

KA-660

KENWOOD

INSTRUCTION MANUAL

Introduction

Your choice of this product indicates that you are a devotee to excellence in sound reproduction.

We appreciate your patronage and take pride in the long tradition of quality components, that our company represents.

So that you can get the most out of your unit, we suggest that you take the time to read through this manual before you hook up and operate your system. This will acquaint you with operating features, and system-connection considerations, so that your listening pleasure will be enhanced right from the start. You will notice that in all aspects of planning, engineering, styling, operating convenience and adaptability, we have sought to anticipate your needs and desires. Keep this manual handy for future reference.

For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.

Model _____ Serial Number _____

Unpacking

Unpack the unit carefully and make sure that all accessories are put aside so they will not be lost.

Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

Before operation

Safety precautions

Never remove the case. If the internal parts are touched accidentally, a serious electric shock might occur.

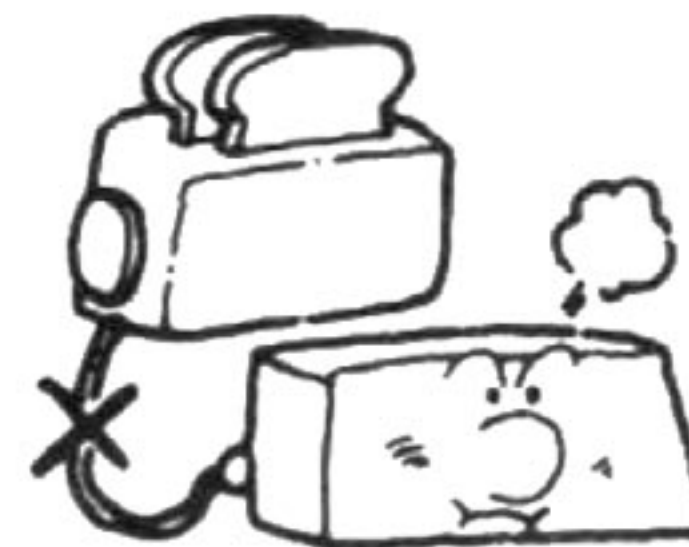


Never touch internal parts.

If a metal object, such as a hair pin or a needle, comes into contact with the power socket on the rear panel, a dangerous electric shock may result. For families with children, never permit children to put anything, especially metal, inside this unit.



Do not connect other audio equipment with a power consumption larger than that specified to the AC outlet on the rear panel. Never connect other electrical appliances, such as an iron or toaster.



Never connect other electrical appliances.

Touching the power plug when your hands are wet may result in a serious electric shock.



Never touch with wet hands.

Never pull, bend or extend the power cord. This could damage the power cord, resulting in a broken cord or short-circuit.



Never pull or stretch the cord.

