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ONKYO® SERVICE MANUAL

Integrated Stereo Amplifier MODEL A-8067

Silver and Black models

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

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 CUSTOMER.

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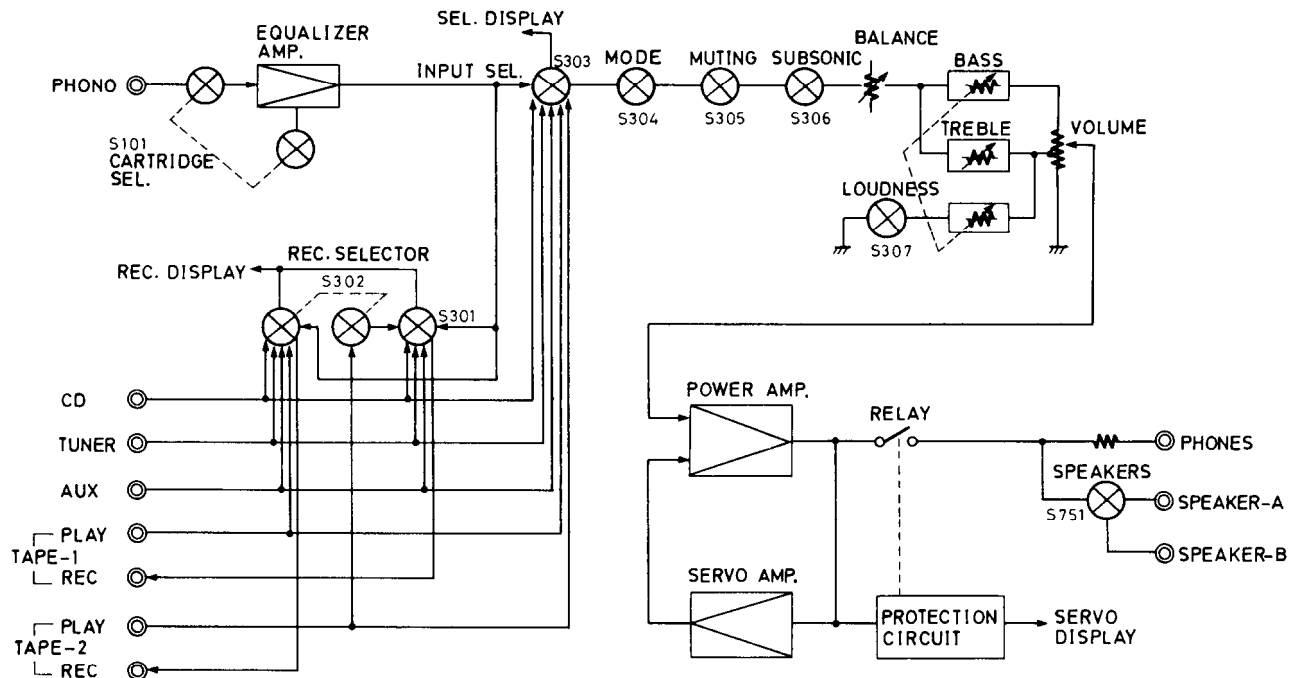
ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

| | |
|----------------------------|---|
| Power Output: | 80 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz with no more than 0.015% THD. |
| Total Harmonic Distortion: | 0.015% at rated power |
| IM Distortion: | 0.005% at rated power |
| Damping Factor: | 50 at 8 ohms |
| Frequency Response: | 2–50,000Hz ± 1dB |
| RIAA Deviation (MM): | 20–20,000Hz ± 0.3dB |
| Sensitivity and Impedance: | Phono (MM): 2.5mV/50 kohms Phono (MC): 160µV/100/220 ohms Tuner: 150mV/50 kohms Tape Play: 150mV/50 kohms Tape Rec: 150mV/1.5 kohms (phono) |
| Phono Overload: | 200mV RMS at 1kHz, 0.015% THD |
| Bass Control: | ± 8dB at 70Hz |
| Treble Control: | ± 8dB at 20,000Hz |
| Signal to Noise Ratio: | Phono (MM): 80dB (IHF A-202, 5mV input, 1 watt output) Phono (MC): 72dB (IHF A-202, 0.5mV input, 1 watt output) Tuner & Tape: 84dB (IHF A-202, 0.5V input, 1 watt output) |
| Muting: | –20dB |
| Loudness Control: | +6dB at 70Hz, +5dB at 20kHz |
| Subsonic Filter: | 15Hz (6dB/Octave) |
| High Cut (TREBLE MIN): | 6kHz (6dB/Octave) |
| Power Supply: | AC 120V, 60Hz [D model] AC 220V, 50Hz [G model] AC 120V or 220V, 50/60Hz [W model] |
| Semiconductors: | IC: 5 TR: 42 Diode: 46 |
| Dimensions: | 435(W) x 144(H) x 391(D) mm 17-1/8" x 5-5/8" x 15-3/8" |
| Weight: | 12kg. (26.5 lbs.) |

Specifications and features are subject to change without notice.

