

FM STEREO/FM-AM RECEIVER

# STR-7065

OWNER'S INSTRUCTION MANUAL



Your new STR-7065 consists of a sensitive fm stereo and a-m tuner, a clear preamplifier, and a powerful amplifier, all contained in a handsome walnut cabinet. The STR-7065 is designed with the most advanced SONY techniques for professionals and technically-minded audiophiles.

In the fm tuner section, the FET frontend uses newly-developed junction FET's in the mixer and r.f. stages, thus providing high sensitivity while retaining the ability to handle strong local stations without overload and spurious responses.

The i.f. amplifier section has permanently-aligned solid-state filters and a high-gain, limiter IC for excellent selectivity and stereo separation. The solid-state filters also offer improved limiting characteristics, good a-m suppression, and superb capture ratio which reduces the tuner's sensitivity to multipath distortion. The newly-developed IC in the MPX section cuts down audible distortion, so you can surely enjoy hi-fi reproduction with low distortion in mono and stereo, and fine fm stereo separation. An effective muting circuit silences all interstation noise as you tune from station to station. This protects the speakers and further simplifies tuning.

The a-m tuner employs triple-tuned solid-state filters and a newly-developed IC with an AGC circuit to maintain high sensitivity, minimum distortion, and superior signal-to-noise ratio. A-m program will be received with an audio quality that will surprise hi-fi oriented ears.

The amplifier section uses differential amplifiers and incorporates balanced positive and negative power supplies. A paralleled complementary push-pull power amplifier reproduces the powerful output throughout entire audio range without permitting the slightest trace of distortion to intrude upon the performance. The preamplifier section employs a high-reliability IC to assure the preamplifier's high performance and long-term stability.

Three pairs of speaker systems can be connected to the receiver. Each pair can be turned on and off independently, or two pairs simultaneously by the selector on the front panel. A line-and-microphone mixing facility is provided with connecting microphones, and the microphone sound can be controlled as desired with the front-panel mixing level control.

Two pairs of inputs and outputs for tape recorders allow making two recordings simultaneously and permit tape duplication.

To obtain maximum performance and enjoyment from your receiver, please study these instructions carefully. The installation and operation of the receiver is not complicated, but the flexibility provided by its many features may not be fully appreciated unless you spend a little time gaining familiarity with its controls and connection facilities. Keep this manual handy for future reference.



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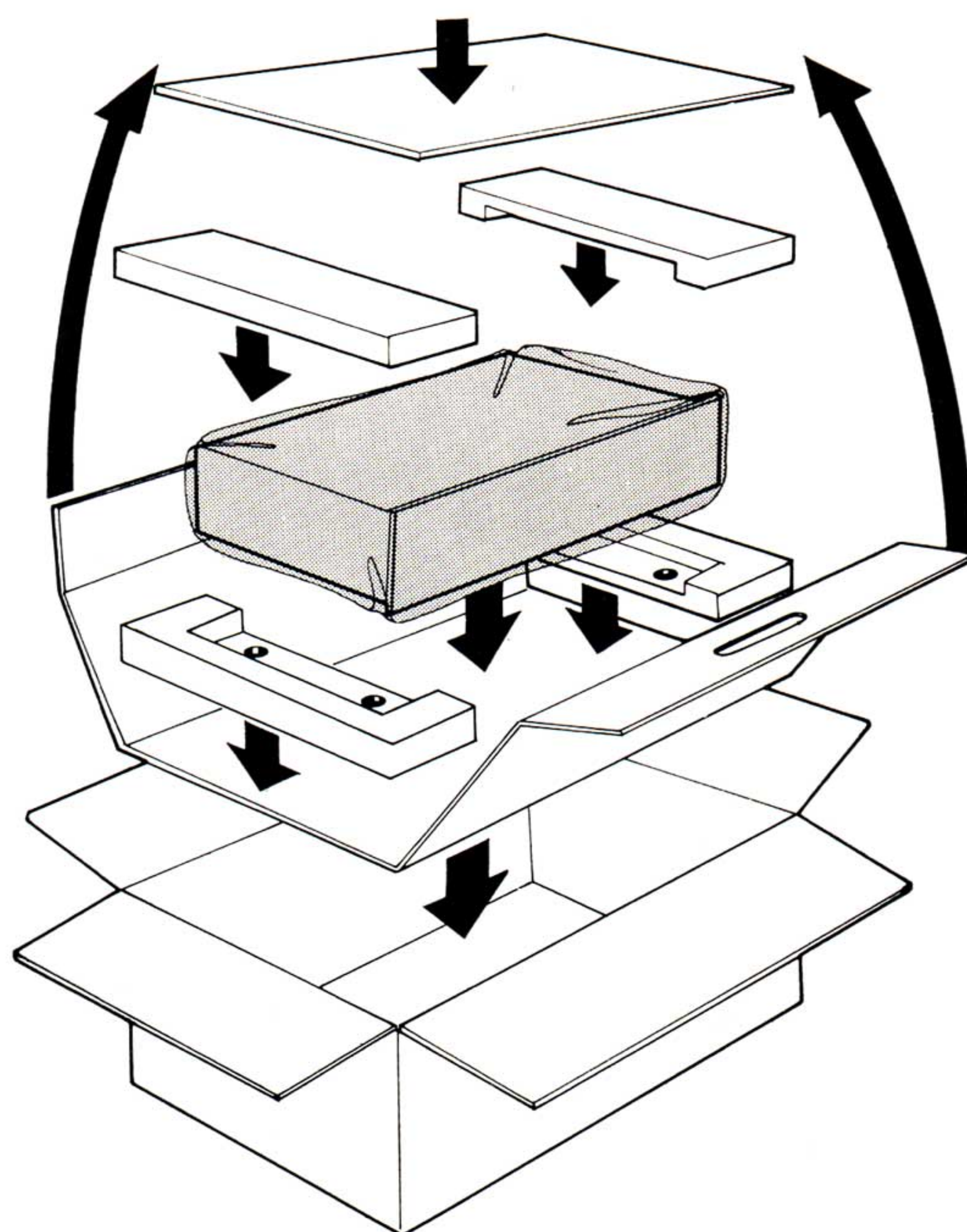
## PREPARING FOR USE

## UNPACKING

All SONY equipment comes to you carefully packed in cartons designed to withstand the rigors of shipment. Do not throw the carton or associated packing material away ; they will come in handy if you ever have to transport or ship the STR-7065.

Inspect your STR-7065 immediately for signs of damage incurred in transit. If damage has occurred, consult your local SONY dealer for further instructions. Once again, save all packing material; it will substantiate your damage claim.

When shipping the unit for repair work or simply to another location, the unit must be repacked in the original carton and the packing material precisely as before.





## SYSTEM CONNECTIONS

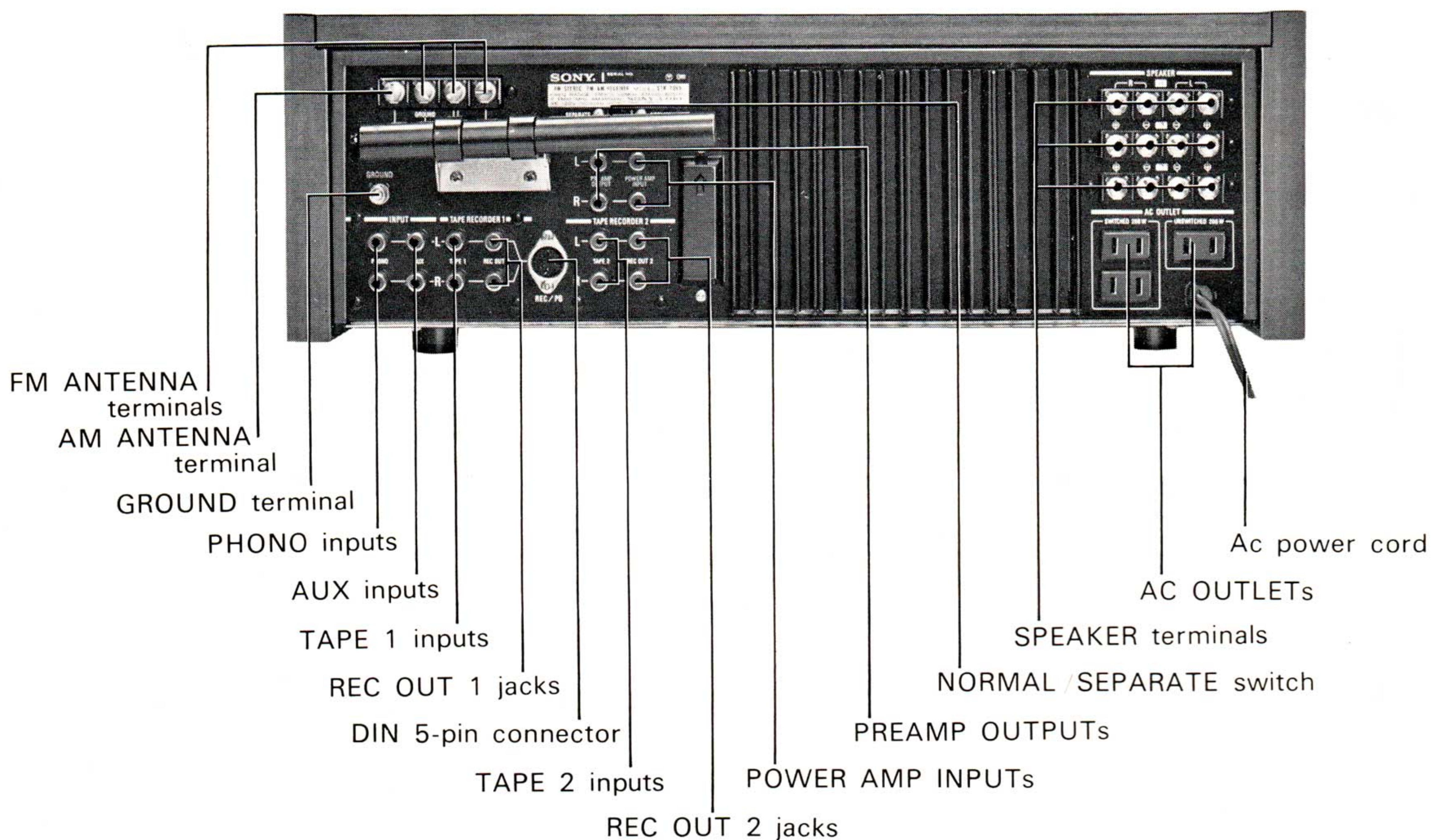
No doubt you have already decided on a location for your STR-7065. However, before going ahead with the installation, make sure that your choice of location agrees with the following list of DO's and DON'T's.

- DO** allow at least one inch clearance around the STR-7065 for ventilation.
- DO** allow sufficient room behind the STR-7065 so you can make connections to the rear panel without disrupting your entire setup.
- DON'T** remove the chassis cover. Refer servicing to qualified personnel.
- DON'T** place the STR-7065 in direct sunlight, or near radiators hot-air ducts, or any other source of heat. The STR-7065 must not be operated where the room temperature is over 110°F. Similarly, don't place it in any area subject to freezing temperatures or excessive moisture.

**DON'T** place anything on top of the cabinet which might block the top ventilation holes. Similarly, don't place it on any soft surface which may block the bottom ventilation holes.

**DON'T** make connections with the POWER switch turned ON.  
**DON'T** connect the STR-7065 to power sources other than those for which it is designed. The proper power source is 120 volts, 60 Hz ac.

After you have found a suitable location for your unit, you can begin making the basic connections described in the following paragraphs. Refer to the overall-system connection diagram while making these connections.









## Antennas

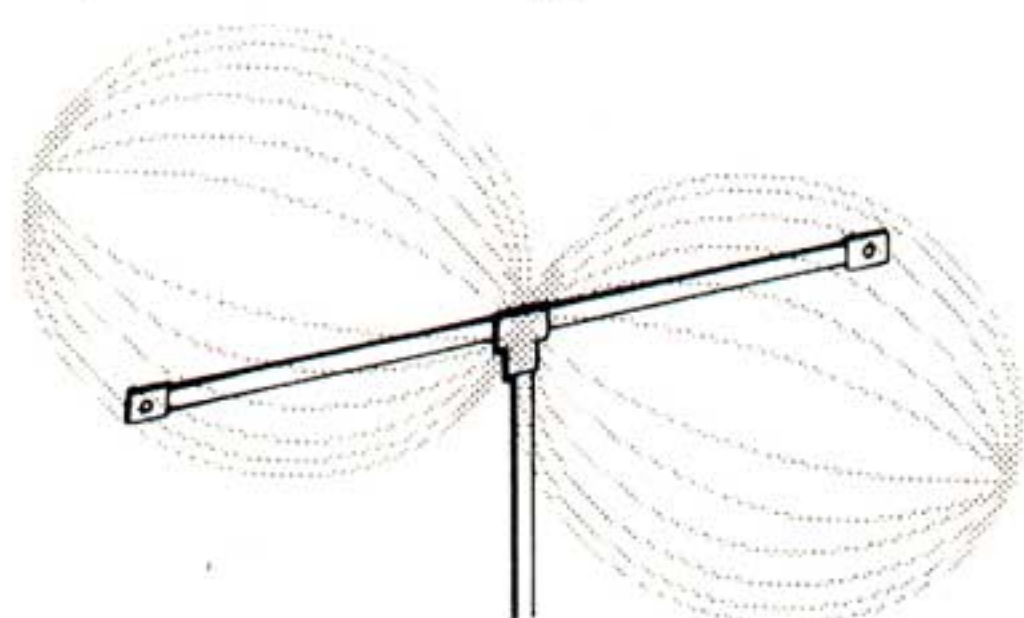
Good fm reception depends not only on the sensitivity of the STR-7065 but on the quality of the received signals.

What shall you do to improve your fm reception and get the best from the receiver? The answer is to use the proper antenna for your location.

