

ONKYO® SERVICE MANUAL

Integrated Stereo Amplifier MODEL A-8940



Black and Silver models

UP

230V AC, 50Hz

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 PARTS 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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ONKYO
AUDIO COMPONENTS

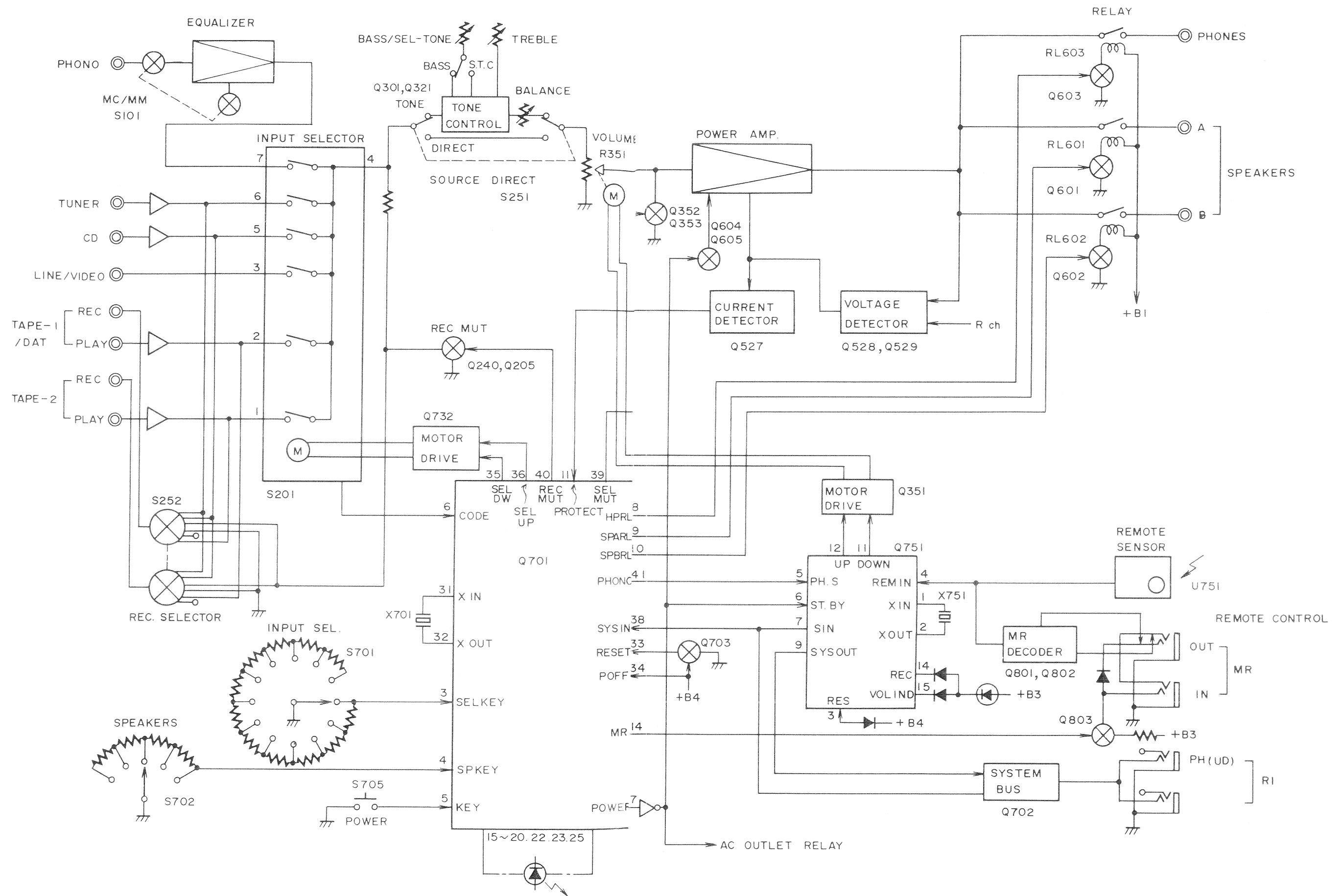
SPECIFICATIONS

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 x 100 watts at 4 ohms, 1 kHz(DIN) 2 x 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:	40 at 8 ohms	
Frequency and Response:	15-30,000 Hz ± 1 dB	
Input Sensitivity/Impedance:	Phono (MM):	2.5 mV/50 kohms
	Phono (MC):	350 μ V/220 ohms
	Tuner/CD/LINE, Video:	150 mV/50 kohms
	Source Direct:	150 mV/50 kohms
	Tape/Play:	150 mV/50 kohms
Output Sensitivity/Impedance:	Tape/Rec:	150 mV/3 kohms (phono)
	135 mV RMS at 1 kHz, 0.1% THD (MM) (REC)	
Phono Overload:	135 mV RMS at 1 kHz, 0.1% THD (MM) (REC)	
Bass Control:	± 10 dB at 100 Hz	
Treble Control:	± 10 dB at 10,000 Hz	
Selective Tone Control:	± 15 dB at 50 Hz/ ± 6 dB at 10 kHz	
Signal to Noise Ratio (IHF-A):	Phono (MM):	80 dB (5 mV input)
	Phono (MC):	70 dB (0.5 mV input)
	Source Direct (CD):	102 dB
General		
Power Supply:	European models	AC 230V, 50Hz
Dimensions (W) x (H) x (D):	455 x 120 x 330 mm	
	17-15/16" x 4-3/4" x 13"	
Weight:	7.9 kg, 17.4 lbs.	
Remote Control Transmitter RC-242S		
Transmitter:	Infrared	
Signal range:	Approx. 5 meters, 16ft	
Power supply:	Two "AA" batteries (1.5 V x 2)	
Dimensions (W x H x D):	64 x 18 x 176 mm	
	2-1/2" x 11/16" x 6-15/16"	
Weight:	130 grams. 4.6 oz. (including batteries)	

Specifications and features are subject to change without notice

IL

BLOCK DIAGRAM



Adjustments and Checking the Protection Circuitry

- 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

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

1) Turn the power switch ON and allow the unit to warm up for about 10 minutes.

- (1) Adjust R531 (R532) so that the voltage at test point VCT-ID on the NAAF-4557 circuit board is $9.5\text{mV} \pm 3.5\text{mV}$

NOTE) Semi-fixed resistors enclosed in parentheses () are for the right channel.

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.
- Check of DC detection
- (1) Turn the power on with no load.
 - (2) After the speaker relay turns ON, apply DC +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 -1.5V is applied.

Note) Under no circumstances connect a load or short the speaker terminals when performing the above test.

(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 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.

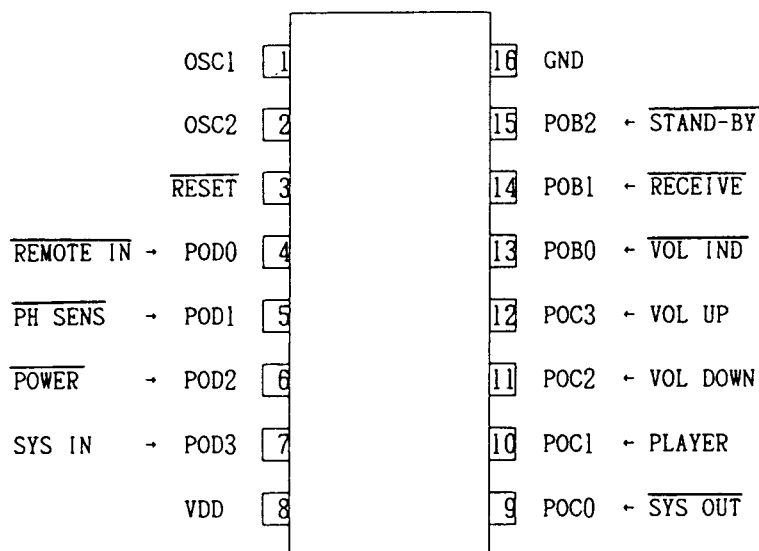
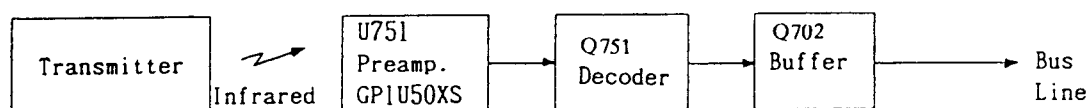
Note) The period before that relay stays OFF should not last for more than 10 second.

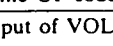
Relay OFF status can be canceled by switching the power OFF.