BLOCK DIAGRAM



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), Primary fuse (120V model) |
| F901 | 252076 | 3.15A-SE-EAK, Primary fuse (220V, 120V/220V model) |
| F701 | 252070 | 1A-SE-EAK, Secondary fuse (220V model) |

2. Replacing the lamp

This unit uses the lamp listed below.

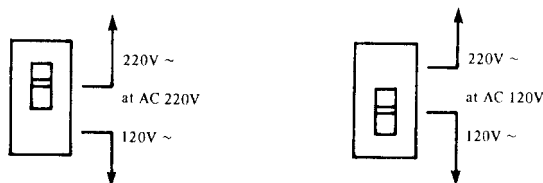
| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|-------------|-----------|-----------------|
| PL701 | 210172 | PL14V0.06AW-2.0 |

3. Insulation resistance measurement (Only U.S.A. model)

Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel. Specification; 500V more than 10M Ω .

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

Set the all control knobs to standard position

| | |
|------------------------|---------|
| Standard knob position | |
| INPUT SELECTOR | CD |
| CARTRIDGE SELECTOR | MM |
| REC. SELECTOR | OFF |
| MODE | STEREO |
| MUTING | OFF |
| SUBSONIC FILTER | OFF |
| BALANCE | Center |
| VOLUME | Minimum |
| LOUDNESS | OFF |
| BASS | DEFEAT |
| TREBLE | DEFEAT |
| SPEAKERS | A |

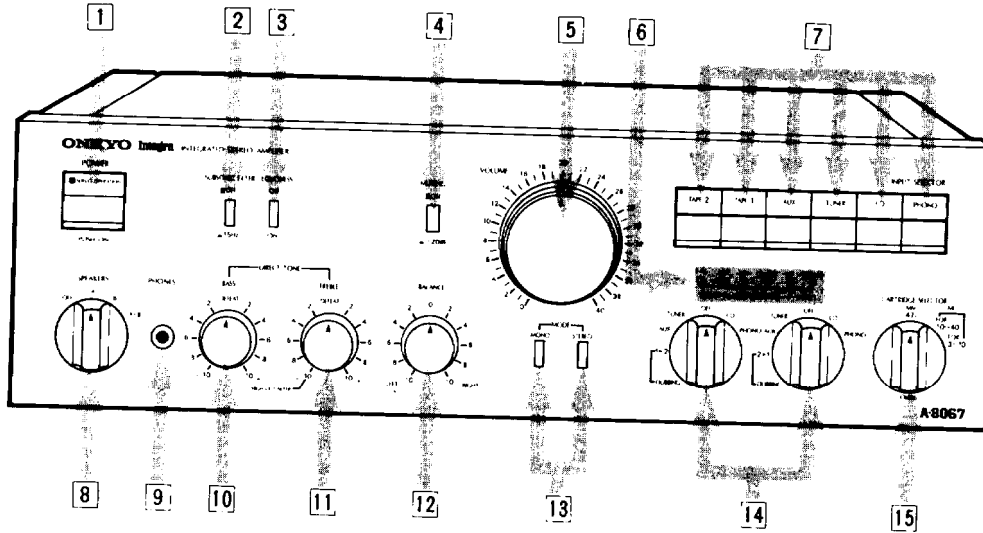
IDLING CURRENT ADJUSTMENT

1. Connect the DC voltmeter between I_{ID} and V_{CT} terminals.
2. Adjust the voltage to 15V \pm 5mV with semi-fixed resistor of R531 and R532.

NOTES.

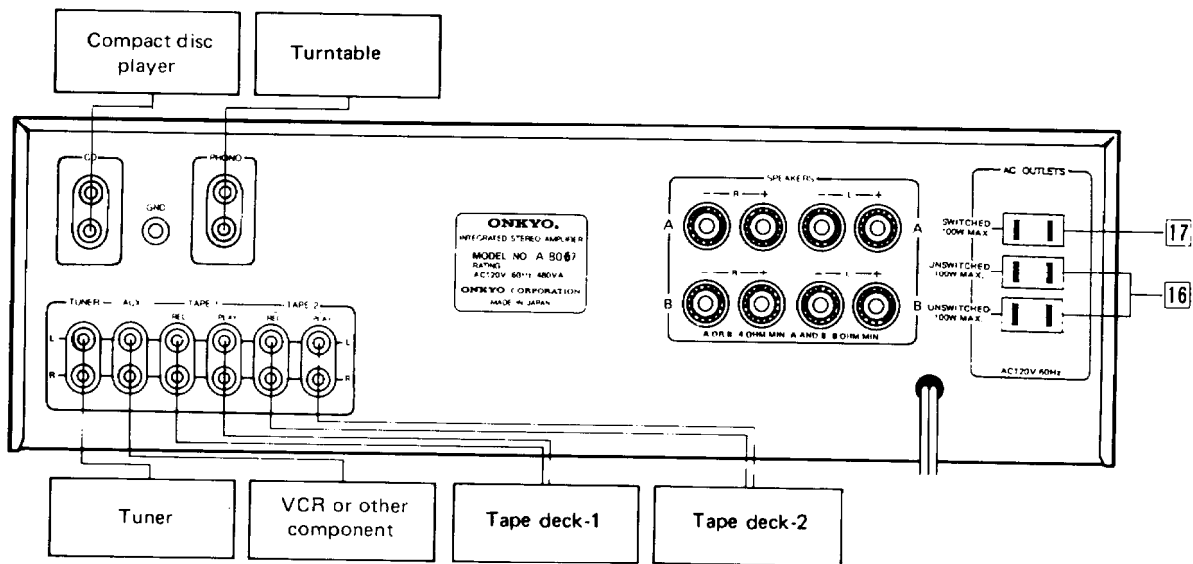
- Adjust after switching on for 5 minutes.
- VOLUME Minimum
- LOAD Open

