

TA-F505ES

SERVICE MANUAL



AEP Model

Free service manuals
Gratis schema's

Digitized by

www.freeservicemanuals.info

SPECIFICATIONS

Amplifier section

| Items | Condition | Data | |
|---|-----------------------------------|---|------------------------------------|
| | | Model for Scandinavian countries, Switzerland, Spain and Portugal | Model for other countries |
| Continuous RMS power output (both channels driven simultaneously) | 4 ohms, 20Hz - 20 kHz | — | 100 W + 100 W (DIN: 120 W + 120 W) |
| | 6 ohms, 20 Hz - 20 kHz | 90 W + 90 W (DIN: 100 W + 100 W) | — |
| | 8 ohms, 20 Hz - 20 kHz | 80 W + 80 W (DIN: 90 W + 90 W) | — |
| Power band width | 8 ohms, THD 0.05% | 10 Hz - 100 kHz at 40 W | |
| Dynamic headroom | 4 ohms | 1.9 dB | |
| | 8 ohms | 1.1 dB | |
| Total harmonic distortion | 8 ohms at 10 W output | 0.008% | |
| Intermodulation (IM) distortion 60 Hz: 7 kHz = 4:1 | 4 ohms, at rated output | 0.008% | |
| | 6 ohms, at rated output | 0.006% | |
| | 8 ohms, at rated output | 0.004% | |
| Damping factor | 8 ohms, at 1 kHz | 80 | |
| Residual noise | network A, 8 ohms | less than 110 μ V | |
| Frequency response | PHONO MM (20 Hz - 20 kHz) | RIAA equalization curve ± 0.2 dB | |
| | TUNER, CD TAPE 1, 2, 3, DIRECT IN | 2 Hz - 200 kHz $^{+0}_{-3}$ dB | |

| Items | Condition | | Data |
|--------------------------|--|---|--------------------|
| Input sensitivity | PHONO | MC | 0.25 mV/100 ohms |
| | | MM | 2.5 mV, 50 kilohms |
| | TUNER, CD, DIRECT IN, TAPE 1,2,3, ADAPTOR, AUX | | |
| S/N (network) | PHONO | MC | 76 dB (0.5 mV) |
| | | MM | 93 dB (5.0 mV) |
| | TUNER, CD, DIRECT IN, TAPE 1,2,3, ADAPTOR, AUX | | |
| Output voltage impedance | REC OUT 1,2,3 ADAPTOR | 150 mV, 1 kilohm | |
| | HEADPHONES | 25 milliwatts (at 8 ohms) Accepts low and high impedance headphones | |
| Tone controls | BASS, at 100 Hz | ± 7 dB | |
| | TREBLE, at 10 kHz | ± 7 dB | |
| Subsonic filter | — | 6 dB/octave attenuation below 15 Hz | |
| Muting | — | -20 dB | |

— Continued on next page —

INTEGRATED STEREO AMPLIFIER
SONY®



General

System

Preamplifier section: Low-noise high gain NFB type equalizer amplifier, passive type direct tone control
 Power amplifier section: Pure-complementary SEPP MOS-FET power amplifier

Power requirement

Models for European countries: 220 V – 230 V AC, 50/60 Hz

Power consumption

Model for Scandinavian countries, Switzerland, Spain and Portugal
 180 W

Model for other European countries
 240 W

Dimensions

Approx. 430 x 150 x 375 mm (w/h/d)
 (17 x 5 7/8 x 14 3/4 inches)

Mass

Approx. 14 kg (30 lb 14 oz)

Supplied accessories

Screws (4)

The above values are measured at 230 V AC.

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Note :

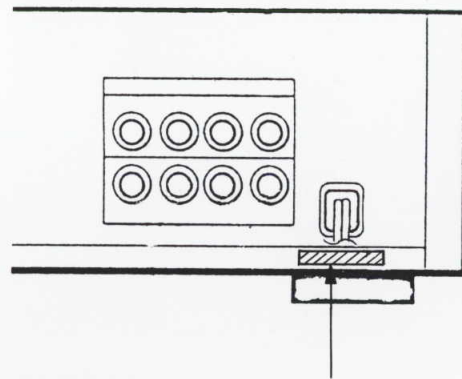
There are two types of power transformer (T901) in German model. When ordering the power transformer, check the part No. of it.

TABLE OF CONTENTS

| <u>Section</u> | <u>Title</u> | <u>Page</u> |
|----------------|--|-------------|
| SECTION 1. | GENERAL | |
| | Identifying the Parts and Controls | 3 |
| SECTION 2. | ELECTRICAL ADJUSTMENTS | 4 |
| SECTION 3. | DIAGRAMS | |
| 3-1. | Circuit Boards Location | 5 |
| 3-2. | Block Diagram | 6 |
| 3-3. | Printed Wiring Board | 9 |
| 3-4. | Schematic Diagram | 13 |
| 3-5. | Semiconductor Lead Layouts | 16 |
| 3-6. | IC Block Diagram | 16 |
| SECTION 4. | EXPLODED VIEWS | |
| 4-1. | Front Panel Section | 17 |
| 4-2. | Sub Chassis Section | 18 |
| 4-3. | Main Chassis Section | 19 |
| SECTION 5. | ELECTRICAL PARTS LIST | 20 |

MODEL IDENTIFICATION

— BACK PANEL —



- 4-944-612-1□ AE2 (AEP2) : Scandinavian countries, Switzerland, Spain and Portugal
- 4-944-612-0□ AE1 (AEP1) : Other European countries
- 4-944-612-0□ G : Germany

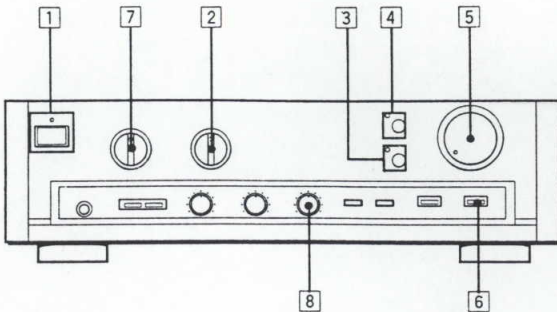
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

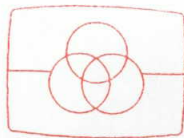
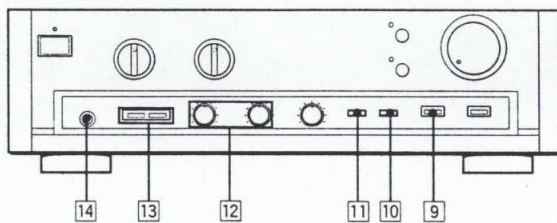
SECTION 1 GENERAL

This section is extracted from instruction manual.

Identifying the Parts and Controls



Front Panel



Free service manuals
Gratis schema's
Digitized by

www.freesevicemanuals.info

- 1** POWER switch and indicator
After the power is turned on, the standby indicator lights in red as the built-in muting circuit activates. When the amplifier stays in a stable operating condition, the indicator lights in green. The indicator lights in red if the unit detects shorting of circuit of the speaker outputs or in case of short-circuit of the inputs of DC components. In such a case, disconnect the power source and check the connected components and speaker systems.
- 2** INPUT SELECTOR
Selects the desired program source for listening.
- 3** SOURCE DIRECT button and indicator
When the button is pressed, the orange indicator lights and the circuits of the TONE control, SUBSONIC filter button, BALANCE control and MODE selector are disengaged regardless of the setting of the switches.
- 4** MUTING button and indicator
Press the button to reduce the sound level by -20 dB. (Output voltage becomes $1/10$.) Generally, set the button to off.
- 5** ATTENUATOR control
Adjusts the sound level. To increase the sound level, turn the control clockwise. To decrease the level, turn the control counterclockwise.
- Note**
Turn down the sound level before switching on the unit.
This prevents damage to speakers.
- 6** CARTRIDGE selector
Set the selector according to your cartridge.
MM: For moving-magnet type cartridge.
MC: For moving-coil type cartridge.
- 7** REC OUT SELECTOR
Selects the program source sent to the REC OUT jacks for recording.
- 8** BALANCE control
Adjust BALANCE to correct stereo imaging, when the speaker position is not symmetrical.
- 9** DIRECT INPUT selector
Set to SOURCE to select program source with the INPUT SELECTOR.
To listen to a program source processed through the equipment, such as graphic equalizer, connected to the ADAPTOR jacks, set it to SOURCE.
To listen to a program source connected to DIRECT IN jacks, set it to DIRECT.
- 10** SUBSONIC filter button
If subsonic noise components created by warped records, etc. are present, the audible range frequencies may be modulated and cause irritating intermodulation distortion. In this case, press the button to reduce noise components of less than 15 Hz, which cause modulation noise.
- 11** MODE selector
STEREO: For listening to a stereo program.
MONO: For listening to a monaural program.
- 12** BASS and TREBLE TONE controls
Adjust the tone quality.
To increase bass or treble sound, turn the control clockwise. To decrease them, turn the control counterclockwise.
- 13** SPEAKERS buttons
Select speaker system A, B, or A and B.
To drive speaker system A: Press A button.
To drive speaker system B: Press B button.
To drive speaker system A and B: Press both A and B.
For headphones listening only: Press both A and B to OFF (□).
- 14** HEADPHONES jack
Connect the stereo phone plug of headphones.

SECTION 2 ELECTRICAL ADJUSTMENTS

Bias Adjustment

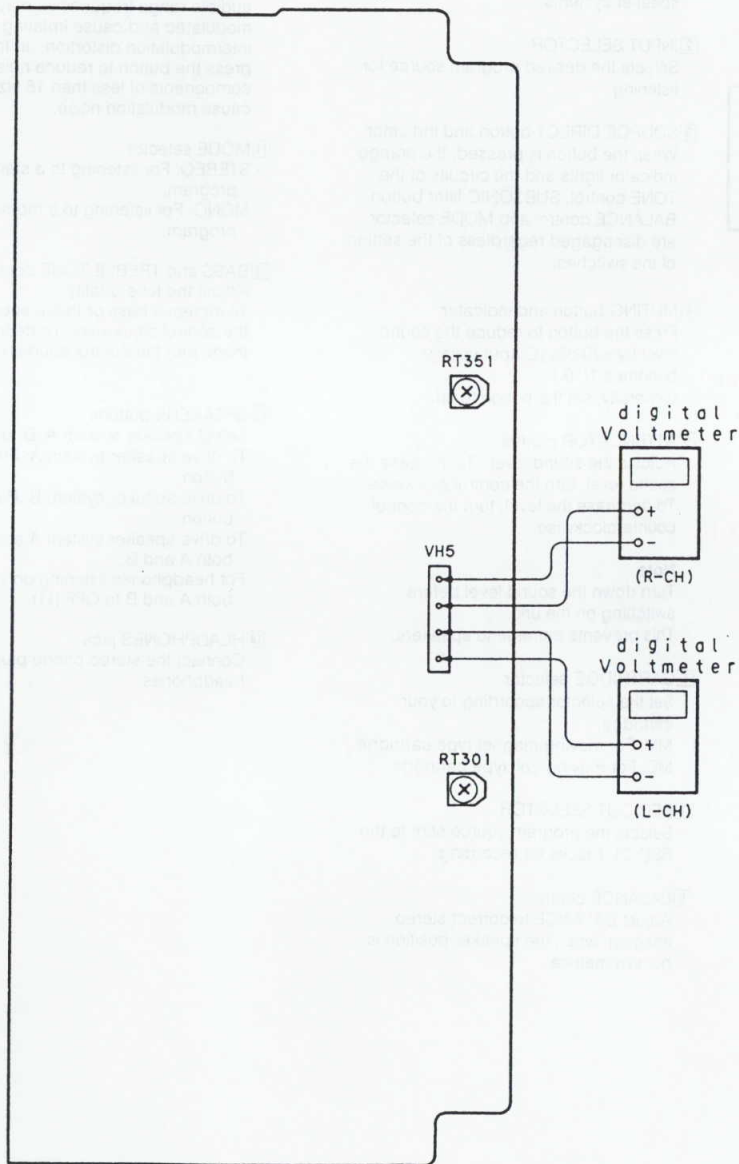
Note: Adjust the idling after tuning the unit on for about 10 minutes, giving it time to warm up.

