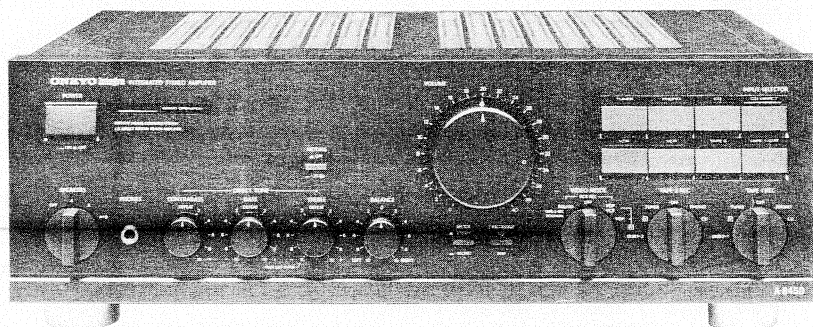


ONKYO® SERVICE MANUAL

Integrated Stereo Amplifier MODEL A-8450



Silver and Black models

UG	220V AC, 50Hz
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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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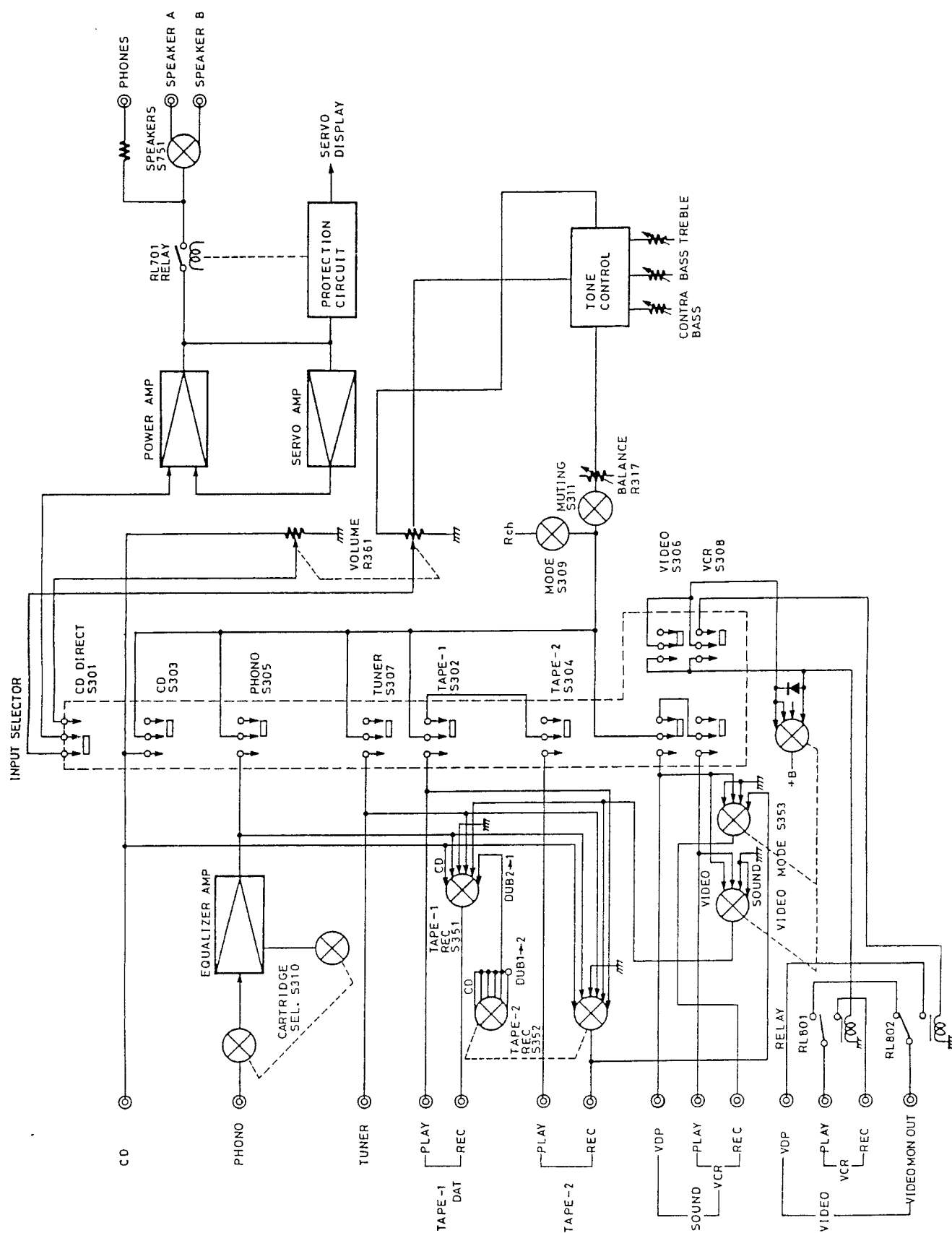
ONKYO
AUDIO COMPONENTS

SPECIFICATIONS

Continuous Power Output:	2 x 120 watts at 4 ohms, 1 kHz (DIN) 2 x 90 watts at 8 ohms, 1 kHz (DIN) 80 watts per channel, min. RMS, at 8 ohms, both channels driven from 20 Hz to 20 kHz, with no more than 0.008% Total harmonic distortion.
Dynamic Power:	2 x 210 watts at 2 ohms, 2 x 167 watts at 4 ohms
Total Harmonic Distortion	0.008% at rated power 0.008% at 1 watt output
Intermodulation Distortion:	0.005% at rated power
Damping Factor:	50 at 8 ohms
Input Sensitivity/ Impedance	Phono (MM): 2.5 mV/50 kohms Phono (MC): 160 μ V/220 ohms CD, DIRECT: 150 mV/50 kohms TUNER: 150 mV/50 kohms Tape Play: 150 mV/50 kohms VCR Play: 150 mV/50 kohms VDP Play: 150 mV/50 kohms
Output Level/Impedance:	Tape Rec: 150 mV/1.5 kohms (Phono)
Phono Overload:	Phono (MM): 200 mV RMS. at 1 kHz, 0.015% THD.
Tone Control (Vol -20 dB):	CONTRABASS: +10 dB at 20 Hz BASS: $\pm$ 10 dB at 70 Hz TREBLE: $\pm$ 8 dB at 20 kHz
High Cut:	6 kHz (6 dB/Octave) (TREBLE min.)
Frequency Response:	CD, Tuner: 2 Hz - 50 kHz (+0, -1 dB)
RIAA Deviation:	Phono (MM): $\pm$ 0.3 dB 20 Hz - 20 kHz
Signal to Noise	Phono (MM): 93 dB (5 mV input)
Ratio (IHF-A):	Phono (MC): 74 dB (0.5 mV input) CD DIRECT: 107 dB
Muting:	-20 dB
Power Supply:	European models: AC220V, 50 Hz
Dimensions (W x H x D):	435 x 147 x 388 mm 17-1/8" x 5-13/16" x 15-5/16"
Weight:	11.2 kg, 24.7 lbs

Specifications and features are subject to change without notice.

