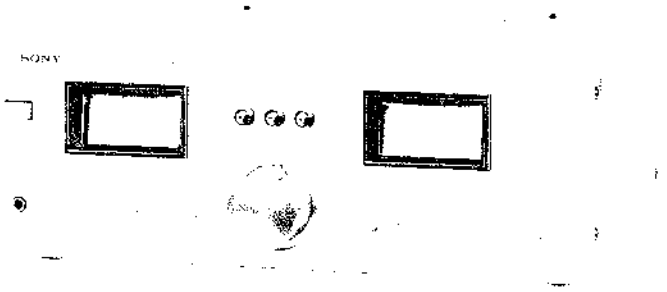
TA-F5A

AEP Model
UK Model
US Model
E Model



(AEP, UK, E model)

INTEGRATED STEREO AMPLIFIER

SPECIFICATIONS

GENERAL

Power Requirements:
220 V ac (or 110 V ac by internal rewiring), 50/60 Hz (AEP model)
240 V ac (or 120 V ac by internal rewiring), 50/60 Hz (UK model)
120 V ac, 60 Hz (US model)
110 V, 220 V ac, 50/60 Hz (E1 model)
120 V, 240 V ac, 50/60 Hz (E2 model)

Power Consumption:
270 W (AEP, E model)
360 W (UK model)
125 W (US model)

AC Outlets: (US model)
2 switched 100 W (at max.)
1 unswitched 50 W (at max.)

Dimensions:
Approx. 410 (w) x 145 (h) x 370 (d) mm
16 3/16 (w) x 5 3/4 (h) x 14 5/8 (d) inches
(AEP, UK, E model)
Approx. 435 (w) x 145 (h) x 370 (d) mm
17 1/8 (w) x 5 3/4 (h) x 14 5/8 (d) inches
(US model)
including projecting parts and controls

Weight:
Approx. 7.2 kg (15 lb 14 oz), net
Approx. 9 kg (19 lb 14 oz), in shipping carton (AEP, UK, E model)
Approx. 8.2 kg (18 lb 1 oz), net
Approx. 10 kg (22 lb 1 oz), in shipping carton (US model)

AMPLIFIER SECTION

Continuous RMS Power Output: (Less than 0.04 % total harmonic distortion)
Both channels driven simultaneously
At 20 – 20,000 Hz
70 + 70 W (8Ω)
At 1 kHz
70 + 70 W (8Ω)
According to DIN 45500
75 + 75 W (8Ω)
} (AEP, UK, E model)

Power Bandwidth: (AEP, UK, E model)
5 – 35,000 Hz, IHF

Harmonic Distortion:
Less than 0.04 % at rated output
Less than 0.02 % at 10 W output

IM Distortion: (60 Hz : 7 kHz = 4 : 1)
Less than 0.01 % at rated output
Less than 0.008 % at 10 W output

– Continued on next page –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND ⚠ MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS 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.

SONY®
SERVICE MANUAL

Frequency Response: PHONO RIAA equalization curve ± 0.2 dB

TUNER, AUX, TAPE 1, TAPE 2, REC/PB (AEP, UK, E model): 3—70,000 Hz $^{+0}_{-1}$ dB

Tone Controls: BASS ± 10 dB at 60 Hz (TURNOVER FREQ 300 Hz)
TREBLE ± 10 dB at 25 kHz (TURNOVER FREQ 5 kHz)

Filters: LOW 6 dB/oct. below 15 Hz
HIGH 6 dB/oct. above 9 kHz

Damping Factor: 40 (8Ω, 1 kHz)

Residual Noise: Less than 50 μV (8 Ω, Network A)

Inputs:

	Sensitivity	Impedance	Maximum Input Level (0.1% distortion)	S/N (weighting network, input level)
PHONO	2.5 mV	50 kΩ	250 mV	85 dB (A, 2.5 mV)
TUNER AUX TAPE 1 TAPE 2 REC/PB(AEP, UK, E model)	150 mV	50 kΩ	———	100 dB (A, 150 mV)

Outputs:

	Output Level	Impedance
REC OUT 1 REC OUT 2 (US model)	150 mV	4.7 kΩ
REC/PB (AEP, UK, E model)	22 mV	82 kΩ
HEADPHONES	Accepts low and high impedance headphones	
SPEAKER	Accepts speakers of 8—16 Ω (AEP, UK, E model) Accepts speakers of 4—16 Ω (US model)	

- **MODEL IDENTIFICATION**

– Specification Label –

AEP model

SONY
INTEGRATED STEREO AMPLIFIER
MODEL NO. TA-F5A
AC 220 V ~ 50/60 Hz 270 W
SERIAL NO.
MADE IN JAPAN

UK model

SONY
INTEGRATED STEREO AMPLIFIER
MODEL NO. TA-F5A
AC 240 V ~ 50/60 Hz 360 W
SERIAL NO.
MADE IN JAPAN

US model

SONY
INTEGRATED STEREO AMPLIFIER
MODEL NO. TA-F5A
AC 120 V 60 Hz 125 W
SERIAL NO.
MADE IN JAPAN

E1 model

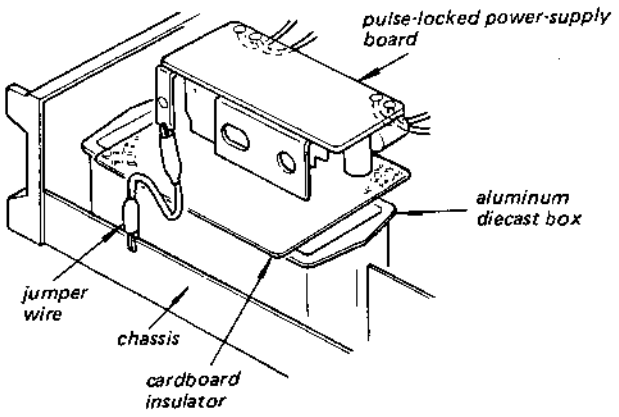
SONY
INTEGRATED STEREO AMPLIFIER
MODEL NO. TA-F5A
AC 110, 220 V ~ 50/60 Hz 270 W
SERIAL NO.
MADE IN JAPAN

E2 model

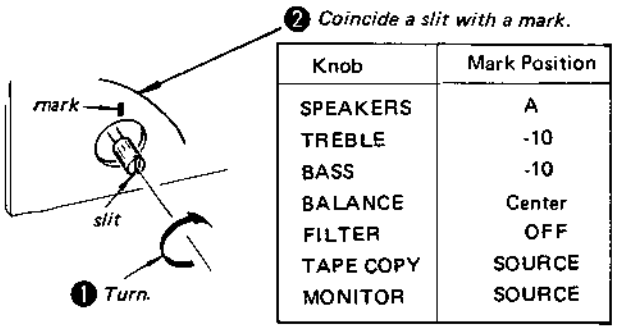
SONY
INTEGRATED STEREO AMPLIFIER
MODEL NO. TA-F5A
AC 120, 240 V ~ 50/60 Hz 270 W
SERIAL NO.
MADE IN JAPAN

SERVICING NOTE

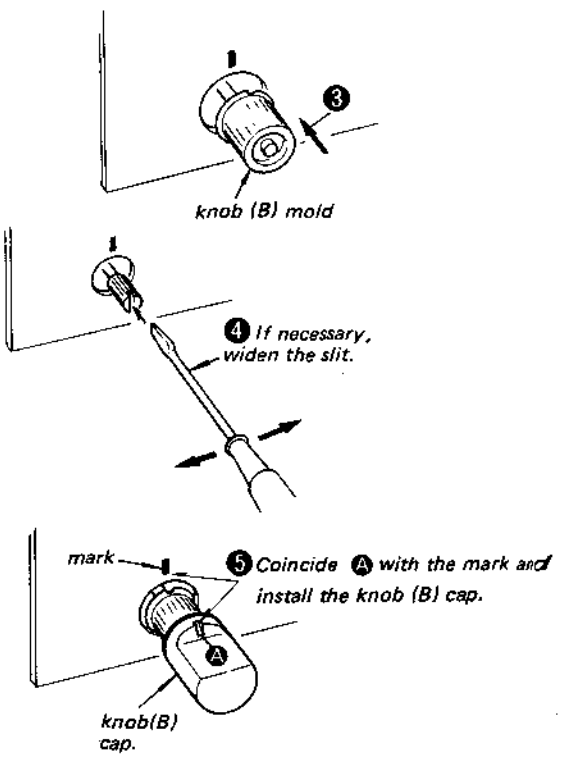
1. This set has a pulse-locked power-supply circuit which is quite different from a conventional power-supply circuit. The pulse-locked power supply directly rectifies and smooths the ac input power to produce the higher dc voltages required in the power supply circuit. When servicing this set, note the following.
   a) To prevent unwanted radiation due to pulse signals in the pulse-locked power-supply circuit, the pulse-locked power-supply board is shielded by the aluminum diecast box.
   b) The negative circuit of the secondary rectifier in the pulse-locked power-supply circuit is grounded by screws in the aluminum diecast box. When checking the pulse-locked power-supply board out of the box, use a jumper wire and a cardboard insulator as shown on the right.



2. When replacing a knob (SPEAKERS/TREBLE/BASS / BALANCE / FILTER / TAPE COPY/MONITOR), prepare a knob(B) cap (4-854-266-00) and a knob (B) mold (4-854-267-00). Installation of the knob is as follows.



Knob	Mark Position
SPEAKERS	A
TREBLE	-10
BASS	-10
BALANCE	Center
FILTER	OFF
TAPE COPY	SOURCE
MONITOR	SOURCE



Part No.	*Description*
X-4854-213-1	Knob Ass'y
including;	
4-854-266-00	Cap, knob (B)
4-854-267-00	Mold, knob (B)

3. **CAUTION**

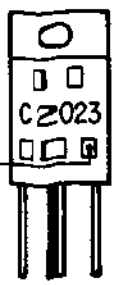
When replacing Q503 – Q506 in the pulse-locked power-supply circuit, use those which have the same hFE values.

- AEP, UK, E model

Q503–506	8-729-302-31	2SC2023-R - - - R
	8-729-302-32	2SC2023-O - - - O

- US model

Q503–506	8-729-308-62	2SC1986C-O - -O



Note: R or O indicates the hFE value.

SECTION 1
OUTLINE

1-1 CIRCUIT DESCRIPTION

In the power supply section of conventional audio equipment, ac input power is usually changed in voltage by a transformer and rectified to obtain a dc voltage. The disadvantages of this are as follows;

1. Voltage regulation is poor.
2. Hum in the output results if large filter are not used.
3. High-power output can not be obtained without a very large transformer.

To eliminate these problems, the pulse-locked power supply is used in this set. In the power supply, after a dc voltage is obtained by rectifying the ac input power, a 20 kHz pulse signal is generated in the inverter. The pulse signal is converted to the desired-voltage signal by a high-frequency transformer which has a small ferrite-core, and then rectified to produce dc voltages.

Fig. 1 shows the block diagram of the pulse-locked power supply. This power supply has the following advantages;

1. The source impedance can be made smaller so better voltage regulation (less than 7%) can be obtained.
2. Square waves as high in frequency as 20 kHz are used, so hum does not occur.
3. Efficiency is very high, since the dc resistance of the high-frequency transformer is small and a high-efficiency inverter is used.
4. This power supply consists of small components that result in a very small size and a light weight. This power supply is half the size and less than one quarter the weight of a conventional power supply.

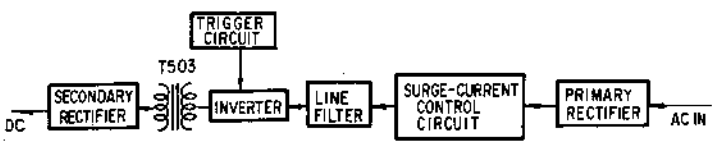


Fig. 1

1. SURGE-CURRENT CONTROL CIRCUIT (See Fig. 2)

Since the pulse-locked power supply directly rectifies ac power input, if S6 (POWER) is set to ON without a surge-current control circuit, a large surge-current charging C313 and C314 will flow and damage S6 (POWER).

To prevent this, the parallel combination of R601 to R603 are added in series with S6 (POWER) to control the rush-current. The resistors are shorted by RY601 after dc voltage appears in the secondary rectifier circuit.

2. LINE FILTER (See Fig. 2)

To eliminate the high-frequency ripple component produced in the inverter, a line filter is installed. The line filter consists of C501 to C503. L501 is a bifilar RF choke having a ferrite toroidal core.

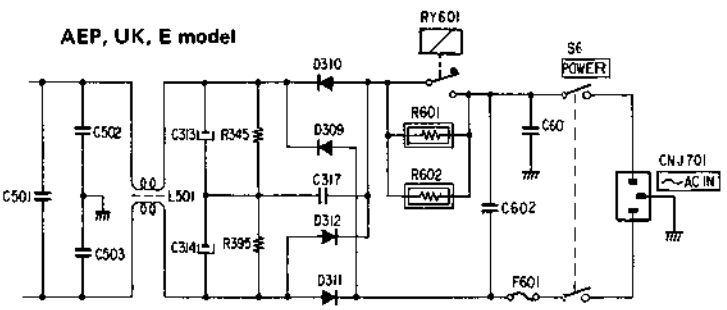


Fig. 2

3. INVERTER TRIGGER CIRCUIT (See Fig. 3.)

Setting S6 (POWER) to ON is not sufficient to start the inverter oscillating; a trigger signal is also required for inverter oscillation. The operation is as follows;

1) When S6 (POWER) is set to ON, current ① charges C506.
2) When the voltage between the base and emitter of Q502 becomes more than 0.6 V, Q502 and Q501 turn on.
3) C506 discharges and current ② flows, causing the inverter to start to oscillate.
4) After the start of the oscillation, the voltage appearing at the winding N2 of T503 is rectified by D501 and D502 and charges C505. As a result, Q502 and Q501 turn off so that the load on the N1 winding of T501 is reduced and the inverter operates normally, maintaining oscillation.

4. INVERTER CIRCUIT

The inverter consists of four transistors and generates a square-wave signal of about 20 kHz.

Fig. 4. shows the principle of the inverter. By turning S1 and S4, or S2 and S3 on and off, the square-wave signal shown in Fig. 5 is generated at the secondary side of T503. In short, dc current is changed to a square-wave signal by switching action.

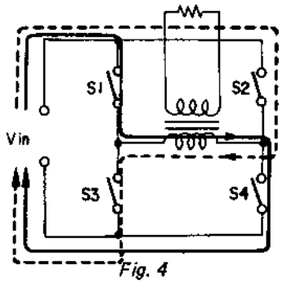


Fig. 4

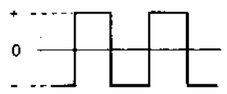


Fig. 5

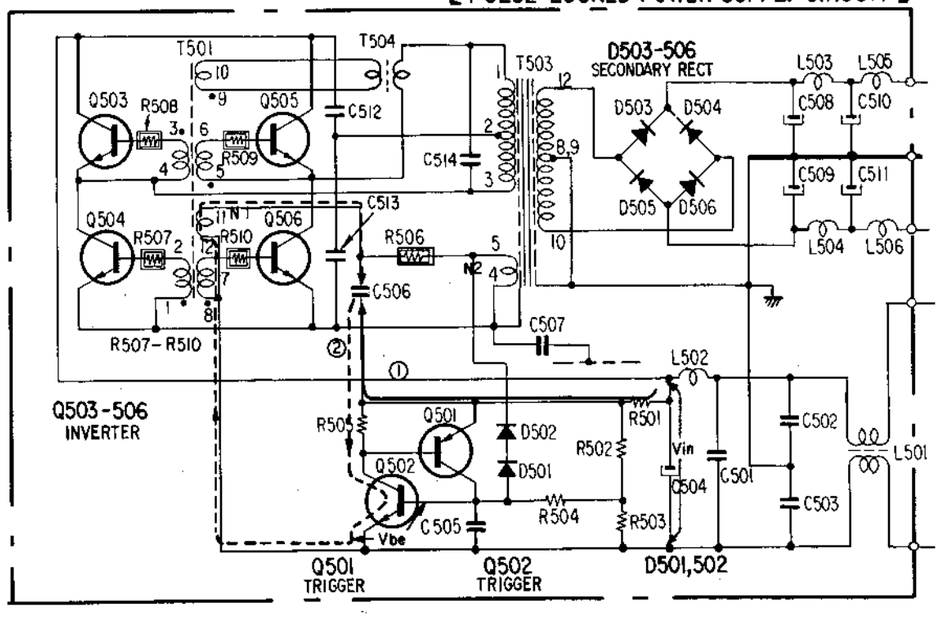
The details are as follows (See Fig. 6.);

1) A trigger signal is generated at winding N1 by the trigger circuit.
2) We assume that Q504 and Q505 are turned on by current ① which is induced by the trigger signal.
3) At this time, an induced current flows through winding N9 and generates voltages at windings N4 and N5. These voltages keep Q504 and Q505 on. This is a current feedback.
4) At the same time, an induced current flows through winding N2 of T503 and generates voltages at windings N4 and N5. These voltages also keep Q504 and Q505 on. This is a voltage feedback.
5) The current and voltage feedbacks keep Q504 and Q505 on and send power to T503. After a while, T501 becomes saturated and stops generating the voltages that keep Q504 and Q505 on.
6) Q504 and Q505 then turn off, and a voltage which is opposite in polarity to the former voltage appears at winding N2.
7) This voltage induces current ② , and turns Q503 and Q506 on.
8) After a while, Q503 and Q506 turn off and Q504 and Q505 turn on, again.
9) In this way, a square-wave signal is obtained at the secondary side of T503.

5. SECONDARY RECTIFIER

The secondary rectifier converts the square-wave into dc. This consists of D503 to D506, L503 to L506 and C508 to C511. S34-type diodes (high-speed switching diodes) are used to reduce power loss.