The factors determining the minimum antenna requirements for your location include following :

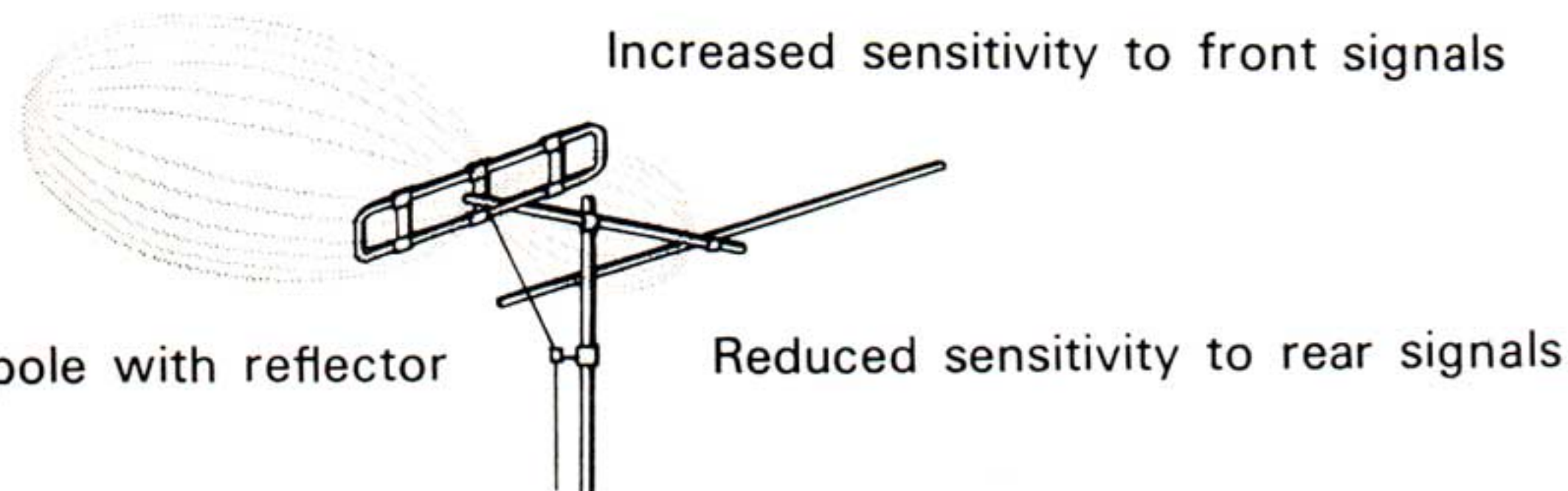
1. How strong are the signals in your neighborhood?
2. Are all the fm stations in the same direction, or are they scattered all over?
3. Is multipath reception a problem?

Ribbon dipole antenna, rabbit ears type antenna



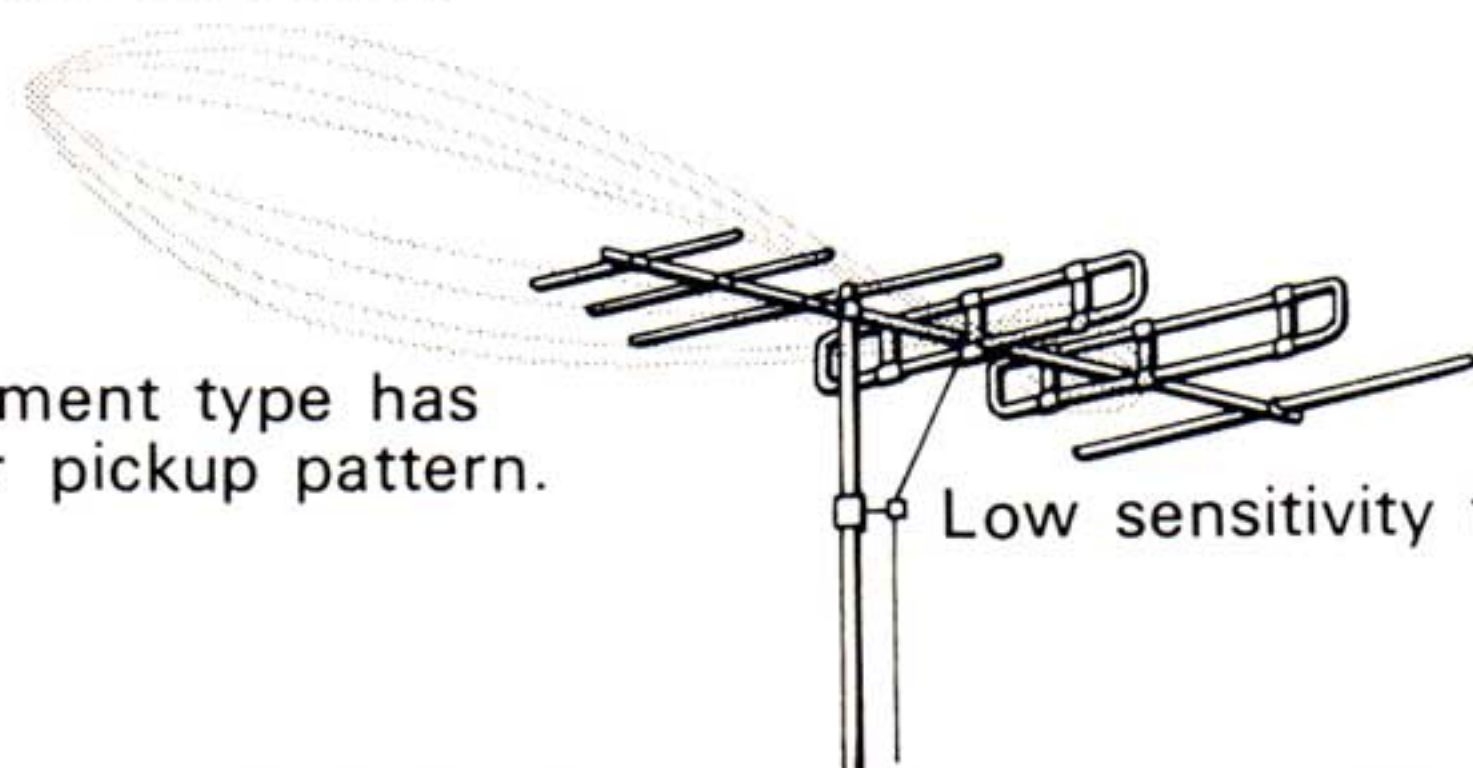
Dipole antenna picks up signals from both the front and rear equally well.

Directional outdoor antenna



High frontal sensitivity

Multi-element type has narrower pickup pattern.

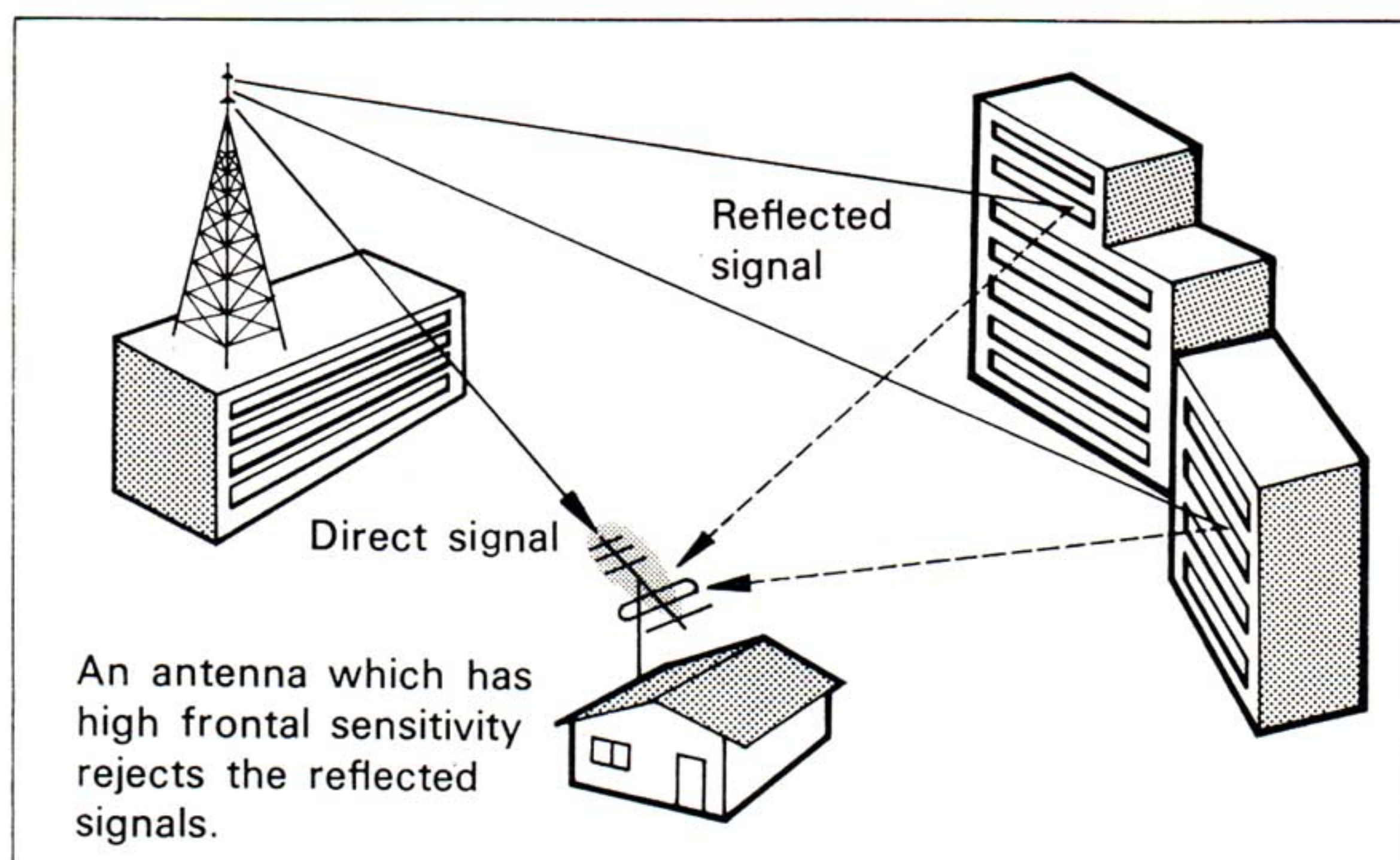


A convenient indoor fm ribbon antenna is supplied with the STR-7065. Use it temporarily until you install the proper antennas.

In a strong signal (metropolitan) area : A ribbon-type fm dipole or the familiar "rabbit ears" antenna is easy to installed and is usually suitable for good fm reception. The rabbit ear antenna is the more preferable of the two since it can easily be turned for the best signal pickup. If there are many high structures nearby, and "fm ghosts" (multipath reception) cause the problems described later, use a highly-directive outdoor antenna and a rotator. The STR-7065 can handle the resulting high input signal level without causing distortion because it is designed to have outstanding overload capability.

In the far suburbs : If you want to receive not only the local station that an indoor antenna pulls in, but to reach out into areas where there may be programs more to your taste, a high-gain highly-directive outdoor fm antenna properly installed with a rotator is recommended.

**Multipath Reception :** The most important factor affecting signal quality is "multipath" reception. Multipath is caused by signal reflections that bounce off hills or structures and reach the receiving antenna much later in time. With fm—especially in stereo—multipath can cause severe distortion and complete loss of channel separation. Much of the multipath problem appears as high-frequency noise and distortion, therefore a small table-model fm radio with a limited high-frequency response might be relatively unaffected.

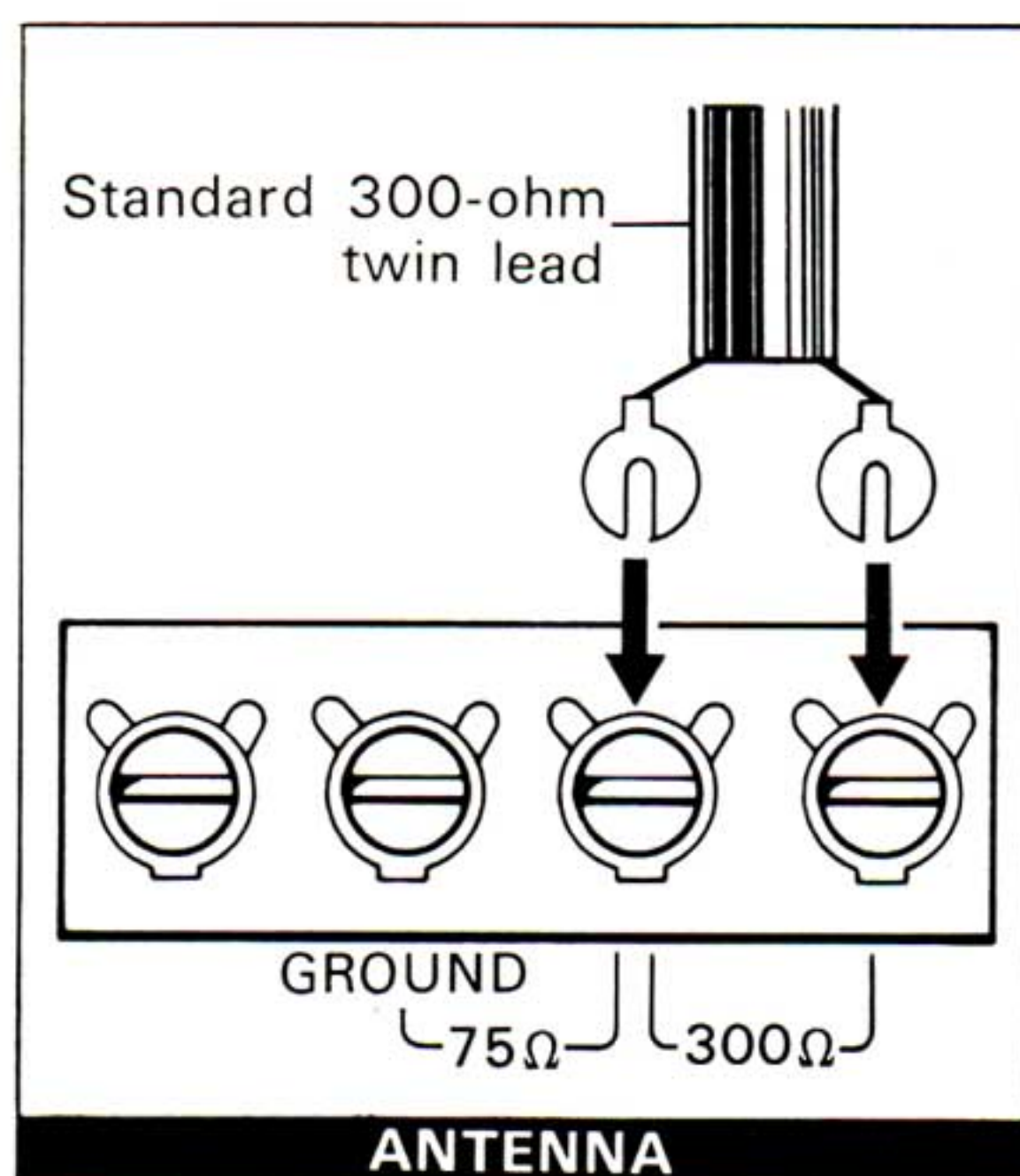


Multipath reception can be avoided to a great extent by using shielded twin lead or coaxial cable, and a good directional antenna that is correctly oriented.