BLOCK DIAGRAM



ADJUSTMENT PROCEDURES

1. Preparations

- 1) Leave the machine in a normal condition parallel to the work bench, maintaining a clearance of 15mm from the bottom for air circulation.
- 2) Set the level to minimum with no load and no signal.
- 3) When making the adjustment, there must be no breeze blowing from the outside.

2. Adjustment of idling current

- 1) Turn ON the power switch, and leave the unit as is for about 5 minutes.
- 2) Adjust the semi-fixed resistor R531 (R532) so that the voltage between the terminals Vcr and I₁₀ of the printed circuit board NAAF-2983 is 7.5mV.

3. Operating check of protection circuit

- 1) When the power switch is turned ON.
 - After about 5 second, relay RL701 of the NAAF-2983 printed circuit board go ON.
 - Operation indicator lights.
- 2) When the power is turned OFF.
 - Immediately a relay go OFF.
- 3) With no load, when $\pm 200\text{mV}$ DC is CD input, the speaker relay go OFF.

Caution: During this test, there should be absolutely no load connected and the load terminals must not be shorted.

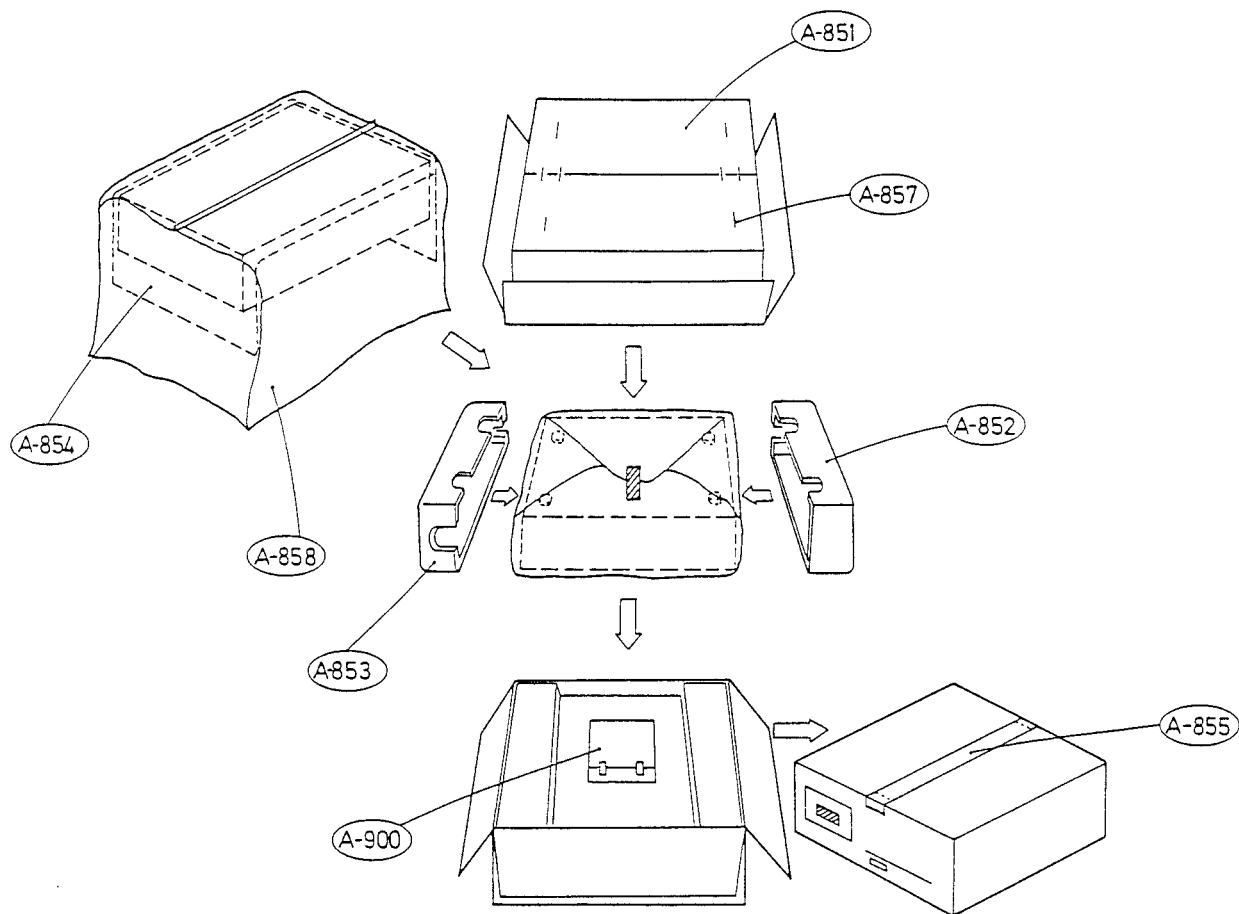
PRECAUTIONS

1. Replacing the fuses

For continued protection against risk fire, replace only with same type and same rating fuse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F902	252076 or	3.15A-SE-EAK Primary fuse
	252076CC	3.15A-SE-EAK Primary fuse

PACKING PROCEDURES



REF. NO.	PART NO.	DESCRIPTION
A851	29051537	MASTER CARTON BOX
A851	29051539	MASTER CARTON BOX [BLACK]
A852	29091159	PAD LEFT
A853	29091160	PAD RIGHT
A854	29095012-1	SHEET 800X500
A855	260012	DAMPLON TAPE W50 BROWN
A857	282301	STAPLE 16H
A858	29100038A	POLY BAG 720X950
	29100094	POLY BAG (WARRANTY CARD)
A900		ACCESSARY BAG
	29341156	INSTRUCTION MANUAL
	29365020	WARRANTY CARD
	29100006A	POLY BAG 350X250

