

powerbass[®]

X T R E M E



2XL-60.3C

2XL 3-WAY COMPONENT SYSTEM

Application Guide



Thank you and Congratulations

Congratulations on your purchase of Powerbass Xtreme speakers. You now own a speaker of uncompromising design and engineering from a factory that truly believes in the relentless pursuit of perfection. Incorporating the highest quality parts and state-of-the-art materials, these speakers display the ultimate balance between high fidelity, extreme performance and long-lasting reliability.



At PowerBass USA, Inc. we are confident you will have many years of outstanding enjoyment from this great SPEAKER investment. For maximum performance we recommend that you have your new PowerBass Xtreme product installed by an Authorized PowerBass Xtreme Dealer. Doing so will also automatically extend your warranty to a full THREE YEAR Period.

To learn more about PowerBass Xtreme, please visit us on the World Wide Web at
<http://www.powerbassusa.com>

⚠ Warning ⚠

Continuous exposure to sound pressure levels in excess of 100 dB can cause permanent hearing loss. PowerBass Xtreme Speakers are capable of producing sound pressure levels well over 170 dB. Please observe all local sound ordinances while listening to your PowerBass Xtreme system. PowerBass USA, Inc. accepts no liability for hearing loss, bodily injury, or property damage due to the result of use or misuse of this product. property damage due to the result of use or misuse of this product.

3-WAY COMPONENT SPEAKER FEATURES

Stamped Woofer Basket (Stainless Steel Finish): These rigid baskets are designed to give the moving parts of the speaker the solid, corrosion free platform that they need to perform for even the most discriminating listener.

4-Layer Wool/Paper Composite Cone: The premium grade cones on the woofers are coated fibrous paper cone with woven wool fibers for addition strength and rigidity. This results in an extremely stiff cone that is lightweight and will deliver a warm sound that you can listen to for hours.

High Damping Butyl Rubber Surround: This surround is used on the woofers to ensure linear travel throughout the entire frequency range resulting in more bass output and higher efficiency while reducing distortion.

High Powered Multi-Layer 3-ohm Voice Coil: ASV is a high temperature voice coil former that is light weight and designed for greater efficiency and increased power handling that gives you that loud and clear sound you are looking for.

Silk Dome Midrange and Tweeter: These soft dome midrange and tweeter components incorporate a neodymium motor structure and edge wound ribbon wire voice coils to provide an extremely wide bandwidth. The sealed back midrange features a built-in protective mesh grill.

Tweeter Mounting Kit: Flush, surface and angle-mounting cups allows multiple mounting options for custom tailored high frequency dispersion.

Computer Optimized Bi-ampable Crossover Network: The included passive crossovers may be used in either a conventional 3-way or Bi-amp configuration. These asymmetrical crossovers were designed using a sophisticated computer program LEAP to provide a smooth, flat frequency transition between the woofer, midrange and tweeter. High quality wire wound resistors, high temp electrolytic capacitors, low DC resistance Air Core inductors and selectable attenuation insure audiophile sound separation. When selecting the Bi-amp mode a separate 4-channel or 2-channel amplifier is required to run the right and left channels.

Additional Features: PBX tuner inspired custom grills, customized rubber boot to protect the woofer magnet, professional mounting hardware and color coded speaker wire adds further value to your investment.

SPECIFICATION FOR POWERBASS 2XL-60.3C SYSTEM

(due to Constant Improvement, Specification and Parameter are subject to change without notice)

	2XL-60.3C
Woofer Size	6.5"
Cone Material	4-layer Composite Cone
Mid Range Size	2.75"
Dome Material	Silk Dome
Tweeter Size	1.0"
Dome Material	Silk Dome
Impedance	3-ohm Total System
Power Handling	120 RMS / 240 Peak
Sensitivity (1 Watt / 1 Meter)	92dB
Frequency Response	59Hz - 20,000Hz (Total System)
Woofer Mounting Hole Diameter	5.59" (142mm)
Woofer Mounting Depth	2.48" (62.7mm)
Midrange Mounting Hole Diameter	3.31" (84mm)
Midrange Mounting Depth	1.18" (30mm)
Tweeter Mounting Hole Diameter	1.87" (47.5mm)
Tweeter Mounting Depth	0.79" (20mm)
Crossover High Pass	5,000 Hz
Crossover Midrange	900 Hz - 5,000 Hz
Crossover Low Pass	900 Hz



