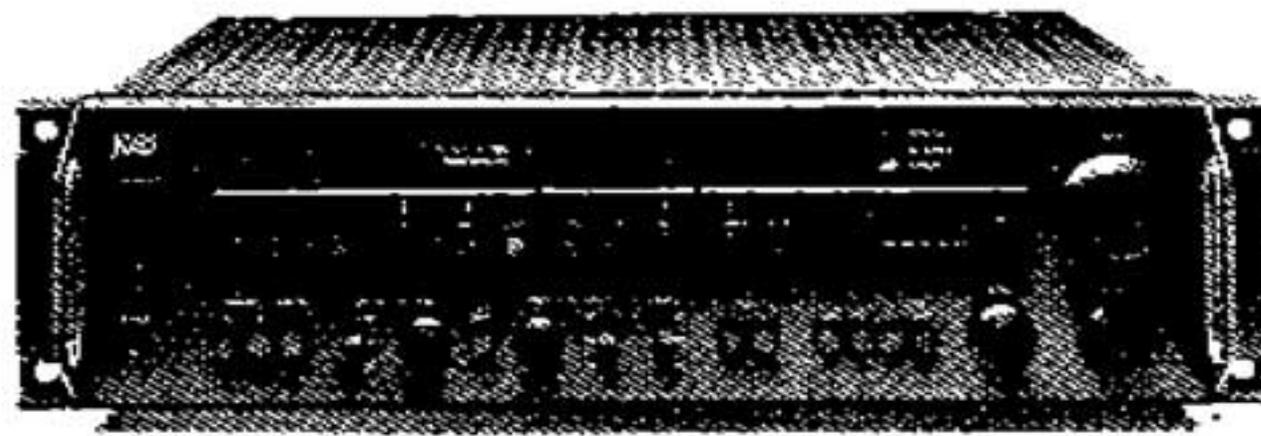


# NAD

# 7400



**OWNER'S MANUAL**

# NAD 7400

## REAR PANEL CONNECTIONS

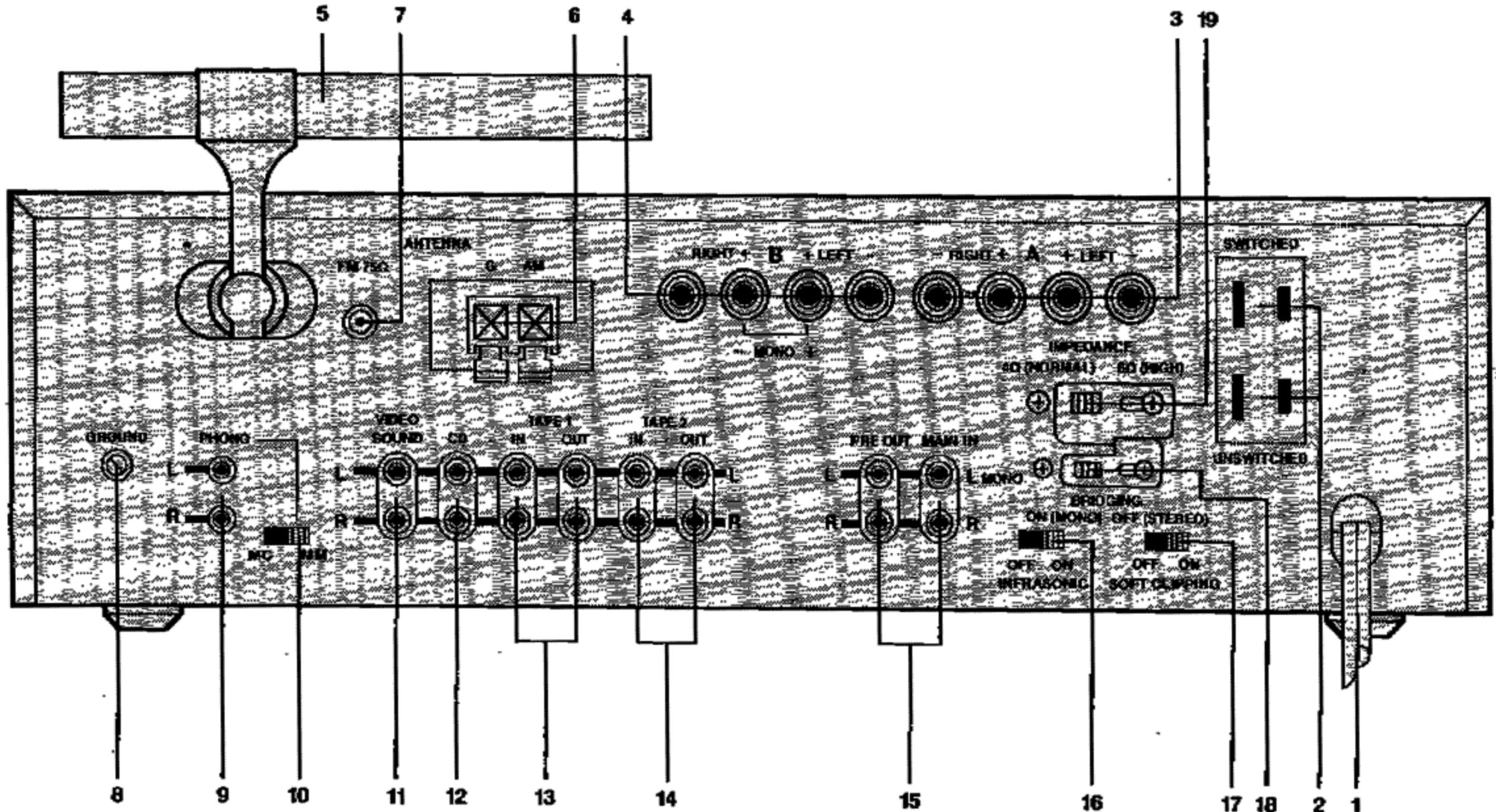
**ATTENTION:**

ET LES CONSÉQUENCES GRAVES QUI POURRAIENT EN RÉSULTER, NE TENTEZ PAS D'OUVRIR L'APPAREIL, ET DE TOUCHER AUX COMPOSANTS INTERNES SANS LA PRÉSENCE D'UNE PERSONNE QUALIFIÉE.



**CAUTION**

CAUTION TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER REPAIRING TO QUALIFIED SERVICE PERSONNEL.