Procedure :

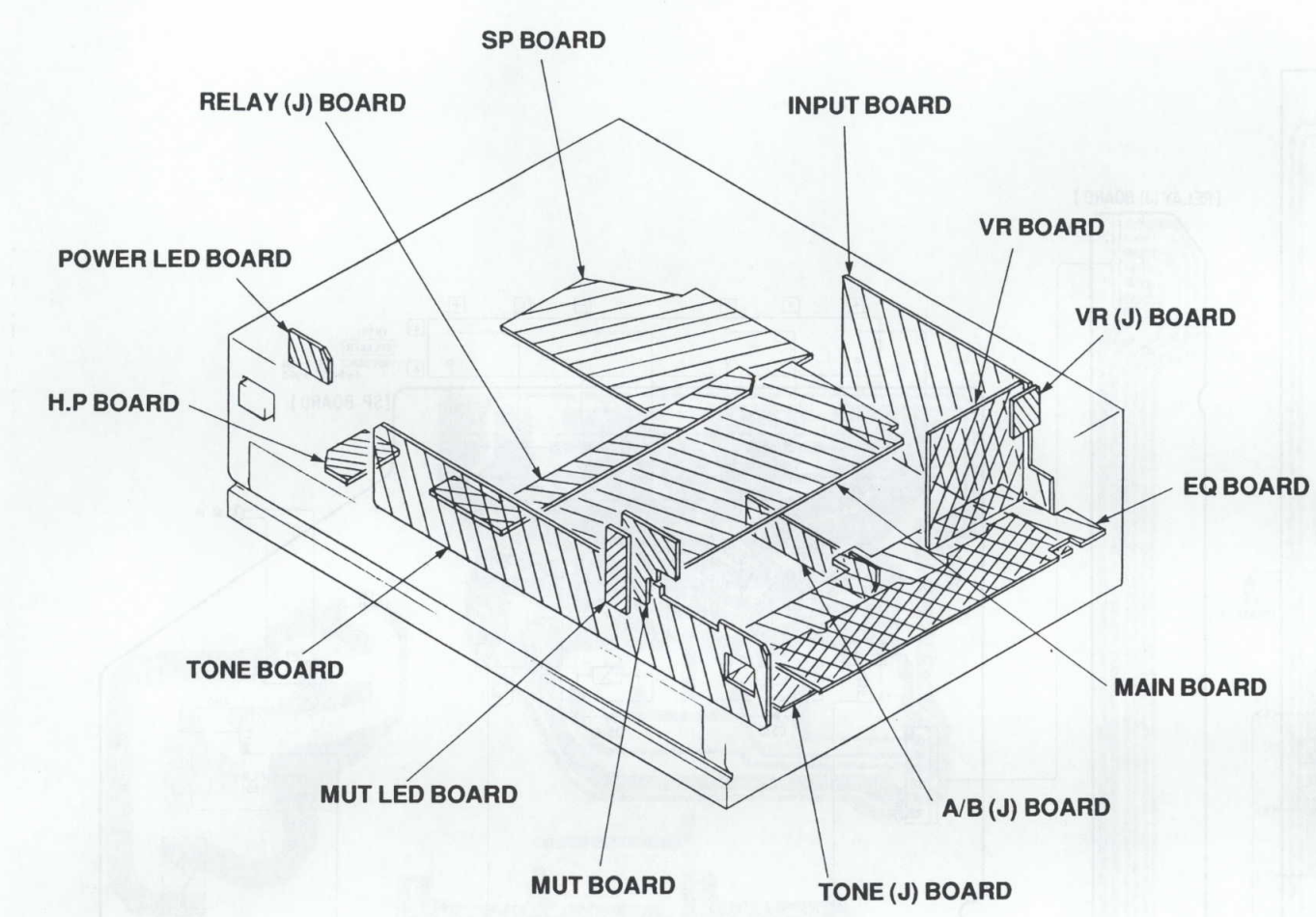
1. Connect the digital voltmeter to VH5 on main board as follows.
2. Adjust RT301 (L-CL) and RT351 (R-CH) so that the digital voltmeter on signal reads 30mV at VH5.

Adjustment Location :

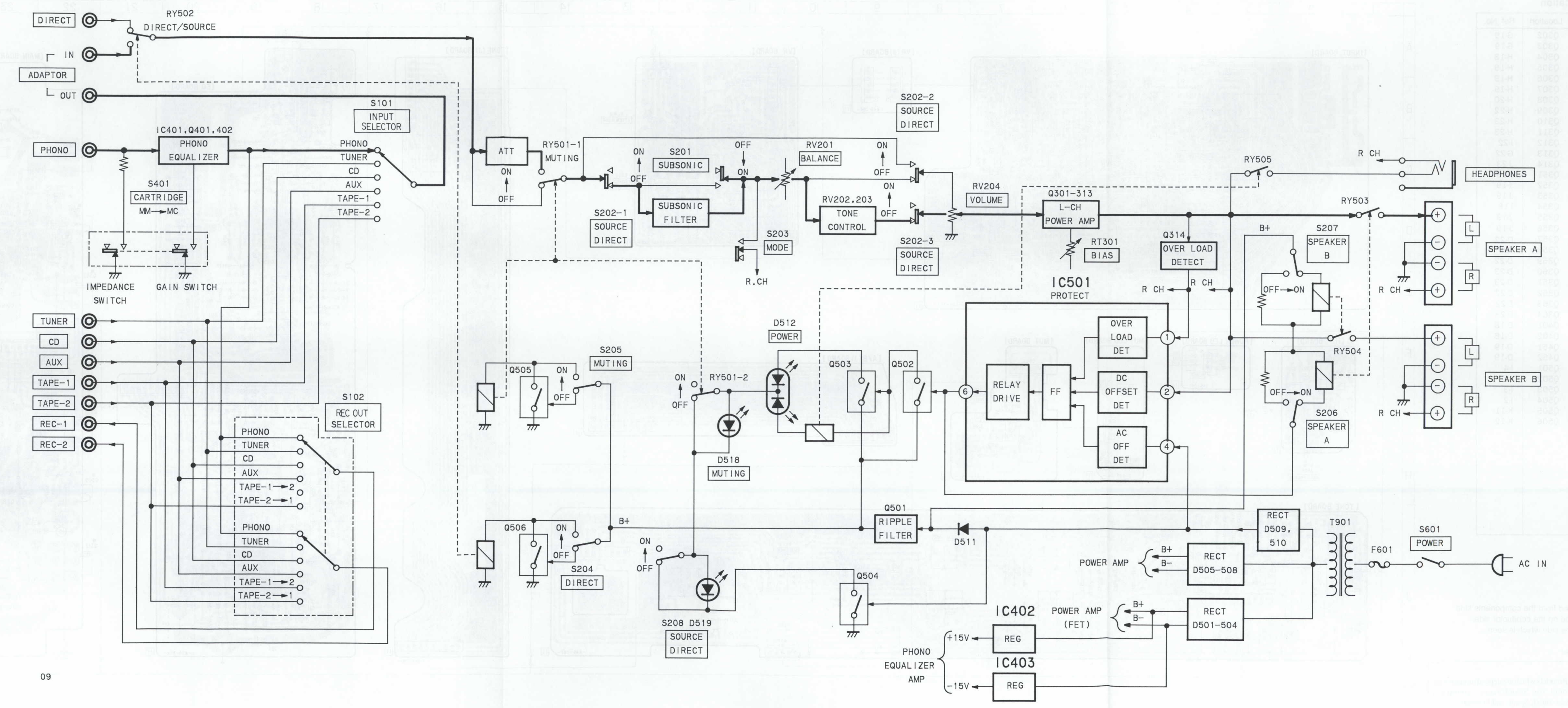
[MAIN BOARD]
(component side)



SECTION 3 3-1. CIRCUIT BOARDS LOCATION DIAGRAMS



3-2. BLOCK DIAGRAM



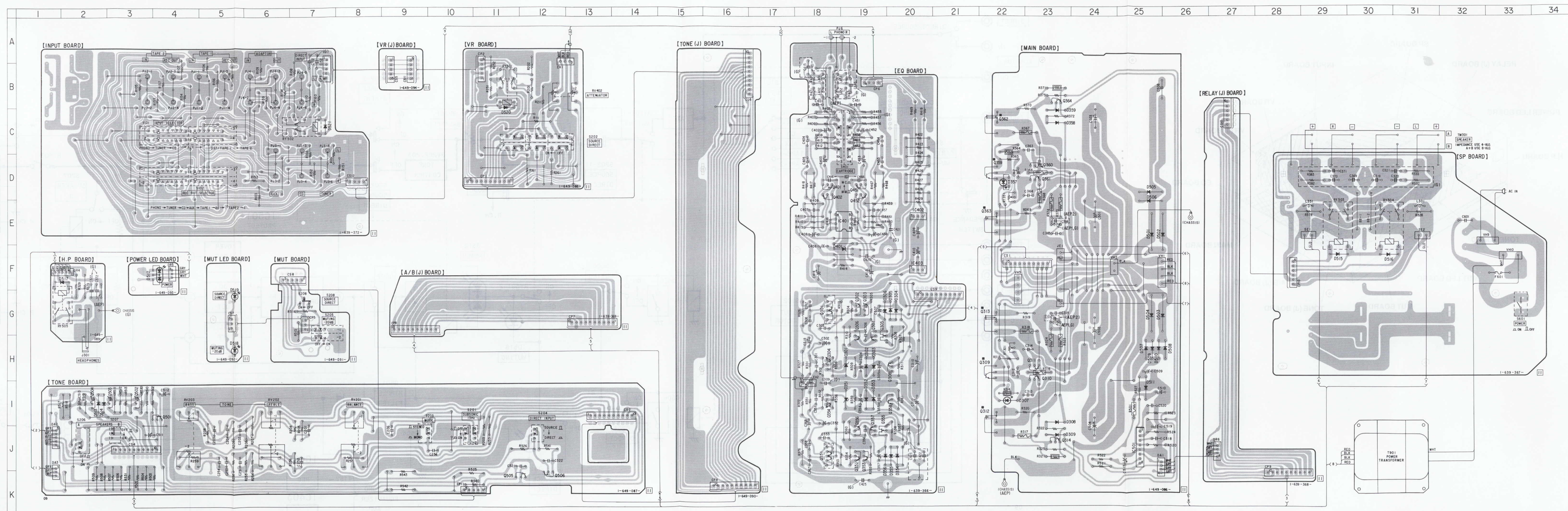
3-3. PRINTED WIRING BOARD
• See page 5 for Circuit Boards Location and see page 16 for Semiconductor Lead Layouts.

