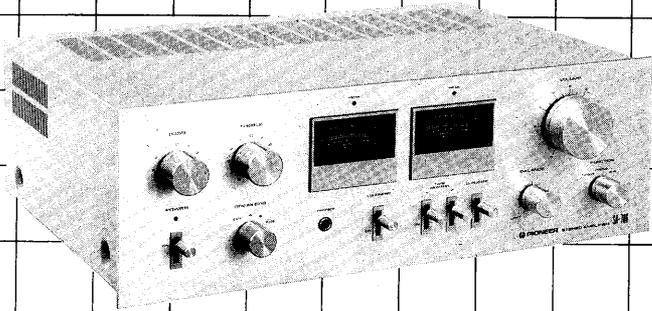


STEREO AMPLIFIER

SA-706

OPERATING INSTRUCTIONS

S
S/G
HG



SA-706 are designed to operate 220V or 240V (HG model) main and 110V, 120V, 220V or 240V (S model) main. Before turning on the power, please confirm the line voltage setting indicated on the rear of your unit corresponds to the supply voltage in your area; if not, change the setting as described in IMPORTANT-LINE VOLTAGE on page 12.

SA-706/HG provides the DIN connector on the rear panel so it can be connected to the tape deck for recording/playback by using the DIN cord.

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 PIONEER®

FEATURES

Low-distortion, Stable-output Power Amplifier

The power amplifier stage adopts a high-reliability npn, pnp silicon power transistor-based differential first-stage current mirror load, all-stage direct-coupled pure complementary OCL circuit.

Continuous power output is 60watts* per channel, min., at 8ohms from 20Hertz to 20,000 Hertz with no more than 0.04% total harmonic distortion.

This is an output which is more than sufficient for first-rate reproduction of music so the SA-706 delivers a powerful and yet high-fidelity stereo reproduction for your enjoyment. Moreover, the first-stage differential amplifier which employs two power transistors and the constant current circuit assures a stable operation stable even in the face of fluctuations in the power supply voltage and external temperature.

Equalizer Amplifier with a Tip-top Signal-to-noise Ratio

The equalizer amplifier features a 3-stage direct-coupled circuit which adopts low-noise transistors in the first stage. The S/N ratio thereby achieved is an excellent 86dB (IHF-A), the equalizer elements employ only those parts which have undergone rigorous selection, and the deviation in the 20Hz–20kHz frequency band is kept down to ± 0.2 dB. All these features add up to the reproduction of records which is faithful to the original sound.

A high voltage is supplied from the dual positive and negative power supplies and a maximum allowable phono input of 180mV (1kHz) is obtained with respect to a rating of 2.5mV. This means that you can sit back and listen to almost distortion-free record play when you use high-output cartridges or when the music source is punctuated by high signal peaks.

Built-in Protection Circuitry Employing Relays and Electronic Circuits

The protective circuitry, which is essentially a combination of electronic circuits and relays, protects the speakers and power transistors against damage in the event of a malfunction. There is also a muting circuit which eliminates unpleasant surge noise during the on-off operation of the power switch.

Power Meters that Allow the Output Level to be Read Out Directly

The two large-sized meters located in the center of the front panel incorporate logarithmic compression scales in order to display the output level across a wide range from 0.01W to 100W. These handy meters mean that you can directly read out the power level from 0.01W up to the maximum output level of the SA-706 at an 8-ohm impedance.

Two Sets of Speaker Systems can be Connected

The SA-706 comes with two sets of speaker terminal and a speaker selector switch so you can compare the sound through two different sets of speakers or place a second set in another room. Another useful facility is the headphones jack which allows you to listen to music in private late at night through your stereo headphones.

'Duplicate' Switch for Easy Tape Editing

This one-touch duplicating switch allows you to do a whole host of things with tapes. For example, with two tape decks, you can edit tape programs which you yourself have recorded in accordance with your own personal preference. Also, you can duplicate open-reel tape deck recordings on a cassette tape deck.

