

INSTALLATION INSTRUCTIONS



INTRODUCTION

The XTC and XTC Reference series loudspeakers are the result of Xantech's commitment to build the best speakers possible. In their quest for perfection, Xantech engineers examined every aspect of their performance and design, from electronic components to structural material, even how they interact with the home environment. The Result: Flawless performance that you never thought possible from an installed speaker.

- ***Pivoting Tweeters***

Pivoting dome tweeters provide brilliant highs, and allow the sound field to be adjusted to fit the specifics of the listening environment. In-wall speakers can accept a Dinky Link™ IR receiver for a convenient, discreet mounting solution. In-ceiling speakers have an aerodynamic dome-shaped tweeter housing that eliminates woofer sound-wave restriction.

- ***FIM***

FIM (Flexible Impedance Matching) binding posts provide a more dependable solution for adding a second pair of speakers to a room or zone. One post is set for 6 ohms, delivering maximum SPL. Another flexible post provides 8 ohms for attaching two speaker pairs in parallel without harming the amplifier.

- ***XTC Technology***

Xantech XTC technology delivers amazing sound quality. Custom-designed crossovers deliver a pure, smooth tonal range that goes beyond the typical expectations of an installed speaker.

- ***High-density MDF Baffles***

The In-Wall baffles are constructed with the same high-density MDF wood material found in premium box speakers. An MDF based speaker provides sonic clarity by reducing vibrations and resonance. The XTC baffle design increases dynamics, provides solid bass and midrange performance.

- ***SoundPATH Bridge Design***

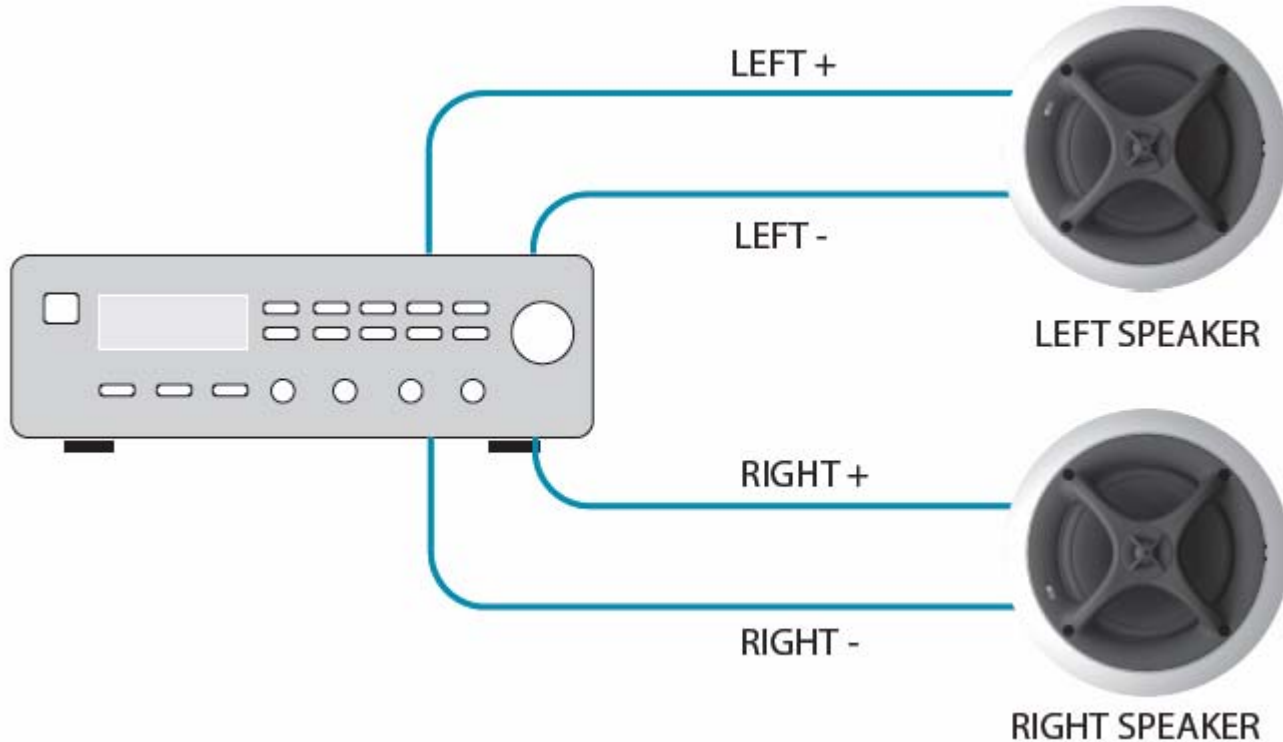
The XTC Reference In-Ceiling baffles are designed to eliminate the adverse-effects of having the tweeter placed directly over the woofer. SoundPATH's solid-density bridge design provides sonic clarity by reducing vibrations and resonance. An aerodynamic shape eliminates woofer sound-wave restriction.

- ***XA and XB Series***

The XTC series is also known by the model numbers as the XB series. The XTC Reference series is also known by the model numbers as the XA series.

