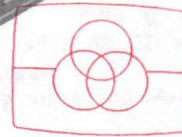


TA-F444ES

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



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SPECIFICATIONS

Amplifier section

Continuous RMS power output

(both channels driven simultaneously)

AEP Model

At 20 Hz - 20 kHz

105 + 105 watts (0.006% THD, 6 ohms)

80 + 80 watts (0.004% THD, 8 ohms)

E, UK Model

At 20 Hz - 20 kHz

110 + 110 watts (0.008% THD, 4 ohms)

80 + 80 watts (0.004% THD, 8 ohms)

US, Canadian Model

At 20 Hz - 20 kHz

100 + 100 watts (0.008% THD, 4 ohms)

80 + 80 watts (0.004% THD, 8 ohms)

G-AEP Model

At 20 Hz - 20 kHz

110 + 110 watts (0.015% THD, 4 ohms)

80 + 80 watts (0.006% THD, 8 ohms)

Power bandwidth (IHF)

5 Hz - 80 kHz

Dynamic headroom

1.2 dB ('78 IHF)

Harmonic distortion

AEP Model

Less than 0.006% at rated output (6 ohms)

Less than 0.004% at rated output (8 ohms)

US, Canadian,

E, UK Model

Less than 0.008% at rated output (4 ohms)

Less than 0.004% at rated output (8 ohms)


G-AEP Model

Less than 0.015% at rated output (4 ohms)


Less than 0.006% at rated output (8 ohms)

— 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®

AUD

Intermodulation (IM) distortion
 (60 Hz : 7 kHz = 4 : 1) AEP Model
 Less than 0.006% at rated output (6 ohms)
 Less than 0.004% at rated output (8 ohms)
 US, Canadian
 E, UK Model
 Less than 0.008% at rated output (4 ohms)
 Less than 0.004% at rated output (8 ohms)
 G-AEP Model
 Less than 0.015% at rated output (4 ohms)
 Less than 0.006% at rated output (8 ohms)

Slew rate 125 V/ μ sec.
 250 V/ μ sec. (inside)
Dynamic range TUNER, AUX, CD, TAPE 1,2 : 120dB
Channel separation
 (at 1 kHz) PHONO MC : 80 dB
 MM : 95 dB
 TUNER, AUX, CD, TAPE 1,2 : 100dB

Frequency response
 PHONO : RIAA equalization curve ± 0.2 dB
 TUNER
 CD
 AUX
 TAPE 1,2 } 5 Hz - 200 kHz $\begin{matrix} +0 \\ -3 \end{matrix}$ dB

Residual noise Less than 25 μ V (8 ohms, network A)

Damping factor 125 (8 ohms, 1 kHz)

Inputs

	Setting of the CARTRIDGE LOAD selector	Sensitivity	Impedance	Maximum input capability (1 kHz)	S/N (weighting network, input level)
PHONO	MM	2.5 mV	50 kilohm	150 mV	87 dB 83 dB* (A, 2.5 mV)
	MC	40 Ω	100 Ω	9 mV	70 dB 73 dB* (A, 170 μ V)
3 Ω		150 mV			
TUNER, AUX, CD, TAPE 1, 2		150 mV	50 kilohm		

* '78 IHF

Outputs REC OUT 1,2
 Voltage 150 mV
 Impedance 1 kilohms
 SPEAKER A, B
 AEP Model:
 Accepts speakers of 6 - 16 ohms.
 US, Canadian, UK, G-AEP, E Model:
 Accepts speakers of 4 - 16 ohms.
 HEADPHONES
 Accepts low and high impedance headphones.
Tone controls BASS
 ± 8 dB at 60 Hz (turnover freq. 300 Hz)
 TREBLE
 ± 8 dB at 25 kHz (turnover freq. 5 kHz)
Bass boost + 4 dB at 50 Hz
Subsonic filter 6 dB/octave attenuation below 15 Hz

General System

Integrated stereo amplifier
 Power amplifier section
 Legato linear, pure-complementary, triple-Darlington OCL SEPP dc power amplifier with all stages direct coupled, Constant current shunt regulator
 Preamplifier section
 Equalizer section : Low-noise ICL equalizer amp (MC or MM cartridge load selectable)
 Audio Current Transfer section : Bridge-balance type voltage-to-current converter with dc servo amp

Power requirements

AEP, G-AEP Model:
 220 V ac (or 240 V ac adjustable by authorized Sony personnel), 50/60 Hz
 UK Model: 240 V ac
 (or 220 V ac adjustable by authorized Sony personnel), 50Hz
 US, Canadian Model: 120 V ac, 60Hz
 E Model:
 120, 220, or 240 V ac adjustable, 50/60 Hz

Power consumption

US Model: 260 W
 AEP Model: 195 W
 UK, E, G-AEP Model: 210 W
 Canadian Model: 500 VA

AC outlets

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

Dimensions

Approx. 430 x 130 x 430 mm (w/h/d)
 (17¹/₈ x 5¹/₈ x 17¹/₈ inches)

Weight

including projecting parts and controls
 Approx. 13.5 kg (29 lbs 13 oz) net
 Approx. 15.6 kg (34 lbs 6.3 oz) in shipping carton

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 microamperes). 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)

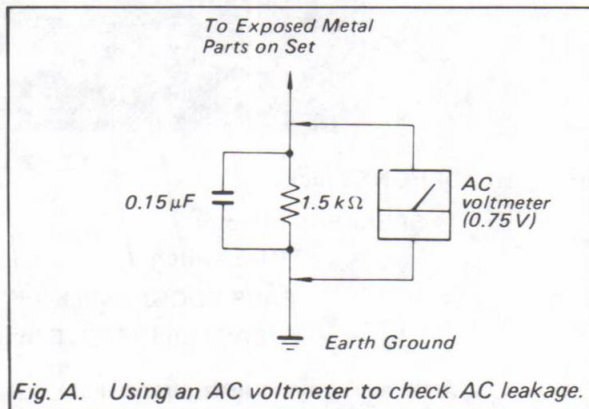
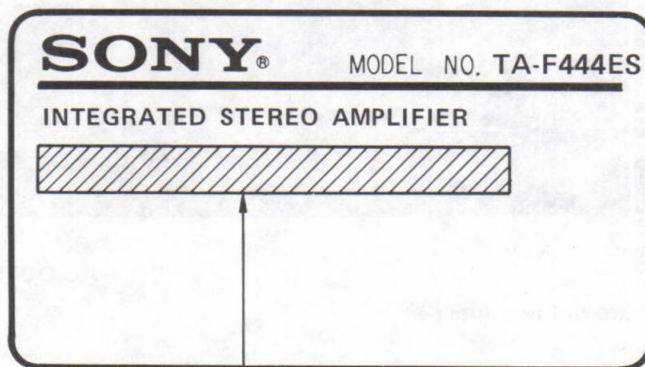


Fig. A. Using an AC voltmeter to check AC leakage.

