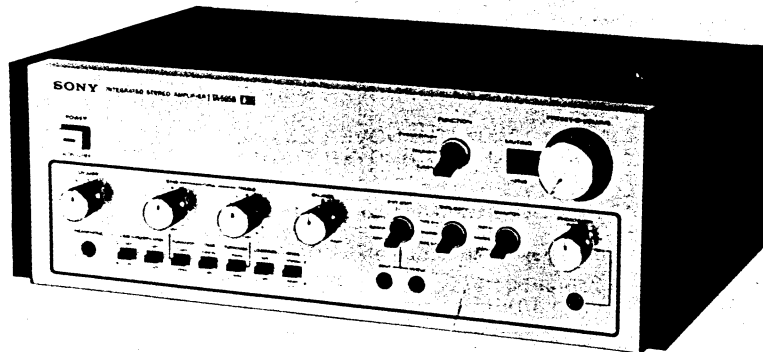


# TA-5650

*WEGA V4810USA Model*  
*Canada Model*  
*UK Model*  
*AEP Model*



Discard TA-5650 service manual previously issued for UK and AEP Models.  
 This service manual contains former information.

## INTEGRATED STEREO AMPLIFIER

### SPECIFICATIONS

#### GENERAL

**Power Requirements:** 120 V ac, 60 Hz (USA and Canada Model)  
 110, 127, 220 or 240 V ac adjustable, 50/60 Hz (UK and AEP Model)

**Power Consumption:** 160 W (USA Model)  
 320 VA (Canada Model)  
 440 W (UK and AEP Model)

**Dimensions:** Approx. 460(w) x 168(h) x 323(d) mm  
 18<sup>1</sup>/<sub>8</sub>(w) x 6<sup>5</sup>/<sub>8</sub>(h) x 12<sup>3</sup>/<sub>4</sub>(d) inches  
 Including projecting parts and controls

**Weight:** Approx. 13.4 kg, 29 lb 9 oz (net)  
 Approx. 16 kg, 35 lb 4 oz (in shipping carton)

#### POWER AMPLIFIER SECTION

**Continuous RMS Power Output:** (less than 0.1 % THD, both channels driven simultaneously)

At 1 kHz  
 60 + 60 W (8  $\Omega$ )  
 50 + 50 W (4  $\Omega$ )

At 20 Hz – 20 kHz  
 50 + 50 W (8  $\Omega$ )  
 according to DIN 45500  
 55 + 55 W (8  $\Omega$ )

**Dynamic Power Output:** (IHF constant power supply method)  
 160 W (8  $\Omega$ )  
 140 W (4  $\Omega$ )

**Power Bandwidth (IHF):** 5 – 40,000 Hz

**Harmonic Distortion:** Less than 0.1 % at rated output  
 Less than 0.08 % at 1 W output

**IM Distortion:** Less than 0.1 % at rated output  
 (60 Hz : 7 kHz = 4 : 1)  
 Less than 0.08 % at 1 W output

**Frequency Response** (at 1 W output): 2 Hz – 100 kHz  $^{+0}_{-2}$  dB

**S/N Ratio:** Greater than 110 dB, short-circuited input

**Residual Noise:** Less than 0.02  $\mu$ W (8  $\Omega$ )

**Damping Factor:** 50 (8  $\Omega$ , at 1 kHz)

**Inputs:** **POWER INPUT**  
 Sensitivity 1 V RMS (for rated output), impedance 50 k $\Omega$

**Outputs:** **SPEAKER** terminals A, B  
 Accept speakers of 4  $\Omega$  or more  
**HEADPHONES** jack  
 Accepts low and high-impedance stereo headphones

— continued on page 2 —

0 dB = 0.775 V

# SONY<sup>®</sup>

## SERVICE MANUAL

## PREAMPLIFIER SECTION

**Harmonic Distortion:** Less than 0.05 % at rated output  
**IM Distortion:** Less than 0.05 % at rated output  
 (60 Hz : 7 kHz = 4 : 1)  
**Frequency Response:** PHONO 1, 2 RIAA equalization  $\pm 0.5$  dB  
 TUNER  
 AUX 1, 2, 3  
 TAPE 1, 2  
 REC/PB (input)  
 EXT ADPT 1, 2 (input)
 

$\left. \begin{array}{l} 10 \text{ Hz} - \\ 100 \text{ kHz} +0 \text{ dB} \end{array} \right\} \text{ (TONE: CANCEL)}$

  
**Tone Controls:** BASS:  
 $\pm 10$  dB at 50 Hz (TURNOVER 250 Hz)  
 $\pm 10$  dB at 100 Hz (TURNOVER 500 Hz)  
 TREBLE:  
 $\pm 10$  dB at 10 kHz (TURNOVER 2.5 kHz)  
 $\pm 10$  dB at 20 kHz (TURNOVER 5 kHz)  
  
**Filters:** LOW:  
 12 dB/octave attenuation below 30 Hz  
 HIGH:  
 12 dB/octave attenuation above 9 kHz  
  
**Loudness switch:** + 10 dB at 50 Hz  
 (att. 30 dB) + 3 dB at 10 kHz

### Inputs:

|                                                                    | Sensitivity | Impedance  | Maximum input capability* | S/N (weighting network) |
|--------------------------------------------------------------------|-------------|------------|---------------------------|-------------------------|
| PHONO 1, 2                                                         | 2.5 mV      | 50 k ohms  | 300 mV                    | greater than 70 dB (B)  |
| AUX 1, 2, 3<br>TAPE 1, 2<br>REC/PB (input)<br>EXT ADPT 1, 2(input) | 150 mV      | 250 k ohms | —                         | greater than 90 dB (A)  |

\* The maximum input capability is measured at a 0.05 % harmonic distortion.

### Outputs:

|               | Output voltage | Impedance  |
|---------------|----------------|------------|
| REC OUT 1, 2  | 150 mV         | 4.7 k ohms |
| PRE OUTPUT    | 1 V            | 1 k ohm    |
| REC/PB        | 17 mV          | 82 k ohms  |
| EXT ADPT 1, 2 | 150 mV         | 4.7 k ohms |

### Specification Labels:

#### USA Model

|                          |                             |
|--------------------------|-----------------------------|
| <b>SONY</b> <sup>®</sup> | INTEGRATED STEREO AMPLIFIER |
|                          | MODEL NO. TA-5650           |
|                          | AC 120V 60Hz 160W           |
|                          | SERIAL NO. _____            |
| MADE IN JAPAN            |                             |

#### Canada Model

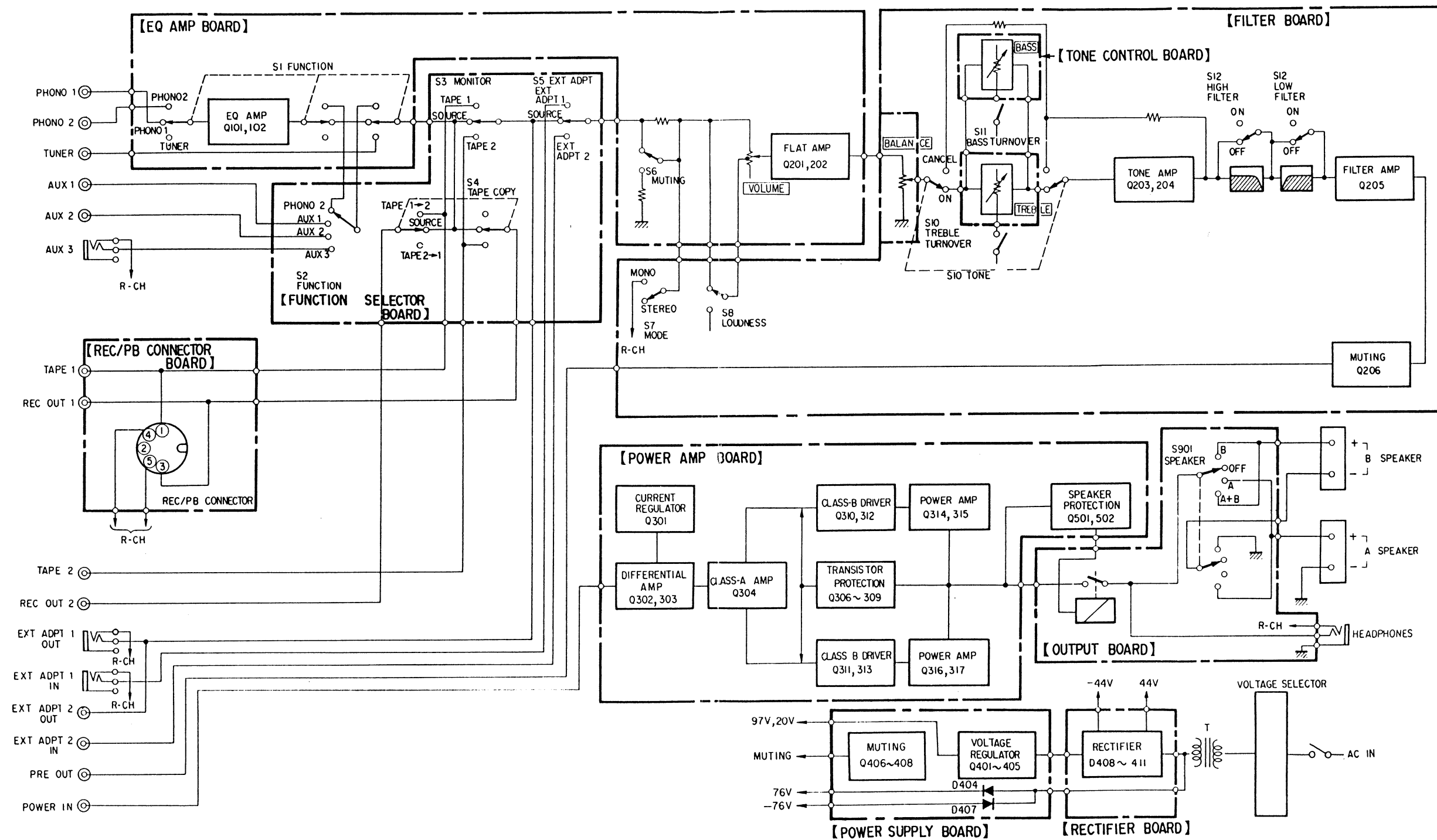
|                          |                             |
|--------------------------|-----------------------------|
| <b>SONY</b> <sup>®</sup> | INTEGRATED STEREO AMPLIFIER |
|                          | MODEL NO. TA-5650           |
|                          | AC 120V 60Hz 320VA          |
|                          | SERIAL NO. _____            |
| MADE IN JAPAN            |                             |

#### UK and AEP Models

|                          |                                   |
|--------------------------|-----------------------------------|
| <b>SONY</b> <sup>®</sup> | INTEGRATED STEREO AMPLIFIER       |
|                          | MODEL NO. TA-5650                 |
|                          | AC 110.127.220.240V~ 50/60Hz 440W |
|                          | SERIAL NO. * _____                |
| MADE IN JAPAN            |                                   |

Note: \* UK Model: Serial No. 600,001 and later  
 AEP Model: Serial No. 500,001 and later

SECTION 1  
BLOCK DIAGRAM



## SECTION 2 ADJUSTMENT

**Note:** Turn the power switch on and allow about five minutes for warm-up the set.

### 2-1. 20 V POWER VOLTAGE ADJUSTMENT

With no input signal, adjust RT401 so that the emitter voltage of Q403 becomes 20 V.

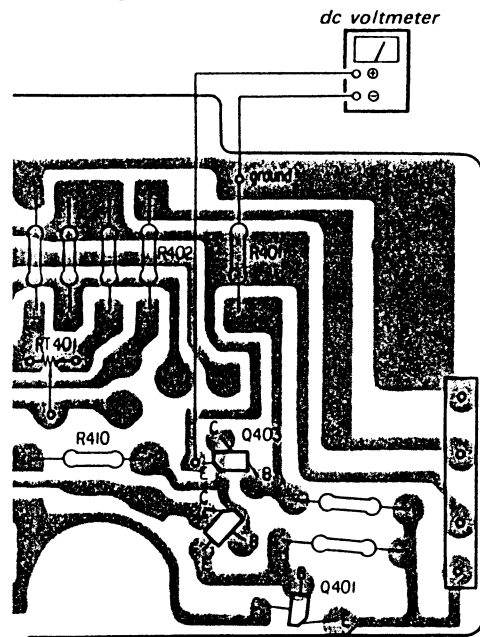


Fig. 2-1. 20 V power voltage adjustment

### 2-2. 97 V POWER VOLTAGE CONFIRMATION

After 20 V power voltage adjustment, confirm that the emitter voltage of Q401 shows 97 V  $\pm$  3 V.

