

TAD

TAD Evolution One

TAD-E1

SPEAKER SYSTEM

OWNER'S MANUAL

BEFORE YOU START

Thank you for buying this TAD product. Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

- This speaker system has an impedance of 4.0 ohms, and should be connected only to an amplifier designed with a load impedance of 4.0 ohms (the amplifier's speaker output connector should clearly be labeled "4.0 ohms").

In order to prevent damage to the speaker system resulting from input overload, please observe the following precautions:

- Do not supply power to the speaker system in excess of the maximum permissible input.
- Always turn off the amplifier power whenever connecting this unit or other components to the amplifier.
- Be careful not to overload the amplifier by playing at high sound levels, as the amplifier's harmonic distortion will be increased and you may damage the speaker.

For U.S. model

WARNING: Handling the cord on this product or cords associated with accessories sold with the product may expose you to chemicals listed on proposition 65 known to the State of California and other governmental entities to cause cancer and birth defect or other reproductive harm.

Wash hands after handling.

D36-P5_B1_En

Caution: installation

- Do not place the speaker on an unstable surface. It could present a hazard if it falls, as well as potentially damaging the equipment.
- Do not attach these speakers to the wall or ceiling. They may fall off and cause injury.
- Switch off and unplug your AV equipment and consult the instructions when connecting up components. Make sure you use the correct connecting cables.
- Technical Audio Devices, Inc. is not responsible for any accidents or damage that result from improper installation, misuse or modification of the product, or natural disasters.

Caution: in use

- Do not allow the speaker to output distorted sound for long periods of times. This is an indication of using excessive power and can result in a fire hazard.
- Do not sit or stand on the speaker, or let children play on the speaker.
- Do not put large or heavy objects on top of the speaker.
- Do not place magnetic objects such as screwdrivers or iron parts near the tweeter or midrange. Since the speakers use strong magnets, the objects may be attracted, causing injury or damaging the diaphragm.

IMPORTANT NOTICE

THE MODEL NUMBER AND SERIAL NUMBER OF THIS EQUIPMENT ARE ON THE REAR OR BOTTOM. RECORD THESE NUMBERS IN THE SPACE BELOW FOR FUTURE REFERENCE.

MODEL NO. _____
SERIAL NO. _____

D36-AP9-2_A1_En

For European model



If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

Private households in the member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).

For countries not mentioned above, please contact your local authorities for the correct method of disposal.

By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

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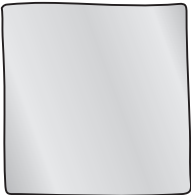
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Parts Included

Check that the following items are located in the accessory kit:

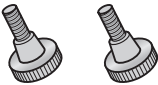
- Shorting links (short x 1; long x 1)

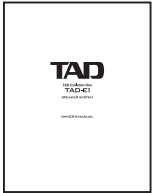

- Cleaning cloth x 1


- Cone-shaped spikes x 3


- Spike bases x 3

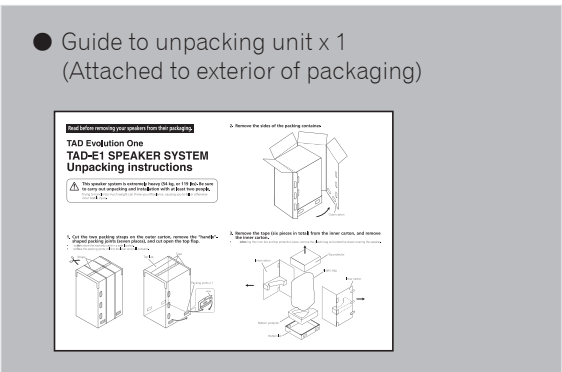

- Auxiliary legs (long) x2


- This Owner's Manual x 1



 WARNING

Store small parts out of the reach of children and infants.
If accidentally swallowed, contact a doctor immediately.



 **Note**
Included parts may vary slightly by region.

INTRODUCTION

Inspiring the joy of listening

Technical Audio Devices Laboratories, Inc. (TADL) grew from the spirit to discover technologies to perfectly recreate the sound of live performances with uncompromising craftsmanship. We have developed our philosophy from a 35 year history of supplying speakers to the most demanding professionals: those artists and engineers that create the music that we listen to.

At TADL, we are honing our technology to create equipment that reproduces musical sounds that evoke both the energy and impact of live music.

TAD Evolution One Features

The TAD-E1 Speaker System is the product of long years of diligent work, the accumulation of advanced audio and electronics technology, all dedicated to the creation of the highest level of sound quality possible.

1. Coaxial speaker unit with “CST* driver” * “Coherent Source Transducer”

The heart of the system is the Coherent Source Transducer (CST). The tweeter diaphragm is mounted concentrically within the midrange cone and provides a point source of sound from 250 Hz to 100 kHz. It results in creating both time coherency and matched directivity between the midrange and tweeter, producing superbly-controlled radiation patterns and ensuring a perfect spectral balance between the direct and reflected sounds arriving at the listener's ears. The result is more consistent sound throughout the listening room and improved imaging capability.

