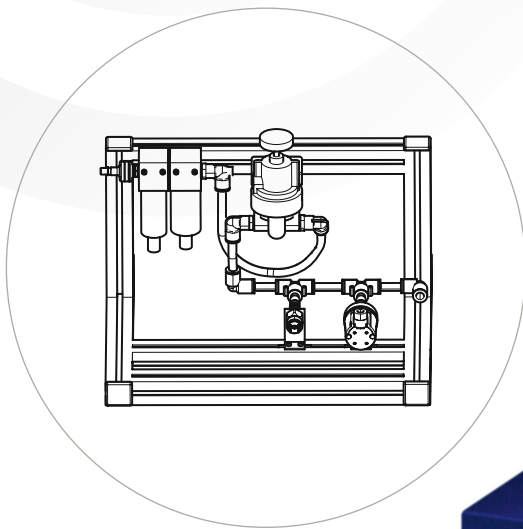


OPERATING INSTRUCTIONS - ADDITIONAL INSTRUCTIONS

VADS 250/2

EXTERNAL SEAL GAS SUPPLY

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1 GENERAL

The VADS250/2 requires clean, dry air from a compressed air supply point e.g. from bottles, local compressed air generators or from a shared compressed air network.

The supplied gas must meet the following minimum requirements:

- Temperature 5-60°C
- Pressure: 100 – 6,000mbar

2 FUNCTIONS

2.1 REGULATING PRESSURE



The pressure value is set at the factory and must not be changed otherwise the device may cease to function.

When the device is delivered, the pressure regulation valve ③ uses the ambient pressure or, optionally, the pressure in the suction chamber as its reference point and adjusts the working pressure to a higher level accordingly.

If the VADS250/2 is installed in relatively large systems, pressure can build up in the pump's outlet line.

The following conditions may cause a pressure increase there:

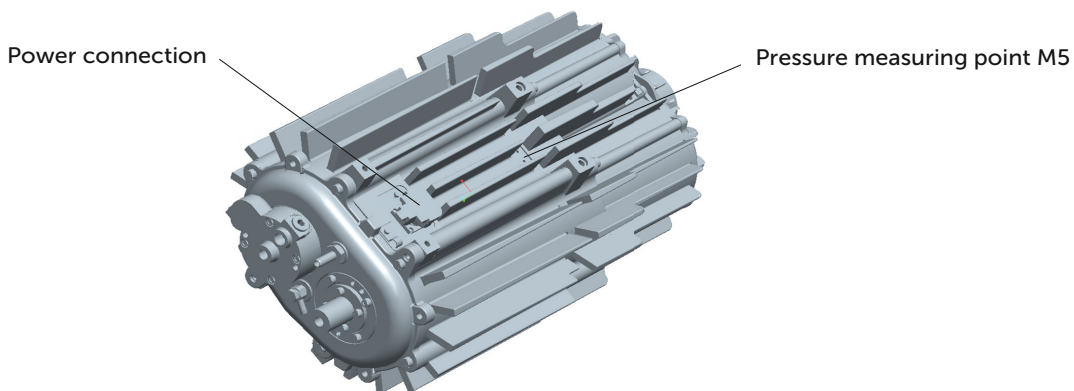
- Long, zigzag outlet line (DN50) on the pump (> 15 m, > 5 bends with 90° or more)
- Small pipe cross-sections (< 50 mm)
- More than 2 silencers
- Sluggish non-return valves (does not apply if equipped with valves from Gebr. Becker GmbH)
- Heat exchanger in the outlet
- (Foreseeable) heavy contamination or dirt, causing the outlet to clog partially or completely.

If one or more of the above-mentioned conditions exist, the pressure in the pump's suction chamber should be used as the reference pressure for regulation.

If the pressure in the suction chamber is higher than the ambient pressure, the supplied seal gas is prevented from flowing towards the pump's suction chamber. This would negate the sealing effect of the gas.

