

Multi-layer diaphragm pumps

R 409.2-...ML / R 410.2-...ML



The new multi-layer diaphragm pumps generation 4

- High operational safety by multi-layer diaphragm technology
- Indication of diaphragm condition by integrated diaphragm rupture monitoring (visual as standard design / electrical available as option)
- Excellent priming characteristics without additional equipment
- Type examination for ATEX-range guarantees certified safety
- Wide range of application by an extensive programme of material combinations and accessories



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Multi-layer diaphragm pumps

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.

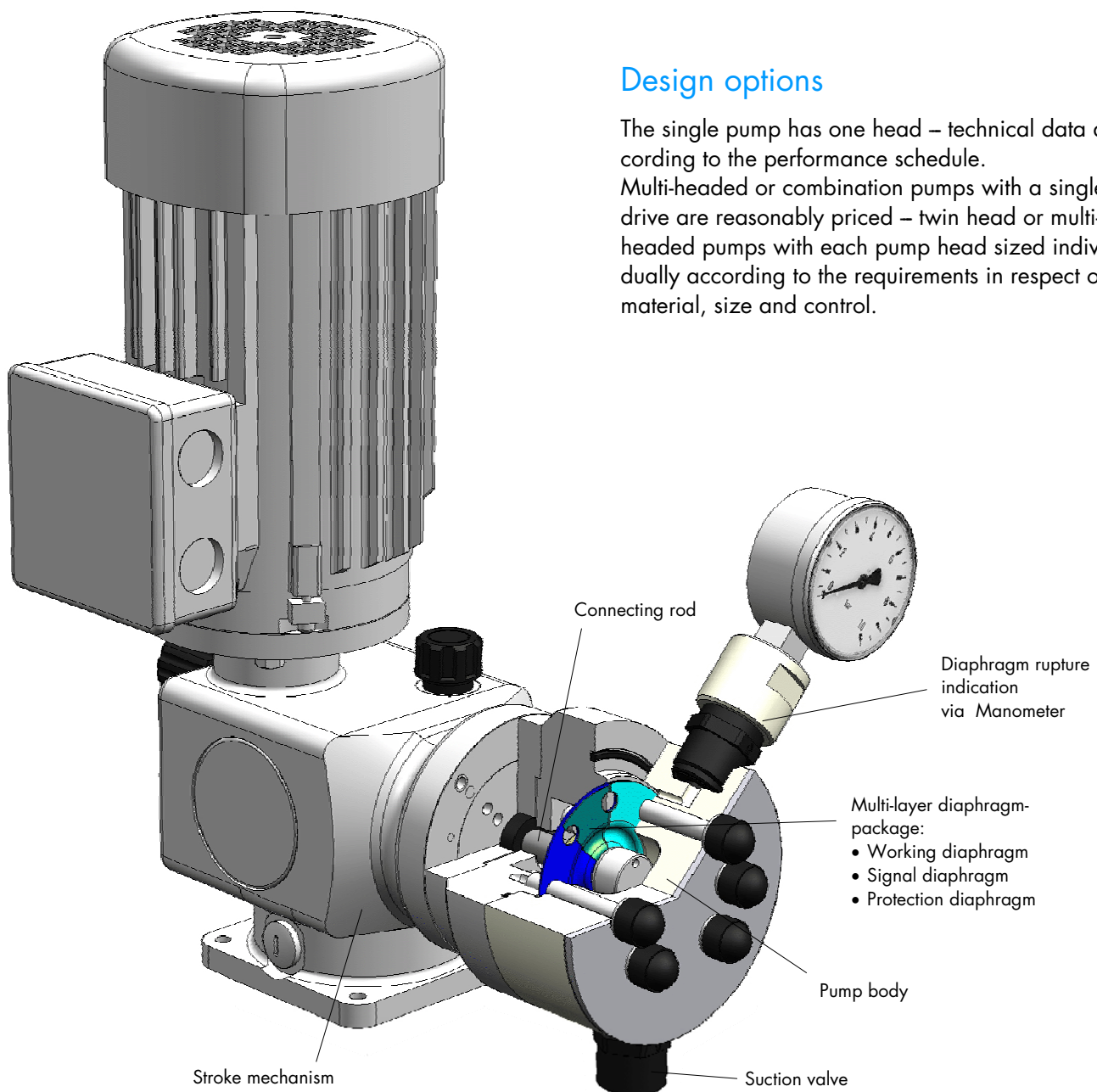
Multi-layer diaphragm

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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Technical data

Series 409.2

Type	Flow capacity		Permissible counter-pressure p_2 max. [bar]	Permissible suction-head [mWC]	Inlet-/Outlet-size DN [mm]	Drive P_M [kW]	Nominal stroke frequency	
	Q_N 50 Hz	Q_N 60 Hz					Q_N 50 Hz	Q_N 60 Hz
	[l/h]	[l/h]					[l/h]	[l/h]
R 409.2 – 011 ML	0 – 11	0 – 13,2	20	3	10	0,37	100	120
R 409.2 – 017 ML	0 – 17	0 – 20	20	3	10	0,37	150	180
R 409.2 – 030 ML	0 – 30	0 – 36	16	3	10	0,37	100	120
R 409.2 – 045 ML	0 – 45	0 – 54	16	3	10	0,37	150	180
R 409.2 – 072 ML	0 – 72	0 – 86	10	3	15	0,37	100	120
R 409.2 – 110 ML	0 – 110	0 – 132	10	3	15	0,37	150	180
R 409.2 – 150 ML	0 – 150	0 – 180	4	3	15	0,37	100	120
R 409.2 – 220 ML	0 – 220	0 – 264	4	3	15	0,37	150	180

Series 410.2

Type	Flow capacity		Permissible counter-pressure p_2 max. [bar]	Permissible suction-head [mWC]	Inlet-/Outlet-size DN [mm]	Drive P_M [kW]	Nominal stroke frequency	
	Q_N 50 Hz	Q_N 60 Hz					Q_N 50 Hz	Q_N 60 Hz
	[l/h]	[l/h]					[l/h]	[l/h]
R 410.2 – 0055 ML	0 – 55	0 – 66	16	3	10	0,75	76	92
R 410.2 – 0070 ML	0 – 70	0 – 84	16	3	15	0,75	97	116
R 410.2 – 0105 ML	0 – 105	0 – 126	15	3	15	0,75	76	92
R 410.2 – 0135 ML	0 – 135	0 – 162	15	3	15	0,75	97	116
R 410.2 – 0400 ML	0 – 400	0 – 480	10	3	15	0,75	76	92
R 410.2 – 0500 ML	0 – 500	0 – 600	10	3	15	0,75	97	116
R 410.2 – 0940 ML	0 – 950	0 – 1128	5	3	20	1,5	76	92
R 410.2 – 1200 ML	0 – 1200	–	5	3	20	1,5	97	–

* In standard design the flow capacity can be adjusted manually via the stroke length.

** Pump bodies made of plastic must not be used for pressures of more than 10 bar.

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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 (3-ply)

*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

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

- Three-phase 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, electric actuators etc.

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.



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