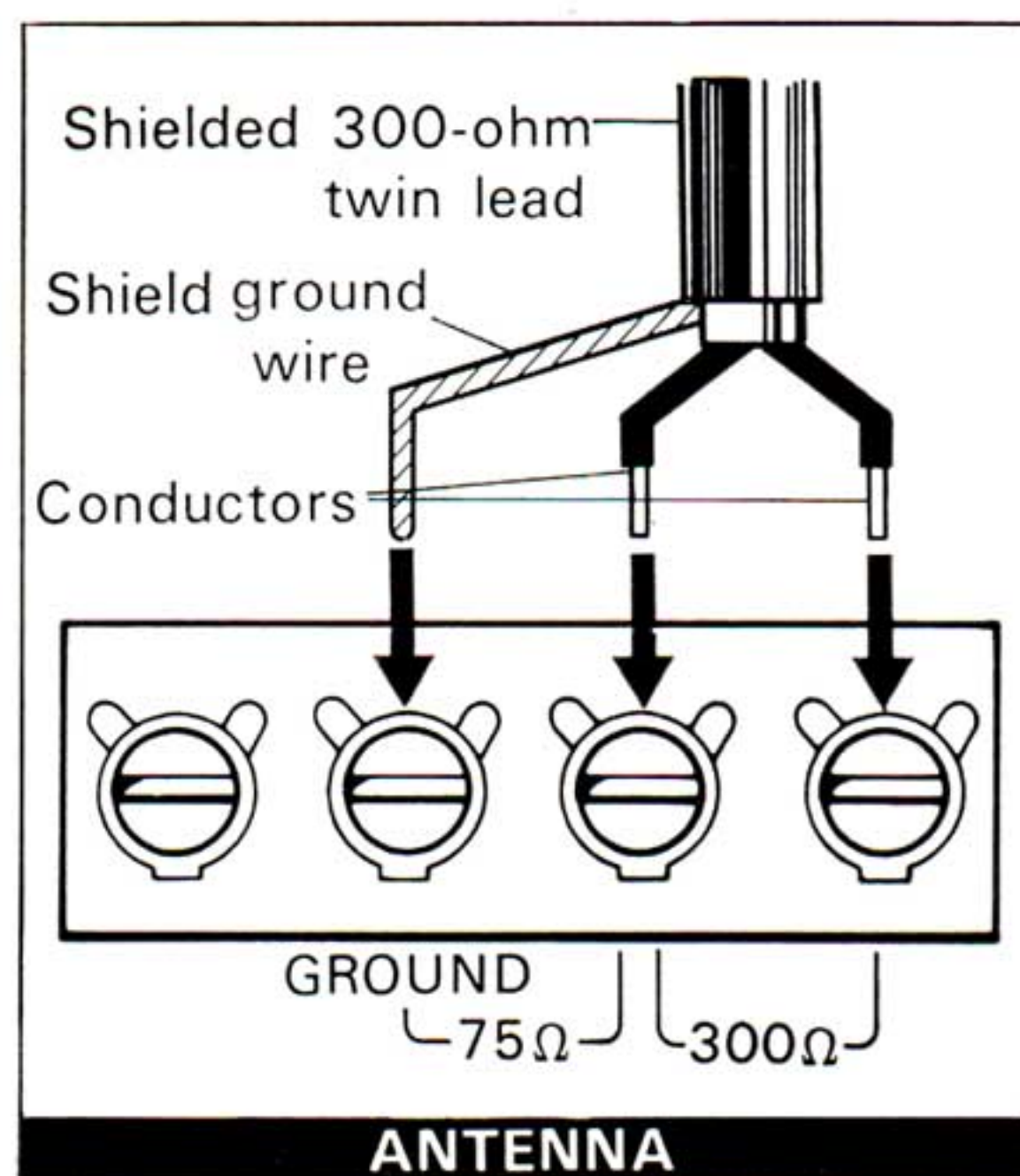
**Connecting the FM Antenna Lead :** The receiver accepts either 300-ohm transmission line (twin lead) or 75-ohm coaxial cable. The 300-ohm twin lead may be either the standard or shielded type. Standard 300-ohm twin lead is inexpensive and will be perfectly adequate for most installations. However, in cases where local noise or multipath pick up on the transmission line causes interference, a shielded transmission line must be used. Coaxial cable and a matching transformer can be used, but 300-ohm shielded twin lead is preferable because most fm antennas are designed to directly match a 300-ohm impedance line.



To connect standard 300-ohm twin lead to the receiver, loosen the ANTENNA terminals marked FM 300Ω. Strip the plastic insulation from the two-conductor lead-in wire and wrap each conductor around a terminal. Tighten the terminal screws.



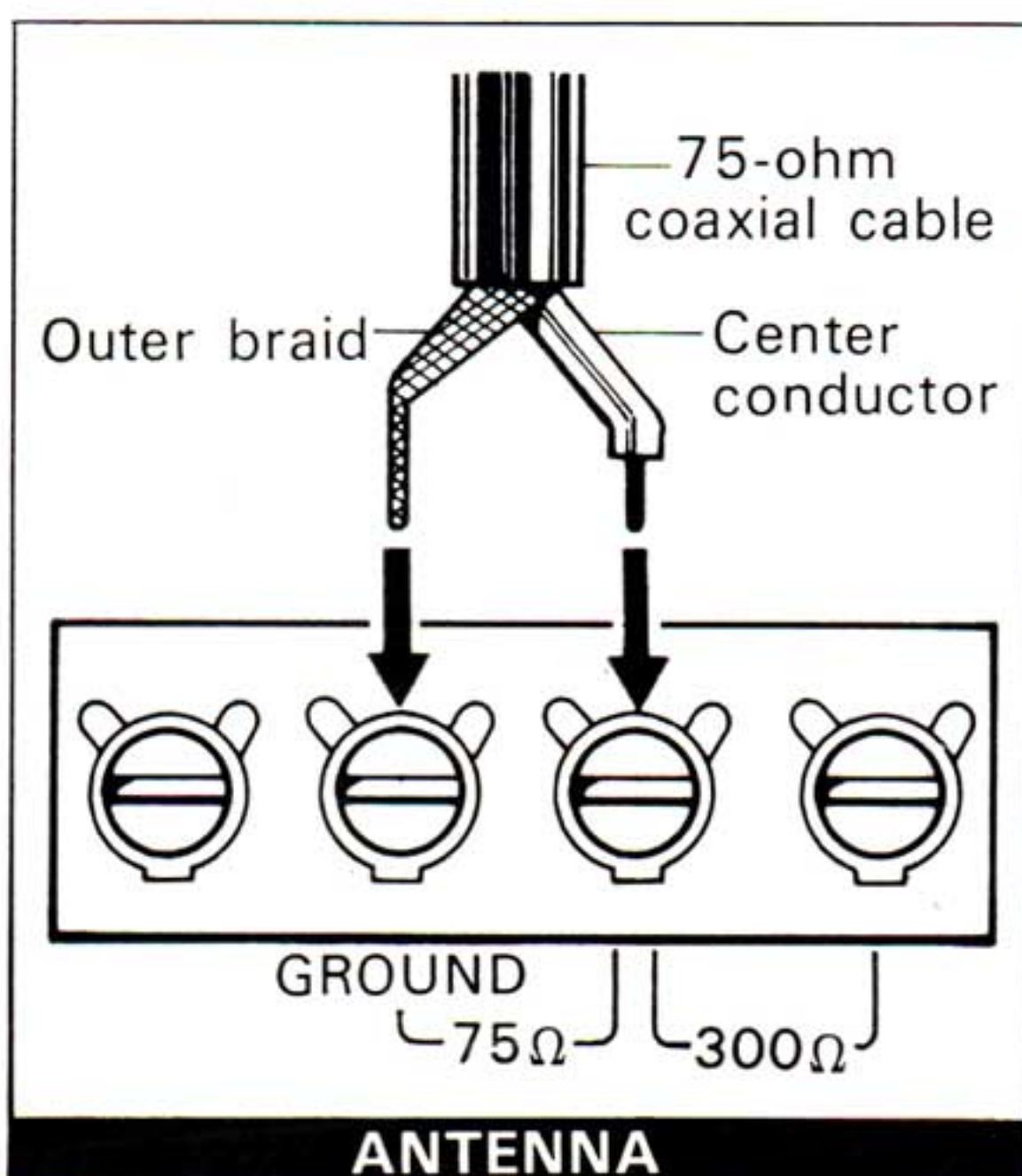
To connect shielded 300-ohm twin lead to the receiver, connect the two conductors, then connect the shield ground wire to the GROUND terminal on the antenna terminal plate.



To obtain minimum signal leakage and pickup on the line, observe the following precautions, when using standard 300-ohm lead-in wire.

- When installing the outdoor antenna lead, use stand-off insulators (available on the market) to route the lead over the roof, outer wall, etc.
- Keep the lead as short as possible and avoid long horizontal runs.
- Do not fold the unused portion of the lead at the input of the receiver.

To connect 75-ohm coaxial cable to the receiver, strip the insulation from the cable and separate the center conductor from the outer braid. Connect the center conductor to the FM 75Ω terminal, and the braid to the GROUND terminal on the antenna terminal plate.



**Antenna Orientation:** First, tune in the desired station by adjusting the TUNING knob, then adjust the antenna direction and height for clearest sound. The signal strength is indicated by the amount of deflection of the TUNER INPUT meter. The stronger the signal, the greater the deflection.

- If distortion is audible, adjust the direction and/or height of the antenna until the distortion is eliminated. Often, a slight turn will be sufficient.
- In some cases multipath reception on two or more stations may require the antenna to be pointed in several different directions. An effective and relatively inexpensive solution to this problem is the use of a remote-controlled antenna rotator.
- If an outdoor antenna cannot be erected, use a good indoor antenna ("rabbit ears" are satisfactory). Adjust the antenna for minimum distortion by listening to the quality of the sound.

**AM Reception:** Pull down the built-in bar antenna located at the rear of the set. In most cases, this ferrite-bar antenna will provide optimum a-m reception. In difficult reception areas an outdoor antenna will be helpful. Connect a length of wire, 20-50 feet long, to the AM ANTENNA terminal.

The signal strength of the a-m station is indicated on the TUNER INPUT meter; the stronger the signal, the greater the deflection toward the right.

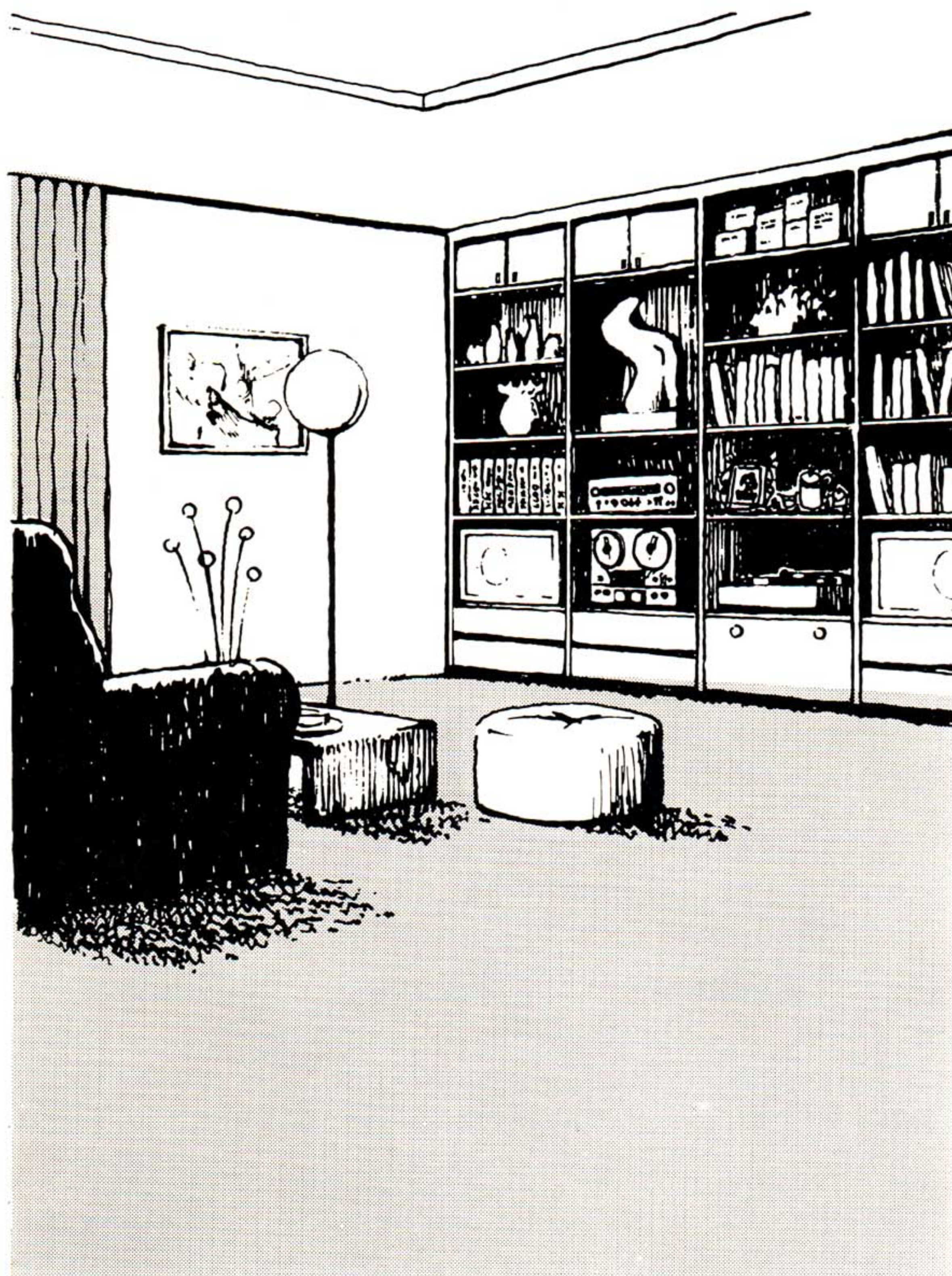


## Speakers

The STR-7065 can drive three speaker systems simultaneously or independently as follows: A, B, C, A+B, A+C. These systems are turned on or off with the SPEAKER selector on the front panel. The speakers connected to these terminals should have an impedance of 4–16 ohms.

