No.	Description
F901	252164	5A-UL/T237 <WT>
F902	252075	2.5A-SE-EAK
F903	252070	1A-SE-EAK <P><PT>

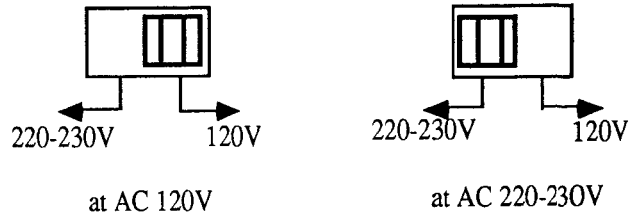
NOTE:	<P> :	230V model only
	<WT> :	Taiwanese model only
	<PT> :	Asian model only

2. Voltage Selector (Rear Panel)

Worldwide models are equipped with a voltage selector to conform to local power supplied.

Be sure to set this switch to match the voltage of the power supply in your area before plugging in the unit. Models without a voltage selector can only be used in area where the power supply is the same as that of the unit.

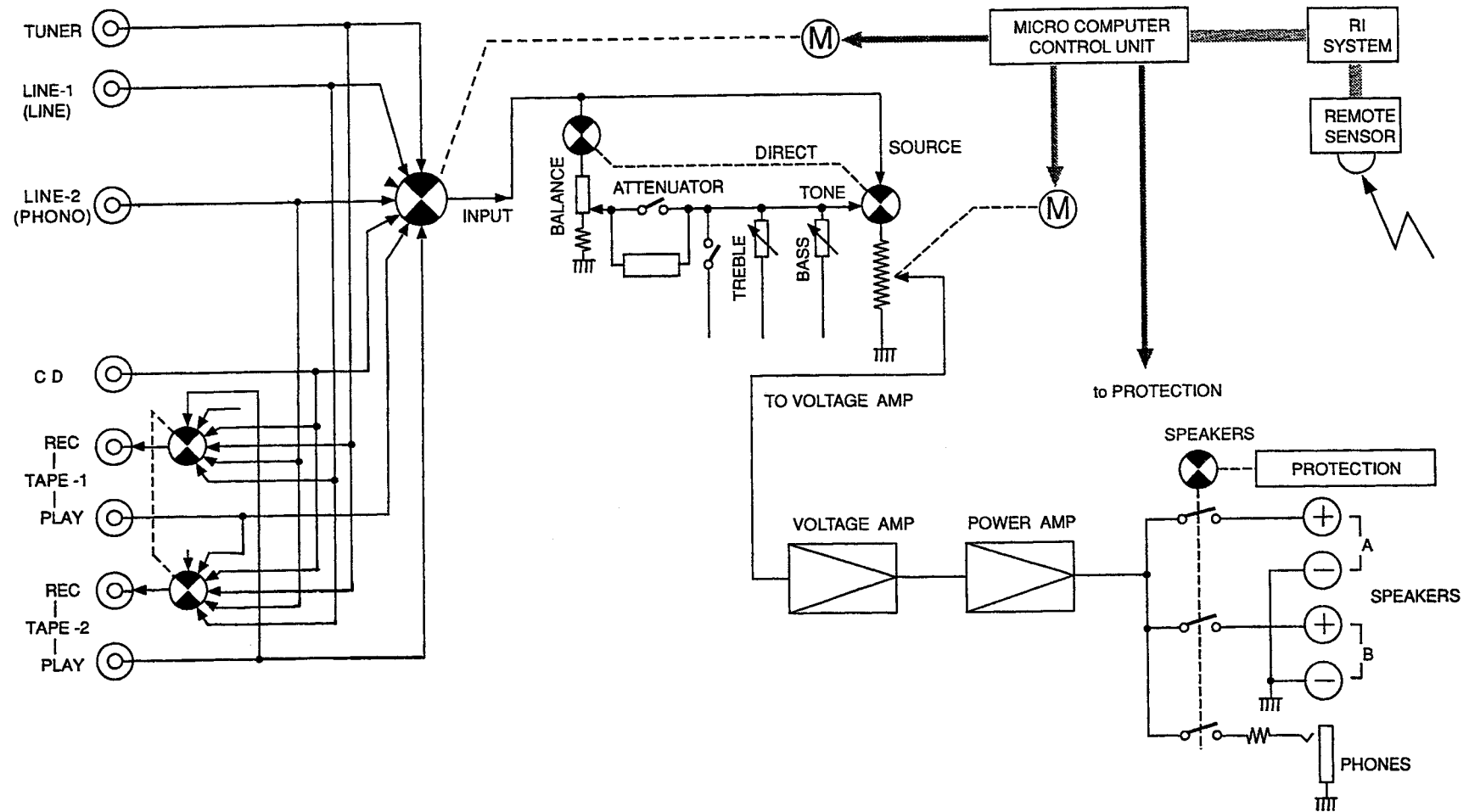
VOLTAGE SELECTOR



Setting the voltage selector

1. Determine the proper for voltage for your area : 220-230V or 120V.
2. If the preset voltage is not proper for your area, insert a screwdriver into the groove in the switch. Slide the switch all the way to the right (120V) or to the left (220-230V), which-ever is proper.

BLOCK DIAGRAM



ADJUSTMENT PROCEDURES

1. Preparations

- 1) Place the unit on the workbench. (There should be about 15 mm of space between the base plate of the unit and the work surface.)
- 2) Set up the unit as follows.
 - (1) No load
 - (2) No signal
 - (3) Volume turned all the way down
 - (4) Speaker switch OFF
 - (5) Power switch OFF

Note) Check the following points before making adjustments

- (1) The power switch should be OFF.
- (2) The interior of the unit should not be warm.

