


# ONKYO SERVICE MANUAL

## Integrated Stereo Amplifier MODEL A-8150

UD	120V AC, 60Hz
UG	220V AC, 50Hz
UQ	240V AC, 50Hz
UW	120V/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**  
**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.
Total Harmonic Distortion	0.06% at 60 watts
IM Distortion	0.06% at 60 watts
Damping Factor:	40 at 8 ohms
Frequency and Response:	15 – 30,000 Hz $\pm$ 1 dB
Sensitivity and Impedance	Phono (MM): 2.5 mV/50 kohms Phono (MC): 350 $\mu$ V/330 ohms Tuner/CD/AUX: 150 mV/50 kohms Tape/Play: 150 mV/50 kohms Tape/Rec: 150 mV/4.5 kohms (phono)
Phono Overload:	150 mV RMS at 1 kHz, 0.06% THD (MM)
Bass Control:	$\pm$ 10 dB at 100 Hz
Treble Control:	$\pm$ 10 dB at 10,000 Hz
Signal to Noise Ratio:	Phono: 83 dB (IHF A), 5 mV input CD & Tape: 95 dB (IHF A)
Loudness Control:	+7 dB at 70 Hz/+5 dB at 10 kHz
Muting:	-20 dB
Selective Tone Control	$\pm$ 15 dB at 50 Hz/ $\pm$ 6 dB at 10 kHz
<b>General</b>	
Power Supply:	European models: AC220V, 50Hz Canadian models: AC120V, 60Hz British & Australian models: AC240V, 50Hz Worldwide models: AC120V and 220V switchable, 50/60 Hz
Dimensions (W x H x D):	435 x 110 x 272 mm 17-1/8" x 4-5/16" x 10-11/16"
Weight:	7.0 kg, 15.4 lbs.

## PRECAUTIONS

### 1. Replacing the fuses

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

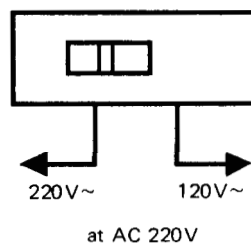
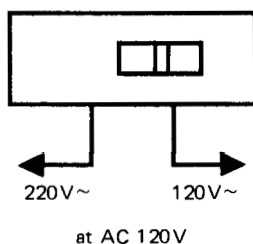
CIRCUIT NO.	PART NO.	DESCRIPTION
F901	252050	5A(ST-6), Primary fuse (120V model)
F902	252075 or 252075CC	2.5A-SE-EAK Primary fuse (220V, 240V, 120V/220V model)
F911, F912	252078 or 252078CC	5A-SE-EAK, Secondary fuse (220V, 240V model) 5A-SE-EAK, Secondary fuse (220V, 240V model)

