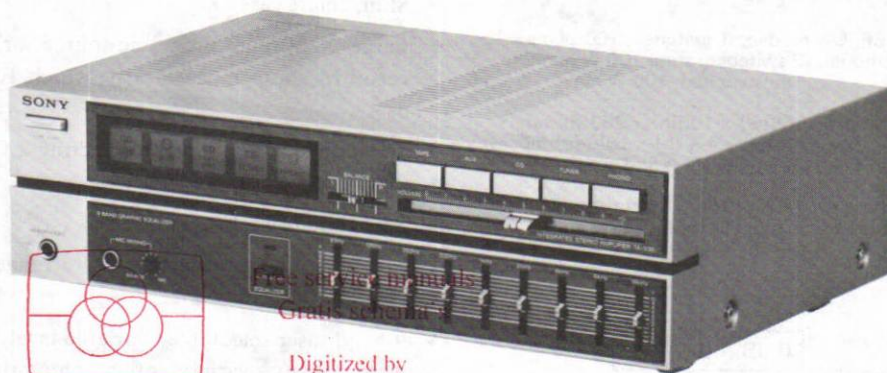


TA-V30

SERVICE MANUAL

AEP Model
UK Model
E Model



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SPECIFICATIONS

Amplifier section

Continuous RMS Power Output:

At 1 kHz
38 + 38 watts (5% THD, 8 Ω)
33 + 33 watts (0.08% THD, 8 Ω)
At 40 Hz – 20 kHz, 0.08% THD
28 + 28 watts (8 Ω)
According to DIN 45500
28 + 28 watts (8 Ω)

Music Power: 140 W (5% THD) (E model)

Power Bandwidth (IHF): 10 Hz – 30 kHz (6 Ω, 15 W)

Dynamic Headroom: 1.8 dB ('78 IHF)

Harmonic Distortion: Less than 0.08% at rated output

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

Frequency Response: PHONO : RIAA equalization curve ±0.5 dB
TUNER
CD } 15 Hz – 50 kHz $_{-3}^{+0}$ dB
AUX }
TAPE }
MIC MIXING 150 Hz – 10 kHz $_{-4}^{+0}$ dB

Residual Noise: Less than 100 μV (8 Ω, network A)

Damping Factor: 30 (6 Ω, 1 kHz)

Inputs:

	Sensitivity	Impedance	Maximum input capability (1 kHz)	S/N (weighting network, input level)
PHONO (MM)	2.5 mV	50 kΩ	120 mV (MM)	72 dB 75 dB* (A, 2.5 mV)
TUNER CD AUX TAPE	150 mV	50 kΩ	—	98 dB 80 dB* (A, 150 mV)
MIC MIXING	2.5 mV	50 kΩ	—	70 dB 70 dB* (A, 2.5 mV)

* '78 IHF

Outputs: REC OUT
Voltage 150 mV
Impedance 4.7 kΩ
SPEAKER
Accepts speakers of 6 – 16 Ω
HEADPHONES
Accepts low and high impedance headphones. (12 mW/8Ω)


Graphic Equalizer: 9 bands
Center frequencies:
63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz,
2 kHz, 4 kHz, 8 kHz, 16 kHz

General

System: Preamplifier section: low-noise NF type equalizer amp
Power amplifier section: quasi-complementary SEPP OTL OCL amplifier with all stages direct coupled

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

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



MICROFILM

INTEGRATED STEREO AMPLIFIER
SONY®

AUD

Power Requirements: AEP model: 220 V ac (240 V ac adjustable by authorized Sony personnel), 50/60 Hz
 UK model: 240 V ac (220 V ac adjustable by authorized Sony personnel), 50/60 Hz
 E model: 120 or 240 V ac adjustable, 50/60 Hz

Power Consumption: 85 W

AC Outlets: AEP, UK model: 3 switched, 100 W max.
 E model: 2 switched, total 100 W max.
 1 unswitched, 100 W max.

Dimensions: Approx. 355(w) x 105(h) x 260(d) mm
 (14(w) x 4¹/₄(h) x 10¹/₄(d) inches)
 including projecting parts and controls

Weight: Approx. 4.5 kg (9 lbs 15 oz) net
 Approx. 5.3 kg (11 lbs 11 oz) in shipping carton

0 dB = 0.775 V

FEATURES

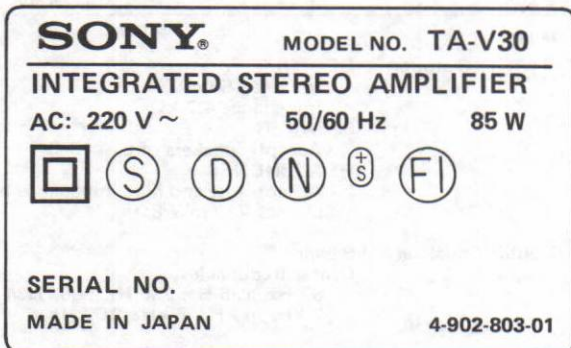
The Sony TA-V30 integrated stereo amplifier provides dynamic high-fidelity sound despite a remarkably compact cabinet.

- Slim, smart case.
- Large light-blue programe-source or mode indicator to show quite clearly which function is in use.
- Separate CD input for connecting a CD (compact disc) player.
- Soft-touch function switches.
- Cord clamp for ensuring tidy arrangement of the cords on the rear panel.
- 9-band user-selectable, variable-level equalizer to make many variety of graphic-oriented music sound.
- Power ON/OFF click-noise muting and amp/speaker protection circuits are equipped.
- Total of 3 AC outlets for wider user utility convenience.
- Front panel jack is provided for an external microphone to facilitate a microphone mixing pleasure.

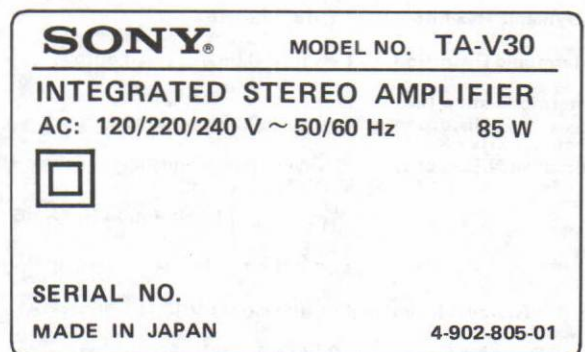
MODEL IDENTIFICATIONS

— Specification Label —

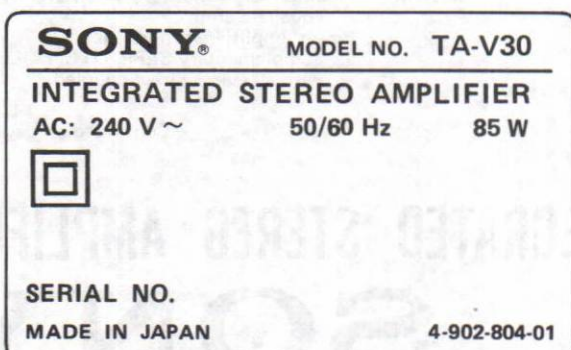
AEP model



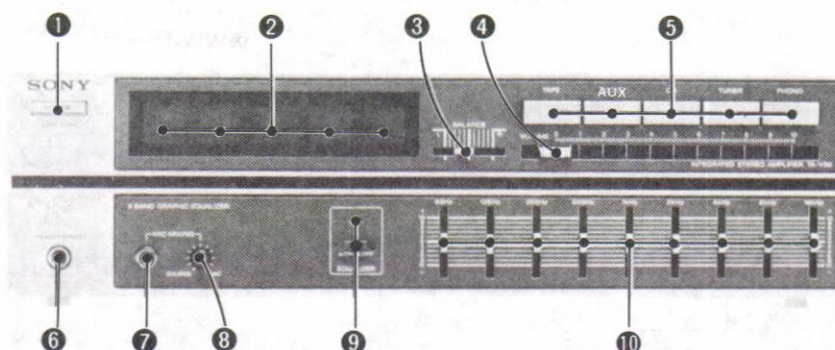
E model



UK model



CONTROLS AND SWITCHES

**1 POWER switch**

Turns the operating power on or off.

2 Programme source indicator

The programme in use is displayed here.

3 BALANCE control

Governs the amount of sound coming from each paired speaker to get optimum stereo effect.

4 VOLUME control

Regulates the overall sound level.

Sliding the lever towards 10 increases the volume and sliding it towards 0 decreases the volume. Be sure to lower the volume whenever you turn the amplifier on or off or make system connections.

5 Function switches

Depress one of these switches to select a desired programme source. The programme in use is displayed in the programme source indicator.

PHONO: For record programmes (connected to PHONO inputs)

TUNER: For off-the-air programmes (connected to TUNER inputs)

CD: For CD programmes (connected to CD inputs)

TAPE: For taped programmes (connected to TAPE inputs)

AUX: For other auxiliary programmes (connected to AUX inputs)

6 HEADPHONES jack (standard stereo)

Accepts any low or high impedance stereo headphones.

7 MIC MIXING jack

External microphone source connector to make a microphone mixing.

8 MIC MIXING control

External microphone mixing level is adjusted by turning this knob. When set at SOURCE position, source level becomes louder than microphone input, and vice versa. Usually set to SOURCE stop.

