

34084



In this photo you can see Model SA-6800

# *Service Manual*

STEREO AMPLIFIER

# SA-6800

# SA-608

 PIONEER®

SA 6800/608

Both Model SA-6800 and Model SA-608 have the same basic performance. The major difference is in appearance, Model SA-6800 being fitted with wooden side cover and top cover, while Model SA-608 employs metal cover. The following table is displayed on the SA-6800 and SA-608.

### MODEL SA-6800

Type	Voltage	Remarks
KU	120V only	U.S.A. model
KC	120V only	Canada model

### MODEL SA-608

Type	Voltage	Remarks
KU	120V only	U.S.A. model
S	110V, 120V, 220V, and 240V (Switchable)	General export model
S/G	110V, 120V, 220V, and 240V (Switchable)	U.S. Military model
HE	220V and 240V	Europe model
HB	220V and 240V	United Kingdom model
HP	220V and 240V	Oceania model

- This service manual is applicable to the KU type of the Model SA-6800 and the Model SA-608. When repairing the KC type of the Model SA-6800 and the S, S/G types of the Model SA-608, please see the additional service manual (ART-370), and for HE, HB, HP types of the SA-608, please see the additional service manual (ART-371).

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# 1. SPECIFICATIONS

## Semiconductors

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## Amplifier Section

Continuous Power Output of 45 watts\* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.02% total harmonic distortion or 45 watts per channel at 4 ohms from 20 Hertz to 20,000 Hertz with no more than 0.03% total harmonic distortion.

Total Harmonic Distortion (20 Hertz to 20,000 Hertz, 8 ohms from AUX)  
 continuous rated power output . . . No more than 0.02%  
 22.5 watts per channel power  
 output . . . . . No more than 0.02%  
 1 watt per channel power output  
 . . . . . No more than 0.02%

Intermodulation Distortion (50 Hertz: 7,000 Hertz = 4:1, 8 ohms, from AUX)  
 continuous rated power output . . . No more than 0.02%  
 22.5 watts per channel power output  
 . . . . . No more than 0.02%  
 1 watt per channel power output  
 . . . . . No more than 0.02%

## Output

Speaker . . . . . A, B, A+B  
 4~16 ohms

Headphones . . . . . Low impedance

## Damping Factor

(20 Hertz to 20,000 Hertz, 8 ohms) . . . . . 30

## Input (Sensitivity/Impedance)

PHONO .....	2.5mV/50kilohms
TUNER .....	150mV/50kilohms
AUX .....	150mV/50kilohms
TAPE PLAY 1 .....	150mV/50kilohms
TAPE PLAY 2 .....	150mV/50kilohms

Phono Overload Level (T.H.D. 0.03%, 1,000Hz)

PHONO . . . . . 180mV

## Output

TAPE REC 1 . . . . . 150mV

TAPE REC 2 . . . . . 150mV

## Frequency Response

PHONO (RIAA Equalization)

. . . . . 30Hz to 15,000Hz  $\pm$ 0.3dB

TUNER, AUX, TAPE PLAY . . . 10Hz to 50,000Hz  $^{+0}_{-1.5}$  dB

## Tone Control

BASS . . . . . +7.5dB, -7.5dB (100Hz)

TREBLE . . . . . +7.5dB, -7.5dB (10kHz)

Subsonic Filter . . . . . 15Hz (-6dB/oct)

Loudness Contour (Volume control set at -40dB

position) . . . . . +6dB (100Hz), +3dB (10kHz)

Hum and Noise (IHF, short-circuited, A network)

PHONO . . . . . 78dB

TUNER, AUX, TAPE PLAY . . . . . 100dB

## Miscellaneous

Power Requirements . . . . . 120V, 60Hz

Power Consumption . . . . . 160W (UL), 350VA (CSA)

Dimensions . . . . . 451(W) x 151(H) x 271(D) mm

17-3/4(W) x 5-15/16(H) x 10-11/16(D) in

Weight (without package) . . . . . 8.3kg (18 lb 5oz)

## Furnished parts

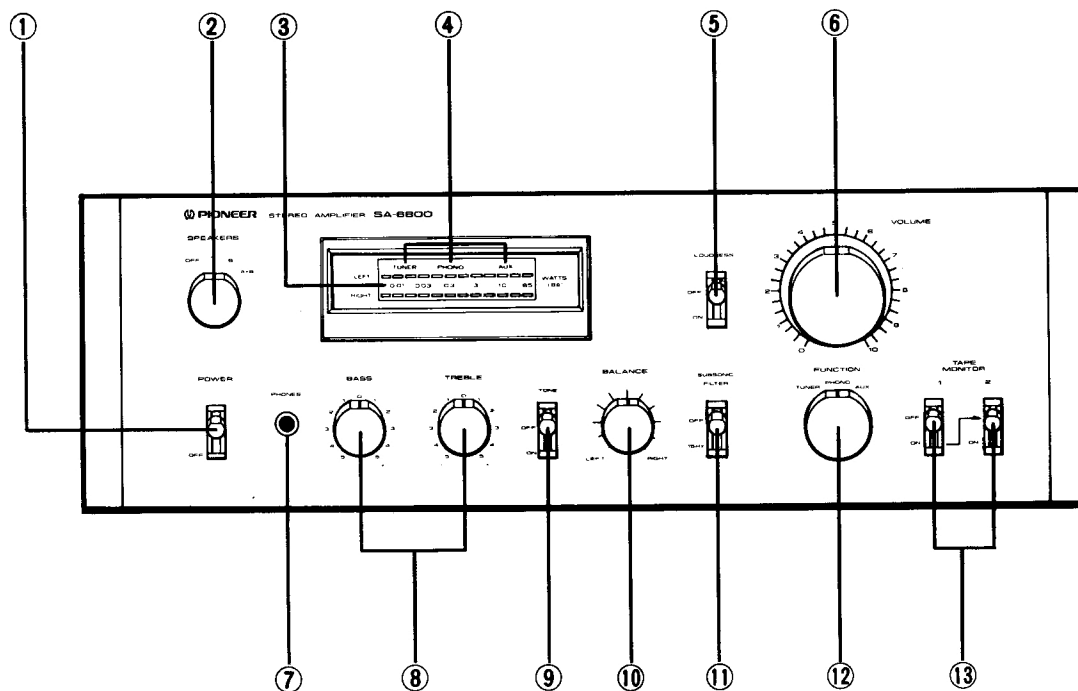
Operating instructions . . . . . 1

\* Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.

## NOTE:

Specifications and the design subject to possible modification without notice due to improvements.

## 2. FRONT PANEL FACILITIES



### ① POWER SWITCH

Set this switch to ON to supply power to the amplifier.

### ② SPEAKER SELECTOR

Use this selector to select the speaker systems.

OFF: Sound not obtained from speakers.

A: Sound obtained from speakers connected to the A speaker terminals.

B: Sound obtained from speakers connected to the B speaker terminals.

A+B: Sound obtained from speakers connected to both A and B speaker terminals.

### ③ POWER METER

This meter allows you to read out the rated power level on the fluorescent display tube when speakers with a nominal impedance of 8 ohms are connected to the amplifier's speaker terminals.

### ④ FUNCTION INDICATORS

The TUNER, PHONO, AUX function indicators light up in accordance with the position of the function selector.

#### NOTE:

*The function indicator will not go off even when the tape monitor switch 1 or 2 is set to ON.*

### ⑤ LOUDNESS SWITCH

When listening to a performance with the volume control turned down, set this switch to ON and the bass and treble will be accentuated.

When the volume is low, the human ear finds it harder to hear the bass and treble than when the volume is high. The loudness switch is thus designed to compensate for this deficiency. By setting it to ON, the bass and treble come through much more strongly and the sound takes on a punch even when the volume control is turned down.

**⑥ VOLUME CONTROL**

Use this control to adjust the output level to the speakers and headphones. Turn it clockwise to increase the output level. No sound will be heard if you set it to "0".

**⑦ HEADPHONE JACK**

Plug the headphones into this jack when you want to listen through your stereo headphones.

**NOTE:**

*Set the speaker selector to OFF when listening only with headphones.*

**⑧ BASS AND TREBLE CONTROLS**

Use these controls to adjust the bass and the treble. If you set the tone switch to ON and turn the bass control to right from its center position, you will be able to emphasize the sound in the low-frequency range. Conversely, turning the bass control to the left from the center position, you will attenuate the sound.

You can use the treble control to adjust the sound in the high-frequency range.

**⑨ TONE SWITCH**

Set this switch to ON when adjusting the bass and treble controls. When set to OFF, the tone control circuits are disengaged and frequency response is flat. This function is convenient for checking phono cartridge and speaker tone quality and listening room acoustics.

**⑩ BALANCE CONTROL**

Use this control to balance the volume of the left and right channels. If the sound appears to be louder on the right, it means that the volume of the right channel is higher. Turn the balance control to the left and adjust.

Conversely, if the sound appears to be louder on the left, it means that the volume of the left channel is higher. Therefore, turn the balance control to the right and adjust.

**⑪ SUBSONIC FILTER SWITCH**

When this switch is set to the 15Hz position, the subsonic filter with a cut-off frequency of 15Hz is actuated. The subsonic filter serves to attenuate frequencies lower than 15Hz in a 6dB/oct slope. It is therefore effective in suppressing ultra-low-frequency noise which is generated by record warp and other causes. You cannot actually hear this noise but it is a factor in the generation of intermodulation distortion and it may damage your speaker system. Set this switch to the 15Hz position during record play for the best effect.

**⑫ FUNCTION SELECTOR**

Use this selector to select the program source. When set, the function indicator above the meter panel corresponding to the position of the function selector will light up.

**TUNER:** Set here when listening to broadcasts on a tuner connected to the TUNER jacks. (The TUNER function indicator lights up.)

**PHONO:** Set here when playing records on a turntable connected to the PHONO jacks. (The PHONO function indicator lights up.)

**AUX:** Set here when listening to a program source which is connected to the AUX jacks.

(The AUX function indicator lights up.)

**⑬ TAPE MONITOR SWITCHES (1, 2)**

Use these switches to monitor recording or a tape being played back on a tape deck.

1: Set this switch to ON when you want to monitor a recording or a tape being played back on a tape deck which is connected to the TAPE 1 jacks.

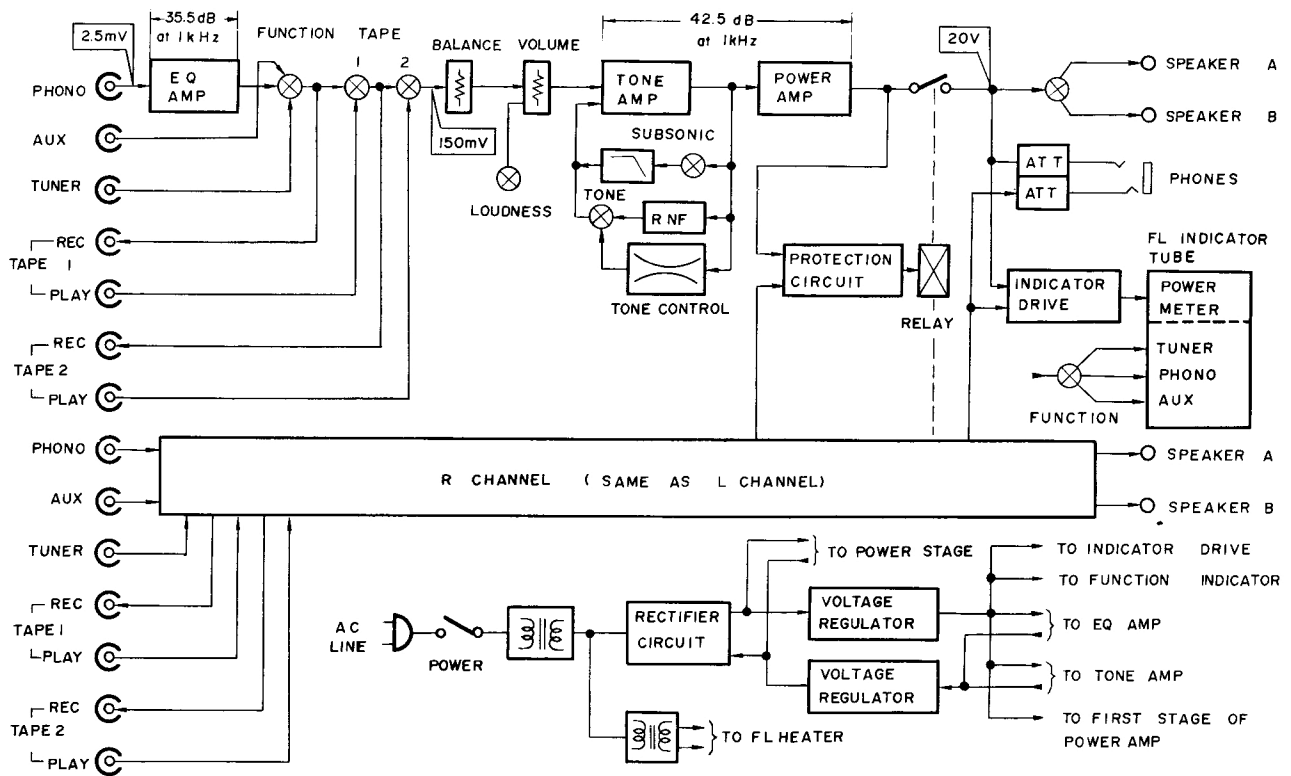
2: Set this switch to ON when you want to monitor a recording or a tape being played back on a tape deck which is connected to the TAPE 2 jacks.