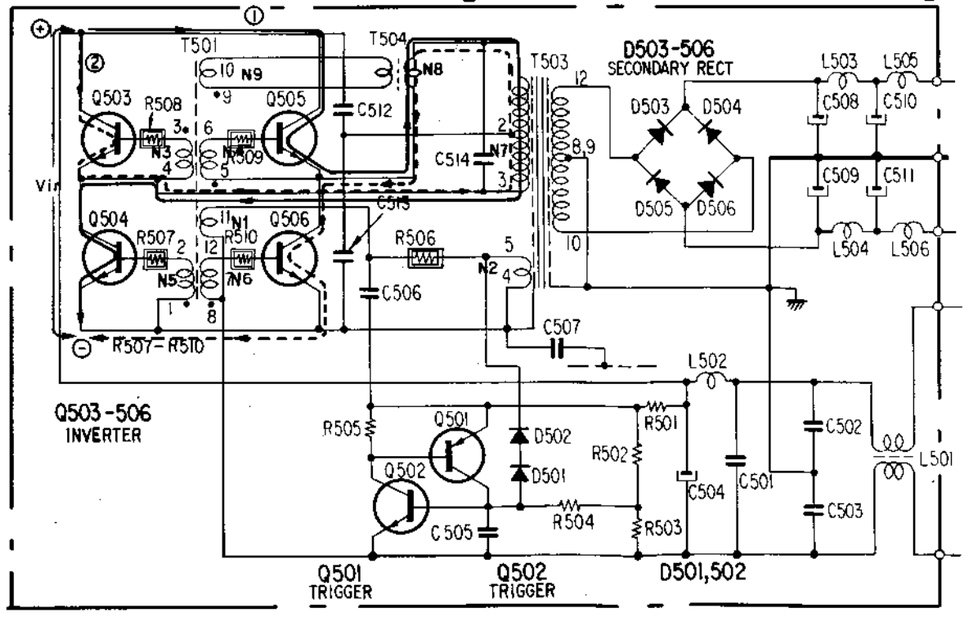
[PULSE-LOCKED POWER-SUPPLY CIRCUIT]



N3 and N6 are wound in the same direction as N1.
N4, N5 and N9 are wound in the opposite direction of N1.

Fig. 3

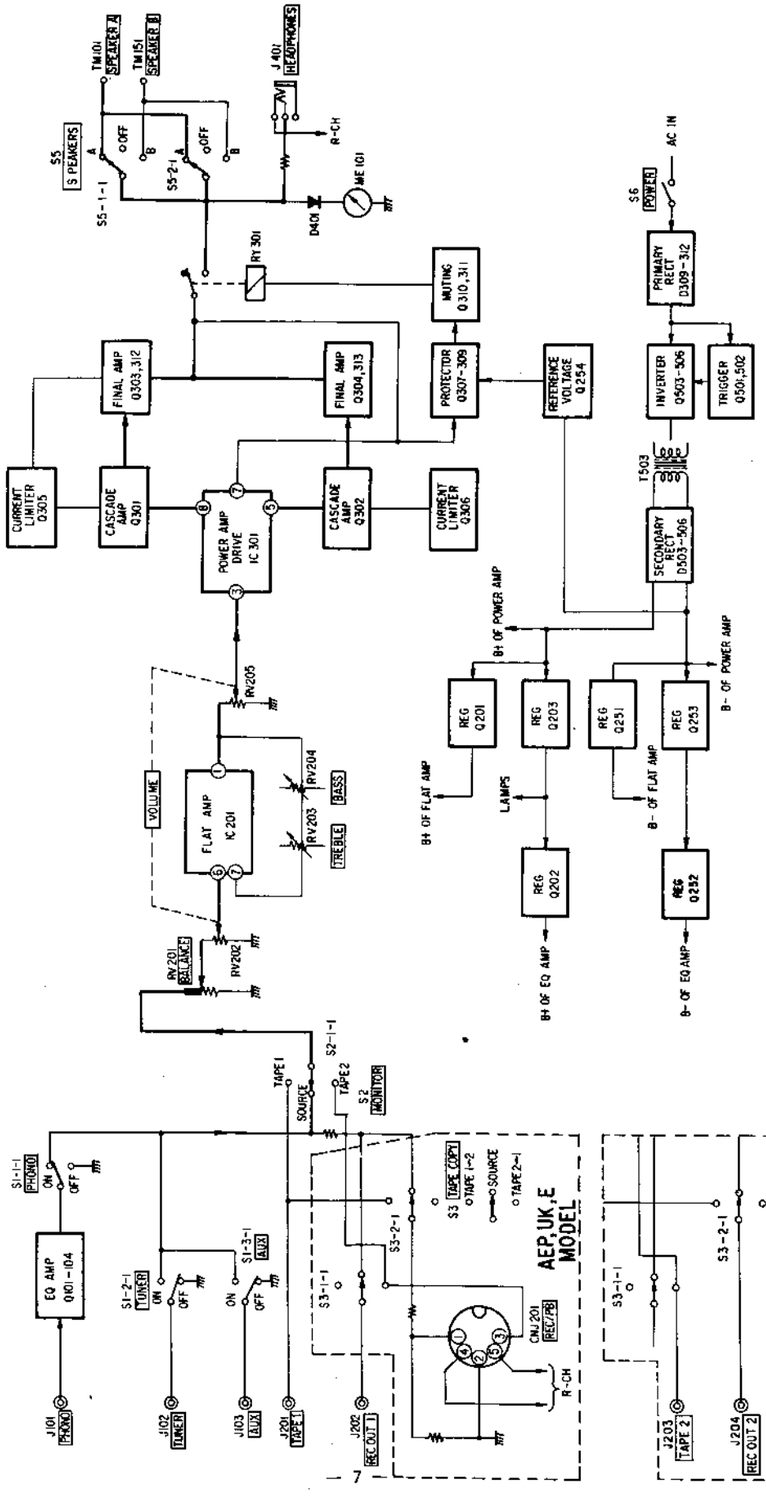
[PULSE-LOCKED POWER-SUPPLY CIRCUIT]



N3 and N6 are wound in the same direction as N1.
N4, N5 and N9 are wound in the opposite direction of N1.

Fig. 6

1-2. BLOCK DIAGRAM



SECTION 2

DISASSEMBLY

- Follow the disassembly procedure in the numerical order given.

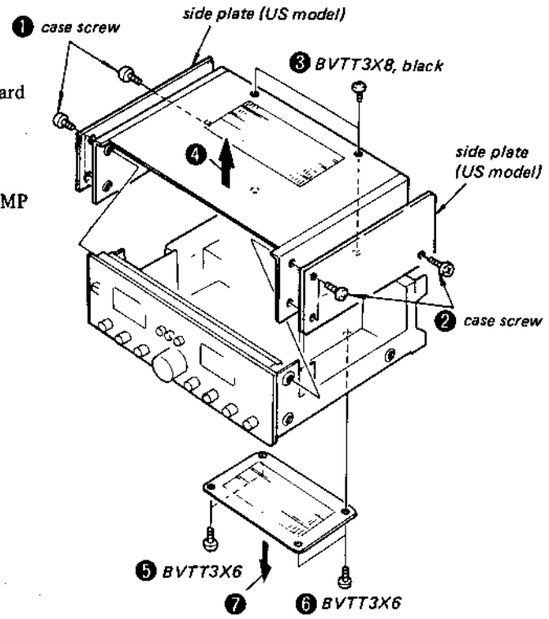
[CASE AND BOTTOM PLATE REMOVAL]

Case: ❶ to ❹

The component side of the EQ AMP board can be checked.

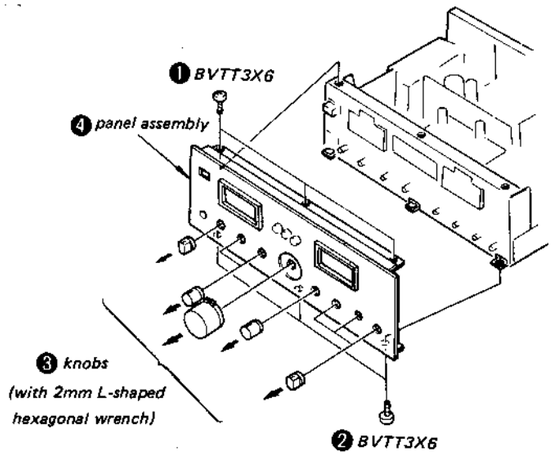
Bottom Plate: ❺ to ❼

The conductor side of the POWER AMP board can be checked.

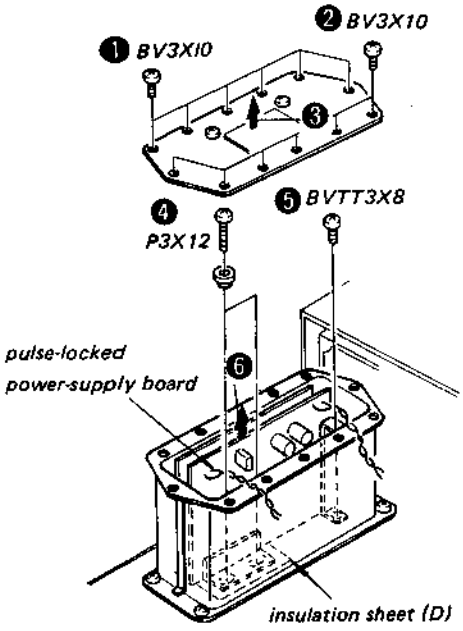


[PANEL ASSEMBLY REMOVAL]

After removing the panel assembly, the S6 (POWER), EQ AMP board and FLAT AMP board can be removed.

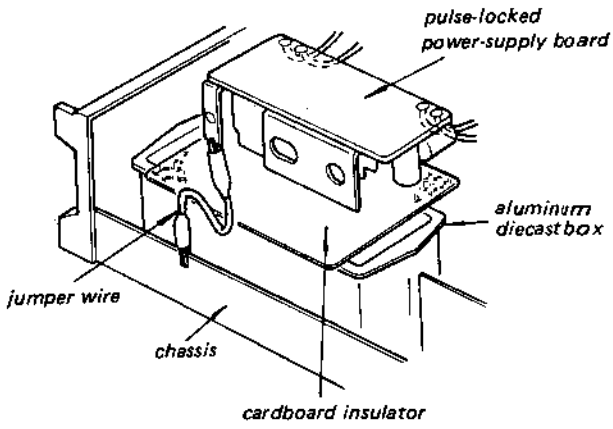


[PULSE-LOCKED POWER-SUPPLY BOARD REMOVAL]

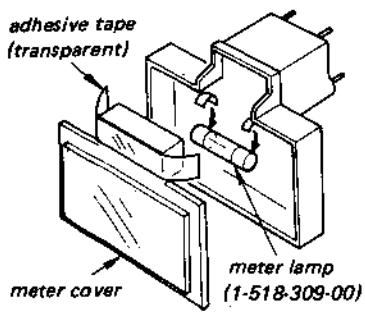


CAUTION

The negative circuit of the secondary rectifier in the pulse-locked power-supply circuit is grounded by screws in the aluminum diecast box. When checking the pulse-locked power-supply board out of the box, use a jumper wire and a cardboard insulator as shown below.



[METER LAMP REPLACEMENT]

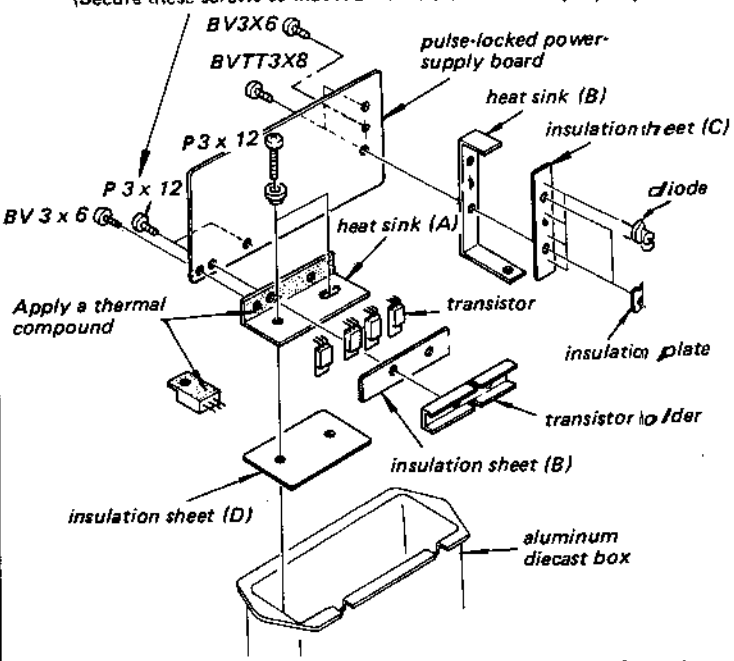


Note:

To obtain the same brightness of meter lamps, replace both lamps (L-CH and R-CH) together with new ones.

Exploded view (Refer this when installing the pulse-locked power-supply board.)

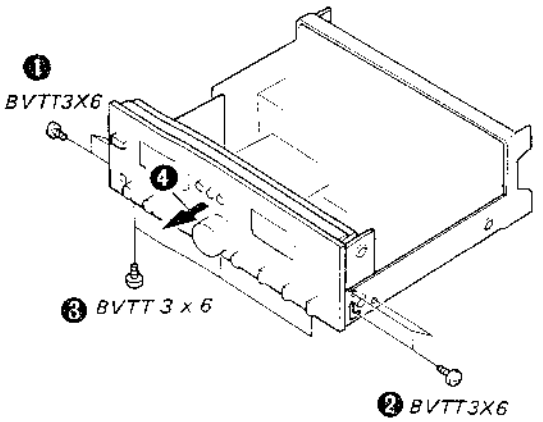
(Secure these screws so that four transistors are held properly)

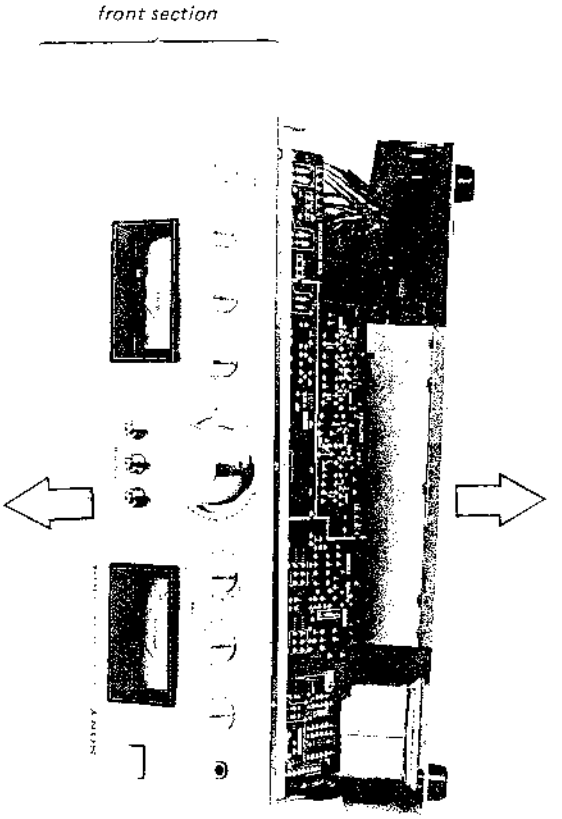


Note:
- If a insulation sheet is injured or torn, change it.
- Confirm that there are no scraps of solder or lead wire on any insulation sheet

[FLAT AMP BOARD CHECKING AND SERVICING]

The FLAT AMP board and EQ AMP board on the front section can be separated from the chassis.





SECTION 3

ELECTRICAL ADJUSTMENTS

Note:

1. DC BIAS and DC BALANCE adjustments should be performed several minutes after the set becomes stable (S6: POWER is set to ON.).
2. Perform first DC BIAS adjustment.
3. Repeat DC BIAS and DC BALANCE adjustments two or three times.
4. After servicing or changing the power transistors, DC BIAS and DC BALANCE adjustments should be performed.

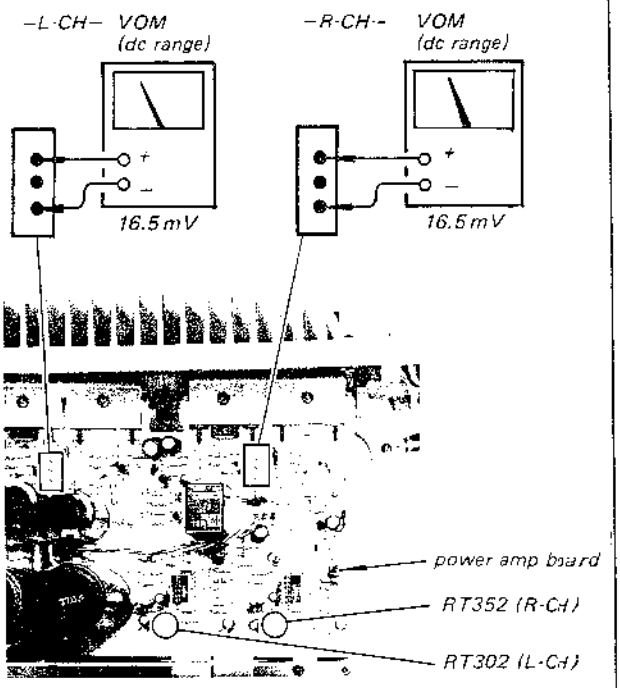
DC Bias Adjustment

Procedure:

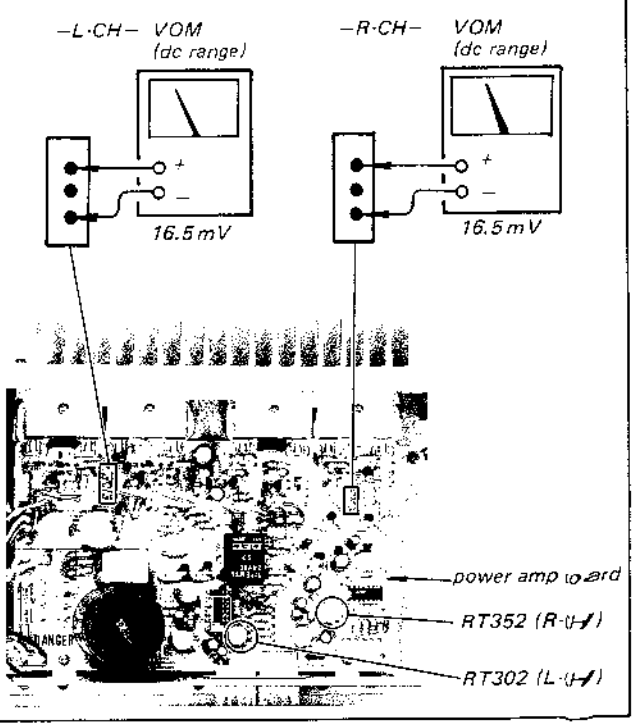
Adjust RT302 (L-CH) and RT352 (R-CH) for 16.5 mV readings.

