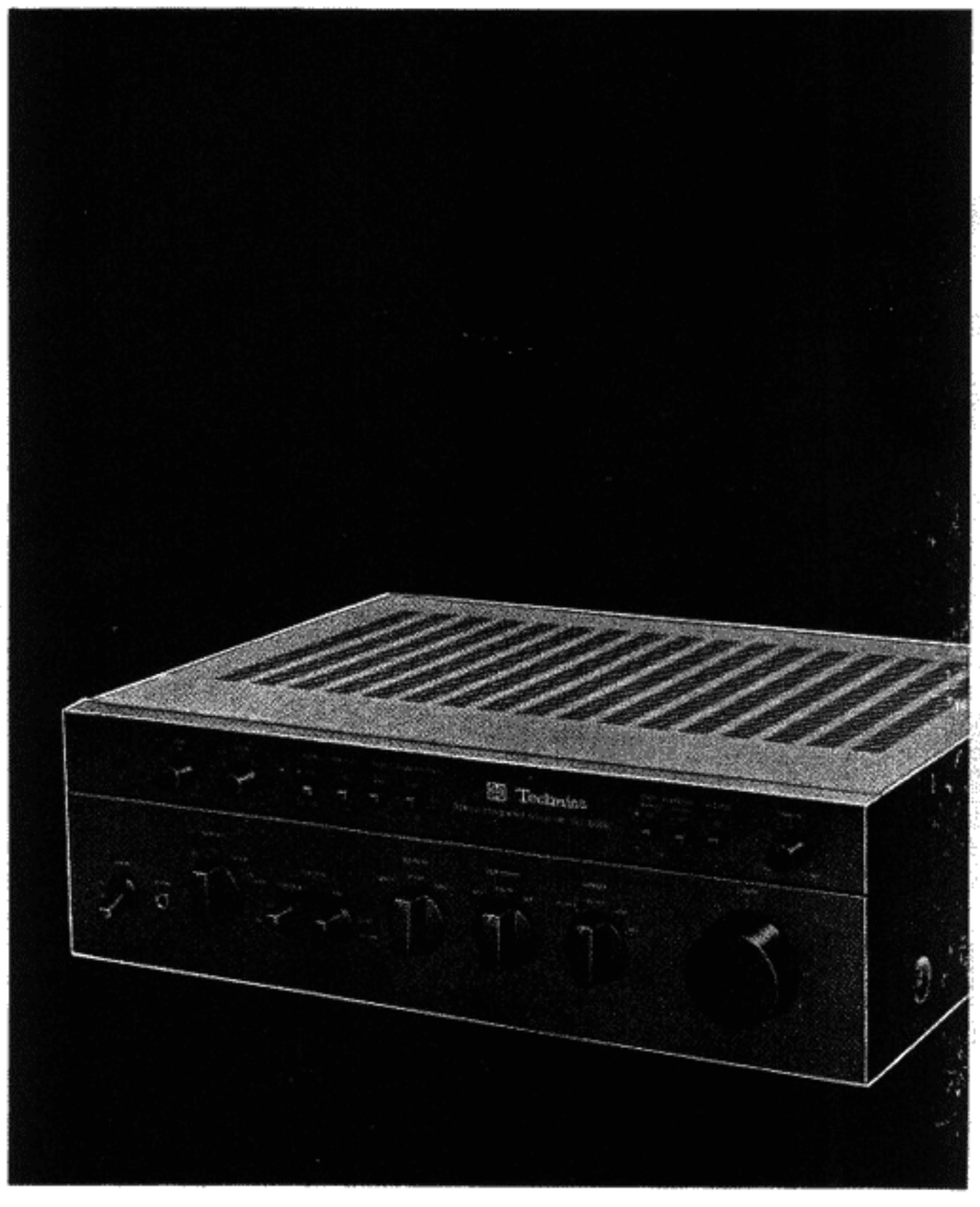
National **Technics**

STEREO INTEGRATED AMPLIFIER

SU-8080

OPERATING INSTRUCTIONS



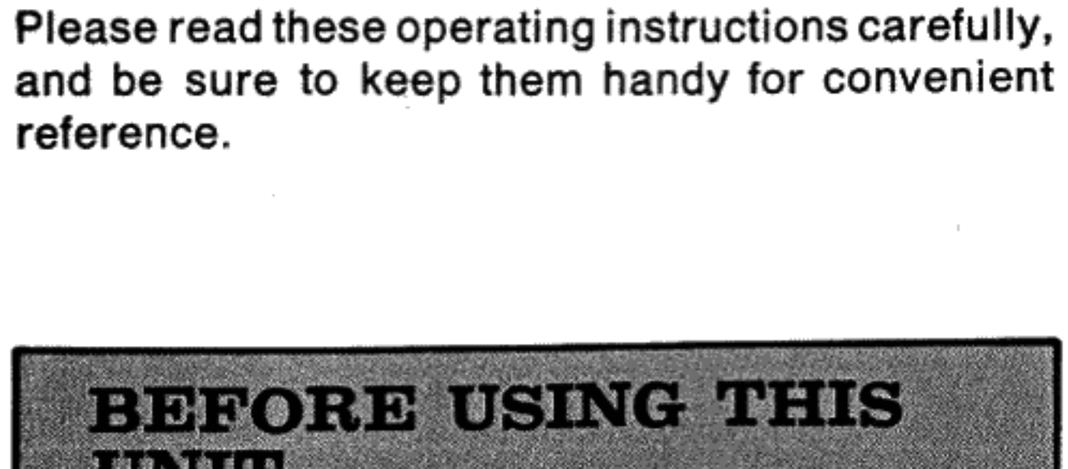
Before operating this unit, please read these instructions completely.

Dear Stereo Fan

We want to thank you for selecting this product and to welcome you to the growing family of satisfied Technics product owners around the world.
We feel certain you will get maximum enjoyment from this new addition to your home.
Please read these operating instructions carefully, and be sure to keep them handy for convenient reference.

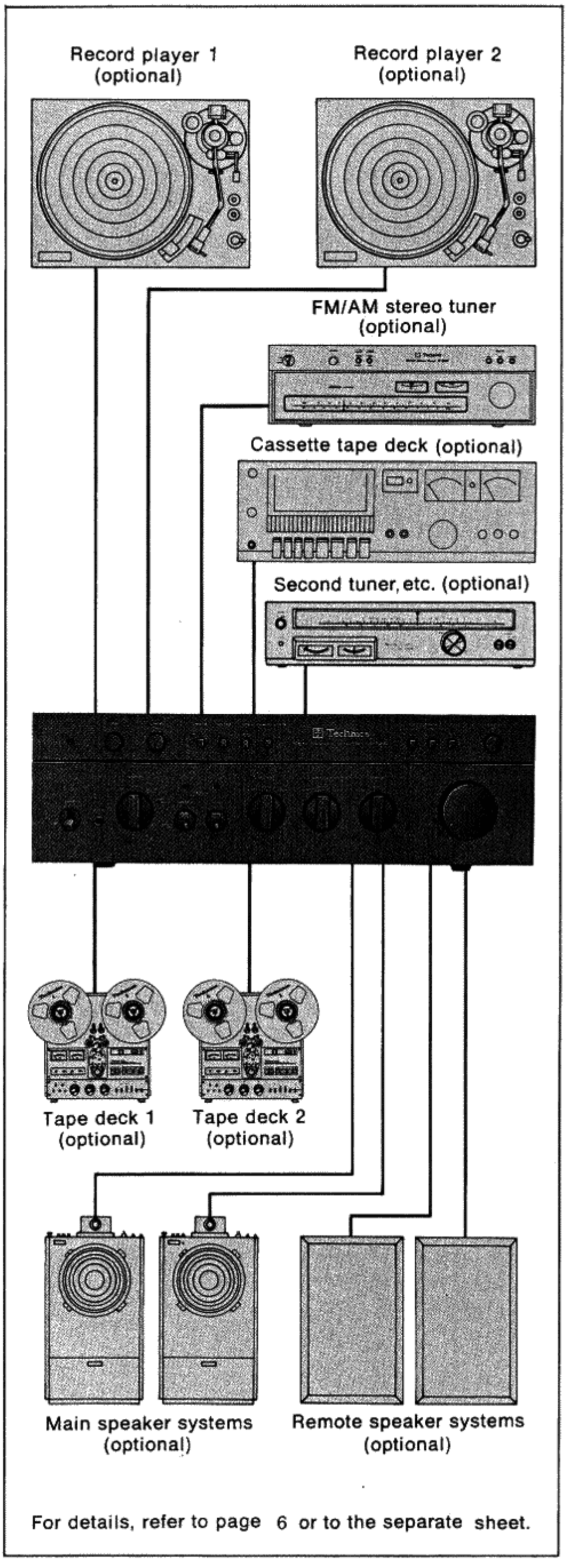
BEFORE USING THIS UNIT

Be sure to set the voltage selector to agree with the voltage used in the region where the unit is uesd. The desired voltage can be easily selected by using an ordinary screwdriver. Never forget to always have the voltage selector set to the correct setting because, if the setting is incorrect, this unit could be ruined by using it on incorrect voltage.
(For some areas, they do not include "voltage selector" for the safety standard and other reasons.)



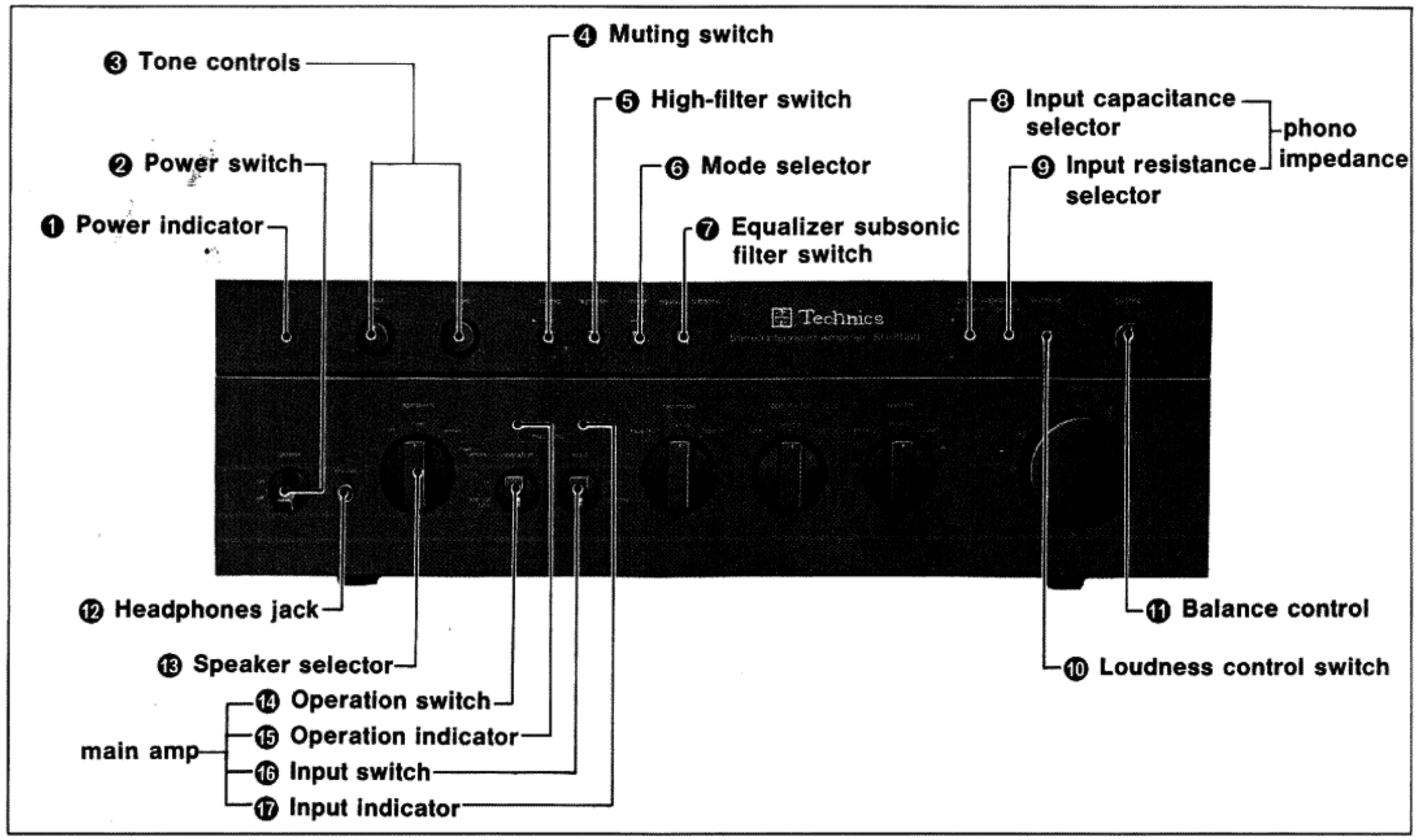
ACCESSORIES

APPLIANCES CONNECTABLE TO THIS UNIT



For details, refer to page 6 or to the separate sheet.

FRONT PANEL CONTROLS AND THEIR FUNCTIONS



❶ Power indicator

When the power switch② is turned on, this indicator illuminates to indicate that the unit is in operation. This indicator remains illuminated during operation.

❷ Power switch

This switch is used to turn the power on and off.

❸ Tone controls

These controls are used to make adjustments of the tone quality which may become necessary as a result of speaker characteristics or listening room characteristics, making it possible to adjust the tonal quality to that most agreeable to the listener's preference.