• Semiconductor Location

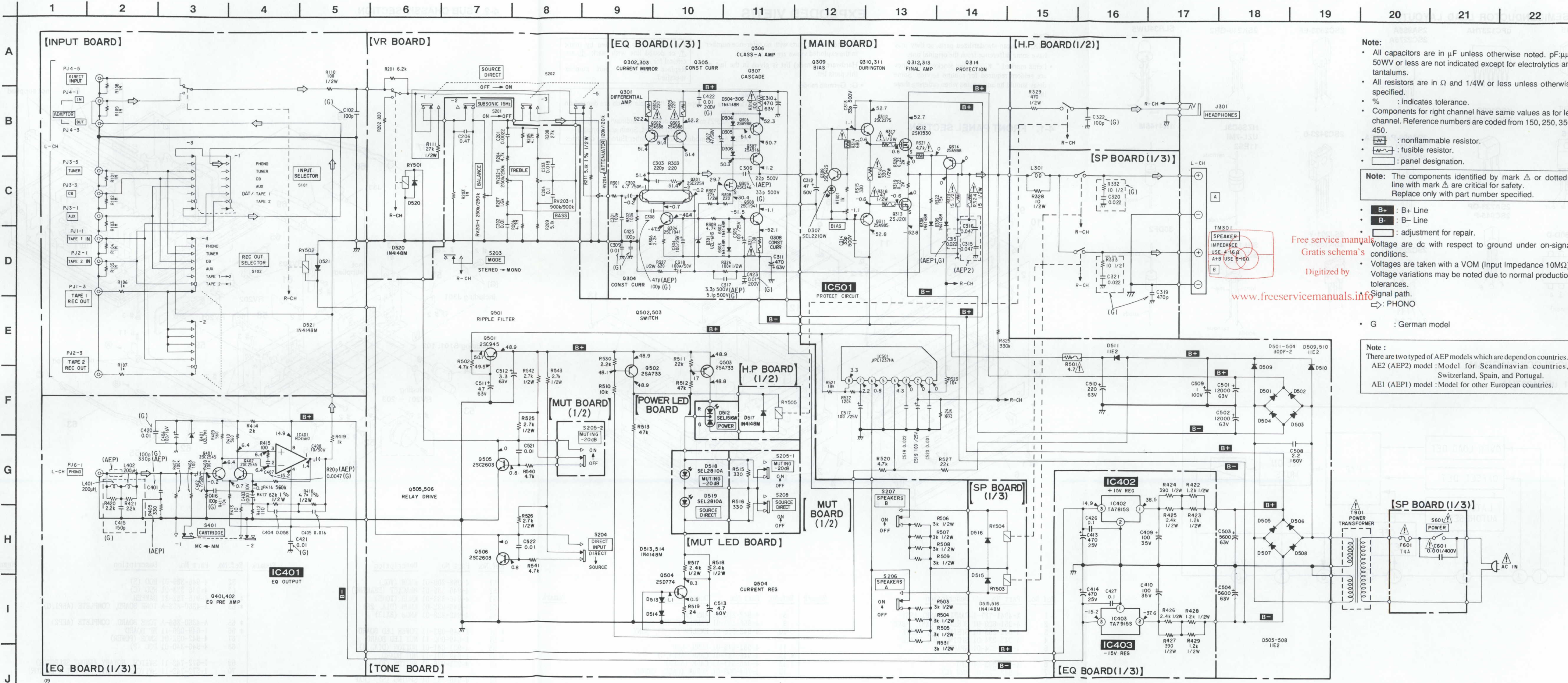
| Location | Ref. No. | Location | Ref. No. |
|----------|----------|----------|----------|
| D301 | H-19 | Q302 | G-19 |
| D302 | H-19 | Q303 | G-19 |
| D303 | H-19 | Q304 | H-18 |
| D304 | G-20 | Q305 | H-19 |
| D305 | G-20 | Q306 | H-19 |
| D306 | G-19 | Q307 | H-19 |
| D307 | I-22 | Q308 | H-20 |
| D308 | I-23 | Q309 | H-22 |
| D309 | J-23 | Q310 | H-23 |
| D351 | I-19 | Q311 | H-23 |
| D352 | I-19 | Q312 | I-22 |
| D353 | I-19 | Q313 | G-22 |
| D354 | J-20 | Q314 | J-23 |
| D355 | J-20 | Q351 | J-18 |
| D356 | J-19 | Q352 | J-19 |
| D357 | C-22 | Q353 | J-19 |
| D358 | C-23 | Q354 | I-18 |
| D359 | C-23 | Q355 | J-19 |
| D401 | F-19 | Q356 | J-19 |
| D501 | E-25 | Q357 | D-22 |
| D502 | E-25 | Q358 | I-20 |
| D503 | G-25 | Q359 | D-22 |
| D504 | G-25 | Q360 | D-23 |
| D505 | D-25 | Q361 | D-23 |
| D506 | E-25 | Q362 | C-22 |
| D507 | H-25 | Q363 | E-22 |
| D508 | H-26 | Q364 | B-23 |
| D509 | H-25 | Q401 | D-18 |
| D510 | H-25 | Q402 | D-18 |
| D511 | I-25 | Q451 | D-19 |
| D512 | F-3 | Q452 | D-19 |
| D513 | I-2 | Q501 | I-4 |
| D514 | I-2 | Q502 | I-3 |
| D515 | F-29 | Q503 | I-3 |
| D516 | F-30 | Q504 | I-2 |
| D517 | F-2 | Q505 | K-11 |
| D518 | H-5 | Q506 | K-12 |
| D519 | G-5 | | |
| D520 | C-11 | | |
| D521 | C-7 | | |
| IC401 | E-19 | | |
| IC402 | E-20 | | |
| IC403 | F-20 | | |
| IC501 | J-25 | | |
| Q301 | G-18 | | |

Note:
 • ○ : parts extracted from the components side.
 • ■ : parts mounted on the conductor side.
 • □ : Pattern on the side which is seen.

• G : German model
Note :
 There are two typed of AEP models which are depend on countries.
 AE2 (AEP2) model :Model for Scandinavian countries, Switzerland, Spain, and Portugal.
 AE1 (AEP1) model :Model for other European countries.



3-4. SCHEMATIC DIAGRAM
• See page 16 for IC Block Diagram.



- Note:**
- All capacitors are in μF unless otherwise noted. $\text{pF}:\mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and 1/4W or less unless otherwise specified.
 - % : indicates tolerance.
 - Components for right channel have same values as for left channel. Reference numbers are coded from 150, 250, 350, 450.
 - \square : nonflammable resistor.
 - \square : fusible resistor.
 - \square : panel designation.

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

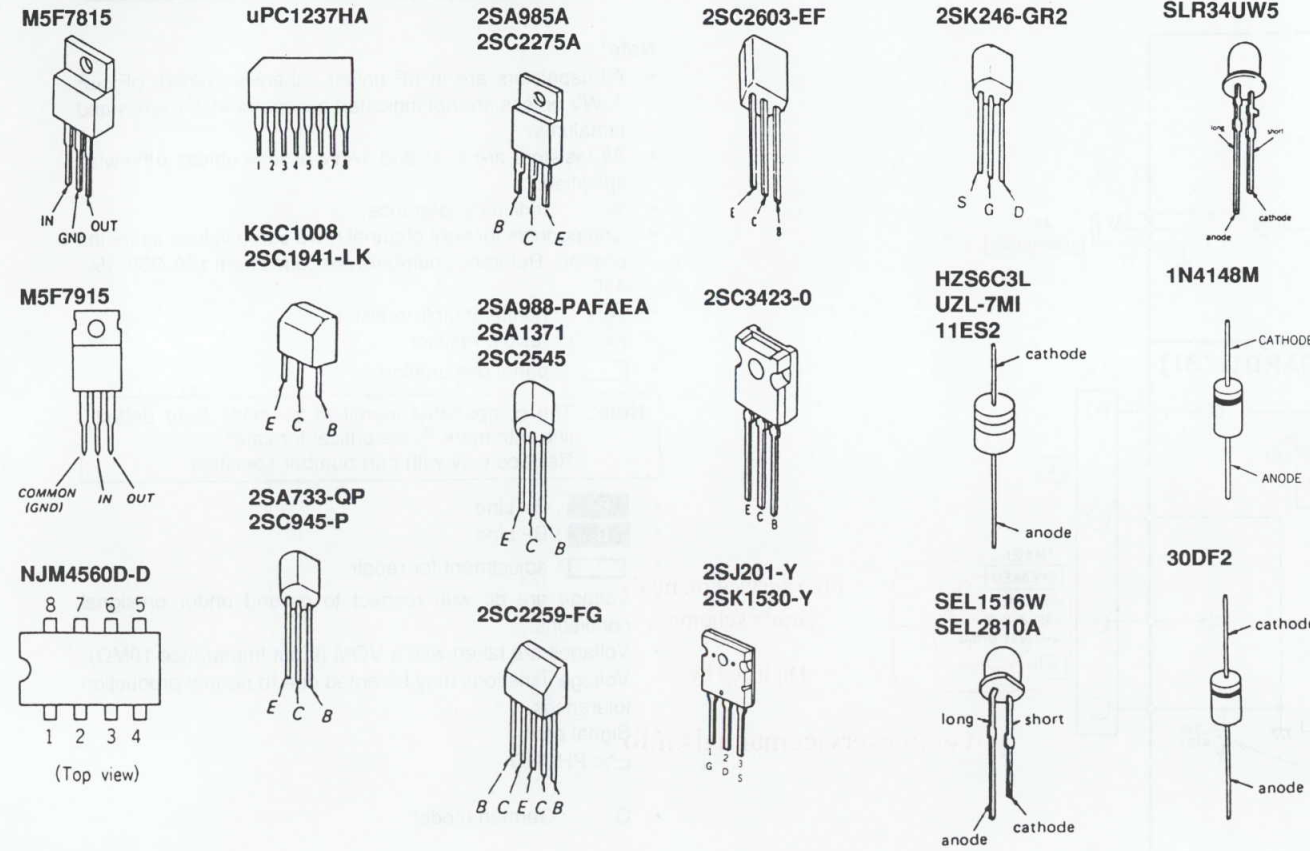
- \square B+ : B+ Line
 - \square B- : B- Line
 - \square : adjustment for repair.
- Voltage are dc with respect to ground under on-signal conditions.
- Voltages are taken with a VOM (Input Impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
 - Signal path.
 - \square : PHONO
 - G : German model

Note :
There are two typed of AEP models which are depend on countries.
AE2 (AEP2) model : Model for Scandinavian countries, Switzerland, Spain, and Portugal.
AE1 (AEP1) model : Model for other European countries.

