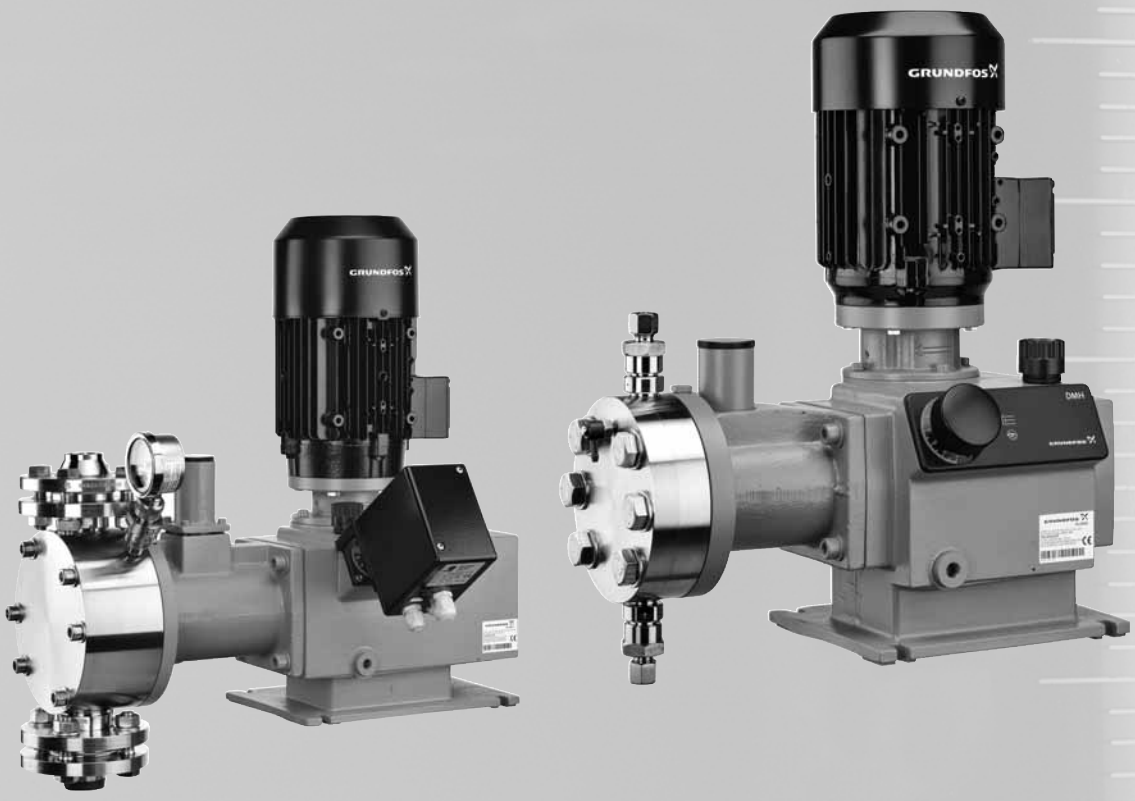
DMH

Hydraulically actuated piston diaphragm dosing pumps and accessories
60 Hz



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1. Product introduction

Performance range

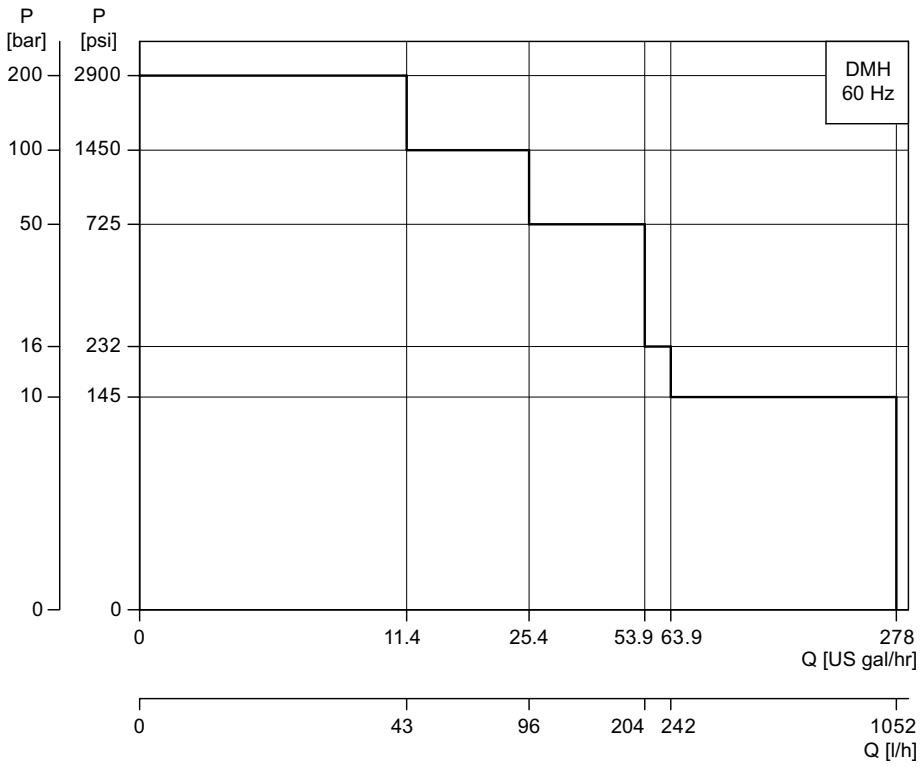
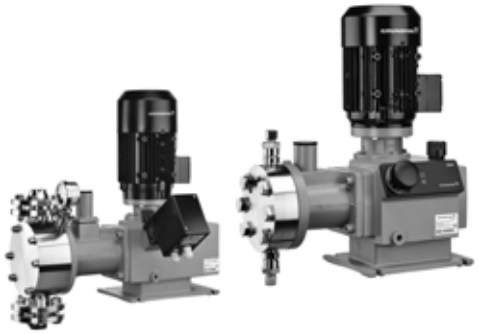


Fig. 1 DMH performance range

Features and benefits



TM04 8986 3413

Fig. 1 DMH model 257 and 288

The preferred choice for demanding applications

The Grundfos DMH range is a series of extremely strong, robust hydraulic pumps for applications requiring reliable dosing and high pressure capabilities. The DMH 28x models have been especially designed for high pressure applications from 725 up to 2900 psi (50 up to 200 bar). The range is highly versatile: it covers a wide flow range and offers a variety of dosing head sizes, materials and accessories. Customers worldwide have enjoyed years of trouble-free operation from their DMH pumps.

Accurate dosing all the time

DMH pumps have a very high dosing accuracy. Control the capacity by adjusting the stroke length from 0 to 100 % with a ± 1 % repeatable accuracy.

Smooth and low-pulsation dosing

The DMH range combines sophisticated drive technology and gear kinematics to ensure smooth and low-pulsation dosing. This means less stress on system components, such as tubes and valves, and leads to longer service intervals for the entire system.

Prepared for performance and safety in extreme situations

The DMH 250 series of pumps is available with PVC, PVDF, polypropylene, stainless steel and Hastelloy C wetted components. For high pressure requirements, select from the series of stainless steel or Hastelloy C DMH 280 pumps, rated up to 2900 psi (200 bar). Other wetted materials include Viton, EPDM, PTFE and glass. All models are fitted with a PTFE diaphragm, with the AMS diaphragm protection system and internal relief valve for pump protection.

Flexibility in pump configuration and applications

A number of different product configurations are available to match requirements. The DMH offers: manual or automatic stroke-length adjustment with electric servomotor. Pumps fitted with double diaphragm with failure indication, or special dosing heads with electrical heating. Wetted parts are available in material combinations that suit virtually all dosing applications. Choose the best configuration for your specific dosing task.

Ready for tough application areas

Power plants

- Dosing of various chemicals for the treatment of boiler feed water, cooling water and process water (raw water purification, chemicals for ion exchangers, supplementary water treatment, effluent water neutralization).
- dosing of ammonia, hydrazine, phosphates in high pressure areas (e.g. boiler feed water).

Petrochemical industry, oil and gas industry, refineries

- Dosing of chemicals for treatment of cleaning water and process water
- dosing of wax as lubricant in oil pipelines
- dosing of inhibitors and anticorrosion chemicals to protect oil pipelines
- dosing of additives and catalysts
- odorization of gas for safety in case of leakages.

Treatment of process water and drinking water

- Rough environments (hot climate, desert, outdoor installations)
- higher flow and pressure ratings.

Dosing of flammable liquids

- Dosing of alcohol or methanol in wastewater treatment
- cleaning of kerosene and gasoline in mechanical engineering and airport areas
- dosing of ethanol and methanol
- dosing of food-grade alcohol for disinfection in meat and bread packaging.

Motors

DMH pumps use high torque electric motors.

Explosion proof motors complying with Class I, Group D and Class II, Groups F&G or ATEX motors are available on request.

For voltages and more details, please see the type key on page 6. Motors for higher ambient temperature, higher humidity, motors with forced ventilation and anti-condensation heaters as well as VIK motors are available on request.

Pumps without motor are standard.

API 675 certificates

DMH pumps can be certified according to API 675. This is commonly used in petroleum, chemical refineries, and transmission pipeline applications. Contact Grundfos for available models.
Deviations include for example:

- The steady-state flow accuracy is within ± 1 % of the rated capacity.
- Several DMH pump models have cap screws.
- Several DMH pump models have internal socket-type bolting.
- DMH pumps are available with threaded DIN/EN or NPT connections (DN 4 up to DN 20). DN 32 slip-on flanges are used.
- Double diaphragm is filled with paraffin oil.
- DIN/EN code is applied for metal parts of DMH.
- Enclosure is made of grey cast iron.
- Dosing head is made of PVC, PP, PVDF, or stainless steel.
- For shipment, threaded openings are covered with plastic caps.

2. Identification

Type key

Example: DMH 13- 10 AR- PVC V/ G/ S- H 1 A9A9 B E3

Pump type

DMH

Max. flow (l/hr at 50 Hz)

Max. pressure (bar)

Control variant

B	Basic
AR	External control (AR control unit)
AT5	4-20 mA stroke length control 1 x 115 V, 50/60 Hz servomotor/actuator

Pump head material

PP	Polypropylene
PVC	Polyvinyl chloride
PV	PVDF (Polyvinylidene flouride)
SS	316 Stainless steel
Y	Hastelloy C

Heads with leak detection:

PP-L	Polypropylene
PVC-L	Polyvinyl chloride
PV-L	PVDF (Polyvinylidene flouride)
SS-L	316 Stainless steel

Gasket material

E	EPDM (ethylene propylene diene monomer)
V	FKM (fluorocarbon)
T	PTFE (polytetrafluoroethylene, eg. Teflon®)

Valve ball material

C	Ceramic
G	Glass
SS	Stainless steel, 316
T	PTFE (polytetrafluoroethylene eg. Teflon®)
Y	Hastelloy C

Specialty code

E3	API675

Mains plug

B	North America
	No plug

Connection, discharge/inlet

A3	3/4" FNPT (SS)
A7	3/4" MNPT (non-SS)
A9	1/2" MNPT
B6	4/6 mm pipe
C2	8/10 mm pipe
P	1 1/4" ANSI flange
S	3/8" ID x 1/2" OD tubing (DDI 60)
V	1/4" FNPT (SS)
X	No connector

Check valve type

1	Standard valves
2	Spring-loaded - 0.7 psi (0.05 bar) inlet and discharge opening pressure
3	Spring-loaded - 0.7 inlet(0.05 bar), 11.6 psi (0.8 bar) discharge opening pressure
4	Spring-loaded discharge
5	SS valves for abrasive fluids
7	Not spring-loaded; larger suction valve: suction side DN 32; discharge side DN 20

Supply voltage

F	Without motor, NEMA flange Only AR pumps include motors
H	1 x 110-120 V, 50/60 Hz

Control position

F	Front, 180 ° from pump head
S	Side 90 ° from pump head
W	Wall mounted
X	No control panel

Other variants on request.

3. Functions and options

Capacity control

Depending on the application, DMH pumps can be equipped with different functions for setting and controlling the capacity:

- DMH B: Manual stroke length control.
- All DMH pumps can be fitted with a servomotor for remote stroke-length control.
- Motor speed control with external variable frequency drive (VFD).
- DMH AR: Electronic unit for automatic stroke frequency control, pulse control, analog signals, alarm relay (available for DMH models 251, 252, 253, 280, 281).

Capacity control by stroke-length adjustment

The capacity is controlled manually by means of the stroke length adjustment knob or electrically by a servomotor.

The stroke frequency remains constant.

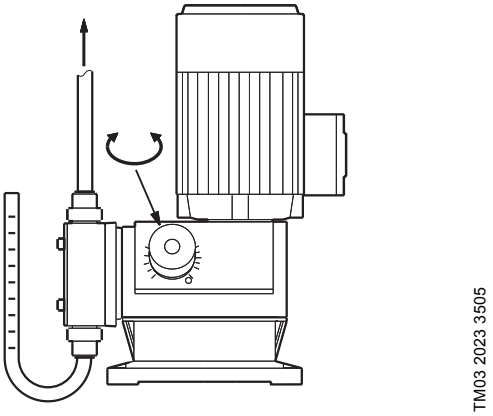


Fig. 2 Capacity control by stroke length adjustment knob

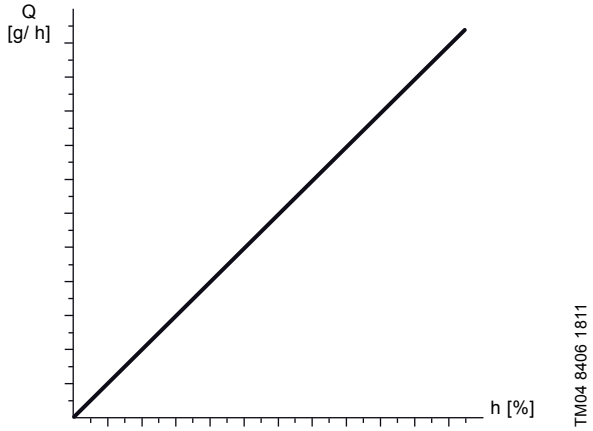


Fig. 3 Relation of stroke length and capacity

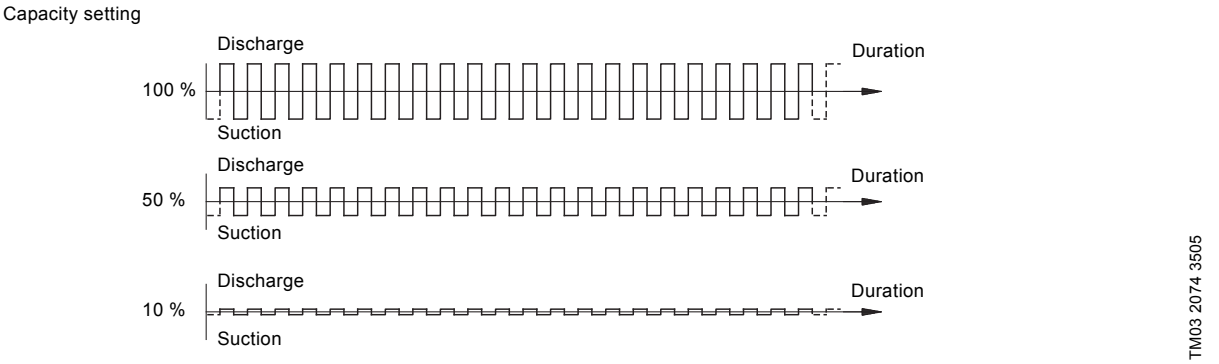


Fig. 4 Relation of stroke length adjustment - capacity

Capacity control with external variable frequency drive (VFD)

The capacity of DMH pumps with motors with PTC-resistor can be adjusted via a variable frequency drive by changing the motor speed.

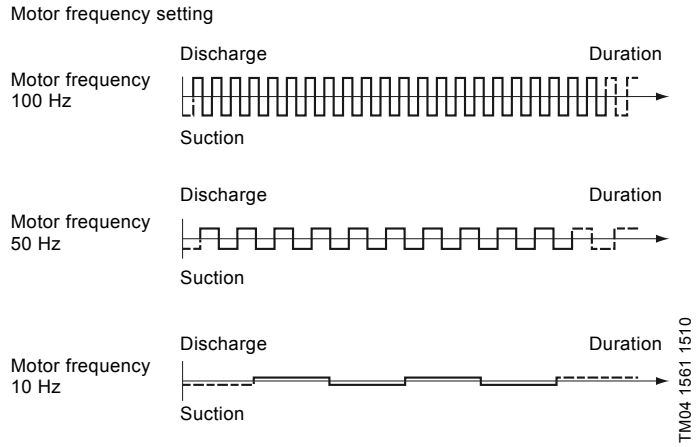


Fig. 5 Relation of motor frequency setting - capacity

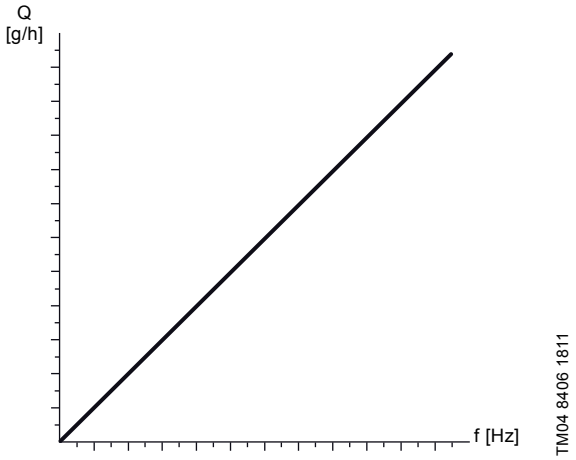


Fig. 6 Relation of motor frequency - capacity

Capacity control with AR electronics

The capacity of the DMH models 251, 252, 253, 280 and 281 with single-phase motor and AR electronics can be controlled by regulation of the pause time between strokes. This is carried out by analog or pulse signals or via manual stroke frequency adjustment.

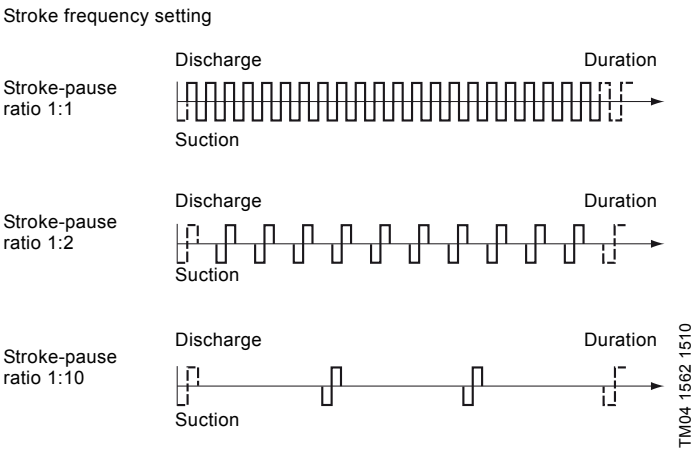


Fig. 7 Relation of stroke frequency setting - capacity

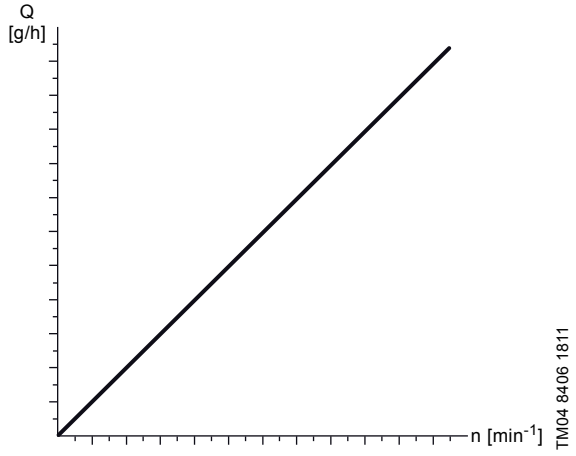


Fig. 8 Relation of stroke frequency - capacity

Electric servomotor

To facilitate automatic control of the flow rate, the DMH pumps can be equipped with an electric servomotor in a metal housing (IP65). The electric servomotor primarily consists of an overload-proof 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 servomotors with 1000 Ω feedback potentiometer.

TM05 9715 4413

Fig. 9 Servomotor

TM04 8402 1711

Fig. 10 DMH with servomotor

AR control unit

A convenient electronic unit in a plastic housing (IP65) for DMH models 251, 252, 253, 280 and 281 with single-phase motors, the AR control unit is mounted on the terminal box of the 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 n incoming pulses), 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, weighting of current input is possible.

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.

TM04 8603 3912

Fig. 11 AR control unit on DMH

Stroke sensor

DMH pumps with stroke sensor are especially designed for batch dosing and other mixing or filling tasks.

An optional stroke sensor can be mounted in the gear cover of a DMH pump.

The stroke sensor is inductive and has a NAMUR output and 6.5 ft (2 m) of PVC cable.

AMS diaphragm protection system

The unique diaphragm protection system AMS has a tactile surface (5) which touches the dosing diaphragm (4). If the suction or discharge line is blocked due to a fault in the system, the tactile surface closes the hydraulic chamber (6). Although the piston (7) continues moving, the diaphragm cannot be overstretched.

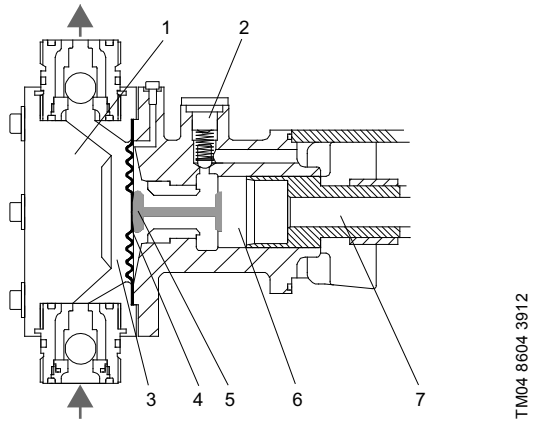


Fig. 12 AMS diaphragm protection system

Legend

Pos.	Description
1	Dosing head
2	Pressure relief valve
3	Dosing chamber
4	Dosing diaphragm
5	AMS diaphragm protection system
6	Hydraulic chamber
7	Piston

Diaphragm leakage detection

DMH piston diaphragm dosing pumps with diaphragm leakage detection are equipped with

- Dosing head with double-diaphragm system
- contact pressure gauge with check valve.

Double-diaphragm system

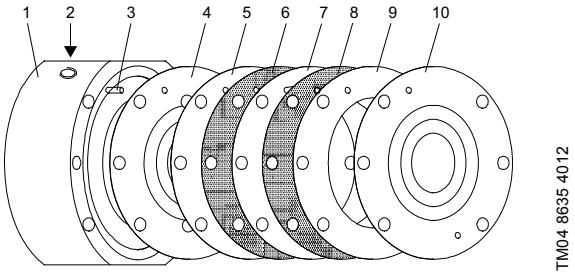


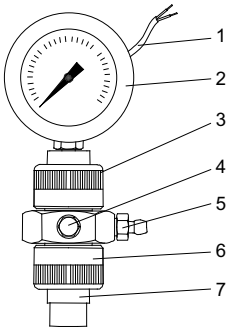
Fig. 13 Double-diaphragm system

Pos.	Description
1	Dosing head
2	Contact pressure gauge (installation position)
3	Clamping sleeves
4	Diaphragm on the dosing head side
5	Covering ring
6	Sealing ring
7	Intermediate disk
8	Sealing ring
9	Covering ring
10	Diaphragm on the pump side

Contact pressure gauge with check valve

TM05 9714 4413

Fig. 14 Contact pressure gauge on a DMH dosing head



TM04 8612 4012

Fig. 15 Contact pressure gauge

Pos.	Description
1	Contact output
2	Contact pressure gauge
3	Union nut
4	Connection for ground cable
5	Deaeration screw
6	Union nut
7	Check valve with ball

Functional principle

The check valve and the gap between the diaphragms are filled with paraffin oil (separating agent) at the factory. If one of the diaphragms breaks, dosing medium or hydraulic oil flows into the gap between the diaphragms, and then into the valve.

The system pressure is applied to the valve, and the contact pressure gauge is activated. A potential-free reed contact can trigger an alarm or switch off the pump.

TM04 8613 3912

Fig. 16 DMH with contact pressure gauge for diaphragm leakage detection

4. Construction

General information

DMH pumps are positive displacement pumps with hydraulic diaphragm motion. The DMH range contains the low pressure DMH models 250 up to 362 psi (25 bar) and the high pressure DMH models 280 up to 2900 psi (200 bar). The pump range includes drive assemblies in three housing sizes as well as single-head and double-head pumps.

Sectional drawings

DMH models 251, 252

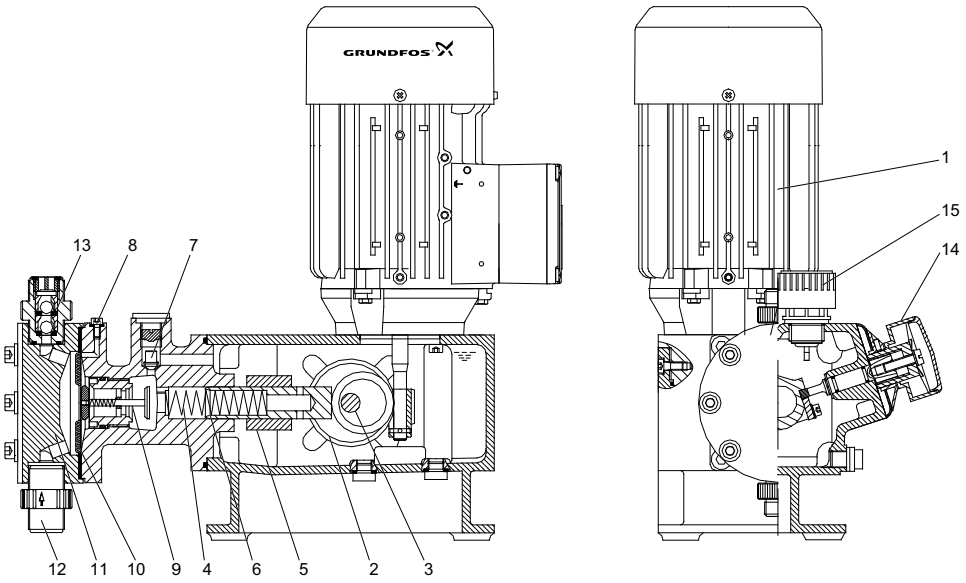
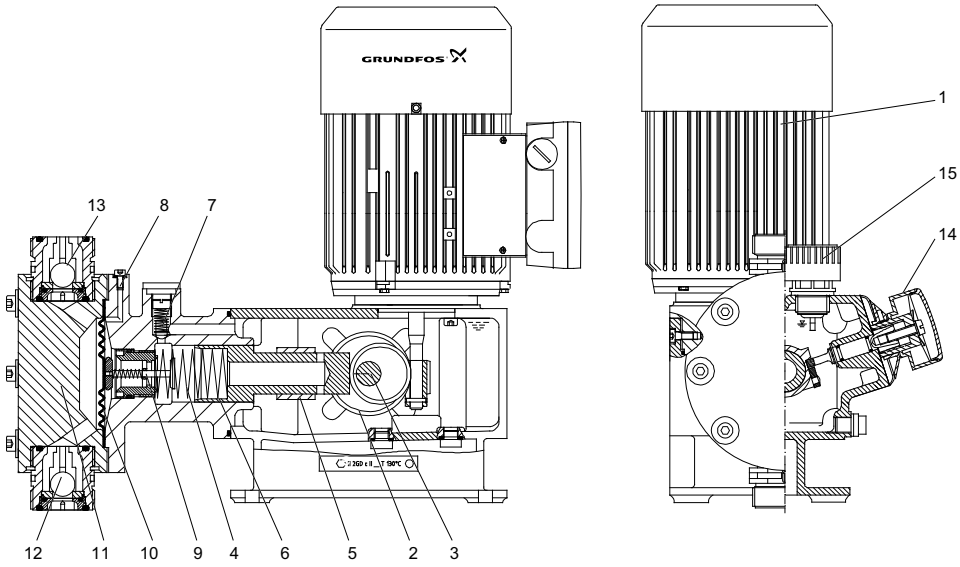


Fig. 17 Sectional drawing, DMH models 251, 252

Legend

Pos.	Description
1	Motor
2	Worm gearing
3	Eccentric
4	Return spring (not for all models)
5	Control slide
6	Piston
7	Combined pressure relief and degassing valve
8	Oil degassing valve
9	Diaphragm protection system (AMS)
10	Dosing diaphragm
11	Dosing head
12	Suction valve
13	Discharge valve
14	Stroke-length adjustment knob
15	Venting screw with oil-level gauge

DMH model 253



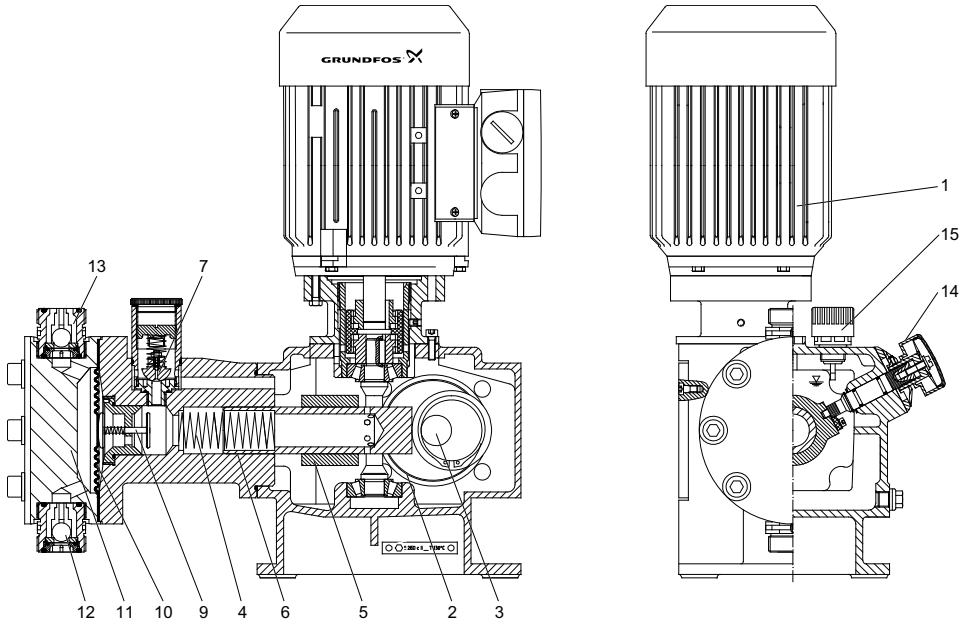
TM03 2165 1811

Fig. 18 Sectional drawing, DMH model 253

Legend

Pos.	Description
1	Motor
2	Worm gearing
3	Eccentric
4	Return spring (not for all models)
5	Control slide
6	Piston
7	Combined pressure relief and degassing valve
8	Oil degassing valve
9	Diaphragm protection system (AMS)
10	Dosing diaphragm
11	Dosing head
12	Suction valve
13	Discharge valve
14	Stroke-length adjustment knob
15	Venting screw with oil-level gauge

DMH model 254



TM03 2166 1811

Fig. 19 Sectional drawing, DMH model 254

Legend

Pos.	Description
1	Motor
2	Worm gearing
3	Eccentric
4	Return spring (not for all models)
5	Control slide
6	Piston
7	Combined pressure relief and degassing valve
9	Diaphragm protection system (AMS)
10	Dosing diaphragm
11	Dosing head
12	Suction valve
13	Discharge valve
14	Stroke-length adjustment knob
15	Venting screw with oil-level gauge

DMH model 255

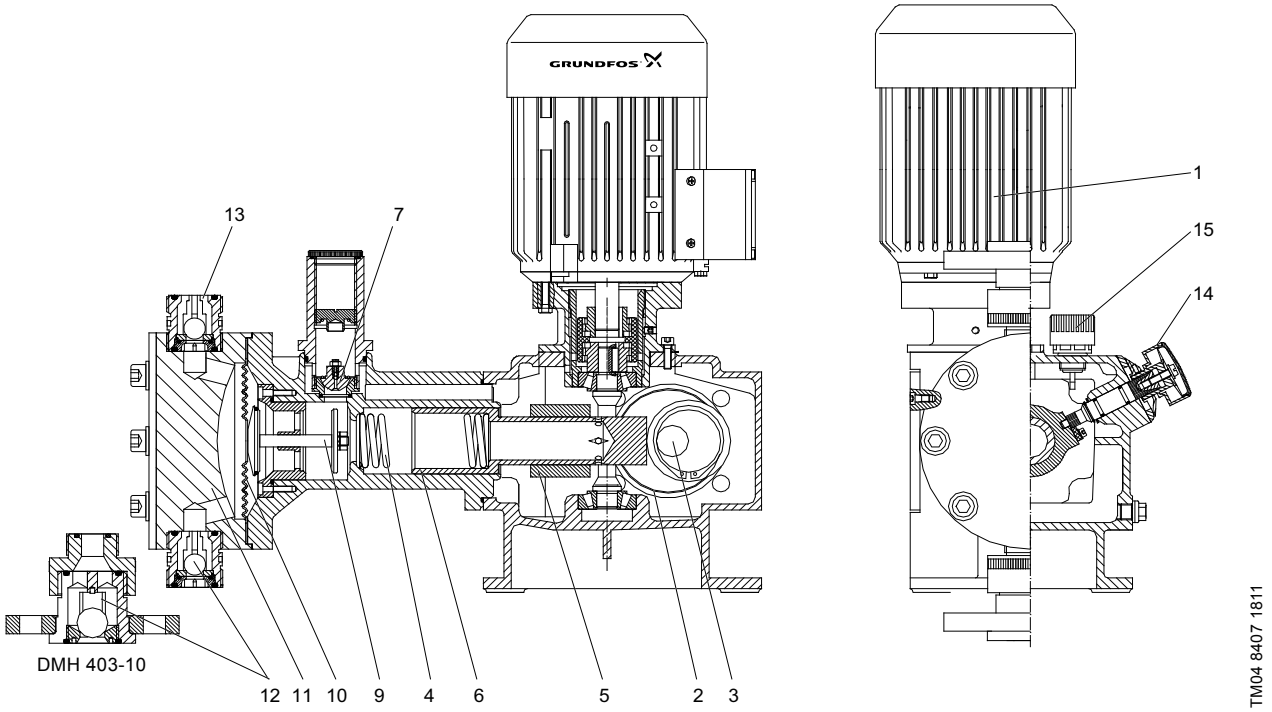


Fig. 20 Sectional drawing, DMH model 255

Legend

Pos.	Description
1	Motor
2	Worm gearing
3	Eccentric
4	Return spring (not for all models)
5	Control slide
6	Piston
7	Combined pressure relief and degassing valve
9	Diaphragm protection system (AMS)
10	Dosing diaphragm
11	Dosing head
12	Suction valve
13	Discharge valve
14	Stroke-length adjustment knob
15	Venting screw with oil-level gauge

DMH model 257

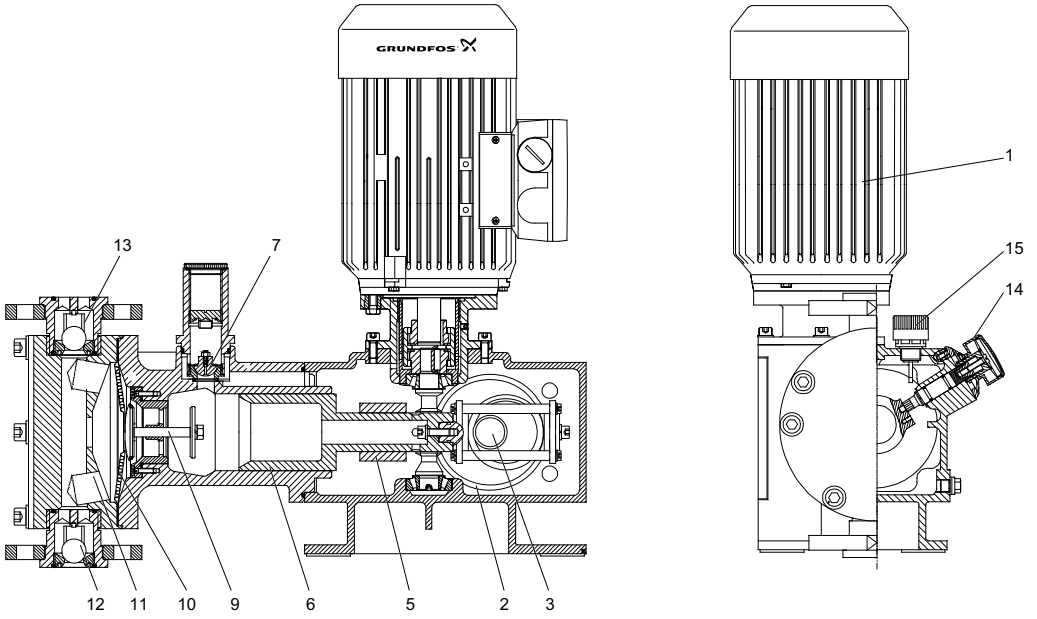
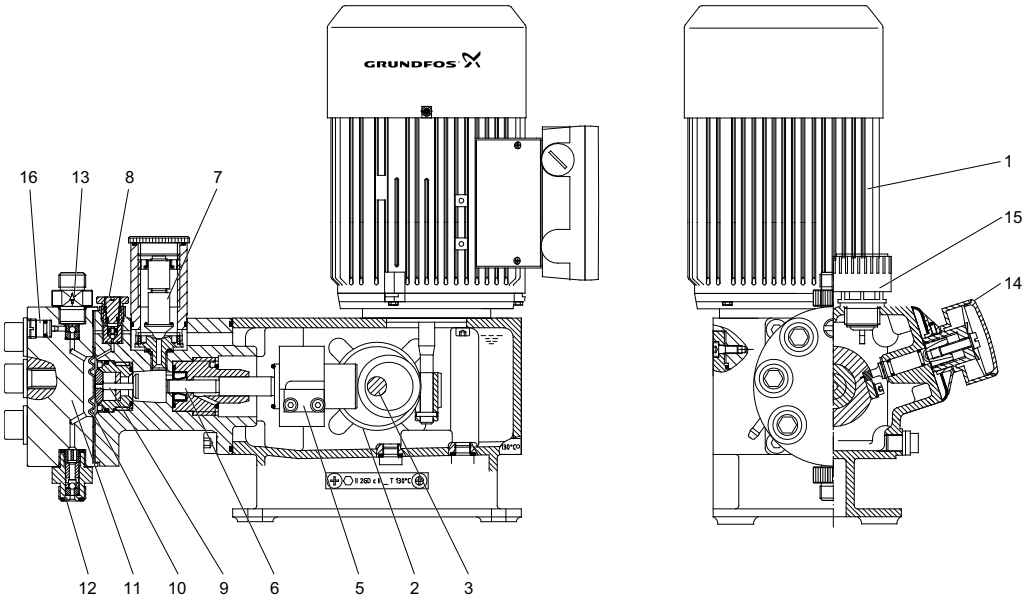


Fig. 21 Sectional drawing, DMH model 257

Legend

Pos.	Description
1	Motor
2	Worm gearing
3	Eccentric
5	Control slide
6	Piston
7	Combined pressure relief and degassing valve
9	Diaphragm protection system (AMS)
10	Dosing diaphragm
11	Dosing head
12	Suction valve
13	Discharge valve
14	Stroke-length adjustment knob
15	Venting screw with oil-level gauge

DMH model 280



TM03 2961 1811

Fig. 22 Sectional drawing, DMH model 280

Legend

Pos.	Description
1	Motor
2	Worm gearing
3	Eccentric
5	Control slide
6	Piston
7	Combined pressure relief and degassing valve
8	Oil degassing valve
9	Diaphragm protection system (AMS)
10	Dosing diaphragm
11	Dosing head
12	Suction valve
13	Discharge valve
14	Stroke-length adjustment knob
15	Venting screw with oil-level gauge
16	Dosing head venting valve (priming)

DMH models 283, 288

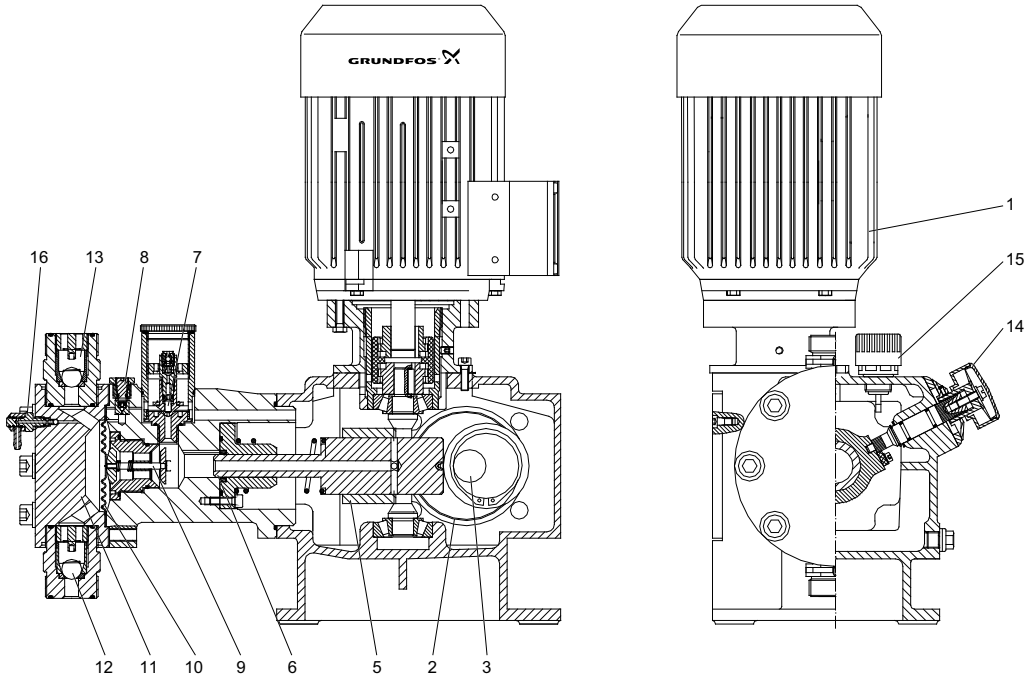


Fig. 23 Sectional drawing, DMH models 283, 288

Legend

Pos.	Description
1	Motor
2	Worm gearing
3	Eccentric
5	Control slide
6	Piston
7	Combined pressure relief and degassing valve
8	Oil degassing valve
9	Diaphragm protection system (AMS)
10	Dosing diaphragm
11	Dosing head
12	Suction valve
13	Discharge valve
14	Stroke-length adjustment knob
15	Venting screw with oil-level gauge
16	Dosing head venting valve (priming)

DMH models 285, 286, 287

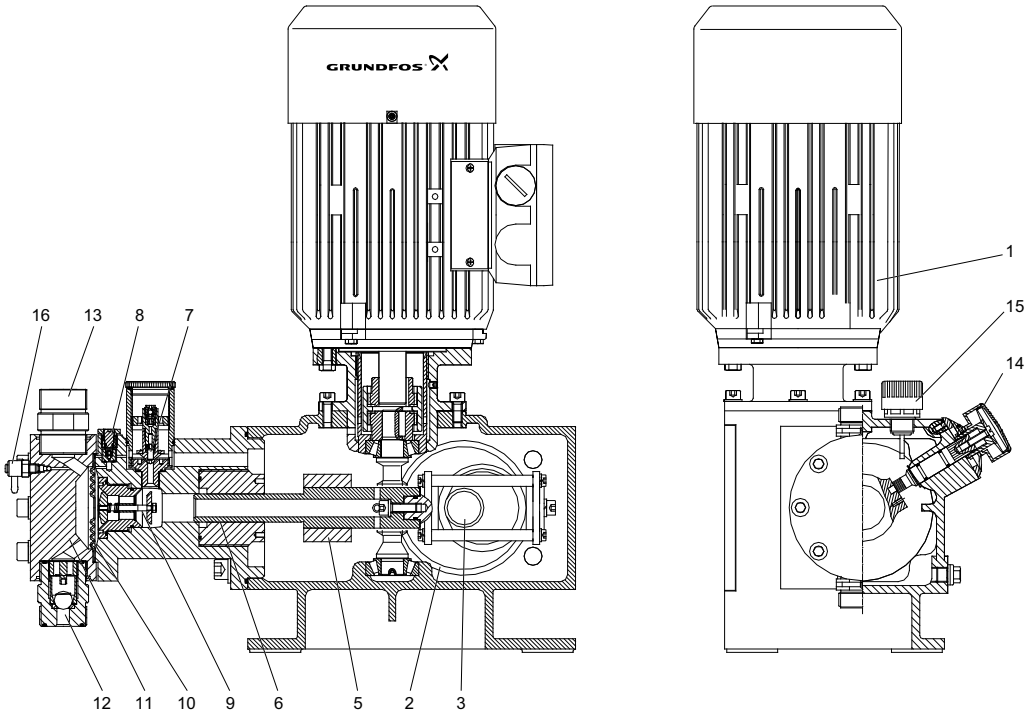


Fig. 24 Sectional drawing, DMH models 285, 286, 287

Legend

Pos.	Description
1	Motor
2	Worm gearing
3	Eccentric
5	Control slide
6	Piston
7	Combined pressure relief and degassing valve
8	Oil degassing valve
9	Diaphragm protection system (AMS)
10	Dosing diaphragm
11	Dosing head
12	Suction valve
13	Discharge valve
14	Stroke-length adjustment knob
15	Venting screw with oil-level gauge
16	Dosing head venting valve (priming)

Functional principle

- The rotational movement of the motor (1) is converted via the worm gearing (2) and eccentric (3) into the reciprocating movement of the piston (6) creating the suction and discharge stroke.
- The piston has a hollow bore and a series of radial hydraulic control holes, which provide the hydraulic connection between the drive and the piston stroke. The control sleeve (5) covers the holes during the stroke and seals the stroke area from the drive area. The hydraulic PTFE diaphragm (10) displaces a metered volume of dosing liquid from the dosing head (11) into the dosing piping. On the suction stroke, the piston creates a low pressure in the dosing head; the ball valve (13) on the discharge side is sealed by the line pressure and the dosing liquid flows through the suction valve (12) into the dosing head.
- The stroke volume size is solely determined by the position of the control slide. The active stroke length and corresponding average dosing flow can be changed continuously and linearly from 10 to 100 % using the stroke-length adjustment knob and micrometer scale (14).
- The safety valve (7) acts as both a pressure relief valve and a hydraulic oil degassing valve. It opens if the pressure in the dosing system is over the set pressure and by-passes hydraulic fluid, thus protecting the pump from overpressure. The degassing valve ensures a constant, high dosing accuracy by removing air from the hydraulic oil.
- The unique diaphragm protection system AMS (9) touches and rides on the dosing diaphragm (10). If the suction or discharge line is blocked due to a fault in the system, the AMS valve seals the hydraulic chamber. Although the piston (6) continues moving, the diaphragm cannot be overstretched.

5. Technical data

Dimensions

DMH models 251-253, 280, 281

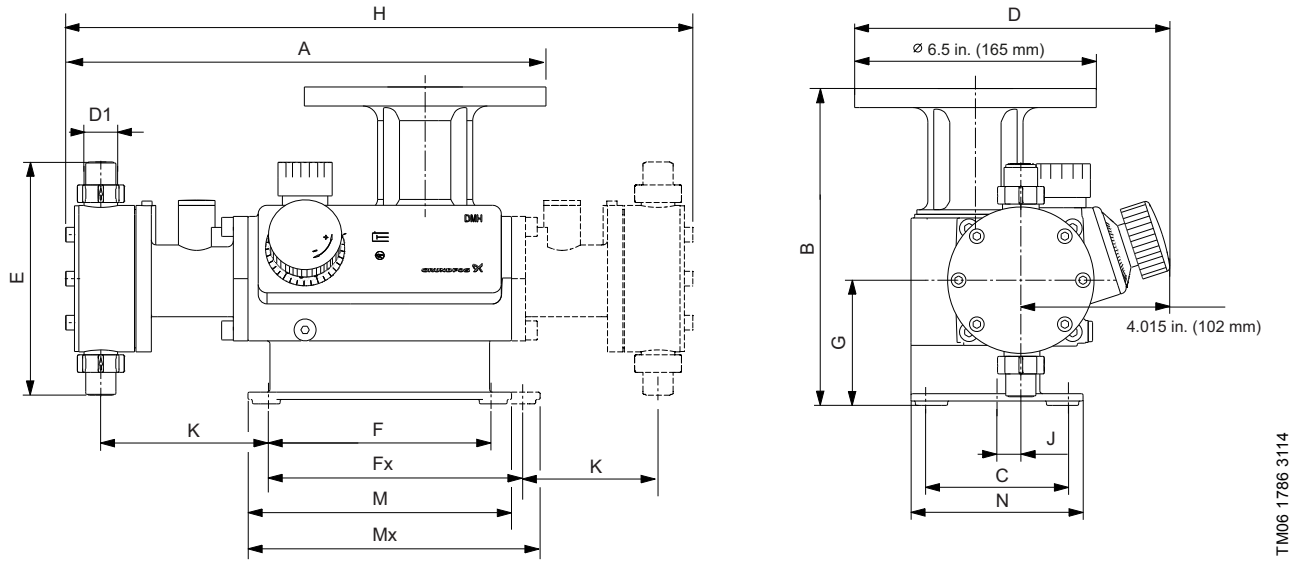


Fig. 25 Dimensions, DMH models 251 to 281

DMH model	A	B	C	D	D1	E	F	Fx	G	H	J	K	M	Mx	N
	[in. (mm)]					[in. (mm)]									
251	12.92 (328)	8.51 (216)	3.84 (97.5)	8.47 (215)	G 5/8	6.30 (160)	5.99 (152)	5.99 (152)	3.37 (85.5)	17.01 (432)	0.63 (16)	4.57 (116)	7.09 (180)	7.09 (180)	4.63 (117.5)
252	12.92 (328)	8.51 (216)	3.84 (97.5)	8.47 (215)	G 5/8	6.30 (160)	5.99 (152)	5.99 (152)	3.37 (85.5)	17.01 (432)	0.63 (16)	4.57 (116)	7.09 (180)	7.09 (180)	4.63 (117.5)
253	13.78 (350)	8.51 (216)	3.84 (97.5)	8.47 (215)	G 5/4 (1 1/4")	7.05 (179)	5.99 (152)	5.99 (152)	3.37 (85.5)	18.59 (472)	0.52 (13)	4.89 (124)	7.09 (180)	7.09 (180)	4.63 (117.5)
280	13.67 (347)	8.51 (216)	3.84 (97.5)	8.47 (215)	G 3/8	5.60 (142)	5.99 (152)	5.99 (152)	3.37 (85.5)	18.31 (465)	0.63 (16)	4.49 (114)	7.09 (180)	7.09 (180)	4.63 (117.5)
281	12.72 (323)	8.51 (216)	3.84 (97.5)	8.47 (215)	G 5/8	6.11 (155)	5.99 (152)	5.99 (152)	3.37 (85.5)	17.01 (432)	0.63 (16)	4.49 (114)	7.09 (180)	7.09 (180)	4.63 (117.5)

Note: Standard B variant DMH pumps do not include a motor. See motor data sheet specific to motor selected for motor dimensions.

Dual head pumps have two micrometers.

DMH models 254-257, 283-288

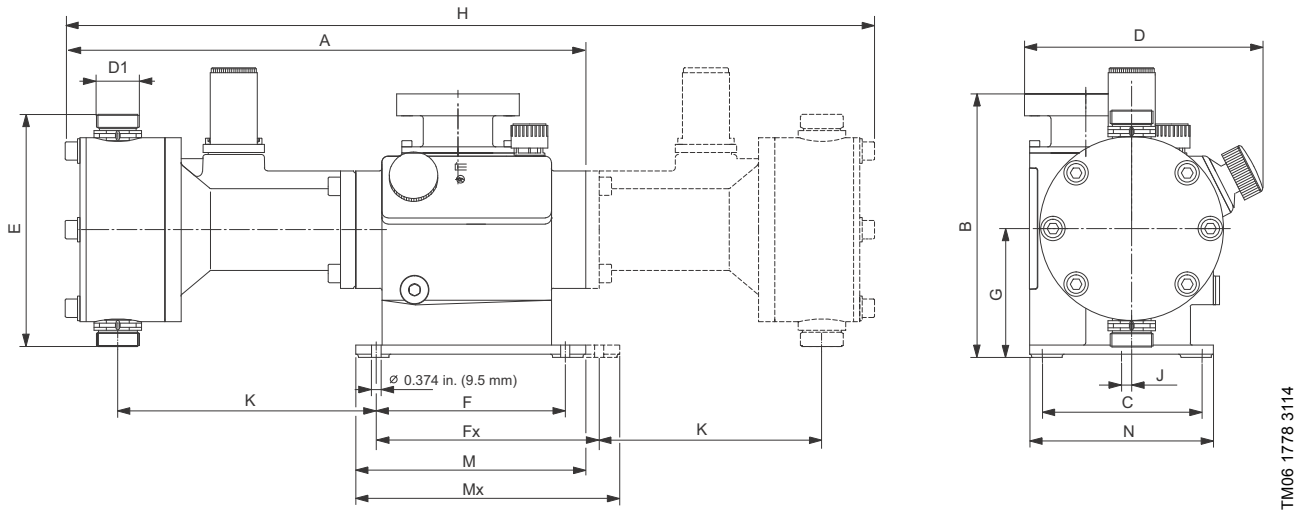


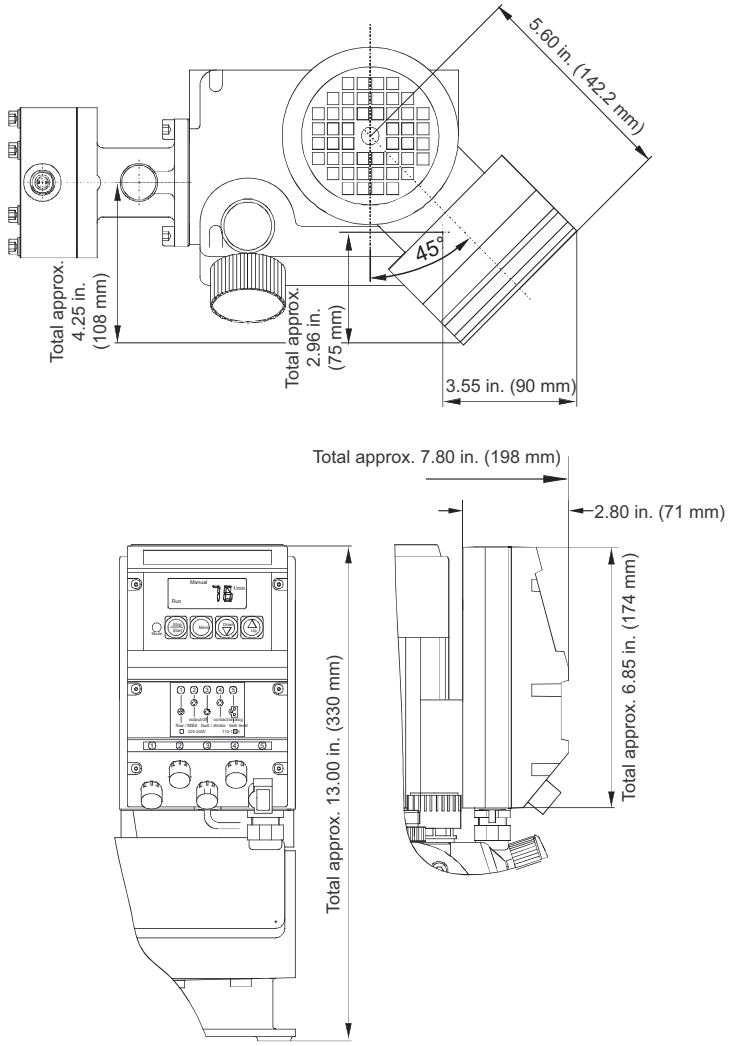
Fig. 26 Dimensions, DMH models 254 to 288

DMH model	A	B	C	D	D1	E	F	Fx	G	H	J	K	M	Mx	N
	[in. (mm)]					[in. (mm)]									
254	17.17 (436)	9.85 (250)	6.15 (156)	10.08 (256)	G 5/4 (1 1/4")	8.15 (207)	7.29 (185)	10.24 (260)	4.97 (126)	28.27 (718)	0.40 (10)	7.29 (185)	8.86 (225)	11.82 (300)	7.09 (180)
255	20.08 (510)	9.85 (250)	6.15 (156)	10.08 (256)	G 5/4 (1 1/4")	8.98 (228)	7.29 (185)	10.24 (260)	4.97 (126)	34.22 (869)	0.40 (10)	9.97 (253)	8.86 (225)	11.82 (300)	7.09 (180)
257	23.19 (589)	10.67 (271)	6.70 (170)	10.67 (271)	flange DN 32	11.03 (280)	9.49 (241)	13.12 (333)	5.08 (129)	38.59 (980)	0.99 (25)	10.32 (262)	11.42 (290)	15.04 (32)	7.66 (194.5)
283	17.21 (437)	9.85 (250)	6.15 (156)	10.08 (256)	G 5/4 (1 1/4")	8.31 (211)	7.29 (185)	10.24 (260)	4.97 (126)	27.80 (706)	0.40 (10)	7.17 (182)	8.86 (225)	11.82 (300)	7.09 (180)
285	20.08 (510)	10.67 (271)	6.70 (170)	10.67 (271)	G 5/4 (1 1/4")	7.05 (179)	9.49 (241)	13.12 (333)	5.08 (129)	32.29 (820)	0.99 (25)	7.37 (187)	11.42 (290)	15.04 (382)	7.66 (194.5)
286	20.08 (510)	10.67 (271)	6.70 (170)	10.67 (271)	G 5/4 (1 1/4")	9.22 (234)	9.49 (241)	13.12 (333)	5.08 (129)	32.29 (820)	0.99 (25)	7.52 (191)	11.42 (290)	15.04 (382)	7.66 (194.5)
287	19.30 (490)	10.67 (271)	6.70 (170)	10.67 (271)	G 5/8	8.19 (208)	9.49 (241)	13.12 (333)	5.08 (129)	32.05 (814)	0.99 (25)	6.93 (176)	11.42 (290)	15.04 (382)	7.66 (194.5)
288	16.74 (425)	9.85 (250)	6.15 (156)	10.08 (256)	G 5/8	8.19 (208)	7.29 (185)	10.24 (260)	4.97 (126)	27.56 (700)	0.40 (10)	6.82 (173)	8.86 (225)	11.82 (300)	7.09 (180)

Note: Standard B variant DMH pumps do not include a motor. See motor data sheet specific to motor selected for motor dimensions.

Dual head pumps have two micrometers.

AR control unit



TM06 2244 3814

Fig. 27 Dimensions, AR control unit (mounted on DMH)

Weights

DMH model	Single-head pump		Double-head pump	
	SS	PVC, PVDF, PP	SS	PVC, PVDF, PP
	Weight without motor [(lb (kg)]			
251	22.00 (10.0)	18.70 (8.5)	33.00 (15.0)	27.50 (12.5)
252	22.00 (10.0)	18.70 (8.5)	33.00 (15.0)	27.50 (12.5)
253	30.80 (14.0)	19.80 (9.0)	52.80 (24.0)	38.50 (17.5)
254	66.00 (30.0)	51.70 (23.5)	105.60 (48.0)	88.00 (40.0)
255	72.60 (33.0)	56.10 (25.5)	121.00 (55.0)	107.80 (49.0)
257	129.80 (59.0)	101.20 (46.0)	191.40 (87.0)	151.80 (69.0)
280	24.86 (11.3)	-	45.54 (20.7)	-
281	23.10 (10.5)	-	41.80 (19.0)	-
283	55.00 (25.0)	-	104.50 (47.5)	-
285	78.10 (35.5)	-	127.60 (58.0)	-
286	83.60 (38.0)	-	138.60 (63.0)	-
287	83.60 (38.0)	-	138.60 (63.0)	-
288	55.00 (25.0)	-	102.30 (46.5)	-

The weights are approximate, and vary according to pump variants.

Motor power

DMH Model	Capacity [gal./h (l/h)]	Counter pressure [psi (bar)]	Motor power [Hp (kW)]		
			50 Hz	60 Hz	100 Hz
251	All	145 (10)	0.12 (0.09)	0.12 (0.09)	0.12 (0.09)
251	All	235 (16.25)	0.12 (0.09)	0.12 (0.09)	0.24 (0.18)
252	All	145 (10)	0.12 (0.09)	0.12 (0.09)	0.24 (0.18)
252	All	232 (16)	0.24 (0.18)	0.24 (0.18)	0.24 (0.18)
253	All	All	0.24 (0.18)	0.24 (0.18)	0.24 (0.18)
254	All	145 (10)	0.74 (0.55)	0.74 (0.55)	0.74 (0.55)
254	All	232 (16)	0.74 (0.55)	0.74 (0.55)	1 (0.75)
255	All	All	0.74 (0.55)	0.74 (0.55)	0.74 (0.55) 1 (0.75)***
257	All	All	1.5 (1.1)*	1.5 (1.1)*	2 (1.5)**
280	All	All	0.24 (0.18)	0.24 (0.18)	0.24 (0.18)
281	All	All	0.24 (0.18)	0.24 (0.18)	0.24 (0.18)
283	All	All	0.74 (0.55)	0.74 (0.55)	0.74 (0.55)
285	All	All	1.5 (1.1)	1.5 (1.1)	2 (1.5)
286	All	All	1.5 (1.1)	1.5 (1.1)	2 (1.5)
287	All	All	1.5 (1.1)	1.5 (1.1)	2 (1.5)
288	All	All	0.74 (0.55)	0.74 (0.55)	0.74 (0.55)

* Double-head pump: 2 Hp (1.5 kW)
** Double-head pump: 3 Hp (2.2 kW)
*** DMH 270-10 at 100 Hz, 142 gal./h (540 l/h)

Flange sizes, pumps without motor

DMH model	IEC	NEMA	Pump housing size
251	BG 63 B5 BG 71 B5	56C	1 (small)
252			
253			
280			
281			
254	BG 80 B14	56C	2 (medium)
255			
283			
288			
257	BG 90 B14 BG 100 B14	145 TC	3 (large)
285			
286			
287			

Pump protection class

The motor protection defines the pump protection class.

Motor capacity	Protection rating
up to 0.24 Hp (up to 0.18 kW) (1 AC and 3 AC)	IP65
0.74 Hp - 3 Hp (0.55 - 2.2 kW) (3 AC)	IP55 or IP65 (depending on motor version)

Accuracy

DMH model	Dosing flow fluctuation	Linearity deviation
251 to 257	< ± 1.5 % within the 10 to 100 % control range	± 2 % of the full-scale value
280 to 288	< ± 1 % within the 10 to 100 % control range	± 1 % of the full-scale value

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

- dosing liquid: water
- fully vented dosing head
- standard version of pump.

Temperature of dosing liquid

Dosing head material	Permissible temp. of dosing liquid	
	p < 145 psi (10 bar) [°F (°C)]	p = 145-232 psi (10-16 bar) [°F (°C)]
PVC	32 to 104 (0 to 40)	32 to 68 (0 to 20)
Stainless steel, 1.4571 (EN 10027-2), 316Ti (AISI)*	14 to 212 (-10 to +100)	14 to 212 (-10 to +100)
Stainless steel, 2.4610 (Alloy C-4) (EN 10027-2)*	14 to 212 (-10 to +100)	14 to 212 (-10 to +100)
PP	32 to 104 (0 to 40)	32 to 68 (0 to 20)
PVDF	14 to 140 (-10 to +60) (158 °F (70 °C) at 130 psi (9 bar))	32 to 68 (0 to 20)

* For SIP/CIP applications, a temperature of 293 °F (145 °C) is permissible for a short time (approx. 15 min.) at p < 29 psi (2 bar).
(SIP = Steaming-In-Place/Sterilization)
(CIP = Cleaning-In-Place)

6. Pump selection

1. Select a DMH model from the "Performance data" tables.
2. Look into the "Catalog variants (limited selection)" tables.
3. If you cannot find a suitable DMH dosing pump there, select the suitable material combination from the "Catalog variants" tables.

Performance data

60 Hz, single head

1. Double head pumps have double capacity.
2. The values refer to dosing liquids with the following characteristics:

- Newtonian and non-degassing
- not containing suspended matter
- density similar to water.

Note: The viscosity increases with decreasing temperature!

We recommend to test the performance with the respective liquid.

Max. counterpressure: 58 psi (4 bar)

DMH model	Capacity	Stroke frequency	Pump type	Stroke volume	Max. suction lift (at viscosity similar to water)	Max. suction lift (at max. viscosity)	Max. inlet pressure	Max. viscosity at 60 Hz	VFD possible (100 Hz, PTC)
	[gal./h (l/h)]	[n/min]		[ml]	[ft (m)]	[ft (m)]	[psi (bar)]	[mPas]	
DMH 257	237.75 (900)	88	DMH 750-4	171	0*	0*	11.6 (0.8)	50	●

* Flooded suction

Max. counterpressure: 145 psi (10 bar)

DMH model	Capacity	Stroke frequency	Pump type	Stroke volume	Max. suction lift (at viscosity similar to water)	Max. suction lift (at max. viscosity)	Max. inlet pressure	Max . viscosity at 60 Hz	VFD possible (100 Hz, PTC)
	[gal./h (l/h)]	[n/min]		[ml]	[ft (m)]	[ft (m)]	[psi (bar)]	[mPas]	
DMH 251	0.77 (2.9)	17	DMH 2.4-10	3.3	3.28 (1)	0*	116 (8)	300	●
	1.59 (6)	35	DMH 5-10	3.3	3.28 (1)	0*	116 (8)	300	●
	4.23 (16)	75	DMH 13-10	3.3	3.28 (1)	0*	116 (8)	100	●
	6.08 (23)	115	DMH 19-10	3.3	3.28 (1)	0*	116 (8)	100	-
DMH 252	3.44 (13)	35	DMH 11-10	6.4	3.28 (1)	0*	116 (8)	300	●
	7.67 (29)	75	DMH 24-10	6.4	3.28 (1)	0*	116 (8)	100	●
	11.63 (44)	115	DMH 37-10	6.4	3.28 (1)	0*	116 (8)	100	-
DMH 253	6.61 (25)	35	DMH 21-10	11.3	3.28 (1)	0*	72.5 (5)	300	●
	13.74 (52)	76	DMH 43-10	11.3	3.28 (1)	0*	72.5 (5)	100	●
	21.14 (80)	115	DMH 67-10	11.3	3.28 (1)	0*	72.5 (5)	100	-
	26.42 (100)	144	DMH 83-10	11.3	3.28 (1)	0*	72.5 (5)	10	-
DMH 254	15.86 (60)	31	DMH 50-10	32	3.28 (1)	0*	72.5 (5)	300	●
	32.23 (122)	65	DMH 102-10	32	3.28 (1)	0*	72.5 (5)	100	●
	45.44 (172)	90	DMH 143-10	32	3.28 (1)	0*	72.5 (5)	100	●
	55.48 (210)	110	DMH 175-10	32	3.28 (1)	0*	72.5 (5)	100	-
	67.63 (256)	134	DMH 213-10	32	3.28 (1)	0*	72.5 (5)	5	-
DMH 255	29.59 (112)	29.6	DMH 96-10	60	0*	0*	116 (8)	100	●
	61.56 (233)	65	DMH 194-10	60	0*	0*	116 (8)	100	●
	85.6 (324)	90	DMH 270-10	60	0*	0*	116 (8)	100	●
	105.15 (398)	110	DMH 332-10	60	0*	0*	116 (8)	100	-
	127.86 (484)	134	DMH 403-10	60	0*	0*	116 (8)	5	-
DMH 257	69.75 (264)	34	DMH 220-10	131	3.28 (1)	0*	116 (8)	200	●
	139.49 (528)	67	DMH 440-10	131	3.28 (1)	0*	116 (8)	50	●
	182.28 (690)	88	DMH 575-10	131	3.28 (1)	0*	116 (8)	50	●
	244.1 (924)	118	DMH 770-10	131	3.28 (1)	0*	116 (8)	50	-
	278.97 (1056)	134	DMH 880-10	131	0*	0*	116 (8)	5	-

* Flooded suction

Max. counterpressure: 232 psi (16 bar)

DMH model	Capacity	Stroke frequency	Pump type	Stroke volume	Max. suction lift (at viscosity similar to water)	Max. suction lift (at max. viscosity)	Max. inlet pressure	Max. viscosity at 60 Hz	VFD possible (100 Hz, PTC)
	[gal./h (l/h)]	[n/min]		[ml]	[ft (m)]	[ft (m)]	[psi (bar)]	[mPas]	
DMH 251	0.74 (2.8)	17	DMH 2.3-16	3.1	3.28 (1)	0*	116 (8)	300	●
	1.56 (5.9)	35	DMH 4.9-16	3.1	3.28 (1)	0*	116 (8)	300	●
	3.7 (14)	75	DMH 12-16	3.1	3.28 (1)	0*	116 (8)	100	●
	5.82 (22)	115	DMH 18-16	3.1	3.28 (1)	0*	116 (8)	100	-
DMH 252	3.18 (12)	35	DMH 10-16	6,3	3.28 (1)	0*	116 (8)	300	●
	7.14 (27)	75	DMH 23-16	6.3	3.28 (1)	0*	116 (8)	100	●
	11.36 (43)	115	DMH 36-16	6.3	3.28 (1)	0*	116 (8)	100	-
DMH 254	14.53 (55)	31	DMH 46-16	30	3.28 (1)	0*	72.5 (5)	300	●
	30.65 (116)	65	DMH 97-16	30	3.28 (1)	0*	72.5 (5)	100	●
	43.07 (163)	90	DMH 136-16	30	3.28 (1)	0*	72.5 (5)	100	●
	52.31 (198)	110	DMH 166-16	30	3.28 (1)	0*	72.5 (5)	100	-
	63.93 (242)	134	DMH 202-16	30	3.28 (1)	0*	72.5 (5)	5	-
DMH 257	86.13 (326)	67	DMH 272-16	78.2	3.28 (1)	0*	11.6 (0.8)	100	●
	107.79 (408)	88	DMH 340-16	78.2	0*	0*	11.6 (0.8)	100	●
	142.66 (540)	118	DMH 450-16	78.2	3.28 (1)	0*	11.6 (0.8)	50	-
	164.85 (624)	134	DMH 520-16	78.2	0*	0*	11.6 (0.8)	5	-
	215.57 (816)	175	DMH 680-16	78.2	0*	0*	11.6 (0.8)	5	-

* Flooded suction

Max. counterpressure: 362 psi (25 bar)

DMH model	Capacity	Stroke frequency	Pump type	Stroke volume	Max. suction lift (at viscosity similar to water)	Max. suction lift (at max. viscosity)	Max. inlet pressure	Max. viscosity at 60 Hz	VFD possible (100 Hz, PTC)
	[gal./h (l/h)]	[n/min]		[ml]	[ft (m)]	[ft (m)]	[psi (bar)]	[mPas]	
DMH 251	0.69 (2.6)	17	DMH 2.2-25	2.9	3.28 (1)	0*	116 (8)	300	●
	1.43 (5.4)	35	DMH 4.5-25	2.9	3.28 (1)	0*	116 (8)	300	●
	3.44 (13)	75	DMH 11-25	2.9	3.28 (1)	0*	116 (8)	100	●
	5.29 (20)	115	DMH 17-25	2.9	3.28 (1)	0*	116 (8)	100	-

* Flooded suction

Max. counterpressure: 725 psi (50 bar)

DMH model	Capacity	Stroke frequency	Pump type	Stroke volume	Max. suction lift (at viscosity similar to water)	Max. suction lift (at max. viscosity)	Max. inlet pressure	Max. viscosity at 60 Hz	VFD possible (100 Hz, PTC)
	[gal./h (l/h)]	[n/min]		[ml]	[ft (m)]	[ft (m)]	[psi (bar)]	[mPas]	
DMH 286	26.95 (102)	67.2	DMH 85-50	25.3	3.28 (1)	0*	72.5 (5)	50	●
DMH 286	35.14 (133)	87.6	DMH 111-50	25.3	3.28 (1)	0*	72.5 (5)	50	●
DMH 286	53.9 (204)	134	DMH 170-50	25.3	3.28 (1)	0*	72.5 (5)	5	-

* Flooded suction

Max. counterpressure: 1450 psi (100 bar)

DMH model	Capacity	Stroke frequency	Pump type	Stroke volume	Max. suction lift (at viscosity similar to water)	Max. suction lift (at max. viscosity)	Max. inlet pressure	Max. viscosity at 60 Hz	VFD possible (100 Hz, PTC)
	[gal./h (l/h)]	[n/min]		[ml]	[ft (m)]	[ft (m)]	[psi (bar)]	[mPas]	
DMH 281	0.64 (2.4)	35	DMH 2-100	1.1	0*	0*	145 (10)	50	●
	1.33 (5)	76	DMH 4.2-100	1.1	3.28 (1)	0*	145 (10)	50	●
	2.04 (7.7)	115	DMH 6.4-100	1.1	3.28 (1)	0*	145 (10)	50	-
	2.54 (9.6)	144	DMH 8-100	1.1	3.28 (1)	0*	145 (10)	5	-
DMH 283	3.18 (12)	32	DMH 10-100	6	3.28 (1)	0*	72.5 (5)	100	●
	6.08 (23)	65	DMH 19-100	6	3.28 (1)	0*	72.5 (5)	50	●
	8.46 (32)	90	DMH 27-100	6	3.28 (1)	0*	72.5 (5)	50	●
	10.57 (40)	110	DMH 33-100	6	3.28 (1)	0*	72.5 (5)	50	-
	12.69 (48)	134	DMH 40-100	6	3.28 (1)	0*	72.5 (5)	5	-
DMH 285	6.35 (24)	34	DMH 20-100	12	3.28 (1)	0*	72.5 (5)	100	●
	12.69 (48)	67	DMH 40-100	12	3.28 (1)	0*	72.5 (5)	50	●
	16.38 (62)	88	DMH 52-100	12	3.28 (1)	0*	72.5 (5)	50	●
	22.2 (84)	118	DMH 70-100	12	3.28 (1)	0*	72.5 (5)	50	-
	25.37 (96)	134	DMH 80-100	12	3.28 (1)	0*	72.5 (5)	5	-

* Flooded suction

Max. counterpressure: 2900 psi (200 bar)

DMH model	Capacity	Stroke frequency	Pump type	Stroke volume	Max. suction lift (at viscosity similar to water)	Max. suction lift (at max. viscosity)	Max. inlet pressure	Max. viscosity at 60 Hz	VFD possible (100 Hz, PTC)
	[gal./h (l/h)]	[n/min]		[ml]	[ft (m)]	[ft (m)]	[psi (bar)]	[mPas]	
DMH 280	0.46 (1.74)	76	DMH 1.3-200	0.36	0*	0*	14.5 (1)	5	●
	0.71 (2.66)	115	DMH 2.2-200	0.36	0*	0*	14.5 (1)	5	-
	0.9 (3.37)	144	DMH 2.5-200	0.36	0*	0*	14.5 (1)	5	-
DMH 287	2.91 (11)	34	DMH 9-200	5.3	3.28 (1)	0*	72.5 (5)	100	●
	5.82 (22)	67	DMH 18-200	5.3	3.28 (1)	0*	72.5 (5)	50	●
	7.4 (28)	88	DMH 23-200	5.3	3.28 (1)	0*	72.5 (5)	50	●
	9.78 (27)	118	DMH 31-200	5.3	3.28 (1)	0*	72.5 (5)	50	-
	11.36 (43)	134	DMH 36-200	5.3	3.28 (1)	0*	72.5 (5)	5	-
DMH 288	1.14 (4.3)	31	DMH 3.3-200	2.33	3.28 (1)	0*	72.5 (5)	100	●
	2.38 (9)	65	DMH 7.5-200	2.33	3.28 (1)	0*	72.5 (5)	50	●
	3.31 (12.5)	90	DMH 10-200	2.33	3.28 (1)	0*	72.5 (5)	50	●
	4.07 (15.4)	118	DMH 13-200	2.33	3.28 (1)	0*	72.5 (5)	50	-
	4.92 (18.6)	134	DMH 15-200	2.33	3.28 (1)	0*	72.5 (5)	5	-

* Flooded suction

Catalog variants

The tables below show the catalog variants of single-head and double-head DMH pumps. Other DMH versions are available on request:

- control variants
- dosing head materials (e.g. alloy C-4)
- supply voltages
- valve types
- connections
- mains plugs
- motor variants
- pumps with API certificate
- pumps with ATEX certificate.

DMH model 251 (DN 8)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 2.4-10 DMH 5.0-10 DMH 13-10 DMH 19-10 DMH 2.3-16 DMH 4.9-16 DMH 12-16 DMH 18-16	B AT5	PP PP-L	E	C	X	F	1 4	A9A9	X	E3
				SS						
				T						
			V	C		F	1 4	A9A9	X	E3
				G						
		PV PV-L	T	C						
				T						
		PVC PVC-L	E	C	X	F	1 4	A9A9	X	E3
				SS						
				T						
			T	C		F	1 4	A9A9	X	E3
				T						
			V	C						
				G						
				SS						
		SS SS-L	T	SS	X	F	1 4	A9A9, VV	X	E3
			V							
			E			F	1 4	A9A9, VV	X	E3
	AR	PP PP-L	E	C	F S	H	1 4	A9A9	B	E3
				SS						
			V	C						
				G						
		PV PV-L	T	C						
				T						
		PVC PVC-L	E	C	F S	H	1 4	A9A9	B	E3
				SS						
				T						
			T	C						
				T						
			V	C						
				G						
				SS						
		SS SS-L	E	SS	F S	H	1 4	A9A9, VV	B	E3
			T							
			V							
DMH 2.2-25 DMH 4.5-25 DMH 11-25 DMH 17-25	B AT5	SS SS-L	E	SS	X	F	1 4	A9A9, VV	X	E3
			T							
			V			F	1 4	A9A9, VV	X	E3
	AR	SS SS-L	E	SS	F S	H	1 4	A9A9, VV	B	E3
			T							
			V							

DMH model 252 (DN 8)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 11-10 DMH 24-10 DMH 37-10 DMH 10-16 DMH 23-16 DMH 36-16	B AT5	PP PP-L	E	C	X	F	1 4	A9A9	X	E3
				SS						
				T						
			V	C		F	1 4	A9A9	X	E3
				G						
		PV PV-L	T	C						
				T						
		PVC PVC-L	E	C		F	1 4	A9A9	X	E3
				SS						
				T						
			T	C		F	1 4	A9A9	X	E3
				T						
			V	C						
				G						
				SS						
		SS SS-L	E	SS	X	F	1 4	A9A9	X	E3
			T			F	1 4	A9A9	X	E3
			V							
	AR	PP PP-L	E	C	F S	H	1 4	A9A9	B	E3
				SS						
				T						
			V	C						
				G						
		PV PV-L	T	C						
				T						
		PVC PVC-L	E	C		H	1 4	A9A9	B	E3
				SS						
				T						
			T	C						
				T						
			V	C						
				G						
				SS						
		SS SS-L	E	SS	F S	H	1 4	A9A9	B	E3
			T							
			V							

DMH model 253 (DN 20)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 21-10 DMH 43-10 DMH 67-10 DMH 83-10	B AT5	PP PP-L	E	C	X	F	1 4	A9A9, A7A7	X	E3
				SS						
				T						
			T	T		F	1 4	A9A9, A7A7	X	E3
			V	G						
		PV PV-L	T	T						
		PVC PVC-L	E	SS	X	F	1 4	A9A9, A7A7	X	E3
				T						
			V	C		F	1 4	A9A9, A7A7	X	E3
				G						
				SS						
		SS SS-L	E	SS	X	F	1 4	A9A9, A3A3	X	E3
			T	SS						
			V	SS		F	1 4	A9A9, A3A3	X	E3
	AR	PP PP-L	E	C SS T	F S	H	1 4	A9A9, A7A7	B	E3
			T	T						
			V	G						
		PV PV-L	T	T						
		PVC PVC-L	E	SS	F S	H	1 4	A9A9, A7A7	B	E3
				T						
			V	C						
				G						
				SS						
		SS SS-L	E	SS	F S	H	1 4	A9A9, A3A3	B	E3
			T	SS						
			V	SS						

DMH model 254 (DN 20)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 50-10 DMH 102-10 DMH 143-10 DMH 175-10 DMH 213-10	B AT5	PP PP-L	E	C	X	F	1 4	A7A7	X	E3
				SS						
				T						
			T	T						
			V	G						
		PV PV-L	T	T						
		PVC PVC-L	E	SS	X	F	1 4	A7A7	X	E3
				T						
			V	C						
				G						
				SS						
		SS SS-L	E	SS	X	F	1 4	A3A3	X	E3
			T	SS						
			V	SS						
DMH 97-16 DMH 136-16 DMH 166-16 DMH 202-16	B AT5	SS SS-L	E	SS	X	F	1 4	A3A3	X	E3
			T	SS						
			V	SS						

DMH model 255 (DN 20)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 194-10 DMH 270-10 DMH 332-10 DMH 403-10*	B AT5	PP PP-L	E	C	X	F	1 4 7*	A7A7*	X	E3
				SS						
				T						
			T	T						
			V	G						
		PV PV-L	T	T						
		PVC PVC-L	E	SS	X	F	1 4 7*	A7A7*	X	E3
				T						
			V	C						
				G						
				SS						
		SS SS-L	E	SS	X	F	1 4 7*	A3A3*	X	E3
			T	SS						
			V	SS						

* For DMH 403-10 connection size for discharge/suction is DN20/DN32 (e.g. A7P), valve type 7.

DMH model 257 (DN 32)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 220-10 DMH 440-10 DMH 575-10 DMH 770-10 DMH 880-10	B AT5	PP PP-L	E	G	X	F	1 4	PP	X	E3
				T						
			V	G						
		PV PV-L	T	T						
		PVC PVC-L	E	SS	X	F	1 4	PP	X	E3
			V	G						
		SS SS-L	E	SS	X	F	1 4	PP	X	E3
			T	SS						
				T						
			V	SS						

DMH model 280 (DN 4)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 1.3-200 DMH 2.2-200 DMH 2.5-200	B AT5	SS SS-L	E V T	C*	X	F	2	B6B6**	X	E3
						F	2	B6B6**	X	E3
	AR	SS SS-L	E V T	C*	F S	H	2	B6B6**	B	E3

* Stainless-steel (SS) ball in deaeration valve
** 95731559: 1/4" FNPT connector (use qty. 2 per pump head)

DMH model 281 (DN 8)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 2-100 DMH 4.2-100 DMH 6.4-100 DMH 8-100 DMH 9.6-100	B AT5	SS SS-L	E V T	SS	X	F	2	VV	X	E3
						F	2	VV	X	E3
	AR	SS SS-L	E V T	SS	F S	H	2	VV	B	E3

DMH model 283 (DN 20)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 10-100 DMH 19-100 DMH 27-100 DMH 33-100 DMH 40-100 DMH 55-100	B AT5	SS SS-L	E	SS	X	F	2	A3A3	X	E3
			V	C						
				SS						
			T	SS						

DMH model 285 (DN 20)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 20-100 DMH 40-100 DMH 52-100 DMH 70-100 DMH 80-100 DMH 105-100	B AT5	SS SS-L	E	SS	X	F	2	A3A3	X	E3
			V	C						
				SS						
			T	SS						

DMH model 286 (DN 20)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 85-50 DMH 111-50 DMH 170-50	B AT5	SS SS-L	E	SS	X	F	1 2	A3A3	X	E3
			V	C						
				SS						
			T	SS						

DMH model 287 (DN 8)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 18-200 DMH 23-200 DMH 31-200 DMH 36-200	B AT5	SS SS-L	E V T	SS	X	F	2	C2C2	X	E3

DMH model 288 (DN 8)

Max. flow - pressure [l/h]-[bar]	Control variant	Material			Control panel position	Supply voltage	Valve type	Connection discharge/ suction	Mains plug	Motor variant
		Dosing head	Gasket	Valve ball						
DMH 7.5-200 DMH 10-200 DMH 13-200 DMH 15-200	B AT5	SS SS-L	E V T	SS	X	F	2	C2C2	X	E3

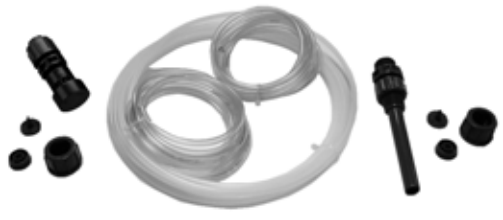
7. Accessories for small dosing pumps

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

Installation kits for dosing pumps

An installation kit includes the following parts:

- injection unit with spring-loaded check valve (see page 41)
- PE discharge tubing, 19.7 ft (6 m).
- PVC suction tubing, 6.5 ft (2 m).
- PVC deaeration tubing, 6.5 ft (2 m).
- foot valve with strainer and weight, without or with level indication (see page 37).



TM04 1600 0312

Fig. 28 Installation kit with foot valve without level indication

TM04 8469 0512

Fig. 29 Installation kit with foot valve with level indication

Technical data

Max. flow rate* [gal./h (l/h)]	Size		Material of foot valve / injection unit			Product number	
	Suction / discharge tubing [in.]	Deaeration tubing [in.]	Housing	Gasket	Ball	Foot valve without level indication	Foot valve with level indication
2 (7.5)	0.17" x 1/4"	0.17" x 1/4"	PP	FKM	Ceramic	95730488	95730512
				EPDM	Ceramic	95730489	95730513
			PVC	FKM	Ceramic	95730490	95730514
				EPDM	Ceramic	95730491	95730515
				PTFE	Ceramic	95730492	95730516
			PVDF	FKM	Ceramic	95730493	95730517
				EPDM	Ceramic	95730494	95730518
				PTFE	Ceramic	95730495	95730519
8 (30)	1/4" x 3/8"	0.17" x 1/4"	PP	FKM	Ceramic	95730496	95730520
				EPDM	Ceramic	95730497	95730521
			PVC	FKM	Ceramic	95730498	95730522
				EPDM	Ceramic	95760499	95730523
				PTFE	Ceramic	95730500	95730524
			PVDF	FKM	Ceramic	95730501	95730525
				EPDM	Ceramic	95730502	95730526
				PTFE	Ceramic	95730503	95730527
15.85 (60)	3/8" x 1/2"	0.17" x 1/4"	PP	FKM	Ceramic	95730504	95730528
				EPDM	Ceramic	95730505	95730529
			PVC	FKM	Ceramic	95730506	95730530
				EPDM	Ceramic	95730507	95730531
				PTFE	Ceramic	95730508	95730532
			PVDF	FKM	Ceramic	95730509	95730533
				EPDM	Ceramic	95730510	95730534
				PTFE	Ceramic	95730511	95730535

* Viscosity similar to water

Cables and plugs

Cables and plugs are used for the connection of the dosing pump to external control devices. For cables and plugs for large dosing pumps, please see page 49.

Tubing

Tubing is available in various materials, sizes and lengths.

TM04 8268 0411

Fig. 30 Tubing

Technical data

Inner/outer dia. [in.]	Material	Max. pressure [psi (bar)]	Length [ft (m)]	Product number
0.125 x 1/4	PVC	85 (6 bar)	20 (6.0)	91127749
0.125 x 1/4	PVC	85 (6 bar)	100 (30.5)	98257648
1/4 x 3/8	PVC	73 (5 bar)	100 (30.5)	91127750
	PE	192 (13 bar)	20 (6.0)	91127825
			100 (30.5)	91127751
	ETFE	290 (20 bar)	100 (30.5)	91127753
3/8 x 1/2	PE	123 (8.5 bar)	20 (6.0)	91127826
			100 (30.5)	91127752

Foot valves

Foot valves are installed at the lower end of the suction tubing. They are available either without level indication or with low-level and empty-tank indication.

Foot valves include:

- Weight
- strainer (mesh size approx. 0.03 in. (0.8 mm))
- check valve
- tubing connection set:
  - 0.17" x 1/4"
  - 1/4" x 3/8"
  - 3/8" x 1/2"
- pipe connection set: threaded, 1/4" NPT, female (stainless steel).

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

- Reed-switch unit with two floaters
- 16.4 ft (5 m) of cable with PE jacket
- M 12 plug (to connect to a DMH with AR control use adapter M12 to flat plug 96635010)
- PE cap, ∅2.28 in. (58 mm), for assembly in Grundfos cylindrical tanks, or for use with tank adaptors.

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

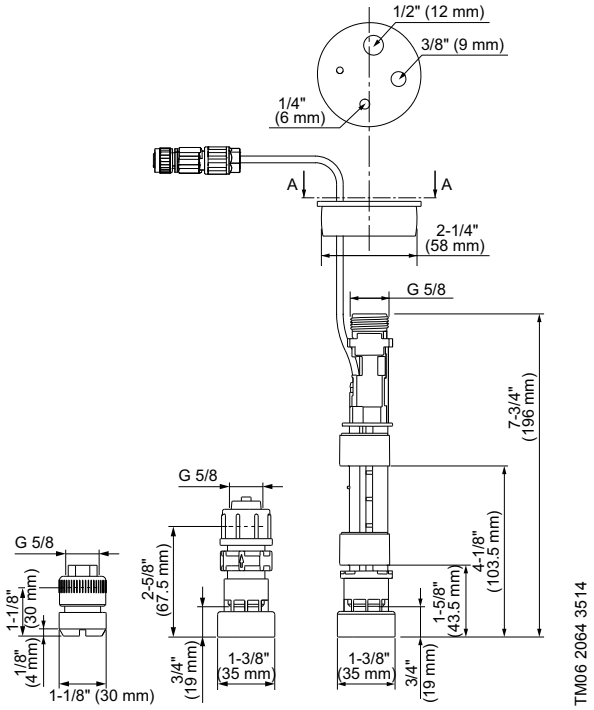
Electrical data of the level indication:

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

TM04 8476 0512

Fig. 31 Left: foot valve without level indication; right: foot valve with level indication

Dimensions



TM06 2064 3514

Fig. 32 Left: stainless-steel foot valve; center and right: PE or PVDF foot valve, dimensions

Technical data

Max. flow rate [gal./h (l/h)]	Material			Product number	
	Housing	Gasket	Ball	Without level indication	With level indication
15.85 (60)	PE	FKM, EPDM	Ceramic	98070955	98070970
		PTFE	Ceramic	98070956	98070971
	PVDF	FKM, EPDM	Ceramic	98070957	98070972
		PTFE	Ceramic	98070958	98070973
	SS	PTFE	SS	98070964	-

Suction lances

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

Suction lances include:

- Strainer (mesh size approx. 0.03 in. (0.8 mm))
- check valve
- tubing connection set:
  - 0.17" x 1/4"
  - 1/4" x 3/8"
  - 3/8" x 1/2"
- adjustable tank connection with holes for e.g. relief line.

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

- Reed-switch unit with 2 floaters
- 16.4 ft (5 m) of cable with PE jacket
- M 12 plug (to connect to a DMH with AR control use adapter M12 to flat plug 96635010).

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

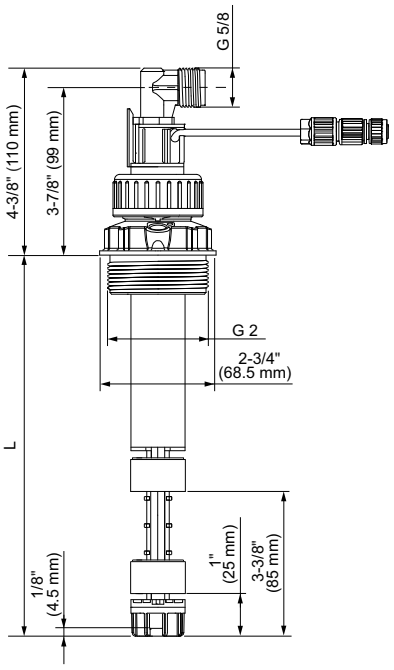
Electrical data of the level indication:

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

TM04 8458 0312

Fig. 33 Suction lance

Dimensions



TM06 2063 3514

Fig. 34 Suction lance, dimensions

Dimensions / selection

For dosing tank type	Tank volume [gal. (l)]	Recommended immersion depth (L) [In. (mm)]
Grundfos cylindrical tank	16 (60)	19.50 (500)
	26 (100)	27.13 (690)
	52 (200)	27.13 (690)
	79 (300)	38.50 (980)
	132 (500)	43.25 (1100)
	264(1000)	47.25 (1200)
Grundfos square tank*	26(100)	27.13 (690)
L-ring drum*	31 (120)	32.25 (820)
	58 (220)	38.50 (980)
Steel drum*	57 (216)	38.50 (980)
Standard jerricans according to EN 12712*	3, 9 (12, 33) (large cap)	15.75 (400)
	7, 8, 9 (25, 30, 33)	19.50 (500)
	16 (60)	27.13 (690)
IBC*	all sizes	47.25 (1200)

* For suitable adaptors, see page 40.

Technical data

Max. flow rate [gal./h (l/h)]	Max. immersion depth* [in. (mm)]	Material			Product number	
		Housing	Gasket	Ball	Without level indication	With level indication
15.85 (60)	15-3/4 (400)	PE	FKM, EPDM	Ceramic	98070982	98071078
			PTFE	Ceramic	98070983	98071079
		PVDF	FKM, EPDM	Ceramic	98070984	98071080
			PTFE	Ceramic	98070985	98071081
	19-1/2 (500)	PE	FKM, EPDM	Ceramic	98070994	98071090
			PTFE	Ceramic	98070995	98071091
		PVDF	FKM, EPDM	Ceramic	98070996	98071092
			PTFE	Ceramic	98070997	98071093
	22-3/8 (570)	PE	FKM, EPDM	Ceramic	98071006	98071102
			PTFE	Ceramic	98071007	98071103
		PVDF	FKM, EPDM	Ceramic	98071008	98071104
			PTFE	Ceramic	98071009	98071105
	27-1/8 (690)	PE	FKM, EPDM	Ceramic	98071018	98071114
			PTFE	Ceramic	98071019	98071115
		PVDF	FKM, EPDM	Ceramic	98071020	98071116
			PTFE	Ceramic	98071021	98071117
	32-1/4 (820)	PE	FKM, EPDM	Ceramic	98071030	98071126
			PTFE	Ceramic	98071031	98071127
		PVDF	FKM, EPDM	Ceramic	98071032	98071128
			PTFE	Ceramic	98071033	98071129
	38-1/2 (980)	PE	FKM, EPDM	Ceramic	98071042	98071138
			PTFE	Ceramic	98071043	98071139
		PVDF	FKM, EPDM	Ceramic	98071044	98071140
			PTFE	Ceramic	98071045	98071141
	43-1/4 (1100)	PE	FKM, EPDM	Ceramic	98071054	98071150
			PTFE	Ceramic	98071055	98071151
		PVDF	FKM, EPDM	Ceramic	98071056	98071152
			PTFE	Ceramic	98071057	98071153
	47-1/4 (1200)	PE	FKM, EPDM	Ceramic	98071066	98071162
			PTFE	Ceramic	98071067	98071163
		PVDF	FKM, EPDM	Ceramic	98071068	98071164
			PTFE	Ceramic	98071069	98071165

* Minimum immersion depth for all sizes: approx. 5-1/2" (140 mm).

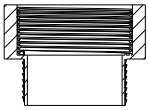
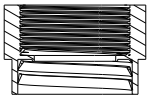
Accessories for suction lances and foot valves with level indication

Adaptors for containers

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

TM04 8506 0712

Technical data

Adaptor type		For container type	Remark	Product number
	TM04 8470 0512	Counter nut for tanks without threaded opening, e.g. 26.4 gal (100 liter) square tank or 264 gal (1000 liter) cylindrical tank	PVC, grey	98071170
	TM04 8471 0512	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
	TM04 8473 0512	Jerricans with small opening (approx. ∅1.42 in. (∅36 m), according to EN 12713	PE, green	98071173
		Jerricans with medium-sized opening (approx. ∅1.77 in. (∅45 mm), according to EN 12713	PE, yellow	98071174
		Jerricans with large opening (approx. ∅2.24 in. (∅57 mm), according to EN 12713	PE, brown	98071175
		US containers with bung hole of 63 mm (ASTM International)	PE, white	98071176
	TM04 8472 0512	IBC (Intermediate Bulk Container) with opening of ∅5.9 in. (∅150 mm), S 160 x 7	PE, black	98071177

Emission protection kits

Gas emitted by liquid in a container can cause bad odor and corrosion. Emission protection kits help avoid such problems. 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 tubing.

They include:

- gasket for the tank adaptor
- snifting valve or tubing nipple 4/6 mm (tubing is not included)
- gasket for the cable outlet.

Order data

Variant	Remark	Product number
Emission protection kit with snifting valve	can be retrofitted	98071178
Emission protection kit for use with filter	can be retrofitted	98071179

M-12-plug-to-flat-plug adaptor

The adaptor allows to connect 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).

Order data

Description	Product number
M-12-plug-to-flat-plug adaptor	96635010

Injection units

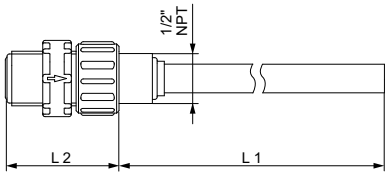
Injection units connect the dosing line with the process line. They ensure a minimum backpressure of 10 psi (0.7 bar), and avoid backflow of the dosing liquid.

In general, they include:

- Injection pipe. PP, PVC and PVDF versions can be shortened.
- spring-loaded check valve with Tantal spring.
- tubing connection set:
  – 0.17" x 1/4"
  – 1/4" x 3/8"
  – 3/8" x 1/2".
- stainless steel inlet pipe connection: 1/4" female NPT.

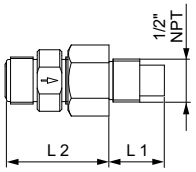
Standard injection units

Dimensions



TM06 2056 3514

Fig. 35 Standard injection unit, PP, PVC, and PVDF version



TM06 2057 3514

Fig. 36 Standard injection unit, stainless-steel version

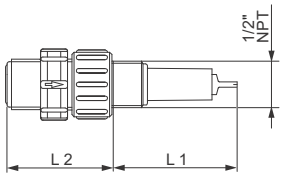
Technical data

Max. flow rate [gal./h (l/h)]	Max. pressure [psi (bar)]	Material			Dimensions		Product number
		Housing	Gasket	Ball	L 1 [in. (mm)]	L 2 [in. (mm)]	
15.85 (60)	232 (16)	PP	FKM	Ceramic	3-7/8 (100)	1-7/8 (47)	95730906
			EPDM	Ceramic	3-7/8 (100)	1-7/8 (47)	95730910
		PVC	FKM	Ceramic	3-7/8 (100)	1-7/8 (47)	95730914
			EPDM	Ceramic	3-7/8 (100)	1-7/8 (47)	95730918
			PTFE	Ceramic	3-7/8 (100)	1-7/8 (47)	95730922
		PVDF	FKM	Ceramic	3-7/8 (100)	1-7/8 (47)	95730926
			EPDM	Ceramic	3-7/8 (100)	1-7/8 (47)	95730930
			PTFE	Ceramic	3-7/8 (100)	1-7/8 (47)	95730934
	1450 (100)	Stainless steel	PTFE	Stainless steel	1-1/8 (27)	2 (50)	95730938
	232 (16)	PVC	FKM	Ceramic	11-3/4 (300)	1-7/8 (47)	95730942
			EPDM	Ceramic	11-3/4 (300)	1-7/8 (47)	95730946
			PTFE	Ceramic	11-3/4 (300)	1-7/8 (47)	95730950

Injection units with lip valve

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

Dimensions



TM06 2058 3514

Fig. 37 Injection unit with lip valve

Technical data

Max. flow rate [gal./h (l/h)]	Max. pressure [psi (bar)]	Material			Dimensions		Product number
		Housing	Gasket	Ball	L 1 [in. (mm)]	L 2 In. [in. (mm)]	
15.85 (60)	232 (16)	PVC	FKM	Ceramic	2 1/8 (55)	2 3/8 (59)	95730966

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 check valve. Thus, the dosing line can be completely disconnected from the process.
The check valve can be disassembled and cleaned without stopping the process and emptying the process line.

Dimensions

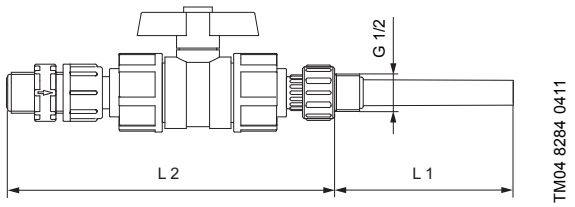


Fig. 38 Injection unit with ball valve

Technical data

Max. flow rate [gal./h (l/h)]	Max. pressure [psi (bar)]	Material			Dimensions		Product number
		Housing	Gasket	Ball	L 1 [In. (mm)]	L 2 [In. (mm)]	
15.85 (60)	232 (16)	PVC	FKM	Ceramic	3-7/8 (100)	7-1/4 (183)	95730954
			EPDM	Ceramic	3-7/8 (100)	7-1/4 (183)	95730958
	928 (64)	Stainless steel	PTFE	Stainless steel	1-1/8 (27)	5-1/2 (138)	95730962

Injection units, withdrawable for cleaning

These injection units are used where regular cleaning of the injection pipe is required. The construction allows the withdrawal of the injection unit from the process line and the cleaning of it, without stopping the water flow. The injection point can be closed with the integrated ball valve. The immersion depth of the injection pipe can be adjusted.

Dimensions

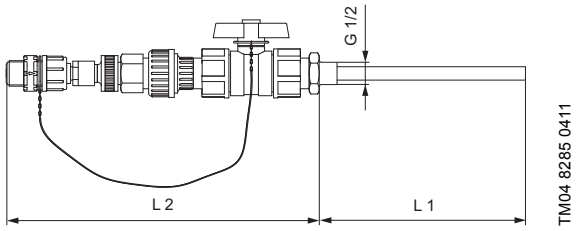


Fig. 39 Injection unit, withdrawable for cleaning

Technical data

Max. flow rate [gal./h (l/h)]	Max. pressure [psi (bar)]	Material			Dimensions		Product number
		Housing	Gasket	Ball	L 1 [in. (mm)]	L 2 [in. (mm)]	
15.85 (60)	145 (10)	PVC	FKM	Ceramic	7-1/4 (185)	11 (280)	95730970
			EPDM	Ceramic	7-1/4 (185)	11 (280)	95730974

Hot-injection units with ball valve

Hot-injection units with ball valve can be used for direct injection of dosing liquid into processes with a temperature of up to 248 °F (120 °C).

In addition, these injection units include:

- Injection pipe, stainless steel.
- Ball valve installed between the injection pipe and the cooling pipe, stainless steel.
- Bendable cooling pipe, stainless steel, length 3.28 ft (1 m).

Dimensions

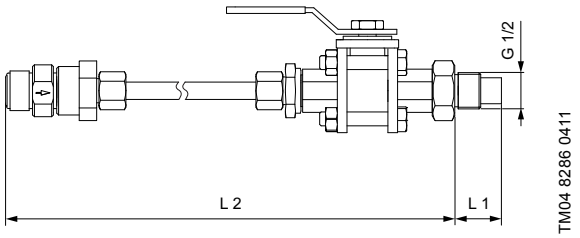


Fig. 40 Hot-injection unit with ball valve

Technical data

Max. flow rate [gal./h (l/h)]	Max. pressure [psi (bar)]	Material			Dimensions		Product number
		Housing	Gasket	Ball	L 1 [in. (mm)]	L 2 [in. (mm)]	
15.85 (60)	232 (16)	PVDF	PTFE	Ceramic	1-1/8 (27)	45-1/2 (1158)	95730978
	928 (64)	Stainless steel	PTFE	Stainless steel	1-1/8 (27)	45-1/2 (1158)	95730982

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

Multi-function valves combine the functions of pressure relief valves and pressure loading valves. In addition, they allow deaeration of the pump and emptying of the discharge line for maintenance.

Pressure relief valves, or safety valves, protect the pump and the discharge installations against excessive pressure. All pressurized dosing installations should include a pressure relief valve.

Pressure loading valves maintain a certain backpressure for the pump. They are used in applications with too low backpressure or no backpressure at all. Pressure loading valves are also used to prevent siphoning, when the admission pressure is higher than the backpressure.
They provide a constant backpressure for the dosing pump when the system pressure is fluctuating.

TM04 8287 0411

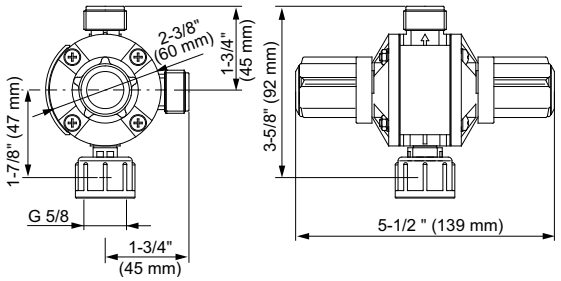
Fig. 41 Multi-function valve, pressure relief valve, pressure loading valve

Multi-function valves

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

- Loading pressure, adjustable from 14.5 to 58 psi (1 to 4 bar), is factory-set to 43.5 psi (3 bar).
- Relief pressure, adjustable from 101 to 232 psi (7 to 16 bar), is factory-set to 145 psi (10 bar).
- Max. system pressure 232 psi (16 bar).
- Tubing connection set:
  – 0.17" x 1/4"
  – 1/4" x 3/8"
  – 3/8" x 1/2".

Dimensions



TM06 2059 3514

Fig. 42 Multi-function valve

Technical data

Max. flow rate [gal./h (l/h)]	Material				Product number
	Housing	Connections	Gasket	Diaphragm	Relief pressure 145 psi (10 bar)
15.85 (60)	PVDF	PP	FKM	PTFE	95730813
			EPDM	PTFE	95730814
		PVC	FKM	PTFE	95730815
			EPDM	PTFE	95730816
			PTFE	PTFE	95730817
		PVDF	FKM	PTFE	95730818
			EPDM	PTFE	95730819
			PTFE	PTFE	95730820

Pressure relief valves

Pressure relief valves are installed in the discharge line near the pump, using the 2 in-line connections. The side connection leads the relief liquid back into the tank.

- Relief pressure, adjustable from 72.5 to 145 psi (5 to 10 bar), is factory-set to 145 psi (10 bar), or
- Max. system pressure 232 psi (16 bar).
- Tubing connection set: 0.17" x 1/4", 1/4" x 3/8" and 3/8" x 1/2".
- Pipe connection set: threaded, 1/4" NPT, female (stainless steel).

Dimensions

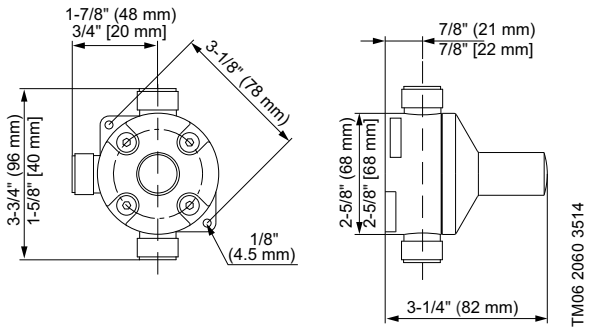


Fig. 43 Pressure relief valve. Dimensions in brackets apply to stainless-steel version

Technical data

Max. flow rate [gal./h (l/h)]	Material			Product number
	Diaphragm	Housing and connections	Gasket	Relief pressure 145 psi (10 bar)
15.85 (60)	PTFE	PP	FKM / EPDM	95730762
		PVC	FKM / EPDM	95730763
			PTFE	95730764
		PVDF	FKM / EPDM	95730765
			PTFE	95730766
		Stainless steel	No gaskets	95730772

Pressure loading valves

Pressure loading valves are installed in the discharge line after the pressure relief valve, and after the pulsation damper, if fitted.

- Loading pressure, adjustable from 14.5 to 72.5 psi (1 to 5 bar), is factory-set to 43.5 psi (3 bar).
- Max. system pressure: 232 psi (16 bar).
- Tubing connection set:
  – 0.17" x 1/4"
  – 1/4" x 3/8"
  – 3/8" x 1/2"
- Pipe connection set: threaded, 1/4" NPT, female (stainless steel).

Dimensions

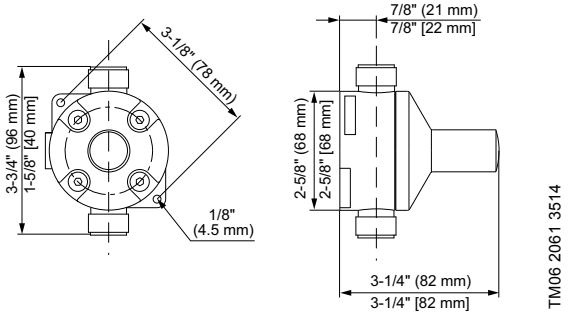


Fig. 44 Pressure loading valve. Dimensions in brackets apply to stainless-steel version.

Technical data

Max. flow rate [gal./h (l/h)]	Material			Product number
	Diaphragm	Housing and connections	Gasket	
15.85 (60)	PTFE	PP	FKM / EPDM	95730746
		PVC	FKM / EPDM	95730747
			PTFE	95730748
		PVDF	FKM / EPDM	95730749
			PTFE	95730750
		Stainless steel	No gaskets	95730752

Pump connection kits and inlay kits

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

A pump connection kit includes:

- 1 set of inlays
- 1 union nut.

An inlay kit includes:

- 2 sets of inlays.

Fig. 45 Left: pump connection kit; right: inlay kit

Technical data

Connection type	Size	Material	Product number	
			Connection kit	Inlay kit
Tubing (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	-
Tubing (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
	5/8 mm	PP	97702475	95730711
		PVC	97702486	95730721
		PVDF	97702496	95730730
	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
	9/12 mm	PP	97702479	95730715
		PVC	97702490	95730725
		PVDF	97702500	95730734
	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
Tubing (cutting ring type)	1/8" x 1/4"	PP	97702481	95730717
		PVDF	97702502	95730736
Pipe welding	External diameter 0.629 in. (16 mm)	PP	97702480	95730716
		PVDF	97702501	95730735
Pipe cementing	Internal diameter 0.472 in. (12 mm)	PVC	97702491	95730726
Pipe, threaded, male	1/2" NPT	PP	97702484	-
		PVC	97702494	-
		PVDF	97702505	-
		Stainless steel	97702508	-
Pipe, threaded, female	Rp 1/4"	Stainless steel	97702472	95730739
	1/4" NPT	Stainless steel	97702473	95730740
Pipe (cutting ring type)	4/6 mm	Stainless steel	97702506	-
	8/10 mm	Stainless steel	97702507	-

Adaptors

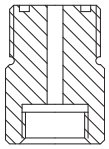
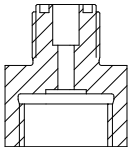
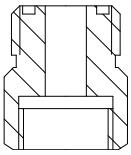
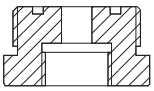
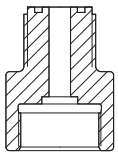
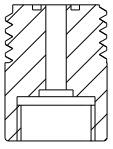
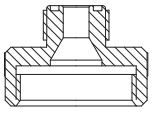
Threaded adaptors

Threaded adaptors are used to convert between different threaded connection sizes.

A threaded adaptor kit includes:

- 1 adaptor
- 1 O-ring.

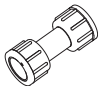
Technical data

Type		Threaded connection size		Material		Product number
		Female	Male	Housing	Gaskets	
	TM04 8296 0411	G 3/8	G 5/8	PP	FKM / EPDM	95730407
				PVC	FKM / EPDM	95730408
					PTFE	95730409
				PVDF	FKM / EPDM	95730410
					PTFE	95730411
	TM04 8297 0411	G 5/8	G 3/8	PP	FKM / EPDM	95730412
				PVC	FKM / EPDM	95730413
					PTFE	95730414
				PVDF	FKM / EPDM	95730415
					PTFE	95730416
	TM04 8298 0411	G 5/8	G 3/4	PP	FKM / EPDM	95730417
				PVC	FKM / EPDM	95730418
					PTFE	95730419
				PVDF	FKM / EPDM	95730420
					PTFE	95730421
	TM04 8299 0411	G 5/8	G 1 1/4	PP	FKM / EPDM	95730422
				PVC	FKM / EPDM	95730423
					PTFE	95730424
				PVDF	FKM / EPDM	95730425
					PTFE	95730426
	TM04 8300 0411	G 5/8	M 20 x 1.5	PP	FKM / EPDM	95730427
				PVC	FKM / EPDM	95730428
					PTFE	95730429
				PVDF	FKM / EPDM	95730430
					PTFE	95730431
	TM04 8475 0612	G 5/8	M 30 x 3.5	PVDF	FKM / EPDM	98154048
					PTFE	98154054
	TM04 8301 0411	G 1 1/4	G 5/8	PP	FKM / EPDM	95730432
				PVC	FKM / EPDM	95730433
					PTFE	95730434
				PVDF	FKM / EPDM	95730435
					PTFE	95730436

Union nut adaptors

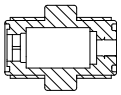
Union nut adaptors consist of a rigid pipe with union nuts on both ends. They have neither gaskets nor glued or welded connections.

Technical data

Type		Threaded connection size		Material	Product number
		Female	Female	Housing	
	TM04 8306 0411	G 5/8	G 5/8	PVC	95730437
				PP	95730438
				PVDF	95730439

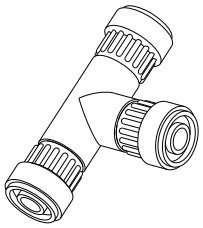
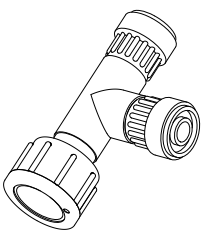
Tubing-to-tubing and tubing-to-pipe adaptors

Technical data

Type		Description	Connections		Material		Product number
			Side 1	Side 2	Housing and connections	Gaskets	
	TM04 8302 0411	Valve housing with two male threads G 5/8	For tubing 0.17" x 1/4", 1/4" x 3/8", 3/8" x 1/2"		PP	FKM / EPDM	95730372
					PVC	FKM / EPDM	95730373
						PTFE	95730374
					PVDF	FKM / EPDM	95730375
						PTFE	95730376
			Without		PP	FKM / EPDM	95730356
					PVC	FKM / EPDM	95730357
						PTFE	95730358
					PVDF	FKM / EPDM	95730359
						PTFE	95730360
			Without	Threaded 1/4" NPT	Stainless steel	PTFE	95730710

T-pieces

Technical data

Type		Description	Connections			Material		Product number
			Bottom	Top	Side	Housing and connections	Gaskets	
	TM04 8304 0411	Three male threads G 5/8	For tubing 0.17" x 1/4", 1/4" x 3/8", 3/8" x 1/2"			PP	FKM / EPDM	95730392
						PVC	FKM / EPDM	95730393
							PTFE	95730394
						PVDF	FKM / EPDM	95730395
							PTFE	95730396
			-	Without	-	PP	FKM / EPDM	95730346
						PVC	FKM / EPDM	95730347
							PTFE	95730348
						PVDF	FKM / EPDM	95730349
							PTFE	95730350
	TM04 8305 0411	Two male threads G 5/8, one female connection with union nut	Union nut G 5/8	Without	For tubing 0.17" x 1/4", 1/4" x 3/8", 3/8" x 1/2"	PP	FKM / EPDM	95730402
						PVC	FKM / EPDM	95730403
							PTFE	95730404
						PVDF	FKM / EPDM	95730405
							PTFE	95730406
					Without	PP	FKM / EPDM	95730351
						PVC	FKM / EPDM	95730352
							PTFE	95730353
						PVDF	FKM / EPDM	95730354
							PTFE	95730355

8. Accessories for large dosing pumps

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

The following accessories are suitable for large dosing pumps, such as DMH with more than 13 gal./h (50 l/h).

To find the suitable hydraulic accessories for your pump, please compare the connection size and material combination of your pump with the data in this booklet.

- G 5/4 = G 1 1/4 = DN 20
- G 2 = DN 32

Overview of a dosing system

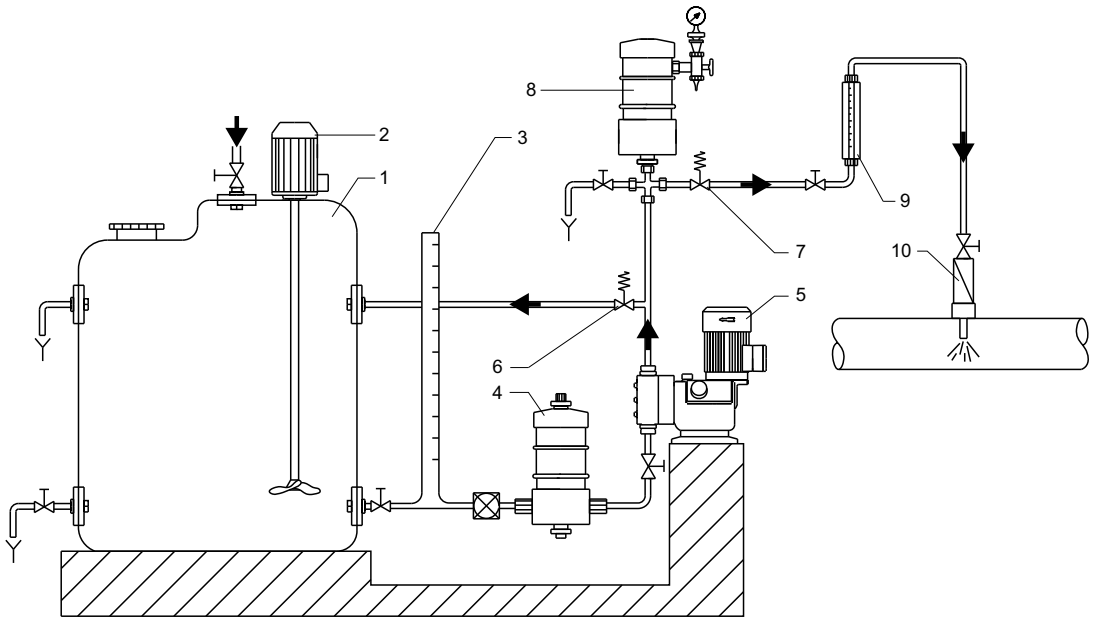


Fig. 46 Overview of a dosing system

Legend

Pos.	Component
1	Dosing tank
2	Electric stirrer
3	Lateral discharge device
4	Pulsation damper, suction side
5	Dosing pump
6	Pressure-relief valve
7	Pressure-loading valve
8	Pulsation damper, discharge side
9	Measuring glass
10	Injection unit

Additional accessories

Accessories
Hoses
Foot valve
Suction line
Level-control unit

Cables and plugs

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

Cables and plugs for DMH pumps with AR control

Technical data

Socket	Application		Pins	Plug type	Cable length [ft (m)]	Product number
④	Input	Analog pulse remote switch	4	Straight	6.5 (2)	96609014
					16.4 (5)	96609016
					no cable	96698715
				Angled	6.5 (2)	96693246
③	Output	Error relay (stroke or low-level relay)	4	Straight	6.5 (2)	96609017
					16.4 (5)	96609019
					no cable	96696198
				Angled	6.5 (2)	96698716
②	Output	Analog	5	Straight	6.5 (2)	96632921
					16.4 (5)	96632922
					no cable	96609031
				Angled	6.5 (2)	96699697
⑤	Input	Low-level; for DDI	4	Straight	-	96698715
		Empty tank; for DMX/DMH AR	2		soldered cable	96679388
		Low-level; for DMX/DMH AR	3			96630345
	Adapter, flat-round	Low-level	4		-	96635010
⑥	Profibus	Y-connector; for DDI			-	96693735
		Terminating resistor			-	96693737
	Mains (DDI 222)	110-240 VAC	3	Angled	-	96698717

Foot valve

Foot valve complete with check valve, strainer and tube or pipe connection.

TM05 9053 0813

Dimensions

TM01 9285 1600

Technical data

Max flow rate [gal./h (l/h)]	Size	Materials			Connection		Dimensions		Product number
		Housing	Gasket	Ball	Type	ID/OD or NPT	Ø [in. (mm)]	L [in. (mm)]	
105 (400)	NPT 3/4"	PP	EPDM	Ceramic	NPT	3/4"	3/4" (19.05)	4.5 (114.3)	96566136
			FKM						96566138
		PVDF	FKM						96566139
		SS	FKM	SS					96537921
303 (1150)	NPT 1 1/4"	PP	EPDM	Glass	NPT	1 1/4"	1 1/4" (31.75)	6.6 (167.64)	96566145
		PP	FKM						96566146
		PVDF	FKM						96566147
		SS	FKM	SS					96537970

Injection valve

Injection valve complete with spring-loaded check valve, injection pipe and tube or pipe connection.

Spring material: Hastelloy

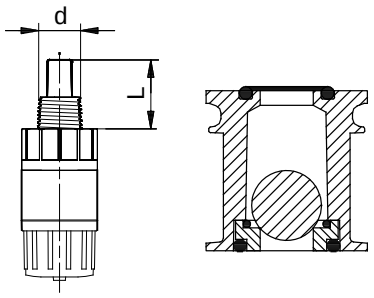
Opening pressure: 16 psi (1.1 bar).

Max. temperature:

PP, PVDF: 122 °F (50 °C)
PVC: 104 °F (40 °C)
Stainless steel: 176 °F (80 °C)

TM06 0337 1213

Dimensions



TM01 9278 3100 - TM02 6433

Technical data

Max flow rate [gal./h (l/h)]	Size	Materials			Connection		Dimensions		Product number
		Housing	Gasket	Ball	Type	NPT	d [in.]	L [in.]	
105 (400)	NPT 3/4"	PP	EPDM	Ceramic	NPT	3/4"	3/4" NPT	4.8 (122)	96566142
			FKM						96566143
		PVDF	FKM						96566144
		SS	FKM	SS					96537923
303 (1150)	NPT 1 1/4"	PP	EPDM	Glass	NPT	1 1/4"	1 1/4" NPT	4.73 (120)	96566148
		PP	FKM						96566149
		PVDF	FKM						96566152
		SS	FKM	SS					96537971

Calibration columns

- Graduated cylinders in ml
- NPT connections
- glass column protected by outer acrylic shield

TM06 0215 1213 - TM06 0214 1213

Fig. 47 Glass (left) or PVC (right)

Suggested column size for DMH pumps

Materials		Volume [ml]	Connection NPT	Material number
Tube	End cap			
PVC	PVC	100	1/2"	97918766
		250	1/2"	97918767
		500	1/2"	97918768
		1000	1/2"	97918769
		2000	1"	97918770
		4000	1"	97918771
		10000	2"	97918772
		20000	2"	97918773
Glass	PVDF	100	1/2"	97918774
		250	1/2"	97918775
		500	1/2"	97918776
		1000	1/2"	97918777
		2000	1"	97918778
		4000	1"	97918779
		6000	2"	97918780

Back-pressure or relief valve selection

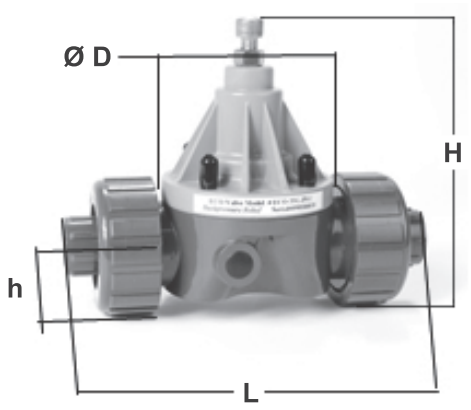
Valves can be used for either back pressure or pressure relief.

- **Back pressure:** Two port valve installed in-line on the pump discharge line provides continuous pressure to facilitate proper pump check valve operation to maintain accuracy and prevent siphoning.
- **Pressure relief:** Two port offline valve installed on the pump discharge is designed to protect the pump and discharge line from overpressure due to blocked discharge piping or closed valves downstream.
- **Back pressure installation:** In-line.
- **Pressure relief installation:** T-connection offline.
- Setting range: 7 to 150 psi (0.48 to 10.3 bar).
- Factory set opening pressure: 50 psig (3.44 bar).
- Diaphragm: PTFE, or PVC on PVC valve body.

TM05 9673 1013

Technical data

Max. pressure vs. temperature						
Temperature		Valve material				
		PVC	CPVC	PP	PVDF	SS
°F	°C	[psi (bar)]	[psi (bar)]	[psi (bar)]	[psi (bar)]	[psi (bar)]
68	20	150 (10.3)	150 (10.3)	150 (10.3)	150 (10.3)	150 (10.3)
86	30	110 (7.6)				
104	70	70 (4.8)		100 (6.9)		
122	30	30 (2.1)	140 (9.6)	65 (4.5)		



TM05 9674 1013

Technical data

Back-pressure or relief valves

PVC, CPVC, PP, PVDF
Dimensions [in. (mm)]

Size	DN	Ø D	h	H	L	L	L	L
Connection type					**Thread**	**Socket**	**Union**	**Flange**
1/4"	8	2.5 (63.5)	.66 (16.7)	4.48 (113.9)	3.4 (86.4)	3.4 (86.4)	6 (152.4)	N/A
3/8"	10							
1/2"	15							5.4 (137.2)
3/4"	20	3.5 (88.9)	.88 (22.4)	4.8 (121.9)	4.85 (123.2)	4.85 (123.2)	6.96 (176)	7.37 (187.1)
1"	25							7.48 (190)
1 1/4"	32	4 (101.6)	1.47 (37.3)	5.75 (146.1)	4.9 (124.5)	4.9 (124.5)	9.4 (237.7)	7.8 (198.1)
1 1/2"	40				6.1 (154.9)	6.1 (154.9)		9.2 (234.7)
2"	50							9.54 (242.3)

316L stainless steel
Dimensions [in. (mm)]

Size	DN	Ø D	h	H	L	L	L	L
Connection type					**Thread**	**Socket**	**Union**	**Flange**
1/4"	8	2.5 (63.5)	.66 (16.7)	4.47 (113.5)	2.5 (63.5)	2.5 (63.5)	N/A	N/A
3/8"	10		.49 (12.4)	4.58 (116.3)				
1/2"	15		.66 (16.7)	4.72 (119.9)				6.25 (158.8)
3/4"	20	3.5 (88.9)	.73 (18.5)	4.8 (121.9)	3.5 (88.9)	3.5 (88.9)	N/A	7.48 (190.1)
1"	25		.86 (21.8)	5.1 (129.5)				7.63 (193.9)
1 1/4"	32	4 (101.6)	1.05 (26.7)	5.77 (146.6)	4 (101.6)	4 (101.6)	N/A	8.29 (210.6)
1 1/2"	40		1.45 (36.8)	5.82 (147.8)	4.72 (119.9)	4.72 (119.9)		9.59 (243.6)
2"	50							9.72 (246.9)

Type key

Back-pressure or relief valves

Example	BPV/PRV ECO-	50	A-	PVC-	P-	NL

Back Pressure / Relief Valve
2 port design

Size:
25 = 1/4", DN 8
38 = 3/8", DN 10
50 = 1/2", DN 15
75 = 3/4", DN 20
100 = 1", DN 25
125 = 1 1/4", DN 32
150 = 1 1/2", DN 40
200 = 2", DN 50

Connections:
A = NPT
B = BSPT
C = Socket (ANSI)
D = Socket (DIN)
E = Flanged (ANSI)
F = Flanged (DIN)
G = Union x NPT (plastic only)
H = Union x BSPT (plastic only)
I = Union x Socket (ANSI, plastic only)
J = Union x Socket (DIN, plastic only)

Body material:
PVC = Polyvinylchloride
CPVC = Chlorinated PVC (Corzan)
PP = Polypropylene
PVDF = Polyvinyldene Flouride
SS = 316L Stainless Steel

Diaphragms:
P = PVC (standard on PVC valves)
T = PTFE backed EPDM (standard except PVC valves)
E = EPDM
V = Viton

Options:
NL = Gauge port, NPT, left to right flow
BL = Gauge port, BSP, left to right flow
NR = Gauge port, NPT, right to left flow
BR = Gauge port, BSP, right to left flow

Note: Viton o-ring seals are standard on all union style valves. EPDM and PTFE encapsulated o-rings are available as an option.

Back-pressure or relief valves				
Size	**Connection**	**Valve type**	**Description**	**Material number**
1/2"	NPT	PVC	BPV/PRV ECO-50A-PVC-P	98533515
		CPVC	BPV/PRV ECO-50A-CPVC-T	98533516
		PP	BPV/PRV ECO-50A-PP-T	98533517
		PVDF	BPV/PRV ECO-50A-PVDF-T	98533518
		SS	BPV/PRV ECO-50A-SS-T	98533519
	Socket weld ASTM	PVC	BPV/PRV ECO-50C-PVC-P	98533984
		CPVC	BPV/PRV ECO-50C-CPVC-T	98533986
		PP	BPV/PRV ECO-50C-PP-T	98533987
		PVDF	BPV/PRV ECO-50C-PVDF-T	98533988
		SS	BPV/PRV ECO-50C-SS-T	98533989
	Union NPT Socket inserts	PVC	BPV/PRV ECO-50G-PVC-P	98533996
		CPVC	BPV/PRV ECO-50G-CPVC-T	98533997
		PP	BPV/PRV ECO-50G-PP-T	98533999
		PVDF	BPV/PRV ECO-50G-PVDF-T	98534000
	Union ASMT Socket inserts	PVC	BPV/PRV ECO-50I-PVC-P	98534011
		CPVC	BPV/PRV ECO-50I-CPVC-T	98534013
		PP	BPV/PRV ECO-50I-PP-T	98534014
		PVDF	BPV/PRV ECO-50I-PVDF-T	98534016
	Flanged ANSI	PVC	BPV/PRV ECO-50E-PVC-P	98534021
		CPVC	BPV/PRV ECO-50E-CPVC-T	98534022
		PP	BPV/PRV ECO-50E-PP-T	98534023
		PVDF	BPV/PRV ECO-50E-PVDF-T	98534024
		SS	BPV/PRV ECO-50E-SS-T	98534025
3/4"	NPT	PVC	BPV/PRV ECO-75A-PVC-P	98538293
		CPVC	BPV/PRV ECO-75A-CPVC-T	98538296
		PP	BPV/PRV ECO-75A-PP-T	98538297
		PVDF	BPV/PRV ECO-75A-PVDF-T	98538298
		SS	BPV/PRV ECO-75A-SS-T	98538299
	Socket weld ASTM	PVC	BPV/PRV ECO-75C-PVC-P	98538308
		CPVC	BPV/PRV ECO-75C-CPVC-T	98538309
		PP	BPV/PRV ECO-75C-PP-T	98538310
		PVDF	BPV/PRV ECO-75C-PVDF-T	98538311
		SS	BPV/PRV ECO-75C-SS-T	98538312
	Union NPT Socket inserts	PVC	BPV/PRV ECO-75G-PVC-P	98538321
		CPVC	BPV/PRV ECO-75G-CPVC-T	98538322
		PP	BPV/PRV ECO-75G-PP-T	98538323
		PVDF	BPV/PRV ECO-75G-PVDF-T	98538324
	Union ASMT Socket inserts	PVC	BPV/PRV ECO-75I-PVC-P	98538330
		CPVC	BPV/PRV ECO-75I-CPVC-T	98538331
		PP	BPV/PRV ECO-75I-PP-T	98538332
		PVDF	BPV/PRV ECO-75I-PVDF-T	98538333
	Flanged ANSI	PVC	BPV/PRV ECO-75E-PVC-P	98538338
		CPVC	BPV/PRV ECO-75E-CPVC-T	98538339
		PP	BPV/PRV ECO-75E-PP-T	98538340
		PVDF	BPV/PRV ECO-75E-PVDF-T	98538341
		SS	BPV/PRV ECO-75E-SS-T	98538342

Back-pressure or relief valves

Size	Connection	Valve type	Description	Material number
1"	NPT	PVC	BPV/PRV ECO-100A-PVC-P	98538353
		CPVC	BPV/PRV ECO-100A-CPVC-T	98538354
		PP	BPV/PRV ECO-100A-PP-T	98538355
		PVDF	BPV/PRV ECO-100A-PVDF-T	98538356
		SS	BPV/PRV ECO-100A-SS-T	98538357
	Socket weld ASTM	PVC	BPV/PRV ECO-100C-PVC-P	98538373
		CPVC	BPV/PRV ECO-100C-CPVC-T	98538374
		PP	BPV/PRV ECO-100C-PP-T	98538375
		PVDF	BPV/PRV ECO-100C-PVDF-T	98538376
		SS	BPV/PRV ECO-100C-SS-T	98538377
	Union NPT socket inserts	PVC	BPV/PRV ECO-100G-PVC-P	98538394
		CPVC	BPV/PRV ECO-100G-CPVC-T	98538396
		PP	BPV/PRV ECO-100G-PP-T	98538397
		PVDF	BPV/PRV ECO-100G-PVDF-T	98538398
	Union ASMT socket inserts	PVC	BPV/PRV ECO-100I-PVC-P	98538403
		CPVC	BPV/PRV ECO-100I-CPVC-T	98538404
		PP	BPV/PRV ECO-100I-PP-T	98538405
		PVDF	BPV/PRV ECO-100I-PVDF-T	98538406
	Flanged ANSI	PVC	BPV/PRV ECO-100E-PVC-P	98538412
		CPVC	BPV/PRV ECO-100E-CPVC-T	98538413
		PP	BPV/PRV ECO-100E-PP-T	98538414
		PVDF	BPV/PRV ECO-100E-PVDF-T	98538415
		SS	BPV/PRV ECO-100E-SS-T	98538416
1 1/4"	NPT	PVC	BPV/PRV ECO-125A-PVC-P	98538905
		CPVC	BPV/PRV ECO-125A-CPVC-T	98538906
		PP	BPV/PRV ECO-125A-PP-T	98538907
		PVDF	BPV/PRV ECO-125A-PVDF-T	98538908
		SS	BPV/PRV ECO-125A-SS-T	98538909
	Socket weld ASTM	PVC	BPV/PRV ECO-125C-PVC-P	98538925
		CPVC	BPV/PRV ECO-125C-CPVC-T	98538926
		PP	BPV/PRV ECO-125C-PP-T	98538927
		PVDF	BPV/PRV ECO-125C-PVDF-T	98538928
		SS	BPV/PRV ECO-125C-SS-T	98538929
	Union NPT socket inserts	PVC	BPV/PRV ECO-125G-PVC-P	98539629
		CPVC	BPV/PRV ECO-125G-CPVC-T	98539630
		PP	BPV/PRV ECO-125G-PP-T	98539642
		PVDF	BPV/PRV ECO-125G-PVDF-T	98539643
	Union ASMT socket inserts	PVC	BPV/PRV ECO-125I-PVC-P	98539648
		CPVC	BPV/PRV ECO-125I-CPVC-T	98539649
		PP	BPV/PRV ECO-125I-PP-T	98539650
		PVDF	BPV/PRV ECO-125I-PVDF-T	98539651
	Flanged ANSI	PVC	BPV/PRV ECO-125E-PVC-P	98539656
		CPVC	BPV/PRV ECO-125E-CPVC-T	98539657
		PP	BPV/PRV ECO-125E-PP-T	98539658
		PVDF	BPV/PRV ECO-125E-PVDF-T	98539659
		SS	BPV/PRV ECO-125E-SS-T	98539660

Back-pressure or relief valves				
Size	**Connection**	**Valve type**	**Description**	**Material number**
1 1/2"	NPT	PVC	BPV/PRV ECO-150A-PVC-P	98539670
		CPVC	BPV/PRV ECO-150A-CPVC-T	98539671
		PP	BPV/PRV ECO-150A-PP-T	98539672
		PVDF	BPV/PRV ECO-150A-PVDF-T	98539673
		SS	BPV/PRV ECO-150A-SS-T	98539674
	Socket weld ASTM	PVC	BPV/PRV ECO-150C-PVC-P	98539680
		CPVC	BPV/PRV ECO-150C-CPVC-T	98539681
		PP	BPV/PRV ECO-150C-PP-T	98539682
		PVDF	BPV/PRV ECO-150C-PVDF-T	98539683
		SS	BPV/PRV ECO-150C-SS-T	98539684
	Union NPT socket inserts	PVC	BPV/PRV ECO-150G-PVC-P	98539690
		CPVC	BPV/PRV ECO-150G-CPVC-T	98539691
		PP	BPV/PRV ECO-150G-PP-T	98539692
		PVDF	BPV/PRV ECO-150G-PVDF-T	98539693
	Union ASMT socket inserts	PVC	BPV/PRV ECO-150I-PVC-P	98539698
		CPVC	BPV/PRV ECO-150I-CPVC-T	98539699
		PP	BPV/PRV ECO-150I-PP-T	98539700
		PVDF	BPV/PRV ECO-150I-PVDF-T	98539701
	Flanged ANSI	PVC	BPV/PRV ECO-150E-PVC-P	98539706
		CPVC	BPV/PRV ECO-150E-CPVC-T	98539707
		PP	BPV/PRV ECO-150E-PP-T	98539708
		PVDF	BPV/PRV ECO-150E-PVDF-T	98539709
		SS	BPV/PRV ECO-150E-SS-T	98539710
2"	NPT	PVC	BPV/PRV ECO-200A-PVC-P	98539771
		CPVC	BPV/PRV ECO-200A-CPVC-T	98539772
		PP	BPV/PRV ECO-200A-PP-T	98539773
		PVDF	BPV/PRV ECO-200A-PVDF-T	98539774
		SS	BPV/PRV ECO-200A-SS-T	98539775
	Socket weld ASTM	PVC	BPV/PRV ECO-200C-PVC-P	98539781
		CPVC	BPV/PRV ECO-200C-CPVC-T	98539782
		PP	BPV/PRV ECO-200C-PP-T	98539783
		PVDF	BPV/PRV ECO-200C-PVDF-T	98539784
		SS	BPV/PRV ECO-200C-SS-T	98539786
	Union NPT socket inserts	PVC	BPV/PRV ECO-200G-PVC-P	98540404
		CPVC	BPV/PRV ECO-200G-CPVC-T	98540405
		PP	BPV/PRV ECO-200G-PP-T	98540407
		PVDF	BPV/PRV ECO-200G-PVDF-T	98540409
	Union ASMT socket inserts	PVC	BPV/PRV ECO-200I-PVC-P	98540415
		CPVC	BPV/PRV ECO-200I-CPVC-T	98540416
		PP	BPV/PRV ECO-200I-PP-T	98540417
		PVDF	BPV/PRV ECO-200I-PVDF-T	98540418
	Flanged ANSI	PVC	BPV/PRV ECO-200E-PVC-P	98540434
		CPVC	BPV/PRV ECO-200E-CPVC-T	98540435
		PP	BPV/PRV ECO-200E-PP-T	98540436
		PVDF	BPV/PRV ECO-200E-PVDF-T	98540437
		SS	BPV/PRV ECO-200E-SS-T	98540438

Level-control units

Grundfos level-control units are suitable for dosing pumps with input for level-control.

The switch mode of the reed switch unit is factory-set to NO. The switch mode can be set to NC by turning the floater(s).

Electrical data

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

Level-control unit for agitator protection

Level-control units for agitator protection are used for suction lances for pumps up to 15.85 gal./h (60 l/h). They are clipped to the suction lances at the required switch-off height above the stirrer propeller.

Level-control units can also be used for overfill protection or as an additional tank level indication.

A level-control unit for agitator protection includes:

- Reed switch unit with 1 floater
- 16.4 ft. (5 m) cable with PE jacket and open wire ends
- clip for suction lance
- cable gland for mounting at the tank top.

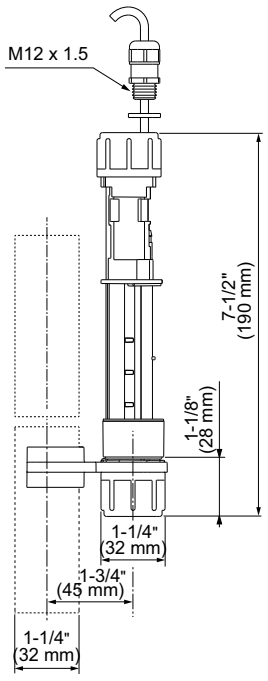


Fig. 48 Level-control unit for agitator protection

Description	Material	Product number
Level-control unit for agitator protection	PE	98306210

Flexible level-control unit

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

A flexible level-control unit includes:

- Reed switch unit with 2 floaters
- 16.4 ft. (5 m) of cable with PE jacket and M12 plug
- weight that keeps the level-control unit in an upright position at the tank bottom
- PE cap, ∅2.28 in. (58 mm), for assembly in Grundfos cylindrical tanks, or for use with tank adaptors.

Dimensions

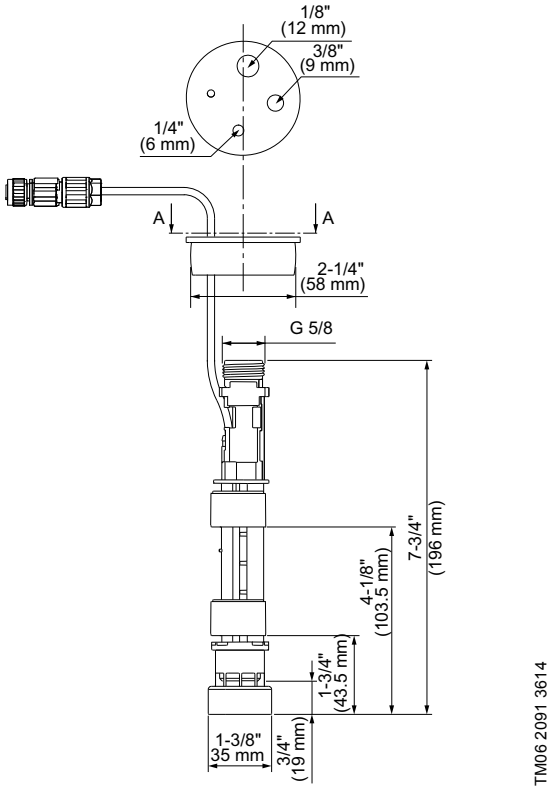


Fig. 49 Flexible level-control unit

Description	Material	Product number
Flexible level-control unit	PE	98375695

Wall bracket

Wall bracket for easy installation of a dosing pump on a wall.

Dimensions

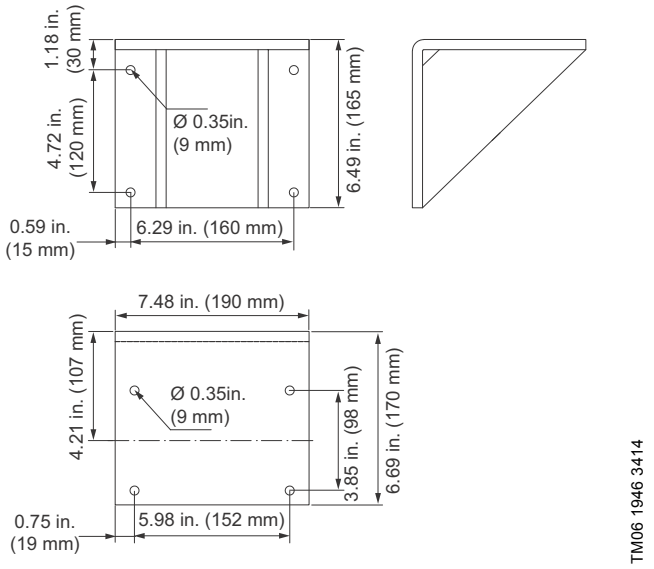


Fig. 50 Wall bracket for DMH 251/251

Technical data

For pump type	Material	Including fixing material for:	Product number
DMH 251/252	PP	Pump on bracket, bracket on wall	96623672

9. 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, 68 °F (20 °C)			Material										
			Dosing head						Gasket			Ball	
Description	Chemical formula	Concentration [%]	PP	PVDF	SS 1.4571	SS 2.4610 (Alloy C-4)	SS PTFE-coated	PVC	FKM	EPDM	PTFE	Ceramic	Glass
Acetic acid	CH_3COOH	25	●	●	●	●	●	●	-	●	●	●	●
		60	●	●	●	●	●	●	-	●	●	●	●
		85	●	●	●	●	●	-	-	-	●	●	●
Aluminium chloride	$AlCl_3$	40	●	●	-	-	●	●	●	●	●	●	●
Aluminium sulphate	$Al_2(SO_4)_3$	60	●	●	●	●	●	●	●	●	●	●	-
Ammonia, aqueous	NH_4OH	28	●	-	●	●	●	●	-	●	●	●	-
Calcium hydroxide[4]	$Ca(OH)_2$		●	●	●	●	●	●	●	●	●	●	●
Calcium hypochlorite	$Ca(OCl)_2$	20	❍	●	-	●	●	●	●	●	●	●	●
Chromic acid[3]	H_2CrO_4	10	●	●	●	●	●	●	●	●	●	●	●
		30	-	●	-	-	●	●	●	❍	●	●	●
		50	-	●	-	-	●	●	●	-	●	●	●
Copper sulphate	$CuSO_4$	30	●	●	●	●	●	●	●	●	●	●	●
Ferric chloride[1]	$FeCl_3$	45	●	●	-	-	●	●	●	●	●	●	●
Ferric sulphate[1]	$Fe_2(SO_4)_3$	60	●	●	●	●	●	●	●	●	●	●	●
Ferrous chloride	FeCl2	37	●	●	-	-	●	●	●	●	●	●	●
Ferrous sulphate	$FeSO_4$	30	●	●	●	●	●	●	●	●	●	●	●
Fluosilicic acid	H_2SiF_6	40	●	●	❍	●	●	●	-	❍	●	●	-
Hydrochloric acid	HCl	< 25	●	●	-	●	●	●	●	●	●	●	●
		25-37	●	●	-	●	●	●	●	❍	●	●	●
Hydrogen peroxide	H_2O_2	30	●	●	●	●	●	●	●	●	●	●	●
Nitric acid	HNO_3	30	●	●	●	●	●	●	●	●	●	●	●
		40	❍	●	●	●	●	●	●	-	●	●	●
		70	-	●	●	●	●	-	●	-	●	●	●
Peracetic acid	CH_3COOOH	5-15	❍	●	●	●	●	❍	-	❍	●	●	●
Potassium hydroxide	KOH	50	●	-	●	●	●	●	-	●	●	●	-
Potassium permanganate	$KMnO_4$	10	●	●	●	●	●	●	❍	●	●	●	●
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	-	●	-	❍[5]	●	●	●	●	●	●	●
Sodium sulphide	Na_2S	30	●	●	●	-	●	●	●	●	●	●	-
Sodium sulphite	Na_2SO_3	20	●	●	●	-	●	●	●	●	●	●	-
Sodium thiosulfate	Na_2S2O_3	10	●	●	●	●	●	●	●	●	●	●	●
Sulphurous acid	H_2SO_3	6	●	●	●	●	●	●	●	●	●	●	❍
Sulphuric acid[2]	H_2SO_4	< 80	●	●	-	●	●	●	●	❍	●	●	❍
		80-96	❍	●	-	●	●	●	●	-	●	●	-
		98	-	●	●	●	●	-	❍	-	●	●	-

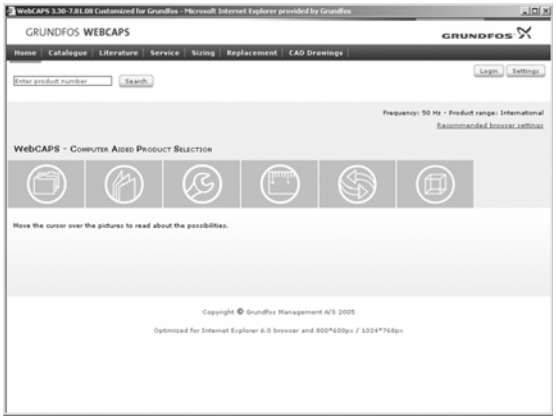
● Resistant
❍ Limited resistance
- Not resistant

1 Risk of crystallization
2 Reacts violently with water and generates much heat (pump must be absolutely dry before dosing sulphuric acid)
3 Must be fluoride-free when glass balls are used
4 Once the pump is stopped, calcium hydroxide will sediment rapidly
5 Not resistant for sodium hypochlorite generated on site

For further information, see "Pumped liquid guide".

10. Further product information

WebCAPS

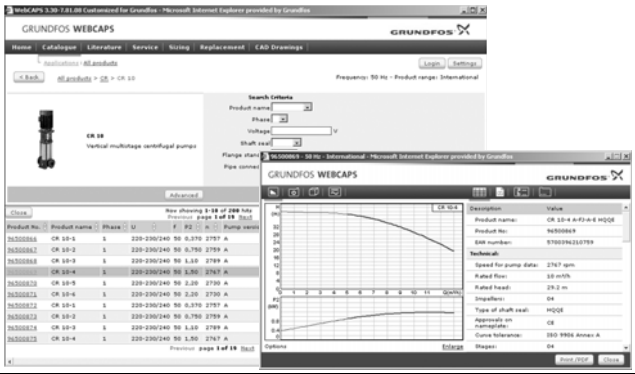


WebCAPS is a **Web**-based **C**omputer **A**ided **P**roduct **S**election program available on www.grundfos.us.

WebCAPS contains detailed information on more than 220,000 Grundfos products in more than 30 languages.

Information in WebCAPS is divided into six sections:

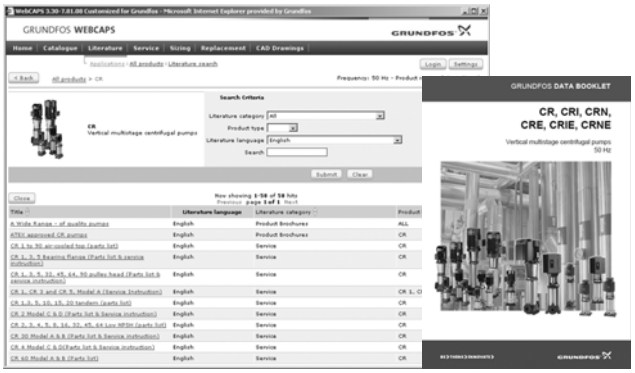
- catalog
- literature
- service
- sizing
- replacement
- cad drawings.



Catalog

Based on fields of application and pump types, this section contains the following:

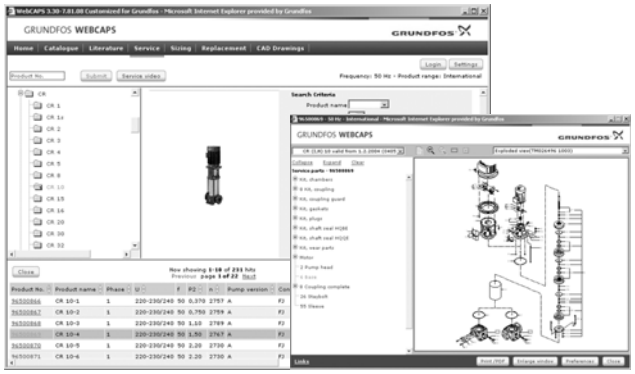
- technical data
- curves (QH, Eff, P1, P2, etc.) which can be adapted to the density and viscosity of the pumped liquid and show the number of pumps in operation
- product photos
- dimensional drawings
- wiring diagrams
- quotation texts, etc.



Literature

This section contains all the latest documents of a given pump, such as

- data booklets
- installation and operating instructions
- service documentation, such as service kit catalog and service kit instructions
- quick guides
- product brochures.



Service

This section contains an easy-to-use interactive service catalog. Here you can find and identify service parts of both existing and discontinued Grundfos pumps.
Furthermore, the section contains service videos showing you how to replace service parts.

Sizing

This section is based on different fields of application and installation examples and gives easy step-by-step instructions in how to size a product:

- Select the most suitable and efficient pump for your installation.
- Carry out advanced calculations based on energy, consumption, payback periods, load profiles, life cycle costs, etc.
- Analyze your selected pump via the built-in life cycle cost tool.
- Determine the flow velocity in wastewater applications, etc.

Replacement

In this section you find a guide to selecting and comparing replacement data of an installed pump in order to replace the pump with a more efficient Grundfos pump.
The section contains replacement data of a wide range of pumps produced by other manufacturers than Grundfos.

Based on an easy step-by-step guide, you can compare Grundfos pumps with the one you have installed on your site. When you have specified the installed pump, the guide will suggest a number of Grundfos pumps which can improve both comfort and efficiency.

CAD drawings

In this section, it is possible to download 2-dimensional (2D) and 3-dimensional (3D) CAD drawings of most Grundfos pumps.

These formats are available in WebCAPS:

2-dimensional drawings:

- .dxf, wireframe drawings
- .dwg, wireframe drawings.

3-dimensional drawings:

- .dwg, wireframe drawings (without surfaces)
- .stp, solid drawings (with surfaces)
- .eprt, E-drawings.

WinCAPS

Fig. 51 WinCAPS DVD

WinCAPS is a **Win**dows-based **C**omputer **A**ided **P**roduct **S**election program containing detailed information on more than 220,000 Grundfos products in more than 30 languages.

The program contains the same features and functions as WebCAPS, but is an ideal solution if no internet connection is available.

WinCAPS is available on DVD and updated once a year.

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Grundfos Kansas City
17100 West 118th Terrace
Olathe, Kansas 66061
Phone: 913-227-3400
Fax: 913-227-3500
www.grundfos.us

Grundfos Canada
2941 Brighton Road
Oakville, Ontario L6H 6C9 Canada
Phone: +1-905-829-9533
Fax: +1-905-829-9512
www.grundfos.ca

Grundfos México
Boulevard TLC No. 15
Parque Industrial Stiva Aeropuerto
C.P. 66600 Apodaca, N.L. Mexico
Phone: 011-52-81-8144 4000
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