

EX3 Series

Tweeter & Component Speaker Systems



polkaudio
the speaker specialists®

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OWNER'S
Manual

**ATTACH YOUR RECEIPT
HERE AND FILE FOR
FUTURE REFERENCE
X**

GETTING STARTED

Please inspect each loudspeaker carefully. Notify your Polk Audio dealer if you notice any damage or missing items. Keep the carton and packing material. They will do the best job of protecting your speakers if they need to be transported. Check that you have the following model-specific parts:

EX3550 and EX3560 Models:

- 2 Mid-Woofers
- 2 Mid-Woofer Grilles
- 2 EX3500 Tweeters With Wires Attached
- 2 Crossover Networks
- 2 Flush Mount Tweeter Cups
- 2 Flush Mount Cup Clamps
- 2 Straight Surface Mount Tweeter Cups
- 2 Angled Surface Mount Tweeter Cups
- Speaker Wires With Fast-on Connectors Attached
- 2 Machine Screws For Flush Mount Installation
- 16 Sheet Metal Screws For Surface Mount Tweeter Installation (4), Crossover Mounting (4) & Driver Mounting (8).
- 12 Speed Nuts (8 Driver Mount, 4 Surface Mount)
- 2 Elliptical Lens Assemblies
- 2 Tweeter Grilles
- Driver Mounting Template (Separate Sheet)
- Registration Card

EX3500:

- 2 EX3500 Tweeters With Crossover & Wires & Connectors Attached
- 2 Flush Mount Tweeter Cups
- 2 Flush Mount Cup Clamps
- 2 Straight Surface Mount Tweeter Cups
- 2 Angled Surface Mount Tweeter Cups
- 2 Machine Screws For Flush Mount Installation
- 4 Sheet Metal Screws For Surface Mount Installation
- 4 Speed Nuts For Surface Mount Installation
- 2 Elliptical Lens Assemblies
- 2 Tweeter Grilles
- Registration Card

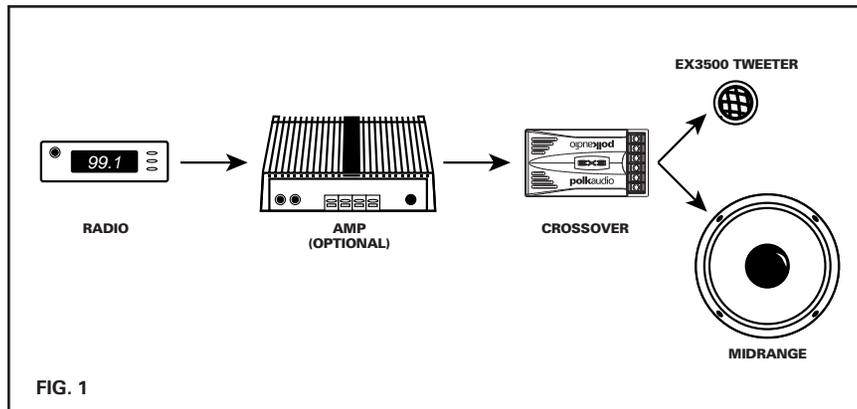
Installing car speakers is a serious project. If you have any doubts about your ability to execute any of the installation steps found in this manual, save yourself a lot of grief and contact a professional installer. Your Polk Audio dealer is a good place to find one. If you intend to do the installation yourself we assume you possess some skill in the proper use of hand and power tools. No matter how much installation experience you have, we recommend that you...

- Read this manual thoroughly before you begin
- Plan your installation carefully
- Allow enough time to complete the installation without rushing
- Take steps to protect your car and upholstery from unwanted scratches and punctures

NECESSARY TOOLS

- Phillips head screwdriver
- Flat blade screwdriver or putty knife
- Door panel pry-tool (available at most auto parts supply stores)
- Electric drill
- 3/16" and 1/8" drill bits
- Hole saw of appropriate diameter for the speaker size (for "new location" and flush mount tweeter installation only)
- Indelible ink marker for marking the cutout (for "new location" installation only)
- Metal file
- Solderless, crimp-on connectors and a crimping tool
- Safety glasses
- Wire strippers and cutters

NOTE: For EX3500 installation, please jump to page 8 now.

