

# VPI Voyager

## Phono Preamp Manual



### Setup and Instruction Manual



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## **Quick Start Guide**

1. Safely unpack the unit and its accessories (Voyager, Power Cord, 2 Shorting Jacks)
2. Place the unit on a sturdy and dry surface
3. Insert shorting jacks in un-used inputs if needed
4. Plug the unit into a grounded electrical socket
5. Connect the RCA and ground wires from your turntable
6. Connect the Output cables to your line level input on your line stage or integrated amplifier
7. Turn on the unit from the power switch in the back
8. Mute the system to configure your settings, Mute indicator will turn red.
9. Select input, gain (MM/MC), and loading from front panel
10. Unmute the system and wait for the mute indicator to turn green
11. At this point you should be able to play music and enjoy your new voyage

**Introduction:** Thank you for purchasing the VPI Voyager phono preamplifier. For many years, VPI produced turntables which are universally acknowledged for being able to resolve incredible amounts of musical information from a record's grooves. The Voyager phono preamplifier was created to compliment not only the VPI turntables musical performance but to functionally compliment the flexibility inherent in the VPI Turntable designs. The Voyager was inspired by past work of Mike Bettinger, VPI Director of Electrical engineering. With suggestions from Harry Weisfeld, VPI founder, Mike molded a musically involving, easy to use Phono Preamplifier.

Accommodating multiple arms or various cartridges is now simple. Changing between two inputs with front panel selection of gain and cartridge loading makes the Voyager a Swiss Army Knife for vinyl lovers. VPI created a phono preamplifier circuitry that truly compliments the capabilities of your VPI turntables.

**The Sound:** Much like the creation of a fine musical instrument, the Voyager circuitry is the culmination of many years of exploring the boundaries of audio circuit design. With an audiophile's sensibilities as a guide, selection of the best circuit building blocks (gain circuits, power supplies, etc.), component parts, biasing and circuit layout have all been synergistically combined.

Musically, the defining characteristic of the Voyager is its low-level detail resolution. The beauty and emotional involvement of music is tied to a components ability to hear into the music and reproduce the subtle decays of notes and resonances, room reflections that add bloom and body, and purity to reproduction of vocals and strings.

Second, the Voyager's lack of compression or congestion as the music gets more complex is also striking. Attention to the power supplies and circuit layout provides a very stable electrical environment for the gain circuitry that does not change with the complexity of the music. There is a sense of nuance and air in the lower frequencies.

Third, purity in the reproduction of vocals and wind instruments is excellent, with the music effortlessly soaring through passages that have a history of being compressed, hard or grainy when the dynamics and complexity of the music.

Overall the sound of the Voyager is very consistent from top to bottom, cut from the same cloth as the saying goes.

### **Design Overview of VPI's Voyager Phono Preamplifier**

Circuit Overview: The Voyager uses a two-stage design using Linear Systems JFETs as input devices. The input stage provides gain and passive EQ, followed by a differential JFET second stage providing more gain and active EQ. The power supply is a unity gain voltage stabilized design. The circuit layout takes into consideration the complicated current loops and loads to control interactions between stages and unintended feedback as the signal is processed by the preamp. The design is intentionally symmetrical and single-ended.

Design details: The first stage provides an interface with the cartridge while providing the gain and drive for the 75us passive de-emphasis equalization network that follows it. This gain is provided by a precision JFET/ Bipolar discrete op-amp design. Circuit balance is maintained by low noise servos. Power for the servos is provided by simple zener-based shunt regulators. MM/MC gain switching is provided by embedded subminiature low

signal relays located at the optimum position in the layout to maintain circuit resolution and stability.

The output of the first stage is fed into the second differential gain block, which provides the additional gain need for tracking the low frequency portion of the RIAA curve. This stage is also designed using matched Linear Systems JFETS and is servo controlled. The drive for the signal out is provided by a high current Class-A/common collector topology.

#### Front Panel Switching Capabilities.

The Voyager provides front panel switching between two inputs, MM/MC gain and three settings for both resistive and capacitive loading, depending on the MM/MC choice for the input the voyager selects either resistive or capacitive loads. MC loads of 100R, 500R or 1K ohms and MM capacitive loads of 100pf, 200pf or 270pf can selected using the front panel switches for each input.

