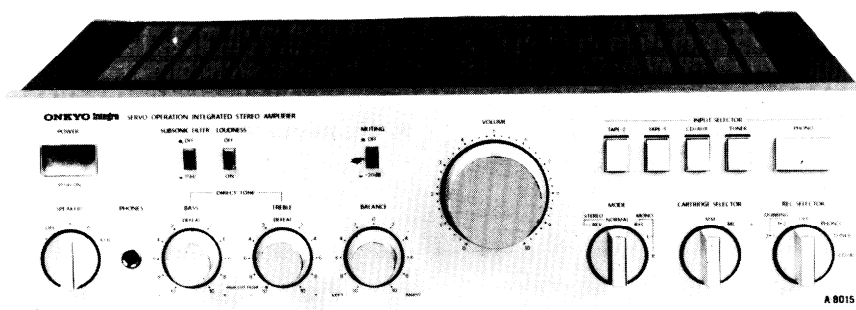




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ONKYO SERVICE MANUAL


SUPER SERVO INTEGRATED STEREO AMPLIFIER A-8015



UDN, UD	120V AC, 60 Hz
UGV, UG	220V AC, 50 Hz
UW	120V or 220V AC, 50/60 Hz

SAFETY-RELATED COMPONENT

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 CUTOMER.

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Printed circuit board view	9, 13
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ONKYO[®]
AUDIO COMPONENTS

SPECIFICATIONS

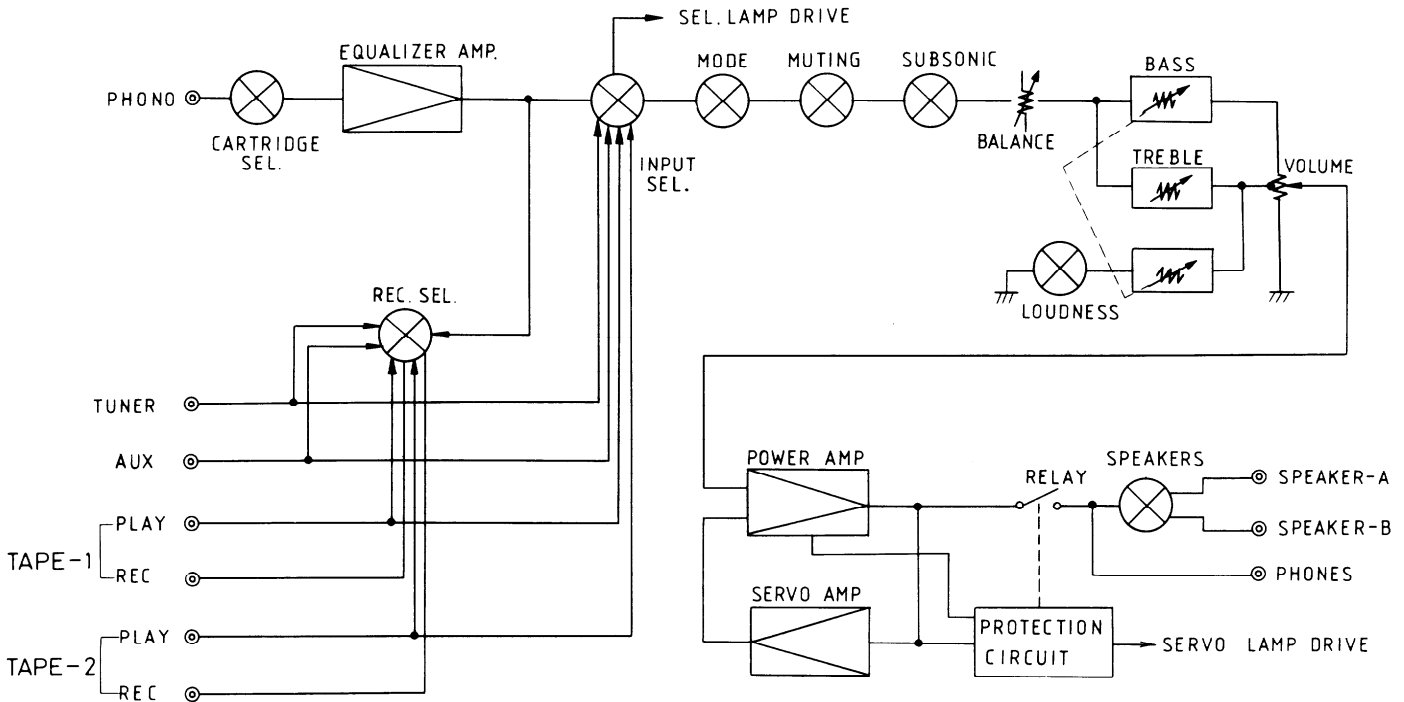
Music Power Output: 2 x 140 watts at 4 ohms, 1kHz (DIN)
 2 x 90 watts at 8 ohms, 1kHz (DIN)
 Continuous Power Output: 2 x 90 watts at 4 ohms, 1kHz (DIN)
 2 x 65 watts at 8 ohms, 1kHz (DIN)
 60 watts per channel min. RMS at 8 ohms both channels driven, from 20Hz to 20kHz, with no more than 0.018% THD.
 Total Harmonic Distortion: 0.018% at rated power
 IM Distortion: 0.005% at rated power
 Damping Factor: 50 at 8 ohms
 Frequency Response: 2 - 50,000 Hz ±1 dB
 RIAA Deviation (MM): 20 - 20,000 Hz ±0.5 dB
 Sensitivity and Impedance: Phono (MM): 2.5 mV/50 kohms
 Phono (MC): 350 μV/330 ohms
 Tuner: 150 mV/50 kohms
 Tape Play: 150 mV/50 kohms
 Tape Rec: 150 mV/3.3 kohms (phono)
 Phono Overload: 180 mV RMS at 1 kHz, 0.018% THD
 Bass Control: ±8 dB at 70 Hz

Treble Control: ±8 dB at 20,000 Hz
 Signal to Noise Ratio: Phono (MM): 80 dB (1HF A-202, 5 mV input, 1 watt output)
 Phono (MC): 67 dB (1HF A-202, 0.5mV input, 1 watt output)
 Tuner & Tape: 84 dB (1HF A-202, 0.5 V input, 1 watt output)
 Muting: -20 dB
 Loudness Control: +6 dB at 70 Hz, +5 dB at 20 kHz
 Subsonic Filter: 15 Hz (6 dB/Oct.)
 High Cut (TREBLE MIN): 6 kHz (6 dB/Oct.)

General
 Semiconductors: IC: 5 TR: 37 Diode: 26
 Dimensions: 435(W) x 122(H) x 392(D) mm
 17-1/8" x 4-13/16" x 15-7/16"
 Weight: 9 kg. (19.9 lbs.)

