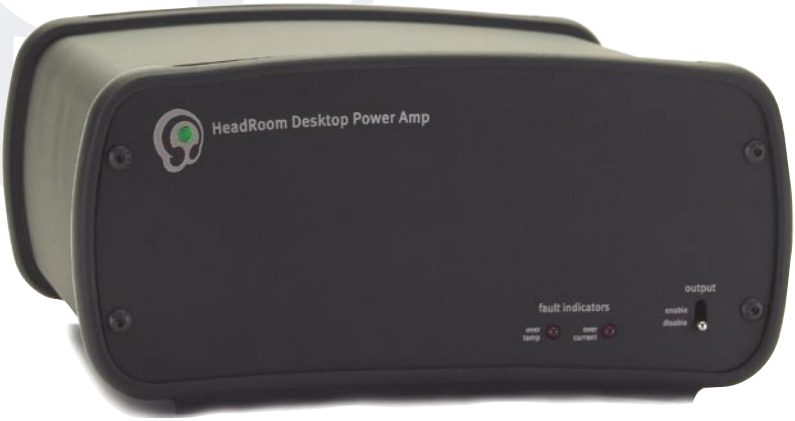
HeadRoom
Right Between Your Ears

HeadRoom Power Amplifier

Owner's Manual

Stereo Power Amp
Monoblock Amp
Bi-Amp



Congratulations on the purchase or your HeadRoom Desktop Power Amp! It's a great little Class-D amp; extraordinary finesse and efficiency with gobs of power and very little heat. A perfect way to bring a listening room experience to your desk.

There's lots of good information in this manual to help you set up your gear, but if you have any problems and aren't sure the manual is helping you out, please feel free to call us, we'll be happy to help you out.

Toll Free: 800-828-8184
Phone: 406-587-9466
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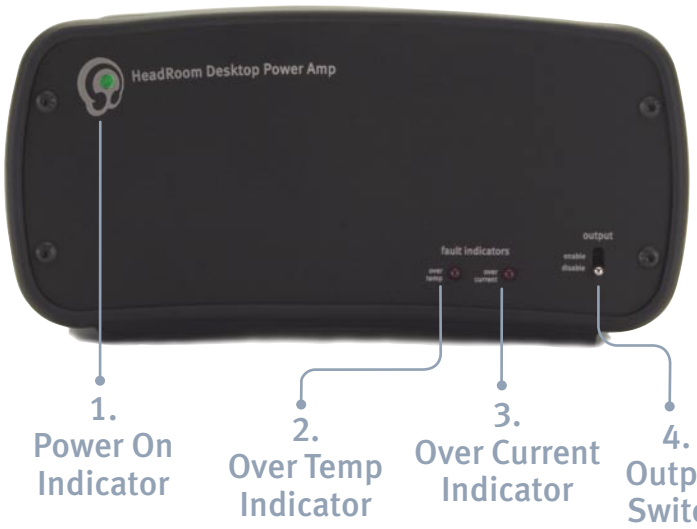
2020 Gilkerson Drive
Bozeman, MT 59715
www.headphone.com

Front panel

Desktop Stereo Amp
Desktop Bi-Amp
Desktop Monoblock Amp



From the front panel all HeadRoom amps appear exactly the same. Like most power amps, the HeadRoom Desktop Power Amps are very simple. The front of the amp has three indicator lights and a switch.

1. Power On Indicator The power on indicator is a green LED in the middle of the logo at the upper left of the panel. Switch your amp on using the power switch on the rear of the unit to illuminate the LED. Disabling the output with the output switch does not turn the power off, and the power indicator will remain lit until the power switch on the rear panel is turned off.

