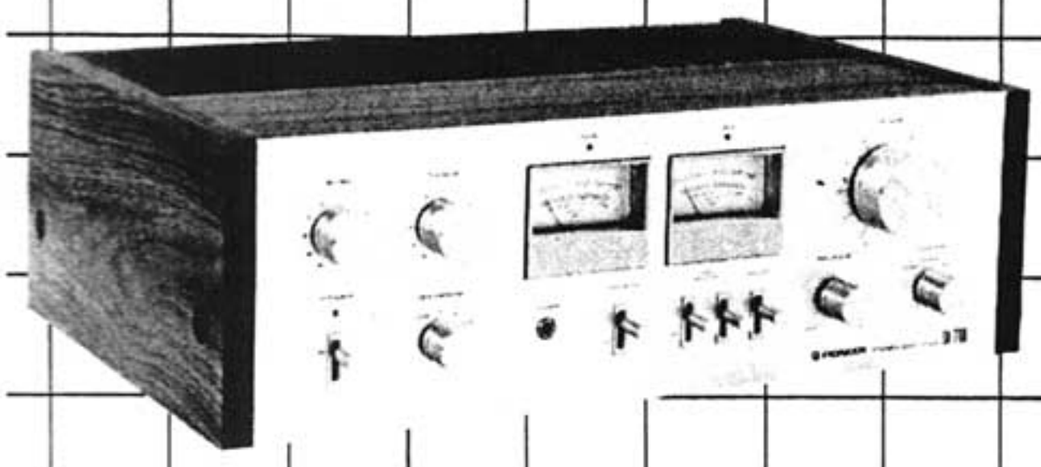
STEREO AMPLIFIER

SA-7700

OPERATING INSTRUCTIONS

KU
KC



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.

Walnut grained vinyl top and side panels are used in the construction of this cabinet.

PIONEER

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

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-7700 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 an 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 ±0.2dB. 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-7700 at an 8-ohm impedance.

Two Sets of Speaker Systems can be Connected

The SA-7700 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-7700 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.

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

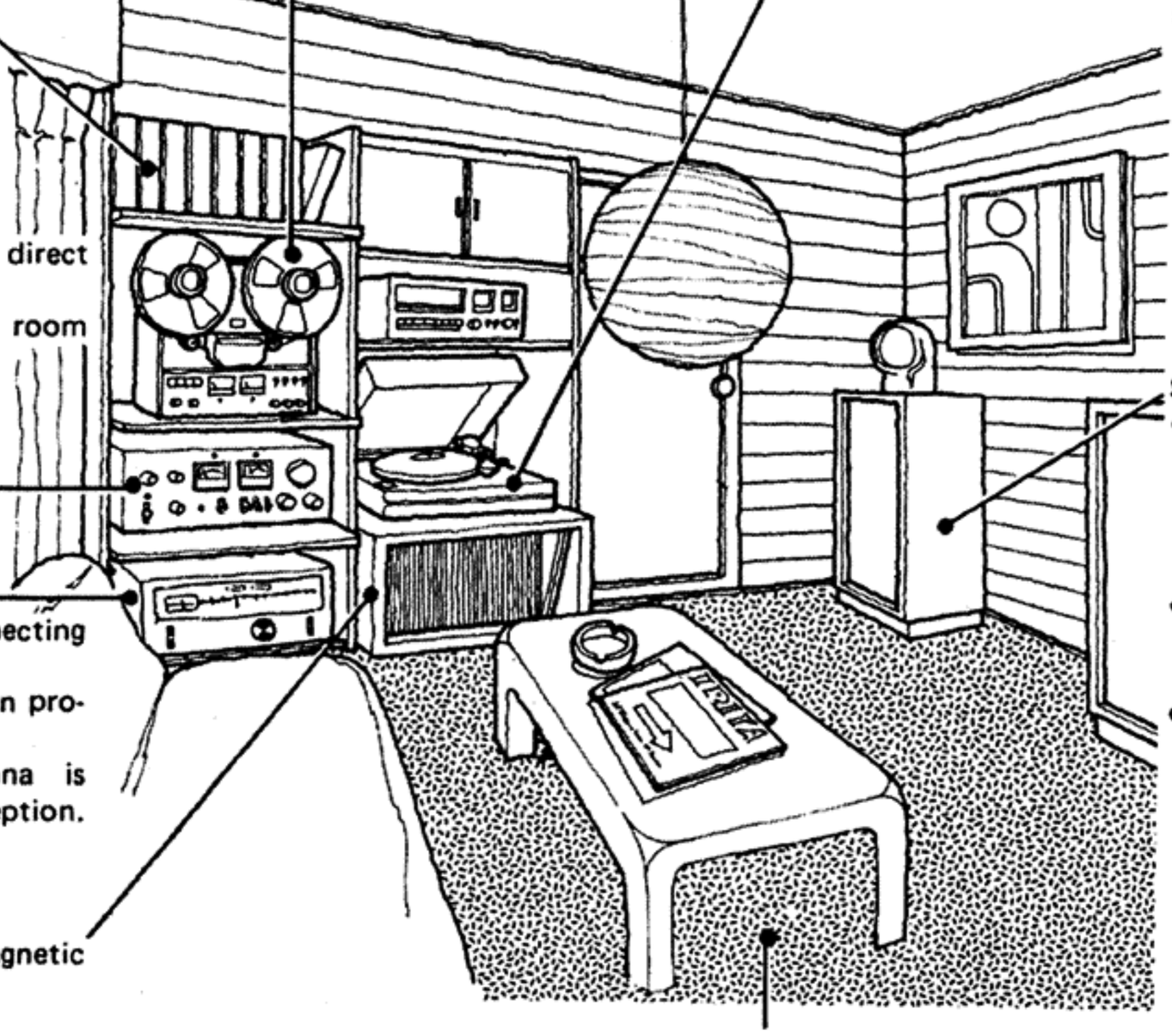
STEREO SYSTEM COMPOSITION

Tape deck
- Be sure to install reel clamps when operating vertically.
- Protect with dust cover when not in use.