FRONT PANEL FACILITIES

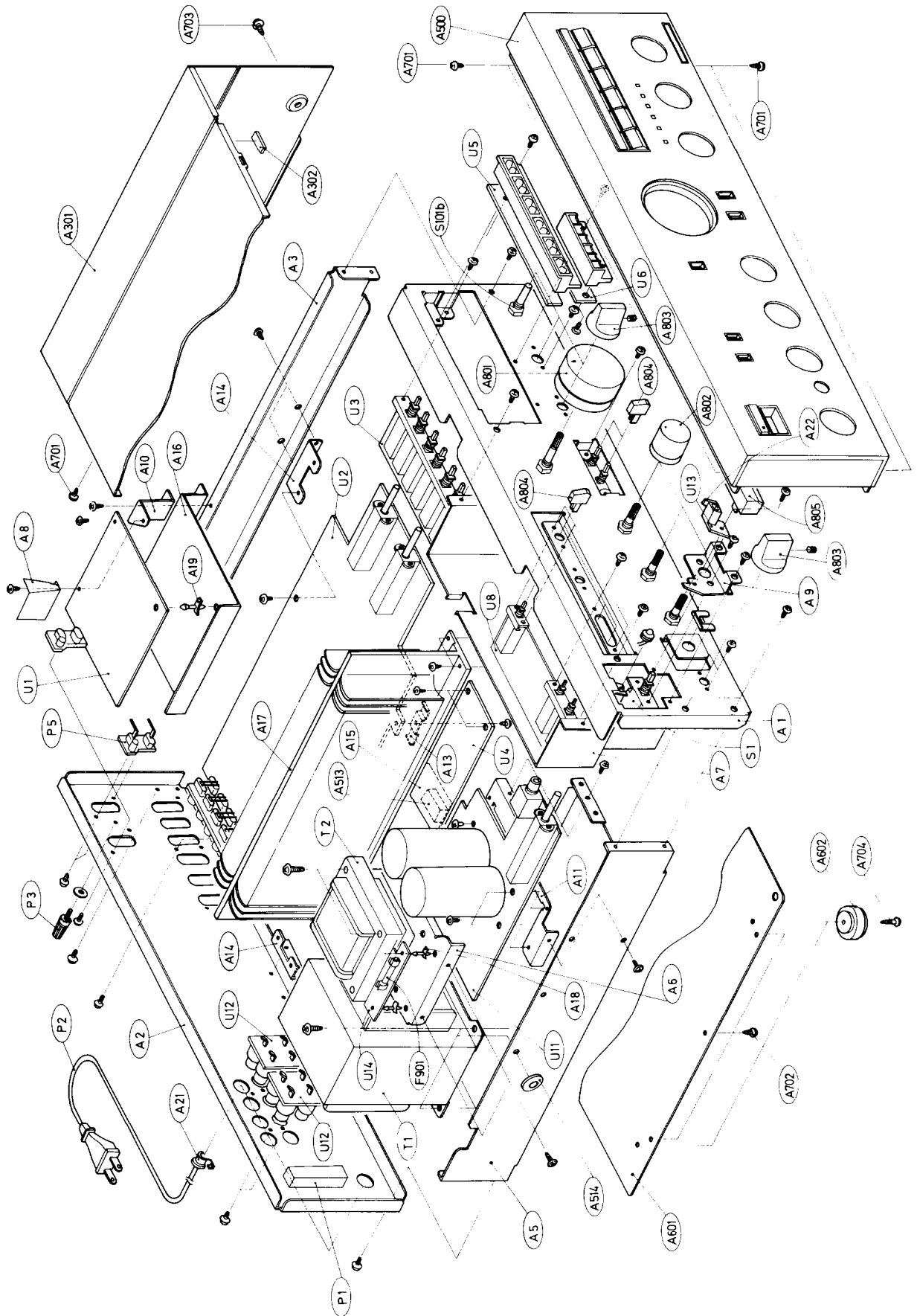


- | | |
|---|--|
| 1. Power switch (POWER) | 9. Headphones jack (PHONES) |
| 2. Subsonic filter (SUBSONIC FILTER) | 10. Bass control (BASS) |
| 3. Loudness control (LOUDNESS) | 11. Treble control (TREBLE) |
| 4. Muting switch (MUTING) | 12. Balance control (BALANCE) |
| 5. Volume control (VOLUME) | 13. Mode selector (MODE) |
| 6. Recording mode indicator | 14. Recording source selectors (REC. SELECTOR) |
| 7. Input selector switches (INPUT SELECTOR) | 15. Cartridge selector (CARTRIDGE SELECTOR) |
| 8. Speaker selector (SPEAKERS) | |

