

ALLNIC AUDIO

L-5000 DHT LINE STAGE PREAMPLIFIER



OWNER'S MANUAL

ALLNIC AUDIO

L-5000 DHT LINE STAGE PREAMPLIFIER

Thank you for purchasing this Allnic Audio L-5000 DHT Line Stage Preamplifier. We are certain your trust in Allnic Audio and Hammertone Audio, as well as your appreciation for the sound of this high-quality device, will be rewarded by its excellent operation for years to come.

Please read this entire manual before you connect the L-5000 DHT Line Stage Preamplifier to the other components of your system and the wall outlet.



David Beetles CEO

**HAMMERTONE
AUDIO**

252 Magic Drive, Kelowna, British Columbia, Canada V1V 1N2

Direct Telephone: (250) 862-9037; Fax: (250) 862-9039

email: david@hammertoneaudio.com

Website: www.hammertoneaudio.com

**** Information and specifications for the Allnic Audio product described in this manual are subject to change without notice.**

TABLE OF CONTENTS:

INTRODUCING THE L-5000 DHT LINE STAGE PREAMPLIFIER	4
WHAT'S IN THE BOX?	6
SAFETY	6
CLEANING Chassis Connectors	6
INITIAL SET-UP Location, Location, Location Power Connection Inputs Outputs Phase Switch Remote Control	6
INITIAL POWER ON	8
OPERATION	8
TUBES	9
SPECIFICATIONS	9
WARRANTY	10
FIGURES	11

Please read about **SAFETY** before you attempt to use the L-5000 DHT Line Stage Preamplifier - we care about our customers and the equipment, and we want you to enjoy this product for a long time!

INTRODUCING THE L-5000 DHT PREAMPLIFIER

Allnic Audio and the Direct Heated Triode Breakthrough

In the early years of the last century, the directly heated triode was invented independently, and almost simultaneously, in the USA and Austria. This simple device, an anode, cathode and a grid in a vacuum contained in a glass bottle, transformed the world. With all the applications in which it has been employed, and with all the changes in electronic design for audio reproduction that have occurred since its invention, it is remarkable that over one hundred years later, the very first triode, the simplest vacuum tube audio signal amplifier, despite the imperfections ascribed to it, remains a favourite audio amplification device of many devoted music lovers worldwide.

Debate, on both subjective and empirical bases, about the quality of the directly heated triode's sound reproduction potential continues even today. One of the interesting aspects of these debates is the degree to which they ignore analysis of common, fundamental assumptions based on decades of circuit and mechanical design experimentation and compromise, about the use of these devices. Indeed, because of the difficulties in application of directly heated triodes in audio circuits, many issues arising out of circuit design problems related to them have evolved into assumptions about the audio characteristics of the valves themselves.

Allnic's Mr. Kang Su Park has spent a lifetime studying and designing circuits and transformers for application of direct heated triodes for audio reproduction. By questioning basic assumptions about the valves and re-examining the original and many historical variations of circuit designs for them, and experimenting constantly in a framework of rigorous application of theory, Mr. Park's work has resulted in some remarkable audio power amplification devices. With the 300B, for example, his creations produce significantly more power than is expected (without shortening valve life because the power increase is not achieved by increased bias), in conjunction with exceptionally low distortion and wide bandwidth.

Now, Mr. Park has successfully combined elements of what he has learned and invented over decades to the development and production of a pure, direct heated triode (DHT) based preamplifier. The main breakthrough, which came after several years of work applying all he knows, was the design of a circuit, valve and transformer

combination the measured results of which astounded him. The purity of its square wave reproduction – as perfect as anything he had ever seen from a DHT valve amplification circuit – had him questioning what he was seeing! Of course, he tested and re-tested, replicated and recorded these results many times before assuring himself that there was no mistake.

With such an unprecedented outcome for the circuit design, Mr. Park could not be satisfied merely with placing a DHT stage after one or two prior stages of amplification using indirectly heated triodes. This approach is used in a number of commercially available preamplifiers using DHT's, but it is a compromise. It does not result in PURE DHT amplification; it necessarily introduces the characteristics of indirectly heated triode sound into the circuit, so the output DHT's are only amplifying a signal already affected by the indirectly heated triodes in the prior stage or stages.

Mr. Park, though, has created a preamplifier that uses DHT's at each amplification stage. In his design, the output stage DHT's are not merely amplifying the signal from previous, indirectly heated triode stages. The L-5000 DHT preamplifier is pure DHT - from input to output.