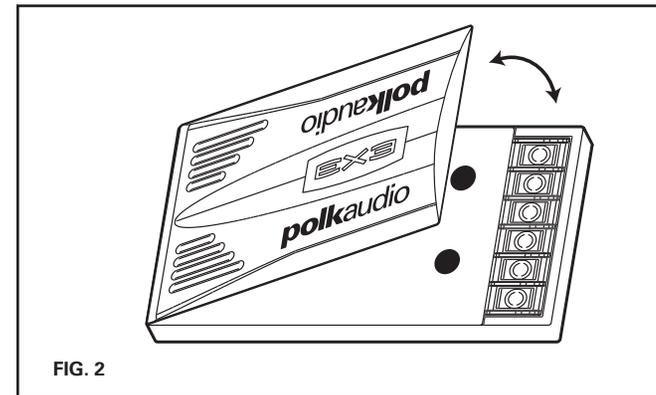


INSTALLING EX3 SERIES COMPONENTS

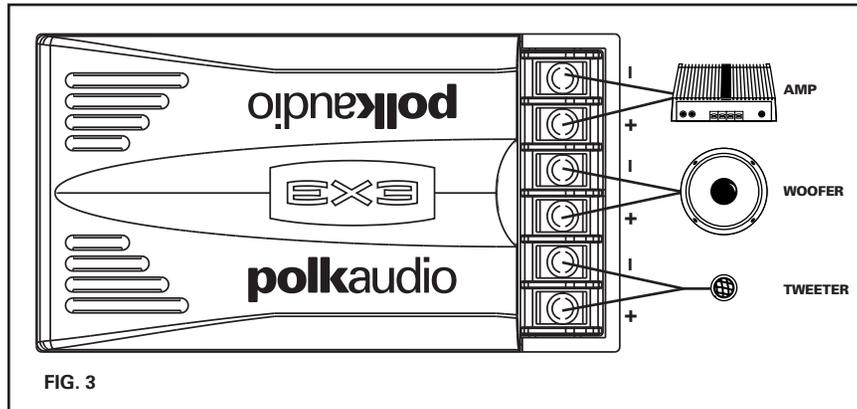
EX3 Series Crossovers

You will need to make wiring connections from your amp or radio to the crossovers and from the crossovers to your mid/woofers and tweeters [figure 1]. Choose crossover box locations that are convenient for making these connections. **We do not recommend placing the crossover inside of door panels due to the increased potential for water damage and interference with internal door and window mechanisms.**

To install the Crossover, squeeze the terminal end of the "hood" and lift it up (like a classic sports car hood, *natch*) to expose the mounting screw holes [figure 2]. Use the included crossover mounting screws to secure the crossover in your chosen location. You may want to mark the holes with an indelible ink marker and pre-drill your screw holes for easy installation. Be careful not to drill or screw through any important mechanical devices in your car.



Your EX3 Series Crossovers have terminals that are clearly marked for wiring connections. These connections are shown in **[figure 3]**. The wires provided with your EX system have one red conductor. Use this wire as the positive (+) lead and connect it to the positive (+) terminals on your crossovers and the positive (+) terminals of each of your speakers.



Installing your mid-woofers in a factory location

- 1.) Carefully remove the grille covering the factory speaker. In most cases it will be “press-fit” or screwed to mounting tabs molded into the surrounding area. On some cars, grilles are held by screws or spring clips. The screws will be obvious, the spring clips may not be. If you experience any resistance you may need to consult your dealer or your car’s owner’s manual to determine if there is any special way the manufacturer has secured the grille. If you don’t feel comfortable prying at your car’s interior with a pry tool, and the grille resists your efforts, back off and think again about a professional installation. The cost of a professional installation is usually less than the cost of new door panels or dashboards. Some grilles are integral parts of their panels and are not removable. In these cases you will need to remove the entire door panel to gain access to the speaker location. This will usually require the removal of door handles, window winder mechanisms and perhaps other parts such as door pulls and lock buttons. Pros do this stuff in their sleep. Think about it.
- 2.) If you’re still reading, and you’ve removed your factory grille, remember to keep all screws, mounting clips or lock washers that held the factory speaker in place and save them for reuse. Lift the speaker out of the hole a short distance.
- 3.) Before unhooking the speaker wires, identify the positive speaker terminal (usually marked with a red dot or [+], or it is the terminal that is larger or wider) and identify the negative speaker terminal (usually marked [–], or having no marking, or whichever terminal is the smaller or narrower of the two). Mark the wire connected to the positive terminal for later identification. Use a permanent marker or piece of tape.