Turntable
- Protect from vibrations.
- Keep dust cover closed whenever possible.

Cabinet
- Stable construction that is durable under weight and vibration.

Speaker connections
Check that speaker cord has sufficient current handling capacity. Avoid using longer cord lengths than necessary.



Thick curtains
- Shield equipment from direct sunlight.
- Aid to reduce listening room reflections and resonance.

SA-7700

Tuner
- Do not use longer connecting cords than necessary.
- Install antenna in direction providing best reception.
- An outdoor FM antenna is recommended for FM reception.

Storage case
- Store records vertically.
- Protect tapes from magnetic fields.

Speaker system
- Rear and side panels of left and right speakers should be at the same conditions. (Placing with rear panel against a wall improves bass.)
- Install speakers so that vibrations are not transferred directly to the floor.
- Employ stands or concrete blocks with bookshelf type speakers.

- Best listening Position is slightly to the rear of the apex of an equilateral triangle formed with the left and right speakers.
- Furniture materials and placement can affect tone.

Carpet
- Improves sound absorption.

INSTALLATION CAUTIONS

In order to ensure long term top performance, do not install the SA-7700 in locations such as the following:

Locations to be avoided	Detrimental effects
• Direct sunlight, radiators or other sources of heat.	• 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.
• 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.
• 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 or flammable material is used or stored.	• In addition to fire hazard, some materials may contribute to corrosion or mar finish of equipment.

CONNECTION DIAGRAM

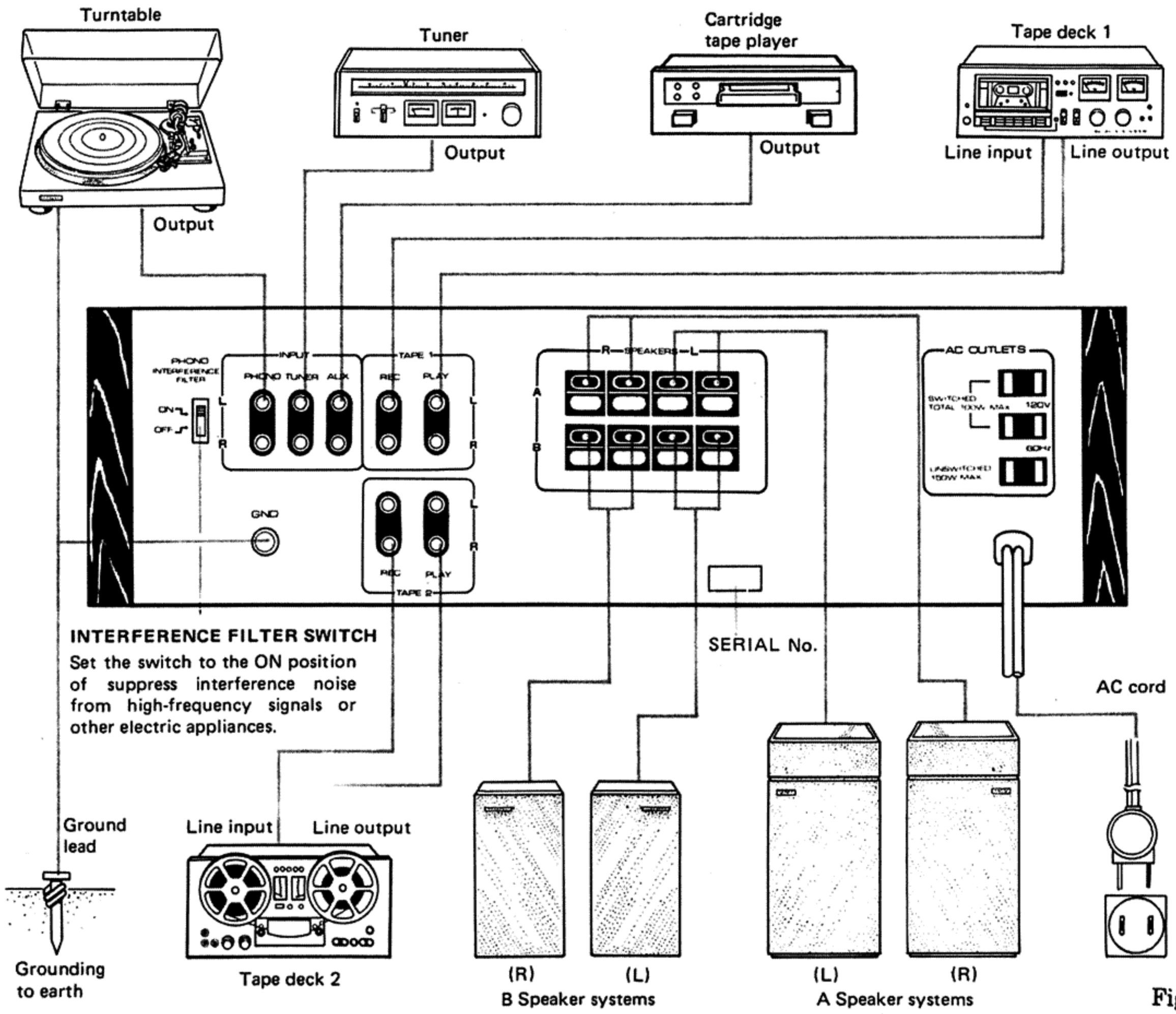


Fig. 1

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. 2)

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.

