

ONKYO® SERVICE MANUAL

INTEGRATED DUAL SUPER SERVO AMPLIFIER MODEL A-25

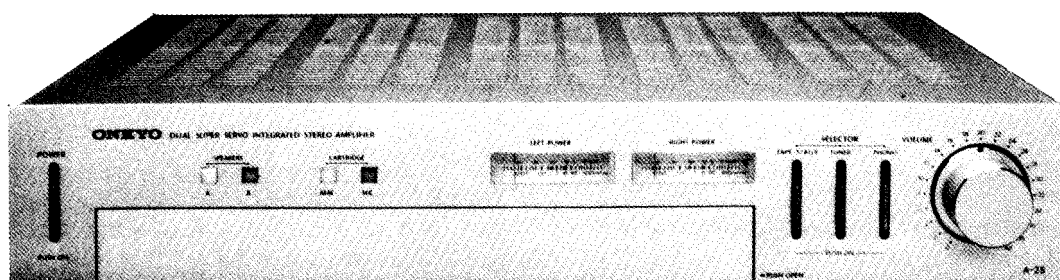


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ONKYO®
AUDIO COMPONENTS

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 Tuner: 150 mV/50 kohms Tape Play: 150 mV/50 kohms Tape Rce: 150 mV/1 kohms (Phono)	Power Supply: AC 120 V, 60 Hz. AC 220 V, 50 Hz. AC 110/220 V, 50/60 Hz.
Phono Overload:	180 mV RMS at 1 kHz, 0.04% THD	Semiconductors: 7 ICs, 1 transistor, 21 diodes,
Bass Control:	$\pm$ 8 dB at 100 Hz	Dimensions: 418(W) x 83(H) x 280(D) mm 16-1/2" x 3-1/4" x 11"
Treble Control:	$\pm$ 8 dB at 10,000 Hz	Weight: 6.5 kg, 14.3 lbs.
Signal to Noise Ratio	Phono (MM): 75 dB (IHF A-202, 5 mV input, 1 watt output)	Specifications and features are subject to change without notice.

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 in sufficient air circulation.)

3. Voltage Selector (Rear Panel)

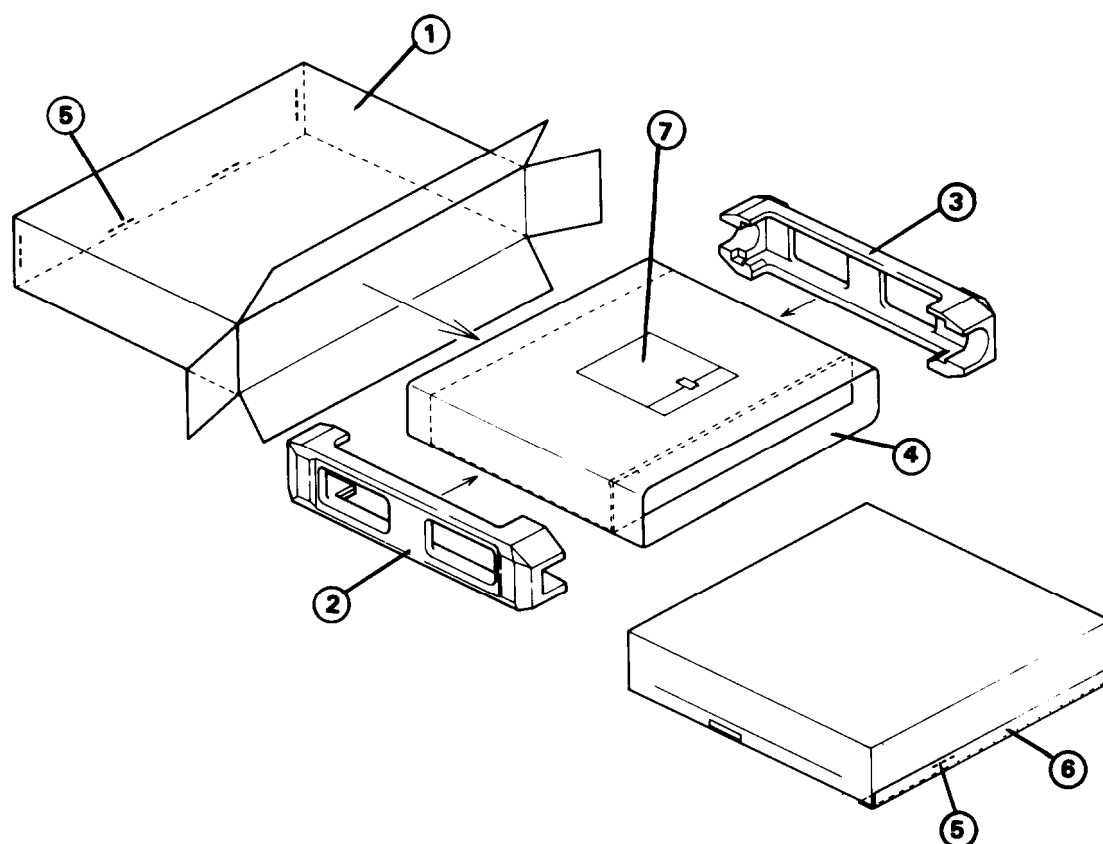
Some models are equipped with a voltage selector to conform with local power supplies.