2. Idling current adjustment

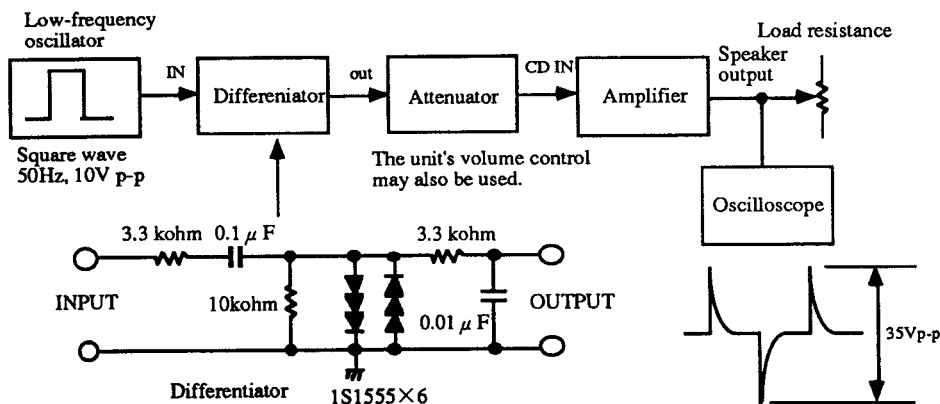
- 1) Connect the DC voltmeter to the terminals P621 and P622 (VCT and IID) on the main circuit pc board.
 - 2) Adjust the trim resistors R617 and R618 so that the indicator of voltmeter becomes 3.5 - 4.5 mV.
 - 3) After 4 - 6 minutes of heat running, readjust R617 and R618 to get 5.0 - 6.0 mV.
- NOTE: Set Volume knob to the minimum position.

3. Check of operation of protection circuitry

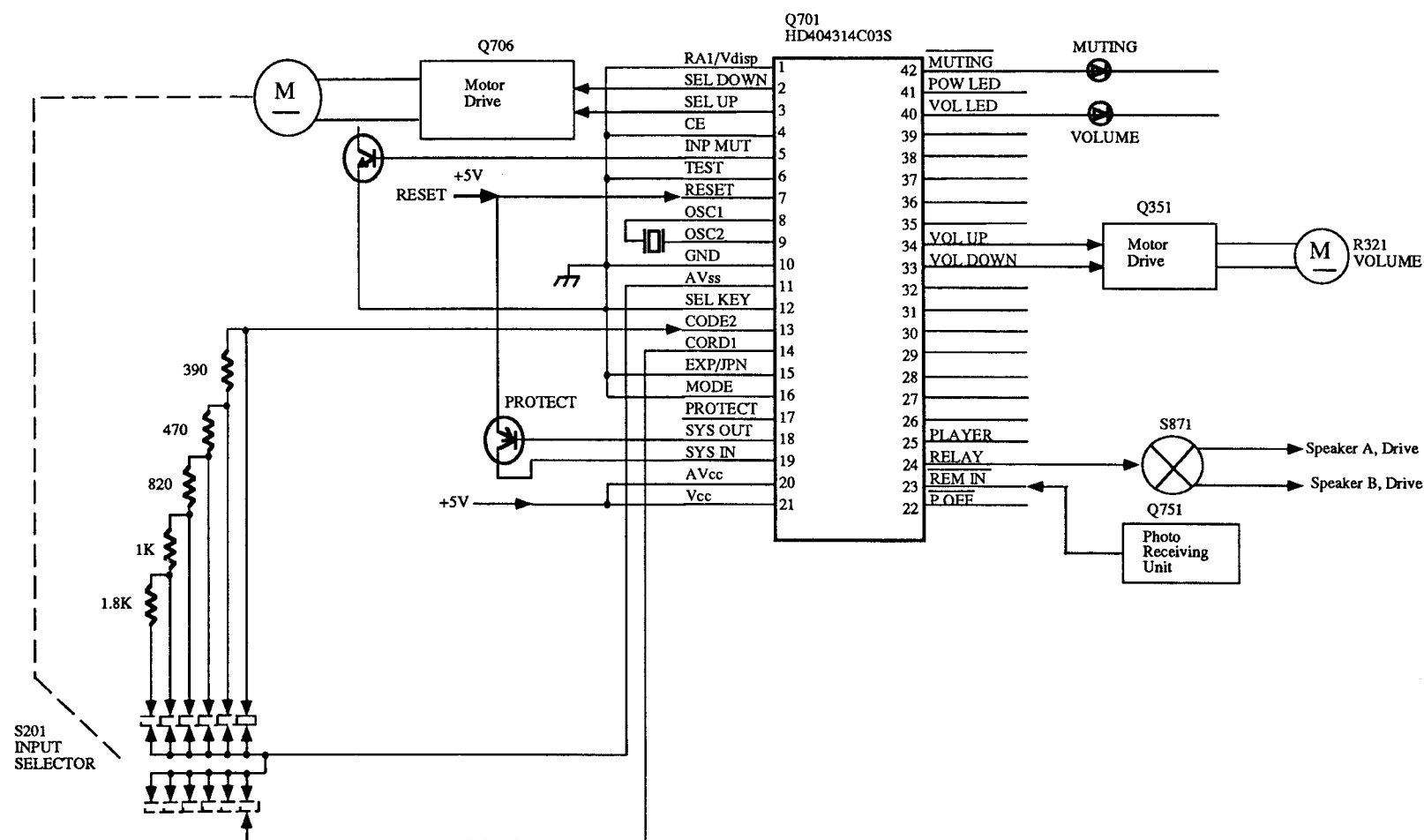
- 1) Check of operation of protection relay.
 - (1) Confirm that the relay turns ON approximately 5 seconds after the power switch is turned ON.
 - (2) The relay should turn OFF approximately 0.5 seconds after the power switch is turned OFF.
- 2) Check of DC detection
 - (1) Turn the power on with no load.
 - (2) After the speaker relay turns ON, apply DC +1~1.5V to the CD input terminals. Confirm that the relay turns OFF.
 - (3) Confirm that operation is the same as (2) above when an input of DC -1~-1.5V is applied.

