

# 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

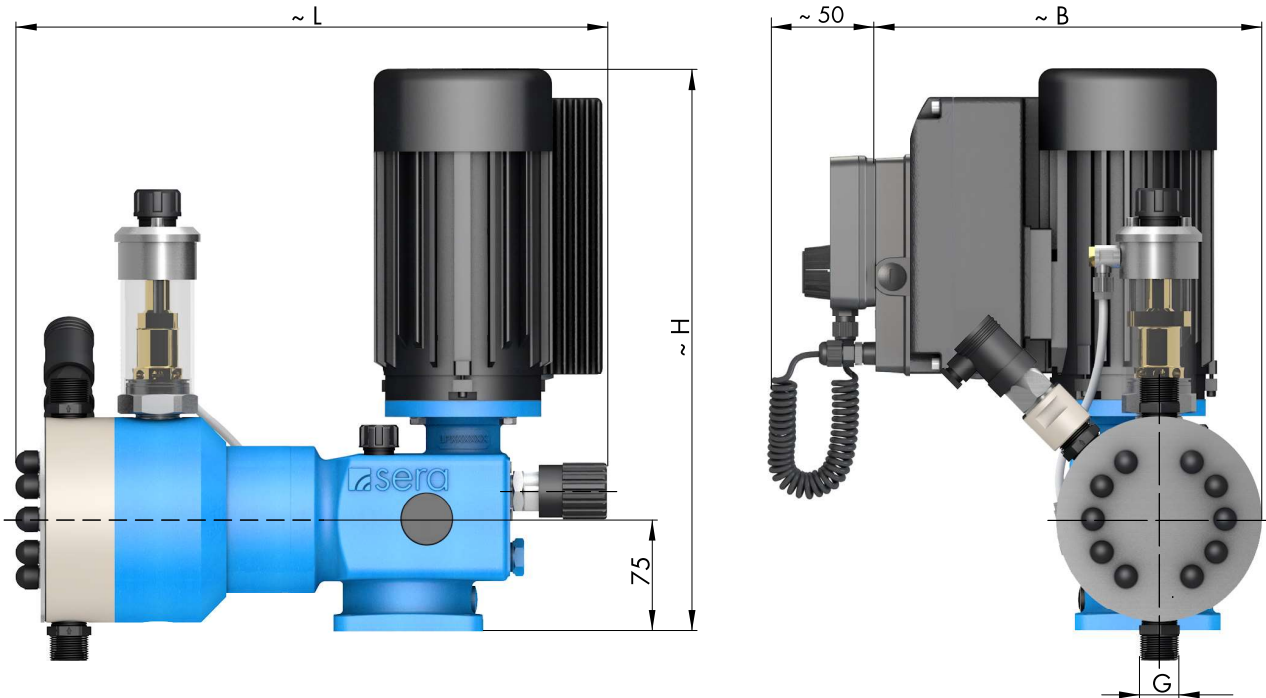
| PUMP DATA   |                  |                | C 409.2-... KM Pro+ |        |        |        |        |        |
|---|------------------|----------------|---------------------|--------|--------|--------|--------|--------|
|   |                  |                | 7,5KM               | 10KM   | 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+ |   |
|---|----------|---------------------|---|
|   |          | 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 |          |                     | PNP<br>max. 24V DC, 30mA /max. 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 Pro+

## DIMENSIONS



|                     | G       |                 | B   | L   | H   |          | B   | L   | H   |
|---------------------|---------|-----------------|-----|-----|-----|----------|-----|-----|-----|
| C 409.2-7,5 KM Pro+ | G 3/4   | ▶ PVC, PP, PVDF | 269 | 350 | 364 | ▶ 1.4571 | 269 | 347 | 364 |
| C 409.2-10 KM Pro+  | G 3/4   |                 | 269 | 350 | 364 |          | 269 | 347 | 364 |
| C 409.2-18 KM Pro+  | G 3/4   |                 | 269 | 350 | 364 |          | 269 | 347 | 364 |
| C 409.2-45 KM Pro+  | G 3/4   |                 | 280 | 403 | 364 |          | 280 | 394 | 364 |
| C 409.2-95 KM Pro+  | G 3/4   |                 | 280 | 403 | 364 |          | 280 | 394 | 364 |
| C 409.2-190 KM Pro+ | G1 1/4* |                 | 280 | 403 | 364 |          | 280 | 394 | 364 |