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

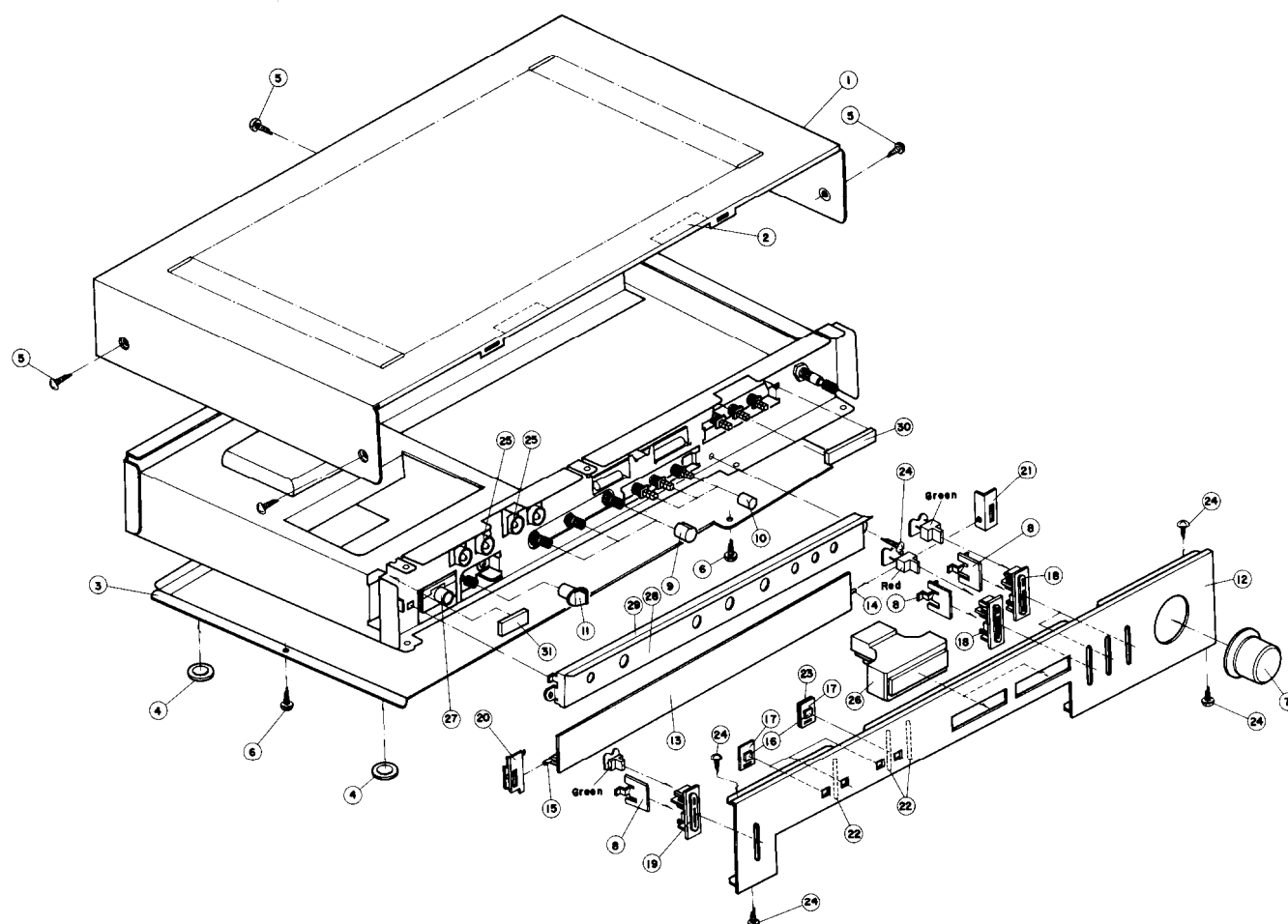
120/220V Model

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

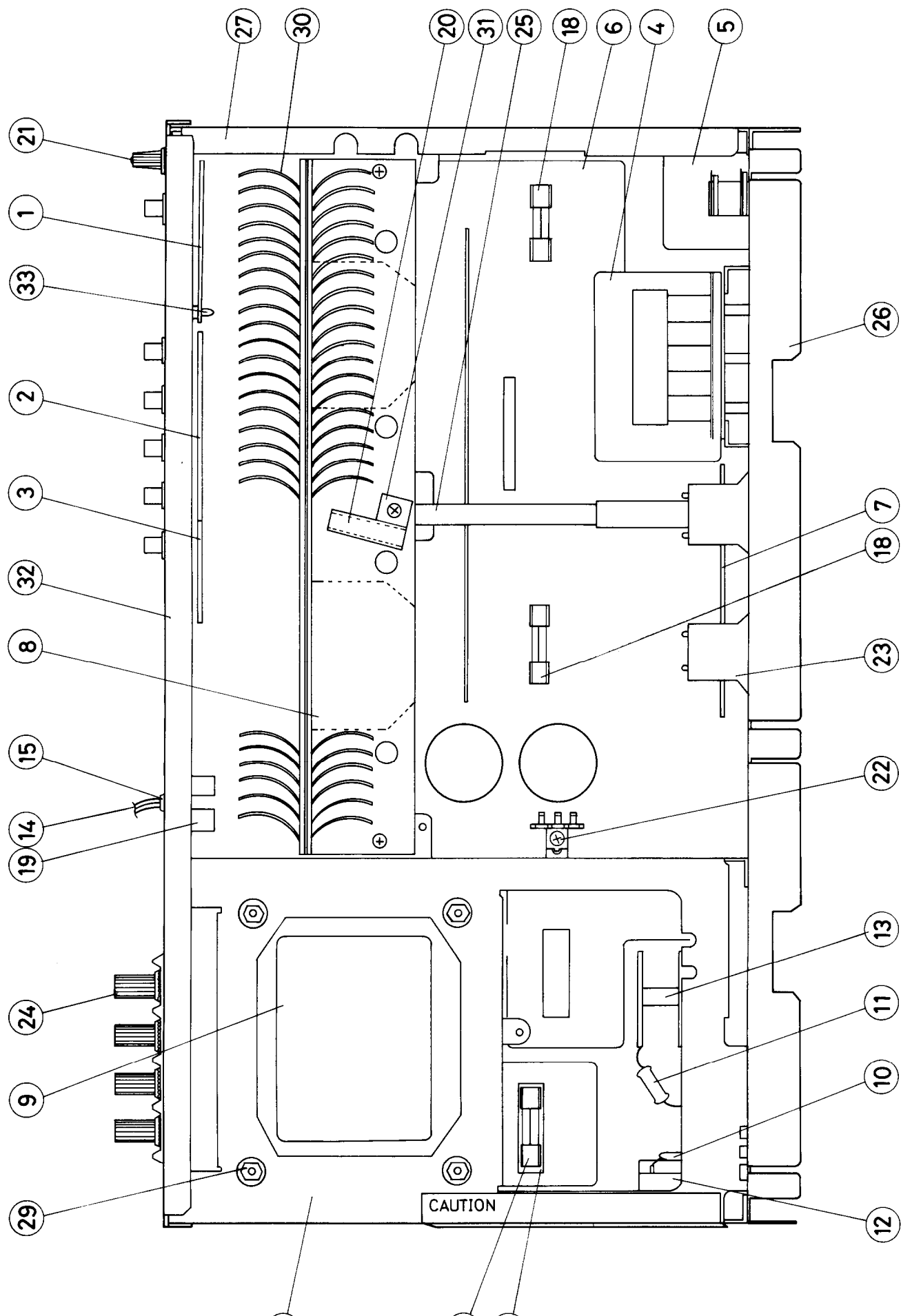


REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
1	28184092A	Top cover	16	28198533	Facet ass'y
2	28140020	4 x 10 x 40 mm, Cushion	17	12569122	Back plate (S)
3	27170089	Bottom board	18	27267073	Guide, push
4	27175011B	Leg	19	27267078	Guide, power
5	834430062	3STS+6BQ(BC), Tapping screw	20	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

MPONENT LOCATION – PARTS LIST

220 model				120/220V model			
REF. NO.	CIRCUIT NO.	PARTS NO.	DESCRIPTION	REF. NO.	CIRCUIT NO.	PARTS NO.	DESCRIPTION
1	1	12569527	NAEQ-927, Equalizer ampli. pc board ass'y	1	1	12569527	NAEQ-927, Equalizer ampli. pc board ass'y
2	2	12569528	NAPJ-928, Tuner/Tape 1 terminal pc board ass'y	2	2	12569528	NAPJ-928, Tuner/Tape 1 terminal pc board ass'y
3	3	12569529	NAPJ-929, Tape 2 terminal pc board ass'y	3	3	12569529	NAPJ-929, Tape 2 terminal pc board ass'y