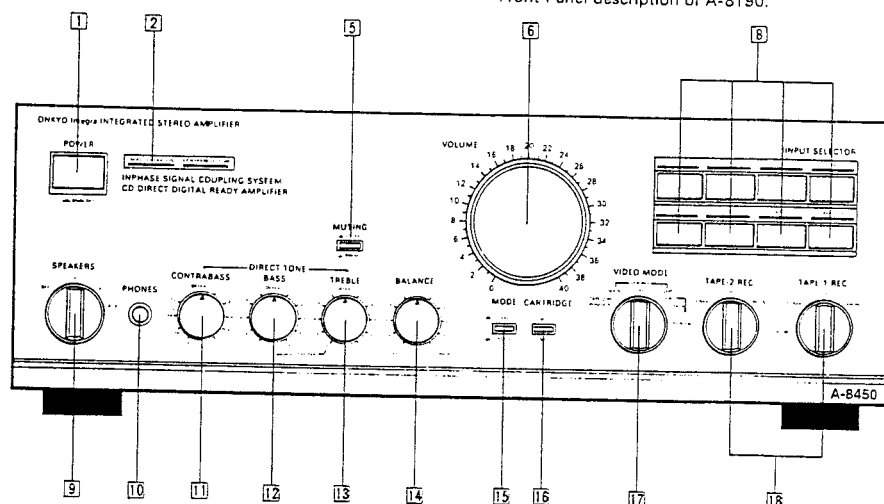
NOTE [BLACK]: ONLY BLACK MODEL

This exploded view diagram illustrates the assembly of a computer system unit. The components are labeled with alphanumeric codes in circles, and their assembly points are indicated by dashed lines. The main components include:

- Chassis and Panels:** A301 (Front Panel), A302, A303, A309 (Top Panel), A601 (Bottom Panel), A602, A602a, A603 (Rear Panel), A14 (Internal Panel), A15 (Internal Panel).
- Power and Cooling:** A801 (Power Supply), A802, A803, A804, A805 (Cooling Fans), U7 (Fan Controller), U12 (Fan Controller).
- Storage and Data:** A9 (Hard Drive), A24 (Optical Drive), A25 (Floppy Drive), A12 (CD-ROM Drive), A13 (CD-ROM Drive), A10 (CD-ROM Drive), T001 (CD-ROM Drive).
- Expansion and Interface:** A1, A3, A31, A32 (Expansion Cards), A17 (Expansion Card), A16 (Expansion Card), A18 (Expansion Card), A19 (Expansion Card), A20 (Expansion Card), A21 (Expansion Card), A22 (Expansion Card), A23 (Expansion Card), A24 (Expansion Card), A25 (Expansion Card), A26 (Expansion Card), A27 (Expansion Card), A28 (Expansion Card), A29 (Expansion Card), A30 (Expansion Card), A31 (Expansion Card), A32 (Expansion Card), A33 (Expansion Card), A34 (Expansion Card), A35 (Expansion Card), A36 (Expansion Card), A37 (Expansion Card), A38 (Expansion Card), A39 (Expansion Card), A40 (Expansion Card), A41 (Expansion Card), A42 (Expansion Card), A43 (Expansion Card), A44 (Expansion Card), A45 (Expansion Card), A46 (Expansion Card), A47 (Expansion Card), A48 (Expansion Card), A49 (Expansion Card), A50 (Expansion Card), A51 (Expansion Card), A52 (Expansion Card), A53 (Expansion Card), A54 (Expansion Card), A55 (Expansion Card), A56 (Expansion Card), A57 (Expansion Card), A58 (Expansion Card), A59 (Expansion Card), A60 (Expansion Card), A61 (Expansion Card), A62 (Expansion Card), A63 (Expansion Card), A64 (Expansion Card), A65 (Expansion Card), A66 (Expansion Card), A67 (Expansion Card), A68 (Expansion Card), A69 (Expansion Card), A70 (Expansion Card), A71 (Expansion Card), A72 (Expansion Card), A73 (Expansion Card), A74 (Expansion Card), A75 (Expansion Card), A76 (Expansion Card), A77 (Expansion Card), A78 (Expansion Card), A79 (Expansion Card), A80 (Expansion Card), A81 (Expansion Card), A82 (Expansion Card), A83 (Expansion Card), A84 (Expansion Card), A85 (Expansion Card), A86 (Expansion Card), A87 (Expansion Card), A88 (Expansion Card), A89 (Expansion Card), A90 (Expansion Card), A91 (Expansion Card), A92 (Expansion Card), A93 (Expansion Card), A94 (Expansion Card), A95 (Expansion Card), A96 (Expansion Card), A97 (Expansion Card), A98 (Expansion Card), A99 (Expansion Card), A100 (Expansion Card).
- Internal Components:** U1 (Motherboard), U2 (Motherboard), U3 (Motherboard), U4 (Motherboard), U5 (Motherboard), U6 (Motherboard), U7 (Motherboard), U8 (Motherboard), U9 (Motherboard), U10 (Motherboard), U11 (Motherboard), U12 (Motherboard), U13 (Motherboard), U14 (Motherboard), U15 (Motherboard), U16 (Motherboard), U17 (Motherboard), U18 (Motherboard), U19 (Motherboard), U20 (Motherboard), U21 (Motherboard), U22 (Motherboard), U23 (Motherboard), U24 (Motherboard), U25 (Motherboard), U26 (Motherboard), U27 (Motherboard), U28 (Motherboard), U29 (Motherboard), U30 (Motherboard), U31 (Motherboard), U32 (Motherboard), U33 (Motherboard), U34 (Motherboard), U35 (Motherboard), U36 (Motherboard), U37 (Motherboard), U38 (Motherboard), U39 (Motherboard), U40 (Motherboard), U41 (Motherboard), U42 (Motherboard), U43 (Motherboard), U44 (Motherboard), U45 (Motherboard), U46 (Motherboard), U47 (Motherboard), U48 (Motherboard), U49 (Motherboard), U50 (Motherboard), U51 (Motherboard), U52 (Motherboard), U53 (Motherboard), U54 (Motherboard), U55 (Motherboard), U56 (Motherboard), U57 (Motherboard), U58 (Motherboard), U59 (Motherboard), U60 (Motherboard), U61 (Motherboard), U62 (Motherboard), U63 (Motherboard), U64 (Motherboard), U65 (Motherboard), U66 (Motherboard), U67 (Motherboard), U68 (Motherboard), U69 (Motherboard), U70 (Motherboard), U71 (Motherboard), U72 (Motherboard), U73 (Motherboard), U74 (Motherboard), U75 (Motherboard), U76 (Motherboard), U77 (Motherboard), U78 (Motherboard), U79 (Motherboard), U80 (Motherboard), U81 (Motherboard), U82 (Motherboard), U83 (Motherboard), U84 (Motherboard), U85 (Motherboard), U86 (Motherboard), U87 (Motherboard), U88 (Motherboard), U89 (Motherboard), U90 (Motherboard), U91 (Motherboard), U92 (Motherboard), U93 (Motherboard), U94 (Motherboard), U95 (Motherboard), U96 (Motherboard), U97 (Motherboard), U98 (Motherboard), U99 (Motherboard), U100 (Motherboard).

