



THE LAT SERIES
LOSSLESS ACOUSTIC
TRANSDUCERS

OWNER'S REFERENCE

The LAT Series
Lossless Acoustic Transducers
Owner's Reference, v03.0

Krell Industries, Inc.
45 Connair Road
Orange, CT 06477-3650 USA

TEL 203-799-9954
FAX 203-891-2028
E-MAIL krell@krellonline.com
WEBSITE <http://www.krellonline.com>



This product complies with the EMC directive (89/336/EEC) and the low-voltage directive (73/23/EEC).

This product is manufactured in the United States of America. Krell® is a registered trademark of Krell Industries, Inc., and is restricted for use by Krell Industries, Inc., its subsidiaries, and authorized agents. Krell CAST™, Krell Current Mode™, Krell HEAT™, and LAT™ are trademarks of Krell Industries, Inc. All rights reserved. All other trademarks and tradenames are registered to their respective companies.

Contents

List of Illustrations, page iv

Foreword, page v

A Letter from Dan D'Agostino, page 1

SECTION ONE: About Krell, page 2

*The Krell Legacy, Ensuring Maximum Performance,
and Definition of Terms*

SECTION TWO: Unpacking and Placement, page 7

*Opening the LAT-1 and the LAT-C Shipping Crate
Opening the LAT-2 Shipping Box*

SECTION THREE: Anatomy of a Loudspeaker, page 14

Features and Benefits of the LAT Design

SECTION FOUR: Connecting a LAT Series Loudspeaker to Your System, page 22

SECTION FIVE: Krell HEAT: Home Theater Technology, page 23

WARRANTY, page 25

RETURN AUTHORIZATION PROCEDURE, page 27

List of Illustrations

Figure 1, page 11

Two-Channel LAT Placement Scenario

Figure 2, page 14

LAT-1 Front Panel and Grill

Figure 3, page 15

LAT-1 Back and Side Panels

Figure 4, page 16

LAT-C Front Panel and Grill

Figure 5, page 17

LAT-C Pivot Mechanism, Leg Assembly, and Crossovers

Figure 6, page 18

LAT-2 Front Panel and Grill

Figure 7, page 19

LAT-2 Back and Side Panels

Figure 8, page 24

A Krell HEAT (Home Theater) System Placement Scenario

Foreword

The design and manufacture of loudspeakers is a new venture for Krell, but the reasons for making them are not new at all.

For more than two decades, Krell components have been the choice of discerning audiophiles all over the world. Krell customers care deeply about music, and they demand the most lifelike music reproduction possible. Krell Industries, Inc., was founded and exists to meet the expectations of those listeners.

Loudspeakers are an integral link in an audio system. With the right loudspeakers, you hear music with its original definition, precision, and clarity. Krell's lossless technology combines the benefits of enclosure design, materials selection, and electronics design and configuration to ensure that you hear music exactly as it was recorded—nothing more, nothing less.

With the Lossless Acoustic Transducer (LAT), Krell has achieved its goal: a loudspeaker that is uniquely capable of delivering music with the same confidence and accuracy as Krell's other legendary components.

A Letter from Dan D'Agostino

Dear Audio Enthusiast,

Thank you for your purchase of the Lossless Acoustic Transducer.

For more than thirty years I have been designing audio components for audiophiles who share my passion for music and its reproduction. The Lossless Acoustic Transducer (LAT) and the LAT Series of loudspeakers are the result of my ongoing quest to design a complete audio system.

Krell's newest line of audio components (compact disc players, preamplifiers, and power amplifiers) features Current Audio Signal Transmission technology (CAST). With the advent of CAST—for the very first time—a discrete, all-Krell signal chain is a reality. With CAST-equipped components you can hear how an unbroken, current signal path impacts music reproduction. Reference quality playback has always been my dream. CAST has made this dream a reality.

When I looked for, but could not find, a loudspeaker that offered the impact, immediacy, and resolution of CAST components, I decided to build one myself. The first Krell loudspeaker, the LAT-1, uses the best of acoustical engineering, electrical engineering, and materials science to enhance music reproduction.

I have taken care at every turn to ensure that every part of a LAT loudspeaker—the drivers, the crossover, and the aluminum enclosure—has been designed to transmit the whole music program to you; nothing is added or subtracted.

The LAT Series signals a new era at Krell Industries, in which every component in the system is a Krell component. I designed the LAT loudspeakers to reproduce all the power and grace that a Krell system can deliver. A Krell system composed of LAT loudspeakers with my other Krell components provides the most thrilling, lifelike playback I have heard yet. Thank you for your appreciation of my art.

Sincerely,



Daniel D'Agostino
Chief Executive Officer

SECTION **ONE**

About Krell

This section describes the Krell Legacy, Krell's innovative loudspeaker design and technology, and defines key terms used in this reference.

The Krell Legacy

"I design every Krell component to set the standard for workmanship, style, and performance."

Dan D'Agostino

High-end audio is a demanding pursuit—an ongoing quest for excellence in music reproduction that drives equipment manufacturers to strive for the absolute in design and performance. With a keen understanding of this passionate drive, Krell Industries, Inc., was founded in 1980.

Over the past two decades, Krell has earned a distinguished reputation for engineering innovation and product excellence. The company's history is replete with product introductions that have deeply impacted the high-end audio industry. The most discriminating audiophiles and product reviewers have consistently recognized Krell components for standard-setting performance.

The Lossless Acoustic Transducer (LAT) represents the next era at Krell Industries—the era of loudspeaker design and manufacture—which will join the ongoing legacy of Krell amplifiers. For two decades, Krell C.E.O. Dan D'Agostino has built amplifiers legendary for their ability to deliver optimum performance for any loudspeaker. This experience has yielded invaluable insights about the nature of loudspeaker design, which Krell has characteristically incorporated into the LAT Series.

The LAT Series of Loudspeakers

The LAT-1, a reference-caliber loudspeaker, employs an all-aluminum enclosure that remains sonically inert, with a baffle that absorbs vibrations and houses custom-made drivers, and a robust, high-power crossover—a loudspeaker capable of handling the legendary power of Krell amplifiers, while maintaining pinpoint accuracy and resolution.

The LAT-C, the first high performance center channel, is manufactured with all of the crossover, enclosure, and driver technologies of the LAT-1. Designed to be operated as a full-range loudspeaker, the LAT-C center channel loudspeaker perfectly complements the LAT-1. Together, these loudspeakers form the most extraordinary home theater loudspeaker system available.

The magnetic shielding and horizontal driver array of the LAT-C allows for ease of installation above or below a video screen. In addition, multiple locator positions in the stand assembly allow for the optimal on-axis setup of the loudspeaker for almost all scenarios.

The LAT-2 is a vented two-way loudspeaker designed for a two-channel system demanding high quality performance in a small space. This loudspeaker is also the perfect complement to the LAT-1 and LAT-C loudspeakers in a home theater system. Crossover, enclosure, and driver technologies used in the LAT-1 have been applied to the design of the LAT-2.

Unparalleled Sonic Performance

From the first Krell product—the KSA-100—to the present, Dan D’Agostino has continually “pushed the envelope” of performance in his search for greater amplifier power, and now, loudspeaker response. His exploration of technologies, driven by his never-ending quest to elevate the standard of excellence, has resulted in breakthrough audio designs. Over the years, the Krell line of power amplifiers, including benchmark products such as the KRS-100, KRS-200, and the Audio Standard models, has established a legacy of unparalleled sonic performance. The LAT Series brings the Krell level of performance to the loudspeaker.