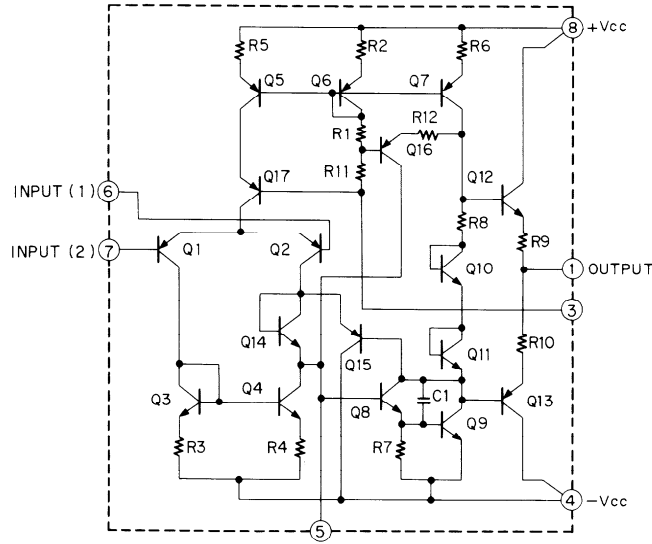
Specifications and features are subject to change without notice.

BLOCK DIAGRAM

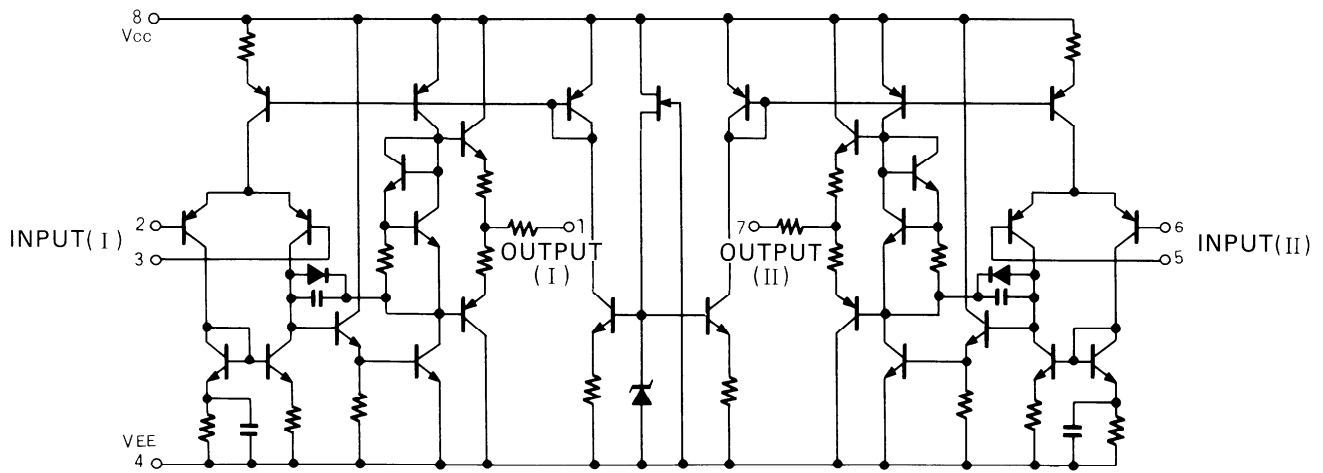


IC BLOCK DIAGRAM

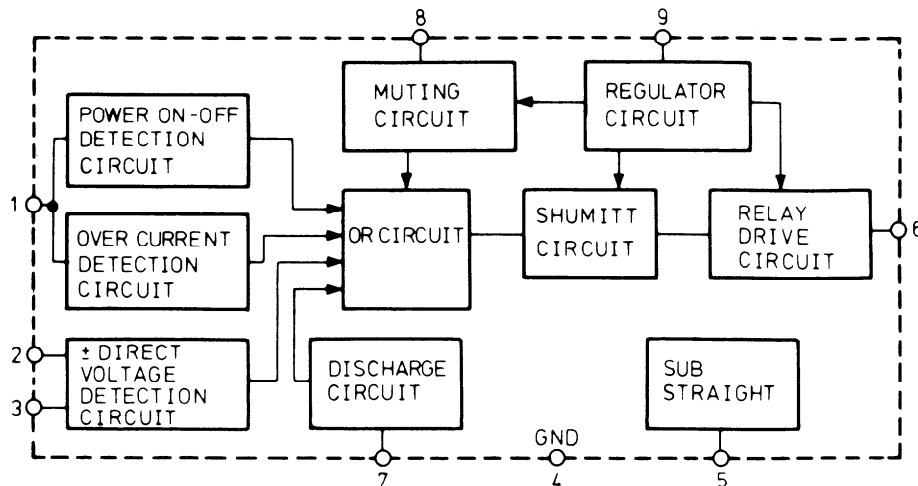
HA12017



NJM4558DX



TA7317P



PRECAUTIONS

1. Replacing the fuses

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

CIRCUIT NO.	PARTS NO.	DESCRIPTION
F901	252051	6A(ST-6), AC fuse (120V model)
F901	252055	6A-T, AC fuse (120V/220V model)
F902	252076	3.15A-SE-EAK, AC fuse (120V, 120V/220V model)
F701	252070	1A-SE-EAK, AC fuse (220V model)
F1, F2	252078	5A-SE-EAK, DC fuse (220V model)

2. Replacing the lamps

This unit uses the lamps listed below.

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL303	210250	PL14V 0.06AW-1.0, Phono selector indicator
PL304, PL305	210146	PL14V 0.06AW-1.0, Tuner, CD/AUX selector indicator
PL306, 307	210147	PL14V 0.06AW-1.0, Tape 1/2 selector indicator

PL701	210148	PL14V 0.06AW-2.0, Power indicator
PL702	210151	PL14V 0.08AW-1.5, Servo indicator

3. Insulation resistance measurement

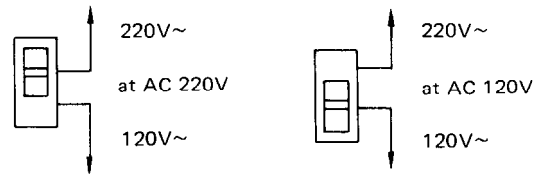
Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND specifications;

D model 500V 100MΩ

G/W model 500V more than 100MΩ

4. 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 up or down position. Confirm that the switch has been moved all the way to the up or down 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.



