

TA-F444ES II

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



SPECIFICATIONS

AUDIO POWER SPECIFICATIONS POWER OUTPUT AND TOTAL HARMONIC DISTORTION : (US, Canadian model)

With 6 ohm loads, both channels driven, from 20 - 20,000 Hz; rated 120 watts per channel minimum RMS power, with no more than 0.006% total harmonic distortion from 250 milliwatts to rated output.

With 8 ohm loads, both channels driven, from 20 - 20,000 Hz; rated 100 watts per channel minimum RMS power, with no more than 0.004% total harmonic distortion from 250 milliwatts to rated output.

Power bandwidth (IHF)	4 ohms, THD 0.02%	10 Hz - 100 kHz (E model)
	6 ohms, THD 0.02%	10 Hz - 100 kHz
	8 ohms, THD 0.02%	10 Hz - 100 kHz
Dynamic headroom ('78 IHF)	4 ohms	2 dB (E model)
	6 ohms	1.5 dB
	8 ohms	1.2 dB


OTHER SPECIFICATIONS

Amplifier


Item	Condition	TA-F444ESII
Continuous RMS power output (both channels driven simultaneously)	4 ohms, 20 Hz - 20 kHz, THD 0.008%	140 W + 140 W (E model)
	6 ohm, 20 Hz - 20 kHz, THD 0.006%	120 W + 120 W (G-AEP, UK, E and Canadian model)
		110 W + 110 W (AEP model)
8 ohms, 20 Hz - 20 kHz, THD 0.004%	100 W + 100 W (G-AEP, UK, E and Canadian model)	
	90 W + 90 W (AEP model)	

- 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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHEMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

INTEGRATED STEREO AMPLIFIER
SONY®



Item	Condition	TA-F444ESII	
Total harmonic distortion	4 ohms, at 10 watt output	0.006% (E model)	
	6 ohms, at 10 watt output	0.004%	
	8 ohms, at 10 watt output	0.002%	
Intermodulation (IM) distortion 60 Hz : 7 kHz = 4 : 1	4 ohms, at rated output	0.008% (E model)	
	6 ohms, at rated output	0.006%	
	8 ohms, at rated output	0.004%	
Damping factor	8 ohms, 1 kHz	50	
Slew rate	—	125 V/μsec 250 V/μsec (inside)	
Dynamic range	input TUNER, CD, TAPE 1, 2, VIDEO 1, 2 (audio)	120 dB	
Channel separation (at 1 kHz)	PHONO	MC	80 dB
		MM	95 dB
	TUNER, CD, TAPE 1, 2, VIDEO 1, 2 (audio)		100 dB
Residual noise	network A	28 μV	
Frequency response	PHONO MM	RIAA equalization curve ±0.2 dB	
	TUNER, CD, TAPE 1, 2, VIDEO 1, 2 (audio)	2 Hz - 200 kHz +0 dB -3 dB 2 Hz - 100 kHz +0 dB -3 dB (G-AEP model)	
Input sensitivity/impedance	PHONO	3 ohms	0.17 mV, 40 ohms
		40 ohms	0.17 mV, 100 ohms
	MM	2.5 mV, 50 kilohms	
Maximum input capability (1 kHz)	PHONO (1 kHz, THD 0.003%)	MC	9 mV
		MM	150 mV
TUNER, CD, TAPE 1, 2, VIDEO 1, 2 (audio)		150 mV, 50 kilohms	

Item	Condition	TA-F444ESII	
S/N (network)	PHONO	MC	71 dB*, 68 dB (A)
		MM	83 dB*, 87 dB (A)
	TUNER, CD, TAPE 1, 2, VIDEO 1, 2 (audio)		102 dB*, 97 dB (A)
*78 IHF			
Output voltage impedance	REC OUT 1, 2, VIDEO 1 (audio)	150 mV, 1 kilohms	
	HEADPHONES	25 milliwatts (at 8 ohms) Accepts low and high impedance headphones.	
Tone controls	BASS, at 60 Hz	± 8 dB (turn-over freq. 300 Hz)	
	TREBLE, at 25 kHz	± 8 dB (turn-over freq. 5 kHz)	
BASS BOOST	at 50 Hz	+ 4 dB	
SUBSONIC filter	—	6 dB/octave attenuation below 15 Hz	

Video

Item	Condition	TA-F444ESII
Input/output	voltage	1 V _{p-p}
	impedance	75 ohms

General System

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

Power requirements

AEP, G-AEP model: 220 V ac, 50/60 Hz
 US, Canadian model: 120 V ac, 60 Hz
 UK model: 240 V ac, 50 Hz
 E model: 120, 220, or 240 V ac adjustable, 50/60 Hz

Power consumption

AEP model; 270 watts
 US model; 270 watts
 Canadian model; 520VA
 G-AEP model; 280 watts
 UK model; 260 watts
 E model; 330 watts

AC outlets

AEP, G-AEP, UK model: 1 switched, 100 watts max.
 US, Canadian model: 2 switched, total 100 watts max., 2 unswitched, total 100 watts.
 E model: 1 unswitched, 100 watts max., 1 switched, 100 watts max.

Dimensions

Approx. 430 x 135 x 425 mm (w/h/d)
 (17 x 5³/₈ x 16³/₄ inches)

Weight

including projecting parts and controls
 Approx. 13.3 kg (29 lbs 6 oz) net



FEATURES

A.C.T. (AUDIO CURRENT TRANSFER) TECHNOLOGY

With A.C.T. technology, which reduces interference and noise as low as possible, the 4 signals of right and left channels of the pre-amp and power amp sections are separated, obtaining the best performance at the normal listening level.

SUPER LEGATO LINEAR POWER AMPLIFIER STAGE

The operation of the power amplifier stage is stable without any observable distortion up through the higher frequencies. Because of its very low switching distortion, the output waveform is smooth.

POWERFUL POWER SUPPLY

Powerful transformer of 250 VA are respectively used in the power supply section to obtain rich sound. In addition, use of the ES filter together with the newly developed large chemical capacitor eliminates the power interference.

SELECTED AUDIO PARTS

A large heatsink and high-rigidity chassis are used to prevent thermal modulation distortion and vibration distortion, respectively. LC-OFC (Linear Crystal Oxion-free Copper) leads are used for internal wiring and speaker output coil. In addition, other audio parts are selected by frequent sound monitoring.

SAFETY CHECK-OUT (US Model)

After connecting the original service problem, perform the following safety check before releasing the set to the customer.

VARIOUS VIDEO OPERATIONS

This amplifier is equipped with 2 pairs of video jacks (one pair for playback/recording and one for playback) to allow you to perform various video operations.

SPEAKER PROTECTION CIRCUIT

When a short circuit or DC component is detected at the speaker outputs, the power/standby indicator blinks in red and the built-in speaker protection circuit functions to protect the speakers.

MUTING CIRCUIT

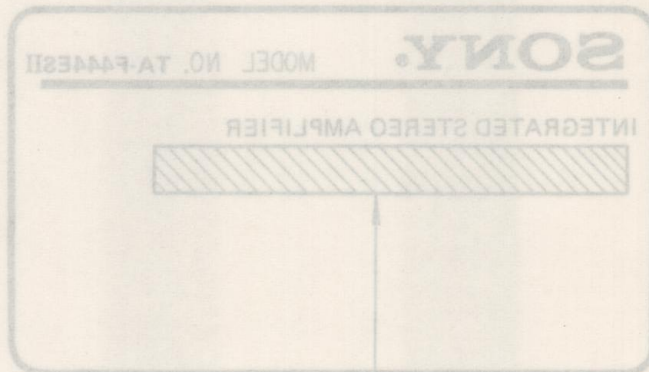
When the power is supplied, the power/standby indicator blinks in red and the muting circuit functions until the amplifier operation becomes stable.

CARTRIDGE SELECTOR

The high-gain equalizer amplifier stage accepts both MM (Moving-Magnet) and MC (Moving-Coil) cartridges.

AUDIO REC OUT SELECTOR SWITCH

With the AUDIO REC OUT SELECTOR switch, you can select the sound source to be recorded while listening to another audio source. This switch is also used to select tape (audio and video) dubbing and editing mode.



US MODEL	: AC120V	60Hz	270W
Canadian MODEL	: AC120V	60Hz	250VA
AEP MODEL	: AC220V	50/60Hz	270W
G-AEP MODEL	: AC220V	50/60Hz	280W
UK MODEL	: AC240V	50/60Hz	280W
E MODEL	: AC120V/220V/240V	50/60Hz	330W

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

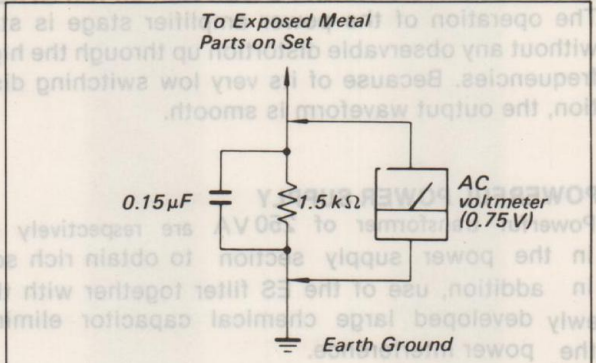
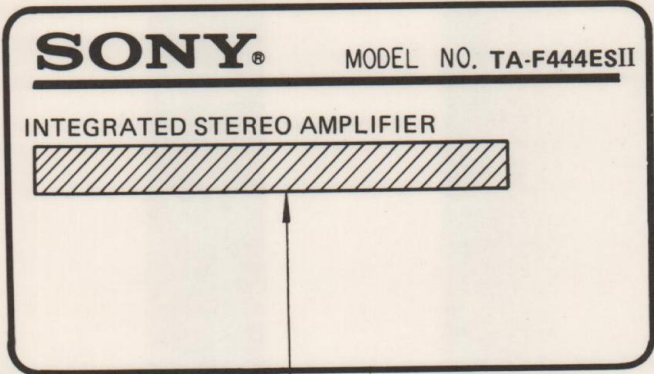


Fig. A. Using an AC voltmeter to check AC leakage.

