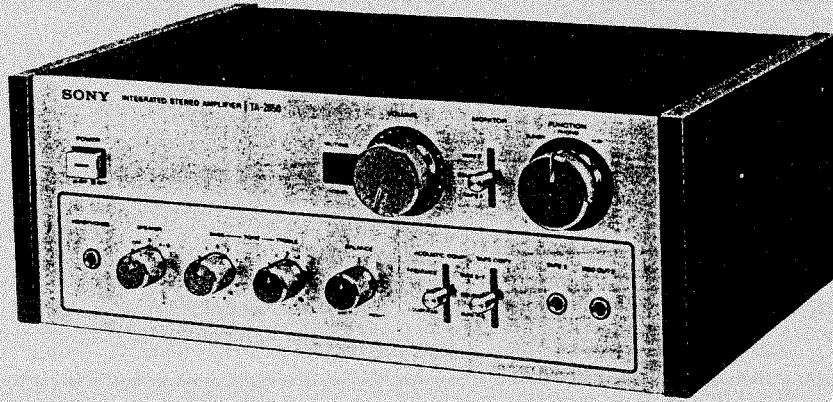


UK Model
AEP Model



INTEGRATED STEREO AMPLIFIER

SPECIFICATIONS

GENERAL

Power Requirements:	110, 127, 220 or 240 V ac adjustable, 50/60 Hz
Power Consumption:	275 W (UK model) 400 W (AEP model)
Dimensions:	Approx. 390 (w) x 145 (h) x 290 (d) mm 15 1/8 (w) x 5 3/4 (h) x 11 1/4 (d) inches Including projecting parts and controls
Weight:	Approx. 8.65 kg, 19 lb 1 oz (net) Approx. 10.5 kg, 23 lb 3 oz (with shipping carton)

Dynamic Power Output:	150 W (8 Ω)
(IHF constant power supply method)	170 W (4 Ω) (AEP model)
Power Bandwidth:	10 - 40,000 Hz, IHF
Damping Factor:	25 (8 Ω , at 1 kHz)
Harmonic Distortion:	Less than 0.2 % at rated output Less than 0.15 % at 1 W output
IM Distortion:	Less than 0.2 % at rated output (60 Hz: 7 kHz=4:1) Less than 0.15 % at 1 W output
Residual Noise:	Less than 0.25 μ W (3 Ω)

AMPLIFIER SECTION

Continuous RMS Power Output:	Both channels driven simultaneously
(rated output)	At 20 - 20,000 Hz 43 + 43 W (8 Ω)
(Less than 0.2 % harmonic distortion)	At 1 kHz 48 + 48 W (8 Ω) 58 + 58 W (4 Ω) (AEP model)
	According to DIN 45,500 43 + 43 W (8 Ω)

- Continued on page 2 -

SONY[®]
SERVICE MANUAL

— Continued from page 1 —

Inputs:

	Sensitivity	Impedance	Maximum Input Capability (THD 0.2 %)	S/N (weighting network, input level)
PHONO	2.5 mV (-50 dB)	50 k Ω	200 mV	70 dB (B, 2.5 mV)
TUNER AUX TAPE1, 2 REC/PB	150 mV (-14.5 dB)	100 k Ω	—————	90 dB (A, 150 mV)

Outputs:

	Output Level	Impedance
REC OUT 1, 2	150 mV	10 k Ω
REC/PB	30 mV	82 k Ω
HEADPHONES	Accepts low and high impedance headphones	
SPEAKERS	Accepts speakers of 4 – 16 Ω (AEP model)	
	Accepts speakers of 8 Ω or more (UK model)	

Frequency Response: PHONO RIAA equalization curve ± 0.5 dB

TUNER	} 10 Hz – 100 kHz $\begin{matrix} +0 \\ -2 \end{matrix}$ dB
AUX	
TAPE 1, 2	
REC/PB (input)	

Tone Controls: BASS
 ± 9 dB at 100 Hz (turnover freq 250 Hz)

TREBLE
 ± 6.5 dB at 10 kHz (turnover freq 4 kHz)

LOUDNESS: +8.8 dB at 50 Hz, 2.5 dB at 10 kHz
(att. 30 dB)

PRESENCE: +2.5 dB at 1 kHz
(att. 30 dB)

