

### sera - Diaphragm pumps

are leakproof oscillating displacement pumps – for volumetric dosing up to 4000 l/h.



### Application

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

### **Advantages**

- Leakproof
- Highest dosing accuracy
- 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!



### 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 or multi-headed pumps with each pump head sized individually according to the requirements in respect of material, size and control.

### Single diaphragm pump

The mechanically coupled working diaphragm acts directly upon the chemical.

### Double diaphragm pump

In order to protect the working diaphragm from chemical attack and for additional safety an intermediate diaphragm is fitted. The action of the working diaphragm is transferred hydromechanically (via a buffer fluid) to the intermediate diaphragm.

This construction principle is well-known today – but originally a **sera** - patent !





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$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	160
R $408.1 7,5 e$ $0 7.5 e$ $0 156 e$ $0 0.09 e$ $156 e$ R $408.1 13 e$ $0 13 e$ $0 15.5 e$ $3$ $10$ $0.09 e$ $80 e$ R $408.1 27 e$ $0 0 0 0 0 0 0 0 0 0 0 0 0 0-$	96
R $408.1  13 e$ $0  13$ $0  15.5$ $6$ $3$ $10$ $0.09$ $80$ R $408.1  13$ $0  15.5$ $6$ $3$ $10$ $0.09$ $80$ R $408.1  27 e$ $0  27$ $0  27$ $6$ $3$ $10$ $0.09$ $156$	160
R 408.1 - 27e P 408.1 - 27 0 - 27 6 3 10 0.09 156	96
	160
R 409.1- 18 e 0- 18 0- 21.5 10 3 10 0.18 100	120
R 409.1- 27 e 0-27 0-27 10 3 10 0.18 160	160
R 409.1- 50 e 0- 50 0- 60 10 3 10 0.18 100 R 409.1- 50	120
R 409.1- 75 0- 75 0- 75 10 3 15 0.18 160	160
R 409.1- 90 e 0- 90 0- 108 8 3 15 0.37 100 R 409.1- 90 0- 108 8 3 15 0.37 100	120
R 409.1-115 0-115 0-138 4 3 15 0.18 100 R 409.1-115 R 409.1-150 c	120
R 409.1-150 e 0-150 0-150 8 3 15 0.37 160 R 409.1-150 P 409.1-190.c	160
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R 409.1-260 0-240 0-285 3 3 15 0.37 100	120
R 411.1-280 e 0-280 0-260 8 5 15 0.75 97	92
R 409.1- 360 e R 409.1- 360 0 - 330 - 3 3 15 0.37 134	-
R 412 Soe 0 - 500 0 - 500 3 3 15 0.37 85	85
R 411.1- 550 e 0- 550 0- 520 6 5 15 0.75 97	92
R 411.1-810e 0-810 0-970 5 3 20 0.75 76	92
R 411.1–1100 e 0 – 1100 0 – 1320 5 3 25 1.1 76	92
R 411.1–1400 e 0–1400 – 5 3 25 1.1 97	-
M 414 2000 2000 3 3 32 0.75 50	50
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The capacity of the R-types R 408.1 to R 411.1 is altered manually by adjusting the stroke length. The capacity of the pumps with fixed stroke length R 414 and R 415 is adjusted by altering the stroke frequency via a handwheel on the drive motor. (An "R" in the type designation means "adjustable".) With "M-types" the capacity is constant (not adjustable). 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.



### **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, titanium, rubber-coated steel, PP-FRP, PVDF-FRP

Valve balls: Glass, PTFE, 1.4401, rubber-coated steel

Valve seals: EPDM, FPM, FEP-covered, PTFE-covered, Sil C-8200

Working diaphragm: CR, EPDM, FPM, PTFE-faced

Intermediate diaphragm: CSM, PTFE, FPM, PTFE-faced

\*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 armtype.

#### 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.

Flushing devices for intermittent and final cleaning to prevent sedimentation in the pump body. Stroke transmitting device, diaphragm rupture alarm etc.

#### Accessories

All accessories required for the optimum installation of dosing pumps, such as valves, pulsation dampers, dosing valves, dosing tanks, flow controllers, etc. can be ordered at **sera**.

### CE

Sera Dosing Feeding Compressing

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