Free service manuals
Gratis schema's
Digitized by

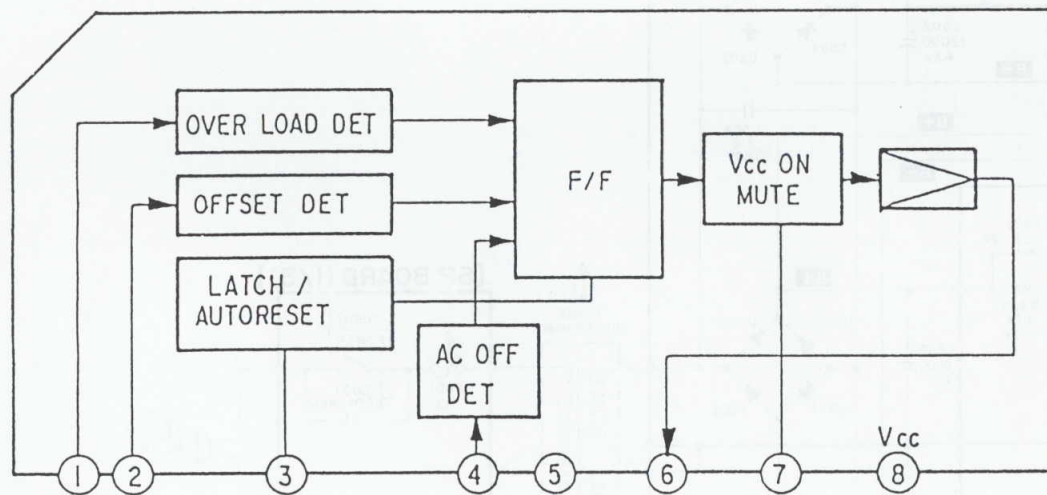
www.freeservicemanuals.info

3-5. SEMICONDUCTOR LEAD LAYOUTS



3-6. IC BLOCK DIAGRAM

• IC501 uPC1237HA



SECTION 4 EXPLODED VIEWS

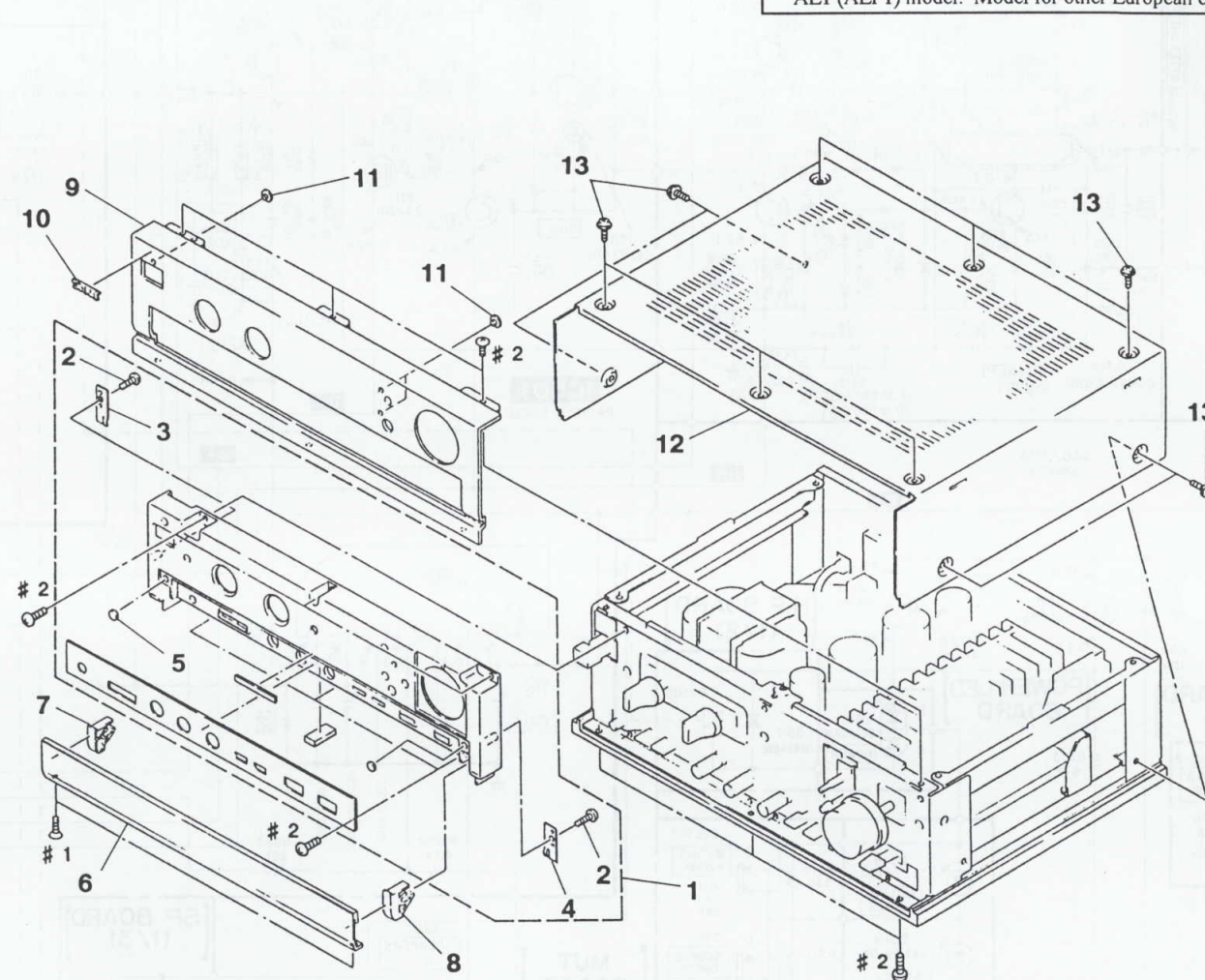
NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- G: German model

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

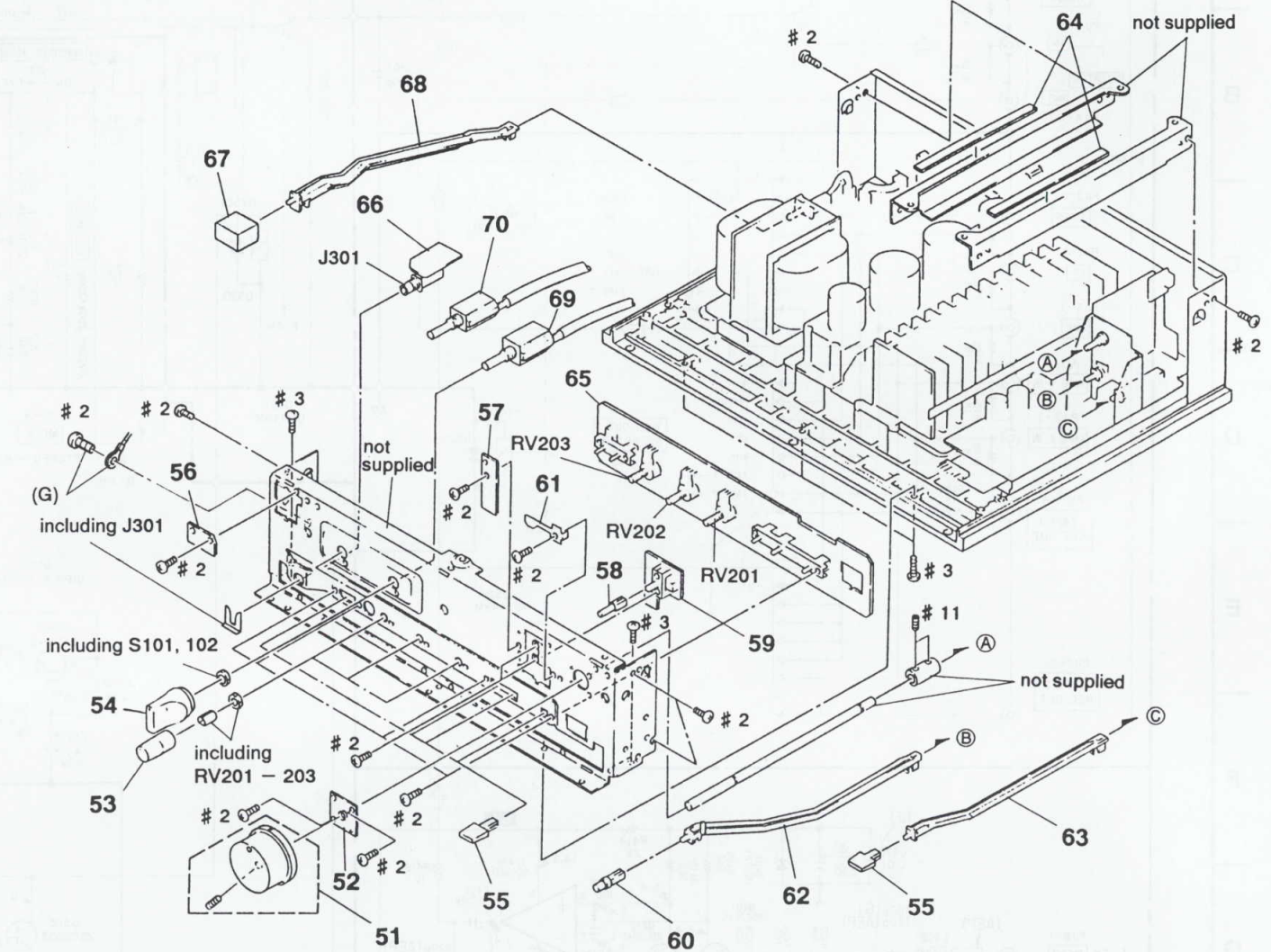
Note: There are two type of AEP models which are depend on countries.
 AE2 (AEP2) model: Model for Scandinavian countries, Switzerland, Spain and Portugal
 AE1 (AEP1) model: Model for other European countries

4-1. FRONT PANEL SECTION



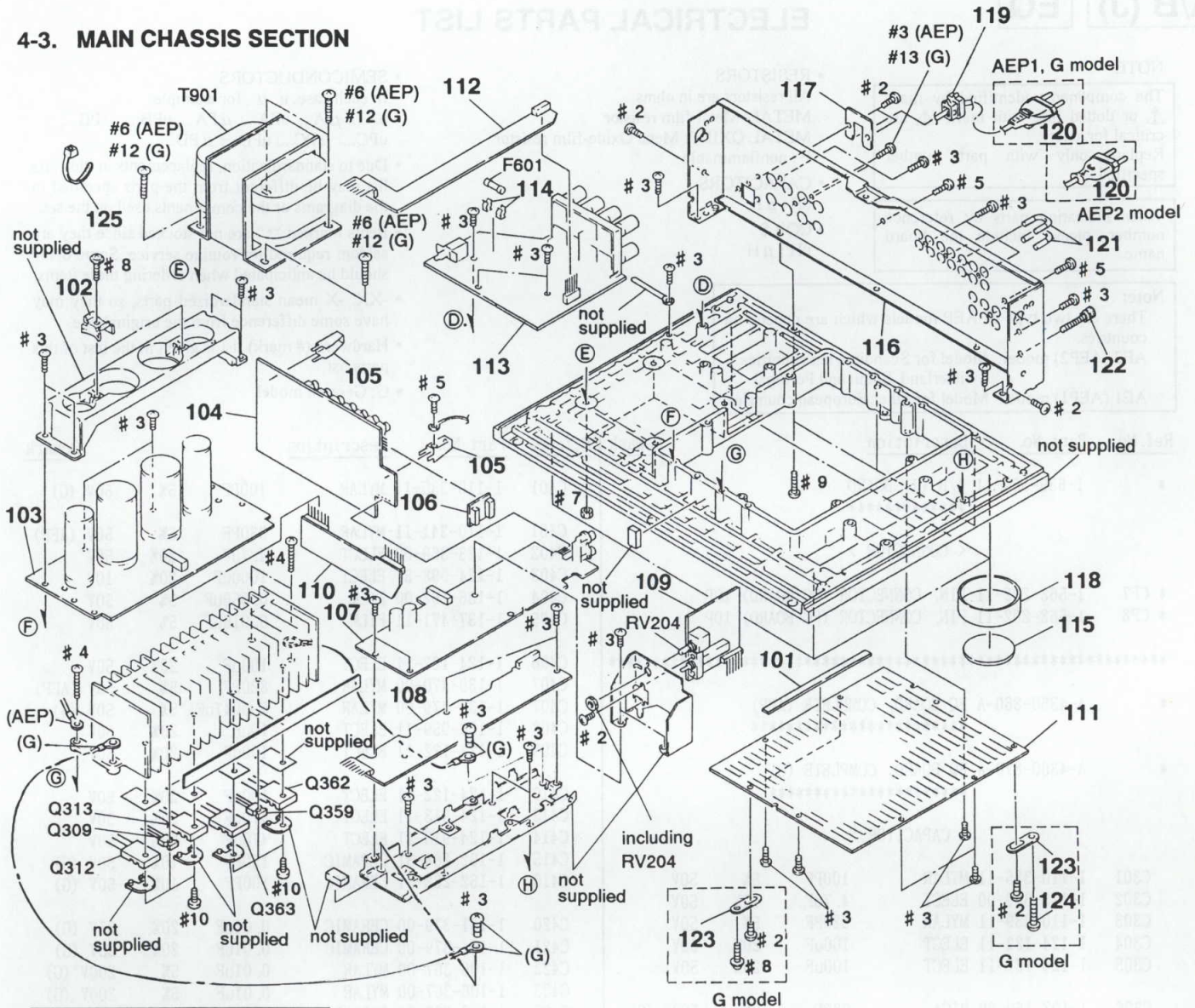
| Ref. No. | Part No. | Description | Remark |
|----------|--------------|----------------------|--------|
| 1 | X-4941-787-1 | PANEL (BASE) ASSY | |
| 2 | 4-951-620-01 | SCREW (2.6X8), +BVTP | |
| * 3 | 4-942-233-01 | SPRING (L), PLATE | |
| * 4 | 4-942-234-01 | SPRING (R), PLATE | |
| 5 | 4-879-274-01 | SPACER | |
| 6 | 4-955-303-21 | LID | |
| 7 | 4-942-225-01 | ARM (L) | |
| 8 | 4-942-226-01 | ARM (R) | |
| 9 | 4-958-199-01 | PANEL, FRONT | |
| 10 | 4-942-568-01 | EMBLEM (NO. 5), SONY | |
| 11 | 4-931-646-01 | LENS, LED | |
| * 12 | 4-946-347-01 | CASE (AEP1, G) | |
| * 12 | 4-946-347-11 | CASE (AEP2) | |
| 13 | 3-704-366-01 | SCREW (CASE) (M3X8) | |

4-2. SUB CHASSIS SECTION



| Ref. No. | Part No. | Description | Remark |
|----------|--------------|-----------------------------------|--------|
| 51 | 4-958-200-01 | KNOB (VOL) | |
| 52 | 4-946-335-01 | BRACKET (BEARING) | |
| 53 | 4-946-333-01 | KNOB (TONE) | |
| 54 | 4-949-932-01 | KNOB (DIA. 25) | |
| 55 | 4-942-228-01 | KNOB (3X13) | |
| * 56 | 1-649-093-11 | POWER LED BOARD | |
| * 57 | 1-649-092-11 | MUT LED BOARD | |
| 58 | 4-931-641-01 | BUTTON (DIA. 4) | |
| * 59 | 1-649-091-11 | MUT BOARD | |
| 60 | 4-931-926-01 | BUTTON (B) | |
| 61 | 4-946-732-01 | SPRING (S), LEAF | |
| 62 | 4-946-339-01 | ROD (S) | |
| 63 | 4-946-338-01 | ROD (C) | |
| * 64 | 4-916-782-21 | DAMPER | |
| * 65 | A-4360-852-A | TONE BOARD, COMPLETE (AEP1, G) | |
| * 65 | A-4360-866-A | TONE BOARD, COMPLETE (AEP2) | |
| * 66 | 1-649-089-11 | HP BOARD | |
| 67 | 4-942-032-01 | KNOB (POWER) | |
| 68 | 4-946-340-01 | ROD (P) | |
| 69 | 1-572-742-11 | SWITCH, ROTARY (INPUT SELECTOR) | |
| 70 | 1-572-743-11 | SWITCH, ROTARY (REC OUT SELECTOR) | |