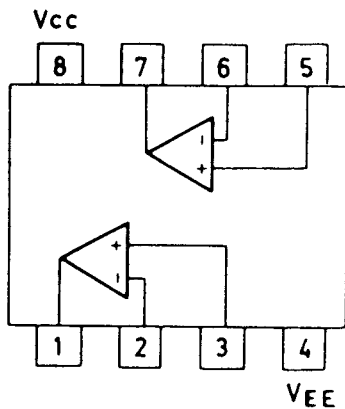
IC BLOCK DIAGRAM

MPD17103CX (Remote Control Decoder)

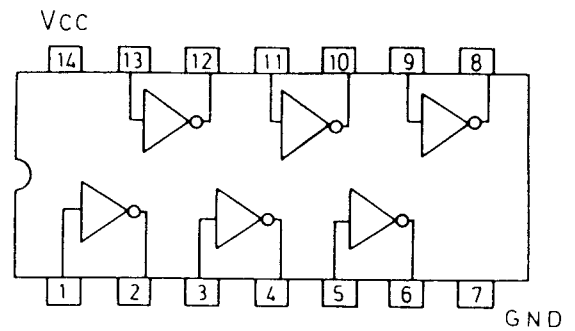


Pin No.	Symbol	Terminal	Description
1	OSC1	OSC	Connect to the 8.00MHz ceramic oscillator.
2	OSC2		
3	RES	RESET	System reset terminal. Active low.
4	POD0	REMOTE IN	Signal input terminal from preamp. for remote control. Active low.
5	POD1	PHONO SENSES	Phono detection input terminal. Active low.
6	POD2	POWER	Stand-by detection input terminal. During low input, only the POWER code is decoded.
7	POD3	SYS IN	System code input terminal.
8	V _{DD}	+B	Power supply terminal.
9	POC0	SYS OUT	Output at this terminal are the custom code (16bits) remote control code input to REMOTE IN, data code (8bits), and the serial code (12bits) that has been converted corresponding to the decoded data code (8bits)
10	POC1	PLAYER	When the player PLAY/REEJECT is input, a high pulse of 200ms is output.
11	POC2	VOL DOWN	When the volume DOWN code is input, a high pulse of 120ms is output.
12	POC3	VOL UP	When the volume UP code is input, a high pulse of 120ms is output.
13	POB0	VOL IND	During the output of VOLUME UP/DOWN, a pulse ( = 250ms) is output. (Not used.)
14	POB1	RECEIVE	This is the display output for remote control reception. Output is low when decoded code is being recieved.
15	POB2	STAND-BY	STAND-BY indication terminal.
16	V _{ss}	GND	Ground terminal.

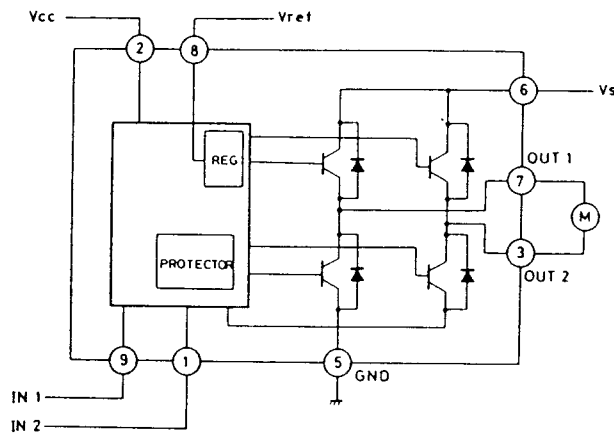
NJM4565DD(OP (O P Amp)
 NJM4558LD
 MPC4570C



74HCU04P(Hex inverters)



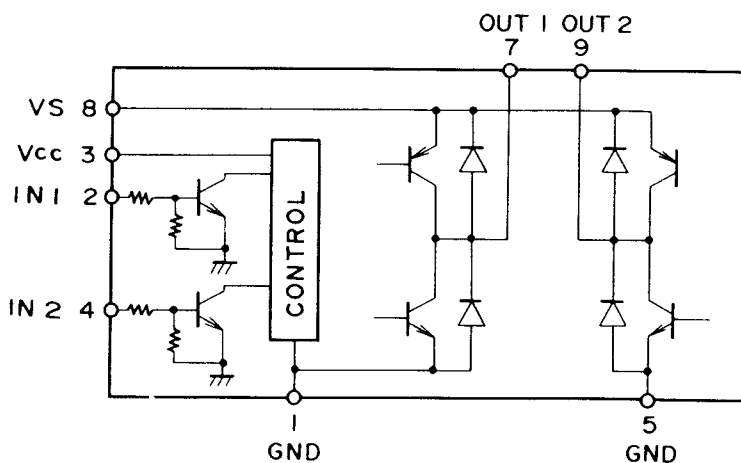
TC7291S(Volume Moter Drive)



INPUT		OUTPUT		MODE
IN 1	IN 2	OUT 1	OUT 2	
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

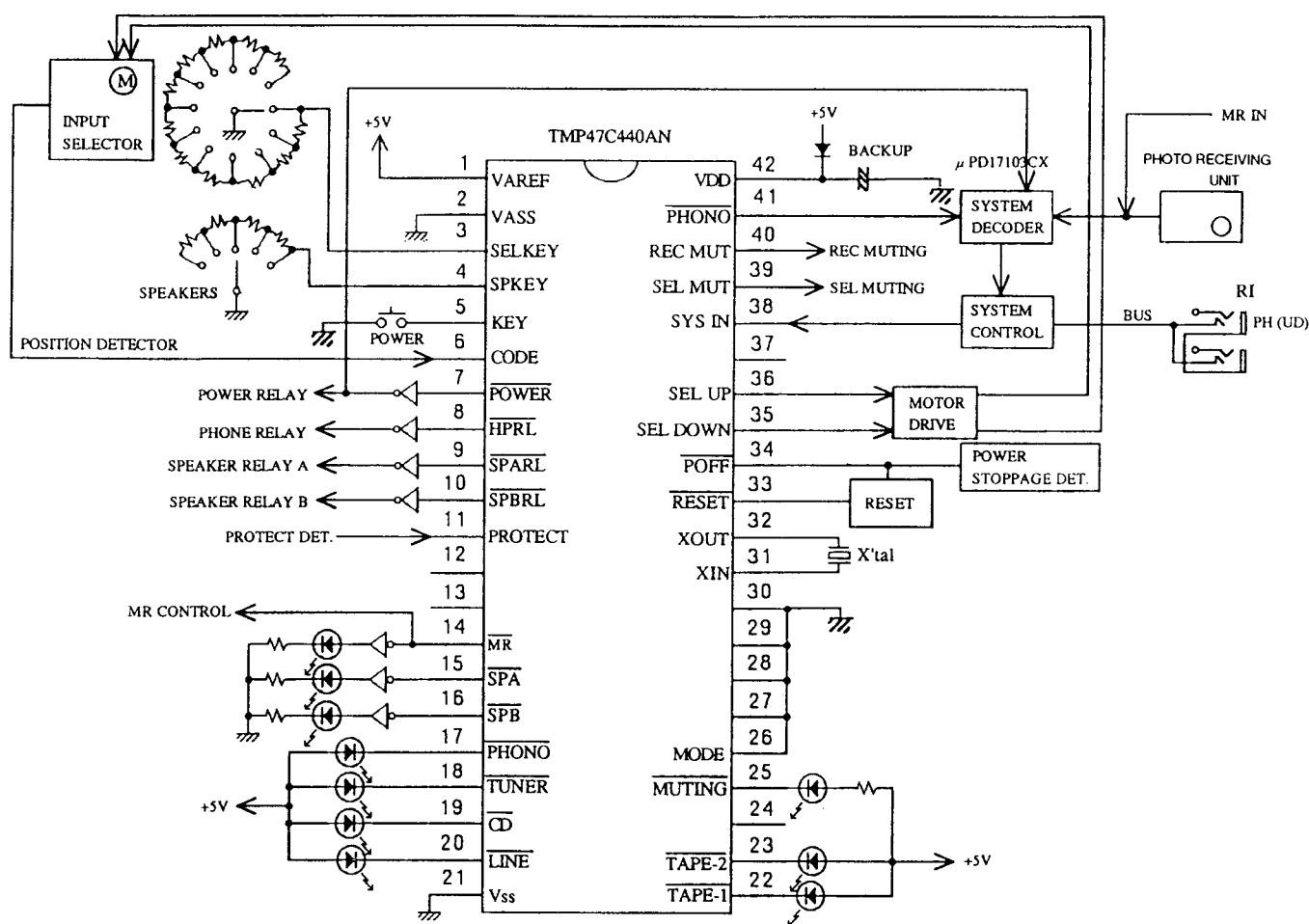
LB1638(Motor Drive)



Tauth Table

IN 1	IN 2	OUT 1	OUT 2	モード
H	L	H	L	NORMAL
L	H	L	H	REVERSE
H	H	L	L	BRAKE
L	L	OFF	OFF	WAIT

TMP47C440AN(Microprocessor)



Pin No.	Symbol	Description
1	VAREF	Analog reference voltage for A/D conversion
2	VASS	Analog reference GND for A/D conversion
3	SELKEY	Input terminal for Switch when changing over Input selector. Through A/D conversion, the Input selector rotation will be detected.
4	SPKEY	Input terminal for Switch when changing over Speaker.
5	KEY	Key entry terminal. Momentary Key will be fetched by A/D conversion.
6	CODE	Input terminal for Detecting position of Rotary switch of Input selector.
7	POWER	Output terminal for Power control. Active "L".
8	HPRL	Output terminal for controlling Head phone relay. "L" when ON.
9	SPARL	Output terminal for controlling Speaker-A relay. "L" when ON
10	SPBRL	Output terminal for controlling Speaker-B relay. "L" when ON.
11	PROTECT	Input terminal for detecting Protect operation. However, "H" 100 μ F or under shall be ignored.
12	SYS IN	Input terminal for System code.
13	-----	Not used.