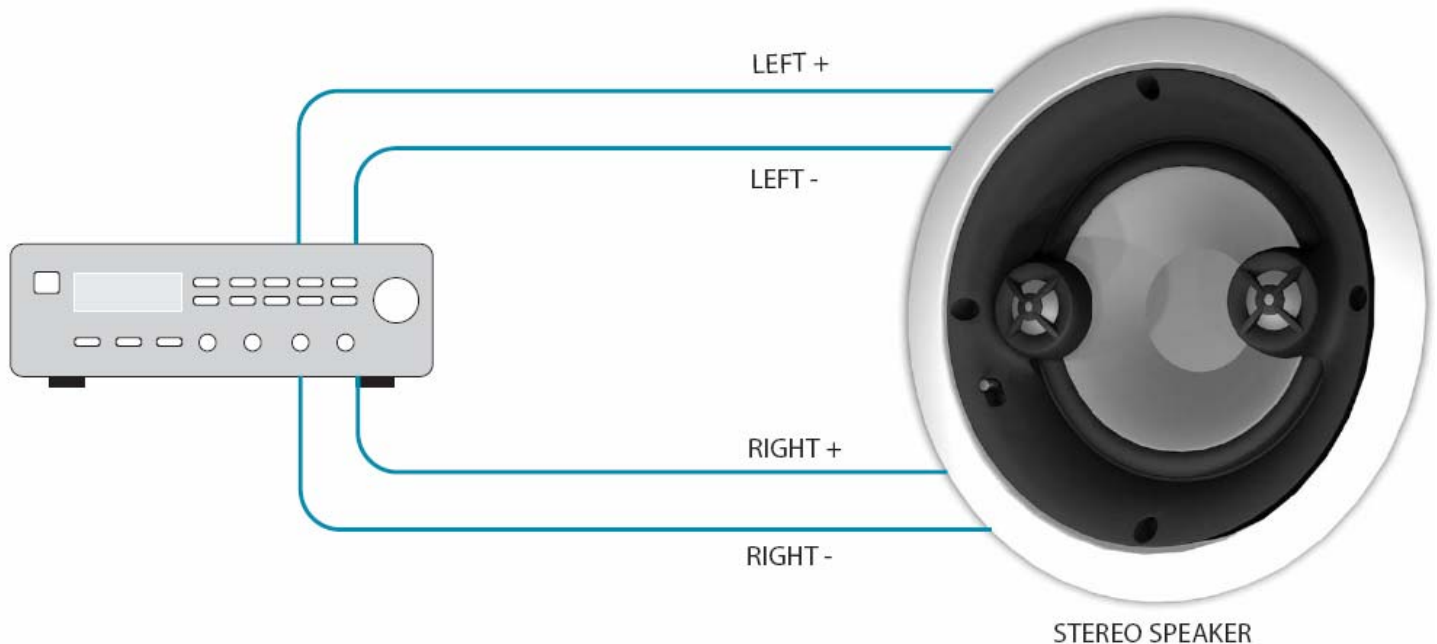
APPLICATION – SINGLE ZONE

A single zone setup can be created using an audio receiver, general purpose amplifier, or a multi-room amplifier. The figure below shows a typical stereo left and right speaker setup.



APPLICATION – SMALL AREA (BATHROOM, LAUNDRY ROOM)

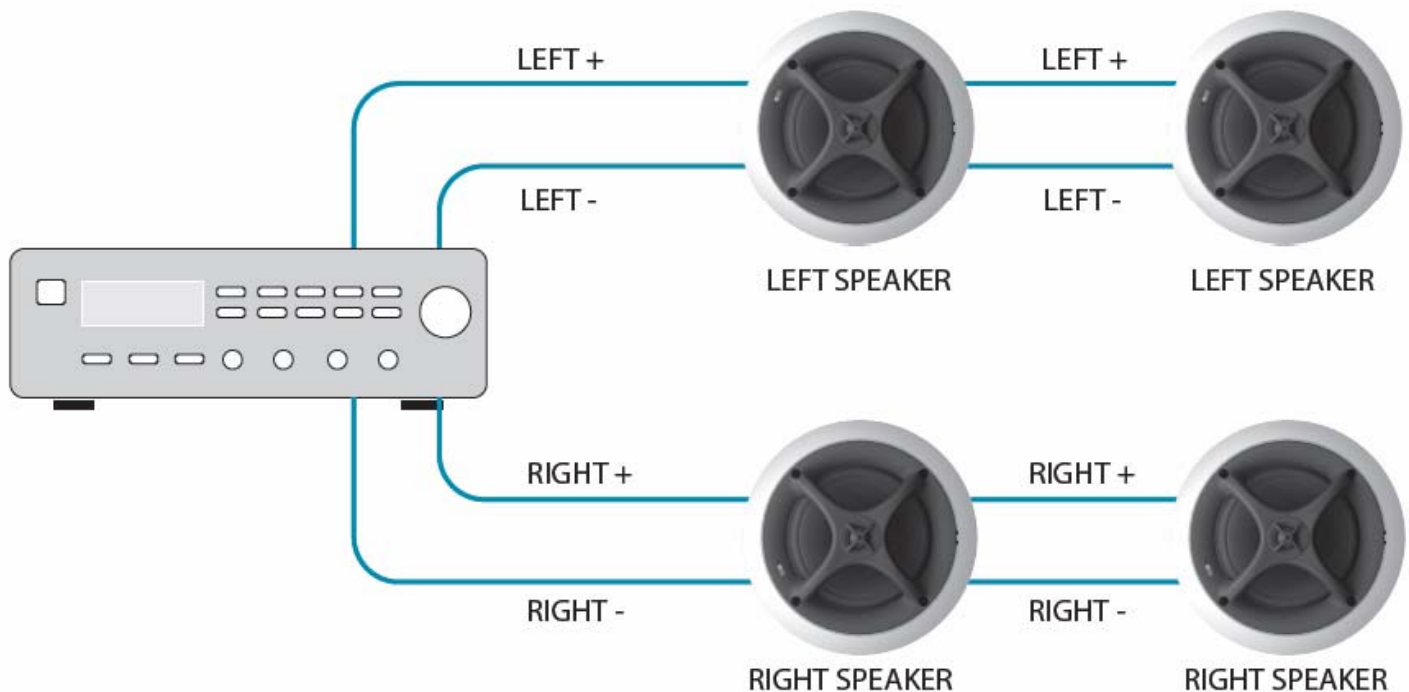
Small areas such as bathrooms and laundry rooms may not have enough room for a pair of left and right speakers. The XA65CS and XB65CS are perfect for this type of situation. The “CS” ceiling stereo speakers are designed with stereo left and right audio in one single installed package. The figure below shows a typical installation.