The gain and load settings operate separately for both inputs allowing independent settings when using two turntables or arm. This arrangement allows for easy swapping of arms/cartridges requiring different gain or load settings, while retaining the settings for the unchanged input.

### Mute operation.

Front panel switching of gain or inputs is normally only available in expensive microprocessor-controlled preamps with sophisticated (expensive) hardware and software control to mute the output during switching. The Voyager minimizes the switching transients through a unique analog muting circuit that monitors the circuit output and mutes the signal during the first 10% of the disturbance. Reducing the transient to a minor pop. The circuit remains muted until the high gain signal circuitry settles. The muting circuit will also mute the output if it senses non-signal related disturbances such as a quickly dropped stylus or large static discharge. The auto-muting mode is indicated by a yellow colored indicator light. After a few second delay the indicator will return to green and the music will resume.

### The layout

The circuit layout, execution and fine-tuning of the Voyager's circuitry is the results of many years of investigation and experimentation. The grounding and supply networks have been implemented through careful consideration of both the circuit biasing and signal return currents, much like the voicing during the creation of a fine musical instrument. The operating points of the active devices have been fine tuned for their "sweet spots ". We believe the musical results speak for themselves.

### Construction:

The PCB uses a 4-layer design. The circuit components include all 1% metal film resistors and polypropylene film capacitors. Equalization components are screened for tight tolerances. The electrolytic capacitors are high frequency and high temperature

rated. Active devices include: Linear Systems JFETS and Fairchild low-noise small signal and power transistors; The Voyager is proudly made in America using all American sourced parts.

### **Important Safety Instructions**

**TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

1. Read instructions: Please read all the safety and operating instructions before operating your preamp, and retain them for future reference.
2. Follow instructions: Follow all operating and use instructions.
3. Cleaning: Unplug the preamp from the wall outlet prior to cleaning. Use a damp cloth. Clean only the outside of the product.
4. Water and moisture: Do not use this product near water or leave it outdoors. Do not place under a plant or place a plant upon it.
5. Product placement: Don't place the preamp on an unstable table or stand; it may fall and become damaged. Move it with care.
6. Power sources: Operate the preamp only from the type of power source indicated in the instructions. The preamp is equipped with a three-prong grounding plug, which will only fit into a grounding power outlet. If you're unable to insert the plug into the outlet, contact your electrician to replace the obsolete outlet. Don't defeat the safety purpose of the grounding plug.

7. Overloading: Don't overload wall outlets or extension cords, which can result in fire or electric shock.
8. Power Cord Protection: Power cords and interconnect cables should be routed so they will not be tripped over or pinched by items placed next to or upon them.
9. Electrical storms: unplug the preamp from the wall outlet for added protection from lightning, or when left unused or unattended for extended periods of time.
10. Servicing: **Do not attempt to repair this product yourself.** Please contact us for guidance. Unplug the preamp from the wall if the power cord or plug is damaged, if liquid has been spilled into it or it has otherwise been exposed to rain or water, if the product doesn't operate normally when you follow the operating instructions, if it's been dropped, or if you notice a distinct degradation in performance.
11. Heat: It's important that you place the preamp away from heat sources, such as your amplifier, a radiator or other product that produces heat.

## **Let's play music!**

### Unpacking the Voyager

Carefully remove your Voyager from its shipping carton and locate the enclosed accessories:

- \* Power Cord

- \* 2 RCA Shorting Jacks.

Inspect the Voyager carefully for any sign of shipping damage and contact us immediately should you find any. We recommend that you save the box and its packing material to protect it if you need to move or ship it.

## Placement guidelines

- Do not place preamp near higher power components such as power amplifiers or Turntable motor speed controllers. Due to the magnetic hum fields emitted by these devices audible 60/120 Hz may be present in the audible output of the system. If this occurs move offending component to a different location.
- Place it on a shelf adequate to support its weight.
- Use input and output cables long enough to leave some slack in them for moving the preamp to check or change connections.
- Place the Voyager where you can route input and output cables as far as possible from any AC cords.

## Ventilation:

- Always position the Voyager horizontally.
- Don't place the Voyager above a power amplifier, the heat from which will age its components faster.
- Do not install the Voyager in an unventilated cabinet or confined space to avoid stagnant hot air.
- Allow at least 1.5" of clearance on all sides of the Voyager if placed in a cabinet, if in a confined cabinet place only on shelf by itself.

