

Trouble shooting tips— oil sealed rotary vane pumps

Check pump first! As with all processes, when fault finding, start with the prime mover.

You will require good gauges. Due to a find by one of our suppliers we can now source good test gauges for about \$600 each (previously up to \$1000 each). Gauges of this calibre are required to test these pumps accurately.

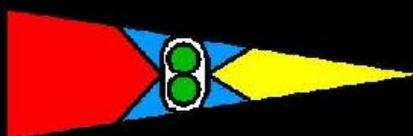
When I say check the pump, I mean remove the pipe work and install your gauge right on the port of the pump. Contact mbar Ltd for special urethane bungs to help with this testing procedure.

Never leave the gauge on the pump, because when you turn the pump off the lowest vacuum is now in the gauge and any oil or other foreign matter will go into the gauge making it worthless. Also the gauge may fall off when the pump is turned off and get damaged.

The pump should achieve a vacuum within 1 or 2 mbar of the pumps rated vacuum (this is usually found on the name tag for the pump) if the pump is rated at <1mbar. If the vacuum level is more like 20mbar away from the manufacturers rating, it is most likely a leak on the pump ie the inlet box gasket.

Since 1987 Paul Vickers has been testing vacuum pumps, the worst reading he has seen was about 5mbar for the sickest 0.5mbar rated vacuum pump. While this doesn't sound like much of a difference, the flow rate at the working vacuum level could be down by as much as 50%! This in most cases is enough to stop the process working efficiently.

Recently two pumps such as in the picture failed due to leaking oil seals that were reported on but the customer didn't take action because the pump was still running. The vacuum level was down so much that the air leak through the bearing caused poor bearing lubrication - one caught fire, the other's bearing failed. In both cases the pumps could have been saved by an earlier overhaul as was recommended by mbar.



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