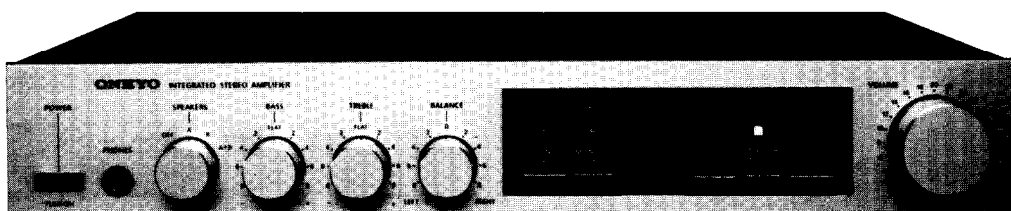


# ONKYO® SERVICE MANUAL

## INTEGRATED STEREO AMPLIFIER MODEL A-05



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**ONKYO®**  
**AUDIO COMPONENTS**

## SPECIFICATIONS

**Continuous Power**

**Output:** 20 watts per channel min. RMS' at 8 ohms both channels driven, from 40 Hz to 20 kHz, with no more than 0.08% THD

**Total Harmonic**

**Distortion:** 0.08% at rated power

**IM Distortion:** 0.08% at rated power

**Damping Factor:** 40 at 8 ohms.

**Frequency Response:** 15 – 30,000 Hz  $\pm 1$  dB

**Sensitivity and**

**Impedance:** Phono: 2.5 mV/50 kohms  
 AUX/Tuner: 150 mV/50 kohms  
 Tape Play: 150 mV/50 kohms  
 Tape Rec: 150 mV/3.5 kohms (Phono)

**Phono Overload:** 150 mV RMS at 1 kHz, 0.08% THD.

**Bass Control:**  $\pm 7$  dB at 100 Hz

**Treble Control:**  $\pm 8$  dB at 10,000 Hz

**Signal to Noise Ratio: Phono:** 75 dB (IHF A-202, 5 mV input, 1 watt output)

**Tuner & Tape:** 80 dB (IHF A-202, 0.5 V input, 1 watt output)

**Loudness:** +6 dB at 70 Hz  
 +6 dB at 10 kHz

**General**

**Power Supply:** AC 220 V 50 Hz (G model)  
 AC 120 V 60 Hz (D model)  
 AC 120/220 V, 50/60 Hz (Universal model)  
 British and Australian model AC 240 V 50 Hz