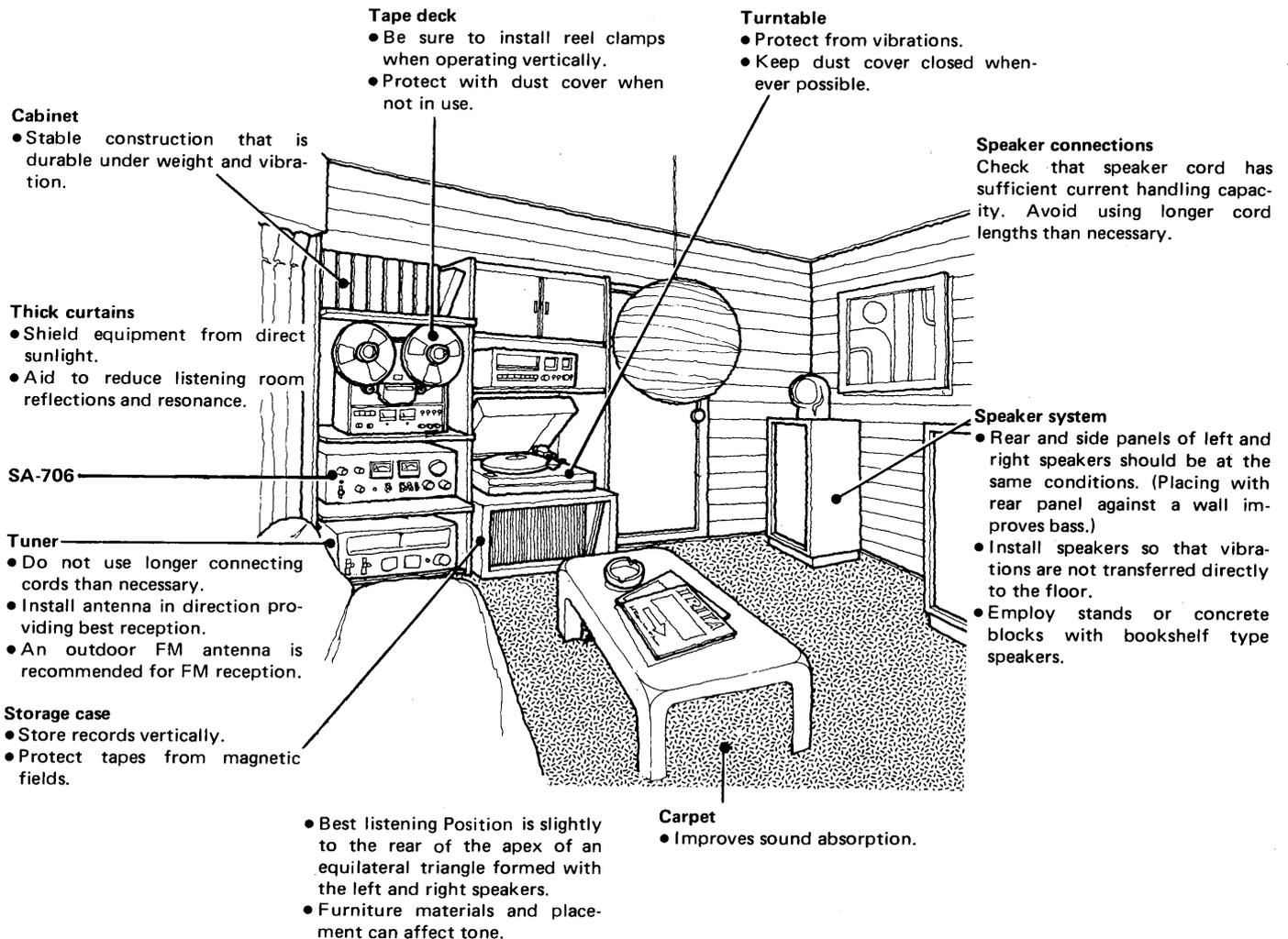
Functionally Streamlined and Attractively Designed Front Panel

The functionally designed front panel is made for easy operation. Its two large-sized output meters in the center as well as its knobs and switches which respond lightly to the touch make operating the SA-706 a real pleasure.

The design matches that of other Pioneer hi-fi stereo components. Just one look is enough to reassure you that you have bought the highest performance and most attractively designed components available on the market.