9 EQUALIZER switch/indicator

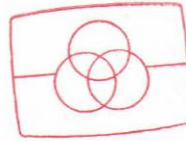
When equalization is needed, turn ON this switch. Then the indicator atop the switch goes on and graphic equalization is made possible.

When equalization is not needed, turn this switch OFF.

10 EQUALIZER controls

Those controls work when EQUALIZER switch is turned ON. When the knob is advanced to (+) side, emphasising equalization is made, and vice versa.

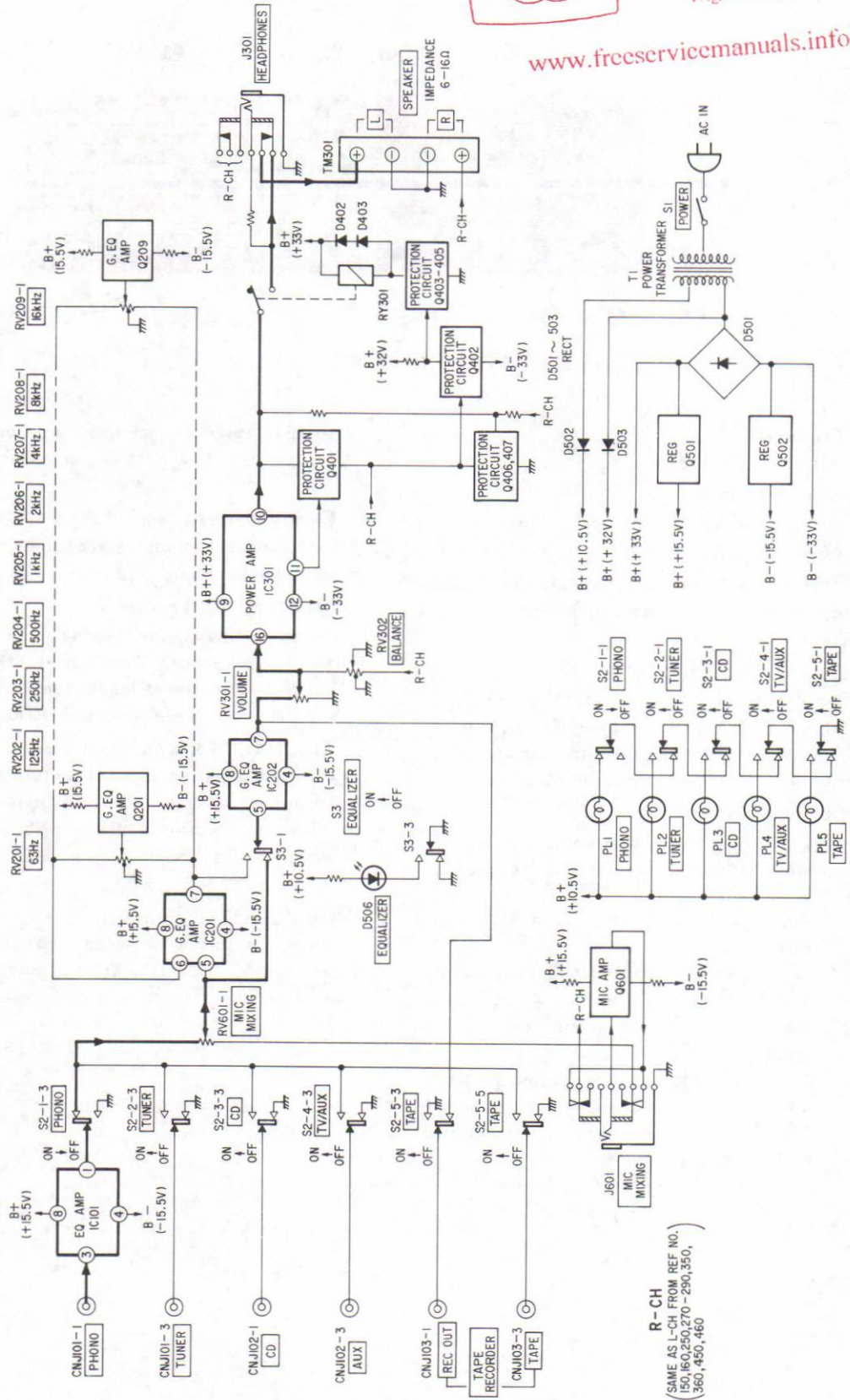
SECTION 1 OUTLINE



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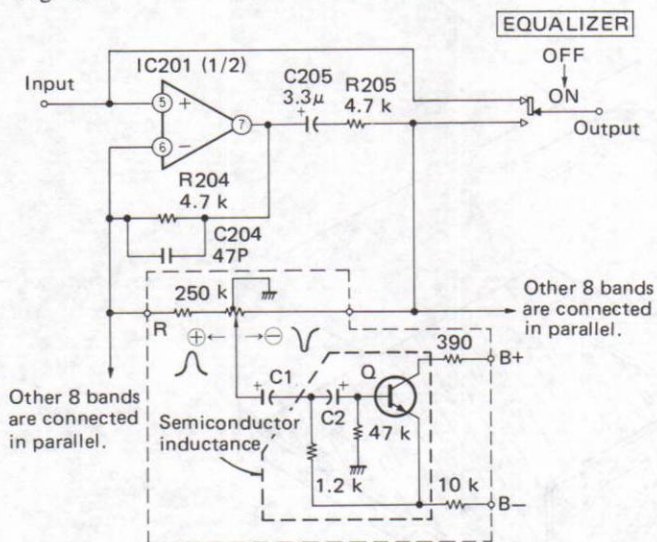
1-1. BLOCK DIAGRAM



1-2. CIRCUIT DESCRIPTION

Graphic Equalizer

The graphic equalizer equipped on this amplifier unit is of the boost/filter type utilizing the conventional operational-amplifier configuration as shown in Fig. 1.



f	C1 (μF)	C2 (μF)	R (Ω)
63 Hz	1	0.1	0
125 Hz	0.47	0.056	0
250 Hz	0.22	0.033	0
500 Hz	0.1	0.018	0
1 kHz	0.068	0.0068	0
2 kHz	0.033	0.0033	0
4 kHz	0.015	0.0018	1.2 k
8 kHz	0.0082	0.00082	1.2 k
16 kHz	0.0033	0.00056	1.2 k

Fig. 1

Capacitor C2, resistors 1.2 kΩ and 47 kΩ and the equalizer-amplifier transistor 2SC2458 compose a semiconductor inductance network. Here $L = C2 \times 10^{-6} \times 1.2 \times 10^3 \times 47 \times 10^3$ henries. The center frequency is decided by the capacitor C1 and C2 as shown in the table.

The transistor 2SC2458 in the semiconductor inductance network is working in a unity-gain amplifier and the "Q" of the resonance circuit is about 2 (two).

Suppose that the 8 (eight) bands' controls are set to "0" positions and the required-band's equalizer control to the (+) side and a signal-boosting is resulted. In this case the circuit condition becomes in that shown in Fig. 2.

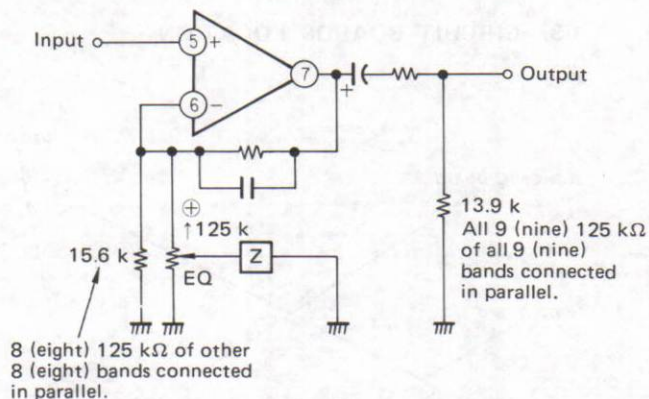


Fig. 2

And the circuit becomes in that shown in Fig. 3 in the mostly-boosted condition with the equalizer control set to +10. The resistors "R" 1.2 kΩ in the upper three frequencies 4 kHz, 8 kHz and 16 kHz in series with the respective equalizer control is provided to reduce the high peaks to protect any tweeters in the loud-speaker systems.

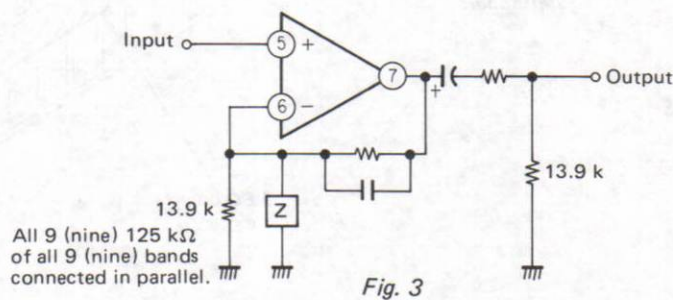


Fig. 3

When the required equalizer control is slid toward (-) on the contrary to enhance the filtering effects, the circuit results in that shown in Fig. 4. The output circuit becomes in that one shown in Fig. 5 in the maximum filtering condition with the equalizer control set to the -10 position.