0 dB = 0.775 V

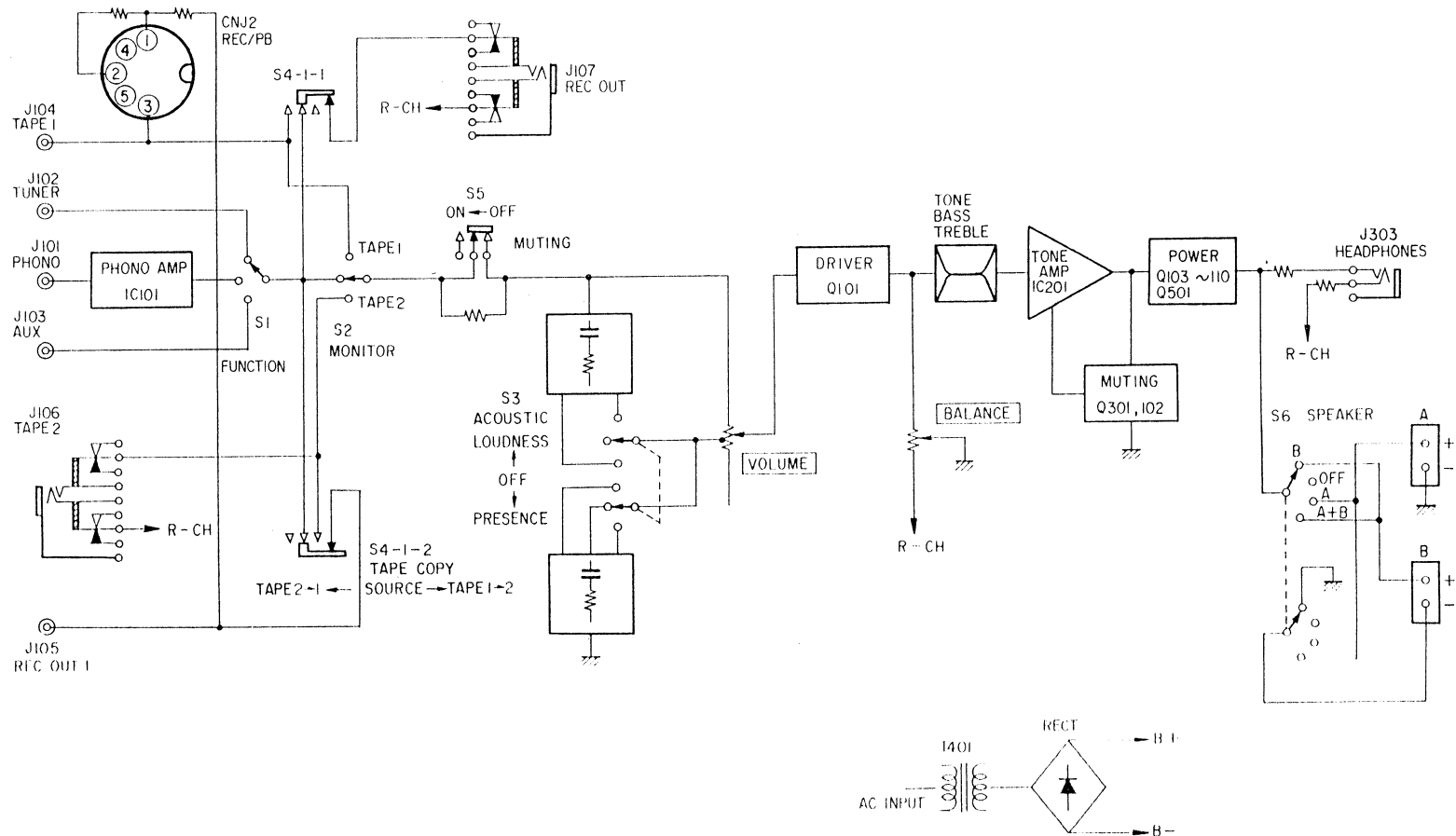
IDENTIFICATION OF SET

TA-2650 is classified by the specification label as shown below.

	Specification Label		
UK Model	<table border="1"><tr><td>SONY[®]</td><td>INTEGRATED STEREO AMPLIFIER MODEL NO. TA-2650 AC 110, 127, 220, 240V~50 60Hz 275W SERIAL NO. _____ MADE IN JAPAN</td></tr></table>	SONY [®]	INTEGRATED STEREO AMPLIFIER MODEL NO. TA-2650 AC 110, 127, 220, 240V~50 60Hz 275W SERIAL NO. _____ MADE IN JAPAN
SONY [®]	INTEGRATED STEREO AMPLIFIER MODEL NO. TA-2650 AC 110, 127, 220, 240V~50 60Hz 275W SERIAL NO. _____ MADE IN JAPAN		
AEP Model	<table border="1"><tr><td>SONY[®]</td><td>INTEGRATED STEREO AMPLIFIER MODEL NO. TA-2650 AC 110, 127, 220, 240V~50 60Hz 400W SERIAL NO. _____ MADE IN JAPAN</td></tr></table>	SONY [®]	INTEGRATED STEREO AMPLIFIER MODEL NO. TA-2650 AC 110, 127, 220, 240V~50 60Hz 400W SERIAL NO. _____ MADE IN JAPAN
SONY [®]	INTEGRATED STEREO AMPLIFIER MODEL NO. TA-2650 AC 110, 127, 220, 240V~50 60Hz 400W SERIAL NO. _____ MADE IN JAPAN		

