

ONKYO® SERVICE MANUAL

INTEGRATED DUAL SUPER SERVO AMPLIFIER MODEL A-25

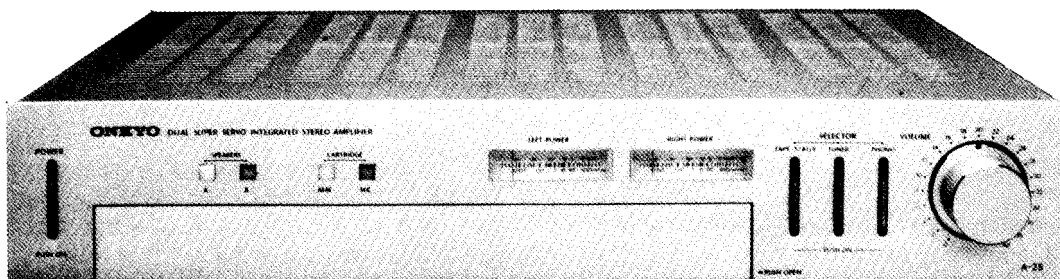


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ONKYO®
AUDIO COMPONENTS

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.	General
Sensitivity and Impedance:	Phono (MM): 2.5 mV/50 kohms (MC): 350 μ 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
	120V model	
F901	252049	4A(ST-6)
	220V model	
F901	252074	2A-SE-EAK
F911, F912	252078	5A-SE-EAK
	120/220V model	
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)

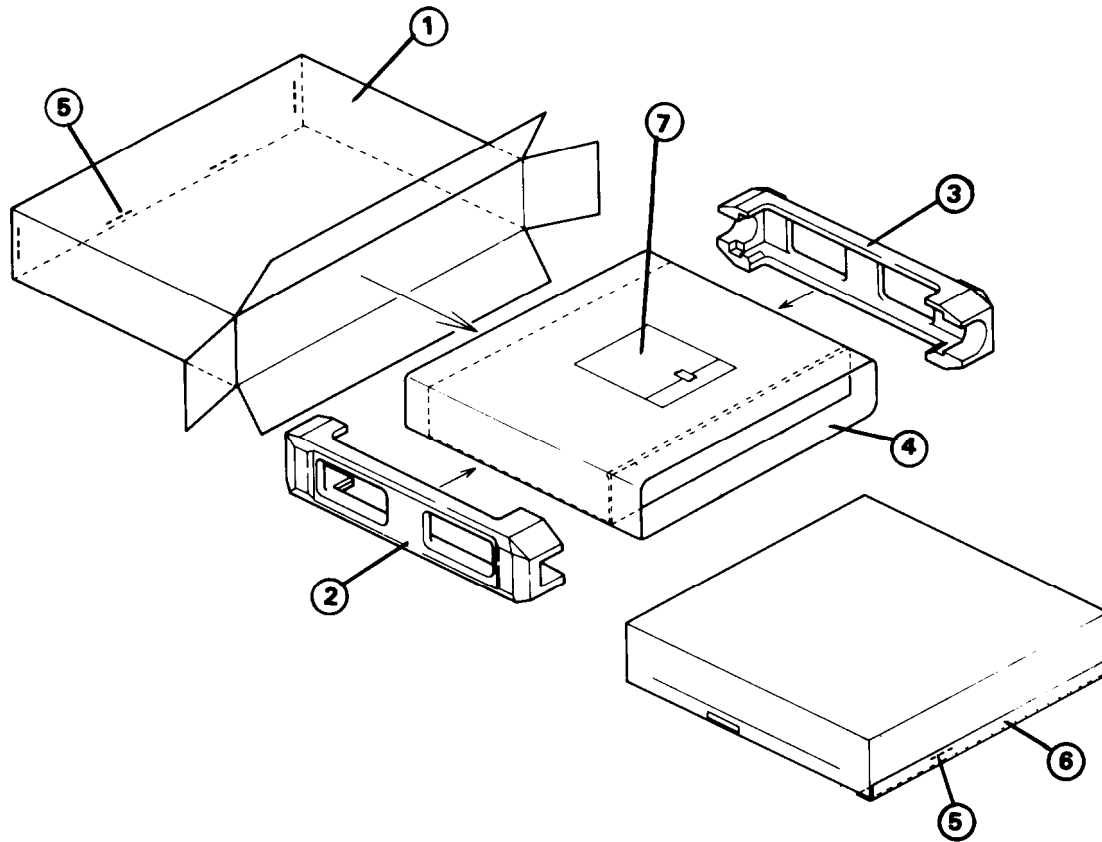
Some models are equipped with a voltage selector to conform with local power supplies.

