

**NAD**

**1700**

**PREAMPLIFIER/  
TUNER**

**MONITOR SERIES**

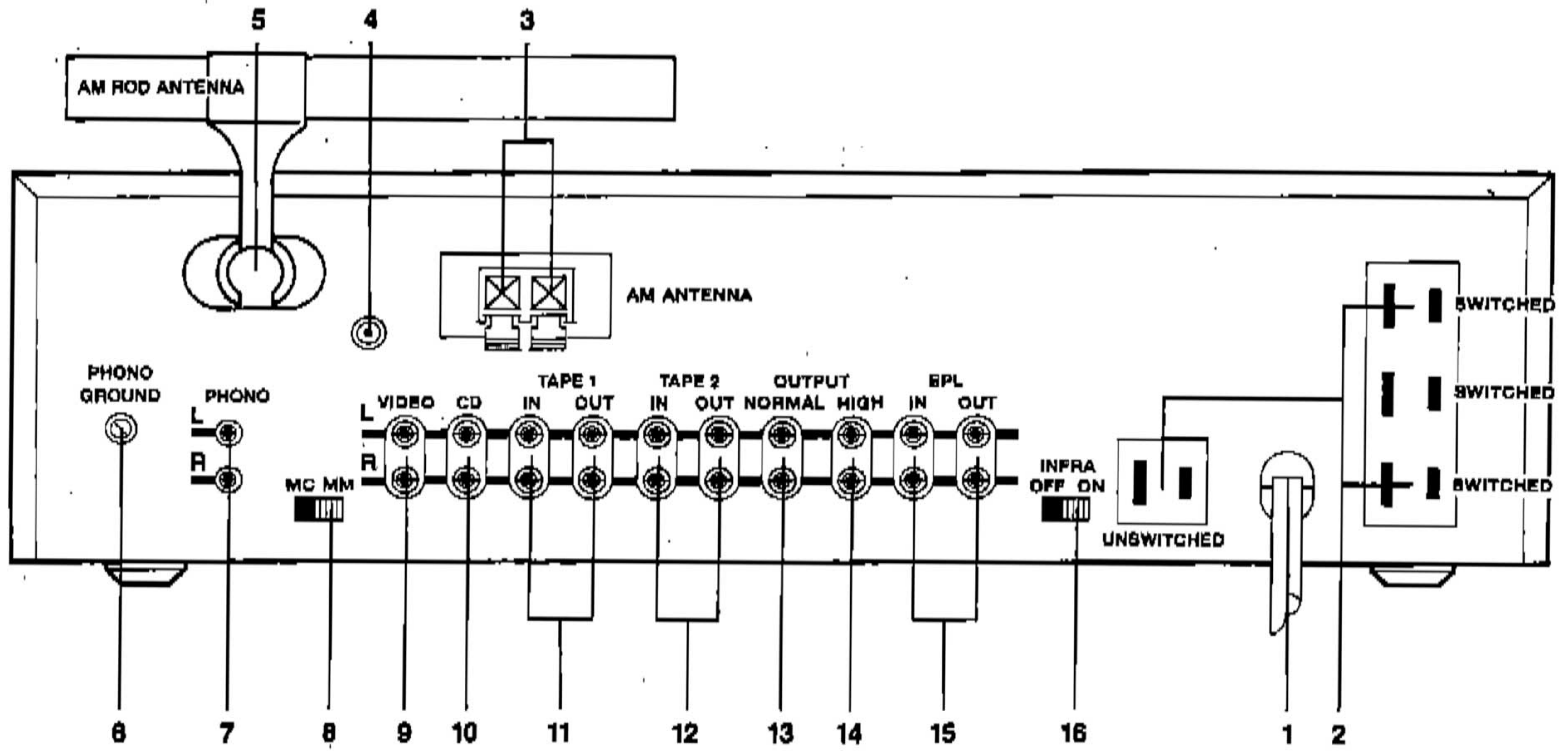
**INSTRUCTIONS FOR INSTALLATION AND OPERATION**

**REAR PANEL**

- |                                    |  |
|------------------------------------|--|
| 1. AC Line Cord.                   | 9. Video Sound Input.                      |
| 2. AC Outlets (not in U.K. model). | 10. CD Input.                              |
| 3. AM Antenna Terminals.           | 11. Tape 1 Input/Output.                   |
| 4. FM Antenna Input.               | 12. Tape 2 Input/Output.                   |
| 5. AM Rod Antenna.                 | 13. Output (Normal).                       |
| 6. Phono Ground.                   | 14. Output (High).                         |
| 7. Phono Input.                    | 15. EPL (External Processor) Input/Output. |
| 8. MM/MC.                          | 16. Infrasonic Filter On/Off.              |