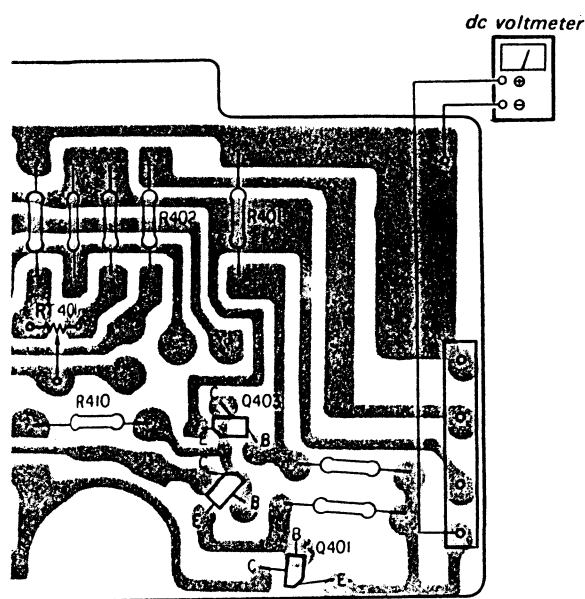


Fig. 2-2. 97 V power voltage confirmation

### 2-3. CONFIRMATION OF DC BALANCE VOLTAGE

1. Set the SPEAKER switch to "A" position.
2. Connect the dc voltmeter across the SPEAKER OUT "A".
3. Confirm that the dc voltage at SPEAKER OUT "A" shows 0 V  $\pm$  50 mV.

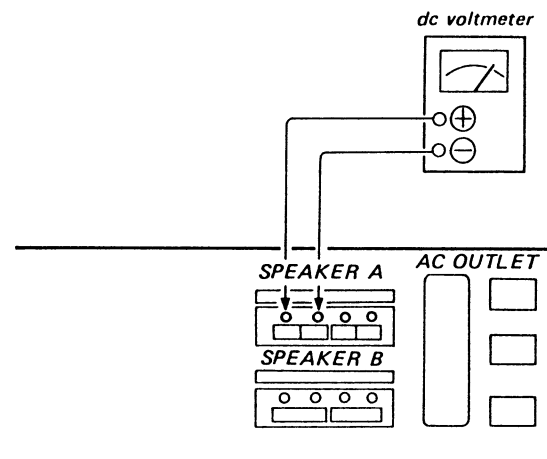


Fig. 2-3. Confirmation of dc balance voltage

### 2-4. DC BIAS ADJUSTMENT

Adjust RT301 and RT351 for 90 mV reading on the meter with no input signal.

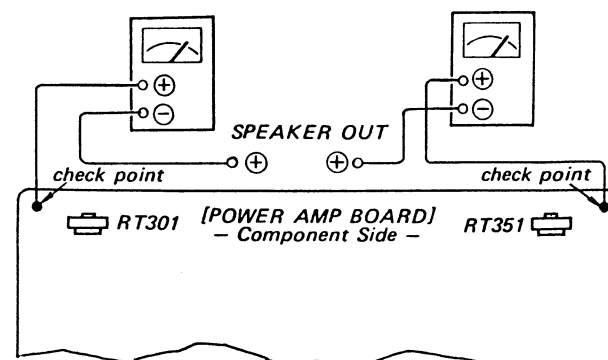


Fig. 2-4. DC bias adjustment

### 2-5. CHASSIS LAYOUT

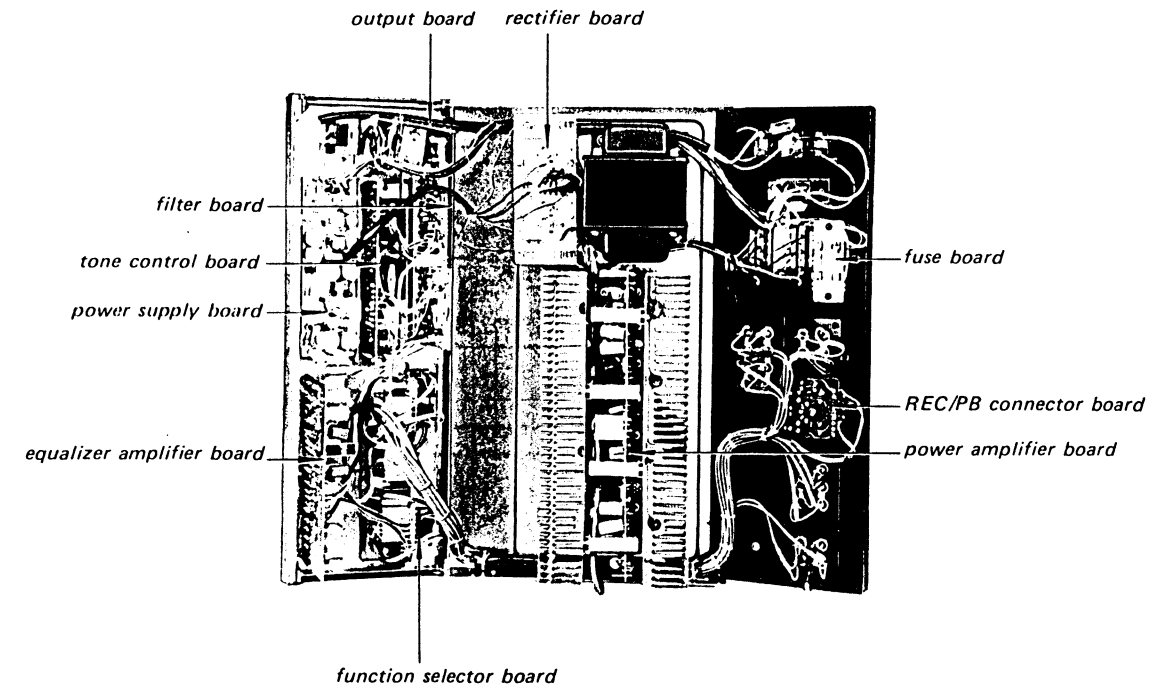
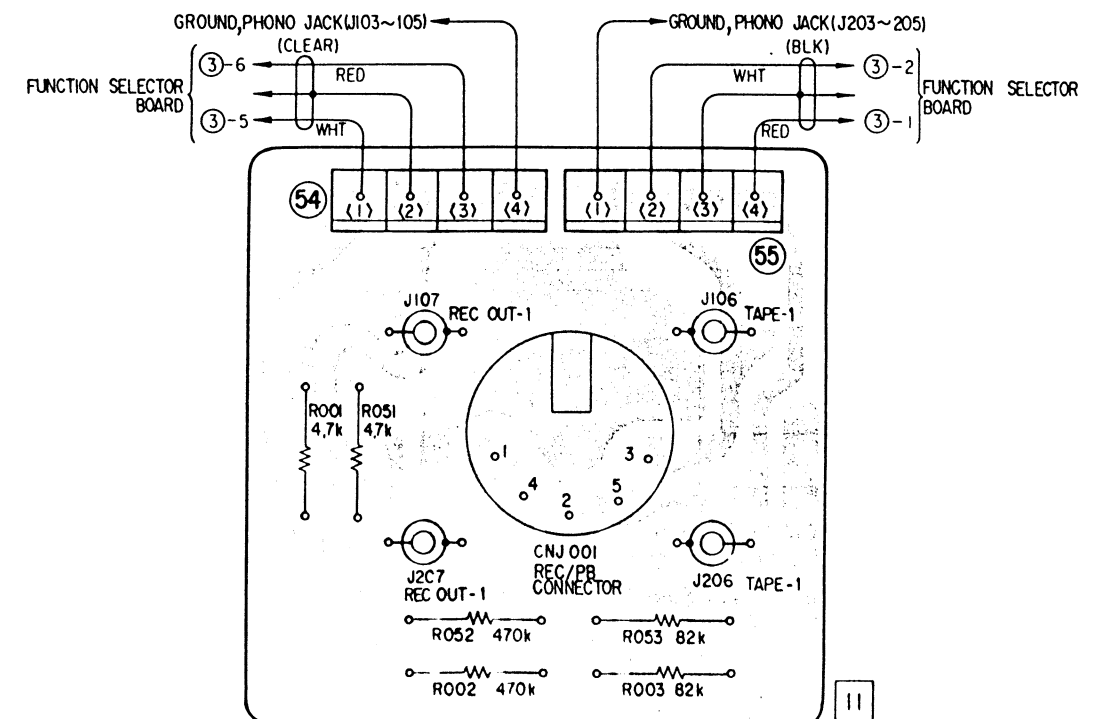


Fig. 2-5. Chassis layout

## SECTION 3 MOUNTING AND SCHEMATIC DIAGRAMS

### 3-1. MOUNTING DIAGRAM — REC/PB CONNECTOR BOARD —

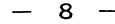
— Conductor Side —



– Conductor Side –



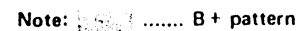
– Conductor Side –



X

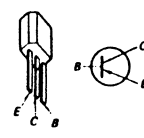
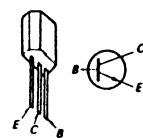
– Conductor Side –

UK Model: Up to serial No. 600,350  
AEP Model: Up to serial No. 501,900



**Q102, 152: 2SK63**

**Q202, 252: 2SA705**



– Conductor Side –

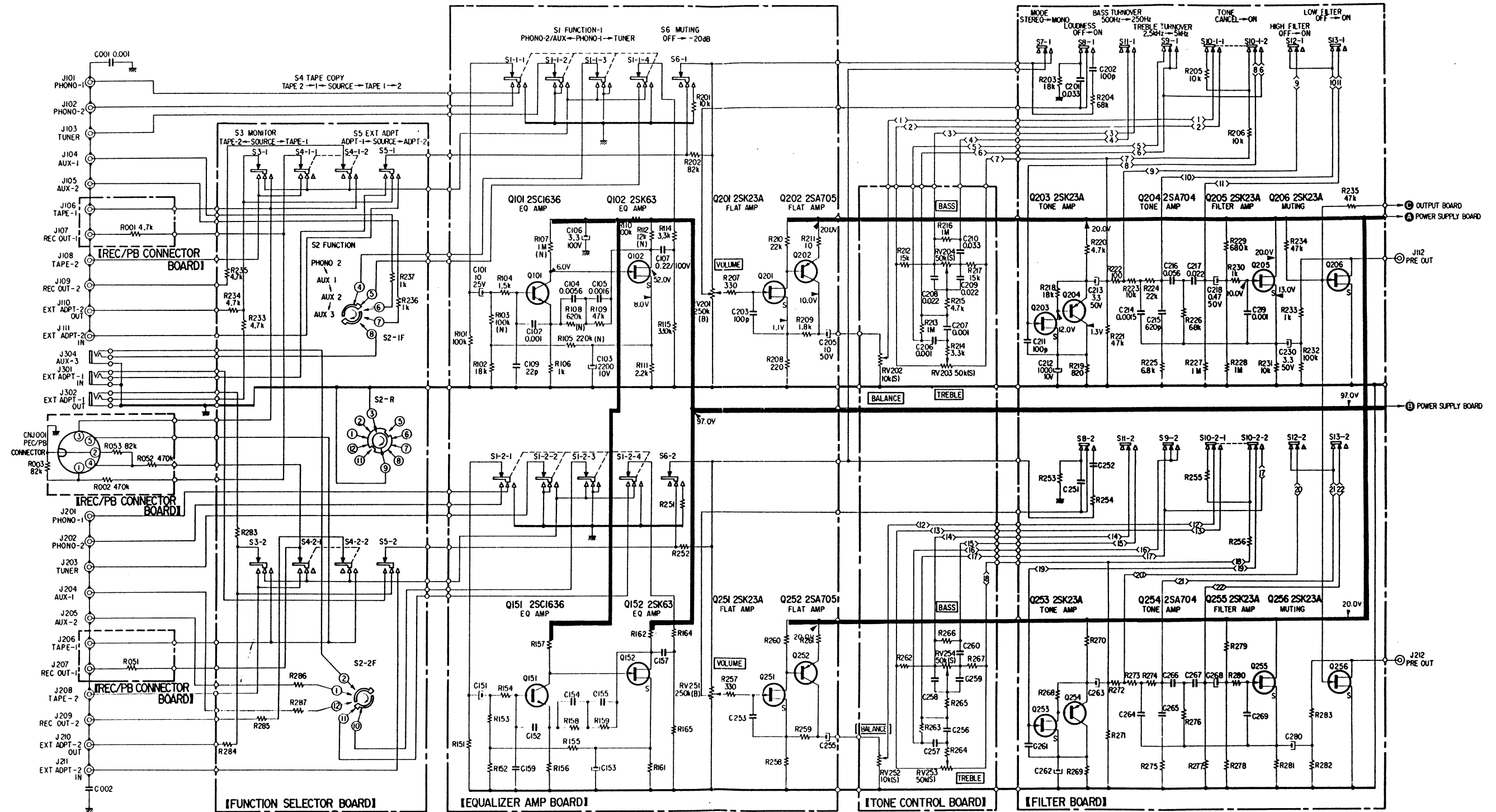
UK Model: Up to serial No. 600,350  
AEP Model: Up to serial No. 501,900



A diagram of a single hair cell. It has a rectangular base and a bundle of stereocilia on top. The stereocilia are labeled 'S' and 'G'.