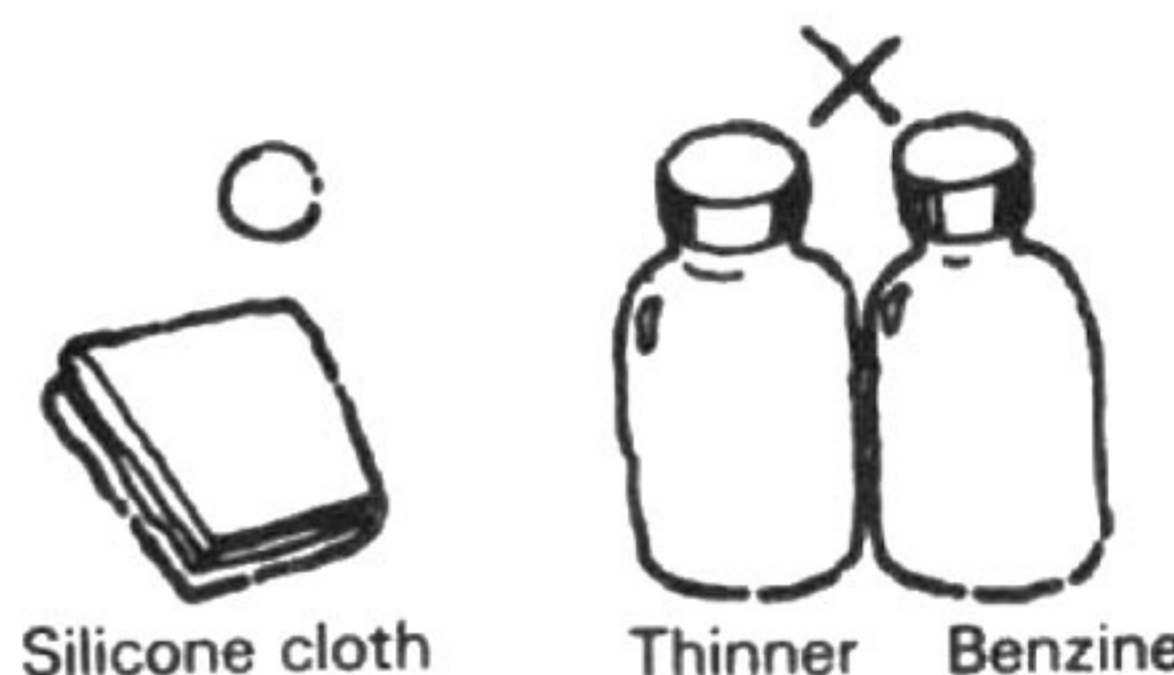
In case of abnormal smell

If an abnormal smell or smoke is detected, immediately turn the power OFF and pull out the power cord. Contact your dealer or nearest service station.



Cleaning

Do not use volatile solvents such as alcohol, paint thinner, gasoline, benzine, etc. to clean the cabinet. Use a silicone cloth or a clean dry cloth.



Silicone cloth

Thinner Benzine

Installation precautions

- Avoid locations subject to direct sunlight.
- Avoid high or low temperature extremes.
- Keep the unit away from heat radiating sources.
- Choose a location that is relatively free of vibration or excessive dust.
- Make sure power is off before making any system connections.

Before applying power

Important!

U.S.A., Canada, Australia and U.K.

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only. Units shipped to Australia and U.K. are designed for operation on 240 volts AC only. These units are not equipped with an AC voltage selector switch and the discussion of such a switch that follows should be disregarded.

All other countries

Units shipped to countries other than the U.S.A., Canada, Australia and U.K. are equipped with an AC voltage selector switch on the rear panel. Refer to the following paragraph for the proper setting of this switch.

AC voltage selection

This unit operates on 120 (110 - 120) volts or 220 (220 - 240) volts AC. The AC voltage selector switch on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

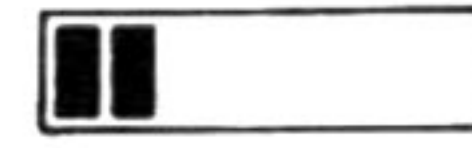
Note: Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.

Safety precaution for AC plug (For Canada)

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

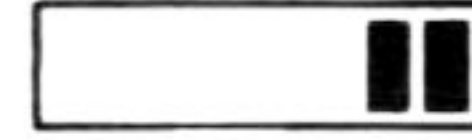
WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

AC 120 V~ (110-120) AC 220 V~ (220-240)



This shows switch lever locked in the AC 120 (110-120) V~ position.

AC 120 V~ (110-120) AC 220 V~ (220-240)



This shows switch lever locked in the AC 220 (220-240) V~ position.

Move switch lever to match your line voltage.

AC voltage selector switch

For United Kingdom

The mains plug must be removed from the wall socket prior to any internal examination.

