

**Stereo Amplifier
SA-410**

**OPERATING INSTRUCTIONS
HE, HB, S, YP**

IMPORTANT

*To prevent electric shock, do not remove cover. No user serviceable parts inside, refer servicing to qualified service personnel.
Always disconnect all the equipment from the mains supply when disconnecting the signal leads. The power cord should be connected last, make sure that the power switch is off.
Unplug the set from the wall socket when it is not to be used for an extended period of time.*

FOR USE IN UNITED KINGDOM AND AUSTRALIA

CAUTION 240V: Mains supply voltage is factory adjusted at 240V.

FOR USE IN UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following cord:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Amplifier Section

Continuous Power Output of 20 watts* per channel, min., at 8 ohms from 30 Hertz to 20,000 Hertz with no more than 0.1% total harmonic distortion.

Continuous Power Output at 1kHz (both channel driven)

T.H.D. 0.1%, 8 ohms 21 watts per channel
Total Harmonic Distortion (30Hertz to 20,000Hertz, 8 ohms, from AUX)

10 watts per channel power output
. No more than 0.05%
Intermodulation Distortion (50Hertz : 7,000Hertz = 4:1, from AUX)

continuous rated power output
. No more than 0.2%
10 watts per channel power output
. No more than 0.08%

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

Input (Sensitivity/Impedance)
PHONO 2.5mV/50 kilohms
TUNER 150mV/50 kilohms
AUX 150mV/50 kilohms
TAPE PLAY 150mV/50 kilohms

Phono Overload Level (T.H.D.: 0.1%, 1,000Hertz)
PHONO 150mV

Output (level)
TAPE REC 150mV
Speaker A, B, OFF

Frequency Response
PHONO (RIAA Equalization)
. 30Hz to 15kHz±0.5dB
TUNER, AUX, TAPE PLAY
. 10Hz to 60kHz±3dB

Tone Control
BASS ±9.5dB (100Hz)
TREBLE ±9.5dB (10kHz)

Loudness Contour (Volume control set at -40dB position +8dB (100Hz)

Hum and Noise (IHF, short-circuited, A network)
PHONO 72dB
TUNER AUX, TAPE PLAY 97dB

Hum and Noise (DIN continuous power/50mW)
PHONO 67dB/61dB
TUNER, AUX, TAPE PLAY 83dB/63dB

Miscellaneous

Power Requirements
HE model 220V, 50/60Hz
HB, YP models 240V, 50/60Hz
S model 110/120/220/240V (switchable), 50/60Hz

Power Consumption
HE, HB models 140W
S, YP models 55W

Dimensions 420(W) x 94(H) x 265(D) mm
16-9/16(W) x 3-11/16(H) x 10-7/16(D) in
Weight (without package) 4.7kg (10 lb 6 oz)