The bass control is for adjustment of the tone quality of the low sound range, and the treble control is for the high sound range. The characteristics can be changed within a range of +7.5dB to −7.5 dB for the bass at 50 Hz, and within the same range for treble at 20 kHz.

The characteristics are "flat" at the "flat" position, and are increased by turning the control to the right from the "flat" position, or decreased by turning it to the left.

❹ Muting switch

If this switch is set to the "−14 dB" position, the volume is decreased by 14 dB without changing the setting of the volume control.

This switch is convenient for use when changing a phono disc, or for decreasing the volume because of, for instance, the arrival of an unexpected caller or a telephone call.

❺ High-filter switch

If this switch is pushed to the "on" position, treble sound which is higher than 10 kHz is decreased with a sharp curve characteristic of − 6 dB/oct.

This pushbutton is especially useful when there is unwanted amount of phono disc "scratch" noise, tape hiss, or if the tone quality is unsatisfactory because there is much distortion in the treble sound of the program source.

Not that this switch functions only when the main amplifier function change-over switch input⑯ is in the "via tone" position.

❻ Mode selector

The mode selector is used to select the playback mode of the program source.

stereo: For reproduction in stereo.
The left input is reproduced from the left speaker, and the right input is reproduced from the right speaker.

mono: Mixed inputs of both left and right are reproduced from both speakers as monaural sound.

❼ Equalizer subsonic filter switch

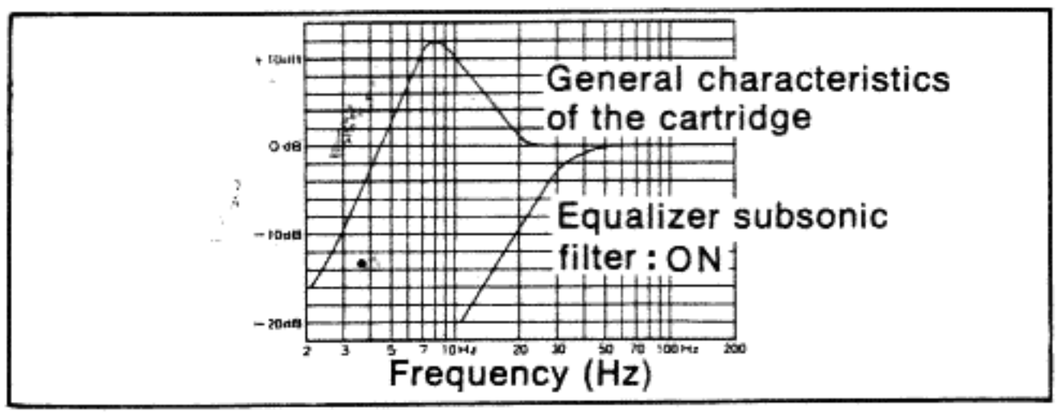
This switch is used for cutting off frequency range lower than the audio frequency range.

Push it inward (▲→▬) to the "on", and push it again (▬→▲) to the "off".

Upon turning this switch "on", frequency ranges lower than 30 Hz are attenuated with a sharp curve of −12 dB/oct.

During phono disc playing, there may be cases where the allowable input is reduced or cross modulation is increased through development of a peak at 5 to 10 Hz as shown in the diagram below due to resonance of the car-

tridge including the tonearm and the like. In such a case, turn this switch "on", and you will enjoy clear reproduction sound having negligible cross modulation distortion, with the peak effectively cut.
Likewise, use the unit with this switch turned "on", when the cone of the woofer tends to fluctuate during reproduction of a warped phono disc or when a large abnormal noises (howling) is developed due to the volume turned high during phono disc playing.



Phono input impedance selectors (⑧, ⑨)

These switches are used to select the input impedance of the phono 1 and phono 2 terminals.
Resistance is selected with the input resistance selector⑨, and capacitance is selected with the input capacitance selector⑧.

⑧ Input capacitance selector

Capacitance can be selected in either of two steps: high or low.
Every cartridge has a reactance component, and the resonance frequency will be changed when the setting is made to the input capacitance of the phono terminals. The frequency response will be changed in the high range especially.
If this selector is set to the "high" position, the resonance frequency will move in the low direction. If it is set to the "low" position, the resonance frequency will move in the high direction.

⑨ Input resistance selector

Resistance can be selected in either of two steps: 27 kΩ or 47 kΩ.
Set to whichever value is closest to the specified resistance value of the phono cartridge to be used.
If the value selected is higher than that specified for the cartridge, the high range will be increased. If it is lower than the cartridge value, the high range will be decreased.

⑩ Loudness control switch

The loudness control compensates for "thinning out" of the sound. Human ears cannot perceive the low-frequency range at low volumes, but this control compensates for this, boosting the bass as the volume decreases. Note, however, that if the volume control㉑ is set to a position higher than the " 5 " indication, (when the muting switch④ at "0 dB"), the efficiency becomes less.

⑪ Balance control

The left and right volume balance is influenced by the difference, if any, between the efficiency of the left and right speakers and by the placement of the furniture in the listening room.
In addition, the left and right volume of some program sources is not well balanced. If the control is turned further to the left beyond the "0" position, the right sound becomes lower. At the left position (at which the control is completely turned to the left), the right sound cannot be heard at all, and only the left sound is emitted.
If the control is turned to the right, the left sound becomes lower and, at the right position (at which it is completely turned to the right), the left sound cannot be heard at all, and only the right sound is emitted.
In order to adjust the balance between the left and right volumes, set the mode selector⑥ to the "mono" position so that the sound is heard from a position at the center of the left and right speakers.
After the balance is satisfactorily adjusted, return the mode selector ⑥ to the "stereo" position.

⑫ Headphones jack

This jack is for connection of headphones.
Use headphones with a voice-coil impedance of 4 to 16 ohms.
When listening only by headphones, set the speaker selector ⑬ to the "off" position.

⑬ Speaker selector

With this switch you oan control two speaker systems.
At "main," it operates the main speaker system only.
At "remote," it operates the remote speaker system.
At "main + remote," both main and remote speaker systems will function.
However, when operating both speaker systems, be sure that the impedance of the speakers is 8 ohms or more.
To use headphones, set this switch to the "off" position.

Main amplifier operation selectors (⑭, ⑮, ⑯, ⑰)

These switches are used to obtain the best operating performance from the DC main amplifier.
Under ordinary operating conditions, the input switch⑯ should be set to the "direct" position, and the operation switch⑭ to the "DC" position.

⑭ Operation switch

DC:
Set this switch to the "DC" position under ordinary operating conditions. The unit will function as a DC amplifier.
low cut (2 Hz):
Set this switch to the "low cut (2 Hz)" position if there is leakage of the DC component from the equipment connected to high-level input terminals such as the tuner terminals, the auxiliary-input terminals, etc.
The low range, 2 Hz or less, will be cut, thus protecting the speakers from the DC component.
If there is leakage of a DC component, a "crackling" or "popping" noise will be heard when the setting of this switch is changed. If such a noise is heard, leave this switch set to the "low cut" position.

⑮ Operation indicator

This indicator will illuminate when the operation switch⑭ is set to the "DC" position.

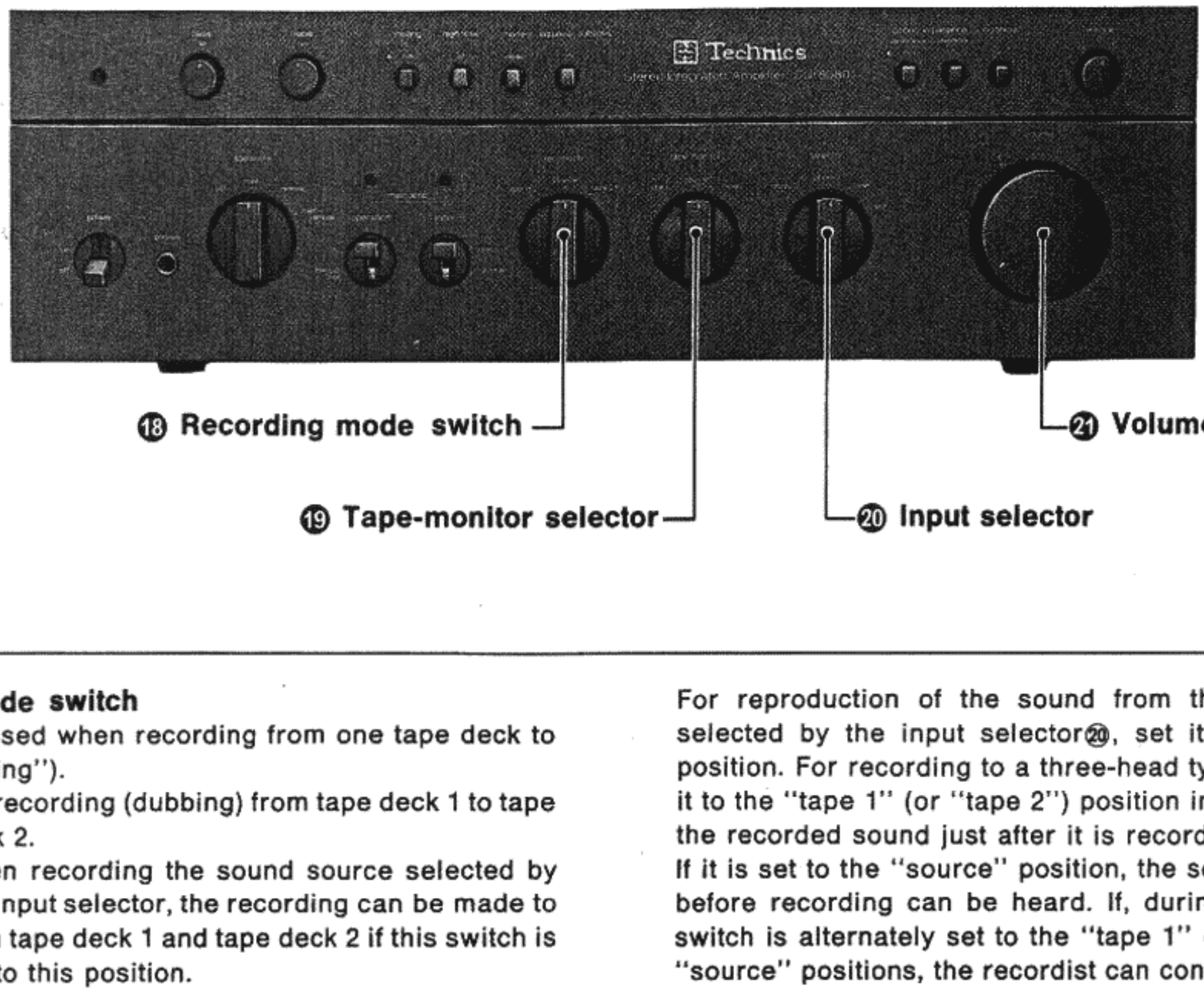
⑯ Input switch

direct:
When this switch is set to the "direct" position, high-level input signals such as tuner signals, auxiliary-input signals, etc. are directly amplified, without passing through the coupling capacitor and tone control circuitry, and are applied directly to the speakers.
via tone:
At this position, input signals pass through the tone control circuitry and the high-filter circuitry before being sent to the main amplifier.
Set to this position when the tone controls③ and high-filter switch⑤ are being used.

⑰ Input indicator

This indicator will illuminate when the input switch⑯ is set to the "direct" position.

FRONT PANEL CONTROLS AND THEIR FUNCTIONS (Continued)



⑱ Recording mode switch

This switch is used when recording from one tape deck to another ("dubbing").

tape 1▶2: For recording (dubbing) from tape deck 1 to tape deck 2.

source: When recording the sound source selected by the input selector, the recording can be made to both tape deck 1 and tape deck 2 if this switch is set to this position.

tape 2▶1: For recording (dubbing) from tape deck 2 to tape deck 1.

* Tape monitoring can be performed during recording if this switch is set to either the "tape 1▶2" (or the "tape 2▶1") position.
* If, during recording, the tape-monitor selector is set to the "source" position, this circuit becomes independent and has no relationship with the input selector. For this reason, the program source selected by the input selector can be heard without change when dubbing from tape to tape.

⑲ Tape-monitor selector

For playback from the tape deck connected to the tape deck 1 terminals, set this switch to the "tape 1" position.
For playback from the tape deck connected to the tape deck 2 terminals, set it to the "tape 2" position.

For reproduction of the sound from the sound source selected by the input selector⑳, set it to the "source" position. For recording to a three-head type tape deck, set it to the "tape 1" (or "tape 2") position in order to monitor the recorded sound just after it is recorded.
If it is set to the "source" position, the sound immediately before recording can be heard. If, during recording, this switch is alternately set to the "tape 1" (or "tape 2") and "source" positions, the recordist can confirm the condition of the recording.

⑳ Input selector

For selection of the input sound source.

phono 1, 2: For record player operation.

tuner: For reception of broadcasts when connected with a tuner.

aux: For playback of the sounds from equipment connected to the auxiliary input terminals.

