

# PRODUCT CATALOGUE DOSING TECHNOLOGY



# PRODUCT CATALOGUE 2024



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From planning, via commissioning of systems, through to a fast and straightforward worldwide device replacement service, **sera** offers support in all project phases. Our aim is to ensure that our customers continue to achieve the production results they are looking for with our systems, dosing units and pumps after commissioning is complete. High availability of the system with minimal system downtimes is essential to ensure this. To this end, **sera** offers a wide range of services, from technical support, via a spare parts service, to a repair service.

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### Servicing & maintenance service

**sera** systems are serviced and maintained by experienced service technicians in order to avoid shutdowns. We offer an extensive range of service contracts, tailored to customer requirements. Early detection of possible causes of faults allows unexpected system shutdowns to be eliminated almost completely.

### Technical support

Whether you have questions relating to **sera** products, need help with system design or a solution for a specific requirement – our experienced, well-qualified **sera** service team will be happy to help.

### Customer training

**sera** training courses are held at **sera's** headquarters in Immenhausen, in our sales and service unit in Passau or, on request, on our customers' premises, and can be customer or application-based. You can find specific information about the current course dates in the Service section of our website.

### Assembly & commissioning

Our trained **sera** service technicians are available for assembly and commissioning work. On request, the assembly can also be carried out by the customer's technical personnel under the guidance of a **sera** service technician. In this way, the customer's technical staff become familiar with handling the new system in a very short time.

### Spare parts & repair service

Quality, ease of servicing and durability can be taken for granted with our products. But if a spare or replacement part is needed, our spare parts service can deliver the part required quickly, as we have the majority of our spare parts in stock. If the entire pump is defective, it can either be sent for repair or a qualified **sera** service technician will come to you and repair it on site.

### Servicing of pumps

Our experienced, well-qualified **sera** service team will be happy to help.



[www.sera-web.com](http://www.sera-web.com)

 sera

# DOSING SYSTEMS

# EXAMPLES OF CUSTOMISED SOLUTIONS

## DEFOAMER DOSING

- Storage tank
- Dosing
- Measuring technology
- Electrical engineering

In terms of design, the individual parameters and our customer requirements are implemented by the **sera** Group's internationally networked engineering department, ensuring the customer receives a customised solution for their task – everything from a single source!



## PORTABLE MIXING AND DOSING STATION FOR THE CHEMICALS INDUSTRY

- Mobile platform truck with 100-litre dosing tank featuring agitator, fluid level gauge and other fittings
- Centrifugal pump for transferring chemicals during the customer process
- Collecting basin in case of leakage
- Control panel for on-site operation



## PRESSURE BOOSTING SYSTEM FOR ADBLUE IN THE AUTOMOTIVE INDUSTRY

- Dosing system for the automotive industry (urea)
- Two pumps of type MK/MF/MK410.2-1450e, each with three pump heads
- Max. delivery rate 4,350 l/h per pump and low pulsation
- Safe operation and easy service thanks to two electric diaphragm valves and the installed ball valves



# EXAMPLES OF CUSTOMISED SOLUTIONS



## DOSING CONTAINER FOR SODIUM PHOSPHATE

- Dosing container for saline ambient air with special coating
- Climate-control system to keep interior temperatures constant
- Dosing unit for sodium phosphate with multi-layer diaphragm pumps



## PREPARATION AND DOSING UNITS FOR POLYMER SOLUTIONS IN THE CLOSED CONTAINER

- Weather-protected and heat-insulated container including heating system, lighting and ventilation
- Container features built-in 3-chamber polymer continuous flow systems (type: PolyLine Flow 2000 S)
- Dry material feeder with small-parts conveyor device and 200-litre storage tank for polymer dry materials
- Two eccentric screw pumps with frequency converters to remove polymer solution when ready for production
- Entire unit features central control cabinet (SPS technology) including customised programming



## DOSING OF SULPHURIC ACID

- Dosing systems with innovative stepper motor pumps and flow measurement for maximum precision
- System piping made of stainless steel with stand-by construction and design
- Maximum safety thanks to spray guard, intelligent diaphragm monitoring and operating condition notifications

# EXAMPLES OF CUSTOMISED SOLUTIONS

## DOSING OF SODIUM PHOSPHATE AT POWER PLANTS

- All-in-one dosing station on a gridiron with collecting basin
- Two high-pressure pumps with multilayer diaphragm technology ensure optimum dosing precision
- Stainless steel preparing tank and control cabinet for automatic operation of the systems



## CONTAINER FOR DOSING AMMONIA SOLUTIONS AT POWER PLANTS

- Two completely assembled dosing systems with collecting basins in one container with double doors
- Location can be determined by the client; easy to retrofit
- Two complete dosing stations each with two dosing pumps and one preparation pump to ensure optimum availability of chemicals



## DISSOLVING AND DOSING SOLIDS

### Sample application

Preparing and dosing solids, for example  $\text{CaCl}_2$  or  $\text{CaSO}_4$

### Design of batching tank

- Manual preparation of bagged chemicals
- Manual addition of water
- PP tank with tapered bottom for draining
- Feed chutes for bagged chemicals
- Electric agitator
- Capacitance liquid level sensor, adjustable
- All components are suspension-suitable and heat-resistant

### Design of storage tank

- Manual addition of water for rinsing
- PP tank with tapered bottom for draining
- Electric agitator
- Capacitance liquid level sensor, adjustable
- All components are suspension-suitable and heat-resistant



# EXAMPLES OF CUSTOMISED SOLUTIONS



## STORAGE TANKS AND DOSING FROM A SINGLE SOURCE

Whenever larger quantities of chemicals are processed, they are usually stored centrally in storage tanks in concentrate rooms. The **sera** dosing systems ensure safe and problem-free removal, and also precise dosing of the chemical over long piping distances.

### Sample application

Removal of acids, lyes and disinfectants, e.g. in large breweries and dairies.

### Design

Removal from the storage tanks (may be up to 5 m high) takes place exclusively from above due to the design (tank in collecting tray). This is why a siphon vessel is always installed on the tanks at the highest point, and **sera** dosing systems are equipped with a priming aid.

### Features

- Siphon vessel on the tank
- Priming aid
- pulsation damper
- Flow measurement



## ROBUST UNITS FOR EXTREME ENVIRONMENTAL CONDITIONS

- Single-layer diaphragm pumps with stainless steel heads and a capacity of 1,450 l/h in a stand-by design
- Stainless steel frame construction for floor installation with drip tray and piping made of stainless steel
- Pressure manometer and stainless steel pulsation damper for ideal operation



## DOSING SYSTEM IN THE PROTECTIVE CABINET

### Sample application

Dosing of external carbon sources such as methanol, ethanol, acetic acid and glycol

### Design

The completely modular design of our dosing systems facilitates simple adaptation to individual dosing requirements. The system is designed in accordance with the ATEX directive, as required for handling flammable liquids such as methanol.

### Features

- Compact, space-saving design
- Pump type and size to meet requirements
- Piping systems made of PVC-U, PP, PVDF or stainless steel
- Assembly panel with collecting basin and drain
- Assembly panel - with base frame as an option
- Leakage sensor with building regulation approval



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# DOSING UNITS, VERTICAL DESIGN



## OVERVIEW

- The most modern pump technology
- Standardized mounting plates
- Space-saving wall mounting
- Wide range of applications
- High safety standard
- Large range of capacity
- High dosing accuracy
- Easy to operate
- Low maintenance
- Complete range of accessories

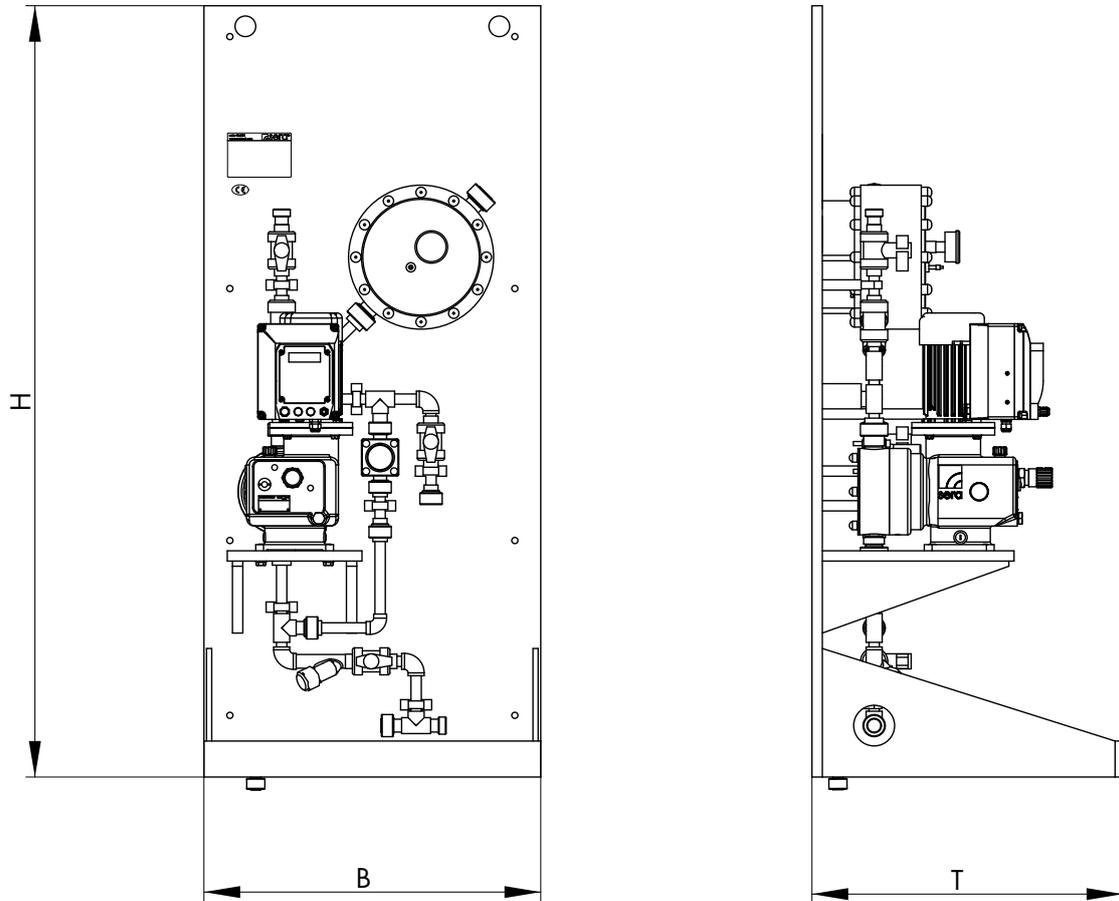
## TECHNICAL DATA

UNIT DATA		CVD1(s)-60.1	CVD1(s)-550.1	CVD1(s)-1500.1
Flow capacity	l/h	0 - 60	0 - 550	0 - 1500
Permissible counter pressure	bar (max)	10	8	5
Permissible suction head	mWC (max)	3	3	3
Number of pumps	Quantity	1	1	1

## ALLOCATION OF DOSING PUMPS

PUMP SERIES	CVD1(s)-60.1	CVD1(s)-550.1	CVD1(s)-1500.1
<b>Solenoid diaphragm pumps</b>  <ul style="list-style-type: none"> <li>C 204.1-2,4e</li> <li>C 204.1-7,0e</li> <li>C 204.1- 10e</li> <li>C 204.1- 35e</li> </ul>		X	X
<b>Stepper motor diaphragm pumps</b>  <ul style="list-style-type: none"> <li>iSTEP S 20</li> <li>iSTEP XS 7</li> <li>iSTEP XS 15</li> <li>iSTEP S 30</li> <li>iSTEP S 40</li> <li>iSTEP S 50</li> </ul>		X	X
<b>Diaphragm pumps</b>  <ul style="list-style-type: none"> <li>C409.2-1,6e ... C409.2-50e</li> <li>RF409.2-1,6e ... RF 409.2-50e</li> </ul>		C409.2-75e ... C409.2-350e RF409.2-75e ... RF 409.2-350e C410.2-280e ... C410.2-570e RF410.2-280e ... RF410.2-570e	C410.2-900e ... C410.2-1450e RF410.2-900e ... RF410.2-1450e
<b>Multi-layer diaphragm pumps</b>  <ul style="list-style-type: none"> <li>C409.2-11 ML</li> <li>C409.2-17 ML</li> <li>C409.2-45 ML</li> <li>RF409.2-11 ML ... RF409.2-45 ML</li> </ul>		C409.2-110 ML C409.2-220 ML RF409.2-110 ML ... RF409.2-220 ML C410.2-500 ML RF410.2-135 ML ... RF410.2-500 ML	RF410.2-1200 ML

## DIMENSIONS



### Application example

Basic design with following options:

- Diaphragm pulsation damper
- Suction side with Shut-off valve and line strainer
- Feedback pipe from relief valve back to suction side

	H	B	T
CVD1 s - 60.1	1.000	650	600
CVD1 s - 550.1	1.000	650	600
CVD1 s - 1500.1	1.000	650	600
CVD1 - 60.1	1.500	650	600
CVD1 - 550.1	1.500	650	600
CVD1 - 1500.1	1.500	650	600

# DOSING UNITS, VERTICAL DESIGN

## BASIC DESIGNS

### CVD 1 s

Dosing pump  
 2-way shut-off valve on the pressure side (Shut off/Emptying)  
 Diaphragm relief valve  
 Wall mounting plat made of PP (H=1.000mm, with drip pan)  
 Piping on pressure side made of PVC-U, PP or stainless steel (soon)  
 Seals made of EPDM or FPM

Connection suction side: External thread of pump's suction valve  
 Connection pressure side: External thread of final shut-off valve

Type	Price (EUR)
CVD 1 s - 60.1	①
CVD 1 s - 550.1	①
CVD 1 s - 1500.1	①

### CVD 1

Dosing pump  
 2-way shut-off valve on the pressure side (Shut off/Emptying)  
 Diaphragm relief valve  
 Wall mounting plat made of PP (H=1.500mm, with drip pan)  
 Piping on pressure side made of PVC-U, PP or stainless steel (soon)  
 Seals made of EPDM or FPM

Connection suction side: External thread of pump's suction valve  
 Connection pressure side: External thread of final shut-off valve

Type	Price (EUR)
CVD 1 - 60.1	①
CVD 1 - 550.1	①
CVD 1 - 1500.1	①

## OPTIONS

	Price [EUR]
Diaphragm pulsation damper	720.1 (up to 25 l/h) ▲
	721.2 (up to 50 l/h) ▲
	722.1 (up to 220 l/h) ▲
	723.1 ▲
	713.1 ▲
Suction side with shut-off valve and line strainer (not for design CVD1s)	▲
Feedback pipe from relief valve back to suction side (only in combination with suction side pipework)	▲
Multifunction device (priming aid/calibration pot)	▲

## OPTIONS

		Price [EUR]
Protective cabinet		▲
Heating for protective cabinet		▲
Lighting for protective cabinet		▲
Splash guard (removable)		▲
Framework for loor mounting	Galvanized steel	▲
	Plastic	▲
Leckage sensor	without WHG-approval	▲
	with WHG-approval	▲
Shut-off valve for emptying of the drip pan		▲
Terminal box	RF-Pump	▲
	C-Pump      up to 0,37 kW	▲
	C-Pump      from 0,75 kW	▲
Terminal box (with power socket)	C-Pump      up to 0,37 kW	▲
	C-Pump      from 0,75 kW	▲
Power socket (each pump)	Shockproof socket (C-pumps)	▲
	CEE power socket (C-pumps with compact drive)	▲
ON-/OFF-Switch (not in association with terminal box or power socket)	409.2/410.2	▲
Protective roof for driving motor		▲

Further accessories on request

# DOSING UNITS, VERTICAL DESIGN



**OVERVIEW**

- The most modern pump technology
- Standardized mounting plates
- Space-saving wall mounting
- Wide range of applications
- High safety standard
- Large range of capacity
- High dosing accuracy
- Easy to operate
- Low maintenance
- Complete range of accessories

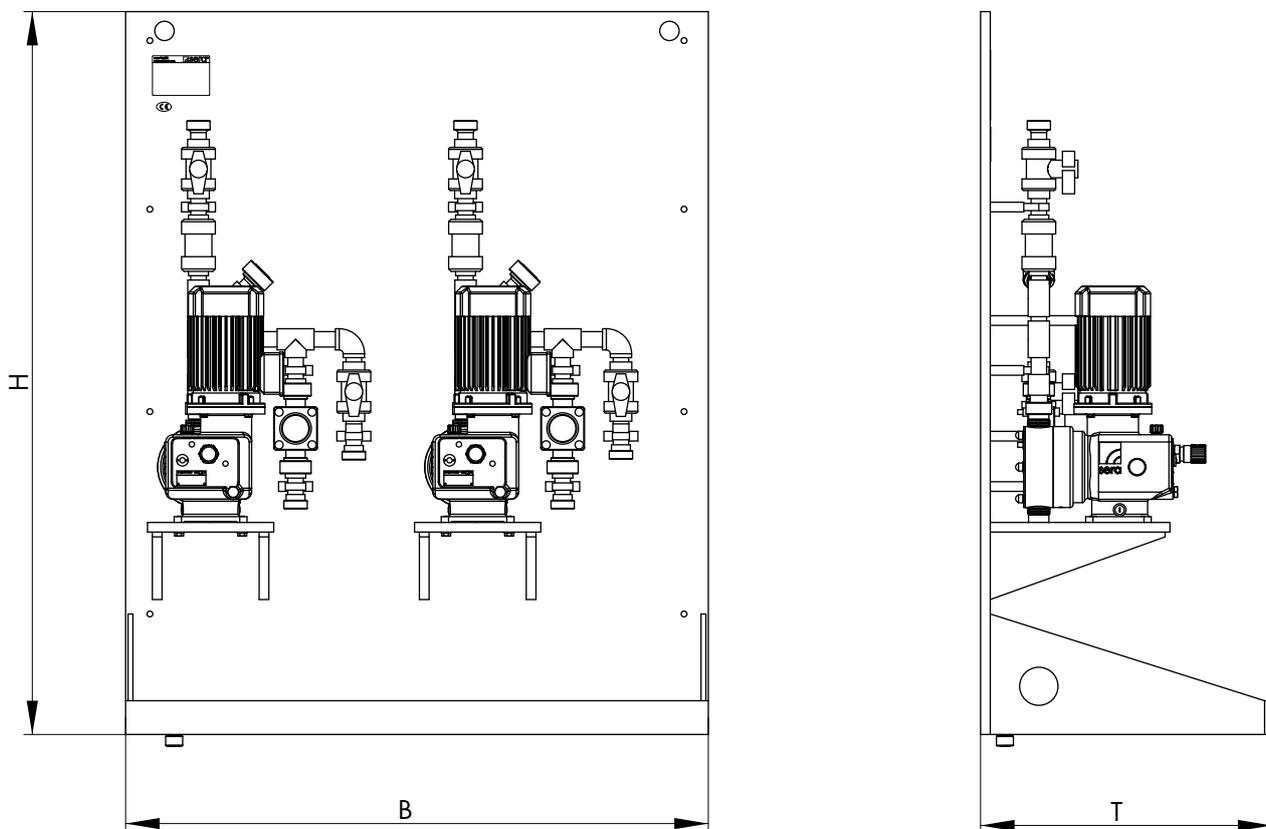
## TECHNICAL DATA

UNIT DATA		CVD2-60.1	CVD2-550.1	CVD2-1500.1
Flow capacity	l/h	2x 0 - 60	2x 0 - 550	2x 0 - 1500
Permissible counter pressure	bar (max)	10	8	5
Permissible suction head	mWC (max)	3	3	3
Number of pumps	Quantity	2	2	2

## ALLOCATION OF DOSING PUMPS

PUMP SERIES	CVD2-60.1	CVD2-550.1	CVD2-1500.1
<b>Solenoid diaphragm pumps</b>  <ul style="list-style-type: none"> <li>C 204.1-2,4e</li> <li>C 204.1-7,0e</li> <li>C 204.1- 10e</li> <li>C 204.1- 35e</li> </ul>		X	X
<b>Stepper motor diaphragm pumps</b>  <ul style="list-style-type: none"> <li>iSTEP S 20</li> <li>iSTEP XS 7</li> <li>iSTEP XS 15</li> <li>iSTEP S 30</li> <li>iSTEP S 40</li> <li>iSTEP S 50</li> </ul>		X	X
<b>Diaphragm pumps</b>  <ul style="list-style-type: none"> <li>C409.2-1,6e ... C409.2-50e</li> <li>RF409.2-1,6e ... RF 409.2-50e</li> </ul>		C409.2-75e ... C409.2-350e RF409.2-75e ... RF 409.2-350e C410.2-280e ... C410.2-570e RF410.2-280e ... RF410.2-570e	C410.2-900e ... C410.2-1450e RF410.2-900e ... RF410.2-1450e
<b>Multi-layer diaphragm pumps</b>  <ul style="list-style-type: none"> <li>C409.2-11 ML</li> <li>C409.2-17 ML</li> <li>C409.2-45 ML</li> <li>RF409.2-11 ML ... RF409.2-45 ML</li> </ul>		C409.2-110 ML C409.2-220 ML RF409.2-110 ML ... RF409.2-220 ML C410.2-500 ML RF410.2-135 ML ... RF410.2-500 ML	RF410.2-1200 ML

## DIMENSIONS



### Application example (basic design)

	H	B	T
CVD2 - 60.1	1.500	1.200	600
CVD2 - 550.1	1.500	1.200	600
CVD2 - 1500.1	1.500	1.200	600

# DOSING UNITS, VERTICAL DESIGN

## BASIC DESIGNS

### CVD 2

2x Dosing pump  
 2-way shut-off valve on the pressure side (Shut off/Emptying)  
 Diaphragm relief valves  
 Wall mounting plat made of PP (H=1.500mm, with drip pan)  
 Piping on pressure side made of PVC-U or PP  
 Seals made of EPDM or FPM

Connection suction side: External thread of pump's suction valve  
 Connection pressure side: External thread of final shut-off valve

Type	Price (EUR)
CVD 2 - 60.1	①
CVD 2 - 550.1	①
CVD 2 - 1500.1	①

## OPTIONS

	Price [EUR]
Diaphragm pulsation damper	720.1 (up to 25 l/h) ▲
	721.2 (up to 50 l/h) ▲
	722.1 (up to 220 l/h) ▲
	723.1 ▲
	Note: Use 2 dampers in case of 2 separate pressure sides 713.1 ▲
Suction side with shut-off valve and line strainer (1x each pump) ▲	
Suction side connecting piping (Pump 1 and pump 2) ▲	
Feedback pipe from relief valve back to suction side (only in combination with suction side pipework; 1x each pump) ▲	
Pressure side connecting piping (Pump 1 and pump 2) ▲	
Multifunction device (priming aid/calibration pot) ▲	

## OPTIONS

			Price [EUR]
Protective cabinet			▲
Heating for protective cabinet			▲
Lighting for protective cabinet			▲
Splash guard (removable)			▲
Framework for loor mounting	Galvanized steel		▲
	Plastic		▲
Leckage sensor	without WHG-approval		▲
	with WHG-approval		▲
Shut-off valve for emptying of the drip pan			▲
Terminal box	RF-Pump		▲
	C-Pump	up to 0,37 kW	▲
	C-Pump	from 0,75 kW	▲
Terminal box (with power socket)	C-Pump	up to 0,37 kW	▲
	C-Pump	from 0,75 kW	▲
Power socket (each pump)	Shockproof socket (C-pumps)		▲
	CEE power socket (C-pumps with compact drive)		▲
ON-/OFF-Switch (not in association with terminal box or power socket)	409.2/410.2		▲
Protective roof for driving motor			▲
Dosing Hose, flexible stainless steel (1.4401, FEP) (see also chapter 4, connecting parts)	L=500mm, G3/4	Art.No.: 90049993	▲
	L=500mm, G1	Art.No.: 90049994	▲

Further accessories on request

# COMPACT DOSING STATIONS



## OVERVIEW

- Standardized dosing tanks
- Space-saving wall mounting
- Wide range of applications
- High safety standard
- High quality materials
- Easy to operate
- Low maintenance
- Complete range of accessories

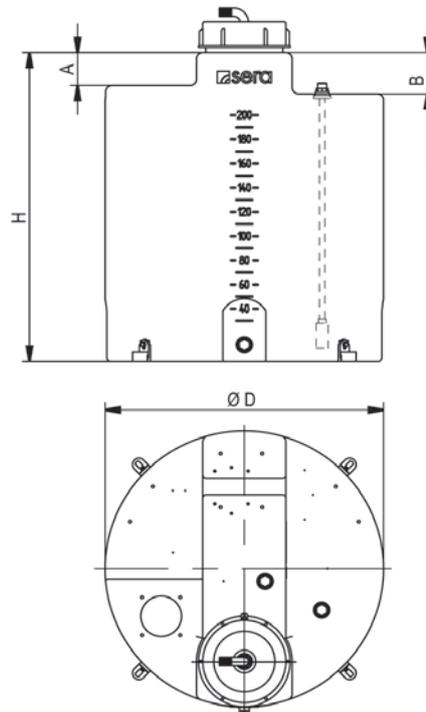
## TECHNICAL DATA

UNIT DATA		CTD - ...						
		.. 40.1	.. 75.1	.. 100.1	.. 200.1	.. 300.1	.. 500.1	.. 1000.1
Tank volume	Litres	40	75	100	200	300	500	1.000
Flow capacity	l/h	0,4...35	0,4...180	0,4...180	0,4...570	0,4...570	0,4...570	0,4...570
Permissible counterpressure	bar (max)	10	10	10	10	10	10	10
Nominal width of suction lance	DN	5	5/10	5/10	5/10/15	5/10/15	5/10/15	5/10/15

## ALLOCATION OF DOSING PUMPS

PUMP SERIES	CTD-40.1	CTD-75.1 ... CTD-1000.1	
<b>Solenoid diaphragm pumps</b> 	C204.1-2,4e C204.1-7,0e C204.1-10e C204.1-35e	C204.1-2,4e C204.1-7,0e C204.1-10e C204.1-35e	
<b>Stepper motor diaphragm pumps</b> 	iSTEP XS 7 iSTEP XS 15	iSTEP XS 7 iSTEP XS 15	iSTEP S 20 iSTEP S 30 iSTEP S 40 iSTEP S 50
<b>Diaphragm pumps</b> 	X	C409.2-1,6e ... C409.2-350e RF409.2-1,6e ... RF 409.2-350e C410.2-280e ... C410.2-570e RF410.2-280e ... RF410.2-570e	
<b>Multi-layer diaphragm pumps</b> 	X	C409.2-11 ML ... C409.2-220 ML RF409.2-11 ML ... RF409.2-220 ML C410.2-500 ML RF410.2-135 ML ... RF410.2-500 ML	

## DIMENSIONS



	D	A	B	H
CTD - 40.1	420	70	70	425
CTD - 75.1	460	70	70	600
CTD - 100.1	460	70	70	760
CTD - 200.1	670	80	100	750
CTD - 300.1	670	80	100	1.030
CTD - 500.1	790	90	90	1.170
CTD - 1000.1	1080	110	100	1.290

## BASIC DESIGNS

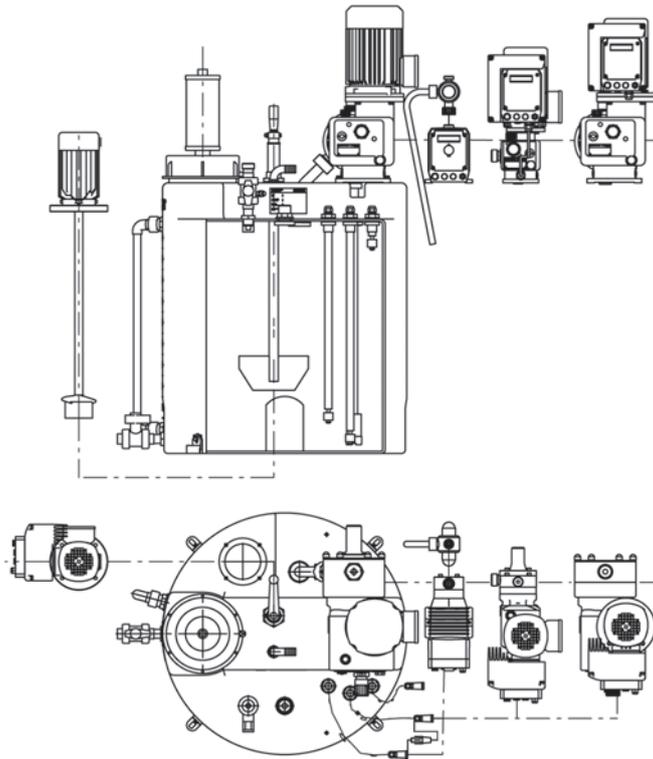
### CTD

Dosing tank (PE-transparent) with litre scale and cover (DIN162)  
 Suction lance with foot valve and sieve  
 Ventilation- / exhaust bow with hose nozzle  
 Brackets for floor mounting

Type	Preis (EUR)
CTD - 40.1	⌚
CTD - 75.1	⌚
CTD - 100.1	⌚
CTD - 200.1	⌚
CTD - 300.1	⌚
CTD - 500.1	⌚
CTD - 1000.1	⌚

# COMPACT DOSING STATIONS

## OPTIONS



		Price [EUR]
Dosing tank	PE-transparent	●
	PE-black	▲
	Fixing for floor mounting	●
Key lock	for screw cover	▲
Collecting basin	CBR - ... .1	▲
	floor mounting	▲
	splash guard (not with CTD-40.1, CTD-500.1 and CTD-1000.1)	▲
Gas-tight design	completely gas-tight system	▲
	chemical vapour lock	binder BM 1 ▲
		binder BM 2 ▲
Dissolving basket	not gas-tight (not with CTD-40.1)	▲
Dosing pump	solenoid diaphragm pump	C 204.1 ▲
	stepper motor diaphragm pump	iSTEP XS ▲
		iSTEP S ▲
	diaphragm pump	C 409.2 Pro+ / RF 409.2 ▲
		C 410.2 / RF 410.2 ▲
	multi-layer diaphragm pump	C 409.2 ML Pro+ / RF 409.2 ML ▲
		C 410.2 ML / RF 410.2 ML ▲

## OPTIONS

			Price [EUR]
Agitators	Hand tamping mixer	only CTD 40.1 up to CTD-100.1	▲
	Hand mixer	only CTD 200.1 up to CTD-500.1	▲
	Electric agitator	not for CTD 40.1 and CTD-75.1	▲
Level switch (Magnetic float)	LSL (min.)		▲
	LSLL (min. - min.)		▲
	LSH (max.)		▲
Multi function valve	for dosing pumps up to 50 l/h		▲
Filling device	DN15	Connection: external thread G1	▲
	DN15	Connection: external thread G1 1/2	▲
Container screw connection	DN15	Connection: external thread G1	▲
Level indicator	only for dosing tanks made of PE-black		▲
Feedback line	e.g. relief valve of a dosing pump		▲
PVC hose for connection to a ventilation system (incl. hose clamp)	d20		▲
	d30	only for CTD-500.1 and CTD-1000.1	▲
Drainage fitting	DN15		▲
Control			▲
Wiring			▲
Dosing technical equipment (DE)  (Pressure keeping valve, pulsation damper, shut-off valve,...)	for tank mounting	(not for CTD-40.1)	①
	for wall mounting		①
Dosing Hose, flexible stainless steel (1.4401, FEP) (see also chapter 4, connecting parts)	L=500mm, G3/4	Art.No.: 90049993	▲
	L=500mm, G1	Art.No.: 90049994	▲

## Weiteres Zubehör auf Anfrage

● basic version

○ available without extra charge

▲ available with extra charge

⊖ not available

① on request

# PREPARATION UNIT FOR POLYMERS



## OVERVIEW

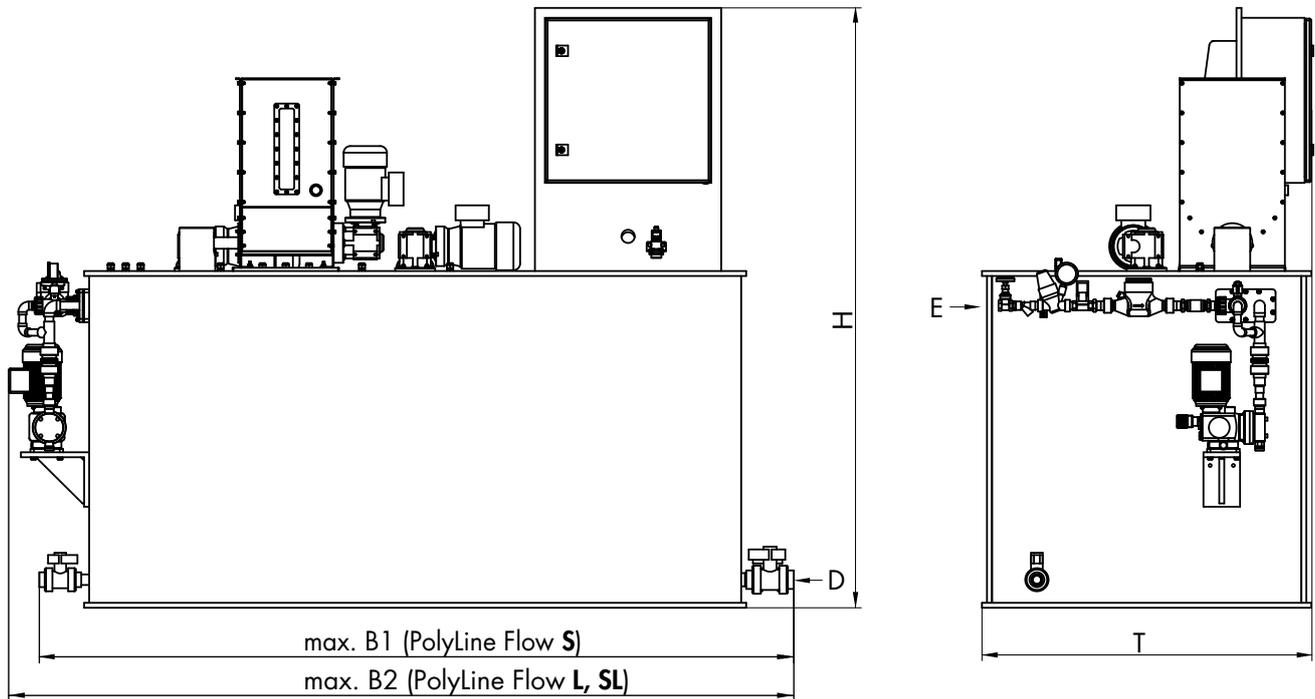
- Fully automatic preparation of organic flocculent aid (pulverized and/or liquid)
- Process logic control (PLC)
- Selectable concentration of prepared solution
- Feeding device
- Dry material feeder with thermal protection zone
- Pump for liquid polymer (option)
- Dissolving water unit
- Electric agitators
- Performance graduation that meets the requirements

## TECHNICAL DATA

DEFINITION of the types		
PolyLine ... <b>S</b>	S = solid	for preparation with polymer in powder form
PolyLine ... <b>L</b>	L = liquid	for preparation with liquid polymer
PolyLine ... <b>SL</b>	SL = solid/liquid	for preparation with polymer in powder form and/or liquid polymer

UNIT DATA		PolyLine Flow 500	PolyLine Flow 1000	PolyLine Flow 2000	PolyLine Flow 4000	PolyLine Flow 8000	
Preparation capacity (at 45 min. maturing time)	l/h	500	1.000	2.000	4.000	8.000	
Weight (empty)	kg	S	250	270	300	380	470
		L	230	240	280	360	450
		SL	270	290	340	410	520

ELECTRICAL DATA		PolyLine Flow ... S/L/SL
Supply voltage		~3/400 V /Hz + N + PE
Power consumption	approx. kW	2,0
Control voltage	V DC	24
Enclosure	Control cabinet	IP 54
	electr. consumer	IP 55

**DIMENSIONS**

	B1	B2	T	H*	D	E
PolyLine® Flow 500	2.240	2.340	990	1.550	DN25	DN15
PolyLine® Flow 1000	2.240	2.340	990	1.550	DN25	DN15
PolyLine® Flow 2000	2.270	2.360	990	1.820	DN32	DN15
PolyLine® Flow 4000	3.310	3.390	1.280	2.110	DN40	DN25
PolyLine® Flow 8000	4.330	4.470	1.570	2.330	DN50	DN25

\* depending on the height of the dry material feeder (DMF)

# PREPARATION UNIT FOR POLYMERS

## BASIC DESIGNS

### PolyLine Flow S

3-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dry material feeder (DMF) with hopper, 25 liters  
Feeding device  
2x electric agitator (low speed)  
Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Flow 500 S	25004493	🕒
PolyLine Flow 1000 S	25004525	🕒
PolyLine Flow 2000 S	25004528	🕒
PolyLine Flow 4000 S	25004531	🕒
PolyLine Flow 8000 S	25004534	🕒

### PolyLine Flow L

3-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dosing pump for liquid polymer  
Feeding device  
2x electric agitator (low speed)  
Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Flow 500 L	25004523	🕒
PolyLine Flow 1000 L	25004526	🕒
PolyLine Flow 2000 L	25004529	🕒
PolyLine Flow 4000 L	25004532	🕒
PolyLine Flow 8000 L	25004535	🕒

### PolyLine Flow SL

3-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dry material feeder (DMF) with hopper, 25 liters  
Dosing pump for liquid polymer  
Feeding device  
2x electric agitator (low speed)  
Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Flow 500 SL	25004524	🕒
PolyLine Flow 1000 SL	25004527	🕒
PolyLine Flow 2000 SL	25004530	🕒
PolyLine Flow 4000 SL	25004533	🕒
PolyLine Flow 8000 SL	25004536	🕒

**OPTIONS**

Option	Type		Price [EUR]
3 <sup>rd</sup> Agitator	S, L, SL	chamber volume 500 - 2.000 litres	▲
		chamber volume 4.000 - 8.000 litres	▲
Low-level indicator for hopper	S, SL	(for DMF)	▲
Hopper Extension	S, SL	(for DMF) expansion of volume: 25 litres	▲
Hopper extension + High level indicator for hopper	S, SL	(for DMF)	▲
Electric external vibrator	S, SL	(for DMF) 0,045kW, 230V, 50Hz, IP65, ISO-Kl. F	▲
Hopper loader	S, SL	incl. hose package and suction pipe	▲
Overflow	S, L, SL	chamber volume 500 - 2.000 litres	▲
		chamber volume 4.000 litres	▲
Overflow protection	S, L, SL		▲
Operating panel	S, L, SL	TOUCH Display with Touchscreen - de/en	●
		Language other languages possible	①
Signal exchange package	S, L, SL		▲
BUS-Connection	S, L, SL	PROFIBUS DP/Slave	▲
		industrial ethernet	▲
Special voltage	S, L, SL	for control and other electrical consumers	①

**ACCESSORIES**

		Price [EUR]	
After-dilution station	Dilution of the preparation in a ratio of 1:10	2...6 m <sup>3</sup> / h	▲
		5...12 m <sup>3</sup> / h	▲
		8...20 m <sup>3</sup> / h	▲

# PREPARATION UNIT FOR POLYMERS



## OVERVIEW

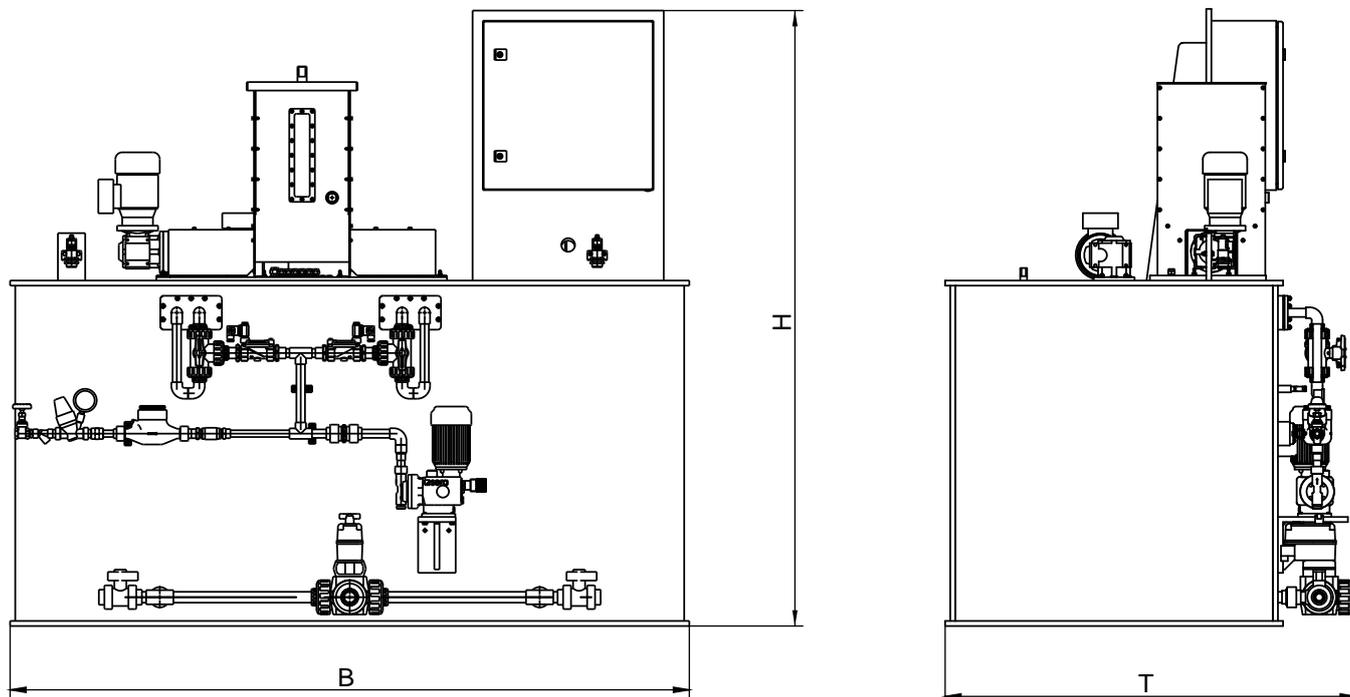
- Fully automatic preparation of organic flocculent aid (pulverized and/or liquid)
- Process logic control (PLC)
- Selectable concentration of prepared solution
- Feeding device
- Dry material feeder with thermal protection zone
- Pump for liquid polymer (option)
- Dissolving water unit
- Electric agitators
- Performance graduation that meets the requirements

## TECHNICAL DATA

DEFINITION of the types		
PolyLine ... <b>S</b>	S = solid	for preparation with polymer in powder form
PolyLine ... <b>L</b>	L = liquid	for preparation with liquid polymer
PolyLine ... <b>SL</b>	SL = solid/liquid	for preparation with polymer in powder form and/or liquid polymer

UNIT DATA		PolyLine Swing 500	PolyLine Swing 1000	PolyLine Swing 2000	PolyLine Swing 4000	
Preparation capacity (at 30 min. maturing time)	l/h	500	1.000	2.000	4.000	
Weight (empty)	kg	S	240	240	280	460
		L	230	230	260	440
		SL	260	260	295	480

ELECTRICAL DATA		PolyLine Swing ... S/L/SL
Supply voltage		~3/400 V /Hz + N + PE
Power consumption	approx. kW	2,0
Control voltage	V DC	24
Enclosure	control cabinet	IP 54
	electr. consumer	IP 55

**DIMENSIONS**

	B	T	H*	D	E
PolyLine® Swing 500	1.990	1.210	1.550	DN25	DN15
PolyLine® Swing 1000	1.990	1.220	1.820	DN32	DN15
PolyLine® Swing 2000	2.990	1.520	2.110	DN40	DN25
PolyLine® Swing 4000	4.000	1.820	2.330	DN50	DN25

\* depending on the height of the dry material feeder (DMF)

# PREPARATION UNIT FOR POLYMERS

## BASIC DESIGNS

### PolyLine Swing S

2-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dry material feeder (DMF) with hopper, 25 liters  
Feeding device  
2x electric agitator (low speed)  
2x Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Swing 500 S		①
PolyLine Swing 1000 S		①
PolyLine Swing 2000 S		①
PolyLine Swing 4000 S		①

### PolyLine Swing L

2-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dosing pump for liquid polymer  
Feeding device  
2x electric agitator (low speed)  
2x Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Swing 500 L		①
PolyLine Swing 1000 L		①
PolyLine Swing 2000 L		①
PolyLine Swing 4000 L		①

### PolyLine Swing SL

2-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dry material feeder (DMF) with hopper, 25 liters  
Dosing pump for liquid polymer  
Feeding device  
2x electric agitator (low speed)  
2x Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Swing 500 SL		①
PolyLine Swing 1000 SL		①
PolyLine Swing 2000 SL		①
PolyLine Swing 4000 SL		①

**OPTIONS**

Option	Type		Price [EUR]
Low-level indicator for hopper	S, SL	(for DMF)	▲
Hopper Extension	S, SL	(for DMF) expansion of volume: 25 litres	▲
Hopper extension + High level indicator for hopper	S, SL	(for DMF)	▲
Electric external vibrator	S, SL	(for DMF) 0,045kW, 230V, 50Hz, IP65, ISO-Kl. F	▲
Hopper loader	S, SL	incl. hose package and suction pipe	▲
Overflow	S, L, SL	chamber volume 500 - 2.000 litres	▲
		chamber volume 4.000 litres	▲
Overflow protection	S, L, SL		▲
Operating panel	S, L, SL	TOUCH Display with Touchscreen - de/en	●
		language other languages possible	①
Signal exchange package	S, L, SL		●
BUS-Connection	S, L, SL	PROFIBUS DP/Slave	▲
		Ind. Ethernet	▲
Special voltage	S, L, SL	for control and other electrical consumers	①

**ACCESSORIES**

		Price [EUR]	
After-dilution station	Dilution of the preparation in a ratio of 1:10	2...6 m <sup>3</sup> / h	▲
		5...12 m <sup>3</sup> / h	▲
		8...20 m <sup>3</sup> / h	▲

# PREPARATION UNIT FOR POLYMERS



## OVERVIEW

- Fully automatic preparation of organic flocculent aid (pulverized and/or liquid)
- Process logic control (PLC)
- Selectable concentration of prepared solution
- Feeding device
- Dry material feeder with thermal protection zone
- Pump for liquid polymer (option)
- Dissolving water unit
- Electric agitator
- Performance graduation that meets the requirements

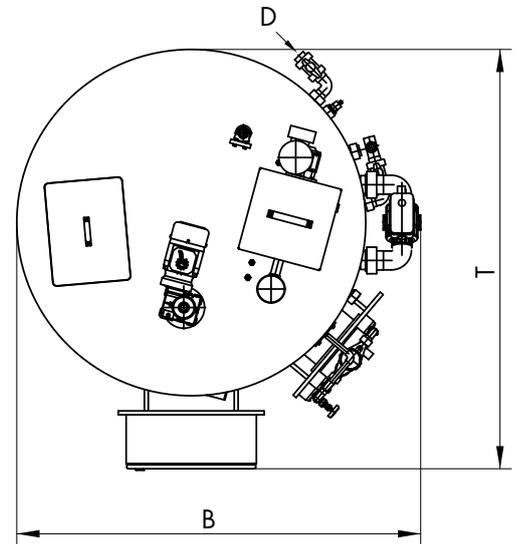
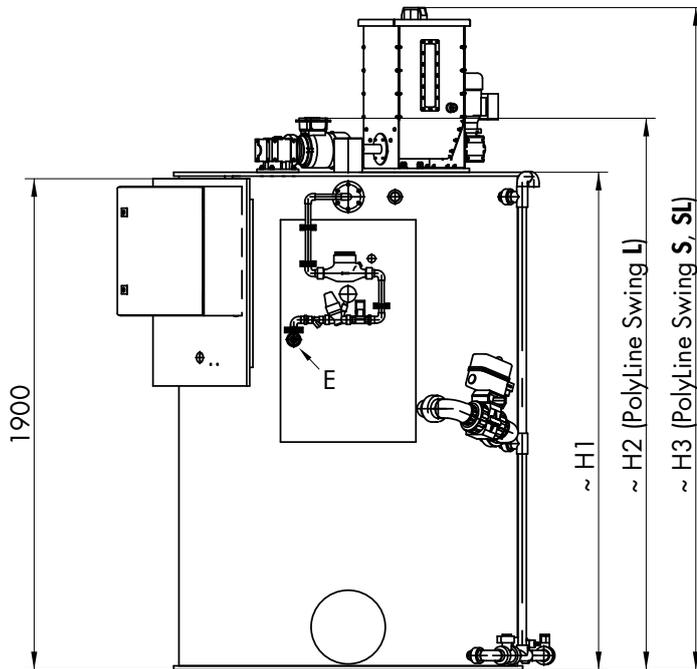
## TECHNICAL DATA

DEFINITION of the types		
PolyLine ... <b>S</b>	S = solid	for preparation with polymer in powder form
PolyLine ... <b>L</b>	L = liquid	for preparation with liquid polymer
PolyLine ... <b>SL</b>	SL = solid/liquid	for preparation with polymer in powder form and/or liquid polymer

UNIT DATA		PolyLine Double 500	PolyLine Double 1000	PolyLine Double 2000	
Preparation capacity (at 45 min. maturing time)	l/h	500	1.000	2.000	
Weight (empty)	kg	S	200	240	325
		L	160	200	285
		SL	210	250	335

ELECTRICAL DATA		PolyLine Double ... S/L/SL
Supply voltage		~3/400 V /Hz + N + PE
Power consumption	approx. kW	2,0
Control voltage	V DC	24
Enclosure	control cabinet	IP 54
	electr. consumer	IP 55

## DIMENSIONS



	B	T	H1	H2	H3*	D	E
PolyLine® Double 500	1.320	1.420	1.370	1.570	2.000	DN25	DN15
PolyLine® Double 1000	1.560	1.630	1.925	2.140	2.570	DN25	DN15
PolyLine® Double 2000	2.020	2.180	1.900	2.130	2.540	DN32	DN15

\* depending on the height of the dry material feeder (DMF)

# PREPARATION UNIT FOR POLYMERS

## BASIC DESIGNS

### PolyLine Double S

2-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dry material feeder (DMF) with hopper, 25 liters  
Feeding device  
Electric agitator (low speed)  
Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Double 500 S	25004537	①
PolyLine Double 1000 S	25004540	①
PolyLine Double 2000 S	25004543	①

### PolyLine Double L

2-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dosing pump for liquid polymer  
Feeding device  
Electric agitator (low speed)  
Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Double 500 L	25004538	①
PolyLine Double 1000 L	25004541	①
PolyLine Double 2000 L	25004544	①

### PolyLine Double SL

2-Chamber tank made of PP  
Control (PLC) for fully automatic preparation  
Dry material feeder (DMF) with hopper, 25 liters  
Dosing pump for liquid polymer  
Feeding device  
Electric agitator (low speed)  
Level monitoring  
Dissolving water unit  
Language on display de/en

Type	Article-No.	Price (EUR)
PolyLine Double 500 SL	25004539	①
PolyLine Double 1000 SL	25004542	①
PolyLine Double 2000 SL	25004545	①

**OPTIONS**

Option	Type		Preis [EUR]
Low-level indicator for hopper	S, SL	(for DMF)	▲
Hopper Extension	S, SL	(for DMF) Erweiterung des Volumens: 25 Liter	▲
Hopper extension + High level indicator for hopper	S, SL	(for DMF)	▲
Electric external vibrator	S, SL	(for DMF) 0,045kW, 230V, 50Hz, IP65, ISO-Kl. F	▲
Hopper loader	S, SL	incl. hose package and suction pipe	▲
Overflow protection	S, L, SL		▲
Operating panel	S, L, SL	TOUCH Display with Touchscreen - de/en	●
		language other languages possible	⌚
Signal exchange package	S, L, SL		●
BUS-Connection	S, L, SL	PROFIBUS DP/Slave	▲
		industrial Ethernet	▲
Special voltage	S, L, SL	for control and other electrical consumers	⌚

**ACCESSORIES**

		Price [EUR]	
After-dilution station	Dilution of the preparation in a ratio of 1:10	2...6 m <sup>3</sup> / h	▲
		5...12 m <sup>3</sup> / h	▲
		8...20 m <sup>3</sup> / h	▲

# PREPARATION AND DOSING UNITS FOR CAUSTIC SODA



## KEY FACTS

- | Modular construction (Lye dissolver ⇒ Transfer unit ⇒ Storage tank ⇒ Dosing unit)
- | Caustic dissolver available in different sizes (1,000, 2,000, 3,000 litre preparation tanks)
- | High operational safety due to structural separation of bag feed and preparation tank as well as an extraction system
- | Preparation with (sodium hydroxide) pellets, flakes, beads or powder possible



# KKV DOSING SYSTEM



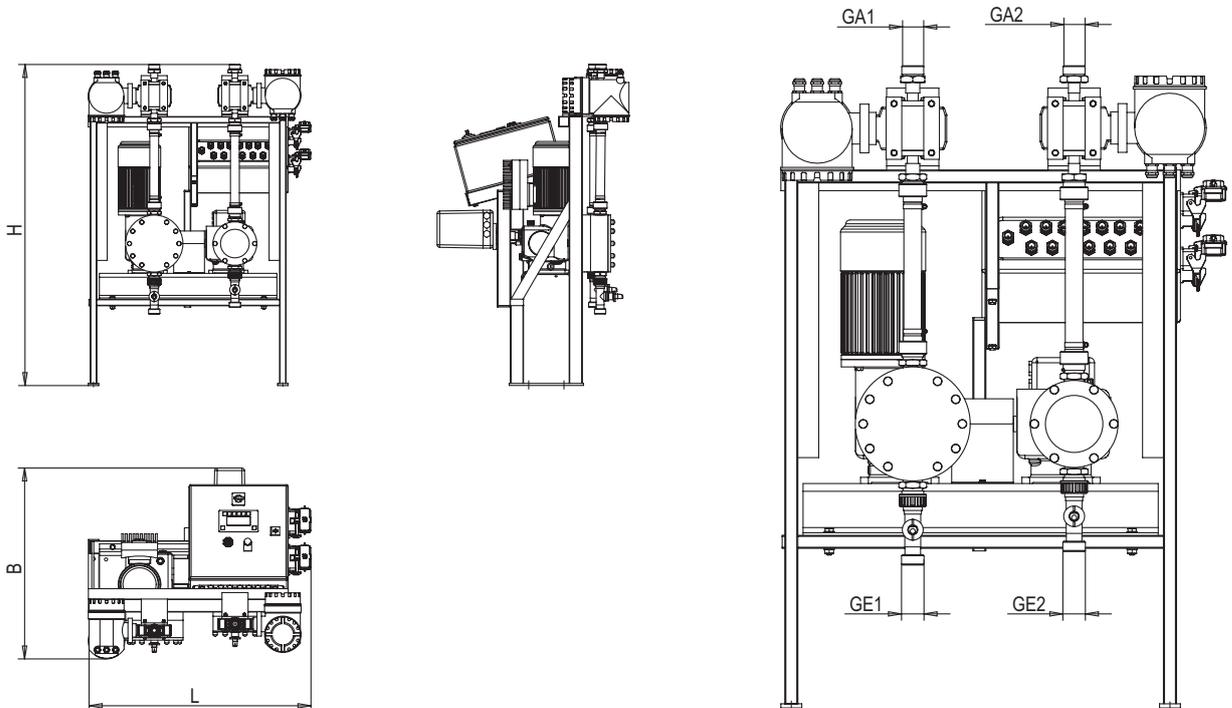
## OVERVIEW

- Fully automatic operation
- Highest accuracy
- The most modern control- and pump technology
- High operational safety
- Easy to operate
- High lifetime
- Low maintenance
- Complete accessory programme

## TECHNICAL DATA

ANLAGENDATEN		KKV-20,8.1
Total capacity (50/60Hz)	l/min	20,8
Chemical consumption	l/h	Colour 1.000
		Lye 250
Power consumption	kW	~1,0
Weight	kg	~170

## DIMENSIONS



	L	B	H	dosage colour		dosage lye	
				GE1	GA1	GE2	GA2
KKV-20,8.1	860	740	1.240	G1 1/4	G1 1/4	G1 1/4	G1 1/4

## ELEKTRICAL DATA / CONTROL TECHNOLOGY

<b>Input</b>	4 digital inputs (potential bonded)	release pump, release control, fast stop, pump flushing
	1 analogue input	0/4-20mA from external fill level controller or external fill level measurement (analog signal must be potential-free)
<b>Output</b>	4 potential free outputs	flush valve, drain valve, color ready, collective fault
<b>Power supply</b>	3 x 400V / 50Hz / N / PE	
<b>Control voltage 1</b>	230V / 50Hz	
<b>Control voltage 2</b>	24V DC	
<b>Enclosure</b>	IP54	

## BASIC DESIGNS

### KKV-Dosing system

Dosing pump type RF410.2-1100e/RK410.2-450e  
 Driving motor with integrated frequency converter  
 Mounted actuator (lye-dosage)  
 Stroke frequency transmitter  
 2x magneto-inductive flow controller  
 2x capacitive sensor for fluid monitoring  
 Mounted control (PLC) with operator panel  
 System-wiring and -piping incl. mounting-frame

Type	Price (EUR)
KKV-20,8.1	①

## ACCESSORIES

		Price [EUR]
Diaphragm pressure-keeping valve	type 624.D	▲
Connection parts	for diaphragm pressure-keeping valve	▲
Suction basket	type 722	▲
Suction basket	type 724	▲
T-piece made of PVC, DN25		▲
PVC-hose with cross-textile ply	16/24	▲
	32/42	▲
Hose clamp	16/27	▲
	32/50	▲

# DOSING TANK



## OVERVIEW

- UV-stabilized polyethylene
- Food safe
- Seamless
- Assembly bridge, centred
- Embossed litre scale
- Connection for drain
- Safe fixing
- Lockable

## TECHNICAL DATA

DOSING TANK		DTR-...						
		...40.2	...75.2	...100.2	...200.2	...300.2	...500.1	...1000.1
Content (volume)	Litres	40	75	100	200	300	500	1.000
Weight (empty)	kg	2,7	6,0	7,5	13,5	17,0	23,8	42,0

## BASIC DESIGNS

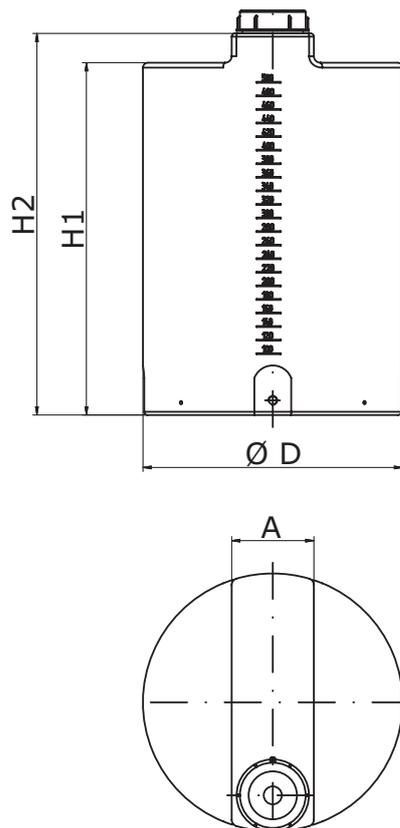
### DTR

Dosing tank **PE-transparent**

Seal **EPDM**

Type	Article-No.	Price (EUR)
DTR - 40.2	90020788	①
DTR - 75.2	90032463	①
DTR - 100.2	90032464	①
DTR - 200.2	90032213	①
DTR - 300.2	90032216	①
DTR - 500.1	90009622	①
DTR - 1000.1	90009623	①

## DIMENSIONS

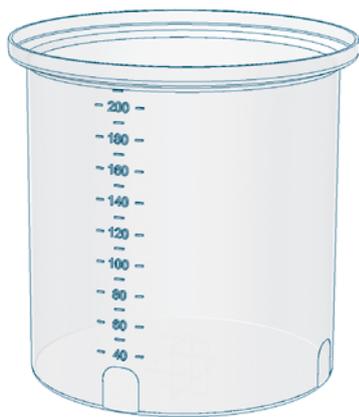


	D	H1	H2	A
DTR - 40.2	420	355	425	150
DTR - 75.2	460	530	600	130
DTR - 100.2	460	690	760	130
DTR - 200.2	670	670	750	200
DTR - 300.2	670	950	1.030	200
DTR - 500.1	790	1.090	1.180	250
DTR - 1000.1	1.080	1.260	1.330	370

## ACCESSORIES

		Price [EUR]
Seals	EPDM	●
	FPM	▲
Level indicator	made of PVC-transparent	▲
Tank emptying	with shut-off valve DN15	①
	blind closed, DN15, G1	①
Tank screw connection	incl. connection seal	①
Colour	black (not transparent)	①
Reinforcing bridge	only with DTR-1000.1	①

# COLLECTING BASINS



## OVERVIEW

- For tank size up to 1000 litres
- UV-stabilized polyethylene
- Food safe
- Seamless
- Embossed litre scale
- Flat spots for the mounting of fittings

## TECHNICAL DATA

GENERAL DATA		CBR-...						
		...60.1	...80.1	...120.1	...260.1	...400.1	...500.1	...1000.1
Content (volume)	Litres	60	80	120	260	400	500	1.000
For dosing tank	DTR-...	...40.2	...75.2	...100.2	...200.2	...300.2	...500.1	...1000.1
Weight (empty)	kg	3,6	5,0	6,7	10	16	19	34

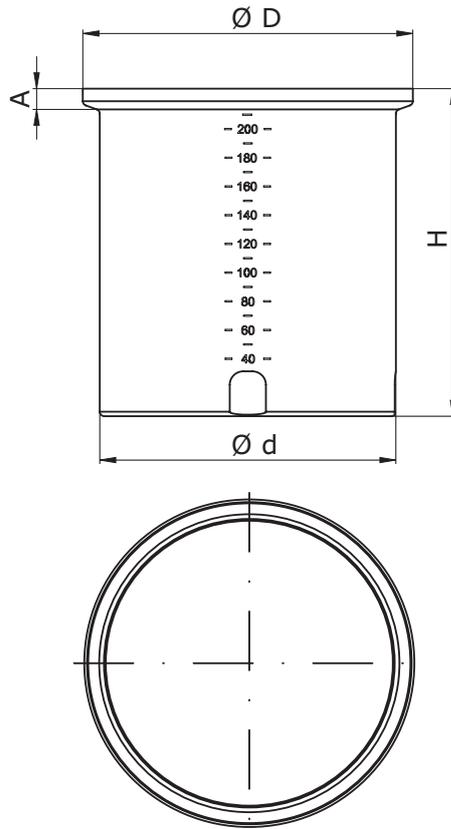
## BASIC DESIGNS

### PE

Collecting basins **PE-transparent**

Type	Article-No.	Price (EUR)
CBR - 60.1	90032796	①
CBR - 80.1	90028426	①
CBR - 120.1	90028427	①
CBR - 260.1	90032797	①
CBR - 400.1	90019776	①
CBR - 500.1	90028429	①
CBR - 1000.1	90028430	①

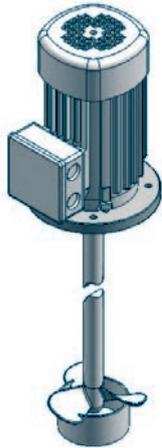
**DIMENSIONS**



	d	D	A	H
CBR - 60.1	500	⊘	⊘	350
CBR - 80.1	500	560	40	545
CBR - 120.1	500	560	40	705
CBR - 260.1	770	⊘	⊘	650
CBR - 400.1	770	860	45	960
CBR - 500.1	860	960	40	980
CBR - 1000.1	1.150	1.240	50	1.080

# ELECTRIC AGITATOR

Fast stirrer



## OVERVIEW

- Speed up to 1500 rpm
- Balanced agitator shaft
- Suitable for continuous operation
- Suitable for pass-through operation
- Maintenance free
- Impeller can be unbolted
- Controllable (Option)
- High quality materials
- For viscosity  $\leq 200$  mPas
- Max. density 1,2 kg/dm<sup>3</sup>

## TECHNICAL DATA

GENERAL DATA		MU-...				
		100E1500.2	200E1500.2	300E1500.2	500E1500.1	1000E1500.1
for tank (type DTR, content)	Litres	100	200	300	400	1.000
Legth of agitator shaft	mm	564	572	822	974	1.069
Speed	min <sup>-1</sup>	1.500	1.500	1.500	1.500	1.500
Weight	kg	8,7	8,7	9,5	10	19

\*) Synchronous speed

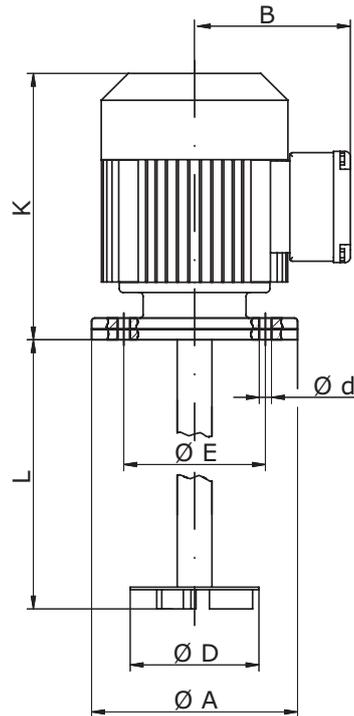
ELECTRICAL DATA		MU-...				
		100E1500.2	200E1500.2	300E1500.2	500E1500.1	1000E1500.1
Power		0,37	0,37	0,37	0,37	0,75
Voltage		230/400V, 50Hz				
Enclosure		IP 55				
ISO-Class		F				

## BASIC DESIGNS

### MU-...E1500...

Type	Article-No.	Price (EUR)
MU-100E1500.2	83003339	①
MU-200E1500.2	83003340	①
MU-300E1500.2	83003321	①
MU-500E1500.1	83003327	①
MU-1000E1500.1	83001917	①

## DIMENSIONS



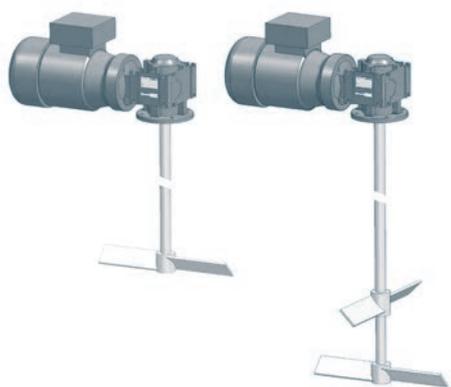
	L	A	B	d	D	E	K
MU-100E1500.2	565	120	111	7	100	100	265
MU-200E1500.2	582	160	111	8,5	100	130	243
MU-300E1500.2	807	160	111	8,5	125	130	243
MU-500E1500.1	970	160	111	8,5	125	130	243
MU-1000E1500.1	1.062	200	123	11	150	165	324

## OPTIONS/ACCESSORIES

		Price [EUR]
Materials	agitator shaft	1.4571 ●
	mixing organ	1.4571 ●
Protection flange	agitator shaft	1.4571, PE-covered ▲
	mixing organ	PVDF ▲
Gas-tight design	made of plastic (PE)	●
	made of stainless steel	▲
Special voltage	(nicht bei Typ: MU-100E1500.2)	▲
Agitator traverse	for IBC-Container (Art.-No. 55002554)	▲
Fixing set	MU-100E1500.2	▲
	MU-200E1500.2	▲
	MU-300E1500.2	▲
	MU-500E1500.1	▲
	MU-1000E1500.1	▲

# ELECTRIC AGITATOR

## Slow stirrer



### ÜBERBLICK

- Speed 180 min<sup>-1</sup> (constant)
- Balanced agitator shaft
- Suitable for continuous operation
- Maintenance-free
- Impeller(s) can be unbolted
- High quality materials
- For viscosity ≤ 500 mPas
- Max. density 1,2 kg/dm<sup>3</sup>

## TECHNICAL DATA

GENERAL DATA		MU-...			
		200E180.1	300E180.1	500E180.1	1000E180.1
for tank (type DTR, content)	Litres	200	300	500	1000
Legth of agitator shaft	mm	573	823	975	1.075
Speed	min <sup>-1</sup>	180	180	180	180
Weight	kg	12,4	14,1	14,6	14,9

Agitators unsuitable for pass-through operation

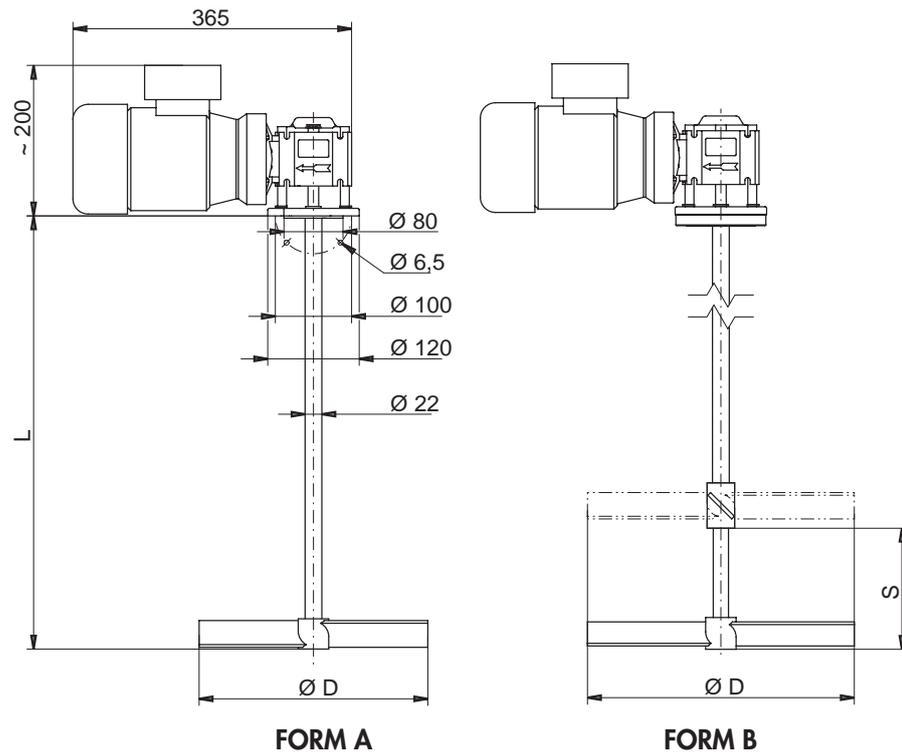
ELECTRICAL DATA	MU-...E180.1
Power	0,37 kW
Voltage	230/400V, 50Hz
Enclosure	IP 55
ISO-Class	F

## BASIC DESIGNS

### MU-...E180.1

Type	Article-No.	Price (EUR)
MU-200E180.1	83001926	①
MU-300E180.1	83001894	①
MU-500E180.1	83001893	①
MU-1000E180.1	83001892	①

## DIMENSIONS

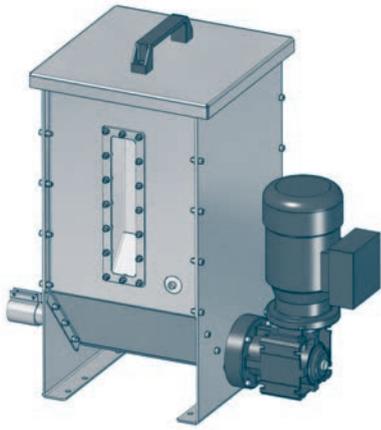


	FORM	L	D	S
MU-200E180.1	A	573	300	—
MU-300E180.1	B	823	300	150
MU-500E180.1	B	975	350	160
MU-1000E180.1	B	1.075	350	210

## OPTIONS/ACCESSORIES

		Price [EUR]
Materials	shaft + mixing organ	1.4571 ●
Gas-tight design	sealing flange made of PE	▲
	sealing flange made of 1.4571	▲
Special voltage		⌚

# DRY MATERIAL FEEDER



## OVERVIEW

- Compact design
- Linear performance curves
- For pourable, non-bridging media
- High dosing accuracy
- Mounted-on ribbon pan
- Sealing between filling space and drive
- No-maintenance
- Easy to operate

## TECHNICAL DATA

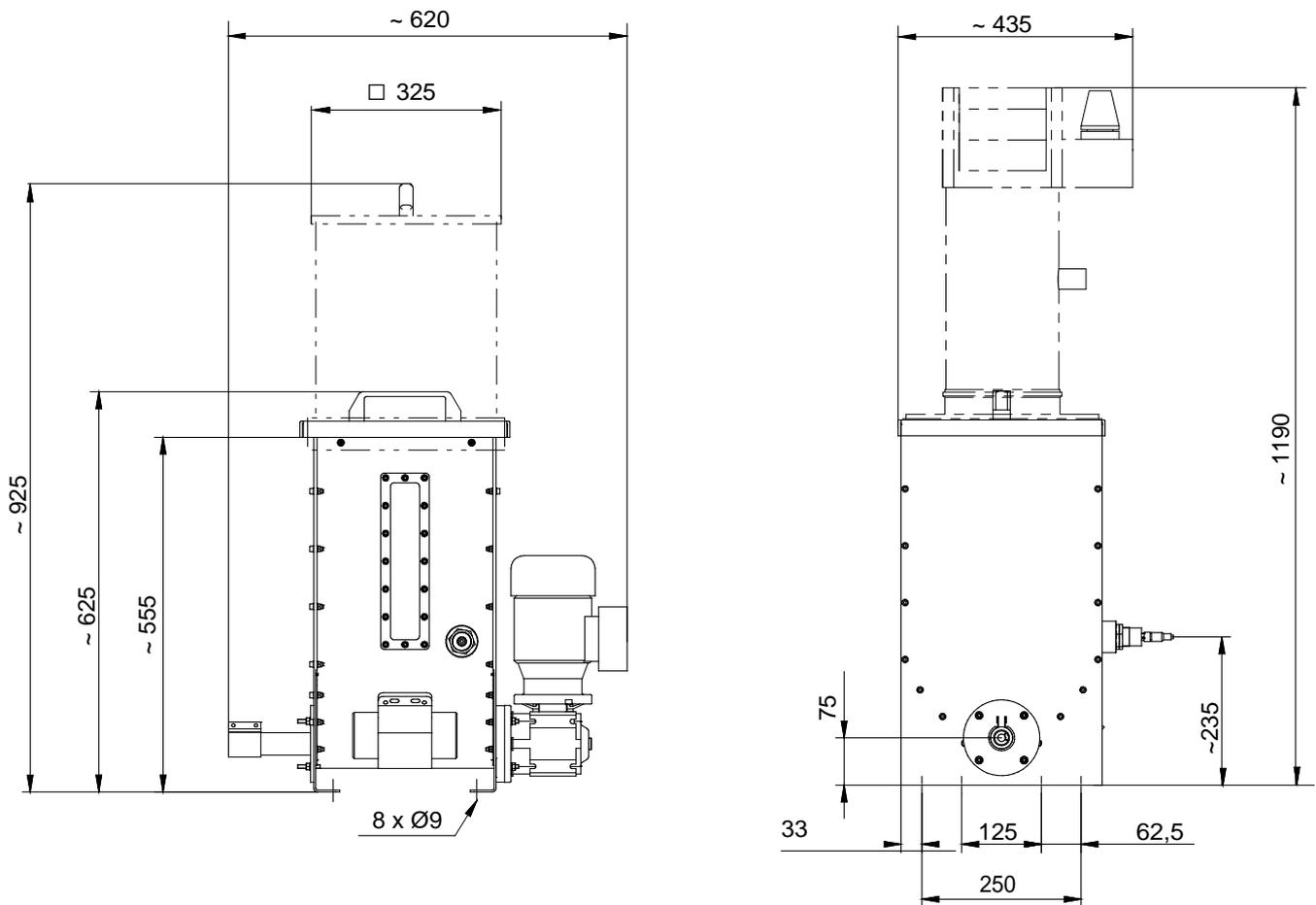
GENERAL DATA			DMF-5.2	DMF-20.2	DMF-50.2	DMF-200.2
Feed rate	l/h		5	20	50	200
Drive power	kW		0,09	0,18	0,09	0,18
Speed	min <sup>-1</sup>		17	68	17	68
Dry material	density	kg/ltr.	0,5...1,2	0,5...1,2	0,5...1,2	0,5...1,2
	grain size	mm	1,5	1,5	1,5	1,5
Vorratsvolumen	litres		35	35	35	35
Weight (empty)	kg		30	30	30	30

## BASIC DESIGNS

### DMF-... .2

Type		Price (EUR)
DMF-5.2	25002778	①
DMF-20.2	25002745	①
DMF-50.2	25002748	①
DMF-200.2	25002780	①

## DIMENSIONS



## OPTIONS/ACCESSORIES

		Price [EUR]
Hopper extension	volume expansion: 25 litres	▲
Sensors	empty signal for hopper	▲
Electric external vibrator	0,045 kW, 230V, 50Hz, IP65, ISO-Class F	▲
Conveyor unit	incl. hose package and suction pipe	▲



# DOSING PUMPS

# OVERVIEW DOSING AND FEEDING PUMPS

## DIAPHRAGM PUMP

max. 1710 l/h, max. 10 bar

### FEATURES

- High operational reliability
- Fully leakage-free
- Can be run dry
- Self-priming
- Cost-effective
- CIP design
- ATEX design

### CONTROLS

- Manual, frequency converter, actuator
- Control electronics (impulse, analogue, external)
- PROFIBUS
- PROFINET (409.2)

### SERIES 409.2 e



### SERIES 410.2 e



### MULTI-HEAD PUMP 409.2 e / 410.2 e

- Max. 5 heads up to 7500 l/h

## MULTI-LAYER DIAPHRAGM PUMP

max. 1440 l/h, max. 20 bar

### FEATURES

- Very high operational reliability
- Diaphragm service life up to 10,000 h
- Diaphragm monitoring
- up to 100 °C (media temp.)
- ATEX design

### CONTROLS

- Manual, frequency converter, actuator
- Control electronics (impulse, analogue, external)
- PROFIBUS
- PROFINET (409.2)

### SERIES 409.2 ML



### SERIES 410.2 ML



### MULTI-HEAD PUMP 409.2 ML / 410.2 ML

- Max. 5 heads up to 6000 l/h

## PISTON DIAPHRAGM PUMP

max. 1020 l/h, max. 80 bar

### FEATURES

- Very high operational reliability
- Diaphragm service life up to 10,000 h
- Diaphragm monitoring
- Overpressure protection
- ATEX design

### CONTROLS

- Manual, frequency converter, actuator
- Control electronics (409.2) (impulse, analogue, external)
- PROFIBUS
- PROFINET (409.2)

### SERIES 409.2 KM



### SERIES 410.2 KM



### MULTI- HEAD PUMP 409.2 KM / 410.2 KM

- Max. 5 heads up to 4000 l/h



## PISTON PUMP

max. 22 l/h, max. 140 bar

### FEATURES

- Cost-effective high-pressure pump
- Very high metering accuracy
- Operational reliability thanks to leakage nozzles

### CONTROLS

- Manual, frequency converter, actuator
- Control electronics (impulse, analogue, external)
- PROFIBUS
- PROFINET

### SERIES 409.2 K



## FEEDING PUMP

max. 3100 L/H, max. 4 BAR

### FEATURES

- Low maintenance
- Up to 8 mWS
- easy to handle
- Low-maintenance transfer pump
- Leakage-free
- Can be run dry indefinitely
- Self-priming

### CONTROLS

- Manual
- Frequency converter

### SERIES 411.3



## SOLENOID DIAPHRAGM PUMP

max. 35 l/h, max. 10 bar

### FEATURES

- Ease of use
- Many standard functions
- Compact and economical
- High-quality design

### CONTROLS

- Manual, pulse, analogue

### SERIES 204.1



## AIR OPERATED PUMP

max. 800 l/min, max. 8 bar

### FEATURES

- Low maintenance
- Protected from overpressure and can be run dry

### CONTROLS

- Via compressed air

### airPUMP SERIES



## STEPPER MOTOR PUMP

max. 50 l/h, max. 10 bar

### FEATURES

- Adjustment range 1:1000
- Batch dosing with recipe pre-selection
- Week/day timer
- Diaphragm monitoring
- Maintenance service display
- Intuitive and easy to operate

### CONTROLS

- Manual, control electronics (impulse, analogue, external)
- PROFIBUS
- PROFINET

### SERIES iSTEP XS / S



## CENTRIFUGAL PUMP

max. 50 m<sup>3</sup>/h, max. 41m Height

### SERIES centrifugalPUMP



## HOSE PUMP

max. 13.000 l/h, max. 10 bar

### SERIES PERIBEST



# MULTI-HEAD AND COMBINATION PUMPS FOR SPECIAL AND LOW-PULSATION TASKS

OPERATING RANGE up to max. 7500 l/h and up to 5 pump heads

## ADVANTAGES AT A GLANCE

- Extremely low-pulsation conveying due to stroke offset
- Up to 5 heads possible, also in different capacities
- Each head individually adjustable in capacity
- Maximum flexibility and accuracy
- Convey different media in one process

## SAMPLE APPLICATIONS

- Power station technology
- Dye and paint manufacturing
- Drinks industry
- Textile industry
- For all sectors that require very low pulsation
- With different dosing rates in interdependent operation



## CONTROL SYSTEM

- 01 | Motor DSM / WSM
- 02 | Motor DSM with frequency converter

## HOUSING TYPE

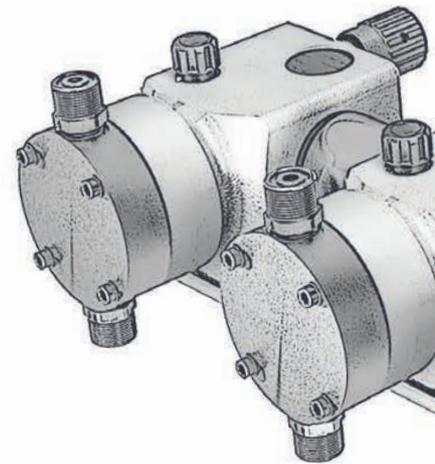
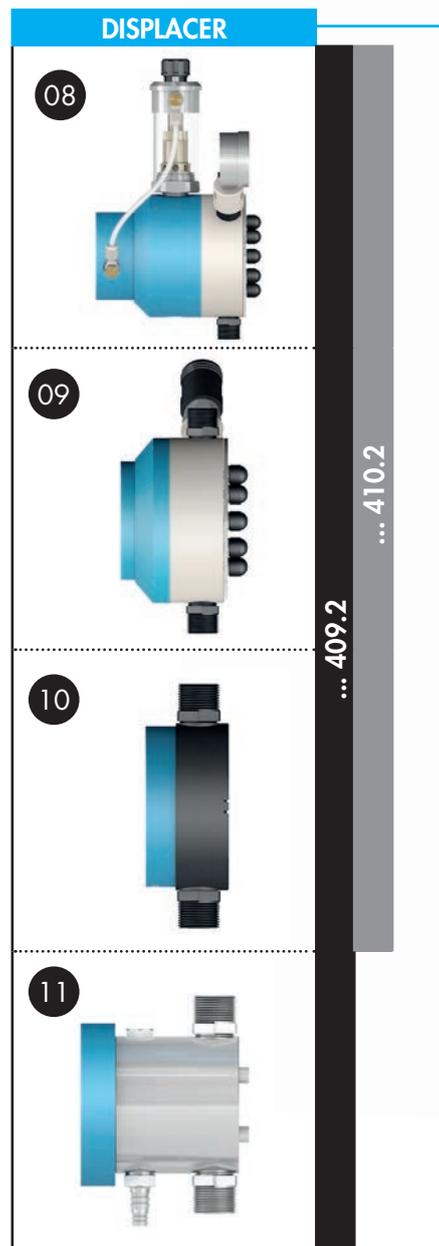
- 03 | 409.2
- 04 | 410.2

## STROKE ADJUSTMENT

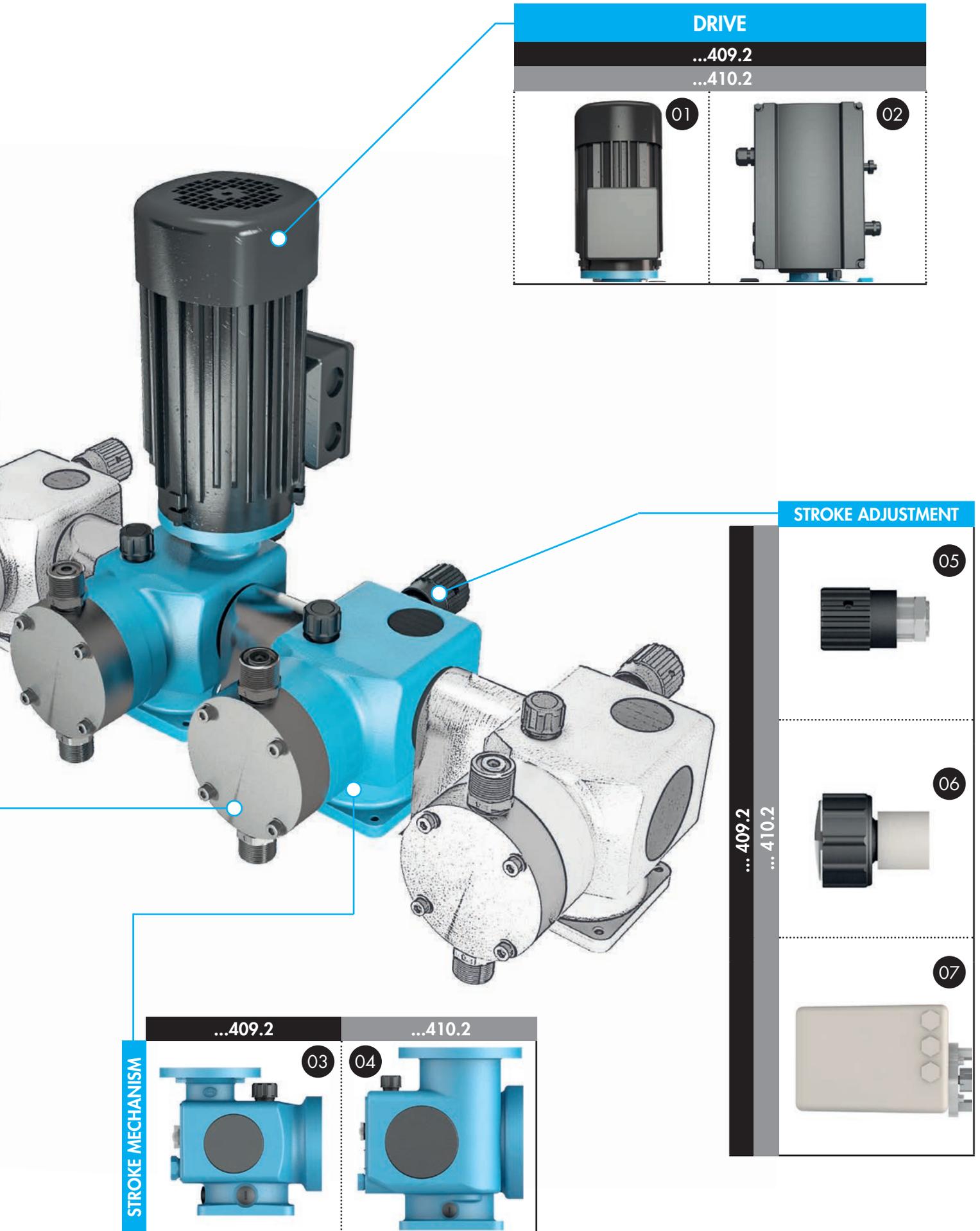
- 05 | Manual with simple scale
- 06 | Manual with position indicator
- 07 | Electrical with actuator

## DISPLACER TYPE

- 08 | Single-layer diaphragm pump
- 09 | Piston diaphragm pump
- 10 | Multi-layer diaphragm pump
- 11 | Piston pump

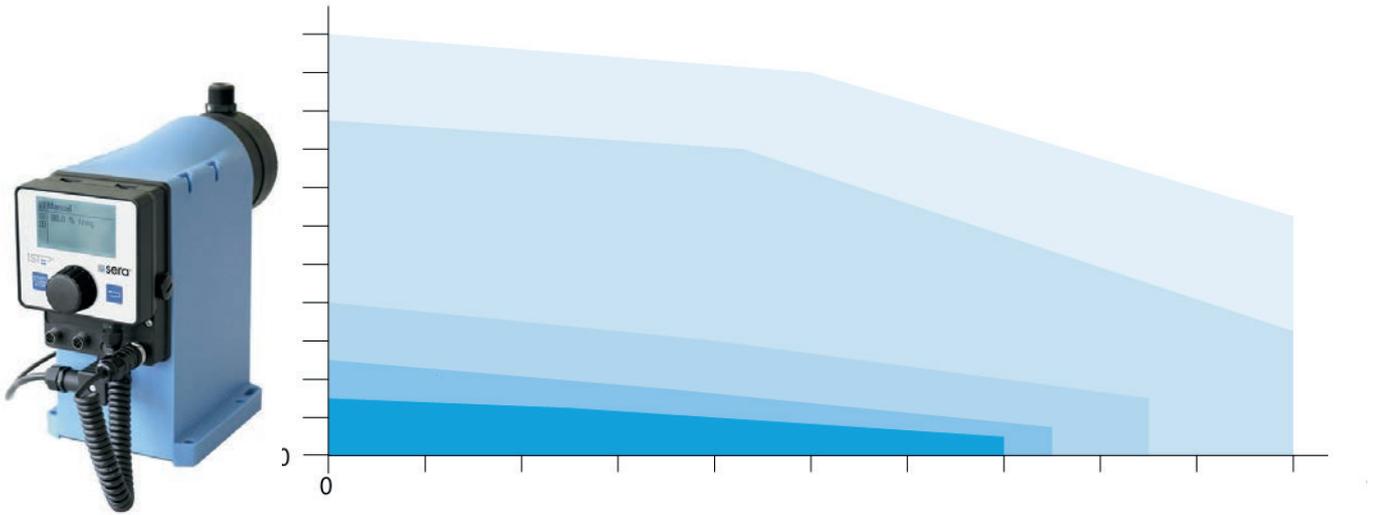


# INDIVIDUAL SOLUTIONS ON REQUEST



# PUMP PERFORMANCE CHART

Table to select the appropriate pump series



Solenoid diaphragm pump	
C 204.1	
l/h <sup>1)</sup>	bar
1,2	10
2,4	10
7	10
10	6
35	1,5

Stepper motor pumps		
iSTEP XS		
iSTEP S		
l/h <sup>1)</sup>	bar	bar
7	10	---
15	7	---
20	---	10
30	---	7
40	---	6
50	---	3

Diaphragm pumps				
RF 409.2				
C 409.2				
RF 410.2				
C 410.2				
l/h <sup>1)</sup>	bar	bar	bar	bar
1,6	10	10	---	---
2,4	10	10	---	---
7	10	10	---	---
12	10	10	---	---
18	10	10	---	---
25	10	10	---	---
50	10	10	---	---
75	10	10	---	---
90	8	8	---	---
115	4	4	---	---
140	8	8	---	---
180	4	4	---	---
250	3	3	---	---
280	---	---	8	8
350	3	3	---	---
570	---	---	6	6
900	---	---	5	5
1.450	---	---	5	5

Multi-layer diaphragm pumps				
RF 409.2 ML				
C 409.2 ML				
RF 410.2 ML				
C 410.2 ML				
l/h <sup>1)</sup>	bar	bar	bar	bar
11	20	20	---	---
17	20	20	---	---
30	20	20	---	---
45	16	16	---	---
72	16	16	---	---
110	10	8	---	---
135	---	---	15	15
150	4	4	---	---
220	4	3	---	---
500	---	---	10	10
1.200	---	---	5	5

Piston diaphragm pumps			
RF 409.2 KM			
C 409.2 KM			
RF 410.2 KM			
l/h <sup>1)</sup>	bar	bar	bar
7,5	80	80	---
10	80	80	---
18	70	50	---
38	---	---	80
45	35	25	---
76	---	---	70
95	20	16	---
150	---	---	40
190	10	8	---
310	---	---	20
510	---	---	14
850	---	---	8

Piston pumps	
RF 409.2 K	
l/h <sup>1)</sup>	bar
8	140
12	140
18	80

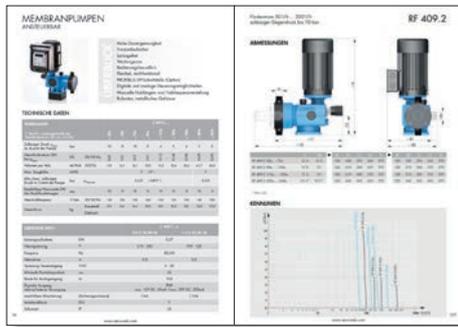
# TABLE OF CONTENTS

<b>DOSING PUMPS</b>		from page
	General Notes	<b>60</b>
	Fitting assignments and installation instructions	<b>62</b>
	<b>Solenoid diaphragm pumps</b> (controllable)	R204.1 <b>64</b> C204.1 <b>78</b>
	<b>Stepper motor pumps</b> (controllable)	iSTEP XS Pro/Pro+ <b>92</b>
	<b>Stepper motor pumps</b> (controllable)	iSTEP S Pro/Pro+ <b>104</b>
	<b>Diaphragm pumps</b> (controllable)	C409.2 Pro/Pro+ (1,2 - 25 l/h) <b>118</b> C409.2 Pro/Pro+ (50 - 350 l/h) <b>134</b>
	<b>Diaphragm pumps</b> (controllable)	C410.2 <b>152</b>
	<b>Multi-layer diaphragm pumps</b> (controllable)	C409.2 ML Pro/Pro+ <b>170</b>
	<b>Multi-layer diaphragm pumps</b> (controllable)	C410.2 ML <b>192</b>
	<b>Piston diaphragm pumps</b> (controllable)	C409.2 KM Pro/Pro+ <b>212</b>
	<b>Diaphragm pumps</b>	RF409.2 (1,2 - 25 l/h) <b>232</b> RF409.2 (50 - 350 l/h) <b>246</b>
	<b>Diaphragm pumps</b>	RF410.2 <b>264</b>
	<b>Multi-layer diaphragm pumps</b>	RF409.2 ML <b>280</b>
	<b>Multi-layer diaphragm pumps</b>	RF410.2 ML <b>300</b>
	<b>Piston diaphragm pumps</b>	RF409.2 KM <b>318</b>
	<b>Piston diaphragm pumps</b>	RF410.2 KM <b>334</b>
	<b>Piston pumps</b>	RF409.2 K <b>354</b>

# NOTES

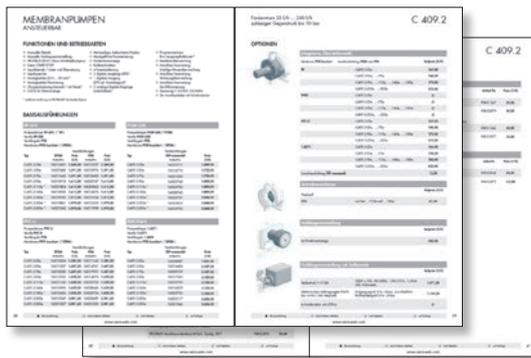
## NAVIGATION

The possible options and various accessories are shown for each pump series, following the pumping data. Fittings for suction and pressure side installations are located directly behind them and are assigned appropriately to the pump types.



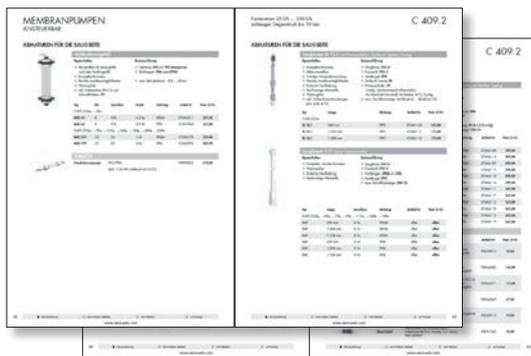
## OVERVIEW

- Properties
- Technical data
- Electrical data
- Dimensions
- Characteristic curves



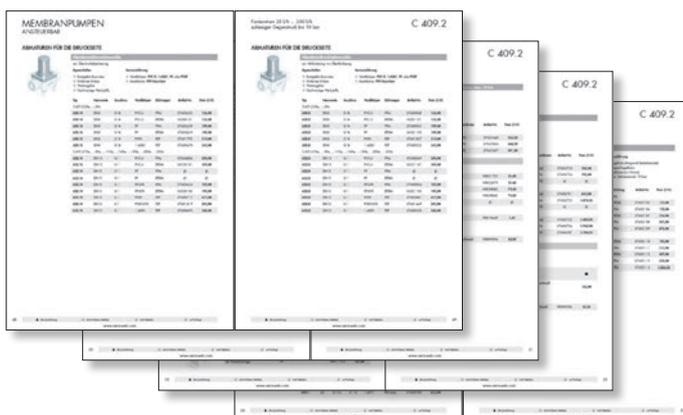
## BASIC DESIGNS / OPTIONS

- Functions and operating modes (C-Pumps)
- Material designs
- Article-No./Prices
- Options for design of the respective pump
- Accessories to the pump



## FITTINGS for the SUCTION SIDE

- Flow controller
- Multi function devices
- Suction lances (+Accessories)
- Foot valves
- Accessories



## FITTINGS for the PRESSURE SIDE

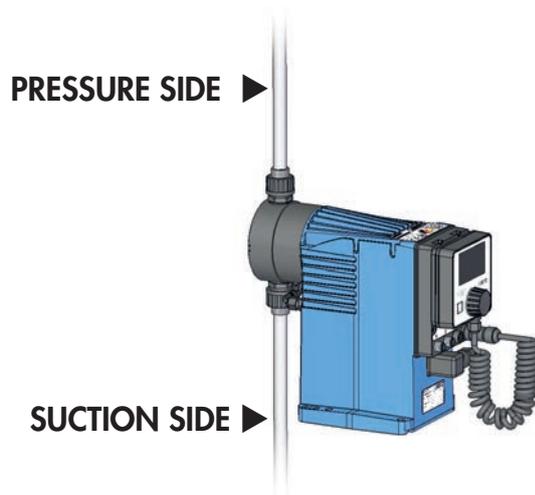
- Diaphragm relief valves
- Diaphragm pressure keeping valves
- Multifunction valves
- Flow meter
- Pulsation damper (+Accessories)
- Dosing valves
- Injection fittings



# ALLOCATION OF FITTINGS

For each pump series an assignment for suction and pressure side fittings is made following the information pages. This assignment takes into account fittings that must at least be used with regard to their nominal width in order to ensure safe and trouble-free operation of the respective pumps when conveying water-like fluids. The use of valves with a larger nominal width is possible without problems in most cases.

When selecting the fittings, the installation instructions for dosing pumps must be observed or sera must be coordinated.



## FITTINGS for pressure side installation

<b>A</b>	Diaphragm relief valve	for overpressure protection
<b>B</b>	Diaphragm pressure keeping valve	to prevent overdosing
<b>C</b>	Multifunction valve	pressure keeping- and relief valve in one fitting
<b>D</b>	Diaphragm pulsation damper	for damping the flow in the pressure line
<b>E</b>	Dosing valve	fitting for feeding the process line
<b>F</b>	Injection fitting	fitting for feeding the process line
<b>G</b>	Vent valve	for the elimination of air/gas inclusions in the suction line and pump body
<b>H</b>	Flow meter	for measuring and monitoring the flow (only for controllable pumps)
<b>I</b>	Shut-Off valve (Ball valve)*	

\* available on request

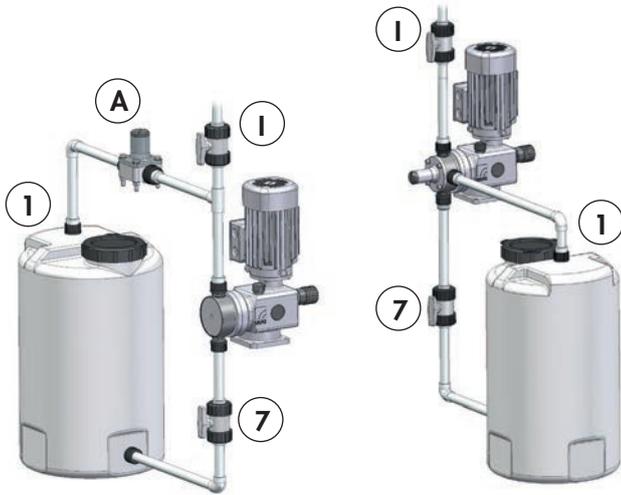
## FITTINGS for suction side installation

<b>1</b>	Tank/Container	for storing the dosing medium
<b>2</b>	Multifunction vessel	usable as an priming aid and/or an calibration pot
<b>3</b>	Suction lance	for suction from different containers (with and without level switch)
<b>4</b>	Foot valve	with check valve to avoid idling of the suction line
<b>5</b>	Flow controller	for detecting the flow rate of the metering pump (only for controllable pumps)
<b>6</b>	Line strainer*	for collecting impurities in the medium
<b>7</b>	Shut-Off valve (Ball valve)*	

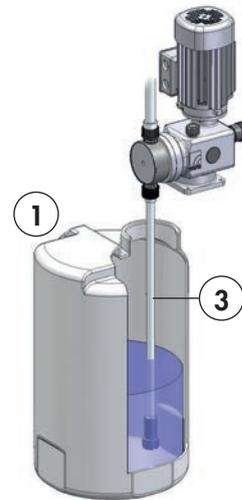
\* available on request

# INSTALLATION EXAMPLES

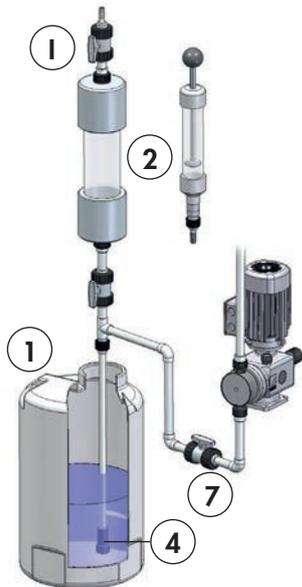
Provide for an overpressure protection



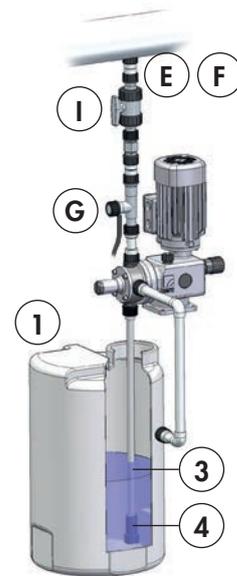
Avoid an emptying of the suction line



Suction via a siphon vessel



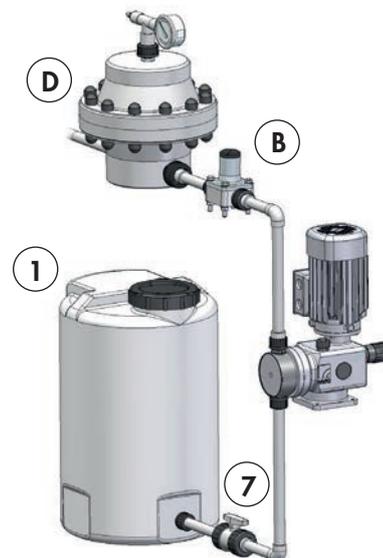
How to ensure suction free from air



Eliminating undesired siphoning



Damping of the pulsation



# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- Compact design
- Low weight
- Safe to run dry
- Leakage-free
- Low-maintenance
- User-friendly
- High dosing accuracy
- Integrable into automatic processes
- Manual stroke length and stroke frequency adjustment
- Robust, corrosion-resistant housing



## TECHNICAL DATA

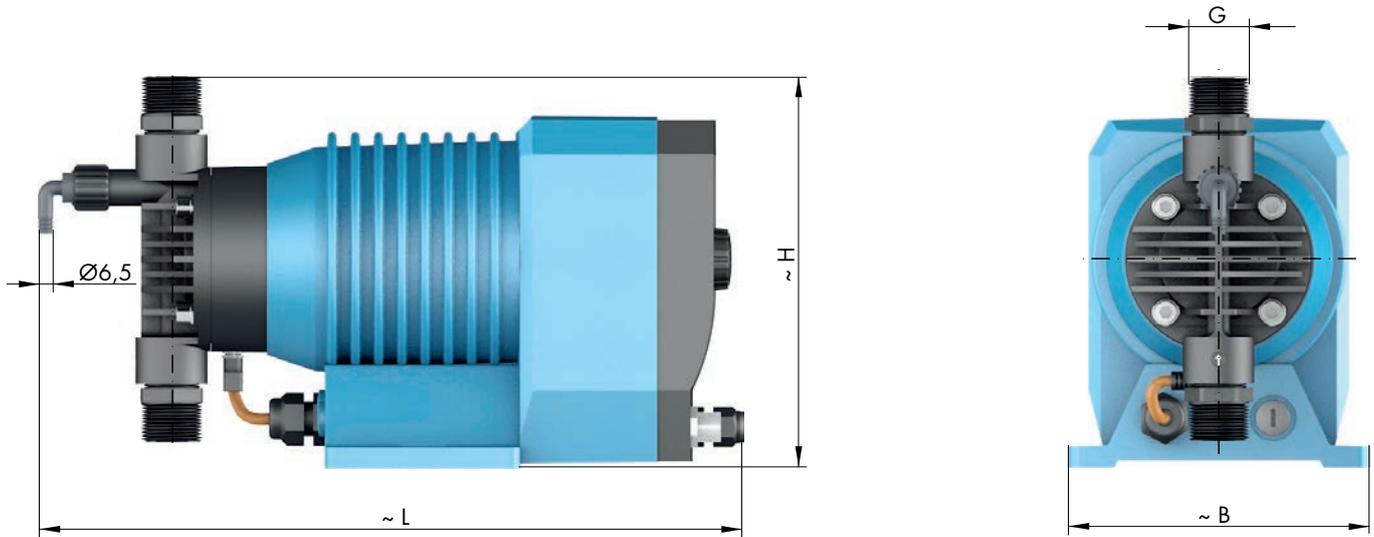
PUMP DATA			R 204.1-...				
			1,2e	2,4e	7,0e	10e	35e
Permissible pressure $p_{2max}$ at the pump outlet	bar		10	10	10	6	1,5
Nominal capacity QN at $p_{2max}$	l/h	50/60 Hz	0-1,2	0-2,4	0-7	0-10	0-35
Quantity per stroke	ml/stroke (100%)		0,13	0,27	0,78	1,11	3,89
Max. suction height	mWC		2	2	3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,2/0	-0,2/0	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		5	5	5	5	10
Nominal stroke frequency	1/min	50/60 Hz	150	150	150	150	150
Weight approx.	kg		4,1	4,1	4,8	4,8	5,1

ELECTRICAL DATA			R 204.1-...e
Middle power draw	W		20
Nominal voltage	V		100 - 240
Frequency	Hz		50/60
Inlet voltage, control input	V DC		5...30
Minimum contact signal time	ms		55
Analogue input resistance	$\Omega$		100
Current Consumption during stroke	A (at 230V)		max. 1,0
Recommended fuse (circuit breaker)			C2A
Insulation class	ISO		F
Enclosure	IP		65

Flow capacity 1,2 l/h ... 35 l/h  
 Admissible counterpressure up to 10 bar

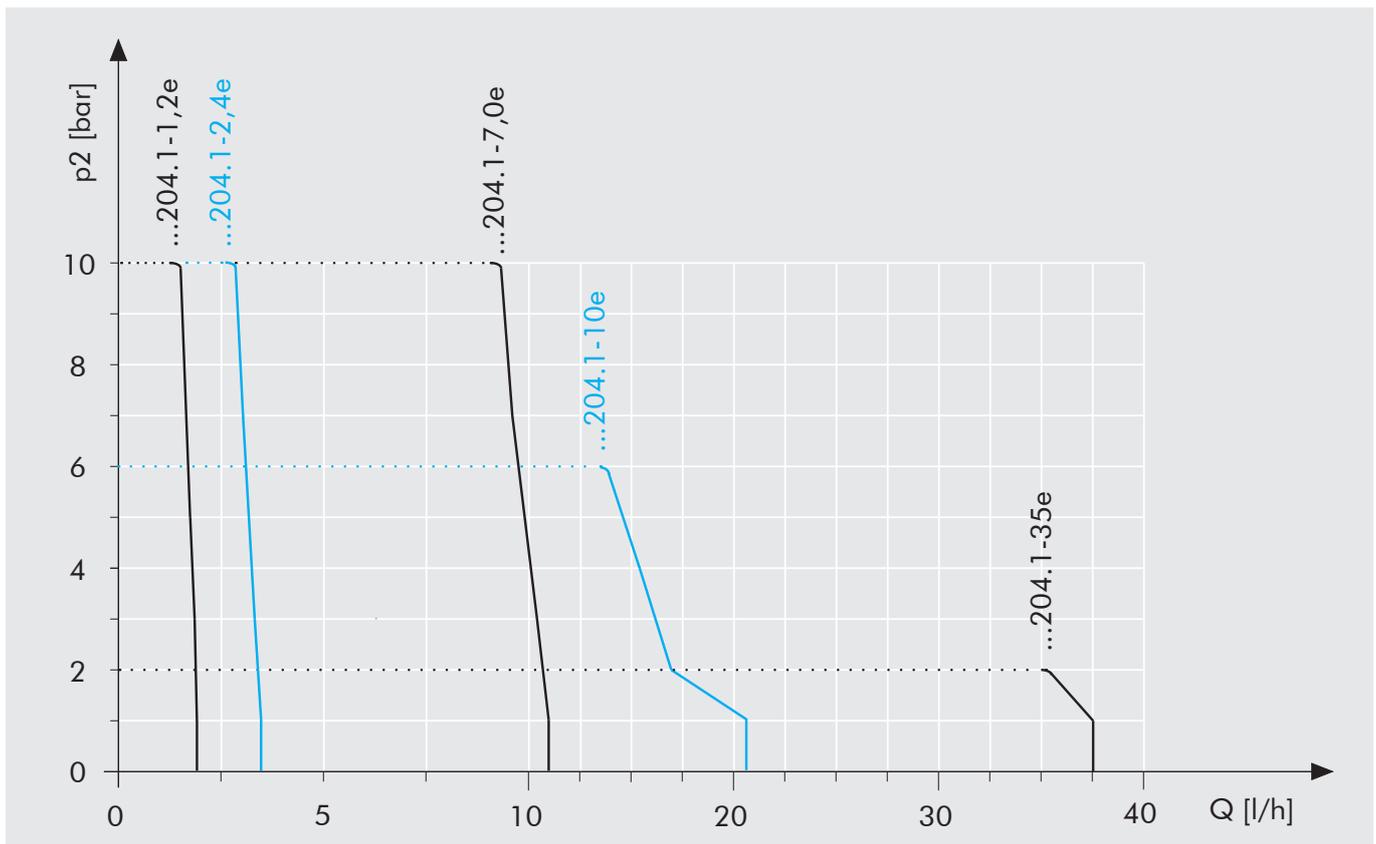
R 204.1

## DIMENSIONS



	G		B	L	H		B	L	H		B	L	H
R 204.1-1,2e	G 3/4	PP-/PVDF-GFK	130	305	171	PVC, PP, PVDF	130	275	161	1.4571	130	275	161
R 204.1-2,4e	G 3/4		130	305	171		130	275	161		130	275	161
R 204.1-7,0e	G 3/4		130	305	171		130	275	161		130	275	161
R 204.1-10e	G 3/4		130	305	171		130	275	161		130	275	161
R 204.1-35e	G 3/4		130	275	166		130	275	171		130	275	167

## CHARACTERISTIC CURVES



# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

- Manual operation
- Manual stroke frequency adjustment (10%, 25%, 50%, 100%)
- External STOP
- Pulse operation 1:1
- Analogue operation (4 ... 20 mA)
- 3 LEDs for status indication
- 2-key operation
- 2 digital inputs (PLC or contact signal)
- 1 analogue input (4 ... 20 mA)
- 2-stage level monitoring
- Voltage 100 - 240 V, 50/60Hz
- 2m connection cable with Euro-plug

### BASIC DESIGNS

#### PP-FRP



Pump body **PP-FRP**

Valves **PP-FRP**

Valve balls **PTFE**

Diaphragm **PTFE-faced**

\* with manual venting valve  
(Seal: **EPDM** or **FPM**)

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
R204.1-1,2e*	16009762	Ⓢ	16007649	Ⓢ
R204.1-2,4e*	16007838	Ⓢ	16008838	Ⓢ
R204.1-7,0e*	16008283	Ⓢ	16008006	Ⓢ
R204.1-10e*	16007836	Ⓢ	16007816	Ⓢ
R204.1-35e	16017102	Ⓢ	16015365	Ⓢ

#### PVDF-FRP

Pump body **PVDF-FRP**

Valves **PVDF-FRP**

Valve balls **PTFE**

Diaphragm **PTFE-faced**

\* with manual venting valve  
(Seal: **FFKM**)

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
R204.1-1,2e**	16028126	Ⓢ
R204.1-2,4e**	16028127	Ⓢ
R204.1-7,0e**	16028128	Ⓢ
R204.1-10e**	16028129	Ⓢ
R204.1-35e	16028130	Ⓢ

#### PVC-U



Pump body **PVC-U**

Valves **PVC-U**

Valve balls **PTFE**

Diaphragm **PTFE-faced**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
R204.1-1,2e	16010444	Ⓢ	16007312	Ⓢ
R204.1-2,4e	16010445	Ⓢ	16012485	Ⓢ
R204.1-7,0e	16014415	Ⓢ	16012464	Ⓢ
R204.1-10e	16013522	Ⓢ	16008722	Ⓢ
R204.1-35e	15006246	Ⓢ	15006247	Ⓢ

#### STAINLESS STEEL

Pump body **1.4571**

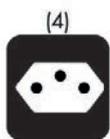
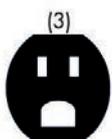
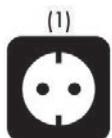
Valves **1.4571**

Valve balls **1.4401**

Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
R204.1-1,2e	15002348	Ⓢ
R204.1-2,4e	15003031	Ⓢ
R204.1-7,0e	15003384	Ⓢ
R204.1-10e	16024904	Ⓢ
R204.1-35e	15005382	Ⓢ

### OPTIONS



#### Special connection

different plug types for different, international standards

Type	Price (EUR)
Plug 1: CEE 7/4 „Euro-plug“	●
Plug 2: AS 3112 „Australia plug“	▲
Plug 3: NEMA 5-15, 3-pole „US plug“	▲
Plug 4: SN 441011 (Type J) „swiss plug“	▲

## ACCESSORIES



### Control cable

#### for controlling the pump

		Article-No.	Price (EUR)
Cable socket M12, 5-pole	fully assembled, incl. 5m cable	90031246	▲
Cable socket M12, 5-pole	individually convertible (without cable)	90022878	▲

#### for level input (level monitoring not included)

Cable socket M12, 3-pole	fully assembled, inkl. 5m cable	90031245	▲
Cable socket M12, 3-pole	individually convertible (without cable)	90022877	▲



### Dosing Set

for easy removal of the medium and dosing into a further pipeline.