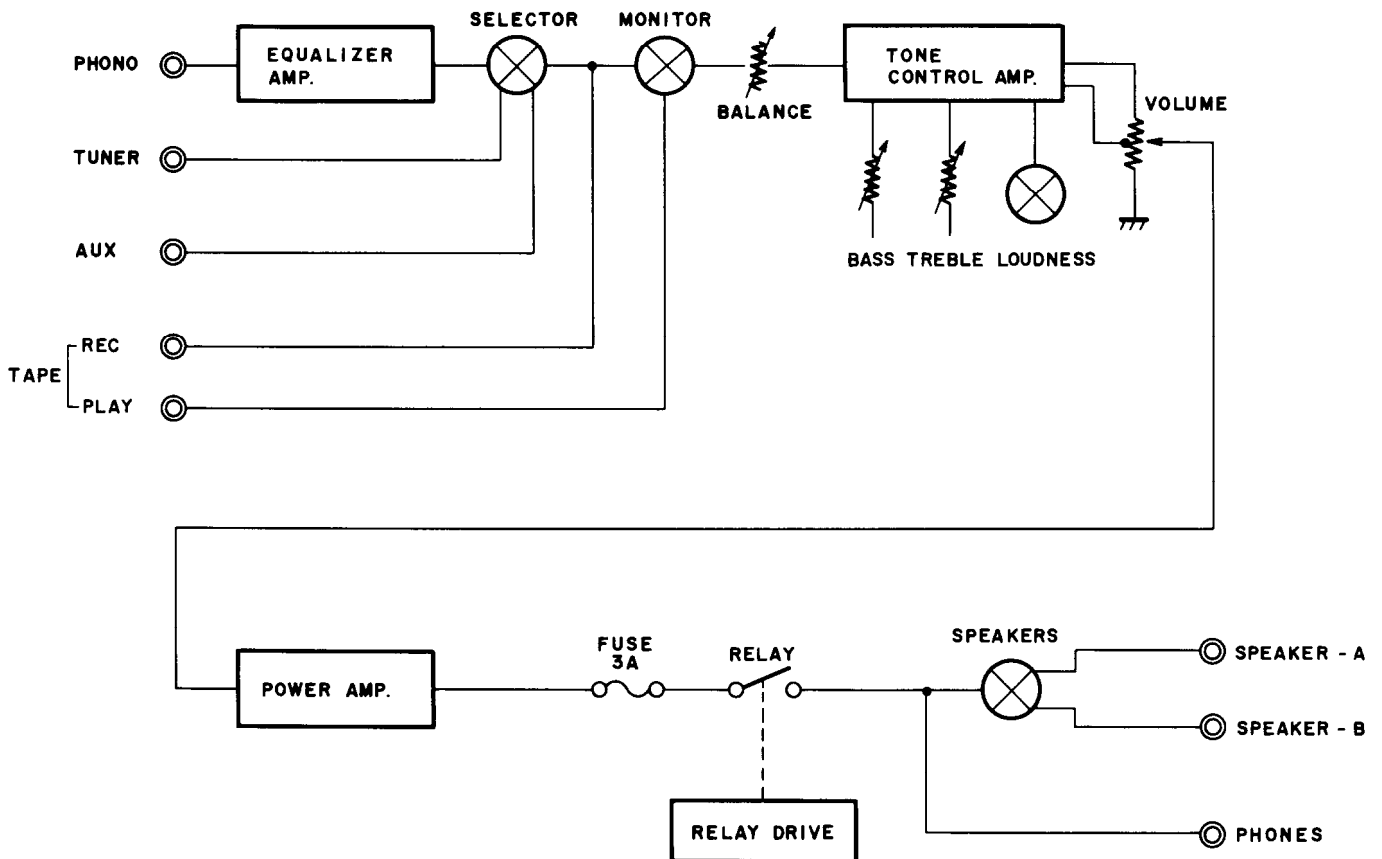
**Semiconductors:** 2 ICs, 2 transistors, 8 diodes, 5 LEDs

**Dimensions:** 418(W) x 72(H) x 281(D) mm  
 16-1/2" x 2-7/8" x 11"

**Weight:** 5.4 kg, 11.9 lbs.

\* Specifications and features are subject to change without notice.

## BLOCK DIAGRAM



## PRECAUTIONS

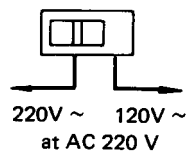
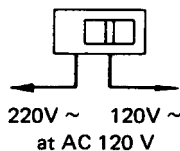
### 1. For continued protection against fire hazard, replace only with same type and same rating fuse.

CIRCUIT NO.	PARTS NO.	DESCRIPTION
F901	252047	2.5A (ST-6), AC fuse (D)
F901	252073	1.6A-SE-EAK, AC fuse (G/Q)
F911, F912	252077	4A-SE-EAK, AC fuse (G/Q)
F901	252025	2.5A-T, AC fuse (W)
F902	252073	1.6A-SE-EAK, AC fuse (W)
F501, F601	252006	3A (SS-2), Speaker protection fuse