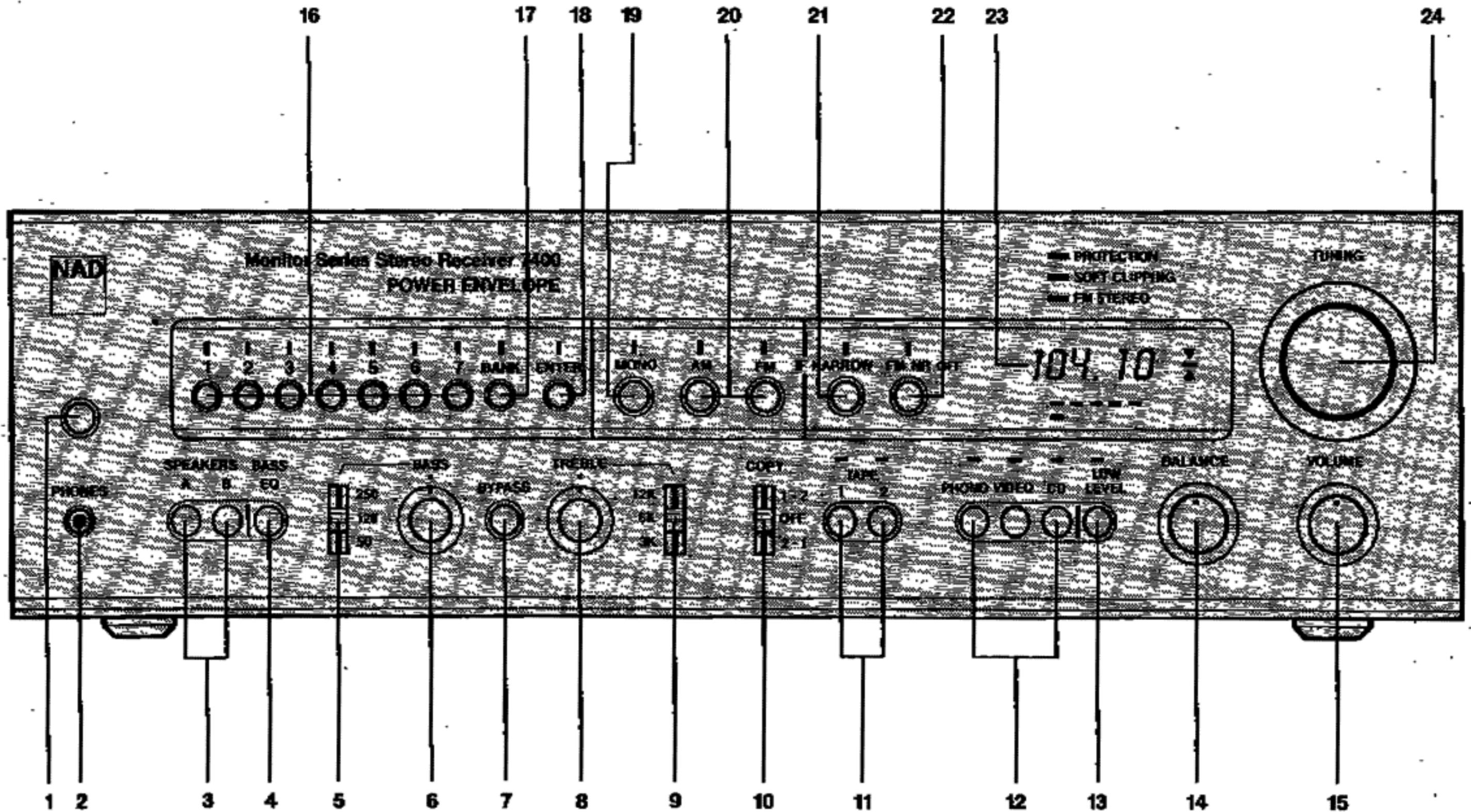


The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

# FRONT PANEL CONTROLS



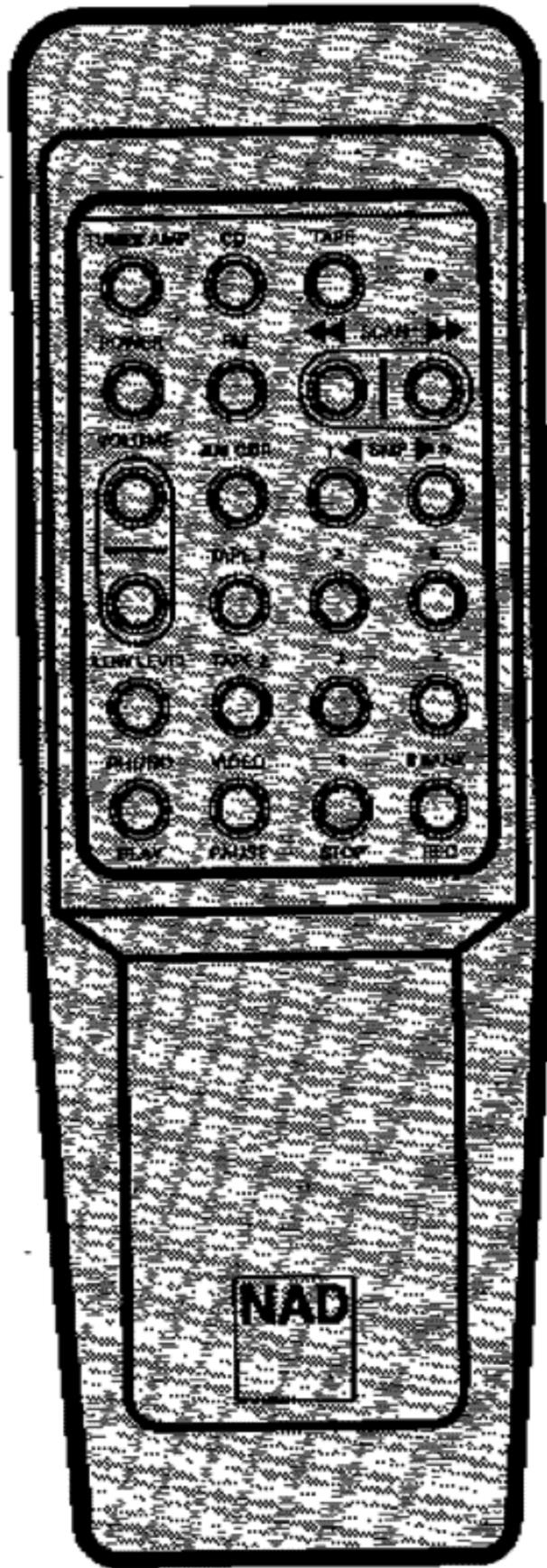