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

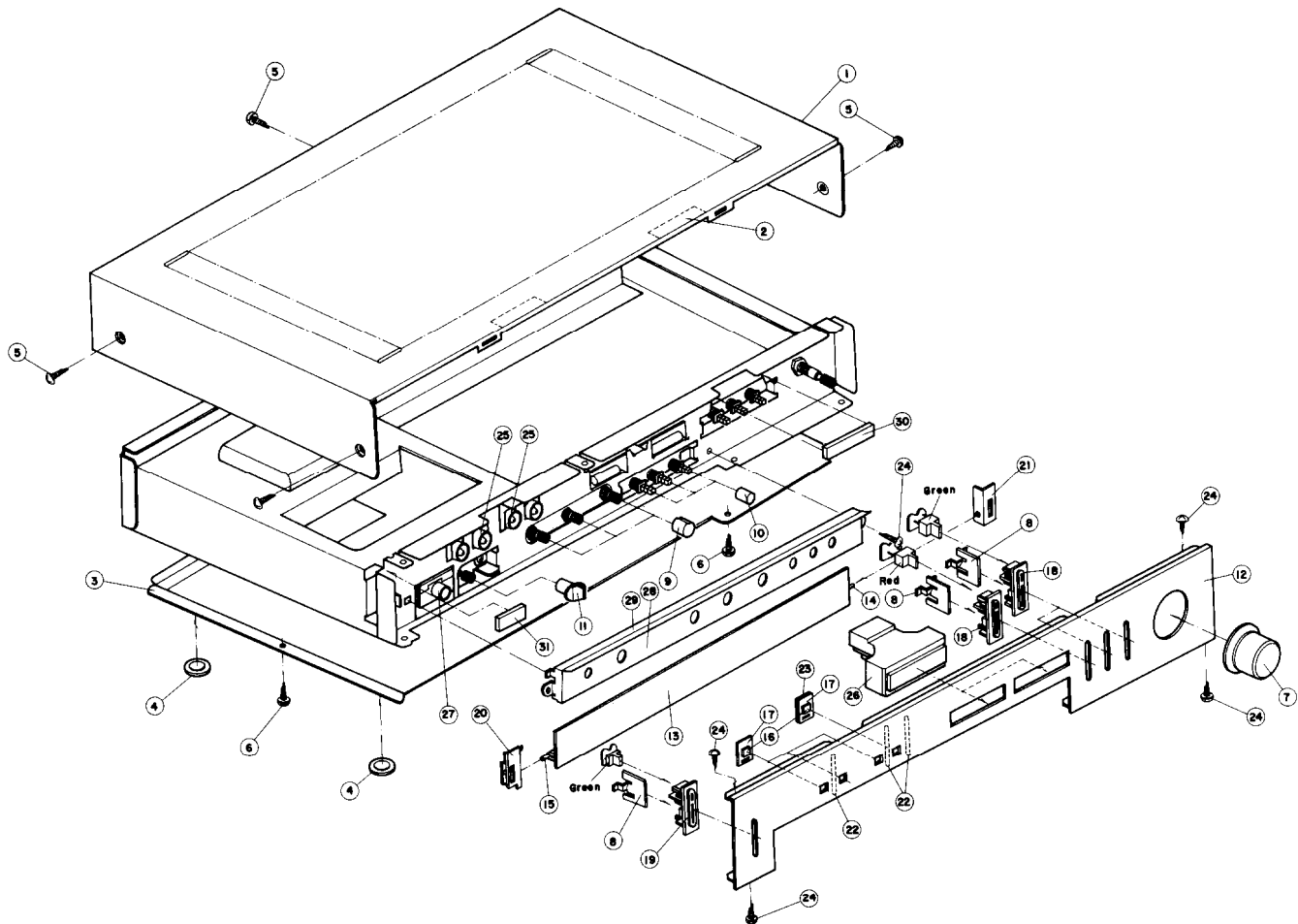
120/220V Model

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

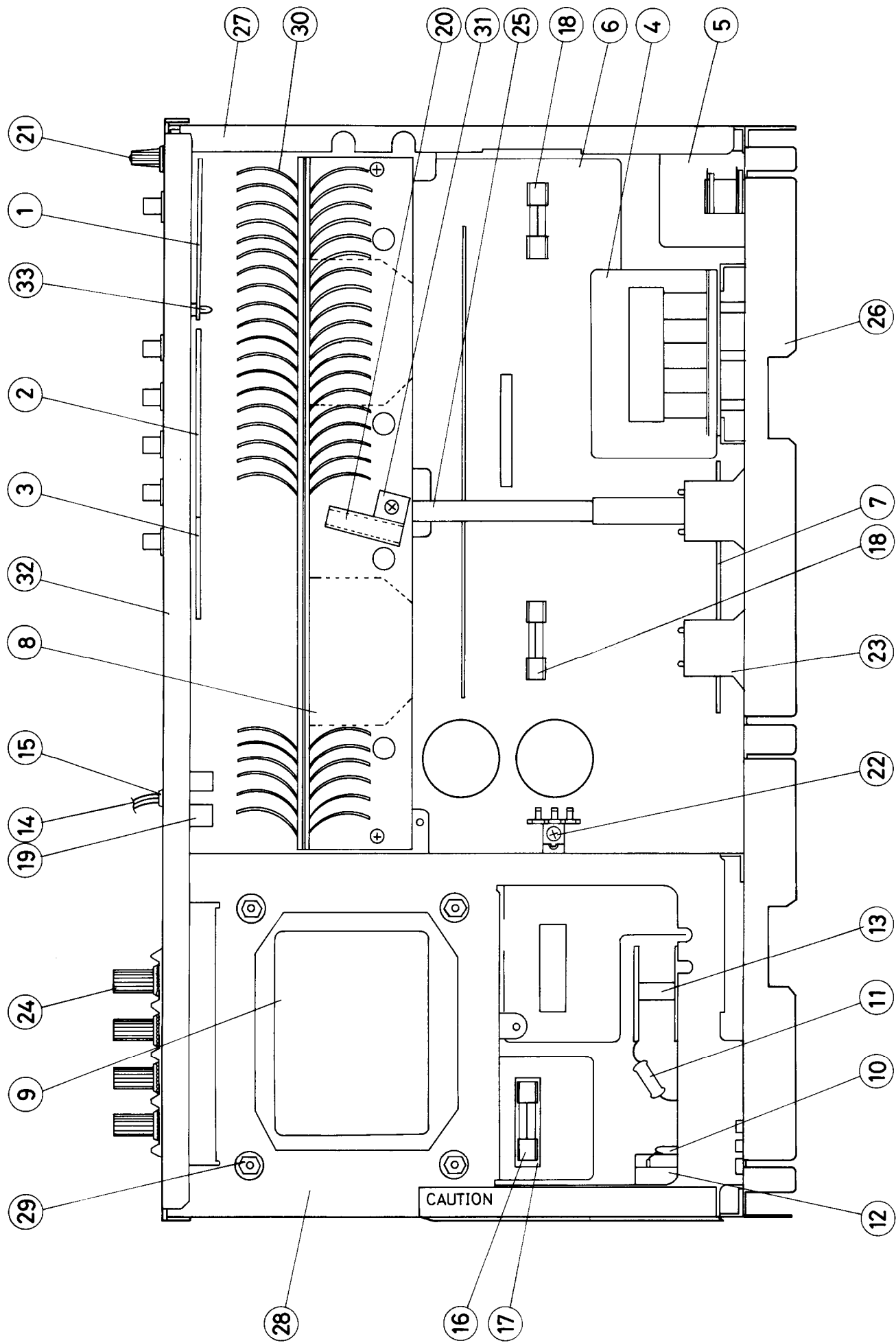


REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
1	28184092A	Top cover	16	28198533	Facet ass'y
2	28140020	4 x 10 x 40 mm, Cushion	17	12569122	Back plate (S)
3	27170089	Bottom board	18	27267073	Guide, push
4	27175011B	Leg	19	27267078	Guide, power
5	834430062	3STS+6BQ(BC), Tapping screw	20	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. NO.	CIRCUIT NO.	PARTS NO.	DESCRIPTION	REF. NO.	CIRCUIT NO.	PARTS NO.	DESCRIPTION	REF. NO.	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
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
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
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
8	Q502, Q602	222025	STK-1050, Power amplifier IC	8	Q502, Q602	222025	STK-1050, Power amplifier IC	8	Q502, Q602	222025	STK-1050, Power amplifier IC
9	T901	230430	NPT-715D, Power transformer	9	T901	230431	NPT-715G, Power transformer	9	T901	230432	NPT-715DG, Power transformer
10	C901	3500062	0.01µF, 125V, CS capacitor	10	C901	3500058	PME265MB510, IS capacitor	10	C901	3500058	PME265MB510, IS capacitor
