TA-1066

USA, Canada, AEP and UK Model

INTEGRATED STEREO AMPLIFIER

SPECIFICATIONS

POWER AMPLIFIER SECTION

Continuous RMS power output: (rated output) (less than 0.8 % THD)
At 1 kHz
20 watts (8 ohms),
26 watts (4 ohms)
one channel driven separately
18 watts (8 ohms) per channel,
22 watts (4 ohms) per channel,
both channels driven simultaneously

Dynamic power output: (IHF constant power supply method)
50 watts (8 ohms)
75 watts (4 ohms)

Power bandwidth: 10 Hz to 40 kHz (8 ohms, IHF)

Harmonic distortion: Less than 0.8 % at rated output

IM distortion: (60 Hz : 7 kHz = 4 : 1) Less than 0.8 % at rated output

PREAMPLIFIER SECTION

Frequency response:

PHONO	RIAA equalization curve ± 1 dB
TUNER, AUX, TAPE-1, TAPE-2, REC/PB (input)	20 Hz to 60 kHz ± 3 dB

Input sensitivity and impedance:

PHONO	2.5 mV, 50 k ohms
TUNER, AUX, TAPE-1, TAPE-2, REC/PB (input)	250 mV, 50 k ohms

Signal output and output impedance:

REC OUT	250 mV, 10 k ohms
REC/PB (output)	30 mV, 82 k ohms

GENERAL

Power requirements:
120 volts ac (USA and Canada Model)
110, 127, 220, 240 volts ac (AEP and UK Model)

Power consumption:
55 watts (USA Model)
80 watts (Canada Model)
140 watts (AEP and UK Model)

Dimensions:
410 (w) x 120 (h) x 280 (d) mm
$16\frac{1}{8}$ (w) x $4\frac{11}{16}$ (h) x $11\frac{1}{16}$ (d) inches

Net weight: 6.0 kg (13 lb 4 oz)

SONY®

SERVICE MANUAL

TABLE OF CONTENTS

Section	*Title*	*Page*
1.	**TECHNICAL DESCRIPTION**	
1-1.	Specifications	1
1-2.	Block Diagram/Level Diagram	2
2.	**DISASSEMBLY AND REPLACEMENT**	
2-1.	Bottom Plate Removal	3
2-2.	Front Panel Removal	3
2-3.	Front Subchassis Removal	3
2-4.	Pushbutton Switch Replacement	3
2-5.	Nylon Rivet Removal	3
2-6.	Chassis Layout	4
3.	**ADJUSTMENT**	
3-1.	Dc-Bias Adjustment	5
4.	**REPACKING**	6
5.	**DIAGRAMS**	
5-1.	Mounting Diagram	7
5-2.	Schematic Diagram	9
6.	**EXPLODED VIEWS**	11
7.	**ELECTRICAL PARTS LIST**	13

SECTION 1

TECHNICAL DESCRIPTION

1-1. SPECIFICATIONS

Power Amplifier Section

Continuous RMS power output: (rated output) (less than 0.8 % THD)
At 1 kHz
20 watts (8 ohms),
26 watts (4 ohms),
one channel driven separately
18 watts per channel (8 ohms),
22 watts per channel (4 ohms),
both channels driven simultaneously
At 40 Hz to 20 kHz
15 watts per channel (8 ohms),
both channels driven simultaneously

Dynamic power output: (IHF constant power supply method)
50 watts (8 ohms)
75 watts (4 ohms)

Power bandwidth: 10 Hz to 40 kHz (8 ohms, IHF)

Harmonic distortion: Less than 0.8 % at rated output
Less than 0.2 % at 1 watt output

IM distortion: (60 Hz : 7 kHz = 4 : 1) Less than 0.8 % at rated output
Less than 0.2 % at 1 watt output

Damping factor: Greater than 22 (8 ohms)

Residual noise: Less than 0.25 μ watt (8 ohms)

Preamplifier Section

Frequency response:

PHONO	RIAA equalization curve ± 1 dB
TUNER AUX TAPE-1, -2 REC/PB (input)	20 Hz to 60 kHz ± 3 dB

Input sensitivity and impedance:

	Maximum sensitivity	Impedance
PHONO	2.5 mV	50 k ohms
TUNER AUX TAPE-1, -2 REC/PB (input)	250 mV	50 k ohms

Measured with specified RMS power output provided into 8-ohm loads (both channels driven simultaneously) at 1 kHz.

Signal output and impedance:

	Level	Impedance	Input level
REC OUT 1 ·2	250 mV	10 k ohms	PHONO 2.5 mV
REC/PB (output)	30 mV	82 k ohms	TUNER, AUX, TAPE 1 ·2, REC/PB (input) 250 mV

Signal-to-noise ratio:

	S/N	Weighting network	Input level
PHONO	70 dB	B	2.5 mV
TUNER AUX TAPE 1 ·2 REC/PB (input)	90 dB	A	250 mV

Tone controls: BASS ± 10 dB at 100 Hz
TREBLE ± 10 dB at 10 kHz

High filters: 6 dB/octave above 5 kHz

Loudness control: + 10 dB at 50 Hz, + 3.5 dB at 10 kHz (at 30 dB attenuation)

General

Circuit system: Quasi-complementary symmetry circuit (SEPP OTL)
Direct output coupling

Semiconductors: 22 transistors and 6 diodes

Power requirements: 120 V ac (USA and Canada Model)
110, 127, 220, 240 V ac (AEP and UK Model)

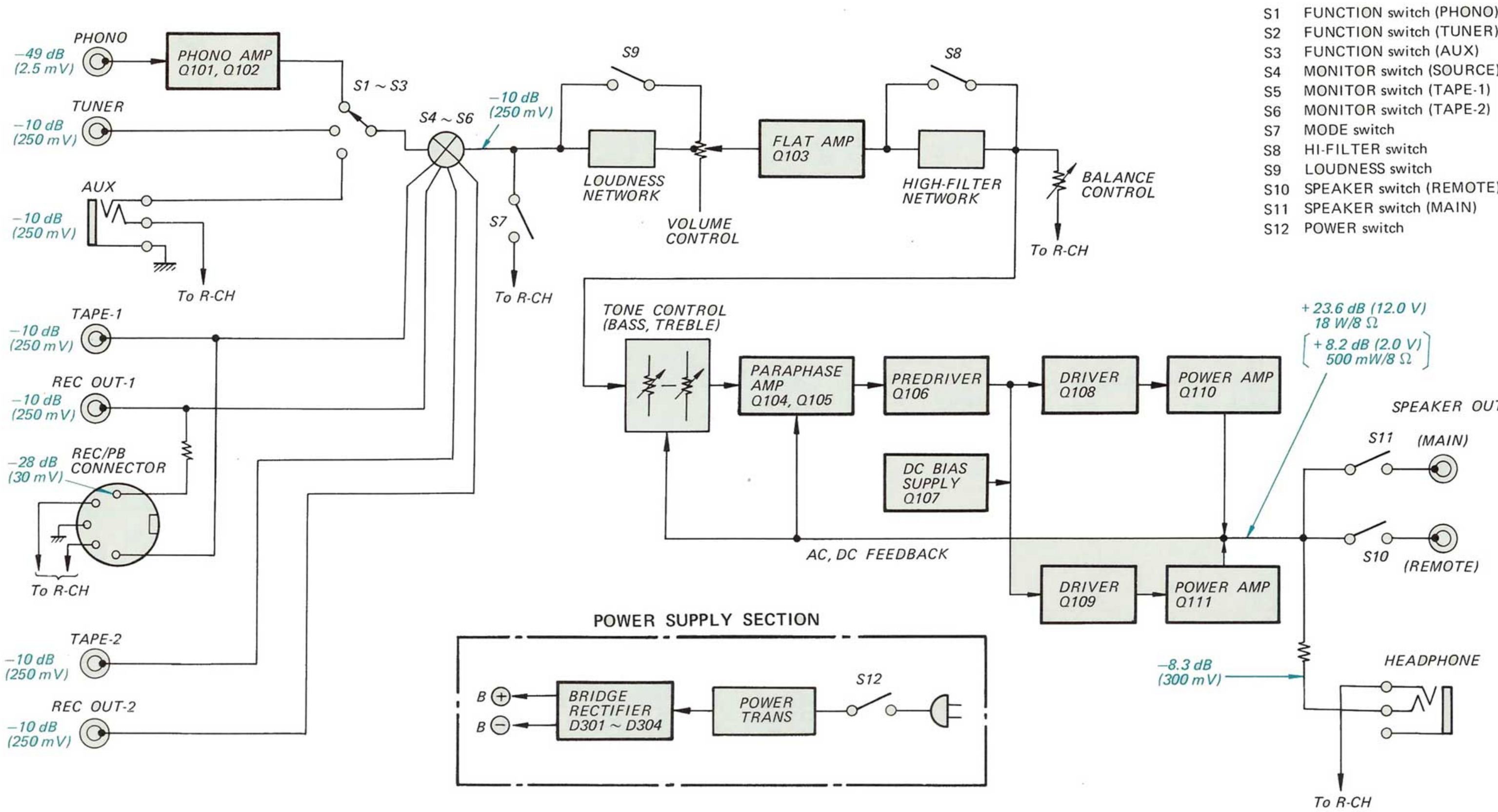
Power consumption: 55 watts (USA Model)
80 watts (Canada Model)
140 watts (AEP and UK Model)