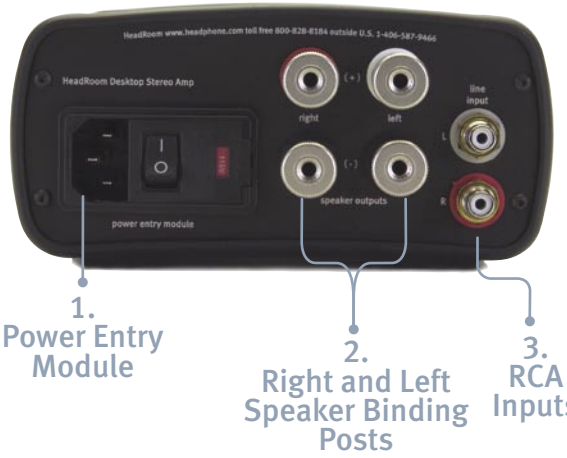
2. Over Temp Indicator The fault indicator to the left is 'over temp', it will light and the output will turn off if the amplifier senses itself getting too hot. Once the unit cools, this light will turn off and the unit will turn back on.

3. Over Current Indicator The fault indicator to the right is 'over current'. The output will be temporarily disabled and the LED will turn on when it senses the output delivering current in excess of specification. The most common time for this to happen is when driving a short, for example if you were to inadvertently touch the two speaker wires together with the amp on. Once the amp senses the amp is no longer shorted the over current LED will go out and the amp will turn back on.

4. Output Switch The output switch allows you to turn the output stage of the amplifier off while leaving the amp in standby mode.

Desktop Stereo Amp Rear Panel

The Desktop Stereo Power Amp will power any 4-8 ohm speaker, and deliver 45 Watts/Ch into 4 Ohms.

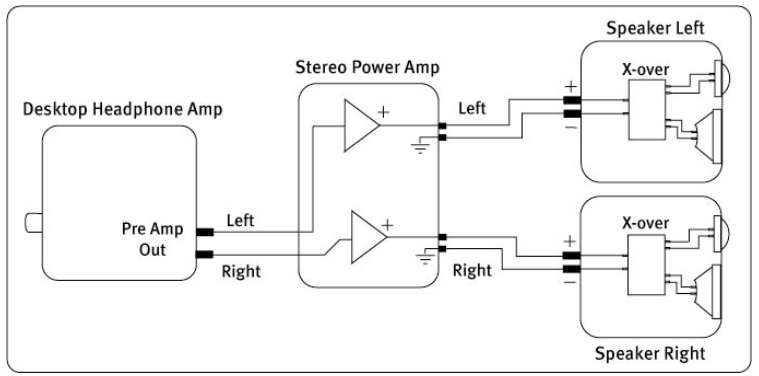


See page 6 for hook up information

1. Power Entry Module Plug the power cord into the power amp here. Turn your power on here using the power switch. It is a good idea to turn your amp 'off'(o) when not in use. (Note - your Desktop Power Amp's voltage CANNOT be changed by the user. If you need to change your amp's A.C. input voltage, you must send your amp back to HeadRoom for the change. See Page 9 for more info.)

2. Right and Left Speaker Posts Here is where you connect your speakers to the power amp. The five-way binding posts accept bare wire, speaker plugs, banana plugs, or prong connections. As always, red denotes 'hot' or the '+' lead.

3. RCA Inputs There is one set of RCA inputs, with the top connector being 'left' and the bottom connector 'right'. The RCA analog inputs are where you will plug in your analog, volume controlled source (such as the rear outputs of a HeadRoom Desktop Headphone Amp, pre-amp, or other volume controlled source).



Desktop Monoblock Amp Rear Panel

HeadRoom Monoblock Amps are sold in pairs and each amp will drive one speaker. You will find a single RCA input and one set of speaker connections on the rear of the amp. The Monoblock amp will drive a single 4-8 Ohm speaker, and will deliver 150 Watts into 4 Ohms.