Pin No.	Symbol	Description												
14	MR	Output terminal for displaying and controlling MR. When set Speaker switch at MR; "L". This output will be output as current condition of MR ever while Power is OFF.												
15	SPA	Output terminal for displaying Speaker-A. When set Speaker to be changed-over at A or A+B or selected, Speaker-A by remote control with Speaker set at MR; "L" (Light).												
16	SPB	Output terminal for displaying Speaker-B. When set Speaker to be changed-over at B or A+B or selected Speaker-B by remote control with Speaker set at MR; "L" (Light).												
17	PHONO	Output terminal for Input selector display. Output of the position currently selected will be "L" (Light).												
18	TUNER													
19	CD													
20	LINE													
21	VSS	GND terminal.												
22	TAPE-1	Output terminal for Input selector display. Output of the position currently selected will be "L" (Light).												
23	TAPE-2													
24	————	Not used.												
25	MUTING	Output terminal for Muting display. Winks in 1 Hz at Muting ON.												
26	MODE	Input terminal for initialization to change over operation mode.												
27	————	Not used.												
28	————	Not used.												
29	————	Not used.												
30	TEST	Shipment Test. To be connected with GND.												
31	XIN	Terminal for connecting with Ceramic oscillator (4 MHz).												
32	XOUT													
33	RESET	Input terminal for System reset.												
34	POFF	Input terminal for Detecting Power suspension. However, "L" 100 μ S or under shall be ignored.												
35	SEL DOWN	UP/DOWN Output terminal for Input selector. Active "H" <table><tr><td>OPERATION</td><td>SEL UP</td><td>SEL DOWN</td></tr><tr><td>STOP</td><td>H</td><td>H</td></tr><tr><td>UP</td><td>H</td><td>L</td></tr><tr><td>DOWN</td><td>L</td><td>H</td></tr></table>	OPERATION	SEL UP	SEL DOWN	STOP	H	H	UP	H	L	DOWN	L	H
OPERATION	SEL UP	SEL DOWN												
STOP	H	H												
UP	H	L												
DOWN	L	H												
36	SEL UP													
37	————	Not used.												
38	SYS IN	Input terminal for System code.												
39	INP MUT	Muting output terminal for Main amplifier input.												
40	REC MUT	Muting output terminal for REC output. Active "H" To be output when changing over Input selector.												
41	PHONO	Control output terminal for PHONO. when set Input selector switch at PHONO; "L".												
42	VDD	Power (+5V) Connecting terminal.												

PRINTED CIRCUIT BOARD-PARTS LIST

MAIN CIRCUIT PC BOARD (NAAF-4577, -1A)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
ICs					
Q105	22240191	NJM4565DD	C261,C262	354780339	3.3 μ F, 50V, Elect.
Q201~Q203	22240293	NJM4558LD	C501,C502	393380477	4.7 μ F, 50V, Elect.(VX)
Transistors			C503,C504	374721015	100 pF, 50V, Film (TF)
Q101~Q104	2211782 or	2SA991-F or	C507,C508	374721024	1000 pF, 50V, Film (TF)
	2211783	2SA991-E	C509,C510	393322217	220 μ F, 6.3V, Elect.(VX)
Q204	2213510 or	DTA114ES or	C511,C512	354780339	3.3 μ F, 50V, Elect.
	2214350	RN2202	C517~C520	374722234	0.022 μ F, 50V, Film (TF)
Q205,Q206	2213631 or	RN1241-A or	C525,C526	374724734	0.047 μ F, 50V, Film (TF)
	2213632	RN1241-B	C537,C538		
Q501,Q502	2213677 or	2SC3067-G or	C529~C532	354781019	100 μ F, 50V, Elect.
	2213678	2SC3067-H	C541~C544	374721024	1000 pF, 50V, Film (TF)
Q505~Q508	2211455	2SA1015-GR	C554	354780479	4.7 μ F, 50V, Elect.
Q509,Q510	2211732 or	2SC1845-F or	C555	354722219	220 μ F, 6.3V, Elect.
	2211733	2SC1845-E	C605	354741009	10 μ F, 16V, Elect.
Q511,Q512	2211255	2SC1815-GR	C914,C915	3504206	10000 μ F, 50V, Elect.
Q513,Q514	2211353 or	2SA949-O or	C916,C917	354761019	100 μ F, 35V, Elect.
	2211354	2SA949-Y	C918,C919	354742219	220 μ F, 16V, Elect.
Q515,Q516	2211633 or	2SC2229-O or	Resistors		
	2211634	2SC2229-Y	R527,R528	442522704	27 Ω , 1/2W, Metal oxide film
Q517,Q518	2212653 or	2SC3421-O or	R529,R530	442529104	91 Ω , 1/2W, Metal oxide film
	2212654	2SC3421-Y	R531,R532	5210062 or	N06HR4.7KBD or
Q519,Q520	2212643 or	2SA1358-O or		5210216	N06HR5KBD, Semi-fixed
	2212644	2SA1358-Y	R535,R536	442522714	270 Ω , 1/2W, Metal oxide film
Q525,Q526	2211732 or	2SC1845-F or	R537,R538	451734794	0.47 Ω , 2W, Metal
Q528,Q529	2211733	2SC1845-E	R539,R540	4500031	0.22 Ω , 5W, Metal plate
Q527	2211792 or	2SA992-F or	R543,R544	451630224	2.2 Ω , 1W, Metal
	2211793	2SA992-E	R545,R546	452530224	2.2 Ω , 1/2W, Metal
Q531,Q532	2211183	2SC1740-R	R547,R548	452530824	8.2 Ω , 1/2W, Metal
Q601~Q603	2213650 or	DTD113ZS or	R549,R550	452530564	5.6 Ω , 1/2W, Metal
	2214680	RN1226	R553~R556	452530224	2.2 Ω , 1/2W, Metal
Q604	2213510 or	DTA114ES or	R601,R602	441627514	750 Ω , 1W, Metal oxide film
	2214350	RN2202	R603	442522724	2.7k Ω , 1/2W, Metal oxide film
Q605	2213290 or	DTC114ES or	R911,R913	441623314	330 Ω , 1W, Metal oxide film
	2214230	RN1202	R912,R914	441623614	360 Ω , 1W, Metal oxide film
Diodes			Switches		
D101~D104	223163 or	1SS133 or	S101	25035631	NPS-142-L587
D501~D504	223205	1SS270A	S201	25030362	NRS-3311-BA, Rotary
D601~D603			Relaies		
D551	224450512	MTZ5.1B, Zener	RL601,RL602	25065339	NRL-2P5A-DC24V-46
D911	22380038	RBV602	RL603	25065396	NRL-2P1.25A-DC24-067
D912,D913	224451503	MTZ15C	Jumper sockets		
Coils			JL301a	25050273	NSCT-9P101
L101,L102	231133	NCH-1188	JL501a	25050267	NSCT-3P95
L501,L502	231176	S-1.3C	JL901a	25050268	NSCT-4P96
Capacitors			Terminals		
C101,C102	374721015	100 pF, 50V, Film (TF)	P101	25045333	NPJ-2PDBL185
C103,C104	374722224	2200 pF, 50V, Film (TF)	P201	25045300	NPJ-6PDBL159
C105,C106	354780479	4.7 μ F, 50V, Elect.	P501	25060125	NTM-8PDMN058
C107,C108	374722215	220 pF, 50V, Film (TF)	Bracket		
C111,C112	374728224	8200 pF, 50V, Film (TF)	27141059	(Ground)	
C113,C114	354724719	470 μ F, 6.3V, Elect.			
C115,C116	371121134	0.011 μ F, 50V, Mylar			
C117,C118	371123034	0.03 μ F, 50V, Mylar			
C119,C120	354780479	4.7 μ F, 50V, Elect.			
C121,C122	374721224	1200 pF, 50V, Film (TF)			
C132,C133	354741019	100 μ F, 16V, Elect.			
C231~C242	354741009	10 μ F, 16V, Elect.			
C266					

TAPE CIRCUIT PC BOARD (NAAF-4578-1A)

CIRCUIT NO. PART NO. DESCRIPTION

ICs

Q211,Q212 22240293 NJM4558LD

Capacitors

C251~C260 354741009 10 μ F, 16V, Elect.

Terminals

P251,P252 25045303 NPJ-4PDBL162

Switches

S251 25035646 NPS-142-L599
S252 25065382 NSS-22109, Slide

Jumper sockets

JL251 25050267 NSCT-3P95
JL252 25050531 NSCT-9P354
JL253 25050529 NSCT-9P352
JL254 25050531 NSCT-9P354

PHONES CIRCUIT PC BOARD (NAAF-4579-1)

CIRCUIT NO. PART NO. DESCRIPTION

Resistors

R571,R572 441623914 390 Ω , 1W, Metal oxide film

Stereo jack

P571 25045255 YKB21-5009

Jumper socket

JL502 25050267 NSCT-3P95

MICROPROCESSOR CIRCUIT PC BOARD (NADG-4581-1)

CIRCUIT NO. PART NO. DESCRIPTION
Photo receiving unit

U751 24130007 GP1U571X

ICs

Q701 22240629 TMP47C440AN
Q731 222755 TC74HCU04P
Q751 22240596 MPD17103CX-542

Transistors

Q702 2213510 or DTA114ES or
2214350 RN2202
Q703 2211255 or 2SC1815-GR or
2211183 2SC1740-R
Q704 2213290 or DTC114ES or
2214230 RN1202
Q705,Q706 2213510 or DTA114ES
2214350 RN2202
Q707,Q708 2213290 or DTC114ES or
2214230 RN1202

Diodes

D701~D708 223163 or 1SS133 or
D751~D756 223205 1SS270A
D764
D709 224450562 MTZ5.6B, Zener
D712~D722 225142DX2 SEL2913K-DX2, LED

CIRCUIT NO. PART NO. DESCRIPTION

Osc.element

X701 3010150 CST4.00MGW
X751 3010154 CST8.00MT

Capacitors

C701 3000059 0.047 F, 5.5V, Super
C703,C752 354741009 10 μ F, 16V, Elect.
C704 354780109 1 μ F, 50V, Elect.
C753 354780339 3.3 μ F, 50V, Elect.