2. Beryllium tweeter and magnesium midrange diaphragms

The tweeter features a light-weight, highly rigid beryllium diaphragm. Utilizing our proprietary vapor-deposition process. The combination of stiffness, low mass, and high internal damping ensures that the diaphragm resonances are well controlled and placed well above the range of audibility. Magnesium is utilized for the midrange diaphragm. It's combination of stiffness, low mass and durability ensure that the midrange is similarly reproduced with freedom from resonance and distortion.

3. Newly developed woofer diaphragm

A newly developed diaphragm comprised of multiple layers of aramid fibers is used to provide low mass with high rigidity while providing the necessary strength to resist the back pressure created by the enclosure. A one piece cone/center dome construction eliminated the weakness introduced by conventional construction techniques, further enhancing performance.

4. “Silent enclosure” for low resonance

The cabinet is constructed of high-rigidity Baltic birch plywood combined with MDF for high internal loss, achieving a “Silent Enclosure” that combines high strength with low resonance. The enclosure's “teardrop” shaped rear section further reduces unwanted cabinet resonance as a result of the improved stiffness of the curved panels.

5. Network filter with iso-mount (isolated mount) built into base

The E1 system's design incorporates network filters located outside of the main enclosure. Installed with iso-mounts (isolated mounts) within the high rigidity aluminum base, these networks are isolated both mechanically and acoustically from the influence of the main cabinet, ensuring maximum resolution.

Precautions regarding the installation location

Do not install the speaker system in areas exposed to direct sunlight nor near heating appliances. Such conditions may result in shrinkage of the wood materials and finish, leading to deformation of the enclosure, discoloration, or damage to the speakers.

Conditions considered unpleasant by humans are detrimental to speakers as well. Providing a comfortable environment for the speakers will assist them in demonstrating their best performance. Please maintain the usage environment as follows:

Temperature: 15 °C to 25 °C (59 °F to 77 °F)

Relative Humidity: 35 % to 65 % (winter)
40 % to 70 % (summer)

- When using room air-conditioners or stoves to rapidly cool or heat room spaces, take precautions to avoid excessive dehumidification.
- Avoid placing the speaker near areas such as windows, as outside air can cause condensation to occur within the speaker.

Precautions during installation

- The total weight of this speaker system is 54 kg (119 lbs). Before installing, confirm that the installation location is fully capable of supporting this weight.
- Further, when using the spikes, each spike will bear a load exceeding 18 kg (39.7 lbs), potentially leading to the production of marks or depressions in the surface contacted by the spike. In order to avoid such damage, either use the supplied spike bases, or other spike base material with the strength and sufficiently large area to support the spike safely.
- When the spikes are mounted on this speaker system, attempting to move the system may result in scratches or gouges to the floor surface. To avoid such damage, remove the spikes and auxiliary legs before attempting to move the speakers.
- Due to the weight of this speaker system, installation of the spikes while tilting the speaker should be attempted only with the assistance of another person. Whenever performing this installation, take care to prevent pinching of fingers or allowing the speaker system to fall over.

Installation

Installation on floor or rack

This speaker system has been factory equipped with cork pads on the bottom surface, together with short auxiliary legs to prevent tipping, thus allowing the speaker to be installed as-is on a flat surface. Supplied accessories include spikes, spike bases, and longer tip-prevention auxiliary legs. These accessories may be used as needed in accordance with the kind and condition of mounting surface. Select the installation method while taking account of the following issues:

	Installation location	Spikes	Auxiliary legs
Spikes not used	Flat surface	 Cork pads (factory default condition)	 Auxiliary legs (short) (factory default condition)
	Flat surface	  To prevent scratches on the installation surface, use of the spike bases is recommended.	 Auxiliary legs (long) Use these to replace the factory-installed short auxiliary legs.
Cone-shaped spikes	Carpeted floor (so no scratches will be produced), or location where floor scratches are acceptable.	 Use spikes.	

Installing The Spikes

Using the spikes allows secure installation on many mounting surfaces. Screw the spikes into the three aluminum leg holders on the bottom of the cabinet (see Figure 1). Supporting the speaker cabinet on three points in this way provides a secure installation without rocking or wobble, eliminating the need for fine adjustment of the spike height. While referring to the section "Choosing Where To Place The Speakers" (page 9), install the spikes and long auxiliary legs according to the following instructions:

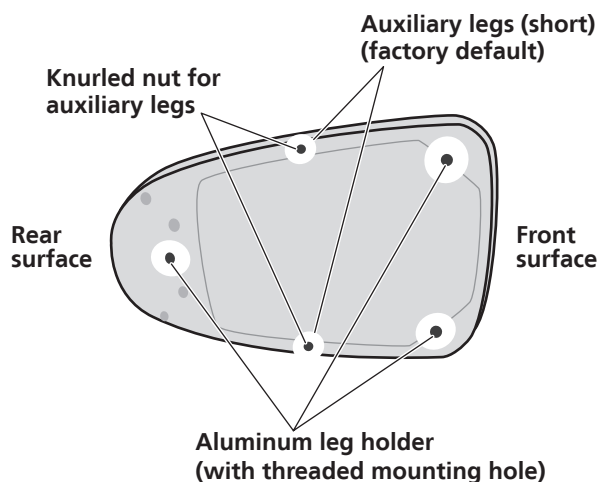


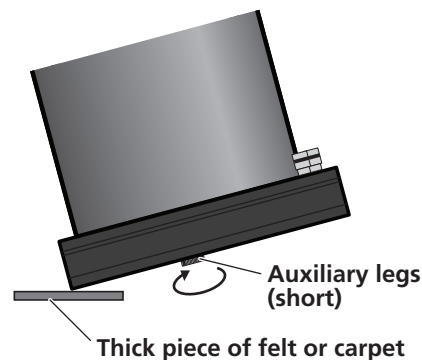
Figure 1: Position of threaded holes for aluminum legs and auxiliary leg knurled mounting nuts.