Figure 1

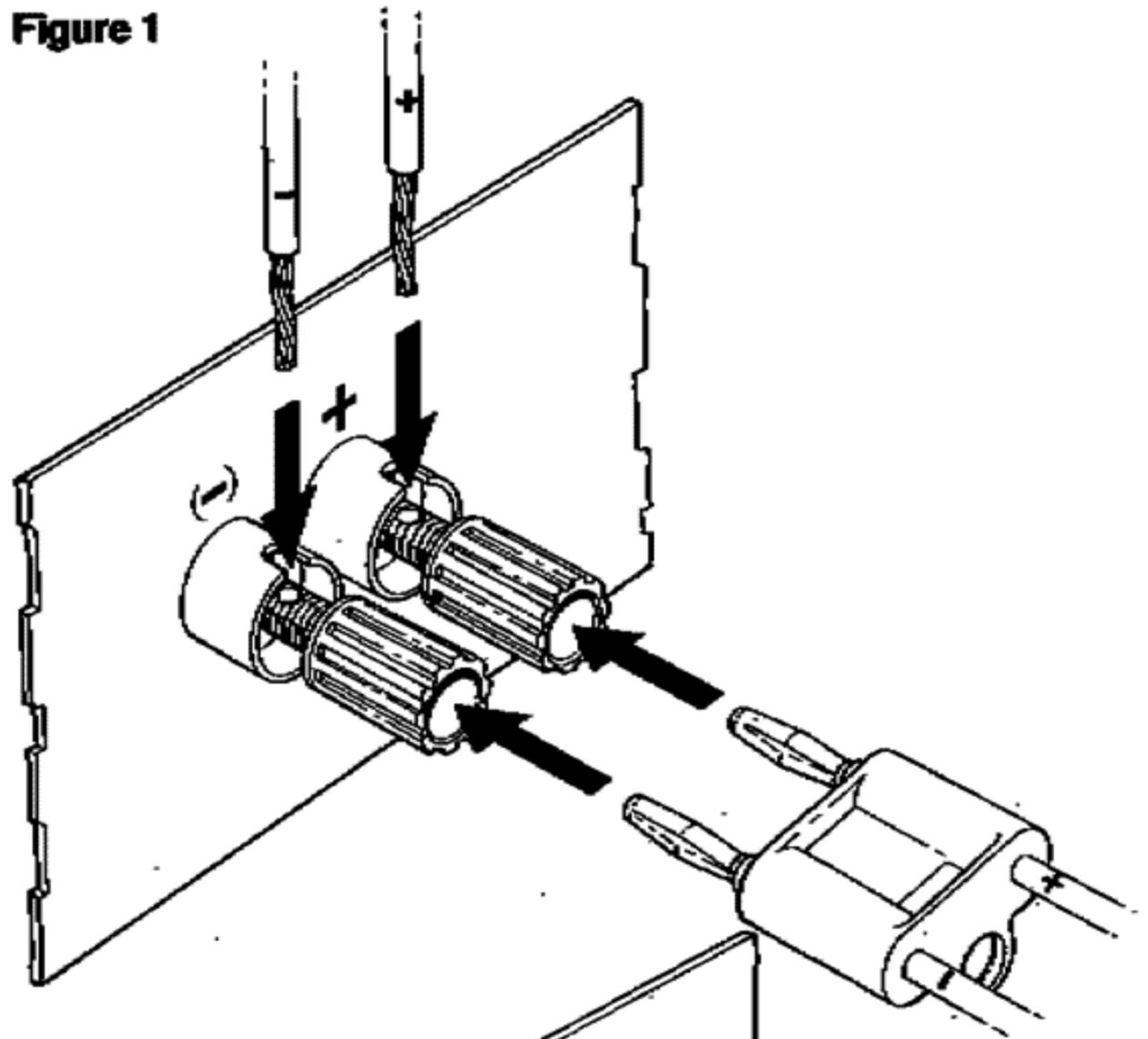
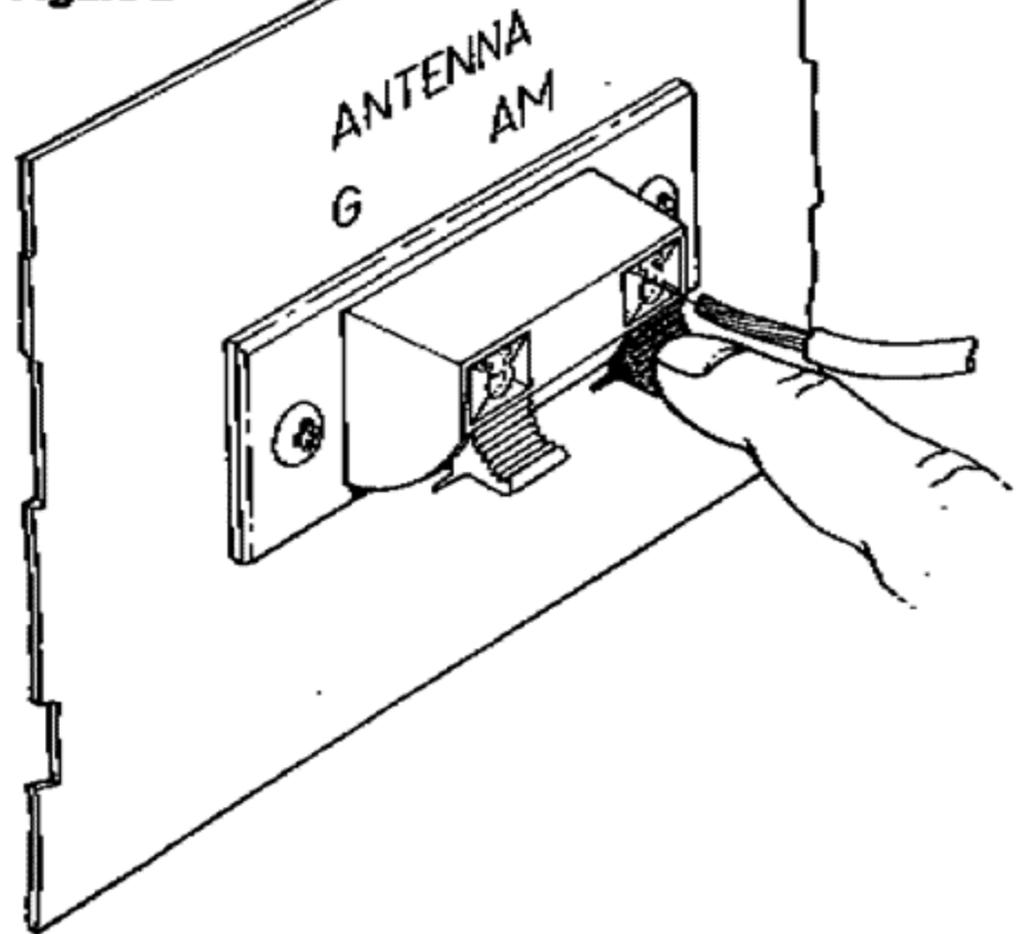
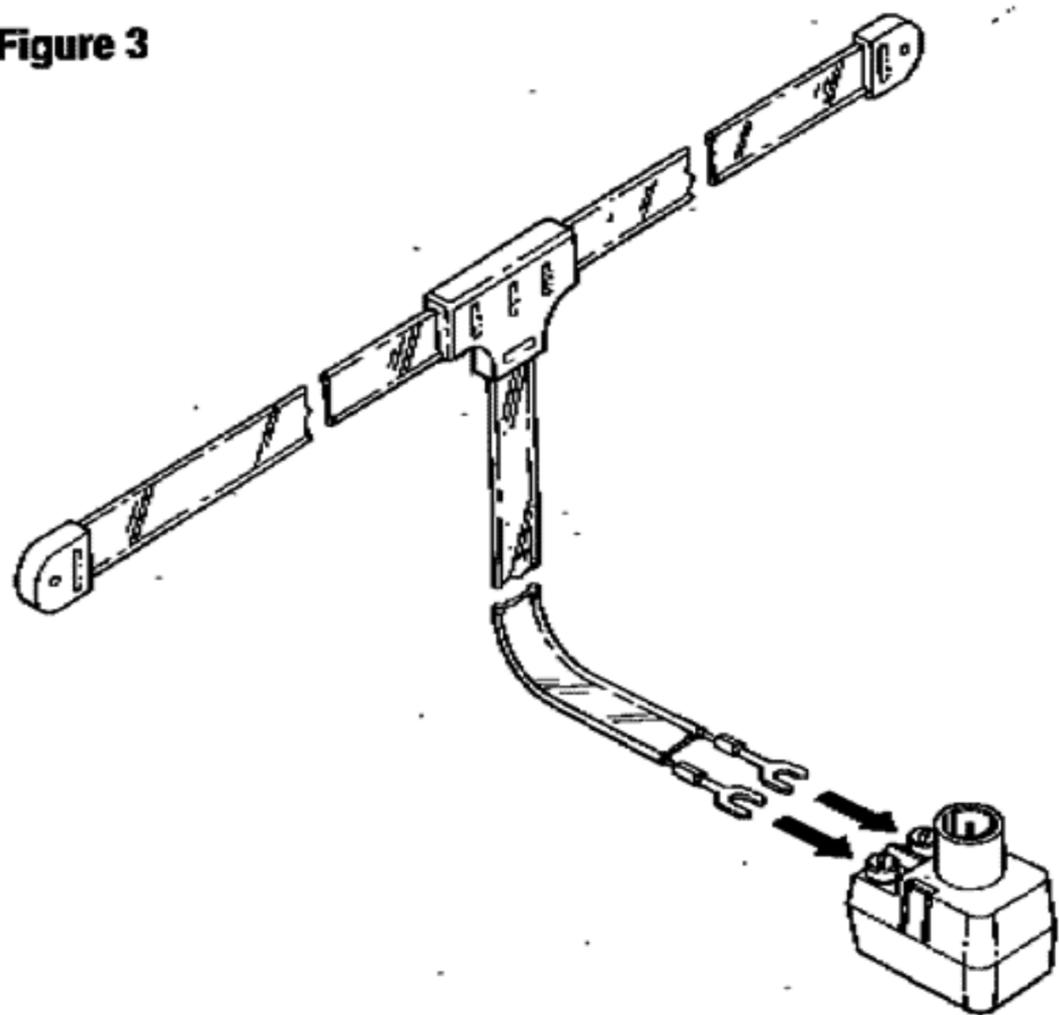