Ac outlets: 1 unswitched, 300 watts maximum (USA and Canada Model only)

Dimensions: 410 (w) x 120 (h) x 280 (d) mm
$16\frac{1}{8}$ (w) x $4\frac{11}{16}$ (h) x $11\frac{1}{16}$ (d) inches

Net weight: 6.0 kg (13 lb 4 oz)

Shipping weight: 7.3 kg (16 lb 2 oz)



S1 FUNCTION switch (PHONO)
S2 FUNCTION switch (TUNER)
S3 FUNCTION switch (AUX)
S4 MONITOR switch (SOURCE)
S5 MONITOR switch (TAPE-1)
S6 MONITOR switch (TAPE-2)
S7 MODE switch
S8 HI-FILTER switch
S9 LOUDNESS switch
S10 SPEAKER switch (REMOTE)
S11 SPEAKER switch (MAIN)
S12 POWER switch

Note: Signal voltages are measured with ac VTVM and expressed in dB referred to 0.775 V, 1 kHz.

SECTION 2

DISASSEMBLY AND REPLACEMENT

Note: All screws in this service manual are Phillips type (cross recess type) unless otherwise indicated. (–): slotted head.

2-1. BOTTOM PLATE REMOVAL

1. Remove the seven screws shown in Fig. 2-1.

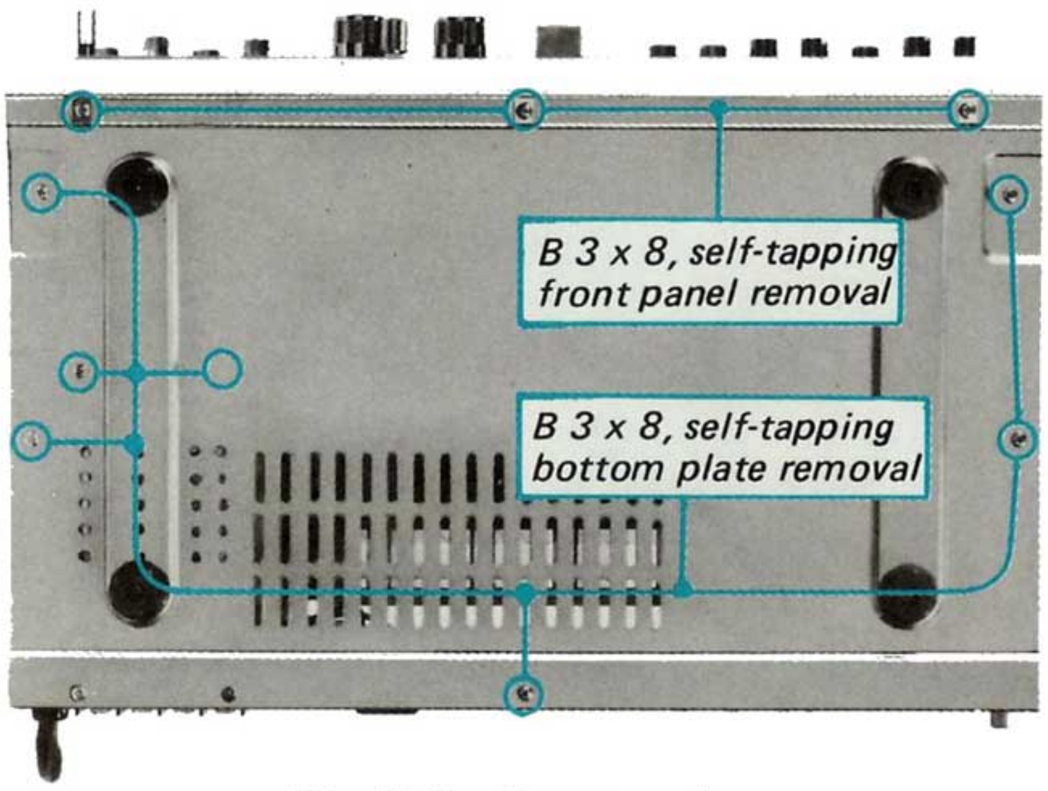


Fig. 2-1. Bottom view

2-2. FRONT PANEL REMOVAL

1. Remove the two screws at both sides of the wooden case.
2. Pull off the TONE, BALANCE and VOLUME control knobs.
3. Remove the six screws from the front top and bottom of the front panel as shown in Fig. 2-1 and 2-2.
4. This frees the front panel with pushbutton.

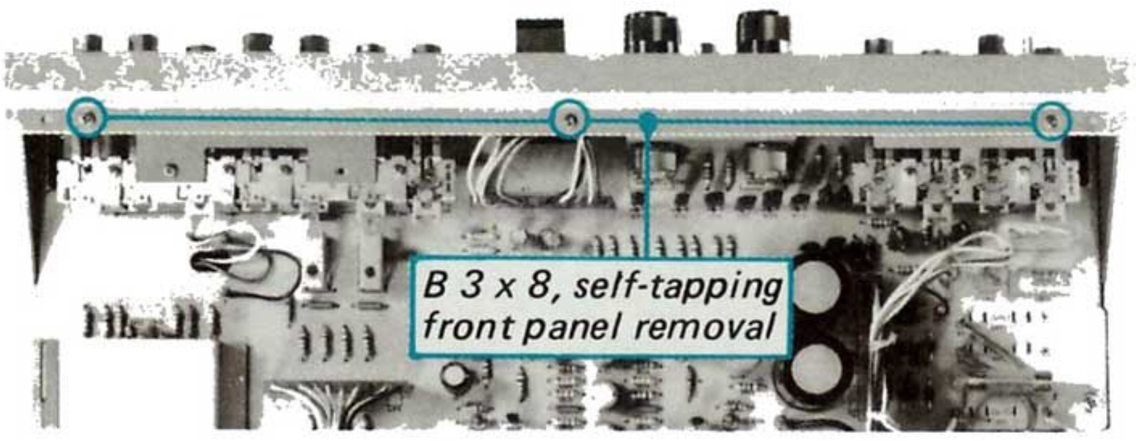


Fig. 2-2. Front panel removal

2-3. FRONT SUBCHASSIS REMOVAL

1. Remove the front panel by following the Procedure 2-2.
2. Remove the two screws at each side of the front subchassis as shown in Fig. 2-3.
3. Remove the three screws shown in Fig. 2-3.
4. Remove the two screws (B 3 x 4) securing the POWER switch.
5. Remove the two hex nuts securing the TONE controls.
6. This frees the front subchassis.

2-4. PUSHBUTTON SWITCH REPLACEMENT

1. Remove the front subchassis by following the Procedure 2-3.
2. With a soldering iron having a soldersucking tip, clean the solder from each lug of the switches and printed circuit board.
3. Install a new one.

2-5. NYLON RIVET REMOVAL

1. To remove the nylon rivet, push its end with a tweezers as shown in Fig. 2-4.
2. To reinstall the rivet, insert the flared part into the opening first, then push its head as far as it will go.