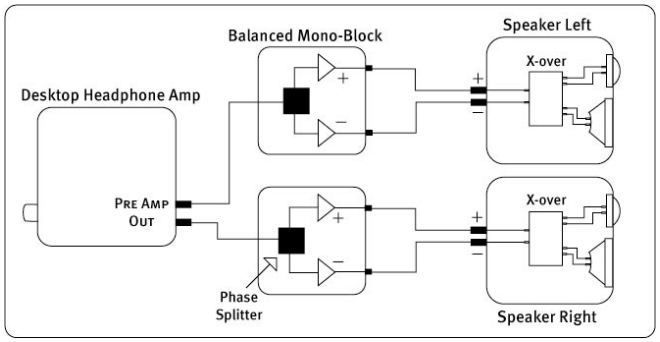
See page 7 for hook up information

1. Power Entry Module
2. Speaker Binding Posts
3. RCA Line Input

1. Power Entry Module Plug the power cord into the power amp here. Turn your power on here using the power switch. It is a good idea to turn your amp 'off'(o) when not in use. (Note - your Desktop Power Amp's voltage CANNOT be changed by the user. If you need to change your amp's A.C. input voltage, you must send your amp back to HeadRoom for the change. See page 9 for more info.)

2. Speaker Binding Posts Here is where you connect your speakers to the power amp. The five-way binding posts accept bare wire, speaker plugs, banana plugs, or prong connections. As always, red denotes 'hot' or the '+' lead.

3. RCA Line Input There is one RCA input on the rear of the amp; the amps may be used for either the left or right channel. The RCA analog input is where you will plug in your analog, volume controlled source (such as the rear outputs of a HeadRoom Desktop Headphone Amp, pre-amp, or other volume controlled source).



Desktop Bi-Amp Rear Panel

Desktop Bi-Amps are sold in pairs and each amp will drive one speaker. You will find a single RCA input and one set of speaker connections on the rear of the amp. The Bi-Amp will drive a single 4-8 Ohm bi-wire capable speaker (a speaker with two sets of binding posts; one for the woofer and one for the tweeter), and will deliver 50 Watts/Ch into 4 Ohms.

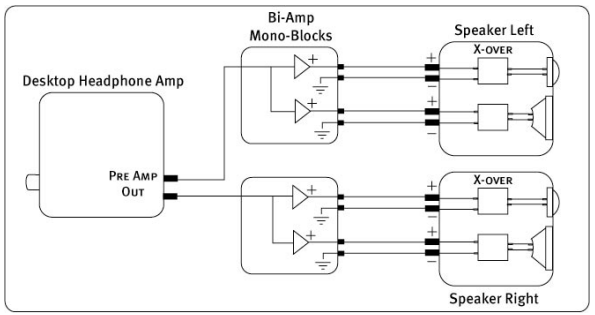
See pages 6-7 for hook up information

1. Power Entry Module
2. Speaker Binding Posts
3. RCA Line Input

1. Power Entry Module Plug the power cord into the power amp here. Turn your power on here using the power switch. It is a good idea to turn your amp 'off'(o) when not in use. (Note - your Desktop Power Amp's voltage CANNOT be changed by the user. If you need to change your amp's A.C. input voltage, you must send your amp back to HeadRoom for the change. See page 9 for more info.)

2. Speaker Binding Posts Here is where you connect your speakers to the power amp. The five-way binding posts accept bare wire, speaker plugs, banana plugs, or prong connections. As always, red denotes 'hot' or the '+' lead.

3. RCA Line Input There is one RCA input on the rear of the amp; the amps may be used for either the left or right channel. The RCA analog input is where you will plug in your analog, volume controlled source (such as the rear outputs of a HeadRoom Desktop Headphone Amp, pre-amp, or other volume controlled source).