11	R807, R808	441722714K	270Ω, 2W, Metal oxide film resistor	11	R807, R808	441722714K	270Ω, 2W, Metal oxide film resistor	11	R807, R808	441722714K	270Ω, 2W, Metal oxide film resistor
12	S901	25035047	NPS-111-L12P, Power switch	12	S901	25035176	NPS-111-L140, Power switch	12	S901	25035176	NPS-111-L140, Power switch
13	S807	25030170	NRS-254-15F, Speaker selector switch	13	S807	25030170	NRS-254-15F, Speaker selector switch	13	S807	25030170	NRS-254-15F, Speaker selector switch
14	W901	253099A	AS-UC-3, Power supply cable	14	W901	253083	AS-CEE, Power supply cable	14	W901	253092	AS-CEE-2, Power supply cable
15	W901a	270025	SR-3P4, Strainrelief	15	W901a	270280	SR-4K-4, Strainrelief	15	W901a	270280	SR-4K-4, Strainrelief
16	F901	252049	4A ST-6, AC fuse	16	F901	252074	2A SE-EAK, AC fuse	16	F901	252014	4A-T, AC fuse
17	F901a	250143	FF-1S4, Fuseholder	17	F901a	25065096	NPF-073, Fuseholder	17	F901a	250143	FF-1S4, Fuseholder
18	F501, F601	252014	4A-T, Speaker protection fuse	18	F501, F601	252014	4A-T, Speaker protection fuse	18	F501, F601	252014	4A-T, Speaker protection fuse
19	P901, P902	25050032	S-16444-01, AC outlet	19	P901, P902	25050032	S-16444-01, AC outlet	19	P901, P902	25050032	S-16444-01, AC outlet
