



## H-6500 PHONO STAGE



**OWNER'S MANUAL**

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## ALLNIC AUDIO H-6500 PHONO STAGE

Thank you for purchasing this Allnic Audio H-6500 PHONO STAGE. We are certain your trust in Allnic Audio and Audiomentors, 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 H-6500 PHONO STAGE 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.**

## INTRODUCING THE H-6500 PHONO STAGE

The H-6500 is Allnic Audio's mid-line phono stage model, just under the top of the line H-7000. 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 H-6500 has the following features:

- LCR TYPE RIAA EQUALIZATION:

RIAA equalization is a specification for the correct playback of vinyl records, established by the Recording Industry Association of America. The purpose of the equalization is to permit longer playback times and improve sound quality.

RIAA equalization is a form of establishing a flat frequency response for the playback of recorded music. The necessity for this equalization process arises from mechanical difficulties inherent in record production. In order to prevent the cutting needle from over-cutting into the next record groove in the bass, as a record is cut, some bass frequencies are attenuated. In the treble region, in order for high frequency sounds not to be masked by the noise inherent in moving a stylus over and through a modulated vinyl surface, some treble frequencies are boosted. With the application of the correct filtering techniques on playback, the result is a flat frequency response with better signal to noise ratios. There are four de-emphasis methods that can be applied at playback:

- A. Active filters (Negative feedback types):

Different quantities of negative feedback are applied, with deeper feedback to the high frequencies and shallower to the low frequencies. The benefits of this method are improved signal to noise ratios, low cost and consistent operation.

Some of the shortfalls are looser bass reproduction and possibly a pinched and compressed high frequency playback due to excess feedback ratios.

- B. Passive filters (CR type):

- The frequencies are filtered to fit the RIAA specification by varying the amount of attenuation at different frequencies through a complex capacitor-resistor network. This technique results in no voltage overload, purer reproduction (because there is no feedback), and more accurate RIAA compensation. However, there are problems because the system provides no gain, and insertion loss and impedance matching issues arise.

- C. Hybrid filters (use of both CR and negative feedback types):

In this method, both types of filters applied separately; an active filter is applied to the low frequencies and a passive filter to the high frequencies. Unfortunately, both the advantages and disadvantages of each of these two types of filters, already discussed, affect the playback system at the same time.

- D. LCR filters, which are used in the H-6500 :

Two pieces of a linear reactor (a kind of choke coil) comprise the main part of these filters, assisted by precise CR filters, in order to lower impedances and insertion loss. In vacuum tube circuits, active and passive filters usually are operated on one hundred plus kilo ohms of impedance. An LCR RIAA filter's impedance is a constant 600 ohms.

Furthermore, an LCR RIAA filter's series resistance is less than 13 ohms (as a comparative, some famous ones are 31 ohms). The lower the impedance, the more dynamic is the sound reproduction, with better bass response and speed.

But LCR RIAA units have drawbacks as well. These drawbacks are high cost and the difficulty of impedance matching; the latter has been the primary hindrance to the commercialization of this superb method in the construction of phono stage amplifiers. However, Allnic Audio manufactures a high quality LCR RIAA unit and has developed a 600 ohms impedance matching method.

- For superior signal to noise ratios, the H-6500 is equipped with pure vacuum tube, high voltage regulation for each channel and a power supply unit separate from the phono stage itself.  
High quality MC Step-up Transformers with Permalloy cores are used for the H-6500's dual MC inputs.
- Pure Class A operation
- As are all Allnic Audio products, the H-6500 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 H-6500 phono stage – in natural aluminum or black, depending on your order specification
- One (1) Power Supply for H-6500 in natural aluminum or black, depending on your order specification
- One (1) power umbilical cord
- One (1) IEC type power cord
- One (1) Owner's Manual

Note:

- 1) The H-6500 and its power supply ship with the tubes installed.
- 2) The H-6500 power supply will work with most IEC type aftermarket power cords. Of course, only you can determine the power cord that

works most synergistically with the H-6500 in your system.

- 3) Be sure the H-6500 power supply unit is labeled for the AC voltage of your location. If it is not, please contact Allnic Audio.

We advise that you keep the boxes and other packing materials that your H-6500 came in. It will be useful if you sell your H-6500 or in the unlikely event you need to ship it or the power supply for service.