3-6. SCHEMATIC DIAGRAM - PREAMPLIFIER SECTION -

UK Model: Up to Serial No. 600,350  
AEP Model: Up to Serial No. 501,900



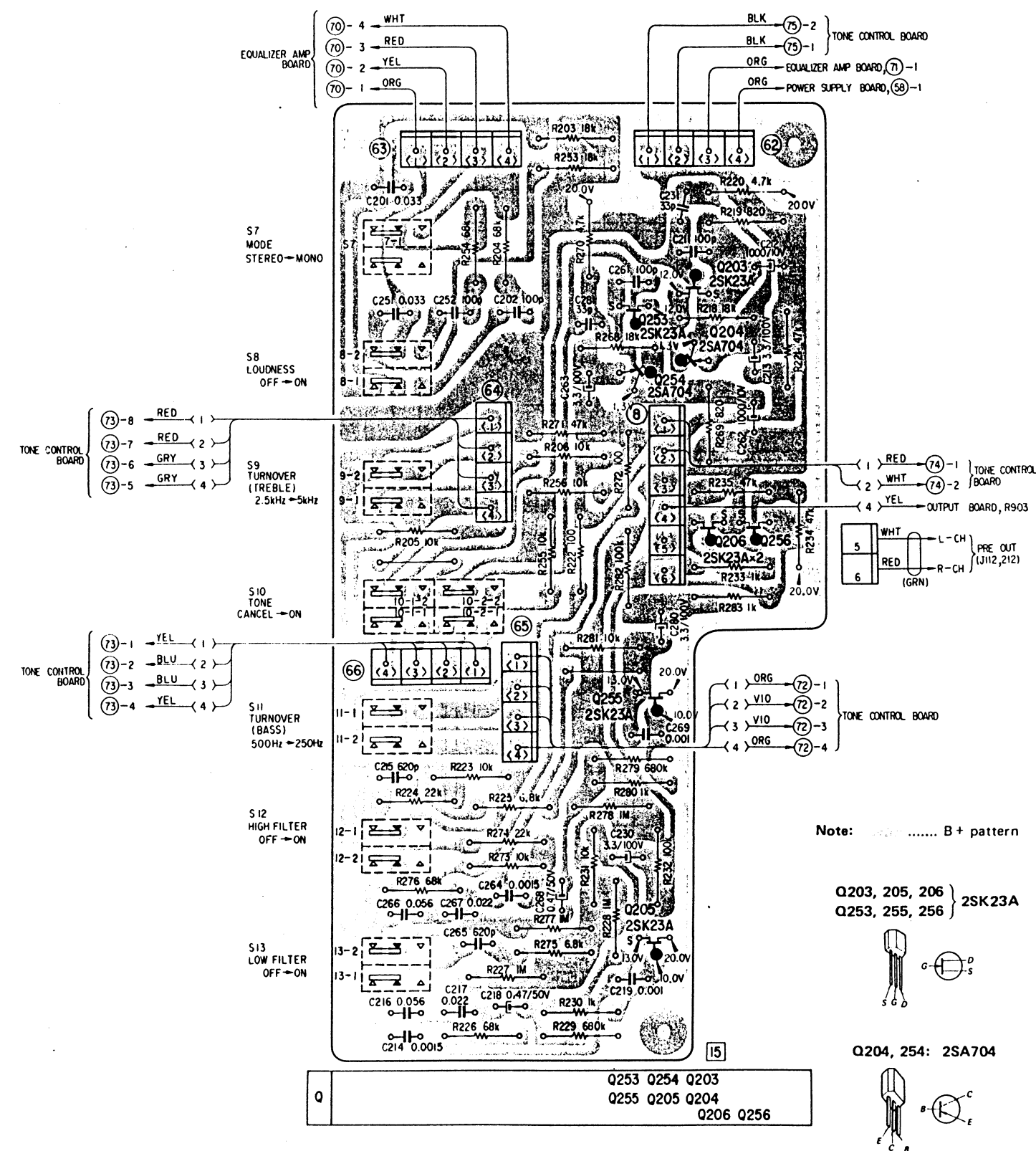
- S1----FUNCTION (PHONO1)
- S2----FUNCTION (PHONO2)
- S3----MONITOR (SOURCE)
- S4----TAPE COPY (SOURCE)
- S5----EXT ADPT (SOURCE)
- S6----MUTING (OFF)
- S7----MODE (STEREO)
- S8----LOUDNESS (OFF)
- S9----TREBLE TURNOVER (2.5kHz)
- S10----TONE (CANCEL)
- S11----BASS TURNOVER (500Hz)
- S12----HIGH FILTER (OFF)
- S13----LOW FILTER (OFF)

**Note:**  
All resistance values are in ohms. k = 1,000, M = 1,000k  
All capacitance values are in  $\mu$ F except as indicated with p, which means  $\mu$ F.  
All voltages are dc measured with a VOM which has an input impedance of 20k ohms/volt. No signal in.  
Voltage variations may be noted due to normal production tolerances.

### 3-8. MOUNTING DIAGRAM – FILTER BOARD –

– Conductor Side –

|               |                              |
|---------------|------------------------------|
| USA Model:    | Serial No. 800,001 and later |
| Canada Model: | Serial No. 700,001 and later |
| UK Model:     | Serial No. 600,351 and later |
| AEP Model:    | Serial No. 501,901 and later |



**Note:** ..... B + pattern

**Note:** ..... B + pattern

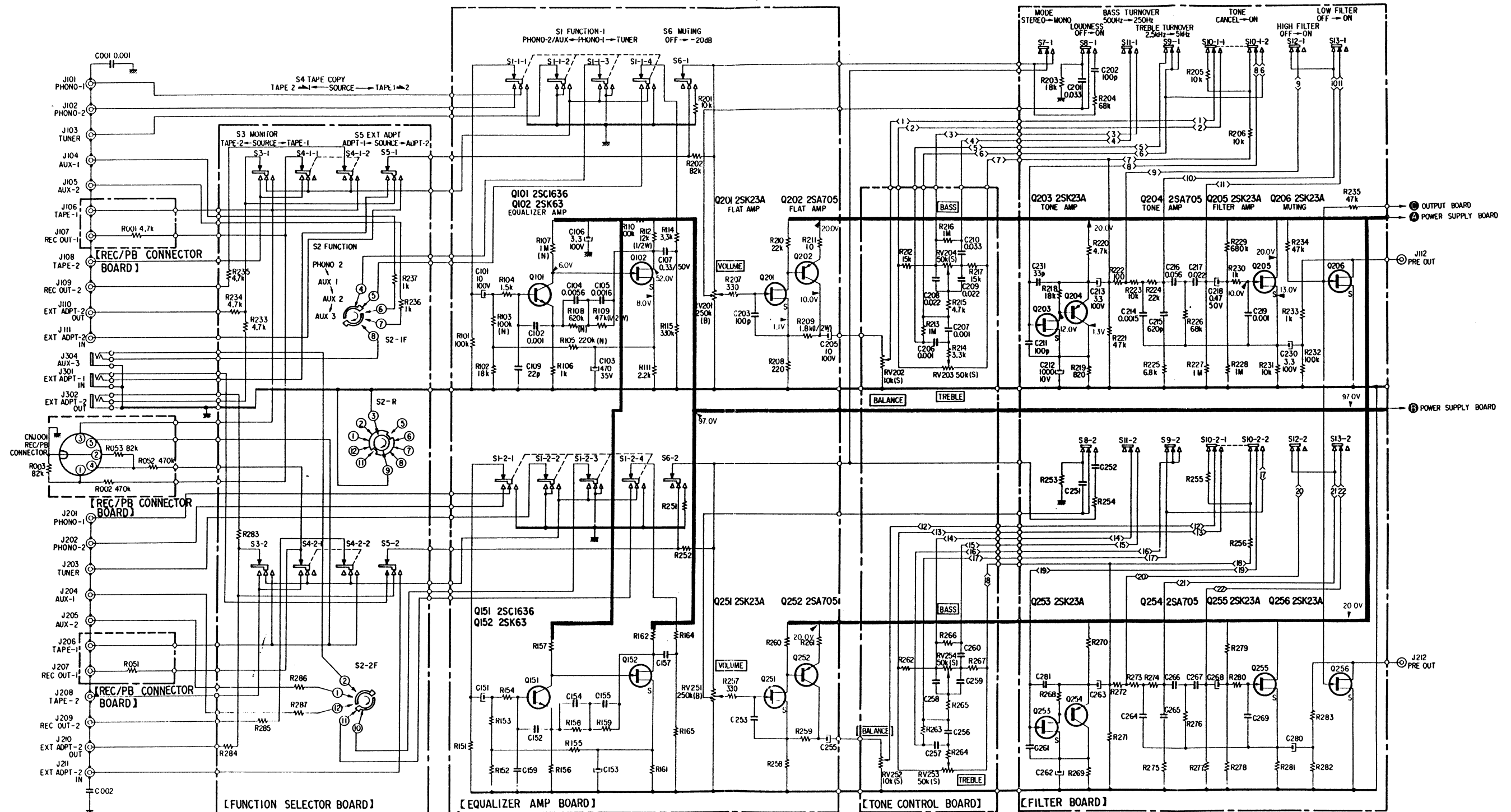
Q203, 205, 206 } 2SK23A  
Q253, 255, 256 }

**Q204, 254: 2SA704**

Q101, 151: 2SC1636      Q102, 152: 2SK63      Q201, 251: 2SK23A      Q202, 252: 2SA705

3-9. SCHEMATIC DIAGRAM – PREAMPLIFIER SECTION –

USA Model: Serial No. 800,001 and later  
 Canada Model: Serial No. 700,001 and later  
 UK Model: Serial No. 600,351 and later  
 AEP Model: Serial No. 501,901 and later



- S1---FUNCTION (PHONO 1)
- S2---FUNCTION (PHONO 2)
- S3---MONITOR (SOURCE)
- S4---TAPE COPY (SOURCE)
- S5---EXT ADPT (SOURCE)
- S6---MUTE (OFF)
- S7---MODE (STEREO)
- S8---LOUDNESS (OFF)
- S9---TREBLE TURNOVER (2.5kHz)
- S10---TONE (CANCEL)
- S11---BASS TURNOVER (500Hz)
- S12---HIGH FILTER (OFF)
- S13---LOW FILTER (OFF)

B+ LINE

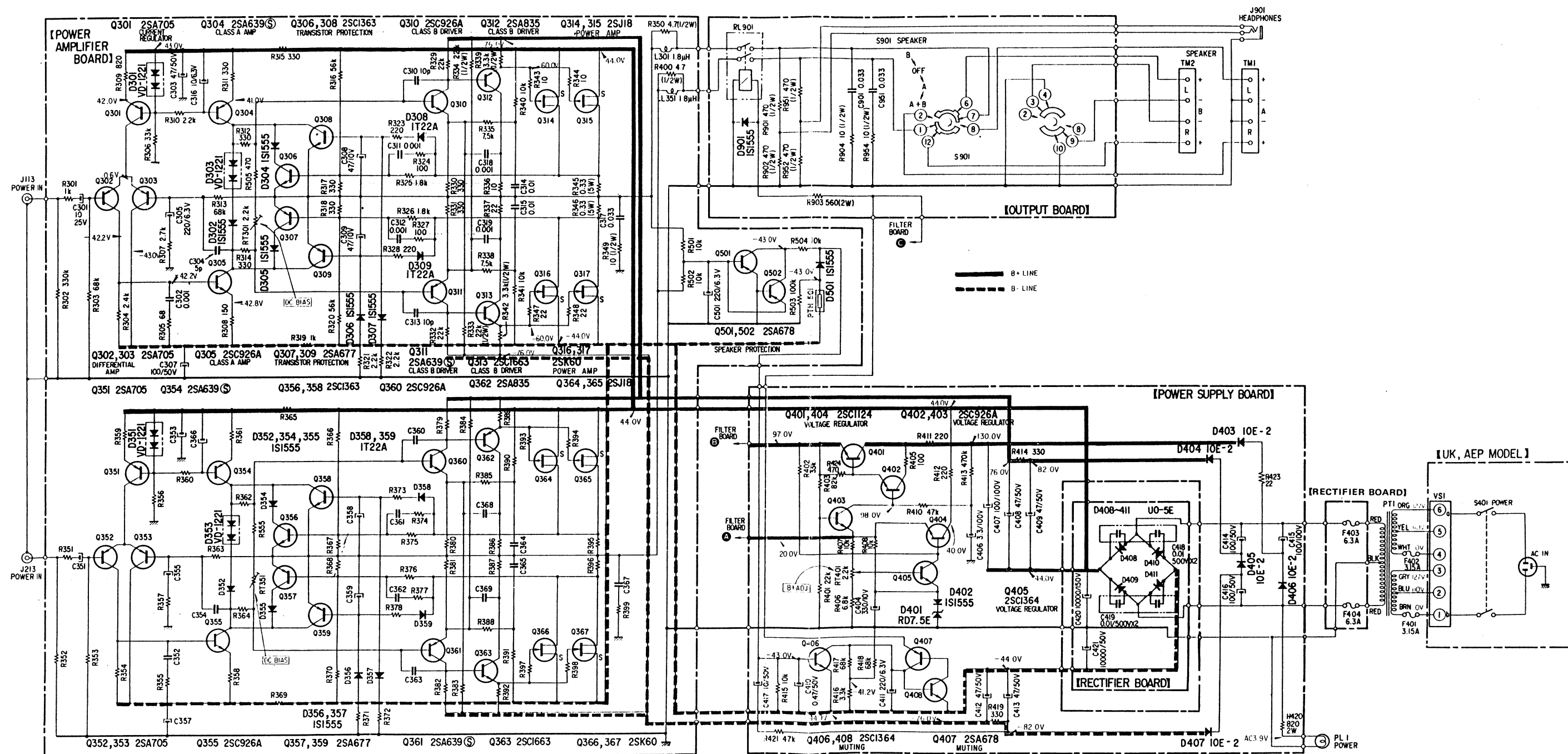
Note:

All resistance values are in ohms. k = 1,000, M = 1,000 k  
 All capacitance values are in  $\mu\text{F}$  except as indicated with p, which means  $\mu\text{F}$ .  
 All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.  
 Voltage variations may be noted due to normal production tolerances.