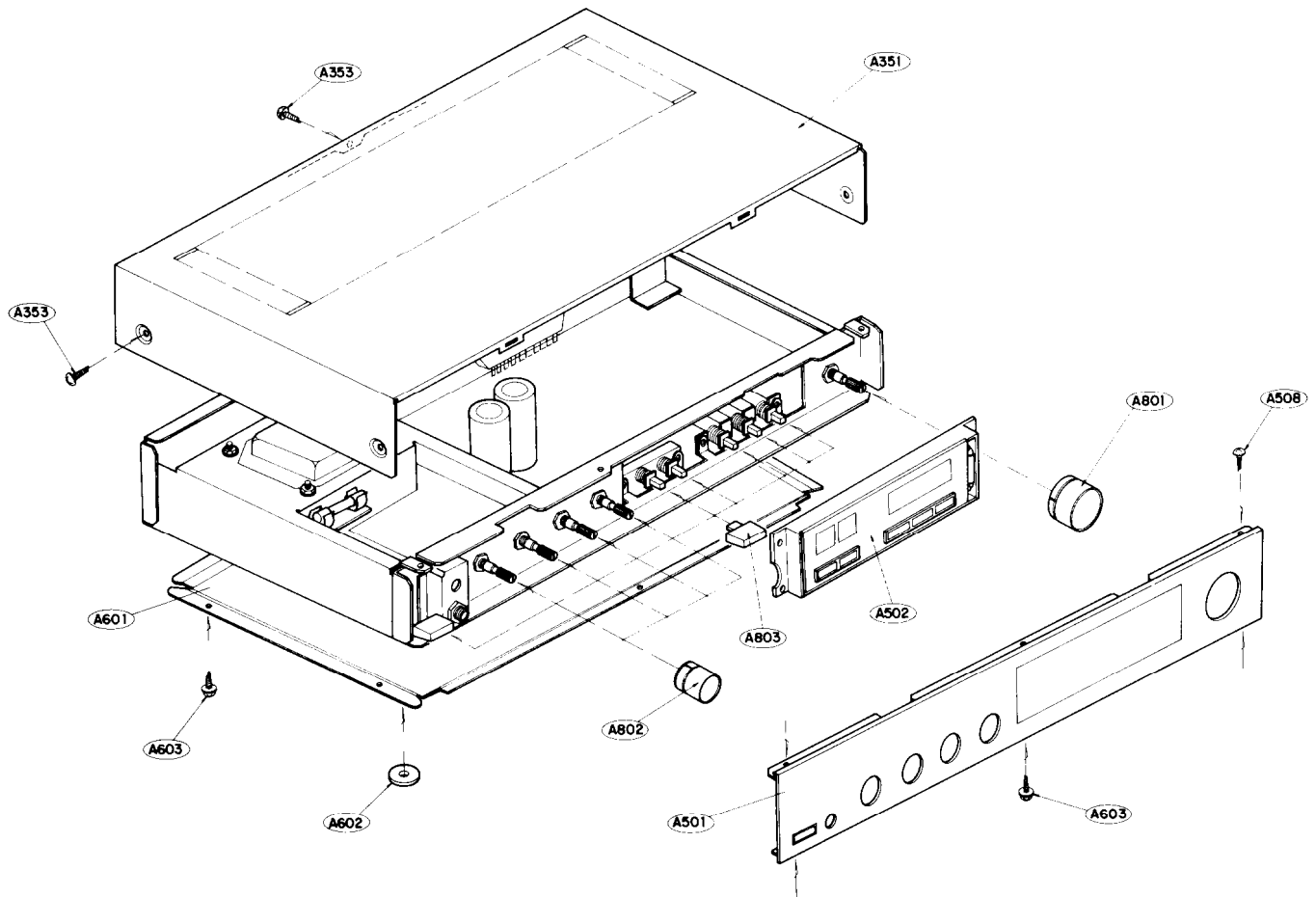
### 2. Replacement for differential, driver, complementary and power amplifier transistors, if necessary, must be made from the same beta ( $h_{FE}$ ) group as the original type.

### 3. Voltage Selector (rear panel)

Some 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.