**NOTE:**

*Set these switches to the upper (OFF) position when playing records or listening to broadcasts.*

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SA  
MO  
MO

### 3. BLOCK DIAGRAM



### 4. CIRCUIT DESCRIPTIONS

#### Equalizer Amplifier

This circuit is an NFB type equalizer amplifier, with one high-performance IC (TA7136P1) in both L and R channels. The circuit diagram is shown in Fig. 4-1.

The input signal is applied to pin no. 2 of the IC, and the output signal is taken from pin no. 6. Pin no. 3 is the NFB in terminal. NFB is applied from pin no. 6. An equalization deviation of  $\pm 0.3\text{dB}$  (30Hz-15kHz) has been achieved by using 1%-tolerance metal film resistors at R1, R2, and R3. The IC supply voltage are +19.9V and -18.9V. Allowable input is 180mVrms (at 1kHz, THD 0.02%).

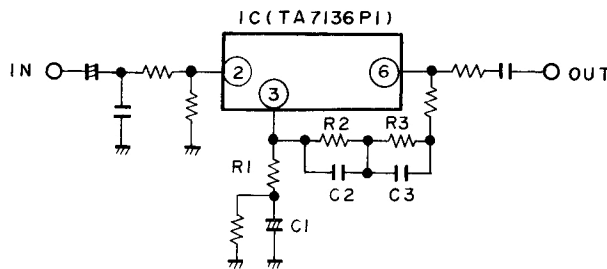


Fig. 4-1 Equalizer amplifier

#### Tone Control Circuit

Fig. 4-2 shows the basic tone control circuit. This circuit is an NFB type tone control, with IC (TA7136P1), and incorporates the subsonic filter.

Tone control (BASS, TREBLE) is accomplished by providing the tone amplifier NFB circuit with a frequency selectivity characteristic. The NFB circuit is changed to a flat frequency characteristic when the TONE switch is in the OFF position.

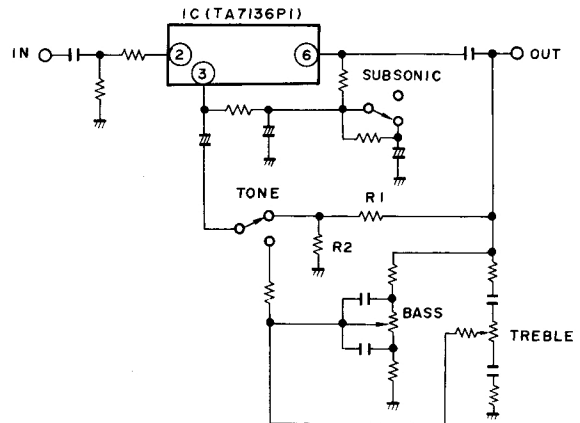


Fig. 4-2 Tone control circuit

1  
P  
a  
s  
C  
1. S  
2. F  
3. E  
4. C  
5. E  
6. A  
7. P  
8. E

When the SUBSONIC switch is turned ON position, the tone amplifier constitutes a high pass filter with a cutoff frequency (-3dB point) of 15Hz.

**Power Amplifier**

The basic circuit arrangement of power amplifier is shown in Fig. 4-3. The first stage is a differential amplifier ( $Q_1$ ), the load circuit of which is a current mirror employing an NPN twin transistor ( $Q_2$ ). The current mirror provides push-pull operation in this stage, which serves to cancel even numbered harmonics and further increase gain.

The pre-driver stage ( $Q_3, Q_4$ ) is a differential amplifier with a current mirror circuit ( $D_3, Q_5$ ), which enables stable operation and provides high voltage gain.

The power stage is a Darlington connection pure complementary SEPP circuit, and has an output of 45W (8Ω load, at both channels driven, THD 0.02%, 20Hz-20kHz).

**Indicator Circuit**

The SA-6800 output power and function indicators feature fluorescent indicator tube (FL tube). In this tube, thermionic emissions from the cathode are accelerated into the fluorescent substance of the segmental anodes, resulting in the emission of light. This tube is used to indicate numerals, letters, and other symbols.

An outline of the FL tube drive circuit is shown in Fig. 4-4. The output circuit signal is applied to pin no. 6 (4) of the IC (TA7318P-A). The IC contains a detector circuit, compressor (40dB), and peak hold circuit for both left and right chan-

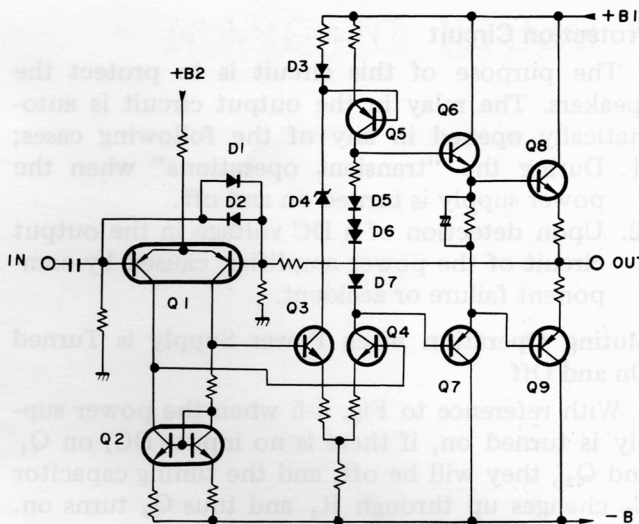


Fig. 4-3 Power amplifier

nels. The dynamic range of the signal is thus contracted by 40dB to obtain a "peak held" DC voltage.

The output power indicator segments of the FL tube are driven by the HA12010 ICs (one for each channel) equipped with 12 pairs of differential amplifiers. These amplifiers are biased at increasing levels, so each amplifier will commence to operate separately as the input level increases. And since these amplifiers apply the voltages to the output power indicator segments, each successive segment will light up in turn as the input level rises.

The function indicators are lit up as a result of a voltage being applied to the corresponding function indicator segment according to the selected positions of the FUNCTION switch.

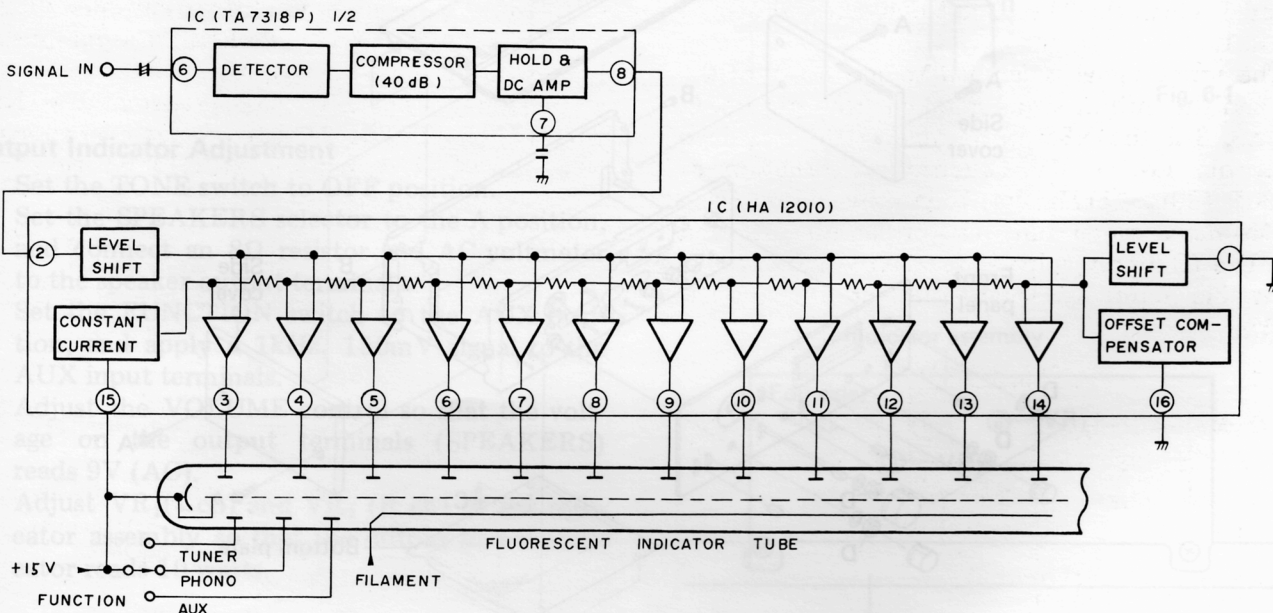


Fig. 4-4 Indicator circuit

## Protection Circuit

The purpose of this circuit is to protect the speakers. The relay in the output circuit is automatically opened in any of the following cases;

1. During the "transient operations" when the power supply is turned on and off.
2. Upon detection of a DC voltage in the output circuit of the power amplifier, caused by component failure or accident.

## Muting Operation when Power Supply is Turned On and Off

With reference to Fig. 4-5 when the power supply is turned on, if there is no input (DC) on  $Q_1$  and  $Q_2$ , they will be off, and the timing capacitor  $C_2$  charges up through  $R_5$  and thus  $Q_3$  turns on. When  $Q_3$  conducts, the relay operates, and the output muting on the power amplifier will be removed.

When the power supply is turned off,  $+B_1$  will abruptly decay,  $C_2$  will discharge through  $D_1$ .  $Q_3$  will cease to conduct, whereupon the relay will become de-energized and restore muting.

## DC Voltage Detector

The output circuit is connected to the  $Q_2$  emitter and  $Q_1$  base via a low-pass filter ( $R_1, C_1$ ). Any DC voltages appearing the output circuit of the power amplifier, it will be applied to the  $Q_2$  emitter and the  $Q_1$  base. If the voltage is negative,  $Q_2$  turns on.  $C_2$  will rapidly discharge. If the voltage is positive,  $Q_1$  turns on.  $C_2$  will rapidly discharge. As consequence,  $Q_3$  will turn on and the relay will become de-energized, thus causing the output circuit to open.