㉑ Volume control

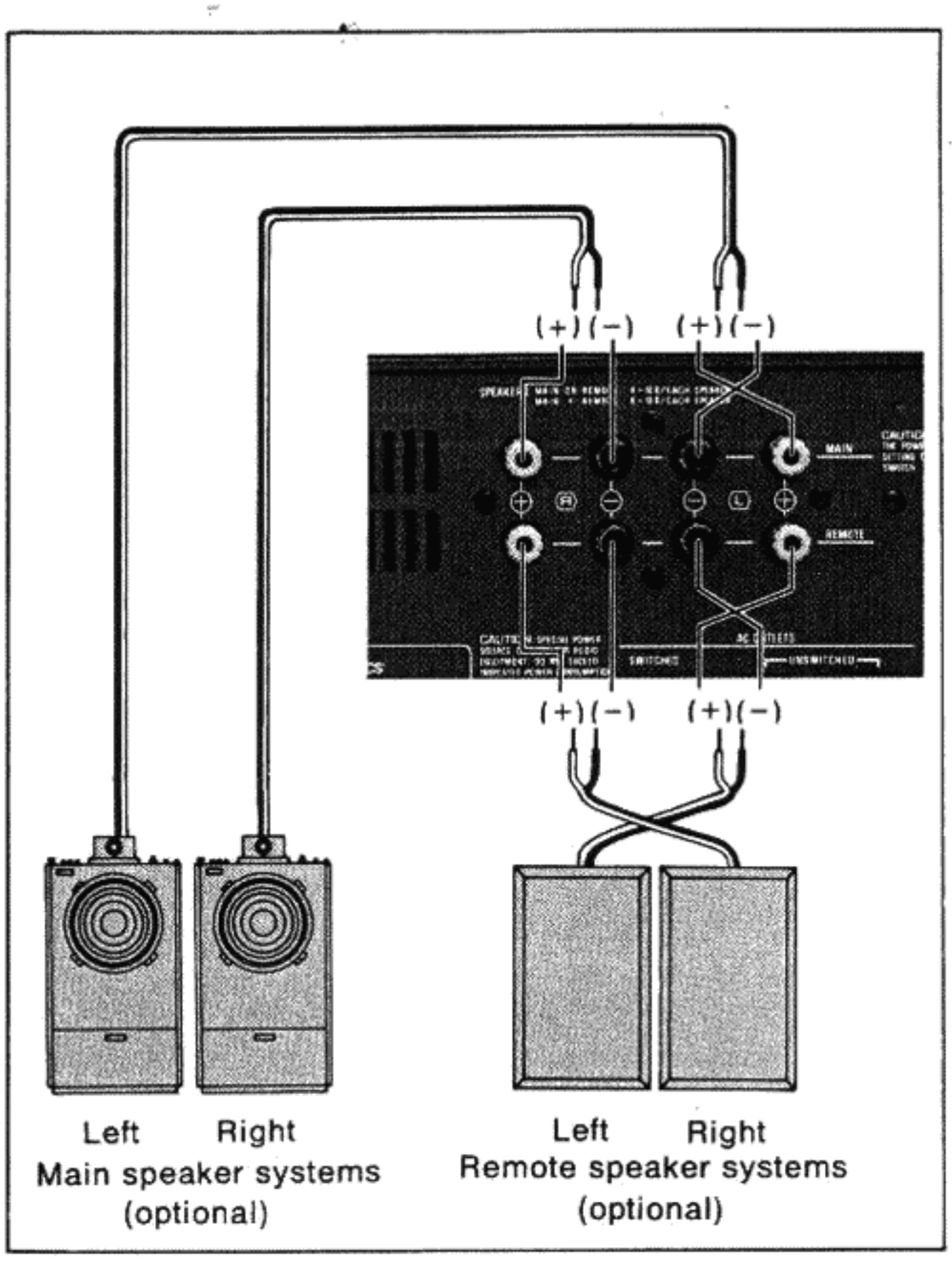
This control is for adjustment of the volume level.
Turning the control clockwise (maximum position is "10") increases the volume.
Always set the volume control at "0" before turning on the set.

CONNECTIONS

Do not connect the power cord until all connections are finished. Also carefully read the operation instructions for all equipment to be connected.

Connection of speaker systems

This unit has two pairs of speaker terminals, marked "MAIN" and "REMOTE", making connection of two speaker systems possible.



Left Right
Main speaker systems
(optional)

Left Right
Remote speaker systems
(optional)

■ Impedance of speakers

Use speakers with a voice-coil impedance of 4～16 ohms with this unit.

If, however, the main and the remote speaker systems are both used at the same time, speakers of 4-ohm impedance cannot be used. Use speakers with an impedance of 8～16 ohms.

Be careful since sound may be interrupted due to actuation of the protection circuit for the unit, when speakers of low impedances such as 4Ω and 6Ω are used simultaneously.

■ Speaker connection wires

Use medium gauge wire, such as AC power cord, for speaker connections so as not to decrease the damping factor.

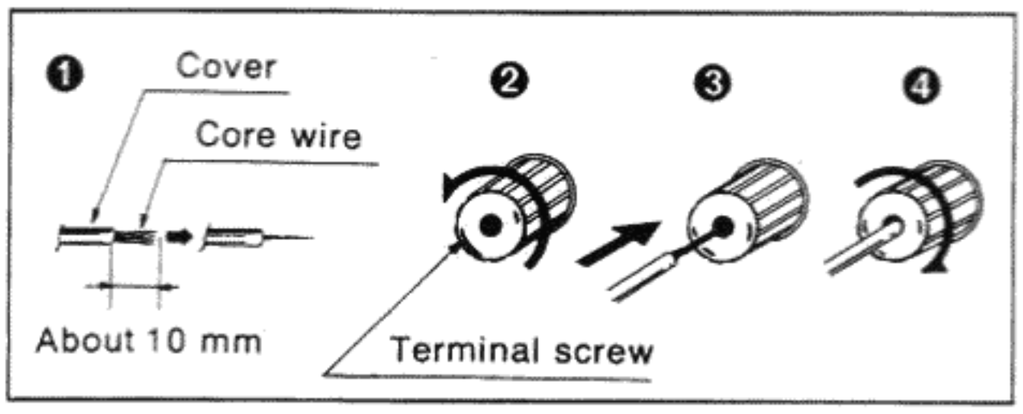
■ Connections

❶ Strip off about 10 mm of the connection cord insulation and twist the strands together.

❷ Turn the screw three or four times counterclock wise.

❸ Insert the core wire into the terminal screw hole.

❹ Tighten the screw snugly clockwise. The connection is then finished.



Note:

Be extremely careful that the terminals or speaker wires do not "short" each other. Never use the minus speaker terminal for ground connections.

■ Polarity (⊕ and ⊖) check

After the connections of the speaker systems have been completed, confirm that the polarity of the speaker connections to the speaker terminals is correct.

How to check:

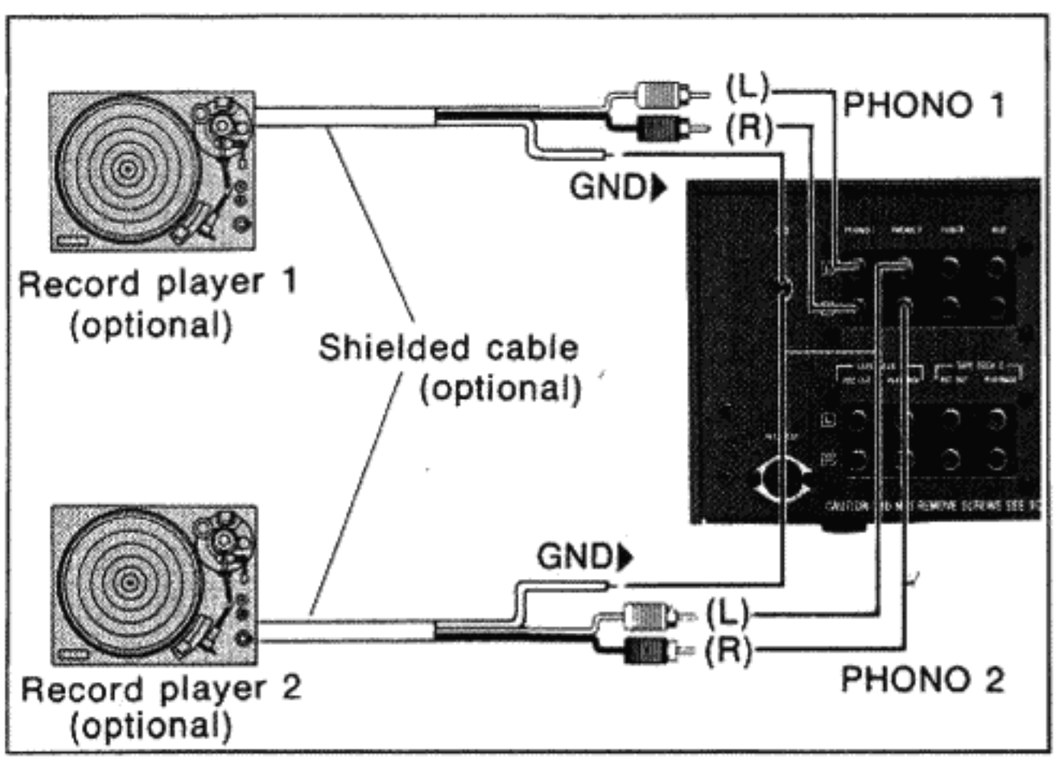
Set the mode selector ⑥ to the "mono" position. If the polarity is correct, the sound will seem to be heard from the center, between the left and right speakers.

If it is incorrect, the sounds will not appear to gather at the center, but will seem dispersed. If so, confirm that the connections of the speakers are correctly made. In order to correct the polarity, if it is incorrect, reverse the polarity connection between the amplifier and either the right or the left speaker.

Record player connections and operation

This unit includes two sets of phono terminals, therefore making comparative listening of two record players and cartridges convenient, as well as making it possible to install and use different cartridges on different record players for use according to the type of music.

■ Connections



Connect the record player to the "phono 1" or "phono 2" terminals, being careful to connect the left and right connection wires correctly.

If the record player has a ground wire, connect it to the ground (GND) terminal. ("Short" pins will be found in the "phono 2" terminals. When using the "phono 2" terminals, be sure to remove these "short" pins.

Never insert the pulled out connection pin into any other terminals such as the recording ("REC OUT") terminal.

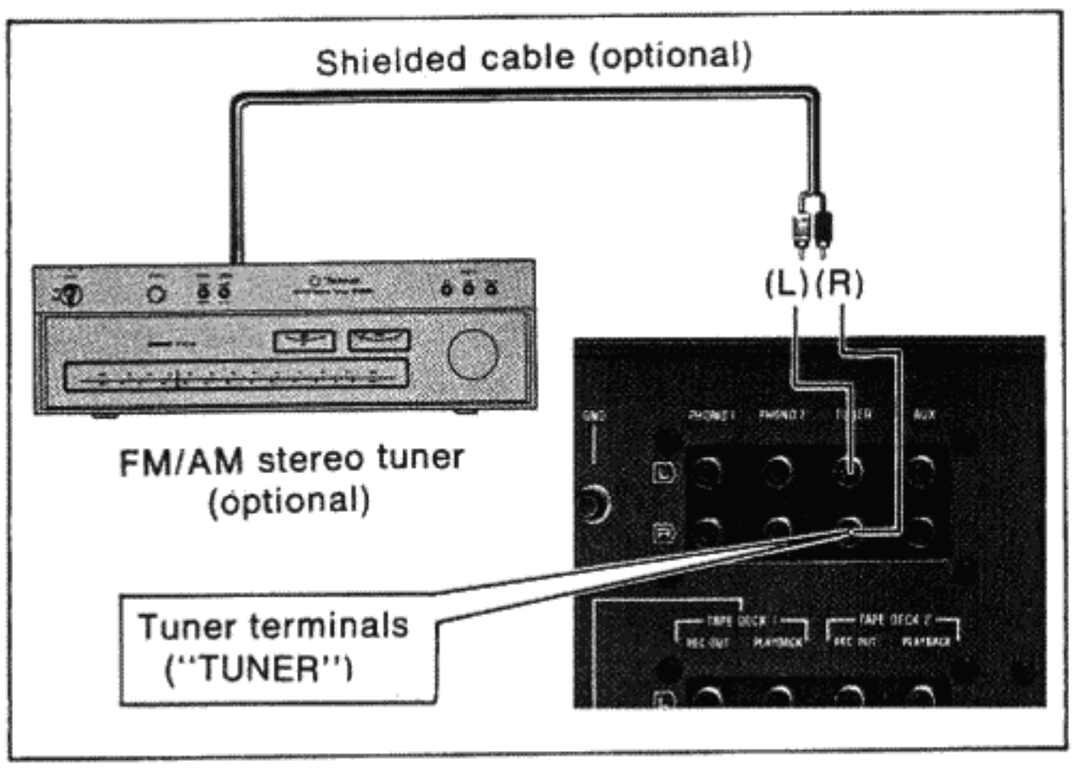
CONNECTIONS (Continued)

■ Cartridge

Use a magnetic cartridge [moving-magnet type (MM), induced-magnet type (IM), or high-output moving-coil type (MC)] with an output of more than 1 mV (50mm/sec).
If a low-output moving-coil type is used, it cannot be connected directly to the "phono 1" or "phono 2" terminals; a booster transformer or head-amplifier must be used.