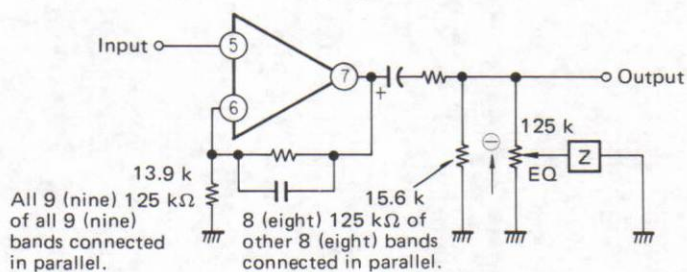


Fig. 4

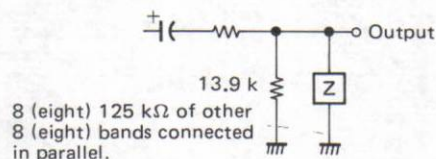
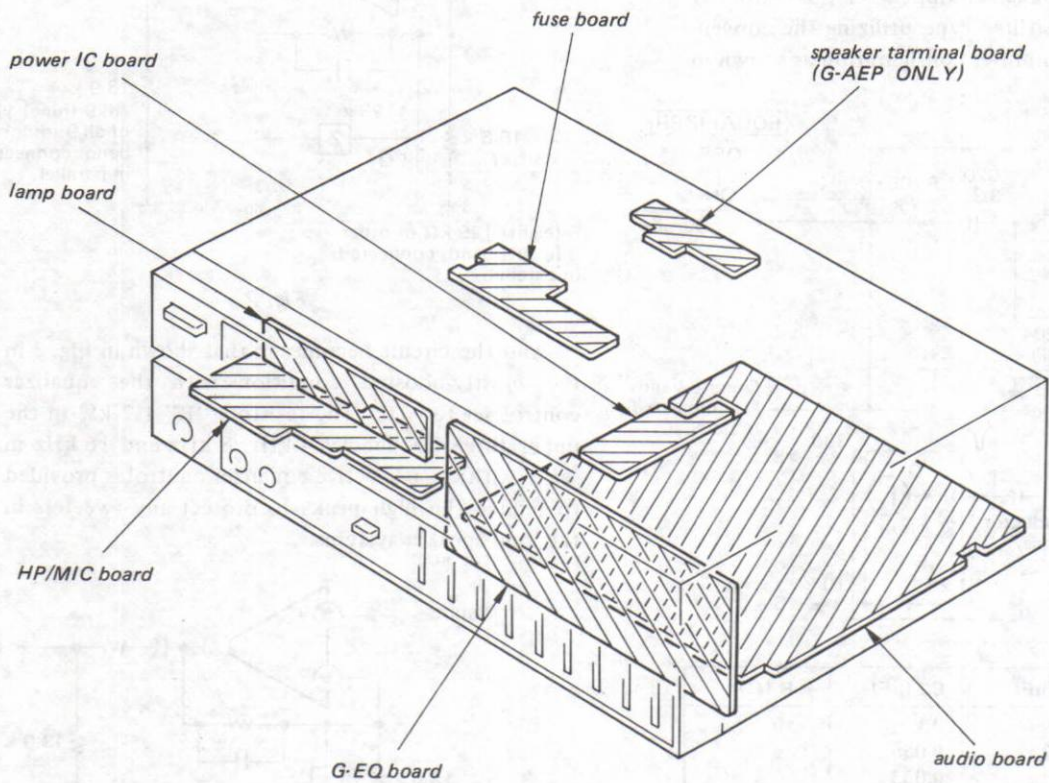