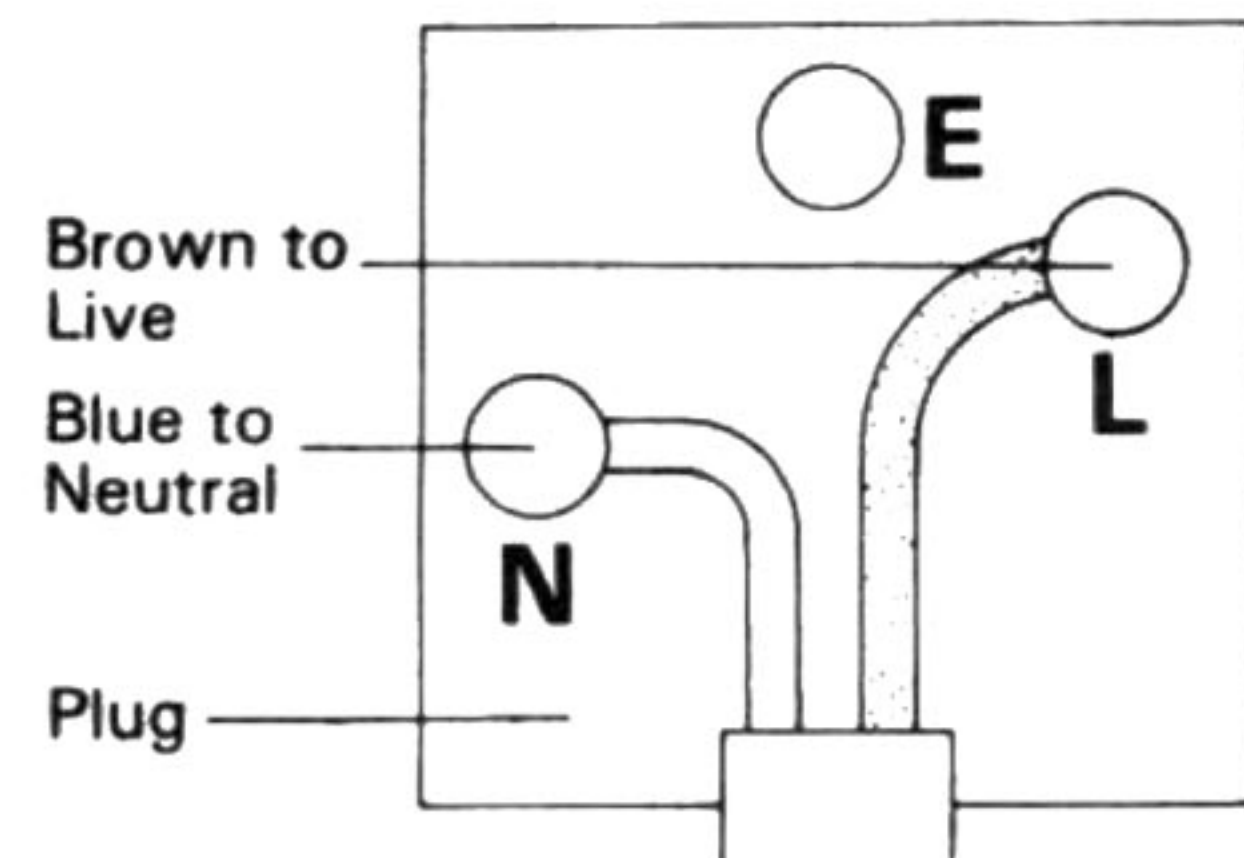
Important

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

Blue Neutral
Brown Live

The wires in this mains lead must be connected to the terminals in the plug as follows:

