

Pre-Servicing Vacuum Pump Care

Hazardous chemicals contaminating the oil in vacuum pumps presents an undue occupational health risk to personnel in the Instrumentation Laboratory (IL). Prior to releasing a vacuum pump for service, the faculty researcher or designee must:

- Drain pump of vacuum pump oil.
- Flush with commercially available flushing oil until pump is clean (see flushing instructions)
- Bring empty pump to the IL.

Instructions on correct procedure for flushing pumps can be obtained from the IL.

In the event that a pump is "frozen" and cannot be flushed, the faculty researcher or designee must:

- Drain pump of vacuum pump oil.
- Fill reservoir with flushing oil and allow to sit for at least two hours before draining flushing oil. (Repeat until drained oil from pump is same color as new oil.) Flushing should be repeated until oil is clean.
- Bring empty pump to IL.

The IL will:

- Protecting themselves with chemical resistant gloves, glasses, etc will disassemble the pump.
- Pump will then be returned to the faculty researcher or designee for cleaning. Cleaning should be done in an exhaust hood with proper personal safety precautions.
- When pump parts have been cleaned, pump can be returned to the IL for rebuild and reassemble.

Note that pump oil and flushing oil contaminated with laboratory chemicals must be disposed of as a chemical waste through the Environmental Health and Safety Office.

NOTE: VACUUM PUMPS WILL BE ACCEPTED FOR SERVICE ONLY IF THEY HAVE BEEN DRAINED AND FLUSHED.

Vacuum Pump Flushing Procedure

- Place a small amount of flushing oil in clear glass container for later comparison.
- Run the pump until the sump is warm (approximately 1/2 hour).
- Disconnect pump from electrical source.
- Open the drain port and drain the pump of used vacuum pump oil while pump is warm.
- Tilt the pump so as much of the used oil and sediment as possible is drained.
- Rotate the pump mechanism manually (on belt drive pumps, by rotating the belt pulley). Some oil sump designs hold oil in the pump until the pulley is rotated a few revolutions.
- Repeat this step until no more oil drains from the pump.
- Place funnel in exhaust port (or designated "oil fill" port) and fill pump to halfway up the sight glass with flushing oil. Turn pump on and adjust oil level if needed.
- Run pump for approximately 1/2 hour and alternately activate the gas ballast valve on the pump. (This helps agitate the oil in the pump.)
- Disconnect pump from electrical source and drain pump as earlier described.
- Compare the color and sediment levels of the drained flushing oil with the virgin sample set aside at the beginning of the process. If the oil is very discolored then a second flushing should be done. (Flushing must be repeated until pump is clean.)
- After a good color of the flushing oil is achieved, the pump should be drained of all flushing oil.
- The pump may now be brought to the IL for repair.

Instrumentation Laboratory
Vacuum Pump Release Form

This form must be completed and signed by a faculty researcher (or designee) who is familiar with the chemical wastes that were used or introduced into the vacuum pump. The IL will keep the form on file.

Faculty Researcher: _____
Department: _____
Office: _____
Phone: _____

Manufacturer, Model, Serial Number, Scanner Number of Equipment:

Check that it has been completed:

- _____ Contaminated oil has been drained from pump.
_____ Pump has been flushed per IL's "Vacuum Pump Flushing Procedure"

Remarks: _____

Signed: _____

Date

PI: _____
List PI if form is signed by designee