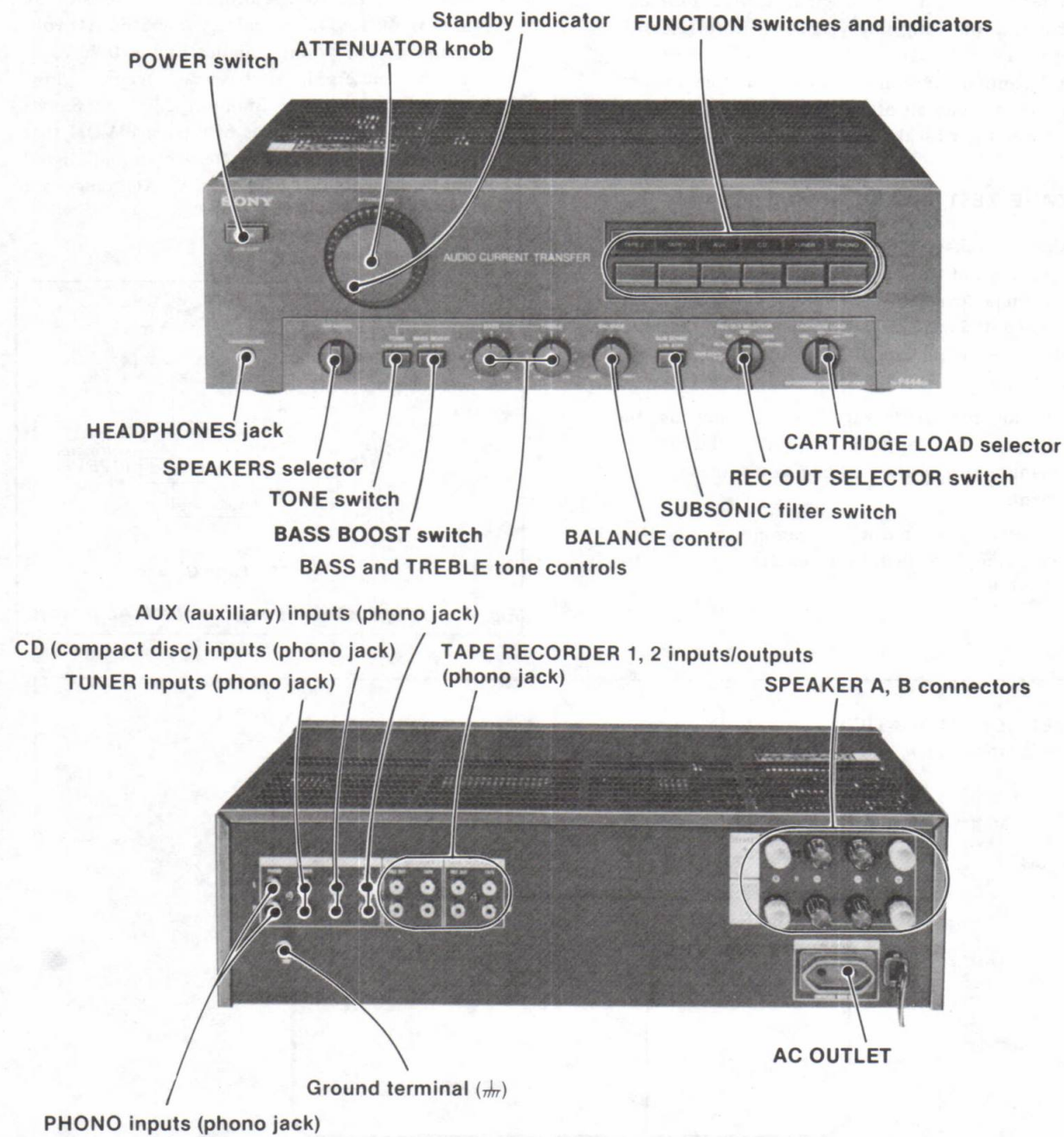
MODEL IDENTIFICATION

— Specification Label —

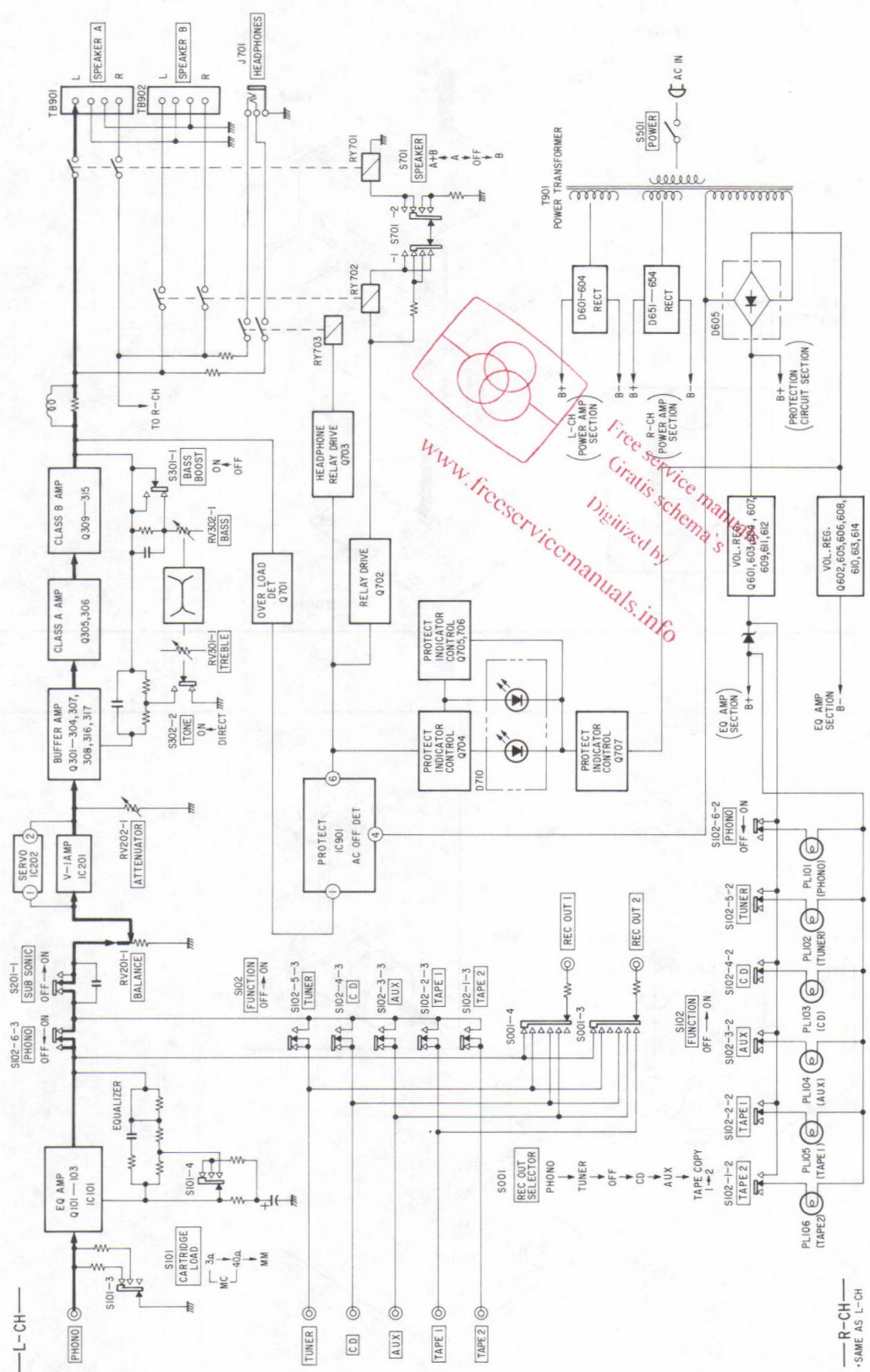


US Model: AC: 120 V ~ 60 Hz 260 W
 Canadian Model: AC: 120 V ~ 60 Hz 500 VA
 AEP Model: AC: 220 V ~ 50/60 Hz 195 W
 UK Model: AC: 240 V ~ 50/60 Hz 210 W
 E Model: AC: 120/220/240 V ~ 50/60 Hz 210 W
 G-AEP Model: AC: 220 V ~ 50/60 Hz, 210 W

FUNCTION OF CONTROLS

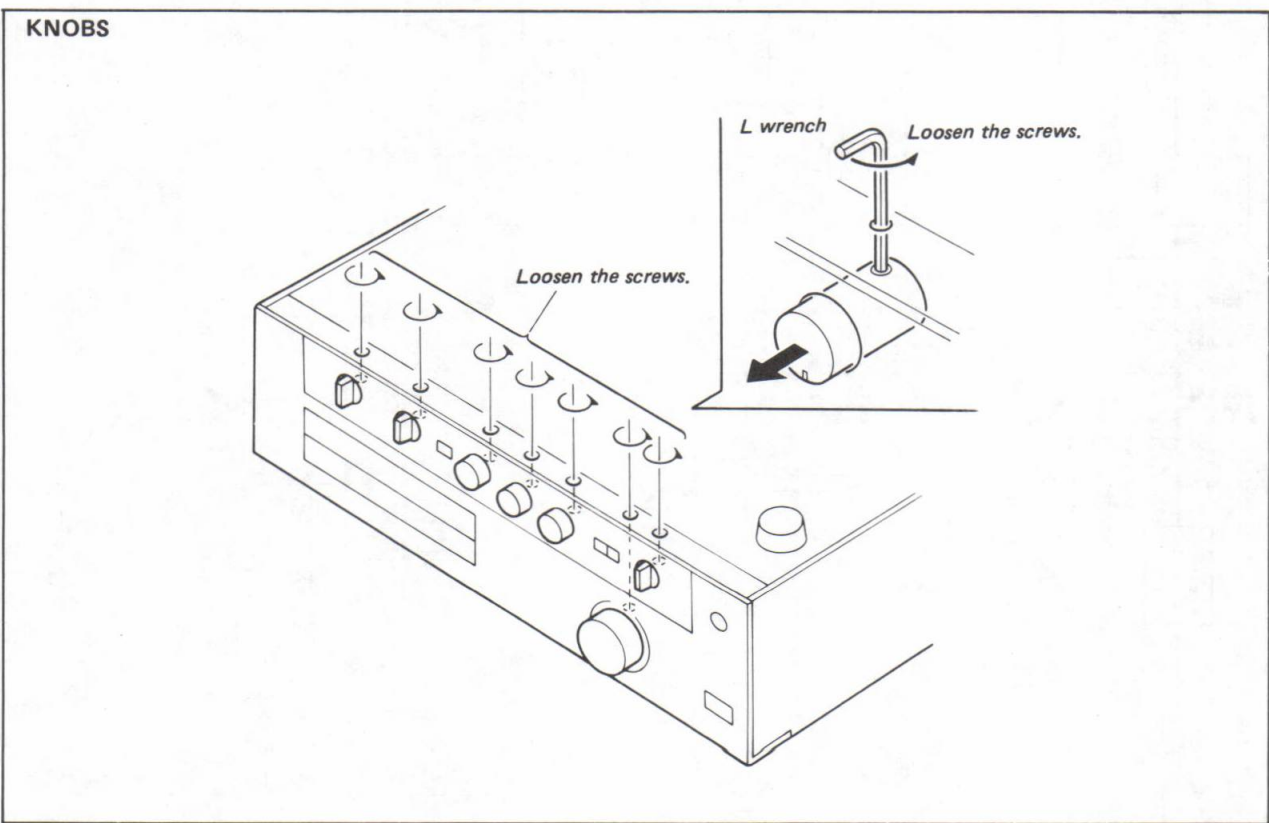
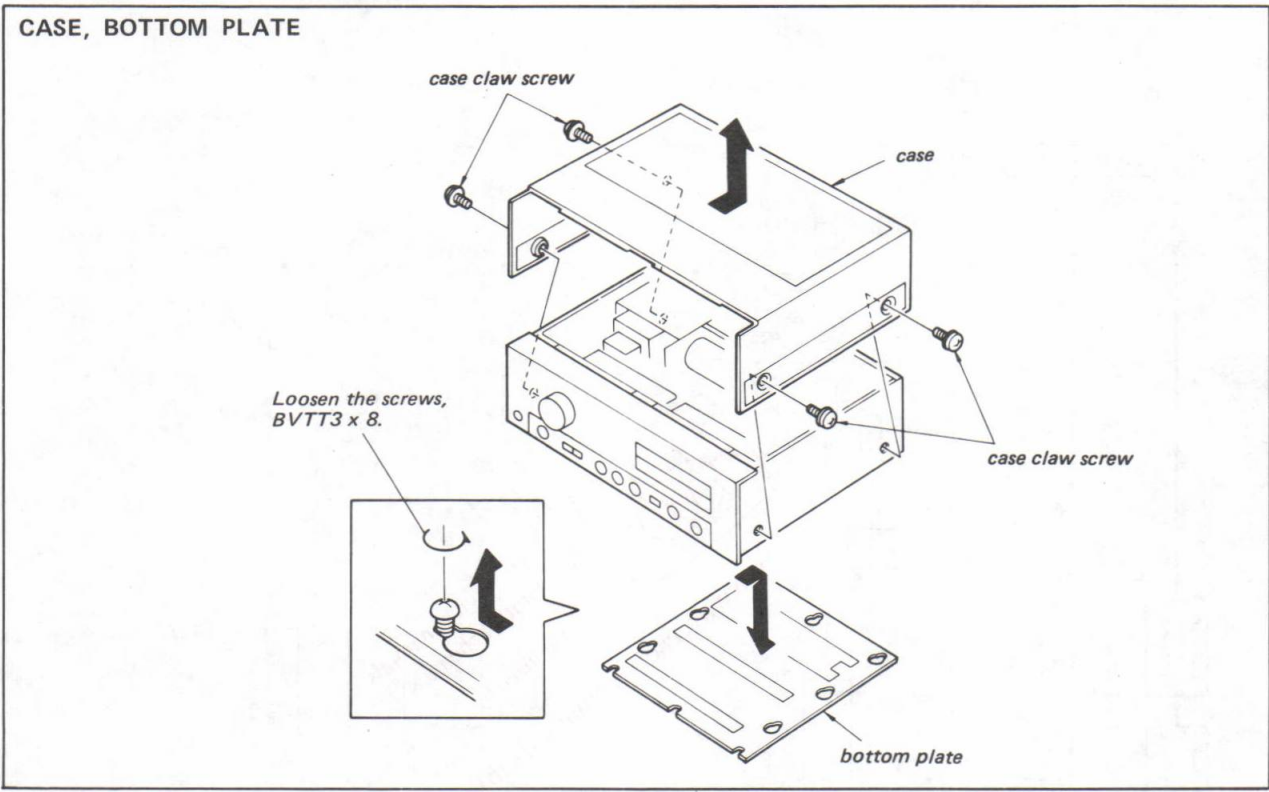


