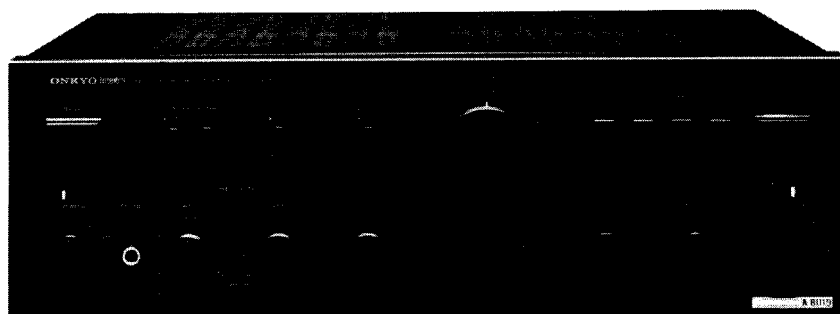




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# ONKYO SERVICE MANUAL


## SUPER SERVO INTEGRATED STEREO AMPLIFIER MODEL A-8019



### Silver and Black models

UDN, UD	120V AC, 60Hz
UG	220V AC, 50Hz
UW	120V or 220V AC, 50/60Hz

### 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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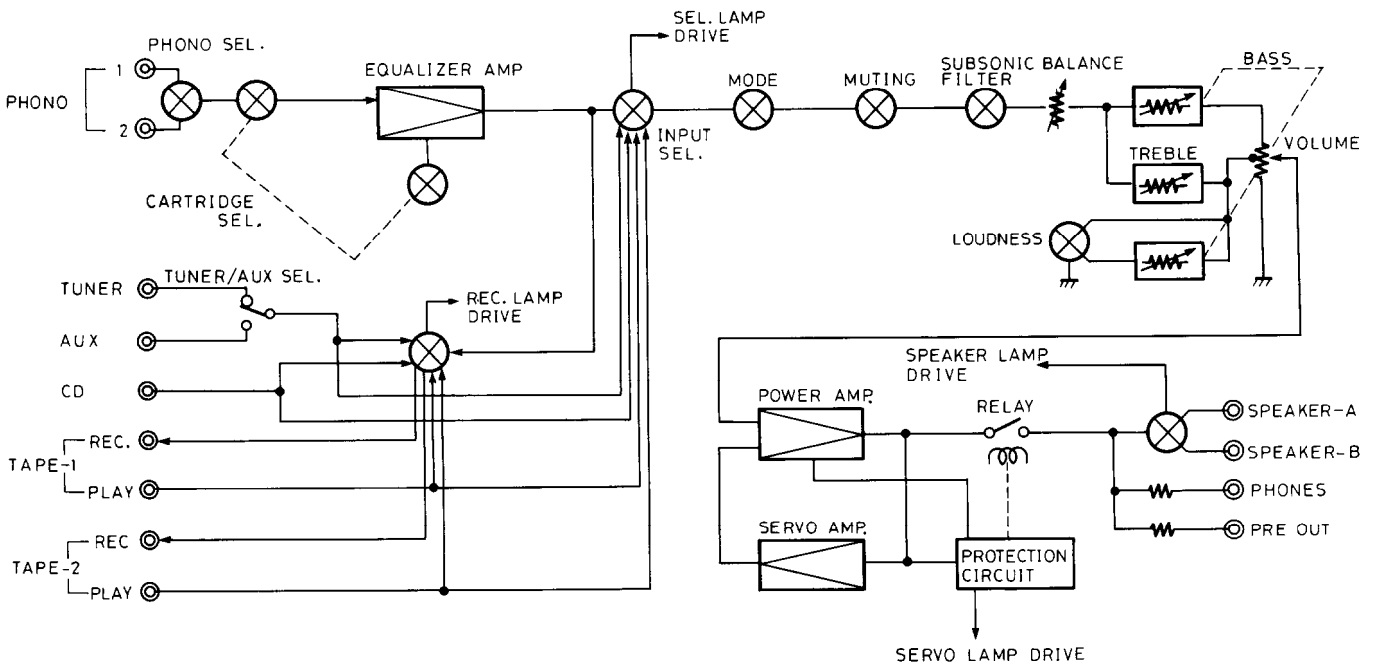
**ONKYO**<sup>®</sup>  
**AUDIO COMPONENTS**

# SPECIFICATIONS

Music Power Output:	2 x 240 watts at 4 ohms, 1kHz (DIN) 2 x 150 watts at 8 ohms, 1kHz (DIN)
Continuous Power Output:	2 x 170 watts at 4 ohms, 1kHz (DIN) 2 x 120 watts at 8 ohms, 1kHz (DIN)
Power Output:	100 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz, with no more than 0.012% THD
Total Harmonic Distortion:	0.012% at rated power
IM Distortion:	0.005% at rated power
Damping Factor:	50 at 8 ohms
Frequency Response:	2-50,000Hz ± 1dB
RIAA Deviation (MM):	20-20,000Hz ± 0.3dB
Sensitivity and Impedance:	Phono (MM): 2.5mV/50 kohms Phono (78EQ): 2.5mV/50 kohms Phono (MC): 160µV/100,220 ohms Tuner: 150mV/50 kohms Tape Play: 150mV/50 kohms Tape Rec: 150mV/3.3 kohms (phono) Pre Out: 1.5V/600 ohms
Phono Overload:	210mV RMS at 1kHz, 0.012% THD
Bass Control:	± 8dB at 70Hz
Treble Control:	± 8dB at 20,000Hz
Signal to Noise Ratio:	Phono (MM): 80dB (IHF A-202, 5mV input, 1 watt output) Phono (MC): 73dB (IHF A-202, 0.5mV input, 1 watt output) CD, Tuner & Tape: 84dB (IHF A-202, 0.5V input, 1 watt output)
Muting:	-20dB
Loudness Control:	+6dB at 70Hz, +5dB at 20kHz
Subsonic Filter:	15Hz, 20Hz (6dB/Oct.)
High Cut (TREBLE MIN):	6kHz (6dB/Oct.)
Semiconductors:	IC: 5 TR: 49 Diode: 32
Dimensions:	435(W) x 122(H) x 392(D) mm 17-1/8" x 4-13/16" x 15-7/16"
Weight:	11.8 kg. (26 lbs.)

Specifications and features are subject to change without notice.