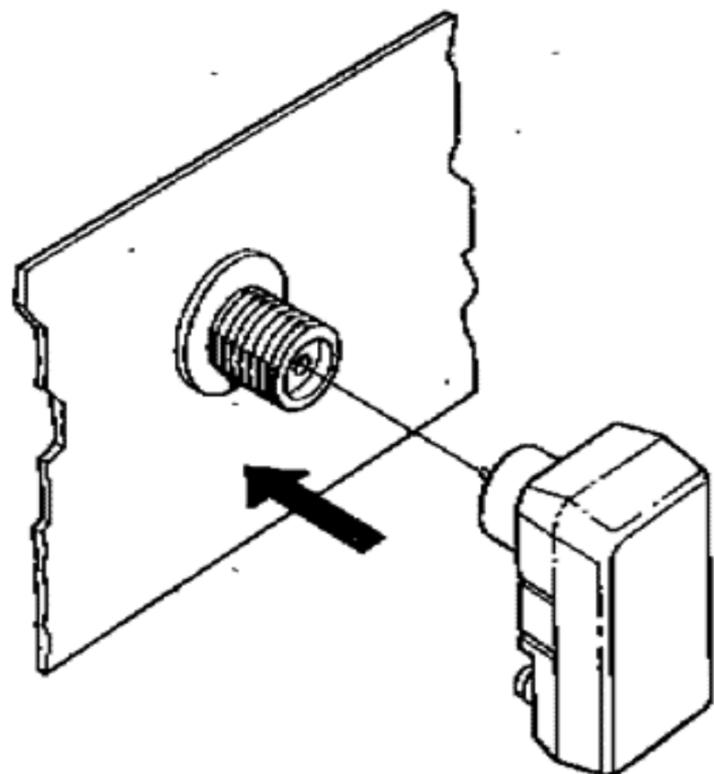
Figure 2



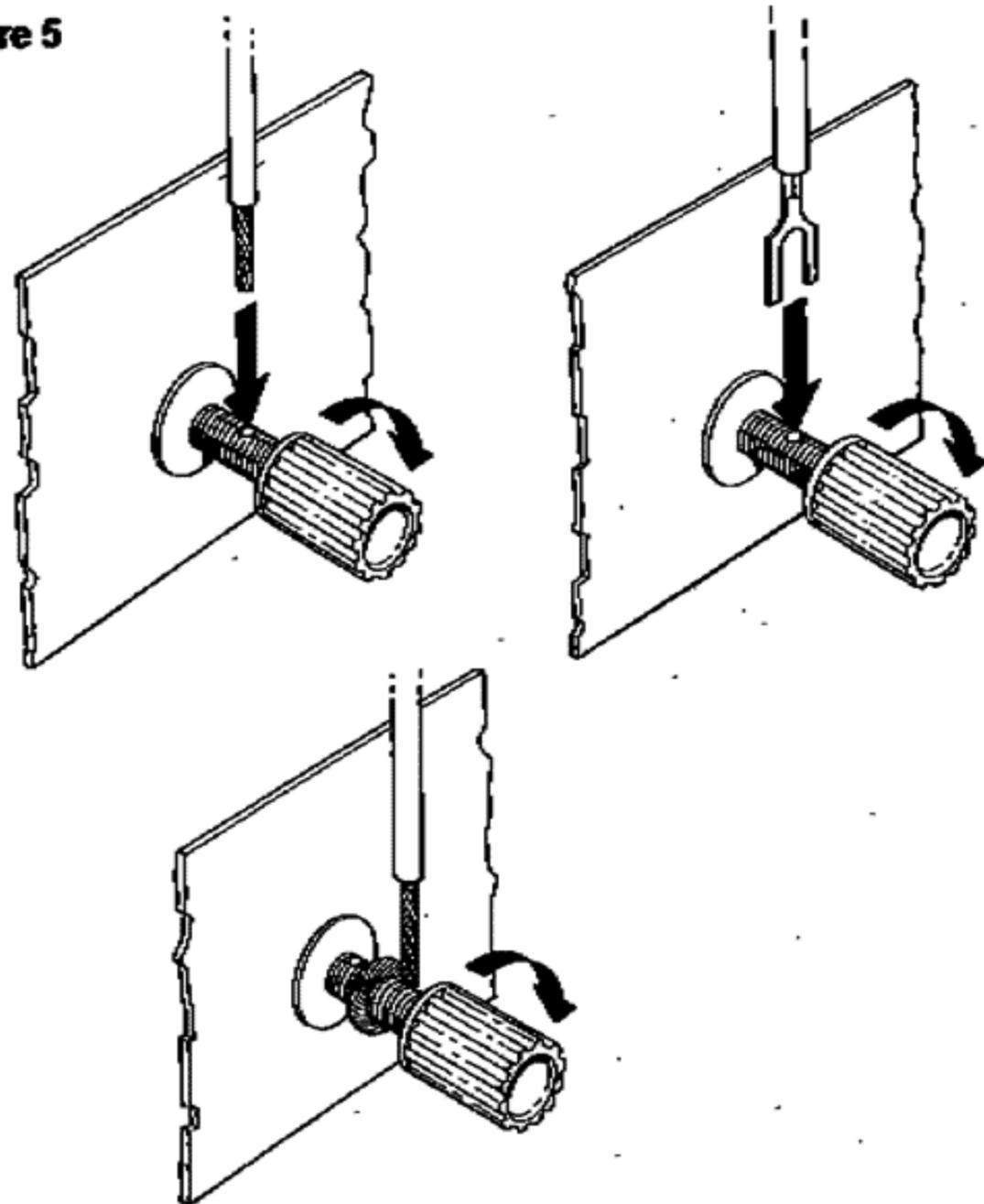
**Figure 3**



**Figure 4**



**Figure 5**



**Figure 6**

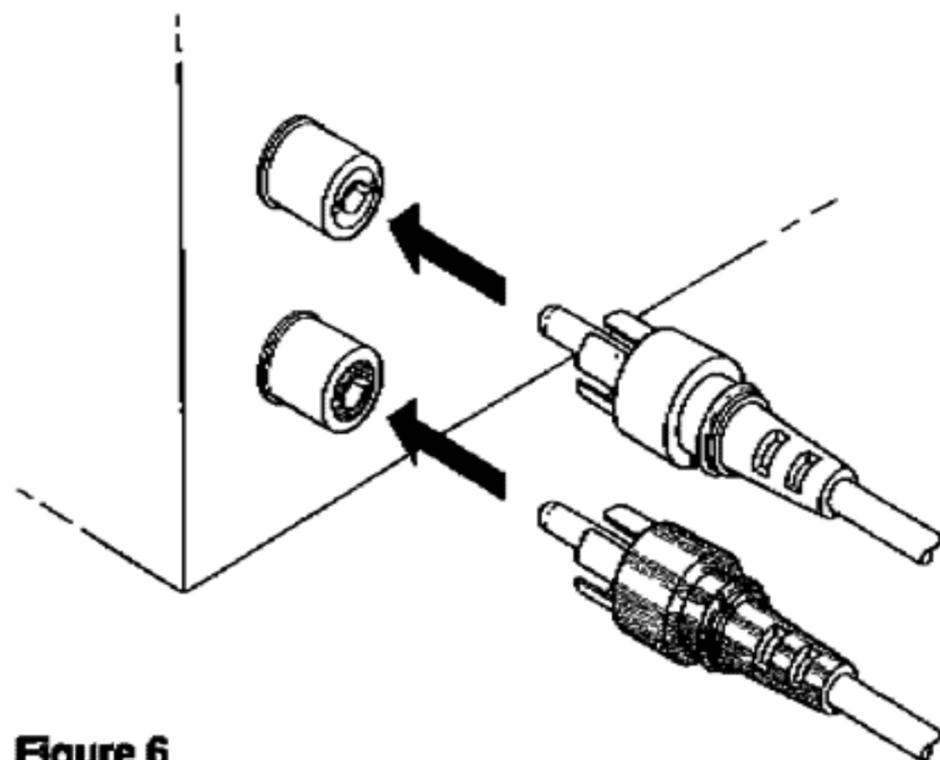


Figure 7

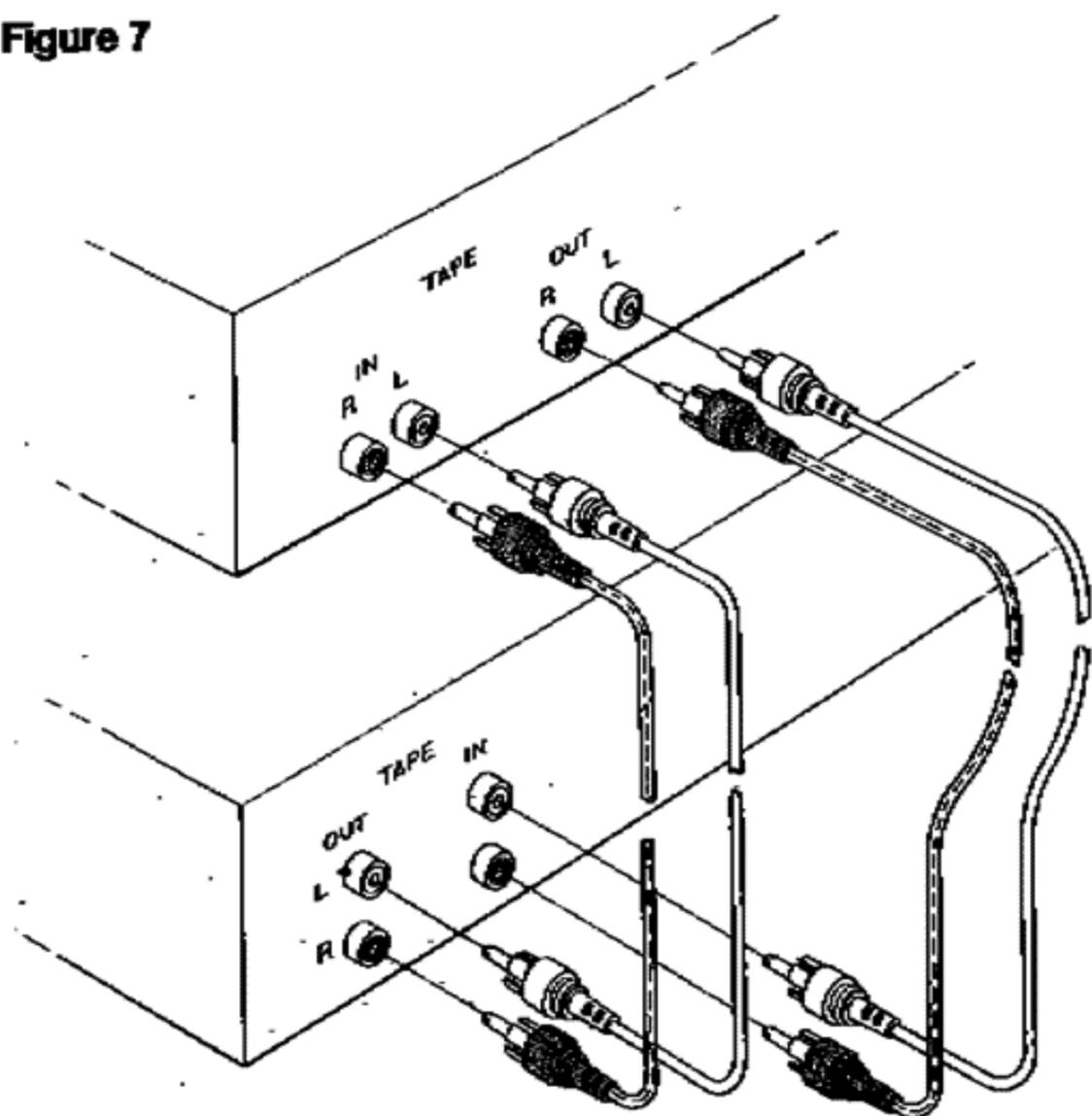