MAIN AMPLIFIER ADJUSTMENT

1. Set the all control knobs to standard position.

INPUT SELECTOR	.....	TUNER
VOLUME	.....	Minimum
BALANCE	.....	Center
MODE	.....	NORMAL
CART SEL.	.....	MM
REC SEL.	.....	OFF
MUTING, SUBSONIC FIL., LOUDNESS	.....	OFF
BASS, TREBLE	.....	DEFEAT
SPEAKER	.....	A

2. Idling current adjustment

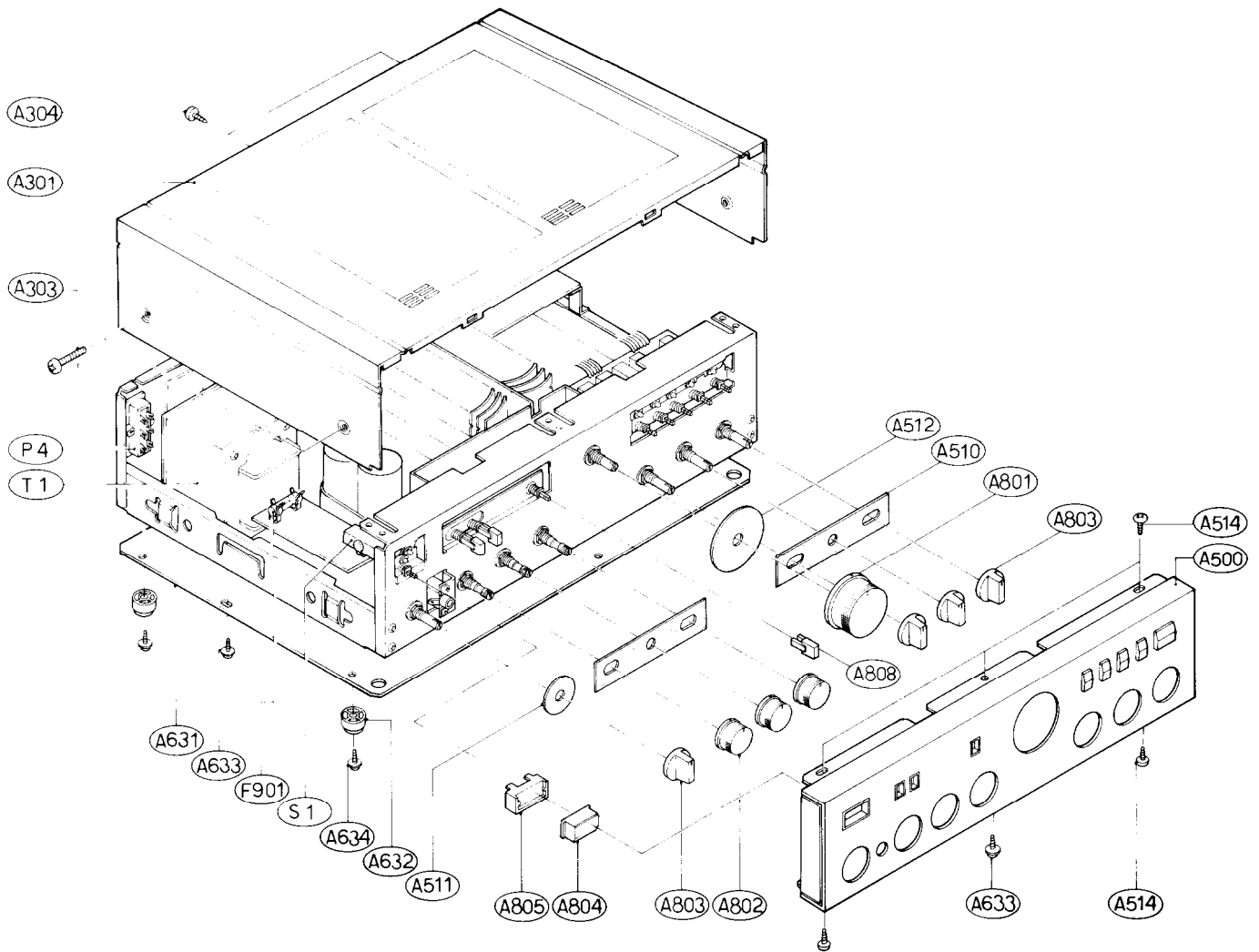
1 Connect the DC voltmeter between I_{ID} and V_{CT} terminals

2 Adjust the voltage to 12 ± 5 mV with semi-fixed resistor of R538 and R415

NOTES: Adjust after switching on for 5 minutes.

VOLUME	.....	Minimum
LOAD	.....	Open

EXPLODED VIEW



PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTION
A6	27115132A	Side bracket, Right
A7	27115089C	Side bracket, Left
A8	27160117	Heatsink
A9	27120470B	Back panel (D)
	27120471A	Back panel (G)
	27120475A	Back panel (W)
A10	270280	SR-4K-4, Strainrelief
A301	28184186	Top cover
	28184179	Top cover (B)
A303	838440089	4TTB+8C (BC), Tapping screw
A304	934430068	3TTS+6B (BC), Tapping screw
A500	12328121	Front panel ass'y
	12314121	Front panel ass'y (B)
A510	28140205	Cushion (TONE)
A511	28140185	Cushion
A512	28140206	Cushion
A514	834430068	3TTS+6B (BC), Tapping screw
A631	27170108B	Bottom board
A632	27175009A	Bottom leg
A633	831430088	3TTW+8B (BC), Tapping screw
	A634	834430108 3TTS+10B (BC), Tapping screw
	A801	28320831A Knob, Volume
		28321012 Knob, Volume (B)
	A802	28320832B Knob, Balance
		28321013 Knob, Balance (B)
	A803	28320833 Knob, Speaker
		28321014 Knob, Speaker (B)
	A804	28321100 Knob ass'y, Power
		28321101 Knob ass'y Power (B)
	A805	28320828C Knob, Base
	A808	28320836 Knob, Push
		28321018 Knob, Push (B)
	△ T1	230686 NPT-732D, Power transformer (D)
		230687 NPT-732G, Power transformer (G)
		230688 NPT-732DG, Power transformer (W)
	△ S1	25035015A NPS-111-LA3, Power switch
	△ S2	25065123 NSS-1258P, Slide switch (W)
	△ C1	3500065A 0.01μF, AC400V, Capacitor IS
	C2	3504172 15000μF, 50V, Capacitor, Elect.

A

B

C

D

E

F

G

SCHEMATIC DIAGRAM

220V Model

The schematic diagram is divided into several functional sections:

- Section A:** Input selector (NASW-1466) with controls for Tuner, Con Aux, Play, Rec, and Tape 1/2.
- Section B:** Input selector (NASW-1470) for Phono, Tuner, Con Aux, and Tape 1/2.
- Section C:** MAER-1163B MN/MC Equalizer Amplifier.
- Section D:** NASW-1472 (1) and NASW-1472a (1) for Mode, Loudness, Subsync, and Multing.
- Section E:** Balance, Treble, Bass, and Volume controls.
- Section F:** Amplifier stages including 07021A731P, 07021A732P, and 07021A733P.
- Section G:** Speaker outputs (Speaker-A, Speaker-B) and a Phones output.