SYSTEM CONNECTIONS



CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW-PARTS LIST

| REF. NO. | PARTS NO. | DESCRIPTION | REF. NO. | PARTS NO. | DESCRIPTION | REF. NO. | PARTS NO. | DESCRIPTION |
|----------|-----------|--|------------|------------|--|----------|-----------|---|
| A1 | 27110227C | Front bracket | A803 | 28321726A | Knob (SP) | U2 | 12028586 | pc board ass'y [G] |
| A2 | 27120664A | Back panel [D] | A804 | 28321908 | Knob (SP), [BLACK] [D] | | | NADA-2286, Power amplifier pc board ass'y 1 [D] [W] |
| | 27120665A | Back panel [G] | | 28322010 | Knob (SP), [BLACK] [G] [W] | | | NADA-2286a, Power amplifier pc board ass'y 1 [G] |
| A3 | 27120667A | Back panel [W] | A805 | 28322023 | Knob (PUSH) | | | NASW-2156a, Input selector board ass'y 2 [D] [W] |
| A4 | 27115132C | Side bracket (R) | | 28321909 | Knob (PUSH), [BLACK] | | | NAMA-2157c, Power amplifier pc board ass'y 2 [D] [W] |
| A5 | 27130371A | Bracket (L) | | 28321904 | Knob (POW) | | | NAMA-2157d, Power amplifier pc board ass'y 2 [G] |
| A6 | 27130386 | Bracket (TP) | | 28321905B | Knob (POW), [BLACK] | | | NADS-2287, LED pc board ass'y |
| A7 | 27130370 | Bracket, shield | | 28321533 | 2SC2837 (O), Transistors | | | NADIS-2159, LED pc board ass'y |
| A8 | 27130392 | Shield plate (EQ) | Q609, Q610 | 2201533 | 2SC2837 (Y) or | | | NASW-2162, Mode switch pc board ass'y |
| A9 | 27140944B | Bracket (POW) | Q613, Q614 | 2201534 or | 2SC2837 (P) | | | NATS-2168, Speaker terminal pc board ass'y [D] [W] |
| A10 | 27140819 | Bracket (PC) | Q611, Q612 | 2201523 | 2SA1186 (O), Transistors | | | NATS-2168a, Speaker terminal pc board ass'y [G] |
| A11 | 27140945 | Bracket (K) | Q615, Q616 | 2201524 or | 2SA1186 (Y) or | | | NAPS-2288, Speaker switch & Power supply pc board ass'y |
| A13 | 27140948 | Bracket (TR) | | 2201525 | NPT-855D, Power transformer | | | NATS-2169, LED pc board ass'y |
| A14 | 27140693 | Bracket (BP) | △ T1 | 230872 | [D] | | | NAFU-2203f, Fuse pc board ass'y [D] |
| A15 | 28175105 | Insulator plate (H) | | 230873 | NPT-855G, Power transformer | | | NAFU-2203g, Fuse pc board ass'y [W] |
| A16 | 27150168A | Shield plate (B) | | 230874 | NPT-855DG, Power transformer | | | NAFU-2203h, Fuse pc board ass'y [D] |
| A17 | 27160154 | Radiator | △ T2 | 231061 | NCH-4106, Choke coil | | | NAFU-2203i, Fuse pc board ass'y [D] |
| A18 | 27190349 | Holder (PC) | △ S1 | 25035015A | NPS-1111LA3, Power switch | | | NAFU-2203j, Fuse pc board ass'y [W] |
| A19 | 27190011 | LCBS-8NS, Holder | △ C1 | 3500065A | 0.01μF, AC400V, Capacitor | | | NAFU-2203k, Fuse pc board ass'y [D] |
| A21 | 27300750 | Strainrelief | △ S101b | 25030262 | NRSM-103-30BU, Cartridge selector, operation section | | | NAFU-2203l, Fuse pc board ass'y [D] |
| A22 | 28140457 | Cushion | △ P1 | 25050139 | NSCT-6P38, AC outlet [D] | | | NAFU-2203m, Fuse pc board ass'y [W] |
| A301 | 28184269 | Top cover | | 25108010 | LG-2C, Terminal [G] [W] | | | NAFU-2203n, Fuse pc board ass'y [D] |
| A302 | 28184270 | Top cover [BLACK] | △ P2 | 25065123 | NSS-1258P, Slide switch [W] | | | NAFU-2203o, Fuse pc board ass'y [W] |
| A500 | 28140020 | 4 x 10 x 40, Cushion | | 253112 | AS-UC-4 #18, Power supply cable [D] | | | NAFU-2203p, Fuse pc board ass'y [D] |
| | 12028121 | Front panel ass'y | | 253127 | AS-CEE, Power supply cable [G] | | | NAFU-2203q, Fuse pc board ass'y [D] |
| | 12008121 | Front panel ass'y [BLACK] | | 253092-1 | AS-CEE-2, Power supply cable [W] | | | NAFU-2203r, Fuse pc board ass'y [D] |
| | 28140570A | Cushion, input selector switch [BLACK] | | 25060044 | Ground terminal | | | NAFU-2203s, Fuse pc board ass'y [W] |
| | 28140532A | Cushion, Rec selector switch [BLACK] | | 25045086 | NPI-2PRBL43, Input terminal | | | NAFU-2203t, Fuse pc board ass'y [W] |
| | 28140205A | Cushion, Tone controle switch [BLACK] | | 252051 | ST-6, 6A, Primary fuse [D] | | | NAFU-2203u, Fuse pc board ass'y [W] |
| | 28140185 | Cushion, speaker switch [BLACK] | P3 | 252076 | 3.15A-SE-EAK, Primary fuse [G] [W] | | | |
| A513 | 28140206B | Cushion, volume [BLACK] | P5 | 25050211 | H0445, Fuse holder [W] | | | |
| A514 | 28140265 | Cushion | △ F901 | 252070 | 1A-SE-EAK, Secondary fuse [G] | | | |
| A601 | 27170187B | Leg | | 12028554B | NAEQ-2154b, Equalizer amplifier pc board ass'y [D] [W] | | | |
| A602 | 27175044 | Bottom board | P3 | 25060044 | Ground terminal | | | |
| A701 | 834430068 | 3TTS+6B (BC), Tapping screw | F701 | 25045086 | NPI-2PRBL43, Input terminal | | | |
| A702 | 831430088 | 3TTW+8B (BC), Tapping screw | U1 | 252051 | ST-6, 6A, Primary fuse [D] | | | |
| A703 | 838440089 | 4TTB+8C (BC), Tapping screw | | 252076 | 3.15A-SE-EAK, Primary fuse [G] [W] | | | |
| A704 | 834430168 | 3TTS+16B (BC), Tapping screw | | 25050211 | H0445, Fuse holder [W] | | | |
| A801 | 28321731A | Knob (VOL) | | 252070 | 1A-SE-EAK, Secondary fuse [G] | | | |
| | 28321906 | Knob (VOL), [BLACK] | | 12028554B | NAEQ-2154b, Equalizer amplifier pc board ass'y [D] [W] | | | |
| A802 | 28321723 | Knob (BAL) | | | | | | |
| | 283220101 | Knob (BAL), [BLACK] | | | | | | |

