STEREO AMPLIFIER

SA-710

OPERATING INSTRUCTIONS

KU



IMPORTANT NOTICE

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

PIONEER®

SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS – The operating instructions should be retained for future reference.

HEED WARNING – All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.

WATER AND MOISTURE – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION – The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING – The appliance should not be mounted to a wall or ceiling.

VENTILATION – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a.bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING – The precautions that should be taken so that the grounding of an appliance is not defeated.

POWER-CORD PROTECTION – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

CLEANING – The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES – An outdoor antenna should be located away from power lines.

NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE – The appliance should be serviced by Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped, or the enclosure damaged.

SERVICING – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be contact nearest Pioneer authorized service center.

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CONTENTS

Specifications 3
Stereo System Composition 4
Installation Precautions 4
Rear Panel Facilities 5
Connections 6
Front Panel Facilities 8
Operations 10
Tape Deck Operations 11
Troubleshooting 12

SPECIFICATIONS

Semiconductors

ICs 3
Transistors 34
Diodes 26

Amplifier Section

Continuous power output of 65watts* per channel, min., at 8ohms from 20Hertz to 20,000 Hertz with no more than 0.02% total harmonic distortion.

Total Harmonic Distortion (20 Hertz to 20,000 Hertz, 8 ohms, from AUX)
32.5 watts per channel power output
. . . . . No more than 0.015%
Intermodulation Distortion (50 Hertz : 7,000 Hertz = 4 : 1 8 ohms, from AUX)
continuous rated power output . . No more than 0.02%
32.5 watts per channel power output
. . . . No more than 0.015%
Damping Factor (20 Hertz to 20,000 Hertz, 8 ohms) . . 60
Input (Sensitivity/Impedance)
PHONO . . . . . 2.5mV/50 kilohms
TUNER . . . . . 150mV/50 kilohms
AUX . . . . . 150mV/50 kilohms
TAPE PLAY 1, 2 . . . . . 150mV/50 kilohms
Phono Overload Level (T.H.D. 0.01%, 1,000Hz)
PHONO 220mV
Output (Level)
TAPE REC 1, 2 . . . . . 150mV
Speaker . . . . . A, B, OFF
Frequency Response
PHONO (RIAA Equalization)
. . . . . 20Hz to 20,000Hz ±0.2dB
TUNER, AUX, TAPE PLAY 1, 2
. . . . . 10Hz to 100,000Hz $^{+0}_{-1}$ dB
Tone Control
BASS . . . . . ±10dB (100Hz)
TREBLE . . . . . ±10dB (10,000Hz)
Subsonic Filter . . . . . 15Hz (–6dB/oct)
Loudness Contour (Volume control set at –40dB position)
. . . . +6dB (100Hz), +3dB (10,000Hz)
Hum and Noise (IHF, short-circuited, A network)
PHONO 87dB
TUNER, AUX, TAPE PLAY 1, 2 . . . . . 108dB

Miscellaneous

Power Requirements . . . . . AC 120V, 60Hz
Power Consumption . . . . . 130W (UL)
Dimensions . . . . . 420(W) x 94(H) x 347(D) mm
16-9/16(W) x 3-11/16(H) x 13-11/16(D) in
Weight (without package) . . . . . 7.5kg (16 lb 9oz)

Furnished Parts

Operating Instructions 1

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

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

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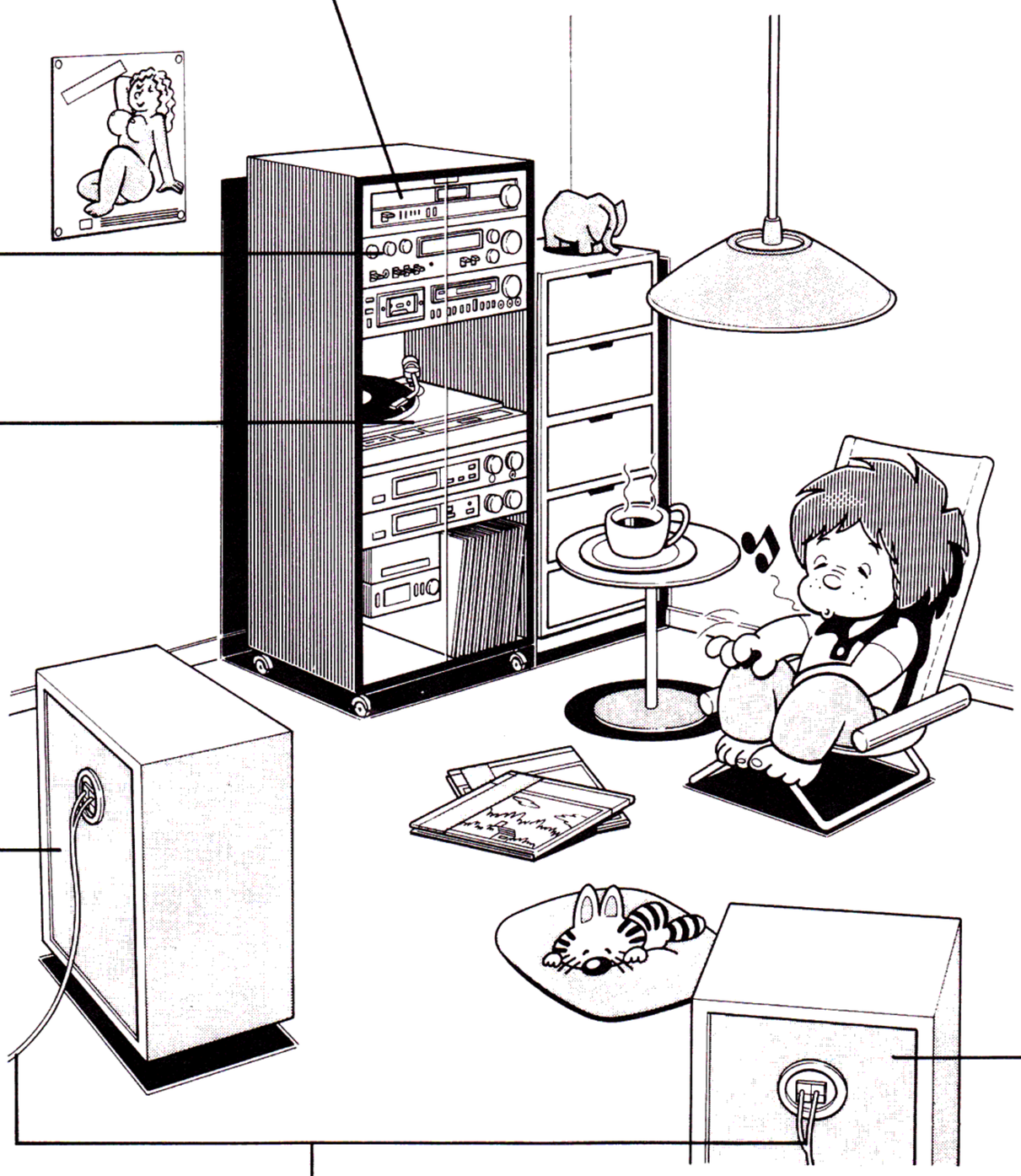
STEREO SYSTEM COMPOSITION



INSTALLATION PRECAUTIONS

In order to ensure long-term top performance, do not install the amplifier in locations such as the following:

Locations to be avoided	Detrimental effects
• In direct sunlight, near radiators or other sources of heat.	• Accumulated effects of internal and external heat can reduce thermal dissipation efficiency of the power amplifier and lead to component deterioration. In some cases heating may also prevent stable operation.
• Poorly ventilated, humid or dusty locations.	• Can cause faulty connection or corrosion of input and output terminals. Humidity and moisture in particular may reduce insulation performance and lead to current leakage or component overheating.
• On unstable supports that are not level or subject to vibration.	• May adversely affect precision circuit components. Weight can also pose a hazard in regions subject to seismic activity.
• Locations where alcohols, insect spray of flammable material is used or stored.	• In addition to the fire hazard, some materials may contribute to corrosion or mar the finish of equipment.