### 2. Insulation resistance measurement (Only U.S.A. model)

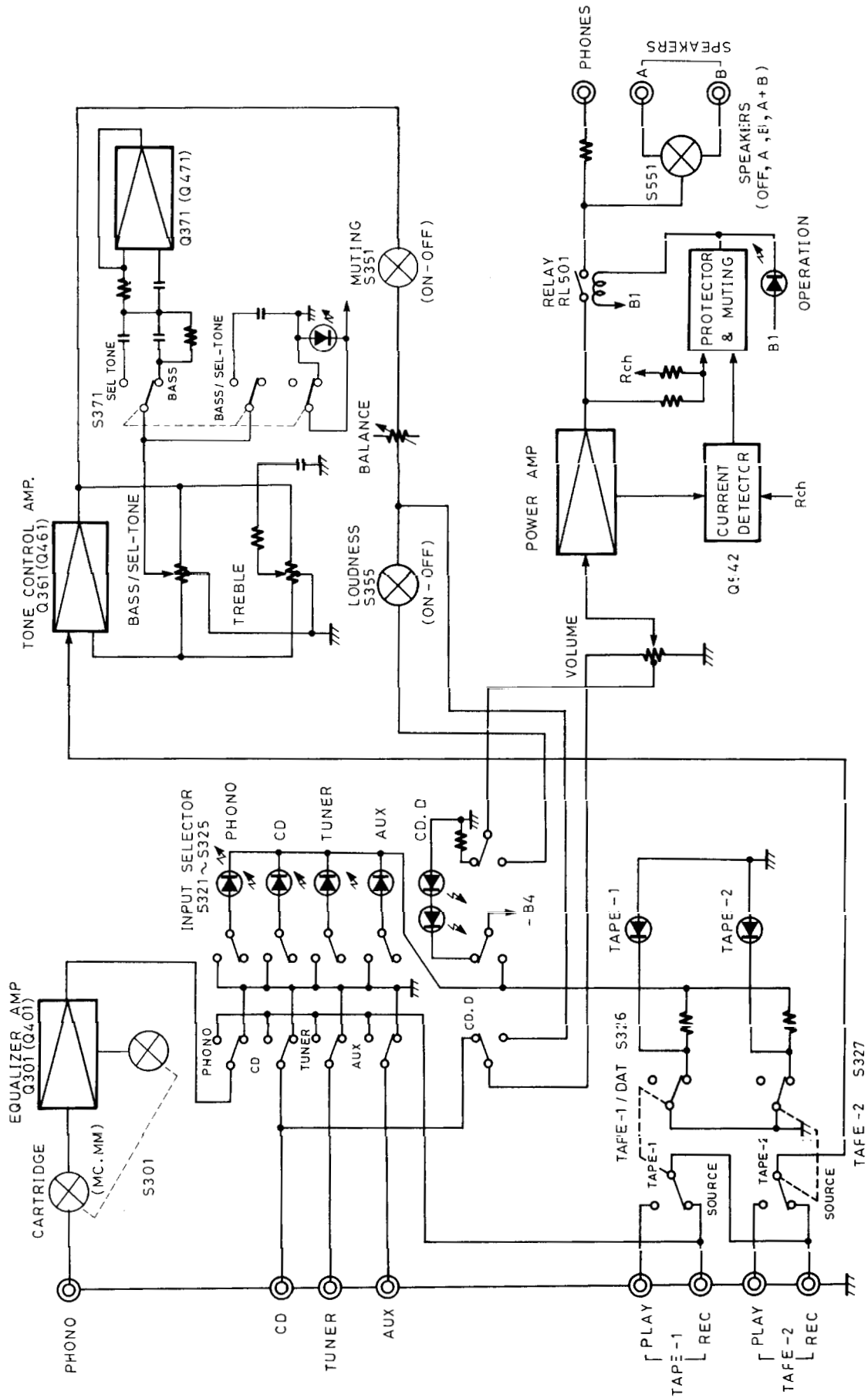
Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel. Specifications; More than 10 M $\Omega$  at 500V.

### 3. 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 right or left position. Confirm that the switch has been moved all the way to the right or left 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.