NOTE: [D]: Only 120V model
[G]: Only 220V model
[W]: Only 120V/220V model
[Black]: Black model

NOTE: 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-2154b) — PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------------------|---|
| | ICs | |
| Q105, Q106 | 222570 | NJM4560DX |
| | Transistors | |
| Q101~Q104 | 2211783 2211782 | 2SA991 (E) or 2SA991 (F) |
| | Diodes | |
| D101~D104 | 223145 | 1S2076TD |
| | Capacitors | |
| C101 | 379122237 | 0.022 μ F (M), 50V, DEW |
| C111, C112 | 392841007 | 10 μ F, 16V, Elect. |
| C113, 114 | 372122214 | 220pF, 50V, Styrene |
| C115, 116 | 372124705 | 47pF, 50V, Styrene |
| C119, C120 | 379124725 | 0.0047 μ F, 50V, DEW |
| C121, C122 | 379122234 | 0.022 μ F (J), 50V, DEW |
| C123, C124 | 379121834 | 0.018 μ F, 50V, DEW |
| C125, C126 | 379124734 | 0.047 μ F, 50V, DEW |
| C127, C128 | 352722229 | 2200 μ F, 6.3V, Elect. |
| C129, C130 | 392880227 | 2.2 μ F, 50V, Elect. |
| C131, C132 | 379121225 | 0.0012 μ F, 50V, DEW |
| C141, C142 | 392851017 | 100 μ F, 25V, Elect. |
| | Etc. | |
| S101a | 25065229 25045034 | NSS-63100, Remote switch NPJ-2PDBL10, INPUT Terminal |

EQUALIZER AMPLIFIER PC BOARD (NAEQ-2154c) — PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------------------|---|
| | ICs | |
| Q105, Q106 | 222570 | NJM4560DX |
| | Transistors | |
| Q101~Q104 | 2211783 2211782 | 2SA991 (E) or 2SA991 (F) |
| | Diodes | |
| D101~D104 | 223145 | 1S2076TD |
| | Capacitors | |
| C101 | 379121037 | 0.01 μ F, 50V, DEW |
| C103, C104 | 372123314 | 330pF, 50V, Styrene |
| C107~C110 | 379128225 | 0.0082, 50V, DEW |
| C111, C112 | 392841007 | 10 μ F, 16V, Elect. |
| C115, C116 | 372122214 | 220pF, 50V, Styrene |
| C119, C120 | 379124725 | 0.0047 μ F, 50V, DEW |
| C121, C122 | 379122234 | 0.022 μ F (J), 50V, DEW |
| C123, C124 | 379121834 | 0.018 μ F, 50V, DEW |
| C125, C126 | 379124734 | 0.047 μ F, 50V, DEW |
| C127, C128 | 352722229 | 2200 μ F, 6.3V, Elect. |
| C129, C130 | 392880227 | 2.2 μ F, 50V, Elect. |
| C131, C132 | 379121225 | 0.0012 μ F, 50V, DEW |
| C141, C142 | 392851017 | 100 μ F, 25V, Elect. |
| | Coils | |
| L101, L102 | 231030 | NCH-1070 |
| | Etc. | |
| S101a | 25065229 25045034 | NSS-63100, Remote switch NPJ-2PDBL10, INPUT Terminal |

