



TIPS AND TRICKS FROM THE EXPERTS

Extending the intervals between oil changes in rotary vane pumps

With their high reliability, their good price-performance ratio, and their longevity, rotary vane pumps have established themselves on the market for various applications in the low to medium vacuum range. Being an oil-sealed rotary displacement pump, it uses oil as operating fluid. This oil lubricates all moving parts and fills both the dead volume under the outlet valve as well as the narrow gap between the inlet and outlet. It compresses the gap between the vanes and the working chamber and additionally ensures an optimal temperature balance through heat transfer.

Proactively extending maintenance intervals

To ensure the proper function and the secure operation of a rotary vane pump, its oil needs to be checked and exchanged regularly. Users of a rotary vane pump can proactively contribute towards extending the intervals between maintenance. This can be done by regularly checking the operating environment of the pump (e.g. ensuring adequate ventilation) or the pump itself:

Advantages of the new DuoLine pump series for extending the service life

The intervals between maintenance in a rotary vane pump depend to a large degree on the aging of the oil. If the temperature of the oil is too high, the oil will age more quickly, with a resulting loss of lubricating and sealing properties in the pump. Maintenance will be required in this case. For this reason, we have thermally optimized the pumps and fitted them with an efficient system, which keeps the oil temperature low and so extends the interval between maintenance. The temperature must not be too low, however, as condensation should not take place in the pump.

Closed oil circuit ensures an adequate oil level

A further reason for premature maintenance is the oil level in the pump. Through constantly pumping gases at various intake pressures, oil escapes from the pump. If too little operating fluid is used, this results in inadequate lubrication. In extreme cases, the pump may break down as a result. If this occurs, expensive maintenance will be necessary, resulting in outages of the whole instrument. To prevent this risk, it is recommendable to use an oil mist filter with an oil return system. On the one hand, the oil mist filter ensures that neither the pump compartment inside the analysis equipment nor the ambient air become contaminated with oil mist. On the other hand, returning oil from the oil mist filter to the pump helps to extend intervals between maintenance. An integrated oil return system ensures that there is always enough operating fluid in the pump for lubricating and sealing purposes and also guarantees reliable operation. A condition for this is that the oil has not yet exceeded its service life and is not contaminated with aggressive process gases.

All pumps of the new DuoLine product family are supplied with a ready-integrated connection for an oil return system. This provides easy adaptation to a variety of different oil mist filters from our product portfolio.



Figure 1: The oil in the rotary vane pump has to be checked and exchanged regularly.

With its pumping speed of between 1.25 m³/h to 300 m³/h, the DuoLine covers a really broad field of applications. Thanks to its magnetic coupling, the pumps are hermetically sealed and work energy-efficiently. They are equipped with a single-phase motor plus an integrated safety and gas ballast valve. The availability of various motor voltages expands the field of applications. Due to its compact design and an optimized cooling, the pumps are well suited for system integration.

We would be happy to assist you in optimizing your vacuum solutions for specific applications – go ahead and ask us: <http://www.pfeiffer-vacuum.com/contact>



Figure 2: Duo 3 with oil mist filter and oil return

Are you looking for a perfect vacuum solution?
Please contact us:

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