



VRA4.0D Four Channel Digital Amplifier

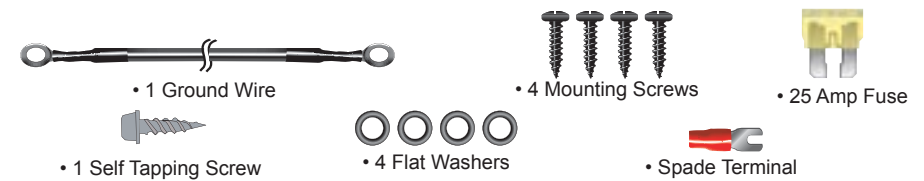
Read First!

Dear Customer,
CONGRATULATIONS. The VRA4.0 Four Channel Amplifier, when used as described, will give you years of dependable service in your car, truck, RV or mini-van. We have taken numerous measures in quality control to ensure that your product arrives in top condition, and will perform to your satisfaction. In the rare event that your VRA4.0 Four Channel Amplifier contains a damaged or missing item, does not perform as specified, requires warranty service or you have a installation problem. **DO NOT RETURN THIS PRODUCT TO THE STORE.** Please call our TOLL FREE number US (800-445-1797) and ask to speak with a member of our technical service team, or submit your questions by E-Mail to customerservice@vr-3.com and a member of our technical service team will respond by E-Mail to your questions. Our in-house technical service team will expedite delivery of your part, or advise you on installation, or help troubleshoot a problem with you. If your product needs warranty service, our technical service team representative will help you obtain the fastest remedy, possible under the warranty.

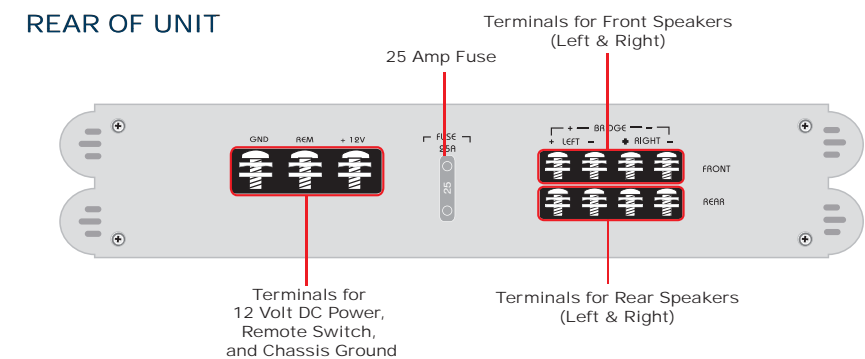
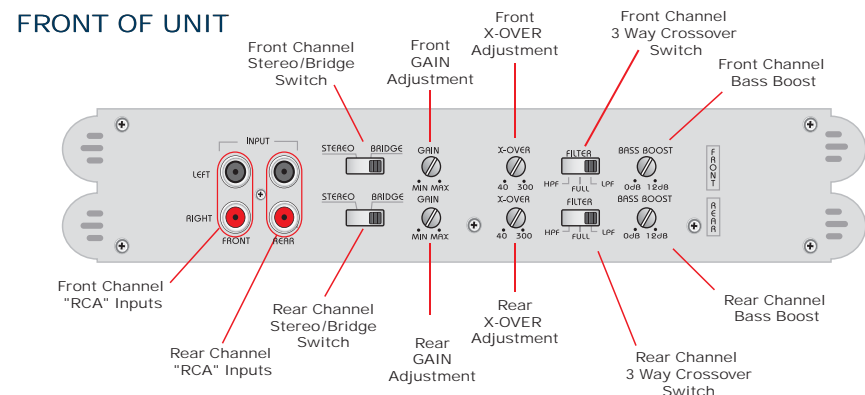
Specifications