ADVANCED APPLICATION – LARGE AREA, MULTIPLE SPEAKER SYSTEMS

Large areas such as gathering rooms or banquet halls may require more than a single pair of speakers. Multiple speakers can be connected to the same amplifier channel. This application requires careful understanding of the amplifiers capabilities.

- 1) Determine what the minimum speaker impedance the amplifier can handle. This should be noted on the amplifier or the amplifier's instruction manual. Typically, most amplifiers can handle a minimum of 4-ohms per speaker channel.
- 2) The XA and XB series speakers are 6-ohms. By connecting two 6-ohm speakers to one amplifier channel, a 3-ohm speaker load is created. For amplifiers with a 4-ohm minimum, this is an improper application that can cause damage to the amplifier.
- 3) The XA and XB series speakers provide a third wiring post for this type of application. Remove the yellow plastic cap to expose the "+8" wiring post. Using the "+8" wiring post will make the XA and XB series speaker 8-ohms. By connecting two 8-ohm speakers to one amplifier channel, a 4-ohm speaker load is created. For amplifiers with a 4-ohm minimum, this is an acceptable application.



The figure above shows multiple speakers connected to a single output amplifier channel by using FIM (flexible impedance matching). To make sure the impedance matches the amplifiers minimum 4-ohm specification, the "+8" post is used. The yellow cap that was once on the "+8" post is moved to the "+6" post as an added precaution.

Note: A 6-Ohm load is the optimum load for a single speaker per channel. The best sound is a result of a single 6-Ohm connection. Be sure to verify the amplifiers minimum impedance capability.

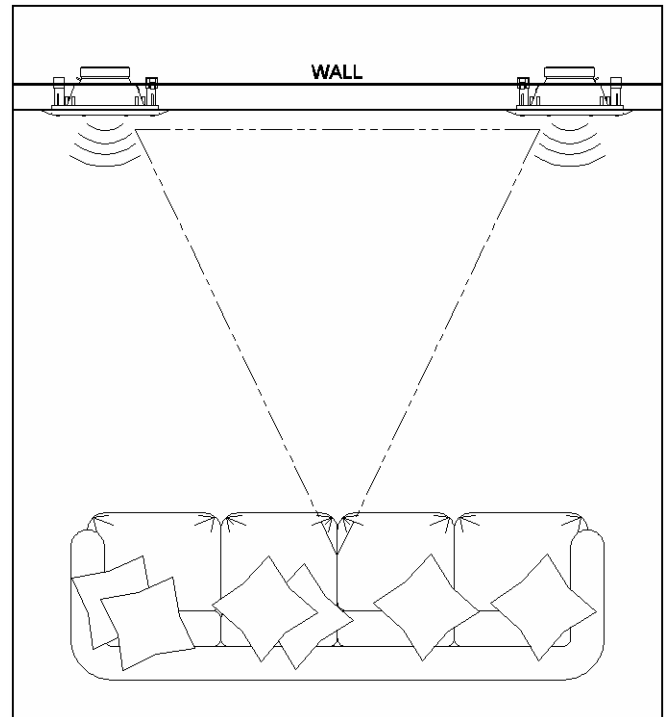
REQUIREMENTS – SPEAKER PLACEMENT

The best sound can be achieved by making sure the speakers are placed in the best position possible. The surface material should be similar for right and left pairs. Also, the cavity volume behind each speaker should be identical.

Placing a speaker near a corner tends to emphasize bass. Large surface areas emphasize treble. Drapes and upholstered furniture may muffle sound. Be sure that both right and left pairs are equal distance from the corners of a room and facing identical surfaces. Non-equality between the left and right speakers may result in inconsistent sound.

The objective of a well designed speaker system is how well it replicates live sound. A speaker system that can present a 3-dimensional replication as if the performer is in front of the listener presents “stereo imaging”.

The left and right channels of a speaker system are best placed 6 to 8 feet apart. The best height for the in-wall systems is where a person standing and a person sitting are within the optimum range of the tweeter. In general, the optimum height should be 4.5 feet from floor to tweeter. This height covers both standing and sitting.