Wire Colour	Plug Terminal Marking
Blue	N or Black
Brown	L or Red

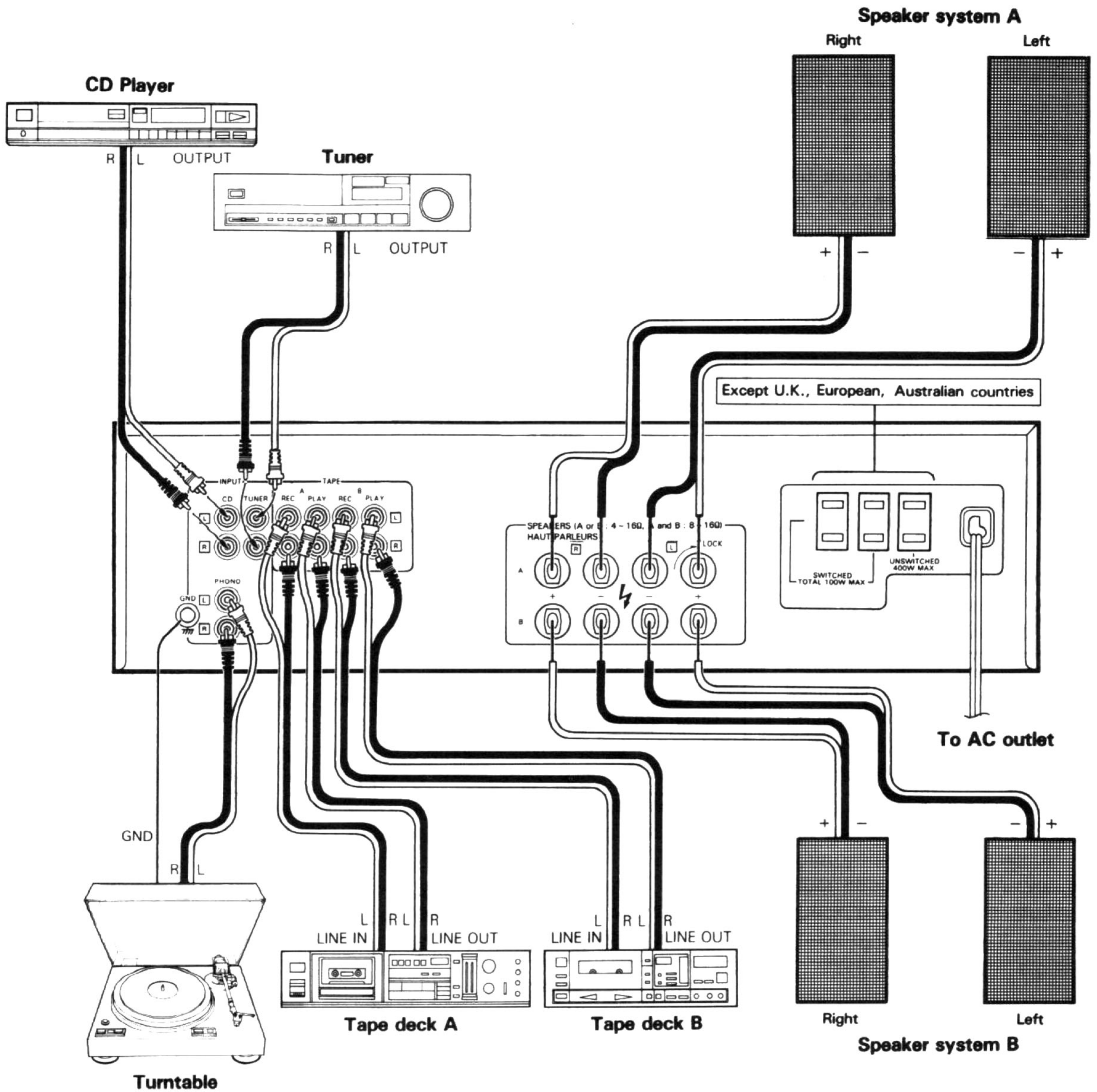


- Notes:**
- 1) If a 13-amp plug is used, this must be fitted with a 5-amp fuse.
 - 2) If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal.

Rear panel safety precautions

<p>CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN</p>	<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>
	<p>The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.</p>
	<p>The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.</p>

System connections



Speakers

This amplifier has two pairs of speaker terminals, SPEAKERS A and SPEAKERS B.

Connecting one speaker system

Connect speakers rated at 4 ohms or more to the SPEAKERS A terminals.

Connecting two speaker systems

To connect an additional pair of speakers, use the B terminals. In this case, each speaker must be rated at 8 ohms or more.

Notes:

1. During speaker systems connection, set the POWER switch to OFF.
2. Check that the connected lead wires of the speaker systems do not contact other jacks or terminals.
3. When connecting one pair of speakers to the SPEAKERS A or B terminals, be sure that the impedance of each speaker is between 4 and 16 ohms. When connecting speakers to both SPEAKERS

and B terminals, be sure that the impedance of each speaker is between 8 and 16 ohms.

WARNING!

Particular attention must be given to making good electrical contact at the amplifier-output and speaker terminals. Poor or loose connections can cause sparking or burning at the terminals because of the very high power that the amplifier can deliver. Follow these steps carefully.

1. Remove insulation from lead tip.
2. Twist wire tightly, and solder.
3. Insert the lead tip as far as it will go.
4. Turn the knob clockwise to lock the wire.
5. To ensure firm contact, pull the wire slightly.

Connecting speaker cords

Turntable

The unit can be connected to either type of turntable; one using MM cartridge or one using MC cartridge.

Connect the left channel of the turntable to the PHONO INPUT jacks and the right channel to the PHONO INPUT jacks.

If the turntable has a ground wire, connect it to the unit's GND terminal to avoid hum.

CD player

Connect the left channel of the CD player to the CD INPUT jack and the right channel of the CD player to the CD INPUT jack.

Tuner

Use the TUNER INPUT jacks for connection to an FM stereo or AM-FM stereo tuner.

Connect the left channel of the tuner to the TUNER INPUT jack and the right channel of the tuner to the TUNER INPUT jack.

Ground

For maximum safety and minimum interference connect the GND terminal to a good earth ground if practicable. A good earth ground is a cold water pipe or a metal stake driven into moist earth. However, never use a gas pipe for this purpose.

Tape decks

If only one tape deck is to be connected to the system it is recommended that it be connected to the jacks marked TAPE A.

Tape deck input and output cables are normally terminated with phono plugs.

Playback

Plug the left and right output cables of the tape deck into the and TAPE A PLAY jacks.

Record

Plug the left and right input cables of the tape deck into the and TAPE A REC jacks.