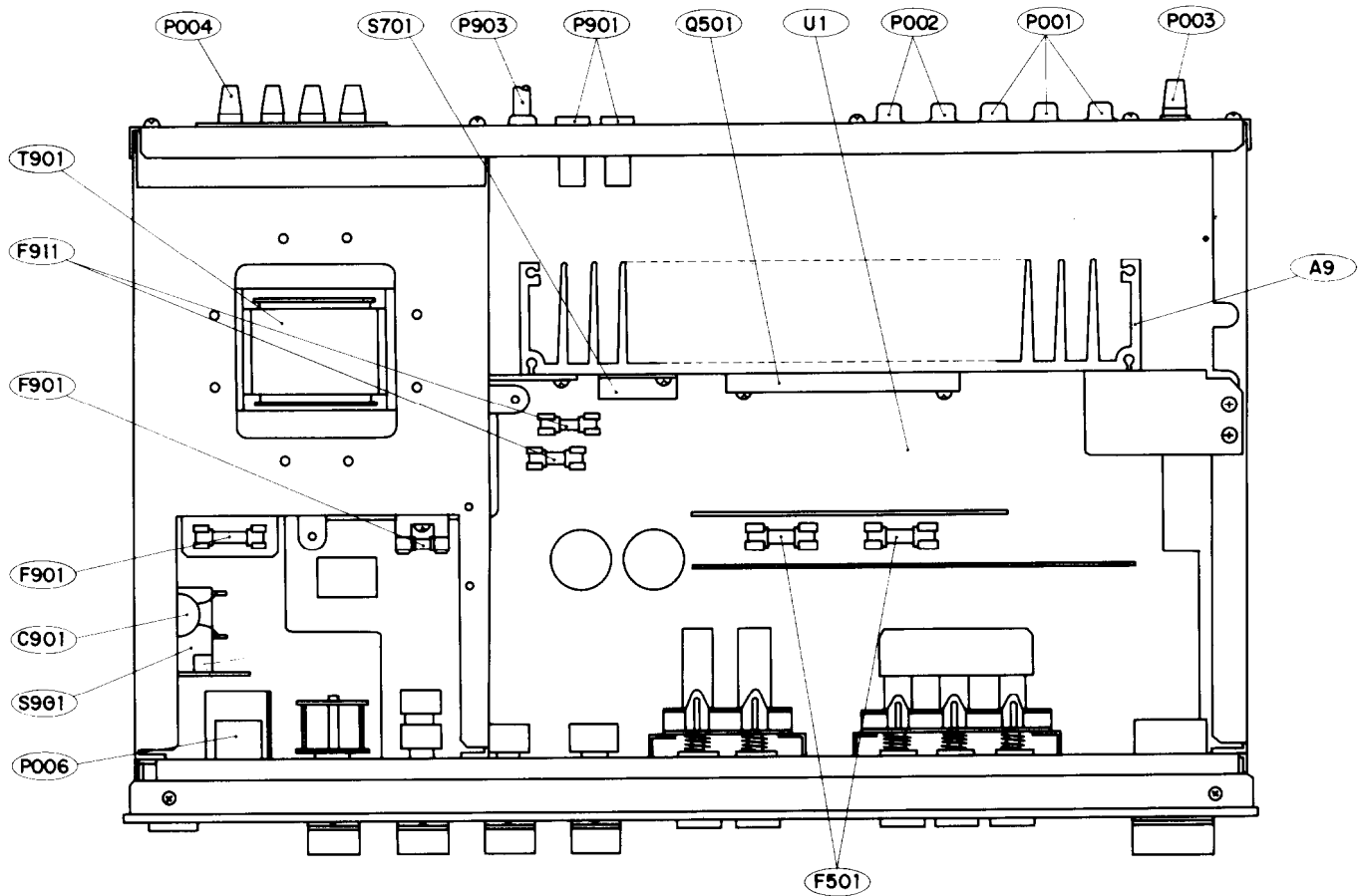


# EXPLODED VIEW



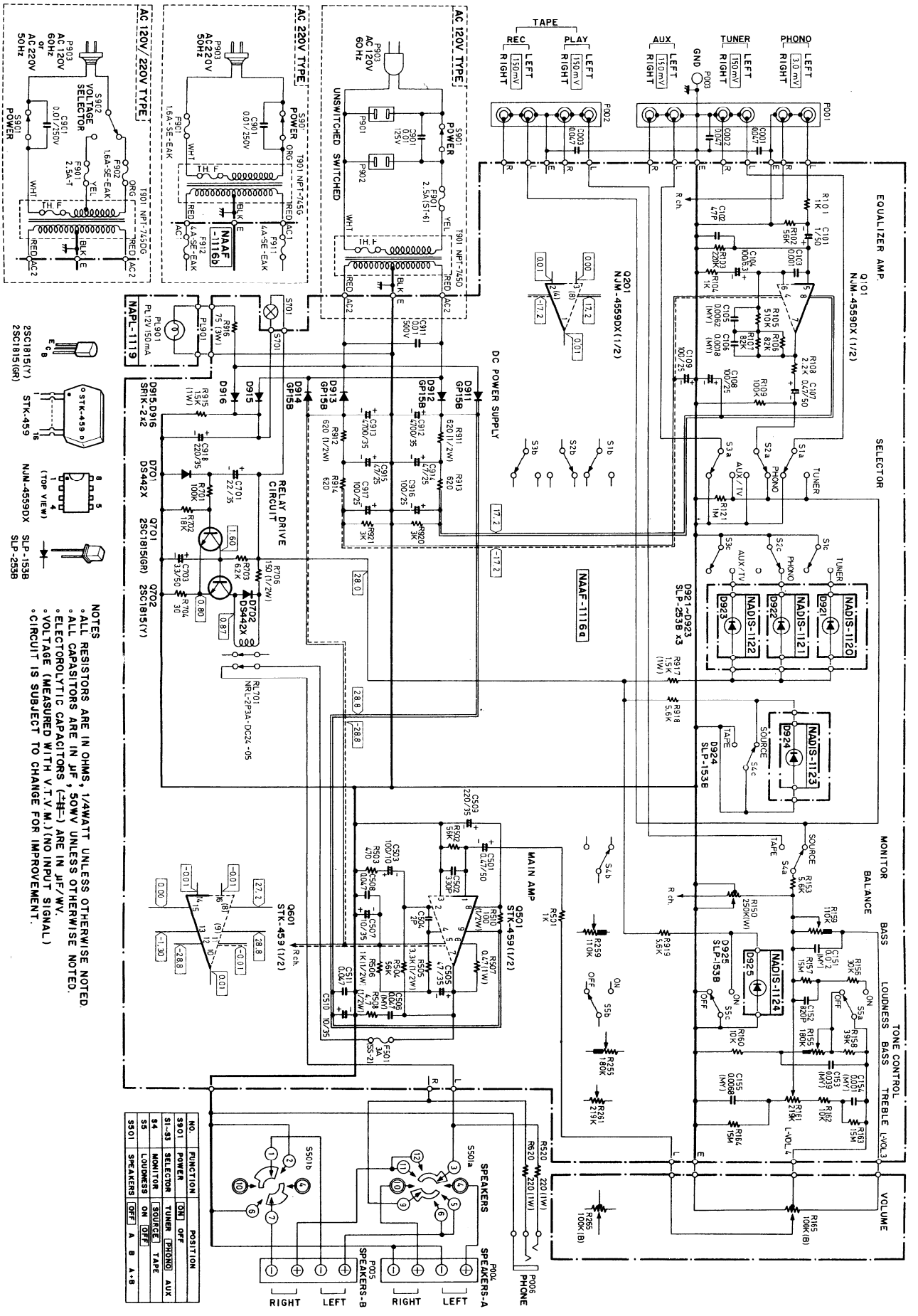
SYMBOL NO.	PARTS NO.	DESCRIPTION	SYMBOL NO.	PARTS NO.	DESCRIPTION
A1	27140503	Front bracket	A511	28140346	0.5x3x45mm, Cushion
A2	27140503	Bracket, headphone	A512	28140348	0.5x3x154mm, Cushion
A5	27115045D	Side bracket	A601	27170094	Bottom board
A6	27140505	Bracket, switch	A603	831130068	3TTW+6B, Tap screw
A7	27130256	Bracket, power transformer	A604	834140108	4TTS+10B, Tap screw
A8	27140446	Bracket, pc board	A801	28320543	Knob, volume
A9	27160081B	Radiator	A802	28320544	Knob, tone
A11	27260062	Shaft, switch	A803	28320541A	Knob, push
A12	27190112	Holder	C001-C003	335624730	0.047μF, 50V, Ceramic capacitor
A13	270281	Holder, thermal switch	C901	3500060	0.01μF, 125V, CS capacitor (D)
A16	27120310	Back panel (D)	C901a	27300080	Cover, capacitor (D)
	27120311	Back panel (G/Q)	C901	3500058	PME265MB510, IS capacitor (G/W/Q)
	27120312	Back panel (W)	F501, F601	252006	3A(SS-2), Speaker protection fuse
A19	834130068	3TTS+6B, Tap screw	F901	252047	2.5A (ST-6), AC fuse (D)
A20	831130068	3TTW+6B, Tap screw	F901a	25050082	S-N1152, Fuseholder (D)
