

MULTISAFE Double Hose-Diaphragm Process Pump *for Toxic or Explosive Fluids*

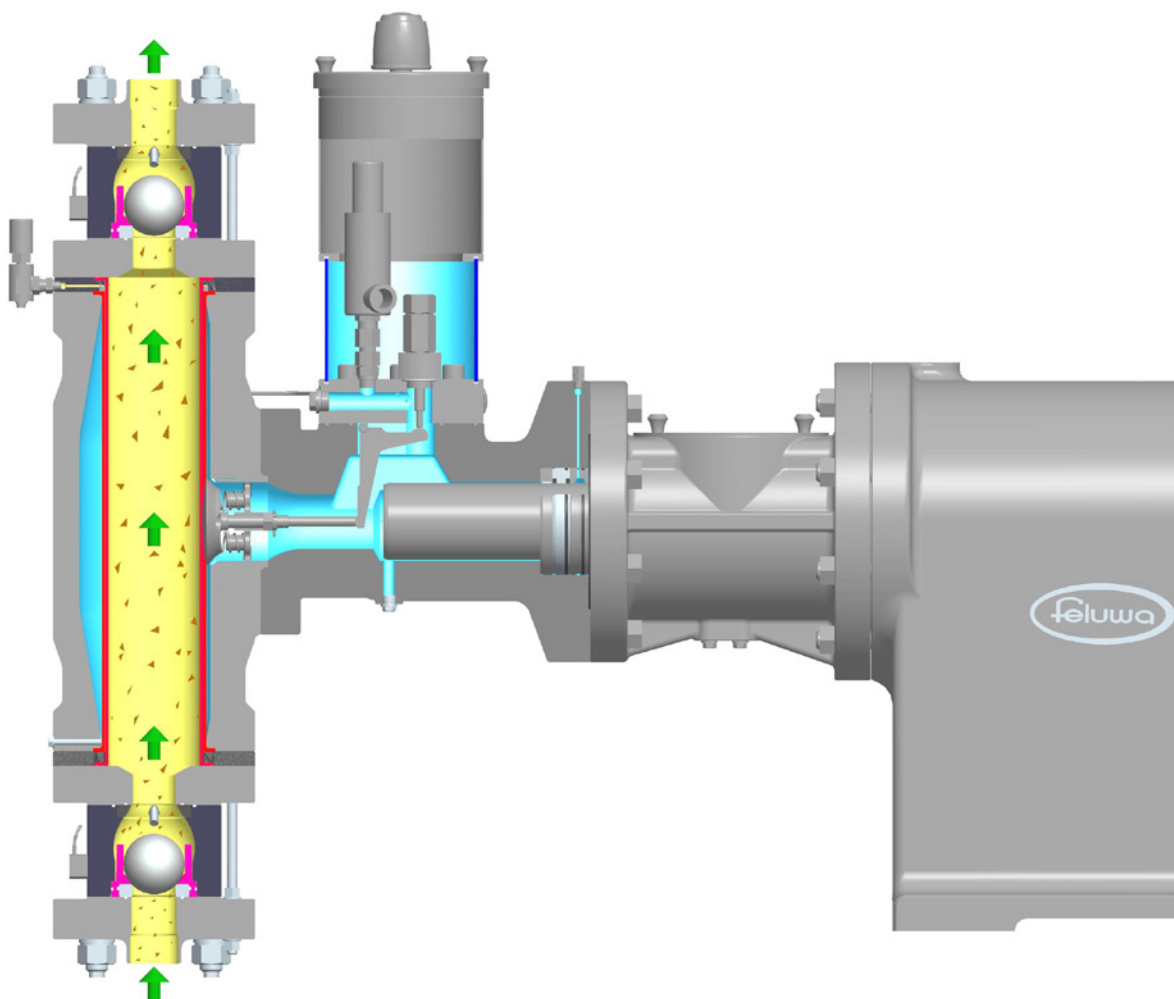


Fig. 1
MULTISAFE Double Hose-Diaphragm Process Pump

Utilisation of hermetically sealed and low-maintenance pumps is vital when pumping aggressive and toxic fluids.

Unique operating safety

Wet and drive end of MULTISAFE Hose-Diaphragm Pumps are not separated by the traditional flat diaphragm, but by means of a pair of redundant double hose-diaphragms (see front page, Fig. 1). With a maximum of linear flow lines the pump is therefore also capable of handling toxic, explosive, corrosive and erosive chemicals at minimum wear.

For extremely critical fluids the use of the Remote Head Design with separation of wet end and dry end is recommendable (see Fig. 2).

Even in the event that one of the two hose-diaphragms leaks, the conveyed fluid will neither come into contact with the pump casing nor with the dynamic seals. The second hose-diaphragm ensures that pump operation can be maintained until the next planned shutdown of the unit.

Monitoring of diaphragm clamping

Beyond condition monitoring of the hose-diaphragm, the novel monitoring unit for hose-diaphragm clamping also allows for reliable detection of even smallest leaks in the clamping area of both hose-diaphragms. Each diaphragm is individually controlled. The working principle is similar to the diagnostics of diaphragm failure. The area behind the clamping is sealed towards the outside by means of an additional ring seal and typically unpressurised (Fig. 3). A pressure sensor is applied for monitoring. In the event that conveyed fluids leaks in this area, pressure will build up and indicate the leak. This principle is likewise applicable for other static seals and allows for maximum operating safety, particularly after repair or service. Relating status signals can be transferred to client's DCS by means of the FELUWA diagnostic system.

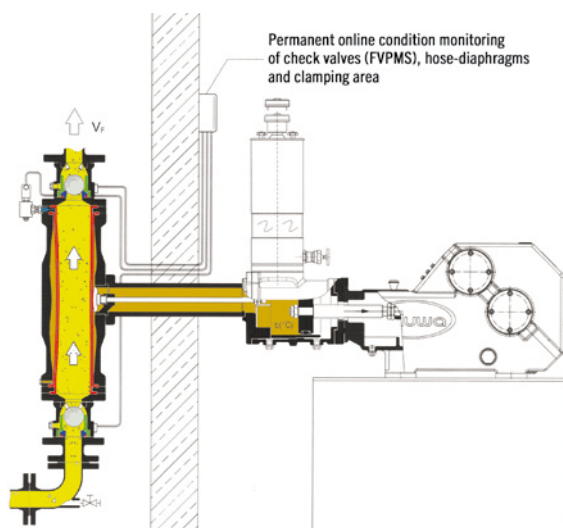


Fig. 2: Remote Head Design for toxic and explosive fluids.

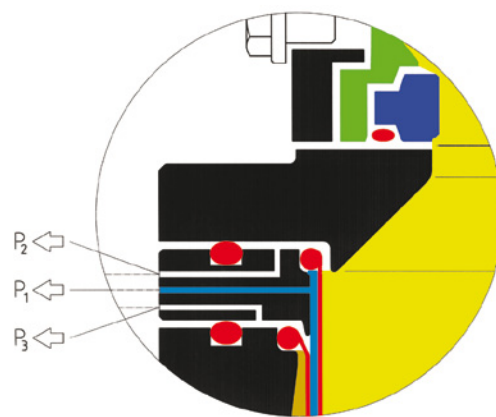


Fig. 3: Monitoring of hose-diaphragms including sealing control of the clamping areas.