

ALLNIC AUDIO

A-5000 DHT

**300B SINGLE ENDED, PURE DIRECT HEATED TRIODE
MONOBLOCK POWER AMPLIFIER**



OWNER'S MANUAL

ALLNIC AUDIO A-5000 DHT MONOBLOCK AMPLIFIER

Thank you for purchasing the Allnic Audio A-5000 DHT 300B Single Ended, Pure Direct Heated Triode Monoblock Power Amplifier. 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 A-5000 DHT Monoblock to the other components of your system and the wall outlet.



MUSICAL
TRUTH



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 A-5000 DHT MONOBLOCK POWER AMPLIFIER	4
WHAT'S IN THE BOX?	5
SAFETY	5
CLEANING Chassis Connectors	5
INITIAL SET-UP Location, Location, Location Inputs Speaker Terminals Power Connection	5
INITIAL POWER ON	6
OPERATION	6
TUBES AND TUBE BIAS	6
SPECIFICATIONS	7
WARRANTY	8
FIGURES	8

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

INTRODUCING THE A-5000 DHT 300B SINGLE ENDED, PURE DIRECT HEATED TRIODE MONOBLOCK POWER AMPLIFIER

The A-5000 DHT monoblock, like all Allnic Audio products, 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 A-5000 DHT has the following features:

- All Direct Heated Triodes – The A-5000 DHT monoblock amplifier is a pure direct heated triode, tube rectified power amplifier. It uses only direct heated, single ended tubes from input to output. The first stage is a new old stock Marconi HL-2; the second is a new old stock STC 3A-110A (or equivalent); the third is the famous 300B. This is an ideal combination of pure direct heated triodes, resulting in unparalleled faithfulness to the incoming signal, incredible musicality and detail, and quick, articulate bass.
- Real power drive - The driver tube is the 3A-110A (or equivalent). Allnic uses this direct heated triode 3A-110A tube to drive the 300B to its correct specifications via a choke plate inductor. The choke inductor (with a 100% permalloy core) has very low power loss and an infinitely high load impedance. This configuration is an ideal drive stage for the single ended 300B and produces 10 watts of pure class A, extremely low distortion, high power output.
- Nickel alloy output transformer - Allnic uses sophisticated ratio mixed nickel permalloy PB cored output transformers. Because of their extremely high initial permeability, it is possible to use lower turns on the primary winding while retaining very high 'open circuit inductance". That means a resulting very wide frequency range and low distortion bass response. This is another reason why the A-5000 DHT excels over other 300B power amplifiers. Allnic also uses a very big nickel core, so as not to be magnetically saturated at a high current of level of 200mA.
- Fixed bias control grid - Allnic prefers to use low distortion and high output "fixed bias" rather than the relatively higher distortion and lower output "self bias" method. That way, it is possible to eliminate the use of cathode

resistors and their associated heat production.

- Natural negative feedback - The A-5000 DHT applies about -6dB of negative feedback. This is a very complimentary amount of negative feedback that differentiates the Allnic 300B single ended amplifiers from the standard, which have a very coloured and weak speaker driving force. With this natural feedback, the A-5000 DHT has a relatively high "damping factor", very low distortion, and a higher S/N ratio, without losing the signature, single ended natural sound quality.
- Hard wiring - The A-5000 DHT is all hard wired; circuit boards are not used.
- Beautiful 20KHz square wave response - See Figures 1-3.

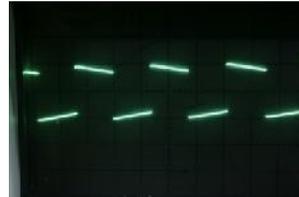


Fig.1 Square Wave 50Hz

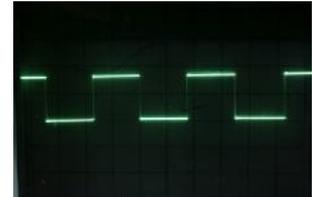


Fig.2 Square Wave 1KHz

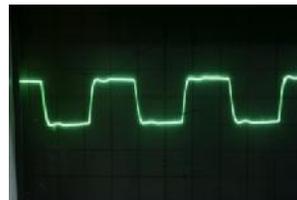


Fig.3 Square Wave 20KHz

Measured by LEADER LAG-126 Audio Signal Generator and KENWOOD CS-4125 Oscilloscope

- As are all Allnic Audio products, the A-5000 DHT 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 A-5000 DHT monoblock power amplifier
- One (1) IEC type power cord
- One (1) Owner's Manual

Note:

- 1) The A-5000 DHT ships with the tubes installed.
- 2) The A-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 A-5000 DHT in your system.
- 3) Be sure the A-5000 DHT is labeled for the AC voltage of your location. If it is not, please contact Hammertone Audio.

