

DMX

Mechanical dosing pumps 50 Hz



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1. Product introduction

Features and benefits

Proven and versatile

The DMX pump range has proven its worth in dosing applications worldwide. With their robust diaphragm-based design and their high-quality motors, DMX pumps require minimum maintenance and are the best choice for many dosing applications. The DMX range is highly versatile: it covers a wide flow range and offers a variety of dosing head sizes, materials and accessories.



DMX model 221, 226 and 227

TM074614

Accurate dosing - all the time

The diaphragm design makes sure that the dosing flow fluctuation and the linearity deviation are very low. This allows very precise dosing of chemicals - as much as necessary, as little as possible.

Smooth and low-pulsation dosing

Sophisticated drive technology and gear kinematics ensure smooth and low-pulsation dosing. This means less stress to all system components, such as tubes and valves, and leads to longer service intervals for the entire system.

Compact design saves money and space

DMX pumps are available in different dosing head sizes. The compact design allows placing several pumps right next to each other in confined spaces. Double-head versions (DMX models 226 and 227) offer a very cost-efficient way to save space or to dose two different chemicals. The extra capacity offered by double-head versions can also be used to gain higher flow rates for a single chemical.

Perfect material selection for housing and liquid-wetted parts

The models DMX 221 have PPE housings offering chemical resistance and all the protection necessary for many applications. The models DMX 226 and DMX 227 have a robust cast-aluminium housing with epoxy coating to meet all application needs. Investment costs and running costs for spare parts are kept low over the years: A wide choice of materials for dosing head, valves and accessories allow selecting exactly the degree of chemical resistance required. All liquid-wetted parts need to be resistant to the chemicals used. The diaphragm is made of NBR and PTFE-coated.

Motors to match application needs

For applications with specific motor requirements, the versatile mechanical dosing pump range offers the following options:

- Ex-classified or ATEX-certified high-quality motors
- Motors with integrated variable frequency drive (VFD) are available on request.
Mechanical dosing pumps equipped with a motor with factory-mounted integrated VFD provide extended capacity range and functionality. They include analog inputs and outputs, an integrated potentiometer for precise and easy setting of speed, control and self-monitoring functions as well as an interface for field bus communication (Profibus, Profinet).
This option is only available for pumps that are able to run at 100 Hz. See performance data tables.
- Motors with PTC, prepared for operation with external variable frequency drive (VFD).

Mechanical dosing pumps equipped with a motor with PTC, planned to be operated by a VFD, the VFD is not supplied with the pump. The PTC protects the motor against locked-rotor conditions, continuous overload and high ambient temperature.

- Use a VFD that can operate at constant torque. The VFD should have a 150 % overload capacity for 60 seconds.
- Respect the limitations on minimum and maximum operating frequency to prevent gear breakdown or motor overheating. See performance data tables.

This option is not available for pumps selected for ATEX.

For more detailed information, please contact Grundfos.

Accessories ensure perfect operation of the entire system

A wide range of accessories specially designed for the DMX range helps to optimise performance: AR control electronics (contact signal control with multiplier and divisor function, 4-20 mA control or stroke frequency control via display and keypad, low-level/empty signal), integrated relief valve, dosing controller, diaphragm leakage detection and servomotor for automatic stroke-length adjustment.

In addition, we offer system components such as pressure-loading valves and pulsation dampers.

ATEX approval

EX classified and ATEX approved motors and pumps for potentially explosive areas are available on request. For more detailed information, please contact Grundfos.

Ex zones for DMX 226

ATEX approved DMX 226 pumps can be used in the following EX zones:

- ATEX Directive, Group II, category 2 (zone 1/21)
- ATEX Directive, Group II, category 3 (zone 2/22)

Note: DMX pumps are not suitable for dosing combustible media.

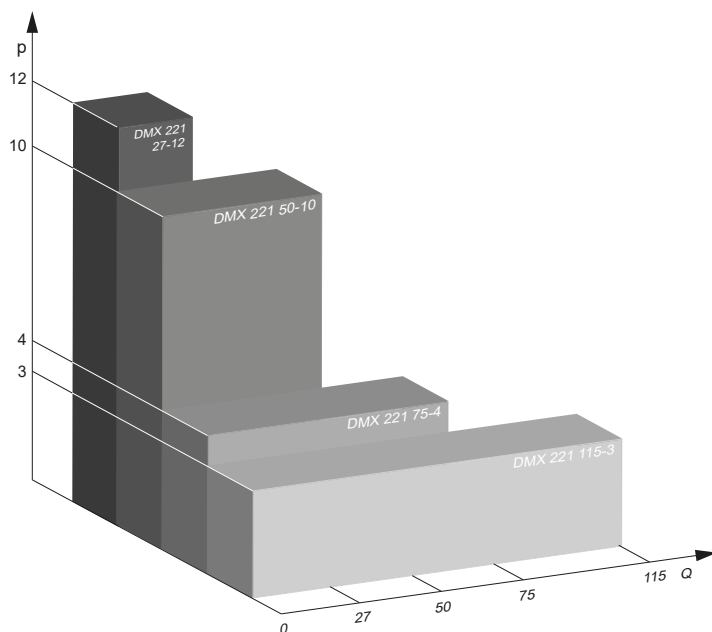
Applications

DMX pumps are intended for the dosing of chemicals in tasks like disinfection, coagulation, flocculation, precipitation in various application fields:

- Drinking water treatment
- Wastewater treatment
- Pulp and paper industry
- Textile industry
- Cleaning water treatment
- Food and beverage industry, dairies
- Cooling tower water treatment
- Low-pressure boiler feed water treatment
- Agriculture
- Irrigation
- Fertigation

Performance range

Performance range DMX 221



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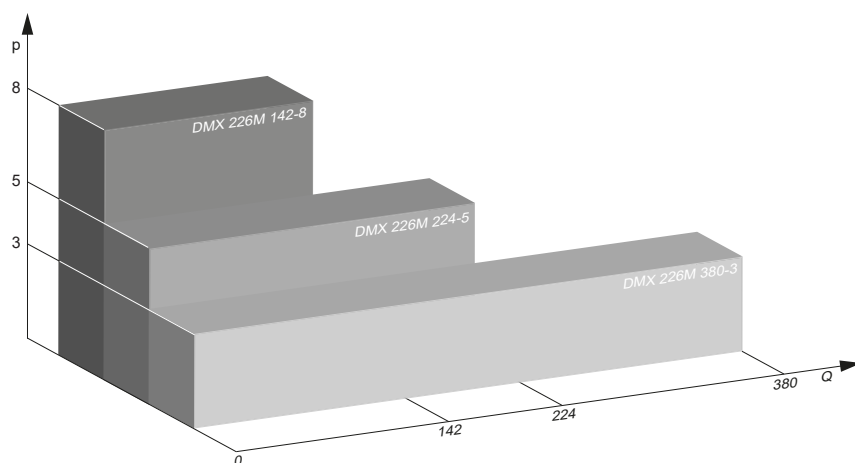
DMX 221 performance range

Legend

Q Dosing flow [l/h]

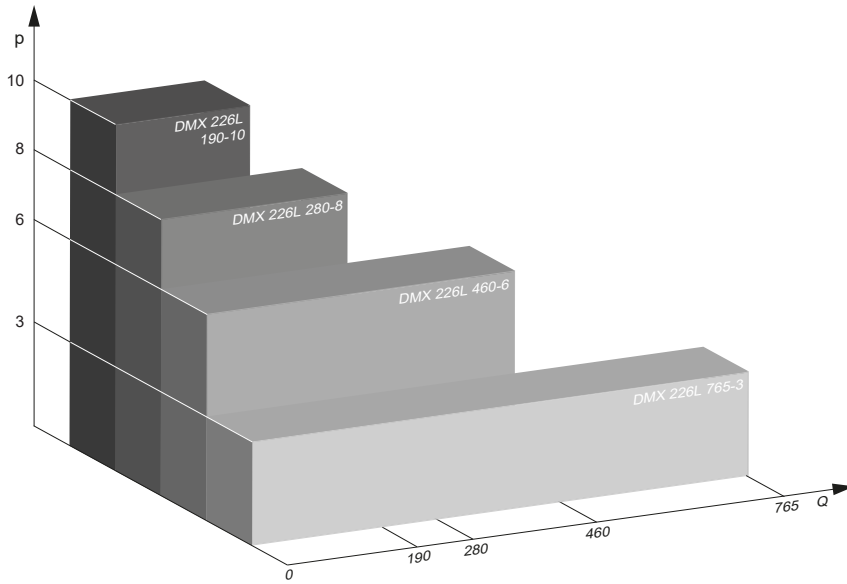
p Pressure [bar]

Performance range DMX 226



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DMX 226M performance range



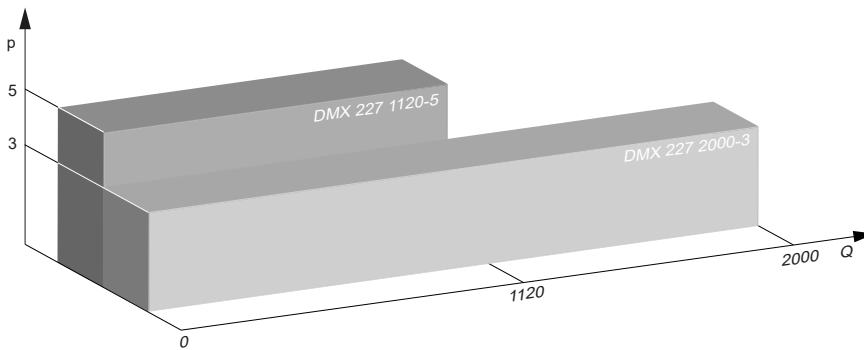
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DMX 226L performance range

Legend

Q	Dosing flow [l/h]
p	Pressure [bar]

Performance range DMX 227



TM071534

DM 227 performance range

Legend

Q	Dosing flow [l/h]
p	Pressure [bar]

Note: If the pump is operated with variable frequency drive (VFD), the maximum dosing flow is doubled.

2. Identification

Type key

The type key is used to identify the precise pump and is not used for configuration purposes.

Type	
DMX 132-10D B-PVC/V/C-X-E1U3U3XEMAG	
Nominal dosing capacity [l/h]	
DMX <u>132</u> -10D B-PVC/V/C-X-E1U3U3XEMAG	
Max. pressure [bar]	
DMX 132- <u>10D</u> B-PVC/V/C-X-E1U3U3XEMAG	
10D	Pumps marked with a "D" after the pressure value are double-head pumps.
Control variant	
DMX 132-10D <u>B</u> -PVC/V/C-X-E1U3U3XEMAG	
B	Standard (manual control)
D	Without manual control
AR*	AR control unit, pump-mounted
D3	Servomotor, 1AC 115-230 V, 50/60 Hz, 4-20 mA control (without manual operation)
* Only for pumps ≤ 0.37 kW (model 221, 226 up to 525 l/h)	
Dosing head variant	
DMX 132-10D B- <u>PVC</u> /V/C-X-E1U3U3XEMAG	
PP	Polypropylene
PV	Polyvinylidene fluoride (PVDF)
SS	Stainless steel, 1.4571 (EN 10027-2), 316Ti (AISI)
PVC	Polyvinyl chloride
PPL	PP with Diaphragm Leakage Detection (DLD)
PVL	PV with Diaphragm Leakage Detection (DLD)
SSL	SS with Diaphragm Leakage Detection (DLD)
PVCL	PVC with Diaphragm Leakage Detection (DLD)
Gasket material	
DMX 132-10D B-PVC/V/ <u>C</u> -X-E1U3U3XEMAG	
E	EPDM
V	FKM
T	PTFE
Valve ball material	
DMX 132-10D B-PVC/V/ <u>C</u> -X-E1U3U3XEMAG	
G	Glass (from DN 32)
T	PTFE
SS	Stainless steel, 1.4401 (EN 10027-2), 316 (AISI)
C	Ceramic (up to DN 20)
PP	Polypropylene
PVC	Polyvinyl chloride

Terminal box position (also AR control position)	
DMX 132-10D B-PVC/V/C-X-E1U3U3XEMAG	
X	Opposite side of dosing head (3 o'clock)
D	Towards dosing head (9 o'clock)
S	Towards adjusting knob (6 o'clock)
R	Opposite side of adjusting knob (12 o'clock)

Supply voltage	
DMX 132-10D B-PVC/V/C-X-E1U3U3XEMAG	
E	3AC 230/400 V, 50/60 Hz, 440-480 V, 60 Hz (motors < 0.75 kW) 3AC 230/400 V, 50 Hz, 460 V, 60 Hz (IE3, motors ≥ 0.75 kW)
G	1AC 230 V, 50/60 Hz (motors ≤ 0.09 kW) 1AC 230 V, 50 Hz (motors 0.18 - 0.37 kW)
H	1AC 115 V, 50/60 Hz (motors ≤ 0.09 kW) 1AC 115 V, 60 Hz (motors 0.18 - 0.37 kW)
F	Without motor, NEMA flange
0	Without motor, IEC flange
4	3AC 230/400 V, 50 Hz (EX motors)
M	3AC 400/690 V, 50 Hz (standard in power plants)

Valve type (inlet/outlet)	
DMX 132-10D B-PVC/V/C-X-E1U3U3XEMAG	
1	Standard valves, not spring-loaded
2	Spring-loaded inlet and outlet valve (0.05 bar)

Hydraulic connections (first = outlet, second = inlet)	
DMX 132-10D B-PVC/V/C-X-E1U3U3XEMAG	
U2	G 5/8, for hoses 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm (PVC, PP, PVDF)
A	G 5/8, for pipes with internal thread Rp 1/4 (SS)
1007	G 5/8, installation set, including 2 pump connections, foot valve, injection unit, 6 m PVC outlet hose (6/12 mm), 2 m PVC inlet hose (6/12 mm)
U3	G 5/4, for hoses with internal diameter 19 or 20 mm and for pipes with external diameter 25 mm
U7	G 5/8, for hoses 0.17" x 1/4", 1/4" x 3/8", 3/8" x 1/2" (PVC, PP, PVDF)
A1	G 5/4, for pipes with internal thread Rp 3/4 (SS)
A8	Flange DN 32, for pipes with internal thread 1 1/4 NPT (PVC, PP, PVDF)
B5	Flange DN 32, for pipes with external diameter 40 mm (PP, PVDF)
V	G 5/8, for pipes with internal thread 1/4 NPT (SS)
A9	G 5/8, for pipes with external thread 1/2 NPT (PVC, PVDF)
A2	G 2, for pipes with internal thread Rp 1 1/4 (SS)
A3	G 5/4, for pipes with internal thread 3/4 NPT (SS)
A7	G 5/4, for pipes with external thread 3/4 NPT (PVC, PVDF)
A4	G 2, for pipes with internal thread 1 1/4 NPT (SS)
K	G 2, for pipes with external diameter 40 mm (PVC)
R	Flange DN 65, for pipes with external diameter 75 mm (PVC)
T	Flange DN 65, for pipes with external diameter 75 mm (PP)
U	Flange DN 65, for welding pipes with external diameter 75 mm (SS)
Z	Prepared for ANSI Flange 2 1/2" (PVC, PP, SS)

Mains plug (only 1AC motors)

DMX 132-10D B-PVC/N/C-X-E1U3U3XEMAG

X No plug

F EU (Schuko)

B USA, Canada

Motor variant and certification

DMX 132-10D B-PVC/N/C-X-E1U3U3XEMAG

EM Standard motor (without certificates)

E0 Motor with PTC for thermal protection (without certificates)

E1 EX motor, type EX II 2G EEx e II T3 (without certificates)

E2 EX motor, type EX II 2GD EEx de IIC T4, without PTC (without certificates)

E5 EX motor, type EX II 2GD EEx de IIC T4, with PTC (without certificates)

MP Standard motor (with certificates)

K0 Motor with PTC for thermal protection (with certificates)

K1 EX motor, type EX II 2G EEx e II T3 (with certificates)

K2 EX motor, type EX II 2GD EEx de IIC T4, without PTC (with certificates)

K5 EX motor, type EX II 2GD EEx de IIC T4, with PTC (with certificates)

Pump housing material

DMX 132-10D B-PVC/N/C-X-E1U3U3XEMAG

A Aluminium

N Noryl (Plastic)

Pump design

DMX 132-10D B-PVC/N/C-X-E1U3U3XEMAG

G Grundfos

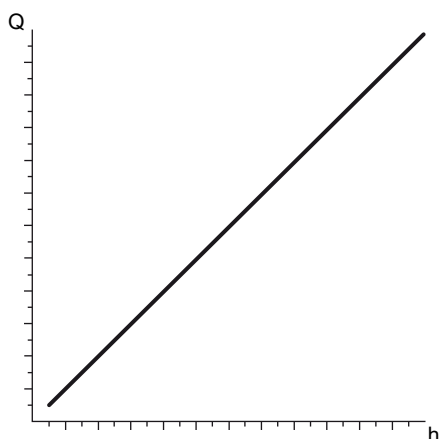
3. Functions and options

Dosing flow control

Dosing flow control	DMX 221	DMX 226	DMX 227
Manual control (stroke-length adjustment)	•	•	
Servomotor control (electric stroke-length adjustment)	•	•	
Motor speed control with integrated variable frequency drive	•	•	•
AR control unit (stroke frequency, pulse and analog signal), only with standard single-phase motor	•	•	

Dosing flow control by stroke-length adjustment

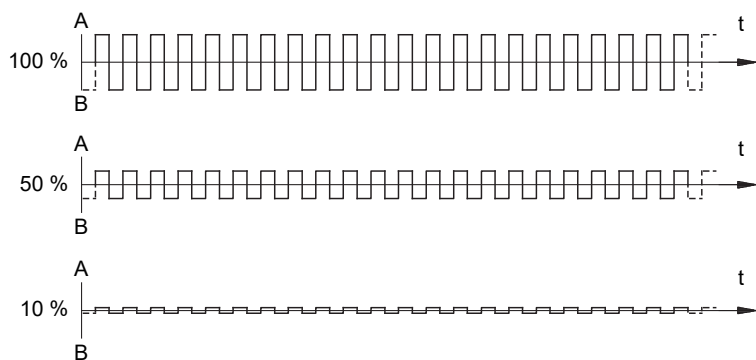
The dosing flow can be controlled either by turning the stroke-length adjusting knob manually or by means of an optional servomotor. The volume of each stroke is increased or decreased, the stroke rate remains constant.



Relation of stroke length and dosing flow

Q: Dosing flow [l/h]
 h: Stroke length [%]

Dosing flow setting



Relation of stroke-length adjustment and dosing flow

A: Discharge
 B: Suction
 t: Duration

TM074243

TM073949

Dosing flow control via variable frequency drive

The dosing flow can be controlled via an integrated or external variable frequency drive. The volume of each stroke remains constant, the stroke rate is increased or decreased. Pumps with special motors for operation with external variable frequency drive are also available.

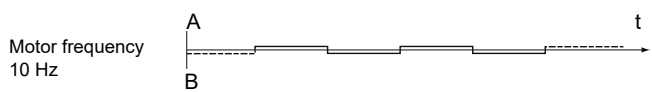
Motor frequency setting



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TM074239



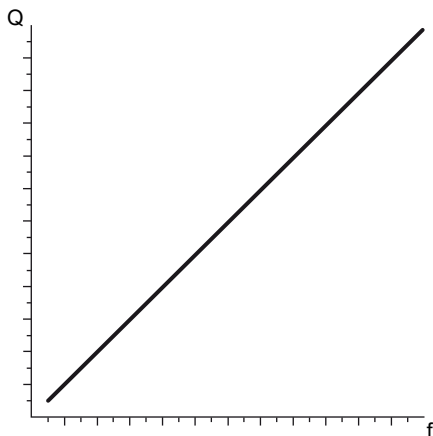
TM074135

A: Discharge

B: Suction

t: Duration

Motor frequency setting



TM048406

Relation of motor frequency and dosing flow

Q: Dosing flow [l/h]

f: Motor frequency [Hz]

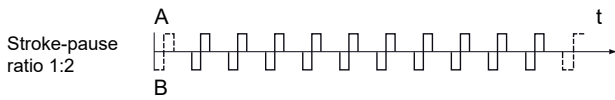
Dosing flow control by AR control unit

The dosing flow can be controlled by adjusting the interval between strokes. This is done via analog or pulse signals or by manually adjusting the stroke frequency.

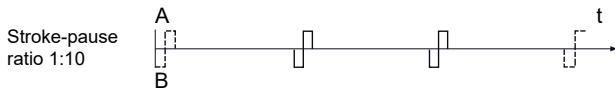
Stroke frequency setting



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TM074137



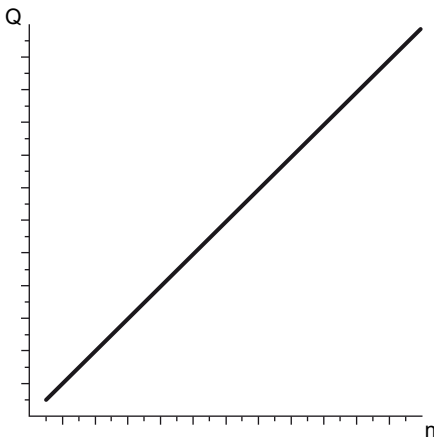
TM074138

A: Discharge

B: Suction

t: Duration

Stroke frequency setting



TM074242

Relation of stroke frequency and dosing flow

Q: Dosing flow [l/h]

n: Stroke frequency [min⁻¹]

Electric servomotor

To facilitate automatic control of the flow rate, mechanical dosing pumps can be equipped with an electric servomotor in IP65 housing. The electric servomotor primarily consists of a digitally controlled stepper motor, reduction gear and min/max limit switches. The electric servomotor is connected to the control slide of the dosing pump. This adjusts the active stroke length and the corresponding dosing flow. The electric servomotor is available as ATEX version, EX II2G Ex db IIB T4 for potentially explosive zones.

Variants

- Electric servomotors with different operating voltages
- Electric servomotors with 4-20 mA control and output signal and manual/automatic switch



Electric servomotor

TMO74765

AR control unit

The AR control unit contains convenient electronics in an IP65 housing, and is suitable for the following pump models:

- DMX 221 with special single-phase motor
- DMX 226 with special single-phase motor

Control modes

- Manual control: stroke frequency is manually adjustable from 1 up to the maximum strokes per minute.
- Pulse signal control: multiplier 1:n (n strokes per incoming pulse) and divisor n:1 (1 stroke per incoming n pulse), memory function (stores a maximum of 65,000 pulses).
- 0/4-20 mA analog signal control: adjustment of stroke frequency in proportion to the current signal and weighting of current input is possible.
- The AR control unit is mounted on the terminal box of the motor.

Inputs

- Pulse signal
- Analog signal
- Remote on/off
- Tank-empty sensor
- Dosing controller and diaphragm leakage sensor

Outputs

- Analog signal
- Error signal (fault)
- Stroke signal
- Low-level signal



AR control unit on a pump motor

TMO48603

Integrated pressure-relief valve (PRV)

The DMX models 221 and 226 (up to 460 l/h) are available with an optional pressure-relief valve (PRV) integrated in the dosing head. If the pressure rises above the set opening pressure, the PRV opens and the dosing medium is returned to the dosing tank.

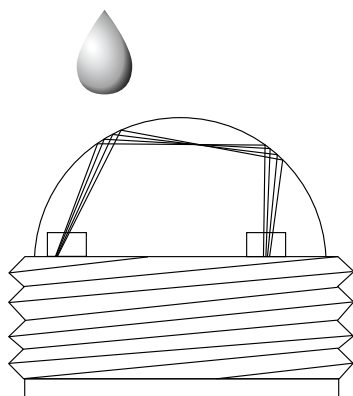
For more detailed information, please contact Grundfos.

Diaphragm leakage detection

Pumps prepared for diaphragm leakage detection have a special dosing head flange for inserting the opto-electronic sensor. The opto-electronic sensor contains an infrared sender and an infrared receiver.

In case of a leaking diaphragm, liquid penetrates the dosing head flange and the light refraction in the opto-electronic sensor changes. The sensor produces a signal. This signal can be used to trigger an alarm device or to switch off the pump via:

- Electronic unit for optical sensor (230 V, product number 96725701)
- AR control unit (DMX 221 and DMX 226).



Diaphragm leakage sensor

Variable frequency drive (VFD)

Mechanical dosing pumps with integrated variable frequency drive provide extended capacity range and functionality. They include analog and digital inputs and outputs and an integrated potentiometer for precise and easy setting of speed and flow as well as control and self-monitoring functions. Mechanical dosing pumps can be prepared for variable-frequency-drive operation and include a variable frequency drive (VFD).

For more detailed information, please contact Grundfos.

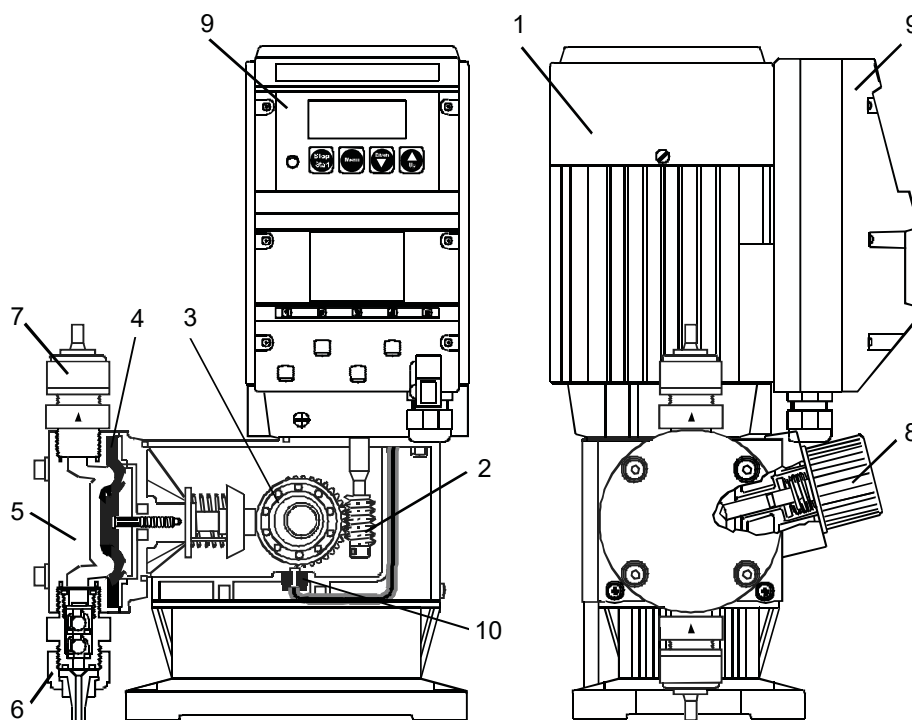
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4. Construction

Functional principle

Grundfos DMX pumps are positive displacement pumps with an electric motor and mechanical diaphragm control. The rotation of the motor is transformed into the reciprocating movement of the diaphragm by the eccentric and the tappet. Due to the movement of the diaphragm (strokes), the size of the dosing chamber is increased and decreased. Dosing medium is drawn in through the inlet valve and pushed out through the outlet valve. The discharge stroke is activated by the eccentric, the suction stroke is activated by the spring return. A separation chamber prevents the dosing medium from flooding the pump or other system components in the event of a diaphragm failure.