Resistors

R701 49163103404 10 K Ω $\times$ 4, Network
R708 49163472404 4.7K Ω $\times$ 4, Network

Switches

S701 25030345 NRS-1112-15SRM, Rotary
S702 25030364 NRSF-115-25SRB, Rotary
S705 25035548 NPS-111-S510

Holders

27190836B (LED-5)
27190811 (LED)

TONE CONTROL CIRCUIT PC BOARD (NAAF-4582-1A)

CIRCUIT NO. PART NO. DESCRIPTION

ICs

Q301,Q321 22240050 MPC4570C

Capacitors

C301,C302 354780109 1 μ F, 50V, Elect.
C325,C326
C305,C306 354780229 2.2 μ F, 50V, Elect.
C323,C324
C321,C322 374728224 8200 pF, 50V, Film (TF)
C327,C328 374723934 0.039 μ F, 50V, Film (TF)
C331,C332 374722234 0.022 μ F, 50V, Film (TF)
C391,C392 354780339 3.3 μ F, 50V, Elect.

Resistors

R315(R316) 5104315 N14RGLC100KMN25Z, Variable
R321(R322) 5104291A N14RLC100KWT25Z, Variable
R335(R336)

Switch

S321 25035480 NPS-142-L442

VOLUME CONTROL CIRCUIT PC BOARD (NAETC-4583-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
Q351	22240239	TA7291S
Transistors		
Q352	2213510 or 2214350	DTA114ES or RN2202
Q353,Q354	2213631 or 2213632	RN1241-A or RN1241-B
Capacitors		
C352,C356	354741009	10 μ F, 16V, Elect.
Resistor		
R351(R352)	5104234	N16RGM50KA30F, Variable
Jumper socket		
JL704	25050282	NSCT-5P110

POWER SUPPLY CIRCUIT PC BOARD (NAPS-4584-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
Q732	22240358	LB1638
Q931	222780565JRC	78M56
Transistors		
Q801,Q802	221282 or 2213560	DTC144ES or RN1204
Q803	2211255	2SC1815-GR
Q901	2213650 or 2214680	DTD113ZS or RN1226
Diodes		
D801~D805	223163 or	1SS133 or
D901	223205	1SS270A
D931~D934	22380046 or	AM01Z or
D936,D937	22380035	GP104003E
D938	224450512	MTZ5.1B, Zener
Capacitors		
C711	354741009	10 μ F, 16V, Elect.
C811	374724724	4700 pF, 50V, Film
C812	354741009	10 μ F, 16V, Elect.
C902	3500065A	0.01 μ F, AC400V/125V, Film (IS)
C903	374721034	0.01 μ F, 50V, Film (TF)
C931	354742229	2200 μ F, 16V, Elect.
C932	354742219	220 μ F, 16V, Elect.
C936	354742209	22 μ F, 16V, Elect.
C934	354741009	10 μ F, 16V, Elect.
C937	374721034	0.01 μ F, 50V, Film (TF)
Cover (Capacitor)		
C902a	27301216	SB-1925A

CIRCUIT NO.	PART NO.	DESCRIPTION
Resistors		
R804	442523304	33 Ω , 1/2W, Metal oxide film
R805	442521024	1K Ω , 1/2W, Metal oxide film
R931	452532294	0.22 Ω , 1/2W, Metal
R932	442521024	1K Ω , 1/2W, Metal oxide film
R933	442524714	470 Ω , 1/2W, Metal oxide film
R934	442521224	1.2K Ω , 1/2W, Metal oxide film
R935	442521024	1K Ω , 1/2W, Metal oxide film
R936	452530224	2.2 Ω , 1/2W, Metal
Mini jack		
P801	25045293	HSJ-1003-01-012
P802	25045172	HSJ-1003-01-020
Relay		
RL901	25065248	NRL-1P15A-DC12-29
Jumper sockets		
JL701a,JL702a	25050273	NSCT-9P101
JL721a	25050269	NSCT-5P97
JL722a	25050271	NSCT-7P99

Fuse holder		
F901a	25050065	YSH403T
F902a	25050065	YSH403T
Heatsink		
Q931a	27160211	RAD-68

POWER SWITCH CIRCUIT PC BOARD (NASW-4585-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
Capacitor		
Δ C901	3500065A	0.01 μ F, AC400V/125V, Film (IS)
Cover (Capacitor)		
Δ C901a	27301216	SB-1925A [P,W]
Switch		
Δ S901	25035550	NPS-111-L512P

LED PC BOARD (NADIS-4586-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
D724	Diode	
	22514DX2	SEL2913K-DX2
	Holder	
	27190811	(LED)

NOTE: THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PARTS LIST OF PACKING

REF. NO.	PART NO.	DESCRIPTION
A851	29052468	Carton box [BLK]
A851	29052470	Carton box [SIL]
A852	29091470	Pad, Left
A853	29091471	Pad, Right
A855	29095378	Protection seet
A856	29100105	620 × 550mm, Poly-vinyl bag
A857	282301 or	Sealing hook or
	282321	Sealing hook
A858	29110071	W=50 mm, Damplon tape
A863	261504	W=30 mm, Paper tape

ACCESSORY BAG ASS'Y

A901	29341764	Instruction manual
	29365020F	Warranty card
	29100094A	Poly-vinyl bag (WARRANTY)
A902	29100097	250 x 350, Poly-vinyl bag
A904	2010200	3.5 Mini cable ass'y
A906	24140242	RC-242S, Remote control unit
A907	3010054	UM-3, Tow batteries