To measure the pressure, a hose line ⑦ (inner diameter 4 mm, suitable for temperatures up to 95 °C, e.g. silicone) must be connected to the pressure measuring point (M5 thread) on the top of the pump housing ⑧. From there, the line is routed to the pressure regulation valve ③ and connected to the 1/8" thread ④.

In this way, the regulation valve keeps the pressure 50 mbar above the suction chamber pressure.



2.2 FILTERING AND DRYING THE SEAL GAS

The compressed air is prepared by the air preparation unit ②.

See the main manual for further instructions (VADS 250 - 28100052100)

2.3 MONITORING PRESSURE



If there is no seal gas present, oil can pass from the gearbox towards the oilfree pump chamber, causing undesirable contamination there.

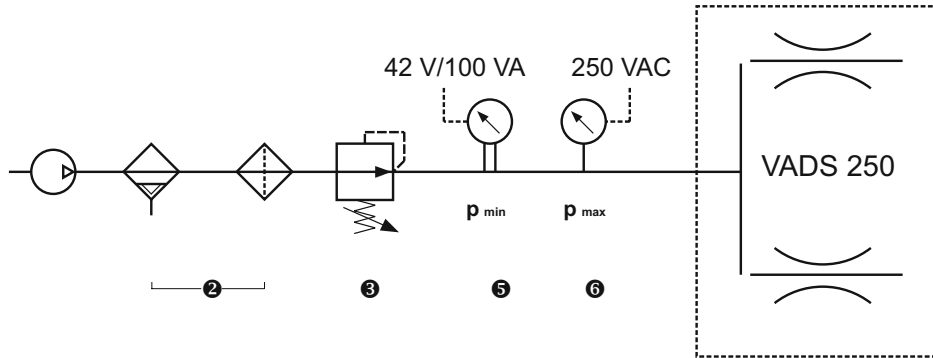
In addition, harmful particles, water or other substances in the pumped air can pass towards the motor and gearbox, causing damage to the pump there.

This is why seal gas monitoring is required.

The two sensors ⑤ ⑥ are designed as switches.

The use of the signal is variable. It is defined by the user of the pump.

Example: switch off the pump, or activate a visual or audible signal.



2.3.1 MONITORING MINIMUM PRESSURE

$p_{\min}$ (30mbar over reference pressure)

The differential pressure switch ⑤ measures the pressure of the seal gas and compares it with a second location. In the factory setting, that is the ambient pressure around the device..

If certain conditions exist in the area of the pump outlet, as described in Section 1.1, the pressure differential with the suction chamber can be measured instead..

The hose line required ⑦ must be routed from the pressure measuring point to the differential pressure switch ⑤.

The switch is permanently set. The setting cannot and must not be changed, in order to ensure the proper functioning of the system.

2.3.2 MONITORING MAXIMUM PRESSURE

$p_{\max}$ (70mbar over reference pressure)

The second differential pressure switch ⑥ is used to safeguard the device against excessive seal gas pressures and keeps the consumption of the seal gas to a minimum.

In addition, it indirectly prevents oil from escaping from the gear housing and leaking out of the device. The VADS250/2 is fitted with a complex oil mist trap, but this trap can be overloaded if the volume of seal gas is too high.