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## 3-10. SCHEMATIC DIAGRAM - POWER AMPLIFIER SECTION -

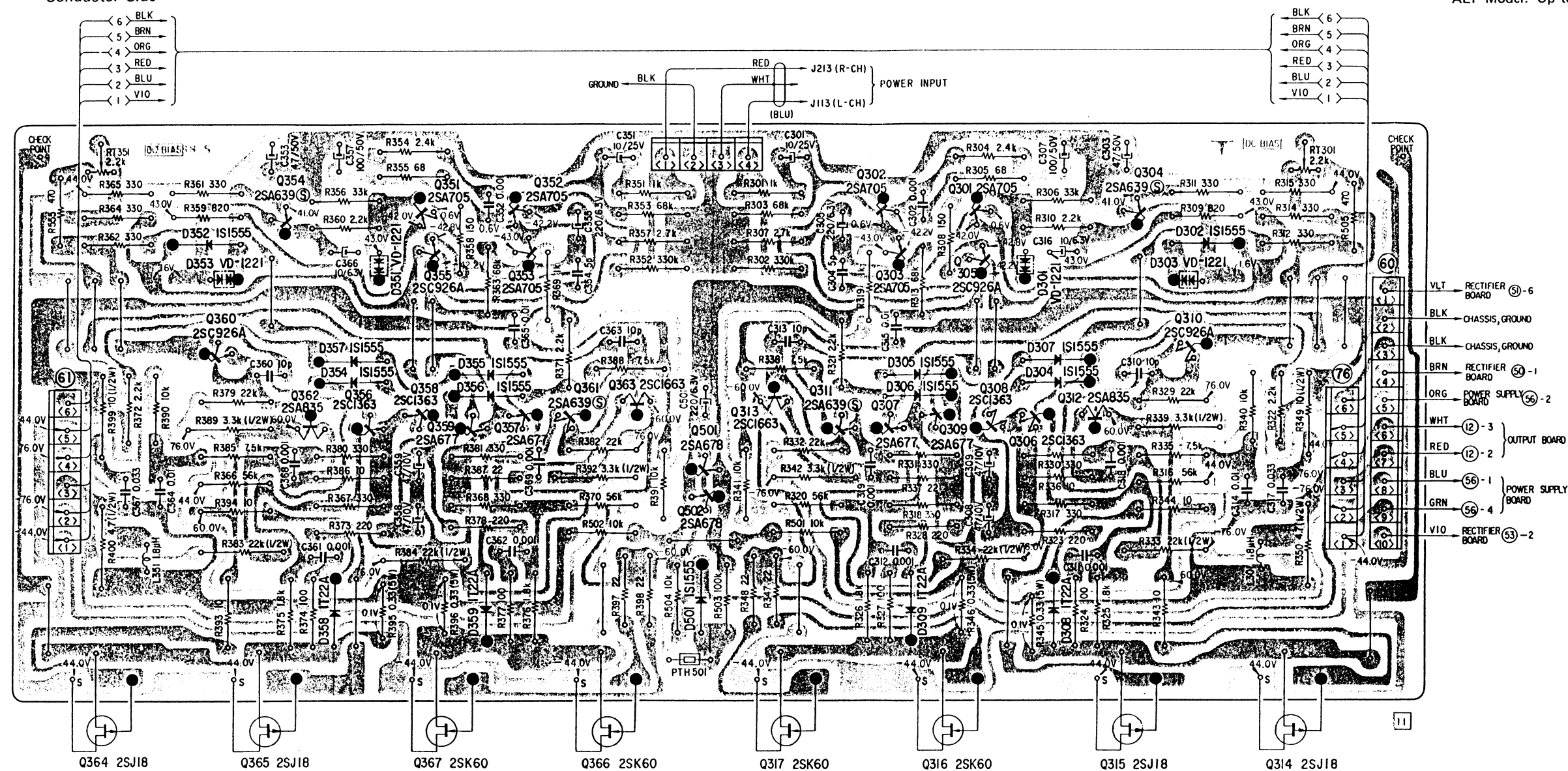
UK Model: Up to Serial No. 600,350  
AEP Model: Up to Serial No. 501,900



**Note:**  
All resistance values are in ohms. k = 1,000, M = 1,000k  
All capacitance values are in  $\mu F$  except as indicated with p, which means  $\mu F$ .  
All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.  
Voltage variations may be noted due to normal production tolerances.

UK Model: Up to Serial No. 600,350  
AEP Model: Up to Serial No. 501,900

— Conductor Side —

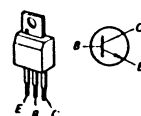
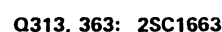
[illegible]

**Note:**

..... B+ pattern  
..... B- pattern

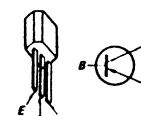
D308, 309 } 1T22A  
D358, 359 }

D302, 352 } 1S1555  
D304 ~ 307  
D354 ~ 357  
D501

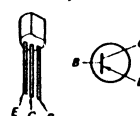


Q301 ~ 303 } 2SA705  
Q351 ~ 353 }

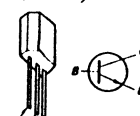
Q307, 309 } 2SA677  
Q357, 359 }



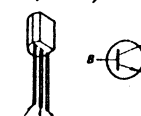
Q304, 311 } 2SA639(S)  
Q354, 361 }



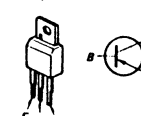
Q305, 310 } 2SC926A  
Q355 360 }



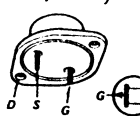
Q306, 308 } 2SC1363  
Q356 358 }



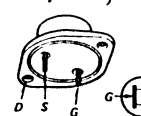
Q312 362: 2SA835



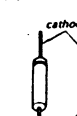
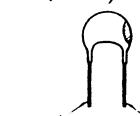
Q314, 315 } 2SJ18  
Q364, 365 }