INSTALLATION EXPERIENCE

Installation of PowerBass Xtreme Speakers requires experience with a variety of mechanical and electrical procedures. This manual only provides general installation and operation instructions. If you have any reservations about your installation skills or lack of the proper tools, please contact your local PowerBass Xtreme dealer for assistance.

TIPS TO GET THE MOST OUT OF YOUR POWERBASS SYSTEM

Your PowerBass Xtreme speakers have been meticulous engineered and designed to handle high power musical reproduction. Despite their rugged construction, it is possible to damage your speaker if they are improperly used. In general, you will hear distortion as a so-called warning before any damage occurs. If you hear distortion in your system, immediately reduce the musical level to the point where the sound retains its clarity.

1. Be sure you supply the speakers with enough unclipped amplifier power to drive them properly. (More damage can be done to a speaker by under-powering and clipping your amplifier than any other way!)
2. Where possible, a separate amplifier just for your speaker should be used with an electronic crossover to set the frequency range. One amplifier with passive crossovers will work (Tri-Way Setup), but the system will do more with less stress on the amplifier by using two amps.
3. To avoid any possible sound cancellation from the front of the speaker to that of the rear of the speaker, cut a panel of Masonite or MDF to firmly mount the speaker if the vehicle's original cutout is too big.
4. When connecting speaker wires from the amplifier or head unit to that of the speaker itself, pay attention to the polarity of the connection. This will insure optimum sound reproduction and performance.
5. For maximum dynamic performance use weather stripping to insure a tight seal.
6. Do not mount any speakers or external crossovers where they will get wet.
7. Remember the Golden Rule "Measure twice...cut once."

When installed properly, your PowerBass Xtreme component system will make a remarkable improvement in the quality of virtually any mobile audio sound system and give years of superior performance.

PREPARING FOR INSTALLATION

NOTE: The tools listed below may be required for proper installation.

1. An electric drill with drill bits
2. Phillips-head and standard screwdrivers
3. Wire strippers
4. Crimping tool and needle-nose pliers
5. Silicone sealant or closed cell weather-stripping
6. Metal file
7. Hole saw

INSTALLATION PRECAUTIONS

NOTE: Proceed only if you are a qualified installer otherwise; let your dealer do it.

- Always wear protective eyewear when using tools.
- Turn off all stereo and other electrical devices before you begin.
- Disconnect the (-) negative lead from your vehicle's battery.
- Keep the speakers in the package until final installation.
- Locate all fuel lines, brake lines, oil lines, and electrical cables when planning your installation.
- Check to see if there is enough clearance behind the mounting surface before installing the speakers.
- When running speaker wires through sheet metal, be sure to use grommets to properly insulate the wires from metal edges.

COMPONENT SYSTEM INSTALLATION

General

Due to the great variety of installation conditions it is impossible to give specific instructions on how to install this 3-way system in your particular vehicle.

Mounting templates have been included for the Woofer and Midrange speakers. If the speaker locations you choose require you to cut metal, avoid cutting any structural metal and/or braces. If the door and body panel cannot support the weight of the speaker you will want to add ring of wood or MDF for additional support.

The following are only general recommendations. If unsure about your level of installation skills, ask your authorized PowerBass Xtreme dealer for assistance.

Component Woofer

The proper installation procedure for mounting these high performance 6.5" (165 mm) mid bass speakers is to secure the speaker to the vehicle's speaker mounting hole. Once the speaker is in place, determine if the supplied grill needs to be installed. If so, place the grill in place over the speaker and screw the speaker into the mounting hole.