20	S701	25065127	IP-105A-100, Thermal switch	20	S901	25065127	IP-105A-100, Thermal switch	20	S901	25065127	IP-105A-100, Thermal switch
21	P001	25060044	Ground terminal	21	P001	25060044	Ground terminal	21	P001	25060044	Ground terminal
22	M501, M601	250130	T4461, Terminal	22	M501, M601	250130	T4461, Terminal	22	M501, M601	250130	T4461, Terminal
23	M501, M601	243131	NIND-0500S-S131, Output level meter	23	M501, M601	243131	NIND-0500S-S131, Output level meter	23	M501, M601	243131	NIND-0500S-S131, Output level meter
24	P501, P502	25060038	NTM-4PRMN09, Speaker terminal	24	P501, P502	25060038	NTM-4PRMN09, Speaker terminal	24	P501, P502	25060038	NTM-4PRMN09, Speaker terminal
25		25065132	Cable	25		25065132	Cable	25		25065132	Cable
26		27110115	Front bracket	26		27110115	Front bracket	26		27110115	Front 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
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
31		270281	Bracket, thermal switch	31		270281	Bracket, thermal switch	31		270281	Bracket, thermal switch
32		27120256	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
							NAFU-936, Fuse pc board ass'y				
							5A-SE-EAK, Fuse				
					F911, F912	252078					
									S902		
									F902		
									F902a		