SECTION 1 BLOCK DIAGRAM

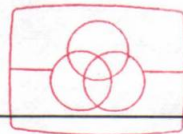
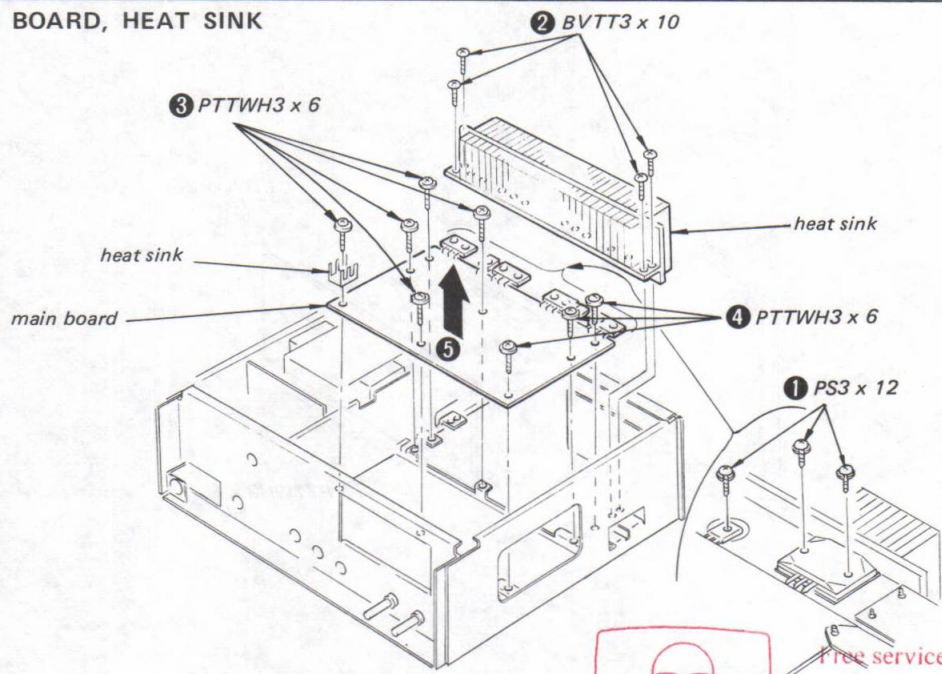


SECTION 2 DISASSEMBLY

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



MAIN BOARD, HEAT SINK

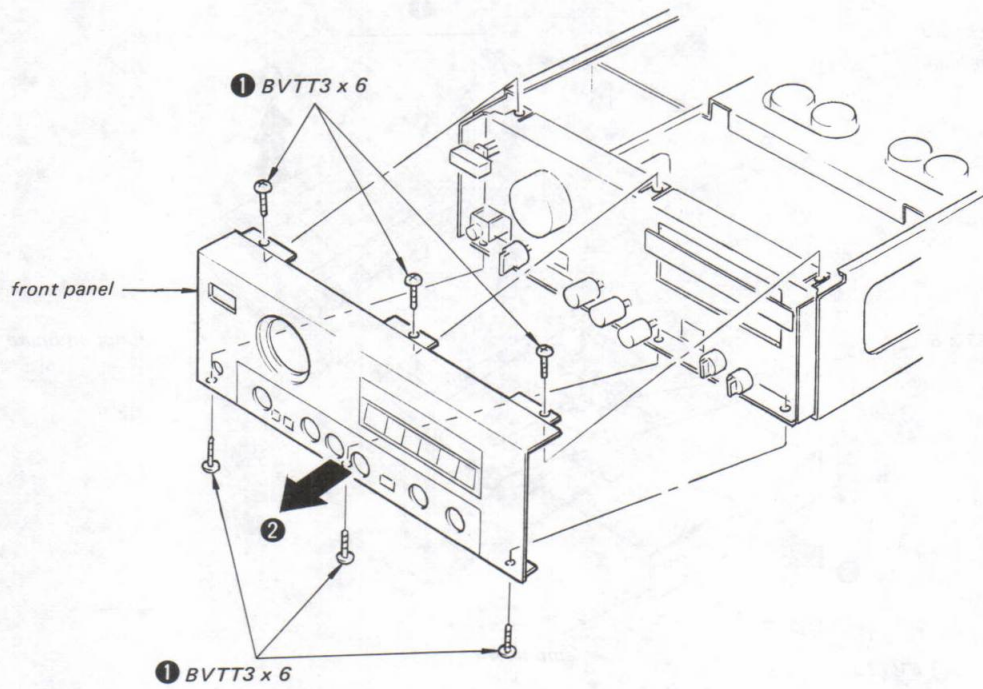


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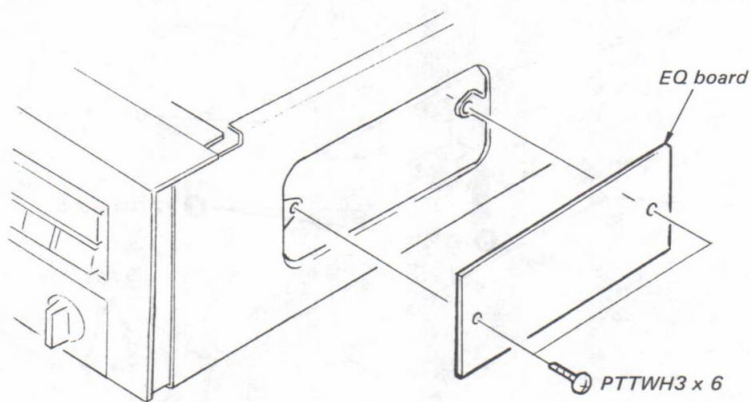
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FRONT PANEL

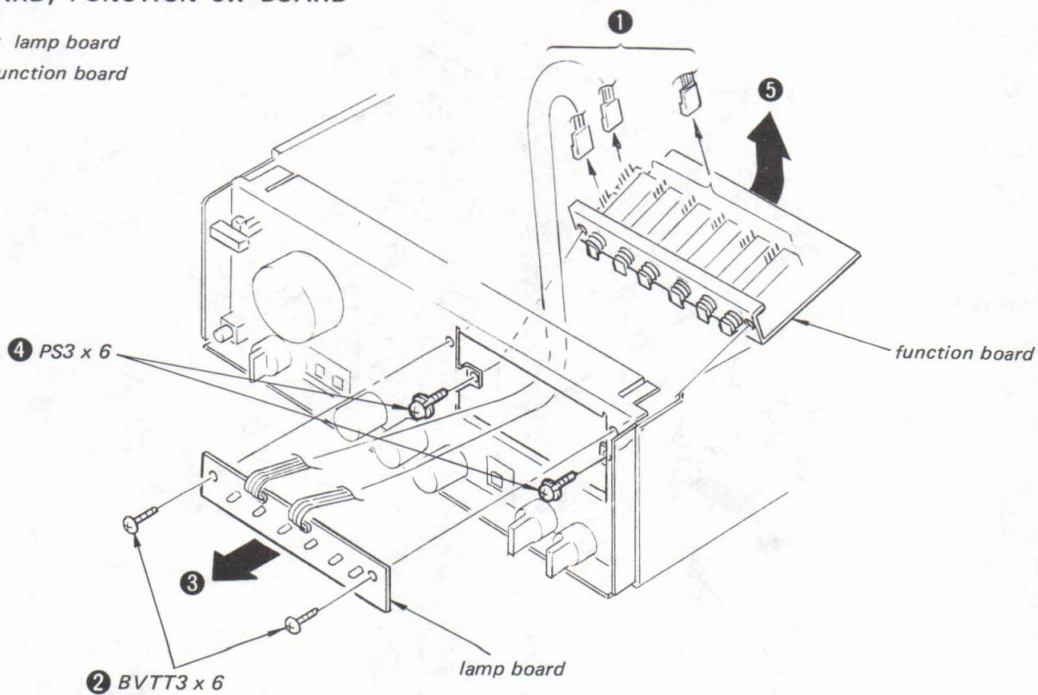


EQ BOARD



LAMP BOARD, FUNCTION SW BOARD

- ① - ③ : lamp board
- ④ , ⑤ : function board



SECTION 3
ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

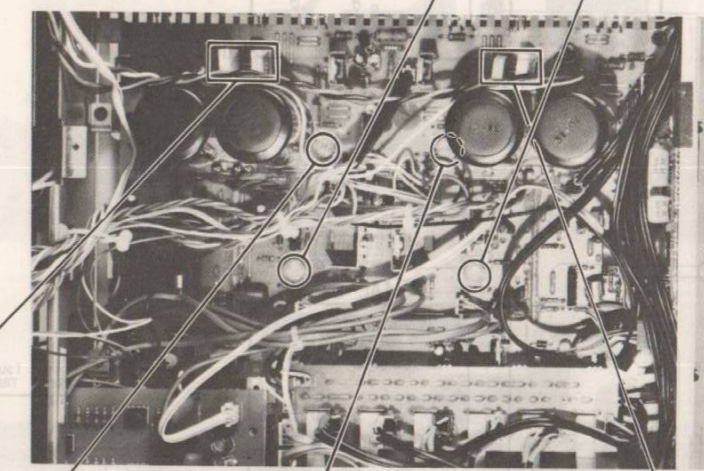
- Note:**
- DC BIAS and DC BALANCE adjustments should be made 5 minutes after the POWER switch is turned on (POWER ON).
 - DC BALANCE adjustment should be performed first.
 - After replacing the power transistors, DC BIAS and DC BALANCE adjustments should be made.

DC BALANCE adjustment (with no signal input)

- Turn on the POWER switch and set the ATTENUATOR knob to MIN. Connect a VTVM to the speaker output terminal. (any polarity)
- Adjust RT301 (L) and 351 (R) for 0 V reading on the VTVM.
- Set the VTVM to high level range. When getting 0 V reading, lower the level range by one rank. Repeat above procedures for precise 0 V reading.

