

Low Flow Pump Accessories: Foot Valves

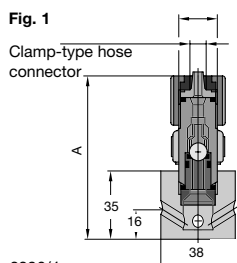
Description

Part No.

Foot valves

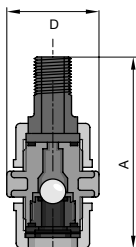
To be installed at the end of the suction line to improve priming and protect pump against coarse impurities. With ceramic* weight, strainer and ball check valve (must be mounted vertically for ball check function). Select material to be compatible with fluid.

Fig. 1



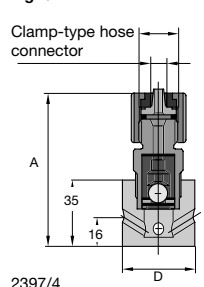
2396/4

Fig. 2



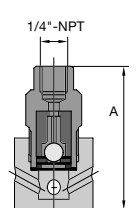
2165/4

Fig. 3



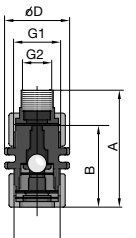
2397/4

Fig. 4



2398/4

Fig. 5



1521/4

Polypropylene

Valve body of PP, seals of EPDM (PP1, PPE)

Connection 1/4" x 3/16" tubing (Fig 1)	3-1/4 (83)	1-3/8 (35)	924570
Connection 1/2" x 3/8" tubing (Fig 1)	3-1/4 (83)	1-3/8 (35)	924572
Connection 1/2" MNPT for 0423/0230 (Fig 2)	3-7/8 (98)	1-3/8 (35)	809465

Valve body of PP, seals of Viton® (PP2, PPB)

Connection 1/4" x 3/16" tubing (Fig 1)	3-1/4 (83)	1-3/8 (35)	7924558
Connection 1/2" x 3/8" tubing (Fig 1)	3-1/4 (83)	1-3/8 (35)	7809470
Connection 1/2" MNPT for 0423/0230 (Fig 2)	3-7/8 (98)	1-3/8 (35)	7809465

Valve body of PP, seals of EPDM-high viscosity (PP4)

Connection 1/2" MNPT (Fig 2)	4 (102)	1-5/8 (42)	7924516
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Valve body of PP, seals of Viton®-high viscosity (PP5)

Connection 1/2" MNPT (Fig 2)	4 (102)	1-5/8 (42)	7809471
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PVC

Valve body of PVC, seals of EPDM

Connection 1/4" x 3/16" tubing (Fig 1)	3-1/8 (79)	1-3/8 (35)	7924547
Connection 1/2" x 3/8" tubing (Fig 1)	3-1/4 (83)	1-3/8 (35)	7924549
Connection 1/2" MNPT (Fig 2)	3-7/8 (98)	1-3/8 (35)	7809464

Valve body of PVC, seals of Viton®

Connection 1/4" x 3/16" tubing (Fig 1)	3-1/8 (79)	1-3/8 (35)	924547
Connection 1/2" x 3/8" tubing (Fig 1)	3-1/4 (83)	1-3/8 (35)	924549
Connection 1/2" MNPT (Fig 2)	3-7/8 (98)	1-3/8 (35)	809464

PTFE

Valve body and seals of PTFE (TT1)

Connection 1/4" x 3/16" tubing (Fig 3)	3-1/4 (83)	1-1/2 (38)	809455
Connection 1/2" x 3/8" tubing (Fig 3)	3-1/2 (89)	1-1/2 (38)	809473
Connection 1/2" MNPT (not illustrated)	3-7/8 (98)	1-1/2 (38)	809466

SS

Valve body of stainless steel, seals of PTFE

Connection 1/4" FNPT (SS2) (Fig 4)	2-5/8 (67)	1-1/2 (38)	924567
Connection 3/8" FNPT (SS1) (Fig 5)	2-5/8 (67)	1-1/2 (38)	809467

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

PVC foot valve weight

7404007

Viton® is a registered trademark of Dupont Dow Elastomers

Low Flow Pump Accessories: Injection Valves

Description	Part No.
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Injection valves