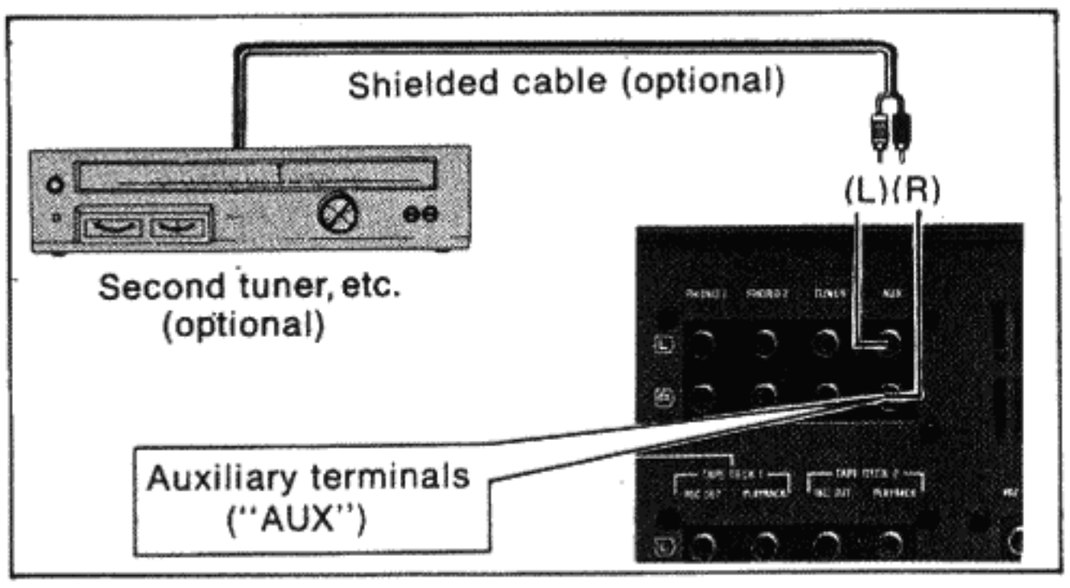
Connection of a tuner

Connect the tuner terminals of this unit with the tuner output terminals



Connection to the auxiliary

The auxiliary ("aux") input terminals can be used for connection of, for example, a second tuner, or a tape deck for playback only, or an 8-track stereo tape deck.

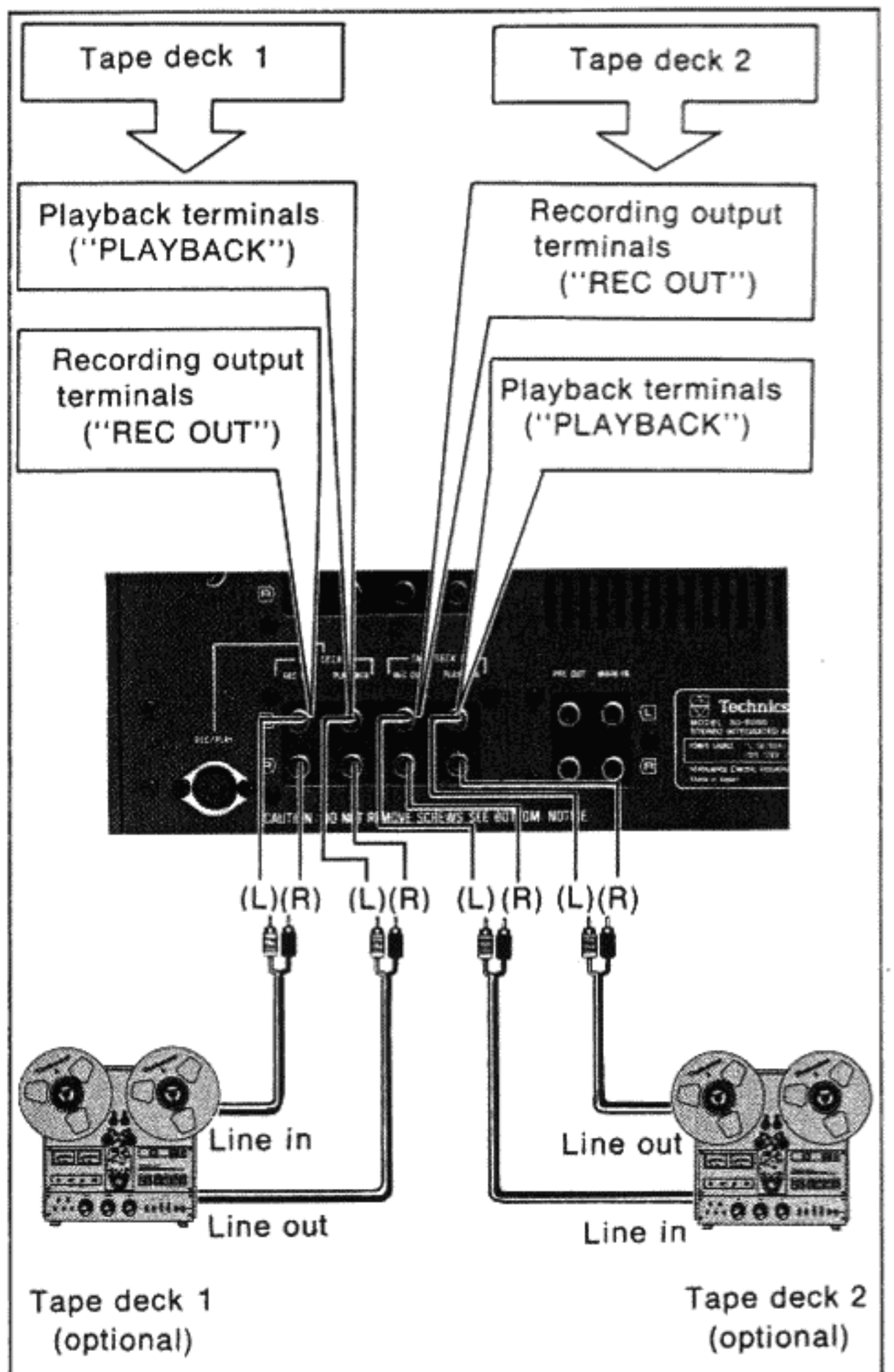


Connection of tape decks

Three tape decks can be connected for recording and playback.

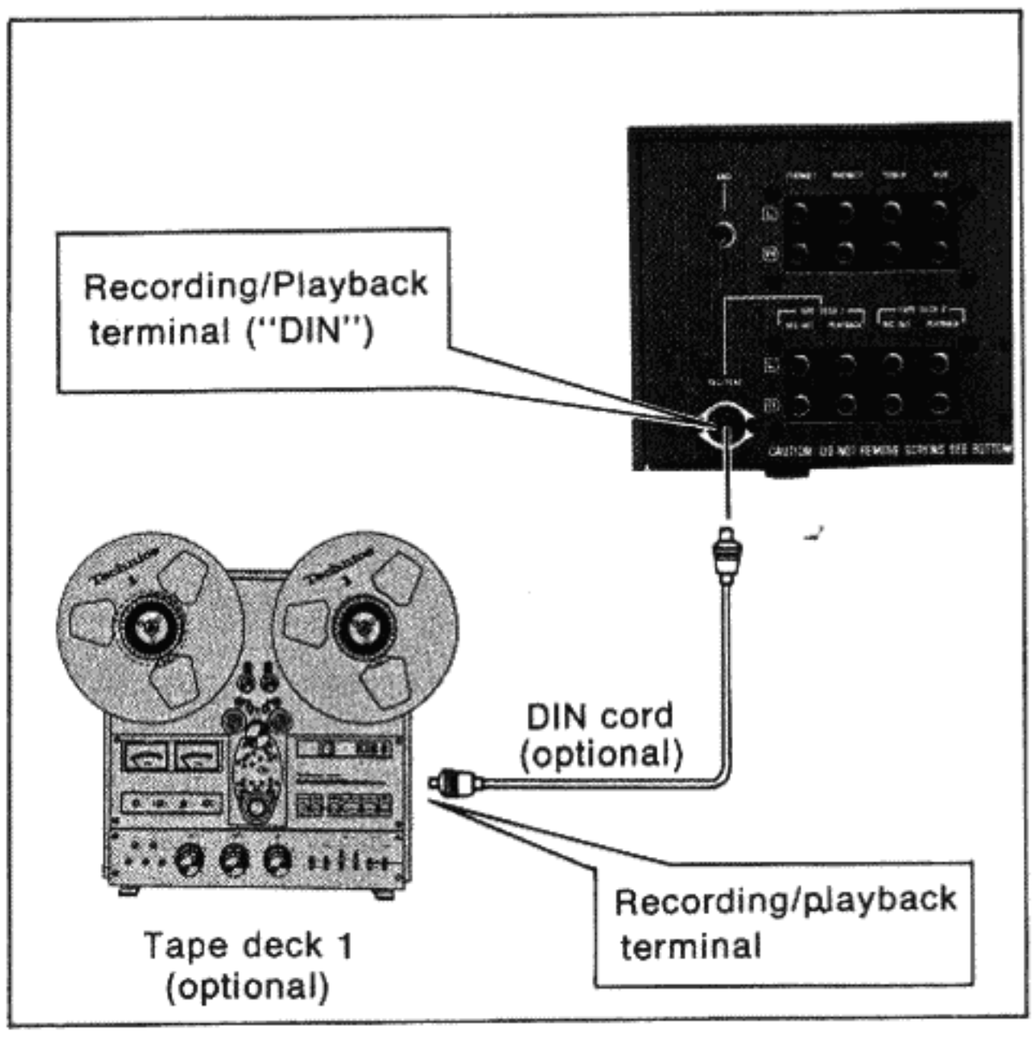
■ Connections

Connect the playback ("PLAY BACK") terminals with the output terminals ("LINE OUT") of the tape deck.
Connect the recording output ("REC OUT") terminals with the input terminals ("LINE IN") of the tape deck.



■ Recording/playback terminal

This is called the DIN connector, and is a terminal combining the functions of playback and recording. Recording and playback are possible by simply connecting one DIN cord.



TAPE RECORDING AND PLAYBACK

Recording

When the recording mode switch ⑱ is in the "source" position, the signal which has been selected with the input selector ⑳ is constantly supplied, as a signal for recording, from the tape deck 1 and tape deck 2 recording output terminals. In this instance, all operating controls, such as the volume control㉑ and tone controls③, have no effect upon the recoording.

❶Set the input selector ⑳ according to the program source which is to be recorded ("phono 1", "phono 2", "tuner", "aux").

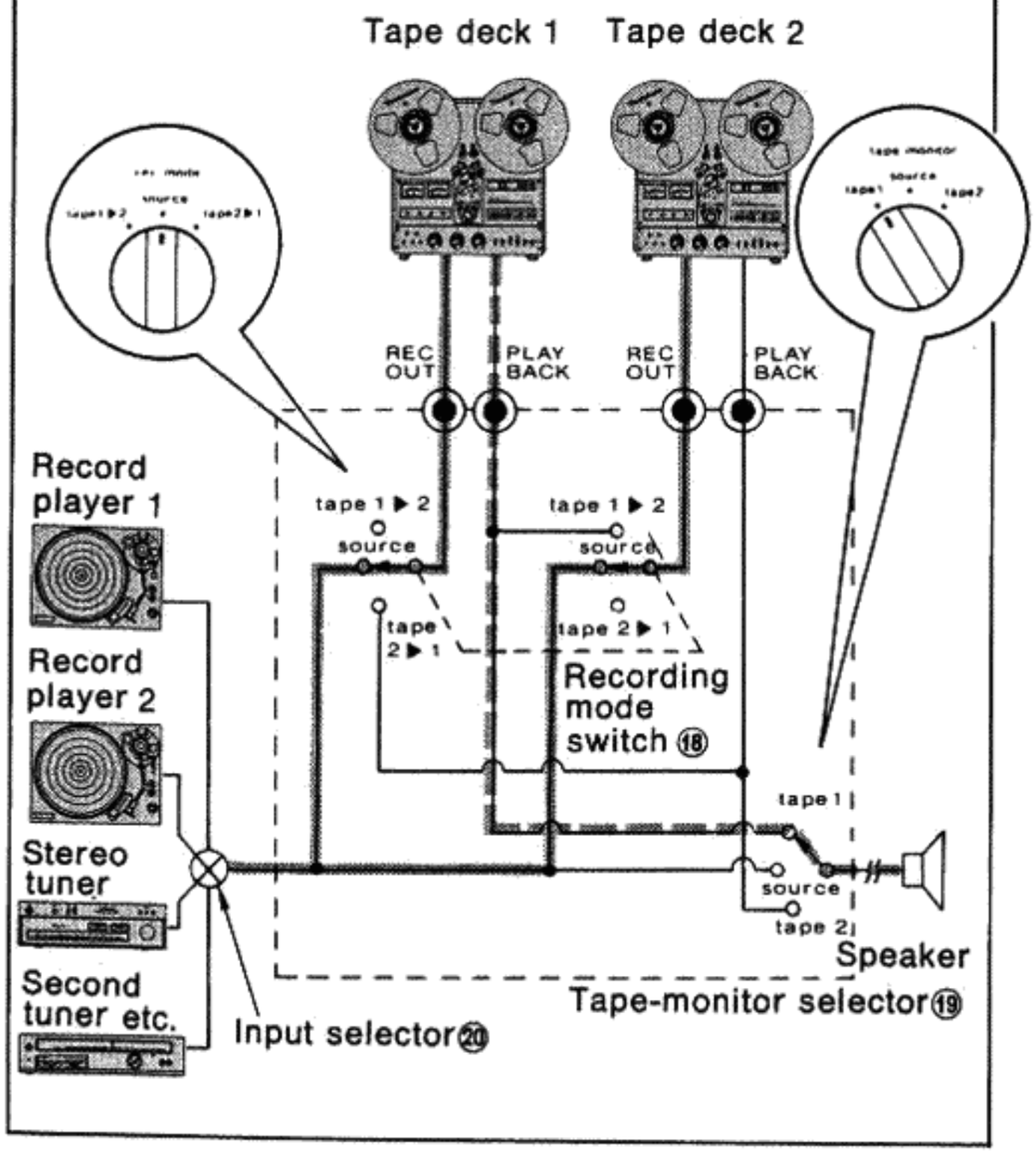
❷Set the recording mode switch ⑱ to the "source" position.

