VPI HR-X
Turntable Manual

Setup and Instruction Manual

VPI Industries, Inc., 77 Cliffwood Ave. #5D, Cliffwood, NJ 07721

http://www.vpiindustries.com

HR-X Turntable Packing List

Serial #:_____

HR-X Chassis	
Stainless Steel/Delrin Clamp	
Azimuth Rod	
Gauge	
Motor	
Instruction Manual	
Drive Belt	
Power Cord (115V Only)	
Alignment Jig	
Platter	
Tonearm	

Date:_____

Final Check by: _____

- **THE MOST IMPORTANT THING YOU CAN DO FOR YOUR NEW HR-X TURNTABLE IS TO PLACE IT ON A FLAT LEVEL SURFACE. IT CANNOT BE STRESSED ENOUGH THAT A FLAT SURFACE WILL MAKE SETTING UP YOUR NEW HR-X A SNAP.**

- **THE STANDARD HR-XREQUIRES A SPACE OF 22" X 16" FOR ITS MAIN FRAME. THE ACTUAL FOOTPRINT OF THE HR-XLEGS MEASURES 19" X 13"**

SPECIFICATIONS

YOUR NEW HR-XTURNTABLE IS A PRECISION INSTRUMENT. IT HAS BEEN THOROUGHLY TESTED AND HAS BEEN RUN FOR AT LEAST TWO HOURS. THE SPEED ACCURACY, WOW, FLUTTER, AND RUMBLE HAVE BEEN CHECKED AND THIS UNIT HAS MET ALL OUR SPECIFICATIONS.

MINIMUM SPECIFICATIONS: WOW AND FLUTTER – LESS THAN .02
RUMBLE – GREATER THAN 80 db DOWN
SPEED ACCURACY – WITHIN .1%
TOTAL WEIGHT – 60 POUNDS
PLATTER RUNOUT - +/- .001 INCH

INSTRUCTIONS FOR UNPACKING AND SETUP

- If you are reading this manual, you must have opened up the main turntable box. In this box you will find the main HR-X chassis, tonearm, and all tools needed. Remove all packaging, noting how it fits together. If you ever need to send the HR-X back for service you must pack it properly. Save the packaging if you can, it will be very expensive to order it later.

- If you ordered the HR-X for another tonearm, follow the tonearm manufacturer's recommendations for proper setup. Remember that cartridge setup is a complicated but satisfying endeavor. If you take your time and protect the stylus you will ultimately be rewarded with a good sounding unit that you will not be afraid of working on.

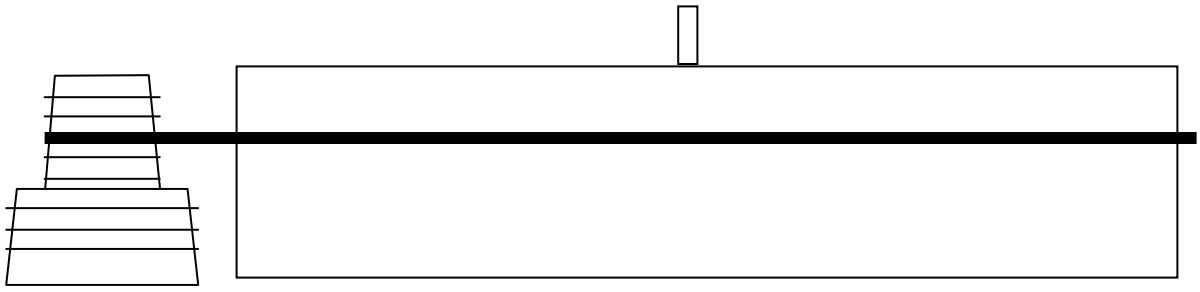
- Before lifting out the main chassis, remember that the feet are attached to the bottom of the unit. Do not put the unit down on any furniture that could be damaged by these feet. Remove the protective bag and set the HR-X chassis down and center it on the shelf it will be resting on.

- Lift out the platter and pull off the tape covering the spindle hole. Carefully place the platter over the spindle and let it slide down. The platter bearing has grease in it so none is needed at this time. The HR-X needs no lubrication for at least one year. A Chrome hardened ball running on a large Teflon surface takes the weight of the platter. This requires no lubrication to perform its task.

