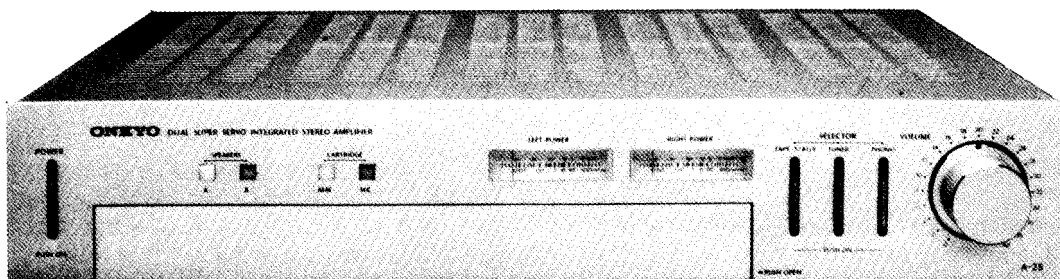


# ONKYO® SERVICE MANUAL

## INTEGRATED DUAL SUPER SERVO AMPLIFIER MODEL A-25



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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 0.04% total harmonic distortion.	(MC): 66 dB (IHF A-202, 0.5 mV input, 1 watt output)
Total Harmonic Distortion:	0.04% at rated power.	Tuner & Tape 80 dB (IHF A-202, 0.5V input, 1 watt output)
IM Distortion:	0.04% at rated power.	Loudness: +6 dB at 70 Hz +5 dB at 10 kHz
Damping Factor:	40 at 8 ohms.	<b>General</b>
Sensitivity and Impedance:	Phono (MM): 2.5 mV/50 kohms (MC): 350 $\mu$ V/330 ohms	Power Supply: AC 120 V, 60 Hz. AC 220 V, 50 Hz. AC 110/220 V, 50/60 Hz.
	Tuner: 150 mV/50 kohms	Semiconductors: 7 ICs, 1 transistor, 21 diodes,
	Tape Play: 150 mV/50 kohms	Dimensions: 418(W) x 83(H) x 280(D) mm 16-1/2" x 3-1/4" x 11"
	Tape Rce: 150 mV/1 kohms (Phono)	Weight: 6.5 kg, 14.3 lbs.
Phono Overload:	180 mV RMS at 1 kHz, 0.04% THD	Specifications and features are subject to change without notice.
Bass Control:	$\pm$ 8 dB at 100 Hz	
Treble Control:	$\pm$ 8 dB at 10,000 Hz	
Signal to Noise Ratio	Phono (MM): 75 dB (IHF A-202, 5 mV input, 1 watt output)	

## SERVICE GUIDE

### 1. Replacing the fuse

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

#### (1) AC fuse

Remove the top cover.

Circuit No.	Parts No.	Description
	<b>120V model</b>	
F901	252049	4A(ST-6)
	<b>220V model</b>	
F901	252074	2A-SE-EAK
F911, F912	252078	5A-SE-EAK
	<b>120/220V model</b>	
F901	252014	4A-T
F902	252074	2A-SE-EAK

#### (2) Speaker protection fuse

Remove the top cover.

F501, F601	252014	4A-T
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### 2. Protective circuit

This model has a built-in thermal switch to protect the power IC. The thermal switch is not activated under normal operating conditions.

However, if there is an abnormal rise in the inside temperature, the thermal switch cuts off the outputs.

(The pilot lamp will not turn off.)

When this occurs, wait for a while until the temperature is cooled down after remove the abnormal conditions.

(Abnormal condition means operation with a load below 4 ohms, or under poor conditions with high power such as a place with insufficient air circulation.)