A21	834130088	3TTS+8B, Tap screw	F901	252073	1.6A-SE-EAK, AC fuse (G/Q)
A22	834130108	3TTS+10B, Tap screw	F901a	25065096	NPF-073, Fuseholder (G/Q)
A23	834130162	3TTS+16B, Tap screw	F901b	27300326	FC-20, Fuse cover (G/Q)
A24	82113006	3P+6FN, Pan head screw	F911, F912	252077	4A-SE-EAK, AC fuse (G/Q)
A25	834230102	3TTS+10B (Ni), Tap screw	F901	252025	2.5A-T, AC fuse (W)
A27	87013010	W3x10F, Washer	F902	252073	1.6A-SE-EAK, AC fuse (W)
A28	86414010	FWN4x10FN, Flange nut	F901a	250143	FF-1S4, Fuseholder (W)
A29	863130	N-3F-N, Nut	F902a	25065096	NPF-073, Fuseholder (W)
A30	28140281	2x10x40mm, Cushion	P001	25045022	NPJ-6PRBL01, Phono, tuner, aux. input terminal
A351	28184089-1	Top cover	P002	25045025	NPJ-4PRBL03, Tape input/output terminal
A352	28140020	4x10x40mm, Cushion	P003	25060044	Ground terminal
A353	834430068	3TTS+6B (BC), Tap screw	P004, P005	25060038	NTM-4PRMN09, Speaker terminal
A501	12499121	Front panel ass'y	P006	25045081	HLJ-0240-01-010, Stereo headphone jack
A502	28130117	Scale plate ass'y			
A504	27267109	Guide, power			
A505	27267111	Guide			
A506	27267112	Guide, tape			
A508	834130068	3TTS+6BQ, Tap screw			