Key components include various transistors (e.g., 0512, 0517, 0518, 0519, 0520, 0521, 0522, 0523, 0524, 0525, 0526, 0527, 0528, 0529, 0530, 0531, 0532, 0533, 0534, 0535, 0536, 0537, 0538, 0539, 0540, 0541, 0542, 0543, 0544, 0545, 0546, 0547, 0548, 0549, 0550, 0551, 0552, 0553, 0554, 0555, 0556, 0557, 0558, 0559, 0560, 0561, 0562, 0563, 0564, 0565, 0566, 0567, 0568, 0569, 0570, 0571, 0572, 0573, 0574, 0575, 0576, 0577, 0578, 0579, 0580, 0581, 0582, 0583, 0584, 0585, 0586, 0587, 0588, 0589, 0590, 0591, 0592, 0593, 0594, 0595, 0596, 0597, 0598, 0599, 0600, 0601, 0602, 0603, 0604, 0605, 0606, 0607, 0608, 0609, 0610, 0611, 0612, 0613, 0614, 0615, 0616, 0617, 0618, 0619, 0620, 0621, 0622, 0623, 0624, 0625, 0626, 0627, 0628, 0629, 0630, 0631, 0632, 0633, 0634, 0635, 0636, 0637, 0638, 0639, 0640, 0641, 0642, 0643, 0644, 0645, 0646, 0647, 0648, 0649, 0650, 0651, 0652, 0653, 0654, 0655, 0656, 0657, 0658, 0659, 0660, 0661, 0662, 0663, 0664, 0665, 0666, 0667, 0668, 0669, 0670, 0671, 0672, 0673, 0674, 0675, 0676, 0677, 0678, 0679, 0680, 0681, 0682, 0683, 0684, 0685, 0686, 0687, 0688, 0689, 0690, 0691, 0692, 0693, 0694, 0695, 0696, 0697, 0698, 0699, 0700, 0701, 0702, 0703, 0704, 0705, 0706, 0707, 0708, 0709, 0710, 0711, 0712, 0713, 0714, 0715, 0716, 0717, 0718, 0719, 0720, 0721, 0722, 0723, 0724, 0725, 0726, 0727, 0728, 0729, 0730, 0731, 0732, 0733, 0734, 0735, 0736, 0737, 0738, 0739, 0740, 0741, 0742, 0743, 0744, 0745, 0746, 0747, 0748, 0749, 0750, 0751, 0752, 0753, 0754, 0755, 0756, 0757, 0758, 0759, 0760, 0761, 0762, 0763, 0764, 0765, 0766, 0767, 0768, 0769, 0770, 0771, 0772, 0773, 0774, 0775, 0776, 0777, 0778, 0779, 0780, 0781, 0782, 0783, 0784, 0785, 0786, 0787, 0788, 0789, 0790, 0791, 0792, 0793, 0794, 0795, 0796, 0797, 0798, 0799, 0800, 0801, 0802, 0803, 0804, 0805, 0806, 0807, 0808, 0809, 0810, 0811, 0812, 0813, 0814, 0815, 0816, 0817, 0818, 0819, 0820, 0821, 0822, 0823, 0824, 0825, 0826, 0827, 0828, 0829, 0830, 0831, 0832, 0833, 0834, 0835, 0836, 0837, 0838, 0839, 0840, 0841, 0842, 0843, 0844, 0845, 0846, 0847, 0848, 0849, 0850, 0851, 0852, 0853, 0854, 0855, 0856, 0857, 0858, 0859, 0860, 0861, 0862, 0863, 0864, 0865, 0866, 0867, 0868, 0869, 0870, 0871, 0872, 0873, 0874, 0875, 0876, 0877, 0878, 0879, 0880, 0881, 0882, 0883, 0884, 0885, 0886, 0887, 0888, 0889, 0890, 0891, 0892, 0893, 0894, 0895, 0896, 0897, 0898, 0899, 0900, 0901, 0902, 0903, 0904, 0905, 0906, 0907, 0908, 0909, 0910, 0911, 0912, 0913, 0914, 0915, 0916, 0917, 0918, 0919, 0920, 0921, 0922, 0923, 0924, 0925, 0926, 0927, 0928, 0929, 0930, 0931, 0932, 0933, 0934, 0935, 0936, 0937, 0938, 0939, 0940, 0941, 0942, 0943, 0944, 0945, 0946, 0947, 0948, 0949, 0950, 0951, 0952, 0953, 0954, 0955, 0956, 0957, 0958, 0959, 0960, 0961, 0962, 0963, 0964, 0965, 0966, 0967, 0968, 0969, 0970, 0971, 0972, 0973, 0974, 0975, 0976, 0977, 0978, 0979, 0980, 0981, 0982, 0983, 0984, 0985, 0986, 0987, 0988, 0989, 0990, 0991, 0992, 0993, 0994, 0995, 0996, 0997, 0998, 0999, 1000).