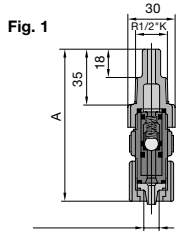


Fig. 1
Clamp-type
hose connector
2399/4

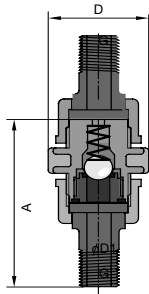


Fig. 2
1447/4

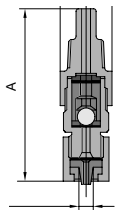


Fig. 3

Clamp-type
hose connector
2400/4

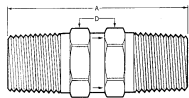
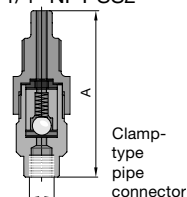


Fig. 4

Fig. 5
1/4" NPT SS2



2401/4

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 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!

Polypropylene

Valve body of PP, seals of EPDM (PP1, PPE)

	Dim "A"	
	inches (mm)	
Connection 1/4" x 3/16" tubing x 1/2" MNPT injection end (Fig 1)	3-7/8 (98)	924584
Connection 1/2" x 3/8" tubing x 1/2" MNPT injection end (Fig 1)	3-7/8 (98)	924586
Connection 1/2" MNPT for 0423/0230 (Fig 2)	5-1/4 (133)	809461

Valve body of PP, seals of Viton® (PP2, PPB)

Connection 1/4" x 3/16" tubing x 1/2" MNPT injection end (Fig 1)	3-7/8 (98)	7924681
Connection 1/2" x 3/8" tubing x 1/2" MNPT injection end (Fig 1)	3-7/8 (98)	7809478
Connection 1/2" MNPT for 0423/0230 (Fig 2)	5-1/4 (133)	7809461

Valve body of PP, seals of EPDM-high viscosity (PP4)

Connection 1/2" MNPT for PP4 (Fig 2)	5-3/8 (137)	7924521
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Valve body of PP, seals of Viton®-high viscosity (PP5)

Connection 1/2" MNPT for PP5 (Fig 2)	5-3/8 (137)	7809462
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PVC

Valve body of PVC, seals of EPDM

Connection 1/4" x 3/16" tubing x 1/2" MNPT injection end (Fig 1)	3-3/4 (95)	7924580
Connection 1/2" x 3/8" tubing x 1/2" MNPT injection end (Fig 1)	3-7/8 (98)	7924582
Connection 1/2" MNPT (Fig 2)	5-3/8 (137)	7809460

Valve body of PVC, seals of Viton®

Connection 1/4" x 3/16" tubing x 1/2" MNPT injection end (Fig 1)	3-3/4 (95)	924580
Connection 1/2" x 3/8" tubing x 1/2" MNPT injection end (Fig 1)	3-7/8 (98)	924582
Connection 1/2" MNPT (Fig 2)	5-3/8 (137)	809460

PTFE

For vertical installation from below, without spring.

Optional valve springs can be ordered separately.

Body and seals of PTFE

Connection 1/4" x 3/16" tubing x 1/2" MNPT injection end (Fig 3)	4-1/8 (105)	809488
Connection 1/2" x 3/8" tubing x 1/2" MNPT injection end (Fig 3)	4-1/4 (108)	809481
Connection 1/2" MNPT (not illustrated)		809462

SS

Valve body of stainless steel, seals of PTFE (SS1 & SS2)

Poppet check valve, connection 1/4" FNPT x 1/4" FNPT, spring-loaded, adjustable by internal hex nut from 3-50 psig (0.2-3.5 bar) (Fig 4)

Optional adapter for above valve 1/4" FNPT x 1/2" MNPT (Fig 5)

Ball check valve, connection 1/4" FNPT inlet to 1/2" MNPT discharge, 7 psig (0.5 bar) spring (Fig 5)

Ball check valve, connection 3/8" FNPT inlet to 1/2" MNPT discharge, 7 psig (0.5 bar) spring (not illustrated) (SS1)

(for 0423 & 0230 only)

