ALLNIC AUDIO

- T-1500 -
300B SET STEREO INTEGRATED AMPLIFIER

OWNER'S MANUAL

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T-1500 300B SET STEREO INTEGRATED AMPLIFIER

Thank you for purchasing the Allnic Audio T-1500 300B SET Stereo Integrated 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 T-1500 300B SET Stereo Integrated Amplifier to the other components of your system and the wall outlet.

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

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Please read about **SAFETY** before you attempt to use the T-1500 - we care about our customers and the equipment, and we want you to enjoy this product for a long time!

INTRODUCING THE T-1500 300B SET STEREO INTEGRATED AMPLIFIER

The T-1500 stereo amplifier is Allnic Audio's top of the line 300B SET stereo integrated amplifier model. Like all Allnic Audio products, the T-1500 has 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 T-1500 has the following features:

- 12.5 watts per channel of pure class A high power output. The T-1500 is a single ended power amplifier. Almost all other 300B amplifiers are under, and distortion, driven. This is a result of the use of conventional "Resister-Capacitor" circuits, which give only up to around a 70V swing voltage, with high distortion. This means that an already distorted signal of a lower than optimum swing voltage is directed to the deep biased 300B grid. Allnic's powerful "Inductor Drive" circuit gives up to a 150V swing voltage, with very low distortion (about 0.3%). It is this drive delivered to the T-1500 that allows for a higher output (12.5w) than the approximately 8 - 10w output that could be expected from standard 300B circuits.

- Real power drive. The driver tube, a PCL86, is a very strong power pentode/triode. We use this power pentode to drive the 300B's via a choke plate inductor. Our choke inductor (100% nickel permalloy PC core) has very low power loss and infinitely high load impedance. This configuration is an ideal drive stage for 300B SET.

- No separate preamplifier section. The T-1500 has only two gain stages, with a total gain of +35dB. The PCL86 driver tube gain stage receives the signal directly from the line inputs. The reduced number of gain stages means less distortion.

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 T-1500 excels over other 300B integrated amplifiers.

- Allnic also uses a very big nickel core, so as not to be magnetically saturated at a high current of level of 100mA.

- Long life and trouble-free operation. Allnic employs a "soft start circuit" to protect the tubes and other parts. It applies the high B+ voltage only after tubes are fully warmed-up.

- 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 resisters and their associated heat production.

- Natural negative feedback. The T-1500 applies about -6dB of negative feedback. This is a very complimentary amount of negative feedback that differentiates the Allnic 300B single ended amplifier from the standard, which has a very coloured and weak speaker driving force. With this natural feedback, the T-1500 has a relatively high "damping factor', very low distortion, and a higher S/N ratio, without losing the signature single ended natural sound quality.

- We use a high quality 41 step silver contact attenuator (all resistors non-inductive) instead of a carbon filmed slide potentiometer.

- Beautiful 20KHz square wave response. See Figures 1-3.

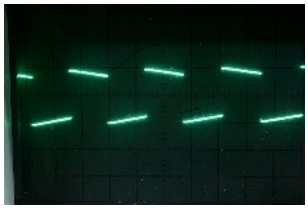


Fig.1 Square Wave 50Hz

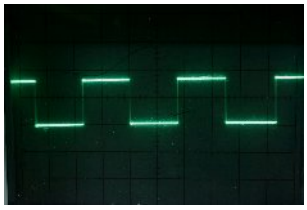


Fig.2 Square Wave 1KHz

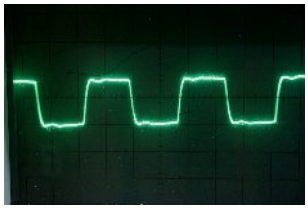


Fig.3 Square Wave 20KHz

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

- As are all Allnic Audio products, the T-1500 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 T-1500 300B SET stereo integrated amplifier
- One (1) IEC type power cord
- One (1) Owner's Manual

Note:

1) The T-1500 ships with the tubes installed.
2) The T-1500 will work with most IEC type aftermarket power cords. Of course, only you can determine the power cord that works most synergistically with the T-1500 in your system.
3) Be sure the T-1500 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 T-1500 came in. It will be useful if you sell your T-1500 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 T-1500 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 T-1500.