Note) Under no circumstances connect a load or short the speaker terminals when performing the above test.
- 3) Confirmation of current detection operation
 - (1) Signal input from the circuit illustrated below with no load.
 - (2) Confirm that the speaker relay does not turn OFF even when a 2 ohm load is connected when a peak value of 35Vp-p is output.
 - (3) Next, confirm that when a 1 ohm load is connected the speaker relay switches OFF and ON a couple of times and then stays OFF.

Note) The period before that relay stays OFF should not last for more than 10 second. Relay OFF status can be canceled by switching the power OFF.



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TERMINAL DESCRIPTION

Q701:HD404314C03S

Q701:HD404314C033

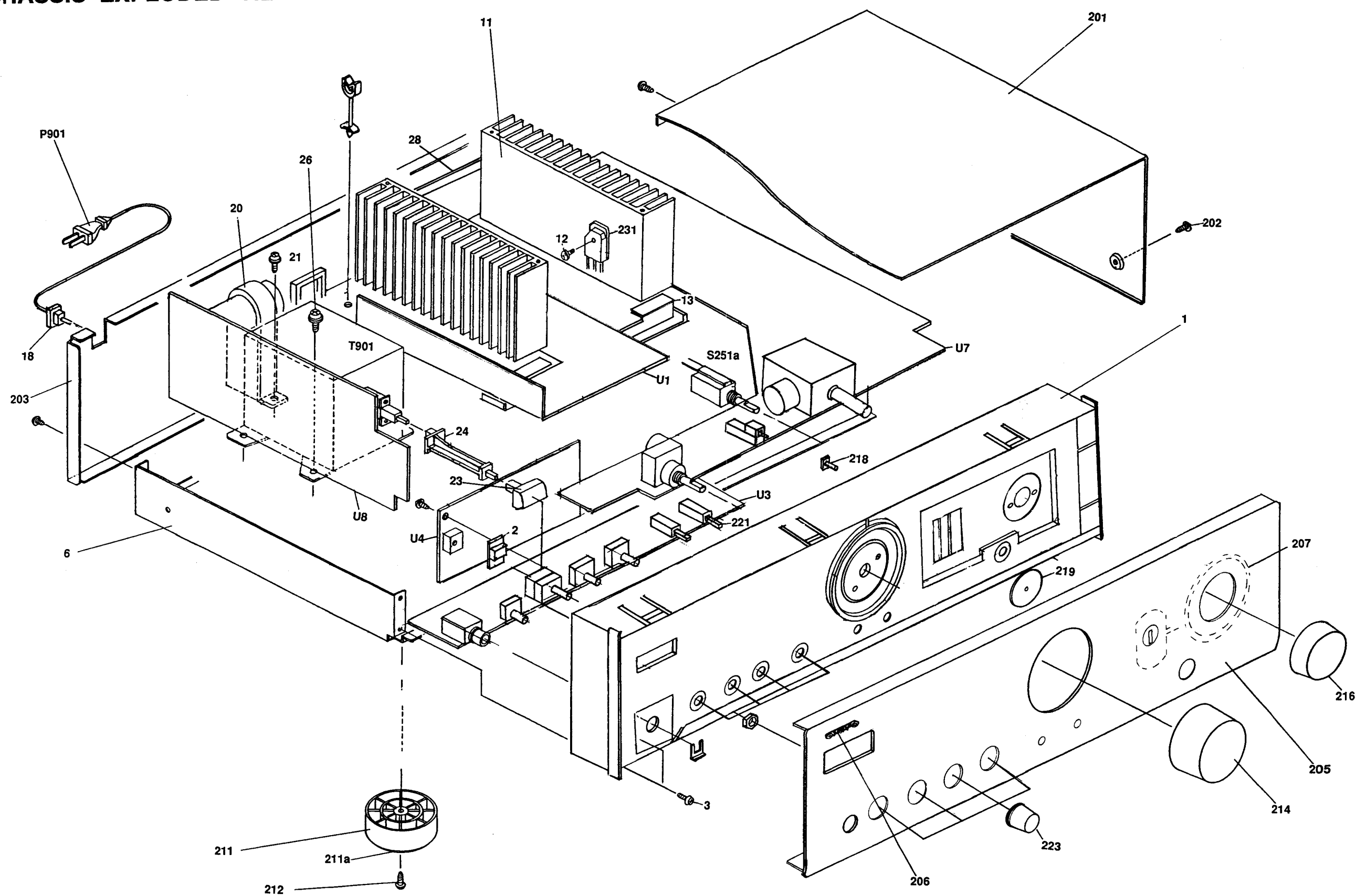
Pin No.	CODE	FUNCTION	I/O	DESCRIPTION			
1	PA1/Vdisp		---	Not used. To be connected with GND.			
2	R00/SCK	SEL DOWN	I/O	UP/DOWN Output terminal for Input selector.			
				OPERATION	SEL UP	SEL DOWN	
				STOP	H	H	
				UP	H	L	
3	R01/SI	SEL UP		DOWN	L	H	
4	R02/SO	CE	---	Not used. To be connected with GND.			
5	R03/TOC	INP MUT	OUT	Muting output terminal. Active "H".			
6	TEST	TEST	---	Shipment Test. To be connected with GND.			
7	RESET	RESET	IN	Input terminal for Reset signal. Active "L".			
8	OSC1	Xtal	---	Terminal for connecting with Ceramic oscillator (4.0MHz)			
9	OSC2	Xtal	---				
10	GND	GND	---	Ground terminal.			
11	AVss	AVss	---	Ground terminal of A/D converter.			
12	R30/AN0	SEL KEY	IN	Input terminal for when changing over Input Selector. Through A/D conversion, the selector will be detector on its right or left rotation.			
13	R31/AN1	CODE 2	IN	Code input terminal for detecting position of input switch of Motor driver.			
14	R32/AN2	CODE 1	IN	Code input terminal for detecting position of input switch of Motor driver.			
15	R33/AN3	EXP/JPN	IN	Input terminal for change-over between Japan model and Export model.			
16	R40/AN4	MODE	IN	Input terminal for initialization to change over operation mode.			
17	R41/AN5	PROTECT	IN	Input terminal for detecting protect operation.			
18	R42/AN6	SYS OUT	OUT	Output terminal for System Code.			
19	R43/AN7	SYS IN	IN	Input terminal for System Code.			
20	AVcc	AVcc		Analog reference voltage for A/D conversion.			
21	Vcc	Vcc	---	Power (+5V) terminal.			
22	D0/INT0	P OFF	IN	Input terminal for Detecting Power suspension. However, "L" 100 μ S or under shall be ignored.			
23	D1/INT1	REM IN	IN	Remote control signal input terminal.			
24	D2/EVENB	RELAY	OUT	Output terminal for controlling relay. "H" when ON.			
25	D3/BUZZ	PLAYER		Not used.			
26	D4/STOPC		---	Not used.			
27	D5						
28	D6						
29	D7						
30	D8						
31	R80						
32	R81						
33	R82	VOL DOWN	OUT	UP/DOWN output terminal for Volume. Active "H".			
34	R83	VOL UP		OPERATION	VOL UP	VOL DOWN	POWER ON
				STOP	H	H	
				VOL UP	H	L	
				VOL DOWN	L	H	
				POWER OFF	L	L	
35	R10			Not used.			
36	R11						
37	R12						
38	R13						
39	R20						
40	R21	VOL LED	---	Output terminal for volume LED.			
41	R22	POW LED	---	Not used..			
42	R23	MUTING	OUT	Output terminal for Audio muting LED, Remote control.			