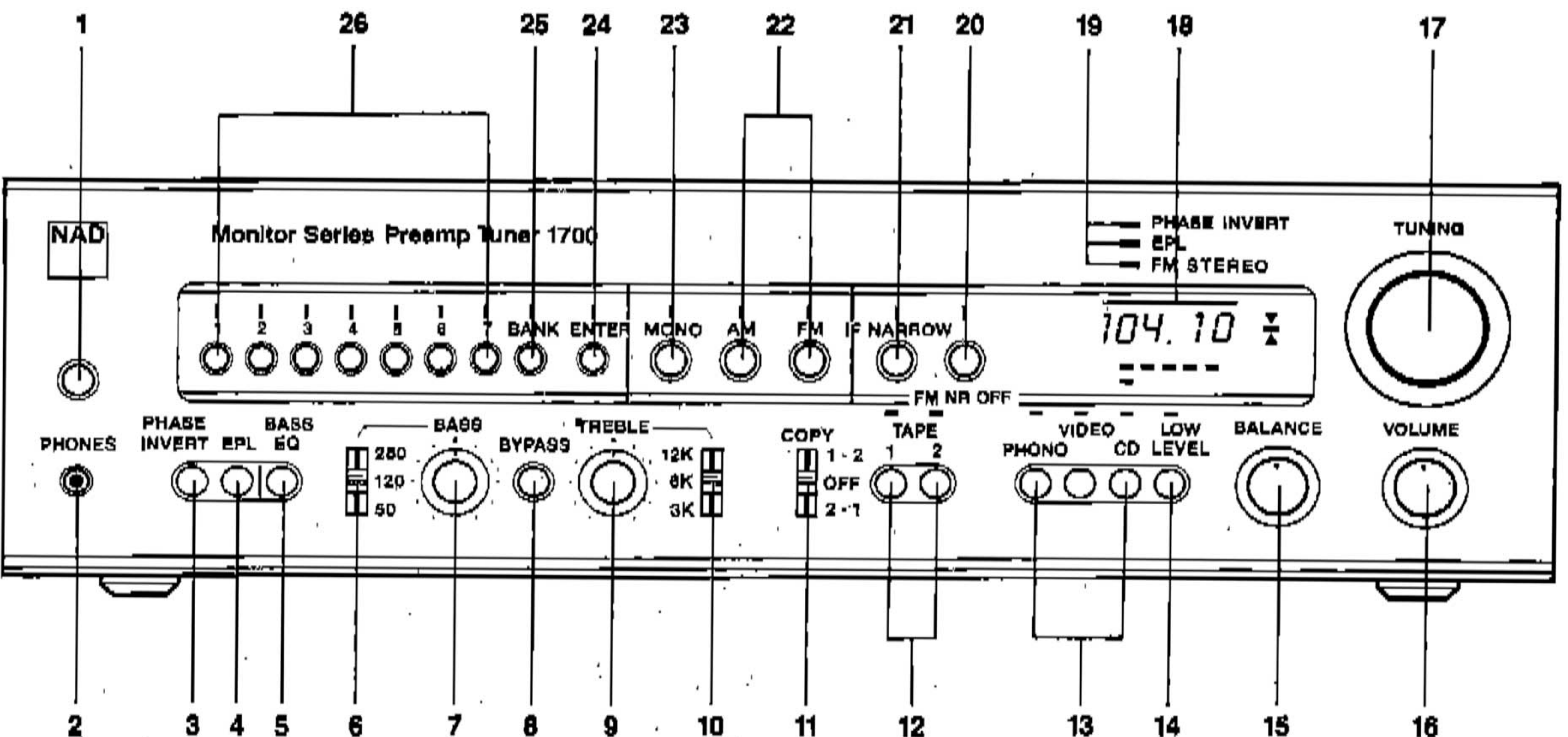


**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



**FRONT PANEL**

- |                                   |                           |                        |                    |
|-----------------------------------|---------------------------|------------------------|--------------------|
| 1. Power.                         | 8. Tone Control Bypass.   | 15. Balance.           | 22. AM/FM.         |
| 2. Phones.                        | 9. Treble.                | 16. Volume.            | 23. Mono.          |
| 3. Phase Invert.                  | 10. Treble Range.         | 17. Tuning.            | 24. Memory Enter.  |
| 4. EPL (External Processor Loop). | 11. Tape Copy.            | 18. Tuning Display.    | 25. Bank Selector. |
| 5. Bass EQ.                       | 12. Tape Monitor 1 and 2. | 19. Status Indicators. | 26. Pre-sets.      |
| 6. Bass Range.                    | 13. Input Selector.       | 20. FM NR Off.         |                    |
| 7. Bass.                          | 14. Low Level.            | 21. IF Narrow.         |                    |



## REAR PANEL CONNECTIONS

### 1. AC LINE CORD

Plug the AC line cord into a "live" wall socket.

### 2. AC OUTLETS (not in U.K. model)

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

### 3. AM ANTENNA TERMINALS

**AM Antenna.** Since the tuner is equipped with a ferrite rod antenna, no external antenna will be needed for satisfactory reception of most local broadcasting stations. But if you wish to improve reception of distant AM stations, attach a long-wire outdoor antenna to the AM terminal. As its name implies, a "long-wire" antenna is a simple, 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.

In some cases the effectiveness of a long-wire antenna will be improved by connecting a second wire from the Ground (G) terminal to a true earth-ground, i.e. a copper-plated rod driven several feet into the earth. A substitute electrical ground may also prove effective: a cold-water pipe, a steam radiator, or the third hole of a modern electrical wall socket.

### 4. FM ANTENNA INPUT

The FM antenna input socket is designed to accept a 75-ohm "co-axial" cable. This type of shielded cable is employed with community cable systems, apartment building master antenna systems, and most roof-mounted antennas.

If you want to connect an antenna with a 300-ohm twin-lead wire, use a "balun" (an adapter containing a 300-to-75-ohm transformer).

An antenna must be connected to the tuner for effective reception of stereo FM broadcasts. A ribbon-wire "folded dipole" antenna is included to get you started. When you stretch out 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 floor). 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; then plug the balun into the tuner's FM input socket.

In view of the exceptional sensitivity of NAD tuner circuits, you may find that the ribbon-wire dipole antenna is all you need for reception of strong local stations. But this simple antenna is not very efficient at rejecting "multipath" and other forms of FM interference, and it cannot easily be rotated to optimize its pickup pattern for best reception of

stations in different directions. Therefore, in most cases you should use a better antenna. The recommended options, in order of increasing cost, are as follows:

(1) A basic "rabbit-ears" indoor TV antenna without auxiliary coils or tuning switches. Electrically, such an antenna is just another dipole (similar to the ribbon-wire antenna). But since its tuned elements are made of solid metal, it can easily be rotated. Stretch out each of its two arms to a length of 30 inches (75 cm), and orient them horizontally or at a shallow angle less than 45 degrees upward. The ribbon wire emerging from the antenna's base should be connected to the balun adapter's screw terminals in place of the simple ribbon-wire antenna. Now, for each station in turn, after you tune the station you can rotate the antenna for best reception.

(2) A more elaborate rabbit-ears indoor TV antenna with a tuning switch. This type of antenna does NOT have greater sensitivity than the simpler rabbit-ears unit, so if your problem is that the signals you want to receive are weak (as shown on the signal-strength meter), then an outdoor antenna is the only effective solution. But in cities and in large buildings where signals are strong but are contaminated by reflected "multipath" interference, the tuning switch on an elaborate indoor antenna may improve reception by reducing the interference.

(3) An electrically tuned indoor antenna. Again, such antennas usually do not provide any advantage over the simplest type of "rabbit-ears" unit for receiving weak signals. But where strong signals are contaminated with interference, the antenna's aiming and tuning controls can reject the interference and yield cleaner reception.

(4) An outdoor antenna. Even the finest indoor antenna, no matter how elaborate, cannot fully exploit the capabilities of a good FM tuner. For the lowest noise, minimum distortion, and largest choice of well-received broadcasts, an outdoor antenna is the best complement to a fine tuner.

A roof-mounted antenna has three fundamental advantages. First, its large size yields better sensitivity (pulling in a stronger signal from the desired station) and a narrower directional pattern for more effective rejection of multipath reflections arriving from other directions. Second, its location on a roof or tall mast places it above many sources of interference—passing cars and buses, other buildings, etc. Third, the strength of received FM signals is directly proportional to the height of any antenna above the ground.

If you already have an outdoor television antenna, using a splitter to extract FM signals from it may produce excellent results. However, many TV antennas are deliberately designed to be relatively weak at FM frequencies in order to minimize potential interference with TV signals at nearby frequencies (Channel 6 in the U.S.). You may be able to use a splitter to extract FM signals from an apartment building's master TV antenna system, but usually this yields poor results because many master antenna systems have "traps" to stop FM signals.



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.

The best choice is a directional FM-only antenna, mounted as high above ground as is practical, and separated by at least two meters (7 feet) from other antennas, vertically and horizontally. If desired stations are located in different directions (more than 90 degrees apart), the antenna should be mounted on a rotor for aiming. Brand names of good FM antennas in the U.S. include Jerrold, Finco, Wineguard, Antennacraft, and Archer (Radio Shack).

Use shielded lead-in cable rather than plain "twin-lead" wire, both to minimize interference and to preserve strong signals during years of weathering. The cable may be either 75-ohm coaxial or a shielded 300-ohm type. Disconnect any indoor antenna before connecting the cable from the outdoor antenna.

If you install an outdoor antenna yourself, observe these important CAUTIONS:

1. Do not mount the antenna close to electric power lines. Plan the installation so that the antenna mast cannot accidentally touch power lines, either while you are installing it or later.