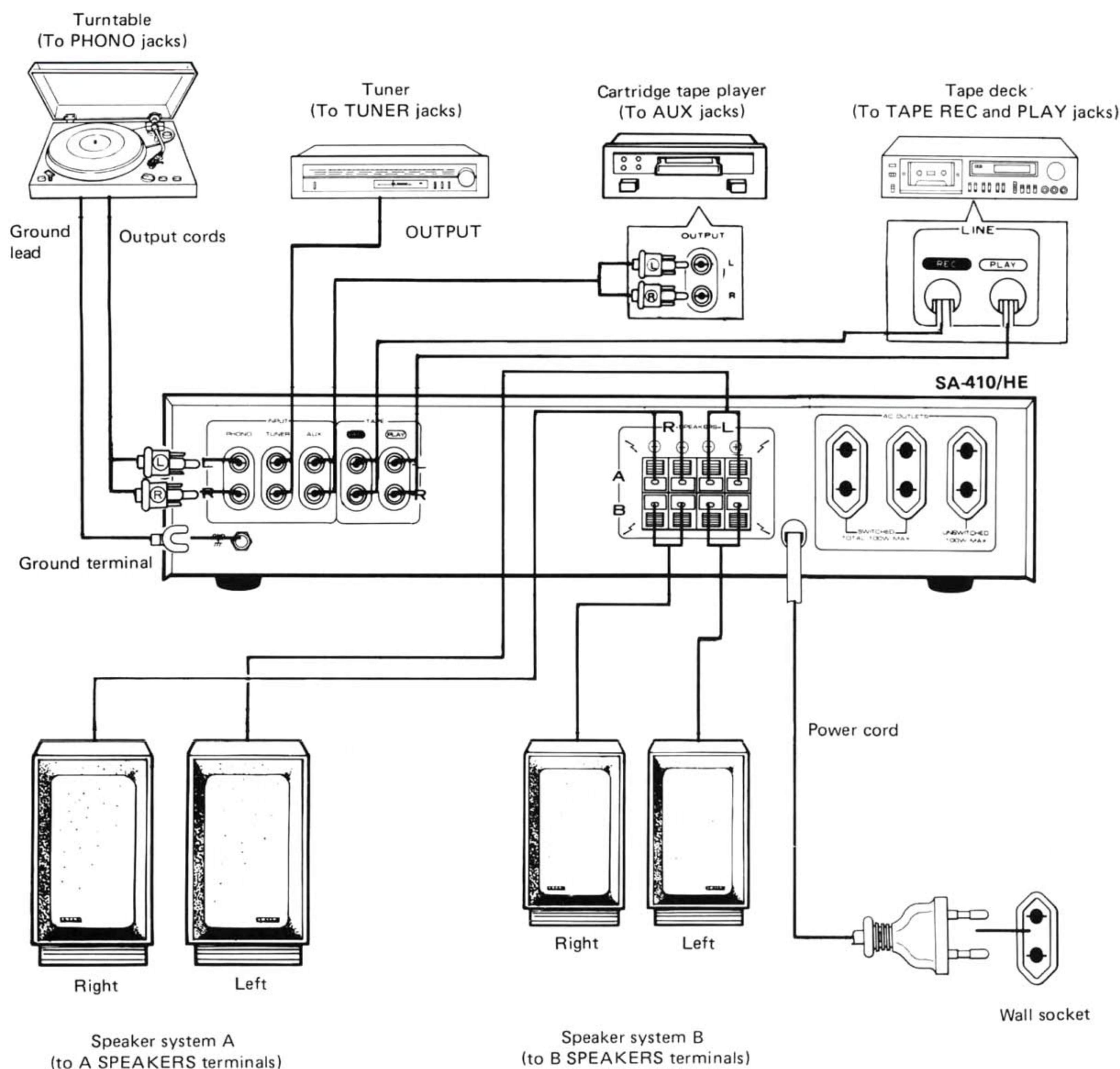
Furnished Parts

Fuse (S model only) 1
Operating instructions 1

*NOTE:
Specifications and the design subject to possible modifications without notice due to improvements.*

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

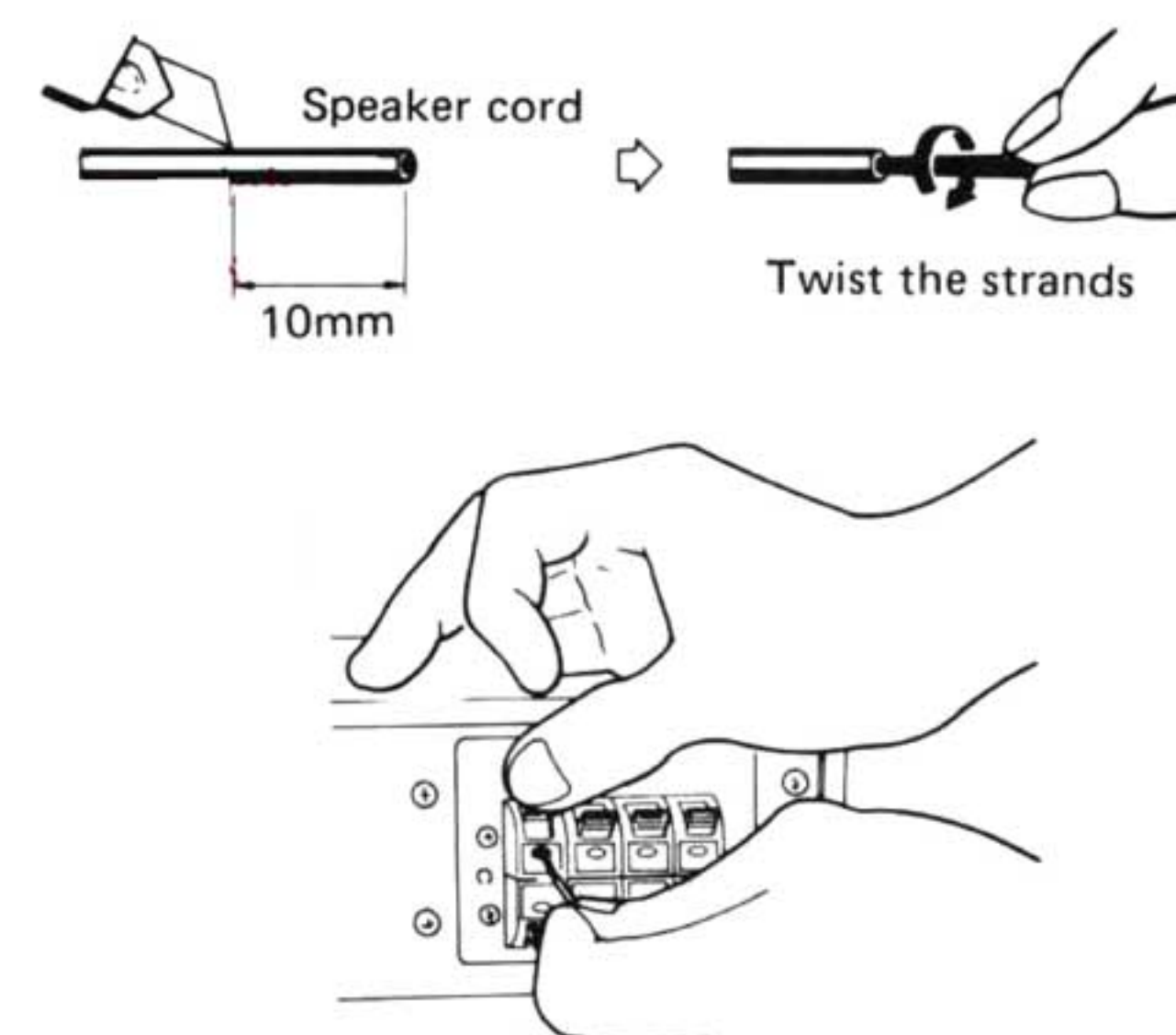
CONNECTION DIAGRAM



Processing and connecting the speaker cords

1. Cut off the covering of the speaker cords as shown in figure.
2. If the strands at the tip of the cord are pointing in all directions, twist them with your thumb and forefinger. Otherwise some of the strands may come into contact with other terminals and cords, and cause a short.
3. Push the minus (black) lever of the speaker terminals (black) with your finger and insert the minus speaker lead into the hole. The lead is locked into position when the lever is released. Check that the lead is connected firmly.
4. In the same way, connect the plus speaker lead (red) to the plus terminal (red).
5. Check that the core wires of the speaker cords are not projecting from the terminals. If they should project and come into contact, this will give rise to a short-circuit.