Figure 8

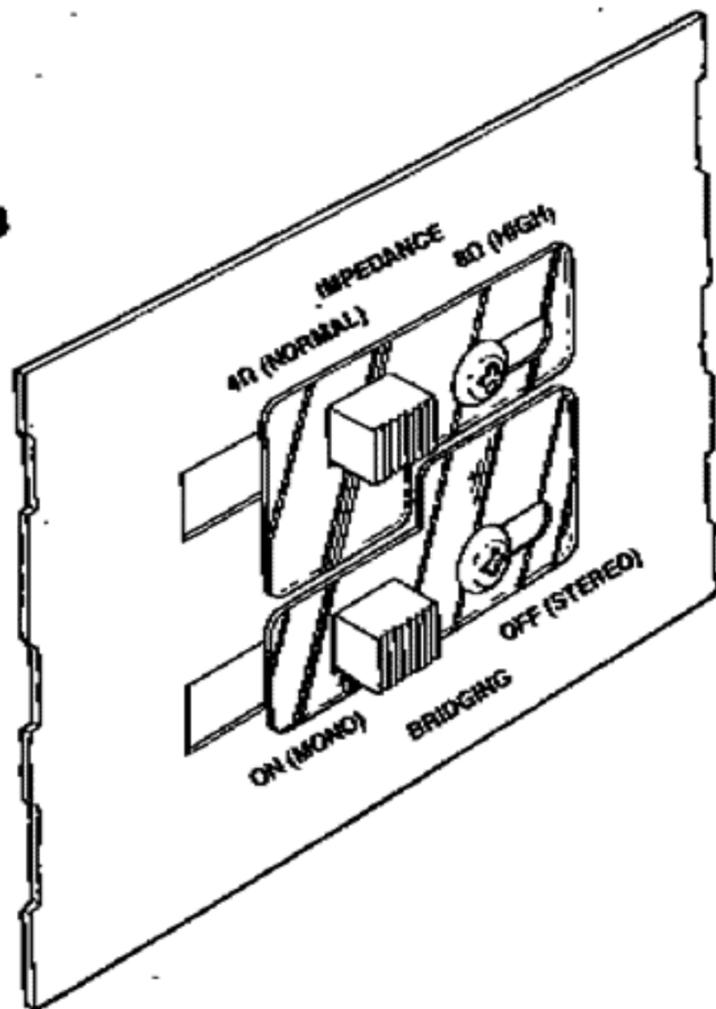


Figure 9

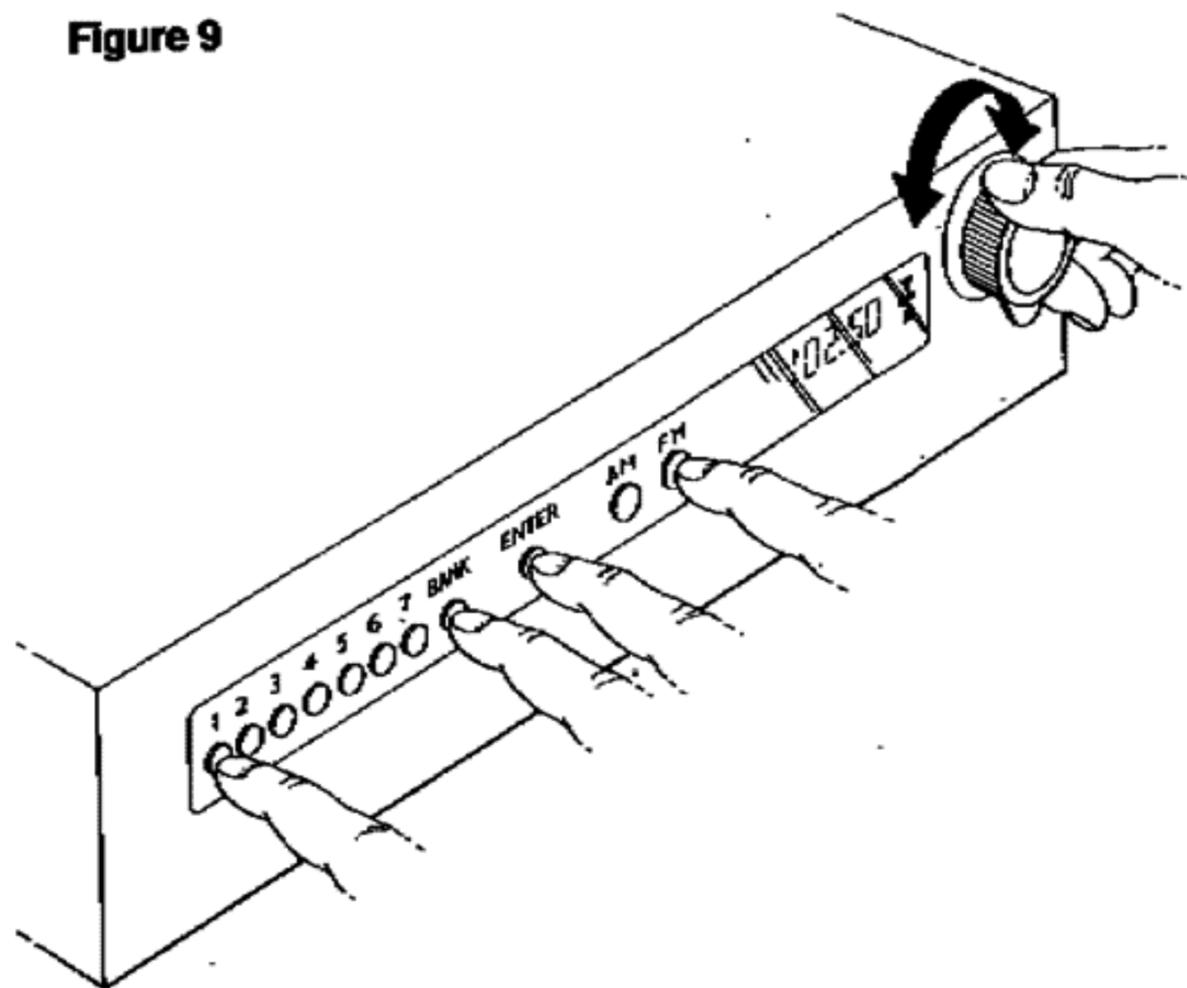


Figure 10

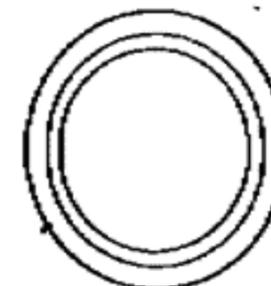
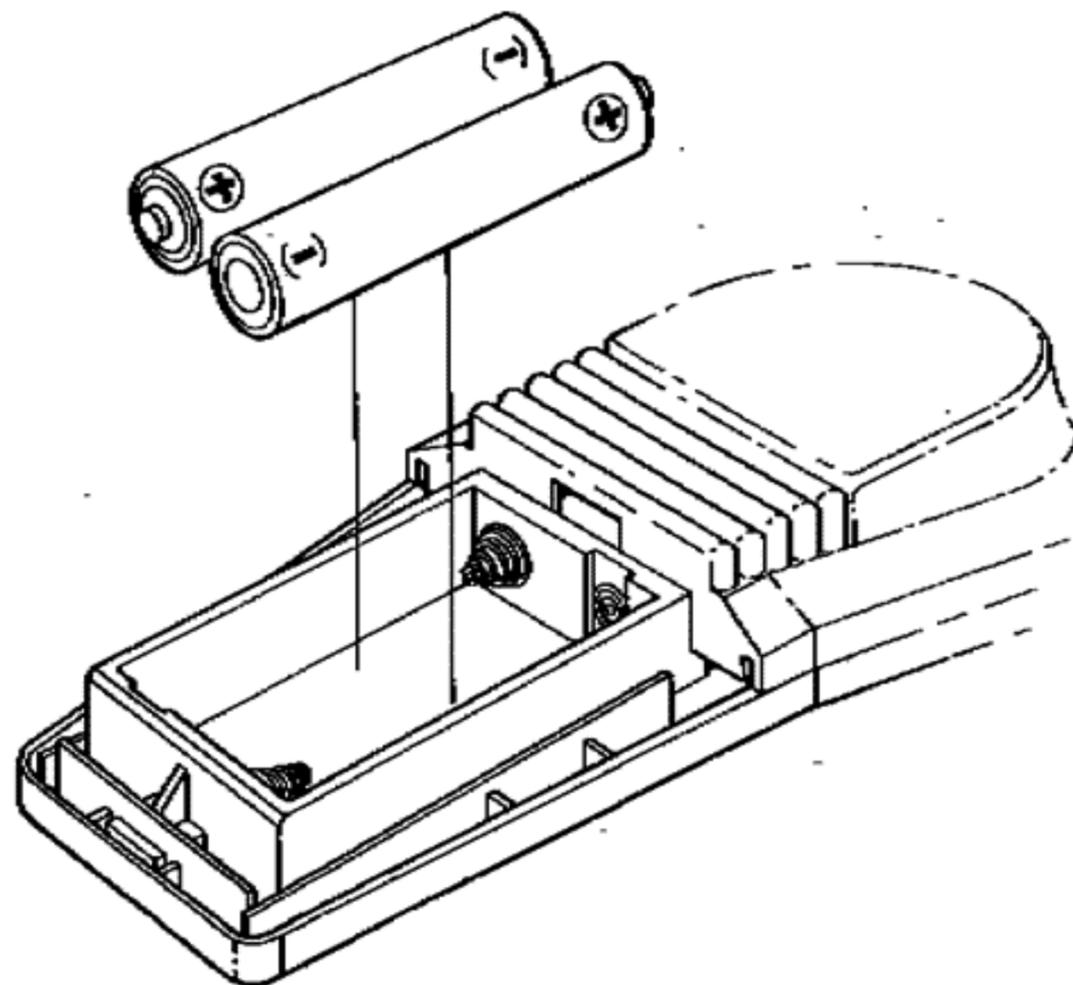
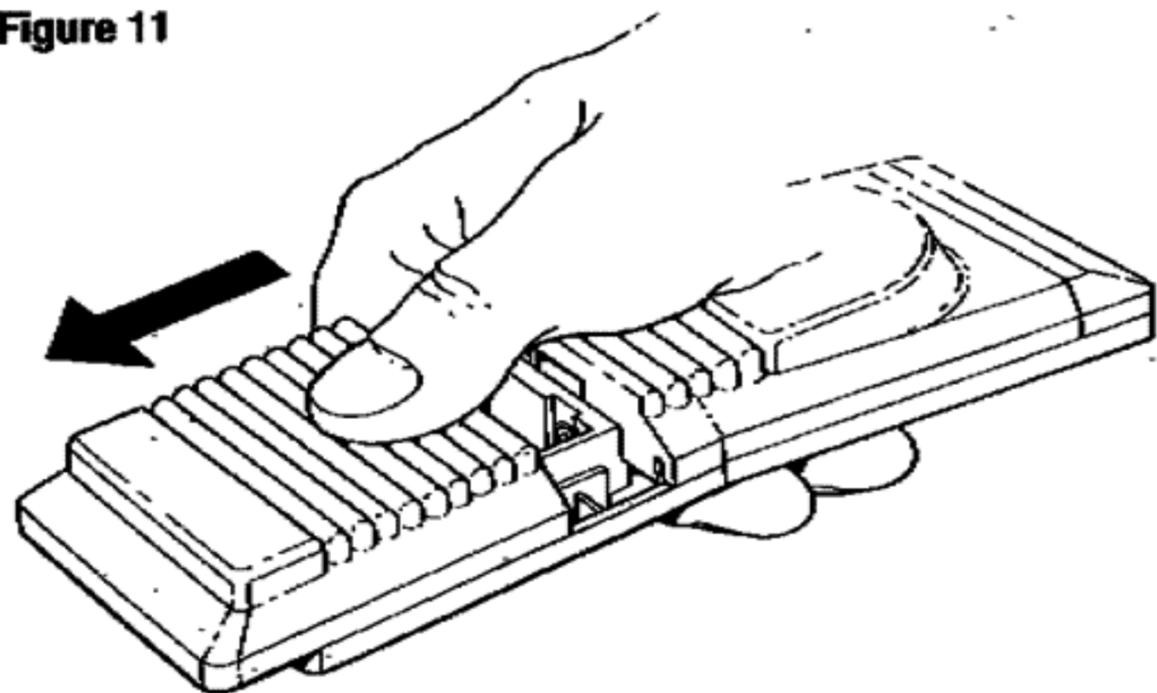