Dan D’Agostino remains committed to the development of new designs and technologies. And the Krell legacy will continue to evolve with products that deliver innovative engineering, perfection in build quality, and outstanding audio performance.

Ensuring Maximum Performance

The function of the LAT Series of loudspeakers is to reproduce the full spectrum of the music program with absolute fidelity, and to deliver its full emotional impact without coloration — an exact reproduction of the audio amplifier's output signal.

The Krell Lossless Acoustic Transducer (LAT) is the latest innovation in a long line of Krell components. The innovative technologies and design of the LAT Series of loudspeakers includes sophisticated crossover networks, a precisely machined enclosure, and drivers designed to efficiently transmit power while negating distortions.

Innovative Loudspeaker Technology and Design

Crossover

The LAT-1 and LAT-C crossovers feature robust construction that divides the circuit among three discrete circuit cards—one each for the woofer, midrange, and tweeter networks. The LAT-2 loudspeaker has a two-way crossover design, with the woofer and tweeter together on a single circuit board. Each printed circuit board for a LAT loudspeaker is fashioned of 1/8-inch fiberglass with 4-ounce copper traces for superior current flow. Air core inductors and banks of potted WIMA capacitors ensure tight tolerances and high linearity during high power levels.

Enclosure

Continuing in the tradition of the Master Reference Subwoofer, a LAT Series loudspeaker enclosure is constructed entirely of aluminum. "Aluminum is the best material for the job," C.E.O. Dan D'Agostino explains. "Other than concrete and lead, which are not practical choices, aluminum is the only material that possesses the ideal combination of structural rigidity and resonance damping characteristics. Within the audio passband, our cabinets are sonically inert—something you cannot say about any wood or wood derivative."

Krell's knowledge of aluminum extrusion technology has yielded an enclosure that is as purposeful as it is beautiful. Computer-optimized geometry eliminates standing wave interference. Rear-firing, tuned ports on the LAT-1 are precision machined. A substantive aluminum baffle, rear plates, bottom, and top comprise an enclosure

that is immune to vibration. Articulating spikes allow the LAT-1 to be precisely leveled for the most accurate imaging and reduced vibration. A special sub-enclosure in the LAT-1 and LAT-C houses the drivers for the midrange and the tweeter. This computer-modeled, welded aluminum case effectively isolates the midrange and tweeter from the main enclosure while providing an ideal operating environment for the midrange drivers.

The LAT-C enclosure is fashioned out of solid aluminum billet and extrusion, creating an operating environment for the drivers that is free of induced vibrations. The loudspeaker has a special advantage in the crucial midrange frequencies: it is optimized for center channel data reproduction, or dialogue, the single most important job of a center channel speaker. The LAT-C maintains the voice matching necessary to recreate seamless multi-channel front staging. Heard through the LAT-C, dialogue is natural sounding and clearly distinguishable from the rest of the audio program.

The LAT-2 construction is based on the same engineering principles that distinguish the LAT-1. The all-aluminum enclosure features wall thickness ranging from 0.75 to 1.0 inch. The curvature of the cabinets is designed to absolutely minimize the effects of internal standing waves and external high-frequency diffraction. The vented cabinet of the LAT-2 features two rear bass ports. Resembling the LAT-1 ports in design, the LAT-2 ports are precisely dimensioned, flared, and positioned with respect to the woofer to eliminate turbulence while providing the correct acoustical loading.

Drivers

The LAT-1 and the LAT-C tweeters have a dual concentric design, with very low ultrasonic resonance and a response beyond 50 kHz. The segmented cones of the midrange driver reduce self-induced resonance. This midrange driver also features a cast magnesium frame with low profile spars in a radial design that reduces reflections. An asymmetrical spider lowers distortion. The woofers, custom made for Krell and matched specifically to the enclosure, are operated without attenuation for maximum system efficiency and power transmission.

The LAT-2 tweeter is identical to the LAT-1 tweeter, and the 7-inch (18 cm) mid-bass driver features the same multifaceted cone construction and proprietary suspension design as the midrange drivers in the LAT-1. This advanced driver design simultaneously ensures extraordinary bass reproduction and outstanding midrange accuracy.

Definition of Terms

Following are the definitions of key terms used in your owner's reference manual.

Technology

- Krell Current Mode*** A proprietary Krell circuit topology in which the audio gain stages of a component operate in the current rather than voltage domain. This unique technology provides the component with exceptional speed and a wide bandwidth.
- Krell HEAT*** Krell HEAT, or High End Audio Theater, is a design application incorporated into Krell components to enhance multi-channel home entertainment systems. A Krell HEAT system is an integrated home theater system consisting of a state-of-the-art Krell preamp/processor and matching amplifiers and loudspeakers that reproduce two-channel and multi-channel sources with audiophile sound quality, placing listeners in the middle of a lifelike environment.
- Crossover*** The crossover consists of a dedicated circuit board for each group of drive units (woofers, midranges, and tweeters). Each crossover network employs impedance correction circuitry that flattens impedance curves and damps the resonance of the drive units it controls, allowing the filter circuits to operate under nearly ideal conditions.



SECTION **TWO**

Unpacking and Placement

This section describes the procedures for safely unpacking and placing your Lossless Acoustic Transducers.

Opening the LAT-1 and the LAT-C Shipping Crate

The LAT-1. Each LAT-1 shipping crate measures 24 in. (61 cm) wide by 61 in. (155 cm) high by 24 in. (61 cm) deep and contains one LAT-1. The combined weight of the crate and loudspeaker is approximately 340 lbs. (155 kg). Each LAT-1 loudspeaker measures 12.5 in. (31.8 cm) wide by 54.6 in. (138.7 cm) high by 14 in. (35.6 cm) deep with an estimated weight of 270 lbs. (122.7 kg).

The LAT-C. Each LAT-C shipping crate measures 44.8 in. (113.8 cm) wide by 28 in. (71.1 cm) high by 23.25 in. (59 cm) deep. The combined weight of the crate and loudspeaker is approximately 300 lbs. (136.4 kg). Each LAT-C loudspeaker measures 40.9 in. (103 cm) wide by 12 in. (30.48 cm) high by 15 in. (38.1 cm) deep with an estimated weight of 200 lbs. (90.9 kg).

Krell recommends that you have three to four people to safely move the loudspeaker to its place in the listening area. Two people are needed to remove the shipping crate top from its base.

The shipping crate is specially designed to open safely and easily. The LAT-1 is enclosed in a protective sleeve and rests on the reinforced base of the crate, and the crate top is fastened to the base with Phillips-head screws. The only tool you need to remove the LAT from the crate is a Phillips screwdriver. See the steps below to unpack the LAT.

To Remove the LAT-1 or LAT-C from the Shipping Crate

1. Locate the screws on the base of the shipping crate (two on each end and three on each side). These screws are circled with black marker for easy identification.
2. Completely remove all screws.
1 person needed

3. With one person grasping each end of the shipping crate, pull steadily straight up. The crate top will slowly slide up and off. Set crate top aside.

2 people needed

The loudspeaker sits in a protective sleeve on the crate base. On top of the loudspeaker is a wooden grill box that is shrink-wrapped.

A packet containing the Owner's Reference and warranty card is affixed to the top of the grill box.

4. Lift the grill box off the loudspeaker and set aside.

1 person needed

5. Carefully lift the loudspeaker out of the crate (do not remove the protective sleeve at this time) and place it on the floor.

3-4 people needed

In the LAT-1 grill box with the grill you will find:

4 stainless steel spikes

1 bubble level

2 binding post knobs

1 7/16 in. nut driver

In the LAT-C grill box you will find:

2 shoulder screws

2 locator bolts

4 socket head cap screws

2 binding post knobs

1 7/16 in. nut driver

Inside the LAT-C crate, at the bottom, there are 2 cardboard boxes containing the loudspeaker feet and legs.

