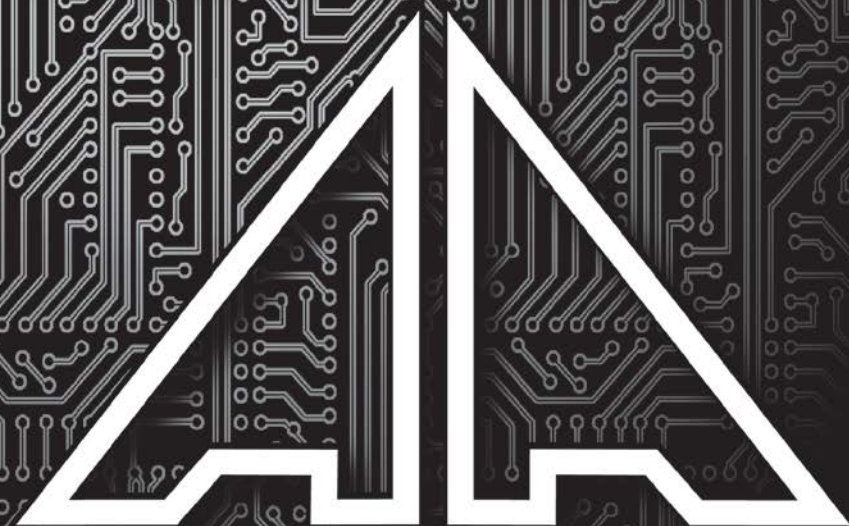


# OWNER & INSTALLATION MANUAL

BOOST SERIES AMPLIFIERS

B250.4 B450.1

"ONE HIT AND YOU'RE HOOKED."



ADDICTIVE AUDIO

# Specifications

## **B250.4 (13.8V)**

**STEREO**

**BRIDGED**

Signal to Noise Ratio 101dB  
High Efficiency 77% THD:  
0.1%  
Lowest Recommended Load:  
4ohm Stereo

65x4 watts RMS @ 4ohm  
  
Do Not Operate at 2ohm or  
1ohm Stereo

135x2 watts RMS @ 4ohm  
  
Do Not Operate at 2ohm or  
1ohm Bridged

## **B450.1 (13.8V)**

**STEREO**

**BRIDGED**

Signal to Noise Ratio 104dB N/A  
High Efficiency 79%  
THD: 0.05%  
Lowest Recommended Load:  
2ohm Mono

225x1 watts RMS @ 4ohm  
450x1 watts RMS @ 2ohm

Do Not Operate at 1ohm

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## Common Design Features

- ✓ Heavy Duty Copper Trace PCB Board
- ✓ Direct Cable Connection for Superior Conductivity
- ✓ Phase Adjustment
- ✓ Heavy Duty Aluminum Heatsink for Max. Heat Dissipation
- ✓ Input Sensitivity: 220mV – 6.6Vrms
- ✓ Engineered in the U.S.A.

## B250.4 Design Features

- ✓ Bass Boost from 0 to +18dB (45Hz)
- ✓ Low Pass Filter: 40 – 400Hz (-12dB/Octave)
- ✓ High Pass Filter: 40 – 400Hz (-12dB/Octave)

## B450.1 Design Features

- ✓ Remote Gain Control
- ✓ Bass Boost from 0 to +18dB (45Hz)
- ✓ Low Pass Filter: 50 – 300Hz (-12dB or -24dB/Octave)
- ✓ Subsonic Filter: 15 – 60Hz (24dB/Octave)
- ✓ Frequency Response -3dB 15Hz – 238Hz
- ✓ Class D High Efficiency Design
- ✓ Auto-Start High-Level Signal Input and Remote Turn On

# CONGRATULATIONS!

Selecting fine audio equipment, such as the Addictive Audio amplifier you have just purchased, is only the beginning of your musical enjoyment. Now is the time to consider how to maximize the fun and excitement your equipment has to offer. We at Addictive Audio want you to get the most out of your equipment by playing it at a safe level, a level that lets the sound come through loud and clear without annoying blaring distortion; most importantly, without affecting your sensitive hearing.

