

RH-5

Headphone Amplifier



Owner's Manual

Rogue Audio, Inc.
545 Jenna Dr.
Brodheadsville, PA 18322

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INTRODUCTION

Congratulations on your purchase decision! We at Rogue Audio truly believe that our equipment provides the “smartest” value in high-end audio. If you have never owned a vacuum tube headphone amplifier you will be thrilled by the silky-smooth sound and incredible detail that only a tube amplifier can provide. And with the RH-5 headphone amp, you can be sure that you are getting the very best in tube amplification. We at Rogue Audio are extremely proud of our products and want you to enjoy them to their fullest potential. So please, take the time to read through this short manual so that you can be confident that you have set up your amplifier properly.

UNPACKING YOUR PREAMPLIFIER

Tools required: none

WARNING - This amplifier uses voltages that could cause injury or death. Never open the amplifier while it is plugged in, and always wait at least 30 minutes after turning the unit off before unplugging the electrical cord and opening the unit. *Lethal* voltages can remain in the electronics after the unit is unplugged.

Your new amplifier has been painstakingly inspected for cosmetic flaws during and after assembly. In order not to damage the cosmetic appearance of your amplifier it is important that you follow the unpacking instructions carefully.

1. Open the shipping carton and remove the box containing the remote control and power cord from the carton.
2. Carefully lift the amplifier out of the carton, and remove the foam pads and plastic bag.
3. Save the packing materials. The packing materials and box have been carefully designed to protect your valuable equipment during shipping so you don't want to throw them away.

INSTALLING THE RH-5 HEADPHONE AMP INTO YOUR SYSTEM

Place the RH-5 on a flat stable surface with at least 1" of airspace above the amplifier for ventilation. Do not place any other electronic components or any other objects on top of the amplifier.

Insert the IEC end of the detachable power cord into the rear of the amp (shown in Figure 1). Plug the opposite end of the power cord into an appropriate power outlet. It is recommended that both the headphone amp and power amplifier (if you are using the RH-5 as a preamplifier) are plugged into the same wall outlet if possible (perhaps using a power outlet strip) in order to avoid creating a ground loop.



Figure 1

Connecting sources to the RH-5:

Connections are made to the inputs on the rear panel of the amplifier shown in Figure 1. Line level (CD player, tuner, DAC, etc...) connections are made via the three pairs of RCA inputs or the pair of XLR balanced inputs. If you have the optional phono card and are using a turntable connect it to the Line 1 inputs. There is also a grounding lug for the turntable if required.

OPERATION OF THE RH-5 HEADPHONE AMP

Powering up the System:

After all your connections have been made, you are now ready to turn the amplifier on. The primary power switch is located on the rear of the unit and is shown in figure 1. You can leave this switch on all the time and it will keep the solid state portions of the RH-5 energized even though the unit is powered down. Very little power is used in standby and the RH-5 will sound its best shortly after turn on. The power button located on the front panel is shown in figure 2 and is used to power the RH-5 on and off between listening sessions. Your amplifier features soft-starting to prolong tube life as well as to suppress turn-on transients. A countdown timer on the display shows the time remaining before the RH-5 is ready to use.

When the RH-5 is turned on or off with the rear switch you should not have headphones plugged in as there are noise transients that could damage sensitive headphones. During normal turn off/turn on with the front button this is not a concern. When using the front power button all previous listener settings are retained such as volume and input selection.

To avoid source transients turn on all sources prior to turning on the RH-5 and turn off the RH-5 first when finished listening.

NOTE – The RH-5 will not play music for approximately 20 seconds after power on while the amplifier goes through its sequential start-up.