Opening the LAT-2 Shipping Box

The LAT-2. Each LAT-2 shipping box measures 15.8 in. (40.1 cm) wide by 19.3 in. (49 cm) high by 20.3 in. (51.6 cm) deep. The combined weight of the shipping box and the loudspeaker is approximately 100 lbs. (45.5 kg). Each LAT-2 loudspeaker measures 10.5 in. (26.7 cm) wide by 14 in. (35.6 cm) high by 15.5 in. (39.4 cm) deep with an estimated weight of 70 lbs. (31.8 kg).

To Remove the LAT-2 from the Shipping Box

The LAT-2 shipping box includes a 2-part cardboard assembly: 1) an interior cardboard box with flaps and 2) a cardboard cap which surrounds the interior box.

To open the shipping box easily and safely, follow these steps:

1. Position the box so that the box opening instructions are on the top.
2. Cut the 4 bands of plastic strapping that secure the shipping box.
3. Lift the cardboard cap straight up and off the shipping box, exposing the interior cardboard box, a shallow box with generous flaps. The flaps are secured by plastic strapping. A packet containing the Owner's Reference and warranty card is affixed to a top layer of foam packing.
4. Cut the band of plastic strapping and fold the flaps open.
5. Remove the top layer of foam packing, exposing the LAT-2 in its protective sleeve, surrounded by foam packing.
6. Remove the foam packing by gently lifting the packing straight up and out of the interior cardboard box. You now see the entire LAT-2 in its protective sleeve, positioned on a bottom layer of foam packing.
7. Lift the LAT-2 out of the shipping box by grasping the base of the loudspeaker sides. Avoid contact with the grill. Do not use the binding posts to lift the loudspeaker.

Notes

The LAT-2 weighs 70 pounds. It may be more convenient for two people to lift the loudspeaker out of the shipping box.

An optional pedestal is available for the LAT-2.

Placement

All loudspeakers interact with the environment in which they are placed. Loudspeaker performance is influenced by the size, shape, and contents of the listening room as well as the placement of the loudspeaker within the room.

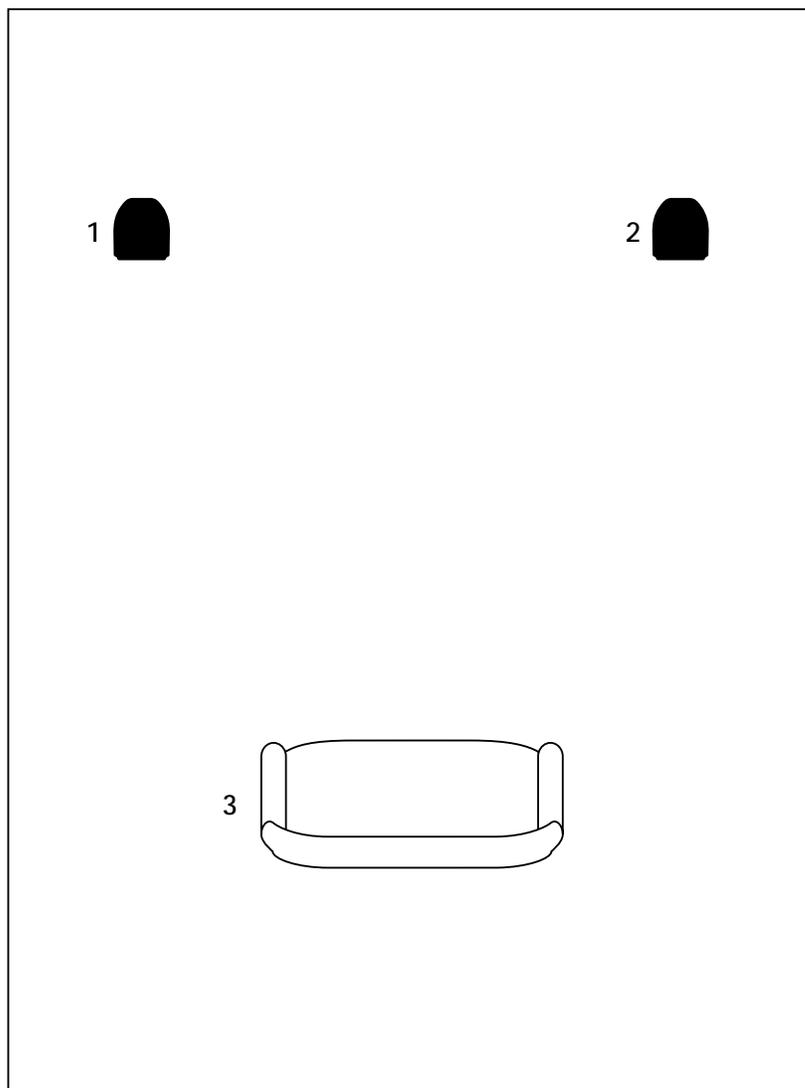
Krell encourages you to experiment and find the loudspeaker placement that reflects your personal preference. A LAT loudspeaker is simple to set up and use. Its unique solid aluminum enclosure produces a soundstage that is both deep and wide, with little or no toe-in required. **Figure 1 on page 11** illustrates a representative placement scenario. Note the position of the loudspeakers with respect to the rear and side walls. The closer a loudspeaker is to the rear wall, the more pronounced the bass response. To minimize unwanted reflected sound and maximize the width and depth of the soundstage, be careful not to set the loudspeakers too close to the side walls.

When the loudspeakers are in position, you are ready to attach the loudspeaker grill, *see page 12*, and install the spikes, *see page 13*.

3-4 people needed

Figure 1 Two-Channel LAT Placement Scenario

A representative placement scenario for a pair of LAT-1 loudspeakers or a pair of LAT-2 loudspeakers.



- 1 Left Front Loudspeaker
- 2 Right Front Loudspeaker
- 3 Optimum Listening Position

To Attach the Loudspeaker Grill

Each LAT is equipped with a snap-on grill, which consists of the grill cord strung between two metal bars. To install the grill, follow these steps.

1. Lift the loudspeaker grill from the grill box, using the grill bars on each end.
2. Locate the end of the grill. On the LAT-1 and LAT-2 loudspeakers, one end of the grill will be placed at the base of the loudspeaker; the other end will be placed at the cap. On the LAT-C loudspeaker, one end of the grill will be placed on the left cap and the other end will be placed on the right cap.
3. Gently guide the grill locator pins into the two holes on the loudspeaker base.
4. Grasp the remaining grill bar, allowing it to rest between the thumb and forefinger of each hand.
5. Pull firmly to stretch the grill cords, until the grill locator pins align with the two holes on the loudspeaker cap.
6. Gently guide the pins into the holes. You hear a click when the grill is in place.

Note

Be careful not to scratch the surface of the loudspeaker with the grill locator pins.

To Detach the Loudspeaker Grill

The loudspeaker grill remains in place while you play music. However, if you wish to move the loudspeaker, first detach the loudspeaker grill.

1. Grasp the grill bar that is attached to the loudspeaker cap.
2. Gently pull the bar straight out, so that the grill locator pins slide out of the holes on the loudspeaker cap.
3. Remove the grill bar from the base of the loudspeaker.

To protect the grill, Krell recommends placing it back in the grill box until you are ready to reinstall it.

Note

The grill should be cleaned periodically to remove accumulated dust. Gently wipe the grill from top to bottom using a soft, dry, lint-free cloth. Do not use rubber conditioner or solvent.