Sound can be deceiving over time your hearing “comfort level” adapts to higher volumes of sound, what may have sounded “normal” can actually be too loud and harmful to your hearing.

Prevent this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish the “safe level”.

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.
- Once you have established a comfortable “sound level” make a note of this position and do not go above this setting.

Taking a minute to do this will help to prevent hearing damage in the future. After all, we want you listening for a lifetime.

## Introduction

Your Addictive Audio amplifier has been designed to give you very high performance, and valuable features, at an exceptional value. Take the time to read over this brief set of instructions, and you will get full enjoyment from your system.

## Installation

The quality of the installation will affect system performance and reliability. You may wish to contact a dealer or professional installer. The amplifier is generally mounted in the rear trunk area but can be mounted in any convenient area such as beneath a seat. Please be sure to locate this unit where you have reasonable air circulation and protection from any moisture.

When considering the mounting location you should minimize the length of the power supply and speaker leads. Minimizing both leads will provide higher audio output from the system. It is important to ensure that the heat sink is not against a panel or a surface preventing air circulation. Mark the location for the mounting screw holes by using the amplifier as a template. Drill #29 or 9/64” diameter holes at the marked locations and firmly fasten the amplifier in place with the mounting screws supplied in the accessory kit.

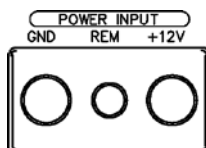
## Caution

Before drilling or cutting any holes investigate the layout of your automobile thoroughly! Take care when working near the gas lines, hydraulic lines and electrical wiring.

## WARNING

This power amplifier has a protection feature to prevent any damage from misuse or faulty conditions - excessive heat, short circuit speakers or overload. If the unit senses one of the above conditions, the protection indicator will light and the system will shut down. To diagnose the problem turn all levels down, all power off and check the installation for possible wiring mistakes or shorts. In the event the amplifier shuts down due to excessive heat under adverse conditions simply allow time for the unit to cool down at which time, the protection indicator will not light.

## Power Supply Connections



The +12VDC and GROUND wires should be heavy gauge copper wire with heavy insulation and of the same gauge. Please see the chart below for recommended gauge and fuse.

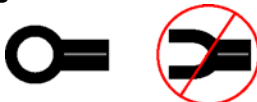
<b>B250.4</b>	<b>40 AMP FUSE</b>	<b>8-4 GAUGE</b>
<b>B450.1</b>	<b>60 AMP FUSE</b>	<b>4 GAUGE</b>

In addition, it has a 12V remote control wire and it should be 14AWG-18AWG.

### +12V Power (+12V)

Firstly, use good quality USA spec OFC wire. If using a low quality/strand count wire, be prepared to increase gauge size accordingly. This wire is usually connected directly to the positive battery terminal. Be sure to use proper fuse as rated above within 16 inches of the main battery. (Refer to Fig. 1)

### Ground (GND) Same gauge as +12V and no longer than 36"



This connection must be completed using an "O" ring (to prevent coming loose) with insulating sleeve. This wire is the electrical ground and must be fastened securely to the vehicle chassis. The best method is to use threading sheet metal screw(s) since the threads cut into bare metal. Ensure that all paint coating or

other insulation is removed from around the ground area. Use as short of a piece of cable as possible – Again, use the same gauge as the +12V. (Refer to Fig. 1)

## Remote (REM)

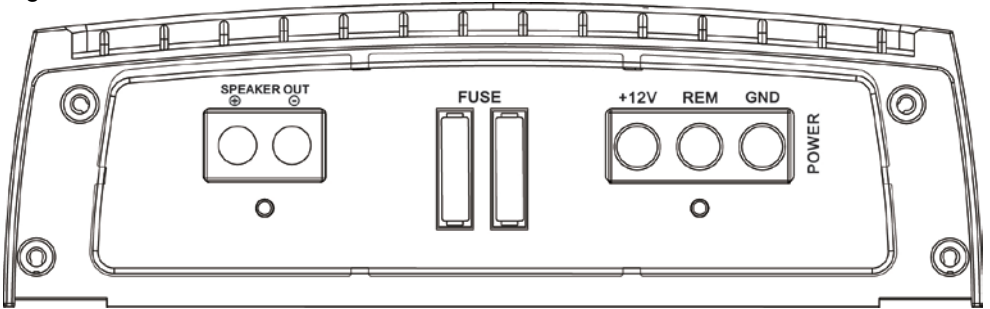
Many source units (cd player) or other music sources have an output terminal for connection of the remote turn-on of the power amplifier. If the source unit doesn't have a remote turn-on feature, then you can connect the remote wire to a switch that derives power from an ignition switched circuit. (Refer to Fig. 1)