SECTION 1
OUTLINE

BLOCK DIAGRAM



SECTION 2
DISASSEMBLY

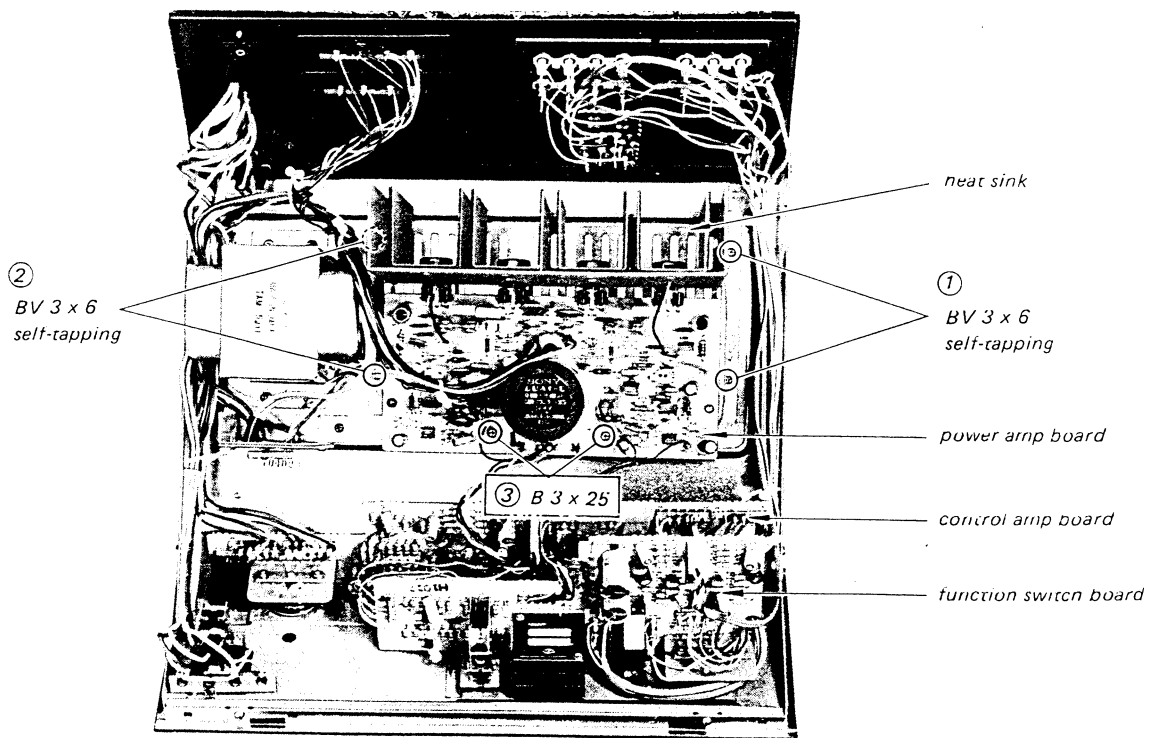
2-1. REMOVALS

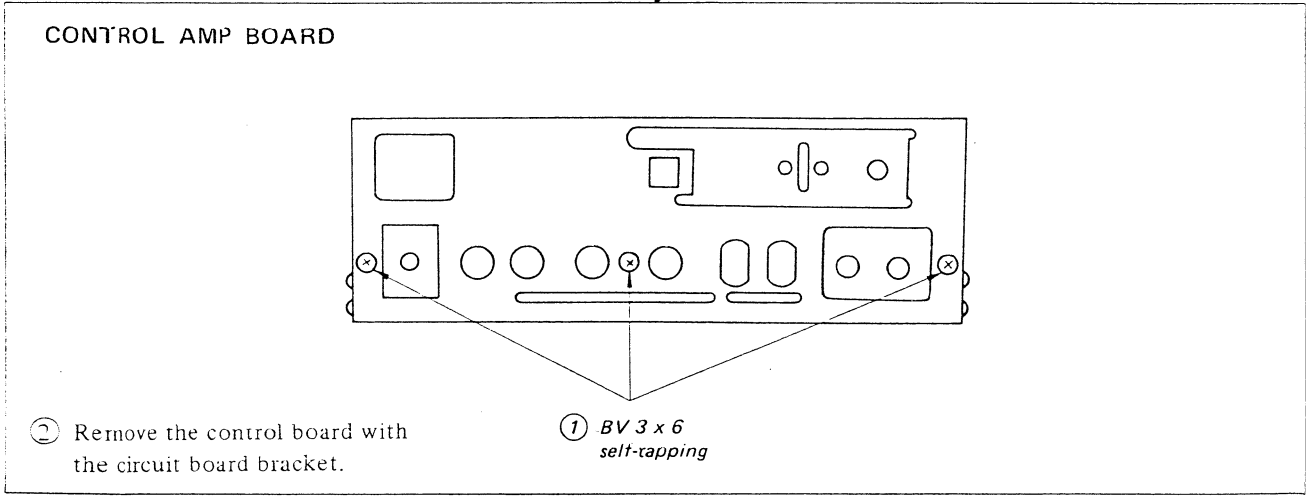
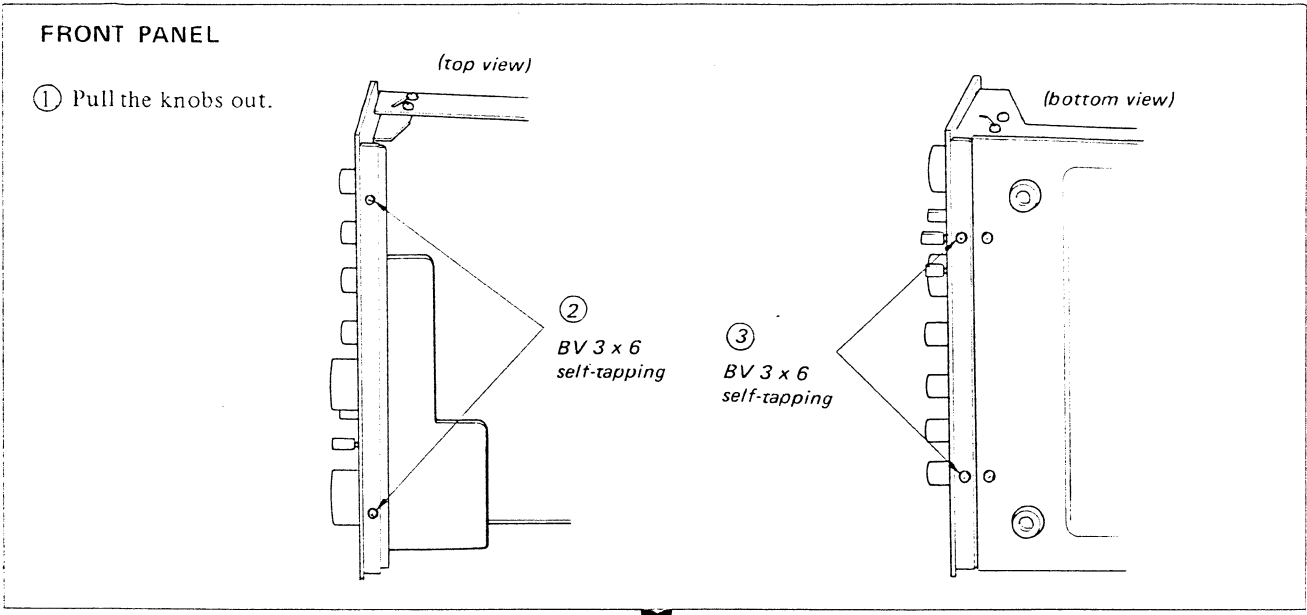
SIDE BOARD and TOP COVER