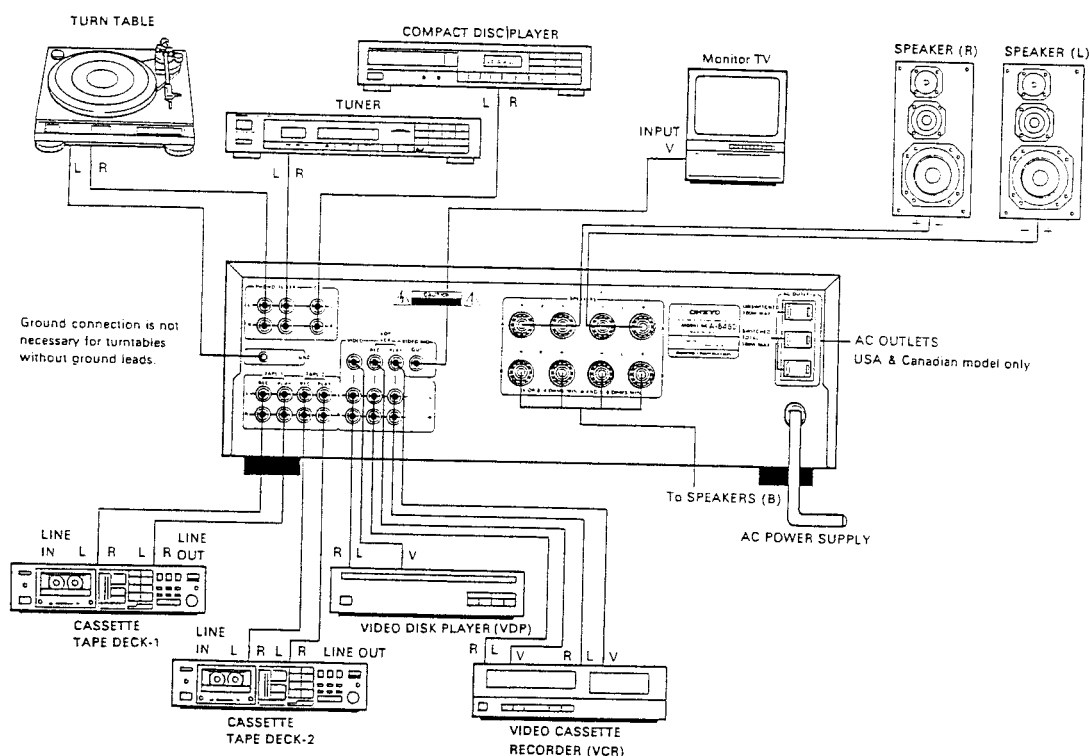
FRONT PANEL FACILITIES

* Front Panel description of A-8190.



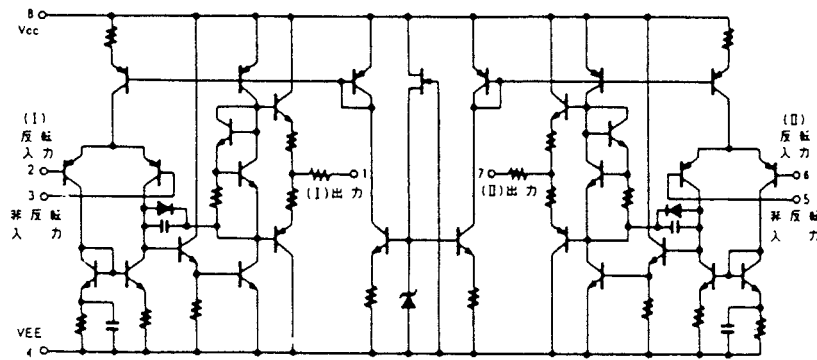
1. Power switch (POWER)
2. Servo operation indicator (SERVO OPERATION)
5. Muting switch (MUTING)
6. Volume control (VOLUME)
8. Input selector switches and indicator (INPUT SELECTOR)
CD DIRECT, CD, PHONO, TUNER, TAPE-1/DAT, TAPE-2, VDP, VCR
9. Speaker selector (SPEAKERS)
OFF, A, B, A+B
10. Headphone jack (PHONES)
11. Contra bass (CONTRA BASS)
12. Bass control (BASS)
13. Treble control (TREBLE)
14. Balance control (BALANCE)
15. Mode selector (MODE)
STEREO, MONO
16. Cartridge selector (CARTRIDGE)
MC, MM
17. Video mode switch (VIDEO MODE)
SOUND, OFF, VDP-VCR, VDP
18. Recording source selectors (TAPE-1 REC, TAPE-2 REC)
TAPE-1 DVB 2 ► 1, ☒,
TUNER, OFF, PHONO, CD
TAPE-2 DVB 1 ► 2, ☒,
TUNER, OFF, PHONO, CD