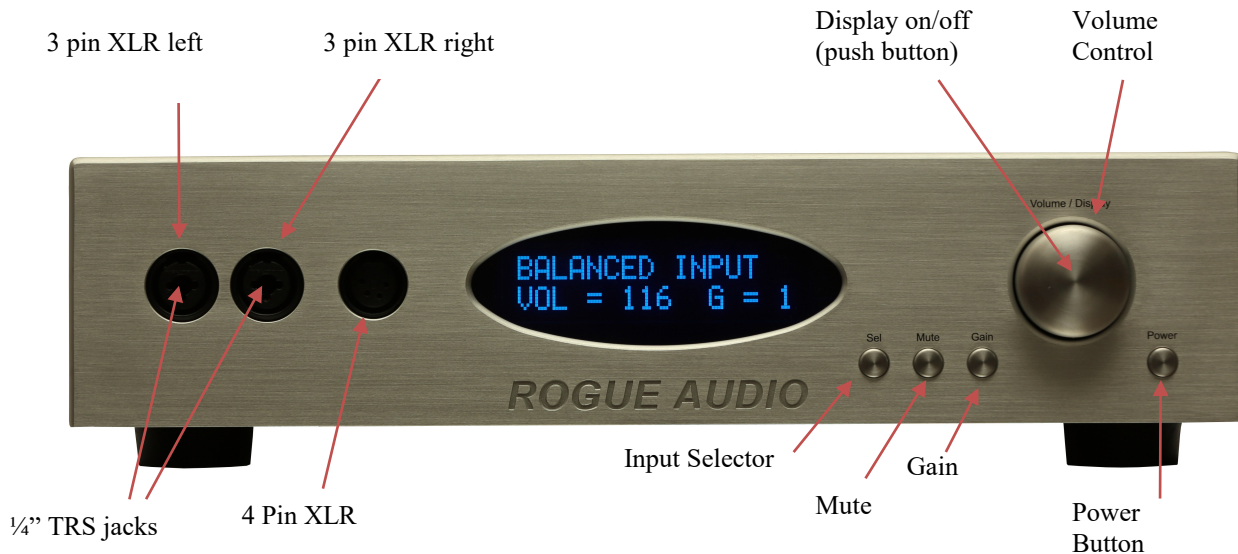


Figure 2

Headphone Connections:

The RH-5 is designed to accept standard ¼" (6.3mm) TRS jacks, 3 pin XLR connectors and 4 pin XLR headphone cables as shown in figure 2. The RH-5 is capable of operating multiple pairs of headphones simultaneously.

Switches, Buttons and Controls:

Volume Control

The volume control has 185 steps which vary in 0.5 dB increments. At turn on the RH-5 defaults to a relatively low volume. The volume can be turned continuously until reaching a reading at either 1 (min) or 185 (max).

Selector Button

The input selector button accesses four different sets of inputs. Each successive push will step through the three RCA inputs and the XLR input. Note that if the optional phono board is installed that it replaces the Line 1 input.

Mute Button

Pushing the mute button mutes the headphone outputs and the variable outputs. The letter "M" appears on the display to show that the RH-5 is in mute.

Gain Button

Pushing the gain button steps the output level through three different gain settings. The difference between the gain settings allows a wide range of volume operation to accommodate various headphone sensitivities. For example, if you have very sensitive headphones you can use gain level "1" and have a useful span of the volume control before the RH-5 plays too loudly. Conversely, if your headphones are low sensitivity you can use gain setting "2" or "3" so that you get full volume. There is no performance advantage between the gain settings.

Display On/Off Switch (located in the volume knob)

Pushing in the volume knob will toggle the display on and off. When the display is "off" only a small blue LED segment remains to show that the RH-5 is turned on. When the display is toggled back on the current input and volume are displayed. You can adjust the volume level while the display is off.

