



## **FAQ for the High Vacuum Pumps**

### **Decibel Level**

The pumps run normally at 70 decibels which is the equivalent of just a little louder than a normal conversation.

### **Amperage draw**

For 110v pumps it is 7.0 amps at startup and 1 amp while running

For 220v pumps it is 3.5 amps at startup and 1 amp while running

### **Oil Getting back into Tubing**

Oil backing up into your vacuum line is generally due to turning off the pump before isolating it from your system, which can be done by connecting a shut off valve between your system and the pump as well as a bleeder valve between that shutoff valve and your system, which both isolates your pump from the system and allows you to bypass the pump when breaking the vacuum. Another very easy way to do that is to disconnect the hose from the intake of the pump before you shut it off. Alternatively, and what we would recommend is our three-way valve #LAV-3WAYVALVE that performs the function of both a shut off valve and a bleeder valve, which can be found in our vacuum pump and accessories page.

### **Drawing liquids and solids in Pump**

Our pumps are only to be used to draw air out of a closed system. Liquids and solids will damage the pump and we have not done any testing of these pumps with relation to flammable materials, but even flammable gasses are not recommended.

### **Pump is making a grinding noise:**

Most likely the #PR-208 flexible couple (green cylinder found underneath the pump) is broken due to some contaminant getting inside the pump cartridge and locking it up. The flexible coupler is designed to fail to avoid major damage to the pump cartridge so merely replacing the coupler is not recommended without first cleaning out the pump housing and making sure there is no more debris inside the cartridge. You can test the cartridge while the pump is disassembled by turning the cartridge shaft and seeing if it will turn freely or not. Download the Pump maintenance and care guide for more information in replacing the coupler if it is indeed broken.

We also recommend checking the sight glass on the front of the pump to determine if the oil is cloudy or contaminated. If so, an oil change is necessary.

### **What is a Gas Ballast and how do I use it?**

On the initial pull of vacuum on a system, the gas ballast is open allowing the initial volume of air in the system to bypass the oil to not contaminate the oil immediately. When the pump starts to quiet down, close the gas ballast and the pump will start reducing atmospheric pressure and get the system in the high vacuum micron range.

### **Can I use any oil in my vacuum pump?**

No. Fischer Technical Company High Vacuum Pump oil is extremely pure and non-detergent. It is hydro processed which means it goes through a series of catalytic steps rendering the oil extremely refined, more viscous, and more stable. The result is a clear mineral oil that will alert you to contamination sooner as it becomes cloudy or milky. This oil is specifically designed to attain High Vacuum in the micron range ~5-micron Hg.

### **What is a micron?**

There are 25,400 microns in an inch. Therefore, with a compound gauge reading 0 inches to 30 inches, there are 762,000 microns. Most 0-30" Bourdon Tube Type Gauges are +/- 1/2 inch (12000 micron). The micron range for the vacuum pumps is under 1000 micron and requires a digital gauge to read. Please see our #HVG-001 Vacuum Gauge under the Vacuum Pump Accessories page.

### **Pump is not getting to high vacuum:**

Test the pump by sticking your thumb or rubber stopper over the intake of the pump. If you feel a suction the pump is working fine, and the cause is due to leak in the vacuum system. Connecting a gauge directly to the intake of the pump will also determine if there is a malfunction in the pump. If the gauge reading is not at 30" or in the micron range on a digital gauge the pump may need an oil change

or have some of the seals replaced. We supply a vacuum pump repair kit which includes all the most frequently needed replacements of seals as well as 2 quarts of oil- See our #LAV-REPAIRKIT on our vacuum pump accessories page.

**A little bit of oil or smoke is coming out of the exhaust (Handle of the pump):**

A little bit of oil and or oil smoke coming out of the handle of the pump is normal but to better protect your working environment you can purchase a smoke eliminator #LAV-EF for the pump. This can be found on our vacuum pump accessories page.

**A lot of oil is coming out of the exhaust (Handle of the pump):**

If you are getting a lot of oil coming out of the handle there could be a number of different reasons for that, but we suggest first checking to see if the oil is only filled to the "oil fill line" on the sight glass which is found on the front of the pump. If it is higher than the line you may have either overfilled the oil or you got some water (or other contaminant) into the pump which you can drain out until the oil is as that oil fill line. \*Note: water in your system will boil at room temperature under high vacuum and then the water vapor will get sucked into the pump, mix with the oil, and settle to the bottom of the pump overnight raising the oil level without you realizing it. If you are working on an application that has water or some other liquid vapor getting into the pump, we highly recommend that you keep up the maintenance of the pump as water left in the pump will rust the pump housing and cause flakes of rust to break off and then clog up the rotors inside the pump cartridge. Download our maintenance and care guide for further directions on changing the oil.

**Oil is shooting out of the pump exhaust (Handle of the Pump)**

The most likely cause is that the cartridge valve is broken or bent. A replacement cartridge valve #PR-18 is available in our vacuum pump repair kit #LAV-REPAIRKIT which can be found on our vacuum pump accessories page.