### 3. Voltage Selector (Rear Panel)

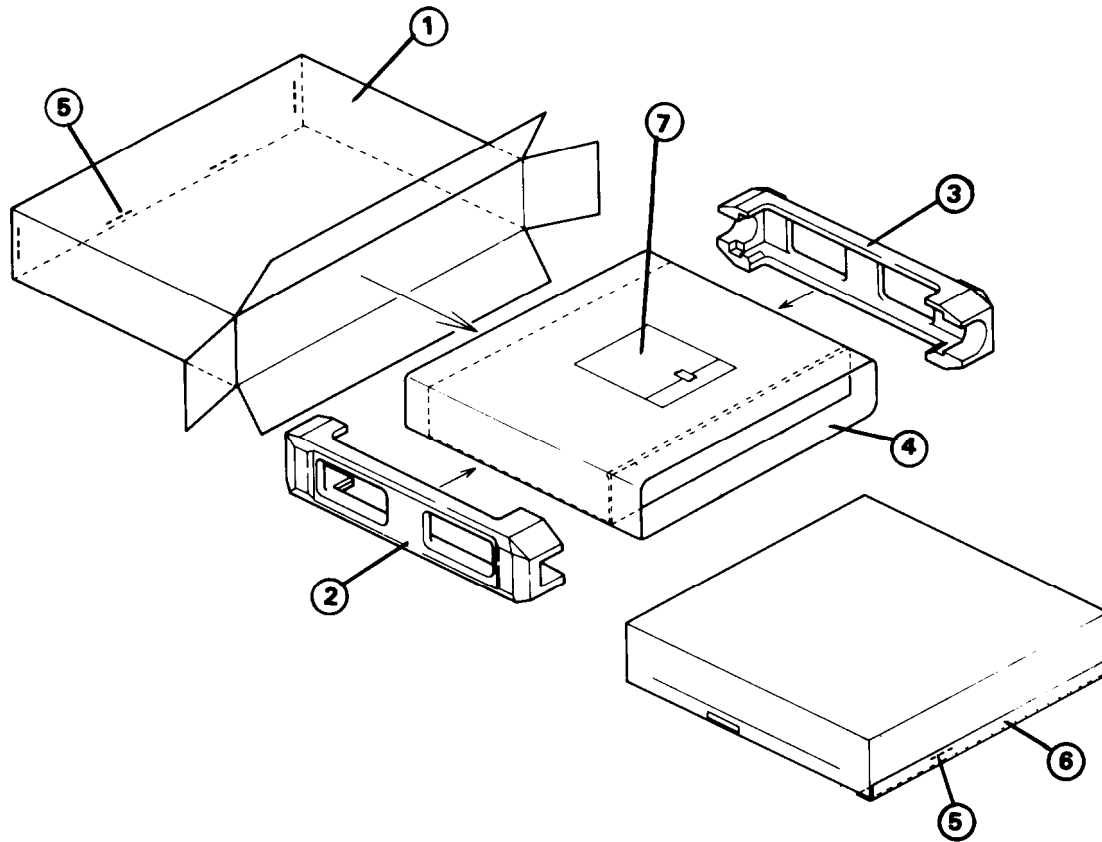
Some models are equipped with a voltage selector to conform with local power supplies.

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 to the right or left. 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.

# PACKING PROCEDURES



## U.S.A. Model

REF. NO.	PARTS NO.	DESCRIPTION
1	29050390	Master carton box
2	29090540A	Pad (L)
3	29090541	Pad (R)
4	29100051	420x750mm, Poly bag
5	282301	Sealing hook
6	260012	W=50mm, Tape
7		Accessory bag ass'y
	29340454	Instruction manual
	29365006	Warranty card
	29358002	Service station list
	29100006	350x250mm, Poly bag
	29360363	Caution label (Bottom board)
	29360378	Label (Top cover)

## 120V Model

REF. NO.	PARTS NO.	DESCRIPTION
1	29050390	Master carton box
2	29090540A	Pad (L)
3	29090541	Pad (R)
4	29100051	420x750mm, Poly bag
5	282301	Sealing hook
6	260012	W=50mm, Tape
7		Accessory bag ass'y
	29340454	Instruction manual
	29100006	350x250mm, Poly bag