SYSTEM CONNECTIONS

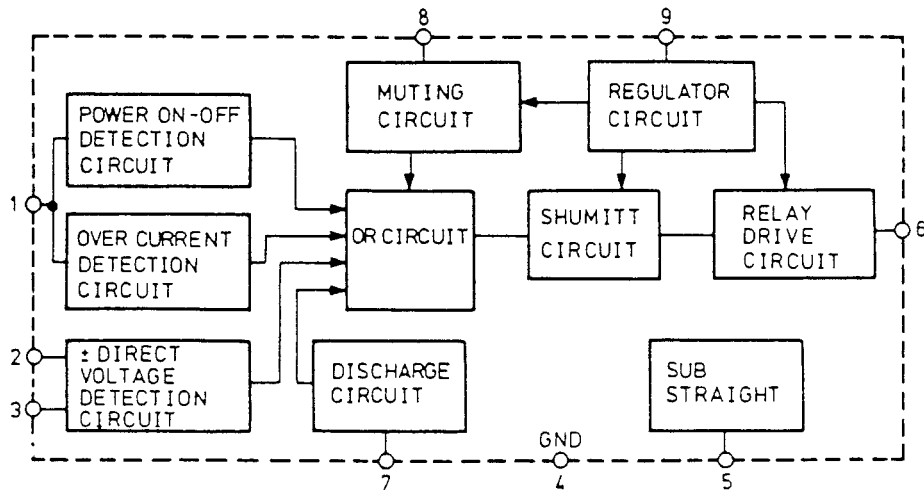


IC BLOCK DIAGRAM

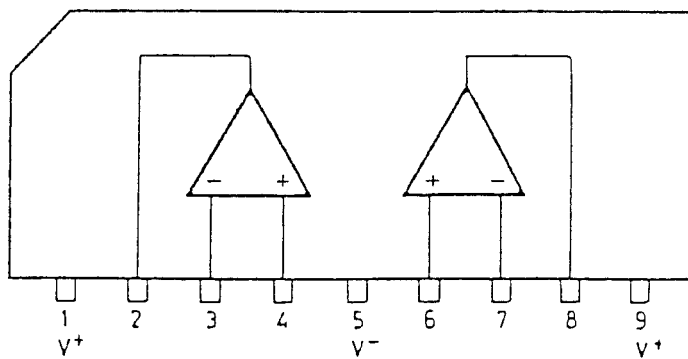
NJM-4560DX(OP Amp)



TA7317P(Protection Circuit)



NJM-4558SE(OP Amp)



PRINTED CIRCUIT BOARD PARTS LIST

REC. SELECTOR AND POWER AMPLIFIER CIRCUIT PC BOARD (NAAF-2983-1B)-PART LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
Q519, Q520	222942	NJM4558SE
Q701	222584	TA7317P
Transistors		
Q501, Q502	2212805 or	2SK389 GR or
	2212806 or	2SK389 BL or
	2212807	2SK389 V
Q503~Q506, Q615	2211733 or	2SC1845 E or
Q616	2211732	2SC1845 F
Q507, Q508	2211515 or	2SA995 F or
	2211516	2SA995 G
Q509, Q510, Q515	2211634 or	2SC2229 Y or
Q516, Q601, Q602	2211633	2SC2229 O
Q511, Q512	2211455 or	2SA1015 GR or
	2210803	2SA733 P
Q513, Q514, Q603	2211354 or	2SA949 Y or
Q604	2211353	2SA949 O
Q605, Q606	2200864 or	2SC2238 Y or
	2200863	2SC2238 O
Q607, Q608	2200874 or	2SA968 Y or
	2200873	2SA968 O
Q617, Q618	2211793 or	2SA992 E or
	2211792	2SA992 F
Q901	2201512 or	2SD1200 Q or
	2201513	2SD1200 R
Q902	2201502 or	2SB889 Q or
	2201503	2SB889 R
Diodes		
D507~D510, D351	223163	1SS133
D513, D514, D704		
D517~D520		
D505, D506, D511	225232	LTZ-R15, LED
D512		
D515, D516	4000068	VD1222
D701	223890	W01RL
D702	223145	1S2076TD
D703	2239493 or	RD6.2E B3 or
	2243163	MTZ6.2-C
D901, D902	2239754 or	RD22E-B4 or
	2243294	MTZ22-D
Coils		
L601, L602	231134S	S-0.8E
Capacitors		
C363~C370	372121014	100pF, 50V, Styrene
C503, C504		
C501, C502	372126804	68pF, 50V, Styrene
C505, C506	354780229	2.2μF, 50V, Elect.
C509, C510	379122235	0.022μF, 50V, Film (DEW)
C511, C512	372123304	33pF, 50V, Styrene
C513~C516	354762209	22μF, 35V, Elect.
C607, C608	379121045	0.1μF, 50V, Film (DEW)
C613~D616		
C609, C610	379124735	0.047μF, 50V, Film (DEW)
C701	354722219	220μF, 6.3V, Elect.
C703	354742209	22μF, 16V, Elect.
C704	354784799	0.47μF, 50V, Elect.
C706	354743319	330μF, 16V, Elect.
C707	354744719	470μF, 16V, Elect.
C708, C710	379122235	0.022μF, 50V, Film (DEW)
C713	354741019	100μF, 16V, Elect.
C901, C902	354772219	220μF, 63V, Elect.
C903, C904	354764709	47μF, 35V, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
C905, C906	354754719	470μF, 25V, Elect.
C911, C912	354782219	220μF, 50V, Elect.
Resistors		
R507, R508	441623614NF	360Ω, 1W, Metal oxide film
R523, R524	442520684F	6.8Ω, 1/2W, Metal oxide film
R525, R526	442525614F	560Ω, 1/2W, Metal oxide film
R527, R528	442524734F	47 kΩ, 1/2W, Metal oxide film
R531, R532	5210062	N06HR4.7KBD, Semi-fixed
R533, R534	442524314F	430Ω, 1/2W, Metal oxide film
R601, R602	442522224F	2.2kΩ, 1/2W, Metal oxide film
R603, R604	442522214F	220Ω, 1/2W, Metal oxide film
R607~R610	442520224F	2.2Ω, 1/2W, Metal oxide film
R615~R618	4000080	0.47Ω, 5W, Metal plate
R619, R620	441727594NF	0.75Ω, 2W, Metal oxide film
R645~R648	441621604NF	16Ω, 1W, Metal oxide film
R713	442522294F	0.22Ω, 1/2W, Metal oxide film
R721, R722	442524704F	47Ω, 1/2W, Metal oxide film
R901, R902	441623004NF	30Ω, 1W, Metal oxide film
R903, R904	442525114F	510Ω, 1/2W, Metal oxide film
Relay		
RL701	25065316	NRL-2P7A-DC1 2-43
Switches		
S351, S352	25030261	NRSM-146-15SS
S353	25030259	NRSM-164-15SS
Terminals		
P391	25045171	NPJ-4PDBL-65
P392	25045165	NPJ-4PDBL-59
P393	25045191	NPJ-6PDBL-75
Socket		
P501	2000551	NSAS-6P507
Plate		
	27300877	Bus

SPEAKER SWITCH PC BOARD (NASW-2984-1)-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Resistors		
R753, R754	441623914F	390Ω, 1W, Metal oxide film
Switch		
S751	25030275	NRSM-144-15SS
Stereo jack		
P751	25045164	HLJ-4317-01-3020

SPEAKER TERMINAL PC BOARD (NAETC-2985-1A)-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Capacitors		
C751, C753	372121024	1000pF, 50V, Styrene
Terminal		
P751	25060110	NTM-4PDMN44

SPEAKER TERMINAL PC BOARD (NAETC-2986-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Capacitors		
C752, C754	372121024	1000pF, 50V, Styrene
Terminal		
P752	25060110	NTM-4PDMN44