Spike installation instructions

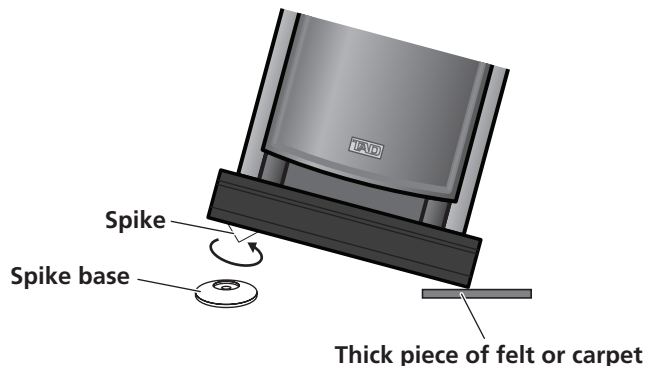
The weight of this speaker system is 54 kg (119 lbs). As a result, installation of the spikes while tilting the speaker should be attempted only with the assistance of another person. Whenever performing this installation, take care to prevent pinching of fingers or allowing the speaker system to fall over.

In addition, to prevent scratching of the floor surface when tilting the speaker system, place a thick piece of felt or carpet under the speaker edge on the side in the direction of tilt.

1. Tilt the speaker toward the front and unscrew the right and left short auxiliary legs.

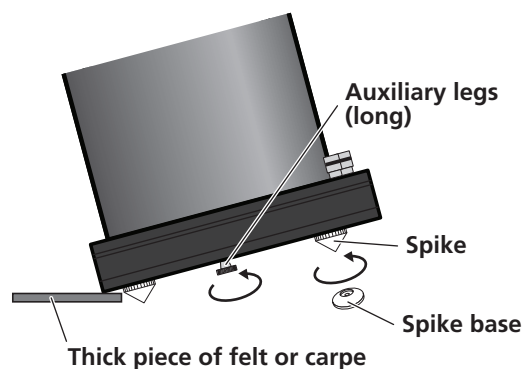


2. Tilt the speaker toward the right and screw a spike into the left-side aluminum leg holder. When using spike bases, place a spike base on the floor underneath the spike.



3. In the same way as for step 2, tilt the speaker toward the left and screw a spike into the right-side aluminum leg holder. When using spike bases, place a spike base on the floor underneath the spike.

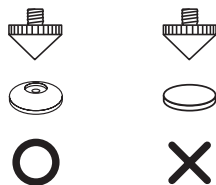
4. Tilt the speaker toward the front and screw a spike into the rear aluminum leg holder. When using spike bases, place a spike base on the floor underneath the spike. Finally, install the long auxiliary legs.



5. Refer to the accompanying section "Adjusting the auxiliary legs" and **adjust the height of auxiliary legs** as necessary.

⚠ WARNING

- Be sure to fully screw in the spikes and auxiliary legs.
- When using spikes, always be sure to remove the factory-installed short auxiliary legs and replace them with the long auxiliary legs. Failure to replace the short auxiliary legs will prevent the anti-tipping design from fulfilling its purpose.
- Be sure to place the spike bases as shown, with the depression facing upward toward the spike.



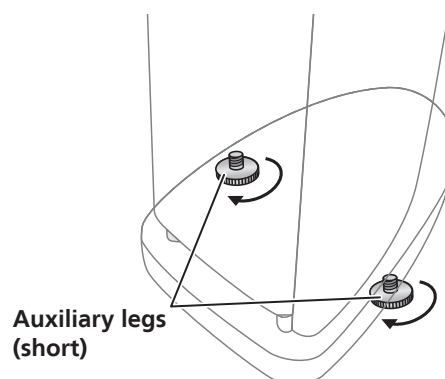
- To prevent dangerous tipping, always use the correct auxiliary legs.
- Do not use the auxiliary legs if they are adjusted to protrude farther than the spikes.
- After installing the spikes, consult the accompanying instruction section "Adjusting the auxiliary legs" (on the right) and adjust as required.

Adjusting the auxiliary legs

To help prevent the speaker system from tipping over, two types of auxiliary legs are provided. Consult the adjustment instructions in order to eliminate unstable rocking on the floor surface.

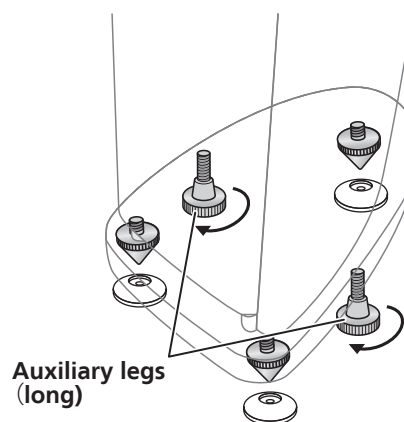
<When spikes are not used>

Rotate the auxiliary leg's knurled nut to set the length of the auxiliary leg so it is in contact with the mounting surface and thus eliminate rocking.