To Install the Spikes on the LAT-1

Each LAT-1 is shipped with 4 stainless steel spikes: two rear articulating spikes (with knob) and two (one long and one short) front stationary spikes (no knob). Use these spikes to stabilize and level the loudspeaker. These spikes are particularly important for sound quality if the loudspeaker will be placed on a carpeted floor. The longer front spike is for deep-pile carpeting.

IMPORTANT

Do not install spikes until the loudspeaker has been placed in the listening area.

1. Insert the rear articulating spikes (with knobs) into the holes provided on the back of the loudspeaker base.
2. Turn knobs by hand until they are secure (do not over-tighten).
3. Tilt the loudspeaker back just enough to insert the front stationary spike (no knob).

IMPORTANT

Two people are needed to safely tilt the loudspeaker to install the front stationary spike.

4. Turn the front spike by hand until it is secure (do not over-tighten).
5. Place the bubble level on the loudspeaker cap.
6. Adjust the rear articulating spikes until the bubble indicates the loudspeaker is level.

To Install the Foot, Leg, and Pivot Mechanism on the LAT-C

1. Bolt the socket head cap screws through the screw holes on the foot and into the right leg.
2. Insert the shoulder screw through the right shoulder screw hole on the right leg and into the pivot hole on the right cap and hand tighten.
3. Move to the left side and repeat steps 1 and 2, to install the left leg and left shoulder screw.
4. Adjust the angle of the LAT-C and insert the locator bolt through the leg and into the locator hole in the cap, one side at a time.

SECTION **THREE**

Anatomy of a Loudspeaker

This section describes LAT features and benefits.