## Power Input Connections

### Caution

First make +12V wire connection then the ground connection and finally the remote connection. Furthermore the +12V wire must always be fused at the battery for protection against possible damage. If you need to replace the power fuse, replace it with a fuse of the same value. Using a fuse of a different type or rating may result in a serious hazard.

Fig. 1



## Signal Input (RCA)

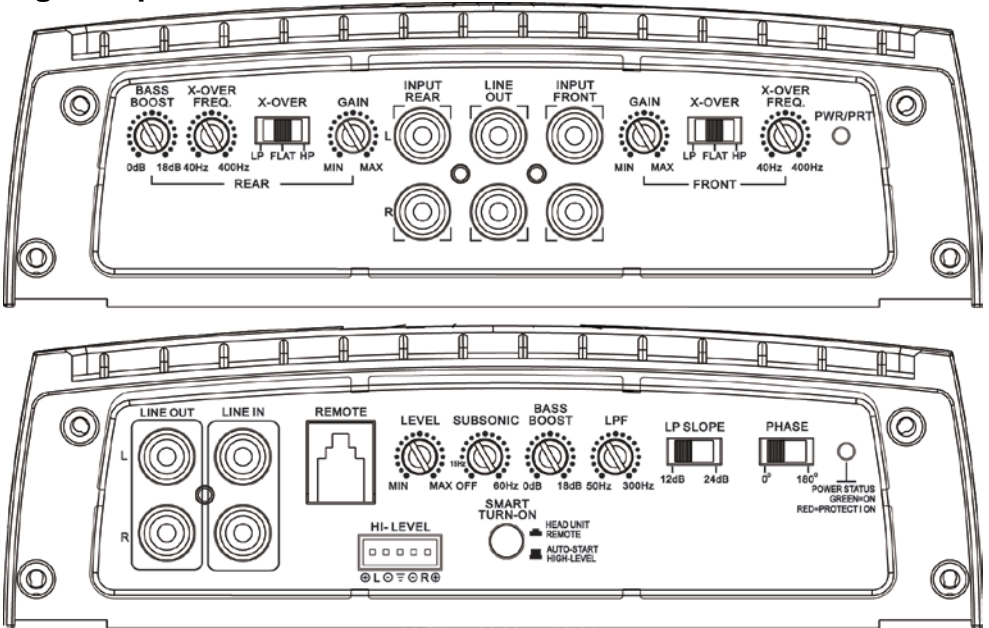
Addictive Audio amplifiers have RCA connection type input terminal for low level input. A standard pair of RCA type cables can be used for all models (Refer to Fig. 2). The amplifiers allow both stereo and mono input. The amplifier internally will take a stereo signal and convert to a mono signal. If using the low level output of one amplifier to provide signal to a stereo amplifier, you must input stereo signal to the amplifier providing signal to secondary amplifier. If mono input to initial amplifier is made the output to stereo (secondary) amplifier will also be mono. Adjustment of input level is accomplished by the gain control. Adjusting this control allows the amplifier gain to be controlled to match the source unit.

## Signal Input (High-Level) B450.1

Addictive Audio B450.1 Boost Series amplifier has High-Level inputs as an input signal option. When High-Level inputs are used the Auto-Start feature can also be

activated. This feature will allow for the amplifier to “turn-on” without having to use a remote (REM) turn on wire.