<When spikes are used>

Rotate the auxiliary leg's knurled nut to set the length of the auxiliary leg so it is in contact with the mounting surface and thus eliminate rocking.



⚠ WARNING

- To prevent dangerous tip-over, always adjust the auxiliary legs correctly.
- After adjusting the auxiliary legs, gently press against the sides of the speaker system and confirm that it sits securely without rocking on the mounting surface.

Removing The Grille

To remove the speaker grille, hold the grille at right and left edges and pull straight off. To replace the grille, orient the grille with the speaker's front surface, then align the holes in the back of the grille with the pins on the front of the woofer and press into position.



Figure 2. Removing the grille from the TAD Evolution One speaker system

Choosing Where To Place The Speakers

Speaker placement within the listening room will have a great impact upon the total performance of TAD Evolution One speaker system in terms of bass performance, tonal accuracy, and imaging. All rooms are different and so this section is intended as a guide only. Experimentation in your room will yield optimum results.

Begin by placing the rear of the speakers approximately one to two feet in from the front walls and the sides one to two feet in from the side walls of your listening room, as shown in Figure 3. Your listening position should be roughly equal to the distance between the two speakers. Also, turn the speakers inward so each axis points toward the listening position.

Next, connect the audio system as described in *CONNECTING THE SPEAKERS* on page 10. Then, optimize the speaker placement as described in *OPTIMIZING THE SYSTEM* on page 14.

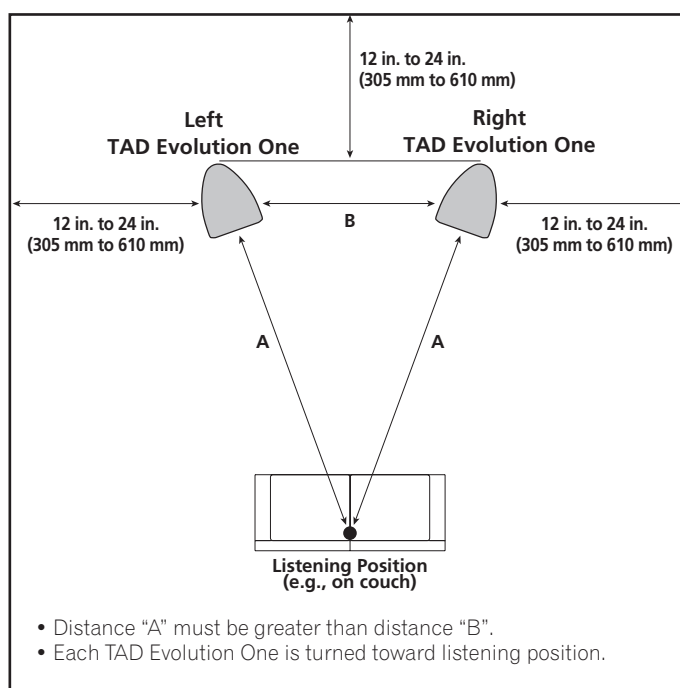


Figure 3. Placement of a pair of TAD Evolution One speakers for stereo music listening

Speaker care

The TAD Evolution One speaker system is crafted with a painted finish. Wipe the cabinet surface gently with the accessory cleaning cloth to remove dust and fingerprints.

⚠ CAUTION

- When dusting the cabinet and grille, do not use cleansers, abrasives or chemically impregnated cloths.
- Contact with alcohol, benzene, insecticides or other chemicals may cause peeling or discoloration of the finished surface.

CONNECTING THE SPEAKERS

⚠ CAUTION

- When connecting speakers or other components, always turn off the power to the amplifier, and disconnect the power cord.
- Speaker cables are not furnished with this speaker system, and must be purchased separately.
- So-called “banana plugs” can be used if desired to connect to the speaker’s input sockets.
- When using banana plugs, remove the end cap on the input sockets.
- After connecting the sockets, gently pull on the cords to confirm that each plug is connected securely to its respective socket. Loose connections may result in interrupted sound or noise.
- Do not allow wires from one connector or cord to touch those from another, since excessive load may be applied to the amplifier, causing the amplifier to stop operating or be damaged.
- If the polarity (+/-) of either right or left speaker is mistakenly reversed when connected to the amplifier, the speakers will be unable to produce proper stereo phase effect.

Single-Wire Connections

For single-wire connections, connect the high- and low-frequency sections of the crossover network with the shorting link that was included with this unit, then connect the (+) wire from your amplifier to either red binding post and the (-) wire from your amplifier to either black binding post, as shown in Figure 4.

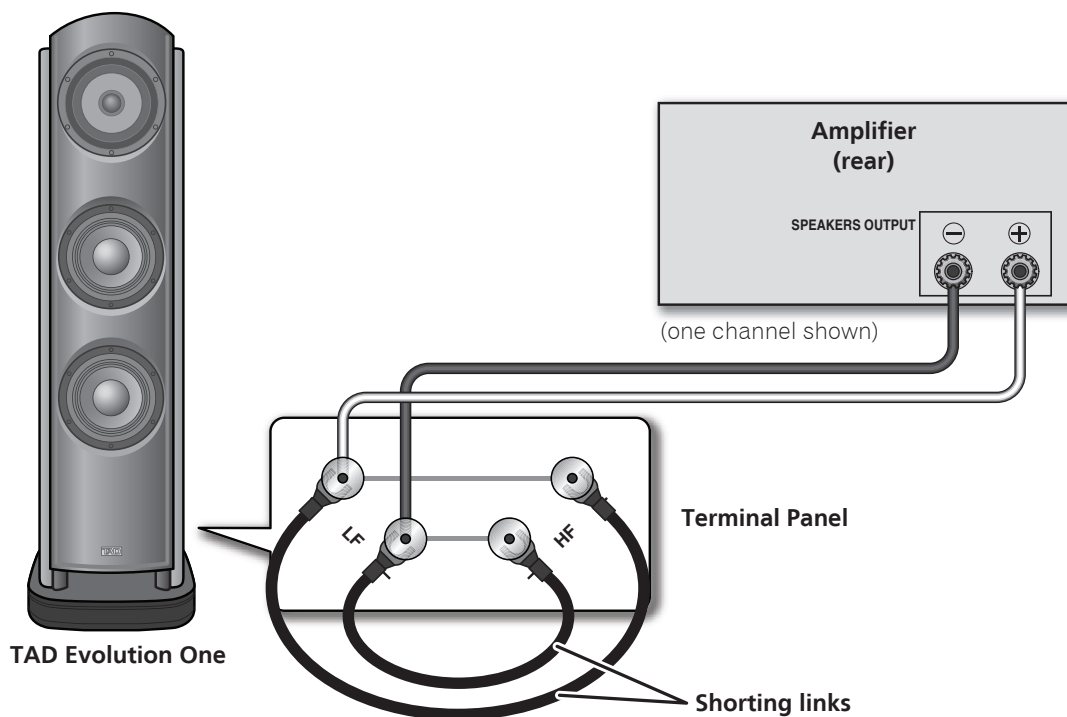


Figure 4. Connecting a TAD Evolution One speaker in a single-wired system

Bi-Wire Connections

In a bi-wiring connection, you independently plug in the loudspeakers running from the amp to their respective high- and low-frequency plugs.

Connect one set of wires to the bottom set of binding posts (bass driver-specific network). Then connect a second set of wires to the top binding posts (CST-specific network). Next, connect both sets of wires to the speaker terminals on your amplifier. Take care to connect both (+) wires to the (+) amplifier terminals and both (–) wires to the (–) amplifier terminals, as shown in Figure 5.

⚠ CAUTION

- Remove the shorting links before connecting speaker cables in bi-wiring connections.

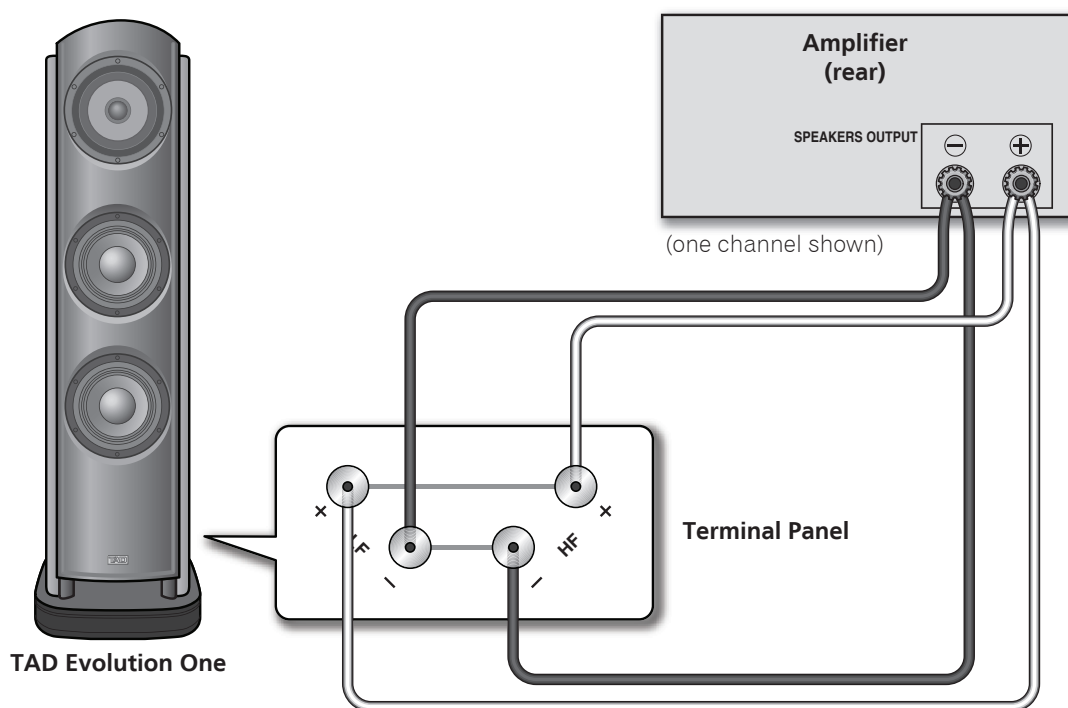


Figure 5. Connecting a TAD Evolution One speaker in a bi-wired system

Bi-Amplification Connections

Bi-Amplification involves using separate amplifiers to power the speakers' low-frequency range (woofer) and high-frequency range (CST). Two connection methods are possible, the "vertical bi-amp" method and "horizontal bi-amp" method.