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

STEREO SYSTEM COMPOSITION



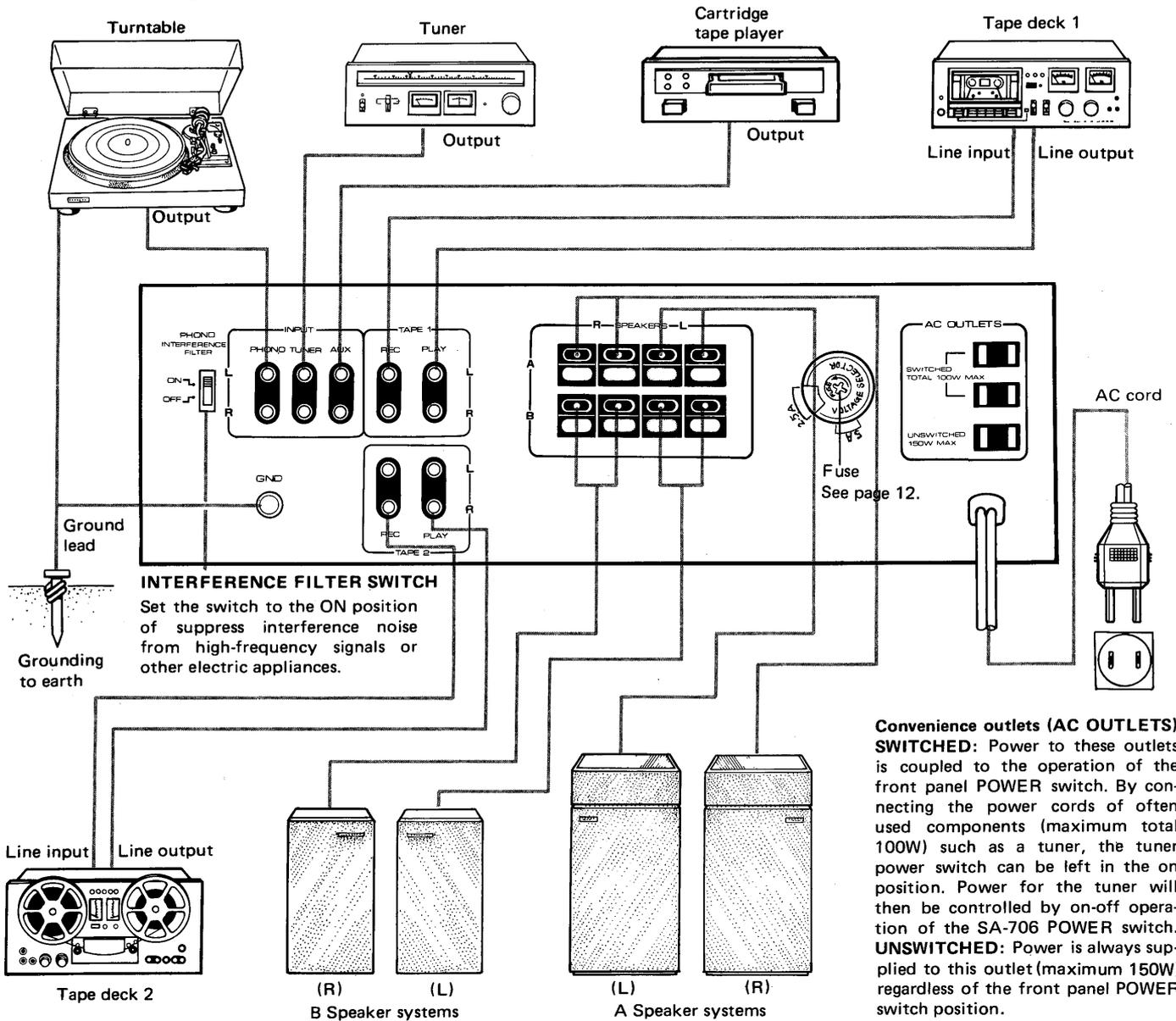
INSTALLATION CAUTIONS

In order to ensure long term top performance, do not install the SA-706 in locations such as the following:

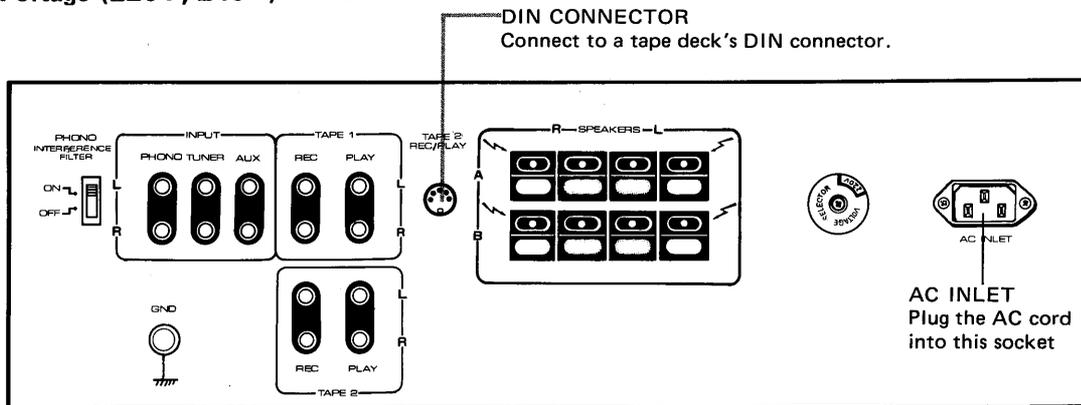
Locations to be avoided	Detrimental effects
<ul style="list-style-type: none"> • Direct sunlight, radiators or other sources of heat. • Poorly ventilated, humid or dusty locations. • Unstable supports that are not level or subject to vibration. • Locations where alcohols, insect spray or flammable material is used or stored. 	<ul style="list-style-type: none"> • Accumulated effects of internal and external heat can reduce thermal dissipation efficiency of power amplifier and lead to component deterioration. In some cases heating may also prevent stable operation. • 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. • May adversely affect precision circuit components. Weight can also pose a hazard in regions subject to seismic activity. • In addition to fire hazard, some materials may contribute to corrosion or mar finish of equipment.

CONNECTION DIAGRAM

Four Line Voltage (110V, 120V, 220V, 240V) Model



Two Line Voltage (220V, 240V) Model



CONNECTIONS

Precautions

- Set the POWER switch to ON only when you have completed all the connections of the stereo system. Always set this switch to OFF if you want to change the connections.
- All the stereo amplifier's jacks are aligned for easy connection in two rows: the top row for L (left channel) and the bottom row for R (right channel). Always connect L to L and R to R with the audio component outputs and input jacks.
- Make sure that the connections are secure. Improper connections can generate noise and cause the sound to be cut off.

SPEAKER SYSTEMS

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 just like the speaker systems themselves. When connecting, always connect minus to minus and plus to plus.

Connecting the speaker cords to the SPEAKERS terminals (Fig. 1)

1. Strip about 10mm of the insulation from the end of the speaker cords. If the conductor is stranded, twist the strands together so that they do not come into contact with other terminals.
2. Depress the terminal buttons and insert the cords into the terminal holes.
3. Release the buttons and check that the cords are secure.

TURNTABLE CONNECTIONS (Fig. 2)

Connect the output cords of a turntable using a moving magnet (MM) cartridge to the PHONO input jacks. Connect the ground lead of the turntable to the GND terminal on the amplifier.

TUNER CONNECTIONS (Fig. 3)

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

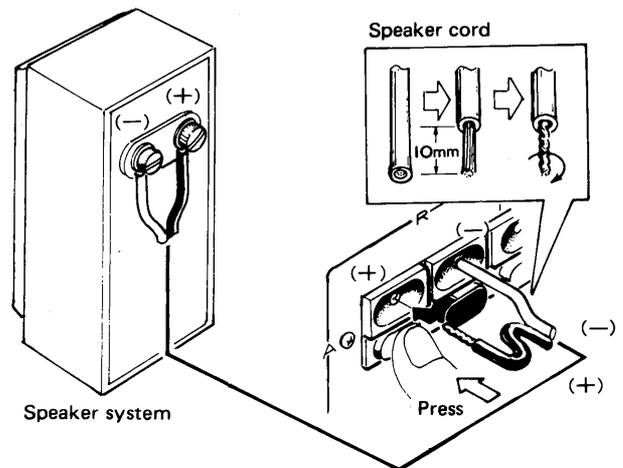


Fig. 1

NOTE:

If you want to use two sets of speaker systems, make sure that the impedance of each system is 8 ohms or more.