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 T-1500 needs to be placed on a solid stand in a location that provides good air circulation around, above and below the stereo amplifier.

- DO NOT cover the top of the T-1500.
- 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 T-1500 on some kind of after-market isolation feet or similar devices. Dropping one side of the T-1500, 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, inter-connects and speaker cables. The T-1500 is a highly sensitive piece of electronic designed for neutrality and will output what you put into it.
- DO try to place T-1500 away from major sources and potential receivers of RFI and EMI. Though well shielded, the T-1500 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 four (4) RCA type female inputs. Your interconnects will require male RCA terminations. Facing the rear of the chassis, the input connections are to the right of the IEC power input and the Pre Out terminal pair. The left channel connector is the top one in each line input pair. Please refer to Figure 5.

C. PRE OUT CONNECTIONS

The T-1500 has a pair of RCA type female Pre Out (Preamplifier outputs – refer to Figure 5) connections on the rear of the chassis, between the IEC connection and the Line Inputs. The Pre Outs are connected passively; therefore, when they are in use, the PCL86 and 300B's continue to draw power and operate. These connections are for use to connect to one or a pair of powered subwoofers or, for bi-amping, to an external stereo power amplifier or pair of monoblock amplifiers (preferably with the same gain as the T-1500).

C. SPEAKER TERMINALS

The T-1500 is equipped with two pairs of high-quality speaker terminals. These terminals are located at the left of the back of the chassis (the right, facing the front of the chassis). The positive terminal for each pair is on top, the negative below. Between the pairs of terminals is a vertically oriented toggle switch to select between either 4 or 8 ohm speaker impedance or 8 and 16 ohm impedance, as pre-specified by the owner. The T-1500 utilizes a circuit design that provides for full power from the output transformer regardless of the impedance selected with the toggle switch. Set the toggle switches to your preferred speaker impedance. Facing the rear of the chassis, the right pair are on the left outside left and the left channel pair are on the inside right. Facing the front of the chassis, the right channel pair is on the outside right and the left channel pair is to their left, on the other side of the impedance toggle. The terminals accept bare wire (not recommended) and spade and banana type connectors. Please refer to Figure 5.

D. POWER CONNECTION

Connect the input interconnects and/or the speaker cables or the Pre Out connections before you insert the power cable into the receptacle at the centre of the chassis rear. The T-1500 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 5.

The T-1500 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 T-1500 in place and all connections have been made to your turntable and preamplifier, you are ready to turn on the power for your T-1500; before you power it up, though, be sure you have:

- **removed ALL the cushion materials from inside the tube chimneys**
- checked that all tubes are snug in their sockets and that the pin alignments for the 300B's are correct (wide diameter pins and narrow diameter pins in the correct holes of the sockets. **This is essential.** The 300B tubes are fused, as is the mains for the unit, and they should preserve both the tubes and the amplifier, in case you have removed and replaced the 300B's incorrectly. However, you will have to replace fuses, and the damage to your self-esteem for getting it wrong may haunt you forever. Hammertone Audio and Allnic Audio Labs are not responsible for such an outcome.
- ensured the interconnects are 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

Turn on the T-1500 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 a thirty to forty (30 - 40) second delay (the soft start), the T-1500 will be powered on.

OPERATION - CHASSIS AND REMOTE CONTROLS

When the power is on, the current meters on the face of the chassis will illuminate. From this point on, the T-1500's operation is straight-forward. The face of the chassis has an input selector control knob and a volume control knob (see Figure 4. The remote control will also control the input selections and the volume. It will not control the power to the T-1500, which must be switched on and off manually, as described above.