REQUIREMENTS – WIRE

For the best installation, using high-quality speaker wire is recommended. High-quality speaker wire is stranded. Do not use solid gauge wire (commonly used for 120VAC and 240VAC power connections).

Wire Length	Recommended Size
Up to 50 feet	16-gauge
Up to 100 feet	14-gauge
Greater than 100 feet	12-gauge

The general rule is that a heavier gauge wire is recommended for all installations, especially for long distances. Be sure to select a wire that has an easy to follow indicator (such as a white stripe or indented ridge). This will make connecting the polarity correctly an easier task.

Be sure to observe the proper polarity. The positive (+) wire must always be connected to the positive (+) terminal and the negative (-) wire must always be connected to the negative terminal. An incorrect polarity connection will result in poor imaging and bass response.

Note: Be sure that each wire strand is completely isolated from other connections. Frayed or poorly twisted strands may cause short circuits and damage the systems equipment.

CAUTION: In-Ceiling Installation

Be sure that the ceiling material has a good integrity and is of a material and thickness to support the weight and vibrations of the speaker installation.

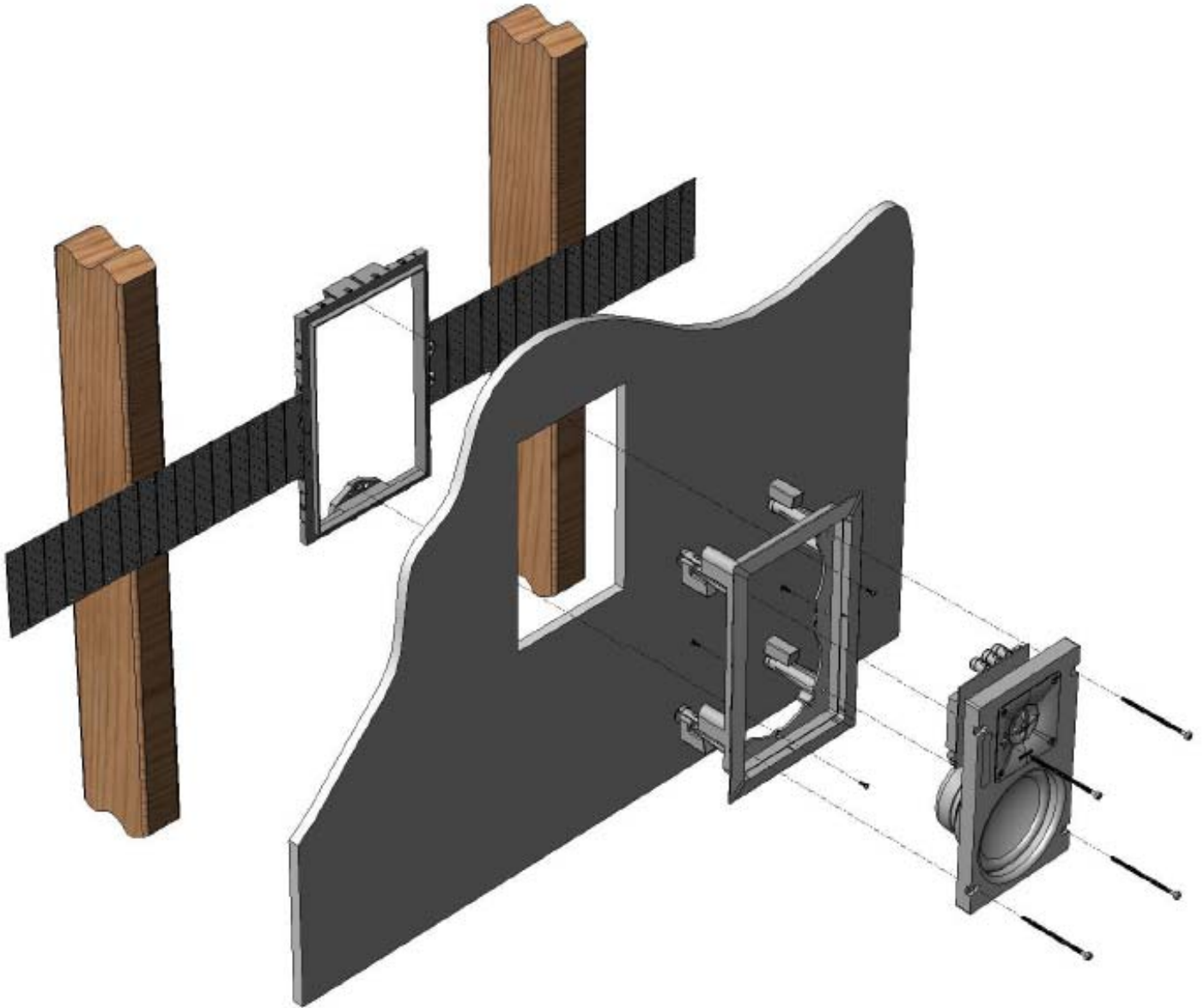
NEW CONSTRUCTION INSTALLATION

The preferred method for new construction installation is using Xantech's new-construction brackets. The brackets provide an installation process that protects the high-value speaker system. The bracket material is heavy-duty ABS plastic. Wings can be assembled to the frame in several locations, thus allowing the speaker system to be installed in almost any position.