MODEL IDENTIFICATION

— Specification Label —



US MODEL	: AC120V	60Hz	270W
Canadian MODEL	: AC120V	60Hz	520VA
AEP MODEL	: AC220V	50/60Hz	270W
G-AEP MODEL	: AC220V	50/60Hz	280W
UK MODEL	: AC240V	50/60Hz	260W
E MODEL	: AC120/220/240V	50/60Hz	330W

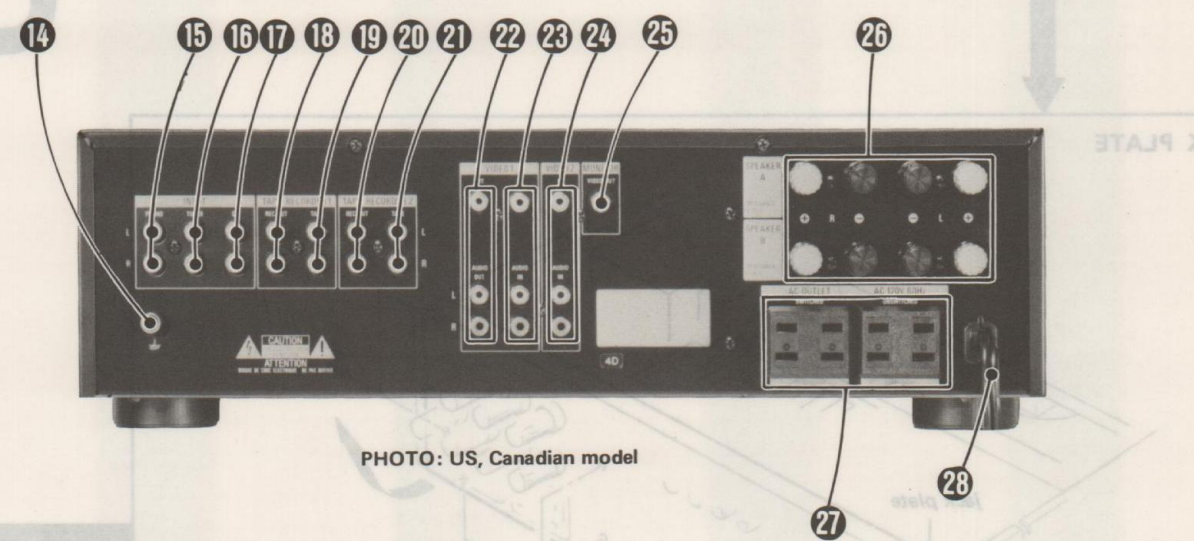
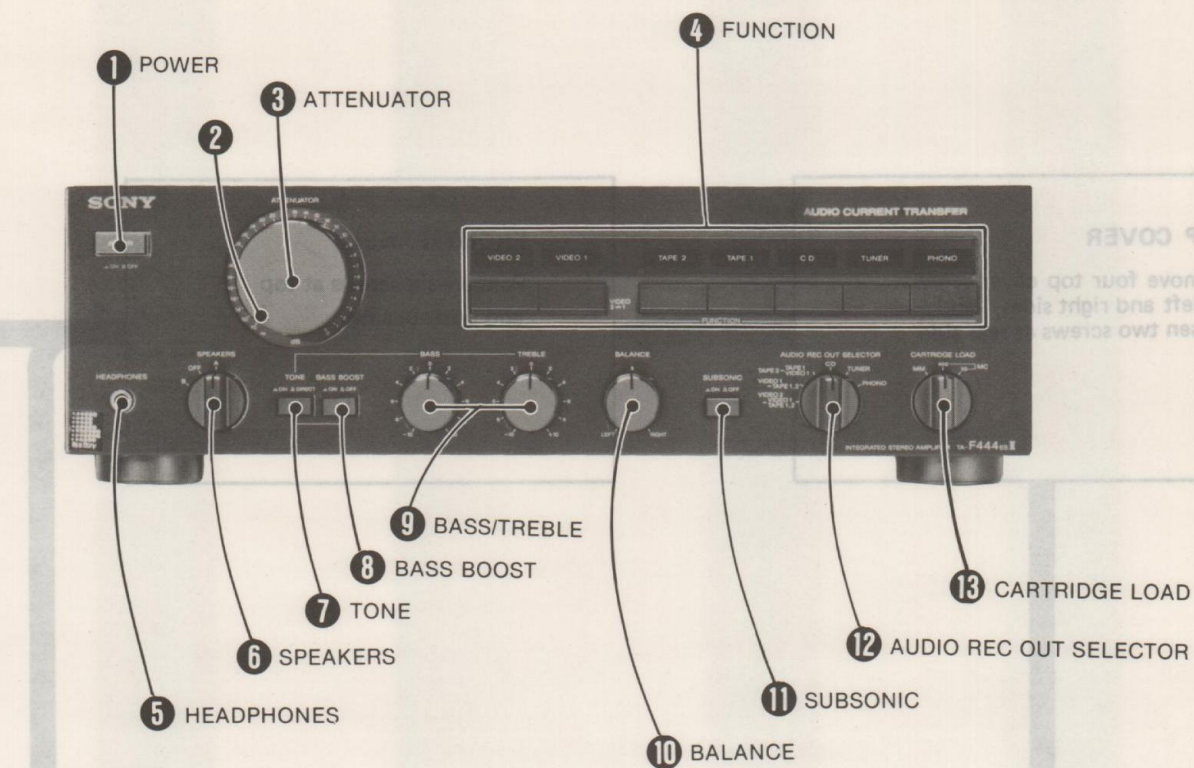
SECTION 2
DISASSEMBLY

PHOTO: US, Canadian model

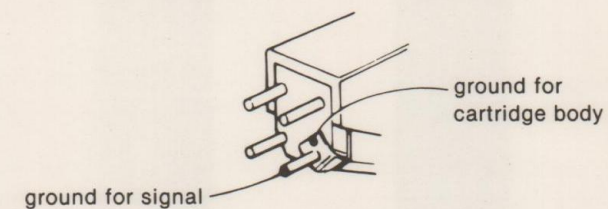
FUNCTION OF CONTROLS

- 1 POWER switch**
Turns the operating power on or off.
- 2 Power/standby indicator**
When the power is turned on, the muting circuit activates and the indicator blinks in red. The indicator then lights up in green indicating that the unit is now in standby. The indicator will also blink in red when the protection circuit is activated.
- 3 ATTENUATOR knob**
Regulates the overall sound level. Turning the knob toward 0 increases the volume and turning it toward ∞ decreases the volume. Be sure to lower the volume whenever you turn the amplifier on or off.
- 4 FUNCTION buttons and indicators**
Press to select the desired audio or video program source. Press another button to change the program. The indicator lamp above the pressed button will light up, indicating the program in use.
- 5 HEADPHONES jack**
Accepts any low or high impedance stereo headphones. For headphone monitoring only, set the SPEAKERS selector to OFF.
- 6 SPEAKERS selector**
Selects speaker system A or B.
- 7 TONE switch**
Depress this switch (Δ ON) when you adjust the tone controls or when you use the BASS BOOST switch. While you keep the switch released (\square DIRECT), the tone control circuits are completely disconnected from the signal path and a flat frequency response is obtained.
- 8 BASS BOOST switch**
Depress this switch (Δ ON) when you are driving a speaker system such as a small bookshelf type system, which has a weak bass response. When the BASS BOOST switch is to be used, be sure to first depress the TONE switch (Δ ON).
- 9 BASS and TREBLE tone controls**
These knobs control the prominence of bass and treble response. Clockwise rotation increases response; counterclockwise rotation decreases it. Adjust the tone to the acoustic condition of the listening room or to your preference. When these tone controls are to be used, be sure to first depress the TONE switch (Δ ON).

- 10 BALANCE control**
Governs the amount of sound coming from each paired speaker to get optimum stereo effect.
- 11 SUBSONIC filter switch**
If subsonic noise components created by warped records, etc. are present, the audible range frequencies may be modulated and cause irritating intermodulation distortion. In this case, depress the switch (Δ ON) to reduce unwanted noise components in the program source. The filter will cut off any input signals below 15 Hz at a 6 dB-per-octave rate. Press the switch again to release it (\square OFF).
- 12 AUDIO REC OUT SELECTOR switch**
Permits you to select the desired program source you want to record. For tape dubbing or video editing, set this switch to appropriate position.
- 13 CARTRIDGE LOAD selector**
Before you play a record, be sure to set the selector as follows:
Moving-Magnet (MM) type cartridge
Set the CARTRIDGE LOAD selector to MM.
Moving-Coil (MC) type cartridge
40 Ω : for a cartridge with an impedance of 40 ohms or more.
3 Ω : for a cartridge with an impedance in the 3 to 40 ohms range.