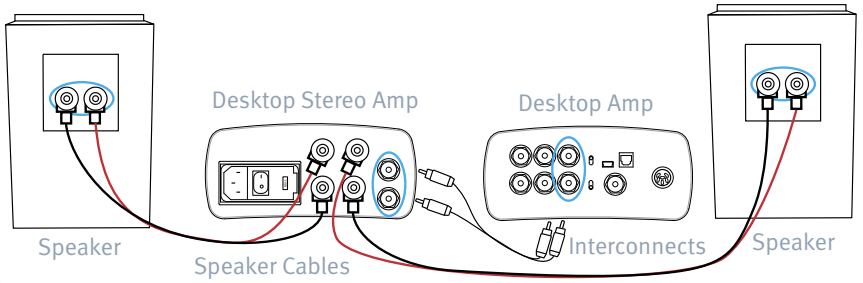


Hooking up your Power Amp

Hooking up the Stereo Amp

This is a standard stereo power amp. Connect your cable from the left channel of your output device (a volume controlled pre-amp or HeadRoom Desktop/Micro Amp)into the left inputs of your power amp. Repeat for right channel. Then connect the speakers to the power amp using speaker cable; be sure to connect the positive (red) terminal post to the positive (usually red) connector on the speaker. **Ensure the power switch is off**, and connect the power cable to the amp.

Turn the front panel 'output' switch to 'disable'. Turn on all other audio electronics in the system prior to turning on the amp. Turn the volume down on the gear feeding the power amp. Turn on Desktop Power Amp rear panel power switch. Flip front panel 'output' switch to 'enable'. Slowly turn up volume of pre-amp feeding the power amp. Ahh, beautiful music!



Hooking up the Desktop Bi-Amp (See opposite for diagram)

This is a special power amp to be used with bi-amp capable speakers; one amp each is used for the left and right channel. Connect your cable from the left channel of your output device (a volume controlled pre-amp or the Desktop/Micro Amp), into the input of your power amp that controls the left speaker. Repeat this for the right channel. Bi-Amp capable speakers have two sets of speaker posts on their rear panel, and commonly have a jumper between the two + posts and the two - posts. Remove the jumpers, and save them. Then connect the tweeter binding posts to one of the amplifiers outputs, and connect the woofer posts to the other of the amplifiers outputs ensuring you connect plus to plus, and minus to minus on both sets of connections. (It doesn't matter which of the amp outputs are used for the woofer and tweeter.) **Ensure the power switch is off** on both amps, and connect the power cables to the amps.

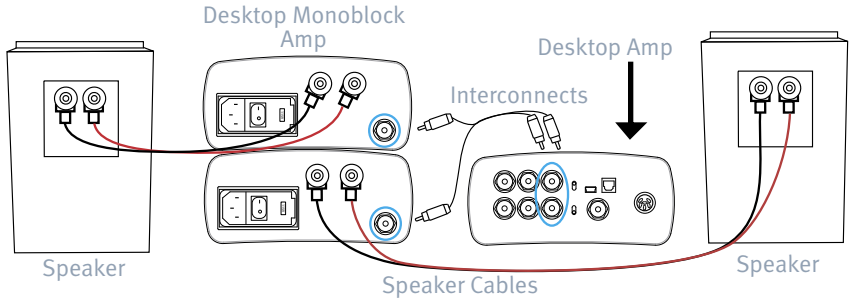
Turn the front panel 'output' switches to 'disable'. Turn on all other audio electronics in the system prior to turning on the amps. Turn the volume down on the gear feeding the power amps. Turn on Desktop Power Amps rear panel power switch. Flip front panel 'output' switches to 'enable'. Slowly turn up volume of pre-amp feeding the power amps. Lovely tunes will grace your ears!