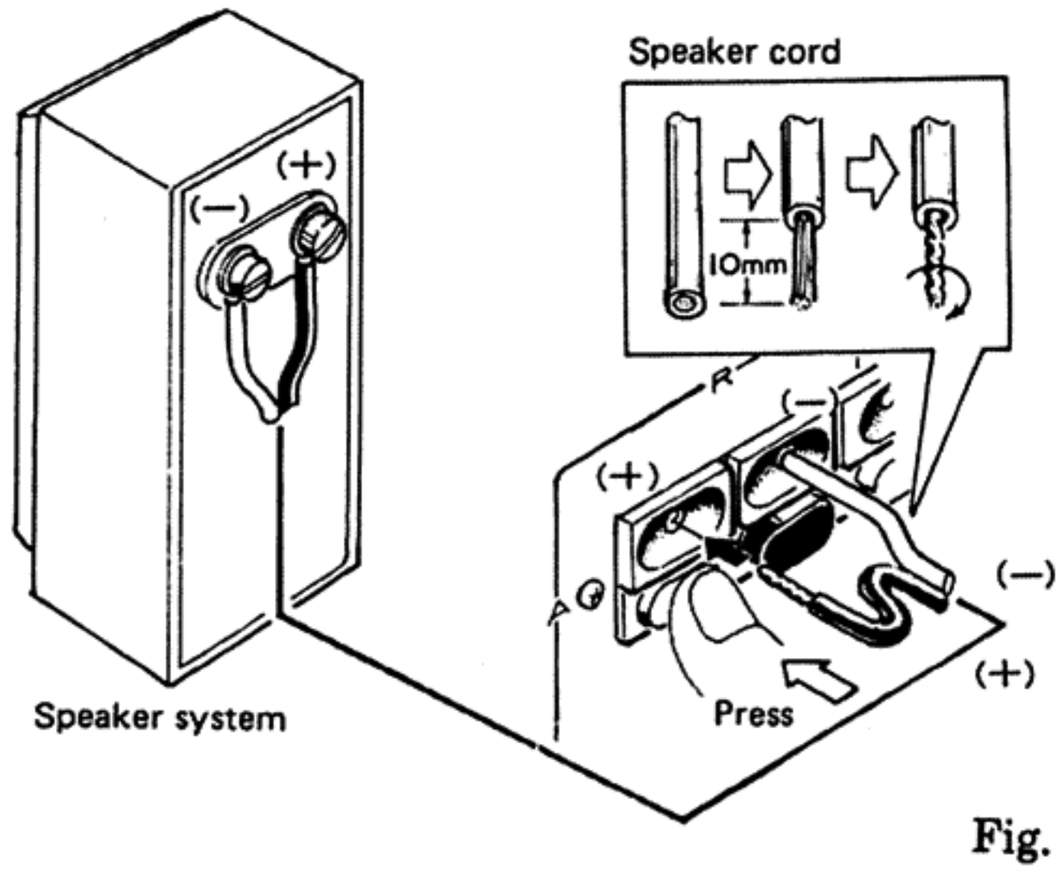


Fig. 2

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

TURNTABLE CONNECTIONS (Fig. 3)

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.

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.

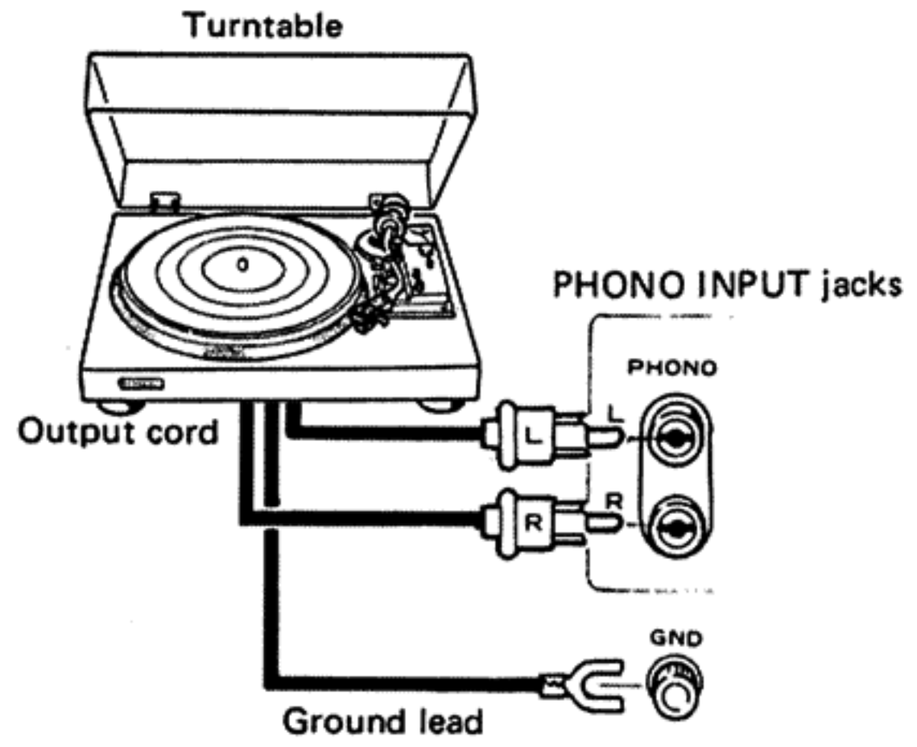


Fig. 3

TUNER CONNECTIONS (Fig. 4)

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

AC OUTLETS and power plugs

Plug the power plug of your audio components into the SWITCHED and UNSWITCHED convenience outlets.

SWITCHED . . . . . The power supplied through these outlets is coupled to the operation of the amplifier's POWER switch, so when the POWER switch is turned to ON, power is supplied through these outlets and when turned to OFF, power is cut off. For instance, if you connect a turntable to one outlet and keep its power switch at ON, you can turn it on and off by turning the amplifier's POWER switch on and off. The maximum power capacity which may be connected to the two SWITCHED outlets is 100W.

UNSWITCHED . . . . 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 150W.

- 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.