Second tape deck

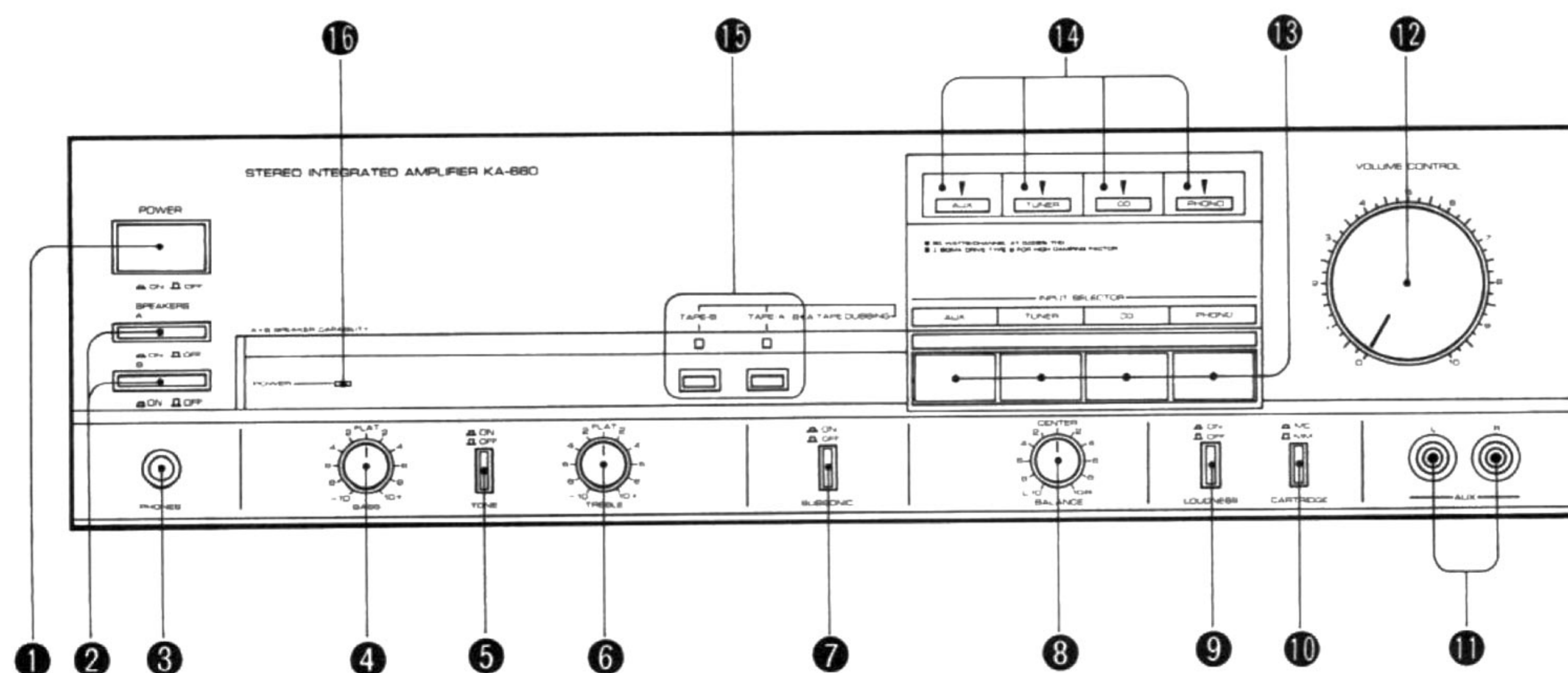
Plug the input and output cables from the second tape deck into the REC and PLAY jacks marked TAPE B.

AC outlets (Except U.K., European, Australian countries)

The AC outlets on the rear panel of the unit may be used to supply power to other components in the system, such as turntables, tape decks, etc. Never connect equipment whose power consumption exceeds the maximum value shown at each outlet.

- 1. SWITCHED outlets:** These outlets supply power only when the unit is turned on. The maximum total capacity (both outlets) is 100 watts.
- 2. UNSWITCHED outlet:** The outlet provides power when the unit is plugged into an active AC wall outlet, regardless of the setting of the POWER switch. The maximum capacity is 400 watts.

Controls, indicators and connectors



1 POWER switch

Press this switch to turn on the power. To turn the power off, press the switch again to set it to the out position.

2 SPEAKERS switches

To obtain sound from the speakers connected to the SPEAKERS A terminals, set the A switch to ON.

To obtain sound from the speakers connected to the SPEAKERS B terminals, set the B switch to ON.

To use A and B speakers simultaneously, set both A and B switches to ON.

To listen with headphones, set both A and B switches to OFF.

③ PHONES jack

Plug stereo headphones into this jack for private listening. The speakers are silenced when the SPEAKERS switches are set to OFF.

④ BASS control

Turn clockwise to increase bass response, counter-clockwise to reduce bass response.

The "FLAT" setting provides a flat bass response.

⑤ TONE switch

This switch provides flat frequency response by deactivating the tone control circuit. BASS and TREBLE controls do not operate when this switch is set to OFF.

Set this switch to ON when the BASS and TREBLE controls are used.

⑥ TREBLE control

Turn clockwise to increase treble response, counter-clockwise to reduce treble response.