4-3. MAIN CHASSIS SECTION



The components identified by mark ▲ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Note :
There are two types of power transformer (T901) in German model. When ordering the power transformer, check the part No. of it.

| Ref. No. | Part No. | Description | Remark | Ref. No. | Part No. | Description | Remark |
|----------|--------------|-----------------------------|--------|----------|--------------|-----------------------------------|--------|
| * 101 | 4-916-782-21 | DAMPER | | * 117 | 4-923-873-01 | BRACKET, CORD STOPPER | |
| 102 | 4-946-329-01 | RETAINER, ELECT CAP | | 118 | 4-923-882-02 | RING (LARGE-16), ORNAMENTAL, FOOT | |
| * 103 | A-4360-851-A | MAIN BOARD, COMPLETE (AEP1) | | * 119 | 3-703-244-00 | BUSHING (2104), CORD | |
| * 103 | A-4360-865-A | MAIN BOARD, COMPLETE (AEP2) | | ▲120 | 1-574-805-11 | CORD, POWER (AEP2) | |
| * 103 | A-4360-868-A | MAIN BOARD, COMPLETE (G) | | ▲120 | 1-696-169-11 | CORD, POWER (AEP1, G) | |
| * 104 | 1-639-372-11 | INPUT BOARD | | 121 | 1-573-905-11 | PLUG, JUMPER | |
| * 105 | 4-946-336-01 | BRACKET (GROUND) | | 122 | 4-947-010-01 | SCREW, FEEDER FIXED | |
| * 106 | 1-649-094-11 | VR (J) BOARD | | * 123 | 4-941-988-01 | BRACKET (GROUND) (G) | |
| * 107 | A-4360-860-A | EQ BOARD, COMPLETE (AEP) | | 124 | 4-921-437-01 | SCREW (M3X20), TAPPING (G) | |
| * 107 | A-4360-870-A | EQ BOARD, COMPLETE (G) | | 125 | 3-655-653-21 | BAND (TAITON), BINDING | |
| * 108 | 1-649-090-11 | TONE (J) BOARD | | ▲F601 | 1-532-350-00 | FUSE, TIME-LAG 4A | |
| * 109 | 1-649-088-11 | VR BOARD | | Q309 | 8-729-203-45 | TRANSISTOR 2SC3423-0 | |
| * 110 | 1-639-369-11 | A/B (J) BOARD | | Q312 | 8-729-015-30 | TRANSISTOR 2SK1530-Y | |
| * 111 | 4-916-732-01 | BOARD, BOTTOM | | Q313 | 8-729-015-31 | TRANSISTOR 2SJ201-Y | |
| * 112 | 1-639-368-11 | RELAY (J) BOARD | | Q359 | 8-729-203-45 | TRANSISTOR 2SC3423-0 | |
| * 113 | 1-639-367-11 | SP BOARD | | Q362 | 8-729-015-30 | TRANSISTOR 2SK1530-Y | |
| 114 | 1-533-233-11 | HOLDER, FUSE | | Q363 | 8-729-015-31 | TRANSISTOR 2SJ201-Y | |
| * 115 | 4-923-850-01 | FOOT (DIA. 46) | | ▲T901 | 1-423-682-11 | TRANSFORMER, POWER | |
| * 116 | 4-944-612-01 | PANEL, BACK (AEP1, G) | | ▲T901 | 1-423-682-21 | TRANSFORMER, POWER | |
| * 116 | 4-944-612-11 | PANEL, BACK (AEP2) | | | | | |

SECTION 5 ELECTRICAL PARTS LIST

A/B (J) EQ

NOTE:

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Note:

There are two type of AEP models which are depend on countries.
AE2 (AEP2) model: Model for Scandinavian countries. Switzerland, Spain and Portugal
AE1 (AEP1) model: Model for other European countries

• RESISTORS

All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

• CAPACITORS

uF : μ F

• COILS

uH : μ H

• SEMICONDUCTORS

In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Hardware (# mark) list is given in the last of this parts list.
- G: German model

| Ref. No. | Part No. | Description | Remark | Ref. No. | Part No. | Description | Remark |
|----------|--------------|-----------------------------------|--------|---------------|--------------|----------------------------|--------|
| * | 1-639-369-11 | A/B (J) BOARD ***** | | C401 | 1-110-335-11 | MYLAR 100PF 5% 50V (G) | |
| | | < CONNECTOR > | | C401 | 1-110-341-11 | MYLAR 330PF 5% 50V (AEP) | |
| * CP7 | 1-568-202-11 | PIN, CONNECTOR (PC BOARD) 10P | | C402 | 1-123-369-00 | ELECT 4.7uF 20% 50V | |
| * CP8 | 1-568-202-11 | PIN, CONNECTOR (PC BOARD) 10P | | C403 | 1-124-998-81 | ELECT 1000uF 20% 10V | |
| ***** | | | | C404 | 1-136-162-00 | FILM 0.056uF 5% 50V | |
| * | A-4360-860-A | EQ BOARD, COMPLETE (AEP) ***** | | C405 | 1-137-471-11 | FILM 0.016uF 5% 50V | |
| * | A-4360-870-A | EQ BOARD, COMPLETE (G) ***** | | C406 | 1-124-122-11 | ELECT 100uF 20% 50V | |
| | | < CAPACITOR > | | C407 | 1-130-470-00 | MYLAR 820PF 5% 50V (AEP) | |
| C301 | 1-110-335-11 | MYLAR 100PF 5% 50V | | C407 | 1-130-479-00 | MYLAR 0.0047uF 5% 50V (G) | |
| C302 | 1-123-369-00 | ELECT 4.7uF 20% 50V | | C408 | 1-126-059-11 | ELECT 10uF 20% 50V | |
| C303 | 1-110-339-11 | MYLAR 220PF 5% 50V | | C409 | 1-124-122-11 | ELECT 100uF 20% 50V | |
| C304 | 1-124-122-11 | ELECT 100uF 20% 50V | | C410 | 1-124-122-11 | ELECT 100uF 20% 50V | |
| C305 | 1-124-122-11 | ELECT 100uF 20% 50V | | C413 | 1-124-913-11 | ELECT 470uF 20% 50V | |
| C306 | 1-107-159-00 | MICA 33PF 5% 500V (G) | | C414 | 1-124-913-11 | ELECT 470uF 20% 50V | |
| C306 | 1-107-210-00 | MICA 22PF 5% 500V (AEP) | | C415 | 1-162-284-31 | CERAMIC 150PF 10% 50V (G) | |
| C307 | 1-124-910-11 | ELECT 47uF 20% 50V | | C416 | 1-162-282-31 | CERAMIC 100PF 10% 50V (G) | |
| C308 | 1-101-880-00 | CERAMIC 47PF 5% 50V (AEP) | | C420 | 1-161-379-00 | CERAMIC 0.01uF 20% 25V (G) | |
| C308 | 1-110-335-11 | MYLAR 100PF 5% 50V (G) | | C421 | 1-161-379-00 | CERAMIC 0.01uF 20% 25V (G) | |
| C309 | 1-130-483-00 | MYLAR 0.01uF 5% 50V (G) | | C422 | 1-106-367-00 | MYLAR 0.01uF 5% 200V (G) | |
| C310 | 1-126-066-11 | ELECT 470uF 20% 63V | | C423 | 1-106-367-00 | MYLAR 0.01uF 5% 200V (G) | |
| C311 | 1-126-066-11 | ELECT 470uF 20% 63V | | C425 | 1-162-282-31 | CERAMIC 100PF 10% 50V (G) | |
| C317 | 1-107-026-00 | MICA 5.1PF 500V (G) | | C426 | 1-136-165-00 | FILM 0.1uF 5% 50V | |
| C317 | 1-107-044-00 | MICA 3.3PF 500V (AEP) | | C427 | 1-136-165-00 | FILM 0.1uF 5% 50V | |
| C318 | 1-126-052-11 | ELECT 100uF 20% 50V | | C451 | 1-110-335-11 | MYLAR 100PF 5% 50V (G) | |
| C351 | 1-110-335-11 | MYLAR 100PF 5% 50V | | C451 | 1-110-341-11 | MYLAR 330PF 5% 50V (AEP) | |
| C352 | 1-123-369-00 | ELECT 4.7uF 20% 50V | | C452 | 1-123-369-00 | ELECT 4.7uF 20% 50V | |
| C353 | 1-110-339-11 | MYLAR 220PF 5% 50V | | C453 | 1-124-998-81 | ELECT 1000uF 20% 10V | |
| C354 | 1-124-122-11 | ELECT 100uF 20% 50V | | C454 | 1-136-162-00 | FILM 0.056uF 5% 50V | |
| C355 | 1-124-122-11 | ELECT 100uF 20% 50V | | C455 | 1-137-471-11 | FILM 0.016uF 5% 50V | |
| C356 | 1-107-159-00 | MICA 33PF 5% 500V (G) | | C457 | 1-130-470-00 | MYLAR 820PF 5% 50V (AEP) | |
| C356 | 1-107-210-00 | MICA 22PF 5% 500V (AEP) | | C457 | 1-130-479-00 | MYLAR 0.0047uF 5% 50V (G) | |
| C357 | 1-124-910-11 | ELECT 47uF 20% 50V | | C458 | 1-126-059-11 | ELECT 10uF 20% 50V | |
| C358 | 1-101-880-00 | CERAMIC 47PF 5% 50V (AEP) | | C465 | 1-162-284-31 | CERAMIC 150PF 10% 50V (G) | |
| C358 | 1-110-335-11 | MYLAR 100PF 5% 50V (G) | | C466 | 1-162-282-31 | CERAMIC 100PF 10% 50V (G) | |
| C367 | 1-107-026-00 | MICA 5.1PF 500V (G) | | < CONNECTOR > | | | |
| C367 | 1-107-044-00 | MICA 3.3PF 500V (AEP) | | CP6 | 1-560-941-00 | PIN, CONNECTOR 4P | |
| C368 | 1-126-052-11 | ELECT 100uF 20% 50V | | < SOCKET > | | | |
| | | | | * CS9 | 1-562-334-00 | SOCKET, CONNECTOR 10P | |