POWER SUPPLY PC BOARD (NAPS-2988-1)-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Diodes		
D951~D954	22380012	HER303F
D955, D956	22380003F	1N5402F
Capacitors		
C951~C953	375101045	0.01 μ F, 125V, Film (ME)
C954, C955	3504209	12000 μ F, 63V, Elect.
Resistors		
R951	442525104F	51 Ω , 1/2W, Metal oxide film
R961, R962	442522294F	0.22 Ω , 1/2W, Metal oxide film
Plate		
	27300732	Bus

MUTING SWITCH PC BOARD (NASW-2989-1)-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Diodes		
D711	225137CG or	SEL2413E CG, LED
	225137CY or	SEL2413E CY, LED
	225137DG or	SEL2413E DG, LED
	225137DY	SEL2413E DY, LED
D713, D714	225142DX2	SEL2913K DX2, LED
Switches		
S311, S312	25035563	NPS-122-L525
Socket		
JL701	25050267	NSCT-3P95
Holder		
	27190493-1	(LED-3)

TONE CONTROL CIRCUIT PC BOARD (NAAF-2990-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Capacitors		
C315, C316	379128225	8200pF, 50V, Film (DEW)
C317, C318	379125625	5600pF, 50V, Film (DEW)
C319, C320	379121025	1000pF, 50V, Film (DEW)
C321, C322	379123935	0.039 μ F, 50V, Film (DEW)
C325, C326	379128235	0.082 μ F, 50V, Film (DEW)

CIRCUIT NO.	PART NO.	DESCRIPTION
Resistors		
R317	5148107	N16RGM250KMN25, Variable
R321	5148108	N16RGM11C219K25, Variable
R323	5144001	N16RQM11C139K176K25, Variable
R337	5148109	N16RGM11C176K25, Variable
Switches		
S309, (S310)	25035539	NPS-142-122-L501
Sockets		
P101, P102	2000676	NSAS-6P632

INPUT SELECTOR SWITCH PC BOARD (NASW-2991-1)- PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Switches		
S301~S308	25035538	NPS-742-162-L500
Sockets		
P301	2000564	NSAS-6P520
P303	2000607	NSAS-18P563
P351, P354	25050272	NSCT-8P100
P352	25050271	NSCT-7P99
P353, P356	25050267	NSCT-3P95
P355	25050273	NSCT-9P101
JL352-1	25050267	NSCT-3P95
Plugs		
P302	25055137	NPLG-7P121
P501	25055133	NPLG-3P117

DISPLAY LED PC BOARD (NADIS-2992-1)-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Diodes		
D301	225142	SEL2913K, LED
D302~D308	225137DG or	SEL2413E DG, LED or
	225137DY or	SEL2413E DY, LED or
	225137CG or	SEL2413E CG, LED or
	225137CY	SEL2413E CY, LED
Plug		
P303	25055190	NPLG-9P174
Holder		
	27190531	(LED-8)

POWER SWITCH PC BOARD (NASW-2993-1A)- PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Switch		
S901	25035398	NPS-111-L362P
Capacitor		
C991	3500065A	0.01 μ F, AC400V/125V, (IS)
Fuse holders		
F902a	25050065	YSH403T

EQUALIZER CIRCUIT PC BOARD (NAAF-2994-1A)- PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Q105	IC	
	222570	NJM4560DX
Q101~Q104	Transistors	
	2212185 or	2SK170 GR or
	2212186	2SK170 BL
L101, L102 L301, L302	Coils	
	231133	NCH-1188
	231069A	NCH-1119
C101, C102 C105, C106 C107, C108 C109, C110 C111, C112 C113, C114 C115, C116 C117, C118 C119, C120 C121, C122 C123, C124 C129 C131, C132 C371, C372, C397, C398	Capacitors	
	372121814	180pF, 50V, Styrene
	372122714	270pF, 50V, Styrene
	372121014	100pF, 50V, Styrene
	379122225	2200pF, 50V, Film (DEW)
	379122234	0.022μF, 50V, Film (DEW)
	379121834	0.018μF, 50V, Film (DEW)
	379124734	0.047μF, 50V, Film (DEW)
	391222227	2200μF, 6.3V, Elect.(MUSE)
	39280227	2.2μF, 50V, Elect.(MUSE)
	379121225	1200 pF, 50V, Film (DEW)
	372121024	1000pF, 50V, Styrene
	354754719	470μF, 25V, Elect.
	372121014	100pF, 50V, Styrene
	Terminals	
P191	25045218	NPJ-4PDBL-96
P395	25045180	NPJ-2PDBL70
P101, P102, P301	Plugs	
	25055133	NPLG-3P117
JL104, JL360	Socket	
	25050267	NSCT-3P95

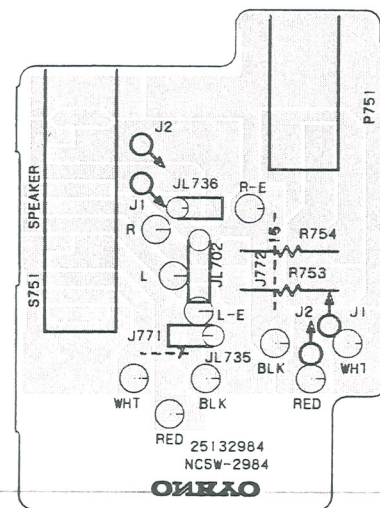
VOLUME CONTROL PC BOARD (NAAF-2995-1)-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
R361	Resistors	
	5144004	N16RQM100KBT100KBT25, Variable
P302	Socket	
	2000622A	NSAS-14P578

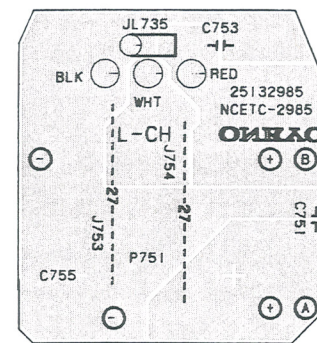
VIDEO TERMINAL PC BOARD (NAETC-2996-1)-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
D801, D802	Diodes	
	223145	1S2076TD
RL801, RL802	Relays	
	25065298	NRL-1P1A-DC12-40
JL801	Socket	
	25050268	NSCT-4P96
	Terminal	
	25045207	NPJ-4PDBL87