Specification: -10 mV to +10 mV

Adjustment Location:
- main board -

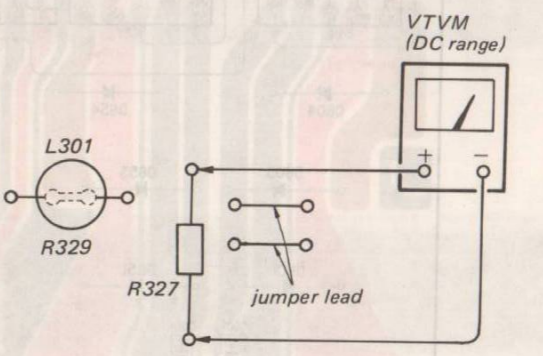


DC BIAS Adjustment (with no signal input)

Procedure:

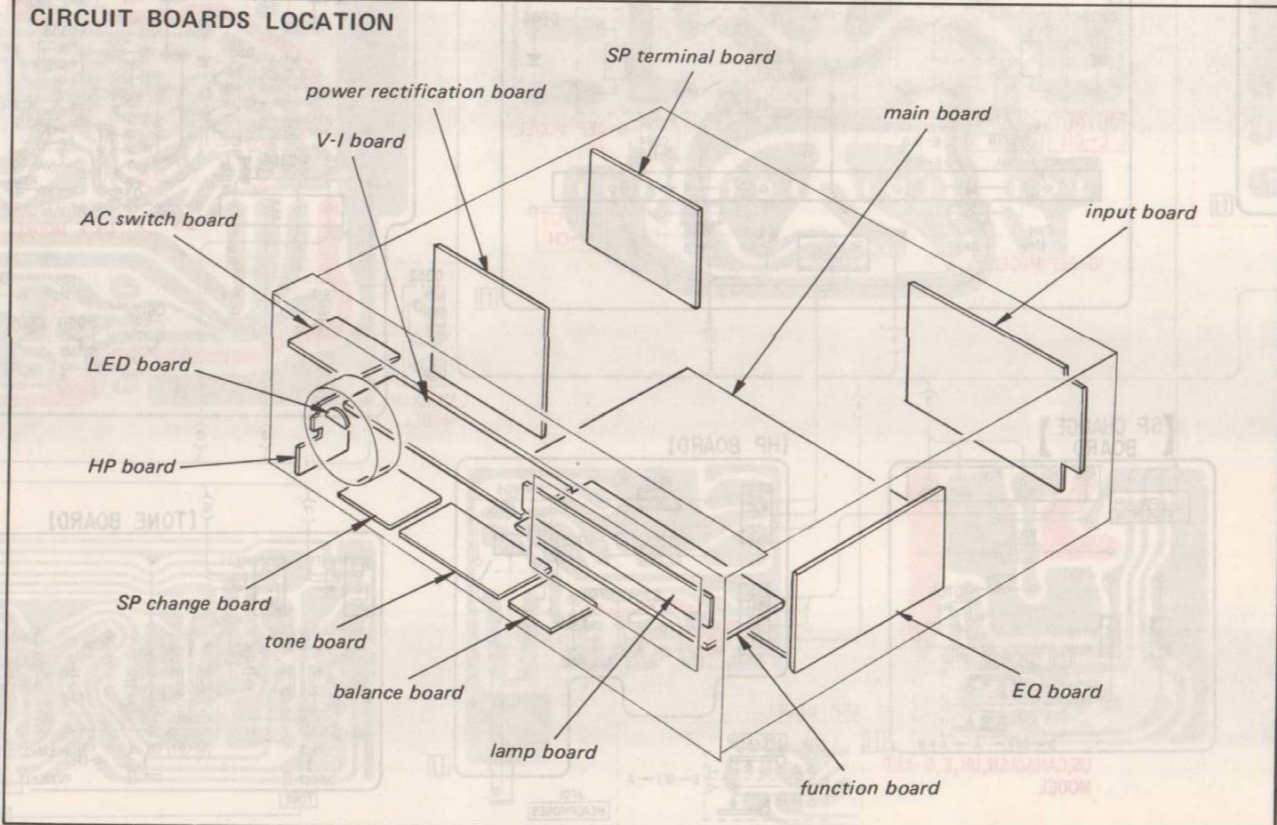
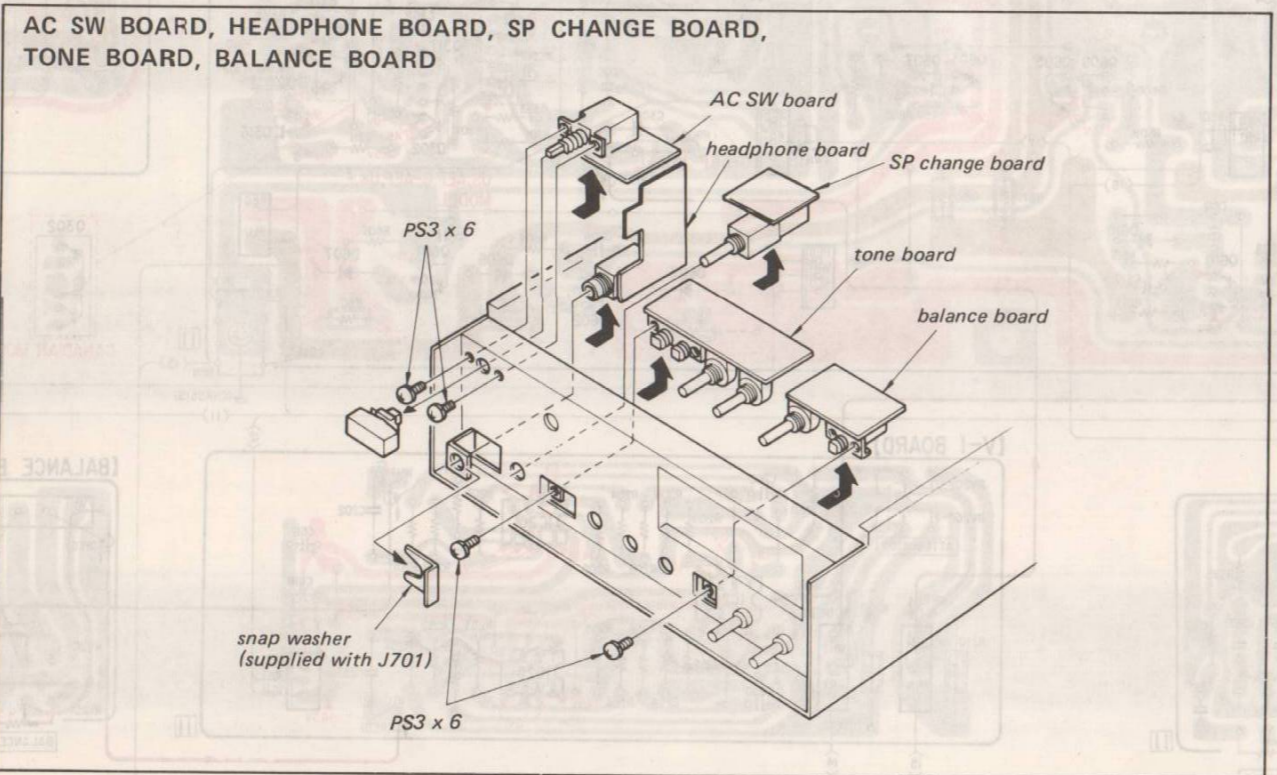
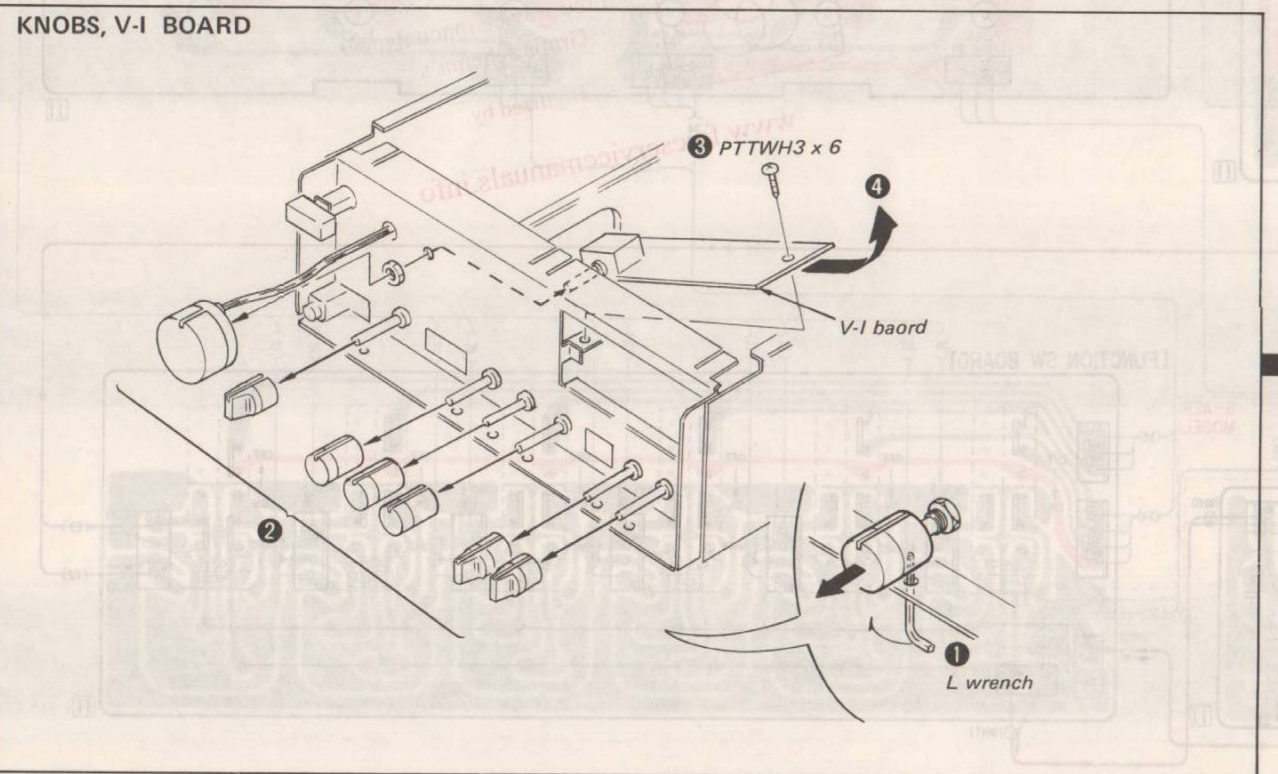
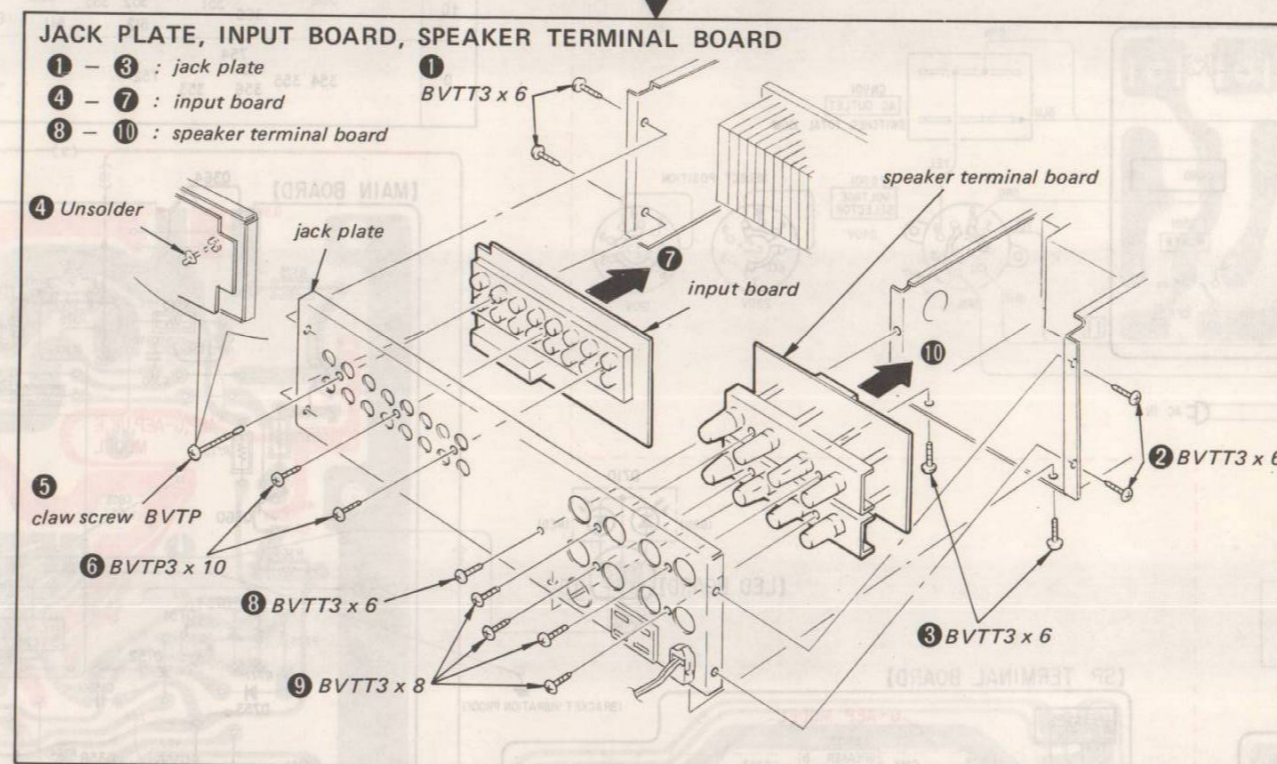
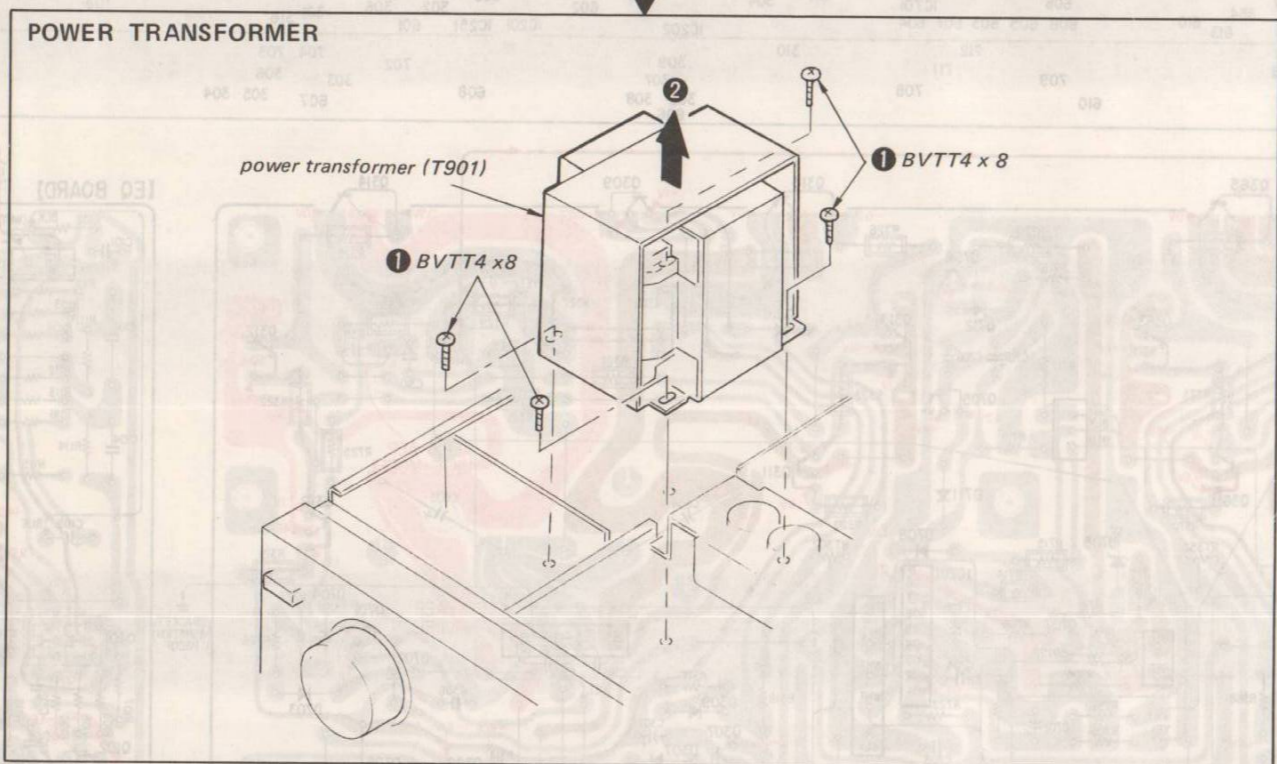