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

SAFETY

- **Remove ALL protective cushioning material inside the tube chimneys before operation. The tube chimneys should contain NOTHING except the tubes.**
- Disconnect the power cord by pulling the plug, not the cable.
- Do not attempt any repairs. Do not remove the unit's chassis cover without specific authorization from Hammertone Audio.
- Keep the power cord away from heat sources
- 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 environment, allow sufficient time for any condensation to evaporate before plugging the A-5000 DHT into an AC connection.
- Do not attempt any repairs.
- 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, chassis and tube chimneys of the A-5000 DHT.

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 A-5000 DHT needs to be placed on a solid stand in a location that provides good air circulation around, above and below the monoblock.

- DO NOT cover the top of the A-5000 DHT.
- 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 A-5000 DHT on some kind of after-market isolation feet or similar devices. Dropping one side of the A-5000 DHT, or the whole of the unit, is not a good thing to do.
- 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 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, interconnects and speaker cables. The A-5000 DHT is a highly sensitive piece of electronic designed for neutrality and will output what you put into it.
- DO try to place A-5000 DHT away from major sources and potential receivers of RFI and EMI. Though well shielded, the A-5000 DHT will function best away from large power transformers and other sources of such interference and from other equipment that could be susceptible to such forms

of interference.

B. INPUTS

There are two (2) female inputs. One accepts a balanced cable with a male XLR connector; the other is to accept a cable with a single-ended, RCA type male connector. These input connections are located on the right (facing the back) rear of the chassis, with the balanced input closest to the side edge. Between the inputs, there is a switch to select one of two pin configurations for a balanced cable (i.e., it changes the phase). The top position is for pin 2 "hot" and pin 3 "cold"; the bottom position is for the reverse (in both cases, pin 1 is ground). Please refer to Figure 4

C. SPEAKER TERMINALS

The A-5000 DHT is equipped with one pair of high-quality speaker terminals. These terminals are located in the middle of the rear panel of the A-5000 DHT chassis. Between the terminals, there is a switch for selection of 4 ohm or 8 ohm impedance (or 8 and 16 ohms, if specified by purchaser in advance). The negative connection, marked "-", is closest to the centre of the chassis. The terminals accept bare wire (not recommended) and spade and banana type connectors. Please refer to Figure 4.

D. POWER CONNECTION

Connect the input interconnect and speaker cables before you insert the power cable into the receptacle at the far left (again, facing the chassis rear). The A-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. Please refer to Figure 4.

The A-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.

INITIAL POWER-ON

Once you have your A-5000 DHT in place and all connections have been made to your turntable and preamplifier, you are ready to turn on the power for your A-5000 DHT; before you

power it up, though, be sure you have:

- **removed ALL the cushion materials from inside the tube chimneys**
- selected the input connection that you want to use, single ended (RCA) or balanced (XLR), on the switch on the back of the chassis and have the interconnect firmly attached.
- turned on your source(s) and your preamplifier, and turned the preamplifier's volume control down to zero or otherwise muted its output
- securely and correctly fastened the speaker cables and ensured that they are also connected properly to the speakers
- checked that no tubes are out of their sockets

Turn on the A-5000 DHT by pushing the on/off vertically mounted rocker switch, located at the front of the right side panel (facing the front of the unit) to the "on" position. The "on" position is with the vertical line on the switch (the upper portion) depressed and the part of the switch marked with the "o" (the lower portion) in the raised position. Of course, the off position is the reverse. After about thirty to forty (30 - 40) seconds, the A-5000 DHT will be fully powered up.

OPERATION

When the power is on, the current meter on the face of the chassis will illuminate. From this point on, operation is straight-forward.

When you are finished listening, turn off your A-5000 DHT monoblock(s) first; then, turn off your preamplifier and sources.

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

TUBES AND TUBE BIAS

Each A-5000 DHT comes with the following tubes installed:

- One (1) x 300B
- One (1) x HL-2
- One (1) x 3A-110A
- One (1) x 5U4G

Because of the ability to bias the 300B, it is not necessary to use a matched pair of 300B's in an A-5000 DHT monoblock pair.

THE CURRENT METER

The illuminated meter on the front of the chassis (see Figure 5) indicates the current supply to the 300B tube in the A-5000 DHT. There is a potentiometer that is used to bias the 300B (Refer to Figure 6 for its location). When you turn on the A-5000 DHT, the needle of the current meter should be somewhere between the two parallel lines on the meter face. Any error of current supply to or failure of the 300B tube is indicated by the needle on the meter moving out from between these two parallel lines.

If the current meter has moved to the left of the parallel lines on the meter face, using an appropriately bladed screwdriver, adjust the potentiometer directly in front of the tube's location by turning it clockwise until the needle has returned to between the meter's parallel lines. If the meter needle has moved to the right of the parallel lines on the meter face, turn the potentiometer control counter-clockwise to correct.

If the meter's needle drops to the left limit of the meter's face during operation and audio output stops, this indicates a failure of the 300B tube. The fuse will have "blown" as well. You must turn off the A-5000 DHT and replace both the fuse (315mA @ 250V, 20mm glass, fast blow type) for the tube and the 300B. To replace a fuse, using a screwdriver, simply turn the top of the fuse cap counter clockwise. It will spring out holding the fuse. Replace the fuse, push the fuse cap down and turn it clockwise; it will lock itself. If you have any questions about doing this, please contact Hammertone Audio for assistance.