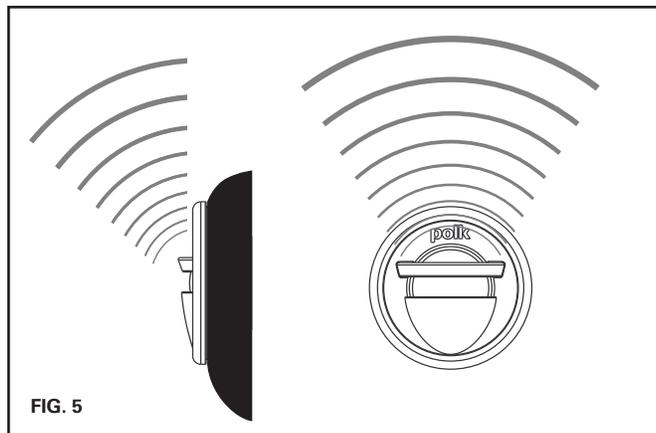
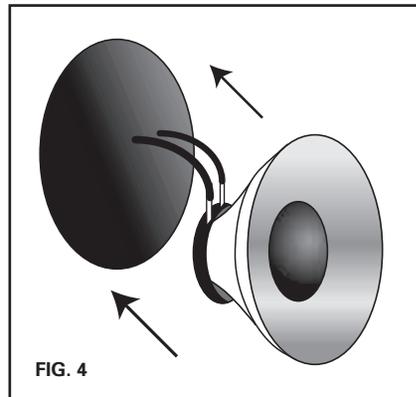
- 4.) Disconnect the factory speaker. After disconnecting the factory speaker, connect the wires to your new Polk Audio speaker, hooking up the positive [+] wire to the wider of the two EX3 terminals and the negative [–] to the narrower EX3 terminal.
- 5.) Mount your EX3 Loudspeaker using the mounting hardware you saved from Step 2.
- 6.) Remount the factory grille cover.
- 7.) Repeat Steps 1-6 for the other speaker(s).

Installing your mid-woofers in a “New Location”

Factory locations uncool? Pick a new location. Be sure to take into account both your vehicle’s design and your sonic goals. Before you begin, read all of these steps. If you have any doubts about your ability to execute any of these steps, save yourself a lot of grief and contact a professional installer. Your Polk Audio dealer is a good place to find one.

- 1.) Using the door panel pry-tool, carefully remove any door panels, kick panels, molded parts or fabric coverings to expose the surface that will need to be cut to install the new speaker.
- 2.) Check the dimensions around and behind the installation area for fit. This includes any moving parts behind the speaker (move the windows up and down) or the sides of the speaker (open and close doors).
- 3.) Locate the template over the desired location. Draw the inside circle and mark at least two opposing screw locations.
- 4.) Cut the circle with the appropriate tool. Drill pilot holes for the screw locations. File the edges of any bare metal surfaces until smooth, then coat with primer to prevent rust.
- 5.) When primer is dry, slip mounting clips over the screw holes.

- 6.) In the meantime, attach speaker wires to the crossover mid-woofer terminals **[figure 3]**. The wires provided with your EX system have one red conductor. Use this wire as the positive (+) lead and connect it to the positive (+) terminal screw on your crossover. Connect the black wire to the negative (-) terminal screw. There's that pattern again.
- 7.) Now run wires from your amplifier or radio to the crossover. Attach these wires to the crossover input terminals **[figure 3]**. Route these wires away from low-level electrical cables in your car, and use grommets when passing through doors. Remember the pattern: attach the red wire to the positive (+) terminal screw on your crossover, and the black wire to the negative (-) terminal screw.
- 8.) Pass the wires from the crossover through your cut hole **[figure 4]**.
- 9.) Connect the wires to your new Polk Audio mid-woofers. Attach the red wire to the positive (+) terminal, and connect the black wire to the negative (-) terminal.
- 10.) Place the grille frame onto the speaker being careful to line up the screw holes. Carefully orient the new speaker over the screw holes and mounting clips. Tighten the screws firmly to secure the speaker and grille frame to the mounting surface.
- 11.) Place the mesh grille in the grille frame.
- 12.) Repeat Steps 1-11 for the other speaker(s).