1-5/8 (42)	7914587
	7914588
3-1/2 (89)	924597
3-1/2 (89)	809463

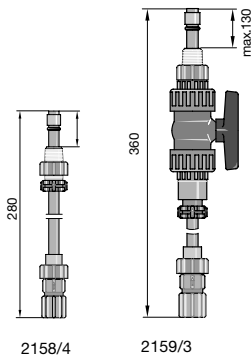
Low Flow Pump Accessories: Injection Lances and Check Valves

Description	Part No.
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Injection lance

Length of insertion variable from 3/4" to 6-1/2" (20 mm...165 mm) for large diameter pipes. Consisting of spring-loaded ball check injection valve, adjustable insertion pipe and elastomeric sleeve over injection port for backflow prevention. Materials: Hastelloy C spring, Ceramic valve ball, EPDM and silicon seals. Max. working pressure 87 psig (6 bar). Requires 1/2" FNPT pipe tap.

Note: For units with isolating valve, the valve may not be closed until the insertion pipe has been pulled out through the valve. Call factory for 3/4" and 1" connection.



Polypropylene (EPDM seals)

Connection 1/4" x 3/16" tubing to 1/2" MNPT	924691
Connection 1/2" x 3/8" tubing to 1/2" MNPT	924693

same, but with ball-type isolating valve

Connection 1/4" x 3/16" tubing to 1/2" MNPT	924695
Connection 1/2" x 3/8" tubing to 1/2" MNPT	924697

PVC (Viton® seals)

Connection 1/4" x 3/16" tubing to 1/2" MNPT	809706
Connection 1/2" x 3/8" tubing to 1/2" MNPT	809708

same, but with ball-type isolating valve

Connection 1/4" x 3/16" tubing to 1/2" MNPT	809710
Connection 1/2" x 3/8" tubing to 1/2" MNPT	809712

Note: For brass 3/4" and 1" corporation stops, please call factory.

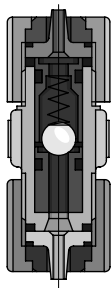
In-line check valve for tubing

Polypropylene

With connectors on both ends for installation in flexible tubing, valve body of PP, seals of EPDM, with valve ball, spring-loaded with Hastelloy C spring, 7 psig (0.5 bar).

By using different adapter sets, different sizes of tubing from 1/4" to 1/2" can be connected with each other.

Connection for tubing 1/4" x 3/16"	809434
Connection for tubing 1/2" x 3/8"	809436



PVC

With connectors on both ends for installation in flexible tubing, valve body of PVC, seals of Viton®, with valve ball, spring-loaded with Hastelloy C spring, 7 psig (0.5 bar).

By using different adapter sets, different sizes of tubing from 1/4" to 1/2" can be connected with each other.

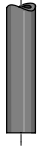
Connection for tubing 1/4" x 3/16"	809417
Connection for tubing 1/2" x 3/8"	809415

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Low Flow Pump Accessories: Tubing and Connectors

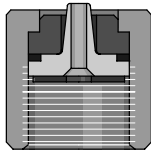
Description	Part No.
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Suction and discharge tubing

	Max. Operating Pressure Rating (psig)	
 1052/4	PVC soft 1/4" x 3/16" (for suction side only)	7 7037004
	PVC soft 1/2" x 3/8" (for suction side only)	7 7037009
	PVC fabric reinforced 1/4" x 1/2"	232 037032
	PE 1/4" x 3/16"	100 7037005
	PE 1/2" x 3/8"	100 7037010
	Teflon (FEP) 1/4" x 3/16"	100 7037426
	Teflon (FEP) 1/2" x 3/8"	100 7037428

Spare connecting parts, adapters

Fig. 1



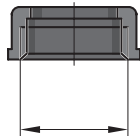
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Connector set (Fig. 1) (excluding NE1 and EXtronic)

Connector set to connect flexible tubing of different sizes to suction or discharge connectors of liquid ends and accessories, each set consisting of hose nozzle, grip ring, union nut and gasket. All connector sets fit on pump valves or accessories with M20 x 1.5 threads. Part number includes two connector sets.