CHASSIS EXPLODED VIEW PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	27110966Y	Front Bracket
	27110967Y	Front Bracket <S>
2	28191765Y	Clear Plate (RE)
3	838130088Y	3TTB+8B, Self-tapping screw
6	27100325Y	Chassis
11	27160380Y	Radiator
12	801433Y	3SMS8W.SW+14B(BC)
13	27130784Y	Bracket (H-1)
15	27130785Y	Bracket (H-2)
18	27300750	Cord Bushing #2271
20	27190995Y	Holder (CH)
21	831430088Y	3TTW+8B(BC) Self-tapping screw
23	28325465Y	Knob (POW)
	28325466Y	Knob (POW) <S>
24	27273162Y	Joint (POW)
26	830440089Y	4TTC+8C(BC) Self-tapping screw
28	28140693Y	Cushion, 1.5x185x10
201	28184667Y	Top Cover
	28184668Y	Top Cover <S>
202	838430088	3TTB+8B(BC), Self-tapping screw
203	27122294Y	Rear Panel <P>
	27122329Y	Rear Panel <PT>
	27122295Y	Rear Panel <WT>
205	27211880Y	Front Panel
	27211881Y	Front Panel <S>
206	28135244Y	Badge
	28135245Y	Badge <S>
207	272567957Y	Guide (SEL)
	272567958Y	Guide (SEL) <S>
211	27175321Y	Leg
211a	28141309Y	Cushion, Leg
212	837440169Y	4TTT+16C(BC), Self-tapping screw
214	28325469	Knob (VOL)
	28325470	Knob (VOL) <S>
216	28325471	Knob (SEL) AS
	28325472	Knob (SEL) AS <S>
218	28325473Y	knob (D)
219	28141314Y	Cushion (D)
221	28325274Y	Knob (PUSH)
	28325275Y	Knob (PUSH) <S>
223	28325405Y	Knob (TONE)
	28325474Y	Knob (TONE) <S>
231	223027	Isolation Sheet
251	880025-1Y	Plastic Rivet <P,PT>
F901	252164	△ 5A-UL/T237, Fuse <WT>
F902	252075	△ 2.5A-SE-EAK, Fuse
F903	252070	△ 1A-SE-EAK, Fuse <P,PT>
P901	253193HITY	△ AS-CEE, AC Cord <P,PT>
	253233KAW	△ AS-CEE-2, <WT>
S251a	25030369AY	NRSF-106-20BU, Rec. Selector
T901	2301242Y	△ NPT-1289P, Power transformer <P,PT>
	2301243Y	△ NPT-1289DG <WT>
Q609,Q610	2202684 or	2SA1859-Y or
	2202683	2SA1859-O Power transistor
Q611,Q612	2202694 or	2SC4883-Y or
	2202693	2SC4883-O Power transistor
Q613,Q614	2201664 or	2SA1492-Y or
	2201665 or	2SA1492-P or
	2201663	2SA1492-O Power transistor
Q615,Q616	2201654 or	2SC3856-Y or
	2201655 or	2SC3856-P or
	2201653	2SC3856-O Power transistor
U1	1A726511-1AY	NAAF-5911-1AY, Main circuit pc board ass'y <P,PT>
	1A726511-1BY	NAAF-5911-1BY, Main circuit pc board ass'y <WT>
U2	1A726512-1AY	NAETC-5912-1AY, Bias pc board ass'y <P,PT>
	1A726512-1BY	NAETC-5912-1BY, Bias pc board ass'y <WT>
U3	1A726513-1AY	NAAF-5913-1AY, Tone circuit pc board ass'y <P,PT>
	1A726513-1BY	NAAF-5913-1BY, Tone circuit pc board ass'y <WT>
U4	1A726514-1AY	NADG-5914-1AY, Digital circuit pc board ass'y <P,PT>
	1A726514-1BY	NADG-5914-1BY, Digital circuit pc board ass'y <WT>
U7	1A726516-1AY	NASW-5916-1AY, Switches circuit pc board ass'y <P,PT>
	1A726516-1BY	NASW-5916-1BY, Switches circuit pc board ass'y <WT>
U8	1A726517-1AY	NASW-5917-1AY, Power supply circuit pc board ass'y <P,PT>
	1A726517-1BY	NASW-5917-1BY, Power supply circuit pc board ass'y <WT>