2. Include a lightning arrestor in the installation, to protect both yourself and the tuner circuit from potential danger during electrical storms.

### 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. PHONO GROUND

If your turntable is equipped with a grounding wire (usually a green wire terminating in a U-shaped spade lug), connect it to this terminal. Turn the thumb-nut counter-clockwise, place the spade lug under the nut, and tighten the thumb-nut clockwise to secure the lug. If the grounding wire has no spade lug, strip off 1 cm of insulation to expose the bare wire, twist the wire strands tightly together, insert the wire through the small hole in the shaft of the Ground terminal, and tighten the thumb-nut to fasten the wire in place.

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. A substitute electrical ground may also prove effective: a cold water pipe, a steam radiator, or the third hole of a modern electrical wall socket.

### 7. PHONO INPUT

Plug the signal cables from your turntable into these jacks. If the cables or plugs are color-coded, refer to your turntable's instruction manual to learn which cable or plug is for the Left channel (upper jack) and which for the Right (lower jack). Be careful to insert each plug fully into the socket so that the plug's metal skirt fits tightly over the exterior of the socket. If necessary, crimp the plug's metal skirt slightly so as to obtain a tight fit with the socket.

### 8. MM/MC

This switch sets the input sensitivity and gain of the phono preamplifier circuit. Set it according to the output level of your phono cartridge. Set the switch 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 1.0mV or greater. If your cartridge is a low-output moving-coil pickup (with a rated output of less than 1.0mV), set the switch at MC.

Here is another way to determine the preferred setting of the MM/MC switch. Begin by setting it to MM. After you have completed the installation and wiring of the system,

play a record. With the front-panel LOW LEVEL button OUT 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.

### 9. 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.

### 10. CD INPUT

Connect the audio signal cables from a digital 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.

### 11. TAPE 1 INPUT/OUTPUT

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

### 12. TAPE 2 INPUT/OUTPUT

These jacks allow you to connect a second tape recorder of any type, and the preamplifier is wired to permit copying tapes from one recorder to the other. Connect a cable from the TAPE 2 output jacks to the recorder's LINE IN jacks, and another cable from the recorder's LINE OUT jacks to the TAPE 2 input jacks.

The TAPE 2 jacks may be used for a signal processing accessory instead of a second tape recorder. Examples of such accessories include a dynamic range processor, a dynamic noise filter, or any other device whose operation depends on the setting of a signal threshold. Connect a patch cord from the TAPE 2 output jacks to the processor's inputs, and another patch cord from processor's outputs to the TAPE 2 input jacks.

Other signal processing accessories, such as a graphic equalizer or the special equalizer supplied with some loudspeakers may be connected either to the Tape jacks or at the EPL jacks. The choice is a matter of convenience.

### 13. OUTPUT (NORMAL)

This is the normal output from the preamplifier. Connect a stereo signal cable from these jacks to the main input jacks on your power amplifier.

If you have an equalizer, ambience-reproduction unit, or other signal processor that needs to be installed in the signal path, connect a cable from the NORMAL output jacks to the input of the processor, and a second cable from the output of the processor to the main input of your power amplifier.

The preamp has a low output impedance. It can drive several amplifiers connected in parallel, and it can be used with long signal cables in order to drive power amplifiers that are located near the speakers (or "powered" speakers having built-in power amplifiers).

### 14. OUTPUT (HIGH)

At this special preamp output the signal level is approximately 13dB higher than at the normal output, and the output impedance is lower (220 ohms). You may use these jacks if your power amplifier requires an input level of more than 2 volts to drive it to full output. The High-level

output jacks also may be used to drive professional studio equipment; from these jacks the preamp can drive load impedances as low as 600 ohms and can deliver undistorted signals up to 15 volts (+26dBm) to a high-impedance (bridging) load.

**NOTE:** The front-panel Phones socket is wired in parallel with the High-level preamp output. When low impedance headphones are plugged into the front panel, they will reduce the signal level and available headroom at the High-level output.

### 15. EXTERNAL PROCESSOR INPUT/OUTPUT

An equalizer or other signal processor may be connected here, leaving the Tape connections free for tape recorders. Connect a stereo patch cord from the preamplifier's External Processor Out jacks to the main Input jacks of the processor. Connect a second cable from the main output jacks of the processor to the preamplifier's External Processor In jacks.

The External Processor is "downstream" from the Tape connections, so its processing may be used to alter the sound of the playback from tapes as well as from other sources. But the processing cannot be used to alter signals that are being recorded.

If you want to record the processed sound, connect the processor to Tape 2 instead, and Copy the processor's output onto Tape 1 (or vice versa). Or you may simply connect a tape deck to the processor's own Tape In/out jacks.

The External Processor circuit is identical to the Tape circuits, except that it does not participate in the Copy function. If you connect a tape deck to the External Processor jacks, you may use the External Processor button on the front panel as a tape monitor (to hear the output from that tape deck). Tapes may be copied from Tape 1 or Tape 2 to External Processor, by setting Copy to OFF and Monitor to 1 or 2.

### 16. INFRASONIC FILTER

The output from a record player contains strong but inaudible signals at infrasonic frequencies (below 20Hz) caused by disc warps, stylus/tonarm resonance, and vibrations reaching the turntable. If these non-musical signals are amplified at full strength they may waste amplifier power and produce excessive woofer cone motion, muddying the sound. The infrasonic filter attenuates this unwanted contamination.

Loudspeakers with "vented" cabinets (i.e. bass-reflex, ported, auxiliary bass radiator, and drone-cone designs) are especially susceptible to being overdriven by infrasonic signals. If your speakers are of this type, you should keep the Infrasonic Filter switched 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.