Speaker lead wire preparation and connection



TURNTABLE CONNECTIONS

Connect the output cords of a turntable to the PHONO input jacks. Be sure to connect left (L) channel and right (R) channel correctly. Connect the ground lead of the turntable to the GND terminal on the amplifier.

AUX JACK CONNECTIONS

These jacks can be connected to the OUTPUT (PLAY) jacks on a TV tuner, cartridge tape player or tape deck. Use connecting cords with pin plugs to connect the OUTPUT jacks on the component with the AUX jacks. Connect the left channel and right channel properly.

TUNER CONNECTIONS

Connect the output jacks of a stereo tuner to the TUNER input jacks with the connecting cords.

TAPE DECK CONNECTIONS

Connections for recording

Connect the recording input jacks (LINE INPUT) on the tape deck to the TAPE **REC** jacks on the amplifier.

Connections for playback

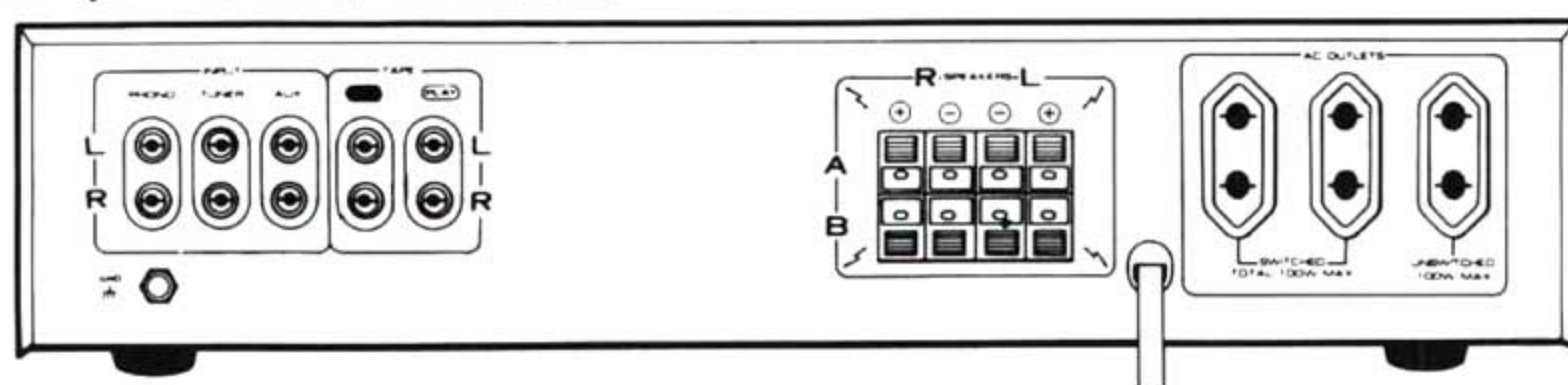
Connect the playback output jacks (LINE OUTPUT) on the tape deck to the TAPE **PLAY** jacks on the amplifier.

Cautions when connecting the speakers

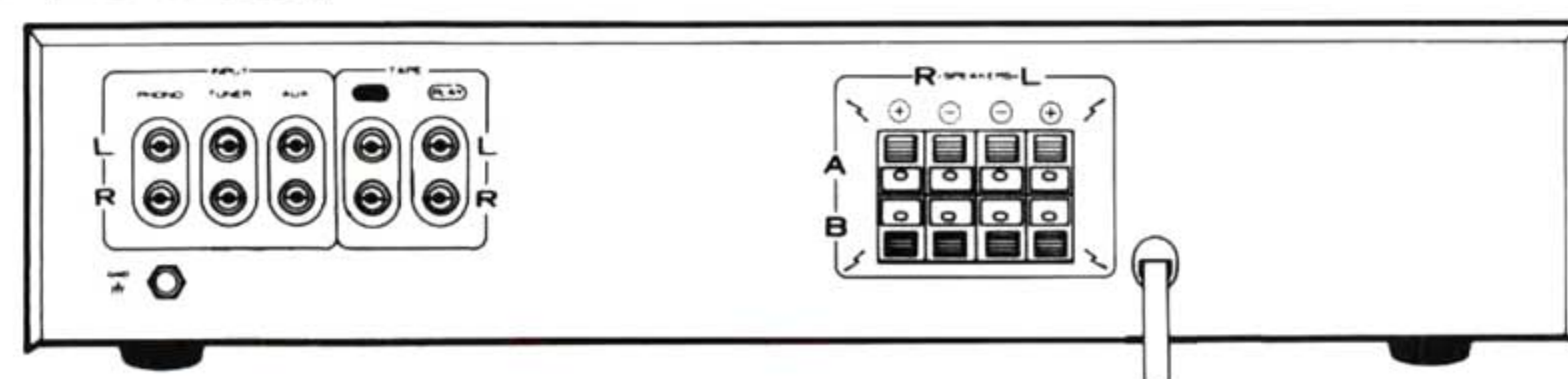
1. Make sure that the polarities of the SPEAKERS terminals and the input jacks on the speaker system are aligned: plus to plus and minus to minus.
2. Use speakers with a nominal impedance ranging from 6 ohms to 16 ohms.
3. Never use the speakers with the speaker output terminals shorted (minus and plus jacks connected) since this may damage the power transistors in the amplifier.