## Signal Input Connections



**More information can be found under Features and Controls.**

## Speaker Output Connections

It is important to understand and know the impedance of the subwoofers that will be connected to the amplifier. Incorrect wiring or too low of an impedance will cause damage to the amplifier. If you do not know the impedance of your subwoofers use a digital multi meter to measure the resistance. If you do not have a DMM, please visit an Authorized Retailer for assistance. All Addictive Audio subwoofers have the coil impedance on the back plate sticker found on the bottom of the subwoofer for easy identification.

### **B450.1**

Single 4 ohm coils: DO NOT Connect more than two (2) woofers to the B450.1

Single 2 ohm coils: DO NOT Connect more than one (1) woofer to the B450.1

Dual Voice Coil Subwoofers **Refer to Fig. 3**

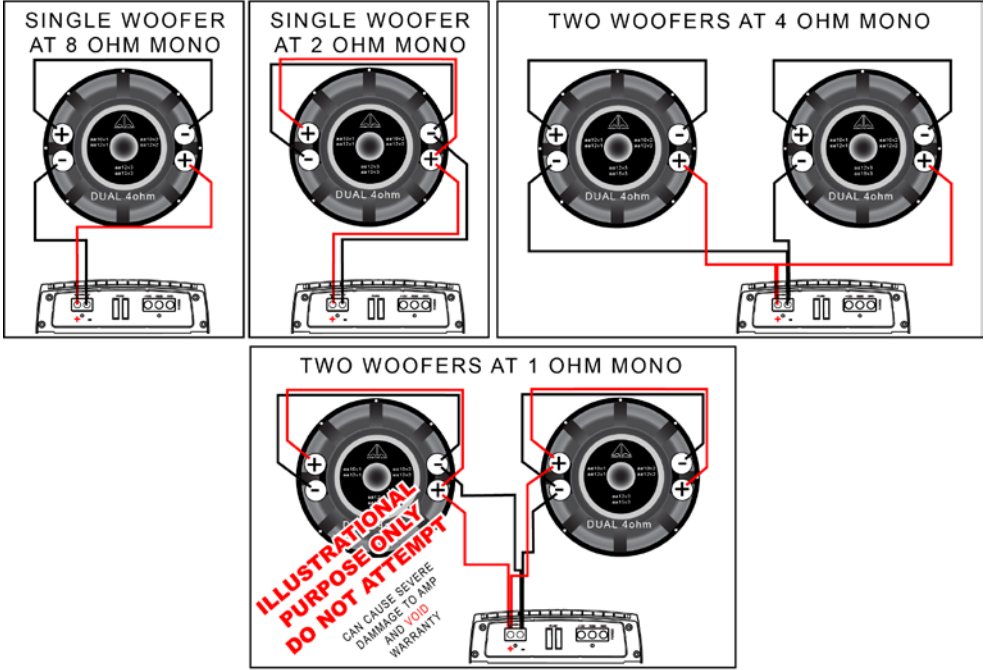
### **B250.4**

DO NOT Operate B250.4 at 2 ohm stereo – ONLY 4 ohm Stable.

