



DHT PRE

Installation Guide & Owner's Manual

Rev - B

Thank you for purchasing Vinnie Rossi LIO DHT PRE - the worlds first ultracapacitor-powered, “convertible,” directly-heated triode (DHT) linestage.

LIO DHT PRE is the only linestage that allows you hear what Class-A, DHTs *really* sound like by taking *out* of the equation elements commonly found with DHT power amplifiers such as driver tubes, speaker output transformers, feedback, cathode resistors/bypass caps and other forms of coloration. We power the two triodes with LIO’s internal ultracapacitor power supply and patented “SPVR” super-regulated filament supplies to achieve what some consider the ‘holy grail’ of DHT linestage design – the lowest levels of noise, hum, and microphonics using a purist circuit topology. You will be rewarded with the most direct and emotional engaging connection to the finest sounding 4-pin DHT triode families ever made.

More so than miniature tubes commonly found in a linestage, the 4-pin DHT family of tubes compatible with LIO DHT PRE offers you:

- The richest tone
- The most fully fleshed-out harmonic structures and soundstage layering
- Awesome dynamics and attack
- Midrange/vocals with a “reach out an touch the performer” effect
- Music that becomes more *lifelike* across the entire frequency spectrum

The resolution, openness, and flow to your music with LIO DHT PRE is exquisite – but most of all, you will enjoy a heightened sense of *realism* and *emotion*, album after album!

Before you can start listening to your LIO DHT PRE, you need to *very carefully* install it into your LIO. We highly recommend only doing so when you feeling awake, alert, and in the right mood to take on this installation. Please carefully read each and every step of this installation guide and do not rush. If something in this guide is not made clear to you, please STOP and contact Vinnie Rossi. And please know that if you get stuck and cannot complete the installation, Vinnie Rossi will gladly complete the installation for you (at no additional charge except return shipping). Are you ready? Here we go!

SECTION 1 – INSTALLING YOUR LIO DHT PRE MODULE

1-1) Make sure your LIO is unplugged

1-2) Remove the stock LIO top cover by removing the two thumbscrews on the rear panel and then slide the cover off.

1-3) If your LIO is configured with the LIO Tubestage, LIO AVC, or LIO AVC/Tubestage module, remove this module by following these steps:

- A. First remove the two tubes (for LIO Tubestage, LIO AVC/Tubestage)
- B. Remove the 3 nylon hex nuts (1/4” hex socket) that hold the module in place.
- C. Pull the module upwards while holding onto the sides of the module to remove it from its sockets.
- D. Once you remove the module and tubes, set it aside to be packaged and returned to Vinnie Rossi (if you are trading-in for your new DHT PRE)

If your LIO is not configured with the LIO Tubestage or LIO AVC/Tubestage, then simply remove the LIO JUMPER board located in the LIO Tubestage location.

1-4) If your LIO is configured with the LIO HPA (headphone amplifier module, located to the right of where the LIO Tubestage was installed), please remove it by unplugging the headphone cable and then remove the nylon hex nuts that are holding it into place. Set aside the nylon hex nuts. Then pull the HPA module upwards to remove it from its two sockets.

1-5) Locate your new LIO DHT PRE module and take note of its (3) 10-pin headers and mounting holes. Position the DHT PRE module over the mating headers and mounting standoffs, and slowly/carefully align them and push the module down into place. Confirm that it is fully seated and then install the 7 nylon hex nuts included with your DHT PRE to secure it into place. Make sure they are tight, but do not over-tighten!

1-6) If you removed the LIO HPA module in step 4 above, then install it onto the LIO DHT PRE module by first locating the (2) 10-pin headers and 4 mounting standoffs, and then aligning your HPA module and pushing your HPA module into place. Confirm that it is fully seated, and then reinstall the nylon hex nuts that you removed in step 4 above to secure it into place.

Next, install the included 5-pin headphone extension cable. Pay attention to matching the red wires (RIGHT Channel), and install into your HPA module.