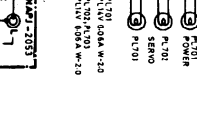
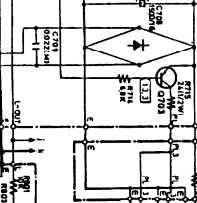
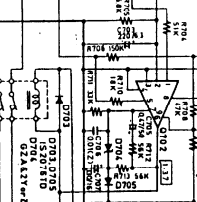
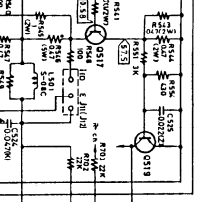
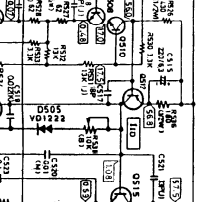
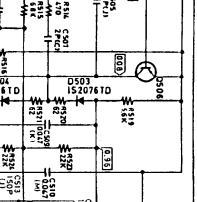
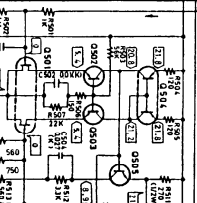
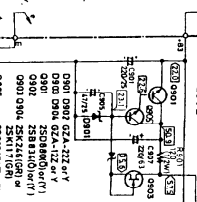
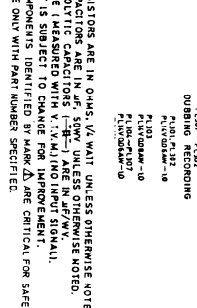
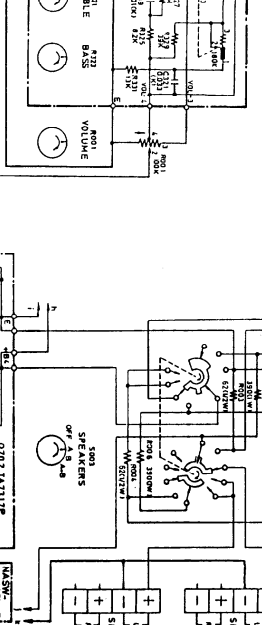
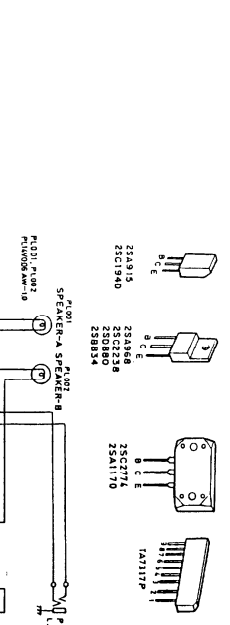
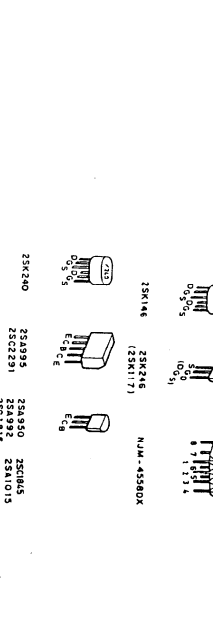
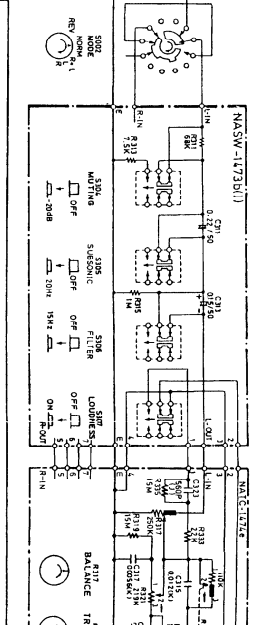
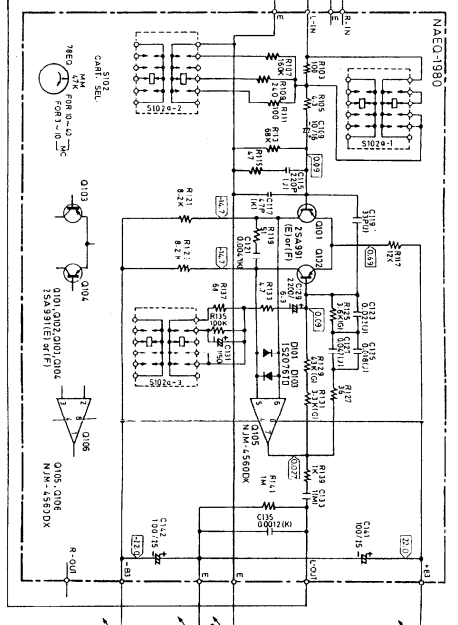
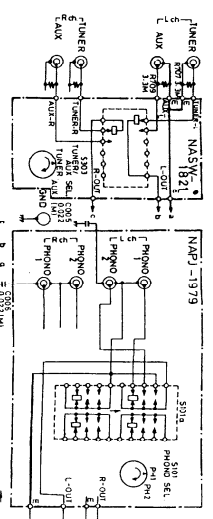
# BLOCK DIAGRAM



# SCHEMATIC DIAGRAM

(120V Model, 120V/220V Model)

A B C D E F G



NOTES:

1. ALL RESISTORS ARE IN OHMS, UNLESS OTHERWISE NOTED.  
 2. ALL CAPACITORS ARE IN P.F. UNLESS OTHERWISE NOTED.  
 3. ELECTROLYTIC CAPACITORS (E-C) ARE IN MICROFARADS.  
 4. CIRCUIT IS SUBJECT TO CHANGE WITHOUT NOTICE.  
 5. COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY.  
 6. REPLACE ONLY WITH PART NUMBER SPECIFIED.

ONKYO CORPORATION  
 P.O. BOX 1012  
 ANN ARBOR, MI 48106-1012  
 U.S.A.

