

Remote Head Designs

for LEWA pumps.





LEWA remote heads. Disconnecting from the displacement system for more safety.

Certain process engineering applications require fluids to be metered, conveyed or circulated at extreme temperatures, also in conjunction with high abrasiveness or toxicity. To protect the operating personnel as well as the system, it is frequently necessary for these critical areas to be disconnected from the displacement system of the pump.

LEWA has developed a solution for such applications in which the valve head is spatially separated from the displacement system of the pump. The displacement movement is transferred by what is called "hydraulic link" (or reciprocating line). This is a liquid column contained in a connecting line. Depending on the design, this fluid can be the process fluid to be conveyed or hydraulic oil.

Such arrangements are called remote head designs. Here, the critical factor is that no exchange of fluids takes place in the hydraulic link; instead, the liquid column only oscillates back and forth.



With our augmented reality app "orange showroom", you can not only look at a 3D pump model with a remote head design from the outside – the complex interior construction and how it functions are also visualized here.

(The app is only available for Apple iPads with iOS 12.0 or higher.)

<https://apps.apple.com/de/app/orange-showroom/id1471977401>

LEWA remote heads.

The advantages at a glance.

1



Conveying extreme and hazardous fluids

If fluids with an extreme temperature, high abrasiveness or toxicity have to be metered, LEWA remote head designs are used. These disconnect the critical areas from the displacement system of the pump. The displacement movement is transferred by what is called a "hydraulic link".

2



Hermetically tight

Diaphragm pumps work without dynamic seals due to their design. This creates a hermetically tight working area. There are no spillages to the atmosphere and contamination of the fluid is impossible.

3



Maximum operational reliability

All pumps are secured against operating error and upset conditions. That means excellent system availability is achieved. A monitoring system indicates possible diaphragm damage immediately. However, the pump can still be operated for a certain time.

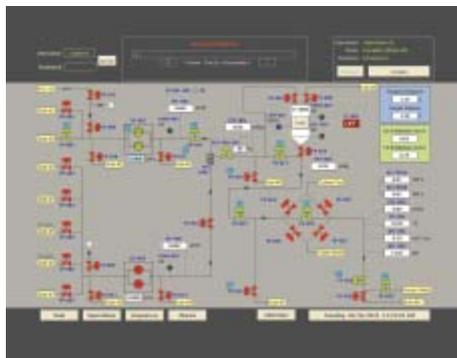
4



Internal pressure relief valve

The pressure relief valve in the hydraulic part of the diaphragm pump prevents potential overload situations during operation. This valve is individually adjustable and can be adapted to various operating situations.

5



Integration into open and closed-loop control systems

LEWA pumps can easily be incorporated into existing production systems. The output can be controlled on the motor side by a frequency inverter or on the pump side by automatic stroke adjustment.

6



Worldwide service

LEWA is a global company. Spare parts and service are quickly available throughout the world.

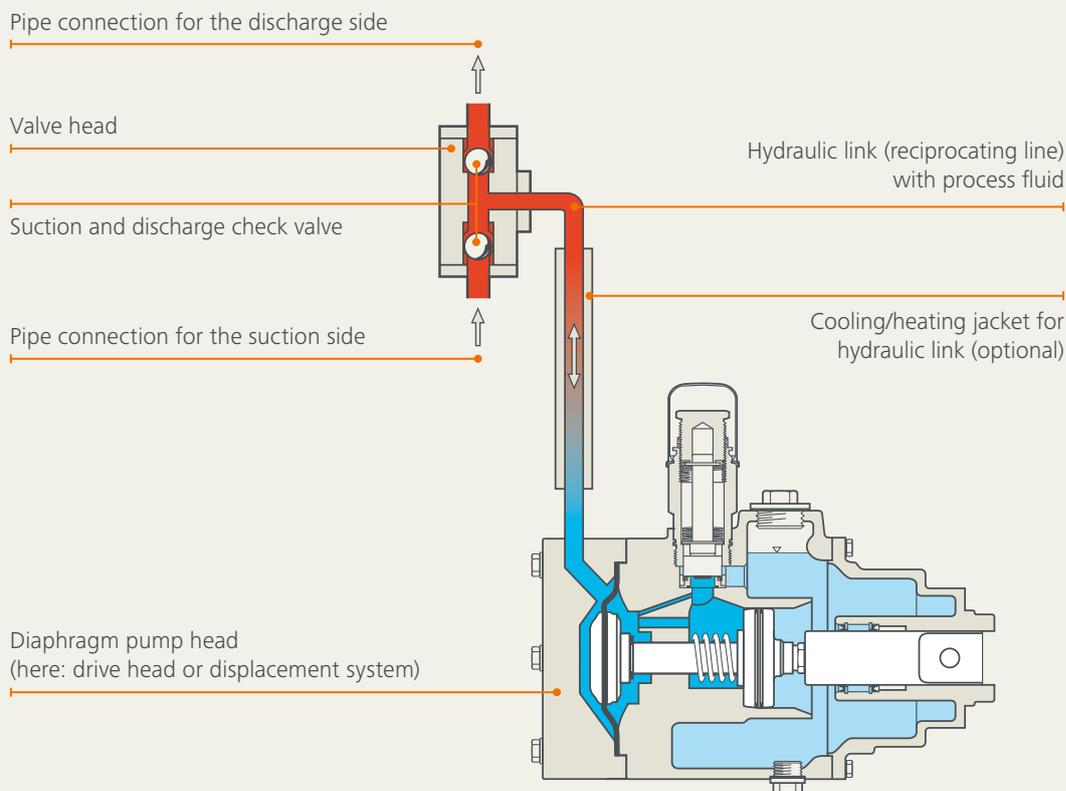
Pump heads for extreme requirements.