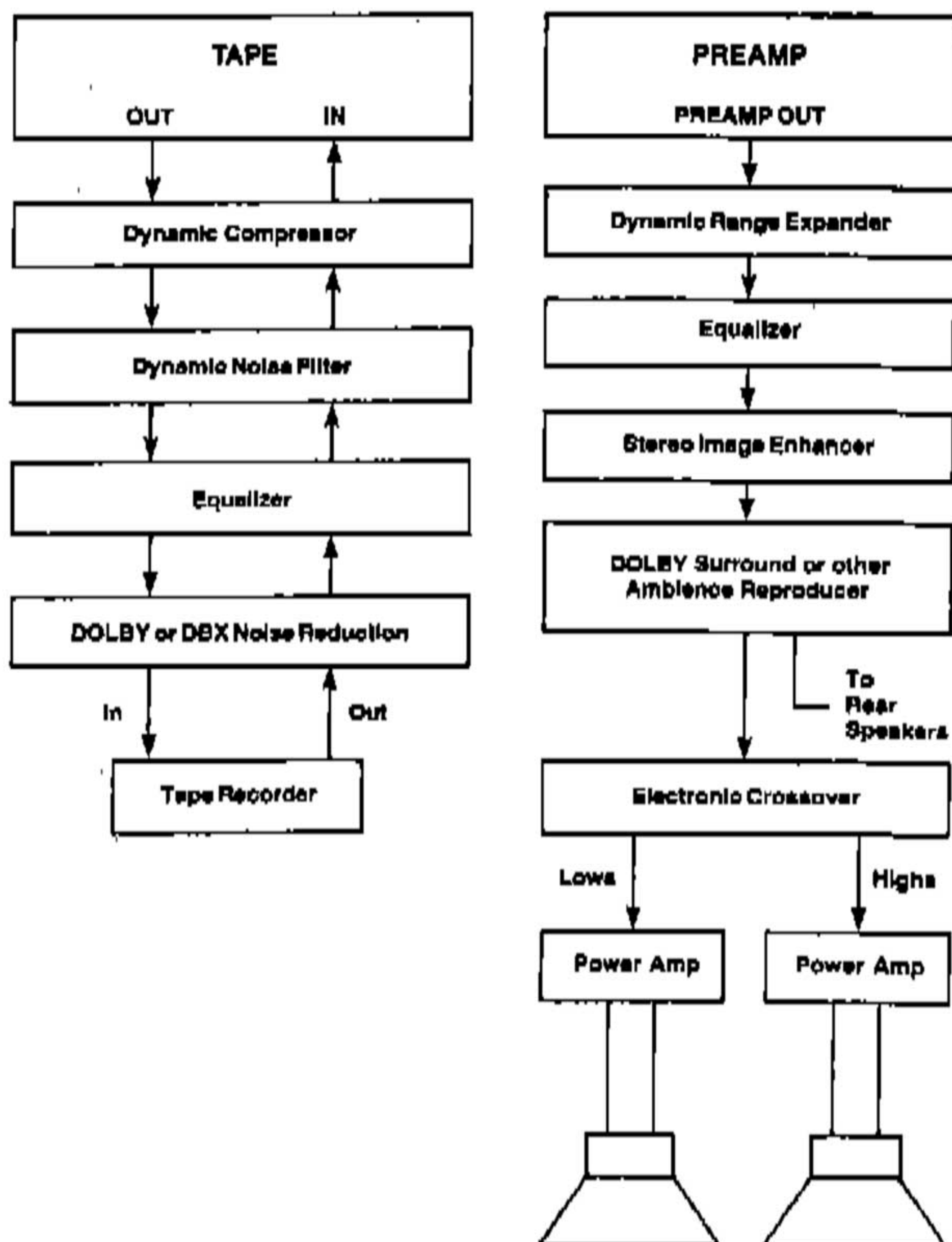
**NOTE:** A second infrasonic filter is included in the BASS EQ circuit and is automatically engaged when the bass equalization is used. It is not affected by the Infrasonic Filter switch.

## A NOTE ON PROCESSOR CHAINING

Today's stereo systems often consist not only of the basic elements (turntable, tuner, tape deck, amplifier and speakers) but also of assorted signal-processing accessories which often exceed in number the available places in the circuit where they can be connected. It then becomes necessary to connect two or more processors in series in a single processing chain, either in a "tape monitor" loop or between the preamp and power amp, and it may not be obvious how the various processors should be chained for best results. The following sketches outline a suggested order for processor chaining, either in a tape-monitor loop or between preamp and power amp.

It is assumed that each processor in the TAPE REC/PLAY chain has its own set of "TAPE" input/output jacks; to which the next processor in the chain is connected. Each unit in the PREAMP OUT chain is assumed to have an "off" or "bypass" mode which allows signals to pass through without processing when desired.

The outline shown here is not the only practical ordering of equipment; you could, for instance, have an equalizer in the TAPE REC/PLAY loop, at approximately the same position in the chain as the dynamic noise filter. And the ordering of the dynamic expander, equalizer, and stereo image enhancer in the PREAMP OUT chain is arbitrary.



## FRONT PANEL CONTROLS

### 1. POWER

Press to switch on the power to the 1700 and to any other products plugged into the SWITCHED convenience outlets on the rear panel. To switch the power off, press the 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 1700 is in standby mode, ready to receive remote commands. When the power is switched on, the LED turns off; thereafter it glows only when remote commands are being received.

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 provide proper drive signals for all conventional stereo headphones regardless of their impedance, with just one exception: electrostatic headphones usually are supplied with an adapter unit which must be connected directly to the speaker terminals on your power amplifier.

You may freely use headphone extension cables. If you want to use a headphone Y-connector to drive two headsets simultaneously, they should be identical models. Connecting together two headphones that differ widely in impedance usually will produce a substantial loss of volume in the headset having the higher impedance (or in both).

### 3. PHASE INVERT

This button inverts the polarity, or absolute phase, of the audio signal in both channels. (Do not confuse this with the *relative* phase inversion of one channel that occurs when loudspeakers are wired out-of-phase. This button inverts signal polarity simultaneously in both channels.)

The 1700 normally inverts signal polarity, from any input (including Tape and EPL In) to Normal or High output. Signal polarity is unaffected by the Bass EQ, tone controls, infrasonic filter, or other controls.

Therefore, when the Phase Invert circuit is engaged, the polarity of the input signal is restored at the output. Whether this is "correct" depends on whether your power amplifier also inverts polarity. It will also depend on the polarity (if any) of your recordings.

Incidental polarity inversions occur throughout the audio recording and playback process—in microphone wiring, tape recorders, equalizers, CD players, and amplifier circuits. Therefore the preferred polarity of the preamp can only be determined by trial-and-error for each recording.

Most multi-way dynamic loudspeakers have a complex phase characteristic that obscures the effect of phase inversions in the audio signal. Moreover, many recordings contain a mix of microphone signals of inconsistent polarity. Don't be surprised if you find it difficult or impossible to hear any clear difference when the Phase Invert button is pressed.

With some loudspeaker systems and some recordings, the effect of polarity inversion is audible either as a change in timbre, a difference in the impact of transients, or an improvement in stereo imaging. If you find that you can hear such differences when the Phase Invert button is pressed, you may want to mark your records and tapes to indicate which is the preferred setting for each.

### 4. EPL (EXTERNAL PROCESSOR LOOP)

Press this button to hear the output of any signal-processing accessory connected to the EPL jacks. For example, if the processor is a special equalizer used with your loudspeakers, press this button IN when you want to

hear the equalized signal, and leave this button OUT when the equalization is not wanted (i.e. when using headphones or extension speakers).

If you engage the External Processor button when no processor is connected (or when a processor is connected but turned off), you will hear only silence—regardless of any other control setting.

If you use the EPL connections for an extra tape recorder, press this button to hear the output signal from the recorder. Leave the button OUT to hear the signal chosen by the Input selector and Tape Monitor.

### 5. BASS EQ

This circuit boosts the lowest bass frequencies, those below 60Hz. In virtually all loudspeakers the useful output rolls off at frequencies below the woofer/cabinet resonance (which typically occurs between 40 and 70Hz). The BASS EQ circuit compensates for this rolloff, extending the useful response of the speakers significantly lower in frequency.

If your loudspeakers already have extended and powerful deep-bass response, the BASS EQ provides other benefits:

- It helps to correct the rolled-off bass in some recordings.
- It provides effective "loudness compensation" to restore subjectively correct tonal balance at low volume levels.
- It helps to compensate for listening-room acoustics. ("Standing waves" in the room tend to weaken the low bass and reinforce the mid-bass at typical listening positions.)

