

Multi-layer diaphragm pumps

Flow capacity 11 l/h ... 220 l/h

Admiss. counterpressure up to 20 bar



R409.2-...ML



409.2-...ML in survey

- Compact design
- Multi-layer diaphragm technology
- Safe to run dry
- Leakage-free
- Low maintenance
- User-friendly
- High dosing accuracy
- Integrable into automatic processes
- Manual stroke length adjustment
- Robust metallic stroke mechanism housing

Infobox

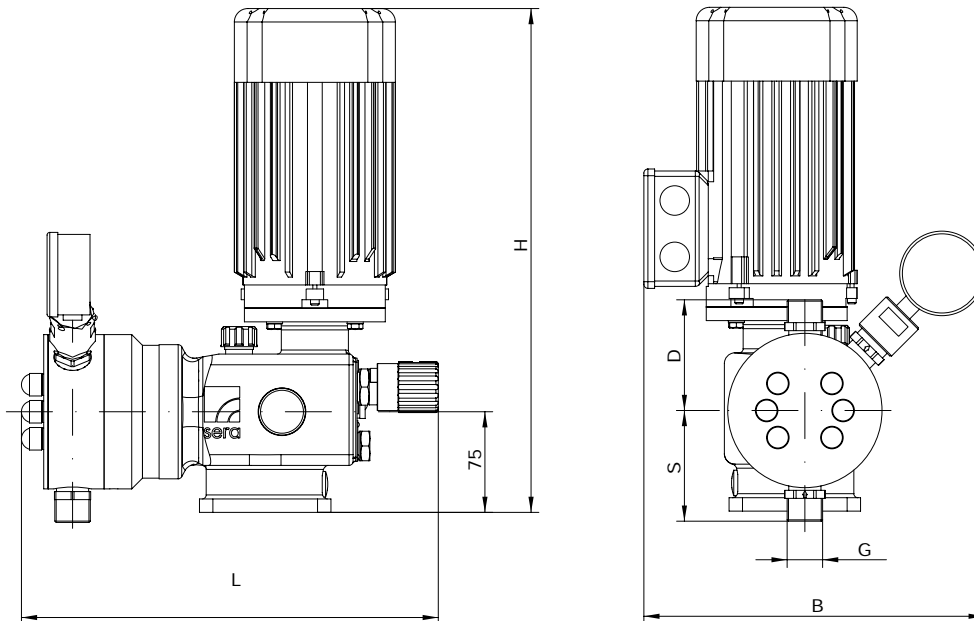
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Technical data

Type	Nominal capacity l/h		Nominal stroke frequency 1/min		Admiss. counter-pressure bar	Admiss. pressure at pump inlet bar	Max. suction height mWC	Inlet/Outlet nominal width DN	Max. stroke length mm	rated motor power kW
	50 Hz	60 Hz	50 Hz	60 Hz						
R409.2-11ML	0 - 11	0 - 13,2	100	120	20	-0,3 / 0	3	10	4	0,37
R409.2-17ML	0 - 17	0 - 20	150	180	20	-0,3 / 0	3	10	4	0,37
R409.2-30ML	0 - 30	0 - 36	100	120	16	-0,3 / 0	3	10	6	0,37
R409.2-45ML	0 - 45	0 - 54	150	180	16	-0,3 / 0	3	10	6	0,37
R409.2-72ML	0 - 72	0 - 86	100	120	10	-0,3 / 0	3	15	8	0,37
R409.2-110ML	0 - 110	0 - 132	150	180	10	-0,3 / 0	3	15	8	0,37
R409.2-150ML	0 - 150	0 - 180	100	120	4	-0,3 / 0	3	15	10	0,37
R409.2-220ML	0 - 220	0 - 264	150	180	4	-0,3 / 0	3	15	10	0,37

Note: The admissible counterpressure is 10 bar or lower when plastic pump bodies are used.