Figure 2 LAT-1 Front Panel and Grill

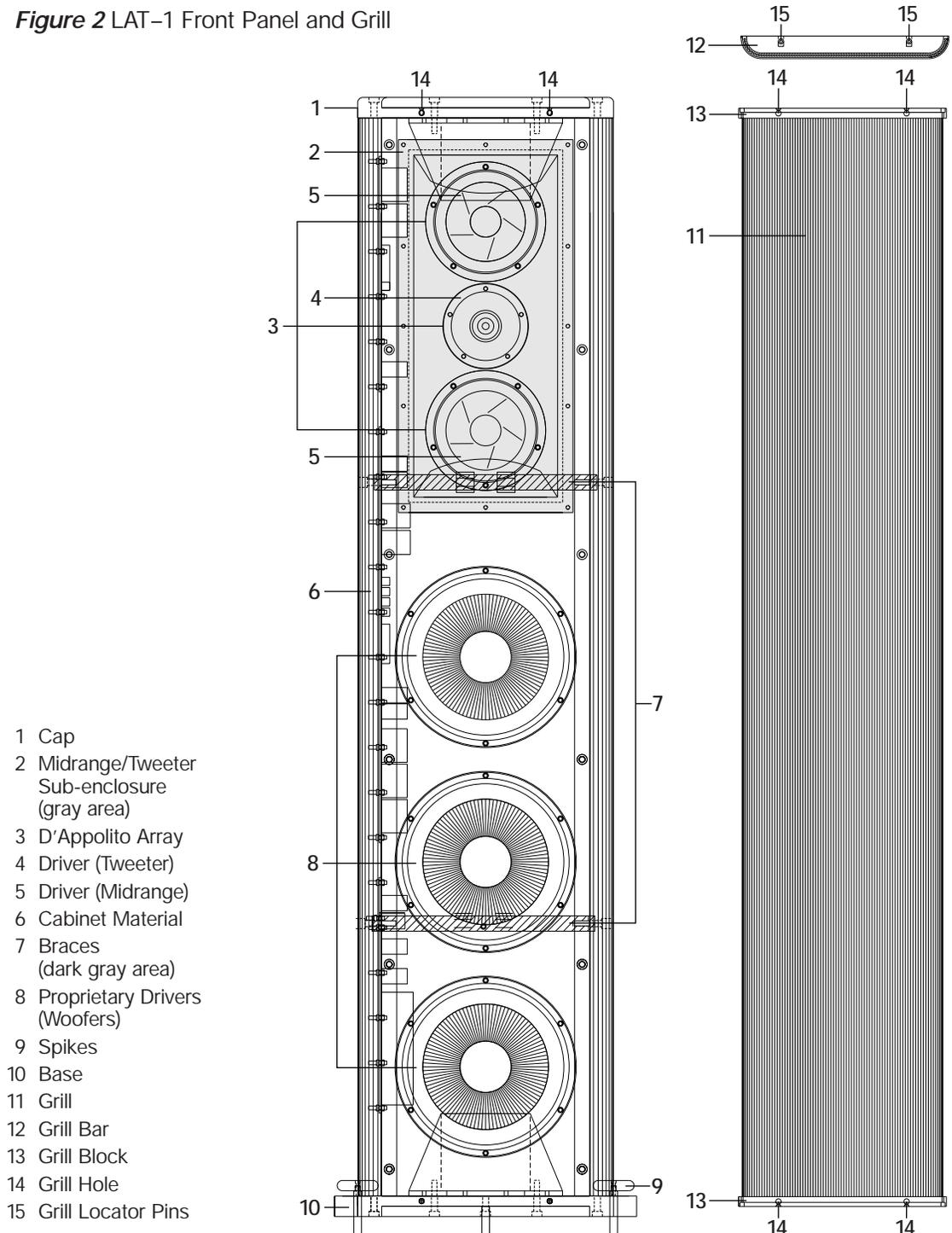


Figure 3 LAT-1 Back and Side Panels

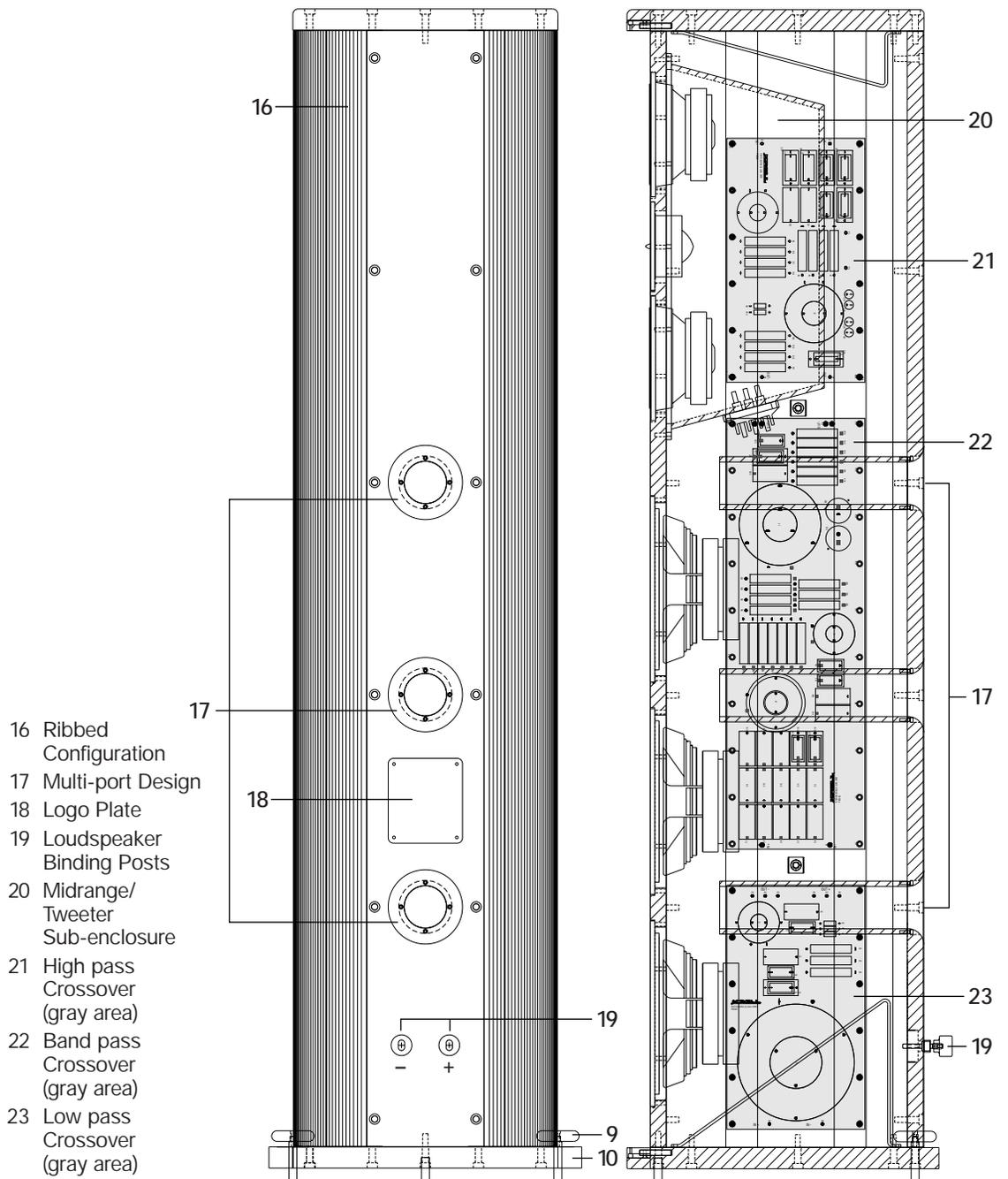
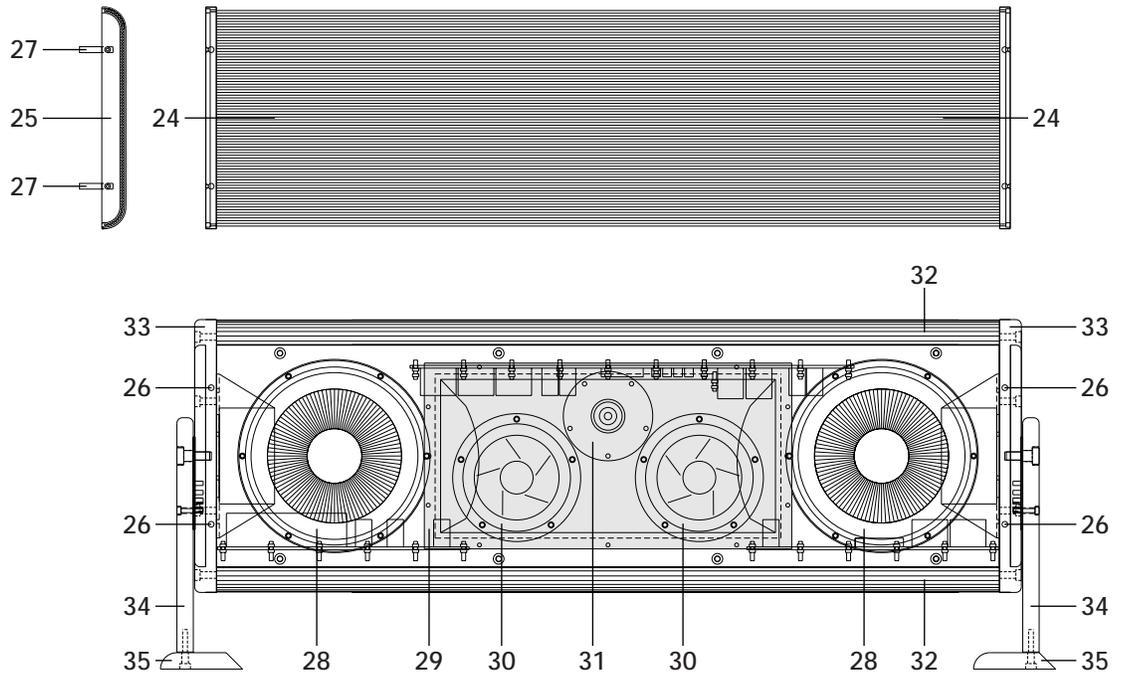
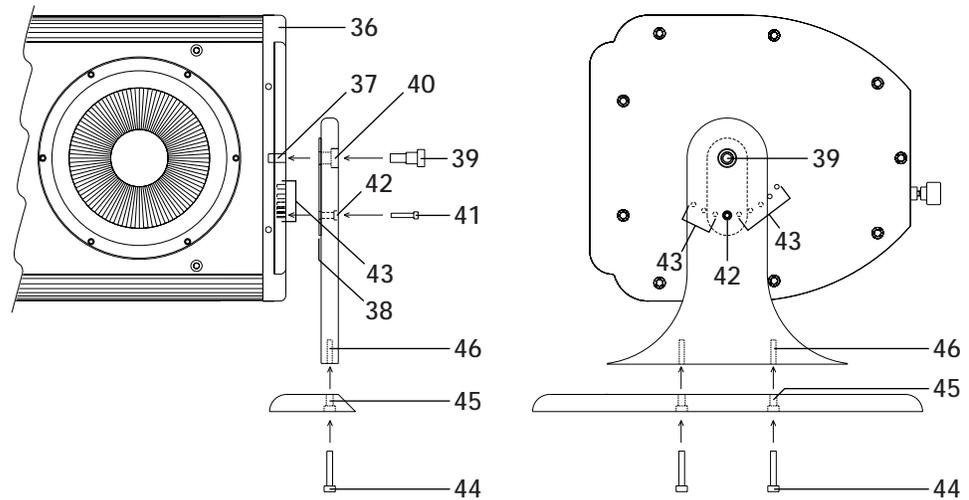


Figure 4 LAT-C Front Panel and Grill

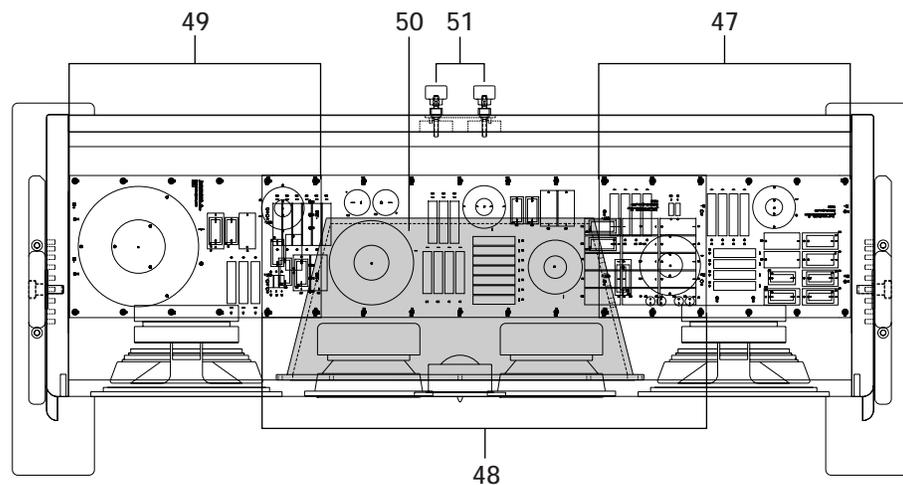


- | | |
|---|----------------------|
| 24 Grill | 30 Driver (Midrange) |
| 25 Grill Block | 31 Driver (Tweeter) |
| 26 Grill Hole | 32 Cabinet Material |
| 27 Grill Locator Pin | 33 Cap |
| 28 Proprietary Driver (Woofer) | 34 Leg |
| 29 Midrange/Tweeter Sub-enclosure (gray area) | 35 Foot |