WARNING

- Remove the shorting links before connecting speaker cables in bi-amplification connections. Failure to do so may result in damage to your amplifiers.

Vertical Bi-Amping

With this configuration, identical stereo amplifiers are used for each speaker. One channel of each amplifier drives the low frequency section and the other channel drives the high frequency section, as shown in Figure 6. Connect one set of wires and amplifier channel to the bottom set of binding posts (bass driver-specific network). Then connect a second set of wires and the other amplifier channel to the top binding posts (CST-specific network). Take care to connect both (+) wires to the (+) amplifier terminals and both (–) wires to the (–) amplifier terminals.

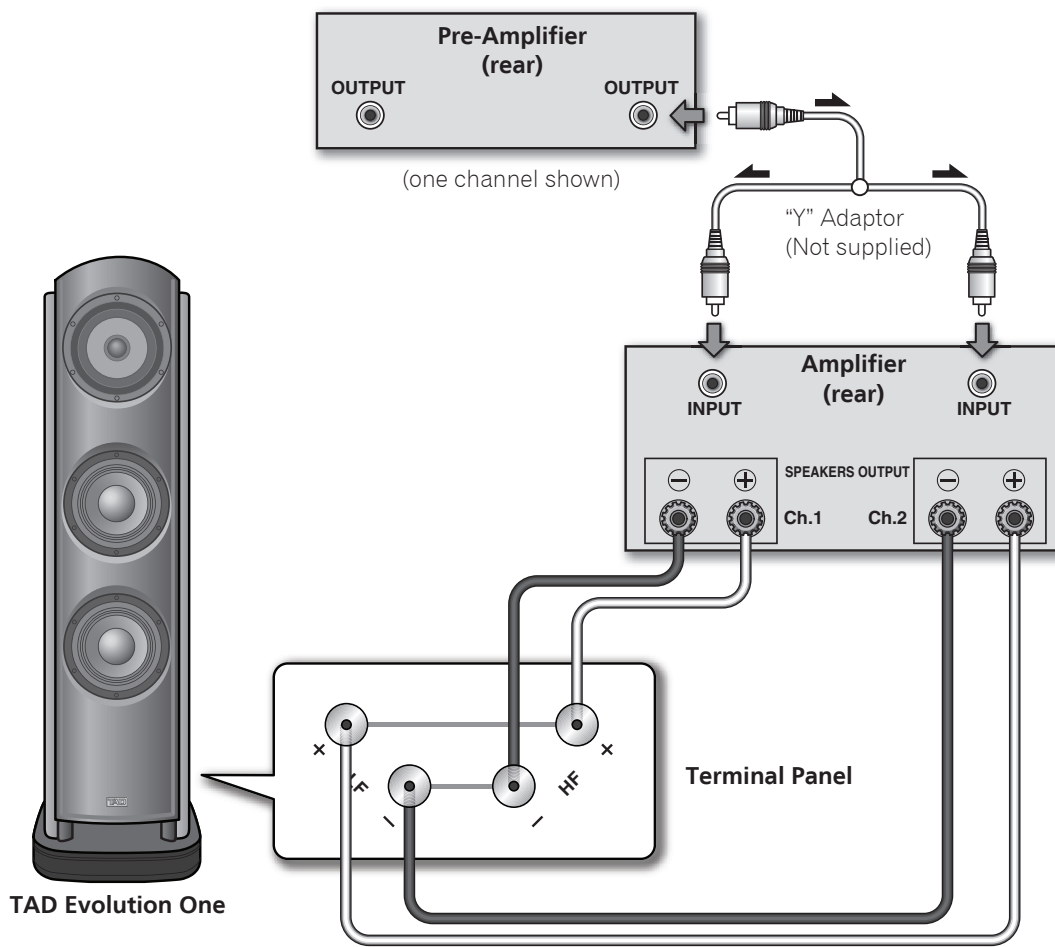


Figure 6. Connecting a TAD Evolution One speaker in a vertical bi-amplified system

Horizontal Bi-Amping

With this connection method, different stereo amplifiers are used to power the speaker system's low-frequency (woofer) range and high-frequency (CST) range. As shown in Figure 7, each channel on one of the amplifiers is used to drive the speakers' low-frequency range, while each channel of the other amplifier is used to drive the high-frequency range of the two speakers.

In order to use this method, each of the amplifiers must possess the same gain value. If the two amplifiers have different gain values, an imbalance will occur between the playback levels of the low-frequency and high-frequency ranges. Consult your dealer for further information.