Adjustment Location:

AEP, UK, E model



US model



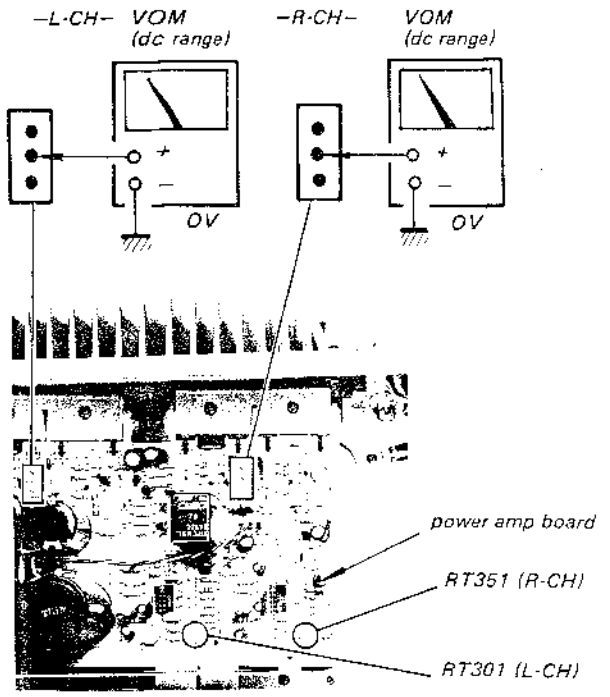
DC Balance Adjustment

Procedure:

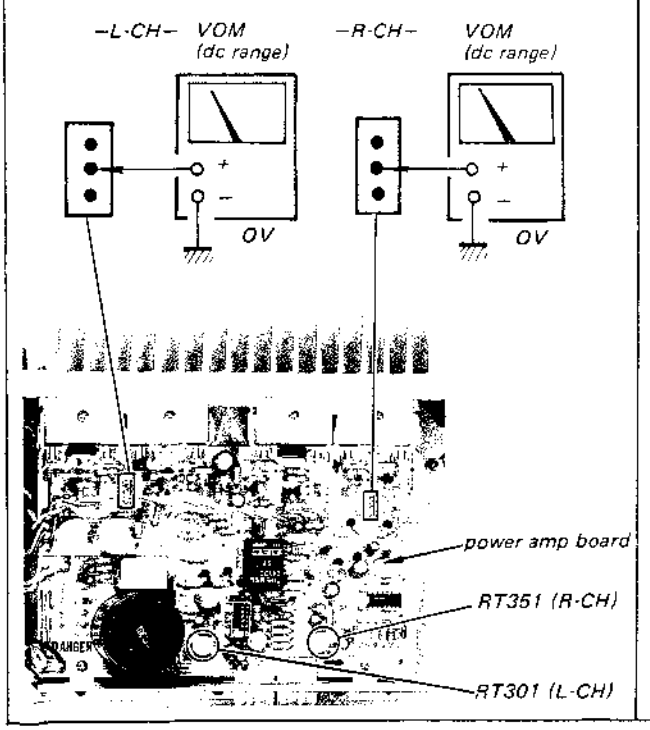
Adjust RT301 (L-CH) and RT351 (R-CH) for 0V readings.

Adjustment Location:

AEP, UK, E model



US model

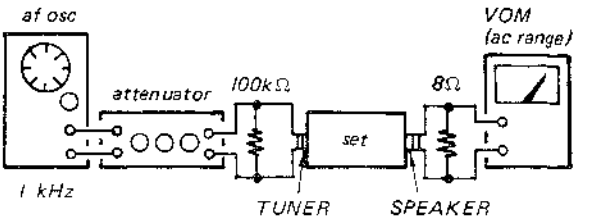


Meter Level Adjustment

Setting:

FUNCTION switch: TUNER

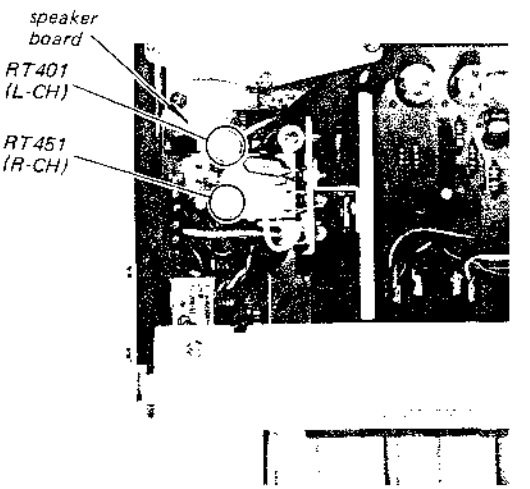
Procedure:



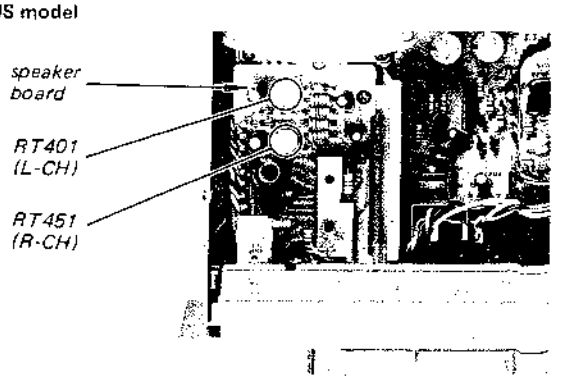
1. Turn the VOLUME control fully clockwise.
2. Adjust the TUNER input level for a 2.83 V reading.
3. Adjust RT401 (L-CH) and RT451 (R-CH) so that the power meters indicate 1 W.

Adjustment Location:

AEP, UK, E model



US model



TA-F5A
AEP, UK, E Model

SECTION 4

DIAGRAMS

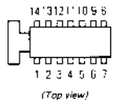
4-1. MOUNTING DIAGRAM (AEP, UK, E Model)

— Power Amplifier Section —

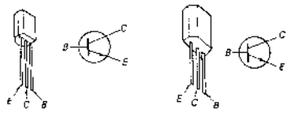
- **Replacement Semiconductors**

For replacement, use semiconductors except in ( ).

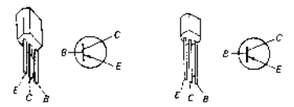
IC301, 351: CX171



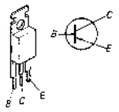
Q301, 351
Q306, 356
Q307, 357
Q308, 310, 311
Q502
: 2SC1364 (2SC634A)



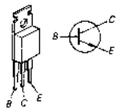
Q302, 352
Q305, 355
Q309, 501
: 2SA678 (2SA733)



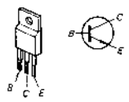
Q303, 353
Q312, 362: 2SA771



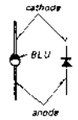
Q304, 354
Q313, 363: 2SC 1986C (2SC 1986)



Q503–506: 2SC2023 R O (2SC2023)



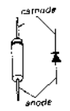
D301, 351
D302, 352: MV12N



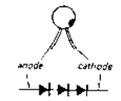
D303, 353
D304, 354: 1S2076A

D305, 355
D401, 451
D402, 452
:1T22AM (1T22)

D306, 356, 308
D313, 363
D501, 502
: 1S1555

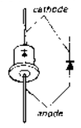


D307: MV203V



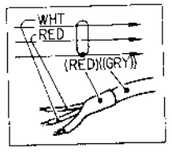
D309–312: U05G (U05E)

D503–506: S34



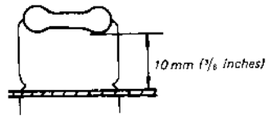
Note:

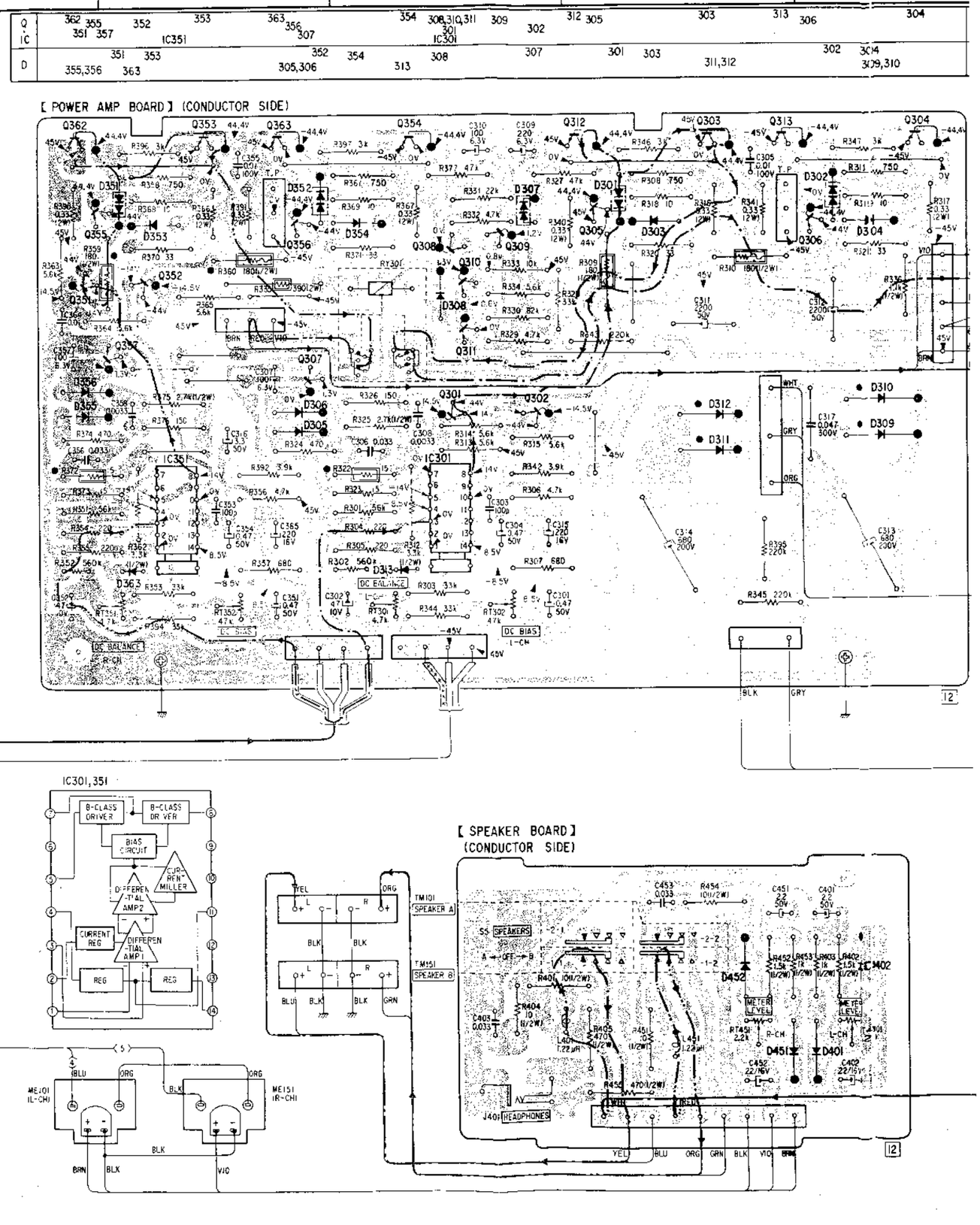
- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- : B + pattern
- : B — pattern
- Signal Path
  - — - → : L-CH
  - - - - → : R-CH
  - ——→ : Common

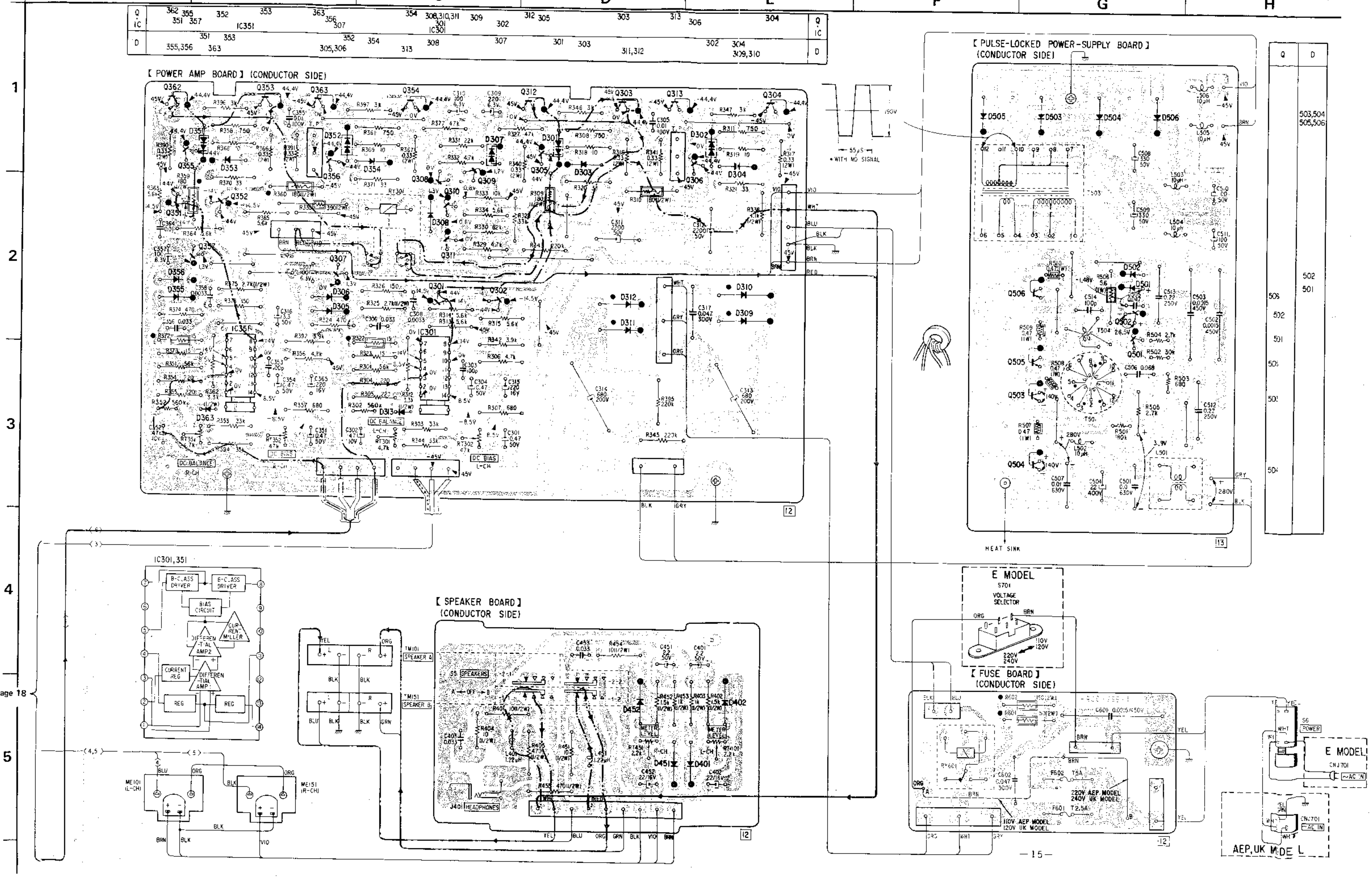
All resistors and diodes indicated by • are mounted as shown below.





	A	B	C	D	E
Q IC	362, 355, 351, 357	352, IC351, 353, 363, 356, 307	354, 308,310,311, 301, IC301, 309, 302	312, 305, 303, 313	306, 304
D	355,356	351, 363, 353, 305,306, 352	354, 313, 308, 307	301, 303, 311,312	302, 304, 309,310

	Q	D
1		503,504 505,506
2	506 502 501	502 501
3	505 503 504	

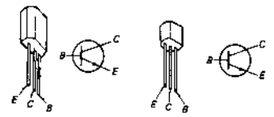


Page 18

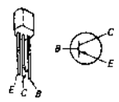
4-2. MOUNTING DIAGRAM (AEP, UK, E Model)
– Preamplifier Section –

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

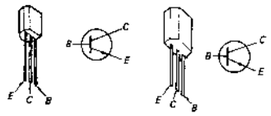
Q101, 151: 2SC1637-0 (2SC2129)



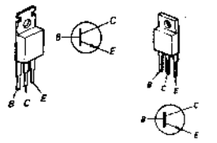
Q102, 152: 2SA872D (2SA872)
Q103, 153: 2SA896 (2SB646)



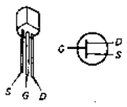
Q104, 154: 2SC1364 (2SC1634)
Q201, 202: 2SC1364 (2SC634A)



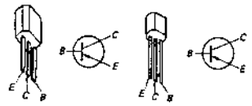
Q203: 2SD476A (2SC1826)



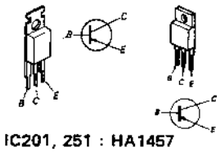
Q204, 254: 2SK30A



Q251, 252: 2SA678 (2SA733)

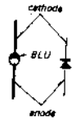


Q253: 2SB566A (2SA768)

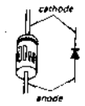


IC201, 251 : HA1457

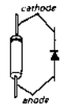
D101, 151: MV12N



D102 : EQB01-06 (EQA01-06R)
D201 : EQB01-30 (EQA01-30R)
D202,251: EQB01-25 (EQA01-25R)
D252 : EQB01-28 (EQA01-28R)

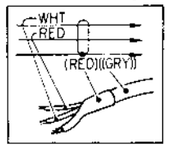


D253: 10E2



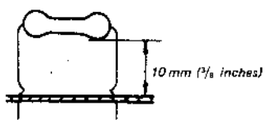
Note:

- Color code of sleeving over the end of the jacket.

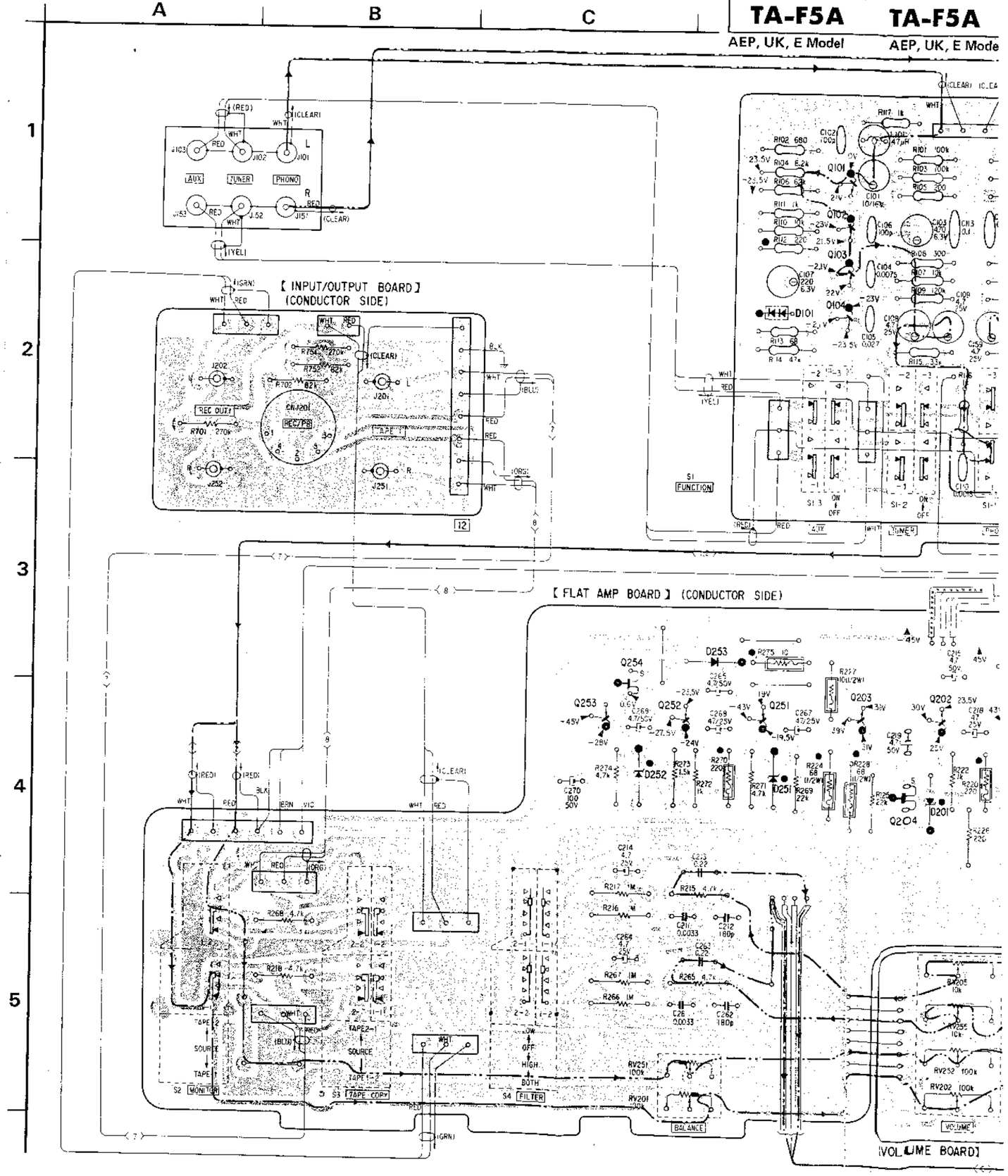


- ○— : parts extracted from the component side.
- ⋯ : B + pattern
- ⋯ : B – pattern
- Signal Path
  - —▸ : L-CH
  - ⋯▸ : R-CH
  - —▸ : Common
- ▲ : nonflammable resistor.