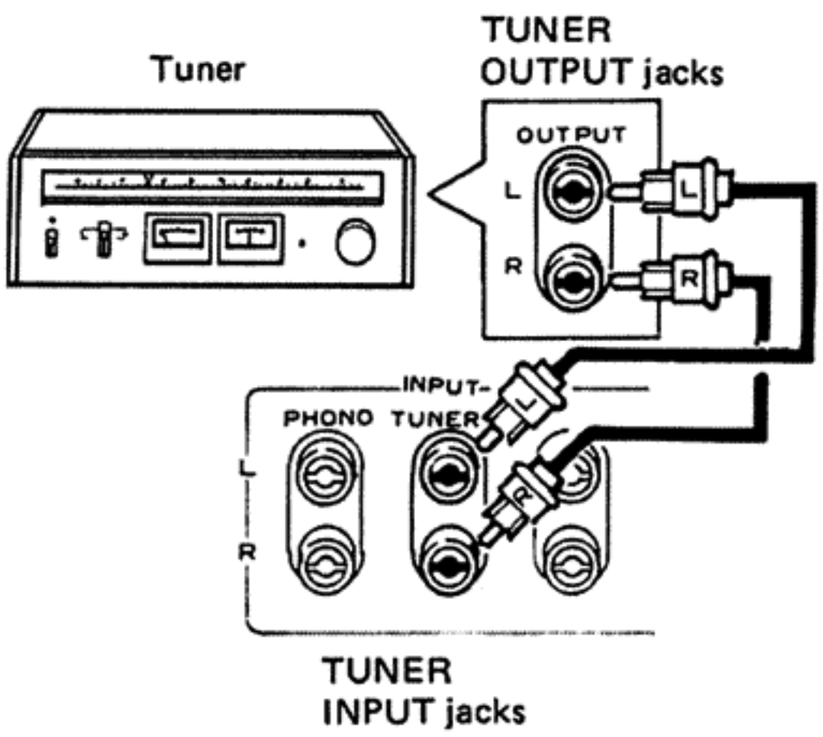


Fig. 4

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.

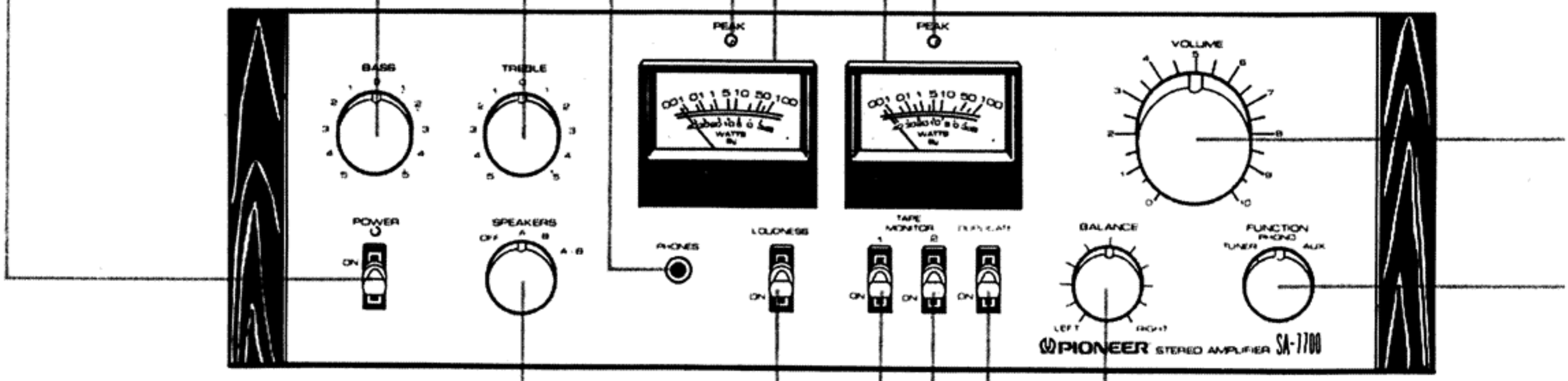
POWER METERS

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 position with the FUNCTION switch while the sound from one program source is being reproduced.

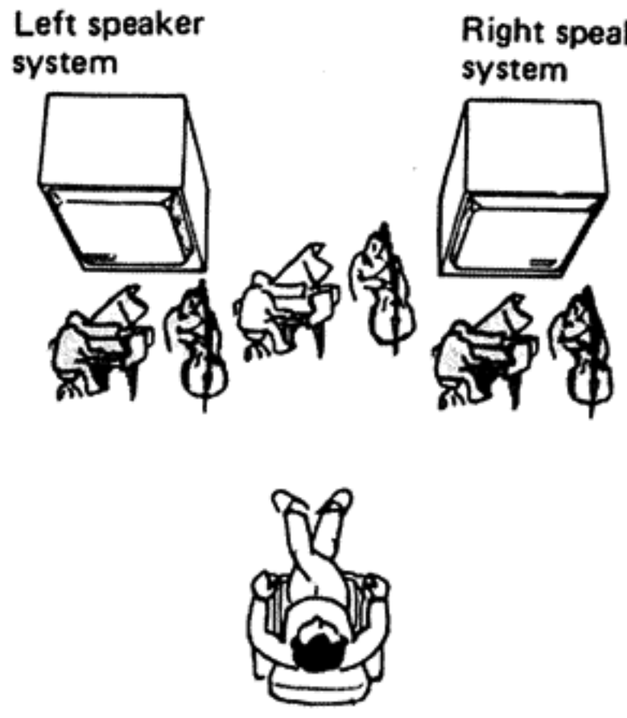


Fig. 5

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 occuring in the output.
- Loss of speaker sound or a continuous clicking noise of the internal relay during operation is most likely 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.

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.

USING THE TAPE DECKS

TAPE DECK CONNECTIONS

The SA-7700 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).