When you are finished listening, turn off your T-1500 stereo amplifier(s) first; then, turn off your preamplifier and sources.

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

THE CURRENT METERS

The illuminated meters indicate the current supply to each of the two 300B gain tubes in the T-1500. There is a potentiometer for each 300B (Refer to Figure 6). When you turn on the T-1500, the needle of the current meter for each 300B should be between the two parallel lines on the meter face. Any error of current supply to or failure of a 300B tube is indicated by the needle on the meter moving out from between these two parallel lines.

If a meter's needle drops to the left limit of the meter's face during operation, this indicates a failure of the related 300B tube. You must turn off the T-1500 and replace both the fuse (0.5A, 250V, 20mm glass type) for that 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.

TUBES AND TUBE BIAS

The T-1500 uses the following tubes:

- Two (2) x 300B
- Two (2) x PCL86

Because of the individual bias for each 300B, it is not necessary to use a matched pair in the T-1500.

You may use any 300B type tube in the T-1500, including the newer higher voltage varieties. Of course, 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.

If the current meter for one of the unit's 300B's 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 that 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.

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 T-1500, any of its parts, or tubes or replacement tubes resulting from the user changing or attempting to change tubes.

SPECIFICATIONS FOR THE ALLNIC AUDIO T-1500 300B SET STEREO INTEGRATED AMPLIFIER

- Output Power: 12.5w + 12.5w (4, 8 or 16Ω load, at 1KHz)
- Distortion: 0.3% at 1KHz, 2.83V
- Frequency Response: 20Hz - 20KHz Flat
- S/N Ratio: -80dB (CCIR, 1KHz)
- Damping Factor: 10 at 8Ω load at 1KHz
- Voltage gain: +35dB
- Input Impedance: 10KΩ (single-ended, unbalanced)
- Input Sensitivity: 230mV for rated power
- Tubes: 300B X 2 (power triode)
PCL86 X 2 (driver tube - equivalent to 14GW8)
- Fuses: AC Mains - 3A / 250V (110W) (two supplied – one is a spare). Tubes - 0.5A, 250V, 20mm glass type

- Dimensions: (W x D x H) 430mm (16.93 inches) x 330mm (inches) X 240mm (9.45 inches)

- Weight: 20Kg (44 lbs) net. 21.8 Kg (48 lbs) shipping weight.

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 – T-1500 300B SET Stereo Integrated Amplifier Front Panel View