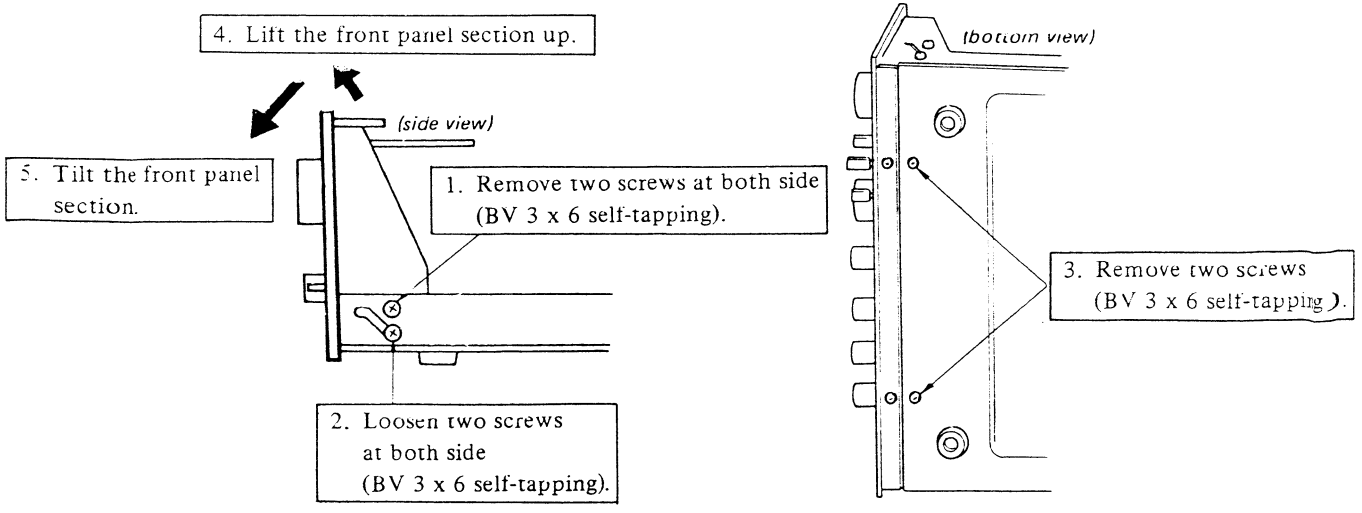
POWER AMP BOARD

④ Remove the power amp board with the heat sink.





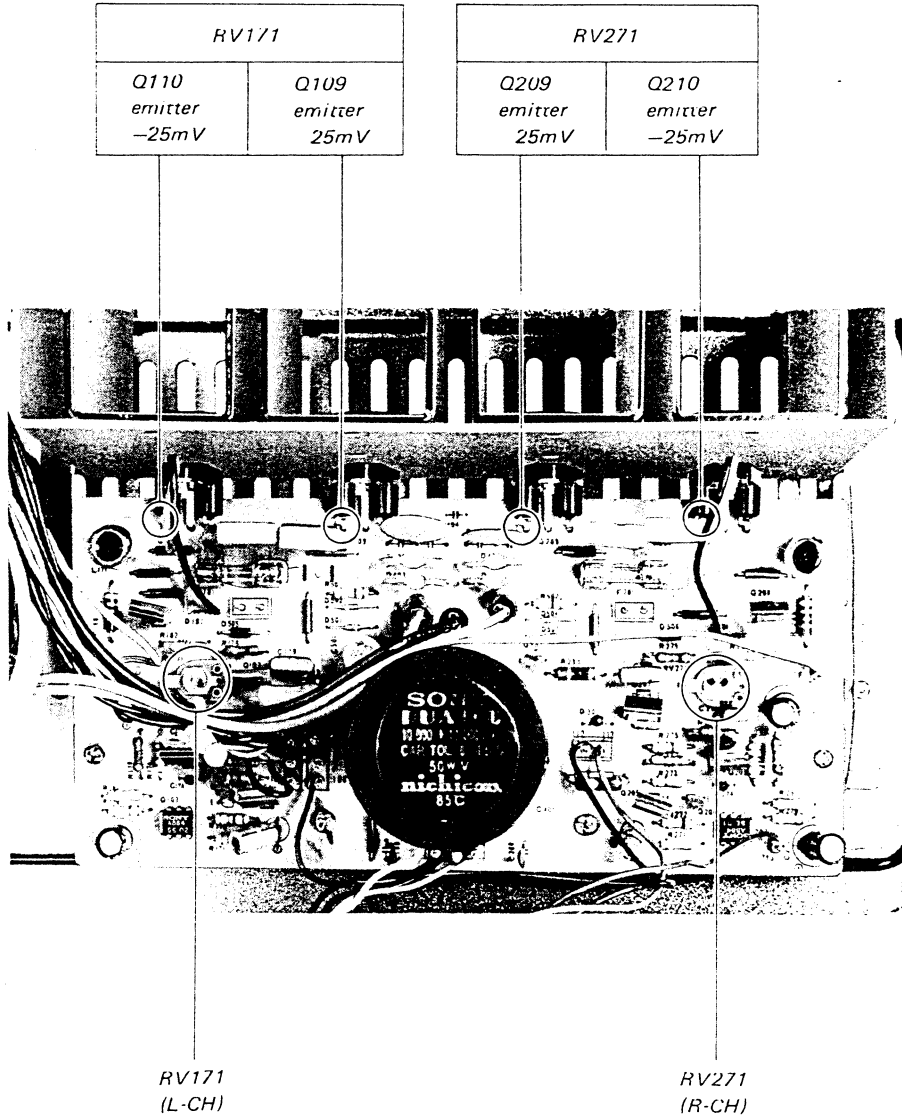
2-2. HOW TO RAISE THE CIRCUIT BOARDS (FUNCTION SWITCH and CONTROL AMP BOARDS)



SECTION 3 ADJUSTMENT

2-1. DC BIAS ADJUSTMENT

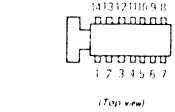
Adjust RV171 and RV271 for specified values.