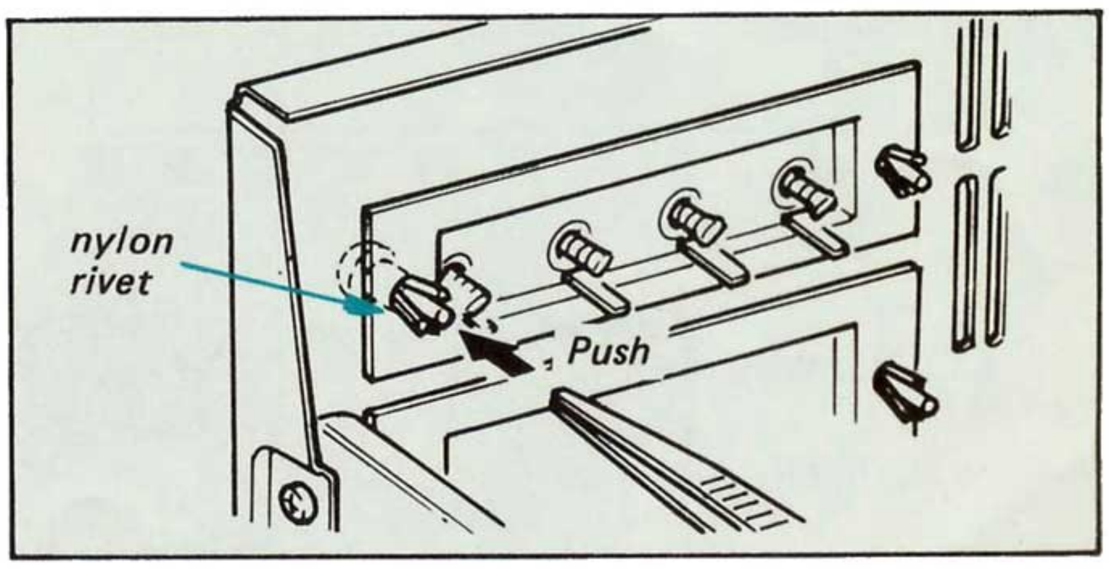


Fig. 2-4. Nylon rivet removal

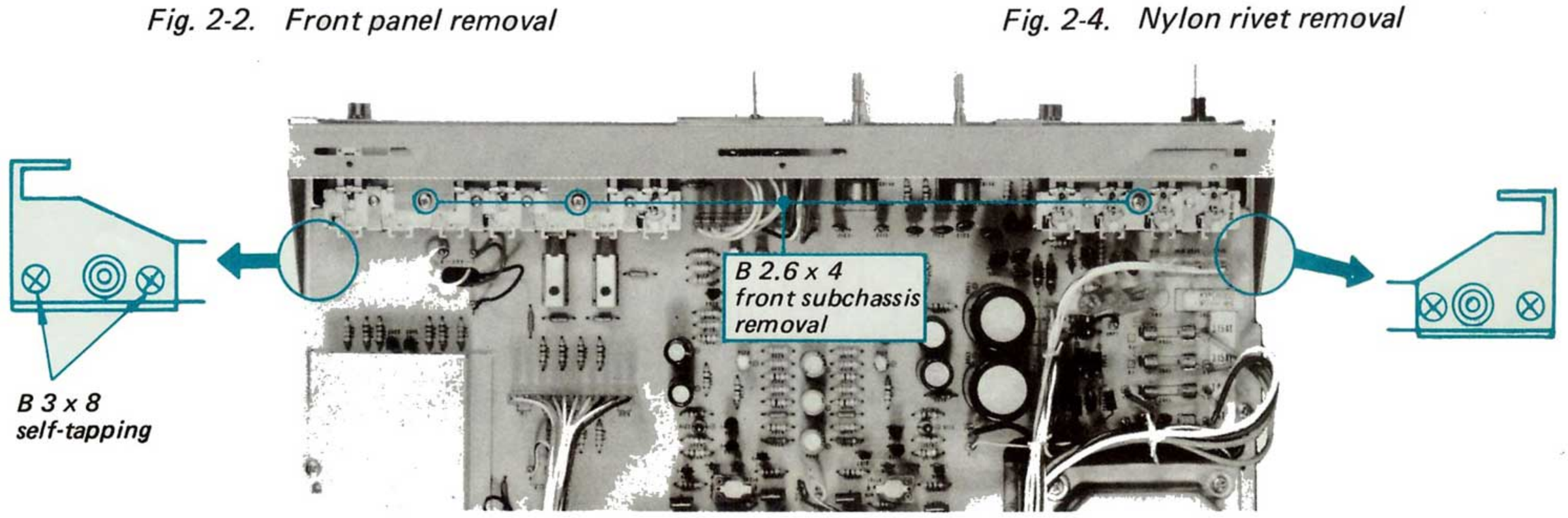
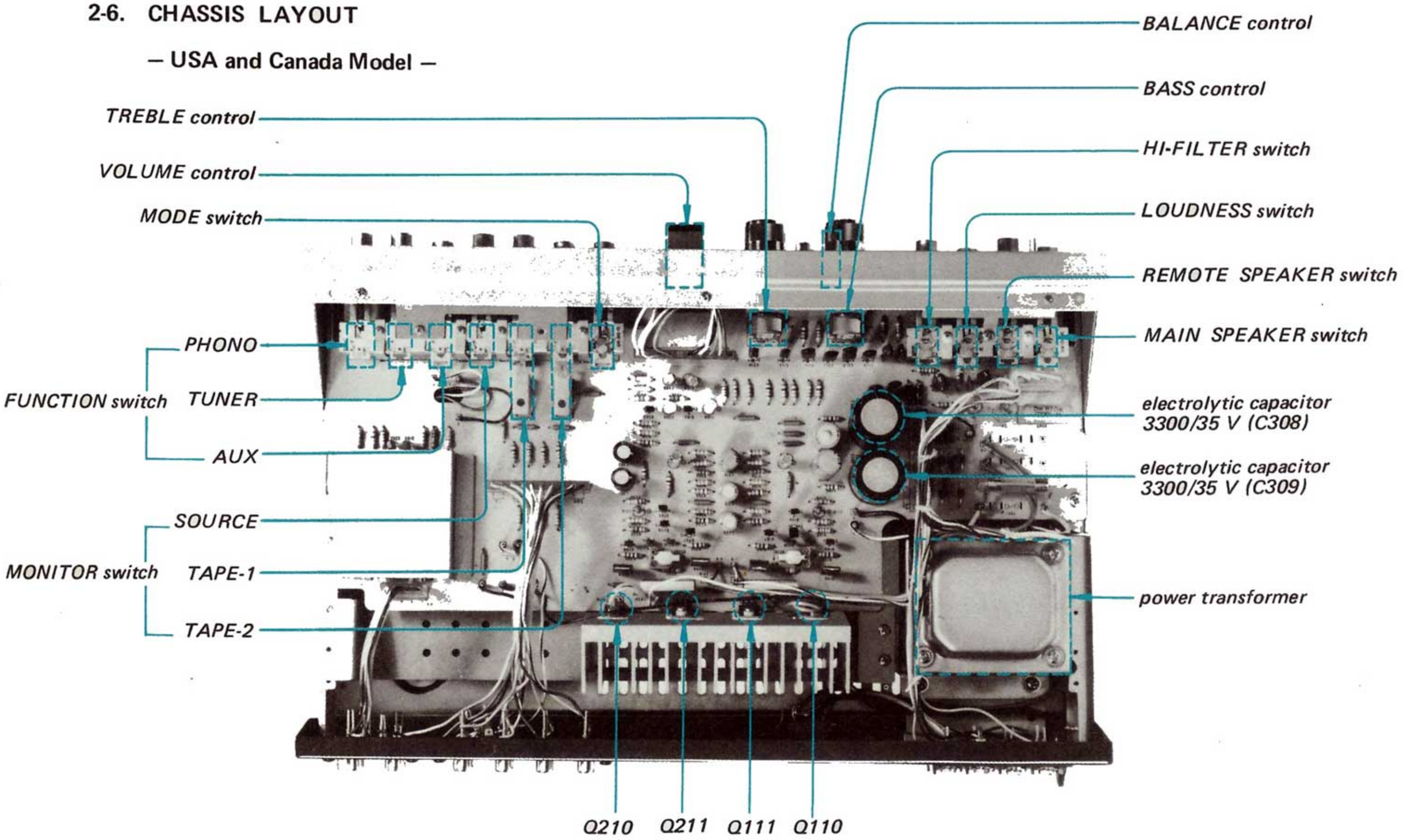