The "FLAT" setting provides a flat treble response.

⑦ SUBSONIC switch

ON — With the switch in this setting, signals below 18 Hz are attenuated at the rate of 6 dB per octave. Although such signals are inaudible, they can cause intermodulation distortion components in the audible range. It is recommended that this switch be depressed at all times, even if no turntable rumble is apparent.

OFF — With this setting, the frequency characteristics are flat, which is suitable for extreme bass sound reproduction.

⑧ BALANCE control

This control permits balancing of the left and right channels when an imbalance exists from the sound source, or to correct acoustic imbalance due to room conditions. Turn it to the left from the CENTER position to raise the left channel; turn it to the right of CENTER to raise the level of the right channel.

⑨ LOUDNESS switch

ON — Bass notes are boosted at low listening levels. This precisely offsets a characteristics of human hearing whereby we are less sensitive to bass notes at very low listening levels.

OFF — The low-level bass boost is removed.

Use this setting for sound reproduction at high volume level.

⑩ CARTRIDGE selector switch

This switch is used to select the type of cartridge of the turntable connected.

MM — When using an MM (moving magnet) and an high output MC (moving coil) cartridge, set the switch to this position.

MC — When using an MC cartridge set the switch to this position.

⑪ AUX jacks

Temporarily used high-level signal sources such as, tuner, CD player, extra tape decks, TV, VTR sound outputs, mic preamps, etc. are connected to these jacks.

⑫ VOLUME CONTROL

This control adjusts left- and right-channel volume simultaneously. Set it for the desired listening level.

⑬ INPUT SELECTORS

Used to select the program source connected to the INPUT jacks.

PHONO — To listen to the record sound connected to the PHONO jacks.

CD — To listen to the CD sound connected to the CD jacks.

TUNER — To listen to the tuner sound connected to the TUNER jacks.

AUX — To listen to the sound source connected to AUX jacks.

⑭ Input selector indicators

One of these indicators lights according to the INPUT SELECTOR pressed to indicate that one of AUX, TUNER, CD or PHONO is selected.

⑮ Tape selector switches, indicators

When one of the TAPE buttons is pressed, the corresponding indicator lights.

TAPE-A — Press this button to play back the sound of the tape deck connected to the TAPE A jacks.

TAPE-B — Press this button to play back the sound of the tape deck connected to the TAPE B jacks.

⑯ POWER indicator

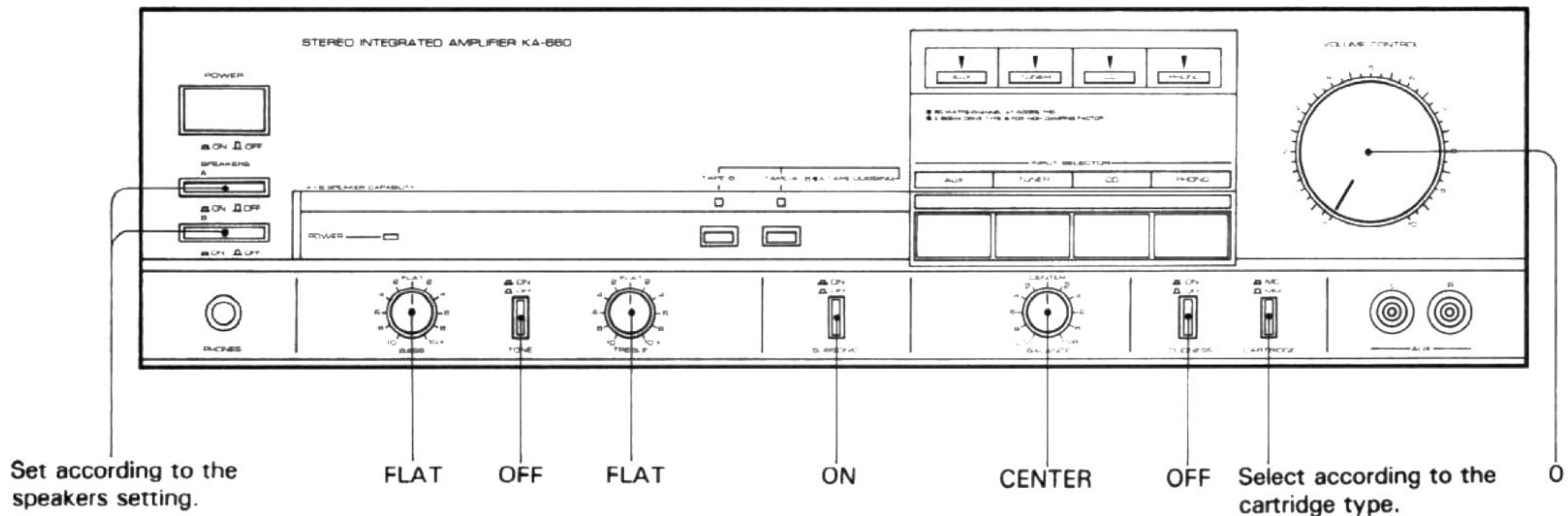
Lights when the POWER switch is set to ON.