Dimensional drawing



Dimensional chart

All indications in mm

Type	G	S	D	L	B	H	Weight (kg)
R409.2-11ML	G 3/4	83	83	321	254	376	12,5
R409.2-17ML	G 3/4	83	83	321	254	376	12,5
R409.2-30ML	G 3/4	90	90	319	258	376	13,0
R409.2-45ML	G 3/4	90	90	319	258	376	13,0
R409.2-72ML	G 3/4	94	94	324	261	376	13,5
R409.2-110ML	G 3/4	94	94	324	261	376	13,5
R409.2-150ML	G 1 1/4	127	127	341	275	376	14,5
R409.2-220ML	G 1 1/4	127	127	341	275	376	14,5

■ Indication of weight for basic design acc. to order information

Order information

Basic design

R409.2-11ML up to R409.2-45ML

- Pump body PP
- Double valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE
- optical diaphragm-rupture indication with manometer

R409.2-72ML up to R409.2-220ML

- Pump body PP
- Single valve PP-FRP
- Valve balls Glass
- Valve seals FPM
- Working diaphragm PTFE
- optical diaphragm-rupture indication with manometer



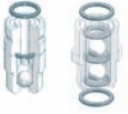


Motor:

- 220-240/380-420 V +/- 5% threephase, 50/60 Hz, IP 55, insul. cl. F

Further options and accessories

- Connection pieces see chapter 4
- Product documentation see chapter 5

Type	Basic design	x
R409.2-11ML	16013040	
R409.2-17ML	16013041	
R409.2-30ML	16013042	
R409.2-45ML	16013043	
R409.2-72ML	16013044	
R409.2-110ML	16013045	
R409.2-150ML	16013046	
R409.2-220ML	16013047	

Options/Accessories			R409.2-11ML R409.2-17ML	x	R409.2-30ML R409.2-45ML	x	R409.1-72ML R409.2-110ML	x	R409.2-150ML R409.2-220ML	x
Pump body and valves 	PP	double valve PP-FRP	●		●		-		-	
		single valve PP-FRP	-		-		●		●	
	PVC-U	single valve PVC-U	-		▲		▲		▲	
		chamber valve (double valve) PVC-U	▲		-		-		-	
	PVDF	double valve PVDF-FRP	⊙		▲		-		-	
		single valve PVDF-FRP	-		-		▲		▲	
	1.4571	single valve 1.4571/1.4581	-		-		-		▲	
		double valve 1.4571/1.4581	▲		▲		▲		-	
Valve balls 	Glass	single valve	-		○		●		●	
		double valve	●		●		-		-	
	1.4401	single valve PVC-U	-		○		○		▲	
		single valve	-		○		○		▲	
	PTFE	double valve	○		○		○		-	
		single valve	-		▲		▲		▲	
double valve	▲		▲		▲		-			
Valve seals 	FPM	single valve	-		○		●		●	
		double valve	●		●		●		-	
	EPDM	single valve	-		○		○		○	
		double valve	○		○		○		-	
FEP-cov.	single valve	-		▲		▲		▲		
	double valve	▲		▲		▲		-		
Diaphragm rupture monitoring 	optical diaphragm rupture indicator with manometer		●		●		●		●	
	Pressure switch IP 65		▲		▲		▲		▲	
	Pressure switch II2G EExd IIC T5 or T6 acc. to ATEX95		▲		▲		▲		▲	
Stroke length adjustment 	with position indicator		▲		▲		▲		▲	

● = basic design ▲ = with add. price ○ = without add. price ⊙ = on request - = not available Art.-No. = available in basic design/accessories

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R409.2-72ML up to R409.2-220ML

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Motor:


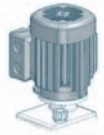

- 220-240/380-420 V +/- 5% threephase, 50/60 Hz, IP 55, insul. cl. F

Further options and accessories

- Connection pieces see chapter 4
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R409.2-110ML	16013045	
R409.2-150ML	16013046	
R409.2-220ML	16013047	