# COMPONENT LOCATION



SYMBOL NO.	PARTS NO.	DESCRIPTION	SYMBOL NO.	PARTS NO.	DESCRIPTION
P901	25050046A	NSCT-2P15, AC outlet (D)	U1	12499116A	NAAF-1116a, Pre., and power amplifier pc board ass'y (D/W)
P903	253099A	AS-UC-3, Power supply cable (D)	U1	12504516A	NAAF-1116b, Pre., and power amplifier pc board ass'y (G/Q)
	253083	AS-CEE, Power supply cable (G/W)	U2	12692519	NAPL-1119, Power indicator pc board ass'y
	728320	2.0.75BS16BLK, Power supply cable (Q)	U3	12692520	NADIS-1120, Tuner indicator pc board ass'y
P903a	270025	SR-3P-4, Strainrelief, (D)	U4	12692521	NADIS-1121, Phono indicator pc board ass'y
P903a	270280	SR-4K-4, Strainrelief (G/W/Q)	U5	12692522	NADIS-1122, Aux. indicator pc board ass'y
Q501, Q601	222016	STK-459, Power amplifier IC	U6	12692523	NADIS-1123, Tape indicator pc board ass'y
R165, R265	5147013	N16RG100KBT35, Variable resistor, volume control	U7	12692524	NADIS-1124, Loudness indicator pc board ass'y
R520, R620	441622214K	220Ω, 1W, Metal oxide film resistor			
S501	25030197	NRS-144-30F, Rotary switch, speaker selector			
S701	25065127	1P-105A-100, Thermal switch			
S901	25035135	NPS-111-L100P, Power switch (D)			
S901	25035176	NPS-111-L140, Power switch (G)			
S901	25035136	NPS-121-L101P, Power switch (W/Q)			
S902	25065123	NSS-1258P, Slide switch, voltage selector			
T901	230503	NPT-745D, Power transformer (D)			
T901	230504	NPT-745G, Power transformer (G)			
T901	230505	NPT-745DG, Power transformer (W)			
T901	230520	NPT-745Q, Power transformer (Q)			

**SCHEMATIC DIAGRAM**



- NOTES**
- ALL RESISTORS ARE IN OHMS, 1/4WATT UNLESS OTHERWISE NOTED.
  - ALL CAPACITORS ARE IN  $\mu$ F, 50V UNLESS OTHERWISE NOTED.
  - ELECTROLYTIC CAPACITORS (—E—) ARE IN  $\mu$ F/VV.
  - VOLTAGE (MEASURED WITH V.T.V.M.) (NO INPUT SIGNAL).
  - CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

NO.	FUNCTION	POSITION
S501	POWER	ON
S1-S3	SELECTION	TUNER (PHONO) AUX
S4	MONITOR	SOURCE
S5	LOUDNESS	ON (OFF)
S501	SPEAKERS	OFF A B A-B