- 1) The speaker bracket installation takes place after wiring and wall box placement has been completed. The speaker brackets are to be installed before the dry-wall process. The dry-wall contractors can accurately cut out the speaker holes using the installed speaker brackets as a reference.
- 2) After the dry-wall process is complete, the painting process is next. The bezel frame from the speaker system can be installed using the speaker bracket as a mounting point. There are two mounting points to fasten the bezel frame to the bracket. Remove the bezel from the speaker frame by locating and removing the shipping screws (silver) on the rear of the system. The dog-ears screws also have to be removed. With the bezel frame installed into the speaker bracket, paint can now be applied to the wall and speaker bezel.

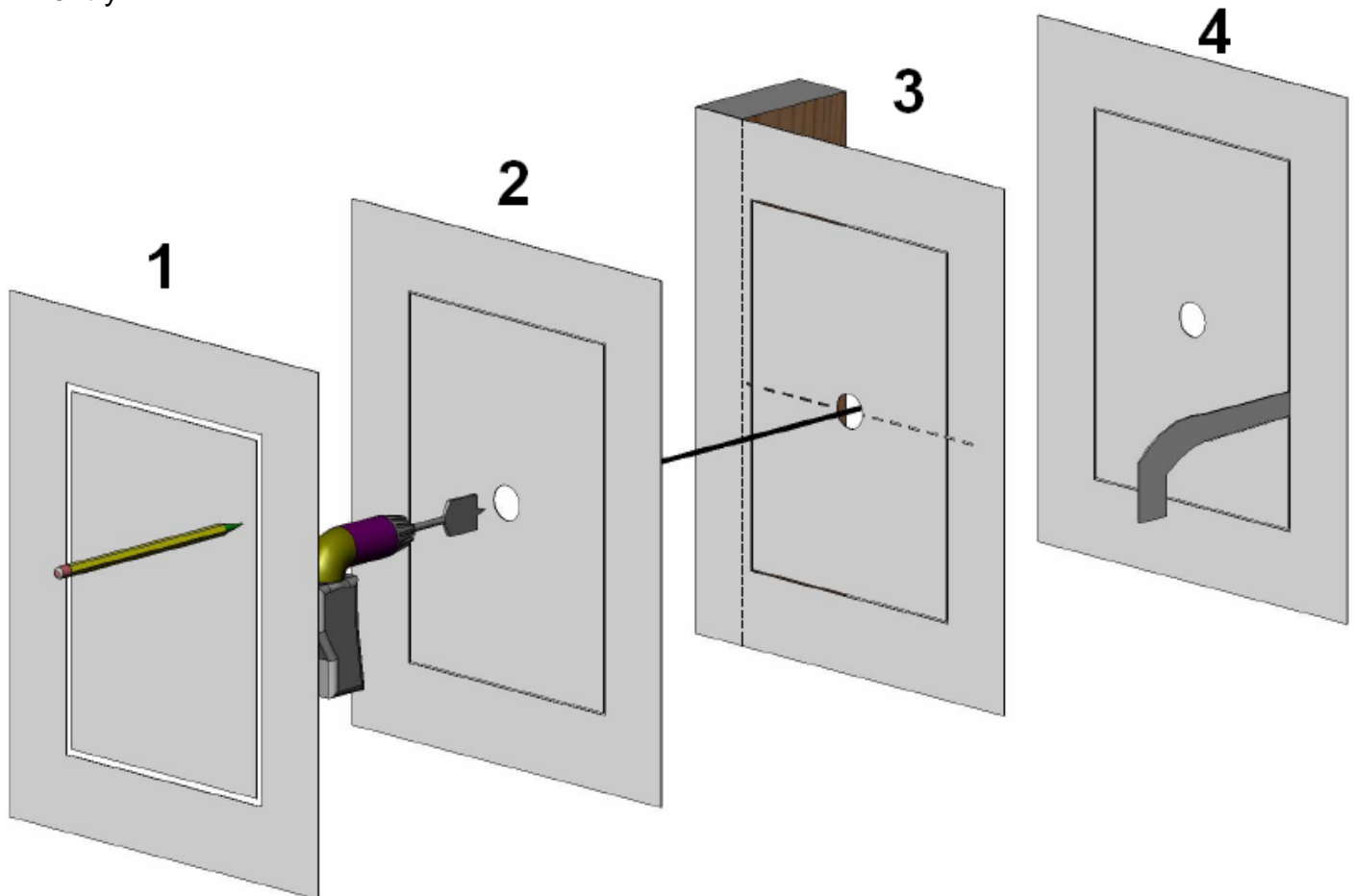


- 3) The baffle part of the speaker system can now be installed into the speaker bezel. Place the baffle into the bezel frame. Use the dog-ears on the speaker bezel to secure the system into place.
- 4) Installation complete! The benefit of using the new construction speaker brackets is that you can maintain possession of the high-value portion of the speaker system instead of passing it through several different contractors.