Figure 5 – T-1500 300B SET Stereo Integrated Amplifier Rear Panel View

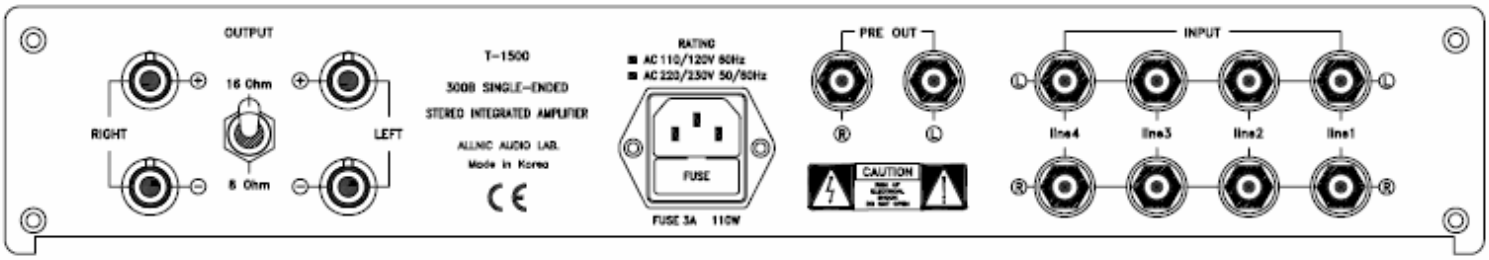
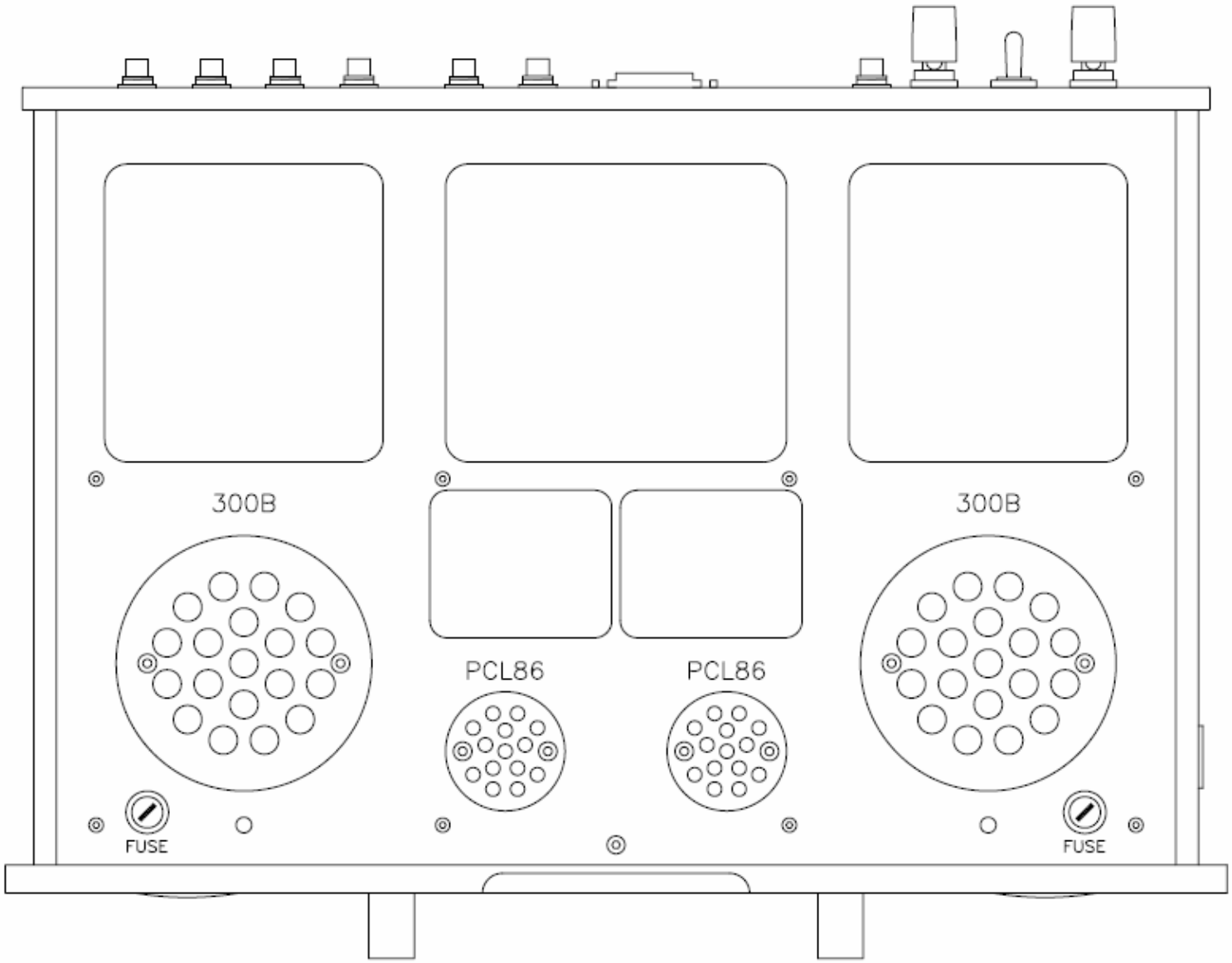


Figure 6 – T-1500 300B SET Stereo Integrated Amplifier Chassis Top View



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