❸Prepare the tape deck for recording.
The program which has been selected with the input selector ⑳ is then recorded onto the tape.

❹Be sure to adjust the recording level of the tape deck.

❺Recording check
If the tape deck is the 3-head type, the tape monitor selector⑲ can be used to check the condition of the recording.
The recording condition can be checked by using the tape-monitor selector ⑲. The sound prior to recording can be heard from the speakers by setting the tape-monitor selector ⑲ to the "source" position, and the sound which has just been recorded can be heard from the speakers by setting it to the appropriate ("tape 1" or "tape 2") position.

When 2 tape decks are used simultaneously for recording



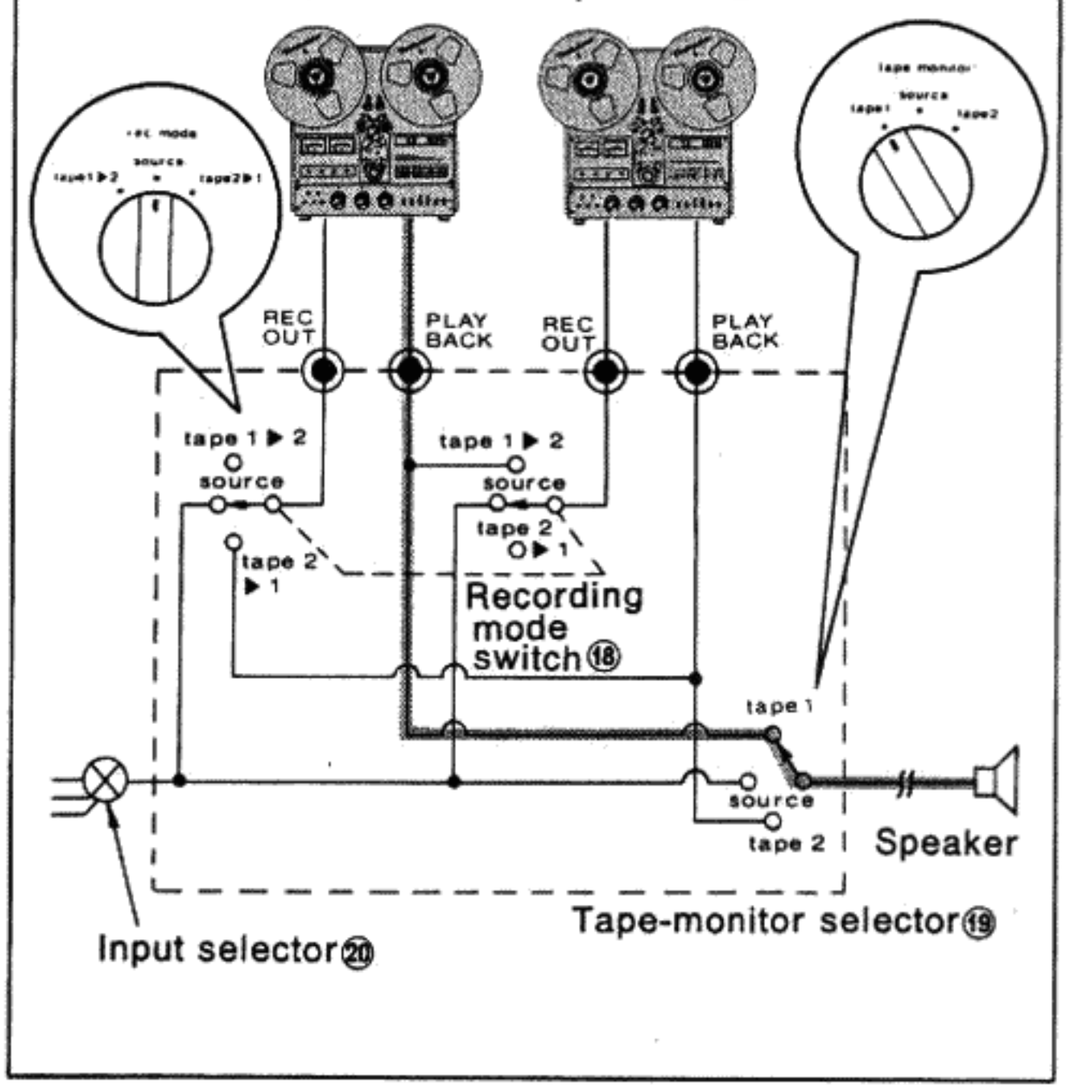
Playback from a tape deck

❶Select the tape deck with the tape-monitor selector ⑲. (The input selector ⑳ has no effect in any position.)
For playback from tape deck 1,set the tape-monitor selector ⑲ to the "tape 1" position.
For playback from tape deck 2, set the tape-monitor selector ⑲ to the "tape 2" position.

❷Set the mode selector ⑥ to the "stereo" position.

❸After preparing the tape deck for playback, increase the volume gradually to the most comfortable listening level.

When tape deck 1 is played back



Tape "dubbing"

Tape-to-tape recording ("dubbing") from tape deck 1 to tape deck 2, and from tape deck 2 to tape deck 1, is possible with this unit.
The direction of the dubbing (from tape deck 1 to 2 or from tape deck 2 to 1) is selected by using the recording mode switch ⑱ .
If this selector is set to the "tape 1 ▶ 2" position, tape dubbing from tape deck 1 to 2 is possible; if it is set to the "tape 2 ▶ 1" position, tape dubbing from tape deck 2 to 1 is possible.

Dubbing check:

The dubbing condition can be checked by using the tape-monitor selector ⑲. If this switch is set to the "tape 1" position the sound from tape deck 1 will be heard; if it is set to the "tape 2" position, the sound from tape deck 2 will be heard.

TAPE RECORDING AND PLAYBACK (Continued)

When recording from tape deck 1 to tape deck 2

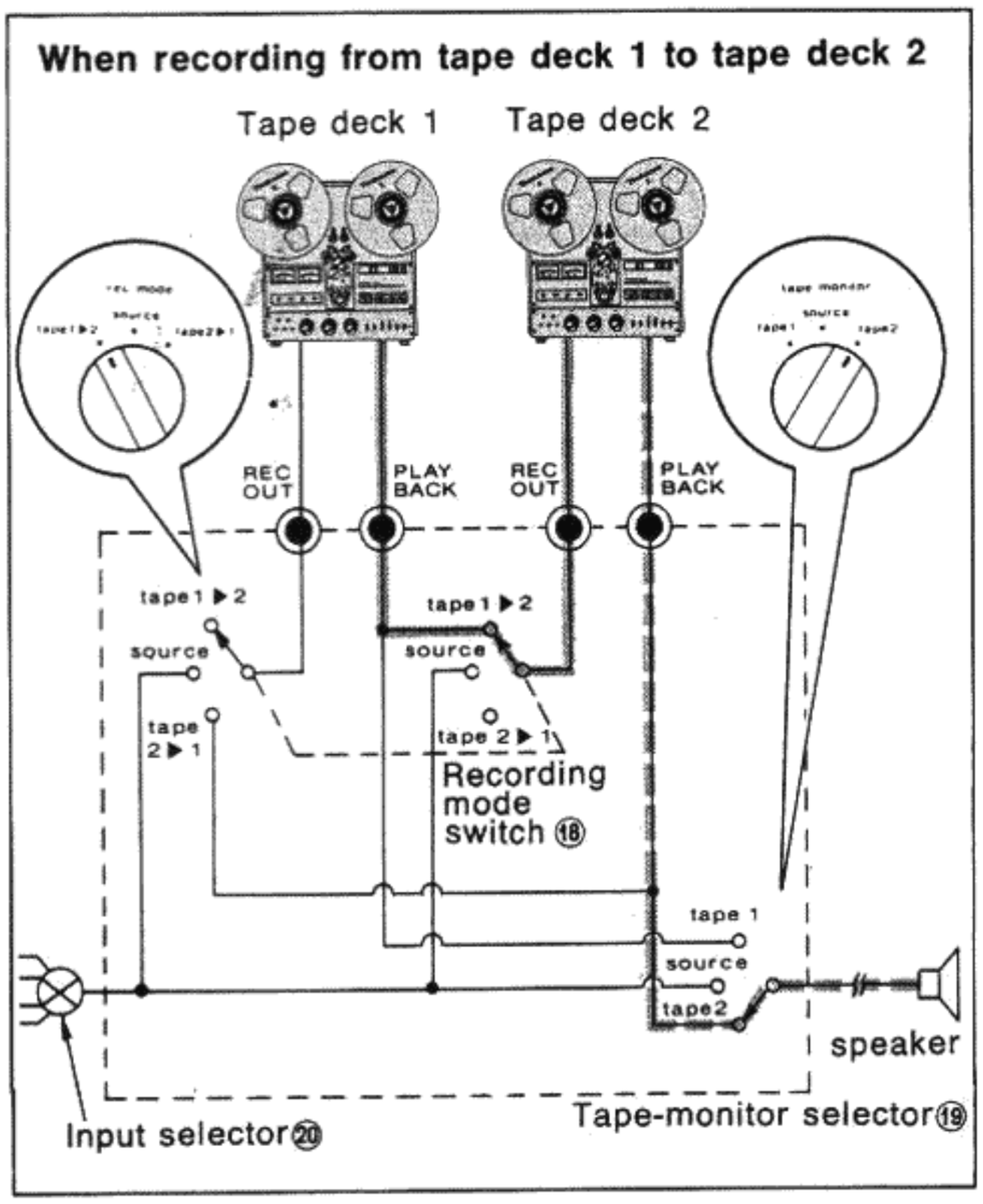
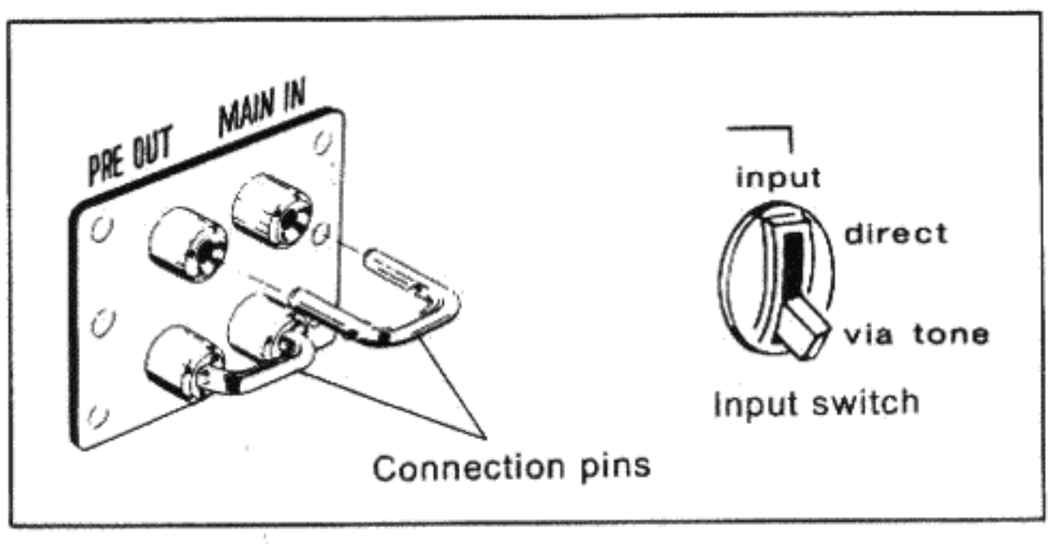


Figure shows the path of the signal when a recording is made from tape deck 1 to tape deck 2. The monitor signal (the sound from tape deck 2 immediately after recording) is heard from the speakers.
As shown in figure, if the tape-monitor selector ⑲ is set to the "source" position, the tape-to-tape recording circuitry becomes completely independent. Accordingly, during tape-to-tape recording, the source signal which has been selected by the input selector ⑳ can be reproduced in the same way as for ordinary operation.

USE OF "PRE OUT" AND "MAIN IN" TERMINALS

When the connection pins inserted in the "PRE OUT" and "MAIN IN" terminals are removed, the pre-amplifier section and the main amplifier section of this unit can be electrically separated by setting the input switch⑯ to the "via tone" position.

* Be sure the power switch② is off before removing the connection pins.



- Use these terminals when the pre-amplifier and the main amplifier are each used separately, or when a channel divider is connected between the "PRE OUT" and "MAIN IN" terminals in order to make a multi-channel amplifier system, etc.
- These terminals can also be used when our model SH-9010 Universal Frequency Equalizer is used in order to make a complete audio system by overall tone quality correction.
- The "PRE OUT" terminals then become the output terminals of the pre-amplifier section, and the "MAIN IN" terminals become the input terminals of the main amplifier section.