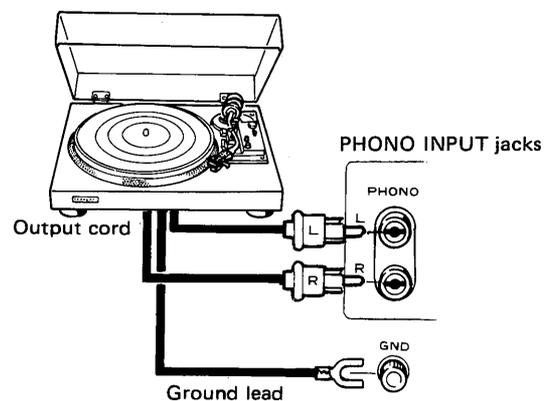


Fig. 2

NOTE:

In addition to turntables using MM cartridges, there are others that employ induced magnet (IM), moving iron (MI) and high-output moving coil (MC) cartridges. If you intend to use a turntable with a low-output MC cartridge, always provide a special MC cartridge boosting transformer or head amplifier.

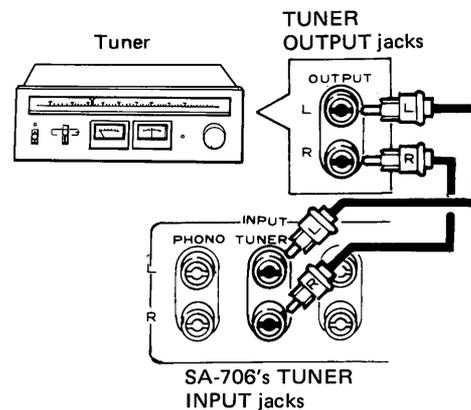


Fig. 3

FRONT PANEL FACILITIES

POWER SWITCH

Flip this switch to the ON position to supply power to the stereo 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 switched on and off.

BASS, TREBLE CONTROLS

Adjust the bass with the BASS control and the treble with the TREBLE control. The bass and treble are strengthened when the controls are turned to the right and weakened when turned to the left.

The sound quality of the music source depends on how the sound is absorbed and reflected in the listening room and also on the characteristics of the speakers. You can use these controls to compensate accordingly and adjust the sound to your preference.

PHONES JACK

When listening with stereo headphones, connect them to this jack.

NOTE:

Set the **SPEAKERS** switch to OFF when listening only with headphones.

POWER METERS

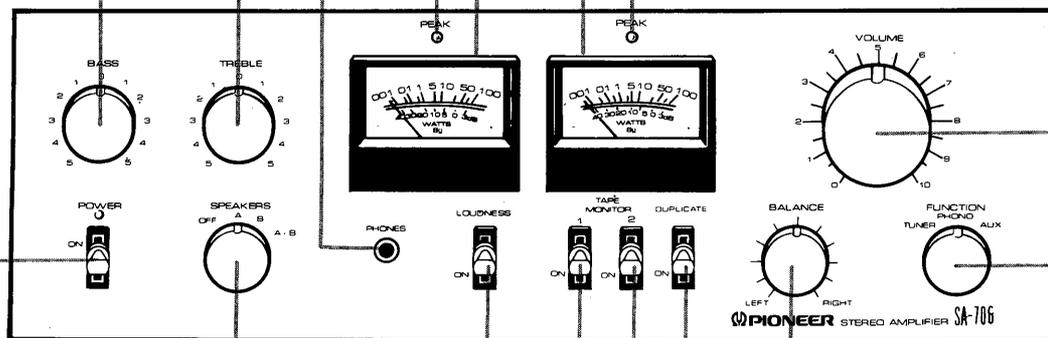
These power meters allow you to read out the rated power level when speakers with a nominal impedance of 8-ohms are connected to the amplifier's speaker terminals.

NOTE:

These values are related to the impedance of the speakers and they vary according to the frequency. In order to find out the exact output level, connect an 8-ohm dummy load instead of the speakers.

PEAK POWER INDICATORS

These lamps light up when the amplifier's output is at its peak level with 8 ohms load. Turn the **VOLUME** control to a lower position until the indicator does not light up continuously but only intermittently.



SPEAKERS SWITCH

Selects speaker system operation.

OFF: Sound not obtained from speakers (when using headphones).

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

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

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

NOTE:

When listening with headphones or to temporarily interrupt the speaker sound, set switch to OFF or to an unused speaker position.

LOUDNESS SWITCH

Set this switch to ON when listening at a low volume. The frequency response of the human ear varies according to the listening volume, and setting this switch to the ON position compensates for hearing response by emphasizing the bass and treble.

TAPE MONITOR SWITCHES (1, 2)

Set switch 1 to ON with a tape deck which is connected to the TAPE 1 jacks (REC and PLAY) when you want to monitor the playback or recording of a tape. The tape on a deck which is connected to the TAPE 2 jacks (REC and PLAY) can be similarly monitored by setting switch 2 to ON. For further details, refer to "USING THE TAPE DECKS" on page 8.

NOTE:

Set these switches to the upper (off) position when listening to records or a radio broadcast.

TAPE DUPLICATE SWITCH

Set this switch to ON when you want to duplicate or edit a pre-recorded tape using two tape decks. For further details, refer to "Duplicating and editing recorded tapes" on page 9.

VOLUME CONTROL

Use this control to adjust the output level to the speakers and headphones. Turn it clockwise to increase the output level.

FUNCTION SWITCH

Selects desired playback source.

TUNER: To listen to broadcasts with a tuner connected to the TUNER jacks.

PHONO: To play records on a turntable connected to the PHONO jacks.

AUX: To play a component connected to the AUX jacks.

NOTE:

Turn the **VOLUME** control down first before selecting a different function switch while the sound from one program source is being reproduced.