Of course, Mr. Park is not the only builder who has accomplished this, but to our knowledge no other pure DHT preamplifiers have been commercially available. There are serious and significant reasons why such preamplifiers could not be acceptable in the marketplace. First among them has been the enormous problem of microphonics. One of the many special elements of Mr. Park's design is reduction of microphonic influence on the DHT's. Where others have sometimes accepted the effects of this problem because even with it they prefer the incredible realism of the pure DHT approach, Mr. Park has succeeded in creating a circuit and mechanical design that reduces the DHTs' susceptibility to microphonic influence to insignificance. Like the Allnic L-3000, which is an indirectly heated triode preamplifier, the L-5000 has a noise floor that is effectively absent.

The Allnic L-5000 DHT preamplifier is THE WORLD'S FIRST COMMERCIALY PRODUCED, PURE DHT PREAMPLIFIER.

Currently, the L-5000 DHT's large output tubes are very rare items, produced many decades ago. Allnic has been able to secure a limited number of these valves, enough to produce an also limited number of the L-5000 DHT preamplifier. ONLY A LIMITED NUMBER OF UNITS OF THIS DESIGN WILL BE MADE. This allows for valve stock to be

retained for replacements, should that ever become necessary, something that is unlikely for a very, very long time – unless one drops the tube! This is because the qualities of the valves combined with the circuit in which they function will extend their life to the utmost limits, very, very much beyond 10,000 hours.

The L-5000 DHT is Allnic Audio's best line stage preamplifier. Like all Allnic Audio products, it uses Permalloy (Iron and nickel alloy) for its transformer cores. Allnic is grateful to Mr. G.W. Elmen of Western Electric for inventing Permalloy for transformer core use, and in so doing, providing an enormous service to recorded music listeners everywhere.

The L-5000 DHT has the following features:

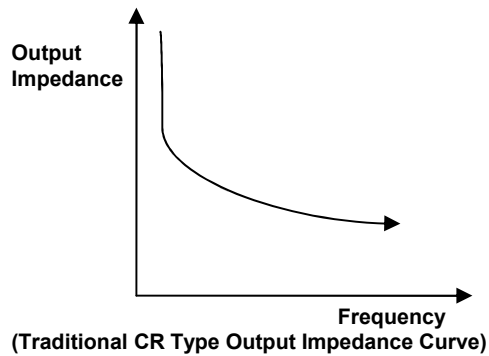
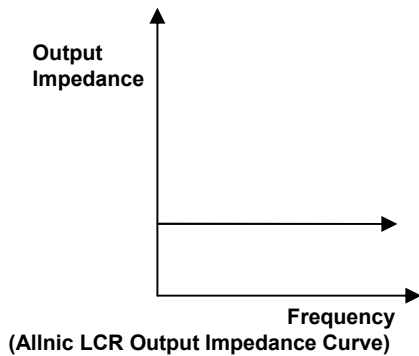
- Line output transformer coupling – The L-5000 DHT is “transformer coupled”. In tube amp circuitry, there are two coupling methods; one is capacitor coupling and the other is transformer coupling. Capacitor coupling is the traditional, low cost method. It is somewhat stable but transfers only voltage, not wattage (i.e., not real energy). With transformer coupling, about 90% of real wattage is transferred (there is still a transformer loss of about 10% of wattage – voltage is not affected).

Transformer coupling is superior to capacitor coupling. However, all the advantages of transformer coupling depend on the quality of the transformer and on the choice of tubes. Allnic Audio manufactures its own transformers and uses what it views to be the best core material, Permalloy. Allnic Audio's unprecedented, wide (16Hz ~ 75kHz, -3db), low distortional, and ultra-ultra-flexible (up to 50kHz square wave response) output transformer helps Allnic Audio to realize the ideal transformer coupled preamplifier. Of course, gain tubes are also carefully selected for three critical factors for function with the Permalloy output transformers: high gm, low internal resistance and high mu.

- Constant and low output impedance – One of the benefits of transformer coupling is that it facilitates constant low output impedance. Low output impedance is critical to the design of a good preamplifier. The L-5000 DHT has a 120 ohm (120Ω)

constant output impedance at all frequencies. In capacitor coupling (C-R coupling), a “cathode follower circuit” is usually used to lower output impedance. Unfortunately, this method of lowering output impedance is accompanied by high distortion and has an “L” shaped output impedance curve. Please compare the two graphs below, especially for low frequency response.