Switches and controls which can be used

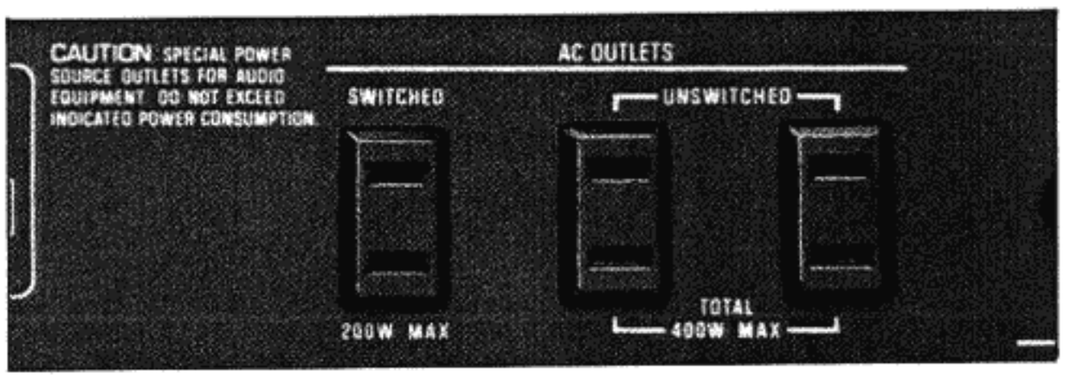
- When the unit is used as a main amplifier, the speaker selector⑬ and the operation switch⑭ can be used.
- When the unit is used as a pre-amplifier, all switches and controls, except the two mentioned above, can be used.

AC OUTLETS

"Switched"
Other equipment connected to this outlet can be switched on and off with the power switch on the front panel.
Use this as a power source for other audio equipment.
Capacity is 200 W.

"Unswitched"
Any equipment connected to this outlet is always on regardless of the position of the power switch on the front panel.
Capacity is 400 W.

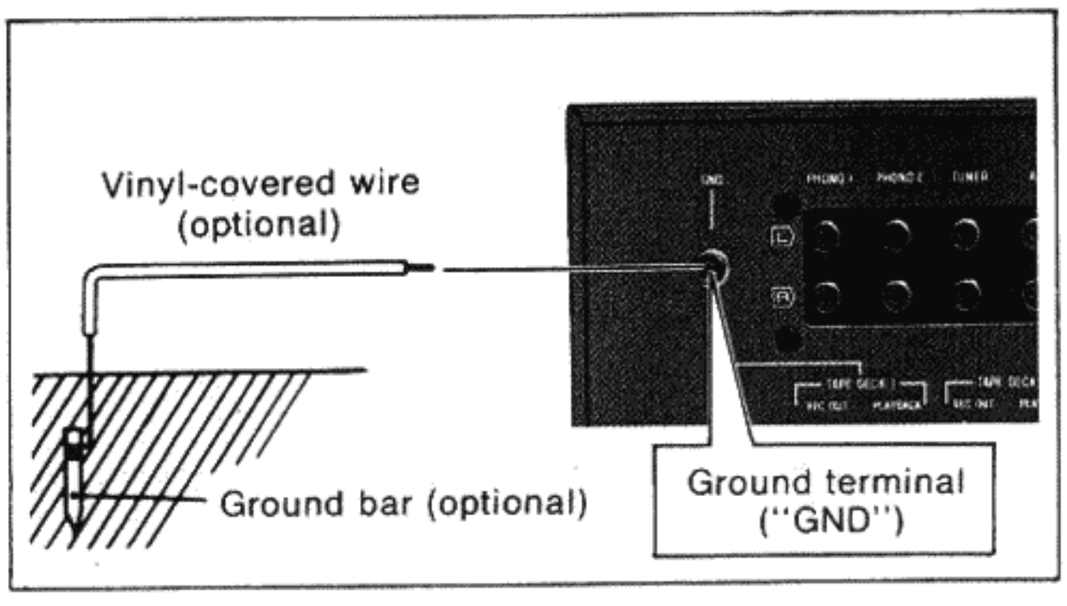
Note:
For some areas, they do not include "AC OUTLETS" for the safety standard and other reasons.



GROUNDING

If noise is heard when this amplifier is used, it may be reduced by making a ground connection. Connect a vinyl-covered wire to the ground ("GND") terminal on the rear panel of this unit and to a copper bar or copper plate which should be buried in the earth.

Never connect the ground wire to a gas pipe.



HOW TO CARE FOR THE CABINET

- If this unit becomes dirty, it can be cleaned by wiping it with a soft, dry cloth. If it is extremely dirty, dip the soft cloth into a soap-and-water solution, wring the cloth out well and then wipe the unit clean. After cleaning, wipe the unit dry once more with a dry cloth.
- Be careful not to allow alcohol, thinner, benzine, insecticide and other similar chemicals to get on the surface of this unit because they may damage its finish by causing the finish to peel off or lose its luster.
- Never use a wet cloth or a chemically-treated cloth for cleaning.

FOR LONGER AND SAFER USE OF THIS UNIT

In order to receive the best service from this unit, and for safest operation, carefully read the following information.

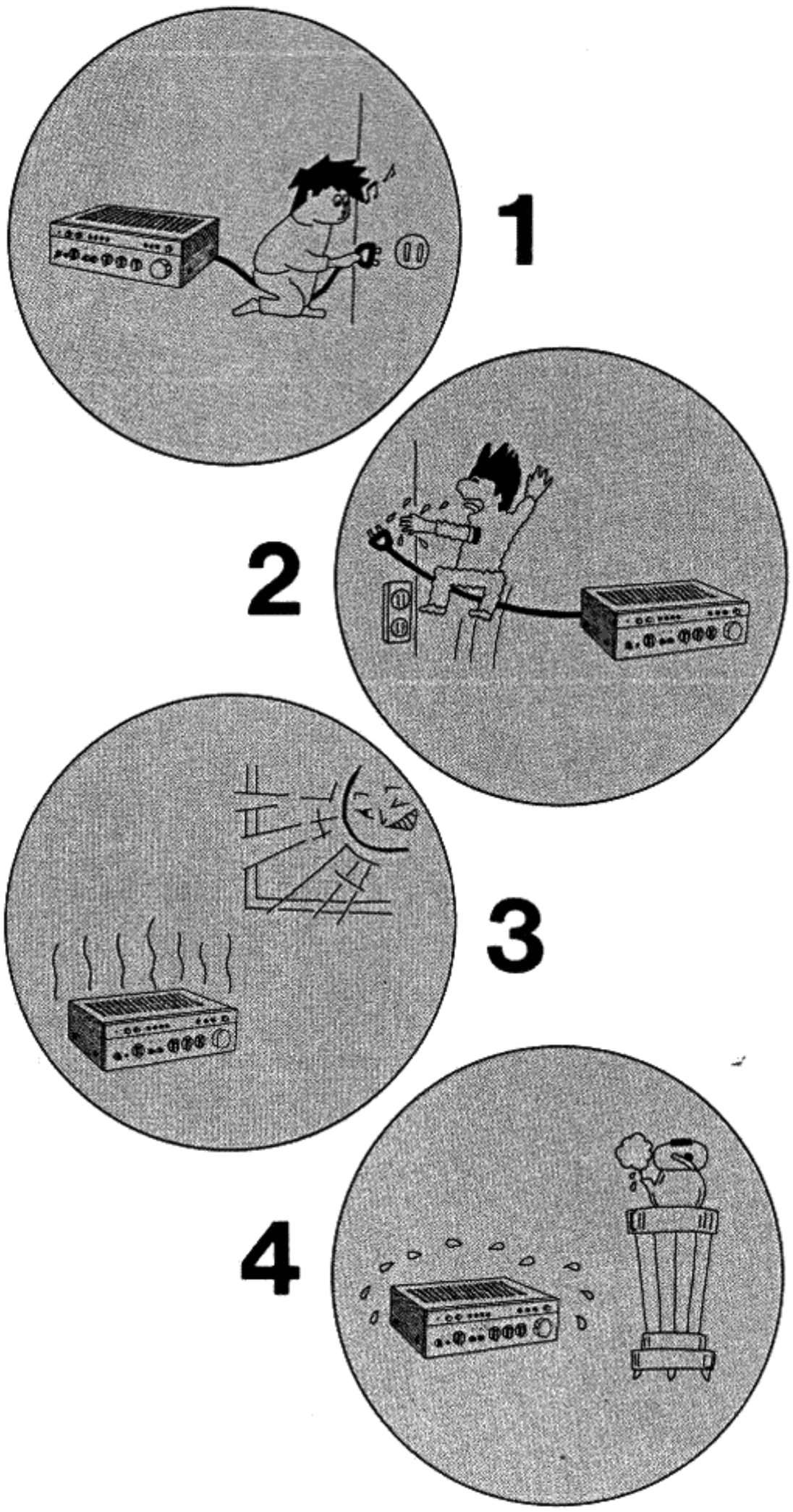
1. THE POWER SOURCE:

It's very dangerous to use this unit at a voltage which is different from the rated voltage

- There is the danger of combustion if the unit is connected to a power source which is different from the rated voltage.
  Be very careful concerning this point.

Direct current cannot be used.

- There are some places, such as ships, where direct current is used as the power source. Before connecting this unit, confirm the power source.



2. CONNECTION OF THE POWER CORD:

Wet hands are dangerous

- Be sure to never touch the power cord with wet hands because there is the danger of electric shock. This is true, of course, of all electric equipment.

Don't pull the power cord

- Never pull the power cord to disconnect it. Always pull the plug of the cord only.

3. LOCATION OF THE UNIT:

- A place which is not in direct sunlight.
- Select a place which will assure good ventilation: at least 10 cm. from walls and other surfaces, and where curtains or other similar material will not obstruct the ventilation holes on its upper surface and rear surface.

4. NEVER PLACE HEATING EQUIPMENT NEARBY

Be sure to keep stoves and other sources of heat away from this unit, because heat radiated by such equipment may cause deformation of plastic parts of this unit or damage its cabinet, or, at worst, might cause a fire.

FOR LONGER AND SAFER USE OF THIS UNIT (continued)

5. KEEP INSECTICIDE AWAY

- If insecticide is sprayed on the cabinet or plastic parts of this unit, "cracks" or "cloudiness" of the material may occur.
- In addition, note that such sprays may be the cause of fire, so great care should be taken.

6. ESPECIALLY FOR FAMILIES WITH CHILDREN

Take care that no small items, such as metal articles, are put inside this unit

- In addition, children should be especially warned not to put anything into the ventilation holes, such as toys or a screwdriver, because these things may cause an electric shock or result in a malfunction of the unit.

7. IF WATER SPILLS ON THE UNIT

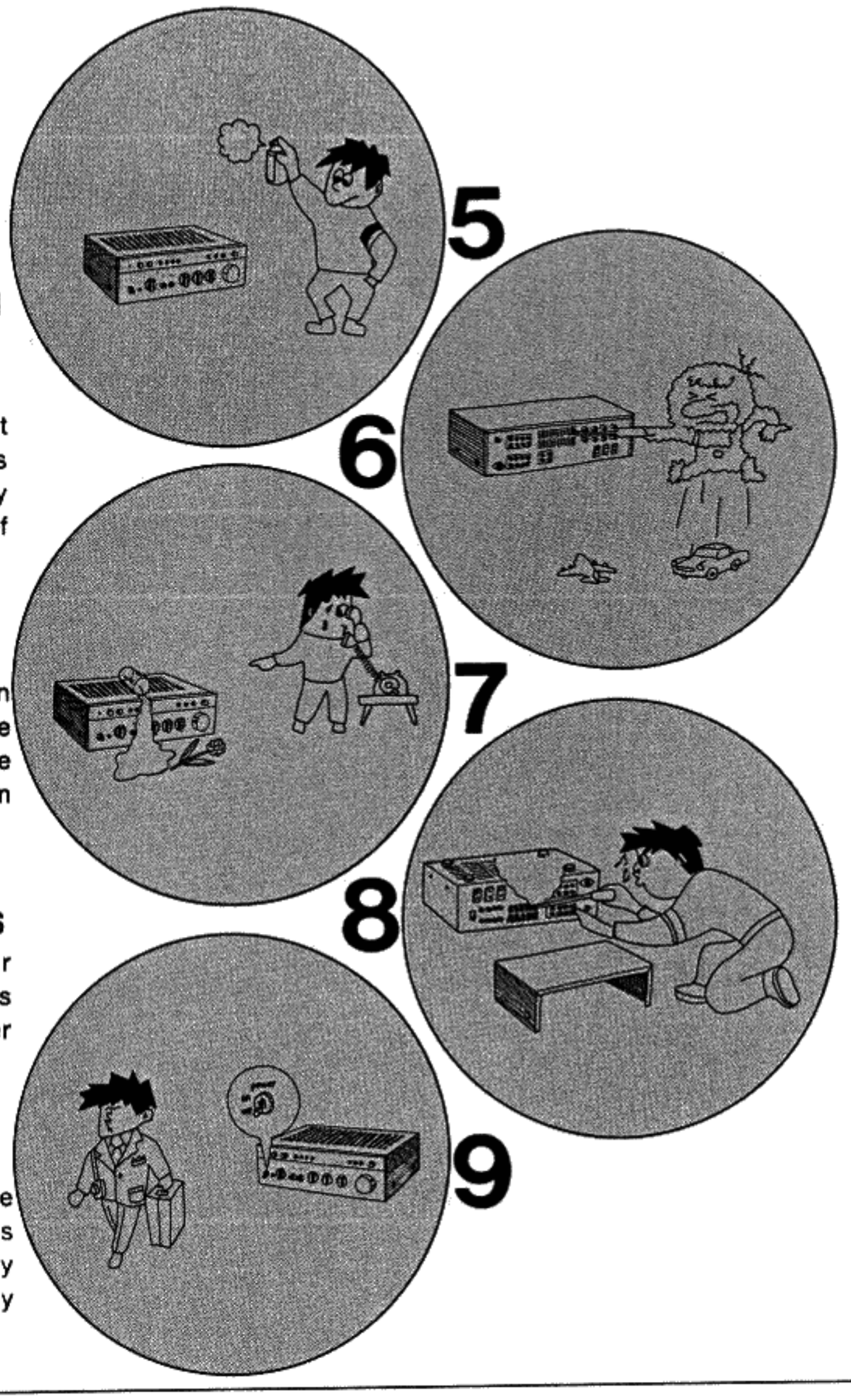
If water should happen to spill on the unit, from an overturned vase for example, there is the danger of fire or electric shock. Disconnect the power cord from the electric outlet immediately, and contact the store from which the unit was purchased.