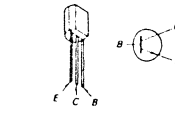
SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM
- Component Side -

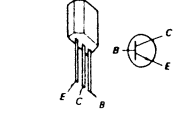
IC101, 201: CX046
 • B+ pattern
 • B- pattern



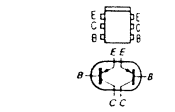
Q101, 201: 2SC1362
 Q301: 2SC1364



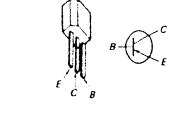
Q102, 202: 2SC1637
 Q501: 2SC634



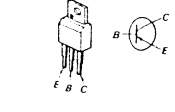
Q103, 203: 2SA884



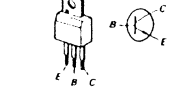
Q104, 204: 2SA678
 502



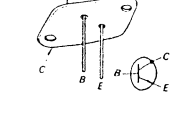
Q105, 108: 2SA706
 205, 208



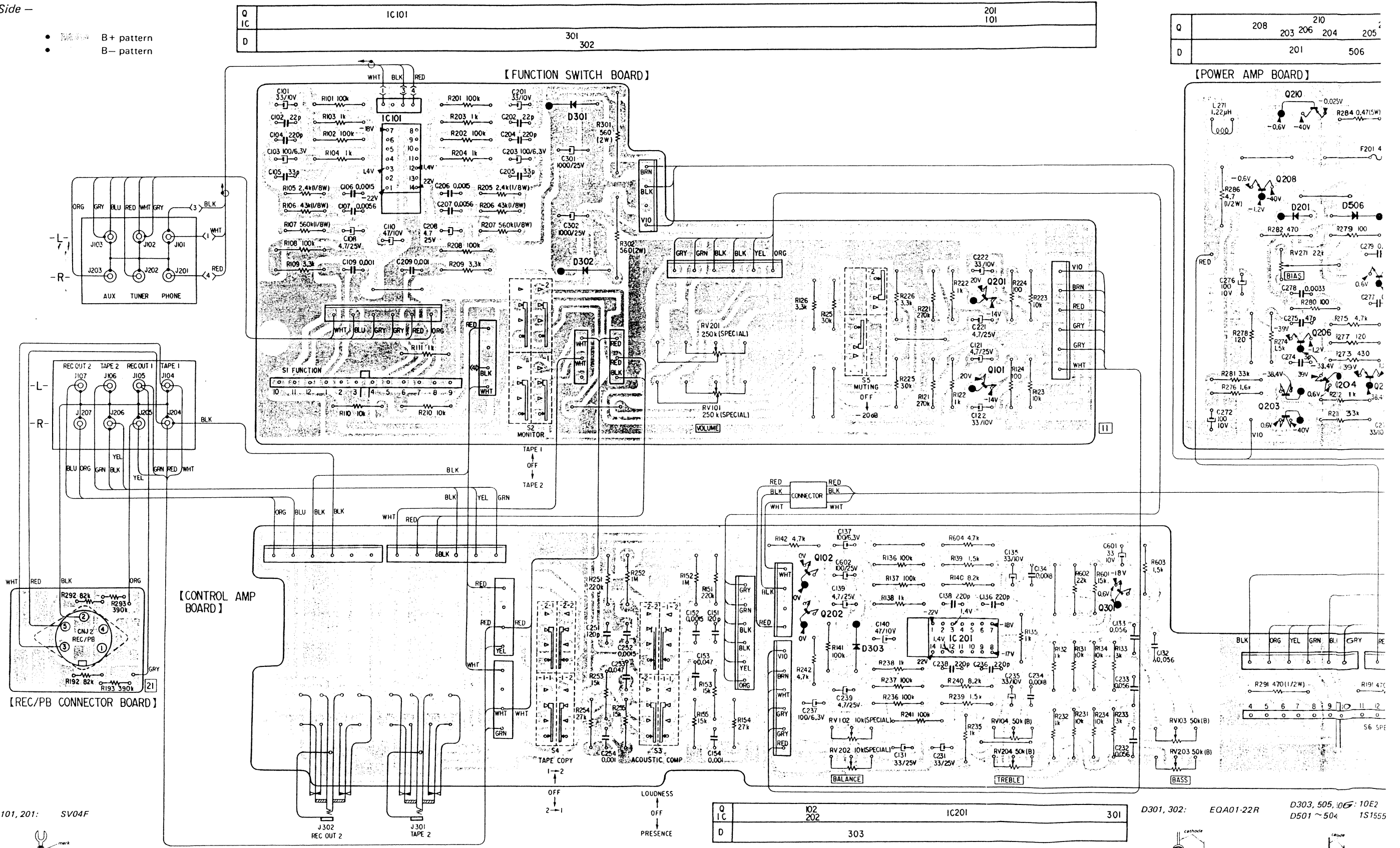
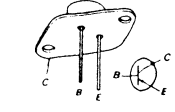
Q106, 107: 2SC1124
 206, 207