25D880
25891C
25A101
25A103
25C183
25C185

25A850
25A852
25A101
25A103
25C183
25C185

25A850
25A852
25A101
25A103
25C183
25C185

25A850
25A852
25A101
25A103
25C183
25C185

25A850
25A852
25A101
25A103
25C183
25C185

25A850
25A852
25A101
25A103
25C183
25C185

25A850
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25C183
25C185

25A850
25A852
25A101
25A103
25C183
25C185

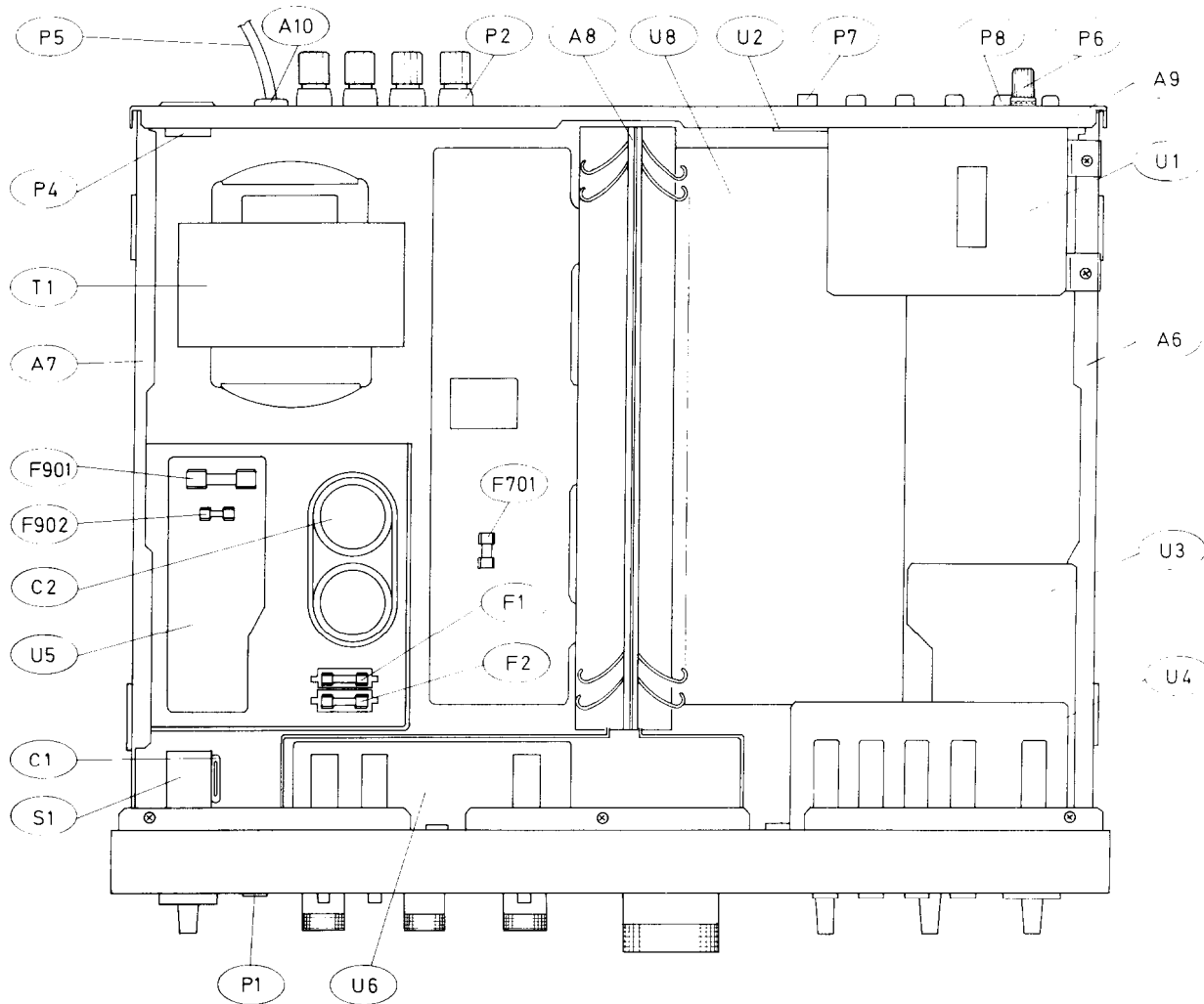
25A850
25A852
25A101
25A103
25C183
25C185

NOTES:
1. ALL RESISTORS ARE IN OHMS, 1/4 WATT UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS ARE IN P.F. 50WV UNLESS OTHERWISE NOTED.
3. ELECTROLYTIC CAPACITORS (EM-) ARE IN P.F.W.V.
4. ALL CAPACITORS ARE IN MICROFARADS UNLESS OTHERWISE NOTED.
5. CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

A 8015UG
A-8015BUG
SCHEMATIC DIAGRAM
RC-201432

ONKYO CORPORATION

COMPONENT LOCATION



△ F901	252051	6A (ST-6), AC fuse (D)	U4	12941570	NASW-1470, Input selector switch pc board ass'y	
	252055	6A-T, AC fuse (W)	U5	12941571	NAPS-1471, Rectifier circuit pc board ass'y (D)	
△ F902	252076	3.15A-SE-EAK, AC fuse (G) (W)		12334571B	NAPS-1471b, Rectifier circuit pc board ass'y (G)	
△ F701	252070	1A-SE-EAK, AC fuse (G)		12330571C	NAPS-1471c, Rectifier circuit pc board ass'y (W)	
△ F1, F2	252078	5A-SE-EAK, DC fuse (G)		U6	12941572	NASW-1472, Switch circuit pc board ass'y
P1	25045018	LJ-100-H, Stereo headphone terminal		U7	12328574B	NATC-1474b, Tone control pc board ass'y
P2	25060051	NTM-4PRMN20, Speaker terminal		U8	12328576C	NAMA-1476c, Power amplifier pc board ass'y (D) (W)
△ P4	25050139	NSCT-6P38, AC outlet (D)			12334576D	NAMA-1476d, Power amplifier pc board ass'y (G)
	25108010	LG-2C, Terminal (G) (W)				
△ P5	253112	AS-UC-4#18, Power supply cable (D)				
	253083-1	AS-CEE, Power supply cable (G)				
	253092-1	AS-CEE-2, Power supply cable (W)				
P6	25060044	Ground terminal				
P7	25045072	NPJ-6PDBL36, Input terminal				
P8	25045087	NPJ-2PDBL44, Phono input terminal				
U1	12328563A	NAEQ-1163a, Equalizer amplifier pc board ass'y (D) (W)				
	12334563B	NAEQ-1163b, Equalizer amplifier pc board ass'y (G)				
U2	12941568	NAPJ-1468, Input terminal pc board ass'y				
U3	12940569A	NASW-1469a, Rec. Selector switch pc board ass'y				

NOTE

(D) : only 120V model

(G) : only 220V model

(W) : only 120V/220V model

ⓑ : Black type

The components identified by mark △ are critical for risk of fire and electric shock. Replace only with parts number specified.

PRINTED CIRCUIT BOARD PARTS LIST

EQUALIZER AMPLIFIER PC BOARD

(NAEQ-1163a)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q101, Q102	222594	HA-12017, ICs
C101, C102	352751009	10 μ F, 25V, Capacitors, Elect.
C107, C108	352724719	470 μ F, 6.3V, Capacitors, Elect.
C113, C114	379126824	6800pF, 50V, Capacitors, DEW
C115, C116	379122034	0.02 μ F, 50V, Capacitors, DEW
C117, C118	352780109	1 μ F, 50V, Capacitors, Elect.
C119, C120	379121225	1200pF, 50V, Capacitors, DEW
C151	379124737	0.047 μ F, 50V, Capacitor, DEW
C907, C908	352780339	3.3 μ F, 50V, Capacitors, Elect.
	25065167	NSS-6376, Remote control switch, switch section
	25045087	NPJ-2PDBL44, Terminal