## Connecting your Voyager:

Always disconnect the AC cords to your Voyager and power amplifier before making or changing any input or output connections. Connecting or disconnecting an input or output

cable with the preamp or power amp on can result in a blast of sound that can damage your speakers. Make sure there is no strain or tension on any cables that could cause them to pull loose.

#### Audio input connections:

Connect your turntable's signal cables to the Voyager's input jacks. The turntable's ground wire attaches to the Voyager's ground terminal, located between the two sets of inputs.

**Important Note on electromagnetic fields:** Turntables and phono preamps are very sensitive to electromagnetic fields that can produce an audible hum. To minimize any hum:

Place your turntable and turntable signal cables as far as possible from power amps or power line conditioners. Don't run the turntable signal cables parallel with any AC cords. If they must cross AC wires, they should cross at a 90° angle.

It might be necessary to experiment with the exact positioning of the turntable signal cables to minimize hum.

#### Audio Output Connections:

The Voyager's output jacks connect to the input jacks on your line level preamp. The Voyager has 1 set of output jacks, unbalanced.

The Voyager does not invert polarity.

#### Power connections:

AC power cord: The standard AC cord supplied with your Voyager is an audiophile-grade component. Please connect it directly to an AC wall outlet or power conditioner that is always "live". If possible, plus connect it into the same AC outlet that your preamplifier is

plugged into. If different AC outlets are used for the Voyager and the preamp, the ground potential may be higher or lower between the outlets, resulting in an audible hum.

AC power switch: This switch is provided to turn the Voyager off when it won't be used for an extended time. Normally, leave the switch in the "on" position. The power switch is located on the back panel next to the power input module. The blue LED function indicators on the front panel will glow when the power is on. Toggle the switch to turn the Voyager off.

Mute Function: The unit will automatically mute the system for the first 8 seconds of startup. After that, it will unmute the phono section and you would be ready to listen. You can also press the mute button on the front panel once to mute the sound. Push a second time to un-mute.

**Important!**

**Before switching inputs or gain you MUST mute the Voyager via the mute button**

MM/MC switch: Each input has its own push button switch to select either moving magnet or moving coil. In its natural state moving magnet will be selected. When the button is depressed it would be switched to moving coil. Moving magnet would be utilizing the capacitive loading settings while the moving coil would be utilizing the resistive loading settings. These settings are automatically applied when switching between the two modes.

## **VPI INDUSTRIES- LIMITED WARRANTY**

VPI Industries, Inc. (VPI) warrants the Voyager against defects in materials and/or workmanship for one (1) year 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, or any product that VPI determines contains a defect or malfunction due to incorrect installation, modification, or misuse. Therefore, any evidence of overheating such as melted or charred parts will be taken as evidence of misuse, or servicing by the purchaser, or service technician not authorized by VPI to perform such service. It 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 without charge.

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 no 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/>



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Specifications:

<p>Frequency Response</p> <p>20 Hz - 20kHz, +/- 0.2 dB</p> <p>Total Harmonic Distortion</p> <p>&lt;0.005% at 20kHz</p> <p>Signal to Noise Ratio (MM)</p> <p>85 dB, input shorted, IHF A-weighted</p> <p>80 dB, input shorted, unweighted</p> <p>Signal to Noise Ratio (MC)</p> <p>74 dB, input shorted, IHF A-weighted</p> <p>78 dB, input shorted, unweighted</p> <p>Crosstalk: 75 dB at 1kHz</p> <p>Phono Input Impedance</p> <p>MM setting: 47k<math>\Omega</math></p> <p>MC setting: Front Panel Selectable</p>	<p>Input sensitivity at 1 kHz</p> <p>MM: 5mV in for 1.0V output</p> <p>MC: 0.5mV for 1.0V output</p> <p>Total Gain:</p> <p>MM: 42 dB</p> <p>MC: 62 Db</p> <p>AC power requirement (<b>set by factory</b>)</p> <p>115 or 230 VAC 50-60 Hz</p> <p>12 watts</p> <p>Dimensions:</p> <p>Width: 15.5"</p> <p>Depth: 13"</p> <p>Height: 4.5"</p> <p>Shipping Weight: <u>10.5</u> lbs ( <u>4.76</u> Kg)</p> <p>Output Impedance</p> <p>Unbalanced: &lt; 100 <math>\Omega</math></p>
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