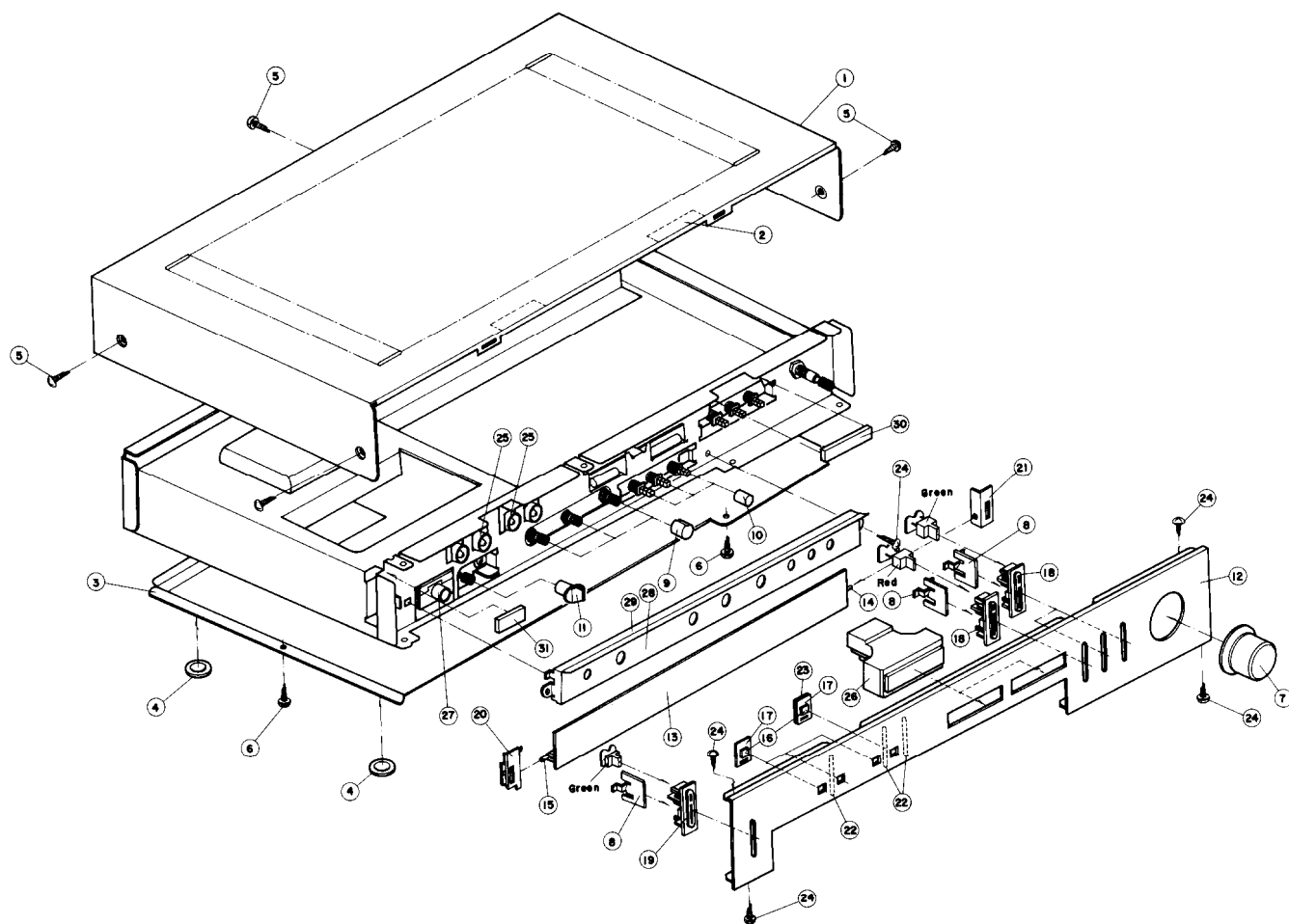
## 120/220V Model

REF. NO.	PARTS NO.	DESCRIPTION
1	29050390	Master carton box
2	29090540A	Pad (L)
3	29090541	Pad (R)
4	29100051	420x750mm Poly bag
5	282301	Sealing hook
6	260012	W=50mm, Tape
7		Accessory bag ass'y
	29340455	Instruction manual
	25055018	Conversion plug
	29100006	350x250mm, Poly bag

## 220V Model

REF. NO.	PARTS NO.	DESCRIPTION
1	29050390	Master carton box
2	29090540A	Pad (L)
3	29090541	Pad (R)
4	29100051	420x750mm, Poly bag
5	282301	Sealing hook
6	260012	W=50mm, Tape
7		Accessory bag ass'y
	29340455	Instruction manual
	29365005-3	Warranty card (only Germany Model)
	29100006	350x250mm, Poly bag