EQUALIZER AMPLIFIER PC BOARD

(NAEQ-1163b)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q101, Q102	222594	HA-12017, ICs
C101, C102	352751009	10 μ F, 25V, Capacitors, Elect.
C107, C108	352724719	470 μ F, 6.3V, Capacitors, Elect.
C113, C114	379126824	6800pF, 50V, Capacitors, DEW
C115, C116	379122034	0.02 μ F, 50V, Capacitors, DEW
C117, C118	352780109	1 μ F, 50V, Capacitors, Elect.
C119, C120	379121225	1200pF, 50V, Capacitors, DEW
C151	379124737	0.047 μ F, 50V, Capacitor, DEW
C907, C908	352780339	3.3 μ F, 50V, Capacitors, Elect.
L101, L102, L103, L104	231029	NCH-1068, Choke coils
	25065167	NSS-6376, Remote control switch, switch section
	25045087	NPJ-2PDBL44, Terminal

INPUT TERMINAL PC BOARD (NAPJ-1468)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	25045072	NPJ-6PDBL36, Terminal

REC. SELECTOR SWITCH PC BOARD

(NASW-1469a)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C721	352741019	100 μ F, 16V, Capacitor, Elect.
R722	441523904	39 Ω , 1/2W, Metal oxide film resistors
S301	25030123	NRSM-146-30ZV, Remote control switch, control section

INPUT SELECTOR SWITCH PC BOARD

(NASW-1470)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL303	210150	14V, 0.08A, Lamp
PL304, PL305	210146	14V, 0.06A, Lamps
PL306, PL307	210147	14V, 0.06A, Lamps
R725	441522204	22 Ω , 1/2W, Metal oxide film resistor
S302	25035340	NPS-542-L304, Switch

RECTIFIER CIRCUIT PC BOARD (NAPS-1471)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D911, D912, D915, D916, D919, D920	223841	GP-30G, Diodes
C911	384171037	0.01 μ F, 630V, Capacitor DT
	250113	S-N5051, Fuseholder

RECTIFIER CIRCUIT PC BOARD

(NAPS-1471b)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D911, D912, D915, D916,	223841	GP-30G, Diodes

D919, D920

C911	384173937	0.039 μ F, 630V, Capacitor DT
	25050065	YSH403T, Fuseholder

RECTIFIER CIRCUIT PC BOARD

(NAPS-1471c)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D911, D912	223841	GP-30G, Diodes
D915, D916, D919, D920		
C911	38417 1037	0.01 μ F, 630V, Capacitor DT
	250113	S-N5051, Fuseholder
	25050065	YSH403T, Fuseholder

SWITCH CIRCUIT PC BOARD (NASW-1472)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL701	210148	14V, 60mA, Lamp
PL702	210151	14V, 80mA, Lamp
C311, C312	352781599	0.15 μ F, 50V, Capacitors, Elect.
R724	441527504	75 Ω , 1/2W, Metal oxide film resistor
S303	25035266	NPS-122-L230, Switch
S304	25035265	NPS-222-L229, Switch

TONE CONTROL PC BOARD (NATC-1474b)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C315, C316	379121235	0.012 μ F, 50V, Capacitors DEW
C317, C318	379125625	5600pF, 50V, Capacitors DEW
C319, C320	379121025	1000pF, 50V, Capacitors, DEW
C321, C322	379123335	0.033 μ F, 50V, Capacitors DEW
R317	5148044	N16RGMC250KMN30, Variable resistor
R321	5148046A	N16RGMC11C219K30, Variable Resistor
R323	5148045A	N16RQMC11C110K180K30, Variable resistors

POWER AMPLIFIER PC BOARD

(NAMA-1476c)-PARTS LIST

CIRCUIT NO.	PARTS NO.	DESCRIPTION
		Transistors
Q501, Q601	2211915 or 2211916	2SK240(GR) or 2SK240(BL)
Q502, Q503	2211255	2SC1815(GR)
Q507, Q514		
Q602, Q603		
Q607, Q614		
Q504, Q506	2211455	2SA1015(GR)
Q604, Q606		
Q508, Q608	2211732 or 2211733	2SC1845(F) or 2SC1845(E)
Q509, Q609	2211792 or 2211793	2SA992(F) or 2SA992(E)
Q512, Q612	2211742 or 2211743	2SA915(L) or 2SA915(M)
Q513, Q613	2211762 or 2211763	2SC1940(L) or 2SC1940(M)
Q515, Q615	2211923 or 2211924	2SC2824(O) or 2SC2824(Y)
Q516, Q616	2211933 or 2211934	2SA1184(O) or 2SA1184(Y)
Q519, Q619	2211395 or 2211396	2SA970(GR) or 2SA970(BL)
Q703	2211504	2SA950(Y)
Q901	2201073 or 2201074	2SD880(O) or 2SD880(Y)
Q902	2201243 or 2201244	2SB834(O) or 2SB834(Y)
Q903, Q904	2211945 or 2211315	2SK246(GR) or 2SK117(GR)

	ICs	
Q561, Q661	222502	NJM4558DX
Q702	222584	TA7317P
	Diodes	
D501-D504	223145	1S2076TD
D561, D562		
D661		
D601-D604		
D662, D703		
D705		
D704	2240972 or 2240973	GZA-6.2Y or GZA-6.2Z
D706	223862	WL-O1
D901, D902	2241232 or 2241233	GZA-22Y or GZA-22Z
	Coils	
L501, L601	231015	S-0.8C
	Capacitors	
C501, C601	372126805	68pF, 50V, ST
C502, C520	379121035	0.01 μ F, 50V, DEW
C602, C620		
C509, C609	379122235	0.022 μ F, 50V, DEW
C709		
C510, C524	379124735	0.047 μ F, 50V, DEW
C610, C624		
C515, C516	352743309	33 μ F, 16V, Elect.
C615, C616		
C519, C619	379121025	0.001 μ F, 50V, DEW
C523, C623	379121047	0.1 μ F, 50V, DEW
C903, C904		
C561, C562	352752209	22 μ F, 25V, Elect.
C661, C662		
C703	352722219	220 μ F, 63V, Elect.
C704	352732209	22 μ F, 10V, Elect.
C705	352784799	0.47 μ F, 50V, Elect.
C707	352743319	330 μ F, 16V, Elect.
C708	352741529	1500 μ F, 16V, Elect.
C901, C902	352752219	220 μ F, 25V, Elect.
C905, C906	352754709	47 μ F, 25V, Elect.
C907, C908	352782219	220 μ F, 50V, Elect.
	Resistors	
R526, R529	442524314	430 Ω , 1/2W, Metal oxide film
R626, R629		
R527, R528	442526204	62 Ω , 1/2W, Metal oxide film
R627, R628		
R536, R537	442521814	180 Ω , 1/2W, Metal oxide film
R636, R637		
R538, R638	5225015	NIOHR10KBD, Semi-fixed
R540, R640	442521014	100 Ω , 1/2W, Metal oxide film
R541, R542	442520274	2.7 Ω , 1/2W, Metal oxide film
R641, R642		
R543, R544	4000063	0.47 Ω , 2W, Metal plate
R546, R547		
R643, R644		
R646, R647		
R545, R645	441620104	1 Ω , 1W, Metal oxide film
R549, R649	441620564	5.6 Ω , 1W, Metal oxide film
R550, R650	441721004	10 Ω , 2W, Metal oxide film
R715	442522704	27 Ω , 1/2W, Metal oxide film
R901, R902	441521614	160 Ω , 1/2W, Metal oxide film
	Relay	
RL701	25065036	NRL-4P3A-DC12-01