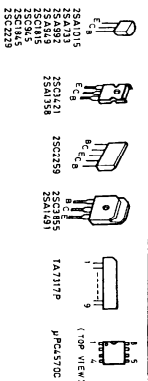
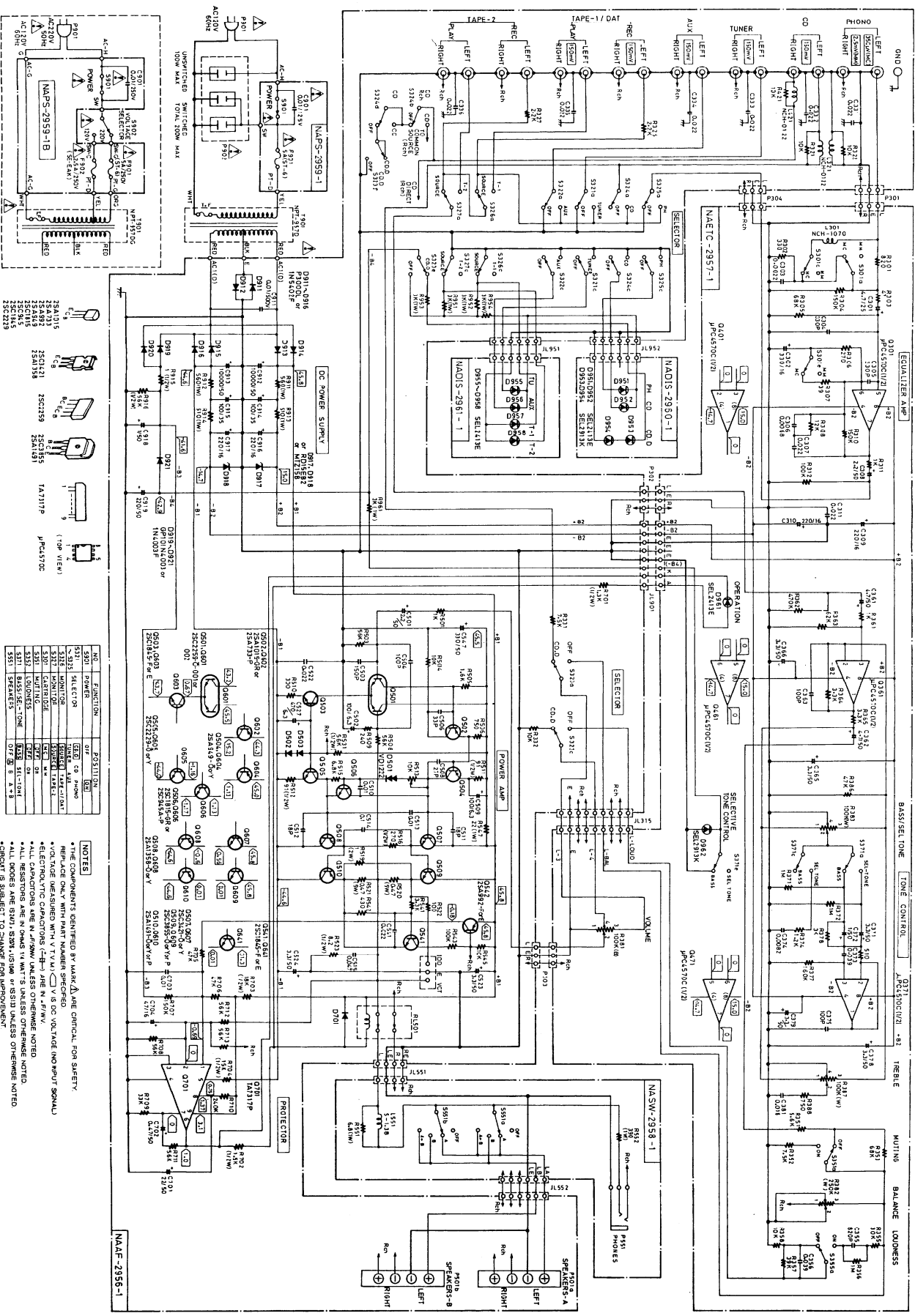


# BLOCK DIAGRAM



# SCHEMATIC DIAGRAM

(120V, 120V/220V Model)



NO.	FUNCTION	POSITION
1	POWER	POWER SUPPLY
2	SELECTOR	SELECTOR
3	OPERATION	OPERATION
4	SELECTOR	SELECTOR
5	SELECTOR	SELECTOR
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100	SELECTOR	SELECTOR

- NOTES**
- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY.
  - WAVELENGTH INDICATED BY λ IN CIRCLE (λ) IS DC VOLTAGE (NO INPUT SIGNAL).
  - ELECTROLYTIC CAPACITORS (C-E) ARE IN P.P.W.V.
  - ALL RESISTORS ARE IN Ω UNLESS OTHERWISE NOTED.
  - ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
  - ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
  - CROWN IS SUBJECT TO CHANGE FOR IMPROVEMENT.

## 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

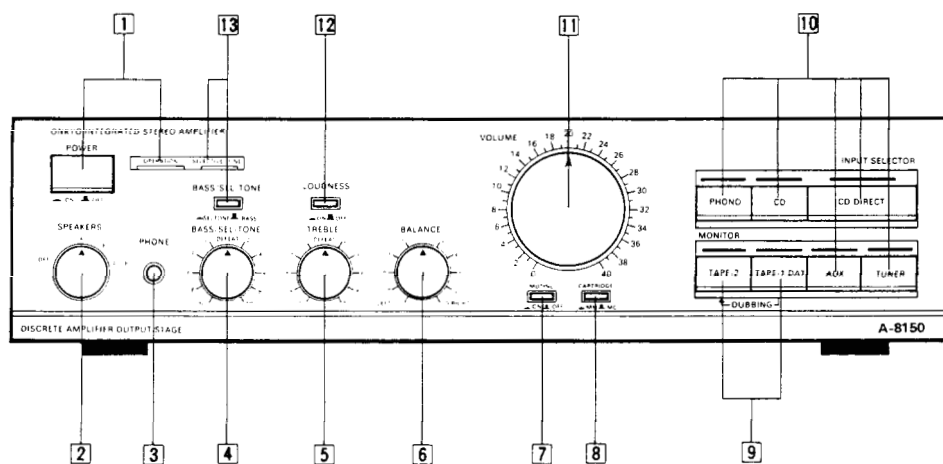
- 1) Turn ON the power switch, and leave the unit as is for about 5 minutes.
- 2) Adjust the semi-fixed resistor R513 (R613) so that the voltage between the terminals  $V_{CT}$  and  $I_{ID}$  of the printed circuit board NAAF-2956 is 7.5mV.