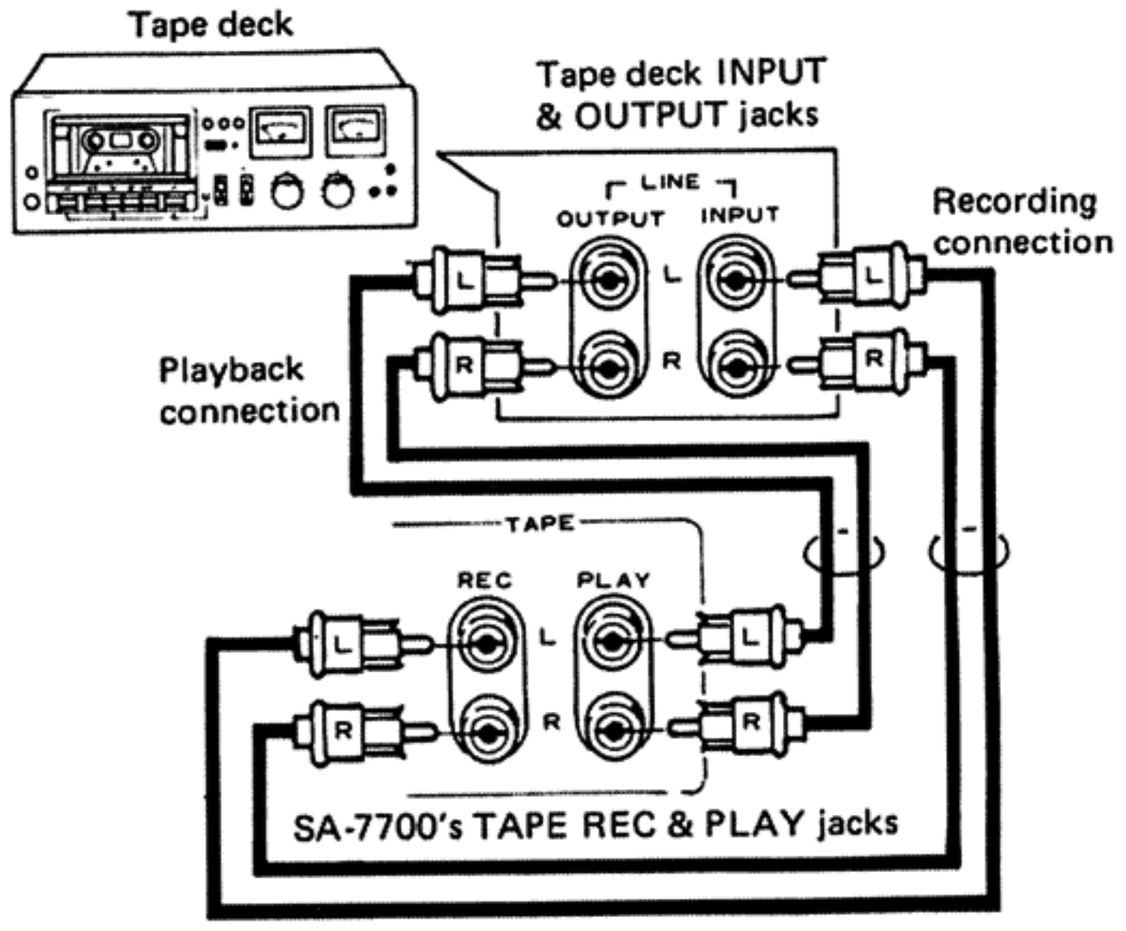


Fig. 6

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.

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 at ON, you will be able to play back a tape regardless of the setting of the function switch.*

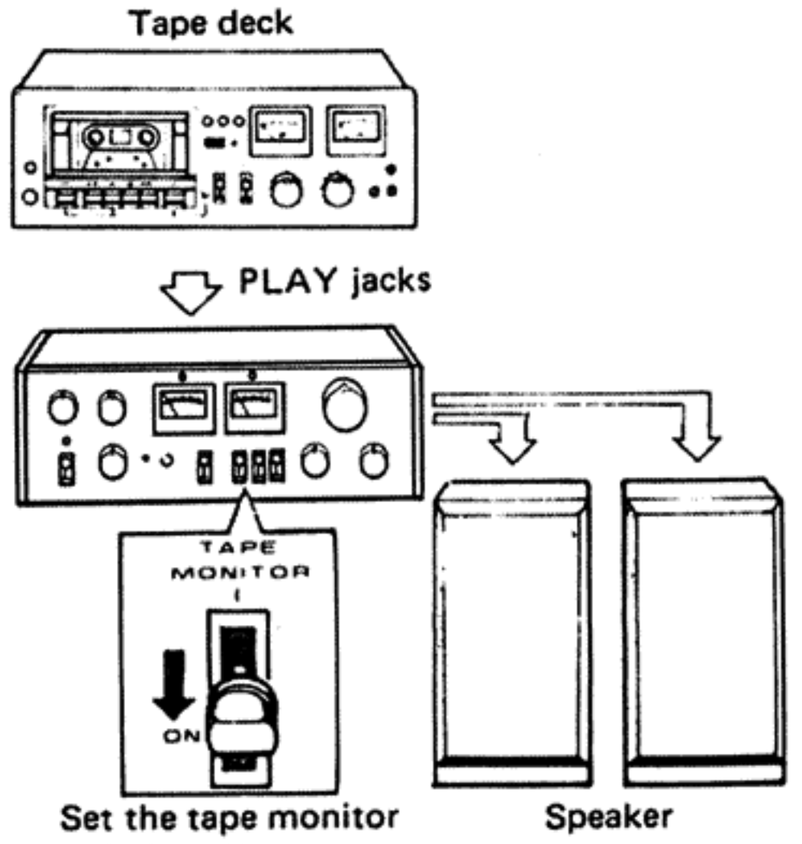


Fig. 7

RECORDING

1. Set the FUNCTION switch so that it corresponds to the program source which you intend to record (for example, a record of a turntable or an FM broadcast).
2. Set the DUPLICATE switch to upper position.
3. Play the selected program source.
4. Operate the tape deck controls and start recording.