Component Midrange

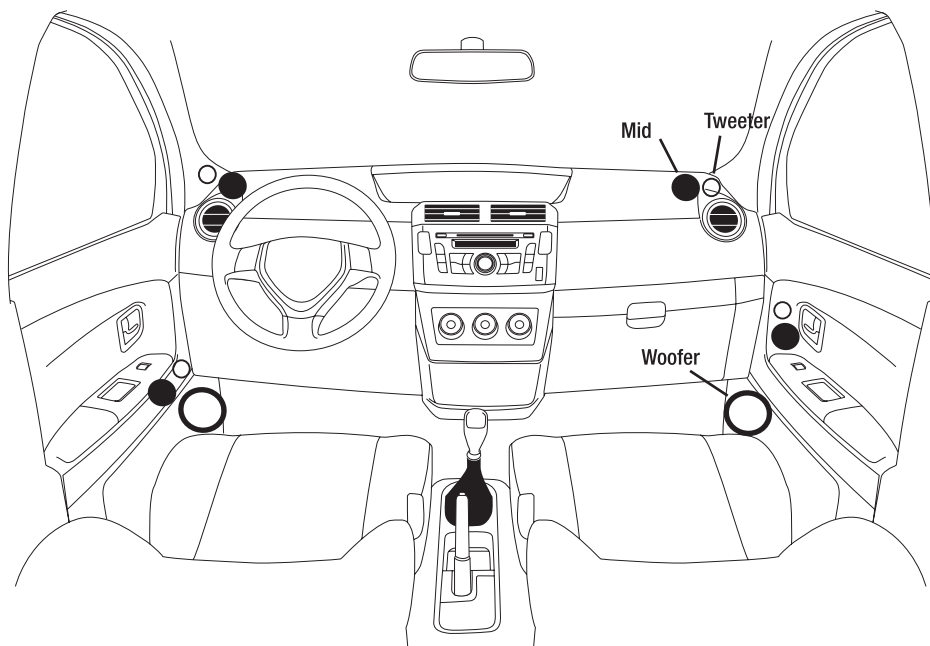
These sealed back 2.75" (70 mm) Silk Dome midrange drivers offer excellent transient response and faithful reproduction of the human voice. Care should be taken when cutting the mounting hole to ensure a tight fit without cracking the plastic mounting frame.

Component Tweeter

These high quality 1.0" (25mm) Silk Dome tweeters come complete with several mounting housings for installation versatility. Once you have chosen the housing that is to be used, gently press the tweeter into the proper mounting cup. Experiment with the tweeter positioned in several locations to determine the best imaging result before cutting out any panel. Typically tweeters should be mounted on axis and as close to ear level as possible. If the tweeter has to be removed from the mounting cup, insert a small screwdriver in the back of the tweeter and carefully push the tweeter from the mounting cup. (The following page shows how to use the supplied tweeter mounting kit).

NOTE: *The speakers included in this 3-way component kit can be damaged beyond repair if these installation instructions are not carefully followed.*

SUGGESTED INSTALLATION OPTIONS

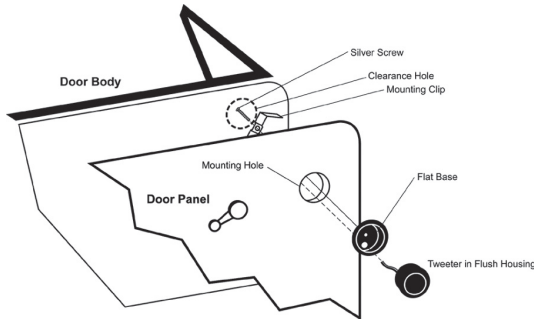


INSTALLATION PROCEDURES

By mounting the tweeter separately from the woofer (or mid-range driver) the installer can choose the best location for sound quality and imaging. Optimum results are usually obtained by locating the tweeters and midrange speakers relatively close to each other, and by keeping the sound path lengths between the listener and the left and right speakers as equal as possible. Three mounting types are possible allowing more versatility for the tweeter location. These are flush mount, surface mount, and angle mount.

Flush Mounting (Type A)

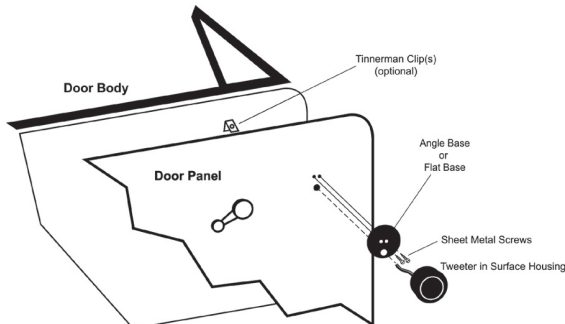
The best location for the tweeter is usually high up on the door and as far forward as possible without interference from the dashboard. If the desired location is flat and space behind the door panel allows the use of the flush mount housing, follow the drawing as shown below:



After checking for clearance, cut the mounting hole in the door panel (see Tweeter Specifications for hole size). Mount the Flat Base from the outside with the mounting clip on the inside of the door panel. Secure the mounting clip to the Flat Base with the long silver screw provided.

Surface/Angle Mounting (Type B and C)

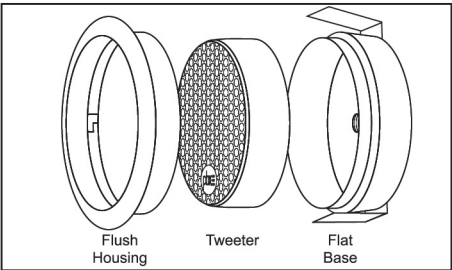
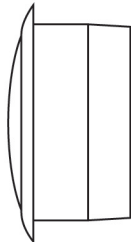
If mounting the tweeter on the surface works out best, refer to the following drawing to see how to best mount the tweeter. Black sheet metal screws have been provided to attach the surface base to the door panel.



EXAMPLE OF MOUNTING

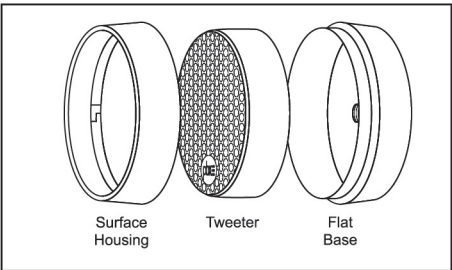
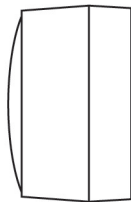
Type A

Flush Mount Tweeter



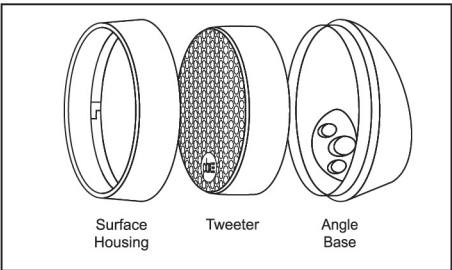
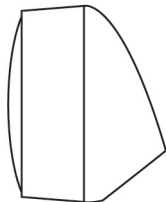
Type B

Surface Mount Tweeter



Type C

Angle Mount Tweeter

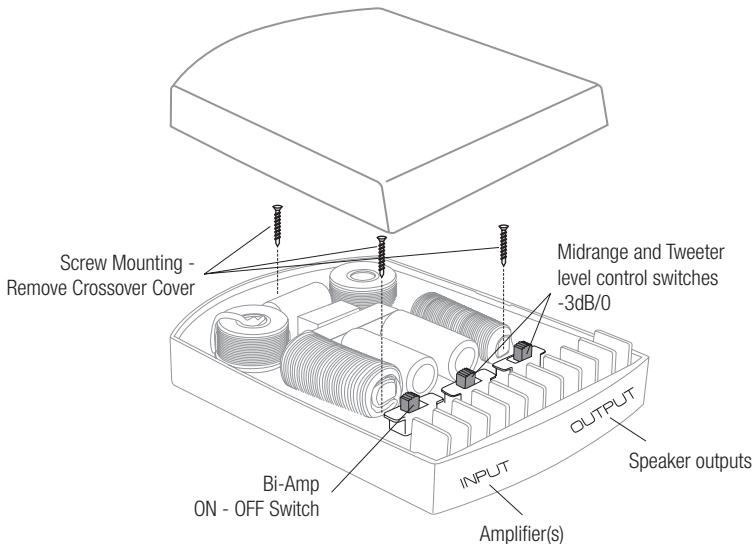


If the tweeter has to be removed from the mounting cup, insert a small screwdriver in the back of the tweeter and carefully push the tweeter from the mounting cup.