PP/VITON® for hose type 1/4" x 3/16"	790872
PP/VITON® for hose type 1/2" x 3/8"	740133
PP/EPDM for hose type 1/4" x 3/16"	790885
PP/EPDM for hose type 1/2" x 3/8"	740132
PP/EPDM for hose type 1/4" x 1/2"	817163
PVC/Viton® for hose type 1/4" x 3/16"	817050
PVC/Viton® for hose type 1/2" x 3/8"	817055
PVC/Viton® for hose type 1/4" x 1/2"	817068
PVC/EPDM for hose type 1/4" x 3/16"	790871
PVC/EPDM for hose type 1/2" x 3/8"	740160
PTFE for hose type 1/4" x 3/16"	817201
PTFE for hose type 1/2" x 3/8"	791199

Fig. 2

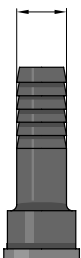


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Union nuts for NPT inserts (Fig. 2) (use with NPT inserts below)

Union nut	PP	DN 10	358613
Union nut	PVC	DN 10	356562
Union nut	PVDF	DN 10	358813
Union nut	SS	DN 10	805270
Union nut	PP	DN 15	358614

Fig. 3



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Inserts (Fig. 3) (requires union nut: 1/4" NPT inserts use union nut provided with pump as part of connector set. 1/2" NPT inserts use union nuts listed above)

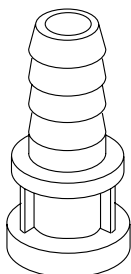
1/4" MNPT	PP	(any beta, gamma/L, Pneumados or alpha except g/5 0423 and 0230, PP4/PP5 or NE1)	7358391
	T		7358390
	PVC		7358392
	SS		7358393
1/2" MNPT	PP	(for g/4 1002 PP4/PP5, g/5 0423 and 0230)	7358630
	PP	(for PP4/PP5 series, 1006, 1310 and 0813)	7358402
	T	(for g/5 0423 and 0230)	7358634
	PVC	(for g/5 0423 and 0230)	7358632
3/8" FNPT	SS	(for g/5 0423 and 0230)	805285

Note: 1/2" NPT fittings will not fit on any gamma pumps except those listed above. Use of 1/4" NPT fittings on pumps with 1/2" valves may reduce capacity.

Low Flow Pump Accessories: Adapters

Description	Part no.
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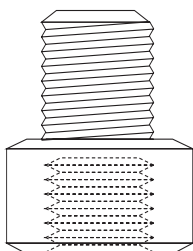
Hose barb adapters



PP for hose type DN 10	800657
PVC for hose type DN 10	800554
PTFE for hose type DN 10	811572
SS for hose type DN 10	810536
PP for hose type DN15	800655

Note: Needed for high viscosity pumps; gamma/4 1002 PP4/PP5 and gamma/5 0423, 0230 PP4/PP5.

Adapters

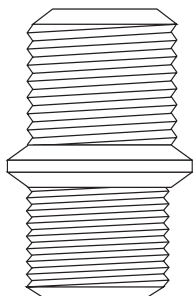


Adapters

M20 x 1.5 Female by 1/2" MNPT

PP	7359010
PVC	7744060
PVDF	7358652

Note: Will screw onto standard gamma/4 & 5 discharge/suction valves excluding models 0423, 0230.



M20 x 1.5 Male by 1/2" MNPT

PVC	7358228
PVDF	7358660

Low Flow Pump Accessories: Backpressure and Pressure Relief Valves

Description

Part No.

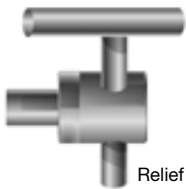
Backpressure, antisiphon and pressure relief valves



In-line pressure relief valve (3 port)



Backpressure valve (2 port)



Backpressure valve on tee for pressure relief

Technical data

Size:

1/4" and 1/2" 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 @ 45 psig (3.1 bar):

1/4" - 132 U.S. gph (500 L/h)
1/2" - 132 U.S. gph (500 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)
Max. Pressure Rating 170 psig @ 120°F

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.