Possible versions of the remote head design:

- Displacement system and valve head with a packed plunger or diaphragm design
- Valve head is positioned geodetically higher or lower than the displacement system
- Hydraulic link is furnished with a cooling jacket

Remote pump head MV.

Elevated valve head for extremely high temperatures.



Technical data

Discharge pressure up to 1,200 bar

Flow rate up to 19 m³/h per pump head

Temperatures from -20 °C to +500 °C

Suitable for the following fluid properties and boundary conditions: very high temperature, toxic

Outstanding advantages

Drive head at bottom position in diaphragm design

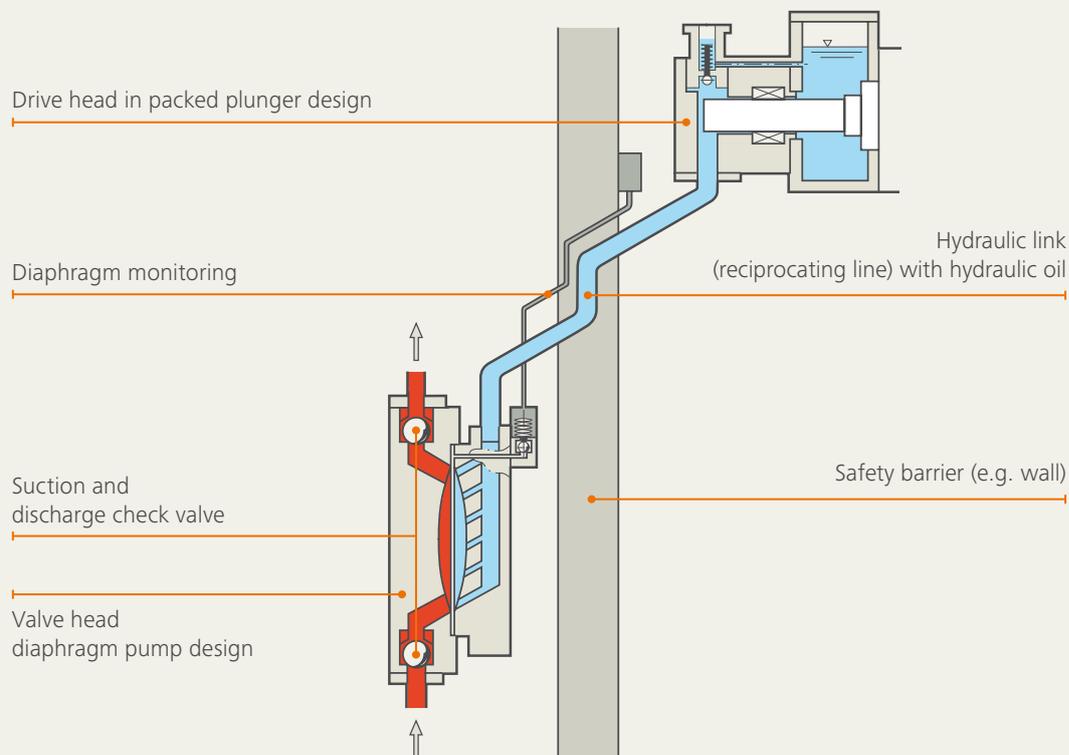
Elevated valve head

Hydraulic link with cooling jacket

Internal pressure relief valve

Remote pump head MR.

Diaphragm pump head at bottom position for extreme fluids and maximum operating reliability.



Technical data

Discharge pressure up to 1,200 bar

Flow rate up to 19 m³/h per pump head

Temperatures from -60 °C to +200 °C
(higher temperatures upon request)

Suitable for the following fluid properties
and boundary conditions: slurries, melts,
high temperature, low temperature, toxic

Outstanding advantages

Elevated drive head with packed plunger design

Diaphragm pump head at bottom position
with diaphragm rupture indication

References for remote head designs.



Industry: Petrochemicals

Application: Biodiesel,
261 °C, 90 bar, 7,000 l/h

LEWA solution:

- Remote head type MR on a
LEWA triplex G3S process diaphragm pump



Industry: Refineries
Application: Hydroconversion,
 260 °C, 16 bar, 7,100 l/h
LEWA solution:
 – Remote head type MV on a
 LEWA triplex G3G process diaphragm pump



Industry: Plastics
Application: Polymer melt
 (crystallizes at room temperature),
 220 °C, 325 bar, 1,560 l/h
LEWA solution:
 – Remote head type MR on a LEWA ecoflow LDE3
 diaphragm metering pump



Industry: Plastics
Application:
 TFE (tetrafluoroethylene),
 -55 °C, 30 bar, 1,200 l/h
LEWA solution:
 – Remote head type MR on a
 LEWA ecoflow LDE2 diaphragm metering pump



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