NOTE: Back model
 <S> Silver model
 <P> 20V model only
 <WT> Taiwanese model
 <PT> Asian model only

CHASSIS EXPLODED VIEW

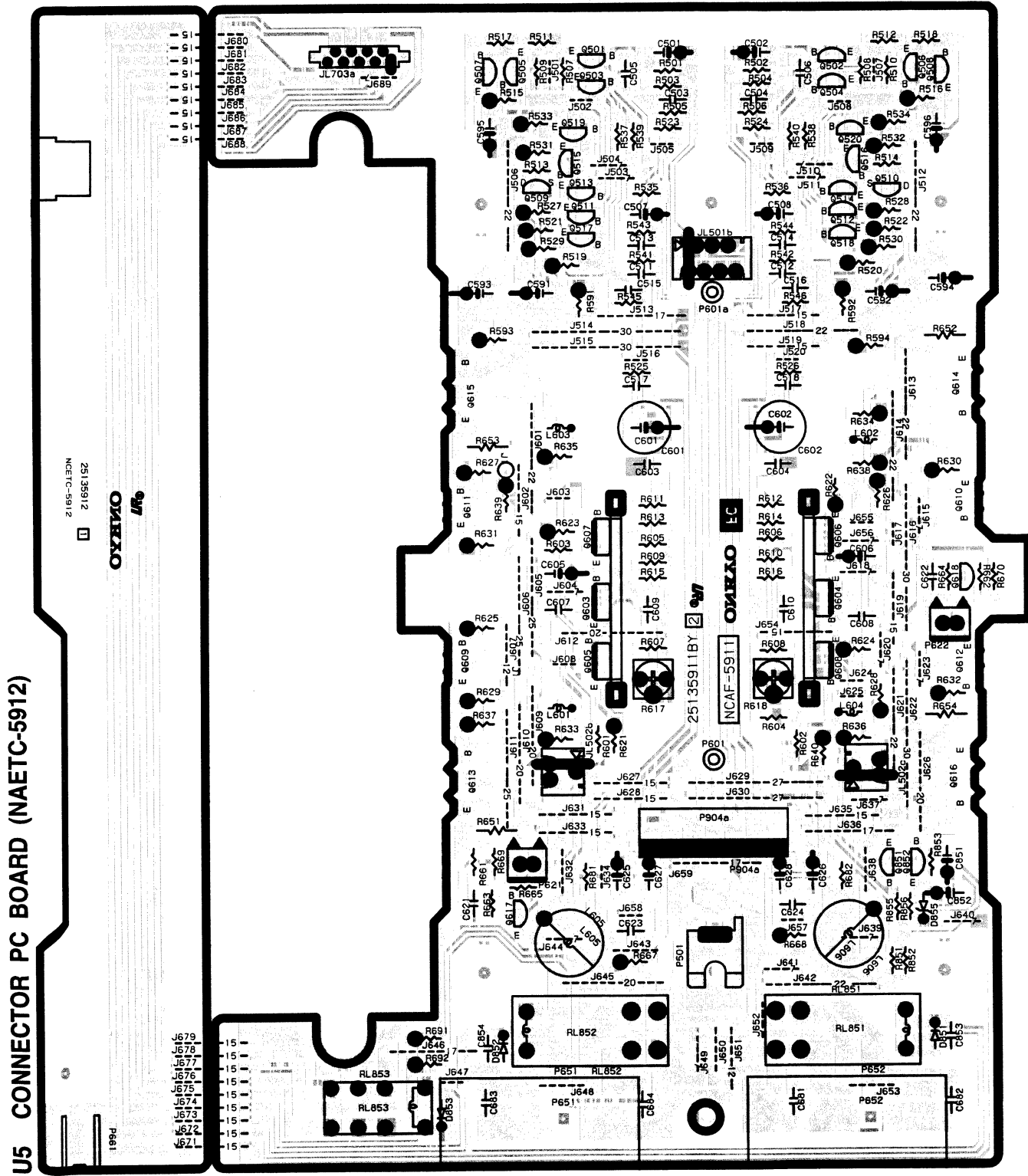


A-9511

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