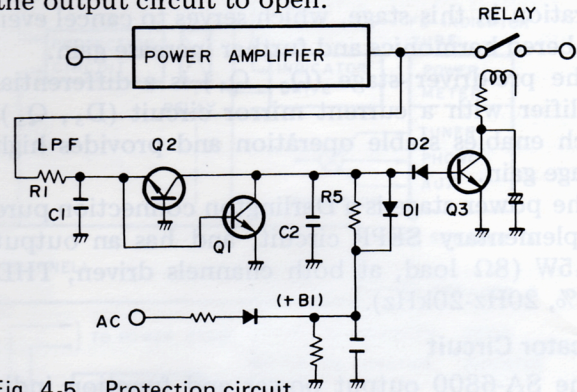


Fig. 4-5 Protection circuit

## 5. DISASSEMBLY

### Side Covers and Top Cover

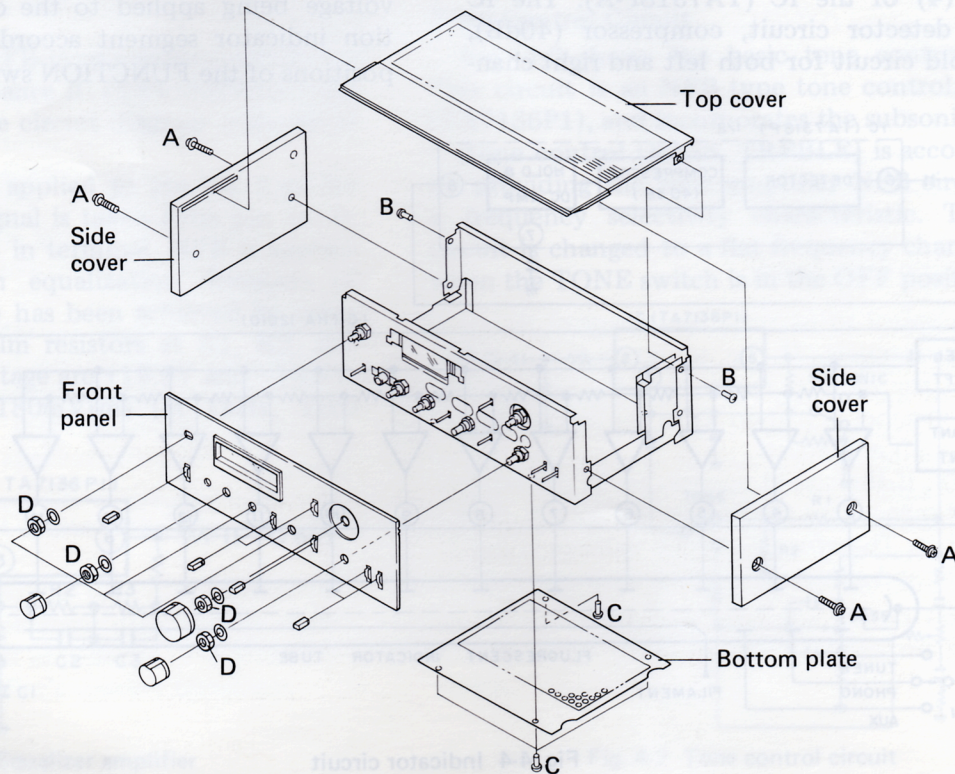
1. Remove the four screws (A), and remove the left and right-hand side covers.
2. Remove the two screws (B), and remove the top cover.

### Bottom Plate

Remove the four screws (C).

### Front Panel

Pull off all the knobs, and remove the four nuts (D).





## 6. ADJUSTMENTS

### Idle Current Adjustment

1. Turn the VOLUME control down to minimum level, turn the power on, and wait about 10 minutes.
2. Connect a DC voltmeter to the TP terminals (L ch; TP<sub>2</sub> ⊕ and TP<sub>1</sub> ⊖, R ch; TP<sub>3</sub> ⊕ and TP<sub>4</sub> ⊖) of the GWK-127.
3. Check that the voltage between TP<sub>1</sub> and TP<sub>2</sub> (L ch) lies within the DC 4.4mV-35mV range. Then make a similar check for the R ch (between TP<sub>3</sub> and TP<sub>4</sub>). If the voltage is less than 4.4mV, cut jumper A (L ch), and jumper B (R ch). If the voltage exceeds 35mV, check for circuit failure.

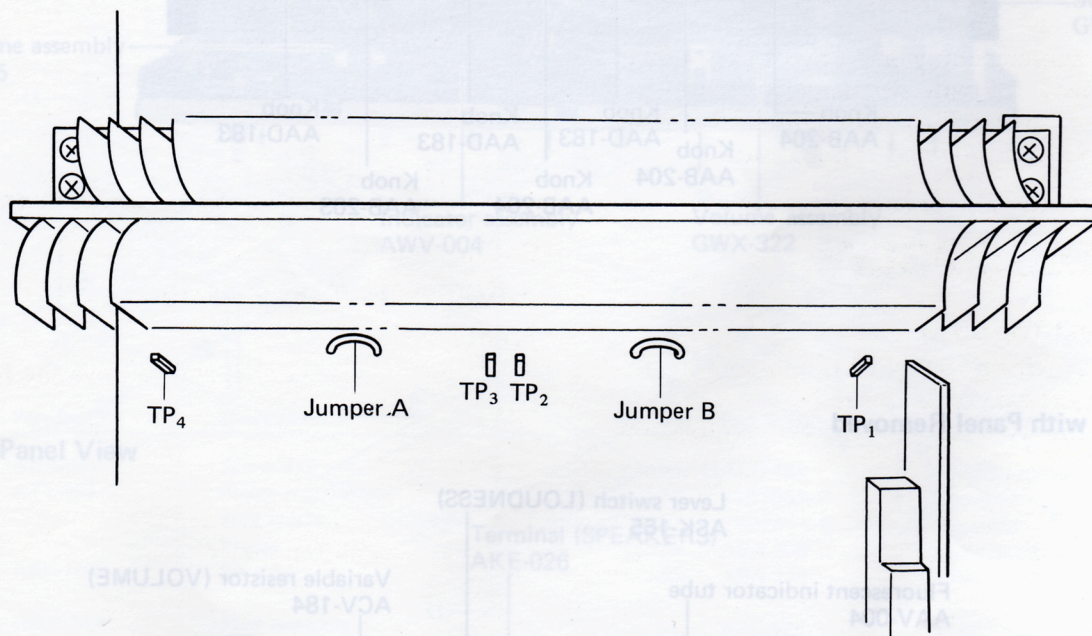


Fig. 6-1

### Output Indicator Adjustment

1. Set the TONE switch to OFF position.
2. Set the SPEAKERS selector to the A position, and connect an 8Ω resistor and AC voltmeter to the speaker output terminals.
3. Set the FUNCTION switch to the AUX position, and apply a 1kHz, 150mV signal to the AUX input terminals.
4. Adjust the VOLUME control so that the voltage on the output terminals (SPEAKERS) reads 9V (AC).
5. Adjust VR<sub>1</sub>(Lch) and VR<sub>2</sub> (R ch) of the indicator assembly so that the output power indicator reads 10 watts.

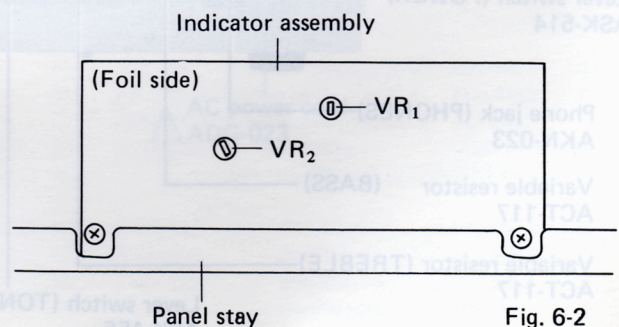
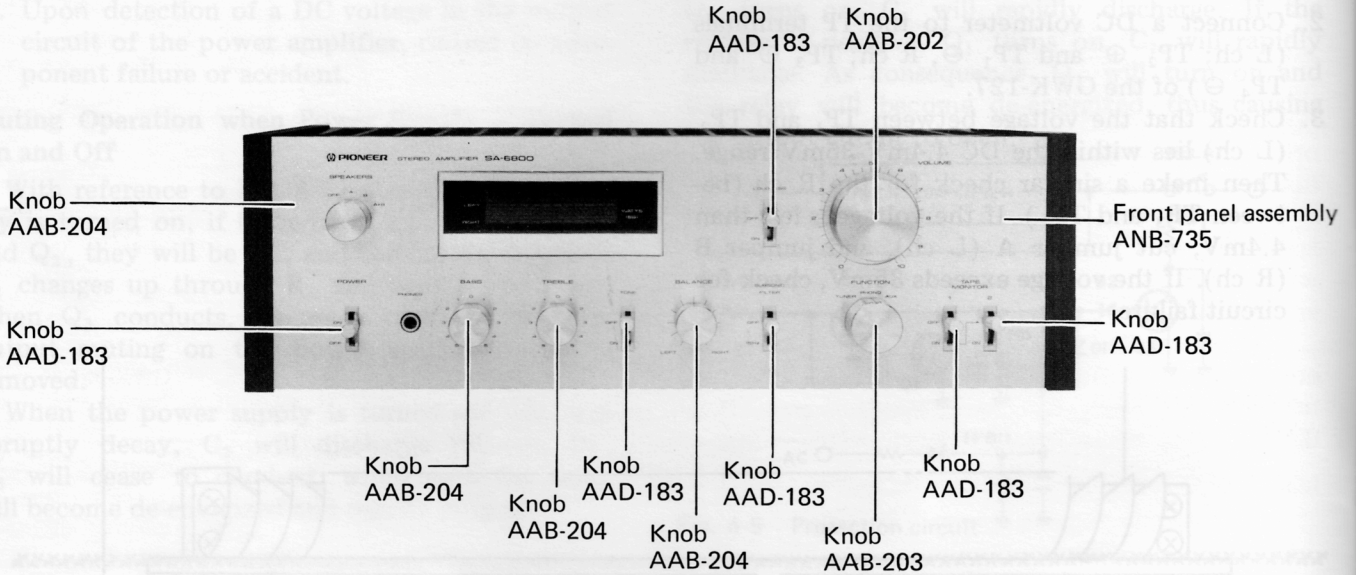