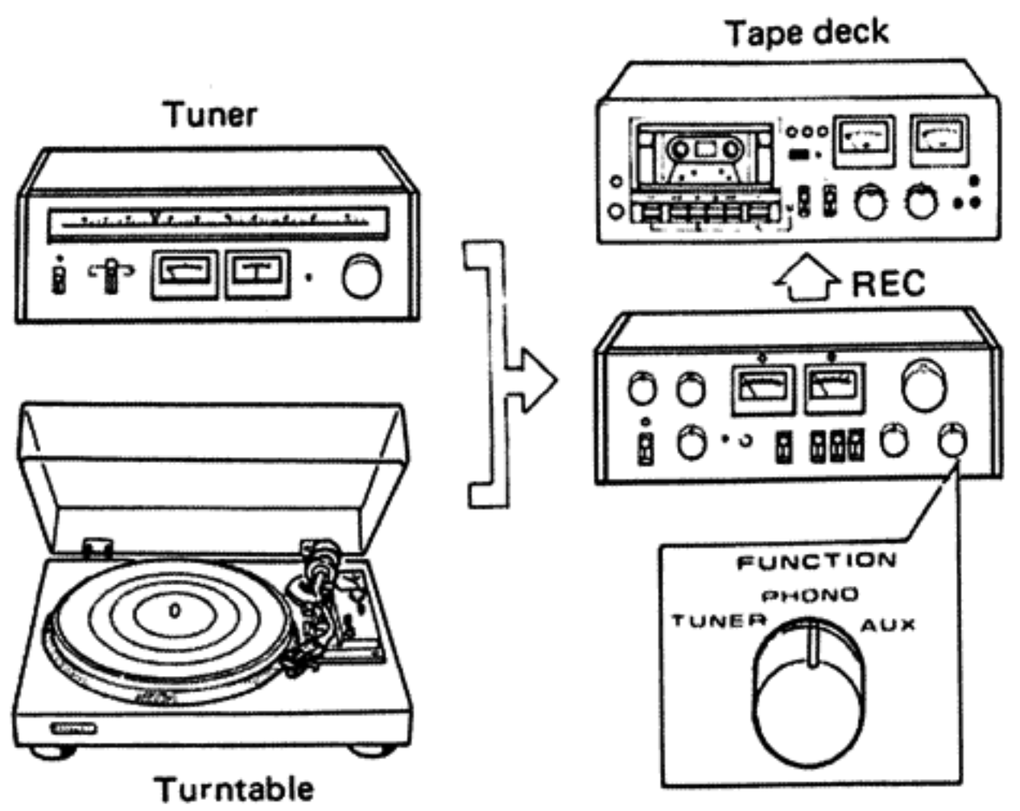


Fig. 8

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 affect on the recorded sound when a recording is being made.*

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.

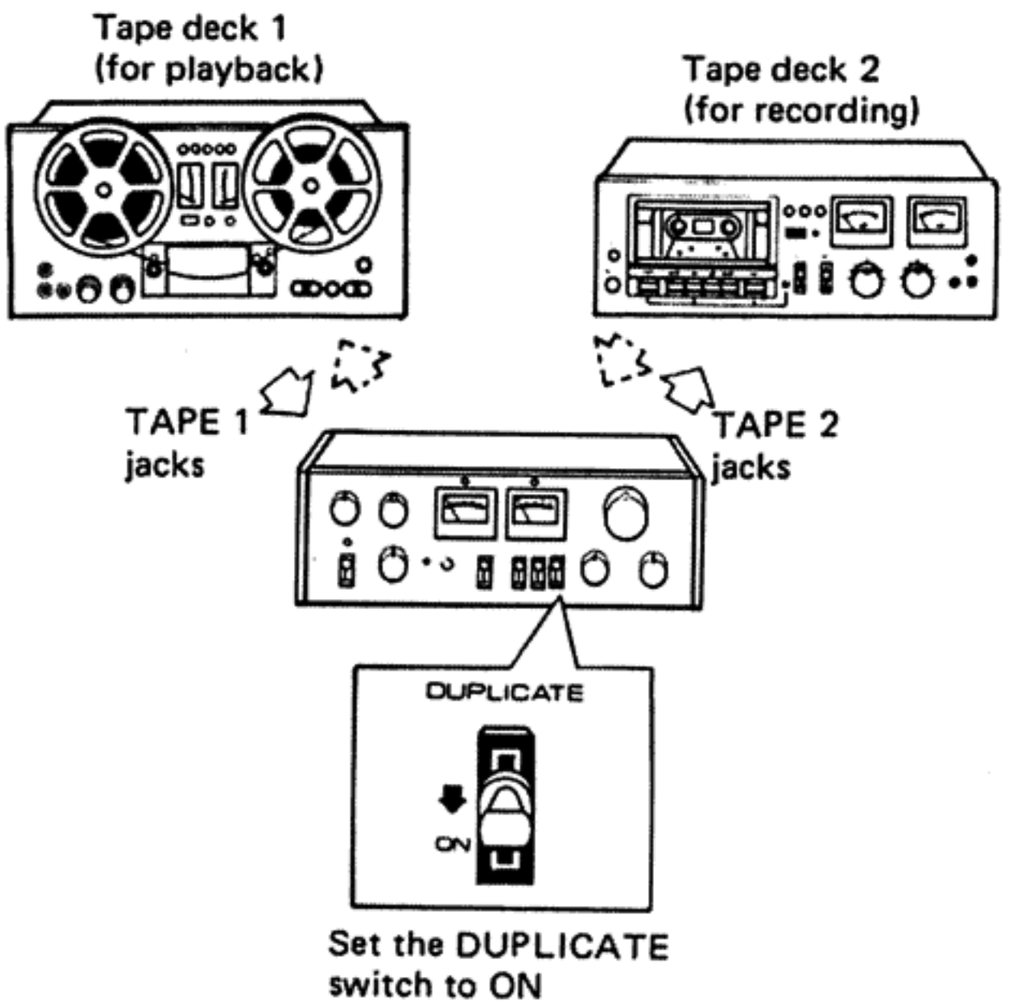


Fig. 9

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.