All resistors and diodes indicated by ● are mounted as shown below.



TA-F5A
AEP, UK, E Model



【EQ AMP BOARD】(COMPONENT SIDE)

【INPUT/OUTPUT BOARD】(CONDUCTOR SIDE)

【FLAT AMP BOARD】(CONDUCTOR SIDE)

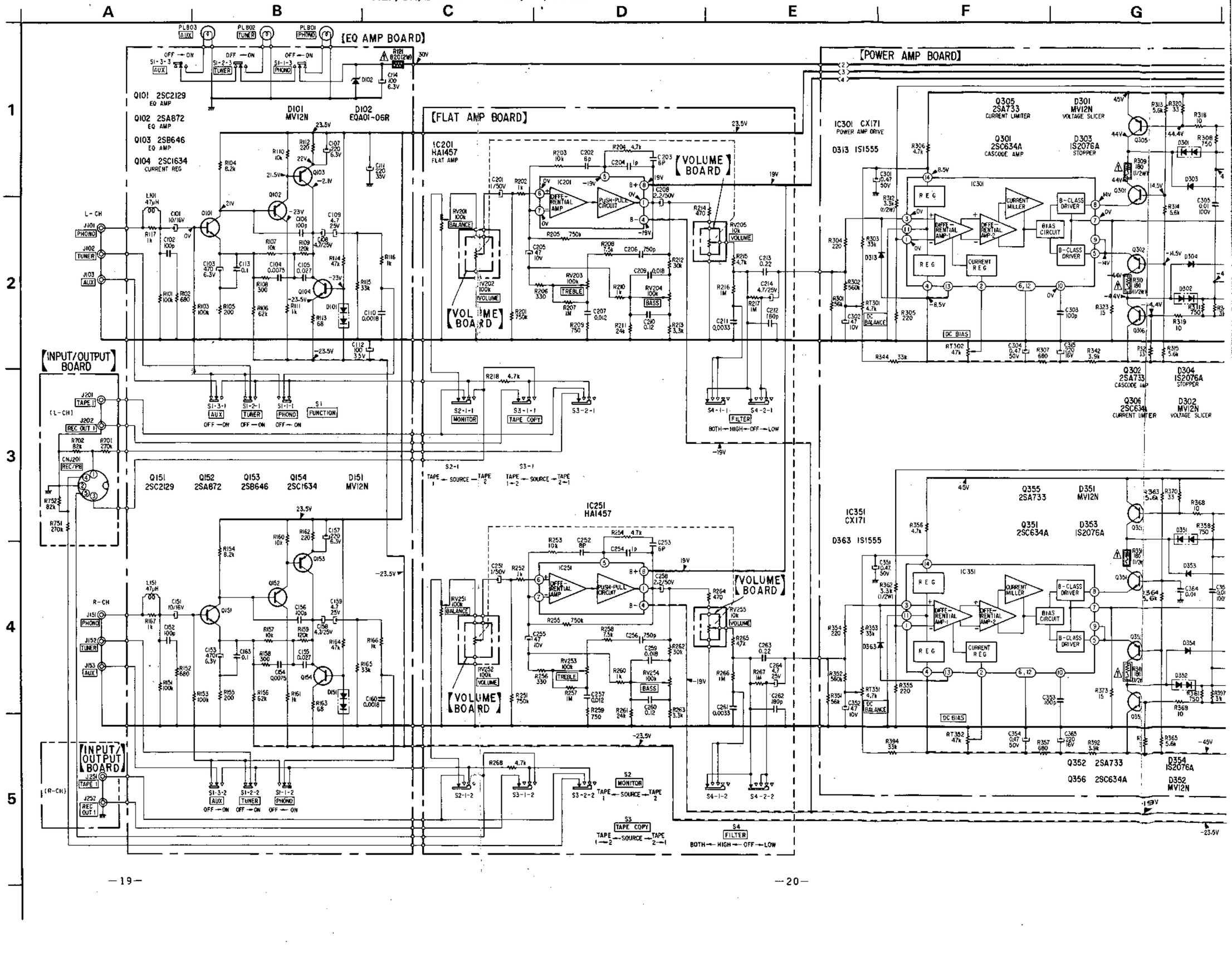
【VOLUME BOARD】

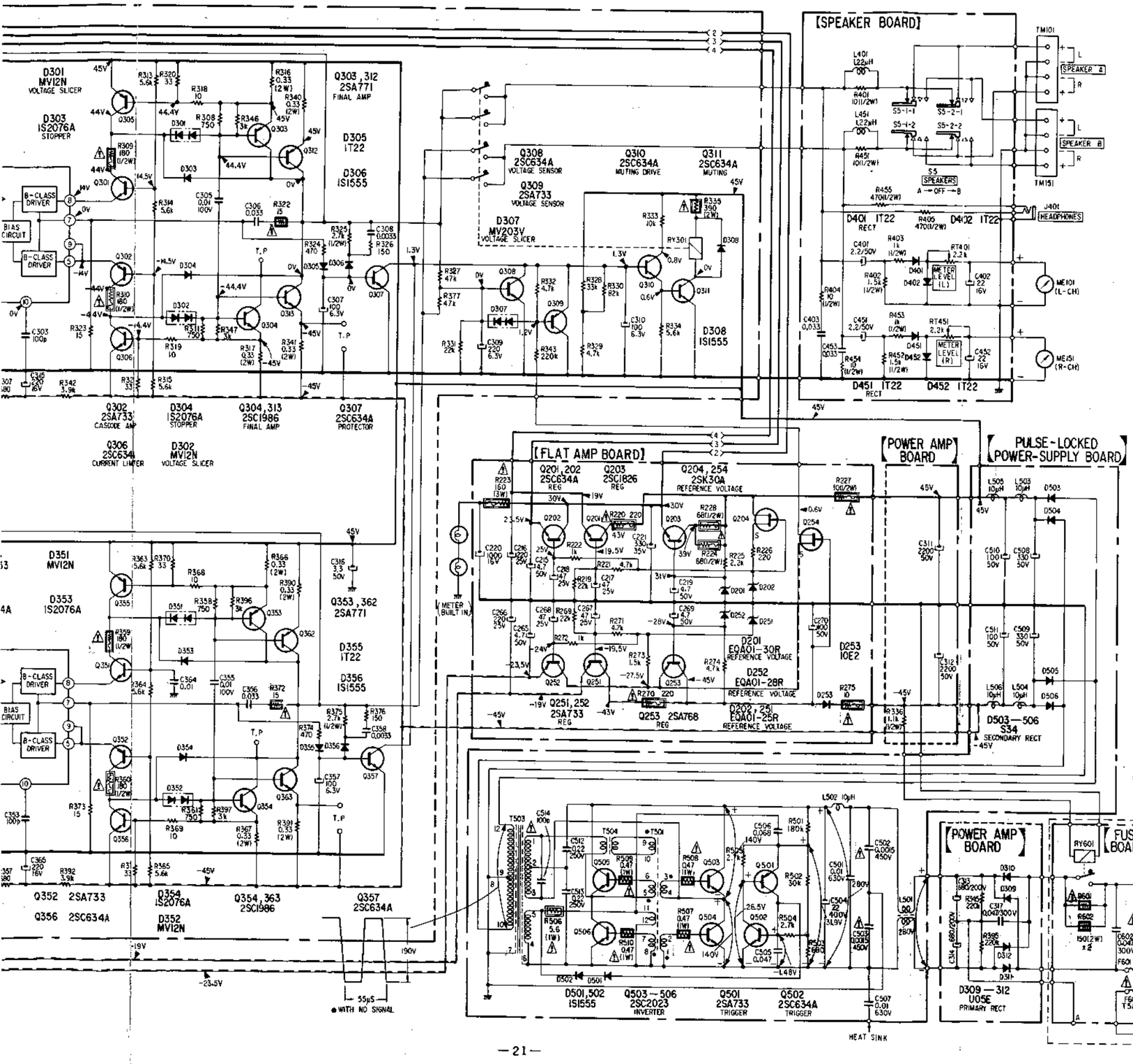
Q	D
101,151	
102,152	
103,153	
104,154	101,151
	102

Q,IC	D
	253
254	
253,252	
251,203	
202,20-	
IC251	252
	251
204	202
	201
IC201	

Page 13

4-3. SCHEMATIC DIAGRAM (AEP, UK, E Model)





Note:

- All capacitors are in μF unless otherwise noted. pF = μμF
  50 WV or less are not indicated except for electrolytics.
  lytics.
- All resistor are in ohms ¼W unless otherwise noted.
  kΩ = 1000 Ω, MΩ = 1000 kΩ.
- : nonflammable resistor
- : B + bus.
- : panel designation
- : adjustment for repair.
- : B − bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Reading are taken under no signal conditions with a VOM (20 kΩ/V) when 220 V ac is applied to the set.
- Voltage variations may be noted due to normal production tolerances
- Switch

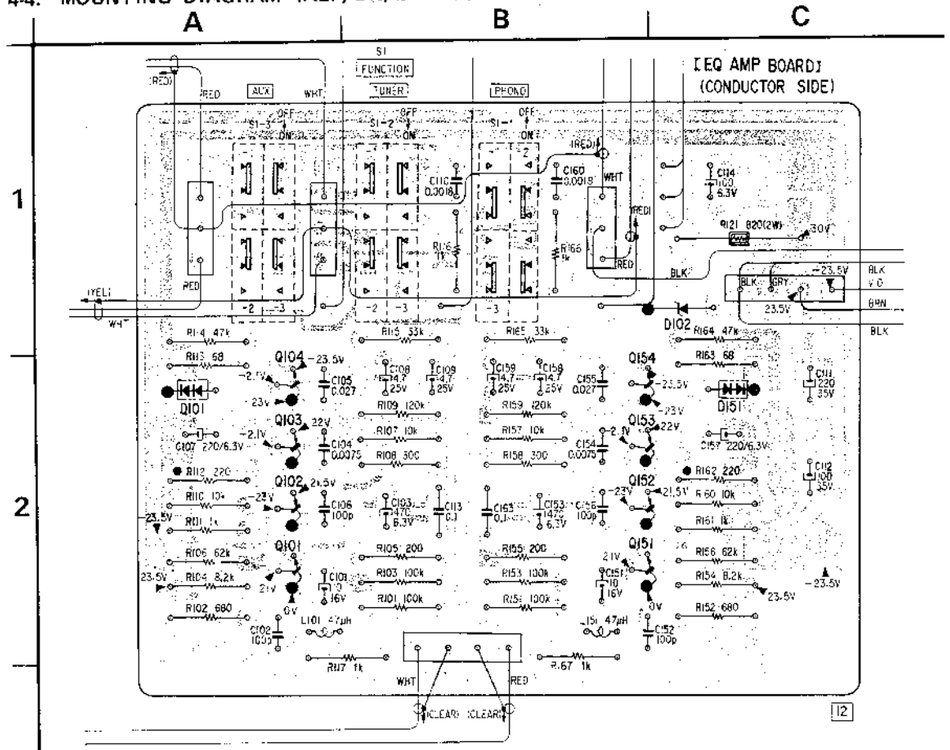
Ref. No.	Switch	Position
S1	FUNCTION	PHONO
S2	MONITOR	SOURCE
S3	TAPE COPY	SOURCE
S4	FILTER	OFF
S5	SPEAKERS	OFF
S6	POWER	OFF
S701	VOLTAGE SELECTOR	

S701	E1	E2
ON	110V	120V
OFF	220V	240V

	AEP	UK
A	110V	120V
B	220V	240V

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

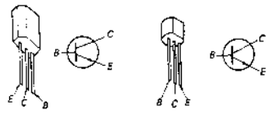
4-4. MOUNTING DIAGRAM (AEP, UK, E Model)



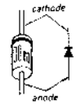
Q	104,103 102,101		154,153 152,151		Q
D	101	102		151	D

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

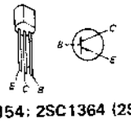
Q101, 151: 2SC1637-0 (2SC2129)



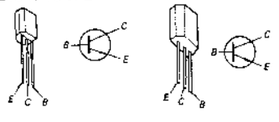
D102: EQB01-06 (EQA01-06R)



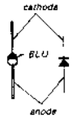
Q102, 152: 2SA872D (2SA872)
Q103, 153: 2SA896 (2SB646)



Q104, 154: 2SC1364 (2SC1634)

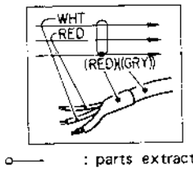


D101, 151: MV12N



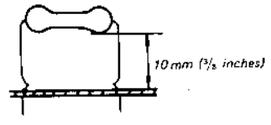
Note:

- Color code of sleeving over the end of the jacket.

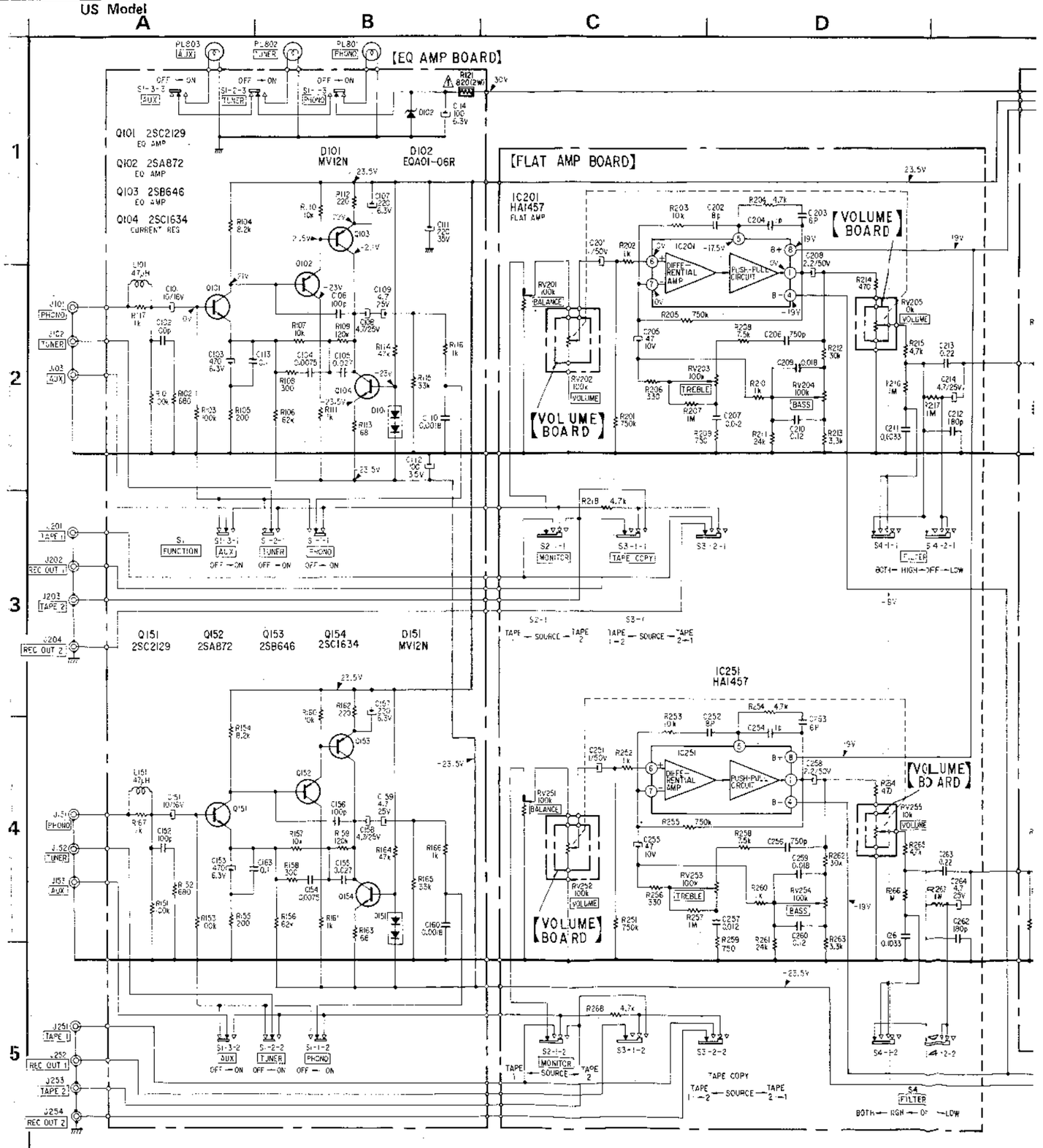


- ○— : parts extracted from the component side.
- ▨ : B + pattern
- ▨ : B − pattern

All resistors and diodes indicated by ● are mounted as shown below.