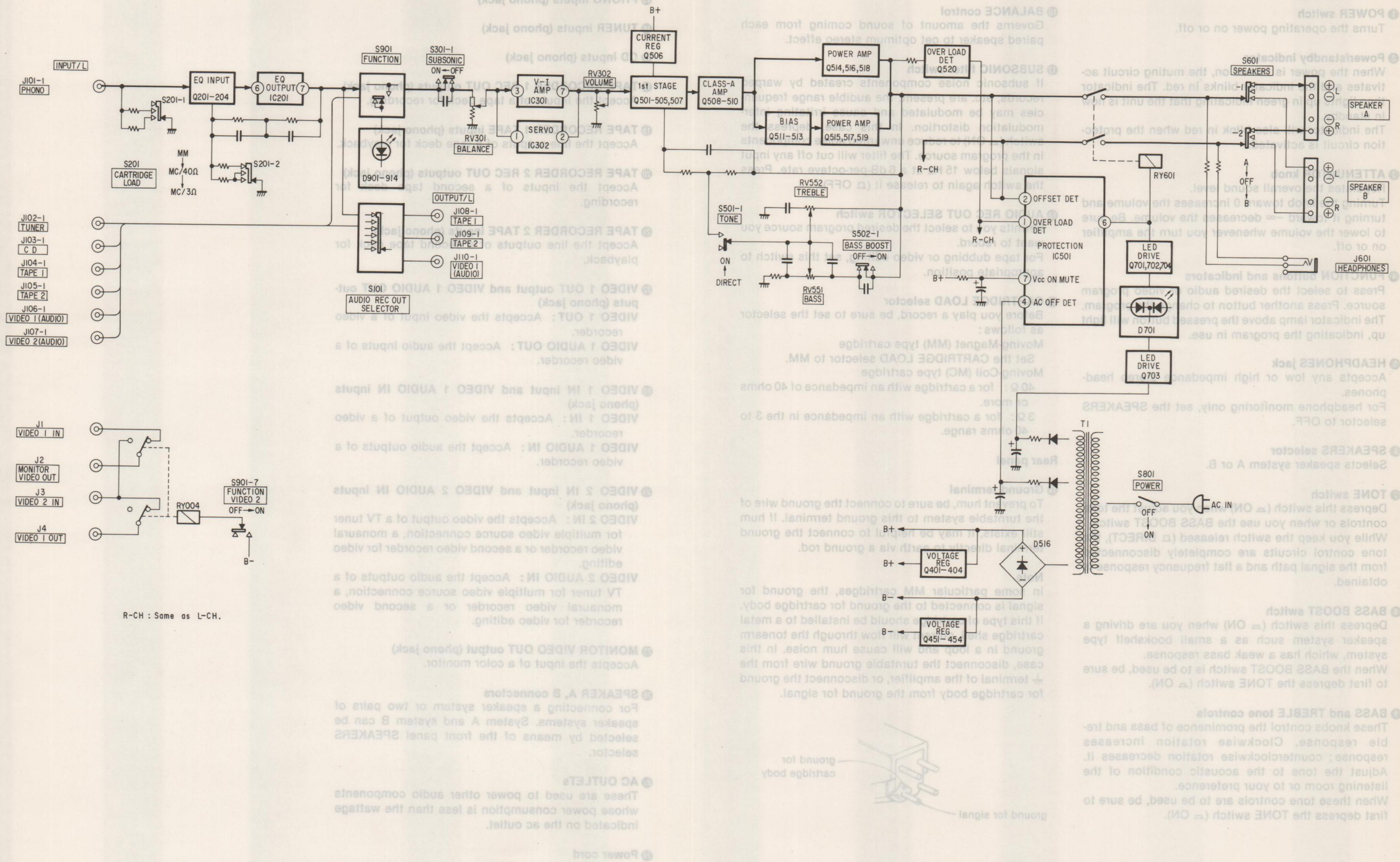
Rear panel

- 14 Ground terminal**
To prevent hum, be sure to connect the ground wire of the turntable system to this ground terminal. If hum still exists, it may be helpful to connect the ground terminal directly to earth via a ground rod.
- Note**
In some particular MM cartridges, the ground for signal is connected to the ground for cartridge body. If this type of cartridge should be installed to a metal cartridge shell, current will flow through the tonearm ground in a loop and will cause hum noise. In this case, disconnect the turntable ground wire from the $\overline{}$ terminal of the amplifier, or disconnect the ground for cartridge body from the ground for signal.

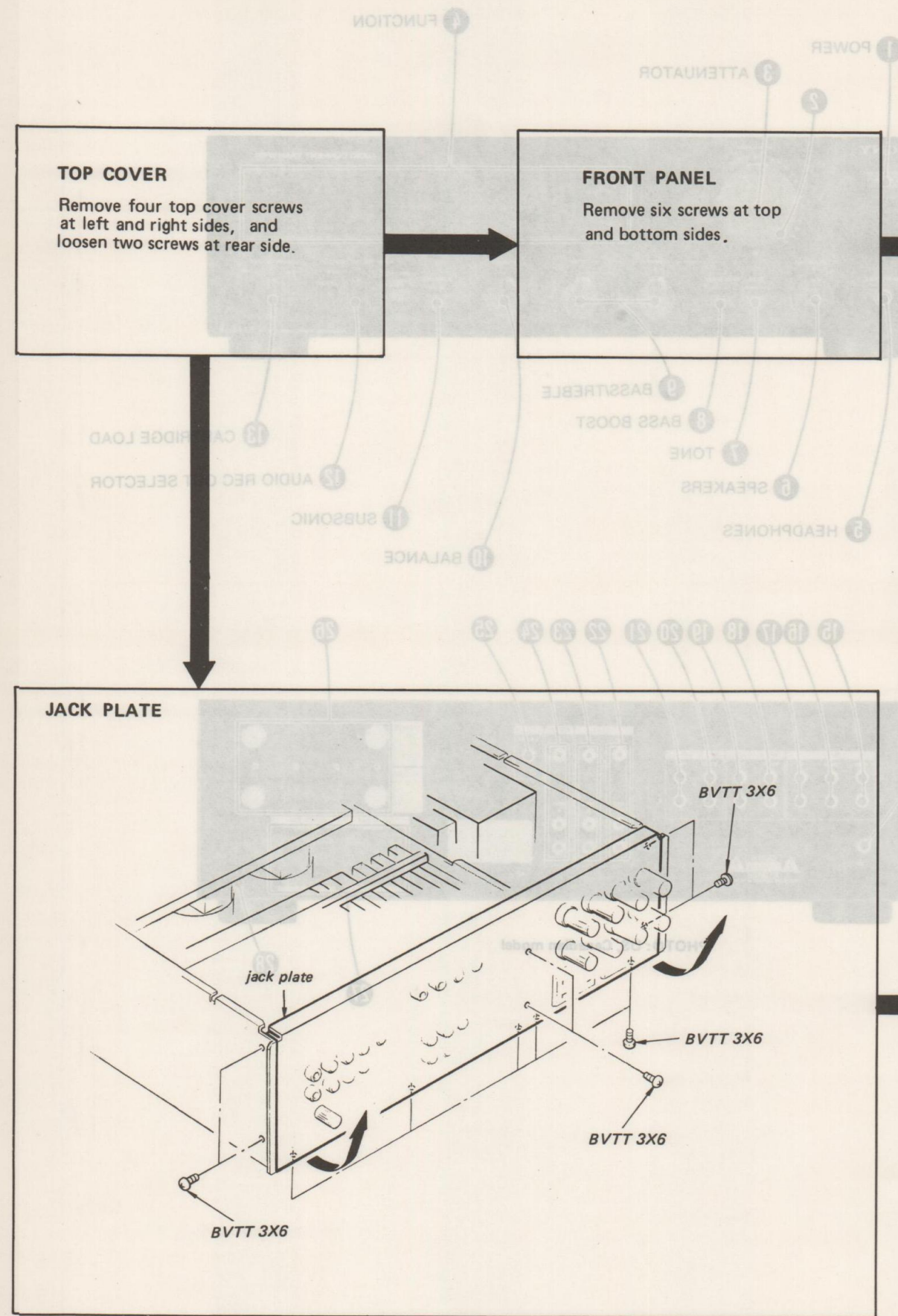
SECTION 1
BLOCK DIAGRAM

- 15 PHONO inputs (phono jack)**
- 16 TUNER inputs (phono jack)**
- 17 CD inputs (phono jack)**
- 18 TAPE RECORDER 1 REC OUT outputs (phono jack)**
Accept the inputs of a tape deck for recording.
- 19 TAPE RECORDER 1 TAPE inputs (phono jack)**
Accept the line outputs of a tape deck for playback.
- 20 TAPE RECORDER 2 REC OUT outputs (phono jack)**
Accept the inputs of a second tape deck for recording.
- 21 TAPE RECORDER 2 TAPE inputs (phono jack)**
Accept the line outputs of a second tape deck for playback.
- 22 VIDEO 1 OUT output and VIDEO 1 AUDIO OUT outputs (phono jack)**
VIDEO 1 OUT: Accepts the video input of a video recorder.
VIDEO 1 AUDIO OUT: Accepts the audio inputs of a video recorder.
- 23 VIDEO 1 IN input and VIDEO 1 AUDIO IN inputs (phono jack)**
VIDEO 1 IN: Accepts the video output of a video recorder.
VIDEO 1 AUDIO IN: Accepts the audio outputs of a video recorder.
- 24 VIDEO 2 IN input and VIDEO 2 AUDIO IN inputs (phono jack)**
VIDEO 2 IN: Accepts the video output of a TV tuner for multiple video source connection, a monaural video recorder or a second video recorder for video editing.
VIDEO 2 AUDIO IN: Accepts the audio outputs of a TV tuner for multiple video source connection, a monaural video recorder or a second video recorder for video editing.
- 25 MONITOR VIDEO OUT output (phono jack)**
Accepts the input of a color monitor.
- 26 SPEAKER A, B connectors**
For connecting a speaker system or two pairs of speaker systems. System A and system B can be selected by means of the front panel SPEAKERS selector.
- 27 AC OUTLETS**
These are used to power other audio components whose power consumption is less than the wattage indicated on the ac outlet.
- 28 Power cord**