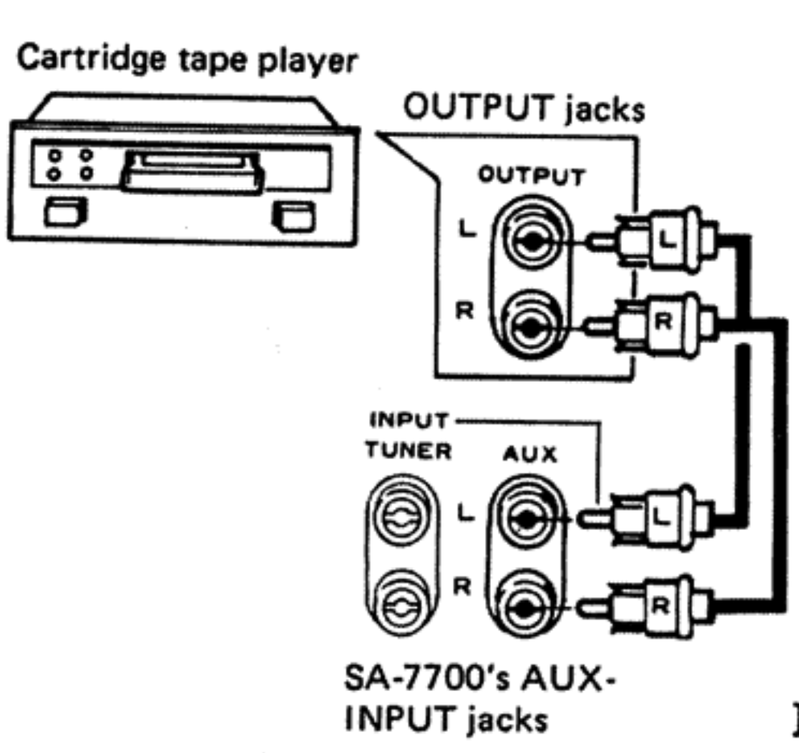
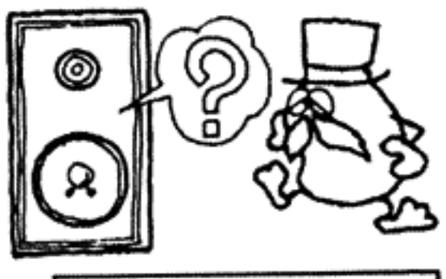