Figure 5 LAT-C Pivot Mechanism, Leg Assembly, and Crossovers

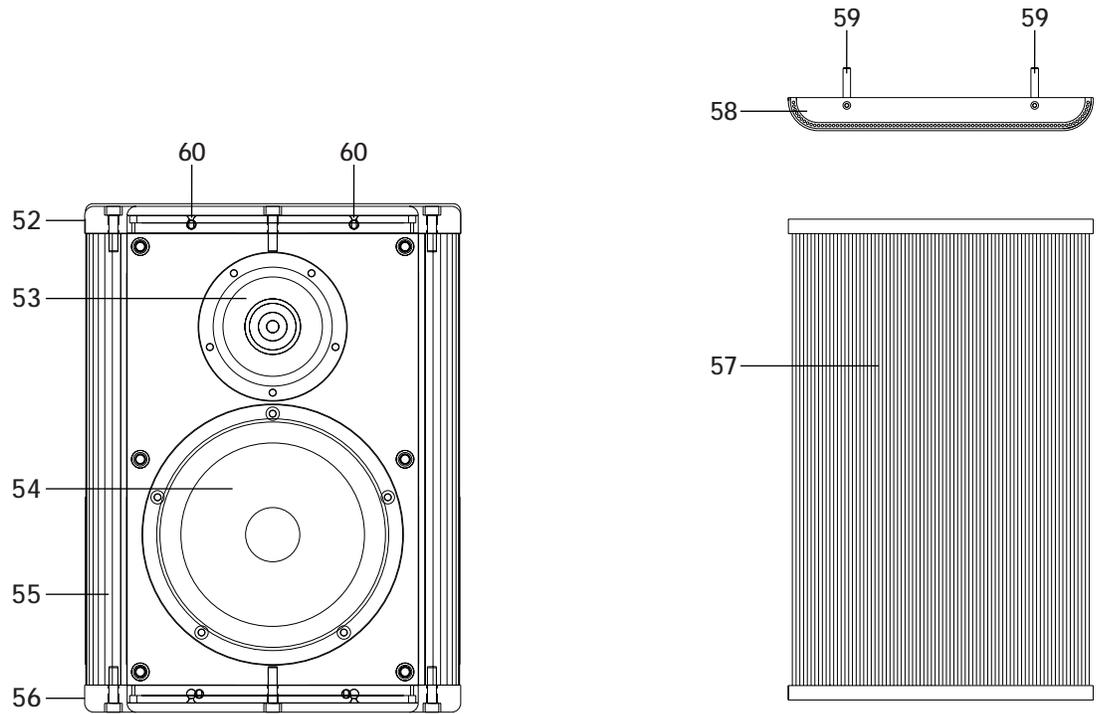


- | | |
|------------------------|---------------------------|
| 36 Cap | 42 Locator Bolt Hole |
| 37 Pivot Hole | 43 Locator Holes |
| 38 Pivot Pad | 44 Socket Head Cap Screws |
| 39 Shoulder Screw | 45 Screw Holes on Foot |
| 40 Shoulder Screw Hole | 46 Screw Holes on Leg |
| 41 Locator Bolt | |



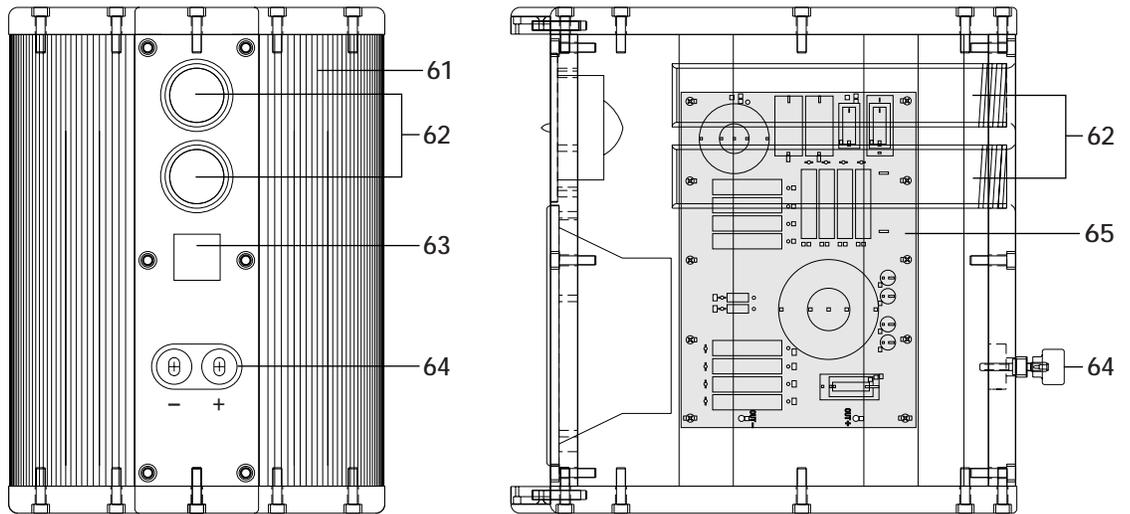
- | | | |
|------------------------|---|------------------------------|
| 47 High pass Crossover | 50 Midrange/Tweeter Sub-enclosure (gray area) | 51 Loudspeaker Binding Posts |
| 48 Band pass Crossover | | |
| 49 Low pass Crossover | | |

Figure 6 LAT-2 Front Panel and Grill



- | | |
|---------------------|----------------------|
| 52 Cap | 57 Grill |
| 53 Driver (Tweeter) | 58 Grill Bar |
| 54 Driver (Woofer) | 59 Grill Locator Pin |
| 55 Cabinet Material | 60 Grill Hole |
| 56 Base | |

Figure 7 LAT-2 Back and Side Panels



- | | |
|-------------------------|---|
| 61 Ribbed Configuration | 64 Loudspeaker Binding Posts |
| 62 Multi-port Design | 65 High pass/Low pass Crossover (gray area) |
| 63 Logo Label | |

Cabinet Material

The LAT sides are constructed of extruded 6063-T5 aluminum. The rigid, dense rear baffle made of 6061-T6 aluminum absorbs any vibration from the driver cones. Using this heavy, inert metal means minimal vibrations—no matter how much power the loudspeakers handle—and thus no loss of sound.

Crossover Design

Each group of driver units (tweeter, midrange, and woofer) on the LAT-1 and LAT-C has its own dedicated crossover circuit board. Each circuit board is made of 1/8-inch fiberglass and has a number of unique elements. To minimize parasitic inductance and resistance, small capacitors are connected in parallel, and air-core inductors are wound with oversize wire. In addition, each capacitor is placed in its own plastic case, making it virtually immune to vibrations and pressure variations. This design allows each drive unit to handle its portion of the music signal without strain, maximizes power delivery, and increases signal linearity while minimizing resistance and inductance. High-current polypropylene film capacitors are used exclusively in the audio signal path.

Similarly, the resistors in the crossover networks are connected in parallel to minimize parasitic inductance and maximize current capacity and power dissipation. Oversized, high-power, metal oxide and wirewound resistors are used exclusively.

All the inductors are air-core types; they suffer from none of the nonlinearities at low signal levels and saturation at high signal levels that iron-core inductors exhibit. All the inductors are wound with oversize wire, reducing parasitic resistance to a fraction of an Ohm. In addition, the inductors in the midrange and tweeter filter networks are wound with Litz wire for extended high-frequency linearity.