SECTION 2 – INSTALLING YOUR LIO DHT OUTPUTS MODULE

2-1) Locate the LIO OUTPUTS module installed in your LIO, and remove it by following these steps:

- A. Remove the 4 metal hex nuts from the LIO OUTPUTS module's rear plate (1/4" hex driver required).
- B. Hold onto the module via the RCA output jacks and circuit board, and pull the module upwards until it is removed from the two mating sockets on the motherboard, and then pull it out of the LIO rear panel.
- C. Set your LIO OUTPUTS module aside to be packaged and returned to Vinnie Rossi.

2-2) Locate your new LIO DHT OUTPUTS module. It should look just like the one you removed in step 2-1 above, but it also contains a DC barrel jack and cable assembly.

2-3) Install your new LIO DHT OUTPUTS module into your LIO by bringing it in from the rear panel and then aligning the (2) 10 pin headers over the mating sockets on the LIO motherboard. Be careful that the attached cable is not pinched, and then push the module into place. Reinstall the 4 metal hex nuts to secure the LIO DHT OUTPUTS module onto the LIO rear panel. Do NOT over tighten these hex nuts, as they will snap / break!

2-4) Install the cable assembly from LIO DHT OUTPUTS module to the LIO DHT PRE module that you installed in Section 1 above. Push the cable's plug into the mating barrel jack on the DHT PRE module, and then screw the plug's locking mechanism securely into place. Make sure the cable is routed in such a way that it will not get pinched when you later install the top cover.

SECTION 3 – INSTALLING YOUR LIO NUDE RVC MODULE

3-1) If your LIO is configured with LIO RVC (resistor volume control), locate this module and remove it by removing the two nylon hex nuts and then lifting the module upwards and out of its sockets. Then set your LIO RVC module aside to be packaged and returned to Vinnie Rossi.

If your LIO was configured with LIO AVC or LIO AVC/Tubestage module, there will be a LIO JUMPER board installed in place of LIO RVC. Remove the LIO JUMPER board.

3-2) Locate your new LIO NUDE RVC module and carefully install it onto the two 10-pin headers that are on the LIO INPUTS module (if your LIO have this module), or directly on the LIO motherboard (if your LIO does not have the LIO INPUTS module). Make sure the two rows of 10-pins are properly aligned over their mating sockets, and then push it into place and confirm it is correctly inserted into the mating sockets.

SECTION 4 – FINALIZING YOUR LIO DHT PRE INSTALLATION

4-1) At this time, check over your installation from the above steps in Sections 1, 2, and 3.

4-2) Install the new LIO DHT PRE top cover by sliding it into place, and then reinstall the two thumbscrews that you removed in step 1-2 above.

4-3) Set the LIO DHT PRE filament voltage switch to the 2.5V setting for each tube by referring to Figure 1 below. You can use a small flat-head screwdriver to slide the 3-way switch to the correct position.

4-4) Locate the included 2A3 tubes, and carefully install them into each 4-pin DHT tube socket. Note that there are two larger diameter holes/pins and two smaller diameter holes/pins on the tube sockets/tubes. Make sure that each tube is fully inserted into each socket.

4-5) If you want to install the included DHT PRE tube covers, carefully position them over each tube and align the mounting brackets over each 4-40 screw hole on the LIO DHT PRE top cover. Then use a number 2 Philips head screwdriver to tighten the included screws through the mounting brackets and into the top panel's screw thread. Be careful not to cross-thread these screws!

4-6) Locate your new LIO DHT Power Supply. Install the included GROUNDED power cable into the power jack on the rear panel of the power supply, making sure the plug is fully inserted. Plug the power cable into your power outlet, and make sure it is a properly GROUNDED power outlet. If it is not properly grounded, then you will probably have noise problems (hum and buzz heard in your speakers).