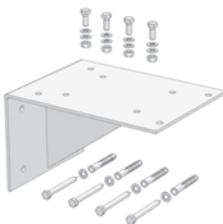
#### Properties

- Foot valve
- Dosing valve
- Dosing hose (length adjustable)
- Hose screw fitting

#### Basic version

- Dosing hose: **PE** (7m length)
- Fußventil: **PP-FRP** or **PVC-U**
- Dosing valve: **PP-FRP** or **PVC-U**
- max. operating pressure: **10 bar**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
Dosing Set	8	G $\frac{3}{4}$	PP	EPDM	37606263	▲
Dosing Set	8	G $\frac{3}{4}$	PVC-U	FPM	37606264	▲



### Bracket

for wall mounting (incl. mounting kit)

	Article-No.	Price (EUR)
PP	90023844	▲
1.4301	90023872	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance S-01 (without level switch)

##### Properties

- Compact, robust design
- Maintenance-free
- Easy handling
- High-quality materials
- individual special lengths up to max. 1.500mm possible

##### Basic version

- Suction lance: **PVC-U**
- Foot valve: **PVC-U**
- Seals: **EPDM** or **FPM**
- Valve ball: **PTFE**
- max. flow rate: **200 l/h**
- Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



#### Suction lance SL-12.1 (with level switch, 2-stage with plug, 3-pole)

##### Properties

- Compact design
- Height-adjustable
- 2-stage level monitoring
- Flexible connection
- Easy handling
- High-quality materials
- Maintenance-free
- incl. hose connections 4/6, 6/8, 6/12

##### Basic version

- Suction lance: **PVC-U**
- Foot valve: **PVC-U**
- Valve ball: **PTFE**
- Hose (inboard): **PE**
- Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole
- max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
SL-12.1	600 mm	PTFE	37606120	▲
SL-12.1	1.000 mm	PTFE	37606117	▲
SL-12.1	1.200 mm	PTFE	37606118	▲

## FITTINGS FOR THE SUCTION SIDE



### Foot valve (Plastic)

#### Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

#### Basic version

- Ball: **PTFE**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>781.1</b>	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲



### Foot valve (plastic)

#### Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

#### Basic version

- Ball: **PTFE**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>731</b>	8	G 3/4	PVC-U	EPDM	37601636	▲



### Foot valve (Stainless steel)

#### Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

#### Basic version

- Ball: **1.4401**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>731</b>	8	G 3/4	1.4571	FEP	37601149	▲



### Multi-function device

#### Properties

- Can be used as an priming aid and/or an calibration pot
- Compact design
- Flexible Connection
- Maintenance-free
- incl. glue joint (PVC-U) and welding joint (PP)

#### Basic version

- Housing: **PVC-U / PVC-transparent**
- Seals: **FPM or EPDM**
- max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
<b>MFD 60</b>	8	G 3/4	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G 3/4	0,5 Ltr.	FPM	37605864	▲

### ACCESSORIES

37605682 ▲

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Flow controller

- IP65
- incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)
- max. permissible operating pressure: **10 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
R204.1-1,2e, ...-2,4e				
⊘			⊘	⊘
R204.1-7,0e, ...-10e				
<b>8191.1</b>		PVC-U/FPM	37602227	▲
		PP/FPM	37602175	▲
R204.1-35e				
<b>8192.1</b>		PVC-U/FPM	37602176	▲
		PP/FPM	37602177	▲

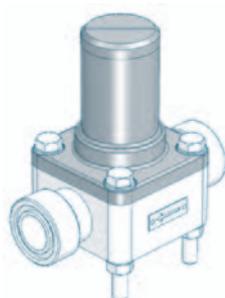


#### Flow meter

- IP65
- incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)
- max. permissible operating pressure: **8 bar**

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
R204.1-1,2e, ...-2,4e						
⊘					⊘	⊘
R204.1-7,0e, ...-10e						
<b>8010.1</b>	Inlet: G <sup>3</sup> / <sub>4</sub> (internal) Outlet: G <sup>3</sup> / <sub>4</sub> (external)	PP	ECTFE	FPM	37602337	▲
		PVC-U	ECTFE	FPM	37602339	▲
		PVDF	ECTFE	FPM	37602341	▲
R204.1-35e						
<b>8011.1</b>	Inlet: G <sup>3</sup> / <sub>4</sub> (internal) Outlet: G <sup>3</sup> / <sub>4</sub> (external)	PP	ECTFE	FPM	37602343	▲
		PVC-U	ECTFE	FPM	37602345	▲
		PVDF	ECTFE	FPM	37602348	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

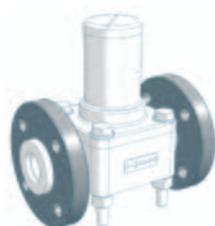
- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

#### Basic version

- Valve body: **PVC-U, 1.4581, PP** or **PVDF**
- Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲

### OPTIONS

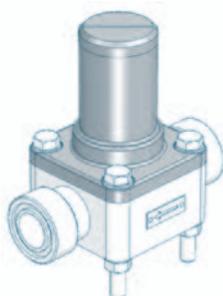


Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pressure keeping valve

to prevent over-conveyance

##### Properties

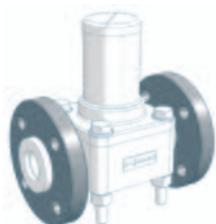
- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

##### Basic version

- Valve body: **PVC-U, 1.4581, PP** or **PVDF**
- Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲

#### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	①
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Multi function valve

#### Properties

- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

#### Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- **Relief valve side**  
Opening pressure: **2 up to 10 bar** (adjustable)
- **Pressure keeping valve side**  
Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲



### Injection fitting

#### Properties

- incl. injection lance for better mixing
- Easy installation
- Any mounting position
- Maintenance-free
- High-quality materials

#### Basic version

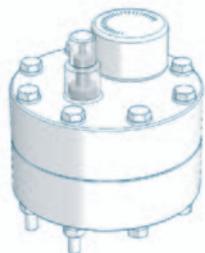
- Cone-type check valve (spring loaded)
- Shut-off ball valve
- Injection lance (L=150mm)
- max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
8061.1	10	G 3/4	R 1/2	PVC-U	EPDM	37602105	▲
8061.1	10	G 3/4	R 1/2	PVC-U	FPM	37602106	▲
8061.1	10	G 3/4	R 1/2	PP	EPDM	37602107	▲
8061.1	10	G 3/4	R 1/2	PP	FPM	37602108	▲
8061.1	10	G 3/4	R 1/2	PVDF	FPM	37602109	▲

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

##### Properties

- Any mounting position
- Easy installation
- Long service life
- Easy handling
- High-quality materials
- Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

#### ACCESSORIES

##### Connection adapter



Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	90038082	Ⓜ Ⓜ

##### Retaining clamp



(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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##### Filling pump FLP 2 for filling device



with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

- Any mounting position
- Easy installation
- Long service life
- Easy handling
- High-quality materials
- Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	⊘	⊘

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Dosing valve (Plastic)

##### Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

##### Basic version

- integrated injection lance
- Valve ball: **PTFE**
- Seals: **EPDM** or **FPM**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



#### Dosing valve (Plastic)

##### Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

##### Basic version

- Valve ball: **PTFE**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



#### Dosing valve (Stainless steel)

##### Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

##### Basic version

- Valve ball: **1.4401**
- Seals: **FEP-covered**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲

Flow capacity 1,2 l/h ... 35 l/h  
Admissible counterpressure up to 10 bar

R 204.1

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- Safe to run dry
- Leakage free
- Low maintenance
- User friendly
- High dosing accuracy
- Flexible, multifunctional
- Digital and analogue control
- PROFIBUS DP-Interface (option)
- Manual stroke length- and stroke frequency adjustm.
- Robust, corrosion-resistant housing



## TECHNICAL DATA

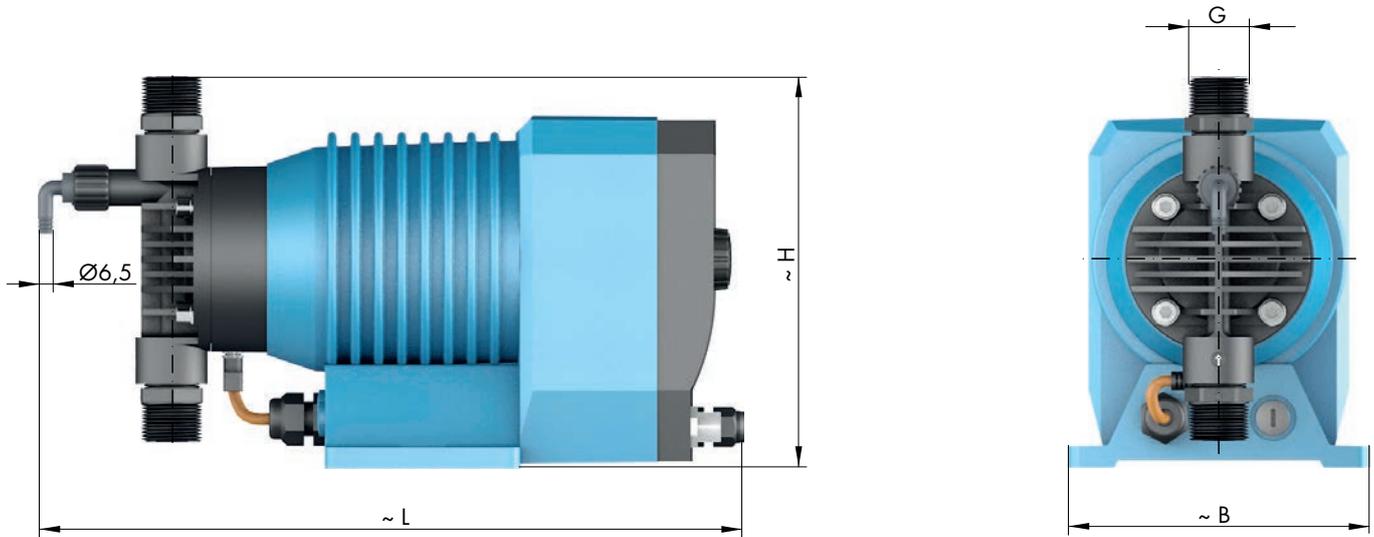
PUMP DATA			C 204.1-...				
			1,2e	2,4e	7,0e	10e	35e
Permissible pressure $p_{2max}$ at the pump outlet	bar		10	10	10	6	1,5
Nominal capacity QN at $p_{2max}$	l/h	50/60 Hz	0-1,2	0-2,4	0-7	0-10	0-35
Quantity per stroke	ml/stroke (100%)		0,13	0,27	0,78	1,11	3,89
Max. suction height	mWC		2	2	3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,2/0	-0,2/0	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		5	5	5	5	10
Nominal stroke frequency	1/min	50/60 Hz	150	150	150	150	150
Weight approx.	kg		4,1	4,1	4,8	4,8	5,1

ELECTRICAL DATA			C 204.1-...e	
Middle power draw	W		33	
Nominal voltage	V		100 - 240	
Frequency	Hz		50/60	
Inlet voltage, control input	V DC		5...30	
Minimum contact signal time	ms		55	
Analogue input resistance	$\Omega$		100	
Current Consumption during stroke	A (at 230V)		max. 1,0	
Digital output internal/external supply			PNP max. 15V DC, 50mA / max. 30V DC, 350mA	
Recommended fuse	(circuit breaker)		C2A	
Insulation class	ISO		F	
Enclosure	IP		65	

Flow capacity 1,2 l/h ... 35 l/h  
 Admissible counterpressure up to 10 bar

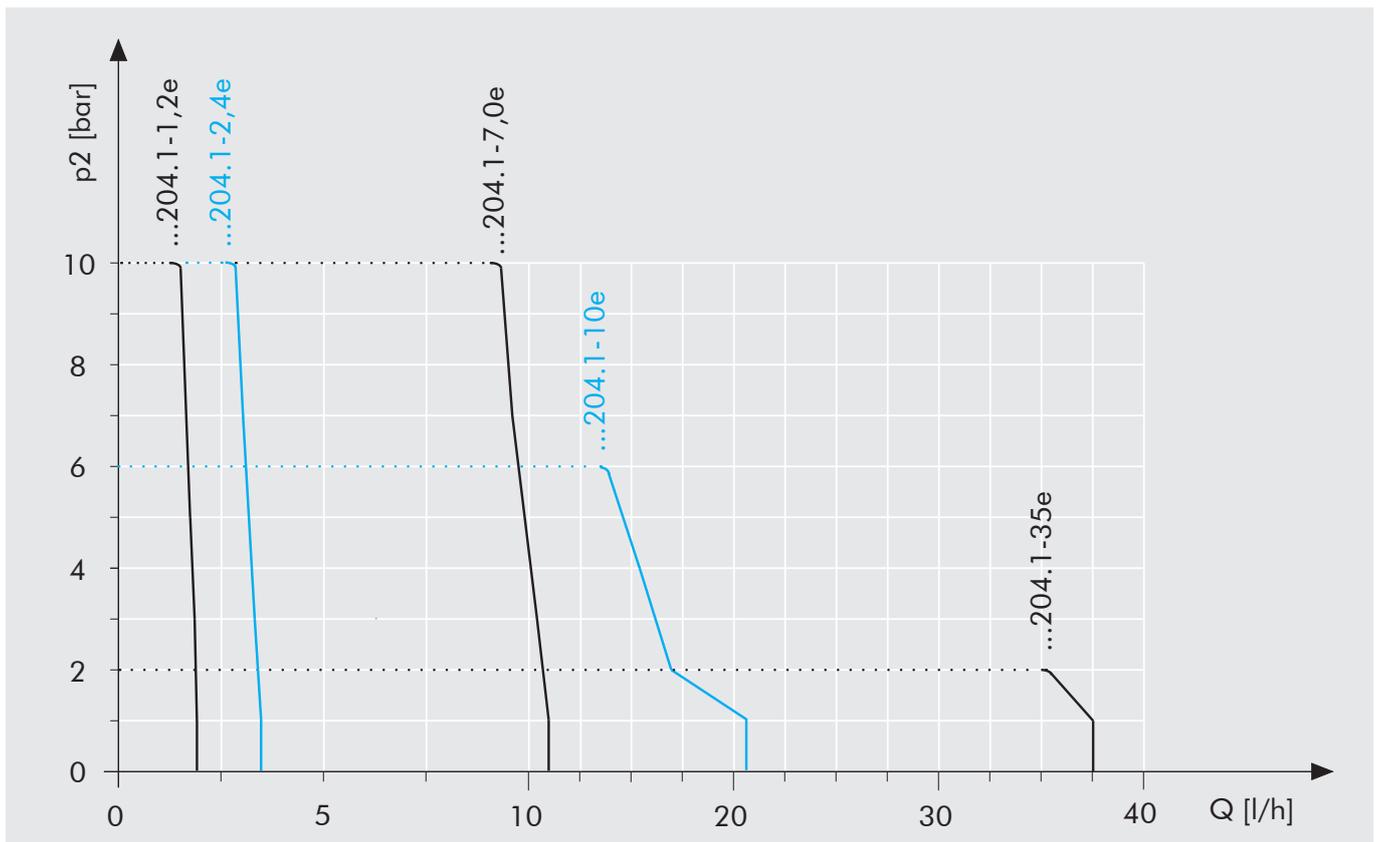
C 204.1

## DIMENSIONS



	G		B	L	H		B	L	H		B	L	H
C 204.1-1,2e	G 3/4	PP-/PVDF-GFK	130	305	171	PVC, PP, PVDF	130	275	161	1.4571	130	275	161
C 204.1-2,4e	G 3/4		130	305	171		130	275	161		130	275	161
C 204.1-7,0e	G 3/4		130	305	171		130	275	161		130	275	161
C 204.1-10e	G 3/4		130	305	171		130	275	161		130	275	161
C 204.1-35e	G 3/4		130	275	166		130	275	171		130	275	167

## CHARACTERISTIC CURVES



# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

Manual operation  
 Manual stroke frequency adjustment  
 External START/STOP  
 Pulse operation / fractinator  
 Pulse memory  
 Analogue operation (0/4 ... 20 mA)\*  
 Analogue operation standardization  
 Batch dosing (manual / with timer)\*  
 3 LEDs for status indication  
 Multiline, illuminated display  
 Menu-driven parameterization

Flow indication  
 Calibration function  
 4-key operation  
 2 digital outputs (PLC)\*  
 1 digital output  
 (PLC or contact signal)\*  
 2 analogue/digital inputs  
 (reversible)\*  
 Programmable  
 input/output functions\*  
 Diaphragm monitoring

Connection/evaluation:  
 2-stage level monitoring  
 Connection/evaluation:  
 Flow monitoring  
 Connection/evaluation:  
 Flow metering  
 Voltage 100 - 240 V, 50/60Hz  
 2m connection cable with Euro-plug  
 incl. control cable, 8-pole, 5m

### BASIC DESIGNS

#### PP-FRP



Pump body **PP-FRP**  
 Valves **PP-FRP**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

\* with manual venting valve  
 (Seal: **EPDM** or **FPM**)

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
C204.1-1,2e*	16018708	Ⓜ	16019066	Ⓜ
C204.1-2,4e*	16021043	Ⓜ	16010191	Ⓜ
C204.1-7,0e*	16010708	Ⓜ	16009166	Ⓜ
C204.1-10e*	16016021	Ⓜ	16012364	Ⓜ
C204.1-35e	16021542	Ⓜ	16020675	Ⓜ

#### PVDF-FRP

Pump body **PVDF-FRP**  
 Valves **PVDF-FRP**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

\* with manual venting valve  
 (Seal: **FFKM**)

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
C204.1-1,2e**	16028123	Ⓜ
C204.1-2,4e**	16028124	Ⓜ
C204.1-7,0e**	16028125	Ⓜ
C204.1-10e**	15005691	Ⓜ
C204.1-35e	15005698	Ⓜ

#### PVC-U



Pump body **PVC-U**  
 Valves **PVC-U**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
C204.1-1,2e	16016100	Ⓜ	16016451	Ⓜ
C204.1-2,4e	16016502	Ⓜ	16012315	Ⓜ
C204.1-7,0e	16015543	Ⓜ	16014969	Ⓜ
C204.1-10e	16017407	Ⓜ	16012316	Ⓜ
C204.1-35e	16023746	Ⓜ	16023747	Ⓜ

#### STAINLESS STEEL

Pump body **1.4571**  
 Valves **1.4571**  
 Valve balls **1.4401**  
 Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
C204.1-1,2e	Ⓜ	Ⓜ
C204.1-2,4e	15005135	Ⓜ
C204.1-7,0e	15004609	Ⓜ
C204.1-10e	15004834	Ⓜ
C204.1-35e	15005721	Ⓜ

## OPTIONS



### Special connection

different plug types for different, international standards

Type	Price (EUR)
Plug 1: CEE 7/4 „Euro-plug“	●
Plug 2: AS 3112 „Australia plug“	▲
Plug 3: NEMA 5-15, 3-pole „US plug“	▲
Plug 4: SN 441011 (Type J) „swiss plug“	▲

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### Control cable

		Article-No.	Price (EUR)
<b>for controlling the pump</b>			
Cable socket M12, 8-pole	fully assembled, incl. 5m cable	90031247	▲
Cable socket M12, 8-pole	individually convertible (without cable)	90022879	▲
<b>for level input</b> (level monitoring not included)			
Cable socket M12, 3-pole	fully assembled, inkl. 5m cable	90031245	▲
Cable socket M12, 3-pole	individually convertible (without cable)	90022877	▲



#### Dosing Set

for easy removal of the medium and dosing into a further pipeline.

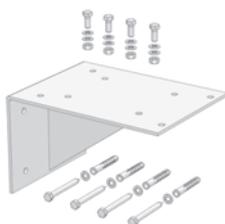
##### Properties

Foot valve  
 Dosing valve  
 Dosing hose (length adjustable)  
 Hose screw fitting

##### Basic version

Dosing hose: **PE** (7m length)  
 Fußventil: **PP-FRP** or **PVC-U**  
 Dosing valve: **PP-FRP** or **PVC-U**  
 max. operating pressure: **10 bar**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
Dosing Set	8	G $\frac{3}{4}$	PP	EPDM	37606263	▲
Dosing Set	8	G $\frac{3}{4}$	PVC-U	FPM	37606264	▲



#### Bracket

for wall mounting (incl. mounting kit)

	Article-No.	Price (EUR)
PP	90023844	▲
1.4301	90023872	▲



#### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 3-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connections  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
SL-12.1	600 mm	PTFE	37606120	▲
SL-12.1	1.000 mm	PTFE	37606117	▲
SL-12.1	1.200 mm	PTFE	37606118	▲

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Foot valve (Plastic)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
781.1	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲



#### Foot valve (plastic)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	PVC-U	EPDM	37601636	▲



#### Foot valve (Stainless steel)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	1.4571	FEP	37601149	▲



#### Multi-function device

##### Properties

Can be used as an priming aid and/or an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and welding joint (PP)

##### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
MFD 60	8	G3/4	0,5 Ltr.	EPDM	37606311	▲
MFD 60	8	G3/4	0,5 Ltr.	FPM	37605864	▲

#### ACCESSORIES



##### Hand vacuum pump

PVC/FPM

37605682

(incl. 1,5m PVC-Hose d=12/21)

▲

## FITTINGS FOR THE PRESSURE SIDE



### Flow controller

IP65  
incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)  
max. permissible operating pressure: **10 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
C204.1-1,2e ...-2,4e				
⊘			⊘	⊘
C204.1-7,0e, ...-10e				
<b>8191.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602227	▲
		PP/FPM	37602175	▲
C204.1-35e				
<b>8192.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602176	▲
		PP/FPM	37602177	▲



### Flow meter

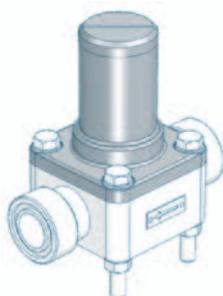
IP65  
incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)  
max. permissible operating pressure: **8 bar**

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
C204.1-1,2e ...-2,4e						
⊘					⊘	⊘
C204.1-7,0e, ...-10e						
<b>8010.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	ECTFE	FPM	37602337	▲
		PVC-U	ECTFE	FPM	37602339	▲
		PVDF	ECTFE	FPM	37602341	▲
C204.1-35e						
<b>8011.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	ECTFE	FPM	37602343	▲
		PVC-U	ECTFE	FPM	37602345	▲
		PVDF	ECTFE	FPM	37602348	▲

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm relief valve

for overpressure protection

##### Properties

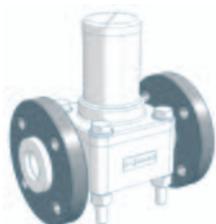
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

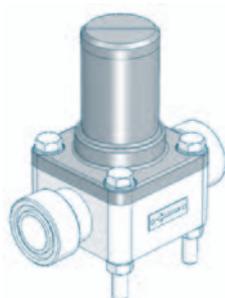
Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲

#### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

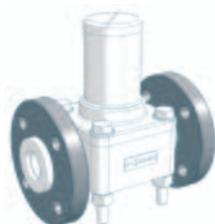
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	①
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Multi function valve

##### Properties

- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

##### Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- Relief valve side**
- Opening pressure: **2 up to 10 bar** (adjustable)
- Pressure keeping valve side**
- Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲



#### Injection fitting

##### Properties

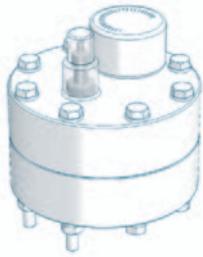
- incl. injection lance for better mixing
- Easy installation
- Any mounting position
- Maintenance-free
- High-quality materials

##### Basic version

- Cone-type check valve (spring loaded)
- Shut-off ball valve
- Injection lance (L=150mm)
- max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
8061.1	10	G 3/4	R 1/2	PVC-U	EPDM	37602105	▲
8061.1	10	G 3/4	R 1/2	PVC-U	FPM	37602106	▲
8061.1	10	G 3/4	R 1/2	PP	EPDM	37602107	▲
8061.1	10	G 3/4	R 1/2	PP	FPM	37602108	▲
8061.1	10	G 3/4	R 1/2	PVDF	FPM	37602109	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

### ACCESSORIES



#### Connection adapter

Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	90038081	Ⓢ



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# SOLENOID DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

##### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	⊘	⊘

#### ACCESSORIES



##### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



##### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

integrated injection lance  
 Valve ball: **PTFE**  
 Seals: **EPDM** or **FPM**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



### Dosing valve (Plastic)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

Valve ball: **PTFE**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

Valve ball: **1.4401**  
 Seals: **FEP-covered**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- Adjustment range 1:1000
- Controlled by a microprocessor
- Flow rates from 7 ml/h to 15 l/h
- Counterpressure up to 10 bar
- Slow Mode
- Timer- and batch-function
- Intuitive navigation
- 2 control versions
- Remote control
- Robust, corrosion-resistant housing

## TECHNICAL DATA

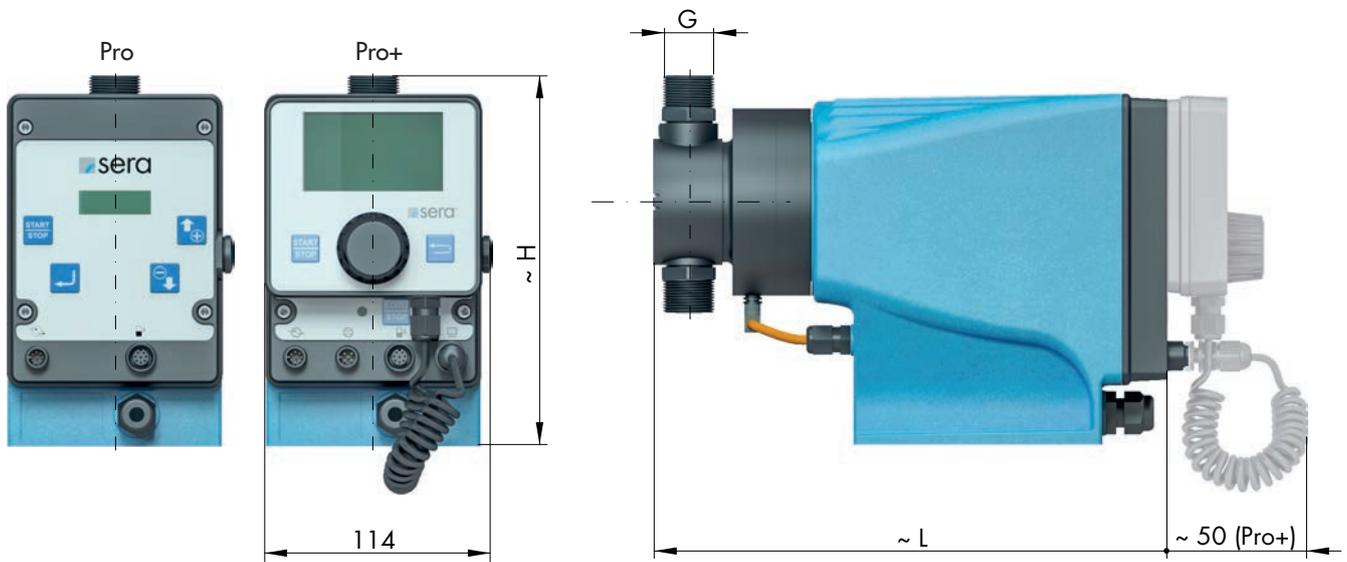
PUMP DATA			iSTEP XS 7	iSTEP XS 15
Permissible pressure $p_{2max.}$ at the pump outlet	bar		10	7
Nominal capacity QN at $p_{2max.}$	l/h		7	15
Capacity min. (1:1000)	l/h		0,007	0,015
Quantity per stroke	ml/Stroke	(100%)	0,61	1,47
Max. suction height	mWS		3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0,5	-0,3/0,5
Recommended nominal diameter DN of the connecting pipes	mm		3	5
Nominal stroke frequency	1/min		190	170
Weight approx.	kg	plastic	3,6	3,6
		stainless steel	4,0	4,0

ELECTRICAL DATA			iSTEP XS...
Power consumption	W		45
Voltage	V		100 - 240 AC
Frequency	Hz		50/60
Insulation class	ISO		F
Recommended fuse	(circuit breaker)		C10A
Enclosure			IP65

Flow capacity 7 l/h ... 15 l/h  
 Admissible counterpressure up to 10 bar

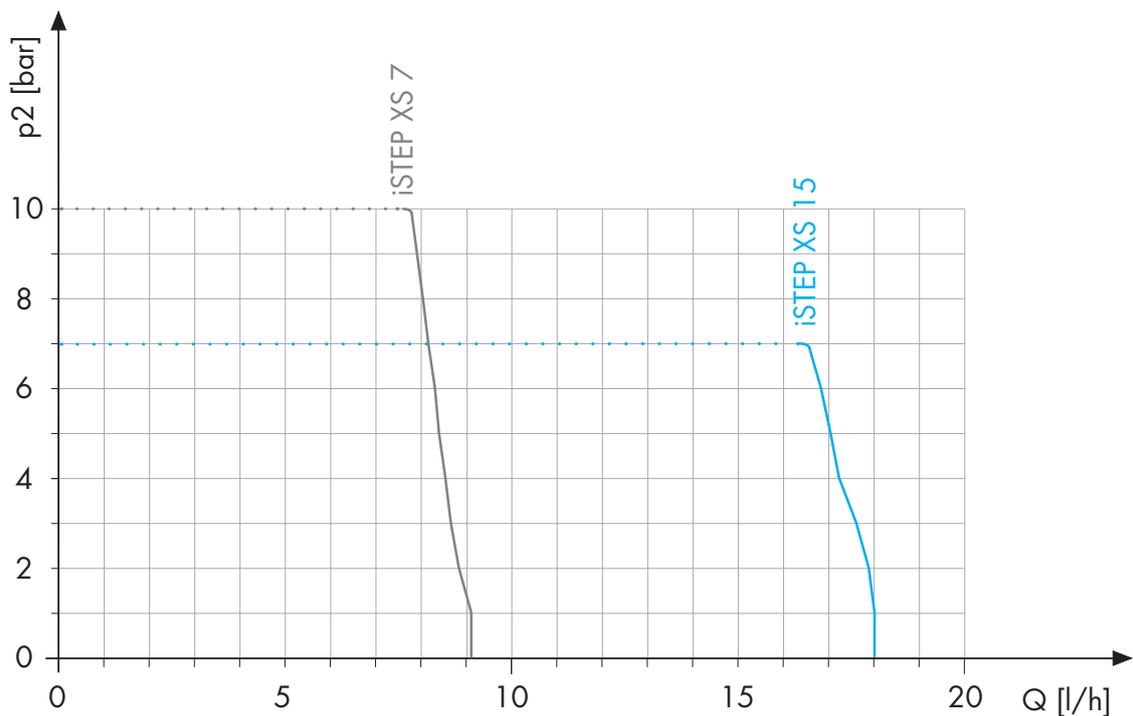
iSTEP XS

## DIMENSIONS



	G		L	H		L	H
iSTEP XS 7	G 3/4	PP PVDF	260	187	PVC 1.4571	260	188
iSTEP XS 15	G 3/4		265	188		264	188

## CHARACTERISTIC CURVES



# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

Extremely wide performance range  
Adjustment range 1:1000  
thus optimally adaptable  
Low pulsation dosage  
Drive controlled by microprocessor

Slow mode for viscous media  
Energy-efficient drive technology  
Intuitive menu navigation  
incl. parameterization  
Pulse division or multiplication

Different languages for the menu  
Certified accord. to TR (EAC)  
different digital/analogue Inputs  
2 Digital outputs  
3m cable with euro plug

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements & Display	4-button control  Multilingual display  4-color status indicator	Removeable handheld with two buttons and clickwheel  Display with 8 languages (de, en, es, fr, nl, cs, fi, tr)  4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V Ready to run (NO/NC) Stroke signal (NO/NC)	24V Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)

## BASIC DESIGNS

PP				
		XS 7	XS 15	
Pump body			PP-FRP	
Valves		PP	PP-FRP	
Valve balls		Ceramic	PTFE	
Diaphragm			PTFE-faced	
Valve seals				
Type	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
Pro				
iSTEP XS 7 Pro	16025998	①	15006958	①
iSTEP XS 15 Pro	16025999	①	15005631	①
Pro+				
iSTEP XS 7 Pro+	15006847	①	15006848	①
iSTEP XS 15 Pro+	15006853	①	15006854	①

PVDF				
		XS 7	XS 15	
Pump body			PVDF-FRP	
Valves		PVDF	PVDF-FRP	
Valve balls		Ceramic	PTFE	
Diaphragm			PTFE-faced	
Valve seals				
Type	FEP-covered Article-No.			Price (EUR)
Pro				
iSTEP XS 7 Pro	16026003			①
iSTEP XS 15 Pro	16026004			①
Pro+				
iSTEP XS 7 Pro+	15006851			①
iSTEP XS 15 Pro+	15006857			①

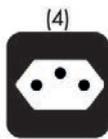
PVC-U				
		XS 7	XS 15	
Pump body			PVC-U	
Valves			PVC-U	
Valve balls		Ceramic	PTFE	
Diaphragm			PTFE-faced	
Valve seals				
Type	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
Pro				
iSTEP XS 7 Pro	16026001	①	15006959	①
iSTEP XS 15 Pro	16026000	①	16026002	①
Pro+				
iSTEP XS 7 Pro+	15006849	①	15006850	①
iSTEP XS 15 Pro+	15006855	①	15006856	①

STAINLESS STEEL				
		XS 7	XS 15	
Pump body			1.4571	
Valves		1.4571	1.4571/1.4581	
Valve balls		Ceramic	1.4401	
Diaphragm			PTFE-faced	
Valve seals				
Type	FEP-covered Article-No.			Price (EUR)
Pro				
iSTEP XS 7 Pro	16026005			①
iSTEP XS 15 Pro	16026006			①
Pro+				
iSTEP XS 7 Pro+	15006852			①
iSTEP XS 15 Pro+	15006858			①

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### OPTIONS



#### Versions (basic equipment)

Version	Price (EUR)
Pump <b>without</b> control element (price reduction)	▲
Pump <b>with</b> control element (basic version)	●
Pump <b>without</b> control element; <b>with</b> INTERFACE MODULE (INTERFACE MODULE instead of control element)	▲

#### Special connection

different plug types for different, international standards

Type	Price (EUR)
Plug 1: CEE 7/4 „Euro-plug“	●
Plug 2: AS 3112 „Australia plug“	▲
Plug 3: NEMA 5-15, 3-pole „US plug“	▲
Plug 4: SN 441011 (Type J) „swiss plug“	▲

### ACCESSORIES



#### Control element

	Article-No.	Price (EUR)
Control element (removeable)	90044844	▲

#### Control cable

	Article-No.	Price (EUR)
<b>for controlling the pump</b>		
Cable socket M12, 8-pole fully assembled, incl. 5m cable	90031247	▲
Cable socket M12, 8-pole individually convertible (without cable)	90022879	▲
<b>for level input (flow monitoring not included)</b>		
Cable plug M12, 8-pole fully assembled, incl. 5m cable	90042494	▲
Cable plug M12, 8-pole Individually convertible (without cable)	90022885	▲

## ACCESSORIES



### INTERFACE MODULE - PROFINET -

PROFINET INTERFACE MODULE  
PROFINET IO RT 2 Port (Ethernet Network Interface)  
Transmission speed: automatic 10Mbit/s, 100Mbit/s  
Connection to dosing pump: M12 cable socket, 8-pole, D-coded

Type	Article-No.	Price (EUR)
PROFINET INTERFACE MODULE	90044877	▲
PROFINET connection	length 1m	90050133 ▲
M12x1, straight, with cable plug and -socket, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5E, color green	length 5m	90050134 ▲
	length 10m	90050135 ▲
PROFINET Connection	length 1m	90050136 ▲
M12x1 - RJ45, straight, 4-pin, 2x2x0,34 mm <sup>2</sup> , CAT5, color green	length 5m	90050137 ▲
	length 10m	90050138 ▲



### INTERFACE MODULE - PROFIBUS -

PROFIBUS INTERFACE MODULE  
PROFIBUS DP-V0 (Slave)  
Transmission speed: automatic 9,6 kbit/s ... 12 Mbit/s  
Connection to dosing pump: M12 cable socket, 5-pole, B-coded

Type	Article-No.	Price (EUR)
PROFIBUS INTERFACE MODULE	90044875	▲
PROFIBUS cable plug M12x1, straight, individually convertible, 5-pole, IP67	90025520	▲
PROFIBUS Cable socket M12x1, straight, individually convertible, 5-pole, IP67	90025521	▲
PROFIBUS Cable socket M12x1, straight, with 10m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025524	▲
PROFIBUS Cable socket M12x1, straight, with 15m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025525	▲
PROFIBUS Connection M12x1, straight, with cable plug and cable socket, 2x0,34mm <sup>2</sup> , length 1m, cable 2x0,34mm <sup>2</sup> , color: purple, IP67	90025674	▲
PROFIBUS Bus line 2x 0,64mm <sup>2</sup> , shielded, Permanent installation (inside), color: purple (serial meter)	90014541	▲
PROFIBUS Terminating resistor M12x1, 5-pole, IP67	90022890	▲

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### Dosing Set

for easy removal of the medium and dosing into a further pipeline.

##### Properties

- Foot valve
- Dosing valve
- Dosing hose (length adjustable)
- Hose screw fitting

##### Basic version

- Dosing hose: **PE** (7m length)
- Fußventil: **PP-FRP** or **PVC-U**
- Dosing valve: **PP-FRP** or **PVC-U**
- max. operating pressure: **10 bar**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
Dosing Set	8	G <sup>3</sup> / <sub>4</sub>	PP	EPDM	37606263	▲
Dosing Set	8	G <sup>3</sup> / <sub>4</sub>	PVC-U	FPM	37606264	▲



#### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM** or **EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲



### ACCESSORIES

<b>Hand vacuum pump</b>	PVC/FPM				37605682	▲
	(incl. 1,5m PVC-Hose d=12/21)					



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>781.1</b>	8	G $\frac{3}{4}$	PVDF/PVDF-GFK	FEP	30073008	▲



### Foot valve (plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>731</b>	8	G $\frac{3}{4}$	PVC-U	EPDM	37601636	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>731</b>	8	G $\frac{3}{4}$	1.4571	FEP	37601149	▲

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance SL-12.1 (with level switch, 2-stage with plug, 8-pole)

##### Properties

Compact design  
 Height-adjustable  
 2-stage level monitoring  
 Flexible connection  
 Easy handling  
 High-quality materials  
 Maintenance-free  
 incl. hose connection  
 4/6, 6/8, 6/12

##### Basic version

Suction lance: **PVC-U**  
 Foot valve: **PVC-U**  
 Valve ball: **PTFE**  
 Hose (inboard): **PE**  
 Level switch: **PP**  
 2-stage, normally closed (NC)  
 5m cable (from foot valve) with plug, M12, 8-pole  
 max. flow rate: **14 l/h** (4/6) ... **35 l/h** (6/12)

Type	Length	Seals	Article-No.	Price (EUR)
SL-12.1	600 mm	PTFE	37606194	▲
SL-12.1	1.000 mm	PTFE	37606495	▲
SL-12.1	1.200 mm	PTFE	37606195	▲

### FITTINGS FOR THE PRESSURE SIDE

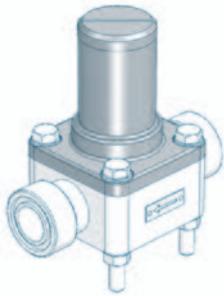


#### Flow meter

IP65  
 incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)  
 max. permissible operating pressure: **10 bar**  
 can be used on suction and pressure side

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
8011.1	Inlet: G <sup>3</sup> / <sub>4</sub> (internal) Outlet: G <sup>3</sup> / <sub>4</sub> (external)	PP	ECTFE	FPM	37602343	▲
		PVC-U	ECTFE	FPM	37602345	▲
		PVDF	ECTFE	FPM	37602348	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲

### OPTIONS

Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

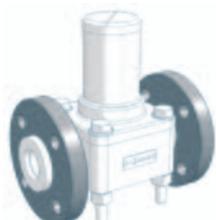
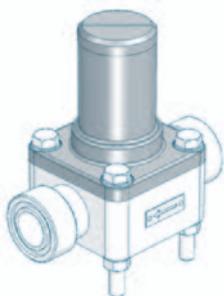
#### Basic version

Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲

### OPTIONS

Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	①
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Dosing valve (Plastic)

##### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

integrated injection lance  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



#### Dosing valve (Plastic)

##### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



#### Dosing valve (Stainless steel)

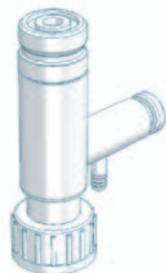
##### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲



#### Vent valve

##### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic version

Valve body: **PVC-U** or **PP**  
Valve ball: **PTFE**  
Seals: **FPM** or **EPDM**  
Connection: **G3/4**  
Vent joint: **Hose nozzle d=6,5mm**

Type	Valve body	Seals	Article-No.	Price (EUR)
8152	PVC-U	EPDM	37605884	▲
8152	PVC-U	FPM	37600531	▲
8152	PP	EPDM	37605885	▲
8152	PP	FPM	37605853	▲

## FITTINGS FOR THE PRESSURE SIDE



### Multi function valve

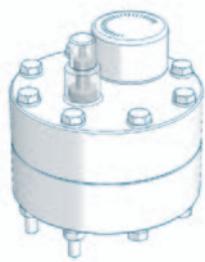
#### Properties

Maximum operating pressure 10 bar  
Compact design  
Easy installation  
Maintenance-free  
Venting  
Overpressure protection for dosing pumps  
Prevention of over conveyance

#### Basic version

Diaphragms: **PTFE-faced**  
Connection: **G<sup>3/4</sup>**  
**Relief valve side**  
Opening pressure: **2 up to 10 bar** (adjustable)  
**Pressure keeping valve side**  
Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

#### Properties

Any mounting position  
Easy installation  
Long service life  
Easy handling  
High-quality materials  
Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
720.1	G 1/2	10 bar	PVC-U	PTFE	37601848	▲
720.1	G 1/2	10 bar	PP	PTFE	37601856	▲
720.1	G 1/2	10 bar	PVDF	PTFE	37601857	▲

## ACCESSORIES

### Connection adapter



Thread connection	Connection	Material	Seals	Article-No.	Price (EUR)
G3/4 male	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	90038082	Ⓜ Ⓜ

### Retaining clamp



(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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### Filling pump FLP 2 for filling device



with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- Adjustment range 1:1000
- Controlled by a microprocessor
- Flow rates from 20 ml/h to 50 l/h
- Counterpressure up to 10 bar
- Slow Mode
- Timer- and batch-function
- Intuitive navigation
- 2 control versions
- Remote control
- Robust, corrosion-resistant housing



## TECHNICAL DATA

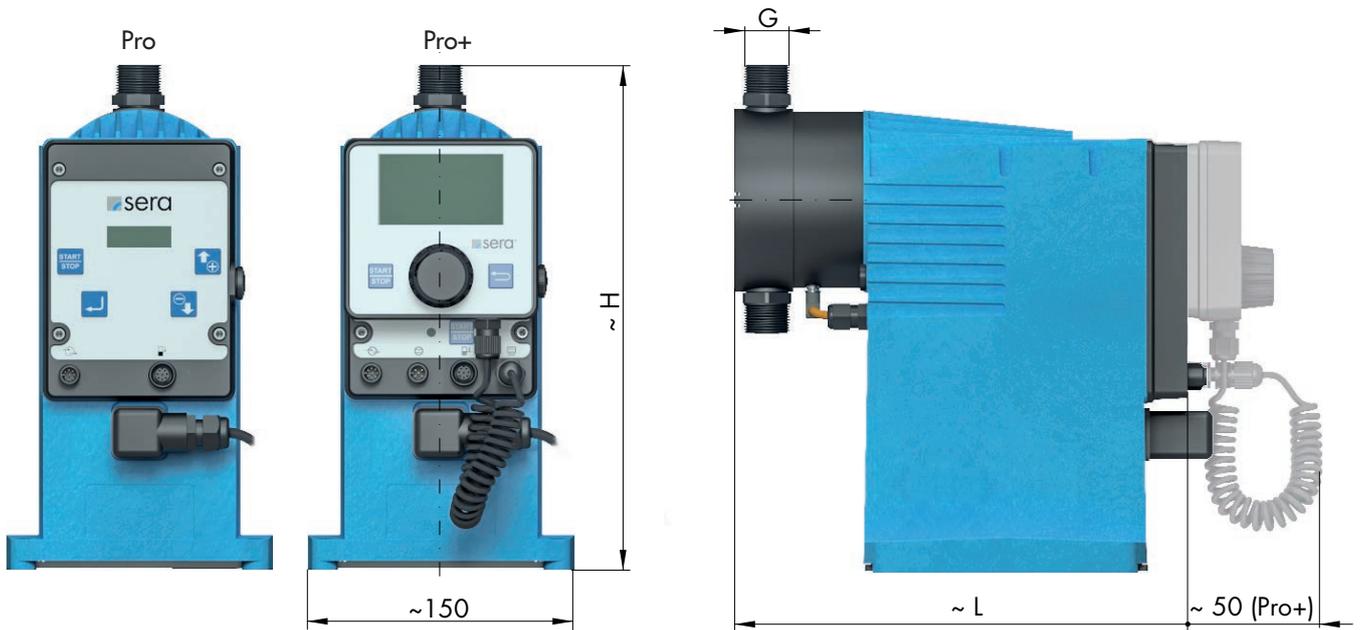
PUMP DATA			iSTEP S 20	iSTEP S 30	iSTEP S 40	iSTEP S 50
Permissible pressure p <sub>2</sub> max. at the pump outlet	bar		10	7	6	3
Nominal capacity Q <sub>N</sub> at p <sub>2</sub> max.	l/h	50/60 Hz	20	30	40	50
Capacity min. (1:1000)	l/h	50/60 Hz	0,02	0,03	0,04	0,05
Capacity min. (1:100)*	l/h	50/60 Hz	0,2	0,3	0,4	0,5
Quantity per stroke	ml/stroke	(100%)	1,75	3,33	3,51	4,39
Max. suction height	mWC		3	3	3	3
Min./max. permissible pressure at the pump inlet	bar	p <sub>1min/max</sub>	-0,3/0,5	-0,3/0,5	-0,3/0,5	-0,3/0,5
Recommended DN of the connecting pipes	mm		5	5	5	8
Nominal stroke frequency	1/min	50/60 Hz	190	150	190	190
Weight approx.	kg	plastic	7,3	7,3	7,3	7,4
		stainless steel	7,9	8,5	8,5	8,7
		stainless steel (CIP)	9,0	11,7	11,7	11,8

ELECTRICAL DATA		iSTEP S...
Power consumption	W	75
Voltage	V	110 - 240 AC
Frequency	Hz	50/60
Insulation class	ISO	F
Recommended fuse	(circuit breaker)	C10A
Enclosure		IP65

Flow capacity 20 l/h ... 50 l/h  
 Admissible counterpressure up to 10 bar

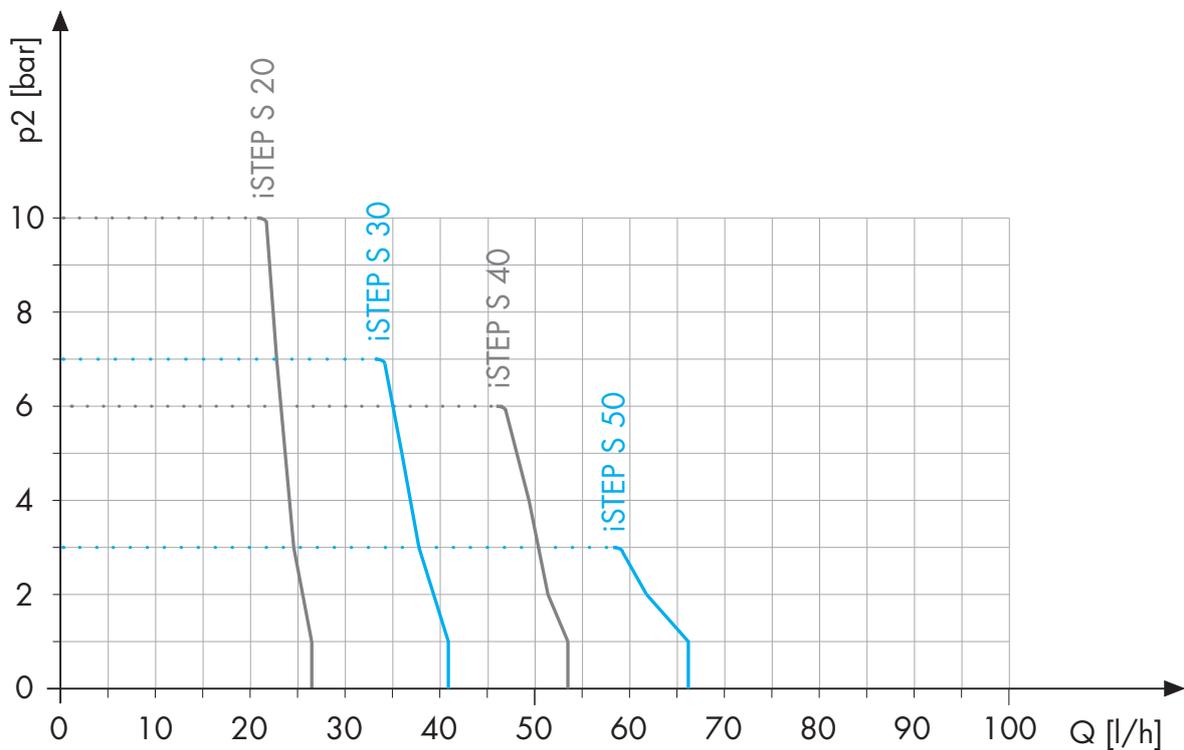
# iSTEP S

## DIMENSIONS



	G		L	H		L	H
iSTEP S 20	G 3/4	PVC, PP, PVDF	270	275	1.4571	270	275
iSTEP S 30	G 3/4		275	282		275	282
iSTEP S 40	G 3/4		275	282		275	282
iSTEP S 50	G 3/4		275	286		275	286

## CHARACTERISTIC CURVES



# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

- Extremely wide performance range
- Adjustment range 1:1000 thus optimally adaptable
- Low pulsation dosage
- Drive controlled by microprocessor
- Slow mode for viscous media
- Energy-efficient drive technology
- Intuitive menu navigation incl. parameterization
- Pulse division or multiplication
- Different languages for the menu
- Certified accord. to TR (EAC)
- different digital/analogue Inputs
- 2 Digital outputs
- 3m cable with euro plug

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements & Display	4-button control  Multilingual display  4-color status indicator	Removeable handheld with two buttons and clickwheel  Display with 8 languages (de, en, es, fr, nl, cs, fi, tr)  4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrizable Digital/analogue, free parametrizable Digital, free parametrizable
Outputs	24V Ready to run (NO/NC) Stroke signal (NO/NC)	24V Digital, free parametrizable Digital, free parametrizable Analogue, free parametrizable
Updateable	USB (Stick)	USB (to host)

## BASIC DESIGNS

### PP

Pump body **PP-FRP**  
Valves **PP-FRP**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
<b>Pro</b>				
iSTEP S20 Pro	16026007	🕒	15007170	🕒
iSTEP S30 Pro	16026008	🕒	15007171	🕒
iSTEP S40 Pro	16026009	🕒	15007172	🕒
iSTEP S50 Pro	15007077	🕒	15007173	🕒
<b>Pro+</b>				
iSTEP S20 Pro+	15004926	🕒	15004923	🕒
iSTEP S30 Pro+	15004931	🕒	15004922	🕒
iSTEP S40 Pro+	15005036	🕒	15005025	🕒
iSTEP S50 Pro+	15004936	🕒	15004776	🕒

### PVDF

Pump body **PVDF-FRP**  
Valves **PVDF-FRP**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
<b>Pro</b>		
iSTEP S20 Pro	16026018	🕒
iSTEP S30 Pro	16026019	🕒
iSTEP S40 Pro	16026020	🕒
iSTEP S50 Pro	16026021	🕒
<b>Pro+</b>		
iSTEP S20 Pro+	15005070	🕒
iSTEP S30 Pro+	15005071	🕒
iSTEP S40 Pro+	15005072	🕒
iSTEP S50 Pro+	15005073	🕒

### PVC-U

Pump body **PVC-U**  
Valves **PVC-U**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
<b>Pro</b>				
iSTEP S20 Pro	16026011	🕒	16026010	🕒
iSTEP S30 Pro	16026013	🕒	16026012	🕒
iSTEP S40 Pro	16026015	🕒	16026014	🕒
iSTEP S50 Pro	16026017	🕒	16026016	🕒
<b>Pro+</b>				
iSTEP S20 Pro+	15004928	🕒	15004927	🕒
iSTEP S30 Pro+	15004933	🕒	15004932	🕒
iSTEP S40 Pro+	15005038	🕒	15005037	🕒
iSTEP S50 Pro+	15004938	🕒	15004937	🕒

### STAINLESS STEEL

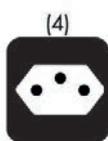
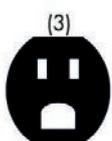
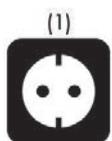
Pump body **1.4571**  
Valves **1.4571/1.4581**  
Valve balls **1.4401**  
Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
<b>Pro</b>		
iSTEP S20 Pro	16026022	🕒
iSTEP S30 Pro	16026023	🕒
iSTEP S40 Pro	16026024	🕒
iSTEP S50 Pro	16026025	🕒
<b>Pro+</b>		
iSTEP S20 Pro+	15005067	🕒
iSTEP S30 Pro+	15005068	🕒
iSTEP S40 Pro+	15005069	🕒
iSTEP S50 Pro+	15005066	🕒

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### OPTIONS



#### Versions (basic equipment)

**Version** **Price (EUR)**

Pump **without** control element (price reduction) ▲

Pump **with** control element (basic version) ●

Pump **without** control element; **with** INTERFACE MODULE  
(INTERFACE MODULE instead of control element) ▲

#### Special connection

different plug types for different, international standards

**Type** **Price (EUR)**

Plug 1: CEE 7/4 „Euro-plug“ ●

Plug 2: AS 3112 „Australia plug“ ▲

Plug 3: NEMA 5-15, 3-pole „US plug“ ▲

Plug 4: SN 441011 (Type J) „swiss plug“ ▲

### ACCESSORIES



#### Control element

**Article-No.** **Price (EUR)**

**Control element** (removeable) 90044844 ▲

#### Control cable

**Article-No.** **Price (EUR)**

##### for controlling the pump

Cable socket M12, 8-pole fully assembled, incl. 5m cable 90031247 ▲

Cable socket M12, 8-pole individually convertible (without cable) 90022879 ▲

##### for level input (flow monitoring not included)

Cable plug M12, 8-pole fully assembled, incl. 5m cable 90042494 ▲

Cable plug M12, 8-pole Individually convertible (without cable) 90022885 ▲



**INTERFACE MODULE - PROFINET -**

- PROFINET INTERFACE MODULE
- PROFINET IO RT 2 Port (Ethernet Network Interface)
- Transmission speed: automatic 10Mbit/s, 100Mbit/s
- Connection to dosing pump: M12 cable socket, 8-pole, D-coded

Type	Article-No.	Price (EUR)
PROFINET INTERFACE MODULE	90044877	▲
PROFINET connection	length 1m	90050133 ▲
M12x1, straight, with cable plug and -socket, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5E, color green	length 5m	90050134 ▲
	length 10m	90050135 ▲
PROFINET Connection	length 1m	90050136 ▲
M12x1 - RJ45, straight, 4-pin, 2x2x0,34 mm <sup>2</sup> , CAT5, color green	length 5m	90050137 ▲
	length 10m	90050138 ▲



**INTERFACE MODULE - PROFIBUS -**

- PROFIBUS INTERFACE MODULE
- PROFIBUS DP-V0 (Slave)
- Transmission speed: automatic 9,6 kbit/s ... 12 Mbit/s
- Connection to dosing pump: M12 cable socket, 5-pole, B-coded

Type	Article-No.	Price (EUR)
PROFIBUS INTERFACE MODULE	90044875	▲
PROFIBUS cable plug M12x1, straight, individually convertible, 5-pole, IP67	90025520	▲
PROFIBUS Cable socket M12x1, straight, individually convertible, 5-pole, IP67	90025521	▲
PROFIBUS Cable socket M12x1, straight, with 10m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025524	▲
PROFIBUS Cable socket M12x1, straight, with 15m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025525	▲
PROFIBUS Connection M12x1, straight, with cable plug and cable socket, 2x0,34mm <sup>2</sup> , length 1m, cable 2x0,34mm <sup>2</sup> , color: purple, IP67	90025674	▲
PROFIBUS Bus line 2x 0,64mm <sup>2</sup> , shielded, Permanent installation (inside), color: purple (serial meter)	90014541	▲
PROFIBUS Terminating resistor M12x1, 5-pole, IP67	90022890	▲

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### Dosing Set

for easy removal of the medium and dosing into a further pipeline.

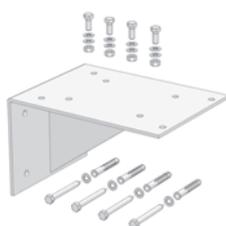
##### Properties

- Foot valve
- Dosing valve
- Dosing hose (length adjustable)
- Hose screw fitting

##### Basic version

- Dosing hose: **PE** (7m length)
- Fußventil: **PP-FRP** or **PVC-U**
- Dosing valve: **PP-FRP** or **PVC-U**
- max. operating pressure: **10 bar**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
Dosing Set	8	G $\frac{3}{4}$	PP	EPDM	37606263	▲
Dosing Set	8	G $\frac{3}{4}$	PVC-U	FPM	37606264	▲



#### Bracket

for wall mounting (incl. mounting kit)

	Article-No.	Price (EUR)
PP	90023849	▲
1.4301	90023876	▲



#### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

### FITTINGS FOR THE SUCTION SIDE



#### Multi-function device

##### Properties

- Can be used as an priming aid and/or an calibration pot
- Compact design
- Flexible Connection
- Maintenance-free
- incl. glue joint (PVC-U) and welding joint (PP)

##### Basic version

- Housing: **PVC-U** / **PVC-transparent**
- Seals: **FPM** or **EPDM**
- max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
MFD 60	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
MFD 60	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲

#### ACCESSORIES

Hand vacuum pump	PVC/FPM	37605682	▲
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(incl. 1,5m PVC-Hose d=12/21)



## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 8-pole)

#### Properties

- Compact, robust design
- Safe
- Easy handling
- 1-stage level switch
- Flexible connection
- High-quality materials
- Maintenance-free

#### Basic version

- Suction lance: **PVC-U**
- Foot valve: **PVDF-GFK**
- Valve ball: **PTFE**
- Suction basket: **PP**
- Level switch: **PP**  
1- or 2-stage  
5m cable (from foot valve) with plug, M12, 8-pole
- max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
iSTEP S40, ...S50						
SL-02	1-stage	630 mm	G ¾	EPDM	37606579	▲
SL-02	1-stage	1.000 mm	G ¾	EPDM	37606581	▲
SL-02	1-stage	1.200 mm	G ¾	EPDM	37606583	▲
SL-02	1-stage	630 mm	G ¾	FPM	37606580	▲
SL-02	1-stage	1.000 mm	G ¾	FPM	37606582	▲
SL-02	1-stage	1.200 mm	G ¾	FPM	37606584	▲
SL-02	2-stage	630 mm	G ¾	EPDM	37606585	▲
SL-02	2-stage	1.000 mm	G ¾	EPDM	37606587	▲
SL-02	2-stage	1.200 mm	G ¾	EPDM	37606589	▲
SL-02	2-stage	630 mm	G ¾	FPM	37606586	▲
SL-02	2-stage	1.000 mm	G ¾	FPM	37606588	▲
SL-02	2-stage	1.200 mm	G ¾	FPM	37605974	▲

## ACCESSORIES

### Drum connection adapter



Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance SL-12.1 (with level switch, 2-stage with plug, 8-pole)

##### Properties

- Compact design
- Height-adjustable
- 2-stage level monitoring
- Flexible connection
- Easy handling
- High-quality materials
- Maintenance-free
- incl. hose connection  
4/6, 6/8, 6/12

##### Basic version

- Suction lance: **PVC-U**
- Foot valve: **PVC-U**
- Valve ball: **PTFE**
- Hose (inboard): **PE**
- Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 8-pole
- max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
iSTEP S20, ...S30				
SL-12.1	600 mm	PTFE	37606194	▲
SL-12.1	1.000 mm	PTFE	37606495	▲
SL-12.1	1.200 mm	PTFE	37606195	▲



#### Foot valve (Plastic)

##### Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

##### Basic version

- Ball: **PTFE**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
781.1	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲



#### Foot valve (plastic)

##### Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

##### Basic version

- Ball: **PTFE**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	PVC-U	EPDM	37601636	▲



#### Foot valve (Stainless steel)

##### Properties

- Compact design
- Easy installation
- High-quality materials
- Maintenance-free

##### Basic version

- Ball: **1.4401**
- Sieve: **ETFE**
- Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	1.4571	FEP	37601149	▲

## FITTINGS FOR THE SUCTION SIDE



### Flow controller

- IP65
- incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)
- max. permissible operating pressure: **1 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
8291.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/EPDM	37606037	▲
		PVC-U/FPM	37605916	▲

## FITTINGS FOR THE PRESSURE SIDE



### Flow meter

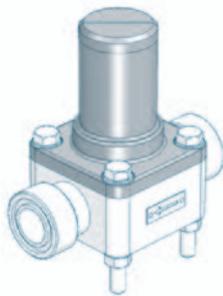
- IP65
- incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)
- max. permissible operating pressure: **10 bar**
- can be used on suction and pressure side

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
iSTEP S20 ... S40						
8011.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	ECTFE	FPM	37602343	▲
		PVC-U	ECTFE	FPM	37602345	▲
		PVDF	ECTFE	FPM	37602348	▲
iSTEP S50						
		⊘			⊘	⊘

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm relief valve

for overpressure protection

##### Properties

- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

##### Basic version

- Valve body: **PVC-U, 1.4581, PP or PVDF**
- Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲

#### OPTIONS

Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲



#### Diaphragm pressure keeping valve

to prevent over-conveyance

##### Properties

- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

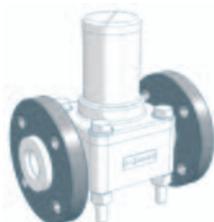
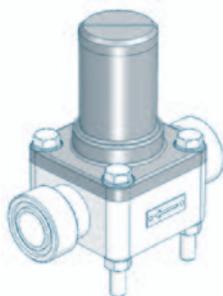
##### Basic version

- Valve body: **PVC-U, 1.4581, PP or PVDF**
- Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲

#### OPTIONS

Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	①
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

#### Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

#### Basic version

- integrated injection lance
- Valve ball: **PTFE**
- Seals: **EPDM** or **FPM**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



### Dosing valve (Plastic)

#### Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

#### Basic version

- Valve ball: **PTFE**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



### Dosing valve (Stainless steel)

#### Properties

- Compact design
- Any mounting position
- Maintenance-free
- High-quality materials

#### Basic version

- Valve ball: **1.4401**
- Seals: **FEP-covered**
- Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲

# STEPPER MOTOR DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Multi function valve

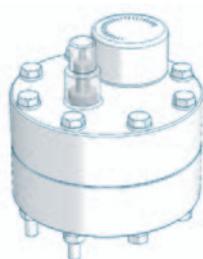
##### Properties

- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

##### Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- **Relief valve side**  
Opening pressure: **2 up to 10 bar** (adjustable)
- **Pressure keeping valve side**  
Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
<b>MFV 050</b>	PVC-U	EPDM	37600973	▲
<b>MFV 050</b>	PVC-U	FPM	37600974	▲
<b>MFV 050</b>	PP	EPDM	37600982	▲
<b>MFV 050</b>	PP	FPM	37600983	▲



#### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

##### Properties

- Any mounting position
- Easy installation
- Long service life
- Easy handling
- High-quality materials
- Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
iSTEP S20						
<b>720.1</b>	G ½	10 bar	PVC-U	PTFE	37601848	▲
<b>720.1</b>	G ½	10 bar	PP	PTFE	37601856	▲
<b>720.1</b>	G ½	10 bar	PVDF	PTFE	37601857	▲

#### ACCESSORIES

##### Connection adapter



Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	①	①

##### Retaining clamp



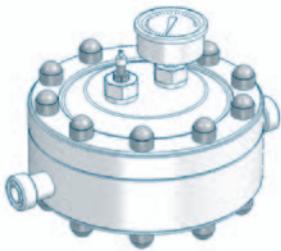
(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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##### Filling pump FLP 2 for filling device



with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

- Any mounting position
- Easy installation
- Long service life
- Easy handling
- High-quality materials
- Low maintenance
- Diaphragm: PTFE-faced

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
iSTEP S30, ...S40, ...S50						
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲

## ACCESSORIES



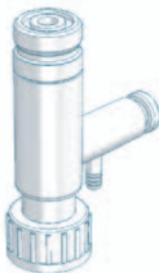
### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve 90009396 ▲



### Retaining clamp

(2 Piece each pulsation damper) PP d 25 90036934 ▲



## Vent valve

#### Properties

- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

#### Basic version

- Valve body: **PVC-U** or **PP**
- Valve ball: **PTFE**
- Seals: **FPM** or **EPDM**
- Connection: **G3/4**
- Vent joint: **Hose nozzle d=6,5mm**

Type	Valve body	Seals	Article-No.	Price (EUR)
8152	PVC-U	EPDM	37605884	▲
8152	PVC-U	FPM	37600531	▲
8152	PP	EPDM	37605885	▲
8152	PP	FPM	37605853	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Flexible, multifunctional
- PROFIBUS DP-Interface
- Digital and analogue control options
- Manual stroke length- and stroke frequency adjustment
- Robust, metallic housing



## TECHNICAL DATA

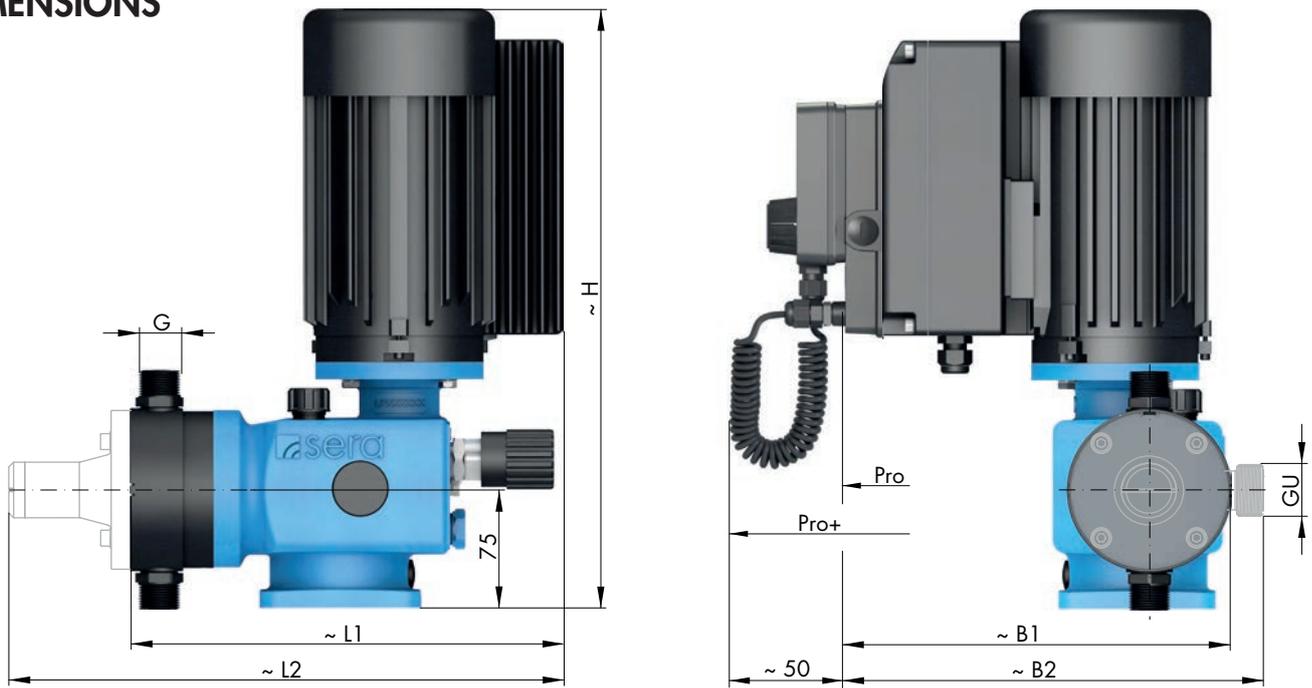
PUMP DATA		C 409.2-... Pro/Pro+						
		1,6e	2,4e	7,0e	12e	18e	25e	
Permissible pressure $p_{2max}$ at the pump outlet	bar	10	10	10	10	10	10	
Nominal capacity QN at $p_{2max}$	l/h	50/60 Hz	0-1,6	0-2,4	0-7	0-12	0-18	0-25
Quantity per stroke	ml/stroke (100%)		0,27	0,27	0,78	2,0	3,0	3,0
Max. suction height	mWC		3					
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0					
Recomm. nominal diameter DN of the connecting pipes	mm		10	10	10	10	10	10
Nominal stroke frequency	1/min	50/60 Hz	100	150	150	100	100	150
Weight approx.	kg	plastic	11	11	11	11	11	12,5
		stainless st.	13,5	13,5	13	13	13	13

ELECTRICAL DATA		C 409.2-1,6e Pro/Pro+ ... C 409.2-25e Pro/Pro+	
		230 V, 50/60 Hz	115 V, 50/60 Hz
Power consumption	kW	0,18	
Voltage	V	210 - 250	100 - 125
Frequency	Hz	50/60	
Inlet voltage, control input	V DC	5...30	
Minimum contact signal time	ms	55	
Analogue input resistance	$\Omega$	39	
Digital output internal/external supply		20V DC, 30mA /... 30V DC, 30mA	
Recommended fuse (circuit breaker)		C6A	C10A
Insulation class	ISO	F	
Enclosure	IP	55	

Flow capacity 1,6 l/h ... 25 l/h  
Admissible counterpressure up to 10 bar

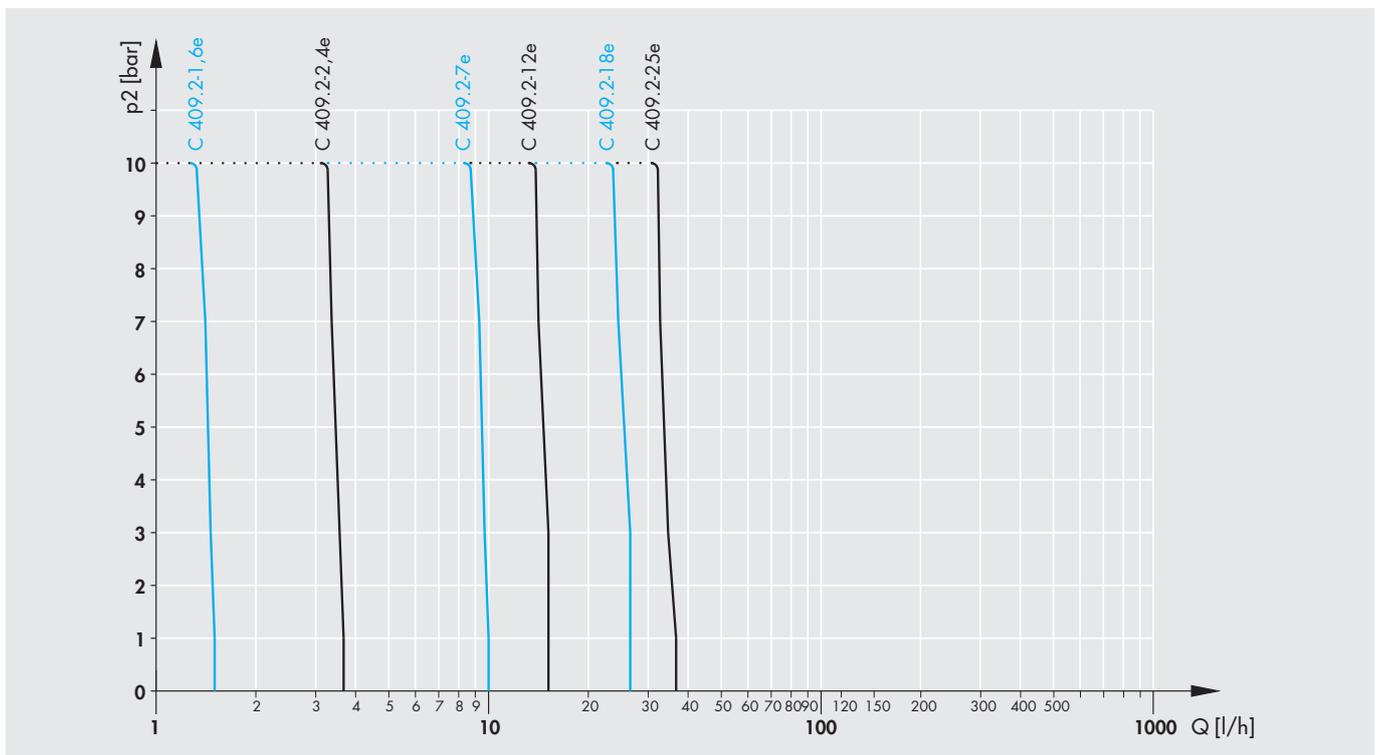
C 409.2

## DIMENSIONS



	G	GU		B1	B2	L1	L2	H		B1	B2	L1	L2	H
C 409.2-1,6e	G 3/4	G 3/4	PVC, PP, PVDF	250	5	310	5	355	1.4571	250	5	310	5	355
C 409.2-2,4e	G 3/4	G 3/4		250	5	310	5	355		250	5	310	5	355
C 409.2-7,0e	G 3/4	G 3/4		250	(250)	285	345	355		250	(250)	285	345	355
C 409.2-12e	G 3/4	G 3/4		250	(250)	285	345	355		250	(250)	285	345	355
C 409.2-18e	G 3/4	G 3/4		250	(250)	285	345	355		250	(250)	285	345	355
C 409.2-25e	G 3/4	G 3/4		250	(250)	285	345	355		250	(250)	285	345	355

## CHARACTERISTIC CURVES



# DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

Manual operation  
 Manual stroke frequency adjustment  
 PROFIBUS DP-VO Slave interface (option)  
 External START/STOP  
 Pulse operation / fractinator  
 Pulse memory  
 Analogue operation (0/4 ... 20 mA)  
 Analogue operation standardization  
 Batch dosing (manual / with timer)  
 3 LEDs for status indication

Multiline, illuminated display  
 Menu-driven parameterization  
 Flow indication  
 Calibration function  
 4-key operation  
 2 digital outputs (PLC)  
 1 analogue output  
 (PLC or contact signal)  
 2 analogue/digital inputs  
 (reversible)  
 1 digital input

Programmable  
 input-/output functions  
 Diaphragm monitoring  
 Connection/evaluation:  
 2-stage level monitoring  
 Connection/evaluation:  
 Flow monitoring  
 Connection/evaluation:  
 Flow metering  
 Voltage 210-250V, 50/60Hz  
 3m connection cable with Euro-plug

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements & Display	4-button control  Multilingual display  4-color status indicator	Removeable handheld with two buttons and clickwheel  Display with 8 languages (de, en, es, fr, nl, cs, fi, tr)  4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V  Ready to run (NO/NC) Stroke signal (NO/NC)	24V  Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)

## BASIC DESIGNS

### PP-FRP

Pump body **PP-FRP**  
Valves **PP-FRP**  
Valve balls **PTFE** \* with manual venting valve  
Diaphragm **PTFE-faced** (Seal: **EPDM** or **FPM**)

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
<b>Pro</b>				
C409.2-1,6e Pro *	16027783	Ⓜ	15007708	Ⓜ
C409.2-2,4e Pro *	16027784	Ⓜ	15007709	Ⓜ
C409.2-7,0e Pro	16027785	Ⓜ	15007710	Ⓜ
C409.2-12e Pro	16027786	Ⓜ	15007711	Ⓜ
C409.2-18e Pro	16027787	Ⓜ	15007712	Ⓜ
C409.2-25e Pro	16027788	Ⓜ	15007713	Ⓜ
<b>Pro+</b>				
C409.2-1,6e Pro+ *	16026227	Ⓜ	15007184	Ⓜ
C409.2-2,4e Pro+ *	16026228	Ⓜ	15007185	Ⓜ
C409.2-7,0e Pro+	16026229	Ⓜ	15007186	Ⓜ
C409.2-12e Pro+	16026230	Ⓜ	15007187	Ⓜ
C409.2-18e Pro+	16026231	Ⓜ	15007188	Ⓜ
C409.2-25e Pro+	16026232	Ⓜ	15007189	Ⓜ

### PVDF-FRP

Pump body **PVDF-FRP** \*\* with manual venting valve  
Valves **PVDF-FRP** (Seal: **FFKM**)  
Valve balls **PTFE**  
Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
<b>Pro</b>		
C409.2-1,6e Pro **	Ⓞ	Ⓞ
C409.2-2,4e Pro **	Ⓞ	Ⓞ
C409.2-7,0e Pro	16027823	Ⓜ
C409.2-12e Pro	16027827	Ⓜ
C409.2-18e Pro	16027832	Ⓜ
C409.2-25e Pro	16027836	Ⓜ
<b>Pro+</b>		
C409.2-1,6e Pro+ **	Ⓞ	Ⓞ
C409.2-2,4e Pro+ **	Ⓞ	Ⓞ
C409.2-7,0e Pro+	16026249	Ⓜ
C409.2-12e Pro+	16026250	Ⓜ
C409.2-18e Pro+	16026251	Ⓜ
C409.2-25e Pro+	16026252	Ⓜ

### PVC-U

Pump body **PVC-U**  
Valves **PVC-U**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced** (\* EPDM)

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
<b>Pro</b>				
C409.2-1,6e Pro	16027813	Ⓜ	16027814	Ⓜ
C409.2-2,4e Pro	16027816	Ⓜ	16027819	Ⓜ
C409.2-7,0e Pro	16027821	Ⓜ	16027822	Ⓜ
C409.2-12e Pro	16027825	Ⓜ	16027826	Ⓜ
C409.2-18e Pro	16027830	Ⓜ	16027831	Ⓜ
C409.2-25e Pro	16027834	Ⓜ	16027835	Ⓜ
<b>Pro+</b>				
C409.2-1,6e Pro	16026242	Ⓜ	16026234	Ⓜ
C409.2-2,4e Pro	16026243	Ⓜ	16026235	Ⓜ
C409.2-7,0e Pro	16026244	Ⓜ	16026236	Ⓜ
C409.2-12e Pro	16026245	Ⓜ	16026237	Ⓜ
C409.2-18e Pro	16026246	Ⓜ	16026238	Ⓜ
C409.2-25e Pro	16026247	Ⓜ	16026239	Ⓜ

### STAINLESS STEEL

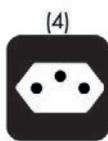
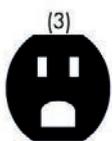
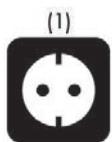
Pump body **1.4571**  
Valves **1.4571**  
Valve balls **1.4401**  
Diaphragm **PTFE-faced** (\* EPDM)

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
<b>Pro</b>		
C409.2-1,6e Pro	16027815	Ⓜ
C409.2-2,4e Pro	16027820	Ⓜ
C409.2-7,0e Pro	16027824	Ⓜ
C409.2-12e Pro	16027829	Ⓜ
C409.2-18e Pro	16027833	Ⓜ
C409.2-25e Pro	16027837	Ⓜ
<b>Pro+</b>		
C409.2-1,6e Pro	16026254	Ⓜ
C409.2-2,4e Pro	16026255	Ⓜ
C409.2-7,0e Pro	16026256	Ⓜ
C409.2-12e Pro	16026257	Ⓜ
C409.2-18e Pro	16026258	Ⓜ
C409.2-25e Pro	16026259	Ⓜ

# DIAPHRAGM PUMPS

## CONTROLLABLE

### OPTIONS



#### Versions (basic equipment)

**Version** **Price (EUR)**

Pump **without** control element (price reduction) ▲

Pump **with** control element (basic version) ●

Pump **without** control element; **with** INTERFACE MODULE  
(INTERFACE MODULE instead of control element) ▲

#### Drive motor

**Surcharge (EUR)**

Connection voltage 100 - 125 V, 60Hz ①

with USA plug (NEMA)

#### Special connection

different plug types for different, international standards

**Type** **Price (EUR)**

Plug 1: CEE 7/4 „Euro-plug“ ●

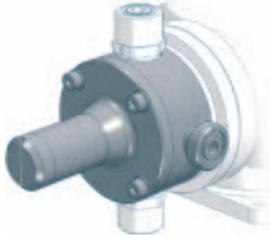
Plug 2: AS 3112 „Australia plug“ ①

Plug 3: NEMA 5-15, 3-pole „US plug“ ○<sup>1)</sup>

Plug 4: SN 441011 (Type J) „swiss plug“ ①

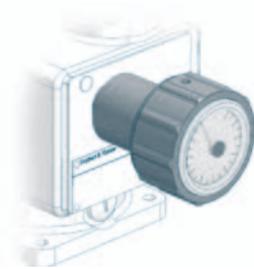
<sup>1)</sup> only in combination with 100-125 V drive motor option (US plug included)

## OPTIONS



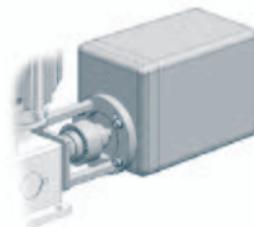
### Integrated relief valve

Diaphragm: <b>PTFE-faced</b>		Connecting seals: <b>EPDM</b> or <b>FPM</b>	Surcharge (EUR)
<b>PP</b>		C409.2-1,6e, ...-2,4e	⊘
		C409.2-4,0e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
<b>PVDF</b>		C409.2-1,6e, ...-2,4e	⊘
		C409.2-4,0e, ...-7,0e, ...-12e, ...-18e, ...-25e	①
<b>PVC-U</b>		C409.2-1,6e, ...-2,4e	⊘
		C409.2-4,0e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
<b>1.4571</b>		C409.2-1,6e, ...-2,4e	⊘
		C409.2-4,0e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
Connecting seals <b>FEP-covered</b>			
for connection G 3/4		C409.2-...e	▲



### Stroke length adjustment

	Surcharge (EUR)
with position indicator	▲



### Stroke length adjustment with actuator

		Surcharge (EUR)
<b>C409.2-1,6e ...-2,4e</b>		
Actuator		⊘
<b>C409.2-7,0e ... C409.2-25e</b>		
Actuator N C1-BA	230V ±10%, 50/60Hz, 128s/10 U, 1,5Nm incl. mounting set	▲
Electronic positioning controller ESR-N (only integrated in N C1-BA)	Input signal 0/4 - 20mA including feedback signal 0/4 - 20mA	▲
in combination with cTÜVus		

# DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### Control element

	Article-No.	Price (EUR)
Control element (removeable)	90044844	▲



#### Control cable

	Article-No.	Price (EUR)
<b>for level input</b> (flow monitoring not included)		
Cable plug M12, 8-pole	fully assembled, incl. 5m cable	90042494 ▲
Cable plug M12, 8-pole	Individually convertible (without cable)	90022885 ▲



#### Dosing Set

for easy removal of the medium and dosing into a further pipeline.

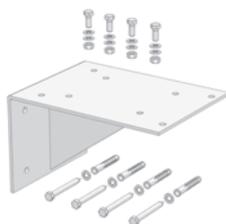
##### Properties

Foot valve  
 Dosing valve  
 Dosing hose (length adjustable)  
 Hose screw fitting

##### Basic version

Dosing hose: **PE** (7m length)  
 Fußventil: **PP-FRP** or **PVC-U**  
 Dosing valve: **PP-FRP** or **PVC-U**  
 max. operating pressure: **10 bar**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
Dosing Set	8	G $\frac{3}{4}$	PP	EPDM	37606263	▲
Dosing Set	8	G $\frac{3}{4}$	PVC-U	FPM	37606264	▲



#### Bracket

for wall mounting (incl. mounting kit)

	Article-No.	Price (EUR)
PP	90023848	▲
1.4301	90023875	▲

## ACCESSORIES



### INTERFACE MODULE - PROFINET -

PROFINET INTERFACE MODULE  
PROFINET IO RT 2 Port (Ethernet Network Interface)  
Transmission speed: automatic 10Mbit/s, 100Mbit/s  
Connection to dosing pump: M12 cable socket, 8-pole, D-coded

Type	Article-No.	Price (EUR)
PROFINET INTERFACE MODULE	90044877	▲
PROFINET connection	length 1m	90050133 ▲
M12x1, straight, with cable plug and -socket, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5E, color green	length 5m	90050134 ▲
	length 10m	90050135 ▲
PROFINET Connection	length 1m	90050136 ▲
M12x1 - RJ45, straight, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5, color green	length 5m	90050137 ▲
	length 10m	90050138 ▲



### INTERFACE MODULE - PROFIBUS -

PROFIBUS INTERFACE MODULE  
PROFIBUS DP-V1 (Slave)  
Transmission speed: automatic 9,6 kbit/s ... 12 Mbit/s  
Connection to dosing pump: M12 cable socket, 5-pole, B-coded

Type	Article-No.	Price (EUR)
PROFIBUS INTERFACE MODULE	90044875	▲
PROFIBUS cable plug M12x1, straight, individually convertible, 5-pole, IP67	90025520	▲
PROFIBUS Cable socket M12x1, straight, individually convertible, 5-pole, IP67	90025521	▲
PROFIBUS Cable socket M12x1, straight, with 10m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025524	▲
PROFIBUS Cable socket M12x1, straight, with 15m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025525	▲
PROFIBUS Connection M12x1, straight, with cable plug and cable socket, 2x0,34mm <sup>2</sup> , length 1m, cable 2x0,34mm <sup>2</sup> , color: purple, IP67	90025674	▲
PROFIBUS Bus line 2x 0,64mm <sup>2</sup> , shielded, Permanent installation (inside), color: purple (serial meter)	90014541	▲
PROFIBUS Terminating resistor M12x1, 5-pole, IP67	90022890	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Multi-function device

##### Properties

Can be used as an priming aid and/or  
an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and  
welding joint (PP)

##### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM** or **EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
MFD 60	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
MFD 60	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲



#### ACCESSORIES

##### Hand vacuum pump

PVC/FPM  
  
(incl. 1,5m PVC-Hose d=12/21)

37605682 ▲



#### Foot valve (Plastic)

##### Properties

Compact design  
Easy installation  
  
High-quality materials  
Maintenance-free

##### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
781.1	8	G $\frac{3}{4}$	PVDF/PVDF-GFK	FEP	30073008	▲



#### Foot valve (plastic)

##### Properties

Compact design  
Easy installation  
  
High-quality materials  
Maintenance-free

##### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G $\frac{3}{4}$	PVC-U	EPDM	37601636	▲



#### Foot valve (Stainless steel)

##### Properties

Compact design  
Easy installation  
  
High-quality materials  
Maintenance-free

##### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G $\frac{3}{4}$	1.4571	FEP	37601149	▲

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 8-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connection  
4/6, 6/8, 6/12

#### Basic version

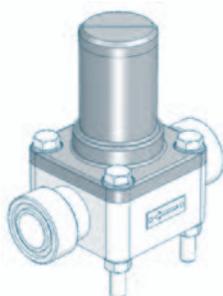
Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 8-pole  
max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
SL-12.1	600 mm	PTFE	37606194	▲
SL-12.1	1.000 mm	PTFE	37606495	▲
SL-12.1	1.200 mm	PTFE	37606195	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm relief valve

for overpressure protection

##### Properties

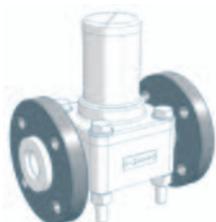
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

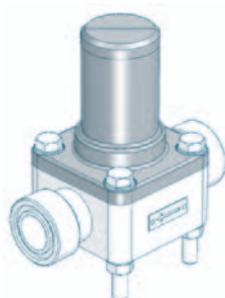
Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲

#### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

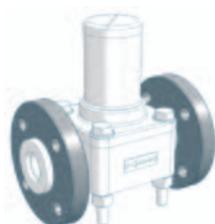
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	①
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Flow controller

IP65

incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)

max. permissible operating pressure: **10 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
C409.2-1,6e, ...-2,4e, ...-7,0e, ...-12e				
8191.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602227	▲
		PP/FPM	37602175	▲
C409.2-18e, ...-25e				
8192.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602176	▲
		PP/FPM	37602177	▲



#### Flow meter

IP65

incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)

max. permissible operating pressure: **10 bar**

can be used on suction and pressure side

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
8012.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607917	▲
		PP	PPS	FPM	37607918	▲



#### Multi function valve

##### Properties

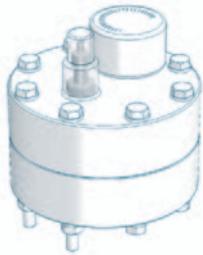
- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

##### Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G $\frac{3}{4}$**
- Relief valve side**
- Opening pressure: **2 up to 10 bar** (adjustable)
- Pressure keeping valve side**
- Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

### ACCESSORIES



#### Connection adapter

Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	☺	☺



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 16	90050991	▲
---------------------------------	----	------	----------	---



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

##### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	⊘	⊘

#### ACCESSORIES



##### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



##### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---



#### Injection fitting

##### Properties

incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
8061.1	10	G ¾	R ½	PVC-U	EPDM	37602105	▲
8061.1	10	G ¾	R ½	PVC-U	FPM	37602106	▲
8061.1	10	G ¾	R ½	PP	EPDM	37602107	▲
8061.1	10	G ¾	R ½	PP	FPM	37602108	▲
8061.1	10	G ¾	R ½	PVDF	FPM	37602109	▲

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

integrated injection lance  
 Valve ball: **PTFE**  
 Seals: **EPDM** or **FPM**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



### Dosing valve (Plastic)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

Valve ball: **PTFE**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

Valve ball: **1.4401**  
 Seals: **FEP-covered**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Flexible, multifunctional
- PROFIBUS DP-Interface
- Digital and analogue control options
- Manual stroke length- and stroke frequency adjustment
- Robust, metallic housing



## TECHNICAL DATA

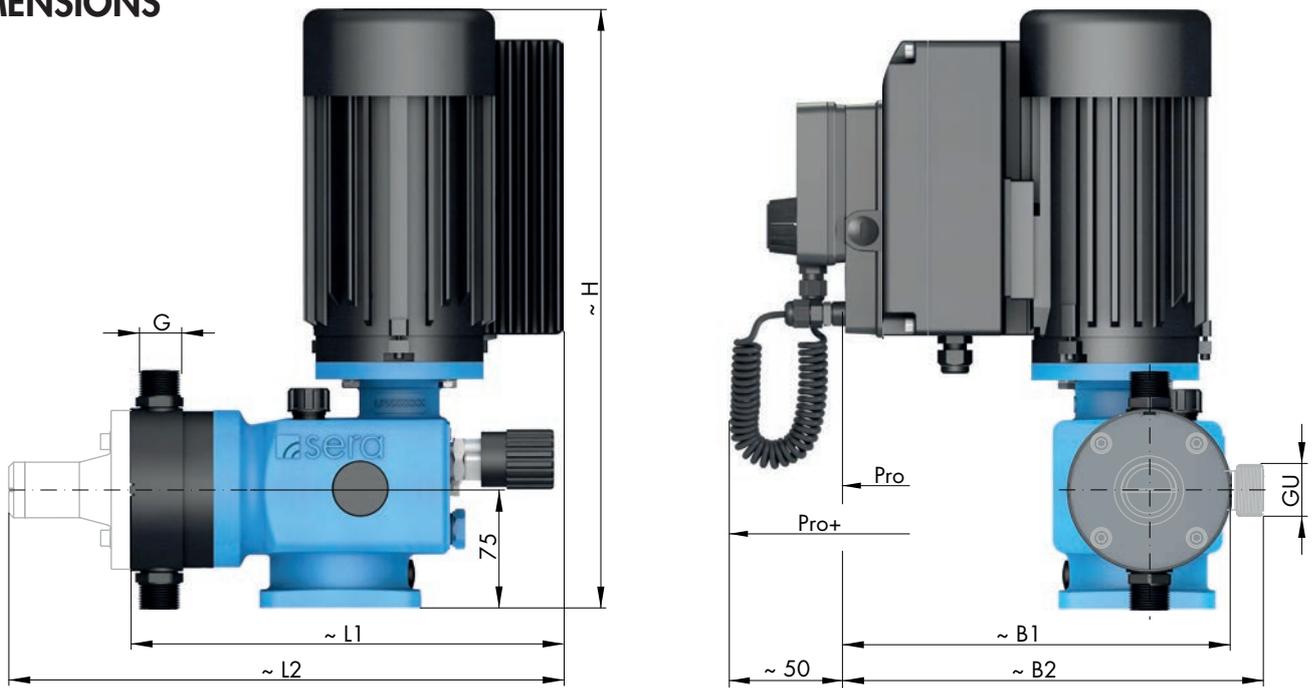
PUMP DATA			C 409.2-... Pro/Pro+							
(* 8mWS = performance losses of nominal capacity QN of 20-25%)			50e	75e	90e	115e	140e	180e	250e	350e
Permissible pressure $p_{2max}$ at the pump outlet	bar		10	10	8	4	8	4	3	3
Nominal capacity QN at $p_{2max}$	l/h	50/60 Hz	0-50	0-75	0-90	0-115	0-140	0-180	0-250	0-350
Quantity per stroke	ml/stroke (100%)		8,3	8,3	15,0	19,2	15,6	20,0	41,7	38,9
Max. suction height	mWC		3 (8*)						3	
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0 (-0,8/0*)						-0,3/0	
Recomm. nominal diameter DN of the connecting pipes	mm		15	15	15	15	15	15	15	15
Nominal stroke frequency	1/min	50/60 Hz	150	150	100	100	150	150	100	150
Weight approx.	kg	plastic	8,5	8,5	10,5	9,0	10,5	9,0	13,0	13,0
		stainless st.	14	16	16	16	16	16	24	24

ELECTRICAL DATA		C 409.2-50e Pro/Pro+ ... C 409.2-350e Pro/Pro+
		230 V, 50/60 Hz      115 V, 50/60 Hz
Power consumption	kW	(...-50e = 0,18 kW) 0,37
Voltage	V	210 - 250      100 - 125
Frequency	Hz	50/60
Inlet voltage, control input	V DC	5...30
Minimum contact signal time	ms	55
Analogue input resistance	$\Omega$	39
Digital output internal/external supply		20V DC, 30mA /... 30V DC, 30mA
Recommended fuse (circuit breaker)		C6A      C10A
Insulation class	ISO	F
Enclosure	IP	55

Flow capacity 50 l/h ... 350 l/h  
 Admissible counterpressure up to 10 bar

C 409.2

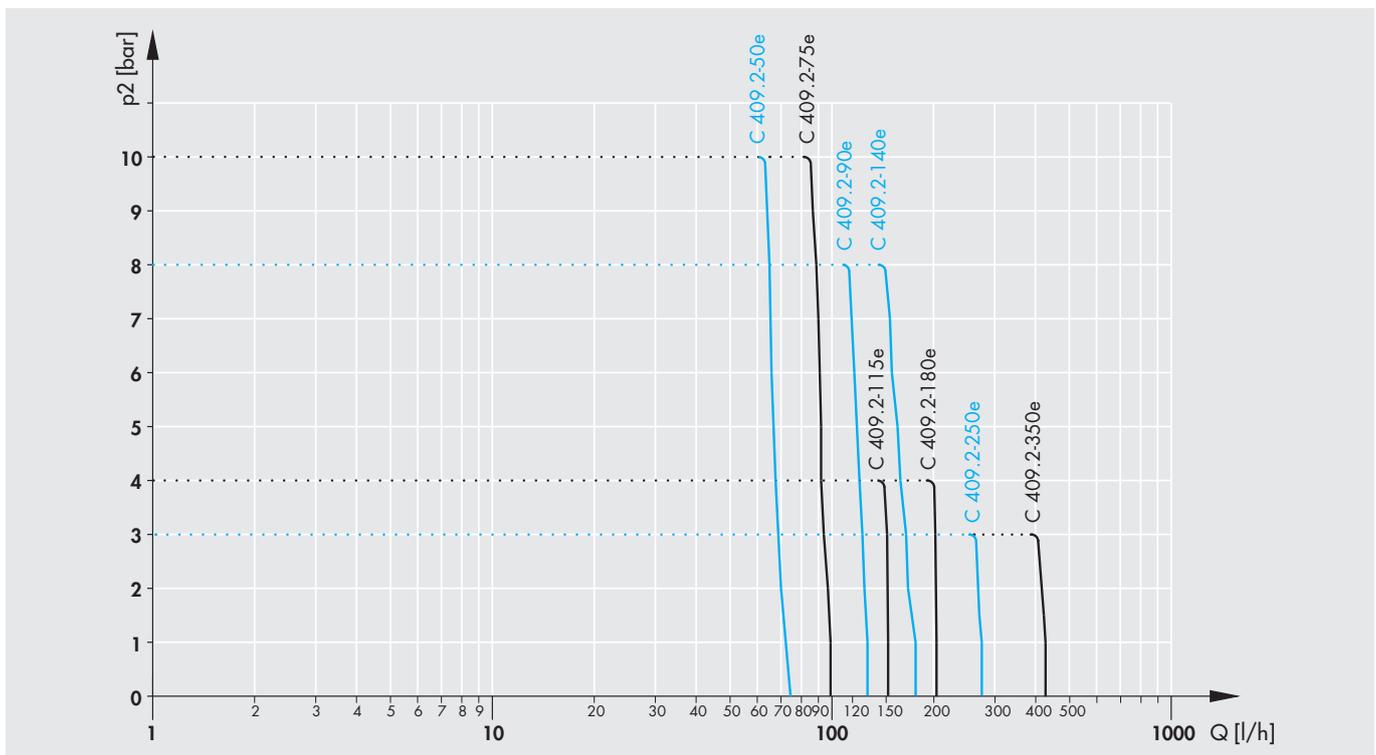
## DIMENSIONS



	G	GU		B1	B2	L1	L2	H		B1	B2	L1	L2	H
C 409.2-50e, ...-75e	G 3/4	G 3/4	▶ PVC, PP, PVDF	260	270	273	335	365	▶ 1.4571	260	270	271	335	365
C 409.2-90e, -115e, -140e, -180e	G 3/4	G1		260	285	276	346	365		260	285	274	346	365
C 409.2-250e, ...-350e	G1 1/4*	G1 1/4*		295	310	327	408	365		295	310	324	408	365

\* PVC = G1

## CHARACTERISTIC CURVES



# DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

Manual operation  
 Manual stroke frequency adjustment  
 PROFIBUS DP-VO Slave interface (option)  
 External START/STOP  
 Pulse operation / fractinator  
 Pulse memory  
 Analogue operation (0/4 ... 20 mA)  
 Analogue operation standardization  
 Batch dosing (manual / with timer)  
 3 LEDs for status indication

Multiline, illuminated display  
 Menu-driven parameterization  
 Flow indication  
 Calibration function  
 4-key operation  
 2 digital outputs (PLC)  
 1 analogue output  
 (PLC or contact signal)  
 2 analogue/digital inputs  
 (reversible)  
 1 digital input

Programmable  
 input-/output functions  
 Diaphragm monitoring  
 Connection/evaluation:  
 2-stage level monitoring  
 Connection/evaluation:  
 Flow monitoring  
 Connection/evaluation:  
 Flow metering  
 Voltage 210-250V, 50/60Hz  
 3m connection cable with Euro-plug

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements & Display	4-button control  Multilingual display  4-color status indicator	Removeable handheld with two buttons and clickwheel  Display with 8 languages (de, en, es, fr, nl, cs, fi, tr)  4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V  Ready to run (NO/NC) Stroke signal (NO/NC)	24V  Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)

## BASIC DESIGNS

### PP-FRP

Pump body **PP-FRP** (\*\* PP)  
Valves **PP-FRP**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced** (\* EPDM)

Type	Valve seals		Price (EUR)
	EPDM Article-No.	FPM Article-No.	
<b>Pro</b>			
C409.2-50e Pro	16027789	15007714	
C409.2-75e Pro	16027790	15007715	
C409.2-90e Pro	16027791	15007716	
C409.2-115e Pro *	16027792	15007717	
C409.2-140e Pro	16027766	15002385	
C409.2-180e Pro *	16027793	15007718	
C409.2-250e Pro **	16027794	15007719	
C409.2-350e Pro **	16027795	15007720	
<b>Pro+</b>			
C409.2-50e Pro+	16026233	15007190	
C409.2-75e Pro+	16026112	15007200	
C409.2-90e Pro+	16026113	15007201	
C409.2-115e Pro+ *	16026064	15007202	
C409.2-140e Pro+	16026114	15007203	
C409.2-180e Pro+ *	16026115	15007204	
C409.2-250e Pro+ **	16026116	15007205	
C409.2-350e Pro+ **	16026117	15007206	

### PVDF-FRP

Pump body **PVDF-FRP** (\*\*PVDF)  
Valves **PVDF-FRP**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced** (\* EPDM)

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.		
<b>Pro</b>			
C409.2-50e Pro	16027840		
C409.2-75e Pro	16027844		
C409.2-90e Pro	16027852		
C409.2-115e Pro *	16027852		
C409.2-140e Pro	16027856		
C409.2-180e Pro *	16027860		
C409.2-250e Pro **			
C409.2-350e Pro **			
<b>Pro+</b>			
C409.2-50e Pro+	16026253		
C409.2-75e Pro+	16026042		
C409.2-90e Pro+	16026043		
C409.2-115e Pro+ *	16026044		
C409.2-140e Pro+	16026045		
C409.2-180e Pro+ *	16026046		
C409.2-250e Pro+ **	16026047		
C409.2-350e Pro+ **	16026048		

### PVC-U

Pump body **PVC-U**  
Valves **PVC-U**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced** (\* EPDM)

Type	Valve seals		Price (EUR)
	EPDM Article-No.	FPM Article-No.	
<b>Pro</b>			
C409.2-50e Pro	16027838	16027840	
C409.2-75e Pro	16027842	16027843	
C409.2-90e Pro	16027850	16027851	
C409.2-115e Pro *	16027850	16027851	
C409.2-140e Pro	16027854	16027856	
C409.2-180e Pro *	16027858	16027859	
C409.2-250e Pro	16027862	16027863	
C409.2-350e Pro	16027865	16027866	
<b>Pro+</b>			
C409.2-50e Pro+	16026248	16026241	
C409.2-75e Pro+	16026126	16026049	
C409.2-90e Pro+	16026127	16026050	
C409.2-115e Pro+ *	16026128	16026051	
C409.2-140e Pro+	16026129	16026052	
C409.2-180e Pro+ *	16026130	16026053	
C409.2-250e Pro+	16026131	16026054	
C409.2-350e Pro+	16026132	16026055	

### STAINLESS STEEL

Pump body **1.4571**  
Valves **1.4571**  
Valve balls **1.4401**  
Diaphragm **PTFE-faced** (\* EPDM)

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.		
<b>Pro</b>			
C409.2-50e Pro	16027841		
C409.2-75e Pro	16027845		
C409.2-90e Pro	16027849		
C409.2-115e Pro *	16027853		
C409.2-140e Pro	16027857		
C409.2-180e Pro *	16027861		
C409.2-250e Pro	16027864		
C409.2-350e Pro	16027867		
<b>Pro+</b>			
C409.2-50e Pro+	16026260		
C409.2-75e Pro+	16026056		
C409.2-90e Pro+	16026057		
C409.2-115e Pro+ *	16026058		
C409.2-140e Pro+	16026059		
C409.2-180e Pro+ *	16026060		
C409.2-250e Pro+	16026061		
C409.2-350e Pro+	16026062		

# DIAPHRAGM PUMPS

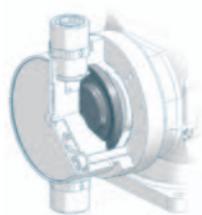
## CONTROLLABLE

### OPTIONS



#### Versions (basic equipment)

Version	Price (EUR)
Pump <b>without</b> control element (price reduction)	▲
Pump <b>with</b> control element (basic version)	●
Pump <b>without</b> control element; <b>with</b> INTERFACE MODULE (INTERFACE MODULE instead of control element)	▲

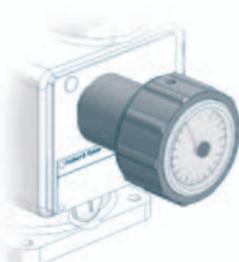


#### Working diaphragm

Surcharge (EUR)