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Options/Accessories		R409.2-11ML	R409.2-30ML	R409.1-72ML	R409.2-150ML
		R409.2-17ML x	R409.2-45ML x	R409.2-110ML x	R409.2-220ML x
Stroke frequency monitoring 	Inductive contact				
	10-60 V DC, three-wire, PNP	▲	▲	▲	▲
	Namur execution, II2G EExia IICT6 acc. to ATEX95	▲	▲	▲	▲
Drive motor 	Special voltage	▲	▲	▲	▲
	Enclosure IP 65	▲	▲	▲	▲
	Protective roof for the fan of the drive	▲	▲	▲	▲
	integrated posistor (3 pcs.) insul. cl. F	▲	▲	▲	▲
	VIK-design	▲	▲	▲	▲
	II2G EExe IIT4 (acc. to ATEX95)	▲	▲	▲	▲
	II2G EExde IICT4 (acc. to ATEX95)	▲	▲	▲	▲
	Single phase AC 230V with capacitor	▲	▲	▲	▲
	Driver for converter operation incl. integrated posistor, 5-50/60Hz	▲	▲	▲	▲
Driver for converter operation II2G EExde IICT4, 5-50/60 Hz acc. ATEX 95, incl. integrated posistor	▲	▲	▲	▲	
Stroke length adjustment electrical 	Actuator N C1-BA 230 V, +/- 10%, 50/60 Hz, 128s/10 U, 1,5 Nm incl. mounting plate for actuator	▲	▲	▲	▲
	Electronic positioning controller PMR3 input signal 0/4-20 mA incl. feedback signal 0/4-20 mA (only in N C1-BA integrated)	▲	▲	▲	▲
	Actuator D30D-10-Ex (II2G EExde IICT4) acc. to ATEX 95, 400 V, 50 Hz, 10 U/min, incl. mounting-kit for actuator and base plate	▲	▲	▲	▲
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R409.2-72ML up to R409.2-220ML

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- Single valve PP-FRP
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- Working diaphragm PTFE
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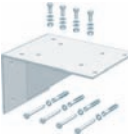
Motor:

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R409.2-220ML	16013047	

Options/Accessories		R409.2-11ML R409.2-17ML x	R409.2-30ML R409.2-45ML x	R409.1-72ML R409.2-110ML x	R409.2-150ML R409.2-220ML x
Stroke frequency adjustment electrical 	Frequency converter series 8200 Motec mounted-on, input 4-20mA				
	Single-phase 230 V, 50/60 Hz	0,37 kW	▲	▲	▲
	Three-phase 320-550 V, +/- 0%, 50/60 Hz	0,37 kW	▲	▲	▲
	Switch-potentiometer for manuell stroke frequency adjustment and to switch on the pump motor (External control of the frequency converter with mounted switch potentiometer unit is not possible)		▲	▲	▲
	Service module hand terminal and keypad incl. 2,5m connection cable	▲	▲	▲	▲
Stroke frequency adjustment electrical 	Frequency converter series 8200 Vector input 4-20mA, incl. Keypad (for integration into control cabinet)				
	Single-phase 230 V, 50/60 Hz	0,37 kW	90017522	90017522	90017522
	Three-phase 320-550 V, +/- 0%, 50/60 Hz	0,55 kW	90017526	90017526	90017526
Console 	for wall mounting incl. fixing screws	1.4301	90023875	90023875	90023875
	PP		90023848	90023848	90023848
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Multi-layer diaphragm pumps