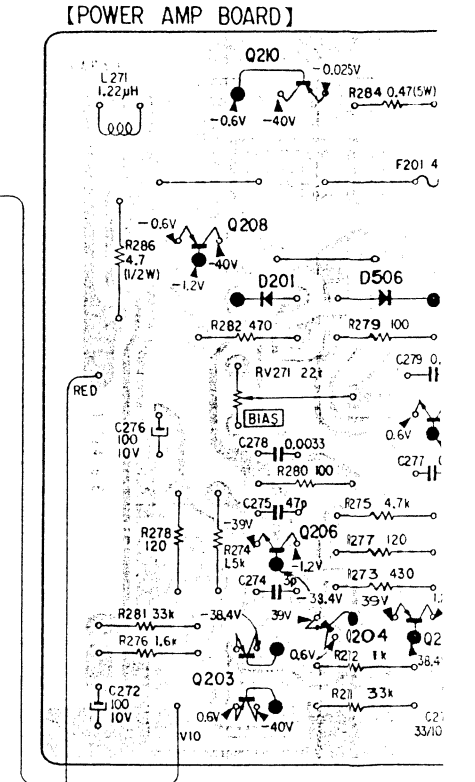
Q109, 209: 2SD532



Q110, 210: 2SB518 D101, 201: SV04F



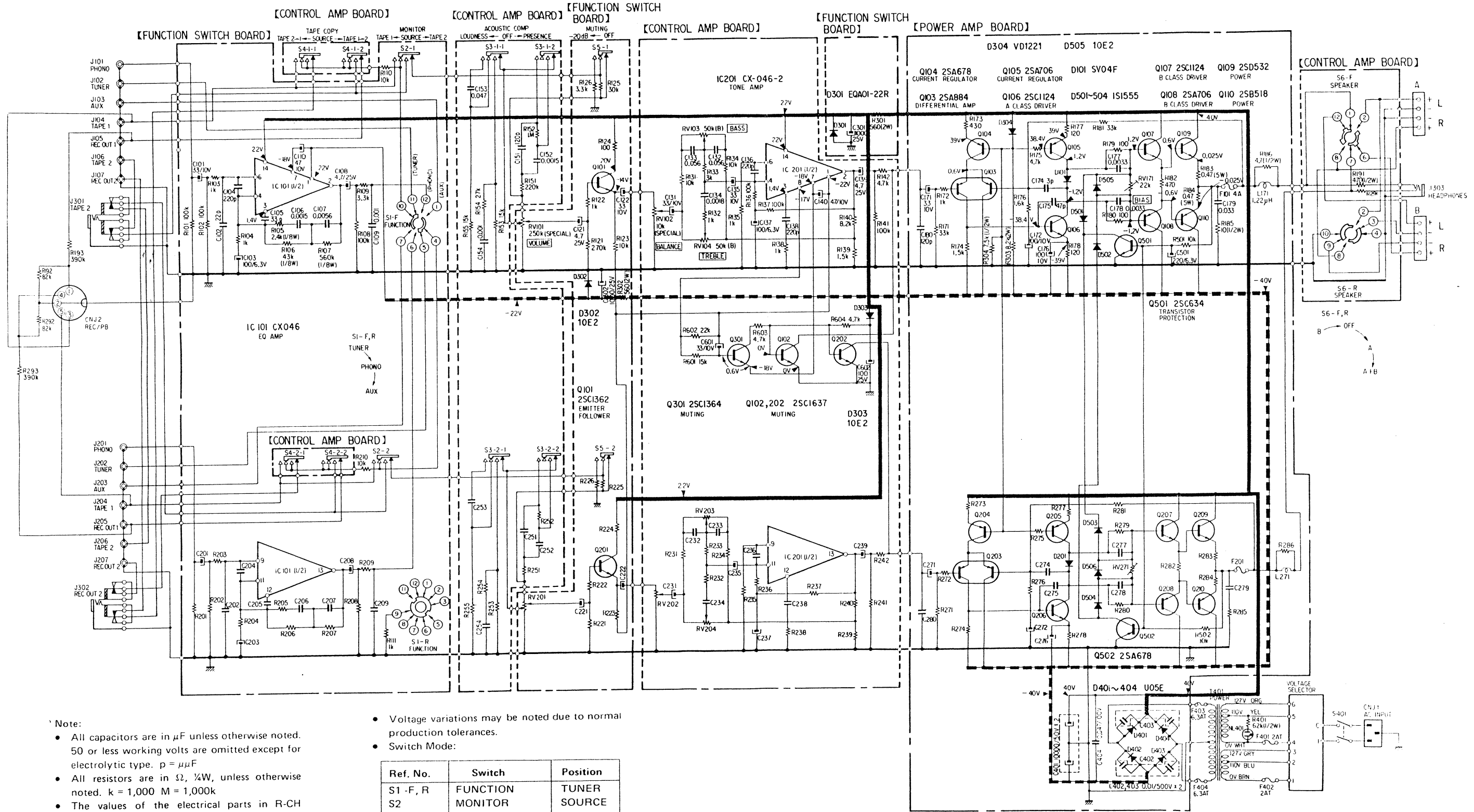
Q	208	203	206	204	205
D	201	506			



Q	IC	102	IC201	301	D301, 302:	EQA01-22R	D303, 505, 106:	10E2
D		303					D501 ~ 504:	1S1555

TA-2650 TA-2650

4-2. SCHEMATIC DIAGRAM



- Note:**
- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. $p = \mu\text{F}$
 - All resistors are in Ω , $\frac{1}{4}\text{W}$, unless otherwise noted. $k = 1,000$ $M = 1,000k$
 - The values of the electrical parts in R-CH section are omitted from the diagram.
 - --- indicates chassis ground.
 - --- indicates B+ circuit.
 - --- indicates B- circuit.
 - Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20k Ω/V).