- Spin the platter and see if it feels like it is running freely. If all is okay and the platter feels free but not loose proceed to the motor.

- Open the 12X12X12 box and place the motor in the circular cutout to the left of the HR-X chassis with the switch facing left. Center the motor in this cutout with roughly a ½" space between it and the chassis all the way around. The motor needs no lubrication at this time and should be relatively noise free. It was just shipped and will be much quieter after a few hours running.

- Remove the drive belt from the bag and place the belt on the small pulley groove and around the turntable platter. The drive pulley is designed for 33 and 45 operation with the smaller section being 33 and the larger section being 45. The motor pulley of your HR-X is designed to let you slightly adjust the speed at 33 and 45. The center groove on the pulley in each diameter is the correct speed. If you need to increase or decrease the speed slightly you can move the belt up or down for fine adjustment. Most people will just leave it on the center groove and never worry about it. If you hear any noise when starting the turntable put baby powder on the drive belts.



- Level the turntable using a 9" or 12" long bubble line level placed next to the spindle on the platter. The feet rotate in their sockets and will move up and down allowing fine leveling of the HR-X. A level turntable will always sound better than an unleveled one and will put less strain on the main bearing.

- If you need to remove the armboard you should use the 9/64" Allen wrench supplied.

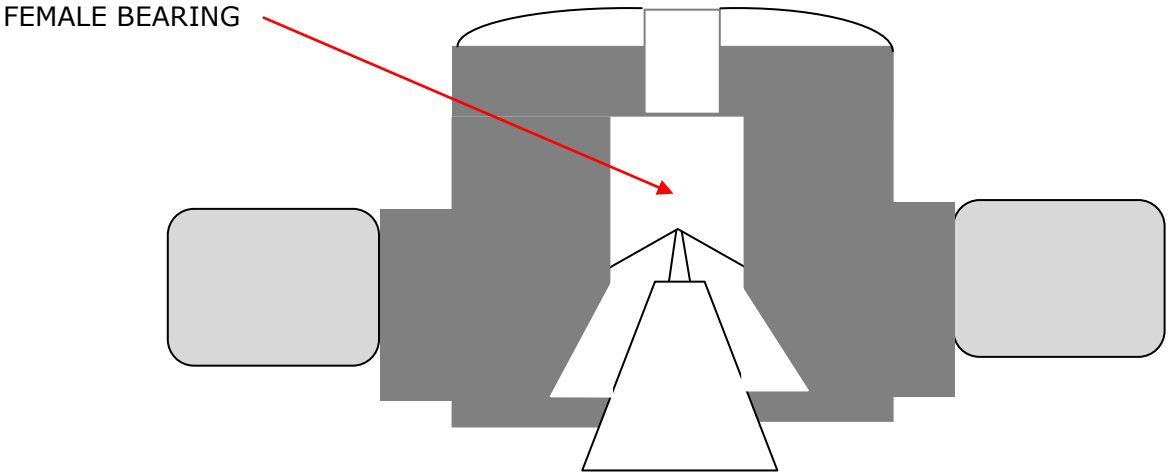
If your phono section inverts phase, the hot color becomes the ground color.

- Using tweezers or fine-tipped pliers, grip the center of the red wire's connector — **not** the wire itself — and push it onto the cartridge's right hot terminal pin. Connect the remaining connectors in the same way. To avoid damage to the cartridge, do not push the connectors all the way on.

- Place the Alignment Jig on the spindle with the V-groove against the base of the male bearing shaft. Tighten the screws of the jig so it fits snugly against the male bearing shaft and over the record spindle.

- Place the arm tube assembly on the male pivot point, using caution with the 4-color wire and Lemo connector. Set the arm in its rest. If the cartridge has a guard, remove it.

MAKE SURE THE MALE POINT IS IN THE CENTER OF THE FEMALE CUP, IT SHOULD FEEL SOLID BUT YOU SHOULD BE ABLE TO SLIDE IT SIDEWAYS AND THE ARM RAISES AS YOU GO FROM THE CENTER TO THE SIDES OF THE FEMALE BEARING. IT IS AN INVERTED CONE.