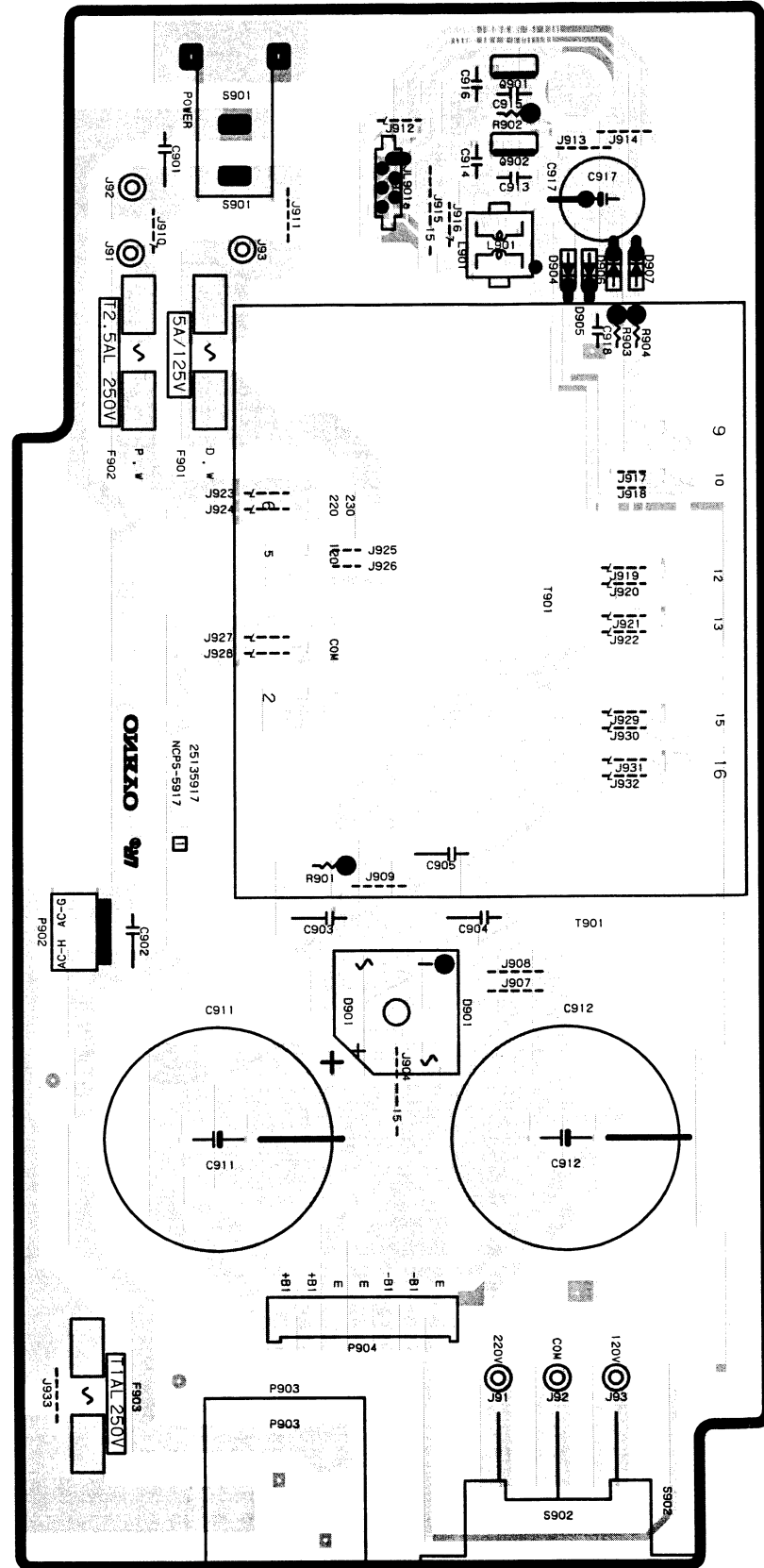
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

U1 MAIN CIRCUIT PC BOARD (NAAF-5911)

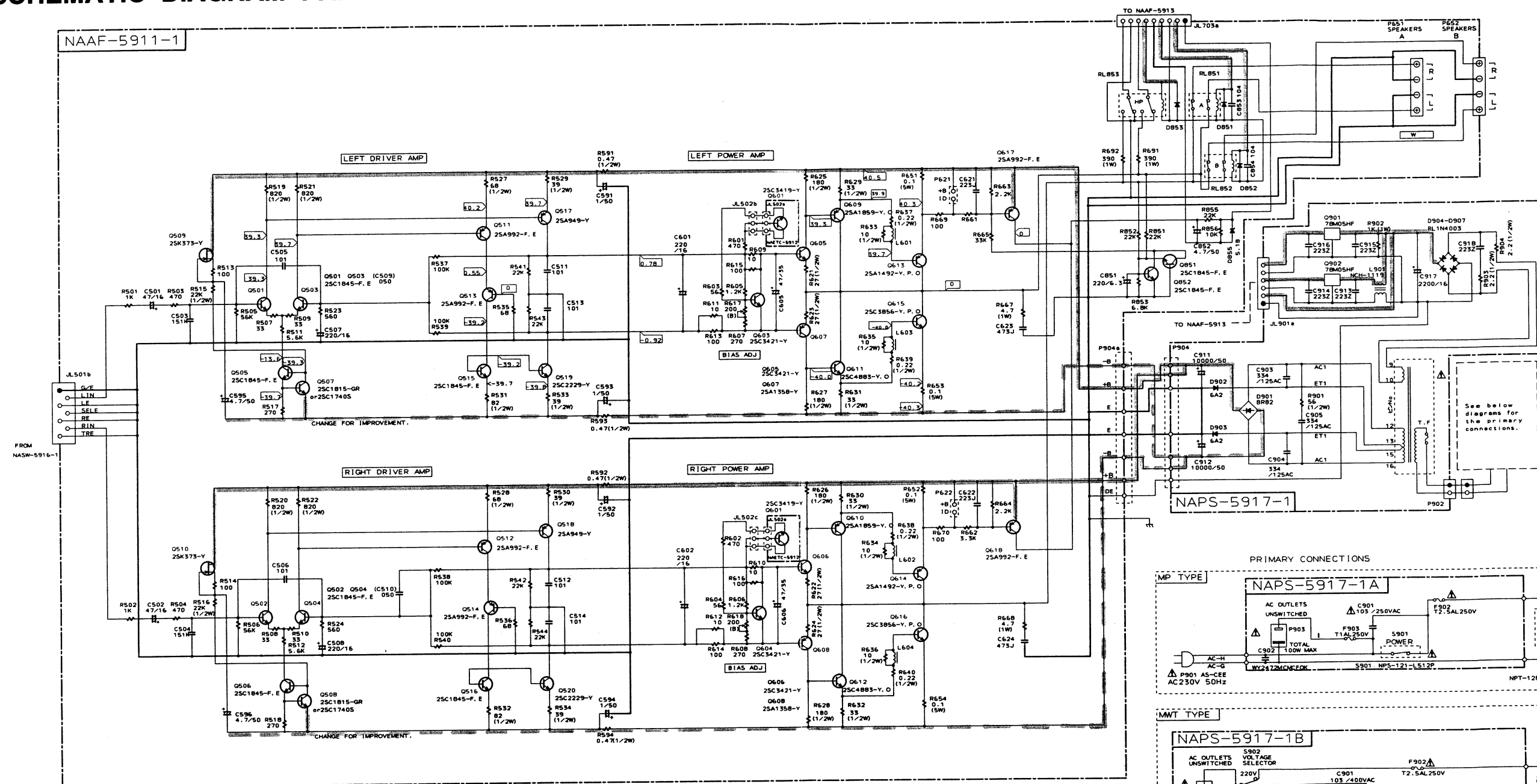


U5 CONNECTOR PC BOARD (NAETC-5912)