- No negative feedback design
- Advanced tube technology voltage regulation - For quieter and more dynamic operation, the L-5000 DHT has an ultra high speed automatic voltage regulation circuit, utilizing vacuum tubes. This also protects the amplifying tubes from change in the AC line supply and copes with any abrupt, internal current demand.
- New vacuum tube damping technology – Allnic Audio's patented "Absorb GEL tube damper" technology prevents harmful vibrations from reaching the signal / gain tubes and, therefore, prevents microphonic noise propagation in the tubes. The Allnic Audio Absorb Gel damper technology effectively solves a problem that plagues most tube, and especially DHT, amplification systems. Provided other tube components do not introduce microphonic noise into your system, with the Absorb Gel damping system, you will enjoy a degree of transparent sound that will surprise and please you.
- Precision attenuator volume control – The L-5000 DHT does not employ a digital IC volume control or a low-cost carbon film volume control with a motor. Allnic Audio has developed a precision oil clutched motorized attenuator; the L-5000 DHT has no (\pm 0db) channel unbalance at any volume level.
- Pure Class A operation
- Pure balanced output stage
- As are all Allnic Audio products, the L-5000 is fully RoHS (EU Reduction of Hazardous Substances regulation) compliant in construction and materials



WHAT'S IN THE BOX?

Please check that the shipping box contains the following:

- One (1) Allnic L-5000 DHT Preamp – in natural aluminum or black, depending on your order specification
- One (1) power cord
- One (1) remote control
- One (1) Gel socket tube puller and instructions
- Two (2) x AAA batteries for the remote control (loaded in the remote)
- One (1) Owner's Manual

Note:

- 1) The L-5000 DHT ships with the tubes installed.
- 2) The L-5000 DHT will work with most IEC type aftermarket power cords. Of course, only you can determine the power cord that works most synergistically with the L-5000 DHT in your system.

We advise that you keep the box and other packing materials that your L-5000 DHT came in. It will be useful if you sell your L-5000 DHT or in the unlikely event you need to ship it for service.

SAFETY

- **CAREFULLY and SLOWLY remove ALL cardboard and Styrofoam cushioning material inside the tube chimneys before operation. DO NOT remove the anti-vibration rings that are on all the tubes except the small voltage regulator (6AK6).**
- Disconnect the power cord by pulling the plug, not the cable.
- Keep the power cord away from any heat source.
- Keep the unit away from liquids – do not allow any liquid to enter the interior of the unit.
- When the unit is moved from a cold to a warm

- When the unit is moved from a cold to a warm environment, allow sufficient time for any condensation to evaporate before plugging the unit into an AC connection.
- Do not attempt any repairs.
- Do not remove the chassis cover without specific authorization from Hammertone Audio.
- See the notes on "Location, Location, Location".

CLEANING

A. Chassis and glass

Use only a soft, lint-free cloth dampened slightly with water only (NO cleaning fluids!) to clean the faceplate, meter glass and chassis.

B. Connectors

You may use any good quality contact cleaner recommended for such applications to clean the contacts from time to time as you deem appropriate.

INITIAL SET-UP

A. LOCATION, LOCATION, LOCATION

Like all audio products using tubes, the Allnic Audio L-5000 DHT needs to be placed on a solid stand in a location that provides for good air circulation around the preamplifier.

- DO NOT cover the top of the preamplifier.
- DO NOT place the unit on carpet or foam.
- DO NOT subject the unit to knocks and shocks as you move it around. This advice is meant particularly for those who may want to place the L-5000 DHT on a set of after-market isolation feet or similar devices. Dropping one side of the L-5000 DHT, or the whole unit, is not a good thing.

- DO NOT place the unit near a strong light or heat source.
- DO NOT place anything heavy on the unit.
- DO NOT allow rubber or vinyl materials to rest on the unit's chassis for long periods of time. This could discolour the metal.
- DO place the unit on a shelf or stand that is stable and not subject to vibration or sudden shock.
- DO consider using a high quality power cord and inter-connects, both inputs and outputs. The L-5000 is a highly sensitive piece of electronic equipment designed for neutrality and will output what you put into it.
- DO try to place the L-5000 DHT away from major sources of RFI and EMI; though well shielded, the L-5000 DHT will function best away from large power transformers and other sources of such interference.

B. POWER CONNECTION

The L-5000 DHT uses a standard three prong male IEC connection for AC input. You need to use a power cord with a female three prong IEC connector at one end.