Flow capacity 11 l/h ... 220 l/h

Admiss. counterpressure up to 20 bar



R409.2-...ML

Fittings for suction side of dosing pumps		R409.2- 11ML up to R409.2-17ML		R409.2-30ML up to R409.2-45ML		R409.2-72ML up to R409.2-110ML		R409.2-150ML		R409.2-220ML	
		Type	P.	Type	P.	Type	P.	Type	P.	Type	P.
Suction lance	with level switch 1-stage	SL-11.1	3.34	SL-02	3.36	SL-02	3.36	SL-02	3.36	S-04	3.40
		–		S-03	3.38	S-03	3.38	S-03	3.38	⊗	
	without level switch	SL-12.1	3.34	SL-02	3.36	SL-02	3.36	SL-02	3.36	⊗	
		S-01	3.46	S-01	3.46	S-01	3.46	S-01	3.46	S-01	3.46
	with level switch 2-stage	770.2	3.76	770.2	3.76	770.2	3.76	770.2	3.76	770.2	3.76
Suction aid / Siphon vessel	PVC-transparent	792.1	3.78	793.1	3.78	793.1	3.78	793.1	3.78	794.1	3.78
Calibration Pot	PVC-U										
Foot valve	PVC-U	731	3.82	731	3.82	732.2	3.80	732.2	3.80	732.2	3.80
	PP / PVDF	–		–		732	3.82	732	3.82	732	3.82
	1.4571	731	3.82	731	3.82	732	3.82	732	3.82	732	3.82
	PP-FRP / PVDF-FRP	781.1	3.86	781.1	3.86	⊗		⊗		783.1	3.86
Line strainer	PVC-U	751.1	3.88	751.1	3.88	751.1	3.88	751.1	3.88	⊗	
	PVC-U / PP / PVDF	752.1	3.88	752.1	3.88	752.1	3.88	752.1	3.88	752.1	3.88
	1.4408	752	3.90	752	3.90	752	3.90	752	3.90	752	3.90
Float valve	PVC-U	871	3.92	871	3.92	871	3.92	871	3.92	872	3.92
Pulsation damper without separating diaphragm	PVC-U / PP	702.1	3.14	702.1	3.14	702.1	3.14	702.1	3.14	702.1	3.14
	1.4571	⊗		⊗		⊗		⊗		⊗	

Fittings for pressure side of dosing pumps		R409.2- 11ML up to R409.2-17ML		R409.2-30ML up to R409.2-45ML		R409.2-72ML up to R409.2-110ML		R409.2-150ML		R409.2-220ML	
		Type	P.	Type	P.	Type	P.	Type	P.	Type	P.
Diaphragm-type relief valve		620.10	3.4	620.10	3.4	622.10	3.4	622.10	3.4	622.10	3.4
Diaphragm-type pressure keeping valve		620.D	3.8	620.D	3.8	622.D	3.8	622.D	3.8	622.D	3.8
Multi-function valve	4 bar opening pressure	MFV 05004	3.10	–		–		–		–	
	6 bar opening pressure	MFV 05006	3.10	–		–		–		–	
	10 bar opening pressure	MFV 05010	3.10	–		–		–		–	
Pulsation damper without separating diaphragm	PVC-U / PP	702.1	3.14	702.1	3.14	702.1	3.14	702.1	3.14	702.1	3.14
	1.4571	⊗		⊗		⊗		⊗		⊗	
Diaphragm-pulsation damper with PTFE/PTFE-faced diaphragm	PVC-U / PP / PVDF	720.1	3.22	721.2	3.22	722.1	3.22	722.1	3.22	722.1	3.22
	1.4571	721.1	3.26	721.1	3.26	722.1	3.26	722.1	3.26	722.1	3.26
Diaphragm-pulsation damper with Elastomer-diaphragm	1.4571	810.1-0,16/180	3.28	810.1-0,16/180	3.28	810.1-0,32/160	3.28	810.1-0,32/160	3.28	810.1-0,75/140	3.28
Check valve	PVC-U	661.2	3.50	661.2	3.50	661.2	3.50	⊗		⊗	
	PP-FRP / PVDF-FRP	661.2	3.50	661.2	3.50	661.2	3.50	663.2	3.50	663.2	3.50
	1.4571	661.2	3.50	661.2	3.50	661.2	3.50	662.2	3.50	662.2	3.50
Dosing valve	PVC-U	691.1	3.54	691.1	3.54	691.1	3.54	⊗		⊗	
	PVC-U / PP / PVDF	681.1	3.58	681.1	3.58	681.1	3.58	682.1	3.58	682.1	3.58
	PP-FRP / PVDF-FRP	691.1	3.54	691.1	3.54	691.1	3.54	693.1	3.54	693.1	3.54
	1.4571	691.1	3.54	691.1	3.54	691.1	3.54	692.1	3.54	692.1	3.54
Injection fitting	PVC-U / PP / PVDF	⊗		⊗		⊗		⊗		⊗	

⊗ = on request – = not available

The above allocation considers the fittings which have to be used at least regarding their nominal width in order to ensure the safe and trouble-free operation of the respective pumps when feeding liquids which are similar to water.

Absolutely note the max. admissible operating pressure of the fittings.

The use of fittings of a bigger nominal width is unproblematically possible in most cases.

When choosing the fittings note the installation instructions for dosing pumps or confer with **sera**.