Of course very low frequencies are not found in all music, nor in all recordings, so the effect of the BASS EQ often won't be obvious. Sometimes you may find that switching it in and out does not produce any apparent change in the sound, simply because the recording contains no energy at very low frequencies. But usually the BASS EQ will provide an audible (and occasionally a dramatic) strengthening of the deepest bass.

The BASS EQ circuit also includes an infrasonic filter that rolls off the response below 25Hz to prevent inappropriate amplification of non-musical signals below the audio range.

**CAUTION:** Be prepared to switch off the equalization when playing recordings (especially digitally mastered discs) that contain unusually powerful recorded bass. The combination of a high playback volume level, the BASS EQ, and a bass-heavy input signal could overdrive the amplifier into clipping and—more important—overdrive your woofers beyond their safe excursion limits, causing the voice-coils to clatter against the magnet back-plates. (This risk is particularly serious with small woofers, those smaller than six inches in diameter, which usually are not designed to accept high power levels at the lowest frequencies.) As long as a speaker sounds good it probably is OK; but distorted or unmusical sounds, such as clattering or buzzing, signal distress in a woofer.

Be alert, also, for signs of acoustic feedback (in which the low-frequency vibrations from the speakers are picked up by the record-playing stylus and are re-amplified). If you encounter a sustained low-frequency roar, or frequent groove-jumping, immediately turn down the Volume and switch off the BASS EQ until a more nearly vibration-free mounting for the turntable is found.

### 6. BASS RANGE

The "semi-parametric" Bass control provides a precisely determined boost or cut over a frequency range that is two octaves wide at the  $-3\text{dB}$  points and is centered at the frequency chosen by the Bass Range selector. The

amount of boost or cut is determined by the rotation of the Bass control.

A boost or cut that is centered at 50Hz (and therefore spans the two-octave range from 25Hz to 100Hz) can dramatically change the amount of bass energy in the signal without altering the timbre of the musical midrange. For example, a bass reduction centered at 50Hz can remove hum or rumble from a poor recording without making the sound objectionably thin.

A boost centered at 120Hz can increase the skin-thumping impact of rock music without overdriving the woofer at very low frequencies. But to emphasize the solid foundation of large-scale orchestral or pipe-organ sound, choose a boost centered at 50Hz. For a massive augmentation of the deepest bass, combine Bass EQ with a moderate Bass boost at the 50Hz setting.

Room standing waves and boundary reflections (off walls and floor) often thicken the mid-bass sound around 120Hz. A slight bass reduction centered at 120Hz may dramatically improve the clarity and definition of mid-bass sound, while the Bass EQ circuit keeps the deep bass strong.

At the low-frequency settings of the Bass Range selector, the Bass control alters the strength of the low bass without changing the timbre of the musically important midrange. The 250Hz setting, on the other hand, alters the overall tonal balance of recordings. Use a slight boost at 250Hz to add warmth and body to a thin recording. If a recording is thick and congested in the lower midrange (a common fault with closely-miked male vocals), a reduction centered at 250Hz may improve the clarity and definition of the sound.

## 7. BASS

The Bass control adjusts the relative level of the low frequencies in the sound. The electrical 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. Adjust the Bass control to achieve the tonal balance that sounds most natural to you.

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.

## 8. 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 output of the preamplifier.

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 switching them in and out of the signal path, you can easily evaluate their effect on the musical sound.

## 9. 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. Adjust the Treble control to achieve the tonal balance that sounds most natural to you.

Boosting the Treble increases the brilliance and clarity of details in the sound, but also makes any noise more prominent. Turning down the Treble makes the sound mellower while suppressing hiss and record surface noise; but too much Treble roll-off will make the sound dull.

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.

## 10. TREBLE RANGE

The "semi-parametric" Treble control provides a precisely determined boost or cut over a frequency range that is two octaves wide at the  $-3\text{dB}$  points and is centered at the frequency chosen by the Treble Range selector. The amount of boost or cut is determined by the rotation of the Treble control.

A boost or cut that is centered at 12kHz (and therefore spans the two-octave range from 6kHz to 24kHz) can dramatically alter the amount of high-frequency energy in the signal without altering the basic midrange timbre. For example, a boost centered at 12kHz can increase the "air" in a recording without making the sound excessively bright, while a rolloff can reduce annoying hiss or distortion without making the sound too dull.

The apparent brightness or dullness of the sound is influenced by the strength of musical overtones in the 6kHz range. Use a treble boost with a center frequency of 6kHz to brighten a dull recording, or a slight treble cut at 6kHz to smooth the sound of a recording that is too bright or strident.

The frequency range around 3kHz is called the "presence" range. A boost centered at this frequency can emphasize a melodic line or improve the articulation of a vocal. With a slight reduction at 3kHz you can smooth a too-forward vocal or increase the apparent distance and depth of recordings that sound too close and flat.

A slight Treble reduction (11 o'clock) at 3kHz, combined with a slight Bass boost (1 o'clock) at 250Hz, can give hard-sounding CDs the warm, mellow tonality of an LP.

## 11. 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. If you have two tape recorders, the selected input signal may be recorded on either recorder, or simultaneously on both. Use the Monitor switch to listen to the signal going through either recorder (Tape 1 or Tape 2), or to hear the input signal (Monitor OFF).

If you have connected a tape recorder to Tape 1 and a signal processor to Tape 2, the selected input signal may be recorded on Tape 1 and will also be fed to the signal processor. Use the Monitor switch to check the signal being recorded (Tape 1), or to hear the output of the signal processor (Tape 2).

**1>2.** When the Copy switch is set at 1>2, the playback signal from Tape 1 is fed to Tape 2 Out. This permits recordings to be copied from Tape 1 to Tape 2.

Use the Monitor switch to hear either the source (Tape 1) or the copying recorder (Tape 2). If you switch the Monitor OFF you may listen to any other signal source (CD, Phono, et al) while the copying proceeds. Changes in the setting of the Monitor switch do not affect the tape copying process.

If you have connected a signal-processing accessory to Tape 2, then the playback signal from Tape 1 will be fed to the processor. Use the Monitor switch to hear the processed playback signal (Tape 2) or the direct tape playback (Tape 1).

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

If you have connected a signal-processing accessory to the Tape 2 Input/output jacks, you can use it to alter the sound being recorded on Tape 1. When the Copy switch is set at 2>1, the selected input signal (CD, Phono, et al) is fed to Tape 2 (the signal processor); then the output of the processor is fed to Tape 1. Use the Monitor switch to hear the unprocessed input signal (OFF), the processed signal (Tape 2), or the recording of the processed signal (Tape 1).

**CAUTION:** In this mode, with some equipment combinations it may be that a feedback path could be set up in which the signal circulates repeatedly, producing a loud squeal that could damage your loudspeakers. Turn down the Volume when making connections and when initiating recordings.

**NOTICE:** Tape copying is a convenience intended for personal use. If you copy commercially-produced recordings and sell or give away the copies, you may be violating the copyright or the property rights of the producer of the recording.

## 12. TAPE 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 it over-rides the Input Selector.

To disengage either Tape button, press the Input Selector button for the signal you want to hear.

**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 amplifier 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 amplifier 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.