To the left of the IEC connector (facing the left side of the unit as in Figure 1), there is a power on-off switch. Leave this switch in the OFF position – that means the switch is pressed “down” at the bottom - while you make all initial connections.

The L-5000 DHT you have purchased is set internally for AC 110/120 volt – 60 HZ operation. There is no way to change this to another AC setting without return of the unit to the factory for re-wiring, at the owner's cost, including transport both directions.

C. INPUTS

There are five (5) inputs. Line 1 and Line 2 are balanced connections (XLR type connectors). The remaining 3 line inputs are RCA type single-ended connections. None of the inputs is intended especially for connection to any particular device.

NO PHONO STAGE - The L-5000 DHT is a line stage preamplifier and does NOT have a built in phono preamplifier section. You will need a phono preamplifier if you want to use a turntable with the L-5000 DHT. You can connect your phono preamplifier to any of the five inputs, provided you have the appropriate types of connections or adaptors.

The L-5000 DHT has been designed and manufactured to work most synergistically with Allnic Audio phono preamplifiers, pre-preamplifiers, equalization and power amplification products.

D. OUTPUTS

The L-5000 DHT has three pairs of outputs. Two (2) output pairs are balanced (i.e., separate ground), using XLR connectors; one (1) pair is unbalanced, using RCA type connectors.

One pair of the balanced (XLR) outputs is a “Record Out” (“rec out”). It is a straight pass-through, unaffected by the L-5000 DHT's circuitry, and provides no gain.

The other two pairs of outputs are intended for connection to a power amplifier. On the back panel of the L-5000 DHT there is a switch to select either the balanced or single-ended connections. This selection switch is at the top centre of the rear panel and labeled “unbalanced output” (see Figure 2). Please set the output selection switch to the output connection you are using. If you set the switch to “balanced” (i.e., XLR – switch pushed to the right, looking from the rear) and then connect your cables to the RCA outputs (“main out 2”), audible hum will be introduced.

You may use both the balanced and single-ended RCA outputs at the same time; for example, if you run one pair to your stereo amplifier and the other to a powered subwoofer (or a pair of them). In such a case, set the output selection switch to unbalanced (RCA – switch pushed to the left). This will avoid the introduction of hum.

E. PHASE SWITCH

On the right hand side of the top deck of the chassis, there is a phase switch. This switch is a 180 degree phase switch; phase is either normal or inverted one hundred percent, depending on the switch position. On initial connection, set the switch to normal. Depending on the phase your sources output and their facilities with regard to phase, you may want to switch to inverted phase sometimes. Phase issues generally will result in lack of bass and/or focus of the stereo image (See Figure 3).

F. REMOTE CONTROL

The remote control provides the ability to remotely:

- Select the line source input using either the numbered buttons or the horizontal arrow buttons

- to each side of the Mute button (Please see Figure 4).
- Control the volume level using the up (louder) and down (quieter) arrow buttons above and below the Mute button. After about forty (40) seconds, the light above the “operate”/“mute” button will illuminate. The L-5000 DHT has a “soft start” delay for the tubes in order to extend tube life.
- Mute the volume using the button labeled with a speaker cone with an “X” across it, located between the “CH” and “VOL” arrow buttons. Depressing the mute button will run the volume control down to zero. To raise the volume again after muting, press the mute button to take the volume level to where it was prior to muting.
- There is no power on/off on the remote. The L-5000 DHT on/off control is on the face of the chassis only. This should help prevent accidental powering off of the L-5000 DHT when the power amps are still on.

INITIAL POWER-ON

Once you have your L-5000 DHT in place and all connections have been made to your sources and amplifier(s) and the power cord is installed and plugged into an AC receptacle, you are ready to turn on the power for your L-5000 DHT. Before you power up the L-5000 DHT, though, be sure you have:

- CAREFULLY AND SLOWLY removed ALL the cardboard cushion materials from inside the tube chimneys**
- ensured the batteries are in the remote control – if not, insert the batteries (by removing plate on the bottom of the remote control).**
- selected the output connections that you want to use, single ended (RCA) or balanced (XLR), on the switch at top centre on the back of the preamplifier
- turned the volume down on or muted the L-5000 DHT
- checked that all your connections are snug

Also, be sure you have manually turned the volume control on the front panel to the extreme counter-clockwise position (minimum volume).