Figure 11



# NAD 7400 AM/FM STEREO RECEIVER

## A NOTE ON INSTALLATION

This unit may be installed on any sturdy, level surface. Since its power transformer generates a magnetic hum field of moderate strength, a turntable (especially one with a moving-coil pickup cartridge) should not be located directly to the left of the receiver nor directly above it.

The receiver requires ventilation. Do not obstruct the air outlet grill on the top cover, and do not place the receiver on a rug or other soft surface that it could sink into, obstructing the air inlets on its bottom panel.

## REAR PANEL CONNECTIONS

### 1. AC LINE CORD

Plug the AC power cord into a "live" wall socket or into a heavy-duty extension cord.

### 2. AC OUTLETS

The AC power cords of other stereo components may be plugged into these accessory outlets. The SWITCHED outlet is intended for all-electronic products (e.g. an equalizer or other signal processor), and will be switched on by the receiver's main Power button. The UNSWITCHED outlet should be used to power products involving mechanical operations (e.g. a turntable, CD player, tape deck or VCR); such products should be switched on and off with their own power switches.

**NOTE:** European models include one SWITCHED outlet only.

### 3. SPEAKERS A.

This receiver is equipped with high-current binding-post speaker terminals to handle the maximum power levels that occur in the "bridged" mode or with low-impedance loudspeakers. The loudspeakers should be connected with heavy-duty (16-gauge or thicker) stranded wire.

Connections may be made in either of two ways. [See Figure 1.]

(1) Strip off a half-inch (1 cm) of insulation from each speaker wire. In each conductor, twist the strands of wire together. Unscrew the knob, insert the bare wire into the opening at the base of the binding post, and tighten the knob. Loose strands of wire should not be touching the chassis or adjacent terminals.

(2) Install banana plugs on your speaker wires, and plug them into the end of each binding post. The terminals are separated by 3/4 inch (19mm), so they will accept dual-banana plugs.

Connect the wires from the left-channel speaker to the (L+) and (L-) terminals and the wires from the right-channel speaker to the (R+) and (R-) terminals in the "A" group.

Stereo speakers must operate in phase with each other in order to produce a focused stereo image and to reinforce rather than cancel each other's output at low frequencies. When connecting speakers, take care that the red (positive) terminal on each loudspeaker is connected to the corresponding red (positive) terminal on the receiver.

#### 4. SPEAKERS B

A second pair of loudspeakers may be connected to the receiver, using the "B" group of terminals, in the same manner as the connections made to the SPEAKERS A terminals. [See Figure 1.]

The SPEAKERS B terminals may also be used to connect an adapter unit for electrostatic headphones. The black "-" terminals in each channel share a common ground.

#### 5. AM ROD ANTENNA

The ferrite rod antenna provides effective reception of local medium-wavelength AM radio stations. The rod is mounted on a pivot. For best reception, swing it away from the metal chassis of the receiver.

#### 6. AM ANTENNA TERMINALS

No external antenna will be needed for satisfactory reception of most local broadcasting stations. If you wish to improve reception of distant AM stations, attach a long-wire outdoor antenna to the AM terminal. [See Figure 2.] A "long-wire" antenna is a straight wire whose length may be anything from a few feet up to about 100 feet (30 meters), mounted parallel to the earth and as high as is convenient.

#### 7. FM ANTENNA INPUT

The FM antenna input socket is designed to accept a 75-ohm "co-axial" cable. If you want to connect an antenna with a 300-ohm twin-lead wire, use the supplied "balun" 300-to-75 ohm adapter.

Some types of FM antenna must be connected to the receiver. A ribbon-wire "folded dipole" antenna and a balun adapter are included to get you started. When you unfold the ribbon-wire antenna you will note that it is in the form of a T. The "crossbar" portion of the T should be stretched out horizontally and tacked in place (on a wall, on the back of a cabinet, or on the ceiling). The "vertical" section of the T goes to the tuner's antenna input. Connect its two wires to the screw terminals on the balun adapter [See Figure 3.]; then plug the balun into the receiver's FM input socket. [See Figure 4.]

#### 8. GROUND

If your turntable is equipped with a grounding wire connect it to this terminal. [Figure 5.]

If you encounter a persistent low-level hum or buzz in the sound, connect a wire from the Ground terminal to a true earth-ground, i.e. a copper-plated rod driven several feet into the earth.

#### 9. PHONO INPUT

Plug the signal cables from your turntable into these jacks. Refer to your turntable's instruction manual to learn which plug is for the Left channel (upper jack) and which for the Right (lower jack). [See Figure 6.]

#### 10. MM/MC SELECTOR

This switch sets the input sensitivity and gain of the phono preamplifier circuit. Set it at MM for cartridges of the moving magnet, induced magnet, moving flux, and moving iron (variable reluctance) types, and for "high-output" moving-coil pickups, i.e. those with a rated output of 1.0 mV or greater. If your cartridge is a low-output moving-coil pickup with a rated output of less than 1.0 mV, set the switch at MC.

Here is another way to determine the correct setting of the MM/MC switch. Set it at MM, complete the installation and wiring of the system, and play a record. With the front-panel LOW LEVEL LED off you should obtain a satisfyingly loud volume level with a Volume control setting between 9 o'clock and 3 o'clock. If you have to turn up the Volume control beyond 3 o'clock to get adequately loud sound, turn the Volume back down and re-set the MM/MC switch to MC.

#### 11. VIDEO SOUND INPUT

Connect a video-related audio signal here, such as the audio output from a video cassette recorder, video disc player, TV monitor/receiver, or stereo television decoder. Alternatively, any "line-level" audio signal may be connected here, such as the playback from a spare tape deck.

#### 12. CD INPUT

Connect the audio signal cables from a Compact Disc player to these jacks. If you don't have a CD player, any other line-level signal source (such as a spare tape deck) may be connected to the CD input.

#### 13. TAPE 1 INPUT/OUTPUT

The tape connections may be used with recorders of all types: cassette, open-reel, digital, HiFi VCR, etc. To make recordings, connect a stereo patch cord from the TAPE 1 OUT jacks to the recorder's audio LINE IN jacks (not to its microphone inputs). To play back tapes, connect a stereo patch cord from the recorder's audio LINE OUT jacks to the TAPE 1 IN jacks. [See Figure 7.]

#### 14. TAPE 2 INPUT/OUTPUT

A second tape recorder can be connected here, as shown in Fig. 7.

Instead of a second tape recorder, the TAPE 2 jacks may be used for a signal-processing accessory such as a graphic equalizer. Connect a cable from TAPE 2 OUT to the processor's inputs, and another cable from the processor's outputs to TAPE 2 IN.