## EXPLODED VIEW

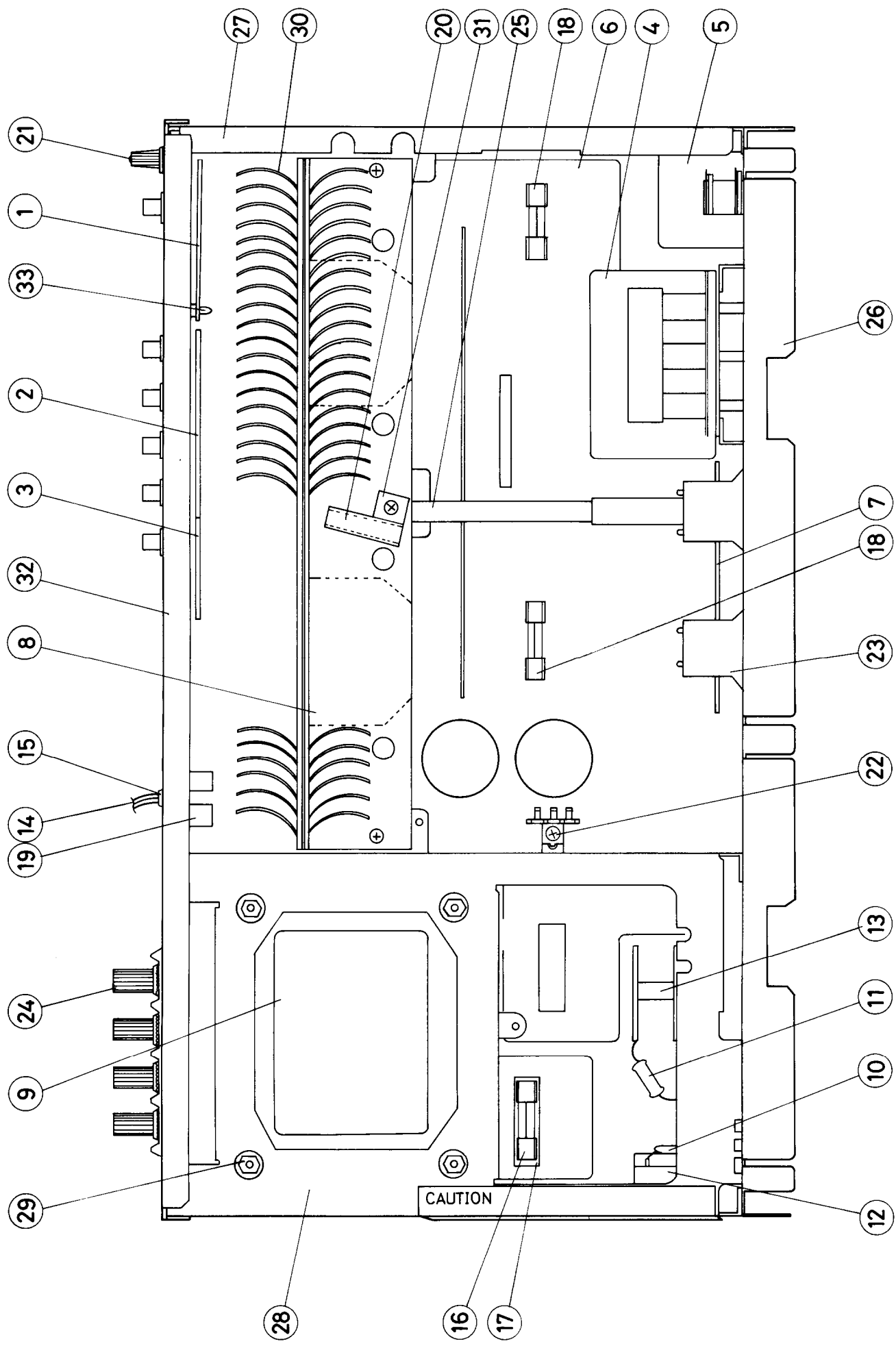


REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
1	28184092A	Top cover	16	28198533	Facet ass'y
2	28140020	4 x 10 x 40 mm, Cushion	17	12569122	Back plate (S)
3	27170089	Bottom board	18	27267073	Guide, push
4	27175011B	Leg	19	27267078	Guide, power
5	834430062	3STS+6BQ(BC), Tapping screw	20	27300318	Side plate (L)
6	831130062	3STW+6BQ, Tapping screw	21	27300317	Side plate (R)
7	28320442	Knob, volume	22	28140290	8 x 28 x 3 mm, Cushion
8	28320341A	Knob, power	23	28199035A	Film
9	28320460	Knob, mode	24	834130062	3STS+6BQ, Tapping screw
10	28320461	Knob, push	25	210099	PL14V0.06AW-2.6, Lamp
11	28320449-1	Knob, speaker	26	243131	NIND-0500S131, Meter
12	12569121	Front panel ass'y	27	25045018	LJ-100-H, Stereo headphone jack
13	12589122	Front panel (S) ass'y	28	27262070	Plate
14	27300315A	Bearing (R)	29	28133033	Back plate
15	27300316A	Bearing (L)	30	28140020	4 x 10 x 40 mm, Cushion
			31		4 x 10 x 20 mm, Cushion