\* PVC = G1

## CHARACTERISTIC CURVES

COMING SOON

# 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

### BASIC DESIGNS

#### PP

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

| Type              | Valve seals         |                |                    |                |
|-------------------|---------------------|----------------|--------------------|----------------|
|                   | EPDM<br>Article-No. | Price<br>(EUR) | FPM<br>Article-No. | Price<br>(EUR) |
| C409.2-7,5KM Pro+ | 16024445            | Ⓞ              | 15005814           | Ⓞ              |
| C409.2-10KM Pro+  | 16024446            | Ⓞ              | 15005815           | Ⓞ              |
| C409.2-18KM Pro+  | 16024447            | Ⓞ              | 15005816           | Ⓞ              |
| C409.2-45KM Pro+  | 16024448            | Ⓞ              | 15005817           | Ⓞ              |
| C409.2-95KM Pro+  | 16024449            | Ⓞ              | 15005818           | Ⓞ              |
| C409.2-190KM Pro+ | 16024450            | Ⓞ              | 15005819           | Ⓞ              |

#### PVDF

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

| Type              | Valve seals                |                |
|-------------------|----------------------------|----------------|
|                   | FEP-covered<br>Article-No. | Price<br>(EUR) |
| C409.2-7,5KM Pro+ | 16024451                   | Ⓞ              |
| C409.2-10KM Pro+  | 16024452                   | Ⓞ              |
| C409.2-18KM Pro+  | 16024453                   | Ⓞ              |
| C409.2-45KM Pro+  | 16024454                   | Ⓞ              |
| 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<br>Article-No. | Price<br>(EUR) | FPM<br>Article-No. | Price<br>(EUR) |
| C409.2-7,5KM Pro+ | 16024461            | Ⓞ              | 16024467           | Ⓞ              |
| C409.2-10KM Pro+  | 16024462            | Ⓞ              | 16024468           | Ⓞ              |
| C409.2-18KM Pro+  | 16024463            | Ⓞ              | 16024469           | Ⓞ              |
| C409.2-45KM Pro+  | 16024464            | Ⓞ              | 16024470           | Ⓞ              |
| C409.2-95KM Pro+  | 16024465            | Ⓞ              | 16024471           | Ⓞ              |
| C409.2-190KM Pro+ | 16024466            | Ⓞ              | 16024472           | Ⓞ              |

#### STAINLESS STEEL

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

| Type              | Valve seals                |                |
|-------------------|----------------------------|----------------|
|                   | FEP-covered<br>Article-No. | Price<br>(EUR) |
| C409.2-7,5KM Pro+ | 16024474                   | Ⓞ              |
| C409.2-10KM Pro+  | 16024473                   | Ⓞ              |
| C409.2-18KM Pro+  | 16024475                   | Ⓞ              |
| C409.2-45KM Pro+  | 16024476                   | Ⓞ              |
| C409.2-95KM Pro+  | 16024477                   | Ⓞ              |
| C409.2-190KM Pro+ | 16024478                   | Ⓞ              |

## OPTIONS

### Versions (basic equipment)

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



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



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

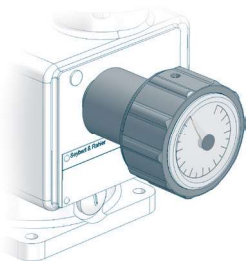


Pump **without** control element; **with** INTERFACE MODULE  
 (INTERFACE MODULE instead of control element)