EX3 Series Tweeter Installation

Step 1—Choosing the proper tweeter location

When properly installed, component systems can improve the soundstage created by music in your car. The soundstage will be dramatically affected by where you mount your tweeters. How do you determine the best place for tweeter installation? Grab a friend and play along as we recommend a simple “Tweeter Placement” experiment! Just follow these easy steps:

- 1.) Complete the installation of your entire system except for the EX3500 Tweeters.
- 2.) Connect the wires provided with your tweeters to the tweeter terminals on your EX3 Crossovers **[figure 3]**.
- 3.) Without actually running the wires through doors or under upholstered panels, connect up your EX3500 Tweeters.
- 4.) Mount the tweeters in a temporary location (where you think you'd like to install them) with tape.
- 5.) Have your friend sit in the passenger-side seat while you sit in the driver's seat.
- 6.) Now, with familiar music playing (we recommend music with vocals for this test), both you and your friend should position the tweeters in different locations around the passenger compartment, listening for resulting sound differences. Listen to the tweeter with the Elliptical Lens on it, and ALSO listen to it with just the Grille on it. If you're planning a surface installation, try this with both the Straight Surface Mount Cup and the Angled Surface Mount Cup. Rotate the Angled Surface Mount Cup in conjunction with the Elliptical Lens to help get the most desirable radiation pattern. Listen for imaging, soundstage and clarity. In a short time, you should be able to determine the best location for your tweeters.
- 7.) Mark the location, and move on to Step 2 and choose your mounting option.

The EX3500 Tweeter offers two optional “high frequency directors” to give you even more control over your sound and to help you get better sound in difficult placements: an Elliptical Lens and an Angled Surface Mount Cup. (You also get a Straight Surface Mount Cup and a Mesh Tweeter Grille. What a deal.) Use the Elliptical Lens to focus the high frequencies in your system for better imaging and directionality **[figure 5]**. When you're doing the Tweeter Location Test (above), tape the Elliptical Lens in place on either the Straight or Angled Surface Mount Cup to help find the direction best suited to your system. When you find the perfect spot, simply snap the Elliptical Lens onto the tweeter. The Elliptical Lens DOES NOT ROTATE. Use the Angled Surface Mount Cup to help you get the most desirable radiation pattern.

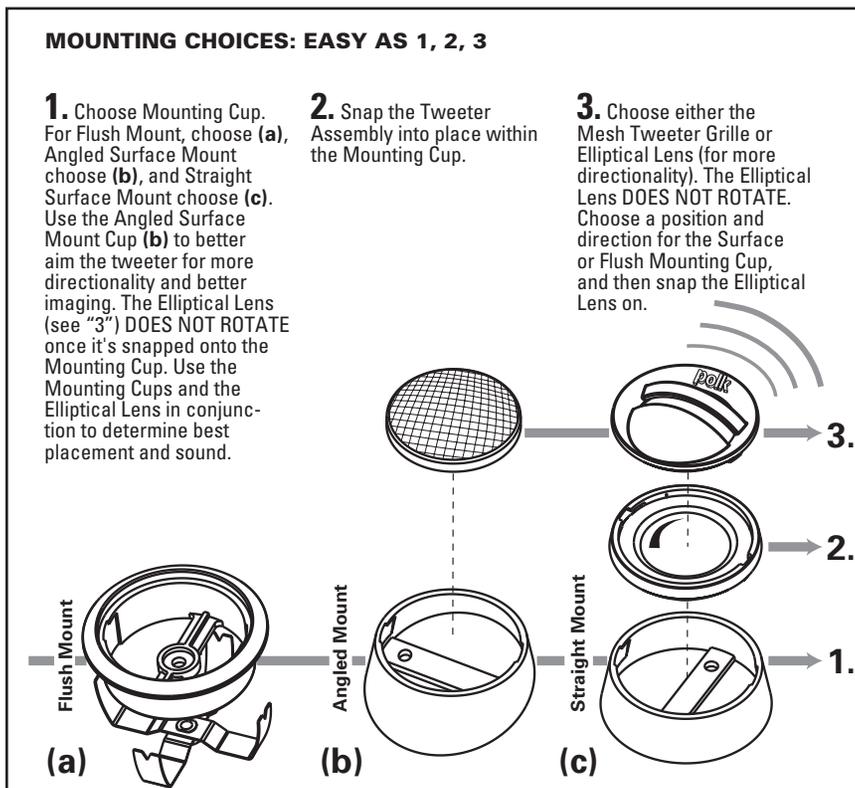
Step 2—Mounting Options

The Polk Audio EX3 Tweeter offers two mounting options for even more installation flexibility:

Tweeter Mounting Option #1—Surface Mount

Your EX3500 Tweeters come with both Straight and Angled Surface Mount Cups to fit any location and installation situation. Use the Angled Surface Mount Cup to help direct the sound in conjunction with the Elliptical Lens.

