

Cumberland Vacuum Products

CARE AND FEEDING OF YOUR VACUUM PUMPS

Vacuum Oils for Vacuum Pumps

Small Cost, Big Savings: Oil is inexpensive compared to the high cost of the vacuum pump. Your vacuum pumps require the proper fluid to operate efficiently. A temperature of at least 165 degrees is recommended to properly remove condensables from the pump oil. Fluids formulated for other purposes contain additives designed to enhance their functions, these additive hold moisture causing a sludge to build up in the pump. This may hinder the performance of the vacuum pump by absorbing moisture, raising vapor pressure and reacting to process gases blocking oil flow passages. In some cases the pump seize up or be difficult to disassemble. Use of proper fluids, regular oil changes and flushing the pump with a **flushing fluid** will give you the lowest obtainable pressure with a minimal amount of repair.

Exhaust: As you evacuate your process chamber condensable vapors are pumped into the vacuum pump. They are then expelled through the exhaust port. If not configured or maintained properly these exhaust vapors condense in the exhaust system and return to the pump where they mix with the oil and clog the filters.

Recommendation: Change exhaust filters regularly. If exhausting outdoors, configure your exhaust line to reduce the amount of condensables that could return to the pump. This can easily be accomplished by installing a vertical leg in the exhaust line which can be drained as needed.

Inlet: During pump down and process, contaminants from the chamber are drawn into the pump through the inlet port. These contaminants along with air mix with the oil causing it to oxidize and form a sludge. This will block oil passages and reduce oil flow. Reduced oil flow means slower pumping, longer evacuation time and vacuum pump failure.

Recommendation: Install a filter on the vacuum pump inlet line to stop particulate from reaching the pump. The type of filter media will vary according to your process. Care must be taken in sizing this type of filter so that the pumping speed of your system is not affected.

Starting, Stopping Pumps: The common practice of stopping the pump after every process run is one of the most detrimental things you can do to a vacuum pump. During the process, you pull contaminants, i.e. water, air, etc., into the pump time after time. The pump is then shut off allowing everything to condense in the pump and contaminate the oil.

Recommendation: After each process run, let the pump run with the gas ballast open isolated from your chamber by means of a valve. A hot pump running against a closed valve will clean itself giving you longer pump life and better pumping speed.

For further information on these and other quick facts

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