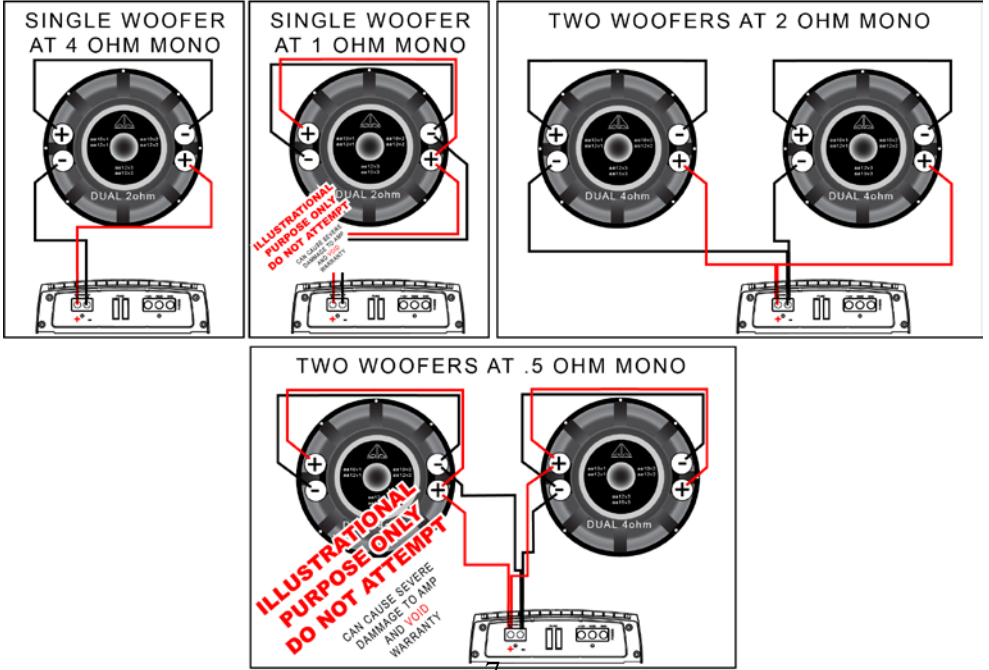
**Refer to Fig. 3b**

Fig. 3

### DUAL 4 ohm SUBWOOFERS

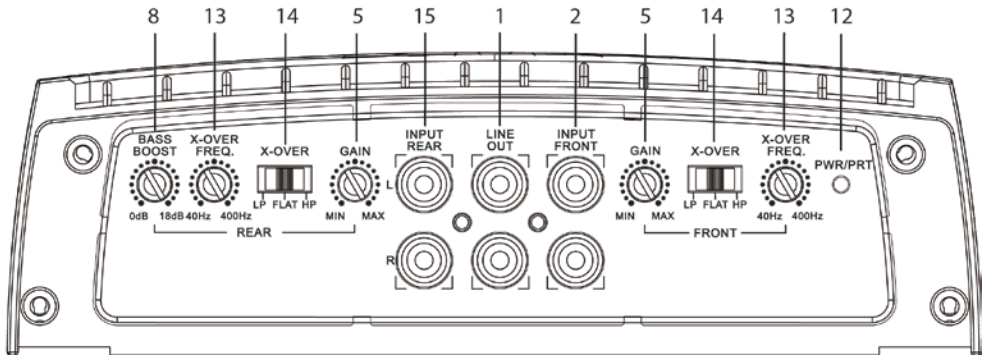
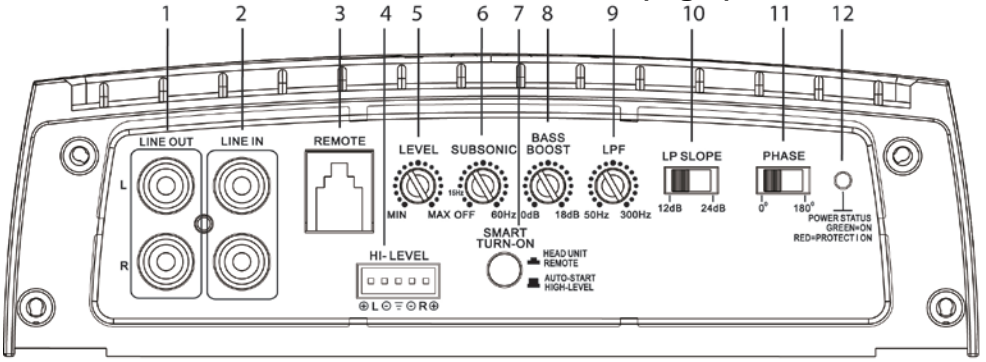


### DUAL 2 ohm SUBWOOFERS





## Features and Controls B450.1 / B250.4 (Fig.4)



### 1. RCA Line Output Jacks

Allows signal to pass through to another amplifier.

### 2. RCA Line Input Jacks

Input signal from source unit through RCA cable.

### 3. Remote Gain Control

This allows an external bass knob (included) to adjust the subwoofer from a more convenient location in the vehicle or in the event the stock head unit is being used. Most aftermarket mid to high-end head units already offer subwoofer adjustment. However, the bass knob can still be used, but is not necessary.