## SAFETY

- Disconnect the power cord by pulling the plug, not the cable.
- Do not attempt any repairs. Do not remove the units' chassis covers without specific authorization from Allnic Audio.
- Keep the power cords away from heat sources
- Keep the units away from liquids – do not allow any liquid to enter the interior of the units.
- When the units are moved from a cold to a warm environment, allow sufficient time for any condensation to evaporate in both units before plugging the power supply unit into an AC connection.
- Do not attempt any repairs.
- Do not remove the units' chassis covers without specific authorization from Allnic Audio.
- See the notes on "Location, Location, Location".

## CLEANING

### A. Chassis

Use only a soft, lint-free cloth dampened slightly with water only (NO cleaning fluids!) to clean the faceplate and chassis of the H-6500 and its power supply.

## 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 H-6500 and its power supply need to be placed on a solid stand in a location that provides good air circulation around both the phono stage and the power supply. (Please refer to Figures 1 and 2).

- DO NOT cover the top of the H-6500 phono stage or the ventilation slots in the top of the power supply chassis.
- DO NOT place the units on carpet or foam.
- DO NOT subject the units to knocks and shocks as you move them around. This advice is meant particularly for those who may want to place the H-6500 or its power supply on some kind of after-market isolation feet or similar devices. Dropping one side of either of the H-6500 units, or the whole of either unit, is not a good thing to do.
- DO NOT place the units near a strong light or heat.
- DO NOT place anything heavy on the units.
- DO NOT allow rubber or vinyl materials to rest on either units' chassis for long periods of time. This could discolour the metal.
- DO place the units 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, for both inputs and outputs. The H-6500 is a highly sensitive piece of electronic designed for neutrality and will output what you put into it.
- DO try to place the H-6500 and its power supply away from major sources of RFI and EMI; though well shielded, the H-6500 units

will function best away from large power transformers and other sources of such interference.

#### B. POWER CONNECTIONS

The H-6500 power supply 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.

The H-6500 power supply connects to the phono stage itself using the supplied umbilical cable. Connect the units to each other using the provided umbilical cable, with the appropriate screw-on connections to the receptacle labeled "DC Source Input" on the rear of the phono stage and the connection terminal labeled "DC Source Output" on the left side of the rear of the power

The H-6500 power supply you have purchased is set internally for AC 220 volt – 60 HZ(AC 120 volt – 60Hz operation USA, Canada). 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 two (2) sets of two (2) pairs of single-ended (RCA) inputs. These two pairs are located on the left hand side of the rear of the phono stage (See Figure 1). Each channel pair of inputs is aligned vertically, with the left channel input at the top and the right channel input on the bottom. The two left hand pair of inputs (facing the back of the phono stage, have an "MC" label below the two right channel connectors; these are the two input pairs for a moving coil cartridge. The right hand pair of inputs has an "MM" label above the left channel connector and below the right channel connector; this is the input pair for a moving magnet cartridge.

In each case, for both MC and MM connections, the left hand vertically aligned pair of connections (again, facing the back of the unit) corresponds to input 1 for

the button switch on the front panel of the phono stage, while the right hand vertically aligned pair is input 2.

To the left of the four MC RCA input connections is a screw type connector. This connector is the ground connection for a ground wire from a cartridge and/or turntable if you are using a moving coil cartridge. To the right of the four MM RCA input connections is another screw type connector. This connector is the ground connection for a ground wire from a cartridge and/or turntable if you are using a moving magnet cartridge.

When you are facing the front of the H-6500, the two pairs of MC connections are on the far right of the unit, with the two MM connections immediately to their left.

The H-6500 has been designed and manufactured to work most synergistically with Allnic Audio preamplifiers, pre-phono stages and equalization products.

#### D. OUTPUTS

The H-6500 is equipped with one pair of single-ended (RCA) outputs. The right and left channel output connections are also aligned vertically under the label "Output" just to the left of the DC Source Input (See Figure 1), with the left channel output at the top and the right channel output connection at the bottom. Facing the front of the phono stage, the output connections are to the immediate right of the power umbilical cord connection.

#### E. Moving Coil (MC) Transformer Controls

On the top of the chassis, on the right if you are looking down facing the front of the phono stage, two transformer controls are accessible through cutouts in the top of the chassis. There is a control for each channel.

The "X#" scale corresponds to the factor that you will select for the millivolt output of your selected MC cartridge. Each position on the X# scale corresponds to an increase in gain, indicated on the +#dB scale. You should use identical settings for both transformers to avoid channel imbalance.

