

Herron Audio
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Owner's Manual



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VTPH-1

*Vacuum Tube
Phono Preampifier*

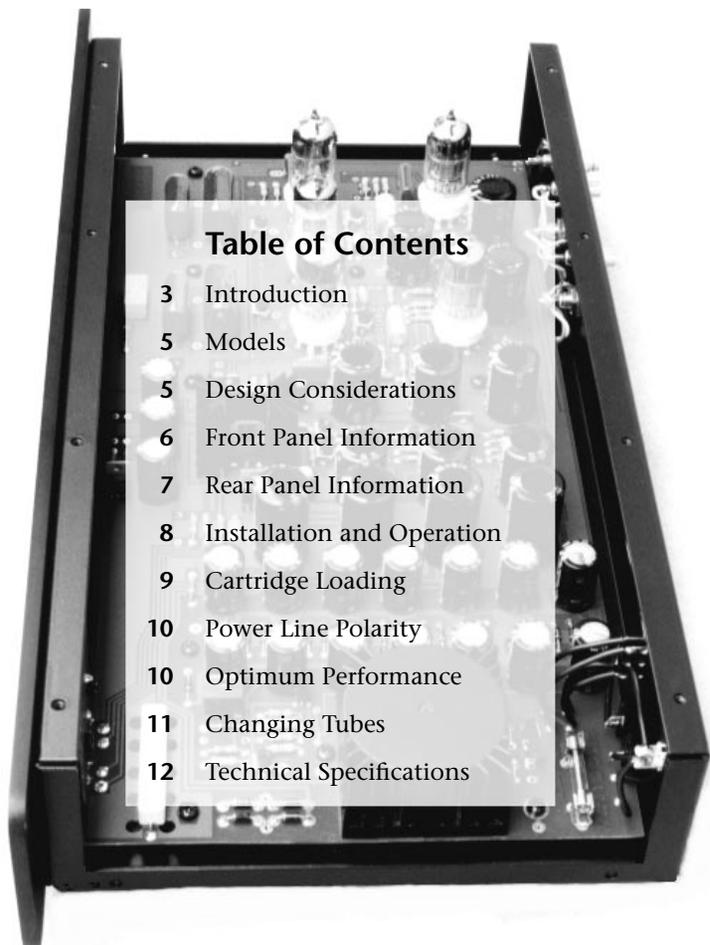


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Welcome!

Thank you for your investment in the Herron Audio Vacuum Tube Phono Preamp, a masterpiece of high-precision analog audio playback equipment. It is designed to be the finest product of its type available. The care in engineering and manufacturing of this product anticipates a lifetime of musical enjoyment.

The Herron Phono Preamp was created to address the retrieval of musical information from vinyl LPs better than any other unit available at any price. The original design was only intended for use by a few dedicated music lovers in their cutting edge audio systems. The design was so good, and demand so high, that the unit was refined and engineered to meet the requirements for a more durable unit manufactured in larger quantities. In the process, important refinements were developed and discoveries were made about tolerances and the threshold of human hearing limits.

This product is engineered to be user friendly, and overcomes the fears that many have expressed concerning the use of vacuum tubes in their systems. Its limited produc-

tion ensures that the components in each unit are matched to the highest standards in the industry. Manufacturing of the unit is performed under the tightest of quality controls. Components are hand-matched to exacting standards—far better than the normal 5% tolerances—to ensure identical unit-to-unit performance. For example, capacitors in the RIAA equalization stage are hand matched to tolerances of less than 0.1% variation from the design of the prototype. Tubes are burned in, bench tested, and hand-matched both across units and to the original design. These techniques ensure that each unit performs to the high standards established in the development of the original prototypes. This costly process is reflected in the unprecedented performance and lack of unit-to-unit variations of Herron Audio components.

The special power supply in all Herron Audio products reflects the engineering innovation that allows the Herron Phono Preamp to provide the highest musical satisfaction without the artifacts produced by most other tube-based components. This power supply provides a

Please read the Owner's Manual completely BEFORE operating the unit.

VTPH-1 Models

rigid voltage source to the tubes, producing remarkable resolution of musical events in time and sound stage.