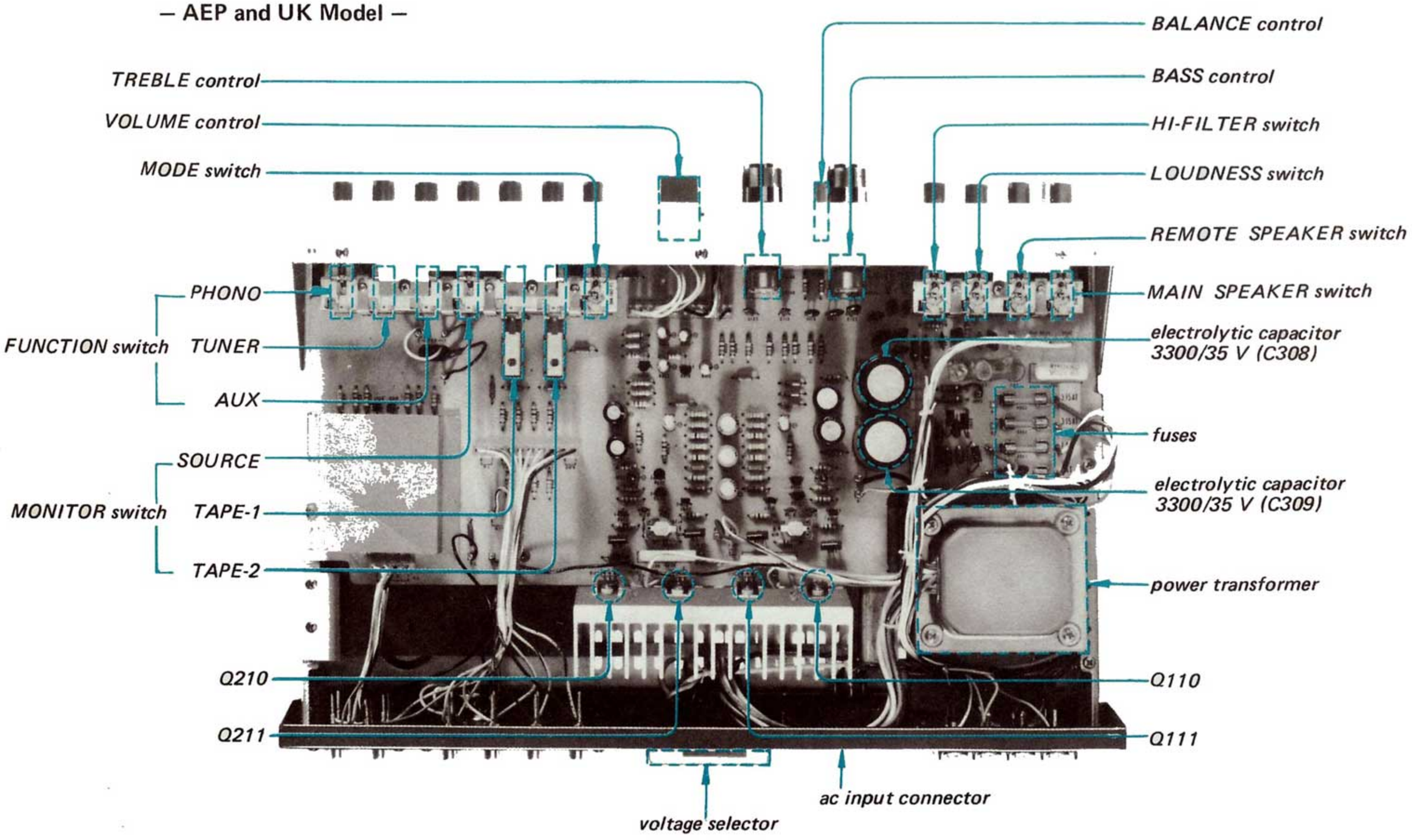
Fig. 2-3. Front subchassis removal

2-6. CHASSIS LAYOUT

— USA and Canada Model —



— AEP and UK Model —



SECTION 3

ADJUSTMENT

3-1. DC-BIAS ADJUSTMENT

Note: This adjustment should be done after replacing any of the power transistors. To avoid accidental power transistor damage, increase the ac line voltage gradually, using a variable transformer, while measuring the voltage across the test point and the MAIN speaker terminal as shown in Fig. 3-1.

Test Equipment Required

1. Dc millivoltmeter
   Capable of measuring dc voltage of 100 mV or less
2. Variable transformer
3. Screwdriver with 3 mm ($\frac{1}{8}$") blade

Preparation

1. Remove the wooden case.
2. Connect the dc voltmeter across the MAIN speaker terminal and the test point as shown in Fig. 3-1.
3. Depress the MAIN speaker switch button.
4. Set the variable transformer for minimum output.
5. Apply a drop of cement solvent to the adjustable resistors RT101, RT201 (See Fig. 3-1) on the circuit board.

Procedure

1. Turn the power switch ON and increase the line voltage to the rated value.

   Note: Check to see that the reading does not exceed 25 mV. If it does, turn off the power immediately, then check and repair the trouble in the power amplifier section.