REAR PANEL DESCRIPTION

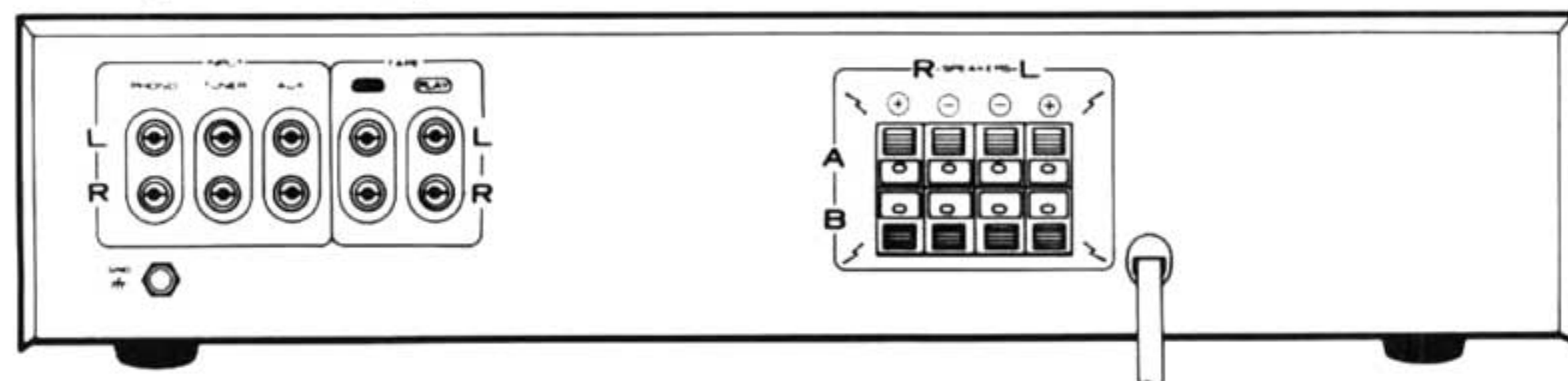
For mainland Europe model (HE model)



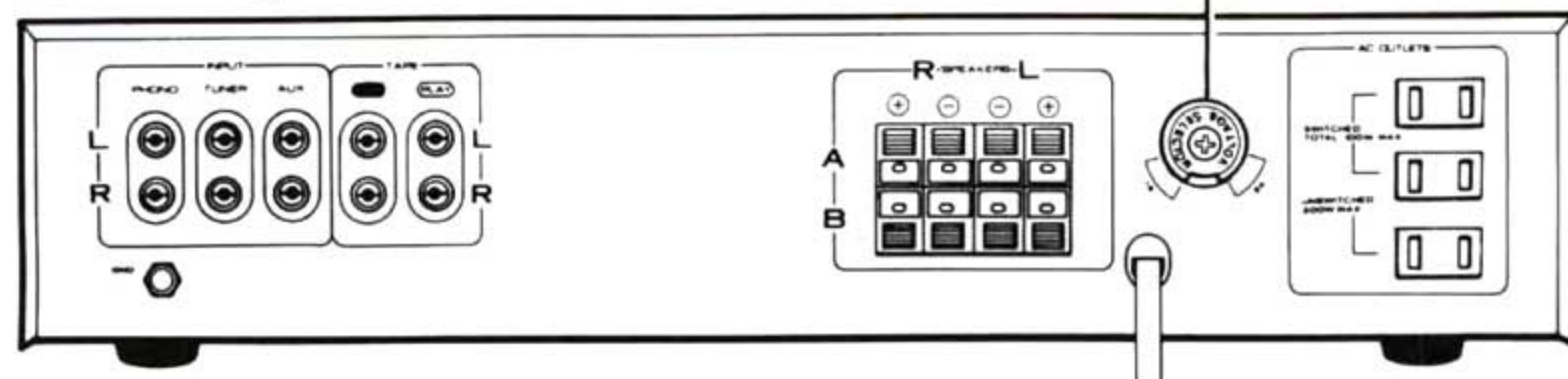
For U.K. model (HB model)



For Australia model (YP model)



For destinations excluding above (S model)



AC outlets (HE, HB and S models)

Insert the power plug on the stereo components (turntable, tuner, etc.) into these outlets.

SWITCHED: The power supplied through these outlets is coupled to the operation of the amplifier's power switch.

UNSWITCHED: The power is always supplied through this outlet regardless of the position of the power switch.