### COMPONENT LOCATION — PARTS LIST

120 model				220 model				120/220V model			
REF. CIRCUIT NO.	PARTS NO.	DESCRIPTION	REF. CIRCUIT NO.	PARTS NO.	DESCRIPTION	REF. CIRCUIT NO.	PARTS NO.	DESCRIPTION	REF. CIRCUIT NO.	PARTS NO.	DESCRIPTION
1	12569527	NAEQ-927, Equalizer ampli. pc board ass'y	1	12569527	NAEQ-927, Equalizer ampli. pc board ass'y	1	12569527	NAEQ-927, Equalizer ampli. pc board ass'y	1	12569527	NAEQ-927, Equalizer ampli. pc board ass'y
2	12569528	NAPJ-928, Tuner/Tape 1 terminal pc board ass'y	2	12569528	NAPJ-928, Tuner/Tape 1 terminal pc board ass'y	2	12569528	NAPJ-928, Tuner/Tape 1 terminal pc board ass'y	2	12569528	NAPJ-928, Tuner/Tape 1 terminal pc board ass'y
3	12569529	NAPJ-929, Tape 2 terminal pc board ass'y	3	12569529	NAPJ-929, Tape 2 terminal pc board ass'y	3	12569529	NAPJ-929, Tape 2 terminal pc board ass'y	3	12569529	NAPJ-929, Tape 2 terminal pc board ass'y
4	12569530	NASW-930, Selector switch pc board ass'y	4	12569530	NASW-930, Selector switch pc board ass'y	4	12569530	NASW-930, Selector switch pc board ass'y	4	12569530	NASW-930, Selector switch pc board ass'y
5	12569533	NAVR-933, Output level control pc board ass'y	5	12569533	NAVR-933, Output level control pc board ass'y	5	12569533	NAVR-933, Output level control pc board ass'y	5	12569533	NAVR-933, Output level control pc board ass'y
6	12569534	NAAF-934, Pre./Power amplifier pc board ass'y	6	12569534	NAAF-934, Pre./Power amplifier pc board ass'y	6	12569534	NAAF-934, Pre./Power amplifier pc board ass'y	6	12569534	NAAF-934, Pre./Power amplifier pc board ass'y
7	12569535	NAPL-935, Meter illumination pc board ass'y	7	12569535	NAPL-935, Meter illumination pc board ass'y	7	12569535	NAPL-935, Meter illumination pc board ass'y	7	12569535	NAPL-935, Meter illumination pc board ass'y
8	Q502, Q602	STK-1050, Power amplifier IC	8	Q502, Q602	STK-1050, Power amplifier IC	8	Q502, Q602	STK-1050, Power amplifier IC	8	Q502, Q602	STK-1050, Power amplifier IC
9	T901	NPT-715D, Power transformer	9	T901	NPT-715G, Power transformer	9	T901	NPT-715G, Power transformer	9	T901	NPT-715DG, Power transformer
10	C901	0.01 $\mu$ F, 125V, CS capacitor	10	C901	PME265MB510, IS capacitor	10	C901	PME265MB510, IS capacitor	10	C901	PME265MB510, IS capacitor
11	R807, R808	441722714K 270 $\Omega$ , 2W, Metal oxide film resistor	11	R807, R808	441722714K 270 $\Omega$ , 2W, Metal oxide film resistor	11	R807, R808	441722714K 270 $\Omega$ , 2W, Metal oxide film resistor	11	R807, R808	441722714K 270 $\Omega$ , 2W, Metal oxide film resistor
12	S901	NPS-111-L12P, Power switch	12	S901	NPS-111-L140, Power switch	12	S901	NPS-111-L140, Power switch	12	S901	NPS-111-L140, Power switch