### CAUTION

The STR-7065 delivers 120 watts (per channel) of dynamic power into a 8-ohm speaker. Be sure to use speakers with suitable power handling capabilities. If lower wattage speakers are to be used, reduce the volume when removing the phonograph pickup from a record or when detuning an fm station. Speaker damage may result if this precaution is not observed.



**Location:** In many home-entertainment stereo systems, the choice of speaker location is often limited by the existing furniture arrangement. However, if rearrangement is possible, or you wish to furnish the area specifically for stereo listening, here are a few suggestions for optimizing your listening pleasure.

Set up your speakers in a large room having a rug on the floor. If the room has heavy drapery, so much the better. Rugs, drapery, and upholstered furniture minimize the multiple reflections of high-frequency sound that occur in a bare room and which degrade the stereo effect.

The usual speaker location is on the floor against a wall. If you must position the speakers off the ground, do not put them higher than eye-level. Because of psychological conditioning, sound coming from the vicinity of the ceiling gives an unnatural feeling. Corner locations, however, are ideal for emphasizing the bass notes.

The distance between the right- and left-channel speaker system in a stereo system is important to the stereo effect. Closely-spaced speakers produce maximum stereo effect, although if the separation is too great, the unnatural “hole-in-the-middle” effect appears. The proper distance between speakers is directly related to the distance from the speakers to the listening areas. In most cases, fine results are obtained if the speakers are separated by an amount slightly more than the distance from the listening area to each speaker. In any case, experiment with different speaker and listening locations until you find the setup that pleases you most.

**Cable Type:** The type of wire used to connect the speakers to the receiver is not critical in most home stereo systems. Ordinal dual-conductor lamp cord is often used for this purpose. Common 18-gauge lamp cord is fine for short runs. However, 14- to 16-gauge wire may be needed for long runs to low impedance speakers to prevent excessive power losses in the wiring. If you use lamp cord or any other stranded wire, make sure that none of the strands separates from its group and shorts across the speaker or receiver terminals.

**Connection:** Connect your speaker systems to the SPEAKER terminals, A, B and/or C. Connect the right and left speakers to the R and L SPEAKER terminals respectively. One of the most important considerations in connecting the speakers of a stereo system is speaker phasing (both cones move in the same direction when energized). Speaker phasing is easy if the speaker terminals are marked and one of the wires in a lamp-cord pair is coded. Most lamp-cord is coded by means of a ridge molded along one conductor, or a colored thread included with the stranded wires of one conductor. For each channel, simply connect one end of the coded conductor to the  $\ominus$  SPEAKER terminals on the STR-7065. Connect the other end of the coded conductor to the speaker terminals marked GROUND or COMMON or  $\ominus$ . After this is done, connect the uncoded conductor ends to the  $\oplus$  SPEAKER terminal on the STR-7065 and to the remaining speaker terminal.

### CAUTION

Do not connect the speaker terminals of one channel in parallel with (across) those of the other channel.



## Microphones

The MIC MIXING jacks on the front panel accept microphones of high- and low-impedance equipped with a standard phone plug. The input sensitivity can be adjusted by the MIC MIXING level control. Refer to "USING MICROPHONES" on page 15.

## Other Input Connections

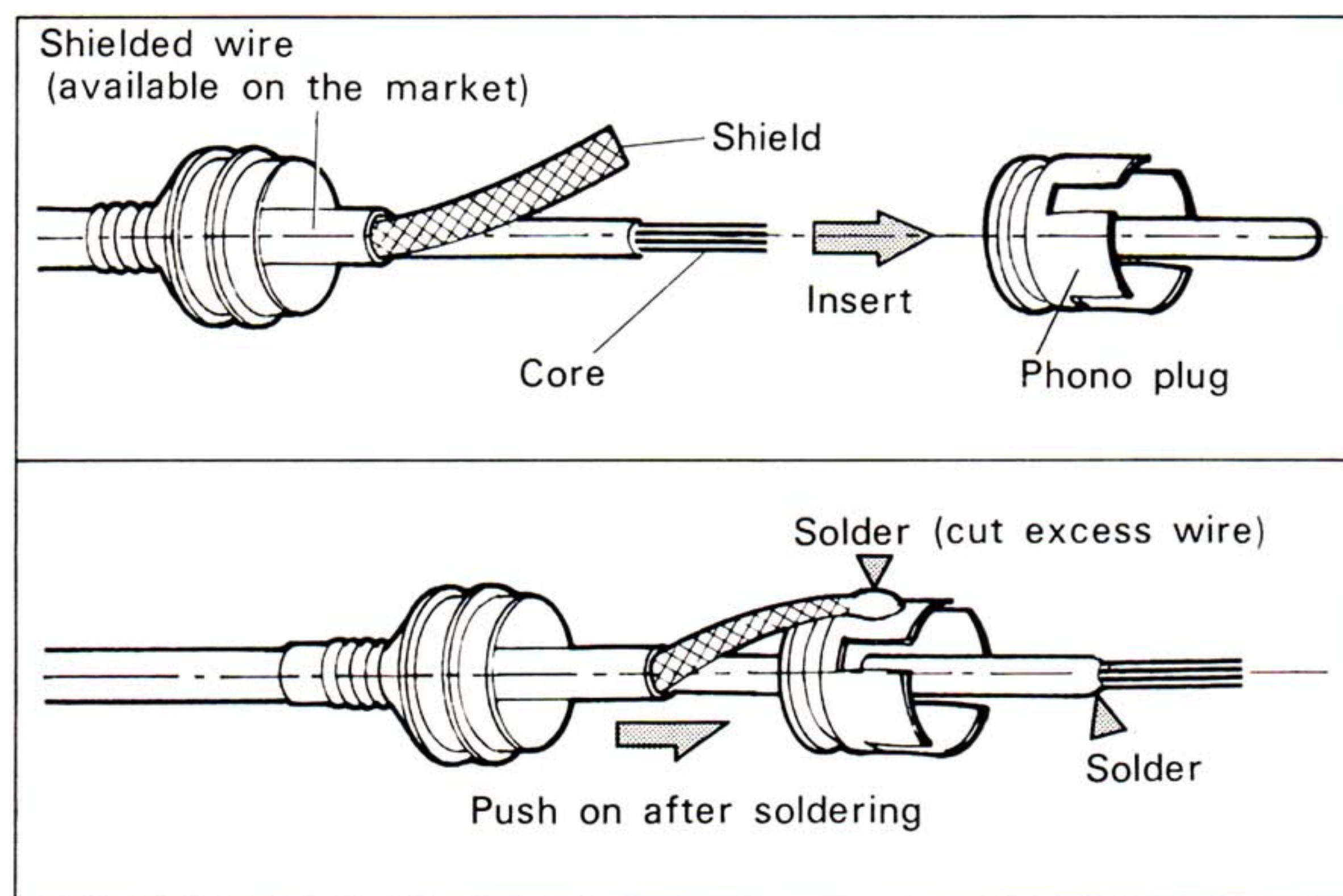
To assure correct matching at the input and output terminals of your sound system, refer to the table of "TECHNICAL SPECIFICATIONS" of the STR-7065 on page 17, and the specifications given in the instruction manuals provided with the components you wish to connect to the STR-7065. Generally the output level of a signal source (phono cartridge, tape recorder, etc.) should be within the range of "slightly higher" to "several times higher" than the sensitivity of the corresponding input. Also, the output impedance of a signal source should be considerably lower (several times or more) than the impedance of the corresponding input. For example, a tape recorder having an output level and impedance of 250 millivolts and 10 k ohms respectively can be connected to the input of this receiver.

For input connections, use low-capacitance shielded cable, otherwise, hum may occur. Keep the cables as short as possible. In excessively-long horizontal runs (over 6 ft), the high-frequency program contents may be reduced.

Be sure the cable connectors are fully inserted into the jacks. A loose connection may cause hum and noise.

When reconnection is required, turn the VOLUME control counter-clockwise.

To use the supplied phono plug, see the illustrations below.



**Record Players:** Connect a record player equipped with a magnetic cartridge to the PHONO inputs.

Hum heard during phono operation usually the result of a poor or incorrect ground connection, between the tonearm and the receiver. If hum is heard, connect a ground wire between the turntable base and the GROUND terminal on the STR-7065. Try reversing the ac line cord. Check your turntable. If the tonearm is mounted on a wooden surface, it may be necessary to make a ground connection between the base of the tonearm and the STR-7065.

**Tape Recorders:** The two pairs of tape recorder connectors, TAPE 1•2 inputs and REC OUT 1•2 jacks, are provided. They will serve for tape duplicating or for making two recordings simultaneously.

For tape playback, connect the line outputs (or monitor outputs) of a tape recorder or a tape deck to the TAPE inputs. For tape recording, connect the line inputs of a tape recorder to the REC OUT jacks.

If your tape recorder has the same type DIN 5-pin connector (indicated REC/PB) as that on the STR-7065, the record and playback connections can be made with a single REC/PB connector cable. In this case the TAPE 1 inputs and the REC OUT 1 jacks cannot be used.

Note that, when making two recordings simultaneously, if there is bias current leak on the recorder connected, the recording may be marred by beat noise. In this case make each recording separately.

## Headphone

The HEADPHONE jack accepts most\* low- and high-impedance headphones equipped with a standard binaural phone plug. For private listening, make sure that the SPEAKER selector is set to OFF.

\* Some electrostatic headphones are designed to be driven by speaker output and cannot be plugged into this jack.

## SQ Connection

SONY SQ records or discrete 4-channel tape programs can be reproduced by connecting a matrix decoder (such as the SONY SQ Decoder), additional amplifier and speakers.

Connect the TAPE inputs of the STR-7065 to the OUTPUT jacks of the Decoder, and the REC OUT jacks of the STR-7065 to the INPUT jacks of the Decoder. In this case connect a 2-channel and/or 4-channel tape recorder to the Decoder.

## Ground Connection

To reduce hum, it may be effective to connect the GROUND terminal to an earth ground such as the mounting screw of an ac outlet cover plate or a cold-water pipe, or directly to the earth. A direct earth ground or a cold-water pipe is recommended for lightning protection when an external antenna is used.