4-5. SCHEMATIC DIAGRAM (US Model)



E F G H I J K L

[POWER AMP BOARD]

IC301 CX171
POWER AMP DRIVE
D313 1S1555

Q305 2SA733 CURRENT LIMITER
Q301 2SC634A CASCODE AMP
D301 MV12N VOLTAGE SLICER
D303 1S2076A STOPPER
Q303,312 2SA771 FINAL AMP
D305 1T22
D306 1S1555

Q302 2SA733 CASCODE AMP
Q306 2SA733 CURRENT LIMITER
D304 1S2076A STOPPER
D302 MV12N VOLTAGE SLICER
Q304,313 2SC1986 FINAL AMP
Q307 2SC634A PROTECTOR

IC351 CX171
Q355 2SA733
Q351 2SC634A
D351 MV12N
D353 1S2076A
Q353,362 2SA771
D355 1T22
D356 1S1555
D363 1S1555

Q352 2SA733
Q356 2SC634A
D354 1S2076A
D352 MV12N
Q354,363 2SC1986
Q357 2SC634A

Q308 2SC634A VOLTAGE SENSOR
Q309 2SA733 VOLTAGE SENSOR
Q310 2SC634A MUTING DRIVE
Q311 2SC634A MUTING
D307 MV203V VOLTAGE SLICER
D308 1S1555

[VOLUME BOARD]
RV205 10k VOLUME
RV255 10k VOLUME
S4-1 S4-2-1 S4-2-2 FILTER BOTH—HIGH—OFF—LOW

[SPEAKER BOARD]
TM101 SPEAKER A
TM151 SPEAKER B
S5 SPEAKERS A—OFF—B
S5-1-1 S5-1-2 S5-2-1 S5-2-2
J401 HEADPHONES
D401 1T22 RECT
D402 1T22
D451 1T22 RECT
D452 1T22
ME101 (L-CH)
ME151 (R-CH)

[FLAT AMP BOARD]
Q201,202 2SC634A REG
Q203 2SC1826 REG
Q204,254 2SK30A REFERENCE VOLTAGE
Q251,252 2SA733 REG
Q253 2SA768 REG
D201 EQA01-30R REFERENCE VOLTAGE
D252 EQA01-28R REFERENCE VOLTAGE
D202,251 EQA01-25R REFERENCE VOLTAGE
METER (BUILT IN)

[POWER AMP BOARD]

PULSE-LOCKED [POWER-SUPPLY BOARD]
D503—506 S34 SECONDARY RECT
D309-312 U05E PRIMARY RECT
RY302
F301 3A
S6 POWER
CP701
CN701 AC IN
AC OUTLET
D501,502 1S1555
Q503—506 2SC1986D INVERTER
Q501 2SA733 TRIGGER
Q502 2SC1634 TRIGGER
HEAT SINK

*WITH NO SIGNAL

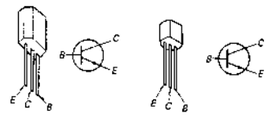
4-6. MOUNTING DIAGRAM (US Model)

— Preamplifier Section —

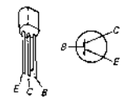
US Model

- **Replacement Semiconductors**
  For replacement, Use semiconductors except In ( ).

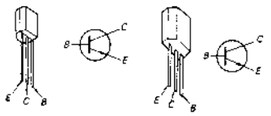
Q101, 151: 2SC1637-0 (2SC2129)



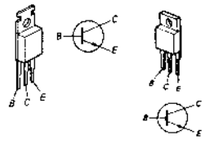
Q102, 152: 2SA872D (2SA872)
Q103, 153: 2SA896 (2SB646)



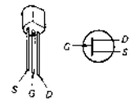
Q104, 154: 2SC1364 (2SC1634)
Q201, 202: 2SC1364 (2SC634A)



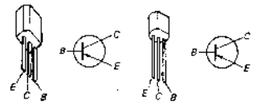
Q203: 2SD476A (2SC1826)



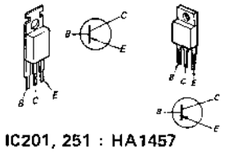
Q204, 254: 2SK30A



Q251, 252: 2SA678 (2SA733)

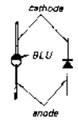


Q253: 2SB566A (2SA768)

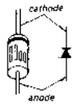


IC201, 251 : HA1457

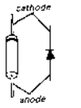
D101, 151: MV12N



D102 : EQB01-06 (EQA01-06R)
D201 : EQB01-30 (EQA01-30R)
D202,251: EQB01-25 (EQA01-25R)
D252 : EQB01-28 (EQA01-28R)

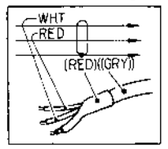


D253: 10E2



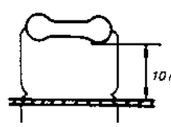
Note:

- Color code of sleeving over the end of the jacket.



- ○—— : parts extracted from the component side.
- : B + pattern
- : B − pattern
- Signal Path
  —— : L-CH
  —— : R-CH
  —— : Common
- ▲ : nonflammable resistor.

All resistors and diodes indicated by ● are mounted as shown below.



Note:

- All capacitors are in μF unless otherwise noted. pF = μμF 50 WV or less are not indicated except for electrolytics. lytics.
- All resistor are in ohms ¼W unless otherwise noted. kΩ = 1000 Ω, MΩ = 1000 kΩ.
- : nonflammable resistor
- : B + bus.
- : panel designation
- : adjustment for repair.
- : B − bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Reading are taken under no signal conditions with a VOM (20 kΩ/V) when 220 V ac is applied to the set.
- Voltage variations may be noted due to normal production tolerances
- Switch

Ref. No.	Switch	Position
S1	FUNCTION	PHONO
S2	MONITOR	SOURCE
S3	TAPE COPY	SOURCE
S4	FILTER	OFF
S5	SPEAKERS	OFF
S6	POWER	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

US Model

678 (2SA733)

(2SA768)

1457

N

06 (EQA01-06R)
30 (EQA01-30R)
25 (EQA01-25R)
28 (EQA01-28R)

jacket.

onent side.

unted as shown

A B C D E F G

1 2 3 4 5

【EQ AMP BOARD】(COMPONENT SIDE)

【FLAT AMP BOARD】(CONDUCTOR SIDE)

【VOLUME BOARD】

Q	D
101,151	
102,152	
103,153	
104,154	101,151
	102

Q,IC	D
	253
254	
253,252	
251,203	
202,201	
IC251	252
	251
204	202
	201
IC201	

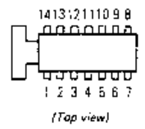
Page 30

4-7. MOUNTING DIAGRAM (US Model)

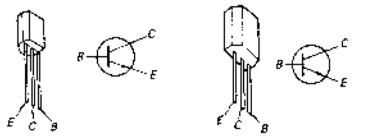
– Power Amplifier Section –

- **Replacement Semiconductors**
  For replacement, use semiconductors except in (   ).

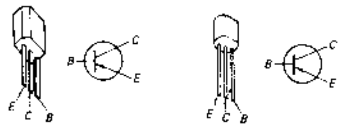
IC301, 351: CX171



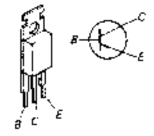
Q301, 351
Q306, 356
Q307, 357
Q308, 310, 311 : 2SC1364 (2SC634A)
Q502 : 2SC1364 (2SC1634)



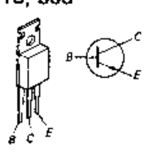
Q302, 352
Q305, 355
Q309, 501 : 2SA678 (2SA733)



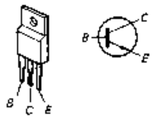
Q303, 353, Q312, 362: 2SA771



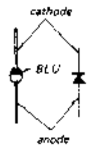
Q304, 354, Q313, 363: 2SC 1986C (2SC 1986)



Q503 – 506: 2SC1986C-0 (2SC1986D)



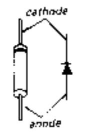
D301, 351, D302, 352: MV12N



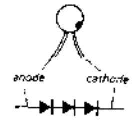
D303, 353, D304, 354: 1S2076A

D305, 355
D401, 451
D402, 452 :1T22AM (1T22)

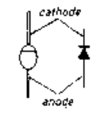
D306, 356, 308
D313, 363
D501, 502 :1S1555



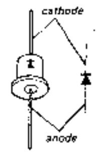
D307: MV203V



D309 – 312: U05G (U05E)

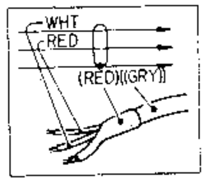


D503 – 506: S34



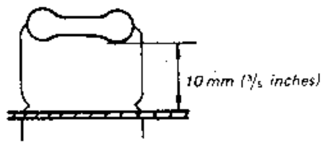
Note:

- Color code of sleeving over the end of the jacket.

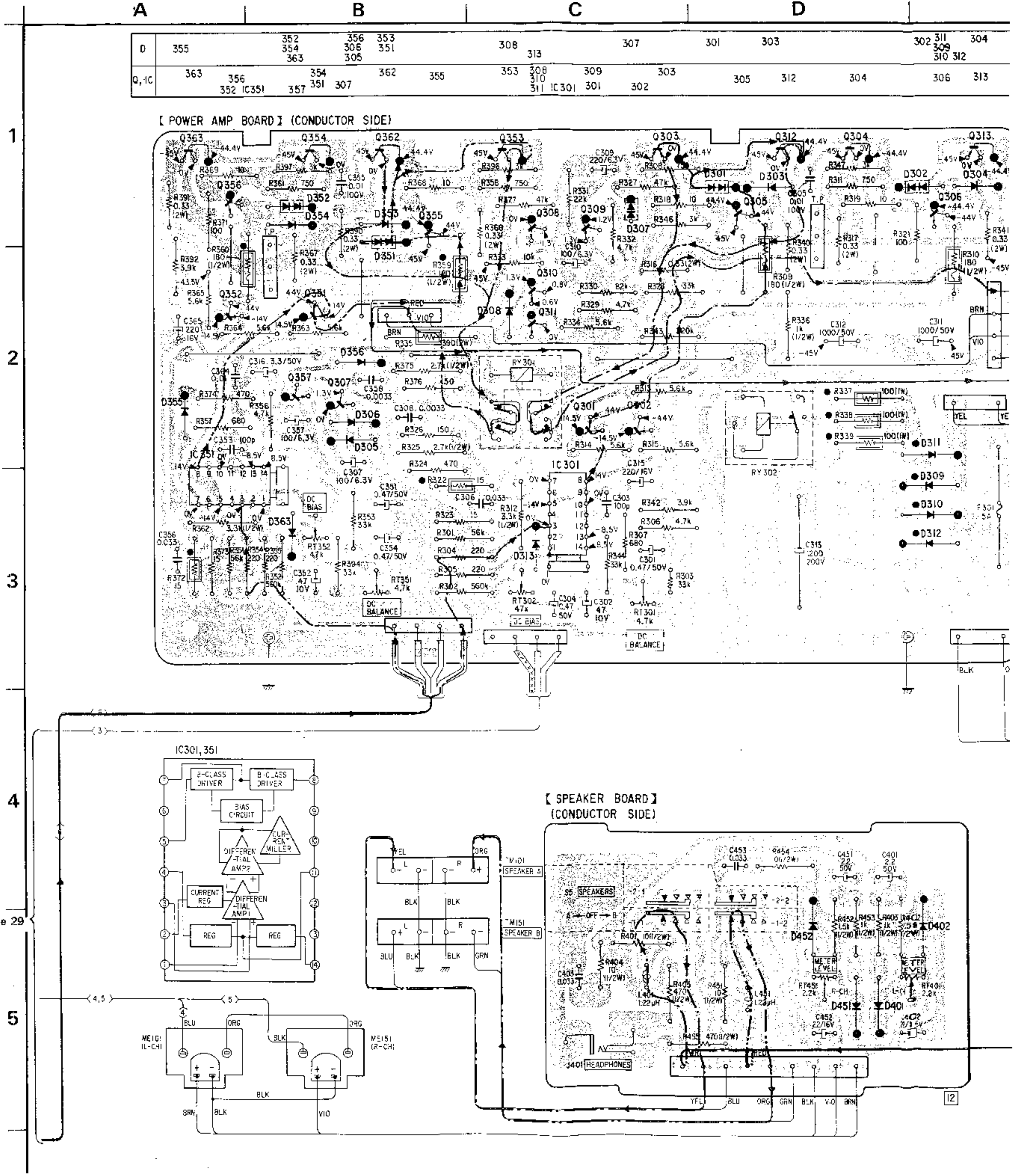


- ○— : parts extracted from the component side.
- ▨ : B + pattern
- ▨ : B – pattern
- Signal Path
  - —·→ : L-CH
  - ---→ : R-CH
  - ——→ : Common

All resistors and diodes indicated by ● are mounted as shown below.

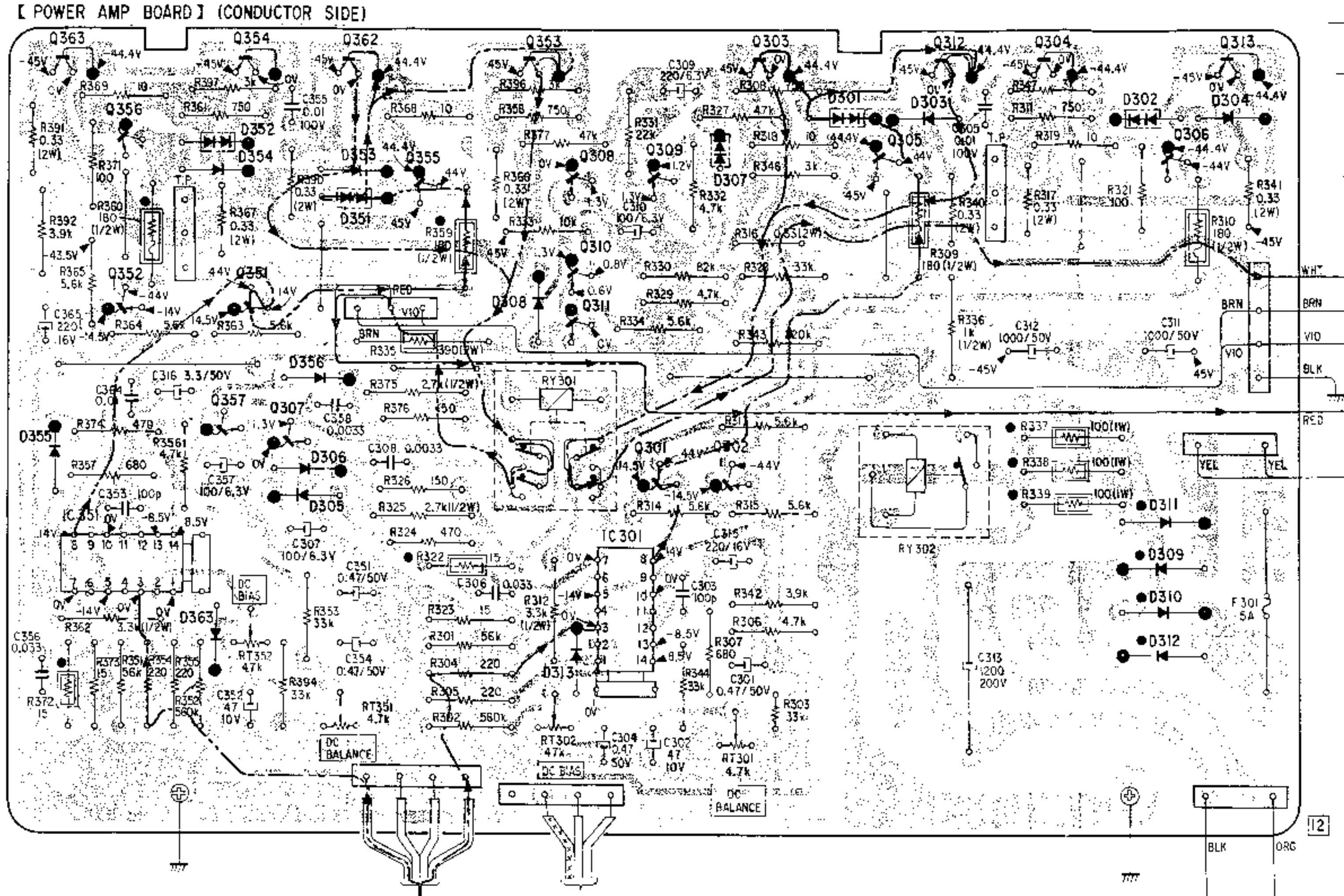


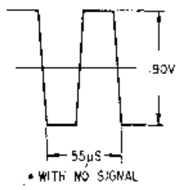
Page 29



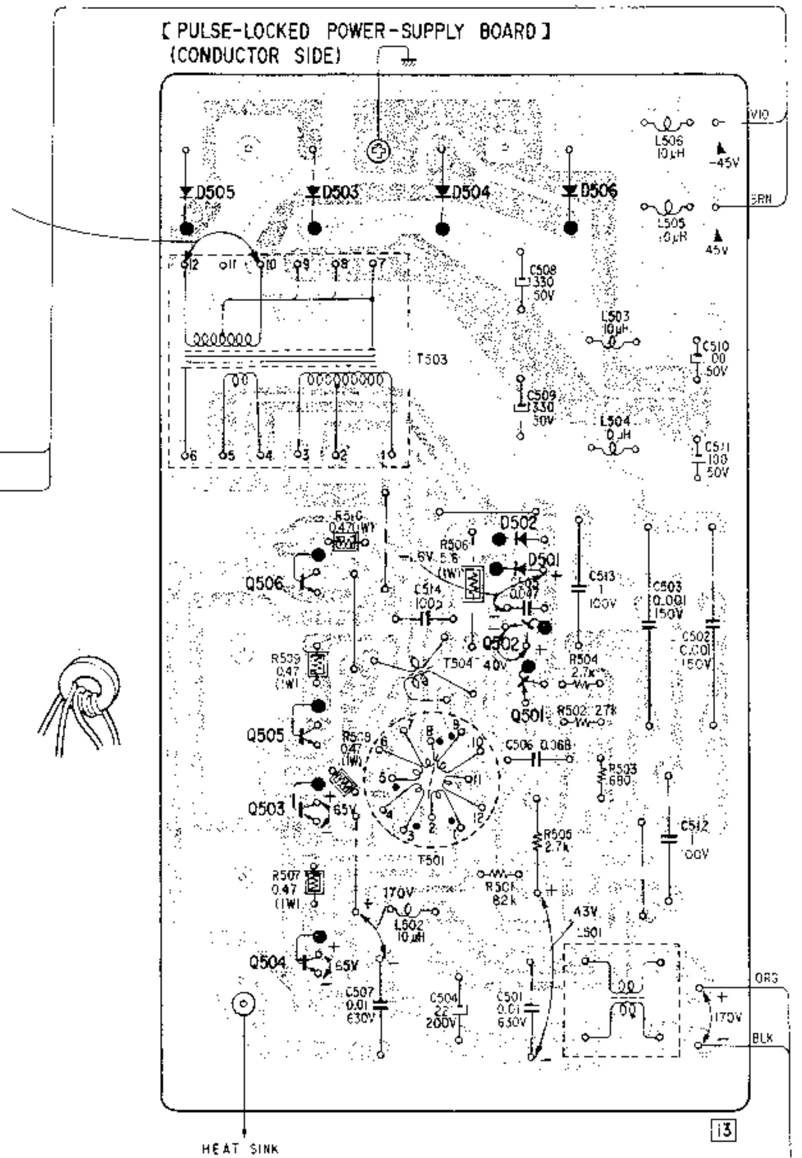
	A	B	C	D	E	
D	355	352 354 363 356 306 305 353 351	308 313 307	301 303	302 311 309 310 312 304	D
Q, IC	363 356 352 IC351 357	354 351 307 362 355	353 308 310 311 IC301 309 301 303 302	305 312	304 306 313	Q, IC