EQ

| Ref. No. | Part No. | Description | Remark | Ref. No. | Part No. | Description | Remark |
|----------------|--------------|--------------------------|--------|--------------|--------------|----------------------------|--------|
| < DIODE > | | | | | | | |
| D301 | 8-719-933-41 | DIODE HZS6C3L | | Q401 | 8-729-354-52 | TRANSISTOR 2SC2545 | |
| D302 | 8-719-987-63 | DIODE 1N4148M | | Q402 | 8-729-354-52 | TRANSISTOR 2SC2545 | |
| D303 | 8-719-987-63 | DIODE 1N4148M | | Q451 | 8-729-354-52 | TRANSISTOR 2SC2545 | |
| D304 | 8-719-987-63 | DIODE 1N4148M | | Q452 | 8-729-354-52 | TRANSISTOR 2SC2545 | |
| D305 | 8-719-987-63 | DIODE 1N4148M | | < RESISTOR > | | | |
| D306 | 8-719-987-63 | DIODE 1N4148M | | R301 | 1-247-713-11 | CARBON 1K 5% 1/4W F | |
| D351 | 8-719-933-41 | DIODE HZS6C3L | | R302 | 1-249-469-11 | CARBON 100K 5% 1/4W | |
| D352 | 8-719-987-63 | DIODE 1N4148M | | R303 | 1-247-704-11 | CARBON 220 5% 1/4W | |
| D353 | 8-719-987-63 | DIODE 1N4148M | | △R304 | 1-212-889-00 | FUSIBLE 220 5% 1/4W F | |
| D354 | 8-719-987-63 | DIODE 1N4148M | | △R305 | 1-212-889-00 | FUSIBLE 220 5% 1/4W F | |
| D355 | 8-719-987-63 | DIODE 1N4148M | | R306 | 1-247-717-11 | CARBON 2.2K 5% 1/4W F | |
| D356 | 8-719-987-63 | DIODE 1N4148M | | R307 | 1-249-490-11 | CARBON 27K 5% 1/2W | |
| D401 | 8-719-000-84 | DIODE UZL-7M1 | | R308 | 1-247-704-11 | CARBON 220 5% 1/4W | |
| < PLUG > | | | | R309 | 1-247-721-11 | CARBON 4.7K 5% 1/4W | |
| * EH2 | 1-564-506-11 | PLUG, CONNECTOR 3P | | △R310 | 1-212-881-11 | FUSIBLE 100 5% 1/4W F | |
| < IC > | | | | △R311 | 1-212-881-11 | FUSIBLE 100 5% 1/4W F | |
| IC401 | 8-759-745-61 | IC NJM4560D-D | | R326 | 1-249-721-11 | CARBON 100K 5% 1/2W | |
| IC402 | 8-759-231-59 | IC M5F7815 | | R327 | 1-249-668-11 | CARBON 620 5% 1/2W | |
| IC403 | 8-759-245-87 | IC M5F7915 | | R351 | 1-247-713-11 | CARBON 1K 5% 1/4W F | |
| < COIL > | | | | R352 | 1-249-469-11 | CARBON 100K 5% 1/4W | |
| L401 | 1-424-397-11 | COIL, CHOKE 200uH (G) | | R353 | 1-247-704-11 | CARBON 220 5% 1/4W | |
| L402 | 1-424-397-11 | COIL, CHOKE 200uH (G) | | △R354 | 1-212-889-00 | FUSIBLE 220 5% 1/4W F | |
| L451 | 1-424-397-11 | COIL, CHOKE 200uH (G) | | △R355 | 1-212-889-00 | FUSIBLE 220 5% 1/4W F | |
| L452 | 1-424-397-11 | COIL, CHOKE 200uH (G) | | R356 | 1-247-717-11 | CARBON 2.2K 5% 1/4W F | |
| < JACK > | | | | R357 | 1-249-490-11 | CARBON 27K 5% 1/2W | |
| PJ6 | 1-580-054-11 | JACK, PIN 2P | | R358 | 1-247-704-11 | CARBON 220 5% 1/4W | |
| < TRANSISTOR > | | | | R359 | 1-247-721-11 | CARBON 4.7K 5% 1/4W | |
| Q301 | 8-729-620-17 | TRANSISTOR 2SC2259-FG | | △R360 | 1-212-881-11 | FUSIBLE 100 5% 1/4W F | |
| Q302 | 8-729-140-82 | TRANSISTOR 2SA988-PAFAEA | | △R361 | 1-212-881-11 | FUSIBLE 100 5% 1/4W F | |
| Q303 | 8-729-140-82 | TRANSISTOR 2SA988-PAFAEA | | R376 | 1-249-721-11 | CARBON 100K 5% 1/2W | |
| Q304 | 8-729-142-01 | TRANSISTOR 2SC1941-LK | | R377 | 1-249-668-11 | CARBON 620 5% 1/2W | |
| Q305 | 8-729-201-56 | TRANSISTOR 2SK246-GR2 | | R405 | 1-247-706-11 | CARBON 330 5% 1/4W F (AEP) | |
| Q306 | 8-729-140-82 | TRANSISTOR 2SA988-PAFAEA | | R406 | 1-247-700-11 | CARBON 100 5% 1/4W | |
| Q307 | 8-729-803-76 | TRANSISTOR 2SA1371 | | R407 | 1-249-469-11 | CARBON 100K 5% 1/4W | |
| Q308 | 8-729-142-01 | TRANSISTOR 2SC1941-LK | | R408 | 1-249-469-11 | CARBON 100K 5% 1/4W | |
| Q351 | 8-729-620-17 | TRANSISTOR 2SC2259-FG | | R409 | 1-247-710-11 | CARBON 560 5% 1/4W | |
| Q352 | 8-729-140-82 | TRANSISTOR 2SA988-PAFAEA | | R410 | 1-247-710-11 | CARBON 560 5% 1/4W | |
| Q353 | 8-729-140-82 | TRANSISTOR 2SA988-PAFAEA | | R411 | 1-247-725-11 | CARBON 10K 5% 1/4W | |
| Q354 | 8-729-142-01 | TRANSISTOR 2SC1941-LK | | R412 | 1-249-529-11 | CARBON 110 5% 1/4W | |
| Q355 | 8-729-201-56 | TRANSISTOR 2SK246-GR2 | | R413 | 1-249-504-11 | CARBON 10 5% 1/4W | |
| Q356 | 8-729-140-82 | TRANSISTOR 2SA988-PAFAEA | | R414 | 1-247-138-00 | CARBON 2K 5% 1/4W | |
| Q357 | 8-729-803-76 | TRANSISTOR 2SA1371 | | R415 | 1-247-700-11 | CARBON 100 5% 1/4W | |
| Q358 | 8-729-142-01 | TRANSISTOR 2SC1941-LK | | R416 | 1-214-958-00 | METAL 560K 1% 1/4W | |
| | | | | R417 | 1-249-845-91 | CARBON 62K 1% 1/2W | |
| | | | | R418 | 1-249-818-11 | CARBON 4.7K 1% 1/2W | |
| | | | | R419 | 1-247-713-11 | CARBON 1K 5% 1/4W F | |
| | | | | R420 | 1-249-421-11 | CARBON 2.2K 5% 1/4W F (G) | |
| | | | | R421 | 1-249-421-11 | CARBON 2.2K 5% 1/4W F (G) | |
| | | | | R422 | 1-247-753-11 | CARBON 1.2K 5% 1/2W | |
| | | | | R423 | 1-247-753-11 | CARBON 1.2K 5% 1/2W | |

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

EQ HP INPUT

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|---------|--------------|----------------------------------|-------------------|---------|----------|-------------|--------|
| R424 | 1-247-746-11 | CARBON | 390 5% 1/2W | | | < RELAY > | |
| R425 | 1-247-249-00 | CARBON | 2.4K 5% 1/2W | | | | |
| R426 | 1-247-249-00 | CARBON | 2.4K 5% 1/2W | | | | |
| R427 | 1-247-746-11 | CARBON | 390 5% 1/2W | | | | |
| R428 | 1-247-753-11 | CARBON | 1.2K 5% 1/2W | | | | |
| R429 | 1-247-753-11 | CARBON | 1.2K 5% 1/2W | | | | |
| R455 | 1-247-706-11 | CARBON | 330 5% 1/4W | F (AEP) | | | |
| R456 | 1-247-700-11 | CARBON | 100 5% 1/4W | | | | |
| R457 | 1-249-469-11 | CARBON | 100K 5% 1/4W | | | | |
| R458 | 1-249-469-11 | CARBON | 100K 5% 1/4W | | | | |
| R459 | 1-247-710-11 | CARBON | 560 5% 1/4W | | | | |
| R460 | 1-247-710-11 | CARBON | 560 5% 1/4W | | | | |
| R461 | 1-247-725-11 | CARBON | 10K 5% 1/4W | | | | |
| R462 | 1-249-529-11 | CARBON | 110 5% 1/4W | | | | |
| R463 | 1-249-504-11 | CARBON | 10 5% 1/4W | | | | |
| R465 | 1-247-700-11 | CARBON | 100 5% 1/4W | | | | |
| R466 | 1-214-958-00 | METAL | 560K 1% 1/4W | | | | |
| R467 | 1-249-845-91 | CARBON | 62K 1% 1/2W | | | | |
| R468 | 1-249-818-11 | CARBON | 4.7K 1% 1/2W | | | | |
| R469 | 1-247-713-11 | CARBON | 1K 5% 1/4W | F | | | |
| R470 | 1-249-421-11 | CARBON | 2.2K 5% 1/4W | F (G) | | | |
| R471 | 1-249-421-11 | CARBON | 2.2K 5% 1/4W | F (G) | | | |
| | | < SWITCH > | | | | | |
| S401 | 1-571-111-11 | SWITCH, PUSH (1 KEY) (CARTRIDGE) | | | | | |
| ***** | | | | | | | |
| * | 1-649-089-11 | HP BOARD | | | | | |
| | | ***** | | | | | |
| | | < CAPACITOR > | | | | | |
| C322 | 1-162-282-31 | CERAMIC | 100PF 10% 50V (G) | | | | |
| C372 | 1-162-282-31 | CERAMIC | 100PF 10% 50V (G) | | | | |
| | | < DIODE > | | | | | |
| D517 | 8-719-987-63 | DIODE 1N4148M | | | | | |
| | | < CONNECTOR > | | | | | |
| * DR4 | 1-564-339-61 | PIN, CONNECTOR 5P | | | | | |
| | | < JACK > | | | | | |
| J301 | 1-507-796-71 | JACK (HEADPHONES) | | | | | |
| | | < RESISTOR > | | | | | |
| R329 | 1-247-747-11 | CARBON | 470 5% 1/2W | | | | |
| R379 | 1-247-747-11 | CARBON | 470 5% 1/2W | | | | |
| | | < RELAY > | | | | | |
| RY505 | 1-515-787-11 | RELAY | | | | | |
| ***** | | | | | | | |
| * | 1-639-372-11 | INPUT BOARD | | | | | |
| | | ***** | | | | | |
| * | 4-946-336-01 | BRACKET (GROUND) | | | | | |
| | | < CAPACITOR > | | | | | |
| C102 | 1-162-282-31 | CERAMIC | 100PF 10% 50V (G) | | | | |
| C152 | 1-162-282-31 | CERAMIC | 100PF 10% 50V (G) | | | | |
| | | < CONNECTOR > | | | | | |
| CP3 | 1-506-906-11 | PIN, CONNECTOR 5P | | | | | |
| | | < SOCKET > | | | | | |
| CS12 | 1-562-087-00 | SOCKET, CONNECTOR 4P | | | | | |
| | | < DIODE > | | | | | |
| D521 | 8-719-987-63 | DIODE 1N4148M | | | | | |
| | | < JACK > | | | | | |
| * PJ1 | 1-573-142-21 | JACK, PIN 4P | | | | | |
| * PJ2 | 1-573-142-21 | JACK, PIN 4P | | | | | |
| PJ3 | 1-568-978-31 | JACK 6P | | | | | |
| PJ4 | 1-568-978-11 | JACK 6P | | | | | |
| | | < RESISTOR > | | | | | |
| R101 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R102 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R103 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R104 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R105 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R106 | 1-247-713-11 | CARBON | 1K 5% 1/4W | F | | | |
| R107 | 1-247-713-11 | CARBON | 1K 5% 1/4W | F | | | |
| R108 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R109 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R110 | 1-247-739-11 | CARBON | 100 5% 1/2W | | | | |
| R151 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R152 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R153 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R154 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R155 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R156 | 1-247-713-11 | CARBON | 1K 5% 1/4W | F | | | |
| R157 | 1-247-713-11 | CARBON | 1K 5% 1/4W | F | | | |
| R158 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R159 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W | | | | |
| R160 | 1-247-739-11 | CARBON | 100 5% 1/2W | | | | |