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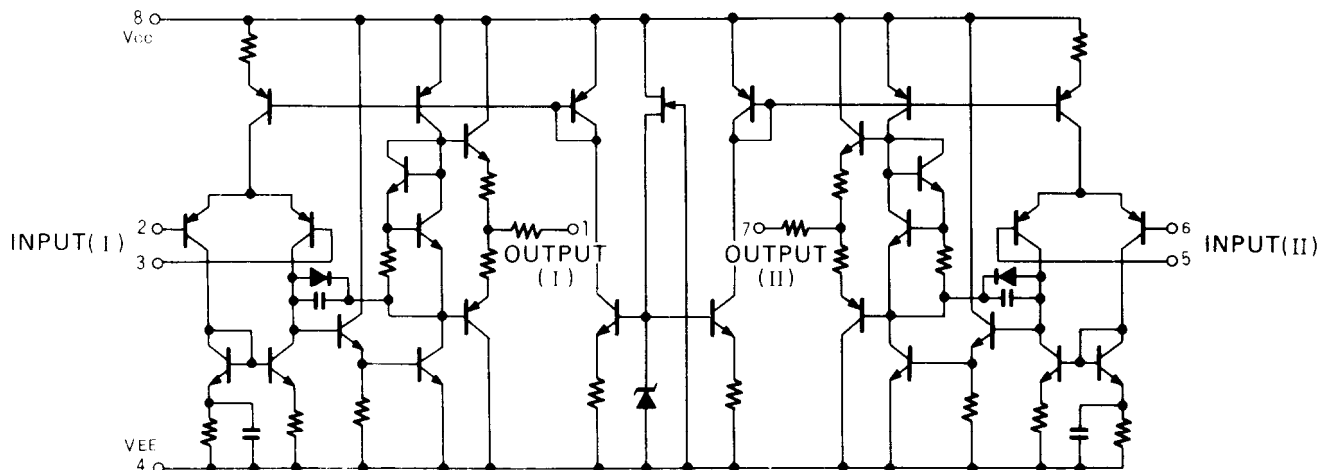
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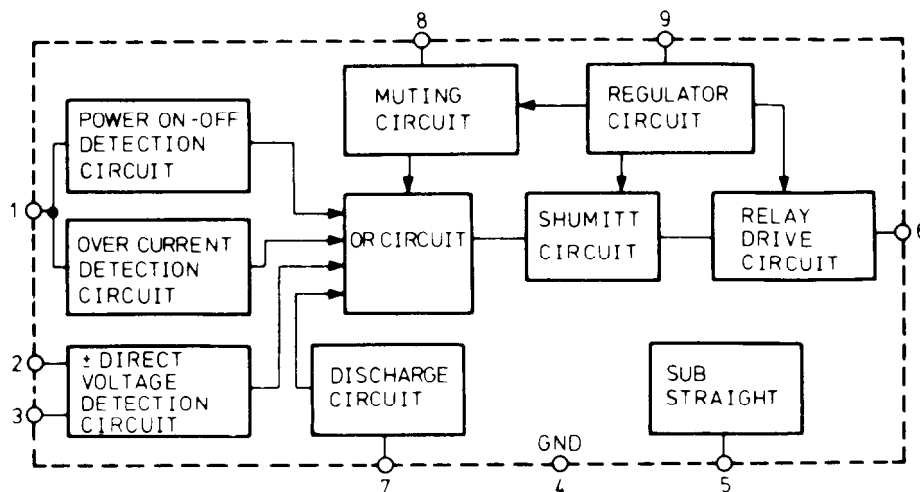
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 ANN ARBOR, MI 48106-1012  
 U.S.A.

## IC BLOCK DIAGRAM

NJM4558DX, NJM4560DX



TA7317P



## PRECAUTIONS

### 1. Replacing the fuses

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

CIRCUIT NO.	PARTS NO.	DESCRIPTION
F901	252052	7A (ST-6), AC fuse (120V model)
F901	252103	7A-TL, AC fuse (220V, 120V/220V model)
F902	252077	4A-SE-EAK, AC fuse (220V, 120V/220V model)
F701	252070	1A-SE-EAK, AC fuse (220V model)

## 2. Replacing the lamps

This unit uses the lamps listed below.

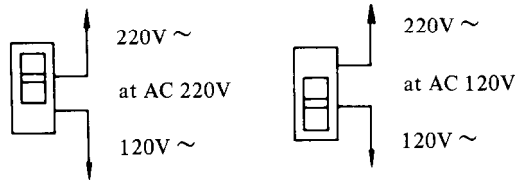
CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL001, PL002	210153	PL14V0.06AW-1.0
PL301, PL302	210155	PL14V0.06AW-1.0
PL303	210150	PL14V0.08AW-1.0
PL304, PL305	210146	PL14V0.06AW-1.0
PL306, PL307	210147	PL14V0.06AW-1.0
PL701	210172	PL14V0.06AW-2.0
PL702, PL703	210182	PL14V0.06AW-2.0
PL702	210173	PL14V0.08AW-2.0 (220V, 120V/220V model only)

## 3. Insulation resistance measurement

Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel. Specification; 500V more than 10 MΩ

## 4. Voltage selector (rear panel)

Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch with a screwdriver or similar instrument to the up or down position. Confirm that the switch has been moved all the way to the up or down before turning the power switch on. If there is no voltage selector switch on the unit you have purchased, it can only be used in areas where the power supply voltage is the same as that of the unit.



# MAIN AMPLIFIER ADJUSTMENT

Set the all control knobs to standard position

Standard knob position		SUBSONIC FILTER	OFF
INPUT SELECTOR	CD	BALANCE	Center
CARTRIDGE SELECTOR	MM	VOLUME	Minimum
PHONO SELECTOR	PHONO 1	LOUDNESS	OFF
REC. SELECTOR	OFF	BASS	DEFEAT
MODE	STEREO	TREBLE	DEFEAT
MUTING	OFF	SPEAKERS	A

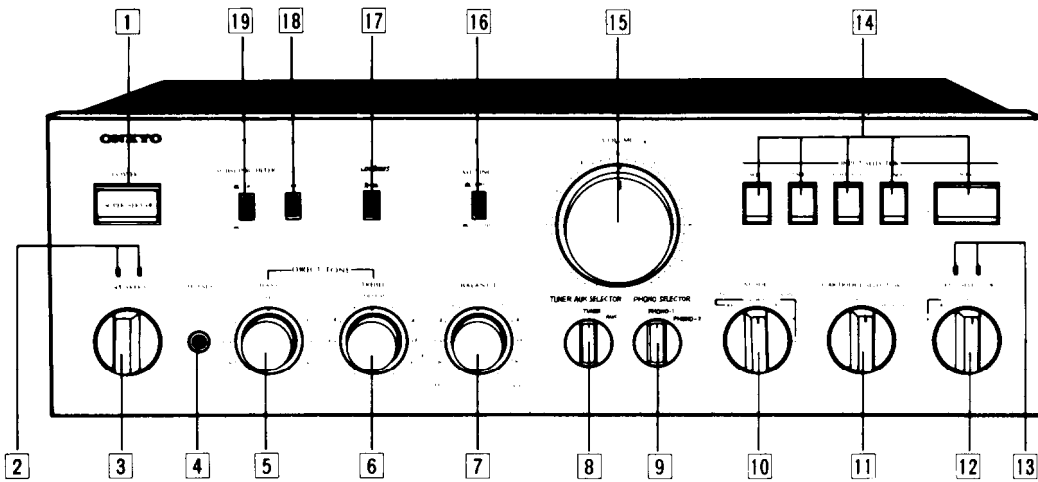
## IDLING CURRENT ADJUSTMENT

1. Connect the DC voltmeter between I1d and Vct terminals.
2. Adjust the voltage to 12mV ± 5mV with semi-fixed resistor of R538 and R638.

## NOTES.

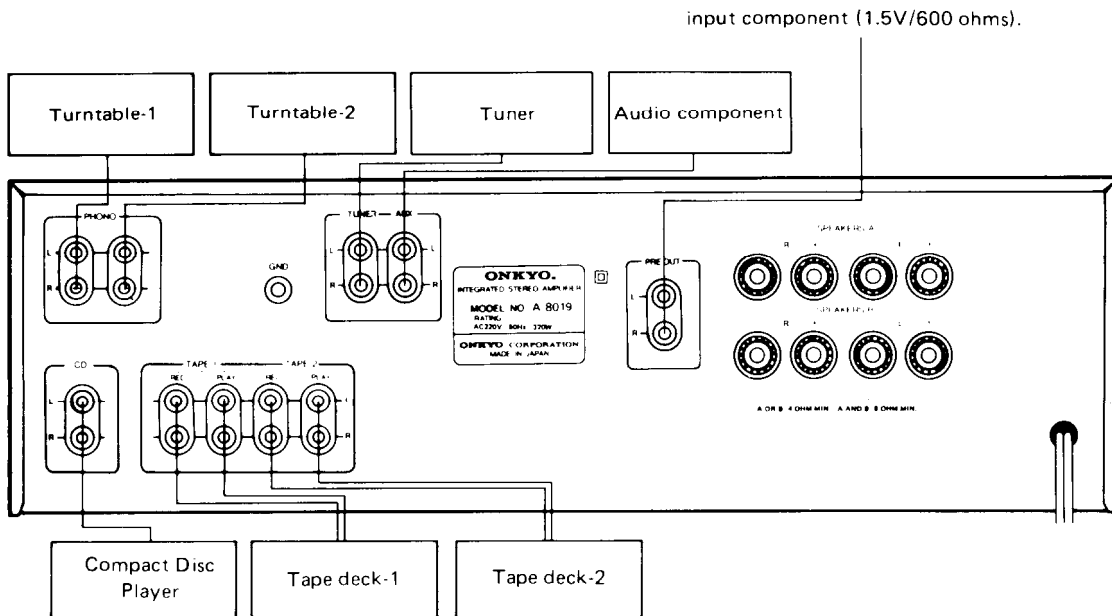
- Adjust after switching on for 5 minutes.
- VOLUME . . . . . Minimum
- LOAD . . . . . Open

# FRONT PANEL FACILITIES

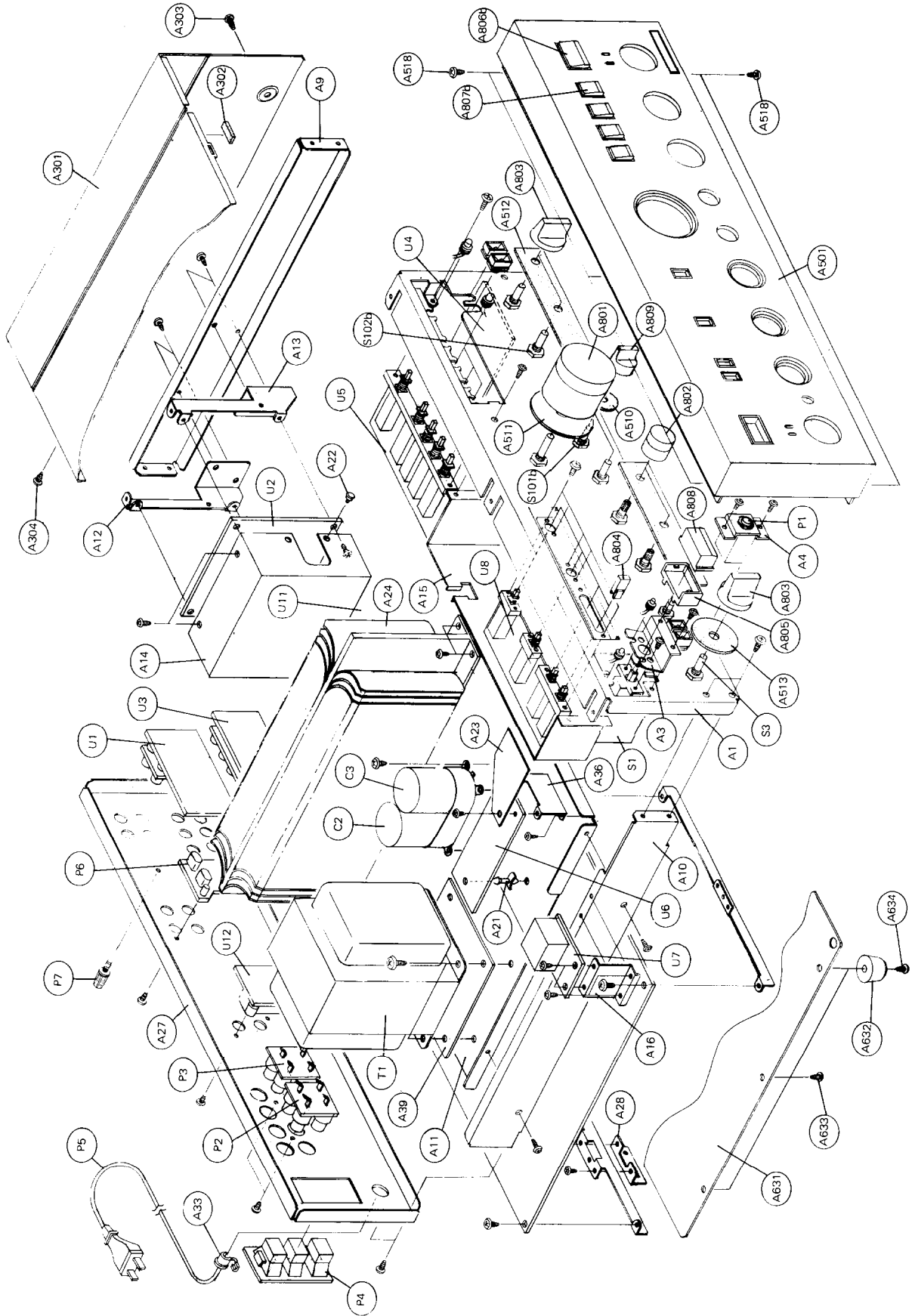


- |                                    |   |
|------------------------------------|---|
| 1. Power switch (POWER)            | 11. Cartridge selector (78EQ/MM/MC)           |
| 2. Speaker selector indicators     | 12. Recording source selector (REC. SELECTOR) |
| 3. Speaker selector (SPEAKERS)     | 13. Recording/Dubbing indicators              |
| 4. Headphones jack (PHONES)        | 14. Input selector switches (INPUT SELECTOR)  |
| 5. Bass control (BASS)             | 15. Volume control (VOLUME)                   |
| 6. Treble control (TREBLE)         | 16. Muting switch (MUTING)                    |
| 7. Balance control (BALANCE)       | 17. Loudness control                          |
| 8. Tuner/Aux Selector              | 18. Subsonic filter, 15Hz (SUBSONIC)          |
| 9. Phono selector (PHONO SELECTOR) | 19. Subsonic filter, 20Hz (SUBSONIC)          |
| 10. Mode selector (MODE)           | When both 18. and 19. are depressed 35Hz      |

# SYSTEM CONNECTIONS



**CHASSIS-EXPLODED VIEW**





## CHASSIS-EXPLODED VIEW-PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A1	27110205B	Front bracket	A807b	28321254	Knob, Selector	P6	25045028	AS-CEE-2, Power supply cable (G) (W)
A3	27140892	Bracket, power switch	A807c	28321385	Knob, Selector (Black)	P7	25060044	NPJ-4PRBL06, Input terminal
A4	27140817	Bracket, headphone	A808	27180142	Spring	P8	25108010	Ground terminal
A9	27115132B	Side bracket, right	A809	28321100	Knob, Power ass'y	F701	252070	LG-2C, Terminal (G) (W)
A10	27115089C	Side bracket, left	Q517, Q617	28321101	Knob, Power ass'y (Black)	F901	252052	1A-SE-EAK, Secondary fuse (G)
A11	27130320G	Bracket, power transformer	Q518, Q618	28321263	Knob, Phono selector	F901	252103	7A(ST-6), Primary fuse (D)
A12	27140890A	Bracket	Q518, Q618	28321550	Knob, Phono selector (Black)	F902	252077	7A-TL, Primary fuse (W)
A13	27140891A	Bracket	D505, D605	2201325	2SC2774 (G) or			4A-SE-EAK, Primary fuse (G) (W)
A14	28184229	Cover, equalizer	PL001, PL002	2201324	2SC2774 (V), Transistors			
A15	27130189A	Bracket	TI	2201335	2SA1170 (G) or			
A16	27140895	Bracket		2201334	2SA1170 (Y), Transistors	U1	250153	P107, Short terminal
A21	27140818	Bracket (G) (W)		4000068	VD1222, Varistor		12218579	NAPJ-1979, Phono selector
A22	27190164	Holder		210153	PL14V0.06AW-1.0, Lamps		12224579A	switch pc board ass'y
A23	880004	Rivet		230804	NPT-824D,			NAPJ-1979a, Phono selector
A24	28175072	Insulator plate		230805	Power transformer (D)			switch pc board ass'y (G)
A27	27160143	Radiator		230806	NPT-824C,			NAEQ-1980, Equalizer
A28	27120586	Back panel (D)		3500065A	Power transformer (G)			amplifier pc board ass'y
A301	27120587	Back panel (G)		3504176	NPT-824DG,			NAEQ-1980a, Equalizer
A302	27120588	Back panel (W)		5177024	Power transformer (W)			amplifier pc board ass'y (G)
A303	27140693	Bracket		441526204	0.01µF, AC400V, Capacitor			NAPJ-1468b, Input terminal
A304	270280	SR-4K-4, Strainrelief		441623914	20000µF, 69V, Elect. capacitor			pc board ass'y
A305	27140778	Bracket		25035201	N24RG100KBT30,			NASW-1469e, Rec. Selector
A306	27300601	Cover, capacitor for C1		25035201	Variable resistor			switch pc board ass'y
A307	27150167A	Insulator plate		25065123	625Ω, 1/2W,			NASW-1470, Input selector
A308	28184187	Top cover		25065123	Metal oxide film resistor			switch pc board ass'y
A309	28184234	Top cover (Black)		25030237	390Ω, 1W,			NAPS-1471i, Rectifier circuit
A310	28140020	Cushion		25030236	Metal oxide film resistor			pc board ass'y
A311	838440089	4TTB+8B (BC), Tapping screw		25030237	NPS-111-L165P,			NAPS-1471g, Rectifier circuit
A312	834430068	3TTS+6B (BC), Tapping screw		25065123	Power switch			pc board ass'y (G)
A313	12218121	Front panel ass'y		25030237	NPS-111L/A3,			NAPS-1471h, Rectifier circuit
A314	12198121	Front panel ass'y (Black)		25065123	Power switch (G) (W)			pc board ass'y (W)
A315	28140127	Cushion φ 32		25030246	NRSM-125-25F, Mode switch			NATB-1818c, Turbo filter pc board ass'y
A316	28140206	Cushion φ 60		25030245	NRSM-104-25BU, Cartridge selector, Operation section			NASW-1473b, Switch circuit
A317	28140532	Cushion, Tone		25045092	HLJ0607-01-020,			pc board ass'y
A318	28140185	Cushion φ 40		25060051	Stereo headphone jack			NASW-1473c, Switch circuit
A319	834430068	3TTS+6B (BC), Tapping screw		25050139	NTM-4PRMN20, Speaker terminal			NASW-1473e, Switch circuit
A320	27170108C	Bottom board		255112	AS-UC-4#18, Power supply cable (D)			NATC-1474e, Tone control
A321	27175009A	Bottom leg						pc board ass'y
A322	831430088	3TTW+8B (BC), Tapping screw						NASW-1821, Tuner/Aux.
A323	834130108	3TTS+12B (BC), Tapping screw						selector switch pc board ass'y
A324	28321248B	Knob, Volume						NAMA-2052, Power amplifier
A325	28321379B	Knob, Volume (Black)						pc board ass'y
A326	28321249	Knob, Balance						NAMA-2052a, Power amplifier
A327	28321380	Knob, Balance (Black)						pc board ass'y (G)
A328	28321251A	Knob, Speakers						NAPJ-2053, Pre. output terminal pc board ass'y
A329	28321381A	Knob, Speakers (Black)						
A330	28320836	Knob, Push						
A331	28321018	Knob, Push (Black)						
A332	28320828C	Knob, Base						
A333	28321253	Knob, Selector, Phono						
A334	28321383	Knob, Selector, Phono (Black)						
A335	27180141A	Spring						

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

NOTE  
(D): Only 120V model  
(G): Only 220V model  
(Black): Black model

# PRINTED CIRCUIT BOARD PARTS LIST

## INPUT TERMINAL PC BOARD (NAPJ-1468b)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	25045071	NPJ-2PDBL35, Input terminal
	25045072	NPJ-6PDBL36, Input terminal

## REC. SELECTOR SWITCH PC BOARD (NASW-1469e)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL301, PL302	210155	PL14V0.06AW-1.0, Lamp
C721	352741019	100 $\mu$ F, 16V, Elect. capacitor
R721	441521014	100 $\Omega$ , 1/2W, Metal oxide film resistor
R722	441523004	30 $\Omega$ , 1/2W, Metal oxide film resistor
S301	25030241	NRSM-166-25ZV, Remote switch, Operation section

## INPUT SELECTOR SWITCH PC BOARD (NASW-1470)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL303	210150	PL14V0.08AW-1.0, Lamp
PL304, PL305	210146	PL14V0.06AW-1.0, Lamps
PL306, PL307	210147	PL14V0.06AW-1.0, Lamps
R725	441522204	22 $\Omega$ , 1/2W, Metal oxide film resistor
S302	25035340	NPS-542-L304, Input selector switch

## RECTIFIER CIRCUIT PC BOARD (NAPS-1471i)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D912 ~ D922	223841	GP-30G, Diodes
F901a	250113	S-N5051, Fuse holder

## RECTIFIER CIRCUIT PC BOARD (NAPS-1471g)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D912 ~ D922	223841	GP-30G, Diodes
F902a	25050065	YSH403T, Fuse holder
	29360374	T4A/250V, Label

## RECTIFIER CIRCUIT PC BOARD (NAPS-1471h)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D912 ~ D922	223841	GP-30G, Diodes
F901a	250113	S-N5051, Fuse holder
	29360486	7A/125V, Label
F902a	25050065	YSH403T, Fuse holder
	29360374	T4A/250V, Label

## SWITCH CIRCUIT PC BOARD (NASW-1473b)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL701	210172	PL14V0.06AW-2.0, Lamp
PL702, PL703	210182	PL14V0.06AW-2.0, Lamp
C311, C312	352782299	0.22 $\mu$ F, 50V, Elect. capacitors
C313, C314	352781599	0.15 $\mu$ F, 50V, Elect. capacitors
R724	442526804	68 $\Omega$ , 1/2W, Metal oxide film resistor
S304, S307	25035266	NPS-122-L230, Switches
S305(S306)	25035269	NPS-222-L233, Switches

## SWITCH CIRCUIT PC BOARD (NASW-1473c)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL701	210172	PL14V0.06AW-2.0, Lamp
PL702	210173	PL14V0.08AW-2.0, Lamp
C311, C312	352782299	0.22 $\mu$ F, 50V, Elect. capacitors
C313, C314	352781599	0.15 $\mu$ F, 50V, Elect. capacitors

CIRCUIT NO.	PARTS NO.	DESCRIPTION
R724	442526804	68 $\Omega$ , 1/2W, Metal oxide film resistor
S304, S307	25035266	NPS-122-L230, Switches
S305(S306)	25035269	NPS-222-L233, Switch

## TONE CONTROL PC BOARD (NATC-1474e)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C315, C316	379121235	0.012 $\mu$ F, 50V, Capacitors, DEW
C317, C318	379125625	5600pF, 50V, Capacitors, DEW
C319, C320	379121025	0.001 $\mu$ F, 50V, Capacitors, DEW
C321, C322	379123335	0.033 $\mu$ F, 50V, Capacitors, DEW
R317	5148032	N16RGMC250KMN25, Balance control variable resistor
R321	5104076	N16RGM11C219K25, Treble control variable resistor
R323	5104075	N16RQM110K180K25, Bass control variable resistor
R001	5177024	N24RG100KBT30 Volume

## TURBO FILTER PC BOARD (NATB-1818c)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C51 ~ C53	380504745	0.47 $\mu$ F, 160V, Capacitors, CF
R53	441525104	51 $\Omega$ , 1/2W, Metal oxide film resistor
	27300609	Cover

## TUNER/AUX. SELECTOR SWITCH PC BOARD (NASW-1821)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S303	25030202	NRSM-122-15U, Switch

## PHONO SELECTOR SWITCH PC BOARD (NAPJ-1979)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S101a	25065100	NSS-4351, Remote switch
	25045069	NPJ-4PDBL34, Input terminal

## PHONO SELECTOR SWITCH PC BOARD (NAPJ-1979a)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
L101, L102	231056	NCH-1098, Coils
C101 ~ C108	372121014	100pF, 50V, Capacitors, ST
S101a	25065100	NSS-4351, Remote switch
	25045069	NPJ-4PDBL34, Input terminal

## EQUALIZER AMPLIFIER PC BOARD (NAEQ-1980)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q101 ~ Q104	2211783 or 2211782	2SA991(E) or 2SA991(F), Transistors
Q105, Q106	222570	NJM-4560DX, ICs
D101 ~ D104	223145	1S2076TD, Diodes
C109, C110	392841007	10 $\mu$ F, 16V, Elect. capacitors
C115, C116	372122214	220pF, 50V, Capacitors, ST
C117, C118	372124705	470pF, 50V, Capacitors, ST
C121, C122	379124725	4700pF, 50V, Capacitors, DEW
C123, C124	379122234	0.022 $\mu$ F, 50V, Capacitors, DEW
C125, C126	379121834	0.018 $\mu$ F, 50V, Capacitors, DEW
C127, C128	379124734	0.047 $\mu$ F, 50V, Capacitors, DEW
C129, C130	392822227	2200 $\mu$ F, 6.3V, Elect. capacitors
C131, C132	3500078	1 $\mu$ F, 50V, Elect. capacitors, SH
C133, C134	379121057	1 $\mu$ F, 50V, Capacitors, DEW
C135, C136	379121225	1200pF, 50V, Capacitors, DEW
C141, C142	392851017	100 $\mu$ F, 25V, Elect. capacitors
S102a	25065238	NSS-64101, Remote switch