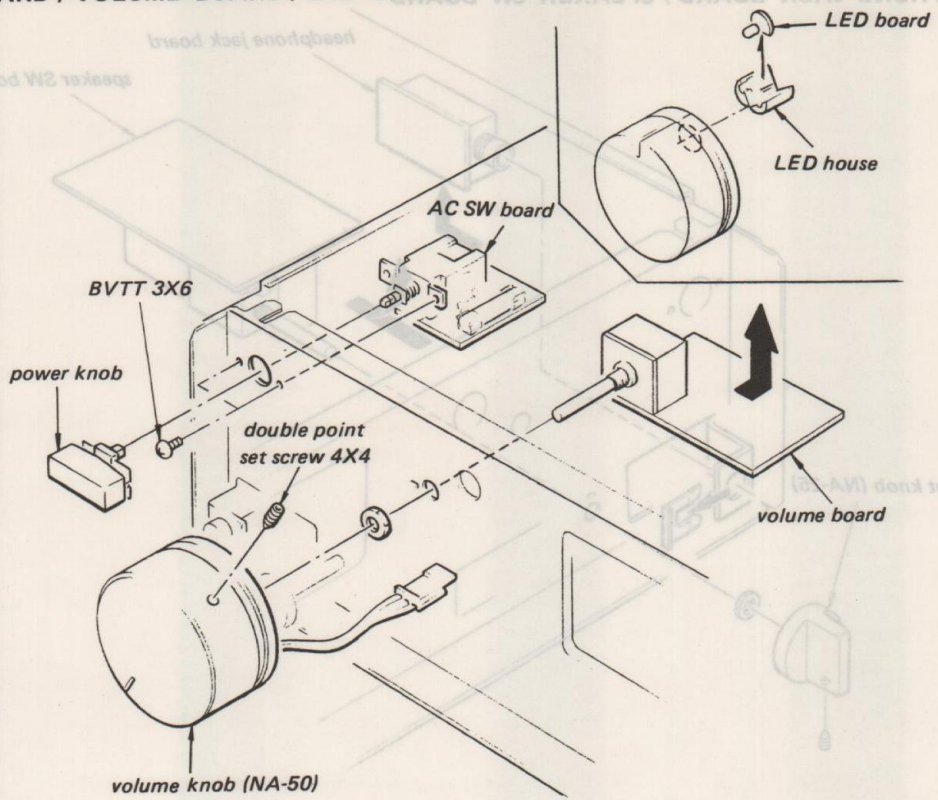
SECTION 1
BLOCK DIAGRAM



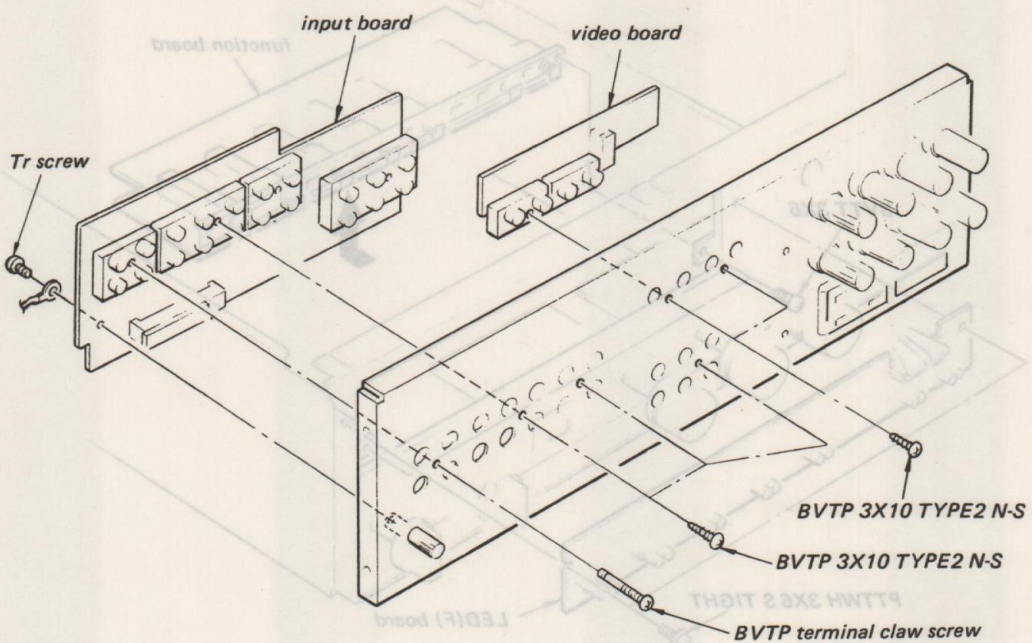
SECTION 2
DISASSEMBLY

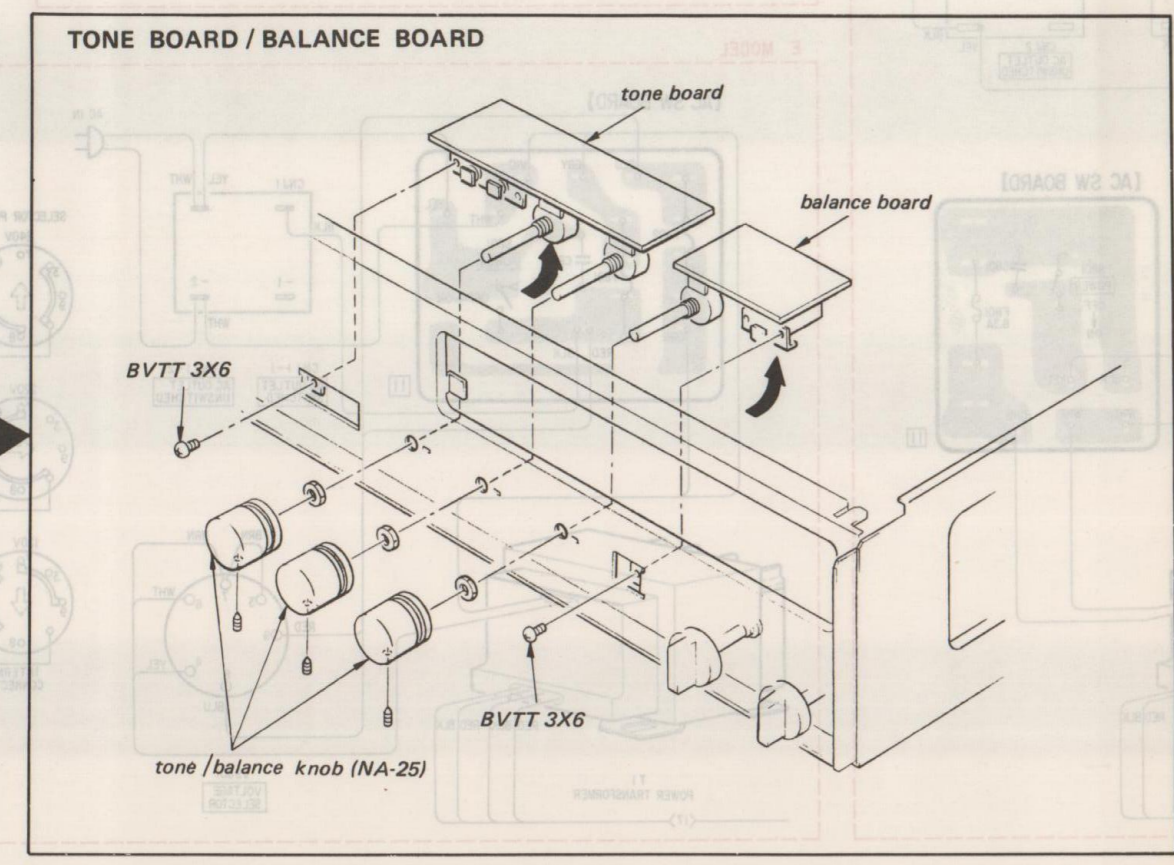
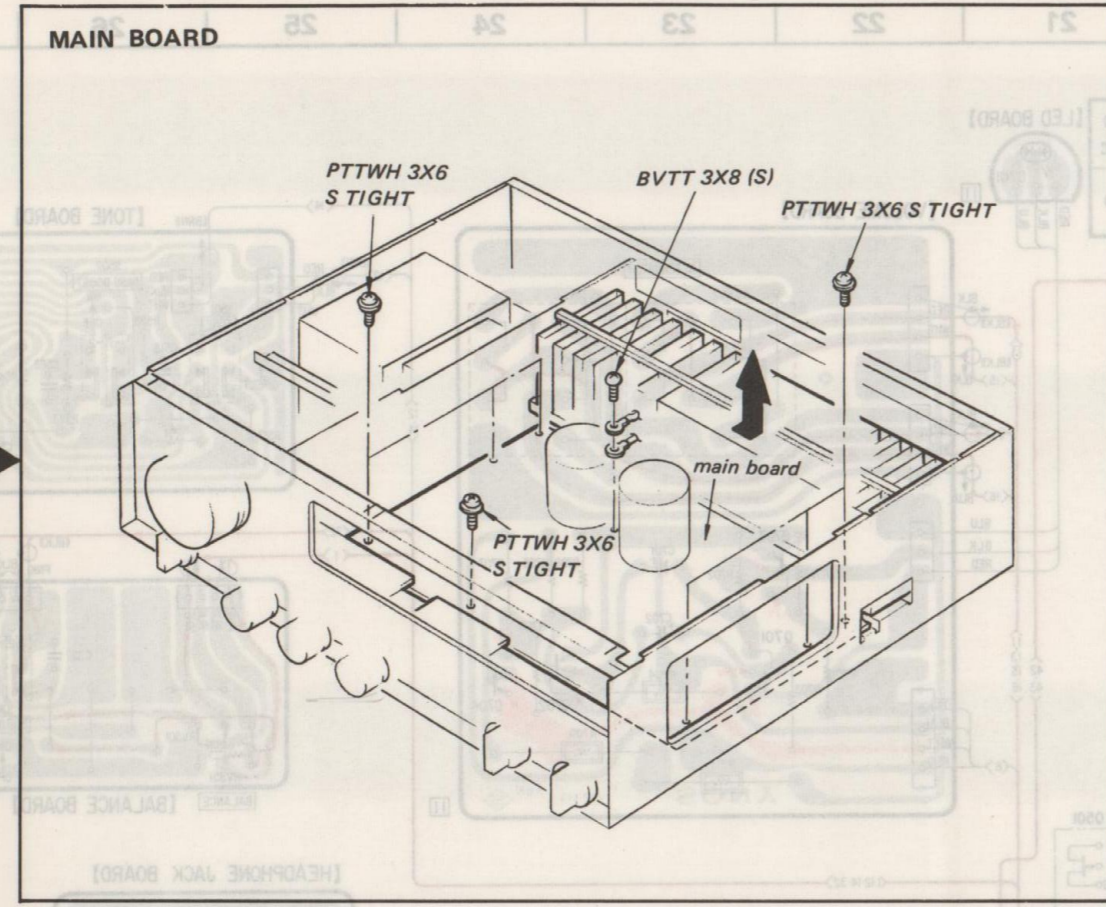
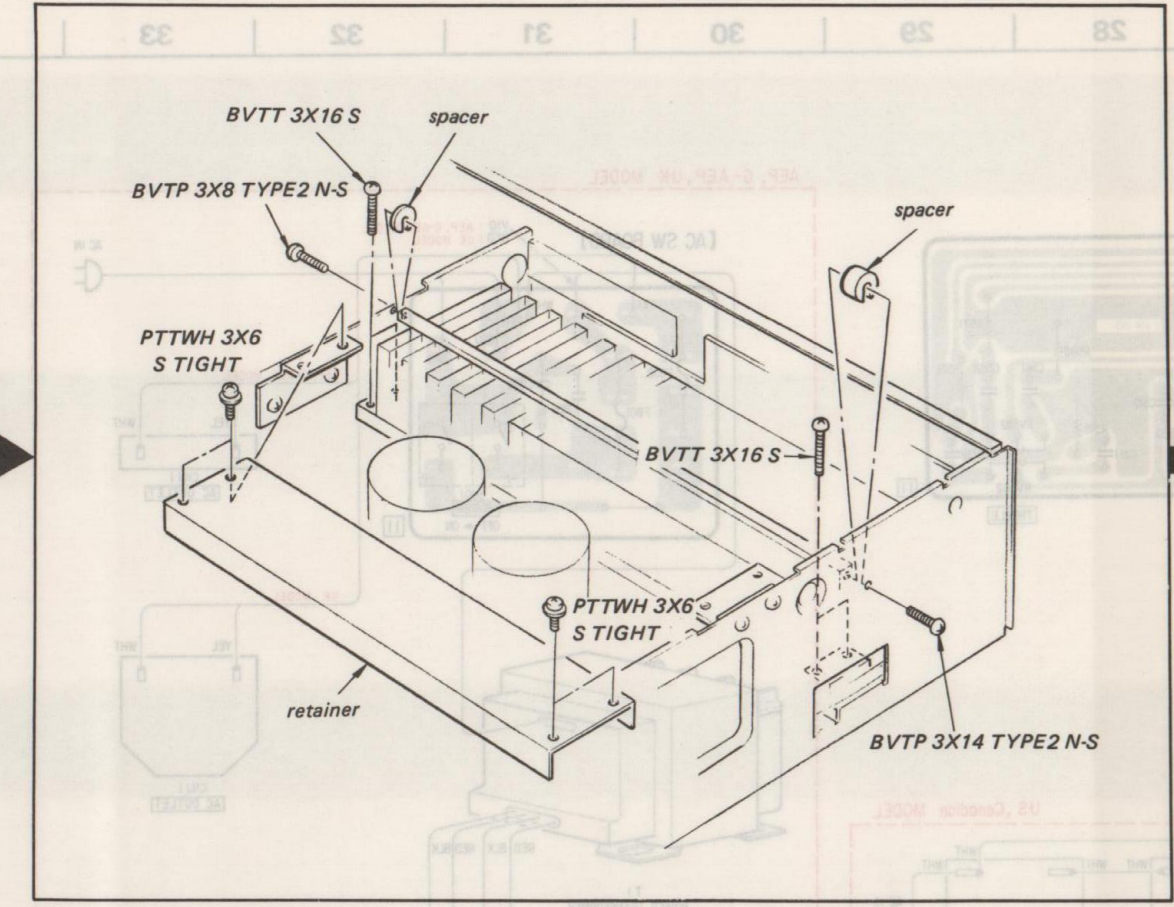