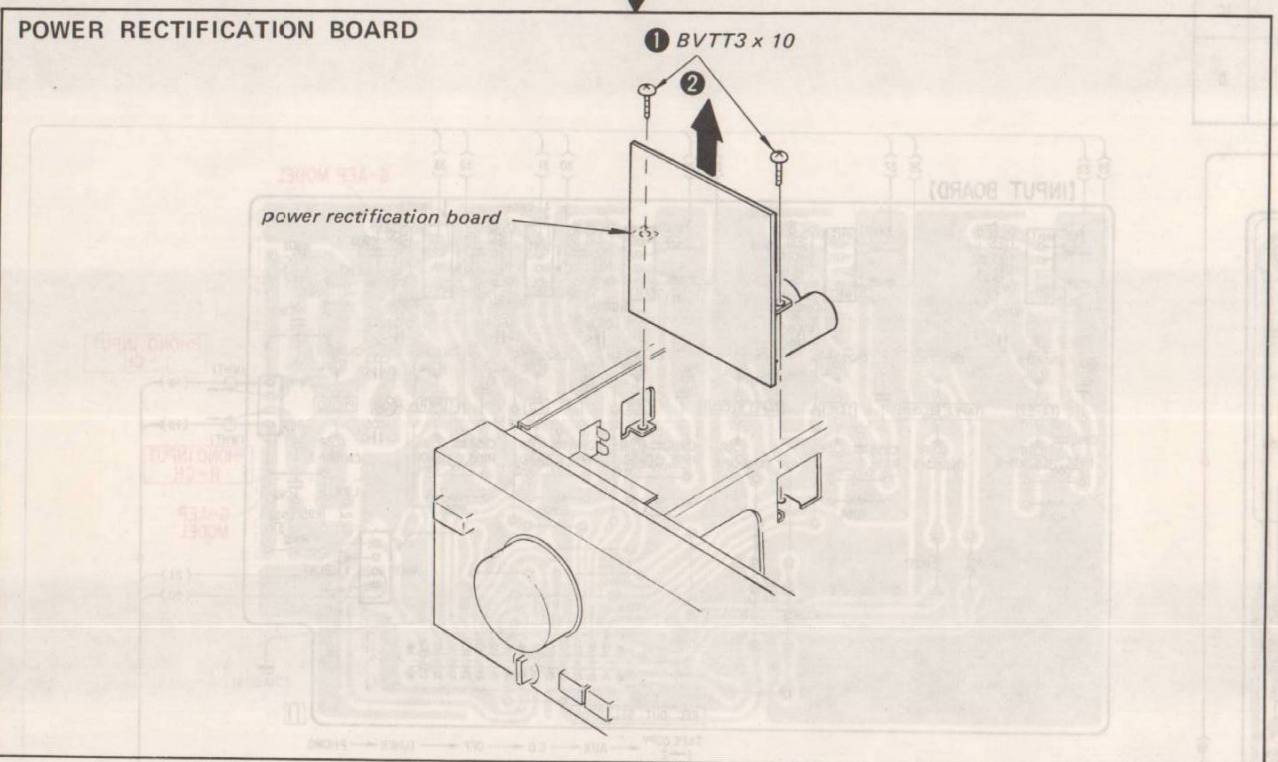
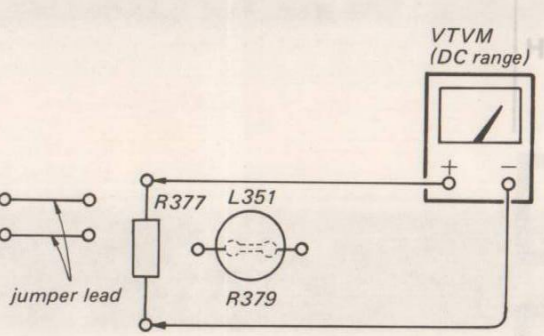
- L-CH -

- Connect a VTVM as illustrated.
- Adjust RT302 for 7.5 mV reading on the VTVM.



- R-CH -

- Connect a VTVM as illustrated.
- Adjust RT352 for 7.5 mV reading on the VTVM.



4-1. MOUNTING DIAGRAM

See page 23 for Semiconductor Lead Layouts.