Fig. 6-2

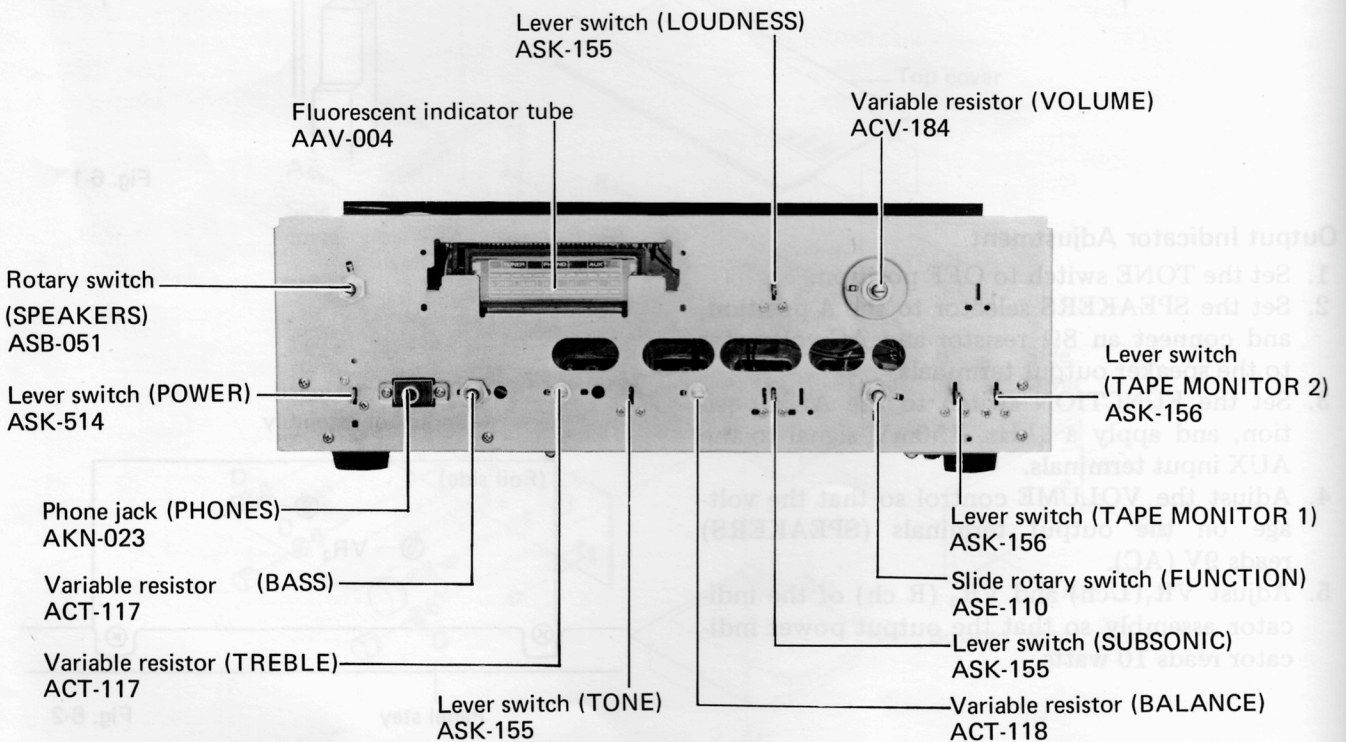
# 7. PARTS LOCATION

## Front Panel View

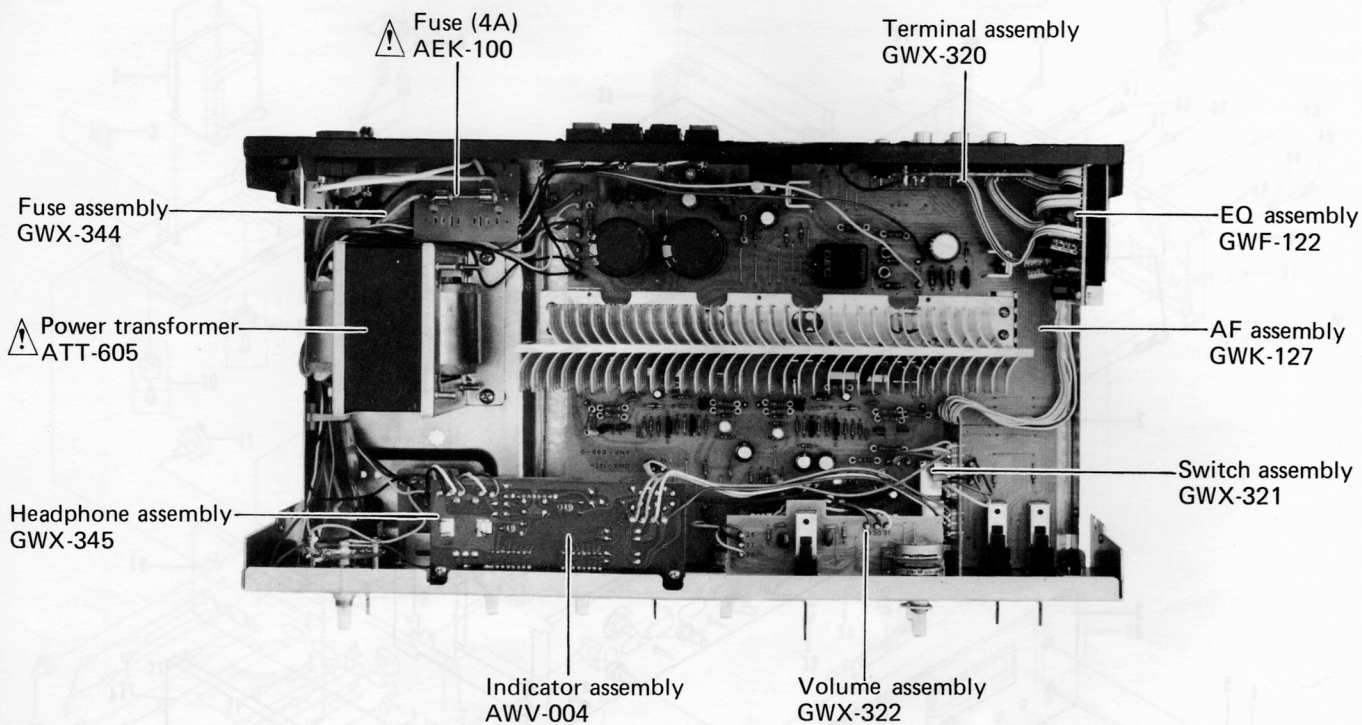
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