### Stroke length adjustment

**Surcharge (EUR)**

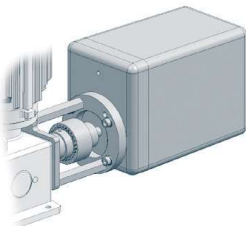


with position indicator



### 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-N  
 (only integrated in N C1-BA)

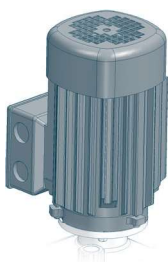
Input signal 0/4 - 20mA including  
 feedback signal 0/4 - 20mA



in combination with cTÜVus

### Drive motor

**Surcharge (EUR)**



Connection voltage 115V, 50/60Hz



# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### OPTIONS



#### Special connection

Surcharge (EUR)

Special connection (plug) for power supply



in combination with cTÜVus



### ACCESSORIES



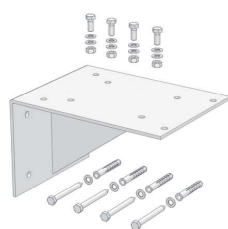
#### Control element

Article-No.

Price (EUR)

Control element (removeable)

90044844



#### 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.

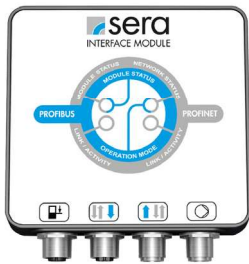
to be found in **CHAPTER 4** of this catalog, from **page 442**



## 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, 4-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    | ▲           |



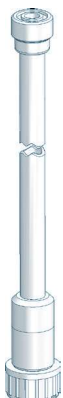
## Control cable

|   | 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 ▲  |

# PISTON 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, 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    | ▲           |

## 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 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<br>G=S65x5<br>DIN2781                                | PP       | EPDM | 90011763    | ▲           |
|  | PP       | FPM  | 90011762    | ▲           |
| for internal thread (set)<br>G=2 fine thread steel drum<br>DIN-ISO 228-1 | PP       | EPDM | 90046044    | ▲           |
| G=v. Leer/tri-sure BCS 56x4<br>EN12708                                   | PP       | FPM  | 90046043    | ▲           |
| for external thread<br>G= DIN51  | PP       | EPDM | 90011767    | ▲           |
|  | PP       | FPM  | 90011766    | ▲           |
| for wall duct<br>G=2<br>Wall thickness S=max. 6mm                        | PP/PVC   | EPDM | 90011773    | ▲           |
|  | PP/PVC   | FPM  | 90011772    | ▲           |
| other adapters   |          |      | Ⓞ           | Ⓞ           |



# PISTON 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    | ▲           |

## 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 <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    | ▲           |
| 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

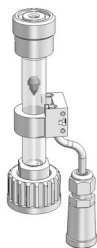


|                         |                               |  |  |  |          |   |
|-------------------------|-------------------------------|--|--|--|----------|---|
| <b>Hand vacuum pump</b> | PVC/FPM                       |  |  |  |          |   |
|                         | (incl. 1,5m PVC-Hose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

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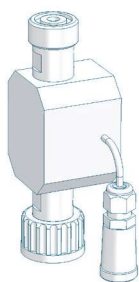
### FITTINGS FOR THE SUCTION SIDE



#### 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 |   |           |             |             |
| <b>8191.1</b>                    | Inlet: G $\frac{3}{4}$ (internal)<br>Outlet: G $\frac{3}{4}$ (external) | PVC-U/FPM | 37602227    | ▲           |
|                                  |   | PP/FPM    | 37602175    | ▲           |
| C409.2-45KM, ...-95KM, ...-190KM |   |           |             |             |
| <b>8192.1</b>                    | Inlet: G $\frac{3}{4}$ (internal)<br>Outlet: G $\frac{3}{4}$ (external) | PVC-U/FPM | 37602176    | ▲           |
|                                  |   | PP/FPM    | 37602177    | ▲           |

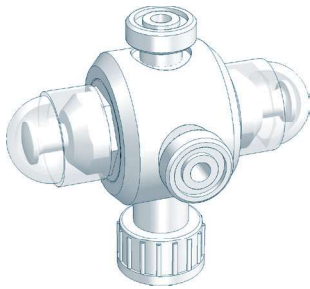


#### Flow meter

- 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) |
|----------------------------------|---|-----------------|-------------|-------------|
| C409.2-7,5KM, ...-10KM, ...-18KM |   |                 |             |             |
| <b>8011.1</b>                    | Inlet: G $\frac{3}{4}$ (internal)<br>Outlet: G $\frac{3}{4}$ (external) | ECTFE/PP/FPM    | 37602343    | ▲           |
|                                  |   | ECTFE/PVC-U/FPM | 37602345    | ▲           |
|                                  |   | ECTFE/PVDF/FPM  | 37602348    | ▲           |
| C409.2-45KM                      |   |                 |             |             |
| <b>8012.1</b>                    | Inlet: G $\frac{3}{4}$ (internal)<br>Outlet: G $\frac{3}{4}$ (external) | PVC-U/FPM       | 37602277    | ▲           |
|                                  |   | PVDF/FPM        | 37602307    | ▲           |
| C409.2-95KM                      |   |                 |             |             |
| <b>8013.1</b>                    | Inlet: G $\frac{3}{4}$ (internal)<br>Outlet: G $\frac{3}{4}$ (external) | PVC-U/FPM       | 37602279    | ▲           |
|                                  |   | PVDF/FPM        | 37602309    | ▲           |
| C409.2-190KM                     |   |                 |             |             |
| <b>8014.1</b>                    | Inlet: G $\frac{3}{4}$ (internal)<br>Outlet: G $\frac{3}{4}$ (external) | PVC-U/FPM       | 37602281    | ▲           |
|                                  |   | PVDF/FPM        | 37602311    | ▲           |

## 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

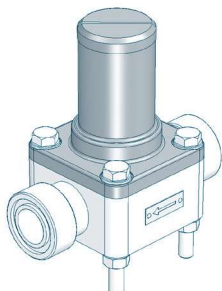
- Diaphragms: **PTFE-faced**
- Connection: **G<sup>3/4</sup>**
- **Relief valve side**  
Opening pressure: **2 up to 10 bar** (adjustable)
- **Pressure keeping valve side**  
Holding pressure: **1,0 - 1,5 bar**

| 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>                             | PVC-U      | FEP   | 37600975    | ▲           |
| <b>MFV 050</b>                             | PP         | EPDM  | 37600982    | ▲           |
| <b>MFV 050</b>                             | PP         | FPM   | 37600983    | ▲           |
| <b>MFV 050</b>                             | PP         | FEP   | 37600984    | ▲           |
| C409.2-95KM, ...-190KM                     |            |       |             |             |
| Ⓢ  |            |       | Ⓢ           | Ⓢ           |

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Diaphragm relief valve

for overpressure protection

##### Properties

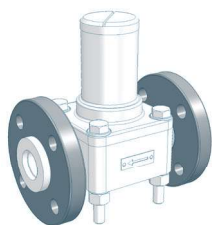
- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

##### Basic version

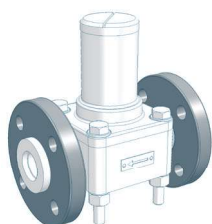
- Valve body: **PVC-U, 1.4581, PP** or **PVDF**
- Diaphragm: **PTFE-faced**

| Type   | Nominal size | Connection | Valve body | Seals | Article-No. | Price (EUR) |
|--|--------------|------------|------------|-------|-------------|-------------|
| 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   | Ⓞ           | Ⓞ           |
| 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

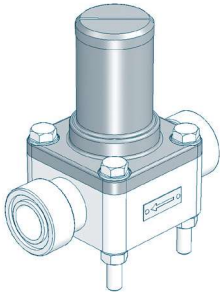


| Type   | Design          | Loose flange                             | Surcharge [EUR] |
|--------|-----------------|--|-----------------|
| 620.10 | PVC             | Loose flange made of PVC-U               | Ⓞ               |
| 620.10 | PP-FRP/PVDF-FRP | Loose flange made of PP with steel inlay | ×               |
| 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

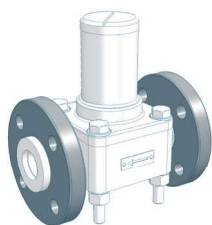
- Compact design
- Easy installation
- Maintenance-free
- High-quality materials

#### Basic version

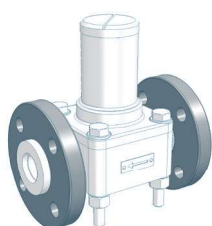
- Valve body: **PVC-U, 1.4581, PP or PVDF**
- Diaphragm: **PTFE-faced**

| Type   | Nominal size | Connection | Valve body | Seals | Article-No. | Price (EUR) |
|--|--------------|------------|------------|-------|-------------|-------------|
| 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 | ▲               |

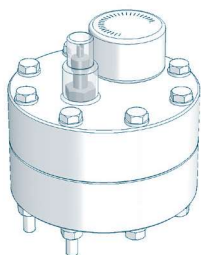


| Type  | Design          | Loose flange                             | Surcharge [EUR] |
|-------|-----------------|--|-----------------|
| 622.D | PVC             | Loose flange made of PVC-U               | ▲               |
| 622.D | PP-FRP/PVDF-FRP | Loose flange made of PP with steel inlay | Ⓞ 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

# PISTON 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) |
|----------------------------------|------------|---------------|----------|-----------|-------------|-------------|
| 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 | 90021733 | ▲   |
| Connction to pulsation damper | G1/2 male | PVC-U | FPM  | 90025079 | ▲   |
|                               |           | PP    | EPDM | 90038083 | ▲   |
|                               |           | PP    | FPM  | 90038082 | ▲   |
|                               |           | PVDF  | FEP  | 90038082 | Ⓢ Ⓢ |

##### Retaining clamp



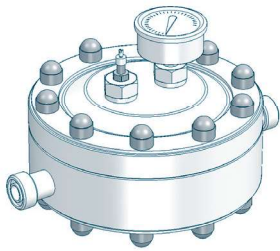
|                                 |    |      |          |   |
|---------------------------------|----|------|----------|---|
| (2 Piece each pulsation damper) | PP | d 16 | 90010649 | ▲ |
|---------------------------------|----|------|----------|---|

##### 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) |
|------------------------|------------|---------------|----------|-------|-------------|-------------|
| 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 90010651 ▲



# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### 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) |
|--|------------|--------------|----------|-----------|-------------|-------------|
| 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<br>Measuring system: copper alloyed                                      | ● |
| Design: <b>Stainless steel</b>                                      | Manometer: 0-16 bar, glycerine-damped<br>Measuring system: copper alloyed<br>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 installation
- Long service life
- Easy handling
- High-quality materials
- 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    | ▲           |

# PISTON DIAPHRAGM PUMPS

## CONTROLLABLE

### FITTINGS FOR THE PRESSURE SIDE



#### Dosing valve (Plastic)

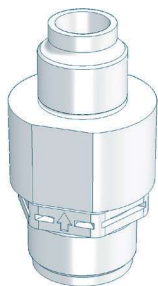
##### Properties

- 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)

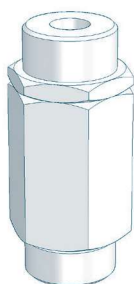
##### Properties

- 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    | ▲           |