INPUT MAIN

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|----------------------------------|-----------|
| | | < RELAY > | |
| RY502 | 1-515-727-11 | RELAY | |
| | | < SWITCH > | |
| S101 | 1-571-115-11 | SWITCH, SLIDE (INPUT SELECTOR) | |
| S102 | 1-571-115-11 | SWITCH, SLIDE (REC OUT SELECTOR) | |
| ***** | | | |
| * | A-4360-851-A | MAIN BOARD, COMPLETE (AEP1) | ***** |
| * | A-4360-865-A | MAIN BOARD, COMPLETE (AEP2) | ***** |
| * | A-4360-868-A | MAIN BOARD, COMPLETE (G) | ***** |
| | | < CAPACITOR > | |
| C312 | 1-126-051-11 | ELECT 47uF 20% 50V | |
| C313 | 1-102-233-00 | CERAMIC 33PF 10% 500V | |
| C314 | 1-102-233-00 | CERAMIC 33PF 10% 500V | |
| C315 | 1-130-487-00 | MYLAR 0.022uF 5% 50V | (AEP1, G) |
| C315 | 1-130-491-00 | MYLAR 0.047uF 5% 50V | (AEP2) |
| C316 | 1-130-491-00 | MYLAR 0.047uF 5% 50V | (AEP2) |
| C362 | 1-126-051-11 | ELECT 47uF 20% 50V | |
| C363 | 1-102-233-00 | CERAMIC 33PF 10% 500V | |
| C364 | 1-102-233-00 | CERAMIC 33PF 10% 500V | |
| C365 | 1-130-487-00 | MYLAR 0.022uF 5% 50V | (AEP1, G) |
| C365 | 1-130-491-00 | MYLAR 0.047uF 5% 50V | (AEP2) |
| C366 | 1-130-491-00 | MYLAR 0.047uF 5% 50V | (AEP2) |
| C501 | 1-104-839-11 | ELECT 12000uF 20% 63V | |
| C502 | 1-104-839-11 | ELECT 12000uF 20% 63V | |
| C503 | 1-104-838-11 | ELECT 5600uF 20% 63V | |
| C504 | 1-104-838-11 | ELECT 5600uF 20% 63V | |
| C508 | 1-136-880-11 | FILM 2.2uF 10% 160V | |
| C509 | 1-126-069-11 | ELECT 1uF 20% 100V | |
| C510 | 1-126-064-11 | ELECT 220uF 20% 63V | |
| C517 | 1-126-023-11 | ELECT 100uF 20% 25V | |
| C518 | 1-130-487-00 | MYLAR 0.022uF 5% 50V | |
| C519 | 1-126-023-11 | ELECT 100uF 20% 25V | |
| C520 | 1-130-471-00 | MYLAR 0.001uF 5% 50V | |
| | | < DIODE > | |
| D307 | 8-719-900-19 | LED SLR34UW5 | |
| D308 | 8-719-987-63 | DIODE 1N4148M | |
| D309 | 8-719-987-63 | DIODE 1N4148M | |
| D357 | 8-719-900-19 | LED SLR34UW5 | |
| D358 | 8-719-987-63 | DIODE 1N4148M | |
| D359 | 8-719-987-63 | DIODE 1N4148M | |

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|--------------------------|--------|
| D501 | 8-719-230-02 | DIODE 30DF2 | |
| D502 | 8-719-230-02 | DIODE 30DF2 | |
| D503 | 8-719-230-02 | DIODE 30DF2 | |
| D504 | 8-719-230-02 | DIODE 30DF2 | |
| D505 | 8-719-200-82 | DIODE 11ES2 | |
| D506 | 8-719-200-82 | DIODE 11ES2 | |
| D507 | 8-719-200-82 | DIODE 11ES2 | |
| D508 | 8-719-200-82 | DIODE 11ES2 | |
| D509 | 8-719-200-82 | DIODE 11ES2 | |
| D510 | 8-719-200-82 | DIODE 11ES2 | |
| D511 | 8-719-200-82 | DIODE 11ES2 | |
| | | < IC > | |
| IC501 | 8-759-111-68 | IC uPC1237HA | |
| | | < TRANSISTOR > | |
| Q309 | 8-729-203-45 | TRANSISTOR 2SC3423-0 | |
| Q310 | 8-729-107-53 | TRANSISTOR 2SC2275A | |
| Q311 | 8-729-141-10 | TRANSISTOR 2SA985A | |
| Q312 | 8-729-015-30 | TRANSISTOR 2SK1530-Y | |
| Q313 | 8-729-015-31 | TRANSISTOR 2SJ201-Y | |
| Q314 | 8-729-140-82 | TRANSISTOR 2SA988-PAFAEA | |
| Q359 | 8-729-203-45 | TRANSISTOR 2SC3423-0 | |
| Q360 | 8-729-107-53 | TRANSISTOR 2SC2275A | |
| Q361 | 8-729-141-10 | TRANSISTOR 2SA985A | |
| Q362 | 8-729-015-30 | TRANSISTOR 2SK1530-Y | |
| Q363 | 8-729-015-31 | TRANSISTOR 2SJ201-Y | |
| Q364 | 8-729-140-82 | TRANSISTOR 2SA988-PAFAEA | |
| | | < RESISTOR > | |
| △R314 | 1-247-711-11 | CARBON 680 5% 1/4W F | |
| R315 | 1-247-706-11 | CARBON 330 5% 1/4W F | |
| △R316 | 1-212-994-00 | FUSIBLE 330 5% 1/2W F | |
| △R317 | 1-212-974-00 | FUSIBLE 47 5% 1/2W F | |
| △R318 | 1-212-974-00 | FUSIBLE 47 5% 1/2W F | |
| R319 | 1-217-151-00 | RES, METAL PLATE 0.22 2W | |
| R320 | 1-217-151-00 | RES, METAL PLATE 0.22 2W | |
| △R321 | 1-247-721-11 | CARBON 4.7K 5% 1/4W F | |
| R322 | 1-249-460-11 | CARBON 15K 5% 1/4W | |
| △R323 | 1-212-962-00 | FUSIBLE 15 5% 1/2W F | |
| △R324 | 1-212-962-00 | FUSIBLE 15 5% 1/2W F | |
| R325 | 1-247-891-00 | CARBON 330K 5% 1/4W | |
| △R364 | 1-247-711-11 | CARBON 680 5% 1/4W F | |
| R365 | 1-247-706-11 | CARBON 330 5% 1/4W F | |
| △R366 | 1-212-994-00 | FUSIBLE 330 5% 1/2W F | |
| △R367 | 1-212-974-00 | FUSIBLE 47 5% 1/2W F | |
| △R368 | 1-212-974-00 | FUSIBLE 47 5% 1/2W F | |
| R369 | 1-217-151-00 | RES, METAL PLATE 0.22 2W | |
| R370 | 1-217-151-00 | RES, METAL PLATE 0.22 2W | |
| △R371 | 1-247-721-11 | CARBON 4.7K 5% 1/4W F | |

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

MAIN **MUT** **MUT LED** **POWER LED** **RELAY (J)** **SP**

| Ref.No. | Part No. | Description | Remark |
|---------|--------------|-------------------------------------|--------|
| R372 | 1-249-460-11 | CARBON 15K 5% 1/4W | |
| △R373 | 1-212-962-00 | FUSIBLE 15 5% 1/2W F | |
| △R374 | 1-212-962-00 | FUSIBLE 15 5% 1/2W F | |
| R375 | 1-247-891-00 | CARBON 330K 5% 1/4W | |
| △R501 | 1-212-849-00 | FUSIBLE 4.7 5% 1/4W F | |
| R520 | 1-247-721-11 | CARBON 4.7K 5% 1/4W | |
| R521 | 1-249-461-11 | CARBON 18K 5% 1/4W | |
| R522 | 1-247-881-00 | CARBON 120K 5% 1/4W | |
| R523 | 1-247-725-11 | CARBON 10K 5% 1/4W | |
| R524 | 1-247-887-00 | CARBON 220K 5% 1/4W | |
| R527 | 1-249-462-11 | CARBON 22K 5% 1/4W | |
| | | < VARIABLE RESISTOR > | |
| RT301 | 1-237-456-11 | RES, ADJ, CARBON 1K | |
| RT351 | 1-237-456-11 | RES, ADJ, CARBON 1K | |
| ***** | | | |
| * | 1-649-091-11 | MUT BOARD ***** | |
| | | < CONNECTOR > | |
| CP5 | 1-568-577-11 | PIN, CONNECTOR (PC BOARD) 3P | |
| | | < RESISTOR > | |
| R515 | 1-247-706-11 | CARBON 330 5% 1/4W F | |
| R516 | 1-247-706-11 | CARBON 330 5% 1/4W F | |
| | | < SWITCH > | |
| S205 | 1-572-740-11 | SWITCH, PUSH (1 KEY) (MUTING -20dB) | |
| S208 | 1-572-143-11 | SWITCH, SLIDE (SOURCE DIRECT) | |
| ***** | | | |
| * | 1-649-092-11 | MUT LED BOARD ***** | |
| | | < SOCKET > | |
| * CS7 | 1-565-835-11 | SOCKET, CONNECTOR 3P | |
| | | < DIODE > | |
| D518 | 8-719-301-49 | LED SEL2810A | |
| D519 | 8-719-301-49 | LED SEL2810A | |
| ***** | | | |
| * | 1-649-093-11 | POWER LED BOARD ***** | |
| | | < DIODE > | |
| D512 | 8-719-313-40 | LED SEL1516W | |

| Ref.No. | Part No. | Description | Remark |
|--------------|--------------|-------------------------------|--------|
| | | < CONNECTOR > | |
| * DR5 | 1-564-337-00 | PIN, CONNECTOR 3P | |
| ***** | | | |
| * | 1-639-368-11 | RELAY (J) BOARD ***** | |
| | | < CONNECTOR > | |
| * CP9 | 1-568-202-11 | PIN, CONNECTOR (PC BOARD) 10P | |
| * DR6 | 1-564-338-00 | PIN, CONNECTOR 4P | |
| | | < SOCKET > | |
| CS10 | 1-561-115-00 | SOCKET, CONNECTOR 6P | |
| ***** | | | |
| * | 1-639-367-11 | SP BOARD ***** | |
| | | < BUS BAR > | |
| 1-533-233-11 | | HOLDER, FUSE | |
| * BB1 | 1-560-242-61 | BUS BAR 2P | |
| * BB2 | 1-560-242-61 | BUS BAR 2P | |
| | | < CAPACITOR > | |
| C319 | 1-130-467-00 | MYLAR 470PF 5% 50V (G) | |
| C320 | 1-130-487-00 | MYLAR 0.022uF 5% 50V (G) | |
| C321 | 1-130-487-00 | MYLAR 0.022uF 5% 50V (G) | |
| C369 | 1-130-467-00 | MYLAR 470PF 5% 50V (G) | |
| C370 | 1-130-487-00 | MYLAR 0.022uF 5% 50V (G) | |
| C371 | 1-130-487-00 | MYLAR 0.022uF 5% 50V (G) | |
| △C601 | 1-161-741-00 | CERAMIC 0.001uF 10% 400V | |
| | | < CONNECTOR > | |
| * CP10 | 1-580-854-11 | PIN, CONNECTOR (PC BOARD) 6P | |
| SE1 | 1-564-320-00 | PIN, CONNECTOR 2P | |
| SE2 | 1-564-320-00 | PIN, CONNECTOR 2P | |
| * VH9 | 1-564-321-00 | PIN, CONNECTOR 2P | |
| * VH10 | 1-564-321-21 | PIN, CONNECTOR 2P | |
| | | < DIODE > | |
| D515 | 8-719-987-63 | DIODE 1N4148M | |
| D516 | 8-719-987-63 | DIODE 1N4148M | |
| | | < FUSE > | |
| △F601 | 1-532-350-00 | FUSE, TIME-LAG T4A | |