Q316, 317 } 2SK60  
Q366 367 }



D301, 303 } VD-1221  
D351 353 }

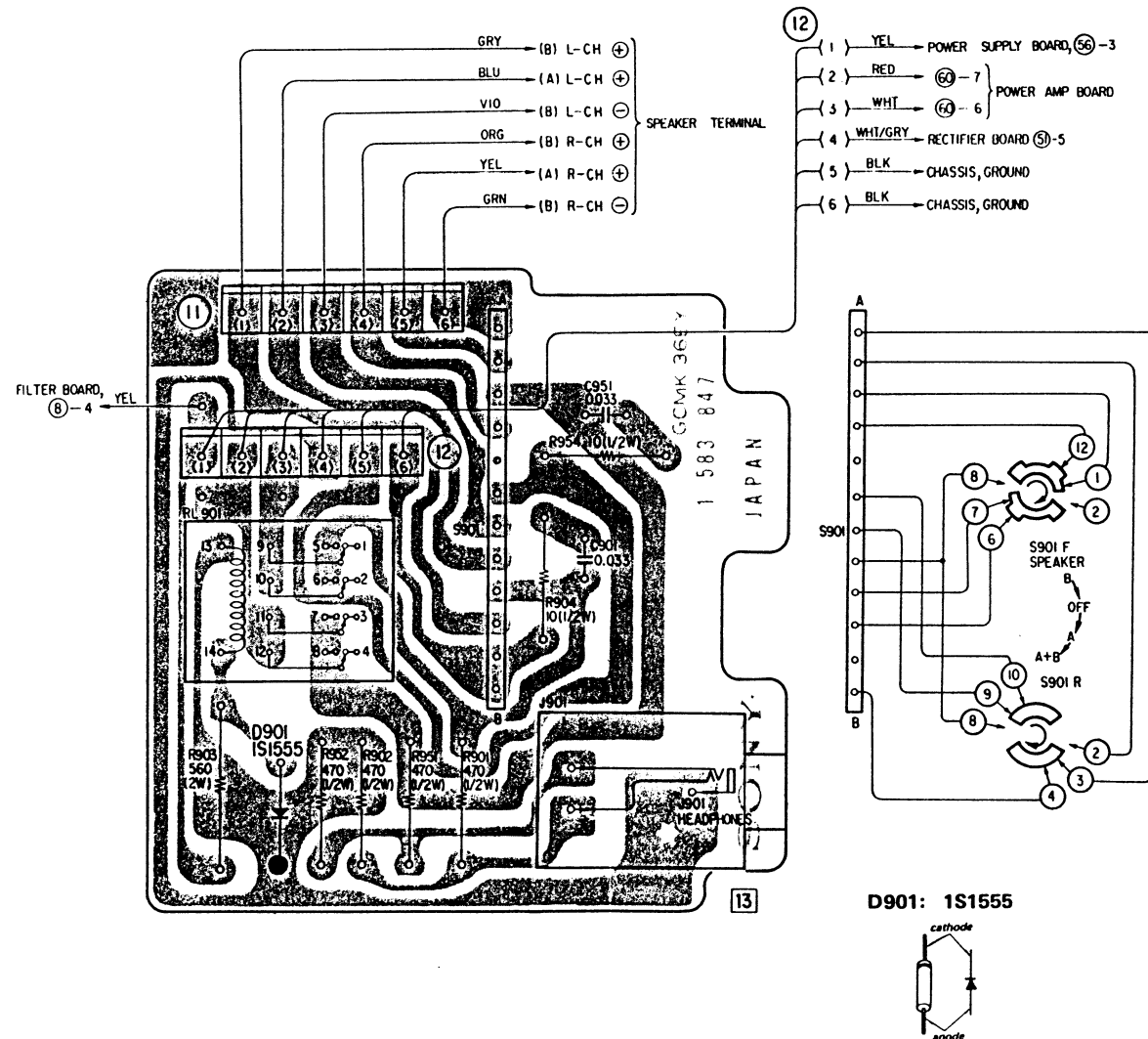


**TA-5650      TA-5650**

### 3-12. MOUNTING DIAGRAM – OUTPUT BOARD –

– Conductor Side –

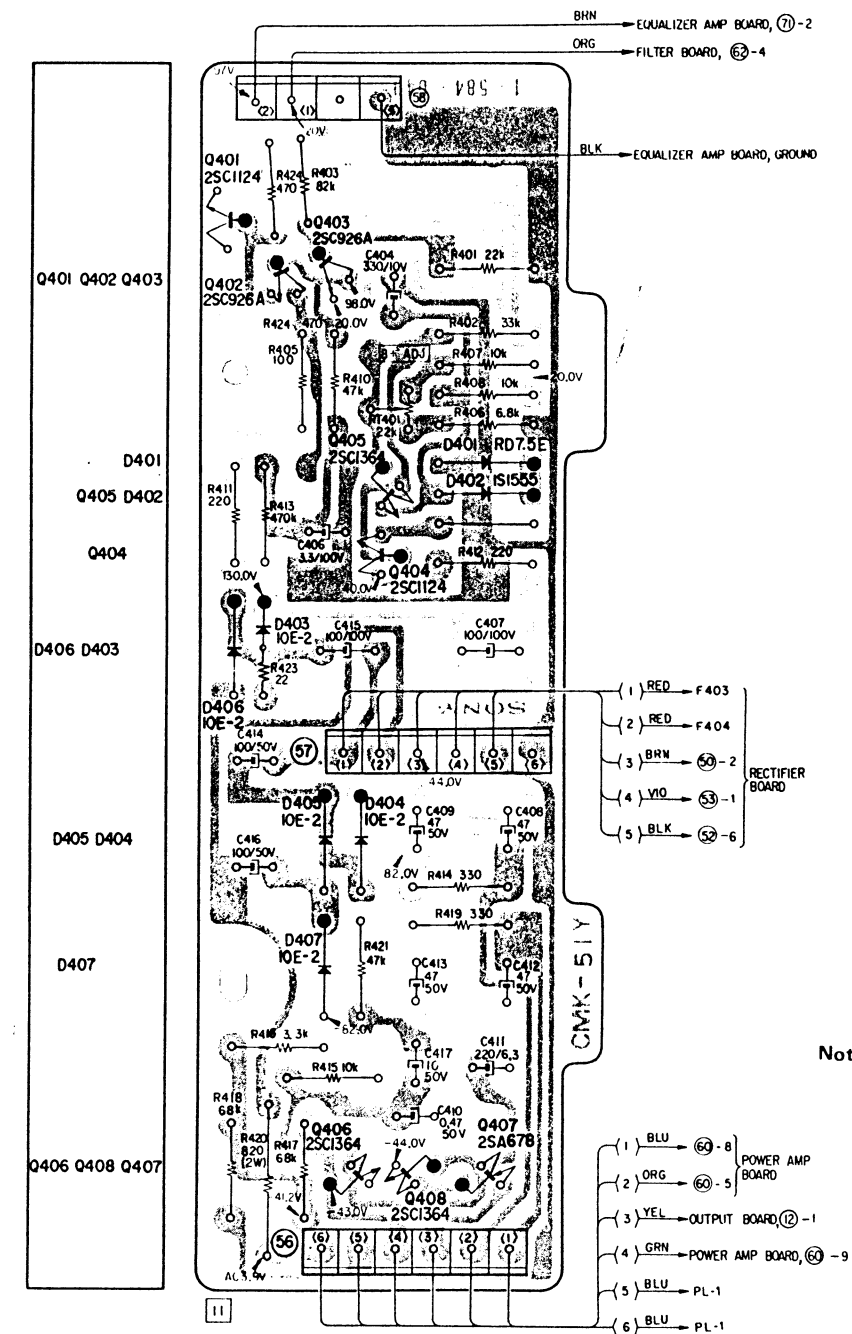
UK Model: Up to Serial No. 600,350  
AEP Model: Up to Serial No. 501,900



### 3-13. MOUNTING DIAGRAM – POWER SUPPLY BOARD –

— Conductor Side —

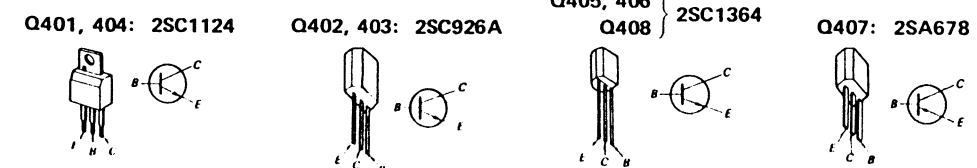
UK Model: Up to Serial No. 600,350  
AEP Model: Up to Serial No. 501,900



**Note:**

..... B + pattern  
..... B - pattern

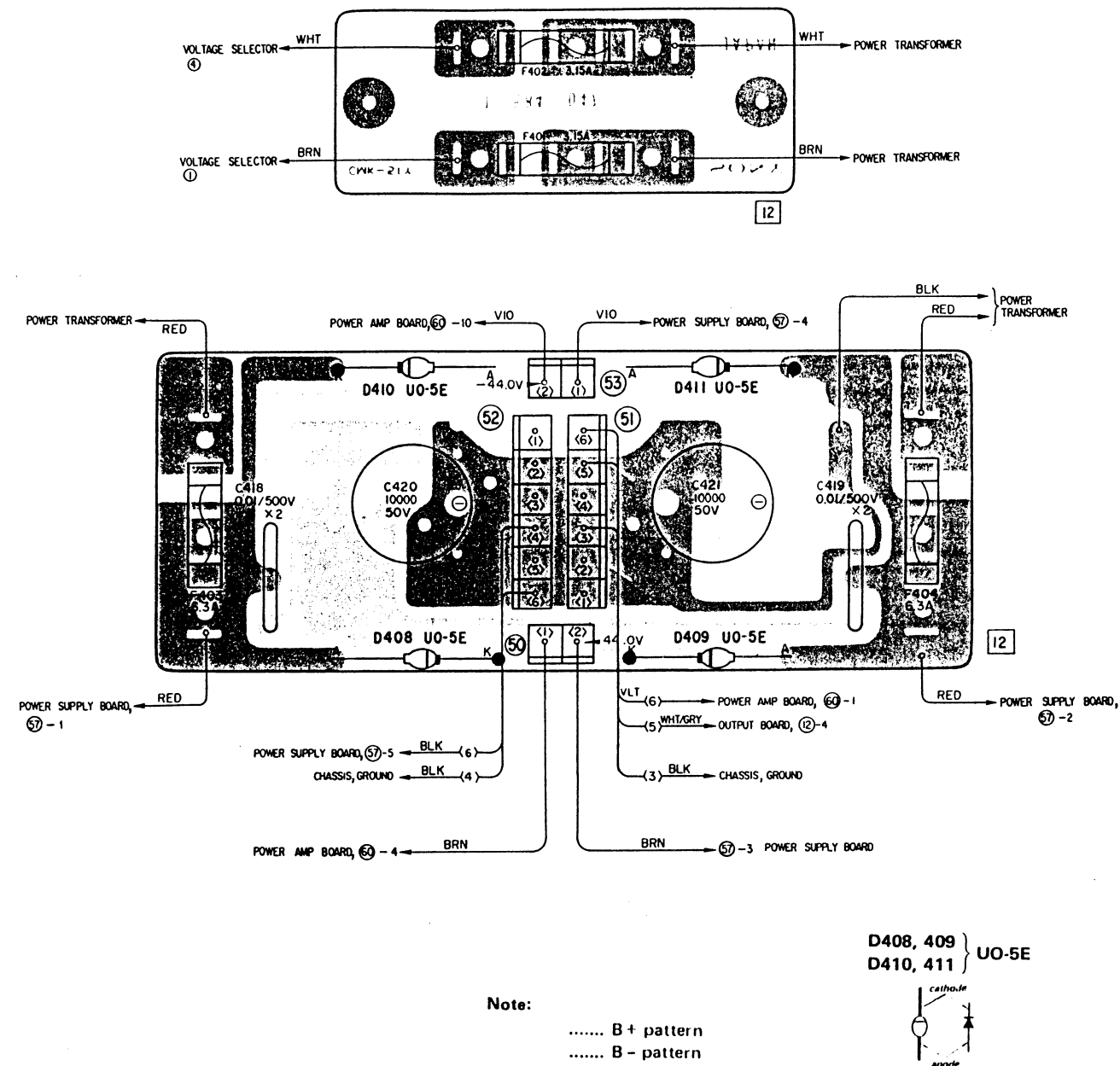
D401: RD-7.5E  
D402: 1S1555  
D403 ~ 407: 10E-2



3-14. MOUNTING DIAGRAM – RECTIFIER/FUSE BOARDS –

– Component Side –

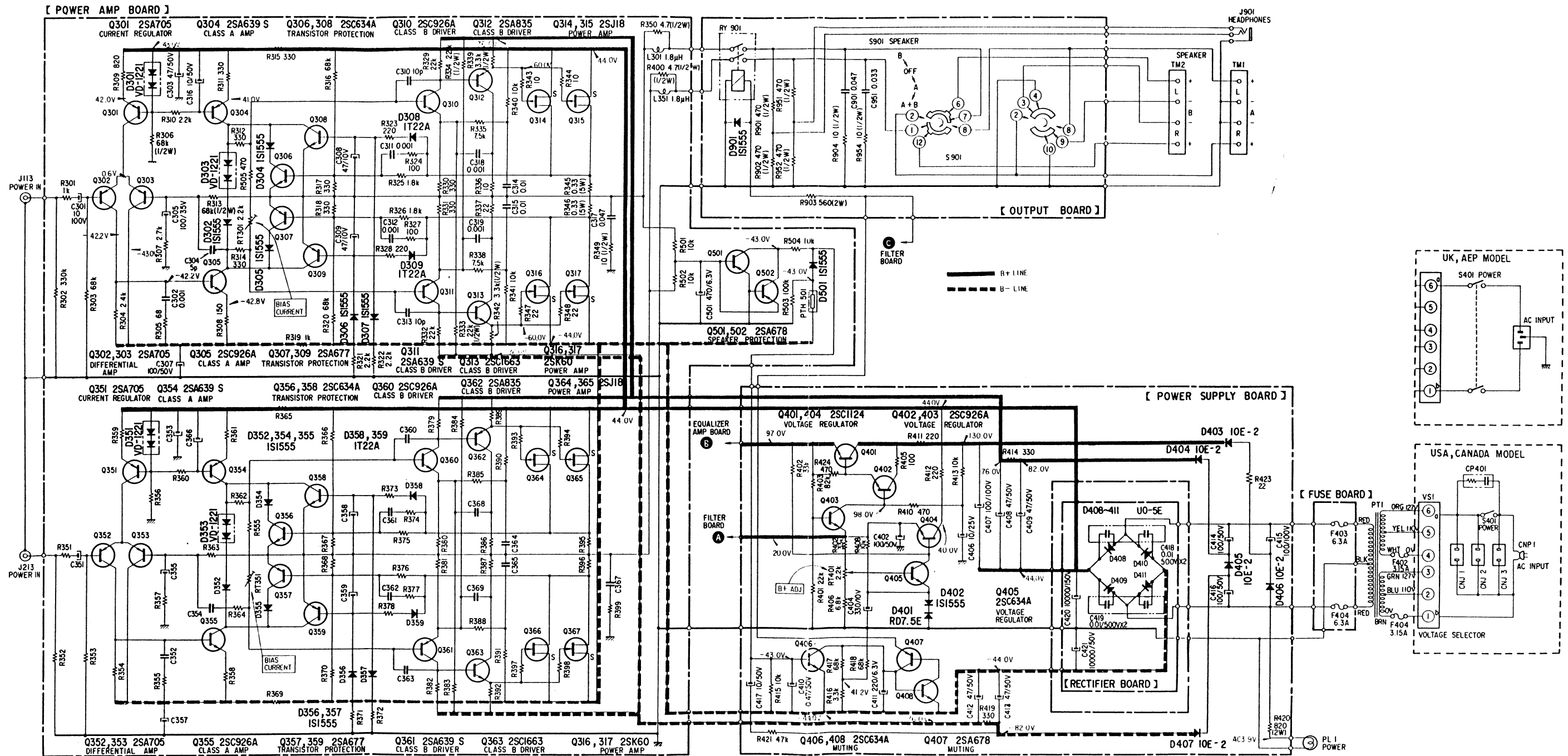
MEMO



# TA-5650 TA-5650

## 3-15. SCHEMATIC DIAGRAM – POWER AMPLIFIER SECTION –

USA Model: Serial No. 800,001 and later  
 Canada Model: Serial No. 700,001 and later  
 UK Model: Serial No. 600,351 and later  
 AEP Model: Serial No. 501,901 and later