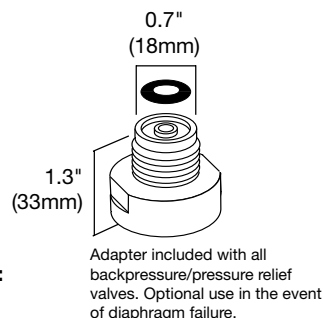
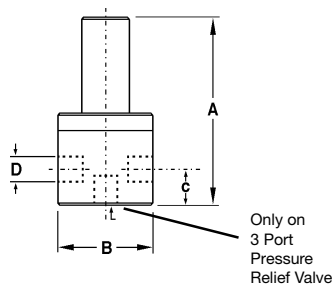
Pressure relief (3-port) valves are mounted in the discharge line, featuring a separate relief port which discharges back to the source tank or to the pump suction line to create a bypass.

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.



DIMENSIONS: 1/4" to 1/2" valves

D	A (in)	B (in)	C (in)
1/4"	4.90	2.6	1.2
*1/4"	*3.5	*2.375	*0.75
1/2"	4.9	2.6	1.2
*1/2"	*5.5	*3.5	*1.125

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

DIMENSIONS (for replacement valves only): 1/4" to 1/2" valves - SEE PG. 8

D	A (in)	B (in)	C (in)
1/4"	3.9	2.375	0.75
*1/4"	*3.5	*2.375	*0.75
1/2"	4.6	2.375	1.125
*1/2"	*5.5	*3.5	*1.125

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

Low Flow Pump Accessories: Backpressure and Pressure Relief Valves

Description	Part No.	
Backpressure, antisiphon and pressure relief valves		
<u>1/4" FNPT valves</u>		
Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP (PP1, PP2)	1009444	1009452
PVC (NP6)	1009445	1009453
PVDF	1009446	1009454
316 SS (SS2)	7302204	7302220
<u>Tubing Adapters</u>		
(1 required per valve port): 1/4" x 3/16" tubing x 1/4" MNPT		
PP/EPDM (PP1)		7500060
PP/Viton® (PP2)		7500058
PVC/EPDM (NP2)		7500064
PVC/Viton® (NP1)		7500062
<u>1/2" FNPT valves</u>		
Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP (PP1, PP2)	1006846	1006858
PVC (NP6)	1006850	1006862
PVDF	1006854	1006866
316 SS (SS2)	7302208	7302224
<u>Tubing Adapters</u>		
(1 required per valve port): 1/2" x 3/8" tubing x 1/2" MNPT		
PP/EPDM (PP1)		7500061
PP/Viton® (PP2)		7500059
PVC/EPDM (NP2)		7500065
PVC/Viton® (NP1)		7500063
<u>Spare diaphragms</u>		
1/4" - 1/2" valve PTFE/EPDM	1006813	1006813

Low Flow Pump Accessories:

REPLACEMENT Backpressure and PR Valves

Description	Part No.
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REPLACEMENT Backpressure, antisiphon and pressure relief valves

1/4" FNPT valves

Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP (PP1, PP2)	7302502	7302503
PVC (NP6)	7302500	7302501
PVDF	7302279	7302285
PTFE (TT1)	7302203	7302219
316 SS (SS2)	7302204	7302220

Tubing Adapters

(1 required per valve port): 1/4" x 3/16" tubing x 1/4" MNPT

PP/EPDM (PP1)	7500060
PP/Viton® (PP2)	7500058
PVC/EPDM (NP2)	7500064
PVC/Viton® (NP1)	7500062
PTFE (TT1)	7359004

1/2" FNPT valves

Material	Backpressure Valve (2-port)	Pressure Relief Valve (3-port)
PP (PP1, PP2)	7302506	7302507
PVC (NP6)	7302504	7302505
PVDF	7302280	7302286
PTFE (TT1)	7302207	7302223
316 SS (SS2)	7302208	7302224

Tubing Adapters

(1 required per valve port): 1/2" x 3/8" tubing x 1/2" MNPT

PP/EPDM (PP1)	7500061
PP/Viton® (PP2)	7500059
PVC/EPDM (NP2)	7500065
PVC/Viton® (NP1)	7500063
PTFE (TT1)	7359008

Spare diaphragms

1/4" PTFE/EPDM	7811401	7811401
1/2" - 1" PTFE/EPDM	7811403	7811403
Adjusting wrench (fits all valves)		7302200

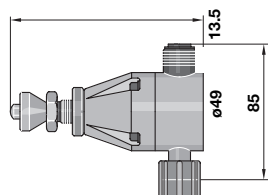
Low Flow Pump Accessories: Backpressure and Pressure Relief Valves

Description

Part No.