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

| | |
|----|------|
| SP | TONE |
|----|------|

| Ref. No. | Part No. | Description | Remark | Ref. No. | Part No. | Description | Remark |
|----------|--------------|---|-----------------|----------|--------------|-----------------------|--------------|
| | | < COIL > | | | | < SOCKET > | |
| * L301 | 1-422-009-13 | COIL, AIR-CORE | | * CS2 | 1-562-334-00 | SOCKET, CONNECTOR 10P | |
| * L351 | 1-422-009-13 | COIL, AIR-CORE | | * CS4 | 1-562-334-00 | SOCKET, CONNECTOR 10P | |
| | | < RESISTOR > | | | | < DIODE > | |
| R328 | 1-247-727-11 | CARBON | 10 5% 1/2W | D513 | 8-719-987-63 | DIODE 1N4148M | |
| R332 | 1-247-727-11 | CARBON | 10 5% 1/2W (G) | D514 | 8-719-987-63 | DIODE 1N4148M | |
| R333 | 1-247-727-11 | CARBON | 10 5% 1/2W (G) | | | < TRANSISTOR > | |
| R378 | 1-247-727-11 | CARBON | 10 5% 1/2W | Q501 | 8-729-194-57 | TRANSISTOR 2SC945-P | |
| R382 | 1-247-727-11 | CARBON | 10 5% 1/2W (G) | Q502 | 8-729-141-03 | TRANSISTOR 2SA733-QP | |
| | | < RELAY > | | Q503 | 8-729-141-03 | TRANSISTOR 2SA733-QP | |
| RY503 | 1-515-501-00 | RELAY | | Q504 | 8-729-140-96 | TRANSISTOR KSC1008 | |
| RY504 | 1-515-501-00 | RELAY | | Q505 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | |
| | | < SWITCH > | | Q506 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | |
| △S601 | 1-554-920-11 | SWITCH, PUSH (AC POWER) (1 KEY) (POWER) | | | | < RESISTOR > | |
| | | < TERMINAL > | | R203 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W |
| TM301 | 1-537-227-11 | TERMINAL BOARD (SP) (SPEAKER) (AEP2) | | R204 | 1-247-721-11 | CARBON | 4.7K 5% 1/4W |
| TM301 | 1-537-228-11 | TERMINAL BOARD (SP) (SPEAKER) (G) | | R205 | 1-259-502-11 | CARBON | 4.7M 5% 1/4W |
| TM301 | 1-537-235-11 | TERMINAL BOARD (SP) (SPEAKER) (AEP1) | | R206 | 1-259-502-11 | CARBON | 4.7M 5% 1/4W |
| | | < CAPACITOR > | | R207 | 1-249-928-11 | CARBON | 1.6K 5% 1/4W |
| | | ***** | | R208 | 1-249-586-11 | CARBON | 27K 5% 1/4W |
| * | A-4360-852-A | TONE BOARD, COMPLETE (AEP1, G) | | R209 | 1-247-148-00 | CARBON | 5.1K 5% 1/4W |
| | | ***** | | R253 | 1-246-545-00 | CARBON | 1.0M 5% 1/4W |
| * | A-4360-866-A | TONE BOARD, COMPLETE (AEP2) | | R254 | 1-247-721-11 | CARBON | 4.7K 5% 1/4W |
| | | ***** | | R255 | 1-259-502-11 | CARBON | 4.7M 5% 1/4W |
| C201 | 1-106-351-00 | MYLAR | 2200PF 5% 200V | R256 | 1-259-502-11 | CARBON | 4.7M 5% 1/4W |
| C202 | 1-130-483-00 | MYLAR | 0.01uF 5% 50V | R257 | 1-249-928-11 | CARBON | 1.6K 5% 1/4W |
| C203 | 1-130-486-00 | MYLAR | 0.018uF 10% 50V | R258 | 1-249-586-11 | CARBON | 27K 5% 1/4W |
| C204 | 1-136-165-00 | FILM | 0.1uF 5% 50V | R259 | 1-247-148-00 | CARBON | 5.1K 5% 1/4W |
| C206 | 1-136-173-00 | FILM | 0.47uF 5% 50V | R502 | 1-247-721-11 | CARBON | 4.7K 5% 1/4W |
| C251 | 1-106-351-00 | MYLAR | 2200PF 5% 200V | R503 | 1-247-251-00 | CARBON | 3K 5% 1/2W |
| C252 | 1-130-483-00 | MYLAR | 0.01uF 5% 50V | R504 | 1-247-251-00 | CARBON | 3K 5% 1/2W |
| C253 | 1-130-486-00 | MYLAR | 0.018uF 10% 50V | R505 | 1-247-251-00 | CARBON | 3K 5% 1/2W |
| C254 | 1-136-165-00 | FILM | 0.1uF 5% 50V | R506 | 1-247-251-00 | CARBON | 3K 5% 1/2W |
| C256 | 1-136-173-00 | FILM | 0.47uF 5% 50V | R507 | 1-247-251-00 | CARBON | 3K 5% 1/2W |
| C511 | 1-126-062-11 | ELECT | 47uF 20% 63V | R508 | 1-247-251-00 | CARBON | 3K 5% 1/2W |
| C512 | 1-126-219-11 | ELECT | 3.3uF 20% 63V | R509 | 1-247-251-00 | CARBON | 3K 5% 1/2W |
| C513 | 1-126-163-11 | ELECT | 4.7uF 20% 50V | R510 | 1-247-725-11 | CARBON | 10K 5% 1/4W |
| C521 | 1-130-483-00 | MYLAR | 0.01uF 5% 50V | R511 | 1-249-462-11 | CARBON | 22K 5% 1/4W |
| C522 | 1-130-483-00 | MYLAR | 0.01uF 5% 50V | R512 | 1-249-465-11 | CARBON | 47K 5% 1/4W |
| | | < CONNECTOR > | | R513 | 1-249-465-11 | CARBON | 47K 5% 1/4W |
| * CP11 | 1-560-531-00 | PIN, CONNECTOR 5P | | R517 | 1-247-249-00 | CARBON | 2.4K 5% 1/2W |
| | | | | R518 | 1-247-249-00 | CARBON | 2.4K 5% 1/2W |
| | | | | R519 | 1-247-092-00 | CARBON | 24 5% 1/4W |
| | | | | R525 | 1-247-757-11 | CARBON | 2.7K 5% 1/2W |

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

STONE

STONE (J)

VR

VR (J)

| Ref. No. | Part No. | Description | Remark |
|-----------------------|--------------|----------------------------|------------------|
| R526 | 1-247-757-11 | CARBON | 2.7K 5% 1/2W |
| R530 | 1-247-717-11 | CARBON | 2.2K 5% 1/4W F |
| R531 | 1-247-251-00 | CARBON | 3K 5% 1/2W |
| R540 | 1-247-721-11 | CARBON | 4.7K 5% 1/4W |
| R541 | 1-247-721-11 | CARBON | 4.7K 5% 1/4W |
| < VARIABLE RESISTOR > | | | |
| R542 | 1-247-757-11 | CARBON | 2.7K 5% 1/2W |
| R543 | 1-247-757-11 | CARBON | 2.7K 5% 1/2W |
| < VARIABLE RESISTOR > | | | |
| RV201 | 1-241-517-11 | RES, VAR, CARBON 250K/250K | (BALANCE) |
| RV202 | 1-223-401-11 | RES, VAR, CARBON 250K/250K | (TREBLE) |
| RV203 | 1-223-402-11 | RES, VAR, CARBON 900K/900K | (BASS) |
| < SWITCH > | | | |
| S201 | 1-572-738-11 | SWITCH, PUSH (3 KEY) | (SUB SONIC 15Hz) |
| S203 | 1-572-738-11 | SWITCH, PUSH (3 KEY) | (MODE) |
| S204 | 1-572-738-11 | SWITCH, PUSH (3 KEY) | (DIRECT INPUT) |
| S206 | 1-572-739-11 | SWITCH, PUSH (2 KEY) | (SPEAKERS A) |
| S207 | 1-572-739-11 | SWITCH, PUSH (2 KEY) | (SPEAKERS B) |
| ***** | | | |
| * | 1-649-090-11 | TONE (J) BOARD | ***** |
| < CONNECTOR > | | | |
| * CP4 | 1-568-202-11 | PIN, CONNECTOR (PC BOARD) | 10P |
| < SOCKET > | | | |
| * CS6 | 1-563-106-11 | CONNECTOR (SOCKET) | 10P |
| ***** | | | |
| * | 1-649-088-11 | VR BOARD | ***** |
| < CONNECTOR > | | | |
| * CP1 | 1-568-202-11 | PIN, CONNECTOR (PC BOARD) | 10P |
| * CP2 | 1-560-531-00 | PIN, CONNECTOR | 5P |
| < DIODE > | | | |
| D520 | 8-719-987-63 | DIODE | 1N4148M |
| < PLUG > | | | |
| * EH1 | 1-564-506-11 | PLUG, CONNECTOR | 3P |
| < RESISTOR > | | | |
| R111 | 1-249-490-11 | CARBON | 27K 5% 1/2W |
| R161 | 1-249-490-11 | CARBON | 27K 5% 1/2W |
| R201 | 1-249-942-11 | CARBON | 6.2K 5% 1/4W |
| R202 | 1-247-712-11 | CARBON | 820 5% 1/4W |

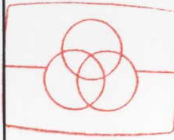
| Ref. No. | Part No. | Description | Remark |
|---------------------------------|---------------------|--|-----------------|
| R211 | 1-214-881-00 | METAL | 5.1K 1% 1/2W |
| R251 | 1-249-942-11 | CARBON | 6.2K 5% 1/4W |
| R252 | 1-247-712-11 | CARBON | 820 5% 1/4W |
| R261 | 1-214-881-00 | METAL | 5.1K 1% 1/2W |
| < VARIABLE RESISTOR > | | | |
| RV204 | 1-223-400-11 | RES, VAR, CARBON 120K/120K | (ATTENUATOR) |
| < RELAY > | | | |
| RY501 | 1-515-727-11 | RELAY | |
| < SWITCH > | | | |
| S202 | 1-572-741-11 | SWITCH, PUSH (1 KEY) | (SOURCE DIRECT) |
| ***** | | | |
| * | 1-649-094-11 | VR (J) BOARD | ***** |
| ***** | | | |
| MISCELLANEOUS | | | |
| ***** | | | |
| 69 | 1-572-742-11 | SWITCH, ROTARY (INPUT SELECTOR) | |
| 70 | 1-572-743-11 | SWITCH, ROTARY (REC OUT SELECTOR) | |
| △120 | 1-574-805-11 | CORD, POWER (AEP2) | |
| △120 | 1-696-169-11 | CORD, POWER (AEP1, G) | |
| 121 | 1-573-905-11 | PLUG, JUMPER | |
| △F601 | 1-532-350-00 | FUSE, TIME-LAG 4A | |
| Q309 | 8-729-203-45 | TRANSISTOR | 2SC3423-0 |
| Q312 | 8-729-015-30 | TRANSISTOR | 2SK1530-Y |
| Q313 | 8-729-015-31 | TRANSISTOR | 2SJ201-Y |
| Q359 | 8-729-203-45 | TRANSISTOR | 2SC3423-0 |
| Q362 | 8-729-015-30 | TRANSISTOR | 2SK1530-Y |
| Q363 | 8-729-015-31 | TRANSISTOR | 2SJ201-Y |
| △T901 | 1-423-682-11 | TRANSFORMER, POWER | |
| △T901 | 1-423-682-21 | TRANSFORMER, POWER | |
| ***** | | | |
| ACCESSORIES & PACKING MATERIALS | | | |
| ***** | | | |
| 3-755-923-11 | MANUAL, INSTRUCTION | (English, French, Spanish, Portuguese) | (AEP) |
| 3-755-923-41 | MANUAL, INSTRUCTION | (German, Dutch, Swedish, Italian) | |
| * | 4-929-219-01 | CUSHION | |
| * | 4-958-317-01 | INDIVIDUAL CARTON | |
| ***** | | | |

Note :

There are two types of power transformer (T901) in German model. When ordering the power transformer, check the part No. of it.

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

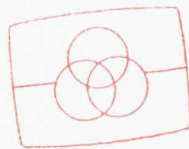
| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> | <u>Remark</u> |
|-----------------|-----------------|---------------------------------|---------------|
| | | ***** HARDWARE LIST ***** | |
| #1 | 7-685-234-19 | SCREW +KTP 2.6X8 TYPE2NON-SLIT | |
| #2 | 7-682-547-09 | SCREW +BVTT 3X6 (S) | |
| #3 | 7-685-647-79 | SCREW +BVTP 3X10 TYPE2 N-S | |
| #4 | 7-685-650-79 | SCREW +BVTP 3X16 TYPE2 SLIT | |
| #5 | 7-682-548-09 | SCREW (3X8) | |
| #6 | 7-682-565-09 | SCREW +B 4X16 | |
| #7 | 7-684-024-04 | N 4, TYPE 2 | |
| #8 | 7-685-648-79 | SCREW +BVTP 3X12 TYPE2 N-S | |
| #9 | 7-685-876-09 | SCREW +BVTT 3X16 (S) | |
| #10 | 7-685-649-79 | SCREW +BVTP 3X14 TYPE2 IT-3 | |
| #11 | 7-683-255-58 | SET SCREW 5X6 HEXAGON SOCKET | |
| #12 | 7-682-566-09 | SCREW +B 4X20 | |
| #13 | 7-621-849-00 | SCREW, TAPPING (G) | |



Free service manuals
Gratis schema's

Digitized by

www.freeservicemanuals.info



Free service manuals
Gratis schema's

Digitized by

www.freeservicemanuals.info