High Flow Pump Accessories: AC Motors

ProMinent®

Description	Part No.

AC Motors

AC motors

All AC Motors are approved by CSA.
All motors are 1725 RPM, 60 Hz, manufacturers may vary.

Horsepower	Enclosure	Frame	AC Voltage	Phase	Part no.
1/3 HP	TEFC	56 C	115 / 208-230	1 phase	7901317
1/3 HP	TEFC	56 C	208-230 / 460	3 phase	7901329
1/3 HP	TEFC	56 C	575	3 phase	7901323
1/2 HP	TEFC	56 C	115 / 208-230	1 phase	7901318
1/2 HP	TEFC	56 C	208-230 / 460	3 phase	7901330
1/2 HP	TEFC	56 C	575	3 Phase	7901324
3/4 HP	TEFC	56 C	115 / 208-230	1 phase	7901319
3/4 HP	TEFC	56 C	208-230 / 460	3 phase	7901331
3/4 HP	TEFC	56 C	575	3 phase	7901325
1 HP	TEFC	56 C	115 / 208-230	1 phase	7901320
1 HP	TEFC	56 C	208-230 / 460	3 phase	7901332
1 HP	TEFC	56 C	575	3 phase	7901326
1-1/2 HP	TEFC	56 C	115 / 208-230	1 phase	7901321
1-1/2 HP	TEFC	56 C	208-230 / 460	3 phase	7901333
1-1/2 HP	TEFC	56 C	575	3 phase	7901327
3 HP*	TEFC	182 TC	208-230 / 460	3 phase	7901334
3 HP*	TEFC	184 C	575	3 phase	7901322
3 HP*	TEFC	182 TC	575	3 phase	7901328

* Must use adapter (see below)

AC explosion-proof motors

All motors come with an explosion proof conduit box and built in overload protection.
CSA approved for Class I Group C and D, or Class II Group F and G.
Manufacturer may vary.

Horsepower	Enclosure	Frame	AC Voltage	Phase	Part no.
1/3 HP	EXP	56 C	115 / 208-230	1 phase	7901335
1/3 HP	EXP	56 C	208-230 / 460	3 phase	7901339
1/3 HP	EXP	56 C	575	3 phase	7901340
1/2 HP	EXP	56 C	115 / 208-230	1 phase	7901336
1/2 HP	EXP	56 C	208-230 / 460	3 phase	7901341
1/2 HP	EXP	56 C	575	3 phase	7901342
3/4 HP	EXP	56 C	115 / 208-230	1 phase	7901337
3/4 HP	EXP	56 C	208-230 / 460	3 phase	7901343
3/4 HP	EXP	56 C	575	3 phase	7901344
1 HP	EXP	56 C	115 / 208-230	1 phase	7901338
1 HP	EXP	56 C	208-230 / 460	3 phase	7901345
1 HP	EXP	56 C	575	3 phase	7901346
1-1/2 HP	EXP	56 C	208-230 / 460	3 phase	7901347
1-1/2 HP	EXP	56 C	575	3 phase	7901348

*Flange Adapter (Required for installing 3 HP motors or motors with 182/184 frames)

Mounting flange and motor shaft coupling (Makro pumps w/3 HP, AC motors) 7951144

ProMinent®

High Flow Pump Accessories: AC Inverters and Inverter Duty Rated Motors

Description | Part No.

AC Inverter

Provides variable motor speed with three phase AC Motors by adjusting the frequency (Hz) output to the motor. The motor is not included with the inverter. Choose the motor from the AC Inverter Duty Rated Motors section following the listing of Inverters. Push button keypad and display for Hertz, RPM, % Frequency.

All Inverter AC output voltage is 3 phase.

Maximum Motor HP	AC Input	Phase	AC Output	Enclosure	Part no.
1/2 HP	120/240	1 ph	230 V 2.2 A	NEMA 4	7901357
1/2 HP	200/240	3 ph	230 V 2.2 A	NEMA 4	7901360
1 HP	120/240	1 ph	230 V 4 A	NEMA 4	7901363
1 HP	200/240	3 ph	230 V 4 A	NEMA 4	7901366
1 HP	400/480	3 ph	460 V 2 A	NEMA 4	7901369
1 HP	590	3 ph	575 V 1.6 A	NEMA 4	7901372
1-1/2 HP	120/240	1 ph	230 V 5.2 A	NEMA 4	7901375
1-1/2 HP	200/240	3 ph	230 V 5.2 A	NEMA 4	7901378
2 HP	200/240	3 ph	230 V 6.8 A	NEMA 4	7901381
2 HP	400/480	3 ph	460 V 3.4 A	NEMA 4	7901384
2 HP	590	3 ph	575 V 2.7 A	NEMA 4	7901387
3 HP	200/240	3 ph	230 V 9.6 A	NEMA 4	7901390
3 HP	400/480	3 ph	460 V 4.8 A	NEMA 4	7901393
3 HP	590	3 ph	575 V 3.9 A	NEMA 4	7901396

AC Inverter Duty Rated Motors *(for Canadian customers only)

HP	Enclosure	Frame	AC Voltage	Phase	Part no.
1/3 HP	TEFC	56 C	230/460	3 phase	7902404
1/3 HP	TEFC	56 C	575	3 phase	7902407
1/2 HP	TEFC	56 C	230/460	3 phase	7902405
1/2 HP	TEFC	56 C	575	3 phase	7902408
3/4 HP	TEFC	56 C	230/460	3 phase	7902406
3/4 HP	TEFC	56 C	575	3 phase	7902409
1 HP	TEFC	56 C	208-230 / 460	3 phase	7901332
1 HP	TEFC	56 C	575	3 phase	7901326
1-1/2 HP	TEFC	56 C	208-230 / 460	3 phase	7901333
1-1/2 HP	TEFC	56 C	575	3 phase	7901327
3 HP*	TEFC	182 TC	208-230 / 460	3 phase	7901334
3 HP*	TEFC	184 C	575	3 phase	7901322
3 HP*	TEFC	182 TC	575	3 phase	7901328

* Flange Adapter 7951144 Required for installing 3 HP motors or motors with 182/184 frames.

High Flow Pump Accessories: DC Motors, SCR Controller and Economy Penta Drive

Description	Part No.

DC Motors

DC motors

Permanent magnet 1750 RPM.

Horsepower	Enclosure	Voltage	Frame	Part no.
1/3 HP	TEFC	0 – 90 VDC	56 C	7902413
1/2 HP	TEFC	0 – 90 VDC	56 C	7902412
3/4 HP	TEFC	0 – 90 VDC	56 C	7356703
1-1/2 HP	TEFC	0 – 180 VDC	56 C	7902411

SCR Control for DC Motors

The SCR control does not come with a motor. Select the required DC motor from the DC motor list.

The KB Penta DC Drive is used to control the DC voltage to DC motors. This controls the speed of the motor. The DC voltage is variable from 0 – 90 VDC or 0 – 180 VDC which represents 0 to approximately 1750 RPM motor speed. Features of this drive include: Manual –OFF – Auto selector switch; Speed pot for manual motor speed control; Auto motor speed control via an isolated 4 – 20 mA input. Single phase line input voltage is selectable as 120 VAC (for 0 – 1 HP motors 0 – 90 VDC) or 230 VAC (for 0 – 2 HP motors 0 – 180 VDC).

For motors 0 – 1 HP, 120 VAC in 0 – 90 VDC out
For motors 0 – 2 HP, 230 VAC in 0 – 180 VDC out

KB Penta DC Drive SCR Controller 7356704

Economy KB Penta AC Drive

This lower cost AC inverter can control motor speed on AC motors up to 1 HP. It has a selectable 115 VAC or 230 VAC input and generates a 230 VAC 3 phase 3.6 A output. Features include switch selectable manual / auto operation, Manual speed control via local potentiometer and Auto speed control via a 4 – 20 mA input. Motor is not included with the drive, select the motor from the AC Inverter Duty Rated Motor list.

Dimensions (mm) 241 x 140 x 148 (H x W x D)

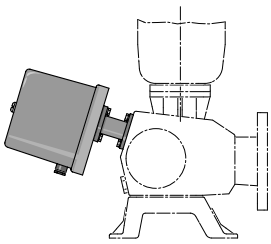
Economy KB Penta AC Drive 7902410

High Flow Pump Accessories: Stroke-positioning Systems and Motors

Description | Part No.

Analog and 3-P Stroke Positioning Systems

Analog stroke-positioning system:



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Note: Stroke postioning motors must be field wired to remove power when the pump drive motor is stopped. For automatic stroke-length control with positioning motor, controlled by a standard process signal.

Technical data:

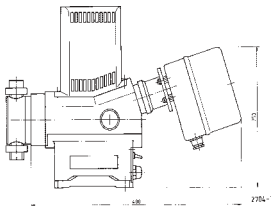
With standard process signal input 4-20 mA, corresponding to 0-100% stroke length.
Power supply: 115V or 230 V, 60 Hz, 1 phase.
Manual/automatic mode selector switch.
Spring-return switch for manual stroke-length adjustment.
Mechanical stroke-length indicator.
Positioning time about 1 second per 1% stroke length

Stroke-positioning control system 4-20 mA

Type	115 V	230 V
Sigma/2 HM (5 mm)	1018894	1018893
Sigma/2 HK	1018890	1018889
Sigma/3, Hydro	1006504	1006505
Makro	1020798	

Note: Stroke postioning system for Hydro is included in the identity code only.

3P Stroke-positioning motor



2704/3

Automatic stroke-positioning system with positioning motor, positioning time about 1 sec. per 1% of total stroke length, equipped with limit switches for minimum and maximum positions, position feedback potentiometer 1 kOhm to transmit actual position. Enclosure rating NEMA 3.

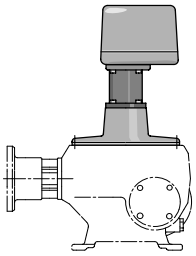
Power supply: 115 V or 230 V, 50/60 Hz, 1 phase.
Other voltages available upon request.
Please state voltage when ordering.

Stroke-positioning motor

Type	115 V	230 V
Sigma/2 HM (5 mm)	1018891	1018892
Sigma/2 HK	1018888	1018887
Sigma/3, Hydro	1006506	1006507

Note: Stroke postioning system for S2Ba is included in the identity code.

For manual and automatic remote stroke-length adjustment we recommend the positioning control system using the D1C controllers.



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3P Stroke-positioning motor

For automatic stroke-length adjustment, positioning time about 1 sec. per 1% of total stroke length, equipped with limit switches for minimum and maximum positions, and feedback potentiometer 1 kOhm to transmit actual position, enclosure rating NEMA 3.

Stroke-positioning motor

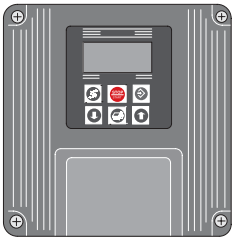
Type	115 V	230 V
Makro HM/HK	7806506	806506

For manual and automatic remote stroke-length adjustment we recommend the positioning control system using the D1C controllers.

High Flow Pump Accessories: Control Systems

Description	Part No.

Control Systems



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Dos-Control Dosing Controller

The Dos-Control dosing controller is a universal controller for controlling motor driven metering pumps and solenoid valves. It is based on the D1CW controller range. The following functions are built in as standard:

1. Control Settings Selection

- Adjustment of preset stroking rate via key pad and LCD display (0-29999 strokes)
- Start contact via key pad or external contact
- Metering pump stroke position response signal via pulse generator/stroke sensor
- Metering pump control via output relay (230 V, 5 A) i.e. voltage to pump motor, on/off
- Fault indicator relay output, i.e. on site fault indicator
- Liquid end monitor, terminal for single stage float switch

2. Proportional Flow Controller

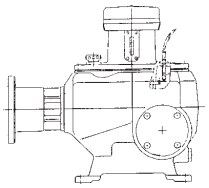
- Control of pump via:
  - voltage free contact input, e.g. setting min./max. limits for water meter via keypad and LCD display
  - internal control via adjustable stroking rate
  - analog control via 0/4 - 20 mA input with adjustable max. stroking rate
- Metering pump control via output relay (230 V, 5 A) i.e. voltage to pump motor, on/off
- Fault indicator relay output, i.e. on site fault indicator
- Level monitor, terminal for float switch

Dos-Control	230 V, 50/60 Hz	1001306
	115 V, 50/60 Hz	1001925

High Flow Pump Accessories: Stroke Sensors

Description	Part No.

Stroke sensors



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Makro-TZ

For the accurate registration of every pump stroke. 7744304

Operating principle as above. Power/output signal type is 2-Wire sinking or sourcing. Operates on 6-60 VDC.

Factory installation required.

Note: Various signal outputs are available for specific applications.
Please contact ProMinent® for details.

High Flow Pump Accessories: Foot Valves

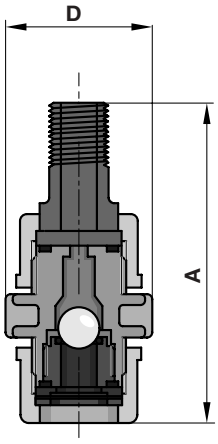
ProMinent®

Description	Part No.

Foot valves

To be installed at the end of the suction line to improve priming and protect pump against coarse impurities. With strainer and ball check valve (must be mounted vertically for ball check function). Select material to be compatible with fluid.

Fig. 1



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Polypropylene (Fig. 1) - Valve body of PP, seals of EPDM (PP1)

Connection	Dimensions inches (mm) Dim "A"		Dim "D"		
1/2" MNPT (DN 10)	3-7/8	(98)	1-1/2	(38)	809465
3/4" MNPT (DN 15)	4	(102)	1-3/4	(44)	924516
3/4" MNPT (DN 20)	5	(127)	2-1/4	(57)	803721
1" MNPT (DN 25)	5-1/4	(133)	2-1/2	(63)	803722
1-1/2" MNPT (DN 40)	6-1/2	(165)	3-1/2	(89)	1004204

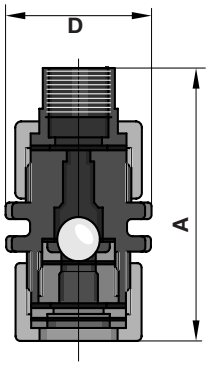
PVC (Fig. 1) - Valve body of PVC, seals of Viton® (NP1)

1/2" MNPT (DN 10)	3-7/8	(98)	1-1/2	(38)	809464
3/4" MNPT (DN 15)	4	(102)	1-3/4	(44)	924515
3/4" MNPT (DN 20)	5	(127)	2-1/4	(57)	803723
1" MNPT (DN 25)	5-1/4	(133)	2-1/2	(63)	803724
1-1/2" MNPT (DN 40)	6-1/2	(165)	3-1/2	(89)	1004193

PVDF/PTFE (Fig. 1) Valve body and seals of PTFE (TT1)

1/2" MNPT (DN 10)	(PTFE/PTFE)	3-7/8	(98)	1-3/8	(35)	809466
1/2" MNPT (DN 15)	(PVDF/PVDF)	3-7/8	(98)	1-3/8	(35)	7803720
3/4" MNPT (DN 15)	(PVDF/PVDF)	4-1/8	(105)	1-3/4	(44)	7803721
3/4" MNPT (DN 15)	(PTFE/PTFE)	4-1/8	(105)	1-3/4	(44)	924517
3/4" MNPT (DN 20)	(PTFE/PTFE)	4-3/4	(121)	2-1/4	(57)	803725
3/4" MNPT (DN 25)	(PVDF/PVDF)	4-3/4	(121)	2-1/4	(57)	7803722
1" MNPT (DN 25)	(PVDF/PVDF)	5-3/8	(137)	2-1/2	(63)	7803723
1" MNPT (DN 25)	(PTFE/PTFE)	5-3/8	(137)	2-1/2	(63)	803726
1-1/2" MNPT (DN 32)	(PVDF/PVDF)					1006434
1-1/2" MNPT (DN 40)	(PTFE/PTFE)	6-1/2	(165)	3-1/2	(89)	1004205

Fig. 2



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SS - Valve body of stainless steel, seals of PTFE

3/8" FNPT (DN 10)	2-3/4	(70)	1-1/2	(38)	809467
1/2" FNPT (DN 15)	3	(76)	1-3/4	(44)	924518
3/4" MNPT (DN 20)	4-1/2	(114)	2-1/8	(54)	803727
1" MNPT (DN 25)	5-1/8	(130)	2-1/2	(63)	803728
1-1/2" MNPT (DN 32)					1006435
1-1/2" MNPT (DN 40)	6-1/4	(159)	3-1/8	(79)	1004206
1/4" FNPT	2-3/4	(70)	1-1/2	(38)	803730
3/8" FNPT	2-3/4	(70)	1-1/2	(38)	803731

* See Figure 1, ** See Figure 2

High Flow Pump Accessories: Injection Valves

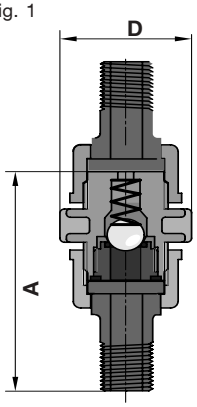
Description | Part No.

Injection valves

To connect the pump discharge line to the point of injection for installation in any position, except PTFE version without spring to be installed in a vertical position discharging upward. All valves except PTFE and Sigma/Meta/Makro HK have 7 psig (0.5 bar) Hastelloy-C spring.

Caution: Injection valves and injection lances should not be used as isolating elements or for antisiphon protection!

Fig. 1



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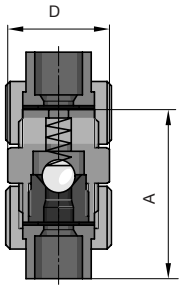
Polypropylene (Fig. 1) Valve body of PP, seals of EPDM (PP1)

Connection	Dimensions inches (mm) Dim "A"		Dim "D"		
1/2" MNPT (DN 10)	5-1/4	(133)	1-1/2	(38)	809461
3/4" MNPT (DN 15)	5-3/8	(137)	1-3/4	(44)	924521
3/4" MNPT (DN 20)	6-3/4	(171)	2-1/4	(57)	803710
1" MNPT (DN 25)	7-1/8	(181)	2-3/8	(60)	803711
1-1/2" MNPT (DN 40)	8-1/4	(210)	3-1/2	(89)	804761

PVC (Fig. 1) - Valve body of PVC, seals of Viton® (NP)

1/2" MNPT (DN 10)	5-3/8	(137)	1-1/2	(38)	809460
3/4" MNPT (DN 15	5-3/8	(137)	1-5/8	(42)	924520
3/4" MNPT (DN 20)	6-3/4	(171)	2-1/4	(57)	803712
1" MNPT (DN 25)	7-1/8	(181)	2-3/8	(60)	803713
1-1/2" MNPT (DN 40)	8-1/4	(210)	3-1/2	(89)	804760

Fig. 2



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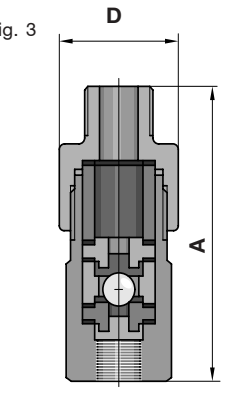
PVDF/PTFE (Fig. 1) - Valve body and seals of PTFE (TT1)

1/2" MNPT (DN 10)	(PTFE/PTFE)	4-7/8	(124)	1-3/8	(35)	809462
1/2" MNPT (DN 15)	(PVDF/PVDF)	4-7/8	(124)	1-3/8	(35)	7803724
3/4" MNPT (DN 15)	(PVDF/PVDF)	5-1/2	(140)	1-3/4	(44)	7803725
3/4" MNPT (DN 15)	(PTFE/PTFE)	5-1/2	(140)	1-3/4	(44)	924522
3/4" MNPT (DN 20)	(PTFE/PTFE)	6-7/8	(175)	2-1/4	(57)	803714
3/4" MNPT (DN 25)	(PVDF/PVDF)	6-7/8	(175)	2-1/4	(57)	7803726
1" MNPT (DN 25)	(PVDF/PVDF)	7-1/4	(184)	2-1/2	(63)	7803727
1" MNPT (DN 25)	(PTFE/PTFE)	7-1/4	(184)	2-1/2	(63)	803715
1-1/2" MNPT (DN 32)	(PVDF/PVDF)					1002783
1-1/2" MNPT (DN 40)	(PTFE/PTFE)	8-1/4	(210)	3-1/2	(89)	1004175

SS - Valve body of stainless steel, seals of PTFE

Fig. 3



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3/8" FNPT (DN 10)	3-1/8	(79)	1-3/8	(35)	809463
1/2" FNPT (DN 15)	3-1/2	(89)	1-3/4	(44)	924523
3/4" MNPT (DN 20)	6-1/2	(165)	2-1/8	(54)	803716
1" MNPT (DN 25)	7-1/4	(184)	2-1/2	(63)	803717
1-1/2" MNPT (DN 40)	8-1/4	(210)	3-1/8	(79)	804763
1-1/2" MNPT (DN 32)					1002801

High pressure valves for HK pumps (Fig. 3)

1/4" FNPT by 1/2" MNPT (DN 8)	4	(83)	1-5/8	(42)	924597
3/8" FNPT by 1/2" MNPT (DN 10)	4	(83)	1-5/8	(42)	803733

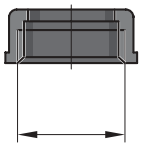
High Flow Pump Accessories: Spare Connector Sets

ProMinent®

Description | Part No.

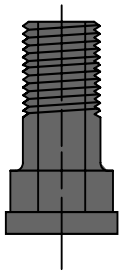
Spare connector sets

The union nut and insert provide a half-union connection, allowing the pump to be easily removed from the piping system. The union nut clamps the threaded insert onto the pump's suction or discharge valve.



Union nut

1031/4



Threaded insert

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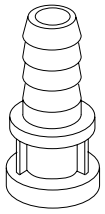
Pump	Union Nut Material	Threaded Insert Material	Union Nut Thread	Insert Thread	Union Nut Part No.	Threaded Insert Part No.
Makro	PP	PP	DN 20	3/4" MNPT	358615	7358603
Makro	PP	PP	DN 25	1" MNPT	358616	7358604
Makro	PP	PP	DN 40	1-1/2" MNPT	358618	7358611
Makro	PVC	PVC	DN 20	3/4" MNPT	356564	7358601
Makro	PVC	PVC	DN 25	1" MNPT	356565	7358602
Makro	PVC	PVC	DN 40	1-1/2" MNPT	356567	7358613
Hydro	PVDF	PTFE	DN 10	1/2" MNPT	358813	7358634
Hydro	PVDF	PTFE	DN 15	3/4" MNPT	358814	7358635
Makro	PVDF	PTFE	DN 20	3/4" MNPT	358815	7358607
Makro	PVDF	PTFE	DN 25	1" MNPT	358816	7358608
Makro	PVDF	PTFE	DN 40	1-1/2" MNPT	358818	7358615
Sigma	PVDF	PVDF	DN 10	1/2" MNPT	358813	1017379
Sigma	PVDF	PVDF	DN 15	1/2" MNPT	358814	7358641
Sigma	PVDF	PVDF	DN 15	3/4" MNPT	358814	7358642
Sigma	PVDF	PVDF	DN 20	3/4" MNPT	358815	1017381
Sigma	PVDF	PVDF	DN 25	3/4" MNPT	358816	7358645
Sigma	PVDF	PVDF	DN 25	1" MNPT	358816	7358644
Sigma/3	PVDF	PVDF	DN 32	1-1/2" MNPT	1003639	7358647
Hydro	SS	SS	DN 10	3/8" FNPT	805270	805285
Hydro/Sigma	SS	SS	DN 15	1/2" FNPT	805271	805286
Makro	SS	SS	DN 20	3/4" MNPT	805272	7358609
Sigma	SS	SS	DN 25	3/4" MNPT	805273	7358646
Makro/Sigma	SS	SS	DN 25	1" MNPT	805273	7358610
Sigma/3	SS	SS	DN 32	1-1/2" MNPT	805274	7358648
Makro	SS	SS	DN 40	1-1/2" MNPT	805275	7358617

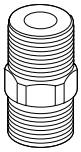
Hose Barbs



1/2"
Hose Barb

Material (all 1/2" DN 10)	Part No.
PP	800657
PVC	800554
PVDF	100228
Material (all 3/4" DN 15)	
PP	800655
PVC	811407
PTFE	811424

Tubing Adapters for HK Pump Valves



1/4" ISO 7/1 1/4" MNPT Hex Nipple (316 SS)	7740931
3/8" ISO 7/1 3/8" MNPT Hex Nipple (316 SS)	7744384

ProMinent®

High Flow Pump Accessories: Backpressure and Pressure Relief Valves

Description | Part No.

Backpressure, antisiphon and pressure relief valves

In-line pressure relief valve (3 port)

Backpressure valve (2 port)

Backpressure valve on tee for pressure relief

Backpressure (2-port) valves may be used in-line to provide a constant discharge pressure for protection from siphoning, or they may be teed off of the discharge line for pressure relief, discharging back to the source tank or to the pump suction line to create a bypass.

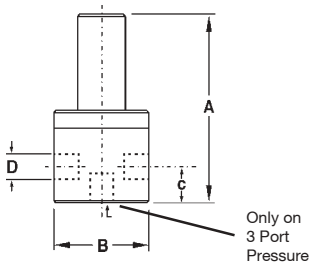
Pressure relief (3-port) valves are mounted in the discharge line, featuring a separate relief port which discharges back to the source tank or to the pump suction line to create a bypass.

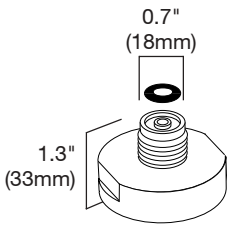
Backpressure valves provide several functions: they improve repeatability by providing a constant discharge pressure; they provide antisiphon protection for discharge into pressurized water lines or vacuums, or where suction head exceeds discharge head; and they minimize pulsation when used in conjunction with a pulsation dampener.

In-line backpressure/antisiphon and pressure relief valves

These adjustable backpressure (2-port) and pressure relief (3-port) valves have FNPT ports and require tubing adapters for use with flexible tubing.

Can be adjusted with screwdriver.





Adapter included with all backpressure valves. Optional use in the event of diaphragm failure.

DIMENSIONS: 1/2" to 2" valves

D	A (in)	B (in)	C (in)
1/2”	4.9	2.6	1.2
*1/2”	*5.5	*3.5	*1.125
3/4”	5.4	3.5	1.1
1”	5.7	3.9	1.4
1-1/2"	8.5	4.6	2.2
2”	8.5	4.6	2.2

*Note: Dimensions apply to SS and PTFE valves only.

Technical data

Size:
1/2", 3/4", 1", 1-1/2" and 2" NPT

Diaphragm Materials:
PTFE-faced EPDM

Liquid Handling Materials:
PP, PVC, PTFE, PVDF
316 Stainless Steel

Pressure Adjustment:
0-150 psig (0-10.3 bar)

Flow rates @ 150 psig:
1/2" (PP, PVC) - 200 U.S. gph (757 L/h)
1/2" (PVDF, TT, SS) - 300 U.S. gph (1135 L/h)
3/4" - 300 U.S. gph (1135 L/h)
1" - 500 U.S. gph (1893 L/h)
1-1/2" - 900 U.S. gph (3407 L/h)
2" - 1200 U.S. gph (4542 L/h)

Max. Temperature:
PP - 195°F (90°C)
PVC - 140°F (60°C)
PTFE - 250°F (121°C)
PVDF - 250°F (121°C)
316 Stainless - 250°F (121°C)

High Flow Pump Accessories: Backpressure and Pressure Relief Valves

ProMinent®

Description	Part No.

Backpressure, antisiphon and pressure relief valves

1/2" FNPT valves

Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP	1006846	1006858
PVC	1006850	1006862
PVDF	1006854	1006866
316 SS	1008796	1008800

3/4" FNPT valves

Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP	1006847	1006859
PVC	1006851	1006863
PVDF	1006855	1006867
316 SS	1008797	1008801

1" FNPT valves

Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP	1006848	1006860
PVC	1006852	1006864
PVDF	1006856	1006868
316 SS	1008798	1008802

1-1/2" FNPT valves

Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP	1006849	1006861
PVC	1006853	1006865
PVDF	1006857	1006869
316 SS	7302243	7302261

2" FNPT valves

Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP	1009448	1009456
PVC	1009449	1009457
PVDF	1009450	1009458
316 SS	7302247	7302265

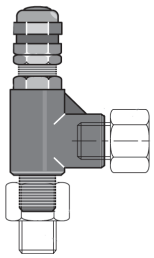
Spare diaphragms

3/4" - 1" valve PTFE/EPDM	1006814	1006814
1-1/2" - 2" valve PTFE/EPDM	1006815	1006815
1/4" - 1/2" valve PTFE/EPDM	1006813	1006813

High Flow Pump Accessories: Pressure Relief Valves

Description	Part No.

Pressure relief valves



1112/4

High pressure relief valve, adjustable, 1/4" and 1/2" NPT for Sigma/Meta/ Makro HK/and Hydro pumps

Can also be used as a backpressure valve for < 30 gph (113 L/h).

These valves are without springs, which must be ordered separately.

Materials:	Stainless steel/Viton®			
Connection:	1/4" NPT male and female thread			7202505
Materials:	Stainless steel/EPDM			
Connection:	1/4" NPT male and female thread			7744507
Spring:	psig	(bar)	Color:	
	50 - 350	(3.5 - 25)	blue	7202519
	350 - 750	(25 - 50)	yellow	7202520
	750 - 1500	(50 - 100)	violet	7202525
	1500 - 2250	(100 - 155)	orange	7202524
	2250 - 3000	(155 - 205)	brown	7202523
	3000 - 4000	(205 - 275)	white	7202522
	4000 - 5000	(275 - 340)	red	7202521
Materials:	Stainless steel/Viton®			
Connection:	1/2" NPT male and female thread			7744508
Materials:	Stainless steel/EPDM			
Connection:	1/2" NPT male and female thread			7744509
Spring:	psig	(bar)	Color:	
	50 - 350	(3.5 - 25)	blue	7744510
	350 - 750	(25 - 50)	yellow	7744511
	750 - 1500	(50 - 100)	violet	7744512

High Flow Pump Accessories: Pulsation Dampeners

ProMinent®

Description	Part No.

Pulsation dampeners

Pulsation dampeners operate on the principle that gas is compressible and fluid is not. The pulsation dampener consists of an air chamber containing compressed air, a fluid chamber connected to the pump's suction or discharge line, and a bladder or bellows which separates the air and fluid.

Some models are flow-through design, with two ports so they can be mounted directly on the pump suction or discharge line. Other models are single port design, to be teed off of the pump suction or discharge line. Flow-through models may also be used in a tee if one port is capped.

All models feature a Schrader (bicycle) valve and pressure gauge for charging the air chamber on-site.

Sizing Pulsation Dampeners

Multiply the pump's displacement per stroke (mL) times 26 to get minimum pulsation dampener volume (mL) to achieve 90% reduction in pulsation.

Safety Note: We recommend using pressure relief valves with pulsation dampeners.

Fig. 1

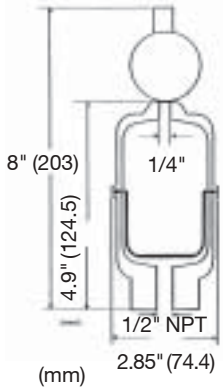
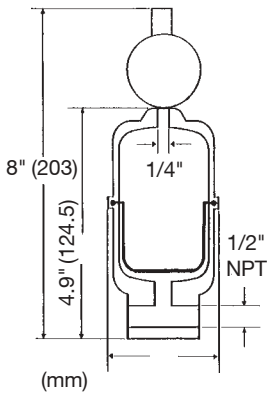


Fig. 2



General Specifications

Maximum pressure:	150 psig (polypro, PVDF and PTFE), 300 psig (SS)
Temperature range:	
Nordel bladder:	-60°F to 280°F (-51°C to 138°C)
Viton® bladder:	30°F to 350°F (-1°C to 177°C)
HYPALON® bladder:	-20°F to 275°F (-29°C to 135°C)
PTFE bellows:	40°F to 220°F (4°C to 104°C)
Polypro housing :	32°F to 175°F (0°C to 79°C)
PVC housing:	32°F to 140°F (0°C to 60°C)
PVDF housing:	10°F to 250°F (-12°C to 121°C)
PTFE housing:	-20°F to 125°F (-29°C to 52°C)
SS housing:	32°F to 200°F (0°C to 93°C)

*Teflon bellows are smaller in volume

	Shipping Weight lbs (kg)	Model	Size	Part No.
131 mL (8 cu. in.) Models				
SS housing: 3/8" FNPT, 1 port (not illustrated)				
PTFE bellows	3 (1.4)	CTS1020 T	III	7253205
PVDF housing: 1/2" FNPT, 1 port (Fig. 1)				
PTFE bellows	1 (0.9)	CTK1005 T 5	III	7744101
164 mL (10 cu. in.) Models				
PVC housing: 1/2" FNPT,1 port (Fig. 1)				
Nordel bladder (EPDM)	1 (0.9)	CTP1015 ND 5	III	7744096
Viton® bladder	1 (0.9)	CTP1015 V 5	III	7901706
HYPALON® bladder	1 (0.9)	CTP1015 H 5	III	7744098
Polypro housing: 1/2" FNPT, 1 port (Fig. 1)				
Nordel bladder (EPDM)	1 (0.9)	CTP1005 ND 5	III	7744102
PVDF housing: 1/2" FNPT, 1 port (Fig. 1)				
Nordel bladder (EPDM)	1 (0.9)	CTK1005 ND 5	III	7744100
Viton® bladder	1 (0.9)	CTK1005 V 5	III	7744099
131 mL (8 cu. in.) Models				
PVDF housing: 1/2" FNPT, 2 port (Fig. 2)				
PTFE bellows	1 (0.9)	CTK1000 T	III	7253217
164 mL (10 cu. in.) Models				
PVC housing: 1/2" FNPT, 2 port (Fig. 2)				
Viton® bladder	1 (0.9)	CTP1010 V	III	7253216
HYPALON® bladder	1 (0.9)	CTP1010 H	III	7740945
Polypro housing: 1/2" FNPT, 2 port (Fig. 2)				
Nordel bladder (EPDM)	1 (0.9)	CTP1000 ND	III	7253201
PVDF housing: 1/2" FNPT, 2 port (Fig. 2)				
Nordel bladder (EPDM)	1 (0.9)	CTK1000 ND	III	7253203
Viton® bladder	1 (0.9)	CTK1000 V	III	7253204

Viton® and HYPALON® are registered trademarks of DuPont Dow Elastomers

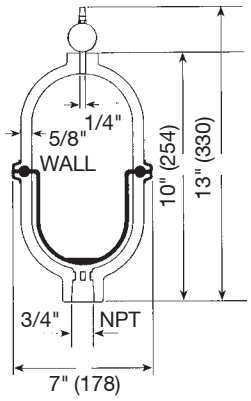
ProMinent®

High Flow Pump Accessories: Pulsation Dampeners

Description | Part No.

Pulsation dampeners (cont.)

Fig. 3



(mm)

	Shipping Weight lbs (kg)	Model	Size	Part No.
262 mL (16 cu. in.) Models				
PVC housing: 3/4" FNPT, 1 port (Fig. 3)				
PTFE bellows	7 (3.2)	CT1311 T	II	7744211
PVDF housing: 3/4" FNPT, 1 port (Fig. 3)				
PTFE bellows	7 (3.2)	CT1401 T	II	7253234
SS housing: 3/4" FNPT, 1 port (Fig. 3)				
PTFE bellows	11 (5.0)	CT3120 T	II	7253237
600 mL (36 cu. in.) Models (cont. from pg.15)				
PVC housing: 3/4" FNPT, 1 port (Fig. 3)				
Nordel bladder	7 (3.2)	CT1311 ND	II	7253232
Viton® bladder	7 (3.2)	CT1311 V	II	7253233
HYPALON® bladder	7 (3.2)	CT1311 H	II	7740946
Polypro housing: 3/4" FNPT, 1 port (Fig. 3)				
Nordel bladder	6 (2.7)	CT1301 ND	II	7253230
Viton® bladder	6 (2.7)	CT1301 V	II	7253231
PVDF housing: 3/4" FNPT, 1 port (Fig. 3)				
Nordel bladder	7 (3.2)	CT1401 ND	II	7253236
Viton® bladder	7 (3.2)	CT1401 V	II	7253235
SS housing: 3/4" FNPT, 1 port (Fig. 3)				
Viton® bladder	11 (5.0)	CT3120 V	II	7253238
1147 mL (70 cu. in.) Models				
PVC housing: 3/4" FNPT, 1 port (Fig. 3)				
PTFE bellows	6 (2.7)	CT311 T	II	7253229
SS housing: 3/4" FNPT, 1 port (Fig. 3)				
PTFE bellows	14 (6.4)	CT3020 T	II	7253206
PVDF housing: 3/4" FNPT, 1 port (Fig. 3)				
PTFE bellows	8 (3.6)	CT401 T	II	7253219
1393 mL (85 cu. in.) Models				
PVC housing: 3/4" FNPT, 1 port (Fig. 3)				
Nordel bladder	6 (2.7)	CT311 ND	II	7253221
Viton® bladder	6 (2.7)	CT311 V	II	7152112
HYPALON® bladder	6 (2.7)	CT311 H	II	7740947
Polypro housing: 3/4" FNPT, 1 port (Fig. 3)				
Nordel bladder (EPDM)	6 (2.7)	CT301 ND	II	7253207
Viton® bladder	6 (2.7)	CT301 V	II	7253208
PVDF housing: 3/4" FNPT, 1 port (Fig. 3)				
Nordel bladder (EPDM)	7 (3.2)	CT401 ND	II	7253209
Viton® bladder	8 (3.6)	CT401 V	II	7253210
1998 mL (122 cu. in.) Models				
PVC housing: 2" FNPT, 1 port				
PTFE bellows	13 (5.9)	CT911 T	I	7253228
PVDF housing: 2" FNPT, 1 port				
PTFE bellows	15 (6.8)	CT1201 T	I	7253225
SS housing: 2" FNPT, 1 port				
PTFE bellows	30 (13.6)	CT2520 T	I	7253226
2867 mL (175 cu. in.) Models				
Polypro housing: 2" FNPT, 1 port				
Nordel bladder	13 (5.9)	CT901 ND	I	7253223
PVC housing: 2" FNPT, 1 port				
Viton® bladder	13 (5.9)	CT911 V	I	7253224
HYPALON® bladder	13 (5.9)	CT911 H	I	7740948

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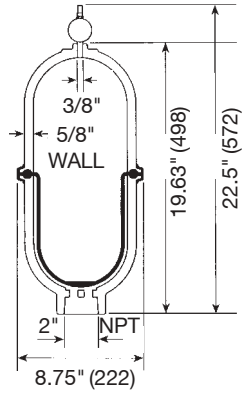
High Flow Pump Accessories: Pulsation Dampeners

ProMinent®

Pulsation dampeners (cont.)

Fig. 4



Description	Shipping Weight lbs (kg)	Model	Size	Part No.
5822 mL (355 cu. in.) Models				
PVC housing: 2" FNPT, 1 port				
PTFE bellows	16 (7.3)	CT111 T	I	7253227
PVDF housing: 2" FNPT, 1 port				
PTFE bellows	21 (9.5)	CT201 T	I	7253215
SS housing: 2" FNPT, 1 port (Fig. 4)				
PTFE bellows	40 (18.1)	CT2400 T	I	7253211
6063 mL (370 cu. in.) Models				
PVC housing: 2" FNPT, 1 port (Fig. 4)				
Nordel bladder	16 (7.3)	CT111 ND	I	7253222
Viton® bladder	16 (7.3)	CT111 V	I	7253218
HYPALON® bladder	16 (7.3)	CT111 H	I	7740949
Polypro housing: 2" FNPT, 1 port (Fig. 4)				
Nordel bladder (EPDM)	15 (6.8)	CT101 ND	I	7253212
Viton® bladder	15 (6.8)	CT101 V	I	7253213
PVDF housing: 2" FNPT, 1 port (Fig. 4)				
Nordel bladder (EPDM)	18 (8.2)	CT201 ND	I	7253214

Note: Other sizes and materials available upon request.

High pressure pulsation dampeners for Hydro pumps only.

Description	Model	Size	Part No.
66 mL (4 cu. in.) Models			
Hastelloy C housing: 3/8" FNPT, 1 port (not illustrated)			
Santoprene® bladder	H1180 W	III	7744378
Viton® bladder	H1180 V	III	7744381
316 Stainless Steel housing: 3/8" FNPT, 1 port (not illustrated)			
Nordel bladder (EPDM)	H1120 ND	III	7744387
164 mL (10 cu. in.) Models			
Hastelloy C housing: 3/8" FNPT, 1 port (not illustrated)			
Santoprene® bladder	H1080 W	III	7744379
Viton® bladder	H1080 V	III	7744382
316 Stainless Steel housing: 3/8" FNPT, 1 port (not illustrated)			
Nordel bladder (EPDM)	H1020 ND	III	7744388
197 mL (12 cu. in.) Models			
316 Stainless Steel housing: 3/8" FNPT, 1 port (not illustrated)			
PTFE bellows	TG12SST	II	7744377
600 mL (36 cu. in.) Models			
Hastelloy C housing: 3/4" FNPT, 1 port (not illustrated)			
Hypalon bladder	H3180 H	II	7744380
Viton® bladder	H3180 V	II	7744383
316 Stainless Steel housing: 3/8" FNPT, 1 port (not illustrated)			
Nordel bladder (EPDM)	H3120 ND	II	7744389

High Flow Pump Accessories: Spare Bladders/Bellows & Inlet Stabilizers

Description | Part No.

Spare bladders/bellows

	Model	Size	Part No.
Nordel (EPDM) bladders	1000-28	III	7740208
	401-28	II	7740202
	201-28	I	7740205
Viton bladders	1000-31	III	7740209
	401-25	II	7740203
	201-25	I	7740206
Hypalon bladders	1000-30	III	7740959
	401-30	II	7740960
	201-30	I	7740961
PTFE bellows	301-10	II	7740204
	101-10	I	7740207

High pressure charging hose

Charging hose consists of an 8 foot (2.4 m) length of 5000 psi hose with a 1/4" NPT (M) fitting at one end, for connection to a nitrogen bottle regulator and a charging adapter with purge valve and gauge at the other end.

	Model	Part No.
1/4" air inlet and 1/8" fill valve	701-00	7744376

Inlet stabilizers

An inlet stabilizer will improve flow conditions to the inlet side of a pump and protect and extend the service life of all inlet system components. Inlet stabilizers must be mounted as close to the pump's inlet connection as possible, and no more than 10 pipe diameters away. All units include a 30-0-30 vacuum/pressure gauge, air venturi, and ball valve for charging bladder chamber. Units must be sized similar to pulsation dampeners, i.e. 26 x (mL/stroke) = minimum required inlet stabilizer volume. Note: Requires a compressed air supply be available for initial bladder charging and periodic readjustment as necessary.

	Model	Size	Part No.
1393 mL (85 cu. in.) Models (for 3/4" models)			
PVC housing:			
Viton® bladder	J3111V	II	7740859
HYPALON® bladder	J311H	II	7744305
Nordel bladder (EPDM)	J311ND	II	7744306
PVDF housing:			
Viton® bladder	J401V	II	7740860
6063 mL (370 cu. in.) Models (for 2" models)			
PVC housing:			
Viton® bladder	J111V	I	7744307
HYPALON® bladder	J111H	I	7744308
Nordel bladder (EPDM)	J111ND	I	7744309
PVDF housing:			
Viton® bladder	J201V	I	7744310

Materials shown are in contact with process fluid.
Other material and sizes are available. Please consult factory.

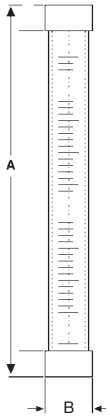
High Flow Pump Accessories:
Calibration Columns

ProMinent®

Description	Part No.

Calibration columns

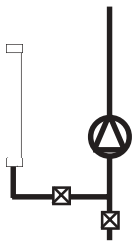
Clear PVC calibration columns (Threaded Base with removable top available upon request)



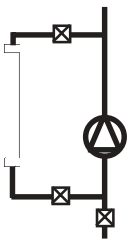
Cylinder size	Fitting size	Dimension (inches) A	B	Threaded both ends
100 mL	1/2" NPT	10.75	1.388	7500127
250 mL	1/2" NPT	11.51	1.888	7500128
500 mL	1/2" NPT	12.75	2.388	7500129
1000 mL	1/2" NPT	16.76	2.765	7500135
2000 mL	1" FNPT	20.67	3.517	7500131
4000 mL	1" FNPT	22.66	4.521	7500132
10,000 mL	2" FNPT	23.16	6.906	7500133
20,000 mL	2" FNPT	42.69	6.906	7500136

Typical Application of Calibration Columns

Column w/removable top
Note: Top must be removed during calibration

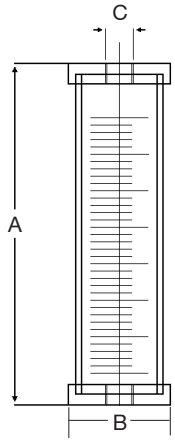


Column threaded both ends
Note: If plumbed as shown, a vent hole must be drilled into the top of the calibration column



Borosilicate Glass calibration columns with Viton® seals for Sulfuric Acid Applications

Glass cylinder with acrylic outer shield and 1/2" (316 SS) or 1/2" (PVDF) thick end flanges. All cylinders are bolted together using stainless steel rods with Viton O-rings for the glass seal and Buna N O-rings for the acrylic seal.



Cylinder size	Fitting size	Dimensions (inches) A	B	C	Part No.
100 mL	1/2" PVDF	10	3.25	1/2	7500152
100 mL	1/2" SS	9.5	3	1/2	7500153
250 mL	1/2" PVDF	12.5	3.25	1/2	7500155
250 mL	1/2" SS	12	3.5	1/2	7500156
500 mL	1/2" PVDF	14.5	4.25	1/2	7500158
500 mL	1/2" SS	14	4	1/2	7500159
1000 mL	1/2" PVDF	16.75	5.5	1/2	7500161
1000 mL	1/2" SS	18.25	5.5	1/2	7500162
2000 mL	1" PVDF	18.75	5.5	1	7500164
2000 mL	1" SS	18.25	5.5	1	7500165
4000 mL	1" PVDF	22.50	6.5	1	7500167
4000 mL	1" SS	22	6.5	1	7500168

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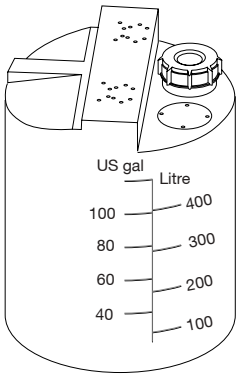
High Flow Pump Accessories: Chemical Tanks and Accessories

Description | Part No.

Chemical tanks



15, 26, 66, 132 gallon capacity

Made of translucent UV-stabilized polyethylene, with gallon/litre scale, screw cap. Mounting platforms for ProMinent metering pumps and mixers. All tanks are specifically developed to maximize toughness. These tanks are impact, stress, and chemical resistant. Maximum allowable temperature 180°F (82°C).

Chemical tanks with threaded bushings

These tanks come complete with corrosion resistant threaded bushings moulded into the top of the tank for easy mounting of ProMinent pumps. 132 Tank comes complete with 2 sets ofbushings for mounting 2 pumps.

Capacity gallon	(litre)	O.D. in.	(mm)	Height in.	(mm)	Empty Weight lb.	(kg)	Screw Cap in.	
15	(60)	17	(435)	24	(610)	11	(5.0)	5 1/4	791994
26	(100)	20	(500)	30	(760)	17	(7.7)	5 1/4	1001490
66	(250)	24	(610)	44	(1120)	39	(17.5)	5 1/4	791996
132*	(500)	33	(840)	47	(1190)	54	(24.5)	5 1/4	791997

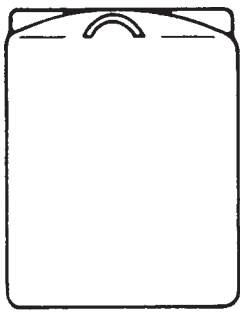
* Limited supply available.

These tanks can be used for mounting the alpha, and gamma series metering pumps. The 132 gallon model can fit two pumps.

Accessories

Lock and key for screw-on cap	200683
Note: Only for the above tanks	

Chemical tanks


15,26,53,60,106,143,160,265 and 360 gallon capacity

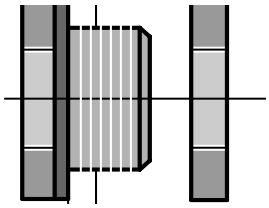
Capacity gallon	(litre)	O.D. in.	(mm)	Height in.	(mm)	Empty Weight lb.	(kg)	Screw Cap / Manway * in.	
26	(100)	18	(460)	29	(740)	14	(6.4)	5 1/4	7809652
53	(200)	22	(560)	39	(990)	25	(11.4)	5 1/4	7809653
80	(300)	27	(685)	44	(1120)	32	(14.5)	5 1/4	7809654
106	(400)	30	(765)	43	(1095)	34	(15.9)	5 1/4	7901747
265	(1000)	31	(790)	87	(2210)	80	(36.4)	12 *	7809688
360	(1360)	48	(1220)	54	(1370)	110	(50)	14 *	7809687

* Dimensions is height of tank only. Does not take into account the height of the manway cover.

Note: Other size tanks available upon request. Color tanks are available in red, blue, yellow, or black at an additional cost.

High Flow Pump Accessories: Chemical Tanks and Accessories

Description	Part No.



1077/4

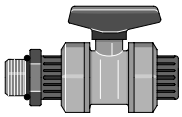
PVC tank drain fitting with plug

1/2" FNPT as an additional connection for chemical tanks.
To be used as an open drain with plug or for addition of optional 1/2" ball valve fitting. Fits 1" opening.

PVC with Viton® seal	7809755
PVC with EPDM seal	7744374

3/4" FNPT as an additional connection for chemical tanks.
To be used as an open drain with plug or for addition of optional 3/4" ball valve fitting. Fits 1-3/8" opening.

PVC with Viton® seal	7000300
PVC with EPDM seal	7744375



2424/4

PVC ball valve

1/2" PVC ball valve with 1/2" FNPT connections for all chemical tanks with 1/2" PVC tank drain fittings.

PVC with Viton® seal	7000309
PVC with EPDM seal	7901183

3/4" PVC ball valve with 3/4" FNPT connections for all chemical tanks with 3/4" PVC tank drain fittings.

PVC with Viton® seal	7152164
PVC with EPDM seal	7741485

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Tank Mixer Selection Worksheet

Tank Size: ____ Gals (L) Diameter: _____ in / ft (mm/m) Height: ____ in / ft (mm/m)

L _____ x W _____ x H _____ in / ft (mm/m) (if rectangular)

Tank Material: _____ Top: ___ Closed __ Open with cover: Y N

Tank Manufacturer: _____

Chemical: _____ Concentration: _____

Temperature: ____ F / C Viscosity: _____

Motor Voltage: _____ AC / DC 1 phase / 3 phase Horsepower: _____

Mounting Requirements:

Flange: _____ Size: _____ Bolt Circle: _____

Clamp-on: _____ Tank Side _____ Mounting Bracket _____

Bolt-on: _____ Details _____

_____

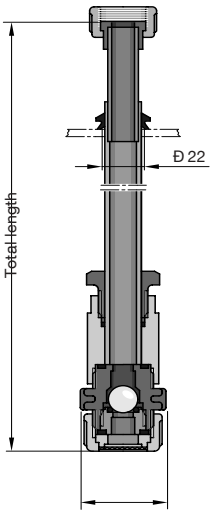
Shaft Material: _____ Stainless Steel _____ Steel _____ Coated ___

Mixer Type/Diameter: _____ Propeller _____ Impeller ____ Other _____

High Flow Pump Accessories: Suction Assemblies

Description	Part No.

Suction assemblies



Note: This fitting is a compression fitting, pipe can be cut to desired length.

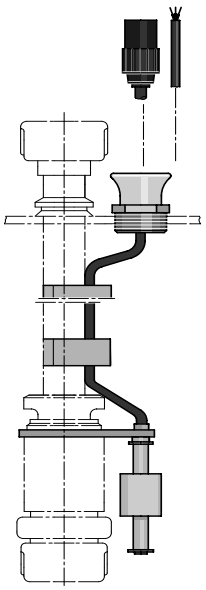
2801/3

PP without float switch

Size of connection		Max. tank size gallons (litres)	Max. length inches (mm)	
PP-DN 10 - 1/2"	Hydro/Sigma	220 (830)	up to 52"(1320)	790389
PP-DN 15 - 3/4"	Hydro/Sigma	220 (830)	up to 52"(1320)	790394
PP-DN 20 - 3/4"	Makro	220 (830)	up to 52"(1320)	790395
PP-DN 25 - 1"	Makro/Sigma	220 (830)	up to 52"(1320)	790396
PP-DN 32 - 1-1/2"	Sigma	-	-	1005524

PVC without float switch

Size of connection		Max. tank size gallons (litres)	Max. length inches (mm)	
PVC-DN 10 - 1/2"	Hydro/Sigma	220 (830)	up to 52"(1320)	790387
PVC-DN 15 - 3/4"	Hydro/Sigma	220 (830)	up to 52"(1320)	790391
PVC-DN 20 - 3/4"	Makro	220 (830)	up to 52"(1320)	790392
PVC-DN 25 - 1"	Makro/Sigma	220 (830)	up to 52"(1320)	790393
PVC-DN 32 - 1-1/2"	Sigma	-	-	1005525



2803/3

Float switch for rigid suction assemblies

PP, two-stage with round connector for Vario/SICa pumps

The float switch set can be ordered together with the suction assemblies 1/2" and 3/4".

3-pole round connector	10 ft. (3 m) cable	790321

PVC, two-stage with round connector for Vario/SICa pumps

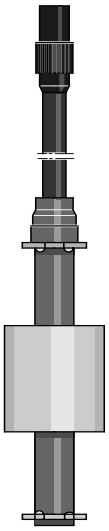
The float switch set can be ordered together with the suction assemblies 1/2" and 3/4".

3-pole round connector	10 ft. (3 m) cable	790318

High Flow Pump Accessories: Float Switches

Description	Part No.

Float switches, two stage for Sigma Control pumps



2380/4

Float switch, two-stage (includes ceramic weight - do not use ceramic weight for fluoride service)

To monitor the fluid level in the chemical tank. Two-stage function, first stage is early warning annunciation, second stage will shut down pump after an additional drop in the fluid level of approximately 1.2" (30 mm).

With 3-pole round connector, suitable for direct connection to ProMinent Vario series.

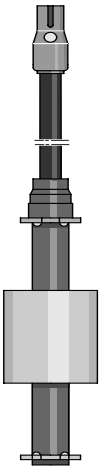
Technical data:

Max. contact load 60 V, 0.3 A, 5 W/5 VA, temperature range -13°F to 167°F (-25°C to 75°C).

Materials:

PP body, foamed PP float 7/8" (21 mm) dia., PE cable				
PP with 3-pole round connector	cable length	6 ft.	(2 m)	7142093
		15 ft.	(5 m)	7142095
PVC body, foamed PP float 7/8" (21 mm) dia., PE cable				
PVC with 3-pole round connector	cable length	6 ft.	(2 m)	7142043
		15 ft.	(5 m)	7142038
PVDF body, foamed PVDF float 1" (25 mm) dia., PE cable				
PVDF with 3-pole round connector	cable length	6 ft.	(2 m)	7792639
		15 ft.	(5 m)	7792640

Float switches, single stage for Makro/Sigma basic pumps



2820/4

Float switch, single-stage (includes ceramic weight – do not use ceramic weight for fluoride service)

For minimum level indication in source tank. May be used to stop pump at motor starter or variable speed drive, or trigger alarm. May be used with relay combination.

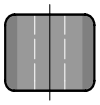
Technical data:

Max. contact load 60 V, 0.3 A, 5 W/5 VA, temperature range -13°F to 167°F (-25°C to 75°C).

Materials:

PP body, foamed PP float 7/8" (21 mm) dia., PE cable				
PP with 2 loose cable ends	cable length	15 ft.	(5 m)	790412
PVC body, foamed PP float 7/8" (21 mm) dia., PE cable				
PVC with flat connector	cable length	15 ft.	(5 m)	790468
PVDF body, PVDF float 1" (25 mm) dia., PE cable				
PVDF with flat connector	cable length	15 ft.	(5 m)	790472

Float switch weights



1086/4

PVC weight

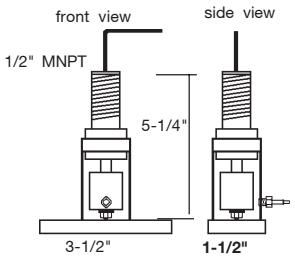
For bottom of foot valve for fluoride applications. 7404007

For fluoride, (hydrofluosilicic acid) or when plastic is required to replace standard ceramic weight.

High Flow Pump Accessories: Diaphragm-failure Detector, Signal Horn, Mountings

Description	Part No.

Diaphragm-failure detector



1046/4

To trip an alarm and/or switch the metering pump off in case of diaphragm failure. In a failure, fluid drains out a weep hole in the backplate, through a tube to the detector column. The float switch in the column trips with 10 mL of fluid. Comprising a float switch PVC/PE, clear PVC column, tube connectors and 1 foot (0.3m) of clear PVC flexible tubing to connect to pump. Switch closure, max. contact rating 60 VAC, 300 mA, 5 W.

1/2" MNPT conduit connection. Shipped with loose ends on cable.

N/O	7803640
N/C	7803650

For processing the alarm signal from the level switch we recommend the relay combination Part No. 914769.5 with wall-mounted plastic housing and 2 change-over relays. Or, the signal could actuate the remote pause feature on the Vario pumps or could stop a Meta or Makro pump if wired into the motor starter or variable speed drive.

Signal horn and strobe light

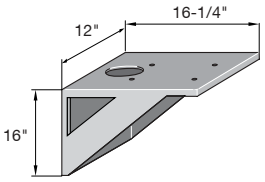
Signal Horn

115 V, 60 Hz, 95 dB, NEMA 4X (IP 65) (e.g. for use in conjunction with fault annunciating relay or float switch or diaphragm failure detector). 7705004

Amber signal strobe light

115 V, 60 Hz, NEMA 4X (IP 65) (e.g. for use in conjunction with fault annunciating relay or float switch or diaphragm failure detector). 7914785

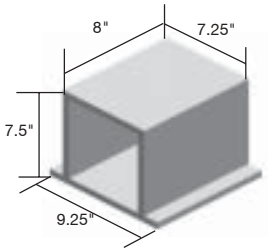
Mountings for Sigma



pk_1_092

Wall-mounting bracket for Sigma

Polypro wall bracket mounts pumps so that diaphragm is parallel to the wall. 7803799



Floor mount pump stand

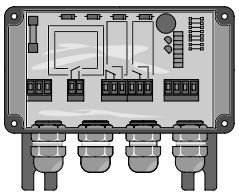
Polypro floor mounting bracket. 7740126

High Flow Pump Accessories: Relay Combination, Contact Repeater

Description	Part No.

Switchgear

Relay combination



1098/4

In wall-mounted plastic housing. To be used as a lack-of-chemical relay and/or a diaphragm-failure relay, or as a pulse repeater, e.g. to connect one water meter contact with two different receiving devices. With two single-pole double-throw relays, voltage-free, max. contact rating 250 V, 1 A. May also be used to start a light inductive load, e.g. transfer pump, using pump relay.

Function: Standard function when either contacts K1 or K2 are closed, both relays 1 and 2 pull in.

Power supply 115 V, 50-60 Hz	914769
Power supply 230 V, 50-60 Hz	914768

Options 1 to 6 with additional reed relay, contact rating 24 V = 50 mA, and 4-pole double-throw DIL switch. 818758

Option 1:
When contact K1 is closed - relay 1 drops out
When contact K2 is closed - relay 2 drops out

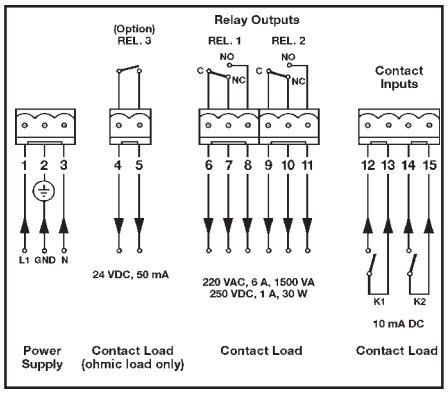
Option 2:
When contact K1 is closed - relay 1 pulls in
When contact K2 is closed - relay 2 pulls in

Option 3:
When contact K1 is closed - relay 1 pulls in
When contact K2 is closed - relays 1 and 2 pull in

Option 4:
When contact K1 is closed - relays 1 and 2 pull in
When contact K2 is closed - relay 2 pulls in

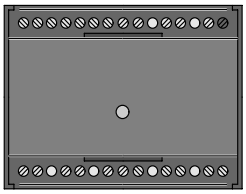
Option 5:
When contact K1 or K2 is closed - relay 3 pulls in

Option 6:
When contact K1 or K2 is open - relay 3 pulls in



Power cord, 6 ft. (2 m) 115 V plug	741203
Power cord, 6 ft. (2 m) 230 V plug (NEMA 6-15P configuration)	7724015

Contact repeater, 4-fold



2139/4

Contact repeater with 4 reed relays to externally pace up to 4 metering pumps or totalizing counters off one input, e.g. water meter. (Optional for Vario and SICa. Not to be used with Meta or Makro).

Plastic snap-in housing for wall mounting (no enclosure).
Power supply 115 V, 50-60 Hz
Contact rating max. 250 V, 2 A
Dimensions 4-2/5" x 3" x 4-1/2" (112 mm x 76 mm x 114 mm) w x h x d 914753

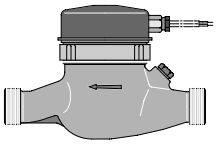
High Flow Pump Accessories: Pulse-type Water Meters – GPH scale

ProMinent®

Description	Part No.

Pulse-type water meters for potable water

Contact water meter – US GPH



1137/4

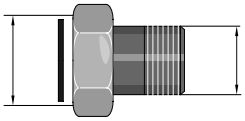
max. operation temperature 104° F.

Pipe Coupl. Size in.	Min. Flow Rate in GPM	GPH	(L/h)	Max. Flow Rate in GPM	GPH	(L/h)	Press. Loss Max. Flow Rate psig	(bar)	
3/4"	0.5	30	(113)	20	1200	(4542)	14.5	(1)	7304501
1"	0.6	36	(136)	50	3000	(11356)	14.5	(1)	7304517
1-1/2"	1.0	60	(227)	100	6000	(22712)	14.5	(1)	7304503
2"	2.0	120	(454)	130	7800	(29526)	14.5	(1)	7304504

Note: Price includes two screw fittings.

*Please specify pulse rate desired

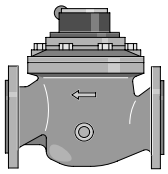
Screw fittings in brass with packing for water meters (price per unit)



1139/4

	Length	
3/4"	(1- 5/8") 41mm	7359021
1"	(2- 5/8") 67 mm	7359022
1-1/2"	(2- 7/8") 73 mm	7359023
2"	(2- 3/8") 60 mm	7359024

Contact water meter – US GPH, 3"...6" flanged



1138/4

max. operation temperature 104°F.

Min. Flow Rate in GPM	GPH	(L/h)	Max. Thru-Put GPM	GPH	Pipe Flange Size in.	Install. Length in.	Standard Gallon/ Pulse	Weight lb. (kg)	
2.6	156	(590)	650	39000	3" ASA	11.8" (300 mm)	10	53 (24)	7304512
4	240	(908)	1100	66000	4" ASA	14.2" (360 mm)	10	62 (28)	7304513
11	660	(2498)	1875	112500	6" ASA	19.7" (500 mm)	25	176 (80)	7304514

Pulse rates

		Cold	Hot
3/4"	P/G	1, 2, 4, 10, 20, 40	1, 2, 4, 8
1"	P/G	1, 2, 4, 10, 20, 40	1, 2, 4, 8
1-1/2"	P/G	1, 2, 4, 10, 20, 40	1, 2
2"	P/G	1, 2, 4, 10, 20, 40	1, 2
3"	G/P	100, 1,000	
4"	G/P	100, 1,000	
6"	G/P	1,000, 10,000	

Note: P/G = pulses per gallon
G/P = gallons per pulse

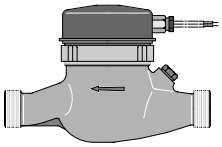
ProMinent®

High Flow Pump Accessories: Pulse-type Water Meters – GPH Scale

Description | Part No.

Contact water meter – US GPH

Warm water up to 248° F



1137/4

Pipe Coupl. Size in.	Min. Flow Rate in GPM	GPH	(L/h)	Max. Flow Rate in GPM	GPH	(L/h)	Press. Loss Max. Flow Rate psig	(bar)	
3/4"	0.5	30	(113)	20	1200	(4542)	14.5	(1)	7304480
1"	0.6	36	(136)	50	3000	(11356)	14.5	(1)	7304483
1-1/2"	1.0	60	(227)	100	6000	(22712)	14.5	(1)	7304484

Note: Price includes two screw fittings.

*Please specify pulse per gallon rate desired.

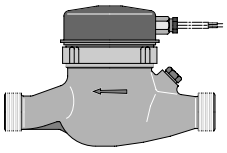
High Flow Pump Accessories: Pulse-type Water Meters – LPH Scale

ProMinent®

Description	Part No.

Pulse-type water meters, 3/4"...2" NPT fittings – litre readout

Max. working temperature 40°C, max. contact load 100 mA, 24 V
Max. flow rate = Q_{max}, nominal flow rate = Q_n



1137/4

Qmax = Qn NG = Nominal size (m^3/h)	Connections in.	**Overall length w/o unions mm	Standard K factor	
5	3/4"	190 mm (7.5")	1	7304434
10	1"	260 mm (10.2")	1.5	7304435
20	1-1/2"	300 mm (11.8")	2	7304436
30	2"	270 mm (10.6")	4	7304438

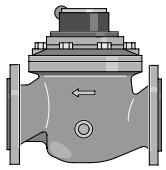
Note: Price includes two screw fittings.
** Overal Lenth with unions add above length + 2x Union Length

*Please specify pulse rate desired

Other pulse rates available (no. of litres per pulse out)

.05	1	5	40	300
.1	1.5	10	50	400
.25	2	15	100	500
.3	2.5	20	150	1000
.4	3	25	200	1500
.5	4	30	250	2000

Pulse-type water meters, 3"...6" flanged



1138/4

Max. working temperature 40°C, max. contact load 100 mA, 24 V
Max. flow rate = Q_{max}, nominal flow rate = Q_n

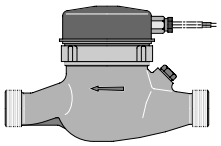
Qmax/Qn (m^3/h)	Connections in.	Overall length mm	Pulse spacing	
110/55	3" ASA	300 mm (11.8")	Please call	304439
180/90	4" ASA	360 mm(14.2")		304442
350/175	6" ASA	500 mm (119.7")		304443

High Flow Pump Accessories: Pulse-type Water Meters – LPH Scale

Description	Part No.

Pulse-type water meters, for hot water up to 120°C, 3/4"...2" NPT fittings – litre readout

Max. contact load 100 mA, 24 V
Max. flow rate = Q_{max}, nominal flow rate = Q_n



1137/4

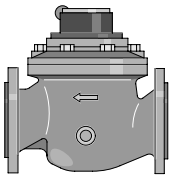
Qmax/Qn (m^3/h)	Connections in.	**Overall length w/o unions mm	Pulse spacing	
5/2.5	3/4"	190 mm (7.5")	Please call	304478
10/6	1"	260 mm (10.2")		304482
20/10	1-1/2"	300 mm (11.8")		304484
30/15	2"	270 mm (10.6")		304487

Note: Price includes two screw fittings.
** Overal Lenth with unions add above length + 2x Union Length

*Please specify pulse rate desired

Pulse-type water meters, for hot water up to 120°C, 3"...6" flanged

as above.



1138/4

Qmax/Qn (m^3/h)	Connections in.	Overall length mm	Pulse spacing	
100/40	3" ASA	300 mm (11.8")	Please call	304490
150/60	4" ASA	360 mm (14.2")		304495
300/150	6" ASA	500 mm (19.7")		304498

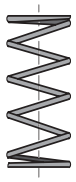
High Flow Pump Accessories: Valve Springs

ProMinent®

Description	Part No.

Valve springs

Fig. 1



pk_1_103

You may spring-load the valve balls in the pump suction and/or discharge valves to improve the valve function and increase the repeatability. Particularly recommended when pumping viscous fluids of more than 50 cPs (mPa).

Discharge valve springs may be used instead of an external backpressure valve to improve repeatability when discharging to an open tank. Suction valve springs in excess of 1 psig (0.05 bar) make priming difficult; and in excess of 7 psig (0.5 bar) makes pumping impossible, except where suction pressure exceeds spring pressure.

Fig. 2

pk_1_104

Not recommended for antisiphon protection – use a diaphragm-type backpressure valve for antisiphon protection.

There is no labor charge for installing the valve springs into the pump valves or injection valves.

Pump Model	Spring Pressure Rating psig	(bar)	Material of Construction	Part No.
DN 10 valves: Vario models 12017, 12026, 12042, 10025, 09039, 07063 Sigma/1, Hydro	1	(0.05)	Hastelloy C	469114
	7	(0.5)	Hastelloy C	469115
	7	(0.5)	PVDF-coated Hastelloy C	818515
	14	(1.0)	Hastelloy C	469119
	1	(0.05)	302 SS	7469401
DN 15 Valves: Vario models 06047, 05075, 04120 Sigma/1 Sigma/2 models 12050, 12090, 12130 Hydro	1	(0.05)	Hastelloy C	469107
	7	(0.5)	Hastelloy C	469108
	7	(0.5)	PVDF-coated Hastelloy C	818516
	14	(1.0)	Hastelloy C	469116
	1	(0.05)	302 SS	7469404
DN 20 Valves: Meta/Makro models with 3/4" connectors	1	(0.05)	Hastelloy C	469451
	7	(0.5)	Hastelloy C	469409
	7	(0.5)	PVDF-coated Hastelloy C	818517
	14	(1.0)	Hastelloy C	469135
	1	(0.05)	302 SS	7469402
DN 25 Valves: Meta/Makro models with 1" connectors Sigma/2 models 07120, 07220, 04350	1	(0.05)	Hastelloy C	469452
	7	(0.5)	Hastelloy C	469414
	7	(0.5)	PVDF-coated Hastelloy C	818518
	14	(1.0)	Hastelloy C	469136
	1	(0.05)	302 SS	7469403
DN 40 Valves: Meta/Makro models with 1-1/2" connectors	7	(0.5)	Hastelloy C	469104
	7	(0.5)	PVDF-coated Hastelloy C	818519
	14	(1.0)	Hastelloy C	469137
Meta/Makro HK pumps with 1/4" connectors	1	(0.05)	316 SS	469461
Makro HK pumps with 3/8" connectors	1	(0.05)	316 SS	469462

High Flow Pump Accessories: Gaskets

Description	Part No.

Gaskets

Teflon gaskets for PVDF (PVT)/SS liquid ends.

DN 10	1019364
DN 15	1019365
DN 20	1019366
DN 25	1019366
DN 32	1019353
DN 40	1019368
DN 50	1019369

Note: The material make-up of the standard gaskets are teflon with a Viton® center. For applications using chemicals that react negatively with Viton®, the above gaskets are needed.

High Flow Pump Accessories: Special Valve Balls and Diaphragms

Description	Part No.

Special valve balls

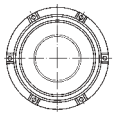
For metering pumps and accessories if standard materials are unsuitable.

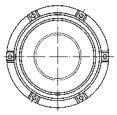
pk_1_102

11.1 mm dia. for DN 10 (Vario, Sigma, Hydro)	
PTFE (1/2" MNPT connection)	7404207
Ceramic (1/2" MNPT connection)	404277
SS (3/8" FNPT connection)	404243
16 mm dia. for DN 15 (Vario, Sigma, Hydro)	
PTFE (3/4" MNPT connection)	7404208
Ceramic (3/4" MNPT connection)	404275
SS (1/2" FNPT connection)	404244
20 mm dia. for valve dia. 3/4" DN 20 (Meta, Makro)	
PTFE	404256
Ceramic	404273
SS	7404258
25 mm dia. for valve dia. 1" DN 25 (Sigma, Meta, Makro)	
PTFE	404257
Ceramic	404274
SS	404247
38.1 mm dia. for valve dia. 1-1/2" DN 40 (Makro)	
PTFE	404261
Ceramic	404278
SS	7404260

Pump diaphragms

ProMinent pump diaphragm made from a steel core with Viton® or EPDM facing. Particularly suited for media tending to crystalize, such as silicate.





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Viton® for pump type:	Max. working pressure	
Makro 130 liquid end	87 psi (6 bar)	7811470
Makro 260 liquid end	87 psi (6 bar)	7811471
Sigma/2 12050,12090, 12130	29 psi (2 bar)	1018953
Sigma/2 07120, 07220, 04350	29 psi (2 bar)	1018984
EPDM for pump type:	**Max. working pressure**	
Sigma/2 12050,12090, 12130	29 psi (2 bar)	1018952
Sigma/2 07120, 07220, 04350	29 psi (2 bar)	1001312