AC SW BOARD / VOLUME BOARD / LED BOARD



INPUT BOARD / VIDEO BOARD

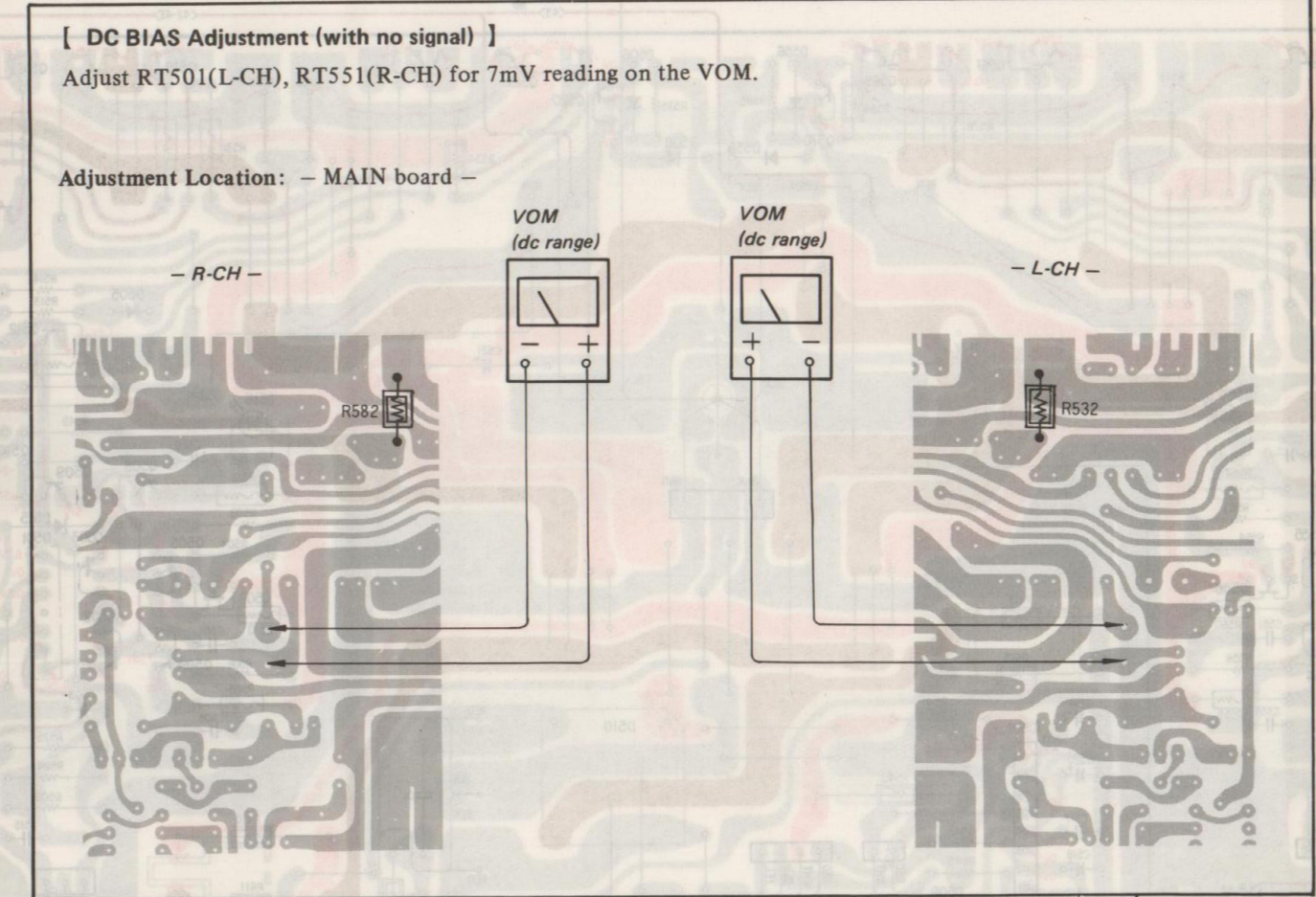




**SECTION 3
ADJUSTMENT**

CAUTION

1. Do not switch S601 (SPEAKER) and S801 (POWER) with audio signal applied to speakers.
2. DC BIAS adjustments should be made 10 minutes after the POWER switch is pushed on (POWER ON).
3. When replacing or repairing power transistors, be sure to replace resistors (R526-R531 or R576-R581) with new one, and make the DC BIAS adjustment.

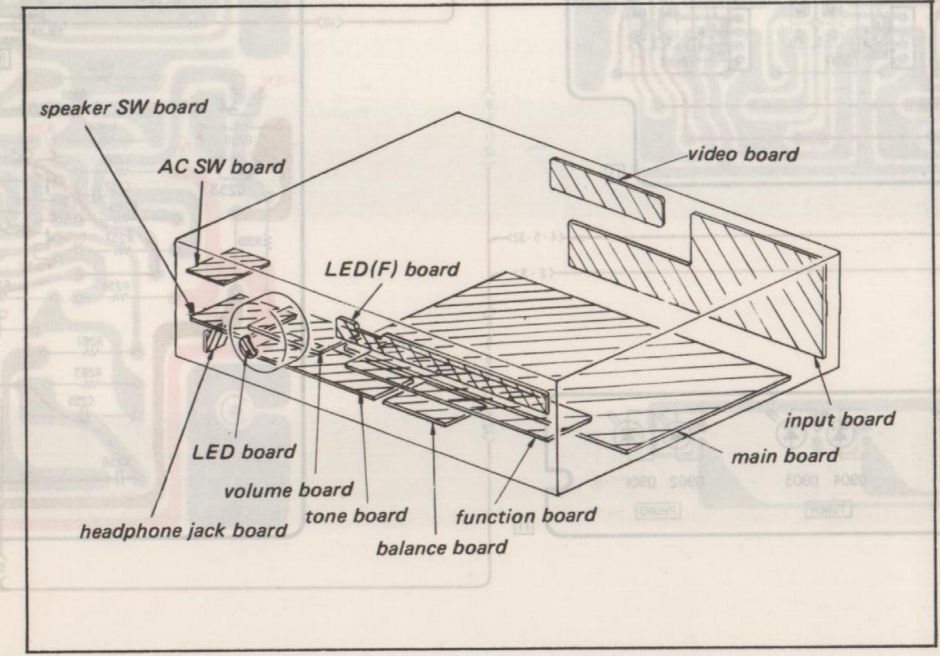


**SECTION 4
DIAGRAMS**

4-1. SEMICONDUCTOR LEAD LAYOUTS

NE5532P TL082CP	2SA1142 2SC2682 2SB731 2SD809	μPA68H-K	PB112E
μPC1237H	2SA1175 2SC2785-E	1SS202-1 EQB01-06 HZ6C3L	STV-2H
2SA733-P 2SC945-P	2SA1386-Y 2SC3519-Y	GL-5HD21	
2SA985-P 2SA1383 2SC1826-Y 2SC2275-P 2SC3514	2SK170	GL-5NG27	
2SA1027R	2SK246-GR2 2SK246-GR3 2SK246-Y	GL-5NP5	