### 3. Operating check of protection circuit

- 1) When the power switch is turned ON.
  - After about 6 second, relay RL501 of the NAAF-2956 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 1.5V DC is input, the speaker relay go OFF.

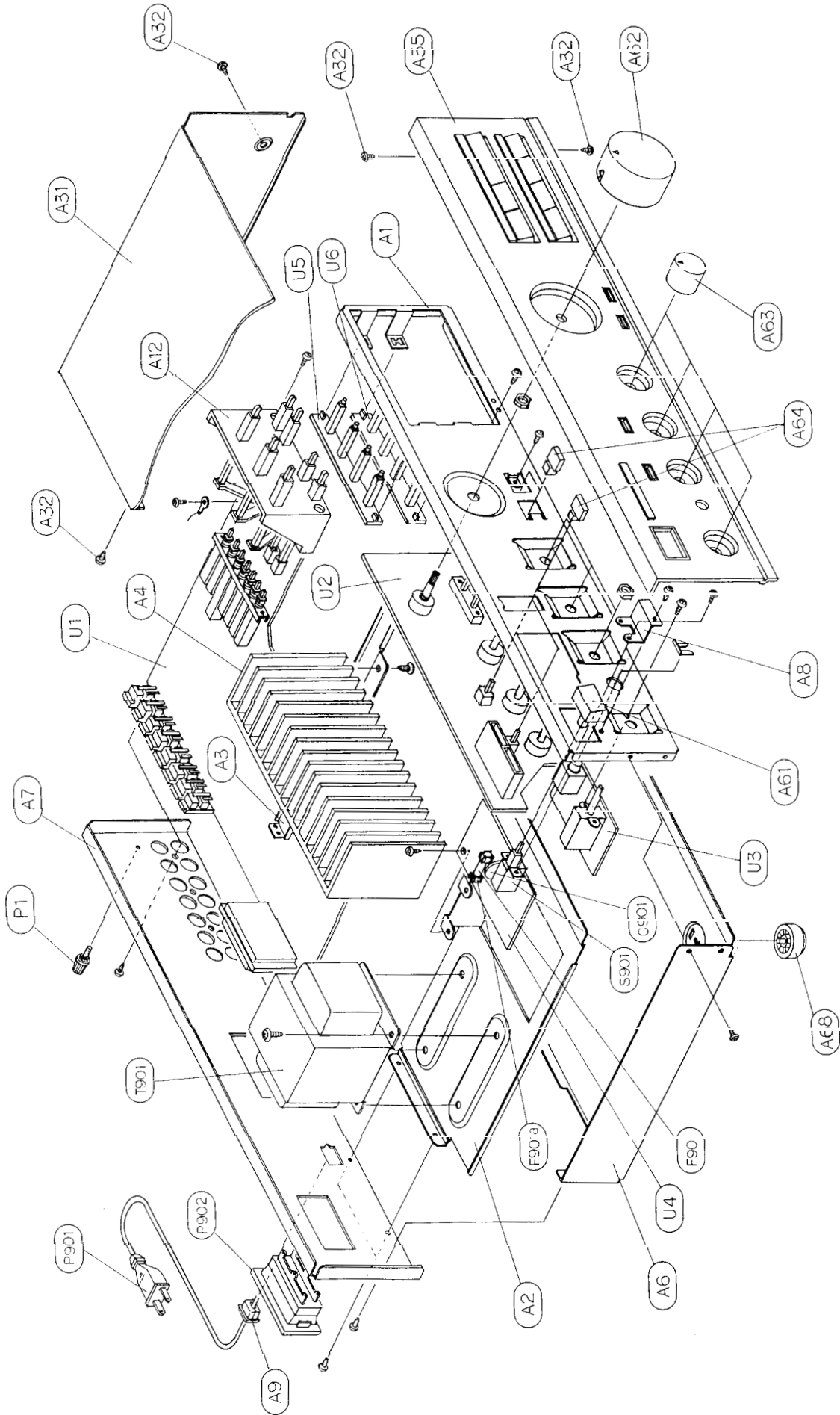
Caution: During this test, there should be absolutely no load connected and the load terminals must not be shorted.