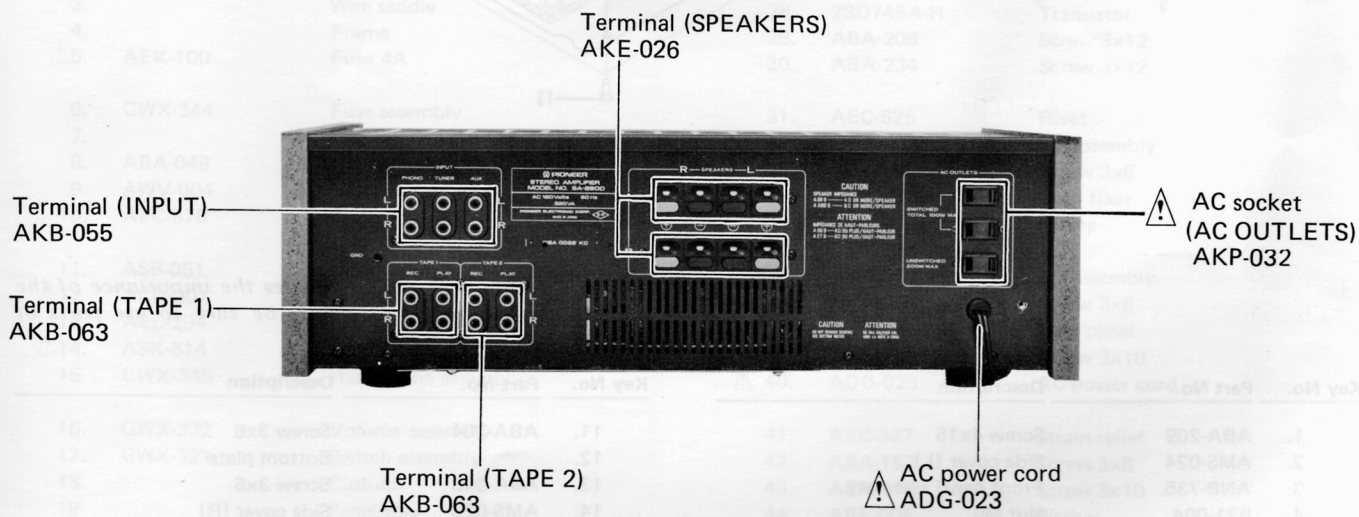
## Front View with Panel Removed



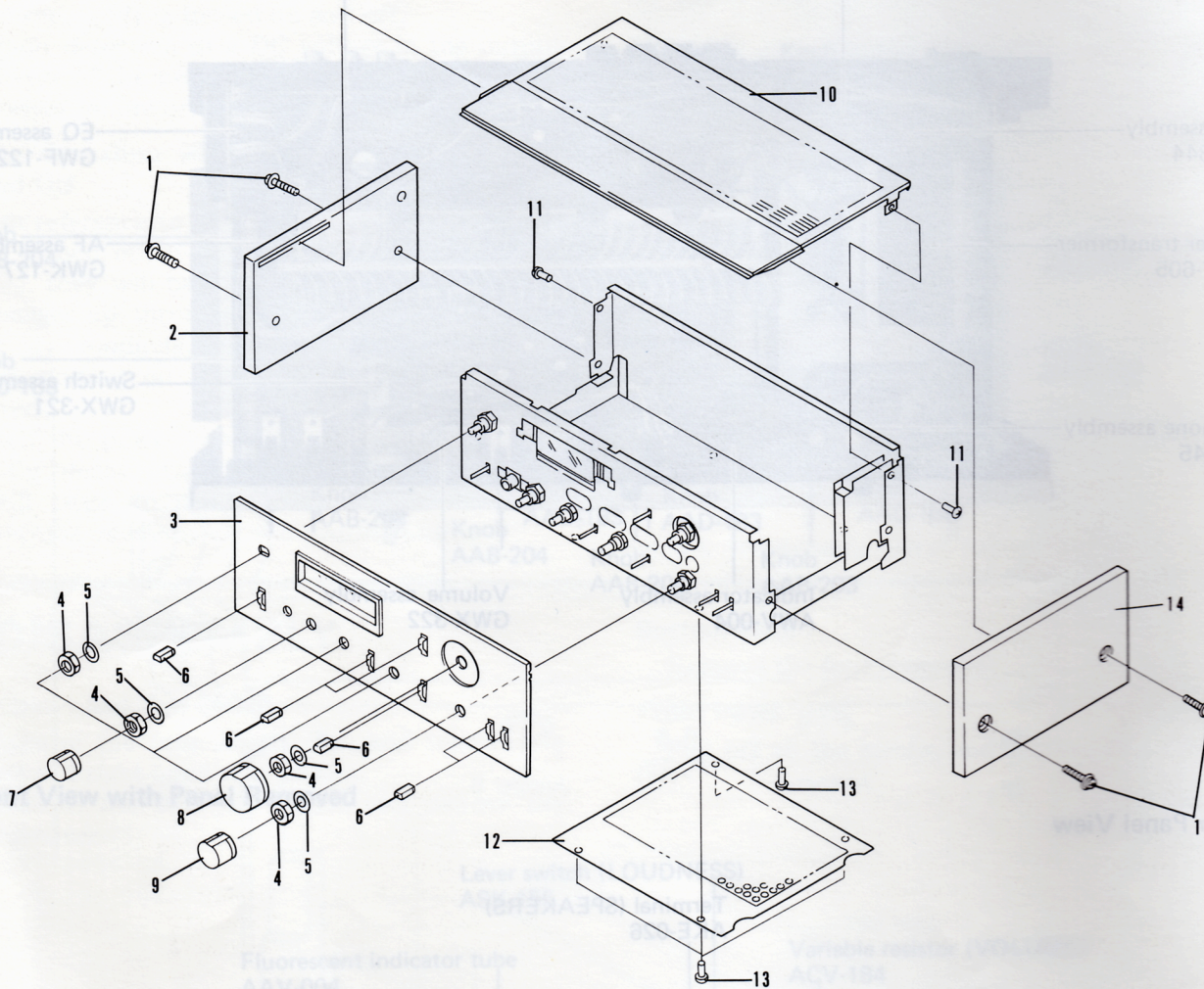
Top View




Rear Panel View

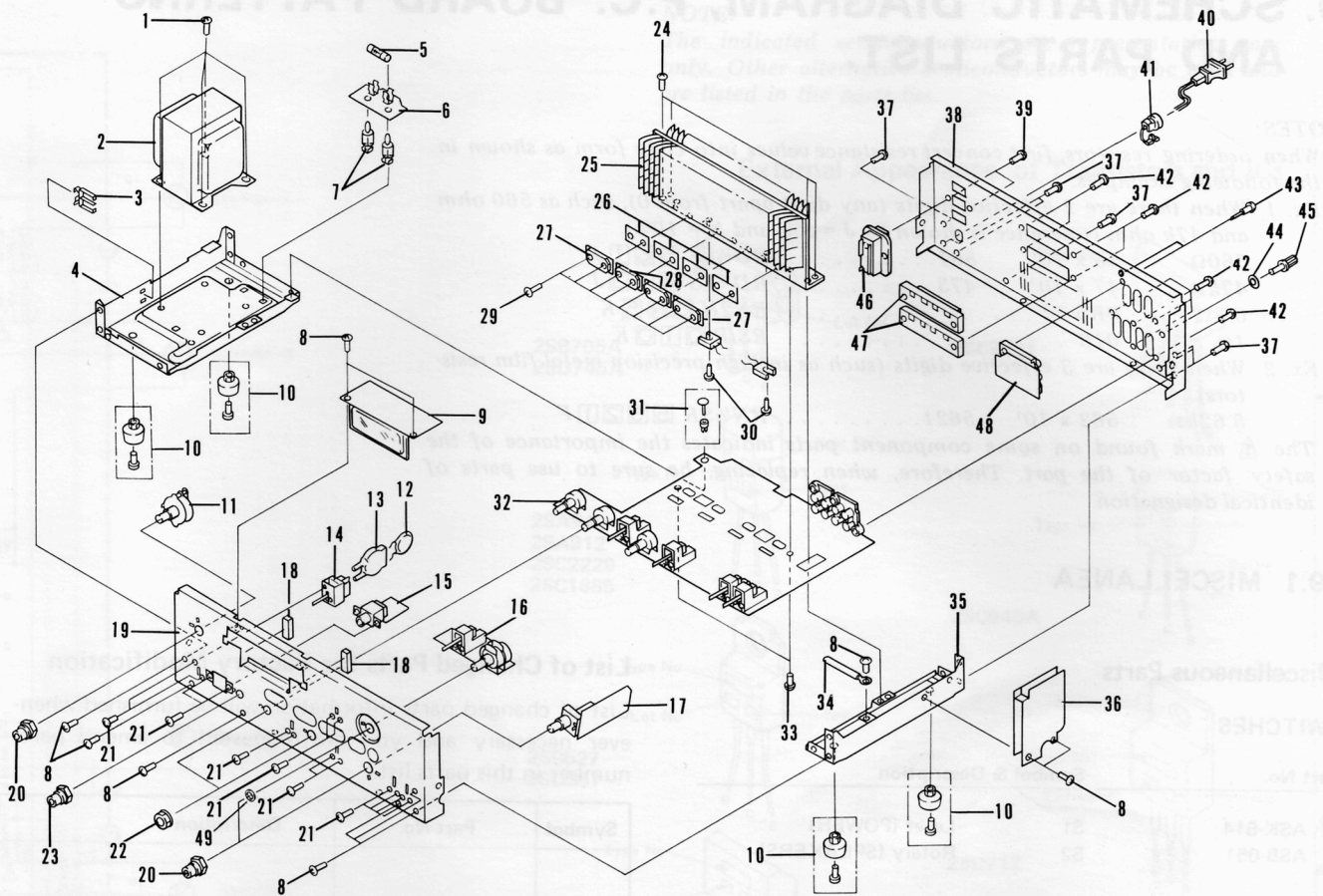


# 8. EXPLODED VIEW



• The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Key No.	Part No.	Description	Key No.	Part No.	Description
1.	ABA-209	Screw 4x15	11.	ABA-204	Screw 3x6
2.	AMS-024	Side cover (L)	12.		Bottom plate
3.	ANB-735	Front panel assembly	13.	ABA-048	Screw 3x6
4.	B71-004	Nut M9	14.	AMS-025	Side cover (R)
5.	M45-086	Washer M9			
6.	AAD-183	Knob			
7.	AAB-204	Knob			
8.	AAB-202	Knob			
9.	AAB-203	Knob			
10.	AMS-023	Top cover			



Key No.	Part No.	Description
1.	ABA-069	Screw 4x8
⚠ 2.	ATT-605	Power transformer
3.		Wire saddle
4.		Frame
⚠ 5.	AEK-100	Fuse 4A
6.	GWX-344	Fuse assembly
7.		P.C. Board holder
8.	ABA-048	Screw 3x6
9.	AWV-004	Indicator assembly
10.	AEC-570	Foot assembly
11.	ASB-051	Rotary switch (SPEAKERS)
⚠ 12.	ACG-001	Ceramic capacitor (0.01/250V)
13.	AEC-294	Capacitor cover
⚠ 14.	ASK-514	Lever switch (POWER)
15.	GWX-345	Headphone assembly
16.	GWX-322	Volume assembly
17.	GWX-321	Switch assembly
18.		Cushion
19.		Panel stay
20.	ABN-050	Union nut
21.	ABA-025	Screw 3x4
22.	ABN-031	Nut M7
23.	ABN-049	Union nut
24.	ABA-049	Screw 3x8
25.		Heat sink

Key No.	Part No.	Description
26.	AEC-488	Insulator spacer
27.	2SB705A-R	Transistor
28.	2SD745A-R	Transistor
29.	ABA-208	Screw 3x12
30.	ABA-234	Screw 3x12
31.	AEC-525	Rivet
32.	GWK-127	AF assembly
33.	ABA-065	Screw 3x6
34.		Cord fixer
35.		Frame
36.	GWF-122	EQ assembly
37.	ABA-228	Screw 3x6
38.		Rear panel
39.	ABA-240	Screw 3x10
⚠ 40.	ADG-023	AC power cord
41.	AEC-327	Strain relief
42.	ABA-157	Screw 3x8
43.	ABA-115	Screw 3x10
44.	ABE-005	Washer
45.		Terminal (GND)
⚠ 46.	AKP-032	AC socket (AC OUTLETS)
47.	AKE-026	Terminal (SPEAKERS)
48.	GWX-320	Terminal assembly
49.	B22-017	Washer

# 9. SCHEMATIC DIAGRAM, P.C. BOARD PATTERNS AND PARTS LIST.

**NOTES:**

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

*Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).*

560Ω	56 × 10 <sup>1</sup>	561	RD½PS	561J
47kΩ	47 × 10 <sup>3</sup>	473	RD½PS	473J
0.5Ω	0R5		RN2H	05K
1Ω	010		RSIP	010K

*Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).*

5.62kΩ	562 × 10 <sup>1</sup>	5621	RN¼SR	5621F
--------	-----------------------	------	-------	-------

- The **△** mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

## 9.1 MISCELLANEA

### Miscellaneous Parts

#### SWITCHES

Part No.	Symbol & Description
△ ASK-514	S1 Lever (POWER)
ASB-051	S2 Rotary (SPEAKERS)

#### SEMICONDUCTORS

Part No.	Symbol & Description
2SD745A-R	Q1, Q2
2SB705A-R	Q3, Q4

#### P.C. BOARD ASSEMBLIES

Part No.	Description
GWK-127	AF assembly
GWF-122	EQ assembly
GWX-322	Volume assembly
GWX-321	Switch assembly
GWX-320	Terminal assembly
AWV-004	Indicator assembly
GWX-344	Fuse assembly
GWX-345	Headphone assembly

#### OTHERS

Part No.	Symbol & Description
△ ATT-605	T1 Power transformer
△ AEK-100	FU1 Fuse 4A
△ ACG-001	C1 Ceramic capacitor
△ AKP-032	AC socket (AC OUTLETS)
△ ADG-023	AC power cord
AKE-026	Terminal (SPEAKERS)

### List of Changed Parts for Factory Modification

List of changed parts information will be furnished whenever necessary and you are requested to amend parts number in this parts list.