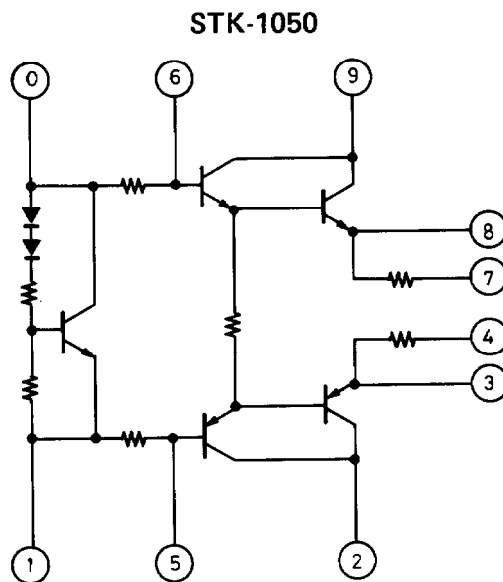
COMPONENT LOCATION



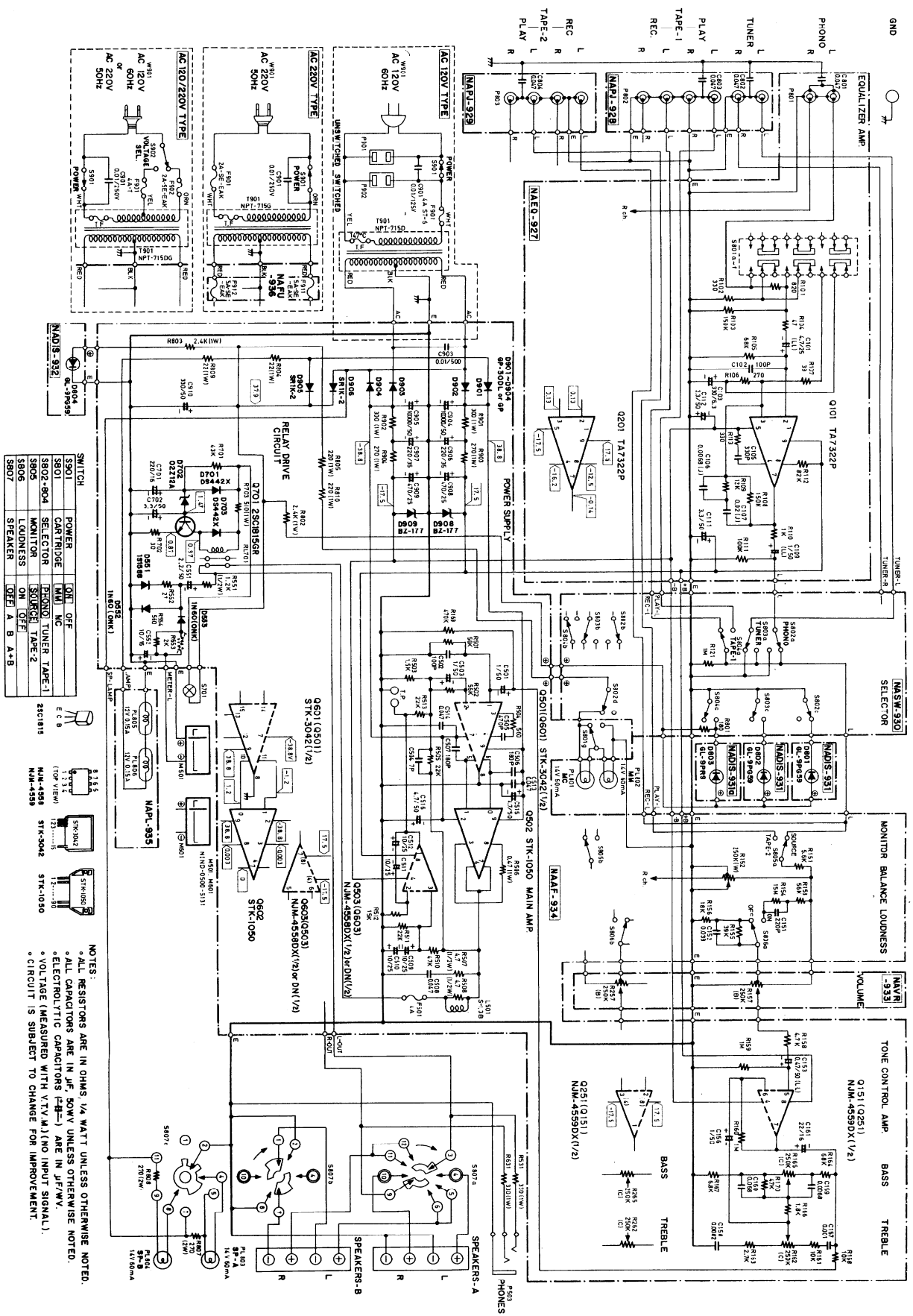
Meter calibration adjustment

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



Q201	TA7322P	IC
Q202	2N3055	TR
Q203	2N3055	TR
Q204	2N3055	TR
Q205	2N3055	TR
Q206	2N3055	TR
Q207	2N3055	TR
Q208	2N3055	TR
Q209	2N3055	TR
Q210	2N3055	TR
Q211	2N3055	TR
Q212	2N3055	TR
Q213	2N3055	TR
Q214	2N3055	TR
Q215	2N3055	TR
Q216	2N3055	TR
Q217	2N3055	TR
Q218	2N3055	TR
Q219	2N3055	TR
Q220	2N3055	TR
Q221	2N3055	TR
Q222	2N3055	TR
Q223	2N3055	TR
Q224	2N3055	TR
Q225	2N3055	TR
Q226	2N3055	TR
Q227	2N3055	TR
Q228	2N3055	TR
Q229	2N3055	TR
Q230	2N3055	TR
Q231	TA7322P	IC
Q232	2N3055	TR
Q233	2N3055	TR
Q234	2N3055	TR
Q235	2N3055	TR
Q236	2N3055	TR
Q237	2N3055	TR
Q238	2N3055	TR
Q239	2N3055	TR
Q240	2N3055	TR
Q241	2N3055	TR
Q242	2N3055	TR
Q243	2N3055	TR
Q244	2N3055	TR
