

ModWright Instruments, Inc.
PH 9.0/ PH 9.0X/ PH9.0XT Tube Phono Stage
Owner's Manual



Manufactured by ModWright Instruments, Inc.
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USA

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CAUTIONS:

Do not operate or power up unit without ALL tubes installed in tube sockets. Failure to do so will result in damage to tubes.

WARNING: DO NOT POWER UNIT ON UNTIL LID IS ENTIRELY FASTENED. VERY HIGH VOLTAGES ARE PRESENT INSIDE UNIT DURING OPERATION. IT IS CRITICAL THAT PREAMP ENCLOSURE NOT BE OPEN WHEN UNIT IS POWERED ON. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.

WHEN CHANGING TUBES, POWER UNIT OFF AND DISCONNECT FROM ALL POWER SOURCES. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.

Introduction:

Thank you for purchasing a ModWright Instruments product. This unit is designed to offer high performance and exceptional reliability.

The PH 9.0/PH 9.0X/PH 9.0XT phono stage offers high bandwidth, low noise and distortion, and exceptional musicality. We have designed this phono stage to allow the reproduction of vinyl recordings that is accurate, transparent, and musical.

The PH 9.0/PH 9.0X/PH 9.0XT includes features not found in simpler phono stage designs:

- Front panel resistance loading on the fly.
- 0, -6dB and -12dB gain adjustments for MM and MC, on the fly.
- MM, Mute, MC input select on the fly.
- Mono/Stereo switch on back panel.

The PH 9.0/PH 9.0X/PH 9.0XT is a high-gain, low noise phono stage design with exceptional flexibility. Maximum gain for the PH 9.0 ranges from 64dB (MC) to 52dB (MM); PH 9.0X ranges from 70dB (MC) to 58dB (MM). Gain may be adjusted by -0dB, -6dB or -12dB for either MC or MM operation. This allows for compatibility with different MM and MC cartridges of high, low or medium gain.

Cartridge loading for MC (resistance only), is user selectable via front panel controls for six different resistance settings.

Cartridge loading for MM is 47K fixed resistance.

The PH 9.0/PH 9.0X was designed purposely with an external, solid-state power supply. The PH 9.0XT has an external tube rectified power supply. The power supply is connected to the phono stage via a 6ft umbilical, and it is recommended that the power supply be well separated from the phono stage for lowest possible noise.

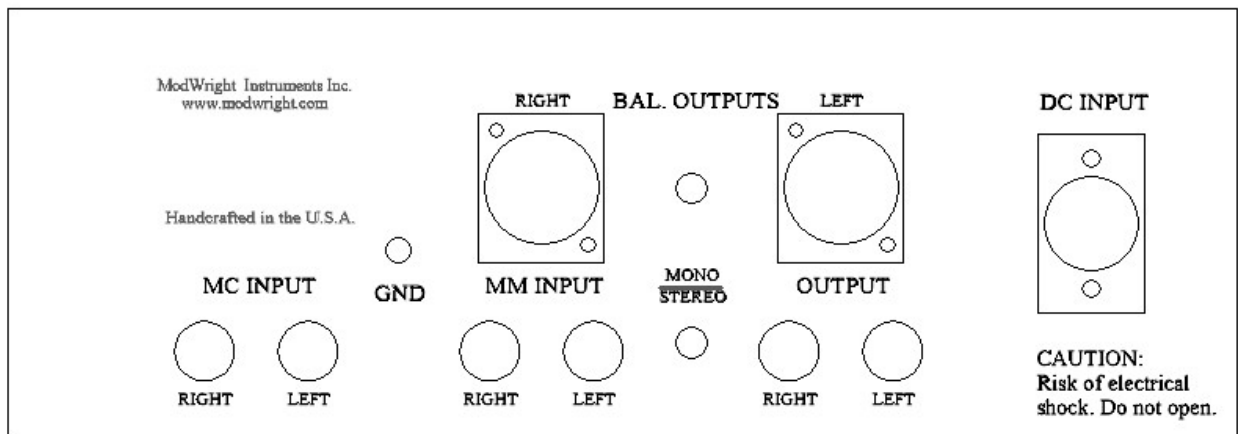
The ground lug on the rear of the PH 9.0/PH 9.0X/PH 9.0XT enclosure is common to signal ground, earth ground and the Power Supply and PH 9.0/PH 9.0X/PH 9.0XT enclosure. Depending on system grounding, you may need to connect a ground wire from turntable to the phono stage ground lug.