Note on Mounting Diagram:

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



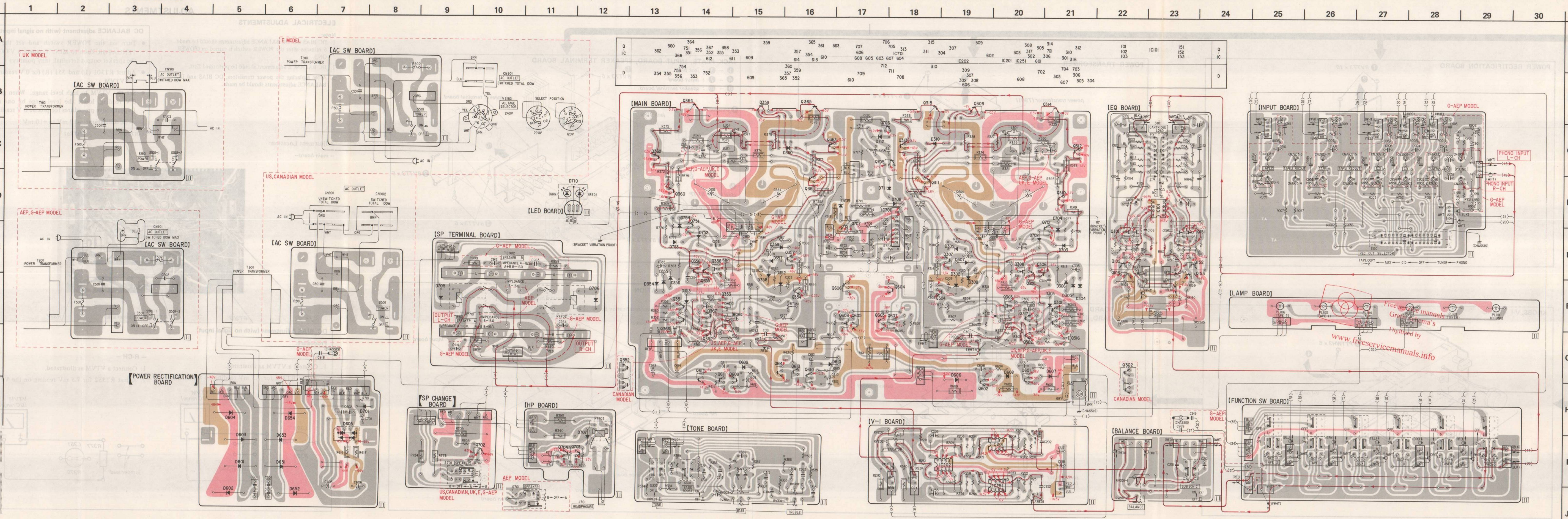
- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.
- ▨ : B + pattern
- ▩ : B - pattern
- : signal path
- : L-CH signal path
- : R-CH signal path

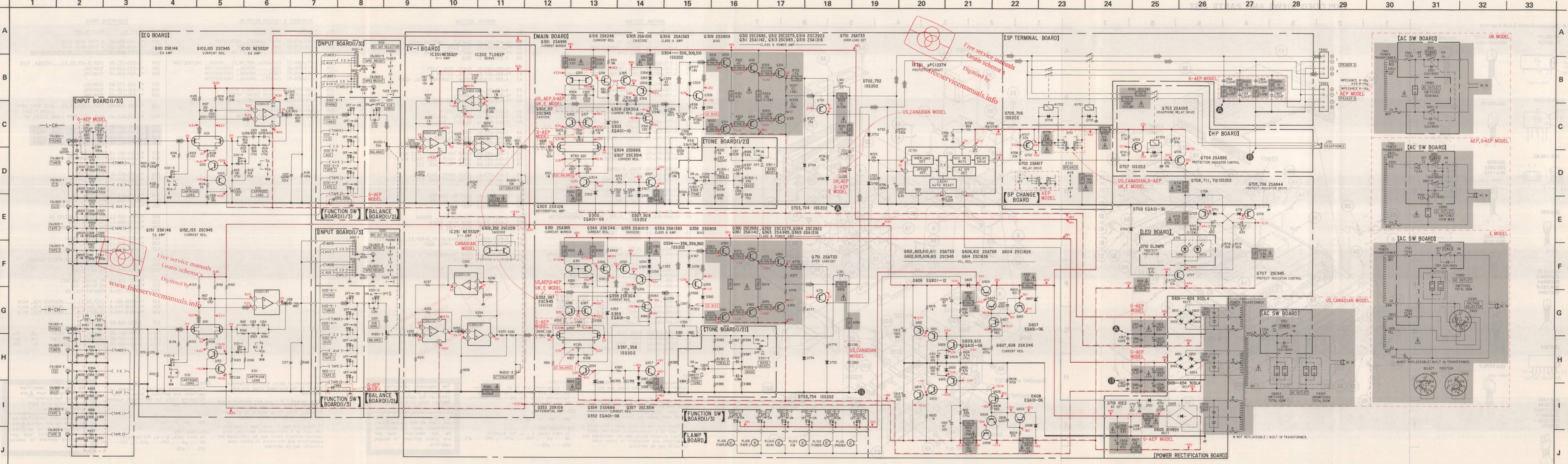
Note on Schematic Diagram:

- Components for right channel have same values as for left channel.
- All capacitors are in μF unless otherwise noted. pF: $\mu F \times 10^{-12}$, 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, $\frac{1}{2}W$ unless otherwise noted. k Ω : 1000 Ω , M Ω : 1000 k Ω
- ▭ : nonflammable resistor.
- : panel designation.
- : signal path.
- ▭ : adjustment for repair.
- ▨ : B + bus.
- ▩ : B - bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 k Ω/V).
- Voltage variations may be noted due to normal production tolerances.

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

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



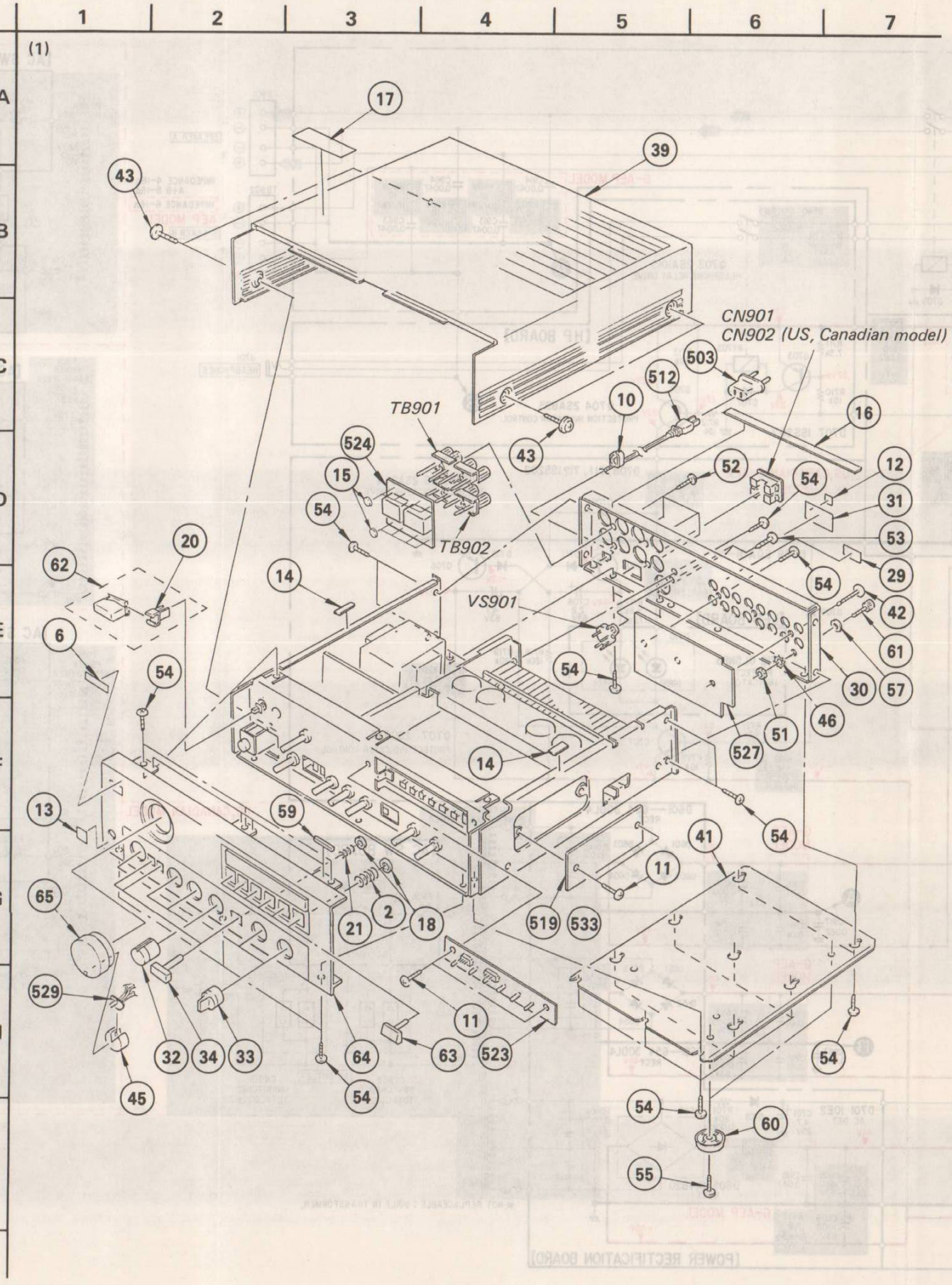
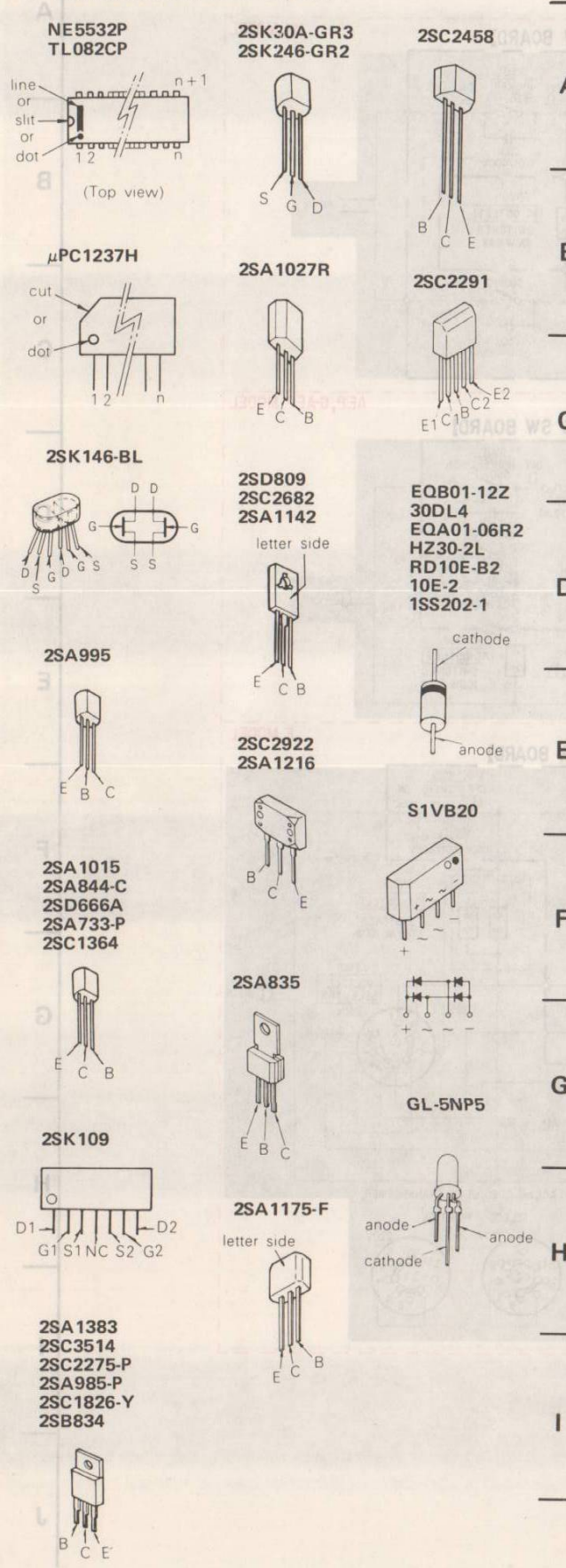