NOTE : [BLK]: Only black models
[SIL]: Only silver models

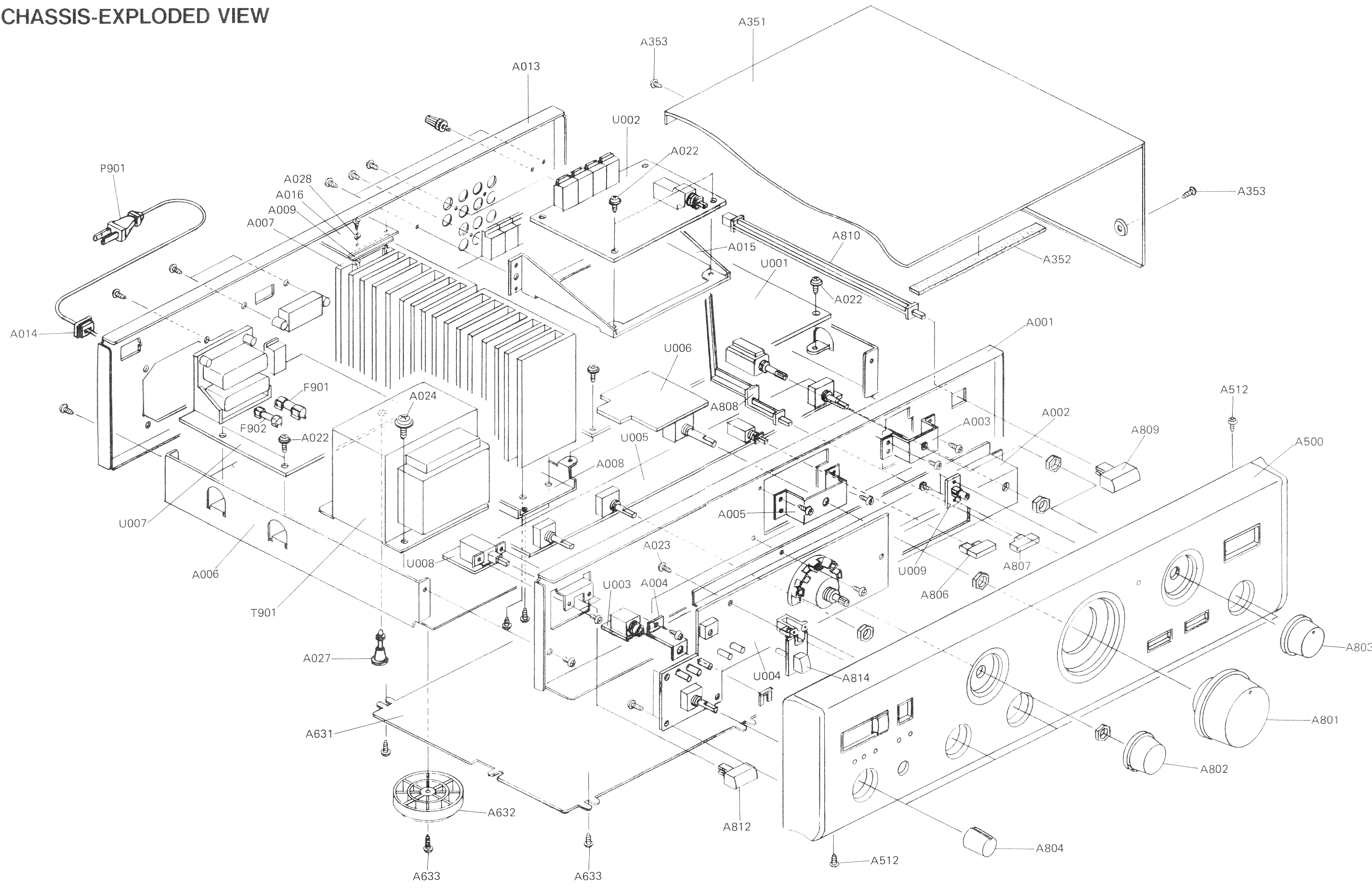
CHASSIS-EXPLODED VIEW PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
A001	27110724A	Front bracket	A814	28324681A	Knob (S-POW) [BLK]
A002	27130701	Bracket (F)	A814	28324682A	Knob (S-POW) [SIL]
A003	27141567	Bracket (DIR)	A817	28191593-1	Clear plate (RE)
A004	27141420	Bracket (HP)			
A005	27141569	Bracket (VOL)	Q521, Q522	2201703 or	2SC3855-O or
A006	27100237	Chassis		2201704 or	2SC3855-Y or
A007	27160277B	Radiator		2201706	2SC3855-P, Transistor
A008	27130652A	Bracket (HE)	Q523, Q524	2201693 or	2SA1491-O or
A009	27190840A	Holder (HE-L)		2201694 or	2SA1491-Y or
A010	27190841	Holder (HE-S)		2201696	2SA1491-P, Transistor
A013	27121626	Rear panel	△ T901	2300647	NPT-1106P, Power transformer
A014	27300750	Bushing (CORD)	△ P901	253148 or	AS-CEE, Power supply cable or
A015	27130702	Bracket (PC)		253175Y	AS-CEE, Power supply cable
A016	27141581	Bracket (HE)	S252a	25030363A	NPS-106-30BU, Rotary switch
A022	831130088	3TTW+8B, Tap-tight screw	△ F901	252075 or	2.5A-SE-EAK, Fuse or
A023	833430080	3TTP+8P(BC), Tap-tight screw		252075CC	2.5A-SE-EAK, Fuse
A024	830440089	4TTC+8C(BC), Tap-tight screw	△ F902	252075 or	2.5A-SE-EAK, Fuse or
A026	801433	3SMS8WSW + 14B(BC), Special screw (Power transistor)		252075CC	2.5A-SE-EAK, Fuse
A027	27190657	KGLS-18RF, Holder	U001	1A388577-1A	NAAF-4577-1A, Main circuit pc board ass'y
A028	27270333	Spacer	U002	1A388578-1A	NAAF-4578-1A, Tape circuit pc board ass'y
A351	28184484A	Top cover	U003	1A388579-1	NAAF-4579-1, Phones terminal pc board ass'y
A352	28140837	10.9×250 ×10, Cushion	U004	1A388581-1	NADG-4581-1, Microprocessor circuit pc board ass'y
A353	834430088	3TTS+8B(BC), Tap-tight screw	U005	1A388582-1A	NAAF-4582-1A, Tone control circuit pc board ass'y
A500	1A396701K	Front panel ass'y [BLK]	U006	1A388583-1	NAETC-4583-1, Volume control circuit pc board ass'y
(A502)	28135199	Name plate	U007	1A388584-1A	NAPS-4584-1A, Power supply circuit pc board ass'y
(A503)	28125226A	End cap (L)	U008	1A388585-1A	NASW-4585-1A, Power switch circuit pc board ass'y
(A504)	28125227A	End cap (R)	U009	1A388586-1	NADIS-4586-1, LED pc board ass'y
(A505)	27267723	Guide (VOL) [BLK]			
(A506)	27267814	Guide ass'y (SEL) [BLK]			
(A508)	27267812	Guide (SEL-R) [BLK]			
(A509)	27267816	Guide (DIR) [BLK]			
(A510)	27267714D	Guide (POW) [BLK]			
(A817)	28191593-1	Clear plate (RE)			
(A818)	28198742	Facet			
A500	1A397701k	Front panel ass'y [SIL]			
(A515)	27267724	Guide (VOL) [SIL]			
(A516)	27267815	Guide ass'y (SEL) [SIL]			
(A518)	27267813	Guide (SEL-R) [SIL]			
(A519)	27267817	Guide (DIR) [SIL]			
(A520)	27267715D	Guide (POW) [SIL]			
A512	801230	3STS+8BQ(BC), Tap-tight screw			
A631	27170279	Bottom board			
A632	27175254	Bottom leg ass'y			
A633	834430088	3TTS+8B(BC), Tap-tight screw			
A801	28324708	Knob (VOL) [BLK]			
A801	28324709	Knob (VOL) [SIL]			
A802	28324673	Knob (SEL) [BLK]			
A802	28324674	Knob (SEL) [SIL]			
A803	28324675	Knob (SEL-R) [BLK]			
A803	28324676	Knob (SEL-R) [SIL]			
A804	28324252-1A	Knob (TONE) [BLK]			
A804	28324252-2	Knob (TONE) [SIL]			
A805	28324677	Knob (SP) [BLK]			
A805	28324678	Knob (SP) [SIL]			
A806	28324323A	Knob (ST) [BLK]			
A806	28324324A	Knob (ST) [SIL]			
A807	28324251	Knob (SOR) [BLK]			
A807	28324251-1	Knob (SOR) [SIL]			
A808	27273138A	Joint (M)			
A809	28324679	Knob (DIR) [BLK]			
A809	28324680	Knob (DIR) [SIL]			
A810	27273154	Joint (DIR)			
A812	28324140	Knob (POW) [BLK]			
A812	28324184	Knob (POW) [SIL]			

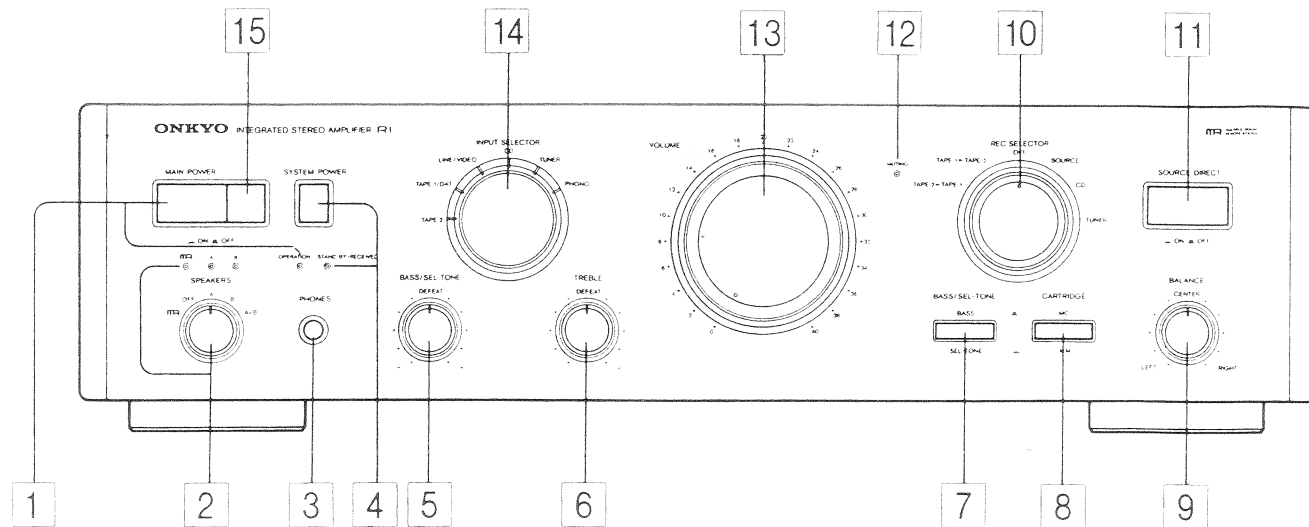
NOTE : [BLK]: Only Black models
[SIL]: Only Silver models

NOTE: THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

CHASSIS-EXPLODED VIEW



FRONT PANEL FACILITIES

**1 Main Power Button (MAIN POWER)**

Press this button to set this unit to the standby mode in which power can be switched on and off by the front panel system power button and remote control power button. A few seconds after power on, the Operation indicator comes on. No sound is heard until this indicator lights. When a problem such as a short-circuiting of the speaker cables, the indicator goes off. In this case, turn the power off immediately, locate the cause of problem and correct it.

2 Speaker Selector Switch (SPEAKERS)

MR: It is possible to switch the speakers using the remote control transmitter.
OFF: All speakers off – only headphones operating.
A: Speakers A operating.
B: Speakers B operating.
A + B: Both speaker systems A and B operating.

3 Headphone Jack (PHONES)

Stereo headphones with a standard binaural plug can be connected here.