8. RECONSTRUCTION CAN CAUSE ACCIDENTS

Absolutely never try to remodel, reconstruct or repair this unit. Do not attempt to touch any internal parts because to do so may result in an electric shock or other accident.

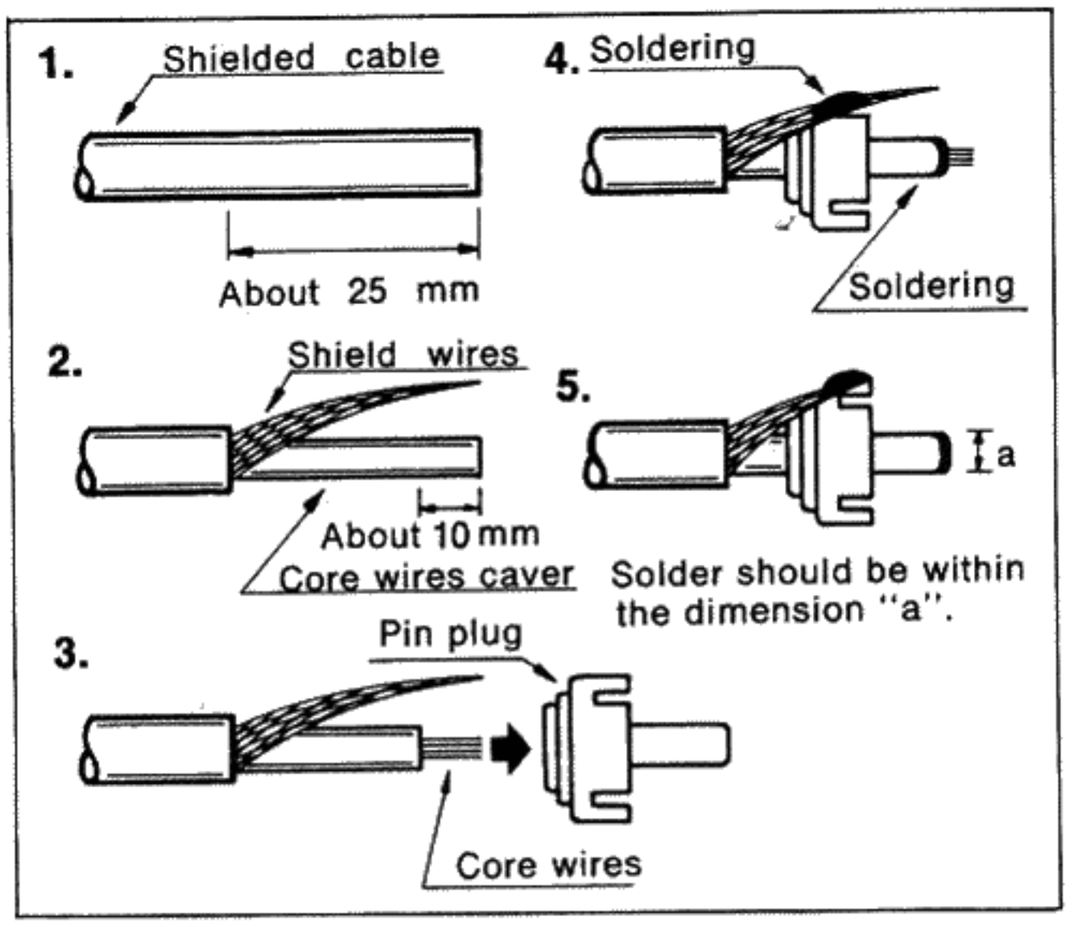
9. BE SURE THE POWER IS OFF

After you have finished using this unit, check once more to be sure that the power is off. If the unit is left with its power on for a long period of time, it may not only damage the unit and thus shorten its useful life, but may also lead to a dangerous accident.



HOW TO USE PIN PLUGS

Use the furnished pin plug when the connection terminal (pin jack) of this unit is different in shape from the connecting cord of the set to be connected to this unit.



FOR UNITED KINGDOM

■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 with the letter E or by the safety earth symbol ⏚ 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 BLACK.

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

FOR AUSTRALIA

■For your safety

To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.

TECHNICAL SPECIFICATIONS

Power amplifier section

(IHF)

1 kHz continuous power	
both channels driven	92W + 92W (4Ω) 74W + 74W (8Ω)
20 Hz～20 kHz continuous power	
both channels driven	90W + 90W (4Ω) 72W + 72W (8Ω)
Total harmonic distortion	
rated power at 1 kHz, 8Ω	0.02%
rated power at 1 kHz, 4Ω	0.02%
rated power at 20 Hz～20 kHz, 8Ω	0.02%
rated power at 20 Hz～20 kHz, 4Ω	0.05%
half power at 1 kHz, 8Ω	0.0015%
half power at 1 kHz, 4Ω	0.0015%
Power bandwidth	
both channels driven at 8Ω	5 Hz～40 kHz, −3 dB
Frequency response	20 Hz～20 kHz, $^{+0}_{-0.1}$ dB
	0 Hz～100 kHz, $^{+0}_{-3}$ dB
S/N (IHF, A)	115 dB
Residual hum & noise	100μV
Damping factor	70 (8Ω), 35 (4Ω)
Input sensitivity & impedance	1V/50 kΩ
Load impedance	
MAIN or REMOTE	4～16Ω
MAIN + REMOTE	8～16Ω

Preamplifier section

Input sensitivity & impedance	
PHONO 1, 2	2.5mV/47k, 27kΩ
TUNER, AUX	200mV/35kΩ
PLAYBACK, REC/PLAY	200mV/35kΩ
Phono maximum input voltage	280mV
Total harmonic distortion	0.01%
S/N (IHF, A)	
PHONO 1, 2	88 dB
TUNER, AUX (via tone)	100 dB
(direct)	106 dB
Frequency response	
PHONO 1, 2	RIAA standard curve ±0.2 dB
TUNER, AUX	20 Hz～20 kHz, $^{+0}_{-0.1}$ dB
Tone controls	
BASS	50 Hz, +7.5 dB～−7.5 dB
TREBLE	20 kHz, +7.5 dB～−7.5 dB
Equalizer subsonic filter	30 Hz, −12 dB/oct.
High filter	10 kHz, −6 dB/oct.
Loudness control (volume at −30 dB)	100 Hz, +8 dB
Muting	−14 dB
Output voltage	
PRE OUT (rated)	1V
(max.)	9V
REC OUT	200mV
REC/PLAY	30mV

(DIN 45 500)

Amplifier section

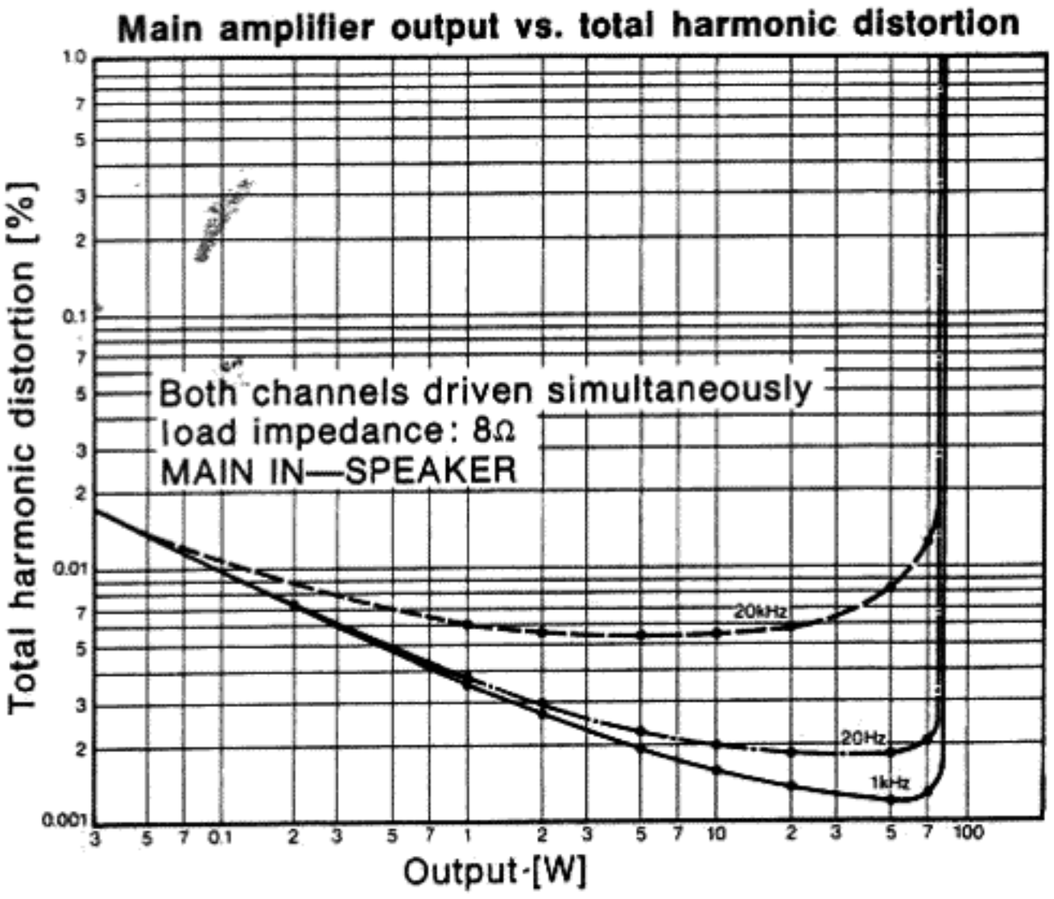
1 kHz continuous power	
both channels driven	2 × 92W (4Ω) 2 × 74W (8Ω)
40 Hz～16 kHz continuous power	
both channels driven	2 × 90W (4Ω) 2 × 72W (8Ω)
20 Hz～20 kHz continuous power	
both channels driven	2 × 90W (4Ω) 2 × 72W (8Ω)
Total harmonic distortion	
rated power at 1 kHz, 8Ω	0.02%
rated power at 1 kHz, 4Ω	0.02%
rated power at 40 Hz～16 kHz, 8Ω	0.02%
rated power at 40 Hz～16 kHz, 4Ω	0.05%
−26 dB rated power at 1 kHz, 4Ω	0.08%
50mW power at 1 kHz, 4Ω	0.15%
Frequency response	20 Hz～20 kHz, $^{+0}_{-0.1}$ dB
S/N rated power PHONO 1, 2	70 dB
TUNER, AUX	92 dB
−26 dB rated power PHONO 1, 2	65 dB
TUNER, AUX	67 dB
50mW power PHONO 1, 2	60 dB
TUNER, AUX	62 dB
Channel balance	±1.0 dB
Headphones level & output impedance	550mV/330Ω

General

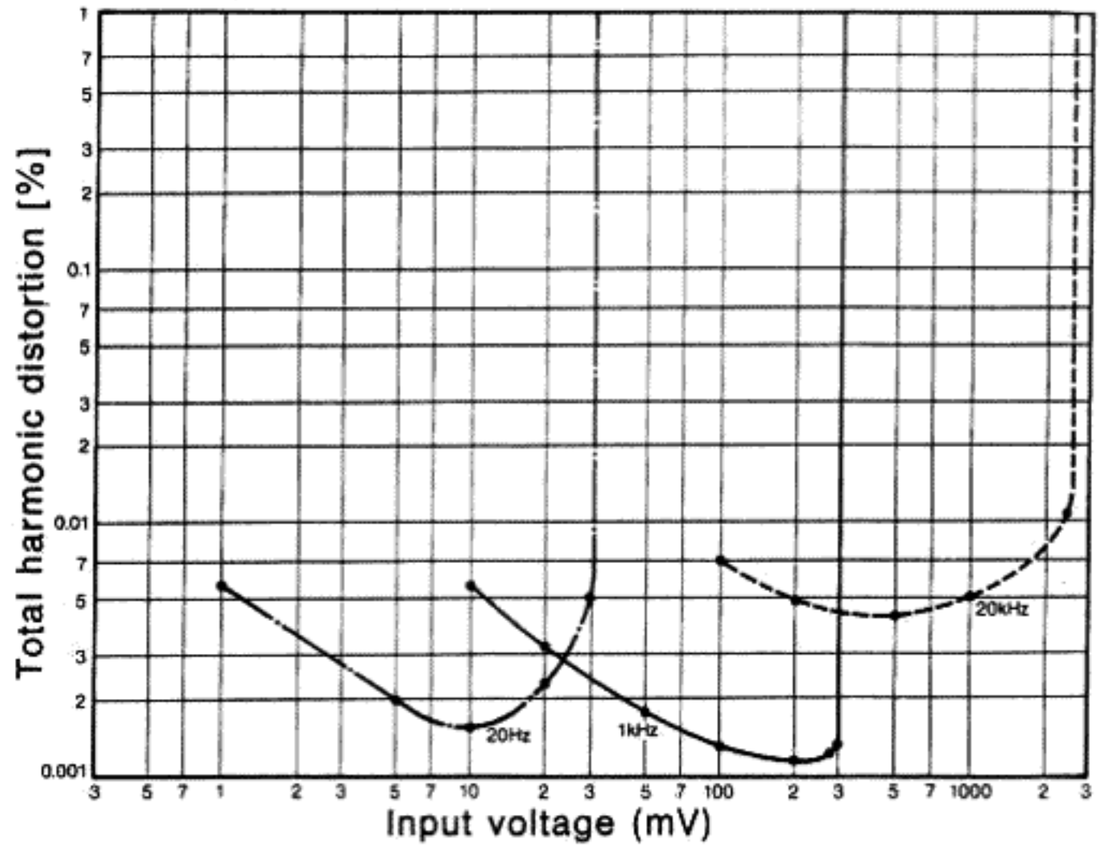
Power consumption	490W 570W (FOR UNITED KINGDOM)
Power supply (50 Hz/60 Hz)	110V/120V/220V/240V 240V only (FOR AUSTRALIA)
Dimensions (W × H × D)	450 × 140 × 371 mm 17 23/32" × 5 1/2" × 14 19/32"
Weight	14 kg 30.9 lb