4	4	12569530	NASW-930, Selector switch pc board ass'y	4	4	12569530	NASW-930, Selector switch pc board ass'y
5	5	12569533	NAVR-933, Output level control pc board ass'y	5	5	12569533	NAVR-933, Output level control pc board ass'y
6	6	12569534	NAAF-934, Pre./Power amplifier pc board ass'y	6	6	12569534	NAAF-934, Pre./Power amplifier pc board ass'y
7	7	12569535	NAPL-935, Meter illumination pc board ass'y	7	7	12569535	NAPL-935, Meter illumination pc board ass'y
8	8	Q502, Q602	222025	8	8	Q502, Q602	222025
9	9	T901	NPT-715D, Power transformer	9	9	T901	NPT-715D, Power transformer
10	10	C901	PME265MB510, IS capacitor	10	10	C901	PME265MB510, IS capacitor
11	11	R807, R808	441722714K 270Ω, 2W, Metal oxide film resistor	11	11	R807, R808	441722714K 270Ω, 2W, Metal oxide film resistor
12	12	S901	NPS-111-L12P, Power switch	12	12	S901	NPS-111-L140, Power switch
13	13	S807	NRS-254-15F, Speaker selector switch	13	13	S807	NRS-254-15F, Speaker selector switch
14	14	W901	AS-UC-3, Power supply cable	14	14	W901	AS-CEE-2, Power supply cable
15	15	W901a	SR-3P4, Strainrelief	15	15	W901a	SR-4K-4, Strainrelief
16	16	F901	4A ST-6, AC fuse	16	16	F901	4A-T, AC fuse