Q245	2N3055	TR
Q246	2N3055	TR
Q247	2N3055	TR
Q248	2N3055	TR
Q249	2N3055	TR
Q250	2N3055	TR
Q251	2N3055	TR
Q252	2N3055	TR
Q253	2N3055	TR
Q254	2N3055	TR
Q255	2N3055	TR
Q256	2N3055	TR
Q257	2N3055	TR
Q258	2N3055	TR
Q259	2N3055	TR
Q260	2N3055	TR
Q261	2N3055	TR
Q262	2N3055	TR
Q263	2N3055	TR
Q264	2N3055	TR
Q265	2N3055	TR
Q266	2N3055	TR
Q267	2N3055	TR
Q268	2N3055	TR
Q269	2N3055	TR
Q270	2N3055	TR
Q271	2N3055	TR
Q272	2N3055	TR
Q273	2N3055	TR
Q274	2N3055	TR
Q275	2N3055	TR
Q276	2N3055	TR
Q277	2N3055	TR
Q278	2N3055	TR
Q279	2N3055	TR
Q280	2N3055	TR
Q281	2N3055	TR
Q282	2N3055	TR
Q283	2N3055	TR
Q284	2N3055	TR
Q285	2N3055	TR
Q286	2N3055	TR
Q287	2N3055	TR
Q288	2N3055	TR
Q289	2N3055	TR
Q290	2N3055	TR
Q291	2N3055	TR
Q292	2N3055	TR
Q293	2N3055	TR
Q294	2N3055	TR
Q295	2N3055	TR
Q296	2N3055	TR
Q297	2N3055	TR
Q298	2N3055	TR
Q299	2N3055	TR
Q300	2N3055	TR