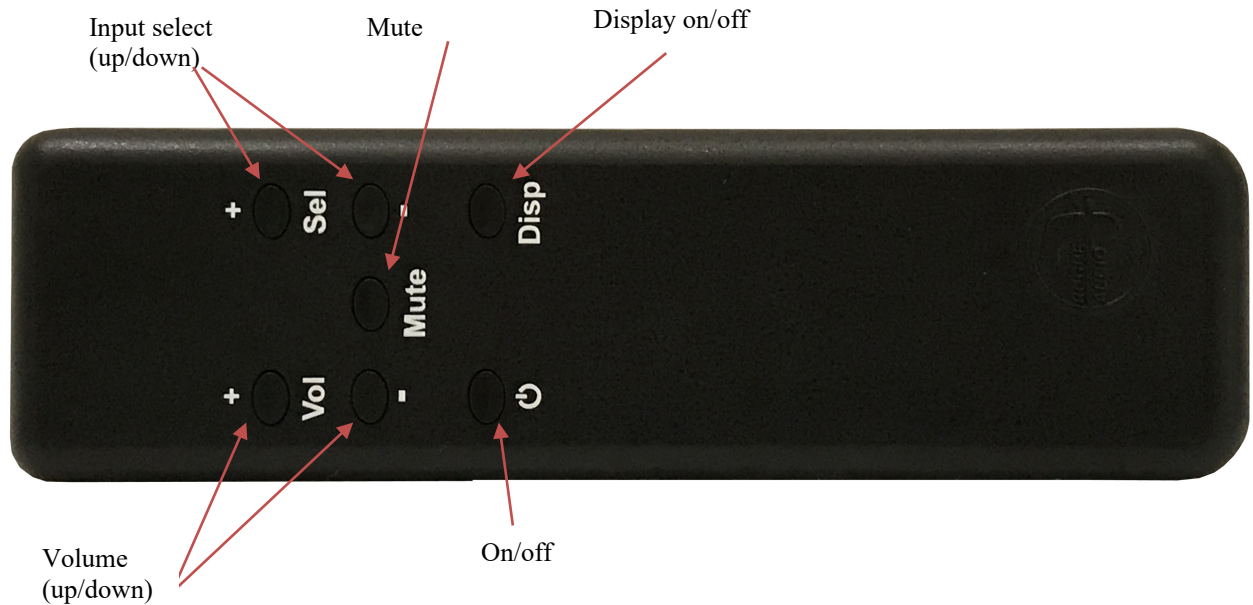
Using the RH-5 as a stereo preamplifier:

There are two pairs of variable (preamplifier) outputs on the RH-5 which can be used to drive an external power amplifier. One pair is RCA and the other pair XLR (balanced).

If you are using the RH-5 as a preamplifier turn on the RH-5 first and then the power amp. Turn off the power amp first and then the RH-5. Also note that the mute button will mute both the headphones and preamp outs. If you want to listen to the headphones only you will need to turn off the external power amp.

Remote Control

The RH-5 hand held remote provides most of the functions located on the RH-5 front panel. Note that the on/off button requires being held down for a moment to avoid accidental turn on/off.



Phono Amplifier (optional)

The RH-5 Phono board provides a high performance phono section that is suitable for the vast majority of phono cartridges available today. It is user configurable and has adjustments for gain, and resistive loading. **The RH-5 w/phono option is shipped with the gain set at 44 dB and the loading set at 47K.** This set up is appropriate for most high output cartridges. Before removing the cover to make any loading or gain adjustments, power off the RH-5 and let it drain off any voltages for at least 30 minutes. Leave the RH-5 plugged into the wall during this time so that the voltages can drain down properly. After the RH-5 has sat for at least 30 minutes disconnect the power cord from the wall or rear of the unit. Please note that best results will be obtained with cartridges of 0.5mV output and higher. Lower values will work but you may not achieve the desired maximum volume with low sensitivity headphones.

Setting the cartridge loading – Remove the 10 cover screws using a #2 Phillips screwdriver and pull off the cover.

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The cartridge loading DIP switches are located near the rear of the optional phono board (figure 3). It is important to point out that the cartridge manufacturers recommended loading should be considered as a starting point and not an absolute. Systems and turntable setups vary significantly and if you want to get the most out of your analog setup, take the time to find the settings that sound best in your system.