[POWER AMP BOARD] (CONDUCTOR SIDE)



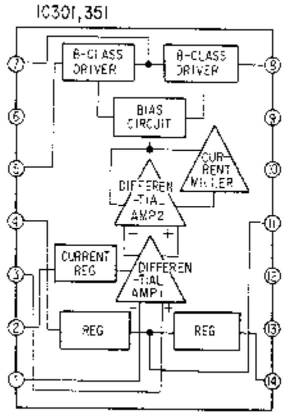


[PULSE-LOCKED POWER-SUPPLY BOARD] (CONDUCTOR SIDE)

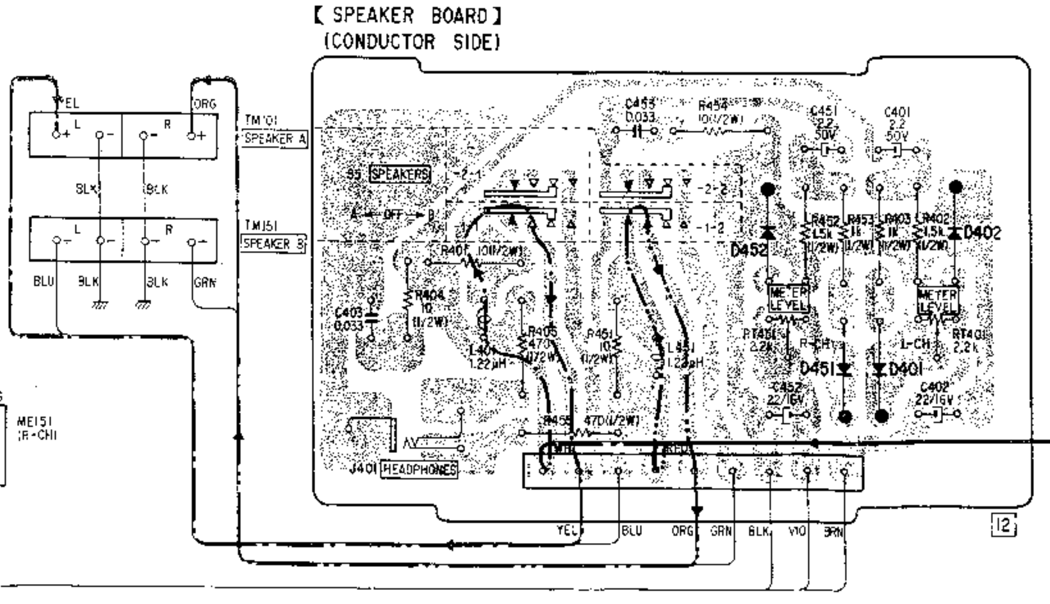


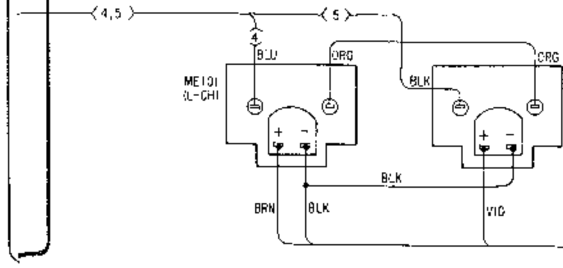
Q	D
	503,504 505,506
	502
	501
506	
502	
501	
505	
503	
504	

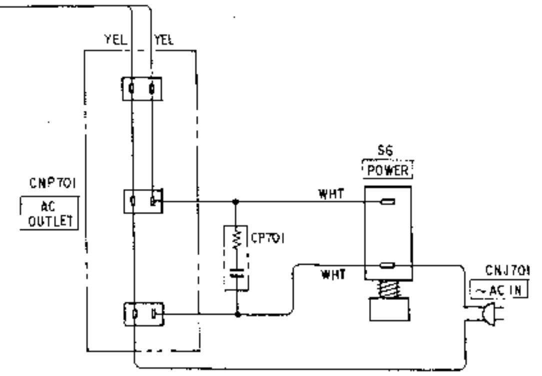
IC301,351



[SPEAKER BOARD] (CONDUCTOR SIDE)

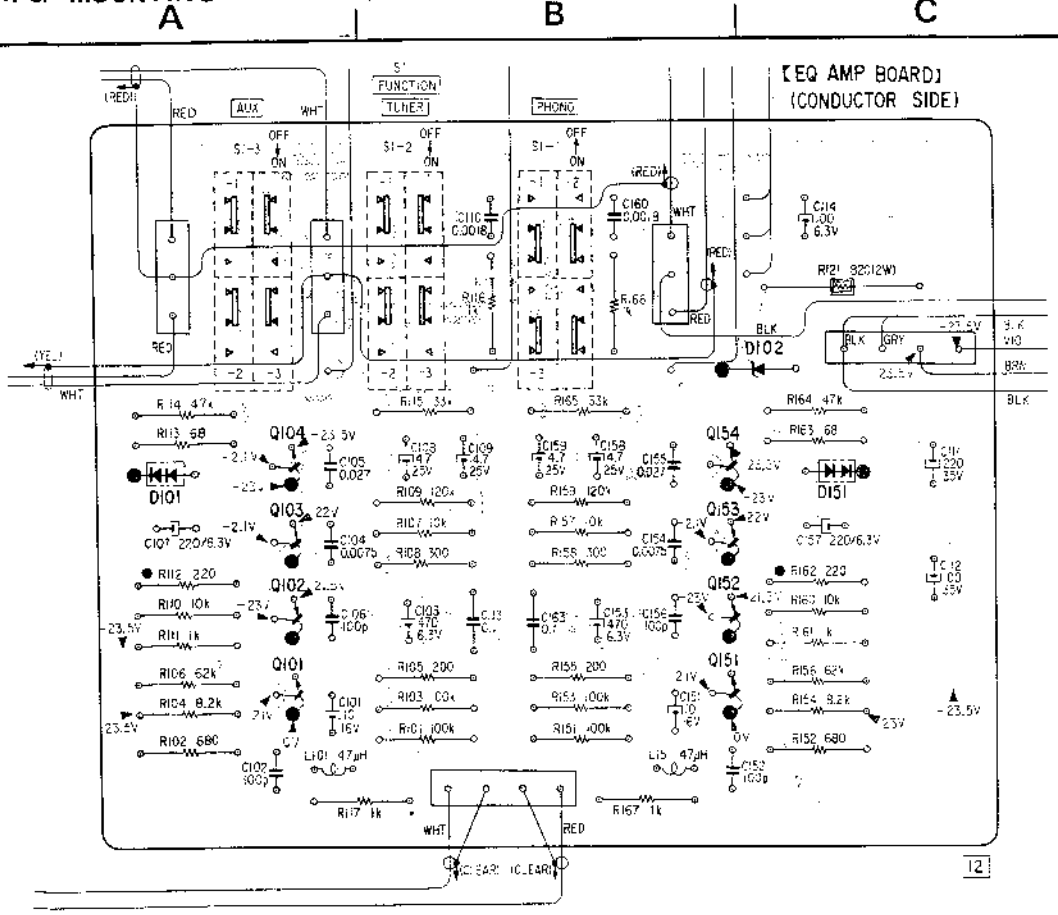






Page 29

4-8. MOUNTING DIAGRAM (US Model)

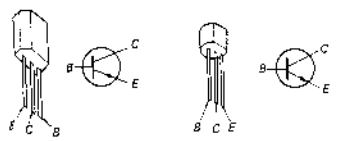


Q	Q104, Q103 Q102, Q101	Q154, Q153 Q152, Q151	Q
D	D101	D102 D151	D

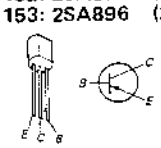
- **Replacement Semiconductors**

For replacement, use semiconductors except in ( ).

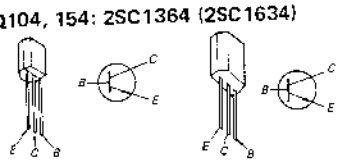
Q101, 151: 2SC1637-0 (2SC2129)



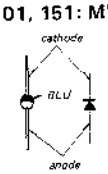
Q102, 152: 2SA872D (2SA872)
Q103, 153: 2SA896 (2SB646)



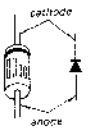
Q104, 154: 2SC1364 (2SC1634)



D101, 151: MV12N

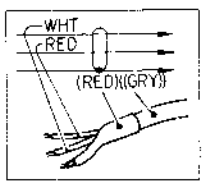


D102: EQB01-06 (EQA01-06R)



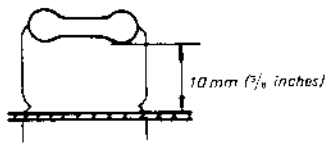
Note:

- Color code of sleeving over the end of the jacket.



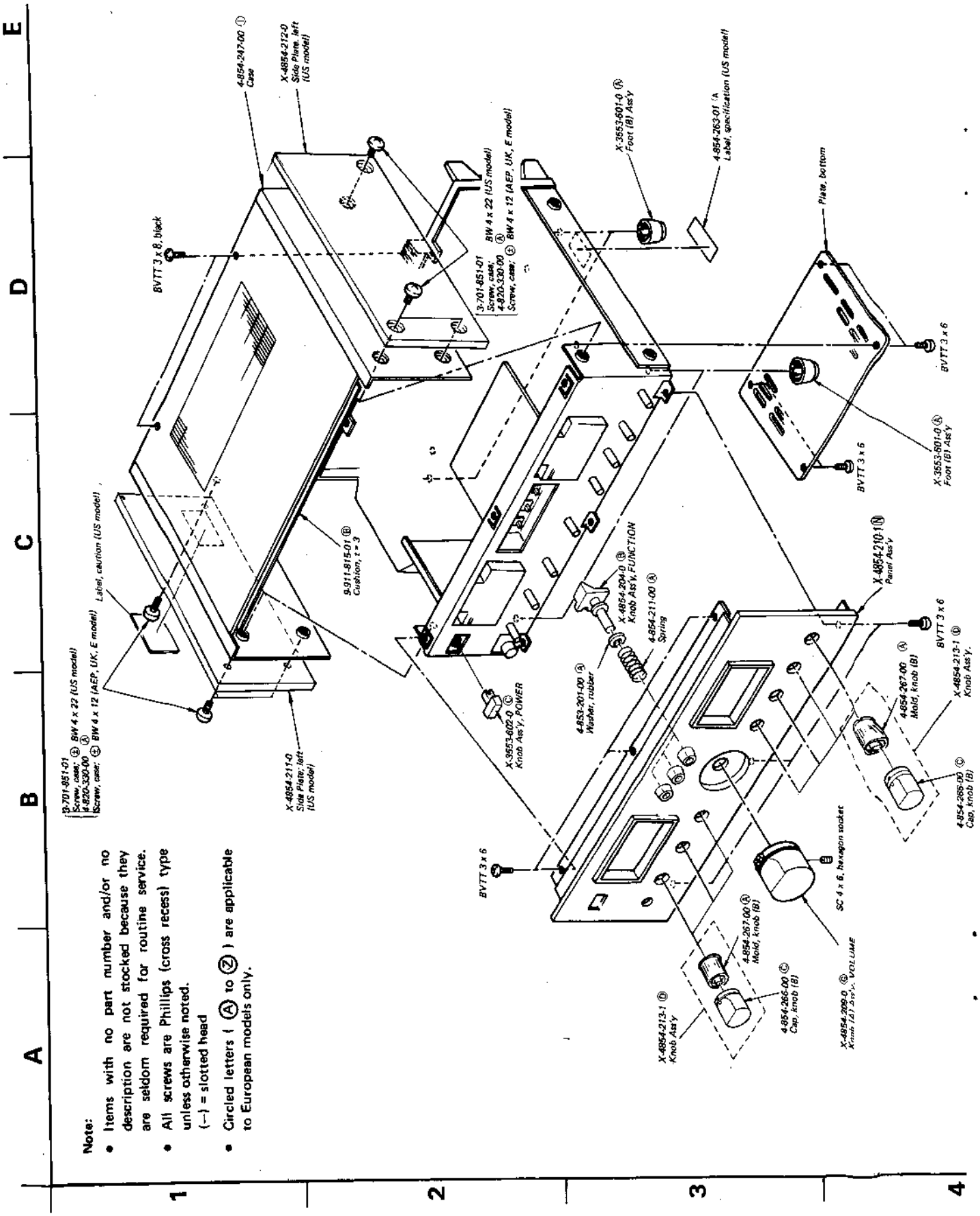
- o—— : parts extracted from the component side.
- : B + pattern
- : B − pattern

All resistors and diodes indicated by ● are mounted as shown below.



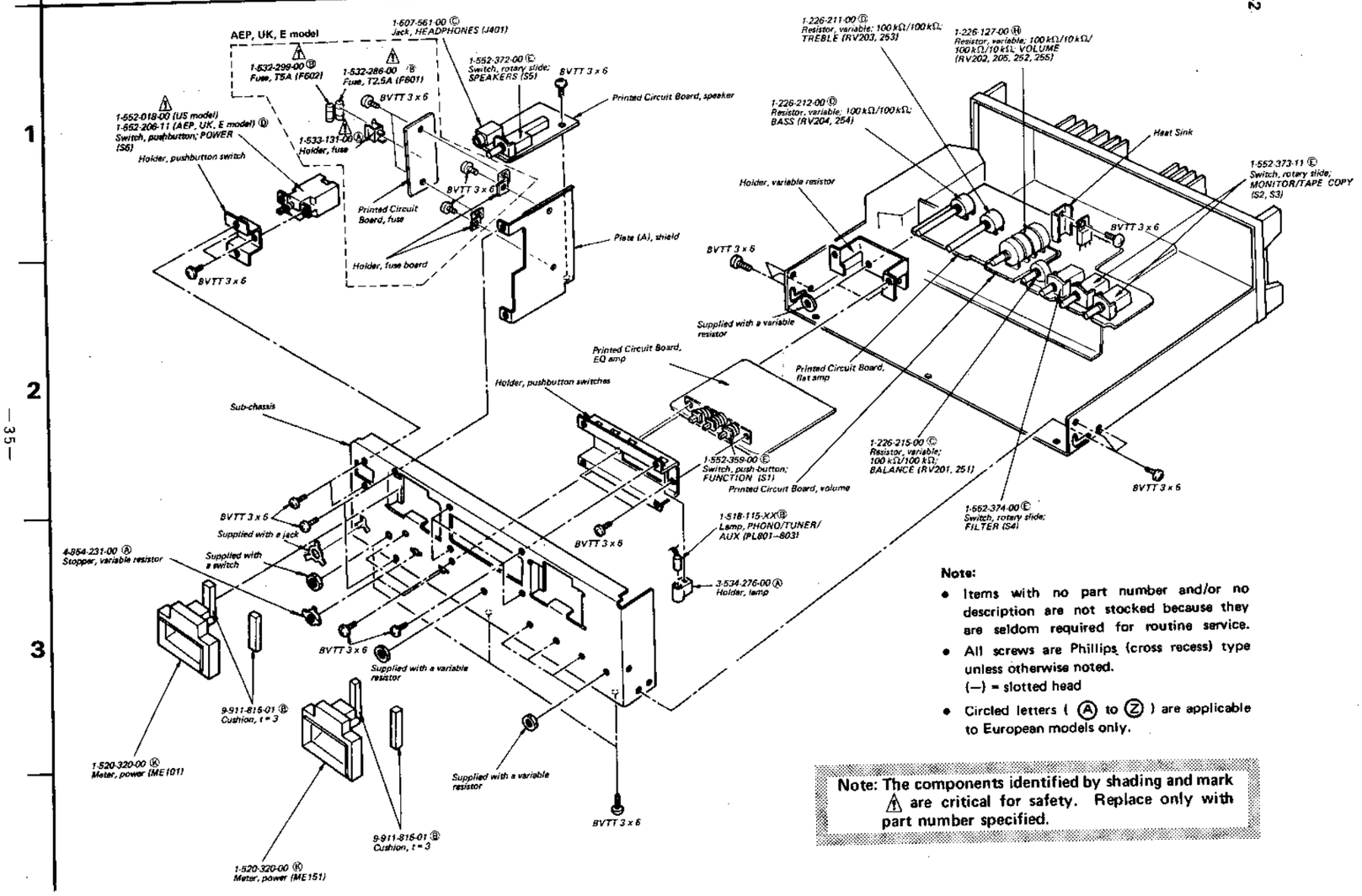
SECTION 5
EXPLODED VIEWS

5-1.