### 4. High-Level Inputs

Allows for high level inputs in place of RCA cables. See also #7 "Auto-Start" remote turn on feature.



## 5. Input Gain/Level Control **\*NOT A VOLUME KNOB\***

This allows for the adjustment of the gain of both channels to match the output level of the source unit. In addition, it allows adjustment from 0.2V to 6.0V.

<b>CAUTION:</b> The gain knob is not a volume control. It is designed to match the input level of the amp to the output level of the source unit. Over-driving (clipping) the input stage of the amp will cause damage to the amplifier.	QUICK REFERENCE GAIN KNOB SETTING				
	MAX. INPUT VOLTAGE BEFORE CLIPPING				
RCA LEVEL	6V	4.5V	1.5V	.375V	.2V

## 6. Subsonic Filter

Control the high pass crossover point for the speaker outputs to eliminate ultra low frequencies. This crossover is always on with a -12dB per octave slope and adjustable from 15-60Hz. This filter is used mainly in ported applications, to protect the subwoofers from excessive excursion below the port tuned frequency. Not necessary when dealing with sealed enclosures, but can still be used to help protect the subwoofer system.

## 7. Auto-Start

When using high-level inputs turn this feature to “Auto-Start High-Level” and the amplifier will turn on via signal sense rather than having to install a remote (REM) turn on wire. If installing RCA input cables, turn this feature to “Head Unit Remote” and install remote turn on cable to the REM input.

## 8. Bass Boost

This allows the ability to Boost low frequency response (45Hz) up to +18dB.

## 9. Low Pass Filter

This controls the low pass crossover point for the speaker outputs. This crossover, when selected, will attenuate the frequencies above the crossover point with an adjustable slope of -12dB or -24dB per octave (See #10) The crossover point is adjustable from 50-300Hz. This filter reduces unwanted upper frequencies from being played through the subwoofer(s).

## 10. Low Pass Slope

Choose between -12dB or -24dB per octave slope for the Low Pass circuit. The steeper the slope (higher the number) the quicker the notes above/below the set point of #9 above fade away.

## 11. 0-180 Degree Phase Alignment

Allows for the time correction of music signals to prevent phasing cancellation or music blurring.

## 12. Power / Protection LED

POWER LED: Will illuminate GREEN when +12VDC is applied to both the remote turn on and +12V input from the battery and a solid ground has been made. The input from the battery to the amplifier can be more than 12VDC.

PROTECTION: Will illuminate RED when any one of the following occurs:

- Short Circuit (Immediately)
- Reverse Voltage (Immediately)
- Thermal (On at 141°F or 60°C)
- Low Voltage (On at 9VDC)
- High Voltage (On at 18VDC)

## 13. Variable Crossover Control

Adjust both the HPF and LPF crossover frequencies between 40-400Hz based upon which MODE is chosen in #14 below.

## 14. MODE

HPF: Set the MODE SWITCH to the HPF position when the amplifier is used to drive a tweeter/midrange system. The frequencies below the crossover point will be attenuated at -12dB/octave slope. Adjust the crossover frequency by rotating #13 above knob to the desired frequency ranging from 40-400Hz.

LPF: Set the MODE SWITCH to the LPF position when the amplifier is used to drive a subwoofer system. The frequencies above the crossover point will be attenuated at -12dB/octave. Adjust the crossover frequency by rotating #13 above knob to the desired frequency ranging from 40-400Hz.

FLAT: Set the MODE SWITCH to the FLAT position when the amplifier is used to drive full-range speakers and/or components that come with their own crossover. The full frequency bandwidth will be output to the speakers without high or low frequency attenuation.

## 15. Rear RCA Line Input Jacks

Input signal from source unit through RCA cable for the rear channels.