Use a coin or other appropriately shaped object to select the gain factor. We encourage experimentation for each of your favourite moving coil cartridges.

#### F. A NOTE ON PHASE

Phase issues generally will result in lack of bass and/or focus of the stereo image. You may need to reverse connections on your cartridge if you are having phase issues. As is usual in these circumstances, some trial and error experimentation may be required to find the correct position. Of course, the entire process is simplified if your preamplifier has a phase control, as do the Allnic Audio L-3000 and L-5000 preamplifiers.

#### G. IMPEDANCE

In the Specifications at the end of this manual, you will read that the moving coil (MC) input impedance for the H-6500 is up to 117 ohms. This value represents the internal impedance of the cartridge itself, and is at the extreme upper end of what would be expected for the internal impedance of an MC cartridge. It would be exceptionally unusual to find a cartridge with internal impedance greater than that value. In fact, however, the MC step-up transformer in the H-6500 can accept cartridges with up to 470 ohms internal impedance.

#### INITIAL POWER-ON

Once you have your H-6500 in place and all connections have been made to your turntable and preamplifier, you are ready to turn on the power for your H-6500. Before you power up the H-6500, though, be sure you have:

- turned the volume down or otherwise muted your preamplifier
- pressed the button switch on the left hand side of the front panel of the phono stage, labeled “muting” below and having button in and out icons for operate and mute, respectively, to the in/down “mute” position (see Figure 3).
- pressed the button switches on the right hand side of the front panel of the phono stage to the appropriate positions for the cartridge type, either MC or MM, and the input (“1” or “2”) that you will use initially (See Figure 3). The left of the two button switches is for choosing MM (button pressed in) or MC (button out). The button switch on the right is to choose the input for that type of cartridge, either MM or MC. The position for input 1 is with the button pressed down in the low position, and the position for input 2 is with the button pushed to return to the raised position.
- if you are using a moving coil cartridge, set the MC transformer controls on the top of the chassis to the factor that you will try initially
- checked that all your connections are snug

To turn on the H-6500 , press in the button switch on the front of the power supply marked with on and off icons (see Figure 4). Of course, the off position is the reverse, pressing the button again so it is returns to the maximum raised position.

#### • **OPERATION**

When the power supply is on, the light on its front panel will illuminate, and the light above the word “ALLNIC” on the front panel of the Allnic Audio H-6500 phono stage will illuminate.

After a forty (40) second automatic protective “mute” period, the Allnic Audio H-6500 will be ready for operation.

To avoid surges to the speakers, it is best to switch between MM or MC input, or between inputs 1 and 2 of either, only with the H-6500 in “mute” mode and with your preamplifier volume down or otherwise muted.

From this point on, operation is straight-forward. All functions except for MC transformers’ gain selection are controlled from the front panel. 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.

When you are finished listening, turn off your power amplifier(s); then turn off your preamplifier and then turn off the H-6500 last by pressing the on-off switch on the front panel of the power supply so it returns to the out position.

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

#### **TUBES**

The H-6500 uses the following tubes (please see Figure 6):

- Eight (8) x 5842
- Two (2) x 7233
- Two (2) x 5654
- One (1) x 5AR4 (in, and the only tube in, the power supply)

All consequences of changing or attempting to change tubes are borne by the user unless by express agreement between the owner and Allnic Audio. Neither Allnic Audio nor Allnic Audio will accept any liability whatsoever for any injury to the user or damage to the H-6500 , any of its parts, or tubes or replacement tubes resulting from the user changing or attempting to change tubes.