Material

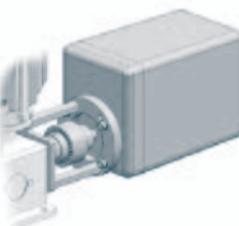
FPM only with ...-115e and ...-180e



#### Stroke length adjustment

Surcharge (EUR)

with position indicator



#### Stroke length adjustment with actuator

Surcharge (EUR)

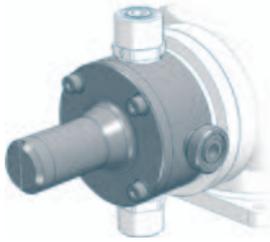
Actuator N C1-BA 230V ±10%, 50/60Hz, 128s/10 U, 1,5Nm incl. mounting set



Electronic positioning controller ESR-NK (only integrated in N C1-BA) Input signal 0/4 - 20mA including feedback signal 0/4 - 20mA



## OPTIONS



### Integrated relief valve

Diaphragm: **PTFE-faced**    Connecting seals: **EPDM** or **FPM**    **Surcharge (EUR)**

<b>PP</b>	C409.2-50e, ...-75e	▲
	C409.2-90e, ...-115e, ...-140e, ...-180e	▲
	C409.2-250e, ...-350e	▲
<b>PVDF</b>	C409.2-50e, ...-75e	Ⓜ
	C409.2-90e, ...-115e, ...-140e, ...-180e	Ⓜ
	C409.2-250e, ...-350e	Ⓜ
<b>PVC-U</b>	C409.2-50e, ...-75e	▲
	C409.2-90e, ...-115e, ...-140e, ...-180e	▲
	C409.2-250e, ...-350e	▲
<b>1.4571</b>	C409.2-50e, ...-75e	▲
	C409.2-90e, ...-115e, ...-140e, ...-180e	▲
	C409.2-250e, ...-350e	▲
Connecting seals <b>FEP-covered</b>		
for connection G 3/4	C409.2-50e up to ...-180e	▲
for connection G1 1/4	C409.2-250e, ...-350e	▲



### Drive motor

**Surcharge (EUR)**

Connection voltage 100 - 125 V, 60Hz    Ⓜ

with USA plug (NEMA)



### Special connection

**Surcharge (EUR)**

Special connection (plug) for power supply    Ⓜ



### Control element

**Article-No.**    **Price (EUR)**

**Control element (removeable)**    90044844    ▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### INTERFACE MODULE - PROFINET -

PROFINET INTERFACE MODULE  
 PROFINET IO RT 2 Port (Ethernet Network Interface)  
 Transmission speed: automatic 10Mbit/s, 100Mbit/s  
 Connection to dosing pump: M12 cable socket, 8-pole, D-coded

Type	Article-No.	Price (EUR)
PROFINET INTERFACE MODULE	90044877	▲
PROFINET connection	length 1m	90050133 ▲
M12x1, straight, with cable plug and -socket, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5E, color green	length 5m	90050134 ▲
	length 10m	90050135 ▲
PROFINET Connection	length 1m	90050136 ▲
M12x1 - RJ45, straight, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5, color green	length 5m	90050137 ▲
	length 10m	90050138 ▲



#### INTERFACE MODULE - PROFIBUS -

PROFIBUS INTERFACE MODULE  
 PROFIBUS DP-V1 (Slave)  
 Transmission speed: automatic 9,6 kbit/s ... 12 Mbit/s  
 Connection to dosing pump: M12 cable socket, 5-pole, B-coded

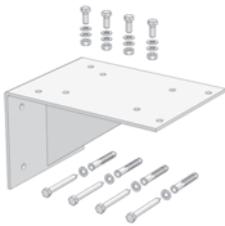
Type	Article-No.	Price (EUR)
PROFIBUS INTERFACE MODULE	90044875	▲
PROFIBUS cable plug M12x1, straight, individually convertible, 5-pole, IP67	90025520	▲
PROFIBUS Cable socket M12x1, straight, individually convertible, 5-pole, IP67	90025521	▲
PROFIBUS Cable socket M12x1, straight, with 10m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025524	▲
PROFIBUS Cable socket M12x1, straight, with 15m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025525	▲
PROFIBUS Connection M12x1, straight, with cable plug and cable socket, 2x0,34mm <sup>2</sup> , length 1m, cable 2x0,34mm <sup>2</sup> , color: purple, IP67	90025674	▲
PROFIBUS Bus line 2x 0,64mm <sup>2</sup> , shielded, Permanent installation (inside), color: purple (serial meter)	90014541	▲
PROFIBUS Terminating resistor M12x1, 5-pole, IP67	90022890	▲

## ACCESSORIES



### Control cable

		Article-No.	Price (EUR)
<b>for level input</b> (flow monitoring not included)			
Cable plug M12, 8-pole	fully assembled, incl. 5m cable	90042494	▲
Cable plug M12, 8-pole	Individually convertible (without cable)	90022885	▲



### Bracket

		Article-No.	Price (EUR)
for wall mounting (incl. mounting kit)			
PP		90023848	▲
1.4301		90023875	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM** or **EPDM**

max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲

### ACCESSORIES

<b>Hand vacuum pump</b>	PVC/FPM	37605682	▲
(incl. 1,5m PVC-Hose d=12/21)			



# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Foot valve (Plastic)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e						
<b>781.1</b>	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲
C409.2-250e, ...-350e						
<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1 1/4	PVDF/PVDF-GFK	FEP	30073018	▲



#### Foot valve (plastic)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e						
<b>731</b>	8	G 3/4	PVC-U	EPDM	37601636	▲



#### Foot valve (Stainless steel)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e						
<b>731</b>	8	G 3/4	1.4571	FEP	37601149	▲
C409.2-250e, ...-350e						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 8-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage  
5m cable (from foot valve) with plug, M12, 8-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606579	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606581	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606583	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606580	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606582	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606584	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606585	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606587	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606589	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606586	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606588	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37605974	▲



## ACCESSORIES

### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

##### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

##### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
C409.2-250e, ...-350e						
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

#### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
BCS 70x6 Di=50	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
G2 IBC	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
G2 universal	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
Hose set	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
Quiver	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
Control cable	Control cable for level input Cable plug M12x1, 8-pole, 5m length, loosely delivered	90042494	▲



## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e					
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲

## FITTINGS FOR THE PRESSURE SIDE



### Multi function valve

#### Properties

Maximum operating pressure 10 bar  
Compact design  
Easy installation  
Maintenance-free  
Venting  
Overpressure protection for dosing pumps  
Prevention of over conveyance

#### Basic version

Diaphragms: **PTFE-faced**  
Connection: **G 3/4**  
**Relief valve side**  
Opening pressure: **2 up to 10 bar** (adjustable)  
**Pressure keeping valve side**  
Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
C409.2-50e				
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲
C409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e, ...-250e, ...-350e				
Ⓜ			Ⓜ	Ⓜ

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Flow controller

IP65

incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)

max. permissible operating pressure: **10 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e				
<b>8192.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602176	▲
		PP/FPM	37602177	▲
C409.2-250e, ...-350e				
<b>8193.1</b>	Inlet: G1 (internal) Outlet: G1 (external)	PVC-U/FPM	37602178	▲
		PP/FPM	37602240	▲



#### Flow meter

IP65

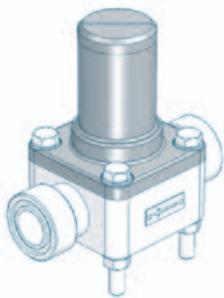
incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)

max. permissible operating pressure: **10 bar**

can be used on suction and pressure side

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
C409.2-50e, ...-75e						
<b>8013.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607919	▲
		PP	PPS	FPM	37607920	▲
C409.2-90e, ...-115e, ...-140e, ...-180e						
<b>8014.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607921	▲
		PP	PPS	FPM	37608002	▲
C409.2-250e, ...-350e						
<b>8015.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PP	EPDM	37607926	▲
		PP	PP	FPM	37607927	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

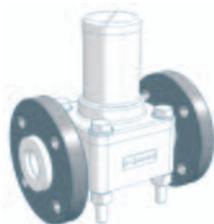
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

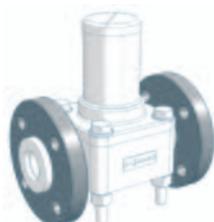
Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C409.2-50e						
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲
C409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e, ...-250e, ...-350e						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	①	①
622.10	DN15	G 1	PP	EPDM	①	①
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲

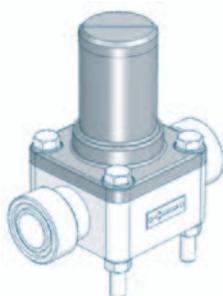


Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pressure keeping valve

to prevent over-conveyance

##### Properties

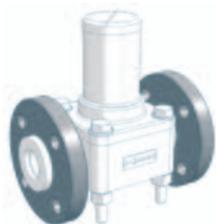
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic version

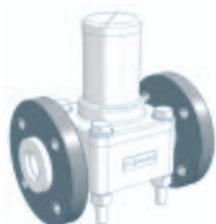
Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C409.2-50e						
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲
C409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e, ...-250e, ...-350e						
622.D	DN15	G 1	PVC-U	FPM	37600049	▲
622.D	DN15	G 1	PVC-U	EPDM	36221101	▲
622.D	DN15	G 1	PP	FPM	Ⓢ	Ⓢ
622.D	DN15	G 1	PP	EPDM	Ⓢ	Ⓢ
622.D	DN15	G 1	PP-GFK	FPM	37600056	▲
622.D	DN15	G 1	PP-GFK	EPDM	36221105	▲
622.D	DN15	G 1	PVDF	FEP	37602881	▲
622.D	DN15	G 1	PVDF-GFK	FEP	37601449	▲
622.D	DN15	G 1	1.4581	FEP	37600538	▲

#### OPTIONS

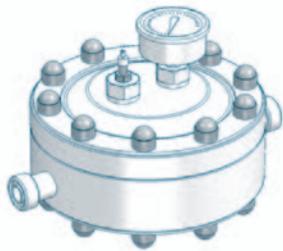


Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	Ⓢ
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓢ
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓢ
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
C409.2-50e						
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲
C409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e						
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲
C409.2-250e, ...-350e						
723.1	G 1 1/4	10 bar	PVC-U	EPDM	37601002	▲
723.1	G 1 1/4	10 bar	PVC-U	FPM	30100011	▲
723.1	G 1 1/4	10 bar	PP	EPDM	37603271	▲
723.1	G 1 1/4	10 bar	PP	FPM	30100012	▲
723.1	G 1 1/4	10 bar	PVDF	FEP	37600918	▲

### ACCESSORIES



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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MPD 721.2, MPD 722.1



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
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MPD 723.1



#### Bracket

for wall mounting	PP	90011722	▲
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# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

##### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C409.2-50e						
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	☉	☉
C409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e						
810.1-0,32/10	G ½	10 bar	1.4571	Butyl	37603721	▲
810.1-0,32/10	G ½	10 bar	1.4571	FPM	37603725	▲
810.1-0,32/10	G ½	10 bar	1.4571	PTFE	☉	☉
C409.2-250e, ...-350e						
810.1-0,75/10	G ½	10 bar	1.4571	Butyl	37603722	▲
810.1-0,75/10	G ½	10 bar	1.4571	FPM	37603726	▲
810.1-0,75/10	G ½	10 bar	1.4571	PTFE	37606307	▲

#### ACCESSORIES

##### Filling- and pressure measuring device

(mounted on pulsation damper)



Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



<b>Filling pump FLP 2</b>	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

integrated injection lance  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e							
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e							
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲
C409.2-250e, ...-350e							
693.1	20	G 1 1/4	R 1 1/4	PP-GFK	EPDM	37604661	▲
693.1	20	G 1 1/4	R 1 1/4	PP-GFK	FPM	37603317	▲
693.1	20	G 1 1/4	R 1 1/4	PVDF-GFK	FEP	30072027	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
C409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e							
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲
C409.2-250e, ...-350e							
692.1	15	G 1	R 1	1.4571	FEP	37600669	▲
693.1	20	G 1 1/4	R 1 1/4	1.4571	FEP	37600789	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Flexible, multifunctional
- PROFIBUS DP-Interface
- Digital and analogue control options
- Manual stroke length- and stroke frequency adjustment
- Robust, metallic housing

## TECHNICAL DATA

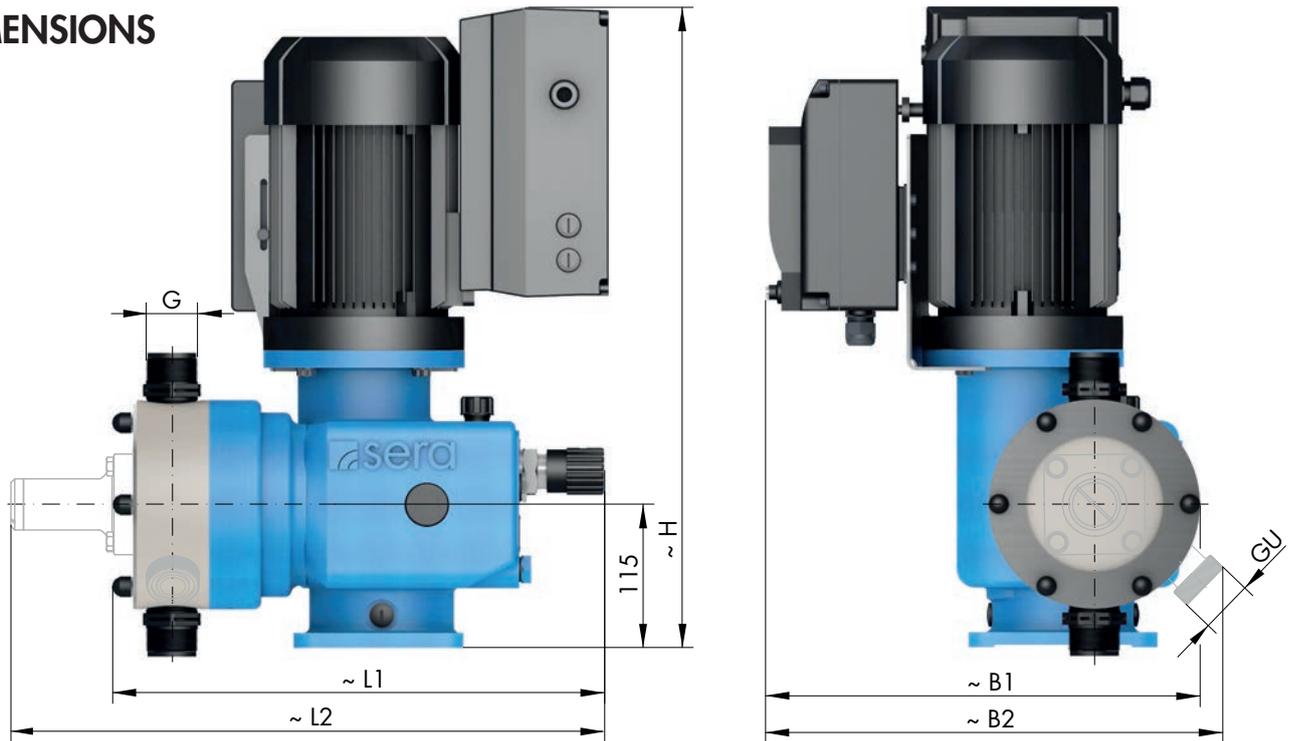
PUMP DATA			C 410.2-... Pro/Pro+			
			280e	570e	900e	1450e
Permissible pressure $p_{2max}$ at the pump outlet	bar		8	6	5	5
Nominal capacity QN at $p_{2max}$	l/h	50/60 Hz	0-280	0-570	0-900	0-1.450
Quantity per stroke	ml/stroke (100%)		46	98	155	245
Max. suction height	mWC		5	5	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,5/0	-0,5/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		15	15	20	25
Nominal stroke frequency	l/min	50 Hz	97	97	97	97
Weight approx.	kg	plastic	38	38	49	49
		stainless steel	45	45	64	64

ELECTRICAL DATA			C 410.2-... Pro/Pro+			
			280e	570e	900e	1450e
Power consumption	kW		0,75	0,75	1,5	1,5
Voltage	V		380-420			
Frequency	Hz		50/60			
Inlet voltage, control input	V DC		5...30			
Minimum contact signal time	ms		55			
Analogue input resistance	$\Omega$		100			
Digital output internal/external supply			max. 15V DC, 50mA /max. 30V DC, 350mA			
Recommended fuse	(circuit breaker)		C10A			
Insulation class	ISO		F			
Enclosure	IP		55			

Flow capacity 280 l/h ... 1.450 l/h  
 Admissible counterpressure up to 8 bar

# C 410.2

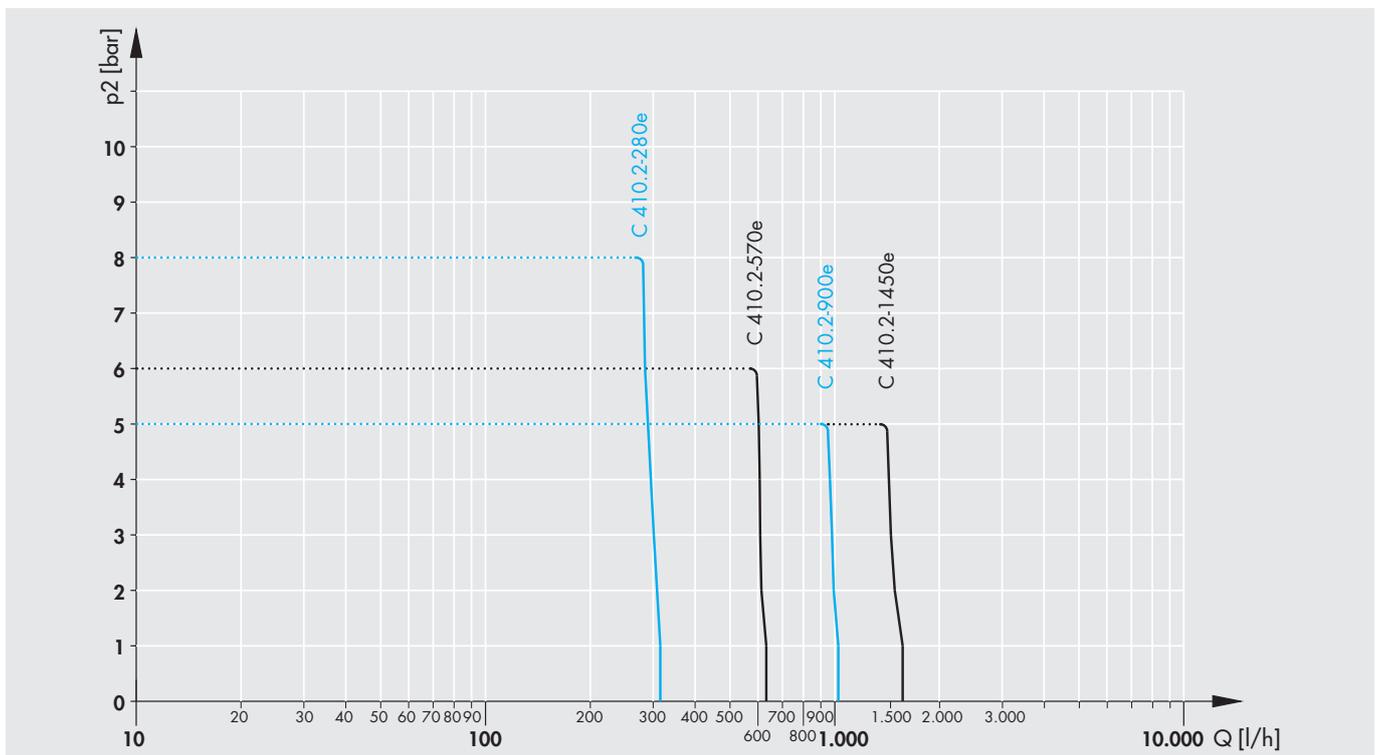
## DIMENSIONS



	G	GU		B1	B2	L1	L2	H		B1	B2	L1	L2	H
C 410.2-280e	G1¼*	G1¼*	▶ PVC, PP, PVDF	355	365	403	484	530	▶ 1.4571	355	365	400	484	530
C 410.2-570e	G1¼*	G1¼*		355	365	403	484	530		355	365	400	484	530
C 410.2-900e	G1¼	5		380	5	428	5	580		380	5	425	5	580
C 410.2-1450e	G1¼	5		380	5	428	5	580		380	5	425	5	580

\* PVC = G1

## CHARACTERISTIC CURVES



# DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

Manual operation  
 Manual stroke frequency adjustment  
 PROFIBUS DP-VO Slave interface (option)  
 External START/STOP  
 Pulse operation / fractinator  
 Pulse memory  
 Analogue operation (0/4 ... 20 mA)\*  
 Analogue operation standardization  
 Batch dosing (manual / with timer)\*  
 3 LEDs for status indication

Speed control/Slow Mode  
 Multiline, illuminated display  
 Menu-driven parameterization  
 Flow indication  
 Calibration function  
 4-key operation  
 2 digital outputs (PLC)\*  
 1 digital output  
 (PLC or contact signal)\*  
 2 analogue/digital inputs  
 (reversible)\*

Programmable  
 input-/output functions\*  
 Diaphragm monitoring  
 Connection/evaluation:  
 2-stage level monitoring  
 Connection/evaluation:  
 Flow monitoring  
 Connection/evaluation:  
 Flow metering  
 Voltage 3~380 -420V/N/PE, 50/60Hz  
 2m connection cable with CEE-plug, 5-pole

\* inapplicable when supplied with PROFIBUS DP - interface (Option)

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	x	✓
Timer	x	✓
Interface	x	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	x	✓
Error messaging	Error Code + alarm color change	Plant text + display color change
Clock for data & time	x	✓

Pro & Pro+ - Version  
 COMING SOON

Connection & Control	Pro	Pro+
Control elements & Display	4-button control	Removeable handheld with two buttons and clickwheel
	Multilingual display	Display with 8 languages (de, en, es, fr, nl, cs, fi, tr)
	4-color status indicator	4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	x	✓
Profibus / Profinet	x	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V Ready to run (NO/NC) Stroke signal (NO/NC)	24V Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)

## BASIC DESIGNS

### PP

Pump body **PP**  
Valves **PP-FRP**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
C410.2-280e	16022724	①	16012455	①
C410.2-570e	16022405	①	16022218	①
C410.2-900e	16022638	①	16022685	①
C410.2-1450e	16022276	①	16022498	①

### PVDF

Pump body **PVDF**  
Valves **PVDF-FRP**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
C410.2-280e	16023757	①
C410.2-570e	16023758	①
C410.2-900e	16023759	①
C410.2-1450e	16023760	①

### PVC-U

Pump body **PVC-U**  
Valves **PVC-U**  
Valve balls **PTFE**  
Diaphragm **PTFE-faced**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
C410.2-280e	16022607	①	16023010	①
C410.2-570e	16022852	①	16022273	①
C410.2-900e	16022650	①	16022562	①
C410.2-1450e	16022649	①	16022526	①

### STAINLESS STEEL

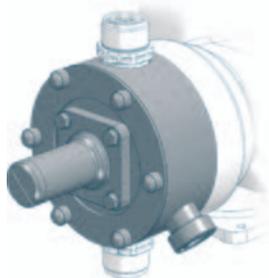
Pump body **1.4571**  
Valves **1.4571/1.4581**  
Valve balls **1.4401**  
Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
C410.2-280e	16023761	①
C410.2-570e	16023056	①
C410.2-900e	16023662	①
C410.2-1450e	16023762	①

# DIAPHRAGM PUMPS

## CONTROLLABLE

### OPTIONS

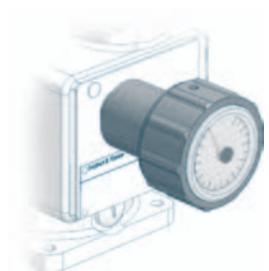


#### Integrated relief valve

Diaphragm: **PTFE-faced**      Connecting seals: **EPDM** or **FPM**      **Surcharge (EUR)**

<b>PP</b>	...410.2-280e, ...-570e	▲
<b>PVC</b>	...410.2-280e, ...-570e	▲
<b>PVDF</b>	...410.2-280e, ...-570e	ⓘ
<b>1.4571</b>	...410.2-280e, ...-570e	▲
<b>PP, PVDF, PVC-U, 1.4571</b>	...410.2-900e, ...-1450e	⊘

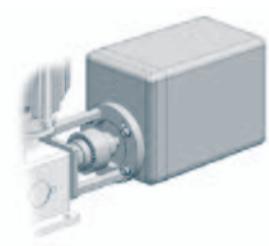
Connecting seals **FEP-covered**      all types      ▲



#### Stroke length adjustment

**Surcharge (EUR)**

with position indicator	...410.2-280e, -570e, 900e	▲
	...410.2-1450e	▲



#### Stroke length adjustment with actuator

**Surcharge (EUR)**

Actuator N1S	230V, 50/60Hz, 128s/10 U, 15Nm Potentiometer 1 kΩ (incl. mounting set)	▲
Electronic positioning controller ESR-NK (only integrated in N1S)	Input signal 0/4 - 20mA including feedback signal 0/4 - 20mA	▲

## ACCESSORIES



### PROFIBUS

PROFIBUS DP-V0 (Slave)  
Transmission speed: automatic 9,6 kbit/s ... 12 Mbit/s  
Connection to dosing pump: M12 cable socket, 5-pole, B-coded

PROFIBUS	Article-No.	Price (EUR)
PROFIBUS DP-V0 (Slave) Interface		▲

#### Accessories

PROFIBUS Y - distributor, M12x1, 5-pole, IP67	90025526	▲
PROFIBUS T - distributor, M12x1, 5-pole, IP67	90022889	▲
PROFIBUS Cable plug M12x1, straight, individually convertible, 5-pole, IP67	90025520	▲
PROFIBUS Cable socket M12x1, straight, individually convertible, 5-pole, IP67	90025521	▲
PROFIBUS Cable socket M12x1, straight, with 10m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025524	▲
PROFIBUS Cable socket M12x1, straight, with 15m line, 2x0,34mm <sup>2</sup> , 1x free cable end color: purple, IP67	90025525	▲
PROFIBUS Connection M12x1, straight, with cable plug and cable socket, 2x0,34mm <sup>2</sup> , length 1m, cable 2x0,34mm <sup>2</sup> , color: purple, IP67	90025674	▲
PROFIBUS Bus line 2x 0,64mm <sup>2</sup> , shielded, Permanent installation inside, color: purple (serial meter)	90014541	▲
PROFIBUS Terminating resistor M12x1, 5-polig, IP67	90022890	▲



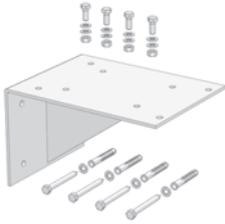
### Control cable

	Article-No.	Price (EUR)
<b>for controlling the pump</b>		
Cable socket M12, 8-pole fully assembled, incl. 5m cable	90031247	▲
Cable socket M12, 8-pole individually convertible (without cable)	90022879	▲
<b>for level input</b> (flow monitoring not included)		
Cable plug M12, 8-pole fully assembled, incl. 5m cable	90042494	▲
Cable plug M12, 8-pole Individually convertible (without cable)	90022885	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### Bracket

for wall mounting (incl. mounting kit)

**Article-No.**

**Price (EUR)**

PP

90023849



1.4301

90023876



#### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
C410.2-280e, ...-570e						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲
C410.2-900e, ...-1450e						
<b>MFD 1500</b>	20	G1¼	5 Ltr.	EPDM	37606316	▲
<b>MFD 1500</b>	20	G1¼	5 Ltr.	FPM	37606315	▲



### ACCESSORIES

<b>Hand vacuum pump</b>	PVC/FPM	37605682	▲
(incl. 1,5m PVC-Hose d=12/21)			



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>783.1</b>	20	G 1¼	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1¼	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1¼	PVDF/PVDF-GFK	FEP	30073018	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
C410.2-280e, ...-570e						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲
C410.2-900e, ...-1450e						
<b>733</b>	20	G 1¼	1.4571	FEP	37603962	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

##### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

##### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
C410.2-280e, ...-570e						
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

#### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
BCS 70x6 Di=50	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
G2 IBC	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
G2 universal	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
Hose set	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
Quiver	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
Control cable	Control cable for level input Cable socket M12x1, 3-pole, 5m length, loosely delivered	90031245	▲



## FITTINGS FOR THE PRESSURE SIDE



### Flow meter

IP65

incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)

max. permissible operating pressure: **10 bar**

can be used on suction and pressure side

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
C410.2-280e, ...-570e						
8015.1	Inlet: G1¼ (internal) Outlet: G1¼ (external)	PP	PP	EPDM	37607926	▲
		PP	PP	FPM	37607927	▲
C410.2-900e, ...-1450e						
8017.1	Inlet: G1¼ (internal) Outlet: G1¼ (external)	PP	PP	EPDM	37607932	▲
		PP	PP	FPM	37607933	▲



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
693.1	20	G 1¼	R 1¼	PP-GFK	EPDM	37604661	▲
693.1	20	G 1¼	R 1¼	PP-GFK	FPM	37603317	▲
693.1	20	G 1¼	R 1¼	PVDF-GFK	FEP	30072027	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

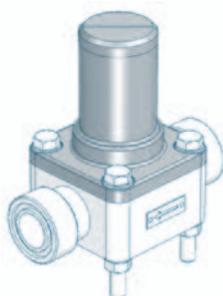
Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
C410.2-280e, ...-570e							
692.1	15	G 1	R 1	1.4571	FEP	37600669	▲
C410.2-900e, ...-1450e							
693.1	20	G 1¼	R 1¼	1.4571	FEP	37600789	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm relief valve

for overpressure protection

##### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C410.2-280e, ...-570e						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	Ⓜ	Ⓜ
622.10	DN15	G 1	PP	EPDM	Ⓜ	Ⓜ
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲
C410.2-900e						
623.10	DN20	G 1¼	PVC-U	FPM	37600009	▲
623.10	DN20	G 1¼	PVC-U	EPDM	36230101	▲
623.10	DN20	G 1¼	PP	FPM	37600016	▲
623.10	DN20	G 1¼	PP	EPDM	36230105	▲
623.10	DN20	G 1¼	PVDF	FEP	37606304	▲
C410.2-1450e						
624.10	DN25	G 1½	PVC-U	FPM	37603639	▲
624.10	DN25	G 1½	PVC-U	EPDM	37603638	▲
624.10	DN25	G 1½	PP	FPM	37603637	▲
624.10	DN25	G 1½	PP	EPDM	37603636	▲
624.10	DN25	G 1½	PVDF	FEP	37603866	▲

## FITTINGS FOR THE PRESSURE SIDE

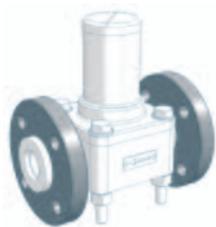
### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
623.10	PVC	Loose flange made of PVC-U	▲
623.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.10	PP	Loose flange made of PP with steel inlay	▲
623.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
624.10	PVC	Loose flange made of PVC-U	▲
624.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
624.10	PP	Loose flange made of PP with steel inlay	▲
624.10	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm relief valve (with fixed flanges)

for overpressure protection

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic design

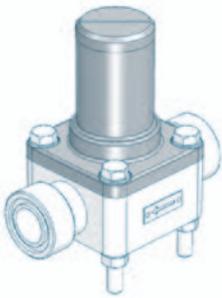
Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
C410.2-900e					
623.10	DN20	DIN 2501	1.4581	36230104	▲
623.10	DN20	DIN 2501	GG	37600038	▲
C410.2-1450e					
624.10	DN25	DIN 2501	1.4581	36240104	▲
624.10	DN25	DIN 2501	GG	37600039	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pressure keeping valve

to prevent over-conveyance

##### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic version

Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C410.2-280e, ...-570e						
<b>622.D</b>	DN15	G 1	PVC-U	FPM	37600049	▲
<b>622.D</b>	DN15	G 1	PVC-U	EPDM	36221101	▲
<b>622.D</b>	DN15	G 1	PP	FPM	Ⓢ	Ⓢ
<b>622.D</b>	DN15	G 1	PP	EPDM	Ⓢ	Ⓢ
<b>622.D</b>	DN15	G 1	PP-GFK	FPM	37600056	▲
<b>622.D</b>	DN15	G 1	PP-GFK	EPDM	36221105	▲
<b>622.D</b>	DN15	G 1	PVDF	FEP	37602881	▲
<b>622.D</b>	DN15	G 1	PVDF-GFK	FEP	37601449	▲
<b>622.D</b>	DN15	G 1	1.4581	FEP	37600538	▲
C410.2-900e						
<b>623.D</b>	DN20	G 1¼	PVC-U	FPM	37600050	▲
<b>623.D</b>	DN20	G 1¼	PVC-U	EPDM	36231101	▲
<b>623.D</b>	DN20	G 1¼	PP	FPM	37600057	▲
<b>623.D</b>	DN20	G 1¼	PP	EPDM	36231105	▲
<b>623.D</b>	DN20	G 1¼	PVDF	FEP	37606309	▲
C410.2-1450e						
<b>624.D</b>	DN25	G 1½	PVC-U	FPM	37600051	▲
<b>624.D</b>	DN25	G 1½	PVC-U	EPDM	36241101	▲
<b>624.D</b>	DN25	G 1½	PP	FPM	37600058	▲
<b>624.D</b>	DN25	G 1½	PP	EPDM	36241105	▲
<b>624.D</b>	DN25	G 1½	PVDF	FEP	37606310	▲

## FITTINGS FOR THE PRESSURE SIDE

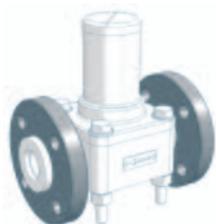
### OPTIONS



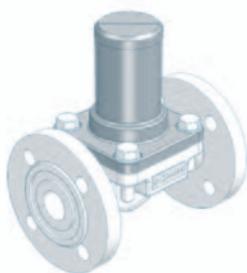
Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
623.D	PVC	Loose flange made of PVC-U	▲
623.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.D	PP	Loose flange made of PP with steel inlay	▲
623.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
624.D	PVC	Loose flange made of PVC-U	▲
624.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
624.D	PP	Loose flange made of PP with steel inlay	▲
624.D	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm pressure keeping valve (with fixed flanges)

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
C410.2-900e					
623.D	DN20	DIN 2501	1.4581	36231104	▲
623.D	DN20	DIN 2501	GG	37600080	▲
C410.2-1450e					
624.D	DN25	DIN 2501	1.4581	36241104	▲
624.D	DN25	DIN 2501	GG	37600081	▲

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

##### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm		Article-No.	Price (EUR)
				Seals			
713.1	G 1 ¼	10 bar	PVC-U	EPDM		30071038	▲
713.1	G 1 ¼	10 bar	PVC-U	FPM		30071039	▲
713.1	G 1 ¼	10 bar	PP	EPDM		30071040	▲
713.1	G 1 ¼	10 bar	PP	FPM		30071041	▲
713.1	G 1 ¼	10 bar	PVDF	EPDM		30071060	▲
713.1	G 1 ¼	10 bar	PVDF	FPM		30071061	▲

#### OPTIONS



##### Loose-type flanges

Design acc. to DIN 2501, incl. O-Rings

PVC-design	Loose flange, PVC-U	DN20	▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20	▲

#### ACCESSORIES



Bracket for wall mounting	PP	90010913	▲
	1.4301	90010914	▲
	Steel (color treated)	90010915	▲



Filling pump FLP 2	for filling device		
with manometer, max. 7 bar incl. 2m hose and coupling for air valve		90009396	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C410.2-280e						
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	Butyl	37603722	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	FPM	37603726	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	PTFE	37606307	▲
C410.2-570e, ...-900e, ...-1450e						
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	Butyl	37603723	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	FPM	37603727	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	PTFE	37606308	▲

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Injection fitting

##### Properties

incl. injection lance for better mixing  
 Easy installation  
 Any mounting position  
 Maintenance-free  
 High-quality materials

##### Basic version

Cone-type check valve (spring loaded)  
 Shut-off ball valve  
 Injection lance (L=150mm)  
 max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
C410.2-280e, ...-570e							
8062.1	15	G 1	R ¾	PVC-U	EPDM	37602110	▲
8062.1	15	G 1	R ¾	PVC-U	FPM	37602111	▲
8062.1	15	G 1	R ¾	PP	EPDM	37602112	▲
8062.1	15	G 1	R ¾	PP	FPM	37602113	▲
8062.1	15	G 1	R ¾	PVDF	FPM	37602114	▲
C410.2-900e, ...-1450e							
8063.1	20	G 1¼	R 1	PVC-U	EPDM	37602115	▲
8063.1	20	G 1¼	R 1	PVC-U	FPM	37602116	▲
8063.1	20	G 1¼	R 1	PP	EPDM	37602117	▲
8063.1	20	G 1¼	R 1	PP	FPM	37602118	▲
8063.1	20	G 1¼	R 1	PVDF	FPM	37602119	▲

Flow capacity 280 l/h ... 1.450 l/h  
Admissible counterpressure up to 8 bar

C 410.2

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- Multi-layer diaphragm technology
- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Flexible, multifunctional
- Digital and analogue control options
- PROFIBUS DP-Interface
- Manual stroke length- and stroke frequency adjustment

## TECHNICAL DATA

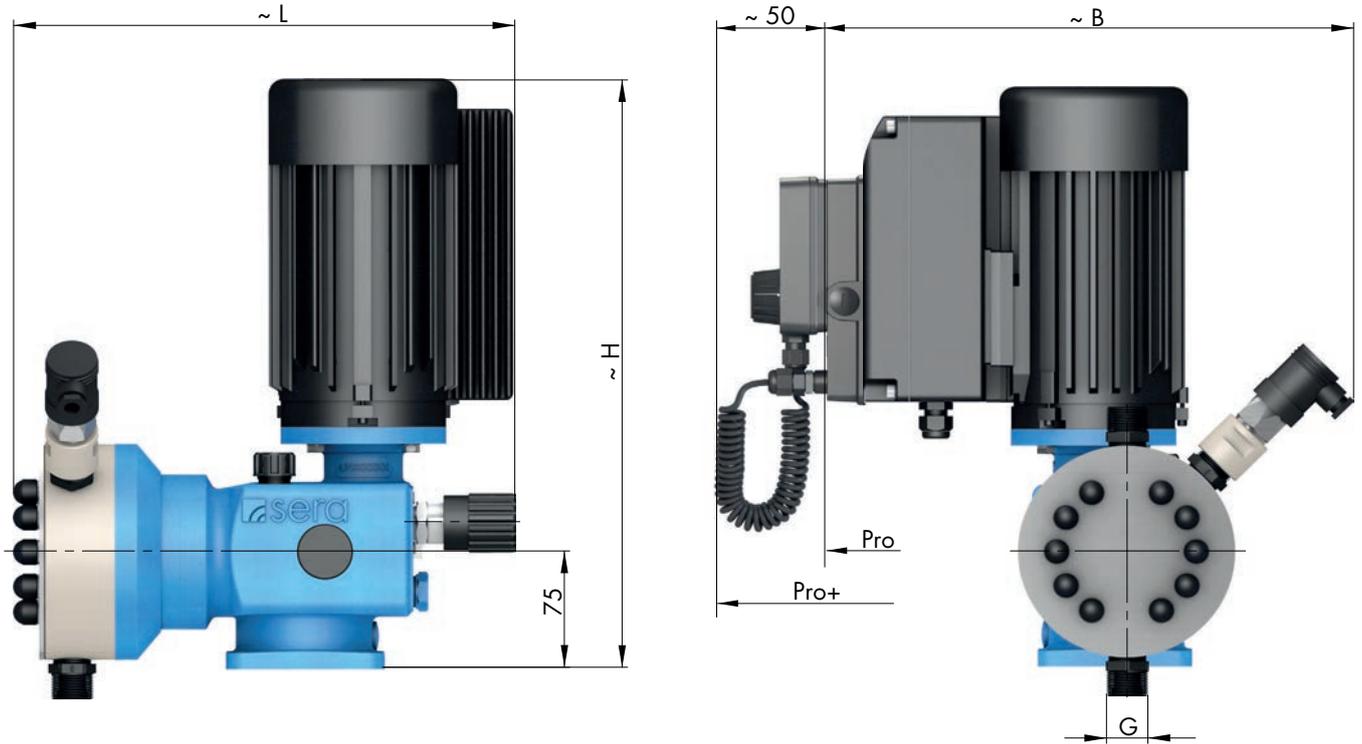
PUMP DATA			C 409.2-... ML Pro/Pro+							
			11 ML	17 ML	30 ML	45 ML	72 ML	110 ML	150 ML	220 ML
Permissible pressure $p_{2max}$ at the pump outlet	bar	plastic	10	10	10	10	10	10	4	4
		stainless steel	20	20	16	16	10	10	4	4
Nominal capacity QN at $p_{2max}$	l/h	50/60 Hz	0-11	0-17	0-30	0-45	0-72	0-110	0-150	0-220
Quantity per stroke	ml/stroke (100%)		1,8	1,8	5	5	5	12	25	24
Max. suction height	mWC		3	3	3	3	3	3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter of the connecting pipes	mm	DN	10	10	10	10	10	15	15	15
Nominal stroke frequency	1/min	50/60 Hz	100	150	100	150	100	150	100	150
Weight approx.	kg	plastic	17,5	17,5	18	18	18,5	18,5	20	20
		stainless steel	19	19	20	20	21,5	21,5	27	27

ELECTRICAL DATA		C 409.2-... ML Pro/Pro+	
		230 V, 50/60 Hz	115 V, 50/60 Hz
Power consumption	kW		0,37
Voltage	V	210 - 250	100 - 125
Frequency	Hz		50/60
Inlet voltage, control input	V DC		5...30
Minimum contact signal time	ms		55
Analogue input resistance	$\Omega$		39
Digital output internal/external supply		20V DC, 30mA /... 30V DC, 30mA	
Recommended fuse (circuit breaker)		C6A	C10A
Insulation class	ISO		F
Enclosure	IP		55

Flow capacity 11 l/h ... 220 l/h  
Admissible counterpressure up to 20 bar

# C 409.2 ML

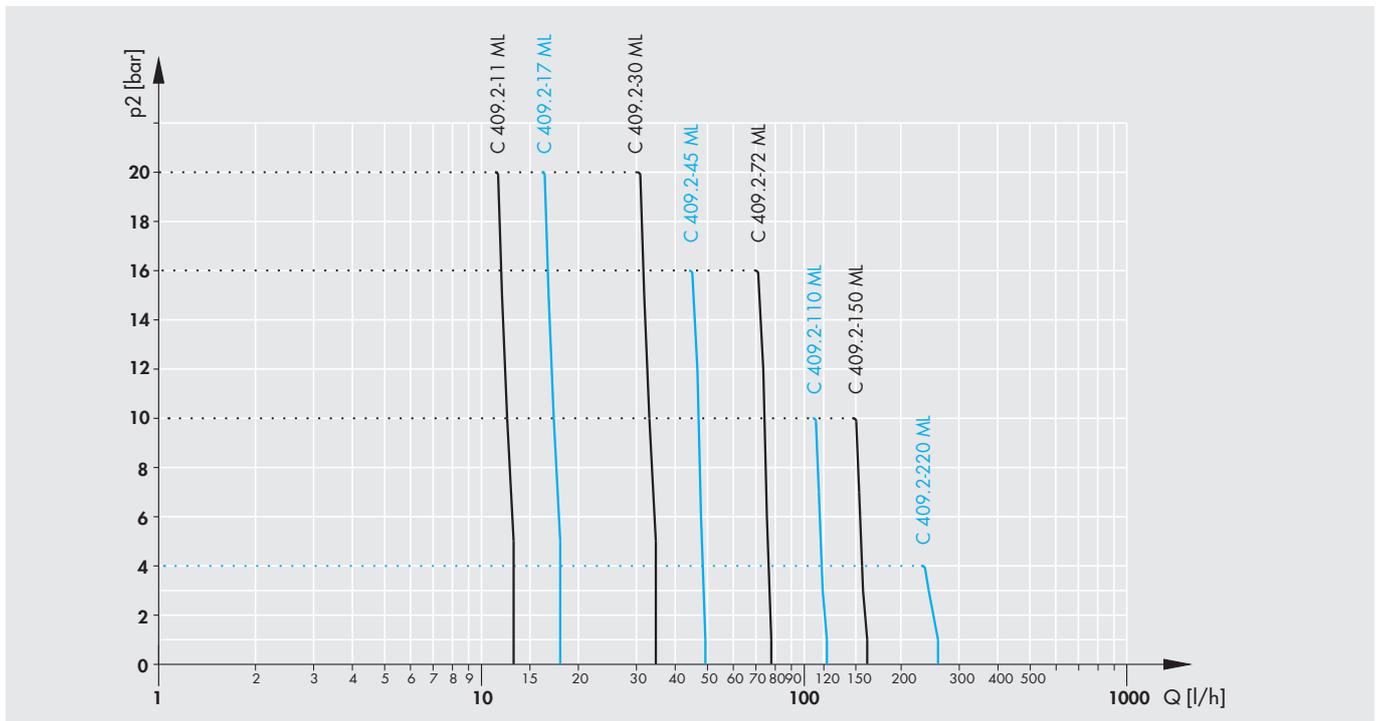
## DIMENSIONS



	G		B	L	H		B	L	H
C 409.2-11 ML, ...-17 ML	G 3/4	PVC, PP, PVDF	340	323	365	1.4571	340	308	365
C 409.2-30 ML, ...-45 ML	G 3/4		345	323	365		335	305	365
C 409.2-72 ML, ...-110 ML	G 3/4		345	327	365		345	314	365
C 409.2-150 ML, ...-220 ML	G 1 1/4*		360	344	365		360	339	365

\* PVC = G1

## CHARACTERISTIC CURVES



# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

Manual operation  
 Manual stroke frequency adjustment  
 PROFIBUS DP-VO Slave interface (option)  
 External START/STOP  
 Pulse operation / fractinator  
 Pulse memory  
 Analogue operation (0/4 ... 20 mA)  
 Analogue operation standardization  
 Batch dosing (manual / with timer)  
 3 LEDs for status indication

Multiline, illuminated display  
 Menu-driven parameterization  
 Flow indication  
 Calibration function  
 4-key operation  
 2 digital outputs (PLC)  
 1 analogue output  
 (PLC or contact signal)  
 2 analogue/digital inputs  
 (reversible)  
 1 digital input

Programmable  
 input-/output functions  
 Diaphragm monitoring  
 Connection/evaluation:  
 2-stage level monitoring  
 Connection/evaluation:  
 Flow monitoring  
 Connection/evaluation:  
 Flow metering  
 Voltage 210-250V, 50/60Hz  
 3m connection cable with Euro-plug

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements & Display	4-button control  Multilingual display  4-color status indicator	Removeable handheld with two buttons and clickwheel  Display with 8 languages (de, en, es, fr, nl, cs, fi, tr)  4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V Ready to run (NO/NC) Stroke signal (NO/NC)	24V Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)

## BASIC DESIGNS

### PP

Pump body **PP**  
Valves **PP-FRP**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
<b>Pro</b>				
C409.2-11ML Pro	16027796	Ⓜ	15007721	Ⓜ
C409.2-17ML Pro	16027797	Ⓜ	15007722	Ⓜ
C409.2-30ML Pro	16027798	Ⓜ	15007723	Ⓜ
C409.2-45ML Pro	16027799	Ⓜ	15007724	Ⓜ
C409.2-72ML Pro	16027800	Ⓜ	15007725	Ⓜ
C409.2-110ML Pro	16027801	Ⓜ	15007726	Ⓜ
C409.2-150ML Pro	16027802	Ⓜ	15007727	Ⓜ
C409.2-220ML Pro	16027803	Ⓜ	15007728	Ⓜ
<b>Pro+</b>				
C409.2-11ML Pro+		Ⓜ		Ⓜ
C409.2-17ML Pro+		Ⓜ		Ⓜ
C409.2-30ML Pro+		Ⓜ		Ⓜ
C409.2-45ML Pro+		Ⓜ		Ⓜ
C409.2-72ML Pro+		Ⓜ		Ⓜ
C409.2-110ML Pro+		Ⓜ		Ⓜ
C409.2-150ML Pro+		Ⓜ		Ⓜ
C409.2-220ML Pro+		Ⓜ		Ⓜ

### PVC-U

Pump body **PVC-U**  
Valves **PVC-U**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
<b>Pro</b>				
C409.2-11ML Pro	16027868	Ⓜ	16027869	Ⓜ
C409.2-17ML Pro	16027871	Ⓜ	16027872	Ⓜ
C409.2-30ML Pro	16027874	Ⓜ	16027875	Ⓜ
C409.2-45ML Pro	16027877	Ⓜ	16027878	Ⓜ
C409.2-72ML Pro	16027880	Ⓜ	16027881	Ⓜ
C409.2-110ML Pro	16027883	Ⓜ	16027884	Ⓜ
C409.2-150ML Pro	16027886	Ⓜ	16027887	Ⓜ
C409.2-220ML Pro	16027889	Ⓜ	16027913	Ⓜ
<b>Pro+</b>				
C409.2-11ML Pro+		Ⓜ		Ⓜ
C409.2-17ML Pro+		Ⓜ		Ⓜ
C409.2-30ML Pro+		Ⓜ		Ⓜ
C409.2-45ML Pro+		Ⓜ		Ⓜ
C409.2-72ML Pro+		Ⓜ		Ⓜ
C409.2-110ML Pro+		Ⓜ		Ⓜ
C409.2-150ML Pro+		Ⓜ		Ⓜ
C409.2-220ML Pro+		Ⓜ		Ⓜ

### PVDF

Pump body **PVDF**  
Valves **PVDF-FRP**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
<b>Pro</b>			
C409.2-11ML Pro	Ⓜ	Ⓜ	
C409.2-17ML Pro	Ⓜ	Ⓜ	
C409.2-30ML Pro	Ⓜ	Ⓜ	
C409.2-45ML Pro	Ⓜ	Ⓜ	
C409.2-72ML Pro	Ⓜ	Ⓜ	
C409.2-110ML Pro	Ⓜ	Ⓜ	
C409.2-150ML Pro	Ⓜ	Ⓜ	
C409.2-220ML Pro	Ⓜ	Ⓜ	
<b>Pro+</b>			
C409.2-11ML Pro+	Ⓜ	Ⓜ	
C409.2-17ML Pro+	Ⓜ	Ⓜ	
C409.2-30ML Pro+	Ⓜ	Ⓜ	
C409.2-45ML Pro+	Ⓜ	Ⓜ	
C409.2-72ML Pro+	Ⓜ	Ⓜ	
C409.2-110ML Pro+	Ⓜ	Ⓜ	
C409.2-150ML Pro+	Ⓜ	Ⓜ	
C409.2-220ML Pro+	Ⓜ	Ⓜ	

### STAINLESS STEEL

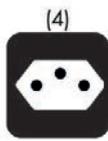
Pump body **1.4571**  
Valves **1.4571/1.4581**  
Valve balls **1.4401**  
Multi-layer diaphragm **PTFE**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
<b>Pro</b>			
C409.2-11ML Pro	16027870	Ⓜ	
C409.2-17ML Pro	16027873	Ⓜ	
C409.2-30ML Pro	16027876	Ⓜ	
C409.2-45ML Pro	16027879	Ⓜ	
C409.2-72ML Pro	16027882	Ⓜ	
C409.2-110ML Pro	16027885	Ⓜ	
C409.2-150ML Pro	16027888	Ⓜ	
C409.2-220ML Pro	16027890	Ⓜ	
<b>Pro+</b>			
C409.2-11ML Pro+		Ⓜ	
C409.2-17ML Pro+		Ⓜ	
C409.2-30ML Pro+		Ⓜ	
C409.2-45ML Pro+		Ⓜ	
C409.2-72ML Pro+		Ⓜ	
C409.2-110ML Pro+		Ⓜ	
C409.2-150ML Pro+		Ⓜ	
C409.2-220ML Pro+		Ⓜ	

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### OPTIONS



#### Versions (basic equipment)

Version	Price (EUR)
Pump <b>without</b> control element (price reduction)	▲
Pump <b>with</b> control element (basic version)	●
Pump <b>without</b> control element; <b>with</b> INTERFACE MODULE (INTERFACE MODULE instead of control element)	▲

#### Drive motor

Surcharge (EUR)	
Connection voltage 100 - 125 V, 60Hz with USA plug (NEMA)	①

#### Special connection

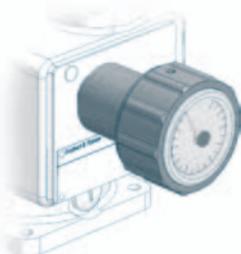
different plug types for different, international standards

Type	Price (EUR)
Plug 1: CEE 7/4 „Euro-plug“	●
Plug 2: AS 3112 „Australia plug“	①
Plug 3: NEMA 5-15, 3-pole „US plug“	○ <sup>1)</sup>
Plug 4: SN 441011 (Type J) „swiss plug“	①

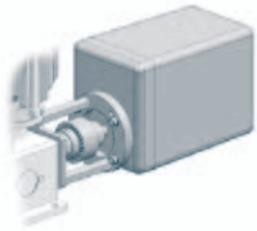
<sup>1)</sup> only in combination with 100-125 V drive motor option (US plug included)

#### Stroke length adjustment

Surcharge (EUR)	
with position indicator	▲



## OPTIONS



### Stroke length adjustment with actuator

Surcharge (EUR)

Actuator N C1-BA	230V ±10%, 50/60Hz, 128s/10 U, 1,5Nm incl. mounting set	▲
Electronic positioning controller ESR-NK (only integrated in N C1-BA)	Input signal 0/4 - 20mA including feedback signal 0/4 - 20mA	▲

## ACCESSORIES



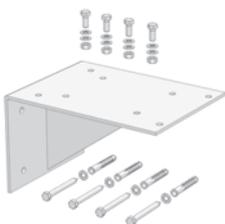
### Control element

	Article-No.	Price (EUR)
Control element (removeable)	90044844	▲



### Control cable

	Article-No.	Price (EUR)
<b>for level input</b> (flow monitoring not included)		
Cable plug M12, 8-pole	fully assembled, incl. 5m cable	90042494 ▲
Cable plug M12, 8-pole	Individually convertible (without cable)	90022885 ▲



### Bracket

	Article-No.	Price (EUR)
for wall mounting (incl. mounting kit)		
PP	90023848	▲
1.4301	90023875	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### INTERFACE MODULE - PROFINET -

PROFINET INTERFACE MODULE  
 PROFINET IO RT 2 Port (Ethernet Network Interface)  
 Transmission speed: automatic 10Mbit/s, 100Mbit/s  
 Connection to dosing pump: M12 cable socket, 8-pole, D-coded

Type	Article-No.	Price (EUR)
PROFINET INTERFACE MODULE	90044877	▲
PROFINET connection	length 1m	90050133 ▲
M12x1, straight, with cable plug and -socket, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5E, color green	length 5m	90050134 ▲
	length 10m	90050135 ▲
PROFINET Connection	length 1m	90050136 ▲
M12x1 - RJ45, straight, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5, color green	length 5m	90050137 ▲
	length 10m	90050138 ▲



#### INTERFACE MODULE - PROFIBUS -

PROFIBUS INTERFACE MODULE  
 PROFIBUS DP-V1 (Slave)  
 Transmission speed: automatic 9,6 kbit/s ... 12 Mbit/s  
 Connection to dosing pump: M12 cable socket, 5-pole, B-coded

Type	Article-No.	Price (EUR)
PROFIBUS INTERFACE MODULE	90044875	▲
PROFIBUS cable plug M12x1, straight, individually convertible, 5-pole, IP67	90025520	▲
PROFIBUS Cable socket M12x1, straight, individually convertible, 5-pole, IP67	90025521	▲
PROFIBUS Cable socket M12x1, straight, with 10m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025524	▲
PROFIBUS Cable socket M12x1, straight, with 15m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025525	▲
PROFIBUS Connection M12x1, straight, with cable plug and cable socket, 2x0,34mm <sup>2</sup> , length 1m, cable 2x0,34mm <sup>2</sup> , color: purple, IP67	90025674	▲
PROFIBUS Bus line 2x 0,64mm <sup>2</sup> , shielded, Permanent installation (inside), color: purple (serial meter)	90014541	▲
PROFIBUS Terminating resistor M12x1, 5-pole, IP67	90022890	▲

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML					
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 8-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connection  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 8-pole  
max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML				
SL-12.1	600 mm	PTFE	37606194	▲
SL-12.1	1.000 mm	PTFE	37606495	▲
SL-12.1	1.200 mm	PTFE	37606195	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 8-pole)

##### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

##### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage  
5m cable (from foot valve) with plug, M12, 8-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
C409.2-45ML, ...-72ML, ...-110ML, ...-150ML						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606579	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606581	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606583	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606580	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606582	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606584	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606585	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606587	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606589	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606586	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606588	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37605974	▲



#### ACCESSORIES

##### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

#### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
C409.2-220ML						
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
BCS 70x6 Di=50	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
G2 IBC	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
G2 universal	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
Hose set	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
Quiver	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
Control cable	Control cable for level input Cable plug M12x1, 8-pole, 5m length, loosely delivered	90042494	▲



# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Foot valve (Plastic)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML						
<b>781.1</b>	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲
C409.2-220ML						
<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1 1/4	PVDF/PVDF-GFK	FEP	30073018	▲



#### Foot valve (plastic)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML						
<b>731</b>	8	G 3/4	PVC-U	EPDM	37601636	▲
C409.2-220ML						
Ⓢ			PVC-U		Ⓢ	Ⓢ



#### Foot valve (Stainless steel)

##### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

##### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML						
<b>731</b>	8	G 3/4	1.4571	FEP	37601149	▲
C409.2-220ML						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or  
 an calibration pot  
 Compact design  
 Flexible Connection  
 Maintenance-free  
 incl. glue joint (PVC-U) and  
 welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
 Seals: **FPM or EPDM**  
 max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
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C409.2-11ML, ...-17ML, ...-30ML, ...-45ML

<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
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<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲
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C409.2-72ML, ...-110ML, ...-150ML, ...-220ML

<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
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<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲
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### ACCESSORIES



<b>Hand vacuum pump</b>	PVC/FPM				37605682	▲
	(incl. 1,5m PVC-Hose d=12/21)					

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Flow controller

IP65

incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)

max. permissible operating pressure: **10 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML				
<b>8191.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602227	▲
		PP/FPM	37602175	▲
C409.2-45ML, ...-72ML, ...-110ML, ...-150ML				
<b>8192.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602176	▲
		PP/FPM	37602177	▲
C409.2-220ML				
<b>8193.1</b>	Inlet: G1 (internal) Outlet: G1 (external)	PVC-U/FPM	37602178	▲
		PP/FPM	37602240	▲



#### Flow meter

IP65

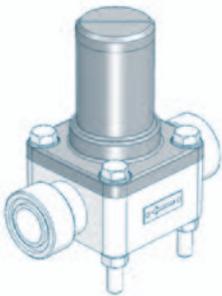
incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)

max. permissible operating pressure: **10 bar**

can be used on suction and pressure side

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
C409.2-11ML, ...-17ML, ...-30ML						
<b>8012.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607917	▲
		PP	PPS	FPM	37607918	▲
C409.2-45ML, ...-72ML						
<b>8013.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607919	▲
		PP	PPS	FPM	37607920	▲
C409.2-110ML, ...-150ML						
<b>8014.1</b>	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607921	▲
		PP	PPS	FPM	37608002	▲
C409.2-220ML						
<b>8015.1</b>	Inlet: G1 $\frac{1}{4}$ (internal) Outlet: G1 $\frac{1}{4}$ (external)	PP	PP	EPDM	37607926	▲
		PP	PP	FPM	37607927	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

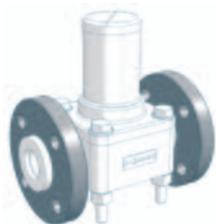
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

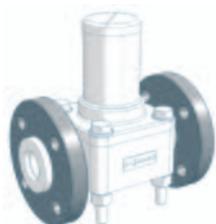
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML						
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲
C409.2-72ML, ...-110ML, ...-150ML, ...-220ML						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	①	①
622.10	DN15	G 1	PP	EPDM	①	①
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲

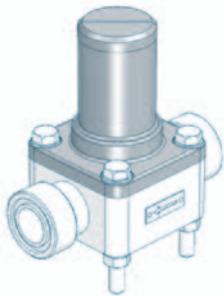


Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

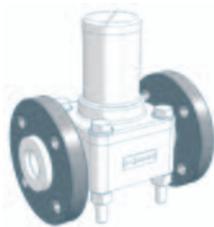
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

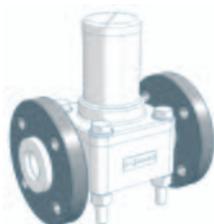
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML						
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲
C409.2-72ML, ...-110ML, ...-150ML, ...-220ML						
622.D	DN15	G 1	PVC-U	FPM	37600049	▲
622.D	DN15	G 1	PVC-U	EPDM	36221101	▲
622.D	DN15	G 1	PP	FPM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP	EPDM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP-GFK	FPM	37600056	▲
622.D	DN15	G 1	PP-GFK	EPDM	36221105	▲
622.D	DN15	G 1	PVDF	FEP	37602881	▲
622.D	DN15	G 1	PVDF-GFK	FEP	37601449	▲
622.D	DN15	G 1	1.4581	FEP	37600538	▲

#### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	Ⓜ
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲

Flow capacity 11 l/h ... 220 l/h  
 Admissible counterpressure up to 20 bar

C 409.2 ML

## FITTINGS FOR THE PRESSURE SIDE



### Multi function valve

#### Properties

- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

#### Basic version

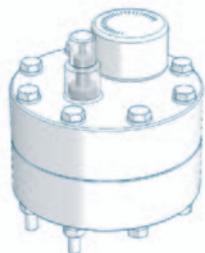
- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- Relief valve side**
- Opening pressure: **2 up to 10 bar** (adjustable)
- Pressure keeping valve side**
- Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML				
<b>MFV 050</b>	PVC-U	EPDM	37600973	▲
<b>MFV 050</b>	PVC-U	FPM	37600974	▲
<b>MFV 050</b>	PP	EPDM	37600982	▲
<b>MFV 050</b>	PP	FPM	37600983	▲
C409.2-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML, ...-220ML				
⌚			⌚	⌚

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

##### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML						
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

#### ACCESSORIES



##### Connection adapter

Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	90038082	Ⓜ Ⓜ



##### Retaining clamp

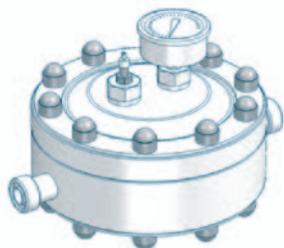
(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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##### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
C409.2-30ML, ...-45ML						
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲
C409.2-72ML, ...-110ML, ...-150ML, ...-220ML						
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲

## ACCESSORIES



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
---------------------------------	----	------	----------	---



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

##### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML						
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	Butyl	37603720	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	FPM	37603724	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
C409.2-72ML, ...-110ML, ...-150ML						
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	Butyl	37603721	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	FPM	37603725	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
C409.2-220ML						
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	Butyl	37603722	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	FPM	37603726	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	PTFE	37606307	▲

#### ACCESSORIES

##### Filling- and pressure measuring device

(mounted on pulsation damper)



Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



<b>Filling pump FLP 2</b>	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML						
810.1-0,16/180	G ½	180 bar	1.4571	Butyl	90008811	▲
810.1-0,16/180	G ½	180 bar	1.4571	FPM	90009498	▲
810.1-0,16/180	G ½	180 bar	1.4571	PTFE	☉	☉

## ACCESSORIES



### Filling- and pressure measuring device

Design: removeable  
 Manometer d63, plastic housing, measuring system: copper alloyed  
 incl. 2,5m filling hose, connection M14x1,5

0 - 25 bar	37601674	▲
0 - 100 bar	37601673	▲
0 - 250 bar	30066005	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Dosing valve (Plastic)

##### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

integrated injection lance  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML							
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



#### Dosing valve (Plastic)

##### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML							
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲
C409.2-150ML, ...-220ML							
693.1	20	G 1 1/4	R 1 1/4	PP-GFK	EPDM	37604661	▲
693.1	20	G 1 1/4	R 1 1/4	PP-GFK	FPM	37603317	▲
693.1	20	G 1 1/4	R 1 1/4	PVDF-GFK	FEP	30072027	▲



#### Dosing valve (Stainless steel)

##### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML							
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲
C409.2-150ML, ...-220ML							
692.1	15	G 1	R 1	1.4571	FEP	37600669	▲

## FITTINGS FOR THE PRESSURE SIDE



### Injection fitting

#### Properties

incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
C409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML							
8061.1	10	G 3/4	R 1/2	PVC-U	EPDM	37602105	▲
8061.1	10	G 3/4	R 1/2	PVC-U	FPM	37602106	▲
8061.1	10	G 3/4	R 1/2	PP	EPDM	37602107	▲
8061.1	10	G 3/4	R 1/2	PP	FPM	37602108	▲
8061.1	10	G 3/4	R 1/2	PVDF	FPM	37602109	▲
C409.2-150ML, ...-220ML							
8062.1	15	G 1	R 3/4	PVC-U	EPDM	37602110	▲
8062.1	15	G 1	R 3/4	PVC-U	FPM	37602111	▲
8062.1	15	G 1	R 3/4	PP	EPDM	37602112	▲
8062.1	15	G 1	R 3/4	PP	FPM	37602113	▲
8062.1	15	G 1	R 3/4	PVDF	FPM	37602114	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- Multi-layer diaphragm technology
- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Flexible, multifunctional
- Digital and analogue control options
- PROFIBUS DP-Interface
- Manual stroke length- and stroke frequency adjustment

## TECHNICAL DATA

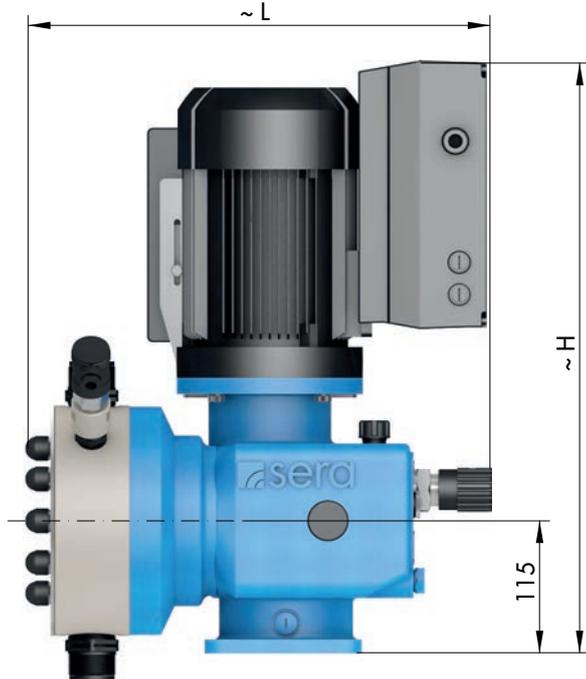
PUMP DATA			C 410.2-135 ML	C 410.2-500 ML	C 410.2-1200 ML
Permissible pressure $p_{2max}$ at the pump outlet	bar	plastic	10	10	5
		stainless steel	15		
Nominal capacity QN at $p_{2max}$	l/h	50/60 Hz	0-135	0-500	0-1200
Quantity per stroke	ml/stroke (100%)		23	85	206
Max. suction height	mWC		3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		15	15	20
Nominal stroke frequency	1/min	50/60 Hz	97	97	97
Weight approx.	kg	plastic	40	43	45
		stainless steel	42	45	47

ELECTRICAL DATA		C 410.2-135 ML C 410.2-500 ML	C 410.2-1200 ML
Power consumption	kW	0,75	1,5
Voltage	V	3 ~ 380 - 420	
Frequency	Hz	50/60	
Inlet voltage, control input	V DC	5...30	
Minimum contact signal time	ms	55	
Analogue input resistance	$\Omega$	100	
Digital output internal/external supply		max. 15V DC, 50mA /max. 30V DC, 350mA	
Recommended fuse	(circuit breaker)	C10A	
Insulation class	ISO	F	
Enclosure	IP	55	

Flow capacity 135 l/h ... 1.200 l/h  
 Admissible counterpressure up to 15 bar

# C 410.2-...ML

## DIMENSIONS



	G		B	L	H		B	L	H
C 410.2-135 ML	G1 ¼ *	PVC, PP PVDF	430	425	530	1.4571	430	425	530
C 410.2-500 ML	G1 ¼ *		440	415	530		440	415	530
C 410.2-1200 ML	G1 ¼ *		455	460	580		455	460	580

\* PVC = G1

## CHARACTERISTIC CURVES

COMING SOON

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

Manual operation  
 Manual stroke frequency adjustment  
 PROFIBUS DP-VO Slave interface (option)  
 External START/STOP  
 Pulse operation / fractinator  
 Pulse memory  
 Analogue operation (0/4 ... 20 mA)\*  
 Analogue operation standardization  
 Batch dosing (manual / with timer)\*  
 3 LEDs for status indication

Speed control/Slow Mode  
 Multiline, illuminated display  
 Menu-driven parameterization  
 Flow indication  
 Calibration function  
 4-key operation  
 2 digital outputs (PLC)\*  
 1 digital output  
 (PLC or contact signal)\*  
 2 analogue/digital inputs  
 (reversible)\*

Programmable  
 input-/output functions\*  
 Diaphragm monitoring  
 Connection/evaluation:  
 2-stage level monitoring  
 Connection/evaluation:  
 Flow monitoring  
 Connection/evaluation:  
 Flow metering  
 Voltage 3~380 -420V/N/PE, 50/60Hz  
 2m connection cable with CEE-plug, 5-pole

\* inapplicable when supplied with PROFIBUS DP - interface (Option)

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements / display	4-button control Multilingual display	Removeable handheld with two buttons and clickwheel Display with 8 languages (de, en, es, fr, nl, cs, fi, tr)
	4-color status indicator	4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V Ready to run (NO/NC) Stroke signal (NO/NC)	24V Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)

Pro & Pro+ - Version

COMING SOON

## BASIC DESIGNS

### PP

Pump body **PP**  
Valves **PP-FRP**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
C410.2-135ML	☺	☺	16022687	☺
C410.2-500ML	16023782	☺	16022695	☺
C410.2-1200ML	☺	☺	16022064	☺

### PVDF

Pump body **PVDF**  
Valves **PVDF-FRP**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
C410.2-135ML	☺	☺
C410.2-500ML	16023784	☺
C410.2-1200ML	☺	☺

### PVC-U

Pump body **PVC-U**  
Valves **PVC-U**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
C410.2-135ML	☺	☺	☺	☺
C410.2-500ML	16023464	☺	16023680	☺
C410.2-1200ML	☺	☺	☺	☺

### STAINLESS STEEL

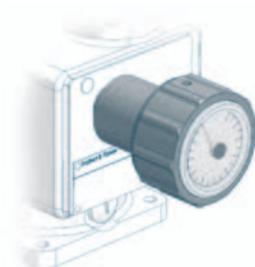
Pump body **1.4571**  
Valves **1.4571/1.4581**  
Valve balls **1.4401**  
Multi-layer diaphragm **PTFE**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
C410.2-135ML	☺	☺
C410.2-500ML	16023607	☺
C410.2-1200ML	☺	☺

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

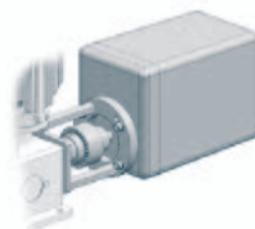
### OPTIONS



#### Stroke length adjustment

Surcharge (EUR)

with position indicator



#### Stroke length adjustment with actuator

Surcharge (EUR)

Actuator N1S

230V, 50/60Hz, 128s/10 U, 15Nm  
Potentiometer 1 k $\Omega$  (incl. mounting set)



Electronic positioning controller  
ESR-NK (only integrated in N1S)

Input signal 0/4 - 20mA including  
feedback signal 0/4 - 20mA



## ACCESSORIES



### PROFIBUS

PROFIBUS DP-V0 (Slave)  
Transmission speed: automatic 9,6 kbit/s ... 12 Mbit/s  
Connection to dosing pump: M12 cable socket, 5-pole, B-coded

PROFIBUS	Article-No.	Price (EUR)
PROFIBUS DP-V0 (Slave) Interface		▲

#### Accessories

PROFIBUS Y - distributor, M12x1, 5-pole, IP67	90025526	▲
PROFIBUS T - distributor, M12x1, 5-pole, IP67	90022889	▲
PROFIBUS Cable plug M12x1, straight, individually convertible, 5-pole, IP67	90025520	▲
PROFIBUS Cable socket M12x1, straight, individually convertible, 5-pole, IP67	90025521	▲
PROFIBUS Cable socket M12x1, straight, with 10m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025524	▲
PROFIBUS Cable socket M12x1, straight, with 15m line, 2x0,34mm <sup>2</sup> , 1x free cable end color: purple, IP67	90025525	▲
PROFIBUS Connection M12x1, straight, with cable plug and cable socket, 2x0,34mm <sup>2</sup> , length 1m, cable 2x0,34mm <sup>2</sup> , color: purple, IP67	90025674	▲
PROFIBUS Bus line 2x 0,64mm <sup>2</sup> , shielded, Permanent installation inside, color: purple (serial meter)	90014541	▲
PROFIBUS Terminating resistor M12x1, 5-polig, IP67	90022890	▲



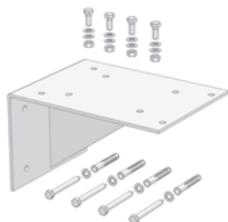
### Control cable

	Article-No.	Price (EUR)
<b>for controlling the pump</b>		
Cable socket M12, 8-pole fully assembled, incl. 5m cable	90031247	▲
Cable socket M12, 8-pole individually convertible (without cable)	90022879	▲
<b>for level input</b> (level monitoring not included)		
Cable socket M12, 3-pole fully assembled, inkl. 5m cable	90031245	▲
Cable socket M12, 3-pole individually convertible (without cable)	90022877	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### Bracket

for wall mounting (incl. mounting kit)

**Article-No.**

**Price (EUR)**

PP

90023849



1.4301

90023876



#### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
C410.2-135ML, ...-500ML						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲
C410.2-1200 ML						
<b>MFD 1500</b>	20	G1 ¼	5 Ltr.	EPDM	37606316	▲
<b>MFD 1500</b>	20	G1 ¼	5 Ltr.	FPM	37606315	▲



### ACCESSORIES

<b>Hand vacuum pump</b>	PVC/FPM	37605682	▲
(incl. 1,5m PVC-Hose d=12/21)			



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>783.1</b>	20	G 1 ¼	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1 ¼	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1 ¼	PVDF/PVDF-GFK	FEP	30073018	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
C410.2-135 ML, ...-500 ML						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲
C410.2-1200 ML						
<b>733</b>	20	G 1 ¼	1.4571	FEP	37603962	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance S-01 (without level switch)

##### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

##### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
C410.2-135 ML					
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 3-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
C410.2-135 ML						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606372	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606567	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606568	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606566	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606078	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606569	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606570	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606572	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606573	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606571	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606577	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37606574	▲



### ACCESSORIES

#### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
G=v. Leer/tri-sure BCS 56x4 EN12708	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

##### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

##### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

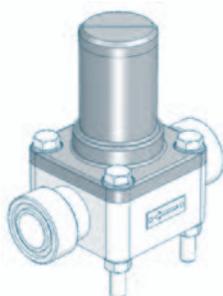
Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
C410.2-500 ML						
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

#### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
BCS 70x6 Di=50	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
G2 IBC	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
G2 universal	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
Hose set	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
Quiver	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
Control cable	Control cable for level input Cable socket M12x1, 3-pole, 5m length, loosely delivered	90031245	▲



## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C410.2-135 ML, ...-500 ML						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	①	①
622.10	DN15	G 1	PP	EPDM	①	①
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲
C410.2-1200 ML						
623.10	DN20	G 1¼	PVC-U	FPM	37600009	▲
623.10	DN20	G 1¼	PVC-U	EPDM	36230101	▲
623.10	DN20	G 1¼	PP	FPM	37600016	▲
623.10	DN20	G 1¼	PP	EPDM	36230105	▲
623.10	DN20	G 1¼	PVDF	FEP	37606304	▲

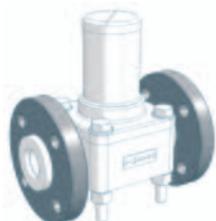
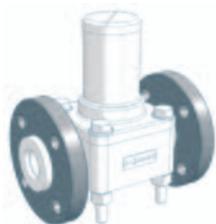
### OPTIONS

C410.2-135 ML, ...-500 ML

Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

C410.2-1200 ML

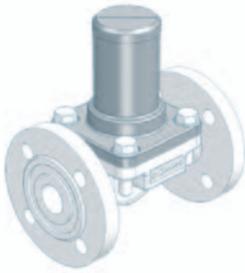
Type	Design	Loose flange	Surcharge [EUR]
623.10	PVC	Loose flange made of PVC-U	▲
623.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.10	PP	Loose flange made of PP with steel inlay	▲
623.10	PVDF	Loose flange made of PP with steel inlay	▲



# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm relief valve (with fixed flanges)

for overpressure protection

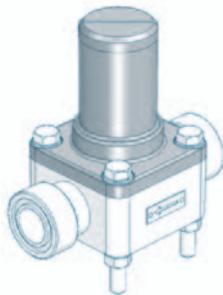
##### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
C410.2-1200 ML					
<b>623.10</b>	DN20	DIN 2501	1.4581	36230104	▲
<b>623.10</b>	DN20	DIN 2501	GG	37600038	▲



#### Diaphragm pressure keeping valve

to prevent over-conveyance

##### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic version

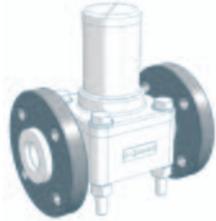
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C410.2-135 ML, ...-500 ML						
<b>622.D</b>	DN15	G 1	PVC-U	FPM	37600049	▲
<b>622.D</b>	DN15	G 1	PVC-U	EPDM	36221101	▲
<b>622.D</b>	DN15	G 1	PP	FPM	①	①
<b>622.D</b>	DN15	G 1	PP	EPDM	①	①
<b>622.D</b>	DN15	G 1	PP-GFK	FPM	37600056	▲
<b>622.D</b>	DN15	G 1	PP-GFK	EPDM	36221105	▲
<b>622.D</b>	DN15	G 1	PVDF	FEP	37602881	▲
<b>622.D</b>	DN15	G 1	PVDF-GFK	FEP	37601449	▲
<b>622.D</b>	DN15	G 1	1.4581	FEP	37600538	▲
C410.2-1200 ML						
<b>623.D</b>	DN20	G 1¼	PVC-U	FPM	37600050	▲
<b>623.D</b>	DN20	G 1¼	PVC-U	EPDM	36231101	▲
<b>623.D</b>	DN20	G 1¼	PP	FPM	37600057	▲
<b>623.D</b>	DN20	G 1¼	PP	EPDM	36231105	▲
<b>623.D</b>	DN20	G 1¼	PVDF	FEP	37606309	▲

## FITTINGS FOR THE PRESSURE SIDE

### OPTIONS

C410.2-135 ML, ...-500 ML



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲

C410.2-1200 ML



Type	Design	Loose flange	Surcharge [EUR]
623.D	PVC	Loose flange made of PVC-U	▲
623.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.D	PP	Loose flange made of PP with steel inlay	▲
623.D	PVDF	Loose flange made of PP with steel inlay	▲

### Diaphragm pressure keeping valve (with fixed flanges)

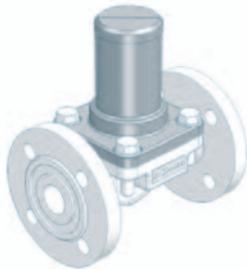
to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**



Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
C410.2-1200 ML					
623.D	DN20	DIN 2501	1.4581	36231104	▲
623.D	DN20	DIN 2501	GG	37600080	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Flow meter

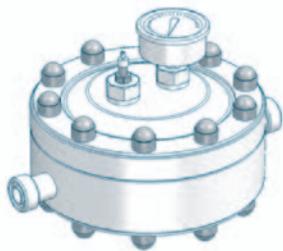
IP65

incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)

max. permissible operating pressure: **10 bar**

can be used on suction and pressure side

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
C410.2-135 ML, ...500 ML						
8015.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PP	EPDM	37607926	▲
		PP	PP	FPM	37607927	▲
C410.2-1200 ML						
8017.1	Inlet: G1 $\frac{1}{4}$ (internal) Outlet: G1 $\frac{1}{4}$ (external)	PP	PP	EPDM	37607932	▲
		PP	PP	FPM	37607933	▲



#### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

##### Properties

Any mounting position

Easy installation

Long service life

Easy handling

High-quality materials

Low maintenance

Diaphragm: PTFE-faced

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
C410.2-135 ML						
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲
C410.2-500 ML						
①					①	①

#### ACCESSORIES

**Filling pump FLP 2** for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve 90009396 ▲

##### Retaining clamp

(2 Piece each pulsation damper) PP d 25 90036934 ▲



## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm Seals	Article-No.	Price (EUR)
C410.2-500 ML, ...-1200 ML						
713.1	G 1¼	10 bar	PVC-U	EPDM	30071038	▲
713.1	G 1¼	10 bar	PVC-U	FPM	30071039	▲
713.1	G 1¼	10 bar	PP	EPDM	30071040	▲
713.1	G 1¼	10 bar	PP	FPM	30071041	▲
713.1	G 1¼	10 bar	PVDF	EPDM	30071060	▲
713.1	G 1¼	10 bar	PVDF	FPM	30071061	▲

### OPTIONS



**Loose-type flanges** Design acc. to DIN 2501, incl. O-Rings

PVC-design	Loose flange, PVC-U	DN20	▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20	▲

### ACCESSORIES



<b>Bracket</b>	PP	90010913	▲
for wall mounting	1.4301	90010914	▲
	Steel (color treated)	90010915	▲



<b>Filling pump FLP 2</b>	for filling device		
with manometer, max. 7 bar incl. 2m hose and coupling for air valve		90009396	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

##### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C410.2-135 ML						
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	Butyl	37603721	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	FPM	37603725	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
C410.2-500 ML						
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	Butyl	37603723	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	FPM	37603727	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	PTFE	37606308	▲
C410.2-1200ML						
☹					☹	☹

#### ACCESSORIES

##### Filling- and pressure measuring device

(mounted on pulsation damper)



Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲
<b>Filling pump FLP 2</b>	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲



## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF410.2-135ML						
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	Butyl	90010409	▲
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	FPM	90010983	▲
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	PTFE	☉	☉
RF410.2-500ML						
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	Butyl	37600314	▲
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	FPM	37600149	▲
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	PTFE	37606303	▲
RF410.2-1200ML						
☹					☹	☹

### ACCESSORIES



#### Filling- and pressure measuring device

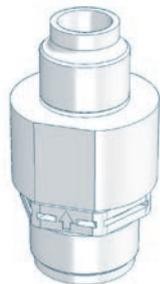
Design: removeable  
Manometer d63, plastic housing, measuring system: copper alloyed  
incl. 2,5m filling hose, connection M14x1,5

<b>0 - 25 bar</b>	37601674	▲
<b>0 - 100 bar</b>	37601673	▲
<b>0 - 250 bar</b>	30066005	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Dosing valve (Plastic)

##### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
693.1	20	G 1 ¼	R 1 ¼	PP-GFK	EPDM	37604661	▲
693.1	20	G 1 ¼	R 1 ¼	PP-GFK	FPM	37603317	▲
693.1	20	G 1 ¼	R 1 ¼	PVDF-GFK	FEP	30072027	▲



#### Dosing valve (Stainless steel)

##### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

##### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
C410.2-135 ML, ...-500 ML							
692.1	15	G 1	R 1	1.4571	FEP	37600669	▲
C410.2-1200 ML							
693.1	20	G 1 ¼	R 1 ¼	1.4571	FEP	37600789	▲

## FITTINGS FOR THE PRESSURE SIDE



### Injection fitting

#### Properties

incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
C410.2-135 ML, ...500 ML							
8062.1	15	G 1	R ¾	PVC-U	EPDM	37602110	▲
8062.1	15	G 1	R ¾	PVC-U	FPM	37602111	▲
8062.1	15	G 1	R ¾	PP	EPDM	37602112	▲
8062.1	15	G 1	R ¾	PP	FPM	37602113	▲
8062.1	15	G 1	R ¾	PVDF	FPM	37602114	▲
C410.2-1200 ML							
8063.1	20	G 1¼	R 1	PVC-U	EPDM	37602115	▲
8063.1	20	G 1¼	R 1	PVC-U	FPM	37602116	▲
8063.1	20	G 1¼	R 1	PP	EPDM	37602117	▲
8063.1	20	G 1¼	R 1	PP	FPM	37602118	▲
8063.1	20	G 1¼	R 1	PVDF	FPM	37602119	▲

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE



### OVERVIEW

- Multi-layer diaphragm technology
- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Flexible, multifunctional
- Digital and analogue control options
- PROFIBUS DP-Interface
- Manual stroke length- and stroke frequency adjustment

## TECHNICAL DATA

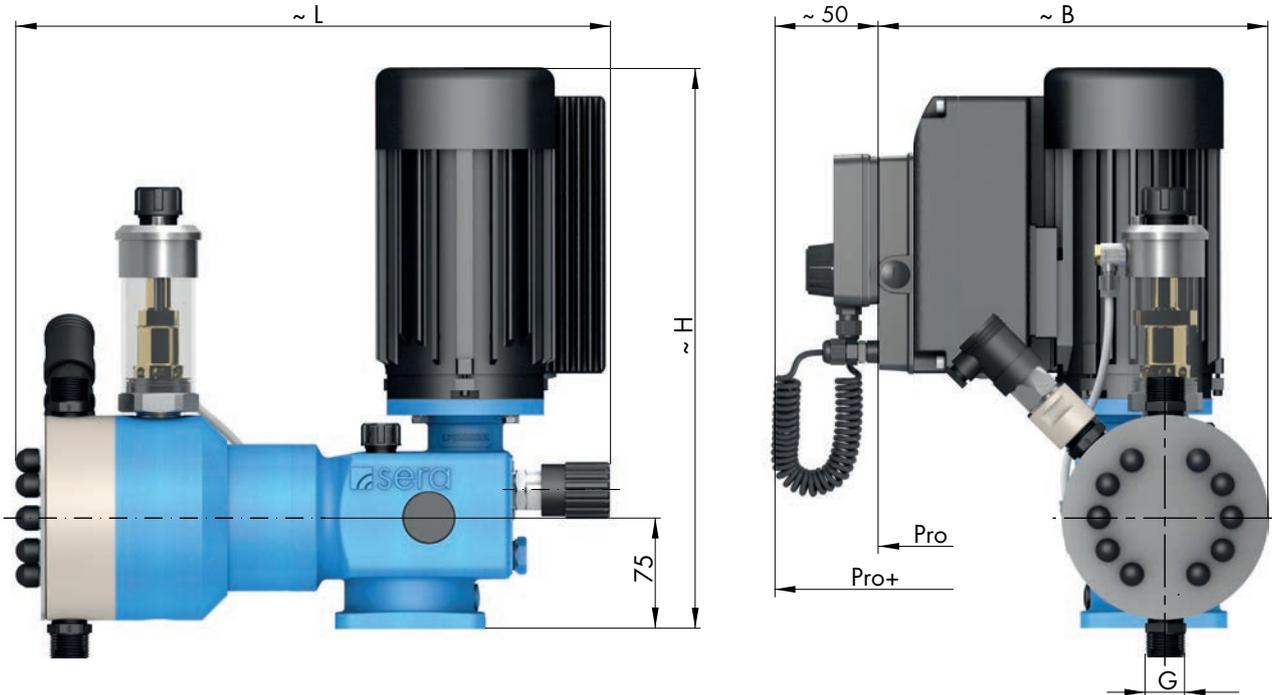
PUMP DATA			C 409.2-... KM Pro/Pro+					
			7,5KM	10KM	18KM	45KM	95KM	190KM
Permissible pressure $p_{2max}$ at the pump outlet	bar	plastic	10	10	10	10	10	8
		stainless st.	80	80	50	25	16	8
Nominal capacity QN at $p_{2max}$	l/h	50/60 Hz	0-7,5	0-10	0-18	0-45	0-95	0-190
Quantity per stroke	ml/stroke (100%)		1,25	1,1	2,0	5,0	10,6	21,1
Max. suction height	mWC		2	2	2	3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,2/0	-0,2/0	-0,2/0	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		10	10	10	10	15	15
Nominal stroke frequency	1/min	50/60 Hz	100	150	150	150	150	150
Weight approx.	kg	plastic	17	17	17	20	20	21
		stainless st.	19	19	19	23	23	24

ELECTRICAL DATA		C 409.2-... KM Pro/Pro+	
		230 V, 50/60 Hz	115 V, 50/60 Hz
Power consumption	kW	0,37	
Voltage	V	210 - 250	100 - 125
Frequency	Hz	50/60	
Inlet voltage, control input	V DC	5...30	
Minimum contact signal time	ms	55	
Analogue input resistance	$\Omega$	39	
Digital output internal/external supply		20V DC, 30mA /... 30V DC, 30mA	
Recommended fuse (circuit breaker)		C6A	C10A
Insulation class	ISO	F	
Enclosure	IP	55	

Flow capacity 7,5 l/h ... 190 l/h  
Admissible counterpressure up to 80 bar

# C 409.2 KM

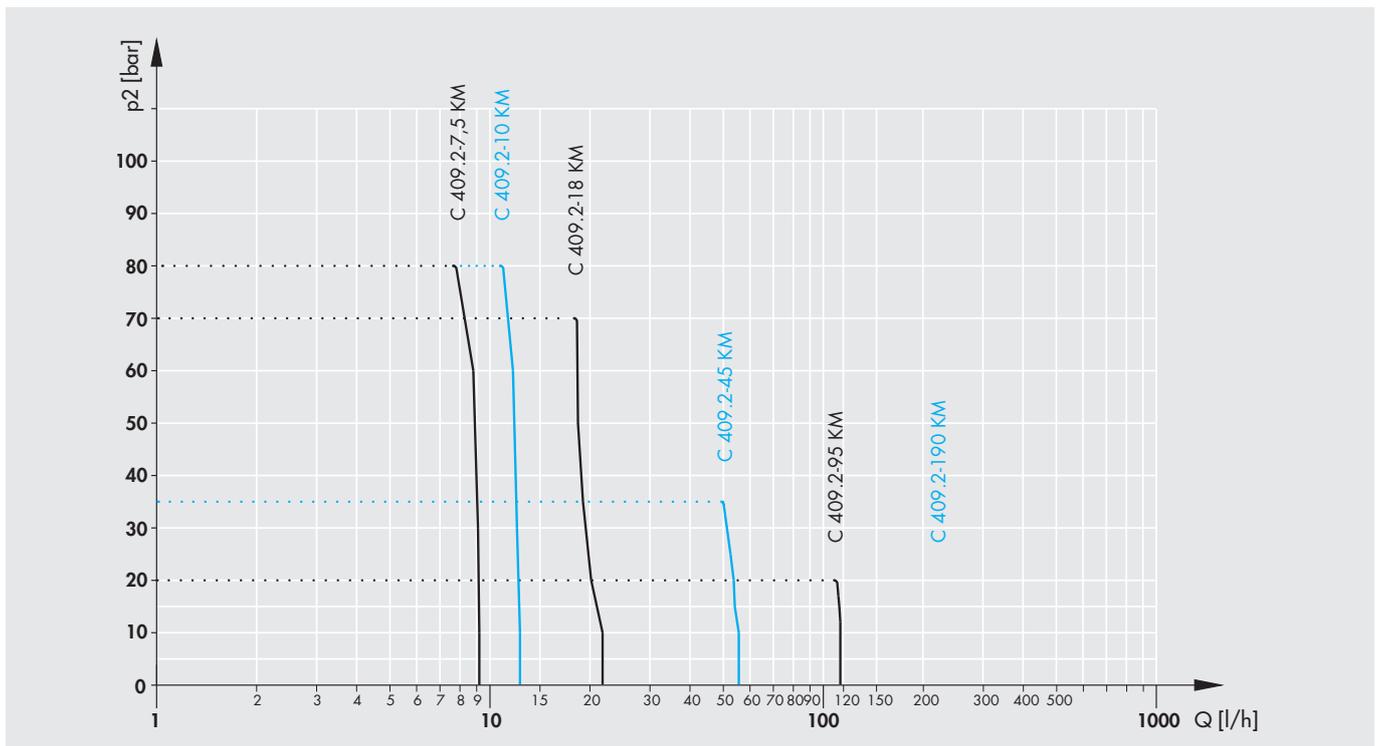
## DIMENSIONS



	G		B	L	H		B	L	H
C 409.2-7,5 KM	G 3/4	PVC, PP, PVDF	255	350	365	1.4571	255	350	365
C 409.2-10 KM	G 3/4		255	350	365		255	350	365
C 409.2-18 KM	G 3/4		255	350	365		255	350	365
C 409.2-45 KM	G 3/4		270	403	365		270	403	365
C 409.2-95 KM	G 3/4		270	403	365		270	403	365
C 409.2-190 KM	G 1 1/4*		270	403	365		270	403	365

\* PVC = G1

## CHARACTERISTIC CURVES



# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FUNCTIONS AND OPERATING MODES

Manual operation  
 Manual stroke frequency adjustment  
 PROFIBUS DP-VO Slave interface (option)  
 External START/STOP  
 Pulse operation / fractinator  
 Pulse memory  
 Analogue operation (0/4 ... 20 mA)  
 Analogue operation standardization  
 Batch dosing (manual / with timer)  
 3 LEDs for status indication

Multiline, illuminated display  
 Menu-driven parameterization  
 Flow indication  
 Calibration function  
 4-key operation  
 2 digital outputs (PLC)  
 1 analogue output  
 (PLC or contact signal)  
 2 analogue/digital inputs  
 (reversible)  
 1 digital input

Programmable  
 input-/output functions  
 Diaphragm monitoring  
 Connection/evaluation:  
 2-stage level monitoring  
 Connection/evaluation:  
 Flow monitoring  
 Connection/evaluation:  
 Flow metering  
 Voltage 210-250V, 50/60Hz  
 3m connection cable with Euro-plug

Operating Modes & Messaging	Pro	Pro+
Manual	✓	✓
Pulse	✓	✓
Analogue	✓	✓
Batch	✗	✓
Timer	✗	✓
Interface	✗	✓
Calibration	✓	✓
Slowmode	✓	✓
Suction mode	✓	✓
Diaphragm monitoring	✓	✓
Data logging (SD-Card)	✗	✓
Error messaging	Error Code + display color change	Plain text + display color change
Clock for data & time	✗	✓

Connection & Control	Pro	Pro+
Control elements & Display	4-button control  Multilingual display  4-color status indicator	Removeable handheld with two buttons and clickwheel  Display with 8 languages (de, en, es, fr, nl, cs, fi, tr)  4-color status indicator
Control cable	optional	5m control cable (8-pole)
In-/Output connection	✓	✓
Level connection	✓	✓
Flow monitor & measurement connection	✗	✓
Profibus / Profinet	✗	optional
Inputs	Digital pulse (NO/NC) Digital extern stop (NO/NC) Analogue 4-20mA	Digital/analogue, free parametrised Digital/analogue, free parametrised Digital, free parametrised
Outputs	24V  Ready to run (NO/NC) Stroke signal (NO/NC)	24V  Digital, free parametrised Digital, free parametrised Analogue, free parametrised
Updateable	USB (Stick)	USB (to host)

## BASIC DESIGNS

### PP

Pump body **PP**  
Valves **PP-FRP**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
<b>Pro</b>				
C409.2-7,5KM Pro	16027804	Ⓜ	15007729	Ⓜ
C409.2-10KM Pro	16027805	Ⓜ	15007730	Ⓜ
C409.2-18KM Pro	16027806	Ⓜ	15007731	Ⓜ
C409.2-45KM Pro	16027807	Ⓜ	15007732	Ⓜ
C409.2-95KM Pro	16027808	Ⓜ	15007733	Ⓜ
C409.2-190KM Pro	16027809	Ⓜ	15007734	Ⓜ
<b>Pro+</b>				
C409.2-7,5KM Pro+		Ⓜ		Ⓜ
C409.2-10KM Pro+		Ⓜ		Ⓜ
C409.2-18KM Pro+		Ⓜ		Ⓜ
C409.2-45KM Pro+		Ⓜ		Ⓜ
C409.2-95KM Pro+		Ⓜ		Ⓜ
C409.2-190KM Pro+		Ⓜ		Ⓜ

### PVDF

Pump body **PVDF**  
Valves **PVDF-FRP**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
<b>Pro</b>		
C409.2-7,5KM Pro	Ⓜ	Ⓜ
C409.2-10KM Pro	Ⓜ	Ⓜ
C409.2-18KM Pro	Ⓜ	Ⓜ
C409.2-45KM Pro	Ⓜ	Ⓜ
C409.2-95KM Pro	Ⓜ	Ⓜ
C409.2-190KM Pro	Ⓜ	Ⓜ
<b>Pro+</b>		
C409.2-7,5KM Pro+		Ⓜ
C409.2-10KM Pro+		Ⓜ
C409.2-18KM Pro+		Ⓜ
C409.2-45KM Pro+		Ⓜ
C409.2-95KM Pro+		Ⓜ
C409.2-190KM Pro+		Ⓜ

### PVC-U

Pump body **PVC-U**  
Valves **PVC-U**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
<b>Pro</b>				
C409.2-7,5KM Pro	16027891	Ⓜ	16027892	Ⓜ
C409.2-10KM Pro	16027894	Ⓜ	16027895	Ⓜ
C409.2-18KM Pro	16027897	Ⓜ	16027898	Ⓜ
C409.2-45KM Pro	16027900	Ⓜ	16027901	Ⓜ
C409.2-95KM Pro	16027903	Ⓜ	16027904	Ⓜ
C409.2-190KM Pro	16027906	Ⓜ	16027907	Ⓜ
<b>Pro+</b>				
C409.2-7,5KM Pro+		Ⓜ		Ⓜ
C409.2-10KM Pro+		Ⓜ		Ⓜ
C409.2-18KM Pro+		Ⓜ		Ⓜ
C409.2-45KM Pro+		Ⓜ		Ⓜ
C409.2-95KM Pro+		Ⓜ		Ⓜ
C409.2-190KM Pro+		Ⓜ		Ⓜ

### STAINLESS STEEL

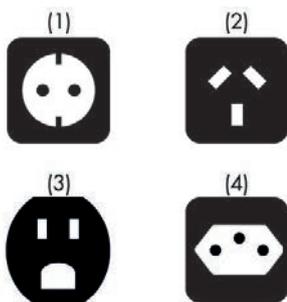
Pump body **1.4571**  
Valves **1.4571/1.4581**  
Valve balls **1.4401**  
Multi-layer diaphragm **PTFE**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
<b>Pro</b>		
C409.2-7,5KM Pro	16026107	Ⓜ
C409.2-10KM Pro	16026063	Ⓜ
C409.2-18KM Pro	16026108	Ⓜ
C409.2-45KM Pro	16026109	Ⓜ
C409.2-95KM Pro	16026110	Ⓜ
C409.2-190KM Pro	16026111	Ⓜ
<b>Pro+</b>		
C409.2-7,5KM Pro+		Ⓜ
C409.2-10KM Pro+		Ⓜ
C409.2-18KM Pro+		Ⓜ
C409.2-45KM Pro+		Ⓜ
C409.2-95KM Pro+		Ⓜ
C409.2-190KM Pro+		Ⓜ

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### OPTIONS



#### Versions (basic equipment)

Version	Price (EUR)
Pump <b>without</b> control element (price reduction)	▲
Pump <b>with</b> control element (basic version)	●
Pump <b>without</b> control element; <b>with</b> INTERFACE MODULE (INTERFACE MODULE instead of control element)	▲

#### Drive motor

Surcharge (EUR)
Connection voltage 100 - 125 V, 60Hz with USA plug (NEMA)

#### Special connection

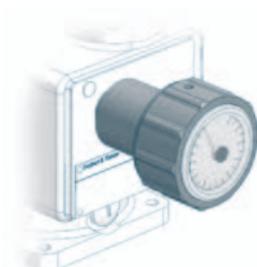
different plug types for different, international standards

Type	Price (EUR)
Plug 1: CEE 7/4 „Euro-plug“	●
Plug 2: AS 3112 „Australia plug“	⓪
Plug 3: NEMA 5-15, 3-pole „US plug“	○ <sup>1)</sup>
Plug 4: SN 441011 (Type J) „swiss plug“	⓪

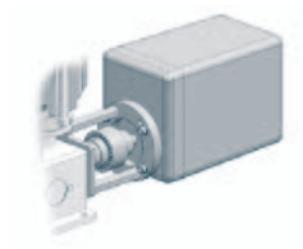
<sup>1)</sup> only in combination with 100-125 V drive motor option (US plug included)

#### Stroke length adjustment

Surcharge (EUR)
with position indicator



## OPTIONS



### Stroke length adjustment with actuator

Surcharge (EUR)

Actuator N C1-BA	230V ±10%, 50/60Hz, 128s/10 U, 1,5Nm incl. mounting set	▲
Electronic positioning controller ESR-NK (only integrated in N C1-BA)	Input signal 0/4 - 20mA including feedback signal 0/4 - 20mA	▲

## ACCESSORIES



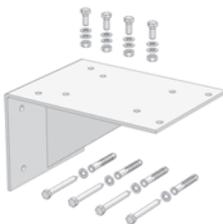
### Control element

	Article-No.	Price (EUR)
Control element (removeable)	90044844	▲



### Control cable

	Article-No.	Price (EUR)
<b>for level input</b> (flow monitoring not included)		
Cable plug M12, 8-pole	fully assembled, incl. 5m cable	90042494 ▲
Cable plug M12, 8-pole	Individually convertible (without cable)	90022885 ▲



### Bracket

	Article-No.	Price (EUR)
for wall mounting (incl. mounting kit)		
PP	90023848	▲
1.4301	90023875	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### ACCESSORIES



#### INTERFACE MODULE - PROFINET -

PROFINET INTERFACE MODULE  
 PROFINET IO RT 2 Port (Ethernet Network Interface)  
 Transmission speed: automatic 10Mbit/s, 100Mbit/s  
 Connection to dosing pump: M12 cable socket, 8-pole, D-coded

Type	Article-No.	Price (EUR)
PROFINET INTERFACE MODULE	90044877	▲
PROFINET connection	length 1m	90050133 ▲
M12x1, straight, with cable plug and -socket, 4-pin, 2x2x0.34 mm <sup>2</sup> , CAT5E, color green	length 5m	90050134 ▲
	length 10m	90050135 ▲
PROFINET Connection	length 1m	90050136 ▲
	length 5m	90050137 ▲
M12x1 - RJ45, straight, 4-pin, 2x2x0,34 mm <sup>2</sup> , CAT5, color green	length 10m	90050138 ▲



#### INTERFACE MODULE - PROFIBUS -

PROFIBUS INTERFACE MODULE  
 PROFIBUS DP-V1 (Slave)  
 Transmission speed: automatic 9,6 kbit/s ... 12 Mbit/s  
 Connection to dosing pump: M12 cable socket, 5-pole, B-coded

Type	Article-No.	Price (EUR)
PROFIBUS INTERFACE MODULE	90044875	▲
PROFIBUS cable plug M12x1, straight, individually convertible, 5-pole, IP67	90025520	▲
PROFIBUS Cable socket M12x1, straight, individually convertible, 5-pole, IP67	90025521	▲
PROFIBUS Cable socket M12x1, straight, with 10m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025524	▲
PROFIBUS Cable socket M12x1, straight, with 15m line, 2x0,34mm <sup>2</sup> , 1x free cable end, color: purple, IP67	90025525	▲
PROFIBUS Connection M12x1, straight, with cable plug and cable socket, 2x0,34mm <sup>2</sup> , length 1m, cable 2x0,34mm <sup>2</sup> , color: purple, IP67	90025674	▲
PROFIBUS Bus line 2x 0,64mm <sup>2</sup> , shielded, Permanent installation (inside), color: purple (serial meter)	90014541	▲
PROFIBUS Terminating resistor M12x1, 5-pole, IP67	90022890	▲

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 8-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connection  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 8-pole  
max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM				
SL-12.1	600 mm	PTFE	37606194	▲
SL-12.1	1.000 mm	PTFE	37606495	▲
SL-12.1	1.200 mm	PTFE	37606195	▲

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 8-pole)

##### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

##### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage  
5m cable (from foot valve) with plug, M12, 8-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
C409.2-45KM, ...-95KM, ...-190KM						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606579	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606581	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606583	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606580	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606582	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606584	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606585	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606587	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606589	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606586	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606588	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37605974	▲



#### ACCESSORIES

##### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
G=v. Leer/tri-sure BCS 56x4 EN12708	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			📞	📞

## FITTINGS FOR THE SUCTION SIDE



### Foot valve (Plastic)

#### Properties

Compact design  
 Easy installation

High-quality materials  
 Maintenance-free

#### Basic version

Ball: **PTFE**  
 Sieve: **ETFE**  
 Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
781.1	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲



### Foot valve (plastic)

#### Properties

Compact design  
 Easy installation

High-quality materials  
 Maintenance-free

#### Basic version

Ball: **PTFE**  
 Sieve: **ETFE**  
 Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	PVC-U	EPDM	37601636	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
 Easy installation

High-quality materials  
 Maintenance-free

#### Basic version

Ball: **1.4401**  
 Sieve: **ETFE**  
 Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	1.4571	FEP	37601149	▲

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE SUCTION SIDE



#### Multi-function device

##### Properties

Can be used as an priming aid and/or an calibration pot  
 Compact design  
 Flexible Connection  
 Maintenance-free  
 incl. glue joint (PVC-U) and welding joint (PP)

##### Basic version

Housing: **PVC-U / PVC-transparent**  
 Seals: **FPM or EPDM**  
 max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM						
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲
C409.2-95KM, ...-190KM						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲

#### ACCESSORIES



##### Hand vacuum pump

PVC/FPM

(incl. 1,5m PVC-Hose d=12/21)

37605682

▲

## FITTINGS FOR THE PRESSURE SIDE



### Flow controller

IP65  
incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)  
max. permissible operating pressure: **10 bar**

Type	Connection thread	Materials	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM				
8191.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602227	▲
		PP/FPM	37602175	▲
C409.2-45KM, ...-95KM, ...-190KM				
8192.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PVC-U/FPM	37602176	▲
		PP/FPM	37602177	▲



### Flow meter

IP65  
incl. 0,6m cable with cable socket M12, 5-pole (socket for pump connection)  
max. permissible operating pressure: **10 bar**  
can be used on suction and pressure side

Type	Connection thread	Materials			Article-No.	Price (EUR)
		Housing	Measuring unit	Seal		
C409.2-7,5KM, ...-10KM, ...-18KM						
8011.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	ECTFE	FPM	37602343	▲
		PVC-U	ECTFE	FPM	37602345	▲
		PVDF	ECTFE	FPM	37602348	▲
C409.2-45KM						
8012.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607917	▲
		PP	PPS	FPM	37607918	▲
C409.2-95KM						
8013.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607919	▲
		PP	PPS	FPM	37607920	▲
C409.2-190KM						
8014.1	Inlet: G $\frac{3}{4}$ (internal) Outlet: G $\frac{3}{4}$ (external)	PP	PPS	EPDM	37607921	▲
		PP	PPS	FPM	37608002	▲

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Multi function valve

##### Properties

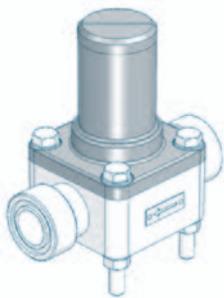
- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

##### Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- Relief valve side**
- Opening pressure: **2 up to 10 bar** (adjustable)
- Pressure keeping valve side**
- Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM				
<b>MFV 050</b>	PVC-U	EPDM	37600973	▲
<b>MFV 050</b>	PVC-U	FPM	37600974	▲
<b>MFV 050</b>	PP	EPDM	37600982	▲
<b>MFV 050</b>	PP	FPM	37600983	▲
C409.2-95KM, ...-190KM				
⌚			⌚	⌚

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

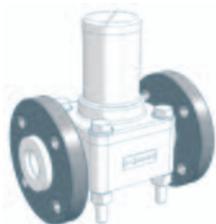
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

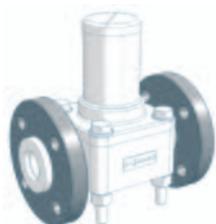
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM, ...-95KM						
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲
C409.2-190KM						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	①	①
622.10	DN15	G 1	PP	EPDM	①	①
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲

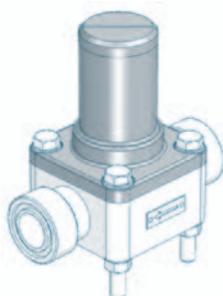


Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pressure keeping valve

to prevent over-conveyance

##### Properties

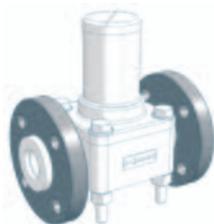
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

##### Basic version

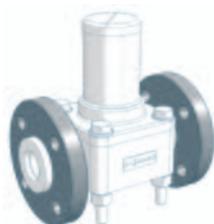
Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM, ...-95KM						
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲
C409.2-190KM						
622.D	DN15	G 1	PVC-U	FPM	37600049	▲
622.D	DN15	G 1	PVC-U	EPDM	36221101	▲
622.D	DN15	G 1	PP	FPM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP	EPDM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP-GFK	FPM	37600056	▲
622.D	DN15	G 1	PP-GFK	EPDM	36221105	▲
622.D	DN15	G 1	PVDF	FEP	37602881	▲
622.D	DN15	G 1	PVDF-GFK	FEP	37601449	▲
622.D	DN15	G 1	1.4581	FEP	37600538	▲