Sectional drawing DMX 221



TM065892

Pos.	Component
1	Motor
2	Worm gear
3	Eccentric
4	Dosing diaphragm
5	Dosing head
6	Inlet valve
7	Outlet valve
8	Stroke-length adjusting knob
9	AR control unit (option)
10	Hall sensor

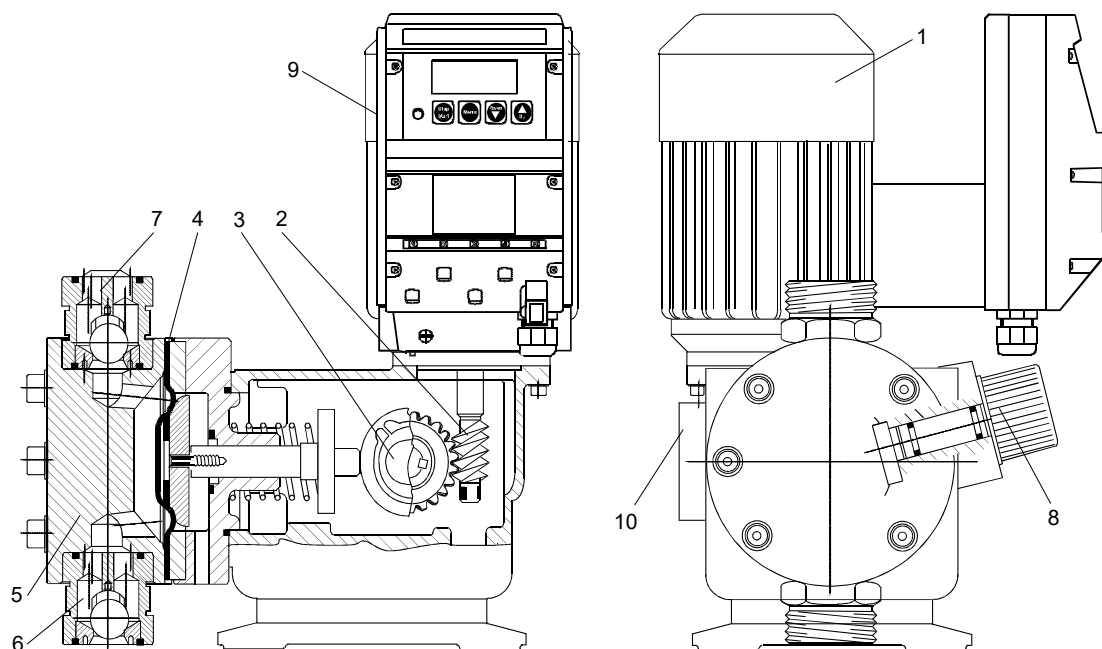
Dosing flow

- Up to 115 l/h
- Available as a single-head pump with one dosing head

Dosing flow control

- Manually with stroke-length adjusting knob
- Via servomotor (option)
- Via AR control unit (option)
- Via variable frequency drive (option)

Sectional drawing DMX 226



TM036380

Pos.	Component
1	Motor
2	Worm gear
3	Eccentric
4	Dosing diaphragm
5	Dosing head
6	Inlet valve
7	Outlet valve
8	Stroke-length adjusting knob
9	AR control unit (option)
10	Hall sensor

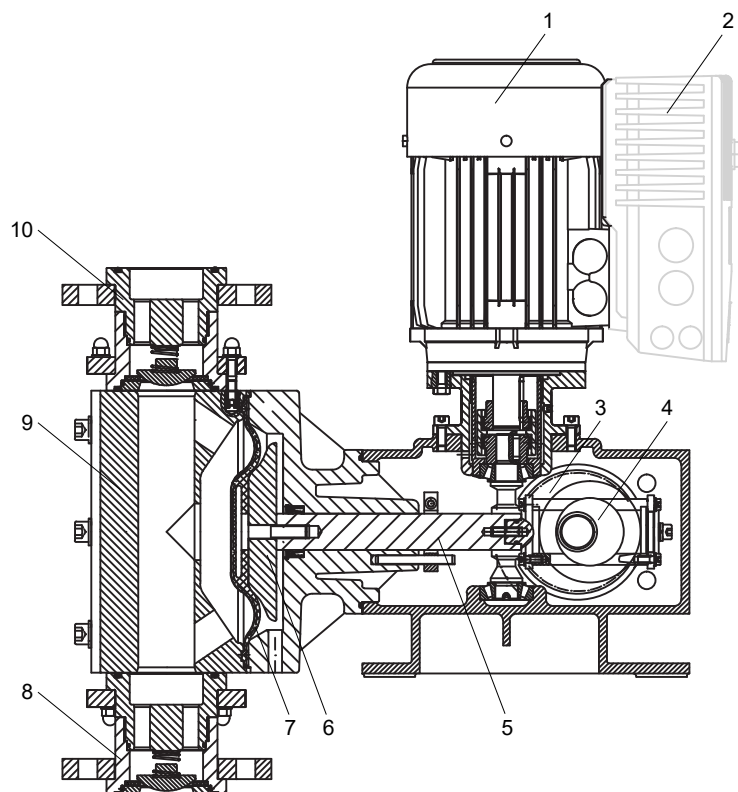
Dosing flow

- DMX 226M (M = Medium), up to 380 l/h per dosing head
- DMX 226L (L = Large), up to 765 l/h per dosing head
- Available as a single-head pump with one dosing head or double-head pump with two dosing heads

Dosing flow control

- Manually with stroke-length adjusting knob
- Via servomotor (option)
- Via AR control unit (option)
- Via variable frequency drive (option)

Sectional drawing DMX 227



TM063164

Sectional drawing DMX 227 with VFC

Pos.	Component
1	Motor
2	Variable frequency drive VFD (option)
3	Worm gear
4	Eccentric
5	Tappet
6	Support disk
7	Dosing diaphragm
8	Inlet valve
9	Dosing head
10	Outlet valve

Dosing flow

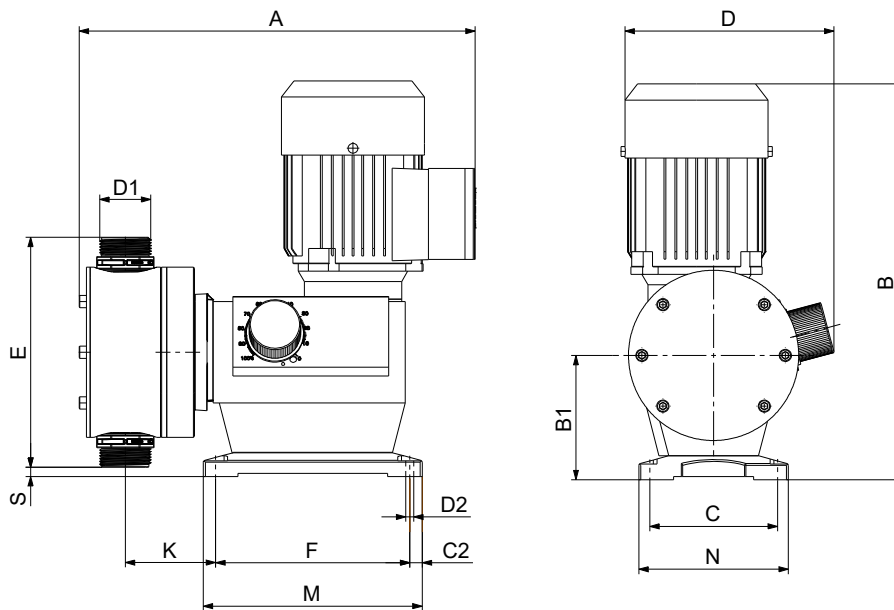
- Up to 4000 l/h per dosing head
- Available as a single-head pump with one dosing head or double-head pump with two dosing heads

Dosing flow control

- Constant stroke length, no manual adjustment
- Via variable frequency drive (option)

5. Technical data

Dimensions DMX 221



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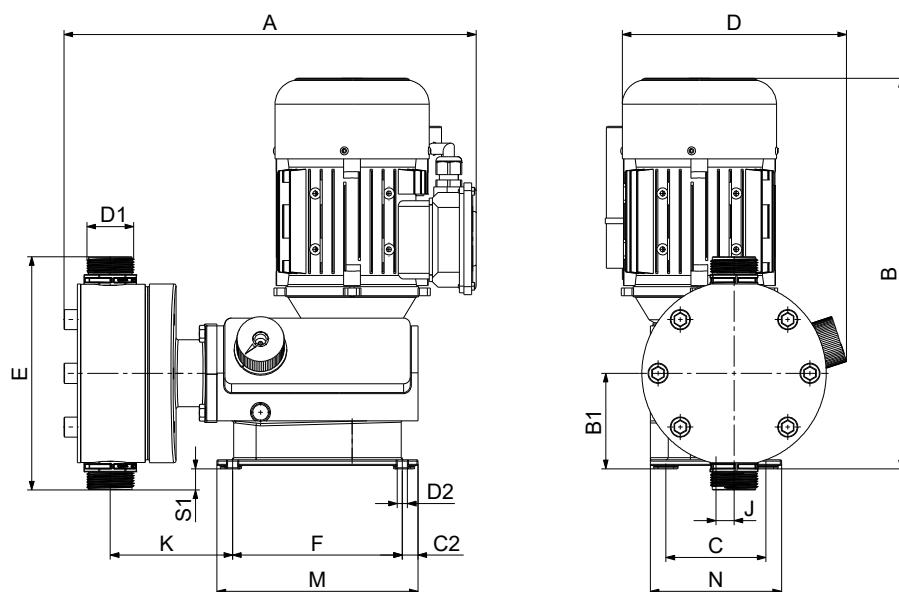
All dimensions are in mm, except for the thread designations.

Pump type	B	B1	C	C2	D	D2	F	M	N
All	319	102.5	105	10.5	175	6.5	159	180	123

Pump type	A	D1	E	K	S
DMX 4-10 / DMX 7-10 / DMX 7,2-16 / DMX 8-10 / DMX 9-10 / DMX 12-10 / DMX 13,7-16 / DMX 14-10 / DMX 16-10 / DMX 16-12	275	G 5/8	153	32	26
DMX 17-4	323	G 1 1/4	178	64	15
DMX 18-10	275	G 5/8	153	32	26
DMX 25-3	330	G 1 1/4	188	80	9
DMX 26-10 / DMX 27-10 / DMX 27-12 / DMX 35-10	275	G 5/8	153	32	26
DMX 39-4	323	G 1 1/4	178	64	15
DMX 50-10	275	G 5/8	153	32	26
DMX 60-3	330	G 1 1/4	188	80	9
DMX 75-4	323	G 1 1/4	178	64	15
DMX 115-3	330	G 1 1/4	188	80	9

Dimensions DMX 226

Dimensions of DMX 226M single-head pumps

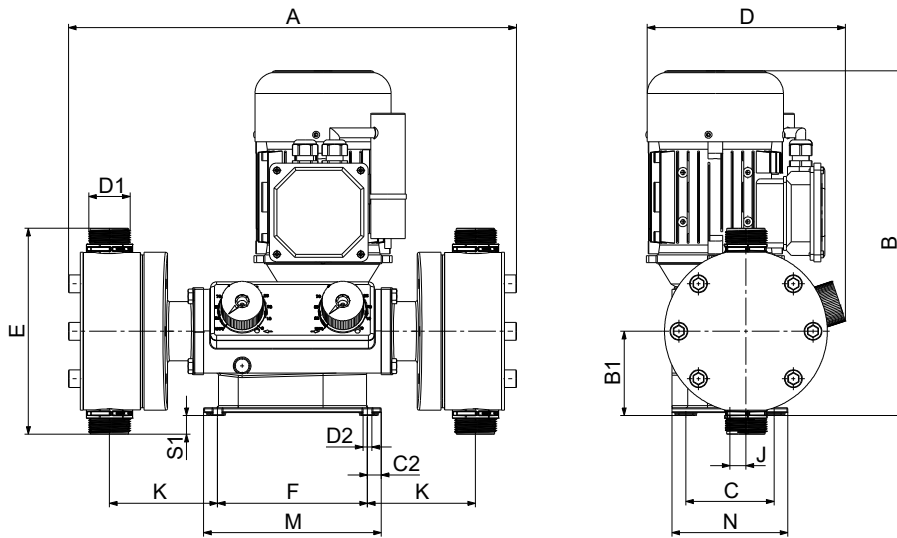


TM073717

All dimensions are in mm, except for the thread designations.

Pump type	A	B	B1	C	C2	D	D1	D2	F	K	M	N	J
All	302	310	85.5	97.5	24.5	190	G 1 1/4	9	152	104.5	180	118	16
Pump type										E	S1		
DMX 24-8										178	4		
DMX 37-5										188	9		
DMX 52-8										178	4		
DMX 60-3										208	19		
DMX 82-5										188	9		
DMX 100-8										178	4		
DMX 130-3										208	19		
DMX 142-8										178	4		
DMX 160-5 / DMX 224-5										188	9		
DMX 255-3 / DMX 380-3										208	19		

Dimensions of DMX 226M double-head pumps

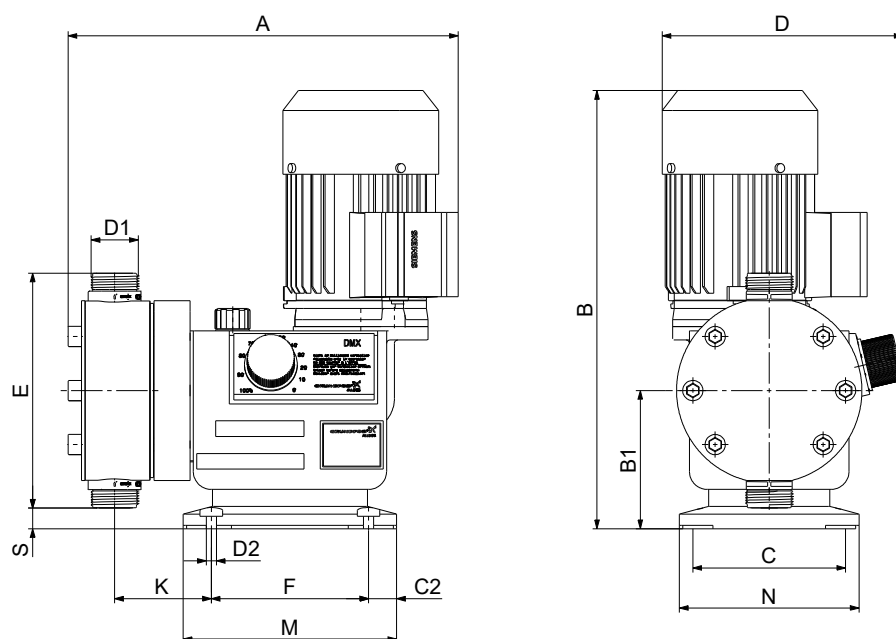


TM073723

All dimensions are in mm, except for the thread designations.

Pump type	A	B	B1	C	C2	D	D1	D2	F	K	M	N	J	
All	425	310	85.5	97.5	24.5	190	G 1 1/4	9	152	104.5	180	118	16	
Pump type										E				S1
DMX 24-8D										178				4
DMX 37-5D										188				9
DMX 52-8D										178				4
DMX 60-3D										208				19
DMX 82-5D										188				9
DMX 100-8D										178				4
DMX 130-3D										208				19
DMX 142-8D										178				4
DMX 160-5D / DMX 224-5D										188				9
DMX 255-3D / DMX 380-3D										208				19

Dimensions of DMX 226L single-head pumps



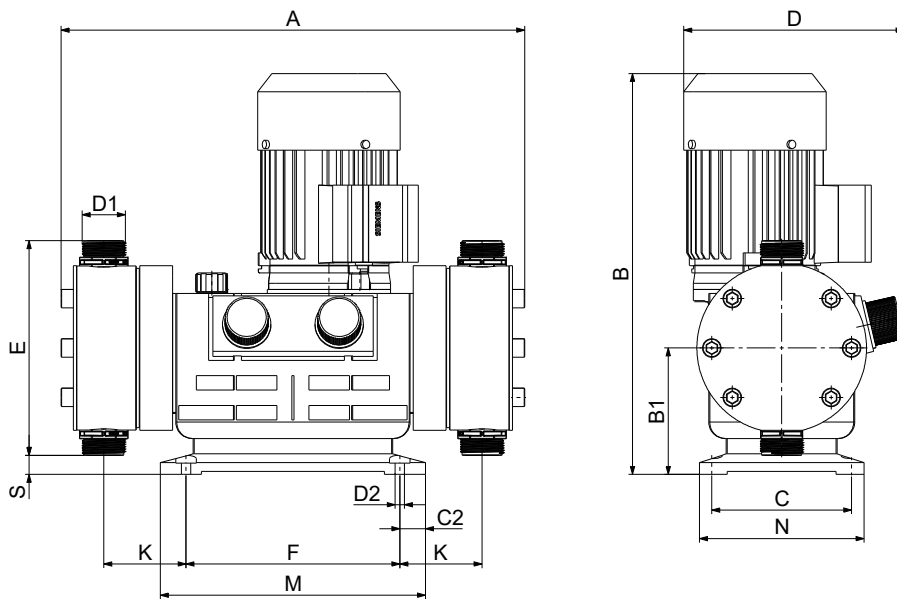
TM073716

All dimensions are in mm, except for the thread designations.

Pump type	B1	C	C2	D	D2	F	M	N
All	123	136	25	222	9	140	190	160

Pump type	A	B	D1	E	K	S
DMX 67-10	366	372	G 1 1/4	178	80	34
DMX 95-8	366	372	G 1 1/4	188	80	29
DMX 132-10	366	372	G 1 1/4	178	80	34
DMX 152-6	381	372	G 1 1/4	208	83	19
DMX 190-10	366	372	G 1 1/4	178	80	34
DMX 199-8	366	372	G 1 1/4	188	80	29
DMX 249-3	395	390	G 2	240	92	3
DMX 280-8	366	372	G 1 1/4	188	80	29
DMX 315-3	395	390	G 2	240	92	3
DMX 321-6 / DMX 460-6	381	372	G 1 1/4	208	83	19
DMX 525-3 / DMX 765-3	395	390	G 2	240	92	3

Dimensions of DMX 226L double-head pumps



TMO73722

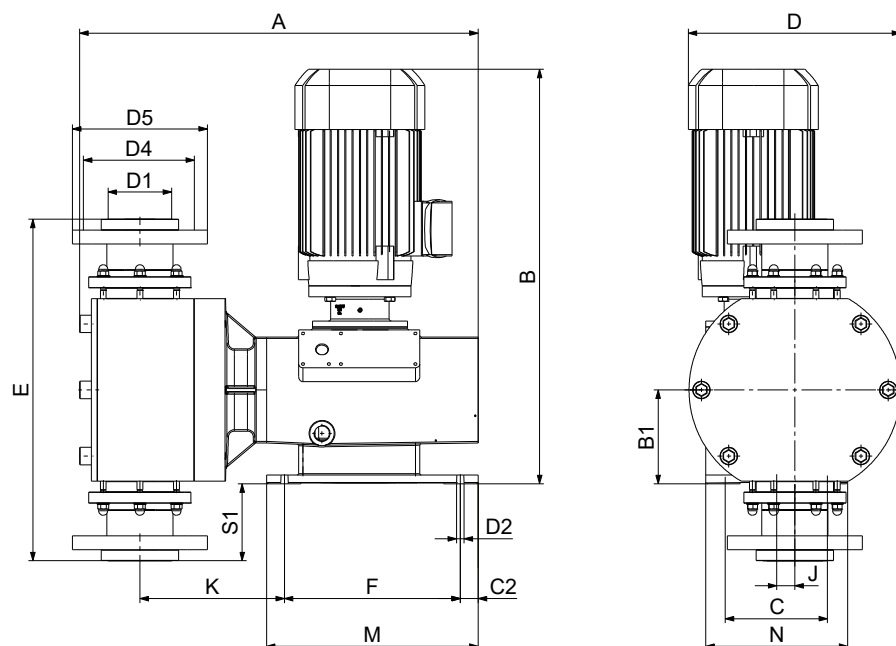
All dimensions are in mm, except for the thread designations.

Pump type	B1	C	C2	D	D2	F	M	N
All	123	136	25	222	9	208	258	160

Pump type	A	B	D1	E	K	S
DMX 67-10D	440	372	G 1 1/4	178	80	34
DMX 95-8D	444	372	G 1 1/4	188	80	29
DMX 132-10D	440	372	G 1 1/4	178	80	34
DMX 152-6D	453	372	G 1 1/4	208	83	19
DMX 190-10D	440	372	G 1 1/4	178	80	34
DMX 199-8D	444	372	G 1 1/4	188	80	29
DMX 249-3D	498	390	G 2	240	92	3
DMX 280-8D	444	372	G 1 1/4	188	80	29
DMX 315-3D	498	390	G 2	240	92	3
DMX 321-6D / DMX 460-6D	453	372	G 1 1/4	208	83	19
DMX 525-3D / DMX 765-3D	498	390	G 2	240	92	3

Dimensions DMX 227

Dimensions of DMX 227 single-head pumps



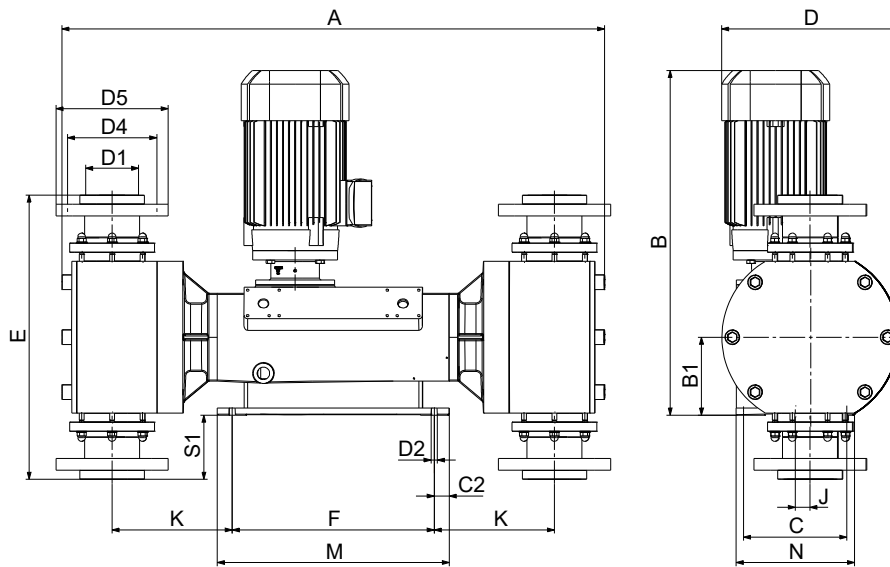
TM074082

All dimensions are in mm, except for the thread designations.

Pump type	B1	C	C2	D2	F	M	N	J	D5
All	128.5	170	24.5	9.5	241	290	194.5	25	185

Pump type	Pump connection size D1	A	B	D	E	K	S1	D4
DMX 860-5	DN 65	567	555	281	446	185	95	145
DMX 860-5	ANSI 2 1/2	567	555	281	446	185	95	140
DMX 1120-5	DN 65	567	555	281	446	185	95	145
DMX 1120-5	ANSI 2 1/2	567	555	281	446	185	95	140
DMX 1520-3	DN 65	580	605	291	468	201	106	145
DMX 1520-3	ANSI 2 1/2	580	605	291	468	201	106	140
DMX 2000-3	DN 65	580	605	291	468	201	106	145
DMX 2000-3	ANSI 2 1/2	580	605	291	468	201	106	140

Dimensions of DMX 227 double-head pumps



TM073724

All dimensions are in mm, except for the thread designations.

Pump type	B1	C	C2	D2	F	M	N	J	D5
All	128.5	170	24.5	9.5	333	382	194.5	25	185

Pump type	Pump connection size D1	A	B	D	E	K	S1	D4
DMX 860-5D	DN 65	880	555	281	446	185	95	145
DMX 860-5D	ANSI 2 1/2	880	555	281	446	185	95	140
DMX 1120-5D	DN 65	880	555	281	446	185	95	145
DMX 1120-5D	ANSI 2 1/2	880	555	281	446	185	95	140
DMX 1520-3D	DN 65	910	605	291	468	201	106	145
DMX 1520-3D	ANSI 2 1/2	910	605	291	468	201	106	140
DMX 2000-3D	DN 65	910	605	291	468	201	106	145
DMX 2000-3D	ANSI 2 1/2	910	605	291	468	201	106	140

Weights DMX 221

The values in the table below apply to pumps without AR control unit, Servomotor or VFD.

Pump type	Weight [kg]	
	Plastic dosing head	Stainless steel dosing head
DMX 4-10	5	7
DMX 7-10	5	7
DMX 7,2-16	5	7
DMX 8-10	5	7
DMX 9-10	5	7
DMX 12-10	5	7
DMX 13,7-16	5	7
DMX 14-10	5	7
DMX 16-10	5	7
DMX 16-12	5	7
DMX 17-4	7.5	12
DMX 18-10	5	7
DMX 25-3	8	13

Pump type	Weight [kg]	
	Plastic dosing head	Stainless steel dosing head
DMX 26-10	5	7
DMX 27-10	5	7
DMX 27-12	5	7
DMX 35-10	5	7
DMX 39-4	7.5	12
DMX 50-10	5	7
DMX 60-3	8	13
DMX 75-4	7.5	12
DMX 115-3	8	13

Weights DMX 226

Weights of DMX 226 single-head pumps

Pump type	Weight [kg]	
	Plastic dosing head	Stainless steel dosing head
DMX 24-8	15	21
DMX 37-5	15	21
DMX 52-8	15	21
DMX 60-3	15	21
DMX 67-10	21	30
DMX 82-5	15	21
DMX 95-8	21	30
DMX 100-8	15	21
DMX 130-3	15	21
DMX 132-10	21	30
DMX 142-8	15	21
DMX 152-6	21	30
DMX 160-5	15	21
DMX 190-10	21	30
DMX 199-8	21	30
DMX 224-5	15	21
DMX 249-3	21	30
DMX 255-3	15	21
DMX 280-8	21	30
DMX 315-3	21	30
DMX 321-6	21	30
DMX 380-3	15	21
DMX 460-6	21	30
DMX 525-3	21	30
DMX 765-3	21	30

Weights of DMX 226 double-head pumps

Pump type	Weight [kg]	
	Plastic dosing head	Stainless steel dosing head
DMX 24-8D	24	36
DMX 37-5D	24	36
DMX 52-8D	24	36
DMX 60-3D	24	36
DMX 67-10D	30	48

Pump type	Weight [kg]	
	Plastic dosing head	Stainless steel dosing head
DMX 82-5D	24	36
DMX 95-8D	30	48
DMX 100-8D	24	36
DMX 130-3D	24	36
DMX 132-10D	30	48
DMX 142-8D	24	36
DMX 152-6D	30	48
DMX 160-5D	24	36
DMX 190-10D	30	48
DMX 199-8D	30	48
DMX 224-5D	24	36
DMX 249-3D	30	48
DMX 255-3D	24	36
DMX 280-8D	30	48
DMX 315-3D	30	48
DMX 321-6D	30	48
DMX 380-3D	24	36
DMX 460-6D	30	48
DMX 525-3D	30	48
DMX 765-3D	30	48

Weights DMX 227

Weights of DMX 227 single-head pumps

Pump type	Weight [kg]	
	Plastic dosing head	Stainless steel dosing head
DMX 860-5	82	103
DMX 1120-5	82	103
DMX 1520-3	86	107
DMX 2000-3	86	107

Weights of DMX 227 double-head pumps

Pump type	Weight [kg]	
	Plastic dosing head	Stainless steel dosing head
DMX 860-5D	136	160
DMX 1120-5D	136	160
DMX 1520-3D	145	185
DMX 2000-3D	145	185

Motor power

Pump model	Pump type	Motor power [kW]			
		Single-head pump		Double-head pump	
		50 [Hz]	100 [Hz]	50 [Hz]	100 [Hz]
221	DMX 4-10				
	DMX 7-10				
	DMX 7,2-16				
	DMX 8-10				
	DMX 9-10				
	DMX 13,7-16				
	DMX 14-10	0.09	0.09	-	-
	DMX 16-10				
	DMX 16-12				
	DMX 18-10				
	DMX 27-10				
DMX 27-12					
DMX 35-10					
221	DMX 12-10				
	DMX 17-4				
	DMX 25-3				
	DMX 26-10				
	DMX 39-4	0.09	0.18	-	-
	DMX 50-10				
	DMX 60-3				
DMX 75-4					
DMX 115-3					
226M	DMX 24-8				
	DMX 37-5				
	DMX 52-8				
	DMX 60-3				
	DMX 82-5				
	DMX 100-8	0.18	0.18	0.18	0.18
	DMX 130-3				
	DMX 142-8				
	DMX 160-5				
	DMX 224-5				
DMX 255-3					
DMX 380-3					
226L	DMX 67-10				
	DMX 95-8				
	DMX 132-10				
	DMX 152-6				
	DMX 190-10				
	DMX 199-8				
	DMX 249-3	0.37	0.55	0.37	0.55
	DMX 280-8				
	DMX 315-3				
	DMX 321-6				
	DMX 460-6				
DMX 525-3					
DMX 765-3					
227	DMX 860-5				
	DMX 1120-5	1.5	1.5	1.5	2.2
	DMX 1520-3				
	DMX 2000-3				

Protection rating and efficiency class

The motor protection rating defines the pump protection rating.

Motor power	Motor protection rating	Motor efficiency class
up to 0.18 kW (1 AC and 3 AC)	IP65	IE1
0.37 kW (1 AC and 3 AC)	IP65	IE1
0.55 kW (3 AC)	IP65	IE1
1.5 - 2.2 kW (3 AC)	IP55 or IP65 (depending on version)	IE3

Sound pressure

Pump model	Sound pressure level [dB(A)] [*]
DMX 221	55
DMX 226	55
DMX 227	70

^{*} Tested according to DIN 45635-01-KL3

Accuracy

Pump model	Dosing flow fluctuation	Linearity deviation
DMX 221 DMX 226	± 1.5 % (FS)	± 4 % of full-scale (FS) value within 20 to 100 % of stroke length
DMX-227	± 2 % (FS) within 10 to 100 % of stroke frequency	-

The values in the table are based on the following conditions:

- Dosing medium: water
- Fully vented dosing head
- Standard version of the pump

Temperature of dosing medium

Dosing head material	Permissible temperature of dosing medium
	p < 10 bar
PVC	0 to +40 °C
Stainless steel, 1.4571 (EN 10027-2), 316Ti (AISI) [*]	-10 to +70 °C
PP	0 to +40 °C
PVDF	-10 to +60 °C (+70 °C at 9 bar)

^{*} For SIP/CIP applications, a temperature of 145 °C at a counterpressure of max. 2 bar is permissible for a short period (15 minutes).
(SIP = Sterilisation-In-Place)
(CIP = Clean-In-Place)

Ambient and operating conditions for DMX pumps

- Permissible ambient temperature: 0 °C to +40 °C
- Permissible storage temperature: -20 °C to +50 °C
- Permissible air humidity (max. relative humidity, not condensing): 70 % at +40 °C, 90 % at +35 °C.

6. Pump selection

1. Select a DMX model from the Performance data tables. The DMX models 226 and 227 are also available as double-head versions. Double-head versions have twice the capacity listed in the table.
2. Look into the DMX standard range tables to find the suitable product number.
3. If you cannot find the DMX dosing pump there, select a suitable variant from the DMX non-standard range tables.

DMX performance data

The values in the tables are based on the following conditions:

- Flooded suction: 0.5 m
- Fully vented dosing head
- 400 V motor, 3-phase, 50 Hz
- Liquid with a viscosity similar to water
- Minimum counterpressure: 1 bar.

The counterpressure refers to the pressure at the pump discharge valve. Pressure losses in the line to the injection point are not taken into account. The maximum permissible viscosity at operating temperature applies to:

- Newtonian fluids
- Non-degassing media
- Media without suspended matter
- Media with a density similar to water.

Note: If the max. suction lift is 0 m, the pump must be installed with flooded suction.

Note: Atex approval is only possible for DMX 226 models with min. frequency / capacity 10 Hz and max. frequency / capacity 100 Hz.

Note: The viscosity increases with decreasing temperature! We recommend testing the performance with the respective liquid.

Performance data DMX 221

Nominal dosing flow	Max. counterpressure	Pump type	Connection inlet/outlet	Stroke frequency at 50 Hz	Max. pump stroke volume	Max. suction lift	Max. suction lift with max. viscosity	Max. length of inlet line	Max. viscosity	VFD in combination with motor with PTC ¹	
										Min. frequency/capacity	Max. frequency/capacity
[l/h]	[bar]			[n/min]	[ml]	[m]	[m]	[m]	[mPas]	[Hz] / [l/h]	[Hz] / [l/h]
4	10	DMX 4-10	DN 8	29	2.2	4	1	5	400	10 / 0.8	100 / 8.0
7	10	DMX 7-10	DN 8	29	3.8	4	1	5	400	10 / 1.4	100 / 14
14	10	DMX 14-10	DN 8	63	3.8	4	1	5	400	10 / 2.8	100 / 28
16 ²	12	DMX 16-12	DN 8	120	2.2	4	1	5	200	15 / 4.8	60 / 19.2
27	10	DMX 27-10	DN 8	120	3.8	4	1	5	200	15 / 8.1	60 / 32
27 ²	12	DMX 27-12	DN 8	120	3.8	4	1	5	200	20 / 10.8	60 / 32
35	10	DMX 35-10	DN 8	120	4.9	3	1	4	100	20 / 14	60 / 42
50	10	DMX 50-10	DN 8	120	6.9	3	1	4	100	20 / 20	60 / 60
75	4	DMX 75-4	DN 20	120	10.4	1	0	2	10	20 / 30	60 / 90
115	3	DMX 115-3	DN 20	120	16	1	0	2	10	20 / 46	60 / 138

¹ VFD not included. Use a VFD for constant torque load. Do not run the pump below the min. or above the max. permissible frequency. Risk of damaging the pump and overheating the motor

² This is a pre-selected pump version. For details see separate data booklet of pre-selected range.

Performance data DMX 226M

Nominal dosing flow	Max. counterpressure	Pump type	Connection inlet/outlet	Stroke frequency at 50 Hz	Max. pump stroke volume	Max. suction lift	Max. suction lift with max. viscosity	Max. length of inlet line	Max. viscosity	VFD in combination with motor with PTC ¹	
										Min. frequency/capacity	Max. frequency/capacity
[l/h]	[bar]			[n/min]	[ml]	[m]	[m]	[m]	[mPas]	[Hz] / [l/h]	[Hz] / [l/h]
52	8	DMX 52-8	DN 20	63	13.8	3	1	4	700	10 / 10.4	100 / 104
00	8	DMX 100-8	DN 20	120	13.8	3	1	4	400	20 / 40	60 / 120
142	8	DMX 142-8	DN 20	168	13.8	3	0	4	200	20 / 56.8	50 / 142
224	5	DMX 224-5	DN 20	168	22	3	0	3	150	20 / 89.6	50 / 224
380	3	DMX 380-3	DN 20	168	36	2	0	3	50	20 / 152	50 / 380

¹ VFD not included. Use a VFD for constant torque load. Do not run the pump below the min. or above the max. permissible frequency. Risk of damaging the pump and overheating the motor

Performance data DMX 226L

Nominal dosing flow	Max. counterpressure	Pump type	Connection inlet/outlet	Stroke frequency at 50 Hz	Max. pump stroke volume	Max. suction lift	Max. suction lift with max. viscosity	Max. length of inlet line	Max. viscosity	VFD in combination with motor with PTC ¹	
										Min. frequency/capacity	Max. frequency/capacity
[l/h]	[bar]			[n/min]	[ml]	[m]	[m]	[m]	[mPas]	[Hz] / [l/h]	[Hz] / [l/h]
67	10	DMX 67-10	DN 20	57	18.5	3	1	4	700	10 / 13.4	100 / 134
132	10	DMX 132-10	DN 20	120	18.5	3	1	4	400	15 / 39.6	60 / 158
199	8	DMX 199-8	DN 20	120	27.8	3	0	3	200	15 / 59.7	60 / 239
280	8	DMX 280-8	DN 20	175	27.8	2	0	3	100	20 / 112	50 / 280
321	6	DMX 321-6	DN 20	120	44.6	0	0	3	100	15 / 96.3	60 / 385
460	6	DMX 460-6	DN 20	175	44.6	0	0	3	100	20 / 184	50 / 460
525	3	DMX 525-3	DN 32	120	73	1	0	2	50	15 / 157.5	60 / 630
765	3	DMX 765-3	DN 32	175	73	0	0	2	10	20 / 306	50 / 765

¹ VFD not included. Use a VFD for constant torque load. Do not run the pump below the min. or above the max. permissible frequency. Risk of damaging the pump and overheating the motor

Performance data DMX 227

Nominal dosing flow	Max. counterpressure	Pump type	Connection inlet/outlet	Stroke frequency at 50 Hz	Max. pump stroke volume	Max. suction lift	Max. suction lift with max. viscosity	Max. length of inlet line	Max. viscosity	VFD in combination with motor with PTC ¹	
										Min. frequency/capacity	Max. frequency/capacity
[l/h]	[bar]			[n/min]	[ml]	[m]	[m]	[m]	[mPas]	[Hz] / [l/h]	[Hz] / [l/h]
860	5	DMX 860-5	DN 65	56	256	3	0	3	800	10 / 172	100 / 1720
1120	5	DMX 1120-5	DN 65	73	256	3	0	3	400	10 / 224	100 / 2240
1520	3	DMX 1520-3	DN 65	56	457	3	0	2	400	10 / 304	100 / 3040
2000	3	DMX 2000-3	DN 65	73	457	3	0	2	200	10 / 400	100 / 4000

¹ VFD not included. Use a VFD for constant torque load. Do not run the pump below the min. or above the max. permissible frequency. Risk of damaging the pump and overheating the motor

DMX standard versions

The following tables show a selection of DMX pumps for typical applications. The listed DMX pumps are fitted with standard three-phase motor. For other configurations and capacities, please see the DMX non-standard range tables.

DMX 221 standard range

Nominal dosing flow [l/h]	Max. counterpressure [bar]	Material			Type designation	Product number
		Dosing head	Gaskets	Valve balls		
4	10	PVC	FKM	Ceramic	DMX 4-10 B-PVC/V/C-X-E1U2U2XEMNG	99591969
4	10	PVDF	PTFE	Ceramic	DMX 4-10 B-PV/T/C-X-E1U2U2XEMNG	99591985
4	10	Stainless steel	FKM	Stainless steel	DMX 4-10 B-SS/V/SS-X-E1AAXEMNG	99591986
7	10	PVC	FKM	Ceramic	DMX 7-10 B-PVC/V/C-X-E1U2U2XEMNG	99591987
7	10	PVDF	PTFE	Ceramic	DMX 7-10 B-PV/T/C-X-E1U2U2XEMNG	99591988
7	10	Stainless steel	FKM	Stainless steel	DMX 7-10 B-SS/V/SS-X-E1AAXEMNG	99591989
14	10	PVC	FKM	Ceramic	DMX 14-10 B-PVC/V/C-X-E1U2U2XEMNG	99591991
14	10	PVDF	PTFE	Ceramic	DMX 14-10 B-PV/T/C-X-E1U2U2XEMNG	99592003
14	10	Stainless steel	FKM	Stainless steel	DMX 14-10 B-SS/V/SS-X-E1AAXEMNG	99592004
16	12	PVC	FKM	Ceramic	DMX 16-12 B-PVC/V/C-X-E1U2U2XEMNG	99205916 ¹
27	10	PVDF	PTFE	Ceramic	DMX 27-10 B-PV/T/C-X-E1U2U2XEMNG	99592005
27	10	Stainless steel	FKM	Stainless steel	DMX 27-10 B-SS/V/SS-X-E1AAXEMNG	99592006
27	12	PVC	FKM	Ceramic	DMX 27-12 B-PVC/V/C-X-E1U2U2XEMNG	99205993 ¹
35	10	PVC	FKM	Ceramic	DMX 35-10 B-PVC/V/C-X-E1U2U2XEMNG	99592007
35	10	PVDF	PTFE	Ceramic	DMX 35-10 B-PV/T/C-X-E1U2U2XEMNG	99592009
35	10	Stainless steel	FKM	Stainless steel	DMX 35-10 B-SS/V/SS-X-E1AAXEMNG	99592010
50	10	PVC	FKM	Ceramic	DMX 50-10 B-PVC/V/C-X-E1U2U2XEMNG	99205998 ¹
50	10	PVDF	PTFE	Ceramic	DMX 50-10 B-PV/T/C-X-E1U2U2XEMNG	99592012
50	10	Stainless steel	FKM	Stainless steel	DMX 50-10 B-SS/V/SS-X-E1AAXEMNG	99592023
75	4	PVC	FKM	Ceramic	DMX 75-4 B-PVC/V/C-X-E1U3U3XEMNG	99592024
75	4	PVDF	PTFE	Ceramic	DMX 75-4 B-PV/T/C-X-E1U3U3XEMNG	99592025
75	4	Stainless steel	FKM	Stainless steel	DMX 75-4 B-SS/V/SS-X-E1A1A1XEMNG	99592026
115	3	PVC	FKM	Ceramic	DMX 115-3 B-PVC/V/C-X-E1U3U3XEMNG	99206002 ¹
115	3	PVDF	PTFE	Ceramic	DMX 115-3 B-PV/T/C-X-E1U3U3XEMNG	99592027
115	3	Stainless steel	FKM	Stainless steel	DMX 115-3 B-SS/V/SS-X-E1A1A1XEMNG	99592028

¹ This is a pre-selected pump version. For details see separate data booklet of pre-selected range.

DMX 226M standard range

Nominal dosing flow [l/h]	Max. counterpressure [bar]	Material			Type designation	Product number
		Dosing head	Gaskets	Valve balls		
52	8	PVC	FKM	Ceramic	DMX 52-8 B-PVC/V/C-X-E1U3U3XEMAG	99592029
52	8	PVDF	PTFE	Ceramic	DMX 52-8 B-PV/T/C-X-E1U3U3XEMAG	99592030
52	8	Stainless steel	FKM	Stainless steel	DMX 52-8 B-SS/V/SS-X-E1A1A1XEMAG	99592031
100	8	PVC	FKM	Ceramic	DMX 100-8 B-PVC/V/C-X-E1U3U3XEMAG	99592033
100	8	PVDF	PTFE	Ceramic	DMX 100-8 B-PV/T/C-X-E1U3U3XEMAG	99592035
100	8	Stainless steel	FKM	Stainless steel	DMX 100-8 B-SS/V/SS-X-E1A1A1XEMAG	99592036
142	8	PVC	FKM	Ceramic	DMX 142-8 B-PVC/V/C-X-E1U3U3XEMAG	99592037
142	8	PVDF	PTFE	Ceramic	DMX 142-8 B-PV/T/C-X-E1U3U3XEMAG	99592038
142	8	Stainless steel	FKM	Stainless steel	DMX 142-8 B-SS/V/SS-X-E1A1A1XEMAG	99592039
224	5	PVC	FKM	Ceramic	DMX 224-5 B-PVC/V/C-X-E1U3U3XEMAG	99592040
224	5	PVDF	PTFE	Ceramic	DMX 224-5 B-PV/T/C-X-E1U3U3XEMAG	99592041

Nominal dosing flow [l/h]	Max. counterpressure [bar]	Material			Type designation	Product number
		Dosing head	Gaskets	Valve balls		
224	5	Stainless steel	FKM	Stainless steel	DMX 224-5 B-SS/V/SS-X-E1A1A1XEMAG	99592042
380	3	PVC	FKM	Ceramic	DMX 380-3 B-PVC/V/C-X-E1U3U3XEMAG	99592043
380	3	PVDF	PTFE	Ceramic	DMX 380-3 B-PV/T/C-X-E1U3U3XEMAG	99592044
380	3	Stainless steel	FKM	Stainless steel	DMX 380-3 B-SS/V/SS-X-E1A1A1XEMAG	99592045

DMX 226L standard range

Nominal dosing flow [l/h]	Max. counterpressure [bar]	Material			Type designation	Product number
		Dosing head	Gaskets	Valve balls		
67	10	PVC	FKM	Ceramic	DMX 67-10 B-PVC/V/C-X-E1U3U3XEMAG	99592046
67	10	PVDF	PTFE	Ceramic	DMX 67-10 B-PV/T/C-X-E1U3U3XEMAG	99592048
67	10	Stainless steel	FKM	Stainless steel	DMX 67-10 B-SS/V/SS-X-E1A1A1XEMAG	99592049
132	10	PVC	FKM	Ceramic	DMX 132-10 B-PVC/V/C-X-E1U3U3XEMAG	99206011 ¹
132	10	PVDF	PTFE	Ceramic	DMX 132-10 B-PV/T/C-X-E1U3U3XEMAG	99592050
132	10	Stainless steel	FKM	Stainless steel	DMX 132-10 B-SS/V/SS-X-E1A1A1XEMAG	99592052
199	8	PVC	FKM	Ceramic	DMX 199-8 B-PVC/V/C-X-E1U3U3XEMAG	99206034 ¹
199	8	PVDF	PTFE	Ceramic	DMX 199-8 B-PV/T/C-X-E1U3U3XEMAG	99592063
199	8	Stainless steel	FKM	Stainless steel	DMX 199-8 B-SS/V/SS-X-E1A1A1XEMAG	99592064
280	8	PVC	FKM	Ceramic	DMX 280-8 B-PVC/V/C-X-E1U3U3XEMAG	99206036 ¹
280	8	PVDF	PTFE	Ceramic	DMX 280-8 B-PV/T/C-X-E1U3U3XEMAG	99592065
280	8	Stainless steel	FKM	Stainless steel	DMX 280-8 B-SS/V/SS-X-E1A1A1XEMAG	99592067
321	6	PVC	FKM	Ceramic	DMX 321-6 B-PVC/V/C-X-E1U3U3XEMAG	99206038 ¹
321	6	PVDF	PTFE	Ceramic	DMX 321-6 B-PV/T/C-X-E1U3U3XEMAG	99592068
321	6	Stainless steel	FKM	Stainless steel	DMX 321-6 B-SS/V/SS-X-E1A1A1XEMAG	99592069
460	6	PVC	FKM	Ceramic	DMX 460-6 B-PVC/V/C-X-E1U3U3XEMAG	99206040 ¹
460	6	PVDF	PTFE	Ceramic	DMX 460-6 B-PV/T/C-X-E1U3U3XEMAG	99592070
460	6	Stainless steel	FKM	Stainless steel	DMX 460-6 B-SS/V/SS-X-E1A1A1XEMAG	99592071
525	3	PVC	FKM	Glass	DMX 525-3 B-PVC/V/G-X-E1KKXEMAG	99206043 ¹
525	3	PVDF	PTFE	PTFE	DMX 525-3 B-PV/T/T-X-E1B5B5XEMAG	99592073
525	3	Stainless steel	FKM	Stainless steel	DMX 525-3 B-SS/V/SS-X-E1A2A2XEMAG	99592074
765	3	PVC	FKM	Glass	DMX 765-3 B-PVC/V/G-X-E1KKXEMAG	99206045 ¹
765	3	PVDF	PTFE	PTFE	DMX 765-3 B-PV/T/T-X-E1B5B5XEMAG	99592076
765	3	Stainless steel	FKM	Stainless steel	DMX 765-3 B-SS/V/SS-X-E1A2A2XEMAG	99592077

¹ This is a pre-selected pump version. For details see separate data booklet of pre-selected range.

DMX 227 standard range

Nominal dosing flow [l/h]	Max. counterpressure [bar]	Material			Type designation	Product number
		Dosing head	Gaskets	Valve balls		
860	5	PVC	FKM	PVC	DMX 860-5 D-PVC/V/PVC-X-E2RRXE0AG	99592078
860	5	Stainless steel	FKM	Stainless steel	DMX 860-5 D-SS/V/SS-X-E2UUXE0AG	99592079
1120	5	PVC	FKM	PVC	DMX 1120-5 D-PVC/V/PVC-X-E2RRXE0AG	99592080
1120	5	Stainless steel	FKM	Stainless steel	DMX 1120-5 D-SS/V/SS-X-E2UUXE0AG	99592081
1520	3	PVC	FKM	PVC	DMX 1520-3 D-PVC/V/PVC-X-E2RRXE0AG	99592082
1520	3	Stainless steel	FKM	Stainless steel	DMX 1520-3 D-SS/V/SS-X-E2UUXE0AG	99592083
2000	3	PVC	FKM	PVC	DMX 2000-3 D-PVC/V/PVC-X-E2RRXE0AG	99592084
2000	3	Stainless steel	FKM	Stainless steel	DMX 2000-3 D-SS/V/SS-X-E2UUXE0AG	99592085

DMX non-standard range

DMX 221 non-standard range with valve size DN 8

Nominal dosing flow and max. pressure [l/h]-[bar]	Control variant	Materials			Terminal box position	Supply voltage	Valve type	Connection outlet/inlet	Mains plug	Motor variant	Pump housing	Pump design
		Dosing head	Gasket	Valve ball								
DMX 4-10 DMX 7-10 DMX 8-10 DMX 9-10 DMX 12-10 DMX 14-10 DMX 16-10 DMX 18-10 DMX 26-10 DMX 27-10 DMX 35-10 DMX 50-10	B D3	PP PPL	E	C	X	0 F E G H	1	U2U2	X F B	EM MP E0 K0	N	G N
				SS								
			T									
			V	C								
		PV PVL	T	C								
				T								
			PVC PVCL	E				C				
								SS				
		T		C								
				T								
		V	C									
			SS									
	SS SSL		E	SS								
			T									
		V										
	AR	PP PPL	E	C	D S R	G H	1	U2U2	F B	EM	N	G N
				SS								
			V	C								
			PV PVL	T								
		T										
		PVC PVCL		E				C				
								SS				
			T	C								
				T								
V		C										
		SS										
		SS SSL	E	SS								
	T											
V												

DMX 221 non-standard range with valve size DN 20

Nominal dosing flow and max. pressure [l/h]-[bar]	Control variant	Materials			Terminal box position	Supply voltage	Valve type	Connection outlet/inlet	Mains plug	Motor variant	Pump housing	Pump design	
		Dosing head	Gasket	Valve ball									
DMX 17-4 DMX 25-3 DMX 39-4 DMX 60-3 DMX 75-4 DMX 115-3	B D3	PP PPL	E	C SS T	X	0 F E G H	1	U3U3	X F B	EM MP E0 K0	N	G N	
			T	T									
			V	C									
		PV PVL	T	T									
		PVC PVCL	E	SS T									
			V	C SS									
	SS SSL		E	SS									
		T											
		V											
	AR	PP PPL	E	C SS T	X S D R	G H	1	U3U3	F B	EM	N	G N	
				T									T
				V									C
PV PVL			T	T									
PVC PVCL			E	SS T									
			V	C SS									
		SS SSL	E	SS									
T													
V													

DMX 226M non-standard range with valve size DN 20

Nominal dosing flow and max. pressure [l/h]-[bar]	Control variant	Materials			Terminal box position	Supply voltage	Valve type	Connection outlet/inlet	Mains plug	Motor variant	Pump housing	Pump design									
		Dosing head	Gasket	Valve ball																	
DMX 24-8 DMX 37-5 DMX 52-8 DMX 60-3 DMX 82-5 DMX 100-8 DMX 130-3 DMX 142-8 DMX 160-5 DMX 230-5 DMX 255-3 DMX 380-3	B D3	PP PPL	E	C SS T	X	0 F E G H	1	U3U3	X F B	EM MP E0 K0 E1 E2 K1 K2	A	G N									
			T	T																	
			V	C																	
		PV PVL	T	T																	
			PVC PVCL	E				SS T													
				V				C SS													
		SS SSL		E				SS													
			T																		
			V																		
		DMX 24-8 DMX 37-5 DMX 52-8 DMX 60-3 DMX 82-5 DMX 100-8 DMX 130-3 DMX 142-8 DMX 160-5 DMX 230-5 DMX 255-3 DMX 380-3	AR	PP PPL				E					C SS T	X S R	G H	1	U3U3	F B	EM	A	G N
								T					T								
								V					C								
PV PVL	T			T																	
	PVC PVCL			E	SS T																
				V	C SS																
SS SSL				E	SS																
	T																				
	V																				

DMX 226L non-standard with valve size DN 20

(ATEX variants on request)

Nominal dosing flow and max. pressure [l/h]-[bar]	Control variant	Materials			Terminal box position	Supply voltage	Valve type	Connection outlet/inlet	Mains plug	Motor variant	Pump housing	Pump design									
		Dosing head	Gasket	Valve ball																	
DMX 67-10 DMX 95-8 DMX 132-10 DMX 152-6 DMX 190-10 DMX 199-8 DMX 280-8 DMX 321-6 DMX 460-6	B D3	PP PPL	E	C SS T	X	0 F E G H	1	U3U3	X F B	EM MP E0 K0 E1 E2 K1 K2	A	G N									
			T	T				U3U3 A7A7													
			V	C																	
		PV PVL	T	T				U3U3 A7A7													
		PVC PVCL	E	SS T																	
			V	C SS																	
		SS SSL	E	SS				A1A1 A3A3													
			T																		
			V																		
		DMX 67-8 DMX 95-8 DMX 132-8 DMX 152-6 DMX 190-8 DMX 199-8 DMX 280-6 DMX 321-4 DMX 460-3	AR	PP PPL				E					C SS T	X S R	G H	1	U3U3 A7A7	F B	EM	A	G N
								T					T				U3U3 A7A7				
								V					C								
PV PVL	T			T	U3U3 A7A7																
PVC PVCL	E			SS T																	
	V			C SS																	
SS SSL	E			SS	A1A1 A3A3																
	T																				
	V																				

DMX 226L non-standard range with valve size DN 32

Nominal dosing flow and max. pressure [l/h]-[bar]	Control variant	Materials			Terminal box position	Supply voltage	Valve type	Connection outlet/inlet	Mains plug	Motor variant	Pump housing	Pump design
		Dosing head	Gasket	Valve ball								
DMX 249-3 DMX 315-3 DMX 525-3 DMX 765-3	B D3	PP PPL	E	SS T	X	0 F 4 E	1	B5B5	X F B	EM MP E0 E1 E2 K2		
			T	T			1	B5B5				
			V	G			1	B5B5				
		PVPVL	T	T			1	KK				
			PVC PVCL	E			SS T	1				
		V		SS G			1	A2A2				
		SS SSL	E	SS			1	A2A2				
			T	SS			1	A2A2				
DMX 249-3 DMX 315-3 DMX 525-3	AR	PP PPL	E	SS T	S	G H	1	B5B5	F B	EM	A	G N
			T	T			1	B5B5				
			V	G			1	KK				
		PV PVL	T	T			1	KK				
			PVC PVCL	E			SS T	1		A2A2		
		V		C			EM					
				G			EM					
				SS			EM					
		SS SSL	E	SS			1	A2A2				
			T				EM					
			V				EM					

DMX 227 non-standard range with valve size DN 65

Nominal dosing flow and max. pressure [l/h]-[bar]	Control variant	Materials			Terminal box position	Supply voltage	Valve type	Connection outlet/inlet	Mains plug	Motor variant	Pump housing	Pump design
		Dosing head	Gasket	Valve ball								
DMX 770-3 DMX 1120-5 DMX 1520-3 DMX 2000-3	D	PP PPL	V	PP	X	0 F E	2	TT ZZ	X	EM E0 MP	A	G N
			PVC PVCL	E	PVC			X				
		V		X				UU ZZ				
		SS SSL	V	SS	X							

7. Pump connection sizes by pump types

The following table gives an overview of the pump connection sizes for different pump types. The listed connection size reflects the connection size at the inlet and outlet valve of the dosing pump without any connection kits.

DMX

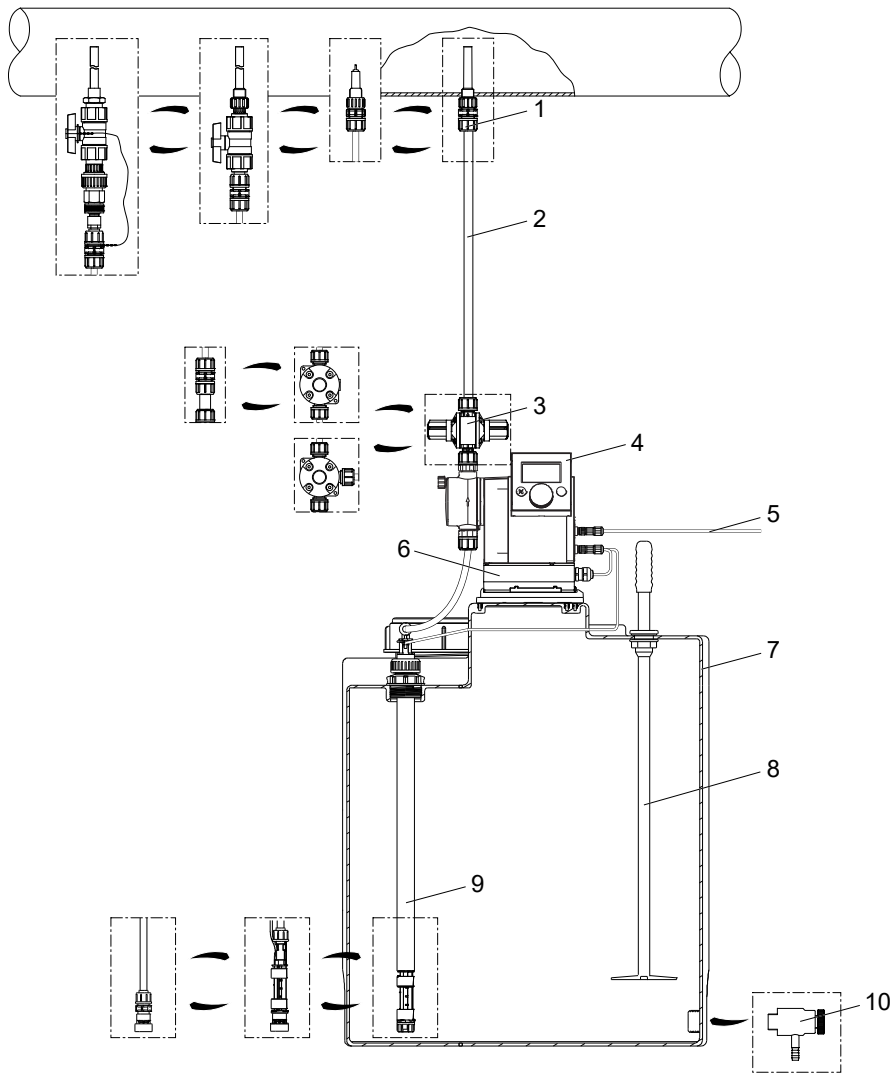
Product family	Model	Pump type	Connection size
DMX	221 (pre-selected)	DMX 16-12	
		DMX 27-12	G 5/8
		DMX 50-10	
		DMX 115-3	G 5/4
DMX	221	DMX 4-10	
		DMX 7-10	
		DMX 8-10	
		DMX 9-10	G 5/8
		DMX 12-10	
		DMX 14-10	
		DMX 16-10	
		DMX 17-4	G 5/4
		DMX 18-10	G 5/8
		DMX 25-3	G 5/4
		DMX 26-10	
		DMX 27-10	G 5/8
		DMX 35-10	
		DMX 39-4	G 5/4
		DMX 50-10	G 5/8
		DMX 60-3	
		DMX 75-4	G 5/4
DMX 115-3			
DMX	226 (pre-selected)	DMX 132-10	
		DMX 199-8	
		DMX 280-8	G 5/4
		DMX 321-6	
		DMX 460-6	
		DMX 525-3	G 2
		DMX 765-3	

Product family	Model	Pump type	Connection size	
DMX	226	DMX 24-8	G 5/4	
		DMX 37-5		
		DMX 52-8		
		DMX 60-3		
		DMX 67-10		
		DMX 82-5		
		DMX 95-8		
		DMX 100-8		
		DMX 130-3		
		DMX 132-10		
		DMX 142-8		
		DMX 152-6		
		DMX 160-5		
		DMX 190-10		
		DMX 199-8		
		DMX 230-5		
		DMX 249-3		G 2
		DMX 255-3		G 5/4
		DMX 280-8		G 2
		DMX 315-3		G 5/4
DMX 321-6	G 2			
DMX 380-3				
DMX 460-6	G 2			
DMX 525-3				
DMX 765-3				
DMX	227	DMX x-x	Flange DN 65. See accessories for DMX 227.	

8. Hydraulic accessories for pump connection size G 5/8

Overview of accessories for pump connection size G 5/8

Grundfos offer a comprehensive range of accessories covering every need when dosing with Grundfos pumps.



TM070284

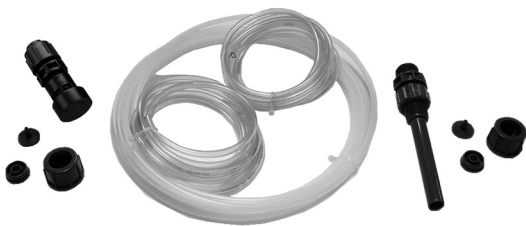
Pos.	Description	See section
1	Injection units	Injection units
2	Hoses	Hoses for pump connection size G 5/8
3	Multi-function valve, pressure loading valves, pressure relief valves, pressure valves	Multi-function valves MFV Pressure relief valves PRV Pressure loading valves PLV Pressure valves PVD Description of pressure valves
4	Example: SMART Digital S dosing pump	
5	Cables	Cables and plugs for pump connection size G 5/8 Technical data and order numbers for cables and plugs for pump connection size G 5/8
6	E-Box	E-Box for SMART Digital S DDA General description of the E-Box (Extension Box) for SMART Digital S DDA dosing pumps.
7	Dosing tanks	Square tank Drawings, dimensions, product numbers and technical data of square tank for dosing medium Cylindrical tanks
8	Handheld mixer	Tank accessories

Pos.	Description	See section
9	Rigid suction lances and foot valves	Order data for rigid suction lances RSL with connection size G 5/8 Order data for foot valves FV with connection size G 5/8
10	Drain valve	Tank accessories
-	Installation kits	Installation kits for pump connection size G 5/8
-	Accessories for hydraulic connection	Pump connection kits and inlay kits for pump connection size G 5/8 Threaded adapters G 5/8 Threaded adapters G 3/8 Adapters G 5/8 T-piece adapters G 5/8

Installation kits for pump connection size G 5/8

The delivery includes:

- Injection unit with spring-loaded non-return valve
- PE outlet hose, 6 m
- PVC inlet hose, 2 m
- PVC deaeration hose, 2 m
- PE foot valve with strainer and weight, without or with level indication



Installation kit with foot valve without level indication



Installation kit with foot valve with level indication

TM048469

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Max. pressure [bar]	Size		Material of injection unit			Product number	
		Inlet / outlet hose [mm]	Deaeration hose [mm]	Body	Gasket	Ball	Foot valve without level indication	Foot valve with level indication
7.5	13	4/6	4/6	PP	FKM	Ceramic	95730440	95730464
					EPDM	Ceramic	95730441	95730465
7.5	13	4/6	4/6	PVC	FKM	Ceramic	95730442	95730466
					EPDM	Ceramic	95730443	95730467
					PTFE	Ceramic	95730444	95730468
7.5	13	4/6	4/6	PVDF	FKM	Ceramic	95730445	95730469
					EPDM	Ceramic	95730446	95730470
					PTFE	Ceramic	95730447	95730471
30	12	6/9	4/6	PP	FKM	Ceramic	95730448	95730472
					EPDM	Ceramic	95730449	95730473
30	12	6/9	4/6	PVC	FKM	Ceramic	95730450	95730474
					EPDM	Ceramic	95730451	95730475
					PTFE	Ceramic	95730452	95730476
30	12	6/9	4/6	PVDF	FKM	Ceramic	95730453	95730477
					EPDM	Ceramic	95730454	95730478
					PTFE	Ceramic	95730455	95730479
60	9	9/12	4/6	PP	FKM	Ceramic	95730456	95730480
					EPDM	Ceramic	95730457	95730481
60	9	9/12	4/6	PVC	FKM	Ceramic	95730458	95730482
					EPDM	Ceramic	95730459	95730483
					PTFE	Ceramic	95730460	95730484
60	9	9/12	4/6	PVDF	FKM	Ceramic	95730461	95730485
					EPDM	Ceramic	95730462	95730486
					PTFE	Ceramic	95730463	95730487

Hoses for pump connection size G 5/8

Hoses in various materials, sizes and lengths for dosing pumps.

Pump connection size: G 5/8



Hoses

TMO18958

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Size (internal/external diameter) [mm]	Material	Max. pressure at 20 °C [bar]	Length [m]	Product number				
7.5	4/6	PE	13	3	91835676				
				10	91836504				
				50	91835680				
		7.5	4/6	PVC	0.5	3	96701733		
						10	96702133		
						50	96727418		
				7.5	4/6	PTFE	20	3	95730337
								10	95730338
								50	95730339
17	5/8	PE	13	3	95730888				
				10	96727393				
				50	95730889				
		17	5/8	PE	12	3	96727409		
						10	96727412		
						50	96727415		
				30	6/9	PVC	0.5	3	95730334
								10	95730335
								50	95730336
30	6/9	ETFE	20			3	95730340		
						10	95730341		
						50	95730342		
30	6/12	PVC, textile-reinforced	23	3	96693751				
				10	96653571				
				50	91835686				
		60	9/12	PE	9	3	96727395		
						10	96705657		
						50	96727398		
				60	9/12	PVC	0.5	3	96727434
								10	95730890
								50	95724702
60	9/12	ETFE	13	3	95730343				
				10	95730344				
				50	95730345				

Foot valves FV

Foot valves FV are installed at the lower end of the inlet hose.

Foot valves are suitable for the following applications:

- Extraction of chemicals from unpressurised containers.
- Monitoring of the liquid level in a chemical container (versions with two-step level indication).



Foot valves, connection size G 5/8 without level indication (left), with level indication (right)



Foot valve, connection size G 5/4

Order data for foot valves FV with connection size G 5/8

Foot valves are available either without level indication or with low-level and empty-tank indication.

The delivery includes:

- Weight
- Strainer (mesh size approx. 0.8 mm)
- Non-return valve
- Hose connection set: 4/6 mm, 6/9 mm, 6/12 mm and 9/12 mm
- Pipe connection set: threaded, Rp 1/4, internal thread (stainless steel).

Foot valves with low-level and empty-tank indication include additionally:

- Reed-switch unit with 2 floaters
- 5 metres of cable with PE jacket
- M 12 plug to connect a DDA, DDC, DDE or DDI dosing pump.
- PE cap, \varnothing 58 mm, for assembly in Grundfos cylindrical tanks, or for use with tank adapters.

The contact type of the low-level and empty-tank indication is factory-set to NO. The contact type can be set to NC by turning the floaters upside down.

Electrical data of the level indication:

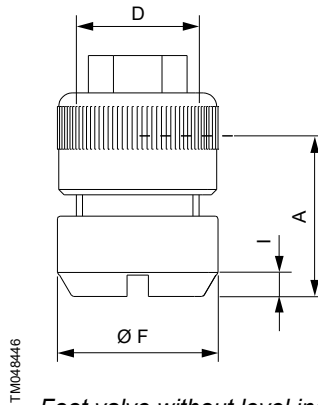
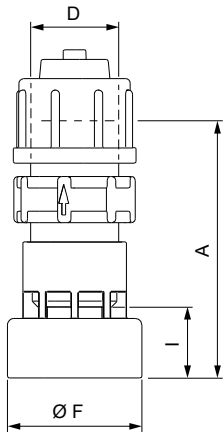
- Max. voltage: 48 V
- Max. current: 0.5 A

TM068476

TM068427

- Max. load: 10 VA

Dimensions



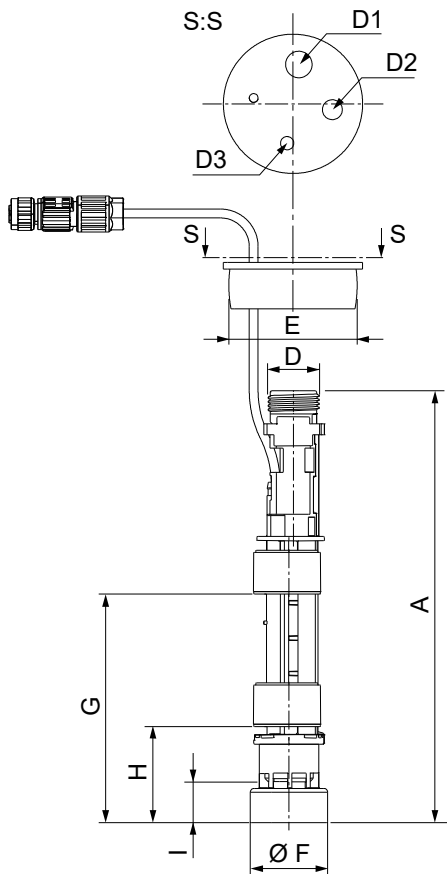
TM048446

TM048464

Foot valve without level indication (stainless-steel version)

Foot valve without level indication, PE / PVDF

Body material	A [mm]	D	øF [mm]	I [mm]
PE / PVDF	67.5	G 5/8	35	19
Stainless steel	30	G 5/8	30	4



TM048447

Foot valve with level indication

A [mm]	D	D1 / D2 / D3 [mm]	E [mm]	øF [mm]	G [mm]	H [mm]	I [mm]
196	G 5/8	12 / 9 / 6	58	35	103.5	43.5	19

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Material			Product number	
	Body	Gasket	Ball	FV without level indication	FV with level indication
60	PE	FKM, EPDM	Ceramic	98070951	98070966
		PTFE	Ceramic	98070952	98070967
	PVDF	FKM, EPDM	Ceramic	98070953	98070968
		PTFE	Ceramic	98070954	98070969
	Stainless steel	PTFE	Stainless steel	98070963	-

Rigid suction lances RSL

Grundfos offer a comprehensive range of rigid suction lances for a variety of chemical containers.

Rigid suction lances RSL are suitable for the following applications:

- Extraction of chemicals from unpressurised containers.
- Monitoring of liquid level in the chemical container (versions with two-step level indication).

Rigid suction lances are installed at the lower end of the inlet hose. They are available either without level indication or with low-level and empty-tank indication. Their immersion depth is adjustable.



Rigid suction lance, connection size G 5/8

TM046458



Rigid suction lance, connection size G 5/4

TM068423

Order data for rigid suction lances RSL with connection size G 5/8

The delivery includes:

- Strainer (mesh size approx. 0.8 mm)
- Non-return valve
- Hose connection set: 4/6 mm, 6/9 mm, 6/12 mm and 9/12 mm
- Adjustable tank connection with holes for e.g. relief line.

Rigid suction lances RSL with low-level and empty-tank indication include additionally:

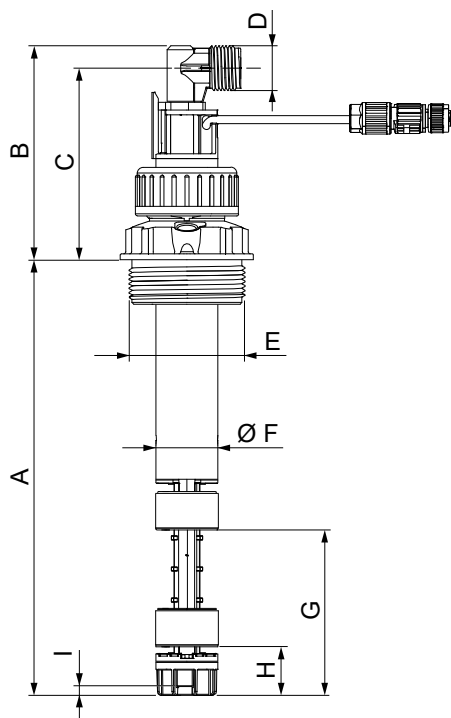
- Reed-switch unit with 2 floaters
- 5 metres of cable with PE jacket
- M 12 plug to connect DDA, DDC, DDE or DDI dosing pump.

The contact type of the low-level and empty-tank indication is factory-set to NO. The contact type can be set to NC by turning the floaters upside down.

Electrical data of the level indication:

- Max. voltage: 48 V
- Max. current: 0.5 A
- Max. load: 10 VA

Dimensions



TM048445

Rigid suction lance with / without level indication

A [mm]	B [mm]	C [mm]	D	E	øF [mm]	G [mm]	H [mm]	I [mm]
400-1200	110	99	G 5/8	G 2	32	85	25	4.5

Selection

For container type	Tank volume [l]	Recommended immersion depth (L) [mm]
Grundfos cylindrical tank	40	400
	60	500
	100	690
	200	690
	300	980
	500	1100
Grundfos square tank	100	690
	120	820
L-ring drum	220	980
	216	980
Steel drum	12, 33 (large cap)	400
	25, 30, 33	500
	60	690
IBC	all sizes	1200

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Minimum immersion depth for all sizes: approx. 140 mm

Max. flow rate [l/h]	Max. immersion depth [mm]	Material			Product number	
		Body	Gasket	Ball	RSL without level indication	RSL with level indication
60	400	PE	FKM, EPDM	Ceramic	98070978	98071074
			PTFE	Ceramic	98070979	98071075
		PVDF	FKM, EPDM	Ceramic	98070980	98071076
			PTFE	Ceramic	98070981	98071077
	500	PE	FKM, EPDM	Ceramic	98070990	98071086
			PTFE	Ceramic	98070991	98071087
		PVDF	FKM, EPDM	Ceramic	98070992	98071088
			PTFE	Ceramic	98070993	98071089
	570	PE	FKM, EPDM	Ceramic	98071002	98071098
			PTFE	Ceramic	98071003	98071099
		PVDF	FKM, EPDM	Ceramic	98071004	98071100
			PTFE	Ceramic	98071005	98071101
690	PE	FKM, EPDM	Ceramic	98071014	98071110	
		PTFE	Ceramic	98071015	98071111	
	PVDF	FKM, EPDM	Ceramic	98071016	98071112	
		PTFE	Ceramic	98071017	98071113	
820	PE	FKM, EPDM	Ceramic	98071026	98071122	
		PTFE	Ceramic	98071027	98071123	
	PVDF	FKM, EPDM	Ceramic	98071028	98071124	
		PTFE	Ceramic	98071029	98071125	
980	PE	FKM, EPDM	Ceramic	98071038	98071134	
		PTFE	Ceramic	98071039	98071135	
	PVDF	FKM, EPDM	Ceramic	98071040	98071136	
		PTFE	Ceramic	98071041	98071137	
1100	PE	FKM, EPDM	Ceramic	98071050	98071146	
		PTFE	Ceramic	98071051	98071147	
	PVDF	FKM, EPDM	Ceramic	98071052	98071148	
		PTFE	Ceramic	98071053	98071149	
1200	PE	FKM, EPDM	Ceramic	98071062	98071158	
		PTFE	Ceramic	98071063	98071159	
	PVDF	FKM, EPDM	Ceramic	98071064	98071160	
		PTFE	Ceramic	98071065	98071161	

Accessories for rigid suction lances RSL and foot valves FV

Adapters for container connection

These adapters allow the installation of standard rigid suction lances RSL (G 2 thread) and foot valves FV with level indication (PE cap) on different types of containers.


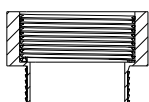
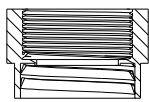
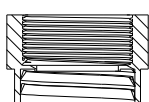

These adapters allow the installation of standard rigid suction lances (G 2 thread) on different types of containers.



TMO48506

Adapters for containers

Order data

Type	For container type	Material	Product number
	TMO48470 Counter nut for tanks without threaded opening, e.g. 100-litre square tank or 1000-litre cylindrical tank	PVC, grey	98071170
	Containers with 2 NPT threaded opening	PVC, grey	98156690
	TMO48471 Drums with S 70 x 6 coarse thread (MAUSER 2")	PE, blue	98071171
	Drums with S 56 x 4 coarse thread (TriSure®)	PE, orange	98071172
	TMO48473 Jerricans with small opening (approx. $\varnothing 36$), according to EN 12713	PE, green	98071173
	Jerricans with medium-sized opening (approx. $\varnothing 45$), according to EN 12713	PE, yellow	98071174
	TMO48473 Jerricans with large opening (approx. $\varnothing 57$), according to EN 12713	PE, brown	98071175
	US containers with bung hole of 63 mm (ASTM International)	PE, white	98071176
	TMO48472 IBC (Intermediate Bulk Container) with opening of $\varnothing 150$ mm, S 160 x 7	PE, black	98071177

Emission protection kits for rigid suction lances RSL

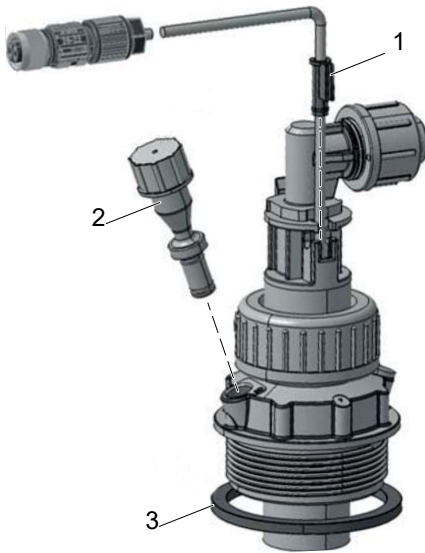
Gas emitted by liquid in a container can cause bad odour and corrosion. Emission protection kits help avoid such problems. Rigid suction lances can be retrofitted with emission protection kits.

Two variants are available:

- Emission protection kit with snifting valve: no gas can escape from the container, but air can be drawn in.
- Emission protection kit for use with filter: gas can escape from the container and air can be drawn in. The kit can be connected to a filter by means of a 4/6 mm hose.

The delivery includes:

- Gasket for the tank adapter
- Snifting valve or hose nipple 4/6 mm (hose is not included)
- Gasket for the cable outlet.



TM069088

Emission protection kit

Pos.	Description
1	Gasket for the cable outlet
2	Air valve
3	Gasket for the tank adapter

Order data

Variant	Product number
Emission protection kit with snifting valve	98071178
Emission protection kit for use with filter	98071179

Flat-plug adapter for DMX and DMH with AR control unit

The flat-plug adapter allows to connect rigid suction lances or foot valves with level indication to pumps with a level input designed for flat plugs (e.g. DMX and DMH with AR control unit).



TM070206

Flat-plug adapter for DMX and DMH with AR control unit

Order data

Description	Product number
Flat-plug adapter for DMX and DMH with AR control unit	96635010

Injection units**Standard injection units**

Injection units connect the dosing line with the process line. They ensure a minimum counterpressure and avoid backflow of the dosing medium.



TM069428

Standard injection unit

Injection units with ball valve

Injection units with ball valve are used for applications where the injection point must be closable. The ball valve is placed between the injection pipe and the spring-loaded non-return valve.

- The dosing line can be completely disconnected from the process.
- The non-return valve can be disassembled and cleaned without stopping the process and emptying the process line.



TM068429

Injection unit with ball valve

Injection units with lip valve

Injection units with lip valve are typically used for adding sodium hypochlorite solution to water with a high carbonate content. The FKM lip prevents crystallisation and blocking caused by alkali carbonate reactions at the point of injection.

Injection units with removable injection pipe

Injection units with removable injection pipe are used where regular cleaning of the injection pipe is required.

- The injection pipe can be removed from the process line without stopping the process water flow.
- The injection point can be closed with the integrated ball valve.
- The immersion depth of the injection pipe can be adjusted.

Hot-injection units with ball valve

Hot-injection units with ball valve can be used for direct injection of the dosing medium into processes with a high process water temperature of up to 120 °C.

- Hot-injection units have a stainless-steel injection pipe and a bendable stainless-steel cooling pipe of 1 metre.
- The stainless-steel ball valve is installed between the injection pipe and the cooling pipe.
- The cooling pipe separates the hot parts from the non-return valve and the dosing line.

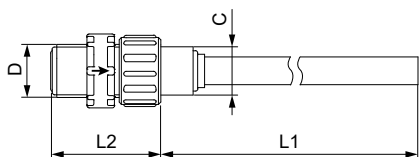
Order data for injection units for pump connection size G 5/8

Injection units for small dosing pumps with G 5/8 connections ensure a minimum counterpressure of 0.7 bar.

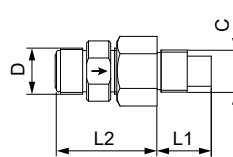
The delivery includes:

- Injection pipe
 - PP, PVC and PVDF versions can be shortened
- Spring-loaded non-return valve with Tantalum spring
- Hose connection set (PP, PVC, PVDF): 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm
- Pipe connection set (Stainless steel): threaded, Rp 1/4, internal thread

Dimensions of standard injection units



Body material: PP, PVC, PVDF



TM068445

TM068446

Body material: Stainless steel

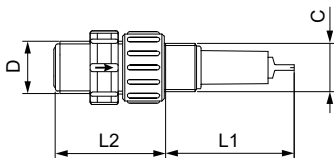
Material	A	L1 [mm]	L2 [mm]
PVC	G 1/2	100 / 300	47
PP, PVDF	G 1/2	100	47
Stainless steel	G 1/2	27	50

Order data for standard injection units

- Max. flow rate: 60 l/h
- The flow rate values apply to liquids with a viscosity similar to water.

Max. pressure [bar]	L1 [mm]	Material			Product number
		Body	Gasket	Ball	
16	100	PVC	FKM	Ceramic	95730912
			EPDM	Ceramic	95730916
			PTFE	Ceramic	95730920
		PP	FKM	Ceramic	95730904
			EPDM	Ceramic	95730908
			FKM	Ceramic	95730924
		PVDF	EPDM	Ceramic	95730928
			PTFE	Ceramic	95730932
			FKM	Ceramic	95730940
16	300	PVC	EPDM	Ceramic	95730944
			PTFE	Ceramic	95730948
			100	27	Stainless steel

Dimensions of injection units with lip valve



TM069847

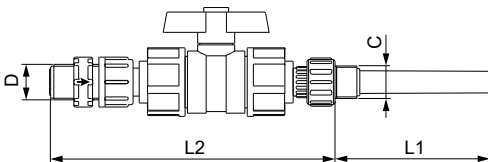
A	L1 [mm]	L2 [mm]
G 1/2	55	59

Order data for injection units with lip valve

- Max. flow rate: 60 l/h
- Max. pressure: 16 bar
- The flow rate values apply to liquids with a viscosity similar to water.

Material			Product number
Body	Gasket	Ball	
PVC	FKM	Ceramic	95730964

Dimensions of injection units with ball valve



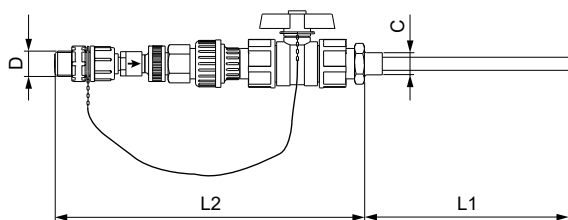
TM069848

Material	A	L1 [mm]	L2 [mm]
PVC	G 1/2	100	183
Stainless steel	G 1/2	27	138

Order data for injection units with ball valve

- Max. flow rate: 60 l/h
- The flow rate values apply to liquids with a viscosity similar to water.

Max. pressure [bar]	Material			Product number
	Body	Gasket	Ball	
16	PVC	FKM	Ceramic	95730952
		EPDM	Ceramic	95730956
64	Stainless steel	PTFE	Stainless steel	95730960

Dimensions of injection units with removable injection pipe

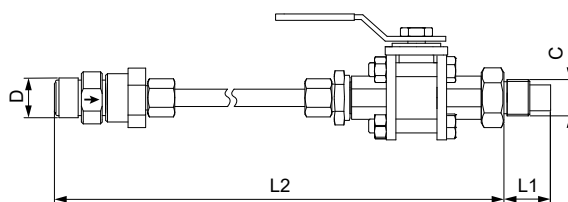
TM069849

A	L1 [mm]	L2 [mm]
G 1/2	185	280

Order data for injection units with removable injection pipe

- Max. flow rate: 60 l/h
- Max. pressure: 10 bar
- The flow rate values apply to liquids with a viscosity similar to water.

Material	Product number		
	Body	Gasket	Ball
PVC	FKM	Ceramic	95730968
	EPDM	Ceramic	95730972

Dimensions of hot-injection units with ball valve

TM069850

A	L1 [mm]	L2 [mm]
G 1/2	27	1158

Order data for hot-injection units with ball valve

- Max. flow rate: 60 l/h
- Maximum process water temperature: 120 °C
- The flow rate values apply to liquids with a viscosity similar to water.

Max. pressure [bar]	Material			Product number
	Body	Gasket	Ball	
16	PVDF	PTFE	Ceramic	95730976
64	Stainless steel	PTFE	Stainless steel	95730980

Multi-function valves, pressure relief valves, pressure loading valves

Multi-function valves MFV

Multi-function valves MFV combine the functions of pressure relief valves PRV and pressure loading valves PLV.

- Pressure relief valves PRV protect the pump and the outlet-side installations against excessive pressure.
- Pressure loading valves PLV maintain a certain counterpressure for the dosing pump.

In addition, multi-function valves allow deaeration of the pump and emptying of the outlet line for maintenance.

A multi-function valve is mounted directly on the pump outlet side. The top connection is for the outlet line, the side connection leads the relief liquid back into the tank.

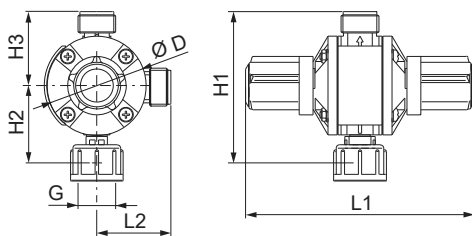


Multi-function valve MFV

Order data for multi-function valves MFV

- Loading pressure:
 - factory-set to 3 bar approximately
 - adjustable from 1 to 4 bar
- Relief pressure:
 - factory-set to 10 bar or 16 bar approximately
 - adjustable from 7 to 16 bar
- Max. operating pressure: 16 bar
- Max. flow rate: 60 l/h
 - The flow rate values apply to liquids with a viscosity similar to water.
- Body material: PVDF
- Connection size: 5/8
- Hose connection set: 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm

Dimensions



Multi-function valve MFV

L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	ø D [mm]	G
139	45	92	47	45	60	G 5/8

TM041224

TM069769

Order data

Material			Product number	
Connections	Gaskets	Diaphragm	Relief pressure: 10 bar	Relief pressure: 16 bar
PP	FKM	PTFE	95704585	95730821
	EPDM	PTFE	95704591	95730822
PVC	FKM	PTFE	95730807	95730823
	EPDM	PTFE	95730808	95730824
	PTFE	PTFE	95730809	95730825
PVDF	FKM	PTFE	95730810	95730826
	EPDM	PTFE	95730811	95730827
	PTFE	PTFE	95730812	95730828

Pressure relief valves PRV

Pressure relief valves PRV protect the pump and the outlet-side installations against excessive pressure. All pressurised dosing installations should include a pressure relief valve.



Pressure relief valve PRV, G 5/8

TM068784



Pressure relief valve PRV, G 5/4

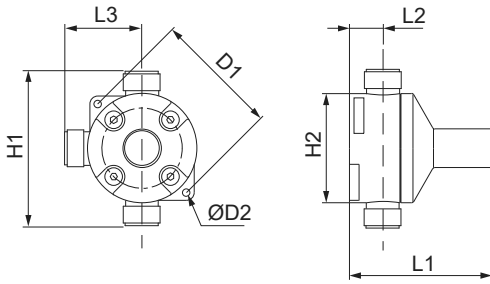
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Order data for pressure relief valves PRV for pump connection size G 5/8

Pressure relief valves PRV for small dosing pumps with G 5/8 connections are installed in the outlet line near the pump using the 2 in-line connections. The side connection leads the relief liquid back into the tank.

- Relief pressure:
 - factory-set to 10 bar approximately, adjustable from 5 to 10 bar
 - factory-set to 16 bar approximately, adjustable from 7 to 16 bar
- Max. operating pressure: 16 bar
- Max. flow rate: 60 l/h
 - The flow rate values apply to liquids with a viscosity similar to water.
- Hose connection set: 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm
- Pipe connection set (Stainless steel): threaded, Rp 1/4, internal thread
- Diaphragm: PTFE-coated

Dimensions



Pressure relief valve PRV

Material	L1 [mm]	L2 [mm]	L3 [mm]	H1 [mm]	H2 [mm]	D1 [mm]	ø D2 [mm]
PP / PVC / PVDF	82	21	48	96	68	78	4.5
Stainless steel	82	22	20	40	68	-	-

Order data

Material		Product number		
Diaphragm	Body / Connections	Gaskets	Relief pressure: 10 bar	Relief pressure: 16 bar
PTFE	PP	FKM / EPDM	95730757	95730773
		FKM / EPDM	95730758	95730774
	PVC	PTFE	95730759	95730775
		FKM / EPDM	95730760	95730776
	PVDF	PTFE	95730761	95730777
		Stainless steel	-	95730771

TM069786

Pressure loading valves PLV

Pressure loading valves PLV maintain a constant counterpressure for the dosing pump. They are used in the following applications:

- Too low counterpressure or no counterpressure at all
- Fluctuating system pressure with outlet-side pulsation damper
- To prevent syphoning, when the inlet pressure is higher than the counterpressure

Pressure loading valves are installed in the outlet line.

Pressure loading valves should not be used as shut-off valves.



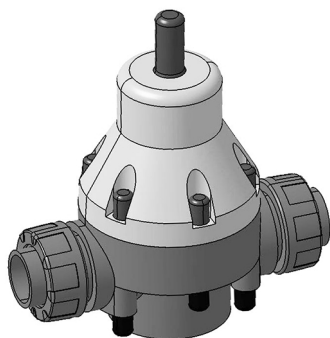
Pressure loading valves PLV, G 5/8

TM069765



Pressure loading valve PLV, G 5/4

TM068422



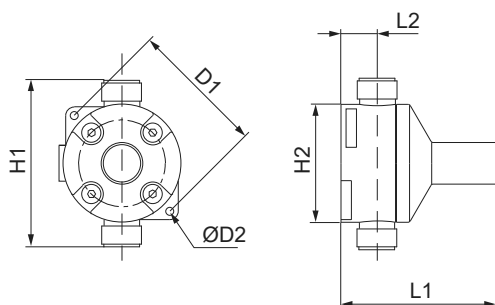
Pressure loading valve PLV, G 2

TM070220

Order data for pressure loading valves PLV for pump connection size G 5/8

- Loading pressure:
 - factory-set to 3 bar approximately
 - adjustable from 1 to 5 bar
- Max. operating pressure: 16 bar
- Max. flow rate: 60 l/h
 - The flow rate values apply to liquids with a viscosity similar to water.
- Hose connection set: 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm
- Pipe connection set (Stainless steel): threaded, Rp 1/4, internal thread
- Diaphragm: PTFE-coated

Dimensions



Pressure loading valve PLV

Material	L1 [mm]	L2 [mm]	H1 [mm]	H2 [mm]	D1 [mm]	ø D2 [mm]
PP / PVC / PVDF	82	21	96	68	78	4.5
Stainless steel	82	22	40	68	-	-

Order data

Material			Product number
Diaphragm	Body and connections	Gaskets	
PTFE	PP	FKM / EPDM	95730741
	PVC	FKM / EPDM	95730742
		PTFE	95730743
	PVDF	FKM / EPDM	95730744
		PTFE	95730745
Stainless steel	-	95730751	

Pulsation dampers and calibration columns

Discharge-side pulsation dampers DB and DBG

Pulsation dampers are used to even out the pulsating flow and pressure produced by positive displacement pumps like diaphragm dosing pumps.

Pulsation dampers DB and DBG have a separating diaphragm and are intended for the outlet side of the dosing pump. They are especially designed for installations with long outlet lines with a small diameter, or with rigid pipes. The pulsation dampers optimise the dosing accuracy and protect the pump and the outlet line against pressure surges.

Pulsation dampers DB and DBG have an air or nitrogen cushion inside, which is separated from the dosing medium by a separating diaphragm. This keeps the preload pressure stable for a long time and avoids that air or nitrogen is dissolved in the dosing medium.

In PVC, PP, and stainless steel pulsation dampers, an FKM or EPDM bladder is used as separating diaphragm, in PVDF pulsation dampers a PTFE bellows is used as separating diaphragm.

Pulsation dampers DBG include a pressure gauge for easy setting of the correct pressure. Pulsation dampers DB have no pressure gauge.

If the counterpressure in the system is low or fluctuating, the installation of a pressure loading valve PLV after the pulsation damper may be required to optimise its function.

TMO69767



TM068424

Discharge-side pulsation damper DBG

Suction-side pulsation dampers CSD with calibration scale

Pulsation dampers are used to even out the pulsating flow and pressure produced by positive displacement pumps like diaphragm dosing pumps.

Pulsation dampers CSD are installed on the inlet side of the dosing pump. They can be used for multiple pumps that are supplied by the same inlet line.

Pulsation dampers CSD help to ensure the accuracy of dosing pumps, which is highly dependent on proper suction conditions. In installations with long inlet lines or inlet lines with a small diameter, the use of a CSD pulsation damper is recommended.

Pulsation dampers CSD have a transparent PVC cylinder with a fine volume scale. When combined with a shut-off valve in the inlet line, they can also be used for calibration or flow measurement. In installations without flooded suction, the optional manual vacuum pump kit simplifies startup of the dosing pump.



TM068450

Suction-side pulsation dampers CSD with calibration scale

Calibration columns

Calibration columns have a graduated glass cylinder with a fine scale. A shut-off valve on the lower end can disconnect them from the inlet-side installation during normal operation.

One calibration column can be used for multiple pumps that are supplied by the same inlet line.

Calibration columns must not be used as pulsation dampers.

Sizing guide for pulsation dampers and calibration columns, pump connection size G 5/8

Look up your pump type in the table. Find the required pulsation damper or calibration column volume in the respective table column.

Pump type	Pump stroke volume [ml]	Required volume [l]		
		DB / DBG	CSD	Calibration column
DMX 4-10	2.2	0.15 - 0.18	0.5	0.5
DMX 8-10				
DMX 16-10				
DMX 16-12	2.2	0.15 - 0.18	0.5	0.5
DMX 7-10	3.8	0.15 - 0.18	0.5	0.5
DMX 14-10				
DMX 27-10				
DMX 27-12	3.8	0.15 - 0.18	0.5	0.5
DMX 9-10	4.9	0.15 - 0.18	0.5	0.5
DMX 18-10				
DMX 35-10				
DMX 12-10	6.9	0.15 - 0.18	0.5	0.5
DMX 26-10				
DMX 50-10				

Order data for pulsation dampers CSD, pump connection size G 5/8

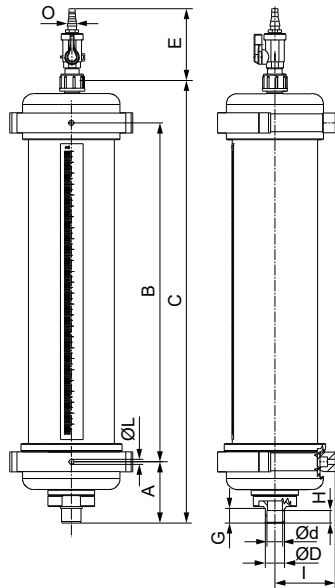
Features

- Prepared for pipe gluing connection with spigot (D) or socket (d).
- Calibration is possible by installing a T-piece and a shut-off valve.
- In installations without flooded suction, the optional manual vacuum pump kit simplifies the startup of the dosing pump.

The delivery includes:

- Sight glass with calibration scale
- Aeration valve
- Material for wall mounting

Dimensions



TMD70431

Suction-side pulsation dampers CSD with calibration scale

Damper volume [l]	A [mm]	B [mm]	C [mm]	øD/ød [mm]	E [mm]	G [mm]	H [mm]	I [mm]	øL [mm]	O [mm]
0.25	50	270	360	16/12	92	14	12	40	6.5	8-13
0.5	50	340	431	16/12	92	14	12	47		

Order data

Max. operating pressure: 2 bar

Damper volume [l]	Max. pump stroke volume [ml]	Max. number of pumps with max. stroke volume	Scale division [ml]	Material			Product number
				Body	Sight glass	Gasket	
0.25	2	3	2	PVC	PVC	FKM / EPDM	99186948
						PTFE	99217401
0.5	7	3	5	PVC	PVC	FKM / EPDM	99187777
						PTFE	99217402

Order data for calibration columns, pump connection size G 5/8

Calibration columns are intended for flow measurement or calibration of dosing pumps. They must be isolated from the pipework during normal operation.

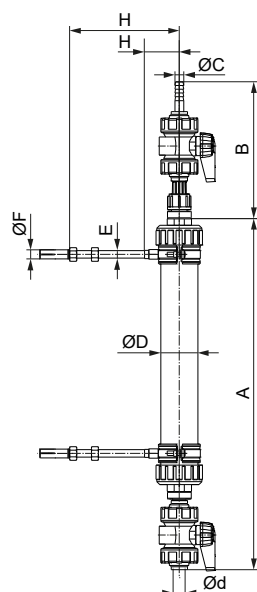
The volume in the calibration column can supply the largest suitable pump for approximately 30 seconds.

The delivery includes:

- Glass cylinder with acrylic outer shield
- Aeration valve on top
- Shut-off valve on the bottom

In installations without flooded suction, the optional manual vacuum pump kit simplifies the startup of the dosing pump. Calibration columns must not be used as pulsation dampers.

Dimensions



TMO68405

Calibration column

Volume [l]	Body	A [mm]	B [mm]	øC [mm]	øD [mm]	E	øF [mm]	H [mm]
0.25	PVDF	478	184	12	50.8	M 10	12	50-154
	SS	460	140					
0.5	PVDF	517	184	12	69.85	M 10	12	61-165
	SS	498	140					

Order data

Volume [l]	Max. pump stroke volume [ml]	Scale division [ml]	Connection ød [mm]	Material		Product number	
				Body	Gasket		
0.25	2	2	16	-	PVDF	FKM	99224280
			-	G 1/2	SS	FKM	99224303
					SS	EPDM	99224304
0.5	7	5	16	-	PVDF	FKM	99224305
			-	G 1/2	SS	FKM	99224307
					SS	EPDM	99224308

Order data for pulsation dampers DB and DBG, pump connection size G 5/8

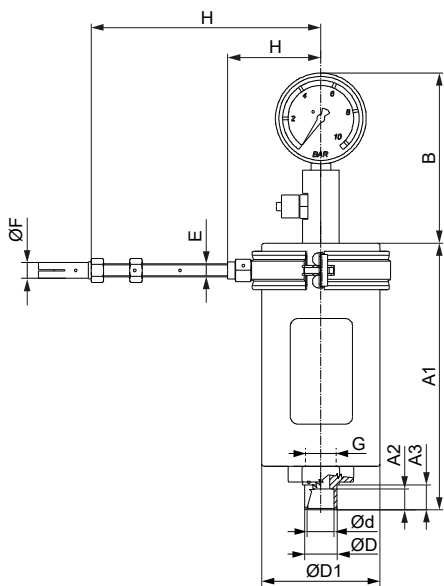
We recommend using one pulsation damper per dosing pump.

Preload pressure: 2.7 bar.

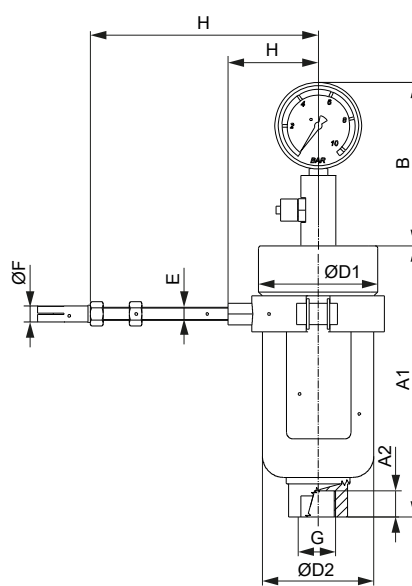
The delivery includes:

- Material for wall mounting
- PVC versions are prepared for pipe gluing connection with spigot (D) or socket (d).
- PVDF and PP versions are prepared for pipe welding connection with spigot (D) or socket (d).
- Pulsation dampers DBG include a pressure gauge.

Dimensions



TMD068284



TMD068452

Pulsation damper DBG, PVC version

Pulsation damper DBG, stainless steel version

B [mm]	øF [mm]	E
129	12	M 10

Damper volume [l]	Body material	Connections		A1 [mm]	A2 [mm]	A3 [mm]	øD1 [mm]	øD2 [mm]	H [mm]
		øD/ød [mm]	G Internal thread						
0.15	PVDF	16/12	G 1/2	205	12	14	70	53	53-127
	PVC, PP	16/12	G 1/2	161	12	14	80	-	67-171
0.18	SS*	-	G 1/2	118	14	-	70	-	64-168

* Stainless steel 1.4404

Order data

Damper volume [l]	Max. pump stroke volume [ml]	Connections		Material		Type DB	Type DBG		
		øD/ød [mm]	G Internal thread	Body	Gasket	Max. operating pressure [bar]	Product number	Max. operating pressure [bar]	Product number
0.15	7	16/12	G 1/2	PVDF	PTFE	20	99202658	20	99202683
					PVC	FKM	10	99202642	10
		16/12	G 1/2	PP	EPDM	10	99202653	10	99202680
					FKM	10	99202654	10	99202681
0.18	7	-	G 1/2	SS	EPDM	10	99202657	10	99202682
					FKM	180	99202660	25	99202684
					EPDM	180	99202661	25	99202685

Accessories for hydraulic connection

Pump connection kits and inlay kits for pump connection size G 5/8

Retrofit pump connection kits and inlay kits for the integration of Grundfos standard dosing pumps into installations with various sizes of hoses or pipes.

A pump connection kit includes one set of inlays and one union nut.



Pump connection kit

The inlay kits are used to connect pumps and accessories to pipes or hoses that differ from Grundfos standard sizes. An inlay kit includes two sets of inlays.



Inlay kit

TMD48294

TMD48295

Order data

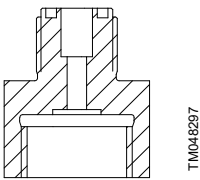
Connection type	Size	Material	Product number	
			Connection kit	Inlay kit
Hose (cone and ring)	4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm	PP	97691902	-
		PVC	97691903	-
		PVDF	97691904	-
	0.17" x 1/4", 1/4" x 3/8", 3/8" x 1/2"	PP	97691905	-
		PVC	97691906	-
		PVDF	97691907	-
Hose (cone and ring)Hose (cone and ring)	4/6 mm, or 0.17" x 1/4"	PP	97702474	95730984
		PVC	97702485	95730720
		PVDF	97702495	95730729
	4/9 mm	PP	98153922	98153977
		PVC	98153944	98154006
		PVDF	98153949	98154029
Hose (cone and ring)	5/8 mm	PP	97702475	95730711
		PVC	97702486	95730721
		PVDF	97702496	95730730

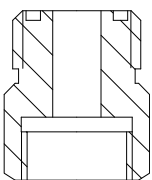
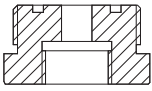
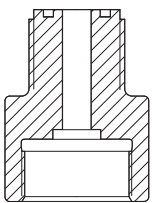
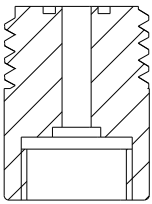
Connection type	Size	Material	Product number			
			Connection kit	Inlay kit		
Hose (cone and ring)	6/8 mm	PP	97702476	95730712		
		PVC	97702487	95730722		
		PVDF	97702497	95730731		
	6/9 mm	PP	97702477	95730713		
		PVC	97702488	95730723		
		PVDF	97702498	95730732		
	6/12 mm	PP	97702478	95730714		
		PVC	97702489	95730724		
		PVDF	97702499	95730733		
Hose (cone and ring)	9/12 mm	PP	97702479	95730715		
		PVC	97702490	95730725		
		PVDF	97702500	95730734		
Hose (cone and ring)	1/4" x 3/8"	PP	97702482	95730718		
		PVC	97702492	95730727		
		PVDF	97702503	95730737		
	3/8" x 1/2"	PP	97702483	95730719		
		PVC	97702493	95730728		
		PVDF	97702504	95730738		
Hose (cutting ring type)	1/8" x 1/4"	PP	97702481	95730717		
		PVDF	97702502	95730736		
Pipe welding	External diameter 16 mm	PP	97702480	95730716		
		PVDF	97702501	95730735		
Pipe cementing	Internal diameter 12 mm	PP	97702484	-		
		PVC	97702494	-		
Pipe, external thread	1/2 NPT	PVDF	97702505	-		
		Stainless steel	97702508	-		
		Pipe, internal thread	Rp 1/4	Stainless steel	97702472	95730739
				Stainless steel	97702473	95730740
Pipe (cutting ring type)	4/6 mm	Stainless steel	97702506	-		
		8/10 mm	Stainless steel	97702507	-	
			Stainless steel	98807664	-	
10/12 mm	Stainless steel	98807664	-			

Threaded adapters G 5/8

With threaded adapters, different sizes of threaded connections can be connected. A threaded adapter includes a gasket.

Technical data

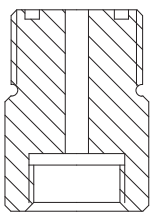
Type	Threaded connection size		Material		Product number
	Internal thread	External thread	Body	Gaskets	
 TM048297	G 5/8	G 3/8	PP	FKM / EPDM	95730412
			PVC	FKM / EPDM	95730413
				PTFE	95730414
				FKM / EPDM	95730415
			PVDF	PTFE	95730416

Type	Threaded connection size		Material		Product number
	Internal thread	External thread	Body	Gaskets	
 TM048298	G 5/8	G 3/4	PP	FKM / EPDM	95730417
			PVC	FKM / EPDM	95730418
				PTFE	95730419
			PVDF	FKM / EPDM	95730420
PTFE	95730421				
 TM048299	G 5/8	G 5/4	PP	FKM / EPDM	95730422
			PVC	FKM / EPDM	95730423
				PTFE	95730424
			PVDF	FKM / EPDM	95730425
PTFE	95730426				
 TM048300	G 5/8	M 20 x 1.5	PP	FKM / EPDM	95730427
			PVC	FKM / EPDM	95730428
				PTFE	95730429
			PVDF	FKM / EPDM	95730430
PTFE	95730431				
 TM048475	G 5/8	M 30 x 3.5		FKM / EPDM	98154048
			PVDF	PTFE	98154054

Threaded adapters G 3/8

With threaded adapters, different sizes of threaded connections can be connected. A threaded adapter includes a gasket.

Technical data

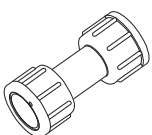
Type	Threaded connection size		Material		Product number
	Internal thread	External thread	Body	Gaskets	
 TM048296	G 3/8	G 5/8	PP	FKM / EPDM	95730407
			PVC	FKM / EPDM	95730408
				PTFE	95730409
			PVDF	FKM / EPDM	95730410
				PTFE	95730411

Adapters G 5/8

Union nut adapters

With a union nut adapter, a pressure loading valve PLV or a pressure relief valve PRV can be mounted directly on the pump outlet valve.

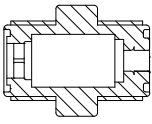
Union nut adapters consist of a rigid pipe with union nuts on both ends. They have neither gaskets nor glued or welded connections.

Type	Threaded connection size		Material		Product number
	Internal thread	Internal thread	Body		
 TM048306	G 5/8	G 5/8	PVC		95730437
			PP		95730438
			PVDF		95730439

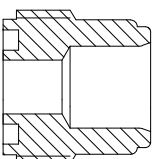
Hose-to-hose and hose-to-pipe adapters

With these adapters, hoses or pipes of different sizes can be connected. The threaded adapter side includes a gasket. Connections for different hose types can be included.

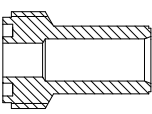
Adapters with two external threads G 5/8

Type	Connections		Material		Product number
	Side 1	Side 2	Body and connections	Gaskets	
 TM048302	External threads G 5/8, connections for hoses 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm		PP	FKM / EPDM	95730367
			PVC	FKM / EPDM	95730368
				PTFE	95730369
			PVDF	FKM / EPDM	95730370
				PTFE	95730371
			PP	FKM / EPDM	95730356
	External threads G 5/8, without connections	PVC	FKM / EPDM	95730357	
			PTFE	95730358	
		PVDF	FKM / EPDM	95730359	
			PTFE	95730360	
	External thread G 5/8, without connection	External thread G 5/8, with threaded Rp 1/4 connection	Stainless steel	PTFE	95730361

Adapters with pipe cementing end and external thread G 5/8

Type	Connections		Material		Product number
	Side 1	Side 2	Body and connections	Gaskets	
 TM048360	External threads G 5/8, connections for hoses 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm	Pipe cementing end with internal \varnothing 12 mm	PVC	FKM / EPDM	95730378
				PTFE	95730379
	External thread G 5/8, without connection	Pipe cementing end with internal \varnothing 12 mm	PVC	FKM / EPDM	95730365
				PTFE	95730366

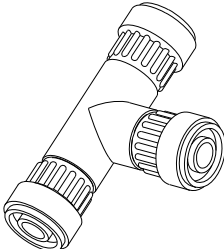
Adapters with pipe welding end and external thread G 5/8

Type	Connections		Material		Product number
	Side 1	Side 2	Body and connections	Gaskets	
 TM048303	External threads G 5/8, connections for hoses 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm	Pipe welding end with external \varnothing 16 mm	PP	FKM / EPDM	95730377
			PVDF	FKM / EPDM	95730380
				PTFE	95730381
	External thread G 5/8, without connection	Pipe welding end with external \varnothing 16 mm	PP	FKM / EPDM	95730362
			PVDF	FKM / EPDM	95730363
				PTFE	95730364

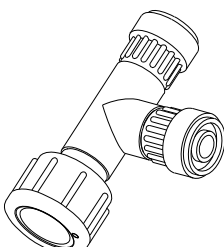
T-piece adapters G 5/8

T-piece adapters can connect three lines. T-piece adapters include gaskets. Connections for different hose types can be included.

T-piece adapters with three external threads G 5/8

Type	Connections			Material		Product number
	Bottom	Top	Side	Body and connections	Gaskets	
 TMD48304	External thread G 5/8, connections for hoses 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm			PP	FKM / EPDM	95730387
				PVC	FKM / EPDM	95730388
					PTFE	95730389
				PVDF	FKM / EPDM	95730390
					PTFE	95730391
	External thread G 5/8, without connection			PP	FKM / EPDM	95730346
PVC				FKM / EPDM	95730347	
				PTFE	95730348	
PVDF	FKM / EPDM	95730349				
				PTFE	95730350	

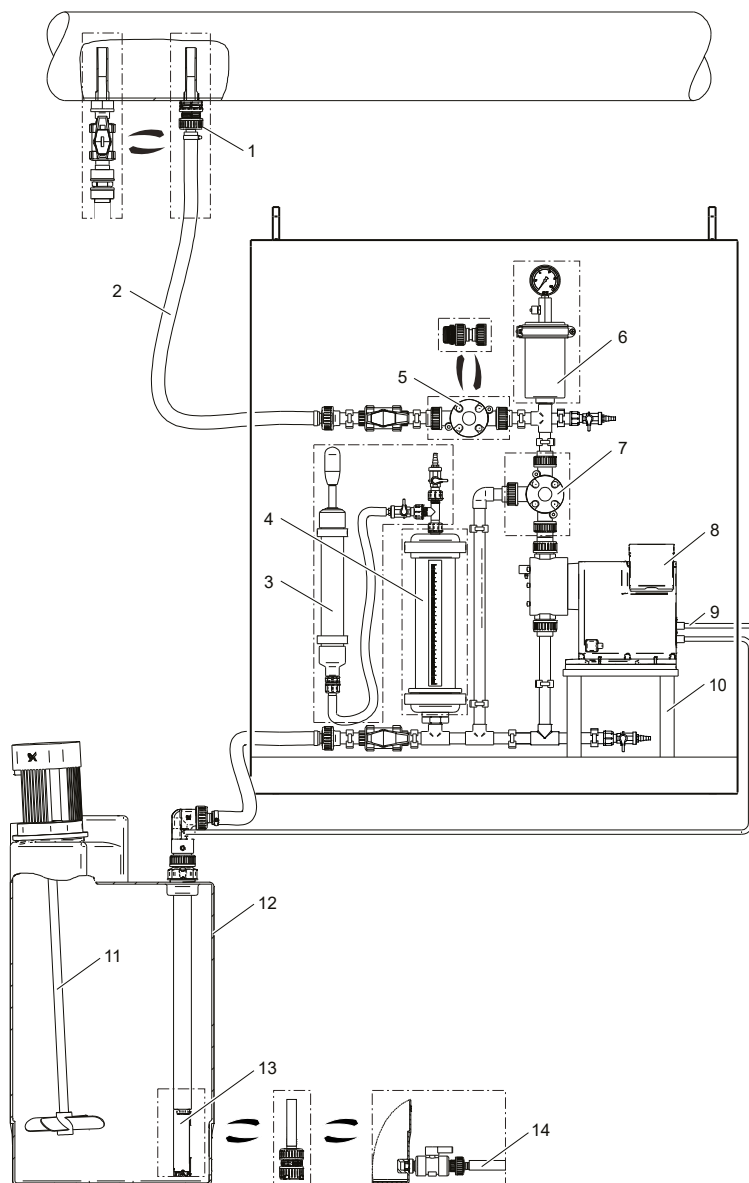
T-piece adapters with internal connection with union nut and two external threads G 5/8

Type	Connections			Material		Product number
	Bottom	Top	Side	Body and connections	Gaskets	
 TMD48305	Internal connection, with union nut G 5/8	External thread G 5/8, without connection	External thread G 5/8, connections for hoses 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm	PP	FKM / EPDM	95730397
			PVC	FKM / EPDM	95730398	
				PTFE	95730399	
	PVDF	FKM / EPDM	95730400			
		PTFE	95730401			
	External thread G 5/8, without connection	PP	FKM / EPDM	95730351		
PVC		FKM / EPDM	95730352			
		PTFE	95730353			
PVDF	FKM / EPDM	95730354				
				PTFE	95730355	

9. Hydraulic accessories for pump connection size G 5/4

Overview of accessories for pump connection size G 5/4

Grundfos offer a comprehensive range of accessories covering every need when dosing with Grundfos pumps.



TM070285

Pos.	Description	See section
1	Injection units	Order data for injection units for pump connection size G 5/4
2	Hoses	Hoses for pump connection size G 5/4
3	Vacuum pump	Order data for pulsation dampers CSD, pump connection size G 5/4
4	Pulsation dampers CSD	
5	Pressure valves	Order data for pressure valves PV for pump connection size G 5/4 Drawings, dimensions, technical data and order numbers of pressure valves up to 200 l/h for medium-sized dosing pumps with G 5/4 connections
6	Pulsation dampers DBG	Order data for pulsation dampers DB and DBG, pump connection size G 5/4
7	Pressure relief valves, pressure loading valves	Order data for pressure relief valves PRV for pump connection size G 5/4 Order data for pressure loading valves PLV for pump connection size G 5/4
8	Example: SMART Digital XL dosing pump	
9	Cables and plugs	Cables and plugs for pump connection size G 5/4
10	Wall brackets	Pump mounting accessories

Pos.	Description	See section
11	Electrical stirrers	Electric stirrers
12	Dosing tanks	Square tank Drawings, dimensions, product numbers and technical data of square tank for dosing medium including optional pump mounting location Cylindrical tanks
13	Rigid suction lances and foot valves	Order data for rigid suction lances RSL with connection size G 5/4 Order data for foot valves FV with connection size G 5/4
14	Withdrawal devices	Tank accessories
-	Accessories for hydraulic connection	Pump connection kits and inlay kits for pump connection size G 5/4 Threaded adapters G 5/4 Adapters G 5/4 Preassembled accessories set for SMART Digital XL Drawings, dimensions, product numbers and technical data of the preassembled accessories set for SMART Digital XL DDA, DDE, with wall or tank mounting material and outlet-side assembly of PRV, PLV, pulsation damper

Hoses for pump connection size G 5/4

Hoses in various materials, sizes and lengths for dosing pumps.

Pump connection size: G 5/4



TMO 18958

Hoses

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Size (internal/external diameter) [mm]	Material	Max. pressure at 20 °C [bar]	Length [m]	Product number
200	13/20	PVC, textile-reinforced	15	3	96727423
				10	96727420
				50	96692592
460	19/27	PVC, textile-reinforced	12	3	96727426
				10	96696200
				50	96695788
	19/24.6	PVC, reinforced with a plastic spiral	7	3	99168771

Foot valves FV

Foot valves FV are installed at the lower end of the inlet hose.

Foot valves are suitable for the following applications:

- Extraction of chemicals from unpressurised containers.
- Monitoring of the liquid level in a chemical container (versions with two-step level indication).



Foot valves, connection size G 5/8 without level indication (left), with level indication (right)

TMD48476



Foot valve, connection size G 5/4

TMD68427

Order data for foot valves FV with connection size G 5/4

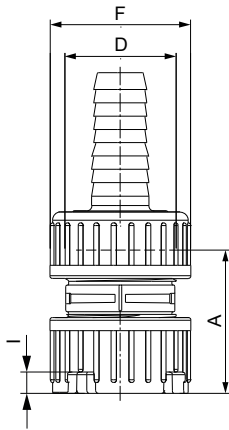
Foot valves G 5/4 have no level indication.

The delivery includes:

- Strainer (mesh size approx. 0.8 mm)
- Non-return valve
- Hose and pipe connection set:
 - for hoses with internal diameter 19 or 20 mm
 - for pipes with external diameter 25 mm (PE includes PVC inlay, PVDF includes PVDF inlay)
- Pipe connection set: threaded, Rp 3/4, internal thread (stainless steel).

Remark: When using the foot valves with hose installation, a rigid pipe should be slipped over the hose to keep the suction line straight and upright in the tank.

Dimensions



Left: Foot valve FV (PE, PVDF). Right: Foot valve FV (stainless steel)

TM069058

Material	d [mm]	L [mm]
PE, PVDF	53	57
SS	50	57

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Material			Product number
	Body	Gasket	Ball	
460	PE	FKM / EPDM	Ceramic	99168633
		PTFE	Ceramic	99168635
	PVDF	FKM / EPDM	Ceramic	99168636
		PTFE	Ceramic	99168649
	SS ¹⁾	PTFE	SS ²⁾	99170593

¹⁾ Stainless steel 1.4571, 1.4435, 1.4305

²⁾ Stainless steel 1.4401

Rigid suction lances RSL

Grundfos offer a comprehensive range of rigid suction lances for a variety of chemical containers.

Rigid suction lances RSL are suitable for the following applications:

- Extraction of chemicals from unpressurised containers.
- Monitoring of liquid level in the chemical container (versions with two-step level indication).

Rigid suction lances are installed at the lower end of the inlet hose. They are available either without level indication or with low-level and empty-tank indication. Their immersion depth is adjustable.



Rigid suction lance, connection size G 5/8

TM048458



Rigid suction lance, connection size G 5/4

TM066423

Order data for rigid suction lances RSL with connection size G 5/4

The delivery includes:

- Strainer (mesh size approx. 2.2 mm)
- Non-return valve
- Hose and pipe connection set:
 - for hoses with internal diameter 19 or 20 mm
 - for PVC pipes with external diameter 25 mm
- Adjustable tank connection with holes for a deaeration line.

Rigid suction lances with low-level and empty-tank indication include additionally:

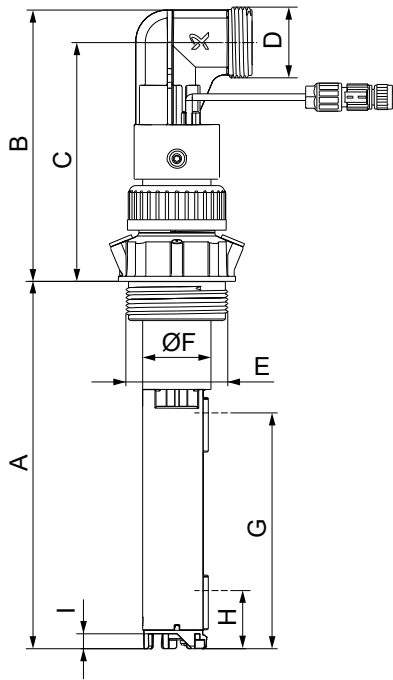
- Reed-switch unit with 2 floaters
- 5 metres of cable with PE jacket
- M 12 plug to connect DDA, DDE, DME or DDI dosing pump.

The contact type of the low-level and empty-tank indication is factory-set to NO. The contact type can be set to NC by turning the floaters upside down.

Electrical data of the level indication:

- Max. voltage: 48 V
- Max. current: 0.5 A
- Max. load: 10 VA

Dimensions



TM068130

Rigid suction lance

A [mm]	B [mm]	C [mm]	D	E	øF [mm]	G [mm]	H [mm]	I [mm]
500								
690	159	140	G 5/4	G 2	40	138	34	8.7
980								
1200								

* Switching level for water

Selection

Type	Tank volume [l]	Recommended immersion depth (A) [mm]
Grundfos cylindrical tank	60	500
	100	690
	200	690
	300	980
	500	1200
	1000	1200
Grundfos square tank	100	690
L-ring drum	120	980
	220	980
Steel drum	216	980
Standard jerricans according to EN 12712	33 (large cap)	500
	25, 30, 33	500
	60	690
IBC	all sizes	1200

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Max. immersion depth [mm]	Material			Product number	
		Body	Gasket	Ball	RSL without level indication	RSL with level indication
460	500	PE	FKM, EPDM	Ceramic	99199363	99161410
			PTFE	Ceramic	99199364	99161411
	690	PE	FKM, EPDM	Ceramic	99199365	99161412
			PTFE	Ceramic	99199366	99161943
	980	PE	FKM, EPDM	Ceramic	99199367	99161944
			PTFE	Ceramic	99199368	99161945
1200	PE	FKM, EPDM	Ceramic	99199369	99161946	
		PTFE	Ceramic	99199370	99161947	

Accessories for rigid suction lances RSL**Adapters for container connection**


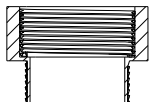
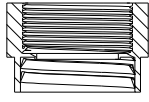
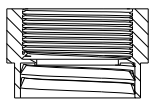

These adapters allow the installation of standard rigid suction lances RSL (G 2 thread) and foot valves FV with level indication (PE cap) on different types of containers.

These adapters allow the installation of standard rigid suction lances (G 2 thread) on different types of containers.



Adapters for containers

Order data

Type	For container type	Material	Product number
	TM048470 Counter nut for tanks without threaded opening, e.g. 100-litre square tank or 1000-litre cylindrical tank	PVC, grey	98071170
	Containers with 2 NPT threaded opening	PVC, grey	98156690
	Drums with S 70 x 6 coarse thread (MAUSER 2")	PE, blue	98071171
	Drums with S 56 x 4 coarse thread (TriSure®)	PE, orange	98071172
	TM048473 Jerricans with small opening (approx. $\varnothing 36$), according to EN 12713	PE, green	98071173
	Jerricans with medium-sized opening (approx. $\varnothing 45$), according to EN 12713	PE, yellow	98071174
	TM048473 Jerricans with large opening (approx. $\varnothing 57$), according to EN 12713	PE, brown	98071175
	US containers with bung hole of 63 mm (ASTM International)	PE, white	98071176
	TM048472 IBC (Intermediate Bulk Container) with opening of $\varnothing 150$ mm, S 160 x 7	PE, black	98071177

TM048506

Emission protection kits for rigid suction lances RSL

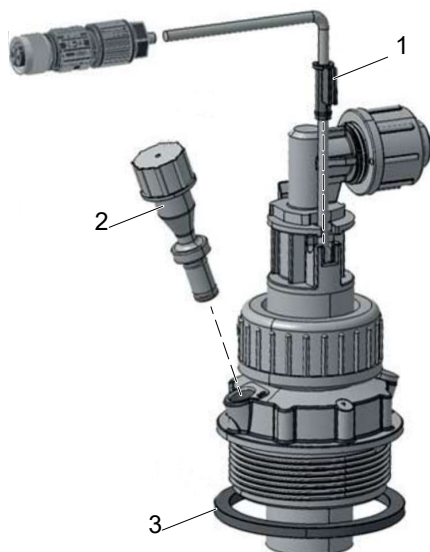
Gas emitted by liquid in a container can cause bad odour and corrosion. Emission protection kits help avoid such problems. Rigid suction lances can be retrofitted with emission protection kits.

Two variants are available:

- Emission protection kit with snifting valve: no gas can escape from the container, but air can be drawn in.
- Emission protection kit for use with filter: gas can escape from the container and air can be drawn in. The kit can be connected to a filter by means of a 4/6 mm hose.

The delivery includes:

- Gasket for the tank adapter
- Snifting valve or hose nipple 4/6 mm (hose is not included)
- Gasket for the cable outlet.



TM069068

Emission protection kit

Pos.	Description
1	Gasket for the cable outlet
2	Air valve
3	Gasket for the tank adapter

Order data

Variant	Product number
Emission protection kit with snifting valve	98071178
Emission protection kit for use with filter	98071179

Flat-plug adapter for DMX and DMH with AR control unit

The flat-plug adapter allows to connect rigid suction lances or foot valves with level indication to pumps with a level input designed for flat plugs (e.g. DMX and DMH with AR control unit).



TM070206

Flat-plug adapter for DMX and DMH with AR control unit

Order data

Description	Product number
Flat-plug adapter for DMX and DMH with AR control unit	96635010

Injection units

Standard injection units

Injection units connect the dosing line with the process line. They ensure a minimum counterpressure and avoid backflow of the dosing medium.



TM066428

Standard injection unit

Injection units with ball valve

Injection units with ball valve are used for applications where the injection point must be closable. The ball valve is placed between the injection pipe and the spring-loaded non-return valve.

- The dosing line can be completely disconnected from the process.
- The non-return valve can be disassembled and cleaned without stopping the process and emptying the process line.



TM068429

Injection unit with ball valve

Injection units with lip valve

Injection units with lip valve are typically used for adding sodium hypochlorite solution to water with a high carbonate content. The FKM lip prevents crystallisation and blocking caused by alkali carbonate reactions at the point of injection.

Injection units with removable injection pipe

Injection units with removable injection pipe are used where regular cleaning of the injection pipe is required.

- The injection pipe can be removed from the process line without stopping the process water flow.
- The injection point can be closed with the integrated ball valve.
- The immersion depth of the injection pipe can be adjusted.

Hot-injection units with ball valve

Hot-injection units with ball valve can be used for direct injection of the dosing medium into processes with a high process water temperature of up to 120 °C.

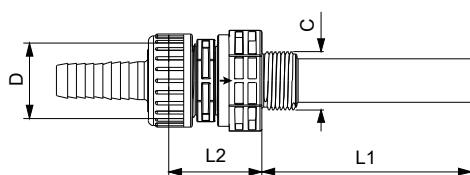
- Hot-injection units have a stainless-steel injection pipe and a bendable stainless-steel cooling pipe of 1 metre.
- The stainless-steel ball valve is installed between the injection pipe and the cooling pipe.
- The cooling pipe separates the hot parts from the non-return valve and the dosing line.

Order data for injection units for pump connection size G 5/4

Injection units for medium-sized dosing pumps with G 5/4 connections ensure a minimum counterpressure of 0.7 bar. The delivery includes:

- Injection pipe
 - immersion depth: 120 mm
 - PP, PVC and PVDF versions can be shortened
- Spring-loaded non-return valve with alloy C-4 spring
- Hose and pipe connection set (PVC, PP, PVDF):
 - for hoses with internal diameter 19 or 20 mm
 - for pipes with external diameter 25 mm
- Pipe connection set (Stainless steel): threaded, Rp 3/4, internal thread

Dimensions of standard injection units



TM069844

A	L1 [mm]	L2 [mm]
G 1	173	120

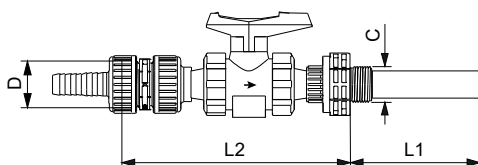
Order data of standard injection units

Max. flow rate: 460 l/h

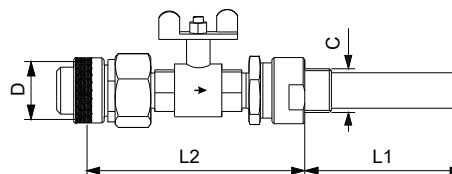
The flow rate values apply to liquids with a viscosity similar to water.

Max. pressure [bar]	Material			Product number
	Body	Gasket	Ball	
10	PVC	FKM	Ceramic	99168657
		EPDM	Ceramic	99168658
		PTFE	Ceramic	99169217
	PP	FKM	Ceramic	99169220
		EPDM	Ceramic	99169223
	PVDF	FKM	Ceramic	99169227
EPDM		Ceramic	99169228	
PTFE		Ceramic	99169229	
16	Stainless steel	PTFE	Stainless steel	99169230

Dimensions of injection units with ball valve



TM069843



TM069842

Body material: PVC

Body material: Stainless steel

Material	A	L1 [mm]	L2 [mm]
PVC	G 1	330	120
Stainless steel	G 1	285.5	120

Order data for injection units with ball valve

Max. flow rate: 460 l/h

Max. pressure: 10 bar

The flow rate values apply to liquids with a viscosity similar to water.

Material			Product number
Body	Gasket	Ball	
PVC	FKM	Ceramic	99206582
	EPDM	Ceramic	99206585
Stainless steel	PTFE	Stainless steel	99206586

Pressure relief valves and pressure loading valves**Pressure relief valves PRV**

Pressure relief valves PRV protect the pump and the outlet-side installations against excessive pressure. All pressurised dosing installations should include a pressure relief valve.

*Pressure relief valve PRV, G 5/8*

TM069784

*Pressure relief valve PRV, G 5/4*

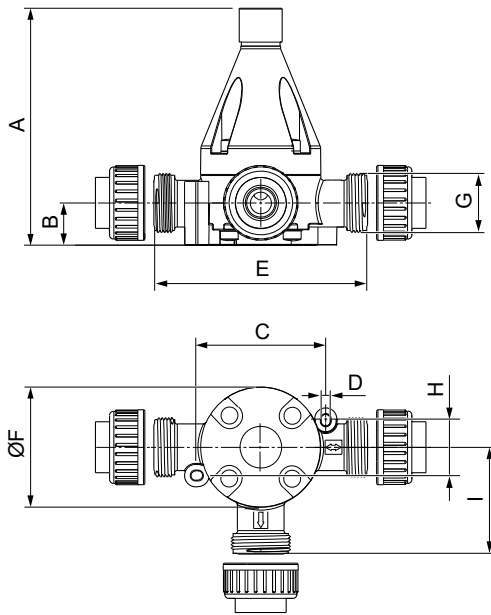
TM069421

Order data for pressure relief valves PRV for pump connection size G 5/4

Pressure relief valves PRV for medium-sized dosing pumps with G 5/4 connections are installed in the outlet line near the pump using the 2 in-line connections. The side connection leads the relief liquid back into the tank.

- Relief pressure:
 - factory-set to 10 bar approximately
 - adjustable from 3 to 10 bar
- Max. operating pressure: 10 bar
- Max. flow rate: 460 l/h
 - The flow rate values apply to liquids with a viscosity similar to water.
- Hose and pipe connection set (PVC, PP, PVDF):
 - for hoses with internal diameter 19 or 20 mm
 - for pipes with external diameter 25 mm
- Pipe connection set (Stainless steel): threaded, Rp 3/4, internal thread

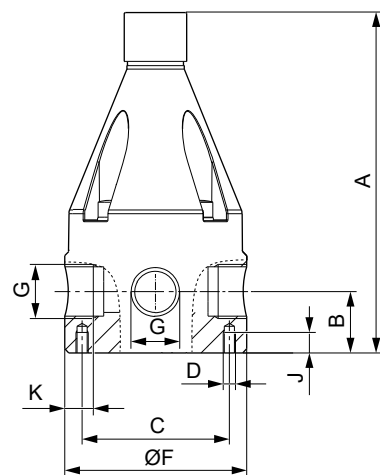
Dimensions of PP, PVC, PVDF pressure relief valves



TM068077

A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	ØF [mm]	G	H [mm]	I [mm]
168	30	92	6.5	150	85	G 5/4	40	75

Dimensions of stainless-steel pressure relief valves



TM068247

A [mm]	B [mm]	C [mm]	D	ØF [mm]	G	J [mm]	K [mm]
167	30	63	M 6	89	Rp 3/4	10	17.5

Order data for pressure relief valves

Material		Product number
Body	Gaskets	
PVC	FKM / EPDM	99131032
	PTFE	99141139
PP	FKM / EPDM	99141197
PVDF	FKM / EPDM	99141212
	PTFE	99141224
Stainless steel	-	99141228

Pressure loading valves PLV

Pressure loading valves PLV maintain a constant counterpressure for the dosing pump. They are used in the following applications:

- Too low counterpressure or no counterpressure at all
- Fluctuating system pressure with outlet-side pulsation damper
- To prevent syphoning, when the inlet pressure is higher than the counterpressure

Pressure loading valves are installed in the outlet line.

Pressure loading valves should not be used as shut-off valves.



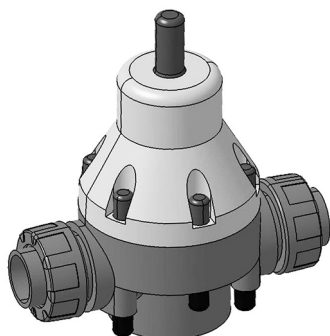
Pressure loading valves PLV, G 5/8

TM069765



Pressure loading valve PLV, G 5/4

TM068422



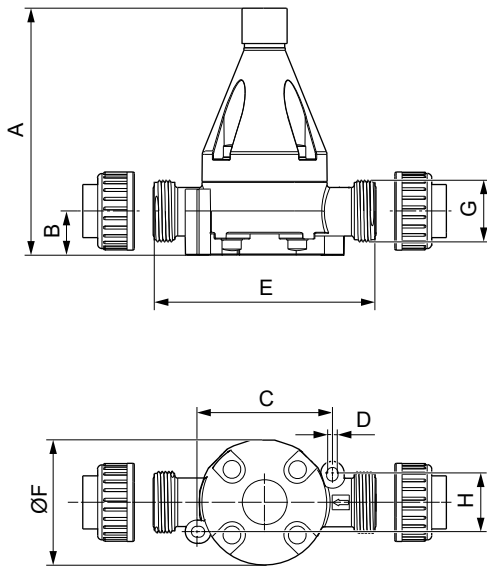
Pressure loading valve PLV, G 2

TM070220

Order data for pressure loading valves PLV for pump connection size G 5/4

- Loading pressure:
 - factory-set to 3 bar approximately
 - adjustable from 3 to 10 bar
- Max. operating pressure: 10 bar
- Max. flow rate: 460 l/h
 - The flow rate values apply to liquids with a viscosity similar to water.
- Hose and pipe connection set (PVC, PP, PVDF):
 - for hoses with internal diameter 19 or 20 mm
 - for pipes with external diameter 25 mm
- Pipe connection set (Stainless steel): threaded, Rp 3/4, internal thread

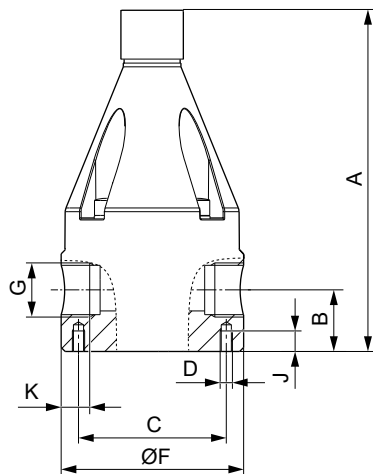
Dimensions of PP, PVC, PVDF pressure loading valves



TM1066090

A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G	H [mm]
168	30	92	6.5	150	85	G 5/4	40

Dimensions of stainless-steel pressure loading valves



TM1068246

A [mm]	B [mm]	C [mm]	D	F [mm]	G	J [mm]	K [mm]
167	30	63	M 6	89	Rp 3/4	10	17.5

Order data

Material		Product number
Body	Gaskets	
PVC	FKM / EPDM	99132186
	PTFE	99140593
PP	FKM / EPDM	99140610
PVDF	FKM / EPDM	99140646
	PTFE	99140651
Stainless steel	-	99135772

Pulsation dampers and calibration columns**Discharge-side pulsation dampers DB and DBG**

Pulsation dampers are used to even out the pulsating flow and pressure produced by positive displacement pumps like diaphragm dosing pumps.

Pulsation dampers DB and DBG have a separating diaphragm and are intended for the outlet side of the dosing pump. They are especially designed for installations with long outlet lines with a small diameter, or with rigid pipes. The pulsation dampers optimise the dosing accuracy and protect the pump and the outlet line against pressure surges.

Pulsation dampers DB and DBG have an air or nitrogen cushion inside, which is separated from the dosing medium by a separating diaphragm. This keeps the preload pressure stable for a long time and avoids that air or nitrogen is dissolved in the dosing medium.

In PVC, PP, and stainless steel pulsation dampers, an FKM or EPDM bladder is used as separating diaphragm, in PVDF pulsation dampers a PTFE bellows is used as separating diaphragm.

Pulsation dampers DBG include a pressure gauge for easy setting of the correct pressure. Pulsation dampers DB have no pressure gauge.

If the counterpressure in the system is low or fluctuating, the installation of a pressure loading valve PLV after the pulsation damper may be required to optimise its function.



Discharge-side pulsation damper DBG

TM068424

Suction-side pulsation dampers CSD with calibration scale

Pulsation dampers are used to even out the pulsating flow and pressure produced by positive displacement pumps like diaphragm dosing pumps.

Pulsation dampers CSD are installed on the inlet side of the dosing pump. They can be used for multiple pumps that are supplied by the same inlet line.

Pulsation dampers CSD help to ensure the accuracy of dosing pumps, which is highly dependent on proper suction conditions. In installations with long inlet lines or inlet lines with a small diameter, the use of a CSD pulsation damper is recommended.

Pulsation dampers CSD have a transparent PVC cylinder with a fine volume scale. When combined with a shut-off valve in the inlet line, they can also be used for calibration or flow measurement. In installations without flooded suction, the optional manual vacuum pump kit simplifies startup of the dosing pump.



Suction-side pulsation dampers CSD with calibration scale

Calibration columns

Calibration columns have a graduated glass cylinder with a fine scale. A shut-off valve on the lower end can disconnect them from the inlet-side installation during normal operation.

One calibration column can be used for multiple pumps that are supplied by the same inlet line.

Calibration columns must not be used as pulsation dampers.

Sizing guide for pulsation dampers and calibration columns, pump connection size G 5/4

Look up your pump type in the table. Find the required pulsation damper or calibration column volume in the respective table column.

Pump type	Pump stroke volume [ml]	Required volume [l]		
		DB / DBG	CSD	Calibration column
DMX 17-4	10.4	0.3 - 0.36	1.5	2.0
DMX 39-4				
DMX 75-4				
DMX 25-3	16	0.3 - 0.36	1.5	2.0
DMX 60-3				
DMX 115-3	13.8	0.3 - 0.36	1.5	2.0
DMX 24-8				
DMX 52-8				
DMX 100-8	18.5	0.3 - 0.36	1.5	2.0
DMX 142-8				
DMX 67-10	18.5	0.3 - 0.36	1.5	2.0
DMX 132-10				

T1066450

Pump type	Pump stroke volume [ml]	Required volume [l]		
		DB / DBG	CSD	Calibration column
DMX 190-10	18.5	0.3 - 0.36	1.5	2.0
DMX 37-5	22	0.65 - 0.7	3.0	4.0
DMX 82-5				
DMX 160-5				
DMX 230-5	27.8	0.65 - 0.7	3.0	4.0
DMX 95-8				
DMX 199-8				
DMX 280-8	36	0.65 - 0.7	3.0	4.0
DMX 60-3				
DMX 130-3				
DMX 255-3	44.6	0.65 - 0.7	3.0	4.0
DMX 380-3				
DMX 152-6				
DMX 321-6	44.6	0.65 - 0.7	3.0	4.0
DMX 460-6				

Order data for pulsation dampers CSD, pump connection size G 5/4

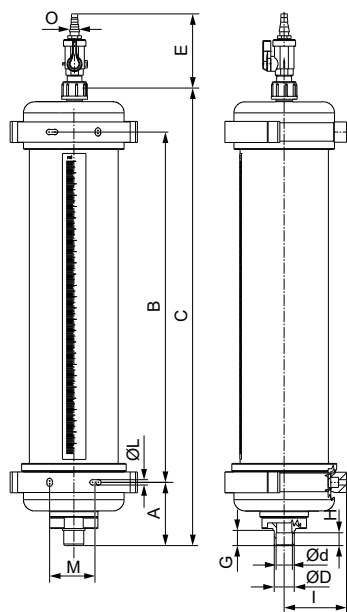
Features

- Prepared for pipe gluing connection with spigot (D) or socket (d).
- Calibration is possible by installing a T-piece and a shut-off valve.
- In installations without flooded suction, the optional manual vacuum pump kit simplifies the startup of the dosing pump.

The delivery includes:

- Sight glass with calibration scale
- Aeration valve
- Material for wall mounting

Dimensions



Suction-side pulsation dampers CSD with calibration scale

TM066373

Damper volume [l]	A [mm]	B [mm]	C [mm]	øD / ød [mm]	E [mm]	G [mm]	H [mm]	I [mm]	øL [mm]	M [mm]	O [mm]
1.5	75	343	465	25 / 20	92	19	16	70	6.5	40	8-13
3.0	79	435	568	25 / 20	92	19	16	78		60	

Order data

Max. operating pressure: 2 bar

Damper volume [l]	Max. pump stroke volume [ml]	Max. number of pumps with max. stroke volume	Scale division [ml]	Material			Product number
				Body	Sight glass	Gasket	
1.5	19	3	20	PVC	PVC	FKM / EPDM	99188854
						PTFE	99217403
3.0	45	2	25	PVC	PVC	FKM / EPDM	99190807
						PTFE	99217406

Order data for calibration columns, pump connection size G 5/4

Calibration columns are intended for flow measurement or calibration of dosing pumps. They must be isolated from the pipework during normal operation.

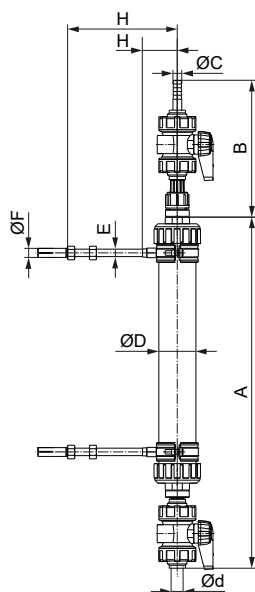
The volume in the calibration column can supply the largest suitable pump for approximately 30 seconds.

The delivery includes:

- Glass cylinder with acrylic outer shield
- Aeration valve on top
- Shut-off valve on the bottom

In installations without flooded suction, the optional manual vacuum pump kit simplifies the startup of the dosing pump. Calibration columns must not be used as pulsation dampers.

Dimensions



TM068405

Calibration column

Volume [l]	Body	A [mm]	B [mm]	øC [mm]	øD [mm]	E	øF [mm]	H [mm]
2.0	PVDF	675	188	12	101.6	M 10	12	78-182
	SS	657	148					
4.0	PVDF	795	188	12	132	M 10	12	92-196
	SS	777	148					

Order data

Volume [l]	Max. pump stroke volume [ml]	Scale division [ml]	Connection \varnothing		Material		Product number
			[mm]		Body	Gasket	
2.0	19	20	25	-	PVDF	FKM	99224309
			-	G 1	SS	FKM	99224310
			-	G 1	SS	EPDM	99224311
4.0	45	25	25	-	PVDF	FKM	99224312
			-	G 1	SS	FKM	99224313
			-	G 1	SS	EPDM	99224314

Order data for pulsation dampers DB and DBG, pump connection size G 5/4

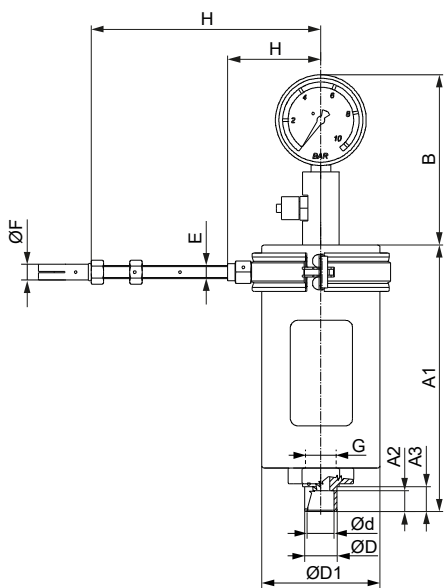
We recommend using one pulsation damper per dosing pump.

Preload pressure: 2.7 bar.

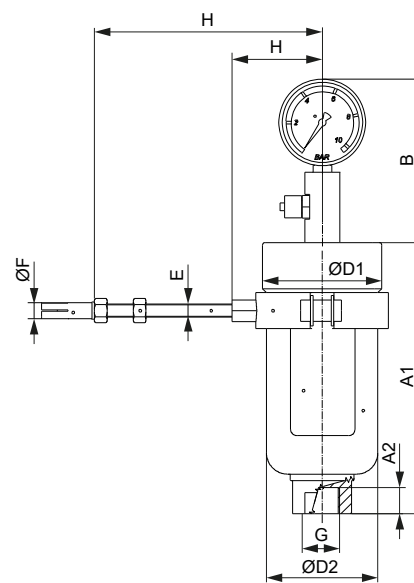
The delivery includes:

- Material for wall mounting
- PVC versions are prepared for pipe gluing connection with spigot (D) or socket (d).
- PVDF and PP versions are prepared for pipe welding connection with spigot (D) or socket (d).
- Pulsation dampers DBG include a pressure gauge.

Dimensions



TM1068284



TM1068462

Pulsation damper DBG, PVC version

Pulsation damper DBG, stainless steel version

B [mm]	\varnothing F [mm]	E
129	12	M 10

Damper volume [l]	Body material	Connections		A1 [mm]	A2 [mm]	A3 [mm]	\varnothing D1 [mm]	\varnothing D2 [mm]	H [mm]
		\varnothing D/ \varnothing d [mm]	G Internal thread						
0.3	PVDF	25/20	G 3/4	267	20	25	84	63	58-175
0.36	PVC, PP	25/20	G 3/4	203	20	25	90	-	71-175
	SS*	-	G 1/2	161	16	-	85	-	67-171
0.65	PVC, PP	25/20	G 3/4	263	20	25	100	-	78-152
	SS*	-	G 3/4	205	20	-	90	84	67-171
0.7	PVDF	25/20	G 3/4	138	20	25	98	84	67-171

* Stainless steel 1.4404

Order data

Damper volume [l]	Max. pump stroke volume [ml]	Connections		Material		Type DB		Type DBG	
		øD/ød [mm]	G Internal thread	Body	Gasket	Max. operating pressure [bar]	Product number	Max. operating pressure [bar]	Product number
0.36	19	25/20	G 3/4	PVC	FKM	10	99202662	10	99202687
					EPDM	10	99202663	10	99202688
				PP	FKM	10	99202664	10	99202689
					EPDM	10	99202665	10	99202690
		-	G 1/2	SS	FKM	180	99202667	25	99202692
					EPDM	180	99202669	25	99202693
0.3	19	25/20	G 3/4	PVDF	PTFE	20	99202666	20	99202691
0.65	45	25/20	G 3/4	PVC	FKM	10	99202670	10	99202694
					EPDM	10	99202671	10	99202695
				PP	FKM	10	99202672	10	99202696
					EPDM	10	99202673	10	99202697
		-	G 3/4	SS	FKM	50	99202675	25	99202699
					EPDM	50	99202676	25	99202700
0.7	45	25/20	G 3/4	PVDF	PTFE	20	99202674	20	99202698

Accessories for hydraulic connection

Pump connection kits and inlay kits for pump connection size G 5/4

Retrofit pump connection kits and inlay kits for the integration of Grundfos standard dosing pumps into installations with various sizes of hoses or pipes.

A pump connection kit includes one set of inlays and one union nut.



Pump connection kit

The inlay kits are used to connect pumps and accessories to pipes or hoses that differ from Grundfos standard sizes. An inlay kit includes two sets of inlays.



Inlay kit

Order data

Application	Connection type	For hose/pipe size		Code	Material	Product number	
		Internal	External			Connection kit	Inlay kit
Hose connection	Nipple and clamp	19, 20 mm	-	U3	PP	99082037	-
Pipe connection	Gluing or welding inlay	-	25 mm		PVC	99082038	-
				PVDF	99082039	-	
Hose connection	Cone and ring	13 mm	20 mm	A6	PVC	91835696	99170747

TM068425

TM068430

Application	Connection type	For hose/pipe size		Code	Material	Product number	
		Internal	External			Connection kit	Inlay kit
Hose connection	Nipple and clamp	19, 20 mm or 3/4"	-	Q	PP	99169576	99169735
					PVC	99169603	99169740
					PVDF	99169728	99169738
Pipe connection	Welding inlay	-	25 mm	B4	PP	91835697	99171119
			DN 20, 3/4"	C0	PVDF	91835698	99171146
			25 mm	B0	SS	99369686	-
Pipe connection	Gluing inlay	-	3/4" pipe (US) or 26.6 mm (BS)	C7	PVC	96701989	99171177
			3/4 NPT	A7	PVC	99082040	99171707
					PP	99082041	99171776
Pipe connection	Internal thread	Rp 3/4	-	A1	PVDF	99082042	99171793
					PP	99082043	99182104
					SS*	99082044	99182109
		3/4 NPT	A3	Alloy C-4**	99082045	99182114	
				PP	99082046	99182136	
				PVDF	99082047	99174974	
		3/4 NPT	A3	PVDF	99082048	99175004	
				SS*	99082049	99175015	
				Alloy C-4**	99082050	99175031	
Pipe connection	Cutting-ring type	19 mm	22 mm	C3	SS*	96727555	-

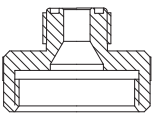
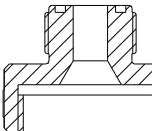
* Union nut: Stainless steel 1.4401, inlay: Stainless steel 1.4571

** 2.4610 (Alloy C-4)

Threaded adapters G 5/4

With threaded adapters, different sizes of threaded connections can be connected. A threaded adapter includes a gasket.

Order data

Type	Threaded connection size		Material	Product number	
	Internal thread	External thread			Body
 TMO48301	G 5/4	G 5/8	PP	FKM / EPDM	95730432
			PVC	FKM / EPDM	95730433
				PTFE	95730434
			PVDF	FKM / EPDM	95730435
				PTFE	95730436
			 TMO68416	G 5/4	G 3/4
PVC	FKM / EPDM	99227511			
	PTFE	99228197			
PVDF	FKM / EPDM	99227829			
	PTFE	99227533			

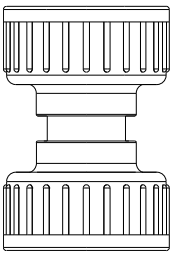
Adapters G 5/4

Union nut adapters

With a union nut adapter, a pressure loading valve PLV or a pressure relief valve PRV can be mounted directly on the pump outlet valve.

Union nut adapters consist of a rigid pipe with union nuts on both ends.

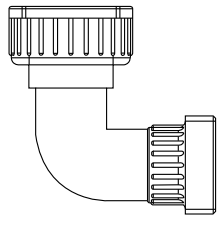
Technical data

Type	Threaded connection size		Body material	Product number
	Internal thread	Internal thread		
 TM068418	G 5/4	G 5/4	PP	99228667
			PVC	99228665
			PVDF	99228669

Elbow adapter

An elbow adapter can be installed, if the space on the inlet side of the pump is confined.

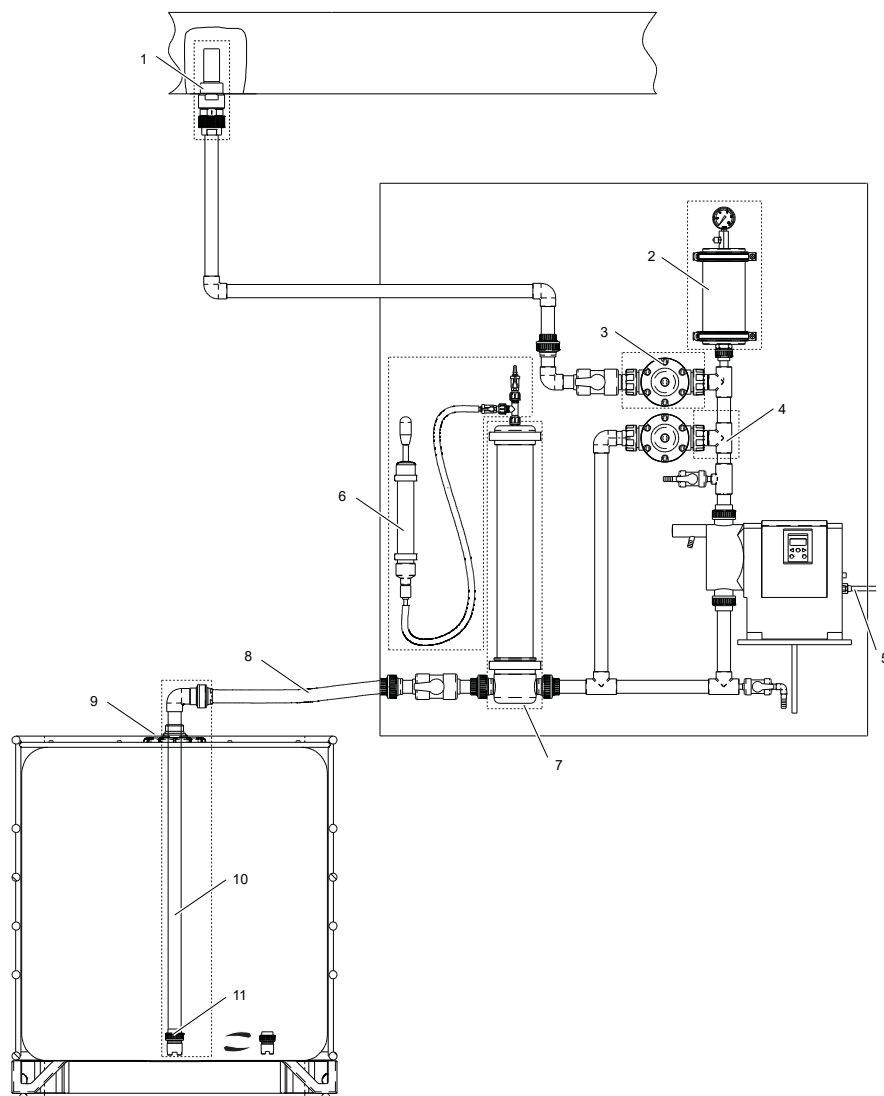
Technical data

Type	Threaded connection size		Body material	Product number
	Internal thread	External thread		
 TM068129	G 5/4	G 5/4	PVC	99168768

10. Hydraulic accessories for pump connection size G 2

Overview of accessories for pump connection size G 2

Grundfos offer a comprehensive range of accessories covering every need when dosing with Grundfos pumps.



TM070519

Pos.	Description	See section
1	Injection units	Injection units for pump connection size G 2
2	Pulsation dampers DBG	Order data for pulsation dampers DB and DBG, pump connection size G 2
3	Pressure loading valves PLV	Order data for pressure loading valves PLV for pump connection size G 2
4	Pressure relief assembly	Relief assembly for pressure loading valves PLV with G 2 connection
5	Cables and plugs	Cables and plugs for DME pumps Technical data and order numbers for cables and plugs
6	Manual vacuum pump kits	Order data for pulsation dampers CSD, pump connection size G 2
7	Pulsation dampers CSD	
8	Hoses	Hoses for dosing pump connection size G 2
9	Adapter for rigid suction lances RSL	Rigid suction lances RSL with connection size G 2
10	Rigid suction lances RSL	
11	Foot valves FV	Foot valves FV with connection size G 2
-	Pump connection inlay kits and union nut kits	Pump connection inlay kits and union nut kits for pump connection size G 2

Hoses for dosing pump connection size G 2

Hoses in various materials, sizes and lengths for dosing pumps.

Pump connection size: G 2



Hoses

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Size (internal/external diameter) [mm]	Material	Max. pressure [bar]	Length [m]	Product number
940	32/41	PVC, textile-reinforced	9	5	96535077
				10	96535079

Foot valves FV with connection size G 2

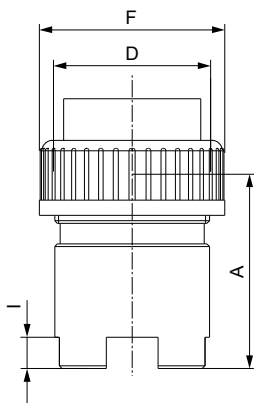
Foot valves G 2 have no level indication.

The delivery includes:

- Strainer (mesh size approx. 1 mm)
- Non-return valve
- Pipe connection set (PVC, PP, PVDF): for pipes with external diameter 40 mm
- Pipe connection set (stainless steel): threaded, Rp 1 1/4, internal thread

Level switches are available as accessories for foot valves. A level switch can be retrofitted, if the foot valve is installed with a pipe with 40 mm external diameter.

Dimensions



Foot valve FV

Material	d [mm]	L [mm]
PVC, PP, PVDF	71.5	75
Stainless steel (SS)	70	75

TM018958

TM069925

Order data

The flow rate values apply to liquids with a viscosity similar to water.

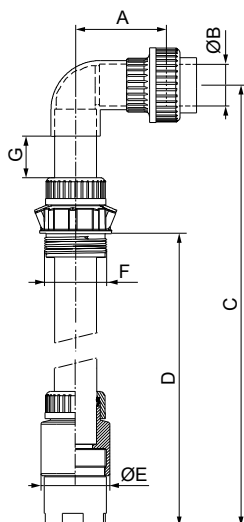
Max. flow rate [l/h]	Material			Product number
	Body	Gasket	Ball	
1150	PVC	FKM	Glass	99352896
		EPDM	PTFE	99352897
		PTFE	PTFE	99352898
	PP	FKM	Glass	99352899
		EPDM	PTFE	99352900
	PVDF	FKM	PTFE	99352902
		PTFE	PTFE	99352903
	SS	PTFE	SS	99352904

Rigid suction lances RSL with connection size G 2

These rigid suction lances are designed for the use with stationary tanks (e.g. Grundfos tanks). Rigid suction lances for stationary tanks have a foot valve with strainer. Level switches are available as accessories and can be retrofitted. The length of the rigid pipe can be adapted to the customer's requirements. The pipe can be cut and assembled without gluing. The delivery includes:

The delivery includes:

- Strainer (mesh size approx. 0.8 mm)
- Non-return valve
- Pipe connection set (PVC): for pipes with external diameter 40 mm
- Adjustable tank connection

Dimensions

Rigid suction lance RSL

A [mm]	øB [mm]	C [mm]	D [mm]	øE [mm]	F	G [mm]
87	40	1342	1200	66	G 2	40

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Max. immersion depth [mm]	Material			Product number
		Body	Gasket	Ball	
1150	1200	PVC / PVDF	FKM	Glass	99328221
			EPDM	Glass	99328227

TM069552

Accessories for rigid suction lances RSL

Adapters for container connection

These adapters allow the installation of standard rigid suction lances RSL (G 2 thread) and foot valves FV with level indication (PE cap) on different types of containers.


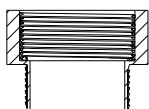

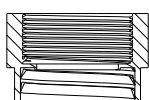

These adapters allow the installation of standard rigid suction lances (G 2 thread) on different types of containers.



Adapters for containers

TM048506

Order data

Type	For container type	Material	Product number
	TM048470 Counter nut for tanks without threaded opening, e.g. 100-litre square tank or 1000-litre cylindrical tank	PVC, grey	98071170
	Containers with 2 NPT threaded opening	PVC, grey	98156690
	Drums with S 70 x 6 coarse thread (MAUSER 2")	PE, blue	98071171
	Drums with S 56 x 4 coarse thread (TriSure®)	PE, orange	98071172
	TM048473 Jerricans with small opening (approx. $\varnothing 36$), according to EN 12713	PE, green	98071173
	Jerricans with medium-sized opening (approx. $\varnothing 45$), according to EN 12713	PE, yellow	98071174
	Jerricans with large opening (approx. $\varnothing 57$), according to EN 12713	PE, brown	98071175
	US containers with bung hole of 63 mm (ASTM International)	PE, white	98071176
	TM048472 IBC (Intermediate Bulk Container) with opening of $\varnothing 150$ mm, S 160 x 7	PE, black	98071177

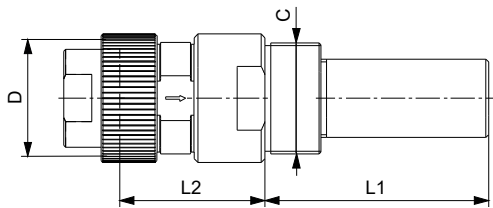
Injection units for pump connection size G 2

Injection units connect the dosing line with the process line. Injection units for large dosing pumps with G 2 connections ensure a minimum counterpressure of 0.6 bar.

The delivery includes:

- Injection pipe
 - immersion depth: 120 mm
 - PP, PVC and PVDF versions can be shortened
- Spring-loaded non-return valve with alloy C-4 spring
- Pipe connection set (PVC, PP, PVDF): for pipes with external diameter 40 mm
- Pipe connection set (Stainless steel): threaded, Rp 1 1/4, internal thread

Dimensions



TM06992

Injection unit

A	B [mm]	C [mm]
G 2	78	120

Order data

- Max. flow rate: 1500 l/h
- The flow rate values apply to liquids with a viscosity similar to water.

Max. pressure [bar]	Material			Product number
	Body	Gasket	Ball	
10	PVC	FKM	Glass	99332974
		EPDM	PTFE	99333838
		PTFE	PTFE	99333839
	PP	FKM	Glass	99333903
		EPDM	PTFE	99333904
	PVDF	FKM	PTFE	99333905
		EPDM	PTFE	99333907
		PTFE	PTFE	99333909
	Stainless steel	PTFE	Stainless steel	99333910

Pressure loading valves PLV

Pressure loading valves PLV maintain a constant counterpressure for the dosing pump. They are used in the following applications:

- Too low counterpressure or no counterpressure at all
- Fluctuating system pressure with outlet-side pulsation damper
- To prevent syphoning, when the inlet pressure is higher than the counterpressure

Pressure loading valves are installed in the outlet line.

Pressure loading valves should not be used as shut-off valves.



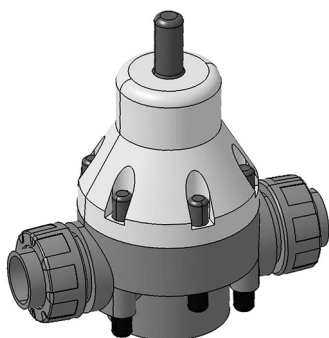
Pressure loading valves PLV, G 5/8

TM069785



Pressure loading valve PLV, G 5/4

TM068422



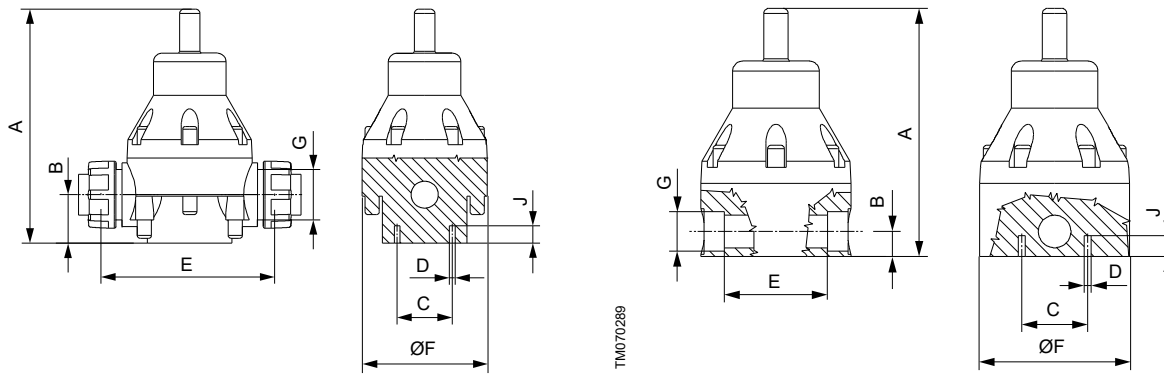
Pressure loading valve PLV, G 2

TM070220

Order data for pressure loading valves PLV for pump connection size G 2

- Loading pressure: adjustable from 0.5 to 10 bar
- Max. operating pressure: 10 bar
- Max. flow rate: 1500 l/h
 - The flow rate values apply to liquids with a viscosity similar to water.
- Pipe connection set (PVC, PP, PVDF): for pipes with external diameter 40 mm
- Pipe connection set (Stainless steel): threaded, Rp 1 1/4, internal thread

Dimensions



Body material: PVC, PP, PVDF

Body material: Stainless steel

Body material	A [mm]	B [mm]	C [mm]	D	E [mm]	øF [mm]	G	J [mm]
PVC, PP	276	57	65	M 8	205	148	G 2	20.4
PVDF	318	56	65	M 8	200	147		
Stainless steel	245	24.5	65	M 8	102	148	Rp 1 1/4	20.5

Order data

Material		Product number
Body	Gaskets	
PVC	FKM / EPDM	99367198
	PTFE	99367199
PP	FKM / EPDM	99367200
PVDF	FKM / EPDM	99367201
	PTFE	99367203
Stainless steel	-	99367204

Relief assembly for pressure loading valves PLV with G 2 connection

Pressure relief valves protect the pump and the outlet-side installations against excessive pressure. All pressurised dosing installations should include a pressure relief valve.

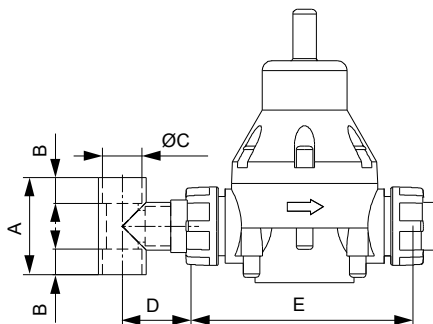
Pressure relief valves are installed in the outlet line near the pump. A pressure relief valve for a large dosing pump can be created by combining a T-piece and a PLV to a relief assembly. The relief line is connected to the outlet of the PLV.

The delivery includes:

- T-piece with union nut for connection of the PLV
- Pipe connection for pipes with external diameter of 40 mm

The pressure loading valve PLV is not included and must be ordered separately.

Dimensions



Relief assembly for pressure loading valves

TM070283

A [mm]	B [mm]	øC [mm]	D [mm]	E [mm]
98	26	40	78	205

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Material	Product number
1500	PVC	99370957
	PP	99370958
	PVDF	99370960

Pulsation dampers

Discharge-side pulsation dampers DB and DBG

Pulsation dampers are used to even out the pulsating flow and pressure produced by positive displacement pumps like diaphragm dosing pumps.

Pulsation dampers DB and DBG have a separating diaphragm and are intended for the outlet side of the dosing pump. They are especially designed for installations with long outlet lines with a small diameter, or with rigid pipes. The pulsation dampers optimise the dosing accuracy and protect the pump and the outlet line against pressure surges.

Pulsation dampers DB and DBG have an air or nitrogen cushion inside, which is separated from the dosing medium by a separating diaphragm. This keeps the preload pressure stable for a long time and avoids that air or nitrogen is dissolved in the dosing medium.

In PVC, PP, and stainless steel pulsation dampers, an FKM or EPDM bladder is used as separating diaphragm, in PVDF pulsation dampers a PTFE bellows is used as separating diaphragm.

Pulsation dampers DBG include a pressure gauge for easy setting of the correct pressure. Pulsation dampers DB have no pressure gauge.

If the counterpressure in the system is low or fluctuating, the installation of a pressure loading valve PLV after the pulsation damper may be required to optimise its function.



Discharge-side pulsation damper DBG

TM068424

Suction-side pulsation dampers CSD with calibration scale

Pulsation dampers are used to even out the pulsating flow and pressure produced by positive displacement pumps like diaphragm dosing pumps.

Pulsation dampers CSD are installed on the inlet side of the dosing pump. They can be used for multiple pumps that are supplied by the same inlet line.

Pulsation dampers CSD help to ensure the accuracy of dosing pumps, which is highly dependent on proper suction conditions. In installations with long inlet lines or inlet lines with a small diameter, the use of a CSD pulsation damper is recommended.

Pulsation dampers CSD have a transparent PVC cylinder with a fine volume scale. When combined with a shut-off valve in the inlet line, they can also be used for calibration or flow measurement. In installations without flooded suction, the optional manual vacuum pump kit simplifies startup of the dosing pump.



TM066450

Suction-side pulsation dampers CSD with calibration scale

Sizing guide for pulsation dampers, pump connection size G 2

Look up your pump type in the table. Find the required pulsation damper volume in the respective table column.

Pump type	Pump stroke volume [ml]	Required volume [l]	
		DB / DBG	CSD
DMX 315-3	73	1.4-1.5	5
DMX 525-3	73	1.4-1.5	5
DMX 765-3			

Order data for pulsation dampers CSD, pump connection size G 2

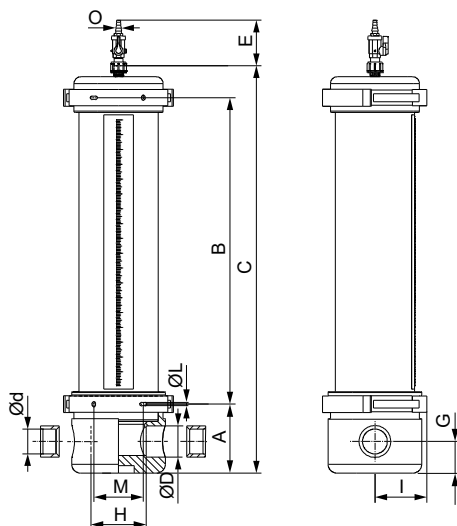
Features

- Prepared for pipe gluing connection with socket (d).
- Calibration is possible by installing a shut-off valve.
- In installations without flooded suction, the optional manual vacuum pump kit simplifies the startup of the dosing pump.

The delivery includes:

- Sight glass with calibration scale
- Aeration valve
- Material for wall mounting

Dimensions



TM070034

Suction-side pulsation dampers CSD with calibration scale

Damper volume [l]	A [mm]	B [mm]	C [mm]	ød [mm]	øD [mm]	E [mm]	G [mm]	H [mm]	I [mm]	øL [mm]	M [mm]	O [mm]
5	118.5	700	871	40	50	92	51	71.5	77.5	6.5	60	8-13
10	139.5	600	824	50 40	63	92	64	111.5	95	6.5	90	8-13

Order data

Max. operating pressure: 2 bar

Damper volume [l]	Max. pump stroke volume [ml]	Max. number of pumps with max. stroke volume	Scale division [ml]	Material		Product number
				Body	Sight glass	
5	75	3	10	PVC	PVC	99192488
10	171	3	50	PVC	PVC	99194326

Order data for pulsation dampers DB and DBG, pump connection size G 2

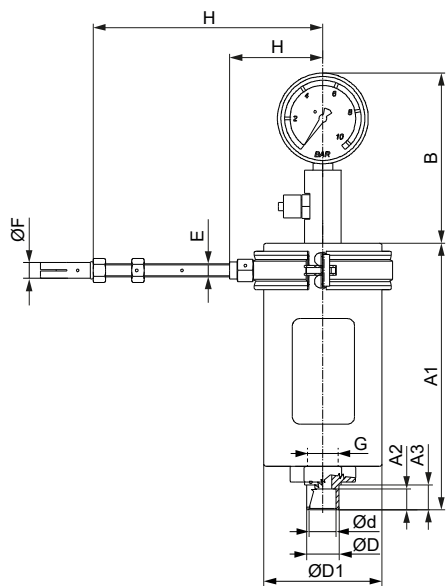
We recommend using one pulsation damper per dosing pump.

Preload pressure: 2.7 bar.

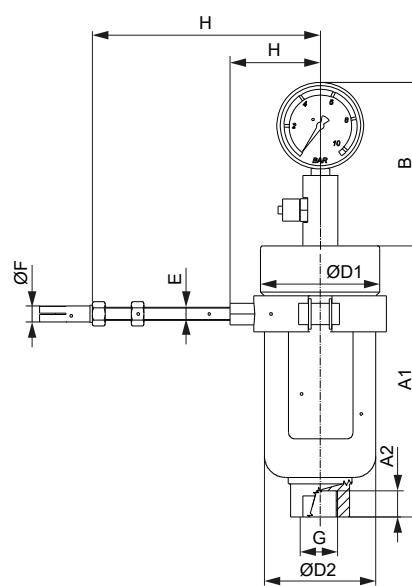
The delivery includes:

- Material for wall mounting
- PVC versions are prepared for pipe gluing connection with spigot (D) or socket (d).
- PVDF and PP versions are prepared for pipe welding connection with spigot (D) or socket (d).
- Pulsation dampers DBG include a pressure gauge.

Dimensions



TMD068284



TMD068452

Pulsation damper DBG, PVC version

Pulsation damper DBG, stainless steel version

B [mm]	øF [mm]	E
129	12	M 10

Damper volume [l]	Body material	Connections		A1 [mm]	A2 [mm]	A3 [mm]	øD1 [mm]	øD2 [mm]	H [mm]
		øD/ød [mm]	G Internal thread						
1.5	PVC, PP	40/32	G 1	335	22	28	130	-	90-190
1.4	PVDF	40/32	G 3/4	294	22	28	125	104	77-177
1.5	SS*	-	G 3/4	245	25	-	110	104	77-177
2.6	PVC, PP	40/32	G 1	365	22	28	160	-	105-205
	PVDF	40/32	G 3/4	360	22	28	170	156	103-203
	SS*	-	G 1	295	27	-	140	129	89.5 - 189.5

* Stainless steel 1.4404

Order data

Damper volume [l]	Max. pump stroke volume [ml]	Connections		Material		Type DB		Type DBG	
		øD/ød [mm]	G Internal thread	Body	Gasket	Max. operating pressure [bar]	Product number	Max. operating pressure [bar]	Product number
1.5	75	40/32	G 1	PVC	FKM	10	99331670	10	99332053
					EPDM	10	99331671	10	99332054
				PP	FKM	10	99331672	10	99332055
					EPDM	10	99331693	10	99332056
1.4	75	40/32	G 3/4	PVDF	PTFE	20	99331694	20	99332057
1.5	75	-	G 3/4	SS	FKM	40	99331695	25	99332058
					EPDM	40	99331696	25	99332059
2.6	171	40/32	G 1	PVC	FKM	10	99333783	10	99333827
					EPDM	10	99333784	10	99333828
				PP	FKM	10	99333785	10	99333829
					EPDM	10	99333786	10	99333830
				PVDF	PTFE	20	99333787	20	99333831
				SS	FKM	30	99333788	25	99333832
EPDM	30	99333789	25		99333843				

Accessories for hydraulic connection

Pump connection inlay kits and union nut kits for pump connection size G 2

Retrofit pump connection kits and inlay kits for the integration of Grundfos standard pumps into installations with various sizes of hoses or pipes.

The inlay kits are used to connect pumps to pipes and hoses that differ from Grundfos standard size.



Inlay kit

Order data for inlay kits

An inlay kit includes 2 sets of inlays.

Application	Connection type	For hose/pipe size		Connector type key code	Material	Product number
		Internal	External			
Hose connection	Nipple and clamp	32 mm, 41 mm 1 1/4", 1 1/2"	-	C5	PP	96535111
					PVC	99338732
					PVDF	96535112
Pipe connection	Welding inlay	-	40 mm	B5	PP	99305837
			PVDF	99305838		
Pipe connection	Gluing inlay	-	DN 32, 1 1/4"	C1	SS	99369687
			40 mm	K	PVC	99305839
Pipe connection	External thread	-	1 1/4 NPT	A8	PVC	99305732
					PP	99305743
Pipe connection	Internal thread	Rp 1 1/4	-	A2	PP	96608418
				A2	PVDF	96608419
				A2	SS	96575258
				A4	SS	96537895
		1 1/4 NPT	-			

Order data for union nut kits

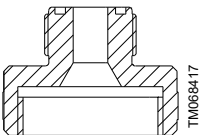
A union nut kit includes 2 union nuts.

Application	Material	Product number
DMX Accessories for dosing pumps	PVC	99307539
	PP	99307540
	PVDF	99307541
DMX Accessories for dosing pumps	SS	96731914

TM068430

Threaded adapters G 2

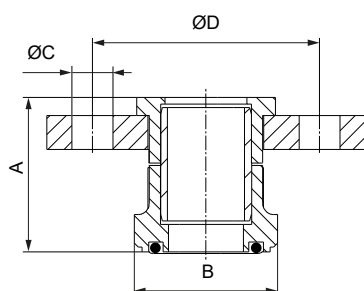
With threaded adapters, different sizes of threaded connections can be connected. A threaded adapter includes a gasket.

Type	Threaded connection size		Material		Product number
	Internal thread	External thread	Body	Gaskets	
	G 2	G 5/4	PP	FKM / EPDM	99227945
			PVC	FKM / EPDM	99227943
				PTFE	99227960
			PVDF	FKM / EPDM	99227953
PTFE	99227948				

Flange adapters DN 32

With flange adapters, accessories with G 2 connections can be connected to a dosing pump with DN 32 flanges. A flange adapter includes a gasket for the threaded connection side.

Dimensions



TM070343

A [mm]	B	øC [mm]	øD [mm]
68	G 2	18	100

Order data

Flange	Threaded connection size	Material		Product number	
		External thread	Body		Gaskets
DN 32	G 2		PP	FKM / EPDM	99307979
			PVC	FKM / EPDM	99307977
				PTFE	99307978
			PVDF	FKM / EPDM	99307980
				PTFE	99307981

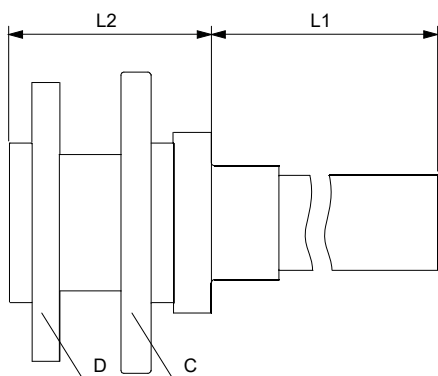
11. Hydraulic accessories for DMX 227 dosing pumps

Injection units for DMX 227

Max. operating pressure: 6 bar

Max. operating temperature: 40 °C

Dimensions



Injection unit

The flanges comply with DIN 2501 / EN 1092.

A [mm]	B [mm]	C	D
157	220	Flange DN 80	Flange DN 65

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Pump connection size	Material			Product number
		Body	Ball	Gasket	
4000	Flange DN 65	PVC	PVC	FKM	96688319
		PP	PP	FKM	96688320

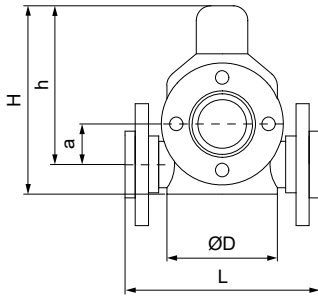
Pressure relief valves for DMX 227

DN 65 pressure relief valves protect the outlet pipes against too high pressures.

- Overflow function by a diaphragm spring system
- Bypass valves with a connected T-piece
- Relief pressure:
 - factory-set to 10 bar approximately
 - adjustable from 0 to 10 bar

TMD70030

Dimensions, PVC and PP version



TMO38639

PVC and PP version

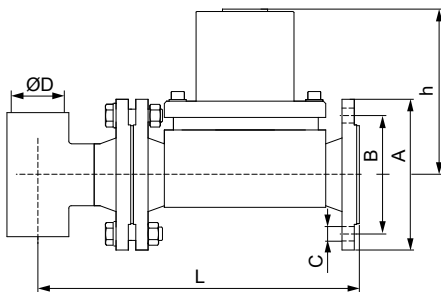
Material	L [mm]	H [mm]	h [mm]	a [mm]	øD [mm]
Body / Gasket					
PVC / FKM	266				
PVC / EPDM		230	195	46	130
PP / FKM	326				

Order data, PVC and PP version

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Pump connection size	Included connections	Material	Product number
			Body / Gasket	
4000	Flange DN 65	Flange DN 65	PVC / FKM	96638461
			PVC / EPDM	96635243
			PP / FKM	96727368

Dimensions, stainless-steel version



TMO68749

Stainless-steel version

A [mm]	B [mm]	C [mm]	øD	h [mm]	L [mm]
185	145	18	76 mm / DN 65	203	394

Order data, stainless-steel version

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Pump connection size	Included connections	Material	Product number
			Body / Gasket	
4000	Flange DN 65	Flange DN 65	Stainless steel 1.4571 / FKM	96694452

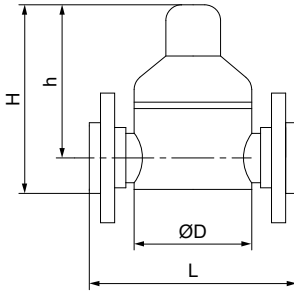
Pressure loading valves for DMX 227

Pressure loading valves DN 65 are used, if the injection point is at a lower level than the pump.

The opening pressure can be adjusted by a spring-loaded screw.

Loading pressure: factory-set to 3 bar approximately

Dimensions



Pressure loading valve

TMC36638

Material		L [mm]	H [mm]	h [mm]	øD [mm]
Body	Gasket				
PP	FKM	326	230	195	130
PVC	FKM	266	230	195	130
PVC	EPDM	266	230	195	130
Stainless steel 1.4571	FKM	280	243	203	198

Order data

The flow rate values apply to liquids with a viscosity similar to water.

Max. flow rate [l/h]	Pump connection size	Included connections	Material		Product number
			Body	Gasket	
4000	Flange DN 65	Flange DN 65	PP	FKM	96727367
			PVC	FKM	96638486
			PVC	EPDM	96635246
			Stainless steel 1.4571	FKM	96694434

Pulsation dampers DB and DBG for DMX 227

Pulsation dampers DB and DBG have a separating diaphragm and are intended for the outlet side of the dosing pump.

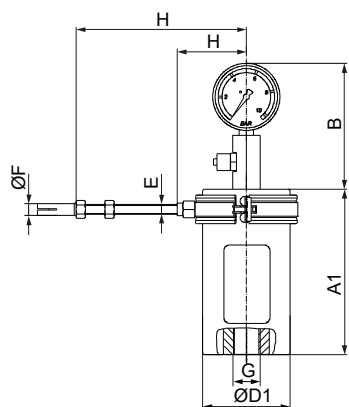
We recommend using one pulsation damper per dosing pump.

Preload pressure: 2.7 bar.

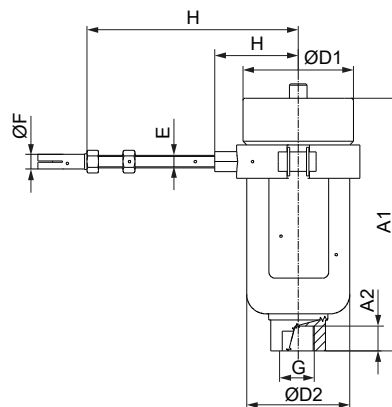
The delivery includes:

- Material for wall mounting
- Pulsation dampers DBG include a pressure gauge.

Dimensions



TMD70064



TMD70065

Pulsation damper DBG, plastic version

Pulsation damper DB, stainless steel version

Damper volume [l]	Body material	A1 [mm]	A2 [mm]	B [mm]	øD1 [mm]	øD2 [mm]	E	øF [mm]	G Internal thread	H [mm]
5.6	PVC, PP	458	32	129	198	-	M 10	12	G 1 1/2	124-224
	PVDF	490	32	129	170	156	M 10	12	G 1	103-203
	SS*	414	30	129	170	156	M 10	12	G 1 1/2	103-203
10.0	PVDF	500	50	129	250	-	M 10	12	G 2	150-250
10.4	PVC, PP	441	50	129	250	206	M 10	12	G 2	128-228
	SS*	442	30	129	220	206	M 10	12	G 2	128-228

* Stainless steel 1.4404

Order data

Damper volume [l]	Max. pump stroke volume [ml]	Connections		Material		Type DB		Type DBG	
		G Internal thread	Body	Gasket	Max. operating pressure [bar]	Product number	Max. operating pressure [bar]	Product number	
5.6	280	G 1 1/2	PVC	FKM	10	on request	10	99380184	
				EPDM	10	on request	10	99380185	
			PP	FKM	10	on request	10	on request	
				EPDM	10	on request	10	on request	
			G 1	PVDF	PTFE	20	on request	10	on request
				SS	FKM	40	on request	10	on request
EPDM	40	on request	10		on request				
10.0	460	G 2	PVDF	PTFE	20	on request	10	on request	
10.4	460	G 2	PVC	FKM	10	on request	10	99380187	
				EPDM	10	on request	10	99380186	
			PP	FKM	10	on request	10	on request	
				EPDM	10	on request	10	on request	
			SS	FKM	30	on request	10	on request	
				EPDM	30	on request	10	on request	

Pump connection kits and inlay kits for DMX 227

Retrofit pump connection kits and inlay kits for the integration of Grundfos standard pumps into installations with various sizes of pipes.

The connection kits are used to connect dosing pumps to pipes that differ from Grundfos standard sizes.

Pump connection size	Pipe internal / external diameter [mm]	Max. pressure [bar]	Material	Product number
Flange DN 65	65 / 75	10	PP	96727603
			PVC	96727602
			Stainless steel 1.4401	96727604

12. General accessories

Dosing tanks

Cylindrical tanks

Dosing tanks are intended for storing and dosing liquids. Different tank accessories can be mounted directly to the tank. Depending on the tank size and type of dosing pump, the pump can be mounted on the tank directly or with an adapter plate.

Cylindrical tanks are available transparent or black. They have a litre scale and a black screw cap.

- Tank volume: 40-1000 l
- Tank material: LLDPE, UV-stabilised
- Liquid temperature: -20 °C to +45 °C

All cylindrical tanks are prepared for a G 3/4 opening for a drain valve, and have a screw plug (PE / EPDM).

The cylindrical tanks with volumes of 60, 100, 200, 300 and 500 litres include additionally:

- Threaded M 6 inserts for the direct assembly of a dosing pump.
- A G 2 opening for a rigid suction lance or a foot valve, closed with a screw plug
- Threaded M 6 inserts at the bottom part for floor mounting with a set of floor-mounting brackets.
- A flange for an electric stirrer with threaded inserts

The cylindrical tanks with volumes of 60, 100, 200, 300, 500 and 1000 litres can optionally be prepared for direct assembly of an electric stirrer:

- With opening for electric stirrer (60-500 l).
- With opening and reinforced beam for holding an electric stirrer (1000 l).



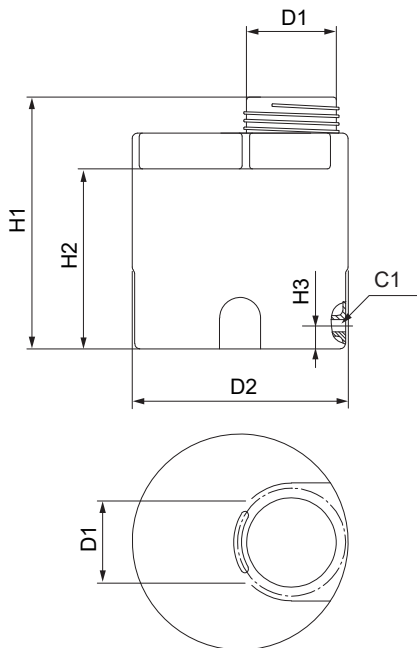
Cylindrical tank, 60 litres

TM048468

Requirements and restrictions for mounting pumps directly on cylindrical tanks

Pump type	Tank volume [l]	Requirement / restriction
DMX 221	40, 1000	Holes must be drilled on site. Use plastic screw kit 95730864 to fix the pump on the tank.
	60, 100, 200, 300, 500	Use screw kit 98159495.
DMX 226	40	Mounting is not possible due to the pump's dimensions or weight.
	60, 100	Pump fits with tank adaptor plate 99211241, but possibly exceeds the mounting area. Combination with electric mixer might not be possible. Observe the pump's maximum suction lift.
	200, 300, 500	Use tank adapter plate 99211241. Observe the pump's maximum suction lift.
	1000	Holes must be drilled on site. Plastic screws cannot be used due to the pump's weight. Observe the pump's maximum suction lift.
DMX 227	40, 60, 100, 200, 300, 500, 1000	Mounting is not possible due to the pump's dimensions or weight.

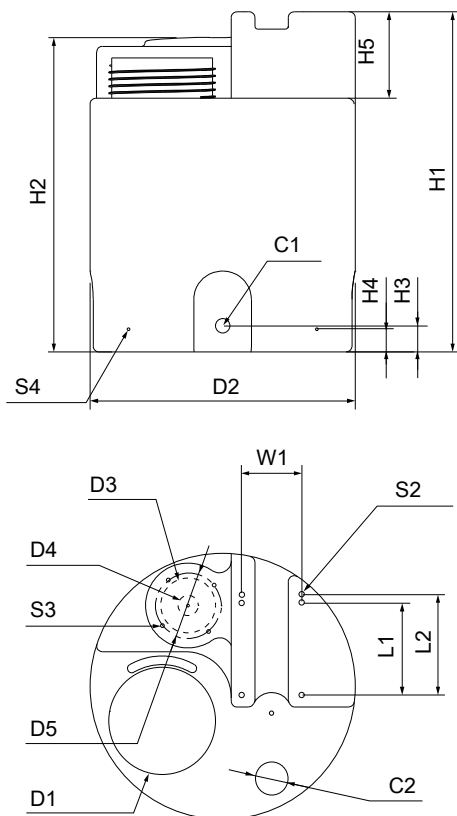
Dimensions of cylindrical tank, 40 litres



TM069773

H1 [mm]	H2 [mm]	H3 [mm]	D1 [mm]	D2 [mm]	C1
420	350	45	ø160	ø420	Rp 3/4

Dimensions of cylindrical tank, 60 and 100 litres

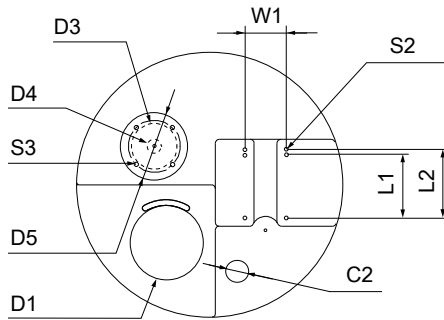
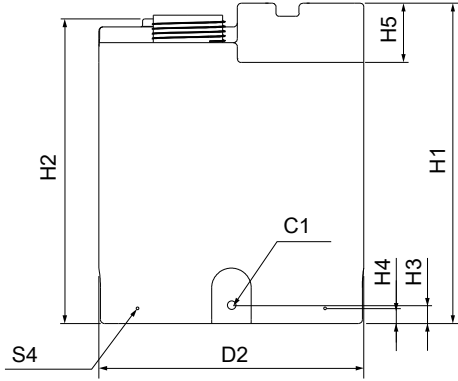


TM069774

Tank volume: 60 l		Tank volume: 100 l	
H1 [mm]	H2 [mm]	H1 [mm]	H2 [mm]
590	545	840	795

H3 [mm]	H4 [mm]	H5 [mm]	D1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	D5 [mm]
50	40	150	∅160	∅460	∅95	∅35	∅130
C1	C2	L1 [mm]	L2 [mm]	W1 [mm]	S2	S3	S4
G 3/4	G 2	159	174	105	M 6 x 9	M 8 x 12	M 6 x 9

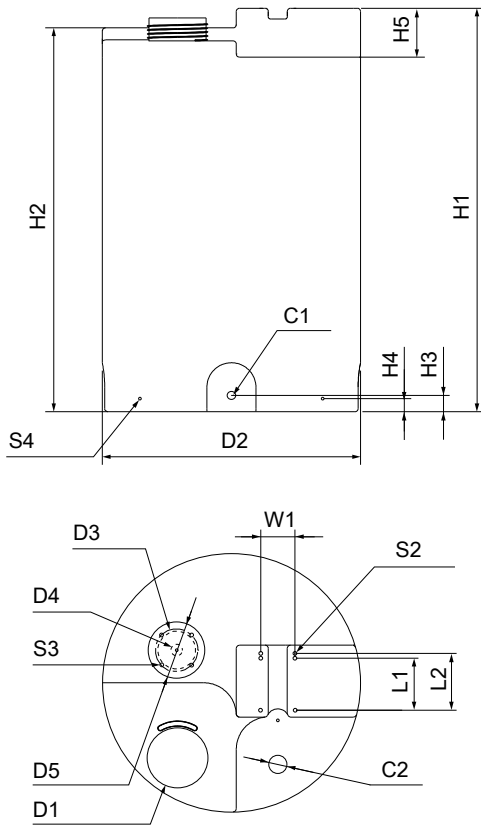
Dimensions of cylindrical tank, 200 and 300 litres



TM069775

Tank volume: 200 l				Tank volume: 300 l			
H1 [mm]	H2 [mm]	H1 [mm]	H2 [mm]	H1 [mm]	H2 [mm]	H1 [mm]	H2 [mm]
810	770	1080	1040				
H3 [mm]	H4 [mm]	H5 [mm]	D1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	D5 [mm]
50	40	150	∅160	∅670	∅115	∅35	∅130
C1 [mm]	C2	L1 [mm]	L2 [mm]	W1 [mm]	S2	S3	S4
G 3/4	G 2	159	174	105	M 6 x 9	M 8 x 12	M 6 x 9

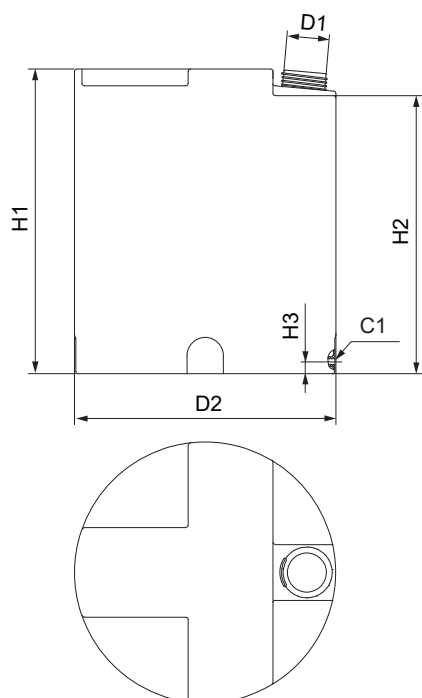
Dimensions of cylindrical tank, 500 litres



TM069776

H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	D1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	D5 [mm]
1235	1175	50	40	150	ø160	ø790	ø115	ø35	ø130
C1	C2	L1 [mm]	L2 [mm]	W1 [mm]	S2	S3	S4		
G 3/4	G 2	159	174	105	M 6 x 9	M 8 x 12	M 6 x 9		

Dimensions of cylindrical tank, 1000 litres



TM069777

H1 [mm]	H2 [mm]	H3 [mm]	D1 [mm]	D2 [mm]	C1
1260	1150	50	ø160	ø1080	G 3/4

Order data

Tank volume [l]	Prepared for direct assembly of an electric stirrer	Weight [kg]	Product number	
			Transparent	Black
40	-	3.4	96688081	95701166
60	-	5.5	98148805	98149053
	Yes	5.5	98150038	98150040
100	-	7.5	98149057	98149082
	Yes	7.5	98150051	98150052
200	-	11.5	98149215	98149224
	Yes	11.5	98150053	98150054
300	-	13	98149245	98149252
	Yes	13	98150055	98150056
500	-	28	98149266	98149269
	Yes	28	98150057	98150058
1000	-	40	96688086	95706305
	Yes	48	98173675	98173752

Tank accessories

Floor mounting brackets

The floor mounting brackets can be mounted to the floor and fixed with screws into the threaded M 6 inserts at the bottom part of a cylindrical tank.

Description	Product number
Set of 4 floor-mounting brackets with fixing screws	98149921

Collecting tray

A collecting tray collects chemicals that might leak out of the cylindrical tank, and protects the environment. Collecting trays are available in several sizes.

- Material: PE
- Colour: transparent



TMD48316

Tank volume [l]	Volume [l]	Dimensions (diameter x height) [mm]	Product number
60	80	500 x 545	96726831
100	120	500 x 700	96726832
200	210	770 x 595	98150059
300	400	770 x 960	96726834
500	500	860 x 980	95701272
1000	1000	1150 x 1080	96726836

Dissolving hopper

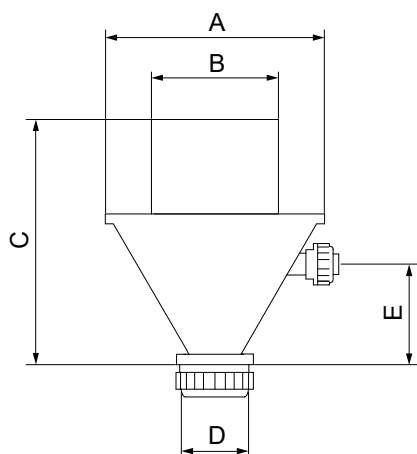
Dissolving hopper for washing powders into a dosing tank.

- Material: PVC
- Dosing tank connection: DN 40 through-bolt
- Water connection: G 5/4
- With union nut and inlay for PVC pipe (cementing diameter 25 mm)

Order data

Description	Product number
Dissolving hopper	96726979

Dimensions of dissolving hopper



TMD69778

A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
ø270	ø140	283	ø70	120

Handheld mixer

Handheld mixer for use in dosing tanks.

- Material: PE
- Shaft length 1200 mm, length can be adapted to the corresponding dosing tank
- With DN 15 through-bolt for connection in the dosing tank



TMO48477

Description	Product number
Handheld mixer	98133793

Drain valve

Drain valve for installation in the threaded sleeve of the dosing tank.

- Material: PVC
- Dosing tank connection: G 3/4

Description	Product number
Drain valve	96689132

Ventilation valve

The spring-loaded ventilation valve can be installed either for aeration or deaeration of the dosing tank.

Opening pressure: 0.05 bar

Description	Material			Product number
	Body	Gasket	Ball	
Ventilation valve	PVC	FKM	Glass	96694401

Withdrawal device

The withdrawal device with ball valve is designed for installation in the drain opening of a Grundfos tank. Withdrawal devices have a through-bolt for connection to the dosing tank.

Hose or pipe connection sets are included.

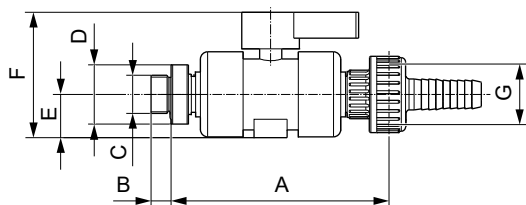
- Hose connection set G 5/8: 4/6 mm, 6/9 mm, 6/12 mm and 9/12 mm
- Hose and pipe connection set G 5/4:
 - for hoses with internal diameter 19 or 20 mm
 - for pipes with external diameter 25 mm

Order data of withdrawal device

The flow rate values apply to liquids with a viscosity similar to water.

Size	Max. flow rate [l/h]	Material		Product number
		Body	Gasket	
G 5/8	60	PVC	FKM	99226879
G 5/8	60	PVC	EPDM	99226880
G 5/4	460	PVC	FKM	99226881
G 5/4	460	PVC	EPDM	99226893

Dimensions of withdrawal device



TM068414

Size	A [mm]	B [mm]	C	D [mm]	E [mm]	F [mm]	G
G 5/8	143	14	G 3/4	41	27	75	G 5/8
G 5/4	151	14	G 3/4	41	30	87	G 5/4

Electric stirrers

Electric stirrers are intended for the mixing and dissolving of non-abrasive, non-inflammable and non-explosive liquids. They ensure that the liquid in the dosing tank is mixed constantly. With a frequency of 50 Hz they run at approximately 1500 rpm. Various types for tanks from 60 litres up to 1000 litres are available. Electric stirrers are suitable for liquids with low to medium viscosity.

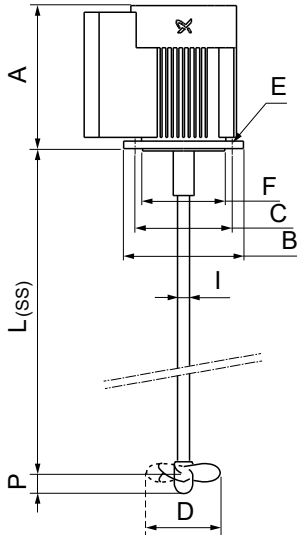
The following types of electric stirrers are available:

- Stainless steel version (SS)
- PP-coated stainless steel version (PP)
- PP-coated stainless steel version with sealing flange (PP-S)

Order data

Type	Product number			
Tank volume [l]	Nominal shaft length [mm]	Material	Single-phase motor	Three-phase motor
60	450	SS	98164569	98165309
		PP	98164573	98165310
		PP-S	98164575	98165318
100	690	SS	98164606	98165355
		PP	98164607	98165357
		PP-S	98164609	98165382
200	700	SS	98164987	98165385
		PP	98164990	98165386
		PP-S	98165152	98165391
300	950	SS	98165172	98165393
		PP	98165175	98165432
		PP-S	98165177	98165433
500	1100	SS	98165253	98165435
		PP	98165258	98165436
		PP-S	98165259	98165437
1000	1150	SS	98165287	98165439
		PP	98165290	98165440
		PP-S	98165304	98165451

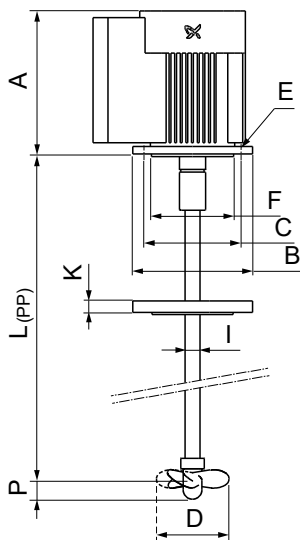
Dimensions



TM069780

Electric stirrer, stainless steel version

Tank volume [l]	L _(ss) [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	P [mm]	I [mm]
60	450	210	140	115	88	9	95	25	16
100	691	210	140	115	88	9	95	25	16
200	698	191	160	130	100	9	110	25	16
300	950	191	160	130	100	9	110	25	16
500	1100	191	160	130	125	9	110	28	16
1000	1150	231	200	165	125	11	130	28	16



TM069781

Electric stirrer, PP version with sealing flange

Tank volume [l]	L _(PP) [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	P [mm]	I [mm]	K [mm]
60	452	210	140	115	88	9	95	25	20	15
100	693	210	140	115	88	9	95	25	20	15
200	700	191	160	130	100	9	110	25	20	15
300	952	191	160	130	100	9	110	25	20	15
500	1102	191	160	130	125	9	110	28	20	15
1000	1152	231	200	165	125	11	130	28	20	15

Motor data of electric stirrers

Tank volume [l]	Power rating [kW]	Motor phases	Voltage [V]	Frequency [Hz]	Enclosure class	Insulation class
60, 100	0.09	1	220-240	50/60	IP65	F
		3	220-240 / 380-420 (440-480)	50/60 (60)		
200, 300, 500	0.25	1	220-230	50	IP55	F
		3	220-240 / 380-415	50/60		
1000	0.55	1	220-230	50	IP55	F
		3	220-240 / 380-415	50/60		

Level-control unit for electric stirrer protection

Grundfos level-control units are suitable for dosing pumps with input for level control. The contact type of the reed switch unit is factory-set to NO. The contact type can be set to NC by turning the floater(s).

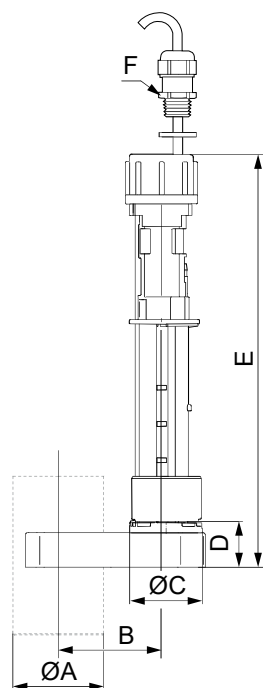
- Max. voltage: 48 V
- Max. current: 0.5 A
- Max. load: 10 VA

Level-control units for electric stirrer protection are used with rigid suction lances RSL. They are clipped to the rigid suction lances at the required switch-off height above the stirrer propeller. Level-control units can also be used for overflow protection or as an additional tank level indication.

The delivery includes:

- Reed switch unit with 1 floater
- 5 m cable with PE jacket and open wire ends
- Clip for diameter 32 mm or 40 mm
- Cable gland for mounting at the tank top

Dimensions



Level-control unit for electric stirrer protection

ØA [mm]	B [mm]	ØC [mm]	D [mm]	E [mm]	F
40	47.5	32	20	182	M 12 x 1.5
32	43	32	28	190	M 12 x 1.5

Order data

Description	Material	For RSL with connection size	ØA [mm]	Product number
Level-control unit for electric stirrer protection	PE	G 5/8	32	98306210
		G 5/4, G 2	40	99174140

Flexible level-control unit

Grundfos level-control units are suitable for dosing pumps with input for level control. The contact type of the reed switch unit is factory-set to NO. The contact type can be set to NC by turning the floater(s).

- Max. voltage: 48 V
- Max. current: 0.5 A
- Max. load: 10 VA

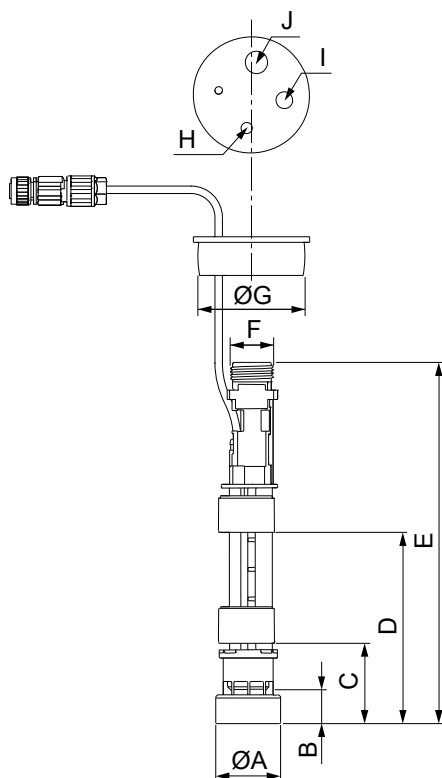
The flexible level-control unit is suitable for dosing pumps with level-control input and provides 2 level switches.

The delivery includes:

- Reed switch unit with 2 floaters
- 5 m of cable with PE jacket and M 12 plug
- Weight that keeps the level-control unit in an upright position at the tank bottom
- PE cap, Ø58 mm, for assembly in Grundfos cylindrical tanks, or for use with tank adapters

TM068304

Dimensions



TM068102

Flexible level control unit

øA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F	øG [mm]	H [mm]	I [mm]	J [mm]
35	19	43.5	103.5	196	G 5/8	58	6	9	12

Order data

Description	Material	Product number
Flexible level-control unit PE	PE	98375695

Level-control units for RSL and FV for pump connection size G 2

Grundfos level-control units are suitable for dosing pumps with input for level control. The contact type of the reed switch unit is factory-set to NO. The contact type can be set to NC by turning the floater(s).

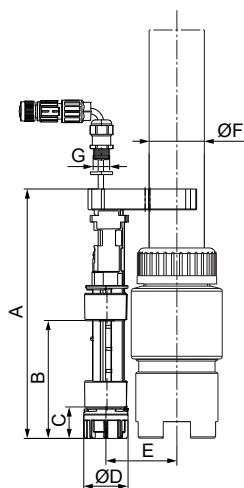
- Max. voltage: 48 V
- Max. current: 0.5 A
- Max. load: 10 VA

Level-control units for RSL G 2 and FV G 2 are used for rigid suction lances or foot valves in stationary tanks for pumps up to 1150 l/h. They are clipped to the rigid suction lances or foot valves at the required switch-off height.

The delivery includes:

- Reed switch unit with 2 floaters
- 5 m cable with PE jacket and M 12 plug
- Clip for diameter 40 mm
- Cable gland for mounting at the tank top

Dimensions



TMC65986

Level-control unit

A [mm]	B [mm]	C [mm]	øD [mm]	E [mm]	øF	G
181	85	25	32	51.5	40	M 12 x 1.5

Order data

Description	Material	Product number
Level-control unit	PE	99339691

Pump mounting accessories

Wall brackets

Wall brackets with installation material for mounting a pump on a wall.

Description	Pump type	Material	Product number
Wall brackets with installation material	DMX 221, DDI 222	PP	91836471
Wall brackets with installation material	DMX 226, DMH 251 / 252 / 253, DME 60-10 / 150-4, SMART Digital XL DDA / DDE	PE	99211245

Pump mounting screws

Set of screws for mounting a dosing pump on a tank.

Description	Tank volume [l]	Pump type	Material	Product number
Set of screws for cylindrical tank	60, 100, 200, 300, 500	SMART Digital S DDA / DDC / DDE, DDI, DMX 221	Stainless steel	98159495
Set of screws for cylindrical tank	40, 1000	SMART Digital S DDA / DDC / DDE, DDI, DMX 221	PP	95730864

Adapter plate for 1 pump

For mounting one dosing pumps on a tank, comprising 1 adapter plate, 8 screws, 8 washers.

Material:

- Adapter plate: black HD-PE
- Screws and washers: Stainless steel

Description	Tank volume [l]	Pump type	Product number
Adapter plate for 1 pump on 1 tank	200, 300, 500	DMX 226, DMH 251 / 252 / 253	99211241

Adapter plate for 2 pumps

For mounting two dosing pumps on one tank, comprising 1 adapter plate, 12 screws, 12 washers.

Material:

- Adapter plate: black HD-PE
- Screws and washers: Stainless steel

Description	Tank volume [l]	Pump type	Product number
Adapter plate for 2 pumps on 1 tank	60, 100, 200, 300, 500	SMART Digital S DDA / DDC / DDE, DDI, DMX 221	98982080

Accessories for pulsation dampers and calibration columns**Filling devices for pulsation dampers DB and DBG**

Filling devices make the adjustment of the preload pressure of pulsation dampers easy. A filling device can be connected to the filling valve of a pulsation damper and to a local compressed-air source or a nitrogen bottle. When the pressure is adjusted, the filling device can be removed.

Order data for filling devices for pulsation dampers DB and DBG

Filling devices are available with different pressure gauges.

A set includes a filling device with pressure gauge and a hose with connections for a nitrogen bottle.

Hose connections:

- Nitrogen bottle: W24.3 x 1 1/4"
- Filling device: G 1/4



TM070019

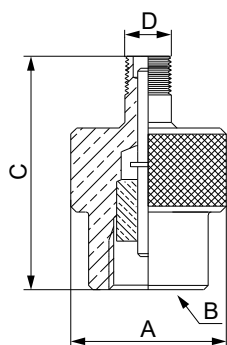
Filling device

Description	Height [mm]	Max. operating pressure [bar]	Product number
Filling device with hose	136	25	96727342
		60	96727343
		160	96727344
		250	96727345

Tyre-valve adapter for pulsation dampers DB and DBG

A tyre-valve adapter allows the use of a common air pump with tyre valve connector for filling pulsation dampers DB and DBG with air.

Dimensions



Tyre-valve adapter

A [mm]	B	C [mm]	D [mm]
25	G 1/4	38	Vg 8

Order data

Description	Max. operating pressure [bar]	Product number
Tyre-valve adapter, for use in conjunction with compressed-air filling device or pressure gauge	8	96727332

Pressure gauges for discharge-side pulsation dampers with separating diaphragm

The following pressure gauges suit all sizes of discharge-side pulsation dampers with separating diaphragm. Select your suitable variant according to the maximum pressure of the pulsation damper.

Description	Max. pressure [bar]	Product number
Pressure gauge for discharge-side pulsation damper with separating diaphragm	10	95730263
	25	95730264
	60	98031543
	160	98031544
	250	98031545

Manual vacuum pump kit for pulsation damper CSD

In installations without flooded suction, the pulsation damper CSD can be filled by the manual vacuum pump kit. This makes startup of the dosing pump easier and prepares the pulsation damper CSD for calibration of the pump.

The delivery includes:

- Ball valve, connection G 5/8
- T-piece, connection G 5/8
- Hose
- Manual vacuum pump
- Holder for wall mounting

Materials:

- Vacuum pump: PVC
- Ball valve and T-piece: PVC
- Gasket: FKM

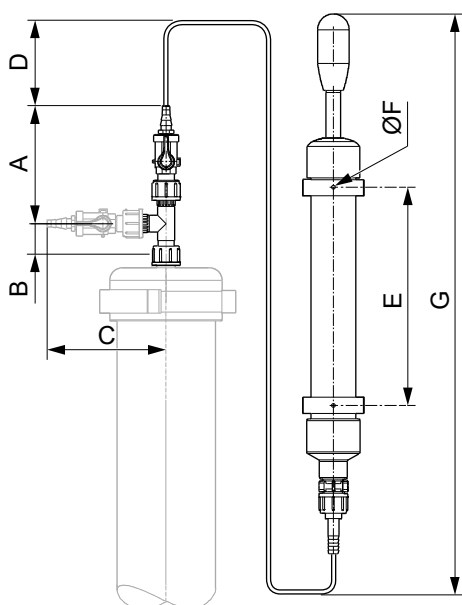
TM069619



Manual vacuum pump kit

TM068426

Dimensions



Manual vacuum pump kit

TM069603

A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	øF [mm]	G [mm]
131	34	132.5	50	242	6.2	675-875

Order data

Description	Product number
Manual vacuum pump kit	99218131

Manual vacuum pump kit for calibration columns

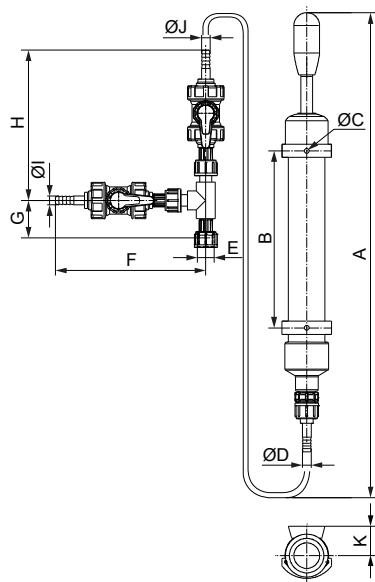
In installations without flooded suction, the calibration column can be filled by the manual vacuum pump kit. This makes startup of the dosing pump easier and prepares the calibration column for pump calibration.

The delivery includes:

- Ball valve, connection G 5/8
- T-piece, connection G 5/8
- Hose
- Manual vacuum pump
- Holder for wall mounting

Material:

- Manual vacuum pump: PVC
- Ball valve and T-piece: PVDF
- Gasket: FKM

Dimensions

TM068412

Manual vacuum pump kit for calibration columns

A [mm]	B [mm]	øC [mm]	øD [mm]	E	F [mm]	G [mm]	H [mm]	øI / øJ [mm]	K [mm]
700-875	242	6.1	12	G 5/8	206	51	206	12	40

Order data

Description	Product number
Manual vacuum pump kit for calibration columns	99226934

Cables and plugs for dosing pumps




Cables and plugs for dosing pumps are suitable for the connection of a pump to external control devices, such as process controllers, flow meters, start/stop contacts and level sensors.

*Cable and plugs*

TM048267

Cables and plugs for pump connection size G 5/4

- Cable material: PVC, 0.34 mm²
- Plug size: M 12

Socket (DDA, DDE)	Socket (DMX, DMH, DDI)	Application	Pins	Plug type	Cable length [m]	Product number		
 TM041156	4	Input	Analog, Pulse, External stop	4	Straight	2	96609014	
						5	96609016	
						No cable	96698715	
						Angled	2	96693246
 TM041118	3	Output	Relay	4	Straight	2	96609017	
						5	96609019	
						No cable	96696198	
						Angled	2	96698716
 TM068403	2	Output	Analog	5	Straight	2	96632921	
						5	96632922	
						No cable	96609031	
						Angled	2	96699697
 TM041119	5	DDI	Input	Low level, Empty tank	4	Straight	No cable	96698715
-	5	DMX / DMH AR	Input	Low level, Empty tank	3	Straight, with soldered cable	No cable	96630345
			Adapter, flat-round	Low level, Empty tank	4	No cable	96635010	
-	6	DDI	Profibus	Y-connector	No cable	96693735		
				Terminating resistor	No cable	96693737		
 TM068453		Input, Output	GENibus	5	Straight	3	98589048	
 TM041156	4 / 5	Extension cable	Analog, Pulse, External stop, Low level, Empty tank	4	Straight	2	96483235	
 TM041119								
-		Mains connection for DDI, DDA, DDE	110-240 VAC	3	Angled	No cable	96698717	

Flat-plug adapter for DMX and DMH with AR control unit

The flat-plug adapter allows to connect rigid suction lances or foot valves with level indication to pumps with a level input designed for flat plugs (e.g. DMX and DMH with AR control unit).



TM070206

Flat-plug adapter for DMX and DMH with AR control unit

Order data

Description	Product number
Flat-plug adapter for DMX and DMH with AR control unit	96635010

Water meters

The in-line water meter with potential-free pulse signal is suitable for use in flow-proportional dosing applications. If the water meter is connected directly to the pump pulse input, use a control plug (product number 96698715).

- Qn 1.5 and Qn 2.5 water meters are of the multi-jet, dry dial type, for cold water up to 30 °C, or hot water up to 90 °C.
- Qn 15 water meters and up are of the helical vane type, for cold water up to 30 °C or 50 °C, or hot water up to 90 °C or 120 °C.
- Qn 1.5 to Qn 15 water meters:
 - Threaded connections
 - Cable length: 3 m
 - Max. pressure: 16 bar
 - Maximum load, Reed contact: 30 VAC/VDC, 0.2 A
- Qn 40 to Qn 150 water meters:
 - Flange connections
 - Cable length: 3 m
 - Max. pressure: 10 bar
 - Maximum load, Namur contact: 8-12 VDC, 1 kOhm (requires external power supply)



Water meter

TM048317

Order data

Qn [m ³ /h]	Pulse rate [l/pulse]	Product number			
		Max. liquid temperature [°C]			
		30	50	90	120
1.5	1	96446846	-	96446897	-
1.5	0.25	96482640	-	96482643	-
2.5	2.5	96446847	-	96446898	-
2.5	0.25	96482641	-	96482644	-
15	2.5	96482642	-	96482645	-
15	10	-	96446848	-	96446899
40	100	-	96446849	-	96446900
60	25	-	96446850	-	96446901
150	100	-	96446851	-	96446902

Capacity

Qn [m ³ /h]	Pulse rate [l/pulse]	Maximum short-period capacity [m ³ /h]	Transitional capacity with error ± 2 % [l/h]	Minimum capacity with error ± 5 % [l/h]
1.5	1	3	120	50
1.5	0.25	3	120	50
2.5	2.5	5	200	70
2.5	0.25	5	200	70
15	2.5	30	3000	450

Qn [m ³ /h]	Pulse rate [l/pulse]	Maximum short-period capacity [m ³ /h]	Transitional capacity with error ± 2 % [l/h]	Minimum capacity with error ± 5 % [l/h]
15	10	30	3000	450
40	100	80	4000	700
60	25	120	6000	1200
150	100	300	12000	3000

Dimensions of water meters with threaded connections, Qn 1.5 to Qn 15

Qn [m ³ /h]	Connections		Port to port length [mm]	
	Water meter	Installation kit	Excluding kit	Including kit
1.5	G 3/4	G 1/2	165	245
2.5	G 1	G 3/4	190	288
15	G 2.5	G 2	300	438

Dimensions of water meters with flanged connections, Qn 40 to Qn 150

Qn [m ³ /h]	Connections	Port to port length [mm]
40	DN 80	225
60	DN 100	250
150	DN 150	300

13. Pumped liquids

The resistance table below is intended as a general guide for material resistance (at room temperature), and does not replace testing of the chemicals and pump materials under specific working conditions.

The data shown are based on information from various sources available, but many factors (purity, temperature, abrasive particles, etc.) may affect the chemical resistance of a given material.

Note: Some of the liquids in this table may be toxic, corrosive or hazardous. Please be careful when handling these liquids.

Pumped liquid (20 °C)			Material								
			Dosing head				Gasket			Valve ball	
Description	Chemical formula	Concentration [%]	PP	PVDF	SS 1.4571	PVC	FKM	EPDM	PTFE	Ceramic	Glass
Acetic acid	CH ₃ COOH	25	•	•	•	•	–	•	•	•	•
		60	•	•	•	•	–	•	•	•	•
		85	•	•	•	–	–	–	•	•	•
Aluminium chloride	AlCl ₃	40	•	•	–	•	•	•	•	•	•
Aluminium sulphate	Al ₂ (SO ₄) ₃	60	•	•	•	•	•	•	•	•	–
Ammonia, aqueous	NH ₄ OH	28	•	•	•	•	–	•	•	•	–
Calcium hydroxide ¹⁾	Ca(OH) ₂		•	•	•	•	•	•	•	•	•
Calcium hypochlorite	Ca(OCl) ₂	20	○	•	–	•	•	•	•	•	•
		10	•	•	•	•	•	•	•	•	•
		30	–	•	–	•	•	○	•	•	•
Chromic acid ²⁾	H ₂ CrO ₄	50	–	•	–	•	•	–	•	•	•
		30	–	•	–	•	•	–	•	•	•
Copper sulphate	CuSO ₄	30	•	•	•	•	•	•	•	•	•
Ferric chloride ³⁾	FeCl ₃	45	•	•	–	•	•	•	•	•	•
Ferric sulphate ³⁾	Fe ₂ (SO ₄) ₃	60	•	•	•	•	•	•	•	•	•
Ferrous chloride	FeCl ₂	37	•	•	–	•	•	•	•	•	•
Ferrous sulphate	FeSO ₄	30	•	•	•	•	•	•	•	•	•
Fluosilicic acid	H ₂ SiF ₆	40	•	•	○	•	–	○	•	•	–
Hydrochloric acid	HCl	< 25	•	•	–	•	•	•	•	•	•
		25-37	•	•	–	•	•	○	•	•	•
Hydrogen peroxide	H ₂ O ₂	30	•	•	•	•	•	•	•	•	•
Nitric acid	HNO ₃	30	•	•	•	•	•	•	•	•	•
		40	○	•	•	•	•	–	•	•	•
		70	–	•	•	–	•	–	•	•	•
Peracetic acid	CH ₃ COOH	5-15	○	•	•	○	–	○	•	•	•
Potassium hydroxide	KOH	50	•	–	•	•	–	•	•	•	–
Potassium permanganate	KMnO ₄	10	•	•	•	•	○	•	•	•	•

Pumped liquid (20 °C)			Material								
			Dosing head				Gasket			Valve ball	
Description	Chemical formula	Concentration [%]	PP	PVDF	SS 1.4571	PVC	FKM	EPDM	PTFE	Ceramic	Glass
Sodium chlorate	NaClO ₃	30	•	•	•	•	•	•	•	•	•
Sodium chloride	NaCl	30	•	•	–	•	•	•	•	•	•
Sodium chlorite	NaClO ₂	20	•	•	–	○	•	•	•	•	•
Sodium hydroxide	NaOH	20	•	–	•	•	•	•	•	•	–
		30	•	•	•	•	○	•	•	•	–
		50	•	•	•	•	–	•	•	•	–
Sodium hypochlorite	NaOCl	12-15	–	•	–	•	•	•	•	•	–
Sodium sulphide	Na ₂ S	30	•	•	•	•	•	•	•	•	–
Sodium sulphite	Na ₂ SO ₃	20	•	•	•	•	•	•	•	•	–
Sodium thiosulfate	Na ₂ S ₂ O ₃	10	•	•	•	•	•	•	•	•	•
Sulphurous acid	H ₂ SO ₃	6	•	•	•	•	•	•	•	•	○
Sulphuric acid ⁴⁾	H ₂ SO ₄	< 80	•	•	–	•	•	○	•	•	○
		80-96	○	•	–	•	•	–	•	•	–
		98	–	•	•	–	○	–	•	•	–

¹⁾ Once the pump is stopped, calcium hydroxide will sediment rapidly

²⁾ Must be fluoride-free when glass balls are used

³⁾ Risk of crystallisation

⁴⁾ Reacts violently with water and generates much heat (pump should be absolutely dry before dosing sulphuric acid)

Legend

•	Resistant
○	Limited resistance
–	Not resistant

14. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

<http://product-selection.grundfos.com>

All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc. in PDF format.



T/M070461

PRODUCT CENTER
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Product range: International | 50 Hz | Language: English
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1:38:11

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Replace an old pump with a new

Liquids
Find pump by liquid

Quick sizing

Advanced sizing by application

Guided selection

Enter duty point:

Flow (Q)* m³/h ▼

Head (H)* m ▼

Select what to size by:

Size by application

Size by pump design

Size by pump family

START SIZING

T/M070462-1

Pos.	Description
1	This drop-down menu enables you to set the search function to "Products" or "Literature".
2	SIZING enables you to size a pump based on entered data and selection choices.
3	CATALOGUE gives you access to the Grundfos product catalogue.
4	<p>REPLACEMENT enables you to find a replacement product. Search results will include information on</p> <ul style="list-style-type: none"> • the lowest purchase price • the lowest energy consumption • the lowest total life-cycle cost.
5	LIQUIDS enables you to find pumps designed for aggressive, flammable or other special liquids.