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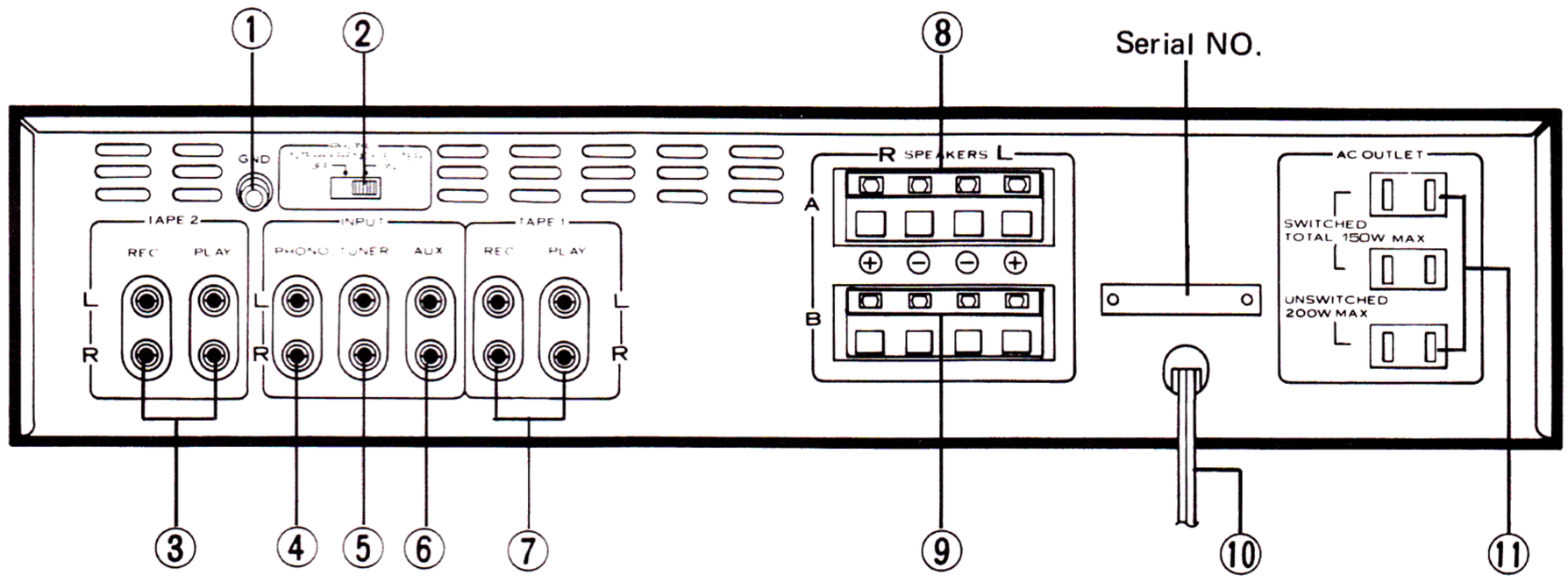
REAR PANEL FACILITIES



① GND TERMINAL

This is the ground terminal. Connect the ground wire of the turntable, etc. to this terminal.

② PHONO INTERFERENCE FILTER SWITCH

Set this switch to the ON position when the radio-frequency interference is adversely affecting the sound quality during record play. This action serves to reduce the amount of noise.

③ TAPE 2 JACKS

These are used to hook up a second tape deck.

④ PHONO JACKS

Connect the turntable output cords to these jacks.

⑤ TUNER JACKS

Connect the tuner cords to these jacks.

⑥ AUX JACKS

These are used to hook up a stereo TV tuner, cartridge tape player or other stereo component. They can also be connected to the playback output terminals on the tape deck.

⑦ TAPE 1 JACKS

Connect the tape deck cords to these jacks. Connect the REC (recording) jacks to the INPUT jacks on the tape deck, and the PLAY (playback) jacks to the OUTPUT jacks.

⑧ SPEAKERS TERMINALS A

Connect your first pair of speakers to these terminals.

⑨ SPEAKERS TERMINALS B

Connect your second pair of speakers to these terminals.

⑩ POWER CORD

This is plugged into a household AC power outlet or into an auxiliary outlet on another stereo component.

⑪ AC OUTLETS

These are spare power outlets. Insert the power plug on the stereo components (turntable, tuner, tape deck, etc.) into these outlets.

SWITCHED: The power supplied through these outlets is coupled to the operation of the amplifier's power switch. The maximum power capacity which may be connected to the two SWITCHED outlets is 150W.

UNSWITCHED: The power is always supplied through this outlet regardless of the position of the power switch. The maximum power capacity which may be connected to this outlet is 200W.

NOTES:

- *Never connect an iron or a toaster to these outlets.*
- *Do not get the power outlets and the power plugs wet or touch them with wet hands, since you may get an electric shock.*

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CONNECTIONS

SPEAKER SYSTEM CONNECTIONS (Fig. 1)

The amplifier is provided with two sets of SPEAKERS output terminals. Use the A set when connecting only one set of speakers. Viewed from the front, the R (right channel) SPEAKERS terminals are on the right and the L (left channel) SPEAKERS terminals are on the left. Connect the left channel speaker to the L terminals and the right channel speaker to the R terminals. The red L and R SPEAKERS terminals have a plus polarity and the black terminals have a minus polarity and the speaker systems have also the same dual polarities. When connecting, always connect minus to minus and plus to plus.