Setup:

It is always recommended to remove all tubes before shipping the unit. Be sure that the external Power Supply is NOT connected to AC power and that the power plug is disconnected from the unit and wall outlet. Use supplied 5/64" hex driver to remove four lid screws in top panel and install (2) 6C45 and (2) 6922 signal tubes in 9-pin ceramic tube sockets. Align tube pins with socket and gently but firmly press the tubes down into socket until seated. If the power supply is tube rectified, then you will also need to install the provided 5AR4 tube in the external supply.

After tubes are installed, replace lid and secure with six screws. Only after this, should the external Power Supply be connected to the PH 9.0/PH 9.0X/PH 9.0XT phono stage. Do not connect the Power Supply to AC power until umbilical is connected to both Power Supply and PH 9.0/PH 9.0X/PH 9.0XT.

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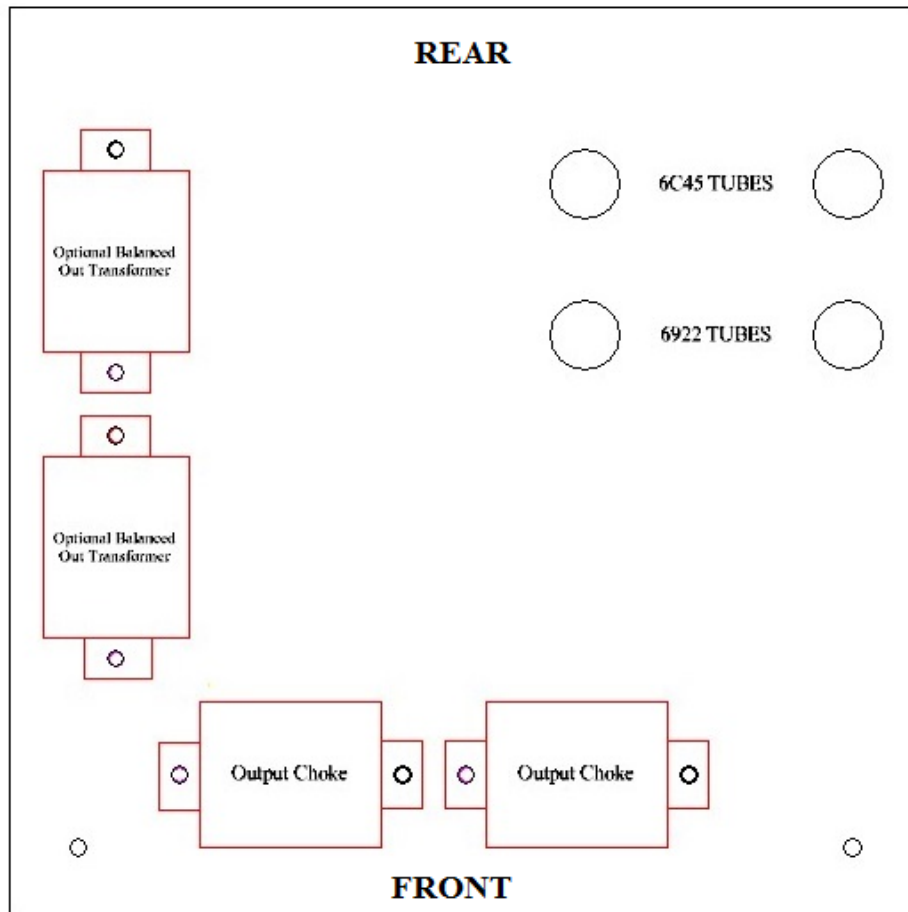
PH 9.0 REAR PANEL

The PH 9.0/PH 9.0X/PH 9.0XT phono stage is powered by the external Power Supply. The umbilical supplied, connects the Power Supply to the PH 9.0/PH 9.0X/PH 9.0XT and provides DC voltage to the phono stage. The Power Supply for the PH 9.0 and PH 9.90X is solid-state and has no user-serviceable parts inside. The PH 9.0XT has a tube rectified power supply and the rectifier tube may be installed or replaced without removing the cover, as it is accessible through a hole in the cover. Operating voltage is indicated on the back panel of the POWER SUPPLY. The Power Supply uses a single SLO-BLO fuse, 5mmx20mm in size. For 120V operation, the fuse should be rated for 3A. For 240V operation, the fuse should be rated for 1.5A.