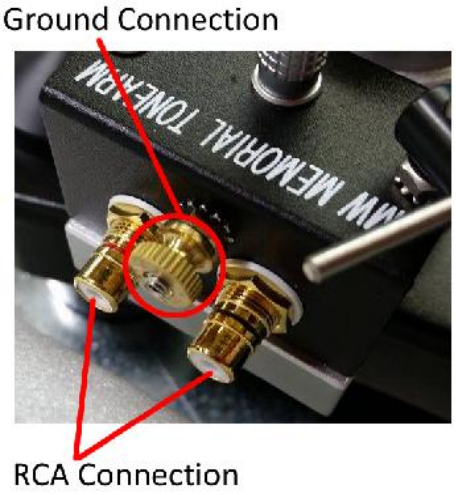


Use the arm rest all the time when not playing a record!!

Your arm is now protected!

- Line up the red dot on the Lemo connector with the red dot on the receptacle on the junction box. The Lemo connector can plug in only one way and should not be forced.

Line up the red dot on your lemo and the red dot on your junction box when connecting your tonearm.

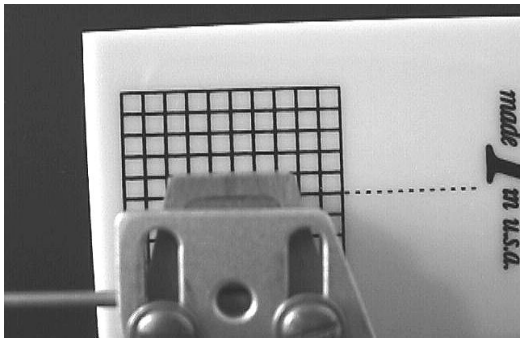


- Swing the tonearm over the jig so the stylus is as close as possible to the dot in the center of the grid. Set the counterweight for enough downward force to keep the stylus from moving when resting on the jig.

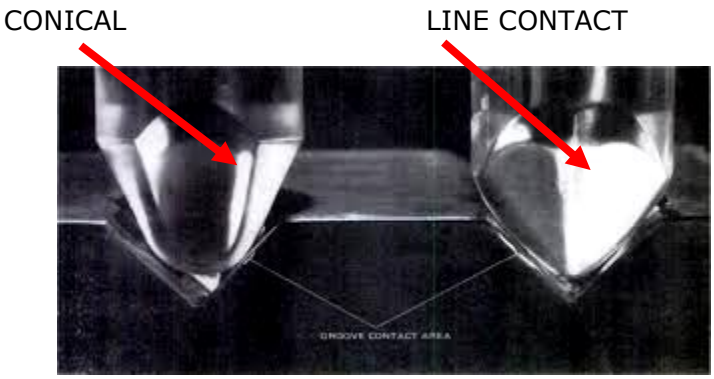
- Look down at the cartridge and align it between the lines of the grid. You should have the diamond stylus on the white dot and the cantilever lined up with the lines on the grid. Use a flashlight to look from the front and line up the cantilever with the grid lines. That is the only alignment that matters, the cantilever lined up with the white lines and the diamond on the white dot. The angle of the cartridge is irrelevant.

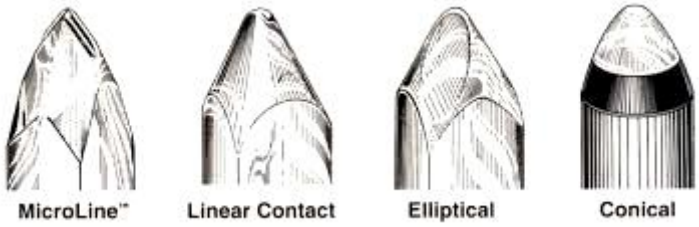
- Adjust the cartridge mounting screws and the counterweight as needed until the cartridge is centered between the grid lines and the stylus is resting on the dot of the grid. The picture below shows the setup, the jig is in white for clarity, yours is black.

- When the cartridge is properly positioned, tighten the cartridge mounting screws and remove the alignment jig. Do not make them overly tight, the 3D arm is self-damping and you can damage the surface by over tightening.