Operating instructions

Prior to operation

It is recommended that rarely used controls and switches be preset in accordance with your preference in order to simplify operation. Once these controls and switches have been preset, normal operation is simply

turning on the POWER switch and selecting the desired program source by depressing one of the INPUT SELECTOR switches.



Tuner

1. Press the TUNER INPUT SELECTOR switch. The corresponding indicator lights.
2. Tune to the desired station.
3. Adjust the volume and tone.

Turntable

1. Turn the VOLUME CONTROL counterclockwise to temporarily mute the volume level.
2. Press the PHONO INPUT SELECTOR switch. The corresponding indicator lights.
3. According to the type of phono-cartridge used, set the CARTRIDGE selector switch to appropriate position.
4. Operate the turntable connected to the PHONO jacks.
5. Adjust the volume and tone.

To listen to CD

1. Press the CD INPUT SELECTOR. The corresponding indicator lights.
2. Operate the CD player connected to the CD jacks.
3. Adjust the volume and tone.

AUX

1. Press the AUX INPUT SELECTOR switch. The corresponding indicator lights.
2. Operate the component connected to the AUX jacks.
3. Adjust the volume and tone.

Tape decks

Tape playback

1. Press the appropriate tape selector switch. (For example, to play back tape deck A, press the TAPE A button.)
2. Operate the tape deck to playback your recorded tape.
3. Adjust the volume and tone.

Recording (with one tape deck)

1. Connect the tape deck to the TAPE A or TAPE B jacks.
2. Select the program source to be recorded with the INPUT SELECTORS.
3. Set up the program source component for operation and set up your tape deck for recording.
4. Set recording levels with the controls on your tape deck. The controls on the unit do not affect the signal output to the tape deck.

Recording (with two tape decks)

1. Connect the tape decks to the TAPE A and TAPE B jacks.
2. Select the program source to be recorded with the INPUT SELECTORS.
3. Set up your two tape decks for recording.
4. Recording levels should be set using controls on the individual tape decks.

Tape Dubbing

Tape recordings may be duplicated (dubbed) easily using two tape decks connected to the TAPE A and B jacks. Tape dubbing is possible from the tape deck connected to the TAPE A jacks to deck connected to the TAPE B jacks.

1. Connect two tape decks to the TAPE A and TAPE B jacks.
2. Press the TAPE A switch.
3. Play back the recorded tape and adjust the recording levels before starting tape dubbing.

Note:

Adjust record levels on the deck that is making the copy using that deck's operating controls.

Thermal protector

This unit employs the thermal protector circuits which automatically shuts off the power or operates muting if the temperature inside the amplifier becomes unusually high. Unusually high temperatures may be caused in poor ventilation condition or by a shorted output circuit.

Speaker protection circuit

Should the POWER switch be set to ON with the speaker cords short circuited, the speaker protection circuit functions. At this time, remove the short circuit. The speaker protection circuit is automatically reset and normal operation is resumed.

In case of difficulty

If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or service representative.

AM, FM, record or tape playback	Cause	Remedy
Power on but no sound.	1. Power cord not plugged in. 2. Poor connection at wall outlet. Power outlet inactive. 3. VOLUME CONTROL set fully counterclockwise.	1. Check plug contact. 2. Check outlet using a lamp or other appliance (outlet may be controlled by a wall switch). 3. Set the control to your preference.
No sound from left and right.	1. Speaker cords disconnected. 2. Speakers switched off. 3. No input selector switch is in use.	1. Check speaker connections. 2. Check speaker switch. 3. Push one of the selector switches to select the desired program.
Sound from left or right, but not both.	1. Poor speaker connections. 2. Defective speaker. 3. BALANCE set to one extreme or the other.	1. Check connections at both ends of speaker cord. 2. Reverse speakers, if problem stays with speaker have speaker checked. 3. Check setting of BALANCE control.
Record playback only	Cause	Remedy
No sound from both or one speaker.	Turntable output disconnected.	Check phono cables.
Loud hum drowns out sound.	Poor ground connection at phono cable connections.	Check phono plugs, particularly outershell connections.
Low background hum.	Hum Picked up in turntable or turntable cables.	Keep cables away from power cords. Twist left and right cables together. Reverse AC plug of turntable. Connect ground wire between turntable and GND connector.
Background buzz.	TV signal picked up by phono cable (especially near transmitter).	Route phono cables to minimize buzz.
Howling noise at maximum volume settings.	Acoustic pickup from speaker.	Increase distance between speaker and turntable. Choose speaker locations carefully. Check turntable suspension.