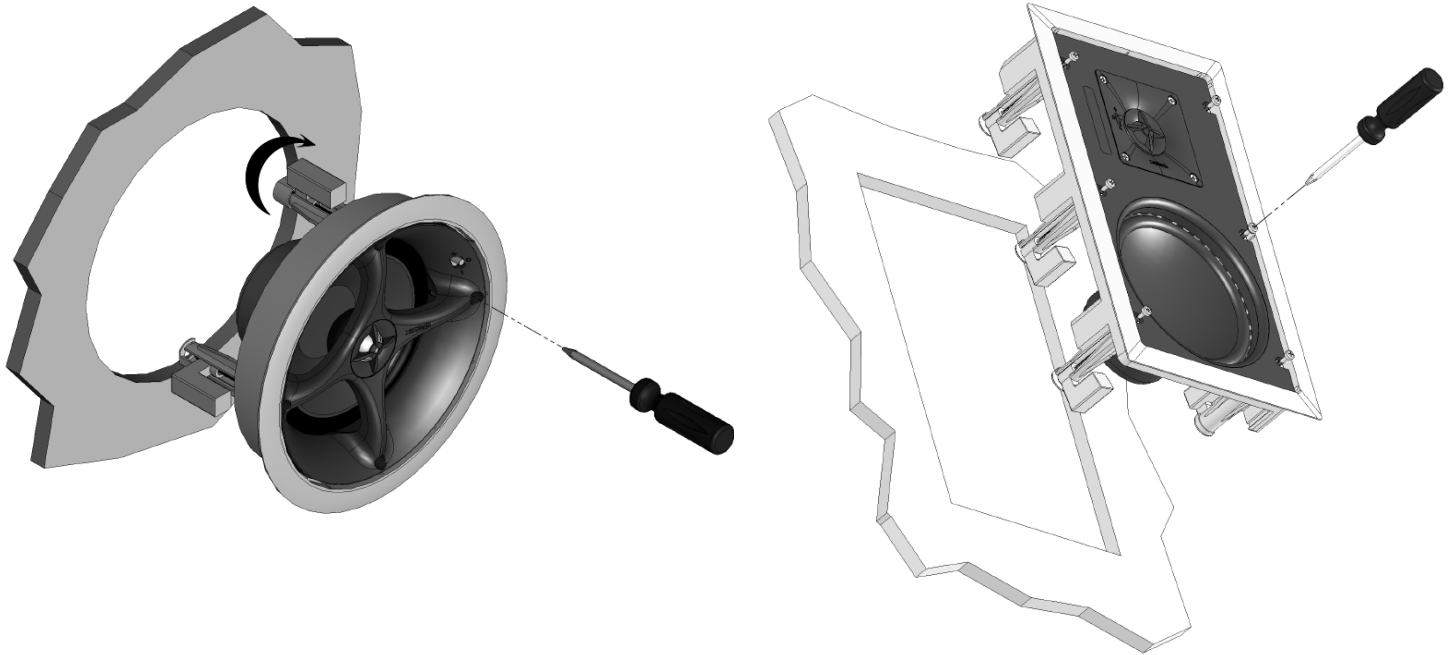
EXISTING CONSTRUCTION INSTALLATION

- 1) Determine the location for the installed speaker. Use a stud-finder to locate the studs behind the wall. It is a good idea to use a voltage detector to determine if any live wiring is in the area. Typically an electrical or switch outlet will identify the location of a stud. The adjacent stud may be 12, 16 or 24 inches apart.
- 2) Using the included mounting template, draw an outline of the area that will be removed. The outline should be at least 2 to 3 inches away from a stud. This will allow the proper clearance for the dog-ears. For applications where the speaker frame must be against a stud, the speaker frame has an area on each leg where direct-to-stud mounting can be applied. It is a good idea to use level to be sure the rectangular outline is level. Drill a small pilot hole to allow probe entry.



- 3) Use a stiff wire to probe inside the wall. Use this probe to check for obstruction such as pipes. The probe can also be used to verify the depth is adequate for the installed speaker.
- 4) Use a dry-wall saw or a jig-saw to slowly remove the outlined area. Place the speaker in the cavity to verify the fit and level is correct. It is recommended to loosely fill the cavity with fire-rated fiberglass insulation. This will prevent unwanted sound to adjacent rooms. Filling the cavity also enhances the performance of the speaker system.

- 5) Connect the speaker wires to the speaker and place the speaker inside the wall cavity.
- 6) Carefully tighten the clamping screws. Be sure to alternate diagonally between each screw position. For wall speakers, carefully adjust the frame level after each screw is installed.