4 System Power Button and Standby/Received Indicator (SYSTEM POWER and STANDBY/RECEIVED)

When A-840 is in standby mode, press this button to switch the on/off status of the power supply and the AC outlets on the rear panel. Power can also be turned on by using the remote control power key.

When this indicator is on, power ON can be performed by the remote control transmitter. The signal received from the remote control transmitter will also turn the indicator ON.

5 Bass Control/Selective Tone Control Knob (BASS/SEL-TONE)

This control functions as either Bass Control or Selective Tone Control depending on the position of the Bass/Selective tone Button **7**. You can adjust to boost or attenuate the bass or selective tone.

Bass Control Knob (BASS)

Turn right to boost or left to attenuate bass. In the DEFEAT position, the bass tone control circuitry is completely bypassed.

6 Treble Control Knob (TREBLE)

Adjust to boost or attenuate treble.

7 Bass/Selective Tone Button (BASS/SEL-TONE)

There are two positions to this push button:

BASS: In this position, the Bass Control/Selective tone Control **5** functions as the Bass Control.

SEL-TONE: When this position is selected, the Bass Control/Selective Tone Control functions as the Selective Tone Control.

8 Cartridge Selector Button (CARTRIDGE)

MC: When a turntable with an MC cartridge is being used.
MM: When a turntable with MM cartridge is being used.

Use the MM position when a step-up transformer is being used with a turntable equipped with an MC cartridge.

9 Balance Control Knob (BALANCE)

This is used to control the relative volume level of the left and right speaker systems or headphones.

10 REC Selector switch (REC SELECTOR)

This selector selects the source that is recorded.

TAPE-2 ► TAPE-1: This position is for dubbing from Tape 2 to Tape 1.

TAPE-1 ► TAPE-2: This position is for dubbing from Tape 1 to Tape 2.

OFF: This position is for when you do not want to record or dubbing.

SOURCE: This position records the source selected with Input Selector button **14** or the remote controller.

CD: This position is for recording CDs.

TUNER: This position is for recording broadcasts.

- The CD and TUNER functions will record regardless of the Input Selector Switch's set position.

11 Source Direct Button (SOURCE DIRECT)

When you select SOURCE DIRECT, you can obtain a "pure" sound reproduction, bypassing the bass, selective tone, treble, and balance, and using only the volume control. The "SOURCE DIRECT" on the display lights up. This button is also enabled by the SOURCE DIRECT button of the remote control transmitter.

12 Muting Indicator (MUTING)

Muting can be performed by the remote control transmitter AUDIO MUTING button. When muting is ON, this indicator will light.

13 Volume Control Knob (VOLUME)

Turn clockwise to increase the volume level.

The volume can be adjusted manually and by the remote control transmitter's VOLUME (UP, DOWN) buttons.

14 Input Selector Switch and Indicators (INPUT SELECTOR)

This switch is used to select the desired program source. The switch can be turned in either direction without end stops. An indicator lights to show which program has been selected. The switch is also able to be switched directly using the Input Selector buttons on the remote control transmitter.

TAPE-2:

This position is for listening to the tape deck connected to the TAPE-2 terminal.

TAPE-1/DAT:

Turn to this position to listen to the tape deck connected to the TAPE-1/DAT jacks. When recording on tape deck 1, the just-recorded signal can not be monitored even if the tape deck is a 3-head model.

LINE/VIDEO:

Turn to this position to listen to an additional audio source (VCR, TV etc) connected to the LINE/VIDEO jacks.

CD:

Turn to this position to listen to the compact disc player.

TUNER:

Turn to this position to listen to an AM or FM broadcast.

PHONO:

Turn to this position to listen to the turntable.

15 Remote Control Sensor

This sensor receives the remote control signals.

Remote Control Transmitter

Power Button (Power)**Tuner Operation Buttons (TUNER)**

CLASS: Class selector button

◀ PRESET ▶: Preset memory DOWN/UP buttons

CD Operation Buttons (CD)

These buttons are used to operate an ONKYO CD player with the **RI** mark.

▶: Press this button to play the CD player.

||: Press this button to pause the CD play back. To resume disc play, press the PLAY button.

■: Press this button to stop the CD player.

◀◀: Press this button to go back to the beginning of the current track and again to skip back to the previous track.

▶▶: Press this button to skip to the next track.

Audio Muting Button (AUDIO MUTING) and Indicator

This button temporarily switches off the sound from the speaker or headphone. Pressing this button will operate the A-840 audio muting circuit. The audio muting indicator will flash. Pressing the button again or using the POWER button on the remote control transmitter to turn the power on will turn off the audio muting.

Multi Room Speakers Button (SPEAKERS)**Multi Room Speakers Button (SPEAKERS)**

If the SPEAKERS switch is moved to "MR", these speakers can be turned on and off using the remote control transmitter. When the button is pressed, the speakers are turned on and when the button is pressed again, the speakers are turned off. If you want to select both speakers, marked A and B, press button A first and then press button B.

Input Selector Buttons (LINE, TUNER, PHONO, CD, TAPE-2, TAPE-1)**Tape Operation Buttons (DECK-A, DECK-B)**

These buttons control ONKYO double cassette tape decks that can be remote controlled. Use the DECK-B buttons to control single cassette tape decks with the **RI** mark.

●/||: When this is pressed, the recording stand-by mode is entered.

◀: The tape plays, moving from right to left, or, in the recording stand-by mode, recording begins.

■: Interrupts all operations.

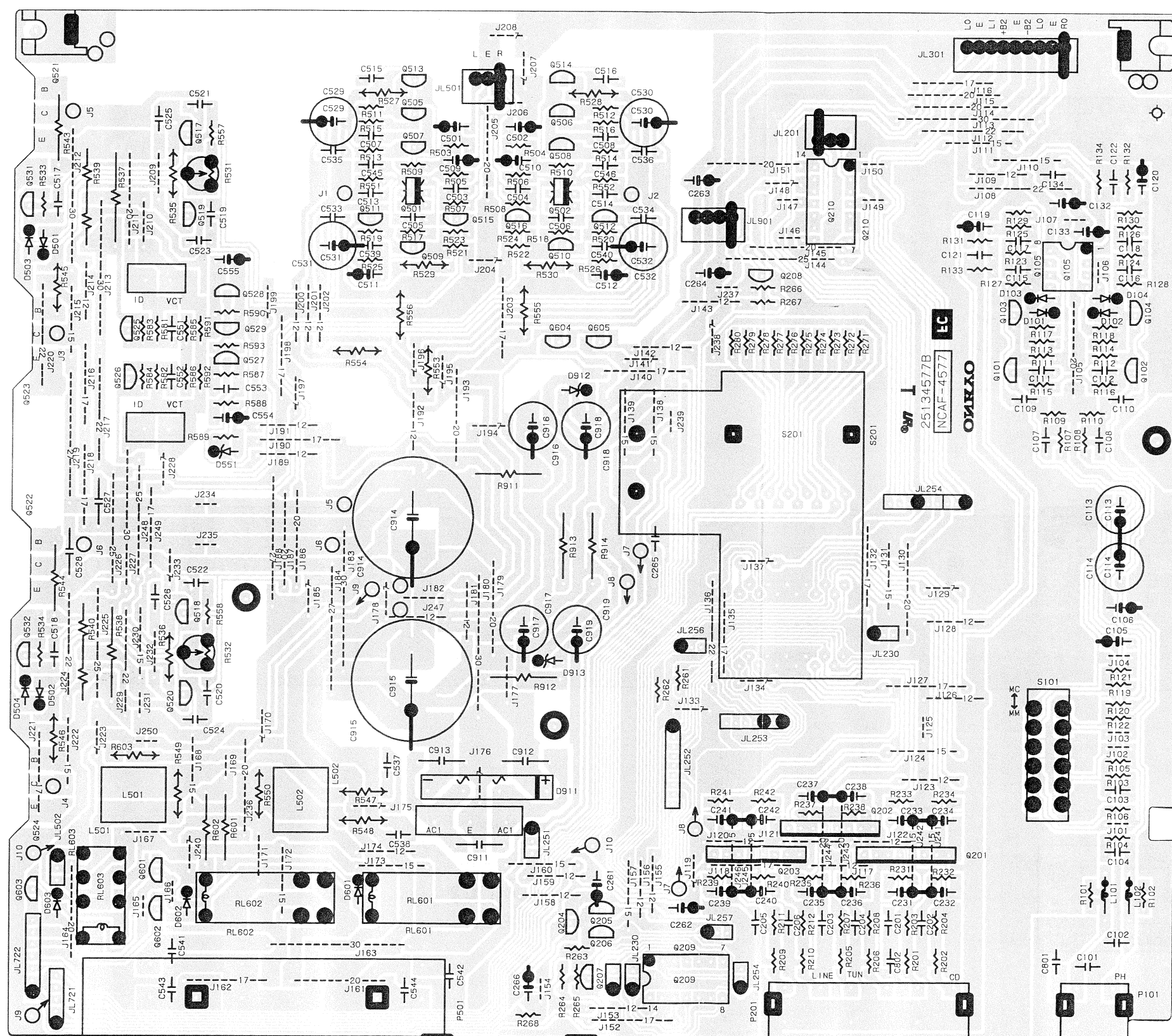
▶: The tape plays, moving from left to right, or, in the recording stand-by mode, recording begins.

◀◀: Fast forward from right to left.

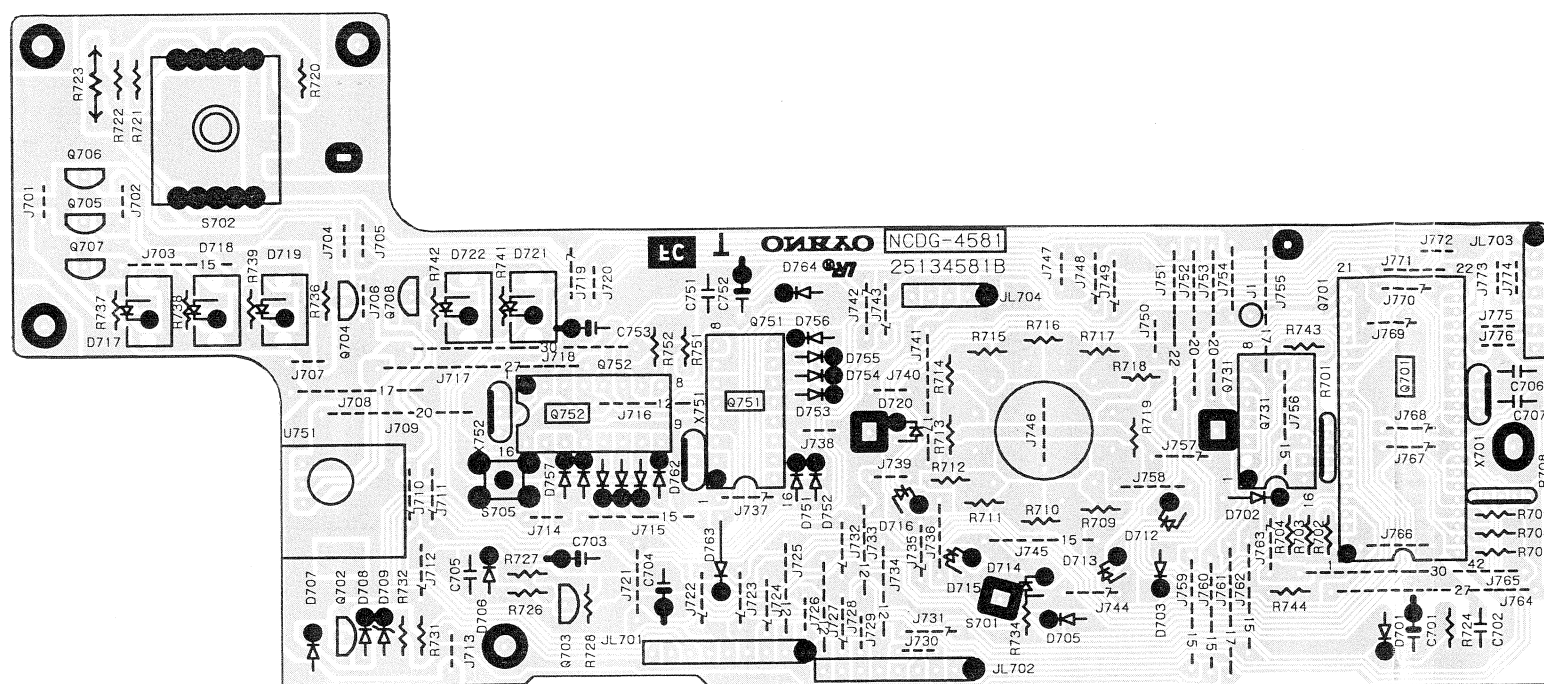
▶▶: Fast forward from left to right.

Volume Buttons (UP, DOWN)

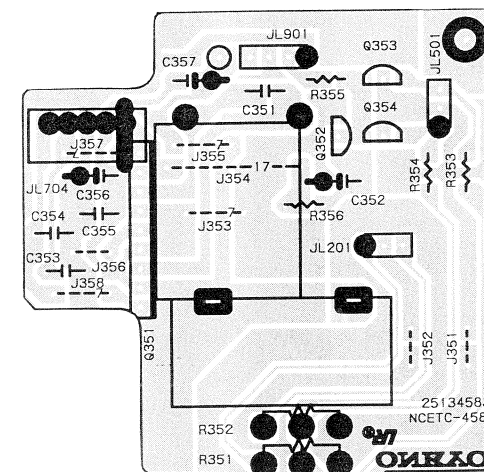
NAAF-4577



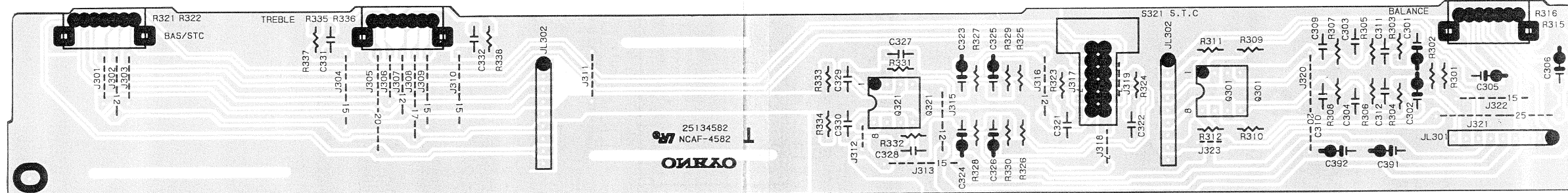
NADG-4581



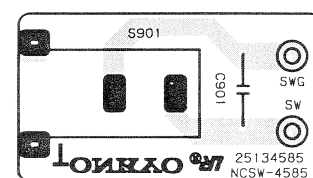
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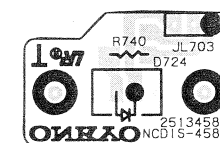
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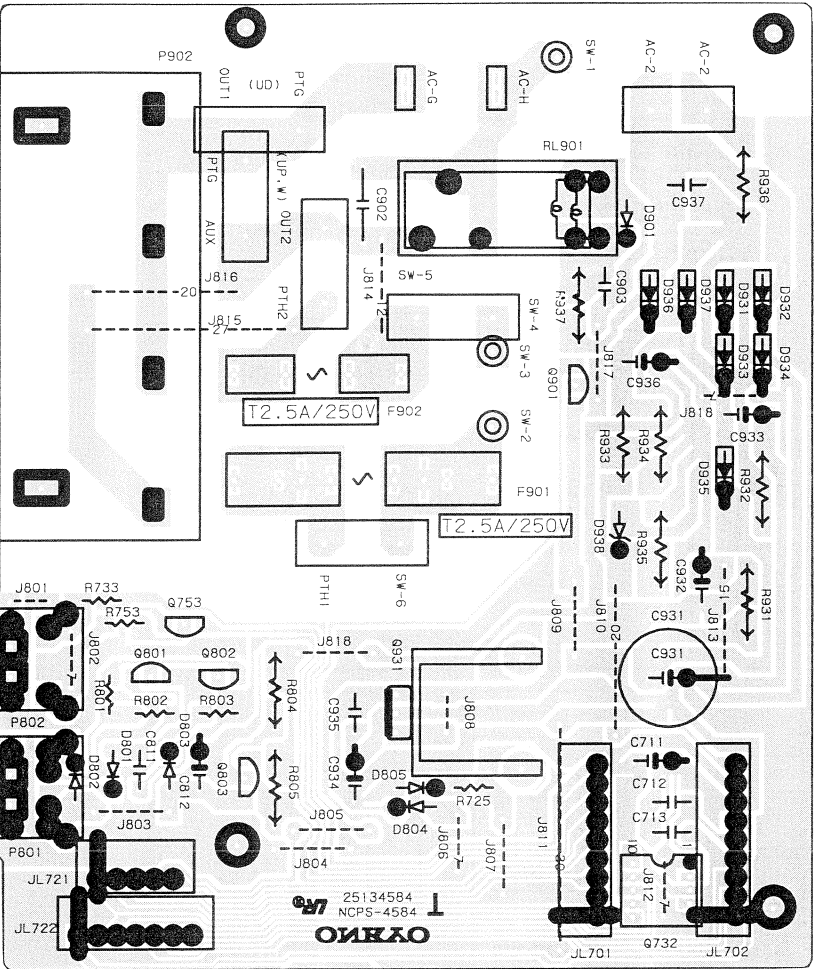
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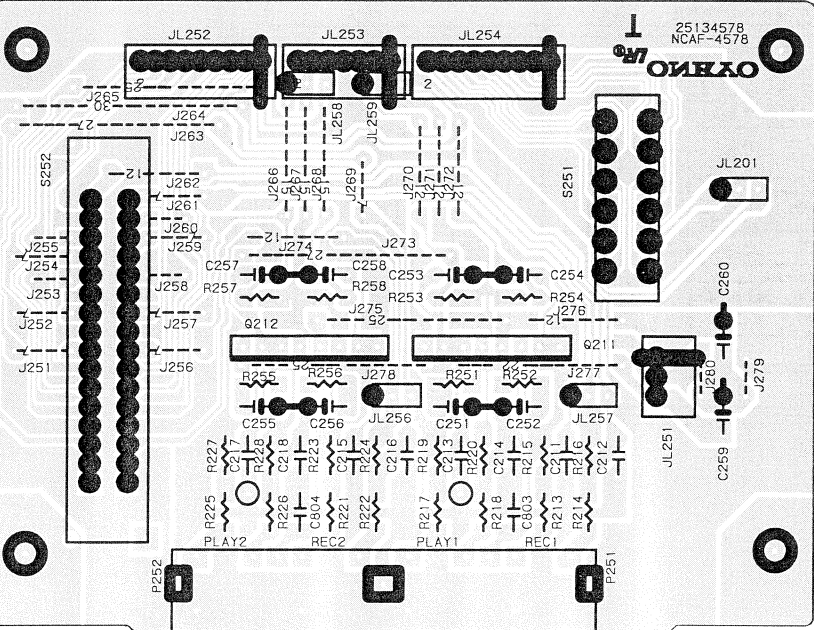
NADIS-4586