Symbol	Part No.	Description

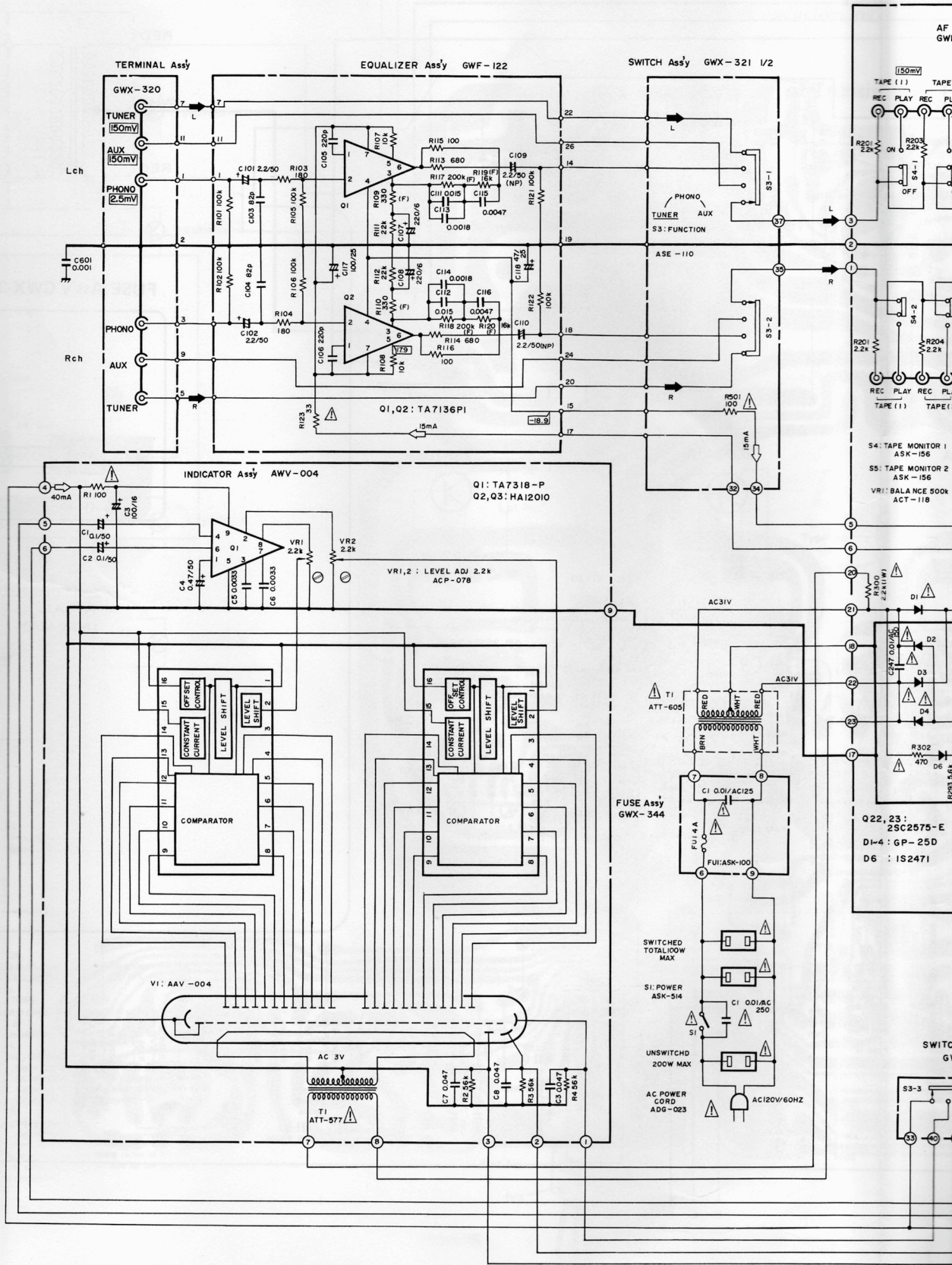
# 9.2 SCHEMATIC DIAGRAM

A

B

C

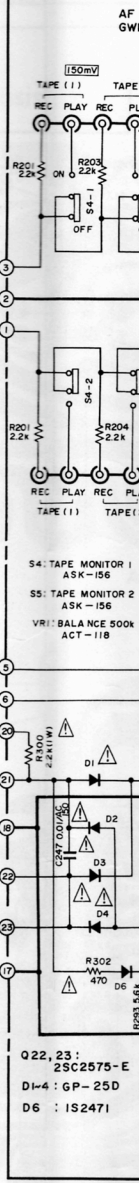
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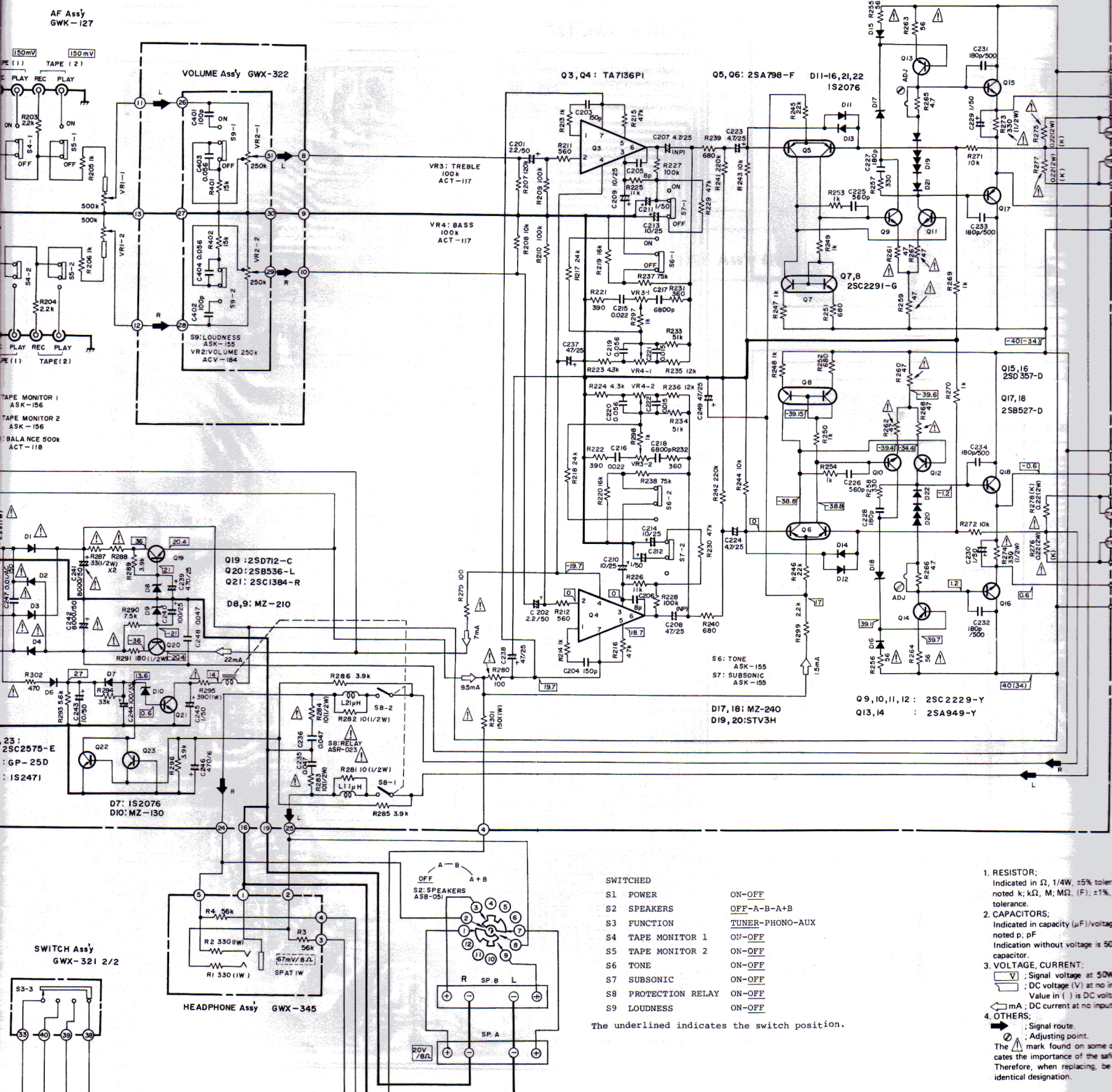


1

2

3





- SWITCHED**
- S1 POWER ON-OFF
  - S2 SPEAKERS OFF-A-B-A+B
  - S3 FUNCTION TUNER-PHONO-AUX
  - S4 TAPE MONITOR 1 ON-OFF
  - S5 TAPE MONITOR 2 ON-OFF
  - S6 TONE ON-OFF
  - S7 SUBSONIC ON-OFF
  - S8 PROTECTION RELAY ON-OFF
  - S9 LOUDNESS ON-OFF
- The underlined indicates the switch position.

1. RESISTOR:  
Indicated in  $\Omega$ , 1/4W,  $\pm 5\%$  tolerance  
noted k;  $k\Omega$ , M,  $M\Omega$ , (F);  $\pm 1\%$ , (G) tolerance.
2. CAPACITORS:  
Indicated in capacity ( $\mu F$ )/voltage/V  
noted p, pF  
Indication without voltage is 50V V capacitor.
3. VOLTAGE, CURRENT:  
[Symbol] V: Signal voltage at 50W +  
[Symbol] V: DC voltage (V) at no input  
Value in ( ) is DC voltage  
[Symbol] mA: DC current at no input signal
4. OTHERS:  
[Symbol]: Signal route.  
[Symbol]: Adjusting point.  
The  $\Delta$  mark found on some components indicates the importance of the safety. Therefore, when replacing, be sure of the original designation.

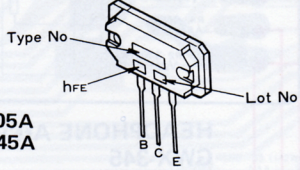
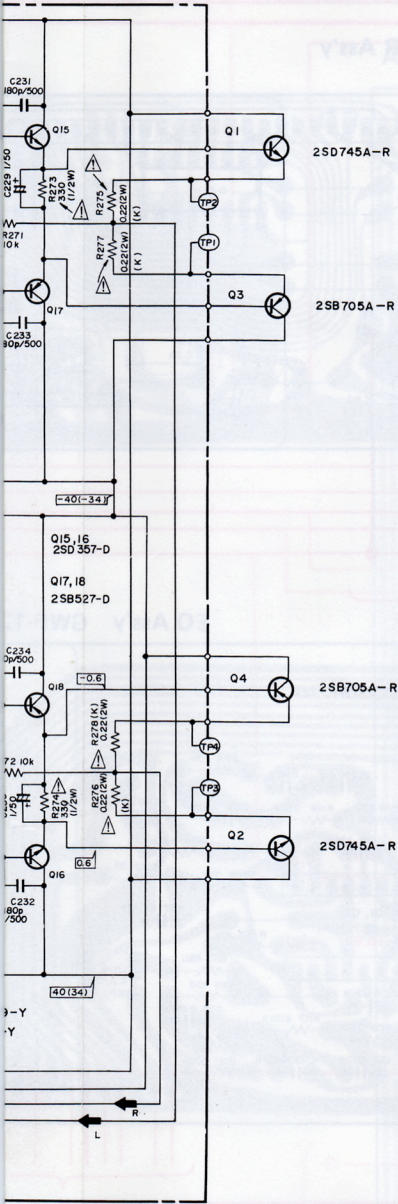
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.



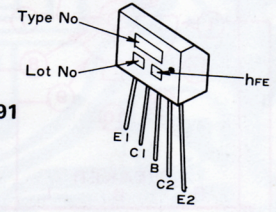
**NOTE:**  
 The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

**External Appearance of Transistors and ICs**

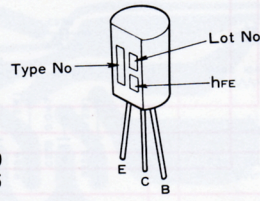
A



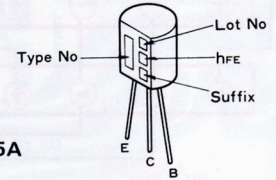
2SB705A  
 2SD745A



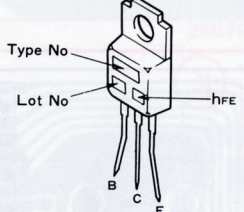
2SC2291



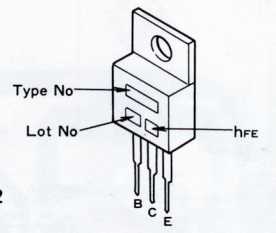
2SA949  
 2SA912  
 2SC2229  
 2SC1885



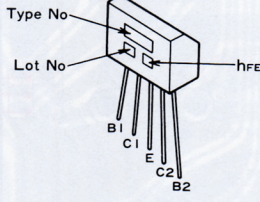
2SC945A



2SB527  
 2SD357

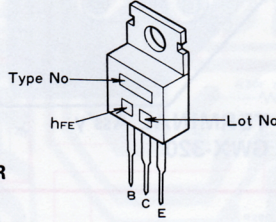


2SD712



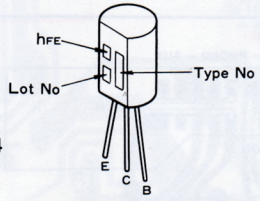
2SA798

TA7136P1



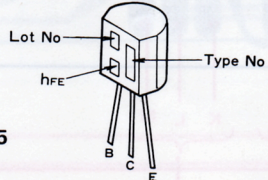
2SB536  
 2SD313R

TA7318P



2SC1384

HA12010



2SC2575

- 1. RESISTOR:**  
 Indicated in  $\Omega$ , 1/4W,  $\pm 5\%$  tolerance unless otherwise noted; k $\Omega$ , M $\Omega$ , M $\Omega$ , (F),  $\pm 1\%$ , (G),  $\pm 2\%$ , (K),  $\pm 10\%$  tolerance.
- 2. CAPACITORS:**  
 Indicated in capacity ( $\mu$ F)/voltage(V) unless otherwise noted; p, pF  
 Indication without voltage is 50V except electrolytic capacitor.
- 3. VOLTAGE, CURRENT:**  
 : Signal voltage at 50W + 50W 8 $\Omega$  output  
 : DC voltage (V) at no input signal  
 Value in ( ) is DC voltage at rated power.  
 : DC current at no input signal
- 4. OTHERS:**  
 : Signal route.  
 : Adjusting point.  
 The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