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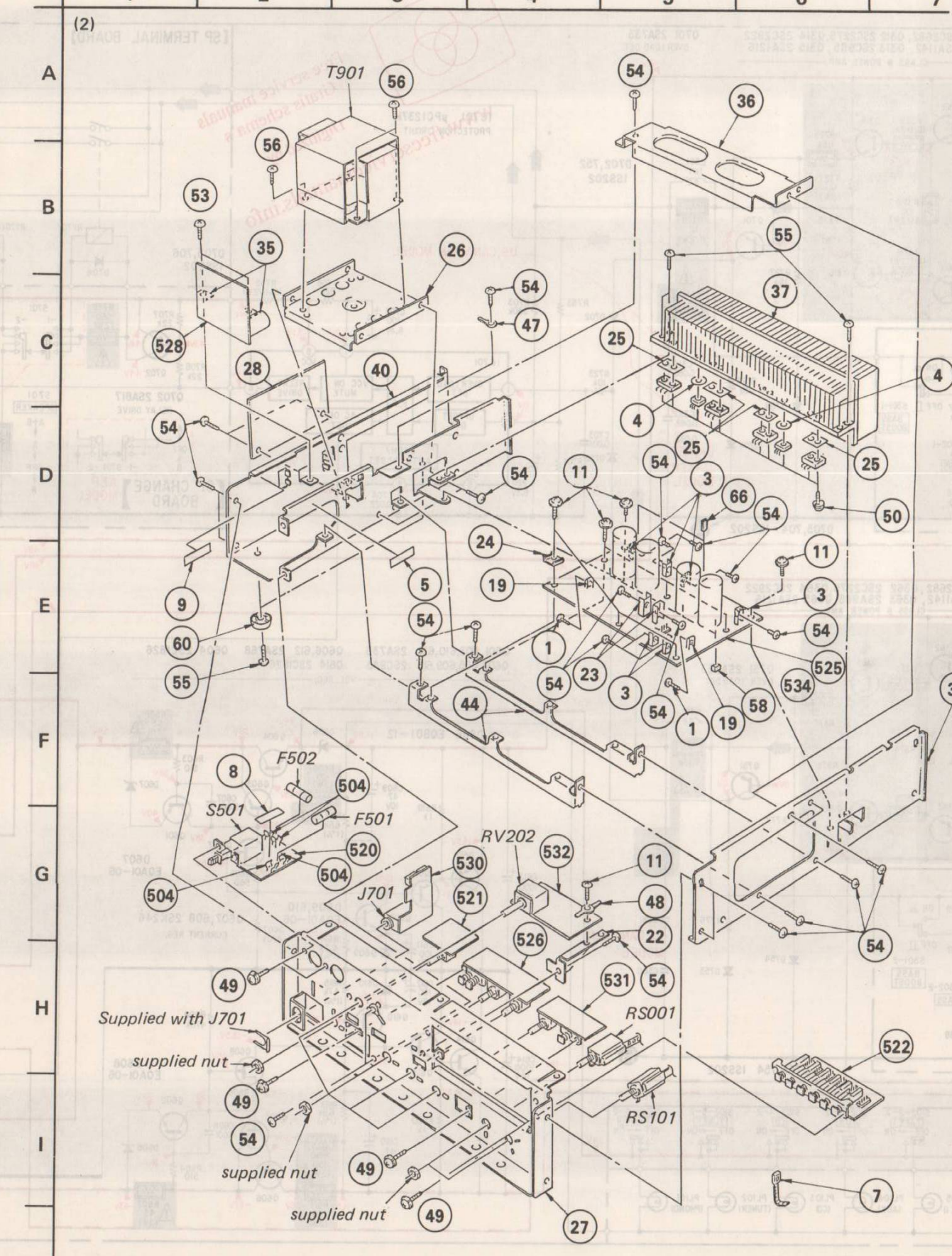
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SECTION 5
EXPLODED VIEWS AND PARTS LIST

Semiconductor Lead Layouts



GENERAL SECTION



GENERAL SECTION

Table with 3 columns: No., Part No., Description. Lists various mechanical and electrical parts such as screws, springs, heat sinks, and labels.

GENERAL SECTION

Table with 3 columns: No., Part No., Description. Lists various mechanical and electrical parts such as brackets, heat sinks, plates, and clamps.

ACCESSORY & PACKING MATERIAL

Table with 3 columns: No., Part No., Description. Lists accessories and packing materials like protection sheets, bags, and instructions.

ELECTRICAL PARTS

Table with 3 columns: Ref.No., Part No., Description. Lists electrical components like base posts, terminals, fuses, and various PCBs.

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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. 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: All capacitors are in μF . Common capacitors are omitted. Refer to the following lists for their part numbers. MF: μF , PF: μpF . COILS: MMH : mH, UH : μH SEMICONDUCTORS In each case, U : μ , for example: UA...: μA ..., UPA...: μPA ..., UPC...: μPC , UPD...: μPD ...

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. 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.

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

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description, and values. Includes parts like C102, C103, C104, C105, C106, C107, C151, C152, C153, C154, C155, C156, C157, C201, C202, C203, C251, C252, C253, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C351, C352, C353, C354, C355, C356, C357, C358, C359.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description, and values. Includes parts like C360, C361, C362, C363, C364, C365, C366, C367, C501, C502, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C613, C614, C615, C616, C617, C618, C651, C653, C654, C701, C702, C703, C704, C705, C706, C707, C901, C902, C903, C904, C905, C906.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description, and values. Includes parts like C907, C908, C909, C910, C911, C912, C913, C914, C915, C916, C917, C918, C919, C951, C952, C953, C954, C955, C956, C957, C958, C959, C960, C961, C962, C963, C964, C965, C966, C967, C968, C969, CN901, CN902, CNJ901, CNJ902, CNJ903, D302, D303, D304, D305, D306, D307.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description, and values. Includes parts like D308, D309, D310, D352, D353, D354, D355, D356, D357, D358, D359, D360, D601, D602, D603, D604, D605, D606, D607, D608, D609, D610, D651, D652, D653, D654, D701, D702, D703, D704, D705, D706, D707, D708, D709, D710, D711, D712, D752, D753, D754, F501, F502.

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. 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:

All capacitors are in µF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:µF.

COILS

MMH : mH, UH : µH

SEMICONDUCTORS

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

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

NOTE:

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COILS

MMH : mH, UH : µH

SEMICONDUCTORS

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

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

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Includes parts like IC101, IC201, IC202, IC251, IC701, J701, L301, L351, L901, L902, L951, L952, PL601, PL602, PL603, PL604, PL605, PL606, Q101, Q102, Q103, Q151, Q152, Q153, Q301, Q302, Q303, Q304, Q305, Q306, Q307, Q308, Q309, Q310, Q311, Q312, Q313, Q314, Q315, Q316, Q317, Q351, Q352, Q352.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Includes parts like Q353, Q354, Q355, Q356, Q357, Q358, Q359, Q360, Q361, Q362, Q363, Q364, Q365, Q366, Q367, Q601, Q602, Q603, Q604, Q605, Q606, Q607, Q608, Q609, Q610, Q611, Q612, Q613, Q614, Q701, Q702, Q703, Q704, Q705, Q706, Q707, Q751, R001, R002, R003, R004, R005, R006, R007, R051, R052.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Includes parts like R053, R054, R055, R056, R057, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116, R117, R118, R151, R152, R153, R154, R155, R156, R157, R158, R159, R160, R161, R162, R163, R164, R165, R166, R167, R168, R201, R202, R203, R204.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Includes parts like R205, R206, R207, R208, R209, R210, R211, R251, R252, R253, R254, R255, R256, R257, R258, R259, R260, R261, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R313, R314, R315, R316, R317, R318, R319, R320, R321, R322, R323, R324, R325, R326, R327.

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. 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:

All capacitors are in µF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:µµF.

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. 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.

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. 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:

All capacitors are in µF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:µµF.

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. 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.