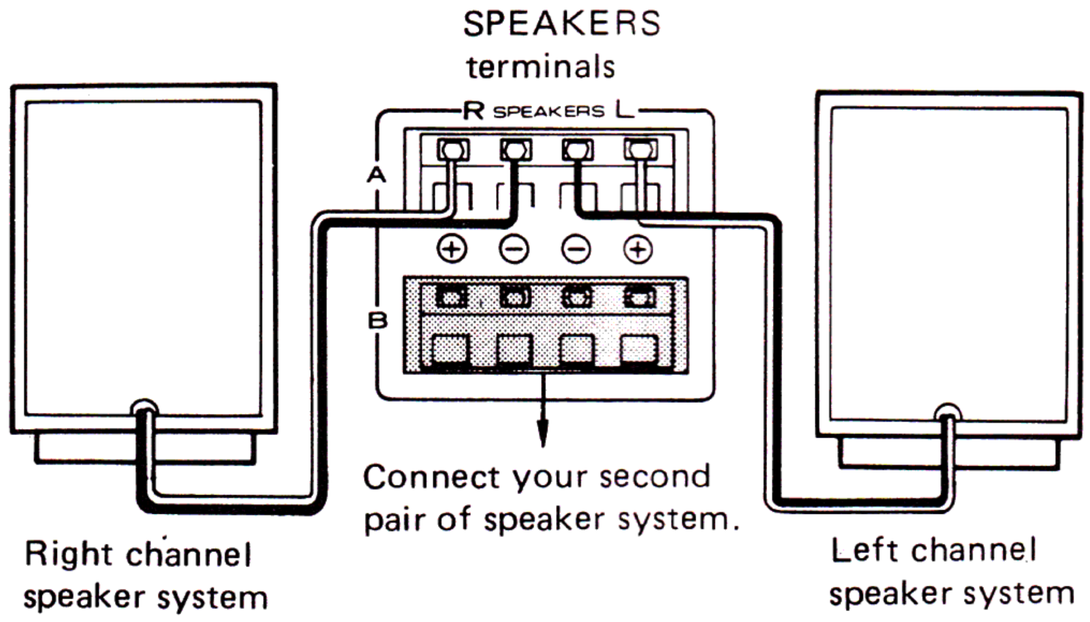

Fig. 1

Cautions when connecting the speakers

1. The speaker output terminals have polarities: minus (black) and plus (red). The input jacks on the speakers also have plus and minus polarities. When connecting, make sure that these polarities are aligned: plus to plus and minus to minus. If the left and right speaker polarities are misaligned, the reproduced sound will not display a natural stereo effect.
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.

Processing and connecting the speaker cords (Fig. 2)

1. Cut off the covering of the speaker cords as shown in Fig. 2-①.
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) button of the speaker terminals with your finger and insert the minus speaker lead (black) into the hole above the button.
   The lead is locked into position when the button is released. Check that the lead is connected firmly (Fig. 2-③).
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 leads are not projecting from the terminals. If they should come into contact, this will give rise to a shortcircuit.

Speaker lead wire preparation and connection

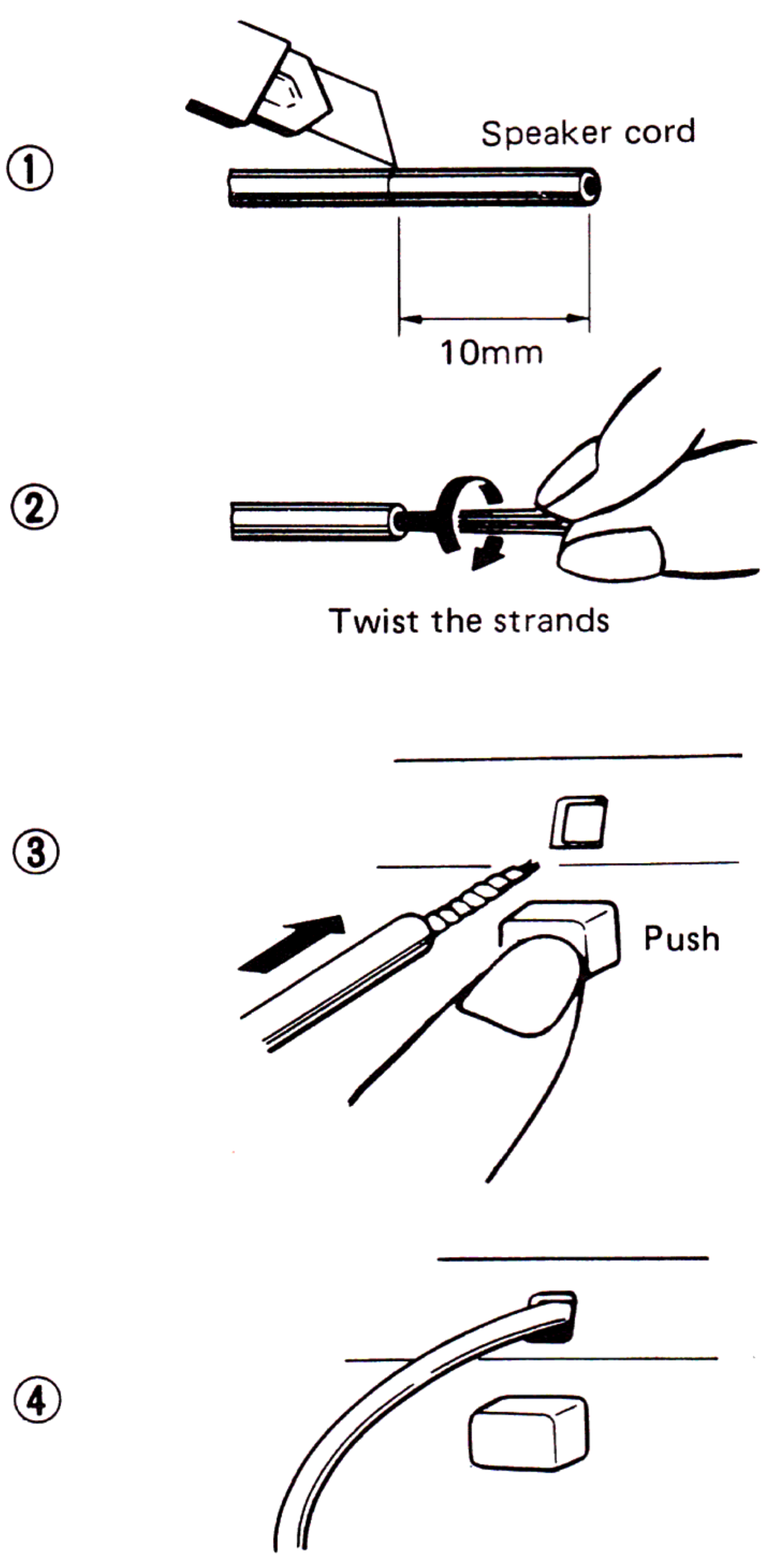

Fig. 2

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TURNTABLE CONNECTIONS (Fig. 3)

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.

NOTE:
The way in which the output cords are attached will depend on the type of cartridge used. If you intend to use a low-output moving coil (MC) cartridge, always provide a special MC transformer or a head amplifier.

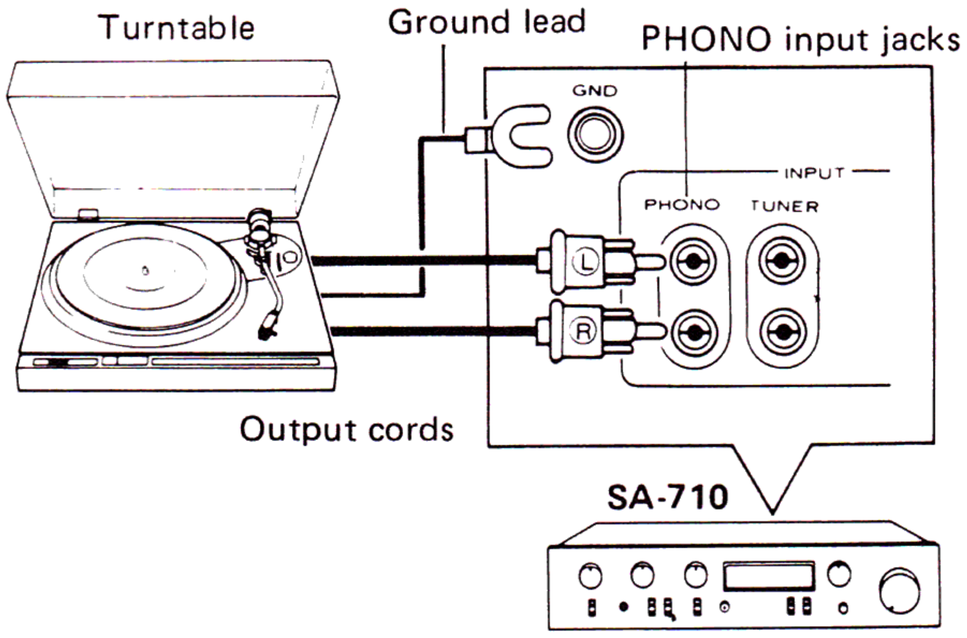

Fig. 3

TUNER CONNECTIONS (Fig. 4)