OPERATING INSTRUCTIONS

LOCATION AND FUNCTION OF CONTROLS

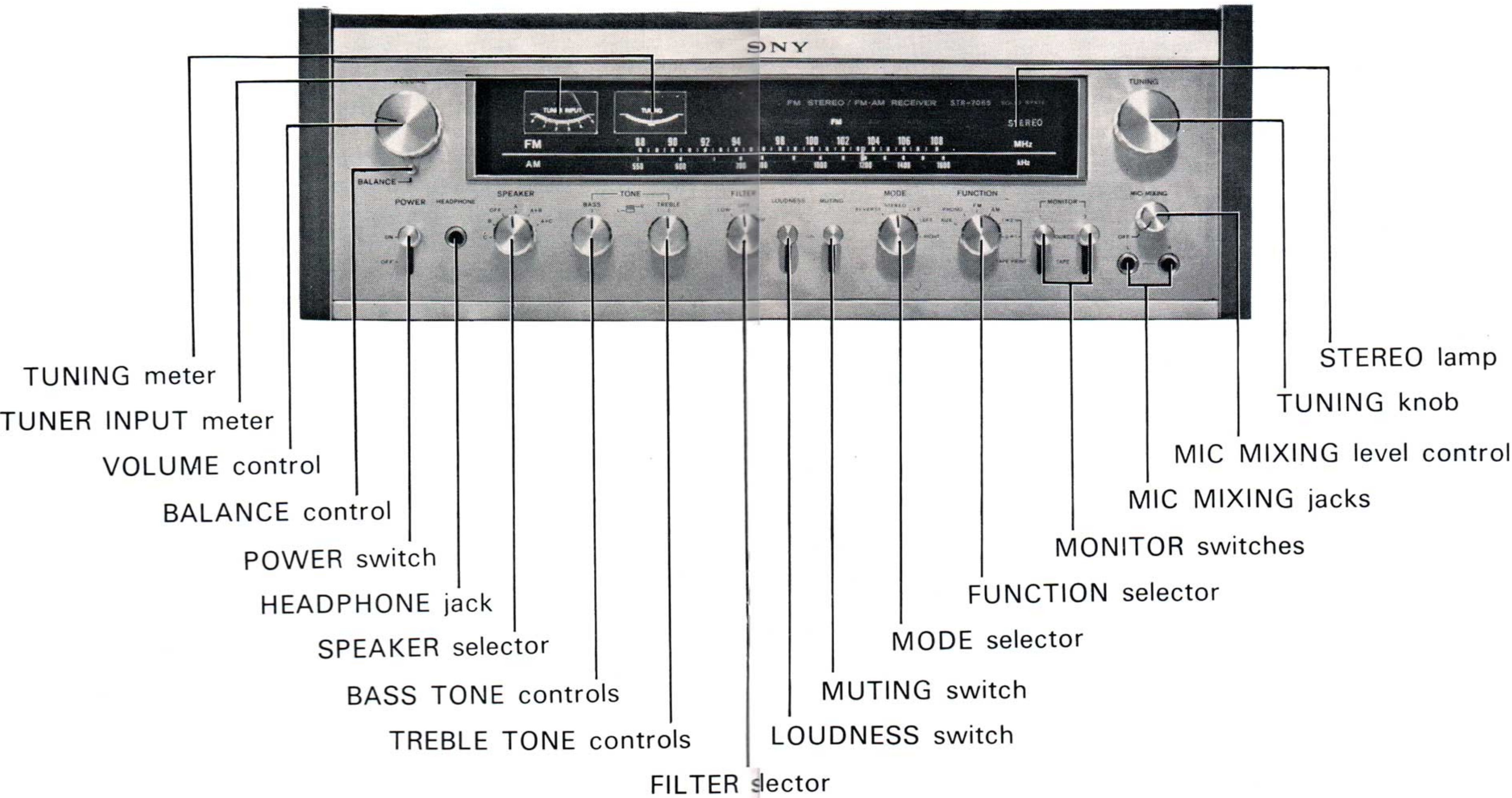
Before attempting to operate your STR-7065, take a few minutes to learn the location and function of the controls mentioned in the operating instructions. The locations are shown in the illustration, and the functions are described on pages 11 and 12.

Power Connections

Before making any form of power connection, make sure that the STR-7065's POWER switch is set to OFF. Then you can plug the receiver's line cord into the electrical outlet providing 120 volts, 60 Hz ac.

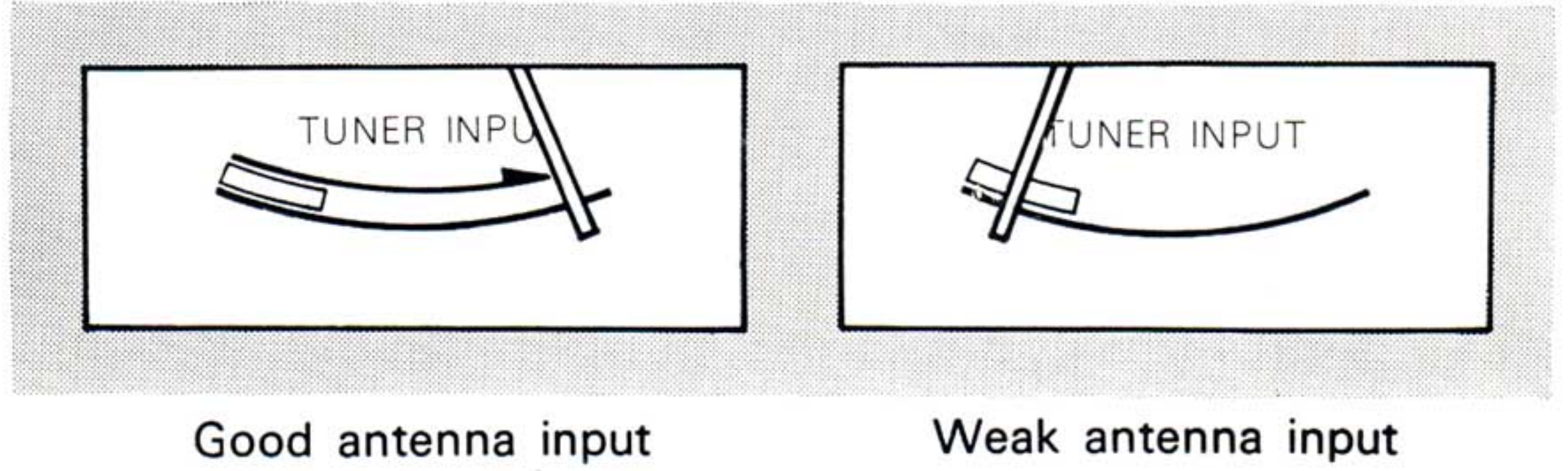
Female outlets on the rear panel provide a convenient source of ac power for any of your other system components. Equipment plugged into the SWITCHED outlets need not have a power switch; the POWER switch on the STR-7065 controls the ac power to these outlets. Equipment plugged into the UNSWITCHED outlet must have a power switch; the POWER switch on the STR-7065 does not control the ac power to this outlet. The total power consumption of the equipment plugged into SWITCHED outlets must not exceed 200 watts, and that plugged into the UNSWITCHED outlet must not exceed 200 watts.

For making connections to the PREAMP OUTPUTs and POWER AMP INPUTs, refer to "Use of the NORMAL/SEPARATE Switch" on page 13.



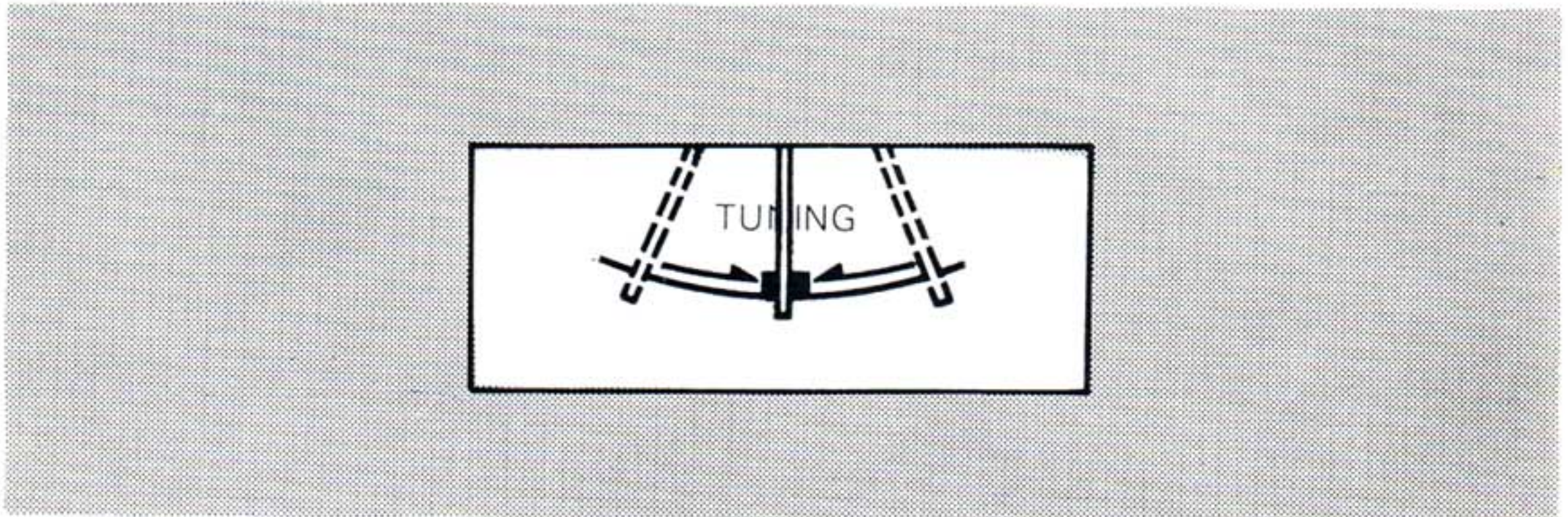
TUNER INPUT meter

The signal strength of fm and a-m, and correct tuning of a-m are indicated at the TUNER INPUT meter. The right most reading shows the best tuning. The relative strength of the received signal is shown by the amount of meter deflection. If the needle stays in the red zone, antenna input level is too weak for full performance especially for fm stereo reception.



TUNING meter

For fm reception this meter acts as a zero-center meter and pin-points the channel center of the selected station. Correct tuning is indicated by center-point reading. Detuning from the center point will cause the needle to swing either to the left or right. The needle will also show a zero-center reading when the receiver is tuned to an unused channel or exactly between channels. For fm antenna orientation, use the TUNER INPUT meter and the TUNING meter, and adjust the antenna direction to get the highest possible reading on the TUNER INPUT meter. For a-m reception the TUNING meter does not function. Therefore, when the FUNCTION selector is set to AM, this meter does not light.



Function indicator lamps

One of the input sources selected by the FUNCTION selector is indicated by these lamps: AUX, PHONO, FM, AM and TAPE. When the FUNCTION selector is set to TAPE PRINT 1-2 and 2-1, the TAPE lamp lights. When the MIC MIXING level control is turned clockwise, the MIC lamp lights.

SPEAKER selector

Selects the speakers connected to the SPEAKER terminals A, B or C. To turn on both A and B, or A and C speaker systems simultaneously, set the selector to A+B, or A+C. In this case make sure that speaker systems are connected to all sets SPEAKER terminals selected, otherwise, no sound will be heard. For private listening, use a stereo headphone and set the selector to OFF.



**BASS and TREBLE TONE controls**

Control the prominence of BASS or TREBLE notes. Turn clockwise to increase bass (or treble) notes, counterclockwise to decrease response. The center position provides a flat response. The friction clutch knobs permit controlling the left and right channels simultaneously or independently. The other knobs control the right channels, and the inner knobs control the left channels.

**FILTER selector**

**LOW.....**This position can be used to sharply reduce turntable rumble and low-frequency noises. This position reduces the frequency by 12 dB/octave below 50 Hz. Obviously, use of this position will reduce desired low-frequency sound as well as the unwanted noise, therefore, this position should be used only with troublesome program sources.

**OFF .....**The LOW and HIGH FILTERs are turned off.

**HIGH ...**This position can be used to sharply reduce high-frequency noises associated with the playing of poorly recorded tapes or old worn disc recordings. In this position the high filter reduces frequency response by 12 dB/octave above 9 kHz and proves effective in suppressing tape "hiss" or the "scratchy" sound from poor-quality or carelessly-handled records.

In this position the high-blend circuit is automatically activated to blend the high-frequency components of the left and right channels.

**BOTH ...**Both LOW and HIGH FILTERs are turned on.

**LOUDNESS switch**

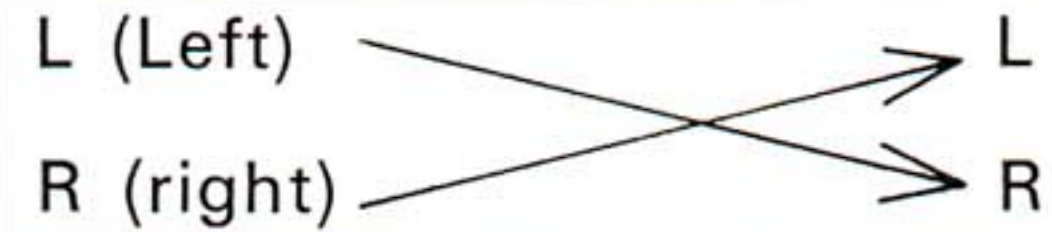
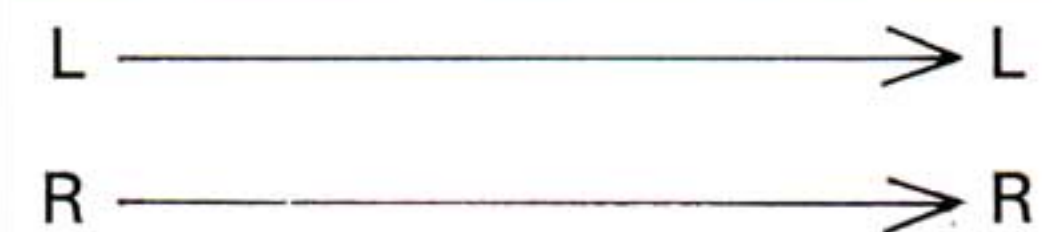



When this switch is set to ON, an equalization network is switched into the circuit to compensate for the change in the tonal response of human hearing at low sound levels. Your ear is most sensitive to those frequencies between 1,500 Hz and 6,000 Hz, so it is not as responsive to frequencies above or below that range. The LOUDNESS switch will boost the low and high frequency response to provide an apparently flat output. It is automatically disconnected when the set is operated at high volume levels.

**MUTING switch**

This switch is usually set to ON. In this position, fm interstation noise is eliminated while tuning from station to station. However, very weak stations may also be muted along with the noise. Therefore, weak stations must be tuned with the MUTING switch set to OFF. In this case, keep the volume down when detuning to avoid speaker damage.

**MODE selector**

Determines the mode of the program reproduced at the outputs.

REVERSE		To reverse right and left stereo sound
STEREO		Normal stereo sound
L+R		For recording with a monaural tape recorder. For balancing right-and left-channel sound levels. For listening to any input program monophonically.
LEFT		To amplify a monaural input source
RIGHT		

**FUNCTION selector**

This knob selects any one of the program sources; AUX, PHONO, FM, AM and TAPE PRINT 1→2, 2→1. The selected program source by this knob is indicated on the dial scale by the function indicator lamp. When the FUNCTION selector is set to AUX, PHONO and TAPE PRINT, the dial scale becomes dark. The TAPE PRINT positions are for tape duplicating.