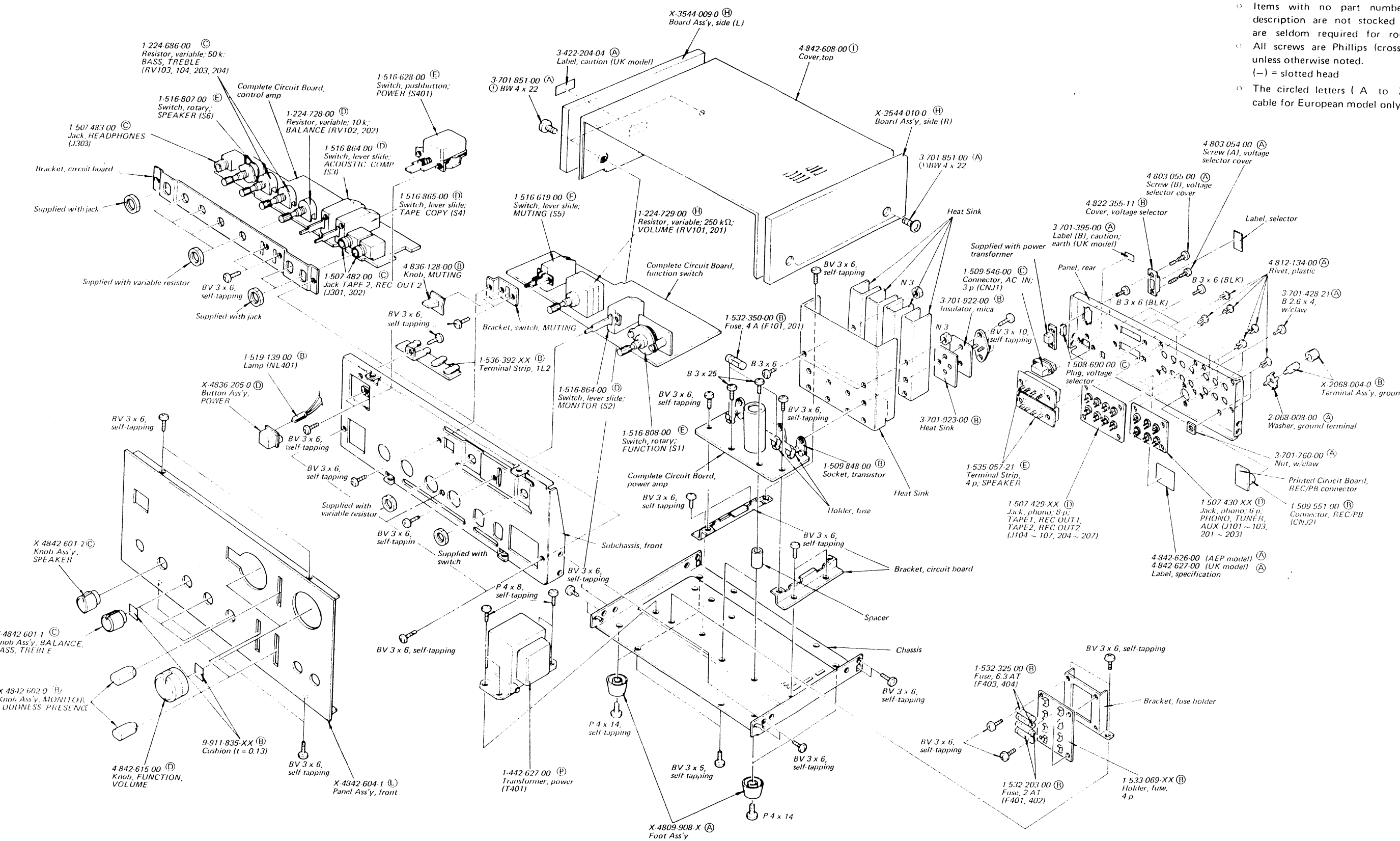
- Voltage variations may be noted due to normal production tolerances.
- Switch Mode:

Ref. No.	Switch	Position
S1 - F, R	FUNCTION	TUNER
S2	MONITOR	SOURCE
S3 -1-1 ~ 2	ACOUSTIC COMP	OFF
S3 -2-1 ~ 2		OFF
S4 -1-1 ~ 2	TAPE COPY	SOURCE
S4 -2-1 ~ 2		SOURCE
S5	MUTING	OFF
S6 - F, R	SPEAKER	B
S401	POWER	OFF

TA-2650 TA-2650

SECTION 5 EXPLODED VIEW

5.



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.

○ The circled letter (A to Z) are applicable for European model only.

Ref. No. Part No. Description

RESISTORS

All resistors are in Ω. Regular type, 1/4W carbon and composition resistors are omitted. Check the schematic diagram for resistance values. (k = 1000, M = 1000k)

R105, 205	1-246-482-11	Ⓐ	2.4k	1/8W	carbon
R106, 206	1-246-512-11	Ⓐ	43k	1/8W	carbon
R107, 207	1-246-539-11	Ⓐ	560k	1/8W	carbon
R183, 283 R184, 284	1-217-158-11	Ⓐ	0.47	5W	wire-wound
R185, 285	1-202-525-00	Ⓐ	10	1/2W	composition
R186, 286	1-202-517-00	Ⓐ	4.7	1/2W	composition
R191, 291	1-202-565-35	Ⓐ	470	1/2W	composition
R301, 302	1-206-658-11	Ⓐ	560	2W	metal oxide
R303	1-206-686-11	Ⓐ	8.2k	2W	metal oxide
R304	1-211-659-11	Ⓐ	7.5k	1/2W	carbon
R401	1-202-616-00	Ⓐ	62k	1/2W	composition
RV101, 201	1-224-729-00	Ⓗ	250k		variable, VOLUME
RV102, 202	1-224-728-00	Ⓓ	10k		variable, BALANCE
RV103, 203 RV104, 204	1-224-686-00	Ⓒ	50k		variable, BASS; TREBLE
RT171, 271	1-224-646-XX	Ⓑ	22k		adjustable

SWITCHES

S1	1-516-808-00	Ⓔ	Rotary, FUNCTION
S2, 3	1-516-864-00	Ⓓ	Lever Slide, MONITOR, ACOUSTIC COMP
S4	1-516-865-00	Ⓓ	Lever Slide, TAPE COPY
S5	1-516-619-00	Ⓕ	Lever Slide, MUTING
S6	1-516-807-00	Ⓔ	Rotary, SPEAKER
S401	1-516-628-00	Ⓔ	Pushbutton, POWER