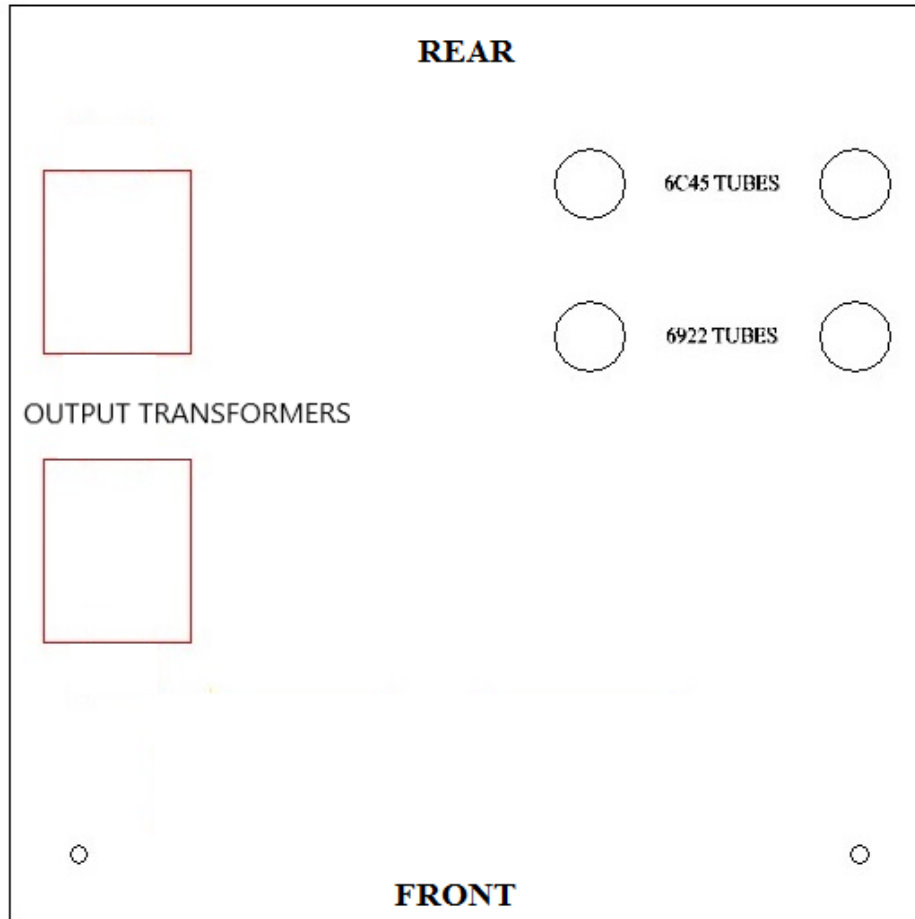
After tubes are installed in the PH 9.0/PH 9.0X/PH 9.0XT, first connect the umbilical to the Power Supply and connect the other end of the umbilical to the PH 9.0/PH 9.0X/PH 9.0XT Phono stage. The umbilical has Male/Female, 4-pin connectors. It can only be connected in one

direction. Only after the umbilical is securely connected at both power supply and phono stage, should AC power cord be connected.

Signal cables must be connected for input and outputs. You may connect the turntable to phono stage for MM or MC operation, by connecting cables to the appropriate RCA input connectors. If cables from turntable to phono stage have a ground wire, this may be connected to the ground lug on the rear of the PH 9.0/PH 9.0X/PH 9.0XT. Signal cables must also be connected (RCA or XLR) main outs to preamp. (XLR outputs only present if option installed on PH 9.0, standard on PH 9.0X).



Internal PH 9.0 Layout
Tube Installation Diagram



Internal PH 9.0X Layout
Tube Installation Diagram

Power Up:

You are ready to power the unit up if the following have been done:

- 1) Tubes are installed in PH 9.0/PH 9.0X/PH 9.0XT and cover secured in place.
- 2) Umbilical is connected between PH 9.0/PH 9.0X/PH 9.0XT and Power Supply.
- 3) AC power has been plugged into IEC power inlet on Power Supply, of appropriate AC mains voltage as indicated on back of power supply.
- 4) MM or MC signal cables and ground wire are connected between turntable and phono stage.
- 5) RCA or XLR signal cables (Balanced Option is installed) are connected from main outs of PH 9.0/PH 9.0X/PH 9.0XT to preamp.