#### OPTIONS

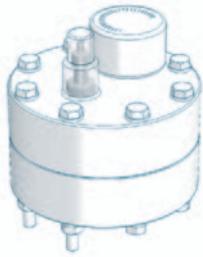


Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	Ⓜ
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM						
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

### ACCESSORIES



#### Connection adapter

Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	90038082	Ⓜ



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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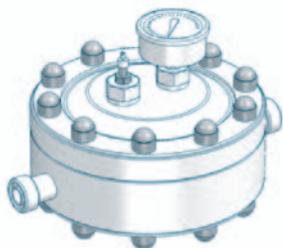
#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

##### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
C409.2-45KM						
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲
C409.2-95KM, ...-190KM						
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲

#### ACCESSORIES



##### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---



##### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
---------------------------------	----	------	----------	---

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM						
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	Butyl	37603720	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	FPM	37603724	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
C409.2-95KM, ...-190KM						
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	Butyl	37603721	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	FPM	37603725	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

##### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
C409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM						
810.1-0,16/180	G ½	180 bar	1.4571	Butyl	90008811	▲
810.1-0,16/180	G ½	180 bar	1.4571	FPM	90009498	▲
810.1-0,16/180	G ½	180 bar	1.4571	PTFE	☉	☉
C409.2-95KM, ...-190KM						
810.1-0,32/160	G ½	160 bar	1.4571	Butyl	90010409	▲
810.1-0,32/160	G ½	160 bar	1.4571	FPM	90010983	▲
810.1-0,32/160	G ½	160 bar	1.4571	PTFE	☉	☉

#### ACCESSORIES



##### Filling- and pressure measuring device

Design: removeable  
 Manometer d63, plastic housing, measuring system: copper alloyed  
 incl. 2,5m filling hose, connection M14x1,5

0 - 25 bar	37601674	▲
0 - 100 bar	37601673	▲
0 - 250 bar	30066005	▲



#### Injection fitting

##### Properties

incl. injection lance for better mixing  
 Easy installation  
 Any mounting position  
 Maintenance-free  
 High-quality materials

##### Basic version

Cone-type check valve (spring loaded)  
 Shut-off ball valve  
 Injection lance (L=150mm)  
 max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
8061.1	10	G ¾	R ½	PVC-U	EPDM	37602105	▲
8061.1	10	G ¾	R ½	PVC-U	FPM	37602106	▲
8061.1	10	G ¾	R ½	PP	EPDM	37602107	▲
8061.1	10	G ¾	R ½	PP	FPM	37602108	▲
8061.1	10	G ¾	R ½	PVDF	FPM	37602109	▲

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

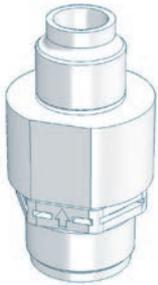
#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

integrated injection lance  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲

# DIAPHRAGM PUMPS



## OVERVIEW

- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Continuous, manual stroke length adjustment
- Motor suitable for operation with frequency converter
- Robust, metallic drive housing
- Compact design
- Low weight



## TECHNICAL DATA

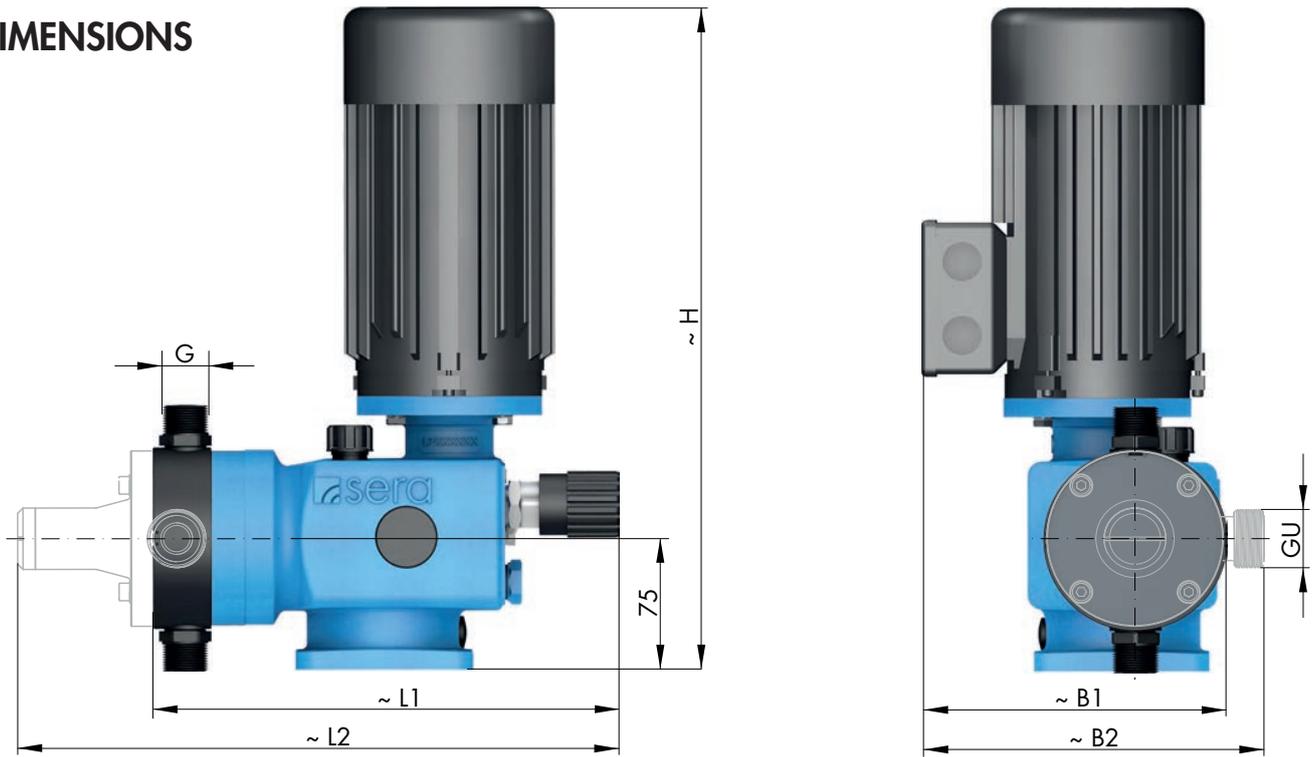
PUMP DATA			RF 409.2-...					
(* 8mWS = performance losses of nominal capacity QN of 20-25%)			1,6e	2,4e	7,0e	12e	18e	25e
Permissible pressure $p_{2max}$ at the pump outlet	bar		10	10	10	10	10	10
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	0-1,6	0-2,4	0-7,0	0-12	0-18	0-25
		60 Hz	0-1,9	0-2,9	0-8,4	0-14,4	0-21,5	0-30
Quantity per stroke	ml/stroke (100%)		0,27	0,27	0,78	2,0	3,0	2,8
Max. suction height	mWC		3					3 (8*)
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0					-0,3/0 (-0,8/0*)
Recomm. nominal diameter DN of the connecting pipes	mm		5	5	5	10	10	10
Nominal stroke frequency	1/min	50 Hz	100	150	150	100	100	150
		60 Hz	120	180	180	120	120	180
Weight approx.	kg	plastic	9	9	9	9	9	9
		stainless steel	10	10	10	10	10	10

ELECTRICAL DATA		RF409.2-1,6e ... RF409.2-25e
Power consumption	kW	0,18
Voltage	V	230/400V 50Hz, 460V 60Hz
Frequency	Hz	50/60
Insulation class	ISO	F
Enclosure	IP	55

Flow capacity 1,6 l/h ... 30 l/h  
 Admissible counterpressure up to 10 bar

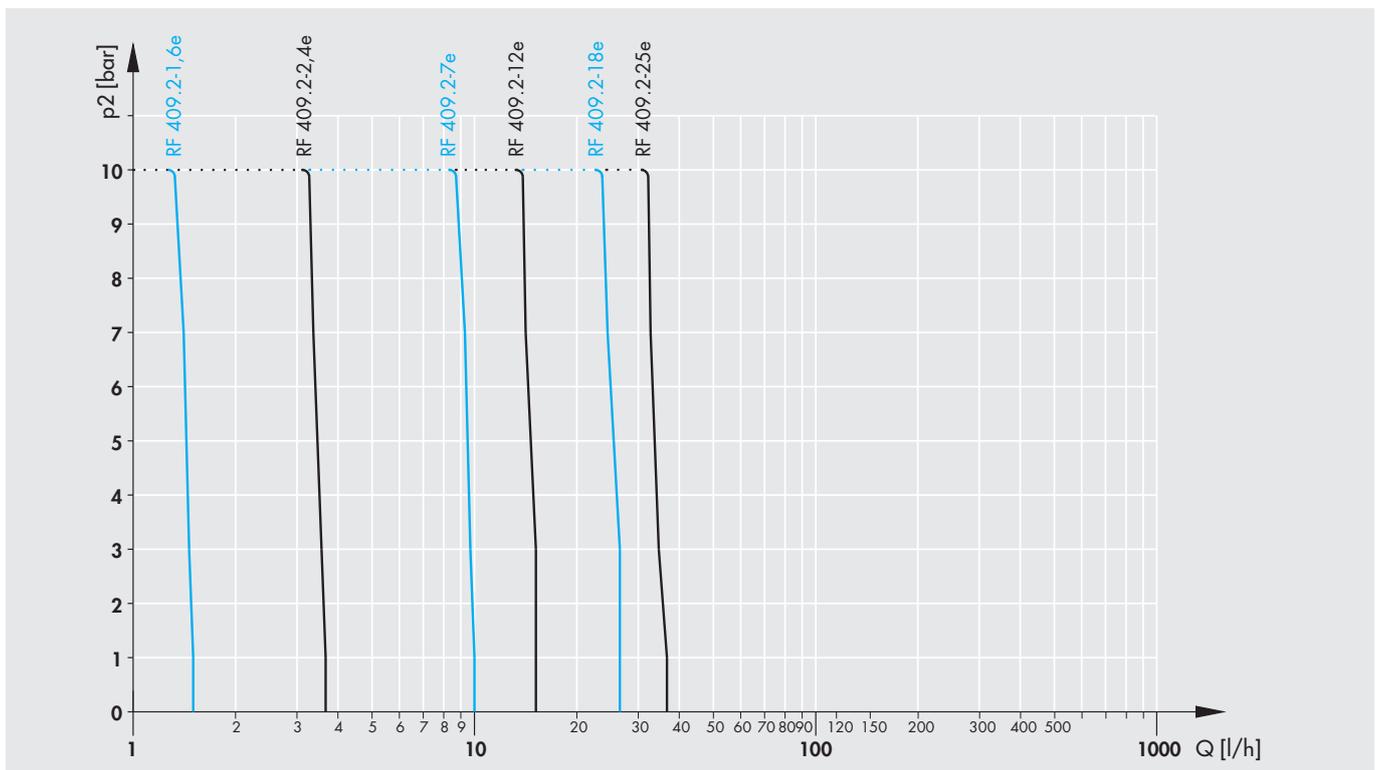
# RF 409.2

## DIMENSIONS



	G	GU		B1	B2	L1	L2	H		B1	B2	L1	L2	H	
RF 409.2 -1,6e, ...-2,4e	G 3/4	5	▶	170	5	310	5	355	▶	170	5	310	5	355	
RF 409.2 -7,0e	G 3/4	G 3/4		170	170	285	345	355		1.4571	170	170	285	345	355
RF 409.2 -12e, ... -18e, ... -25e	G 3/4	G 3/4		170	170	285	345	355		170	170	285	345	355	

## CHARACTERISTIC CURVES



# DIAPHRAGM PUMPS

## BASIC DESIGNS



### PP-FRP

Pump body **PP-FRP**  
 Valves **PP-FRP**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
RF409.2-1,6e	16026263	Ⓜ	15007178	Ⓜ
RF409.2-2,4e	16026264	Ⓜ	15007179	Ⓜ
RF409.2-7,0e	16026265	Ⓜ	15007180	Ⓜ
RF409.2-12e	16026266	Ⓜ	15007181	Ⓜ
RF409.2-18e	16026267	Ⓜ	15007182	Ⓜ
RF409.2-25e	16026268	Ⓜ	15007183	Ⓜ

### PVDF-FRP

Pump body **PVDF-FRP**  
 Valves **PVDF-FRP**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
RF409.2-1,6e	Ⓞ	Ⓞ
RF409.2-2,4e	Ⓞ	Ⓞ
RF409.2-7,0e	16026325	Ⓜ
RF409.2-12e	16026326	Ⓜ
RF409.2-18e	16026327	Ⓜ
RF409.2-25e	16026328	Ⓜ



### PVC-U

Pump body **PVC-U**  
 Valves **PVC-U**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

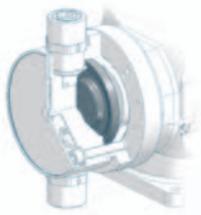
Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
RF409.2-1,6e	16026312	Ⓜ	16026299	Ⓜ
RF409.2-2,4e	16026313	Ⓜ	16026300	Ⓜ
RF409.2-7,0e	16026314	Ⓜ	16026301	Ⓜ
RF409.2-12e	16026315	Ⓜ	16026302	Ⓜ
RF409.2-18e	16026316	Ⓜ	16026298	Ⓜ
RF409.2-25e	16026317	Ⓜ	16026303	Ⓜ

### STAINLESS STEEL

Pump body **1.4571**  
 Valves **1.4571**  
 Valve balls **1.4401**  
 Diaphragm **PTFE-faced**

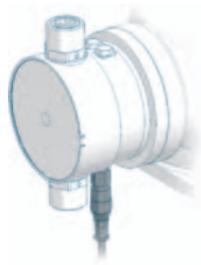
Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
RF409.2-1,6e	16026337	Ⓜ
RF409.2-2,4e	16026338	Ⓜ
RF409.2-7,0e	16026339	Ⓜ
RF409.2-12e	16026340	Ⓜ
RF409.2-18e	16026341	Ⓜ
RF409.2-25e	16026342	Ⓜ

OPTIONS



**Working diaphragm**

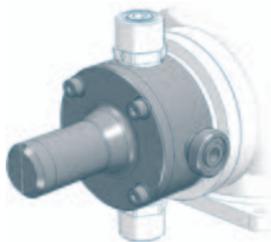
		Surcharge (EUR)
Material		
FPM	only with ...-115e and ...-180e	▲



**Diaphragm monitoring**

Diaphragm rupture electrode, conductive, mounted on pump  
 (Evaluation via electrode relay, ER-104 (see accessories))

		Surcharge (EUR)
MBE-02	incl. connection cable (length 2m)	▲
	Connection cable for EX ia-circuit (blue, length 5m)	▲



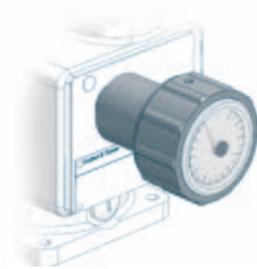
**Integrated relief valve**

Diaphragm: **PTFE-faced**      Connecting seals: **EPDM or FPM**

		Surcharge (EUR)
<b>PP</b>	RF409.2-1,6e, ...-2,4e	⊘
	RF409.2-4,0e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
<b>PVDF</b>	RF409.2-1,6e, ...-2,4e	⊘
	RF409.2-4,0e, ...-7,0e, ...-12e, ...-18e, ...-25e	①
<b>PVC-U</b>	RF409.2-1,6e, ...-2,4e	⊘
	RF409.2-4,0e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
<b>1.4571</b>	RF409.2-1,6e, ...-2,4e	⊘
	RF409.2-4,0e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
Connecting seals <b>FEP-covered</b>		
	for connection G 3/4      RF409.2-...e	▲

# DIAPHRAGM PUMPS

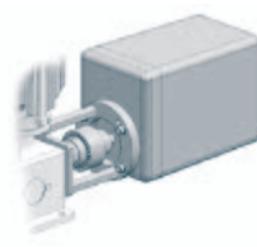
## OPTIONS



### Stroke length adjustment

Surcharge (EUR)

with position indicator



### Stroke length adjustment with actuator

(version uL/CSA on request)

Surcharge (EUR)

#### RF409.2-1,6e ...-2,4e

Actuator



#### RF409.2-7,0e ... RF409.2-25e

Actuator N C1-BA

230V ±10%, 50/60Hz, 128s/10 U, 1,5Nm  
incl. mounting set



Elektronischer Stellungsregler ESR-N  
(only integrated in N C1-BA)

Input signal 0/4 - 20mA including  
feedback signal 0/4 - 20mA



Actuator D30D-10-Ex  
II2G Ex d e IIC T4

400V, 50Hz, 10 U/min  
incl. mounting set and base plate



### Stroke frequency monitoring

Inductive contact

Surcharge (EUR)

10 - 60 V DC, three-wire, PNP



NAMUR-design, II2G Ex ia IIC T6



## OPTIONS



### Drive motor

- Please note: If one or several options 'drive motor' are required to fix the add. price of the drive, the calculation will be as follows: 'add. price special drive' plus the single options of the drive.
- Surcharge and availability must be requested from **sera**.

Surcharge special drive		Surcharge (EUR)
RF 409.2-1,6e, ...-2,4e, ...-7,0e, ...-12e, ...-18e, ...-25e		▲
Special voltage	(all types)	①
Enclosure IP65	(all types)	▲
Protection roof	(all types)	▲
VIK design	(all types)	①
Electrical acc. to uL/CSA	(all types)	①

### Single-phase alternating current motor, 230V/50Hz with capacitor

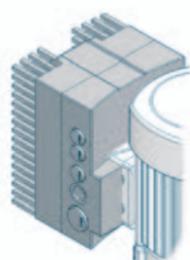
RF 409.2-1,6e, ...-2,4e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
--------------------------------------------------------------	---

### II2G Ex e II T4

RF 409.2-1,6e, ...-2,4e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
--------------------------------------------------------------	---

### II2G Ex d e IIC T4 (suitable for converter operation, 5-50Hz)

RF 409.2-1,6e, ...-2,4e, ...-7,0e, ...-12e, ...-18e, ...-25e	▲
--------------------------------------------------------------	---



### Stroke frequency adjustment, electrical

Frequency converter (Series INVEOR) mounted on drive motor  
 Input 4-20 mA

		Surcharge (EUR)
<b>1-phase</b>		
200-230V ±10%, 50/60Hz	0,37 kW	▲
<b>3-phase</b>		
400-480V ±10%, 50/60Hz	0,55 kW	▲

### Frequency converter accessories

	Article-No.	Price (EUR)
Operating module (incl. control cable)	90039445	▲
Communication cable for parameterization via PC	90042176	▲

# DIAPHRAGM PUMPS

## ACCESSORIES



### Diaphragm monitoring (evaluation)

Electrode relay for mounting in control cabinet  
(for evaluating the diaphragm rupture electrode MBE-02 (see options))

		Article-No.	Price (EUR)	
ER-104	auxiliary power 230 V AC	90022944	▲	
ER-104	auxiliary power 24 V DC	90022945	▲	
ER-142	auxiliary power 230 V AC	II(1)G [Ex ia] II C	90200363	▲



### Dosing Set

for easy removal of the medium and dosing into a further pipeline.

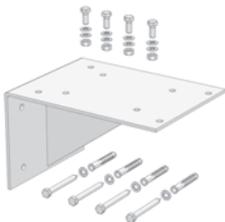
#### Properties

Foot valve  
Dosing valve  
Dosing hose (length adjustable)  
Hose screw fitting

#### Basic version

Dosing hose: **PE** (7m length)  
Fußventil: **PP-FRP** or **PVC-U**  
Dosing valve: **PP-FRP** or **PVC-U**  
max. operating pressure: **10 bar**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
Dosing Set	8	G $\frac{3}{4}$	PP	EPDM	37606263	▲
Dosing Set	8	G $\frac{3}{4}$	PVC-U	FPM	37606264	▲



### Bracket

for wall mounting (incl. mounting kit)

	Article-No.	Price (EUR)
PP	90023848	▲
1.4301	90023875	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or  
an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and  
welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
MFD 60	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
MFD 60	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲



### ACCESSORIES

#### Hand vacuum pump

PVC/FPM  
  
(incl. 1,5m PVC-Hose d=12/21)

37605682 ▲



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation  
  
High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
781.1	8	G $\frac{3}{4}$	PVDF/PVDF-GFK	FEP	30073008	▲



### Foot valve (plastic)

#### Properties

Compact design  
Easy installation  
  
High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G $\frac{3}{4}$	PVC-U	EPDM	37601636	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation  
  
High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G $\frac{3}{4}$	1.4571	FEP	37601149	▲

# DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 3-pole)

#### Properties

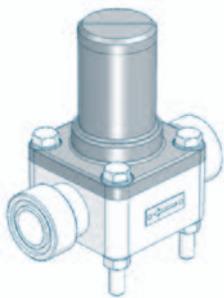
Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connections  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
SL-12.1	600 mm	PTFE	37606120	▲
SL-12.1	1.000 mm	PTFE	37606117	▲
SL-12.1	1.200 mm	PTFE	37606118	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

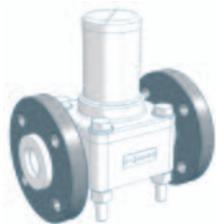
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

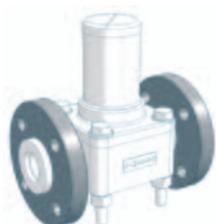
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲

### OPTIONS



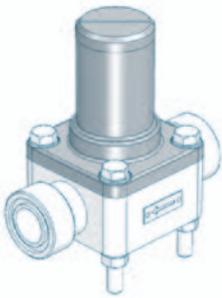
Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

# DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	①
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Multi function valve

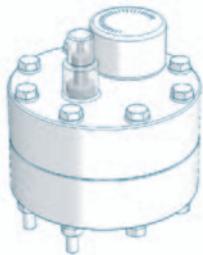
#### Properties

Maximum operating pressure 10 bar  
Compact design  
Easy installation  
Maintenance-free  
Venting  
Overpressure protection for dosing pumps  
Prevention of over conveyance

#### Basic version

Diaphragms: **PTFE-faced**  
Connection: **G<sup>3/4</sup>**  
**Relief valve side**  
Opening pressure: **2 up to 10 bar** (adjustable)  
**Pressure keeping valve side**  
Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

#### Properties

Any mounting position  
Easy installation  
Long service life

Easy handling  
High-quality materials  
Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
720.1	G 1/2	10 bar	PVC-U	PTFE	37601848	▲
720.1	G 1/2	10 bar	PP	PTFE	37601856	▲
720.1	G 1/2	10 bar	PVDF	PTFE	37601857	▲

## ACCESSORIES

### Connection adapter



Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	①	①

### Retaining clamp



(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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### Filling pump FLP 2 for filling device



with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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# DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	⊘	⊘

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---



### Injection fitting

#### Properties

incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
8061.1	10	G ¾	R ½	PVC-U	EPDM	37602105	▲
8061.1	10	G ¾	R ½	PVC-U	FPM	37602106	▲
8061.1	10	G ¾	R ½	PP	EPDM	37602107	▲
8061.1	10	G ¾	R ½	PP	FPM	37602108	▲
8061.1	10	G ¾	R ½	PVDF	FPM	37602109	▲

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

integrated injection lance  
 Valve ball: **PTFE**  
 Seals: **EPDM** or **FPM**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



### Dosing valve (Plastic)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

Valve ball: **PTFE**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

Valve ball: **1.4401**  
 Seals: **FEP-covered**  
 Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲

# DIAPHRAGM PUMPS



## OVERVIEW

- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Compact design
- Low weight
- Continuous, manual stroke length adjustment
- Motor suitable for operation with frequency converter
- Robust, metallic drive housing



## TECHNICAL DATA

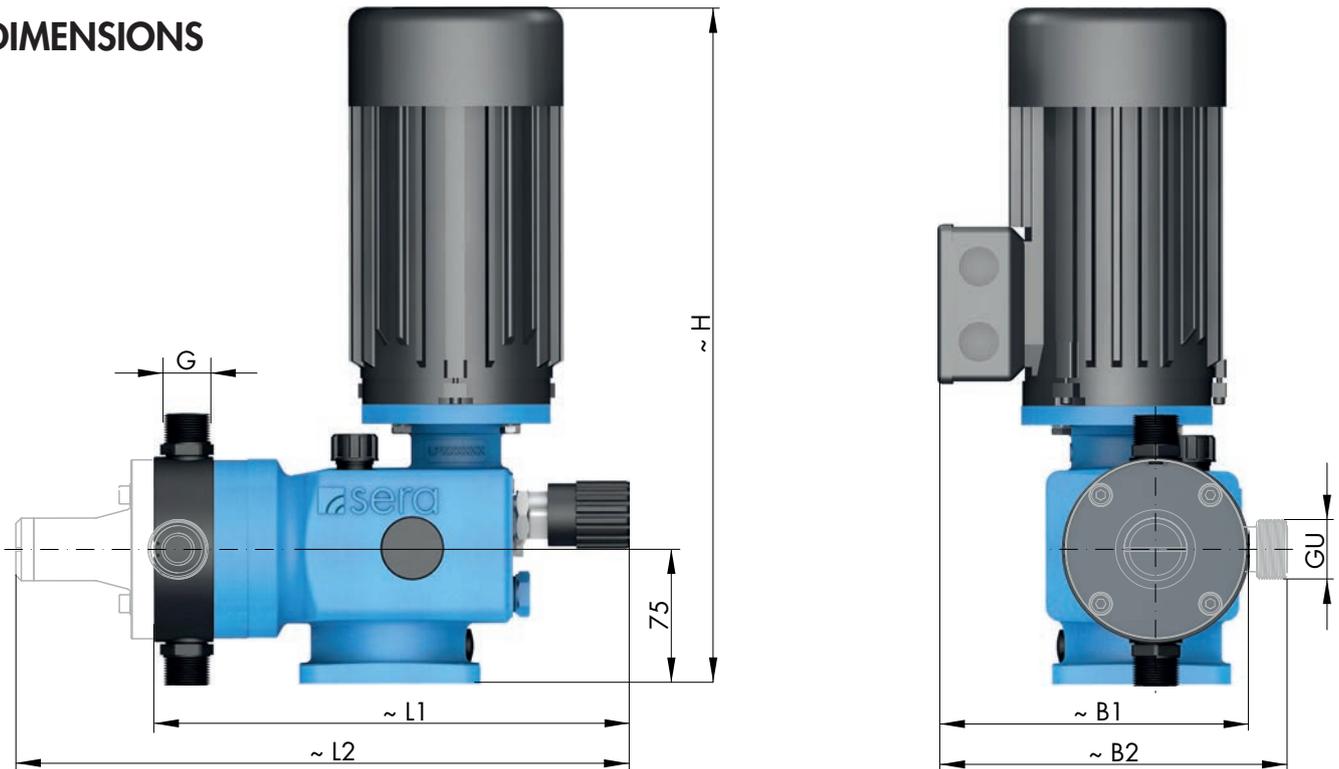
PUMP DATA			RF 409.2-...							
(* 8mWS = performance losses of nominal capacity QN of 20-25%)			50e	75e	90e	115e	140e	180e	250e	350e
Permissible pressure $p_{2max}$ at the pump outlet	bar		10	10	8	4	8	4	3	3
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	0-50	0-75	0-90	0-115	0-140	0-180	0-250	0-350
		60 Hz	0-60	0-90	0-108	0-138	0-168	0-216	0-300	—
Quantity per stroke	ml/stroke (100%)		8,3	8,3	15,0	19,2	15,6	20,0	41,7	38,9
Max. suction height	mWC		3 (8 *)						3	
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0 (-0,8/0)						-0,3/0	
Recomm. nominal diameter DN of the connecting pipes	mm		10	15	15	15	15	15	15	15
Nominal stroke frequency	1/min	50 Hz	100	150	100	100	150	150	100	150
		60 Hz	120	180	120	120	180	180	120	—
Weight approx.	kg	plastic	9	9	11	10	11	10	13	13
		stainless steel	10	10	13	13	13	13	21	21

ELECTRICAL DATA		RF409.2-50e ... RF409.2-350e
Power consumption	kW	0,37
Voltage	V	230/400V 50Hz, 460V 60Hz
Frequency	Hz	50/60
Insulation class	ISO	F
Enclosure	IP	55

Flow capacity 50 l/h ... 350 l/h  
Admissible counterpressure up to 10 bar

RF 409.2

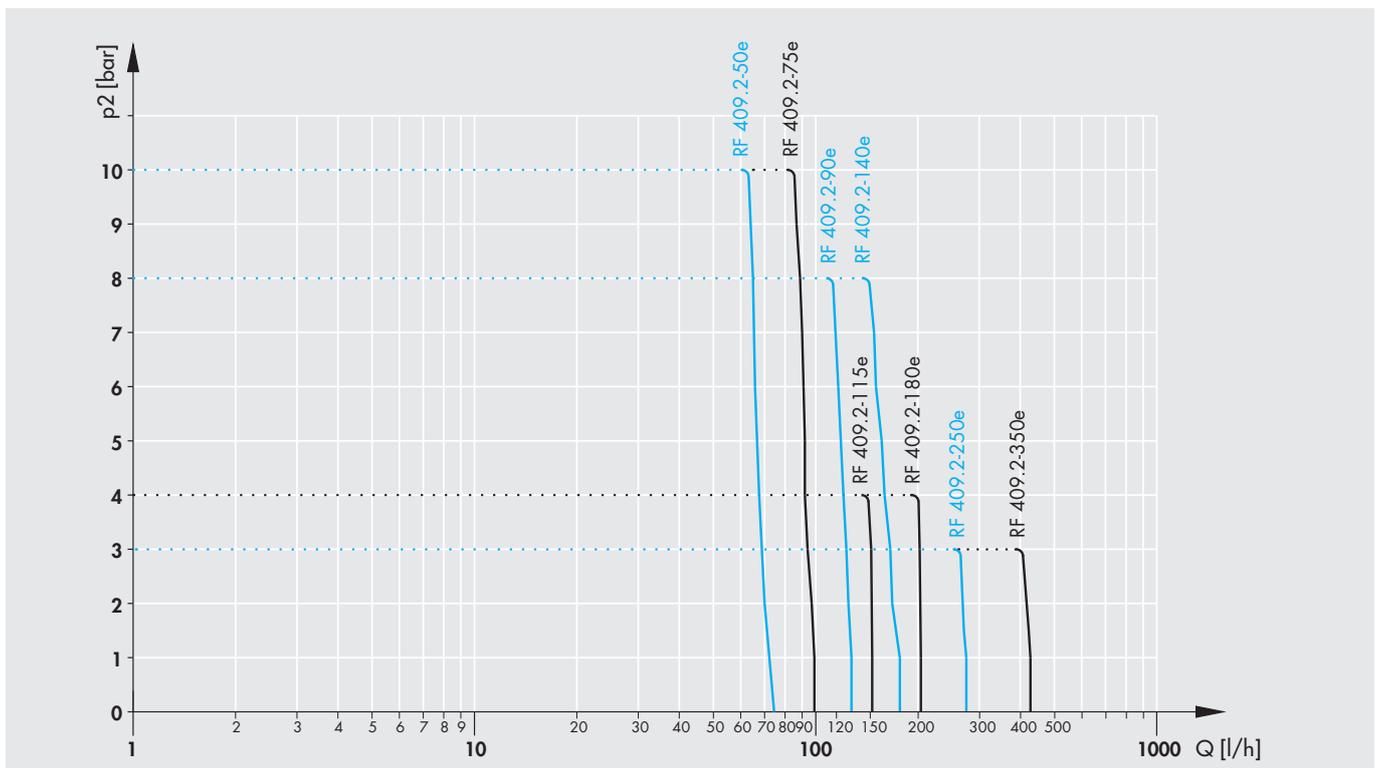
## DIMENSIONS



	G	GU		B1	B2	L1	L2	H		B1	B2	L1	L2	H
RF 409.2 -50e, ...-75e	G 3/4	G 3/4	PVC, PP, PVDF	185	190	295	360	365	1.4571	185	190	295	360	365
RF 409.2 -90e, ... -140e	G 3/4	G1		185	205	300	370	365		185	205	300	370	365
RF 409.2 -115e, ... -180e	G 3/4	G1		185	205	300	370	365		185	205	300	370	365
RF 409.2 -250e, ...-350e	G1 1/4*	G1 1/4*		220	230	355	435	365		220	230	355	435	365

\* PVC = G1

## CHARACTERISTIC CURVES



# DIAPHRAGM PUMPS

## BASIC DESIGNS

### PP-FRP

Pump body **PP-FRP** (\*\* PP)  
 Valves **PP-FRP**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced** (\* EPDM)



Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
RF409.2-50e	16026269	Ⓜ	15007192	Ⓜ
RF409.2-75e	16026270	Ⓜ	15007193	Ⓜ
RF409.2-90e	16026271	Ⓜ	15007194	Ⓜ
RF409.2-115e *	16026272	Ⓜ	15007195	Ⓜ
RF409.2-140e	16026273	Ⓜ	15007196	Ⓜ
RF409.2-180e *	16026274	Ⓜ	15007197	Ⓜ
RF409.2-250e **	16026275	Ⓜ	15007198	Ⓜ
RF409.2-350e **	16026276	Ⓜ	15007199	Ⓜ

### PVDF-FRP

Pump body **PVDF-FRP** (\*\*PVDF)  
 Valves **PVDF-FRP**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced** (\* EPDM)

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
RF409.2-50e	16026329	Ⓜ
RF409.2-75e	16026330	Ⓜ
RF409.2-90e	16026331	Ⓜ
RF409.2-115e *	16026332	Ⓜ
RF409.2-140e	16026333	Ⓜ
RF409.2-180e *	16026334	Ⓜ
RF409.2-250e **	16026335	Ⓜ
RF409.2-350e **	16026336	Ⓜ

### PVC-U

Pump body **PVC-U**  
 Valves **PVC-U**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced** (\* EPDM)



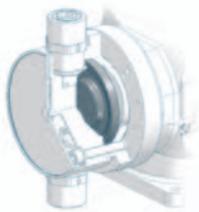
Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
RF409.2-50e	16026318	Ⓜ	16026304	Ⓜ
RF409.2-75e	16026319	Ⓜ	16026305	Ⓜ
RF409.2-90e	16026292	Ⓜ	16026306	Ⓜ
RF409.2-115e *	16026320	Ⓜ	16026307	Ⓜ
RF409.2-140e	16026321	Ⓜ	16026308	Ⓜ
RF409.2-180e *	16026322	Ⓜ	16026309	Ⓜ
RF409.2-250e	16026323	Ⓜ	16026310	Ⓜ
RF409.2-350e	16026324	Ⓜ	16026311	Ⓜ

### STAINLESS STEEL

Pump body **1.4571**  
 Valves **1.4571**  
 Valve balls **1.4401**  
 Diaphragm **PTFE-faced** (\* EPDM)

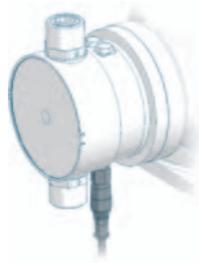
Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
RF409.2-50e	16026343	Ⓜ
RF409.2-75e	16026344	Ⓜ
RF409.2-90e	16026345	Ⓜ
RF409.2-115e *	16026346	Ⓜ
RF409.2-140e	16026347	Ⓜ
RF409.2-180e *	16026348	Ⓜ
RF409.2-250e	16026349	Ⓜ
RF409.2-350e	16026350	Ⓜ

## OPTIONS



### Working diaphragm

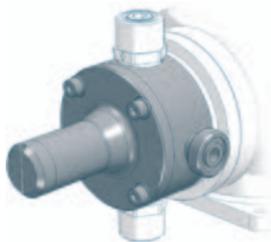
		Surcharge (EUR)
Material		
FPM	only with ...-115e and ...-180e	▲



### Diaphragm monitoring

Diaphragm rupture electrode, conductive, mounted on pump  
(Evaluation via electrode relay, ER-104 (see accessories))

		Surcharge (EUR)
MBE-02	incl. connection cable (length 2m)	▲
	Connection cable for EX ia-circuit (blue, length 5m)	▲



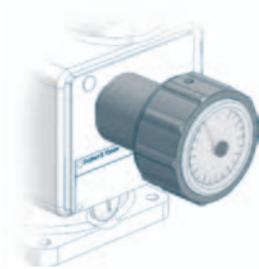
### Integrated relief valve

Diaphragm: **PTFE-faced**      Connecting seals: **EPDM or FPM**      **Surcharge (EUR)**

<b>PP</b> 	RF 409.2-50e, ...-75e	▲
	RF 409.2-90e, ...-115e, ...-140e, ...-180e	▲
	RF 409.2-250e, ...-350e	▲
<b>PVDF</b>	RF 409.2-50e, ...-75e	Ⓜ
	RF 409.2-90e, ...-115e, ...-140e, ...-180e	Ⓜ
	RF 409.2-250e, ...-350e	Ⓜ
<b>PVC-U</b> 	RF 409.2-50e, ...-75e	▲
	RF 409.2-90e, ...-115e, ...-140e, ...-180e	▲
	RF 409.2-250e, ...-350e	▲
<b>1.4571</b>	RF 409.2-50e, ...-75e	▲
	RF 409.2-90e, ...-115e, ...-140e, ...-180e	▲
	RF 409.2-250e, ...-350e	▲
Connecting seals <b>FEP-covered</b>		
for connection G 3/4	RF 409.2-7,0e, up to and including ...-180e	▲
for connection G1 1/4	RF 409.2-250e, ...-350e	▲

# DIAPHRAGM PUMPS

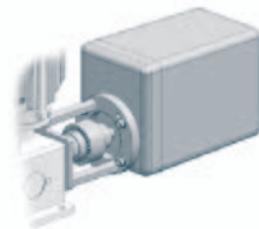
## OPTIONS



### Stroke length adjustment

Surcharge (EUR)

with position indicator



### Stroke length adjustment with actuator

(version uL/CSA on request)

Surcharge (EUR)

Actuator N C1-BA

230V  $\pm$ 10%, 50/60Hz, 128s/10 U, 1,5Nm  
incl. mounting set



Elektronischer Stellungsregler ESR-NK  
(only integrated in N C1-BA)

Input signal 0/4 - 20mA including  
feedback signal 0/4 - 20mA



Actuator D30D-10-Ex  
II2G Ex d e IIC T4

400V, 50Hz, 10 U/min  
incl. mounting set and base plate



### Stroke frequency monitoring

Inductive contact

Surcharge (EUR)

10 - 60 V DC, three-wire, PNP



NAMUR-design, II2G Ex ia IIC T6



## OPTIONS



### Drive motor

- Please note: If one or several options 'drive motor' are required to fix the add. price of the drive, the calculation will be as follows: 'add. price special drive' plus the single options of the drive.
- Surcharge and availability must be requested from **sera**.

Surcharge special drive		Surcharge (EUR)
RF 409.2-50e, ...-75e, ...-90e, ...-115e, ..140e ...-180e, ..250e, ..350e		▲
Special voltage	(all types)	①
Enclosure IP65	(all types)	▲
Protection roof	(all types)	▲
VIK design	(all types)	①
Electrical acc. to uL/CSA	(all types)	①

### Single-phase alternating current motor, 230V/50Hz with capacitor

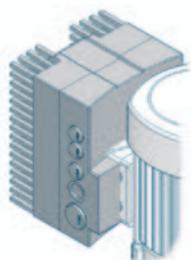
RF 409.2-50e, ...-75e, ...-90e, ...-115e, ..140e ...-180e, ..250e, ..350e	▲
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### II2G Ex e II T4

RF 409.2-50e, ...-75e, ...-90e, ...-115e, ..140e ...-180e, ..250e, ..350e	▲
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### II2G Ex d e IIC T4 (suitable for converter operation, 5-50Hz)

RF 409.2-50e, ...-75e, ...-90e, ...-115e, ..140e ...-180e, ..250e, ..350e	▲
---------------------------------------------------------------------------	---



### Stroke frequency adjustment, electrical

Frequency converter (Series INVEOR) mounted on drive motor  
Input 4-20 mA

		Surcharge (EUR)
<b>1-phase</b>		
200-230V ±10%, 50/60Hz	0,37 kW	▲
<b>3-phase</b>		
400-480V ±10%, 50/60Hz	0,55 kW	▲

Frequency converter accessories	Article-No.	Price (EUR)
Operating module (incl. control cable)	90039445	▲
Communication cable for parameterization via PC	90042176	▲

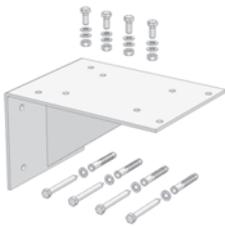
# DIAPHRAGM PUMPS

## ACCESSORIES



### Diaphragm monitoring (evaluation)

Electrode relay for mounting in control cabinet (for evaluating the diaphragm rupture electrode MBE-02 (see options))		Article-No.	Price (EUR)
ER-104	auxiliary power 230 V AC	90022944	▲
ER-104	auxiliary power 24 V DC	90022945	▲
ER-142	auxiliary power 230 V AC      II(1)G [Ex ia] II C	90200363	▲



### Bracket

for wall mounting (incl. mounting kit)		Article-No.	Price (EUR)
PP		90023848	▲
1.4301		90023875	▲

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
RF409.2-50e						
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲
RF409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e, ...-250e, ...-350e						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲

### ACCESSORIES



<b>Hand vacuum pump</b>	PVC/FPM  (incl. 1,5m PVC-Hose d=12/21)	37605682	▲
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## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
 Maintenance-free  
 Easy handling  
 High-quality materials

individual special lengths  
 up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
 Foot valve: **PVC-U**  
 Seals: **EPDM** or **FPM**  
 Valve ball: **PTFE**  
 max. flow rate: **200 l/h**  
 Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e					
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲

# DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 3-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606372	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606567	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606568	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606566	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606078	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606569	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606570	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606572	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606573	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606571	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606577	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37606574	▲



### ACCESSORIES

#### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

#### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
RF409.2-250e, ...-350e						
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
BCS 70x6 Di=50	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
G2 IBC	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
G2 universal	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
Hose set	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
Quiver	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
Control cable	Control cable for level input Cable socket M12x1, 3-pole, 5m length, loosely delivered	90031245	▲



# DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e						
<b>781.1</b>	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲
RF409.2-250e, ...-350e						
<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1 1/4	PVDF/PVDF-GFK	FEP	30073018	▲



### Foot valve (plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e						
<b>731</b>	8	G 3/4	PVC-U	EPDM	37601636	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

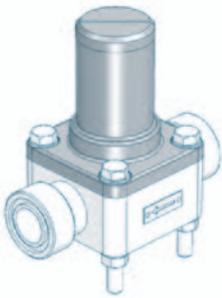
High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e						
<b>731</b>	8	G 3/4	1.4571	FEP	37601149	▲
RF409.2-250e, ...-350e						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

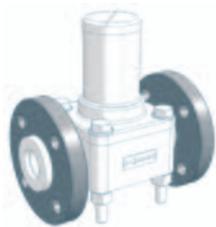
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

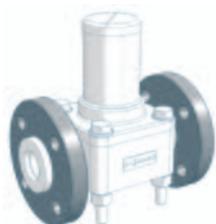
Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF409.2-50e						
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲
RF409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e, ...-250e, ...-350e						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	Ⓜ	Ⓜ
622.10	DN15	G 1	PP	EPDM	Ⓜ	Ⓜ
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲

### OPTIONS



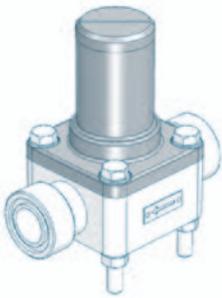
Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	Ⓜ
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

# DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF409.2-50e						
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲
RF409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e, ...-250e, ...-350e						
622.D	DN15	G 1	PVC-U	FPM	37600049	▲
622.D	DN15	G 1	PVC-U	EPDM	36221101	▲
622.D	DN15	G 1	PP	FPM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP	EPDM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP-GFK	FPM	37600056	▲
622.D	DN15	G 1	PP-GFK	EPDM	36221105	▲
622.D	DN15	G 1	PVDF	FEP	37602881	▲
622.D	DN15	G 1	PVDF-GFK	FEP	37601449	▲
622.D	DN15	G 1	1.4581	FEP	37600538	▲

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	Ⓜ
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Multi function valve

#### Properties

- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

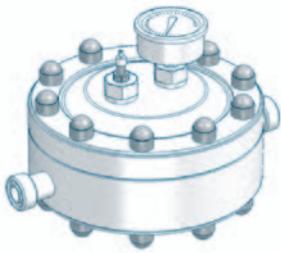
#### Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- Relief valve side**
- Opening pressure: **2 up to 10 bar** (adjustable)
- Pressure keeping valve side**
- Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
RF409.2-50e				
<b>MFV 050</b>	PVC-U	EPDM	37600973	▲
<b>MFV 050</b>	PVC-U	FPM	37600974	▲
<b>MFV 050</b>	PP	EPDM	37600982	▲
<b>MFV 050</b>	PP	FPM	37600983	▲
RF409.2-75e, ...-90e, ...-115e, -140e, ...-180e, ...-250e, ...-350e				
⌚			⌚	⌚

# DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
RF409.2-50e						
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲
RF409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e						
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲
RF409.2-250e, ...-350e						
723.1	G 1 1/4	10 bar	PVC-U	EPDM	37601002	▲
723.1	G 1 1/4	10 bar	PVC-U	FPM	30100011	▲
723.1	G 1 1/4	10 bar	PP	EPDM	37603271	▲
723.1	G 1 1/4	10 bar	PP	FPM	30100012	▲
723.1	G 1 1/4	10 bar	PVDF	FEP	37600918	▲

### ACCESSORIES



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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MPD 721.2, MPD 722.1



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
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MPD 723.1



#### Bracket

for wall mounting	PP	90011722	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF409.2-50e						
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	Butyl	37603720	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	FPM	37603724	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	PTFE	⊘	⊘
RF409.2-75e, ...-90e, ...-115e, ...-140e, ...-180e						
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	Butyl	37603721	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	FPM	37603725	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	PTFE	⊘	⊘
RF409.2-250e, ...-350e						
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	Butyl	37603722	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	FPM	37603726	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	PTFE	37606307	▲

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

integrated injection lance  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e							
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e							
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲
RF409.2-250e, ...-350e							
693.1	20	G 1 1/4	R 1 1/4	PP-GFK	EPDM	37604661	▲
693.1	20	G 1 1/4	R 1 1/4	PP-GFK	FPM	37603317	▲
693.1	20	G 1 1/4	R 1 1/4	PVDF-GFK	FEP	30072027	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e							
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲
RF409.2-250e, ...-350e							
692.1	15	G 1	R 1	1.4571	FEP	37600669	▲
693.1	20	G 1 1/4	R 1 1/4	1.4571	FEP	37600789	▲

## FITTINGS FOR THE PRESSURE SIDE



### Injection fitting

#### Properties

incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
RF409.2-50e, ...-75e, ...-90e, ...-115e, ...-140e, ...-180e							
8061.1	10	G 3/4	R 1/2	PVC-U	EPDM	37602105	▲
8061.1	10	G 3/4	R 1/2	PVC-U	FPM	37602106	▲
8061.1	10	G 3/4	R 1/2	PP	EPDM	37602107	▲
8061.1	10	G 3/4	R 1/2	PP	FPM	37602108	▲
8061.1	10	G 3/4	R 1/2	PVDF	FPM	37602109	▲
RF409.2-250e, ...-350e							
8062.1	15	G 1	R 3/4	PVC-U	EPDM	37602110	▲
8062.1	15	G 1	R 3/4	PVC-U	FPM	37602111	▲
8062.1	15	G 1	R 3/4	PP	EPDM	37602112	▲
8062.1	15	G 1	R 3/4	PP	FPM	37602113	▲
8062.1	15	G 1	R 3/4	PVDF	FPM	37602114	▲

# DIAPHRAGM PUMPS



## OVERVIEW

- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Continuous, manual stroke length adjustment
- Motor suitable for operation with frequency converter
- Robust, metallic drive housing
- Compact design
- Low weight

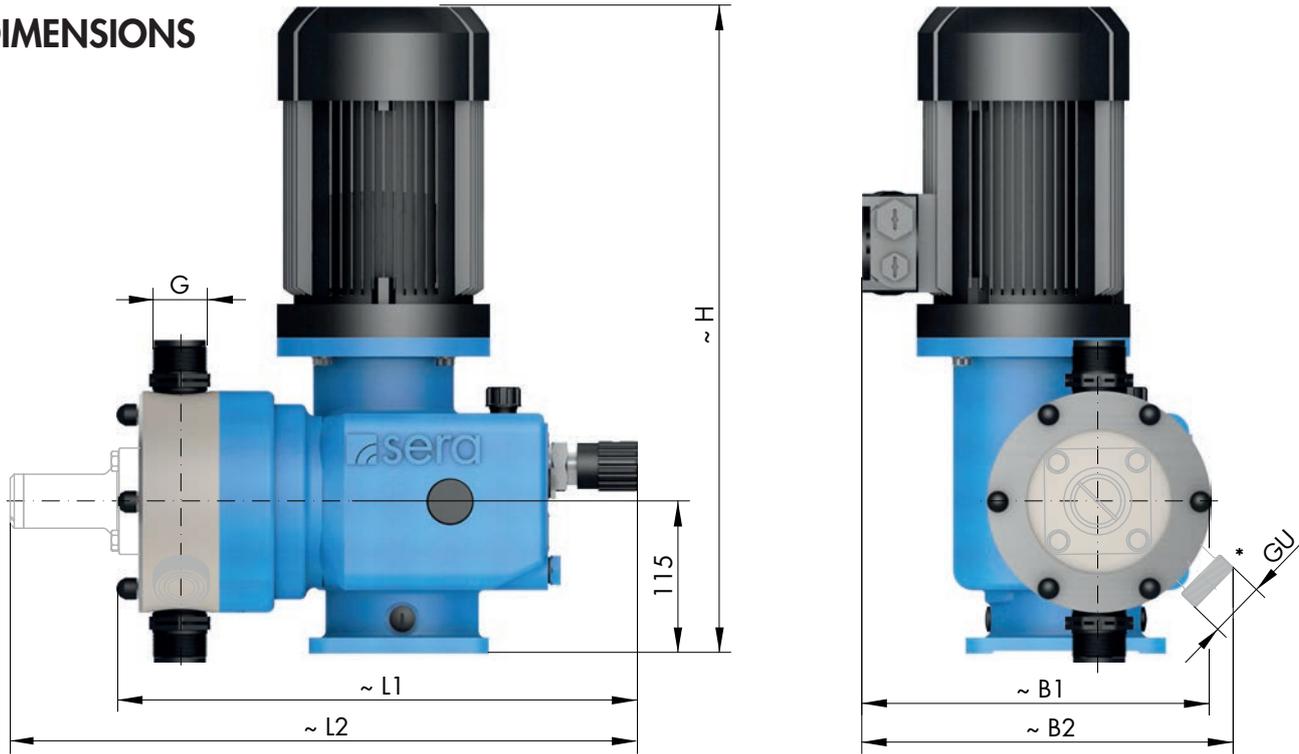
## TECHNICAL DATA

PUMP DATA			RF 410.2-...			
			280e	570e	900e	1450e
Permissible pressure $p_{2max}$ at the pump outlet	bar		8	6	5	5 *
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	0-280	0-570	0-900	0-1.450
		60 Hz	0-336	0-684	0-1.080	0-1.740
Quantity per stroke	ml/stroke (100%)		46	98	155	245
Max. suction height	mWC		5	5	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,5/0	-0,5/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		15	15	20	25
Nominal stroke frequency	1/min	50 Hz	97	97	97	97
		60 Hz	116	116	116	116
Weight approx.	kg	plastic	35	35	37	41
		stainless steel	42	42	52	59

\* at 60 Hz is the permissible pressure 3,5 bar

ELECTRICAL DATA		RF 410.2-...			
		280e	570e	900e	1450e
Power consumption	kW	0,75	0,75	1,1	1,5
Voltage	V	230/400V 50Hz, 460V 60Hz			
Frequency	Hz	50/60			
Insulation class	ISO	F			
Enclosure	IP	55			

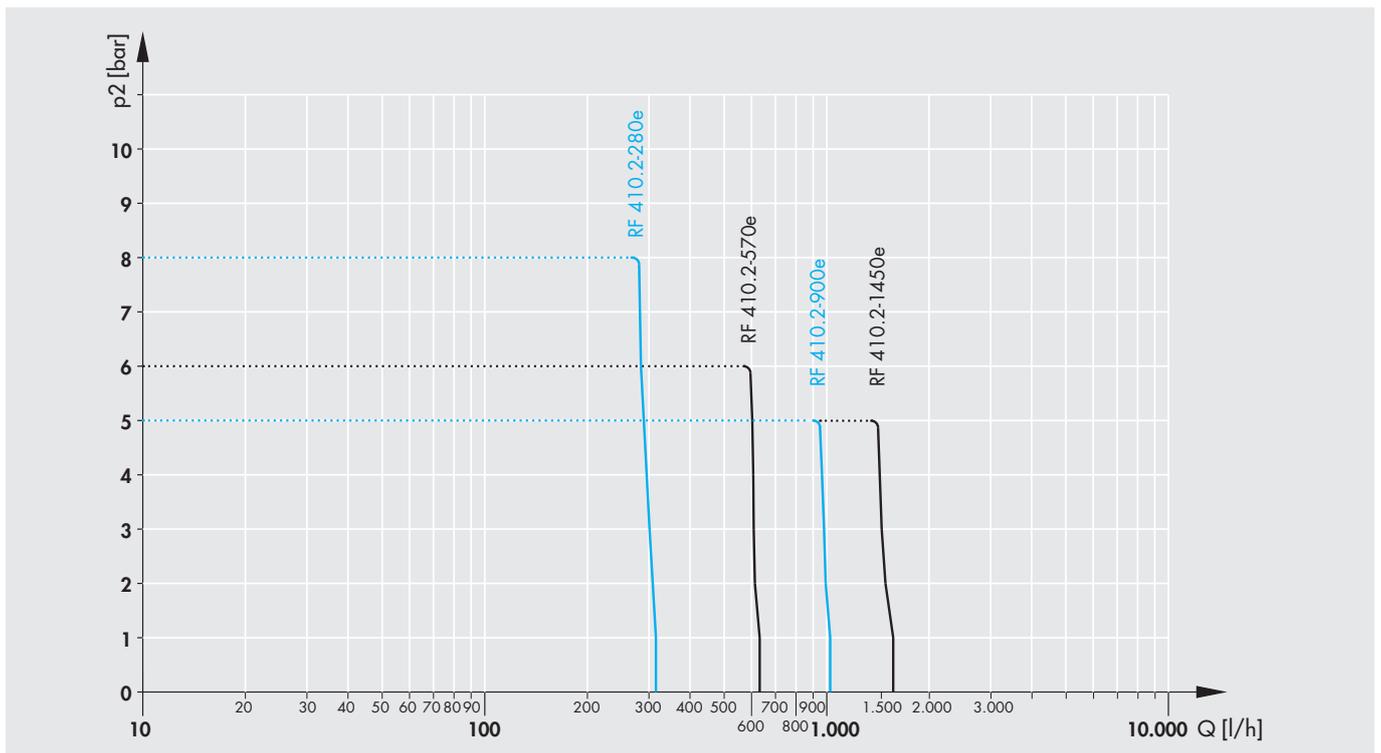
**DIMENSIONS**



	G	GU		B1	B2	L1	L2	H		B1	B2	L1	L2	H
RF 410.2-280e	G1¼*	G1¼*	PVC, PP, PVDF	265	280	403	484	530	1.4571	265	280	400	484	530
RF 410.2-570e	G1¼*	G1¼*		265	280	403	484	530		265	280	400	484	530
RF 410.2-900e	G1¼	5		295	5	428	5	540		295	5	425	5	540
RF 410.2-1450e	G1¼	5		295	5	428	5	580		295	5	425	5	580

\* PVC = G1

**CHARACTERISTIC CURVES**



# DIAPHRAGM PUMPS

## BASIC DESIGNS

### PP

Pump body **PP**  
 Valves **PP-FRP**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
RF410.2-280e	16017347	Ⓜ	16006793	Ⓜ
RF410.2-570e	16006711	Ⓜ	16007252	Ⓜ
RF410.2-900e	16013635	Ⓜ	16013926	Ⓜ
RF410.2-1450e	16010632	Ⓜ	16018420	Ⓜ

### PVDF

Pump body **PVDF**  
 Valves **PVDF-FRP**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
RF410.2-280e	16023909	Ⓜ	
RF410.2-570e	16023910	Ⓜ	
RF410.2-900e	16014495	Ⓜ	
RF410.2-1450e	16023677	Ⓜ	

### PVC-U

Pump body **PVC-U**  
 Valves **PVC-U**  
 Valve balls **PTFE**  
 Diaphragm **PTFE-faced**

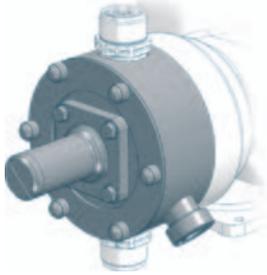
Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
RF410.2-280e	16009107	Ⓜ	16013181	Ⓜ
RF410.2-570e	16013411	Ⓜ	16007243	Ⓜ
RF410.2-900e	16012282	Ⓜ	16013170	Ⓜ
RF410.2-1450e	16021259	Ⓜ	16016460	Ⓜ

### STAINLESS STEEL

Pump body **1.4571**  
 Valves **1.4571/1.4581**  
 Valve balls **1.4401**  
 Diaphragm **PTFE-faced**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
RF410.2-280e	16012324	Ⓜ	
RF410.2-570e	16014802	Ⓜ	
RF410.2-900e	16008500	Ⓜ	
RF410.2-1450e	16019211	Ⓜ	

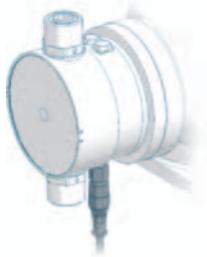
## OPTIONS



### Integrated relief valve

Diaphragm: <b>PTFE-faced</b>	Connecting seals: <b>EPDM</b> or <b>FPM</b>	Surcharge (EUR)
<b>PP</b>	...410.2-280e, ...-570e	▲
<b>PVC</b>	...410.2-280e, ...-570e	▲
<b>PVDF</b>	...410.2-280e, ...-570e	Ⓜ
<b>1.4571</b>	...410.2-280e, ...-570e	▲
<b>PP, PVDF, PVC-U, 1.4571</b>	...410.2-900e, ...-1450e	⊘

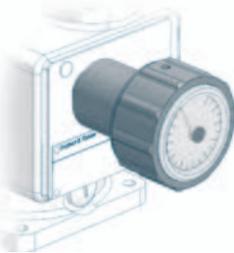
Connecting seals <b>FEP-covered</b>	all types	▲
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### Diaphragm monitoring

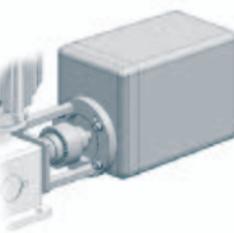
Diaphragm rupture electrode, conductive, mounted on pump  
(Evaluation via electrode relay, ER-104 (see accessories))

MBE-02	incl. connection cable	(length 2m)	▲
Connection cable for EX ia-circuit		(blue, length 5m)	▲



### Stroke length adjustment

		Surcharge (EUR)
with position indicator	...410.2-280e, -570e, 900e	▲
	...410.2-1450e	▲



### Stroke length adjustment with actuator

	(version uL/CSA on request)	Surcharge (EUR)
Actuator N1S	230V, 50/60Hz, 128s/10 U, 15Nm Potentiometer 1 kΩ (incl. mounting set)	▲
Electronic positioning controller ESR-NK (only integrated in N1S)	Input signal 0/4 - 20mA including feedback signal 0/4 - 20mA	▲
Actuator D30D-10-Ex II2G Ex d e IIC T4	400V, 50Hz, 10 U/min incl. mounting set and base plate	▲



### Stroke frequency monitoring

Inductive contact	Surcharge (EUR)
10 - 60 V DC, three-wire, PNP	▲
NAMUR-design, II2G Ex ia IIC T6	▲

# DIAPHRAGM PUMPS

## OPTIONS



### Drive motor

- Please note: If one or several options 'drive motor' are required to fix the add. price of the drive, the calculation will be as follows: 'add. price special drive' plus the single options of the drive.
- Surcharge and availability must be requested from **sera**.

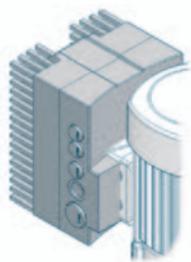
Surcharge special drive		Surcharge (EUR)
RF 410.2-280e, ...-570e, ...-900e		▲
RF 410.2-1450e		▲
Special voltage	(all types)	Ⓜ
Enclosure IP65	(all types)	▲
Protection roof	(all types)	▲
VIK design	(all types)	Ⓜ
Electrical acc. to uL/CSA	(all types)	Ⓜ

### II2G Ex e II T4

R 410.2-280e, ...-570e	▲
R 410.2-900e	▲
R 410.2-1450e	▲

### II2G Ex d e IIC T4 (suitable for converter operation, 5-50Hz)

RF 410.2-280e, ...-570e	▲
RF 410.2-900e	▲
RF 410.2-1450e	▲



### Stroke frequency adjustment, electrical

Frequency converter (Series INVEOR) mounted on drive motor  
Input 4-20 mA

3-phase			Surcharge (EUR)
400-480V ±10%, 50/60Hz	0,75 kW	RF410.2-280e, ...-570e	▲
400-480V ±10%, 50/60Hz	1,5 kW	RF410.2-900e, ...-1450e	▲

90039445 ▲

90042176 ▲

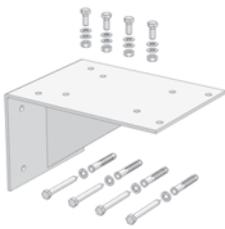
## ACCESSORIES



### Diaphragm monitoring (evaluation)

Electrode relay for mounting in control cabinet  
(for evaluating the diaphragm rupture electrode MBE-02 (see options))

		Article-No.	Price (EUR)
ER-104	auxiliary power 230 V AC	90022944	▲
ER-104	auxiliary power 24 V DC	90022945	▲
ER-142	auxiliary power 230 V AC II(1)G [Ex ia] II C	90200363	▲



### Bracket

for wall mounting (incl. mounting kit)

	Article-No.	Price (EUR)
PP	90023849	▲
1.4301	90023876	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

# DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>783.1</b>	20	G 1¼	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1¼	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1¼	PVDF/PVDF-GFK	FEP	30073018	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF410.2-280e, ...-570e						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲
RF410.2-900e, ...-1450e						
<b>733</b>	20	G 1¼	1.4571	FEP	37603962	▲

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or  
 an calibration pot  
 Compact design  
 Flexible Connection  
 Maintenance-free  
 incl. glue joint (PVC-U) and  
 welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
 Seals: **FPM or EPDM**  
 max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
RF410.2-280e, ...-570e						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲
RF410.2-900e, ...-1450e						
<b>MFD 1500</b>	20	G1 ¼	5 Ltr.	EPDM	37606316	▲
<b>MFD 1500</b>	20	G1 ¼	5 Ltr.	FPM	37606315	▲

### ACCESSORIES



<b>Hand vacuum pump</b>	PVC/FPM	37605682	▲
(incl. 1,5m PVC-Hose d=12/21)			

# DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

#### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

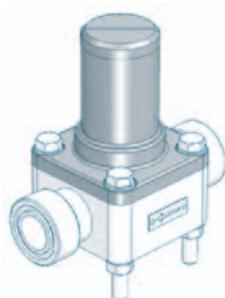
Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
RF410.2-280e, ...-570e						
SLP-151.1		750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1		750 mm	PVC-U	FPM	37604114	▲
SLP-151.1		1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1		1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1		1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1		1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1		750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1		750 mm	PVC-U	FPM	37604117	▲
SLP-152.1		1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1		1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1		1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1		1.250 mm	PVC-U	FPM	37604119	▲

### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
BCS 70x6 Di=50	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
G2 IBC	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
G2 universal	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
Hose set	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
Quiver	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
Control cable	Control cable for level input Cable socket M12x1, 3-pole, 5m length, loosely delivered	90031245	▲



## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF410.2-280e, ...-570e						
<b>622.10</b>	DN15	G 1	PVC-U	FPM	37604006	▲
<b>622.10</b>	DN15	G 1	PVC-U	EPDM	37603635	▲
<b>622.10</b>	DN15	G 1	PP	FPM	①	①
<b>622.10</b>	DN15	G 1	PP	EPDM	①	①
<b>622.10</b>	DN15	G 1	PP-GFK	FPM	37603634	▲
<b>622.10</b>	DN15	G 1	PP-GFK	EPDM	37600450	▲
<b>622.10</b>	DN15	G 1	PVDF	FEP	37600717	▲
<b>622.10</b>	DN15	G 1	PVDF-GFK	FEP	37601819	▲
<b>622.10</b>	DN15	G 1	1.4581	FEP	37600695	▲
RF410.2-900e						
<b>623.10</b>	DN20	G 1¼	PVC-U	FPM	37600009	▲
<b>623.10</b>	DN20	G 1¼	PVC-U	EPDM	36230101	▲
<b>623.10</b>	DN20	G 1¼	PP	FPM	37600016	▲
<b>623.10</b>	DN20	G 1¼	PP	EPDM	36230105	▲
<b>623.10</b>	DN20	G 1¼	PVDF	FEP	37606304	▲
RF410.2-1450e						
<b>624.10</b>	DN25	G 1½	PVC-U	FPM	37603639	▲
<b>624.10</b>	DN25	G 1½	PVC-U	EPDM	37603638	▲
<b>624.10</b>	DN25	G 1½	PP	FPM	37603637	▲
<b>624.10</b>	DN25	G 1½	PP	EPDM	37603636	▲
<b>624.10</b>	DN25	G 1½	PVDF	FEP	37603866	▲

# DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE

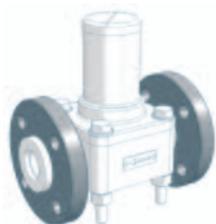
### OPTIONS



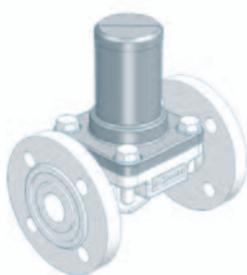
Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
623.10	PVC	Loose flange made of PVC-U	▲
623.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.10	PP	Loose flange made of PP with steel inlay	▲
623.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
624.10	PVC	Loose flange made of PVC-U	▲
624.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
624.10	PP	Loose flange made of PP with steel inlay	▲
624.10	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm relief valve (with fixed flanges)

for overpressure protection

#### Properties

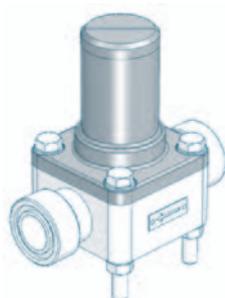
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
RF410.2-900e					
623.10	DN20	DIN 2501	1.4581	36230104	▲
623.10	DN20	DIN 2501	GG	37600038	▲
RF410.2-1450e					
624.10	DN25	DIN 2501	1.4581	36240104	▲
624.10	DN25	DIN 2501	GG	37600039	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

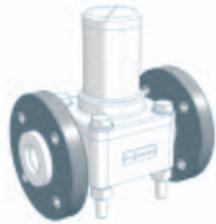
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF410.2-280e, ...-570e						
<b>622.D</b>	DN15	G 1	PVC-U	FPM	37600049	▲
<b>622.D</b>	DN15	G 1	PVC-U	EPDM	36221101	▲
<b>622.D</b>	DN15	G 1	PP	FPM	①	①
<b>622.D</b>	DN15	G 1	PP	EPDM	①	①
<b>622.D</b>	DN15	G 1	PP-GFK	FPM	37600056	▲
<b>622.D</b>	DN15	G 1	PP-GFK	EPDM	36221105	▲
<b>622.D</b>	DN15	G 1	PVDF	FEP	37602881	▲
<b>622.D</b>	DN15	G 1	PVDF-GFK	FEP	37601449	▲
<b>622.D</b>	DN15	G 1	1.4581	FEP	37600538	▲
RF410.2-900e						
<b>623.D</b>	DN20	G 1¼	PVC-U	FPM	37600050	▲
<b>623.D</b>	DN20	G 1¼	PVC-U	EPDM	36231101	▲
<b>623.D</b>	DN20	G 1¼	PP	FPM	37600057	▲
<b>623.D</b>	DN20	G 1¼	PP	EPDM	36231105	▲
<b>623.D</b>	DN20	G 1¼	PVDF	FEP	37606309	▲
RF410.2-1450e						
<b>624.D</b>	DN25	G 1½	PVC-U	FPM	37600051	▲
<b>624.D</b>	DN25	G 1½	PVC-U	EPDM	36241101	▲
<b>624.D</b>	DN25	G 1½	PP	FPM	37600058	▲
<b>624.D</b>	DN25	G 1½	PP	EPDM	36241105	▲
<b>624.D</b>	DN25	G 1½	PVDF	FEP	37606310	▲

# DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE

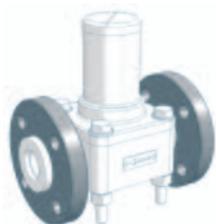
### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
623.D	PVC	Loose flange made of PVC-U	▲
623.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.D	PP	Loose flange made of PP with steel inlay	▲
623.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
624.D	PVC	Loose flange made of PVC-U	▲
624.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
624.D	PP	Loose flange made of PP with steel inlay	▲
624.D	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm pressure keeping valve (with fixed flanges)

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
RF410.2-900e					
623.D	DN20	DIN 2501	1.4581	36231104	▲
623.D	DN20	DIN 2501	GG	37600080	▲
RF410.2-1450e					
624.D	DN25	DIN 2501	1.4581	36241104	▲
624.D	DN25	DIN 2501	GG	37600081	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm		Article-No.	Price (EUR)
				Seals			
713.1	G 1 ¼	10 bar	PVC-U	EPDM		30071038	▲
713.1	G 1 ¼	10 bar	PVC-U	FPM		30071039	▲
713.1	G 1 ¼	10 bar	PP	EPDM		30071040	▲
713.1	G 1 ¼	10 bar	PP	FPM		30071041	▲
713.1	G 1 ¼	10 bar	PVDF	EPDM		30071060	▲
713.1	G 1 ¼	10 bar	PVDF	FPM		30071061	▲

### OPTIONS



Loose-type flanges	Design acc. to DIN 2501, incl. O-Rings		
PVC-design	Loose flange, PVC-U	DN20	▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20	▲

### ACCESSORIES



Bracket			
	PP	90010913	▲
for wall mounting	1.4301	90010914	▲
	Steel (color treated)	90010915	▲



Billingepump FLP 2	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve		90009396 ▲
	Steel (color treated)	

# DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF410.2-280e						
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	Butyl	37603722	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	FPM	37603726	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	PTFE	37606307	▲
RF410.2-570e, ...-900e						
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	Butyl	37603723	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	FPM	37603727	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	PTFE	37606308	▲
RF410.2-1450e						
①					①	①

### ACCESSORIES



#### Filling- and pressure measuring device

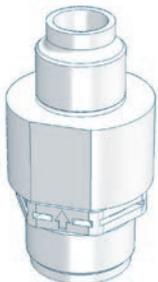
(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
<b>693.1</b>	20	G 1 ¼	R 1 ¼	PP-GFK	EPDM	37604661	▲
<b>693.1</b>	20	G 1 ¼	R 1 ¼	PP-GFK	FPM	37603317	▲
<b>693.1</b>	20	G 1 ¼	R 1 ¼	PVDF-GFK	FEP	30072027	▲

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
RF410.2-280e, ...-570e							
<b>692.1</b>	15	G 1	R 1	1.4571	FEP	37600669	▲
RF410.2-900e, ...-1450e							
<b>693.1</b>	20	G 1 ¼	R 1 ¼	1.4571	FEP	37600789	▲



### Injection fitting

#### Properties

incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
RF410.2-280e, ...-570e							
<b>8062.1</b>	15	G 1	R ¾	PVC-U	EPDM	37602110	▲
<b>8062.1</b>	15	G 1	R ¾	PVC-U	FPM	37602111	▲
<b>8062.1</b>	15	G 1	R ¾	PP	EPDM	37602112	▲
<b>8062.1</b>	15	G 1	R ¾	PP	FPM	37602113	▲
<b>8062.1</b>	15	G 1	R ¾	PVDF	FPM	37602114	▲
RF410.2-900e, ...-1450e							
<b>8063.1</b>	20	G 1 ¼	R 1	PVC-U	EPDM	37602115	▲
<b>8063.1</b>	20	G 1 ¼	R 1	PVC-U	FPM	37602116	▲
<b>8063.1</b>	20	G 1 ¼	R 1	PP	EPDM	37602117	▲
<b>8063.1</b>	20	G 1 ¼	R 1	PP	FPM	37602118	▲
<b>8063.1</b>	20	G 1 ¼	R 1	PVDF	FPM	37602119	▲

# MULTI-LAYER DIAPHRAGM PUMPS



## OVERVIEW

- Multi-layer diaphragm technology
- High dosing accuracy
- Compact design
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Motor suitable for operation with frequency converter
- Continuous, manual stroke length adjustment
- Robust, metallic drive housing

## TECHNICAL DATA

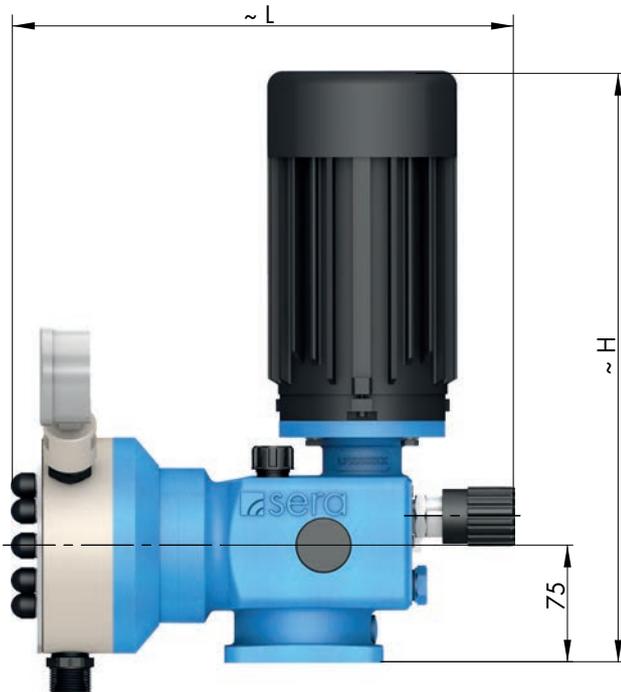
PUMP DATA			RF 409.2-... ML							
			11 ML	17 ML	30 ML	45 ML	72 ML	110 ML	150 ML	220 ML
Permissible pressure $p_{2max}$ at the pump outlet	bar	plastic	10	10	10	10	10	10	4	4
		stainless steel	20	20	16	16	10	10	4	4
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	0-11	0-17	0-30	0-45	0-72	0-110	0-150	0-220
		60 Hz	0-13	0-20	0-36	0-54	0-86	0-132	0-180	0-264
Quantity per stroke	ml/stroke (100%)		1,8	1,8	5	5	12	12	25	24
Max. suction height	mWC		3	3	3	3	3	3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,3/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter of the connecting pipes	mm	DN	10	10	10	10	15	15	15	15
Nominal stroke frequency	1/min	50 Hz	100	150	100	150	100	150	100	150
		60 Hz	120	180	120	180	120	180	120	180
Weight approx.	kg	plastic	14	14	15	15	16	16	18	18
		stainless steel	16	16	17	17	18	18	24	24

ELECTRICAL DATA		RF 409.2-... ML
Power consumption	kW	0,37
Voltage	V	230/400V 50Hz, 460V 60Hz
Frequency	Hz	50/60
Insulation class	ISO	F
Enclosure	IP	55

Flow capacity 11 l/h ... 220 l/h  
 Admissible counterpressure up to 20 bar

RF 409.2-...ML

## DIMENSIONS



	G		B	L	H		B	L	H
RF 409.2-11 ML, ...-17ML	G 3/4	PVC, PP, PVDF	270	323	365	1.4571	270	310	365
RF 409.2-30 ML, ...-45 ML	G 3/4		275	323	365		275	309	365
RF 409.2-72 ML, ...-110 ML	G 3/4		275	327	365		275	316	365
RF 409.2-150 ML, ...-220 ML	G1 1/4 *		290	344	365		290	341	365

\* PVC = G1

## CHARACTERISTIC CURVES

COMING SOON

# MULTI-LAYER DIAPHRAGM PUMPS

## BASIC DESIGNS

### PP

Pump body **PP**  
Valves **PP-FRP**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
RF409.2-11ML	16026283	Ⓜ	15007207	Ⓜ
RF409.2-17ML	16026284	Ⓜ	15007208	Ⓜ
RF409.2-30ML	16026285	Ⓜ	15007209	Ⓜ
RF409.2-45ML	16026286	Ⓜ	15007210	Ⓜ
RF409.2-72ML	16026287	Ⓜ	15007211	Ⓜ
RF409.2-110ML	16026288	Ⓜ	15007212	Ⓜ
RF409.2-150ML	16026289	Ⓜ	15007213	Ⓜ
RF409.2-220ML	16026290	Ⓜ	15007214	Ⓜ

### PVDF

Pump body **PVDF**  
Valves **PVDF-FRP**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
RF409.2-11ML	16026392	Ⓜ	
RF409.2-17ML	16026393	Ⓜ	
RF409.2-30ML	16026394	Ⓜ	
RF409.2-45ML	16026395	Ⓜ	
RF409.2-72ML	16026396	Ⓜ	
RF409.2-110ML	16026397	Ⓜ	
RF409.2-150ML	16026398	Ⓜ	
RF409.2-220ML	16026399	Ⓜ	

### PVC-U

Pump body **PVC-U**  
Valves **PVC-U**  
Valve balls **PTFE**  
Multi-layer diaphragm **PTFE**

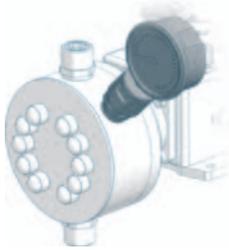
Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
RF409.2-11ML	16026384	Ⓜ	16026375	Ⓜ
RF409.2-17ML	16026385	Ⓜ	16026376	Ⓜ
RF409.2-30ML	16026386	Ⓜ	16026377	Ⓜ
RF409.2-45ML	16026387	Ⓜ	16026378	Ⓜ
RF409.2-72ML	16026388	Ⓜ	16026380	Ⓜ
RF409.2-110ML	16026389	Ⓜ	16026381	Ⓜ
RF409.2-150ML	16026390	Ⓜ	16026382	Ⓜ
RF409.2-220ML	16026391	Ⓜ	16026383	Ⓜ

### STAINLESS STEEL

Pump body **1.4571**  
Valves **1.4571/1.4581**  
Valve balls **1.4401**  
Multi-layer diaphragm **PTFE**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
RF409.2-11ML	16026401	Ⓜ	
RF409.2-17ML	16026402	Ⓜ	
RF409.2-30ML	16026403	Ⓜ	
RF409.2-45ML	16026404	Ⓜ	
RF409.2-72ML	16026405	Ⓜ	
RF409.2-110ML	16026406	Ⓜ	
RF409.2-150ML	16026407	Ⓜ	
RF409.2-220ML	16026408	Ⓜ	

## OPTIONS



### Diaphragm monitoring

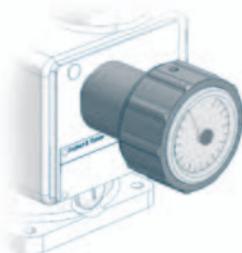
Basic version: optical diaphragm rupture indication with manometer

Surcharge (EUR)

Pressure switch IP65



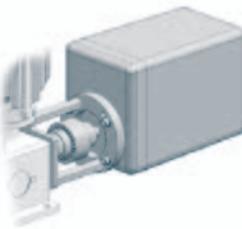
Pressure switch II2G Ex d e IIC T5 or T6



### Stroke length adjustment

Surcharge (EUR)

with position indicator



### Stroke length adjustment with actuator

(version uL/CSA on request)

Surcharge (EUR)

Actuator N C1-BA

230V  $\pm 10\%$ , 50/60Hz, 128s/10 U, 1,5Nm  
incl. mounting set



Electronic positioning controller  
ESR-INK (only integrated in N C1-BA)

Input signal 0/4 - 20mA including  
feedback signal 0/4 - 20mA



Actuator D30D-10-Ex  
II2G Ex d e IIC T4

400V, 50Hz, 10 U/min  
incl. mounting set and base plate



### Stroke frequency monitoring

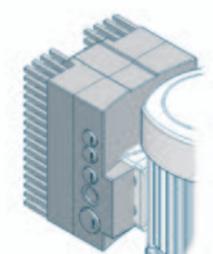
Inductive contact

Surcharge (EUR)

10 - 60 V DC, three-wire, PNP



NAMUR-design, II2G Ex ia IIC T6



### Stroke frequency adjustment, electrical

Frequency converter (Series INVEOR) mounted on drive motor  
Input 4-20 mA

Surcharge (EUR)

**1-phase**

200-230V  $\pm 10\%$ , 50/60Hz

0,37 kW



**3-phase**

400-480V  $\pm 10\%$ , 50/60Hz

0,55 kW



**Frequency converter accessories**

**Article-No.**

**Price (EUR)**

Operating module (incl. control cable)

90039445



Communication cable for parameterization via PC

90042176



# MULTI-LAYER DIAPHRAGM PUMPS

## OPTIONS

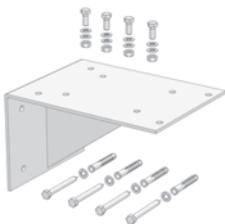


### Drive motor

- Please note: If one or several options 'drive motor' are required to fix the add. price of the drive, the calculation will be as follows: 'add. price special drive' plus the single options of the drive.
- Surcharge and availability must be requested from **sera**.

Surcharge special drive		Surcharge (EUR)
(all types)		▲
Special voltage	(all types)	
Enclosure IP65	(all types)	▲
Protection roof	(all types)	▲
VIK design	(all types)	▲
Electrical acc. to uL/CSA	(all types)	▲
<b>Single-phase alternating current motor, 230V/50Hz with capacitor</b>		
(all types)		▲
<b>IIC Ex e II T4</b>		
(all types)		▲
<b>IIC Ex d e IIC T4</b> (with PTC resistor, suitable for converter operation, 5-50Hz)		
(all types)		▲

## ACCESSORIES



### Bracket

for wall mounting (incl. mounting kit)	Article-No.	Price (EUR)
PP	90023848	▲
1.4301	90023875	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or  
 an calibration pot  
 Compact design  
 Flexible Connection  
 Maintenance-free  
 incl. glue joint (PVC-U) and  
 welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
 Seals: **FPM or EPDM**  
 max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML						
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲
RF409.2-110ML, ...-150ML, ...-220ML						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲

### ACCESSORIES



<b>Hand vacuum pump</b>	PVC/FPM	37605682	▲
(incl. 1,5m PVC-Hose d=12/21)			

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML					
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 3-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connections  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-30ML				
SL-12.1	600 mm	PTFE	37606120	▲
SL-12.1	1.000 mm	PTFE	37606117	▲
SL-12.1	1.200 mm	PTFE	37606118	▲

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 3-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606372	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606567	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606568	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606566	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606078	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606569	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606570	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606572	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606573	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606571	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606577	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37606574	▲



## ACCESSORIES

### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
G=v. Leer/tri-sure BCS 56x4 EN12708	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

#### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
RF409.2-220ML						
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
BCS 70x6 Di=50	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
G2 IBC	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
G2 universal	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
Hose set	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
Quiver	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
Control cable	Control cable for level input Cable socket M12x1, 3-pole, 5m length, loosely delivered	90031245	▲



## FITTINGS FOR THE SUCTION SIDE



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML						
<b>781.1</b>	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲
RF409.2-220ML						
<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1 1/4	PVDF/PVDF-GFK	FEP	30073018	▲



### Foot valve (plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-30ML, ...-45ML, ...-72ML, ...-110ML, ...-150ML						
<b>731</b>	8	G 3/4	PVC-U	EPDM	37601636	▲
RF409.2-72ML, ...-110ML, ...-150ML, ...-220ML						
Ⓜ			PVC-U		Ⓜ	Ⓜ



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

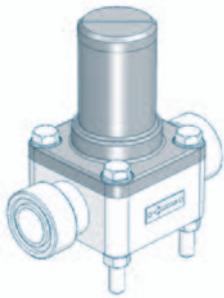
#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-30ML, ...-45ML						
<b>731</b>	8	G 3/4	1.4571	FEP	37601149	▲
RF409.2-72ML, ...-110ML, ...-150ML, ...-220ML						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

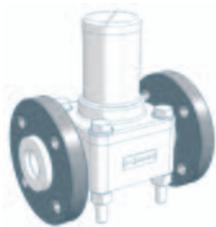
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

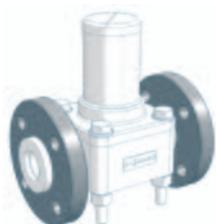
Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-45ML						
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲
RF409.2-72ML, ...-220ML						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	Ⓜ	Ⓜ
622.10	DN15	G 1	PP	EPDM	Ⓜ	Ⓜ
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲

### OPTIONS

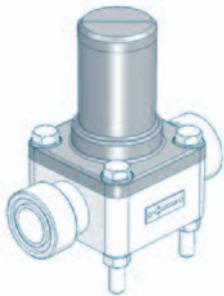


Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	Ⓜ
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

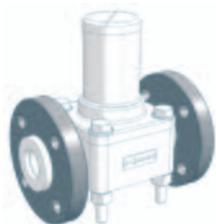
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

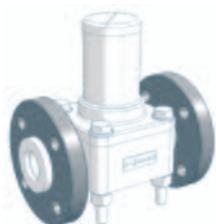
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-45ML						
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲
RF409.2-72ML, ...-220ML						
622.D	DN15	G 1	PVC-U	FPM	37600049	▲
622.D	DN15	G 1	PVC-U	EPDM	36221101	▲
622.D	DN15	G 1	PP	FPM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP	EPDM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP-GFK	FPM	37600056	▲
622.D	DN15	G 1	PP-GFK	EPDM	36221105	▲
622.D	DN15	G 1	PVDF	FEP	37602881	▲
622.D	DN15	G 1	PVDF-GFK	FEP	37601449	▲
622.D	DN15	G 1	1.4581	FEP	37600538	▲

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	Ⓜ
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Multi function valve

#### Properties

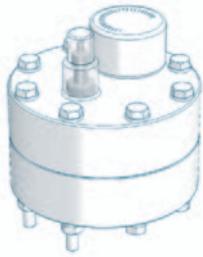
- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

#### Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- Relief valve side**
- Opening pressure: **2 up to 10 bar** (adjustable)
- Pressure keeping valve side**
- Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-45ML				
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲
RF409.2-72ML, ...-220ML				
⌚			⌚	⌚

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML						
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

### ACCESSORIES



#### Connection adapter

Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	90038082	Ⓜ Ⓜ



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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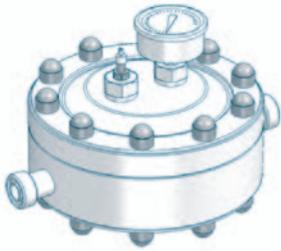


#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
RF409.2-45ML						
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲
RF409.2-72ML, ...-220ML						
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲

### ACCESSORIES



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-45ML						
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	Butyl	37603720	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	FPM	37603724	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
RF409.2-72ML, ...-110ML						
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	Butyl	37603721	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	FPM	37603725	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
RF409.2-220ML						
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	Butyl	37603722	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	FPM	37603726	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	PTFE	37606307	▲

## ACCESSORIES



### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-45ML						
<b>810.1-0,16/180</b>	G ½	180 bar	1.4571	Butyl	90008811	▲
<b>810.1-0,16/180</b>	G ½	180 bar	1.4571	FPM	90009498	▲
<b>810.1-0,16/180</b>	G ½	180 bar	1.4571	PTFE	☉	☉
RF409.2-72ML, ...-110ML						
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	Butyl	90010409	▲
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	FPM	90010983	▲
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	PTFE	☉	☉
RF409.2-220ML						
<b>810.1-0,75/140</b>	G ½	140 bar	1.4571	Butyl	37600313	▲
<b>810.1-0,75/140</b>	G ½	140 bar	1.4571	FPM	37600148	▲
<b>810.1-0,75/140</b>	G ½	140 bar	1.4571	PTFE	37606302	▲

### ACCESSORIES



#### Filling- and pressure measuring device

Design: removeable  
 Manometer d63, plastic housing, measuring system: copper alloyed  
 incl. 2,5m filling hose, connection M14x1,5

<b>0 - 25 bar</b>	37601674	▲
<b>0 - 100 bar</b>	37601673	▲
<b>0 - 250 bar</b>	30066005	▲

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

integrated injection lance  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
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RF409.2-11ML, ...-17ML, ...-45ML, ...-72ML, ...-110ML

<b>691.2</b>	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
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<b>691.2</b>	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
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<b>691.2</b>	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
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<b>691.2</b>	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲
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RF409.2-220ML



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
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RF409.2-11ML, ...-17ML, ...-45ML, ...-72ML, ...-110ML

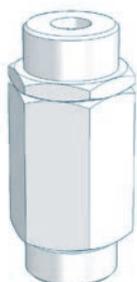
<b>691.1</b>	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲
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RF409.2-220ML

<b>693.1</b>	20	G 1 1/4	R 1 1/4	PP-GFK	EPDM	37604661	▲
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<b>693.1</b>	20	G 1 1/4	R 1 1/4	PP-GFK	FPM	37603317	▲
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<b>693.1</b>	20	G 1 1/4	R 1 1/4	PVDF-GFK	FEP	30072027	▲
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### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
------	----	-------	--------	----------	------	-------------	-------------

RF409.2-11ML, ...-17ML, ...-45ML, ...-72ML, ...-110ML

<b>691.1</b>	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲
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RF409.2-220ML

<b>692.1</b>	15	G 1	R 1	1.4571	FEP	37600669	▲
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# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Injection fitting

#### Properties

incl. injection lance for better mixing  
 Easy installation  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
 Shut-off ball valve  
 Injection lance (L=150mm)  
 max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
RF409.2-11ML, ...-17ML, ...-45ML, ...-72ML, ...-110ML							
8061.1	10	G ¾	R ½	PVC-U	EPDM	37602105	▲
8061.1	10	G ¾	R ½	PVC-U	FPM	37602106	▲
8061.1	10	G ¾	R ½	PP	EPDM	37602107	▲
8061.1	10	G ¾	R ½	PP	FPM	37602108	▲
8061.1	10	G ¾	R ½	PVDF	FPM	37602109	▲
RF409.2-220ML							
8062.1	15	G 1	R ¾	PVC-U	EPDM	37602110	▲
8062.1	15	G 1	R ¾	PVC-U	FPM	37602111	▲
8062.1	15	G 1	R ¾	PP	EPDM	37602112	▲
8062.1	15	G 1	R ¾	PP	FPM	37602113	▲
8062.1	15	G 1	R ¾	PVDF	FPM	37602114	▲

Flow capacity 11 l/h ... 220 l/h  
Admissible counterpressure up to 20 bar

RF 409.2-...ML

# MULTI-LAYER DIAPHRAGM PUMPS



## OVERVIEW

- Multi-layer diaphragm technology
- High dosing accuracy
- Compact design
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Motor suitable for operation with frequency converter
- Continuous, manual stroke length adjustment
- Robust, metallic drive housing

## TECHNICAL DATA

PUMP DATA			RF 410.2-135 ML	RF 410.2-500 ML	RF 410.2-1200 ML
Permissible pressure $p_{2max}$ at the pump outlet	bar	plastic	10	10	5 *
		stainless steel	15		
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	0-135	0-500	0-1200
		60 Hz	0-162	0-600	0-1440
Quantity per stroke	ml/stroke (100%)				
Max. suction height	mWC		3	3	3
Min./max. permissible pressure at the pump inlet	bar	$P_{1min/max}$	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		15	15	20
Nominal stroke frequency	1/min	50 Hz	97	97	97
		60 Hz	116	116	–
Weight approx.	kg	plastic	36	38	41
		stainless steel	43	46	57

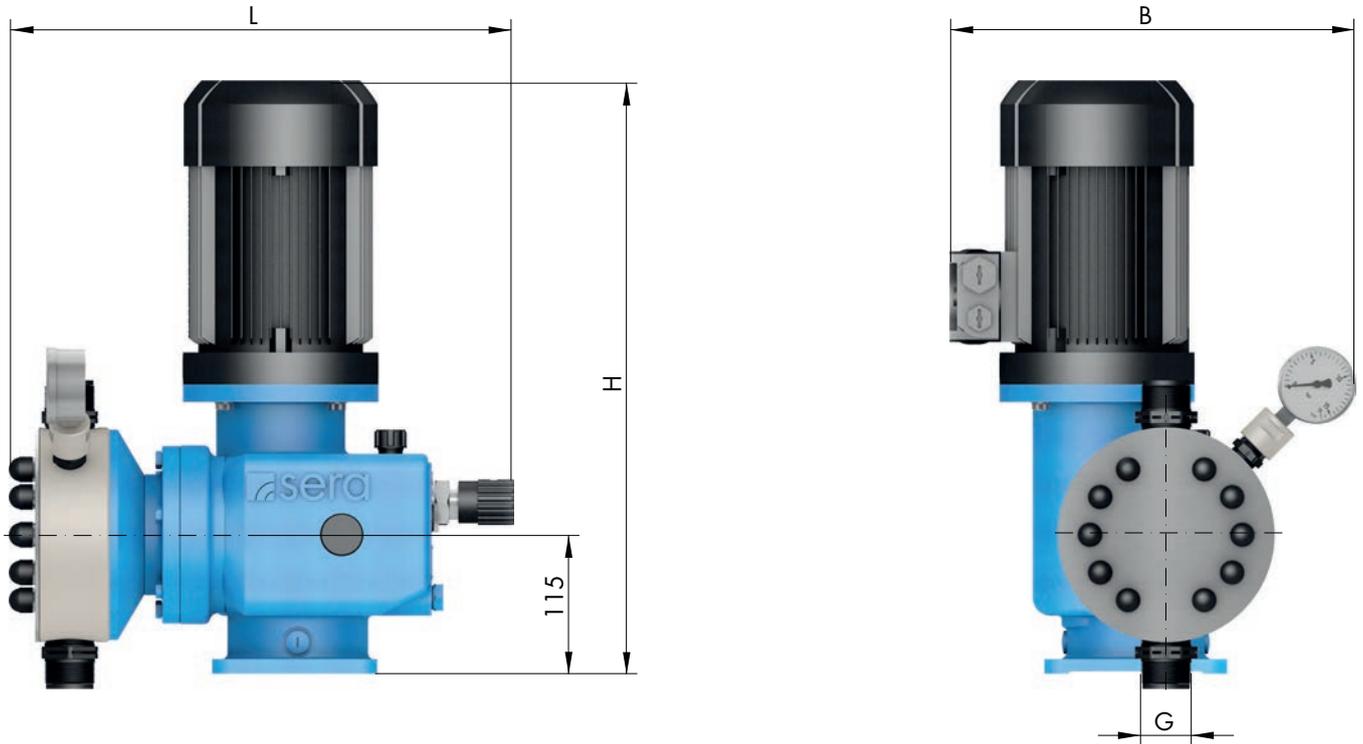
\* at 60 Hz is the permissible pressure 3,5 bar

ELECTRICAL DATA		RF 410.2-135 ML	RF 410.2-500 ML	RF 410.2-1200 ML
Power consumption	kW	0,75	1,1	1,5
Nominal voltage	V	230/400V 50Hz, 460V 60Hz		
Frequency	Hz	50/60		
Insulation class	ISO	F		
Enclosure	IP	55		

Flow capacity 135 l/h ... 1.200 l/h  
 Admissible counterpressure up to 15 bar

# RF 410.2-...ML

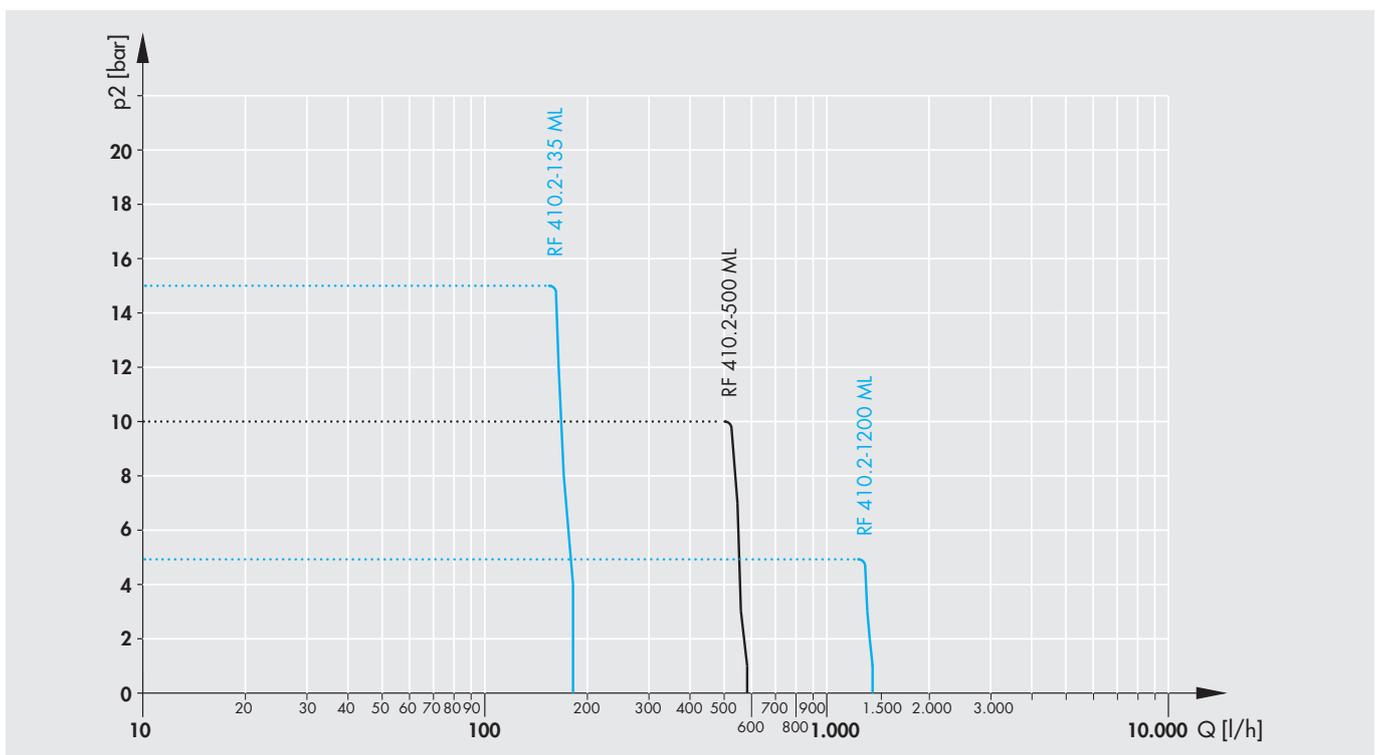
## DIMENSIONS



	G		B	L	H		B	L	H
RF 410.2-135 ML	G1¼*	PVC, PP, PVDF	335	425	530	1.4571	335	425	530
RF 410.2-500 ML	G1¼*		350	415	540		350	415	540
RF 410.2-1200 ML	G1¼		365	460	580		365	460	580

\* PVC = G1

## CHARACTERISTIC CURVES



# MULTI-LAYER DIAPHRAGM PUMPS

## BASIC DESIGNS

### PP

Pump body **PP**  
 Valves **PP-FRP**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
RF410.2-135ML	16022681	Ⓢ	16020640	Ⓢ
RF410.2-500ML	16015806	Ⓢ	16023277	Ⓢ
RF410.2-1200ML	16023839	Ⓢ	16022305	Ⓢ

### PVDF

Pump body **PVDF**  
 Valves **PVDF-FRP**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
RF410.2-135ML	16023840	Ⓢ	
RF410.2-500ML	16023591	Ⓢ	
RF410.2-1200ML	16022990	Ⓢ	

### PVC-U

Pump body **PVC-U**  
 Valves **PVC-U**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

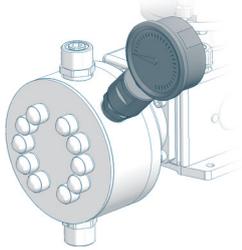
Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
RF410.2-135ML	16023842	Ⓢ	16023845	Ⓢ
RF410.2-500ML	16023843	Ⓢ	16023535	Ⓢ
RF410.2-1200ML	16023844	Ⓢ	16023846	Ⓢ

### STAINLESS STEEL

Pump body **1.4571**  
 Valves **1.4571/1.4581**  
 Valve balls **1.4401**  
 Multi-layer diaphragm **PTFE**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
RF410.2-135ML	16020416	Ⓢ	
RF410.2-500ML	16026660	Ⓢ	
RF410.2-1200ML	16021672	Ⓢ	

## OPTIONS

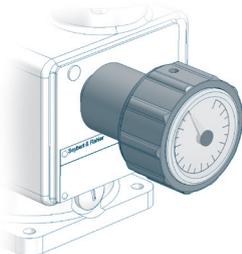


### Diaphragm monitoring

Basic version: optical diaphragm rupture indication with manometer Surcharge (EUR)

Pressure switch IP65 ▲

Pressure switch II2G Ex d e IIC T5 or T6 ▲

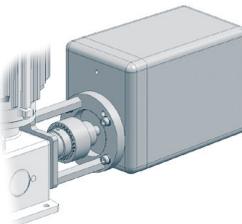


### Stroke length adjustment

Surcharge (EUR)

with position indicator RF410.2-135ML, ...-500ML ▲

RF410.2-1200ML ▲



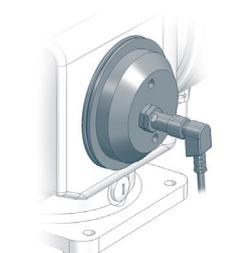
### Stroke length adjustment with actuator

(version uL/CSA on request) Surcharge (EUR)

Actuator N1S ▲  
230V, 50/60Hz, 128s/10 U, 15Nm  
Potentiometer 1 kΩ (incl. mounting set)

Electronic positioning controller ESR-NK (only integrated in N1S) ▲  
Input signal 0/4 - 20mA including  
feedback signal 0/4 - 20mA

Actuator D30D-10-Ex ▲  
II2G Ex d e IIC T4 incl. mounting set and base plate

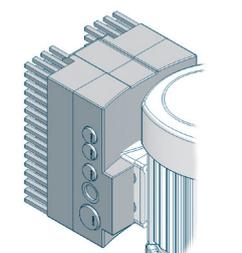


### Stroke frequency monitoring

Inductive contact Surcharge (EUR)

10 - 60 V DC, three-wire, PNP ▲

NAMUR-design, II2G Ex ia IIC T6 ▲



### Stroke frequency adjustment, electrical

Frequency converter (Series INVEOR) mounted on drive motor Surcharge (EUR)  
Input 4-20 mA

**3-phase** ▲  
400-480V ±10%, 50/60Hz 0,75 kW RF410.2-135ML

**3-phase** ▲  
400-480V ±10%, 50/60Hz 1,5 kW RF410.2-500ML, ...-1200ML

**Frequency converter accessories** Article-No. Price (EUR)

Operating module (incl. control cable) 90039445 ▲

Communication cable for parameterization via PC 90042176 ▲

# MULTI-LAYER DIAPHRAGM PUMPS

## OPTIONS



### Drive motor

- Please note: If one or several options 'drive motor' are required to fix the add. price of the drive, the calculation will be as follows: 'add. price special drive' plus the single options of the drive.
- Surcharge and availability must be requested from **sera**.