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

These buttons, together with the AM and FM buttons on the tuner panel, select the input signal for the preamplifier. If the COPY switch is OFF, the selected input signal is also fed to the Tape circuits for recording.

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

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.

## 14. LOW LEVEL

This button reduces the volume of the amplified sound by approximately 20 decibels. It has no effect on the signal fed to the TAPE OUT jacks for taping or processing. The LOW LEVEL switch has several practical uses:

- It extends the useful range of the Volume control. With high-output signal sources, with efficient loudspeakers, or with sensitive headphones, you may find that the sound is too loud over most of the range of the Volume control, so that you are restricted to using only settings near the lower end of the control range. In this case, engaging the Low Level switch to reduce the output level will allow you to use the full range of the Volume control for normal listening.

- It provides optimum signal-to-noise ratio for low-level listening in quiet environments. For example, if you are listening to soft music late at night when the surroundings are quiet, the Low Level switch minimizes the already-low residual noise of the preamplifier and tone-control circuits, ensuring noise-free listening.

- It provides a convenient temporary cut in volume, to be used while answering the telephone for instance. When the button is pressed again and released, it restores the volume precisely to the pre-set level.

When the power is switched on, the Low Level mode is automatically engaged.

## 15. 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, thus shifting the sonic image to the right. Rotation of the control to the left shifts the sonic image toward the left speaker.

Ideally the detented center position of the Balance control will be the normal setting. But several common circumstances may cause unequal balance, requiring an off-center setting of the Balance control to restore the most uniform spread of stereo sound between the speakers. These include unequal output from the two channels of the phono cartridge, different acoustical environments around the two loudspeakers, or simply a listening position that is closer to one speaker than to the other.

Adjust the Balance control to produce a natural spread of sound across the space between the speakers, with any monophonic sound (such as a radio announcer's voice) appearing as a phantom image centered midway between them.

## 16. 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 for tape recording. The Volume control is designed for accurate tracking of its two channels, so that the stereo balance will not shift noticeably as the loudness of the sound is varied.

## 17. TUNING

Rotation of the tuning knob generates digital pulses that increase or decrease the tuned frequency in small steps. The minimum tuning increment is 0.05MHz for FM. For the AM band the tuning step is 10kHz in North America (9kHz in Europe and elsewhere).

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).

## 18. TUNING DISPLAY

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

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

**SIGNAL STRENGTH.** The signal strength meter is a series of five bars. 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 an illuminated 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. The orientation of the illuminated pointer shows whether the tuning frequency should be increased or decreased. If the indicator points upward, rotate the Tuning knob clockwise to increase the frequency. If the indicator points down, turn the knob counter-clockwise to decrease the frequency. When the broadcast is accurately center-tuned, the triangular pointers fade out and only the middle bar is illuminated.

On the AM band, tune for maximum signal strength.

At the bottom of the display window is a green LED that glows when remote commands are received. This LED also glows when the unit is in standby mode (plugged in but turned off).

## 19. STATUS INDICATORS

The Phase Invert Indicator illuminates when the polarity inverting circuit is in use.

The EPL Indicator illuminates when the EPL (external processor) button is engaged.

The FM STEREO Indicator illuminates when a stereo FM broadcast is received and decoded. Note that if the MONO button is engaged, all broadcasts will be received in mono.

If an FM station is broadcasting only in mono, or if a stereo broadcast signal is too weak for reasonably noise-free reception in stereo, then the tuner will automatically switch into the mono mode, and the FM STEREO light will not illuminate. Also, if you have mis-tuned away from the center of a station's broadcast channel, the stereo decoding circuits may not lock onto the signal and it may be received only in mono.

## 20. FM NR OFF

The tuner contains an FM Noise Reduction circuit that automatically reduces noise in weak FM stereo signals by reducing the stereo separation. As the received signal becomes weaker and the stereo subcarrier becomes noisier, the circuit automatically reduces the contribution of the stereo subcarrier to the final sound, obtaining the best practical compromise between quieting and subjective image breadth. Even with maximum noise reduction, the circuit maintains enough channel separation to produce a stereo image that is appreciably wider and more spacious than mono.

For normal operation of the circuit, leave the button OUT. The FM noise-reduction circuit operates only on those weak stereo FM signals that would be noisy without it. 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 difference when this button is

pressed, since most broadcast signals are strong enough to disengage the circuit automatically.

An amber LED above the FM NR OFF button glows when the noise reduction has been switched off.

## 21. IF 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/AM

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

The tuning circuit has a "last station selected" memory. When you switch between tuning bands, the circuit automatically re-tunes the last station that you were tuned to when you previously used that band.

## 23. MONO

This button blends the two stereo channels together to produce monophonic sound. This blend minimizes rumble and surface noise in old monophonic records. The button must be OUT for normal stereo listening.

**NOTE:** If you are making a recording, engaging the MONO button may affect the signal being recorded—depending on whether one of the TAPE buttons is also engaged. If neither TAPE button is 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 on its multiplex decoding circuits 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. In that case, depress the MONO button to lock the tuner in the mono mode, in order to obtain consistently quieter and cleaner sound.

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

## 24. 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). The procedure is as follows.

1. Decide which station you want to assign to each of the fourteen pre-sets. You may arrange the stations in any order that you find easy to remember or convenient to use. For example the arrangement may be alphabetical (1 = WABC, 2 = WCBS, 3 = WNYC . . .), numerical (1 = BBC1, 2 = BBC2, . . .), or in order of increasing frequency (1 = 89.7, 2 = 90.9, 3 = 95.3, etc). You may enter FM stations in one bank of seven pre-sets and AM stations in the other bank, or Intermix AM and FM stations in each bank. For

example you could store the children's favorite stations in one bank and the parents' favorites in the other bank.

2. Select the FM or AM band, as appropriate. Tune to the first station on your list. If you are not certain of station frequencies, check the station/frequency directory in a local newspaper or broadcasting guide. Check the signal-strength display (AM) or center-tune indicator (FM) to be sure that you have tuned precisely to the center of the station's broadcast channel.

Press the BANK button to select the bank that you want to store the first station in. Press the ENTER button, then press Pre-set #1 to store the first station in the tuner's memory. (NOTE: After you press ENTER, you will have approximately ten seconds to store a station in one of the pre-sets. After that interval, the ENTER mode will automatically de-activate.)

3. Tune to the second station on your list. Press the ENTER button and, within ten seconds, press Pre-set #2 to store the second station.

4. Tune to the third station on your list, press ENTER, and press Pre-set #3 to store the station. Continue in this manner until you have stored seven stations in the first seven pre-sets. Then press the BANK button to switch to the second bank of pre-sets, and continue the process for the second group of seven stations.

Incidentally, if you make a mistake or change your mind, it is not necessary to re-program the pre-sets in sequence. You can re-program any pre-set simply by tuning to the desired frequency, pressing ENTER, and pressing the pre-set that you want to re-program.

After you finish programming the pre-sets, you may wish to post your list of stations and associated pre-set numbers nearby for reference.

**CAUTION:** In day-to-day operation, be careful not to press the ENTER button by accident. Doing so will activate the ENTER mode, and if you then press any of the pre-set buttons you will unintentionally re-program that pre-set. You would then have to manually re-tune to the station you wanted, and re-ENTER it into the pre-set.