U8 POWER SUPPLY CIRCUIT PC BOARD (NAPS-5917)



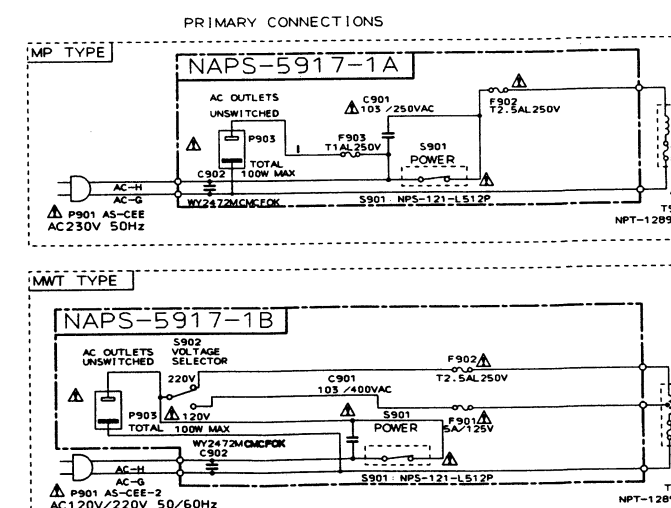
SCHEMATIC DIAGRAM PART 2

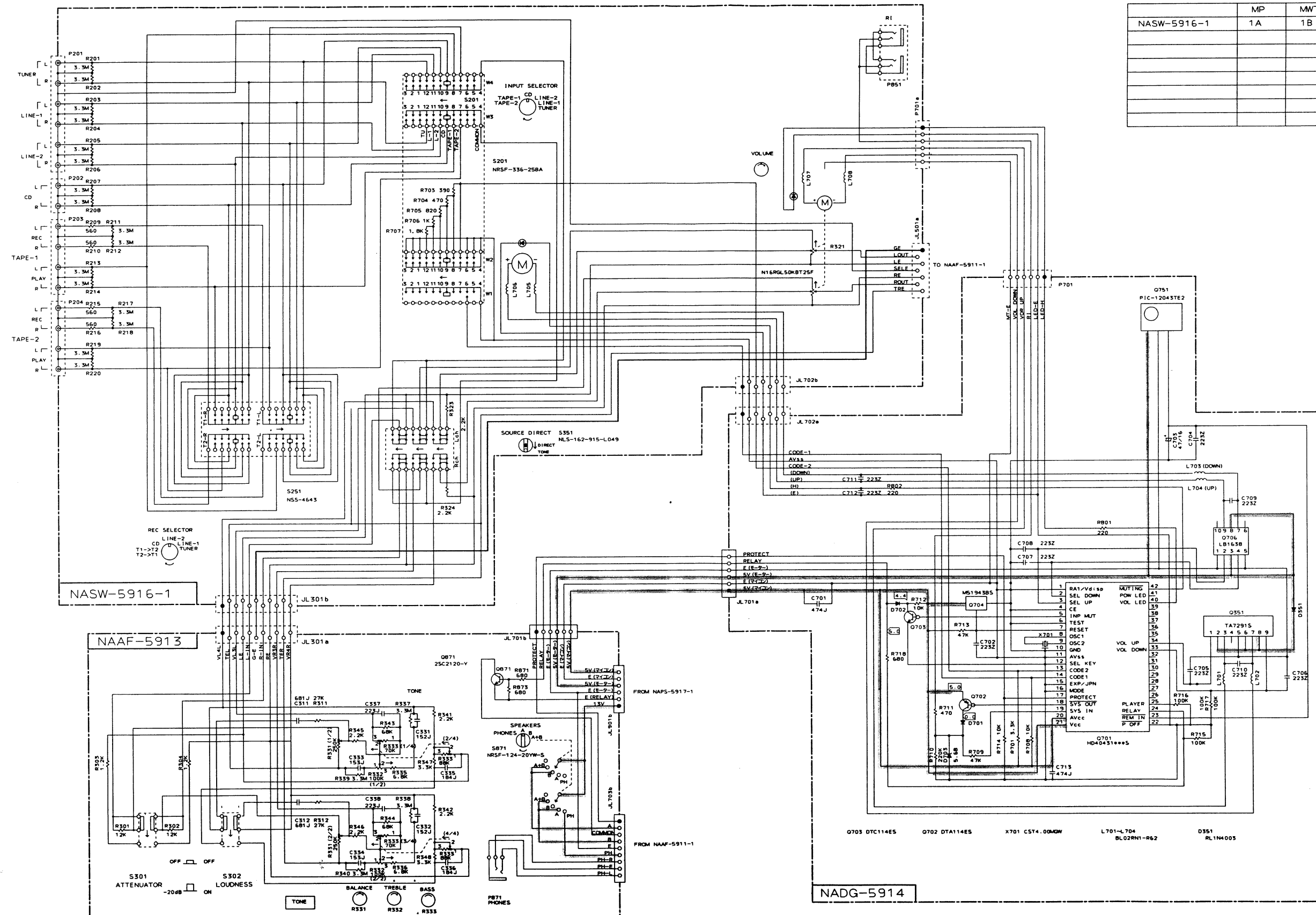


NOTE

- ① THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. THESE ONLY WITH PART NUMBER SPECIFIED.
- ② VOLTAGE MEASURED WITH VOLTMETER $\square$ IS DC VOLTAGE, (NO INPUT SIGNAL).
- ③ TRANSISTORS ARE EQUIVALENT TO 25A1015-GR UNLESS OTHERWISE NOTED.
- ④ ALL PNP TRANSISTORS ARE EQUIVALENT TO 25C1B15-GR UNLESS OTHERWISE NOTED.
- ⑤ ALL DIODES ARE EQUIVALENT TO 155133 UNLESS OTHERWISE NOTED.
- ⑥ ELECTROLYTIC CAPACITORS $\square$ ARE 50VMM UNLESS OTHERWISE NOTED.
- ⑦ RESISTORS ARE 1/4W UNLESS OTHERWISE NOTED.
- ⑧ EX100-50W, 330-330W, 331-330W, 333-0, 033W.
- ⑨ TRANSISTORS ARE 25A1015-GR UNLESS OTHERWISE NOTED.
- ⑩ THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
- ⑪ EXCLUDED PRINTING SIDE.
- ⑫ CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

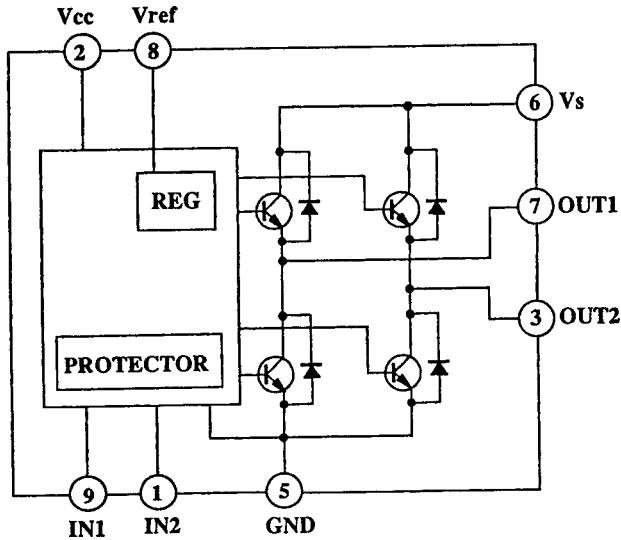
	MP	MWT
NCAF-5911-1	1A	1B
R503, R504	470 ohm	0 ohm
NAPS-5917-1	1A	1B


$$\begin{aligned} \text{---} &: +B \\ \text{---} &: -B \end{aligned}$$

[illegible]

IC BLOCK DIAGRAMS

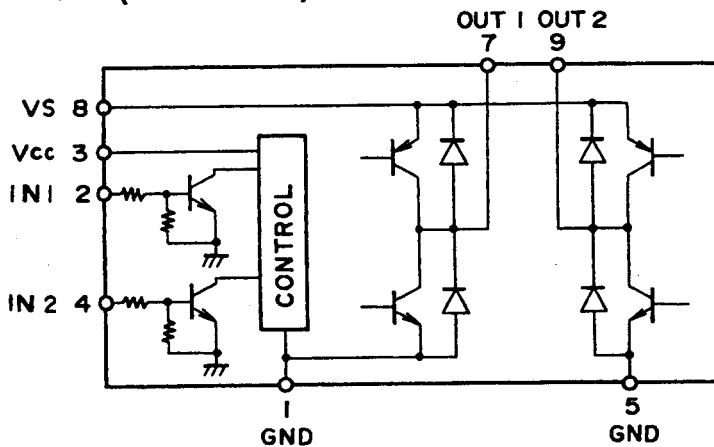
Q351 :
TA7291S (Volume Motor Drive)



INPUT		OUTPUT		
IN1	IN2	OUT1	OUT2	MODE
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

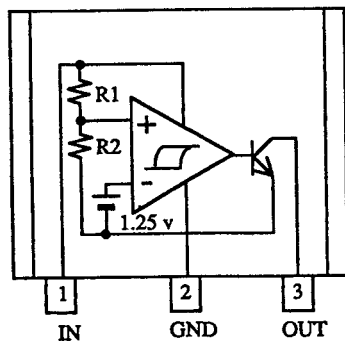