Surcharge special drive		Surcharge (EUR)
RF 410.2-135ML, ...-500ML		▲
RF 410.2-1200ML		▲
Special voltage	(all types)	⌚
Enclosure IP65	(all types)	▲
Protection roof	(all types)	▲
VIK design	(all types)	⌚
Electrical acc. to uL/CSA	(all types)	⌚

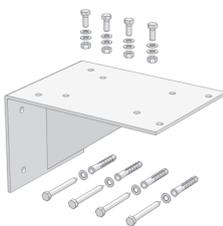
### II2G Ex e II T4

R 410.2-135ML	▲
R 410.2-500ML	▲
R 410.2-1200ML	▲

### II2G Ex d e IIC T4 (suitable for converter operation, 5-50Hz)

RF 410.2-135ML	▲
RF 410.2-500ML	▲
RF 410.2-1200ML	▲

## ACCESSORIES



### Bracket

for wall mounting (incl. mounting kit)	Article-No.	Price (EUR)
PP	90023849	▲
1.4301	90023876	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
RF410.2-135ML, ...500ML						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲
RF410.2-1200ML						
<b>MFD 1500</b>	20	G1 ¼	5 Ltr.	EPDM	37606316	▲
<b>MFD 1500</b>	20	G1 ¼	5 Ltr.	FPM	37606315	▲



### ACCESSORIES

<b>Hand vacuum pump</b>	PVC/FPM	37605682	▲
(incl. 1,5m PVC-Hose d=12/21)			



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation  
High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>783.1</b>	20	G 1 ¼	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1 ¼	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1 ¼	PVDF/PVDF-GFK	FEP	30073018	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation  
High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF410.2-135ML, ...500ML						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲
RF410.2-1200ML						
<b>733</b>	20	G 1 ¼	1.4571	FEP	37603962	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
RF410.2-135ML					
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 3-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
RF410.2-135ML						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606372	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606567	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606568	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606566	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606078	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606569	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606570	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606572	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606573	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606571	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606577	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37606574	▲



### ACCESSORIES

#### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
G=v. Leer/tri-sure BCS 56x4 EN12708	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

#### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

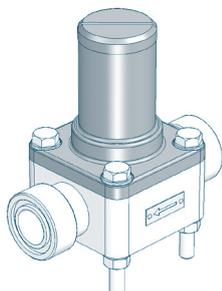
Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
RF410.2-500ML						
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
<b>BCS 70x6 Di=50</b>	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
<b>G2 IBC</b>	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
<b>G2 universal</b>	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
<b>Hose set</b>	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
<b>Quiver</b>	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
<b>Control cable</b>	Control cable for level input Cable socket M12x1, 3-pole, 5m length, loosely delivered	90031245	▲



## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

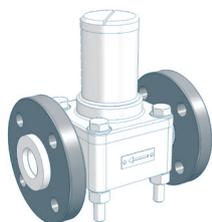
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

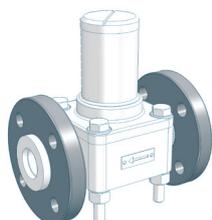
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF410.2-135ML, ...500ML						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	Ⓢ	Ⓢ
622.10	DN15	G 1	PP	EPDM	Ⓢ	Ⓢ
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲
RF410.2-1200ML						
623.10	DN20	G 1¼	PVC-U	FPM	37600009	▲
623.10	DN20	G 1¼	PVC-U	EPDM	36230101	▲
623.10	DN20	G 1¼	PP	FPM	37600016	▲
623.10	DN20	G 1¼	PP	EPDM	36230105	▲
623.10	DN20	G 1¼	PVDF	FEP	37606304	▲

### OPTIONS



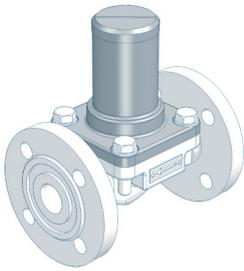
Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓢ
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
623.10	PVC	Loose flange made of PVC-U	▲
623.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓢ
623.10	PP	Loose flange made of PP with steel inlay	▲
623.10	PVDF	Loose flange made of PP with steel inlay	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve (with fixed flanges)

for overpressure protection

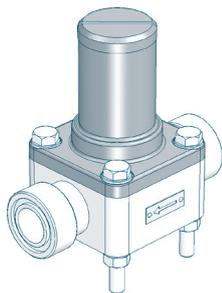
#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
RF410.2-1200ML					
<b>623.10</b>	DN20	DIN 2501	1.4581	36230104	▲
<b>623.10</b>	DN20	DIN 2501	GG	37600038	▲



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

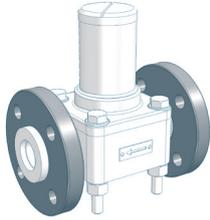
#### Basic version

Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

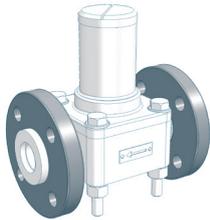
Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF410.2-135ML, ...-500ML						
<b>622.D</b>	DN15	G 1	PVC-U	FPM	37600049	▲
<b>622.D</b>	DN15	G 1	PVC-U	EPDM	36221101	▲
<b>622.D</b>	DN15	G 1	PP	FPM	⌚	⌚
<b>622.D</b>	DN15	G 1	PP	EPDM	⌚	⌚
<b>622.D</b>	DN15	G 1	PP-GFK	FPM	37600056	▲
<b>622.D</b>	DN15	G 1	PP-GFK	EPDM	36221105	▲
<b>622.D</b>	DN15	G 1	PVDF	FEP	37602881	▲
<b>622.D</b>	DN15	G 1	PVDF-GFK	FEP	37601449	▲
<b>622.D</b>	DN15	G 1	1.4581	FEP	37600538	▲
RF410.2-1200ML						
<b>623.D</b>	DN20	G 1¼	PVC-U	FPM	37600050	▲
<b>623.D</b>	DN20	G 1¼	PVC-U	EPDM	36231101	▲
<b>623.D</b>	DN20	G 1¼	PP	FPM	37600057	▲
<b>623.D</b>	DN20	G 1¼	PP	EPDM	36231105	▲
<b>623.D</b>	DN20	G 1¼	PVDF	FEP	37606309	▲

## FITTINGS FOR THE PRESSURE SIDE

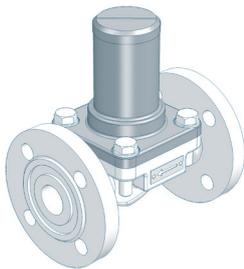
### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
623.D	PVC	Loose flange made of PVC-U	▲
623.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.D	PP	Loose flange made of PP with steel inlay	▲
623.D	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm pressure keeping valve (with fixed flanges)

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

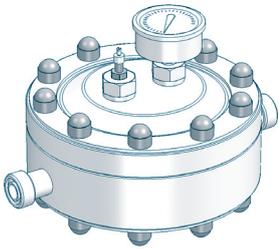
#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
RF410.2-1200ML					
623.D	DN20	DIN 2501	1.4581	36231104	▲
623.D	DN20	DIN 2501	GG	37600080	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
RF410.2-135ML						
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲
RF410.2-500ML						
①					①	①

### ACCESSORIES



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm Seals	Article-No.	Price (EUR)
RF410.2-500ML, ...-1200ML						
713.1	G 1¼	10 bar	PVC-U	EPDM	30071038	▲
713.1	G 1¼	10 bar	PVC-U	FPM	30071039	▲
713.1	G 1¼	10 bar	PP	EPDM	30071040	▲
713.1	G 1¼	10 bar	PP	FPM	30071041	▲
713.1	G 1¼	10 bar	PVDF	EPDM	30071060	▲
713.1	G 1¼	10 bar	PVDF	FPM	30071061	▲

### OPTIONS



Loose-type flanges	Design acc. to DIN 2501, incl. O-Rings	
PVC-design	Loose flange, PVC-U	DN20 ▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20 ▲

### ACCESSORIES



Bracket	Material	Article-No.	Availability
for wall mounting	PP	90010913	▲
	1.4301	90010914	▲
	Steel (color treated)	90010915	▲



Filling pump FLP 2	for filling device
with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396 ▲

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF410.2-135ML						
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	Butyl	37603721	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	FPM	37603725	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
RF410.2-500ML						
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	Butyl	37603723	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	FPM	37603727	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	PTFE	37606308	▲
RF410.2-1200ML						
☹					☹	☹

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF410.2-135ML						
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	Butyl	90010409	▲
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	FPM	90010983	▲
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	PTFE	☉	☉
RF410.2-500ML						
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	Butyl	37600314	▲
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	FPM	37600149	▲
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	PTFE	37606303	▲
RF410.2-1200ML						
☉					☉	☉

## ACCESSORIES



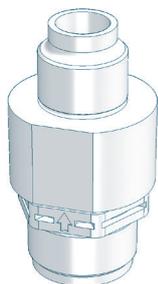
### Filling- and pressure measuring device

Design: removeable  
Manometer d63, plastic housing, measuring system: copper alloyed  
incl. 2,5m filling hose, connection M14x1,5

<b>0 - 25 bar</b>	37601674	▲
<b>0 - 100 bar</b>	37601673	▲
<b>0 - 250 bar</b>	30066005	▲

# MULTI-LAYER DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

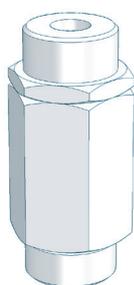
#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
<b>693.1</b>	20	G 1 ¼	R 1 ¼	PP-GFK	EPDM	37604661	▲
<b>693.1</b>	20	G 1 ¼	R 1 ¼	PP-GFK	FPM	37603317	▲
<b>693.1</b>	20	G 1 ¼	R 1 ¼	PVDF-GFK	FEP	30072027	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
RF410.2-135ML, ...-500ML							
<b>692.1</b>	15	G 1	R 1	1.4571	FEP	37600669	▲
RF410.2-1200ML							
<b>693.1</b>	20	G 1 ¼	R 1 ¼	1.4571	FEP	37600789	▲

## FITTINGS FOR THE PRESSURE SIDE



### Injection fitting

#### Properties

incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
RF410.2-135ML, ...500ML							
8062.1	15	G 1	R ¾	PVC-U	EPDM	37602110	▲
8062.1	15	G 1	R ¾	PVC-U	FPM	37602111	▲
8062.1	15	G 1	R ¾	PP	EPDM	37602112	▲
8062.1	15	G 1	R ¾	PP	FPM	37602113	▲
8062.1	15	G 1	R ¾	PVDF	FPM	37602114	▲
RF410.2-1200ML							
8063.1	20	G 1¼	R 1	PVC-U	EPDM	37602115	▲
8063.1	20	G 1¼	R 1	PVC-U	FPM	37602116	▲
8063.1	20	G 1¼	R 1	PP	EPDM	37602117	▲
8063.1	20	G 1¼	R 1	PP	FPM	37602118	▲
8063.1	20	G 1¼	R 1	PVDF	FPM	37602119	▲

# PISTON DIAPHRAGM PUMPS



## OVERVIEW

- Multi-layer diaphragm technology
- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Motor suitable for operation with frequency converter
- Continuous, manual stroke length adjustment
- High-quality materials
- Robust, metallic drive housing

## TECHNICAL DATA

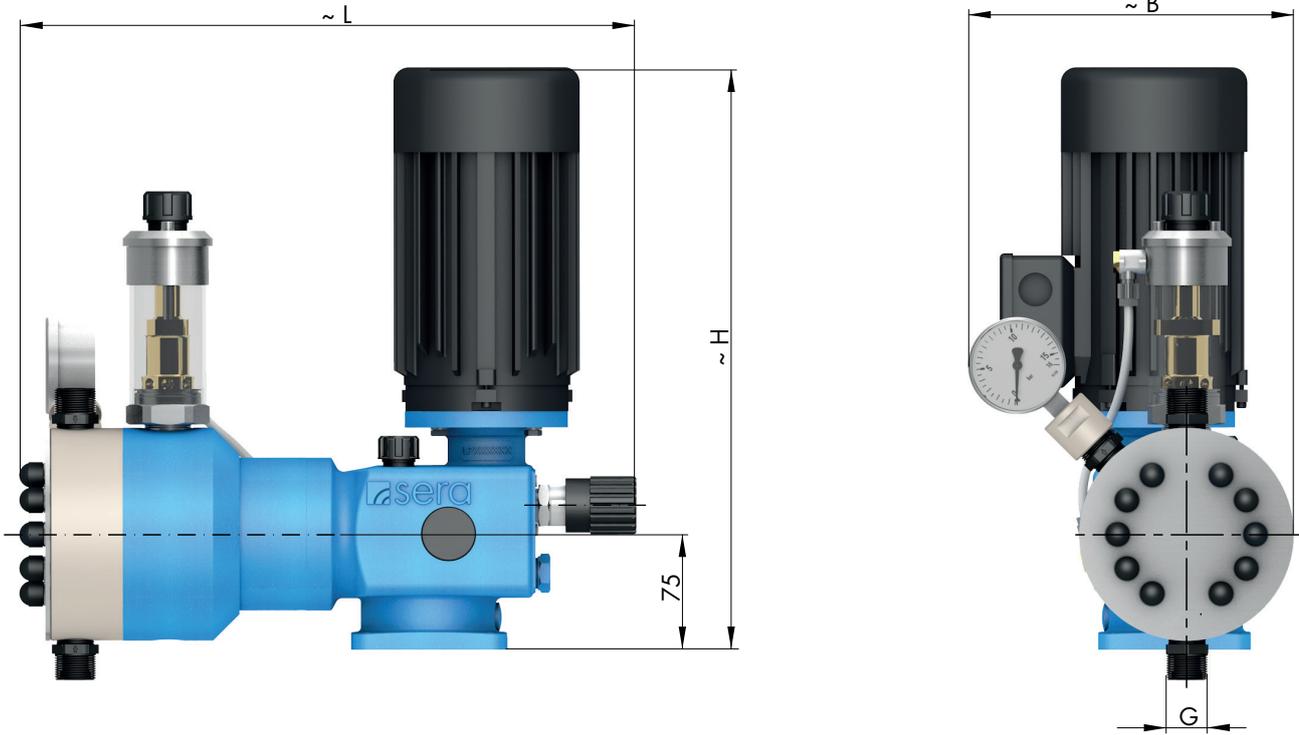
PUMP DATA			RF 409.2-... KM					
			7,5 KM	10 KM	18 KM	45 KM	95 KM	190 KM
Permissible pressure $p_{2max}$ at the pump outlet	bar	plastic	10	10	10	10	10	10
		stainless steel	80	80	70	35	20	10
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	0-7,5	0-10	0-18	0-45	0-95	0-190
		60 Hz	0-9,0	0-12	0-21	0-54	0-114	–
Quantity per stroke	ml/stroke (100%)		1,25	1,1	2,0	5,0	10,6	21,1
Max. suction height	mWC		2	2	2	3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,2/0	-0,2/0	-0,2/0	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm		10	10	10	10	15	15
Nominal stroke frequency	1/min	50 Hz	100	150	150	150	150	150
		60 Hz	120	180	180	180	180	180
Weight approx.	kg	plastic	15	15	15	18	18	18
		stainless steel	17	17	17	21	21	21

ELECTRICAL DATA		RF 409.2-... KM
Power consumption	kW	0,37
Voltage	V	230/400V 50Hz, 460V 60Hz
Frequency	Hz	50/60
Insulation class	ISO	F
Enclosure	F	55

Flow capacity 7,5 l/h ... 190 l/h  
Admissible counterpressure up to 80 bar

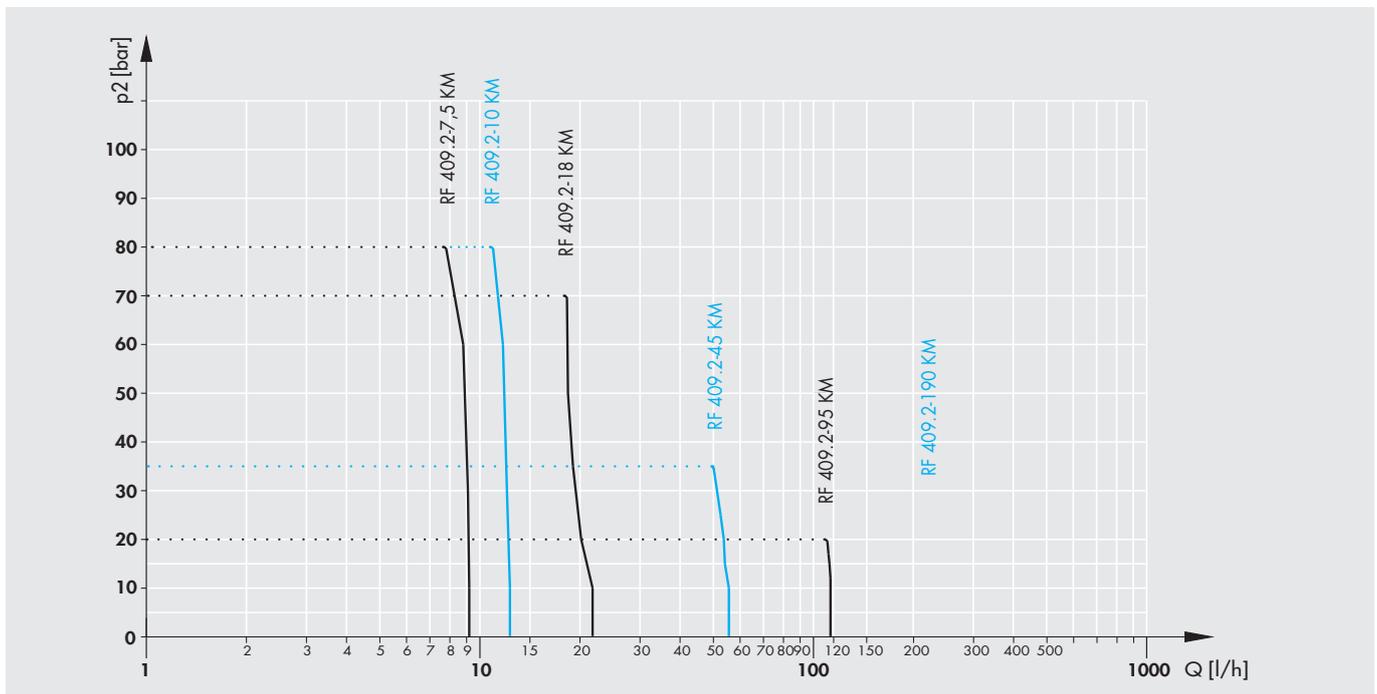
RF 409.2-...KM

## DIMENSIONS



	G		B	L	H		B	L	H
RF 409.2-7,5 KM	G 3/4	PVC, PP, PVDF	195	350	365	1.4571	195	350	365
RF 409.2-10 KM	G 3/4		195	350	365		195	350	365
RF 409.2-18 KM	G 3/4		195	350	365		195	350	365
RF 409.2-45 KM	G 3/4		210	405	365		210	405	365
RF 409.2-95 KM	G 3/4		210	405	365		210	405	365
RF 409.2-190 KM	G 3/4		210	405	365		210	405	365

## CHARACTERISTIC CURVES



# PISTON DIAPHRAGM PUMPS

## BASIC DESIGNS

### PP

Pump body **PP**  
 Valves **PP-FRP**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
RF409.2-7,5KM	16026277	①	15007239	①
RF409.2-10KM	16026278	①	15007240	①
RF409.2-18KM	16026279	①	15007241	①
RF409.2-45KM	16026280	①	15007242	①
RF409.2-95KM	16026281	①	15007243	①
RF409.2-190KM	16026282	①	15007244	①

### PVDF

Pump body **PVDF**  
 Valves **PVDF-FRP**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
RF409.2-7,5KM	16026363	①	
RF409.2-10KM	16026364	①	
RF409.2-18KM	16026365	①	
RF409.2-45KM	16026366	①	
RF409.2-95KM	16026367	①	
RF409.2-190KM	16026368	①	

### PVC-U

Pump body **PVC-U**  
 Valves **PVC-U**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

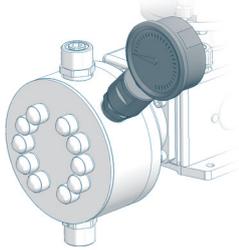
Type	EPDM Article-No.	Valve seals		Price (EUR)
		Price (EUR)	FPM Article-No.	
RF409.2-7,5KM	16026357	①	16026351	①
RF409.2-10KM	16026358	①	16026352	①
RF409.2-18KM	16026359	①	16026353	①
RF409.2-45KM	16026360	①	16026354	①
RF409.2-95KM	16026361	①	16026355	①
RF409.2-190KM	16026362	①	16026356	①

### STAINLESS STEEL

Pump body **1.4571**  
 Valves **1.4571/1.4581**  
 Valve balls **1.4401**  
 Multi-layer diaphragm **PTFE**

Type	Valve seals		Price (EUR)
	FEP-covered Article-No.	Price (EUR)	
RF409.2-7,5KM	16026369	①	
RF409.2-10KM	16026370	①	
RF409.2-18KM	16026371	①	
RF409.2-45KM	16026372	①	
RF409.2-95KM	16026373	①	
RF409.2-190KM	16026374	①	

## OPTIONS

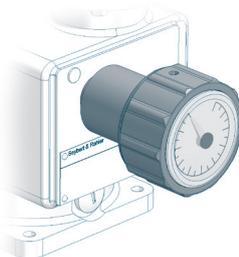


### Diaphragm monitoring

Basic version: optical diaphragm rupture indication with manometer Surcharge (EUR)

Pressure switch IP65 ▲

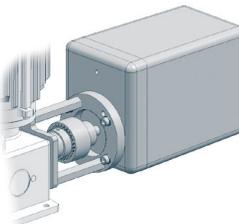
Pressure switch II2G Ex d e IIC T5 or T6 ▲



### Stroke length adjustment

Surcharge (EUR)

with position indicator ▲



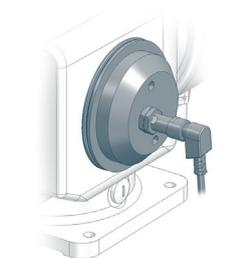
### Stroke length adjustment with actuator

(version uL/CSA on request) Surcharge (EUR)

Actuator N C1-BA 230V ±10%, 50/60Hz, 128s/10 U, 1,5Nm  
incl. mounting set ▲

Electronic positioning controller ESR-NK (only integrated in N C1-BA) Input signal 0/4 - 20mA including  
feedback signal 0/4 - 20mA ▲

Actuator D30D-10-Ex 400V, 50Hz, 10 U/min  
II2G Ex d e IIC T4 ▲



### Stroke frequency monitoring

Inductive contact Surcharge (EUR)

10 - 60 V DC, three-wire, PNP ▲

NAMUR-design, II2G Ex ia IIC T6 ▲

# PISTON DIAPHRAGM PUMPS

## OPTIONS



### Drive motor

- Please note: If one or several options 'drive motor' are required to fix the add. price of the drive, the calculation will be as follows: 'add. price special drive' plus the single options of the drive.
- Surcharge and availability must be requested from **sera**.

Surcharge special drive		Surcharge (EUR)
(all types)		▲
Special voltage	(all types)	
Enclosure IP65	(all types)	▲
Protection roof	(all types)	▲
VIK design	(all types)	▲
Electrical acc. to uL/CSA	(all types)	▲

### Single-phase alternating current motor, 230V/50Hz with capacitor

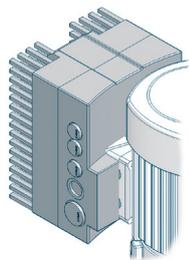
(all types)	▲
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### II2G Ex e II T4

(all types)	▲
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### II2G Ex d e IIC T4 (with PTC resistor, suitable for converter operation, 5-50Hz)

(all types)	▲
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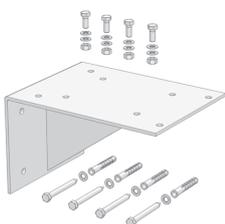
### Stroke frequency adjustment, electrical

Frequency converter (Series INVEOR) mounted on drive motor  
Input 4-20 mA

		Surcharge (EUR)
<b>1-phase</b>		
200-230V ±10%, 50/60Hz	0,37 kW	▲
<b>3-phase</b>		
400-480V ±10%, 50/60Hz	0,55 kW	▲

Frequency converter accessories	Article-No.	Price (EUR)
Operating module (incl. control cable)	90039445	▲
Communication cable for parameterization via PC	90042176	▲

## ACCESSORIES



### Bracket

	Article-No.	Price (EUR)
for wall mounting (incl. mounting kit)		
PP	90023848	▲
1.4301	90023875	▲



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 3-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connections  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
RF409.2-7,5KM, ...-10KM, ...-18KM				
SL-12.1	600 mm	PTFE	37606120	▲
SL-12.1	1.000 mm	PTFE	37606117	▲
SL-12.1	1.200 mm	PTFE	37606118	▲

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 3-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
RF410.2-135ML						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606372	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606567	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606568	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606566	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606078	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606569	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606570	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606572	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606573	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606571	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606577	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37606574	▲



### ACCESSORIES

#### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
G=v. Leer/tri-sure BCS 56x4 EN12708	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

## FITTINGS FOR THE SUCTION SIDE



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
781.1	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲



### Foot valve (plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	PVC-U	EPDM	37601636	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
731	8	G 3/4	1.4571	FEP	37601149	▲

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Multi-function device

#### Properties

Can be used as an priming aid and/or an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
RF409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM						
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲
RF409.2-95KM, ...-190KM						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲

### ACCESSORIES



#### Hand vacuum pump

PVC/FPM

(incl. 1,5m PVC-Hose d=12/21)

37605682

▲

## FITTINGS FOR THE PRESSURE SIDE



### Multi function valve

#### Properties

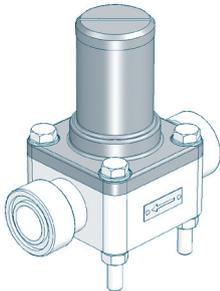
Maximum operating pressure 10 bar  
Compact design  
Easy installation  
Maintenance-free  
Venting  
Overpressure protection for dosing pumps  
Prevention of over conveyance

#### Basic version

Diaphragms: **PTFE-faced**  
Connection: **G $\frac{3}{4}$**   
**Relief valve side**  
Opening pressure: **2 up to 10 bar** (adjustable)  
**Pressure keeping valve side**  
Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
RF409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM				
<b>MFV 050</b>	PVC-U	EPDM	37600973	▲
<b>MFV 050</b>	PVC-U	FPM	37600974	▲
<b>MFV 050</b>	PP	EPDM	37600982	▲
<b>MFV 050</b>	PP	FPM	37600983	▲
RF409.2-95KM, ...-190KM				
Ⓜ			Ⓜ	Ⓜ

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

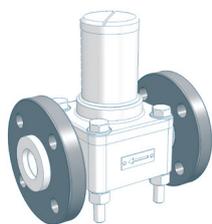
Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

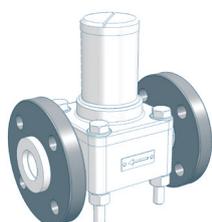
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM, ...-95KM						
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲
RF409.2-190KM						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	①	①
622.10	DN15	G 1	PP	EPDM	①	①
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲

### OPTIONS



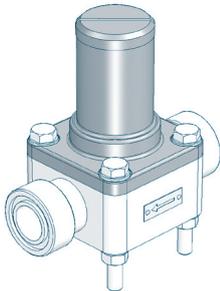
Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
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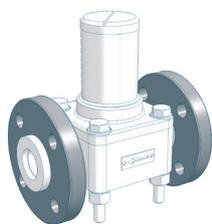
RF409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM, ...-95KM

620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲

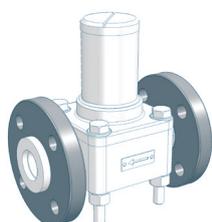
RF409.2-190KM

622.D	DN15	G 1	PVC-U	FPM	37600049	▲
622.D	DN15	G 1	PVC-U	EPDM	36221101	▲
622.D	DN15	G 1	PP	FPM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP	EPDM	Ⓜ	Ⓜ
622.D	DN15	G 1	PP-GFK	FPM	37600056	▲
622.D	DN15	G 1	PP-GFK	EPDM	36221105	▲
622.D	DN15	G 1	PVDF	FEP	37602881	▲
622.D	DN15	G 1	PVDF-GFK	FEP	37601449	▲
622.D	DN15	G 1	1.4581	FEP	37600538	▲

### OPTIONS

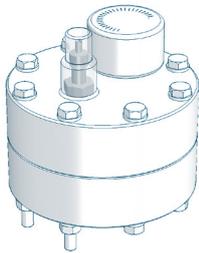


Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	Ⓜ
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	Ⓜ
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF409.2-7,5KM, ...-10KM, ...-18KM						
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

### ACCESSORIES



#### Connection adapter

Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	90038082	Ⓜ



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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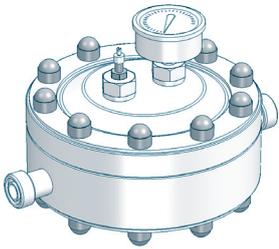


#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
RF409.2-45KM						
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲
RF409.2-95KM, ...-190KM						
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲

### ACCESSORIES



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM						
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	Butyl	37603720	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	FPM	37603724	▲
<b>810.1-0,16/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
RF409.2-95KM, ...-190KM						
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	Butyl	37603721	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	FPM	37603725	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF409.2-7,5KM, ...-10KM, ...-18KM, ...-45KM						
810.1-0,16/180	G ½	180 bar	1.4571	Butyl	90008811	▲
810.1-0,16/180	G ½	180 bar	1.4571	FPM	90009498	▲
810.1-0,16/180	G ½	180 bar	1.4571	PTFE	☉	☉
RF409.2-95KM, ...-190KM						
810.1-0,32/160	G ½	160 bar	1.4571	Butyl	90010409	▲
810.1-0,32/160	G ½	160 bar	1.4571	FPM	90010983	▲
810.1-0,32/160	G ½	160 bar	1.4571	PTFE	☉	☉

### ACCESSORIES



#### Filling- and pressure measuring device

Design: removeable  
 Manometer d63, plastic housing, measuring system: copper alloyed  
 incl. 2,5m filling hose, connection M14x1,5

0 - 25 bar	37601674	▲
0 - 100 bar	37601673	▲
0 - 250 bar	30066005	▲



### Injection fitting

#### Properties

incl. injection lance for better mixing  
 Easy installation  
 Any mounting position  
 Maintenance-free  
 High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
 Shut-off ball valve  
 Injection lance (L=150mm)  
 max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
8061.1	10	G ¾	R ½	PVC-U	EPDM	37602105	▲
8061.1	10	G ¾	R ½	PVC-U	FPM	37602106	▲
8061.1	10	G ¾	R ½	PP	EPDM	37602107	▲
8061.1	10	G ¾	R ½	PP	FPM	37602108	▲
8061.1	10	G ¾	R ½	PVDF	FPM	37602109	▲

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

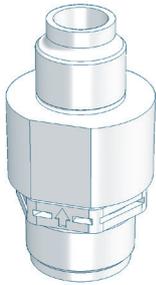
#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

integrated injection lance  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲
691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲



### Dosing valve (Plastic)

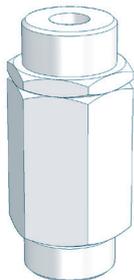
#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲

# PISTON DIAPHRAGM PUMPS



## OVERVIEW

- Multi-layer diaphragm technology
- High dosing accuracy
- Safe to run dry
- Leakage free
- Low-maintenance
- User-friendly
- Motor suitable for operation with frequency converter
- Continuous, manual stroke length adjustment
- High-quality materials
- Robust, metallic drive housing

## TECHNICAL DATA

PUMP DATA			RF 410.2-... KM					
			38 KM	76 KM	150 KM	310 KM	510 KM	850 KM
Permissible pressure $p_{2max}$ at the pump outlet	bar	plastic	10	10	10	10	10 *	8
		stainless steel	80	70	40	20	14 *	8
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	0-38	0-76	0-150	0-310	0-510	0-850
		60 Hz	0-45	0-90	0-180	0-372	0-610	0-1.020
Quantity per stroke	ml/stroke (100%)		6,5	13	25,8	53,3	87,6	186,4
Max. suction height	mWC		2	2	3	3	3	3
Min./max. permissible pressure at the pump inlet	bar	$p_{1min/max}$	-0,2/0	-0,2/0	-0,3/0	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter of the connecting pipes	mm	DN	8	8	15	15	15	20
Nominal stroke frequency	1/min	50 Hz	97	97	97	97	97	76
		60 Hz	116	116	116	116	–	92
Weight approx.	kg	plastic	54	54	54	54	54	64
		stainless steel	60	60	60	60	60	82

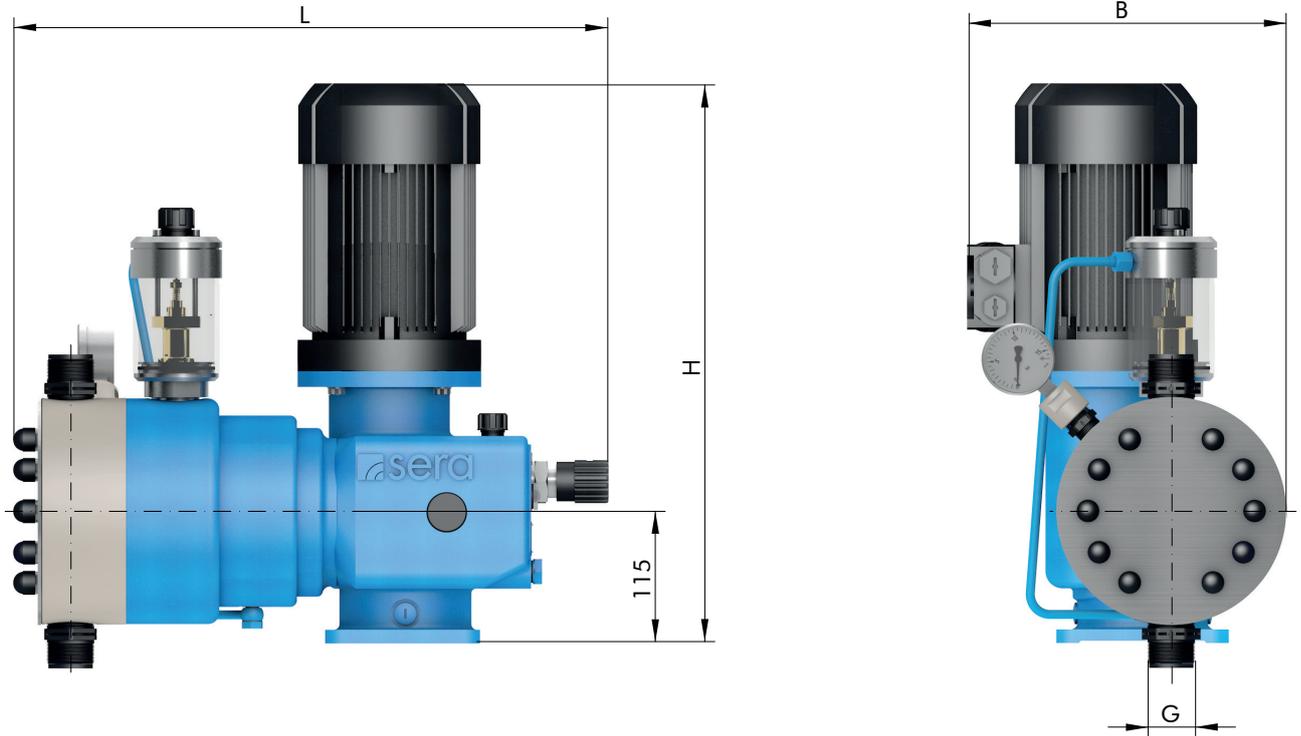
\* at 60 Hz is the permissible pressure 8 bar

ELECTRICAL DATA		RF 410.2-... KM		
		38 KM	76 KM	150 KM ... 850 KM
Power consumption	kW	0,75	1,1	1,5
Voltage	V	230/400V 50Hz, 460V 60Hz		
Frequency	Hz	50/60		
Insulation class	ISO	F		
Enclosure	F	55		

Flow capacity 38 l/h ... 1.020 l/h  
 Admissible counterpressure up to 80 bar

RF 410.2-...KM

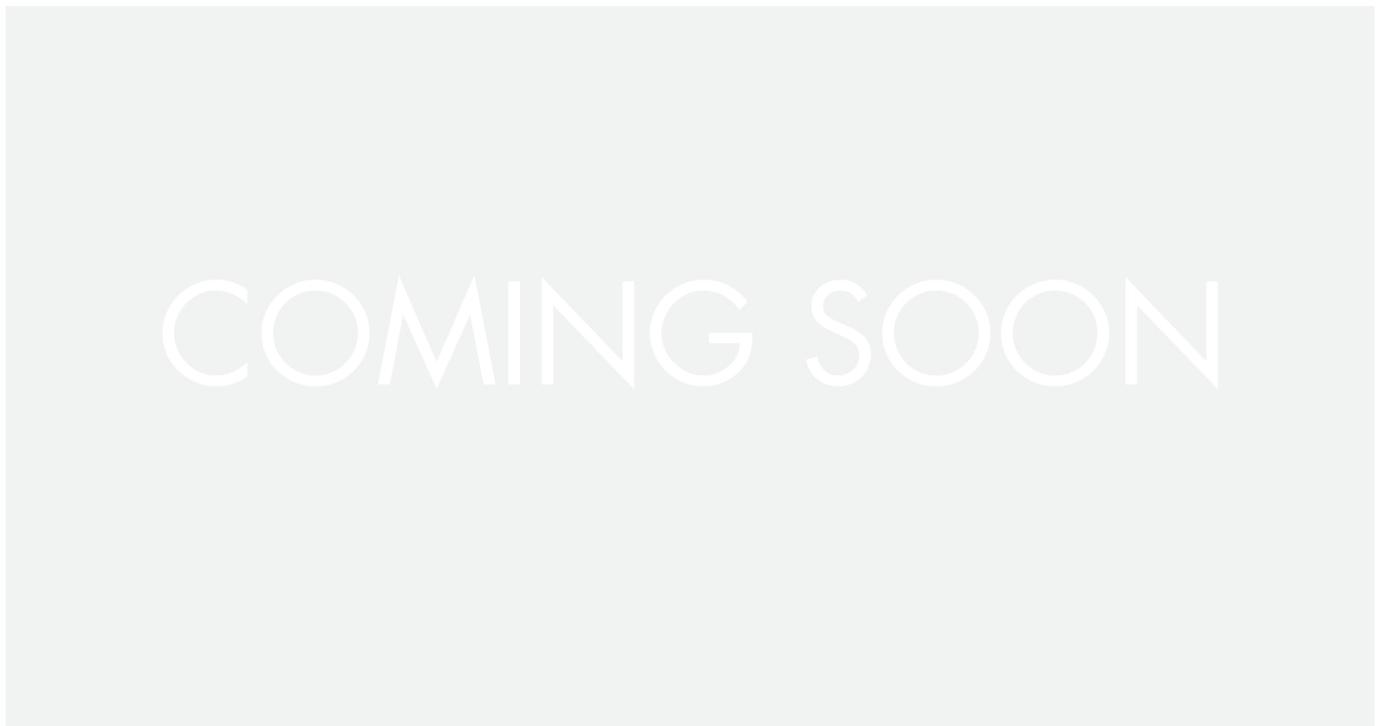
**DIMENSIONS**



	G		B	L	H		B	L	H
RF 410.2-38 KM	G 3/4	PVC, PP, PVDF	255	495	530	1.4571	255	495	530
RF 410.2-76 KM	G 3/4		260	495	540		260	495	540
RF 410.2-150 KM	G 1 1/4 *		285	533	580		285	533	580
RF 410.2-310 KM	G 1 1/4 *		285	533	580		285	533	580
RF 410.2-510 KM	G 1 1/4 *		285	533	580		285	533	580
RF 410.2-850 KM	G 1 1/4		310	580	580		310	580	580

\* PVC = G1

**CHARACTERISTIC CURVES**



# PISTON DIAPHRAGM PUMPS

## BASIC DESIGNS

### PP

Pump body **PP**  
 Valves **PP-FRP**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
RF410.2-38KM	☺	☺	16023269	☺
RF410.2-76KM	☺	☺	16023275	☺
RF410.2-150KM	16023869	☺	16023248	☺
RF410.2-310KM	16023507	☺	16023280	☺
RF410.2-510KM	16023870	☺	16023249	☺
RF410.2-850KM	16023908	☺	16019644	☺

### PVDF

Pump body **PVDF**  
 Valves **PVDF-FRP**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
RF410.2-38KM	☺	☺
RF410.2-76KM	☺	☺
RF410.2-150KM	16023871	☺
RF410.2-310KM	16023872	☺
RF410.2-510KM	16023873	☺
RF410.2-850KM	16023874	☺

### PVC-U

Pump body **PVC-U**  
 Valves **PVC-U**  
 Valve balls **PTFE**  
 Multi-layer diaphragm **PTFE**

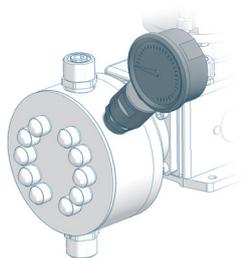
Type	Valve seals			
	EPDM Article-No.	Price (EUR)	FPM Article-No.	Price (EUR)
RF410.2-38KM	☺	☺	☺	☺
RF410.2-76KM	☺	☺	☺	☺
RF410.2-150KM	16023875	☺	16023877	☺
RF410.2-310KM	16023508	☺	16023509	☺
RF410.2-510KM	16023876	☺	16023878	☺
RF410.2-850KM	16015172	☺	16014805	☺

### STAINLESS STEEL

Pump body **1.4571**  
 Valves **1.4571/1.4581**  
 Valve balls **1.4401**  
 Multi-layer diaphragm **PTFE**

Type	Valve seals	
	FEP-covered Article-No.	Price (EUR)
RF410.2-38KM	☺	☺
RF410.2-76KM	☺	☺
RF410.2-150KM	16014699	☺
RF410.2-310KM	16023681	☺
RF410.2-510KM	16023510	☺
RF410.2-850KM	16016067	☺

## OPTIONS



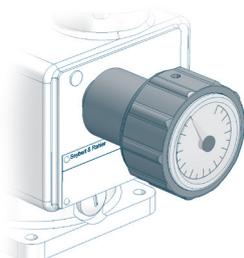
### Diaphragm monitoring

Basic version: optical diaphragm rupture indication with manometer

Surcharge (EUR)

Pressure switch IP65 ▲

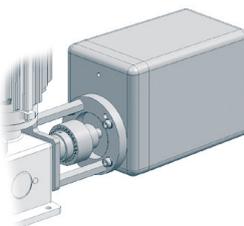
Pressure switch II2G Ex d e IIC T5 or T6 ▲



### Stroke length adjustment

Surcharge (EUR)

with position indicator ▲



### Stroke length adjustment with actuator

(version uL/CSA on request)

Surcharge (EUR)

Actuator N1S

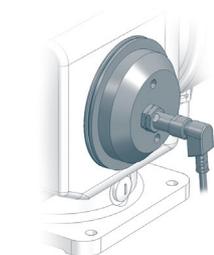
230V, 50/60Hz, 128s/10 U, 15Nm  
Potentiometer 1 kΩ (incl. mounting set) ▲

Electronic positioning controller  
ESR-NK (only integrated in N1S)

Input signal 0/4 - 20mA including  
feedback signal 0/4 - 20mA ▲

Actuator D30D-10-Ex  
II2G Ex d e IIC T4

400V, 50Hz, 10 U/min  
incl. mounting set and base plate ▲



### Stroke frequency monitoring

Inductive contact

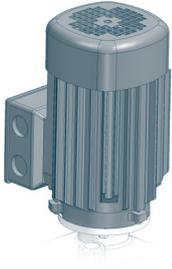
Surcharge (EUR)

10 - 60 V DC, three-wire, PNP ▲

NAMUR-design, II2G Ex ia IIC T6 ▲

# PISTON DIAPHRAGM PUMPS

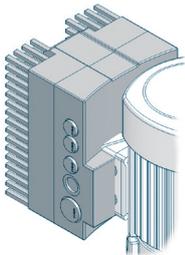
## OPTIONS



### Drive motor

- Please note: If one or several options 'drive motor' are required to fix the add. price of the drive, the calculation will be as follows: 'add. price special drive' plus the single options of the drive.
- Surcharge and availability must be requested from **sera**.

Surcharge special drive		Surcharge (EUR)
(all types)		▲
Special voltage	(all types)	Ⓜ
Enclosure IP65	(all types)	▲
Protection roof	(all types)	▲
VIK design	(all types)	Ⓜ
Electrical acc. to uL/CSA	(all types)	Ⓜ
<b>II2G Ex e II T4</b>		
(all types)		▲
<b>II2G Ex d e IIC T4</b> (with PTC resistor, suitable for converter operation, 5-50Hz)		
(all types)		▲



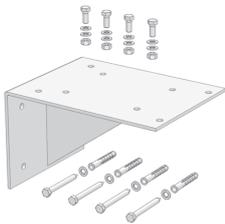
### Stroke frequency adjustment, electrical

Frequency converter (Series INVEOR) mounted on drive motor  
Input 4-20 mA

		Aufpreis (EUR)
<b>3-phase</b>	1,5 kW	▲
400-480V ±10%, 50/60Hz		

Frequency converter accessories	Article-No.	Price (EUR)
Operating module (incl. control cable)	90039445	▲
Communication cable for parameterization via PC	90042176	▲

## ACCESSORIES



Bracket		
	Article-No.	Price (EUR)
for wall mounting (incl. mounting kit)		
PP	90023849	▲
1.4301	90023876	▲



Connection pieces		
Extensive range of connection / transition pieces and dosing hoses		
Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.		
to be found in <b>CHAPTER 5</b> of this catalog, from <b>page 485</b>		

## FITTINGS FOR THE SUCTION SIDE



Multi-function device						
Properties			Basic version			
Can be used as an priming aid and/or an calibration pot			Housing: <b>PVC-U / PVC-transparent</b>			
Compact design			Seals: <b>FPM or EPDM</b>			
Flexible Connection			max. operating pressure: <b>-0,5 ... +2 bar</b>			
Maintenance-free						
incl. glue joint (PVC-U) and welding joint (PP)						
Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
RF410.2-38KM						
<b>MFD 60</b>	8	G <sup>3</sup> / <sub>4</sub>	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G <sup>3</sup> / <sub>4</sub>	0,5 Ltr.	FPM	37605864	▲
RF410.2-76KM, ...-150KM, ...-310KM, ...-510KM						
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲
RF410.2-850KM						
<b>MFD 1500</b>	20	G1 <sup>1</sup> / <sub>4</sub>	5 Ltr.	EPDM	37606316	▲
<b>MFD 1500</b>	20	G1 <sup>1</sup> / <sub>4</sub>	5 Ltr.	FPM	37606315	▲

ACCESSORIES		
<b>Hand vacuum pump</b>	PVC/FPM	37605682 ▲
(incl. 1,5m PVC-Hose d=12/21)		



# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

individual special lengths  
up to max. 1.500mm possible

Type	Length	Connection	Seals	Article-No.	Price (EUR)
RF410.2-38KM, ...-76KM, ...-150KM					
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 3-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
RF410.2-38KM, ...-76KM, ...-150KM						
SL-02	1-stage	630 mm	G 3/4	EPDM	37606372	▲
SL-02	1-stage	1.000 mm	G 3/4	EPDM	37606567	▲
SL-02	1-stage	1.200 mm	G 3/4	EPDM	37606568	▲
SL-02	1-stage	630 mm	G 3/4	FPM	37606566	▲
SL-02	1-stage	1.000 mm	G 3/4	FPM	37606078	▲
SL-02	1-stage	1.200 mm	G 3/4	FPM	37606569	▲
SL-02	2-stage	630 mm	G 3/4	EPDM	37606570	▲
SL-02	2-stage	1.000 mm	G 3/4	EPDM	37606572	▲
SL-02	2-stage	1.200 mm	G 3/4	EPDM	37606573	▲
SL-02	2-stage	630 mm	G 3/4	FPM	37606571	▲
SL-02	2-stage	1.000 mm	G 3/4	FPM	37606577	▲
SL-02	2-stage	1.200 mm	G 3/4	FPM	37606574	▲



### ACCESSORIES

#### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
G=v. Leer/tri-sure BCS 56x4 EN12708	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			📞	📞

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

#### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
RF410.2-310KM, ...-510KM						
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

### ACCESSORIES

Type	Designation	Article-No.	Price (EUR)
BCS 70x6 Di=50	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
G2 IBC	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
G2 universal	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
Hose set	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
Quiver	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
Control cable	Control cable for level input Cable socket M12x1, 3-pole, 5m length, loosely delivered	90031245	▲



Flow capacity 38 l/h ... 1.020 l/h  
Admissible counterpressure up to 80 bar

# RF 410.2-...KM



## Foot valve (Plastic)

### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF410.2-150KM, ...-310KM, ...-510KM						
<b>783.1</b>	20	G 1¼	PP/PP-GFK	EPDM	37600552	▲
<b>783.1</b>	20	G 1¼	PP/PP-GFK	FPM	37600553	▲
<b>783.1</b>	20	G 1¼	PVDF/PVDF-GFK	FEP	30073018	▲

RF410.2-850KM



## Foot valve (Stainless steel)

### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

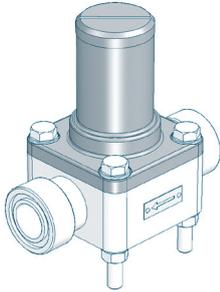
### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
RF410.2-150KM, ...-310KM, ...-510KM						
<b>732</b>	15	G 1	1.4571	FEP	37603325	▲
RF410.2-850KM						
<b>733</b>	20	G 1¼	1.4571	FEP	37603962	▲

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

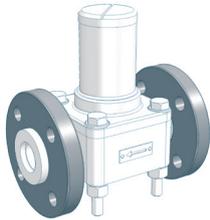
#### Basic version

Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

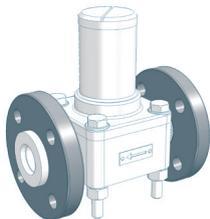
Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF410.2-38KM						
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲
RF410.2-76KM, ...-150KM, ...-310KM, ...-510KM						
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	①	①
622.10	DN15	G 1	PP	EPDM	①	①
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲
RF410.2-850KM						
623.10	DN20	G 1 1/4	PVC-U	FPM	37600009	▲
623.10	DN20	G 1 1/4	PVC-U	EPDM	36230101	▲
623.10	DN20	G 1 1/4	PP	FPM	37600016	▲
623.10	DN20	G 1 1/4	PP	EPDM	36230105	▲
623.10	DN20	G 1 1/4	PVDF	FEP	37606304	▲

## FITTINGS FOR THE PRESSURE SIDE

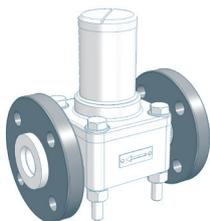
### OPTIONS



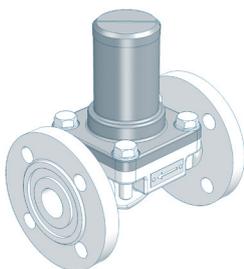
Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
623.10	PVC	Loose flange made of PVC-U	▲
623.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.10	PP	Loose flange made of PP with steel inlay	▲
623.10	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm relief valve (with fixed flanges)

for overpressure protection

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

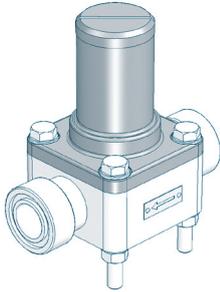
#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
RF410.2-850KM					
623.10	DN20	DIN 2501	1.4581	36230104	▲
623.10	DN20	DIN 2501	GG	37600038	▲

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

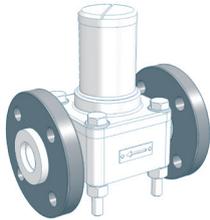
#### Basic version

Valve body: **PVC-U, 1.4581, PP or PVDF**  
Diaphragm: **PTFE-faced**

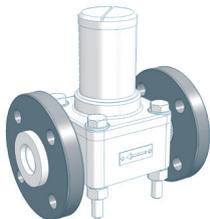
Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
RF410.2-38KM						
<b>620.D</b>	DN8	G 3/4	PVC-U	FPM	37600048	▲
<b>620.D</b>	DN8	G 3/4	PVC-U	EPDM	36201101	▲
<b>620.D</b>	DN8	G 3/4	PP	FPM	37600055	▲
<b>620.D</b>	DN8	G 3/4	PP	EPDM	36201105	▲
<b>620.D</b>	DN8	G 3/4	PVDF	FEP	37601827	▲
<b>620.D</b>	DN8	G 3/4	1.4581	FEP	37600525	▲
RF410.2-150KM, ...-310KM, ...-510KM						
<b>622.D</b>	DN15	G 1	PVC-U	FPM	37600049	▲
<b>622.D</b>	DN15	G 1	PVC-U	EPDM	36221101	▲
<b>622.D</b>	DN15	G 1	PP	FPM	Ⓢ	Ⓢ
<b>622.D</b>	DN15	G 1	PP	EPDM	Ⓢ	Ⓢ
<b>622.D</b>	DN15	G 1	PP-GFK	FPM	37600056	▲
<b>622.D</b>	DN15	G 1	PP-GFK	EPDM	36221105	▲
<b>622.D</b>	DN15	G 1	PVDF	FEP	37602881	▲
<b>622.D</b>	DN15	G 1	PVDF-GFK	FEP	37601449	▲
<b>622.D</b>	DN15	G 1	1.4581	FEP	37600538	▲
RF410.2-850KM						
<b>623.D</b>	DN20	G 1 1/4	PVC-U	FPM	37600050	▲
<b>623.D</b>	DN20	G 1 1/4	PVC-U	EPDM	36231101	▲
<b>623.D</b>	DN20	G 1 1/4	PP	FPM	37600057	▲
<b>623.D</b>	DN20	G 1 1/4	PP	EPDM	36231105	▲
<b>623.D</b>	DN20	G 1 1/4	PVDF	FEP	37606309	▲

## FITTINGS FOR THE PRESSURE SIDE

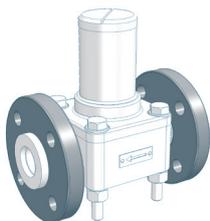
### OPTIONS



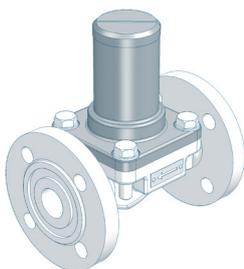
Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	①
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲



Type	Design	Loose flange	Surcharge [EUR]
623.D	PVC	Loose flange made of PVC-U	▲
623.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.D	PP	Loose flange made of PP with steel inlay	▲
623.D	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm pressure keeping valve (with fixed flanges)

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

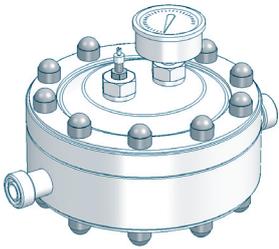
#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
RF410.2-850KM					
623.D	DN20	DIN 2501	1.4581	36231104	▲
623.D	DN20	DIN 2501	GG	37600080	▲

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
RF410.2-38KM						
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲
RF410.2-76KM, ...-150KM, ...-310KM, ...-510KM						
723.1	G 1 1/4	10 bar	PVC-U	EPDM	37601002	▲
723.1	G 1 1/4	10 bar	PVC-U	FPM	30100011	▲
723.1	G 1 1/4	10 bar	PP	EPDM	37603271	▲
723.1	G 1 1/4	10 bar	PP	FPM	30100012	▲
723.1	G 1 1/4	10 bar	PVDF	FEP	37600918	▲

### ACCESSORIES



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

721.2

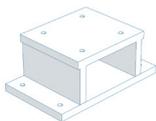
#### Retaining clamp



(2 Piece each pulsation damper)	PP	d 25	90036934	▲
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723.1

#### Bracket



for wall mounting	PP	90011722	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm Seals	Article-No.	Price (EUR)
RF410.2-850KM						
713.1	G 1¼	10 bar	PVC-U	EPDM	30071038	▲
713.1	G 1¼	10 bar	PVC-U	FPM	30071039	▲
713.1	G 1¼	10 bar	PP	EPDM	30071040	▲
713.1	G 1¼	10 bar	PP	FPM	30071041	▲
713.1	G 1¼	10 bar	PVDF	EPDM	30071060	▲
713.1	G 1¼	10 bar	PVDF	FPM	30071061	▲

### OPTIONS



Loose-type flanges	Design acc. to DIN 2501, incl. O-Rings	
PVC-design	Loose flange, PVC-U	DN20 ▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20 ▲

### ACCESSORIES



Bracket	Material	Article-No.	Availability
for wall mounting	PP	90010913	▲
	1.4301	90010914	▲
	Steel (color treated)	90010915	▲



Filling pump FLP 2	for filling device
with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396 ▲

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF410.2-38KM						
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	Butyl	37603721	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	FPM	37603725	▲
<b>810.1-0,32/10</b>	G ½	10 bar	1.4571	PTFE	☉	☉
RF410.2-150KM, ...-310KM, ...-510KM						
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	Butyl	37603722	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	FPM	37603726	▲
<b>810.1-0,75/10</b>	G ½	10 bar	1.4571	PTFE	37606307	▲
RF410.2-850KM						
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	Butyl	37603723	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	FPM	37603727	▲
<b>810.1-2,0/10</b>	G ¾	10 bar	1.4571	PTFE	37606308	▲

### ACCESSORIES

#### Filling- and pressure measuring device

(mounted on pulsation damper)



Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲

#### Filling pump FLP 2 for filling device



with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
RF410.2-38KM						
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	Butyl	90010409	▲
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	FPM	90010983	▲
<b>810.1-0,32/160</b>	G ½	160 bar	1.4571	PTFE	☉	☉
RF410.2-76KM, ...-150KM, ...-310KM, ...-510KM						
<b>810.1-0,75/140</b>	G ½	140 bar	1.4571	Butyl	37600313	▲
<b>810.1-0,75/140</b>	G ½	140 bar	1.4571	FPM	37600148	▲
<b>810.1-0,75/140</b>	G ½	140 bar	1.4571	PTFE	37606302	▲
RF410.2-850KM						
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	Butyl	37600314	▲
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	FPM	37600149	▲
<b>810.1-2,0/100</b>	G ¾	100 bar	1.4571	PTFE	37606303	▲

### ACCESSORIES



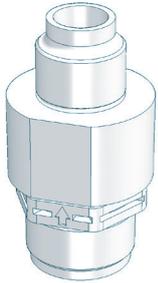
#### Filling- and pressure measuring device

Design: removeable  
Manometer d63, plastic housing, measuring system: copper alloyed  
incl. 2,5m filling hose, connection M14x1,5

<b>0 - 25 bar</b>	37601674	▲
<b>0 - 100 bar</b>	37601673	▲
<b>0 - 250 bar</b>	30066005	▲

# PISTON DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Dosing valve (Plastic)

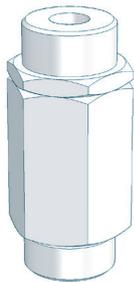
#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
RF410.2-38KM							
<b>691.1</b>	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲
RF410.2-76KM, ...-150KM, ...-310KM, ...-510KM							
<b>693.1</b>	20	G 1 1/4	R 1 1/4	PP-GFK	EPDM	37604661	▲
<b>693.1</b>	20	G 1 1/4	R 1 1/4	PP-GFK	FPM	37603317	▲
<b>693.1</b>	20	G 1 1/4	R 1 1/4	PVDF-GFK	FEP	30072027	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
RF410.2-38KM							
<b>691.1</b>	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲
RF410.2-76KM, ...-150KM, ...-310KM, ...-510KM							
<b>692.1</b>	15	G 1	R 1	1.4571	FEP	37600669	▲
RF410.2-850KM							
<b>693.1</b>	20	G 1 1/4	R 1 1/4	1.4571	FEP	37600789	▲

## FITTINGS FOR THE PRESSURE SIDE



### Injection fitting

#### Properties

incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
RF410.2-38KM							
8061.1	10	G 3/4	R 1/2	PVC-U	EPDM	37602105	▲
8061.1	10	G 3/4	R 1/2	PVC-U	FPM	37602106	▲
8061.1	10	G 3/4	R 1/2	PP	EPDM	37602107	▲
8061.1	10	G 3/4	R 1/2	PP	FPM	37602108	▲
8061.1	10	G 3/4	R 1/2	PVDF	FPM	37602109	▲
RF410.2-76KM, ...-150KM, ...-310KM, ...-510KM							
8062.1	15	G 1	R 3/4	PVC-U	EPDM	37602110	▲
8062.1	15	G 1	R 3/4	PVC-U	FPM	37602111	▲
8062.1	15	G 1	R 3/4	PP	EPDM	37602112	▲
8062.1	15	G 1	R 3/4	PP	FPM	37602113	▲
8062.1	15	G 1	R 3/4	PVDF	FPM	37602114	▲
RF410.2-850KM							
8063.1	20	G 1 1/4	R 1	PVC-U	EPDM	37602115	▲
8063.1	20	G 1 1/4	R 1	PVC-U	FPM	37602116	▲
8063.1	20	G 1 1/4	R 1	PP	EPDM	37602117	▲
8063.1	20	G 1 1/4	R 1	PP	FPM	37602118	▲
8063.1	20	G 1 1/4	R 1	PVDF	FPM	37602119	▲

# PISTON PUMPS



## OVERVIEW

- Wide pressure range
- High operational reliability
- High dosing accuracy
- Low-maintenance
- User-friendly
- Integrateable in automatic processes
- Continuous, manual stroke length adjustment
- Motor suitable for operation with frequency converter
- High-quality materials
- Robust, metallic drive housing

## TECHNICAL DATA

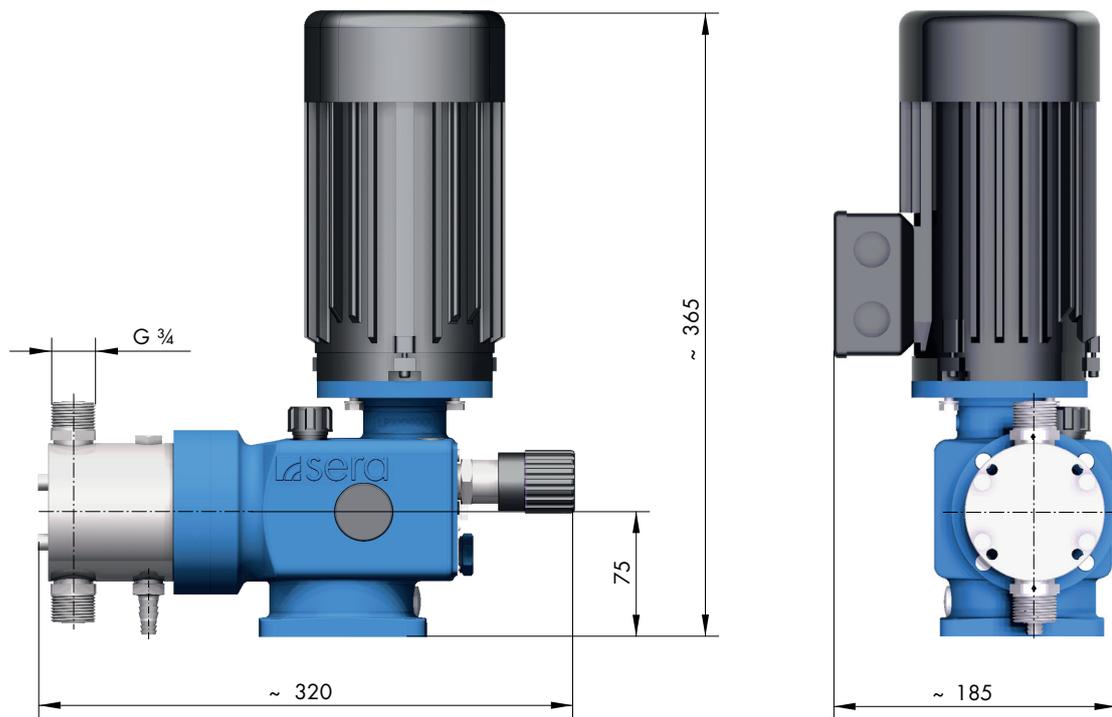
PUMP DATA		RF 409.2-8 K	RF 409.2-12 K	RF 409.2-18 K
Permissible pressure $p_{2max}$ at the pump outlet	bar	140	140	80
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	8	12
		60 Hz	10	14
Quantity per stroke	ml/stroke (100%)	1,3	1,3	3,0
Max. suction height	mWC	3	3	3
Min./max. permissible pressure at the pump inlet	bar $p_{1min/max}$	-0,3/0	-0,3/0	-0,3/0
Recommended nominal diameter DN of the connecting pipes	mm	8	8	8
Nominal stroke frequency	1/min	50 Hz	100	150
		60 Hz	120	180
Weight approx	kg	12	12	12

ELECTRICAL DATA		RF 409.2-... K
Power consumption	kW	0,37
Voltage	V	230/400V 50Hz, 460V 60Hz
Frequency	Hz	50/60
Protection category	IP	55

Flow capacity 8 l/h ... 22 l/h  
Admissible counterpressure up to 140 bar

RF 409.2-...K

## DIMENSIONS



## CHARACTERISTIC CURVES

COMING SOON

# PISTON PUMPS

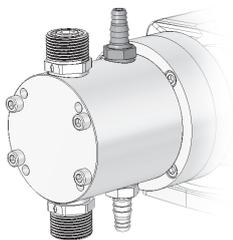
## BASIC DESIGNS

### STAINLESS STEEL

Pump body **1.4122V**  
 Valves **1.4571/1.4581**  
 Valve balls **1.4401**  
 Kolben **1.4571**  
 Kolbendichtung **PE**

Type	Valve seals	Price (EUR)
	EPDM Article-No.	
RF409.2-8 K	15007245	①
RF409.2-12 K	15007246	①
RF409.2-18 K	15007247	①

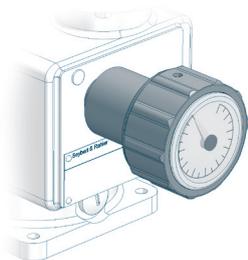
## OPTIONS



### Flushing joint

Surcharge (EUR)

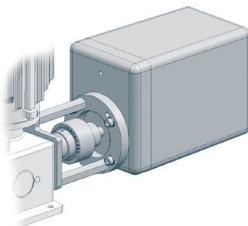
additional flushing joint (with hose nozzle d=10mm) ▲



### Stroke length adjustment

Surcharge (EUR)

with position indicator ▲



### Stroke length adjustment with actuator

(version uL/CSA on request)

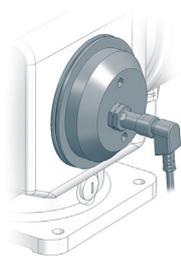
Surcharge (EUR)

Actuator N C1-BA 230V ±10%, 50/60Hz, 128s/10 U, 1,5Nm  
incl. mounting set ▲

Electronic positioning controller  
ESR-NK (only integrated in N C1-BA) Input signal 0/4 - 20mA including  
feedback signal 0/4 - 20mA ▲

Actuator D30D-10-Ex II2G Ex d e IIC T4 400V, 50Hz, 10 U/min  
incl. mounting set and base plate ▲

## OPTIONS



### Stroke frequency monitoring

Inductive contact	<b>Surcharge (EUR)</b>
10 - 60 V DC, three-wire, PNP	▲
NAMUR-design, II2G Ex ia IIC T6	▲



### Drive motor

- Please note: If one or several options 'drive motor' are required to fix the add. price of the drive, the calculation will be as follows: 'add. price special drive' plus the single options of the drive.
- Surcharge and availability must be requested from **sera**.

<b>Surcharge special drive</b>	<b>Surcharge (EUR)</b>
(all types)	▲
Special voltage (all types)	①
Enclosure IP65 (all types)	▲
Protection roof (all types)	▲
VIK design (all types)	Ⓜ
Electrical acc. to uL/CSA (all types)	Ⓜ

### Single-phase alternating current motor, 230V/50Hz with capacitor

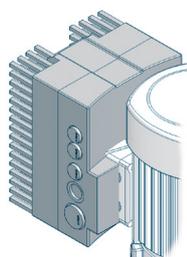
(all types)	▲
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### II2G Ex e II T4

(all types)	▲
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### II2G Ex d e IIC T4 (with PTC resistor, suitable for converter operation, 5-50Hz)

(all types)	▲
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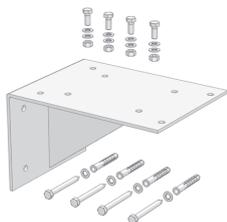
### Stroke frequency adjustment, electrical

Frequency converter (Series INVEOR) mounted on drive motor Input 4-20 mA	<b>Surcharge (EUR)</b>
<b>1-phase</b> 200-230V ±10%, 50/60Hz	0,37 kW ▲
<b>3-phase</b> 400-480V ±10%, 50/60Hz	0,55 kW ▲

Frequency converter accessories	Article-No.	Price (EUR)
Operating module (incl. control cable)	90039445	▲
Communication cable for parameterization via PC	90042176	▲

# PISTON PUMPS

## ACCESSORIES



### Bracket

for wall mounting (incl. mounting kit)

**Article-No.**

**Price (EUR)**

PP

90023848



1.4301

90023875



### Connection pieces

Extensive range of connection / transition pieces and dosing hoses

Inserts and pipe sockets with union nuts, flange connections, hose screw connections, hose nozzles as well as dosing hoses and accessories.

to be found in **CHAPTER 5** of this catalog, from **page 485**

## FITTINGS FOR THE SUCTION SIDE



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 3-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connections  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **14 l/h (4/6) ... 35 l/h (6/12)**

Type	Length	Seals	Article-No.	Price (EUR)
SL-12.1	600 mm	PTFE	37606120	▲
SL-12.1	1.000 mm	PTFE	37606117	▲
SL-12.1	1.200 mm	PTFE	37606118	▲

# PISTON PUMPS

## FITTINGS FOR THE SUCTION SIDE



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 3-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
SL-02	1-stage	630 mm	G ¾	EPDM	37606372	▲
SL-02	1-stage	1.000 mm	G ¾	EPDM	37606567	▲
SL-02	1-stage	1.200 mm	G ¾	EPDM	37606568	▲
SL-02	1-stage	630 mm	G ¾	FPM	37606566	▲
SL-02	1-stage	1.000 mm	G ¾	FPM	37606078	▲
SL-02	1-stage	1.200 mm	G ¾	FPM	37606569	▲
SL-02	2-stage	630 mm	G ¾	EPDM	37606570	▲
SL-02	2-stage	1.000 mm	G ¾	EPDM	37606572	▲
SL-02	2-stage	1.200 mm	G ¾	EPDM	37606573	▲
SL-02	2-stage	630 mm	G ¾	FPM	37606571	▲
SL-02	2-stage	1.000 mm	G ¾	FPM	37606577	▲
SL-02	2-stage	1.200 mm	G ¾	FPM	37606574	▲

## ACCESSORIES



### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
G=v. Leer/tri-sure BCS 56x4 EN12708	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			📞	📞

## FITTINGS FOR THE SUCTION SIDE



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>781.1</b>	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲



### Foot valve (plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>731</b>	8	G 3/4	PVC-U	EPDM	37601636	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>731</b>	8	G 3/4	1.4571	FEP	37601149	▲



### Multi-function device

#### Properties

Can be used as an priming aid and/or  
an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and  
welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
<b>MFD 60</b>	8	G3/4	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G3/4	0,5 Ltr.	FPM	37605864	▲



### ACCESSORIES

#### Hand vacuum pump

PVC/FPM

37605682

(incl. 1,5m PVC-Hose d=12/21)

▲

# PISTON PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	⊘	⊘

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
---------------------------------------------------------------------	----------	---

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/180	G ½	180bar	1.4571	Butyl	90608820	▲
810.1-0,16/180	G ½	180bar	1.4571	FPM	90609728	▲
810.1-0,16/180	G ½	180bar	1.4571	PTFE	⊘	⊘

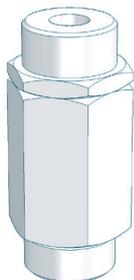
### ACCESSORIES



#### Filling- and pressure measuring device

Design: removeable  
Manometer d63, plastic housing, measuring system: copper alloyed  
incl. 2,5m filling hose, connection M14x1,5

0 - 25 bar	37601674	▲
0 - 100 bar	37601673	▲
0 - 250 bar	30066005	▲



### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G ¾	R ½	1.4571	FEP	37600493	▲



# FEEDING PUMPS



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centrifugalPUMP

M Series

**412**

MP Series

**440**



**High performance hose pumps**

I Series

**456**

# FEEDING PUMPS



## OVERVIEW

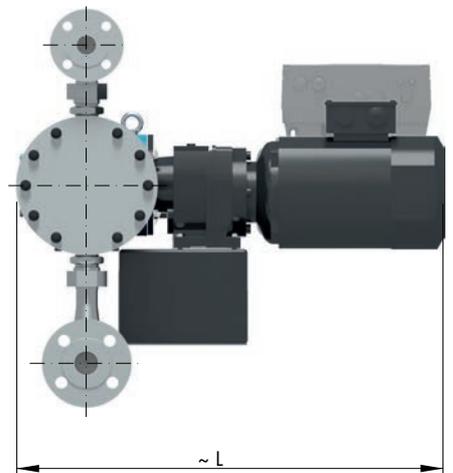
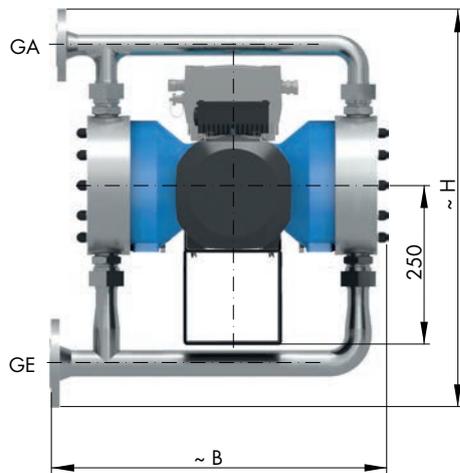
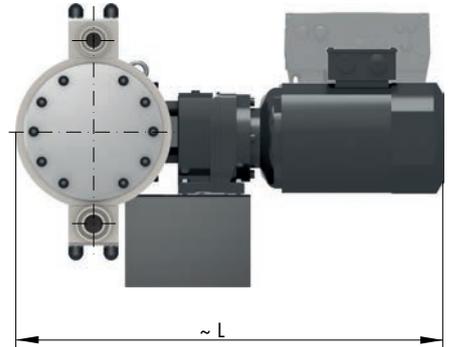
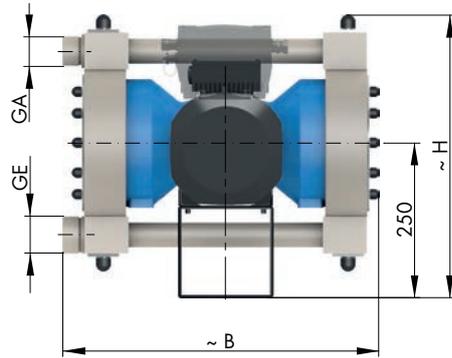
- Safe to run dry
- Leakage free
- Low-maintenance
- Low operating costs
- High-quality materials
- User-friendly
- Integrateable in automatic processes
- Manual stroke frequency adjustment (Type ZXRI)
- Compact design
- Robust, metallic drive housing

## TECHNICAL DATA

PUMP DATA			ZX..411.3-2200e		ZX..411.3-2600e		ZX..411.3-3100e		
			ZXM/RF	ZXRI	ZXM/RF	ZXRI	ZXM/RF	ZXRI	
Permissible pressure $p_{2max}$ at the pump outlet	bar	4							
Nominal capacity QN at $p_{2max}$	l/h	50 Hz	2.200	230-2.200	2.600	230-2.600	3.100	230-3.100	
		60 Hz	2.640	230-2.200	3.120	230-2.600	–	230-3.100	
Max. suction height	mWC	8							
Min./max. permissible pressure at the pump inlet	$p_{1min/max}$ bar	-0,8/0							
Recommended nominal diameter DN of the connecting pipes	mm	Inlet	32						
		Outlet	25						
Nominal stroke frequency	1/min	50 Hz	94	94	105	113	131	131	
		60 Hz	113	94	126	113	–	131	
Weight approx.	kg	plastic	75	75	75	80	80	80	
		stainless steel	95	100	100	107	106	109	

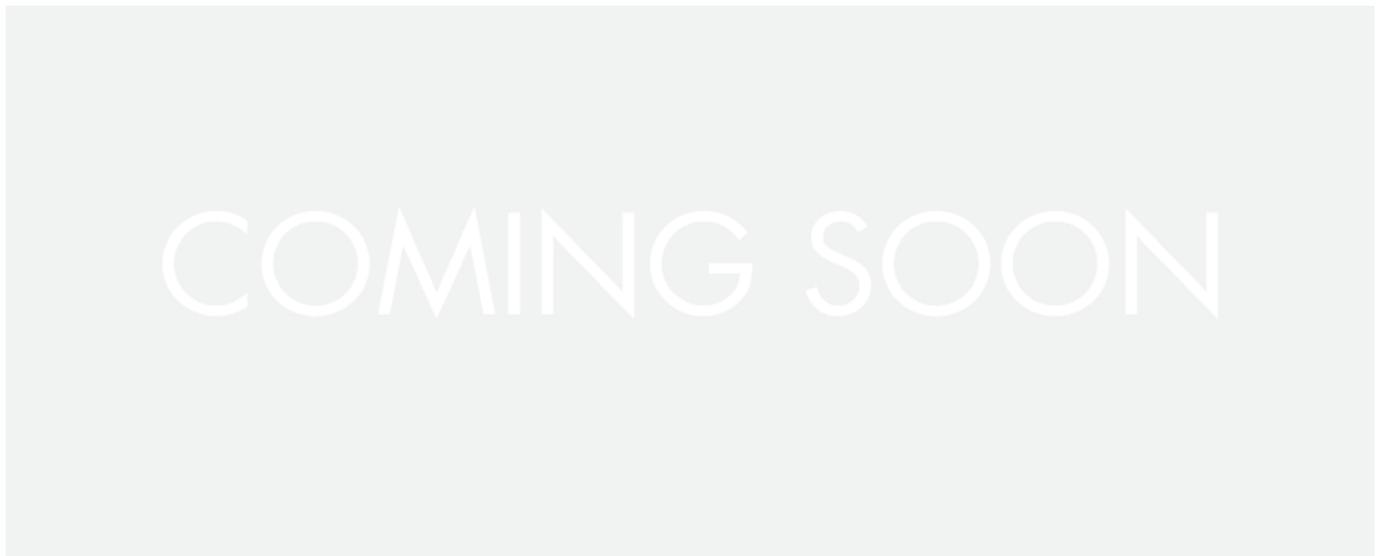
ELECTRICAL DATA		ZXM 411.3-... e	ZXRF 411.3-... e	ZXRI 411.3-... e
Power consumption	kW	0,75	1,1	0,75
Voltage	V	230/400V 50Hz, 460V 60Hz		
Frequency	Hz	50/60		
Protection category	IP	65	65	54

## DIMENSIONS



	GE	GA		B	L	H		B	L	H		B	L	H
ZXM / ZXRF 411.3-2200e	G2	G1½	PVC, PP, PVDF	530	665	510	PP-GFK, PVDF-GFK	505	680	460	1.4571	525	665	530
ZXM / ZXRF 411.3-2600e	G2	G1½		530	665	510		505	680	460		525	665	530
ZXM / ZXRF 411.3-3100e	G2	G1½		530	665	510		505	680	460		525	665	530
ZXRI 411.3-2200e	G2	G1½		530	665	510		505	680	460		525	665	530
ZXRI 411.3-2600e	G2	G1½		530	665	510		505	680	460		525	665	530
ZXRI 411.3-3100e	G2	G1½		530	665	510		505	680	460		525	665	530

## CHARACTERISTIC CURVES



## BASISDESIGNUNGEN

### PP

Pumpentyp **PP**  
 Vehikel **PP-ERK**  
 Vehikelglas **PIIPE**  
 Diebtrag **PIIPE-kaschliert**

Type	Verfügbare Stangen		Preise	
	EPDM Artikel-No.	Preis (EUR)	FPM Artikel-No.	Preis (EUR)
ZXM411.3-2200e	16019656	<b>5.691,00</b>	16010329	<b>5.691,00</b>
ZXM411.3-2600e	16023879	<b>5.691,00</b>	16021621	<b>5.691,00</b>
ZXM411.3-3100e	15002457	<b>5.691,00</b>	16009886	<b>5.691,00</b>
ZXRI411.3-2200e	16027387	<b>8.330,00</b>	15002401	<b>8.330,00</b>
ZXRI411.3-2600e	16027393	<b>8.330,00</b>	15002494	<b>8.330,00</b>
ZXRI411.3-3100e	16027394	<b>8.330,00</b>	15002495	<b>8.330,00</b>

### PVDF

Pumpentyp **PVDF**  
 Vehikel **PVDF-ERK**  
 Vehikelglas **PIIPE**  
 Diebtrag **PIIPE-kaschliert**

Type	Verfügbare Stangen		Preise	
	EPDM Artikel-No.	Preis (EUR)	FPM Artikel-No.	Preis (EUR)
ZXM 411.3-2200e	☺	☺	16013532	<b>9.700,00</b>
ZXM 411.3-2600e	☺	☺	☺	☺
ZXM 411.3-3100e	☺	☺	16010766	<b>9.700,00</b>
ZXRI 411.3-2200e	☺	☺	☺	☺
ZXRI 411.3-2600e	☺	☺	☺	☺
ZXRI 411.3-3100e	☺	☺	☺	☺

### PVC-U

Pumpentyp **PVC-U**  
 Vehikel **PVC-U**  
 Vehikelglas **PIIPE**  
 Diebtrag **PIIPE-kaschliert**

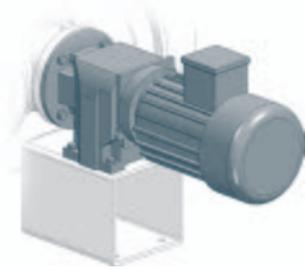
Type	Verfügbare Stangen		Preise	
	EPDM Artikel-No.	Preis (EUR)	FPM Artikel-No.	Preis (EUR)
ZXM411.3-2200e	16023563	☺	16023881	☺
ZXM411.3-2600e	16023882	☺	16023883	☺
ZXM411.3-3100e	16012761	☺	☺	☺
ZXRI411.3-2200e	16027405	☺	16027395	☺
ZXRI411.3-2600e	16027406	☺	16027396	☺
ZXRI411.3-3100e	16027407	☺	16027397	☺

### EDELSTAHL

Pumpentyp **1.4571**  
 Vehikel **1.4571/1.4581**  
 Vehikelglas **1.4401**  
 Diebtrag **PIIPE-kaschliert**

Type	Verfügbare Stangen		Preise (EUR)
	FPM Artikel-No.	Preis	
ZXM 411.3-2200e	16023884	☺	
ZXM 411.3-2600e	16023885	☺	
ZXM 411.3-3100e	16010746	☺	
ZXRI 411.3-2200e	16010284	☺	
ZXRI 411.3-2600e	16023886	☺	
ZXRI 411.3-3100e	16013679	☺	

## OPTIONEN



### Antriebsmotor

- Basisausführung (Standardoption) (ohne Aufpreis lieferbar, entspricht der Basisausführung der drive, the delu) (Aufpreis Sonderantrieb: sollte als separate Option in der Bestellung angegeben werden)
- Aufpreisgeräuschdämmung (bei der höchsten Förderleistung) ist im Bedarfsfall bei sera anzufragen

### Aufpreis Sonderantrieb

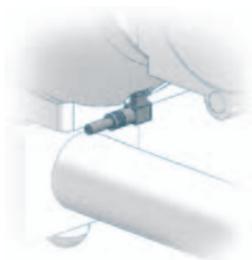
Aufpreis (EUR)

(alle Typen)

Option	ZXM 411.3-...	ZXRI 411.3-...	Aufpreis (EUR)
Sonderspannung	☐	☐	
Schutzart IP65	☐	☐	133,00
Schutzdach für Lüfterhaube	☐	☐	130,00
VIK Ausführung	☐	☐	
II2G Ex e II T3	☐	☐	
	☐	☒	
II2G Ex e II T4	☐	☐	
	☐	☒	

### Antriebe für Frequenzrichterbetrieb

Option	ZXM 411.3-...	ZXRI 411.3-...	Aufpreis (EUR)
mit Kaltleiter, 5-50/60Hz	☐	☐	339,00
	☐	●	
mit Kaltleiter, 5-50/60Hz II2G Ex d e IIC T4	☐	☐	
	☐	☒	

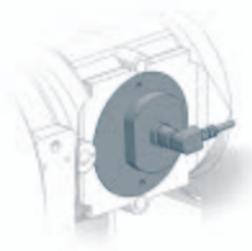


### Membranüberwachung

Membranüberwachung, die durch einen Pumpenmotor (Evaluation über Elektrolyse, ER-ER4 (Seele aus Zinn))

Aufpreis (EUR)

Option	inkl. Anschlusskabel	(Länge 2m)	Aufpreis (EUR)
MBE-02			223,00
Anschlusskabel für EX ia-Stromkreis		(blau, Länge 5m)	56,00



### Hubfrequenzüberwachung

Induktivkontakt

Aufpreis (EUR)

Option	Aufpreis (EUR)
10 - 60 V DC, Dreidraht, PNP	978,00
Namur-Ausführung, II2G Ex ia IIC T6	978,00

# FEEDING PUMPS

## ACCESSORIES



### Diaphragm monitoring (evaluation)

Electrode relay for mounting in control cabinet (for evaluating the diaphragm rupture electrode MBE-02 (see options))		Article-No.	Price (EUR)
ER-104	auxiliary power 230 V AC	90022944	▲
ER-104	auxiliary power 24 V DC	90022945	▲
ER-142	auxiliary power 230 V AC	II(1)G [Ex ia] II C 90200363	▲

## FITTINGS FOR THE SUCTION SIDE



### Priming Aid/Siphon vessel

#### Properties

Improvement of the priming behavior  
Easy handling  
High-quality materials  
Easy installation

#### Basic version

Material: **PVC-U / PVC-transparent**  
Seals: **EPDM** or **FPM**  
Shut-Off fitting with filling-/venting joint  
Hose nozzle d=12mm  
incl. holding clamp (1 piece)  
max. operating pressure: **-1 ... +2 bar**

Type	DN	Connection	Seals	Article-No.	Price (EUR)
①				①	①



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
①					①	①



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

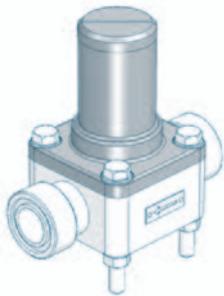
High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
①					①	①

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm relief valve

for overpressure protection

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

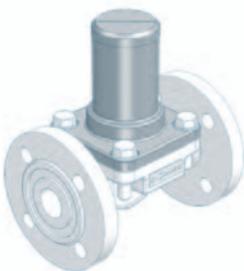
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
624.10	DN25	G 1½	PVC-U	FPM	37603639	▲
624.10	DN25	G 1½	PVC-U	EPDM	37603638	▲
624.10	DN25	G 1½	PP	FPM	37603637	▲
624.10	DN25	G 1½	PP	EPDM	37603636	▲
624.10	DN25	G 1½	PVDF	FEP	37603866	▲
624.10	DN25	G 1½	1.4581	FEP	☉	☉

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
624.10	PVC	Loose flange made of PVC-U	▲
624.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	☉
624.10	PP	Loose flange made of PP with steel inlay	▲
624.10	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm pressure keeping valve (with fixed flanges)

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

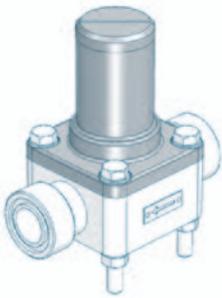
#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
624.10	DN25	DIN 2501	1.4581	36240104	▲
624.10	DN25	DIN 2501	GG	37600039	▲

# FEEDING PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pressure keeping valve

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

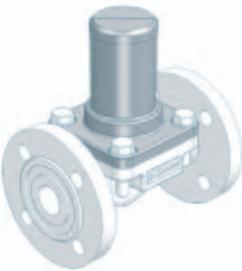
Valve body: **PVC-U, 1.4581, PP** or **PVDF**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
624.D	DN25	G 1½	PVC-U	FPM	37600051	▲
624.D	DN25	G 1½	PVC-U	EPDM	36241101	▲
624.D	DN25	G 1½	PP	FPM	37600058	▲
624.D	DN25	G 1½	PP	EPDM	36241105	▲
624.D	DN25	G 1½	PVDF	FEP	37606310	▲
624.D	DN25	G 1½	1.4581	FEP	⊘	⊘

### OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
624.D	PVC	Loose flange made of PVC-U	▲
624.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
624.D	PP	Loose flange made of PP with steel inlay	▲
624.D	PVDF	Loose flange made of PP with steel inlay	▲



### Diaphragm pressure keeping valve (with fixed flanges)

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
624.D	DN25	DIN 2501	1.4581	36241104	▲
624.D	DN25	DIN 2501	GG	37600081	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm Seals	Article-No.	Price (EUR)
713.1	G 1 1/4	10 bar	PVC-U	EPDM	30071038	▲
713.1	G 1 1/4	10 bar	PVC-U	FPM	30071039	▲
713.1	G 1 1/4	10 bar	PP	EPDM	30071040	▲
713.1	G 1 1/4	10 bar	PP	FPM	30071041	▲
713.1	G 1 1/4	10 bar	PVDF	EPDM	30071060	▲
713.1	G 1 1/4	10 bar	PVDF	FPM	30071061	▲

### OPTIONS



Loose-type flanges	Design acc. to DIN 2501, incl. O-Rings		
PVC-design	Loose flange, PVC-U	DN20	▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20	▲

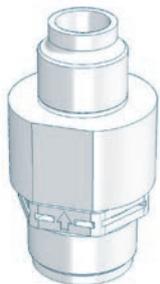
### ACCESSORIES



Bracket			
	PP	90010913	▲
for wall mounting	1.4301	90010914	▲
	Steel (color treated)	90010915	▲



Filling pump FLP 2	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve		90009396 ▲



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
①						①	①



# AIR OPERATED DIAPHRAGM PUMPS

**airPUMP** - SERIES



INSPIRED. SOLUTIONS. FOR CUSTOMERS.

# AIR OPERATED DIAPHRAGM PUMPS

## BENEFITS

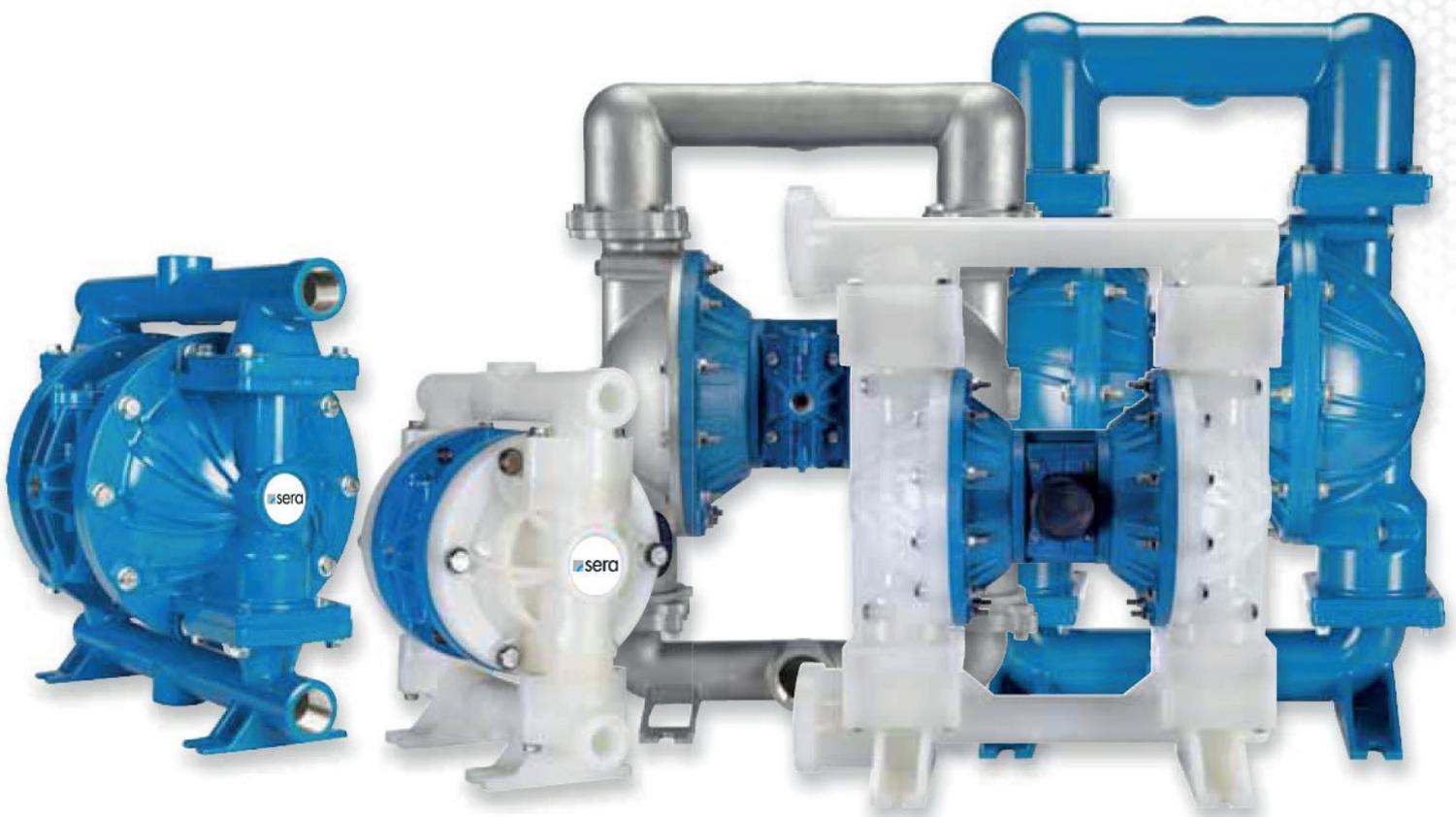
Air-operated diaphragm pumps have many benefits over other pump technologies:

- Easy to install
- Simple to operate
- Portable
- Self-priming
- Submersible
- Dry running
- Solids handling
- Abrasive handling
- Viscosity fluid handling
- Shear sensitive
- Economical compared to other positive displacement technologies
- Various applications
- Low maintenance cost

The **sera** airPUMP has its own additional unique features. It features a lube-free, non-stalling air valve, ideal for various applications and environments. The air valve contains very few parts compared to other air valves in the market, reducing maintenance time, costs and downtime. And **sera** airPUMP is backed by a strong 5 year warranty.

## TYPICAL INDUSTRIES

- Mining
- Paints and Coatings
- Ceramics
- Pulp and Paper
- Electroplating and Anodizing
- Wastewater
- Marine
- OEM's
- Chemical Manufacturing and Distribution



## OVERVIEW

Type	Suction-/ Pressure- connec- tion	max. Flow rate	Displace- ment per stroke	Control air connection		Control air pressure min/max	max. size of solids	Schall- druck- pegel	Material	Weight
				Inlet	Outlet					
	NPT	[l/min. ]	Liter	FNPT	FNPT	[bar]	[ mm ]	[dB(A)]		[ kg ]
<b>AP025</b>	<b>1/4"</b>			1/2"	1/2"	0,7/8,3	6,4	73,6	PP	
									PVDF	
<b>AP05</b>	<b>1/2"</b>	77	0,08	1/4"	1/2"	0,7/8,3	4,7	72,1	PP	3,8
									PVDF	5,4
									Alumini- um	5,3
									Stainless steel	7,0
<b>AP10</b>	<b>1"</b>	212	0,32	1/2"	1/2"	0,7/8,3	6,4	73,6	PP	10,9
									PVDF	15,5
									Alumini- um	15,5
									Stainless steel	22,1
									PP	29,9
									PVDF	43,1
<b>AP15</b>	<b>1 1/2"</b>	500	1,20	1/2"	3/4"	0,7/8,3	8,9	77,0	Alumini- um	36,4
									Stainless steel	57,6
									PP	30,4
<b>AP20</b>	<b>2"</b>	590	1,20	3/4"	3/4"	0,7/8,3	8,9	77,0	PVDF	44,2
									Alumini- um	39,5
									Stainless steel	59,9
<b>AP30</b>	<b>3"</b>	908	3,70	3/4"	3/4"	0,7/8,3	12,7	86,5	Alumini- um	70,3
									Stainless steel	107

## NOTE

Further information on the **sera airPUMP** series can be found in the product information PI2015 ([www.sera-web.com](http://www.sera-web.com)). Detailed product information in this catalog will be available soon.

# AIR OPERATED DIAPHRAGM PUMPS



## ÜBERBLICK

- Mobile use
- Easy handling
- Self priming
- Immersible
- Dry suction
- Safe to run dry
- Suitable for solids
- For viscous media
- Low maintenance costs

## TECHNICAL DATA

Type	Connection	max. flow rate [Litres/min.]	max. particle size [mm]	max. counterpressure [bar]	Air pressure min - max [bar]	Air supply connection	max. suction height		Weight [kg]
							dry [m]	wet [m]	
AP025 Plastic	1/4" (f) 3/4" (m)	22	1,8	8,3	0,7 - 8,3	1/8" BSP(f)	6,9	6,9	PP 1,0
									PVDF 1,4

## BASIC DESIGNS

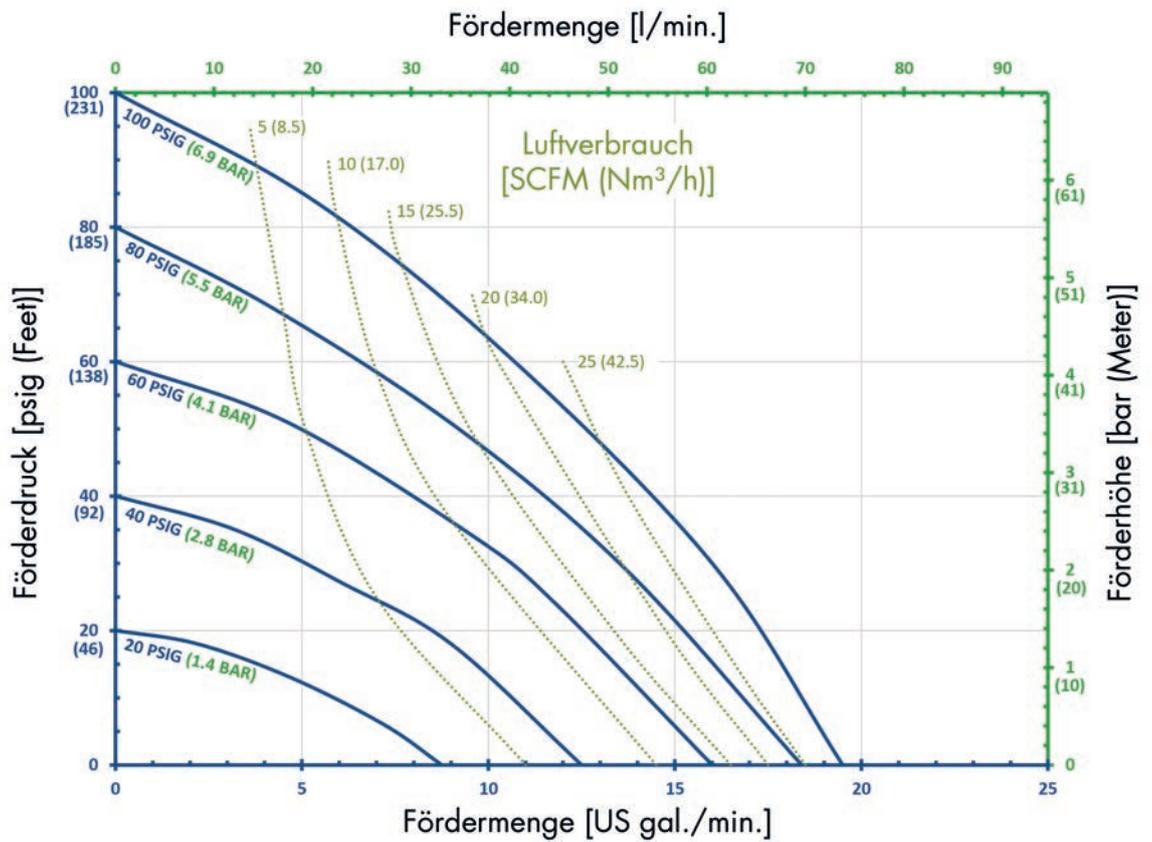
Type	Pump-body	Diaphragm(s)	Valve seats	Valve balls	Valve seals	Article-No.	Price (EUR)	Wearing parts set	
								Article-No.	Price (EUR)
AP025	PP	Santoprene	PP	Santoprene	Santoprene	15007140	①	①	▲
AP025	PP	Santoprene+PTFE	PP	PTFE	FEP-covered	15007141	①	①	▲
AP025	PVDF	Santoprene	PVDF	Santoprene	Santoprene	15007142	①	①	▲
AP025	PVDF	Santoprene+PTFE	PVDF	PTFE	FEP-covered	15007143	①	①	▲

**CONNECTION** Suction-/Pressure side: 1/4"  
 Max. flow capacity 22 l/min  
 Max. admissible counterpressure up to 8,3 bar

**airPUMP AP025**

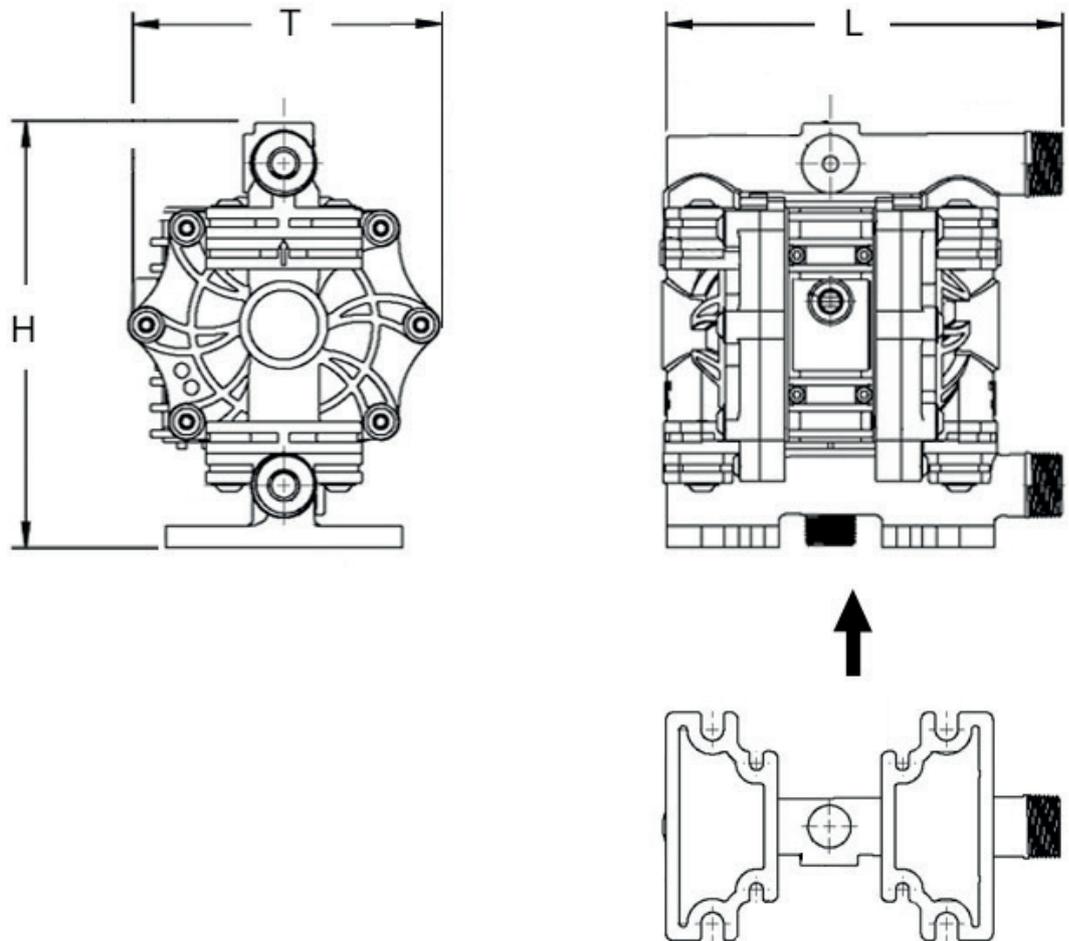
**CHARACTERISTIC CURVES**

Kunststoff



# AIR OPERATED DIAPHRAGM PUMPS

## DIMENSIONS



<b>AP025</b>	<b>(Plastic)</b>
max. Length (L)	168mm
max. Height (H)	174mm
max. Width (T)	127mm

## ACCESSORIES



### Compressed air supply unit

- Filter pressure controller
  - Shut-off valve
  - Fittings
- incl. 5m pneumatic hose  
incl. Bracket

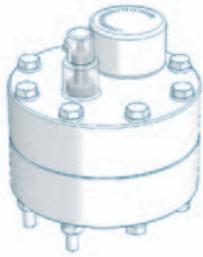
Article-No.	Price (EUR)
90053115	▲



### Vibration damper

	Article-No.	Price (EUR)
4 pcs. vibration dampers	90054760	▲
4 pcs. vibration dampers (FDA compliant)	90054763	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
720.1	G 1/2	10 bar	PVC-U	PTFE	37601848	▲
720.1	G 1/2	10 bar	PP	PTFE	37601856	▲
720.1	G 1/2	10 bar	PVDF	PTFE	37601857	▲

### ACCESSORIES



#### Connection adapter

Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	①	①



#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 16	90050991	▲
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#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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### Diaphragm pulsation damper F007A Active

#### Properties

Volume: 0,7 Litre	Any mounting position	Easy handling
Air supply pressure: 10 bar	Easy installation	High-quality materials
Diaphragm made of PTFE	Long service life	Low maintenance

Connection	Housing	Valve	max. Pressure	Temperature	Article-No.	Price (EUR)
3/4"	PP	PP	10	0/+60°C	37607857	▲
3/4"	PP	PVDF	10	0/+60°C	37607858	▲
3/4"	PP	PVC	10	0/+60°C	37607859	▲
3/4"	AISI316L	AISI316L	60	-40/200°C	37607860	▲

# AIR OPERATED DIAPHRAGM PUMPS



## ÜBERBLICK

- Mobile use
- Easy handling
- Self priming
- Immersible
- Dry suction
- Safe to run dry
- Suitable for solids
- For viscous media
- Low maintenance costs

## TECHNICAL DATA

Type	Connection	max. flow rate [Litres/min.]	max. particle size [mm]	max. counterpressure [bar]	Air pressure min - max [bar]	Air supply connection	max. suction height		Weight [kg]
							dry [m]	wet [m]	
AP05 Plastic	1/2"	72	4,7	6,9	0,7 - 6,9	1/4" NPT(f)	6,9	6,9	PP 3,8
									PVDF 5,4
									CFPP 3,8
AP05 Metal	1/2"	76	4,7	8,3	0,7 - 8,3	1/4" NPT(f)	6,9	6,9	Stainless Steel 7,0
									Aluminium 5,3

## BASIC DESIGNS

	Type	Pump-body	Diaphragm(s)	Valve seats	Valve balls	Valve seals	Article-No.	Price (EUR)	Wearing parts set	
									Article-No.	Price (EUR)
	AP05	PP	Santoprene	PP	Santoprene	Santoprene	15006967	①	90052064	▲
	AP05	PP	Santoprene+PTFE	PP	PTFE	FEP-covered	15006968	①	90054303	▲
	AP05	PVDF	Santoprene	PVDF	Santoprene	Santoprene	15006969	①	90052073	▲
	AP05	PVDF	Santoprene+PTFE	PVDF	PTFE	FEP-covered	15006970	①	90052074	▲
	AP05	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15006977	①	90052080	▲
	AP05	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15006978	①	90052081	▲
	AP05	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15006975	①	90052078	▲
	AP05	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15006976	①	90052079	▲
FDA	AP05	PP	Santoprene	PP	Santoprene	FEP-covered	15006971	①	90052075	▲
	AP05	PP	Santoprene+PTFE	PP	PTFE	FEP-covered	15006972	①	90052072	▲
	AP05	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15006973	①	90052076	▲
	AP05	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15006974	①	90052077	▲
ATEX <sup>1)</sup>	AP05	CFPP	Santoprene	PP	Santoprene	Santoprene	15006979	①	90052064	▲
	AP05	CFPP	Santoprene+PTFE	PP	PTFE	FEP-covered	15006980	①	90054303	▲
	AP05	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15006981	①	90052080	▲
	AP05	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15006982	①	90052081	▲
	AP05	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15006983	①	90052078	▲
	AP05	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15006984	①	90052079	▲

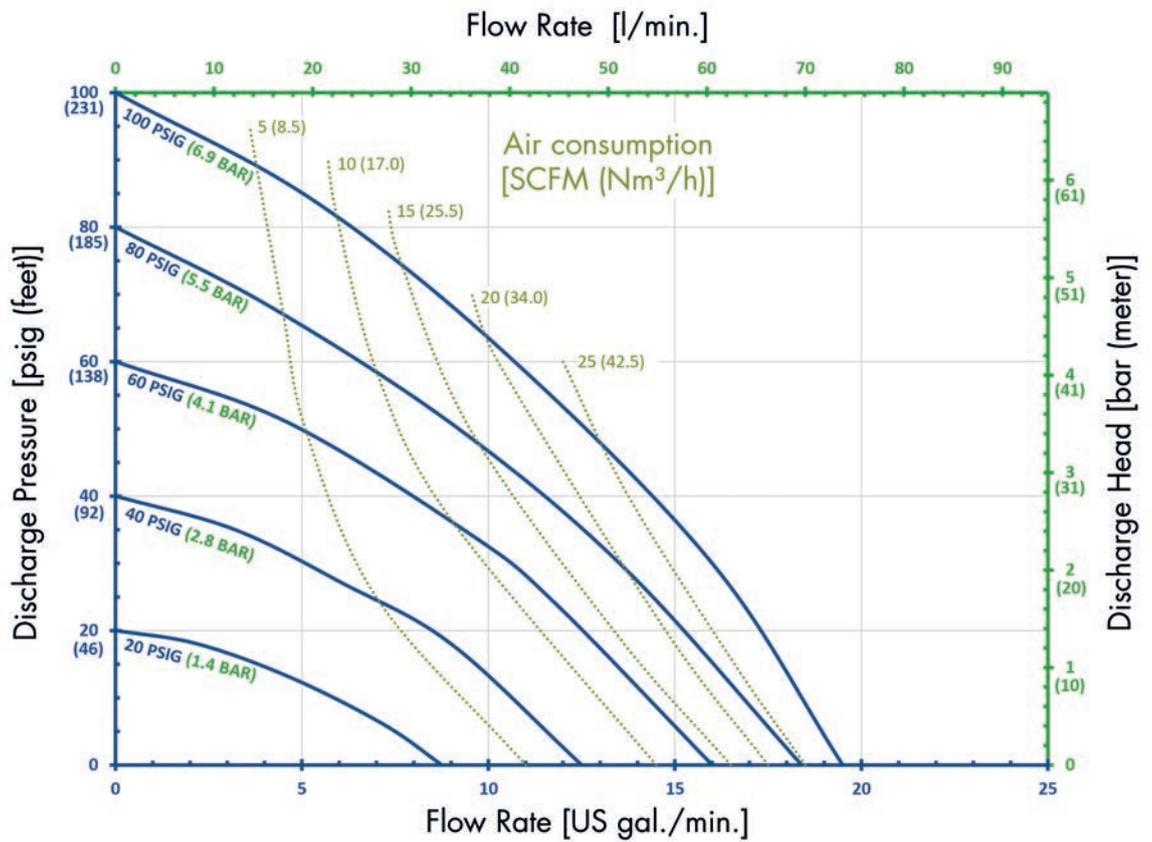
<sup>1)</sup> Zone: Ex II 2GD c IIB TX

**CONNECTION** Suction-/Pressure side: 1/2"  
 Max. flow capacity 77 l/min  
 Max. admissible counterpressure up to 8,3 bar