- 400 Watts Total Peak Power
- 4 X 100 Watts Peak into 4 Ohm @ 1Khz (+/- 5%)
- 4 X 50 Watts RMS into 4 Ohm @ 1 KHz (+/- 5%)
- Measured at 14.4 VDC Input Voltage
- Frequency Response: 20 Hz to 35,000 Hz +/- 3 db
- THD: Less than 1% All Channels
- Dimensions: 21 H X 10.251 W X 11.51 D
- Input Sensitivity: 250 mv to 6 Volts
- Signal to Noise Ratio: Greater than 90 db
- Bass Boost (Mega Bass δ): 0 or +6 db
- Adjustable Crossover Freq.: 30 Hz to 180 Hz
- Output Impedance: 4 Ohm Recommended
- Bridgeable? : Yes (4 Ohm Impedance Minimum)
- Fuse: 1 X 25 Amp Automotive Blade Type

Parts



Features & Functions



1 Preinstallation

Automotive audio equipment installations can be troublesome at times, even to the most experienced of installation technicians. If you are not confident working with electrical wiring, removing and reinstalling interior panels, carpeting, dashboards or other components of your vehicle, please call our toll free help line (800)445-1797 and our in-house technical service team will answer your installation questions.

Tools Needed For Installation:

- Nail Set/Center Punch
- Hammer
- Safety Glasses
- Electrical Tape
- Phillips Screwdriver
- Wire Cutter
- Marker/Pen
- Electric Drill with 1/16" bit

We recommend an Amplifier Installation Kit containing the following parts:

- Power Wire - 8 Gauge w/Terminal Lug
- Speaker Wire - 16 to 12 Gauge
- RCA "Y" Adaptors
- Remote Wire - 20 Gauge OK
- Input Wires - Shielded RCA cables
- After-Market Battery terminal

Location

When choosing a location for the amplifier, keep in mind that the amplifier will generate heat. Place the amplifier in a location that allows for air to circulate around it. Amplifier location and installation will vary from vehicle to vehicle, depending on physical layout of the vehicle. Carefully consider as many installation locations and configurations as is practically possible. DO NOT COVER the amp with carpet or enclose it behind interior panels. DO NOT mount inverted or upside down. The amplifier may be mounted vertically.

Before permanently installing your VRA 4.0 amplifier, place the VRA 4.0 amplifier in the approximate place it will occupy in your car, run all power and speaker wires inside the vehicle toward the amplifier prior to mounting. This will allow you to estimate how much wire you'll need, and where to route the wires inside of your vehicle.

Connect the fused 12 volt DC power wire, chassis ground cable, and remote wires. (SEE SECTION 3, ELECTRICAL CONNECTIONS)

Turn on the amplifier, if the Power Protection light is green, turn off the amplifier and proceed to the next section. If the Power Protection light is red, review the all of the connections and wires, you may have loose connections, a bad chassis ground, or inadequate size power wire. After reviewing all the connections and wires, and the problem persists, call our toll free help line for assistance.

WARNING Allow for air to circulate around the amplifier. Do not mount inverted or upside down. Do not cover with carpeting or enclose it behind interior panels. Avoid mounting under a seat.

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2 Mounting The Amplifier

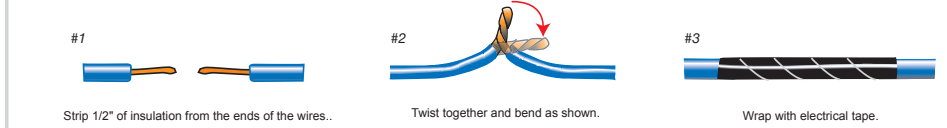
WARNING Water Damage: Do not install this amplifier in a location that will expose it to water or moisture. Dust or Dirt: Do not install this amplifier in a location that will expose it to dusty or dirty conditions. Modifications: Do not open the amplifier for any reason, or modify the amplifier in any way. If modified in any way a fire hazard or malfunction may occur. Modification will void the warranty.