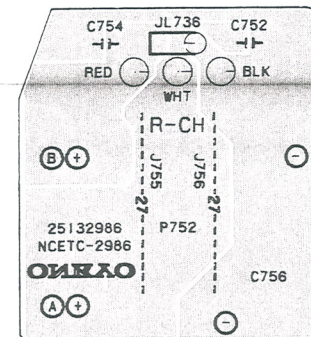
NASW-2984



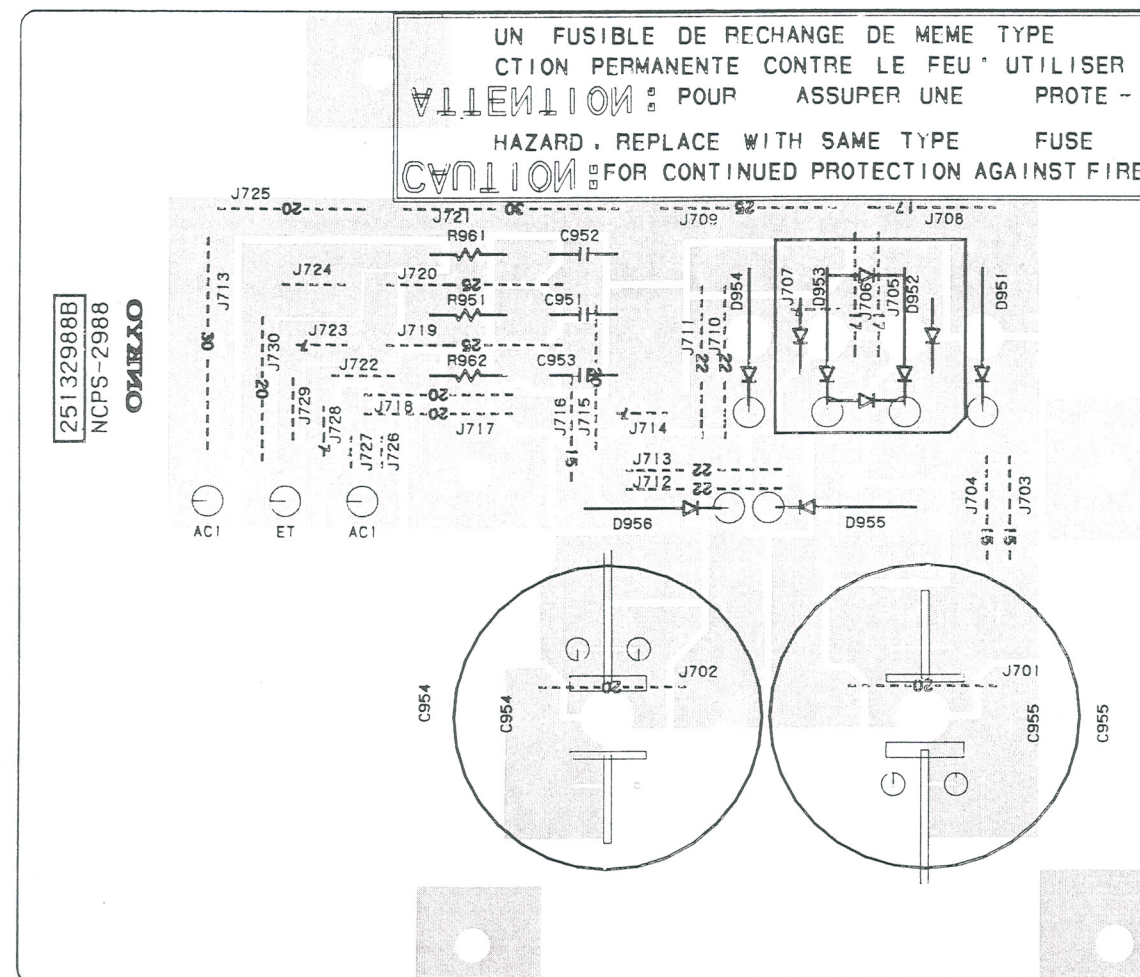
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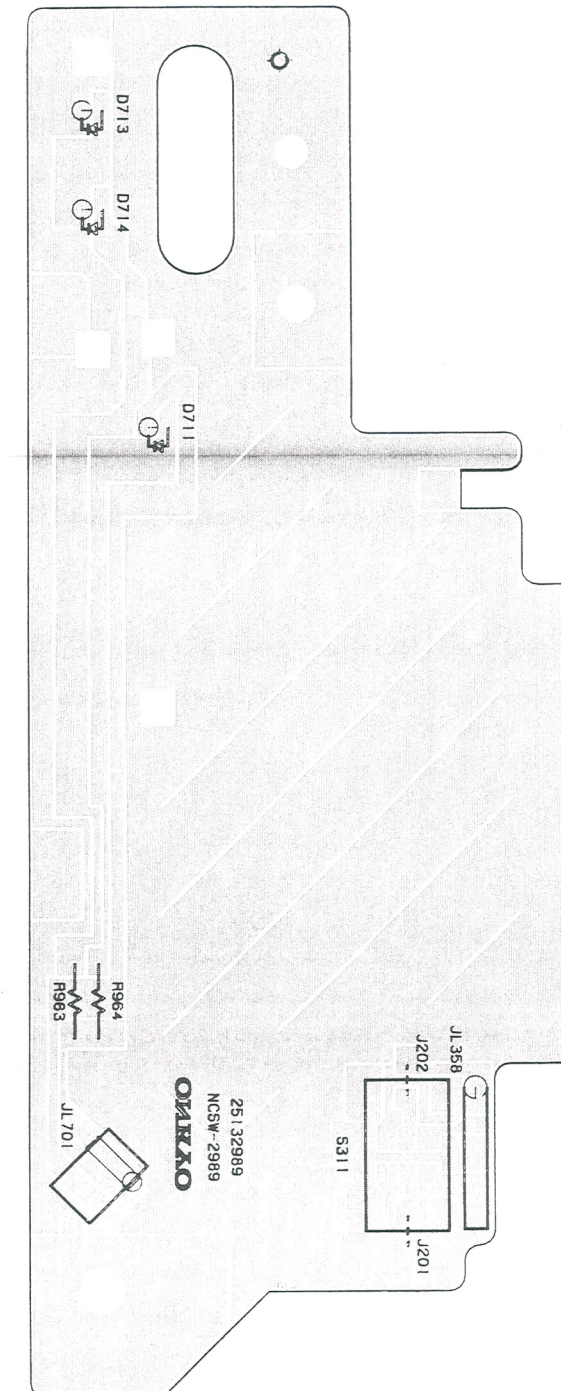
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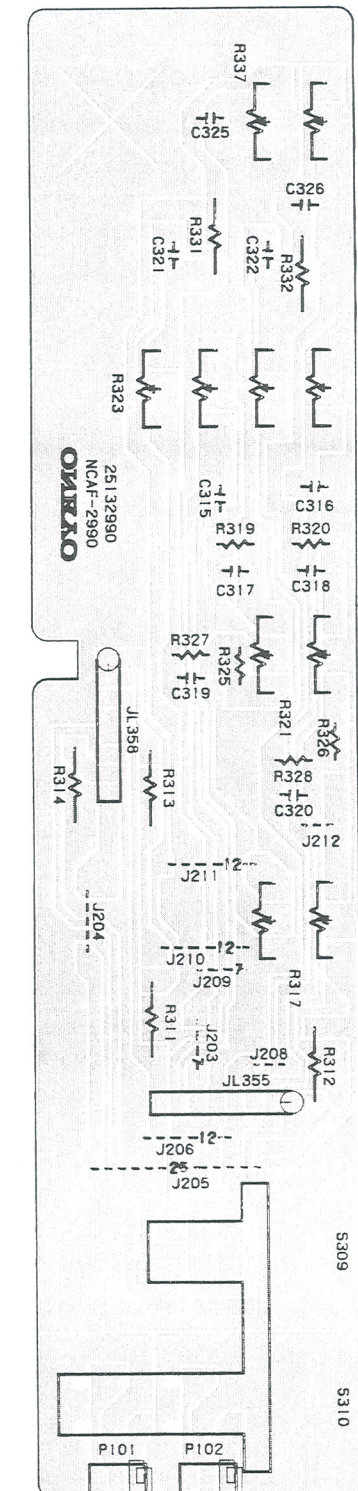
NAPS-2988