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

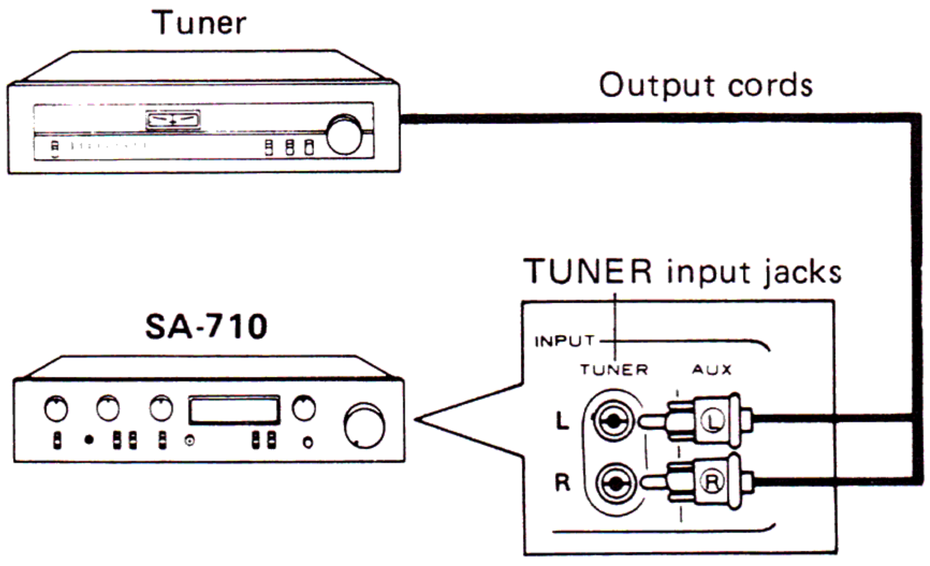

Fig. 4

AUX JACK CONNECTIONS (Fig. 5)

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.

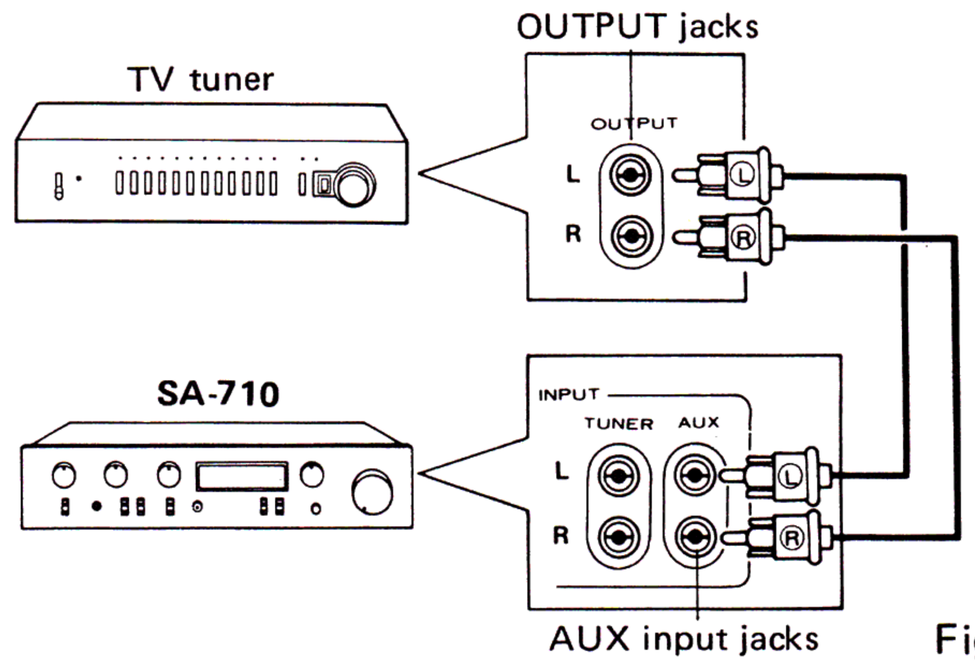

Fig. 5

TAPE DECK CONNECTIONS (Fig. 6)

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.

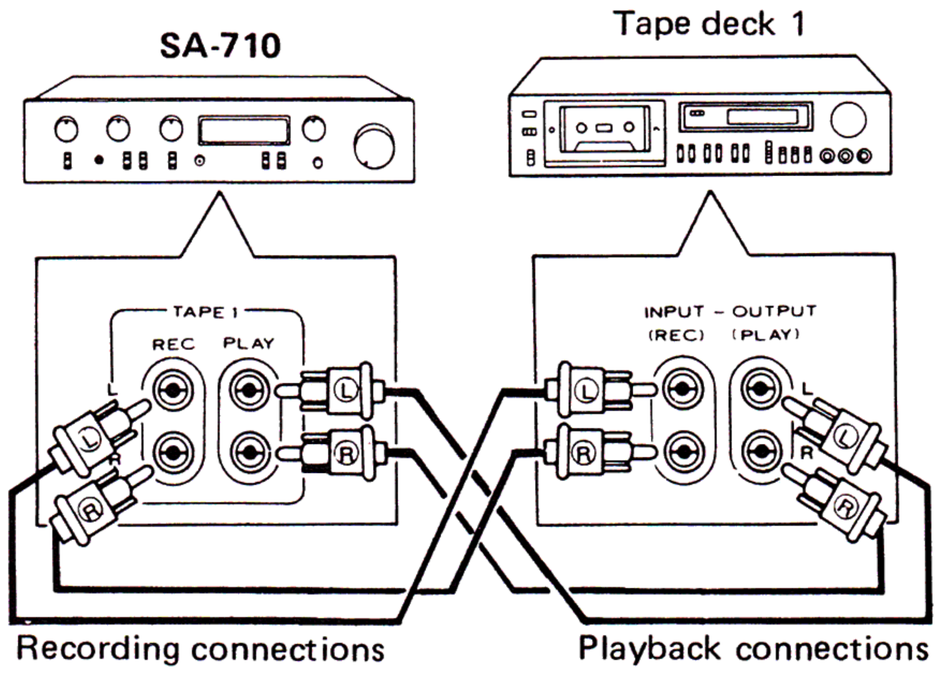

Fig. 6

TAPE 2 JACK CONNECTIONS (Fig. 7)

A second tape deck or other adaptor component (which is connected to the tape terminals on the stereo amplifier) can be connected to these terminals.