4-7) A. Turn ON your LIO DHT Power Supply via the red rocker switch on its front panel.
B. Next, locate the 2 barrel plugs on the end of the 5-foot power output cable from the LIO DHT Power Supply. The plug without the locking mechanism replaces the stock LIO power adapter and plugs into the same location (24V DC IN) on the rear panel of your LIO. After you insert this plug, your LIO will begin its pre-charge sequence.

C. Next, install the barrel plug with the locking mechanism to the mating jack on the back of the new LIO DHT OUTPUTS module. Make sure this plug is fully inserted, and then tighten the locking mechanism.

4-8) Let your LIO finish its pre-charge sequence (it will automatically turn OFF when it is finished), and then reinstall all the rest of your system's audio cables to the rear panel of your LIO. Once this is completed, you may turn ON your LIO. Allow for the approx. 30-second tube warm-up sequence ("LIO" displayed on the front panel), and once you see the "- - -" on the front panel display, you are ready to select your input and turn up the volume out of mute.

CONGRATULATIONS – your LIO DHT PRE installation is complete! IMPORTANT - Before you start listening, please read the remaining sections of this manual.

SECTION 5 – YOUR LIO DHT Power Supply

5-1) Only use a GROUNDED 3-conductor power cord with your LIO DHT Power Supply, and this power cord MUST be plugged into a properly GROUNDED electrical outlet. Improper/faulty grounding will result in noise/hum issues.

5-2) Leave your LIO DHT Power Supply ON, and turn ON/OFF your LIO via the PWR button on your LIO front panel or LIO Remote Handset. Only turn OFF your LIO DHT Power Supply when you need to open your LIO.

5-3) When connecting the LIO DHT Power Supply to your LIO that is not charged, you will first need to turn the power supply ON and then plug in the two cables to the LIO. Otherwise, the LIO DHT Power Supply's in-rush protection might activate and shut off power to the output cable.

5-4) It is normal for the LIO DHT Power Supply to feel quite warm / hot to the touch after using it for some time. Make sure it is located where there is some ventilation, and away from sources of heat (sunlight, radiators, etc.).

5-5) YOUR LIO DHT Power Supply is factory-configured for either a 110-120V or 220V-240V power outlet. If you move to a country with a different AC voltage, you must either use a "Vinnie Rossi approved" voltage converter (rated for at least 250W), or order a new LIO DHT Power Supply with the correct voltage rating.

Failure to do so will damage your LIO DHT Power Supply, LIO, and LIO DHT PRE!

SECTION 6 – TUBE ROLLING WITH YOUR LIO DHT PRE

6-1) Your LIO DHT PRE is a "convertible" design that allows you roll in tubes from a few different 4-pin DHT families. Before you do this, you need to be aware of the filament voltage of the tube you plan to install (see compatible list of tubes below), and then adjust the 3-way slide switch next to each tube socket to set the correct filament voltage (Refer to Figure 1, below).

WARNING: Failure to use the correct filament voltage can easily damage your tubes, so please do not forget to set it correctly and double-check the setting before installing your tubes!

For your reference, here is a list of 4-pin DHT tubes that may be used with your LIO DHT PRE, and the correct filament switch setting to use:

Tube / Switch Setting

2A3	2.5V
45	2.5V
300B	5V
SR71A	5V
SV811-10	5V
SV572-30	5V
CX301-A	5V
PX4	4V
PX25	4V
101-D	4V
205-D	4V

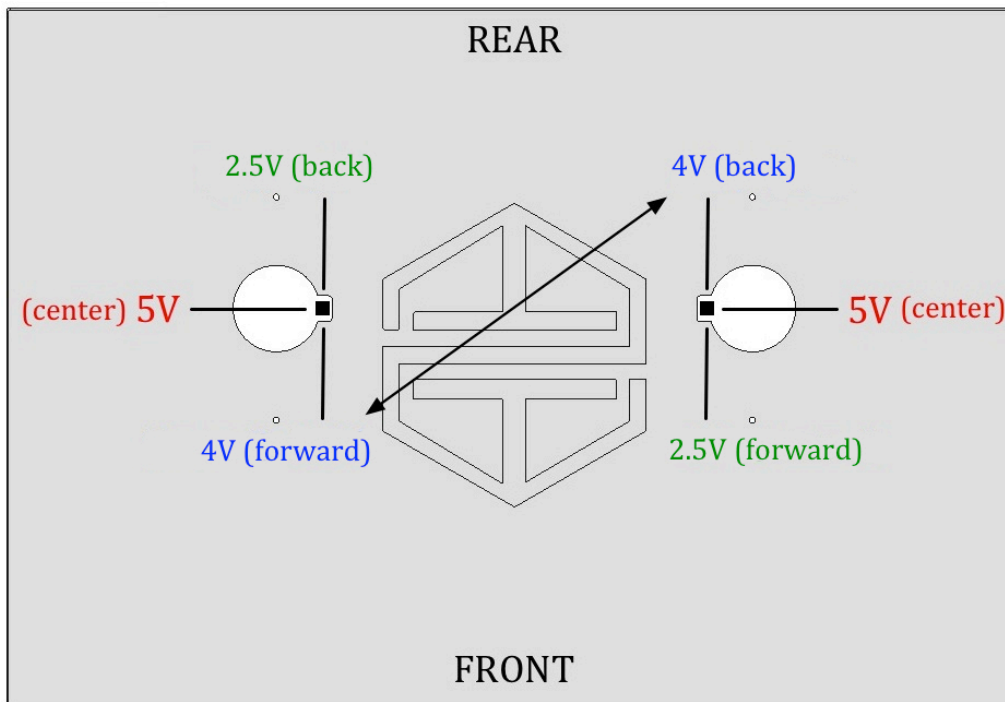


Figure 1: LIO DHT PRE (TOP) 3-Way Filament Voltage Switch Settings

NOTE: The 2.5V and 4V switch settings are different for the L and R tubes!

6-2) The tubes listed in the table above are all compatible with your LIO DHT PRE, but we cannot guarantee the quality of the tubes or how well they will work with regards to noise, hum, channel matching, life, etc. We can only recommend buying tubes from vendors that will exchange or refund your purchase if you are not satisfied with the results.

6-3) Before installing any tube, make sure the 4-pins of the tube are clean (especially NOS tubes that might have oxidation or corrosion on the pins due to age). It is essential that the pins are very clean *before* you install them!

6-4) Vacuum tubes are made of glass (breakable) and can get warm/hot! Be careful about allowing pets or children near them. We recommend that you install the included tube covers if you have pets or children in your home. Before swapping tubes, turn OFF your LIO and allow the tubes to cool down for at least 5 minutes.

6-5) NEVER touch the tube socket female pins with your fingers or with any metal object unless your LIO is OFF and your LIO DHT Supply is turned OFF!

6-6) Some DHT tubes are more prone to noise/hum pickup (even if your LIO DHT Power Supply is plugged into a properly grounded power outlet), and microphonics (see below). If you find this to be troublesome, try installing the included tube covers in step 4-5 above. They are metal and provide shielding around the tube, and also help block sound waves (from your speakers) from reaching the tubes.

SECTION 7 - MICROPHONICS

“Microphonics” is the phenomenon where components (the tubes) in an electronic device transform mechanical vibrations into an electrical signal (noise). This term comes from the analogy of a microphone, which is intentionally designed to convert vibration into an electrical signal.

7-1) It is normal for any DHT tube used in this linestage to exhibit microphonics. If you tap the LIO enclosure, tube, tube cover, and even the shelf that your LIO is sitting on, you will most likely hear this in your loudspeakers if your volume is turned up.

7-2) Feel free to try using various isolation footers, isolation shelves, and even tube dampers if you wish to reduce tube microphonics. However, microphonics should not be induced from listening to your music (even if LIO is fairly close to the loudspeakers) and should not cause you any trouble.

7-3) Make sure your LIO DHT PRE is not located next to any sources of vibration (e.g. air conditioning unit).

Thank you again for your purchase, and enjoy listening!

Vinnie Rossi