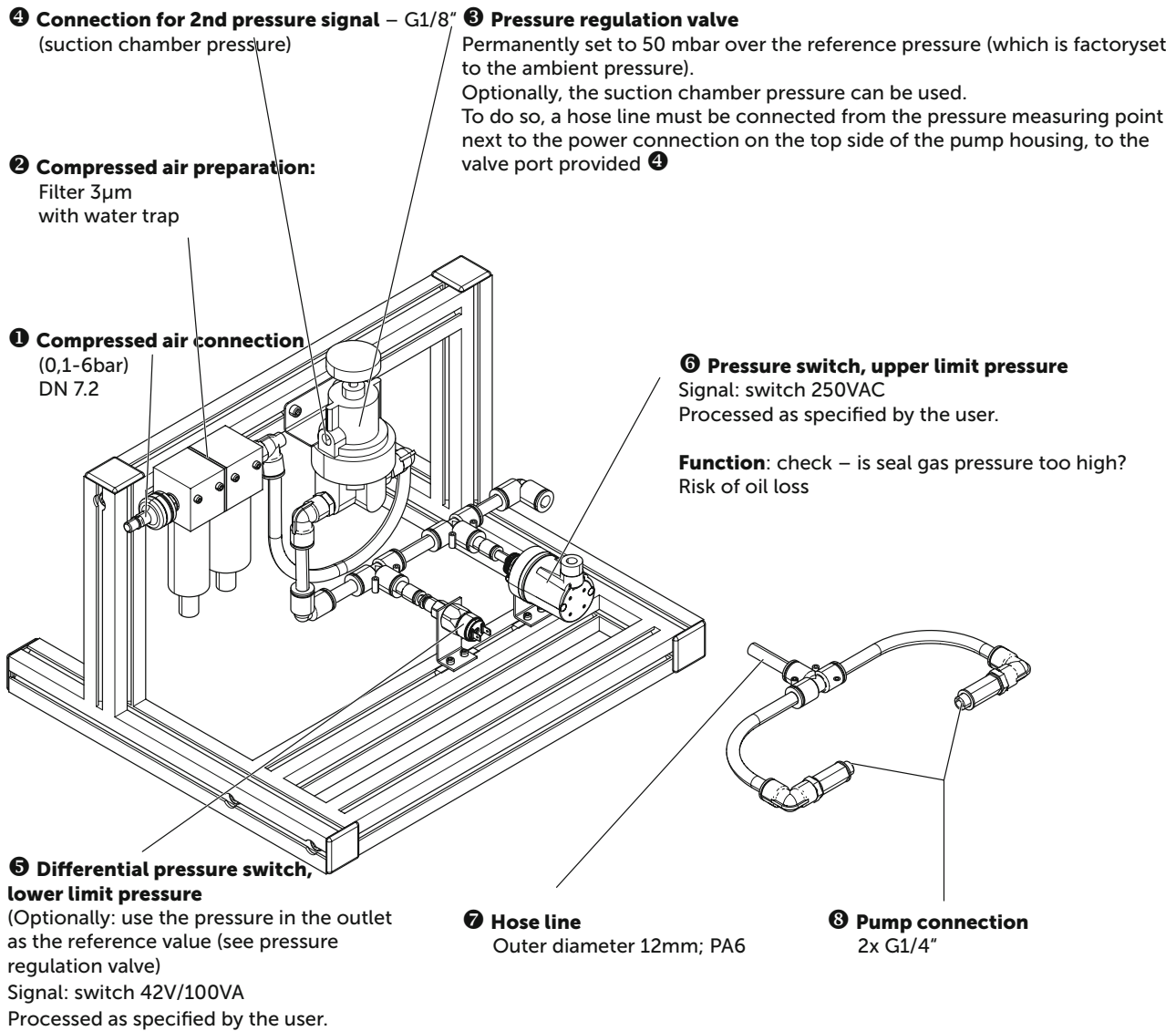
If this switch is triggered, it is usually an indication of unfavourable conditions in the outlet line.

2.4 TRANSPORTING SEAL GAS

The VADS250/2 has 2 rotating shafts and therefore also 2 seals which require the application of seal gas.

There are therefore 2 access points in the gear housing of the pump, which are sealed with plugs when the device is delivered. The threads on these connections are of size G1/4".

The external seal gas preparation unit is connected to the device via a main line ⑦, which is split into 2 gas streams by a tee connection shortly before the device ⑧. Hose lines and fittings must be able to resist continuous temperatures of at least 90 °C



Function: check – is seal gas present?

If yes:

- the vacuum pump must also be in operation.

If not (with vacuum pump in operation):

- Contaminants can enter the gearing
- Oil can get into the process



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