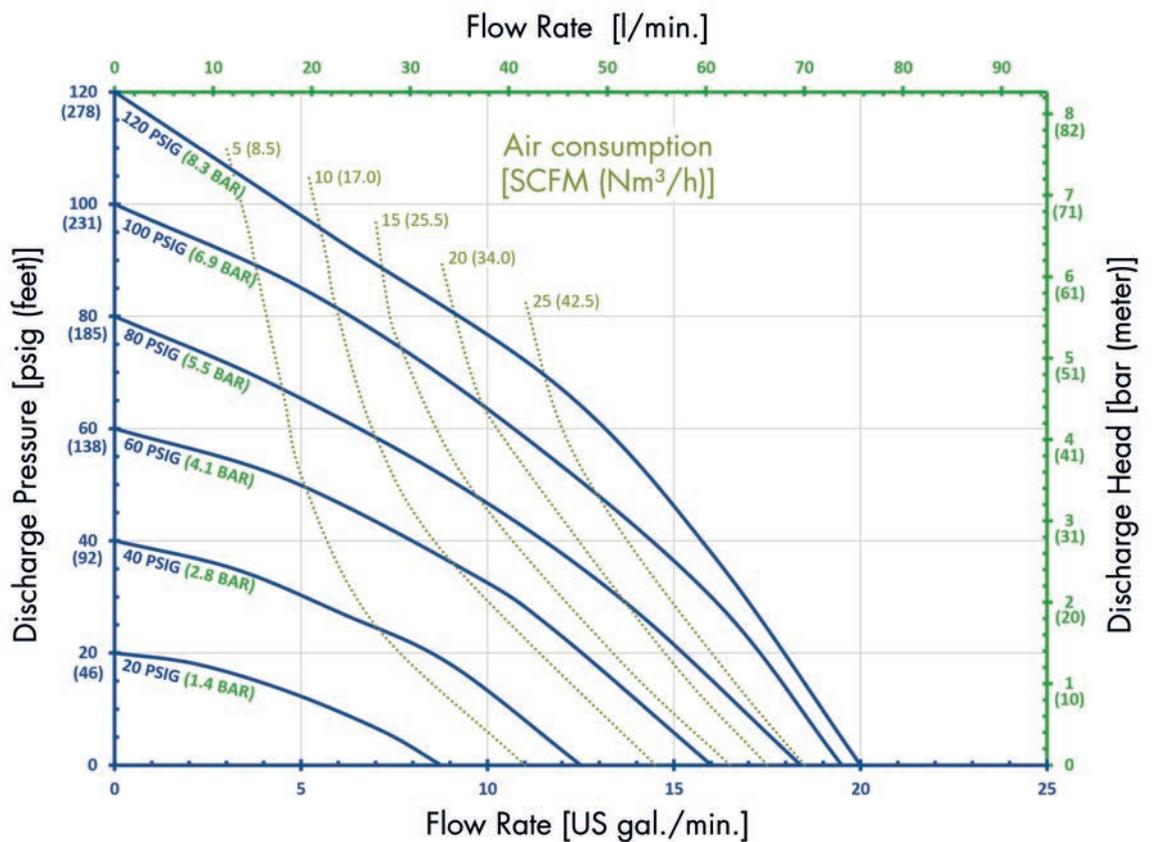
**airPUMP AP05**

**CHARACTERISTIC CURVES**

Plastic

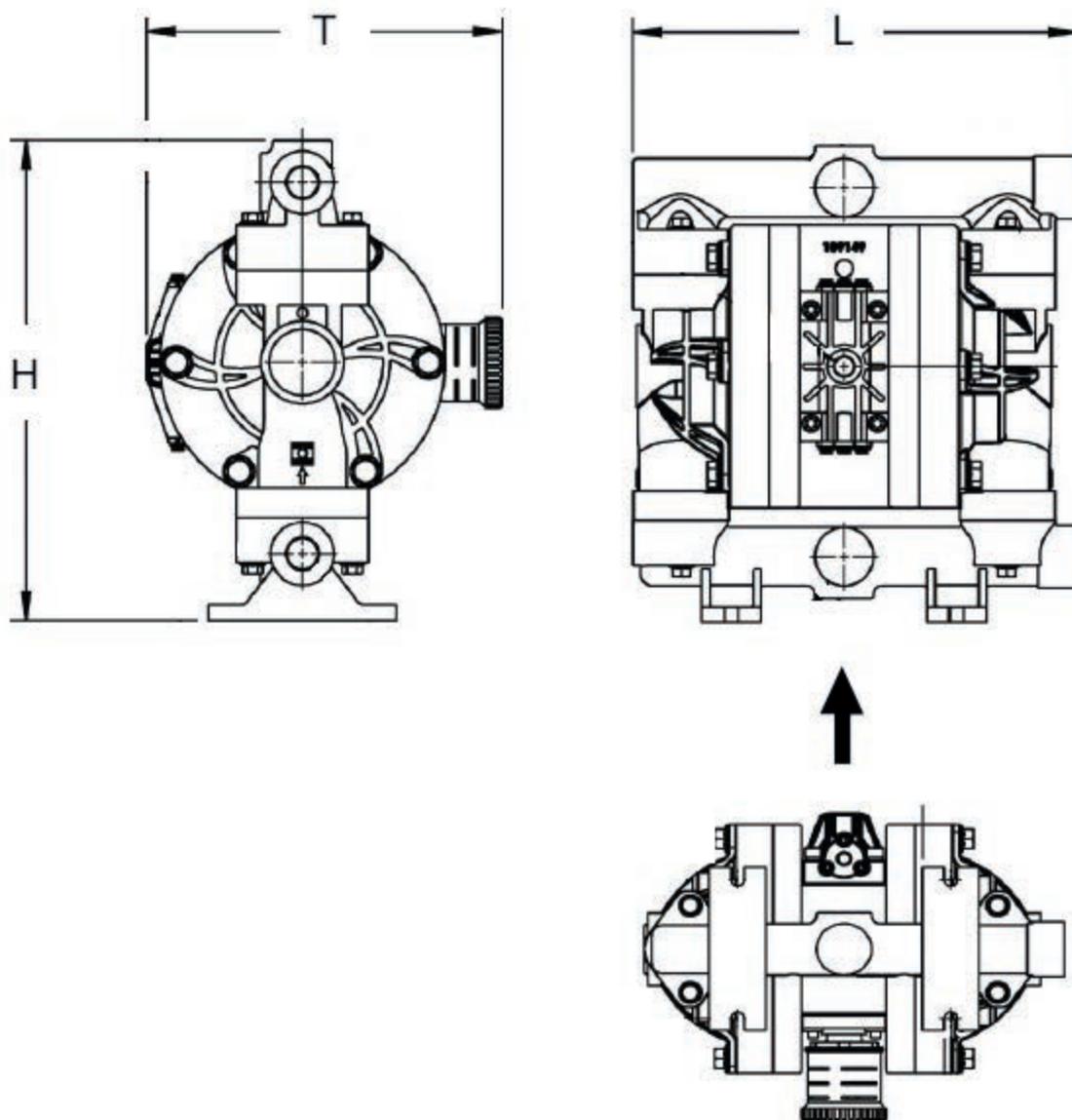


Metal



# AIR OPERATED DIAPHRAGM PUMPS

## DIMENSIONS



AP05	(Plastic)	(Metal)
max. Length (L)	259mm	246mm
max. Height (H)	276mm	250mm
max. Width (T)	204mm	204mm

## ACCESSORIES



### Compressed air supply unit

Filter pressure controller                      incl. 5m pneumatic hose  
 Shut-off valve                                      incl. Bracket  
 Fittings

**Article-No.**                      **Price (EUR)**

90052195                      ▲



### Connection adapter

two pieces are required per pump

Pump connection	Adapter connections	Material	Seals	Article-No.	Price (EUR)
G 1/2	G1/2 - G3/4	PP	EPDM	90044750	▲
G 1/2	G1/2 - G3/4	PP	FPM	90044755	▲
G 1/2	G1/2 - G3/4	1.4571	FEP	90044761	▲



### Vibration damper

**Article-No.**                      **Price (EUR)**

4 pcs. vibration dampers                      90054761                      ▲

4 pcs. vibration dampers (FDA compliant)                      90054764                      ▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper F007A Active

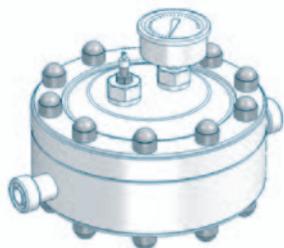
#### Properties

Volume: 0,7 Litre                      Any mounting position                      Easy handling  
 Air supply pressure: 10 bar                      Easy installation                      High-quality materials  
 Diaphragm made of PTFE                      Long service life                      Low maintenance

Connection	Housing	Valve	max. Pressure	Temperature	Article-No.	Price (EUR)
3/4"	PP	PP	10	0/+60°C	37607857	▲
3/4"	PP	PVDF	10	0/+60°C	37607858	▲
3/4"	PP	PVC	10	0/+60°C	37607859	▲
3/4"	AISI316L	AISI316L	60	-40/200°C	37607860	▲

# AIR OPERATED DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲

### ACCESSORIES



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	⊘	⊘

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



<b>Filling pump FLP 2</b>	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve		90009396 ▲

# AIR OPERATED DIAPHRAGM PUMPS



## ÜBERBLICK

- Mobile use
- Easy handling
- Self priming
- Immersible
- Dry suction
- Safe to run dry
- Suitable for solids
- For viscous media
- Low maintenance costs

## TECHNICAL DATA

Type	Connection	max. flow rate [Litres/min.]	max. particle size [mm]	max. counterpressure [bar]	Air pressure min - max [bar]	Air supply connection	max. suction height		Weight [kg]
							dry [m]	wet [m]	
AP10 Plastic	1"	185	6,4	6,9	0,7 - 6,9	1/2" NPT(f)	6,4	8,5	PP 10,9
									PVDF 15,5
AP10 Metal	1"	193	6,4	8,3	0,7 - 8,3	1/2" NPT(f)	6,4	8,5	Stainless Steel 22,1
									Aluminium 15,5

## BASIC DESIGNS

Type	Pump-body	Diaphragm(s)	Valve seats	Valve balls	Valve seals	Article-No.	Price (EUR)	Wearing parts set		
								Article-No.	Price (EUR)	
AP10	PP	Santoprene	PP	Santoprene	Santoprene	15006985	①	90052082	▲	
AP10	PP	Santoprene+PTFE	PP	PTFE	FEP-ummantelt	15006986	①	90052083	▲	
AP10	PVDF	Santoprene	PVDF	Santoprene	Santoprene	15006987	①	90052084	▲	
AP10	PVDF	Santoprene+PTFE	PVDF	PTFE	FEP-ummantelt	15006988	①	90052085	▲	
AP10	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15006995	①	90052086	▲	
AP10	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15006996	①	90052087	▲	
AP10	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15006993	①	90052092	▲	
AP10	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15006994	①	90052093	▲	
FDA	AP10	PP	Santoprene	PP	Santoprene	FEP-ummantelt	15006989	①	90052088	▲
	AP10	PP	Santoprene+PTFE	PP	PTFE	FEP-ummantelt	15006990	①	90052089	▲
	AP10	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15006991	①	90052090	▲
	AP10	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15006992	①	90052091	▲
ATEX <sup>1)</sup>	AP10	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15006999	①	90052086	▲
	AP10	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007000	①	90052087	▲
	AP10	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15006997	①	90052092	▲
	AP10	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15006998	①	90052093	▲

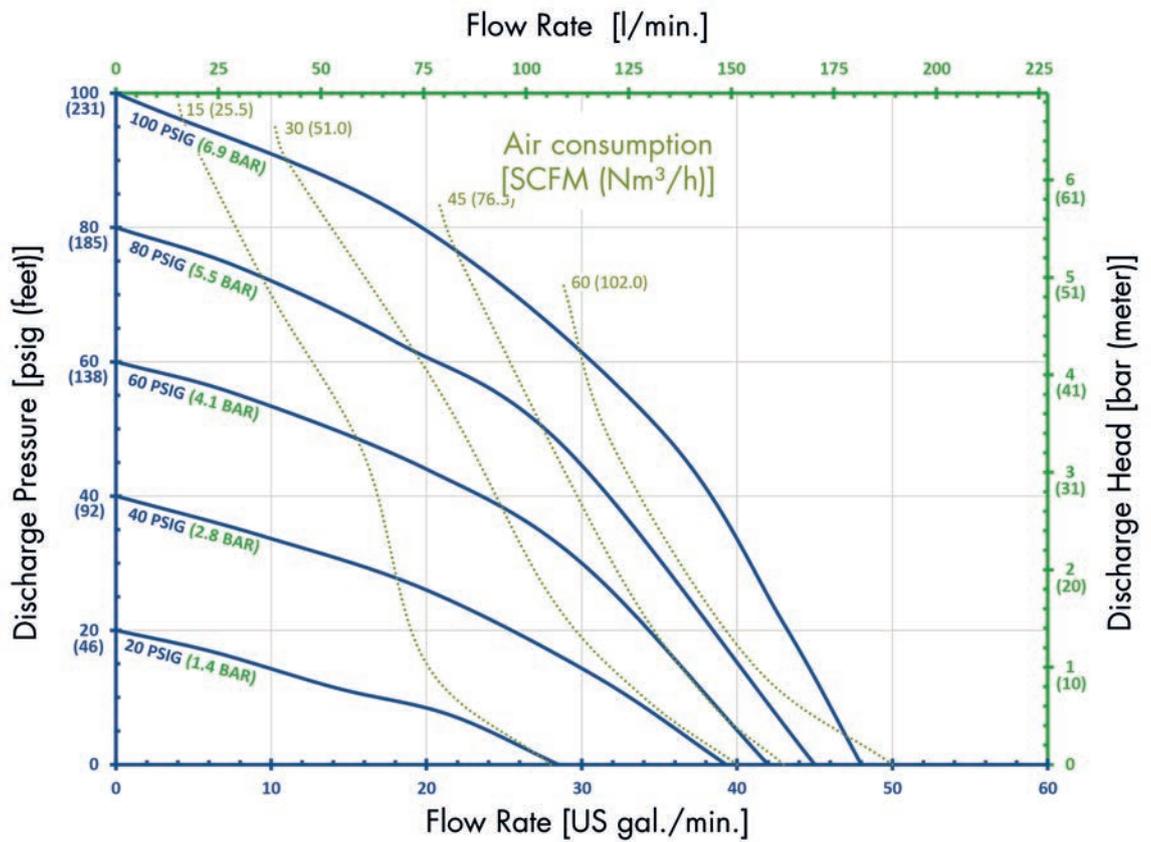
<sup>1)</sup> Zone: Ex II 2GD c IIB TX

**CONNECTION** Suction-/Pressure side: 1"  
 Max. flow capacity 212 l/min  
 Max. admissible counterpressure up to 8,3 bar

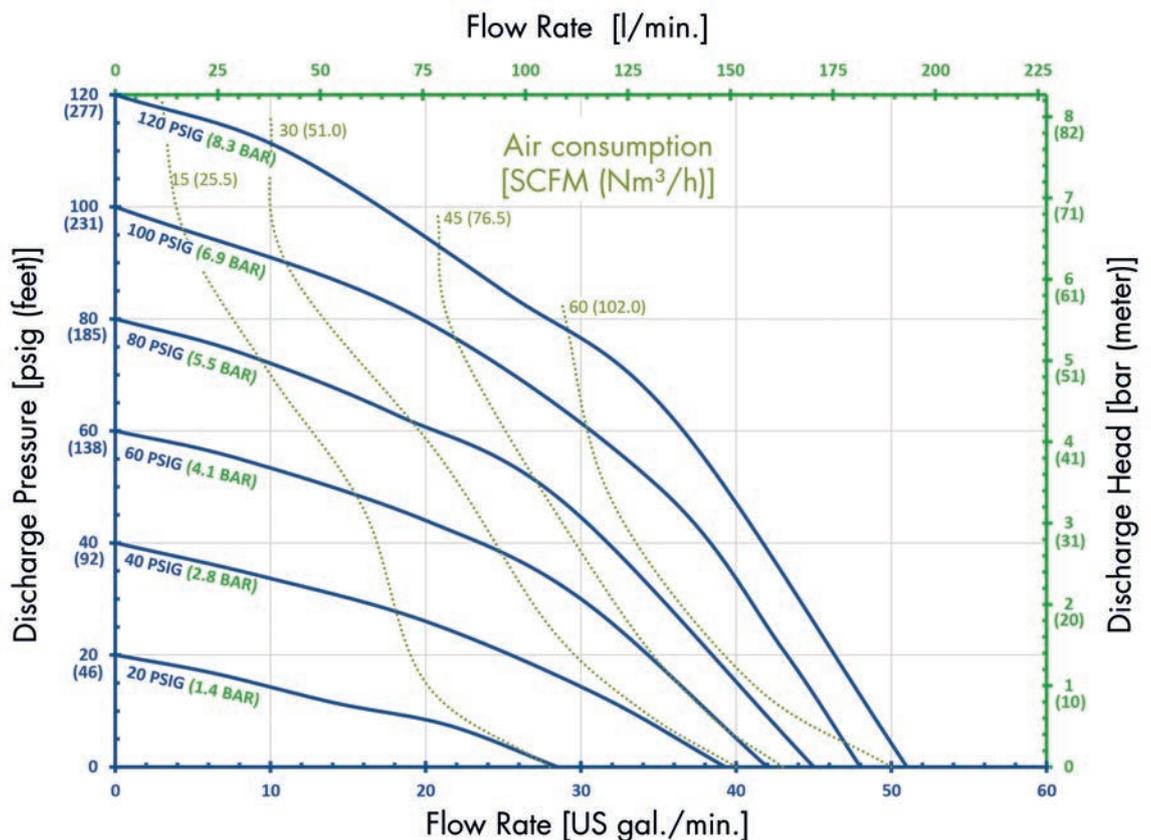
# airPUMP AP10

## CHARACTERISTIC CURVES

Plastic

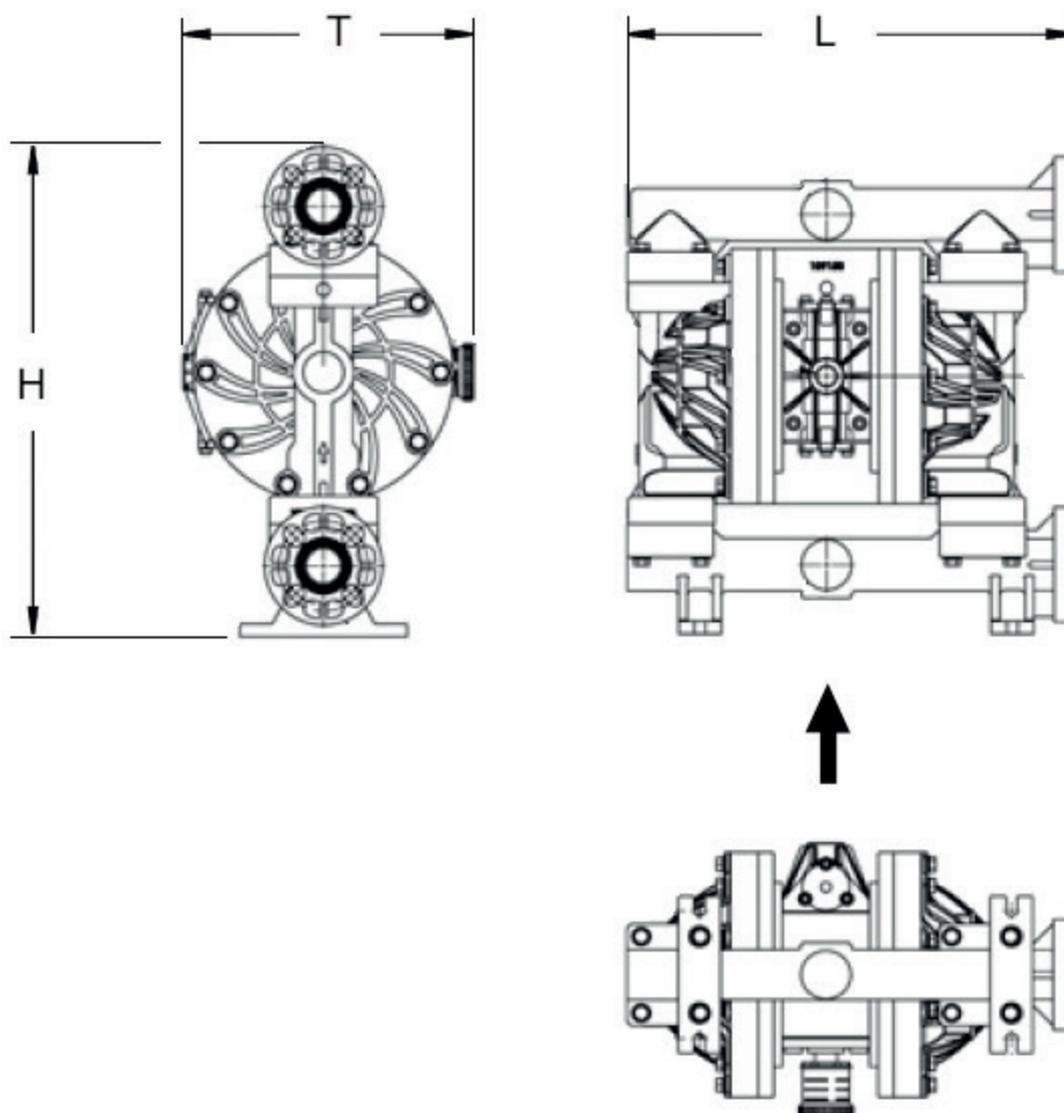


Metal



# AIR OPERATED DIAPHRAGM PUMPS

## DIMENSIONS



AP10	(Plastic)	(Metal)
max. Length (L)	427mm	Aluminium 375mm Stainless steel 364mm
max. Height (H)	454mm	Aluminium 366mm Stainless steel 360mm
max. Width (T)	271mm	Aluminium 271mm Stainless steel 271mm

## ACCESSORIES



### Compressed air supply unit

Filter pressure controller                      incl. 5m pneumatic hose  
 Shut-off valve                                      incl. Bracket  
 Fittings

Article-No.	Price (EUR)
90052196	▲



### Connection adapter

two pieces are required per pump

Pump connection	Adapter connections	Material	Seals	Article-No.	Price (EUR)
G 1	G1 - G1 1/4	PP	EPDM	90044751	▲
G 1	G1 - G1 1/4	PP	FPM	90044757	▲
G 1	G1 - G1 1/4	1.4571	FEP	90044762	▲



### Vibration damper

	Article-No.	Price (EUR)
4 pcs. vibration dampers	90054761	▲
4 pcs. vibration dampers (FDA compliant)	90054764	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper F007A Active

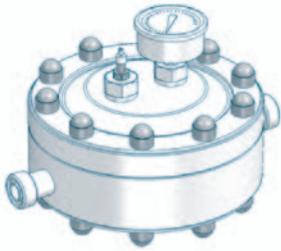
#### Properties

Volume: 0,7 Litre	Any mounting position	Easy handling
Air supply pressure: 10 bar	Easy installation	High-quality materials
Diaphragm made of PTFE	Long service life	Low maintenance

Connection	Housing	Valve	max. Pressure	Temperature	Article-No.	Price (EUR)
3/4"	PP	PP	10	0/+60°C	37607857	▲
3/4"	PP	PVDF	10	0/+60°C	37607858	▲
3/4"	PP	PVC	10	0/+60°C	37607859	▲
3/4"	AISI316L	AISI316L	60	-40/200°C	37607860	▲

# AIR OPERATED DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling	Diaphragm: PTFE-faced
Easy installation	High-quality materials	
Long service life	Low maintenance	

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲

### ACCESSORIES



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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#### Retaining clamp

(2 Piece each pulsation damper)	PP	d 25	90036934	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,32/10	G ½	10 bar	1.4571	Butyl	37603721	▲
810.1-0,32/10	G ½	10 bar	1.4571	FPM	37603725	▲
810.1-0,32/10	G ½	10 bar	1.4571	PTFE	☉	☉

## ACCESSORIES



### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲
<b>Filling pump FLP 2</b>	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲



# AIR OPERATED DIAPHRAGM PUMPS



## ÜBERBLICK

- Mobile use
- Easy handling
- Self priming
- Immersible
- Dry suction
- Safe to run dry
- Suitable for solids
- For viscous media
- Low maintenance costs

## TECHNICAL DATA

Type	Connection	max. flow rate [Litres/min.]	max. particle size [mm]	max. counterpressure [bar]	Air pressure min - max [bar]	Air supply connection	max. suction height		Weight [kg]
							dry [m]	wet [m]	
AP15 Plastic	1 1/2"	473	9,7	6,9	0,7 - 6,9	1/2" NPT(f)	5,5	8,5	PP 18,6
									PVDF 27,2
AP15 Metal	1 1/2"	503	9,7	8,3	0,7 - 8,3	1/2" NPT(f)	5,5	8,5	Stainless Steel 44,5
									Aluminium 23,6

## BASIC DESIGNS

	Type	Pump-body	Diaphragm(s)	Valve seats	Valve balls	Valve seals	Article-No.	Price (EUR)	Wearing parts set	
									Article-No.	Price (EUR)
	AP15	PP	Santoprene	PP	Santoprene	Santoprene	15007001	①	90052094	▲
	AP15	PP	Santoprene+PTFE	PP	PTFE	FEP-covered	15007002	①	90052095	▲
	AP15	PVDF	Santoprene	PVDF	Santoprene	Santoprene	15007003	①	90052096	▲
	AP15	PVDF	Santoprene+PTFE	PVDF	PTFE	FEP-covered	15007004	①	90052097	▲
	AP15	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007011	①	90052104	▲
	AP15	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007012	①	90052105	▲
	AP15	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15007009	①	90052102	▲
	AP15	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15007010	①	90052103	▲
FDA	AP15	PP	Santoprene	PP	Santoprene	FEP-covered	15007005	①	90052098	▲
	AP15	PP	Santoprene+PTFE	PP	PTFE	FEP-covered	15007006	①	90052099	▲
	AP15	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007007	①	90052100	▲
	AP15	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007008	①	90052101	▲
ATEX <sup>1)</sup>	AP15	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007013	①	90052104	▲
	AP15	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007014	①	90052105	▲
	AP15	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15007015	①	90052102	▲
	AP15	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15007016	①	90052103	▲

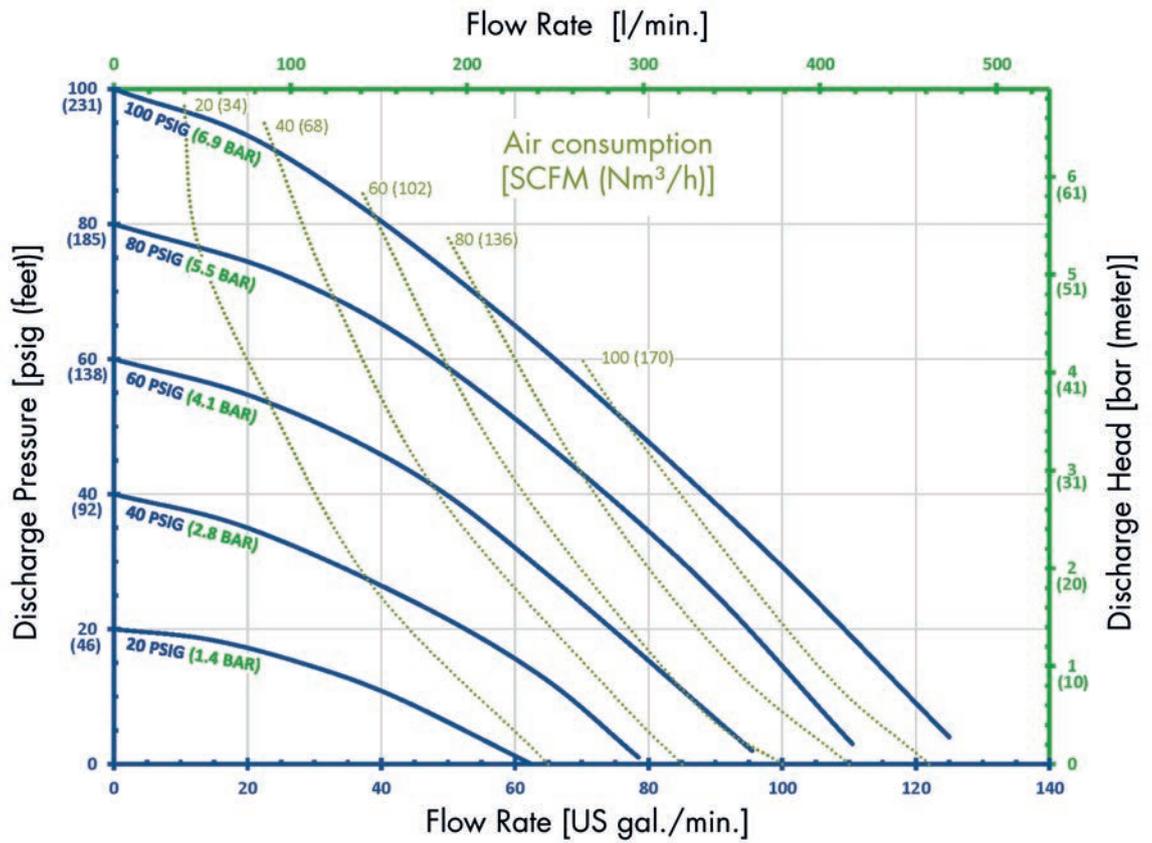
<sup>1)</sup> Zone: Ex II 2GD c IIB TX

**CONNECTION** Suction-/Pressure side: 1 1/2"  
 Max. flow capacity 500 l/min  
 Max. admissible counterpressure up to 8,3 bar

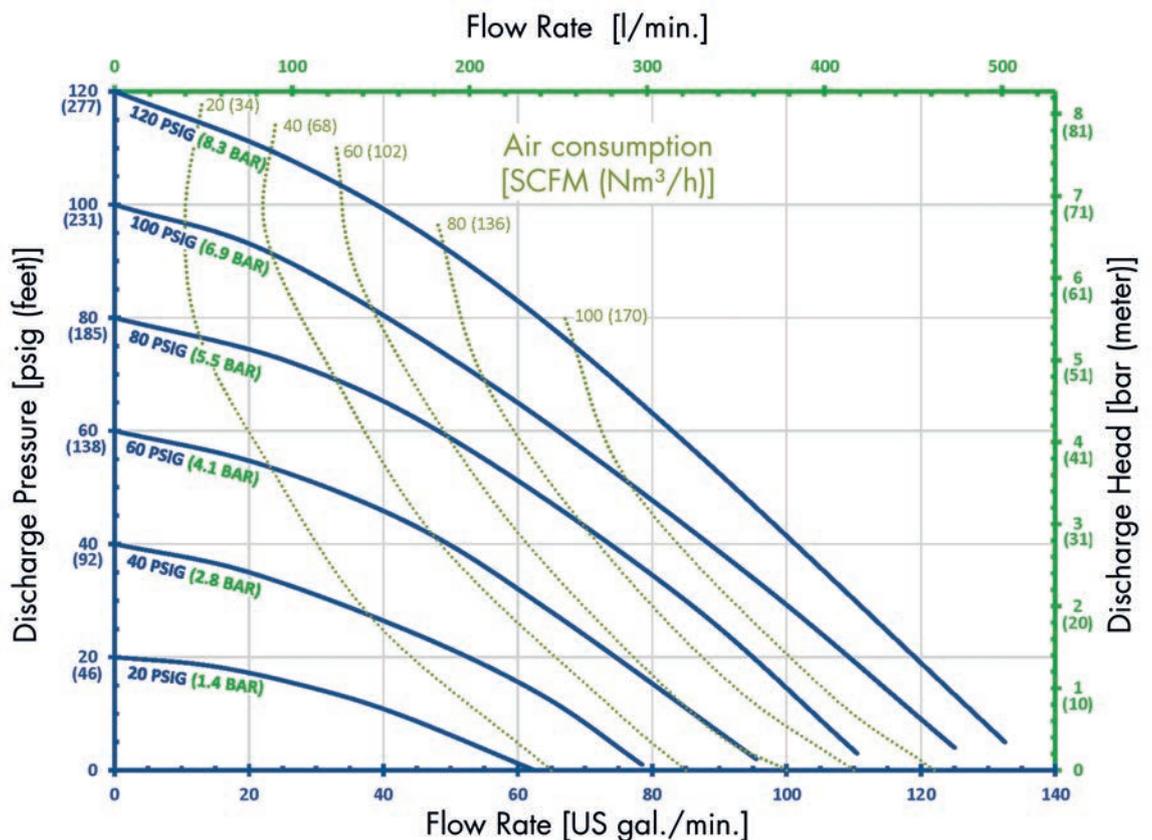
# airPUMP AP15

## CHARACTERISTIC CURVES

Plastic

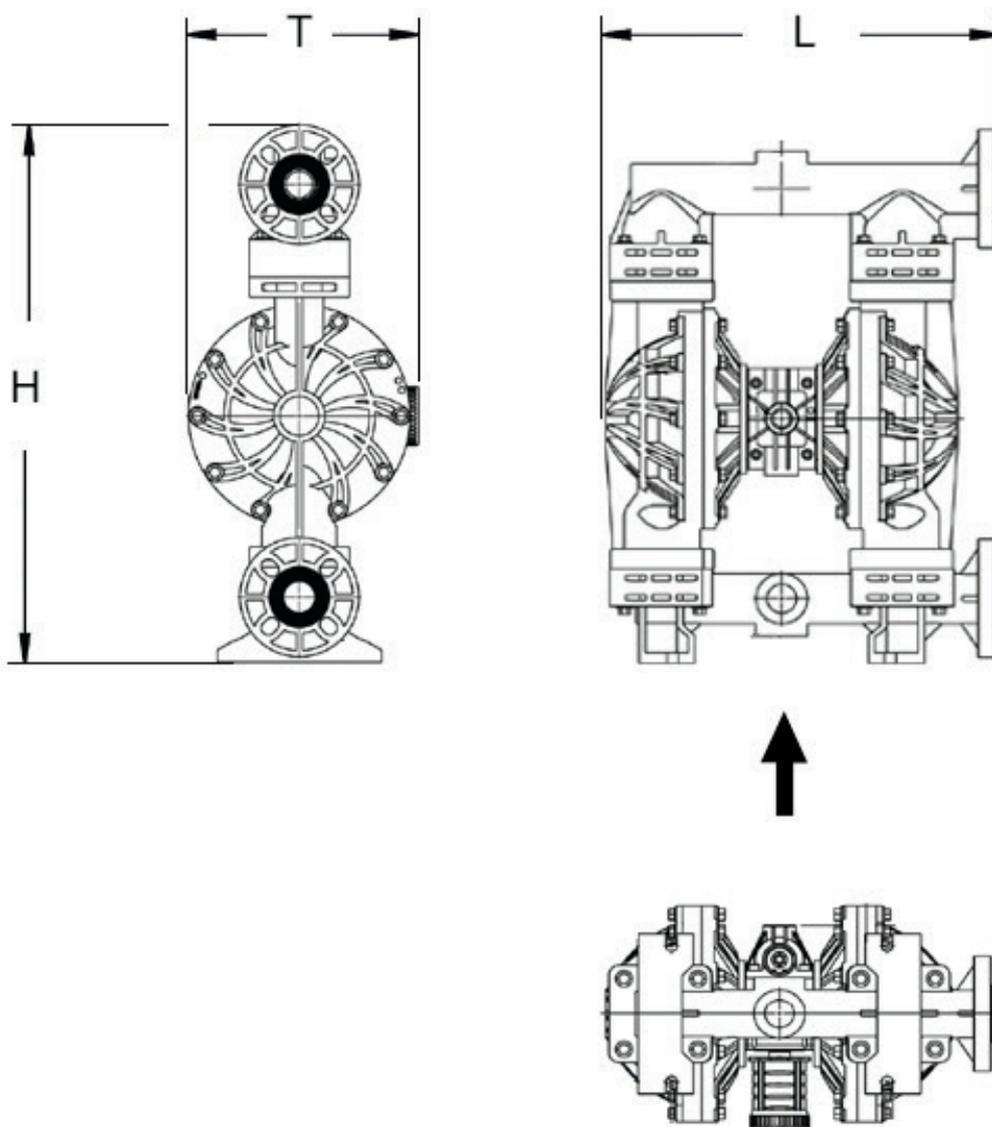


Metal



# AIR OPERATED DIAPHRAGM PUMPS

## DIMENSIONS



AP15	(Plastic)	(Metal)
max. Length (L)	475mm	Aluminium 494mm Stainless steel 494mm
max. Height (H)	677mm	Aluminium 445mm Stainless steel 482mm
max. Width (T)	290mm	Aluminium 290mm Stainless steel 290mm

## ACCESSORIES



### Compressed air supply unit

Filter pressure controller                      incl. 5m pneumatic hose  
 Shut-off valve                                      incl. Bracket  
 Fittings

Article-No.	Price (EUR)
90052196	▲



### Connection adapter

two pieces are required per pump

Pump connection	Adapter connections	Material	Seals	Article-No.	Price (EUR)
G 1 1/2	G1 1/2 - G2 1/4	PP	EPDM	90044752	▲
G 1 1/2	G1 1/2 - G2 1/4	PP	FPM	90044758	▲
G 1 1/2	G1 1/2 - G2 1/4	1.4571	FEP	90044763	▲



### Vibration damper

	Article-No.	Price (EUR)
4 pcs. vibration dampers	90054762	▲
4 pcs. vibration dampers (FDA compliant)	90054765	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper F030A Active

#### Properties

Volume: 2,6 Litre                      Any mounting position                      Easy handling  
 Air supply pressure: 10 bar                      Easy installation                      High-quality materials  
 Diaphragm made of PTFE                      Long service life                      Low maintenance

Connection	Housing	Valve	max. Pressure	Temperature	Article-No.	Price (EUR)
1"	PP	PP	10	0/+60°C	37607861	▲
1"	PP	PVDF	10	0/+60°C	37607862	▲
1"	PP	PVC	10	0/+60°C	37607863	▲
1"	AISI316L	AISI316L	40	-40/200°C	37607864	▲

# AIR OPERATED DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-2,0/10	G 3/4	10 bar	1.4571	Butyl	37603723	▲
810.1-2,0/10	G 3/4	10 bar	1.4571	FPM	37603727	▲
810.1-2,0/10	G 3/4	10 bar	1.4571	PTFE	37606308	▲

### ACCESSORIES



#### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm Seals	Article-No.	Price (EUR)
713.1	G 1 ¼	10 bar	PVC-U	EPDM	30071038	▲
713.1	G 1 ¼	10 bar	PVC-U	FPM	30071039	▲
713.1	G 1 ¼	10 bar	PP	EPDM	30071040	▲
713.1	G 1 ¼	10 bar	PP	FPM	30071041	▲
713.1	G 1 ¼	10 bar	PVDF	EPDM	30071060	▲
713.1	G 1 ¼	10 bar	PVDF	FPM	30071061	▲

### OPTIONS



Loose-type flanges	Design acc. to DIN 2501, incl. O-Rings		
PVC-design	Loose flange, PVC-U	DN20	▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20	▲

### ACCESSORIES



Bracket	Material	Article-No.	
for wall mounting	PP	90010913	▲
	1.4301	90010914	▲
	Steel (color treated)	90010915	▲



Filling pump FLP 2	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲

# AIR OPERATED DIAPHRAGM PUMPS



## ÜBERBLICK

- Mobile use
- Easy handling
- Self priming
- Immersible
- Dry suction
- Safe to run dry
- Suitable for solids
- For viscous media
- Low maintenance costs

## TECHNICAL DATA

Type	Connection	max. flow rate [Litres/min.]	max. particle size [mm]	max. counterpressure [bar]	Air pressure min - max [bar]	Air supply connection	max. suction height		Weight [kg]
							dry [m]	wet [m]	
AP20 Plastic	2"	583	8,9	6,9	0,7 - 6,9	3/4" NPT(f)	2,8 - 4	8,5	PP 30,4
									PVDF 44,2
AP20 Metal	2"	590	8,9	8,3	0,7 - 8,3	3/4" NPT(f)	2,8 - 4	8,5	Stainless Steel 59,0
									Aluminium 39,5

## BASIC DESIGNS

Type	Pump-body	Diaphragm(s)	Valve seats	Valve balls	Valve seals	Article-No.	Price (EUR)	Wearing parts set		
								Article-No.	Price (EUR)	
AP20	PP	Santoprene	PP	Santoprene	Santoprene	15007017	①	90052106	▲	
AP20	PP	Santoprene+PTFE	PP	PTFE	FEP-covered	15007018	①	90052107	▲	
AP20	PVDF	Santoprene	PVDF	Santoprene	Santoprene	15007019	①	90052108	▲	
AP20	PVDF	Santoprene+PTFE	PVDF	PTFE	FEP-covered	15007020	①	90052109	▲	
AP20	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007027	①	90052116	▲	
AP20	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007028	①	90052117	▲	
AP20	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15007025	①	90052114	▲	
AP20	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15007026	①	90052115	▲	
FDA	AP20	PP	Santoprene	PP	Santoprene	FEP-covered	15007021	①	90052110	▲
	AP20	PP	Santoprene+PTFE	PP	PTFE	FEP-covered	15007022	①	90052111	▲
	AP20	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007023	①	90052112	▲
	AP20	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007024	①	90052113	▲
ATEX <sup>1)</sup>	AP20	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007029	①	90052116	▲
	AP20	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007030	①	90052117	▲
	AP20	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15007031	①	90052114	▲
	AP20	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15007032	①	90052115	▲

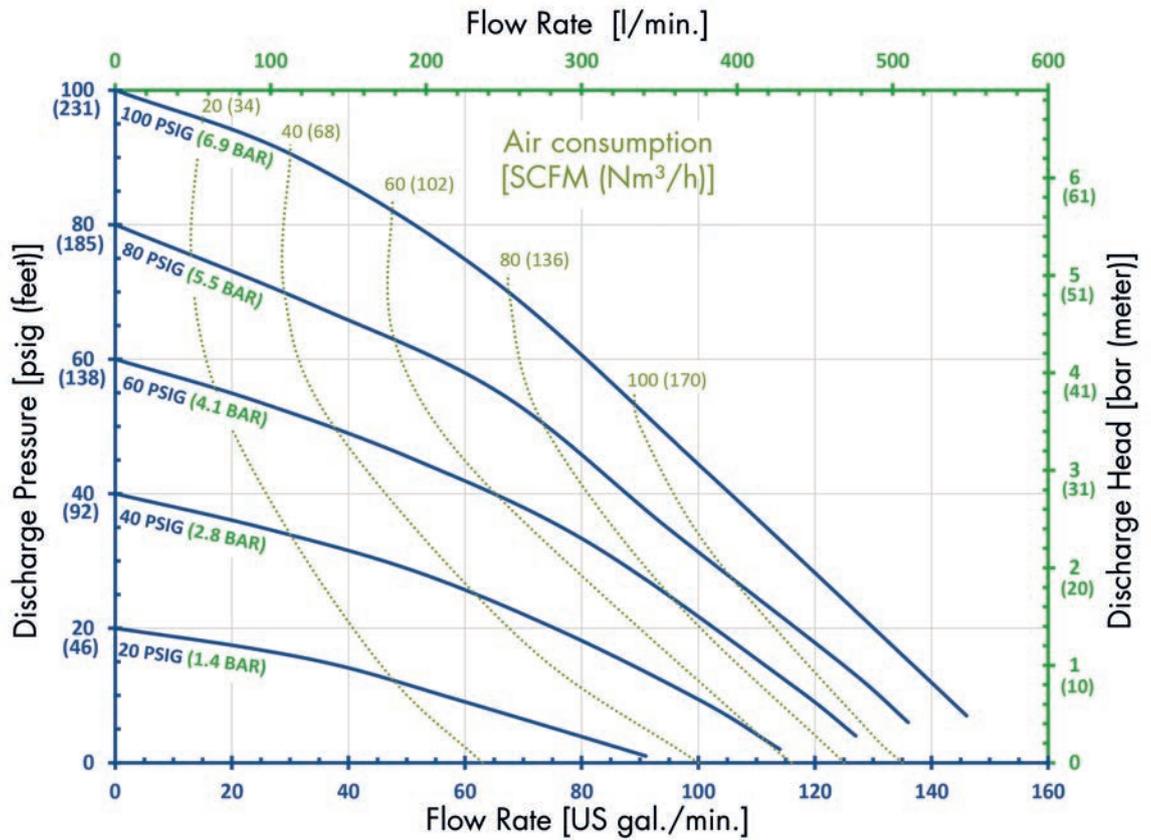
<sup>1)</sup> Zone: Ex II 2GD c IIB TX

**CONNECTION** Suction-/Pressure side: 2"  
 Max. flow capacity 590 l/min  
 Max. admissible counterpressure up to 8,3 bar

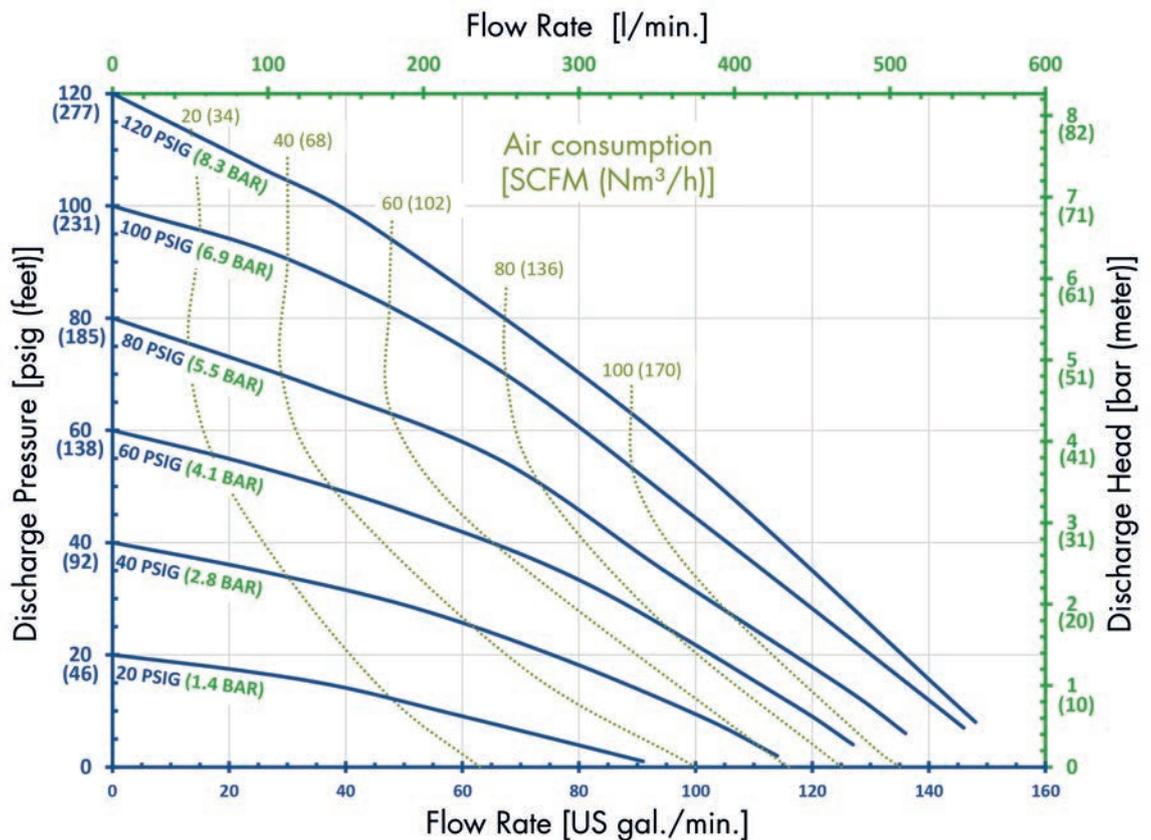
# airPUMP AP20

## CHARACTERISTIC CURVES

Plastic

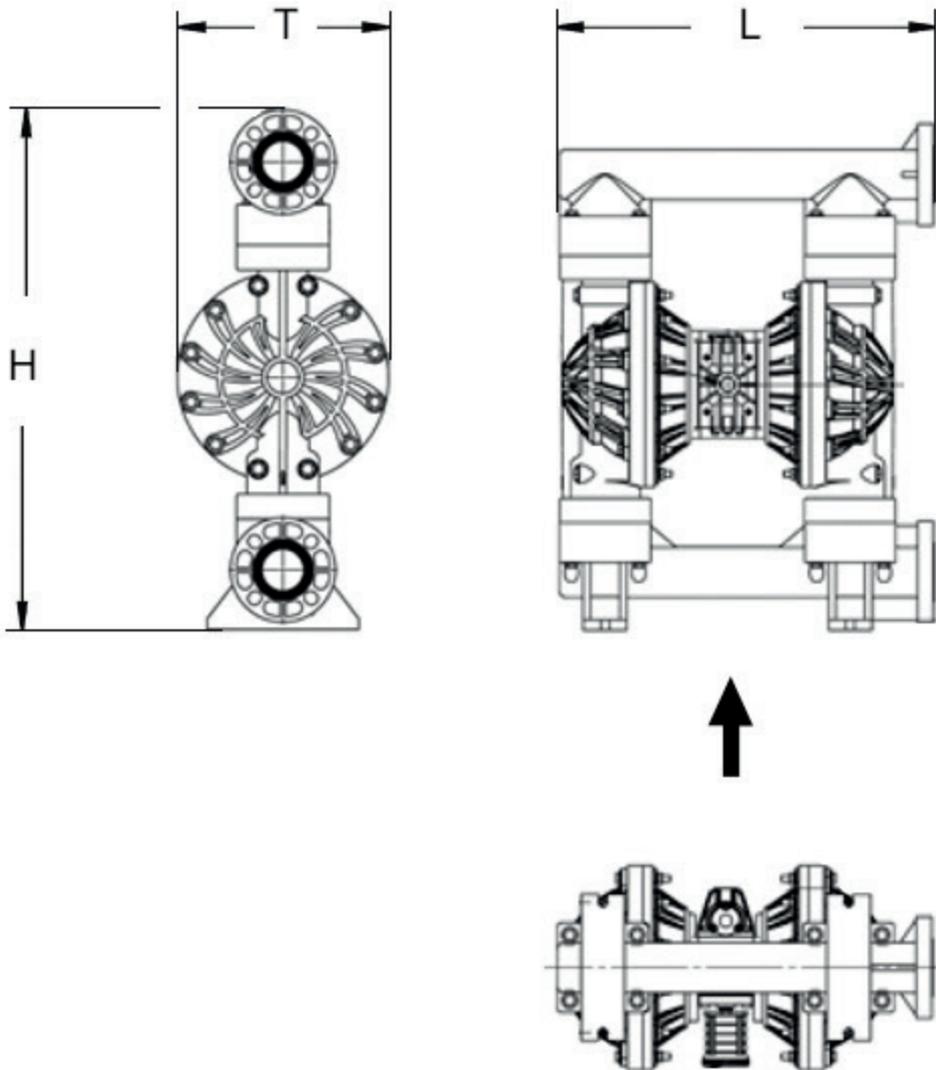


Metal



# AIR OPERATED DIAPHRAGM PUMPS

## DIMENSIONS



AP15	(Plastic)	(Metal)
max. Length (L)	600mm	Aluminium 530mm Stainless steel 520mm
max. Height (H)	805mm	Aluminium 733mm Stainless steel 765mm
max. Width (T)	326mm	Aluminium 326mm Stainless steel 326mm

## ACCESSORIES



### Compressed air supply unit

Filter pressure controller      incl. 5m pneumatic hose  
 Shut-off valve                      incl. Bracket  
 Fittings

**Article-No.**      **Price (EUR)**

90052197      ▲



### Vibration damper

**Article-No.**      **Price (EUR)**

4 pcs. vibration dampers      90054762      ▲

4 pcs. vibration dampers (FDA compliant)      90054765      ▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper F030A Active

#### Properties

Volume: 2,6 Litre      Any mounting position      Easy handling  
 Air supply pressure: 10 bar      Easy installation      High-quality materials  
 Diaphragm made of PTFE      Long service life      Low maintenance

Connection	Housing	Valve	max. Pressure	Temperature	Article-No.	Price (EUR)
1"	PP	PP	10	0/+60°C	37607861	▲
1"	PP	PVDF	10	0/+60°C	37607862	▲
1"	PP	PVC	10	0/+60°C	37607863	▲
1"	AISI316L	AISI316L	40	-40/200°C	37607864	▲

# AIR OPERATED DIAPHRAGM PUMPS

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm Seals	Article-No.	Price (EUR)
713.1	G 1¼	10 bar	PVC-U	EPDM	30071038	▲
713.1	G 1¼	10 bar	PVC-U	FPM	30071039	▲
713.1	G 1¼	10 bar	PP	EPDM	30071040	▲
713.1	G 1¼	10 bar	PP	FPM	30071041	▲
713.1	G 1¼	10 bar	PVDF	EPDM	30071060	▲
713.1	G 1¼	10 bar	PVDF	FPM	30071061	▲

### OPTIONS



Loose-type flanges	Design acc. to DIN 2501, incl. O-Rings	
PVC-design	Loose flange, PVC-U	DN20 ▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20 ▲

### ACCESSORIES



Bracket	PP	90010913	▲
for wall mounting	1.4301	90010914	▲
	Steel (color treated)	90010915	▲



Filling pump FLP 2	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-2,0/10	G 3/4	10 bar	1.4571	Butyl	37603723	▲
810.1-2,0/10	G 3/4	10 bar	1.4571	FPM	37603727	▲
810.1-2,0/10	G 3/4	10 bar	1.4571	PTFE	37606308	▲

## ACCESSORIES



### Filling- and pressure measuring device

(mounted on pulsation damper)

Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲



<b>Filling pump FLP 2</b>	for filling device	
with manometer, max. 7 bar incl. 2m hose and coupling for air valve		90009396 ▲

# AIR OPERATED DIAPHRAGM PUMPS



## ÜBERBLICK

- Mobile use
- Easy handling
- Self priming
- Immersible
- Dry suction
- Safe to run dry
- Suitable for solids
- For viscous media
- Low maintenance costs

## TECHNICAL DATA

Type	Connection	max. flow rate [Litres/min.]	max. particle size [mm]	max. counterpressure [bar]	Air pressure min - max [bar]	Air supply connection	max. suction height		Weight [kg]
							dry [m]	wet [m]	
<b>AP30</b> Stainless Steel	3"	908	12,7	8,3	0,7 - 8,3	3/4" NPT(f)	4,3 - 5,6	8,8	107,0
<b>AP30</b> Aluminium	3"	908	12,7	8,3	0,7 - 8,3	3/4" NPT(f)	4,3 - 5,6	8,8	70,3

## BASIC DESIGNS

	Type	Pump-body	Diaphragm(s)	Valve seats	Valve balls	Valve seals	Article-No.	Price (EUR)	Wearing parts set	
									Article-No.	Price (EUR)
	AP30	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007033	①	90052118	▲
	AP30	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007034	①	90052119	▲
	AP30	Stainless Steel	Santoprene	Aluminium	Santoprene	PTFE	15007037	①	90052122	▲
	AP30	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15007038	①	90052123	▲
<b>FDA</b>	AP30	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007035	①	90052120	▲
	AP30	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007036	①	90052121	▲
<b>ATEX <sup>1)</sup></b>	AP30	Stainless Steel	Santoprene	Stainless Steel	Santoprene	PTFE	15007039	①	90052118	▲
	AP30	Stainless Steel	Santoprene+PTFE	Stainless Steel	PTFE	PTFE	15007040	①	90052119	▲
	AP30	Aluminium	Santoprene	Aluminium	Santoprene	PTFE	15007041	①	90052122	▲
	AP30	Aluminium	Santoprene+PTFE	Aluminium	PTFE	PTFE	15007042	①	90052123	▲

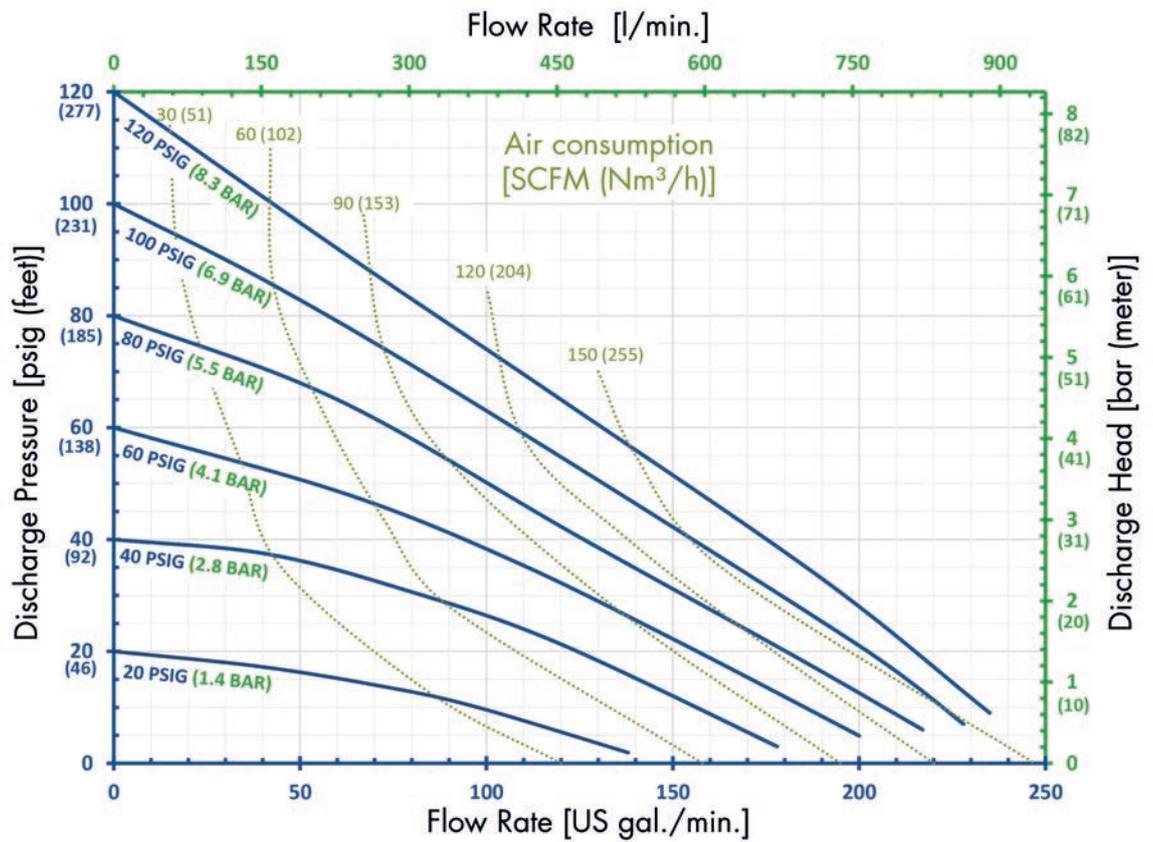
<sup>1)</sup> Zone: Ex II 2GD c IIB TX

**CONNECTION** Suction-/Pressure side: 3"  
 Max. flow capacity 908 l/min  
 Max. admissible counterpressure up to 8,3 bar

# airPUMP AP30

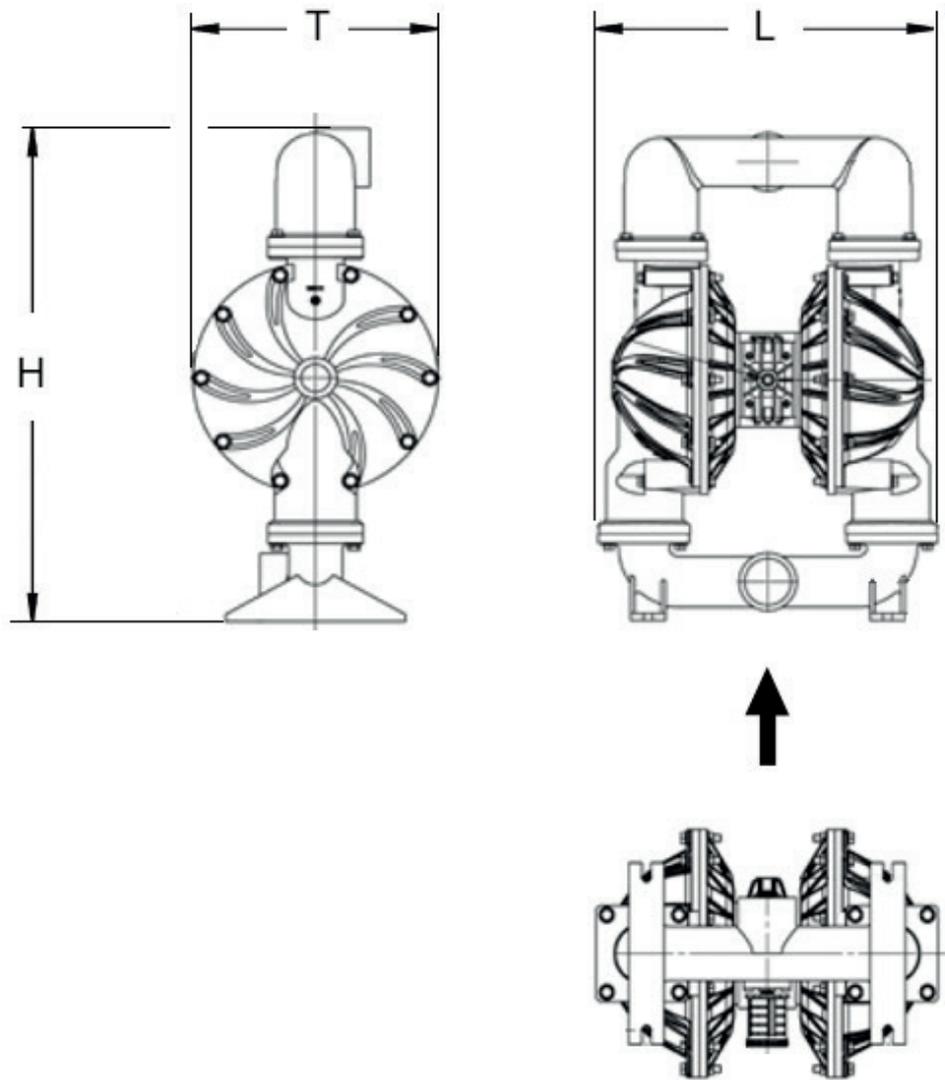
## CHARACTERISTIC CURVES

Plastic



# AIR OPERATED DIAPHRAGM PUMPS

## DIMENSIONS



AP15	(Metal)	
max. Length (L)	Aluminium	617mm
	Stainless Steel	617mm
max. Height (H)	Aluminium	884mm
	Stainless Steel	924mm
max. Width (T)	Aluminium	416mm
	Stainless Steel	416mm



### Vibration damper

	Article-No.	Price (EUR)
4 pcs. vibration dampers	90054762	▲
4 pcs. vibration dampers (FDA compliant)	⊘	⊘

## ACCESSORIES



### Compressed air supply unit

Filter pressure controller                      incl. 5m pneumatic hose  
 Shut-off valve                                      incl. Bracket  
 Fittings

Article-No.      Price (EUR)

90052197      ▲

## FITTINGS FOR THE PRESSURE SIDE



### Diaphragm pulsation damper F060A Active

#### Properties

Volume: 5,6 Litre                                  Any mounting position                      Easy handling  
 Air supply pressure: 10 bar                      Easy installation                                  High-quality materials  
 Diaphragm made of PTFE                      Long service life                                  Low maintenance

Connection	Housing	Valve	max. Pressure	Temperature	Article-No.	Price (EUR)
1"	PP	PP	10	0/+60°C	37607865	▲
1"	PP	PVDF	10	0/+60°C	37607866	▲
1"	PP	PVC	10	0/+60°C	37607867	▲
1"	AISI316L	AISI316L	40	-40/200°C	37607868	▲

### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

Any mounting position                                  Easy handling  
 Easy installation                                          High-quality materials  
 Long service life                                          Low maintenance

Article-No.      Price (EUR)

Type      715.1      ①      ①

### Diaphragm pulsation damper (metal, with elastomere diaphragm, max. 16 bar)

#### Properties

Any mounting position                                  Easy handling  
 Easy installation                                          High-quality materials  
 Long service life                                          Low maintenance

Article-No.      Price (EUR)

Type      715.1      ①      ①





# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## DB-/SP-SERIES



INSPIRED. SOLUTIONS. FOR CUSTOMERS.

# centrifugalPUMP

## APPLICATIONS M- AND MP-SERIES

- Chemical processes
- Metal plating/working
- Wastewater treatment
- Electronics manufacturing
- OEM equipment supply
- DI & High purity water
- Fume scrubbing
- Mining
- Paper mills
- Pharmaceutical
- Chillers

## APPLICATIONS MP-SERIES

- Sumps
- Underground storage tanks
- Rail cars and tanker trucks
- Over-the-wall applications
- Double containment tanks
- Piping systems that tend to have trapped or entrained air.

## PROPERTIES AT A GLANCE

### M- AND MP-SERIES

- Close-coupled design
- Material PP or PVDF
- Neodymium magnets on every model
- Replaceable shaft and bushing
- ISO 1940 G2.5 balancing
- Mounts to NEMA and IEC motor frames
- Easy Set measurement-free outer drive
- Mounts to motor without disassembly
- Back pullout design
- CE certified
- ATEX 2014/34/EU available (DB only)

## SPECIFICATIONS

- Up to 70% operating efficiency
- Working pressure up to 6,2 bar (90 psi)
- Maximum viscosity  
M-Series: over 150 cP  
MP-Series: over 50 cP
- Maximum temperature  
PP: up to 82° C (180° F)  
PVDF: up to 104° C (220° F)

## TECHNICAL DATA

- MP retains fluid for re-priming when shut off without a check valve
- MP lifts up to 25 feet (7.6 meters)\*\*
- MP primes up to 18 feet (5.5 meters) in 90 seconds\*\*\*

\*\* lift determined on fresh, cold water

\*\*\* with maximum diameter impeller



Flow capacity M (MP) up to max. 50,7 (47,9) m<sup>3</sup>/h  
 Discharge head M (MP) up to 41,7 (37,9) m

**M/MP**

**M - SERIES**

flooded suction



The standard for hydraulic efficiency and corrosive fluid handling

- Extreme dry run capability
- Designs according to ATEX 2014/34/EU
- PP or PVDF corrosion resistant construction
- Horizontal or vertical installation (with IEC motor only)
- Specific gravity handling over 1.8 kg/dm<sup>3</sup>

**MP - SERIES**

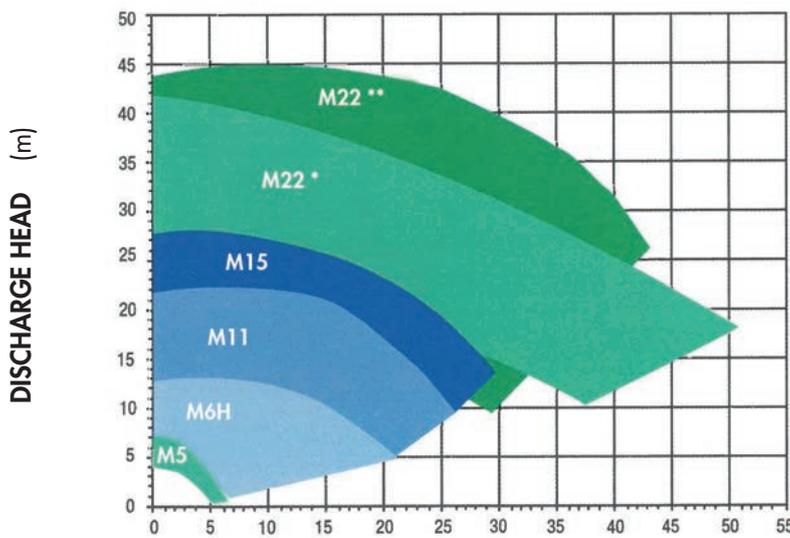
self-priming



The most innovative and versatile mag-drive centrifugal pump

- Big on power - short on energy consumption
- Deep-lift capabilities - up to 7,6 meters
- Lightning fast priming - 5,5 meters in 90 sec.
- Easy to operate
- No seal replacement and no leaks
- Corrosion-resistant materials handle the most difficult applications

**M SERIES**



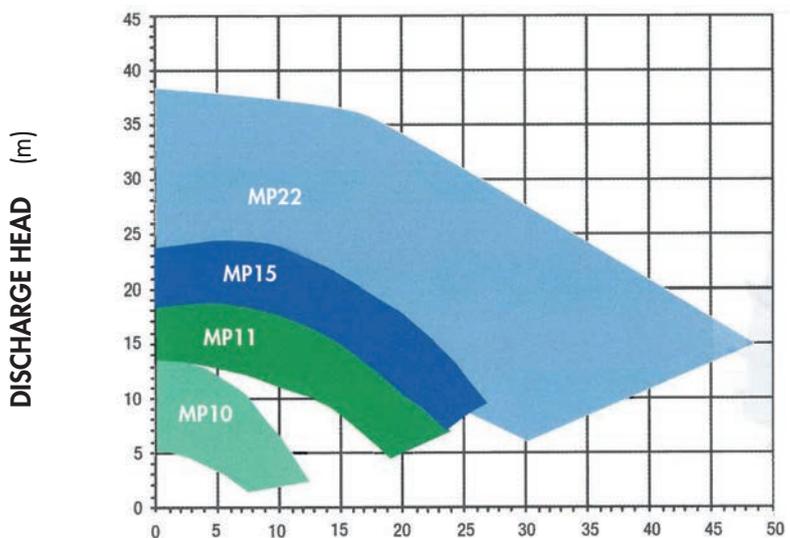
**2.900 U/min. (50 Hz)**

\* open impeller  
 \*\* closed impeller

**FLOW CAPACITY (m<sup>3</sup>/h)**

**MP SERIES**

(curves based on flooded suction)



**2.900 U/min. (50 Hz)**

**FLOW CAPACITY (m<sup>3</sup>/h)**

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS



## OVERVIEW

- 5 years warranty
- Extreme dry run capability
- Neodymium magnets on every model
- Easy Set measurement-free outer drive
- Close-coupled design
- Design according to ATEX 2014/34/EU
- Horizontal or vertical installation
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

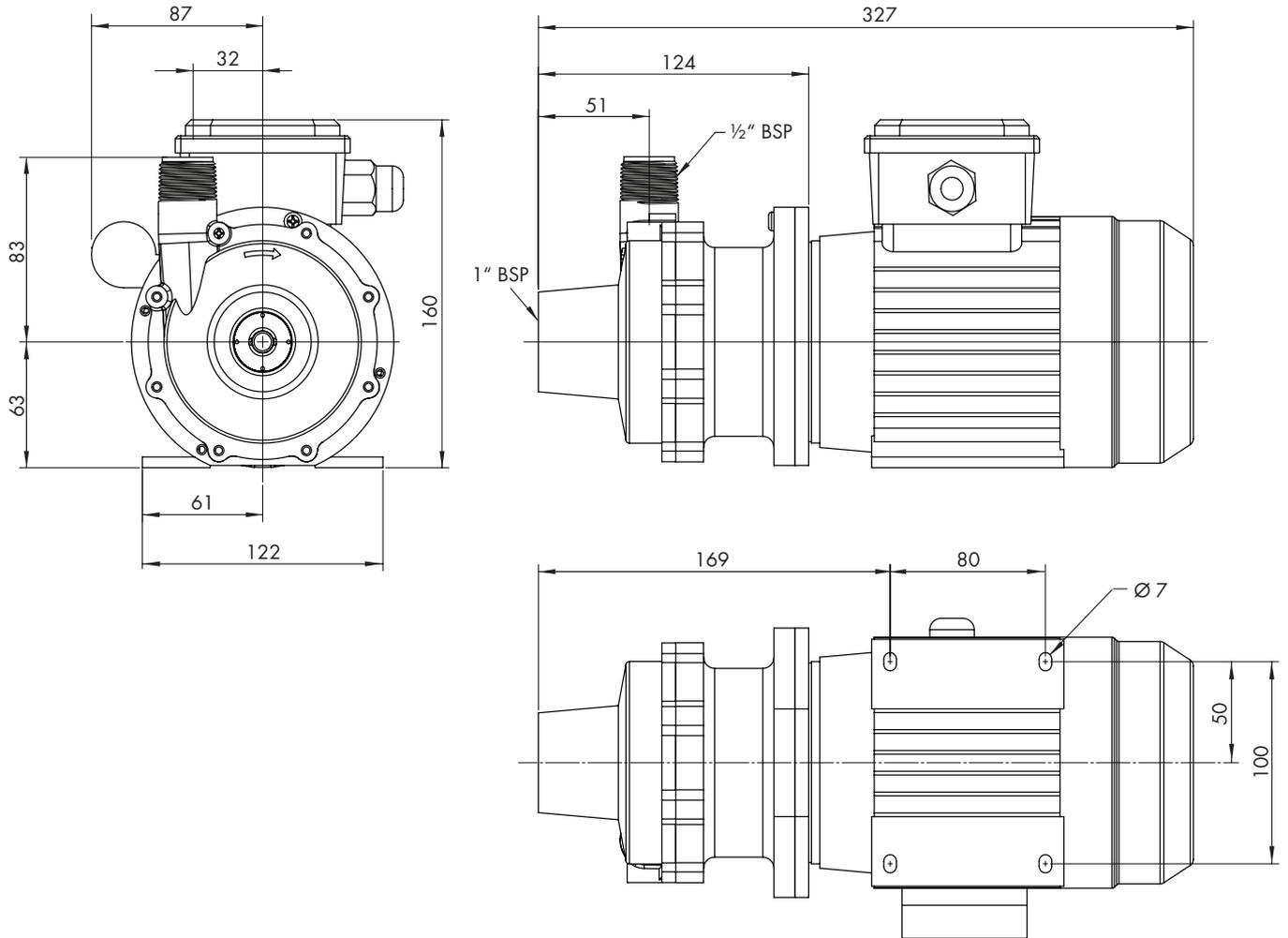
PUMP DATA			M5
Impeller	Diameter	[mm]	76,2
Flow quantity $Q_N$	min.	[Litre/min]	1
	max.	[Litre/min]	60
		[m <sup>3</sup> /h]	3,6
Discharge head	max. H	[mWC]	7,5
System pressure	max.	[bar]	4,1
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	50
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	0,65
		PVDF	0,80

MOTOR DATA			M5
Nominal speed		[rpm]	2.900
Power consumption		[kW]	0,18
Nominal voltage		[V]	230/400
Frequency		[Hz]	50
Enclosure		[IP]	55
Isolation class			F
Motor-Size		[BG]	63
Weight (without pump)		approx. [kg]	5,1

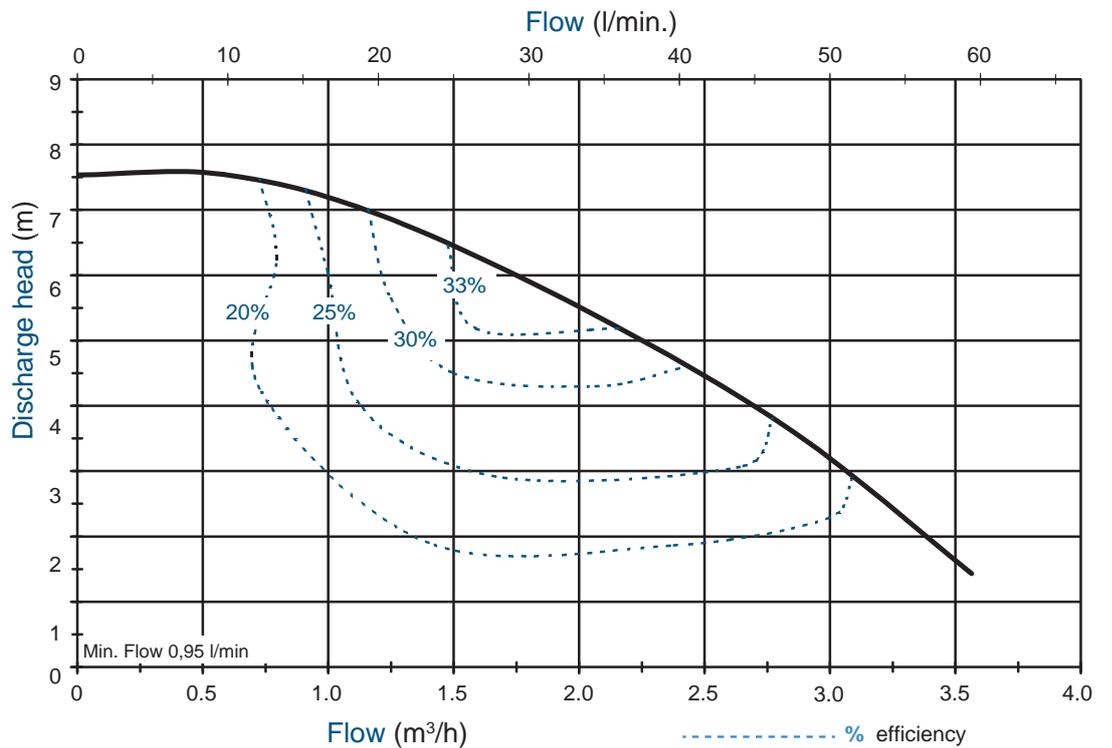
max. flow capacity 3,6 m<sup>3</sup>/h  
 Discharge head up to 7,5 m

# centrifugalPUMP M5

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearing	Carbon		Slide bearing	Oxide ceramic	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	0,18 kW (Standard)		Drive motor	0,18 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
DB5P	15006576	🕒	DB5V	15006577	🕒



### Surcharge [EUR]

#### 3-Phase-DC motor, 230/400V DC, 50Hz, 3x PTC

BG 63	0,18 kW	(included in the basic design)	●
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#### 1-Phase-AC motor, 230V/50Hz

BG 63	0,18 kW		▲
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#### II2G Ex e II T4

BG 63	0,18 kW		🕒
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Further drive motors possible on request.

## ACCESSORIES



### Diaphragm valve, manually

reliable diaphragm valve  
good control characteristics  
optical position indicator

Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)

						Article-No.	Price (EUR)
Diaphragm valve	1/2"	DN15	Socket	d20	PP	EPDM	37607414 ▲
Diaphragm valve	1/2"	DN15	Socket	d20	PVDF	FPM	37607491 ▲

max. flow capacity 3,6 m<sup>3</sup>/h  
Discharge head up to 7,5 m

# centrifugalPUMP M5

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS



## OVERVIEW

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- Design according to ATEX 2014/34/EU
- Horizontal or vertical installation
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

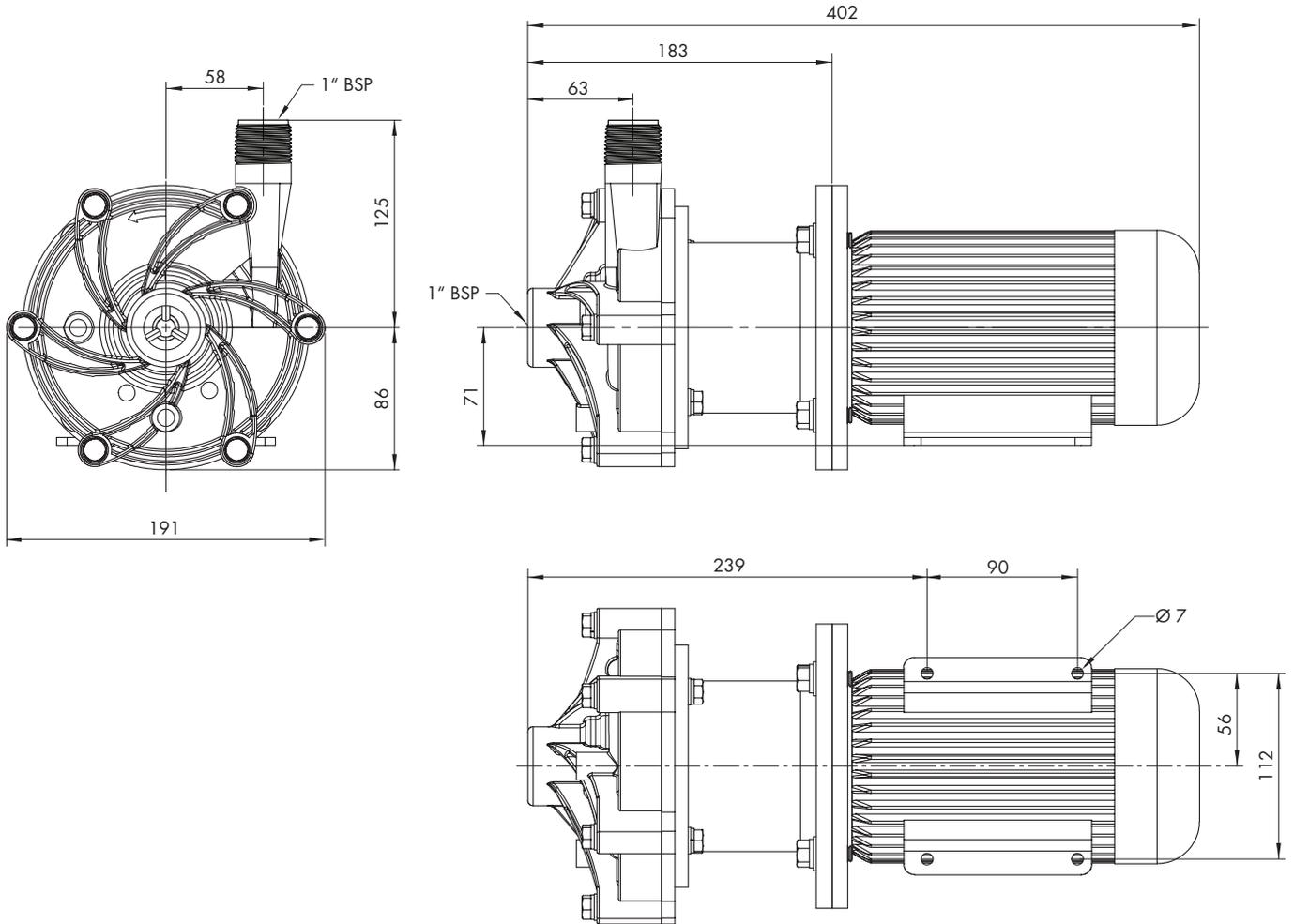
PUMP DATA			M6H
Impeller	Diameter	[mm]	106
Flow quantity $Q_N$	min.	[Litre/min]	1,9
	max.	[Litre/min]	241
		[m <sup>3</sup> /h]	9,5
Discharge head	max. H	[mWC]	14,5
System pressure	max.	[bar]	5,5
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	150
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	3,4
		PVDF	3,9

MOTOR DATA			M6H
Nominal speed		[rpm]	2.900
Power consumption		[kW]	0,37
Nominal voltage		[V]	230/400
Frequency		[Hz]	50
Enclosure		[IP]	55
Isolation class			F
Motor-Size		[BG]	71
Weight (without pump)		approx. [kg]	6,0

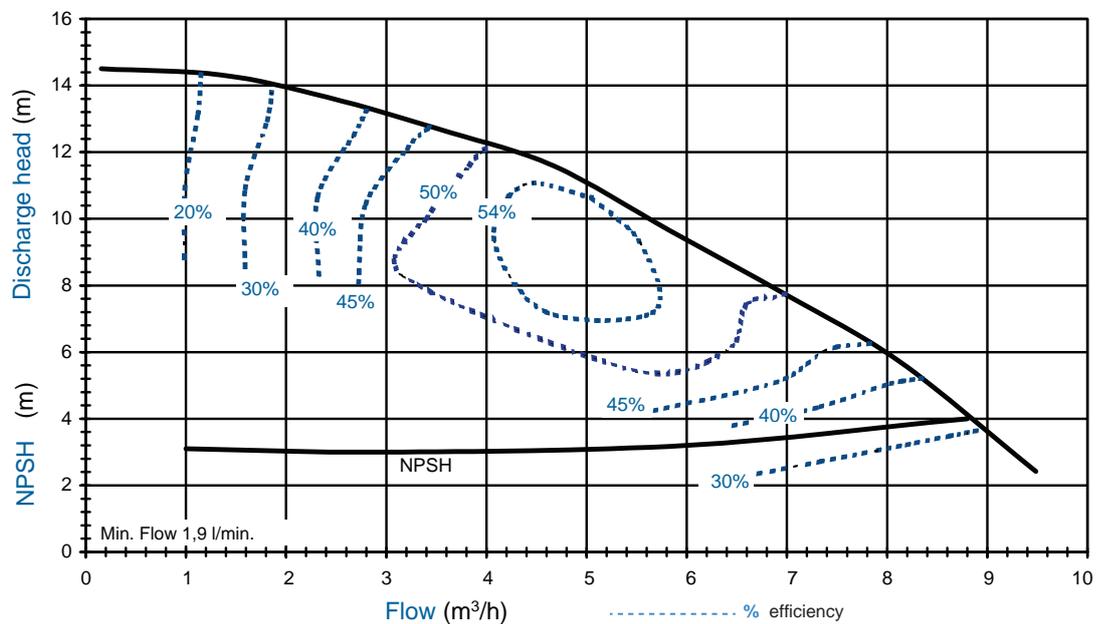
max. flow capacity 9,5 m<sup>3</sup>/h  
 Discharge head up to 14,5 m

# centrifugalPUMP M6H

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearing	Carbon		Slide bearing	Oxide ceramic	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	0,37 kW (Standard)		Drive motor	0,37 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
DB6HP	15006578	①	DB6HV	15006579	①

## DRIVE MOTOR



**3-Phase-DC motor**, 230/400V DC, 50Hz, 3x PTC

			Surcharge [EUR]
BG 71	0,37 kW	(included in the basic design)	●

**1-Phase-AC motor**, 230V/50Hz

BG 71	0,37 kW		▲
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**II2G Ex e II T4**

BG 71	0,37 kW		①
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Further drive motors possible on request.

## ACCESSORIES



### Diaphragm valve, manually

reliable diaphragm valve  
good control characteristics  
optical position indicator

Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)

						Article-No.	Price (EUR)
Diaphragm valve	1"	DN25	Socket d32	PP	EPDM	37607488	▲
Diaphragm valve	1"	DN25	Socket d32	PVDF	FPM	37607493	▲

max. flow capacity 9,5 m<sup>3</sup>/h  
 Discharge head up to 14,5 m

# centrifugalPUMP M6H

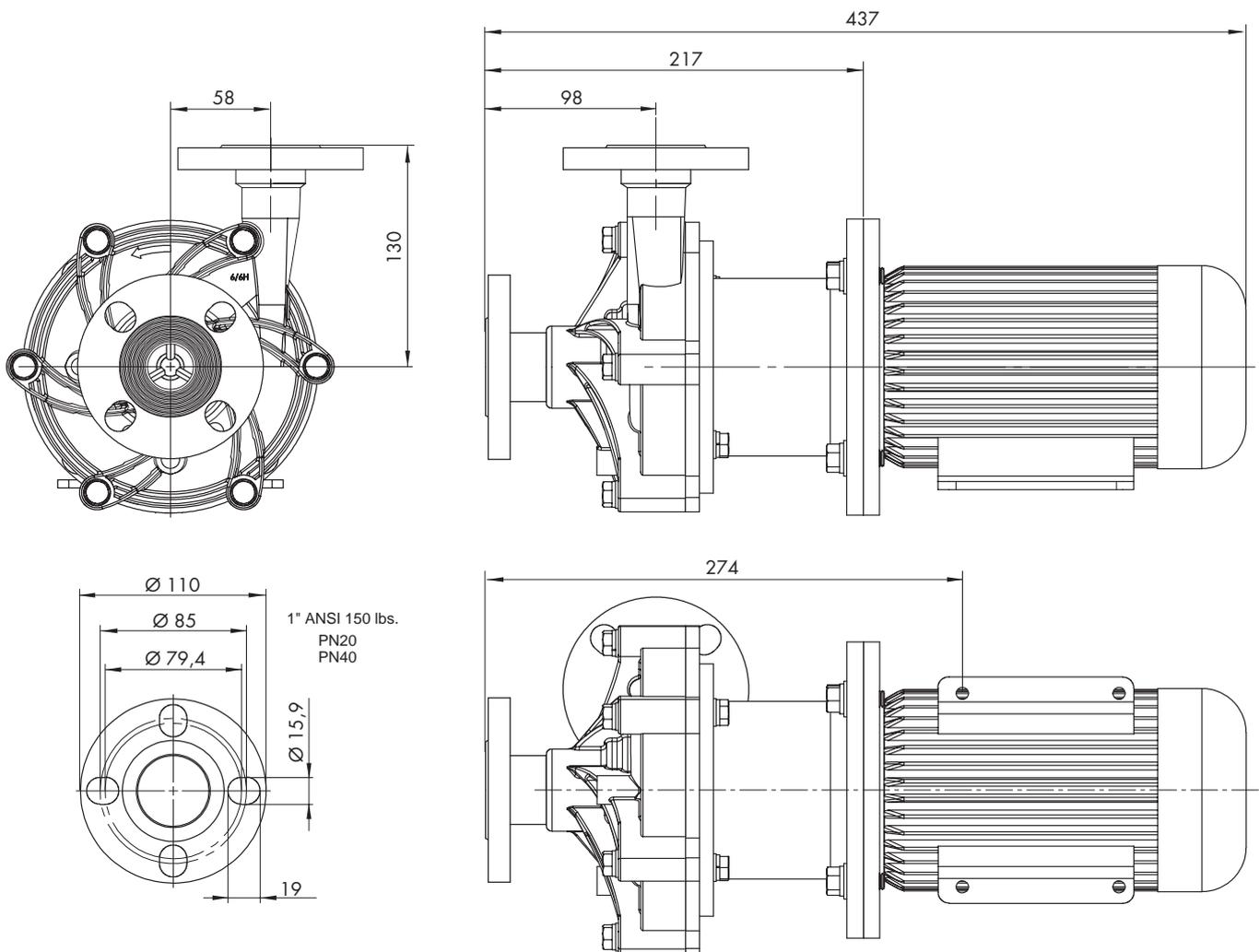
## OPTIONS



### Flange connection

		Surcharge [EUR]	
FRP flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲
Steel reinforced flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲

## DIMENSIONS



● basic version

○ available without extra charge

▲ available with extra charge

⊖ not available

ⓘ on request

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS



## OVERVIEW

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- Neodymium magnets on every model
- Easy Set measurement-free outer drive
- Close-coupled design
- Design according to ATEX 2014/34/EU
- Horizontal or vertical installation
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

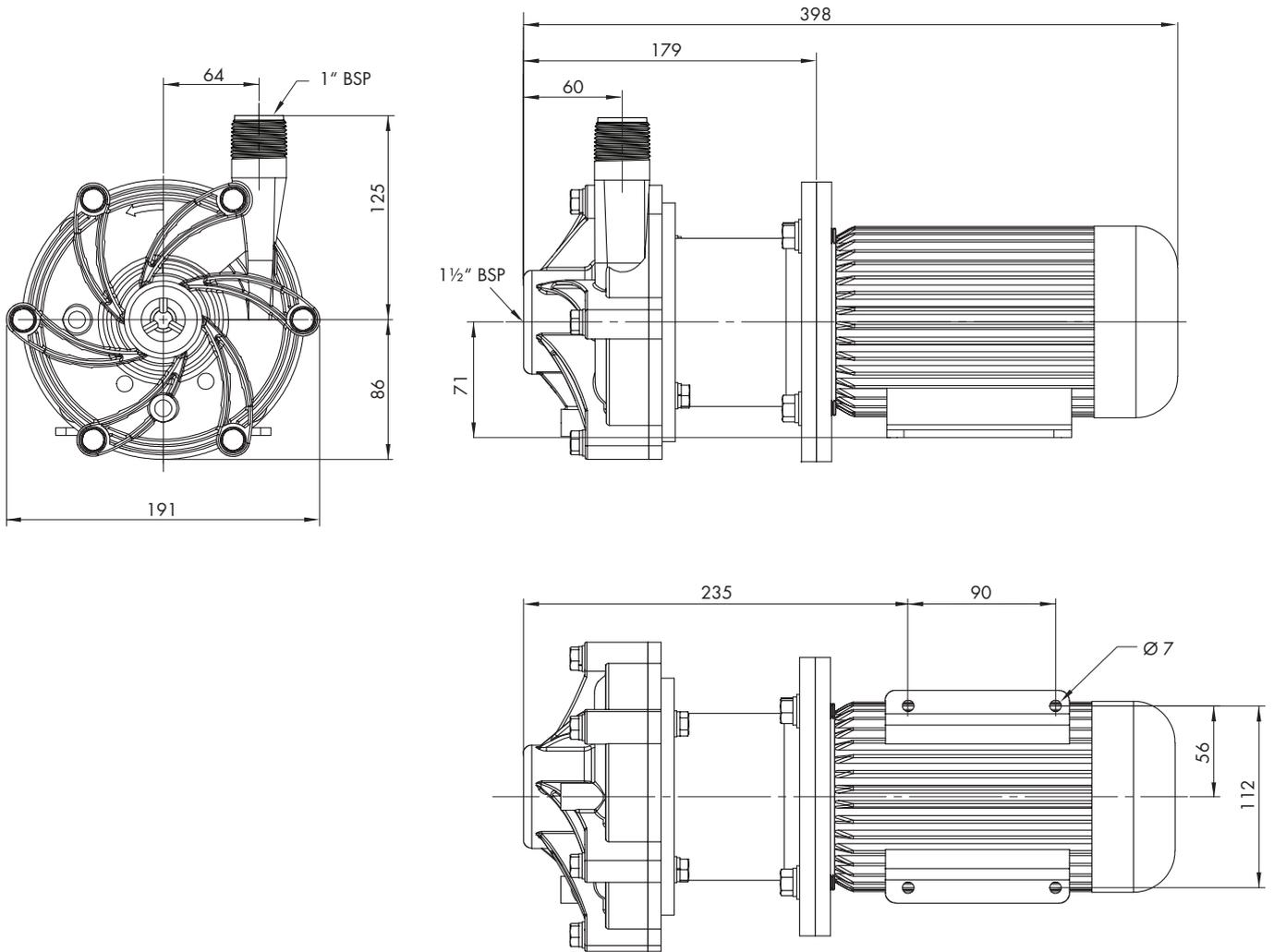
PUMP DATA			M8
Impeller	Diameter	[mm]	106
Flow quantity $Q_N$	min.	[Litre/min]	1,9
	max.	[Litre/min]	235
		[m <sup>3</sup> /h]	14,1
Discharge head	max. H	[mWC]	14,1
System pressure	max.	[bar]	5,5
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	150
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	4,2
		PVDF	5,5

MOTOR DATA			M8
Nominal speed		[rpm]	2.900
Power consumption		[kW]	0,55
Nominal voltage		[V]	230/400
Frequency		[Hz]	50
Enclosure		[IP]	55
Isolation class			F
Motor-Size		[BG]	71
Weight (without pump)		approx. [kg]	7,0

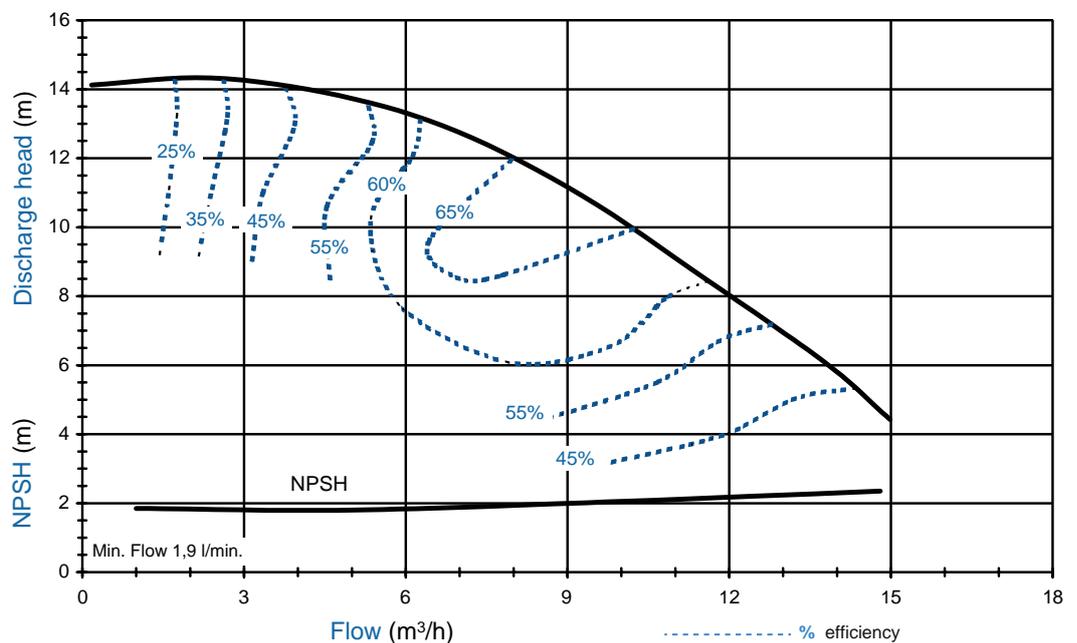
max. flow capacity 14,1 m<sup>3</sup>/h  
 Discharge head up to 14,1 m

# centrifugalPUMP M8

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearing	Carbon		Slide bearing	Oxide ceramic	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	0,55 kW (Standard)		Drive motor	0,55 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
DB8P	15006580	①	DB8V	15006581	①

## DRIVE MOTOR



				Surcharge [EUR]
<b>3-Phase-DC motor, 230/400V DC, 50Hz, 3x PTC</b>				
BG 71	0,55 kW	(included in the basic design)		●
<b>1-Phase-AC motor, 230V/50Hz</b>				
BG 71	0,55 kW			▲
<b>II2G Ex e II T4</b>				
BG 71	0,55 kW			①

Further drive motors possible on request.

## ACCESSORIES



Diaphragm valve, manually							Article-No.	Price (EUR)
reliable diaphragm valve			Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)					
good control characteristics								
optical position indicator								
Diaphragm valve	1"	DN25	Socket	d32	PP	EPDM	37607488	▲
Diaphragm valve	1"	DN25	Socket	d32	PVDF	FPM	37607493	▲

max. flow capacity 14,1 m<sup>3</sup>/h  
 Discharge head up to 14,1 m

# centrifugalPUMP M8

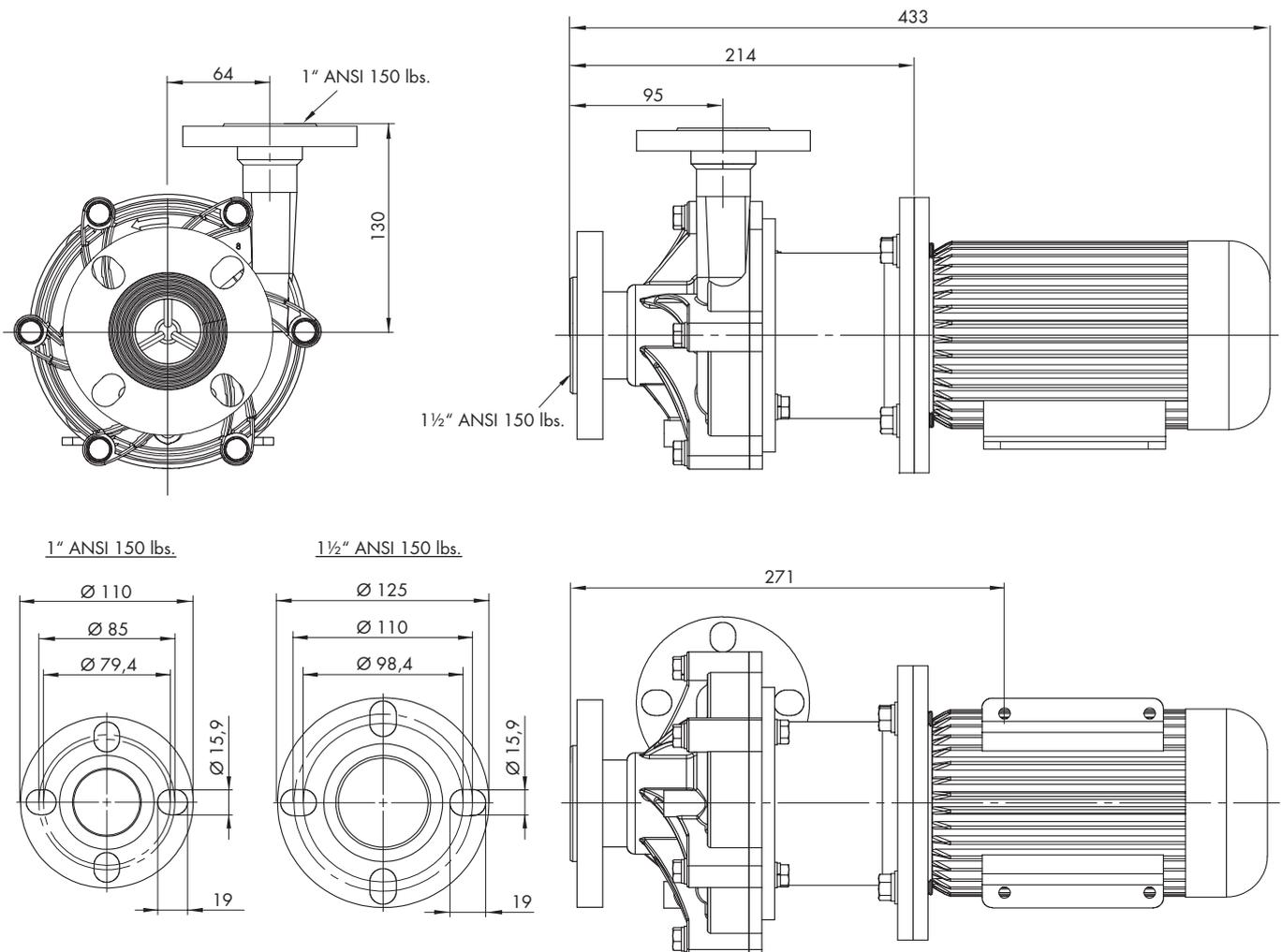
## OPTIONS



### Flange connection

		Surcharge [EUR]	
FRP flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲
Steel reinforced flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲

## DIMENSIONS



● basic version

○ available without extra charge

▲ available with extra charge

⊘ not available

① on request

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS



## OVERVIEW

- 5 years warranty
- Extreme dry run capability
- Neodymium magnets on every model
- Easy Set measurement-free outer drive
- Close-coupled design
- Design according to ATEX 2014/34/EU
- Horizontal or vertical installation
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

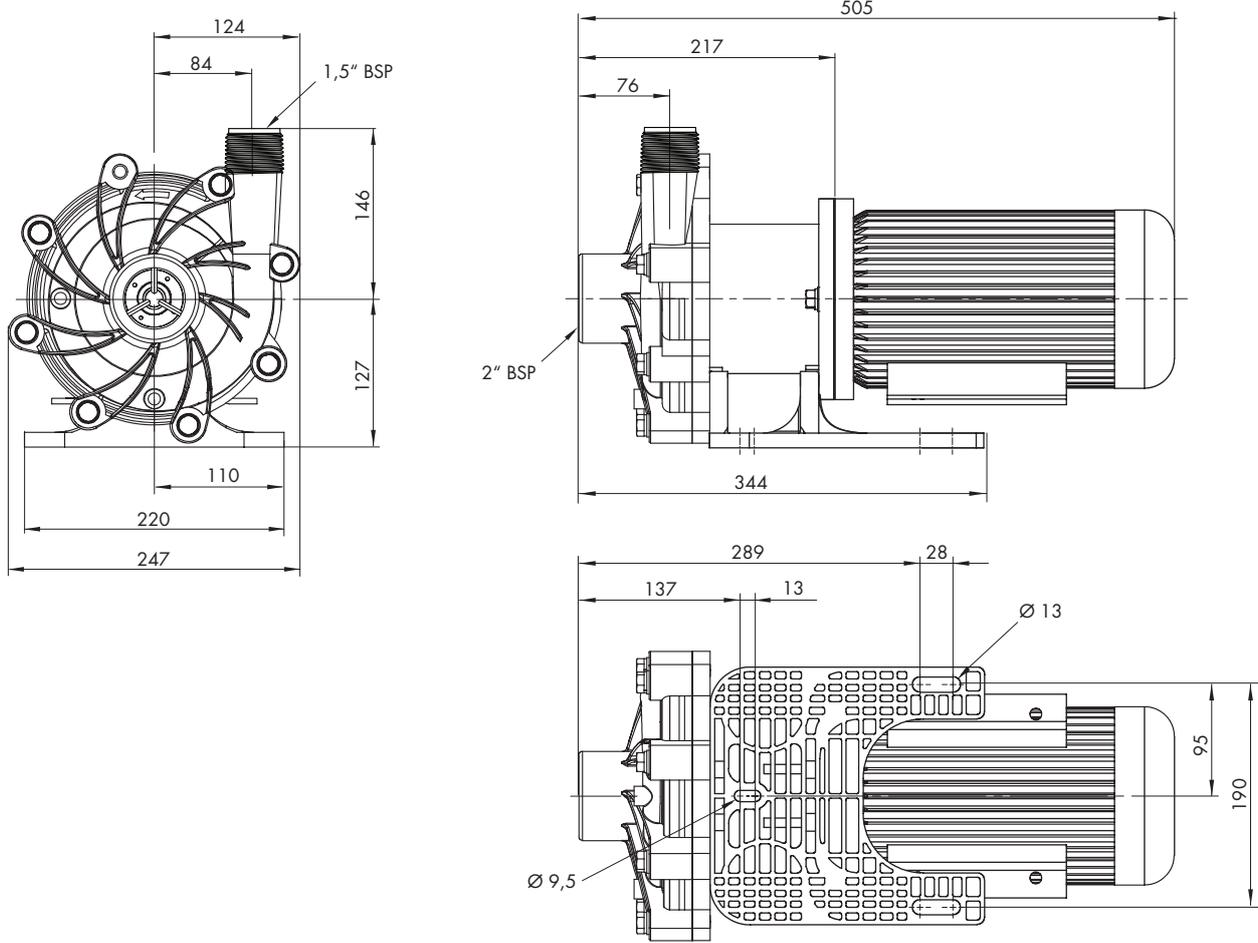
PUMP DATA			M11
Impeller	Diameter	[mm]	133
	min.	[Litre/min]	17
Flow quantity $Q_N$	max.	[Litre/min]	447
		[m <sup>3</sup> /h]	26,8
Discharge head	max. H	[mWC]	23
System pressure	max.	[bar]	6,2
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	150
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	10,1
		PVDF	11,1

MOTOR DATA			M11
Nominal speed		[rpm]	2.900
Power consumption		[kW]	1,5
Nominal voltage		[V]	230/400
Frequency		[Hz]	50
Enclosure		[IP]	55
Isolation class			F
Motor-Size		[BG]	90
Weight (without pump)		approx. [kg]	17,7

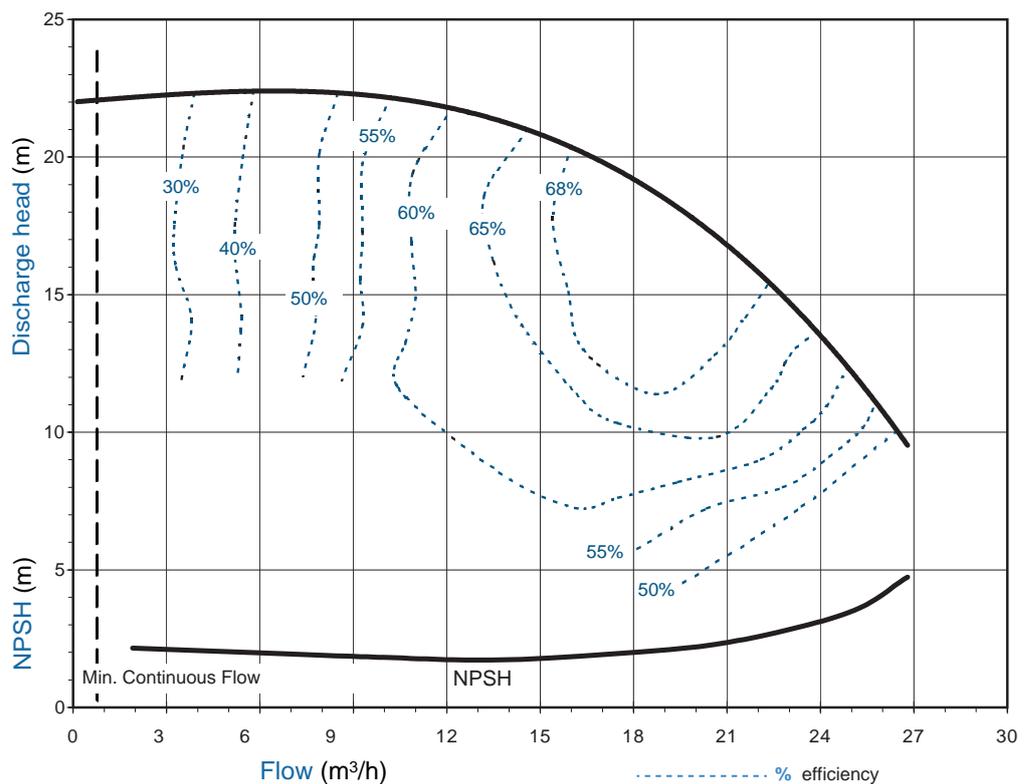
max. flow capacity 26,8 m<sup>3</sup>/h  
 Discharge head up to 23 m

# centrifugalPUMP M11

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearing	Carbon		Slide bearing	Oxide ceramic	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	1,5 kW (Standard)		Drive motor	1,5 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
DB11V	15006582	①	DB11V	15006583	①

## DRIVE MOTOR



**3-Phase-DC motor**, 230/400V DC, 50Hz, 3x PTC

			Surcharge [EUR]
BG 90	1,5 kW	(included in the basic design)	●

**1-Phase-AC motor**, 230V/50Hz

BG 90	1,5 kW		▲
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**II2G Ex e II T4**

BG 90	1,5 kW		①
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Further drive motors possible on request.