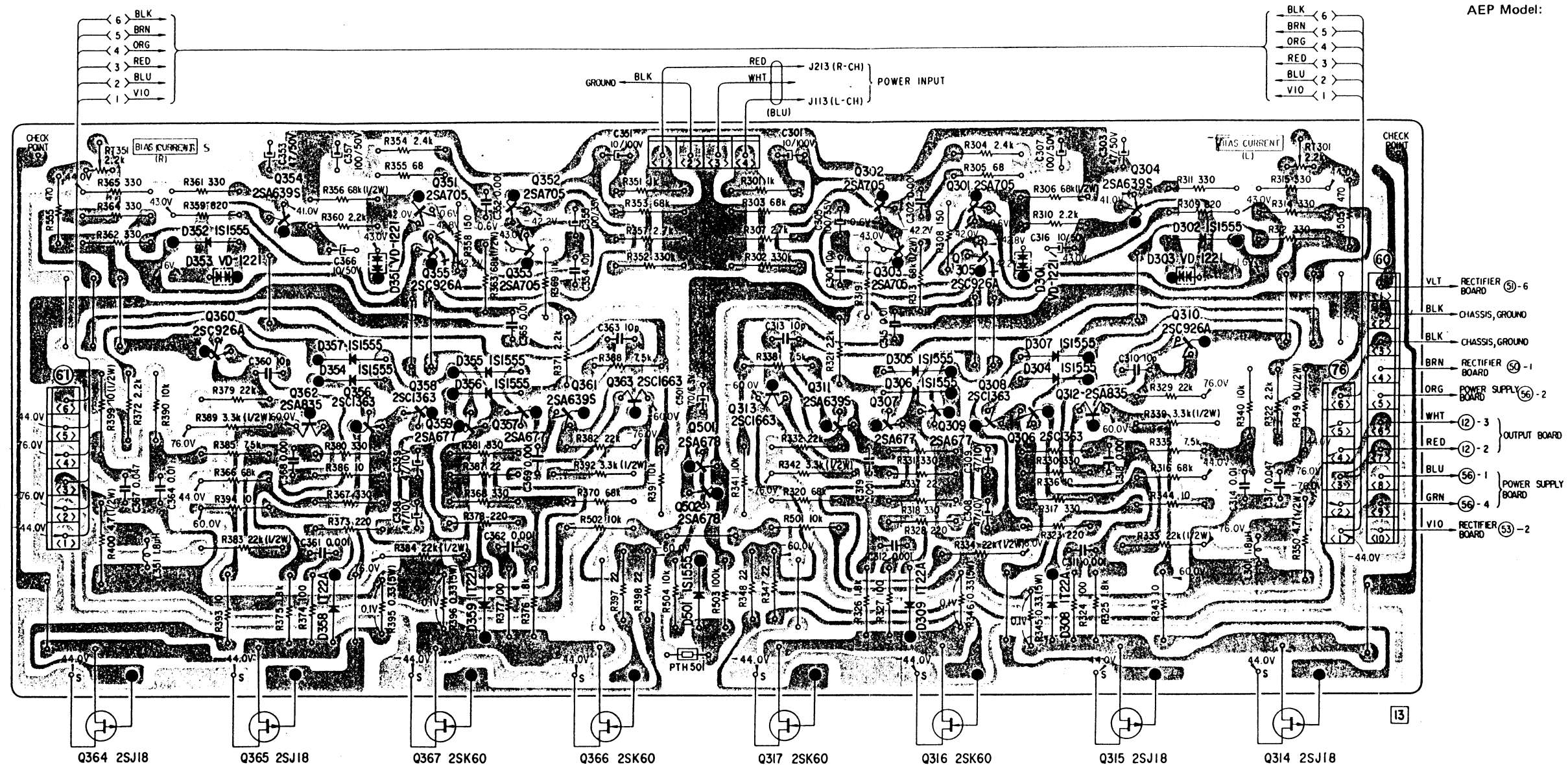


**Note:**  
 All resistance values are in ohms. k = 1,000, M = 1,000 k  
 All capacitance values are in  $\mu\text{F}$  except as indicated with p, which means  $\mu\text{F}$ .  
 All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.  
 Voltage variations may be noted due to normal production tolerances.

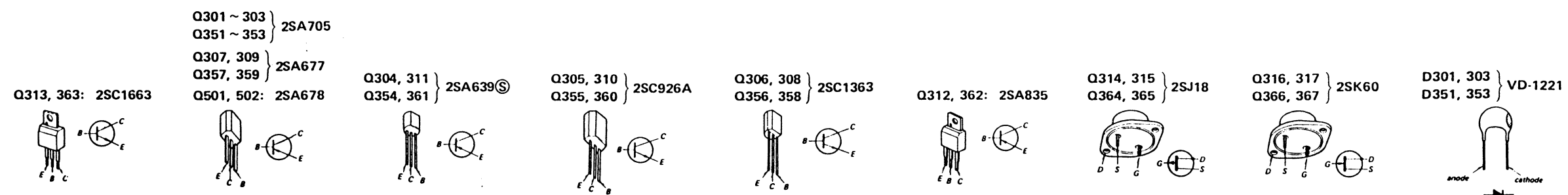
3-16. MOUNTING DIAGRAM — POWER AMPLIFIER BOARD —

— Conductor Side —

USA Model: Serial No. 800,001 and later  
Canada Model: Serial No. 700,001 and later  
UK Model: Serial No. 600,351 and later  
AEP Model: Serial No. 501,901 and later



Note:  
..... B+ pattern  
..... B- pattern

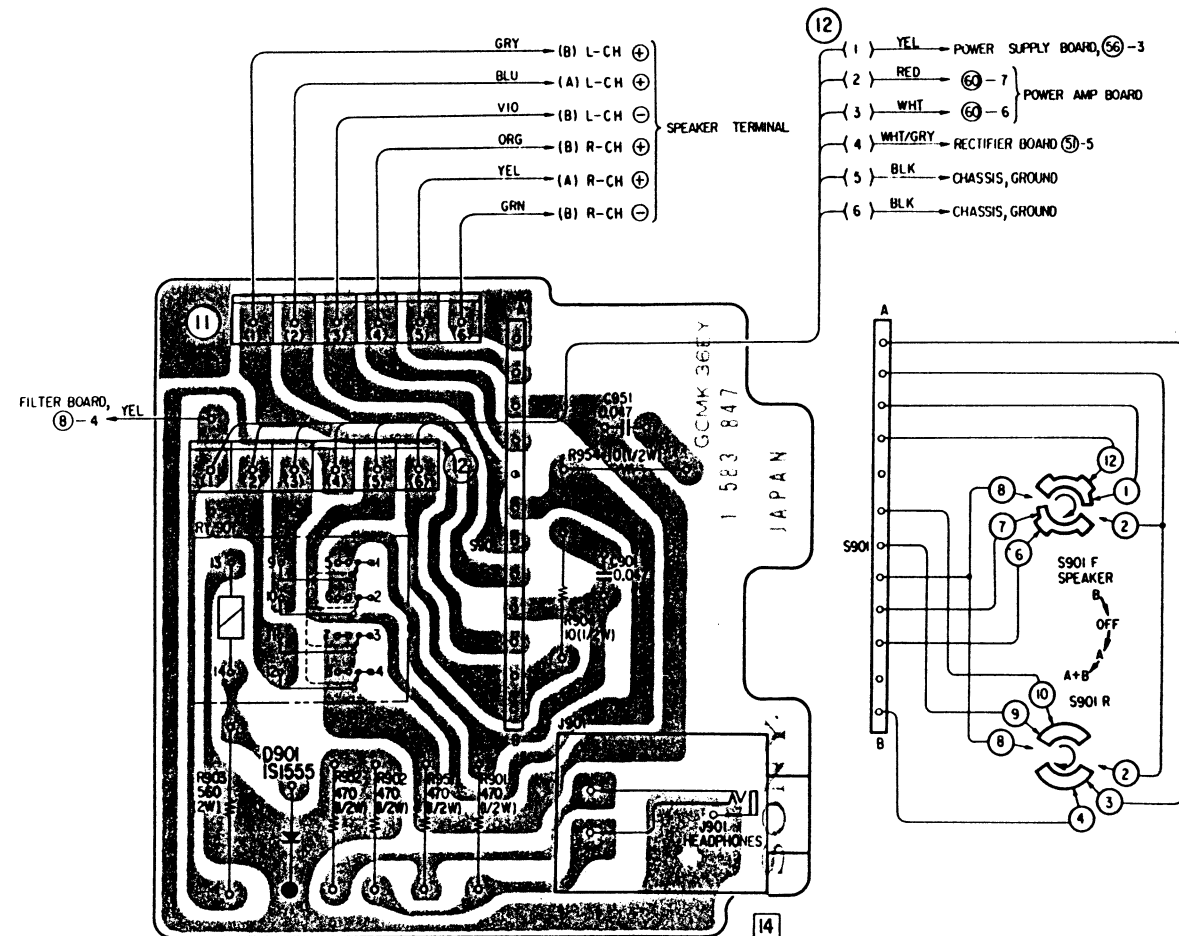


# TA-5650 TA-5650

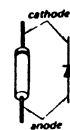
## 3-17. MOUNTING DIAGRAM - OUTPUT BOARD -

- Conductor Side -

USA Model: Serial No. 800,001 and later  
Canada Model: Serial No. 700,001 and later  
UK Model: Serial No. 600,351 and later  
AEP Model: Serial No. 501,901 and later



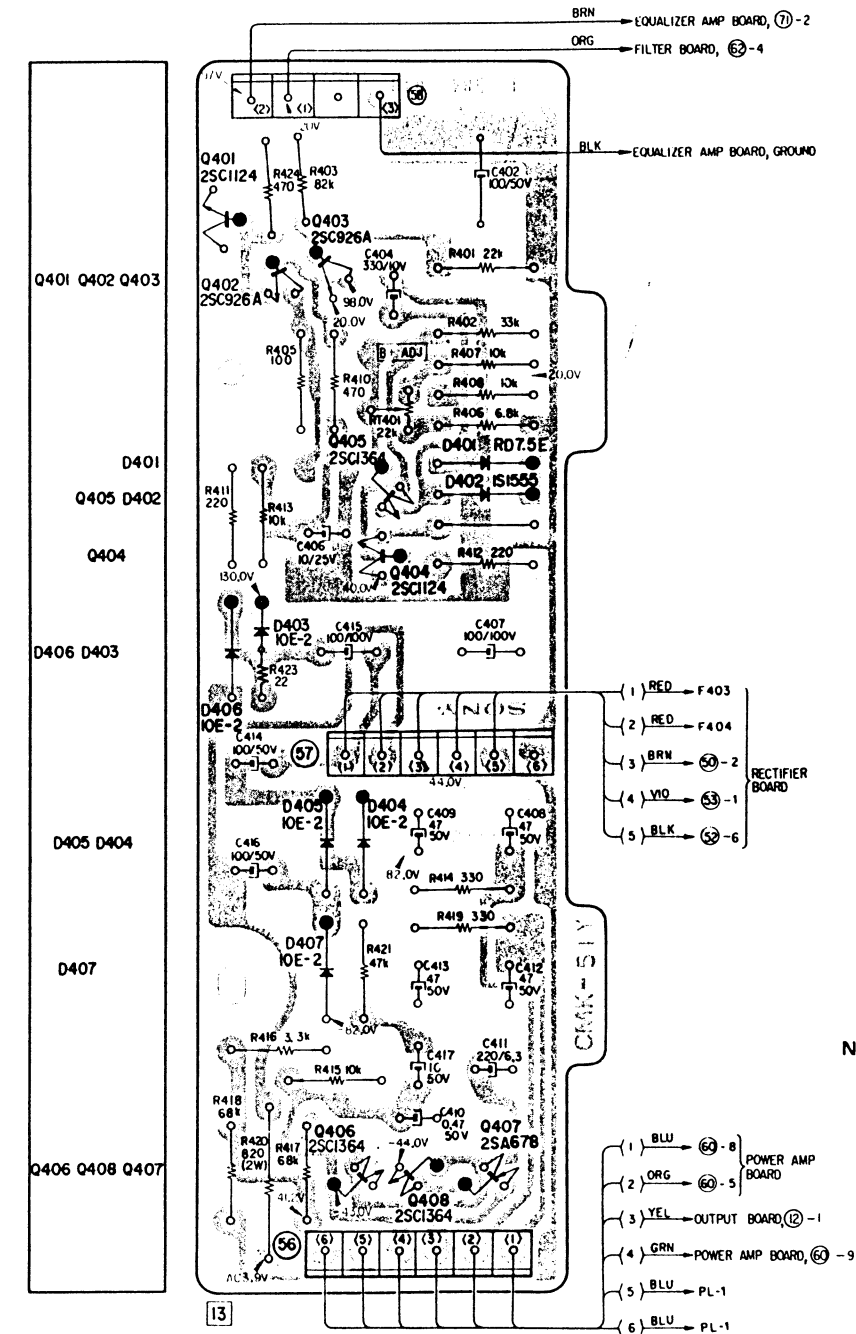
D901: 1S1555



## 3-18. MOUNTING DIAGRAM - POWER SUPPLY BOARD -

- Conductor Side -

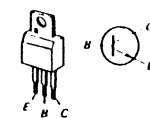
USA Model: Serial No. 800,001 and later  
Canada Model: Serial No. 700,001 and later  
UK Model: Serial No. 600,351 and later  
AEP Model: Serial No. 501,901 and later



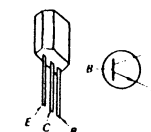
Note:

..... B + pattern  
..... B - pattern

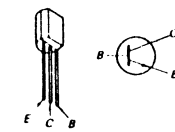
Q401, 404: 2SC1124



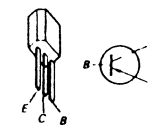
Q402, 403: 2SC926A



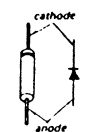
Q405, 406  
Q408 } 2SC1364



Q407: 2SA678



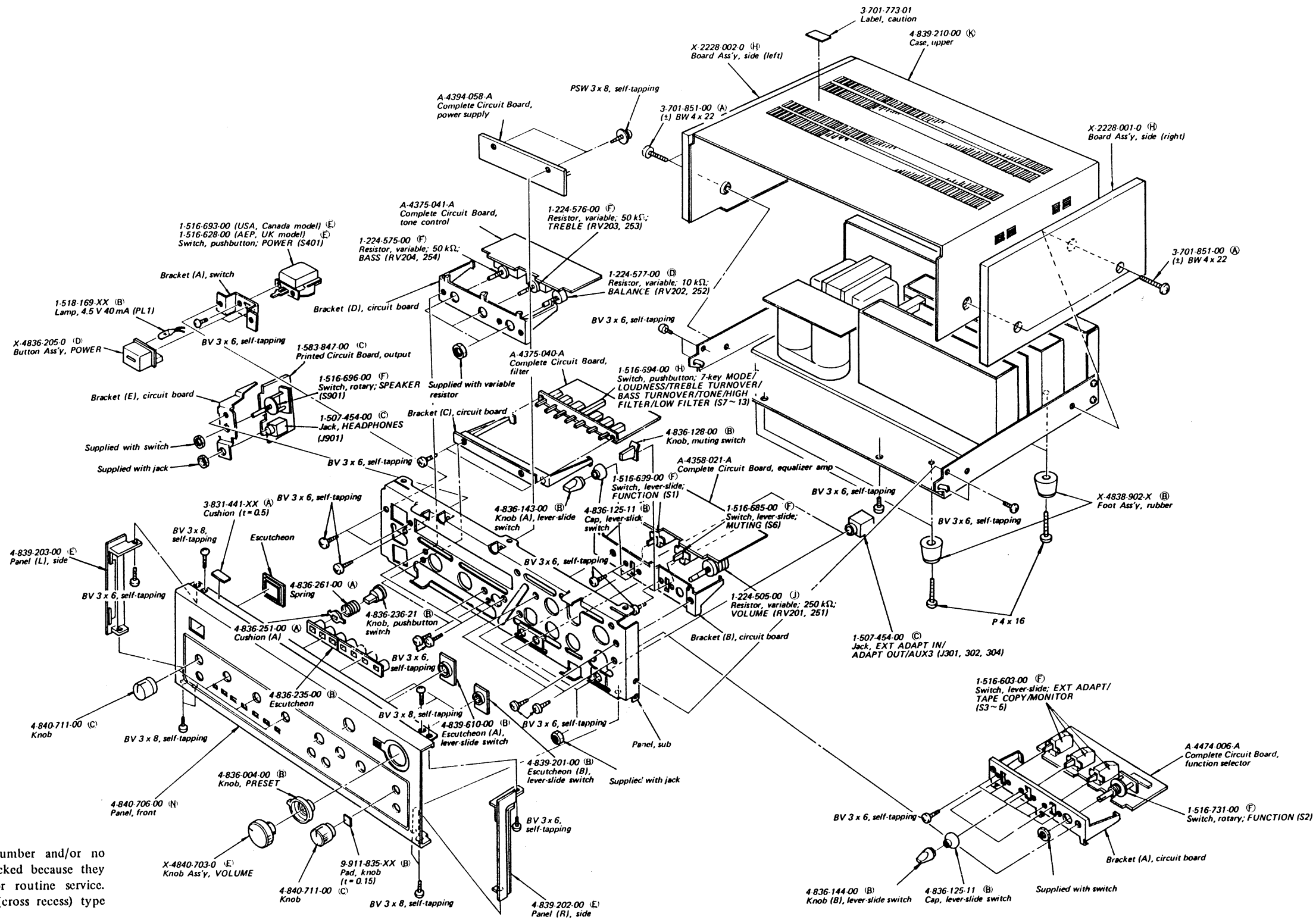
D401: RD-7.5E  
D402: 1S1555  
D403 ~ 407: 10E-2



## SECTION 4

### EXPLODED VIEWS

(1)

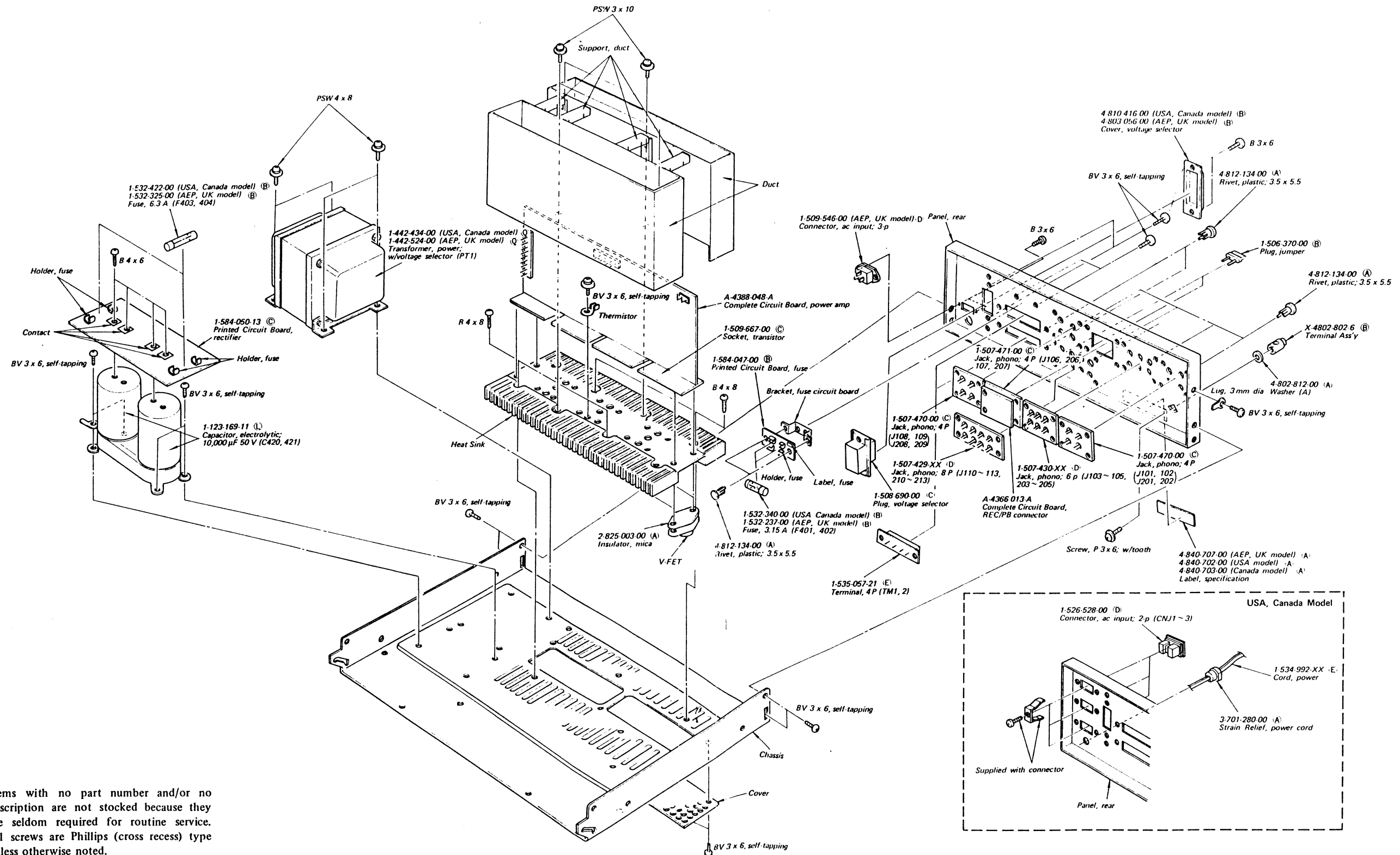


**Note:**

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.  
(-) = slotted head
- The circled letters (A to Z) are applicable for European model only.

# TA-5650 TA-5650

(2)



## Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head
- The circled letters (A) to (Z) are applicable for European model only.

## SECTION 5 ELECTRICAL PARTS LIST

Note: The circled letters (A) to (Z) are applicable for European model only.

| Mark | Applicable Serial No.                                                                                                                                                      |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| □    | UK model: Up to Serial No. 600,350<br>AEP model: Up to Serial No. 501,900                                                                                                  |
| ■    | USA model: Serial No. 800,001 and later<br>Canada model: Serial No. 700,001 and later<br>UK model: Serial No. 600,351 and later<br>AEP model: Serial No. 501,901 and later |

| <u>Ref. No.</u>                | <u>Part No.</u> | <u>Description</u> | <u>Ref. No.</u>       | <u>Part No.</u> | <u>Description</u>            |
|--------------------------------|-----------------|--------------------|-----------------------|-----------------|-------------------------------|
| <b>COMPLETE CIRCUIT BOARDS</b> |                 |                    |                       |                 |                               |
| A-4358-021-A                   |                 | Equalizer Amp      | Q314,364,<br>Q315,365 | (K) 2SJ18       |                               |
| A-4366-013-A                   |                 | REC/PB Connector   | Q316,366,<br>Q317,367 | (J) 2SK60       |                               |
| A-4375-040-A                   |                 | Filter             |                       |                 |                               |
| A-4375-041A                    |                 | TONE Control       | Q401                  | (C) 2SC1124     |                               |
| A-4388-048-A                   |                 | Power Amp          | Q402,403              | (D) 2SC926A     |                               |
|                                |                 |                    | Q404                  | (C) 2SC1124     |                               |
| A-4394-058-A                   |                 | Power Supply       | Q405,406              | (B) 2SC1364     |                               |
| A-4474-006-A                   |                 | Function Selector  | Q407                  | (C) 2SA678      |                               |
|                                |                 |                    | Q408                  | (B) 2SC1364     |                               |
| <b>PRINTED CIRCUIT BOARDS</b>  |                 |                    | Q501,502              | (C) 2SA678      |                               |
| 1-583-847-00                   | (C)             | Output             | <b>Diodes</b>         |                 |                               |
| 1-584-047-00                   | (B)             | Fuse               | D301,351              | (B) VD1221      |                               |
| 1-584-050-13                   | (C)             | Rectifier          | D302,352              | (B) 1S1555      |                               |
| <b>SEMICONDUCTORS</b>          |                 |                    | D303,353              | (B) VD1221      |                               |
| <b>Transistors</b>             |                 |                    | D304~307,<br>D354~357 | (C) 1S1555      |                               |
| Q101,151                       | (B)             | 2SC1636            | D308,358,<br>D309,359 | (B) 1T22A       |                               |
| Q102,152                       | (E)             | 2SK63              |                       |                 |                               |
| Q201,251                       | (C)             | 2SK23A             | D401                  | (B) RD7.5E      |                               |
| Q202,252                       | (C)             | 2SA705             | D402                  | (B) 1S1555      |                               |
| Q203,253                       | (C)             | 2SK23A             | D403~407              | (B) 10E-2       |                               |
| Q204,254                       | (C)             | 2SA705             | D408~411              | (C) U05E        |                               |
| Q205,255,<br>Q206,256          | (C)             | 2SK23A             | D501,901              | (B) 1S1555      |                               |
| Q301~303,<br>Q351~353          | (C)             | 2SA705             | PTH501                | 1-800-340-21    | (B) Thermistor (positive)     |
| Q304,354                       | (C)             | 2SA639S            | <b>COIL</b>           |                 |                               |
| Q305,355                       | (D)             | 2SC926A            | L301,351              | 1-407-592-00    | (A) Microinductor 1.8μH       |
| Q306,356                       | (B)             | 2SC1364            | <b>TRANSFORMER</b>    |                 |                               |
| Q307,357                       | (C)             | 2SA677             | PT1                   | 1-442-434-00    | (Q) Power (USA, Canada model) |
| Q308,358                       | (B)             | 2SC1364            | PT1                   | 1-442-524-00    | (Q) Power (AEP, UK model)     |
| Q309,359                       | (C)             | 2SA677             |                       |                 |                               |
| Q310,360                       | (D)             | 2SC926A            |                       |                 |                               |
| Q311,361                       | (C)             | 2SA639S            |                       |                 |                               |
| Q312,362                       | (E)             | 2SA835             |                       |                 |                               |
| Q313,363                       | (D)             | 2SC1663            |                       |                 |                               |

Note: The circled letters (A to Z) are applicable for European model only.

