

6 Maintenance

Maintenance work on the device must be carried out in a cooled state.

The following section describes repair, maintenance and conversion work that can also be carried out easily by you on site, without the sample gas pump having to be sent to us.

During maintenance, remember:

- The equipment must be maintained by a professional familiar with the safety requirements and risks.
- Only perform maintenance work described in these operating and installation instructions.
- When performing maintenance of any type, observe the respective safety and operation regulations.

NOTICE



Please refer to the assembly drawings in the appendix when carrying out maintenance.

DANGER

Electrical voltage

Electrocution hazard.



- a) Disconnect the device from power supply.
- b) Make sure that the equipment cannot be reconnected to mains unintentionally.
- c) The device must be opened by trained staff only.
- d) Regard correct mains voltage.



DANGER

Toxic, corrosive gases

The measuring gas led through the equipment can be hazardous when breathing or touching it.



- a) Check tightness of the measuring system before putting it into operation.
- b) Take care that harmful gases are exhausted to a safe place.
- c) Before maintenance turn off the gas supply and make sure that it cannot be turned on unintentionally.
- d) Protect yourself during maintenance against toxic / corrosive gases. Use suitable protective equipment.



CAUTION

Tipping hazard



Equipment damage.
Secure the device against tipping, sliding and falling.

CAUTION

Gas leakage



The sample gas pump should not be dismantled under pressure.

CAUTION

Hot surface



Burning hazard
According to the product type and operation conditions, the temperature may exceed 50 °C during operation.
Depending on the conditions at the installation site it may be necessary to provide these areas with appropriate warning signs.

Depending on the composition of the sample gas, it may be necessary to replace the in- and out-let valves from time to time.

If the valves are heavily contaminated, especially after a short time, consider installing a particle filter upstream the pump. This increases the service life significantly.

The screws of the fastening ring should be re-tightened after 500 hours of operation with torque 3 Nm.

6.1 Replacing the inlet and outlet valves



First detach the screw connections.

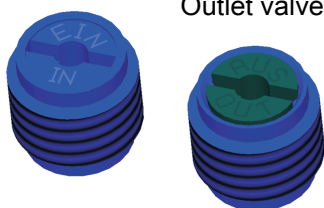
Unscrew the inlet or outlet valve with a wide slot screwdriver.

Attention: The PVDF and PVDF with bypass valve pump bodies already have PTFE gaskets installed in the gas inlets and outlets. These are also included in the valve spare parts kit. Remove the old gaskets before installing the new ones.

The inlet and outlet valves are identical. Their installation position determines the function. As shown in the image, the valves are blue on one side and black on the other. The valves are further marked “IN” or for inlet and “OUT” for outlet.

Inlet valve

Outlet valve

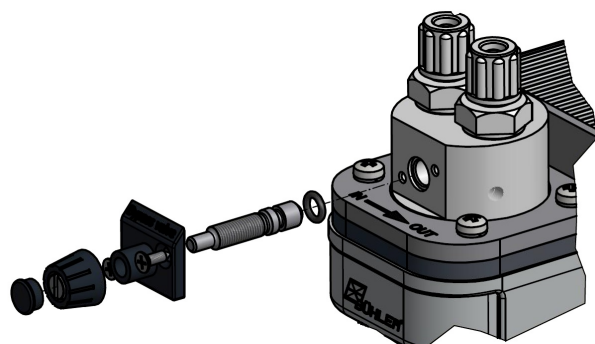


To assemble the sample gas pump, perform the steps in reverse order. When tightening the inlet and outlet valves be sure to observe the required tightening torque of max. 1 Nm. **CAUTION! Tightening the valves more will permanently deform the pump body, requiring replacement.**

When installing the screw connection, ensure the connection is tight.

6.2 Replacing the O-ring on the bypass valve (optional)

- Loosen the two screws on the valve plate and carefully remove the entire unit.
- Coat the new O-ring with suitable O-ring grease (e.g. Fluoronox S90/2) and install in the spindle.
- Carefully insert the entire unit into the pump body while turning and tighten screws.



6.3 Replacing parts inside the pump housing



First detach the screw-in connections as described in chapter „Conversion to pump body pointing down“.
Loosen the 4 Torx screws M4x18 (Tx20) and lift the pump head along with mounting ring and foam cover off the console.

6.4 Replacing the bellows



To replace the bellows carefully unscrew it from the connecting rod counter clockwise. Be sure not to lose any installed shims.
Before reinstalling the bellows be sure it is not damaged.
Reinstall hand tight in reverse order.

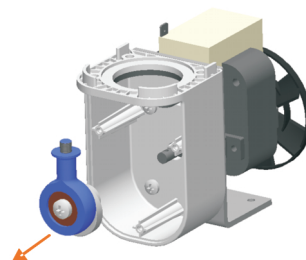
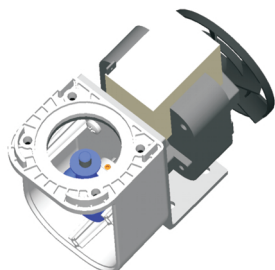
6.5 Crank gear replacement

NOTICE

Restrictions for connecting rod-eccentric replacement



The individual replacement of the eccentric, connecting rod or bearings is not allowed. Only the factory pre-assembled connecting rod-eccentric combination is suitable for replacement by the operator.



The crank gear consists of the connecting rod with ball bearing and eccentric.

After removing the bellow remove the set-screw inside the eccentric M3 using a size 1,5 setscrew wrench (or Tx6 for torx drive depending on the screw type).

The crank gear may now be removed from the motor shaft.

Before installing the replacement part remove any rust residue on the motor shaft and coat with non-resinous oil.

Reinstall the set screw with a drop of medium-strength threadlocker. When tightening the set screw, be sure it is seated in the locking hole on the shaft. Once it touches the bore, tighten the set screw 90° more.

6.6 Assembly of the sample gas pump

If the sample gas pump was removed, install in reverse order. Be sure the sealing surfaces of the below and pump head are clean and aren't scratched (even minimal grooves can cause leaks). First evenly tighten the 4 Torx screws M4x18 at 1 Nm. Then tighten the screws to 3 Nm.

CAUTION! Tighten each screw only once at 3 Nm. The bellow and pump body material (PTFE) is very weak and has high flow properties.

Check the sample gas pumps for tightness and proper function.