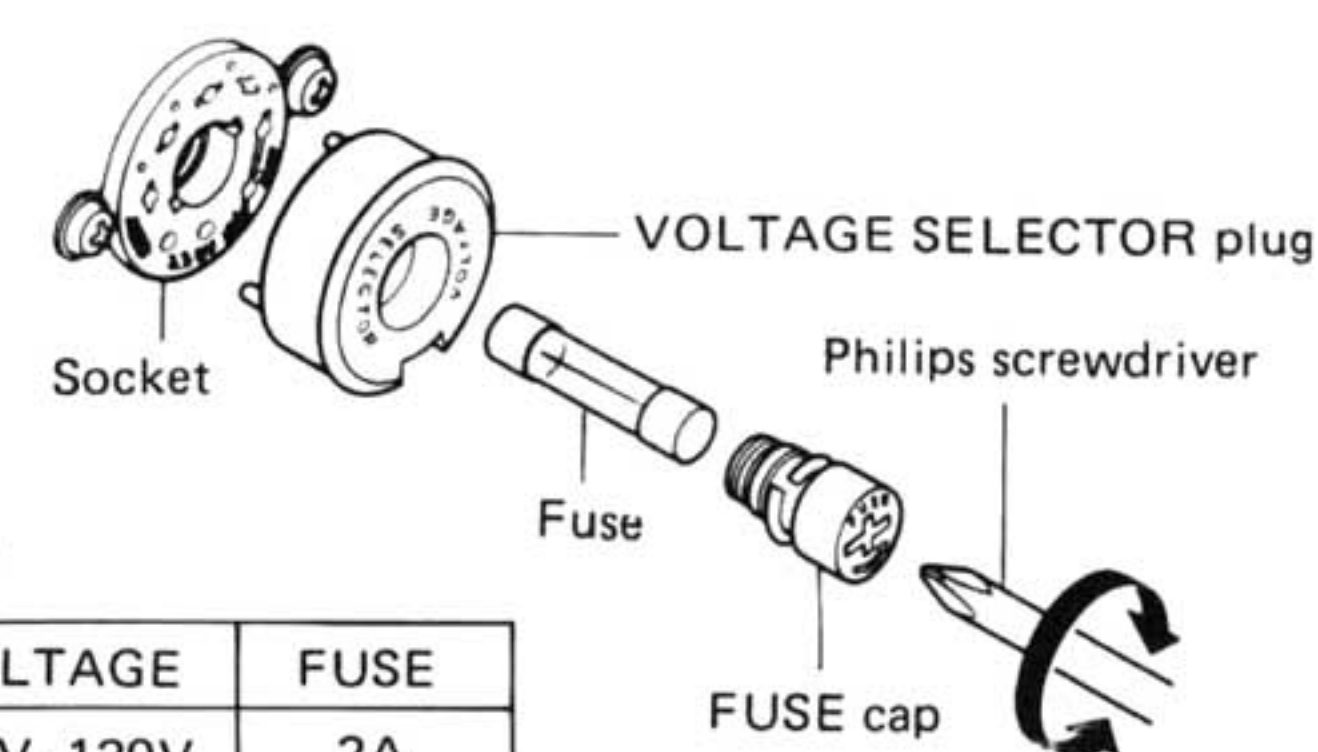
NOTE:

NEVER connect the power plug of the electric appliances whose power consumption exceeds the power capacity of the AC OUTLETS indication.

LINE VOLTAGE SELECTOR SWITCH

How to Adjust the Line Voltage Selector Switch

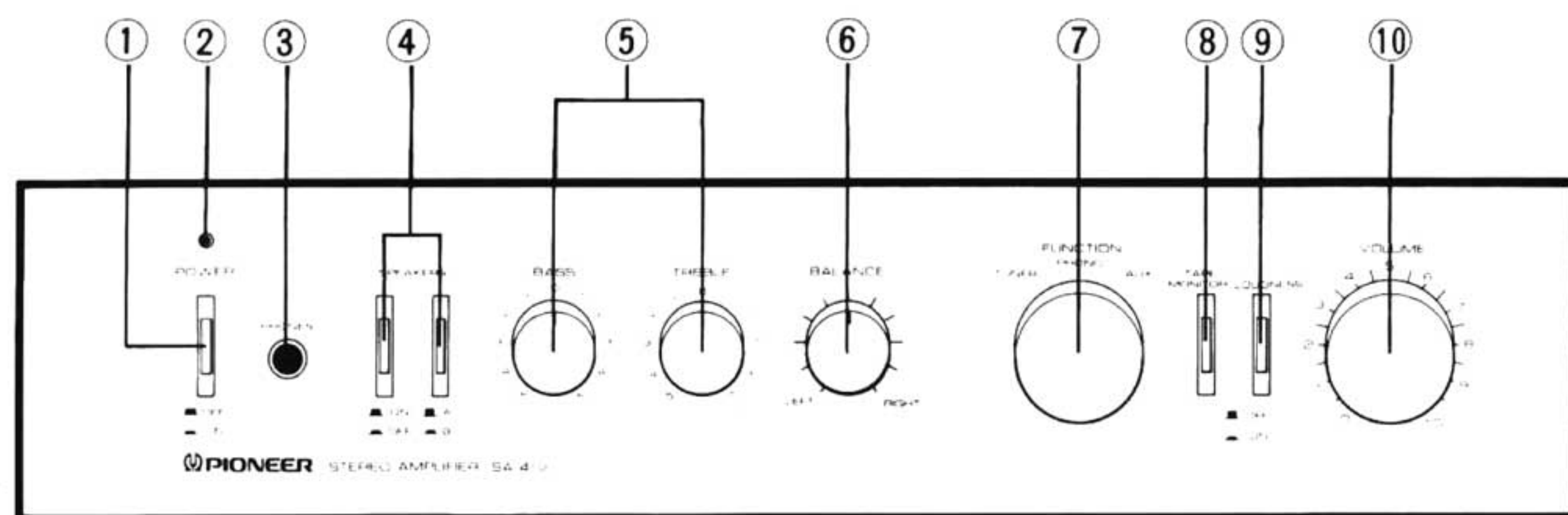
1. Disconnect the power cord.
2. Unscrew the fuse cap with a Phillips screwdriver, then take out the fuse and plug.
3. Re-install the plug with its cutaway section exposing the correct voltage indication as shown in the figure below.
4. Refer to the table and install a replacement fuse (provided as an accessory).
5. Insert the fuse in the fuse cap, then fit the cap to the plug and tighten.