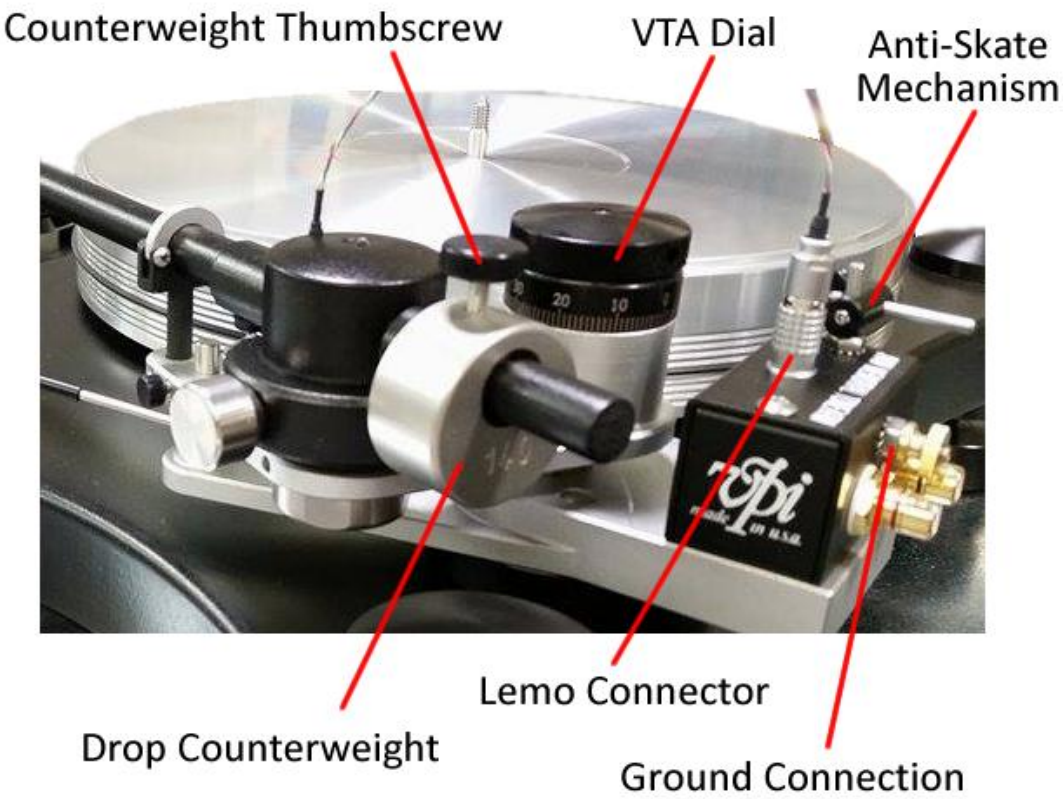


VIEW OF CONICAL AND LINE CONTACT STYLI AND WHY ALIGNMENT MATTERS MORE WITH THE LINE CONTACT.



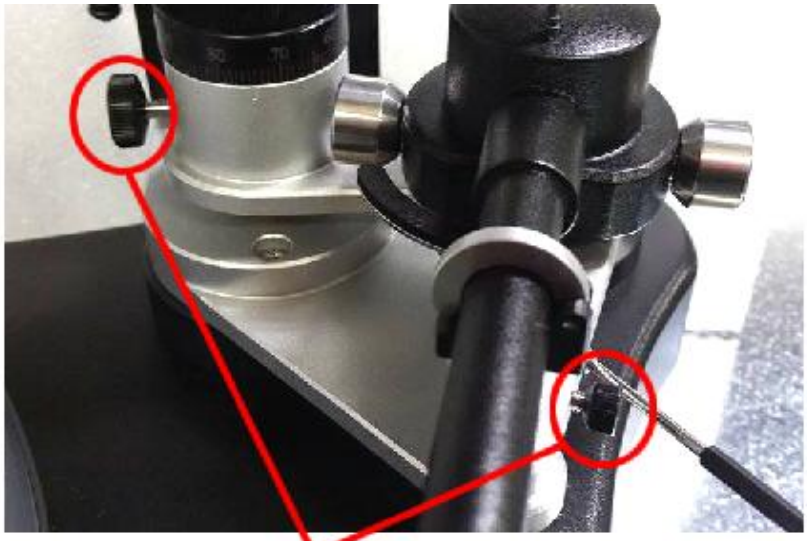


Setting the Tracking Force and Tonearm Height



Tracking force is adjusted by moving the tonearm counterweight forward and back on its shaft. If your cartridge is overly heavy and the counterweight is all the way back, you can order a heavier weight from your dealer. Half way back is fine as is the middle third of the stub.
The JMW Tonearm does not have a built-in tracking force gauge but we have supplied you with a quality digital tracking force gauge if we did not mount a cartridge for you.