13	S807	NRS-254-15F, Speaker selector switch	13	S807	NRS-254-15F, Speaker selector switch	13	S807	NRS-254-15F, Speaker selector switch	13	S807	NRS-254-15F, Speaker selector switch
14	W901	AS-UC-3, Power supply cable	14	W901	AS-CEE, Power supply cable	14	W901	AS-CEE-2, Power supply cable	14	W901	AS-CEE-2, Power supply cable
15	W901a	SR-3P4, Strainrelief	15	W901a	SR-4K-4, Strainrelief	15	W901a	SR-4K-4, Strainrelief	15	W901a	SR-4K-4, Strainrelief
16	F901	4A ST-6, AC fuse	16	F901	2A SE-EAK, AC fuse	16	F901	2A SE-EAK, AC fuse	16	F901	4A-T, AC fuse
17	F901a	FF-1S4, Fuseholder	17	F901a	NPF-073, Fuseholder	17	F901a	NPF-073, Fuseholder	17	F901a	FF-1S4, Fuseholder
18	F501, F601	4A-T, Speaker protection fuse	18	F501, F601	4A-T, Speaker protection fuse	18	F501, F601	4A-T, Speaker protection fuse	18	F501, F601	4A-T, Speaker protection fuse
19	P901, P902	S-16444-01, AC outlet	19	P901, P902	S-16444-01, AC outlet	19	P901, P902	S-16444-01, AC outlet	19	P901, P902	S-16444-01, AC outlet
20	S701	IP-105A-100, Thermal switch	20	S901	IP-105A-100, Thermal switch	20	S901	IP-105A-100, Thermal switch	20	S901	IP-105A-100, Thermal switch
21	P001	Ground terminal	21	P001	Ground terminal	21	P001	Ground terminal	21	P001	Ground terminal
22	250130	T4461, Terminal	22	250130	T4461, Terminal	22	250130	T4461, Terminal	22	250130	T4461, Terminal
23	M501, M601	243131	23	M501, M601	243131	23	M501, M601	243131	23	M501, M601	243131
24	P501, P502	25060038	24	P501, P502	25060038	24	P501, P502	25060038	24	P501, P502	25060038
25	25065132	Cable	25	25065132	Cable	25	25065132	Cable	25	25065132	Cable
26	27110115	Front bracket	26	27110115	Front bracket	26	27110115	Front bracket	26	27110115	Front bracket
27	27115045C	Side bracket	27	27115045C	Side bracket	27	27115045C	Side bracket	27	27115045C	Side bracket
28	27130224	Bracket, power transformer	28	27130224	Bracket, power transformer	28	27130224	Bracket, power transformer	28	27130224	Bracket, power transformer
29	86414010	FWN4 x 10FN, Nut	29	86414010	FWN4 x 10FN, Nut	29	86414010	FWN4 x 10FN, nut	29	86414010	FWN4 x 10FN, nut
30	27160078	Radiator	30	27160078	Radiator	30	27160078	Radiator	30	27160078	Radiator
31	270281	Bracket, thermal switch	31	270281	Bracket, thermal switch	31	270281	Bracket, thermal switch	31	270281	Bracket, thermal switch
32	27120256	Back panel	32	27120257	Back panel	32	27120257	Back panel	32	27120258	Back panel
33	27190063	TCBS-8N, Holder	33	27190063	TCBS-8N, Holder	33	27190063	TCBS-8N, Holder	33	27190063	TCBS-8N, Holder
				F911, F912	252078					S902	NSS-1258P, Voltage Selector
										F902	2A-SE-EAK, Fuse
										F902a	NPF-073, Fuseholder