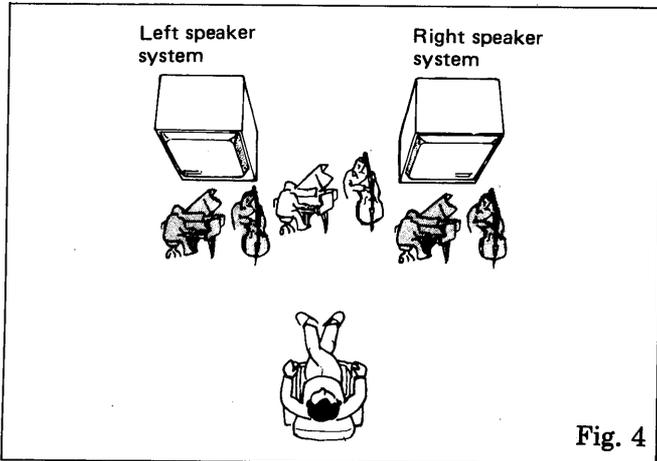


Fig. 4

BALANCE CONTROL

Use this control to balance the volume of the left and right channels. First, however, tune the AM broadcast, 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.

PROTECTION CIRCUIT

- After setting the **POWER** switch to **ON**, sound is not obtained from the speakers for a period of 3 to 8 seconds. This is due to the internal protection circuit which prevents noise generation when the power supply is activated and protects the speakers in the event of DC current occurring in the output.
- Loss of speaker sound or a continuous clicking noise of the internal relay during operation is most likely

BEFORE OPERATION

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

- Set the **VOLUME** control to the "0" position.
- Set the **BALANCE** control to the center position.
- Set the **BASS**, **TREBLE** controls to the center positions.
- Set the **TAPE MONITOR** (1, 2) switches to the upper positions (**OFF**).
- Set the **DUPLICATE** switch to the upper position (**OFF**).
- Set the **SPEAKERS** switch so that it corresponds to the speaker system which is connected to the **SPEAKERS** terminals on the rear panel.

OPERATION

PLAYING RECORDS

1. Set the **FUNCTION** switch to **PHONO**.
2. Prepare the turntable for operation and start playing the record.
3. Adjust the volume with the **VOLUME** control, and the tone with the **BASS** and **TREBLE** controls to the preferred levels.

Precautions when playing records

- Lower the stylus gently onto 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 TUNER (AM, FM BROADCAST)

1. Set the **FUNCTION** switch to **TUNER**.
2. Operate the tuner and tune in to the desired station.
3. Adjust the volume with the **VOLUME** control, and the tone with the **BASS**, **TREBLE** controls to the preferred levels.

due to speaker terminal shorting or overloading (such as occurs with less than 4-ohm speaker impedance). The protection circuit functions automatically in these cases to protect the speakers and semiconductors from damage.

The circuit is self-resetting and after the cause of the difficulty has been corrected, normal operation will resume.

USING THE TAPE DECKS

TAPE DECK CONNECTIONS

The SA-706 is provided with two sets of recording (TAPE REC) output jacks and two sets of playback (TAPE PLAY) input jacks. Connect each of the jacks in the following way using the connecting cords which come with the tape deck. The upper row of jacks is for the left channel (L) and the lower row for the right channel (R).

Connections for recording

Connect the recording input jacks (LINE INPUT) on the tape deck to the TAPE 1 REC jacks on the amplifier.

Connections for playback

Connect the playback output jacks (LINE OUTPUT) on the tape deck to the TAPE 1 PLAY jacks on the amplifier.

NOTE:

Connect your second tape deck to the TAPE 2 jacks (REC, PLAY).

Connections using the recording/playback connector (DIN cord): Applicable to HG (220V, 240V) model only (Fig. 6)

If your tape deck is equipped with a recording/playback connector (DIN-type), use the optional recording/playback cord to connect this connector with the TAPE 2 REC/PLAY jacks on the amplifier. This means that the deck and amplifier are now set up for both recording and playback. In such cases, do not connect pin cords (ordinary pin plug cords) to the TAPE 2 REC and PLAY jacks.

PLAYBACK

Proceed as follows when playing back pre-recorded music tapes available on the open market, and tapes on which you have recorded programs:

1. As shown in Fig. 7, set the TAPE MONITOR switch 1 to ON if the tape deck is connected to the TAPE 1 jacks. Set the TAPE MONITOR switch 2 to ON if it is connected to the TAPE 2 jacks.
2. Operate the tape deck controls for playback.
3. Adjust the VOLUME, BASS and TREBLE controls for the listening level and tone quality of your preference.

RECORDING

1. Set the FUNCTION switch so that it corresponds to the program source which you intend to record (for example, a record on a turntable or an FM broadcast).