Flip the power toggle up on front face of unit, to power up the PH 9.0/PH 9.0X/PH 9.0XT. When first powered on, a blue LED above the power switches will be lit. The unit will remain in mute for approximately 25-seconds, allowing for tubes to stabilize and gently reach operating voltage.

Operation:

Once the PH 9.0/PH 9.0X/PH 9.0XT is powered up, you must first select MM or MC input. The knob on the left side of the front panel allows for MM, Mute, or MC input selection when rotated clockwise. *[You will notice that while the input is labeled MM, Mute, MC, there are actually four positions. This is because each MM and MC input has a separate mute position. To prevent any possibility of switching noise when selecting between MM and MC, we found that it was critical to mute after MM and also before MC.]*

The Gain toggle switch on the lower right side of the front panel is used to select desired attenuation. It is a 3-way toggle, with the middle position being '0 dB', the up position being '-6dB and the down position being '-12dB'. For example, if MC were selected, in the '0dB' position, max gain would be 64Db (PH 9.0), 70dB (PH 9.0X). If this were too much, then moving the toggle switch to the -6dB position would reduce MC gain to 58dB (PH 9.0), 64dB (PH 9.0X). The same may be done for MM use, where max gain is 52dB (PH 9.0), 58dB (PH 9.0X) when Gain selector is in '0dB' position.

If you are using a MC cartridge, you may set the recommended Resistance loading for your cartridge. This may also be changed with or without music playing. Six resistance settings: 10 ohm, 20 ohm, 50 ohm, 100 ohm, 250 ohm and 470 ohm are intended to meet most MC cartridge loading needs.

You may also at this time select if you are listening to a Mono or Stereo recording. The rear Mono/Stereo toggle is in the down position for Stereo and in the up position for Mono playback.

If you are connecting XLR analog outs (PH 9.0X, PH 9.0XT or PH 9.0 with balanced option), you must also **set the rear XLR/RCA toggle**. This toggle is located in between the two XLR connections and the **UP position is for XLR**, the **DOWN position is for RCA** operation. The unit will only output music via RCA or XLR outs, but not both at the same time.

Ground:

You should **ALWAYS** use a grounded AC cord with this product. The chassis is always connected to earth ground if unit is fitted with proper grounded AC power cord.

Technical Specifications:

- MC Gain: Max 64dB (PH 9.0); 70dB (PH 9.0X)
- MM Gain: Max 52dB (PH 9.0); 58dB (PH 9.0X)
- Gain Attenuation: 0dB, -6dB, -12dB.
- MC Resistance Loading: 10, 20, 50, 100, 250, 470.
- MM Resistive loading: 47K fixed.
- Frequency Response: 20Hz – 20Khz (+/- .2dB)
- Weight: PH 9.0 – 11 lbs PH 9.0X – 13 lbs
- Weight: PH9.0/PH9.0X/PH9.0XT Power Supply – 12 lbs
- Dimensions: PH 9.0/PH 9.0X/PH 9.0XT - 10"W x 10"D x 4"H;
Power Supply: 7"W x 9"D x 3"H

Basic Specifications:

- (1) pair MM RCA inputs.
- (1) pair MC RCA Inputs.
- (1) pair RCA Main Outs.
- (1) pair XLR Main Outs, fully balanced
(Standard on PH 9.0X, optional upgrade for PH 9.0).

Vacuum Tubes:

- Two 6922 signal tubes – may substitute ANY 6922/6DJ8/7308 compatible tubes.
- Two 6C45 signal tubes.

Warranty:

ModWright agrees to warranty product for a period of 5 years from the date of purchase from a factory authorized ModWright Instruments Dealer.

Warranty covers parts and labor for repairs due to equipment failure not related to customer abuse and/or neglect. Customer is responsible for shipping costs to and from ModWright Instruments or authorized service center.

Warranty is non-transferable to second party.

Contact Information:

If you have any questions about ModWright Instruments products or ModWright modifications or products, please do not hesitate to contact us via phone, e-mail or conventional mail.

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Thank you for purchasing a ModWright Instruments product.

Dan Wright,
President, Owner
ModWright Instruments, Inc.