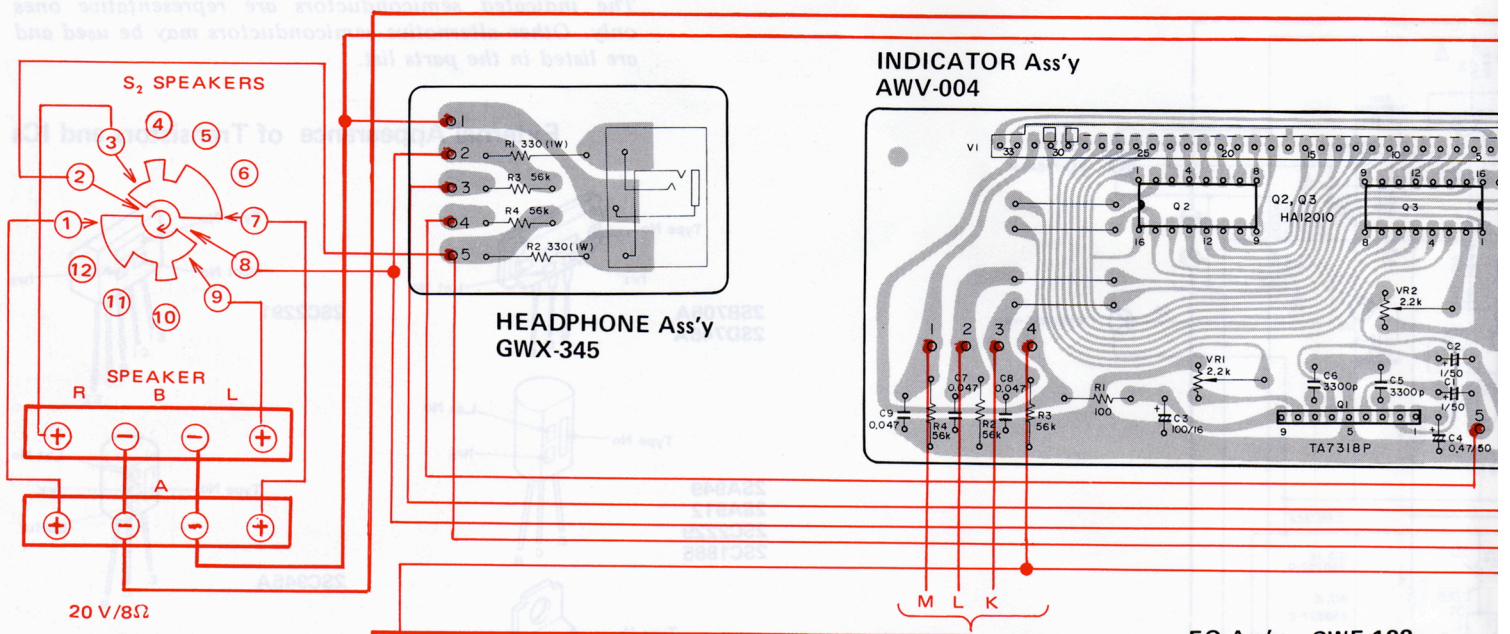
B

C

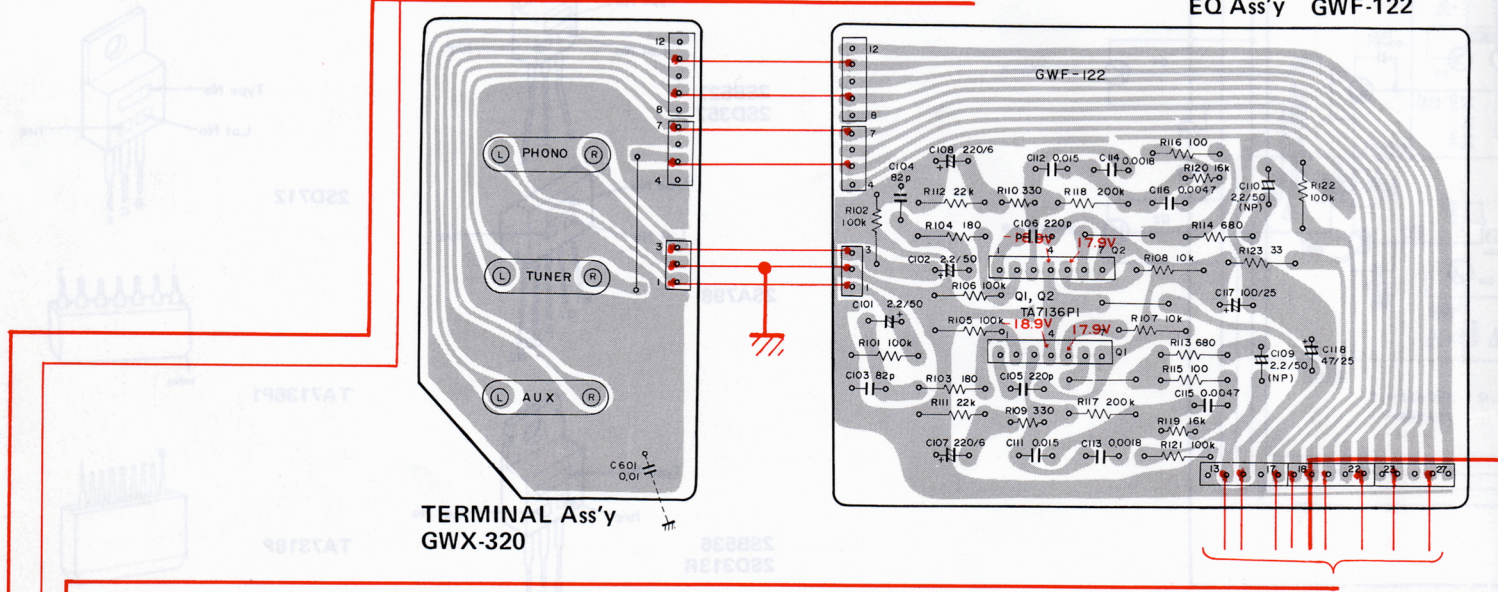
D

### 9.3 P.C. BOARD, CONNECTION DIAGRAM

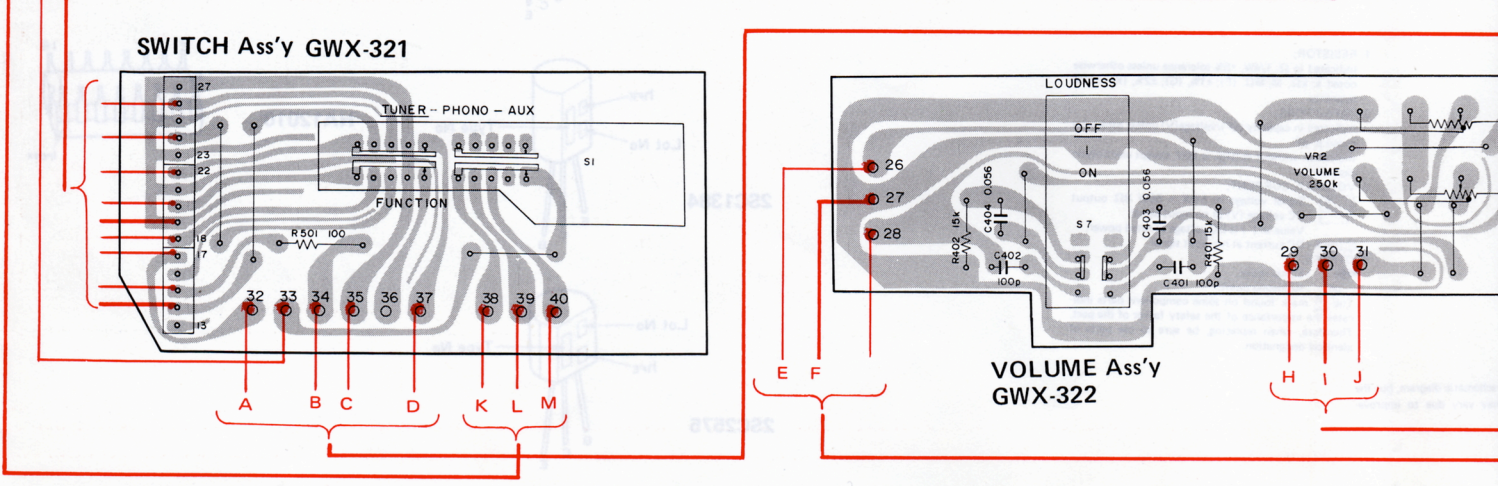
A



B



C



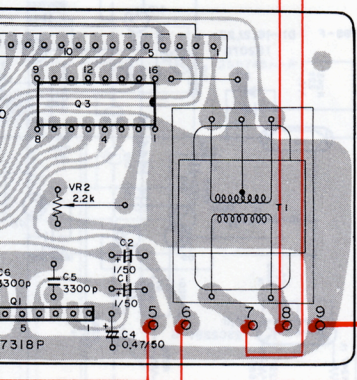
D

1

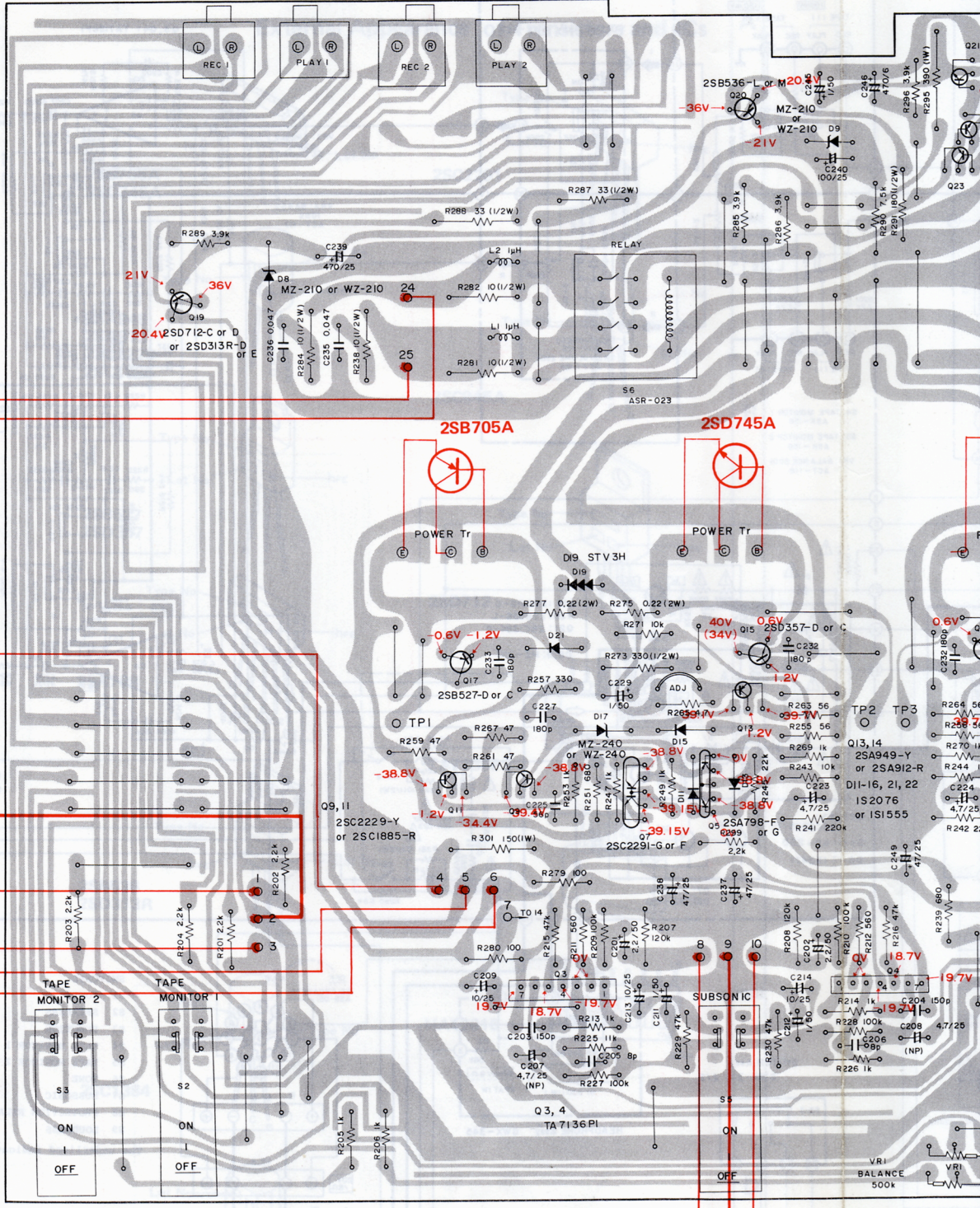
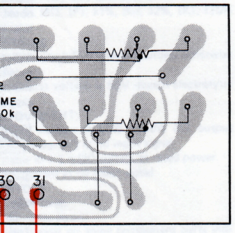
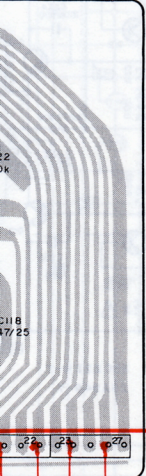
2