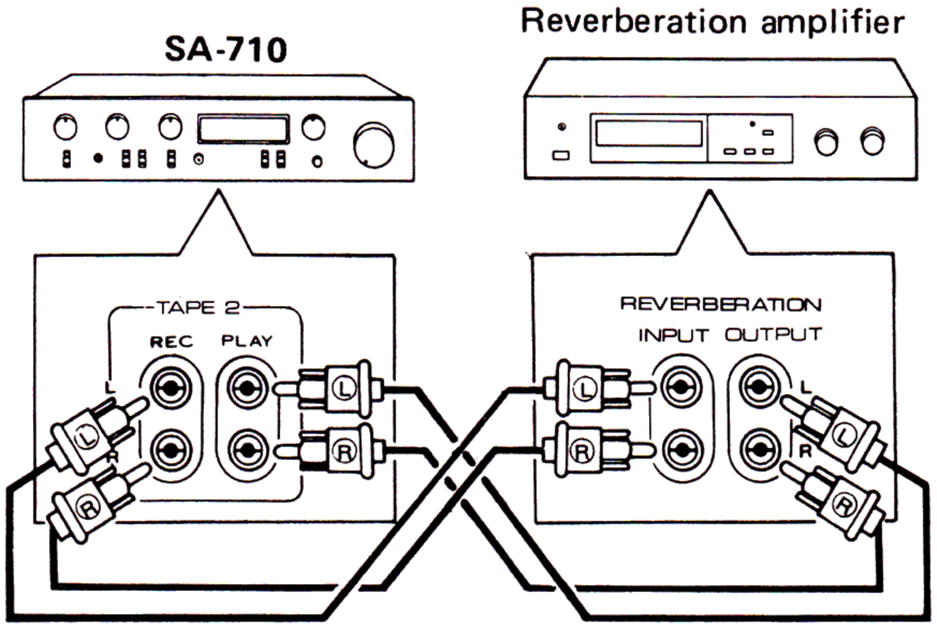

Fig. 7

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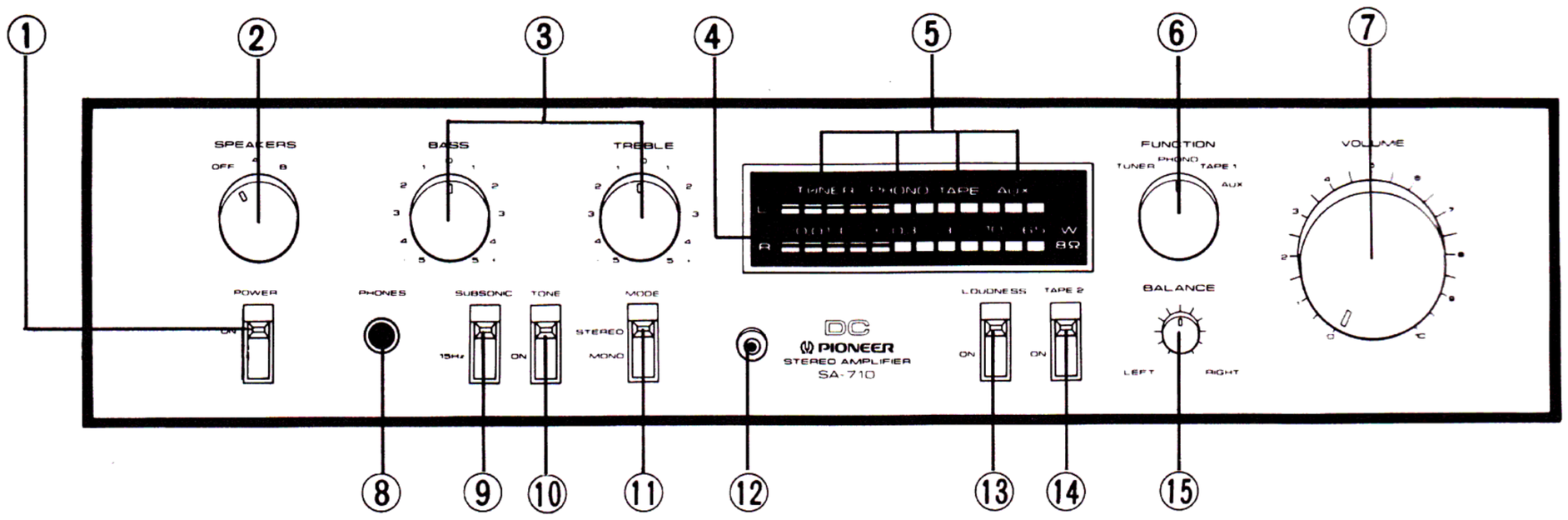
FRONT PANEL FACILITIES



① POWER SWITCH

Set this switch to ON to supply power to the amplifier. There will be a short delay when it is set to ON, because the muting circuit has been actuated to suppress the unpleasant noise that is sometimes generated when the power is on and off.

② SPEAKER SELECTOR

Use this selector to select the speaker system.

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.

③ 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.

④ 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.

⑤ FUNCTION INDICATORS

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

⑥ 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.)

TAPE 1: Set here when playing tapes on the tape deck connected to the TAPE 1 jacks.
(The TAPE 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.)

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⑦ 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."

⑧ 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.

⑨ 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.

⑩ TONE SWITCH

Set this switch to ON when adjusting the bass and treble controls. When set to the upper (OFF) position, 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.

⑪ MODE SELECTOR

Use this selector for selecting the performances.

STEREO: Set to this position for normal stereo reproduction.

MONO: Mixes left and right channel signals and reproduces them monophonically.

⑫ POWER INDICATOR

When the power switch is set to ON this lamp lights up, indicating the amplifier is turned on.

⑬ 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.

⑭ TAPE 2 SWITCH

Set this switch to the ON position when monitoring a tape performance on a tape deck which you have connected to the TAPE 2 jacks or when monitoring a recording.

NOTE:
Set the switch to the upper (OFF) position when listening to records or broadcasts, etc. selected by the function selector.

⑮ BALANCE CONTROL

Use this control to balance the volume of the left and right channels. First, however, set the mode selector to MONO, and adjust so that the sound appears to come from somewhere exactly between the two speakers. 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. After adjusting, return the mode selector to STEREO.

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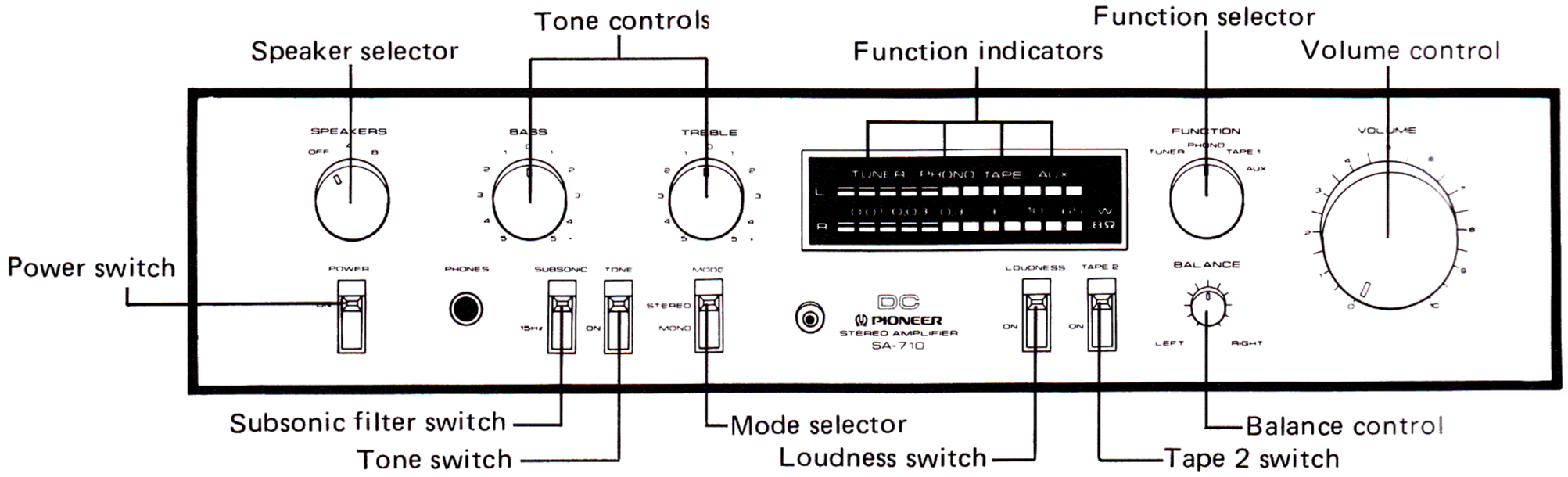
OPERATIONS



PRIOR TO SWITCHING POWER ON

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

1. Set the subsonic filter switch to OFF.
2. Set the volume control to 0.
3. Set the tape 2 switch to OFF.
4. Set the tone switch to OFF.
5. Set the balance control to the center position.
6. Set the loudness switch to OFF.
7. Set the tone controls to the center positions.
8. Set the mode selector to STEREO.
9. Set the speaker selector to the appropriate position according to the employed terminals.

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 tone switch to ON in line with your preference and adjust the tone with the tone controls.

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.
- Set the subsonic filter switch to 15Hz when there is a great deal of noise in the low-frequency region or when the bass speaker's diaphragm moves even though no sound can be heard during a performance.
- 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 tone switch to ON in line with your preference and adjust the tone with the tone controls.

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 tone switch to ON in line with your preference and adjust the tone with the tone controls.

TAPE PLAYBACK

1. Set the function selector to TAPE 1.
2. Operate the tape deck which you have connected to the TAPE 1 jacks and playback the tape.
3. Adjust the volume with the volume control.
4. Set the tone switch to ON in line with your preference and adjust the tone with the tone controls.

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TAPE DECK OPERATIONS

RECORDING ON A TAPE DECK

1. Set the TAPE 2 switch to OFF.
2. Select the program source which is to be recorded using the function selector.
3. Play the program source (record, FM broadcast, etc.).
4. Set the recording level on the tape deck.
5. Start recording by following the tape deck's recording procedure.

If a second tape deck is connected to the TAPE 2 jacks, the source can be recorded simultaneously on the second tape deck.

CAUTION:
The output signals are not available at the TAPE 1 REC jacks if the function selector is at the TAPE 1 position.

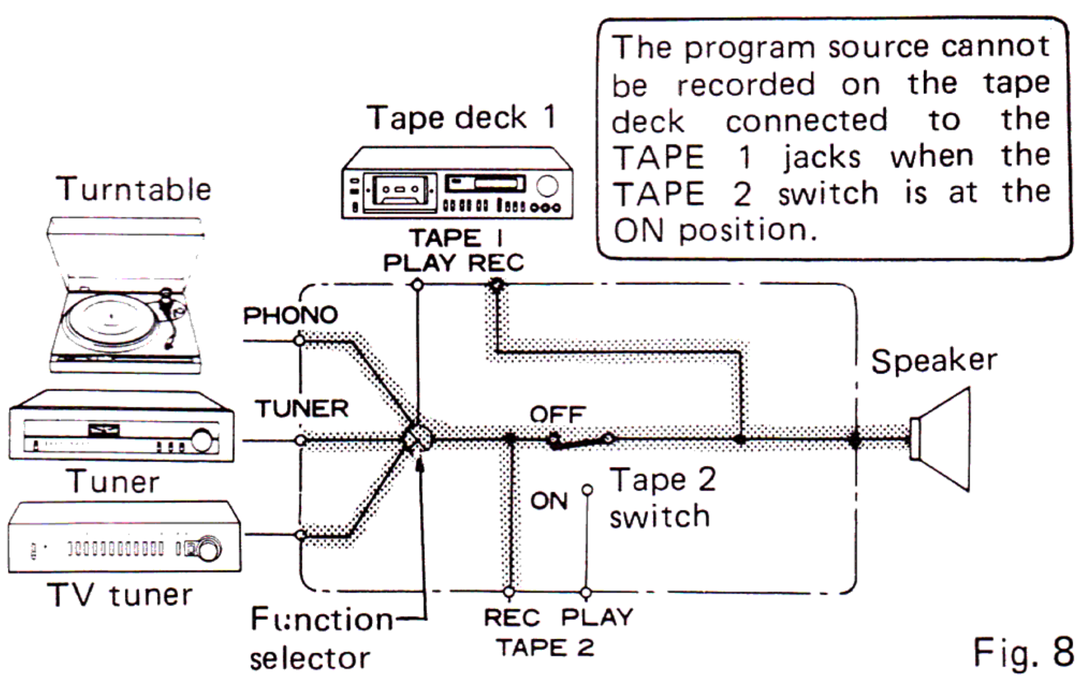

Fig. 8

DUBBING TAPES

If you have a second tape deck, connect its input and output terminals to the TAPE 2 jacks.

When recording the playback sound of the tape deck connected to the TAPE 1 jacks on the second tape deck

1. Set the function selector to TAPE 1.
2. Set the tape deck connected to the TAPE 1 jacks to the playback mode.
3. Set the tape deck connected to the TAPE 2 jacks to the recording mode.