Backpressure/antisiphon valves

Pump-mounted backpressure/antisiphon valves



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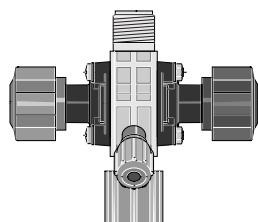
Type DHV-S-DK backpressure valve, adjustable from 14.5 to 145 psig (1 to 10 bar). This adjustable backpressure valve is designed for mounting directly on the liquid end to generate a constant backpressure. Inlet thread is female M20 x 1.5, discharge is male M20 x 1.5 for connection to 1/4" x 3/16" or 1/2" x 3/8" tubing adapter.

Caution: Backpressure valves are not supposed to be used as completely/sealing, isolating elements.

Application: beta, gamma, Pneumados, EXtronic, and D metering pumps (except SS1/SS2, PP4/PP5 and gamma/5 0423/0230 models)

DHV-S-DK	PP/EPDM (PP1, PPE)	302320
DHV-S-DK	PP/Viton® (PP2, PPB)	7302320
DHV-S-DK	PVC/Viton® (NP6, PCB)	302321
DHV-S-DK	PTFE (TT1)	

Multifunction valve



3006/4

ProMinent's multifunction valve is operated by means of smooth-action rotary knobs which automatically return to their initial position when released. Made of PVDF, it can be used in feed systems for virtually all chemicals. The multifunction valve is mounted directly on the liquid end of the pump for backpressure, antisiphon, pressure relief, priming, and draining the discharge line. The inlet thread is female M20 x 1.5 and the discharge is male M20 x 1.5.

ProMinent's multifunction valve has the following functions:

- Backpressure valve, opening pressure approximately 22 psi (1.5 bar)
- Relief valve, opening pressure approximately 87, 145 or 232 psi (6, 10 or 16 bar)
- Admission aid in existing backpressure, no need to de-pressurize pipes
- Pressure relief, e.g. prior to servicing

Warning: Backpressure valves are not intended as completely sealed units!

Materials in contact with chemicals:

Valve body	PVDF
Diaphragm	PTFE-coated
Seals	FPM (*Viton®) or EPDM
DN 10 adapter	PVC

Technical data:

Type	Relief opening pressure	Application range by size	Order No.
Size I (M20 x 1.5)	232 psi (16 bar)	alpha all types, G/4b all types,	792011
Size I	145 psi (10 bar)	beta & gamma/L type 1000, 1601,	791715
Size I	87 psi (6 bar)	1602, 1605, 1005, 1008, 0708, 0413, 0220	1005745
Size II (M20 x 1.5)	145 psi (10 bar)	G/5b all types except 0423 & 0230,	792203
Size II	87 psi (6 bar)	beta & gamma/L type 1605, 1008, 0713, 0420, 0232	740427
Size III (DN 10)	145 psi (10 bar)	G/5b type 0423, 0230	792215

Note: Multifunction valves mounted to stainless steel liquid ends require below adapters.

*Cannot adjust pressure; fixed factory setting.

Adapter set for SS version pumps

Adapter with seals, for use with SS2 liquid ends: 1/4" MNPT x Male M20 x 1.5 adapter, PVDF	7358651
Adapter with seals, for use with SS2 liquid ends: 3/8" MNPT x Male M20 x 1.5 adapter, PVDF	7358659

Low Flow Pump Accessories: Pulsation Dampeners

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.

Polypropylene and PVDF models are flow-through design, with two ports so they can be mounted directly on the pump suction or discharge line. PTFE and stainless steel 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.

PVDF/Nordel pulsation dampeners are recommended for sodium hydroxide (caustic) applications. Viton® pulsation dampeners are recommended for sodium hypochlorite applications.

