

## **YOUR ROTARY VACUUM PUMP and OIL**

The oil in your school's vacuum pump provides many functions in the operation of this device. So proper maintenance is critical for good vacuum operation. This sheet is intended to provide you with general information, regardless of pump make and model, for proper care and feeding of your pump. Assuming that the pump is in good operating condition, mechanically, the oil level may need to be adjusted, or changed. CAUTION: If your pump is a belt drive unit, from a separate motor, make certain the belt guard is properly mounted, for safety of the students!

With the vacuum pump inlet sealed off, or closed, start up your pump, and let it operate for 15 to 20 minutes, pumping on itself. This will bring the temperature of the pump up to its normal operating level. Now check the oil level in the pump. It should be in the middle of the sight glass, or inspection port. If you cannot see the oil level, try carefully and slowly raising the end of the pump, opposite the oil level/inspection port. If the oil level is an inch or two low, it may just need some addition.

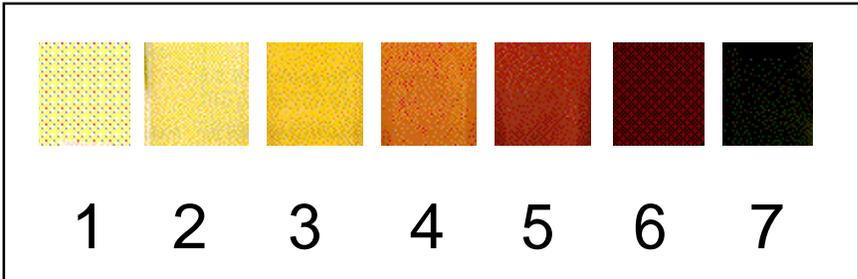
However, if the oil is dark brown in color, or worse, like black coffee, it should be replaced (see Color Chart at end of this document). Have a suitable volume container (usually 16 to 24 ounces in volume) placed below the drain plug or valve, near the bottom of the pump. CAUTION: The pump oil temperature by this point may be in the range of 140°F to 160°F, so protect your hands! Turn off the pump, immediately open the inlet, then open the drain plug/valve at the bottom of the bottom. The hot oil will flow horizontally for 3 or 4 inches. When the oil flow is down to just a drip every few seconds, place a rag or paper towel, directly in front of the drain, and turn on the pump for 4 to 5 seconds. This will expel any additional oil that might be in the mechanism. Remember, oil being incompressible, can squirt out the drain hole, so protect yourself. Now, close the drain port, and refill the pump, through the fill port on the top of the pump, with a fresh charge of the proper vacuum pump oil (see paragraph below), to the middle of the sight glass. Close the fill port, reseal the inlet of the pump, and restart it. You may notice that the oil level drops in the pump. Wait 5-10 minutes, then shut off the pump, open the inlet, and add enough oil at the fill port, to bring it to the middle of the sight.

### **VACUUM PUMP OIL**

Oil used in rotary vacuum pumps is a special product, vastly different from motor oil. There are no additives such as rust inhibitors used in pump oil since such agents would be separated from the base fluid and plate out on surfaces as gummy substances. Good vacuum pump oil is general 8 to 10 times the cost of motor oil, but is necessary for proper pump operation!

## Rotary Pump Oil Condition Chart

The color chart below indicates the degree of thermal ageing & therefore the remaining useful life of the oil in your rotary pump.



Oil should be changed before it has reached color 4. If the oil is allowed to degrade to the extent that colors 6 & 7 are reached, the pump may have suffered damage & should be fully serviced prior to re-use.

1	Pantone	1205 U
2	Pantone	127 U
3	Pantone	141 U
4	Pantone	173 U
5	Pantone	1085 U
6	Pantone	187 U
7	Pantone	Black 5 U 2X