- 1.) Using the base of the surface mount cup as a template, mark the two screw holes and drill them using a 1/8" drill bit. Drill a third hole (for the speaker wire) using a 3/16" drill bit.
- 2.) Attach either surface mount cup (angled or straight) to the panel using #8 screws of appropriate length for the panel.
- 3.) Push the tweeter wires through the open area at the bottom of the cup and through the 3/16" hole in the panel.
- 4.) Connect wires from the tweeter terminals of the Crossover to the tweeter wires using faston connectors. Be sure to connect the red wire strand from the tweeter to the (+) terminal of the crossover tweeter output.
- 5.) Mount the tweeter by snapping it into the mounting cup and turning the tweeter clockwise, locking it into place.



Tweeter Mounting Option #2—Flush Mount

- 1.) Remove the panel on which you are going to mount the tweeter and check for proper clearance behind it. The flush mount kit is 3/4" deep; measure to make sure there is sufficient depth behind the spot you choose.
- 2.) Mark the center of the spot and cut a 1 13/16" diameter hole using a hole saw or a large 1 13/16" drill bit. Go slowly. You can use a razor or knife for this job if you wish to have more control.
- 3.) Assemble the cup, clamp and machine screws loosely as shown in [figure 6].
- 4.) Route wires through the round opening in the bottom of the cup.
- 5.) Press the assembly into the 1 13/16" diameter hole until the clamp edge is below the mounting surface, then tighten the screw. The cup will clamp down to the surface as the screw is tightened. In the case of a thicker-than-average mounting surface, the legs of the clamp can be bent outward by inserting a screwdriver through the holes in the cup while still mounted.
- 6.) Connect wires from the tweeter terminals of the Crossover to the tweeter itself using the faston connectors. Connect the red wire from the (+) terminal of the Crossover tweeter output to the red (+) wire from the tweeter.
- 7.) Mount the tweeter by snapping it into the mounting cup and turning the tweeter clockwise, locking it into place.

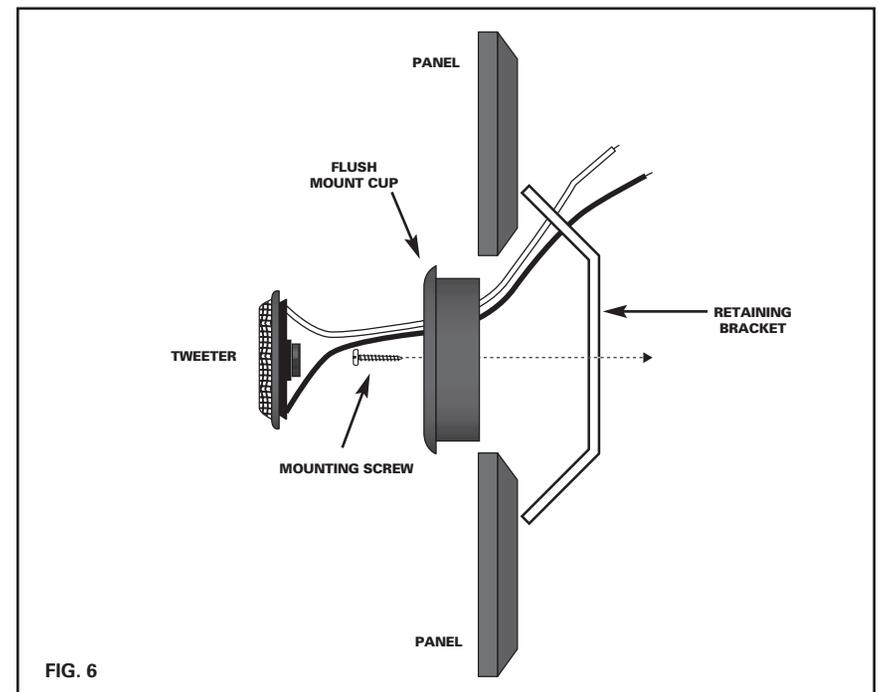


FIG. 6

EX3500 Component Tweeter Hook Up

When purchased as a separate unit, the EX3500 tweeter includes a second order (12dB/octave) crossover network integrated into the tweeter assembly. This high pass filter allows the EX3500 to be used with other components.