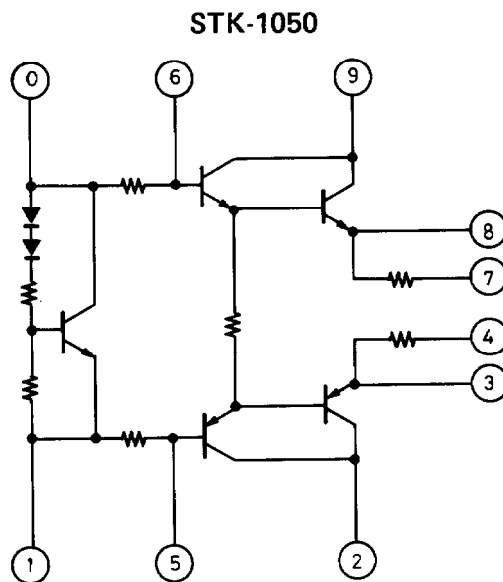
**COMPONENT LOCATION**



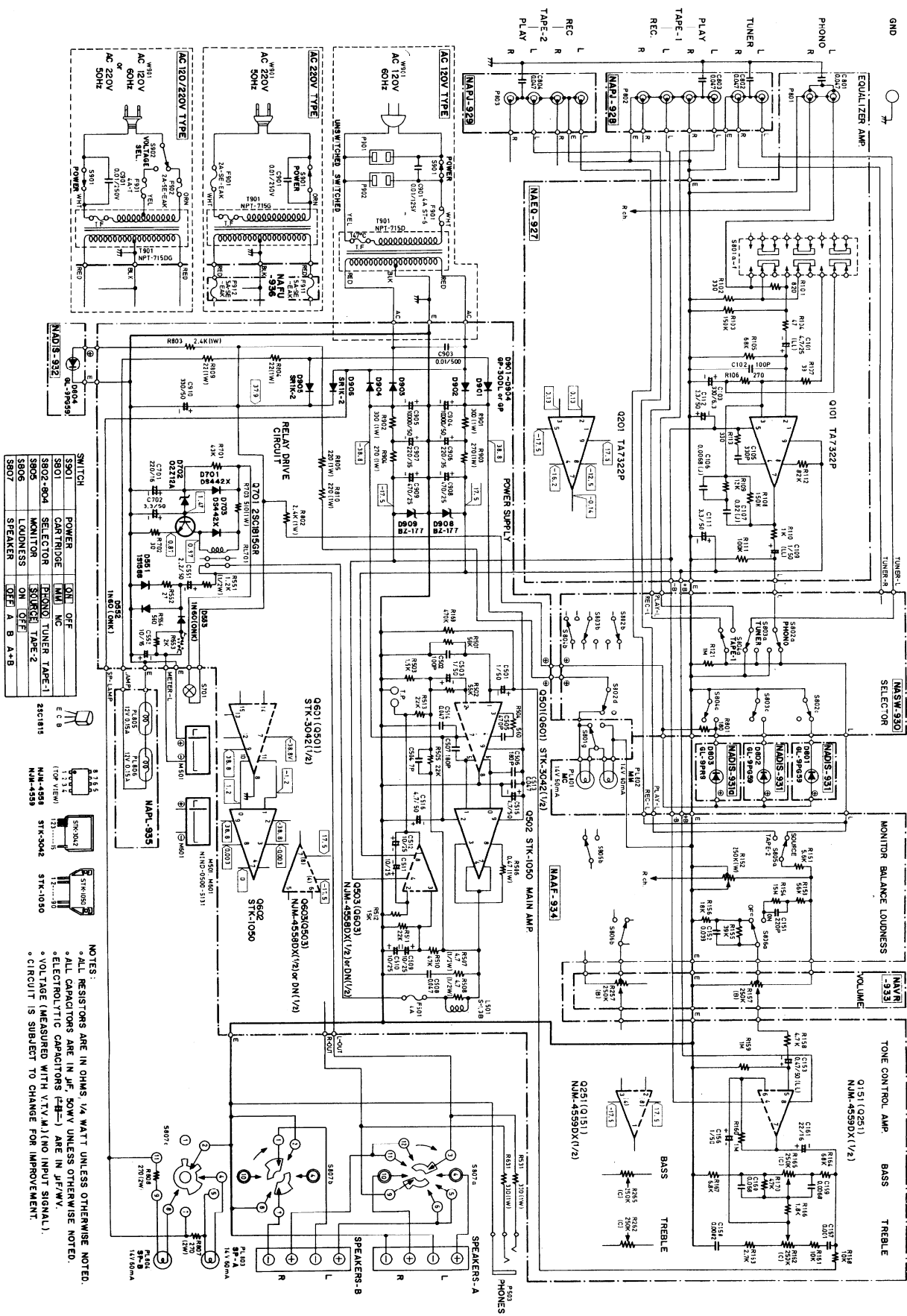
### Meter calibration adjustment

Connect the AC V.T.V.M. and 8 ohms hollow resistor across the LEFT speaker terminals.

Apply a 1kHz test signal to the TAPE terminal of the left channel. Adjust input to the point the voltage reading at the speaker output is 2.8V, and adjust R653 on meter until the reads 1W.



# SCHEMATIC DIAGRAM



NOTES:  
 ALL RESISTORS ARE IN OHMS 1/4 WATT UNLESS OTHERWISE NOTED.  
 ALL CAPACITORS ARE IN UF 50V UNLESS OTHERWISE NOTED.  
 ELECTROLYTIC CAPACITORS (E-2) ARE IN JF/WV.  
 VOLTAGE (MEASURED WITH TV/M/110V INPUT SIGNAL).  
 \* CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.



# PRINTED CIRCUIT BOARD-PARTS LIST

## EQUALIZER AMPLIFIER PC BOARD (NAEQ 927)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	Q701	Transistor 2211255	2SC1815(GR)
				<b>Diodes</b>	
	<b>ICs</b>		D551, D651	223119	1S1588
Q101, Q201	222605	TA7322P	D552, D652	2231031	1N60(N)FM
			D553, D653		
	<b>Capacitors</b>		D701, D703	223133	DS-442X
C101, C201	392850477	4.7 $\mu$ F, 25V, LL	D702	224025	02Z12A
C103, C203	352723319	330 $\mu$ F, 6.3V, Elect.	D901 - D904	223863	GP-30DL
C109, C209	392880107	1 $\mu$ F, 50V, LL	D905, D906	223804	SR1K-2
C111, C112	352780339	3.3 $\mu$ F, 50V, Elect.	D908, D909	224072	BZ-177
	<b>Switch</b>			<b>Lamps</b>	
S801	25065131	NSS-6262, MM/MC selector	PL801	210085	PL14V 0.06AW-2.6
			PL802	210099	PL14V 0.06AW-2.6
	<b>Terminal</b>			<b>Coils</b>	
P801	25045071	NPJ-2PDBL35, Input	L501, L601	231001	S-1.3B