## PRINTED CIRCUIT BOARD — PARTS LIST

### MAIN AMPLIFIER AND TONE AND EQUALIZER AMPLIFIER PC BOARD (NAAF-1116) — PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
<b>ICs</b>		
Q101, Q201	222534	JNM-4559DX
Q501, Q601	222016	STK-459
<b>Transistors</b>		
Q701	2211255	2SC1815 (GR)
Q702	2211254	2SC1815 (Y)
<b>Diodes</b>		
D701, D702	223133	DS-442X, Silicon
D911–D914	223842	GP-15B, Silicon
D915, D916	223804	SR1K-2, Silicon
<b>Capacitors</b>		
C101, C201	352780109	1 $\mu$ F, 50V, Elect.
C104, C204	352721019	100 $\mu$ F, 6.3V, Elect.
C107, C207	352751019	100 $\mu$ F, 25V, Elect.
C108	352780339	3.3 $\mu$ F, 50V, Elect.
C109	352751019	100 $\mu$ F, 25V, Elect.
C501, C601	352784799	0.47 $\mu$ F, 50V, Elect.
C503, C603	352731019	100 $\mu$ F, 10V, Elect.
C505, C605	352764709	47 $\mu$ F, 35V, Elect.
C507, C607	352761009	10 $\mu$ F, 35V, Elect.
C509	352762219	220 $\mu$ F, 35V, Elect.
C510	352761009	10 $\mu$ F, 35V, Elect.
C701	352762209	22 $\mu$ F, 35V, Elect.
C703	352780339	3.3 $\mu$ F, 50V, Elect.
C912, C913	3504143 or 3504146	4,700 $\mu$ F, 35V, Elect.
C914, C915	352764709	47 $\mu$ F, 35V, Elect.
C916, C917	352751019	100 $\mu$ F, 25V, Elect.
C918	352762219	220 $\mu$ F, 35V, Elect.
<b>Resistors</b>		
R150	5146034	N16RLC250KWT30, Variable, Balance control
R155, R255	5148073	N16RQMC110K180K30, Variable, Bass control
R161, R261	5148073	N16RQMC110K180K30, Variable, Treble control
R157, R257	431421567	15M $\Omega$ , 1/4W, Solid
R505, R605	441523324	3.3k $\Omega$ , 1/2W, Metal oxide film
R506, R606	441521024	1k $\Omega$ , 1/2W, Metal oxide film
R507, R607	441624794	0.47 $\Omega$ , 1W, Metal oxide film
R508, R608	441520474	4.7 $\Omega$ , 1/2W, Metal oxide film
R510	441521014	100 $\Omega$ , 1/2W, Metal oxide film
R706	441521514	150 $\Omega$ , 1/2W, Metal oxide film
R911, R912	441521524	1.5k $\Omega$ , 1/2W, Metal oxide film
R915, R917	441621524	1.5k $\Omega$ , 1W, Metal oxide film
R916	441827504	75 $\Omega$ , 3W, Metal oxide film
<b>Relay</b>		
RL701	25065108	NPL-2P3A-DC24, speaker
<b>Switches</b>		
S1–S3	25035258	NPS-342-L222, Selector
S4, S5	25035259	NPS-242-L233, Tape monitor/Loudness
<b>Fuseholders</b>		
	250113	SN5051
	25050065	YSH403T (G/Q)
<b>Terminals</b>		
	27300236	
	27300237	

### POWER INDICATOR PC BOARD (NAPL-1119) — PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	210065B	PL12V150mA, Lamp

### TUNER INDICATOR PC BOARD (NADIS-1120) — PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	225085	SLP253B, L.E.D.

### PHONO INDICATOR PC BOARD (NADIS-1121) — PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	225085	SLP253B, L.E.D.