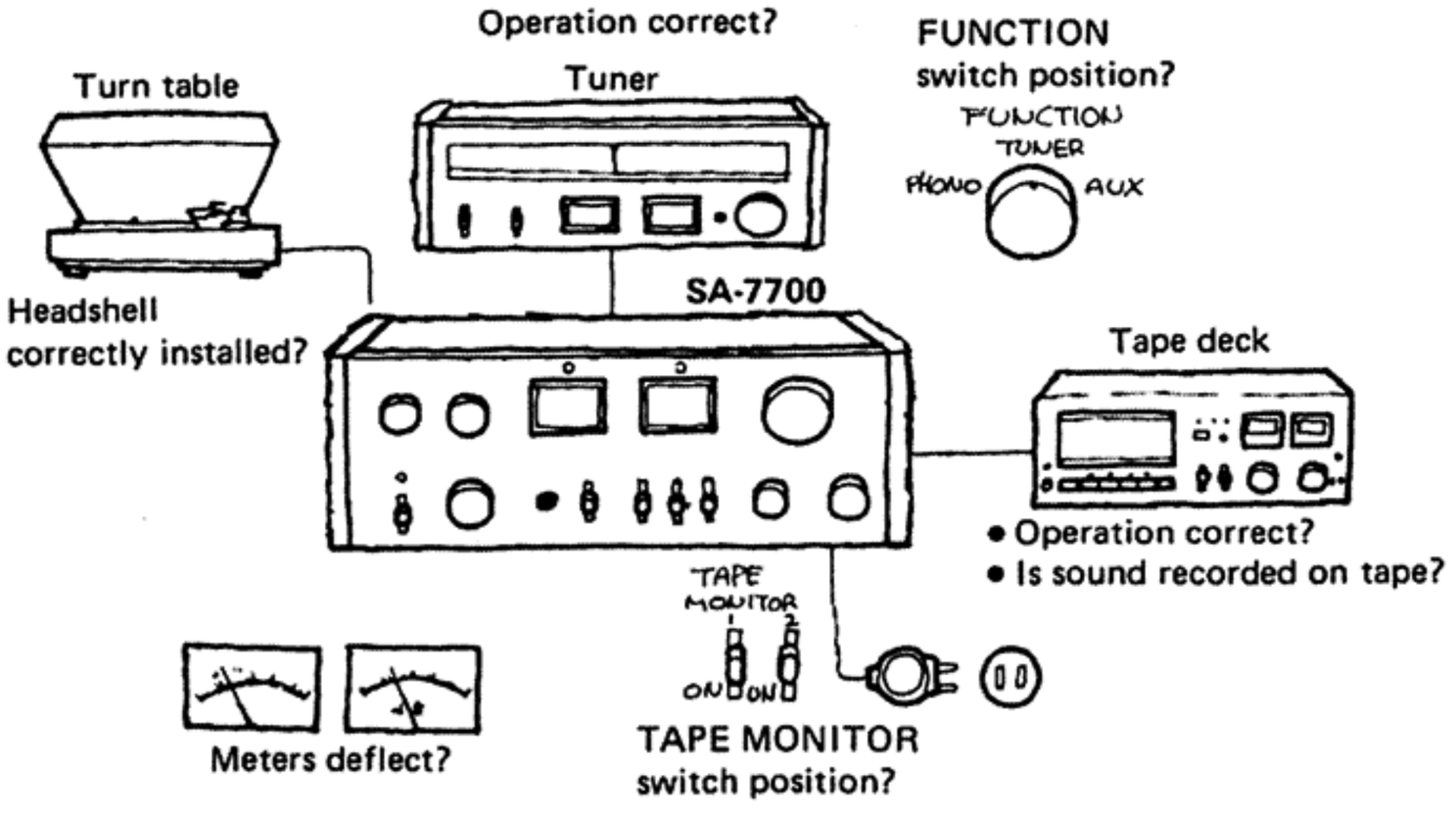
Fig. 10

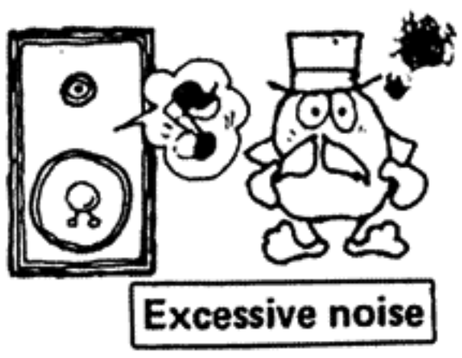
CONDITIONS FREQUENTLY MISTAKEN FOR MALFUNCTION

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.

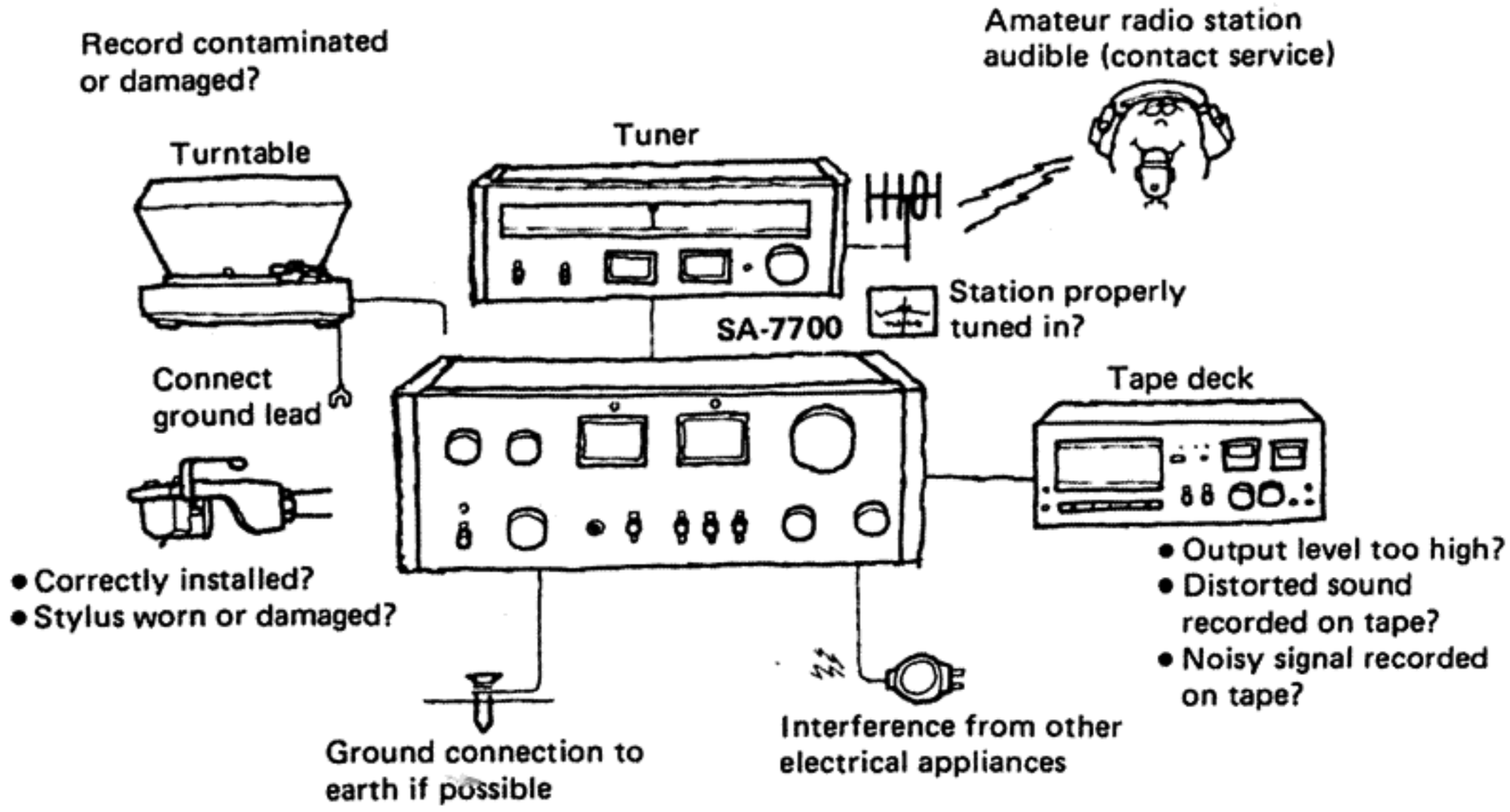


Sound not obtained





Excessive noise



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.

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)
- 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

Phono Overload Level (T.H.D. 0.01%, 1kHz)
- PHONO 180mV

Output (Level/Impedance)
- TAPE REC 1 . . . . . 150mV
- TAPE REC 2 . . . . . 150mV

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

Miscellaneous

- Power Requirements 120V 60Hz
- Power Consumption . . . . . 180W(UL), 380VA(CSA), 520W(max.)
- Dimensions . . . . . 450(W)x148(H)x329(D) mm
  17-3/4(W) x5-13/16(H) x12-15/16(D) in
- Weight . . . . . Without package; 11.1kg(24 lb 7 oz)
  With package; 12.3kg(27 lb)

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.

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