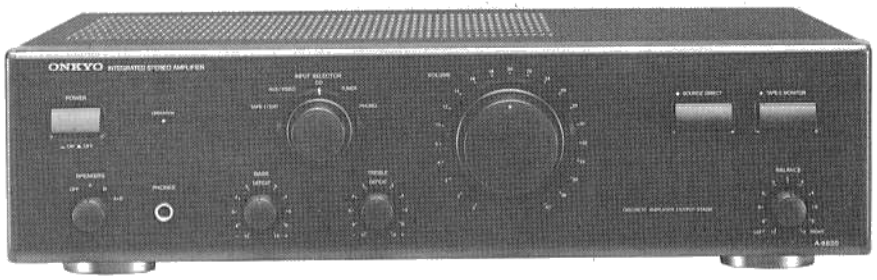
Ref.No. 3397

ONKYO® SERVICE MANUAL

Integrated Stereo Amplifier

MODEL A-8820



Black and Silver models

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ 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:	**40 watts per channel, min, RMS, at 8 ohms, both channels driven from 20 Hz to 20 kHz, with no more than 0.08% THD.**	
	2 × 65 watts at 4 ohms, 1 kHz(DIN)	
	2 × 50 watts at 8 ohms, 1 kHz(DIN)	
Total Harmonic Distortion	0,08% at reted power	
IM Distortion	0.08% at rated power	
Damping Factor:	40 at 8 ohms	
Frequencey and Response:	15 −30,000 Hz ± 1 dB	
Input Sensitivity/Impedance:	Phono:	2.5 mV/50 kohms
	Tuner/CD/AUX, 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)
Phono Overload:	135 mV RMS at 1 kHz, 0.1% THD (REC)	
Bass Control:	±10 dB at 100 Hz	
	±10 dB at 10,000 Hz	
Selective Tone Control:		
Signal to Noise Ratio (IHF-A):	Phono:	80 dB (5 mV input)
	Source Direct (CD):	102 dB
General		
Power Supply:	European models	AC 230V, 50Hz
Dimensions (W) × (H) × (D):	455 × 120 × 330 mm	
	17-15/16" × 4-3/4" × 13"	
Weight:	6.8 kg, 15 lbs.	
	Specifications and features are subject to change without notice.	

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	252074	2A-SE-EAK, Primary fuse (230V model)

ADJUSTMENT PROCEDURES

Adjustments and Checking the Protection Circuitry

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) Turn the power switch ON and allow the unit to warm up for about 10 minutes.
   (1) Ajust R531 (R532) so that the voltage at test point VCT-ID on the NAAF-4169 circuit board is 7.5mV±2.5mV

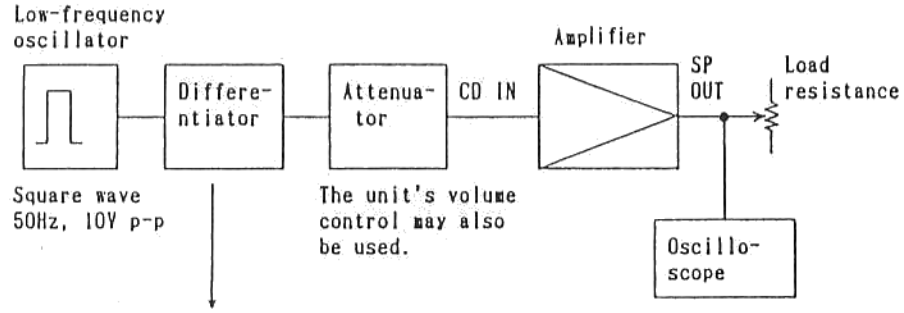
3. Check of operation of protection circuitry

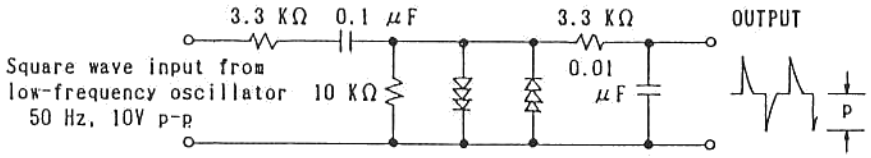
1) Check of operation of protection relay.
   (1) Confirm that the relay turns ON approximately 5 seconds after the power switch is turned ON.
   (2) The relay should turn OFF approximately 0.5 seconds after the power switch is turned OFF.
2) Check of DC detection
   (1) Turn the power on with no load.
   (2) After the speaker relay turns ON, apply DC +1.5V 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.

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 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.

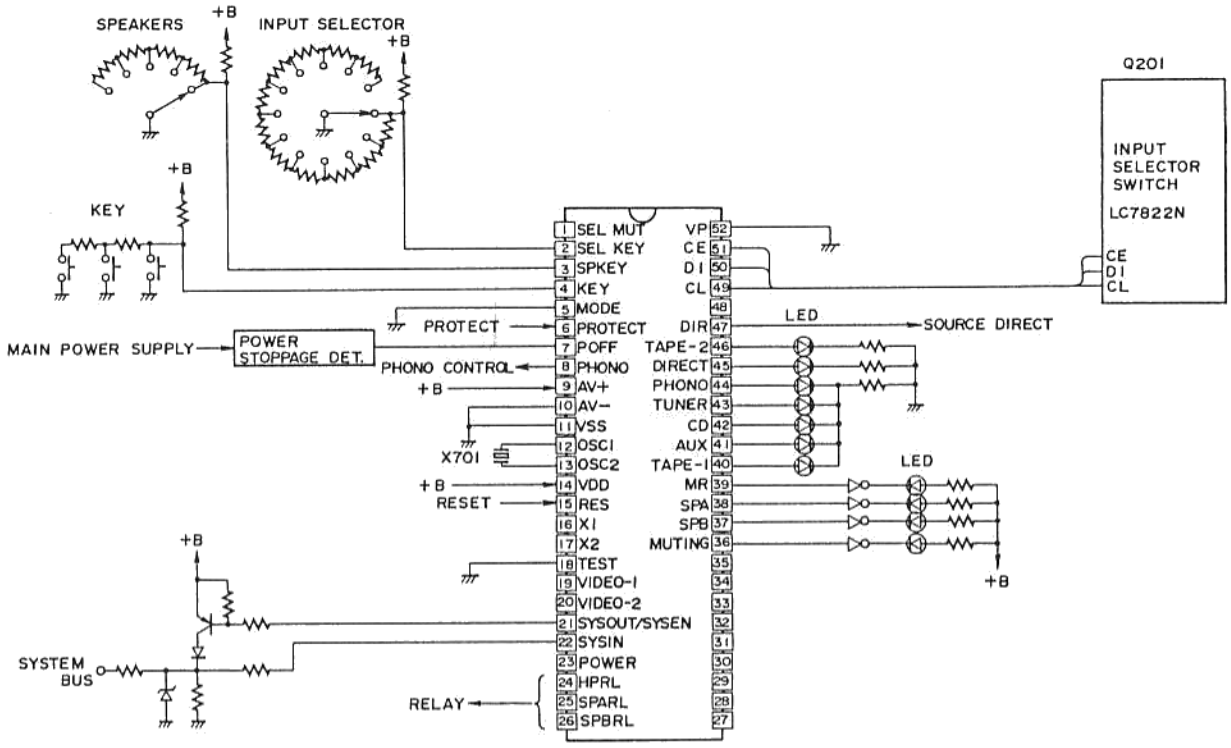




NOTE) Semi-fixed resistors enclosed in parentheses ( ) are for the right channel.

IC BLOCK DIAGRAM

LC65204A-4605 (Micro Processor)

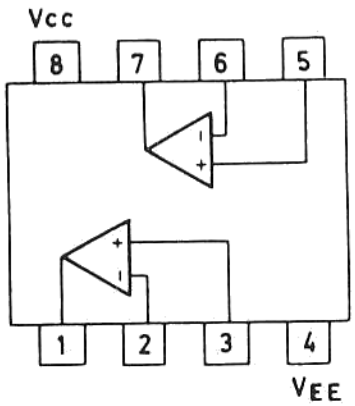


Pin No.	Pin name	Symobl	Function
1	PAO/ADO	SEL MUT	Output terminal for muting when changing over Input Selector to the like. Active "H".
2	PA1/AD1	SELKEY	Input terminal for switch when changing over Input Selector. Effective exclusively when MODE = 0. In case of MODE = 1, connect to GND (Ground). Through A/D conversion, the selector will be detected on its right or left rotation.
3	PA2/AD2	SPKEY	Input terminal for switch when changing over Speaker. Effective exclusively when MODE = 0. In case of MODE = 1, connect to GND. The position of Rotary Switch will be fetched by A/D conversion.
4	PA3/AD3/$\overline{INT1}$	KEY	Key entry terminal Momentary Key will be fetched by A/D conversion.
5	PB0/AD4/$\overline{DAC0}$	MODE	Input terminal for initialization to change over operation mode.
6	PB1/AD5/$\overline{DAC1}$	PROTECT	Input terminal for detecting Protect Operation. Active "H". However, "H" 100μs or under shall be ignored.
7	PB2/AD6/SQR	$\overline{POFF}$	Input terminal for detecting power suspension. Active "L". However, "L" 100μs or under shall be ignored.
8	PB3/AD7/START	$\overline{PHONO}$	Output terminal for controlling PHONO. TO be "L" when set Selector at PHONO.
9	AV+	AV+	Input terminal for the referential electric current and voltage in case of A/D conversion.
10	AV−	AV−	
11	V_{SS}	V_{SS}	GND terminal.

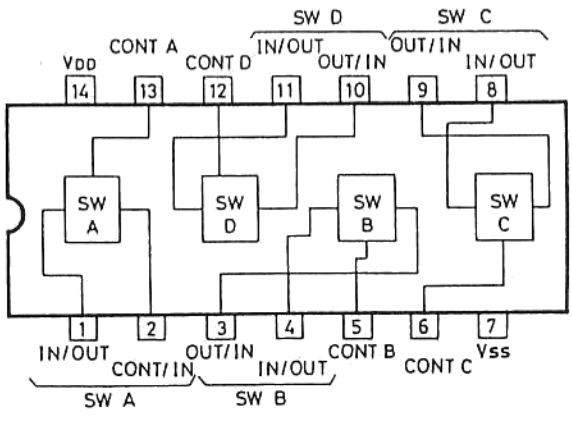
Pin No.	Pin name	Symobl	Function
12	OSC1	OSC1	The terminal composing oscillator circuit for the System Main Clock. Ceramic oscillator of 4. 4.00MHz shall be connected.
13	OSC2	OSC2	
14	V_{DD}	V_{DD}	Power source (+5V) terminal.
15	$\overline{RES}$	$\overline{RES}$	Input terminal for system reset. Active "L".
16	X1	X1	The terminal composing oscillator circuit for the System Subclock. Not used and X1 shall be connected with V_{DD} to leave X2 open.
17	X2	X2	
18	TEST	TEST	Test terminal for LSI. To be connected to V_{SS}.
19	PFO/SI	VIDO-1	Output terminal for controlling the picture signal of VIDEO-1. TO be "L" when set the selector at VIDEO-1.
20	PF1/SO	VIDEO-2	Output terminal for controlling the picture signal of VIDEO-2. To be "L" when set the selector at VIDEO-2.
21	PF2/$\overline{SCK}$	$\overline{SYS\ OUT}$/SYS EN	Output terminal for System Code. Active "L". When turned on the power source. Initialized input SYS EN Will be displayed to change-over operartion such as System Code. When SYS EN = 0 this input shall be left "H" (input).
22	PF3/INTO	SYS IN	Input terminal for System Code. Active "H".
23	PCO	POWER	Output terminal for controlling POWER. To be "H" when POWER ON.
24	PC1	HPRL	Output terminal for controlling HEAD PHONE Relay. "H" when turned ON.
25	PC2	SPARL/Sr	In case of MODE = 0. Output terminal for controlling SPEAKER A Relay. "H" when turned ON. In case of MODE = 1. Output terminal for Segment Sr. Active "H".
26	PC3	SPBRL/Sp	In case of MODE = 0. Output terminal for controlling SPEAKER B Relay. "H" when turned ON. In case of MODE = 1. Output terminal for Segment Sp. Active "H".
27	PD0	Sn	Output terminal for Segment (Sn – Sd). Effective exclusively when MODE = 1. Active "H". In case of MODE = 0, not to used and "L" will be output at any time.
28	PD1	Sm	
29	PD2	Sk	
30	PD3	Sj	
31	PK0	Sh	
32	PK1	Sg	
33	PK2	Sf	
34	PK3	Se	
35	PL0	Sd	
36	PL1	MUTING/Sc	In case of MODE = 0 Output terminal for displaying MUTING. In case MUTING ON of the remote control; "H" (light). In case of MODE = 1 Output terminal for Segment Sc. Active "H".
37	PL2	SPB/Sb	In case of MODE = 0 Output terminal for displaying SPB (Speaker B Relay). When set Speaker to be changed-over at B or A+B, or selected SPEAKER-B by remote control with Speaker set at MR; "H" (light) In case of MODE = 1 Output terminal for Segment Sb. Active "H".
38	PL3	SPA/Sa	In case of MODE = 0 Output terminal for displaying SPA (Speaker A Relay). When set Speaker to be changed-over at A or A+B, or selected SPEAKER-A by remote control with Speaker set at MR; "H" (lighted). In case of MODE = 1 Output terminal for Segment Sa. Active "H".

Pin No.	Pin name	Symobl	Function
39	PMO	MR	Output terminal for displaying and controlling MR. When set Speaker SW at MR; "H" (MODE = 0). When MR is ON; "H" (MODE = 1). This output will be output as current condition of MR even while POWER is OFF.
40	PM1	TAPE-1/D7	In case of MODE = 0 Output terminal for displaying Input Selector (LED). One output of current positions of Input Selector shall be set at "H" (lighted). In case of MODE = 1 Output terminal for Digit (D7 – D3). Active "H".
41	PM2	AUX/D6	
42	PM3	CD/D5	
43	PN0	TUNER/D4	
44	PN1	PHONO/D3	
45	PN2	DIRECT/D2	In case of MODE = 0 Output terminal for displaying SOURCE DIRECT. When DIRECT ON; "H" (lighted) In case of MODE = 1 Output terminal for Dight D2. Active "H".
46	PN3	TAPE-2/D1	In case of MODE = 0 Output terminal for displaying TAPE-2. When TAPE-2 ON; "H" (lighted) In case of MODE = 1 Output terminal for Digit D1. Active "H".
47	P00	DIRCTL	Output terminal for controlling SOURCE DIRECT. Effective exclusively when MODE = 0. When DIRECT ON; "H" In case of MODE = 1, not to be used and "L" will be output at any time.
48	P01	—	Not to be used and "L" will be output.
49	P02	CL	Output terminal to be connected with CL Terminal of FUNCTION SWITCH LC7822N.
50	P03	DI	Output terminal to be connected with DI Terminal of FUNCTIN SWITCH LC 7822N.
51	PP0	CE	Output terminal to be connected with CE Terminal of FUNCTION SWITCH LC7822N.
52	VP	VP	Loading power source terminal for pull-down resistance with built-in fluorescent display.

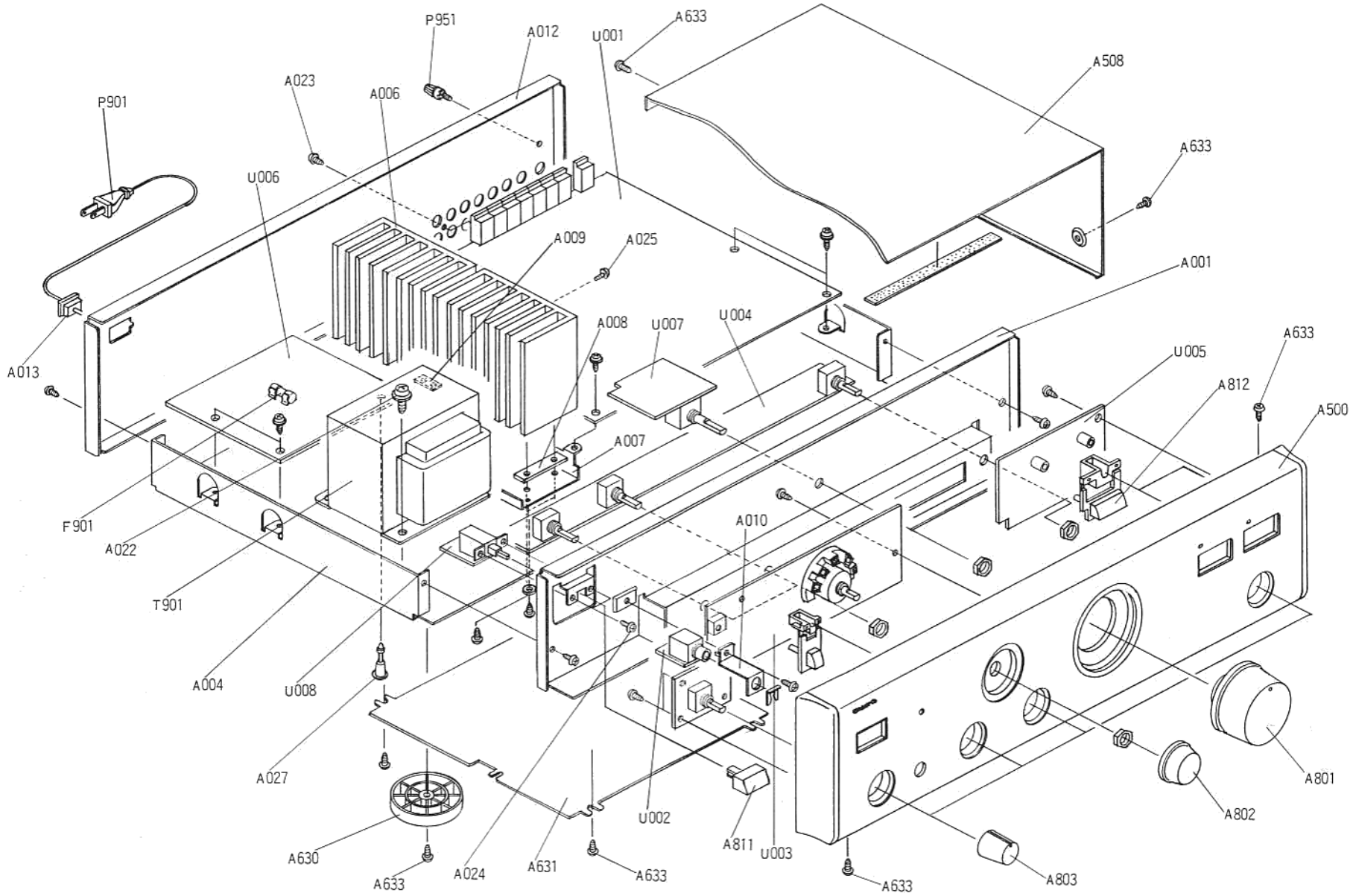
NTM4565DD (OP. amp.)
MPC4570C



LC4966 (Switch)



CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
A001	27110632A	FRONT BRACKET
A004	27100237	CHASSIS
A006	27160278B	HEATSINK
A007	27130652A	BRACKET (HE)
A008	27190840A	HOLDER (HE-L)
A009	27190841	HOLDER (HE-S)
A010	27141420	BRACKET (HP)
A012	27121429	BACK PLATE
A013	27300750	BUSHING (CABLE)
A022	830440089	4TTC+8CBC, TAPPING SCREW
A023	833430080	3TTP+8PBC, TAPPING SCREW
A025	801433	3SMS8WSW+14BBC, SPECIAL SCREW
A027	27190657	KGLS-18RT, HOLDER
A500	1A268121	FRONT PANEL ASS'Y [BLK]
(A502)	28135199	NAME PLATE
(A504)	28125226	END CAP (L)
(A505)	28125227	END CAP (R)
(A511)	27267723	GUIDE (VOL) [BLK]
(A512)	27267725	GUIDE ASS'Y (SEL) [BLK]
(A518)	27267712B	GUIDE (DIR) [BLK]
(A520)	27267716B	GUIDE (POW) [BLK]
(A811)	28198742	FACKET
A500	1A269121	FRONT PANEL ASS'Y [SIL]
(A511)	27267724	GUIDE (VOL) [SIL]
(A512)	27267726	GUIDE ASS'Y (SEL) [SIL]
(A518)	27267713B	GUIDE (DIR) [SIL]
(A520)	27267717B	GUIDE (POW) [SIL]
A508	28184484A	TOP COVER
A630	27175254	BOTTOM LEG ASS'Y
A631	27170279	BOTTOM BOARD
A633	834430088	3TTS+8BBC, TAPPING SCREW
A801	28324317	KNOB (VOL) [BLK]
A801	28324318	KNOB (VOL) [SIL]
A802	28324315	KNOB (SEL) [BLK]
A802	28324316	KNOB (SEL) [SIL]
A803	28324252-1	KNOB (TON) [BLK]
A803	28324252-2	KNOB (TON) [SIL]
A811	28324140	KNOB (POW) [BLK]
A811	28324184	KNOB (POW) [SIL]
A812	28324319	KNOB ASS'Y (DIR) [BLK]
A812	28324320	KNOB ASS'Y (DIR) [SIL]
Q521,Q522	2201783 or	2SC3854 - O or
	2201784 or	2SC3854 - Y or
	2201786	2SC3854 - P, TRANSISTOR
Q523,Q524	2201773 or	2SA1490 - O or
	2201774 or	2SA1490 - Y or
	2201776	2SA1490 - P, TRANSISTOR
P951	25060044	GROUND TERMINAL
⚠ T901	2300650	NPT-1107P, POWER TRANSFORMER
⚠ P901	253149	AS-CEE, POWER SUPPLY CABLE
⚠ F901	252074	2A-SE-EAK, FUSE
U001	1A266569-2A	NAAF-4169-2A, INPUT TERMINAL CIRCUIT PC BOARD ASS'Y
U002	1A266570-2	NAETC-4170-2, PHONES CIRCUIT PC BOARD ASS'Y
U003	1A266571-2	NADG-4171-2, SYSTEM CONTROL CIRCUIT PC BOARD ASS'Y
U004	1A266572-2A	NAAF-4172-2A, TONE CONTROL CIRCUIT PC BOARD ASS'Y
U005	1A266573-2	NASW-4173-2, TAPE-2 AND DIRECT SWITCH CIRCUIT PC BOARD ASS'Y
U006	1A266574-2A	NAPS-4174-2A, POWER SUPPLY CIRCUIT PC BOARD ASS'Y
U007	1A266576-2	NAETC-4176-2, VOLUME CONTROL CIRCUIT PC BOARD ASS'Y
U008	1A266577-2A	NASW-4177-2A, POWER SWITCH CIRCUIT PC BOARD ASS'Y

NOTE [BLK]: ONLY BLACK MODEL
[SIL]: ONLY SILVER MODEL

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

PRINTED CIRCUIT BOARD PARTS LIST

INPUT TERMINAL CIRCUIT PC BOARD (NAAF-4169-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q105	22240191	NJM4565D-D
Q201	22240270	LC7822N
Q202	22240025	LC4966
	Transistors	
Q101~Q104	2211782 or	2SA991-F or
	2211783	2SA991-E
Q203	221282	DTC144ES
Q204	2212600	DTA124ES
Q205	2213290	DTC114ES
Q501,Q502	2213677 or	2SC3067-G or
	2213678	2SC3067-H
Q505~Q508	2211455	2SA1015-GR
Q509,Q510	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q511,Q512	2211255	2SC1815-GR
Q513,Q514	2211353 or	2SA949-O or
	2211354	2SA949-Y
Q515,Q516	2211633 or	2SC2229-O or
	2211634	2SC2229-Y
Q517,Q518	2211653 or	2SC2235-O or
	2211654	2SC2235-Y
Q519,Q520	2211643 or	2SA965-O or
	2211644	2SA965-Y
Q525,Q526	2211732 or	2SC1845-F or
Q528,Q529	2211733	2SC1845-E
Q527	2211792 or	2SA992-F or
	2211793	2SA992-E
Q531,Q532	2211183	2SC1740-R
Q601~Q603	2213650	DTD113ZS
	Diodes	
D101~D104	223163	1SS133
D501~D504		
D601~D603		
D551	224450512	MTZ5.1B, Zener
D911	22380022	RBV402
D912,D913	224451503	MTZ15C
	Coils	
L501,L502	231176	S-1.3C
	Capacitors	
C101,C102	373301014	100 pF, 125V, Styrene (PP)
C105,C106	393180477	4.7 μF, 50V, Elect.
C107,C108	373302214	220 pF, 125V, Styrene (PP)
C111,C112	374728224	8200 pF, 50V, Film (TF)
C113,C114	354722219	220 μF, 6.3V, Elect.
C115,C116	371121134	0.011 μF, 50V, Mylar
C117,C118	371123034	0.03 μF, 50V, Mylar
C119,C120	393180477	4.7 μF, 50V, Elect.
C121,C122	374721224	1200 pF, 50V, Film (TF)
C132,C133	354741019	100 μF, 16V, Elect.
C261~C263	354780339	3.3 μF, 50V, Elect.
C501,C502	393180477	4.7 μF, 50V, Elect.
C503,C504	373301014	100 pF, 125V, Styrene (PP)
C507,C508	374721024	1000 pF, 50V, Film (TF)
C509,C510	354722219	220 μF, 6.3V, Elect.
C511,C512	354780339	3.3 μF, 50V, Elect.
C517~C520	374722234	0.022 μF, 50V, Film (TF)
C525,C526	374724734	0.047 μF, 50V, Film (TF)
C537,C538		
C529~C532	354781019	100 μF, 50V, Elect.
C541~C544	374721024	1000 pF, 50V, Film (TF)
C554	354780479	4.7 μF, 50V, Elect.
C555	354722219	220 μF, 6.3V, Elect.
C914,C915	3504207	6800 μF, 50V, Elect.
C916,C917	354761019	100 μF, 35V, Elect.
C918,C919	354742219	220 μF, 16V, Elect.
	Resistors	
R527,R528	442522704	27 Ω, 1/2W, Metal oxide film
R529,R530	442529104	91 Ω, 1/2W, Matal oxide film
R531,R532	5210062 or	N06HR4.7KBD or
	5210216	N06HR5KBD, Semi-fixed
R535,R536	442522714	270 Ω, 1/2W, Metal oxide film
R537,R538	441620104	1 Ω, 1W, Metal oxide film
R539~R542	4000063	0.47 Ω, 2W, Metal plate
R543~R546	442520224	2.2 Ω, 1/2W, Metal oxide film
R553~R556		
R547,R548	442520824	8.2 Ω, 1/2W, Metal oxide film
R549,R550	442520564	5.6 Ω, 1/2W, Metal oxide film
R601,R602	441626214	620 Ω, 1W, Metal oxide film
R603	442522024	2 kΩ, 1/2W, Metal oxide film
R911~R914	441623614	360 Ω, 1W, Metal oxide film
	Relaies	
RL601,RL602	25065339	NRL-2P5A-DC24V-46
RL603	25065396	NRL-2P1.25A-DC24-067
	Jumper sockets	
JL201a,JL501a	25050267	NSCT-3P95
JL301a	25050273	NSCT-9P101
	Terminals	
P101	25045333	NPJ-2PDBL185
P201	25045300	NPJ-6PDBL159
P202,P203	25045303	NPJ-4PDBL162
P501	25060125	NTM-8PDMN058
	Radiator	
	27160166	
	Bracket	
	27141059	Ground

PHONES CIRCUIT PC BOARD (NAETC-4170-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistors	
R571,R572	441623914	390 Ω, 1W, Metal oxide film
	Stereo jack	
P571	25045255	VKB26-5009

SYSTEM CONTROL CIRCUIT PC BOARD (NADG-4171-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q701	22240431	LC65204A-4605
	Transistors	
Q703	2213284	2SC1740S-R
Q708	2213290	DTC114ES
	Diodes	
D701~D706	223163	1SS133
D712~D716	225142DX2	SEL2913K-DX2, LED

CIRCUIT NO.	PART NO.	DESCRIPTION
D723		
	Osc.element	
X701	3010150	CST4.00MGW
	Capacitors	
C701	3000051	0.047 F, 5.5V, Super
C703	354741009	10 μF, 16V, Elect.
C704	354780109	1 μF, 50V, Elect.
	Resistors	
R701	49163103404	10 KΩ*4, Network
	Switches	
S701	25030345	NRS-1112-15SRM
S702	25030347	NRSF-114-25SRB
	Holders	
	27190836	(LED-5)
	27190811	(LED)

TONE CONTROL CIRCUIT PC BOARD (NAAF-4172-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q301,Q321	22240050	MPC4570C
	Capacitors	
C301,C302	354780109	1 μF, 50V, Elect.
C325,C326		
C305,C306	354780229	2.2 μF, 50V, Elect.
C327,C328	374723934	0.039 μF, 50V, Film (TF)
C331,C332	374722234	0.022 μF, 50V, Film (TF)
C391,C392	354780339	3.3 μF, 50V, Elect.
	Resistors	
R315	5104292A	N11RGLC250KW25Z, Variable
R321(R322)	5104291A	N14RLC100KWT25Z, Variable
R335(R336)		

TAPE-2 AND DIRECT SWITCH CIRCUIT PC BOARD (NASW-4173-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D710,D711	22514DX2	SEL2913K-DX2, LED
	Switches	
S703,S704	25035548	NPS-111-S510
	Holder	
	27190811	(LED)

POWER SUPPLY CIRCUIT PC BOARD (NAPS-4174-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistor	
Q931	2201754 or	2SD1913-R or
	2201755	2SD1913-S
	Diode	
D931~D934	22380032	1SR139-100
D936,D937		
D935	224450623	MTZ6.2C, Zener
D938	224450512	MTZ5.1B
	Capacitors	
C931	354742229	2200 μF, 16V, Elect.
C932,C934	354741019	100 μF, 16V, Elect.
C935	354721019	100 μF, 6.3V, Elect.
C936	354742209	22 μF, 16V, Elect.
C937	374721034	0.01 μF, 50V, Film (TF)
	Resistors	
R931	441622204	22 Ω, 1W, Metal oxide film
R932,R935	442521024	1 KΩ, 1/2W, Metal oxide film
R933	442524714	470 Ω, 1/2W, Metal oxide film
R934	442521224	1.2 KΩ, 1/2W, Metal oxide film
R936	442520224	2.2 Ω, 1/2W, Metal oxide film
	Jumper sockets	
JL701a	25050268	NSCT-4P96
JL702a	25050273	NSCT-9P101
JL721a	25050268	NSCT-4P96
JL722a	25050271	NSCT-7P99
	Fuse holder	
F901a	25050065	YSH403T
	C.Cover	
C902a	27301216	SB-1925A

VOLUME CONTROL CIRCUIT PC BOARD (NAETC-4176-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q353,Q354	2212286 or	2SC2878-B or
	2212285	2SC2878-A
	Capacitors	
C355,C356	354780109	1 μF, 50V, Elect.
	Resistors	
R351(R352)	5104250A	N16RGM50KA30F, Variable
	Jumper socket	
JL704a	25050280	NSCT-3P108

POWER SWITCH CIRCUIT PC BOARD (NASW-4177-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitor	
⚠ C901	3500065A	0.01 μF, AC400V/125V, Film (IS)
	Switch	
⚠ S901	25035550	NPS-111-L512P

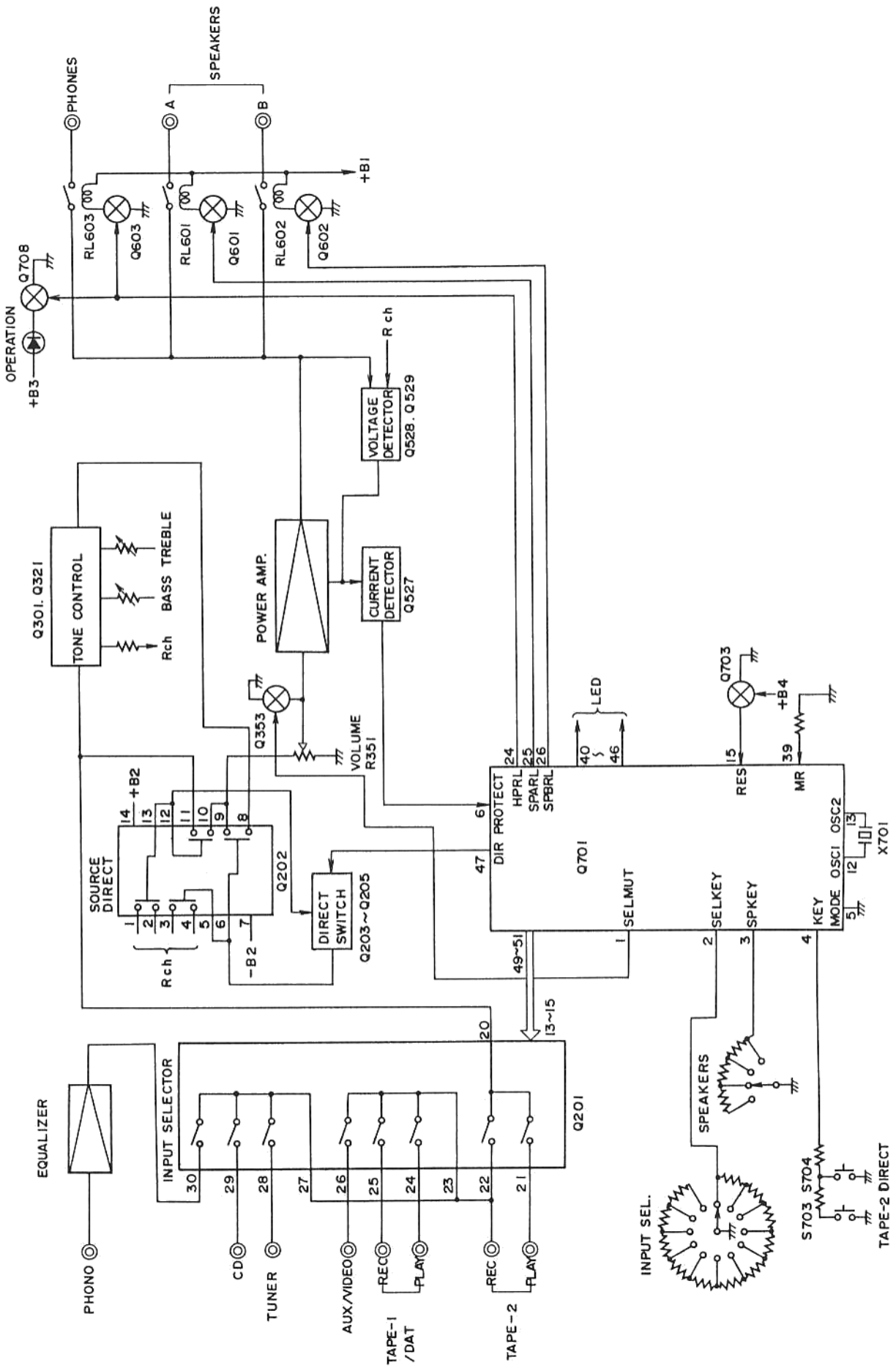
NOTE:
THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PART LIST OF PACKING

REF.NO.	PART NO.	DESCRIPTION
A851	29052182-1	MASTER CARTON BOX [BLK]
A851	29052182-2	MASTER 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
A874	261504	W=30 mm, PAPER TAPE
	29355133	DBP CAUTION LABEL
	ACCESSARY BAG ASS'Y	
	29341613	INSTRUCTION MANUAL
	29365020C	WARRANTY CARD
	29100094A	POLY-VINYL BAG (WARRANTY)
	29100097	250 × 350, POLY-VINYL BAG

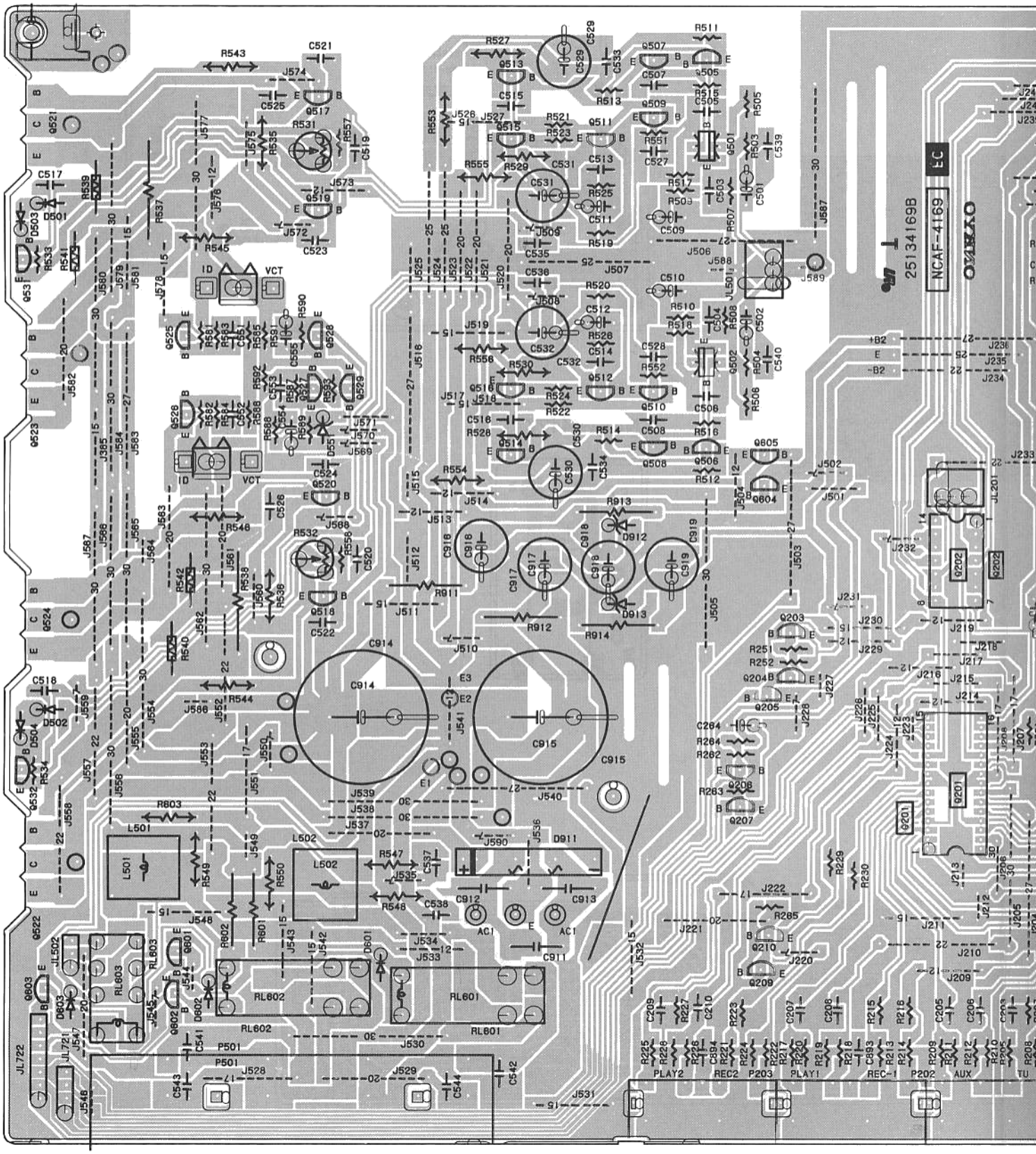
NOTE: [BLK]: ONLY BLACK MODEL
[SIL]: ONLY SILVER MODEL

BLOCK DIAGRAM



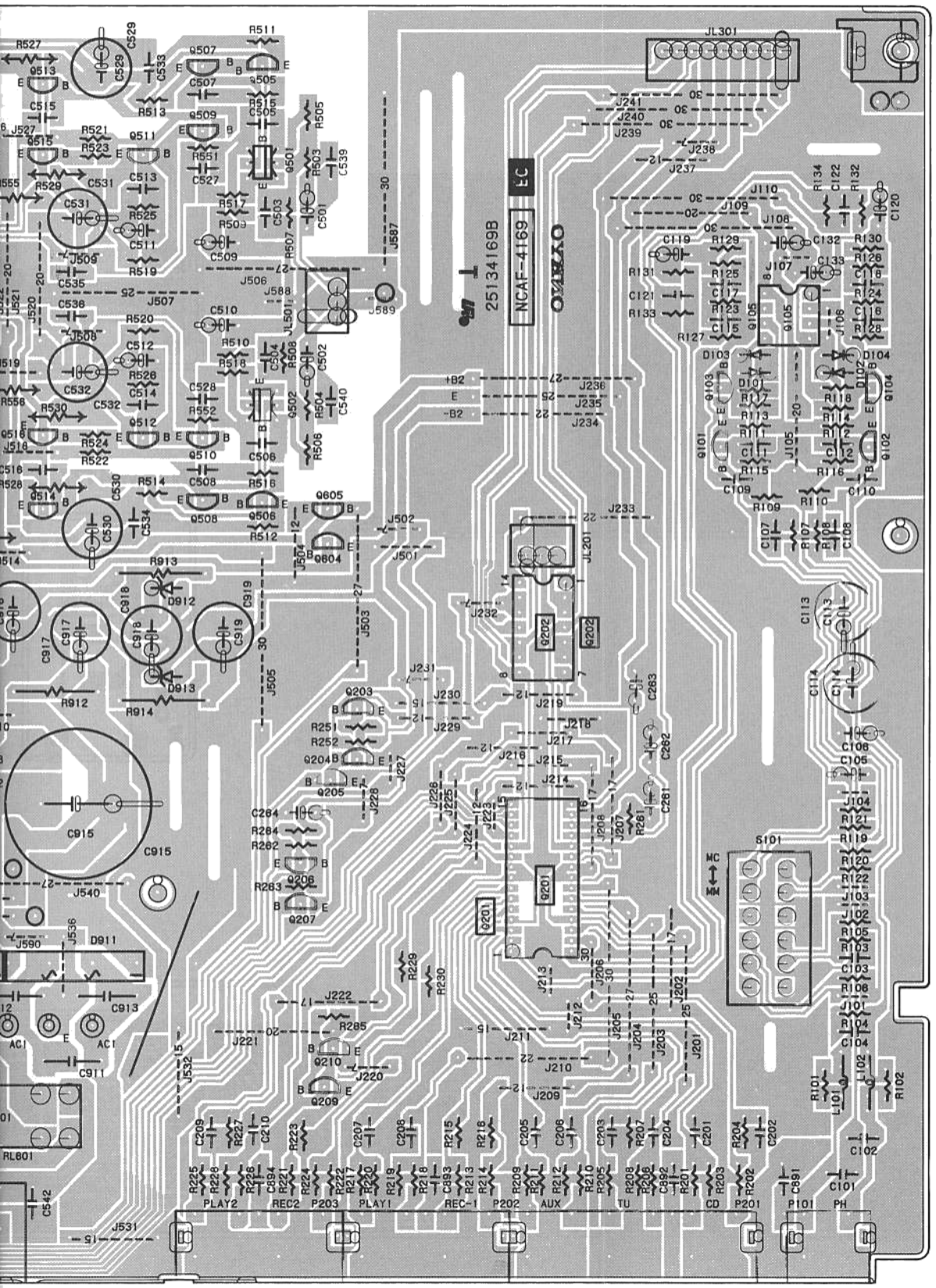
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

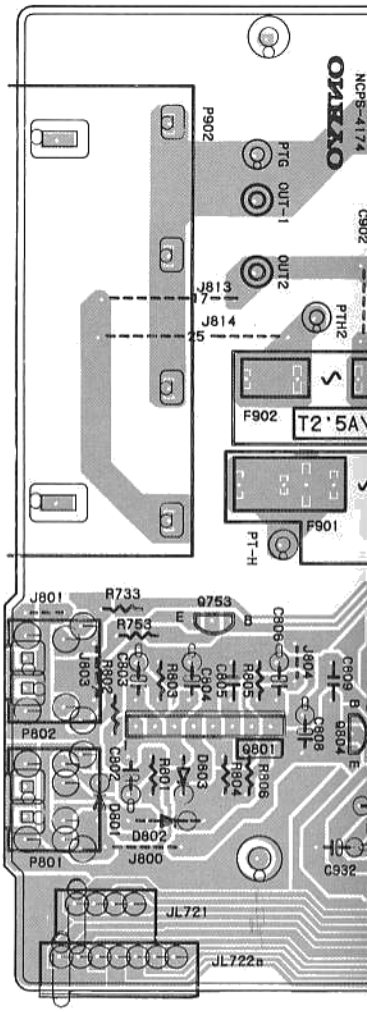
NAAF-4169



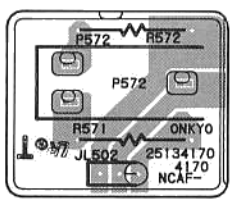
FROM BOTTOM SIDE

NAETC-4174

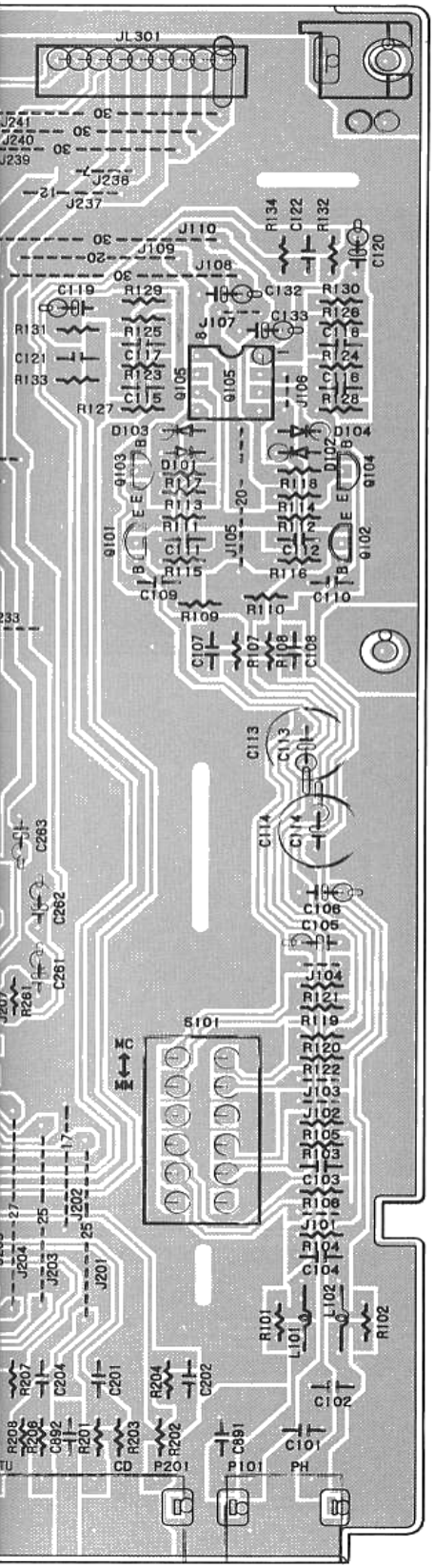


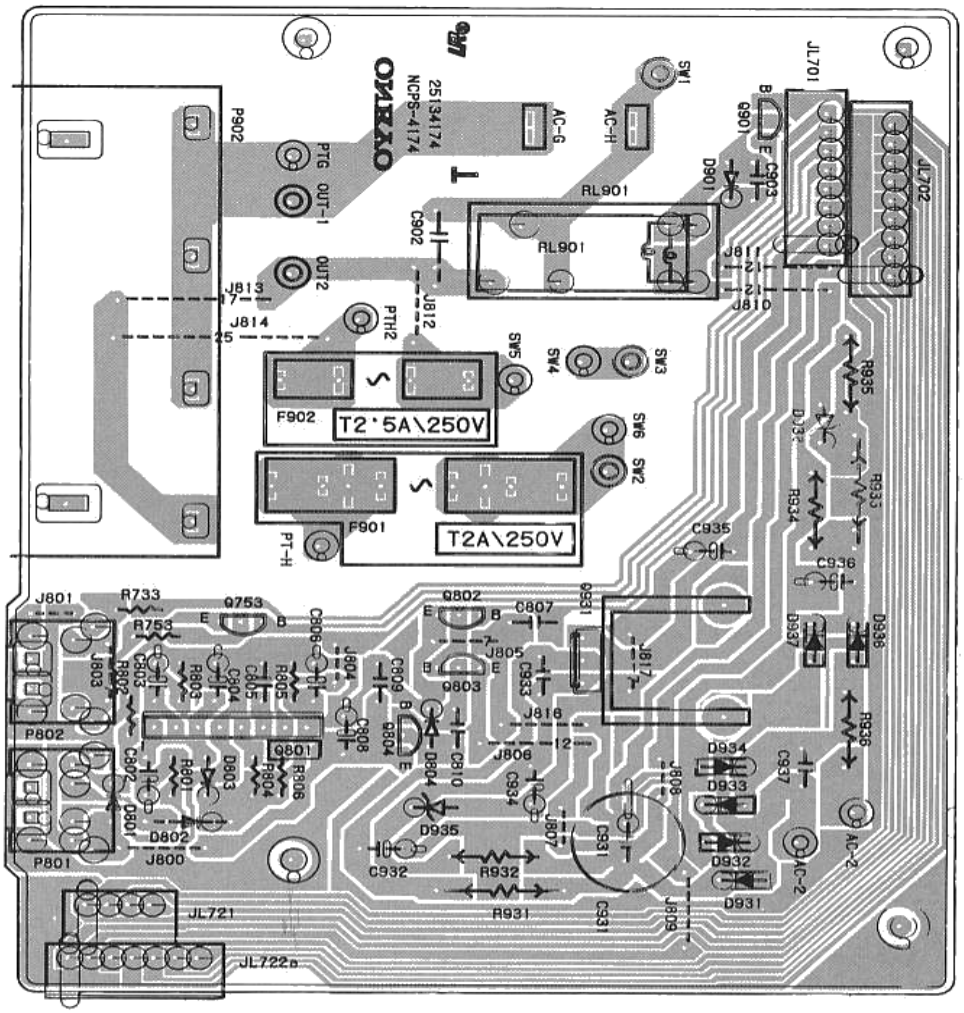


NAETC-4170



NAETC-4174





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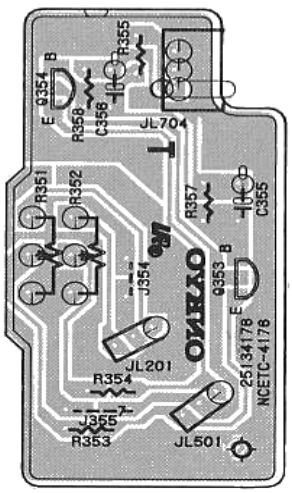

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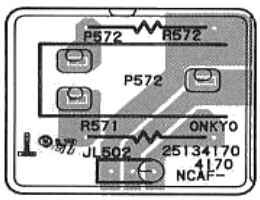
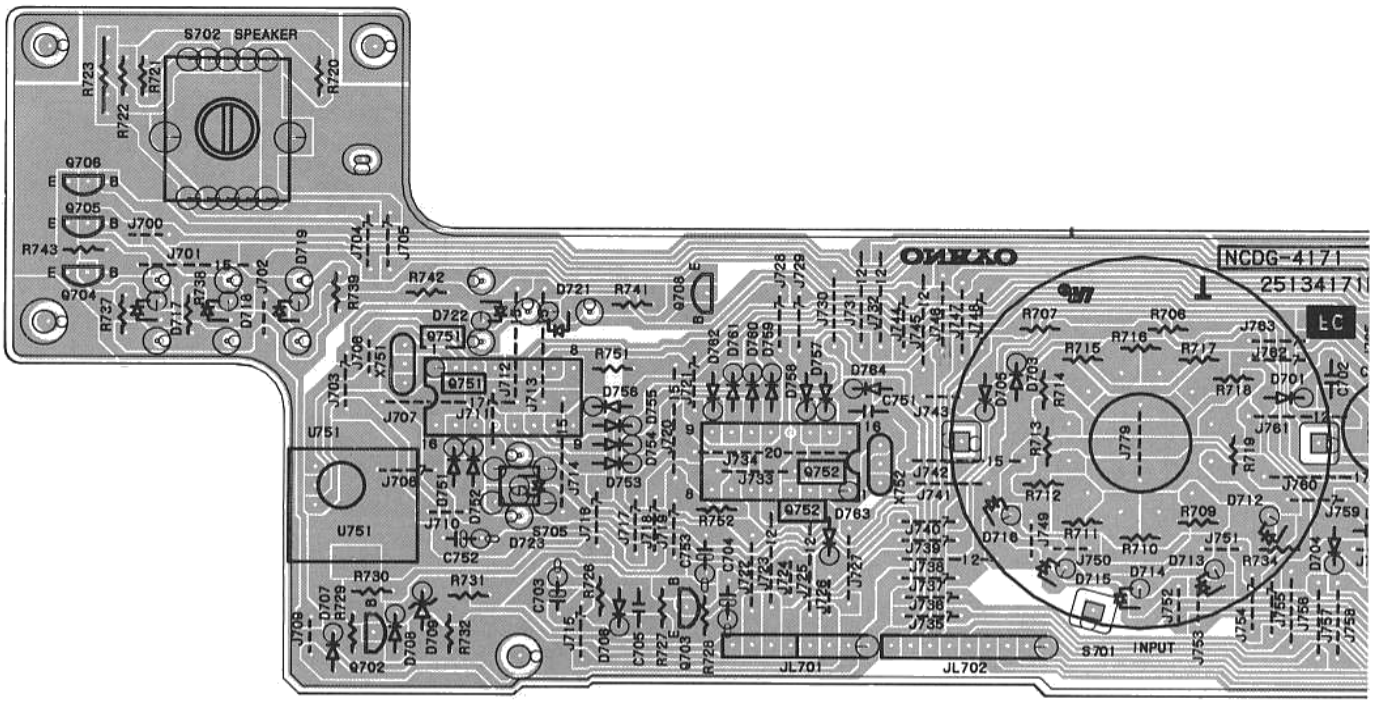
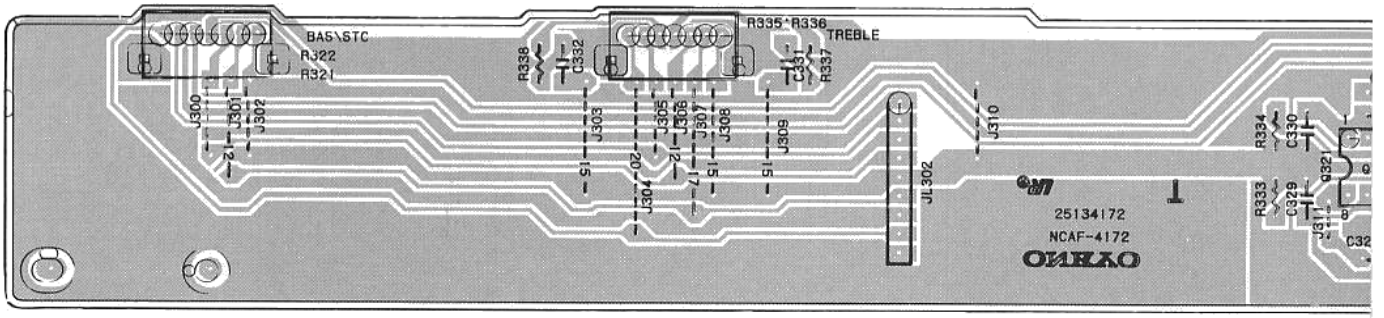