The circuit board layout was engineered with all of its electrical properties considered, in order to achieve fine audio performance with greater consistency than hand wiring. Compromise was not an option.

The unique design of the Herron Phono Preamplifier, along with its conservative design and operating parameters, means that owners can expect the industry's highest level of performance to be maintained over the extended life of the unit.

Operating the Herron Phono Preamplifier is easy and straightforward. The unit has been designed to be exquisitely simple and user friendly, with its operational readiness easily monitored.

During the manufacturing process, every unit is subjected to a battery of quality control checks. Each unit is run through a full forty-eight hour burn-in, and then measurements are made to make sure that it is functioning correctly. Last and most importantly, careful listening tests are made in comparison to a reference unit, to make sure each Phono Preamplifier performs up to the strictest Herron Audio standards.

The staff of Herron Audio are audiophiles who regard the high-quality reproduction of the performance of music as one of the finest pursuits in the engineering arts. We at Herron Audio believe in the pursuit of audio perfection. We hope you enjoy the fruits of our efforts. If you have any comments, suggestions, or questions, please contact us at 314-434-5416.

VTPH-1MM moving magnet version (use with cartridges above 1 millivolt output)

VTPH-1MC moving coil version (same as the MM version with an additional FET front end amplifier)

Design Considerations

- All-tube signal path (moving magnet version)
- Passive RIAA equalization for accurate phase and amplitude response
- Star grounding for low interference susceptibility and clean signal path
- Zero feedback—no feedback loops in the audio circuitry
- Low noise
- No switches in the signal path
- High input signal capacity without overload; see technical specifications
- Gold plated TIF RCA and ground connectors
- Audio path capacitors are polypropylene and polystyrene
- Hand-picked components for accurate response
- Automatic muting at startup and shutdown
- 78,000 μF of power supply energy storage capacitance
- 4 levels of high voltage regulation
- Regulated soft-start DC filament supply
- Regulated tube bias supply
- Toroidal power transformer
- Rugged—0.10" thick aluminum chassis with 0.25" thick faceplate
- Reversing power line (AC) polarity switch for minimizing line-to-chassis reactive currents and noise pickup
- Controlled warm-up of tube filaments and high voltage for extended tube life
- Low plate operating currents for extended tube life and cool operation
- Front panel indicators for power, filament voltage, and output (mute release)
- Each unit is given a 48-hour burn-in, including rigorous bench and listening tests

Please read the Owner's Manual completely BEFORE operating the unit.

The Front Panel



Front Panel Indicators

The VTPH-1 features a fully-functional front panel capable of monitoring the operational readiness of the preamp. When the VTPH-1 is powered up, the automute feature is engaged until the unit is ready for operation. The first indicator on the panel is the POWER LED, which indicates the unit has been turned on. After a few moments, the FILAMENTS LED gradually brightens, as the voltage to the filaments slowly increases. When the unit is ready to operate, the OUTPUTS LED comes on and the automute is disengaged, allowing signal to be passed to the line stage/preamp. This process generally takes just more than a minute, but can take considerably longer if the unit has not been operated for long period of time.

The Rear Panel



Rear Panel Features

- Power Switch** On / Off switch (1 = On, 0 = Off)
- AC Polarity Switch (Power Line)** Allows the user to select the AC polarity offering the best performance. Used during set-up of the unit, and whenever changes are made to the AC source.
- IEC Power Jack** Used to connect the AC power cord to the unit.
- Ground Connector** Used to connect the phono ground bleed wire to the unit. Connects to the star ground system in the unit.
- Input Jacks** Used to connect the input signal from the cartridge to the unit. The left channel is closest to the top of the unit.
- Output Jacks** Used to connect the unit to a line stage or preamp. Optimum performance is gained by using the Herron Audio Line Stage, though good performance can also be derived by using other top-quality preamps. The left channel is closest to the top of the unit.
- Model Number** VTPH-1MM for moving magnet (Tube only, 44 dB gain nominal)
 VTPH-1MC for moving coil (22 dB gain FET front end + 44 dB tube section)