RESPONSE CURVES

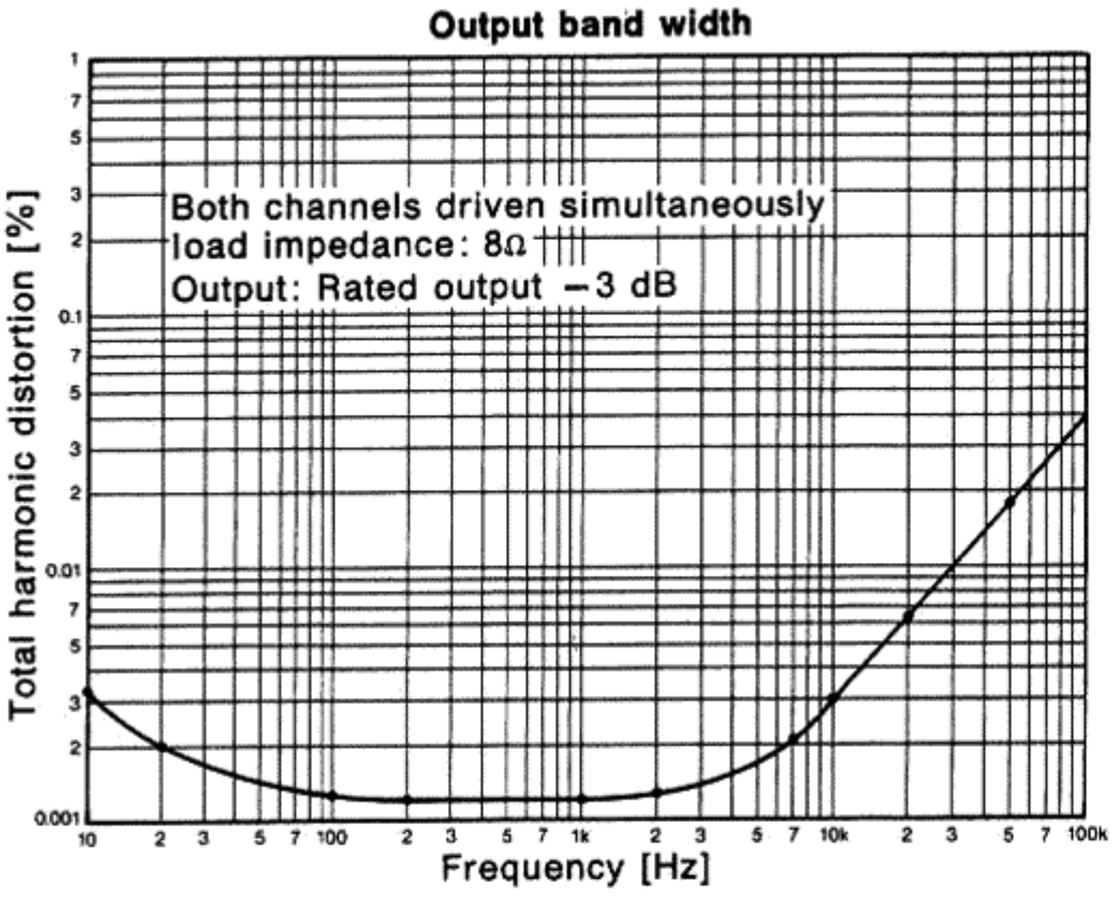
Main amplifier output vs. total harmonic distortion



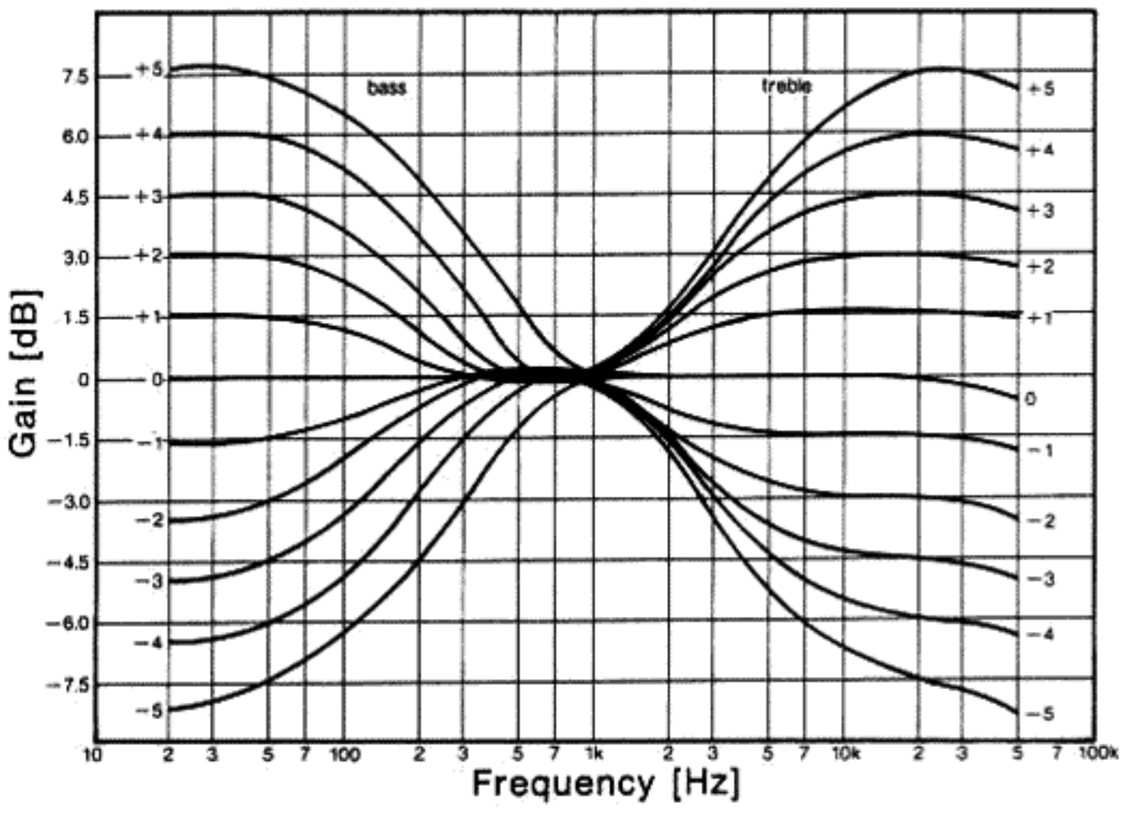
PHONO-REC OUT input voltage vs. total harmonic distortion



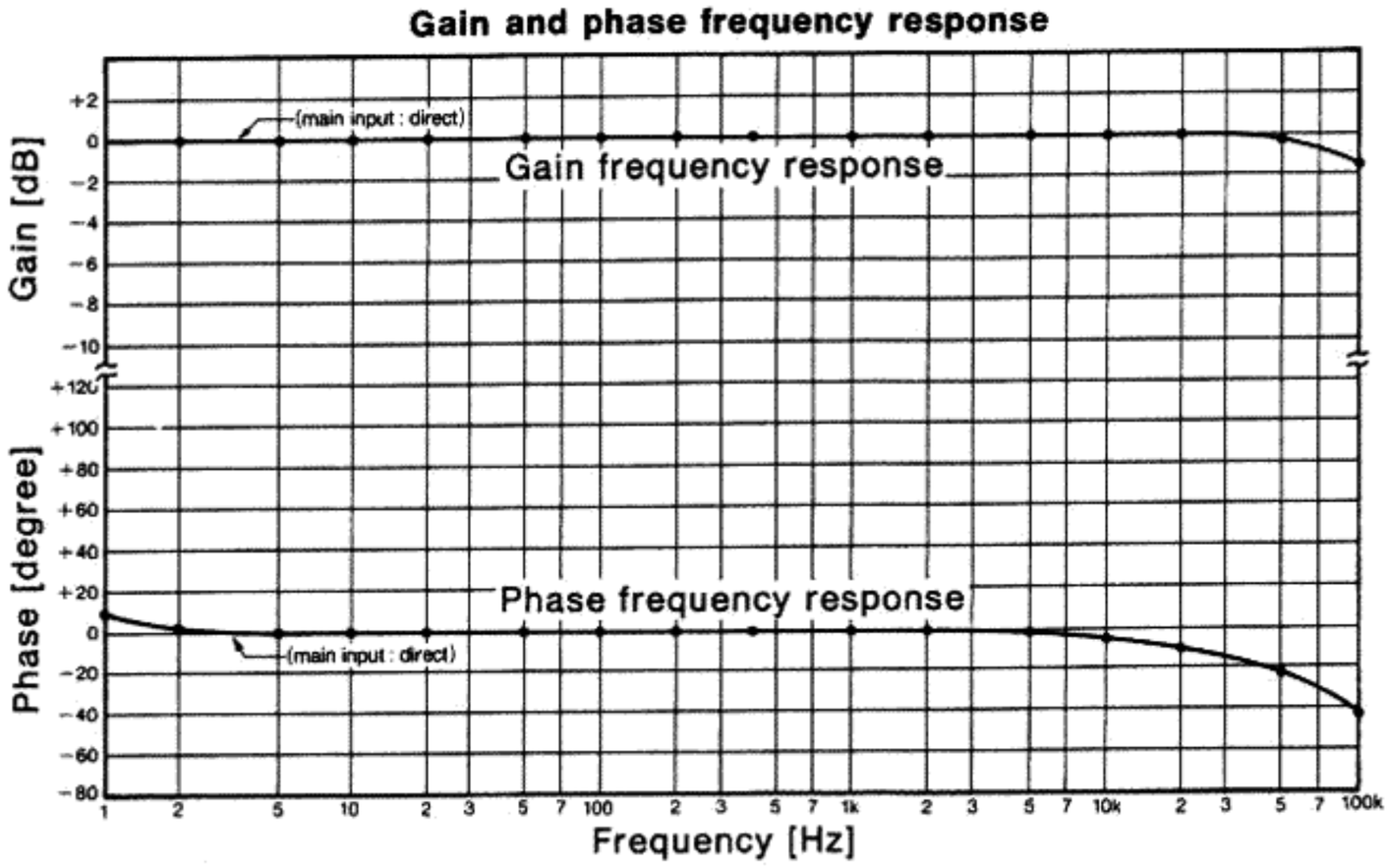
Output band width



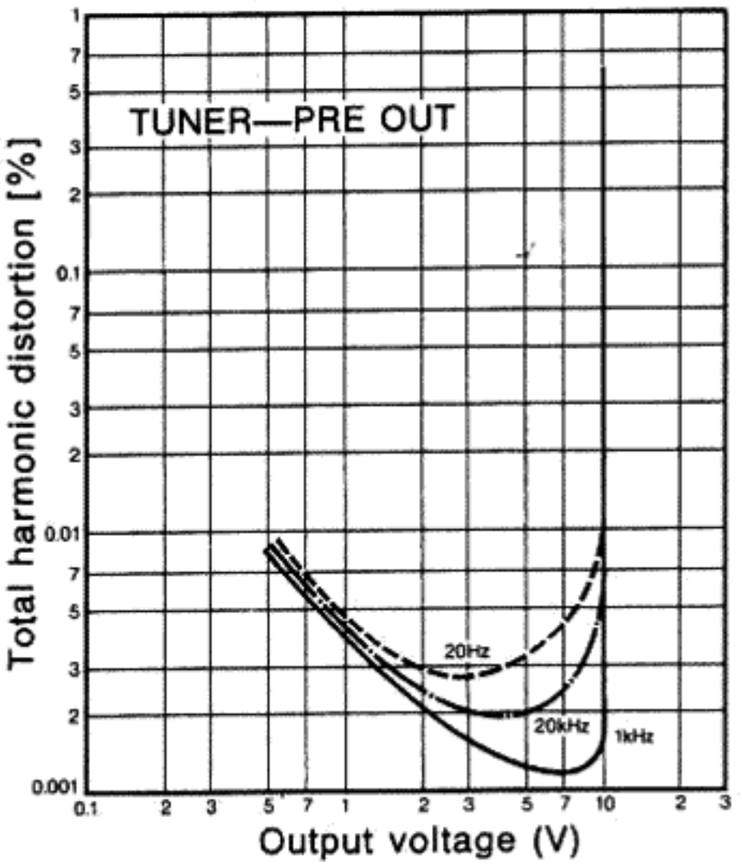
Tone control frequency response



Gain and phase frequency response



Tone control amplifier output vs. total harmonic distortion



BLOCK DIAGRAM