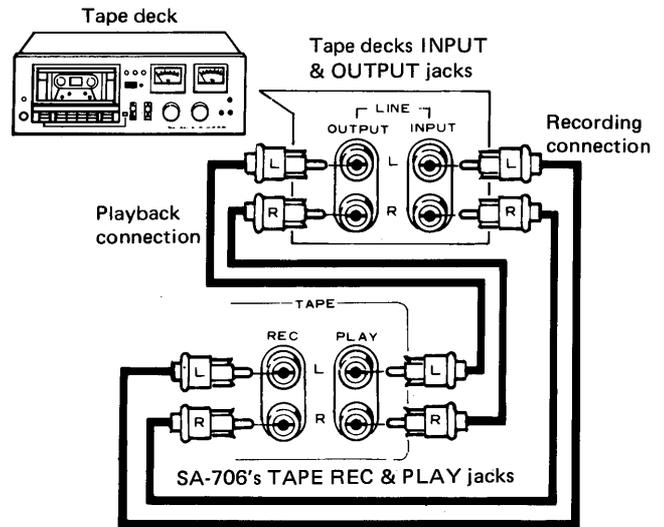


Fig. 5

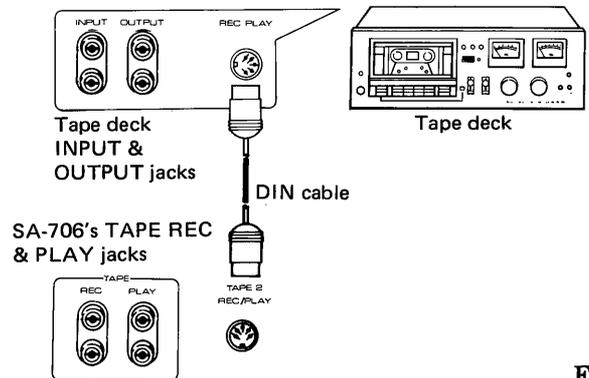


Fig. 6

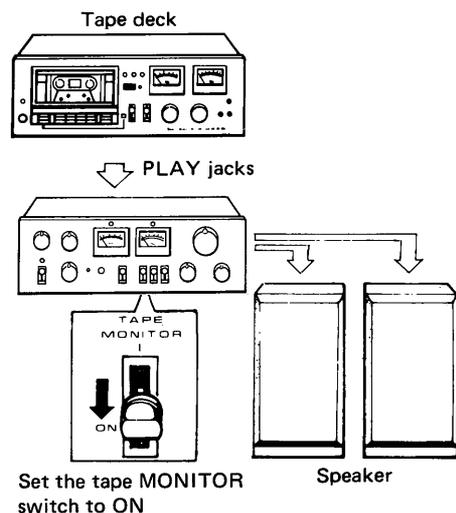


Fig. 7

NOTES:

1. Always return the TAPE MONITOR switch to the upper position (OFF) when you are not playing back a tape.
2. As long as the TAPE MONITOR switch 1 or 2 is ON, you will be able to play back a tape regardless of the setting of the function switch.

2. Set the DUPLICATE switch to upper position.
3. Play the selected program source.
4. Operate the tape deck controls and start recording.

Tape monitoring

If a recording is being made on a 3-head tape deck, the recorded sound can be monitored through the speakers systems if the TAPE MONITOR switch 1 or 2 is set to ON. In this case, both recording and playback connections must be made.

NOTE:

If you have a 2-head open-reel deck 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).

DUPLICATING AND EDITING RECORDED TAPES

If you have two tape decks, a recording of, say, a complete FM broadcast can be made and then those items that you want for your permanent "tape library" can be selected and re-recorded onto another tape. It is also possible to duplicate tapes from an open-reel tape deck onto a cassette tape deck.

1. As shown in Fig. 9, connect the tape decks to the amplifier's TAPE 1 and TAPE 2 jacks.
2. Set the DUPLICATE switch to ON.
3. Play back the recorded tape on tape deck 1 and record it on tape deck 2. It is also possible to play the tape back on tape deck 2 and record it on tape deck 1.
4. Set the TAPE MONITOR switch 1 or 2 to ON when you want to monitor the recorded sound.
- Do not set both tape decks to the recording mode at the same time.

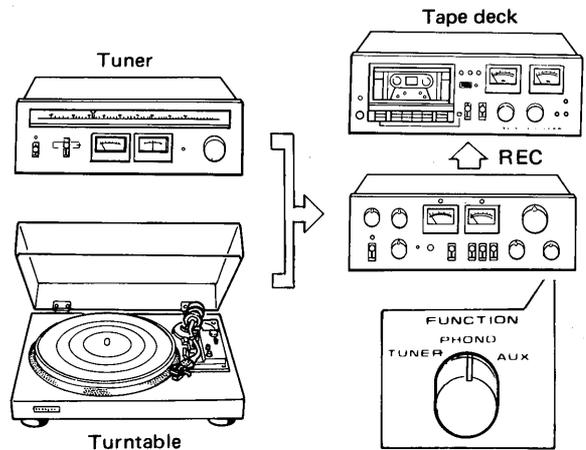


Fig. 8

NOTES:

1. Adjust the recording level with the tape deck's recording level controls.
2. The amplifier's VOLUME, BASS and TREBLE controls have no effect on the recorded sound when a recording is being made.

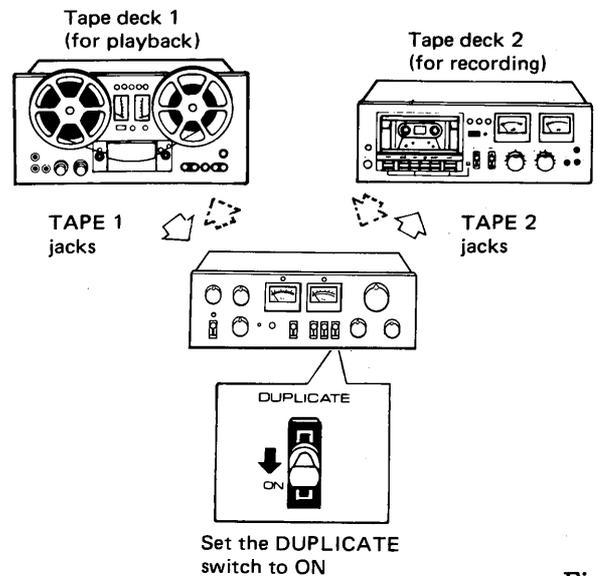


Fig. 9

USING THE AUX INPUT JACKS

You can connect an 8-track cartridge tape player, TV tuner, second tuner or tape deck playback output to these jacks. (See Fig. 10).

1. Set FUNCTION switch to AUX.
2. Operate component.
3. Adjust VOLUME, BASS and TREBLE controls for desired volume and tone.