**POWER AMPLIFIER PC BOARD
(NAMA-1476d)-PARTS LIST**

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Transistors	
Q501, Q601	2211915 or 2211916	2SK240(GR) or 2SK240(BL)

Q502, Q503	2211255	2SC1815(GR)
Q507, Q514		
Q602, Q603		
Q607, Q614		
Q504, Q506	2211455	2SA1015(GR)
Q604, Q606		
Q508, Q608	2211732 or 2211733	2SC1845(F) or 2SC1845(E)
Q509, Q609	2211792 or 2211793	2SA992(F) or 2SA992(E)
Q512, Q612	2211742 or 2211743	2SA915(L) or 2SA915(M)
Q513, Q613	2211762 or 2211763	2SC1940(L) or 2SC1940(M)
Q515, Q615	2211923 or 2211924	2SC2824(O) or 2SC2824(Y)
Q516, Q616	2211933 or 2211934	2SA1184(O) or 2SA1184(Y)
Q519, Q619	2211395 or 2211396	2SA970(GR) or 2SA970(BL)
Q703	2211504	2SA950(Y)
Q901	2201073 or 2201074	2SD880(O) or 2SD880(Y)
Q902	2201243 or 2201244	2SB834(O) or 2SB834(Y)
Q903, Q904	2211945 or 2211315	2SK246(GR) or 2SK117(GR)
	ICs	
Q561, Q661	222502	NJM4558DX
Q702	222584	TA7317P
	Diodes	
D501-D504	223145	1S2076TD
D561, D562		
D661		
D601-D604		
D662, D703		
D705		
D704	2240972 or 2240973	GZA-6.2Y or GZA-6.2Z
D706	223862	WL-O1
D901, D902	2241232 or 2241233	GZA-22Y or GZA-22Z
	Coils	
L501, L601	231015	S-0.8C
	Capacitors	
C501, C601	322126805	68pF, 50V, ST
C502, C520	379121035	0.01 μ F, 50V, DEW
C602, C620		
C509, C609	379122235	0.022 μ F, 50V, DEW
C709		
C510, C524	379124735	0.047 μ F, 50V, DEW
C610, C624		
C515, C516	352743309	33 μ F, 16V, Elect.
C615, C616		
C519, C619	379121025	0.001 μ F, 50V, DEW
C523, C623	379121047	0.1 μ F, 50V, DEW
C903, C904		
C527, C627	379121027	0.001 μ F, 50V, DEW
C561, C562	352752209	22 μ F, 25V, Elect.
C661, C662		
C703	352722219	220 μ F, 63V, Elect.
C704	352732209	22 μ F, 10V, Elect.
C705	352784799	0.47 μ F, 50V, Elect.
C707	352743319	330 μ F, 16V, Elect.
C708	352741529	1500 μ F, 16V, Elect.
C901, C902	352752219	220 μ F, 25V, Elect.
C903, C904	379121047	0.1 μ F, 50V, DEW
C905, C906	352754709	47 μ F, 25V, Elect.
C907, C908	352782219	220 μ F, 50V, Elect.

MODEL A-8015

SUBSTITUTIVE PARTS LIST

NOTE:USE THE REGULAR PARTS WHEN REPLACEMENT

TYPE	CIRCUIT NO.	DESCRIPTION	REGULAR PARTS	SUBSTITUTIVE PARTS	APPLICATION
UG	Q504,Q604	TRANSISTORS	2SA1015(GR)	JA101P	8646-9145
UG	Q506,Q606	TRANSISTORS	2SA1015(GR)	2SA1015L(GR)	8646-9145
UG	Q501,Q601	F.E.T.	2SK240(BL)	2SK240(V)	8846-9145
UD	Q504,604,506,606	TRANSISTORS	2SA1015(GR)	2SA1015(Y)	1911-2210
UG	Q504,506,604,606	TRANSISTORS	2SA1015(GR)	2SA1015(Y)	9146-9645
UG	Q501,Q601	F.E.T.	2SK240(GR)	2SK170(BL)	9646-10445
UG	Q504,506,604,606	TRANSISTORS	2SA1015(GR)	2SA1015(Y)	9646-10445
UG	D901,D902	DIODES	GZA22Y OR Z	RD22EB3	9646-10445
UD	Q504,506,604,606	TRANSISTORS	2SA1015(GR)	2SA1015(Y)	2211-2610
UD	D901,D902	DIODES	GZA22Y OR Z	RD22EB3	2211-2610
UD	Q501,Q601	F.E.T.	2SK240(GR)	2SK170(BL) OR (V)	2210-2610
UG	Q501,Q601	F.E.T.	2SK240(GR)	2SK170(BL) OR (V)	10446-10845
UG	Q561,Q661	IC	NJM-4558DX	NJM-4560DX	10846-11845

MODEL A-8015

SUBSTITUTIVE PARTS LIST

NOTE:USE THE REGULAR PARTS WHEN REPLACEMENT

TYPE	CIRCUIT NO.	DESCRIPTION	REGULAR PARTS	SUBSTITUTIVE PARTS	APPLICATION
UG	Q504,Q604	TRANSISTORS	2SA1015(GR)	JA101P	8646-9145
UG	Q506,Q606	TRANSISTORS	2SA1015(GR)	2SA1015L(GR)	8646-9145
UG	Q501,Q601	F.E.T.	2SK240(BL)	2SK240(V)	8846-9145
UD	Q504,604,506,606	TRANSISTORS	2SA1015(GR)	2SA1015(Y)	1911-2210
UG	Q504,506,604,606	TRANSISTORS	2SA1015(GR)	2SA1015(Y)	9146-9645
UG	Q501,Q601	F.E.T.	2SK240(GR)	2SK170(BL)	9646-10445
UG	Q504,506,604,606	TRANSISTORS	2SA1015(GR)	2SA1015(Y)	9646-10445
UG	D901,D902	DIODES	GZA22Y OR Z	RD22EB3	9646-10445
UD	Q504,506,604,606	TRANSISTORS	2SA1015(GR)	2SA1015(Y)	2211-2610
UD	D901,D902	DIODES	GZA22Y OR Z	RD22EB3	2211-2610
UD	Q501,Q601	F.E.T.	2SK240(GR)	2SK170(BL) OR (V)	2210-2610
UG	Q501,Q601	F.E.T.	2SK240(GR)	2SK170(BL) OR (V)	10446-10845
UG	Q561,Q661	IC	NJM-4558DX	NJM-4560DX	10846-11845
UG	Q512,Q612	TRANSISTOR	2SA915(M)/(L)	2SA915(K)	
UG	Q513,Q613	TRANSISTOR	2SC1940(M)/(L)	2SC1940(K)	

