

Multi-layer diaphragm pumps



sera-Multi-layer diaphragm pumps

are leakproof oscillating displacement pumps – for volumetric dosing up to 500 l/h.



Application

Free-flowing chemicals with aggressive, odorous, abrasive, radioactive, flammable, viscous or toxic properties.

Advantages

- Completely leakproof
- Enhanced operating safety
- Prolonged operating life for diaphragms
- High delivery pressures
- Optimum dosing precision
- Completely safe if run dry
- High quality materials
- Capable of continuous operation with low maintenance

Ask us to submit a quotation to meet your specific requirements!

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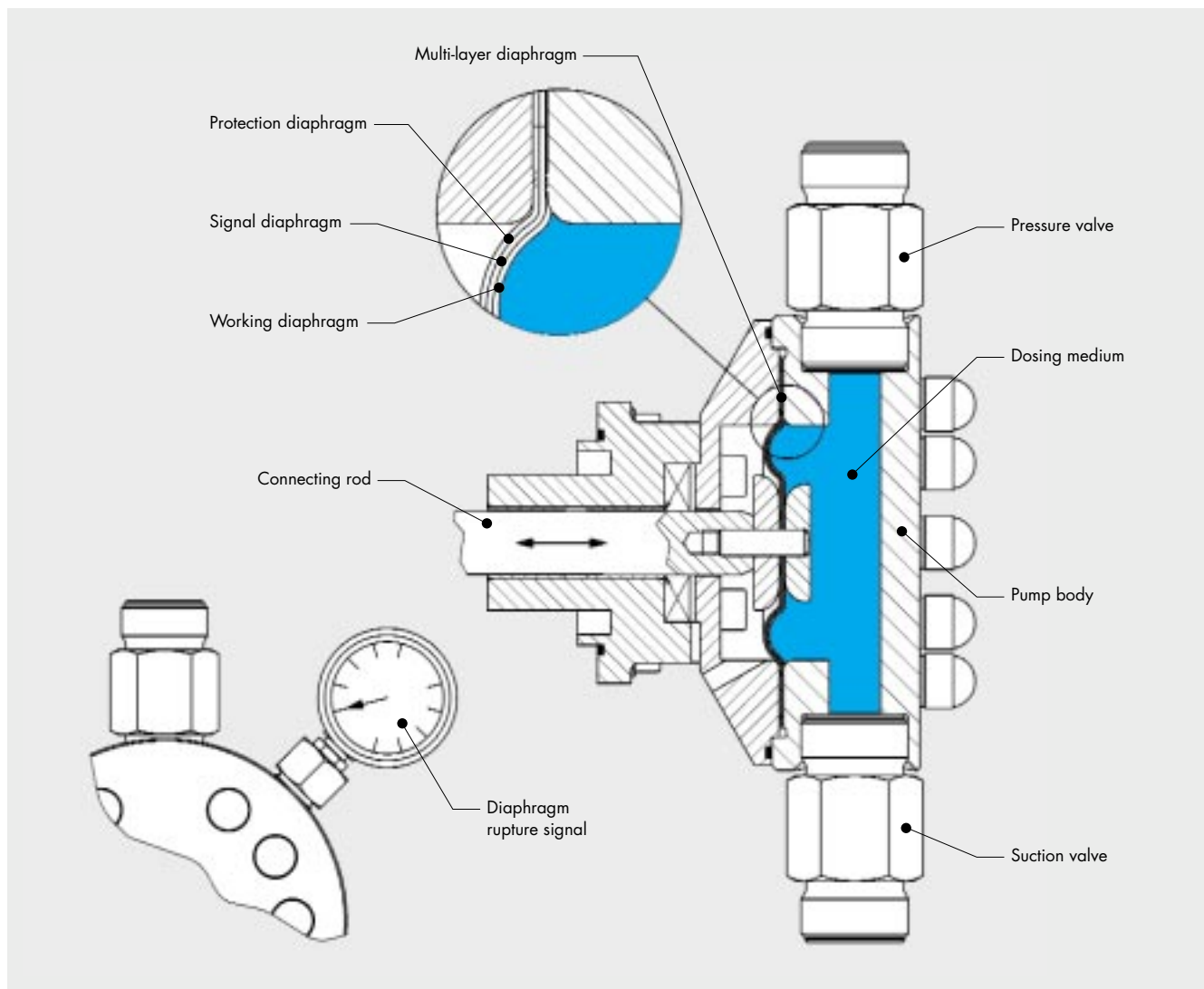
The operating principle of the multi-layer diaphragm pump is the same as that of the common diaphragm pump. The diaphragm is coupled mechanically and oscillating via a connecting rod – this way feeding the dosing medium.