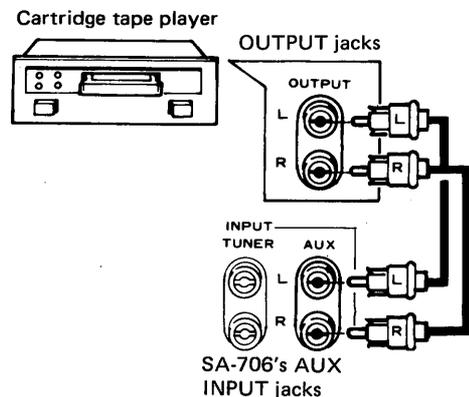
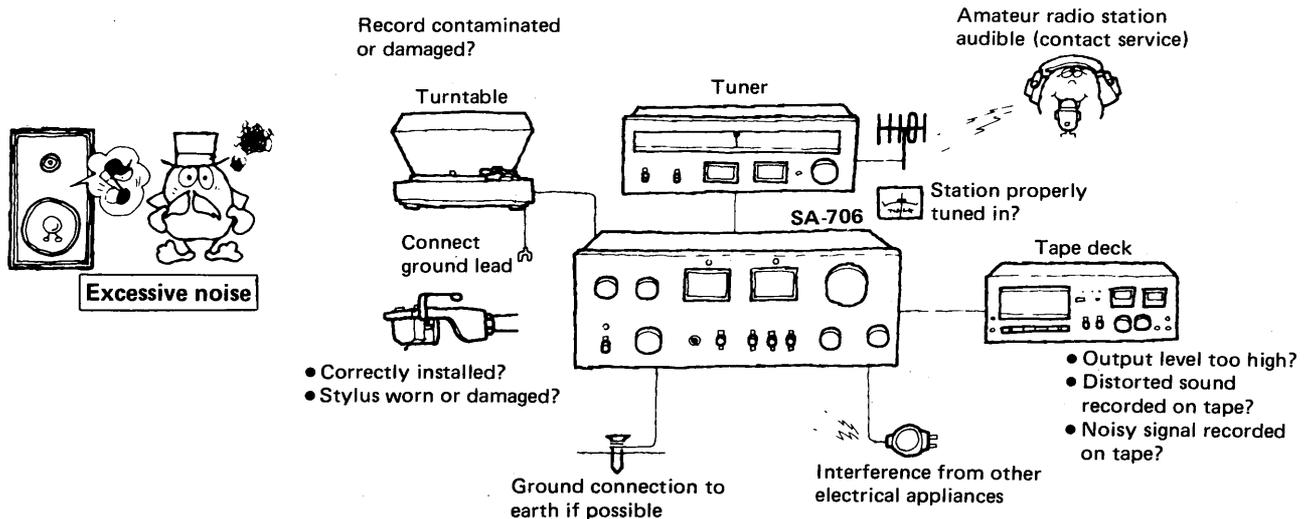
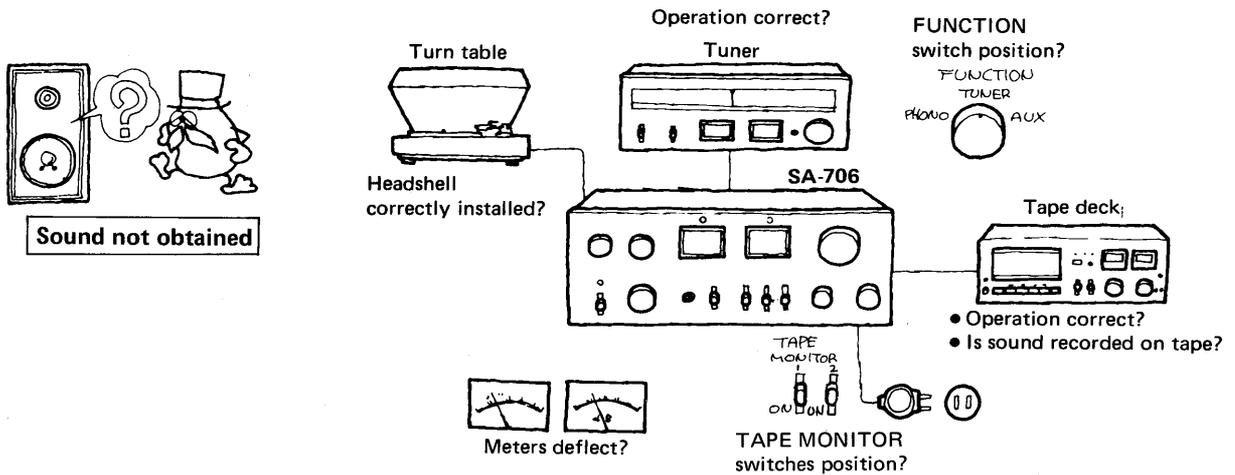


Fig. 10

CONDITIONS FREQUENTLY MISTAKEN FOR MALFUNCTION

Most cases of operating difficulty can be attributed to simple causes, such as faulty connections or incorrect operation. If the problem cannot be corrected with reference to the following chart, turn off the power and contact your nearest Pioneer Authorized Service Center.



SPECIFICATIONS

Semiconductors

IC	1
Transistors	31
Diodes	29

Amplifier Section

Circuitry	1-st stage current-mirror loaded differential amplifier, constant current loaded all-stage direct-coupled OCL.
-----------------	--

Continuous power output is 60watts* per channel, min., at 8ohms from 20Hertz to 20,000 Hertz with no more than 0.04% total harmonic distortion.