17	17	F901a	FF-154, Fuseholder	17	17	F901a	FF-154, Fuseholder
18	18	F501, F601	4A-T, Speaker protection fuse	18	18	F501, F601	4A-T, Speaker protection fuse
20	20	P901, P902	S-16444-01, AC outlet	20	20	S901	1P-105A-100, Thermal switch
21	21	S701	1P-105A-100, Thermal switch	21	21	P001	Ground terminal
22	22	P001	Ground terminal	22	22	T4461	T4461, Terminal
23	23	M501, M601	243131	23	23	M501, M601	243131
24	24	P501, P502	25060038	24	24	P501, P502	25060038
25	25	25065132	Cable	25	25	25065132	Cable
26	26	27110115	Front bracket	26	26	27110115	Front bracket
27	27	27115045C	Side bracket	27	27	27115045C	Side bracket
28	28	27130224	Bracket, power transformer	28	28	27130224	Bracket, power transformer
29	29	86414010	FWN4 x 10FN, Nut	29	29	86414010	FWN4 x 10FN, nut
30	30	27160078	Radiator	30	30	27160078	Radiator
31	31	270281	Bracket, thermal switch	31	31	270281	Bracket, thermal switch
32	32	27120256	Back panel	32	32	27120256	Back panel
33	33	27190063	TCBS-8N, Holder	33	33	27190063	TCBS-8N, Holder
						S902	NSS-1258P, Voltage Selector
						F902	2A-SE-EAK, Fuse
						F902a	NPF-073, Fuseholder