## FRONT PANEL FACILITIES



1. Power switch and Operation indicator (POWER and OPERATION)
2. Speaker selector (SPEAKERS) OFF, A, B, A+B
3. Headphone jack (PHONES)
4. Bass control/Selective Tone control (BASS/SEL-TONE)
5. Treble control (TREBLE)
6. Balance control (BALANCE)
7. Audio muting (MUTING)
8. Cartridge selector (CARTRIDGE) MM, MC
9. Tape monitor switches and indicators (MONITOR) TAPE-1/DAT, TAPE-2
10. Input selector switches and indicators (INPUT SELECTOR) CD DIRECT, CD, PHONO, TUNER, AUX, TAPE-1/DAT, TAPE-2
11. Volume control (VOLUME)
12. Loudness control (LOUDNESS) ON/OFF
13. Selective tone switch (BASS/SEL-TONE) and Selective tone indicator (SELECTIVE TONE) BASS, SEL-TONE

# CHASSIS-EXPLODED VIEW



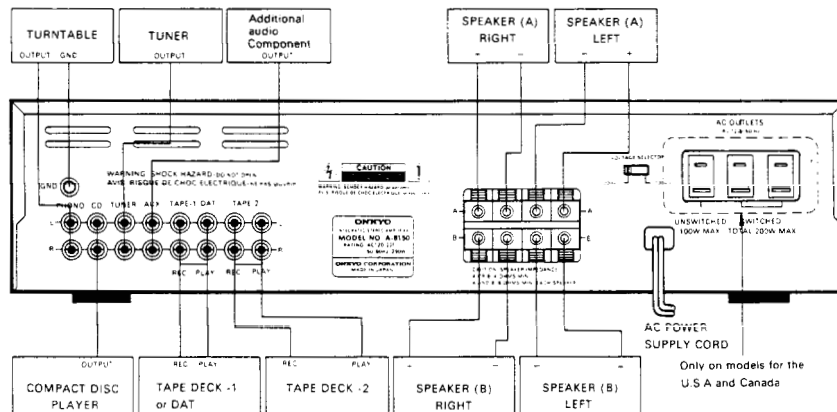
# CHASSIS-EXPLODED VIEW PARTS LIST

REF. NO.	PART NO.	DESCRIPTION				
A1	27110360A	FRONT BRACKET		F901a	252078CC	FUSE 5A-SE-EAK [G][A][B]
A2	27130471	BRACKET (PT)		F902a	250113	FUSE HOLDER
A3	27130472	BRACKET (H)			25050065	YSH403T, FUSE HOLDER
A4	27160204	HEATSINK		P1	25060044	[G][W][A][B]
A6	27100130A	CHASSIS	⚠	P2	25060092	TERMINAL (GROUND)
A7	27120989	BACK PANEL				TERMINAL (POWER SUPPLY)
A7	27120990	BACK PANEL [G]	⚠	T901	2300211	[G][W][A][B]
A7	27120992	BACK PANEL [W]	⚠	T901	2300212	NPT-957D, POWER TRANSFORMER
A7	27121013	BACK PANEL [A][B]				NPT-957G, POWER TRANSFORMER [G]
A8	27141124	BRACKET (POW)	⚠	T901	2300213	NPT-957DG, POWER TRANSFORMER [W]
A9	27300750	BUSHING (CORD)				NPT-957Q, POWER TRANSFORMER [A][B]
A12	27273070B	JOINT AS	⚠	T901	2300238	NAAF-2956-1, MAIN CIRCUIT PC BOARD ASS'Y
A31	28184361A	TOP COVER		U1	1A022556-1	NAAF-2956-1A, MAIN CIRCUIT PC BOARD ASS'Y [G][A][B]
A32	834430088	TAP-TIGHT SCREW 3TTS+8BBC		U1	1A022556-1A	NAETC-2957-1, EQUALIZER & TONE CONTROLE CIRCUIT PC BOARD ASS'Y
A35	1A021121	FRONT PANEL		U2	1A022557-1	NAETC-2957-1A, EQUALIZER & TONE CONTROLE CIRCUIT PC BOARD ASS'Y
A61	28322795A	KNOB (POW)		U2	1A022557-1A	NAETC-2957-1A, EQUALIZER & TONE CONTROLE CIRCUIT PC BOARD ASS'Y [G][A][B]
A62	28323022	KNOB (VOL)		U3	1A022558-1	NASW-2958-1, SPEAKER SWITCH CIRCUIT PC BOARD ASS'Y
A63	28323024	KNOB (TONE)		U4	1A022559-1	NAPS-2959-1, POWER SWITCH CIRCUIT PC BOARD ASS'Y
A64	28323026A	KNOB (PUSH)		U4	1A022559-1A	NAPS-2959-1A, POWER SWITCH CIRCUIT PC BOARD ASS'Y [G][A][B]
A68	27175142	LEG		U4	1A022559-1B	NAPS-2959-1B, POWER SWITCH CIRCUIT PC BOARD ASS'Y [W]
Q509, Q609	2201703 or 2201704 or 2201706	2SC3855-O or 2SC3855-Y or 2SC3855-P		U5	1A022560-1	NADIS-2960-1, DISPLAY LED PC BOARD ASS'Y
Q510, Q610	2201693 or 2201694 or 2201696	2SA1491-O or 2SA1491-Y or 2SA1491-P		U6	1A022561-1	NADIS-2961-1, DISPLAY LED PC BOARD ASS'Y
⚠ S901	25035398	POWER SWITCH, NPS-111-L362P				
⚠ S902	25065123	SLIDE SWITCH, NSS-1258P [W]				
⚠ C901	3500065A	0.01μF, AC400V/125V				
⚠ P901	253123 or 253136 or 253140 or 253146	AC CORD AS-UC6-#18 AC CORD AS-UC6-#18 AC CORD AS-UC6-#18 AC CORD AS-UC6-#18				
⚠ P901	253130A or 253128B	AC CORD AS-CEE or [G] [W] AC CORD AS-CEE [G] [W]				
⚠ P901	253118	AC CORD AS-SAA [A]				
⚠ P901	253104 or 253105 or 728320 or 728328	AC CORD C 2.5BS2 or [B] AC CORD C 2.5BS2 or [B] 2-0.75BS16 BLK/GRY or [B] 2-0.75BS16 BLK/GRY [B]				
⚠ P902	25050293	AC OUTLET NSCT-6P120				
⚠ F901	252050	FUSE 5A ST-6				
⚠ F902	252075 or 252075CC	FUSE 2.5A-SE-EAK or [G][W][A][B] FUSE 2.5A-SE-EAK [G][W][A][B]				
F911, F912	252078 or	FUSE 5A-SE-EAK or [G][A][B]				

NOTE: [N]: Only U.S.A. model  
 [A]: Only Australian model  
 [B]: Only British model  
 [G]: Only 220V model  
 [W]: Only 120V/220V model

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

## SYSTEM CONNECTIONS







## DISPLAY LED PC BOARD (NADIS-2961-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Resistors</b>		
R381, (R481)	5104174	N16RGH100KBT20, Variable
R382	5104192	N16RHC250KW25Z, Variable
R383, (R483)	5104196	N16RGHC100KWT25Z, Variable
R387, (R487)		
<b>Switch</b>		
S301, (S351)	25035561	NPS-122-162-L523
S352	25035537	NPS-122-L499
S371	25035560	NPS-162-L522
<b>Sockets</b>		
P301, P304	2000557	NSAS-6P513
<b>Holder</b>		
	27190529	(LED-2)
<b>Diodes</b>		
D955~D958	225137CG or 225137DG or 225137DY	SEL2413ECG or SEL2413EDG or SEL2413EDY
<b>Holder</b>		
	27190530	(LED-4)
NOTE	[G]: Only 220V Model [Q]: Only 240V Model [W]: Only 120V/220V Model	

## SPEAKER SWITCH CIRCUIT PC BOARD (NASW-2958-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Coils</b>		
L551, L651	231001S	S-1.3B
<b>Resistors</b>		
R551, R651	441620684F	6.8Ω, 1W, Metal oxide film
R552, R652	441623914F	390Ω, 1W, Metal oxide film
<b>Switch</b>		
S551	25030290	NRSF-144-25SS
<b>Terminal</b>		
P551	25045164	HLJ-4317-01-3020, Phones