Continuous Power Output at 1kHz (both channels driven)
 T.H.D. 0.04%, 8 ohms 65 watts per channel
 Total Harmonic Distortion (20Hertz to 20,000Hertz, from AUX)

continuous rated power output . . .	No more than 0.04%
30 watts per channel power output, 8 ohms No more than 0.03%
1 watt per channel power output, 8 ohms No more than 0.03%
Intermodulation Distortion (50Hertz : 7,000Hertz = 4 : 1 from AUX)	
continuous rated power output . . .	No more than 0.04%
30 watts per channel power output, 8 ohms No more than 0.02%
1 watt per channel power output, 8 ohms No more than 0.02%

Output

Speaker A, B, A+B

Damping Factor

(20Hertz to 20,000Hertz, 8 ohms) 40

Input (Sensitivity/Impedance)

PHONO	2.5mV/ 50 kilohms
TUNER	150mV/50 kilohms
AUX	150mV/50 kilohms
TAPE PLAY 1	150mV/50 kilohms
TAPE PLAY 2	150mV/50 kilohms
TAPE PLAY 2 (DIN connector) . .	150mV/50 kilohms (HG model only)

Phono Overload Level (T.H.D. 0.01%, 1kHz)

PHONO 180mV

Output (Level/Impedance)

TAPE REC 1	150mV
TAPE REC 2	150mV
TAPE REC 2 (DIN connector)	30mV/80 kilohms (HG model only)

Frequency Response

PHONO (RIAA Equalization)	20Hz to 20,000Hz±0.2dB
TUNER, AUX, TAPE PLAY	20Hz to 40,000Hz±2dB

Tone Control

BASS	+12dB, -10dB (100Hz)
TREBLE	+10dB, -10dB (10kHz)
Loudness Contour (Volume control set at -40dB position)	... +6dB (100Hz), +3dB (10kHz)

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

PHONO . . .	86dB (Phono interference filter switch off)
TUNER, AUX, TAPE PLAY	95dB
Hum and Noise (DIN, continuous power/50mW)	
PHONO	58dB/70dB
AUX	60dB/85dB

Miscellaneous

Power Requirements	AC 110/120/220/240V (switchable), 50/60Hz (S model) AC 220/240V (switchable), 50/60Hz (HG model)
Power Consumption	520W (max.)
Dimensions	420(W)x147(H)x327(D) mm 16-9/16(W)x5-13/16(H)x12-7/8(D) in
Weight	Without package; 10.5kg (23lb 2 oz) With package; 11.7kg (25lb 13 oz)

Furnished Parts

Fuse 2.5A	1 (S model only)
5A	1 (S model only)
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.

IMPORTANT—LINE VOLTAGE

The LINE VOLTAGE SELECTOR switch has been set according to the local AC power line supply in the area of use. Before operating your unit, be sure to confirm that this switch has been set properly. If necessary to change the switch setting, perform according to the steps below.

S MODELS (110V—120V—220V—240V)

1. Disconnect the AC mains cord.
2. Use Phillips screwdriver to unscrew fuse cap, then take out fuse and SELECTOR plug (Fig. A).
3. Reinstall the SELECTOR plug so that its cut out section exposes the voltage indication of the SELECTOR socket which corresponds to your household AC power line.
4. Refer to table and install replacement fuse (provided as accessory).
5. Insert fuse in fuse cap, then install cap to plug and tighten.

S model

TABLE	
VOLTAGE	FUSE
110V, 120V	5A
220V, 240V	2.5A

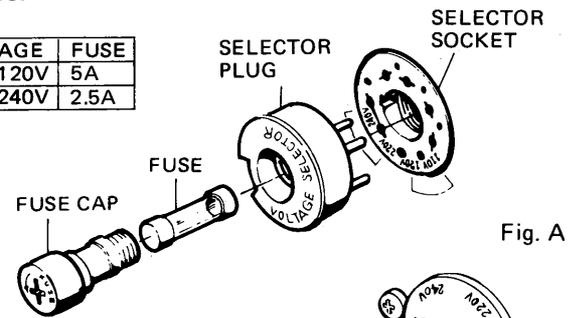


Fig. A

HG MODELS (220V—240V)

1. Disconnect the AC mains cord.
2. Use Phillips screwdriver to loosen mounting screw, then remove SELECTOR plug (See Fig. B).
3. Reinstall the SELECTOR plug with its cut out section exposing the correct voltage indication.
4. Insert and tighten mounting screw.

HG model

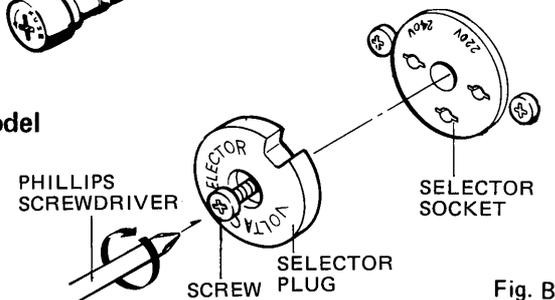


Fig. B

FOR USE IN UNITED KINGDOM OR AUSTRALIA

CAUTION 240V

Mains supply voltage is factory adjusted at 240 volts.

WARNING

THIS APPARATUS MUST BE EARTHED.

IMPORTANT

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

Green-and-Yellow: Earth
 Blue: Neutral
 Brown: Live

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

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol \equiv or coloured green or green-and-yellow. The wire which is coloured blue must be connected to the terminal which is marked with the letter N

or coloured blue or black.

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

The power cord should be connected last, make sure that the power switch is off. First insert the female appliance connector of the mains cord into the AC INLET, then plug the cord to the wall socket. Be sure the appliance connector is fully inserted into the AC INLET. Unplug the set from the wall socket when it is not be used for an extended period of time.

FOR YOUR SAFETY

1. Insert this plug only into effectively earthed three-pin plug-socket outlet.
2. If any doubt exists regarding the earthing, consult a qualified electrician.
3. Extension cords, if used, must be three-core correctly wired.

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PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia