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# Owner's Manual

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## **Model PH5**

**PHONO PREAMPLIFIER**

**audio research**  
H I G H D E F I N I T I O N<sup>®</sup>

3900 ANNAPOLIS LANE NORTH / PLYMOUTH, MINNESOTA 55447-5447 / PHONE: 763-577-9700 FAX: 763-577-0323

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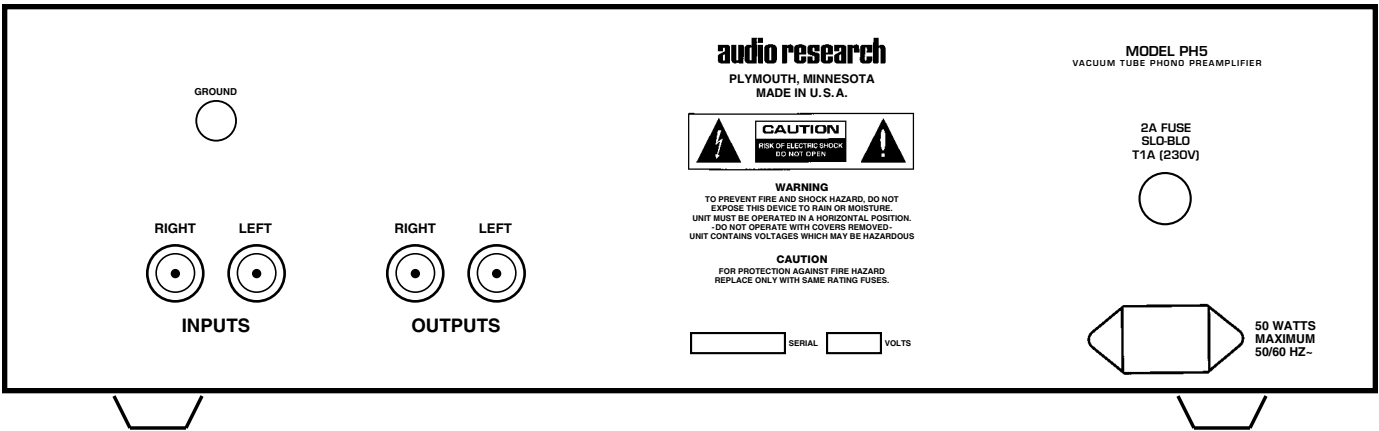
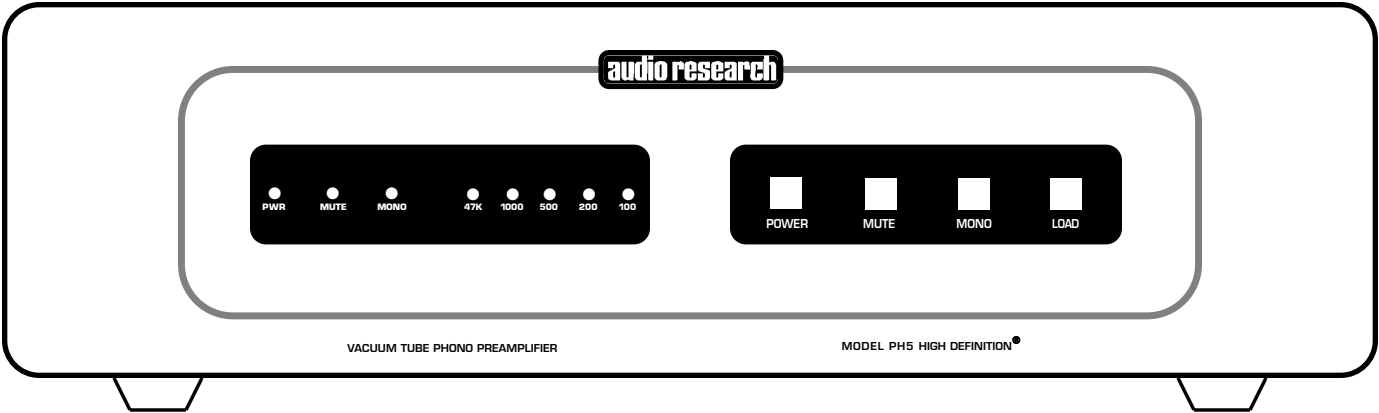
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## Preface

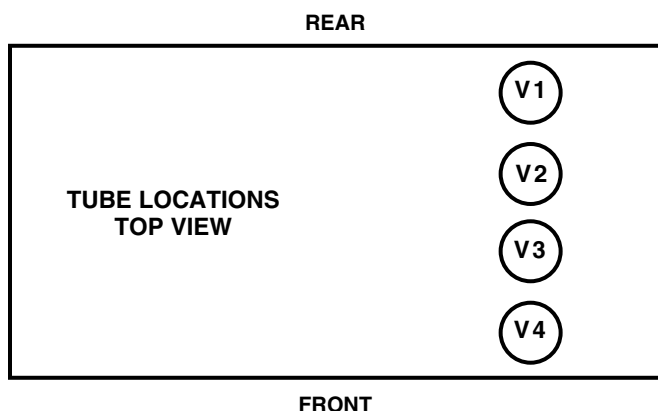
Please take the time to carefully read this instruction manual prior to installation or use of your PH5 phono preamplifier. Because it is a highly advanced electronic instrument, there are several facts and procedures you should know before you place it in operation.

Just as you would not purchase and attempt to operate an expensive camera, computer system or high-performance automobile without first learning something about performance parameters and correct operating procedures, so too your phono preamplifier requires some familiarization before you make it part of your music reproduction system. Your reward, in terms of maximum performance and a long service life, will be well worth the effort.

## Warnings

1. To prevent fire, or shock hazard, do not expose your PH5 to rain or moisture.
2. This unit contains voltages which can cause serious injury or death. Do not operate with cover removed. Refer servicing to your authorized Audio Research dealer or other qualified personnel.
3. The power cord on your PH5 is equipped with a standard three-prong grounding plug. For absolute protection, **do not defeat the ground power plug**. This provides powerline grounding of the PH5 chassis to provide absolute protection from electrical shock.
4. For continued protection against fire hazard, replace the fuse only with the same type and rating as specified at the fuse holder.

**DO NOT ATTEMPT TO OPERATE THIS EQUIPMENT BEFORE INSTALLING THE VACUUM TUBES IN THEIR PROPER SOCKETS.**



## Packaging

Save all packaging in a dry place away from fire hazard. Your PH5 phono preamplifier is a precision electronic instrument and should be properly cartoned any time shipment is made. You may not have occasion to return your unit to the factory for service, but if that should prove necessary, or other occasion requiring shipment occurs, the original packaging will protect your PH5 from unnecessary damage or delay.

Note that your PH5 has been shipped with the vacuum tubes installed in a protective foam block under the top cover. With the PH5 unplugged, use a phillips-head screwdriver to loosen the fastening screws, remove the top cover and set aside. Install the numbered tubes in their respective sockets, refasten the top cover and store the foam block with your carton.

## Front Panel Controls

**POWER ON/OFF:** The unit is off when no front panel LEDs are lit; unit defaults to "off" whenever it is unplugged and then plugged in. Press the Power switch to turn unit on; after approximately 30 seconds the mute LED will stop flashing and stay on continuously (along with the power LED and chosen cartridge loading LED) indicating unit is ready to play.

**MUTE:** After unit is on and warmed up for at least 30 seconds, the unit defaults to mute position indicated by continuously lit mute LED. Pressing the Mute switch once so the mute LED is unlit unmutes the PH5 for play; pressing the Mute switch again lights the mute LED and mutes the PH5.

**MONO:** Pressing the Mono switch selects between stereo and mono operation; when mono LED is lit, the PH5 is in mono, when unlit it is in stereo.

**LOAD:** Pressing the load switch allows the user to step through five pre-set cartridge loading options (47K, 1000, 500, 200, and 100 ohms) with the LED lit above the currently selected load value for listening. It is suggested that you select the loading value option nearest the cartridge manufacturers loading recommendation to begin with and then listen to alternate loading if desired.

Because all four PH5 front panel functions are duplicated on the remote, you may listen to loading sonic changes from the listening position by repeatedly pressing the Load button to scroll through the values. (Note that volume level will decrease as lower loading values are selected.)

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## Connections

**INPUT CONNECTORS:** There is one set of RCA input connectors, which should be connected to your turntable/tonearm cable.

**OUTPUT CONNECTORS:** There is one set of RCA output connectors which should be connected to line inputs (Direct, Aux, Spare, Tuner, etc.) of your line stage/pre-amplifier. Single ended RCA-to-balanced adapters are available from Audio Research allowing the PH5 to be connected directly to a balanced input preamplifier using single ended RCA interconnects.

All input/output connectors are gold plated and connect "ground" before "hot". On disconnect, "hot" is disconnected first.

**NOTE:** A "passive" line stage is not recommended for use with the PH5 as it will not provide the gain necessary to amplify the output of the PH5 to adequate levels to the power amplifier.

At the performance level of the PH5, high quality audio signal interconnect cables such as the Audio Research Litzlink 2 are critical to preserving maximum fidelity. Please consult your Audio Research dealer.

## Installation Instructions

While the PH5 does not dissipate an unusual amount of heat, it is important that it have a reasonable airflow to assure long, trouble-free operation. In addition, the following installation guidelines will help insure maximum sonic performance as well as reliable service.

1. Upright and horizontal mounting is required if extended operation (longer than one hour) is contemplated.
2. Do not "stack" the PH5 on top of other equipment: not only could this cause overheating, but "hum" may be introduced into the phono circuits from the proximity of the power transformer of the other equipment.
3. Do not place or operate unit on a soft or irregular surface such as a rug. This will prevent proper ventilation.
4. Do not operate unit without the top and bottom covers installed. These are required both for safety as well as shielding from interference (except in service operations).
5. If side-by-side mounting with other equipment is employed, place the PH5 to the left of the other chassis, so as to provide maximum spacing between the transformer of the PH5 and the other component.

6. In a cabinet or rack-mount installation which has an enclosed back, an exhaust fan is desirable so as not to operate the PH5 in overheated ambient air. Operation of vacuum tube equipment for long periods of time in hot ambient air will shorten tube life and increase chance of failure of other component parts.

## Operating/Start-up Procedure

1. Secure connections between turntable, PH5, and line stage preamplifier. Note: Given the advanced performance capabilities of the PH5, it is extremely important that high-quality interconnects be used for connection to ancillary electronics. Audio Research brand interconnects, in either unshielded or RFI-shielded configurations, are strongly recommended. Your authorized Audio Research dealer can assist you in determining which type and lengths are optimal for your system.
2. Plug 3-prong power cord into a grounded AC wall receptacle.
3. Turn Power switch "on." The green "Power" LED will light and the mute LED will flash for approximately 30 seconds while the power supply stabilizes, indicating operation of the automatic muting circuit. After this warm-up period the mute LED will stay on and the cartridge loading value LED will light, indicating that your PH5 is ready for operation.
4. Unmute PH5, select proper cartridge loading and play.

**Note:** For superior sonic performance, a warm-up period of at least one hour is recommended.

## Servicing

Because of its careful design and exacting standards of manufacture, your PH5 should normally require only minimal routine service to maintain its high level of performance.

**CAUTION:** Your PH5 contains sufficient levels of voltage and current to be lethal. Do not tamper with a component or part inside the unit. Refer any needed service to your authorized Audio Research dealer or other qualified technician.

The vacuum tubes inside your PH5 are 6922 dual triodes, and with normal use should not need to be changed for approximately 2,000 hours of use.