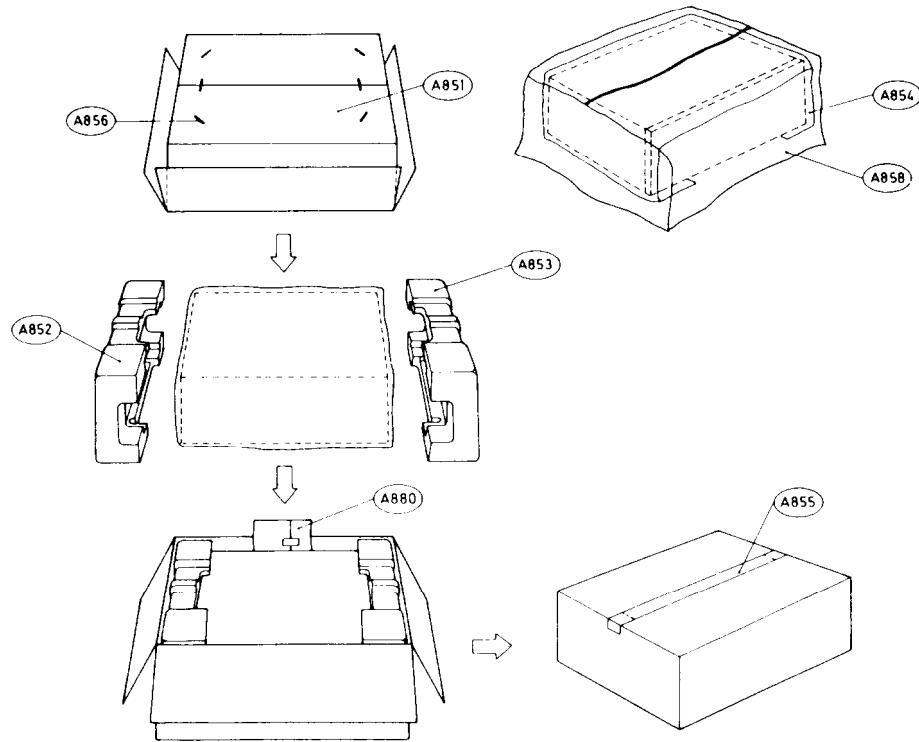
## POWER SWITCH PC BOARD (NAPS-2959-1, NAPS-2959-1A, NAPS-2959-1B) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Capacitor</b>		
C901	3500065A	0.01μF, AC400V/125V
<b>Terminal</b>		
P2	25060092	NTM-1S33 [G] [Q] [W]
<b>Switch</b>		
S901	25035398	NPS-111-L362P
<b>Fuse holder</b>		
F901a	250113	SN5051
F902a	25050065	YSH403T [G] [Q] [W]
<b>Label</b>		
	29360626-1	(Fuse)

## DISPLAY LED PC BOARD (NADIS-2960-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Diodes</b>		
D951, D952	225137CG or 225137DG or 225137DY	SEL2413ECG or SEL2413EDG or SEL2413EDY
D953, D954	225142	SEL2913K
<b>Holder</b>		
	27190530	(LED-4)

# PACKING PROCEDURES



REF. NO.	PART NO.	DESCRIPTION
A851	29051521	MASTER CARTON BOX
A852	29090987	PAD, LEFT
A853	29090988	PAD, RIGHT
A854	29095012-1	PROTECTION SHEET
A855	260012	DAMPLON TAPE
A856	282301	SEALING HOOK
A858	29100063	750X580, POLY BAG
A880	ACCESSORY BAG ASS'Y	
	29341148	INSTRUCTION MANUAL
	29341149	INSTRUCTION MANUAL [G] [W] [Q]
	29341158	INSTRUCTION MANUAL, 1 [G] [W]
	29365019	WARRANTY CARD [U]
	29358002E	SERVICE STATION LIST [U]
	29100006A	350X250, POLY BAG
	25055018	CV-K-1, CONVERSION PLUG [W]

NOTE [U]: ONLY U.S.A. MODEL  
 [G]: ONLY 220V MODEL  
 [Q]: ONLY 240V MODEL  
 [W]: ONLY 120V/220V MODEL