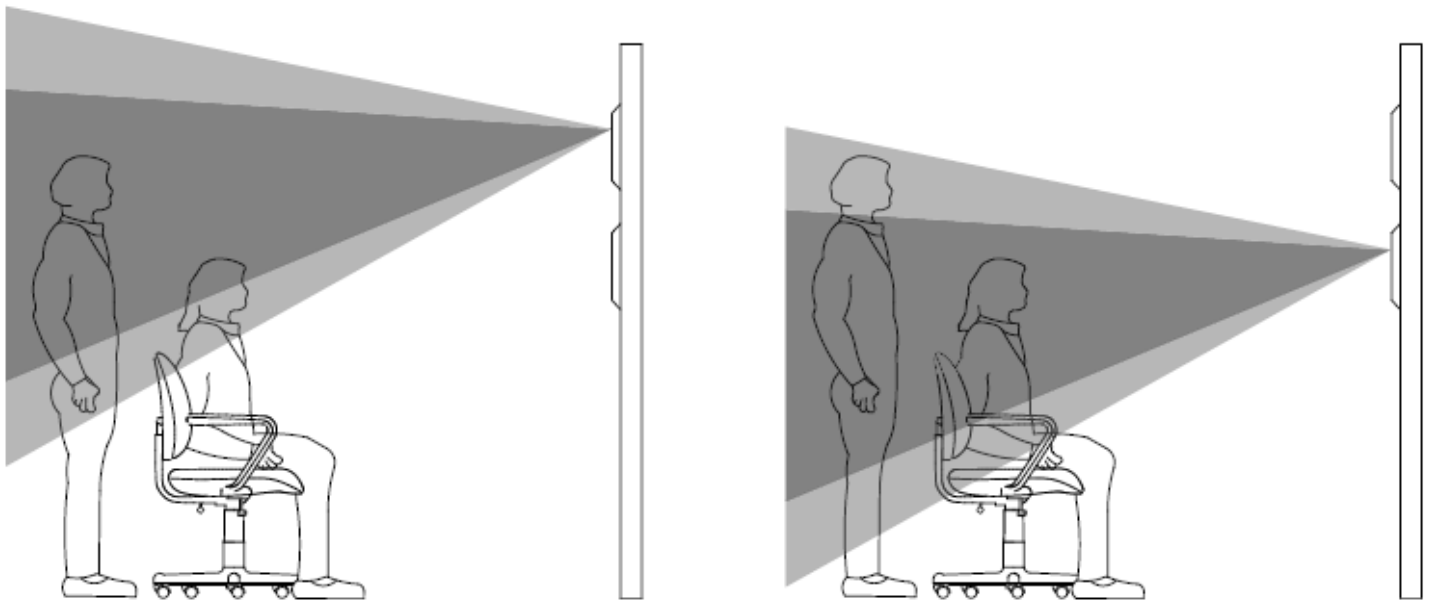


CAUTION: DO NOT OVER-TIGHTEN THE SCREWS!
This may cause damage to the wall and speaker system.

- 7) INSTALLATION COMPLETE!

FINISHING TOUCH – PIVOTABLE TWEETER

All speaker models, except the stereo ceiling models, have pivot-able tweeters. As mentioned in the speaker placement section, the tweeter should be level to the listener's ear.



Adequate Tweeter Direction

Optimum Tweeter Direction

Gently push the edge of the tweeter frame to adjust the angle. Be careful not to touch the dome portion of the tweeter. The tweeter must be treated with care to maintain its high performance characteristics.

FINISHING TOUCH – TWEETER & EQUALIZATION SWITCH

All XA series speakers are designed with a 3-position equalization switch. The center position is nominal (normal position). Moving the speaker switch towards the “+” will increase the equalization response. Moving the speaker switch towards the “-” will decrease the equalization response. The equalization will affect the treble and bass.

All XB series speakers are designed with a 3-position tweeter switch. The center position is nominal (normal position). Moving the speaker switch towards the “+” will increase the tweeter response. Moving the speaker switch towards the “-” will decrease the tweeter response. The tweeter will affect the treble only.

FINISHING TOUCH – PAINTING

The frame and grill can be painted to match the wall or ceiling color. Included is a paint shield that is meant to replace the grill on the speaker assembly. This will protect the speaker while exposing only the frame.

The grill should not be painted while assembled to the speaker assembly. It is suggested to use spray paint on the grill. Be sure the perforations (holes) in the grill do not fill with paint. Several light coats will yield the best results.

TROUBLESHOOTING

1. POLARITY

It is a good idea to test the polarity of the speaker and wire connection. Testing the polarity confirms that positive (+) wire is connected to the positive (+) terminal on the speaker and amplifier. A reverse-polarity connection (positive (+) wire connected to negative (-) terminal) will result in poor speaker performance and possibly damage the system.

To test the polarity, take a 9 Volt battery. Connect the negative (-) terminal of the 9 Volt battery to the negative (-) wire. Then, while observing the woofer on a speaker, connect the positive (+) terminal of the 9 Volt battery to the positive (+) wire.

If the woofer on the speaker moves outwards, the wiring polarity is correct. If the woofer on the speaker moves inward, the wiring polarity is incorrect. In this situation, it is best to correct the polarity by swapping the positive (+) and negative (-) wire on back of the speaker.

2. CHANNEL CHECK

To check that the left speaker is not connected as a right speaker, you will need an amplifier or preamplifier that has BALANCE control. Turn on the system so that music is coming from the speaker system. Move the BALANCE control to the far right. The right speaker should only be producing sound. Move the BALANCE control to the far left. The left speaker should only be producing sound.

If the above case is not true, then it would be easiest to correct the problem at the equipment rack. The problem may not be at the amplifier to speaker connection. It is a good idea to check source to amplifier connection as well.

3. NO SOUND FROM SPEAKER

In the event that no sound from the speaker is heard, check the wiring or the items below.

- A. Verify the correct source is playing and is selected on the receiver\amplifier end.
- B. Verify mute and volume levels are correct. Verify volume control is wired properly.
- C. Some receivers have A or B selector switches, verify the correct output is switched. This also applies to speaker selector switches and advanced volume controls.
- D. A wire short-circuit may cause the amplifier to shut-down in protection mode.
- E. Bad connecting between the source and receiver\amplifier end.

SPECIFICATIONS - OVERVIEW

XTC SERIES

Tweeter: Pivotal Teteron dome tweeter constructed with advance neodymium magnet, fluid cooled, and rear acoustic damping.

Woofer: Durable IMG (injection molded graphite) woofer for higher sensitivity and increased sound pressure levels.