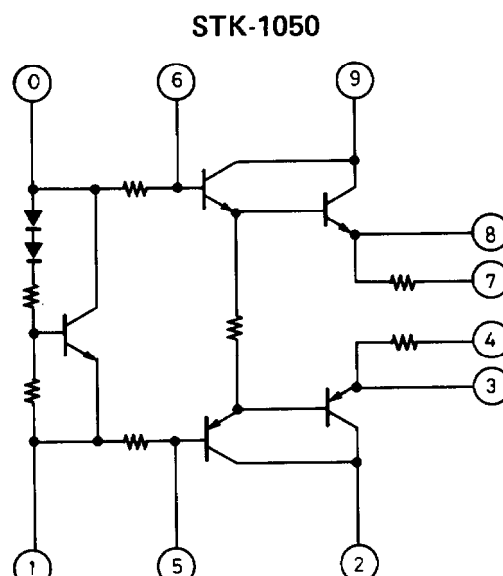
OMPONENT LOCATION



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.



This is a detailed electronic schematic diagram for a stereo receiver, labeled "FIG. 1". The diagram is organized into several functional sections:

- Input Section (Top):** Includes inputs for PHONO, TUNER, TAPE-1, TAPE-2, REC, and PLAY. These signals pass through an EQUALIZER AMP and various coupling capacitors and resistors.
- Power Supply Section (Middle):** Features a 250V AC input, a power transformer (T-1) with multiple secondary windings (e.g., 500V-0-500V, 250V, 12.6V), and a full-wave bridge rectifier (D1-D4). The resulting DC is filtered by capacitors (C1, C2) and regulated by a 500V-0-500V regulator (Q101).
- Detector and Tuning Section (Left):** Contains the detector (Q101, 6X4), tuner (Q102, 6X4), and various tuning-related components like capacitors (C101-C104) and resistors (R101-R104).
- Relay Drive Section (Center):** A 250V-0-250V relay drive circuit (Q103, 6X4) that controls the switching of various components.
- Monitor Balance Loudness Section (Right):** Includes a monitor balance circuit (Q104, 6X4) and a loudness control circuit (Q105, 6X4) with associated capacitors (C105-C108) and resistors (R105-R108).
- Output Section (Bottom):** Features a main amplifier (Q106, 6X4) and a speaker driver (Q107, 6X4) that drives two speakers (SPEAKERS-A and SPEAKERS-B). The output is filtered by capacitors (C109-C112) and resistors (R109-R112).
- Control Section (Bottom Left):** Includes a switch (S1) for power, a selector switch (S2) for TAPE-1, TAPE-2, and TUNER, and a speaker selector switch (S3) for SPEAKERS-A and SPEAKERS-B.
- Notes:**
 - ALL RESISTORS ARE IN OHMS, 1/4 WATT UNLESS OTHERWISE NOTED.
 - ALL CAPACITORS ARE IN μ F, 50V UNLESS OTHERWISE NOTED.
 - ELECTROLYTIC CAPACITORS (E-1) ARE IN μ F/WV.
 - VOLTAGE (MEASURED WITH V.T.M.) (NO INPUT SIGNAL).
 - CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

The schematic uses standard electronic symbols for components like resistors (R), capacitors (C), diodes (D), transistors (Q), and relays (K). Component values are specified with their tolerance and power/voltage ratings.