3

### AF Ass'y GWK-127

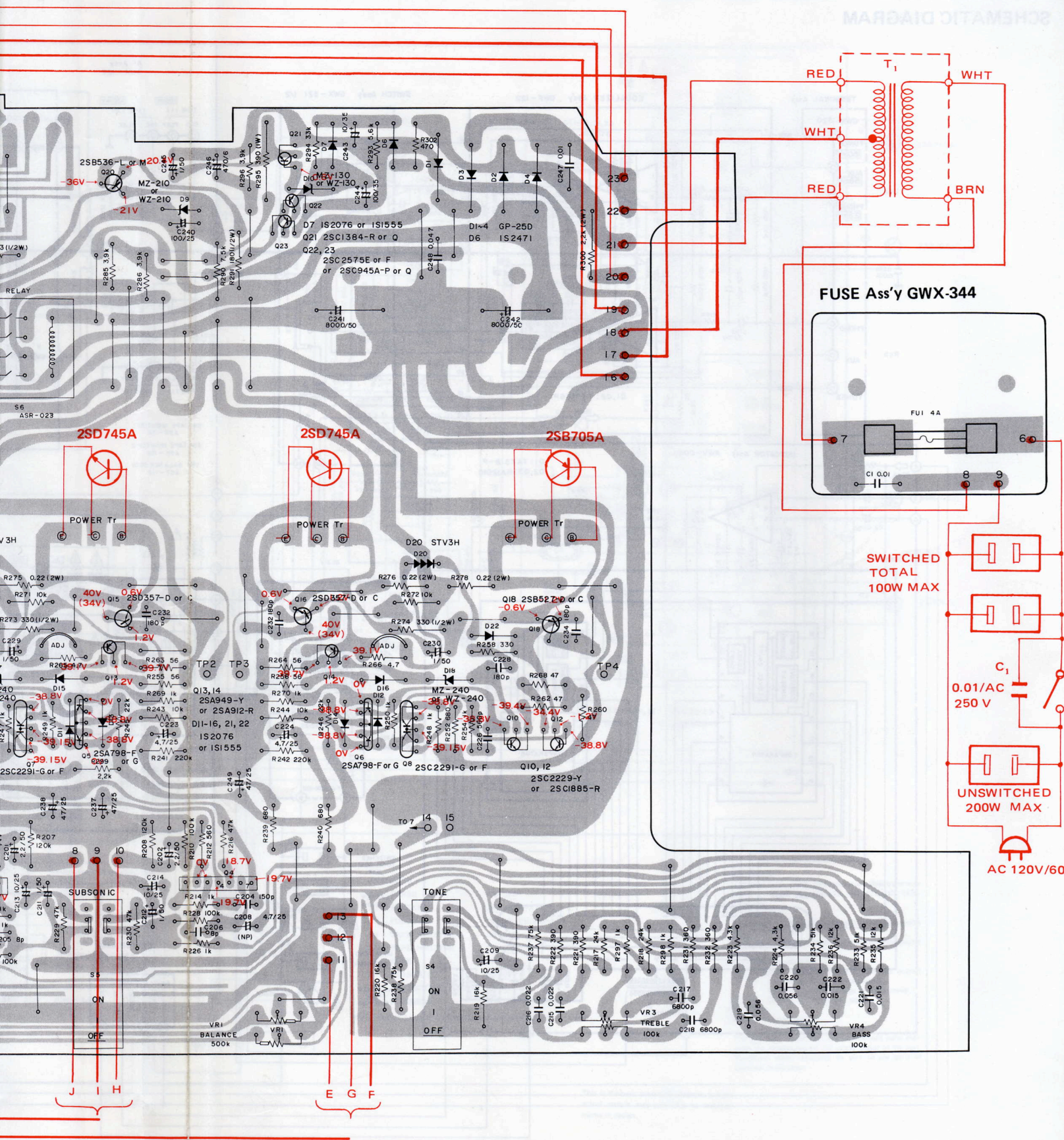


### WF-122



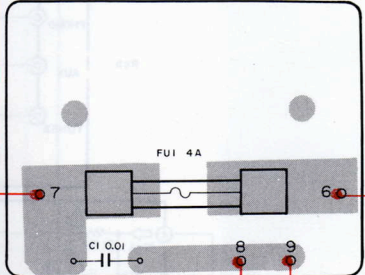
C  
D  
B  
A

J  
I  
H

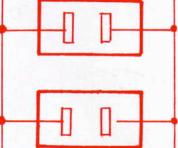


SCHEMATIC DIAGRAM

FUSE Ass'y GWX-344



SWITCHED TOTAL 100W MAX



UNSWITCHED 200W MAX



AC 120V/60H

## 9.4 PARTS LIST OF P.C. BOARD ASSEMBLIES

## EQ Assembly (GWF-122)

## CAPACITORS

Part No.	Symbol & Description
CEANL 2R2M 50	C101, C102
CCDSL 820K 50	C103, C104
CCDSL 221K 50	C105, C106
CEA 221P 6	C107, C108
CEANLNP 2R2M 50 (ACH-323)	C109, C110
CQMA 153J 50	C111, C112
CQMA 182J 50	C113, C114
CQMA 472J 50	C115, C116
CEA 101P 25	C117
CEA 470P 25	C118

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

## RESISTORS

Part No.	Symbol & Description
RD%PM □□□ J	R101–R108, R111–R116, R121, R122
RN%SQ □□□□ F	R109, R110, R119, R120
RN%PT □□□□ F	R117, R118
△ RD%PMF □□□ J	R123

## SEMICONDUCTORS

Part No.	Symbol & Description
TA7136P1	Q1, Q2

## OTHER

Part No.	Symbol & Description
ABA-048	Screw 3x6

## AF Assembly (GWK-127)

## CAPACITORS

Part No.	Symbol & Description
CEANL 2R2M 50	C201, C202
ACH-318	C207, C208
CEANL 4R7M 25	C223, C224
CEANL 010M 50	C211, C212
CEA 010P 50	C229, C230, C245
CEA 100P 25	C209, C210, C213, C214
CEA 100P 50	C243
CEA 470P 25	C237, C238, C249
CEA 101P 35	C244
CEA 101P 25	C240
CEA 471P 6	C246
CEA 471P 25	C239
CQMA 153J 50	C221, C222

Part No.	Symbol & Description
CQMA 223J 50	C215, C216
CQMA 563J 50	C219, C220
CQMA 682J 50	C217, C218
CQMA 473K 50	C235, C236
CCDSL 181K 500	C231–C234
CCDSL 080F 50	C205, C206
CCDSL 151K 50	C203, C204
CCDSL 181K 50	C227, C228
CKDYB 561K 50	C225, C226
CKDYF 473Z 50	C248
△ ACH-082	C241, C242
△ ACG-004	C247

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

## RESISTORS

Part No.	Symbol & Description
RD%PM □□□ J	R201–R254, R257, R258, R265, R266, R269–R272
RD%PM □□□ J	R285, R286, R289, R290, R293, R294, R296–R299
△ RD%PMF □□□ J	R255, R256, R259–R264, R267, R268, R279, R280, R302
△ RD%PSF □□□ J	R273, R274, R281–R284, R287, R288, R291
△ ACN-039	R275–R278
△ RS1P □□□ J	R295, R301
RS2P □□□ J	R300
ACT-118	VR1 Variable (BALANCE)
ACT-117	VR3 Variable (TREBLE)
ACT-117	VR4 Variable (BASS)

## SEMICONDUCTORS

Part No.	Symbol & Description
TA7136P1	Q3, Q4
2SA798	Q5, Q6
2SC2291	Q7, Q8
2SC2229 (2SC1885)	Q9–Q12
2SA949 (2SA912)	Q13, Q14
2SD357	Q15, Q16
2SB527	Q17, Q18
2SD712 (2SD313R)	Q19
2SB536	Q20
2SC1384	Q21
2SC2575 (2SC945A)	Q22, Q23
△ GP-25D	D1–D4
1S2471	D6

Part No.	Symbol & Description
1S2076 (1S1555)	D7, D11-D16, D21, D22
MZ-210 (WZ-210)	D8, D9
MZ-130 (WZ-130)	D10
MZ-240 (WZ-240)	D17, D18
STV3H-Y	D19, D20

### SWITCHES

Part No.	Symbol & Description
ASK-156	S2 Lever (TAPE MONITOR 1)
ASK-156	S3 Lever (TAPE MONITOR 2)
ASK-155	S4 Lever (TONE)
ASK-155	S5 Lever (SUBSONIC)
ASR-023	S6 Relay

### OTHER

Part No.	Symbol & Description
AKB-063	Terminal (TAPE)
ABA-139	Screw 3x6

### Indicator Assembly (AWV-004)

#### CAPACITORS

Part No.	Symbol & Description
CEANL 0R1M 50	C1, C2
CEA 101P 16	C3
CEA R47P 50	C4
CQMA 332K 50	C5, C6
CKDYF 473Z 50	C7-C9

*Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

#### RESISTORS

Part No.	Symbol & Description
RD $\frac{1}{4}$ PMF $\square\square\square$ J	R1
RD $\frac{1}{4}$ PM $\square\square\square$ J	R2-R4
ACP-078	VR1, VR2

#### SEMICONDUCTORS

Part No.	Symbol & Description
TA7318P-A	Q1
HA12010	Q2, Q3

#### OTHERS

Part No.	Symbol & Description
AAV-004	V1 Fluorescent indicator tube
$\Delta$ ATT-577	T1 Heater transformer

### Volume Assembly (GWX-322)

#### CAPACITORS

Part No.	Symbol & Description
CQMA 563K 50	C403, C404
CCDSL 101K 50	C401, C402

#### OTHERS

Part No.	Symbol & Description
ASK-155	S7 Lever switch (LOUDNESS)
ACV-184	VR2 Variable (VOLUME)
RD $\frac{1}{4}$ PM 153J	R401, R402

### Switch Assembly (GWX-321)

Part No.	Symbol & Description
ASE-110 (ASE-101)	S1 Slide rotary switch (FUNCTION)
$\Delta$ RD $\frac{1}{4}$ PSF 101J	R501

### Terminal Assembly (GWX-320)

Part No.	Symbol & Description
AKB-055	Terminal (INPUT)
CKDYB 103K 50	C601

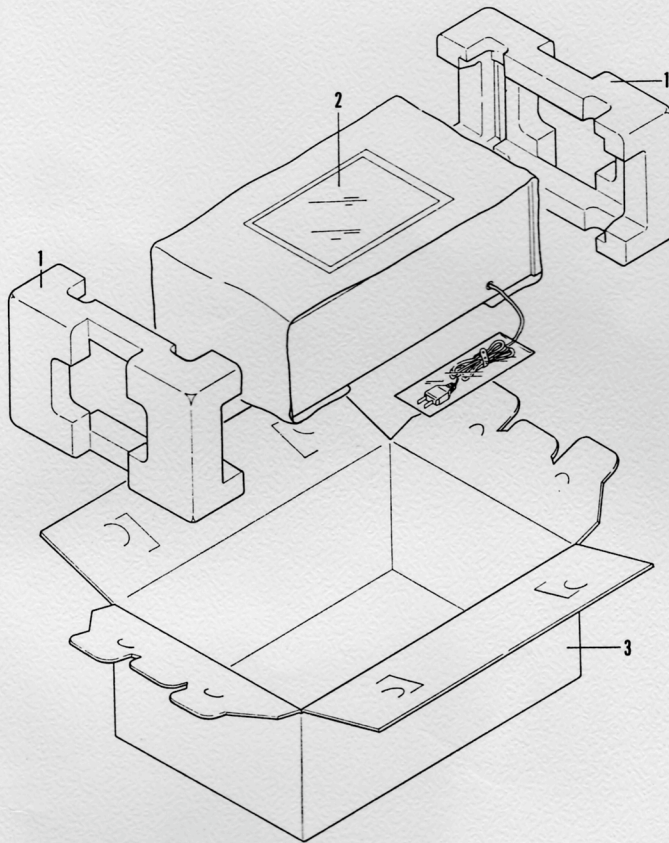
### Fuse Assembly (GWX-344)

Part No.	Symbol & Description
$\Delta$ ACG-017	C1 Ceramic capacitor

### Headphone Assembly (GWX-345)

Part No.	Symbol & Description
RS1P $\square\square\square$ J	R1, R2
RD $\frac{1}{4}$ PM $\square\square\square$ J	R3, R4
AKN-023	Phone jack (PHONES)

# 10. PACKING



Key No.	Part No.	Description
1.	AHA-188	Side pad
2.	ARB-324	Operating instructions
3.	AHD-691	Packing case

# 11. SUPPLEMENTS FOR MODEL SA-608/KU.

Model SA-608/KU is the same as SA-6800/KU with exception of description in this supplements.

## Contrast of Miscellaneous Parts

Symbol	Description	Part No.	
		SA-608/KU	SA-6800/KU
	Front panel assembly	ANB-758	ANB-735
	Bonnet cover	ANE-250	.....
	Top cover	.....	AMS-023
	Side cover (L)	.....	AMS-024
	Side cover (R)	.....	AMS-025
	Packing case	AHD-707	AHD-691
	Side pad	AHA-189	AHA-188
	Operating instructions	ARB-333	ARB-324

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**PIONEER ELECTRONIC (EUROPE) N.V.** Luithagen-Haven 9, 2030 Antwerp, Belgium  
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia