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PLXR3B

3-Way Electronic Crossover Network with Remote Subwoofer Control

USER GUIDE

INTRODUCTION

Your selection of an Audio bank car audio product indicates a true appreciation of fine musical reproduction. Whether adding to an existing system or including your Audio bank crossover in a new system, you are certain to notice immediate performance benefits.

KEEP YOUR SALES RECEIPT

Take this time to attach your sales receipt to the manual and put in a safe place.
In case of any unforeseen reason this product may need warranty service.
Your receipt will be necessary to establish purchase date.

RECOMMENDATION

A crossover's performance is only as good as its installation.
Proper installation will maximize the system's overall performance.
It is recommended that you have our product installed by an authorized Audio bank retailer. However, if you decide to install it yourself, please carefully read through this manual and take your time to do a quality installation.

IMPORTANT!

Before making any connections, disconnect the car's battery until the installation is completed to avoid possible damage to the electrical system.

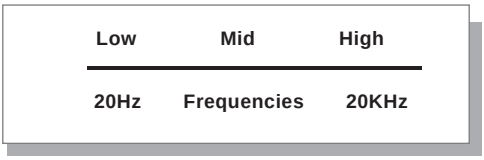
WARNING!

Exposure to high power sound system can cause hearing loss or damage.
Listening to your system at loud levels while driving will impair your ability to hear traffic sounds and emergency vehicles.
Use common sense when listening to your system.

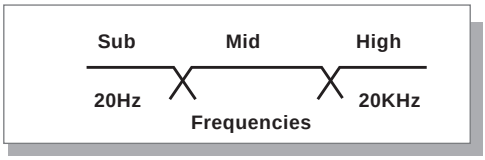
SYSTEM LAYOUT

The primary function of the crossover is to filter the audio signal. Basically, the **PLXR3B** divides the audio signal into three separate pars..... Subwoofer, Mid and High. (See Figure #1).

Although the **PLXR3B** has rather simple connections, it is important for you to have a general understanding of the operating range of your system to properly setup the system as well as to make the final adjustments.



Full Range Output



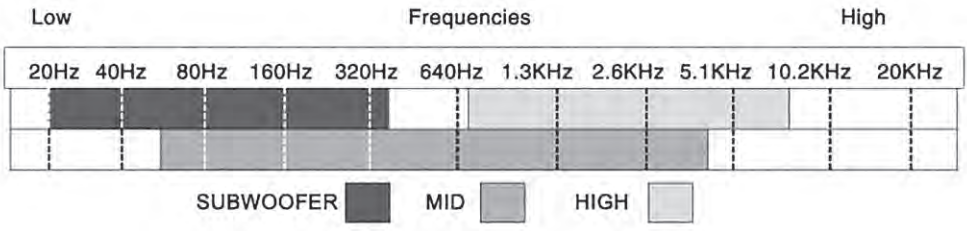
Three-way Output

(FIGURE # 1)

FULL RANGE VS. THREE-WAY OUTPUT

In order to reproduce the music in which it was recorded, your audio system should have the ability to recreate all audio information from 20Hz up to 20KHz (This is known as human audible range). One of the most important factors in sound quality is the overall balance of the frequency response, better known as the linearity of the sound. In a perfectly balance system, the low to high frequencies are reproduced without missing information. Unfortunately there are many factors that can cause loss of frequencies in your system. Some loss may be caused due your speaker's frequency response, crossover points, and level adjustment.

Before you set up the system it is best to first layout your system maintaining the speakers operating range. The following graph will give a general idea of the Subwoofer, Midrange and High operating range for the PLXR3B crossovers.



CROSSOVER RANGE

(FIGURE # 2)

PLXR3B CROSSOVERS AND OPERATING RANGE

SAFETY PRECAUTIONS

Fuse crossover's power wire at the battery.
Be sure to fuse (3 amp) the power wire within 12" of the car's battery.
This will protect the car's battery in case of a short circuit between the crossover and the battery. **THIS IS A MUST**.

Use high grade wire connectors.
To ensure maximum power transfer and secure safe connections, it is recommended to use high grade barrier spades (for connection at crossover) and terminal rings (for connection at battery)..

Do not run any wires underneath vehicle
Exposed wires have a chance of being cut or damaged. It is best to run all wires through the vehicle under the carpet and/ or side panels. This lends to a cleaner installation and less risk of damage.

Use caution when mounting the crossover.
Remember that there are many electrical wires, gas lines, vacuum lines, brake lines as well as a gas tank in the automobile. Make sure you know where they are when mounting the crossover to avoid puncturing lines, shorting wires or drilling holes in the gas tank.

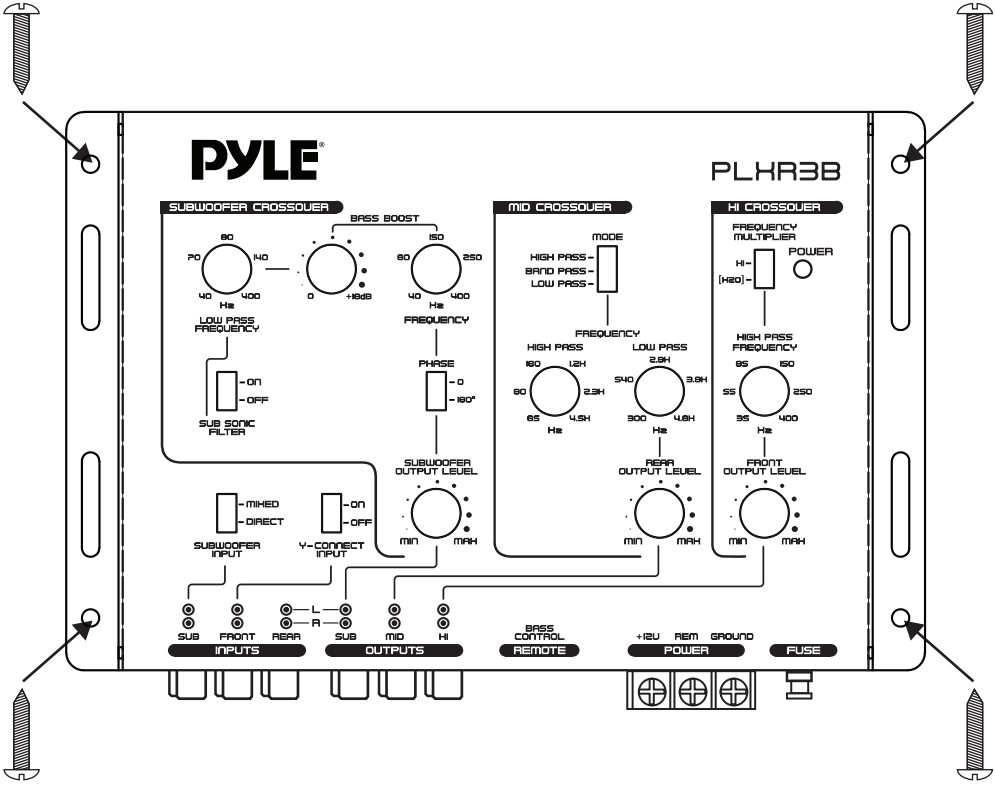
Run signal wires away from electrical wires.
To avoid possibility of induced noise from the car's electrical system (i.e. popping noises or engine noise), run signal wires away from the car's electrical wiring.

Make all ground wires as short as possible and at the same point.
In order to reduce the chance of ground loops (i.e. engine noise), make the grounding wire as short as possible to reduce the wire's resistance. Also, when using multiple components, make sure all units are grounded at the same point.

Avoid sharp edges when running the wires.
To avoid the possibility of power, signal or speaker shorts, be careful not to allow the crossover's wires to come in contact with sharp edges.
Use a grommet to protect the wire when running through the firewall.

MOUNTING LOCATION

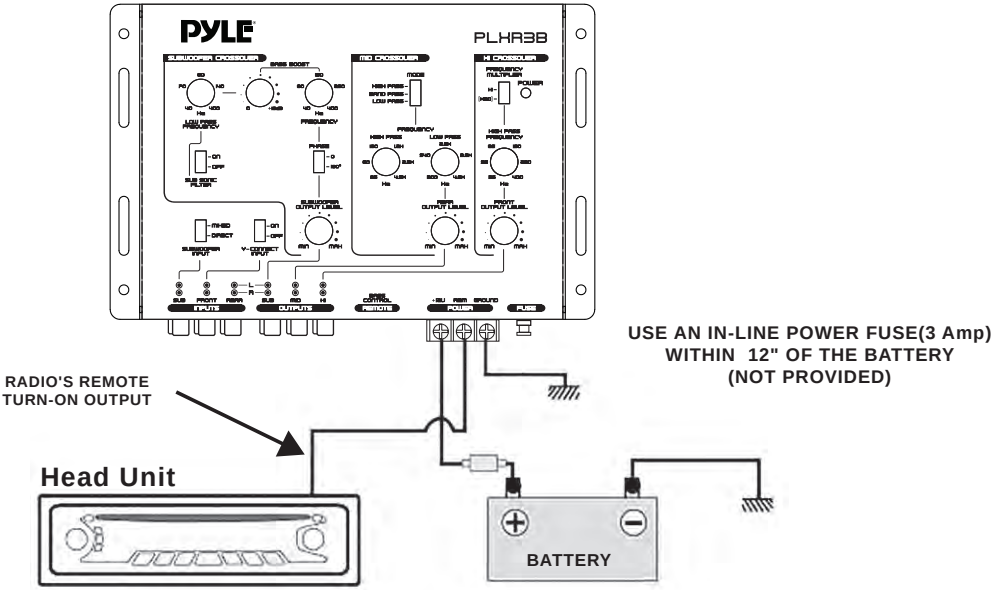
Select the location in which you wish to mount the crossover. It is recommended to find a location that will allow easy adjustment. Use caution when mounting crossover. There are many wires, gas lines, vacuum lines, brake lines as well as a gas tank in the automobile. Make sure you know where they are when mounting the crossover to avoid puncturing lines, shorting wires or drilling holes in the gas tank. Once you are ready use a pencil to mark the through holes in the bottom panel. After you have marked the locations of the holes move crossover out of the way and drill small starter holes to make the taping screws easier to install. Use provided screws to tighten down the crossover (see Figure # 3).



(FIGURE #3)

MOUNTING THE CROSSOVER

POWER CONNECTIONS



IMPORTANT!

Before making any connections, disconnect the car's battery until the installation is completed to avoid possible damage to the electrical system.

Connect the Power terminal of the crossover to the car's battery.

Use a 16 gauge wire to connect to the terminal on the crossover marked +12V. Run the wire directly to the positive terminal of the car's battery. Make sure to use an in-line fuse (3 amp) within 12' of the battery. Since the crossover's current draw is nominal, you can connect to the pre-existing + 12V power wire that has been run for the crossovers if so desired.

Connect the ground terminal of the crossover to the car's chassis.

Use a 16 gauge wire to connect the GROUND terminal to the car's chassis. Try to keep the length of the cable as short as possible, preferably less than 12". Also make sure that the point on the car chassis where the connection is to be made is free of paint and dirt. It is recommended to use the same grounding point as the amplifiers to eliminate the possibility of ground loop (engine noise) caused by different levels of ground to each of the components.

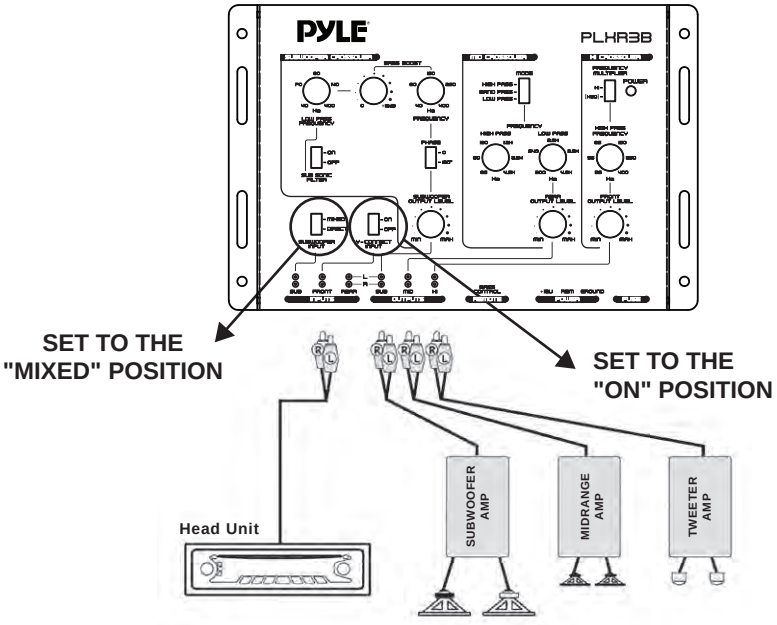
Connect the remote terminal of the crossover to a switchable +12V.
This connection allows the crossover to be turned on and off with the power control of the head unit. If the head unit has a **REMOTE OUTPUT WIRE** (+ 12V), connect it to the **PLXR3B** terminal marked REM. Now when the head unit is turned on, the crossover will automatically turn on. If the head unit does not provide a remote output, it is necessary to connect the crossover to a switched + 12V power supply (when the car is on or in use).

SIGNAL CONNECTIONS

Before making your signal connections, you will need to decide how you wish to configure your system. The **PLXR3B** is extremely flexible allowing for many different configurations. All signal connections should be made using higher-grade RCA patch cables and these cables should be run away from electrical wiring to avoid inducted noise. The **PLXR3B** allows for three different types of input connections that control all three outputs of the crossover.

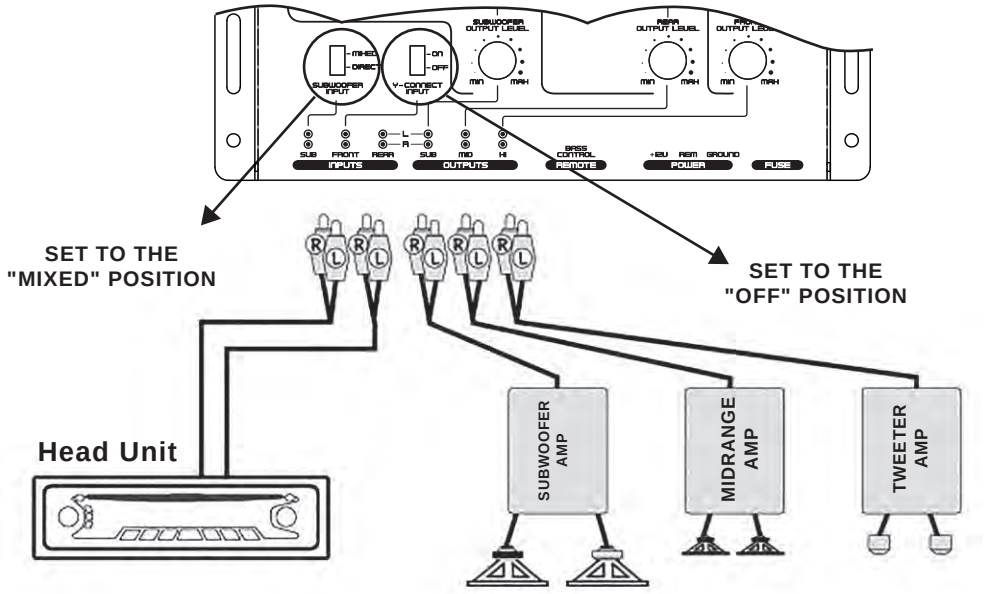
1. USING ONE PAIR OF PRIMARY INPUTS

When only one pair of input is available, input the signal into the "**FRONT**" input section and set the **SUBWOOFER INPUT** switch to "**MIXED**" and "**Y-CONNECT INPUT**" switch to "**ON**" position. This will allow the signals to be fed internally to the **SUBWOOFER** and **REAR** sections to give proper outputs.



2. USING TWO PAIRS OF INPUTS

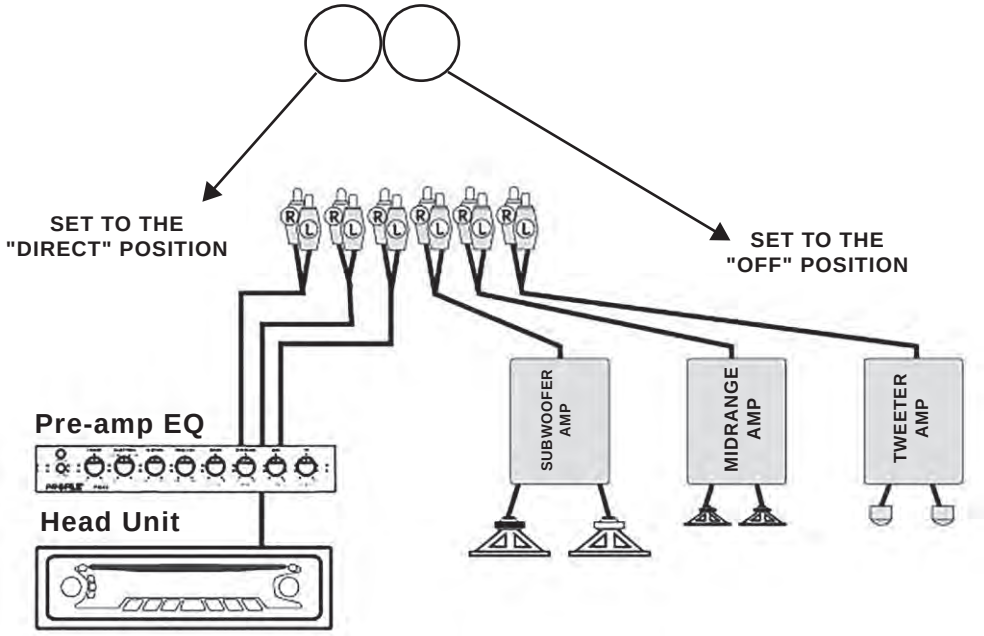
When front and rear pairs of input are available, input the signals into the "**FRONT**" and "**REAR**" inputs, respectively. Set the **SUBWOOFER INPUT** switch to "**MIXED**" position to allow the signals to be fed internally to the **SUBWOOFER** section to give proper outputs and set the "**Y-CONNECT INPUT**" switch to "**OFF**" position to allow control of fader from the head unit.



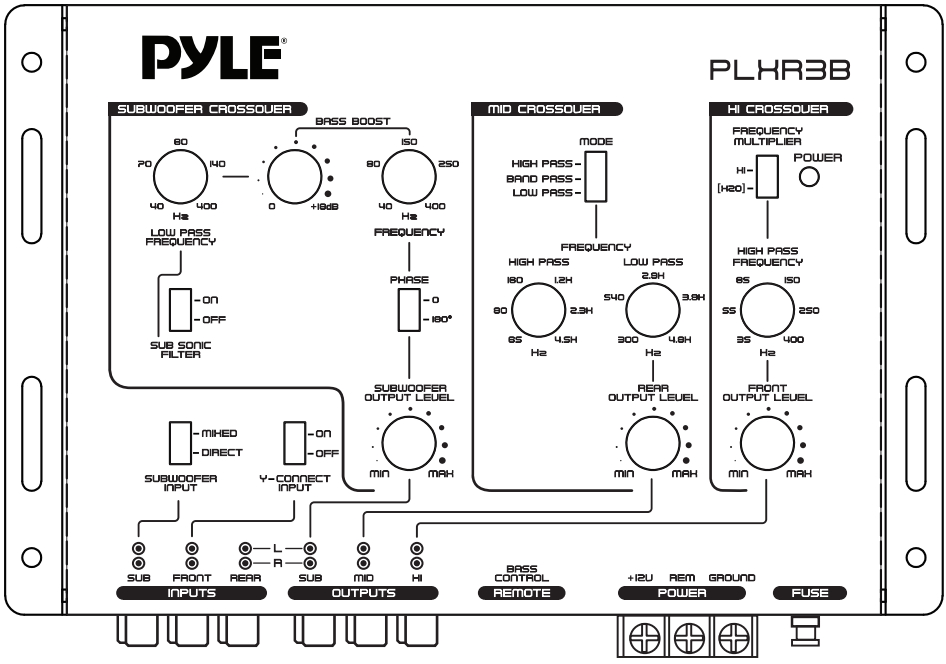
3. USING THREE PAIRS OF INPUTS

All three pairs of inputs on **PLXR3B** can be utilized when front, rear, and subwoofer pairs of inputs are available from a pre- amp EQ.

Set the **SUBWOOFER INPUT** switch to "**DIRECT**" position to allow independent subwoofer level control from the EQ and set the "**Y-CONNECT INPUT**" switch to "**OFF**" position to allow control of fader from the head unit. Note that some head units offer independent subwoofer output signals as well.



SELECTING THE CROSSOVER POINTS



1. SETTING THE SUBWOOFER CROSSOVER POINT, BASS BOOST, PHASE, and SUB SONIC FILTER

Set the desired **CROSSOVER FREQUENCY** tor the subwoofer output using the **LOW PASS FREQUENCY** dial. You may select from 40Hz up to 400Hz as your crossover point.

Set the **BASS BOOST** by using the two dials. Use the **LEVEL** dial to set the boost gain from 0 to 18dB. and use the **FREQUENCY** dial to set the bass boost frequency point from 40Hz up to 400Hz.

Select the **PHASE** of the subwoofer using the **PHASE** switch, 0 degrees in phase or 180 degrees out of phase. The normal default setting is 0 degrees in phase.

SUBSONIC FILTER may be turned on/off by using the **SUBSONIC FILTER** switch. When switched on, this Filter avoids reproduction of inaudible low frequencies below 25Hz which could damage the subwoofer(s) because they can generate over displacement of the subwoofer cone. It is recommended that the **SUBSONIC FILTER** be switched ON.

2. SETTING THE CROSSOVER POINTS FOR THE REAR (MIDRANGE) OUTPUT

Usually the **MID** output is a **BAND PASS** design. It's achieved by setting the **MODE** switch at "**BAND PASS**" and using both **HIGH PASS** and **LOW PASS FREQUENCY** dials. Set the desired **HIGH PASS** frequency anywhere between 65Hz and 300Hz for the low frequency cutoff, and set the desired Low PASS frequency anywhere between 2.9KHz and 4.8KHz for the high frequency cutoff.

Selecting **HIGH PASS** from the **MODE** switch and using **HIGH PASS FREQUENCY** dial alone will remove the high cutoff section and allow the midrange output to play up to 20KHz.

Selecting **LOW PASS** from the **MODE** switch and using **LOW PASS FREQUENCY** dial alone will remove the low cutoff section and allow the midrange output to play down to 20Hz. This setting will be ideal if you're using mid bass speakers capable of reproducing low to mid frequencies.

3. SETTING THE CROSSOVER POINT FOR THE FRONT (HIGH) OUTPUT

Set the desired frequency cutoff point using the **HIGH PASS FREQUENCY** dial for. your **HIGH** output, such as tweeters. The **FREQUENCY MULTIPLIER** switch must be set at "**x20**" in order to obtain the frequency range from 700Hz to 8KHz.

You also have an option of reproducing mid bass or midrange level in the **FRONT** by using the cutoff frequency range from 30Hz to 400Hz with the **FREQUENCY MULTIPLIER** switch at "**x1**".

FINE TUNE THE SYSTEM

One very important part of fine tuning your system is properly level matching the signal from the head unit to the **PLXR3B** crossover and from the crossover to the amplifiers. Level matching is the process of calibrating the audio signal from the head unit all the way to the amplifiers to eliminate unwanted noise and maximize the dynamic: headroom. When the system is properly adjusted, you should achieve maximum output before distortion at about 3/4 volume on the head unit.

MATCHING THE SIGNAL LEVEL

Note: If you have pre-amp Equalizer in the system, bypass or turn off the equalization while level matching.

1. Turn all three output level dials on **PLXR3B** (Subwoofer, Rear, and Front) to maximum position.
2. Turn the **BASS BOOST LEVEL** dial on **PLXR3B** to 0.
3. Turn all input sensitivity gain control knobs on output amplifiers to minimum position.
4. Turn on the system and increase the head unit's volume to 3/4 high (75% of Max volume).
5. Very slowly increase the input sensitivity gain on each amplifier to the point right before the speakers go into distortion. Use **CAUTION** not to overdrive the speakers. Do this for all three amplifiers one by one.

   Once all adjustments are made, the system should sound clear without distortion up to 3/4 of main volume. Also the volume should increase very evenly.

ADJUSTING THE OVERALL BALANCE OF THE SYSTEM

Once you complete matching the signal level, the following steps ought to be made to set the overall linearity of the system.

This may be necessary due to the relative efficiencies of each of the speakers.

For example, smaller speakers normally are more efficient then woofers and play louder faster at given equal power (See Figure # 4)

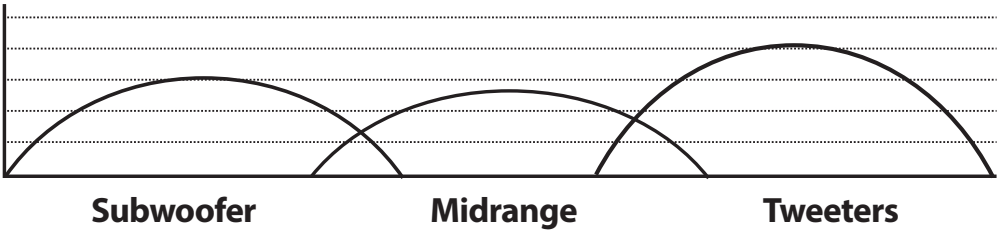
The **PLXR3B's** individual output level controls allow compensation for this.

It is important to understand that the output levels are not designed to add gain to the signal. Actually, the output level controls attenuate (reduce signal gain).

It is for this reason that in the following steps we will start with the output levels at the maximum position then reduce the outputs to balance the system.

For example, if you like heavy bass, you will most likely leave the **SUBWOOFER OUTPUT LEVEL** at the maximum position and reduce the **MID** and **HIGH** output levels by 1/2 (50%). This will allow the bass to reach a high output faster than **MID** and **HIGH** speakers.

If you wish to increase the **MID** and **HIGH** frequencies, reduce the **SUBWOOFER OUTPUT LEVEL**.



(FIGURE #4)

VISUAL EXAMPLE OF DIFFERENT OUTPUT LEVELS BASED ON THE SAME POWER INPUT.

TROUBLESHOOTING THE SYSTEM

We have put together this troubleshooting guide if you experience problems after installing the crossover. Please keep in mind that the majority of problems incurred are caused by improper installation and not the equipment itself.
In addition, there are many components in the system that could cause various signal problems such as inducted electrical noise and engine noise.
Before you can properly address the problem, you must first find the component that is causing the problem. This will take patience and process of elimination.

LOOK FOR....	SOLUTION
No Output	
Blown fuse	Replace
Bad RCA Cable(s)	Replace
+12V at power terminal	Check connection
+ 12V at remote terminal	Check connection
Grounding point clean and tight	Check for ground w/meter
Head Unit's fader not in center position	Set to center position
Low Output	
Check level adjustments	Re-adjust
Bad RCA cables(s)	Replace
Improper level matching	Re-adjust
Engine Noise	
Grounding points are clean and tight	Check for ground w/meter
Ground all components at same point	Ground at same point
Try different grounding point	Change for better ground
Bad RCA cable(s)	Replace
Use High Quality shielded RCA cable	Rejects inducted noise
Low Vehicle charging system and /or battery	Fix and 1 or replace.

California Prop 65 Warning

⚠WARNING:

This product contains Nickel carbonate which is known to the state of California to cause cancer birth defects and other reproductive harm. Do not ingest.

For more info go to: www.P65warnings.ca.gov

Features:

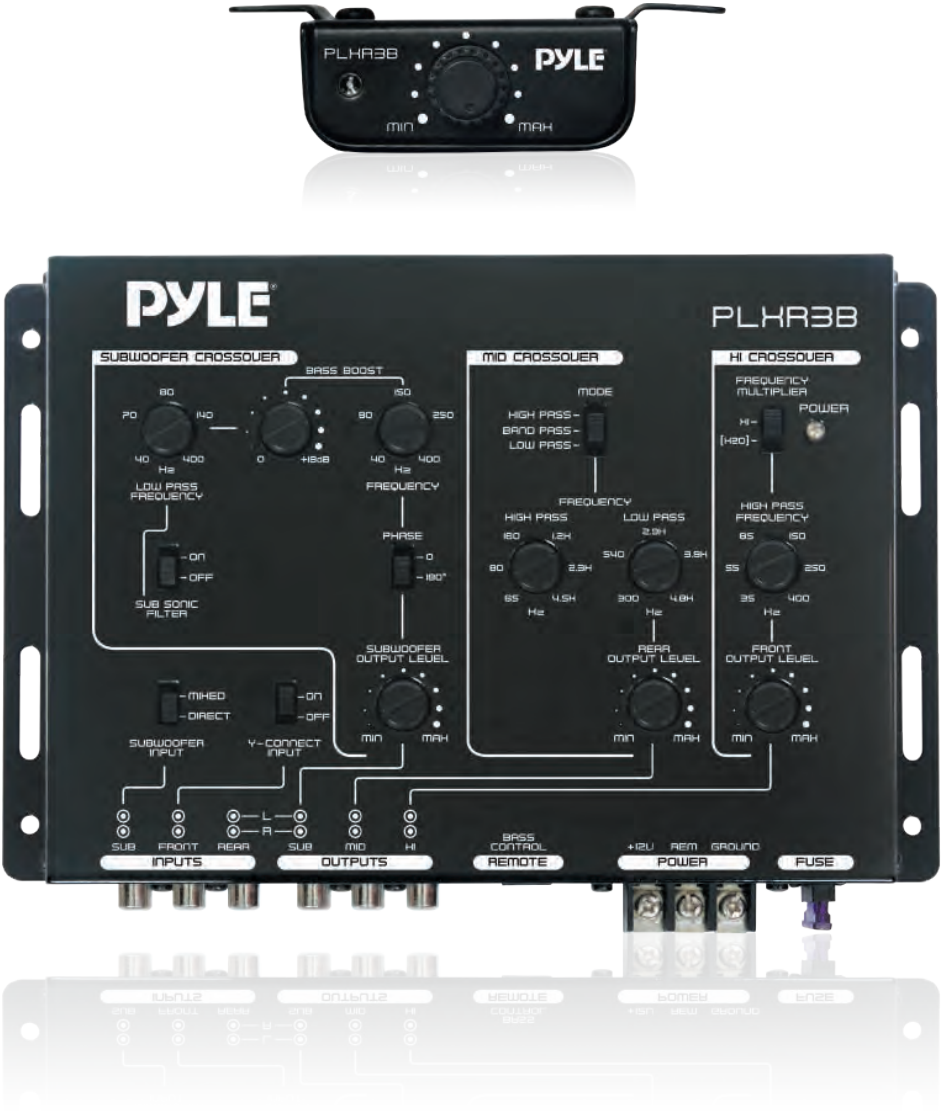
- 3-way Electronic Crossover
- 2/4/6 Channel Input
- 6-Channel / 5 Volt RCA Outputs (Front/Rear/Subwoofer)
- Front/Rear/Subwoofer Lever Control
- Subwoofer Equalizer and Boost Level Controls
- Subwoofer Low-Pass Crossover Control
- 6/4/2 Channel RCA Inputs
- 6-Channel / 5 Volt RCA Outputs (Front/Rear/Subwoofer)
- X20 Frequency Multiplier for Front Channel
- Low-Pass Crossover
- 12dB per Octave Crossover Slope
- Parallel Input Switch, Mixed In/Out Switch
- Remote Subwoofer Level Control
- Power on LED Indicator

What's in the Box:

- 3-Way Electronic Crossover
- 4 Phillips-head Screws
- Remote Unit
- Remote Wire
- 3A Chip Fuse

Technical Specs:

- Hi-Pass Crossover (Front): 35Hz-400Hz
- Hi-Pass Crossover (Rear): 65Hz-4.5 KHz
- Low-Pass Crossover (Rear): 300Hz-4.8 KHz
- Variable Bass Frequency: 40Hz-400Hz
- Boost Level: 0-18dB
- Boost Frequency: 40Hz-400Hz
- Phase Shift: 0 / 180
- Subsonic: 25Hz
- Distortion: 0.05% THD at 1V output level
- S/N Ratio: 110dB
- Separation: >60dB
- Frequency Response: 10 HZ~ 50 KHZ
- Voltage: 11V-15V
- Product Dimensions (L x W x H): 10.4" x 6.3" x 1.5" -inches


PLHR3B
PYLE
MIN
MAX
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PLHR3B
SUBWOOFER CROSSOVER
BASS BOOST
LOW PASS FREQUENCY
PHASE
SUB SONIC FILTER
SUBWOOFER OUTPUT LEVEL
SUBWOOFER INPUT
Y-CONNECT INPUT
MID CROSSOVER
MODE
HIGH PASS
BAND PASS
LOW PASS
FREQUENCY
REAR OUTPUT LEVEL
HI CROSSOVER
FREQUENCY MULTIPLIER
POWER
HIGH PASS FREQUENCY
FRONT OUTPUT LEVEL
SUB
FRONT
REAR
SUB
MID
HI
INPUTS
OUTPUTS
BASS CONTROL
REMOTE
+12V
REM
GROUND
POWER
FUSE

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Questions? Issues?

We are here to help!

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