POWER AMPLIFIER PC BOARD 1 (NADA-2286, NADA-2286a) — PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---------------------------|-------------------------------|--|
| | ICs | |
| Q519, Q520 | 222502 | NJM4558DX |
| | Transistors | |
| Q501, Q502 | 2211915 2211916 2211917 | 2SK240 (GR) or 2SK240 (BL) or 2SK240 (V) |
| Q503~Q506 | 2211733 2211732 | 2SC1845 (E) or 2SC1845 (F) |
| Q507~Q512 | 2211455 2210803 | 2SA1015 (GR) or 2SA733 (P) |
| Q513, Q514 | 2211354 2211353 | 2SA949 (Y) or 2SA949 (O) |
| Q515, Q516 | 2211634 2211633 | 2SC2229 (Y) or 2SC2229 (O) |
| Q517, Q518 | 2211255 | 2SC1815 (GR) |
| Q901 | 2201512 2201513 2201074 | 2SD1200 (Q) or 2SD1200 (R) or 2SD880 (Y) |
| Q902 | 2201502 2201503 2201244 | 2SB889 (Q) or 2SB889 (R) or 2SB834 (Y) |
| | Diodes | |
| D501~D504 | 223145 | 1S2076TD |
| D507~D510 | | |
| D513, D514, D517 | | |
| D518~D520 | | |
| D505, D506, D511, D512 | 225126 | GL-3PR1, LED |
| D515, D516 | 4000068 | VD1222, Varistor |
| D901, D902 | 2241232 2239754 2243294 | GZA-22Y or RD22E-B4 or MTZ22-D, Zener |
| | Capacitors | |
| C301~C308 | 372121014 | 100pF, 50V, Styrene |
| C503, C504 | | |
| C501, C502 | 372126805 | 68pF, 50V, Styrene |
| C505, C506 | 379121235 | 0.012 μ F, 50V, DEW |
| C509, C510 | 379122237 | 0.022 μ F, 50V, DEW |
| C511, C512 | 372123305 | 33pF, 50V, Styrene |
| C513~C516 | 352752209 | 22 μ F, 25V, Elect. |
| C519, C520 | 379123935 | 0.039 μ F, 50V, DEW |
| C901, C902 | 352781019 | 100 μ F, 50V, Elect. |
| C903, C904 | 352754709 | 47 μ F, 25V, Elect. |
| C905, C906 | 352754719 | 470 μ F, 25V, Elect. |
| | Resistors | |
| R523, R524 | 442520684 | 6.8 Ω , 1/2W, Metal oxide film |
| R525, R526 | 442525614 | 560 Ω , 1/2W, Metal oxide film |
| R527, R528 | 442524734 | 47k Ω , 1/2W, Metal oxide film |
| R531, R532 | 5225072 | N10HR4.7KBDM, Semi-fixed |
| R533, R534 | 442523724 | 4.7k Ω , 1/2W, Metal oxide film |
| R549, R550 | 442520474 | 4.7 Ω , 1/2W, Metal oxide film |
| R901, R902 | 441525114 | 510 Ω , 1/2W, Metal oxide film |
| R958 | 442527514 | 750 Ω , 1/2W, Metal oxide film |
| | Etc. | |
| S301 | 25030195 | NRSM-146-30SS, Switch |
| S302 | 25030258 25045137 | NRSM-166-30SS, Switch NPJ-6PDBL52, INPUT Terminal |
| P304, P306 | 25050140 | NJPS-3P-S, Socket |

INPUT SELECTOR SWITCH PC BOARD (NASW-2156a) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------|----------------------|
| S303 | 25035442 | NPS-642-L406, Switch |
| P303, P305 | 25050140 | NJPS-3P-S, Sockets |

INPUT SELECTOR SWITCH PC BOARD (NASW-2156b) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|-----------|---------------------------------|
| C331, C332 | 372122214 | 220pF, 50V, Capacitors, Styrene |
| S303 | 25035442 | NPS-642-L406, Switch |
| P303, P305 | 25050140 | NJPS-3P-S, Sockets |