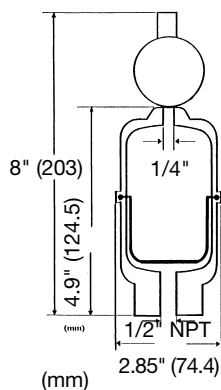
Sizing Pulsation Dampeners

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 the pulsation dampeners.

General Specifications

Fig. 1



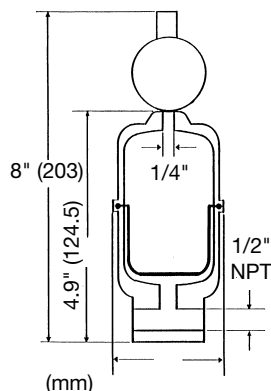
Maximum pressure: 150 psig (10.3 bar) (polypro, PVC, PVDF and PTFE),
300 psig (21 bar) (SS)

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 225°F (-29°C to 52°C)
SS housing:	32°F to 200°F (0°C to 93°C)

*Teflon bellows are smaller in volume

Fig. 2



131 mL (8 cu. in.) Models

SS housing: 3/8" FNPT, 1 port (not illustrated)

PTFE bellows

PVDF housing: 1/2" FNPT, 1 port (Fig. 1)

PTFE bellows

164 mL (10 cu. in.) Models

PVC housing: 1/2" FNPT, 1 port (Fig. 1)

Nordel bladder (EPDM)

Viton® bladder

HYPALON® bladder

Polypro housing: 1/2" FNPT, 1 port (Fig. 1)

Nordel bladder (EPDM)

PVDF housing: 1/2" FNPT, 1 port (Fig. 1)

Nordel bladder (EPDM)

Viton® bladder

**Shipping
Weight
lbs (kg)**

Model

Size

Part No.

3 (1.4)	CTS1020 T	III	7253205
---------	-----------	-----	---------

1 (0.9)	CTK1005 T 5	III	7744101
---------	-------------	-----	---------

1 (0.9)	CTP1015 ND 5	III	7744096
---------	--------------	-----	---------

1 (0.9)	CTP1015 V 5	III	7744097
---------	-------------	-----	---------

1 (0.9)	CTP1015 H 5	III	7744098
---------	-------------	-----	---------

1 (0.9)	CTP1005 ND 5	III	7744102
---------	--------------	-----	---------

1 (0.9)	CTK1005 ND 5	III	7744100
---------	--------------	-----	---------

1 (0.9)	CTK1005 V 5	III	7744099
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Low Flow Pump Accessories: Pulsation Dampeners & Spare Bladders/Bellows

Description	Part No.
-------------	----------

Pulsation Dampeners (cont.)

	Shipping Weight lbs (kg)	Model	Size	Part No.
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

Spare bladders/bellows

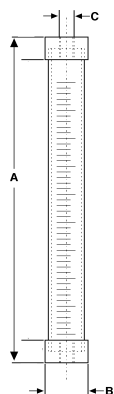
	Model	Size	Part No.
Nordel (EPDM) bladders	1000-28	III	7740208
Viton bladders	1000-31	III	7740209
Hypalon bladders	1000-30	III	7740959

Low Flow Pump Accessories: Calibration Columns

Description	Part No.
Calibration columns	

Clear PVC calibration columns

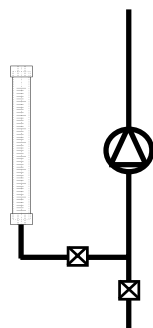
Cylinder size	Fitting size	Dimension (inches)		Threaded base, removable top	Threaded both ends
		A	B		
100 mL	1/2" NPT	10.75	1.39	7500137	7500127
250 mL	1/2" NPT	11.51	1.89	7350138	7500128
500 mL	1/2" NPT	12.75	2.39	7350139	7500129
1000 mL	1/2" NPT	16.75	2.77	7350130	7500135



Typical Application of Calibration Columns

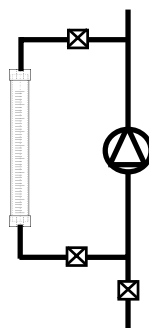
Column w/removable top

(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)

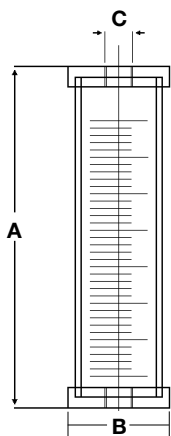


Borosilicate Glass calibration columns with Viton® seals for Sulfuric Acid Applications

Glass cylinder with acrylic outer shield and 1/2" (316 SS) or 3/4" (PVDF, PVC) 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.