If you press ENTER accidentally, you may wait ten seconds for the ENTER mode to disengage. Or you can immediately force the tuner out of the ENTER mode in either of two ways: switch to the other tuning band (e.g. from FM to AM and back), or turn the Tuning knob to change the tuned frequency.

## 25. 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.

## 26. STATION PRE-SETS

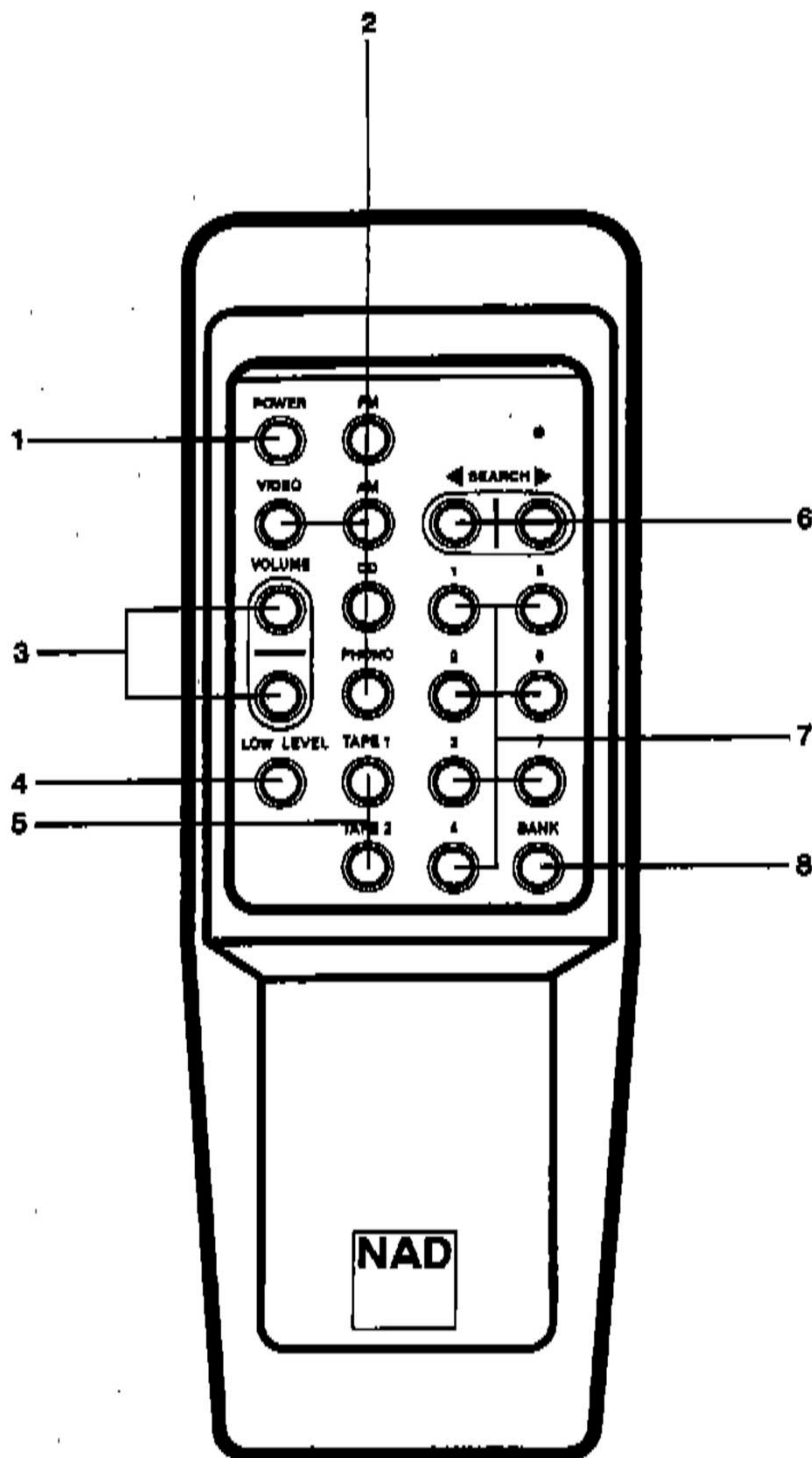
You can store the frequencies of fourteen stations in these pre-sets, using the BANK and ENTER buttons. Then, to tune those stations from day to day, just select the appropriate bank and press the desired pre-set button. The tuner will automatically switch to AM or FM accordingly.

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 re-tunes to the last station that you used on that band.

The pre-sets preserve their frequency assignments when the AC line cord is unplugged, for a period of at least two weeks. Thus you can re-arrange your stereo system, or move the equipment from room to room, without losing the pre-set frequencies. But if you leave the power off for a month or more, you may have to re-program the tuning pre-sets.

## REMOTE CONTROL:

- |                    |                              |
|--------------------|------------------------------|
| 1. Power.          | 5. Tape 1, Tape 2 (Monitor). |
| 2. Input Select.   | 6. Tuning Search Up/Down.    |
| 3. Volume Up/Down. | 7. Station Pre-sets.         |
| 4. Low Level.      | 8. Bank Select.              |



## REMOTE CONTROL

A wireless remote control is provided with the model 1700, enabling you to operate most functions from the comfort of your chair (or from virtually anywhere in the room). The unique, ergonomically derived design of the NAD remote control offers several benefits:

1. Since the control beam is transmitted from the back rather than from the end of the controller, it is not necessary to point the remote end-on at the 1700. You may hold it at a comfortable angle in front of you, or even hold it vertically, so that you can see the buttons as you press them.

2. The transmitting end of the controller is canted upward so that, if you prefer, you can place it on a tabletop or on the arm of a chair and use a forefinger to operate it.

3. When the controller is held in the right hand, the most frequently used buttons are located so that they fall under the natural arc of the thumb.

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 1700's tuning display illuminates briefly when a remote command is received. The remote control produces a strong enough infrared signal that, in many cases, reflection off of walls and ceiling will be sufficient to operate the 1700, regardless of how the remote control is held or aimed. But for the most reliable operation there should be a clear line-of-sight path from the back of the remote control to the front of the 1700. If the 1700 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 1700, except as described below.

#### **1. POWER**

Same as the front-panel Power button; switches the power on and off. When the 1700 is plugged in but the power is switched off, a green LED at the bottom of the tuning display glows to indicate that the 1700 is in standby mode, ready to receive remote commands. When the power is switched on, the LED turns off; thereafter it glows only when remote commands are being received.

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. INPUT SELECT (FM, AM, VIDEO, CD, PHONO)**

Same as the front-panel input selector buttons. Press to select the input that you want to hear.

#### **3. VOLUME UP/DOWN**

These buttons activate a small motor that turns the Volume control. Press the upper button to increase the loudness of the sound, or the lower button to reduce it. The sound is also affected by the Low Level button.

#### **4. LOW LEVEL**

Same as the front-panel LOW LEVEL button. When pressed, it reduces the volume level by 20dB. When pressed again, the previous volume level is restored.

LOW LEVEL is automatically engaged when the 1700 is switched on. Press the LOW LEVEL button to restore normal volume.