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## Cleaning

To maintain the visual appearance of your PH5 phono preamplifier, occasionally wipe the front panel and top cover surfaces with a soft damp (not wet) cloth to remove dust. A mild, non-alkaline soap solution may be used to remove fingerprints or similar smudges. Cleaners containing abrasives should **not** be used as they will damage the "brushed" grain of the front panel finish. A dry 2-inch pure bristle paint brush works well to remove dust from bevels, reliefs and switches.



## Disposal and Recycling Guidelines

To dispose of this electronic product, do not place in landfill. In accordance with the European Union Waste Electrical and Electronic Equipment (WEEE) directive effective August 2005, this product may contain regulated materials which upon disposal require special reuse and recycling processing.

Please contact your dealer or importing distributor for instructions on proper disposal of this product in your country. Or, contact Audio Research Corporation (763-577-9700) for the name of your importing distributor and how to contact them.

Packing and shipping materials may be disposed of in a normal manner.

## Limited Warranty

Audio Research Corporation products are covered by a 3-Year Limited Warranty, or a 90-Day Limited Warranty (vacuum tubes). This Limited Warranty initiates from the date of purchase, and is limited to the original purchaser, or in the case of demonstration equipment, limited to the balance of warranty remaining after original shipment to the retailer or importer.

In the United States, the specific terms, conditions and remedies for fulfillment of this Limited Warranty are listed on the warranty card accompanying the product in its shipping carton, or may be obtained from the authorized retailer or from the Audio Research Customer Service Department. Outside the United States, the authorized importing retailer or distributor has accepted the responsibility for warranty of Audio Research products sold by them. The specific terms and remedies for fulfillment of the Limited Warranty may vary from country to country. Warranty service should normally be obtained from the importing retailer or distributor from whom the product was purchased.

In the unlikely event that technical service beyond the ability of the importer is required, Audio Research will fulfill the terms and conditions of the Limited Warranty. Such product must be returned at the purchaser's expense to the Audio Research factory, along with a photocopy of the dated purchase receipt for the product, a written description of the problem(s) encountered, and any information necessary for return shipment. The cost of return shipment is the responsibility of the purchaser.

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## Specifications

**FREQUENCY RESPONSE:**  $\pm .25\text{dB}$  of RIAA, 10Hz to 60kHz; 3dB points below 0.7Hz and above 400kHz.

**DISTORTION:** Less than .005% at .50V RMS 1kHz output.

**GAIN:** 57.5dB at 1kHz (MC & MM compatible).

**PUSH BUTTONS:** Power, Mute, Mono, Load.

**INPUT IMPEDANCE:** Selectable 47K, 1000, 500, 200, or 100 ohms with 200pF Unbalanced.

**OUTPUT IMPEDANCE:** 200 ohms Unbalanced. Recommended load 50K-100K ohms and 100pF. (10K ohms minimum and 2000pF maximum.)

**OUTPUT POLARITY:** Non-Inverting.

**MAXIMUM INPUTS:** 70mV RMS at 1kHz (180mV RMS at 10kHz).

**RATED OUTPUTS:** .50V RMS 10Hz to 60kHz, 100K ohm load (output capability is 50V RMS output at 1/2% THD at 1kHz).

**POWER SUPPLIES:** Electronically-regulated low and high voltage supplies. Line regulation better than .01%.

**NOISE:** 0.16uV equivalent input noise, IHF weighted, shorted input (76 dB below 1mV 1kHz input).

**TUBE COMPLEMENT:** (4) 6922/E88CC dual triodes with JFET input. Solid state power supply.

**POWER REQUIREMENTS:** 100-135VAC 60Hz (200-270VAC 50/60Hz) 50 watts maximum. Line fuse 2A SLO BLO (1A SLO BLO 230V).

**DIMENSIONS:** 19" (47 cm) W x 5.22" (13.2 cm) H x 10.0" (25.4 cm) D. Rear chassis fittings extend 0.6" (1.5 cm).

**WEIGHT:** 11.3 lbs. (5.1 kg) Net; 19 lbs. (8.6 kg) Shipping.

Specifications subject to change without notice.

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