FUNCTION selector	Tape recorder 1 – Tape recorder 2
TAPE PRINT 1→2	Playback → Recording
TAPE PRINT 2→1	Recording ← Playback

**MONITOR switches**

**MONITOR 1 TAPE ...**Taped programs connected to either the TAPE 1 inputs or to the DIN 5-pin connector can be played back.

**MONITOR 2 TAPE ...**When playing back taped programs connected to the TAPE 2 inputs, set the MONITOR 1 switch to SOURCE and set the MONITOR 2 switch to TAPE.

**SOURCE .....**For all other program sources, set the MONITOR switches 1 and 2 to this position and set the FUNCTION selector to the proper position.

**MIC MIXING level control**

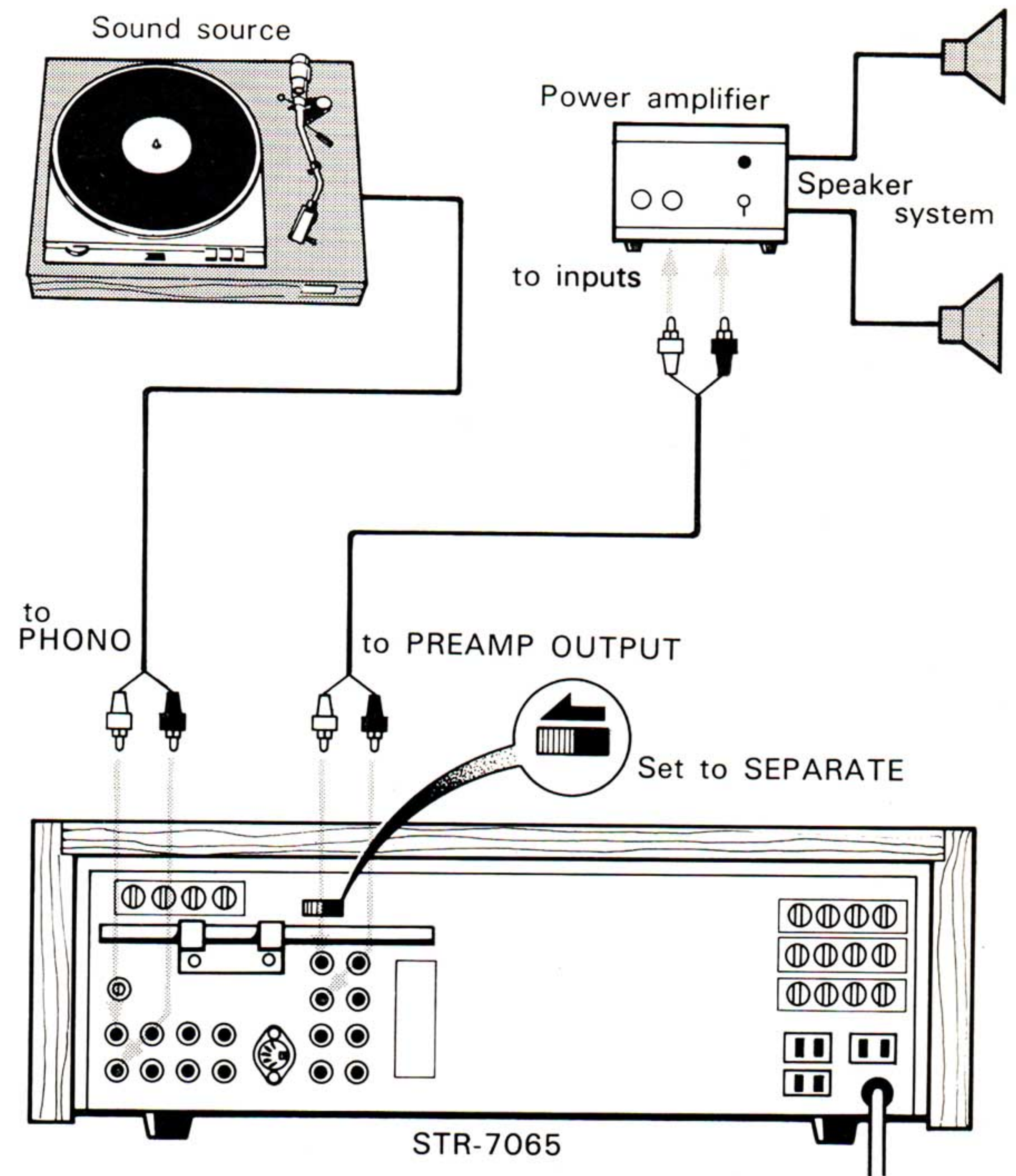
This knob controls the input sensitivity of jacks under the MIC MIXING knob. When set to OFF, the microphone signal is internally cut off. Use this position when you leave the microphones connected to the STR-7065 without using them. When turning the knob clockwise, the microphone input signal is connected to the signal path of the line programs and the sensitivity of MIC MIXING jacks can be controlled. In this case the MIC function indicator lamp lights. For further information refer to the "USING MICROPHONES" on page 15.



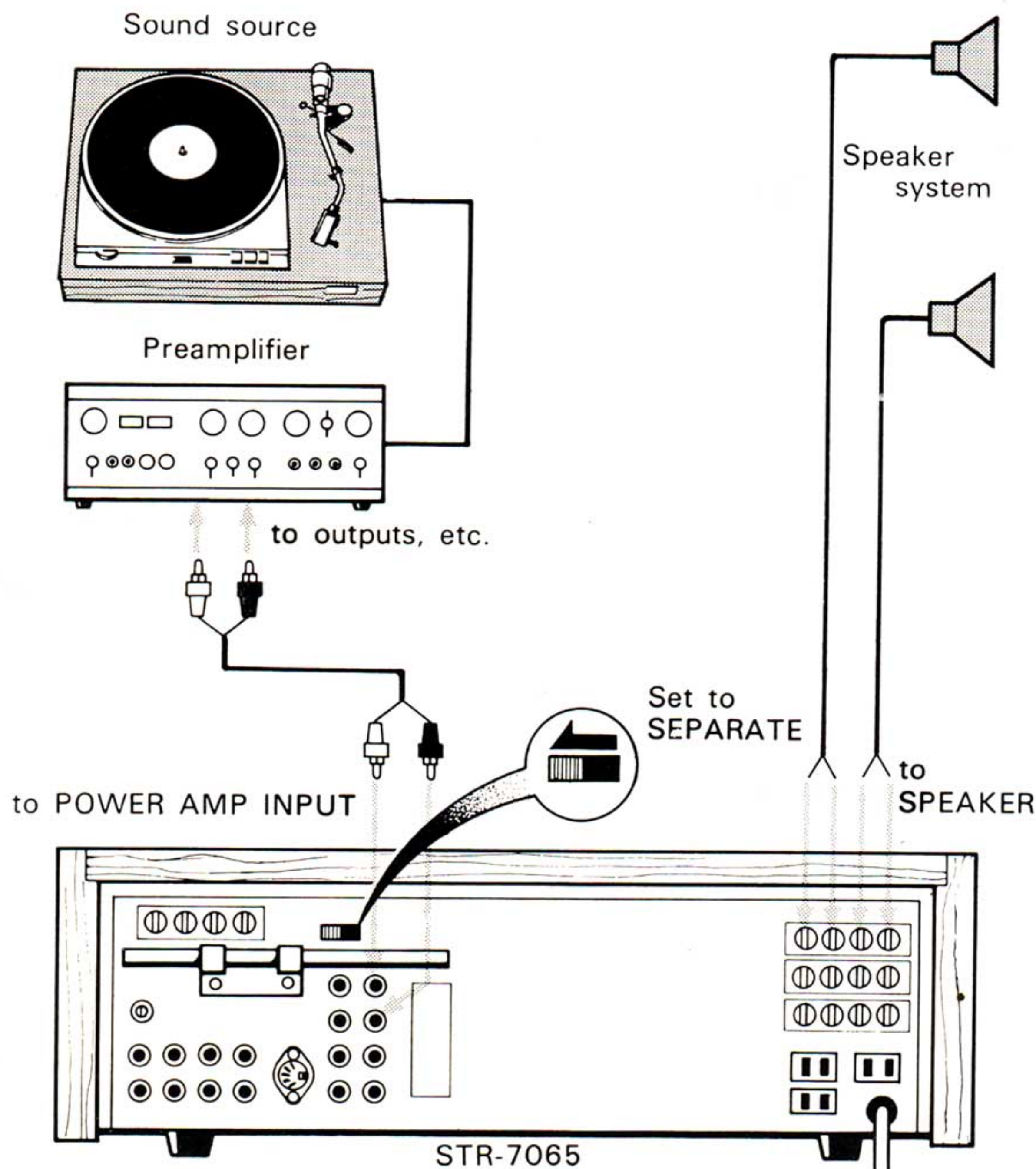
## Use of the NORMAL/SEPARATE Switch

By setting the NORMAL/SEPARATE switch on the STR-7065 to SEPARATE, you can use the preamplifier and power amplifier sections completely independently of each other as shown in the illustration. In SEPARATE, the connections between preamplifier and power amplifier sections are broken. The preamplifier output is available at the PREAMP OUTPUTs, allowing you to use the preamplifier section to drive a different power amplifier. Input to the power amplifier section of the STR-7065 is made to the POWER AMP INPUTs, allowing you to use a different preamplifier to drive the STR-7065's power amplifier. When the NORMAL/SEPARATE switch is set to NORMAL, the output of the preamplifier section is connected to the power amplifier. Thus, the preamplifier output appearing at POWER AMP INPUTs can be used to drive an additional power amplifier.

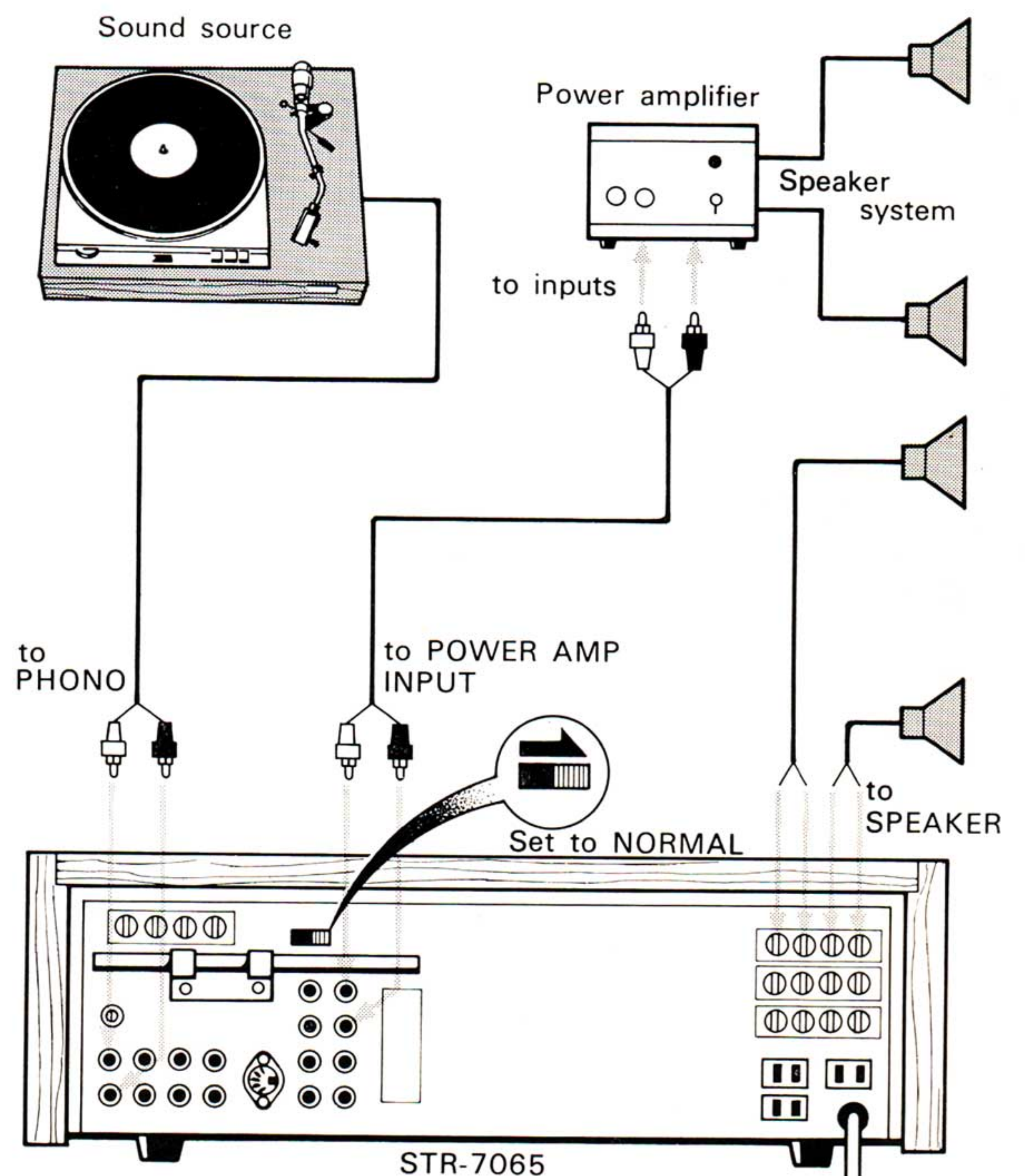
## With a different power amplifier



## With a different preamplifier



## With an additional power amplifier





## HOW TO RECEIVE FM OR AM PROGRAMS

1. Turn on the receiver.
2. Set the MONITOR 1 • 2 switches to SOURCE, MODE selector to STEREO.
3. Set the FUNCTION selector to FM or AM. The function indicator lamp FM or AM lights.
4. Leave the MUTING switch in its normal (ON) position. In a-m reception the position of this switch is not important.
5. Turn the TUNING knob to tune in the desired station. For fm reception watch the TUNER INPUT and TUNING meters, and for a-m reception watch the TUNER INPUT meter; the TUNING meter does not light.
6. Adjust the VOLUME, BALANCE and TONE controls for your listening preference.