1. Mark the holes for the 4 mounting screws in the 4 mounting brackets with a marker/pen.
 2. With a hammer and nail set/center punch, make dimple marks on the mounting surface for each mounting screw.
 3. Drill 4 pilot holes with electric drill and 1/16" bit, make sure there is nothing behind mounting surface that can be damaged when drilling the holes. (Safety glasses should be worn at this time.)
 4. Secure amplifier with included screws and washers using Phillips screwdriver.
- NOTE** When mounting the amplifier, make sure there is enough room for access to make adjustments to the switches and adjustment screws.

3 Electrical Connections

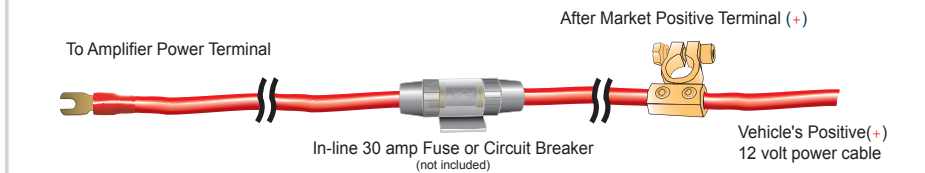
WARNING Read the following wiring instructions very carefully. If you any trouble understanding any of these instructions, have the amplifier professionally installed by an experienced technician. Incorrect wiring will prevent the amplifier from operating, or will damage the amplifier.

Recommended Method For Splicing Wires



1. Power Terminal

1. Disconnect the negative(-) battery terminal from the negative battery post.
2. Remove the fuse(s) from the amplifier.
3. Strip 1/2" of insulation from the end of the 8 gauge power wire. Connect the 8 gauge power wire to the after-market positive battery terminal according to the manufacturer's installation instructions.



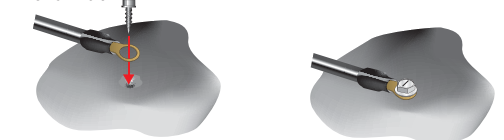
4. Install a 30 amp fuse or 30 amp circuit breaker in the 8 gauge power wire as close to the battery as practical.
5. Then route the 8 gauge power wire from the 30 amp fuse or circuit breaker to the rear of the amplifier.
6. Strip 1/2" width of insulation from the end of the 8 gauge power wire.
7. Attach a spade lug on the end of 8 Ga. wire.
7. Loosen screw to open POWER connector plates on rear of amplifier.
8. Insert the spade lug between the connector plates. Turn screw until power cable is tight.

2. Remote Terminal

- The REMOTE wire connection automatically turns on your amplifier when your stereo is turned on. On most stereos, this wire is marked as the REMOTE, ACCESSORY, or POWER ANTENNA.
1. Locate the REMOTE, ACCESSORY, or POWER ANTENNA on the stereo. (Refer to your stereo's owner's manual.)
 2. Splice REMOTE, Accessory or Power Antenna wire from rear of the stereo to a length of wire that will reach the rear of the amplifier
 3. Loosen screw and open REMOTE connector plates on rear of amplifier.
 4. Insert wire end between the REMOTE connector plates.
 5. Tighten screw closing REMOTE connector plates on wire.

3. Ground Terminal

1. The ground connection cable should be attached to clean, unpainted chassis metal for a good electrical connection.
2. Find good, non rusted chassis metal, as close to the amplifier as possible.
3. Drill a pilot hole with a 1/16" drill bit.