When the Allnic L-5000 DHT has powered up internally and you have depressed the far left hand button marked “power” on the front panel, the following will happen on the front panel (Please see Figure 5):

- the light above the “power” button will illuminate.
- the meters on the front panel will illuminate.
- the light over the line source button that is depressed will illuminate

- after about 40 seconds, the light over the mute button will illuminate

The Allnic Audio L-5000 DHT is now ready for operation. At this point, you can power on your stereo power amplifier or mono-blocks.

OPERATION

From this point on, operation is straight-forward. All functions are controlled from the front panel or the remote control. Of course, BE CAREFUL about differences in gain between your sources. Generally, disc players and tuners will have greater gain than phono stages. That means the volume setting for listening to your turntable might be too high for listening to CD’s.

To avoid surges to the speakers, it is best to change from input to input only with the “operate” button set to mute (the light above the button will not be illuminated when the button is in the “mute” position).

When you are finished listening, turn off your stereo power amplifier or mono-block amplifiers. Then turn off the L-5000 DHT, using the remote control or depressing the power switch on the front panel. The power switch on the rear panel should stay in the “on” position – this will keep key circuitry warm, and your L-5000 DHT will be ready to play when the soft-start turns on the L-5000 DHT next time you want to listen. Turn off your sources last.

THE CURRENT METERS

These illuminated meters indicate the current supply to the gain tubes in the L-5000 DHT. They are indicators of failure or damage to the function of the unit. There is one meter for each channel. The needle should be between the two parallel lines just left of centre on the meter face. Any failure of the tubes or circuits in one or the other of the L-5000 DHT’s channels is indicated by the needle on the meter for the respective channel moving out from between those two parallel lines.

- If the needle has moved to the left of the parallel lines on a meter, it means that one or both of the gain tubes (3A/110A or 3A/109B) for that channel is failing.
- If the needle on either meter moves to the right of the parallel lines, it means that one or the other of the rectifier or voltage regulator tubes (7233 or 6AK6) for that channel is failing.

In the case of any failure indicated by the meter, please contact Hammertone Audio for assistance.

TUBES

The L-5000 DHT uses the following tubes (see Figure 6):

- Two (2) x 6AK6 or 6485
- Two (2) x 7233
- Two (2) x 3A/110A (or MR0 PT8, if requested for lower gain)
- Two (2) x 3A/109B

All consequences of changing or attempting to change tubes are borne by the user unless by express agreement between the owner and Hammertone Audio. Allnic Audio and Hammertone Audio are not liable in any way whatsoever for any injury or loss incurred by the user or for damage to the L-5000, any of its parts, or tubes or replacement tubes resulting from the user changing or attempting to change tubes.

SPECIFICATIONS

FOR THE ALLNIC AUDIO L-5000 DHT LINE STAGE PREAMPLIFIER

- Inputs: Line level × 5 pairs (Balanced × 2, Unbalanced (RCA) × 3)
- Outputs: Balanced × 2 pair (1 record) Unbalanced × 1 pair
- Input Impedance: 10kΩ Balanced/Unbalanced
- Frequency Range: 20Hz ~ 20kHz (FLAT) 16Hz ~ 75kHz (-3dB)
- Voltage Gain: +18dB
- THD (1kHz): Output 0.3V, 0.06% Output 1.0V, 0.16%
- S/N Ratio: -90dB (CCIR, 1kHz)
- Maximum Output: 20V RMS (Non-clipping)
- Output Impedance: 120Ω Constant
- Power Consumption: 30W at 110/120V / 60 Hz

- Tubes: 3A/110A or lower gain stage equivalents MR0 PT8 or MR0 TS8 x 2 (1st gain stage); 3A/109B × 2 (2nd – output - gain stage – equivalents are CV1671 and 4021a; 7233 (no equivalent) × 2 (Rectifier); 6AK6 (equivalent to A4361, CV1762) or 6485 (similar to 6AH6, 6AH6WA, 6AH6S, CV2521) × 2 (Voltage Regulator)
- Fuse: 2A 250V slow blow
- Tube chimney screws: 2mm Allen head
- Dimensions: 430mm (16.9291 inches) (W) 351mm (13.811 inches) (D) 211mm (8.3 inches) (H)
- Weight: 19.1 kg (42 lbs) unpacked. Packed shipping weight in original shipping material is 21 kg. (46.2 lbs)

WARRANTY

All Allnic Audio amplifier products are warranted against materials and manufacturing defects for parts, excluding tubes, and labour for two (2) years from date of purchase. Tubes are warranted against materials and manufacturing defects for one (1) year from date of purchase. The warranty is transferable for the balance of the original purchaser's warranty period, provided, as stated below, no unauthorized repairs or modifications have been performed on the product. Date of purchase is the date indicated on the invoice for the product issued by Hammertone Audio.