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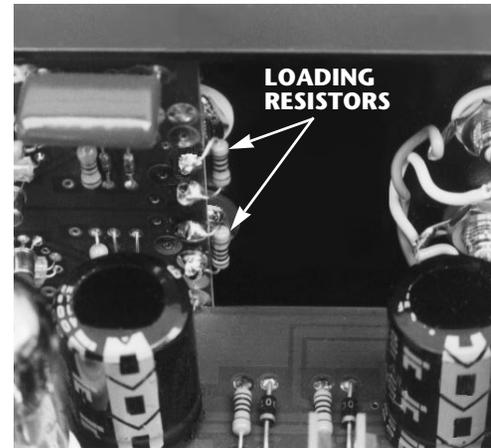
Installation and Operation

The operation of the Herron Phono Preamp is straightforward. As with any fine audio component, careful set-up and integration into one's system is important for optimum performance, safety, and reliability. Please read through the following set-up instructions completely prior to operating the unit.

Procedure:

1. Position the unit in a well-ventilated area on a firm, stable surface, away from equipment that generates alternating magnetic fields such as motors, transformers, etc. Magnetic fields of this type can introduce hum into the signal path.
2. Connect the phono leads to the phono preamp left-to-left and right-to-right. Connect the phono ground bleed wire to the ground connector of the phono preamp.
3. Plug the line stage leads into the output, left-to-left and right-to-right.
4. Plug the power cord into the phono preamp. Make sure it is firmly seated into the IEC socket prior to inserting the plug into an AC outlet.
5. Plug the power cord into a 120 volt (U.S. spec units) AC outlet.
6. Power up the unit by switching on the power switch.
7. Observe the LEDs for the appropriate operation (see the Front Panel Indicators section). Listen carefully for the click of the auto-mute engaging the outputs.
8. Once the unit is powered up and operating, place the line stage input selector switch to a position selecting an unused or deactivated input.
9. Power up the rest of the system with the line stage input selector positioned to select any input not otherwise in use other than the phono preamp. With the volume control of the line stage set at its lowest position, select the phono preamp. Gradually increase the volume control until a normal listening level is reached.

Cartridge Loading



Optional cartridge loading resistors shown at input connector terminations of the FET amplifier board.

The Herron Phono Preamp is available in different configurations to suit the type of phono cartridge being used. User adjustments are minimized to simplify operations. For moving magnet units, the input impedance is set at 47,000 ohms in parallel with 100 pF (grid to plate capacitance of the first 12AX7 multiplied by the gain—the "Miller Effect"). For moving coil units, optional internal cartridge loading resistors can be soldered to the input

connectors, as shown, in parallel with existing 47,000 ohm resistors on the FET amplifier board. Loading resistor switch contacts would compromise performance at the small signal levels that are generated by a moving coil cartridge. The cartridge loading resistors may be changed by the user, dealer, or factory, with values appropriate to specific cartridge requirements.

CAUTION CAUTION CAUTION CAUTION CAUTION CAUTION

When changing cartridge loading resistors, the phono stage should be unplugged and left off for a minimum of 30 minutes prior to opening the unit, to insure that hazardous voltages in the power supply have time to discharge before entering the unit.

Loading resistors should only be changed by technically qualified personnel.

Care needs to be taken during this procedure in order to prevent damage by static electricity to the field effect transistors in the moving coil input stage. A grounding wrist strap is highly recommended.

Keep the cartridge load resistor leads short, as shown, to prevent hum pick-up. Install the grounding lug under the top screw at the rear of the chassis when reinstalling the cover.

Please read the Owner's Manual completely BEFORE operating the unit.

Power Line Polarity

Set the power line polarity switch to the "A" position.

With the volume control at its lowest position, place the line stage input selector in the position to select the phono preamp. Increase the volume to a normal listening level and check for hum.

Reduce the volume to a lower position and play a record. Gradually increase the volume control to the

desired level and listen closely to the quality of the reproduction. This will be used as a baseline for determining AC polarity.

Place the line stage input selector to an unused position and change the AC polarity of the phono preamp by switching the power line polarity switch to the "B" position. Repeat the process, listening to the same recording. Place the AC polarity switch in the position that sounds best.