#### **5. TAPE 1, TAPE 2 (MONITOR)**

Same as the front-panel TAPE 1 and TAPE 2 buttons. Press to hear the playback from the corresponding tape deck (or the output from a signal processor). To disengage the Tape monitor, or to bypass a signal processor, press the button again.

#### **6. TUNING SEARCH UP/DOWN**

These buttons are not duplicated on the front panel. When either Search button is tapped, the tuner scans rapidly up or down in frequency and automatically stops at the next station whose signal is strong enough for good reception. This system provides remote-control tuning of stations that have not been programmed into the pre-sets, and it also serves as a convenient method of scanning the broadcast band to find an interesting program.

A muting circuit automatically silences the sound during the scan, until the tuning circuits lock onto a station.

#### **7. STATION PRE-SETS**

Same as the front-panel pre-sets. After selecting the desired bank, select the number of the station you want to hear. When tape-recording a radio broadcast, be careful not to press a different station pre-set by accident.

#### **8. BANK SELECT**

Same as the front-panel BANK button. Press to select either of two groups of seven pre-set station frequencies. The front-panel LED above the BANK button changes color to indicate which bank is in use.

### **BATTERY REPLACEMENT**

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. 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.

## IN CASE OF DIFFICULTY: A TROUBLE-SHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSE
<b>No sound.</b>	<p>Power not switched on.</p> <p>Line cord unplugged, or plugged into dead outlet. (To check AC outlet, plug in an electric lamp.)</p> <p>Power amplifier turned off, or its speaker switch disengaged.</p> <p>Volume control turned down; Low Level engaged.</p> <p>AM or FM selected but tuned to a blank frequency between stations.</p> <p>Inoperative input selected (e.g. CD Input selected with no CD playing).</p> <p>Tape 1 or Tape 2 selected with no tape playing.</p> <p>External Processor (EPL) button engaged with no processor connected or operating.</p> <p>Internal fuses blown; return unit to dealer for service.</p>
<b>No sound in one channel.</b>	<p>Balance control set at full-left or full-right.</p> <p>Loudspeaker connecting wire pulled loose (check all connections, both at speakers and at the amplifier).</p> <p>Connecting cable pulled loose or making poor contact in socket. Rotate plugs in sockets to restore contact.</p> <p>Short circuit in a defective connecting cable. Wiggle all cables, especially where they enter plugs.</p> <p>Dirty contact in a switch. Exercise all front-panel switches to restore clean wiping contact.</p>
<b>Loud buzz and hum.</b>	<p>Connecting cable pulled partially out of its socket.</p> <p>Defective connecting cable.</p>
<b>Low-frequency hum in phono.</b>	<p>Turntable grounding wire not connected.</p> <p>Ground-loop hum. Install polarized AC plugs properly in polarized wall sock-</p>

SYMPTOM	POSSIBLE CAUSE
<b>Low-frequency hum in phono. (continued)</b>	<p>ets (in which one slot is longer than the other). Try reversing any non-polarized plugs in their sockets, to find the orientation that yields the least hum.</p> <p>Phono cables routed too close to a power amplifier's power transformer.</p> <p>Phono plugs making poor contact in socket. (Also check any phono plugs in the turntable base.)</p>
<b>Hum in tape playback.</b>	<p>Tape deck located too close to power amplifier (directly above or below).</p> <p>Tape deck located too close to television set.</p> <p>Plugs making poor contact in sockets.</p>
<b>Distorted reception of FM stations.</b>	<p>"Multipath" reception. Rotate antenna to find the orientation that provides best reception. (The best orientation may vary from station to station.) Raise the height of the antenna. If your building has steel-frame or steel-reinforced concrete construction move your FM antenna outside, and use a shielded 75-ohm coaxial lead-in cable.</p> <p>FM NR switched off. Disengage the FM NR OFF button.</p> <p>Adjacent-channel interference. Use NARROW I.F. mode</p> <p>If all else fails, switch to Mono reception.</p>
<b>Whistle or buzz in AM or FM.</b>	<p>Video game, computer, or computerized game operating nearby.</p> <p>AM only: static due to electric motors or fluorescent lights. Minimize by tuning to a strong station. Re-orient the ferrite-rod AM antenna, or connect an external antenna.</p>
<b>Weak bass; diffuse stereo imaging.</b>	<p>Speakers wired out of phase.</p> <p>Swap connections at the back of ONE speaker.</p>



## THE PERFECT MATCH FOR THE MODEL 1700:

To take fullest advantage of the NAD 1700 Preamplifier/Tuner, it should be matched with a power amplifier of comparably refined sonic qualities and advanced technical performance, and we recommend the NAD 2600 Monitor Series Power Amplifier. In practical terms the NAD 2600 is one of the most powerful amplifiers available today.

The Model 2600 is conservatively rated at 150 watts per channel. Its Power Envelope circuitry delivers a remarkable 400-600 watts per channel of long-term dynamic power—not just for the 20 milliseconds of the IHF dynamic headroom test, but for hundreds of milliseconds, the full duration of the most demanding musical peaks. In the bridged mode, the Model 2600 can deliver 1600 watts of dynamic power per channel.

If you prefer an amplifier less potent than the magnificent 2600, NAD produces a full range of power amplifiers, all designed with the same performance-enhancing features as the 2600. Every NAD power amplifier features Power Envelope circuitry for long term dynamic headroom, high-output current to drive speaker impedances as low as 2 ohms, Soft Clipping and the transparent, musically convincing sound that has won worldwide praise for NAD.

## THE NAD MONITOR SERIES

Among high-performance stereo components, the Model 1700 stands alone in its class. But it is not unique at NAD; the Model 1700 is part of our new Monitor Series product line, each of which redefines the standards in its category.

Three years ago, in response to requests from audio enthusiasts and professional users of NAD equipment in the broadcast, motion picture, and pro-sound industries, we embarked on an exciting project of unusual difficulty. Our self-imposed mandate was to develop a new series of components that represented a technical and audible advance beyond our standard line. The new NAD Monitor Series is the result of this project, and we believe our philosophy of cost-effective quality is raised to its highest level with this new product line.

For example, the Monitor Series 5300 remote-control CD Player is equipped with special ultra-linear decoding and digital filtering, dynamic compression, ambience enhancement, and a disc-condition analyzer that displays error-correction activity. The Monitor Series 6300 is the world's first cassette deck with both DYNEQ\* and Dolby HX Pro\*\* for enhanced high-frequency performance, plus Dolby/NAD Play Trim for better playback of pre-recorded tapes, three heads with tape monitoring, a dual-capstan transport with ultra-low flutter, and a built-in compressor for making car tapes.

The Monitor Series 1700 Preamplifier/Tuner and its companion products were designed, not to a price, but to a standard: the best audio products we know how to make—period. We invite you to write to us for more information on the series. And knowing that the printed word can never substitute for the listening experience, we particularly invite you to audition the special sound of the Monitor Series components at your local NAD dealer.

\*Patented and registered trademark of Tandberg Audio.

\*\*Registered trademark of Dolby Laboratories.

**NAD ELECTRONICS**  
BOSTON/LONDON

PRINTED IN JAPAN