Crossover: Second-order network. (12dB per octave). Premium components specified and designed into the system.

XTC REFERENCE SERIES

Tweeter: Pivotal Titanium dome tweeter. Rear acoustic damping and positive rubber surround removes ringing and achieves pure tones with low distortion.

Woofer: Premium Al/Mg (aluminum magnesium material) woofer stays rigid during the most extreme bass notes and the agility results in accuracy and dynamic bass response.

Crossover: Third-order network. (18dB per octave). Premium components specified and designed into the system.

SPECIFICATIONS

XB525C

Speaker Type: Ceiling Mount
Driver size: 5.25" Woofer / 22mm Tweeter
Recommend Amplifier Power: 5-60 Watts
Frequency Response: 50Hz-22kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 7.96" DIA. x 5.25" Depth
Cut-Out Size: 6.75" DIA.
Construction Bracket Available: XBKT525C
(sold separately)

XB525W

Speaker Type: Wall Mount
Driver size: 5.25" Woofer / 22mm Tweeter
Recommend Amplifier Power: 5-60 Watts
Frequency Response: 50Hz-22kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 11.45" W x 7.30 H x 3.75" Depth
Cut-Out Size: 10.23" W x 6.08" H
Construction Bracket Available: XBKT525W
(sold separately)

XB65C

Speaker Type: Ceiling Mount
Driver size: 6.5" Woofer / 22mm Tweeter
Recommend Amplifier Power: 5-80 Watts
Frequency Response: 42Hz-22kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 9.24" DIA. x 5.50" Depth
Cut-Out Size: 8.05" DIA.
Construction Bracket Available: XBKT650C
(sold separately)

XB65W

Speaker Type: Wall Mount
Driver size: 6.5" Woofer / 22mm Tweeter
Recommend Amplifier Power: 5-80 Watts
Frequency Response: 42Hz-22kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 13.46" W x 8.24" H x 3.75" Depth
Cut-Out Size: 12.24" W x 7.02" H
Construction Bracket Available: XBKT650W
(sold separately)

XB8C

Speaker Type: Ceiling Mount
Driver size: 8" Woofer / 28mm Tweeter
Recommend Amplifier Power: 10-100 Watts
Frequency Response: 35Hz-20kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 10.92" DIA. x 6.00" Depth
Cut-Out Size: 9.72" DIA.
Construction Bracket Available: XBKT800W
(sold separately)

XB8W

Speaker Type: Wall Mount
Driver size: 8" Woofer / 28mm Tweeter
Recommend Amplifier Power: 10-100 Watts
Frequency Response: 35Hz-20kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 16.37" W x 9.80" H x 4.00" Depth
Cut-Out Size: 15.15" W x 8.58" H
Construction Bracket Available: XBKT800W
(sold separately)

XB65CS

Speaker Type: Ceiling Mount
Driver size: 6.5" Dual Coil Woofer / Twin 22mm Tweeters
Recommend Amplifier Power: 5-70 Watts
Frequency Response: 42Hz-22kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 9.24" DIA. x 6.00" Depth
Cut-Out Size: 8.05" DIA.
Construction Bracket Available: XBKT650C
(sold separately)



SPECIFICATIONS

XA65C

Speaker Type: Ceiling Mount
Driver size: 6.5" Woofer / 22mm Tweeter
Recommend Amplifier Power: 10-85 Watts
Frequency Response: 40Hz-30kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 9.24" DIA. x 5.50" Depth
Cut-Out Size: 8.05" DIA.
Construction Bracket Available: XBKT650C
(sold separately)

XA65W

Speaker Type: Wall Mount
Driver size: 6.5" Woofer / 22mm Tweeter
Recommend Amplifier Power: 10-85 Watts
Frequency Response: 40Hz-30kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 13.46" W x 8.24" H x 3.75" Depth
Cut-Out Size: 12.24" W x 7.02" H
Construction Bracket Available: XBKT650W
(sold separately)

XA8C

Speaker Type: Ceiling Mount
Driver size: 8" Woofer / 26mm Tweeter
Recommend Amplifier Power: 10-110 Watts
Frequency Response: 32Hz-24kHz
Impedance: 6 or 8 ohm selectable
Overall Dimensions: 10.92" DIA. x 6.00" Depth
Cut-Out Size: 9.72" DIA.
Sensitivity (1Watt/1Meter): 90dB
Construction Bracket Available: XBKT800C
(sold separately)

XA8W

Speaker Type: Wall Mount
Driver size: 8" Woofer / 26mm Tweeter
Recommend Amplifier Power: 10-110 Watts
Frequency Response: 32Hz-24kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 16.37" W x 9.80" H x 4.00" Depth
Cut-Out Size: 15.15" W x 8.58" H
Construction Bracket Available: XBKT800W
(sold separately)

XA65CS

Speaker Type: Ceiling Mount
Driver size: 6.5" Dual Coil Woofer / Twin 22mm Tweeters
Recommend Amplifier Power: 10-80 Watts
Frequency Response: 40Hz-30kHz
Impedance: 6 or 8 ohm selectable
Sensitivity (1Watt/1Meter): 90dB
Overall Dimensions: 9.24" DIA. x 6.50" Depth
Cut-Out Size: 8.05" DIA.
Construction Bracket Available: XBKT650C
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