Hooking up your Power Amp

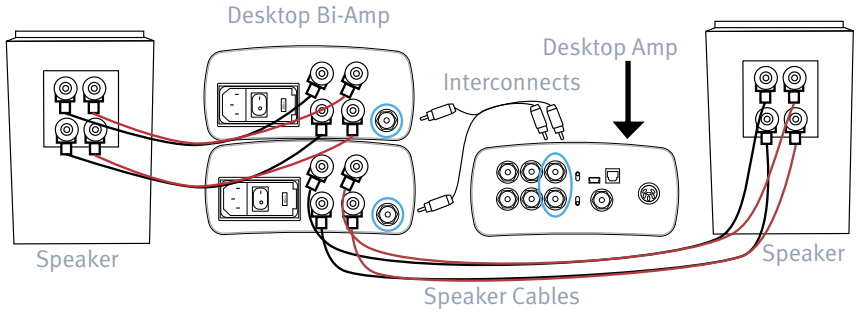
Hooking up the Desktop Monoblock Amp

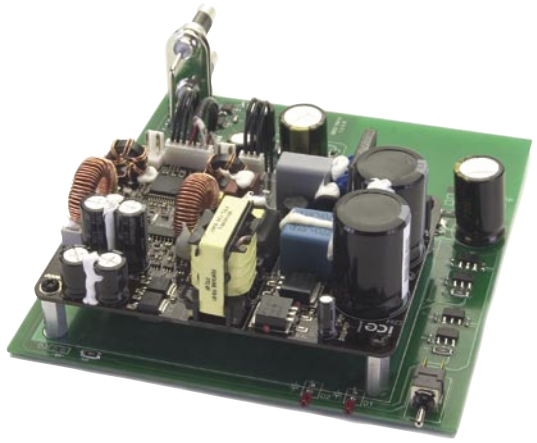
This is a standard mono-block power amp, one amp each is used for the left and right channel. Connect your cable from the left channel of your output device (a volume controlled pre-amp or the Desktop/Micro Amp), into the input of your power amp that controls the left speaker. Repeat this for the right channel. Then connect the each speaker to its respective power amp using speaker cable; be sure to connect the positive (red) terminal post to the positive (usually red) connector on the speaker. **Ensure the power switch is off** on both amps, and connect the power cables to the amps.

Turn the front panel 'output' switches to 'disable'. Turn on all other audio electronics in the system prior to turning on the amps. Turn the volume down on the gear feeding the power amps. Turn on Desktop Power Amps rear panel power switch. Flip front panel 'output' switches to 'enable'. Slowly turn up volume of pre-amp feeding the power amps. Sweet music floats in the air!



....Hooking up the Desktop Bi-Amp





Desktop Stereo Power Amp

We thought you might like to know a little about the technology inside your new amplifier.

The most important thing to know about a class-D amplifier is that it's a type of amp that is VERY efficient. A typical class-A audiophile amp might be 20% efficient. In a class-A amp, the output device is always conducting. If there is no signal present, it will be dissipating its full power through the output devices and a 50 Watt class-A amp becomes a 50 Watt heater. They sound good, of course, but they run very hot.

A class-AB amplifier has a pair (or pairs) of output devices where one is used for positive half of the signal and the other for negative half of the signal. The output devices of a class-AB amp are not conducting if the signal is at zero. Class-AB amplifiers may theoretically reach efficiencies as high as 75%, but since high-end class-AB amps are usually biased somewhat into class-A operation, 50% efficiencies are more typical. A 50 Watt amp will still put out about 25 Watts of heat.

Class-C amps are usually used in radio frequency applications and are not relevant here.

A class-D amp could be more meaningfully described as a Pulse Width Modulation Amplifier. Normally, we think of an amplifier as simply making an audio signal bigger, class-D amplifiers really don't work like that. In a class-D amp the output devices are switching between fully on and fully off at a very fast and constant rate, but the amount of time the pulse is high vs. low varies with the amplitude of the incoming audio signal.

A Little About Class-D Amplifiers

The advantage of this scheme is that because the output devices are either fully on or fully off they don't suffer from the resistive heat losses normally found in traditional amplifier designs. Class-D amps are commonly about 85% efficient. A 50 Watt Class-D amp puts out about 7 Watts of heat, and the difference between having a 50 watt heater and a 7 watt heater within arms reach on your desktop is quite noticeable!

There are some significant downsides with class-D amplifiers, unfortunately they are quite technical and beyond the scope of this manual, suffice it to say that class-D amps are complicated and need to be designed very carefully by highly skilled and specialized engineers. Early generations of class-D amps suffered from poor damping and noise, but many technological improvements have been made.