Table

VOLTAGE	FUSE
110V, 120V	2A
220V, 240V	1A

FRONT PANEL FACILITIES



- The (■) and (●) for the pushbutton switches on the panel indicate the depressed and released position, respectively.

① POWER SWITCH

Depress this switch to supply power to the amplifier.

② POWER INDICATOR

This comes on as soon as the amplifier's power switch is set to ON to indicate that power is being supplied.

③ HEADPHONE JACK

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

NOTE:

Set the speaker switch on the left to OFF when listening only with headphones.

④ SPEAKER SWITCHES

These two switches are used to switch the output signals of the speaker terminals. The switch on the left switches the output signals on and off. When listening to the sound through the speakers, set this switch to the released position ON (■). No sound will be heard through the speakers when this switch is set to the depressed position OFF (●).

The switch on the right selects the A and B sets of speaker terminals. Set to the released position A (■) when listening to the sound from the speaker systems connected to the A speaker terminals, and to the depressed position B (●) when listening from the speaker systems connected to the B speaker terminals.

⑤ BASS AND TREBLE CONTROLS

Use these controls to adjust the bass and the treble. If you turn the bass control to the right from its center position, you will be able to emphasize the sound in the low-frequency range. Conversely, turning this control to the left from the center position, you will attenuate the sound in the low-frequency range. You can use the treble control to adjust the sound in the high-frequency range.

⑥ 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.

⑦ FUNCTION SELECTOR

Use this selector to select the program source.

TUNER: Set here when listening to broadcasts on a tuner connected to the TUNER jacks.

PHONO: Set here when playing records on a turntable connected to the PHONO jacks.

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

⑧ TAPE MONITOR SWITCH

Depress this switch when monitoring a tape performance on a tape deck which you have connected to the TAPE jacks or when monitoring a recording.

NOTE:

Set the switch to the OFF position when listening to records or broadcasts, etc. selected by the function selector.

⑨ LOUDNESS SWITCH

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

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

⑩ 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".

OPERATIONS

PRIOR TO SWITCHING POWER ON

Before switching the power on, set the various controls as follows:

- Set the speaker switch ④ on the left to ON (■) and select the switch on the right.
- Set the tone controls ⑤ to the center position.
- Set the balance control ⑥ to the center position.
- Release the tape monitor switch ⑧ (OFF position).
- Release the loudness switch ⑨ (OFF position).
- Set the volume control to 0.

PLAYING RECORDS

1. Set the function selector to PHONO.
2. Operate the turntable to play the record.
3. Adjust the volume with the volume control.
4. Set the bass and treble controls for the preferred bass and treble levels.

Precautions when playing records

- Lower the stylus gently on to the surface of the record. It is a good idea to turn the volume down when lowering the stylus onto the record.
- Do not cause the turntable to vibrate while a record is being played since this will cause the stylus to jump and scratch the record. Do not turn off the power if the stylus is still tracing grooves on the record.

LISTENING TO THE BROADCAST

1. Set the function selector to TUNER.
2. Operate the tuner and tune in to the desired station.
3. Adjust the volume with the volume control.
4. Set the bass and treble controls for the preferred bass and treble levels.

USING THE AUX JACKS

1. Set the function selector to AUX.
2. Operate the audio component which you have connected to the AUX jacks.
3. Adjust the volume with the volume control.
4. Set the bass and treble controls for the preferred bass and treble levels.

TAPE PLAYBACK

1. Depress the tape monitor switch.
2. Operate the tape deck controls for playback.
3. Adjust the volume with the volume control.
4. Set the bass and treble controls for the preferred bass and treble levels.

TAPE RECORDING

1. Set the function selector to the program source to be recorded.
2. Play the selected program source.
3. Set recording level by means of the controls on the tape deck.
4. Operate the tape deck controls and start recording.

NOTE:

The volume control, tone controls, balance control, and loudness switch have no effect on the signals which are fed out from the REC jacks on the stereo amplifier.