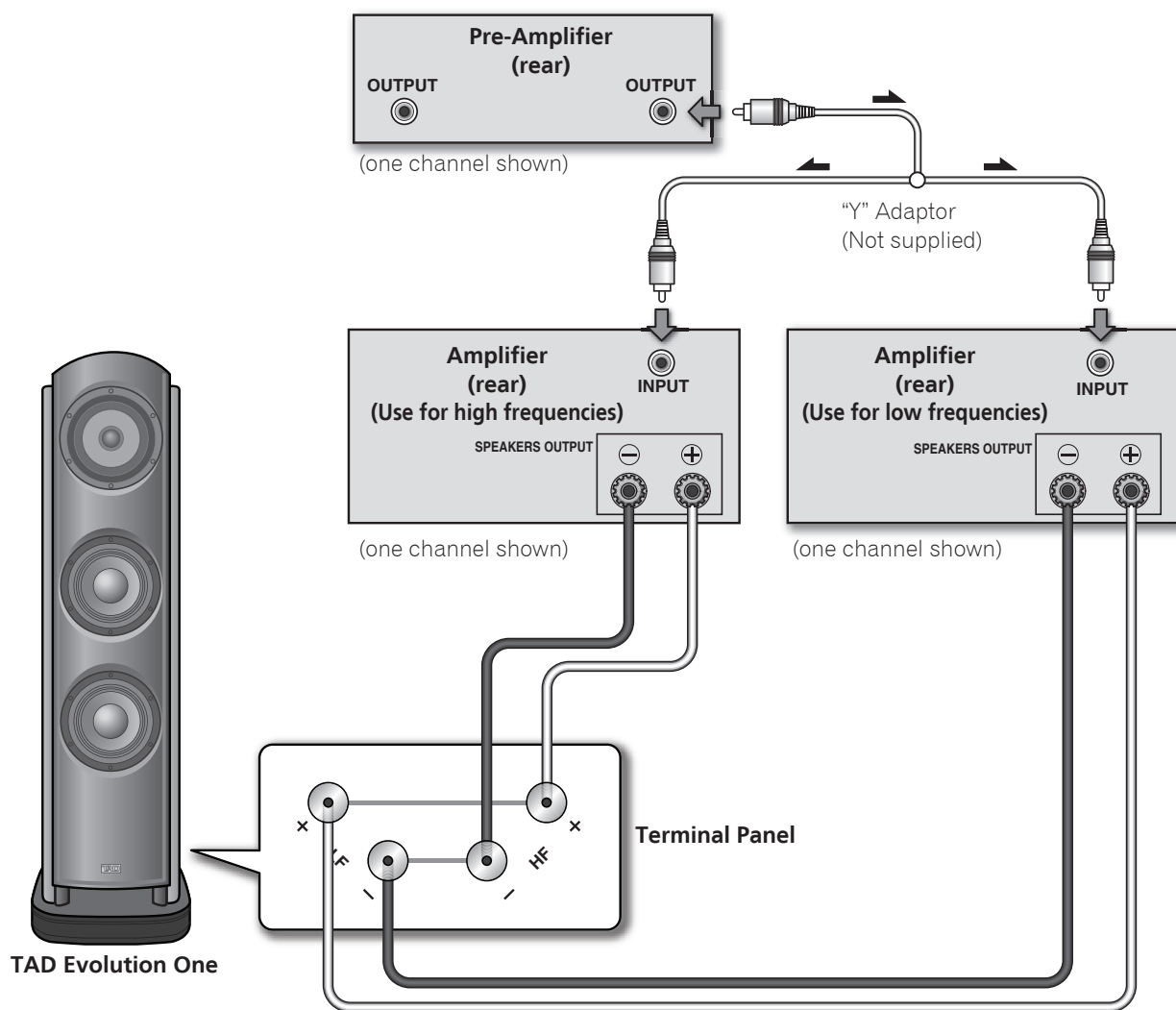


Figure 7. Connecting a TAD Evolution One speaker in a horizontal bi-amplified system

OPTIMIZING THE SYSTEM

Improving Bass Performance

Select a music track with well-recorded bass, such as acoustic string bass. Listen for all the bass notes having roughly equal level. If any notes jump out at you more strongly than others, try moving the TAD Evolution One speaker system until you get the most even progression of the notes.

Typically, moving them towards the walls will increase low bass output, but can result in more unevenness higher up the musical scale. Moving them closer to the side walls will not produce the same effect as moving closer to the back wall, so try experimenting moving both ways for the most pleasing sound. Also listen to drum sounds. The kick drum should sound tight and fast, without low-frequency boom. Changes in speaker position of as little as a few inches can have a large effect upon bass performance, so take time and try many positions.

A useful tip to speed up the process is to have a partner move around the room while talking. Listen to where the voice sounds most natural, without added chestiness, and position the speaker system in that location.

Improving Imaging

Now select music with a strong center image. Listen for that image to be exactly centered between the speakers, and to be well-focused. If the image is unclear and spreads wide, the side walls are probably creating strong reflections. Try moving the speakers closer together to reduce this effect. If this brings them too close, try instead toeing in the speakers so that the axis crosses in front of the listening position. Because of the superior off-axis performance of the CST driver, the strength of the side-wall reflections will be reduced, and at the same time, the image will be stabilized and focused.

Now listen to music with well-recorded acoustics. Check that the image is wide and deep. Limited depth suggests that the speakers are placed too close to the front wall. Try moving them forward.

Final Optimization

You may find that as you move the speakers to optimize one aspect of performance another worsens; for example, trading improved image accuracy for poorer bass response. If this occurs, try moving your listening position. Bass response is governed strongly by both speaker and listening positions, whereas imaging is mostly determined by the speaker position. Therefore, you may find that if optimizing for imaging compromises bass, then changing the listening position will bring back bass performance.