DIP switches for resistive loading

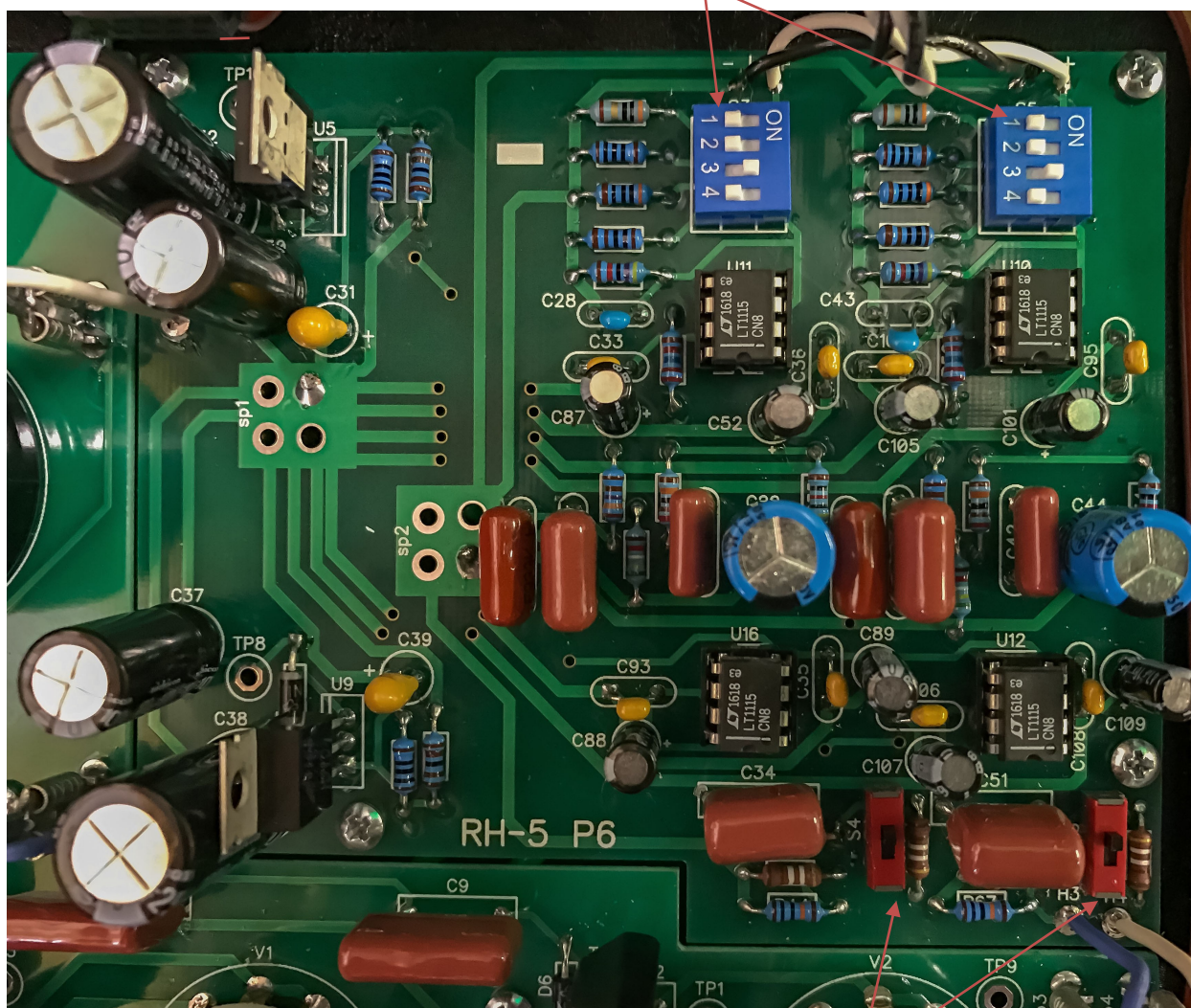


Figure 3

Slide switches for setting the phono gain.

Resistive loading – There are two sets of DIP switches (S3 and S5) for setting the resistive loading (one per channel). The four switches are labeled 1,2,3 and 4. Figure 3 shows the switches in the 300 Ω position. The loading options are given in Table 1 on the following page.

Resistive Loading Table (see figure 3)

1	2	3	4	resistance
on	on	on	on	20 Ω
on	off	off	off	30 Ω
off	on	on	off	75 Ω
off	on	off	off	100 Ω
off	off	on	on	230 Ω
off	off	on	off	300 Ω
off	off	off	on	1K Ω
off	off	off	off	47K Ω

Table 1

Setting the phono gain - The two slide switches S6 and S4 are used to set the gain and are located on the front right side of the optional phono board (Figure 3). If the switches are pushed towards the rear 56 dB of gain is provided which is sufficient for most low output cartridges. When the switches are pushed forward (towards the front of the RH-5) the phono provides 44 dB of gain which is suitable for moving magnet (MM) and high output moving coil (MC) cartridges. A setting of 56 dB gain and 300 Ω loading is shown in Figure 3.