NAPS-4584



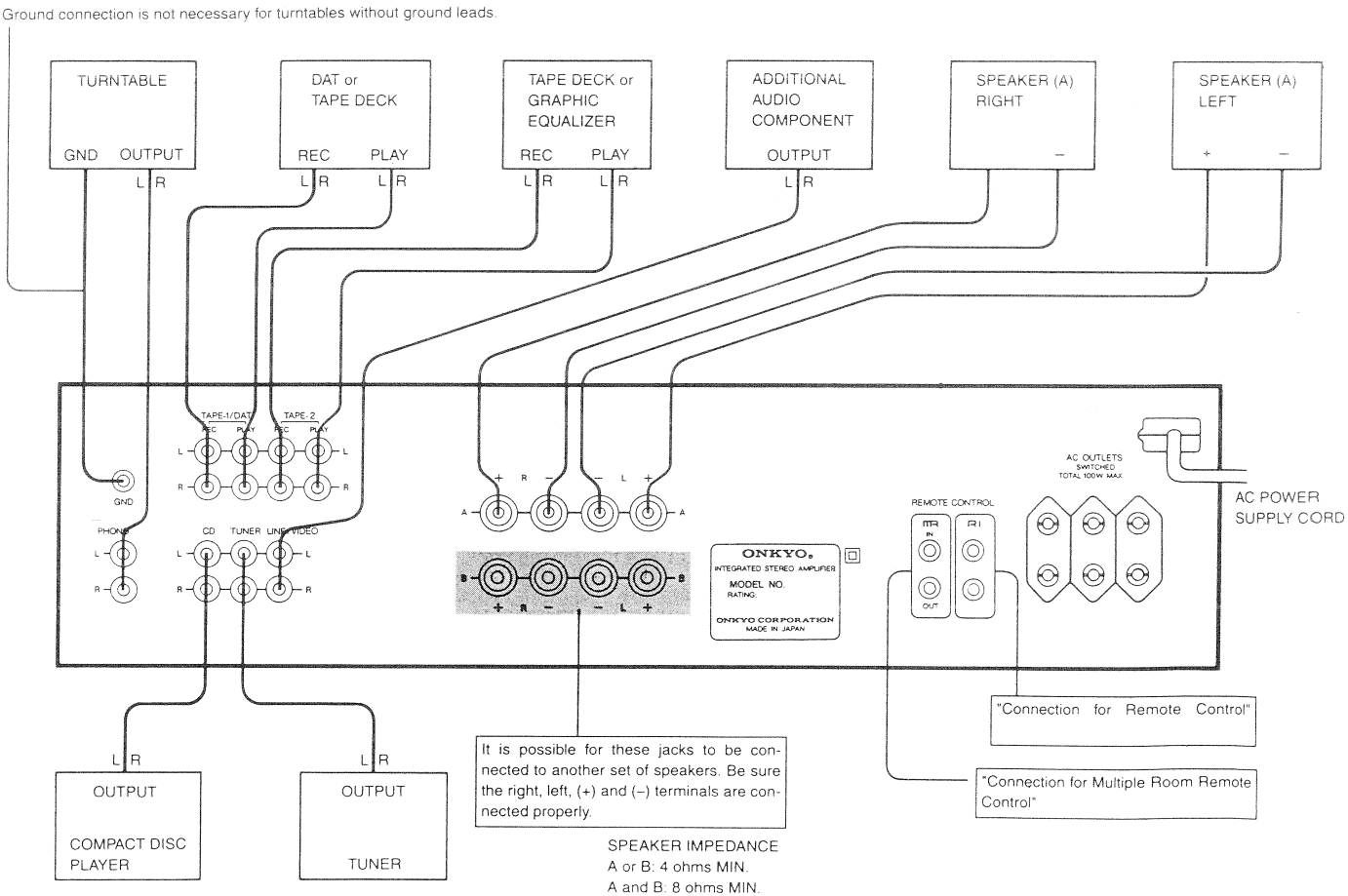
NAAF-4578



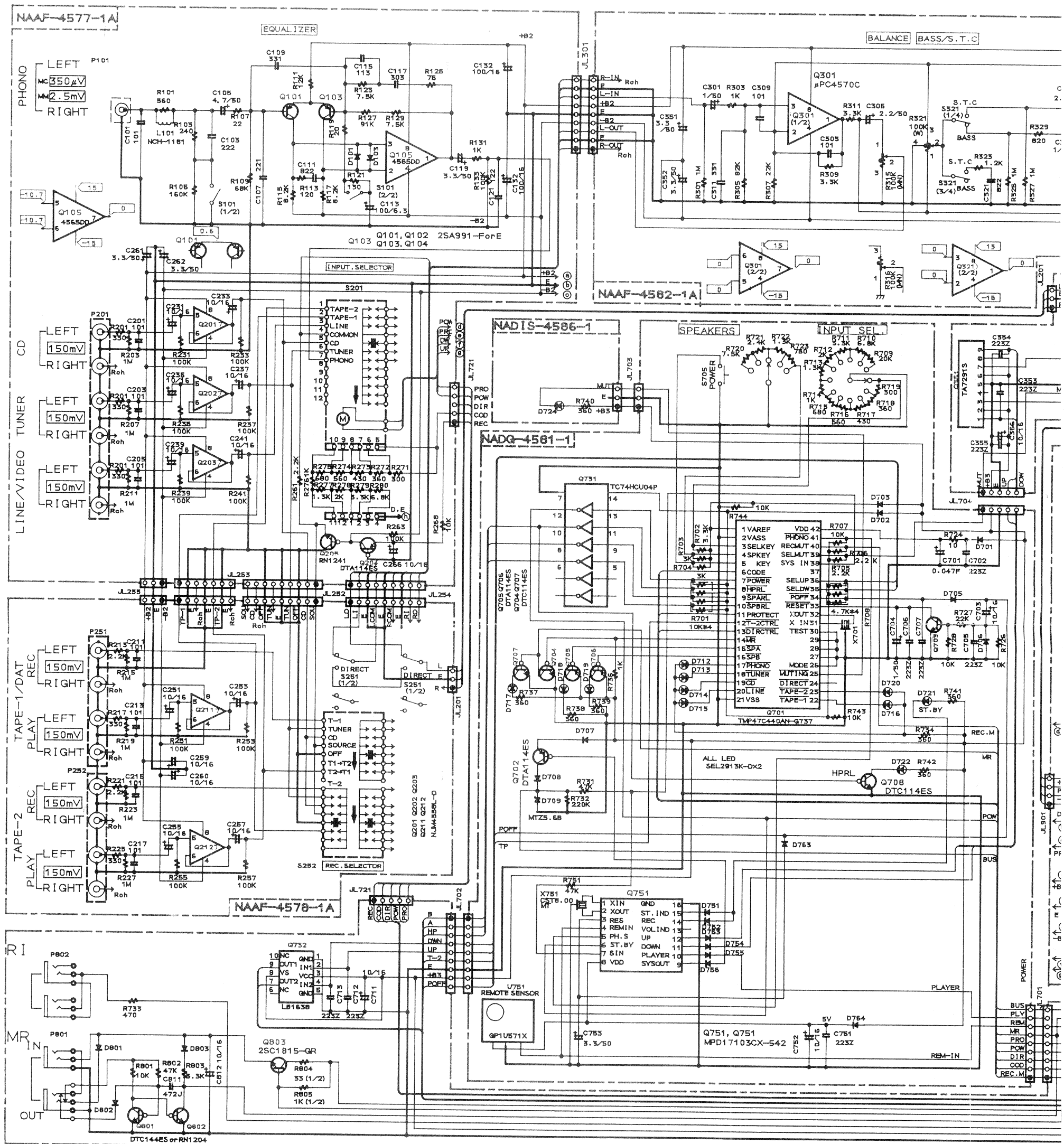
PRECAUTIONS

1. Replacing the fuses
- For continued protection against risk fire, replace only with same type and same rating fuse.
- | CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|--------------------|---------------------------|
| F901, F902 | 252075 or 252075CC | 2.5A-SE-EAK, Primary fuse |

SYSTEM CONNECTION



SCHEMATIC DIAGRAM



NOTE

- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER) $\square$ IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (μ) ARE IN μ F/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.
- EX) 3pF $\rightarrow$ 030, 33pF $\rightarrow$ 330, 330pF $\rightarrow$ 331, 0.033 μ F $\rightarrow$ 333
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
- EX) $\square$ PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