### AUX. INDICATOR PC BOARD (NADIS-1122) — PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	225085	SLP253B, L.E.D.

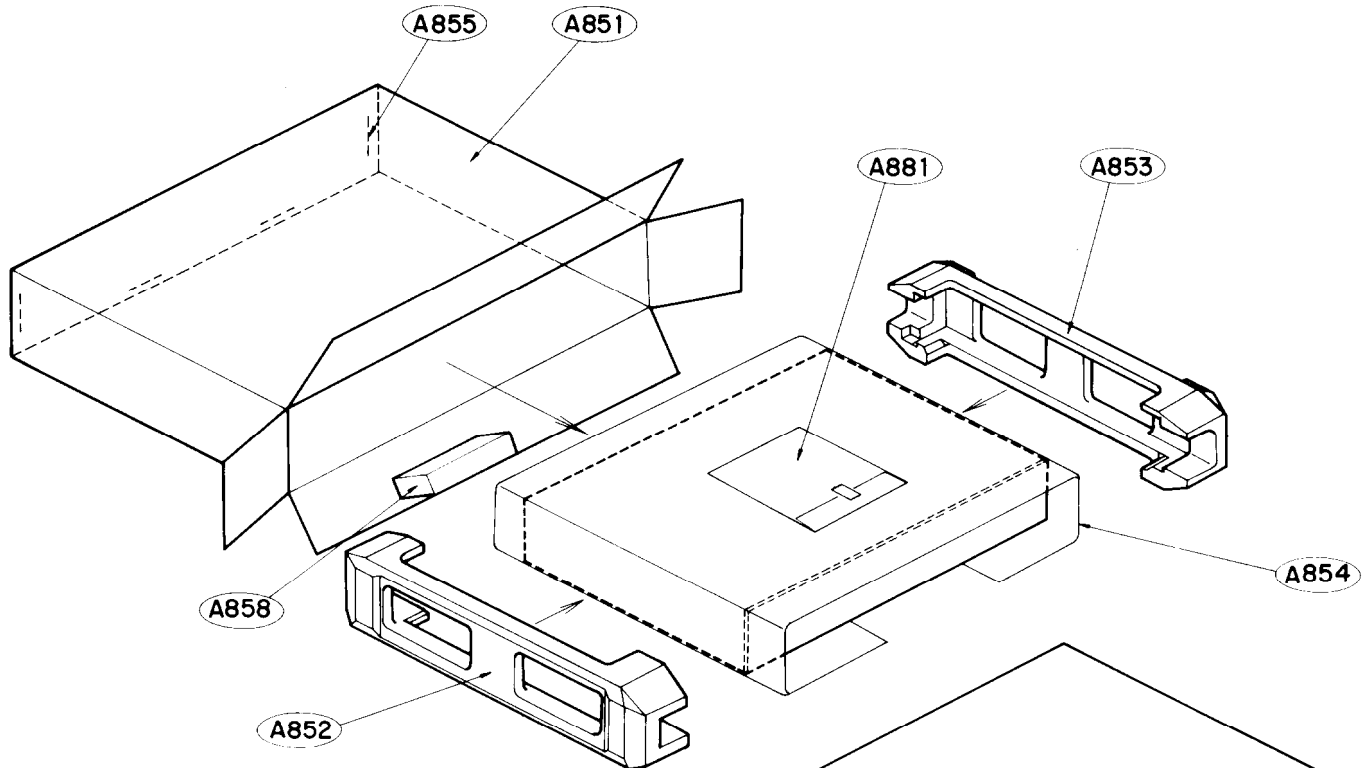
### TAPE INDICATOR PC BOARD (NADIS-1123) — PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	225084	SLP153B

### LOUDNESS INDICATOR PC BOARD (NADIS-1124) — PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	225084	SLP153B

# PACKING PROCEDURES



SYMBOL NO.	PARTS NO.	DESCRIPTION
A851	29050453	Master carton box
A852	29090532A	Pad, left
A853	29090533C	Pad, right
A854	29100051	420x750mm, Poly bag
A855	282301	Sealing hook
A856	260012	W=50mm, Dampson tape
A858	29090617	Pad
A884	29360378	Label (U)
A882	29360363	Label (U)
A881	29340513	Accessory bag ass'y
	29340514	Instruction manual (D)
	29365006	Instruction manual (G/W/Q)
	29365005-3	Warranty card (U)
	29358002	Warranty card (V)
		Service station list (U)
		Conversion plug (W)
	29100006	350x250mm, Poly bag

**Note:**

- (U): Only U.S.A. model
- (V): Only West Germany
- (D): Only 120V model
- (G): Only 220V model
- (W): Only 120/220V model
- (Q): Only 240V model

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