If your system contains an active crossover, you may bypass the in-line crossover and wire the tweeter directly to the output terminals of an amplifier that has a high pass filter (crossover) on its input. The minimum crossover point should be 4kHz @ 12dB/octave. It is important to maintain correct polarity. The red wire connects to the positive (+) amplifier terminal and the black wire connects to the negative (-) amplifier terminal.

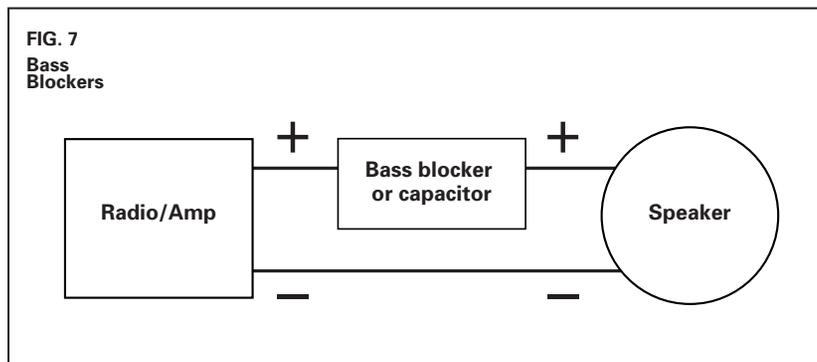
DO NOT USE THE TWEETER WITHOUT A CROSSOVER NETWORK. Damage to the tweeter from thermal overload will result without the protection provided by a crossover and will void your warranty.

POLARITY/BLENDING

If it seems that your tweeters and mid-woofers are not “blending” or not working together in harmony (as we all should), try changing the polarity of both of the tweeters by reversing the positive (+) and negative (-) tweeter wires that connect to the crossover. This reversal of the tweeter’s “absolute phase” may help the blending or integration of all of your system components. This could be particularly useful if your tweeters and mid-woofers are spaced far apart in your setup.

LOW FREQUENCY CUT-OFF FOR SYSTEMS WITH SUBWOOFERS

If you have a subwoofer in your system, you may want to decrease the amount of bass going to your mid-range speakers. This will get you better mid-range sound and increase the power handling. There are two ways to roll off the bass before it gets to your mid-range speakers. One way is to use a “bass blocker,” a capacitor placed in series with the speaker input. Bass blockers are installed in series, one end connected with the positive lead from your amplifier and the other end connected to the positive lead of each of your speakers [figure 7]. Bass blocker capacitors (200 microfarad @ 100volts, non-polarized) are available at any RadioShack or parts supply house. The other route is to use an electronic crossover device that allows filtering below 100Hz or so. Find these devices at your authorized Polk Audio dealer.



AMPLIFIER POWER REQUIREMENTS

Your new EX3 Loudspeakers will work well with a variety of electronic components. As little as 10 watts per channel will deliver adequate listening levels in most cars. If you have a noisy car or intend to play your system at loud listening levels, more power may be necessary to achieve the best performance. Consult your Polk Audio dealer for specific requirements.

SAFE LIMITS OF OPERATION

Your new EX3 Loudspeakers are made with the highest quality materials for years of durable, trouble-free performance. However, damage can occur to loudspeakers when an amplifier, regardless of its wattage, is made to play at higher listening levels than its power can clearly produce. This is usually beyond the “1 to 2 o’clock” position on the volume control. This results in very high levels of audible distortion, originating in the amplifier, which add a harsh, gritty sound to your music. Contrary to popular belief, a speaker is more likely to be damaged by trying to get too much volume from a low-powered amp or receiver than from a high-powered one.

TECHNICAL ASSISTANCE OR SERVICE

If, after following these hookup and installation directions, you experience difficulty, please double-check all wire connections.