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R328	△ 1-217-657-11	RES, METAL PLATE	0.1	10%	5W	
R329	△ 1-247-192-00	CARBON	10	5%	1/2W	F
R330	△ 1-247-192-00	CARBON	10	5%	1/2W	F
R331	1-249-246-51	CARBON	33K	5%	1/3W	
R332	1-247-139-00	CARBON	2.2K	5%	1/4W	
R333	1-247-135-00	CARBON	1.5K	5%	1/4W	
R334	1-246-545-00	CARBON	1M	5%	1/4W	
R335	1-247-138-00	CARBON	2K	5%	1/4W	
R336	1-247-119-00	CARBON	330	5%	1/4W	
R337	1-247-151-00	CARBON	6.8K	5%	1/4W	
R338	1-246-470-00	CARBON	750	5%	1/4W	
R339	1-247-149-00	CARBON	5.6K	5%	1/4W	
R340	△ 1-206-657-00	METAL OXIDE	510	5%	2W	F
R351	1-246-545-00	CARBON	1M	5%	1/4W	
R352	△ 1-247-115-00	CARBON	220	5%	1/4W	F
R353	△ 1-247-115-00	CARBON	220	5%	1/4W	F
R354	1-247-115-00	CARBON	220	5%	1/4W	
R355	1-247-131-00	CARBON	1K	5%	1/4W	
R356	1-247-131-00	CARBON	1K	5%	1/4W	
R357	1-247-091-00	CARBON	22	5%	1/4W	
R358	1-247-091-00	CARBON	22	5%	1/4W	
R359	△ 1-247-131-00	CARBON	1K	5%	1/4W	F
R360	1-247-161-00	CARBON	18K	5%	1/4W	
R361	1-247-127-00	CARBON	680	5%	1/4W	
R362	△ 1-247-107-00	CARBON	100	5%	1/4W	F
R363	1-244-907-00	CARBON	27K	5%	1/2W	
R364	1-247-115-00	CARBON	220	5%	1/4W	
R365	1-247-147-00	CARBON	4.7K	5%	1/4W	
R366	△ 1-247-107-00	CARBON	100	5%	1/4W	F
R367	1-247-137-00	CARBON	1.8K	5%	1/4W	
R368	1-247-133-00	CARBON	1.2K	5%	1/4W	
R369	△ 1-247-107-00	CARBON	100	5%	1/4W	F
R370	△ 1-247-107-00	CARBON	100	5%	1/4W	F
R371	△ 1-247-123-00	CARBON	470	5%	1/4W	F
R372	△ 1-247-099-00	CARBON	47	5%	1/4W	F
R373	△ 1-247-099-00	CARBON	47	5%	1/4W	F
R374	△ 1-247-216-00	CARBON	100	5%	1/2W	F
R375	△ 1-247-192-00	CARBON	10	5%	1/2W	F
R376	△ 1-247-192-00	CARBON	10	5%	1/2W	F
R377	△ 1-217-657-11	RES, METAL PLATE	0.1	10%	5W	
R378	△ 1-217-657-11	RES, METAL PLATE	0.1	10%	5W	
R379	△ 1-247-192-00	CARBON	10	5%	1/2W	F
R380	△ 1-247-192-00	CARBON	10	5%	1/2W	F
R381	1-249-246-51	CARBON	33K	5%	1/3W	
R382	1-247-139-00	CARBON	2.2K	5%	1/4W	

NOTE:

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- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- 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:

All capacitors are in μF . Common capacitors are omitted. Refer to the following lists for their part numbers.
MF: μF , PF: μP .

COILS

MMH : mH, UH : μH

SEMICONDUCTORS

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R383	1-247-135-00	CARBON	1.5K	5%	1/4W	
R384	1-246-545-00	CARBON	1M	5%	1/4W	
R385	1-247-138-00	CARBON	2K	5%	1/4W	
R386	1-247-119-00	CARBON	330	5%	1/4W	
R387	1-247-151-00	CARBON	6.8K	5%	1/4W	
R388	1-246-470-00	CARBON	750	5%	1/4W	
R389	1-247-149-00	CARBON	5.6K	5%	1/4W	
R390	△ 1-206-657-00	METAL OXIDE	510	5%	2W	F
R601	△ 1-206-526-00	METAL OXIDE	43	5%	3W	F
R602	△ 1-206-526-00	METAL OXIDE	43	5%	3W	F
R603	1-247-124-00	CARBON	510	5%	1/4W	
R604	1-247-124-00	CARBON	510	5%	1/4W	
R605	1-247-125-00	CARBON	560	5%	1/4W	
R606	1-247-125-00	CARBON	560	5%	1/4W	
R607	1-246-537-00	CARBON	470K	5%	1/4W	
R608	1-246-537-00	CARBON	470K	5%	1/4W	
R609	△ 1-206-645-00	METAL OXIDE	160	5%	2W	F
R610	△ 1-206-705-00	METAL OXIDE	150	5%	3W	F
R611	△ 1-206-705-00	METAL OXIDE	150	5%	3W	F
R612	1-214-749-00	METAL	6.8K	1%	1/4W	
R613	1-214-749-00	METAL	6.8K	1%	1/4W	
R614	1-214-745-00	METAL	4.7K	1%	1/4W	
R615	1-214-745-00	METAL	4.7K	1%	1/4W	
R616	△ 1-247-188-00	CARBON	4.7	5%	1/2W	F
R617	△ 1-247-190-00	CARBON	6.8	5%	1/2W	F
R618	△ 1-247-107-00	CARBON	100	5%	1/4W	F
R619	1-247-131-00	CARBON	1K	5%	1/4W	
R620	1-247-131-00	CARBON	1K	5%	1/4W	
R701	1-244-904-00	CARBON	20K	5%	1/2W	
R703	1-246-533-00	CARBON	330K	5%	1/4W	
R704	1-246-529-00	CARBON	220K	5%	1/4W	
R705	1-244-901-00	CARBON	15K	5%	1/2W	
R706	1-247-177-00	CARBON	82K	5%	1/4W	
R707	1-247-163-00	CARBON	22K	5%	1/4W	
R708	1-247-163-00	CARBON	22K	5%	1/4W	
R709	△ 1-206-718-00	METAL OXIDE	510	5%	3W	F
R710	1-247-159-00	CARBON	15K	5%	1/4W	
R711	1-247-152-00	CARBON	7.5K	5%	1/4W	
R712	1-247-159-00	CARBON	15K	5%	1/4W	
R713	1-247-169-00	CARBON	39K	5%	1/4W	
R714	△ 1-213-146-00	METAL OXIDE	1.8K	5%	1W	F
R715	△ 1-206-680-00	METAL OXIDE	4.7K	5%	2W	F
R717	1-244-893-00	CARBON	6.8K	5%	1/2W	
R718	1-246-523-00	CARBON	120K	5%	1/4W	
R719	1-246-523-00	CARBON	120K	5%	1/4W	

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ELECTRICAL PARTS

Ref.No.	Part No.	Description	QTY	UNIT	REMARKS
R720	1-213-153-00	METAL OXIDE	6.8K	5%	1W F
R721	1-247-147-00	CARBON	4.7K	5%	1/4W
R722	1-247-155-00	CARBON	10K	5%	1/4W
R723	1-247-155-00	CARBON	10K	5%	1/4W
R724	1-206-658-00	METAL OXIDE	560	5%	2W F
R725	1-247-135-00	CARBON	1.5K	5%	1/4W F
R726	1-247-159-00	CARBON	15K	5%	1/4W
R727	1-247-159-00	CARBON	15K	5%	1/4W
R753	1-246-533-00	CARBON	330K	5%	1/4W
R775	1-247-135-00	CARBON	1.5K	5%	1/4W F
R776	1-247-159-00	CARBON	15K	5%	1/4W
R777	1-247-159-00	CARBON	15K	5%	1/4W
R778	1-206-658-00	METAL OXIDE	560	5%	2W F
R901	1-247-119-00	(G-AEP)...CARBON	330	5%	1/4W
R902	1-247-119-00	(G-AEP)...CARBON	330	5%	1/4W
R903	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R904	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R905	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R906	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R907	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R908	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R909	1-247-192-00	(G-AEP)...CARBON	10	5%	1/2W F
R910	1-247-192-00	(G-AEP)...CARBON	10	5%	1/2W F
R951	1-247-119-00	(G-AEP)...CARBON	330	5%	1/4W
R952	1-247-119-00	(G-AEP)...CARBON	330	5%	1/4W
R953	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R954	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R955	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R956	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R957	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R958	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W
R959	1-247-192-00	(G-AEP)...CARBON	10	5%	1/2W F
R960	1-247-192-00	(G-AEP)...CARBON	10	5%	1/2W F
RS001	1-554-877-11	SWITCH, ROTARY SLIDE (REMOTE) (REC OUT SELECTOR)			
RS101	1-554-878-11	SWITCH, ROTARY SLIDE (REMOTE) (CARTRIDG LOAD)			

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CAPACITORS:

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COILS

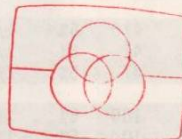
MMH : mH, UH : μH

SEMICONDUCTORS

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RT301	1-224-550-21	RES, ADJ, SOLID 220
RT302	1-224-805-21	RES, ADJ, SOLID 470
RT351	1-224-550-21	RES, ADJ, SOLID 220
RT352	1-224-805-21	RES, ADJ, SOLID 470
RV201	1-228-905-00	RES, VAR, CARBON 50K/50K (BALANCE)
RV202	1-230-130-00	RES, VAR, CARBON 10K/10K (ATTENUATOR)
RV301	1-228-906-00	RES, VAR, CARBON 37K/37K (TREBLE)
RV302	1-228-907-00	RES, VAR, CARBON 24K/24K (BASS)
RY701	1-515-356-00	RELAY
RY702	1-515-356-00	RELAY
RY703	1-515-503-00	RELAY
S001	1-554-879-11	SWITCH, SLIDE (REC OUT SELECTOR)
S101	1-554-019-00	SWITCH, SLIDE (REMOTE TYPE) (CARTRIDGE LOAD)
S102	1-554-354-00	SWITCH, PUSH (6 KEY)(FUNCTION)
S201	1-554-352-00	SWITCH, PUSH (1 KEY)(SUB SONIC)
S301	1-554-353-00	SWITCH, PUSH (2 KEY)(BASS BOOST)
S302	1-554-353-00	SWITCH, PUSH (2 KEY)(TONE)
S501	1-552-246-00	(US,Canadian).....SWITCH, PUSH (AC POWER)
S501	1-554-880-11	(AEP,G-AEP,UK,E)...SWITCH, PUSH (1 KEY)(AC POWER)
S701	1-554-681-00	(AEP).....SWITCH, ROTARY (SPEAKER)
S701	1-554-876-11	(US,Canadian,G-AEP,UK,E)...SWITCH, ROTARY (SPEAKER)
T901	1-447-855-11	(US,Canadian)....TRANSFORMER, POWER
T901	1-447-856-11	(UK,AEP,G-AEP)...TRANSFORMER, POWER
T901	1-447-857-11	(E).....TRANSFORMER, POWER
TB901	1-536-767-00	TERMINAL BOARD, SPEAKER
TB902	1-536-767-00	TERMINAL BOARD, SPEAKER
VS901	1-526-576-31	(E)...SELECTOR, POWER VOLTAGE



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