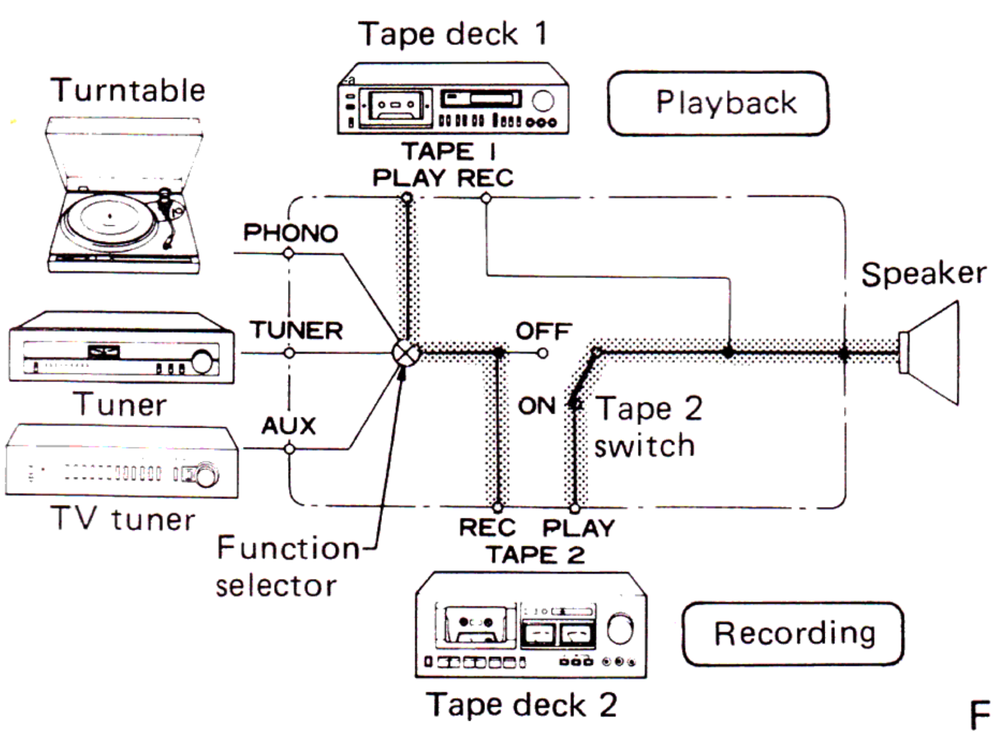

Fig. 9

NOTE:
It is possible to monitor the recording if the TAPE 2 switch is set to the ON position when a tape deck (3-head system) having a monitoring mechanism is connected to the TAPE 2 jacks and set to the recording mode.

When recording from a tape deck connected to the TAPE 2 jacks onto a tape deck connected to the TAPE 1 jacks (tape dubbing)

1. *Set the tape deck connected to the TAPE 2 jacks to the playback mode.*
2. *Set the TAPE 2 switch to ON.*
3. *Set the function selector to any position except TAPE 1.*

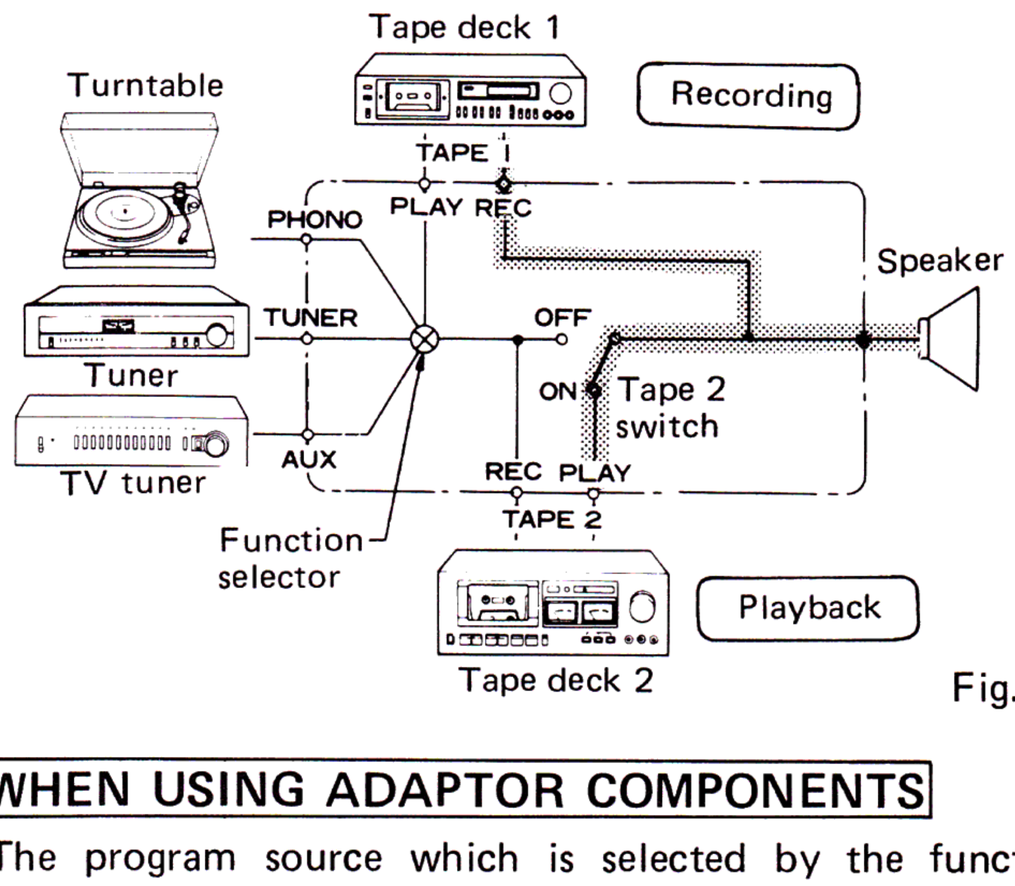

Fig. 10

WHEN USING ADAPTOR COMPONENTS

The program source which is selected by the function switch (such as a record or tape) is always available at the TAPE 2 REC jacks. An optional reverberation amplifier or other adaptor component can be connected.

1. Select the program source with the function selected.
2. Set the TAPE 2 switch to ON.
3. Operate the adaptor component as instructed in the Operating Instructions.
4. The signals which have passed through the adaptor component can now be recorded on the tape deck which is connected to the TAPE 1 jacks.