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
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



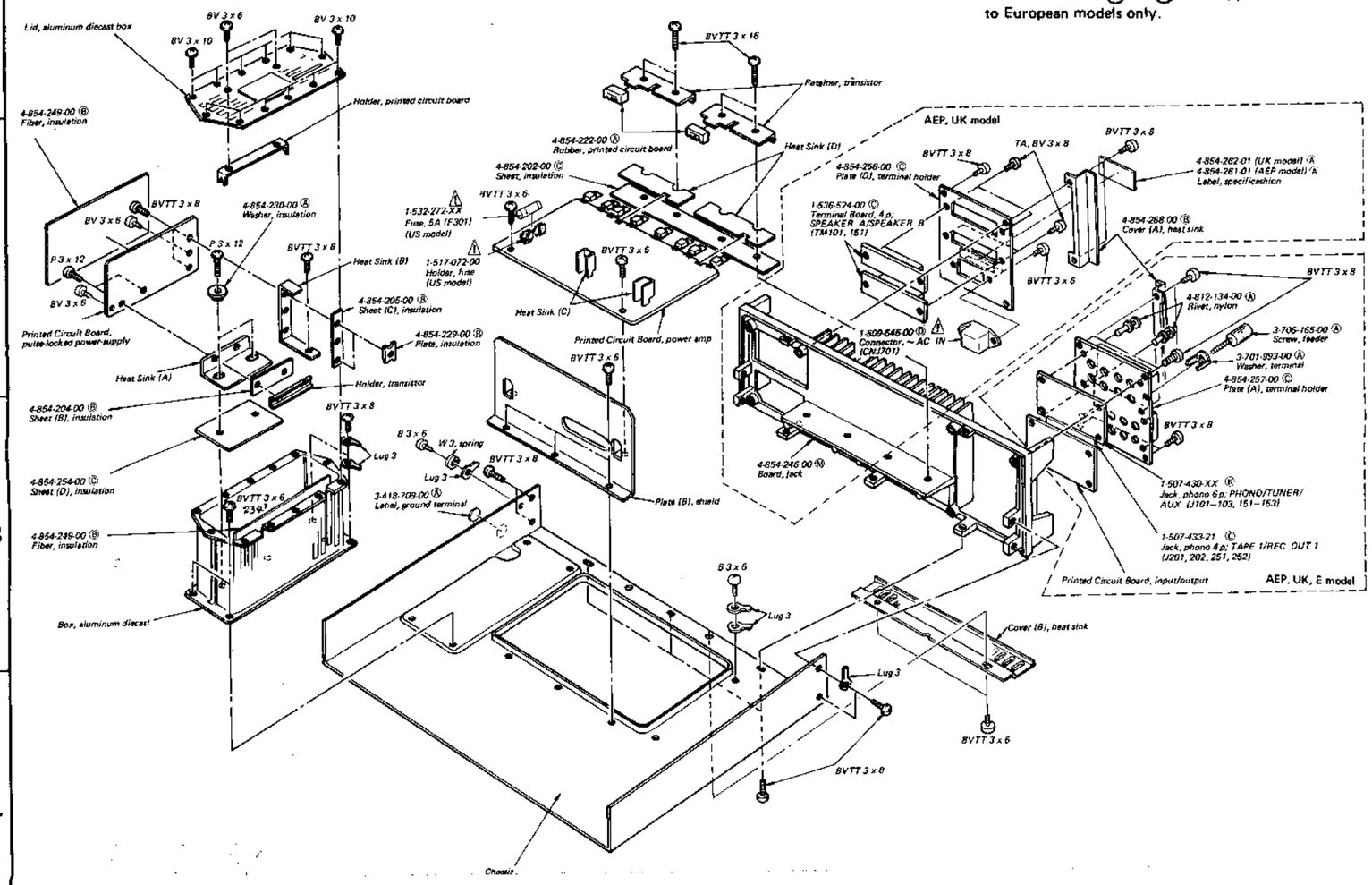
Note:

- 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
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



TA-F5A

1-520-320-00 Ⓚ
Meter, power (ME151)

9-911-815-01 Ⓑ
Cushion, τ = 3

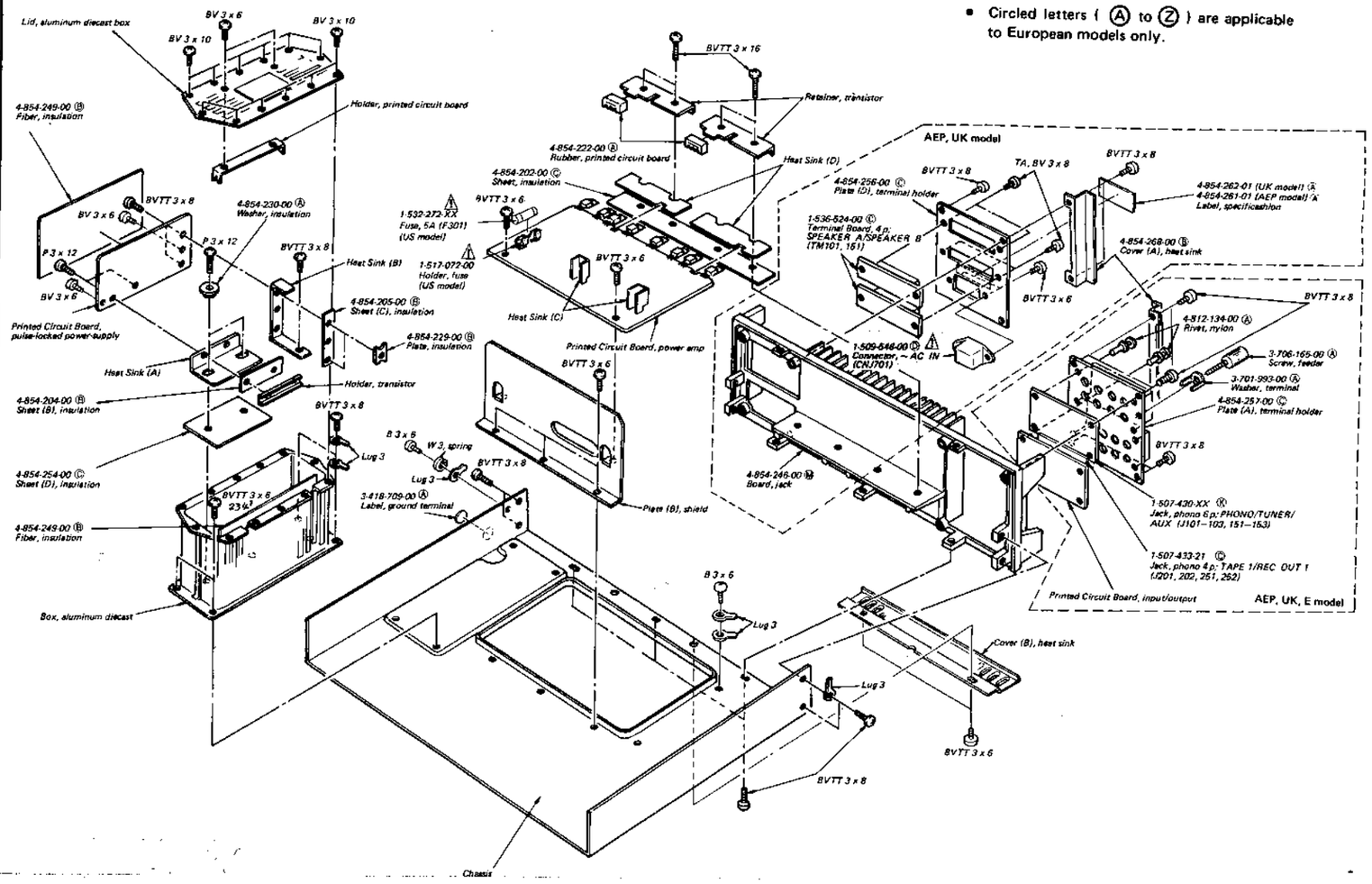
BVTT 3 x 6

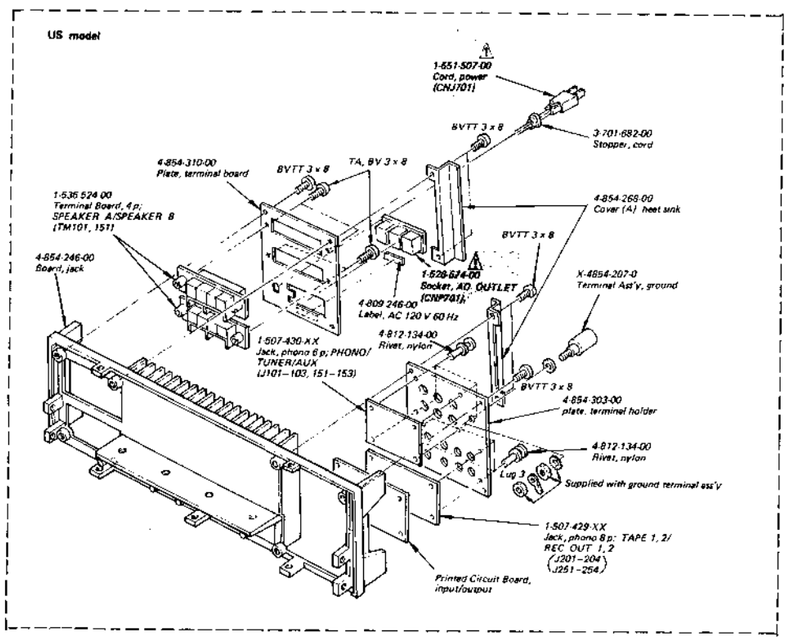
⚠ are critical for safety. Replace only with part number specified.

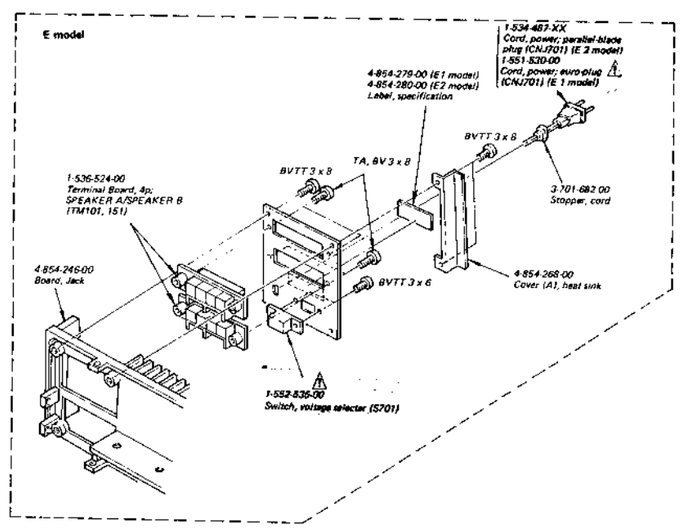
5-3.

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
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.







⚠ are critical for safety. Replace only with part number specified.

TA-F5A

SECTION 6
ELECTRICAL PARTS LIST

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
		SEMICONDUCTORS
		Transistors
⇒ Q101, 151	8-761-700-00	Ⓑ 2SC1637-O
⇒ Q102, 152	8-729-387-27	Ⓑ 2SA872D
⇒ Q103, 153	8-765-082-20	Ⓒ 2SA896
⇒ Q104, 154	8-729-663-47	Ⓑ 2SC1364
⇒ Q201, 202	8-729-663-47	Ⓑ 2SC1364
⇒ Q203	8-729-307-62	Ⓓ 2SD476A
Q204	8-729-203-04	Ⓑ 2SK30A
⇒ Q251, 252	8-727-788-00	Ⓑ 2SA678
⇒ Q253	8-729-306-62	Ⓔ 2SB566A
Q254	8-729-203-04	Ⓑ 2SK30A
⇒ Q301, 351	8-729-663-47	Ⓑ 2SC1364
⇒ Q302, 352	8-727-788-00	Ⓑ 2SA678
Q303, 353	8-729-377-12	Ⓔ 2SA771
⇒ Q304, 354	8-729-308-62	Ⓔ 2SC1986C-O
⇒ Q305, 355	8-727-788-00	Ⓑ 2SA678
⇒ Q306–308	8-729-663-47	Ⓑ 2SC1364
⇒ Q309	8-727-788-00	Ⓑ 2SA678
⇒ Q310, 311	8-729-663-47	Ⓑ 2SC1364
Q312	8-729-377-12	Ⓔ 2SA771
⇒ Q313	8-729-308-62	Ⓔ 2SC1986C-O
⇒ Q356, 357	8-729-663-47	Ⓑ 2SC1364
Q362	8-729-377-12	Ⓔ 2SA771
⇒ Q363	8-729-308-62	Ⓔ 2SC1986C-O
⇒ Q501	8-727-788-00	Ⓑ 2SA678
⇒ Q502	8-729-663-47	Ⓑ 2SC1364
⇒ Q503–506	8-729-302-31 / 8-729-302-32	Ⓓ 2SC2023-R / Ⓓ 2SC2023-O (AEP, UK, E model)
⇒ Q503–506	8-729-308-62	2SC1986C-O (US model)
		Diodes
D101, 151	8-719-912-00	Ⓑ MV12N
⇒ D102	8-719-931-06	Ⓑ EQB01-06
⇒ D201	8-719-931-30	Ⓑ EQB01-30
⇒ D202, 251	8-719-931-25	Ⓑ EQB01-25
⇒ D252	8-719-931-28	Ⓑ EQB01-28
D253	8-719-200-02	Ⓑ 10E2
D301, 351 / D302, 352	8-719-912-00	Ⓑ NV12N
D303, 353 / D304, 354	8-719-923-76	Ⓑ 1S2076A
⇒ D305, 355	8-719-422-21	Ⓐ 1T22AM
D306, 356	8-719-815-55	Ⓑ 1S1555
D307	8-719-920-30	Ⓑ MV203V
D308	8-719-815-55	Ⓑ 1S1555
D309–312	8-719-911-55	Ⓑ U05G
D313, 363	8-719-815-55	Ⓑ 1S1555
⇒ D401, 451 / D402, 452	8-719-422-21	Ⓐ 1T22AM
D501, 502	8-719-815-55	Ⓑ 1S1555
D503–506	8-719-303-41	Ⓒ S34
		ICs
IC201, 251	8-759-314-57	Ⓒ HA1457
IC301, 351	8-751-710-00	Ⓖ CX171
		COILS
L101, 151	1-407-165-XX	Ⓐ 47 µH, microinductor
L501	1-421-340-00	Ⓔ Line Filter (AEP, UK, E model)
L501	1-421-328-11	Line Filter (US model)
L502–506	1-421-329-00	Ⓑ 10 µH, choke
		TRANSFORMERS
T501	1-433-197-11	Ⓕ OSC
T503	⚠ 1-446-012-11	Ⓚ Converter (AEP, E1 model)
T503	⚠ 1-446-024-00	Converter (E2 model)
T503	⚠ 1-446-090-00	Converter (US model)
T504	1-543-129-00	Ⓐ Core
		CAPACITORS

All capacitors are in µF and ceramic unless otherwise noted.
50 WV or less are not indicated except for electrolytics.
pF = µµF, elect = electrolytic

C101	1-121-651-11	Ⓐ 10	16 V	elect
C102	1-102-973-11	Ⓐ 100 p		
C103	1-121-424-11	Ⓑ 470	6.3 V	elect
C104	1-108-576-12	Ⓐ 0.0075		mylar
C105	1-108-589-12	Ⓐ 0.027		mylar
C106	1-102-973-11	Ⓐ 100 p		
C107	1-121-419-11	Ⓑ 220	6.3 V	elect
C108, 109	1-121-395-11	Ⓐ 4.7	25 V	elect
C110	1-108-561-12	Ⓐ 0.0018		mylar
C111	1-123-063-11	Ⓑ 220	35 V	elect
C112	1-123-062-11	Ⓑ 100	35 V	elect
C113	1-108-251-11	Ⓑ 0.1		mylar
C114	1-123-197-11	Ⓐ 100	6.3 V	elect
C151	1-121-651-11	Ⓐ 10	16 V	elect
C152	1-102-973-11	Ⓐ 100 p		
C153	1-121-424-11	Ⓑ 470	6.3 V	elect
C154	1-108-576-12	Ⓐ 0.0075		mylar
C155	1-108-589-12	Ⓐ 0.027		mylar
C156	1-102-973-11	Ⓐ 100 p		
C157	1-121-419-11	Ⓑ 220	6.3 V	elect
C158, 159	1-121-395-11	Ⓐ 4.7	25 V	elect
C160	1-108-561-12	Ⓐ 0.0018		mylar
C163	1-108-251-12	Ⓑ 0.1		mylar
C201	1-121-391-11	Ⓐ 1	50 V	elect
C202	1-102-945-11	Ⓐ 8 p		
C203	1-102-943-11	Ⓐ 6 p		
C204	1-102-938-11	Ⓐ 1 p		
C205	1-121-352-11	Ⓐ 47	10 V	elect
C206	1-104-074-11	Ⓐ 750 p		polystyrol
C207	1-108-581-12	Ⓐ 0.012		mylar
C208	1-121-450-11	Ⓐ 2.2	50 V	elect
C209	1-108-585-12	Ⓐ 0.018		mylar
C210	1-108-605-12	Ⓑ 0.12		mylar
C211	1-108-567-12	Ⓐ 0.0033		mylar
C212	1-102-976-11	Ⓐ 180 p		
C213	1-108-611-12	Ⓑ 0.22		mylar
C214	1-121-395-11	Ⓐ 4.7	25 V	elect
C215	1-123-182-11	Ⓐ 4.7	50 V	elect
C216	1-121-936-11	Ⓑ 220	25 V	elect
C217, 218	1-121-410-11	Ⓑ 47	25 V	elect
C219	1-121-396-11	Ⓐ 4.7	50 V	elect
C220	1-121-944-11	Ⓔ 1000	16 V	elect
C221	1-121-655-11	Ⓑ 330	35 V	elect
C251	1-121-391-11	Ⓐ 1	50 V	elect
C252	1-102-945-11	Ⓐ 8 p		
C253	1-102-943-11	Ⓐ 6 p		
C254	1-102-938-11	Ⓐ 1 p		
C255	1-121-352-11	Ⓐ 47	10 V	elect
C256	1-104-074-11	Ⓐ 750 p		polystyrol
C257	1-108-581-12	Ⓐ 0.012		mylar
C258	1-121-450-11	Ⓐ 2.2	50 V	elect
C259	1-108-585-12	Ⓐ 0.018		mylar
C260	1-108-605-12	Ⓑ 0.12		mylar
C261	1-108-567-12	Ⓐ 0.0033		mylar
C262	1-102-976-11	Ⓐ 180 p		
C263	1-108-611-12	Ⓑ 0.22		mylar
C264	1-121-395-11	Ⓐ 4.7	25 V	elect
C265	1-123-182-11	Ⓐ 4.7	50 V	elect
C266	1-121-936-11	Ⓑ 220	25 V	elect
C267, 268	1-121-410-11	Ⓑ 47	25 V	elect
C269	1-121-396-11	Ⓐ 4.7	50 V	elect
C270	1-123-059-11	Ⓑ 100	50 V	elect
C301	1-121-726-11	Ⓐ 0.47	50 V	elect
C302	1-121-352-11	Ⓐ 47	10 V	elect
C303	1-102-973-11	Ⓐ 100 p		
C304	1-121-726-11	Ⓐ 0.47	50 V	elect
C305	1-106-196-11	Ⓐ 0.01	100 V	mylar
C306	1-108-591-12	Ⓐ 0.033		mylar
C307	1-123-197-11	Ⓐ 100	6.3 V	elect
C308	1-108-567-12	Ⓐ 0.0033		mylay
C309	1-121-419-11	Ⓑ 220	6.3 V	elect
C310	1-121-413-11	Ⓐ 100	6.3 V	elect
C311, 312	1-123-061-11	1000	50 V	elect (US model)
C311, 312	1-123-256-11	Ⓓ 2200	50 V	elect (AEP, UK, E model)
C313	1-123-291-11	Ⓖ 680	200 V	elect (AEP, UK, E model)
C313	1-125-180-11	1200	200 V	elect (US model)
C314	1-123-291-11	Ⓖ 680	200 V	elect (AEP, UK, E model)