NOTES:

- ALL RESISTORS ARE IN OHMS, 1/4 WATT UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μF , 50VW UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS ($\text{E}-$) ARE IN $\mu\text{F}/\text{WV}$.
- VOLTAGE (MEASURED WITH V.T.A.) (NO INPUT SIGNAL).
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

ONKYO CORPORATION

PRINTED CIRCUIT BOARD-PARTS LIST

EQUALIZER AMPLIFIER PC BOARD (NAEQ 927)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	Q701	Transistor	2211255	2SC1815(GR)
Q101, Q201	ICs 222605	TA7322P	D551, D651	Diodes 223119	2231031	1S1588
			D552, D652			1N60(N)FM
			D553, D653			
			D701, D703	223133		DS-442X
			D702	224025		02Z12A
C101, C201	392850477	4.7μF, 25V, LL	D901 - D904	223863		GP-30DL
C103, C203	352723319	330μF, 6.3V, Elect.	D905, D906	223804		SR1K-2
C109, C209	392880107	1μF, 50V, LL	D908, D909	224072		BZ-177
C111, C112	352780339	3.3μF, 50V, Elect.				
S801	Switch 25065131	NSS-6262, MM/MC selector	PL801	Lamps 210085		PL14V 0.06AW-2.6
			PL802	210099		PL14V 0.06AW-2.6
P801	Terminal 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	Capacitors	392884797	0.47μF, 50V, LL
P802	25045076	NPJ-6PDBL39, Tuner/Tape terminal	C156, C256		352780109	1μF, 50V, Elect.
			C161, C261		352742209	22μF, 16V, Elect.
			C501, C601		352780109	1μF, 50V, Elect.
			C503, C603		352780109	1μF, 50V, Elect.
			C508, C608		379124737	0.047μF, 50V, DEW
			C509-C512		352751009	10μF, 25V, Elect.
			C609 - C612			
			C515, C516		352780479	4.7μF, 50V, Elect.
			C615, C616			
			C551, C651		352780229	2.2μF, 50V, Elect.

TAPE TERMINAL PC BOARD (NAPJ-929)

TAPE TERMINAL PC BOARD (NAPJ-929)			C515, C516	352780479	4.7μF, 50V, Elect.
CIRCUIT NO.	PARTS NO.	DESCRIPTION	C615, C616		
			C551, C651	352780229	2.2μF, 50V, Elect.
P803	25045069	NPJ-4PDBL34, Tape terminal	C552, C652	352741009	10μF, 16V, Elect.
			C701	352742219	220μF, 16V, Elect.
			C702	352780339	3.3μF, 50V, Elect.
			C904, C905	3504147	10,000μF, 50V, Elect.
			C906, C907	352762219	220μF, 35V, Elect.
SELECTOR SWITCH PC BOARD (NASW-930)			C908, C909	352754719	470μV, 25V, Elect.
			C910	352783319	330μF, 50V, Elect.
CIRCUIT NO.	PARTS NO.	DESCRIPTION			

SELECTOR SWITCH PC BOARD (NASW-930)

SELECTOR SWITCH PC BOARD (NASW-930)			C904, C905	3504147	10,000μF, 50V, Elect.
CIRCUIT NO.	PARTS NO.	DESCRIPTION	C906, C907	352762219	220μF, 35V, Elect.
			C908, C909	352754719	470μV, 25V, Elect.
			C910	352783319	330μF, 50V, Elect.
S802 - S804	25035209	NPS-342-L173, Phono, tuner/tape selector switch	Resistors		
			R152, R252	5104084	N16RL250KWTR15

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

CIRCUIT NO.	PARTS NO.	DESCRIPTION				
D801, D802	225028-3	GL-9PG59(C), L.E.D.	R901, R902		441623014KF	300Ω, 1W, Metal oxide film
			R903, R904		441622714KF	270Ω, 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				
D804	225028-3	GL-9PG59(C), L.E.D.	S801, S805		25035217	NPS-322-L181
			S806			

VOLUME PC BOARD (NAVR-933)

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

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

CIRCUIT NO.	PARTS NO.	DESCRIPTION				
Q151, Q251	222534	NJM-4559DX	PL805, PL806		210065B	PL12V150mA, Lamp

METER ILLUMINATION LAMP PC BOARD (NAPL-935)

CIRCUIT NO.	PARTS NO.	DESCRIPTION				
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FUSE PC BOARD (NAFU-936)

CIRCUIT NO.	PARTS NO.	DESCRIPTION				
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