#### 15. PREAMP OUT, MAIN IN

In normal operation the preamplifier and power amplifier sections of the receiver are connected together via factory-installed U-shaped metal jumpers that connect the PRE-OUT and MAIN-IN jacks.

By switching OFF the power and removing the metal jumpers, you can connect a signal processor such as a surround-sound decoder or an electronic crossover in the path between preamp and power amp. Connect a cable from PRE-OUT to the processor's input and a second cable from the processor's output to MAIN IN.

## 16. INFRASONIC FILTER.

Loudspeakers with "vented" cabinets (i.e. bass-reflex, ported, auxiliary bass radiator, and drone-cone designs) are especially susceptible to being overdriven by inaudible signals below 20 Hz, especially from a turntable. If your speakers are of this type, switch the Infrasonic Filter ON, especially when playing LP records.

If you have sealed-cabinet (acoustic suspension) loudspeakers, or if you listen mainly to Compact Discs or tapes, the infrasonic filter may be switched OFF.

NOTE: A second infrasonic filter is included in the BASS EQ circuit and is automatically engaged when the bass equalization is used. It is not affected by the Infrasonic Filter switch.

## 17. SOFT CLIPPING

When an amplifier is driven beyond its maximum power output it normally produces "hard clipping" of the signal with harsh distortion and power-supply buzz as the output transistors saturate. The NAD Soft Clipping circuit gently limits the output waveform and minimizes audible distortion when the amplifier is overdriven. We recommend that it be switched ON when playing music at very high levels that might exceed the amplifier's power capacity.

## 18. BRIDGING

This switch "bridges" the two power amplifier channels to form a monophonic amplifier with more than double the output power. To convert to bridged operation, the following procedure should be followed.

(1) Switch OFF the Power.

(2) Be sure that the Impedance switch is set to 4Ω (NORMAL). If it is at 8Ω (HIGH), re-set it to 4Ω (NORMAL).

(3) In the bridged mode the power-amplifying section of this receiver will normally be used to drive your Left speaker, while a separate amplifier such as a NAD 2400 will drive your Right speaker.

In that case, leave in place the upper jumper or cable that connects PRE-OUT to MAIN IN in the left channel. Disconnect the lower (right-channel) jumper and connect a cable from the lower PRE-OUT jack to the appropriate input jack on the power amplifier that will be driving your Right speaker. (If you are using a NAD 2400 in bridged mode, you will connect to its upper (L) input.)

Note that in the bridged mode, both the 7400 receiver and the companion 2400 power amp are driven through the upper (L) input jack, regardless of which speaker is being driven.

(4) Disconnect any speaker wires from both the SPEAKERS A and SPEAKERS B terminals. Select the cable from the speaker that is to be driven by the bridged 7400. Connect its "positive" conductor to the L+ terminal and its "negative" conductor to the R+ terminal in the "B" group only. DO NOT connect any wires to the black terminals (R- and L-). The "A" group terminals are not operational in the Bridged mode.

**CAUTION:** In the bridged mode, wires must be connected directly from the receiver to the speakers, not to a speaker switch, a headphone adapter, or any other device that shares a common ground between channels.

(5.) After the preceding conditions have been satisfied, re-set the bridging switch. It is held in place by a plastic bracket and screw in a slot. Use a small screwdriver to loosen the bracket screw, turning it about a half-turn counter-clockwise; then slide the switch to ON (MONO). (See Figure 8.) The bracket will move with the switch. Re-tighten the screw to secure the switch in its new position. Finally, turn the power on.

Note: The brackets around the Impedance and Bridging switches are interlocking. If you have set the Impedance switch to 8Ω, the bridging switch cannot be moved to ON (MONO). By loosening screws on both brackets, you can re-set both switches at the same time.

(6) To return the amplifier to normal stereo operation at a later date, first turn off the power. Re-set the Bridging switch to OFF (STEREO). Restore the connection from PRE-OUT to MAIN-IN in the Right channel, and re-connect loudspeaker wires to the speaker terminals as described above under SPEAKERS A and SPEAKERS B.

## 19. SPEAKER IMPEDANCE

If you are not sure of the true impedance of your speakers and are using only one pair, leave the Impedance switch at 4Ω (normal). If you are using a single pair of speakers whose true impedance is above 6Ω, you can maximize the power delivery by resetting the Impedance switch to 8Ω (high).

If you are using two pairs of speakers at the same time, or if you are in the bridged mode, we recommend that the speakers have a nominal impedance of 8Ω and that the Impedance switch is set to 4Ω (normal). The Impedance switch is automatically set to this position when the Bridged Mode is selected.

The Impedance switch is held by a slotted bracket which is fastened by a screw next to the switch. To change the impedance setting, use a small screwdriver to loosen the screw about a half-turn counter-clockwise, and then slide the switch. (See Figure 8) The bracket will move with the switch. Tighten the screw to secure the switch in its new position.

## FRONT PANEL CONTROLS

### 1. POWER

Press to switch on the power. To switch the power off, press the Power button again.

When the AC line cord is plugged in but the power is switched off, a green LED at the bottom of the tuning display glows to indicate that the unit is in standby mode, ready for remote-control operation. When the power is switched on, the LED turns off; thereafter it glows only when commands are received from the remote control.

When the power is switched on, the Low Level mode is automatically engaged. Press the LOW LEVEL button to raise the volume to normal.

### 2. PHONES

Plug stereo headphones in here. The circuit will drive all conventional stereo headphones regardless of their impedance. NOTE: Electrostatic headphones usually are supplied with an adapter unit which must be connected directly to the speaker terminals on the rear panel. When using this unit in the bridged mode, a special headphone adapter must be used. Consult your NAD dealer.

### 3. SPEAKERS A/B.

Use these buttons to select which speakers you want to use. If A and B are both pressed, the amplifier's output power is fed to both sets of speakers in parallel. If A and B are both disengaged (with the buttons OUT), both sets of speakers are silenced.

Thus you can choose to hear only your main speakers (by pressing button A), only the extension speakers (by disengaging button A and pressing button B), or you can activate both by depressing both buttons.

The receiver's output signal is present at the Phones jack at all settings of these buttons. When using headphones, switch off the loudspeakers by setting these buttons OUT.

If you have connected an adapter unit for electrostatic headphones to the SPEAKERS B terminals, you can use the SPEAKERS buttons to select your main stereo speakers (A) or the headphones (B).

### 4. BASS EQ.

This circuit boosts the lowest bass frequencies below 60 Hz. The BASS EQ circuit compensates for the low-frequency rolloff of most loudspeakers, extending their useful response an extra half-octave lower.

### 5. BASS RANGE

The "semi-parametric" Bass control boosts or cuts a frequency range that is two octaves wide at the -3 dB points and is centered at the frequency chosen by this Bass Range selector. The amount of boost or cut is determined by the rotation of the Bass control.

### 6. BASS

The Bass control adjusts the relative level of the low frequencies in the sound. The response of the amplifier is flattest when the control is set in the detent at the 12 o'clock position. Rotation of the knob to the right (clockwise) increases the level of low-frequency sounds, and rotation counter-clockwise decreases their level.

The effect of the Bass control depends on the setting of the Bass Range selector. The Bass control has no effect if the Bypass button is engaged.

### 7. TONE CONTROL BYPASS

When this button is pressed the Bass and Treble circuits are completely bypassed, providing a direct signal path from the Volume control to the input of the power amplifier.

The Bass EQ and the Infrasonic filter are not affected by the Bypass switch.

The Bypass switch provides a convenient way to evaluate various settings of the Bass and Treble controls (and their respective Range selectors). By adjusting the tone controls and then bypassing them, you can easily evaluate their effect on the sound.

### 8. TREBLE

The Treble control adjusts the relative level of the high frequencies in the sound. The response of the amplifier is flattest when the control is set in the detent at the 12 o'clock position. Rotation of the Treble control to the right (clockwise) increases the level of high-frequency sounds, and rotation counter-clockwise decreases their level.

The effect of the Treble control depends on the setting of the Treble Range selector. The Treble control has no effect if the Bypass button is engaged.

### 9. TREBLE RANGE

The "semi-parametric" Treble control boosts or cuts a frequency range that is two octaves wide at the -3 dB points and is centered at the frequency chosen by this Treble Range selector. The amount of boost or cut is determined by the rotation of the Treble control.

## 10. TAPE COPY

The Copy switch selects the signal that is fed to the Tape Out jacks for recording or signal processing. It has three settings.

**OFF.** When the Copy switch is OFF, the signal chosen by the Input Selector (CD, Phono, et al) is fed to both Tape OUT jacks. The selected input signal may be recorded on two recorders simultaneously.

**1>2.** When the Copy switch is set at 1>2, the playback signal from TAPE 1 IN is fed to TAPE 2 OUT. This permits recordings to be copied from Tape 1 to Tape 2. Changes in the settings of the input selector and Tape Monitor buttons do not affect the copying process.

**2>1.** When the Copy switch is set at 2>1, the direction of copying is reversed: the playback signal from tape 2 IN is fed to TAPE 1 OUT. This permits recordings to be copied from Tape 2 to Tape 1.

