

TROUBLE SHOOTING CHART – ROTANT ROTARY VANE VACUUM PUMPS

LIST OF PROBLEMS

PROBLEM	LIST OF POSSIBLE CAUSES
Pump takes too long to evacuate the system	1-2-3-4-5-6-7-8-10
Pump does not reach blank-off pressure	1-2-3-4-5-6-7-8-9-10
Pump will not start	11-12-13
Pump starts but draws very high current	14-15-16-17-18-19
Pump smokes at discharge side or expels oil droplets from the exhaust	20-21-22
Pump runs very noisy	23-24-25-26
Pump runs very hot	27-28
Pump is seized	29-30-31-32-33

	CAUSES	SOLUTIONS
1	Contaminated oil	Allow the pump to run, drain warm contaminated oil and fill with new clean oil
2	Vacuum system or piping not leak-tight	Check system and piping for possible leak
3	Inlet filter is plugged	Clean and/or replace filter element
4	Oil level is low or there is no oil	Shut off the pump, drain any oil from the pump and add new oil
5	Shaft seal leaking	Replace shaft seal ring, see repair instructions
6	Vanes are stuck in rotor or damaged	Clean pump, replace vanes if required
7	Radial clearance between rotor and cylinder no longer adequate	Disassemble and reassemble pump resetting the proper radial clearances
8	Internal parts worn or damaged	Disassemble and reassemble repairing or replacing the affected parts
9	Pump model is PVL/B series	To achieve lower blank-off pressures it is necessary to remove the outside fitted oil return line. Request details.
10	Instrumentation is out of calibration	Check the instruments (gauges) for accuracy
11	Pumps is seized	Remove fan guards; rotate pump or motor by hand. If either one is blocked disassembly is necessary to check the problem
12	Defective motor or wired wrong	Check the voltage, frequency, motor type, power consumption, rotation, wire connections, phase load consistency
13	Wrong motor connections	Check wiring connections, fuses, breakers, heaters, power supply line
14	Oil too viscous or ambient temperature is below 5°C	Change oil to lighter weight (less viscous). Change the oil back to the recommended type when ambient temperatures rise.
15	Pump run in the wrong direction	Reverse the rotation by reversing any two leads of the three phase power or follow instructions usually given on motor nameplate for single-phase motors.
16	Pump is overfilled with oil	Drain some oil until level is half way of the top sight glass
17	Oil separator filter is clogged due to burned oil or process material	Replace oil separator filter, maintain proper oil conditions. Install pump pre-filters.
18	Loose connection in motor terminal box or motor starter. Motor operates on two phases	Check motor wiring diagram for proper hook-up, tighten or replace loose connections.
19	Foreign material in pump, vanes broken, bearings seized	Disassemble pump and reassemble with new parts. Install pre-filters
20	Oil separator filter clogged or ineffective	Replace oil separator filter
21	Oil return line is plugged	Clean or replace
22	Pump is handling vapours	Water vapour will escape through the pump vent, not usually trapped by the filter.
23	Coupling insert worn	Replace rubber inserts in coupling
24	Bearing noise	Replace bearings
25	Vanes are stuck	Replace vanes or clean. Use proper oil.
26	Loose pump or motor cooling fans	Check, repair or replace the fan
27	Not enough air ventilation to pump	Clean pump and motor fins. Clean oil radiator fins if applicable, install in well ventilated area
28	Not enough oil in pump or oil is degraded	Drain and refill with non-detergent recommended oil, change oil more often
29	Pump operated without oil and vanes broke	Disassemble and replace vanes
30	Pump run in the wrong rotation for too long	Inspect vanes and replace
31	Liquid carryover into pump cylinder while running breaking the vanes	Install condensate trap in pump suction line
32	Multiple pumps on same line without automatic isolation	Install check valve or automatic operated valve in each pump suction line
33	Too much oil in pump cylinder at start-up breaking the vanes	Allow pump to discharge excessive oil before stopping or install soft starter



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