Fig. 5

1-3. CIRCUIT BOARDS LOCATION



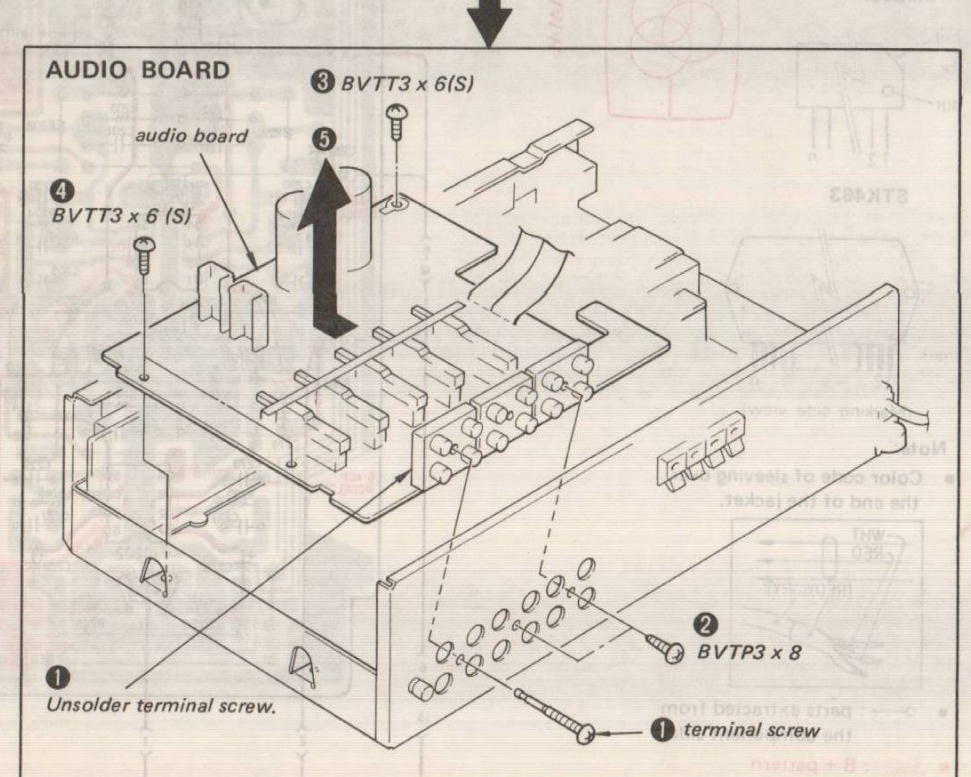
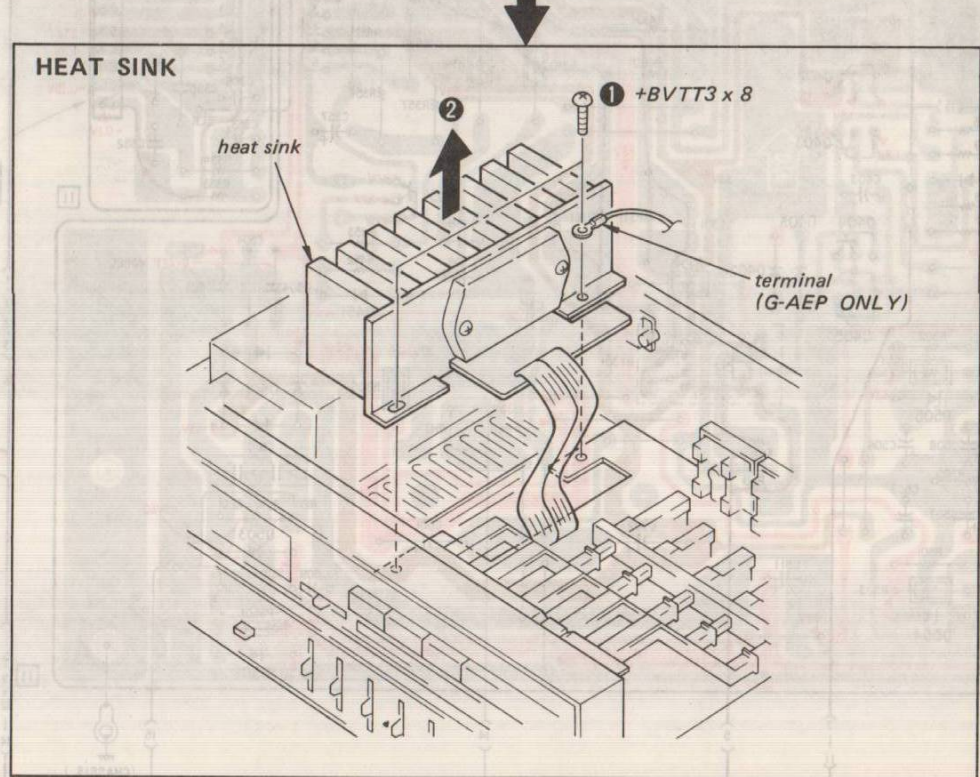
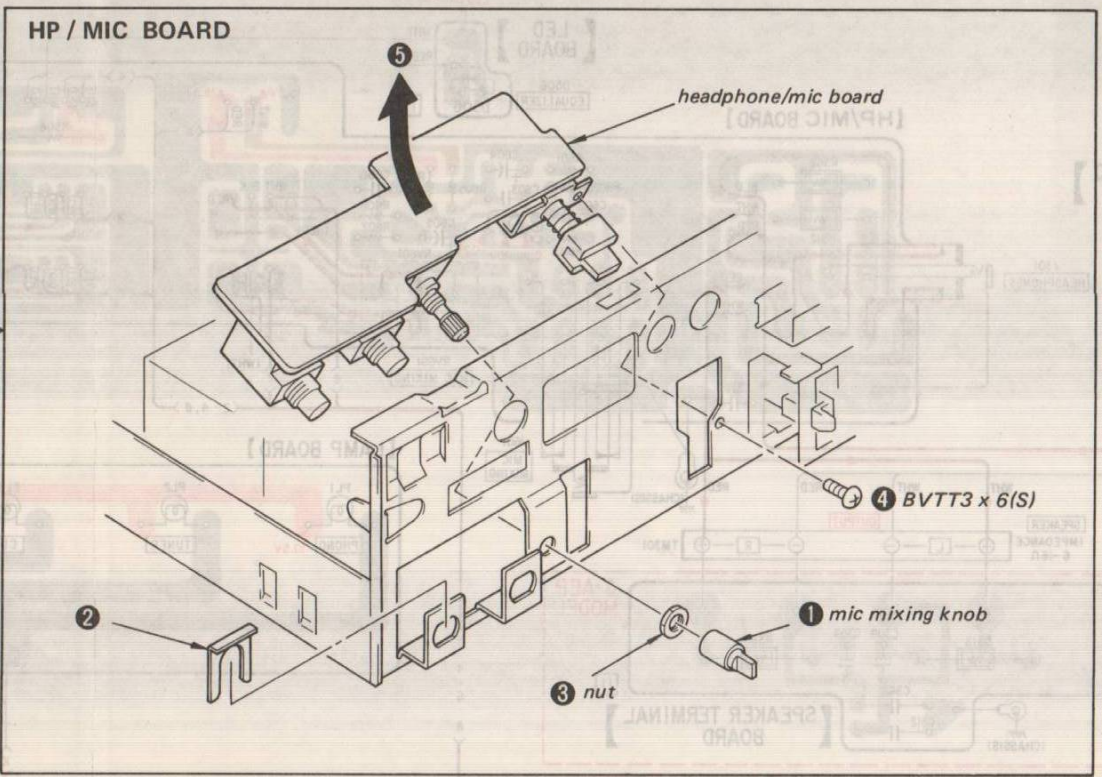
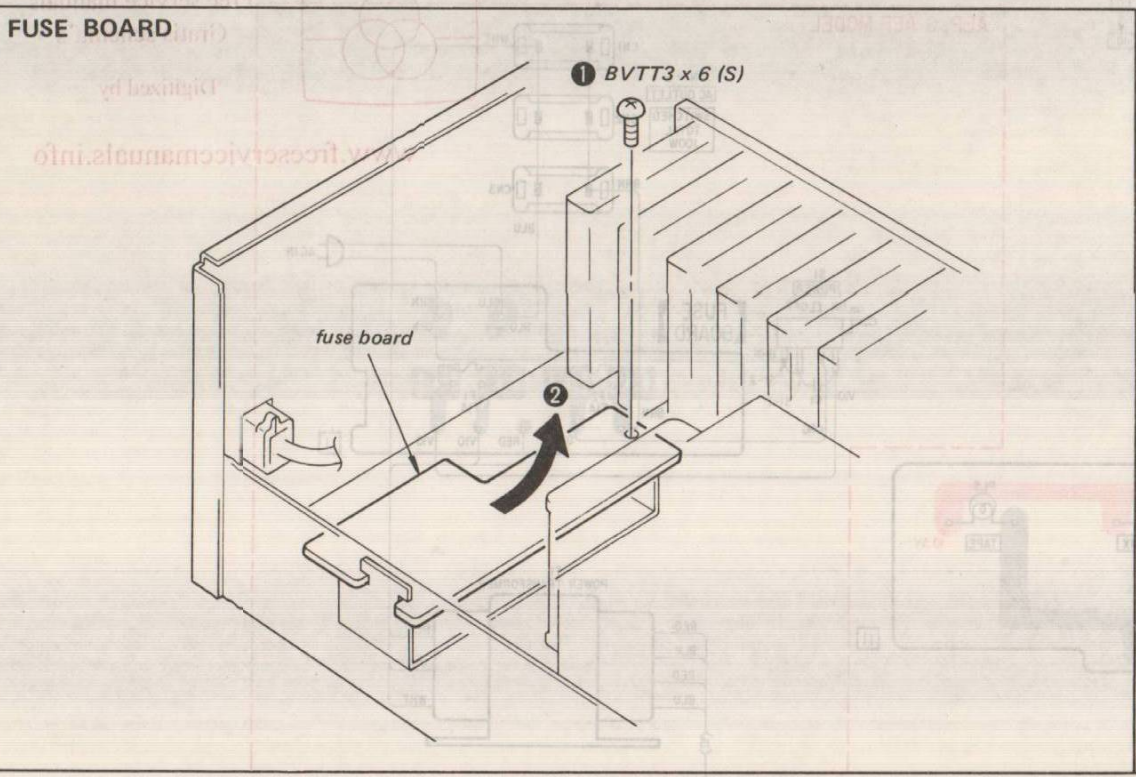