**EQUALIZER AMPLIFIER PC BOARD (NAEQ-1980a)**

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q101 ~Q104	2211783 or 2211782	2SA991 (E) or 2SA991 (F), Transistors
Q105, Q106	222570	NJM-4560DX, ICs
D101 ~D104	223145	1S2076TD, Diodes
C109, C110	392841007	10 $\mu$ F, 16V, Elect. Capacitors
C111, C112	379121035	0.01 $\mu$ F, 50V, Capacitors, DEW
C115, C116	372122214	220pF, 50V, Capacitors, ST
C117, C118	372124705	470pF, 50V, Capacitors, ST
C121, C122	379124725	4700pF, 50V, Capacitors, DEW
C123, C124	379122234	0.022 $\mu$ F, 50V, Capacitors, DEW
C125, C126	379121834	0.018 $\mu$ F, 50V, Capacitors, DEW
C127, C128	379124734	0.047 $\mu$ F, 50V, Capacitors, DEW
C129, C130	392822227	2200 $\mu$ F, 6.3V, Elect. capacitors
C131, C132	3500078	1 $\mu$ F, 50V, Elect. capacitors, SH
C133, C134	379121057	1 $\mu$ F, 50V, Capacitors, DEW
C135, C136	379121225	1200pF, 50V, Capacitors, DEW
C141, C142	392851017	100 $\mu$ F, 25V, Elect. capacitors
S102a	25065238	NSS-64101, Remote switch

**POWER AMPLIFIER PC BOARD  
(NAMA-2052, NAMA-2052a)**

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q501, Q601	2211915 or 2211916	2SK240 (GR) or 2SK240 (BL)
Q502, Q503, Q507 Q508, Q514, Q602 Q603, Q607, Q608 Q614	2211255	2SC1815 (GR)
Q504, Q604	2211515 or 2211516	2SA995 (F) or 2SA995 (G)
Q505, Q506, Q509 Q605, Q606, Q609	2211455	2SA1015 (GR)
Q510, Q610, Q905	2211732 or 2211733	2SC1845 (F) or 2SC1845 (E)
Q511, Q611, Q906	2211792 or 2211793	2SA992 (F) or 2SA992 (E)
Q512, Q612	2211743 or 2211742	2SA915 (M) or 2SA915 (L)
Q513, Q613	2211763 or 2211762	2SC1940 (M) or 2SC1940 (L)
Q515, Q615	2200863 or 2200864	2SC2238 (O) or 2SC2238 (Y)
Q516, Q616	2200873 or 2200874	2SA968 (O) or 2SA968 (Y)
Q519, Q619	2211395 or 2211396	2SA970 (GR) or 2SA970 (BL)
Q703	2211504	2SA950 (Y)
Q901	2201073 or 2201074	2SD880 (O) or 2SD880 (Y)
Q902	2201243 or 2201244	2SB834 (O) or 2SB834 (Y)
Q903, Q904	2211945 or 2211315	2SK246 (GR) or 2SK117 (GR)
Q561, Q661	222502	NJM-4558DX
Q702	222584	TA7317P
D502 ~D604 D561 ~D662 D703, D705 D704	223145	1S2076TD
D706	2240972 or 2240973	GZA-6.2Y or GZA-6.2Z
D901, D902	223862 2241233 or 2241232	WL-01 GZA-22Z or GZA-22Y

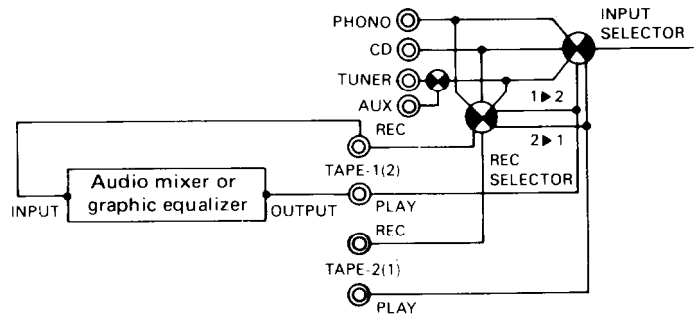
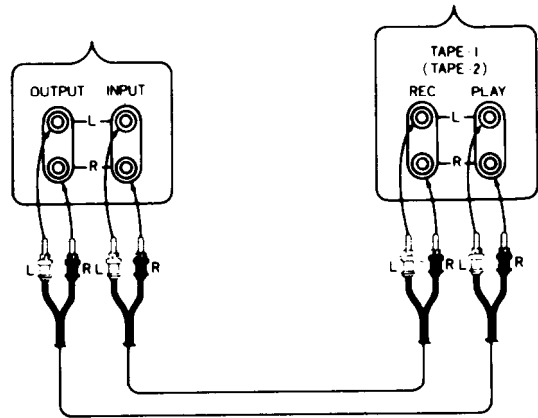
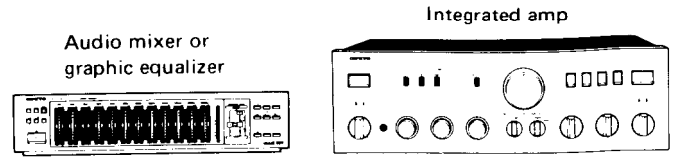
CIRCUIT NO.	PARTS NO.	DESCRIPTION
D903, D904	2241113 or 2241112	GZA-12Z or GZA-12Y
L501, L601	231015	Coils S-0.8C
C501, C601	372126805	Capacitors 68pF, 50V, ST
C502, C602	379121035	0.01 $\mu$ F, 50V, DEW
C504, C604	379122735	0.027 $\mu$ F, 50V, DEW
C509, C510, C609 C610	379124735	0.047 $\mu$ F, 50V, DEW
C515, C516, C615 C616	352722219	220 $\mu$ F, 6.3V, Elect.
C519, C619	379122235	0.022 $\mu$ F, 50V, DEW
C520, C620	379121037	0.01 $\mu$ F, 50V, DEW
C523, C623	379121047	0.1 $\mu$ F, 50V, DEW
C526, C626	372123314	330pF, 50V, ST
C529, C629	379124735	0.047 $\mu$ F, 50V, DEW
C561, C562, C661 C662	35272209	22 $\mu$ F, 25V, Elect.
C564, C664	372123305	33pF, 50V, ST
C703	352722219	220 $\mu$ F, 6.3V, Elect.
C704	352732209	22 $\mu$ F, 10V, Elect.
C705	352784799	0.47 $\mu$ F, 50V, Elect.
C707	352743319	330 $\mu$ F, 16V, Elect.
C708	352741529	1500 $\mu$ F, 16V, Elect.
C709	379122237	0.022 $\mu$ F, 50V, DEW
C901, C902	352753319	330 $\mu$ F, 25V, Elect.
C905, C906	352754709	47 $\mu$ F, 25V, Elect.
C907, C908	352772219	220 $\mu$ F, 63V, Elect.
R511, R611	442522714	Resistors 270 $\Omega$ , 1/2W, Metal oxide film
R526, R529, R626 R629	442524314	430 $\Omega$ , 1/2W, Metal oxide film
R527, R528, R627 R628	441526204	62 $\Omega$ , 1/2W, Metal oxide film
R536, R537, R636 R637	442521814	180 $\Omega$ , 1/2W, Metal oxide film
R538, R638	5225074	N10HR10KBDM, Semi-fixed
R540, R640	442521014	100 $\Omega$ , 1/2W, Metal oxide film
R541, R542, R641 R642	442520274	2.7 $\Omega$ , 1/2W, Metal oxide film
R543, R544, R643 R644	4000063	0.47 $\Omega$ , 2W, Metal plate
R545, R645	441720104	1 $\Omega$ , 2W, Metal oxide film
R546, R547, R646 R647	4000080	0.47 $\Omega$ , 5W, Metal plate
R549, R649	441620564	5.6 $\Omega$ , 1W, Metal oxide film
R550, R555, R650 R655	441622004	20 $\Omega$ , 1W, Metal oxide film
R715	442522404	24 $\Omega$ , 1/2W, Metal oxide film
R901, R902	441521214	120 $\Omega$ , 1/2W, Metal oxide film
Radiators	27160029-1	RAD-07B
Relay	25065036 or 25065236	NRL-4P3A-DC12-01 or NRL-4P3A-DC12-25