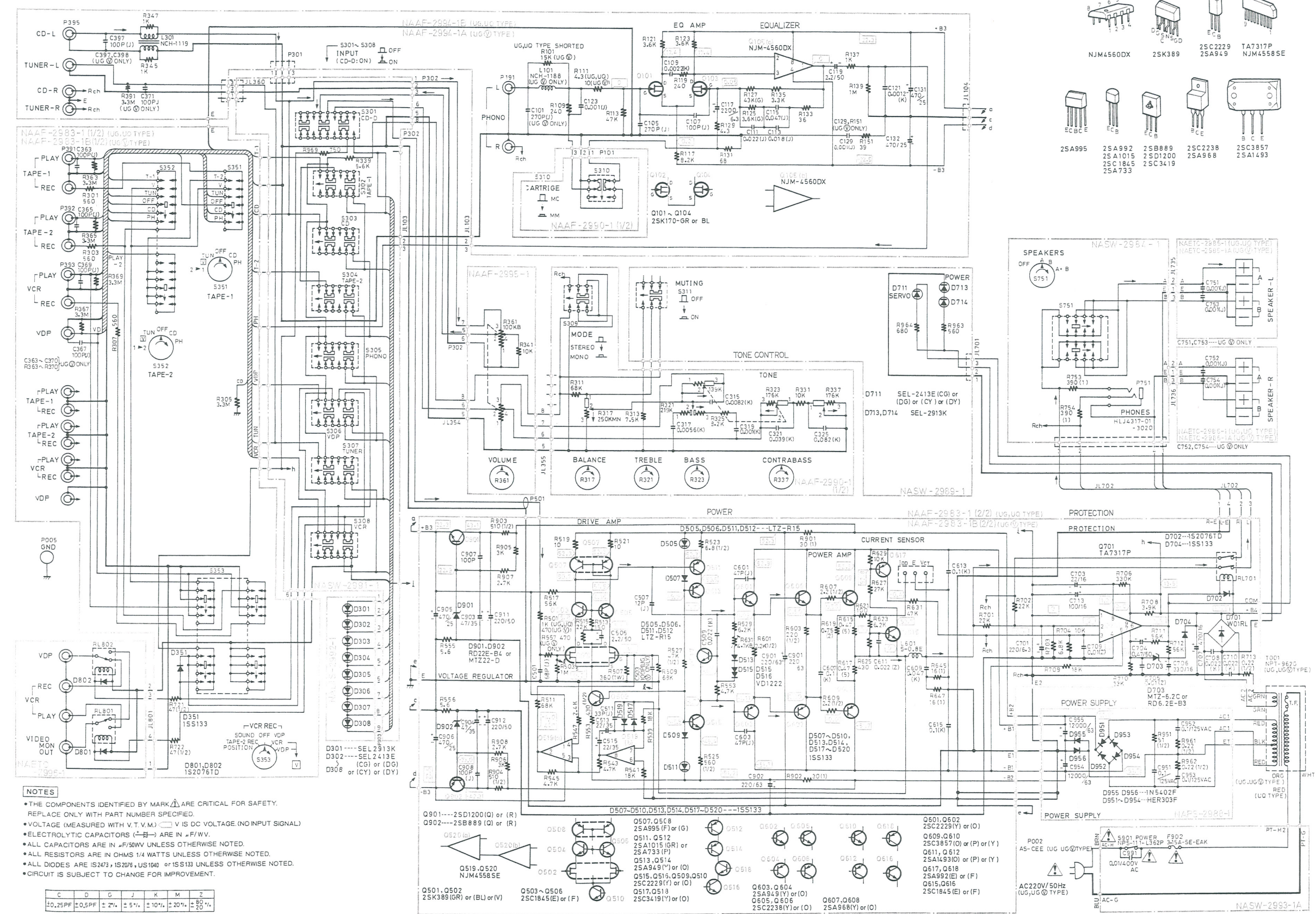
NASW-2989



NAAF-2990



SCHEMATIC DIAGRAM



NOTES

- THE COMPONENTS IDENTIFIED BY MARK ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH V.T.V.M.) IS DC VOLTAGE (NO INPUT SIGNAL).
- ELECTROLYTIC CAPACITORS () ARE IN μ F/V.V.
- ALL CAPACITORS ARE IN μ F/50V UNLESS OTHERWISE NOTED.
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- ALL DIODES ARE 1S243, 1S206, 1S1140, OR 1S1133 UNLESS OTHERWISE NOTED.
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

C	D	G	J	K	M	Z
$\pm 0.25\%$	$\pm 0.5\%$	$\pm 1\%$	$\pm 5\%$	$\pm 10\%$	$\pm 20\%$	$\pm 50\%$

251 32991
NCSW-2991

ONKYO

Top view of the NCD1S-2992 integrated circuit package. The package is rectangular with a central notch. It features eight square pins labeled D308, D307, D306, D305, D304, D303, D302, and D301. A central pin is labeled P303. The ONKYO logo and part number NCD1S-2992 are visible at the bottom.

[illegible]

25132996
NCETC-2996

D801 D802

J291

HL801 HL802

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