Drivers

LAT-1 drivers are custom-built to Krell specifications. The midrange cones have five doped cuts, providing strength without the distortion that occurs when the entire cone is doped. Woofer cones are reinforced with carbon fiber, which adds rigidity and damps cone resonance. The dual concentric tweeter features an innovative waveguide design that increases dispersion around its axis.

Drivers: D'Appolito Array

In the LAT-1, a special midrange/tweeter configuration places the acoustic center at ear level and ensures stereo imaging with pinpoint accuracy. The configuration also provides symmetrical vertical dispersion. As a result, the listening "sweet spot" remains the same whether listeners are sitting or standing.

Loudspeaker Grill Design

The bar and cord design of the loudspeaker grill decreases reflective surfaces and thus improves sound quality. The grill design also matches the ribbed configuration of the loudspeaker body, providing a sleek, unified look.

Midrange/Tweeter Sub-Enclosure

This feature in the LAT-1 and the LAT-C separates the midrange/tweeter and woofers into two discrete physical environments. The midrange and tweeter are enclosed in their own rigid aluminum box that separates them from the woofers, and each unit is bolted to the back of the baffle. Standing waves are eliminated because the midrange and woofer boxes minimize parallel surfaces, and because the baffle's aluminum structure absorbs vibrations. The result is clear, distinct sound in high, mid, and low frequencies.

Multi-port Design

In the LAT-1 and LAT-2, the computer-optimized, multi-port design minimizes compression, which can cause loss of sound, especially in the bass range, at higher output levels. This design allows full excursion of drivers and the resulting depth and range of music reproduction.

Pedestal

An optional pedestal is available for the LAT-2.

Pivot Mechanism

Multiple locator positions in the foot and leg assembly allow for optimal on-axis setup of the LAT-C center channel.

Spikes

Articulating stainless steel spikes included with the LAT-1 loudspeaker allow you to level the loudspeakers. The stationary front spike reduces vibrations, particularly for installations on carpet.

SECTION **FOUR**

Connecting a LAT Series Loudspeaker to Your System

To connect the loudspeaker to your system:

1. Make sure that all power sources and components are off before connecting system components.
2. Neatly organize wiring between all system components. Separate AC wires from audio cables to prevent hum or other unwanted noise from being introduced into the system.
3. Locate the loudspeaker binding posts on the LAT back panel.
4. Connect the loudspeaker cable from the positive binding post on the LAT to the positive channel output on the amplifier. Connect the loudspeaker cable from the negative binding post on the LAT to the negative channel output on the amplifier.

IMPORTANT

Do not disconnect signal cables when the amplifier is on and connected to the loudspeaker. Doing so will cause a loud pop that may damage your components.

Tighten loudspeaker binding posts by hand only.



SECTION **FIVE**

Krell HEAT: Home Theater Technology

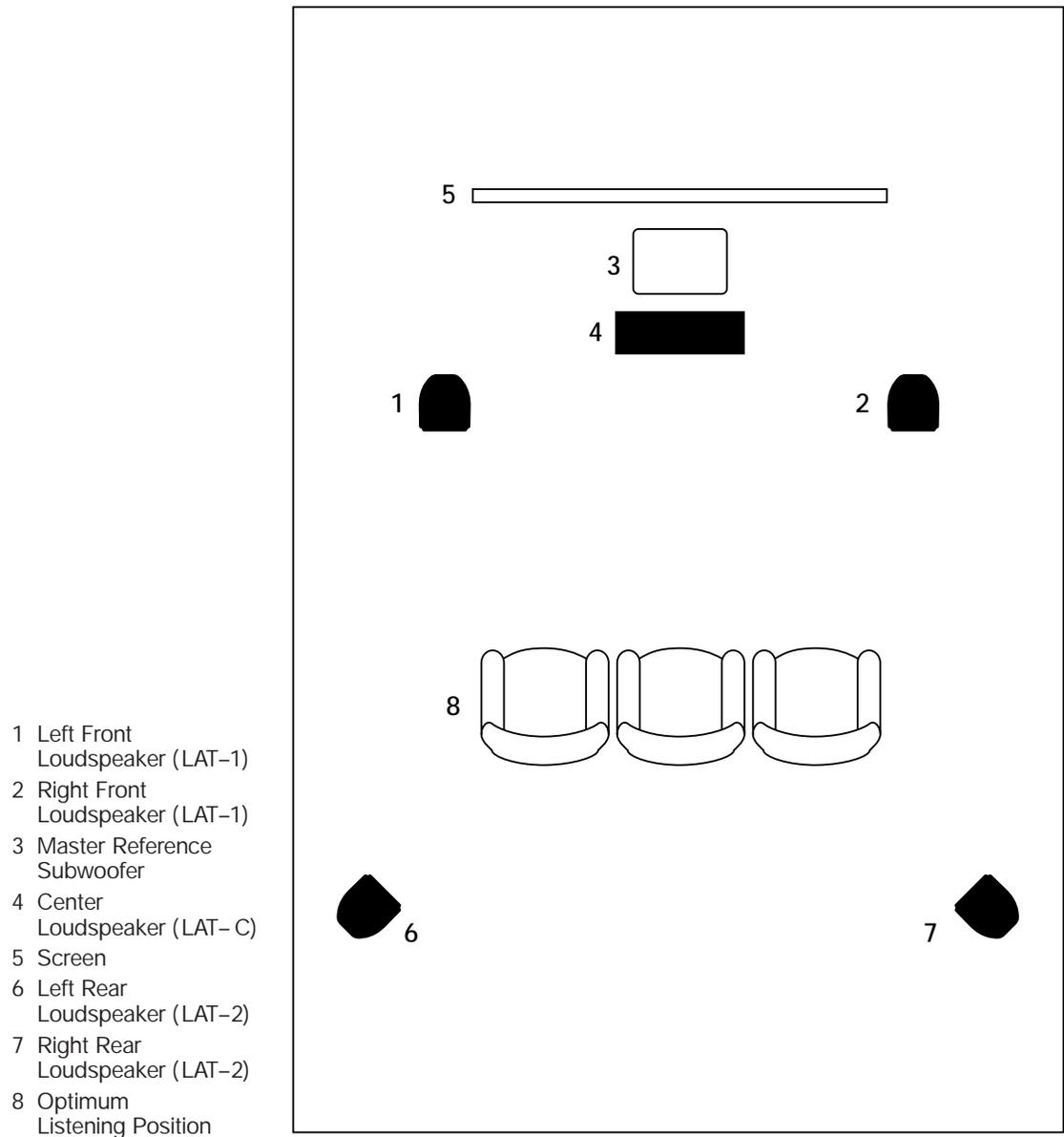
The Krell Lossless Acoustic Transducer (LAT) loudspeakers are part of a whole family of loudspeakers newly designed by Krell. The LAT-C and the LAT-2 are voiced precisely for use with the LAT-1. Together with the Krell Master Reference Subwoofer, these components comprise the High-End Audio Theater (HEAT) loudspeaker, continuing the Krell tradition of making the best high-performance audio technology available for home theater.

Today's home theater soundtracks contain a demanding range of dynamic material, from the softest music or whispered conversation to the roar of a jet take-off. The soundtrack plays a key role in the action seen on the screen and its content is becoming increasingly complex with each theatrical release. LAT loudspeakers address the demands of these soundtracks in three ways: superior power handling, ultra-fast response, and high resolution at low levels.