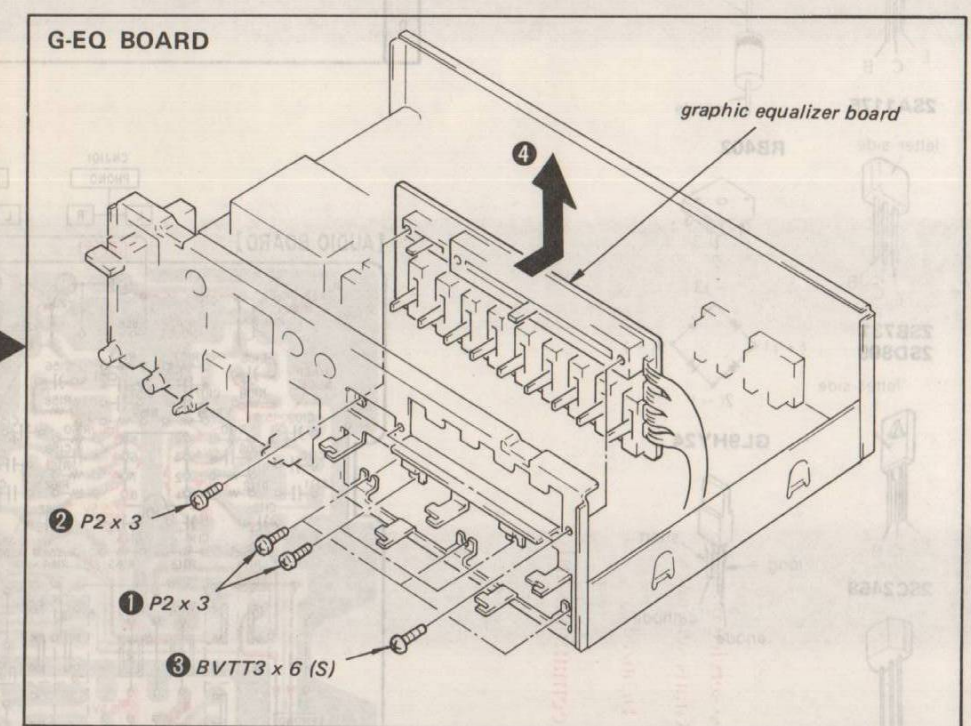
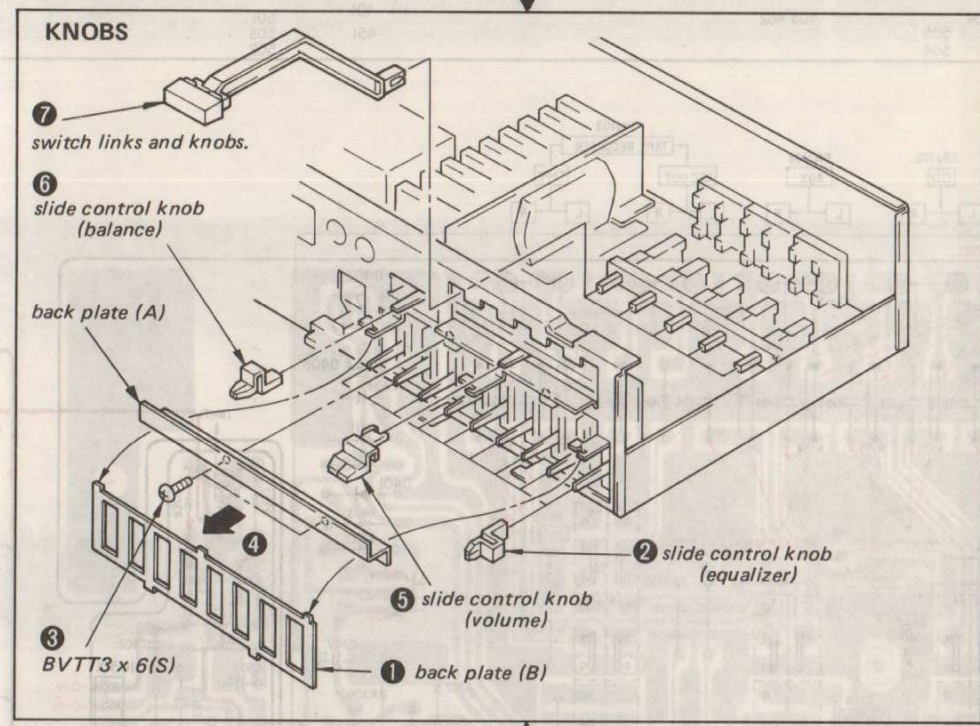
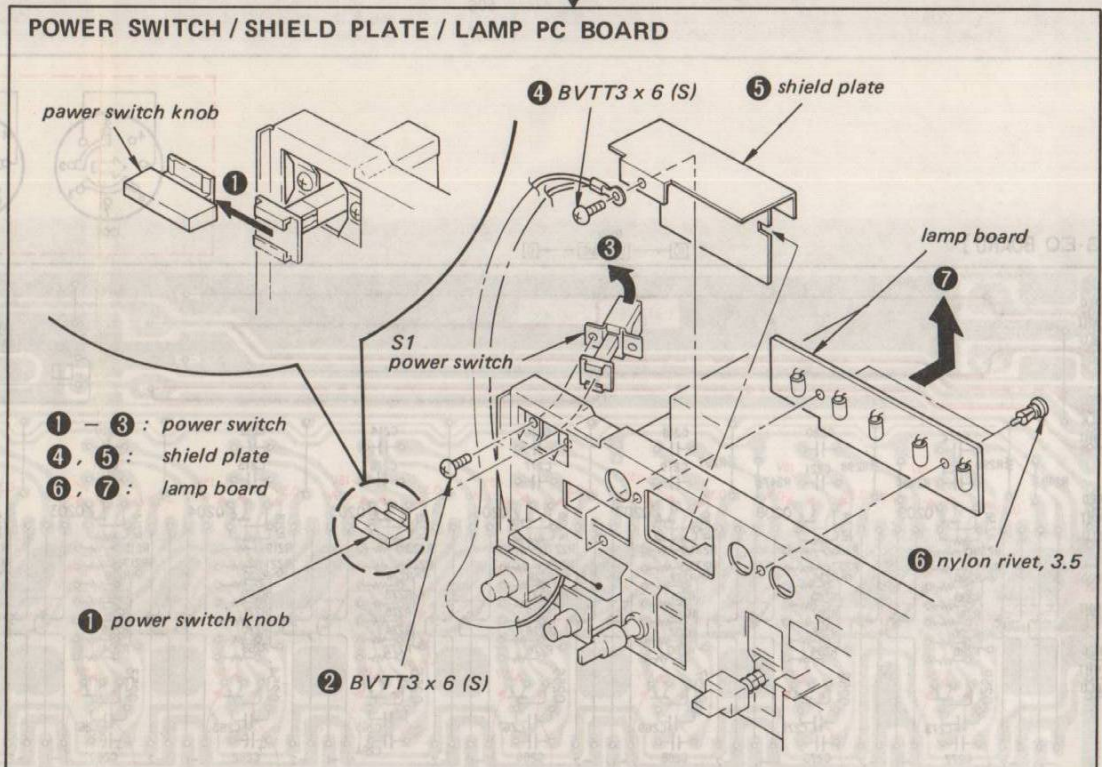
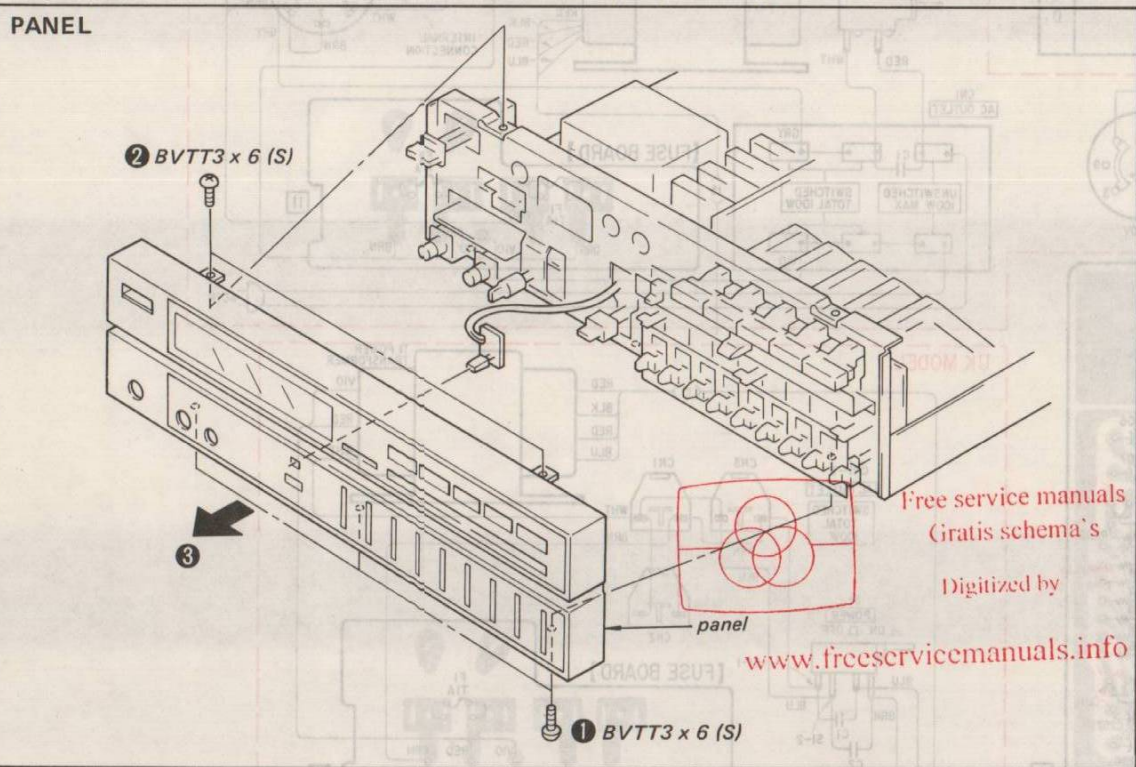
1-4. NOTE ON ADJUSTMENT