Make certain your electronic equipment is operating correctly by hooking up another speaker to the speaker output. For example, if you are not getting sound from the left channel speaker, connect the right channel speaker to the left output. If you still get no sound from that side, the problem is in your amp or source electronics. Should you isolate the problem to the speaker, contact the authorized Polk Audio dealer where you bought your speakers. Authorized Polk Audio dealers are the best source for advice and assistance.

Polk Audio’s Customer Service Department is available from 9am–6pm, EST, Monday through Friday, at 800-377-7655. Please do not hesitate to call us if you have questions about your speaker system.

You will find additional information, informative articles, manual updates and cool stuff to buy that has “Polk Audio” all over it by visiting www.polkaudio.com.

EX3 SERIES COMPONENT SPECIFICATIONS

	EX3560	EX3550	EX3500
Type	two-way system	two-way system	tweeter
Driver complement	6 1/2" driver with a 1" dome tweeter	5 1/4" driver with a 1" dome tweeter	1"(25mm) dome tweeter
Mounting diameter	4 7/8" 124mm	4 13/16" 122mm	1 13/16" flush mount 46mm
Mounting depth (top)	2 1/4" 57mm	2 7/16" 62mm	9/16" flush cup 14.3mm
Mounting depth (bottom)	2 1/2" 63mm	2 9/16" 65mm	N/A
Peak power handling	300w	250w	160w
Continuous power handling	100w	85w	60w
Nominal Imp.	4 ohms	4 ohms	4 ohms
Freq. response	50Hz-22kHz	68Hz-22kHz	4kHz-22kHz
Grille height & diameter	1 1/16" 6 1/2"	7/8" 6 3/8"	N/A N/A
Sensitivity (SPL)	92dB	92dB	92dB
Crossover Point	4 kHz	4 kHz	4kHz
Crossover Slope (high pass)	12db/octave	12db/octave	12db/octave
Crossover Slope (low pass)	12db/octave	12db/octave	12db/octave

EX3 SERIES 1 YEAR WARRANTY

Polk Audio, Inc. warrants the original purchaser only that this Polk Audio EX 3 Series Product (the Product) will be free from defects in materials and workmanship for a period of (1) one year from the date of original retail purchase from a Polk Audio Authorized Dealer. However, this warranty will automatically terminate prior to the expiration of the (1) one year period if the original retail purchaser sells or otherwise transfers the Product to any other party. The original retail purchaser shall herein after be referred to as "you." To allow Polk Audio to offer the best possible warranty service, please fill out the Product Registration Card(s) and send them to the Factory at the address provided in the Registration Card within (10) ten days of the date of purchase.

Defective Products must be shipped, together with a proof of purchase, prepaid insured to the Authorized Polk Audio Dealer from whom you purchased the Product, or to 2550 Britannia Blvd., Suite D, San Diego, CA 92154. Products must be shipped in the original shipping container or its equivalent; in any case the risk of loss or damage in transit is to be borne by you. If, upon examination at the Factory or Polk Audio Authorized Dealer it is determined that the unit was defective in materials or workmanship at any time during the Warranty period, Polk Audio or the Polk Audio Dealer will, at its option, repair or replace this Product at no additional charge, except as set forth below. All replaced parts and Products become property of Polk Audio. Products replaced or repaired under this Warranty will be returned to you, within a reasonable time, freight prepaid.

This Warranty does not include service or parts to repair damage caused by accident, disaster, misuse, abuse, negligence, inadequate packing or shipping procedures, commercial use, voltage inputs in excess of the rated maximum of the unit, cosmetic appearance of the cabinetry not directly attributable to defects in materials or workmanship, or service, repair, or modifications of the Product which has not been authorized or approved by Polk Audio.

This Warranty is in lieu of all other expressed Warranties. If this Product is defective in materials and workmanship as warranted above, your sole remedy shall be repair or replacement as provided above. In no event will Polk Audio, Inc. be liable to you for any incidental or consequential damages arising out of the use or inability to use the Product, even if Polk Audio, Inc. or a Polk Audio Dealer has been advised of the possibility of such damages, or any other claim by any other party. Some states do not allow the exclusion or limitation of consequential damages, so the above limitation and exclusion may not apply to you. This Warranty gives you specific legal rights which may vary from state to state.

This warranty applies only to Products purchased in the United States of America, its possessions, and U.S. and NATO armed forces exchanges and audio clubs. The Warranty terms and conditions applicable to Products purchased in other countries are available from the Polk Audio Authorized Distributors in such countries.