Optimum Performance

With higher definition and detail available in the musical signal, more careful attention to the set-up of other components will yield greater benefits. We have found that the best place to start is with the turntable set-up. Adjustments of the vertical tracking angle will be easier to resolve using the Herron Phono Preamplifier. Users may gain improved performance by making fine adjustments. Slight changes in cartridge tracking force can improve tracking and position the coils in a cartridge at the correct position relative to the magnets. This can dramatically improve performance.

The VTPH-1 should be used with a line stage having an input impedance of no less than 50,000 Ohms. Impedances below this will significantly

degrade the performance of the unit. Depending on the cartridge output rating, the line stage may require an input capacity of as much as 30 volts rms.

We recommend the use of high quality interconnecting cables between the turntable and the phono stage and between the phono stage and line stage. It is very important for achieving best performance from the VTPH-1 that the cables between the phono stage and the line stage be a low capacitance type.

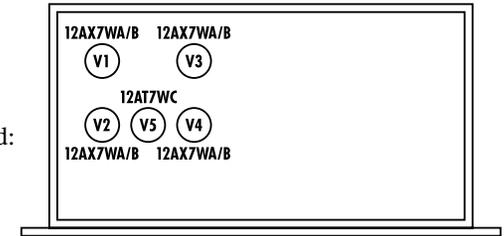
Along with careful determination of optimum AC polarity, compensation for absolute signal polarity should be considered. The VTPH-1MM is noninverting, the VTPH-1MC is inverting in absolute phase.

Changing Tubes

We do not recommend changing tubes for the purposes of "improving sonic performance." Tubes of even the same part number (12AX7 for instance) from different manufacturers and different production lots generally vary considerably in many operating parameters. The Herron Phono Preamplifier has been optimized for the tubes that were supplied by the factory. If tube replacement is required, channel-to-

channel gain matching can be done using the left and right bias controls on the printed circuit board. Do not try to compensate for large gain differences (more than 0.5 dB) as this will degrade performance. The original tubes should provide many years of good performance, due to the conservative plate voltage and current operating requirements of the Herron Audio Phono Preamplifier.

Tube locations as marked on the printed circuit board:



Install the grounding lug under the top screw at the rear of the chassis when reinstalling the cover.

CAUTION CAUTION CAUTION CAUTION CAUTION CAUTION

When changing tubes, the phono stage should be unplugged and left off for a minimum of 30 minutes prior to opening the unit, to insure that hazardous voltages in the power supply have time to discharge before entering the unit.

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Herron Audio Vacuum Tube Phono Preamplifier

VTPH-1 Technical Specifications

Tube complement: 4 x 12AX7WA/B, 1 x 12AT7WC

Frequency Response: RIAA 1 Hz to beyond 100 kHz,
20 Hz to 20 kHz +/- 0.1dB

Gain: VTPH-1MM 44dB nominal at 1 kHz,
channels matched to within 0.05 dB
VTPH-1MC 66 dB nominal at 1 kHz,
channels matched to within 0.05 dB

Signal-to-Noise Ratio: VTPH-1MC 80 dB, A weighted, inputs shorted,
AC polarity set

Output Impedance: 500 ohms nominal (recommended load 50 k ohms
or higher)

Input Impedance: VTPH-1MM 47,000 ohms, 100 pF
VTPH-1MC 47,000 ohms, 100 pF plus optional
internal load resistors at input terminals

Absolute Polarity: VTPH-1MM noninverting
VTPH-1MC inverting

Power Supply: 78,000 μ F of energy storage
4 levels of high voltage regulation
Regulated soft start DC filament supply
Regulated tube bias supply
Toroidal power transformer

Power requirements: U.S.: 120 VAC 60 Hz, 30 VA
Fuse 1/2 amp 250 volt slow blow
Export: 230 VAC 50/60 Hz, 30 VA
Fuse 1/4 amp 250 volt slow blow

Input capacity: VTPH-1MM up to 300 mv at 1 kHz,
1 volt at 10 kHz (output unloaded)
VTPH-1MC up to 30 mv at 1 kHz,
100 mv at 10 kHz (output unloaded)

Overall dimensions: 19" wide x 3.5" high x 10" deep

Warranty: 2 years, parts and labor
90 days on tubes