This unit uses fixed value components throughout except the front-panel controls. Thus no internal adjustments are needed.

SECTION 2
DISASSEMBLY

CASE REMOVAL
Remove case by taking out four screws securing case.

Note: Follow the disassembly procedure in the numerical order given.



TA-V30

SECTION 3
DIAGRAMS

3-1. MOUNTING DIAGRAM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Semiconductor Lead Layouts

2SA893A 10E2
1SS202-1 HZ16-1L

2SA1175
RB402

2SB731
2SD809

GL9HY24

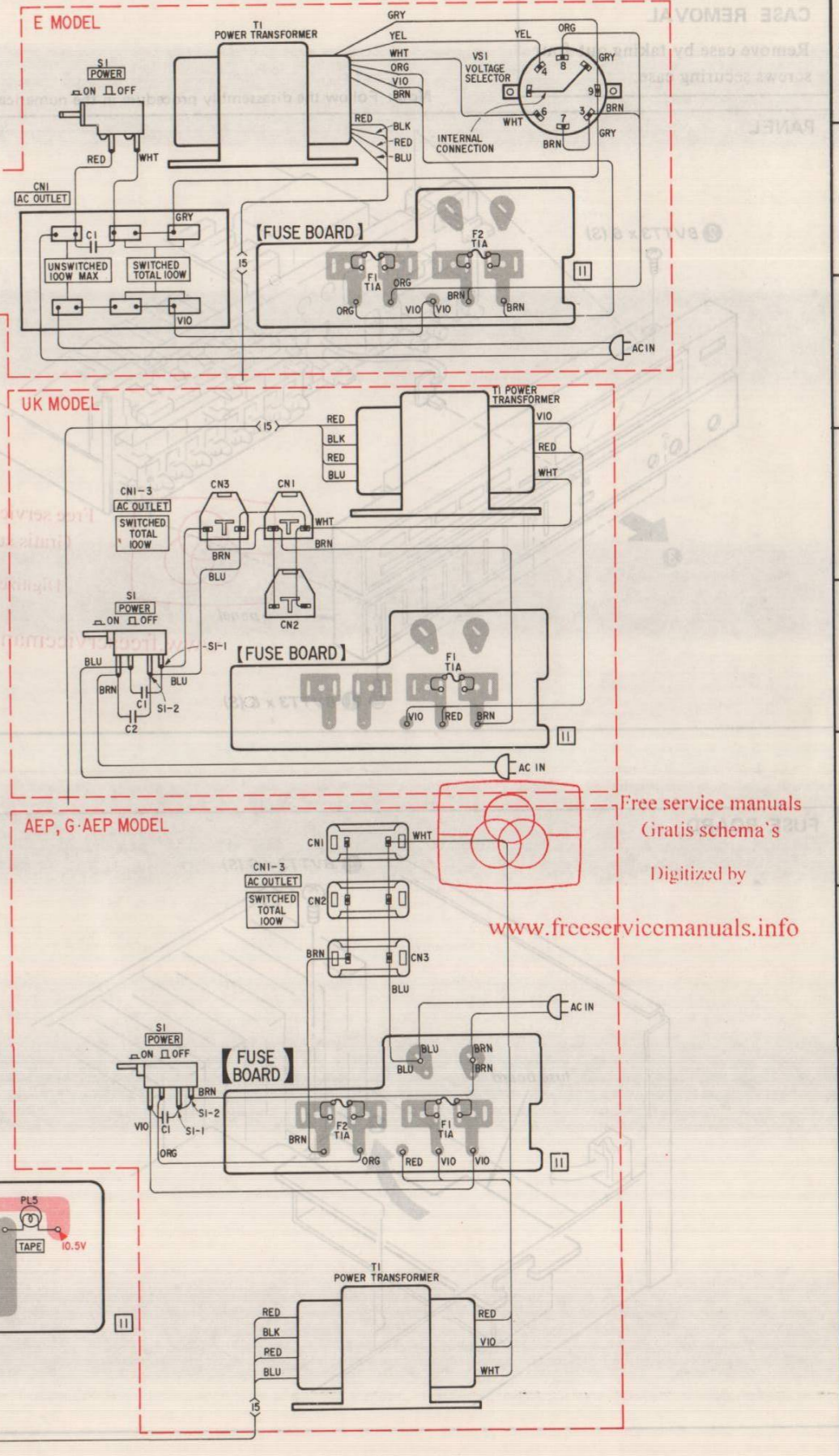
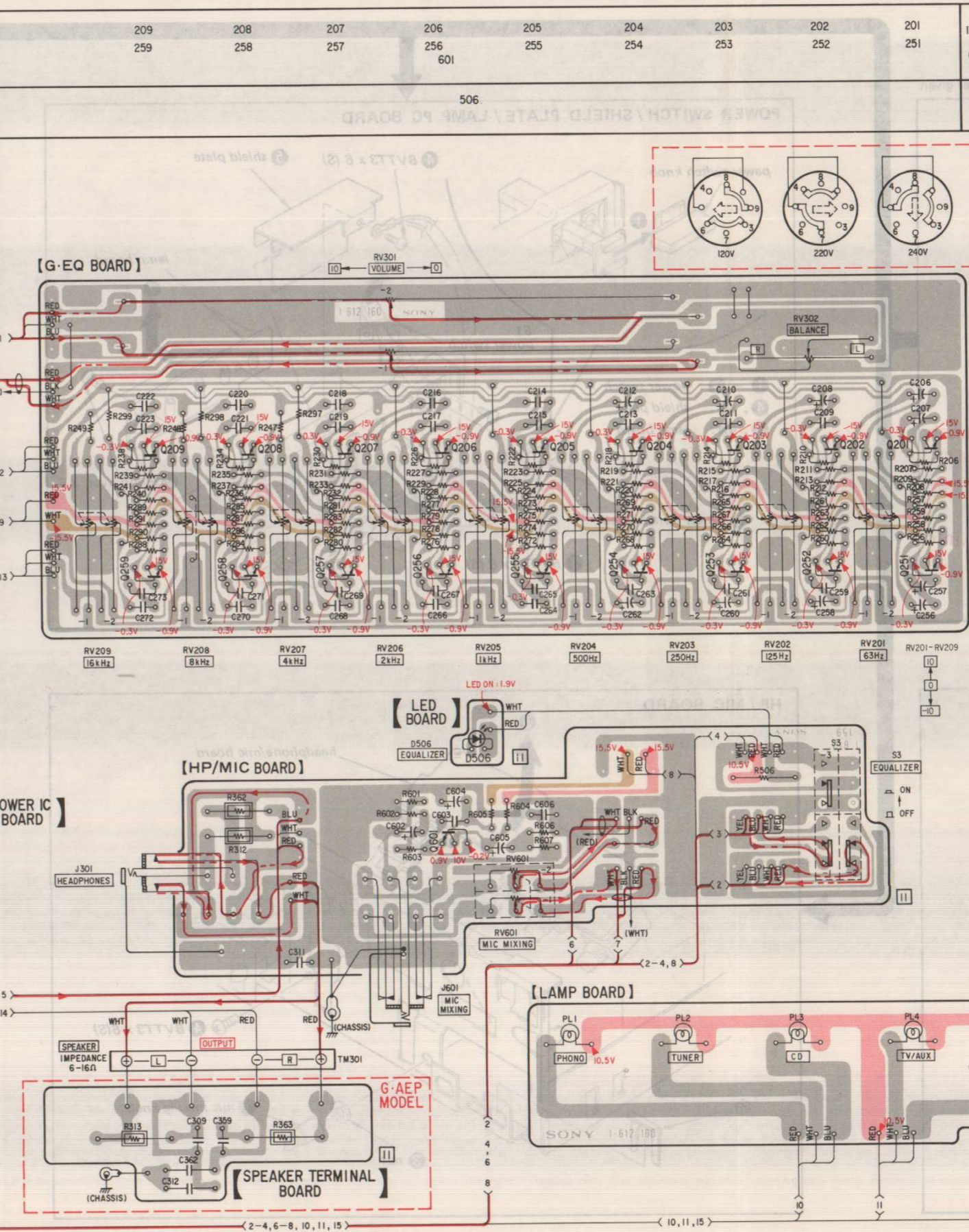
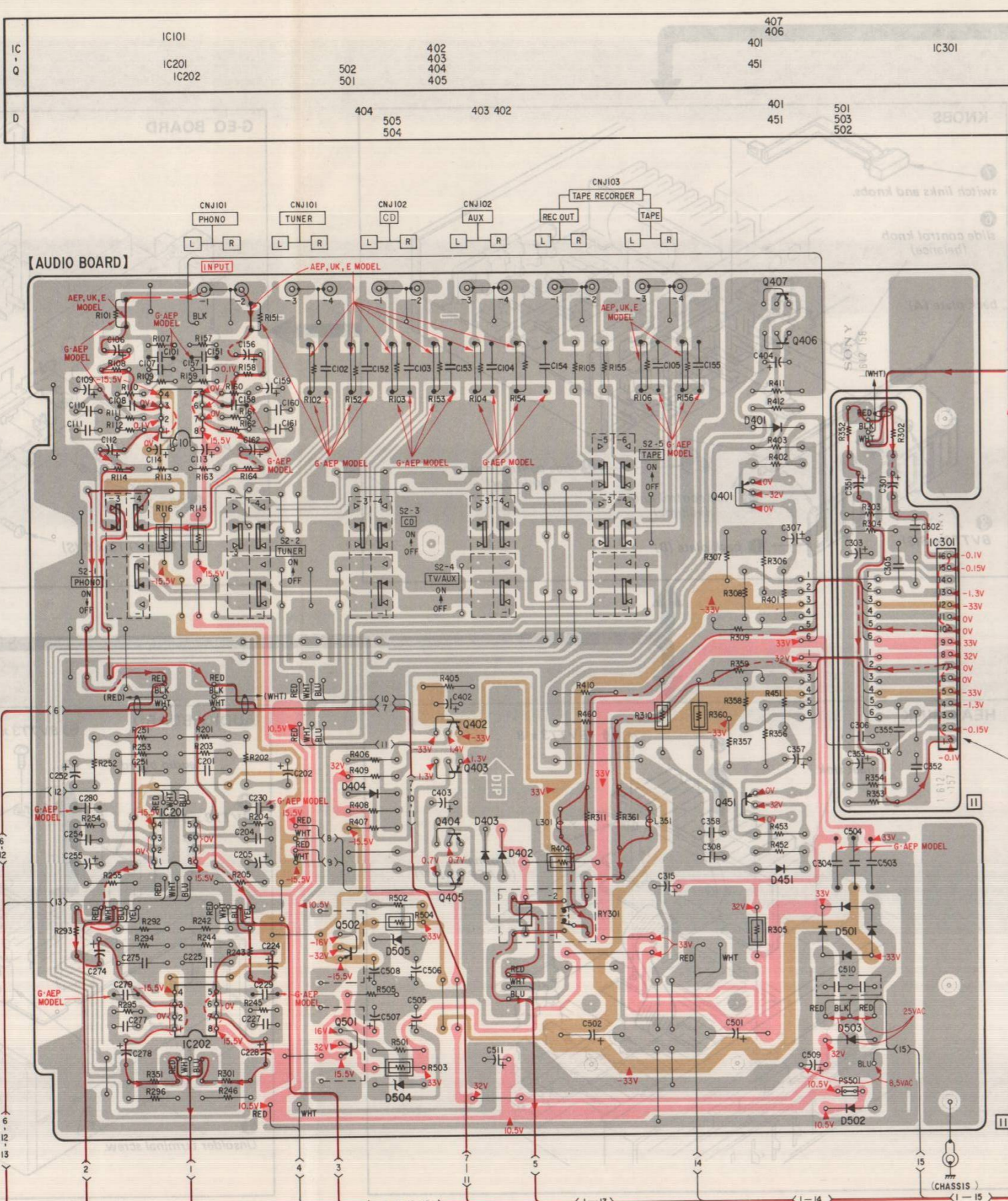
2SC2458

M5218P

STK463

Note:
Color code of sleeving over the end of the jacket.