The STEREO lamp lights when a multiplex fm stereo broadcast is received. If the stereo signal shifts to monophonic, the lamp goes out indicating that the tuner has automatically switched to monophonic reception. When an fm stereo signal is too weak or noisy for enjoyable stereo listening, the STEREO lamp will flicker. In this case, set the MODE selector to L+R.

When listening at low sound levels, set the LOUDNESS switch to ON, if desired.

To reduce high-frequency and/or low-frequency noise, set the FILTER selector to LOW, HIGH or BOTH.

## RECORD PLAYING

1. Turn on the receiver.
2. Set the MONITOR 1 • 2 switches to SOURCE, and the MODE selector to STEREO.
3. Set the FUNCTION selector to PHONO. The PHONO function indicator lamp lights.
4. Turn on the record player, then lower the cartridge onto the record.
5. Adjust the VOLUME, BALANCE and TONE controls to your preference.

## TAPE PLAYING

1. Turn on the receiver.
2. When using a tape recorder connected to the TAPE 1 inputs, set the MONITOR 1 switch to TAPE. When using a tape recorder connected to TAPE 2 inputs, set the MONITOR 1 switch to SOURCE and the MONITOR 2 switch to TAPE. If a recorder is connected to the AUX inputs, keep the MONITOR 1 • 2 switches in SOURCE and set the FUNCTION selector to AUX.
3. Keep the MODE selector to STEREO.
4. Start the recorder in the playback mode.
5. Adjust the VOLUME, BALANCE and TONE controls to your preference.

## RECORDING THROUGH THE STR-7065

1. Turn on the receiver and a program source.
2. Keep the MONITOR 1 • 2 switches in SOURCE, and MODE selector to STEREO.
3. Set the FUNCTION selector to the desired program ; FM, AM, PHONO or AUX.
4. Start the recorder in recording mode. Adjust the recording level at the recorder.

### Notes on Recording

The VOLUME, BALANCE, TONE controls, LOUDNESS switch, and the FILTER selector do not affect the recording results.

If the connected tape recorder is a monaural type, and the program is stereophonic, set the MODE selector to L+R.

When using a three-head tape recorder, instantaneous tape/source monitoring is possible by setting the MONITOR switches alternately to TAPE and SOURCE. To monitor the recording signal, set the MONITOR 1 • 2 switches to SOURCE. To monitor the recorded signal, set the MONITOR switches as follows ; when using recorder connected to TAPE 1 inputs and REC OUT 1 jacks, set the MONITOR 1 switch to TAPE, when using recorder connected to TAPE 2 inputs and REC OUT 2 jacks, set the MONITOR 1 switch to SOURCE and the MONITOR 2 switch to TAPE. If the DIN 5-pin connector is used, this tape/source monitoring is not advisable.



## TAPE DUPLICATION

Without changing the tape recorder connection, you can copy a tape program through the STR-7065.

- Connect tape recorder 1 to the TAPE 1 inputs and the REC OUT 1 jacks, and tape recorder 2 to the TAPE 2 inputs and the REC OUT 2 jacks.

### Duplicating on tape recorder 2

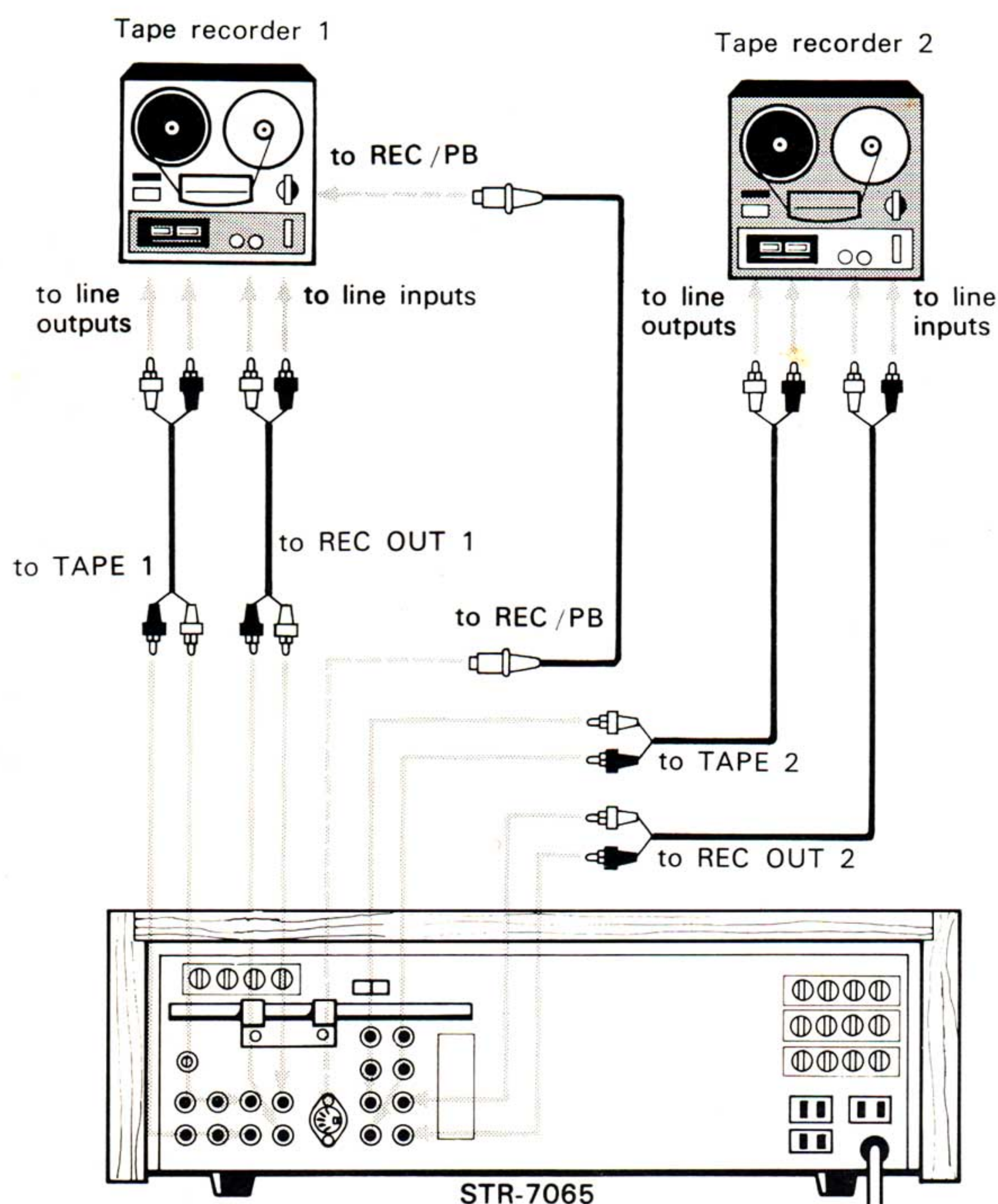
1. Set the FUNCTION selector to TAPE PRINT 1→2. The TAPE function indicator lamp lights.
2. Put tape recorder 1 in the playback mode and tape recorder 2 in the recording mode. Duplicating will begin.

When using a 3-head tape recorder you can monitor the recording signal by setting the MONITOR 2 switch to SOURCE, and the recorded signal by setting the MONITOR 1 switch to SOURCE and the MONITOR 2 switch to TAPE.

### Duplicating on tape recorder 1

1. Set the FUNCTION selector to TAPE PRINT 2→1. The TAPE lamp lights.
2. Put tape recorder 2 in the playback mode and tape recorder 1 in the recording mode. Duplicating will begin.

To monitor, set the MONITOR 1 switch to SOURCE and TAPE. You can add microphone sound to duplicating signals by connecting microphones to the STR-7065 and adjusting the MIC MIXING level control. Refer to the following "Line-and-Microphone Mixing".



## USING MICROPHONES

Keep the MODE selector to STEREO. The input signal at the L MIC MIXING jack connects to both left and right channels when only the L jack is plugged in. (The R jack connects only to the right channel.) If you have two microphones, connect them as usual.

When recording, the MIC MIXING level control affects the outputs of the REC OUT jacks. The VOLUME control has no effect on recording.

### Line-and-Microphone Mixing

When using microphones, you can simultaneously reproduce the desired line program.

1. Set the MONITOR 1 • 2 switches to SOURCE. Set the FUNCTION selector to the desired program position.
2. Connect the microphones.
3. Turn the MIC MIXING level control clockwise to connect the MIC signal to the line program path and to balance the mixing level.  
The microphone level can be controlled with the MIC MIXING level control.  
Reproduce the line program and the line-and-microphone mixing begins.
4. The overall mixing volume can be controlled with the VOLUME control.

You can record the mixing sound by setting the connected tape recorder to the recording mode.

### To Amplify Only Microphone Signals

1. Keep the MONITOR 1 • 2 switches in SOURCE, and set the FUNCTION selector to any position to which no program source is connected.
2. Turn the MIC MIXING level control clockwise. The MIC lamp lights.
3. Adjust the volume level with the MIC MIXING level and VOLUME controls. If the microphone signals are distorted by overloading, turn the MIC MIXING level control further counterclockwise.

If acoustic feedback occurs between microphone and speaker, place the microphone further apart from the speaker, or change the direction of the microphone.

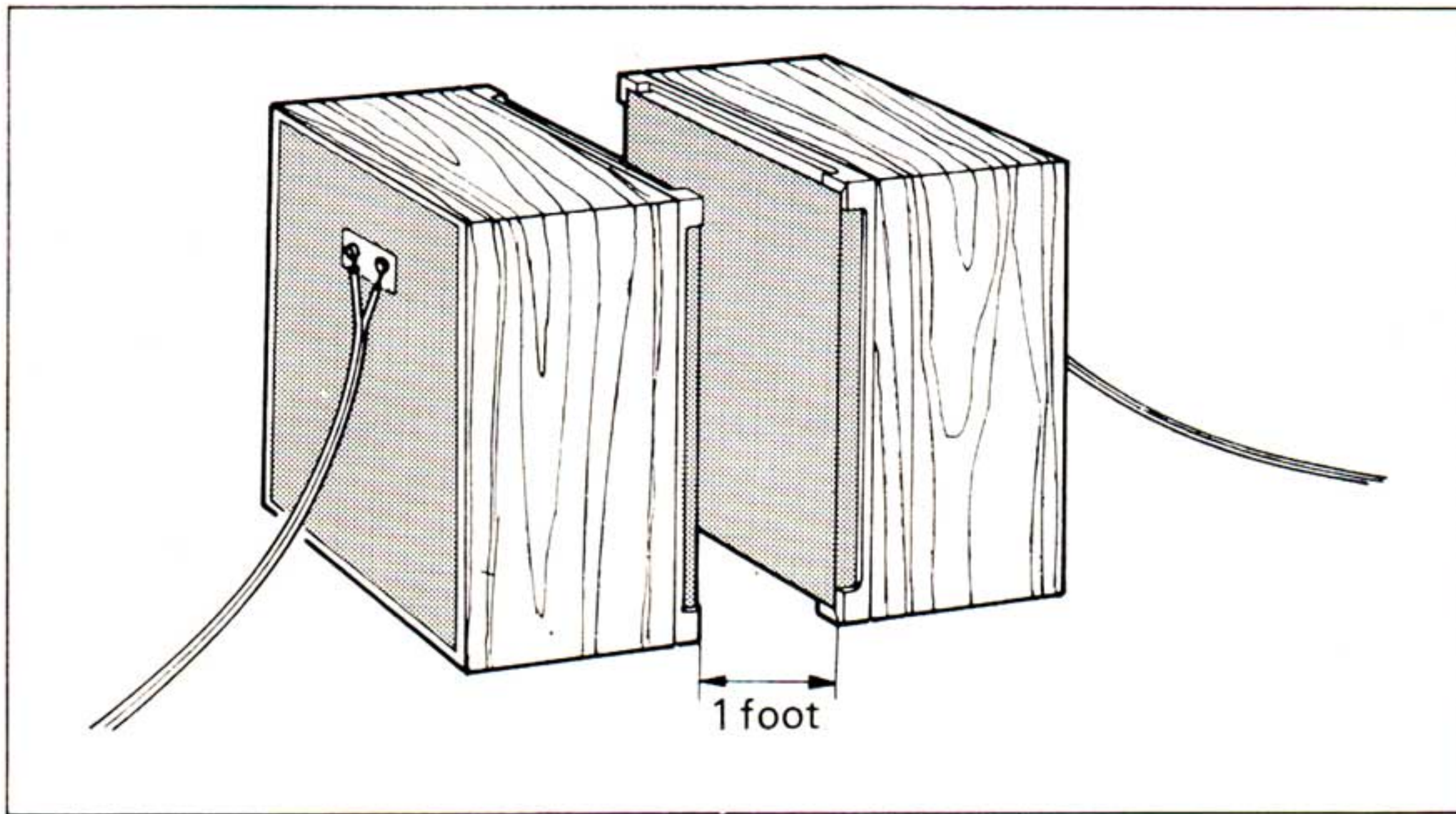


## BALANCING THE STEREO SYSTEM

As soon as you are familiar with the operation of your STR-7065, make the following checks and adjustments in your stereo system to secure the best possible stereo listening.

### Speaker Phasing Check

Make sure your speakers are properly phased by performing this simple test. Move the right- and left-channel speakers so that they are about one foot apart and facing each other. Set the MODE selector to L+R and center the BALANCE control. Listen to a recorded passage containing prominent bass notes. Then reverse the connection to one of the speakers and listen to the same bass passage again. If it now sounds like there is less bass, the speakers were correctly phased and the original connection should be restored. However, if the bass appears to have increased, the speakers were originally phased incorrectly and the new connection should be used.



### Stereo Balance

The feeling of direction and depth that stereophonic sound produces is greatly degraded if the levels of both channels are not balanced. Set the MODE selector to L+R and adjust the BALANCE control for equal output from right and left speakers. Balance variations with different program sources are due to differences in the recording levels. Stereo balance is also influenced by the acoustics of the room. Carpets, furniture placement, and room size and shape have a definite effect upon sound quality and balance.