CROSSOVER NETWORK INSTALLATION AND WIRING

Your PowerBass Xtreme Component system contains two separate 3-way crossover networks. When choosing a location to mount the crossovers, keep in mind they contain electronic parts which can be damaged by moisture and dirt. Mount each crossover in a location that has easy access for wiring plus the adjustment of the Midrange and Tweeter levels (each can be adjusted by a slide switch located under the crossover cover).

Correct wiring of the crossover is critical to avoid damage to the speakers and ensure true high fidelity sound. Pay close attention to the wiring diagrams outline and the markings on the crossover.



Mount each crossover in a location that has easy access for wiring plus the adjustment of the Midrange and Tweeter levels (each can be adjusted by a slide switch located under the crossover cover).

CAUTION: Care must be taken when adjusting the screws on the input terminals that fasten the speaker wires to the crossover network. Make sure each connection is secure without over tightening. Use of power tools to tighten these screws is not recommended as they can strip the screws and permanently damage the input terminals.

The 3-way crossover network is constructed of the highest quality components selected and matched to tight tolerances that enable a linear frequency response and improved dispersion from each driver. There is a two-position level control for both the tweeter and midrange which allow high frequency adjustment tailored to your own personal taste.

Another unique feature of this crossover is the ability to accept two inputs. This means it can accept 2 amplifier inputs and allows the system to operate in an optional BI-AMP mode. In the BI-AMP mode one input is used for both the Midrange and Tweeter while the other input is used solely for the woofer. This configuration allows easier tuning and maximizes your amplifiers output power. In addition you will notice greater dynamic range and more efficient impedance loads for the woofer and midrange/tweeter.

Under the cover of the crossover network are a row of three switches. The BI-AMP on/off switch is on the left. Refer to the wiring diagrams to determine if this switch should be set to the ON or OFF position.

The switch in the middle is marked MID; the switch to the right of that is marked TW. These two switches make it possible to adjust the level according to the placement of the speakers in the vehicle and your personal preference. The TW slide switch adjusts the level (volume) of the tweeter relative to the midrange and woofer. The MID slide switch adjusts the level of the midrange in a similar fashion. The 0dB setting provides the greatest amount of output. Selecting -3dB reduces the output.

NOTE: Make sure you adjust the controls before permanently mounting the crossover.