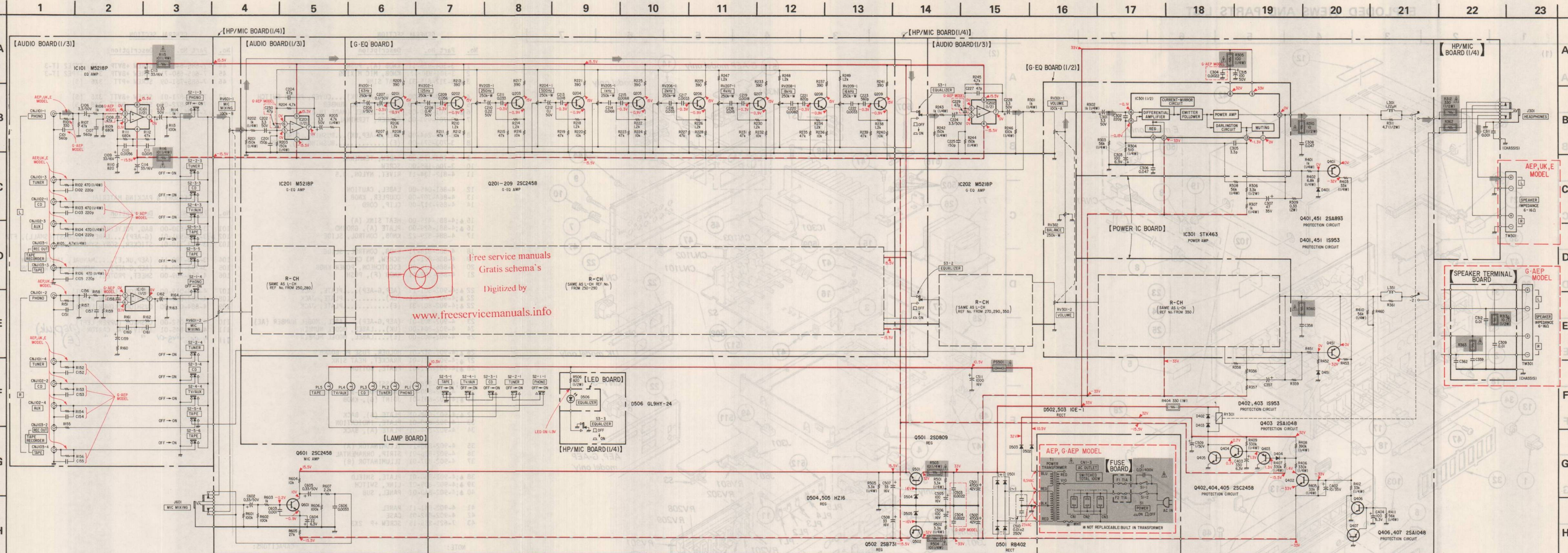
Legend:
 - : parts extracted from the component side.
 - : B+ pattern
 - : B- pattern
 - : signal path
 - : L-CH signal path
 - : R-CH signal path



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3-2. SCHEMATIC DIAGRAM



- Note:**
- Components for right channel have same values as for left channel. Reference numbers are coded from 251 (50 up).
 - All capacitors are in μF unless otherwise noted. pF: μmF 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted. k Ω : 1000 Ω , M Ω : 1000 k Ω .
 - : nonflammable resistor.
 - : adjustment for repair.
 - : B+ bus.
 - : B- bus.
 - : signal path.

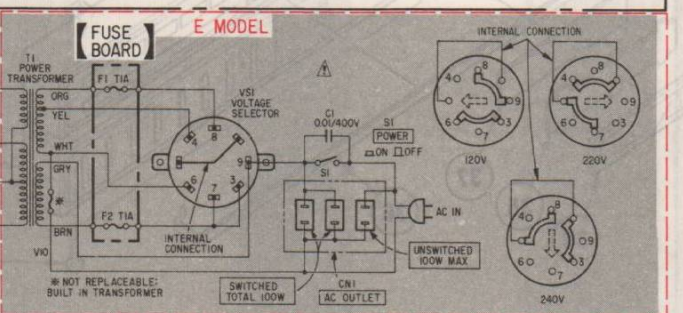
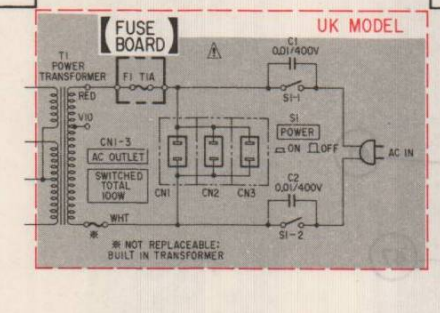
• Readings are taken under no-signal conditions with a VOM (50 k Ω /V).

• Switch

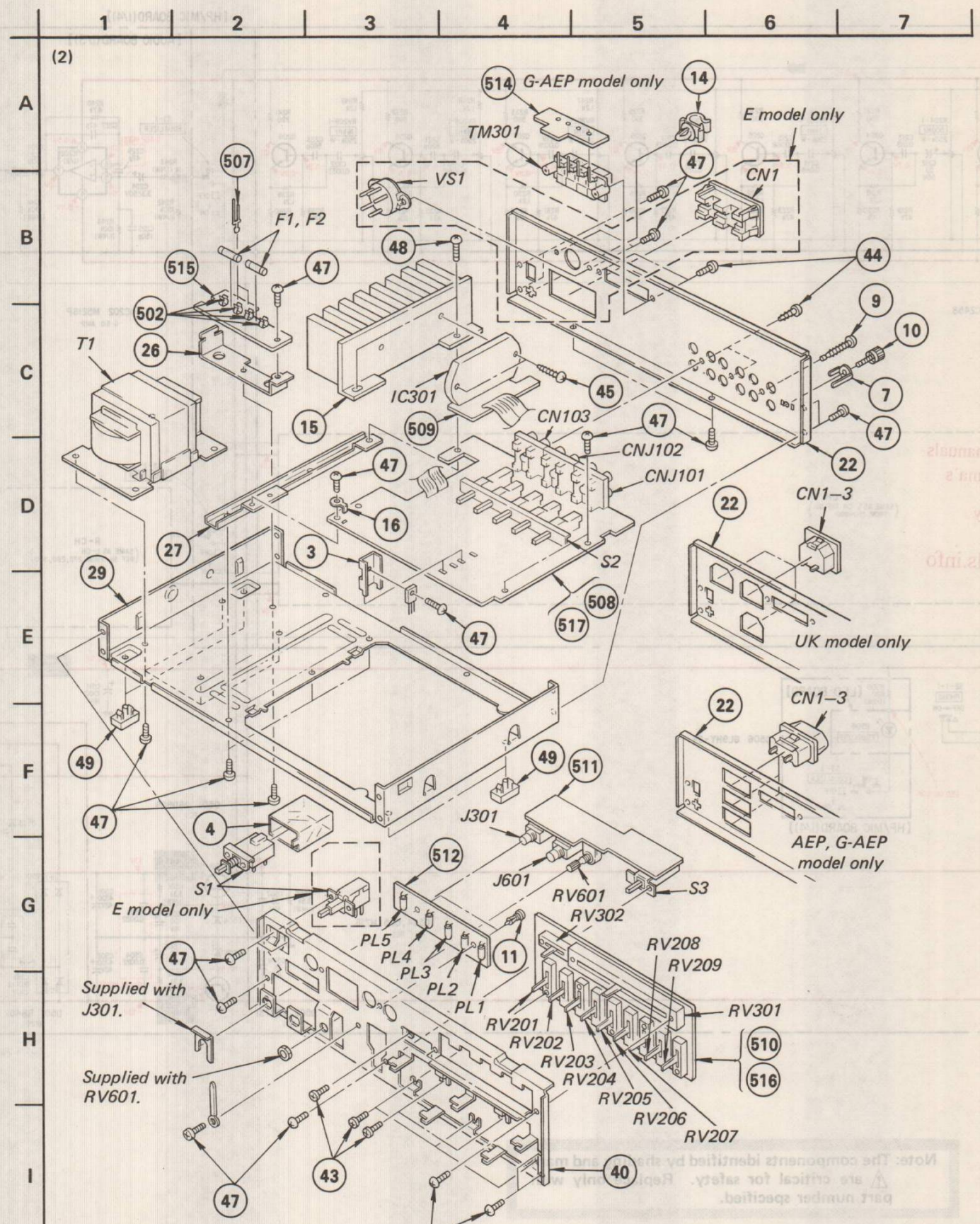
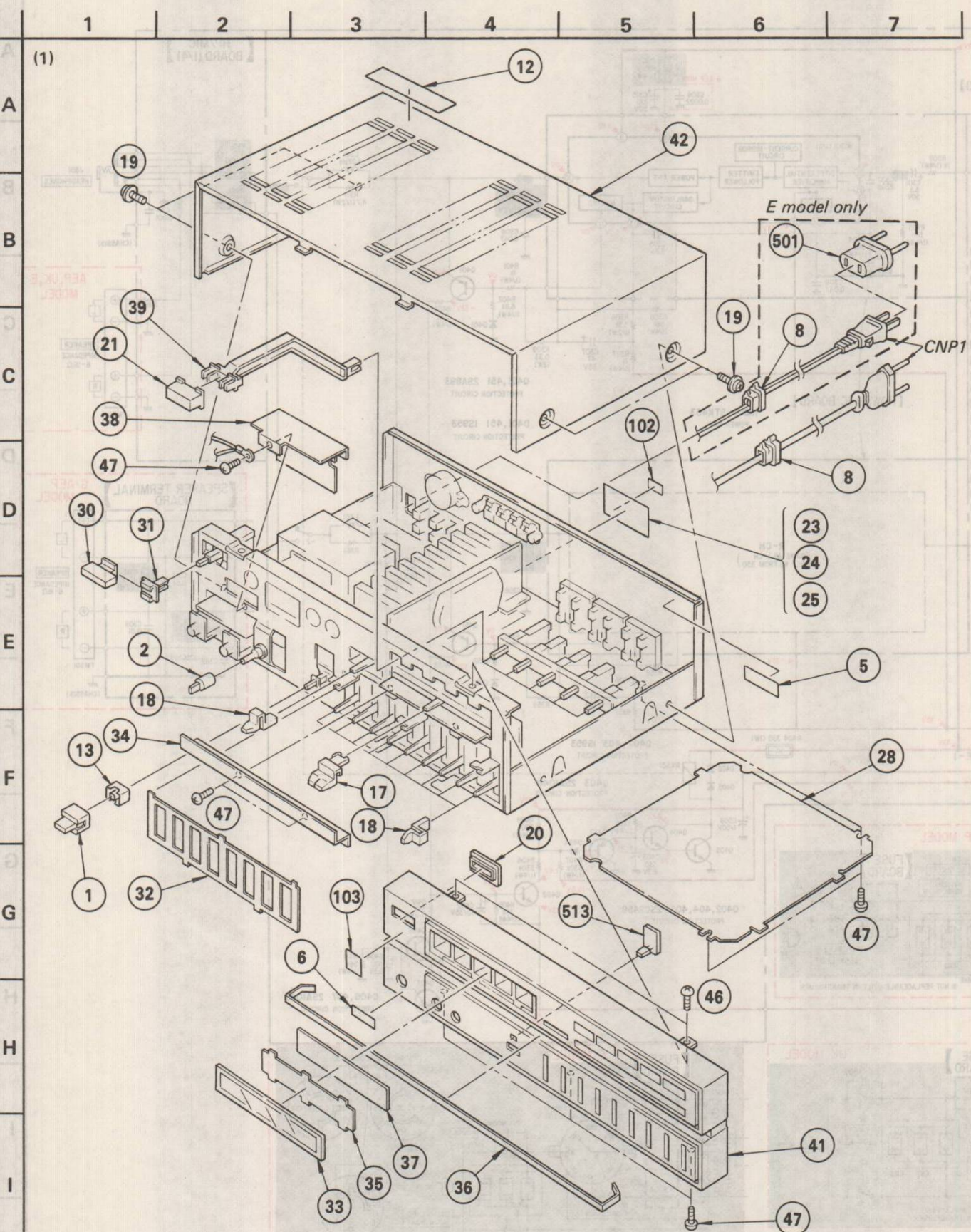
Ref. No.	Switch	Position
S1	POWER	OFF
S2-1	PHONO	ON
S2-2	TUNER	OFF
S2-3	CD	OFF
S2-4	TV/AUX	OFF
S2-5	TAPE	OFF
S3	EQUALIZER	OFF

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

Note: Voltages are measured with a VOM (50k Ω /V).



SECTION 4
EXPLODED VIEWS AND PARTS LIST



GENERAL SECTION		
No.	Part No.	Description
1	3-304-926-11	KNOB (A), PUSH
2	3-304-930-12	KNOB, MIC MIXING
3	3-312-615-31	HEAT SINK
4	3-559-001-00	(AEP,G-AEP,UK)...COVER, POWER SWITCH
5	3-701-030-00	LABEL, SERIAL NUMBER
6	3-701-690-00	(UK)...LABEL (MADE IN JAPAN)
7	3-701-993-00	SPACER, TERMINAL
8	3-703-244-00	(AEP,G-AEP,UK)...BUSHING, CORD
8	3-703-571-00	(E)...BUSHING (S), CORD
9	3-703-473-00	SCREW, TERMINAL
10	3-706-165-00	SCREW
11	4-812-134-11	RIVET, NYLON, 3.5
12	4-861-045-00	LABEL, CAUTION
13	4-864-307-00	COUPLER, KNOB
14	4-869-217-00	CLIP, CORD
15	4-881-415-00	HEAT SINK (A)
16	4-881-629-00	PLATE (A), GROUND
17	4-884-829-22	KNOB, CONTROL, SLIDE
18	4-886-818-71	KNOB, CONTROL, SLIDE
19	4-886-821-11	SCREW, M3 CASE
20	4-886-976-00	ESCUTCHEON, POWER KNOB
21	4-888-208-11	KNOB (F), PUSH
22	4-902-801-11	(AEP,G-AEP)...PLATE, JACK
22	4-902-801-21	(UK)...PLATE, JACK
22	4-902-801-31	(E)...PLATE, JACK
23	4-902-803-01	(AEP,G-AEP)...LABEL, MODEL NUMBER (AE)
24	4-902-804-00	(UK)...LABEL, MODEL NUMBER
25	4-902-805-00	(E)...LABEL, MODEL NUMBER
26	4-902-812-01	HOLDER, FUSE PC BOARD
27	4-902-821-01	BRACKET, HEAT SINK
28	4-902-822-01	PLATE, BOTTOM
29	4-902-828-01	CHASSIS
30	4-902-830-01	KNOB (POWER-S), T TYPE
31	4-902-831-01	JOINT (G), KNOB
32	4-902-832-01	PLATE (B), BACK
33	4-902-833-01	PLATE, INDICATION
34	4-902-834-01	PLATE (A), BACK
35	4-902-835-11	ILLUMINATOR (A)
36	4-902-836-01	STRIP, ORNAMENTAL
37	4-902-837-01	ILLUMINATOR (B)
38	4-902-838-01	PLATE, SHIELD
39	4-902-839-01	LINK, SWITCH
40	4-902-840-01	PANEL, SUB
41	4-902-841-11	PANEL
42	4-902-842-01	CASE
43	7-621-255-15	SCREW +P 2X3

NOTE:
 The mechanical parts with no reference number in the exploded views are not supplied.
 Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
 If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

GENERAL SECTION		
No.	Part No.	Description
44	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3
45	7-685-650-71	SCREW +BVTP 3X16 TYPE2 IT-3
46	7-685-751-09	SCREW +PTT 3X6 (S)
47	7-685-871-01	SCREW +BVTT 3X6 (S)
48	7-685-872-09	SCREW +BVTT 3X8 (S)
49	X-4886-405-1	FOOT ASSY

ACCESSORY & PACKING MATERIAL		
No.	Part No.	Description
101	3-701-630-00	BAG, POLYETHYLENE
102	3-703-591-01	(G-AEP)...LABEL (23585S) (SMALL), FTZ
103	3-703-710-01	STICKER, SONY SYMBOL (12)
104	3-773-790-11	(AEP,UK,E)...MANUAL, INSTRUCTION
105	3-773-790-41	(AEP,G-AEP)...MANUAL, INSTRUCTION
106	4-855-809-00	SHEET, PROTECTION
107	4-884-049-00	CUSHION (LOWER RIGHT)
108	4-884-050-00	CUSHION (UPPER RIGHT)
109	4-884-051-00	CUSHION (LOWER LEFT)
110	4-884-052-00	CUSHION (UPPER LEFT)
111	4-902-845-01	INDIVIDUAL CARTON (AEP,UK, E)

CAPACITORS:
 MF:μF, PF:μPF.
 RESISTORS
 All resistors are in ohms.
 F : nonflammable
 COILS
 MMH : mH, UH : μH
 SEMICONDUCTORS
 In each case, U : μ, for example:
 UA...: μA...; UPA...: μPA...; UPC...: μPC;
 UPD...: μPD...

ELECTRICAL PARTS

ELECTRICAL PARTS

ELECTRICAL PARTS

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Includes parts like AC PLUG ADAPTOR, FUSE, TERMINAL, and various capacitors.

Table with columns: Ref.No., Part No., Description. Includes parts like FILM, ELECT, MYLAR, CERAMIC, and various resistors.

Table with columns: Ref.No., Part No., Description. Includes parts like CERAMIC, ELECT, SOCKET, CONNECTOR, JACK, PIN, and DIODE.

Table with columns: Ref.No., Part No., Description. Includes parts like FUSE, TIME-LAG, IC M5218P, JACK, COIL, LAMP, and TRANSISTOR.

NOTE: The mechanical parts with no reference number in the exploded views are not supplied. Items marked '♦' are not stocked since they are seldom required for routine service.

CAPACITORS: MF:µF, PF:µµF. RESISTORS: All resistors are in ohms. F: nonflammable. COILS: MMH: mH, UH: µH. SEMICONDUCTORS: In each case, U: µ, for example: UA...: µA...

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

NOTE: The mechanical parts with no reference number in the exploded views are not supplied. Items marked '♦' are not stocked since they are seldom required for routine service.

CAPACITORS: MF:µF, PF:µµF. RESISTORS: All resistors are in ohms. F: nonflammable. COILS: MMH: mH, UH: µH. SEMICONDUCTORS: In each case, U: µ, for example: UA...: µA...

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

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Lists electrical components like carbon resistors (R101-R229) with values and wattages.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Lists electrical components like carbon resistors (R230-R409) and metal oxide resistors (R404).

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Lists electrical components like carbon resistors (R410-R607) and capacitors (R503, R504, R505).

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Lists electrical components like resistors (RV201-RV209), relays (RY301), transformers (T1), terminal boards (TM301), and selector switches (VS1).

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
Items marked with a star symbol are not stocked since they are seldom required for routine service.
Due to standardization, parts with part numbers (A-AAA-AAA-XX or A-AAA-AAA-X) may be different from those used in the set.
If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF: μF, PF: μμF.

RESISTORS

- All resistors are in ohms.
F : nonflammable

COILS

MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA... : μA..., UPA... : μPA..., UPC... : μPC,
UPD... : μPD...

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

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
Items marked with a star symbol are not stocked since they are seldom required for routine service.
Due to standardization, parts with part numbers (A-AAA-AAA-XX or A-AAA-AAA-X) may be different from those used in the set.
If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS: MF: μF, PF: μμF.

RESISTORS

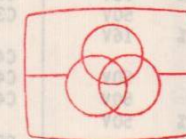
- All resistors are in ohms.
F : nonflammable

COILS

MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA... : μA..., UPA... : μPA..., UPC... : μPC,
UPD... : μPD...



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

English

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