

## OIL CARRYOVER

**Issue: DuraVane vacuum pump or vacuum pump system has oil carryover.**

Each DuraVane system is tested and checked at the factory prior to shipment to ensure trouble-free operation. In the unlikely event you encounter a problem, we recommend that you consult with your local distributor for parts/service. Remember, when calling for service, parts or system information, always have the pump or system model number and serial number ready.

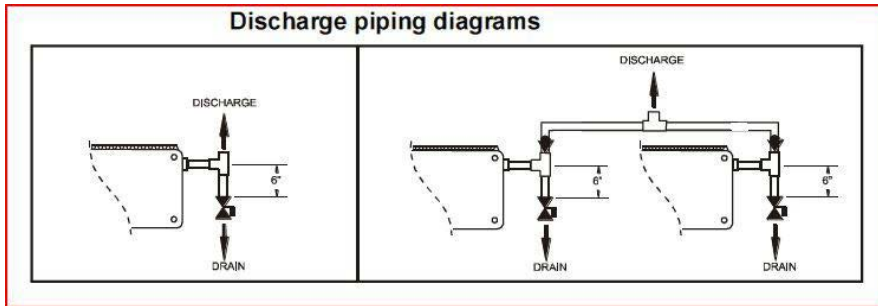
[Click here to find your local authorized distributor.](#)

**WARNING!** Before attempting any repairs, disconnect all power from the system by switching off power at the main breaker or disconnect switch. Always use appropriate Lock Out – Tag Out procedures.

DuraVane systems offered by DEKKER Vacuum Technologies are the result of years of research and experience in the design, operation and application of this type of system, with thousands of successful installations in the field. The DuraVane separators that are standard on DuraVane lubricated rotary vane pumps virtually eliminate oil carryover concerns and ensures the cleanest environment.

If the system begins to use excessive oil or produce an oil mist from the system discharge, the operator should check the following items:

Make sure the system is installed with proper discharge piping including a drip leg.



[Refer to the Installation, Operations, and Maintenance Manual for more information on proper discharge piping.](#)

Check the oil-recovery valve. The oil-recovery valve is a needle valve that is covered by a float when no oil is present in the valve area. The purpose of the oil-recovery valve is to remove oil buildup from inside the separator and separator element. Ensure there is no blockage and that oil flows from the separator back to the vacuum pump.

Check your maintenance log to determine when the separator element was last changed. Recommended change frequency is every 2,000 hours or once per year.

If your pump is equipped with the optional backpressure gauge, check the gauge on the top of the separator tank. If the backpressure is greater than 4 psig, replace the separator element. High backpressure is the result of dirt buildup on the separator element due to oil varnish or contaminated inlet gas stream.

Temperature can also play a role in the amount of oil misting that occurs. If the vacuum system continuously runs hot (>200°F), excessive oil misting may be seen. Ambient temperatures over 110°F may also contribute to oil carryover. Sometimes, process conditions can affect the amount of oil mist produced by the vacuum system. Operating the vacuum



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system at low vacuum (below 15" HgV) for extended periods of time can cause enough mass flow to allow oil mist to be seen at the system discharge. If the process requires the system to consistently run at low vacuum levels, a secondary mist eliminator (sometimes referred to as a polishing filter) can be added to the discharge piping.

Excessive amounts of water vapor carried over from the process can also contribute to oil misting or oil carryover. Knockout tanks installed upstream of the vacuum system can reduce this issue. Many knockout tanks contain a stainless steel mesh called a demister pad to further reduce the amount of water vapor carried over from the process. In extreme cases, a condenser may need to be added to "drop out" any condensables from the inlet air stream.

### **Product Operation Notification Letter**

TO: Concerned Parties

Date: November 13, 2015

Title: Operating Vacuum for Rotary Vane Pumps

Affected Products: RVL002H, RVL003H, RVL006H, RVL010H

Effective Date: November 11, 2015

**Description & Purpose:** This letter is to recommend that the rotary vane pumps are to be operated at inlet pressures > 1 Torr for not more than 2 minutes. If the pumps are operated above the recommended maximum for prolonged periods, the relatively high gas density will carry the oil mist in to the element and rates beyond its maximum filtering capacity. The result is oil discharge from the exhaust of the pump creating excessive back pressure, resulting in poor performance. These pumps should be operated at their maximum vacuum level to allow draining back through the integral check valve.

**Reason for Change:** DEKKER's continued commitment to providing the best possible products and service to our customers continues with the recommended changes to the range of operation that will help prolong the operating life of the pump.

Please contact your DEKKER Regional Sales Manager if you need additional information.