## ACCESSORIES



### Diaphragm valve, manually

reliable diaphragm valve  
good control characteristics  
optical position indicator

Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)

						Article-No.	Price (EUR)
Diaphragm valve	1 1/2"	DN40	Socket	d50	PP	EPDM	37607489 ▲
Diaphragm valve	1 1/2"	DN40	Socket	d50	PVDF	FPM	37607494 ▲

max. flow capacity 26,8 m<sup>3</sup>/h  
 Discharge head up to 23 m

# centrifugalPUMP M11

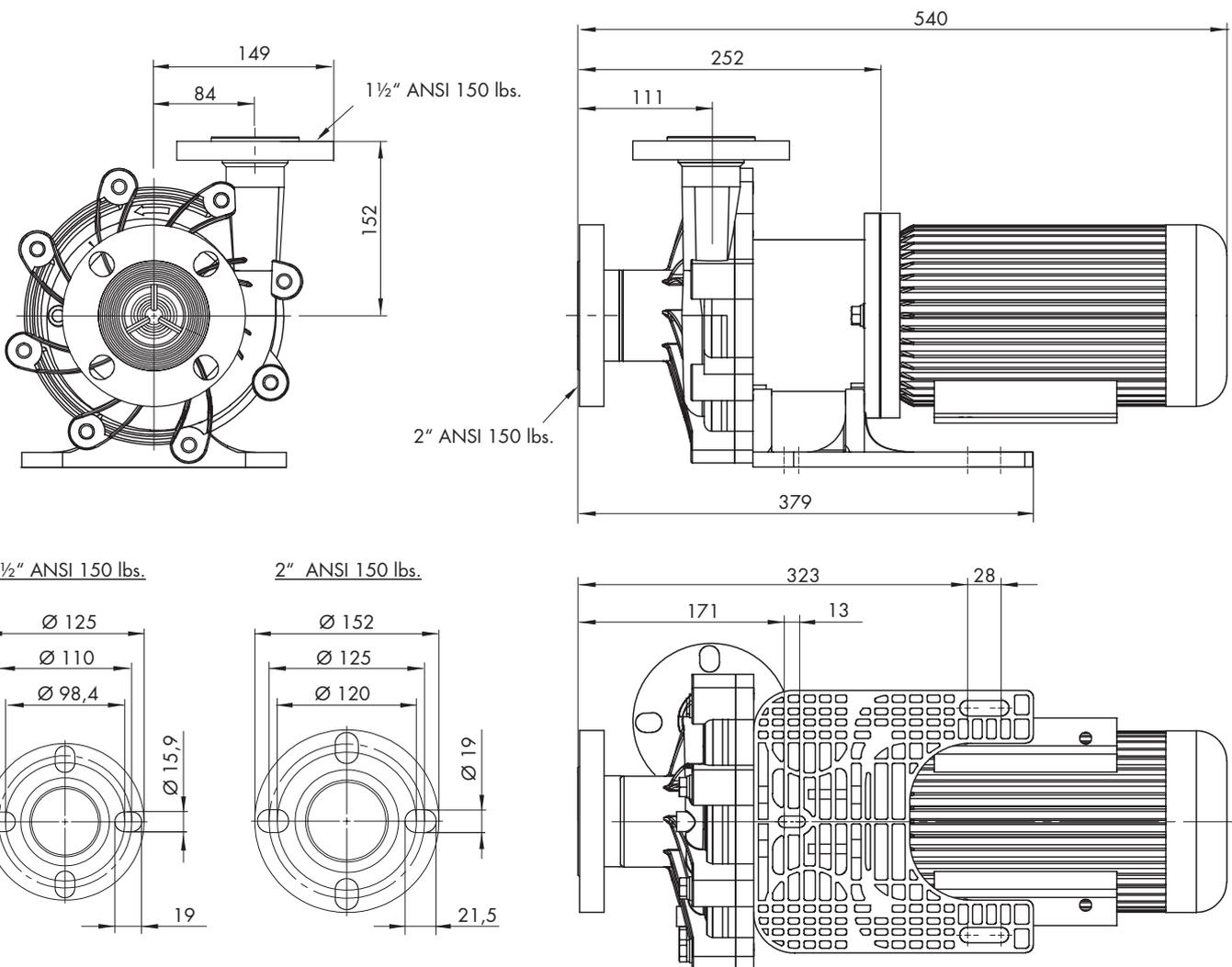
## OPTIONS



### Flange connection

		Surcharge [EUR]	
FRP flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲
Steel reinforced flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲

## DIMENSIONS



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS



## OVERVIEW

- 5 years warranty
- Extreme dry run capability
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- Easy Set measurement-free outer drive
- Close-coupled design
- Design according to ATEX 2014/34/EU
- Horizontal or vertical installation
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

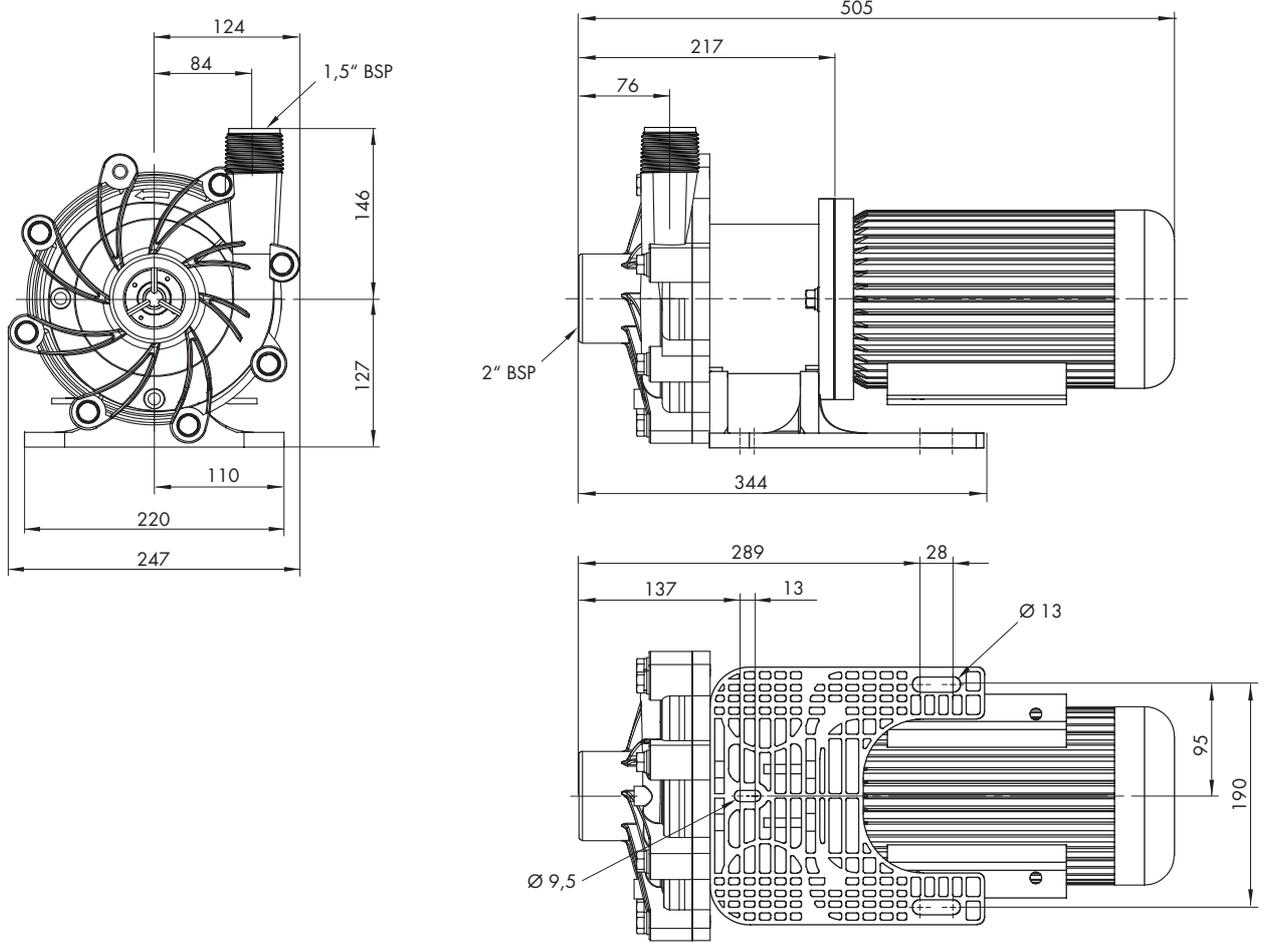
PUMP DATA			M15
Impeller	Diameter	[mm]	146
	min.	[Litre/min]	17
Flow quantity $Q_N$	max.	[Litre/min]	483
		[m <sup>3</sup> /h]	29
Discharge head	max. H	[mWC]	27
System pressure	max.	[bar]	6,2
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	150
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	10,1
		PVDF	11,1

MOTOR DATA			M15
Nominal speed		[rpm]	2.900
Power consumption		[kW]	2,2
Nominal voltage		[V]	230/400
Frequency		[Hz]	50
Enclosure		[IP]	55
Isolation class			F
Motor-Size		[BG]	90
Weight (without pump)		approx. [kg]	21,1

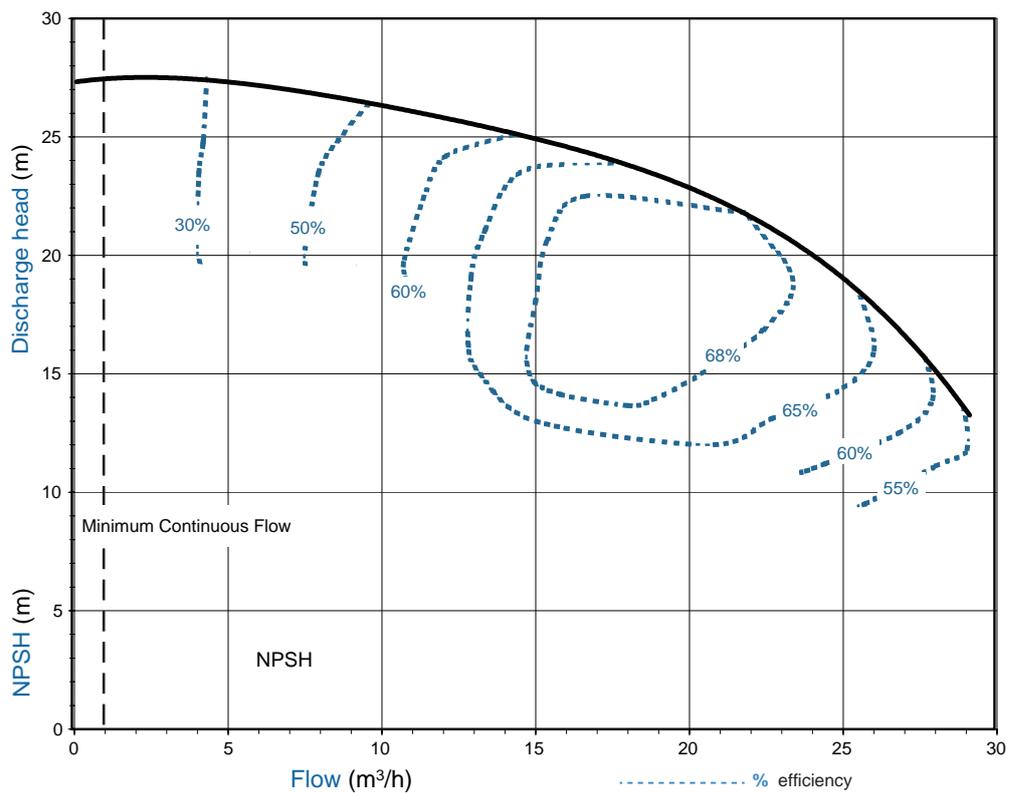
max. flow capacity 3,6 m<sup>3</sup>/h  
 Discharge head up to 7,5 m

# centrifugalPUMP M5

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearing	Carbon		Slide bearing	Oxide ceramic	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	2,2 kW (Standard)		Drive motor	2,2 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
DB15V	15006584	①	DB15V	15006585	①

## DRIVE MOTOR



				Surcharge [EUR]
<b>3-Phase-DC motor, 230/400V DC, 50Hz, 3x PTC</b>				
BG 90	2,2 kW	(included in the basic design)		●
<b>1-Phase-AC motor, 230V/50Hz</b>				
BG 90	2,2 kW			▲
<b>II2G Ex e II T4</b>				
BG 90	2,2 kW			①

Further drive motors possible on request.

## ACCESSORIES



Diaphragm valve, manually							Article-No.	Price (EUR)
reliable diaphragm valve		Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)						
good control characteristics								
optical position indicator								
Diaphragm valve	1 1/2"	DN40	Socket	d50	PP	EPDM	37607489	▲
Diaphragm valve	1 1/2"	DN40	Socket	d50	PVDF	FPM	37607494	▲

max. flow capacity 29 m<sup>3</sup>/h  
Discharge head up to 27 m

# centrifugalPUMP M15

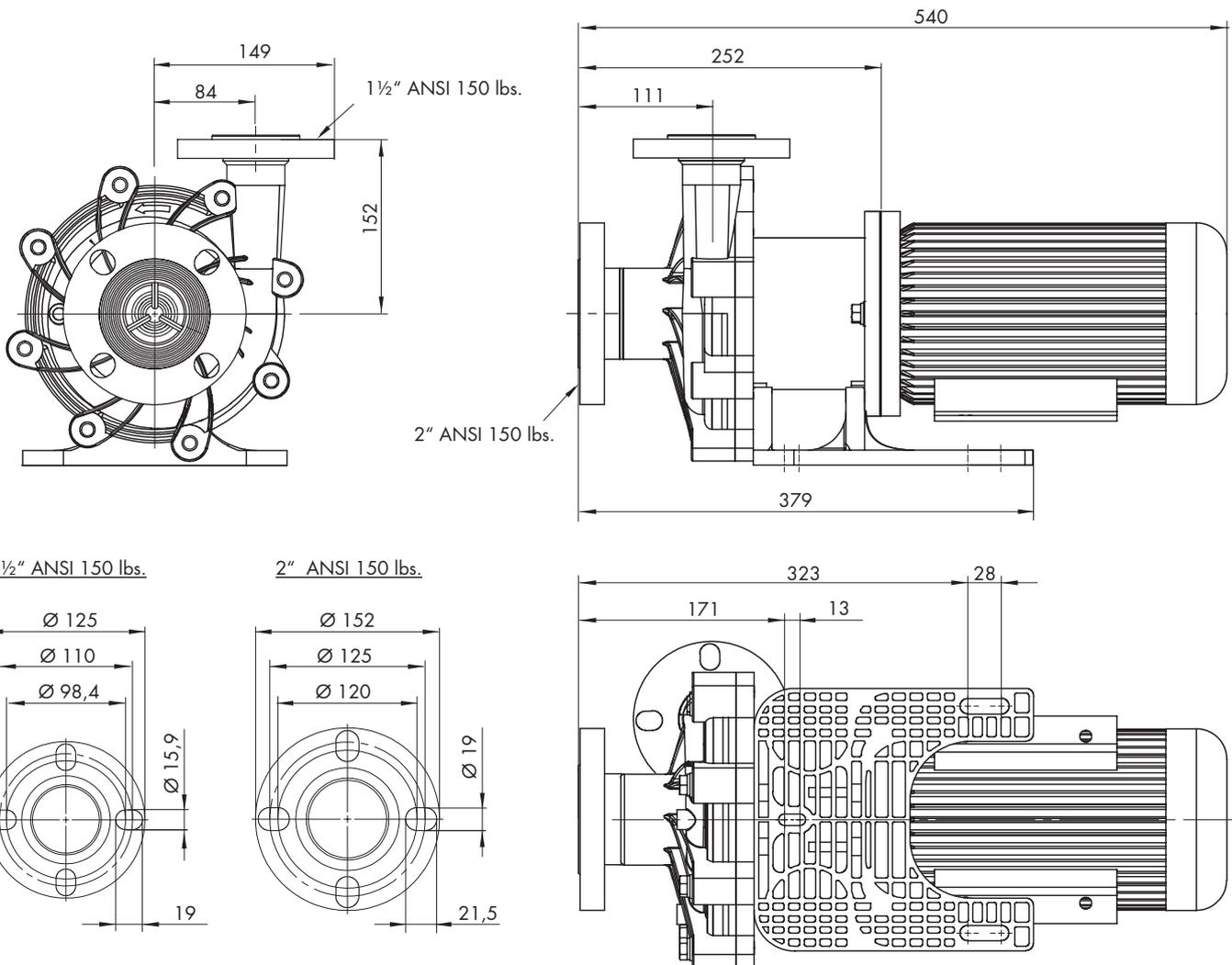
## OPTIONS



### Flange connection

		Surcharge [EUR]	
FRP flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲
Steel reinforced flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲

## DIMENSIONS



● basic version

○ available without extra charge

▲ available with extra charge

⊖ not available

ⓘ on request

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS



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- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

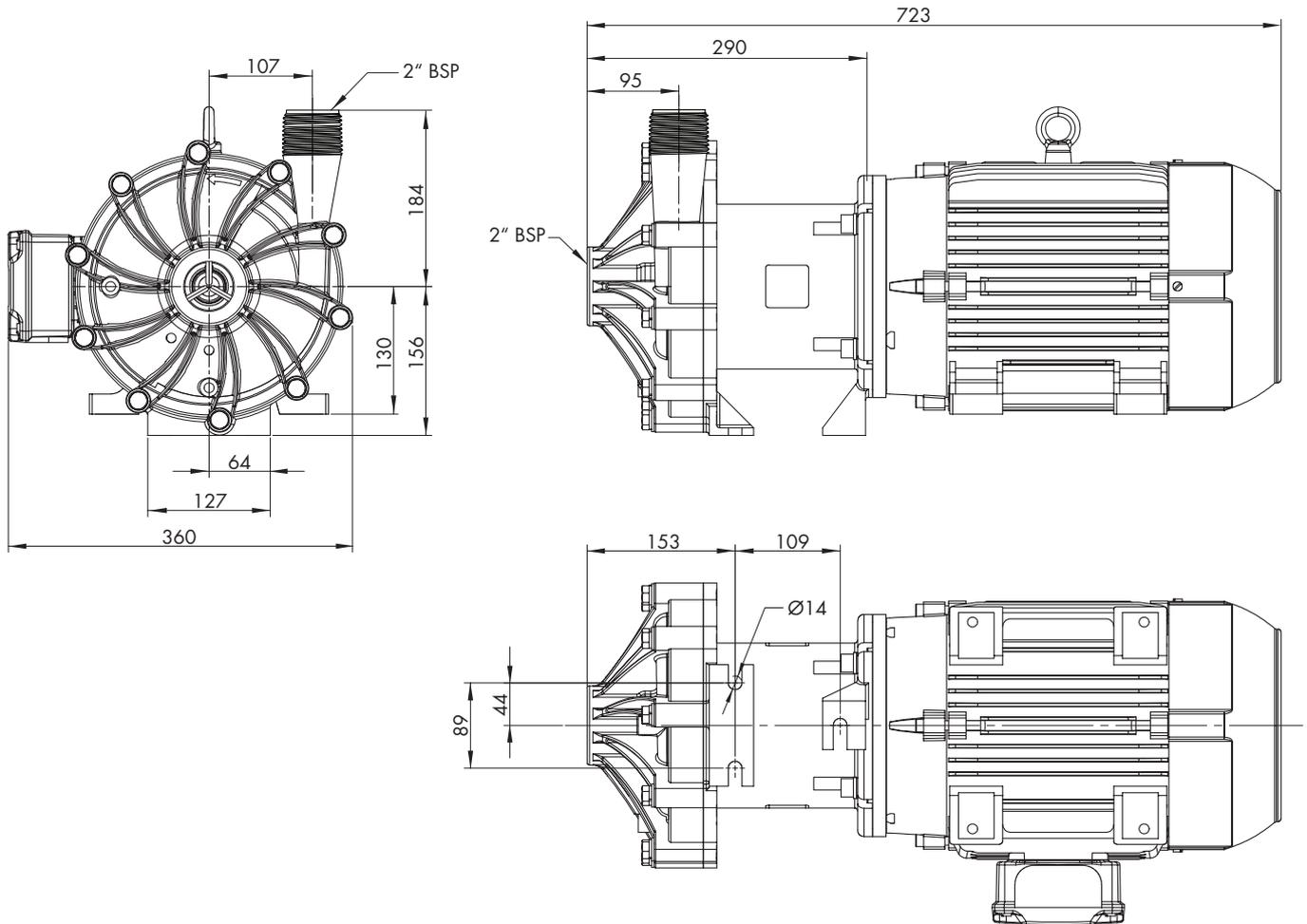
PUMP DATA			M22 L	M22 H
Impeller	Diameter	[mm]	152,4	184,2
Flow quantity $Q_N$	min.	[Litre/min]	38	38
	max.	[Litre/min]	650	717
		[m <sup>3</sup> /h]	39	43
Discharge head	max. H	[mWC]	29	45
System pressure	max.	[bar]	6,2	6,2
Density	max.	[kg/dm <sup>3</sup> ]	1,8	1,8
Viscosity	max.	[cP]	150	150
Temperature	max. [°C]	PP	82	82
		PVDF	104	104
Weight	approx. [kg]	PP	18	19
		PVDF	19	19,5

MOTOR DATA		M22 L	M22 H
Nominal speed	[rpm]	2.900	2.900
Power consumption	[kW]	3,0	5,5
Nominal voltage	[V]	400/690	400/690
Frequency	[Hz]	50	50
Enclosure	[IP]	55	55
Isolation class		F	F
Motor-Size	[BG]	100	132
Weight (without pump)	approx. [kg]	21,2	52,9

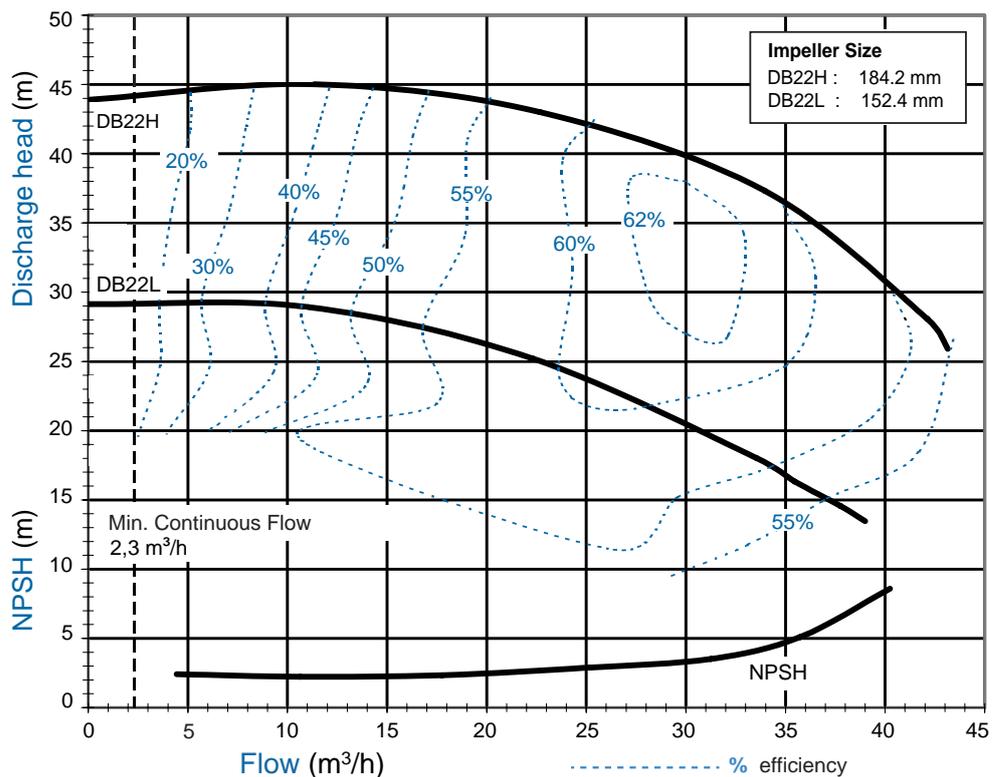
max. flow capacity 50,7 m<sup>3</sup>/h  
 Discharge head up to 41,7 m

# centrifugalPUMP M22

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearing	Carbon		Slide bearing	PTFE	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	3,0 kW (*5,5 kW) (Standard)		Drive motor	3,0 kW (*5,5 kW) (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
DB22 L	15006586	Ⓜ	DB22 L	15006587	Ⓜ
DB22 H*	15006588	Ⓜ	DB22 H*	15006589	Ⓜ

## DRIVE MOTOR



**3-Phase-DC motor**, 230/400V DC, 50Hz, 3x PTC

			Surcharge [EUR]
BG 100	3,0 kW	(included in the basic design)	●
BG 132	5,5 kW	(included in the basic design)	●

**II2G Ex e II T4**

BG 100	3,0 kW	Ⓜ
BG 132	5,5 kW	Ⓜ

Further drive motors possible on request.

## ACCESSORIES



### Diaphragm valve, manually

reliable diaphragm valve  
good control characteristics  
optical position indicator

Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)

						Article-No.	Price (EUR)
Diaphragm valve	2"	DN50	Socket d63	PP	EPDM	37607490	▲
Diaphragm valve	2"	DN50	Socket d63	PVDF	FPM	37607495	▲

max. flow capacity 50,7 m<sup>3</sup>/h  
 Discharge head up to 41,7 m

# centrifugalPUMP M22

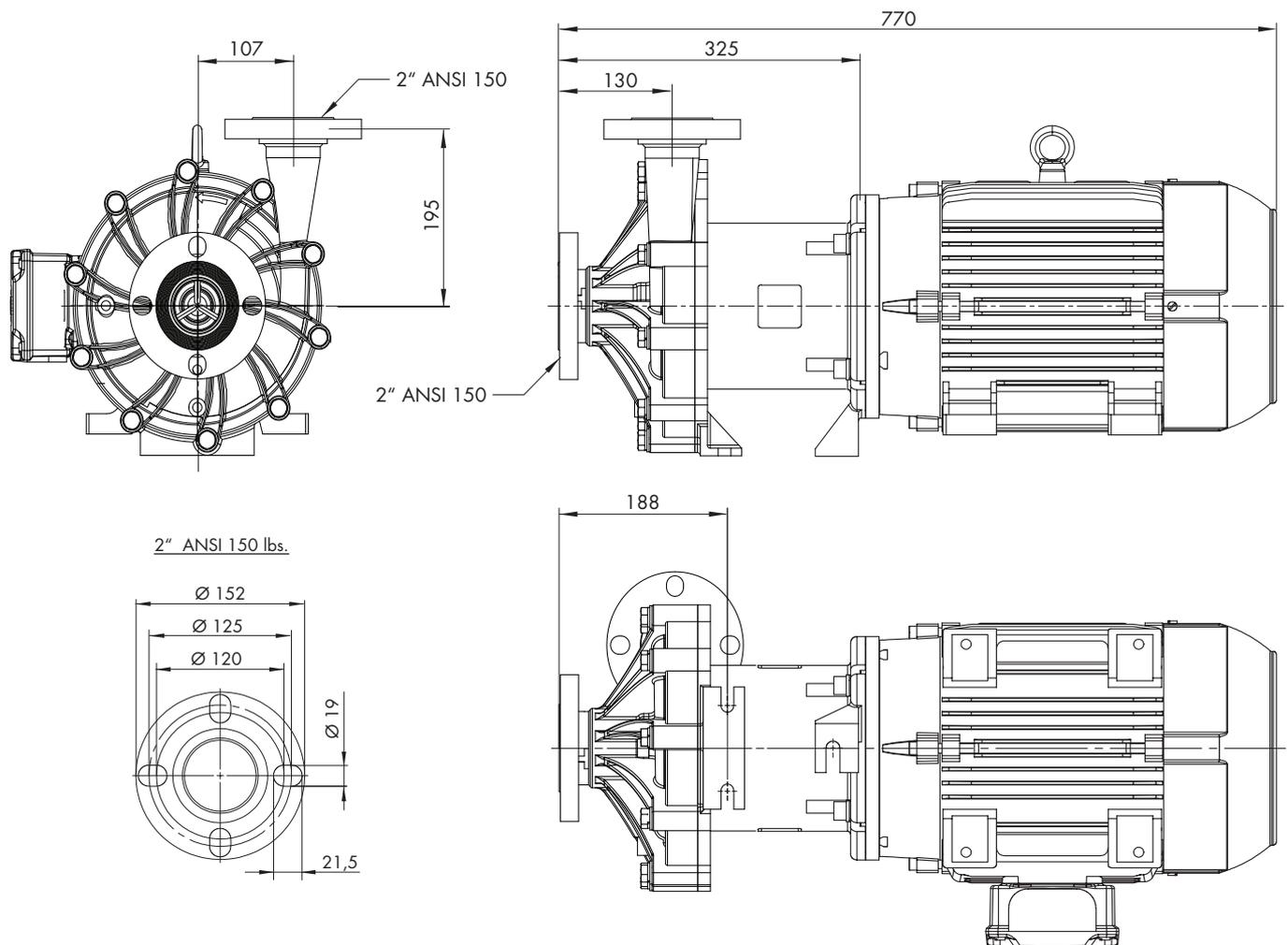
## OPTIONS



### Flange connection

			Surcharge [EUR]	
FRP flange 2" x 2"	ANSI 150/PN20/40	PP	▲	
		PVDF	▲	
FRP flange 3" x 2"	ANSI 150/PN20/40	PP	▲	
		PVDF	▲	
Steel reinforced flange	ANSI 150/PN20/40	PP	▲	
		PVDF	▲	

## DIMENSIONS



● basic version

○ available without extra charge

▲ available with extra charge

⊖ not available

① on request

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## SELF-PRIMING



### OVERVIEW

- 5 years warranty
- Suction height up to 7.6 m (at density 1.0)
- Extreme dry run capability
- Neodymium magnets on every model
- Easy Set measurement-free outer drive
- Close-coupled design
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

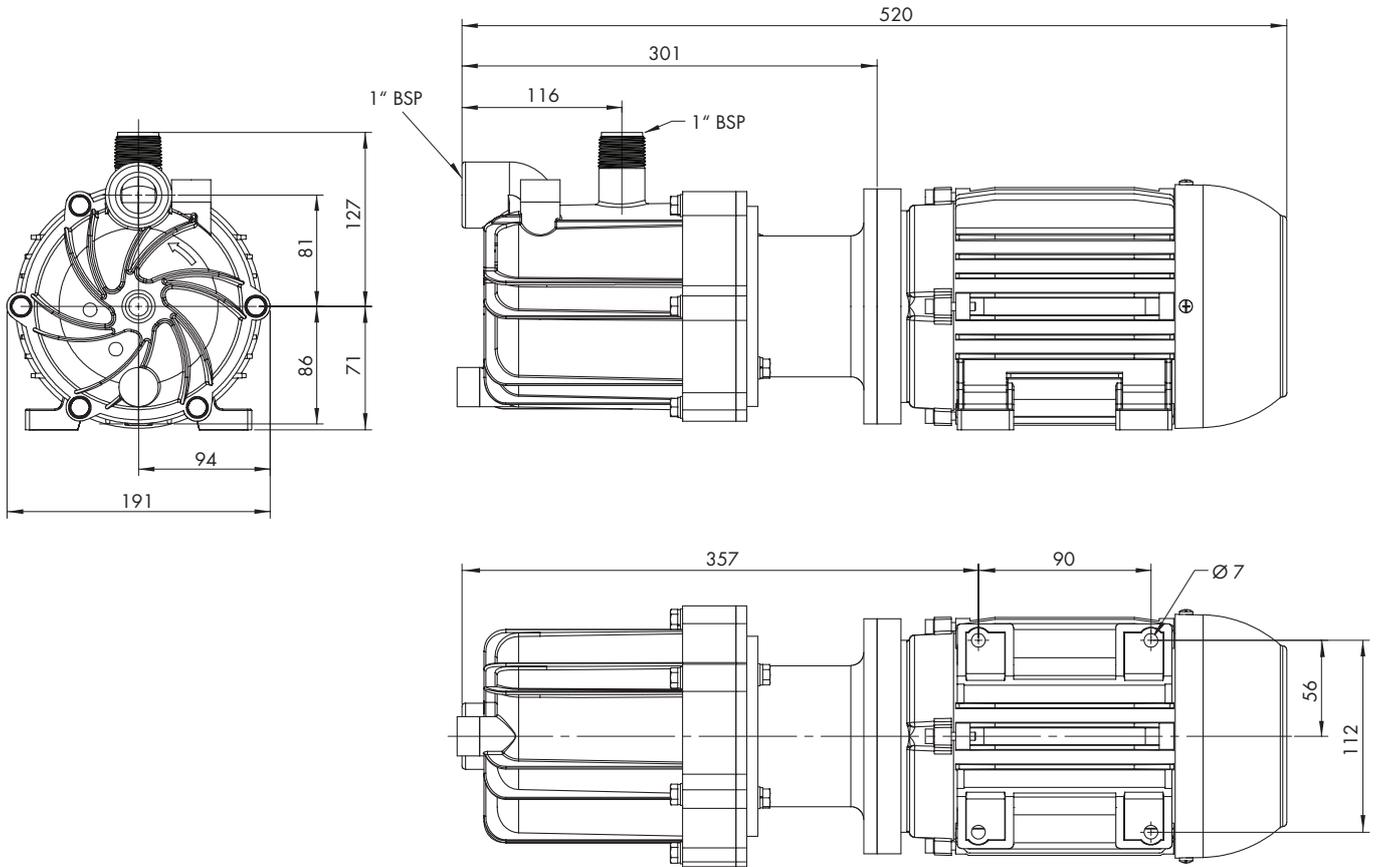
PUMP DATA			MP10
Impeller	Diameter	[mm]	106,2
Flow quantity $Q_N$	min.	[Litre/min]	1,9
	max.	[Litre/min]	203
		[m <sup>3</sup> /h]	12,2
Discharge head	max. H	[mWC]	13,7
System pressure	max.	[bar]	5,5
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	150
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	5,1
		PVDF	5,4

MOTOR DATA		MP10
Nominal speed	[rpm]	2.900
Power consumption	[kW]	0,55
Nominal voltage	[V]	230/400
Frequency	[Hz]	50
Enclosure	[IP]	55
Isolation class		F
Motor-Size	[BG]	71
Weight (without pump)	approx. [kg]	7,0

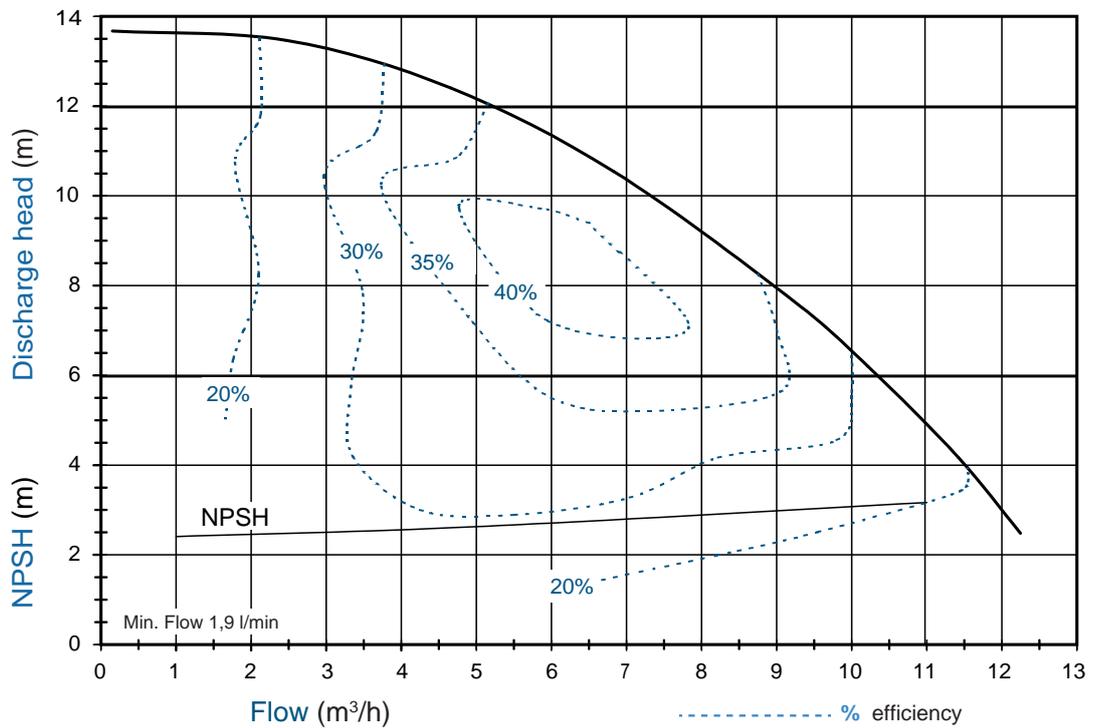
max. flow capacity 12,2 m<sup>3</sup>/h  
 Discharge head to 13,7 m

# centrifugalPUMP MP10

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## SELF-PRIMING

### BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearings	Carbon		Slide bearings	Oxide ceramic	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	0,55 kW (Standard)		Drive motor	0,55 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
SP10P	15006591	🕒	SP10V	15006592	🕒

### DRIVE MOTOR



			Surcharge [EUR]
<b>3-Phase-DC motor, 230/400V DC, 50Hz, 3x PTC</b>			
BG 71	0,55 kW	(included in the basic design)	●
<b>1-Phase-AC motor, 230V/50Hz</b>			
BG 71	0,55 kW		▲
<b>II2G Ex e II T4</b>			
BG 71	0,55 kW		🕒

Further drive motors possible on request.

### ACCESSORIES



Diaphragm valve, manually							
reliable diaphragm valve				Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)			
good control characteristics							
optical position indicator						<b>Article-No.</b>	<b>Price (EUR)</b>
Diaphragm valve	1"	DN25	Socket d32	PP	EPDM	37607488	▲
Diaphragm valve	1"	DN25	Socket d32	PVDF	FPM	37607493	▲

max. flow capacity 12,2 m<sup>3</sup>/h  
 Discharge head to 13,7 m

# centrifugalPUMP MP10

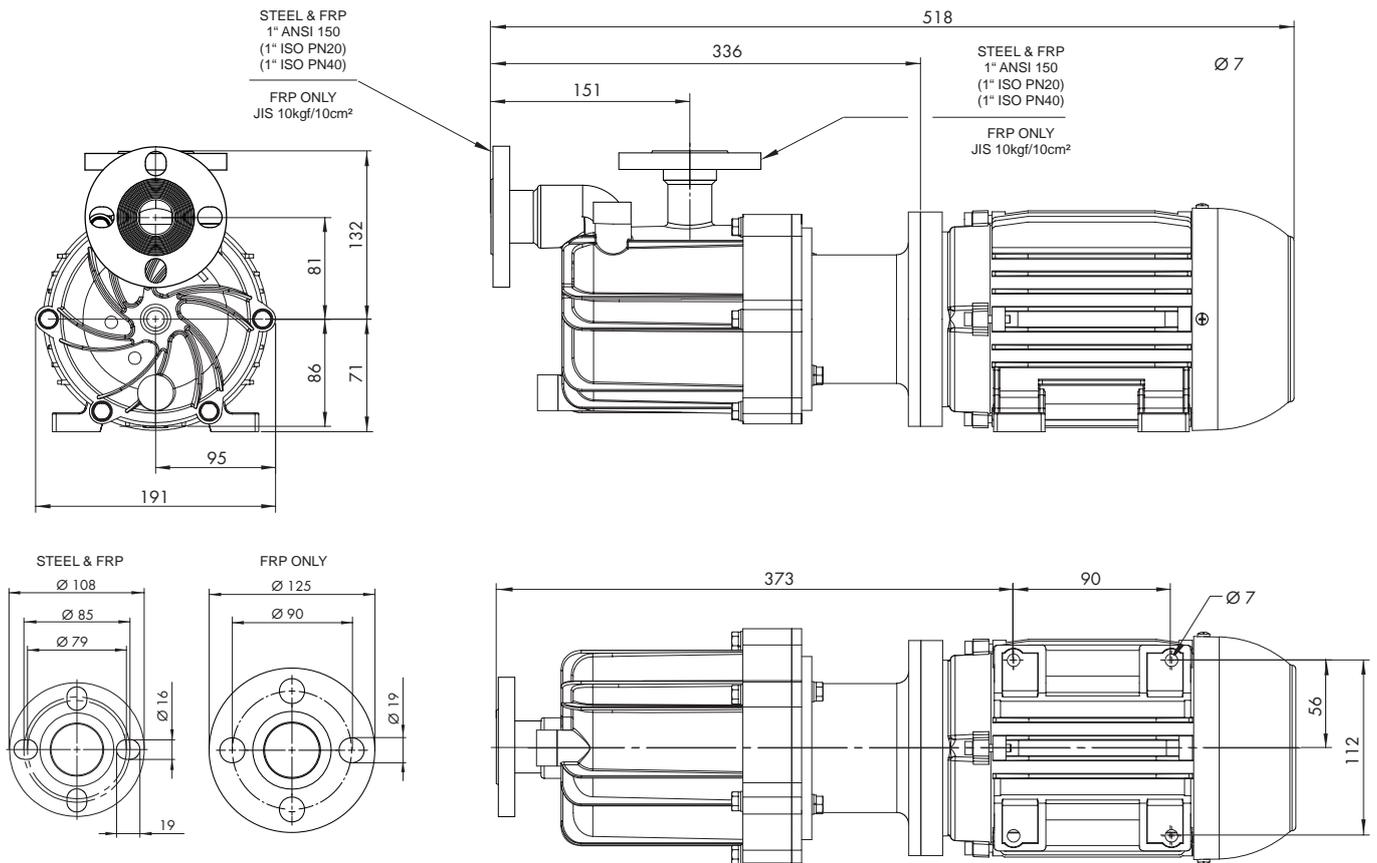
## OPTIONS



### Flange connection

		Surcharge [EUR]	
FRP flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲
Steel reinforced flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲

## DIMENSIONS



● basic version

○ available without extra charge

▲ available with extra charge

⊖ not available

ⓘ on request

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## SELF-PRIMING



### OVERVIEW

- 5 years warranty
- Suction height up to 7.6 m (at density 1.0)
- Extreme dry run capability
- Neodymium magnets on every model
- Easy Set measurement-free outer drive
- Close-coupled design
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

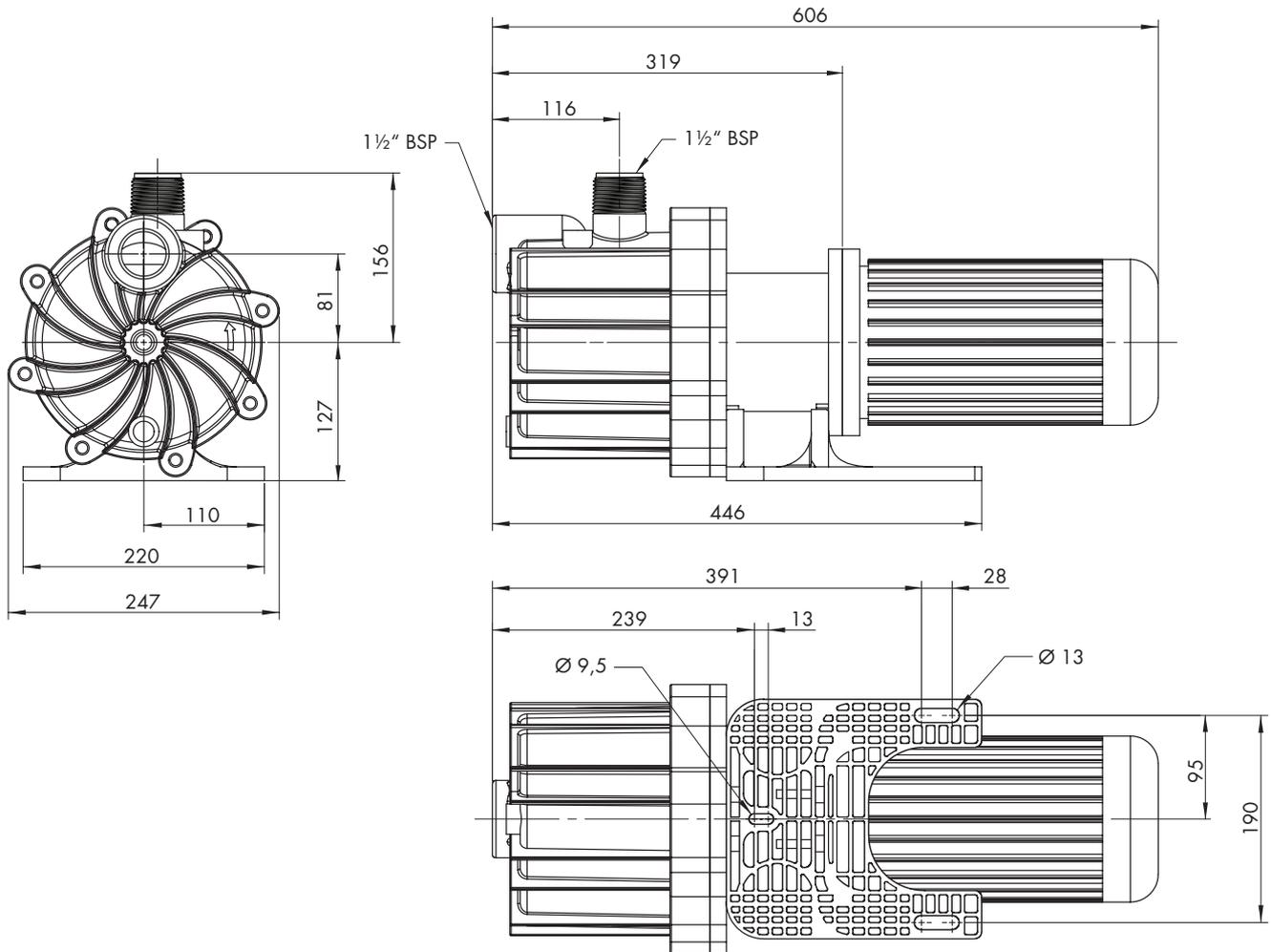
PUMP DATA			MP11
Impeller	Diameter	[mm]	133
Flow quantity $Q_N$	min.	[Litre/min]	15
	max.	[Litre/min]	400
		[m <sup>3</sup> /h]	24
Discharge head	max. H	[mWC]	21,3
System pressure	max.	[bar]	6,2
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	150
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	12,8
		PVDF	13,9

MOTOR DATA		MP11
Nominal speed	[rpm]	2.900
Power consumption	[kW]	1,5
Nominal voltage	[V]	230/400
Frequency	[Hz]	50
Enclosure	[IP]	55
Isolation class		F
Motor-Size	[BG]	90
Weight (without pump)	approx. [kg]	17,7

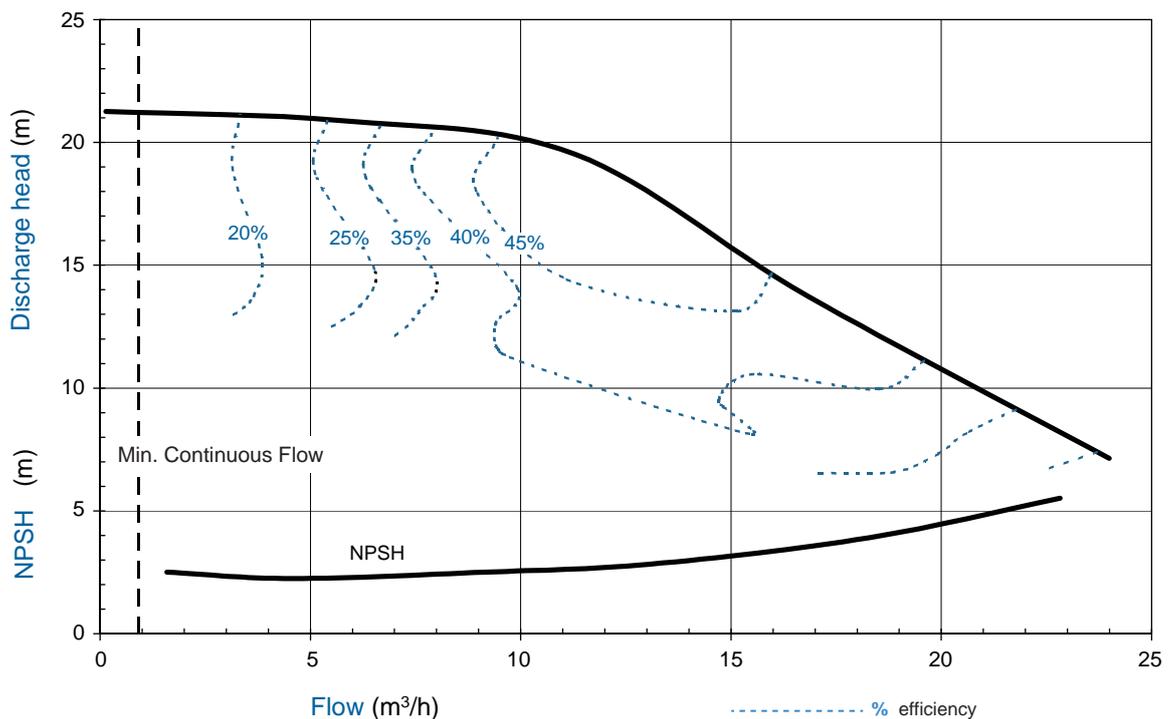
max. flow capacity 24 m<sup>3</sup>/h  
 Discharge head to 21,3 m

# centrifugalPUMP MP11

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## SELF-PRIMING

### BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearings	Carbon		Slide bearings	Oxide ceramics	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	1,5 kW (Standard)		Drive motor	1,5 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
SP11P	15006593	①	SP11V	15006594	①

### DRIVE MOTOR



				Surcharge [EUR]
<b>3-Phase-DC motor, 230/400V DC, 50Hz, 3x PTC</b>				
BG 90	1,5 kW	(included in the basic design)		●
<b>1-Phase-AC motor, 230V/50Hz</b>				
BG 90	1,5 kW			▲
<b>II2G Ex e II T4</b>				
BG 90	1,5 kW			①

Further drive motors possible on request.

### ACCESSORIES



Diaphragm valve, manually						
reliable diaphragm valve		Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)				
good control characteristics						
optical position indicator						
					<b>Article-No.</b>	<b>Price (EUR)</b>
Diaphragm valve	1 1/2"	DN40	Socket	d50	PP EPDM	37607489 ▲
Diaphragm valve	1 1/2"	DN40	Socket	d50	PVDF FPM	37607494 ▲

max. flow capacity 24 m<sup>3</sup>/h  
 Discharge head up to 21,3 m

# centrifugalPUMP MP11

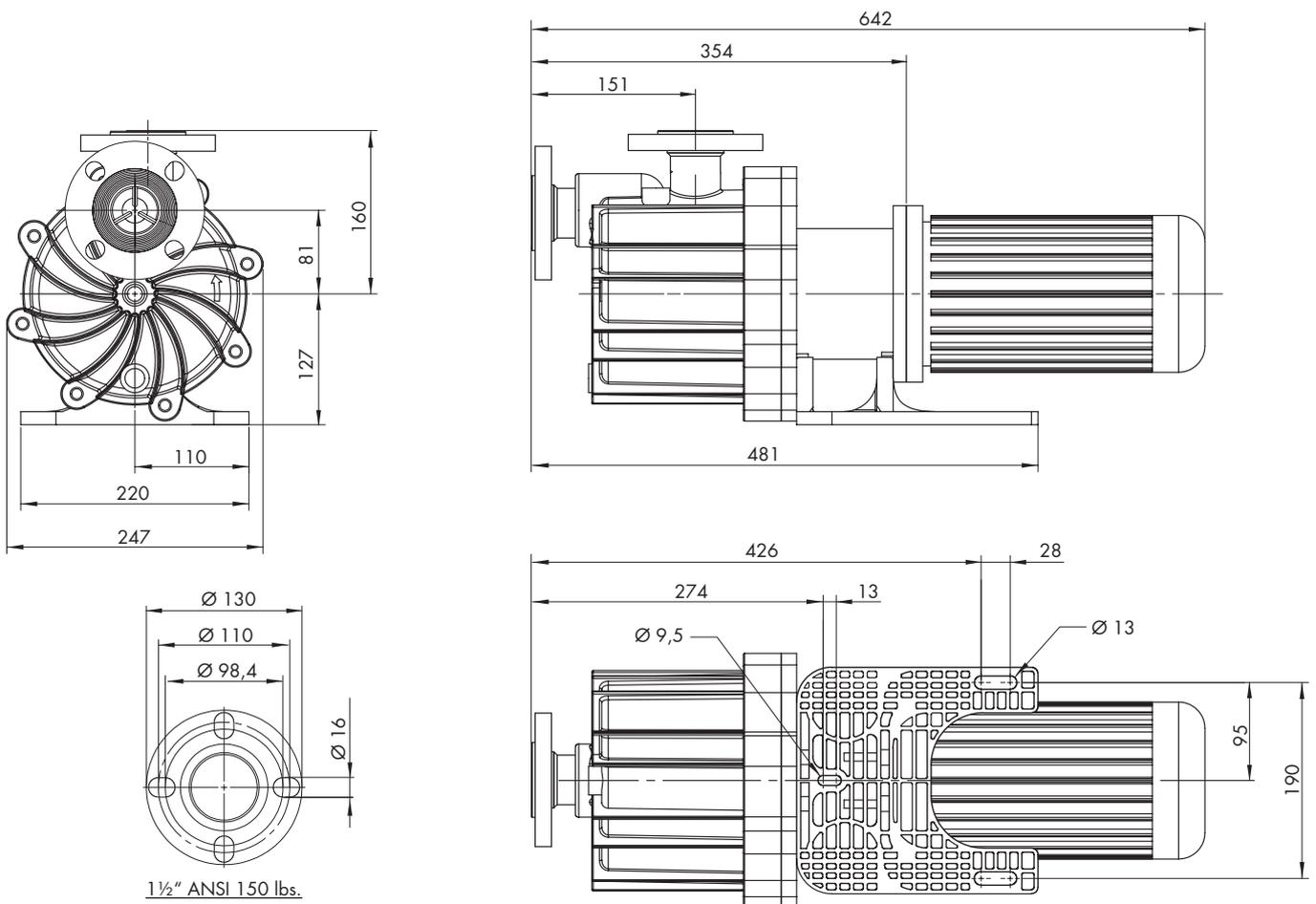
## OPTIONS



### Flange connection

		Surcharge [EUR]	
FRP flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲
Steel reinforced flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲

## DIMENSIONS



● basic version

○ available without extra charge

▲ available with extra charge

⊖ not available

ⓘ on request

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## SELF-PRIMING



### OVERVIEW

- 5 years warranty
- Suction height up to 7.6 m (at density 1.0)
- Extreme dry run capability
- Neodymium magnets on every model
- Easy Set measurement-free outer drive
- Close-coupled design
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

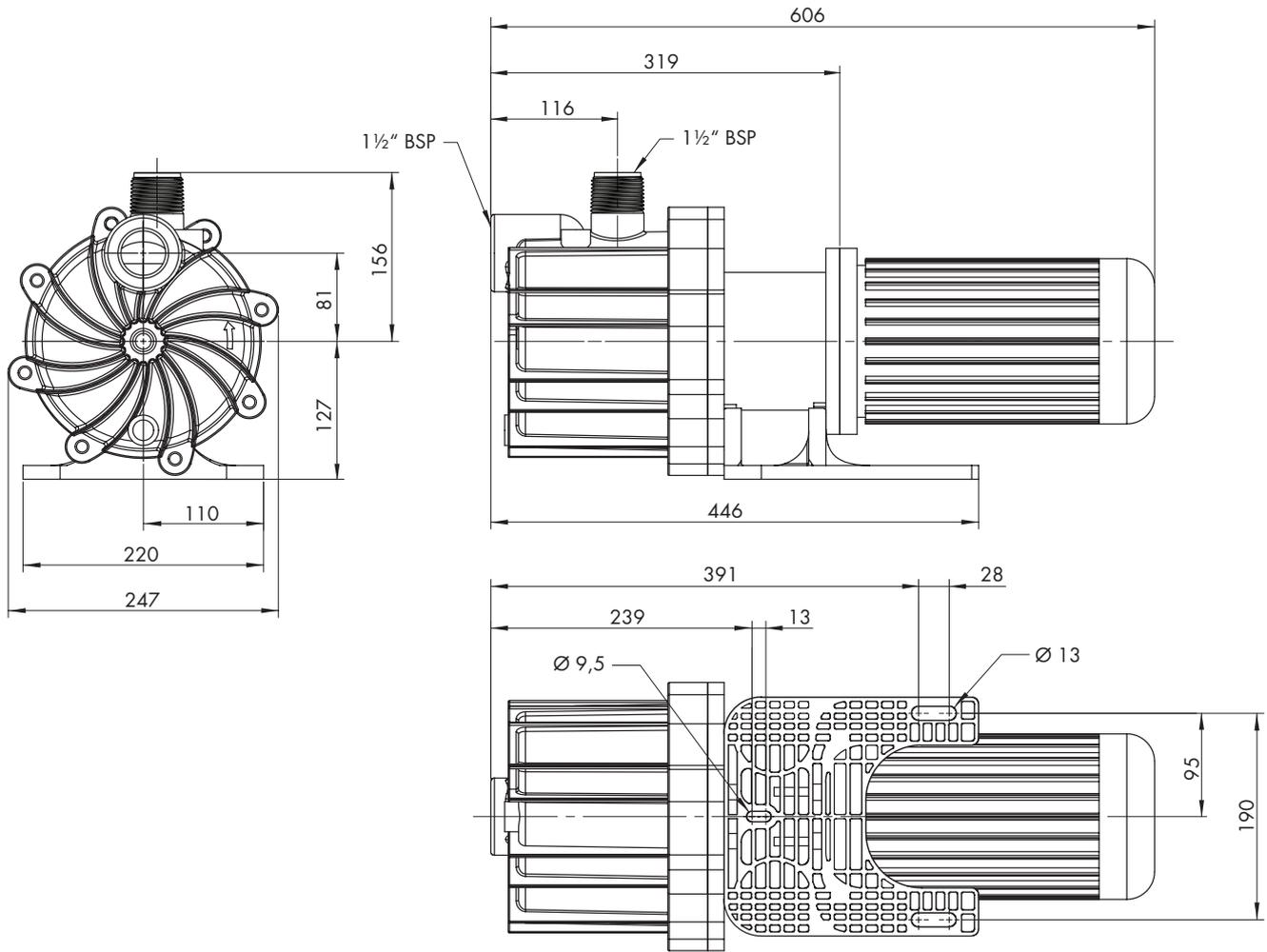
PUMP DATA			MP15
Impeller	Diameter	[mm]	140
	min.	[Litre/min]	20
Flow quantity $Q_N$	max.	[Litre/min]	430
		[m <sup>3</sup> /h]	25,8
Discharge head	max. H	[mWC]	23,3
System pressure	max.	[bar]	6,2
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	150
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	12,8
		PVDF	13,9

MOTOR DATA		MP15
Nominal speed	[rpm]	2.900
Power consumption	[kW]	2,2
Nominal voltage	[V]	230/400
Frequency	[Hz]	50
Enclosure	[IP]	55
Isolation class		F
Motor-Size	[BG]	90
Weight (without pump)	approx. [kg]	21,1

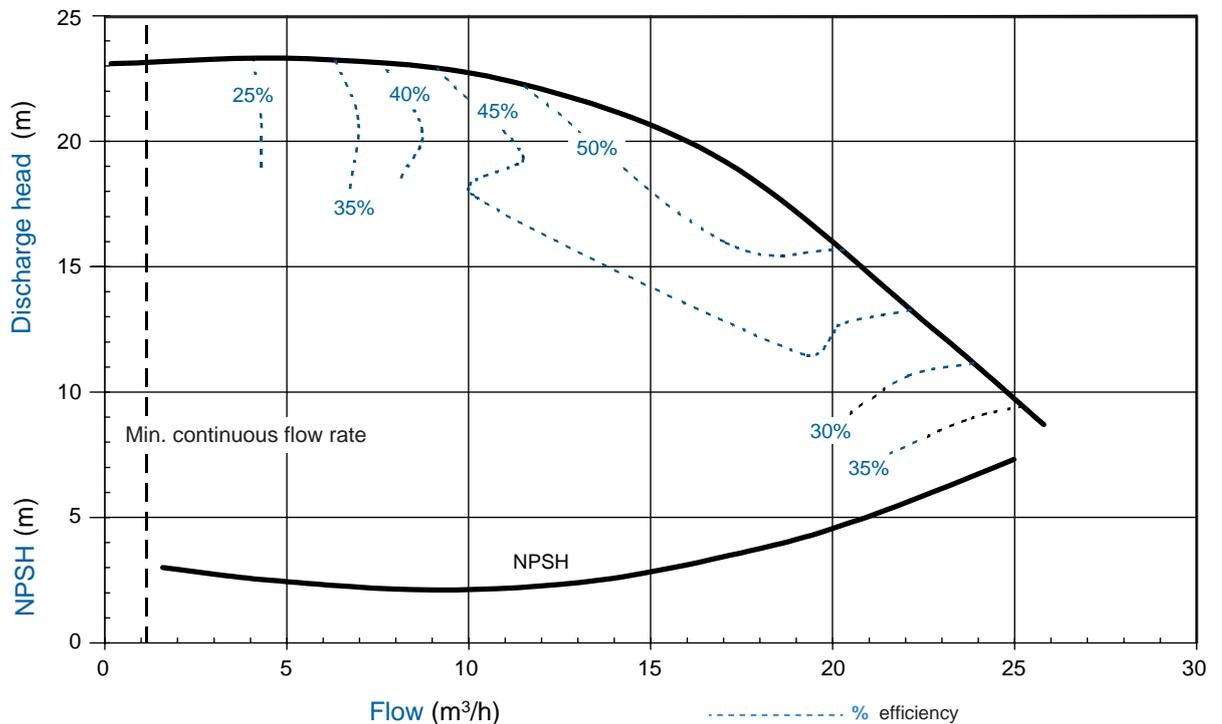
max. flow capacity 25,8 m<sup>3</sup>/h  
 Discharge head up to 23,3 m

# centrifugalPUMP MP15

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## SELF-PRIMING

### BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearings	Carbon		Slide bearings	Oxide ceramic	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	2,2 kW (Standard)		Drive motor	2,2 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
SP15P	15006595	①	SP15V	15006596	①

### DRIVE MOTOR



				Surcharge [EUR]
<b>3-Phase-DC motor, 230/400V DC, 50Hz, 3x PTC</b>				
BG 90	2,2 kW	(included in the basic design)		●
<b>1-Phase-AC motor, 230V/50Hz</b>				
BG 90	2,2 kW			▲
<b>II2G Ex e II T4</b>				
BG 90	2,2 kW			①

Further drive motors possible on request.

### ACCESSORIES



Diaphragm valve, manually							Article-No.	Price (EUR)
reliable diaphragm valve		Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)						
good control characteristics								
optical position indicator								
Diaphragm valve	1 1/2"	DN40	Socket	d50	PP	EPDM	37607489	▲
Diaphragm valve	1 1/2"	DN40	Socket	d50	PVDF	FPM	37607494	▲

max. flow capacity 25,8 m<sup>3</sup>/h  
 Discharge head up to 23,3 m

# centrifugalPUMP MP15

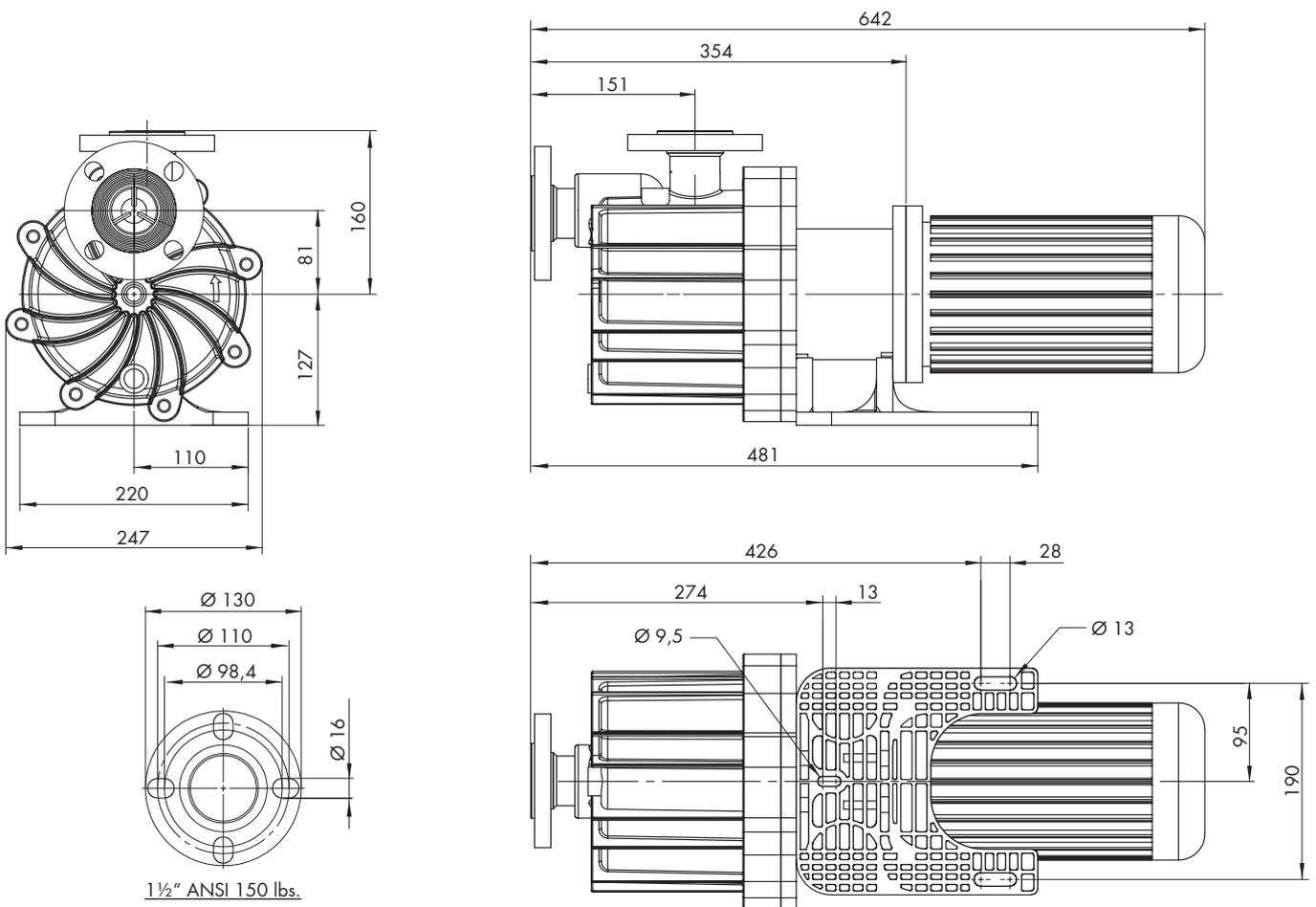
## OPTIONS



### Flange connection

		Surcharge [EUR]	
FRP flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲
Steel reinforced flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲

## DIMENSIONS



● basic version

○ available without extra charge

▲ available with extra charge

⊖ not available

ⓘ on request

# MAGNETIC-DRIVE CENTRIFUGAL PUMPS



## OVERVIEW

- 5 years warranty
- Suction height up to 7.6 m (at density 1.0)
- Extreme dry run capability
- Neodymium magnets on every model
- Easy Set measurement-free outer drive
- Close-coupled design
- ISO 1940 G2.5 balancing
- High quality materials
- Material PP or PVDF

## TECHNICAL DATA

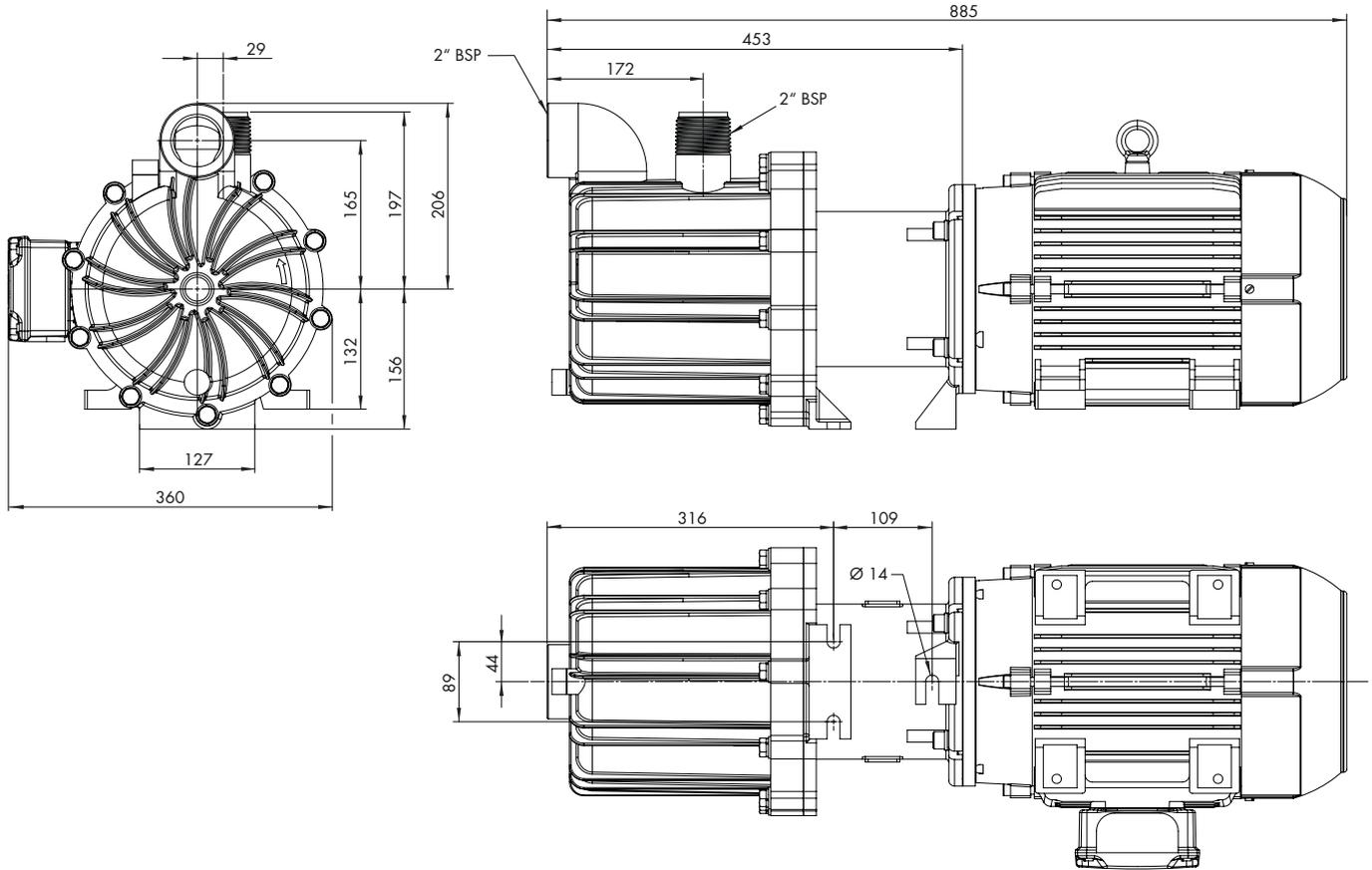
PUMP DATA			MP22
Impeller	Diameter	[mm]	177,8
Flow quantity $Q_N$	min.	[Litre/min]	39
	max.	[Litre/min]	798
		[m <sup>3</sup> /h]	47,9
Discharge head	max. H	[mWC]	37,9
System pressure	max.	[bar]	6,2
Density	max.	[kg/dm <sup>3</sup> ]	1,8
Viscosity	max.	[cP]	50
Temperature	max. [°C]	PP	82
		PVDF	104
Weight	approx. [kg]	PP	21
		PVDF	23

MOTOR DATA		MP22
Nominal speed	[rpm]	2.900
Power consumption	[kW]	5,5
Nominal voltage	[V]	400/690
Frequency	[Hz]	50
Enclosure	[IP]	55
Isolation class		F
Motor-Size	[BG]	132
Weight (without pump)	approx. [kg]	53

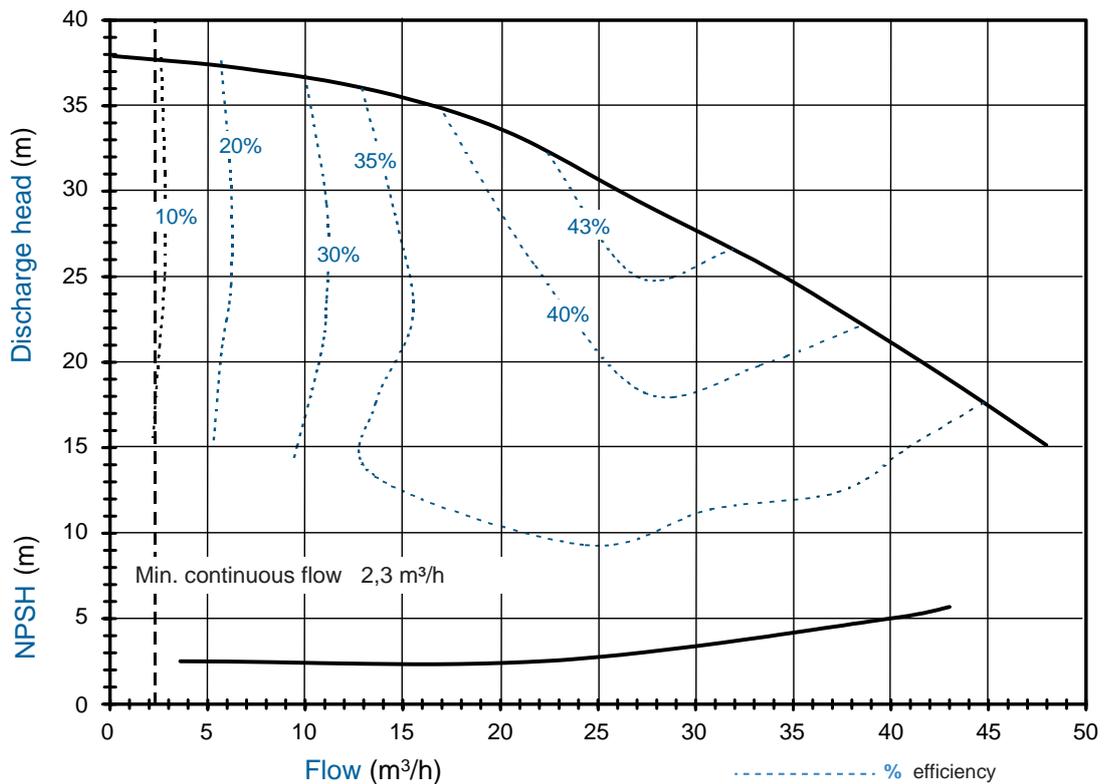
max. flow capacity 47,9 m<sup>3</sup>/h  
 Discharge head up to 37,9 m

# centrifugalPUMP MP22

## DIMENSIONS



## CHARACTERISTIC CURVES



# MAGNETIC-DRIVE CENTRIFUGAL PUMPS

## SELF-PRIMING

### BASIC DESIGNS

PP			PVDF		
Pump housing	PP-FRP		Pump housing	PVDF-FRP	
Impeller	PP-FRP		Impeller	PVDF-FRP	
Slide bearings	Carbon		Slide bearings	PTFE	
O-Rings	EPDM		O-Rings	FKM	
Drive motor	5,5 kW (Standard)		Drive motor	5,5 kW (Standard)	
Type	Article-No.	Price (EUR)	Type	Article-No.	Price (EUR)
SP22P	15006597	🕒	SP22V	15006598	🕒

### DRIVE MOTOR



**3-Phase-DC motor**, 230/400V DC, 50Hz, 3x PTC

BG 132	5,5 kW	(included in the basic design)	Surcharge [EUR]
			●

**II2G Ex e II T4**

BG 132	5,5 kW		🕒
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Further drive motors possible on request.

### ACCESSORIES



#### Diaphragm valve, manually

reliable diaphragm valve  
good control characteristics  
optical position indicator

Valve accessories on request (e.g. stroke limitation, pneumatic drive, limit switch, solenoid pilot valve, manual override)

						Article-No.	Price (EUR)
Diaphragm valve	2"	DN50	Socket d63	PP	EPDM	37607490	▲
Diaphragm valve	2"	DN50	Socket d63	PVDF	FPM	37607495	▲

max. flow capacity 47,9 m<sup>3</sup>/h  
 Discharge head up to 37,9 m

# centrifugalPUMP MP22

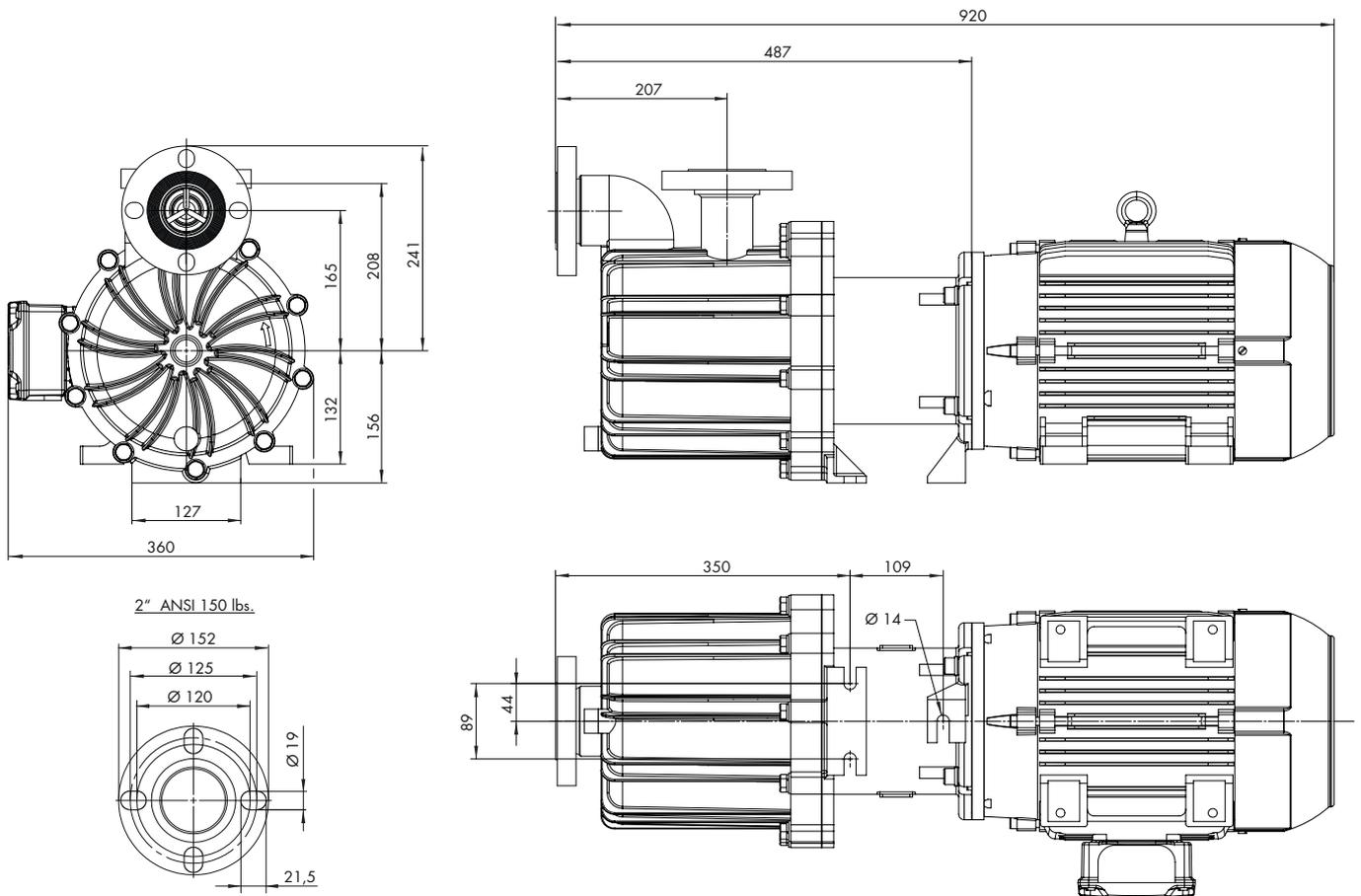
## OPTIONS



### Flange connection

			Surcharge [EUR]
FRP flange 2" x 2"	ANSI 150/PN20/40	PP	▲
		PVDF	▲
Steel reinforced flange	ANSI 150/PN20/40	PP	▲
		PVDF	▲

## DIMENSIONS



● basic version

○ available without extra charge

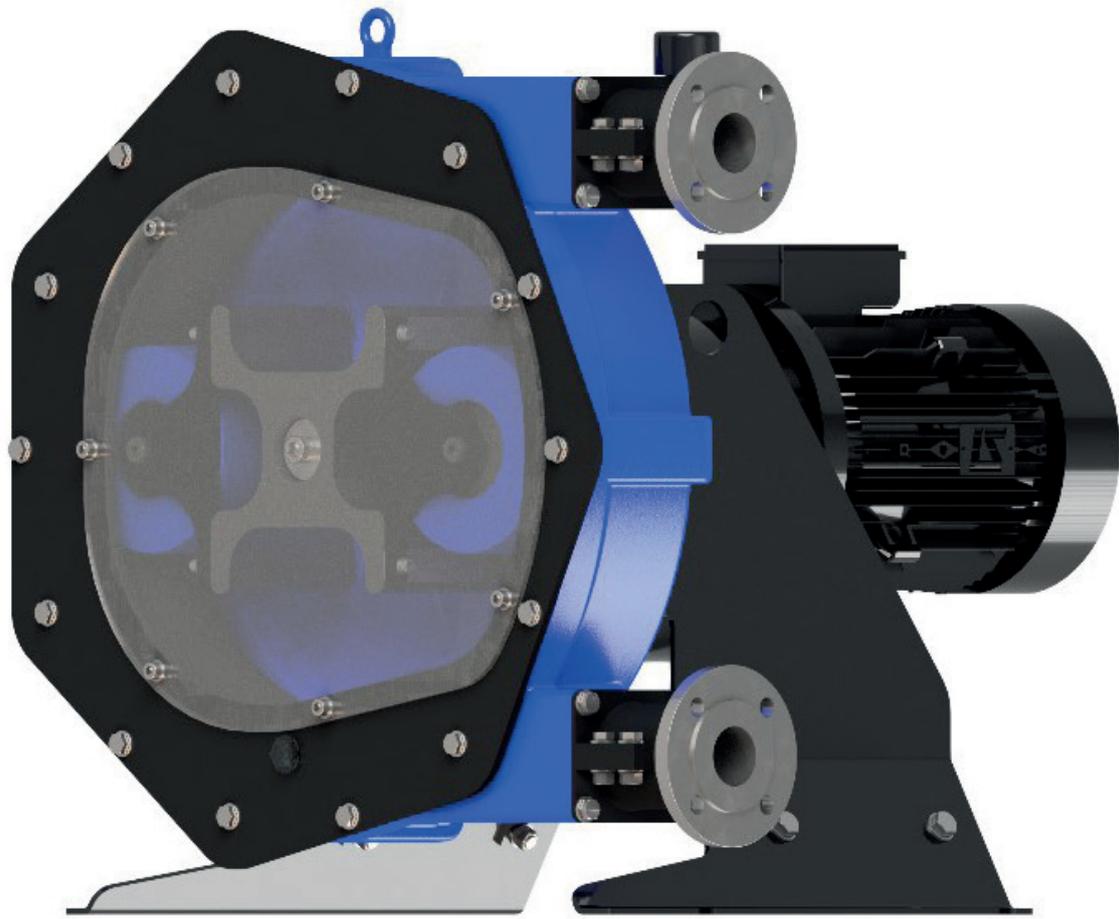
▲ available with extra charge

⊖ not available

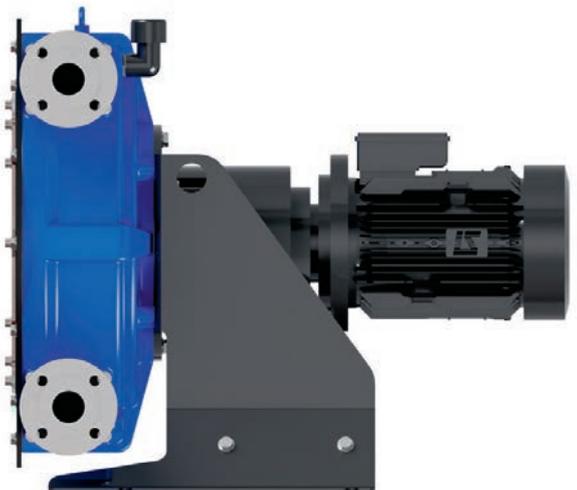
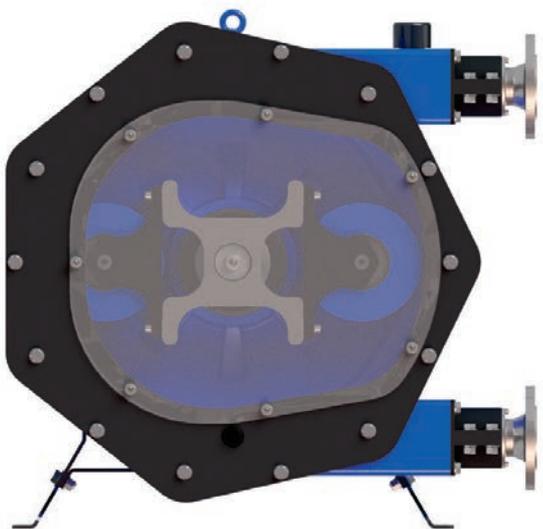
ⓘ on request



# HIGH PERFORMANCE HOSE PUMPS I-SERIES



**PERIBEST**  
pumps



INSPIRED. SOLUTIONS. FOR CUSTOMERS.

# HOSE PUMPS

## HIGH PERFORMANCE HOSE PUMPS

### PERIBEST PUMPS PERISTALTIC TECHNOLOGY

- maximum resistance to abrasion.
- unmatched suction capability.
- indefinite dry running.
- no valves or mechanical seals.
- sanftes Fördern.
- gentle and reversible pumping.
- full dosing control.
- industrial, corrosion resistant and food versions.
- Dosiergenauigkeit von +1%



### ADVANTAGES OF PERIBEST HOSE PUMPS COMPARED WITH:

#### **Hose pumps with shoe technology**

Energy savings of up to 30%, ease of hose replacement, wide range of operation, low starting torque.

#### **Progressive cavity pumps**

Allow dry running and have no mechanical seals. Simple adaptation to pumping of corrosive products.

#### **Air operated diaphragm pumps**

Incomparable efficiency and absence of valves that make the passage of solids difficult.

### DIFFICULT PRODUCTS ARE NOT A PROBLEM

#### **abrasive products**

Lime milk, activated carbon, sludges and slurries...

#### **corrosive products**

sodium hypochlorite, ferric chloride, hydrochloric acid...

#### **viscous products**

water-based glues, greases, creams, resins...

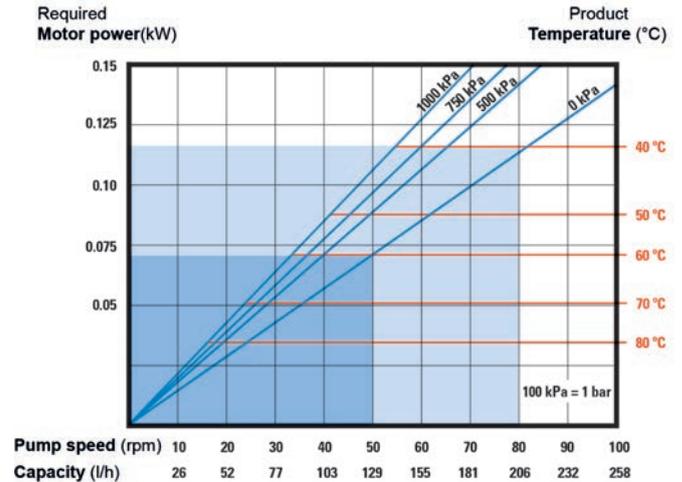
#### **shear sensitive products**

Latex, polymers and flocculants, food products...

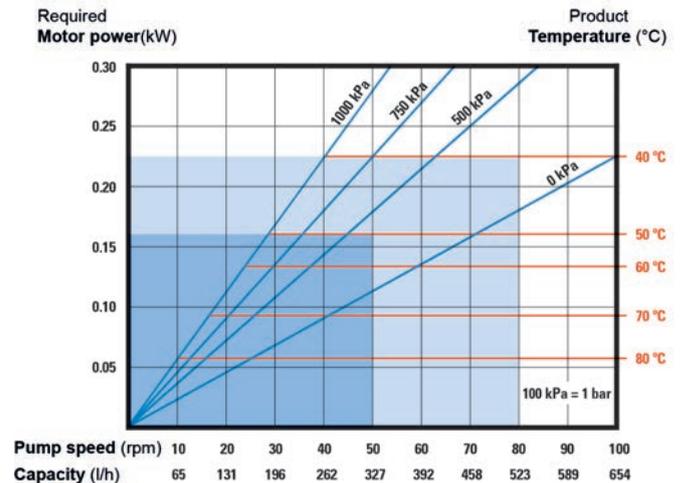
Flow capacity up to max. 1.100 Litres/h  
max. operating pressure 10 bar

# PERIBEST I12, I17, I21

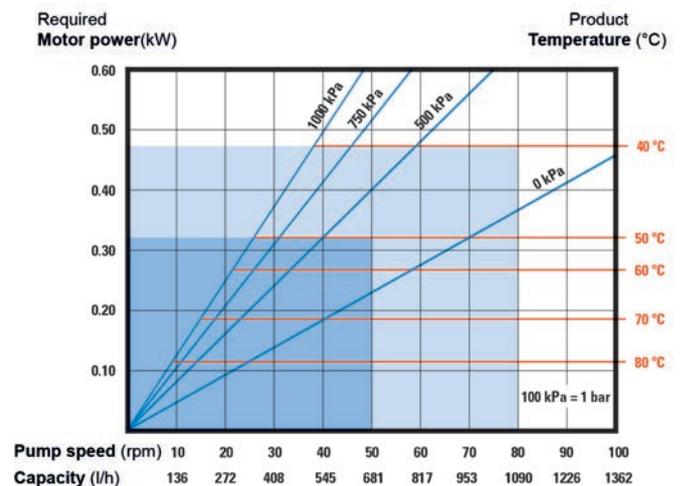
Technical specification	Model I12
Max. flow (continuous)	max. 205 l/h
Capacity	0,043 l/U
Max. discharge pressure	10 bar
Max. temperature	80°C
Inner diameter	13 mm
Hose material	NR, EPDM, NBR (food grade), Hypalon®
Connections	stainless steel 1.4401, PP, PVDF (PTFE)



Technical specification	Model I17
Max. flow (continuous)	max. 500 l/h
Capacity	0,109 l/U
Max. discharge pressure	10 bar
Max. temperature	80°C
Inner diameter	16 mm
Hose material	NR, EPDM, NBR (food grade), Hypalon®
Connections	stainless steel 1.4401, PP, PVDF (PTFE)



Technical specification	Model I21
Max. flow (continuous)	max. 1.100 l/h
Capacity	0,227 l/U
Max. discharge pressure	10 bar
Max. temperature	80°C
Inner diameter	22 mm
Hose material	NR, EPDM, NBR (food grade), Hypalon®
Connections	stainless steel 1.4401, PP, PVDF (PTFE)

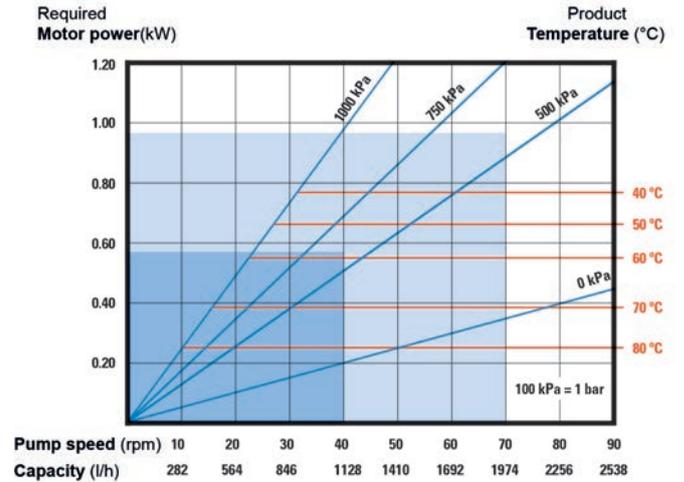


# HOSE PUMPS

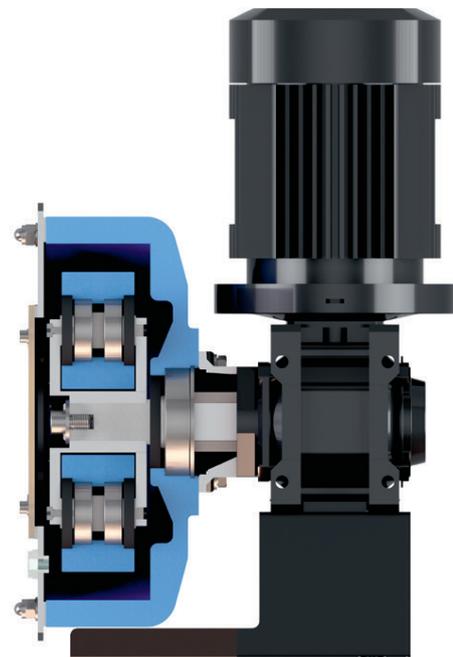
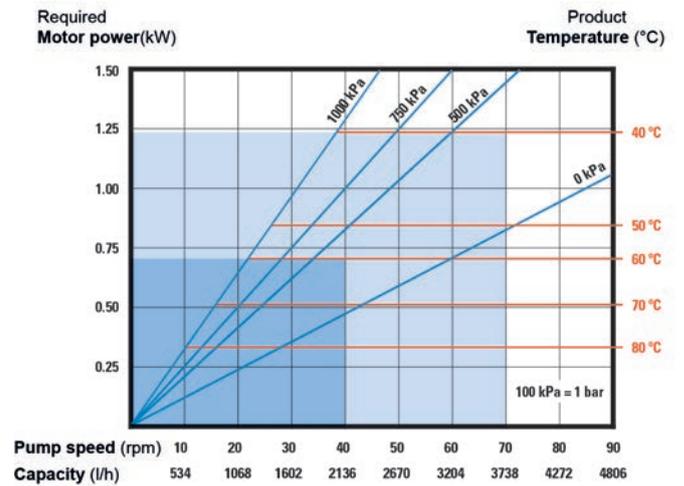
## HIGH PERFORMANCE HOSE PUMPS

# PERIBEST I28, I35

Technical specification	Model I28
Max. flow (continuous)	max. 1.900 l/h
Capacity	0,47 l/U
Max. discharge pressure	10 bar
Max. temperature	80°C
Inner diameter	28 mm
Hose material	NR, EPDM, NBR (food grade)
Connections	stainless steel 1.4401, PP, PVDF (PTFE)

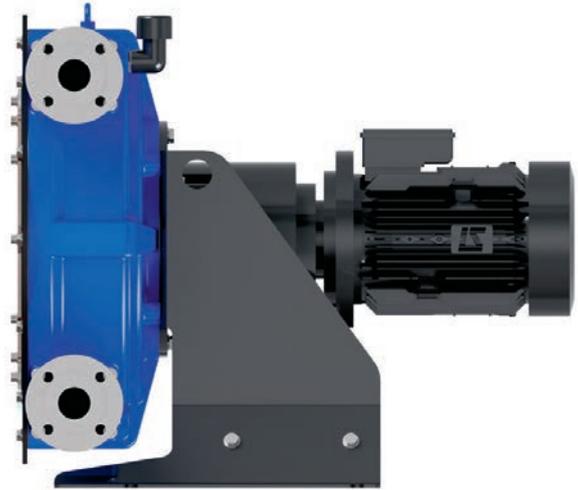
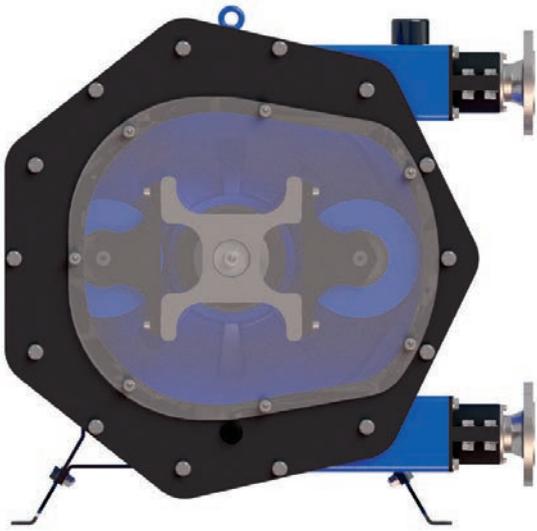


Technical specification	Model I35
Max. flow (continuous)	max. 3.600 l/h
Capacity	0,89 l/U
Max. discharge pressure	10 bar
Max. temperature	80°C
Inner diameter	35 mm
Hose material	NR, EPDM, NBR (food grade)
Connections	stainless steel 1.4401, PP, PVDF (PTFE)

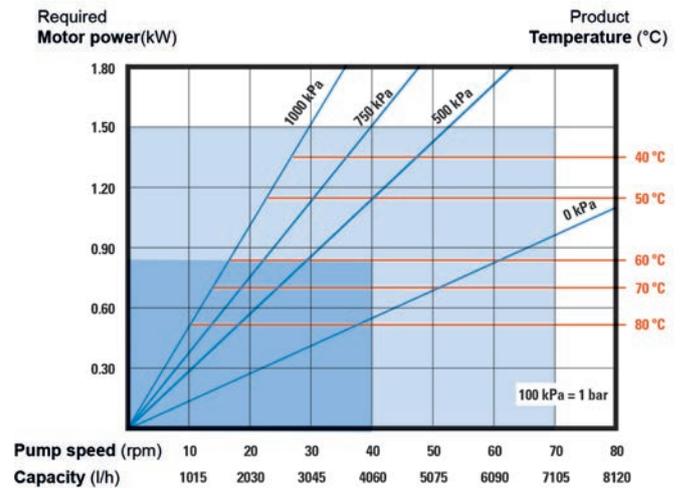


Flow capacity up to max. 13.000 Litres/h  
max. operating pressure 10 bar

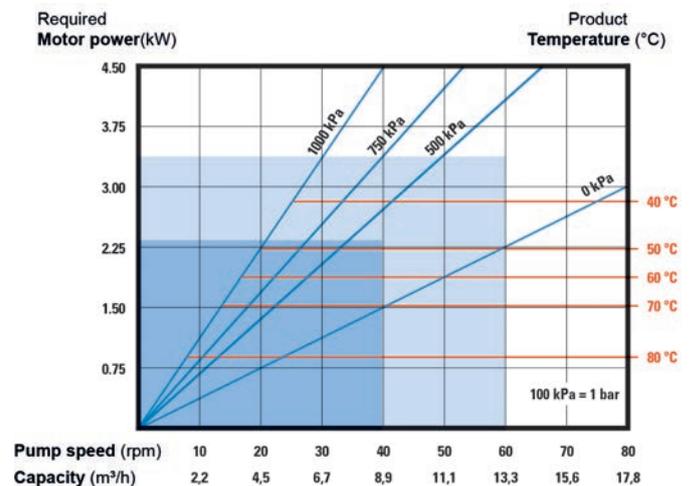
# PERIBEST I43, I55

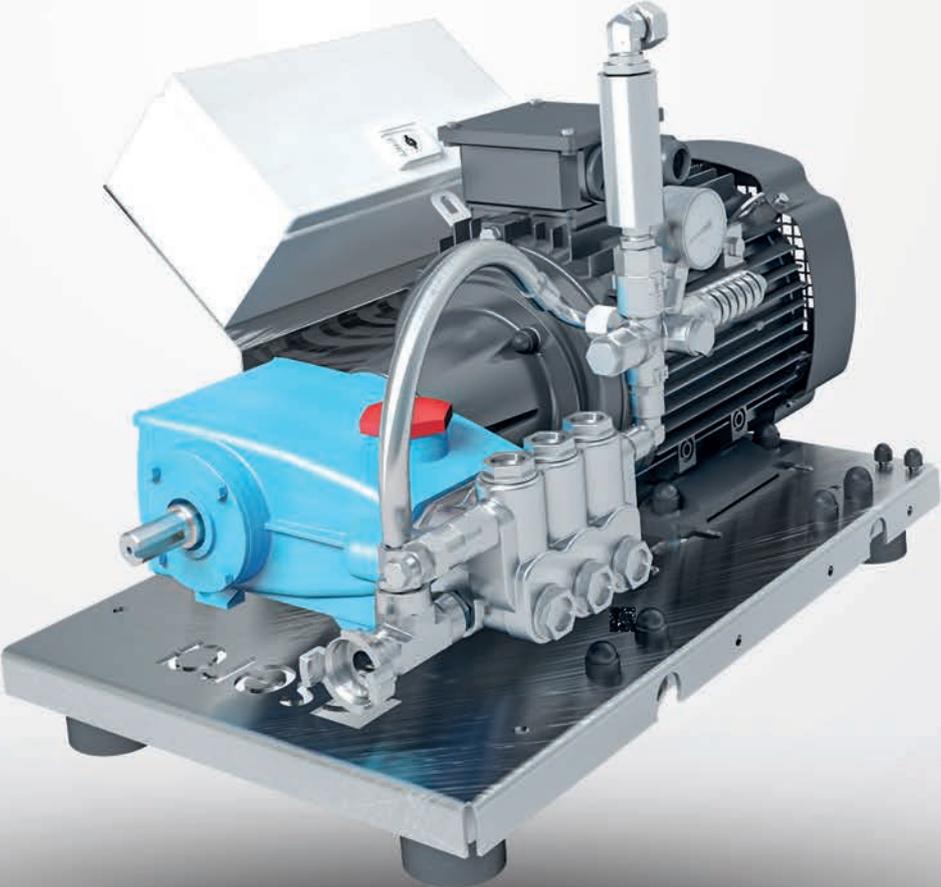


Technical specification	Model I43
Max. flow (continuous)	max. 7.000 l/h
Capacity	1,69 l/U
Max. discharge pressure	10 bar
Max. temperature	80°C
Inner diameter	43 mm
Hose material	Naturkautschuk, EPDM, NBR (lebensmittelecht)
Connections	Edelstahl 1.4401, PP, PVDF (PTFE)



Technical specification	Model I55
Max. flow (continuous)	max. 13.000 l/h
Capacity	3,71 l/U
Max. discharge pressure	10 bar
Max. temperature	80°C
Inner diameter	55 mm
Hose material	NR, EPDM, NBR (food grade)
Connections	stainless steel 1.4401, PP, PVDF (PTFE)





# HIGH PRESSURE CLEANING



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## HIGH PRESSURE CLEANING

from page



**High pressure cleaner, stationary**

**HCP<sub>center</sub>**

**468**



**High pressure cleaner, mobile**

**HCP<sub>move</sub>**

**470**

# HIGH PRESSURE CLEANER FOR COMMERCIAL USE

## GENERAL

This unit was designed for commercial use. The compact design of the unit is particularly space-saving and completely ready for connection with the integrated electrical control. The high-pressure pump unit can be operated with fresh water as well as with service water.

## FUNCTIONAL DESCRIPTION

The unit switches on automatically when the pressure drops (when the spray gun is actuated). When the gun is closed, the unit switches to standby after a delay of 3-30 sec. When the gun is closed, the unit switches to standby operation after a delay of 3-30 seconds (adjustable) and restarts immediately when the gun is actuated again. If the water supply is interrupted, the unit does not switch on, so there is a safeguard against dry running (does not apply to operation without pre-pressure).

## OPTIONS

- operation without inlet pressure
- dosing pump (for detergent)
- mobile design

## HIGH PRESSURE PUMP

Compressed air driven diaphragm pumps offer many advantages over other pump technologies:

- Pump head corrosion-resistant
- brass
- Plunger hard ceramic (solid)
- Valves, valve seats and springs made of stainless steel
- Seals made of special material
- Integrated leakage recirculation
- Low-noise running
- Crankcase die-cast aluminium
- Forged CrMo steel crankshaft
- Easy-to-maintain design

## DEVICE COMPONENTS

Compressed air-driven diaphragm pumps offer many advantages over other pump technologies:

- Three-phase standard motor
- Recirculation valve
- Pressure gauge
- Flow monitor (for pump control and water inflow monitoring)
- Motor protection switch
- Operating hours counter
- Base plate
- 3m cable and 16A CEE standard plug
- Control unit also suitable for wall mounting suitable

# INDUSTRIAL HIGH PRESSURE CLEANER



## ÜBERBLICK

- Standardised pre-wash units
- Compact design
- Integrated control
- Suitable for fresh and process water
- High-quality materials
- 3 plungers made of resistant ceramics
- Low maintenance
- Low operating costs
- Easy to operate

## TECHNICAL DATA

Type	Flow rate * [l/min.]	Operating pressure * [bar]	Speed [min <sup>-1</sup> ]	Motor power [kW]
HPCC	15	200	1.450	5,5

\*Special flow rates and operating pressures on request.

## BASIC DESIGN

### HPCcenter

Type	Article-No.	Price (EUR)
HPCC	25004942	①

## ACCESSORIES



### Lance set, industry

#### consisting of

- 10m hose
- Spray gun, LTF+ technology
- Stainless steel lance, length 1.200mm
- Flat spray nozzle

Type	Article-No.	Price (EUR)
LANZENSET-I-10-1200	▲	●

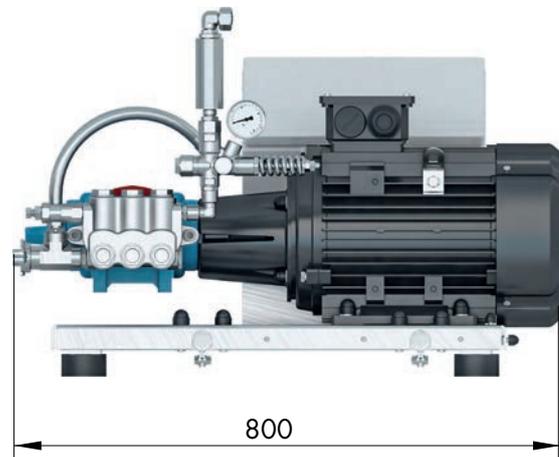
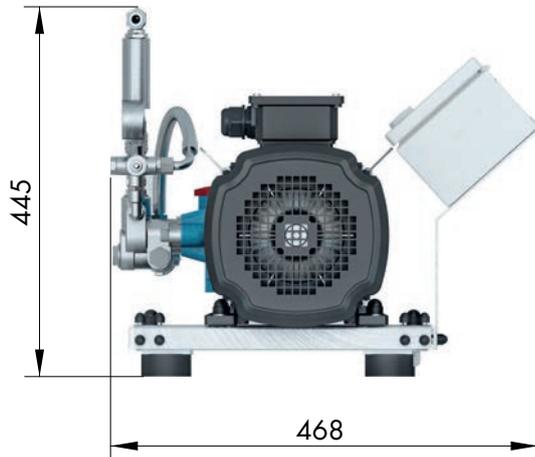


### Nozzles

Type	Article-No.	Price (EUR)
Flat jet nozzle 25°	90054326	▲
Rotating nozzle	90054334	▲

Stationary design  
 Delivery rate: 10-23 litres/min.  
 Pressure: 100-200 bar

## DIMENSIONS



## ACCESSORIES



### Pressure reducer, complete set

#### consisting of

Pressure reducer, brass, 1.5 to 6 bar, DN15  
 2x GEKA coupling, brass  
 for chemical-free water

#### Type

Pressure reducer, complete set, Kompletset

#### Artikel-Nr.

37608158

#### Preis (EUR)

▲



### Hose reels

#### Type

plastics for dry environment  
 stainless steel for ATEX environment  
 wall bracket  
 wall swivel bracket

#### Article-No.

90054402

90053055

90054400

90054401

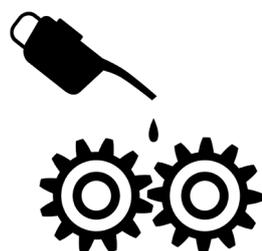
#### Price (EUR)

▲

▲

▲

▲



### High pressure gear oil

#### Viscosity

low

low

high

high

#### Qty.

1 Litre

5 Litre

1 Litre

5 Litre

#### Article-No.

Ⓣ

Ⓣ

Ⓣ

Ⓣ

#### Price (EUR)

▲

▲

▲

▲

● basic version

○ available without extra charge

▲ available with extra charge

Ⓣ not available

Ⓣ on request

# INDUSTRIAL HIGH PRESSURE CLEANER



## ÜBERBLICK

- Standardised pre-wash units
- Compact design
- Integrated control
- Suitable for fresh and process water
- High-quality materials
- 3 plungers made of resistant ceramics
- Low maintenance
- Low operating costs
- Easy to operate

## TECHNICAL DATA

Type	Flow rate * [l/min.]	Operating pressure * [bar]	Speed [min <sup>-1</sup> ]	Motor power [kW]
HPCM	15	200	1.450	5,5

\*Special flow rates and operating pressures on request.