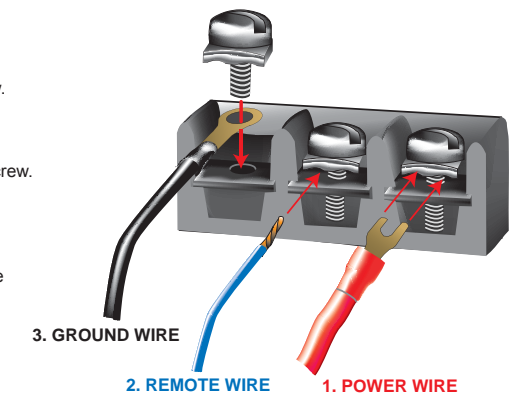


4. Use sandpaper to expose an area of bare metal around the pilot hole.
5. Tightly fasten the provided ground cable with the self tapping sheet metal screw to the chassis metal. A loose ground will cause distortion and popping noises in the speakers

NOTE You may purchase shielded RCA cables that have a remote wire that is built right into the cable. This type of cable makes it possible to route both RCA cable and remote wire at the same time.

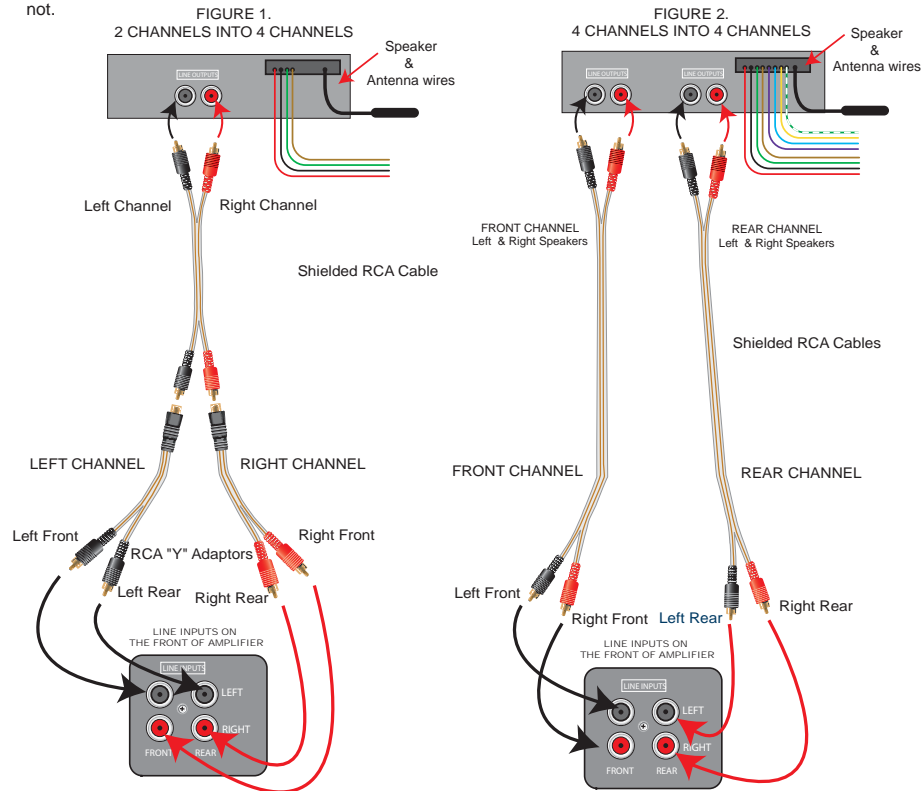
Recommended Method For Attaching Wires to Terminals

1. POWER WIRE
When connecting the power wire place the spade terminal under the contact plate, and the forks around the screw, then tighten the screw.
2. REMOTE WIRE
To connect the remote wire place the twisted end under the contact plate and tighten screw.
3. GROUND WIRE
To connect the supplied ground wire, remove the screw and contact from the ground terminal on the rear of the amplifier. Put the screw through the contact plate then through the ground wire, then tighten the screw.



4 RCA Line Inputs

The line inputs on the front of the amplifier receive low level, high impedance signals from the low level RCA outputs on the car stereo. The amplifier receives the signals and converts them to high level, low impedance signals to be used to drive the speakers. All of the amplifier's line inputs need to be connected to the car stereo, in order to use all of the speaker outputs, or to bridge the outputs. If you plug left and right line inputs into the front channel, only the front left and right speaker terminals will have power to output, the other speaker terminals will not.