## CLEANING

Finger prints, the children's chocolate candy, and similar household annoyances can mar the beauty of your STR-7065. These can be cleaned up by wiping the panel, knobs or dial glass with a supplied polishing cloth or a soft clean cloth moistened with water. Do not use any type of scouring powder, abrasive pad, or solvent.

## TROUBLE CHECKS

If trouble with the STR-7065 arises, make the following simple checks to determine if the trouble is really in the STR-7065 or external to it. Quite often hi-fi equipment fails to work properly because of incorrectly-made system connections. If the trouble persists after you have made these checks, consult your SONY dealer further instructions.

Symptom	Check
No audio and the dial does not light.	Check the power cord connection.
No audio but the dial lights.	Check the speaker connection. Set the SPEAKER selector properly. Set the MONITOR 1•2 switches to SOURCE (except for tape playback). Set the FUNCTION selector properly. Turn the VOLUME control clockwise.
No audio from one channel, or unbalanced output	Check the speaker connection. Adjust the BALANCE control lever.
Severe hum or noise	Use shielded connection cables. Avoid long horizontal runs. Keep connection cables away from transformers or generators, and at least 10 feet from TV sets and fluorescent lights. Reverse the ac plug in the receptacle. Ground the set.
Poor reception	Tune accurately and adjust the antenna.
Stereo broadcast is noisy and distorted.	Adjust the antenna for maximum signal strength. Set the FILTER selector to HIGH or set the MODE selector to L+R.
STEREO lamp blinks on and off.	Adjust the antenna to eliminate weak or multipath reception.
STEREO lamp does not light when receiving stereo programs.	Set the MODE selector to STEREO.



# TECHNICAL DATA

## TECHNICAL SPECIFICATIONS

### Fm Tuner Section

Tuning range :	87.5 MHz – 108 MHz
Antenna terminals :	300 ohms balanced 75 ohms unbalanced
Intermediate frequency :	10.7 MHz
Sensitivity :	2.0 $\mu$ V, IHF, 1.6 $\mu$ V, S/N=30 dB
Image rejection :	70 dB
I-f rejection :	100 dB
Spurious rejection :	90 dB
A-m suppression :	56 dB
Capture ratio :	1.0 dB
Selectivity :	70 dB, IHF
S/N :	70 dB
Frequency response :	20 Hz – 15 kHz $\pm$ 1 dB
Harmonic distortion :	Mono 0.2% at 400 Hz, 100% modulation Stereo 0.5% at 400 Hz, 100% modulation
Stereo separation :	Better than 38 dB at 400 Hz
19 kHz, 38 kHz suppression :	40 dB
SCA suppression :	55 dB
Muting level :	Less than 5 $\mu$ V

### A-m Tuner Section

Tuning range :	530 kHz – 1,605 kHz
Antenna :	Built-in bar antenna and external antenna terminal
Intermediate frequency :	455 kHz
Sensitivity :	53 dB/m, built-in antenna at 1000 kHz, 30 $\mu$ V, external antenna
Image rejection :	50 dB at 1,000 kHz
I-f rejection :	40 dB at 1,000 kHz
S/N :	50 dB at 50 mV/m
Harmonic distortion :	0.8% at 50 mV/m

### Amplifier Section

Continuous RMS power output :	Both channels driven simultaneously
(Less than 0.2% THD)	At 20 Hz – 20 kHz 50+50 watts (8 ohms) At 1 kHz 70+70 watts (8 ohms) 85+85 watts (4 ohms) One channel driven At 1 kHz 85/85 watts (8 ohms) 110/110 watts (4 ohms)
Dynamic power output :	240 watts (8 ohms)
(IHF constant power supply method)	380 watts (4 ohms)
Power bandwidth IHF :	15 Hz – 35 kHz
Damping factor :	50 (8 ohms)
Harmonic distortion :	Less than 0.2% at rated output Less than 0.1% at 1 watt output
IM distortion :	Less than 0.2% at rated output Less than 0.1% at 1 watt output
(60 Hz : 7 kHz=4 : 1)	PHONO RIAA equalization curve $\pm$ 1 dB
Frequency response :	MIC 100 Hz – 10 kHz $\begin{smallmatrix} +0 \\ -3 \end{smallmatrix}$ dB

AUX TAPE REC/PB (input)	} 10 Hz – 70 kHz $\begin{smallmatrix} +0 \\ -3 \end{smallmatrix}$ dB
POWER AMP INPUT	
	} 10 Hz – 100 kHz $\begin{smallmatrix} +0 \\ -1 \end{smallmatrix}$ dB

S/N :

	S/N	Weighting network	Input level
PHONO	72 dB	A	PHONO 3 mV
MIC	65 dB	B	MIC 1.6 mV
AUX TAPE REC/PB (input)	90 dB	A	AUX TAPE REC/PB (input) } 250 mV
POWER AMP INPUT	110 dB		POWER AMP INPUT 1 V

Input sensitivity and impedance :

	Maximum sensitivity	Impedance
PHONO	2 mV	47 k ohms
MIC	1 mV	47 k ohms
AUX TAPE REC/PB (input)	150 mV	50 k ohms
POWER AMP INPUT	1 V	50 k ohms

Maximum sensitivity means the input level at which the rated output is provided into 8 ohms (with both channels driven at full volume) at 1 kHz.

Output level and impedance :

	Level	Impedance	Input level
REC OUT	250 mV	10 k ohms	PHONO 3 mV
REC/PB(output)	30 mV	82 k ohms	MIC 1.6 mV
PREAMP OUTPUT	1 V	4.7 k ohms	AUX TAPE REC/PB (input) } 250 mV
			POWER AMP INPUT 1 V

HEADPHONE Accepts all low and high impedance headphones.  
SPEAKER Accepts 4–16 ohms speakers.

Tone controls :	BASS 100 Hz $\pm$ 10 dB TREBLE 10 kHz $\pm$ 10 dB
High filter :	12 dB/oct. above 9 kHz
Low filter :	12 dB/oct. below 50 Hz
Loudness control :	50 Hz +10 dB, 10 kHz +4 dB (Att. –30 dB)

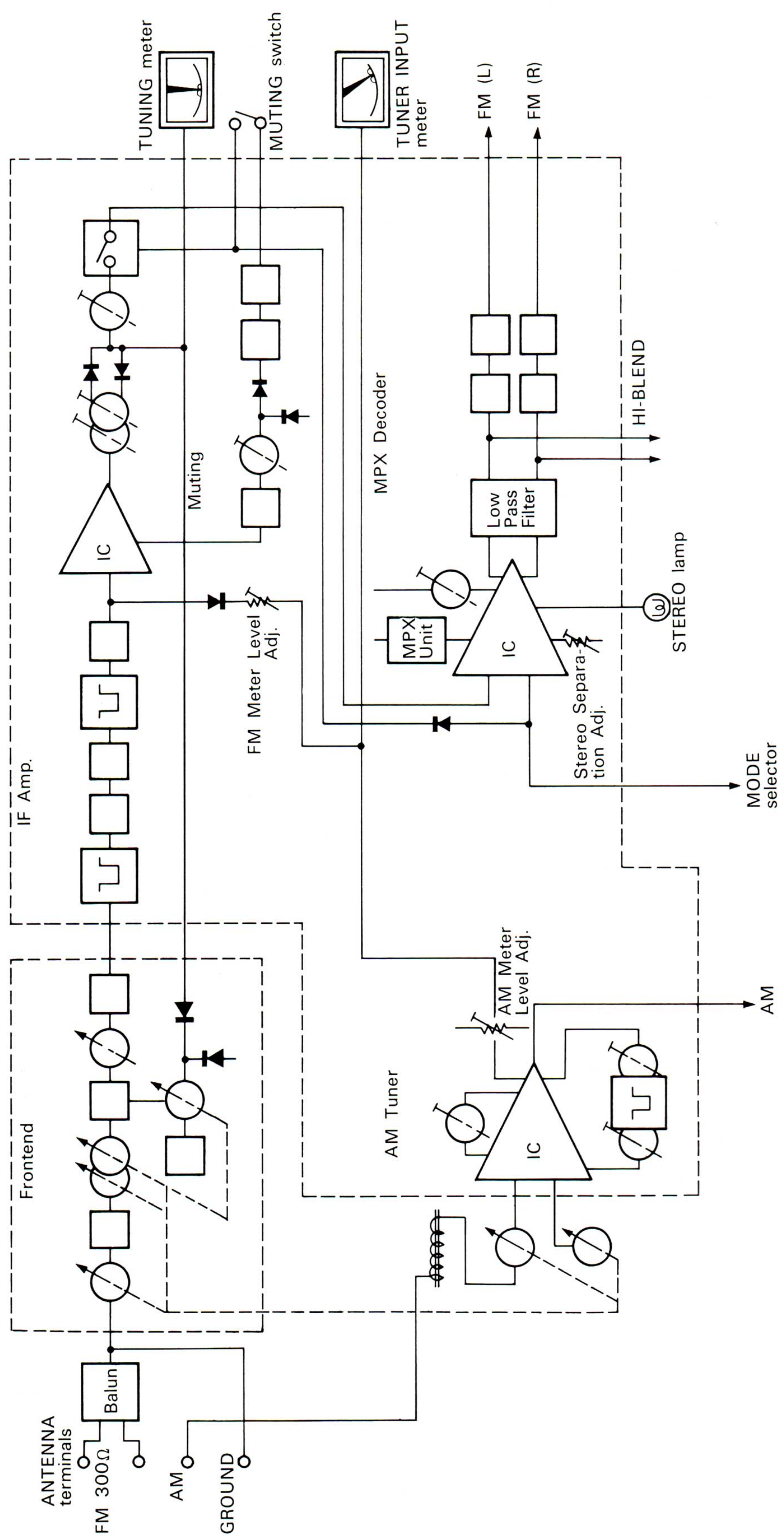
### General

System :	Superheterodyne fm/a-m, switching MPX Complementary symmetry circuit (SEPP OTL), Direct output coupling
Semiconductors :	5 IC's+2 FET's+35 transistors for reception 2 FET's+14 transistors for auxiliary circuits 31 diodes
Power requirements :	120 volts, 60 Hz ac
Power consumption :	180 watts
AC outlets :	2 switched, 200 watts, total 1 unswitched, 200 watts
Dimensions :	17 <sup>5</sup> / <sub>16</sub> (w) $\times$ 51 <sup>3</sup> / <sub>16</sub> (h) $\times$ 9 (d) inches
Weight :	33 lb 8 oz (net) 44 lb 10 oz (in shipping carton)
Supplied accessories :	FM ribbon antenna (1) Phono plugs (4) Polishing cloth (1)

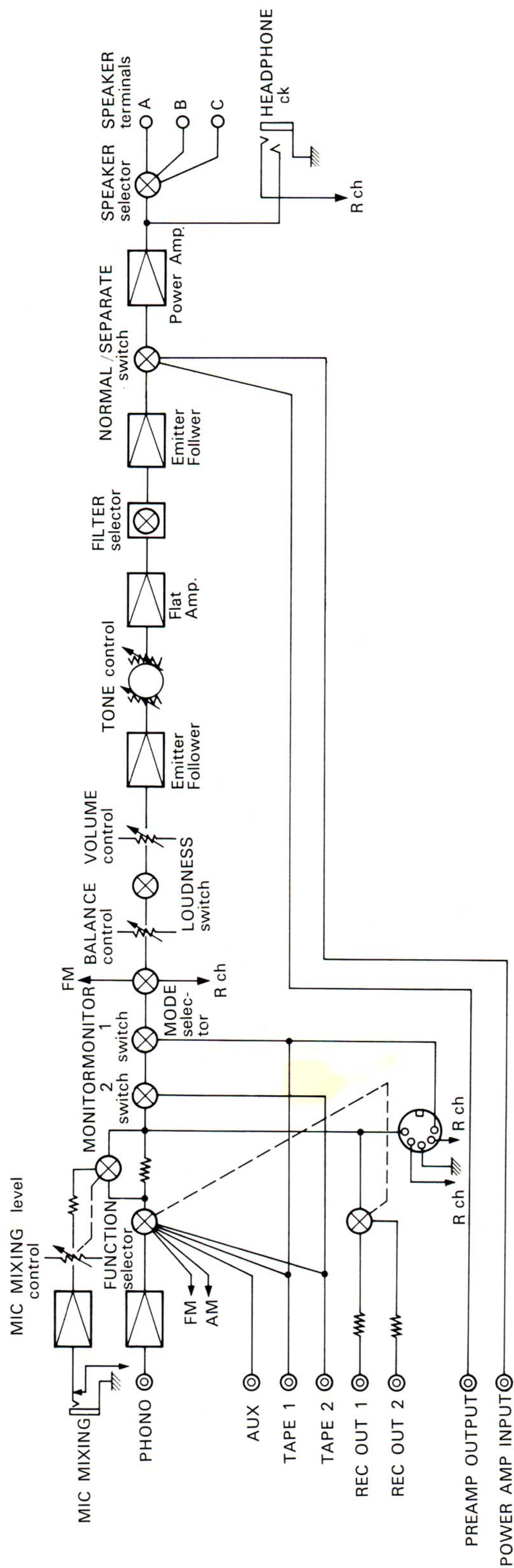
Design and specifications subject to change without notice.



BLOCK DIAGRAM







POWER switch : ON / OFF  
 FILTER selector : LOW / OFF / HIGH / BOTH  
 LOUDNESS switch : ON / OFF  
 MODE selector : REVERSE / STEREO / L + R / LEFT / RIGHT  
 FUNCTION selector : AUX / PHONO / FM / AM / TAPE PRINT 1 → 2 / TAPE RPINT 2 → 1  
 MONITOR 1 switch : SOURCE / TAPE  
 MONITOR 2 switch : SOURCE / TAPE