PRINTED CIRCUIT BOARD VIEW FROM COMPONENT SIDE

NAMA-1476

Resistors		
R526, R529	442524314	430Ω, 1/2W, Metal oxide film
R626, R629		
R527, R528	442526204	62Ω, 1/2W, Metal oxide film
R627, R628		
R536, R537	442521814	180Ω, 1/2W, Metal oxide film
R636, R637		
R538, R638	5225015	N10HR10KBD, Semi-fixed
R540, R640	442521014	100Ω, 1/2W, Metal oxide film
R541, R542	442520274	2.7Ω, 1/2W, Metal oxide film
R641, R642		
R543, R544	4000063	0.47Ω, 2W, Metal plate
R546 R547		
R643, R644		
R646, R647		
R545, R645	441620104	1Ω, 1W, Metal oxide film
R549, R649	441620564	5.6Ω, 1W, Metal oxide film
R550, R650	441721004	10Ω, 2W, Metal oxide film
R715	442522704	27Ω, 1/2W, Metal oxide film
R901, R902	441521614	160Ω, 1/2W, Metal oxide film

Relay		
RL701	25065036	NRL-4P3A-DC12-01

Fuseholder		
	25050065	YSH403T

VARISTORD505
D605

4000068

VD1222

Q517
Q617

2201164

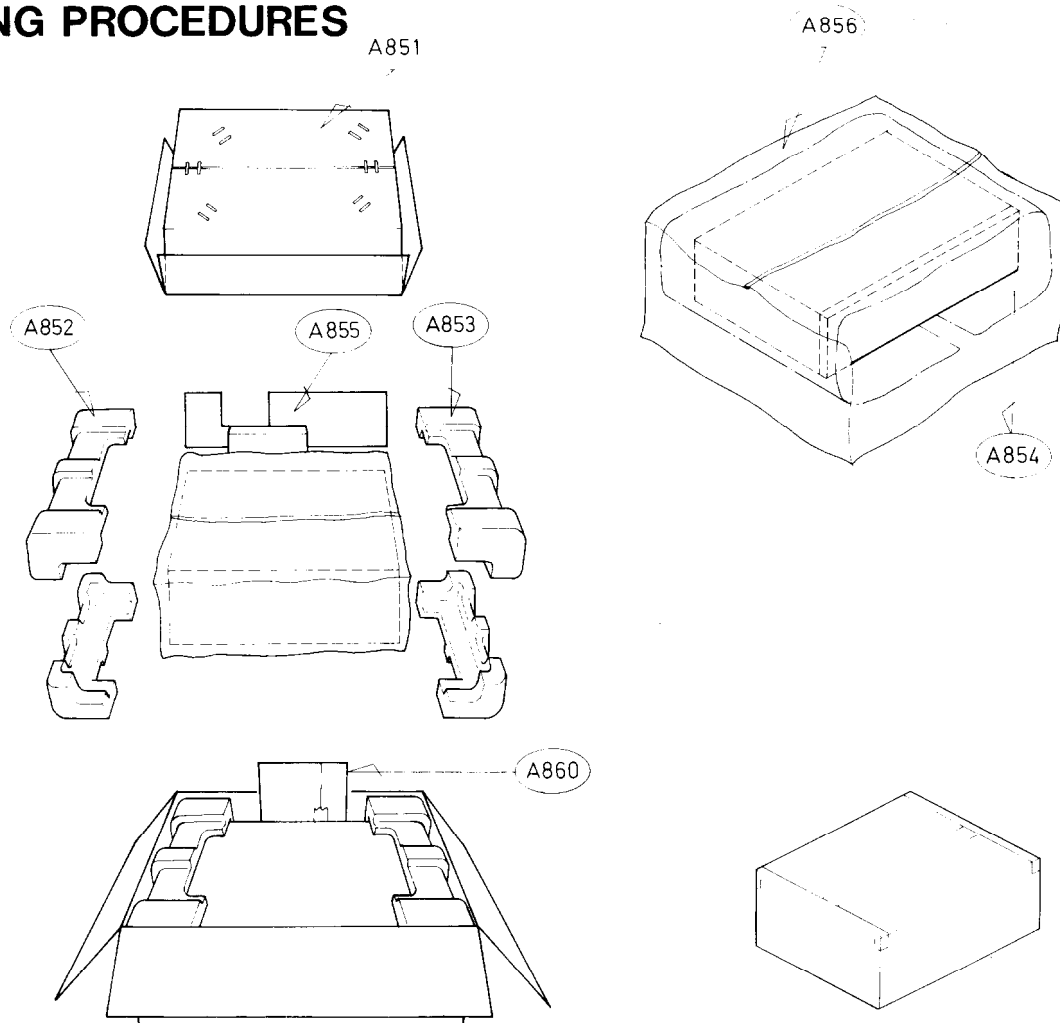
ZSC2581

Q618
Q518

2201154

ZSA1106

PACKING PROCEDURES



PACKING PROCEDURES PARTS LIST

REF NO.	PARTS NO.	DESCRIPTION	
A851	29050645	Master carton box	
	29050647	Master carton box (B)	
A852	29090362A	Pad L	
A853	29090361	Pad R	
A854	29095012-1	500×800, Protection sheet	
A856	2900038A	720×950, Poly bag	
A855	29095282	Pad S	
A860	Accessory bag ass'y		
	29340673	Instruction maunal (D) (U)	
	29340674	Instruction manual (G) (V) (W)	
	29365006-5	Warranty card (U)	
	29365005-3A	Warranty card (V)	
	29358002	Service station list (U)	
	29358004	Service station list (V)	
	29365010	Caution label C (U)	
	29365011	Label (U)	
	29100006A	350×250, Poly bag	
	25055018	CV-K-1, Conversion plug (W)	
	29100002A	80×150, Poly bag (W)	

NOTE

(U): only U.S.A. model
 (V): only West Germany model
 (D): only 120V model
 (G): only 220V model
 (W): 120V/220V model
 (B): Black type

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