Krell HEAT provides an electronic transcription of the source material from DVD to amplifier output. The LAT provides the mechanical transcription—faithfully and without coloration—from loudspeaker input to listener. These loudspeakers, driven by Krell amplifiers, guarantee that you will experience the soundtrack of any film just as the director intended.

See **Figure 8**, on page 24, for a home theater placement scenario using Krell Lossless Acoustic Transducers.

Figure 8 A Krell HEAT (Home Theater) System Placement Scenario



Warranty

Each LAT Series loudspeaker has a limited warranty of five years for parts and labor. Should this product fail to perform at any time during the warranty, Krell will repair it at no cost to the owner, except as set forth in this warranty.

This warranty does not apply to damage caused by acts of God or nature.

The warranty described on this page shall be in lieu of any other warranty, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. There are no warranties which exceed beyond those described in this document. If this product does not perform as warranted herein, the owner's sole remedy shall be repair. In no event will Krell be liable for incidental or consequential damages arising from purchase, use, or inability to use this product, even if Krell has been advised of the possibility of such damages.

Proof of purchase in the form of a bill of sale or receipted invoice substantiating that the unit is within the warranty period must be presented to obtain warranty service. The warranty begins on the date of the original retail purchase, as noted on the bill of sale or receipted invoice from an authorized Krell dealer or distributor. Previously owned equipment, when re-purchased from an authorized Krell dealer or distributor, has the balance of the original warranty, based on the original date of manufacture.

The warranty for Krell products is valid only in the country to which they were originally shipped, through the authorized Krell distributor for that country, and at the factory. There may be restrictions on or changes to Krell's warranty because of regulations within a specific country. Please check with your distributor for a complete understanding of the warranty in your country.

If a unit is serviced by a distributor who did not import the unit, there may be a charge for service, even if the product is within the warranty period.

Freight to the factory is your responsibility. Return freight within the United States (U.S.A.) is included in the warranty. If you have purchased your Krell product outside the U.S.A. and wish to have it serviced at the factory, all freight and associated charges to the factory are your responsibility.

Krell will pay return freight to the U.S.A.-based freight forwarder of your choice. Freight and other charges to ship the unit from the freight forwarder to you are also your responsibility.

Krell is not responsible for any damage incurred in transit. Krell will file claims for damages as necessary for units damaged in transit to the factory. You are responsible for filing claims for shipping damages during the return shipment.

Krell does not supply replacement parts and/or products to the owner of the unit. Replacement parts and/or products will be furnished only to the distributor performing service on this unit on an exchange basis only; any parts and/or products returned to Krell for exchange become the property of Krell.

No expressed or implied warranty is made for any Krell product damaged by accident, abuse, misuse, natural or personal disaster, or unauthorized modification.

Any disassembly, component replacement, perforation of chassis, updates, or modifications performed to the unit will void the warranty.

In the event that Krell receives a product for warranty service that has been modified in any way without Krell authorization, all warranties on that product will be void. The product will be returned to original factory layout specifications at the owner's expense before it is repaired. All repairs required after the product has been returned to original factory specifications will be charged to the customer, at current parts and labor rates.

All operational features, functions, specifications, and policies are subject to change without notification.

To register your product for warranty benefits, please complete and return the Warranty Registration Card enclosed in the shipping box within 15 days of purchase. Thank you.



Return Authorization Procedure

If you believe there is a problem with your component, please contact your dealer, distributor, or the Krell factory to discuss the problem before you return the component for repair. To expedite service, you may wish to complete and e-mail the Service Request Form in the Service Section of our website at:

<http://www.krellonline.com>

To contact the Krell Service Department

TEL	203-799-9954, Monday-Friday 9:00 AM to 5:00 PM EST
FAX	203-799-9796
E-MAIL	service@krellonline.com
WEBSITE	http://www.krellonline.com

Krell Lossless Acoustic Transducer

PRODUCT

MODEL NUMBER

SERIAL NUMBER

To return a product to Krell, please follow this procedure so that we may serve you better.

1. Obtain a Return Authorization Number (R/A number) and shipping address from the Krell Service Department.
2. Insure and accept all liability for loss or damage to the product during shipment to the Krell factory and ensure all freight (shipping) charges are prepaid.

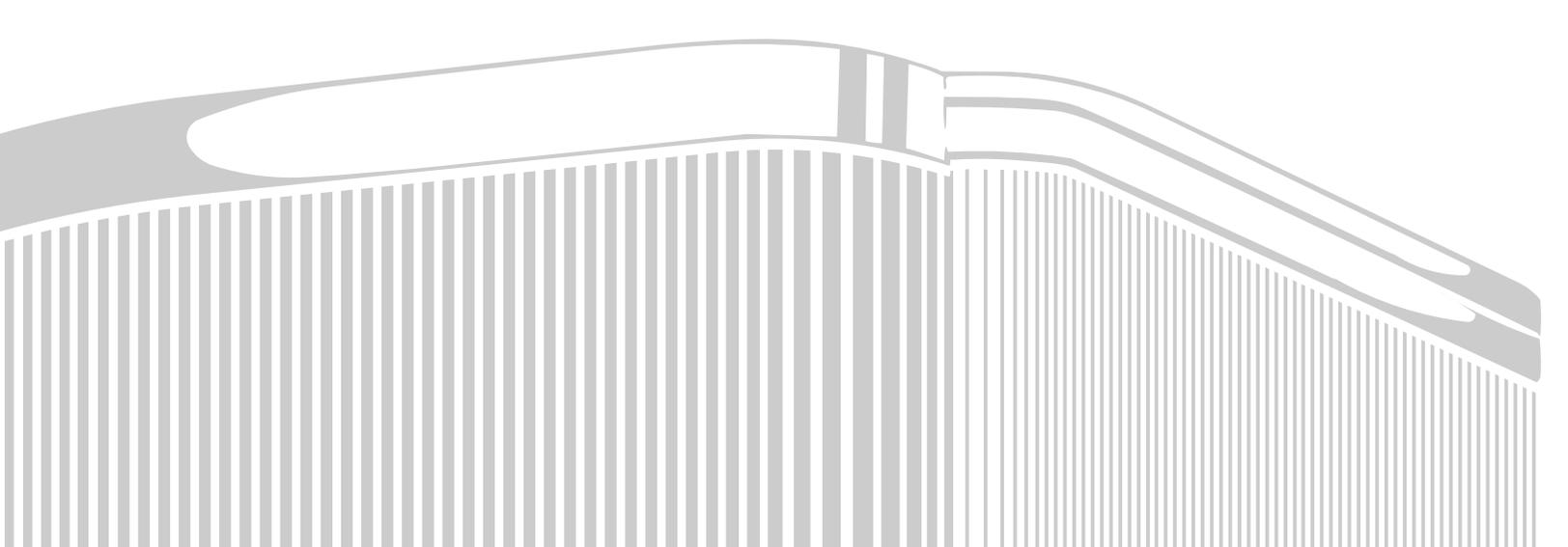
The product may also be hand delivered if arrangements with the Service Department have been made in advance. Proof of purchase will be required for warranty validation at the time of hand delivery.

IMPORTANT

Use the original packaging to ensure the safe transit of the product to the factory, dealer, or distributor. Krell may, at its discretion, return a product in new packaging and bill the owner for such packaging if the product received by Krell was boxed in nonstandard packaging or if the original packaging was so damaged that it was unusable. If Krell determines that new packaging is required, the owner will be notified before the product is returned.

To purchase additional packaging, please contact your authorized Krell dealer, distributor, or the Krell Service Department for assistance.





KRELL

THE LEADER IN AUDIO ENGINEERING

KRELL INDUSTRIES, INC.
45 CONNAIR ROAD
ORANGE, CT 06477-3650 USA