CCW:Counter clockwise direction
CW:Clockwise direction

Q706 :
LB1638 (Motor Drive)



IN 1	IN 2	OUT 1	OUT 2	MODE
H	L	H	L	NORMAL
L	H	L	H	REVERSE
H	H	L	L	BRAKE
L	L	OFF	OFF	WAIT

Q704 :
M51943BS (System Reset)



A-9511

PACKING PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	29053112Y	Carton Box <P>
	29053114Y	Carton Box <S><P>
	29053113Y	Carton Box <PT,WT>
2	29091763Y	Pad AS
3	29100034-1AY	Styrene Bag 850x650
4	282321Y	Staple
	Accessory bag ass'y	
	29100097-1AY	Styrene Bag 350x250
	29342391A	Instruction Manual, E
	29342393A	Instruction Manual, T<PT,WT>
	29342435A	Instruction Manual, U3FSI <P>
	29342436AY	Instruction Manual, U3GSwD <P>
	29355133AY	Instruction Sheet (DBP) <P>
	24140314Y	RC-314S, Remote control transmitter
	25055018	CV-K-1, Conversion Plug <WT>
	3010194Y	UM-3, Two Battery
	29362115Y	Label (EAN) AS <P,WT>
	29362116Y	Label (EAN) AS <S><P>
	29361786Y	Label (Malaysia) <PT>

NOTE: Black model
 <S> Silver model
 <P> 230V model only
 <WT> Taiwan model only
 <PT> Asian model only

ONKYO CORPORATION

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 Industriestrasse 18-20, 82110 Germering, GERMANY
 TEL : 089 84 93 20 FAX : 089 84 93 226

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 Immeuble Le Diamant, Domaine Technologique de Saclay, 4 Rue Rene Razel, 91892 SACLAY, FRANCE
 TEL : (1) 69 33 14 00 FAX : (1) 69 41 35 84