HeadRoom utilizes the latest generation Bang & Olufsen ICEpower class-D power amp modules. These modules are now being used by numerous high-end audio manufacturers and perform extremely well at their price and power levels. We believe these class-D amps are an ideal fit with the price/performance requirements of the Desktop Audiophile System. For more info, see www.headphone.com/products/product-resources/the-audiophile-desktop/power-amplification/

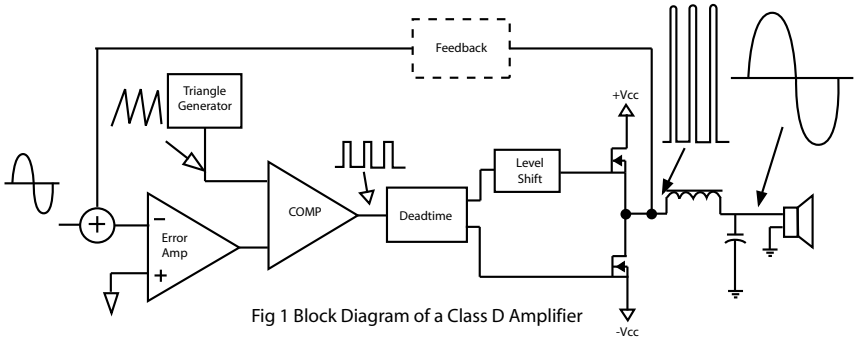


Fig 1 Block Diagram of a Class D Amplifier

Changing Voltage Configurations

If you are planning on taking your amp to another country where voltage requirements vary, you need to send your Power Amp into the HeadRoom factory to be permanently re-wired (you can of course have it changed back, but only by sending in the amp once again.) The current charge for this service is one labor-hour (currently at $50) PLUS shipping charges to and from the HeadRoom factory. Please allow 2-3 weeks for service. Further questions about voltage changes can be directed to our Sales Department at sales@headphone.com, or give us a call at 800.828.8184.

Desktop Power Amp Warranty

HeadRoom Manufactured Products under Warranty:

The Desktop Power Amp is warrantied for two years. If anytime within the first two years of your purchase you have a problem with your Desktop Power Amp, you can return it for repairs under the terms of our Warranty. Visit our website for details about warranting your Desktop Power amp, or give us a call at 800.828.8184, and we will trouble shoot the problem, and if necessary authorize a repair.

HeadRoom is the only authorized service center for HeadRoom products, either in or out of warranty. If a unit is under warranty, there is no cost for the repair labor, parts, or shipping from HeadRoom back to you (i.e., You're responsible for paying the shipping charges to get the product to us).

Out of Warranty Repairs

If you have an older HeadRoom amp that is out of warranty, call us at 800.828.8184 ext.104 to speak with our Service Department to troubleshoot the problem.

The cost of repairing your out-of-warranty HeadRoom amp is a $50 repair fee, plus parts and shipping costs. Additional costs will include replacement parts along with any additional labor beyond your first hour (the good news is that most repairs can be normally performed within one hour.) If the cost of your repair exceeds $100, we will call or email you first with an estimate and we will then request your approval for work to continue.

Email us at service@headphone.com for more information. If you have an older HeadRoom amp BEFORE model year 2001-2002, it's imperative that you contact our Service Department first to confirm the amp can be repaired.

Shipping Products back to HeadRoom

Please ship products back in the original shipping box (or another that is comparable); please don't send headphones back in JUST the headphone box, as it's a sure bet that they will no longer be in "as-new" condition when we receive them! We HIGHLY recommend that you ship returns using an insured and "signature required" delivery method—we can't be responsible for lost or damaged packages. Finally, don't forget to include the completed Return & Exchange card and WRITE YOUR NAME on the outside of the box!