| Ref. No.                                                                                                                                                                          | Part No.       | Description           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------|
| <b>CAPACITORS</b>                                                                                                                                                                 |                |                       |
| All capacitors are in $\mu\text{F}$ and electrolytic type unless otherwise indicated.<br>50 or less working volts are omitted except for electrolytic type. ( $p = \mu\text{F}$ ) |                |                       |
| C001,002                                                                                                                                                                          | 1-102-074-11   | (A) 0.001 ceramic     |
| C101,151                                                                                                                                                                          | □ 1-121-748-11 | (A) 10 25 V           |
|                                                                                                                                                                                   | ■ 1-121-126-11 | (A) 10 100 V          |
| C102,152                                                                                                                                                                          | 1-108-227-12   | (A) 0.001 mylar       |
| C103,153                                                                                                                                                                          | □ 1-121-659-11 | (B) 2200 10 V         |
|                                                                                                                                                                                   | ■ 1-121-361-11 | (B) 470 35 V          |
| C104,154                                                                                                                                                                          | 1-103-743-11   | (B) 0.0056 polystyrol |
| C105,155                                                                                                                                                                          | 1-103-730-11   | (A) 0.0016 polystyrol |
| C106                                                                                                                                                                              | 1-121-995-11   | (B) 3.3 100 V         |
| C107,157                                                                                                                                                                          | □ 1-105-729-12 | (A) 0.22 100 V mylar  |
|                                                                                                                                                                                   | ■ 1-108-822-12 | (A) 0.33 50 V mylar   |
| C109,159                                                                                                                                                                          | 1-102-967-11   | (A) 22 p ceramic      |
| C201,251                                                                                                                                                                          | 1-108-591-12   | (A) 0.033 mylar       |
| C202,252<br>C203,253                                                                                                                                                              | 1-102-973-11   | (A) 100 p ceramic     |
|                                                                                                                                                                                   |                |                       |
| C205,255                                                                                                                                                                          | □ 1-123-051-11 | (A) 10 50 V           |
|                                                                                                                                                                                   | ■ 1-121-126-11 | (A) 10 100 V          |
| C206,256<br>C207,257                                                                                                                                                              | 1-108-555-12   | (A) 0.001 mylar       |
|                                                                                                                                                                                   |                |                       |
| C208,258<br>C209,259                                                                                                                                                              | 1-108-587-12   | (A) 0.022 mylar       |
|                                                                                                                                                                                   |                |                       |
| C210,260                                                                                                                                                                          | 1-108-591-12   | (A) 0.033 mylar       |
| C211,261                                                                                                                                                                          | 1-102-973-11   | (A) 100 p ceramic     |
| C212,262                                                                                                                                                                          | 1-121-736-11   | (B) 1000 10 V         |
| C213,263                                                                                                                                                                          | □ 1-121-914-11 | (B) 3.3 50 V          |
|                                                                                                                                                                                   | ■ 1-121-995-11 | (B) 3.3 100 V         |
| C214,264                                                                                                                                                                          | 1-108-559-12   | (A) 0.0015 mylar      |
| C215,265                                                                                                                                                                          | 1-103-720-11   | (A) 620 p polystyrol  |
| C216,266                                                                                                                                                                          | 1-108-597-12   | (A) 0.056 mylar       |
| C217,267                                                                                                                                                                          | 1-108-587-12   | (A) 0.022 mylar       |
| C218,268                                                                                                                                                                          | 1-121-911-11   | (A) 0.47 50 V         |
| C219,269                                                                                                                                                                          | 1-108-227-12   | (A) 0.001 mylar       |
| C230,280                                                                                                                                                                          | □ 1-121-914-11 | (B) 3.3 50 V          |
|                                                                                                                                                                                   | ■ 1-121-995-11 | (B) 3.3 100 V         |
| C231,281                                                                                                                                                                          | 1-102-963-11   | (A) 33 p ceramic      |

| Ref. No.             | Part No.       | Description            |
|----------------------|----------------|------------------------|
| C301,351             | □ 1-121-748-11 | (A) 10 25 V            |
|                      | ■ 1-121-126-11 | (A) 10 100 V           |
| C302,352             | 1-108-227-12   | (A) 0.001 mylar        |
| C303,353             | 1-123-058-11   | (A) 47 50 V            |
| C304,354             | 1-102-807-11   | (A) 5 p ceramic        |
| C305,355             | □ 1-121-419-11 | (B) 220 6.3 V          |
|                      | ■ 1-121-357-11 | (B) 100 35 V           |
| C307,357             | 1-123-059-11   | (B) 100 50 V           |
| C308,358<br>C309,359 | 1-121-927-11   | (B) 47 10 V            |
|                      |                |                        |
| C310,360             | 1-102-947-11   | (A) 10 p ceramic       |
| C311,361<br>C312,362 | 1-108-227-12   | (A) 0.001 mylar        |
|                      |                |                        |
| C313,363             | 1-102-947-11   | (A) 10 p ceramic       |
| C314,364<br>C315,365 | 1-108-239-12   | (A) 0.01 mylar         |
|                      |                |                        |
| C316,366             | □ 1-121-469-11 | (A) 10 6.3 V           |
|                      | ■ 1-121-738-11 | (A) 10 50 V            |
| C317,367             | □ 1-108-244-12 | (A) 0.033 mylar        |
|                      | ■ 1-108-868-12 | (A) 0.047 mylar        |
| C318,368<br>C319,369 | 1-108-227-12   | (A) 0.001 mylar        |
|                      |                |                        |
| C402                 | ■ 1-121-417-11 | (B) 100 50 V           |
| C404                 | 1-121-805-11   | (B) 330 10 V           |
| C406                 | □ 1-121-995-11 | (A) 3.3 100 V          |
|                      | ■ 1-121-398-11 | (A) 10 25 V            |
| C407                 | 1-123-084-11   | (C) 100 100 V          |
| C408,409             | 1-123-058-11   | (B) 47 50 V            |
| C410                 | 1-121-726-11   | (A) 0.47 50 V          |
| C411                 | 1-121-419-11   | (A) 220 6.3 V          |
| C412,413             | 1-123-058-11   | (B) 47 50 V            |
| C414                 | 1-123-059-11   | (B) 100 50 V           |
| C415                 | 1-123-084-11   | (C) 100 100 V          |
| C416                 | 1-123-059-11   | (B) 100 50 V           |
| C417                 | 1-121-738-11   | (A) 10 50 V            |
| C418,419             | 1-102-355-11   | (A) 0.01 500 V ceramic |
| C420,421             | 1-123-169-11   | (L) 10000 50 V         |
| C501                 | □ 1-121-419-11 | (B) 220 6.3 V          |
|                      | ■ 1-123-077-11 | (B) 470 6.3 V          |
| C901,951             | □ 1-108-244-12 | (A) 0.033 mylar        |
|                      | ■ 1-108-868-12 | (A) 0.047 mylar        |

Note: The circled letters (A) to (Z) are applicable for European model only.

| Ref. No.                                                                                                                                                                                          | Part No.     | Description                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------|
| <b>RESISTORS</b>                                                                                                                                                                                  |              |                                 |
| All resistors are in ohms. Regular type $\pm 5\%$ , $\frac{1}{4}W$ carbon and composition resistors are omitted.<br>Check the schematic diagram for the resistance values. (k = 1000, M = 1000 k) |              |                                 |
| R109,159                                                                                                                                                                                          | 1-244-913-11 | (A) 47 k $\frac{1}{2}W$ carbon  |
| R112,162                                                                                                                                                                                          | 1-244-899-11 | (A) 12 k $\frac{1}{2}W$ carbon  |
| R209,259                                                                                                                                                                                          | 1-244-879-11 | (A) 1.8 k $\frac{1}{2}W$ carbon |
| R306,356                                                                                                                                                                                          | 1-244-917-11 | (A) 68 k $\frac{1}{2}W$ carbon  |
| R313,363                                                                                                                                                                                          | 1-244-917-11 | (A) 68 k $\frac{1}{2}W$ carbon  |
| R333,383<br>R334,384                                                                                                                                                                              | 1-244-905-11 | (A) 22 k $\frac{1}{2}W$ carbon  |
| R339,389<br>R342,392                                                                                                                                                                              | 1-211-650-11 | (A) 3.3 k $\frac{1}{2}W$ carbon |
| R345,395<br>R346,396                                                                                                                                                                              | 1-217-157-11 | (A) 0.33 5W wire-wound          |
| R349,399                                                                                                                                                                                          | 1-211-590-11 | (A) 10 $\frac{1}{2}W$ carbon    |
| R350,450                                                                                                                                                                                          | 1-244-817-11 | (A) 4.7 $\frac{1}{2}W$ carbon   |
| R420                                                                                                                                                                                              | 1-206-662-11 | (A) 820 2W metal oxide          |
| R901,951<br>R902,952                                                                                                                                                                              | 1-244-865-11 | (A) 470 $\frac{1}{2}W$ carbon   |
| R903                                                                                                                                                                                              | 1-206-658-11 | (A) 560 2W metal oxide          |
| R904,905                                                                                                                                                                                          | 1-211-590-11 | (A) 10 $\frac{1}{2}W$ carbon    |
| RT301,351                                                                                                                                                                                         | 1-224-489-00 | (B) 2.2 k adjustable            |
| RT401                                                                                                                                                                                             | 1-224-250-XX | (C) 2.2 k adjustable            |
| RV201,251                                                                                                                                                                                         | 1-224-505-00 | (J) 250 k variable; VOLUME      |
| RV202,252                                                                                                                                                                                         | 1-224-577-00 | (D) 10 k variable; BALANCE      |
| RV203,253                                                                                                                                                                                         | 1-224-576-00 | (F) 50 k variable; TREBLE       |
| RV204,254                                                                                                                                                                                         | 1-224-575-00 | (E) 50 k variable; BASS         |

## SWITCHES

|      |              |                                                |
|------|--------------|------------------------------------------------|
| S1   | 1-516-699-00 | (E) Lever-slide, FUNCTION                      |
| S2   | 1-516-731-00 | (E) Rotary, FUNCTION                           |
| S3~5 | 1-516-603-00 | (E) Lever-slide, EXT ADAPT, TAPE COPY, MONITOR |
| S6   | 1-516-685-00 | (E) Lever-slide, MUTING                        |

| Ref. No. | Part No.                     | Description                                                                                    |
|----------|------------------------------|------------------------------------------------------------------------------------------------|
| S7~13    | 1-516-694-00                 | (H) Push, 7-key; MODE, LOUDNESS, TREBLE TURNOVER, BASS TURNOVER, TONE, HIGH FILTER, LOW FILTER |
| S401     | 1-516-628-00<br>1-516-693-00 | (E) Pushbutton, POWER (AEP, UK model)<br>(E) Pushbutton, POWER (USA, Canada model)             |

|      |              |                     |
|------|--------------|---------------------|
| S901 | 1-516-696-00 | (F) Rotary, SPEAKER |
|------|--------------|---------------------|

## JACKS

|                      |              |                                               |
|----------------------|--------------|-----------------------------------------------|
| CNJ001               | 1-509-549-00 | (B) Connector, REC/PB                         |
| CNJ1~3               | 1-526-528-00 | (D) Connector, ac; 2-p (USA, Canada model)    |
|                      | 1-509-546-00 | (D) Connector, ac; 3-p (AEP, UK model)        |
| J101,201<br>J102,202 | 1-507-470-00 | (C) Phono, 4-p; PHONO 1, 2                    |
| J103~105<br>J203~205 | 1-507-430-XX | (D) Phono, 6-p; TUNER, AUX 1, 2               |
| J106,206<br>J107,207 | 1-507-471-00 | (C) Phono, 4-p; TAPE 1, REC OUT 1             |
| J108,208<br>J109,209 | 1-507-470-00 | (C) Phono, 4-p; TAPE 2, REC OUT 2             |
| J110~113<br>J210~213 | 1-507-429-XX | (D) Phono, 8-p; EXT ADPT 2, PRE OUT, POWER IN |
| J301,302<br>J304     | 1-507-454-00 | (C) EXT ADAPT IN, ADAPT OUT, AUX 3            |
| J901                 | 1-507-454-00 | (C) HEADPHONES                                |

## MISCELLANEOUS

|          |                              |                                                                          |
|----------|------------------------------|--------------------------------------------------------------------------|
| CP401    | 1-231-057-31                 | (B) Encapsulated Component (USA, Canada model)                           |
| F401,402 | 1-532-340-00<br>1-532-237-00 | (B) Fuse, 3.15 A (USA, Canada model)<br>(B) Fuse, 3.15 A (AEP, UK model) |
| F403,404 | 1-532-325-00<br>1-532-422-00 | (B) Fuse, 6.3 A (AEP, UK model)<br>(B) Fuse, 6.3 A (USA, Canada model)   |
| PL1      | 1-518-169-XX                 | (B) Lamp, 4.5V 40 mA                                                     |
| RY901    | 1-515-257-00                 | (H) Relay                                                                |

**Note:** The circled letters (A) to (Z) are applicable for European model only.

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u>                  |
|-----------------|-----------------|-------------------------------------|
| TM1,2           | 1-535-057-21    | (E) Terminal, 4-p                   |
|                 | 1-506-370-00    | (B) Plug, jumper                    |
|                 | 1-508-690-00    | (C) Plug, voltage selector          |
|                 | 1-509-667-00    | (C) Socket, transistor              |
|                 | 1-534-992-XX    | (E) Cord, power (USA, Canada model) |

| <u>Ref. No.</u>    | <u>Part No.</u> | <u>Description</u>                                |
|--------------------|-----------------|---------------------------------------------------|
| <b>ACCESSORIES</b> |                 |                                                   |
| 1-506-113-00       | (A)             | Plug, short                                       |
| 1-534-819-11       | (E)             | Cord, power (UK model)                            |
| 1-534-754-12       | (E)             | Cord, power (E model)                             |
| 3-780-566-11       | (F)             | Manual, instruction<br>(Canada, UK and AEP model) |
| 3-780-566-21       | (E)             | Manual, instruction (USA model)                   |
| 3-793-520-82       | (A)             | Card, guaranty (UK model)                         |

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