## TUNER AND TAPE TERMINAL PC BOARD (NAPJ-928)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	C153, C253	392884797	0.47 $\mu$ F, 50V, LL
			C156, C256	352780109	1 $\mu$ F, 50V, Elect.
			C161, C261	352742209	22 $\mu$ F, 16V, Elect.
P802	25045076	NPJ-6PDBL39, Tuner/Tape terminal	C501, C601	352780109	1 $\mu$ F, 50V, Elect.
			C503, C603	352780109	1 $\mu$ F, 50V, Elect.
			C508, C608	379124737	0.047 $\mu$ F, 50V, DEW
			C509-C512	352751009	10 $\mu$ F, 25V, Elect.
			C609 - C612		
			C515, C516	352780479	4.7 $\mu$ F, 50V, Elect.
			C615, C616		
			C551, C651	352780229	2.2 $\mu$ F, 50V, Elect.
			C552, C652	352741009	10 $\mu$ F, 16V, Elect.
			C701	352742219	220 $\mu$ F, 16V, Elect.
			C702	352780339	3.3 $\mu$ F, 50V, Elect.
			C904, C905	3504147	10,000 $\mu$ F, 50V, Elect.
			C906, C907	352762219	220 $\mu$ F, 35V, Elect.
			C908, C909	352754719	470 $\mu$ F, 25V, Elect.
			C910	352783319	330 $\mu$ F, 50V, Elect.

## TAPE TERMINAL PC BOARD (NAPJ-929)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	C701 <th>352742219 <th>220<math>\mu</math>F, 16V, Elect.</th> </th>	352742219 <th>220<math>\mu</math>F, 16V, Elect.</th>	220 $\mu$ F, 16V, Elect.
P803	25045069	NPJ-4PDBL34, Tape terminal	C702	352780339	3.3 $\mu$ F, 50V, Elect.

## SELECTOR SWITCH PC BOARD (NASW-930)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	C904, C905 <th>3504147</th> <th>10,000<math>\mu</math>F, 50V, Elect.</th>	3504147	10,000 $\mu$ F, 50V, Elect.
S802 - S804	25035209	NPS-342-L173, Phono, tuner/tape selector switch	C906, C907	352762219	220 $\mu$ F, 35V, Elect.
			C908, C909	352754719	470 $\mu$ F, 25V, Elect.
			C910	352783319	330 $\mu$ F, 50V, Elect.

## TUNER/PHONO INDICATOR L.E.D. PC BOARD (NADIS-931)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	R152, R252 <th>5104084</th> <th>N16RL250KWTP15, Balance control variable</th>	5104084	N16RL250KWTP15, Balance control variable
D801, D802	225028-3	GL-9PG59(C), L.E.D.	R162, R262	5148036	N16RGL250KC15, Treble control variable
			R165, R265	5148036	N16RGL250KC15, Bass control variable
			R506, R606	441624794KF	0.47 $\Omega$ , 1W, Metal oxide film
			R507, R607	441520474KF	4.7 $\Omega$ , 1/2W, Metal oxide film
			R508, R608	441520474K	4.7 $\Omega$ , 1/2W, Metal oxide film
			R551, R651	441521224K	1.2k $\Omega$ , 1/2W, Metal oxide film
			R703	441625114KF	510 $\Omega$ , 1W, Metal oxide film
			R803, R802	441622424KF	2.4 k $\Omega$ , 1W, Metal oxide film
			R804, R809	441622204KF	22 $\Omega$ , 1W, Metal oxide film
			R805, R810	441622214KF	220 $\Omega$ , 1W, Metal oxide film
			R901, R902	441623014KF	300 $\Omega$ , 1W, Metal oxide film
			R903, R904	441622714KF	270 $\Omega$ , 1W, Metal oxide film
			R653	5215043	NO8HR2KBC, Semi-fixed
			RL701	25065134	NRL-2P5A-DC24V-07

## POWER INDICATOR L.E.D. PC BOARD (NADIS-932)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	S801, S805	25035217	NPS-322-L181
D804	225028-3	GL-9PG59(C), L.E.D.	S806		

## VOLUME PC BOARD (NAVR-933)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	F501, F601 <th>252014 <th>4A-T, Speaker protection</th> </th>	252014 <th>4A-T, Speaker protection</th>	4A-T, Speaker protection
R157, R257	5148052	N16RGM41C250KBTP35, Variable resistor			

## PRE., AND POWER AMPLIFIER PC BOARD (NAAF-934)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	PL805, PL806 <th>210065B</th> <th>PL12V150mA, Lamp</th>	210065B	PL12V150mA, Lamp
	<b>ICs</b>				
Q151, Q251	222534	NJM-4559DX			
Q501, Q601	222026	STK-3042			
Q502, Q602	222025	STK-1050			
Q503, Q603	222502 or 222597	NJM-4558DX or NJM-4558DN			

## METER ILLUMINATION LAMP PC BOARD (NAPL-935)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	F501, F601 <th>252014 <th>4A-T, Speaker protection</th> </th>	252014 <th>4A-T, Speaker protection</th>	4A-T, Speaker protection

## FUSE PC BOARD (NAFU-936)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	F911, F912 <th>252078 <th>5A-SE-EAK, Fuse</th> </th>	252078 <th>5A-SE-EAK, Fuse</th>	5A-SE-EAK, Fuse