For the warranty to be valid, a defective product must be returned to Hammertone Audio for service prior to any unauthorized attempt to repair. Any repair work on an Allnic Audio product not specifically authorized by Hammertone Audio will void the warranty on the product.

FIGURES

Figure 1 – L-5000 DHT Left Side Panel View

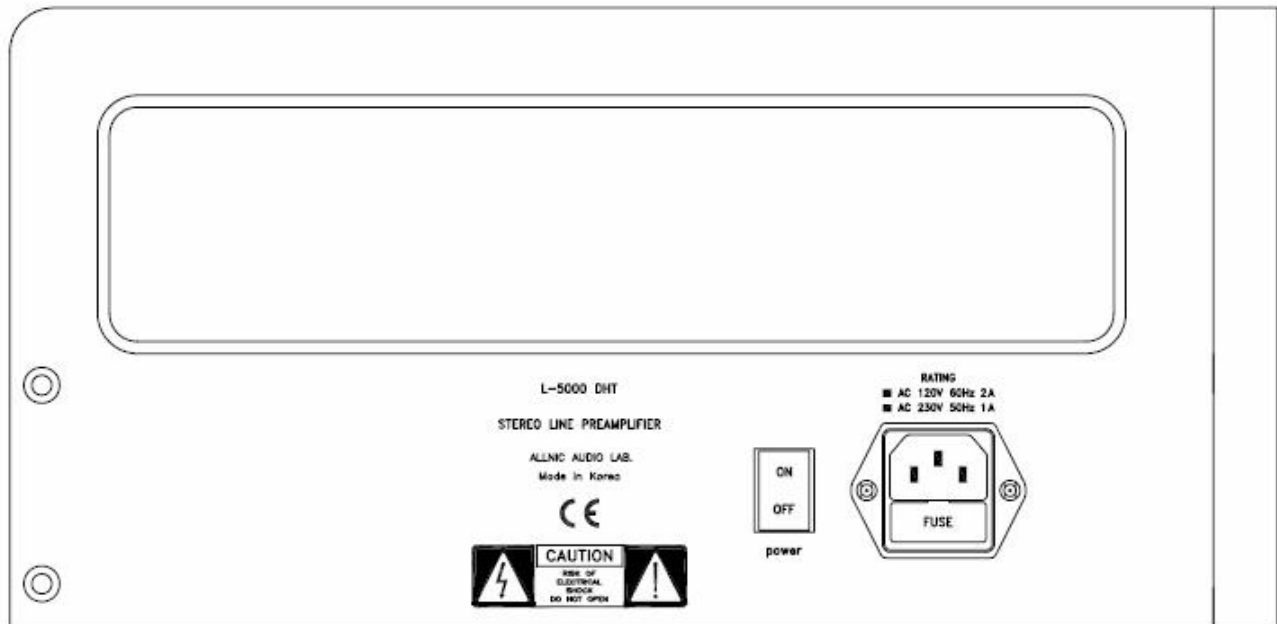


Figure 2 – L-5000 DHT Rear Panel View

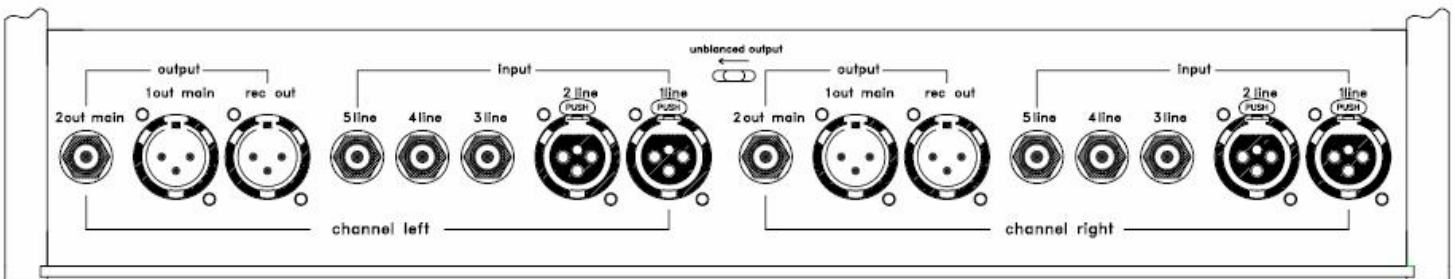


Figure 3 – L-5000 DHT Phase Switch

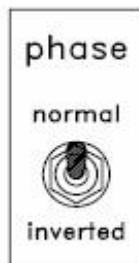


Figure 4 – L-5000 DHT Remote Control

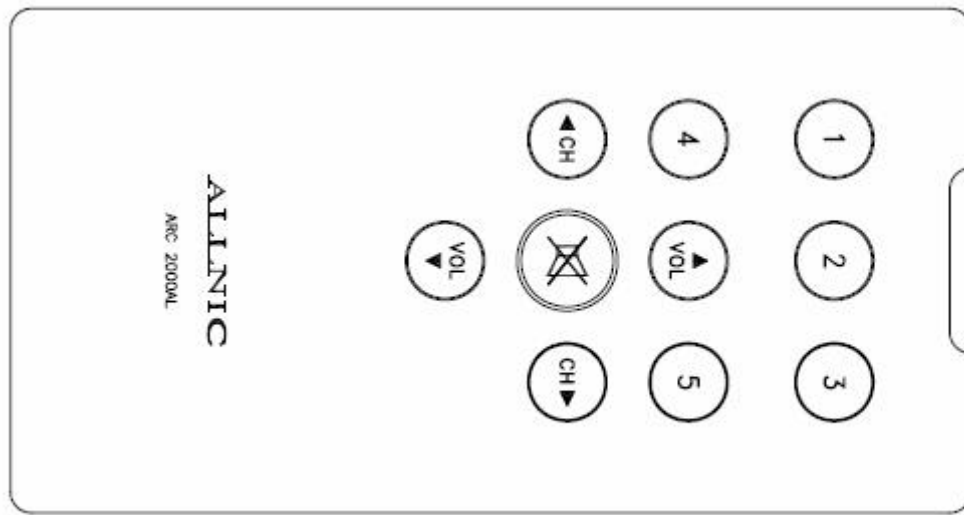


Figure 5 – L-5000 DHT Front Panel View

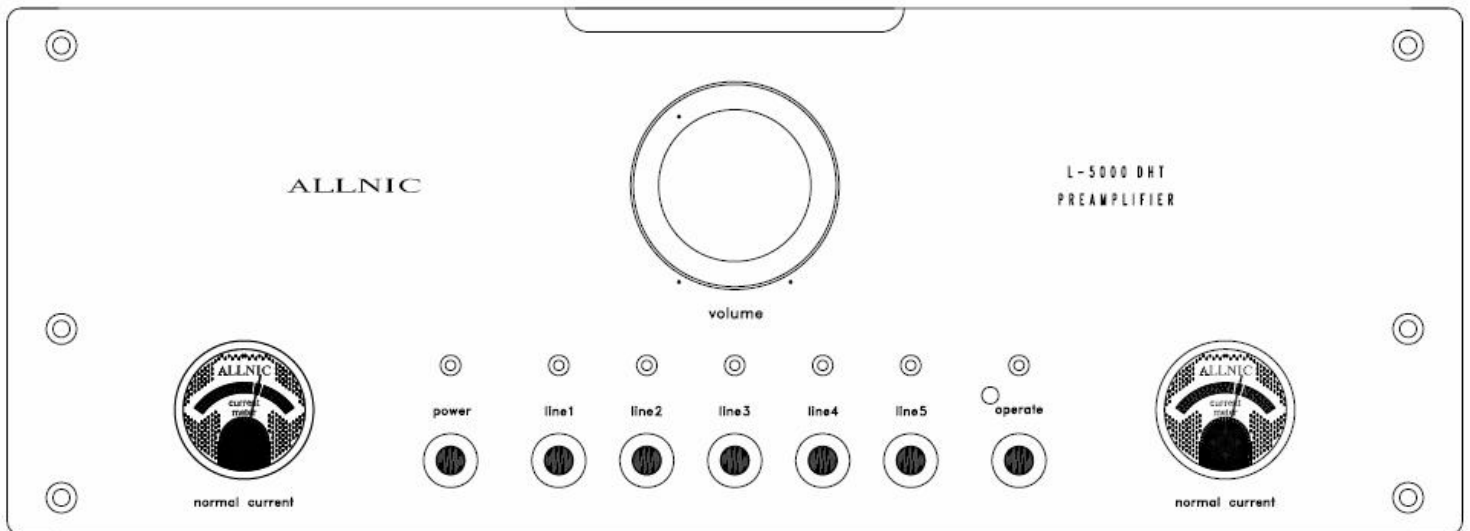