**PRE. OUTPUT TERMINAL PC BOARD (NAPJ-2053)**

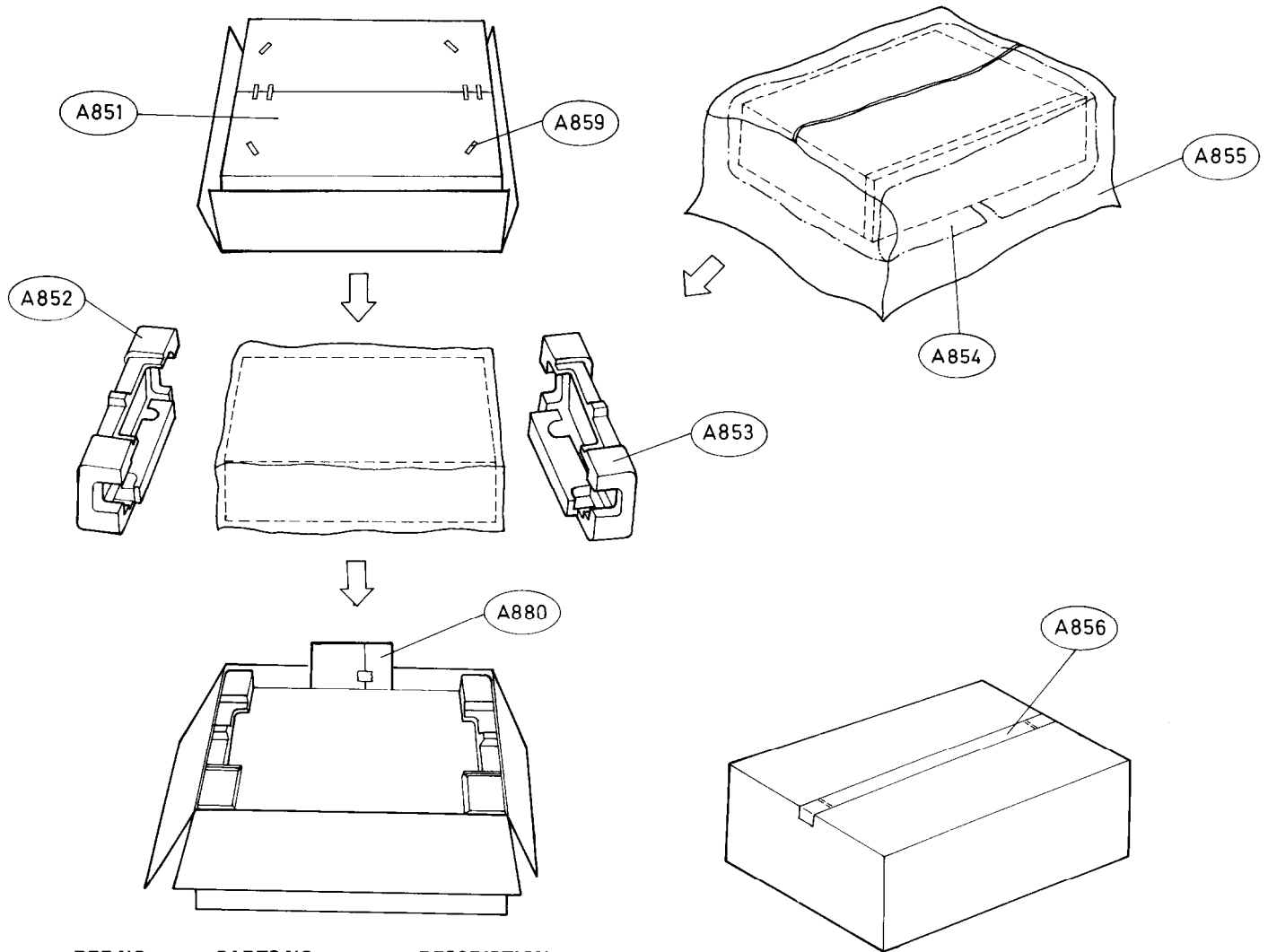
CIRCUIT NO.	PARTS NO.	DESCRIPTION
	25045071	NPJ-2PDBL35, Terminals, Pre. output

**Using a Mixing Console or Graphic Equalizer**

A mixing console or graphic equalizer can be connected to the TAPE-1 or TAPE-2 terminals as shown below. The input selector is then set to the TAPE 1 or 2 setting, depending on the terminals to which the mixing console or equalizer is connected and the recording source selector to the program source to be used with mixing or equalization. To perform mixing or equalization with a tape deck program, set the recording source selector to 2▶1 (or 1◀2) for mixing or equalizing the tape program from tape deck 2 (or tape deck 1).



## PACKING PROCEDRES



REF NO.	PARTS NO.	DESCRIPTION
A851	29050960	Master carton box
	29050961	Master carton box (Black)
A852	29090488A	Pad, left
A853	29090489	Pad, right
A854	29095012-1	500 x 800, Protection sheet
A855	29100038A	720 x 950, Poly bag
A856	260012	Damplon tape
A859	282301	Sealing hook
A880	Accessory bag ass'y	
	29340783	Instruction manual (D)
	29340784	Instruction manual (G) (W)
	29365006-6	Warranty card (U)
	29358002A	Service station list (U)
	29365010	Lable, bottom (U)
	29365011	Lable, top cover (U)
	29100006A	350 x 250, Poly bag
	29100002A	80 x 150, Poly bag (W)
	25055018	CV-K-1, Conversion plug (W)

### NOTE

- (U): Only U.S.A. model
- (G): Only 220V model
- (W): Only 120V/220V model
- (Black): Black model