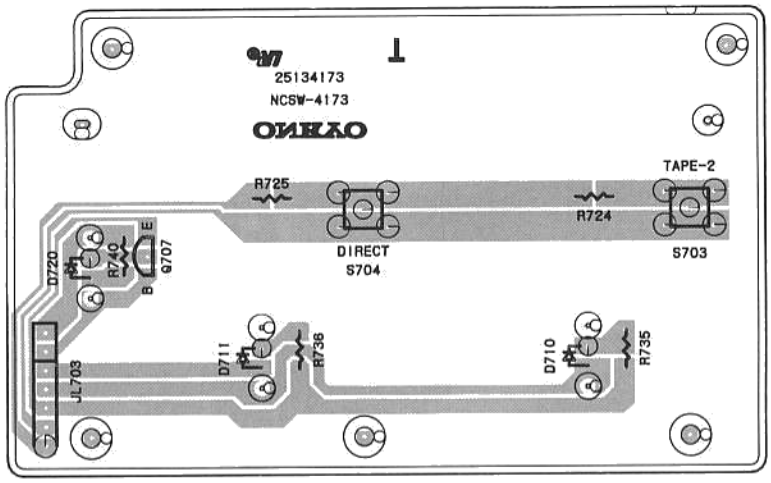
NADG-4171

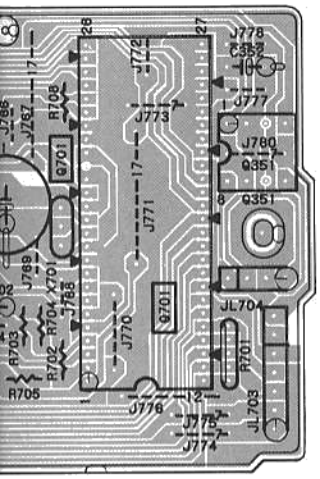


NAAF-4172

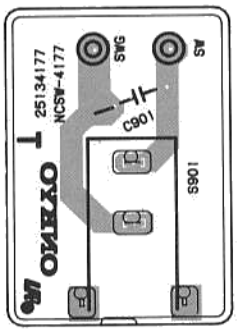


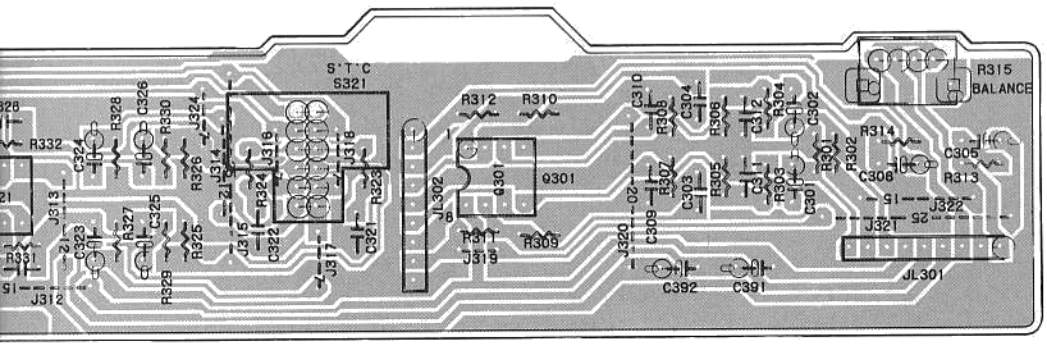
NASW-4173



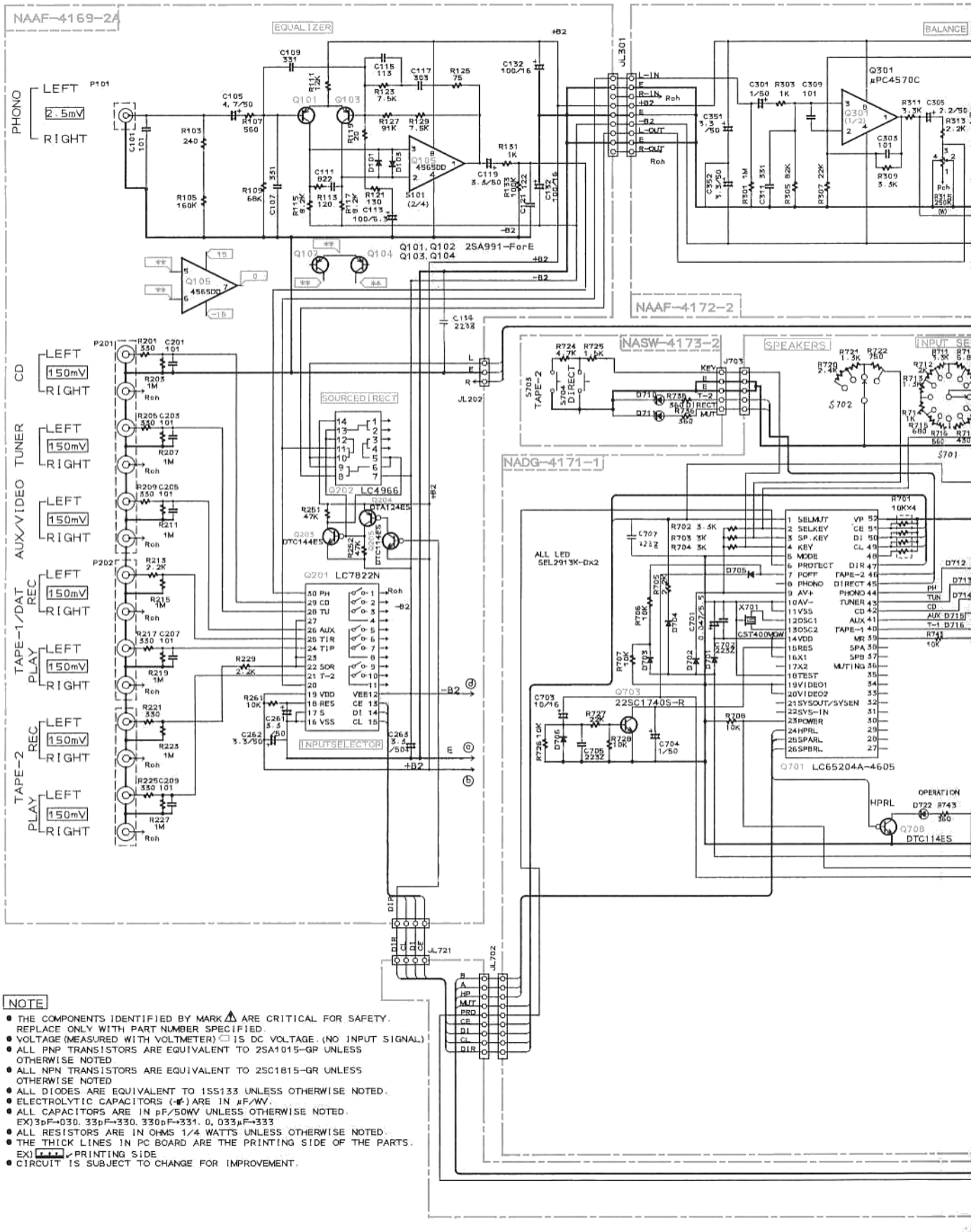


NASW-4177



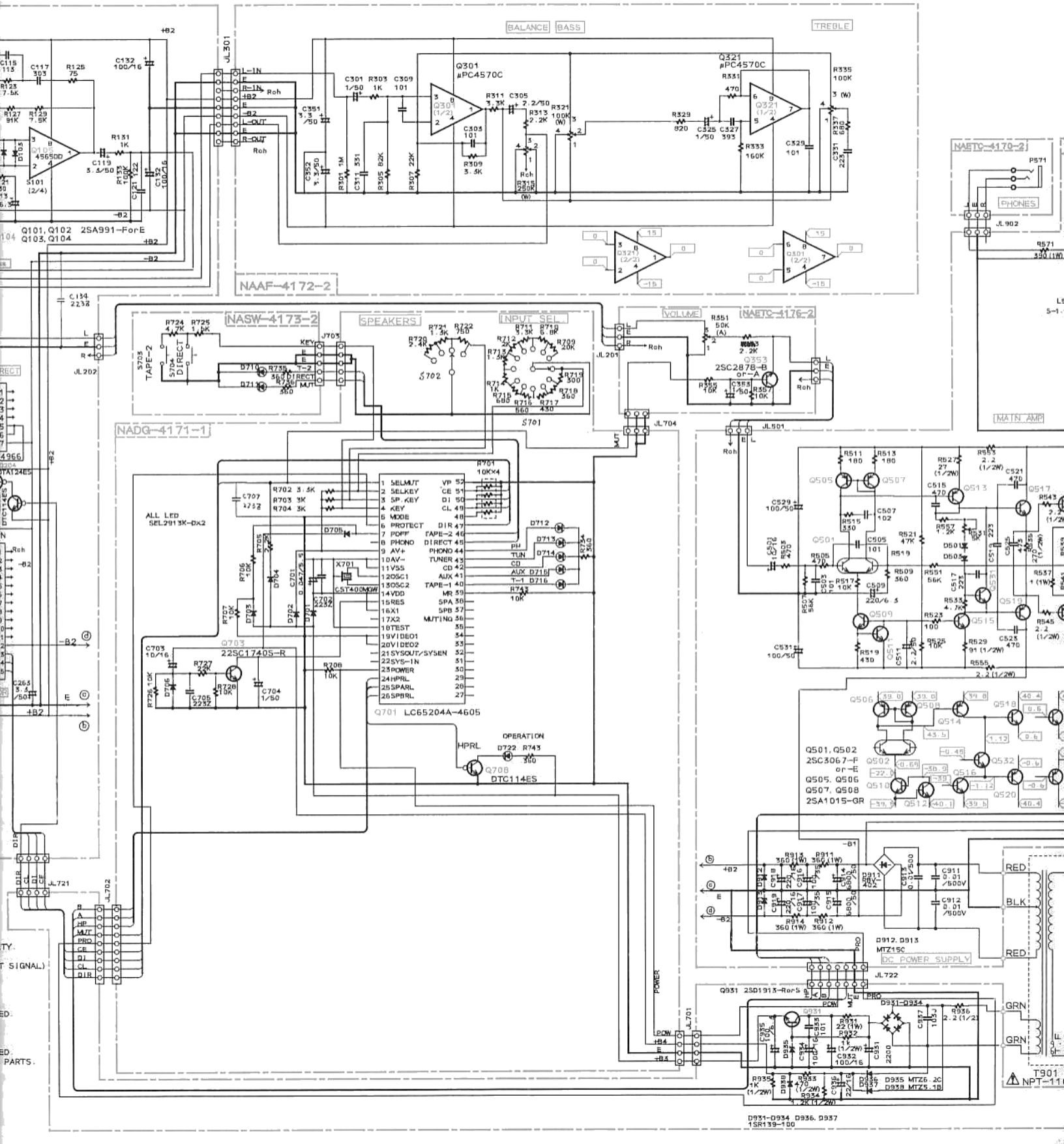


SCHEMATIC DIAGRAM
MODEL A-8820

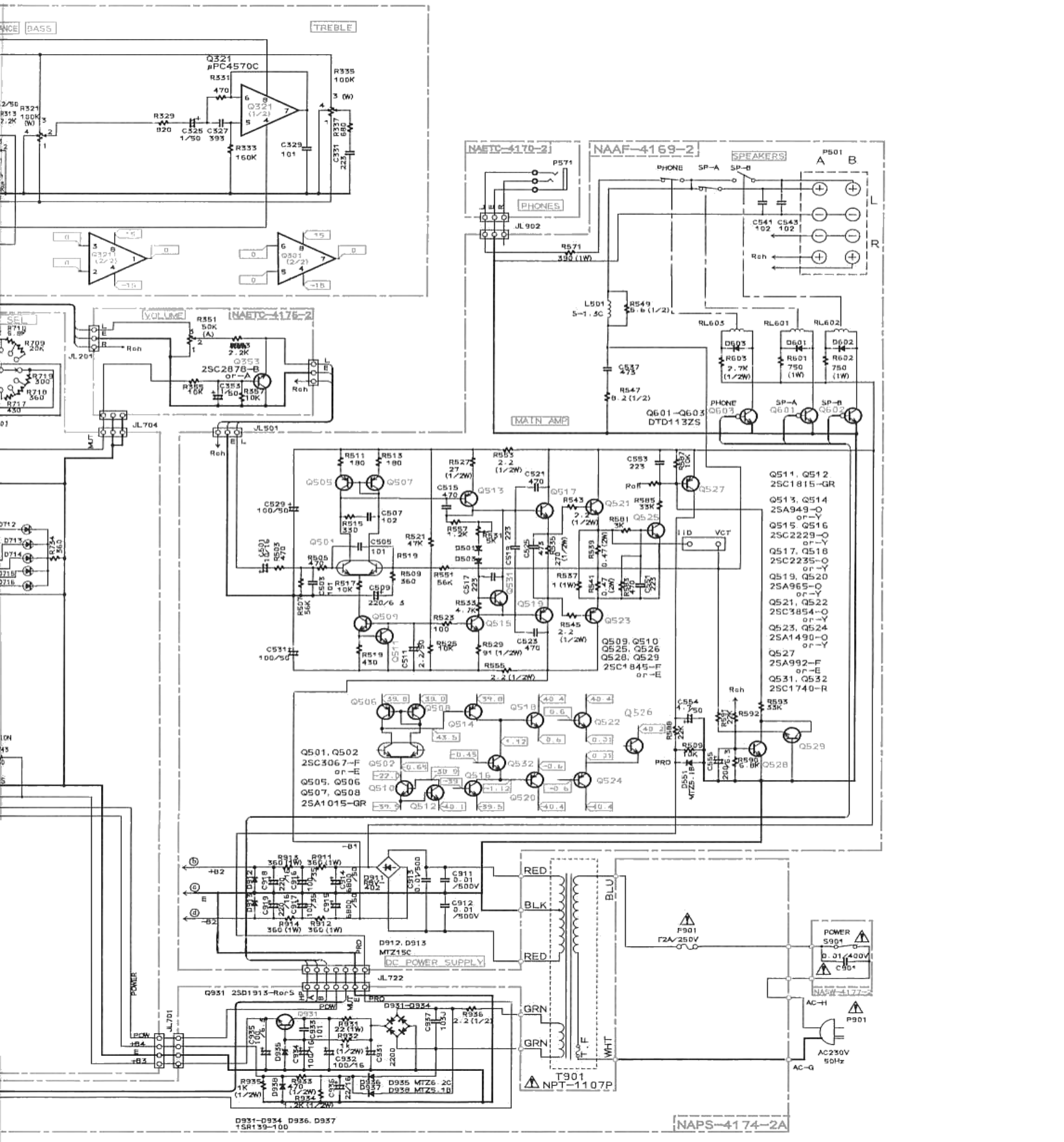


NOTE

- THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER) ☐ IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GP 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 (-■-) ARE IN μF/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED. EX) 3pF→030, 33pF→330, 330pF→331, 0.033μF→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) ▭▭▭ ✓PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.


NAAF-4172-2
NASW-4173-2
NADG-4171-1
NAETC-4176-2
NAETC-4170-2
BALANCE
BASS
TREBLE
SPEAKERS
INPUT SEL
VOLUME
PHONES
MAIN AMP
Q301 μPC4570C
Q321 μPC4570C
Q101, Q102 2SA991-ForE
Q103, Q104
2SC2878-B or-A
Q703 22SC1740S-R
Q708 DTC114ES
Q701 LC65204A-4605
Q501, Q502 2SC3067-F or-E
Q505, Q506 Q507, Q508 2SA1015-GR
Q931 2SD1913-RorS
D912, D913 MTZ15C
D935 MTZ6.2C
D938 MTZ5.1B
D931-D934 D936, D937 1SR139-100
DC POWER SUPPLY
ALL LED SEL2913K-Dx2
OPERATION
HPRL
RED
BLK
GRN
T901 NPT-11

E F G H



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