POWER AMPLIFIER PC BOARD 2 (NAMA-2157c, NAMA-2157d) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|--------------------|---------------------------------------|
| | IC | |
| Q701 | 222584 | TA7317P |
| | Transistors | |
| Q601, Q602 | 2211634 | 2SC2229 (Y) or |
| | 2211633 | 2SC2229 (O) |
| Q603, Q604 | 2211354 | 2SA949 (Y) or |
| | 2211353 | 2SA949 (O) |
| Q605, Q606 | 2200864 | 2SC2238 (Y) or |
| | 2200863 | 2SC2238 (O) |
| Q607, Q608 | 2200874 | 2SA968 (Y) or |
| | 2200873 | 2SA968 (O) |
| Q617, Q618 | 2211733 | 2SC1845 (E) or |
| | 2211732 | 2SC1845 (F) |
| | Diodes | |
| D701 | 223862 | WL-01 |
| D702, D704 | 223145 | 1S2076TD |
| D703 | 2240972 | GZA6.2Y, |
| | 2240973 | GZA6.2Z, |
| | 2239492 | RD6.2E-B2, |
| | 2239493 | RD6.2E-B3, |
| | 2243162 | MTZ6.2-B or |
| | 2243163 | MTZ6.2-C, Zener |
| | Coils | |
| L601, L602 | 231015 | S-0.8C |
| L603, L604 | 230904 | B-20L-44, Core (FR) |
| | Capacitors | |
| C605, C606 | 379121047 | 0.1 μ F, 50V, DEW |
| C607, C608 | 379124735 | 0.047 μ F, 50V, DEW |
| C611 ~ C614 | 379121045 | 0.1 μ F, 50V, DEW |
| C701 | 352722219 | 220 μ F, 6.3V, Elect. |
| C703 | 352732209 | 22 μ F, 10V, Elect. |
| C704 | 352784799 | 0.47 μ F, 50V, Elect. |
| C706 | 352743319 | 330 μ F, 16V, Elect. |
| C707 | 352744719 | 470 μ F, 16V, Elect. |
| C708, C710 | 379122237 | 0.022 μ F, 50V, DEW |
| | Resistors | |
| R601, C602 | 442521024 | 1k Ω , 1/2W, Metal oxide film |
| R603, R604 | 442521014 | 100 Ω , 1/2W, Metal oxide film |
| R605 ~ R612 | 442520224 | 2.2 Ω , 1/2W, Metal oxide film |
| R613 ~ R616 | 4000063 | 0.47 Ω , 2W, Metal plate |
| R619 ~ R622 | | |
| R617, R618 | 441620104 | 1 Ω , 1W, Metal oxide film |
| R623, R624 | | |
| R629 ~ R632 | 4000061 | 0.33 Ω , 2W, Metal plate |
| R639 ~ R642 | 441621604 | 16 Ω , 1W, Metal oxide film |
| R713 | 442523304 | 33 Ω , 1/2W, Metal oxide film |
| | Etc. | |
| PL701 | 210172 | PL14V 0.06A W-2.0, Lamp |
| RL701 | 25065036 | NRL-4P3A-DC12-01, Relay |

LED CIRCUIT PC BOARD (NADIS-2287) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|-----------|----------------|
| D301 ~ D306 | 225174 | SLR55MC3N or |
| | 225173 | SLR55MC3M, LED |
| | 27190316A | Holder LED |

LED CIRCUIT PC BOARD (NADIS-2159) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|-------------|------------------|
| D321 ~ D326 | 225167RB or | GL-5HY10-RB or |
| | 225167RC | GL-5HY10-RC, LED |
| | 27190317 | Holder LED |

MODE SWITCH PC BOARD (NASW-2162) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------|--------------------------|
| S304 | 25035443 | NPS-122-100-L407, Switch |

SWITCH CIRCUIT PC BOARD (NASW-2163) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|--------------|-----------|--------------------------------------|
| C311, C312 | 352781599 | 0.15 μ F, 50V, Capacitor, Elect. |
| S305 | 25035266 | NPS-122-L230, Switch |
| S306, (S307) | 25035265 | NPS-222-L229, Switch |

tone CONTROL PC BOARD (NATC-2164b) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|-------------------|-------------------------------|
| | Capacitors | |
| C315, C316 | 379121235 | 0.012 μ F, 50V, DEW |
| C317, C318 | 379125625 | 0.0056 μ F, 50V, DEW |
| C319, C320 | 379121025 | 0.001 μ F, 50V, DEW |
| C321, C322 | 379123335 | 0.033 μ F, 50V, DEW |
| | Resistors | |
| R317 | 5148044 | N16RGMC250KMN30, Variable |
| R321 | 5148046A | N16RGM11C219K30, Variable |
| R323 | 5148045A | N16RQM11C110K180K30, Variable |

VOLUME CONTROL PC BOARD (NAVR-2166) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------|------------------------------------|
| R351 | 5172062 | N16RGL100KBTP30, Variable resistor |