Ref. No. Part No. Description

JACKS

J101 ~ 103 J201 ~ 203	1-507-430-XX	Ⓓ	Phono, 6-p; PHONO, TUNER, AUX
J104 ~ 107 J204 ~ 207	1-507-429-XX	Ⓓ	Phono, 8-p; TAPE 1, REC OUT 1, TAPE 2, REC OUT 2
J301, 302	1-507-482-00	Ⓒ	TAPE 2, REC OUT 2
J303	1-507-483-00	Ⓒ	HEADPHONES
CNJ1	1-509-546-00	Ⓒ	Connector, AC IN; 3-p
CNJ2	1-509-551-00	Ⓑ	Connector, REC/PB

MISCELLANEOUS

CP401	1-231-057-31	Ⓑ	Encapsulated Components, C-R
F101, 102	1-532-350-00	Ⓑ	Fuse, 4A
F401, 402	1-532-203-00	Ⓑ	Fuse, 2AT
F403, 404	1-532-325-00	Ⓑ	Fuse, 6.3AT
NL401	1-519-139-00	Ⓑ	Lamp
T401	1-442-627-00	Ⓔ	Transformer, power
	1-508-690-00	Ⓒ	Plug, voltage selector
	1-509-848-00	Ⓑ	Socket, transistor
	1-533-069-XX	Ⓑ	Holder, fuse; 4-p
	1-535-057-21	Ⓔ	Terminal Strip, 4-p; SPEAKER
	1-536-392-XX	Ⓑ	Terminal Strip, 1L2

ACCESSORIES

	1-534-819-00	Ⓒ	Cord, power (UK model)
	3-780-751-11	Ⓑ	Manual, instruction

SECTION 6
ELECTRICAL PARTS LIST

○ The circled letter (A to Z) are applicable for European model only.

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

Q101, 201	Ⓑ	2SC1362
Q102, 202	Ⓑ	2SC1637
Q103, 203	Ⓓ	2SA884
Q104, 204	Ⓒ	2SA678
Q105, 205	Ⓓ	2SA706
Q106, 206	Ⓒ	2SC1124
Q107, 207		
Q108, 208	Ⓓ	2SA706
Q109, 209	Ⓔ	2SD532
Q110, 210	Ⓒ	2SB518
Q301	Ⓑ	2SC1364
Q501	Ⓑ	2SC634
Q502	Ⓒ	2SA678

IC's

IC101, 201	Ⓗ	CX046
------------	---	-------

Diodes

D101, 201	Ⓑ	SV04F
D301, 302	Ⓑ	EQA01-22R
D303	Ⓑ	10E2
D304	Ⓑ	VD1221
D401 ~ 404	Ⓒ	U05E
D501 ~ 504	Ⓑ	1S1555
D505, 506	Ⓑ	10E2

CAPACITORS

All capacitors are in μ F and of mylar unless otherwise noted.
(p = μ F, elect = electrolytic)
50 and/or less working voltages are omitted except for electrolytic type.

C101, 201	1-121-926-11	Ⓐ	33	10V	elect
C102, 202	1-102-959-11	Ⓐ	22p		ceramic
C103, 203	1-121-413-11	Ⓐ	100	6.3V	elect
C104, 204	1-102-978-11	Ⓐ	220p		ceramic
C105, 205	1-102-963-11	Ⓐ	33p		ceramic

Ref. No. Part No. Description

C106, 206	1-108-794-12	Ⓐ	0.0015		
C107, 207	1-108-801-12	Ⓐ	0.0056		
C108, 208	1-121-915-11	Ⓐ	4.7	25V	elect
C109, 209	1-108-792-12	Ⓐ	0.001		
C110	1-121-927-11	Ⓑ	47	10V	elect
C121, 221	1-121-915-11	Ⓐ	4.7	25V	elect
C122, 222	1-121-926-11	Ⓐ	33	10V	elect
C131, 231					
C132, 232	1-108-846-12	Ⓐ	0.056		
C133, 233					
C134, 234	1-108-828-12	Ⓐ	0.0018		
C135, 235	1-121-926-11	Ⓐ	33	10V	elect
C136, 236	1-102-978-11	Ⓐ	220p		ceramic
C137, 237	1-121-413-11	Ⓐ	100	6.3V	elect
C138, 238	1-102-978-11	Ⓐ	220p		ceramic
C139, 239	1-121-915-11	Ⓐ	4.7	25V	elect
C140	1-121-352-11	Ⓐ	47	10V	elect
C151, 251	1-102-816-11	Ⓐ	120p		ceramic
C152, 252	1-108-827-12	Ⓐ	0.0015		
C153, 253	1-108-845-12	Ⓐ	0.047		
C154, 254	1-108-825-12	Ⓐ	0.001		
C171, 271	1-121-926-11	Ⓐ	33	10V	elect
C172, 272	1-121-414-11	Ⓐ	100	10V	elect
C174, 274	1-102-940-11	Ⓐ	3p		ceramic
C175, 275	1-101-880-11	Ⓐ	47p		ceramic
C176, 276	1-121-414-11	Ⓐ	100	10V	elect
C177, 277	1-108-831-12	Ⓐ	0.0033		
C178, 278					
C179, 279	1-108-843-12	Ⓐ	0.033		
C180, 280	1-102-816-11	Ⓐ	120p		ceramic
C301, 302	1-123-066-11	Ⓑ	1000	25V	elect
C401	1-125-100-11	Ⓚ	10000 x 2	50V	elect
C402, 403	1-102-355-11	Ⓐ	0.01	500V	elect
C404	1-108-634-12	Ⓐ	0.047	100V	
C501	1-121-419-11	Ⓑ	220	6.3V	elect
C601	1-121-926-11	Ⓐ	33	10V	elect
C602	1-121-935-11	Ⓑ	100	25V	elect