Adaptors & Cables

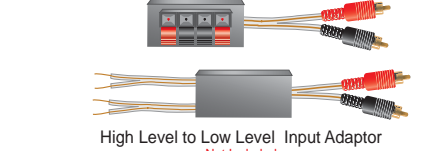
Your car stereo may only have 2 line outputs (left & right), RCA "Y" Adaptors will be needed to split the left and right signals into 2 right channels and 2 left channels, one of each channel for both the front and rear inputs. (See Fig. 1)



For best sound performance use Shielded RCA Cables to connect the Line Outputs from your stereo to ALL FOUR (4) Amplifier Line Inputs. Shielded RCA Cables prevent electrical interference from the vehicles electrical system, and also radio frequency interference.



If your stereo does not have RCA type output jacks, a high level to low level adaptor will need to be purchased. The high level to low level adaptor takes the signals from the car stereo's speaker wires and converts them to low level, high impedance signals to be used by the amplifier. Install the converter according to the manufacturer's instructions.



WARNING Do not splice RCA jacks directly to the car stereo's speaker wires.

You must trim the unused speaker wires on the stereo and wrap with electrical tape as shown to prevent a short circuit.



The colors of the jacks on the RCA cables and adaptors shown here are for illustration purposes. The color of the cables and adaptors that you purchase for installation will vary by manufacturer.

Gain Control



The GAIN control matches the line output of your car stereo's RCA jacks, to the line inputs of the amplifier. When you have completed installing the amplifier, turn the gain control to about 1/2 way (recommended). If you have any distortion at this setting, play a CD or cassette on the car stereo, set the bass and treble at 50%, and set the equalizer, if you have one, to flat across all frequencies. Also make sure the left & right balance and front & rear fader settings are set in the middle.

5 Amplifier Settings

The VRA 4.0 amplifier is capable of driving different speaker configurations by using different combinations of settings.

The 3 Way CROSSOVER permits you to customize the amplifier to power a sub woofer (HPF), a pair of full range speakers (FULL), or a pair of satellite tweeters like the RoadmasterUSA RT-15 (LPF).

The FREQ control only works when the crossover switch is set to HPF or LPF, when crossover is set to FULL it has no effect at all. (see Speaker Wiring & Options for more settings)

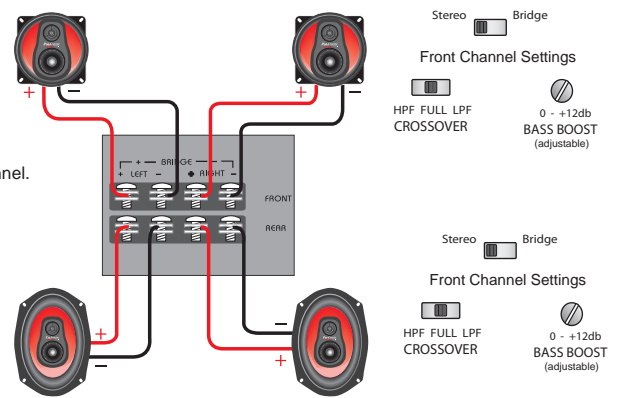
The HPF BOOST switch adds a additional 6dB at 50Hz. It normally is set to off. Turning on HPF BOOST, will not make the bass sound better, it only adds volume to the lowest frequency.

6 Speaker Wiring & Options

Four Full Range Speakers

Connect 4 full range speakers to the amplifier, 2 to the front channel, and 2 to the back channel. set both the front and rear crossover switches to FULL.

The FULL setting allows the full range of sound to the speakers.