Phono noise – Please note that the phono amp is high gain and as you turn up the volume you may start to increase the noise floor compared to the other inputs. While the RH-5 phono board has a Signal to Noise ratio of over 70 dB some noise is inevitable with a phono preamp (particularly through headphones). The volume control is limited to 160 steps in phono.

TROUBLESHOOTING

Unit does not turn on

- Check that the power cord connection is secure and that the rear power switch is turned on
- Unplug the power cord from the rear of the RH-5. Wait ten minutes then plug the preamp back in. Wait 30 seconds then press the power button on the front panel (e.g. reboot).

Unit does not play

- Check that the interconnects are connected to the proper input or output.
- Check that the interconnects are connected securely.

One channel does not play

- Check that the tubes are operational and seated correctly and securely

For further problems, please call Rogue Audio Technical Support at 570-992-9901.

OWNER AND WARRANTY REGISTRATION FORM

Included with this manual is an Owner and Warranty Registration Form. Please take a minute to fill out this card and return it to Rogue Audio. This card must be returned within 30 days of purchase to validate the warranty.

FUSE VALUE

One 1 A slow Blow Type Fuse located on left side of main circuit board.

RH-5 SPECIFICATIONS

Tube Complement	Two 12AU7/ECC82 tubes
Frequency Response	5Hz – 50KHz +0/-1 dB
THD	<0.05 % 1W
Gain	3dB/12dB/16dB (selectable)
Output Impedance	<0.1 Ω (1KHz)
Output power	3.5 W (32 Ω) 1.8W (100 Ω) .75W (300 Ω)
Phono Gain	42dB, 55dB
Phono Overload	40 mV
Power Consumption Off	12 W standby
Power Consumption On	31 W
Physical Dimensions	15" W x 13.5" D x 4" H
Weight	19 pounds
Shipping Weight	25 pounds
Power Requirements	115V 50/60Hz or
Power Requirements	220-240V 50/60Hz

LIMITED WARRANTY

Warranty Period

This product has been manufactured under the highest standards of quality and workmanship. Rogue Audio Inc. (hereinafter "Rogue Audio") warrants this product against defects in material or workmanship as follows:

With the exception of vacuum tubes, Rogue Audio warrants to the original purchaser of this product all parts of this product against defects in material and workmanship for a period of three years from the date of retail purchase. Rogue Audio warrants the vacuum tubes for a period of six months from the date of retail purchase. Any defective parts will be replaced free of charge, excluding shipping and handling.

Proof of purchase in the form of a bill of sale or recited invoice which indicates that the product is within the warranty period must be presented to obtain warranty service. Rogue Audio suggests that the purchaser retain the dealer's bill of sale as evidence of the date of retail purchase.

What's Not Covered

This warranty does not cover cosmetic damage or any damage that results from product misuse, product abuse, installation error, connection to an improper voltage supply, accident, improper maintenance, alterations, modifications not authorized in writing by Rogue Audio, lightning, power surges, or acts of God. Use of any other than Rogue Audio factory parts may void this warranty.

This warranty does not cover the cost of parts and labor which would be otherwise provided without charge under this warranty, obtained from any source other than Rogue Audio.

This warranty applies only to consumer use of this product and does not cover any product that is used in any trade or business, or in an industrial or commercial application.

This warranty applies only to the original purchaser of this product when purchased from an Authorized Rogue Audio dealer.

This warranty is valid only in the United States.

YOUR RIGHTS

ROGUE AUDIO LIMITS ITS OBLIGATIONS UNDER ANY IMPLIED WARRANTIES UNDER STATE LAWS TO A PERIOD NOT TO EXCEED THE WARRANTY PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, AND SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

To Obtain Service

To obtain service, you must contact Rogue Audio and obtain a return authorization number. The product must be delivered to Rogue Audio in its original packaging prepaid at the following address:

**Rogue Audio Inc.
545 Jenna Dr.
Brodheadsville, PA 18322**