- Place the gauge on the platter (no record).
- Loosen the two black thumb screws in the base of the tonearm and raise the arm so it looks parallel to the platter when it is on the stylus force gauge. When the arm is at the desired height, lightly tighten the thumbscrews.
- If you do not make the arm parallel when doing this you will be between .2 to .4 grams light or heavy when you are on the record. THIS IS VERY IMPORTANT!!
- Set the tracking force according to the cartridge manufacturer's recommendation. We recommend always going to the high side of tracking force. High frequency vibrations on a light-tracking cartridge can cause more damage to the grooves of a record than running a cartridge at a heavy setting. We usually recommend .1 gram higher than the max tracking force if you are not using anti-skate (recommended way of setting). This does not apply to Lyra cartridges that sound best at 1.73 to 1.76 grams tracking force with or without anti-skate.
- Put a record on the platter and using the VTA tower lower the arm so it is parallel to the record. Now you will be tracking at the force you set and not a lighter force.



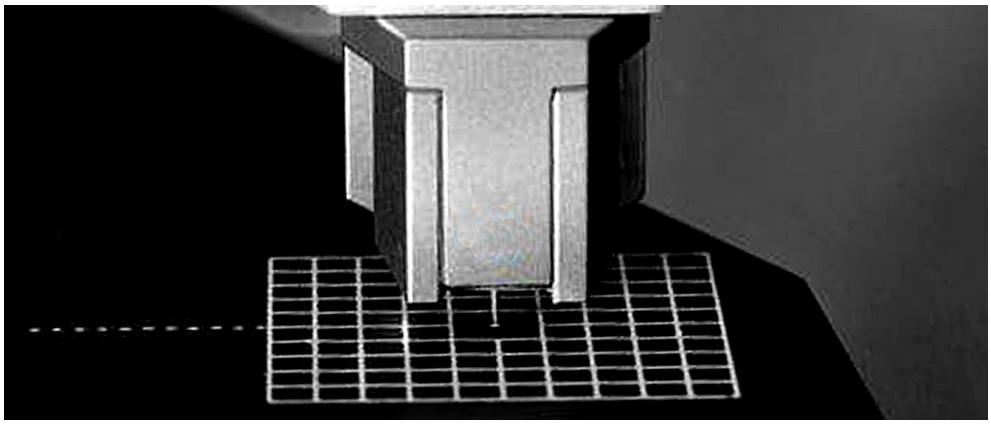
Loosen these two screws to
adjust VTA and tighten when set

Setting the Azimuth

- Using the supplied aluminum rod or a fireplace match or coffee stirrer (something light and about 6" long) place one of them into the groove behind the mounting screws on the tonearm headshell.

- If it is not level loosen the thumbscrew on the drop counterweight and rotate the counterweight around the shaft until the headshell is parallel to the record. Be careful not to change the tracking force setting.

- With the new 3D arm on the HR-X you can also rotate the side weights for even finer azimuth adjustment, this lets you leave the tracking force as set. You want the rod to be parallel to the record.



Setting the Anti-Skating – Two Solutions

- VPI does not support the need to have anti-skate but does respect the customer's interest in having it enabled. Therefore we provide a mechanism for anti-skate and the option of engaging it.

- For normal music listening all the anti-skate you need will be supplied by the lead out wire of the tonearm to junction box unless you are using test records and measuring sine waves. For music listening the push back of the wire is ideal for anti-skate.

- We supply mechanical anti-skate for those who require it.

⚠ **If you try adjusting the anti-skate with a groove less record, you will ruin the twist in the tonearm wire and void your warranty. Do this with the mechanical anti-skate if you want that much anti-skate.**

Playing Records

- Before playing a record, make sure that both of the tonearm VTA thumbscrews are slightly tight.

- Place the black washer on the platter, then the record, then the record clamp. Always turn off the turntable before installing the record clamp.

- Press the power button on the motor. Sit down and enjoy listening to your records!