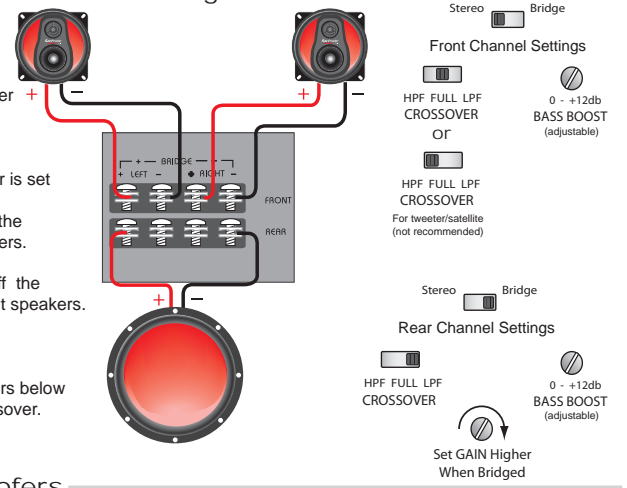


Two Full Range Speakers and a Bridged Sub woofer

Connect 2 full range or satellite speakers to the front channel, and a sub woofer to the rear channel of the amplifier. Set the front crossover switch to FULL, this allows the full range of sound to the front speakers.

To set the FREQ. when the crossover is set to LPF, turn FREQ. all the way to the left(counter clockwise) this will allow the full range of sound to the front speakers. As you turn the FREQ. to the right(clockwise), you will be cutting off the low frequencies coming from the front speakers. Adjust to your liking.

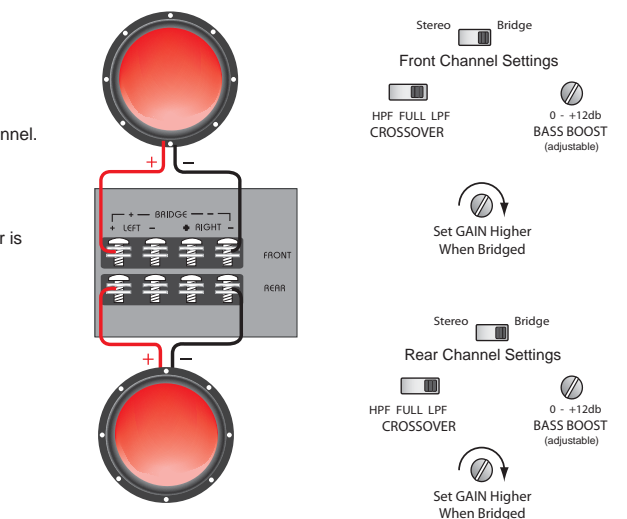
The rear crossover will be set to HPF. See Two Bridged Sub Woofers below for FREQ. adjustments for HPF crossover.



Two Bridged Sub Woofers

Connect 2 sub woofers, one to the front channel and one to the rear channel. Set both crossover switches to HPF, this will allow only the bass sounds to the sub woofer.

To set the FREQ. when the crossover is set to HPF, turn FREQ. all the way to the right, this will allow the full range of sound to the sub woofer. As you turn the FREQ. to the left(counter clockwise), you will be cutting the high frequencies coming from the speaker. Adjust to your liking.



Frequently Asked Questions

What is the per channel RMS power of this amplifier?

50 Watts RMS per channel times two channels. Consult the specifications in the installation manual.

What is a 3 Way Electronic Crossover?

A 3 Way Electronic Crossover divides the audio signal into two parts, this permits you to customize the amplifier to power a subwoofer (LPF), or a pair of satellite tweeters like the RoadmasterUSA RT-15 (HPF). When the switch is set to (FULL) the full audio signal will power a pair of full range speakers.

Why do I hear a clicking sound?

Digital amplifiers make a clicking sound when driven into distortion. Turn down the Gain control.

Can I wire a bridged subwoofer ("Bridge" two channels)?

Yes you can connect a subwoofer by bridging the two channels, see Speaker Wiring and Options.

What if my car radio doesn't have RCA line outputs?