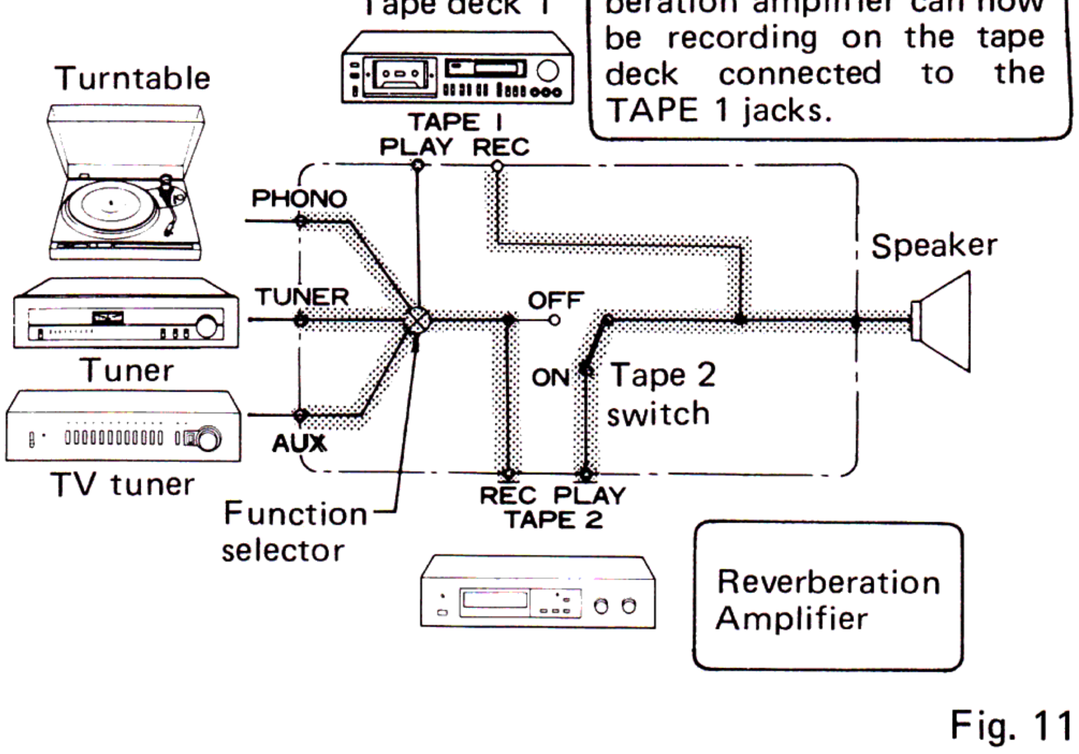

Fig. 11

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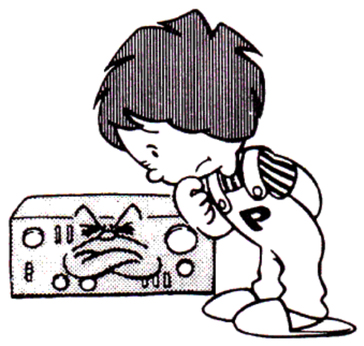
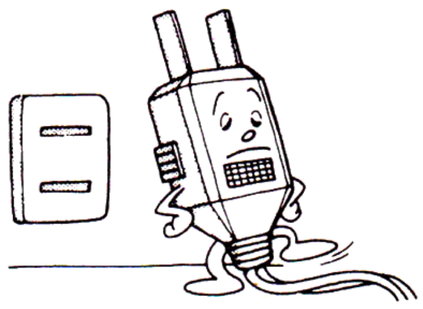
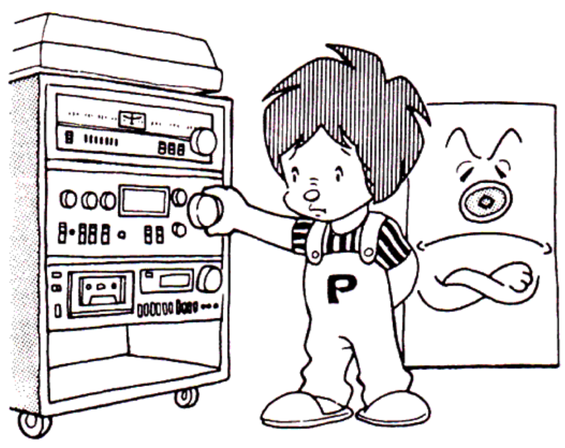
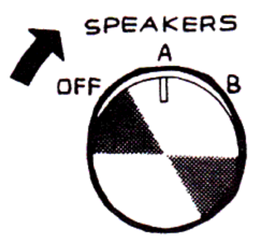
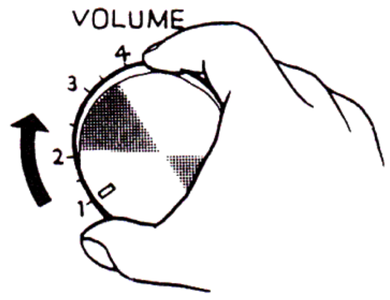
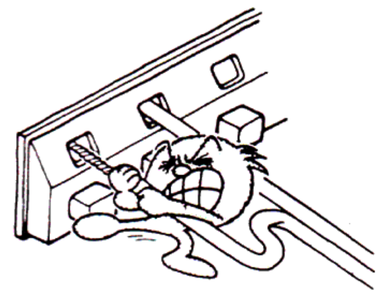
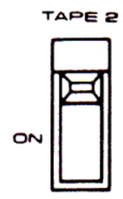
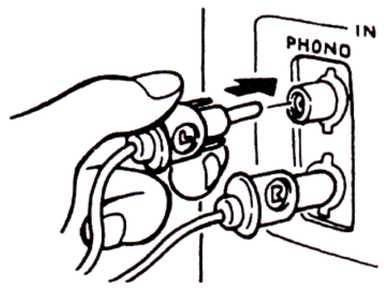
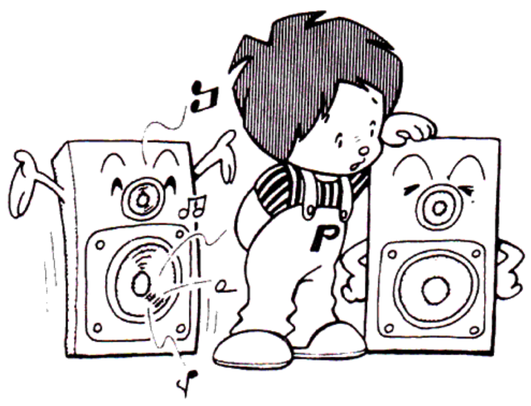
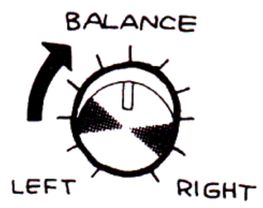
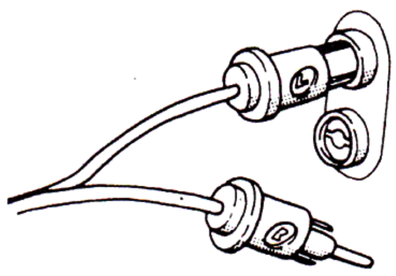
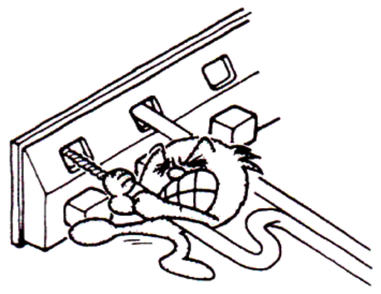
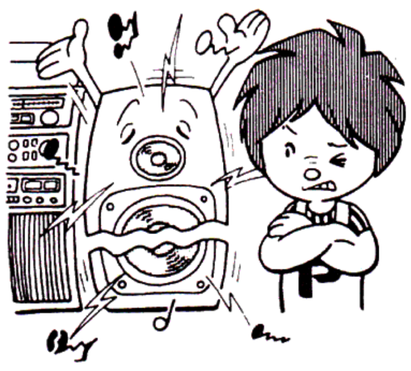
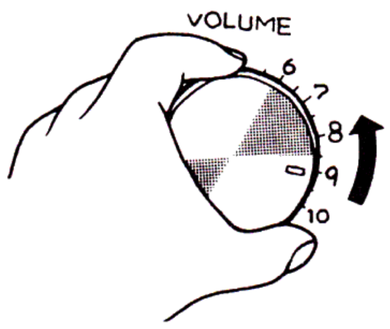
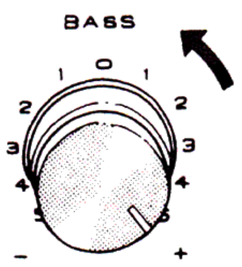
TROUBLESHOOTING

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	Possible trouble and Remedy		
No power even when amplifier's POWER switch is set to ON. 	Power plug is not connected to the power outlet.  Connect the plug to the outlet.		
No sound even when FUNCTION selector switch is set. 	SPEAKERS switch is set to OFF.  Select switch in accordance with the speaker systems you have connected to rear panel terminals.	VOLUME control is set to '0'.  Rotate VOLUME control slowly clockwise.	Connecting cords have worked free of speaker terminals.  Connect securely.
	TAPE 2 switch is set to ON.  Set to OFF (top position).	One or both input cords have worked free.  Connect the jacks securely.	
Sound through one speaker only. 	BALANCE control is set to LEFT or RIGHT.  Set control to center position.	One of input cords has worked free.  Connect the jacks securely.	One of speaker connecting cords has worked free.  Connect securely.
Sound is distorted. 	VOLUME control is set too high.  Set control to lower position.	BASS control is turned too high.  Rotate in direction of '0'.	

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