Return Products to:
HeadRoom
Attn: Returns
2020 Gilkerson Drive
Bozeman, MT 59715

Contact Us:
www.headphone.com
Toll Free: 800-828-8184
Phone: 406-587-9466
Fax: 406-586-9484

Exchanges & Returns

HeadRoom 30 Day Guaranty

Unless specifically stated otherwise, all HeadRoom purchases come with a 30-day satisfaction guaranty in order to give you the opportunity to evaluate your purchases. We're happy to provide you with the opportunity to refund or exchange your product, but to keep costs down we do have a few conditions. Products must be returned to us within 30 days of the date you receive the product. So make sure you try your purchase out right away! Products must be in "as-new" condition. This means that they're in pristine cosmetic condition, functioning perfectly, and include ALL materials (plastic bags, warranty cards, tie wraps, etc). In other words, please send products back exactly as you received them. If a product is returned within the 30-day return period, but is not in "as-new" condition, we will charge you a 15% restocking fee plus any labor and materials required to return the product to "as-new" condition. Sorry, but after your 30 day trial, products are no longer exchangeable or refundable.
If you're having trouble with a headphone amp or system, please contact us first to troubleshoot the problem. You can email Sales, (sales@headphone.com) or call 800.828.8184. If we can fix it while you've still got the product, everyone's happy!

Equipment Exchanges

If you would like to exchange your purchase for another item, you have two options. You can simply purchase the item you want, and send the item you don't want back for refund within 30 days of the original purchase (don't forget to fill out the back of the Return & Exchange card and include it with your return). We will refund your credit card after we receive the item. Or, you can send your product back as an exchange, and indicate the product you would like on the Return card. We will adjust your credit card accordingly and ship you the new item. Replacement products are shipped to you as soon as possible, typically within 3-5 days provided the replacement item is in stock.

Defective Equipment Exchanges

In the uncommon event of receiving a defective product, contact us and we will ship out a replacement product to you at no cost as soon as possible, typically within 3-5 days provided the replacement item is in stock. You will receive the replacement item along with a return shipping label and a card to include with the defective item to return to HeadRoom. Important: Fill in your name and original invoice number of your order on the card and return the item to HeadRoom within 2 weeks. If we have not received the product after 2 weeks (allowing shipping time) we will charge your credit card the amount of the defective item. Please understand that we enforce this policy as an incentive for customers to get defective equipment back to us as soon as possible.

HeadRoom
Right Between Your Ears

A Word About Your Hearing

People have a natural tendency to listen to music at much louder levels with headphones than they would with speakers. To avoid permanent hearing damage, it's important to be careful not to listen at extremely loud levels (or to listen for too long at moderately loud levels). Because HeadRoom amps need to be able to drive even the most inefficient dynamic headphones to satisfactory listening levels, they are also able to drive headphones of average or higher efficiencies to extremely high levels. As a result, even though the volume control on your HeadRoom amp may appear to be set to a low level, you may not be listening at a safe level. Generally speaking, when listening to headphones you should only turn up the volume to the point at which the sound isn't too quiet.

As a general rule, sound pressure levels under 80 decibels will not damage hearing, even if experienced continually. On the other hand, anything over 100 decibels may cause permanent damage very quickly. Sustained exposure to sound pressure levels anywhere in between can also be damaging —the louder the sound, the shorter the time required to cause permanent damage. Just to drive this message home, here's a bit of information about hearing damage. The most common type of damage caused by prolonged or excessively loud sound is called tinnitus. It manifests itself as a sustained buzzing and/or ringing in the ears, and can become a permanent condition.

If you find that your ears are ringing or that there is a sensation of pressure or fatigue, your body is trying to tell you that your ears need a break. Give them a rest for a few days (or until they feel fresh). If you ignore these symptoms, you're risking permanent hearing damage.

In addition, don't fool yourself into thinking that you either have full-blown tinnitus or you don't have it at all—there are different degrees of hearing damage. For example, you might have a mild case where you only notice ringing in your ears in the quiet of your bedroom at night. However, once you have a slight case of tinnitus, your ears are much more susceptible to further damage. So if you do experience mild symptoms, it's important to be much more careful about your exposure to loud sounds.

Sorry to sound so sobering, but a lifetime of musical enjoyment requires ears in tiptop shape. Now that we've told you to be careful, don't blame us if you blow it. If you have any more questions about hearing damage, call a doctor.

Contacting HeadRoom

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