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/1 AND 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)
	ICs		D551, D651	Diodes 223119	1S1588
Q101, Q201	222605	TA7322P	D552, D652	2231031	1N60(N)FM
	Capacitors		D553, D653		
C101, C201	392850477	4.7 μ F, 25V, LL	D701, D703	223133	DS-442X
C103, C203	352723319	330 μ F, 6.3V, Elect.	D702	224025	02Z12A
C109, C209	392880107	1 μ F, 50V, LL	D901 - D904	223863	GP-30DL
C111, C112	352780339	3.3 μ F, 50V, Elect.	D905, D906	223804	SR1K-2
	Switch		D908, D909	224072	BZ-177
S801	25065131	NSS-6262, MM/MC selector	PL801	Lamps 210085	PL14V 0.06AW-2.6
	Terminal		PL802	210099	PL14V 0.06AW-2.6
P801	25045071	NPJ-2PDBL35, Input	L501, L601	Coils 231001	S-1.3B

TUNER AND TAPE TERMINAL PC BOARD (NAPJ-928)

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

TAPE TERMINAL PC BOARD (NAPJ-929)

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

SELECTOR SWITCH PC BOARD (NASW-930)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	C904, C905 <th>3504147</th> <th>10,000μF, 50V, Elect.</th>	3504147	10,000 μ F, 50V, Elect.
S802 - S804	25035209	NPS-342-L173, Phono, tuner/tape selector switch	C906, C907	352762219	220 μ F, 35V, Elect.
			C908, C909	352754719	470 μ F, 25V, Elect.
			C910	352783319	330 μ 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 Ω , 1W, Metal oxide film
			R507, R607	441520474KF	4.7 Ω , 1/2W, Metal oxide film
			R508, R608	441520474K	4.7 Ω , 1/2W, Metal oxide film
			R551, R651	441521224K	1.2k Ω , 1/2W, Metal oxide film
			R703	441625114KF	510 Ω , 1W, Metal oxide film
			R803, R802	441622424KF	2.4 k Ω , 1W, Metal oxide film
			R804, R809	441622204KF	22 Ω , 1W, Metal oxide film
			R805, R810	441622214KF	220 Ω , 1W, Metal oxide film
			R901, R902	441623014KF	300 Ω , 1W, Metal oxide film
			R903, R904	441622714KF	270 Ω , 1W, Metal oxide film
			R653	5215043	NO8HR2KBC, Semi-fixed

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

CIRCUIT NO.	PARTS NO.	DESCRIPTION	RL701 <th>25065134</th> <th>NRL-2P5A-DC24V-07</th>	25065134	NRL-2P5A-DC24V-07
D804	225028-3	GL-9PG59(C), L.E.D.	S801, S805	Relay 25065134	
			S806	Switch 25035217	NPS-322-L181

VOLUME PC BOARD (NAVR-933)

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

FUSE PC BOARD (NAFU-936)

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