## Adjusting the Amplifier

1. Disconnect the negative battery post and secure it to something so accidental re-connection does not occur during the installation process.
2. Run all wires needed for the amplifier to work correctly. Do not attach the fuse in the fuse holder by the battery until all wires have been plugged into the amplifier.
3. Turn the amplifiers gain and boost all the way down (counter clockwise).
4. As a good “starting point” set low pass filter to 80Hz (7 clicks), set the subsonic to the tuning frequency of your enclosure (*refer to EASY CLICK chart on pg.13 for exact tuning*), and set the phase to 0.
5. Make sure Bass EQ switch is set to OFF and the Strap Mode switch is set to MAS.
6. If using the supplied Remote Gain Control (Bass knob) turn the dial all the way up to the max. (full clockwise)
7. Attach the recommended fuse (*refer to fuse chart on pg.4*) to the fuse holder by the main battery.
8. Re-attach the negative battery post from step 1.
9. Turn the head unit on and start at a low volume. Check amplifier to make sure all wires are correct and no protection lights are on.
10. Set the head unit’s tone controls, balance, and fader to the center or flat position. Be sure to turn off any loudness or other signal processors.
11. Use a very clear original recording not mp3 or burned cd. Turn the volume of the head unit to its maximum undistorted volume. On most *quality* head units this is around 7/8 of the maximum volume.
12. Slowly turn up the gain (clockwise) to match the voltage output of the head unit or until the speakers reach the maximum *undistorted* output. *Keep an eye on the clipping LED!*
13. Re-adjust the low pass filter and phase if needed.

14. Turn the Bass EQ "ON" if desired. Now set the center point frequency (refer to *EASY CLICK* chart on pg. 13 for exact tuning) and adjust the BOOST accordingly. *Keep an eye on the clipping LED!*
15. If you have installed the Bass Knob, now you can use it effectively and safely.
16. Play a few different selections of music to check for overall system balance.
17. ENJOY!



# ADDICTIVE AUDIO

## LIMITED WARRANTY INFORMATION

Addictive Audio warrants this product to be free from defects in material and workmanship under normal use for a period of one (1) year from date of original purchase when installed by an authorized dealer. Items not installed by an authorized dealer will be warranted for ninety (90) days from date of original purchase. All returns must be accompanied with original sales receipt. Should service be necessary under this warranty for any reason due to manufacturing defect or malfunction during the warranty period, Addictive Audio will replace or repair (at its discretion) the defective merchandise with equivalent merchandise at no charge. Discontinued products may be replaced with equivalent products.

This warranty is valid only for the original purchaser and is not extended to owners of the product subsequent to the original purchaser. Any applicable implied warranties are limited in duration to a period of the express warranty as provided herein beginning with the date of original purchase at retail, and no warranties, weather express of implied, shall apply to this product thereafter. Some states do not allow limitations on implied warranties, therefore these exclusions may not apply to you.

## THE FOLLOWING IS NOT COVERED BY WARRANTY

This warranty is valid only if the product is used for the purpose for which it was designed. It does not cover:

- Product Modification
- Damage through negligence, misuse, or accident.
- Items physically damaged due to abuse.
- Failure to follow installation instructions.
- Cosmetic Damage due to accident or normal wear and tear
- Freight damage.
- The cost of shipping product to Addictive Audio Service Center.
- Items repaired by any unauthorized individuals or dealers.
- Items returned from unauthorized individuals or dealers.
- Items returned without original sales receipt
- Return shipping on non-defective items.

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## WHAT TO DO IF YOU NEED WARRANTY OR SERVICE

Please follow each step below completely. Warranty or service will not be honored unless each and every step below is completed.

### 1. Obtain an Return Authorization Number

- Go to: [www.addictive-audio.com](http://www.addictive-audio.com) and click "SUPPORT" then click "OBTAIN R.A.#"  
ADDICTIVE AUDIO NO LONGER PROVIDES RA#\*S BY PHONE. PLEASE VISIT OUR WEBSITE.

### 2. Pack items in original container(s) or in a package that will prevent shipping damage.

- Original sales receipt from Authorized Dealer must be included for each item returned.

### 3. The RA# should be clearly marked on outside of the package. Return only defective components.

### 4. Freight must be prepaid; items received freight collect will be refused.

**THE SHIP TO ADDRESS AND INSTRUCTIONS WILL BE EMAILED TO YOU WITH THE RA#.**

Failure to complete any one of the steps above when obtaining warranty/service may void your warranty.



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