Tape Monitoring

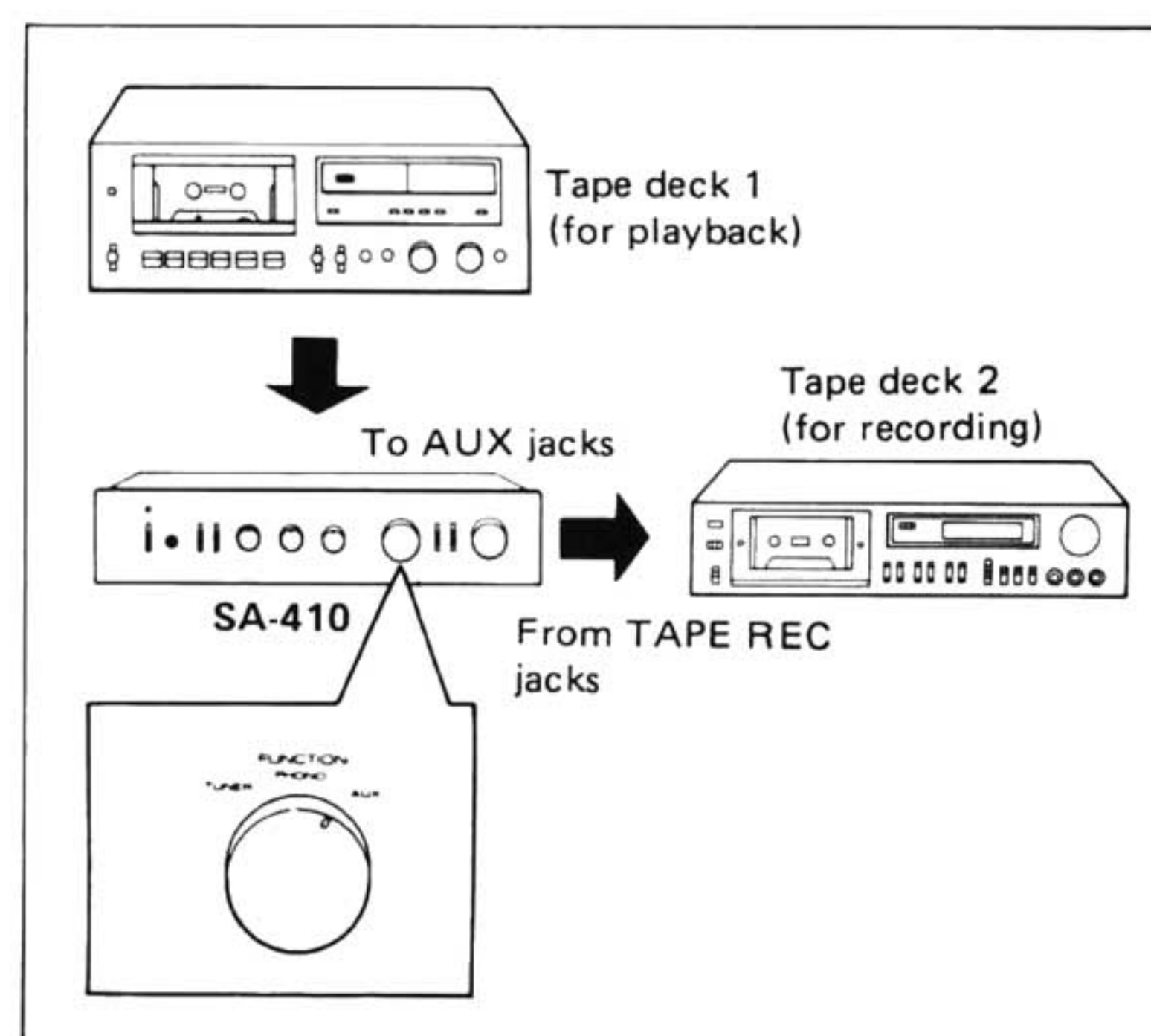
If a recording is being made on a 3-head tape deck, the recorded sound can be monitored through the speaker system if the tape monitor switch is at ON position. In this case, both recording and playback connections must be made.

NOTE:

If you have a 2-head open-reel or cassette deck, you will not be able to monitor the recorded sound even if you set the tape monitor switch to ON. However, you will be able to hear the sound at the playback end (program source).

You can use the AUX jacks to duplicate a pre-recorded tape (See the figure below)

1. Connect the tape deck for playback to the AUX jacks, and the tape deck for recording to the TAPE REC jacks.
2. Play back the recorded tape on tape deck connected to AUX jacks, and set the function selector to AUX.
3. Operate the controls on tape deck connected to TAPE jacks, and start recording.
4. Set the tape monitor switch to ON when you want to monitor the recorded sound.



The specifications of this model differ according to the shipment destination.

- For Australia (YP stamped on packing case); Power line voltage is 240 volts.
- For mainland Europe (HE stamped on packing case): Power line voltage is 220 volts. AC outlets are provided on the rear panel.
- For U.K. (HB stamped on packing case): Power line voltage is 240 volts.
- For destinations excluding above (S stamped on packing case): A 4-point (110V/120V/220V/240V) voltage selector switch and AC outlets are provided on the rear panel.

NOTE:

Models for the U.K. (HB) and mainland Europe (HE) have their power line voltages set in accordance with their destination before they are shipped from the factory. The voltage which has thus been set is indicated on the rear panel of the main unit.

Before switching on the power, make absolutely sure that the voltage tallies with the value used in your area. If it does not tally or if you move to another area with a different voltage (such from 220V to 240V or vice versa), get in touch with our nearest authorized Pioneer Service Center or Service Station or, alternatively, call for a qualified electrician to set the voltage properly.