## BASIC DESIGN

### HPCmove

Type	Article-No.	Price (EUR)
HPCM	25004948	①

## ACCESSORIES



### Lance set, industry

#### consisting of

- 10m hose
- Spray gun, LTF+ technology
- Stainless steel lance, length 1.200mm
- Flat spray nozzle

Type	Article-No.	Price (EUR)
LANZENSET-I-10-1200	37608159	▲



### Nozzles

Type	Article-No.	Price (EUR)
Flat jet nozzle 25°	90054326	▲
Rotating nozzle	90054334	▲

moveable design  
 Delivery rate: 10-23 litres/min.  
 Pressure: 100-200 bar

## DIMENSIONS



## ACCESSORIES



### Pressure reducer, complete set

#### consisting of

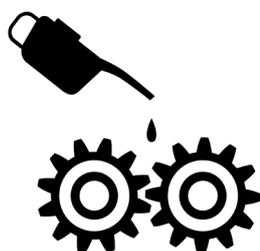
Pressure reducer, brass, 1.5 to 6 bar, DN15  
 2x GEKA coupling, brass  
 for chemical-free water

Type	Artikel-No.	Preis (EUR)
Pressure reducer, complete set	37608158	▲



### Hose reels

Design	Article-No.	Price (EUR)
plastics for dry environment	90054402	▲
stainless steel for ATEX environment	90053055	▲
wall bracket	90054400	▲
wall swivel bracket	90054401	▲



### High pressure gear oil

Viscosity	Qty.	Article-No.	Price (EUR)
low	1 Litre	Ⓢ	▲
low	5 Litre	Ⓢ	▲
high	1 Litre	Ⓢ	▲
high	5 Litre	Ⓢ	▲

● basic version

○ available without extra charge

▲ available with extra charge

Ⓢ not available

Ⓢ on request



# CONNECTION PARTS

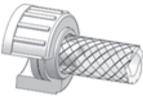


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## CONNECTION PARTS

for dosing pumps and fittings

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# CONNECTING PARTS

## Inserts/Pipe sockets

### PP

Insert **PP**

Union nut **PP-FRP (\*PVC-U)**

Connection type **Welding joint**

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	8	☉	☉
G3/4	10	90003805	▲
G3/4	15	90003544	▲
G1	15	90003808	▲
G1 1/4	15	90004620	▲
G1 1/4	20	90003811	▲
G1 1/4	25	90004624	▲
G1 1/2 *	25	90003814	▲
G2 *	32	90003817	▲
G2 1/4 *	40	☉	☉
G2 3/4 *	50	90003823	▲

### PVC-U

Insert **PVC-U**

Union nut **PP-FRP (\*PVC-U)**

Connection type **Gluing joint**

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	8	90003796	▲
G3/4	10	90003797	▲
G3/4	15	90003543	▲
G1	15	90003798	▲
G1 1/4	15	90004622	▲
G1 1/4	20	90003799	▲
G1 1/4	25	90004626	▲
G1 1/2 *	25	90003800	▲
G2 *	32	90003801	▲
G2 1/4 *	40	90003802	▲
G2 3/4 *	50	90003803	▲

### PVC-U (NA) (North america design)

Insert **PVC-U**

Union nut **PP-FRP**

Connection type **Gluing joint**

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	10	90031755	☉
G3/4	10	90031756	☉
G3/4	10	90031757	☉
G1	15	90031766	☉
G1	15	90031768	☉
G1 1/4	20	90031769	☉
G1 1/4	20	90031770	☉

### PVDF

Insert **PVDF**

Union nut **PVDF-FRP (\*PVDF)**

Connection type **Welding joint**

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	8	☉	☉
G3/4	10	90003804	▲
G3/4	15	90003546	▲
G1	15	90003807	▲
G1 1/4	15	90004621	▲
G1 1/4	20	90003810	▲
G1 1/4	25	90004625	▲
G1 1/2 *	25	90003813	▲
G2 *	32	☉	☉
G2 1/4 *	40	☉	☉
G2 3/4 *	50	☉	☉

### STAINLESS STEEL

Pipe socket **1.4571**

Union nut **1.4571**

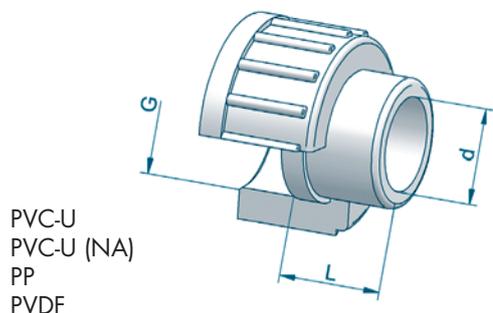
Connection type **Welding joint**

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	5	90003831	▲
G3/4	8	90003832	▲
G3/4	10	90008740	▲
G3/4	15	90008741	▲
G1	15	90008743	▲
G1	20	90015935	▲
G1 1/4	15	90008744	▲
G1 1/4	20	90008745	▲
G1 1/4	25	90008746	▲
G1 1/2	25	90008747	▲
G2	32	☉	☉
G2 1/4	40	☉	☉

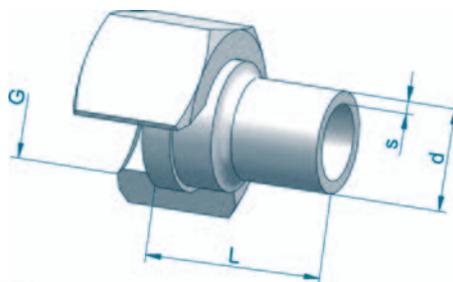
# CONNECTING PARTS

## Inserts/Pipe sockets

### DIMENSIONS



PVC-U  
PVC-U (NA)  
PP  
PVDF



1.4571

DN	d	L	d	L	d x s	L
G3/4	5	—	—	—	10 x 2,0	46
G3/4	8	12	17	12	12 x 2,0	46
G3/4	10	16	17	16	17,2 x 2,0	30
G3/4	15	20	60	20	21,3 x 2,0	30
G1	15	20	19	20	21,3 x 2,0	32
G1	20	5	5	5	26,9 x 2,5	35
G1 1/4	15	20	22	20	21,3 x 2,0	35
G1 1/4	20	25	22	25	26,9 x 2,5	35
G1 1/4	25	32	74	32	33,7 x 3,0	35
G1 1/2	25	32	25	32	33,7 x 3,0	37
G2	32	40	29	40	38 x 3,0	69
G2 1/4	40	50	34	50	44,5 x 2,0	70
G2 3/4	50	63	41	63	—	—

DN	d	L
G3/4	10	3/8"
G3/4	10	1/2"
G3/4	10	3/4"
G1	15	3/4"
G1	15	1"
G1 1/4	20	1"
G1 1/4	20	1 1/4"

# CONNECTING PARTS

## Transition piece with loose flange

### PP

Loose flange **PP** with steel inlay (\* **PP-FRP**)      DIN2501 (PN10)  
 Union nut **PP-FRP**

Type (Thread connection)	Seals EPDM Article-No.	Price (EUR)	Seals FPM Article-No.	Price (EUR)
G3/4 * DN10	Ⓜ	▲	90003788	▲
G3/4 DN15	Ⓜ	▲	90003791	▲
G1 DN15	Ⓜ	▲	90005809	▲
G1 1/4 DN15	Ⓜ	▲	90005705	▲
G1 1/4 DN20	Ⓜ	▲	90005702	▲
G1 1/4 DN25	Ⓜ	▲	90005699	▲

### PVDF

Loose flange **PP** with steel inlay (\* **PVDF-FRP**)      DIN2501 (PN10)  
 Union nut **PVDF-FRP**

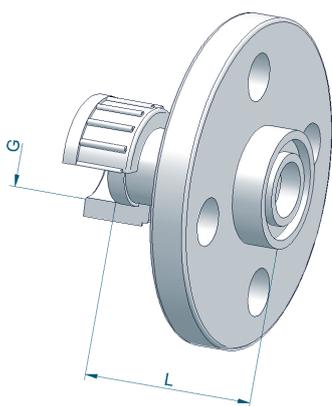
Type (Thread connection)	Seals EPDM Article-No.	Price (EUR)	Seals FPM Article-No.	Price (EUR)
G3/4 * DN10	Ⓜ	▲	90003789	▲
G3/4 DN15	Ⓜ	▲	90003792	▲
G1 DN15	Ⓜ	Ⓜ	Ⓜ	Ⓜ
G1 1/4 DN15	Ⓜ	▲	90005706	▲
G1 1/4 DN20	Ⓜ	▲	90005703	▲
G1 1/4 DN25	Ⓜ	▲	90005700	▲

### PVC-U

Loose flange **PVC-U**      DIN2501 (PN10)  
 Union nut **PP-FRP**

Type (Thread connection)	Seals EPDM Article-No.	Price (EUR)	Seals FPM Article-No.	Price (EUR)
G3/4 DN10	Ⓜ	▲	90003790	▲
G3/4 DN15	Ⓜ	▲	90003793	▲
G1 DN15	Ⓜ	▲	90005808	▲
G1 1/4 DN15	Ⓜ	▲	90005707	▲
G1 1/4 DN20	Ⓜ	▲	90005704	▲
G1 1/4 DN25	Ⓜ	▲	90005701	▲

## DIMENSIONS



G	DN	▶	L	▶	L
G3/4	10		PVC-U		45
G3/4	15	45		46	
G1	15	52		50	
G1 1/4	15	51		53	
G1 1/4	20	51		53	
G1 1/4	25	51		53	

# CONNECTING PARTS

## Transition piece with fixed flange

### STAINLESS STEEL

Flange **1.4571** DIN2633 (PN16)  
 Union nut **1.4571**

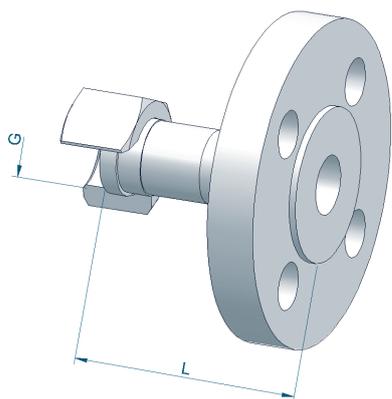
Type (Thread connection)	Article-No.	Price (EUR)
G3/4 DN10	90023375	▲
G3/4 DN15	90011412	▲
G1 DN15	90011414	▲
G1 1/4 DN15	90011418	▲
G1 1/4 DN20	90011420	▲
G1 1/4 DN25	90011422	▲

### STAINLESS STEEL

Flange **1.4571** ANSI B16,5 (150 lbs/sqin)  
 Union nut **1.4571**

Type (Thread connection)	Article-No.	Price (EUR)
G3/4 DN10	90011472	▲
G3/4 DN15	90018303	▲
G1 DN15	90023332	▲
G1 1/4 DN15	90021801	▲
G1 1/4 DN20	90022289	▲
G1 1/4 DN25	90021802	▲

## DIMENSIONES



G	DN	L	DN	L
G3/4	10	65	1/2"	77,8
G3/4	15	65	3/4"	120
G1	15	67	3/4"	87,3
G1 1/4	15	70	3/4"	87,5
G1 1/4	20	73	1"	90,6
G1 1/4	25	73	1 1/4"	142,2

DIN 2633

ANSI B16,5

● basic version

○ available without extra charge

▲ available with extra charge

⊘ not available

① on request

# CONNECTING PARTS

## Transition piece with hose nozzle

### PP

Hose nozzle **PP**  
Union nut **PP-FRP** (\*PP)

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	3	Ⓜ	Ⓜ
G3/4	5	90003873	▲
G3/4	8	90003877	▲
G3/4	10	90003881	▲
G3/4	15	90003885	▲
G1	15	90003889	▲
G1 1/4	15	90004631	▲
G1 1/4	20	90003893	▲
G1 1/4	25	90004635	▲
G1 1/2 *	25	Ⓜ	Ⓜ
G2 *	32	Ⓜ	Ⓜ
G2 1/4 *	40	Ⓜ	Ⓜ

### PVDF

Hose nozzle **PVDF**  
Union nut **PVDF-FRP** (\*PVDF)

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	3	Ⓜ	Ⓜ
G3/4	5	Ⓜ	Ⓜ
G3/4	8	Ⓜ	Ⓜ
G3/4	10	Ⓜ	Ⓜ
G3/4	15	90003886	▲
G1	15	Ⓜ	Ⓜ
G1 1/4	15	Ⓜ	Ⓜ
G1 1/4	20	Ⓜ	Ⓜ
G1 1/4	25	90004636	▲
G1 1/2 *	25	90003898	▲
G2 *	32	Ⓜ	Ⓜ
G2 1/4 *	40	Ⓜ	Ⓜ

### PVC-U

Hose nozzle **PVC-U**  
Union nut **PP-FRP** (\*PVC-U)

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	3	90003871	▲
G3/4	5	90003875	▲
G3/4	8	90003879	▲
G3/4	10	90003883	▲
G3/4	15	90003887	▲
G1	15	90003891	▲
G1 1/4	15	90004633	▲
G1 1/4	20	Ⓜ	Ⓜ
G1 1/4	25	Ⓜ	Ⓜ
G1 1/2 *	25	90003899	▲
G2 *	32	90003903	▲
G2 1/4 *	40	90003907	▲

### STAINLESS STEEL

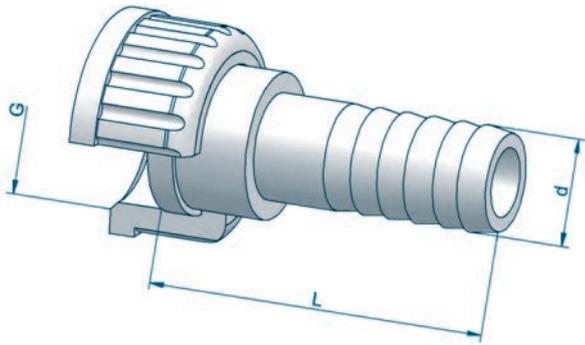
Hose nozzle **1.4571**  
Union nut **1.4571**

Type (Thread connection)	DN	Article-No.	Price (EUR)
G3/4	3	90003872	▲
G3/4	5	90003876	▲
G3/4	8	90003880	▲
G3/4	10	90003884	▲
G3/4	15	90003888	▲
G1	15	90003892	▲
G1 1/4	15	90004634	▲
G1 1/4	20	Ⓜ	Ⓜ
G1 1/4	25	90004638	▲
G1 1/2 *	25	90003900	▲
G2 *	32	Ⓜ	Ⓜ
G2 1/4 *	40	Ⓜ	Ⓜ

# CONNECTING PARTS

## Transition piece with hose nozzle

### DIMENSIONES

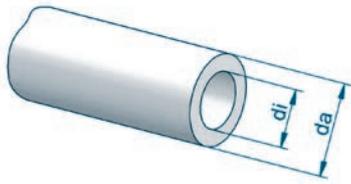


DN		▶	d L	
G3/4	3		6,5	30
G3/4	5	10	35	
G3/4	8	12	54	
G3/4	10	16	60	
G3/4	15	20	65	
G1	8	13	57	
G1	15	20	65	
G1 1/4	15	20	65	
G1 1/4	20	25	82	
G1 1/4	25	30	92	
G1 1/2	25	30	92	
G2	32	40	103	
G2 1/4	40	50	120	

PVC-U, PP, PVDF, 1.4571

# CONNECTING PARTS

## Dosing hoses/hose clamps



### DOSING HOSE made of EPDM

Only for connection with hose nozzle + hose clamp

Inner liners and outer cover made of EPDM, black

Available in any length (note max. length)

Price per metre

Ø (di/da)	Ø Hose nozzle [mm]	permitted min. pressure [bar]	max. pressure [bar]	max. length [m]	Article-No.	Price (EUR)
13/20	13	-0,3	10	40	90009835	▲
19/27	20	-0,3	10	40	90010443	▲
25/34	25	-0,3	10	40	90014695	▲



### HOSE CLAMP for EPDM-hose

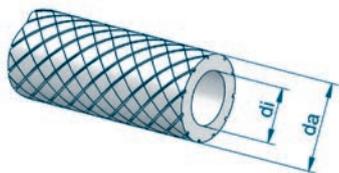
Heavy duty clamp, DIN3017

Stainless steel W4 (1.4301)

for hose up to Ø (da)	Strapping width	Wide gap		Article-No.	Price (EUR)
		d (min)	d (max)		
21	18	19	21	90041220	▲
29	18	27	29	90041221	▲
37	20	34	37	90041222	▲
43	20	40	43	90041223	▲

# CONNECTING PARTS

## Dosing hoses/hose clamps

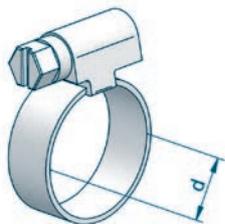


### DOSING HOSE made of PVC-U with cross fabric inlay

Available in any length (note max. length)

Price per metre

Ø (di/da)	Hose nozzle [Ø mm]	max. pressure [bar]	max. length [m]	Article-No.	Price (EUR)
6/12	6,5	10	50	90005974	▲
10/16	10	10	50	90005975	▲
12/21	12	10	50	90005976	▲
16/24	16	10	50	90005977	▲
19/27	20	10	50	90005978	▲
25/34	25	9	25	90005979	▲
30/38	30	6	25	90010204	▲
38/48	40	6	25	90005981	▲



### HOSE CLAMP for PVC-hose

Worm drive clamp, DIN3017

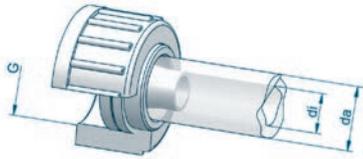
Stainless steel W4 (1.4301)

for hose up to Ø (da)	Strapping width	Wide gap		Article-No.	Price (EUR)
		d (min)	d (max)		
16	9	10	16	90002343	▲
24	9	16	27	90002345	▲
27	9	20	32	90002346	▲
48	9	32	50	90002348	▲

# CONNECTING PARTS

## Hose screw connections and dosing hoses

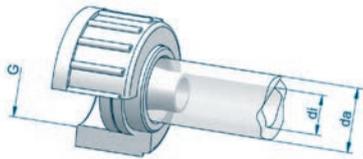
### HOSE SCREW CONNECTION for PE- and PTFE-hose



#### PVC-U

Nozzle **PVC-U**  
 Support sleeve **PVC-U**  
 Union nut **PVC-U** or **PP-FRP**

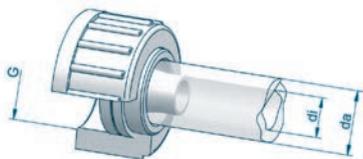
Type (Thread connection)	di	da	Article-No.	Price (EUR)
<b>G3/4</b>	4	6	90043324	▲
<b>G3/4</b>	6	8	90040925	▲
<b>G3/4</b>	8	12	90025703	▲
<b>G3/4</b>	10	12	90017815	▲



#### PP-FRP

Nozzle **PP-GFK**  
 Support sleeve **PP-FRP**  
 Union nut **PP-FRP**

Type (Thread connection)	di	da	Article-No.	Price (EUR)
<b>G3/4</b>	4	6	90043323	▲
<b>G3/4</b>	6	8	⊘	⊘
<b>G3/4</b>	8	12	⊘	⊘
<b>G3/4</b>	10	12	⊘	⊘



#### PP

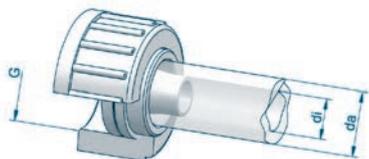
Nozzle **PP**  
 Support sleeve **PP**  
 Union nut **PP-FRP**

Type (Thread connection)	di	da	Article-No.	Price (EUR)
<b>G3/4</b>	4	6	⊘	⊘
<b>G3/4</b>	6	8	90015988	▲
<b>G3/4</b>	8	12	90015981	▲
<b>G3/4</b>	10	12	90016415	▲

# CONNECTING PARTS

## Hose screw connections and dosing hoses

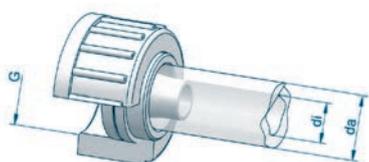
### HOSE SCREW CONNECTION for PE- and PTFE-hose (North america design)



#### PVC-U

Nozzle **PVC-U**  
 Support sleeve **PVC-U**  
 Union nut **PVC-U** or **PP-FRP**

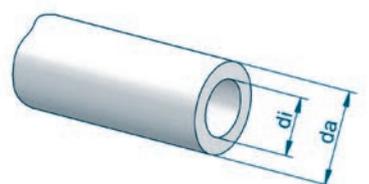
Type (Thread connection)	di	da	Article-No.	Price (EUR)
<b>G3/4</b>	9,65	12,7	Ⓜ	Ⓜ
<b>G1</b>	9,65	12,7	Ⓜ	Ⓜ



#### PP

Nozzle **PP**  
 Support sleeve **PP**  
 Union nut **PP-FRP**

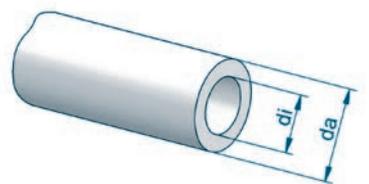
Type (Thread connection)	di	da	Article-No.	Price (EUR)
<b>G3/4</b>	9,65	12,7	Ⓜ	Ⓜ
<b>G1</b>	9,65	12,7	Ⓜ	Ⓜ



#### DOSING HOSE made of PE

Only for hose screw connection  
 Available in any length (note max. length)  
 Price per metre

Ø (di/da)	max. pressure [bar]	max. length [m]	Article-No.	Price (EUR)
<b>4/6</b>	10	50	90005503	▲
<b>6/8</b>	10	50	90041198	▲
<b>8/12</b>	10	50	90007742	▲



#### DOSING HOSE made of PTFE

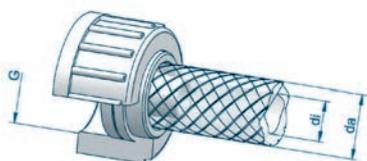
Only for hose screw connection  
 Available in any length (note max. length)  
 Price per metre

Ø (di/da)	max. pressure [bar]	max. length [m]	Article-No.	Price (EUR)
<b>4/6</b>	15	30	90007737	▲
<b>6/8</b>	10	50	90018852	▲
<b>10/12</b>	11	50	90007738	▲

# CONNECTING PARTS

## Dosing hoses

### HOSE SCREW CONNECTION for PVC-hose with cross fabric inlay



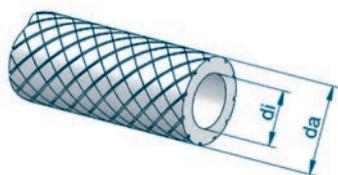
#### PVC-U

Nozzle **PVC-U**

Support sleeve **PVC-U**

Union nut **PVC-U** or **PP-FRP**

Type (Thread connection)	di	da	Article-No.	Price (EUR)
<b>G3/4</b>	6	12	90011092	▲
<b>G3/4</b>	10	16	90011093	▲
<b>G1</b>	16	24	90011094	▲
<b>G1</b>	10	16	🕒	🕒
<b>G1 1/4</b>	16	24	🕒	🕒
<b>G1 1/4</b>	19	27	90011096	▲



#### DOSING HOSE made of PVC-U with cross fabric inlay

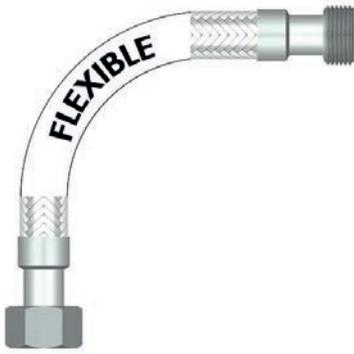
Available in any length (note max. length)

Price per metre

Ø (di/da)	Hose nozzle [Ø mm]	max. pressure [bar]	max. length [m]	Article-No.	Price (EUR)
<b>6/12</b>	6,5	10	50	90005974	▲
<b>10/16</b>	10	10	50	90005975	▲
<b>12/21</b>	12	10	50	90005976	▲
<b>16/24</b>	16	10	50	90005977	▲
<b>19/27</b>	20	10	50	90005978	▲
<b>25/34</b>	25	9	25	90005979	▲
<b>30/38</b>	30	6	25	90010204	▲
<b>38/48</b>	40	6	25	90005981	▲

# CONNECTING PARTS

## Flexible dosing hoses

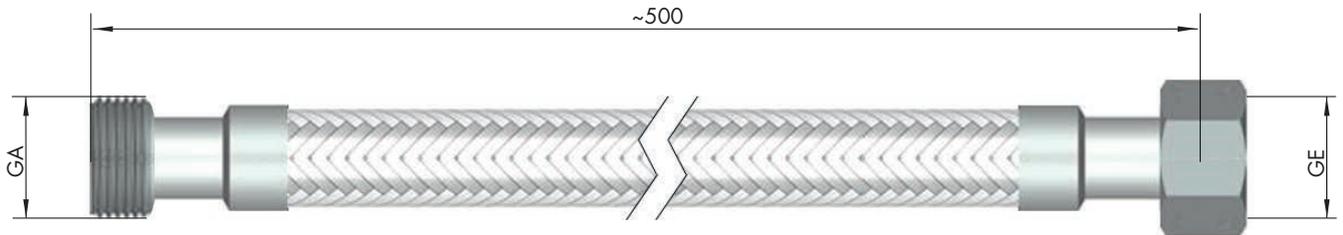


### DOSING HOSE, FLEXIBLE made of stainless steel

Hose set incl. connection O-ring  
 Inlet: union nut (female thread - GE)  
 Outlet: thread joint (male thread - GA)

Materials: hose 1.4401, O-ring: FEP

GE	GA	L	Article-No.	Price (EUR)
G3/4	G3/4	500	90049994	▲
G 1	G 1	500	90049993	▲
G1 1/2	G1 1/2	500	90050817	▲





# FITTINGS



# TABLE OF CONTENTS

## FITTINGS

from page



**Diaphragm relief valves** Counterpressure up to max. 10 bar 62x.10 **492**



**Diaphragm pressure keeping valves** Counterpressure up to max. 10 bar 62x.D **496**



**Multi function valves** Counterpressure up to max. 10 bar MFV **500**



**Diaphragm pulsation damper** Flow rate up to 4.000 l/h  
Counterpressure up to max. 10 bar 713.1 **502**



**Diaphragm pulsation damper** Flow rate up to 600 l/h  
Counterpressure up to max. 10 bar 72x.1 **504**



**Diaphragm pulsation damper** Flow rate up to 900 l/h  
Counterpressure up to max. 10 bar 810.1 **508**



**Diaphragm pulsation damper** Flow rate up to 900 l/h  
Counterpressure up to max. 180 bar 810.1 **510**



**Suction lances with level switch** Flow rate up to bis 35 l/h SL-12.1 **512**



**Suction lances with level switch** Flow rate up to bis 200 l/h SL-02 **514**



**Suction lances with level switch** Flow rate up to bis 700 l/h SLP-15x.1 **518**



**Suction lances without level switch** Flow rate up to bis 200 l/h S-01 **520**



**Dosing valves** Flow rate up to 1.500 l/h  
Counterpressure up to max. 10 bar 69x.1 **522**



**Injection fittings** Flow rate up to 1.500 l/h  
Counterpressure up to max. 10 bar 806x.1 **526**



**Vent valve** Flow rate up to 190 l/h  
Counterpressure up to max. 10 bar 8152 **528**



**Foot valves** Flow rate up to 1.100 l/h  
Counterpressure up to max. 10 bar 73x **530**



**Foot valves** Flow rate up to 1.450 l/h  
Counterpressure up to max. 10 bar 78x.1 **530**



**Multi function device** Flow rate up to 1.500 l/h  
Counterpressure up to max. 10 bar MFD **532**

# DIAPHRAGM RELIEF VALVES



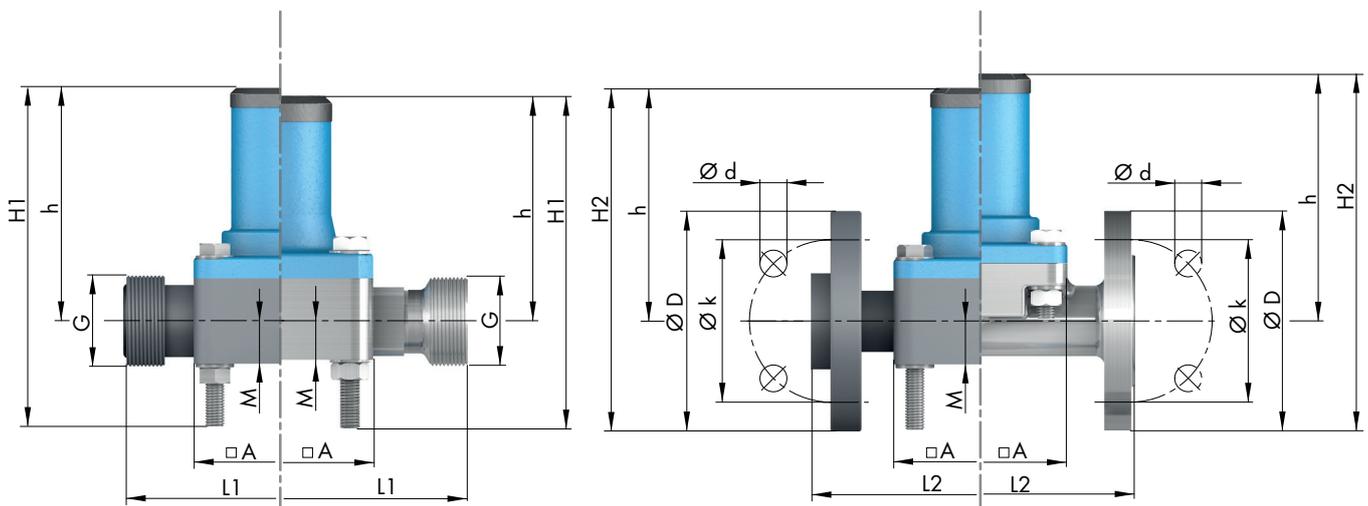
## OVERVIEW

- Compact design
- Easy to mount
- Maintenance free
- Reliable
- Overpressure protection of dosing pumps
- High quality materials
- Low weight

## TECHNICAL DATA

		620.10	622.10	623.10	624.10	625.10	626.10	627.10
Inlet/outlet nominal width	DN	8	15	20	25	32	40	50
Permissible operating pressure	bar	10	10	10	10	10	10	10
Set pressure $p_e$	bar	2,5...10	2,5...10	1,5...10	1,5...10	1,5...10	1,5...10	1,5...10
Max. flow rate	l/h	200	500	1000	2000	4000	7000	10000

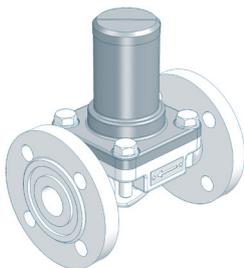
## DIMENSIONS



		620.10	622.10	623.10	624.10	625.10	626.10	627.10
<b>G</b>	PVC-U, PP (-FRP), PVDF (-FRP)	G¾	G1	G1¼	G1½	G2	G2¼	G2¾
	1.4581	G¾	G1	–	–	–	–	–
<b>A</b>	PVC-U, PP (-FRP), PVDF (-FRP), 1.4581	50	72	80	90	100	115	140
<b>M</b>	PVC-U, PP (-FRP), PVDF (-FRP)	13	15	28	22,5	24	30	38
	1.4581	13	16	–	–	–	–	–
<b>L1</b>	PVC-U, PP (-FRP), PVDF (-FRP)	80	115	130	160	180	235	260
	1.4581	110	145	–	–	–	–	–
<b>L2</b>	PVC-U, PP (-FRP), PVDF (-FRP)	110	145	160	175	200	235	260
	1.4581	–	–	150	160	180	200	230
<b>h</b>	PVC-U, PP (-FRP), PVDF (-FRP)	80	90	116	123	157	180	185
	1.4581	80	88	125	130	165	180	185
<b>H1</b>	PVC-U, PP (-FRP), PVDF (-FRP)	113	130	169	166,5	206	249	254
	1.4581	108	129	–	–	–	–	–
<b>H2</b>	PVC-U, PP (-FRP), PVDF (-FRP)	125	137,5	168,5	180,5	227	255	267,5
	1.4581	–	–	177,5	187,5	235	255	267,5
<b>k</b>	PVC-U, PP (-FRP), PVDF (-FRP), 1.4581	60	65	75	85	100	110	125
<b>d</b>	PVC-U, PP (-FRP), PVDF (-FRP), 1.4581	14	14	14	14	18	18	18
<b>D</b>	PVC-U, PP (-FRP), PVDF (-FRP), 1.4581	90	95	105	115	140	150	165

(Dimensions in mm)

## BASIC DESIGNS



### Diaphragm relief valve (with fixed flanges)

for overpressure protection

#### Properties

- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

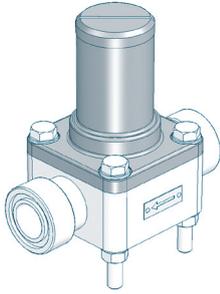
#### Basic design

- Flanges acc. to **DIN 2501**
- Valve body: **1.4581** or **GG**
- Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
<b>623.10</b>	DN20	DIN 2501	GG	37600038	▲
<b>624.10</b>	DN25	DIN 2501	GG	37600039	▲
<b>625.10</b>	DN32	DIN 2501	GG	Ⓢ	Ⓢ
<b>626.10</b>	DN40	DIN 2501	GG	Ⓢ	Ⓢ
<b>627.10</b>	DN50	DIN 2501	GG	Ⓢ	Ⓢ
<b>623.10</b>	DN20	DIN 2501	1.4581	36230104	▲
<b>624.10</b>	DN25	DIN 2501	1.4581	36240104	▲
<b>625.10</b>	DN32	DIN 2501	1.4581	Ⓢ	Ⓢ
<b>626.10</b>	DN40	DIN 2501	1.4581	Ⓢ	Ⓢ
<b>627.10</b>	DN50	DIN 2501	1.4581	Ⓢ	Ⓢ

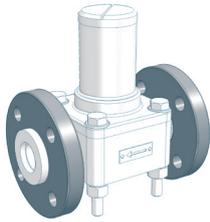
# DIAPHRAGM RELIEF VALVES

## BASIC DESIGNS



Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.10	DN8	G 3/4	PVC-U	FPM	37603632	▲
620.10	DN8	G 3/4	PVC-U	EPDM	36200101	▲
620.10	DN8	G 3/4	PP	FPM	37603630	▲
620.10	DN8	G 3/4	PP	EPDM	37603629	▲
620.10	DN8	G 3/4	PVDF	FEP	37601792	▲
620.10	DN8	G 3/4	1.4581	FEP	37600670	▲
622.10	DN15	G 1	PVC-U	FPM	37604006	▲
622.10	DN15	G 1	PVC-U	EPDM	37603635	▲
622.10	DN15	G 1	PP	FPM	Ⓢ	Ⓢ
622.10	DN15	G 1	PP	EPDM	Ⓢ	Ⓢ
622.10	DN15	G 1	PP-GFK	FPM	37603634	▲
622.10	DN15	G 1	PP-GFK	EPDM	37600450	▲
622.10	DN15	G 1	PVDF	FEP	37600717	▲
622.10	DN15	G 1	PVDF-GFK	FEP	37601819	▲
622.10	DN15	G 1	1.4581	FEP	37600695	▲
623.10	DN20	G 1 1/4	PVC-U	FPM	37600009	▲
623.10	DN20	G 1 1/4	PVC-U	EPDM	36230101	▲
623.10	DN20	G 1 1/4	PP	FPM	37600016	▲
623.10	DN20	G 1 1/4	PP	EPDM	36230105	▲
623.10	DN20	G 1 1/4	PVDF	FEP	37606304	▲
624.10	DN25	G 1 1/2	PVC-U	FPM	37603639	▲
624.10	DN25	G 1 1/2	PVC-U	EPDM	37603638	▲
624.10	DN25	G 1 1/2	PP	FPM	37603637	▲
624.10	DN25	G 1 1/2	PP	EPDM	37603636	▲
624.10	DN25	G 1 1/2	PVDF	FEP	37603866	▲
625.10	DN32	G 2	PVC-U	Ⓢ	Ⓢ	Ⓢ
625.10	DN32	G 2	PP	Ⓢ	Ⓢ	Ⓢ
625.10	DN32	G 2	PVDF	Ⓢ	Ⓢ	Ⓢ
626.10	DN40	G 2 1/4	PVC-U	Ⓢ	Ⓢ	Ⓢ
626.10	DN40	G 2 1/4	PP	Ⓢ	Ⓢ	Ⓢ
626.10	DN40	G 2 1/4	PVDF	Ⓢ	Ⓢ	Ⓢ
627.10	DN50	G 2 3/4	PVC-U	Ⓢ	Ⓢ	Ⓢ
627.10	DN50	G 2 3/4	PP	Ⓢ	Ⓢ	Ⓢ
627.10	DN50	G 2 3/4	PVDF	Ⓢ	Ⓢ	Ⓢ

## OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.10	PVC	Loose flange made of PVC-U	①
620.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.10	PP	Loose flange made of PP with steel inlay	▲
620.10	PVDF	Loose flange made of PP with steel inlay	▲

Type	Design	Loose flange	Surcharge [EUR]
622.10	PVC	Loose flange made of PVC-U	▲
622.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.10	PP	Loose flange made of PP with steel inlay	▲
622.10	PVDF	Loose flange made of PP with steel inlay	▲

Type	Design	Loose flange	Surcharge [EUR]
623.10	PVC	Loose flange made of PVC-U	▲
623.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.10	PP	Loose flange made of PP with steel inlay	▲
623.10	PVDF	Loose flange made of PP with steel inlay	▲

Type	Design	Loose flange	Surcharge [EUR]
624.10	PVC	Loose flange made of PVC-U	▲
624.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
624.10	PP	Loose flange made of PP with steel inlay	▲
624.10	PVDF	Loose flange made of PP with steel inlay	▲

Type	Design	Loose flange	Surcharge [EUR]
625.10	PVC	Loose flange made of PVC-U	①
625.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
625.10	PP	Loose flange made of PP with steel inlay	①
625.10	PVDF	Loose flange made of PP with steel inlay	①

Type	Design	Loose flange	Surcharge [EUR]
626.10	PVC	Loose flange made of PVC-U	①
626.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
626.10	PP	Loose flange made of PP with steel inlay	①
626.10	PVDF	Loose flange made of PP with steel inlay	①

Type	Design	Loose flange	Surcharge [EUR]
627.10	PVC	Loose flange made of PVC-U	①
627.10	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
627.10	PP	Loose flange made of PP with steel inlay	①
627.10	PVDF	Loose flange made of PP with steel inlay	①

# DIAPHRAGM PRESSURE KEEPING VALVES



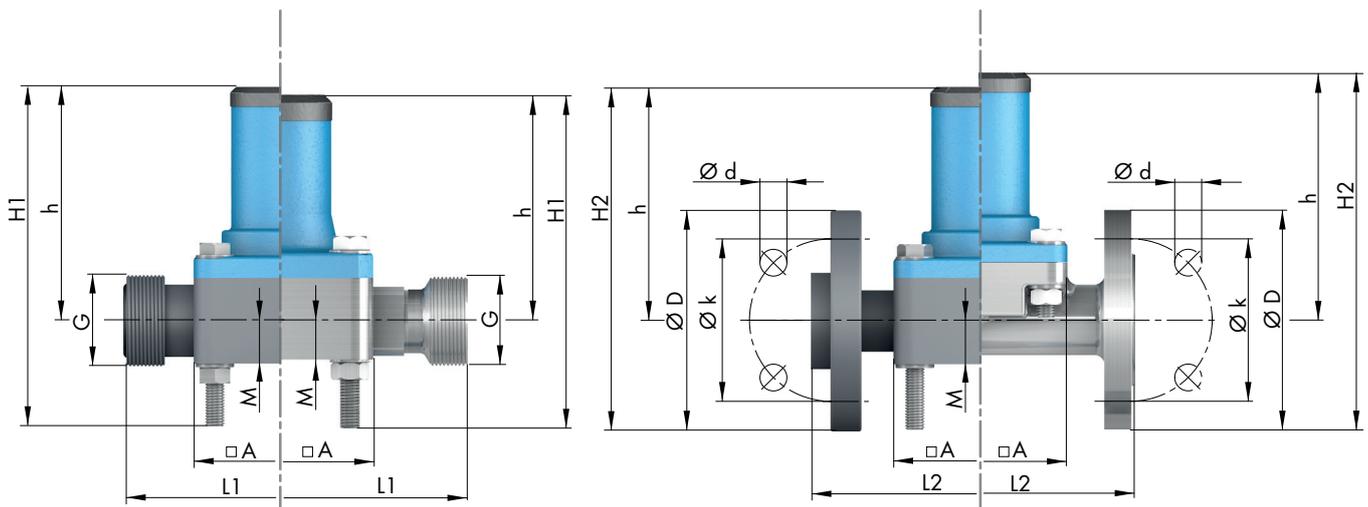
## OVERVIEW

- Compact design
- Easy installation
- Maintenance free
- Reliable
- High quality materials
- Low weight
- Overpressure protection of dosing pumps

## TECHNICAL DATA

		620.D	622.D	623.D	624.D	625.D	626.D	627.D
Inlet/outlet nominal width	DN	8	15	20	25	32	40	50
Permissible operating pressure	bar	10	10	10	10	10	10	10
Set pressure $p_e$	bar	1,5...2,0	1,0...2,0	1,0...3,5	1,0...3,0	1,0...7,0	1,0...7,0	1,0...7,0
Max. flow rate	l/h	200	500	1000	2000	4000	7000	10000

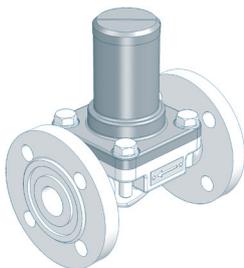
## DIMENSIONS



		620.D	622.D	623.D	624.D	625.D	626.D	627.D
<b>G</b>	PVC-U, PP (-FRP), PVDF (-FRP)	G¾	G1	G1¼	G1½	G2	G2¼	G2¾
	1.4581	G¾	G1	–	–	–	–	–
<b>A</b>	PVC-U, PP (-FRP), PVDF (-FRP), 1.4581	50	72	80	90	100	115	140
<b>M</b>	PVC-U, PP (-FRP), PVDF (-FRP)	13	15	28	22,5	24	30	38
	1.4581	13	16	–	–	–	–	–
<b>L1</b>	PVC-U, PP (-FRP), PVDF (-FRP)	80	115	130	160	180	235	260
	1.4581	110	145	–	–	–	–	–
<b>L2</b>	PVC-U, PP (-FRP), PVDF (-FRP)	110	145	160	175	200	235	260
	1.4581	–	–	150	160	180	200	230
<b>h</b>	PVC-U, PP (-FRP), PVDF (-FRP)	80	90	116	123	157	180	185
	1.4581	80	88	125	130	165	180	185
<b>H1</b>	PVC-U, PP (-FRP), PVDF (-FRP)	113	130	169	166,5	206	249	254
	1.4581	108	129	–	–	–	–	–
<b>H2</b>	PVC-U, PP (-FRP), PVDF (-FRP)	125	137,5	168,5	180,5	227	255	267,5
	1.4581	–	–	177,5	187,5	235	255	267,5
<b>k</b>	PVC-U, PP (-FRP), PVDF (-FRP), 1.4581	60	65	75	85	100	110	125
<b>d</b>	PVC-U, PP (-FRP), PVDF (-FRP), 1.4581	14	14	14	14	18	18	18
<b>D</b>	PVC-U, PP (-FRP), PVDF (-FRP), 1.4581	90	95	105	115	140	150	165

(Dimensions in mm)

## BASIC DESIGNS



### Diaphragm pressure keeping valve (with fixed flanges)

to prevent over-conveyance

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

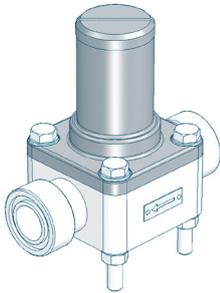
#### Basic design

Flanges acc. to **DIN 2501**  
Valve body: **1.4581** or **GG**  
Diaphragm: **PTFE-faced**

Type	Nominal size	Connection	Valve body	Article-No.	Price (EUR)
<b>623.D</b>	DN20	DIN 2501	GG	37600080	▲
<b>624.D</b>	DN25	DIN 2501	GG	37600081	▲
<b>625.D</b>	DN32	DIN 2501	GG	①	①
<b>626.D</b>	DN40	DIN 2501	GG	①	①
<b>627.D</b>	DN50	DIN 2501	GG	①	①
<b>623.D</b>	DN20	DIN 2501	1.4581	36231104	▲
<b>624.D</b>	DN25	DIN 2501	1.4581	36241104	▲
<b>625.D</b>	DN32	DIN 2501	1.4581	①	①
<b>626.D</b>	DN40	DIN 2501	1.4581	①	①
<b>627.D</b>	DN50	DIN 2501	1.4581	①	①

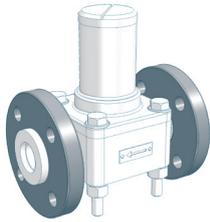
# DIAPHRAGM PRESSURE KEEPING VALVES

## BASIC DESIGNS



Type	Nominal size	Connection	Valve body	Seals	Article-No.	Price (EUR)
620.D	DN8	G 3/4	PVC-U	FPM	37600048	▲
620.D	DN8	G 3/4	PVC-U	EPDM	36201101	▲
620.D	DN8	G 3/4	PP	FPM	37600055	▲
620.D	DN8	G 3/4	PP	EPDM	36201105	▲
620.D	DN8	G 3/4	PVDF	FEP	37601827	▲
620.D	DN8	G 3/4	1.4581	FEP	37600525	▲
622.D	DN15	G 1	PVC-U	FPM	37600049	▲
622.D	DN15	G 1	PVC-U	EPDM	36221101	▲
622.D	DN15	G 1	PP	FPM	Ⓢ	Ⓢ
622.D	DN15	G 1	PP	EPDM	Ⓢ	Ⓢ
622.D	DN15	G 1	PP-GFK	FPM	37600056	▲
622.D	DN15	G 1	PP-GFK	EPDM	36221105	▲
622.D	DN15	G 1	PVDF	FEP	37602881	▲
622.D	DN15	G 1	PVDF-GFK	FEP	37601449	▲
622.D	DN15	G 1	1.4581	FEP	37600538	▲
623.D	DN20	G 1 1/4	PVC-U	FPM	37600050	▲
623.D	DN20	G 1 1/4	PVC-U	EPDM	36231101	▲
623.D	DN20	G 1 1/4	PP	FPM	37600057	▲
623.D	DN20	G 1 1/4	PP	EPDM	36231105	▲
623.D	DN20	G 1 1/4	PVDF	FEP	37606309	▲
624.D	DN25	G 1 1/2	PVC-U	FPM	37600051	▲
624.D	DN25	G 1 1/2	PVC-U	EPDM	36241101	▲
624.D	DN25	G 1 1/2	PP	FPM	37600058	▲
624.D	DN25	G 1 1/2	PP	EPDM	36241105	▲
624.D	DN25	G 1 1/2	PVDF	FEP	37606310	▲
625.D	DN32	G 2	PVC-U	Ⓢ	Ⓢ	Ⓢ
625.D	DN32	G 2	PP	Ⓢ	Ⓢ	Ⓢ
625.D	DN32	G 2	PVDF	Ⓢ	Ⓢ	Ⓢ
626.D	DN40	G 2 1/4	PVC-U	Ⓢ	Ⓢ	Ⓢ
626.D	DN40	G 2 1/4	PP	Ⓢ	Ⓢ	Ⓢ
626.D	DN40	G 2 1/4	PVDF	Ⓢ	Ⓢ	Ⓢ
627.D	DN50	G 2 3/4	PVC-U	Ⓢ	Ⓢ	Ⓢ
627.D	DN50	G 2 3/4	PP	Ⓢ	Ⓢ	Ⓢ
627.D	DN50	G 2 3/4	PVDF	Ⓢ	Ⓢ	Ⓢ

## OPTIONS



Type	Design	Loose flange	Surcharge [EUR]
620.D	PVC	Loose flange made of PVC-U	①
620.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
620.D	PP	Loose flange made of PP with steel inlay	▲
620.D	PVDF	Loose flange made of PP with steel inlay	▲
Type	Design	Loose flange	Surcharge [EUR]
622.D	PVC	Loose flange made of PVC-U	▲
622.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	①
622.D	PP	Loose flange made of PP with steel inlay	▲
622.D	PVDF	Loose flange made of PP with steel inlay	▲
Type	Design	Loose flange	Surcharge [EUR]
623.D	PVC	Loose flange made of PVC-U	▲
623.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
623.D	PP	Loose flange made of PP with steel inlay	▲
623.D	PVDF	Loose flange made of PP with steel inlay	▲
Type	Design	Loose flange	Surcharge [EUR]
624.D	PVC	Loose flange made of PVC-U	▲
624.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
624.D	PP	Loose flange made of PP with steel inlay	▲
624.D	PVDF	Loose flange made of PP with steel inlay	▲
Type	Design	Loose flange	Surcharge [EUR]
625.D	PVC	Loose flange made of PVC-U	①
625.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
625.D	PP	Loose flange made of PP with steel inlay	①
625.D	PVDF	Loose flange made of PP with steel inlay	①
Type	Design	Loose flange	Surcharge [EUR]
626.D	PVC	Loose flange made of PVC-U	①
626.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
626.D	PP	Loose flange made of PP with steel inlay	①
626.D	PVDF	Loose flange made of PP with steel inlay	①
Type	Design	Loose flange	Surcharge [EUR]
627.D	PVC	Loose flange made of PVC-U	①
627.D	PP-FRP/PVDF-FRP	Loose flange made of PP with steel inlay	⊘
627.D	PP	Loose flange made of PP with steel inlay	①
627.D	PVDF	Loose flange made of PP with steel inlay	①

# MULTI-FUNCTION VALVES



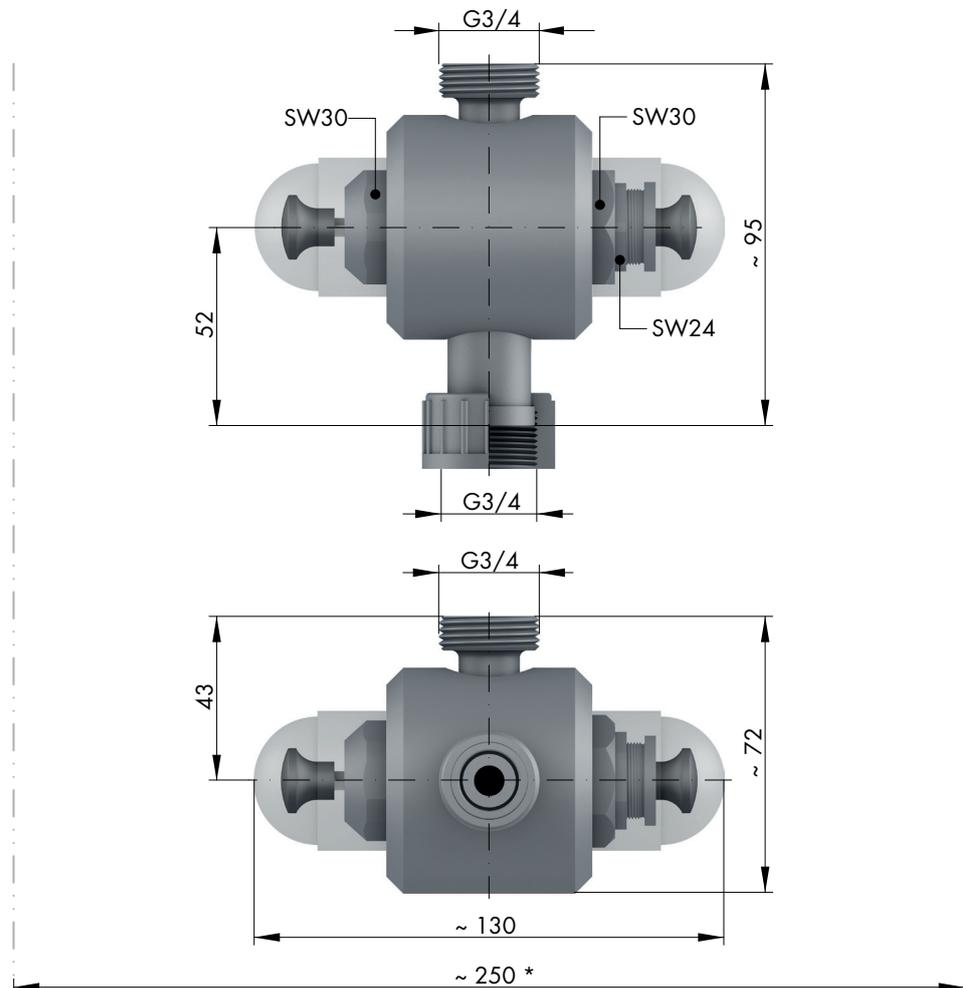
## OVERVIEW

- Compact design
- Easy installation
- Maintenance free
- Overpressure protection for dosing pumps
- Prevention of overdose
- Venting
- High quality materials

## TECHNICAL DATA

		MFV050
Opening pressure	bar	4 - 10
Holding pressure	bar	1 - 1,5
Max. flow rate	l/h	50

## DIMENSIONS



## BASIC DESIGNS



### Multi function valve

#### Properties

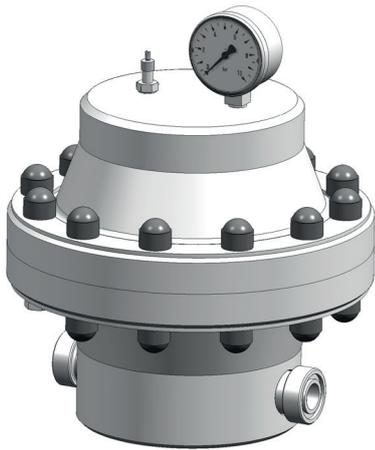
- Maximum operating pressure 10 bar
- Compact design
- Easy installation
- Maintenance-free
- Venting
- Overpressure protection for dosing pumps
- Prevention of over conveyance

#### Basic version

- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- Relief valve side**
- Opening pressure: **2 up to 10 bar** (adjustable)
- Pressure keeping valve side**
- Holding pressure: **1,0 - 1,5 bar**

Type	Valve body	Seals	Article-No.	Price (EUR)
MFV 050	PVC-U	EPDM	37600973	▲
MFV 050	PVC-U	FPM	37600974	▲
MFV 050	PP	EPDM	37600982	▲
MFV 050	PP	FPM	37600983	▲

# DIAPHRAGM PULSATION DAMPER



## OVERVIEW

- User-friendly
- Low-maintenance
- Long service life
- Easy installation
- Design acc. to 2014/68/EU
- High quality materials

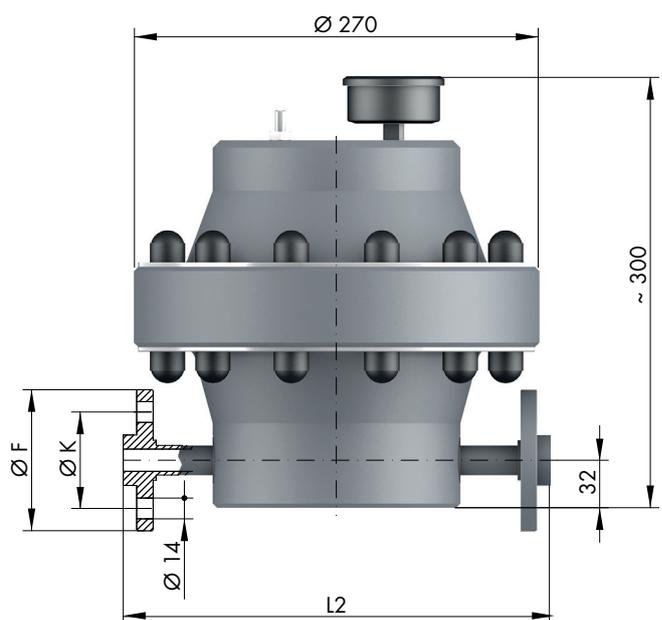
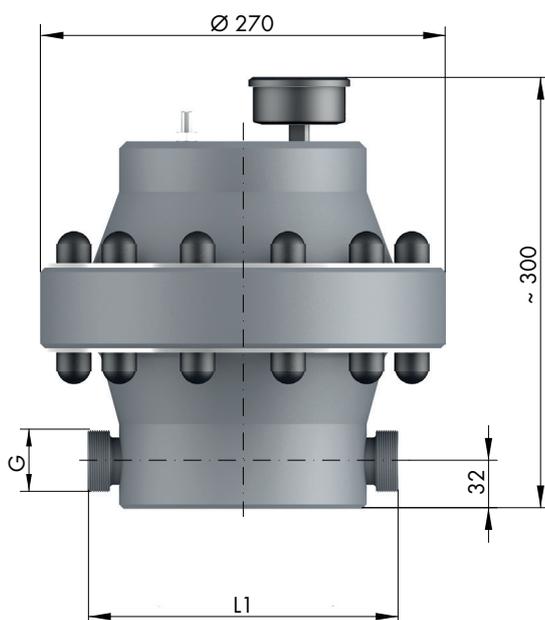
## TECHNICAL DATA

			713.1		
Nominal width	DN		15	20	25
Max. permissible operating pressure	bar		10	10	10
Content	Litre		3	3	3
<b>Weight <sup>2)</sup></b>					
Empty weight	PP	kg	6,5	6,5	6,5
Empty weight	PVC-U	kg	9,0	9,0	9,0
Empty weight	PVDF <sup>1)</sup>	kg	9,0	9,0	9,0

<sup>1)</sup> Upper part made of PVC-U

<sup>2)</sup> Standard design (threaded connector)

## DIMENSIONS



Threaded connector		713.1		
<b>DN</b>	Nominal width	15	20	25
<b>G</b>	Connection thread	G1	G1¼	G1½
<b>L1</b>	PVC-U	213	207	235
<b>L1</b>	PP	263	215	243
<b>L1</b>	PVDF <sup>2)</sup>	255	215	243
Loose-type flange connector acc. to DIN2501		713.1		
<b>DN</b>	Nominal width	15	20	25
<b>F</b>		95	105	115
<b>K</b>		65	75	85
<b>L2</b>	PVC-U	285	285	285
<b>L2</b>	PP	285	285	285

(Dimensions in mm) <sup>2)</sup> Upper part made of PVC-U

## BASIC DESIGNS



### Diaphragm pulsation damper (Plastic, with elastomere diaphragm, max. 10 bar)

#### Properties

- Any mounting position
- Easy installation
- Long service life
- Easy handling
- High-quality materials
- Low maintenance

Type	Connection	max. Pressure	Housing	Diaphragm Seals	Article-No.	Price (EUR)
713.1	G 1¼	10 bar	PVC-U	EPDM	30071038	▲
713.1	G 1¼	10 bar	PVC-U	FPM	30071039	▲
713.1	G 1¼	10 bar	PP	EPDM	30071040	▲
713.1	G 1¼	10 bar	PP	FPM	30071041	▲
713.1	G 1¼	10 bar	PVDF	EPDM	30071060	▲
713.1	G 1¼	10 bar	PVDF	FPM	30071061	▲

### OPTIONS

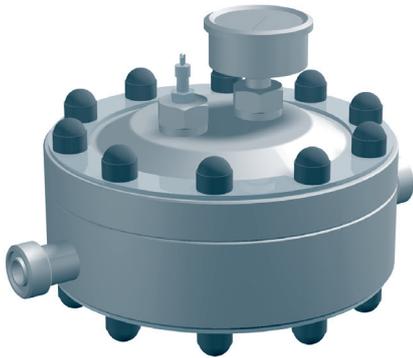
<b>Loose-type flanges</b>	Design acc. to DIN 2501, incl. O-Rings	
PVC-design	Loose flange, PVC-U	DN20 ▲
PP-/PVDF-design	Loose flange, PP with steel insert	DN20 ▲

### ACCESSORIES

<b>Bracket</b>	PP	90010913	▲
for wall mounting	1.4301	90010914	▲
	Steel (color treated)	90010915	▲
<b>Filling pump FLP 2</b>	for filling device		
with manometer, max. 7 bar incl. 2m hose and coupling for air valve		90009396	▲



# DIAPHRAGM PULSATION DAMPER



## OVERVIEW

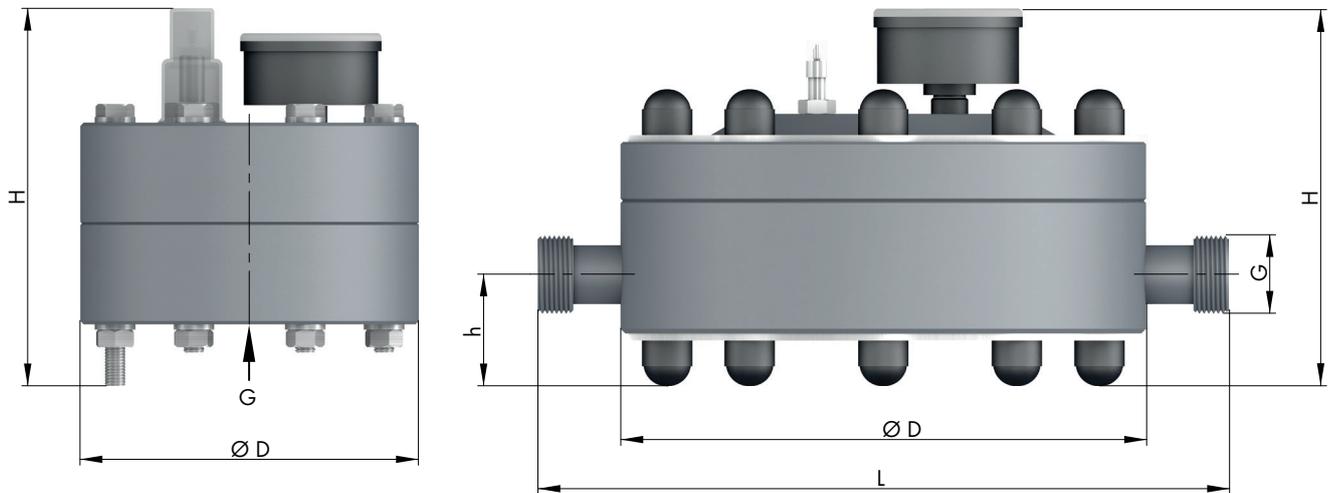
- User-friendly
- Low-maintenance
- Long service life
- Any mounting position
- Easy installation
- Design acc. to 2014/68/EU
- High quality materials

## TECHNICAL DATA

			720.1	721.2	722.1	723.1
Nominal width	DN		5	10	15	20
Max. permissible operation pressure	bar		10	10	10	10
Content	Litre		0,025	0,14	0,32	0,86
<b>Weight</b>						
Empty weight	PP	kg	0,9	3,5	5,0	8,0
Empty weight	PVC-U	kg	0,9	4,5	6,5	11,5
Empty weight	PVDF <sup>1)</sup>	kg	1,0	5,0	7,0	13,0

<sup>1)</sup> Upper part made of PVC-U

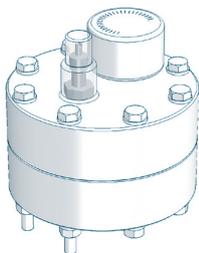
## DIMENSIONS



	720.1	721.2	722.1	723.1
<b>DN</b> Nominal width	5	10	15	20
<b>G</b> Connection thread	G½	G¾	G1	G1¼
<b>D</b>	100	180	222	280
<b>H</b>	115	165	180	211
<b>h</b>	–	45	48	46
<b>L</b>	–	250	292	330

(Dimensions in mm)

## BASIC DESIGNS



### Diaphragm pulsation damper (Plastic, PTFE-diaphragm, max. 10 bar)

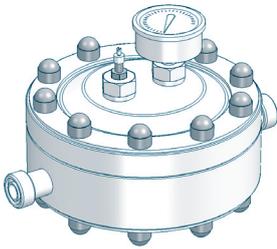
#### Properties

- Any mounting position
- Easy installation
- Long service life
- Easy handling
- High-quality materials
- Low maintenance

Type	Connection	max. Pressure	Material	Diaphragm	Article-No.	Price (EUR)
720.1	G ½	10 bar	PVC-U	PTFE	37601848	▲
720.1	G ½	10 bar	PP	PTFE	37601856	▲
720.1	G ½	10 bar	PVDF	PTFE	37601857	▲

# DIAPHRAGM PULSATION DAMPER

## BASIC DESIGNS



### Diaphragm pulsation damper (Plastic, PTFE(-faced) diaphragm, max. 10 bar)

#### Properties

Any mounting position  
Easy installation  
Long service life

Easy handling  
High-quality materials  
Low maintenance

Diaphragm: PTFE-faced

Type	Connection	max. Pressure	Material	Seals	Article-No.	Price (EUR)
721.2	G 3/4	10 bar	PVC-U	EPDM	37602014	▲
721.2	G 3/4	10 bar	PVC-U	FPM	37602013	▲
721.2	G 3/4	10 bar	PP	EPDM	37603419	▲
721.2	G 3/4	10 bar	PP	FPM	37602017	▲
721.2	G 3/4	10 bar	PVDF	FEP	37604046	▲
722.1	G 1	10 bar	PVC-U	EPDM	37600647	▲
722.1	G 1	10 bar	PVC-U	FPM	30100008	▲
722.1	G 1	10 bar	PP	EPDM	37600676	▲
722.1	G 1	10 bar	PP	FPM	30100009	▲
722.1	G 1	10 bar	PVDF	FEP	37601852	▲
723.1	G 1 1/4	10 bar	PVC-U	EPDM	37601002	▲
723.1	G 1 1/4	10 bar	PVC-U	FPM	30100011	▲
723.1	G 1 1/4	10 bar	PP	EPDM	37603271	▲
723.1	G 1 1/4	10 bar	PP	FPM	30100012	▲
723.1	G 1 1/4	10 bar	PVDF	FEP	37600918	▲
724.1	G 1 1/4	10 bar	PVC-U	EPDM	Ⓜ	Ⓜ
724.1	G 1 1/4	10 bar	PVC-U	FPM	30100014	▲
724.1	G 1 1/4	10 bar	PP	EPDM	Ⓜ	Ⓜ
724.1	G 1 1/4	10 bar	PP	FPM	30100015	▲
724.1	G 1 1/4	10 bar	PVDF	FEP	30100016	▲

## ACCESSORIES

720.1, 721.2, 722.1, 723.1



**Filling pump FLP 2** for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve 90009396 ▲

720.1



**Connection adapter**

Thread connection	G3/4 male	PVC-U	EPDM	90025079	▲
Connction to pulsation damper	G1/2 male	PVC-U	FPM	90021733	▲
		PP	EPDM	90038083	▲
		PP	FPM	90038082	▲
		PVDF	FEP	☹	☹

720.1



**Retaining clamp**

(2 Piece each pulsation damper) PP d 16 90050991 ▲

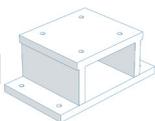
721.2, 722.1



**Retaining clamp**

(2 Piece each pulsation damper) PP d 25 90036934 ▲

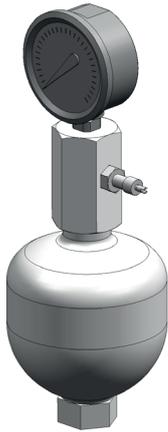
723.1



**Bracket**

● basic version ○ avai for wall mounting PP 90011722 ▲

# DIAPHRAGM PULSATION DAMPER



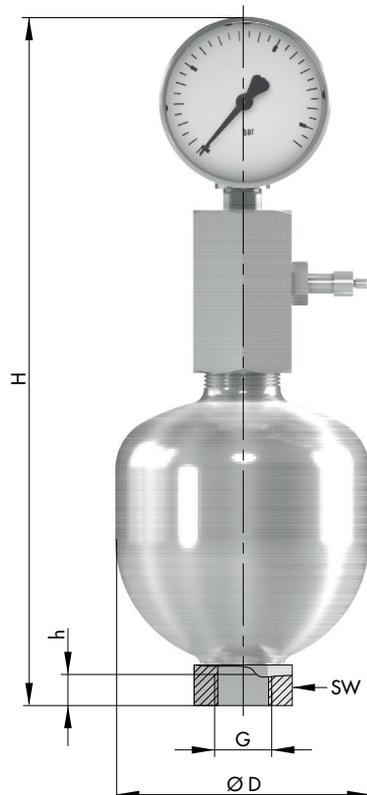
## OVERVIEW

- Compact design
- User-friendly
- Low-maintenance
- Long service life
- Easy installation
- Design acc. to 2014/68/EU
- High quality materials

## TECHNICAL DATA

Type	max. permissible operating pressure bar	Content litre
810.1-0,16/10	10	0,16
810.1-0,32/10	10	0,32
810.1-0,75/10	10	0,75
810.1-2,0/10	10	2,00

## DIMENSIONS



	G	SW	D	h	H	kg
810.1-0,16/10	G1/2	30	74	14	244	0,8
810.1-0,32/10	G1/2	30	93	14	257	1,3
810.1-0,75/10	G1/2	41	212	14	288	2,8
810.1-2,0/10	G3/4	46	160	18	338	4,0

## BASIC DESIGNS



### Diaphragm pulsation damper (Stainless steel, max. 10 bar)

#### Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/10	G ½	10 bar	1.4571	Butyl	37603720	▲
810.1-0,16/10	G ½	10 bar	1.4571	FPM	37603724	▲
810.1-0,16/10	G ½	10 bar	1.4571	PTFE	⊘	⊘
810.1-0,32/10	G ½	10 bar	1.4571	Butyl	37603721	▲
810.1-0,32/10	G ½	10 bar	1.4571	FPM	37603725	▲
810.1-0,32/10	G ½	10 bar	1.4571	PTFE	⊘	⊘
810.1-0,75/10	G ½	10 bar	1.4571	Butyl	37603722	▲
810.1-0,75/10	G ½	10 bar	1.4571	FPM	37603726	▲
810.1-0,75/10	G ½	10 bar	1.4571	PTFE	37606307	▲
810.1-2,0/10	G ¾	10 bar	1.4571	Butyl	37603723	▲
810.1-2,0/10	G ¾	10 bar	1.4571	FPM	37603727	▲
810.1-2,0/10	G ¾	10 bar	1.4571	PTFE	37606308	▲

### ACCESSORIES

#### Filling- and pressure measuring device

(mounted on pulsation damper)



Design: <b>Plastic</b>	Manometer: 0-16 bar Measuring system: copper alloyed	●
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Design: <b>Stainless steel</b>	Manometer: 0-16 bar, glycerine-damped Measuring system: copper alloyed Housing: 1.4301	▲
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#### Filling pump FLP 2 for filling device

with manometer, max. 7 bar incl. 2m hose and coupling for air valve	90009396	▲
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# DIAPHRAGM PULSATION DAMPER



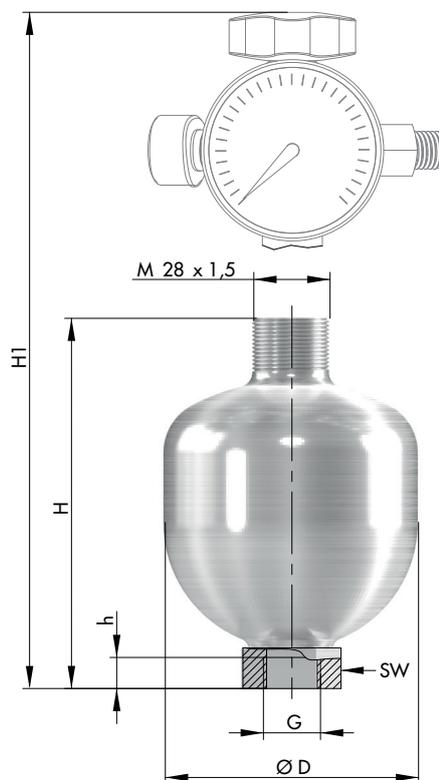
## OVERVIEW

- Compact design
- User-friendly
- Low-maintenance
- Long service life
- Easy installation
- Design acc. to 2014/68/EU
- High quality materials

## TECHNICAL DATA

Type	max. permissible operating pressure bar	Content litre
810.1-0,16/180	180	0,16
810.1-0,32/160	160	0,32
810.1-0,75/140	140	0,75
810.1-2,0/100	100	2,00

## DIMENSIONS



	G	SW	D	h	H	H1	kg
810.1-0,16/180	G1/2	30	74	14	124	225	0,8
810.1-0,32/160	G1/2	30	93	14	137	238	1,3
810.1-0,75/140	G1/2	41	212	14	168	268	2,8
810.1-2,0/100	G3/4	46	160	18	218	319	4,0

## BASIC DESIGNS



## Diaphragm pulsation damper (Stainless steel, max. 100-180 bar)

## Properties

Any mounting position	Easy handling
Easy installation	High-quality materials
Long service life	Low maintenance

Type	Connection	max.Pressure	Material	Diaphragm	Article-No.	Price (EUR)
810.1-0,16/180	G ½	180 bar	1.4571	Butyl	90008811	▲
810.1-0,16/180	G ½	180 bar	1.4571	FPM	90009498	▲
810.1-0,16/180	G ½	180 bar	1.4571	PTFE	☉	☉
810.1-0,32/160	G ½	160 bar	1.4571	Butyl	90010409	▲
810.1-0,32/160	G ½	160 bar	1.4571	FPM	90010983	▲
810.1-0,32/160	G ½	160 bar	1.4571	PTFE	☉	☉
810.1-0,75/140	G ½	140 bar	1.4571	Butyl	37600313	▲
810.1-0,75/140	G ½	140 bar	1.4571	FPM	37600148	▲
810.1-0,75/140	G ½	140 bar	1.4571	PTFE	37606302	▲
810.1-2,0/100	G ¾	100 bar	1.4571	Butyl	37600314	▲
810.1-2,0/100	G ¾	100 bar	1.4571	FPM	37600149	▲
810.1-2,0/100	G ¾	100 bar	1.4571	PTFE	37606303	▲

## ACCESSORIES



## Filling- and pressure measuring device

Design: removeable  
 Manometer d63, plastic housing, measuring system: copper alloyed  
 incl. 2,5m filling hose, connection M14x1,5

0 - 25 bar	37601674	▲
0 - 100 bar	37601673	▲
0 - 250 bar	30066005	▲

# SUCTION LANCES



## OVERVIEW

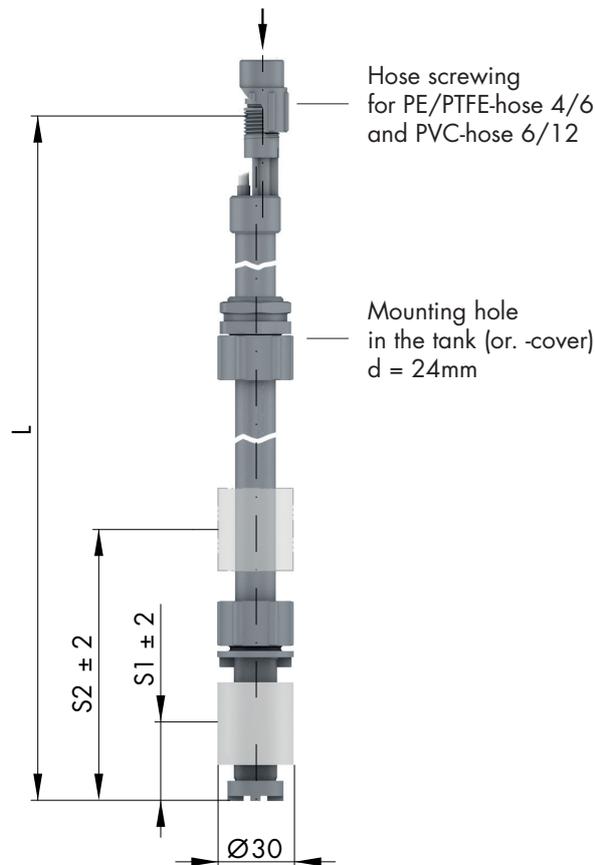
- Compact design
- Safe
- Height adjustable
- 2-stage level monitoring
- 3- or 8-pole connection
- Flexible connection possibilities
- Maintenance free
- Easy handling
- High quality materials

## TECHNICAL DATA

Type	Switching voltage	Switching current	Switching capacity		max. flow rate	max. viscosity of the conveyed medium	min density of the conveyed medium
	V	A	W	VA	l/h	mPas	kg/dm <sup>3</sup>
SL-12.1	50	0,5	10	10	35*	50	1

\*1) max. flow rates:  
up to 14 l/h with hose screwing 4/6  
up to 35 l/h with hose screwing 6/12

## DIMENSIONS



	L	S1	S2
SL-12.1	600	33	104
SL-12.1	1.000	33	104
SL-12.1	1.200	33	104

## BASIC DESIGNS



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 3-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connections  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **14 l/h** (4/6) ... **35 l/h** (6/12)

Type	Length	Seals	Article-No.	Price (EUR)
C409.2-...e				
<b>SL-12.1</b>	600 mm	PTFE	37606120	▲
<b>SL-12.1</b>	1.000 mm	PTFE	37606117	▲
<b>SL-12.1</b>	1.200 mm	PTFE	37606118	▲



### Suction lance SL-12.1 (with level switch, 2-stage with plug, 8-pole)

#### Properties

Compact design  
Height-adjustable  
2-stage level monitoring  
Flexible connection  
Easy handling  
High-quality materials  
Maintenance-free  
incl. hose connection  
4/6, 6/8, 6/12

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Hose (inboard): **PE**  
Level switch: **PP**  
2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 8-pole  
max. flow rate: **14 l/h** (4/6) ... **35 l/h** (6/12)

Type	Length	Seals	Article-No.	Price (EUR)
iSTEP, C409.2-... Pro+				
<b>SL-12.1</b>	600 mm	PTFE	37606194	▲
<b>SL-12.1</b>	1.000 mm	PTFE	37606495	▲
<b>SL-12.1</b>	1.200 mm	PTFE	37606195	▲

# SUCTION LANCES



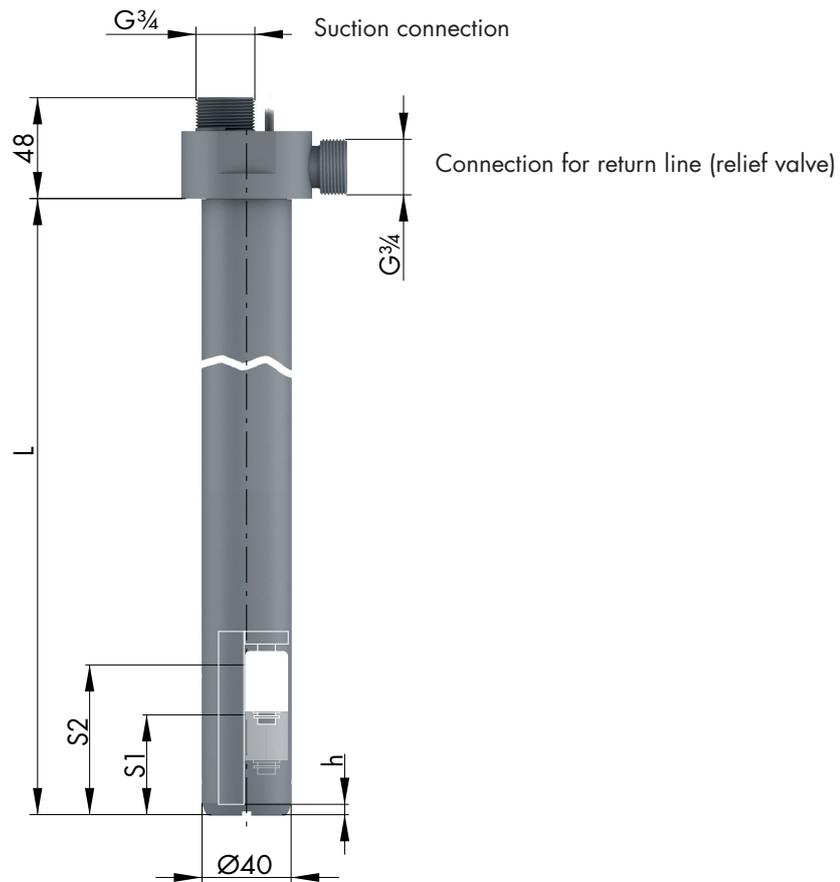
## OVERVIEW

- Compact, robust design
- Protective tube
- Safe
- 1-stage level monitoring
- 3- or 8-pole connection
- Flexible connection possibilities
- Maintenance free
- Easy handling
- High quality materials

## TECHNICAL DATA

Typ	Switching voltage V	Switching current A	Switching capacity		max. flow rate l/h	max. pump stroke volume cm <sup>3</sup>	max. viscosity of the conveyed medium mPas	min. density of the conveyed medium kg/dm <sup>3</sup>
			W	VA				
SL-02	max. 48	0,5	10	12	200	20	100	1

## DIMENSIONS



G	L	1-stage			2-stage			
		S1	S2	h	S1	S2	h	
SL-02	G 3/4	630	50	–	8	72	48	5
SL-02	G 3/4	1.000	50	–	8	72	48	5
SL-02	G 3/4	1.200	50	–	8	72	48	5

## BASIC DESIGNS



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 3-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
5m cable (from foot valve) with plug, M12, 3-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
SL-02	1-stage	630 mm	G ¾	EPDM	37606372	▲
SL-02	1-stage	1.000 mm	G ¾	EPDM	37606567	▲
SL-02	1-stage	1.200 mm	G ¾	EPDM	37606568	▲
SL-02	1-stage	630 mm	G ¾	FPM	37606566	▲
SL-02	1-stage	1.000 mm	G ¾	FPM	37606078	▲
SL-02	1-stage	1.200 mm	G ¾	FPM	37606569	▲
SL-02	2-stage	630 mm	G ¾	EPDM	37606570	▲
SL-02	2-stage	1.000 mm	G ¾	EPDM	37606572	▲
SL-02	2-stage	1.200 mm	G ¾	EPDM	37606573	▲
SL-02	2-stage	630 mm	G ¾	FPM	37606571	▲
SL-02	2-stage	1.000 mm	G ¾	FPM	37606577	▲
SL-02	2-stage	1.200 mm	G ¾	FPM	37606574	▲

## ACCESSORIES



### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
G=v. Leer/tri-sure BCS 56x4 EN12708	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			①	①

# SUCTION LANCES

## BASIC DESIGNS



### Suction lance SL-02 (with level switch, 1- or 2-stage with plug, 8-pole)

#### Properties

Compact, robust design  
Safe  
Easy handling  
1-stage level switch  
Flexible connection  
High-quality materials  
Maintenance-free

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVDF-GFK**  
Valve ball: **PTFE**  
Suction basket: **PP**  
Level switch: **PP**  
1- or 2-stage  
5m cable (from foot valve) with plug, M12, 8-pole  
max. flow rate: **200 l/h**

Type	Level switch	Length	Connection	Seals	Article-No.	Price (EUR)
SL-02	1-stage	630 mm	G ¾	EPDM	37606579	▲
SL-02	1-stage	1.000 mm	G ¾	EPDM	37606581	▲
SL-02	1-stage	1.200 mm	G ¾	EPDM	37606583	▲
SL-02	1-stage	630 mm	G ¾	FPM	37606580	▲
SL-02	1-stage	1.000 mm	G ¾	FPM	37606582	▲
SL-02	1-stage	1.200 mm	G ¾	FPM	37606584	▲
SL-02	2-stage	630 mm	G ¾	EPDM	37606585	▲
SL-02	2-stage	1.000 mm	G ¾	EPDM	37606587	▲
SL-02	2-stage	1.200 mm	G ¾	EPDM	37606589	▲
SL-02	2-stage	630 mm	G ¾	FPM	37606586	▲
SL-02	2-stage	1.000 mm	G ¾	FPM	37606588	▲
SL-02	2-stage	1.200 mm	G ¾	FPM	37605974	▲

## ACCESSORIES



### Drum connection adapter

Connection	Material	Seal	Article-No.	Price (EUR)
for external thread G=S65x5 DIN2781	PP	EPDM	90011763	▲
	PP	FPM	90011762	▲
for internal thread (set) G=2 fine thread steel drum DIN-ISO 228-1	PP	EPDM	90046044	▲
	PP	FPM	90046043	▲
for external thread G= DIN51	PP	EPDM	90011767	▲
	PP	FPM	90011766	▲
for wall duct G=2 Wall thickness S=max. 6mm	PP/PVC	EPDM	90011773	▲
	PP/PVC	FPM	90011772	▲
other adapters			📞	📞

with level monitoring  
Flow rates up to 200 l/h

SL-02

# SUCTION LANCES



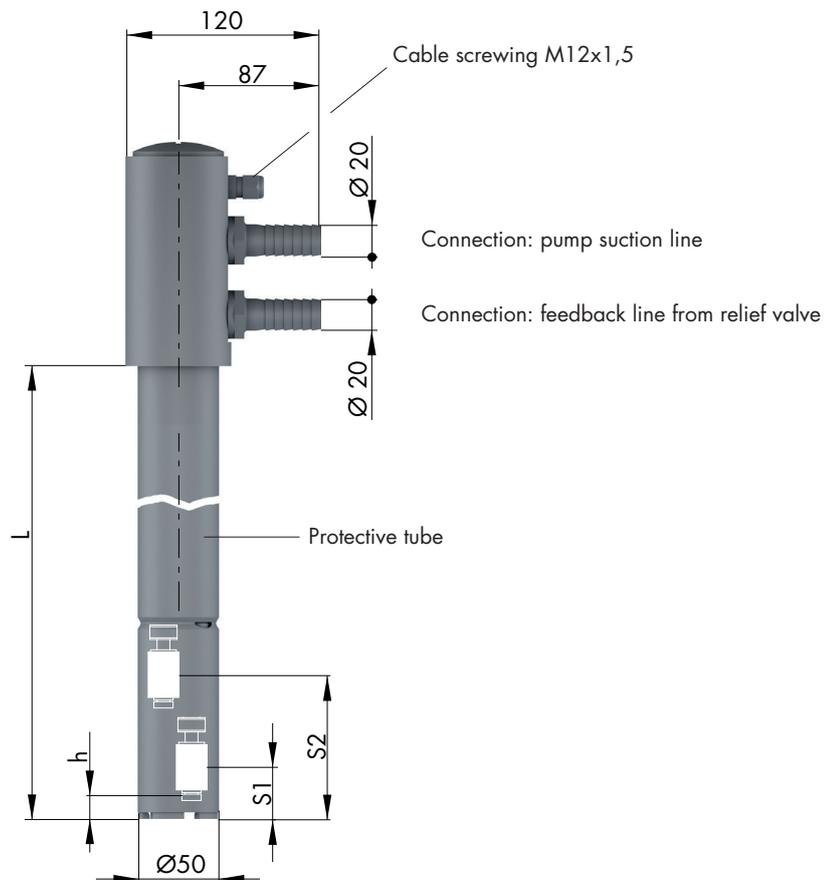
## OVERVIEW

- Compact, robust design
- Easy handling
- Maintenance free
- Protective tube
- Safe
- High quality materials
- SLP-151.1 1-stage level monitoring
- SLP-152.1 2-stage level monitoring
- Protection class IP65

## TECHNICAL DATA

Type	Nominal size DN	Switching voltage V	Switching capacity		max. flow rate l/h	max. pump stroke volume cm <sup>3</sup>	max. viscosity of the conveyed medium mPas	min. density of the conveyed medium kg/dm <sup>3</sup>
			W	VA				
SLP-151.1/152.1	15	48	10	12	700	100	100	1

## DIMENSIONS



	DN	L	S1	S2	h
SLP-151.1	15	750 / 1.000 / 1.250	55	—	15
SLP-152.1	15	750 / 1.000 / 1.250	55	113	15

## BASIC DESIGNS



### Suction lance SLP-15x.1 (with level switch, 1- or 2-stage)

#### Properties

Compact, robust design  
Easy handling  
1- or 2-stage level monitoring  
Protective tube  
Maintenance free  
High quality materials  
Protection class IP65

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Level switch: **PP**  
1- or 2-stage, normally closed (NC)  
cable gland: **M12x1,5**  
max. flow rate: **700 l/h**

Type	Level switch	Length	Material	Seals	Article-No.	Price (EUR)
SLP-151.1	1-stage	750 mm	PVC-U	EPDM	37604108	▲
SLP-151.1	1-stage	750 mm	PVC-U	FPM	37604114	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	EPDM	37604109	▲
SLP-151.1	1-stage	1.000 mm	PVC-U	FPM	37604115	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	EPDM	37604110	▲
SLP-151.1	1-stage	1.250 mm	PVC-U	FPM	37604116	▲
SLP-152.1	2-stage	750 mm	PVC-U	EPDM	37604111	▲
SLP-152.1	2-stage	750 mm	PVC-U	FPM	37604117	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	EPDM	37604112	▲
SLP-152.1	2-stage	1.000 mm	PVC-U	FPM	37604118	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	EPDM	37604113	▲
SLP-152.1	2-stage	1.250 mm	PVC-U	FPM	37604119	▲

Type	Designation	Article-No.	Price (EUR)
<b>BCS 70x6 Di=50</b>	Container screw connection for internal thread. Ventilation via tolerance of the inner diameter of the adapter or via separate ventilation of the container.	90028923	▲
<b>G2 IBC</b>	For IBC cover with G2 internal thread. Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044282	▲
<b>G2 universal</b>	Bulkhead fitting with flat gasket (made of PVC-U). Ventilation via adapter. Gas-tight design with „hose set“ possible.	90044277	▲
<b>Hose set</b>	G3/4, d12, L=3m for gas tight container screwing for connection to On-site evacuation system	90044369	▲
<b>Quiver</b>	Quiver for storing/holding the suction lance (e.g. when changing containers)	90028919	▲
<b>Control cable</b>	Control cable for level input Cable socket M12x1, 3-pole, 5m length, loosely delivered	90031245	▲
<b>Control cable</b>	Control cable for level input Cable plug M12x1, 8-pole, 5m length, loosely delivered	90042494	▲



# SUCTION LANCES



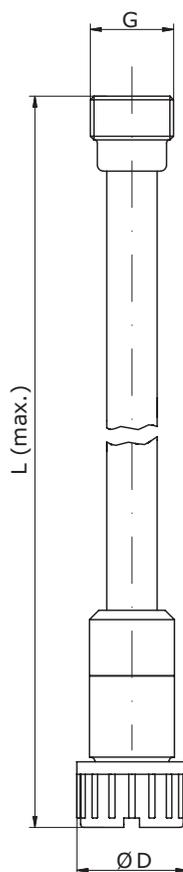
## OVERVIEW

Compact, robust design  
 Easy handling  
 Maintenance free  
 High quality materials

## TECHNICAL DATA

Type	max. flow rate l/h	max. pump stroke volume cm <sup>3</sup>	max. viscosity of the conveyed medium mPas	min. density of the conveyed medium kg/dm <sup>3</sup>
S-01	200	20	100	1

## DIMENSIONS



	DN	G	D	max. L
S-01	15	G 3/4	38	1.500

## BASIC DESIGNS



### Suction lance S-01 (without level switch)

#### Properties

Compact, robust design  
Maintenance-free  
Easy handling  
High-quality materials

individual special lengths  
up to max. 1.500mm possible

#### Basic version

Suction lance: **PVC-U**  
Foot valve: **PVC-U**  
Seals: **EPDM** or **FPM**  
Valve ball: **PTFE**  
max. flow rate: **200 l/h**  
Standard length: **650mm, 1.000mm und 1.250mm**

Type	Length	Connection	Seals	Article-No.	Price (EUR)
S-01	650 mm	G 3/4	EPDM	37606591	▲
S-01	1.000 mm	G 3/4	EPDM	37606592	▲
S-01	1.250 mm	G 3/4	EPDM	37606593	▲
S-01	max. 1.500 mm	G 3/4	EPDM	37600705	▲
S-01	650 mm	G 3/4	FPM	37606594	▲
S-01	1.000 mm	G 3/4	FPM	37606595	▲
S-01	1.250 mm	G 3/4	FPM	37606596	▲
S-01	max. 1.500 mm	G 3/4	FPM	37600817	▲

# DOSING VALVES



## OVERVIEW

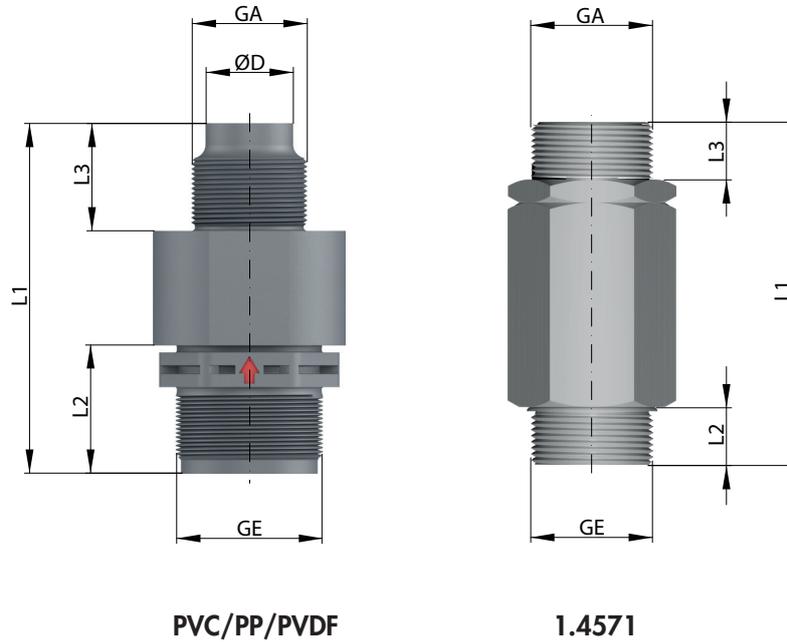
- Compact design
- Easy handling
- Maintenance free
- Mounting in any position
- High quality materials

## TECHNICAL DATA

		691.1	691.2	692.1	693.1	
Nominal width	DN	8	8	15	20	
Max. permissible operating pressure*	bar	PVC-U, PP-, PVDF-FRP	10	10	–	10
		1.4571	63	–	40	25
Opening pressure	bar	PVC-U, PP-, PVDF-FRP	0,5	0,5	–	0,5
		1.4571	1,0	–	1,0	1,0
Max. flow rate	l/h	200	200	600	1100	
Max. pump stroke volume	cm <sup>3</sup>	20	20	100	190	

\*at 20°C (water)

## DIMENSIONS

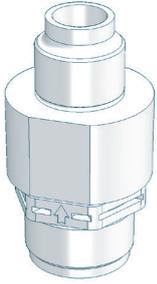


		691.1	691.2	692.1	693.1
<b>GE</b>	PVC-U, PP-FRP, PVDF-FRP	G $\frac{3}{4}$	G $\frac{3}{4}$	–	G1 $\frac{1}{4}$
	1.4571	G $\frac{3}{4}$	–	G1	G1 $\frac{1}{4}$
<b>GA</b>	PVC-U, PP-FRP, PVDF-FRP	R $\frac{1}{2}$	R $\frac{1}{2}$	–	R1 $\frac{1}{4}$
	1.4571	R $\frac{1}{2}$	–	R1	R1 $\frac{1}{4}$
<b>D</b>	PVC-U, PP-FRP, PVDF-FRP	16	12	–	25
<b>L1</b>	PVC-U, PP-FRP, PVDF-FRP	71	116,1	–	101
	1.4571	60	–	104	119
<b>L2</b>	PVC-U, PP-FRP, PVDF-FRP	18	17	–	25
	1.4571	13	–	17	20
<b>L3</b>	PVC-U, PP-FRP, PVDF-FRP	24	69	–	31
	1.4571	13	–	17	20

(Dimensions in mm)

# DOSING VALVES

## BASIC DESIGNS



### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

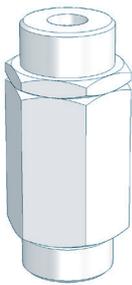
Valve ball: **PTFE**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	PVDF/-GFK	FEP	30072015	▲

693.1	20	G 1 1/4	R 1 1/4	PP-GFK	EPDM	37604661	▲
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693.1	20	G 1 1/4	R 1 1/4	PP-GFK	FPM	37603317	▲
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693.1	20	G 1 1/4	R 1 1/4	PVDF-GFK	FEP	30072027	▲
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### Dosing valve (Stainless steel)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Valve ball: **1.4401**  
Seals: **FEP-covered**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.1	8	G 3/4	R 1/2	1.4571	FEP	37600493	▲

692.1	15	G 1	R 1	1.4571	FEP	37600669	▲
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693.1	20	G 1 1/4	R 1 1/4	1.4571	FEP	37600789	▲
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### Dosing valve (Plastic)

#### Properties

Compact design  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

integrated injection lance  
Valve ball: **PTFE**  
Seals: **EPDM** or **FPM**  
Spring: **Hastelloy C4**

Type	DN	Inlet	Outlet	Material	Seal	Article-No.	Price (EUR)
691.2	8	G 3/4	R 1/2	PVC-U	EPDM	37606318	▲

691.2	8	G 3/4	R 1/2	PVC-U	FPM	37605769	▲
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691.2	8	G 3/4	R 1/2	PP-GFK	EPDM	37605768	▲
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691.2	8	G 3/4	R 1/2	PP-GFK	FPM	37606317	▲
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Check valves/Injection fittings  
Flow rates up to 1.500 l/h

691.1- 693.1, 691.2

# INJECTION FITTING



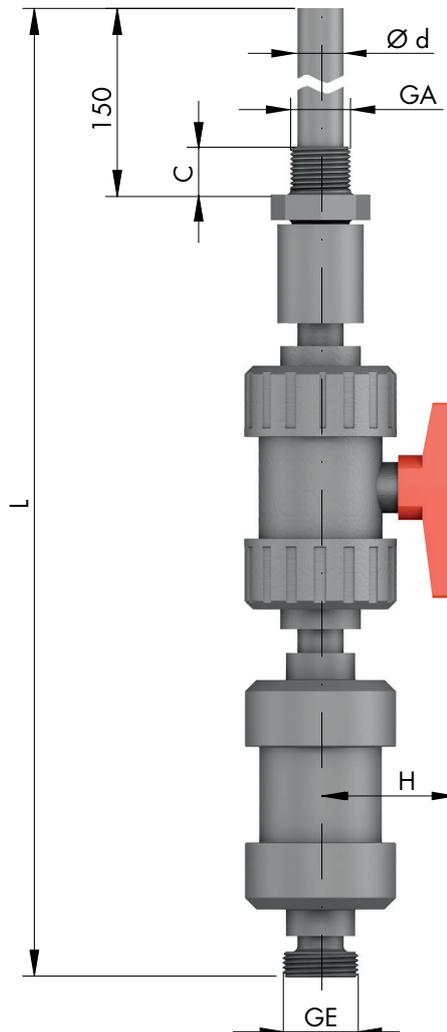
## OVERVIEW

- Injection lance for better mixing
- Easy installation
- Maintenance free
- Mounting in any position
- High quality materials

## TECHNICAL DATA

		8061.1	8062.1	8063.1
Nominal width	DN	10	15	20
Opening pressure	bar	0,05	0,05	0,05
Max. permissible operating pressure	bar	10	10	10

## DIMENSIONS



## DIMENSIONS

		8061.1	8062.1	8063.1
<b>GE</b>	PVC-U, PP, PVDF	G $\frac{3}{4}$	G1	G1 $\frac{1}{4}$
<b>GA</b>	PVC-U, PP, PVDF	R $\frac{1}{2}$	R $\frac{3}{4}$	R1
<b>d</b>	PVC-U, PP, PVDF	16	20	25
<b>C</b>	PVC-U, PP, PVDF	17	19	22
<b>H</b>	PVC-U, PP, PVDF	72	72	77
<b>L</b>	PVC-U	390	409	447
	PP	427	439	481
	PVDF	438	446	483

(Dimensions in mm)

## BASIC DESIGNS



### Injection fitting

#### Properties

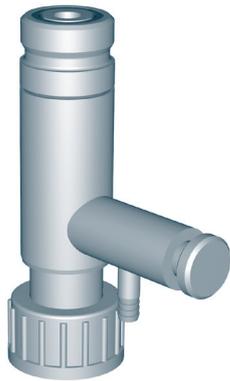
incl. injection lance for better mixing  
Easy installation  
Any mounting position  
Maintenance-free  
High-quality materials

#### Basic version

Cone-type check valve (spring loaded)  
Shut-off ball valve  
Injection lance (L=150mm)  
max. operating pressure: 10 bar

Type	DN	Inlet	Outlet	Material	Seals	Article-No.	Price (EUR)
8061.1	10	G $\frac{3}{4}$	R $\frac{1}{2}$	PVC-U	EPDM	37602105	▲
8061.1	10	G $\frac{3}{4}$	R $\frac{1}{2}$	PVC-U	FPM	37602106	▲
8061.1	10	G $\frac{3}{4}$	R $\frac{1}{2}$	PP	EPDM	37602107	▲
8061.1	10	G $\frac{3}{4}$	R $\frac{1}{2}$	PP	FPM	37602108	▲
8061.1	10	G $\frac{3}{4}$	R $\frac{1}{2}$	PVDF	FPM	37602109	▲
8062.1	15	G 1	R $\frac{3}{4}$	PVC-U	EPDM	37602110	▲
8062.1	15	G 1	R $\frac{3}{4}$	PVC-U	FPM	37602111	▲
8062.1	15	G 1	R $\frac{3}{4}$	PP	EPDM	37602112	▲
8062.1	15	G 1	R $\frac{3}{4}$	PP	FPM	37602113	▲
8062.1	15	G 1	R $\frac{3}{4}$	PVDF	FPM	37602114	▲
8063.1	20	G 1 $\frac{1}{4}$	R 1	PVC-U	EPDM	37602115	▲
8063.1	20	G 1 $\frac{1}{4}$	R 1	PVC-U	FPM	37602116	▲
8063.1	20	G 1 $\frac{1}{4}$	R 1	PP	EPDM	37602117	▲
8063.1	20	G 1 $\frac{1}{4}$	R 1	PP	FPM	37602118	▲
8063.1	20	G 1 $\frac{1}{4}$	R 1	PVDF	FPM	37602119	▲

# VENT VALVE



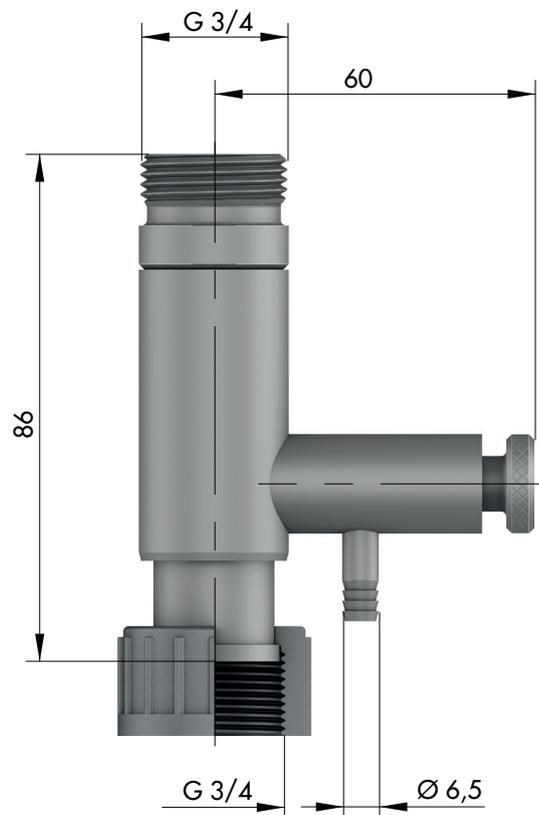
## OVERVIEW

Compact design  
Easy installation  
Maintenance free  
High quality materials

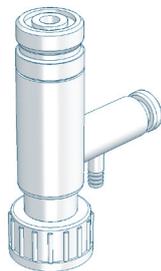
## TECHNICAL DATA

		8152
Nominal width	DN	8
Max. permissible operating pressure	bar	10
Max. volume of pump's stroke	cm <sup>3</sup>	20

## DIMENSIONS



## BASIC DESIGNS



### Vent valve

#### Properties

Compact design  
Easy installation  
Maintenance-free  
High-quality materials

#### Basic version

Valve body: **PVC-U** or **PP**  
Valve ball: **PTFE**  
Seals: **FPM** or **EPDM**  
Connection: **G<sup>3/4</sup>**  
Vent joint: **Hose nozzle d=6,5mm**

Type	Valve body	Seals	Article-No.	Price (EUR)
<b>8152</b>	PVC-U	EPDM	37605884	▲
<b>8152</b>	PVC-U	FPM	37600531	▲
<b>8152</b>	PP	EPDM	37605885	▲
<b>8152</b>	PP	FPM	37605853	▲

# FOOT VALVES



## OVERVIEW

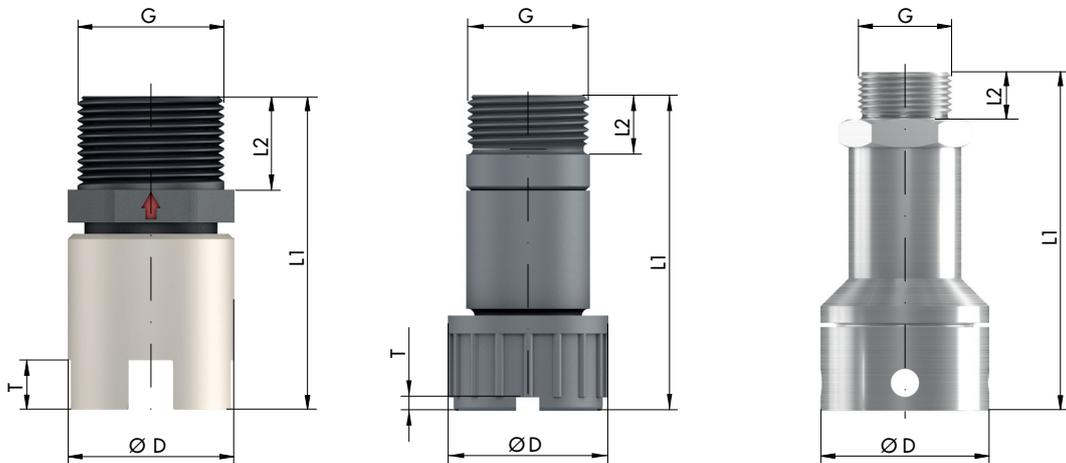
Compact design  
Easy installation  
Maintenance free  
High quality materials

## TECHNICAL DATA

		781.1	783.1	731	732	733
Nominal width	DN	8	20	8	15	20
Max. permissible operating pressure	bar	10	10	10	10	3
Max. flow rate*	l/h	200	1450	200	600	1100
Max. volume of pump's stroke	cm <sup>3</sup>	20	190	20	100	190

\*at a viscosity of max. 50mPas

## DIMENSIONS



		781.1	783.1	731	732	733
<b>G</b>		G <sup>3</sup> / <sub>4</sub>	G1 <sup>1</sup> / <sub>4</sub>	G <sup>3</sup> / <sub>4</sub>	G1	G1 <sup>1</sup> / <sub>4</sub>
<b>D</b>	PVC-U	–	–	31	–	–
	PP-FRP, PVDF-FRP	30	50	–	–	–
	1.4571	–	–	30	60	80
<b>L1</b>		50	82	70	121	129
<b>L2</b>	PVC-U	–	–	13	–	–
	PP-FRP	18	25	–	–	–
	PVDF-FRP	18	24	–	–	–
	1.4571	–	–	13	17	20

(Dimensions in mm)

## BASIC DESIGNS



### Foot valve (Plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>781.1</b>	8	G 3/4	PVDF/PVDF-GFK	FEP	30073008	▲

<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	EPDM	37600552	▲
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<b>783.1</b>	20	G 1 1/4	PP/PP-GFK	FPM	37600553	▲
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<b>783.1</b>	20	G 1 1/4	PVDF/PVDF-GFK	FEP	30073018	▲
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### Foot valve (plastic)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **PTFE**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>731</b>	8	G 3/4	PVC-U	EPDM	37601636	▲



### Foot valve (Stainless steel)

#### Properties

Compact design  
Easy installation

High-quality materials  
Maintenance-free

#### Basic version

Ball: **1.4401**  
Sieve: **ETFE**  
Mesh size: **1mm**

Type	DN	Connection	Material	Seals	Article-No.	Price (EUR)
<b>731</b>	8	G 3/4	1.4571	FEP	37601149	▲

<b>732</b>	15	G 1	1.4571	FEP	37603325	▲
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<b>733</b>	20	G 1 1/4	1.4571	FEP	37603962	▲
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# MULTIFUNCTION DEVICE



## OVERVIEW

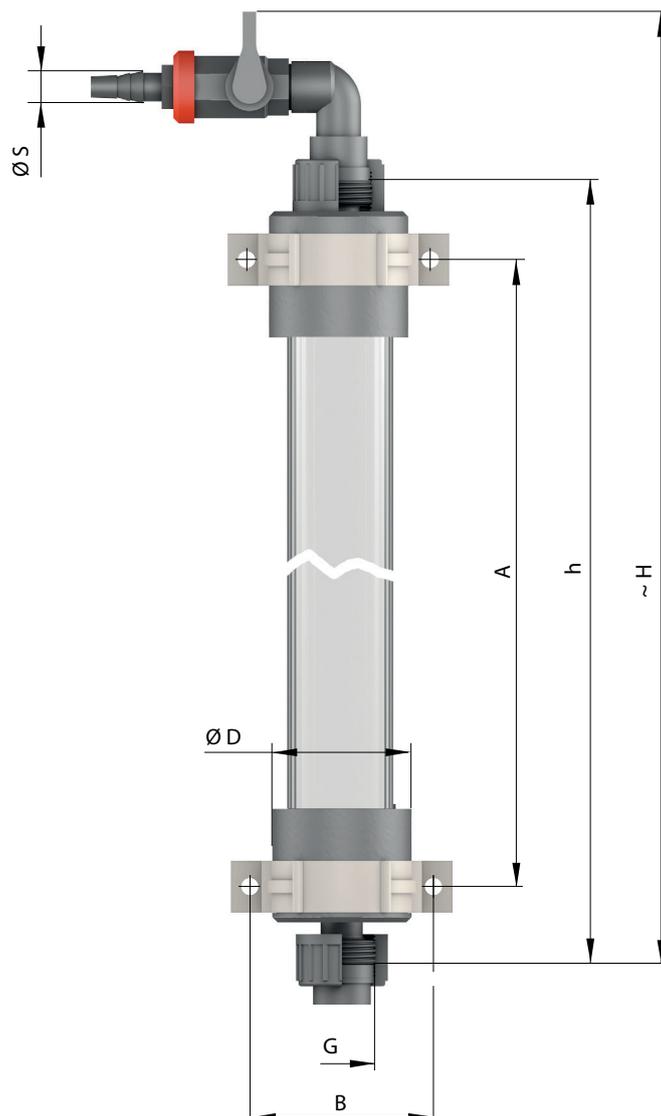
Can be used as an priming aid and/or an calibration pot  
 Compact Design  
 Easy installation  
 Flexible connection  
 Maintenance free  
 High quality materials

incl. glue joint (PVC-U)  
 and welding joint (PP)

## TECHNICAL DATA

		MFD-60	MFD-570	MFD-1500
Nominal width	DN	8	15	20
Content	Litre	0,5	2,0	5,0
Max. permissible operating pressure	bar	-0,5...+2	-0,5...+2	-0,5...+2

## DIMENSIONS



## DIMENSIONS

	MFD-60	MFD-570	MFD-1500
<b>G</b>	G $\frac{3}{4}$	G1	G1 $\frac{1}{4}$
<b>D</b>	53	120	180
<b>h</b>	637	557	562
<b>H</b>	707	635	637
<b>A</b>	574	442	458
<b>B</b>	70	167	228
<b>S</b>	8-13	8-13	8-13

(Dimensions in mm)

## BASIC DESIGNS



### Multi-function device

#### Properties

Can be used as an priming aid and/or  
an calibration pot  
Compact design  
Flexible Connection  
Maintenance-free  
incl. glue joint (PVC-U) and  
welding joint (PP)

#### Basic version

Housing: **PVC-U / PVC-transparent**  
Seals: **FPM or EPDM**  
  
max. operating pressure: **-0,5 ... +2 bar**

Type	DN	Connetion	Volume	Seals	Article-No.	Price (EUR)
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	EPDM	37606311	▲
<b>MFD 60</b>	8	G $\frac{3}{4}$	0,5 Ltr.	FPM	37605864	▲
<b>MFD 570</b>	15	G1	2 Ltr.	EPDM	37606278	▲
<b>MFD 570</b>	15	G1	2 Ltr.	FPM	37605992	▲
<b>MFD 1500</b>	20	G1 $\frac{1}{4}$	5 Ltr.	EPDM	37606316	▲
<b>MFD 1500</b>	20	G1 $\frac{1}{4}$	5 Ltr.	FPM	37606315	▲

### ACCESSORIES

<b>Hand vacuum pump</b>	PVC/FPM	37605682	▲
(incl. 1,5m PVC-Hose d=12/21)			



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