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

TA-F5A

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description		
C104	1-108-576-12	Ⓐ 0.0075		mylar
C105	1-108-589-12	Ⓐ 0.027		mylar
C106	1-102-973-11	Ⓐ 100 p		
C107	1-121-419-11	Ⓑ 220	6.3 V	elect
C108, 109	1-121-395-11	Ⓐ 4.7	25 V	elect
C110	1-108-561-12	Ⓐ 0.0018		mylar
C111	1-123-063-11	Ⓑ 220	35 V	elect
C112	1-123-062-11	Ⓑ 100	35 V	elect
C113	1-108-251-11	Ⓑ 0.1		mylar
C114	1-123-197-11	Ⓐ 100	6.3 V	elect
C151	1-121-651-11	Ⓐ 10	16 V	elect
C152	1-102-973-11	Ⓐ 100 p		
C153	1-121-424-11	Ⓑ 470	6.3 V	elect
C154	1-108-576-12	Ⓐ 0.0075		mylar
C155	1-108-589-12	Ⓐ 0.027		mylar
C156	1-102-973-11	Ⓐ 100 p		
C157	1-121-419-11	Ⓑ 220	6.3 V	elect
C158, 159	1-121-395-11	Ⓐ 4.7	25 V	elect
C160	1-108-561-12	Ⓐ 0.0018		mylar
C163	1-108-251-12	Ⓑ 0.1		mylar
C201	1-121-391-11	Ⓐ 1	50 V	elect
C202	1-102-945-11	Ⓐ 8 p		
C203	1-102-943-11	Ⓐ 6 p		
C204	1-102-938-11	Ⓐ 1 p		
C205	1-121-352-11	Ⓐ 47	10 V	elect
C206	1-104-074-11	Ⓐ 750 p		polystyrol
C207	1-108-581-12	Ⓐ 0.012		mylar
C208	1-121-450-11	Ⓐ 2.2	50 V	elect
C209	1-108-585-12	Ⓐ 0.018		mylar
C210	1-108-605-12	Ⓑ 0.12		mylar
C211	1-108-567-12	Ⓐ 0.0033		mylar
C212	1-102-976-11	Ⓐ 180 p		
C213	1-108-611-12	Ⓑ 0.22		mylar
C214	1-121-395-11	Ⓐ 4.7	25 V	elect
C215	1-123-182-11	Ⓐ 4.7	50 V	elect
C216	1-121-936-11	Ⓑ 220	25 V	elect
C217, 218	1-121-410-11	Ⓑ 47	25 V	elect
C219	1-121-396-11	Ⓐ 4.7	50 V	elect

Ref. No.	Part No.	Description		
C220	1-121-944-11	Ⓔ 1000	16 V	elect
C221	1-121-655-11	Ⓑ 330	35 V	elect
C251	1-121-391-11	Ⓐ 1	50 V	elect
C252	1-102-945-11	Ⓐ 8 p		
C253	1-102-943-11	Ⓐ 6 p		
C254	1-102-938-11	Ⓐ 1 p		
C255	1-121-352-11	Ⓐ 47	10 V	elect
C256	1-104-074-11	Ⓐ 750 p		polystyrol
C257	1-108-581-12	Ⓐ 0.012		mylar
C258	1-121-450-11	Ⓐ 2.2	50 V	elect
C259	1-108-585-12	Ⓐ 0.018		mylar
C260	1-108-605-12	Ⓑ 0.12		mylar
C261	1-108-567-12	Ⓐ 0.0033		mylar
C262	1-102-976-11	Ⓐ 180 p		
C263	1-108-611-12	Ⓑ 0.22		mylar
C264	1-121-395-11	Ⓐ 4.7	25 V	elect
C265	1-123-182-11	Ⓐ 4.7	50 V	elect
C266	1-121-936-11	Ⓑ 220	25 V	elect
C267, 268	1-121-410-11	Ⓑ 47	25 V	elect
C269	1-121-396-11	Ⓐ 4.7	50 V	elect
C270	1-123-059-11	Ⓑ 100	50 V	elect
C301	1-121-726-11	Ⓐ 0.47	50 V	elect
C302	1-121-352-11	Ⓐ 47	10 V	elect
C303	1-102-973-11	Ⓐ 100 p		
C304	1-121-726-11	Ⓐ 0.47	50 V	elect
C305	1-106-196-11	Ⓐ 0.01	100 V	mylar
C306	1-108-591-12	Ⓐ 0.033		mylar
C307	1-123-197-11	Ⓐ 100	6.3 V	elect
C308	1-108-567-12	Ⓐ 0.0033		mylay
C309	1-121-419-11	Ⓑ 220	6.3 V	elect
C310	1-121-413-11	Ⓐ 100	6.3 V	elect
C311, 312	1-123-061-11	1000	50 V	elect (US model)
C311, 312	1-123-256-11	Ⓓ 2200	50 V	elect (AEP, UK, E model)
C313	1-123-291-11	Ⓖ 680	200 V	elect (AEP, UK, E model)
C313	1-125-180-11	1200	200 V	elect (US model)
C314	1-123-291-11	Ⓖ 680	200 V	elect (AEP, UK, E model)

Ref. No.	Part No.	Description		
C315	1-123-068-11	Ⓑ 220	16 V	elect
C316	1-121-393-11	Ⓐ 3.3	50 V	elect
C317	1-108-749-12	Ⓑ 0.047	300 V	mylar (AEP, UK, E model)
C351	1-121-726-11	Ⓐ 0.47	50 V	elect
C352	1-121-352-11	Ⓐ 47	10 V	elect
C353	1-102-973-11	Ⓐ 100 p		
C354	1-121-726-11	Ⓐ 0.47	50 V	elect
C355	1-106-196-11	Ⓐ 0.01	100 V	mylar
C356	1-108-591-12	Ⓐ 0.033		mylar
C357	1-123-197-11	Ⓐ 100	6.3 V	elect
C358	1-108-567-12	Ⓐ 0.0033		mylar
C364	1-108-579-12	Ⓐ 0.01		mylar
C365	1-123-068-11	Ⓑ 220	16 V	elect
C401	1-121-450-11	Ⓐ 2.2	50 V	elect
C402	1-121-479-11	Ⓐ 22	16 V	elect
C403	1-108-591-12	Ⓐ 0.033		mylar
C451	1-121-450-11	Ⓐ 2.2	50 V	elect
C452	1-121-479-11	Ⓐ 22	16 V	elect
C453	1-108-591-12	Ⓐ 0.033		mylar
C501	1-130-141-11	Ⓐ 0.01	630 V	polyethylene
C502, 503	⚠ 1-115-149-11	Ⓒ 0.0015	450 V	paper (AEP, UK, E model)
C502, 503	⚠ 1-102-070-11	0.001	150 V	ceramic (US model)
C504	1-123-402-11	Ⓒ 22	400 V	elect (AEP, UK, E model)
C504	1-125-176-11	22	200 V	elect (US model)
C505	1-108-595-12	Ⓐ 0.047		mylar
C506	1-108-599-12	Ⓑ 0.068		mylar
C507	1-130-141-11	Ⓐ 0.01	630 V	polyethylene
C508, 509	1-121-656-11	Ⓑ 330	50 V	elect
C510, 511	1-121-417-11	Ⓑ 100	50 V	elect
C512, 513	1-108-969-11	Ⓐ 0.22	250 V	mylar (AEP, UK, E model)
C512, 513	1-130-083-11	1	100 V	polyethylene (US model)
C514	1-102-973-11	Ⓐ 100 p		

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description		
C601	⚠ 1-115-149-11	Ⓒ 0.0015	450 V	paper (AEP, UK, E model)
C602	1-108-749-12	Ⓒ 0.047	300 V	mylar (AEP, UK, E model)

RESISTORS

All resistors are in ohms. Common ¼ W carbon resistors are omitted. Refer to the list on page 42 for their part numbers.

Ref. No.	Part No.	Description		
R121	⚠ 1-206-662-11	Ⓐ 820	2 W	metal oxide (nonflammable)
R220	⚠ 1-212-889-11	Ⓐ 220	¼ W	fusible (nonflammable)
R223	⚠ 1-206-706-11	Ⓑ 160	3 W	metal oxide (nonflammable)
R224	⚠ 1-212-978-11	Ⓑ 68	½ W	fusible (nonflammable)
R227	⚠ 1-212-958-11	Ⓐ 10	½ W	fusible (nonflammable)
R228	⚠ 1-212-978-11	Ⓑ 68	½ W	fusible (nonflammable)
R270	⚠ 1-212-889-11	Ⓐ 220	¼ W	fusible (nonflammable)
R275	⚠ 1-212-857-11	Ⓐ 10	¼ W	fusible (nonflammable)
R309, 310	⚠ 1-121-988-11	Ⓑ 180	½ W	fusible (nonflammable)
R312	1-244-885-11	Ⓐ 3.3 k	½ W	carbon
R316, 317	1-217-152-11	Ⓐ 0.33	2 W	wirewound
R322	⚠ 1-211-502-11	Ⓑ 15	¼ W	carbon (nonflammable)
R325	1-244-883-11	Ⓐ 2.7 k	½ W	carbon
R335	⚠ 1-206-654-11	Ⓐ 390	2 W	metal oxide (nonflammable)
R336	1-244-874-11	Ⓐ 1.1 k	½ W	carbon
R337–339	⚠ 1-213-131-11	100	1 W	metal oxide (nonflammable) (US model)
R340, 341	1-217-152-11	Ⓐ 0.33	2 W	wirewound

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.		Description		
R359, 360	⚠1-121-988-11	Ⓑ	180	½W	fusible (nonflammable)
R362	1-244-885-11	Ⓐ	3.3 k	½W	carbon
R366, 367	1-217-152-11	Ⓐ	0.33	2W	wirewound
R372	⚠1-211-502-11	Ⓑ	15	¼W	carbon (nonflammable)
R375	1-244-883-11	Ⓐ	2.7 k	½W	carbon
R390, 391	1-217-152-11	Ⓐ	0.33	2W	wirewound
R401	1-244-825-11	Ⓐ	10	½W	carbon
R402	1-244-877-11	Ⓐ	1.5 k	½W	carbon
R403	1-244-873-11	Ⓐ	1 k	½W	carbon
R404	1-244-825-11	Ⓐ	10	½W	carbon
R405	1-244-865-11	Ⓐ	470	½W	carbon
R451	1-244-825-11	Ⓐ	10	½W	carbon
R452	1-244-877-11	Ⓐ	1.5 k	½W	carbon
R453	1-244-873-11	Ⓐ	1 k	½W	carbon
R454	1-244-825-11	Ⓐ	10	½W	carbon
R455	1-244-865-11	Ⓐ	470	½W	carbon
R502	1-214-166-11		27 k	¼W	metal oxide (US model)
R502	1-214-167-11	Ⓐ	30 k	¼W	metal oxide (AEP, UK, E model)
R503	1-214-128-11	Ⓐ	680	¼W	metal oxide
R504	1-214-142-11	Ⓐ	2.7 k	¼W	metal oxide
R506	⚠1-212-369-11	Ⓑ	5.6	1W	metal oxide (nonflammable)
R507–510	⚠1-121-356-11	Ⓑ	0.47	1W	metal oxide (nonflammable)
R601–602	⚠1-206-644-00	Ⓐ	150	2W	metal oxide (nonflammable) (AEP, UK, E model)
RT301	1-224-251-XX	Ⓒ	4.7 k, adjustable; DC BALANCE		
RT302	1-224-254-XX	Ⓒ	47 k, adjustable; DC BIAS		
RT351	1-224-251-XX	Ⓒ	4.7 k, adjustable; DC BALANCE		
RT352	1-224-254-XX	Ⓒ	47 k, adjustable; DC BIAS		
RT401	1-221-997-00	Ⓑ	2.2 k, adjustable; METER LEVEL		
RT451	1-221-997-00	Ⓑ	2.2 k, adjustable; METER LEVEL		
RV201, 251	1-226-215-00	Ⓒ	100 k/100 k, variable; BALANCE		
RV202/252, RV205/255	1-526-574-00	Ⓗ	100 k/100 k/10 k/10 k, variable; VOLUME		
RV203, 253	1-226-211-00	Ⓓ	100 k/100 k, variable; TREBLE		
RV204, 254	1-226-212-00	Ⓓ	100 k/100 k, variable; BASS		

SWITCHES

S1	1-552-359-00	Ⓔ	Pushbutton; FUNCTION
S2	1-552-373-11	Ⓔ	Rotary Slide; MONITOR
S3	1-552-373-11	Ⓔ	Rotary Slide; TAPE COPY
S4	1-552-374-00	Ⓔ	Rotary Slide; FILTER
S5	1-552-372-00	Ⓔ	Rotary Slide; SPEAKERS
S6	⚠1-552-206-11	Ⓓ	Pushbutton; POWER (AEP, UK, E model)
S6	⚠1-552-018-00		Pushbutton; POWER (US model)
S701	⚠1-552-535-00		Voltage Selector (E model)

JACKS

J101–103, J151–153	1-507-430-XX	Ⓚ	Phono, 6 p; PHONE, TUNER, AUX
J201, 202, J251, 252	1-507-429-XX		Phono, 8 p; TAPE 1/2, REC OUT 1/2 (US model)
J201, 202, J251, 252	1-507-433-21	Ⓒ	Phono, 4 p; TAPE 1, REC OUT 1 (AEP, UK, E model)
J203, 204, J253, 254	1-507-429-XX		Phono, 8 p; TAPE 2, REC OUT 2 (US model)
J401	1-507-561-00	Ⓒ	HEADPHONES

MISCELLANEOUS

CNJ201	1-509-549-00	Ⓑ	Connector, REC/PB (AEP, UK, E model)
CNJ701	⚠1-551-507-00		Cord, power (US model)
CNJ701	⚠1-509-546-00	Ⓒ	Connector, ~AC IN (AEP, UK model)
CNJ701	⚠1-534-487-XX		Cord, power; parallel-blade plug (E2 model)
CNJ701	⚠1-551-530-00		Cord, power; euro-plug (E model)
CNP701	⚠1-517-072-00		Socket, AC OUTLET (US model)
CP701	⚠1-231-326-11		Encapsulated Component (US model)
F301	⚠1-532-272-XX		Fuse, 5 A (US model)
F601	⚠1-532-286-00	Ⓑ	Fuse, T 2.5 A (AEP, UK, E model)
F602	⚠1-532-299-00	Ⓑ	Fuse, T 5 A (AEP, UK, E model)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
ME101, 151	1-520-320-00	Ⓚ Meter, power
PL801	1-518-115-XX	Ⓑ Lamp; PHONO
PL802	1-518-115-XX	Ⓑ Lamp; TUNER
PL803	1-518-115-XX	Ⓑ Lamp; AUX
RY301	1-515-302-00	Ⓕ Relay
RY302	1-515-278-00	Relay (US model)
RY601	1-515-278-00	Ⓕ Relay (AEP, UK, E model)
TM101, 151	1-536-524-00	Ⓒ Terminal Board, 4 p; SPEAKER A/B
	⚠1-517-072-00	Holder, fuse (US model)
	⚠1-533-131-00	Ⓐ Holder, fuse (AEP, UK, E model)

ACCESSORY AND PACKING MATERIALS

Part No.	*Description*
1-534-819-00	Ⓖ Cord, power (UK model)
3-701-020-00	Ⓐ Bag, check sheet
3-770-456-11	Ⓔ Manual, instruction (AEP, UK, E model)
3-770-456-21	Manual, instruction (US model)
3-794-340-11	Ⓓ Manual, instruction; Dutch and Swedish
4-809-251-00	Ⓐ Bag, plastic
4-854-273-00	Ⓑ Cushion
4-854-275-00	Ⓔ Carton

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10k	1-244-697-11	100k	1-244-721-11	1.0M	1-244-745-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11k	1-244-698-11	110k	1-244-722-11	1.1M	1-244-746-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12k	1-244-699-11	120k	1-244-723-11	1.2M	1-244-747-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13k	1-244-700-11	130k	1-244-724-11	1.3M	1-244-748-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15k	1-244-701-11	150k	1-244-725-11	1.5M	1-244-749-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16k	1-244-702-11	160k	1-244-726-11	1.6M	1-244-750-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18k	1-244-703-11	180k	1-244-727-11	1.8M	1-244-751-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20k	1-244-704-11	200k	1-244-728-11	2.0M	1-244-752-11
2.2	1-244-609-11	22	1-244-633-11	220	1-244-657-11	2.2k	1-244-681-11	22k	1-244-705-11	220k	1-244-729-11	2.2M	1-244-753-11
2.4	1-244-610-11	24	1-244-634-11	240	1-244-658-11	2.4k	1-244-682-11	24k	1-244-706-11	240k	1-244-730-11	2.4M	1-244-754-11
2.7	1-244-611-11	27	1-244-635-11	270	1-244-659-11	2.7k	1-244-683-11	27k	1-244-707-11	270k	1-244-731-11	2.7M	1-244-755-11
3.0	1-244-612-11	30	1-244-636-11	300	1-244-660-11	3.0k	1-244-684-11	30k	1-244-708-11	300k	1-244-732-11	3.0M	1-244-756-11
3.3	1-244-613-11	33	1-244-637-11	330	1-244-661-11	3.3k	1-244-685-11	33k	1-244-709-11	330k	1-244-733-11	3.3M	1-244-757-11
3.6	1-244-614-11	36	1-244-638-11	360	1-244-662-11	3.6k	1-244-686-11	36k	1-244-710-11	360k	1-244-734-11	3.6M	1-244-758-11
3.9	1-244-615-11	39	1-244-639-11	390	1-244-663-11	3.9k	1-244-687-11	39k	1-244-711-11	390k	1-244-735-11	3.9M	1-244-759-11
4.3	1-244-616-11	43	1-244-640-11	430	1-244-664-11	4.3k	1-244-688-11	43k	1-244-712-11	430k	1-244-736-11	4.3M	1-244-760-11
4.7	1-244-617-11	47	1-244-641-11	470	1-244-665-11	4.7k	1-244-689-11	47k	1-244-713-11	470k	1-244-737-11	4.7M	1-244-761-11
5.1	1-244-618-11	51	1-244-642-11	510	1-244-666-11	5.1k	1-244-690-11	51k	1-244-714-11	510k	1-244-738-11	5.1M	1-244-762-11
5.6	1-244-619-11	56	1-244-643-11	560	1-244-667-11	5.6k	1-244-691-11	56k	1-244-715-11	560k	1-244-739-11		
6.2	1-244-620-11	62	1-244-644-11	620	1-244-668-11	6.2k	1-244-692-11	62k	1-244-716-11	620k	1-244-740-11		
6.8	1-244-621-11	68	1-244-645-11	680	1-244-669-11	6.8k	1-244-693-11	68k	1-244-717-11	680k	1-244-741-11		
7.5	1-244-622-11	75	1-244-646-11	750	1-244-670-11	7.5k	1-244-694-11	75k	1-244-718-11	750k	1-244-742-11		
8.2	1-244-623-11	82	1-244-647-11	820	1-244-671-11	8.2k	1-244-695-11	82k	1-244-719-11	820k	1-244-743-11		
9.1	1-244-624-11	91	1-244-648-11	910	1-244-672-11	9.1k	1-244-696-11	91k	1-244-720-11	910k	1-244-744-11		

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