**SPECIFICATIONS FOR THE ALLNIC AUDIO H-6500  
PHONO STAGE**

- Inputs: Moving Coil (MC) × two (2) pairs unbalanced (RCA)  
Moving Magnet (MM) × two (2) pairs unbalanced (RCA)
- Ground: Two (2) x screw type terminal
- Outputs: One (1) pair x unbalanced (RCA)
- Input Impedance: MC up to 117Ω (see “Impedance” in the Initial Set-Up section, above)  
MM 47kΩ
- Frequency (RIAA): 20Hz ~ 20KHz (±0.3db)
- Voltage Gain: +40db (1KHz) MM  
+66db (1KHz) MC
- Maximum Input Voltage (MM, non-clipping): 20Hz / 30mV  
100Hz / 100mV  
1KHz / 240mV  
10KHz / 280mV
- THD (Total Harmonic Distortion): Less than 0.17% (1KHz, Output 1V)
- Output Impedance: 430Ω(On - off method)
- S/N Ratio: -86db (CCIR, 1KHz)
- Tubes: 5842 x 8, signal gain (similar to WE 417A).  
7233 x 2, series voltage regulator (similar to CV4079).  
5654 x 2, automatic voltage regulator (similar to 6AH6, 6AH6WA, 6AH6S).  
5AR4 x 1, rectifier - in the power supply (same as GZ34).
- Power Consumption: 70W – 110/220 / 60Hz
- Fuse: AC 2A, 250V
- Dimensions:
  - Phono Stage: 430mm (16.9 inches) x 335mm (13.2 inches) x 170mm (6.7 inches) (W x D x H)
  - Power supply: 170mm (6.7 inches) x 275mm (10.8 inches) x 118mm (4.65 inches) (W x D x H)
- Weight: Phono Stage: 8 Kg unpacked  
Power supply: 8.1 Kg unpacked

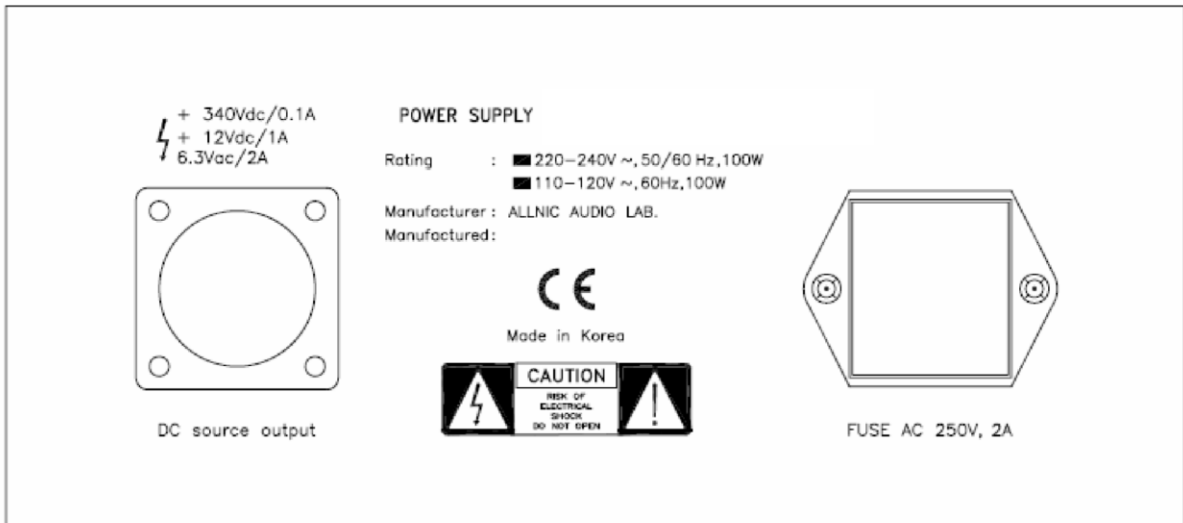


## WARRANTY

All Allnic Audio amplifier and phono stage products, including tubes, are warranted, including parts and labour, for twelve months from date of purchase. Date of purchase is the date indicated on the invoice for the product issued by Allnic Audio. Subject to applicable laws, warranty is non-transferable and valid only for original purchaser.

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

**Figure 1 – H-6500 Power Supply Rear Panel View**



**Figure 2 – H-6500 Chassis Top View - MC Transformer Control**

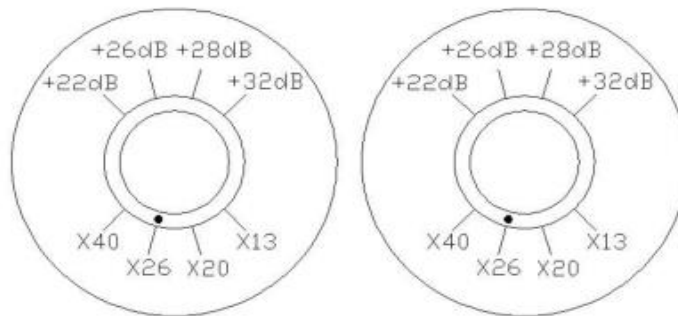


Figure 3 - H-6500 Power Supply Front Panel View