You may use any 300B type tube in the A-5000 DHT, including the newer higher voltage varieties (300B XLS), which will operate at their optimal specification. Of course, before changing a 300B, you should turn the bias potentiometer down. Then when you have inserted the new tube, you will have to adjust the bias back into the area between the two parallel lines of the meter for a tube when it is replaced. Please refer to Figure 6 for tube locations.

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 A-5000 DHT, any of its parts, or tubes or replacement tubes resulting from the user changing or attempting to change tubes.

SPECIFICATIONS FOR THE ALLNIC AUDIO A-5000 DHT MONOBLOCK POWER AMPLIFIER

- Output Power: 10W (8Ω or 4Ω load, at 1KHz)
- Distortion: 0.5% at 1KHz, 2.83V
- Frequency Response: 20Hz - 20KHz Flat
- S/N Ratio: -76dB (CCIR, 1KHz)
- Damping Factor: 4.7 at 8Ω load at 1KHz
- Voltage gain: +24dB
- Input Impedance: 100KΩ (single-ended, unbalanced)
- Input Sensitivity: 0.6V for rated power
- Tubes:
 - 300B or 300B XLS X 1 (power triode)
 - HL-2 X 1 (input tube – no equivalent)
 - 3A-110A x 1 (driver tube – equivalent = WE 101FA)
 - 5U4G x 1 (May use any octal pin rectifying tube, e.g., GZ34).
- AC Fuse:
 - Main: 3A @ 250V 20mm glass, fast blow type (two supplied – one is a spare)
 - 300B: 315mA @ 250V, 20mm glass, fast blow type
- Dimensions: (W x D x H) 430mm (16.93 inches) x 330mm (13 inches) x 240mm (9.45 inches)
- Weight: 20Kg (44 lbs) net per monoblock. 21.8 Kg (48 lbs) shipping weight per monoblock.

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.

Figure 4 – A-5000 DHT Rear Panel View

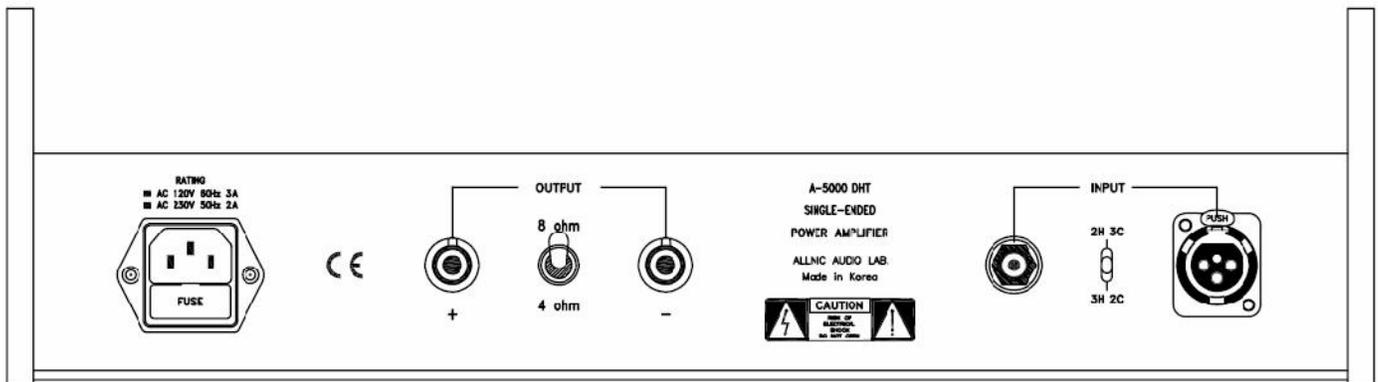


Figure 5 – A-5000 DHT Chassis Front View

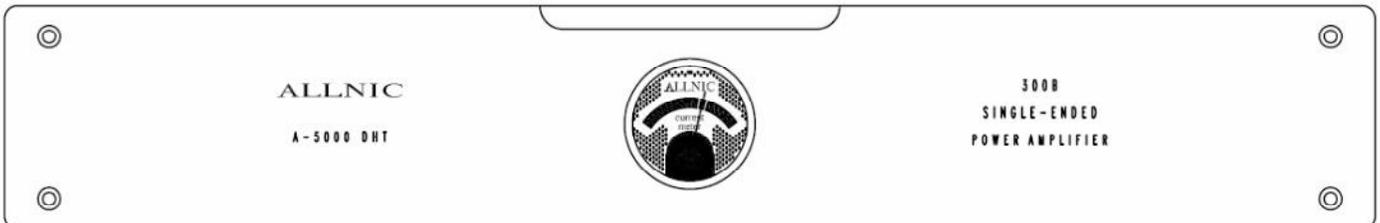


Figure 6 – A-5000 DHT Chassis Top View