2. Adjust RT101 (RT201) for 25 mV reading on the meter.

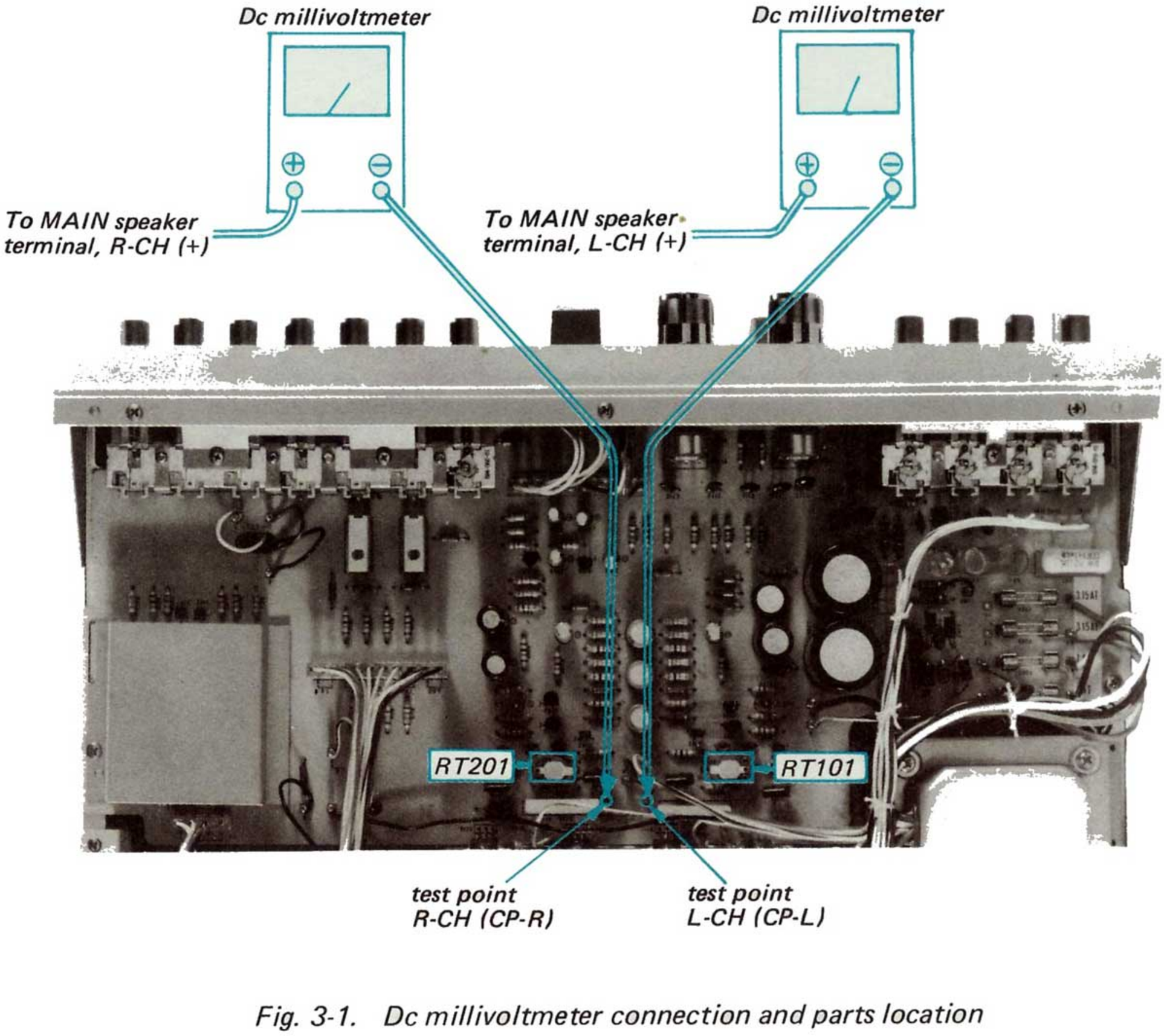
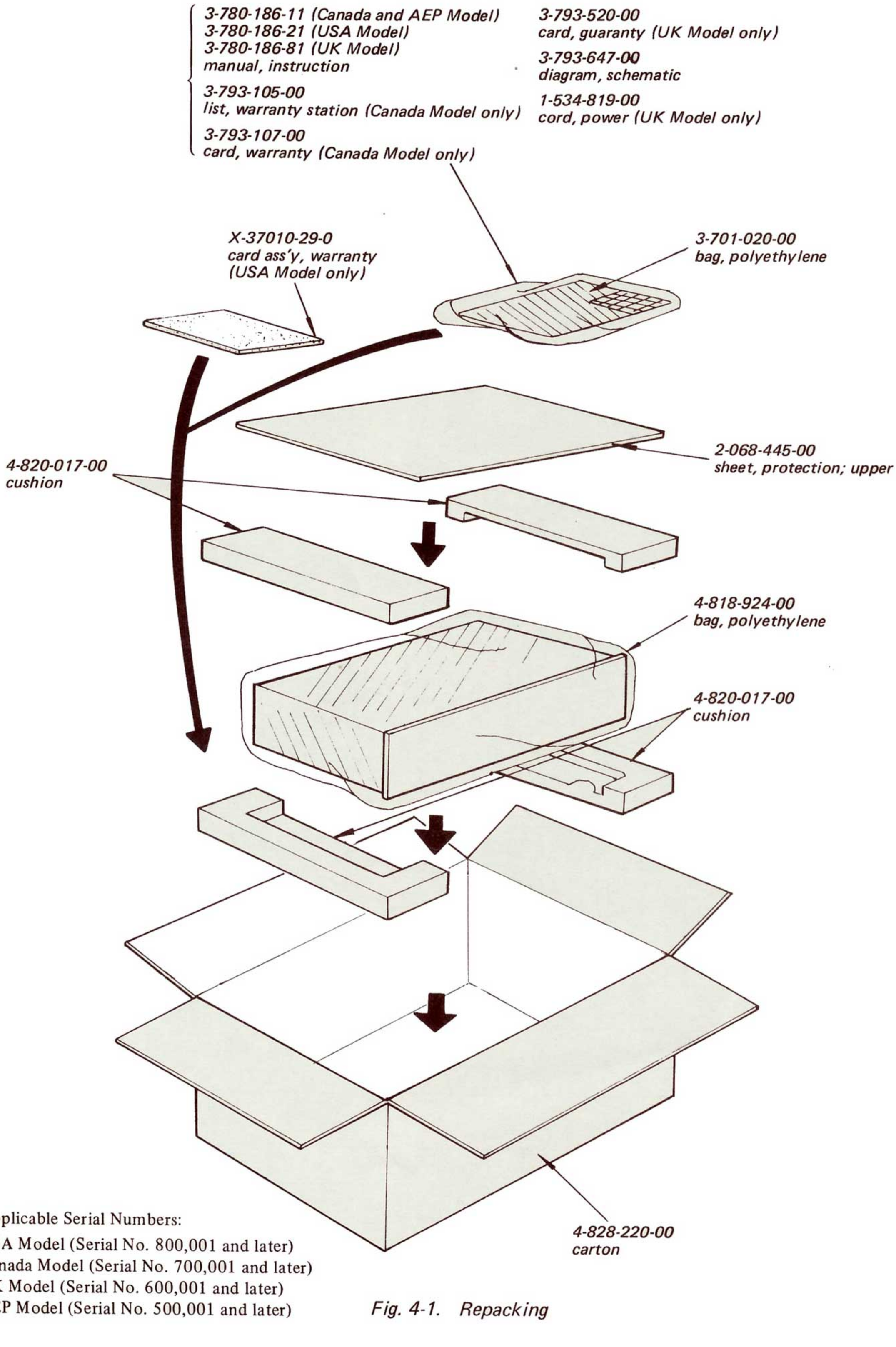


Fig. 3-1. Dc millivoltmeter connection and parts location

SECTION 4

REPACKING

The TA-1066's original shipping carton and packing materials are the ideal containers for shipping the unit. However to secure the maximum protection, the TA-1066 must be repacked in these materials precisely as before. The proper repacking procedures are shown in Fig. 4-1.



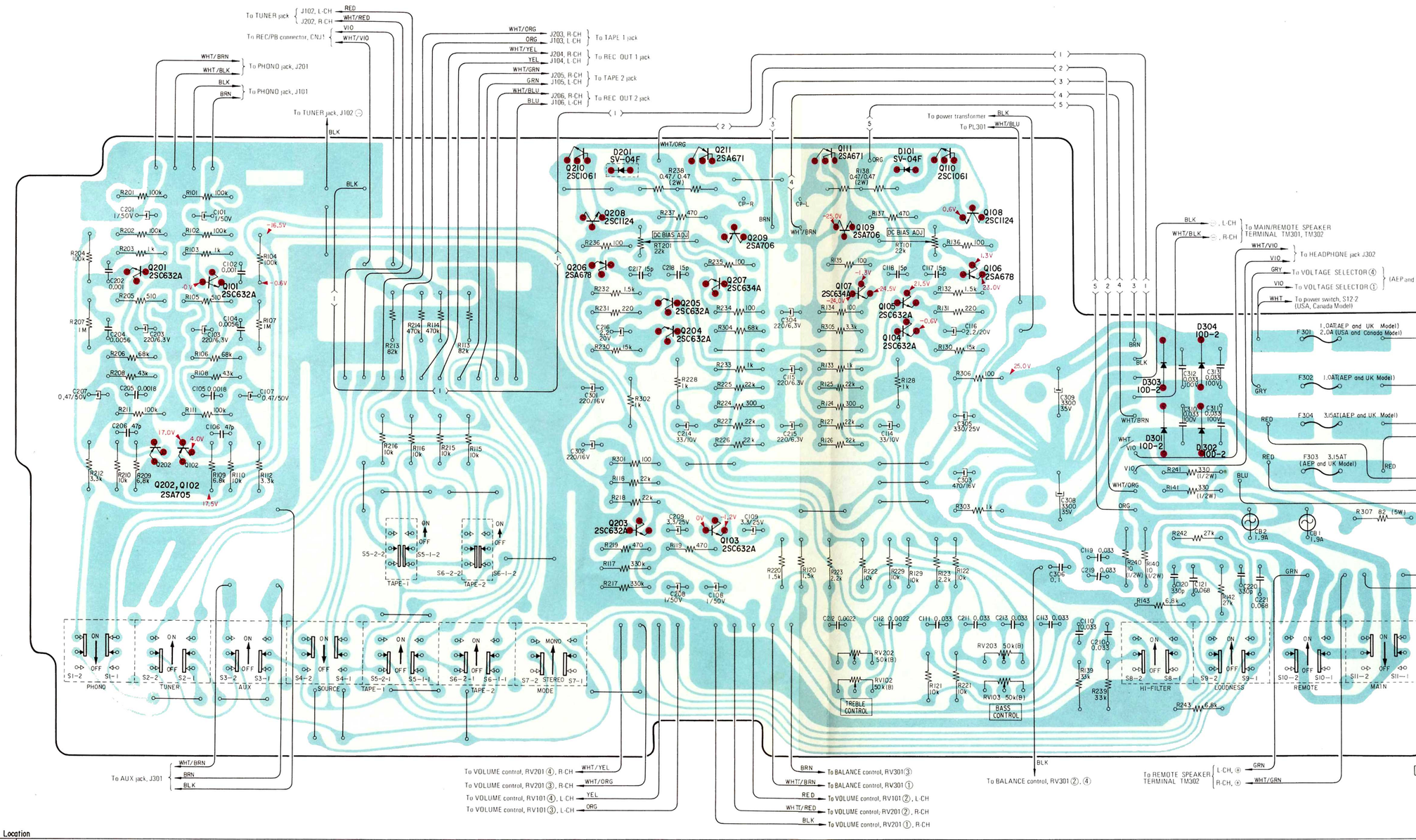
Note: Applicable Serial Numbers:
USA Model (Serial No. 800,001 and later)
Canada Model (Serial No. 700,001 and later)
UK Model (Serial No. 600,001 and later)
AEP Model (Serial No. 500,001 and later)

Fig. 4-1. Repacking

SECTION 5
DIAGRAMS

5-1. MOUNTING DIAGRAM

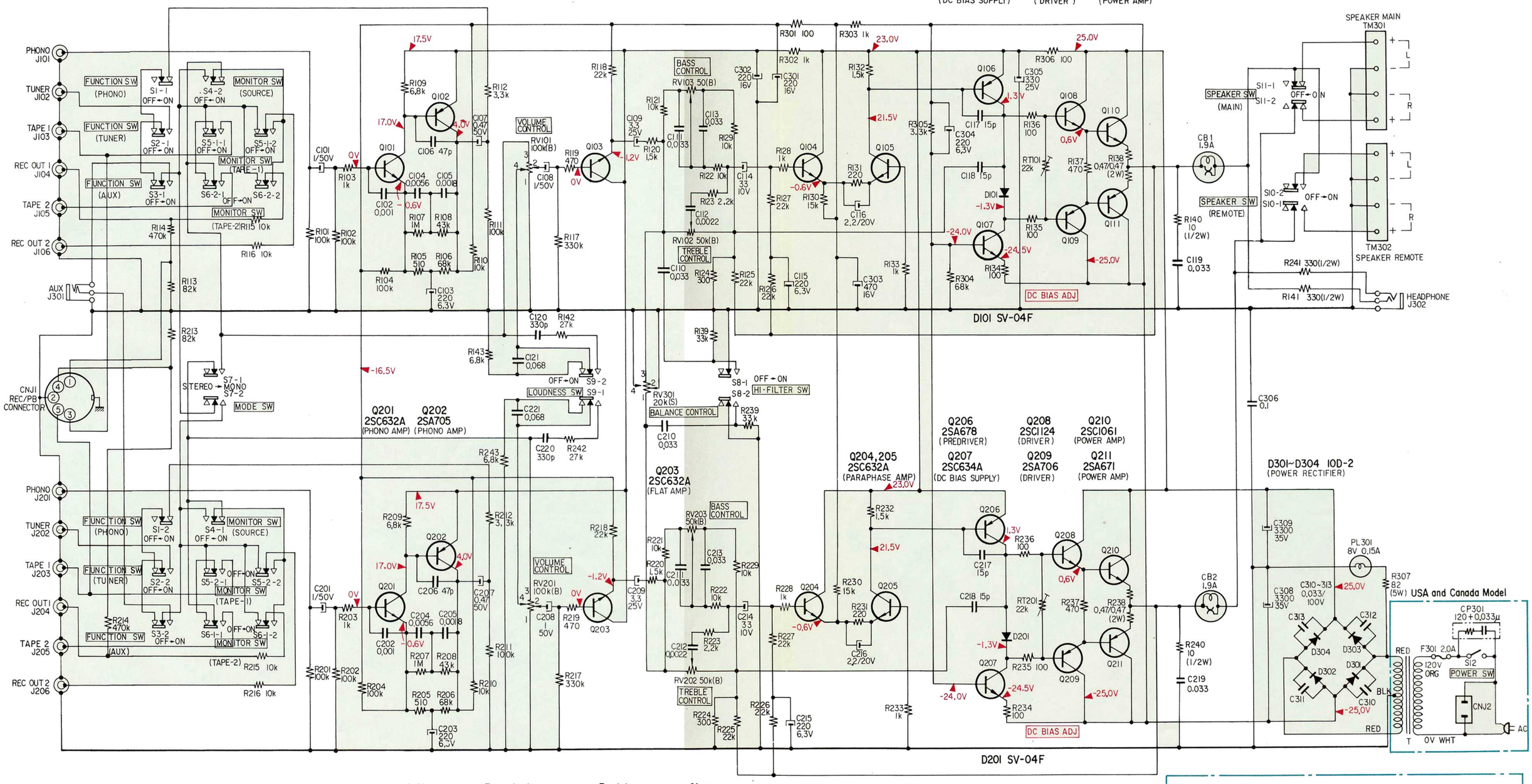
– Conductor Side –



Parts Location

| | | |

5-2. SCHEMATIC DIAGRAM



Ref. No.	Description	Position	Ref. No.	Description	Position
S1-1 ~ 2	FUNCTION switch (PHONO)	ON	S7-1 ~ 2	MODE switch (STEREO-MONO)	STEREO
S2-1 ~ 2	FUNCTION switch (TUNER)	OFF	S8-1 ~ 2	HI-FILTER switch (ON-OFF)	OFF
S3-1 ~ 2	FUNCTION switch (AUX)	OFF	S9-1 ~ 2	LOUDNESS switch (ON-OFF)	OFF
S4-1 ~ 2	MONITOR switch (SOURCE)	ON	S10-1 ~ 2	SPEAKER switch (REMOTE)	OFF
S5-1 ~ 2	MONITOR switch (TAPE-1)	OFF	S11-1 ~ 2	SPEAKER switch (MAIN)	ON
S6-1 ~ 2	MONITOR switch (TAPE-2)	OFF	S12	POWER switch (ON-OFF)	OFF

Note:

All resistance values are in ohms. k = 1,000 M = 1,000 k.

All capacitance values are in μF except as indicated with p, which means $\mu\mu$F.

All voltages are dc measured with a VOM having 20 k ohms/volt input impedance. No signal in.

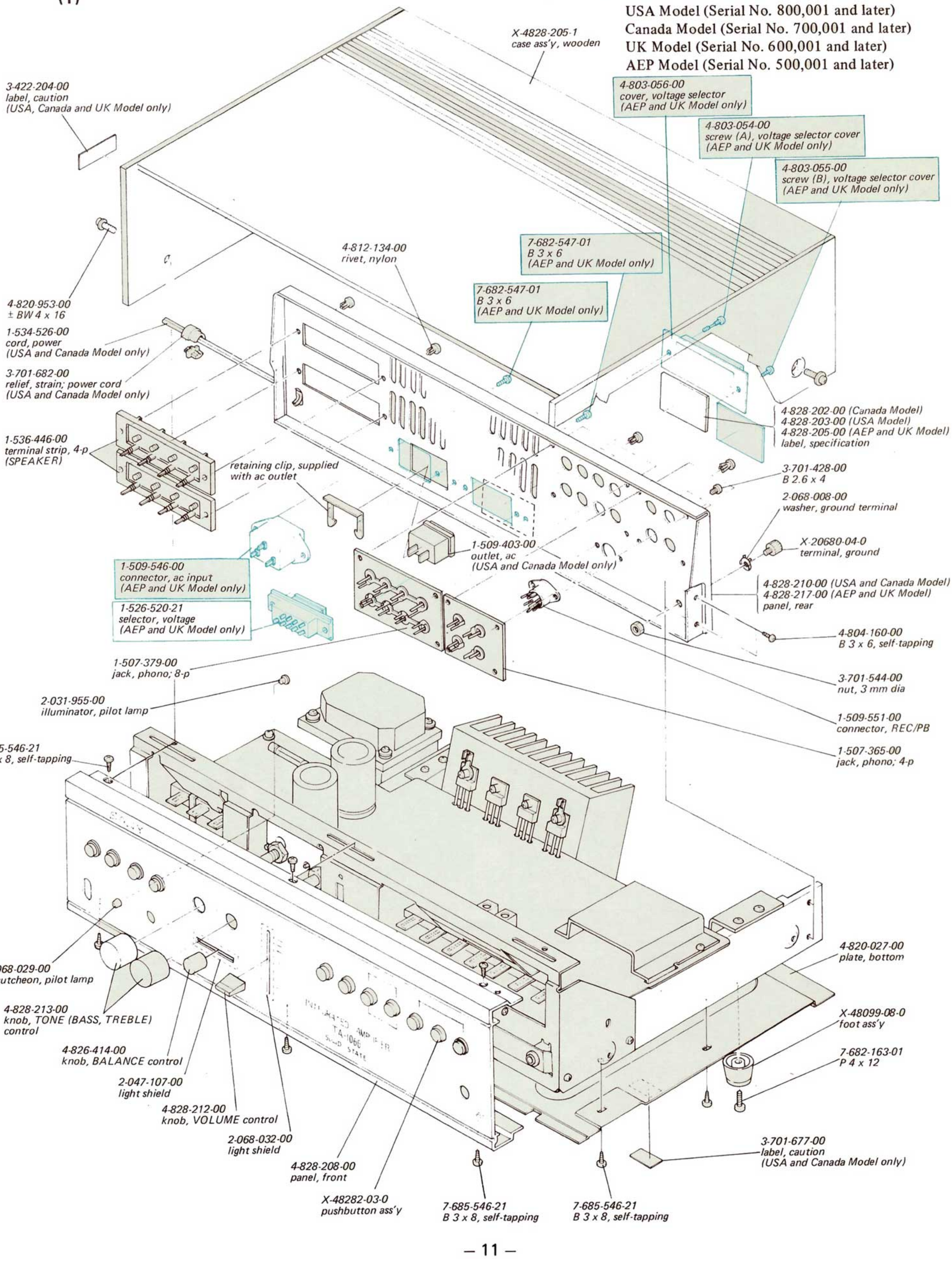
Voltage variations may be noted due to normal production tolerances.

SECTION 6

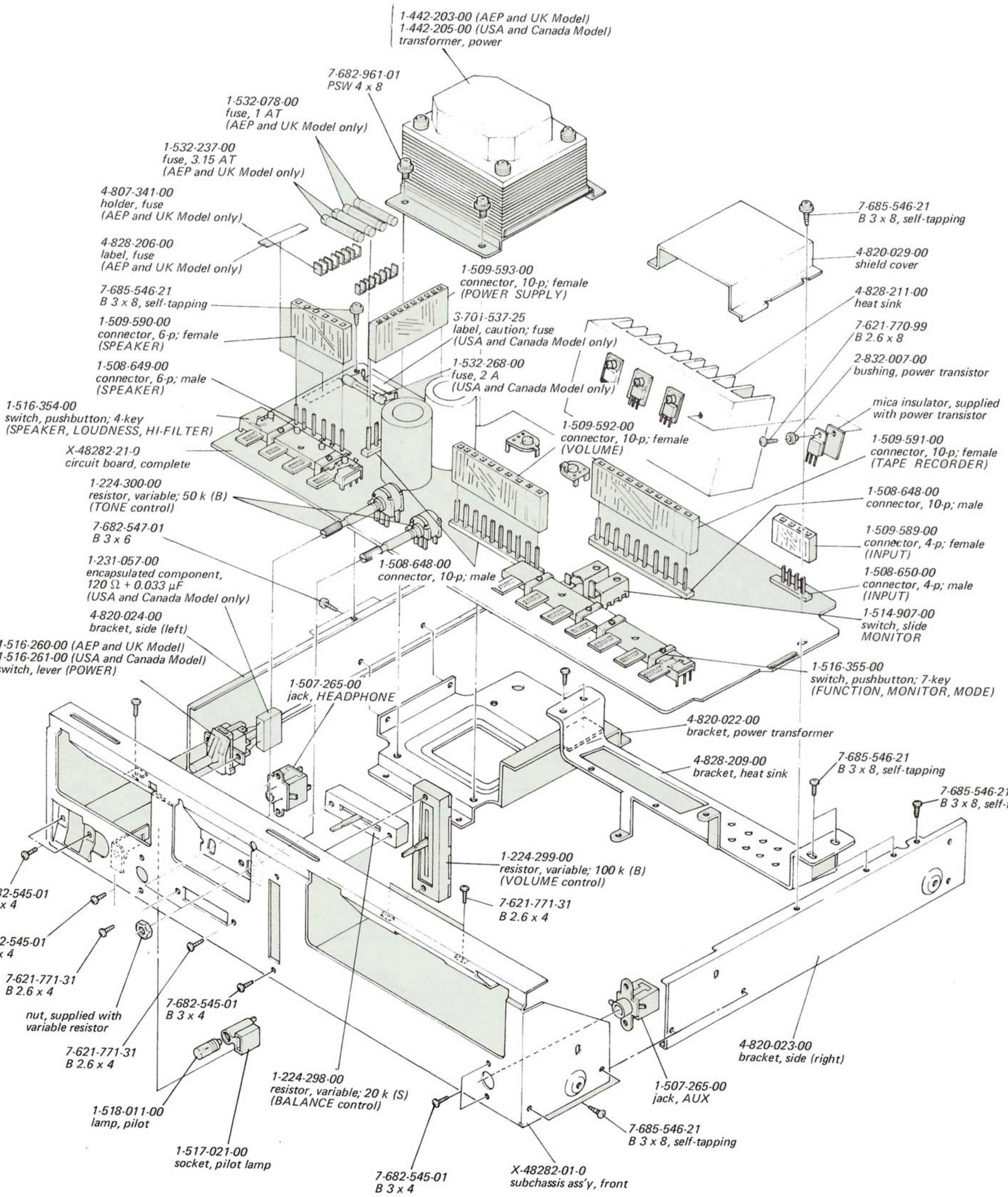
EXPLODED VIEWS

(1)

Note: Applicable Serial Numbers:
USA Model (Serial No. 800,001 and later)
Canada Model (Serial No. 700,001 and later)
UK Model (Serial No. 600,001 and later)
AEP Model (Serial No. 500,001 and later)



(2)


1-442-203-00 (AEP and UK Model)
1-442-205-00 (USA and Canada Model)
transformer, power
7-682-961-01
PSW 4 x 8
1-532-078-00
fuse, 1 AT
(AEP and UK Model only)
1-532-237-00
fuse, 3.15 AT
(AEP and UK Model only)
4-807-341-00
holder, fuse
(AEP and UK Model only)
4-828-206-00
label, fuse
(AEP and UK Model only)
7-685-546-21
B 3 x 8, self-tapping
1-509-590-00
connector, 6-p; female
(SPEAKER)
1-508-649-00
connector, 6-p; male
(SPEAKER)
1-516-354-00
switch, pushbutton; 4-key
(SPEAKER, LOUDNESS, HI-FILTER)
X-48282-21-0
circuit board, complete
1-224-300-00
resistor, variable; 50 k (B)
(TONE control)
7-682-547-01
B 3 x 6
1-231-057-00
encapsulated component,
120 Ω + 0.033 µF
(USA and Canada Model only)
4-820-024-00
bracket, side (left)
1-516-260-00 (AEP and UK Model)
1-516-261-00 (USA and Canada Model)
switch, lever (POWER)
1-509-593-00
connector, 10-p; female
(POWER SUPPLY)
3-701-537-25
label, caution; fuse
(USA and Canada Model only)
1-532-268-00
fuse, 2 A
(USA and Canada Model only)
1-508-648-00
connector, 10-p; male
1-507-265-00
jack, HEADPHONE
7-685-546-21
B 3 x 8, self-tapping
4-820-029-00
shield cover
4-828-211-00
heat sink
7-621-770-99
B 2.6 x 8
2-832-007-00
bushing, power transistor
mica insulator, supplied
with power transistor
1-509-592-00
connector, 10-p; female
(VOLUME)
1-509-591-00
connector, 10-p; female
(TAPE RECORDER)
1-508-648-00
connector, 10-p; male
1-509-589-00
connector, 4-p; female
(INPUT)
1-508-650-00
connector, 4-p; male
(INPUT)
1-514-907-00
switch, slide
MONITOR
1-516-355-00
switch, pushbutton; 7-key
(FUNCTION, MONITOR, MODE)
4-820-022-00
bracket, power transformer
4-828-209-00
bracket, heat sink
1-224-299-00
resistor, variable; 100 k (B)
(VOLUME control)
7-621-771-31
B 2.6 x 4
7-682-545-01
B 3 x 4
7-682-545-01
B 3 x 4
7-621-771-31
B 2.6 x 4
nut, supplied with
variable resistor
7-621-771-31
B 2.6 x 4
7-682-545-01
B 3 x 4
1-518-011-00
lamp, pilot
1-517-021-00
socket, pilot lamp
1-224-298-00
resistor, variable; 20 k (S)
(BALANCE control)
7-682-545-01
B 3 x 4
X-48282-01-0
subchassis ass'y, front
7-685-546-21
B 3 x 8, self-tapping
1-507-265-00
jack, AUX
4-820-023-00
bracket, side (right)
7-685-546-21
B 3 x 8, self-tapping
7-685-546-21
B 3 x 8, self-tapping

SECTION 7

ELECTRICAL PARTS LIST

Ref. No.	*Part No.*	*Description*			

Note: Applicable Serial Numbers:
USA Model (Serial No. 800,001 and later)
Canada Model (Serial No. 700,001 and later)
UK Model (Serial No. 600,001 and later)
AEP Model (Serial No. 500,001 and later)

COMPLETE CIRCUIT BOARD

X-48282-21-0

SEMICONDUCTORS

Q101(Q201)	Transistor	2SC632A
Q102(Q202)	Transistor	2SA705
Q103(Q203)	Transistor	2SC632A
Q104(Q204)	Transistor	2SC632A
Q105(Q205)	Transistor	2SC632A
Q106(Q206)	Transistor	2SA678
Q107(Q207)	Transistor	2SC634A
Q108(Q208)	Transistor	2SC1124
Q109(Q209)	Transistor	2SA706
Q110(Q210)	Transistor	2SC1061
Q111(Q211)	Transistor	2SA671
D101(D201)	Diode	SV-04F
D301	Diode	10D-2
D302	Diode	10D-2
D303	Diode	10D-2
D304	Diode	10D-2

TRANSFORMERS

T	1-442-205-00	Power (USA and Canada Model)
	1-442-203-00	Power (AEP and UK Model)

CAPACITORS

All capacitors listed here are 50 V, mylar type unless otherwise specified and in μF except as indicated with p (p means $\mu\mu$).
(elect = electrolytic)

C101(C201)	1-121-912-11	1		50 V	elect
C102(C202)	1-105-661-12	0.001	± 10 %		
C103(C203)	1-121-419-11	220		6.3 V	elect
C104(C204)	1-105-510-12	0.0056	± 5 %		
C105(C205)	1-105-504-12	0.0018	± 5 %		
C106(C206)	1-101-880-11	47 p	± 5 %	50 V	ceramic
C107(C207)	1-121-911-11	0.47		50 V	elect
C108(C208)	1-121-912-11	1		50 V	elect
C109(C209)	1-121-913-11	3.3		25 V	elect
C110(C210)	1-105-679-12	0.033	± 10 %		
C111(C211)	1-105-679-12	0.033	± 10 %		

Ref. No.	*Part No.*	*Description*			
C112(C212)	1-105-665-12	0.0022	± 10 %		
C113(C213)	1-105-679-12	0.033	± 10 %		
C114(C214)	1-121-926-11	33		10 V	elect
C115(C215)	1-121-419-11	220		6.3 V	elect
C116(C216)	1-131-196-11	2.2		20 V	tantalum
C117(C217)	1-102-951-11	15 p	± 5 %	50 V	ceramic
C118(C218)	1-102-951-11	15 p	± 5 %	50 V	ceramic
C119(C219)	1-105-679-12	0.033	± 10 %		
C120(C220)	1-102-820-11	330 p	± 5 %	50 V	ceramic
C121(C221)	1-105-683-12	0.068	± 10 %		
C301	1-121-421-11	220		16 V	elect
C302	1-121-421-11	220		16 V	elect
C303	1-121-426-11	470		16 V	elect
C304	1-121-419-11	220		6.3 V	elect
C305	1-121-654-11	330		25 V	elect
C306	1-105-685-12	0.1	± 10 %		
C307		----------			
C308	1-123-118-11	3300		35 V	elect
C309	1-123-118-11	3300		35 V	elect
C310	1-105-879-12	0.033	± 20 %	100 V	
C311	1-105-879-12	0.033	± 20 %	100 V	
C312	1-105-879-12	0.033	± 20 %	100 V	
C313	1-105-879-12	0.033	± 20 %	100 V	

RESISTORS

All resistors are in Ω, ± 5 %, ¼ W and carbon type unless otherwise specified.

R101(R201)	1-244-721-11	100 k
R102(R202)	1-244-721-11	100 k
R103(R203)	1-244-673-11	1 k
R104(R204)	1-244-721-11	100 k
R105(R205)	1-244-666-11	510
R106(R206)	1-244-717-11	68 k
R107(R207)	1-244-745-11	1 M
R108(R208)	1-244-712-11	43 k
R109(R209)	1-244-693-11	6.8 k
R110(R210)	1-244-697-11	10 k
R111(R211)	1-244-721-11	100 k
R112(R212)	1-244-685-11	3.3 k
R113(R213)	1-244-719-11	82 k
R114(R214)	1-244-737-11	470 k
R115(R215)	1-244-697-11	10 k
R116(R216)	1-244-697-11	10 k
R117(R217)	1-244-733-11	330 k
R118(R218)	1-244-705-11	22 k
R119(R219)	1-244-665-11	470
R120(R220)	1-244-677-11	1.5 k
R121(R221)	1-244-697-11	10 k
R122(R222)	1-244-697-11	10 k
R123(R223)	1-244-681-11	2.2 k

Ref. No.	*Part No.*	*Description*		
R124(R224)	1-244-660-11	300		
R125(R225)	1-244-705-11	22 k		
R126(R226)	1-244-705-11	22 k		
R127(R227)	1-244-705-11	22 k		
R128(R228)	1-244-673-11	1 k		
R129(R229)	1-244-697-11	10 k		
R130(R230)	1-244-701-11	15 k		
R131(R231)	1-244-657-11	220		
R132(R232)	1-244-677-11	1.5 k		
R133(R233)	1-244-673-11	1 k		
R134(R234)	1-244-649-11	100		
R135(R235)	1-211-522-11	100		
R136(R236)	1-244-649-11	100		
R137(R237)	1-244-665-11	470		
R138(R238)	1-217-359-11	0.47	2 W	metal
R139(R239)	1-244-709-11	33 k		
R140(R240)	1-202-525-11	10	½ W	composition
R141(R241)	1-202-561-11	330	½ W	composition
R142(R242)	1-244-707-11	27 k		
R143(R243)	1-244-693-11	6.8 k		
R301	1-244-649-11	100		
R302	1-244-673-11	1 k		
R303	1-244-673-11	1 k		
R304	1-244-717-11	68 k		
R305	1-244-685-11	3.3 k		
R306	1-211-522-11	100		
R307	1-217-309-11	82	5 W	wirewound
RT101 (RT201)	1-222-764-00	22 k, adjustable (dc bias adj.)		
RV101 (RV201)	1-224-299-00	100 k (B), variable (VOLUME)		
RV102 (RV202)	1-224-300-00	50 k (B), variable (TREBLE)		
RV103 (RV203)	1-224-300-00	50 k (B), variable (BASS)		
RV301	1-224-298-00	20 k (S), variable (BALANCE)		

SWITCHES

S1 ~ 4, S7	1-516-355-00	Pushbutton; 7-key (FUNCTION, MONITOR, MODE)
S5, S6	1-514-907-00	Slide (MONITOR)
S8 ~ 11	1-516-354-00	Pushbutton; 4-key (SPEAKER, LOUDNESS, HI-FILTER)
S12	1-516-260-00	Lever (POWER) (AEP and UK Model)
	1-516-261-00	Lever (POWER) (USA and Canada Model)

MISCELLANEOUS

CB1, 2	1-532-380-21	Circuit Breaker, 1.9 A
CP301	1-231-057-00	Encapsulated Component, 120 Ω + 0.033 μF (USA and Canada Model only)
CNJ1	1-509-551-00	Connector, REC/PB
CNJ2	1-509-403-00	Outlet, ac (USA and Canada Model only)
	1-509-546-00	Connector, ac input; 3-p (AEP and UK Model only)
F301	1-532-268-00	Fuse, 2 A (USA and Canada Model only)
	1-532-078-00	Fuse, 1 AT (AEP and UK Model)
F302	1-532-078-00	Fuse, 1 AT (AEP and UK Model only)
F303, 304	1-532-237-00	Fuse, 3.15 AT (AEP and UK Model only)
J101, 102 (J201, 202)	1-507-365-00	Jack, phono; 4-p
J103~J106 (J203~J206)	1-507-379-00	Jack, phono; 8-p
J301, 302	1-507-265-00	Jack, AUX, HEADPHONE
PL301	1-518-011-00	Lamp, pilot; 8 V, 0.15 A
TM301, 302	1-536-446-00	Terminal Strip, 4-p (SPEAKER)
VS	1-526-520-21	Selector, voltage (AEP and UK Model only)
	1-508-648-00	Connector, 10-p; male
	1-508-649-00	Connector, 6-p; male (SPEAKER)
	1-508-650-00	Connector, 4-p; male (INPUT)
	1-509-589-00	Connector, 4-p; female (INPUT)
	1-509-590-00	Connector, 6-p; female (SPEAKER)
	1-509-591-00	Connector, 10-p; female (TAPE RECORDER)
	1-509-592-00	Connector, 10-p; female (VOLUME)
	1-509-593-00	Connector, 10-p; female (POWER SUPPLY)
	1-517-021-00	Socket, pilot lamp
	1-534-526-00	Cord, power (USA and Canada Model only)

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