The room characteristics will also have a profound influence upon the sound. *Live* rooms, with few soft furnishings and hard floors, will impart an artificial sense of spaciousness to the sound but reduce the intimacy and accuracy. Overly *dead* rooms, with lots of furnishing, carpets, and drapes will produce a very dry, lifeless sound and require lots more power to drive the speaker system to adequate sound levels. The optimum is somewhere in-between. Avoid hard, unbroken, parallel walls, especially side walls, as these impart strong flutter-type echoes and will have a bad influence on the imaging. Try and break up long expanses of walls with drapes, wall hangings, or bookshelves, and try not to introduce too much asymmetry into the room layout, as this will also affect the imaging.

Model Name

TAD Evolution One

Model No.

TAD-E1

Design

3-Way reflex loaded, floorstander

Drive units

Bass driver 18 cm (7 1/16 in.) cone x 2
Midrange/Tweeter
.....concentric 14 cm (5 1/2 in.) cone/ 3.5 cm (1 3/8 in.) dome

Performance Data

Frequency Range.....28 Hz to 100 kHz
Crossover Frequencies..... 250 Hz, and 2 kHz
Maximum input power..... 250 W
Sensitivity88 dB @ 2.83 V and 1 m (anechoic conditions)
Impedance 4 ohms

Physical Data

Weight 54 kg (119 lbs)
Dimensions
Width 334 mm (13 1/8 in.)
Height 1166 mm (45 7/8 in.)
Depth 512 mm (20 3/16 in.)

Supplied accessories

Guide to unpacking unit (Attached to exterior of packaging)

Accessory kit

- Shorting links (short x 1; long x 1)
- Cone-shaped spikes x 3
- Spike bases x 3
- Auxiliary legs (long) x2
- Cleaning cloth x 1
- This Owner's Manual x 1

Note

Included parts may vary slightly by region.

The specifications and construction details in this and related TAD publications are subject to change without notice. The TAD logo is a registered trademark of Technical Audio Devices, Inc.

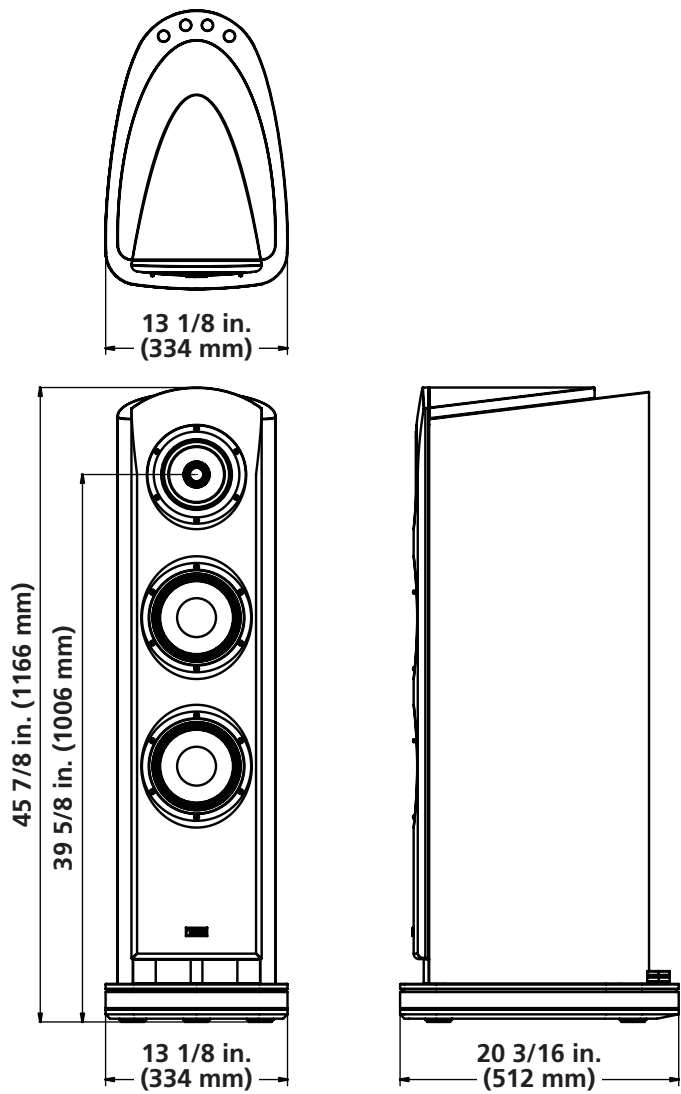


Figure 8. Overall dimensions of the TAD Evolution One speaker system

The Safety of Your Ears is in Your Hands

Get the most out of your equipment by playing it at a safe level – a level that lets the sound come through clearly without annoying blaring or distortion and, most importantly, without affecting your sensitive hearing. Sound can be deceiving. Over time, your hearing “comfort level” adapts to higher volumes of sound, so what sounds “normal” can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

ESTABLISH A SAFE LEVEL:

- Set your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, without distortion.
- Once you have established a comfortable sound level, set the dial and leave it there.

BE SURE TO OBSERVE THE FOLLOWING GUIDELINES:

- Do not turn up the volume so high that you can't hear what's around you.
- Use caution or temporarily discontinue use in potentially hazardous situations.
- Do not use headphones while operating a motorized vehicle; the use of headphones may create a traffic hazard and is illegal in many areas.

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