

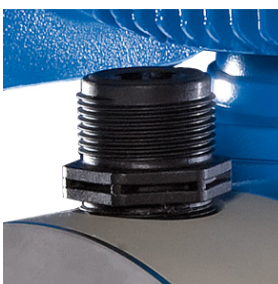
# Multi-layer diaphragm pumps

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



## The 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
- Applicable in explosion-hazardous areas by optional equipment components
- Wide range of application by an extensive programme of material combinations and accessories



# Multi-layer diaphragm pumps

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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

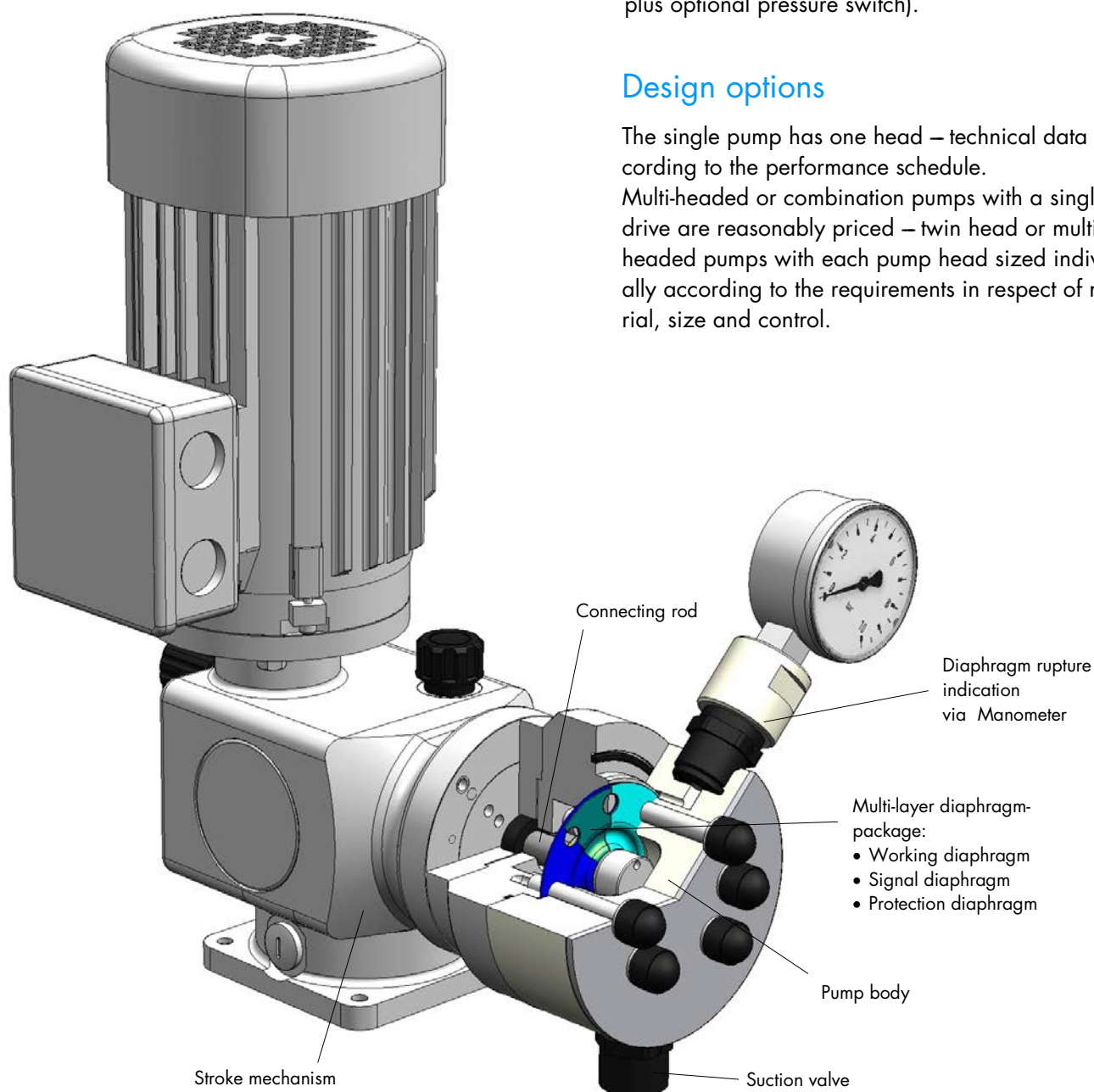
By using the multi-layer diaphragm these pumps can now handle dosing tasks with higher requirements regarding safety.

Such demands will be fulfilled by the higher lifetime of the multi-layer diaphragm in comparison to single layer diaphragms and thanks to the integrated diaphragm rupture signalization (manometer as standard plus optional pressure switch).

## 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.



# Multi-layer diaphragm pumps

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## Technical data

### Series 409.2

Type	Flow capacity		Permissible counter-pressure	Permissible suction-head	Inlet-/Outlet-size	Drive	Nominal stroke frequency	
	Q <sub>N</sub> 50 Hz	Q <sub>N</sub> 60 Hz	p <sub>2</sub> max.		DN	P <sub>M</sub>	Q <sub>N</sub> 50 Hz	Q <sub>N</sub> 60 Hz
	[l/h]	[l/h]	[bar]	[mWC]	[mm]	[kW]	[l/h]	[l/h]
R 409.2 – 11 ML	0 – 11	0 – 13,2	20	3	10	0,37	100	120
R 409.2 – 17 ML	0 – 17	0 – 20	20	3	10	0,37	150	180
R 409.2 – 30 ML	0 – 30	0 – 36	16	3	10	0,37	100	120
R 409.2 – 45 ML	0 – 45	0 – 54	16	3	10	0,37	150	180
R 409.2 – 72 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	Permissible suction-head	Inlet-/Outlet-size	Drive	Nominal stroke frequency	
	Q <sub>N</sub> 50 Hz	Q <sub>N</sub> 60 Hz	p <sub>2</sub> max.		DN	P <sub>M</sub>	Q <sub>N</sub> 50 Hz	Q <sub>N</sub> 60 Hz
	[l/h]	[l/h]	[bar]	[mWC]	[mm]	[kW]	[l/h]	[l/h]
R 410.2 – 55 ML	0 – 55	0 – 66	16	3	10	0,75	76	92
R 410.2 – 70 ML	0 – 70	0 – 84	16	3	15	0,75	97	116
R 410.2 – 105 ML	0 – 105	0 – 126	15	3	15	0,75	76	92
R 410.2 – 135 ML	0 – 135	0 – 162	15	3	15	0,75	97	116
R 410.2 – 400 ML	0 – 400	0 – 480	10	3	15	0,75	76	92
R 410.2 – 500 ML	0 – 500	0 – 600	10	3	15	0,75	97	116
R 410.2 – 940 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.

Local sera - Representative:


### sera GmbH

sera-Straße 1  
34376 Immenhausen  
Germany  
Tel. +49 5673 999-00  
Fax +49 5673 999-01  
www.sera-web.com  
info@sera-web.com