Specifications

EIA

Power Amplifier Section

Power Output

60 watts* per channel minimum RMS, both channels driven at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.006% total harmonic distortion

Both Channels Driven into

8 ohms at 1 kHz..... 65 W + 65 W (Except USA, Europe, and U.K.)

4 ohms at 1 kHz..... 90 W + 90 W (Except USA, Europe, and U.K.)

Dynamic Power Output..... 145 watts at 4 ohms (Except USA, Europe, Australia, and U.K.)

Total Harmonic Distortion

(AUX—SPKR 8 Ω)

at Rated Output, 20 Hz ~ 20,000 Hz..... 0.006%

at 1/2 Rated Output, 20 Hz ~ 20,000 Hz..... 0.004%

at Rated Output, 1,000 Hz..... 0.003%

(PHONO—SPKR 8 Ω : at -20 dB VOLUME Level)

at Rated Output, 20 Hz ~ 20,000 Hz..... 0.006%

Intermodulation Distortion

(60 Hz:7 kHz = 4:1)..... 0.006% at rated power into 8 ohms

Damping Factor 1,000, at 50 Hz into 8 ohms

Transient Response

Rise Time..... 3.5 μs

Frequency Response 1 Hz to 100 kHz, +0 dB, -3 dB

Input Sensitivity/Impedance

Phono MM 2.5 mV/47 k ohms

Phono MC 0.2 mV/100 ohms

TUNER, AUX., TAPE PLAY, CD 150 mV/47 k ohms

Signal-to-Noise Ratio (IHF-A)

Phono MM 86 dB for 2.5 mV input

Phono MC 68 dB for 250 μV input

TUNER, AUX., TAPE PLAY, CD 107 dB

Maximum Input Level for Phono

MM 200 mV (RMS), T.H.D. 0.006% at 1 kHz

MC 15 mV (RMS), T.H.D. 0.006% at 1 kHz

Output Level/Impedance

TAPE REC (Pin) 150 mV/220 ohms

Frequency Response for Phono..... RIAA standard curve ±0.3 dB (20 Hz to 20,000 Hz)

Tone Control

Bass ± 10 dB at 100 Hz

Treble ± 10 dB at 10 kHz

Loudness Control

(at -30 dB VOLUME Level) +9 dB at 100 Hz

Subsonic Filter 18 Hz, 6 dB/oct.

General

Power Consumption 3.3 A (USA and Canada: UL and CSA)

220 W (Others)

AC Outlets..... Switched 2, Unswitched 1 (Except U.K., European, Australian countries)

Dimensions W: 440 mm (17-5/16")

H: 133 mm (5-1/4")

D: 333 mm (13-1/8")

Weight (Net) 8.9 kg (19.6 lb)

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

IEC

Power Amplifier Section

Rated Power Output

8 ohms at 20 Hz to 20,000 Hz

no more than 0.006% THD (FTC)..... 60 W + 60 W

4 ohms at 60 Hz to 12.5 kHz

no more than 0.7% THD (IEC/NF)..... 90 W + 90 W

Total Harmonic Distortion

Rated Power Output into 8 ohms 0.006%

Intermodulation Distortion..... 0.006%

Frequency Response 1 Hz ~ 100 kHz +0 dB, -3 dB

S/N Weighted: Rated Output Power (IEC-A)

() = Unweighted at 50 mW (DIN)

Phono MM 86 dB (55 dB)

Phono MC 68 dB (60 dB)

TUNER, AUX., TAPE PLAY, CD 107 dB (57 dB)

Damping Factor at 8 ohms, 50 Hz 1,000

Transient Response

Rise Time 3.5 μs

Input Sensitivity/Impedance

Phono MM 2.5 mV/47 kΩ

Phono MC 0.2 mV/100 Ω

TUNER, AUX., TAPE PLAY, CD 150 mV/47 kΩ

Tone Control

Bass 100 Hz ± 10 dB

Treble 10 kHz ± 10 dB

Loudness Control (-30 dB) 9 dB at 100 Hz

Subsonic Filter 18 Hz, 6 dB/oct.

General

Power Consumption

IEC 220 W

Dimensions W: 440 mm

H: 133 mm

D: 333 mm

Weight (Net) 8.9 kg

Note:

We follow a policy of continuous advancements in development. For this reason specifications may be changed without notice.