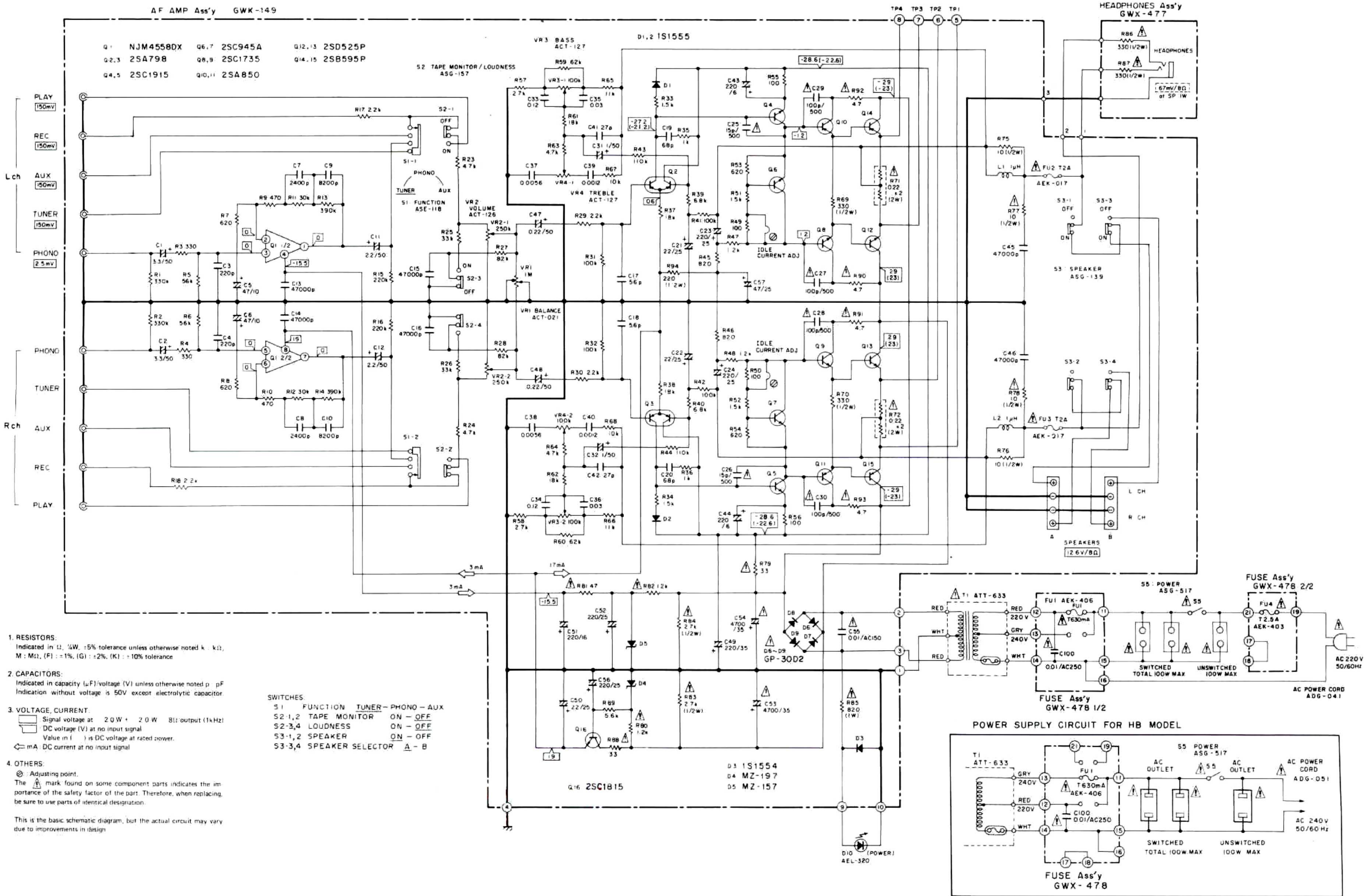
In case of S model, please confirm the setting of the line voltage selector switch on the rear panel. If it is not set properly, change the setting of it according to the REAR PANEL DESCRIPTION on next page.

TROUBLESHOOTING

Sometimes an operational fault can be mistaken for a malfunction or failure. Check the following points and see if the symptoms of the trouble are outlined below before you get in touch with the serviceman. If you cannot locate the symptoms, turn off the power and contact your nearest Pioneer Service Center, Service Station or authorized Pioneer dealer.

Symptom	Diagnosis check points	Remedy
No sound	● Does power indicator light on?	● Plug power cord securely into power outlet. ● Set power switch to ON.
	● Are speakers, tuner, tape deck and other components connected properly?	● Connect properly. (If all components are connected properly, check the components themselves).
	● Is function selector set to correspond to program source?	● Set so that the switch corresponds to the source.
	● Check tape monitor switch position.	● Set to OFF except for tape playback.
	● Check speaker switches.	● Select in accordance with the speaker terminals to which speakers are connected.
Occasional noise heard.	● Check volume control.	● Rotate volume control clockwise.
	● Are components connected properly?	● Connect so as to eliminate faulty contacts. (Noise may decrease when ground wire is connected.)
Howl caused when volume is raised.	● Any problem with connected components?	● Correct fault.
	● Turntable and speakers are too close to one another.	● Try changing the installation locations of the turntable and speakers.
	● Installation locations of turntable and speakers are not stable.	● Do not turn up the bass controls excessively.

SCHEMATIC DIAGRAM HE, HB models



- RESISTORS:**
Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k, kΩ, M, MΩ, (F) = ±1%, (G) = ±2%, (K) = ±10% tolerance
- CAPACITORS:**
Indicated in capacity (μF)/voltage (V) unless otherwise noted p, pF
Indication without voltage is 50V except electrolytic capacitor
- VOLTAGE, CURRENT:**
 - Signal voltage at 2.0W + 2.0W B1: output (1kHz)
 - DC voltage (V) at no input signal
 - Value in () is DC voltage at rated power.
 - ← mA DC current at no input signal
- OTHERS:**
 - ⊗: 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.

- SWITCHES:**
- S1 FUNCTION TUNER - PHONO - AUX
 - S2-1,2 TAPES MONITOR ON - OFF
 - S2-3,4 LOUDNESS ON - OFF
 - S3-1,2 SPEAKER ON - OFF
 - S3-3,4 SPEAKER SELECTOR A - B

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

SCHEMATIC DIAGRAM S, YP models