4-2. CIRCUIT BOARDS LOCATION

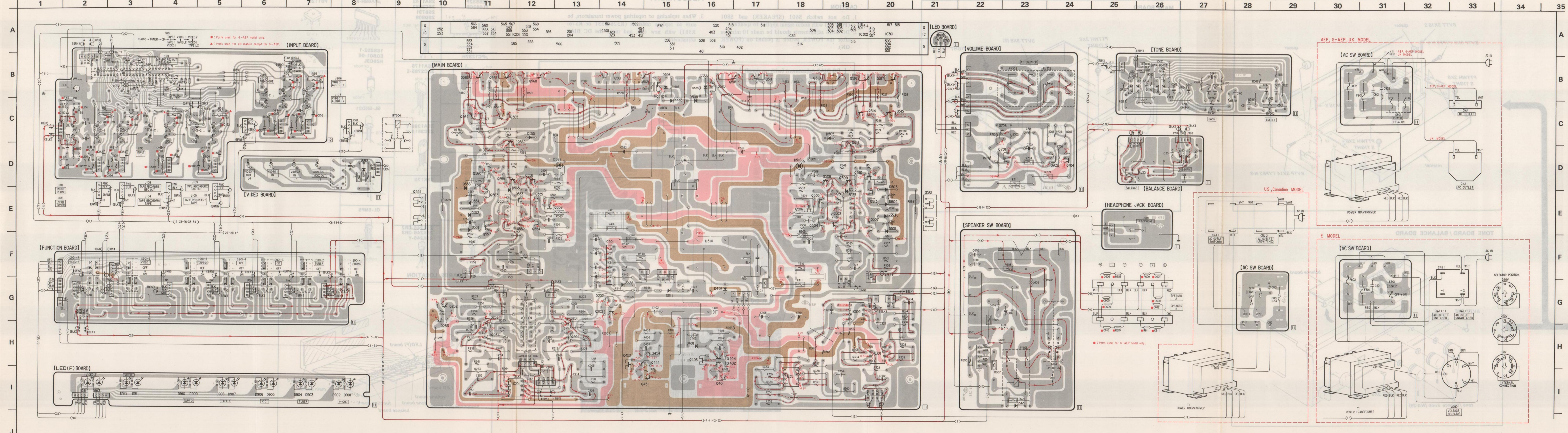


4-3. MOUNTING DIAGRAM

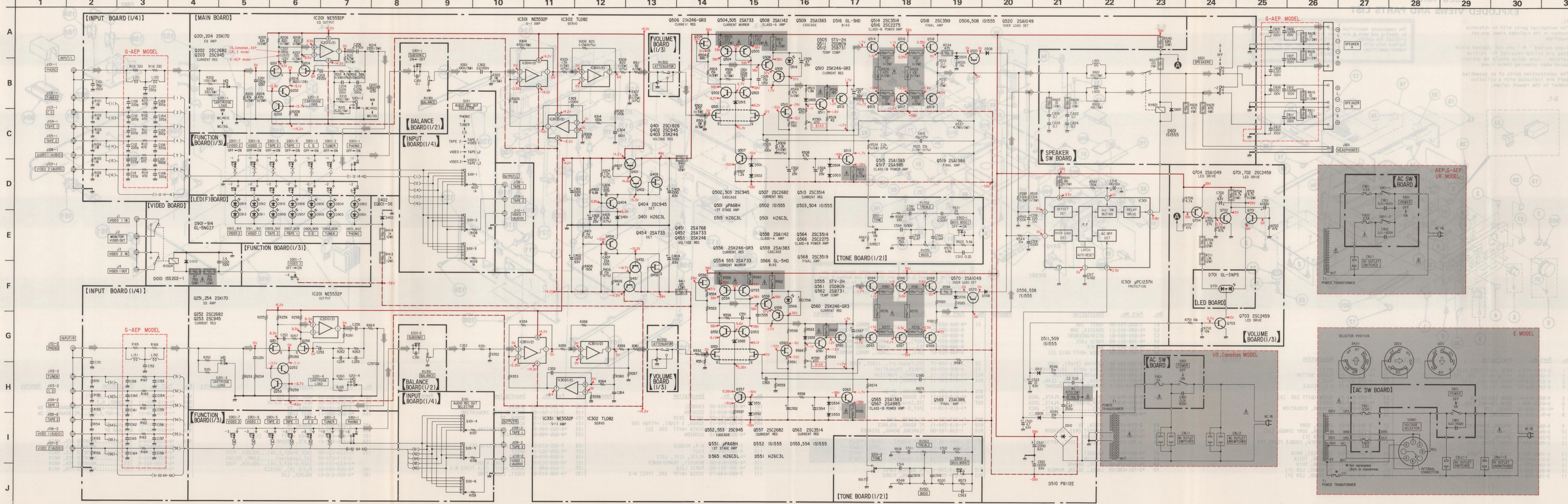
— Conductor Side —

• See page 16 for semiconductor lead layouts and circuit boards location. • See page 27 for note.

• B + pattern • B - pattern



4-4. SCHEMATIC DIAGRAM



Note on Schematic Diagram.

- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\text{F} / 100$. 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- Signal path.

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

Note: Les composants identifiés par une trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Components for right channel have same values as for left channel.
- Δ : nonflammable resistor.
- \square : fusible resistor.
- Switch

Ref. No.	Switch	Position
S101	AUDIO REC OUT SELECTOR	PHONO
S201	CARTRIDGE LOAD	MM
S301	SUBSONIC	OFF
S501	tone	DIRECT
S502	BASS BOOST	OFF
S601	SPEAKERS	A
S801	POWER	ON
S901-1	PHONO	ON
S901-2	TUNER	OFF
S901-3	CD	OFF
S901-4	TAPE 1	OFF
S901-5	TAPE 2	OFF
S901-6	VIDEO 1	OFF
S901-7	VIDEO 2	OFF
VS801	VOLTAGE SELECTOR (E model)	240V

- --- : B+ bus.
- --- : B- bus.
- \square : adjustment for repair.
- Voltagess are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 $\text{k}\Omega/\text{V}$).
- Voltage variations may be noted due to normal production tolerances.

Note on Mounting Diagram

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

\bullet : parts extracted from the component side.
 --- : L-CH signal path
 --- : R-CH signal path

SECTION 5 EXPLODED VIEWS AND PARTS LIST

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. The construction parts of an assembled part are indicated with a collation number in the remark column.

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

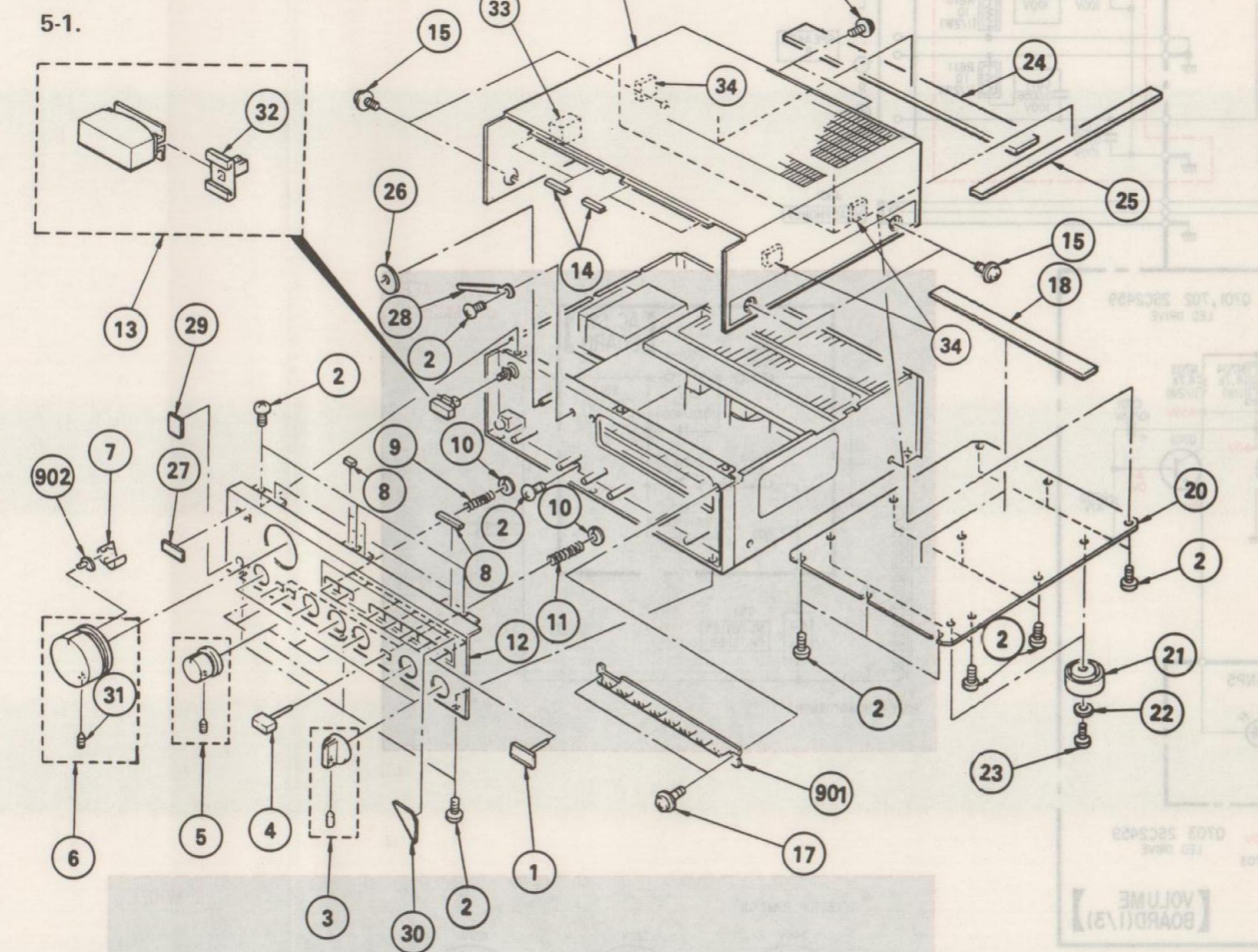


Table with 4 columns: No., Part No., Description, Remarks. Lists parts 1 through 34 including knobs, screws, springs, and the front panel assembly.

5-2.

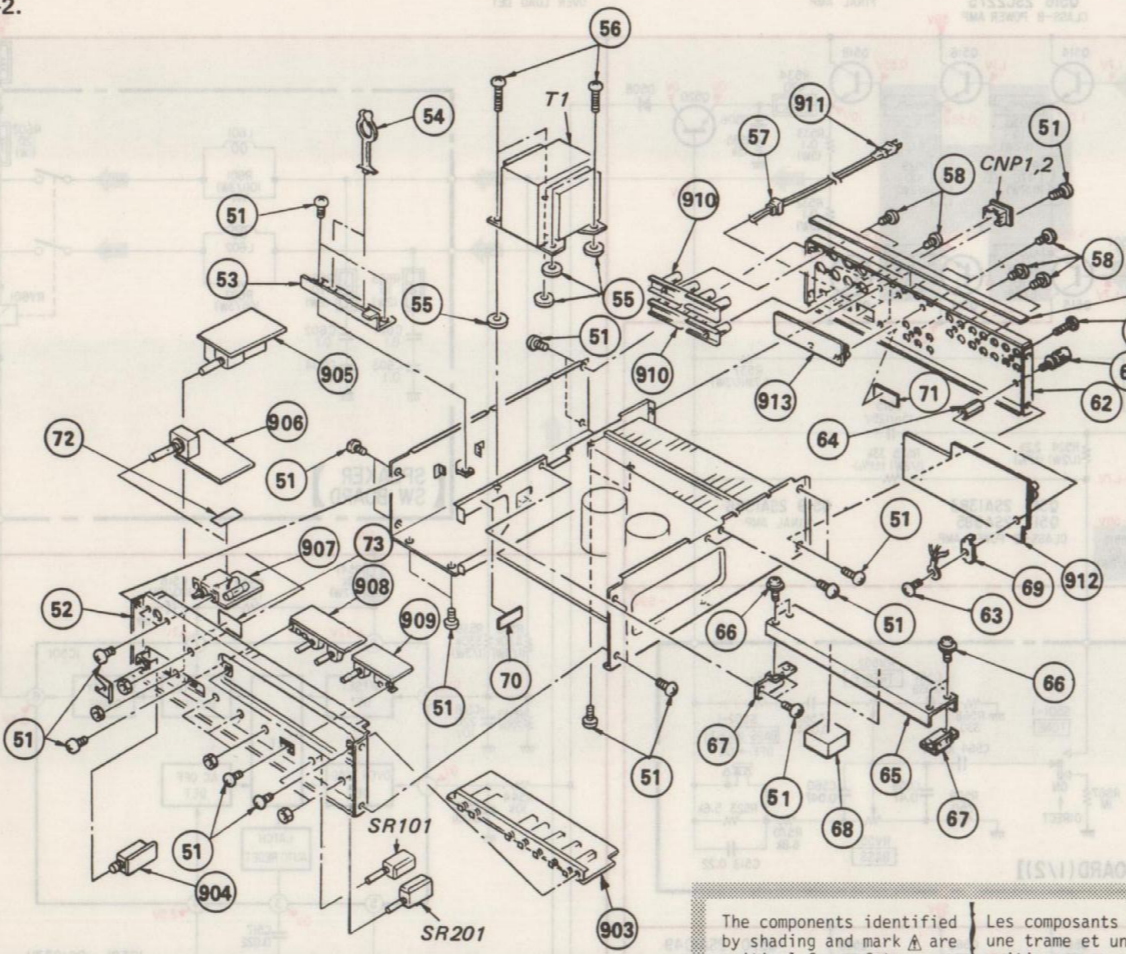


Table with 4 columns: No., Part No., Description, Remarks. Lists parts 51 through 910 including chassis sub, reinforcement, screws, washers, bushings, and various PC boards.

5-3.

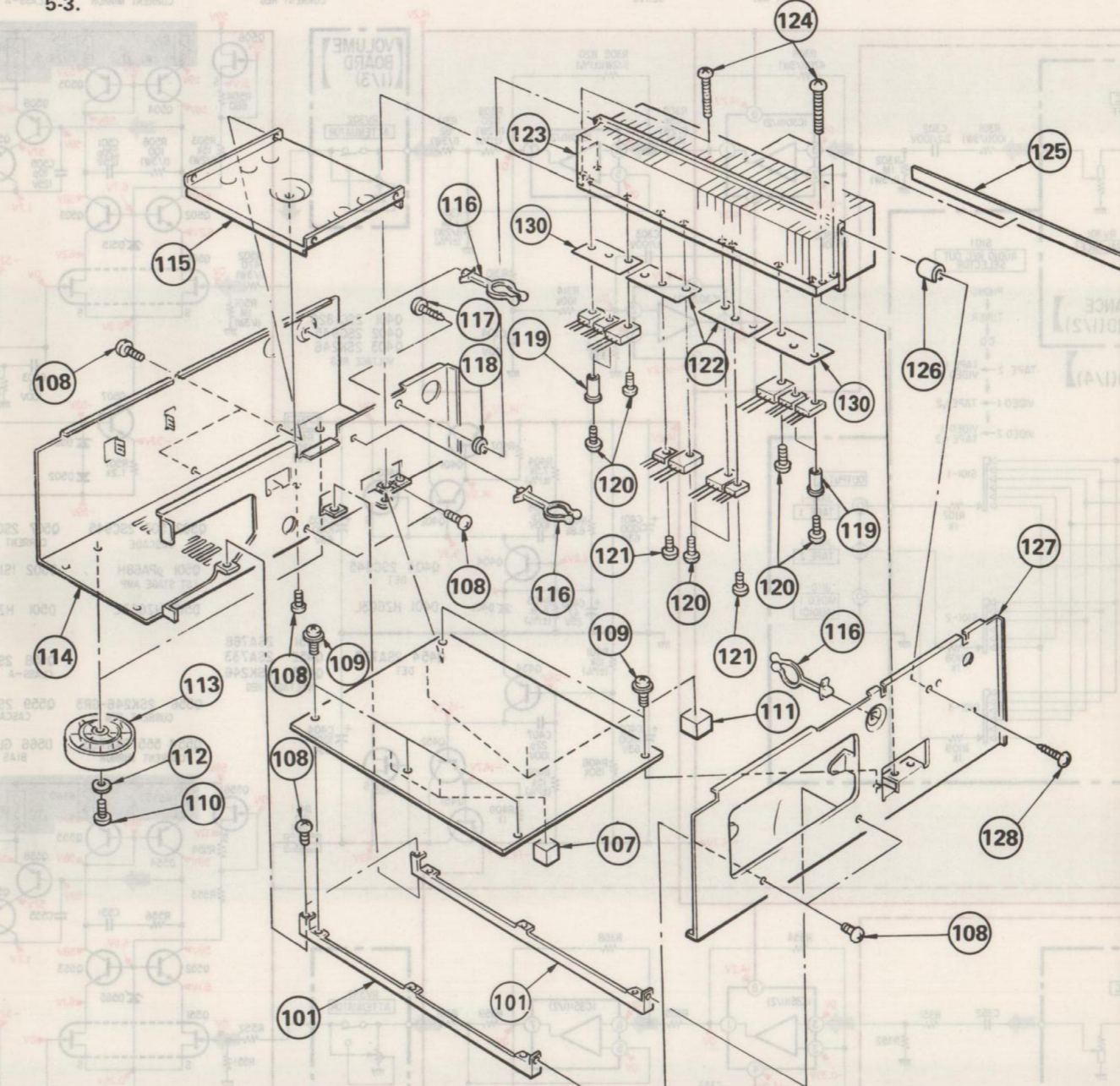


Table with 4 columns: No., Part No., Description, Remarks. Lists parts 101 through 130 including channels, cushions, screws, and transformer brackets.

5-4.

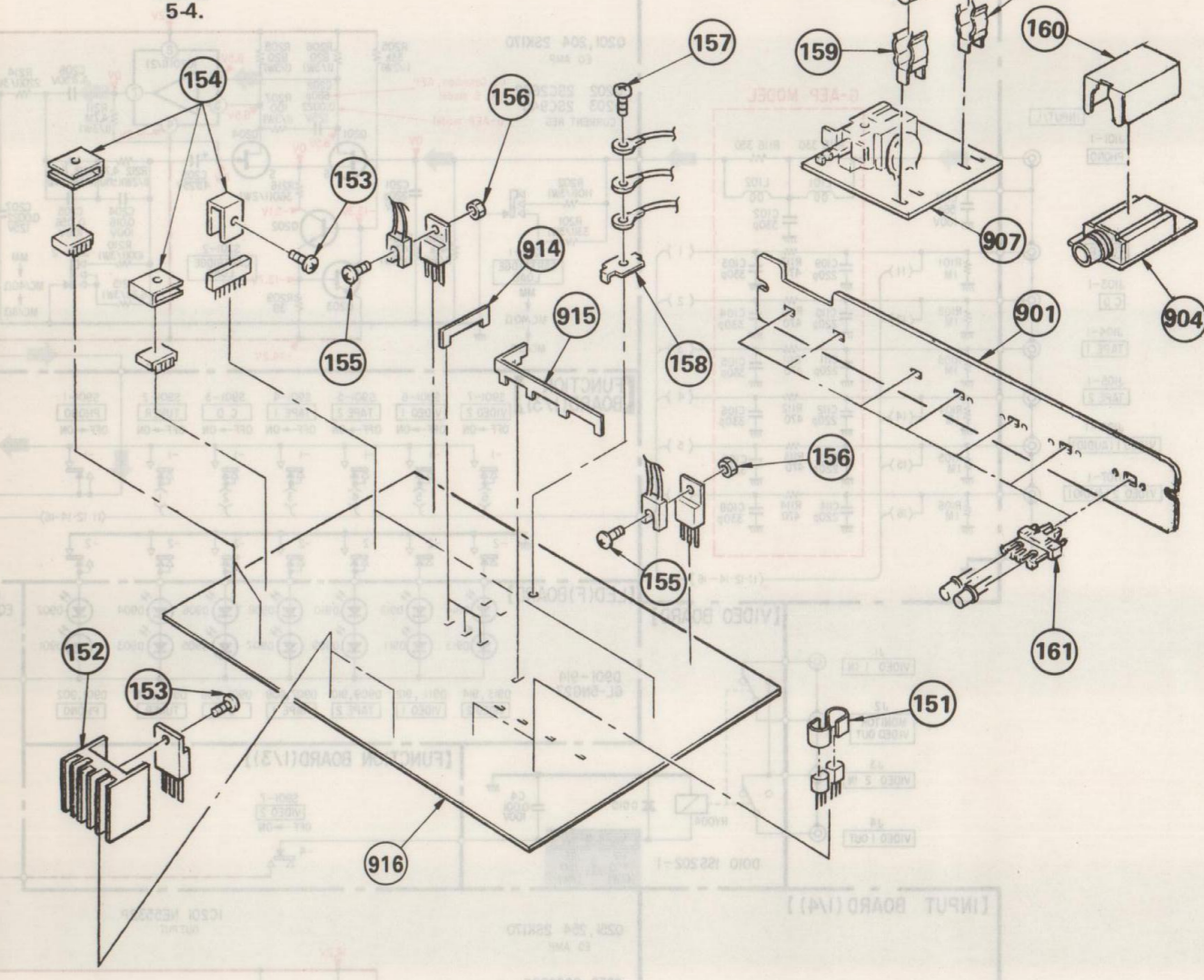


Table with 4 columns: No., Part No., Description, Remarks. Lists parts 151 through 161 including heat sinks, bus bars, and PCBs.

Table with 2 columns: Part No., Description. Lists various electronic components like switches, capacitors, and resistors.

Notes on Schematic Diagram, Note on Mounting Diagram, and other technical instructions.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Lists various electrical components like JACK, COIL, TRANSISTOR, CARBON, METAL, and FUSIBLE with their respective part numbers and descriptions.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Lists various electrical components like TRANSISTOR, CARBON, METAL OXIDE, and FUSIBLE with their respective part numbers and descriptions.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Lists various electrical components like CARBON, METAL, METAL OXIDE, and FUSIBLE with their respective part numbers and descriptions.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Lists various electrical components like METAL, CARBON, METAL OXIDE, and FUSIBLE with their respective part numbers and descriptions.

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

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

ELECTRICAL PARTS

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R553	1-247-268-00	CARBON	15K	5%	1/2W	
R554	1-247-127-00	CARBON	680	5%	1/4W	
R555	△.1-212-990-00	FUSIBLE	220	5%	1/2W	F
R556	1-247-216-00	CARBON	100	5%	1/3W	
R557	1-247-133-00	CARBON	1.2K	5%	1/4W	
R558	1-247-147-00	CARBON	4.7K	5%	1/4W	
R559	1-214-867-00	METAL	1.3K	1%	1/2W	
R560	△.1-212-990-00	FUSIBLE	220	5%	1/2W	F
R561	1-247-127-00	CARBON	560	5%	1/4W	
R562	△.1-206-486-00	FUSIBLE	91	5%	1/2W	F
R563	1-247-137-00	CARBON	1.8K	5%	1/4W	
R564	1-247-123-00	CARBON	470	5%	1/4W	
R565	△.1-217-445-00	FUSIBLE	82	5%	1/2W	F
R566	△.1-217-402-00	FUSIBLE	180	5%	1/4W	F
R567	1-246-545-00	CARBON	1M	5%	1/4W	
R568	1-247-119-00	CARBON	330	5%	1/4W	
R569	1-247-098-00	CARBON	43	5%	1/4W	
R570	1-247-151-00	CARBON	6.8K	5%	1/4W	
R571	1-247-138-00	CARBON	2K	5%	1/4W	
R573	1-247-149-00	CARBON	5.6K	5%	1/4W	
R574	1-214-872-00	METAL	2.2K	1%	1/2W	
R575	1-214-901-00	METAL	33K	1%	1/2W	
R576	△.1-217-454-00	FUSIBLE	470	5%	1/2W	F
R577	△.1-217-434-00	FUSIBLE	10	5%	1/2W	F
R578	△.1-217-434-00	FUSIBLE	10	5%	1/2W	F
R579	△.1-217-446-00	FUSIBLE	100	5%	1/2W	F
R580	△.1-217-434-00	FUSIBLE	10	5%	1/2W	F
R581	△.1-217-434-00	FUSIBLE	10	5%	1/2W	F
R582	1-217-657-11	METAL PLATE	0.1		5W	
R583	1-217-657-11	METAL PLATE	0.1		5W	
R584	1-247-123-00	CARBON	470	5%	1/4W	F
R585	1-247-159-00	CARBON	15K	5%	1/4W	
R587	1-249-298-11	CARBON	4.7M	5%	1/3W	
R598	1-247-128-00	CARBON	750	5%	1/4W	
R599	1-247-280-00	CARBON	47K	5%	1/2W	
R601	1-247-192-00	CARBON	10	5%	1/3W	
R602	1-247-192-00	CARBON	10	5%	1/3W	
R603	1-206-463-00	METAL OXIDE	10	5%	2W	F
R604	1-206-463-00	METAL OXIDE	10	5%	2W	F
R605	1-213-139-00	METAL OXIDE	470	5%	1W	F
R606	1-213-139-00	METAL OXIDE	470	5%	1W	F
R607	1-213-132-11	METAL OXIDE	120	5%	1W	F
R608	1-124-192-00	(G-AEP)...CARBON	10	5%	1/2W	F
R609	1-124-192-00	(G-AEP)...CARBON	10	5%	1/2W	F
R610	1-124-192-00	(G-AEP)...CARBON	10	5%	1/2W	F
R611	1-124-192-00	(G-AEP)...CARBON	10	5%	1/2W	F
R701	1-247-155-00	CARBON	10K	5%	1/4W	
R702	1-247-171-00	CARBON	47K	5%	1/4W	
R703	1-247-256-00	CARBON	4.7K	5%	1/2W	
R704	1-213-151-11	METAL OXIDE	4.7K	5%	1W	F
R705	1-247-165-00	CARBON	27K	5%	1/4W	
R706	1-247-147-00	CARBON	4.7K	5%	1/4W	
R707	1-247-171-00	CARBON	47K	5%	1/4W	
R708	1-247-171-00	CARBON	47K	5%	1/4W	

Ref.No.	Part No.	Description				
R709	1-206-667-11	METAL OXIDE	1.3K	5%	2W	F
R710	1-247-155-00	CARBON	10K	5%	1/4W	F
R711	1-206-667-11	METAL OXIDE	1.3K	5%	2W	F
RT501	1-224-248-XX	RES, ADJ, SOLID	470			
RT551	1-224-248-XX	RES, ADJ, SOLID	470			
RV301	1-230-654-11	RES, VAR, CARBON	100K/100K		(BALANCE)	
RV302	1-230-657-11	RES, VAR, CARBON	10K/10K		(ATTENUATOR)	
RV351	1-230-654-11	RES, VAR, CARBON	100K/100K		(BALANCE)	
RV352	1-230-657-11	RES, VAR, CARBON	10K/10K		(ATTENUATOR)	
RV501	1-230-655-11	RES, VAR, CARBON	24K/24K		(BASS)	
RV502	1-230-656-11	RES, VAR, CARBON	37K/37K		(TREBLE)	
RV551	1-230-655-11	RES, VAR, CARBON	24K/24K		(BASS)	
RV552	1-230-656-11	RES, VAR, CARBON	37K/37K		(TREBLE)	
RY004	1-515-495-00	RELAY (VIDEO)				
RY601	1-515-356-00	RELAY				
S101	1-570-076-11	SWITCH, SLIDE (REMOTE TYPE, REC OUT SELECT)				
S201	1-554-019-00	SWITCH, SLIDE (REMOTE TYPE, CARTRIDGE LOAD)				
S301	1-570-078-11	SWITCH, PUSH (1 KEY, SUBSONIC)				
S501	1-570-079-11	SWITCH, PUSH (2 KEY, TONE)				
S502	1-570-079-11	SWITCH, PUSH (2 KEY, BASS BOOST)				
S601	1-570-077-11	SWITCH, ROTARY SLIDE (SPEAKERS)				
S801	△.1-552-246-00	(US, Canadian)...SWITCH, PUSH (AC POWER)				
S801	△.1-554-880-11	(AEP, G-AEP, UK, E)...SWITCH, PUSH (AC POWER)(1 KEY)				
S901	1-570-075-11	SWITCH, PUSH (7 KEY, FUNCTION)				
SR101	1-570-081-11	(AEP, G-AEP, UK, E)...SWITCH, ROTARY SLIDE (REMOTE)				
SR201	1-570-080-11	SWITCH, ROTARY SLIDE (REMOTE)				
T1	△.1-448-173-11	(US, Canadian)...TRANSFORMER, POWER				
T1	△.1-448-174-11	(AEP)...TRANSFORMER, POWER				
T1	△.1-448-175-11	(G-AEP)...TRANSFORMER, POWER				
T1	△.1-448-176-11	(UK)...TRANSFORMER, POWER				
T1	△.1-448-177-11	(E)...TRANSFORMER, POWER				
VS801	△.1-526-576-31	(E)...SELECTOR, POWER VOLTAGE				

ACCESSORY & PACKING MATERIAL

Part No.	Description
2-297-403-00	SHEET (LARGE), PROTECTION
3-701-630-00	BAG, POLYETHYLENE
3-760-469-11	MANUAL, INSTRUCTION
4-885-951-01	CUSHION (FRONT), LOWER
4-885-952-01	CUSHION (REAR), LOWER
4-885-949-01	CUSHION (FRONT), UPPER
4-885-950-01	CUSHION (REAR), UPPER
4-908-813-01	INDIVIDUAL CARTON

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

Les composants identifiés par une trame et une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