## 11. TAPE 1, TAPE 2 (MONITOR)

The Tape buttons let you hear the output signal from tape decks (or signal processors) connected to the Tape 1 and Tape 2 jacks. When either Tape button is engaged you will hear only that input. To disengage either Tape, press the button again.

**NOTE:** If either Tape button is engaged with no tape deck connected, or with a tape machine connected but not running, you will hear only silence — regardless of the settings of any other receiver controls.

The Tape buttons allow you to listen to recorded tapes and to check on your own tape recordings as they are being made. If you have a three-head audio recorder that permits off-the-tape monitoring, then by engaging the Tape buttons on both the receiver and the recorder, you can hear the playback signal from the tape immediately after it is recorded, to monitor its quality.

With two-head audio recorders, HiFi VCRs, and most digital recorders, the "monitor" signal heard while recording is not from the tape but is merely the signal passing through the recorder's electronics (including its Recording Level controls). In this case the Tape buttons allow you to check the left/right balance of the signal as it is recorded.

The Tape buttons select only the output signal from tape recorders (or from signal processors). They have no effect on the signals that are being recorded. Selection of a signal for recording is controlled only by the Input Selector and the Copy switch.

## 12. INPUT SELECTOR (PHONO, VIDEO, CD)

These buttons select the input signal for the receiver. If the Copy switch is OFF, the selected input signal will also be fed to the TAPE OUT jacks for tape recording or signal processing.

If the Tape monitor buttons (Tape 1 and 2) are disengaged, the selected input signal is fed to the power amplifier and so to the loudspeakers or headphones.

If Tape 1 or Tape 2 is engaged, the selected input signal continues to be fed to the TAPE OUT jacks for recording or signal processing, but the signal returning from the tape recorder (or processor) is selected for listening.

## 13. LOW LEVEL

This button reduces the volume of the sound by 20 decibels. It has no effect on the signal fed to the TAPE OUT jacks.

Use the Low Level button to extend the useful range of the Volume control and to provide a convenient temporary cut in volume (while answering the telephone, for example). When the button is pressed again, it restores the volume precisely to the pre-set level.

**NOTE:** The LOW LEVEL mode is engaged automatically when the power is switched on.

## 14. BALANCE.

The Balance control adjusts the relative levels of the left and right channels. It has no effect on recordings being made. A detent at the 12 o'clock position marks the point of equal balance.

Rotation of the Balance control to the right (clockwise) decreases the level of the left channel so that only the right channel is heard. Rotation to the left shifts the sonic image the other way.

## 15. VOLUME.

The Volume control adjusts the overall loudness level of the sound. It has no effect on the level of the signals fed to the TAPE OUT jacks.

## 16. TUNING PRE-SETS

You can store the frequencies of fourteen favorite stations in these pre-sets, using the BANK and ENTER buttons. Then, to tune those stations from day to day, just select the appropriate bank and press the desired pre-set button.

The circuit has a "last station tuned" memory. When the power is switched on, or when you switch from one tuning band to the other, it automatically retunes to the last station that it was tuned to on that band.

## 17. BANK SELECTOR.

This button selects which group of seven programmed stations is assigned to the pre-set buttons. The LED above the BANK button changes color to indicate which bank is in use.

## 18. MEMORY ENTER

This button engages the Memory Enter mode. Use this mode to enter the frequencies of your favorite stations into the fourteen memory pre-sets (two banks of seven). First, decide which station you want to assign to each pre-set. You may arrange the stations in any order that you find easy to remember or convenient to use. The entry procedure is summarized in Fig. 9.

1. Select FM or AM.
  2. Tune to the first station on your list.
  3. Press BANK to select the bank that you want to store the first station in.
  4. Press ENTER.
  5. Press Pre-set #1 to store the first station. (After you press ENTER, you will have approximately ten seconds to store a station in one of the pre-sets.)
- Tune to the second station on your list. Press ENTER and, within ten seconds, press Pre-set #2 to store the second station. Repeat this process until all 14 pre-sets are programmed.

## 19. MONO

This button blends the two stereo channels together to produce monophonic sound. This blend minimizes rumble and surface noise in old monophonic records.

**NOTE:** If you are making a tape recording, engaging the MONO button may affect the signal being recorded — depending on whether one of the TAPE buttons is also engaged. If a TAPE monitor is not engaged, then pressing MONO will blend the input signal into mono, and the monophonic signal will be recorded. If one of the TAPE buttons is engaged, then pressing MONO will affect only the sound that you hear as it returns from the recorder; the signal going to the tape will be recorded in stereo.

The MONO button also disables the stereo FM circuits in the tuner. Normally the tuner receives monophonic transmissions in mono and automatically switches to stereo when a stereo FM broadcast is received (as shown by the FM STEREO indicator). But when a very weak FM stereo signal is received, it may be excessively noisy because of the multiplex encoding technique used for stereo broadcasting. If that occurs, depress the MONO button to lock the tuner in mono for maximum quieting.

Disengage the MONO mode when you re-tune to a stronger signal. As long as MONO is engaged, no broadcasts can be received in stereo.

## 20. AM/FM SELECTOR

When the FM or AM button is pressed it switches the receiver to the tuner input and selects the FM or medium-wave AM band.

## 21. I.F. NARROW

In normal operation the tuner's intermediate-frequency (I.F.) circuit has a moderately wide bandwidth that delivers maximum stereo separation and minimum distortion in well-received broadcasts.

When this button is pressed, it provides a narrow I.F. bandwidth with sharper selectivity. Use the Narrow setting when you need to separate stations that are very closely spaced in frequency — especially to improve the reception of a weak signal that is adjacent to the frequency of a strong signal. To return to a wide I.F. bandwidth, press this button again.

An amber LED above the button glows when the narrow I.F. mode is engaged.

## 22. FM NR OFF/ MUTING

The receiver's FM Noise Reduction circuit automatically reduces noise in weak FM stereo signals by reducing the stereo separation. It does not affect the reception of strong signals.

If you want to turn off the noise-reduction and restore full stereo separation, press the FM NR OFF button. You may not hear an obvious change, since most broadcast signals are strong enough to disengage the circuit automatically.

This FM tuner has a "smart" muting circuit which evaluates the quality of the signal as it is tuning. If the signal is of poor quality (noisy or weak), the volume is reduced.

This circuit is controlled by the FM NR button. Should you wish to hear such a broadcast at normal volume, switch the FM NR OFF. Should you then wish to re-engage FM NR, press the button again. The mute will remain off until you tune to a different station.

## 23. TUNING DISPLAY

This display is in three parts: frequency, signal strength, and tuning.

**FREQUENCY.** The numerical display shows the tuned frequency.

**SIGNAL STRENGTH.** The number of illuminated bars increases with the strength of the received signal. If only one or two bars illuminate, the signal is too weak for noise-free reception in stereo, but reception may be satisfactory in mono. Strong signals are indicated by four or five illuminated bars.

**TUNING.** The center-tuning indicator (FM only) consists of a rectangular bar and two triangular pointers. The pointers glow when the tuning is within an FM station's channel but not at the center of that channel. If the up pointer glows, tune to a higher frequency. If the down pointer glows, tune to a lower frequency. When the triangular pointers fade out and only the middle bar is illuminated, the broadcast is accurately center-tuned. [See Figure 10.]

On the AM band, tune for maximum signal strength.

## 24. TUNING KNOB

To increase the tuned frequency, turn the knob to the right (clockwise). To decrease the tuned frequency, turn the knob to the left (counter-clockwise).

## REMOTE CONTROL

The wireless remote control allows you to operate most functions of the receiver from virtually anywhere in the room.

The green Transmit indicator, located in the upper-right corner of the remote control panel, glows when any remote command is being transmitted. If it does not illuminate when a button is pressed, the batteries may be weak and should be replaced.

A green LED at the bottom of the receiver's tuning display illuminates briefly when a remote command is received. If the receiver does not respond to remote commands, and the Transmit indicator on the remote control glows brightly when buttons are pressed (indicating that the batteries are healthy), it may be that the line-of-sight path from the remote control to the receiver is obstructed by clothing, paper, or furnishings.

Each button on the remote control produces the same effect as the corresponding button on the front panel of the receiver.

**Exceptions:** The Volume buttons activate a small motor that turns the Volume knob. The tuning buttons activate a scan circuit which tunes to the next strong station.

## INSTALLING AND REPLACING BATTERIES

Batteries must be installed before the remote control can be used. In the future, if the Transmit indicator does not glow brightly when remote control buttons are pressed, or if the receiver does not respond to remote commands, the batteries may be weak and should be replaced. The unit requires two 1.5-volt AA-size penlight cells. Alkaline cells are recommended, to obtain maximum operating life.

To open the battery compartment, press down with the thumb at the center of the ribbed area on the back of the remote control unit. The cover of the battery compartment will slide down and off. [See Figure 11.] Install fresh AA cells, orienting them as shown on the diagram within the compartment. The coil springs should contact the (-) end of each cell. Slide the battery compartment cover back on until it latches.