By using the multi-layer diaphragm these pumps can now handle dosing tasks with higher requirements regarding safety because the diaphragm rupture signalisation (pressure switch, manometer etc.) fulfils such demands. Furthermore the lifetime of these diaphragms is much higher than the lifetime of single-layer diaphragms.

Design options

The single pump has one head – technical data according to the performance schedule.

Multi-headed or combination pumps with a single drive are reasonably priced – twin head or multi-headed pumps with each pump head sized individually according to the requirements in respect of material, size and control.



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Type	Flow capacity		Nominal stroke frequency		Permissible counter-pressure [bar]	Permissible suction head [mWC]	Inlet/Outlet size [DN]	Drive [kW]
	[l/h] with 50 Hz	[l/h] with 60 Hz	[1/min.] with 50 Hz	[1/min.] with 60 Hz				
R 409.1 – 60 ML	0 – 60	0 – 70	80	96	10	3	15	0.37
R 411.1 – 60 ML	0 – 60	0 – 70	76	92	16	3	10	0.75
R 411.1 – 75 ML	0 – 75	0 – 90	97	116	16	3	15	0.75
R 411.1 – 105 ML	0 – 105	0 – 125	76	92	15	3	15	0.75
R 409.1 – 115 ML	0 – 115	–	150	–	10	3	15	0.37
R 409.1 – 120 ML	0 – 120	0 – 145	80	96	4	3	15	0.37
R 411.1 – 135 ML	0 – 135	0 – 160	97	116	15	3	15	0.75
R 409.1 – 220 ML	0 – 220	–	150	–	4	3	15	0.37
R 411.1 – 400 ML	0 – 400	0 – 480	76	92	10	3	15	0.75
R 411.1 – 500 ML	0 – 500	0 – 600	97	116	10	3	15	0.75

The capacity of the R-types R 409.1 to R 411.1 is altered manually by adjusting the stroke length.

Whilst using the full stroke length the maximum capacities quoted can be reduced by fitting motors with lower output speeds (stroke frequency of pump). With a multi-headed pump the total pump capacity is the sum of the individual maximum pump outputs. If a combination of different pump types is required the total pump capacity depends on the stroke frequency of the combination pump.

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Materials

The high quality of the materials ensures continuous and reliable operation. We have the optimum material* for each requirement.

Pump head and valves:
PVC, PP, PVDF, 1.4571, 1.4581, Titanium, Hastelloy, PP-FRP, PVDF-FRP

Valve balls:
Glass, PTFE, 1.4401, Hastelloy

Valve seals:
EPDM, FPM, FEP-covered

Working diaphragm:
PTFE

*Please ask us for any material required but not mentioned here.

Drive

Each drive unit consists of a proven motor coupled to a stroke mechanism in a robust cast iron housing. **sera** cast iron housings can cope with even extreme operating conditions due to the thickness of the material and the surface treatment. They resist even chemical attack.

Depending on the size of the pump the stroke mechanisms are spring cam, slider crank or swinging arm-type.

Control

The capacities of the dosing pumps are constant or infinitely variable.

Manual capacity control via:

- Adjustment of stroke length
- Adjustment of stroke frequency
- Adjustment of stroke length and stroke frequency

Automatic capacity control, dependent on analogue or digital input signals via:

- Threephase motors with frequency converters
- Actuators with position controllers for adjusting the stroke length

Special designs

For special dosing problems we offer individual solutions:

Pump heads with special nominal bores, heating devices etc.

Double valve assemblies, spring loaded, with elastic seats etc.

Mounted-on stroke frequency transmitters, pneumatic and electric actuators.

Accessories

For the optimum installation of a dosing pump we can supply all the necessary accessories such as valves, pulsation dampers, injection fittings, dosing tanks, flow controllers etc. against your order.

CE

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Dosing
Feeding
Compressing



Hyxo Oy

P.O. Box 16 (Palokorvenkatu 2)
FI-04261 Kerava, Finland
Tel. +358 10 417 4500
Fax +358 10 417 4501
hyxo@hyxo.fi • www.hyxo.com

Seybert & Rahier GmbH + Co. Betriebs-KG

sera-Straße 1 · D-34376 Immenhausen
Phone + 49 56 73 99 90
Fax + 49 56 73 99 91 55
e-mail: info@sera-web.de
Internet: www.sera-web.de