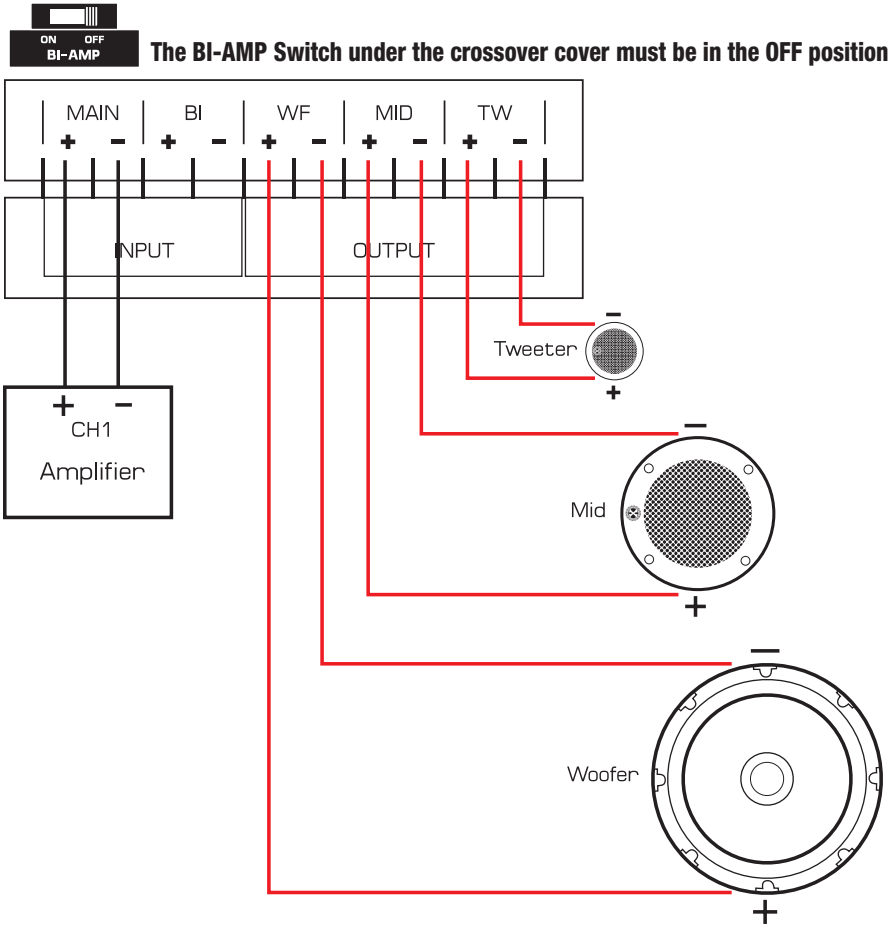
Conventional VS Bi-Amp Comparison

Type	Advantages	Disadvantages
Conventional 3-Way	<ul style="list-style-type: none">• Easy Install• Best use of a 2 channel amplifier	<ul style="list-style-type: none">• Audio fidelity not as good as bi-amp• Amplifier works harder
Bi-Amplified	<ul style="list-style-type: none">• Optimum sound quality• More efficient use of amplifier power	<ul style="list-style-type: none">• Requires at least 4 amplifier channels• Trickier to install• Better control

CONVENTIONAL WIRING

By selecting the OFF position on the switch labeled BI-AMP the crossover can be set up using a single amplifier input. While this set up does sacrifice some fidelity, it makes the best use of a single 2-channel amplifier. Note: The BI terminal will not be used in this configuration.

- 1. Connect the amplifier or head unit to the crossover's **+MAIN-** terminals. (White/Black Wire)
- 2. Connect the terminals labeled **+WF -** to the component woofer speaker. (Red/ Black Wire)
- 3. Connect the terminals labeled **+MID-** to the component midrange speaker. (Red/ Black Wire)
- 4. Connect the terminals labeled **+TW-** to the component tweeter set. (Red/Black Wire)



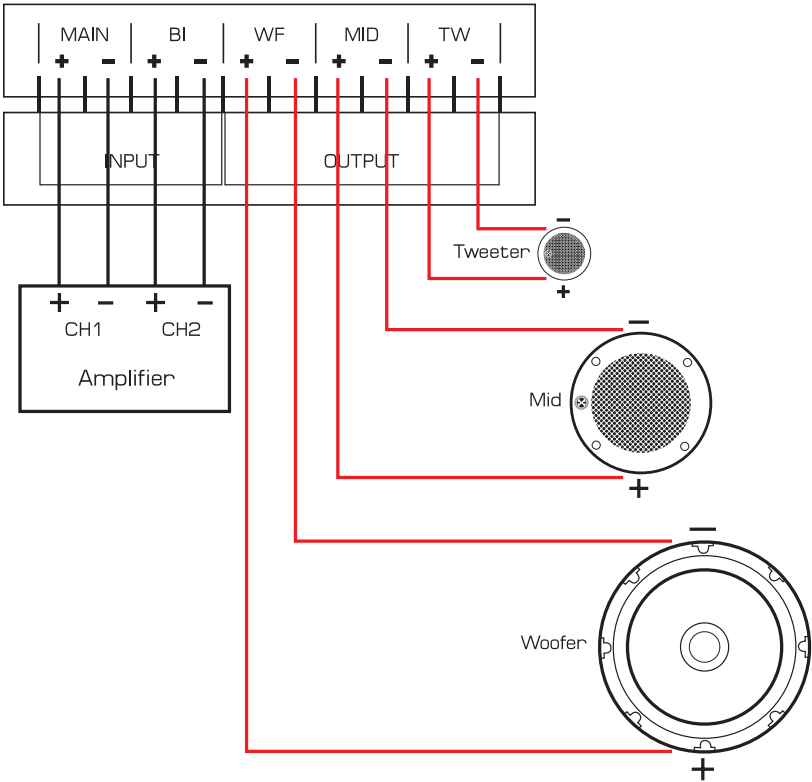
NOTE: BE SURE TO OBSERVE PROPER POLARITY WHEN CONNECTING SPEAKER WIRES TO THE CROSS-OVER NETWORK TERMINALS.

BI-AMP WIRING

By selecting the ON position on the switch labeled BI-AMP the crossover must be set up using two amplifier inputs. Wiring of the Bi-amp configuration is a bit trickier and careful attention must be paid to avoid damage to the entire system.

1. Connect one channel on the amplifier or head unit to the crossover's **+MAIN-** terminals, this will power the midrange and tweeter. (White/Black Wire)
2. Connect second channel on the amplifier to the crossover's **+BI-** terminals, this will power the woofer. (White/Black Wire)
3. Connect the terminals labeled **+WF-** to the component woofer speaker. (Red/ Black Wire)
4. Connect the terminals labeled **+MID-** to the component midrange speaker. (Red/ Black Wire)
5. Connect the terminals labeled **+TW-** to the component tweeter set. (Red/Black Wire)

 **ON OFF**
BI-AMP **The BI-AMP Switch under the crossover cover must be in the ON position**



WE WANT YOU LISTENING FOR A LIFETIME

Dear Customer,

Selecting fine audio equipment such as the speakers you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. PowerBass and the Consumer Electronics Association (CEA) want you to get the most out of your equipment by playing at a safe level. One that lets the sound come through loud and clear 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.

PowerBass and the CEA want you listening for a lifetime!



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POWERBASS XTREME LIMITED WARRANTY POLICY

PowerBass USA, Inc. offers limited warranty on PowerBass products under normal use on the following terms:

PowerBass Xtreme Speakers are to be free of defects in material and workmanship for a period of one (1) year. The warranty is extended to three (3) years for parts and labor, if an Authorized PowerBass Xtreme Dealer completes the installation.

This warranty applies only to PowerBass products sold to consumers by Authorized PowerBass Dealers in the United States of America. Products purchased by consumers from a PowerBass dealer in another country are covered only by that country's Distributor and not by PowerBass USA.

This warranty covers only the original purchaser of PowerBass product. In order to receive service, the purchaser must provide PowerBass with the receipt stating the consumer name, dealer, product and date of purchase.

Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at PowerBass's discretion and will not be liable for incidental or consequential damages. PowerBass will not warranty this product under the following situations:

- **Speakers received with bent frames or water damage**
- **Abuse such as holes in the cone, surround or ripped spider**
- **Voice coil damage due to amplifier clipping or distortion**
- **Product that has not been installed according to this owners manual**

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for PowerBass any other liability in connection with the sale of this product.

Please call (909) 993-5399 for PowerBass Customer Service. You must obtain an RA# (Return Authorization Number) to return any product to PowerBass. The RA number must be prominently marked on the outside of the shipping carton or the delivery will be refused. Please pack your return carefully; we are not responsible for items damaged in shipping. Return the defective product along with a copy of the original dated retail sales receipt, plus \$12.00 for handling and diagnostic evaluation to:

**PowerBass USA, Inc.,
Attn: Returns (RA# _____)
13936 Mountain Avenue, Chino, CA 91710**

Residents of HI, AK and US territories will be charged for return shipping. All inquiries regarding service and warranty should be sent to the above address.

Removed or altered serial numbers will void this warranty



PowerBass Xtreme (PBX) – A division of PowerBass USA, Inc.

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