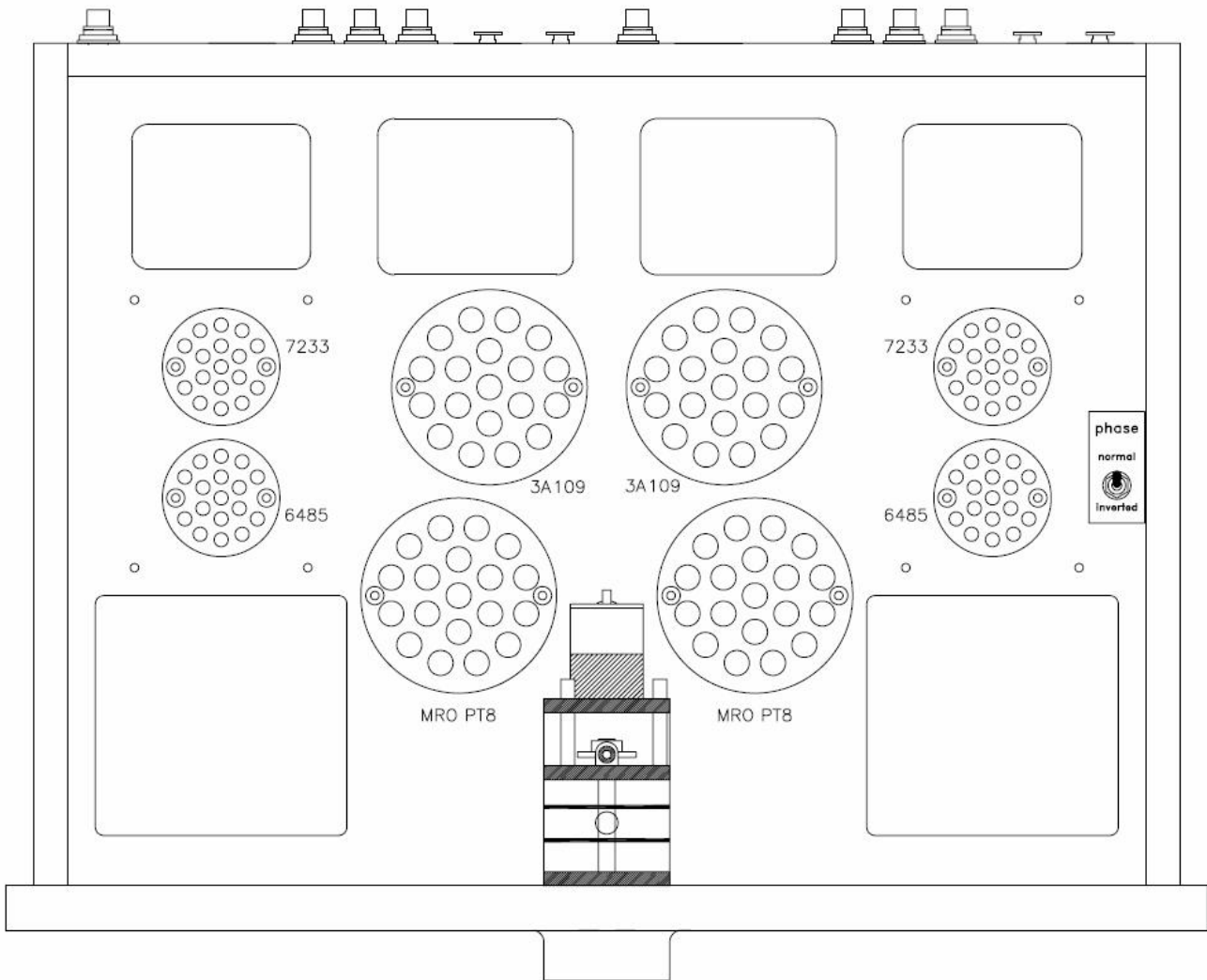


Figure 6 – L-5000 DHT Internal (Top) View





MUSICAL
TRUTH

David Beetles CEO

HAMMERTONE AUDIO

52 Magic Drive, Kelowna, British Columbia, Canada V1V 1N2
Direct Telephone: (250) 862-9037; Fax: (250) 862-9039
email: david@hammertoneaudio.com
Website: www.hammertoneaudio.com