SPEAKER SWITCH & POWER SUPPLY PC BOARD (NAPS-2288) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|-------------------|--|
| | Diodes | |
| D951 | 223884 | KBPC8-02 |
| | 223845 | GP-20DL |
| | Capacitors | |
| C951 ~ C953 | 380504745 | 0.47 μ F, 160V, CF |
| C954, C955 | 3504174 | 15000 μ F, 69V, Elect. |
| | Resistors | |
| R753, R754 | 441623914 | 390 Ω , 1W, Metal oxide film |
| R951 | 442525104 | 51 Ω , 1/2W, Metal oxide film |
| R964, R965 | 441522294 | 0.22 Ω , 1/2W, Metal oxide film |
| | Etc. | |
| | 25030257 | NRSM-164-30SS, Switch |
| | 25045164 | HLJ4317-01-3020, Headphone jack |
| | 27300731 | Plate (C) |
| | 27300732 | Plate (P) |

SPEAKER TERMINAL PC BOARD (NATS-2168) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------|-----------------------|
| | 25060039 | NTM-4PDMN10, Terminal |

SPEAKER TERMINAL PC BOARD (NATS-2168a) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|-----------|-----------------------------------|
| C751, C753 | 379121025 | 0.001 μ F, 50V, Capacitor DEW |
| | 25060039 | NTM-4PDMN10, Terminal |

LED CIRCUIT PC BOARD (NADIS-2169) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|-----------|----------------|
| D711 | 225174 | SLR55MC3N, LED |
| | 225173 | SLR55MC3M, LED |
| | 27190319A | Holder LED |

FUSE PC BOARD (NAFU-2203f) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------|----------------------|
| | 250113 | S-N5051, Fuse holder |
| | 29355118 | Label |

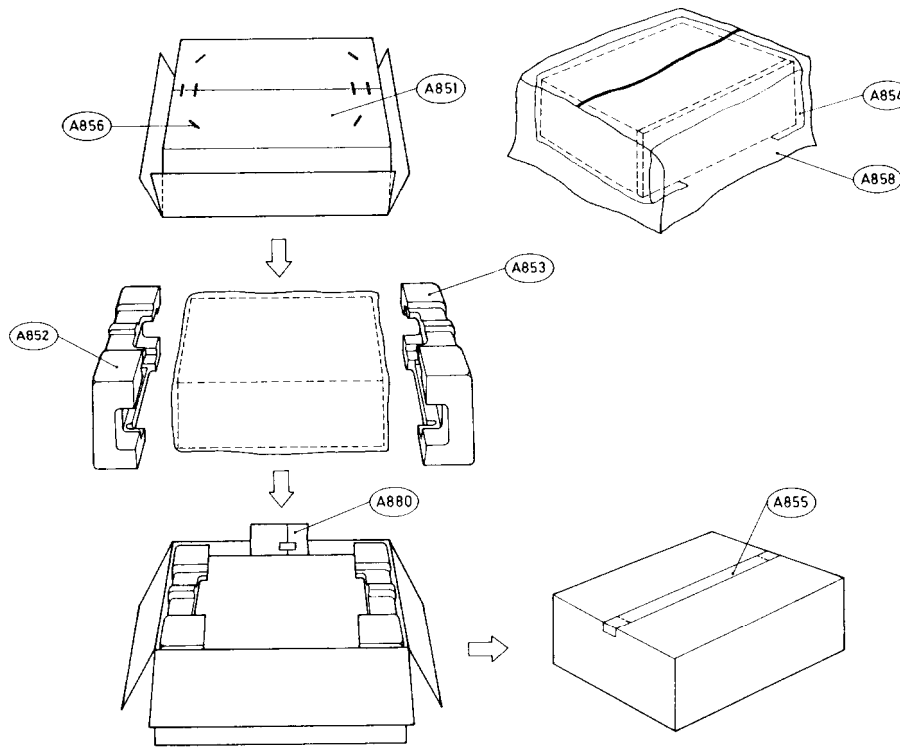
FUSE PC BOARD (NAFU-2203b) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------|----------------------|
| | 25050065 | YSH403T, Fuse holder |

FUSE PC BOARD (NAFU-2203g) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|-------------|----------|----------------------|
| | 250113 | S-N5051, Fuse holder |
| | 29360783 | 6A/125V, Label |

PACKING PROCEDURES



| REF. NO. | PART NO. | DESCRIPTION | | |
|----------|---------------------|---------------------------|------------|-----------------------------|
| A851 | 29051060A | Master carton box | 29365006-6 | Warranty card [U] |
| | 29051061A | Master carton box [BLACK] | 29358002C | Service station list [U] |
| A852 | 29090488C | Pad, left | 29360778 | Label, flush [U] |
| A853 | 29090489B | Pad, right | 29100006A | 350x250, Poly bag |
| A854 | 29095012-1 | 500x800, Protection sheet | 25055018 | CV-K-1, Conversion plug [W] |
| A855 | 260021 | Damplon tape | | |
| A856 | 282301 | Sealing hook | | |
| A858 | 29100038A | 720x950, Poly bag | | |
| A880 | Accessory bag ass'y | | | |
| | 29340845 | Instruction manual [D] | | |
| | 29340846 | Instruction manual [G][W] | | |

NOTE: [U] : Only U.S.A. model
 [G] : Only 220V model
 [W] : Only 120V/220V model
 [BLACK] : Black model