General Use

- Allow at least 20 hours of break-in time.
- The motor will make some low-level noise. This will not get into the system. The motor and bearings will become quieter as you use your HR-X. Place the motor on a mouse pad for better isolation if this bothers you.
- If you notice hum in the system, remove the turntable to phono section interconnects and replace them with very cheap, standard VCR interconnects. These are well shielded and should eliminate the hum. If the hum goes away, get quality, well shielded interconnects.
- After at least one year of use the platter bearing should be re-lubed with PTFE super grease. The motor will need to be lubricated with 1 drop of 40-weight motor oil below the black drive pulley and right on the brass piece.
- You can experiment with mats but you need to adjust the VTA setting when doing this.

Additional Items Available from Your Dealer

- The VPI Synchronous Drive System power supply provides a major increase in musicality by feeding the 300 RPM AC Synchronous motor with a pure sine wave of the frequency selected. It is hundreds of times more accurate than the power company and will let your motor run cooler and at the exact right speed from microsecond to microsecond. A plus is it will allow electronic speed change and will count the hours of use so you know when your cartridge is getting old.

Possible Problems:

- **Noise in the system, a hum or buzz:**
    - The answer is to ground the motor and system properly. A line filter that floats the grounds will not allow proper grounding of the phono system, the phono system must be grounded!!!!!! Phono is not like CD and if this is your first table or your return to vinyl after a decade or so you must remember that phono amplification can be 1000 times higher than CD or streaming so any noise that

gets into the system will be amplified much, much more. Kill the noise with proper grounding and your system will sound much better.

- **A pop on motor turn on or turn off:**
    - In some systems the phono section is not well shielded and will pick up the EMF created by the switch opening to turn off the turntable. If you system is like that you can get into the habit of muting (the preferred method as you should really do that) or you can experiment with capacitors across the on-off switch. We supply the table with a .001 microfarad cap, you can change it to a .01 microfarad cap and it may eliminate to lower the problem to a tolerable level. BTW, judicious grounding will many times solve this problem also.
- **Trembling of tonearm when playing records:**
    - You have a uni-pivot tonearm, it sits on one point and is constantly moving with the record grooves; spiraling in and out as the record center changes and moving up and down with minute warps. It is perfectly normal and inaudible.
- **Sibilance and distortion in both channels:**
    - Azimuth not set correctly or diamond stylus misaligned on cartridge. This is usually a setup or cartridge issue, not a tonearm issue. It can also be caused by a tracking force that is too light even if it reads correctly. Tracking force needed is determined by the temperature in the room, below 70 degrees requires greater tracking force. We have found almost all cartridges work and sound best at 72 degrees.
    - A 60 watt light put above a turntable in a cold room will heat up the cartridge just enough to make it much more compliant and track better.
    - Before going crazy try a slightly higher tracking force, it usually solves all the problems and zero in on the azimuth adjustment.
    - Another possibility is probably not as bad as the next photo but will definitely cause distortion and sibilance even in small amounts.

- **Distortion in left channel:**
    - Too much anti-skate.
- **Distortion in right channel:**
    - Too little anti-skate.
- **Noise at startup:**
    - We used to ship all tables pre 9-11 with talc powder in the bag with the belt. After 9-11 and the Anthrax scares we discontinued this. If you get a screeching sound on startup just powder the drive belt and you will be fine.

VPI Industries, Inc. Limited Warranty

VPI Industries, Inc. (VPI) warrants this unit against defects in materials and/or workmanship for three (3) years from the date of purchase by the original retail purchaser. VPI's sole obligation under this warranty is limited to the repair or replacement, at VPI's option, of any part(s) found to be defective. VPI's obligation to repair or replace defective parts is the purchaser's sole and exclusive remedy, and VPI shall not be liable for any direct or indirect injury and/or property damage arising out of the use of the product or defect in or failure of the product.

This warranty does not extend to any unit whose serial number has been defaced or altered. Any product that VPI determines causes a defect or malfunction due to incorrect installation, modification, misuse, or servicing by the purchaser, or service technician not authorized by VPI to perform such service will not be warranted. This warranty does not cover trivial or cosmetic defects that do not impair the unit's normal function.

VPI reserves the right to make changes in this product without assuming any obligation to install such change in any product previously manufactured. This warranty to repair or replace defective parts is in lieu of all other express or implied warranties of merchantability or fitness for a particular purpose. There are not warranties that extend beyond the description herein.

Some states do not allow exclusion of implied warranties or limitation of incidental or consequential damages, so the above exclusion or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

Register your Product Online:

http://vpiindustries.com/warranty/