You will need a converter used to change the signals from the speaker wires to RCA line level inputs. Follow the converter manufacturer's installation instructions.

What should I do if my car radio doesn't have a remote wire?

Connect the amplifier remote terminal to a switched 12 volt circuit controlled by the ignition switch. This will turn the amplifier off when the ignition switch is turned off.

Do I need a stiffening capacitor with this amplifier?

It never hurts to have extra reserve power when operating an amplifier of this caliber.

Why does the Protect LED stay red?

Suspect the power and ground connections, insufficient wire size to carry the current demand, or improper speaker wiring. Check all wiring connections.

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Limited Warranty

VIRTUAL REALITY SOUND LABS® products are designed and manufactured to provide a high level of trouble-free performance. VIRTUAL REALITY SOUND LABS® warrants, to the original purchaser, that its products are free from defects in material and workmanship for 30 days from the date of original purchase. As part of our commitment to product excellence, VIRTUAL REALITY SOUND LABS® and/or its affiliates routinely improve the designs, materials or production methods of its existing products. Because it is impractical to publicize all changes in every product, we reserve the right to make such changes without notice.

CONDITIONS OF WARRANTY:
If during the 30 day warranty period your new product is found to be defective, VIRTUAL REALITY SOUND LABS® will repair such defect, or replace the product, without charge for parts or labor subject to the following conditions:

1. All repairs must be performed by VIRTUAL REALITY SOUND LABS® and/or its affiliates in Eatontown, New Jersey.
2. The equipment must not have been altered or been damaged through negligence, accident, or improper operation.
3. The replacement of parts are exempted from this warranty when replacement is necessary due to normal wear and tear.
4. All warranty claims must be accompanied by a copy of the sales receipt or bill of sale.
5. Repair or replacement parts supplied by VIRTUAL REALITY SOUND LABS® under this warranty are protected only for the unexpired portion of the original warranty.
6. In the case of car stereos, this warranty does not extend to the elimination of car static or motor noise; correction of antenna problems; costs incurred for the removal or reinstallation of the product; damage to tapes, speakers, accessories or car electrical systems.
7. VIRTUAL REALITY SOUND LABS® will not be responsible for any charge incurred for installation.

OWNER'S RESPONSIBILITIES:
VIRTUAL REALITY SOUND LABS® will make every effort to provide warranty service within a reasonable period of time. SHOULD YOU HAVE ANY QUESTIONS ABOUT SERVICE RECEIVED, OR IF YOU WOULD LIKE ASSISTANCE IN OBTAINING SERVICE, PLEASE CALL TOLL FREE 1-800-445-1797, 8:30am - 4:30pm EST.

In order to provide you with the proper warranty service, we request that you adhere to the following procedure:

1. Include a copy of your sales receipt or bill of sale with your unit when it is returned for warranty service.
2. If it is necessary to return your product for service, please return it securely packed, preferably in the original shipping carton, and freight and insurance prepaid to the following address: VIRTUAL REALITY SOUND LABS, Service Department, 41 James Way, Eatontown, New Jersey 07724.
3. Please include a detailed explanation of the problem you are having.
4. If your product is found by VIRTUAL REALITY SOUND LABS® to have a defect in material or workmanship, within the warranty period, it will be repaired or replaced at no charge and returned to you prepaid. Where permitted by law VIRTUAL REALITY SOUND LABS® liability shall be limited to that set forth in this warranty. This warranty shall be the exclusive remedy of the purchaser.

VIRTUAL REALITY SOUND LABS® makes no other warranty of any kind, expressed or implied; and all implied warranties, are hereby disclaimed by VIRTUAL REALITY SOUND LABS® and excluded from this warranty, VIRTUAL REALITY SOUND LABS® and/or its affiliates, the manufacturer, distributor and seller shall not be liable for any injury, loss or damage, incidental or consequential, arising out of the use or intended use of the product.

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