Dimensions (inches)

Cylinder size	Fitting size	A	B	C	Part No.
100 mL	1/2" CPVC	10.0	3.0	1/2	7500151
100 mL	1/2" PVDF	10.0	3.0	1/2	7500152
100 mL	1/2" SS	9.5	3.0	1/2	7500153
250 mL	1/2" CPVC	12.5	3.5	1/2	7500154
250 mL	1/2" PVDF	12.5	3.5	1/2	7500155
250 mL	1/2" SS	12.0	3.5	1/2	7500156
500 mL	1/2" CPVC	14.5	4.0	1/2	7500157
500 mL	1/2" PVDF	14.5	4.0	1/2	7500158
500 mL	1/2" SS	14.0	4.0	1/2	7500159
1000 mL	1/2" CPVC	16.75	4.75	1/2	7500160
1000 mL	1/2" PVDF	16.75	4.75	1/2	7500161
1000 mL	1/2" SS	16.25	4.75	1/2	7500162
2000 mL	1" CPVC	18.75	5.5	1	7500163
2000 mL	1" PVDF	18.75	5.5	1	7500164
2000 mL	1" SS	18.25	5.5	1	7500165
4000 mL	1" CPVC	22.5	6.5	1	7500166
4000 mL	1" PVDF	22.5	6.5	1	7500167
4000 mL	1" SS	22.0	6.5	1	7500168

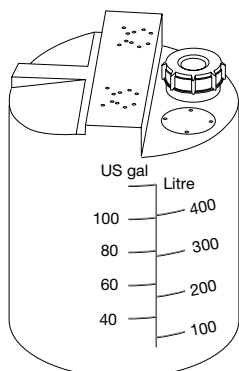


Low Flow Pump Accessories: Chemical Tanks and Accessories

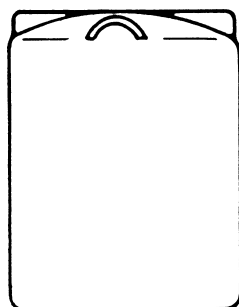
Description

Part No.

Chemical tanks



15, 26, 66, 132 gallon capacity



220 & 300 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). Tank opening (screw cap) diameter for 15 - 132 gal.: 6.5". Tank opening (screw cap) diameter for 220 and 300 gal.: 5-1/4".

Capacity		O.D.		Height		Empty Weight		
gallon	(litre)	in.	(mm)	in.	(mm)	lb.	(kg)	
15	(60)	16	(410)	23	(590)	11	(5.0)	791994
26	(100)	20	(500)	30	(760)	17	(7.7)	1001490
66	(250)	24	(600)	43	(1100)	39	(17.5)	791996
132*	(500)	32	(820)	47	(1190)	54	(24.5)	791997
220	(830)	42	(1067)	41	(1041)	55	(25.0)	7809688
300	(1100)	43	(1092)	59	(1499)	70	(31.7)	7809687

* Limited supply available.

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

Accessories

Lock and key for screw-on cap 200683

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

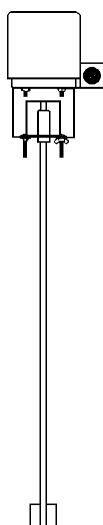
Low Flow Pump Accessories: Chemical Tanks and Accessories

Description	Part No.
<div data-bbox="181 422 337 579" data-label="Image"> </div> <div data-bbox="133 611 193 630" data-label="Text">1077/4</div> <div data-bbox="425 352 862 388"> <p>PVC tank drain fitting with plug</p> </div> <div data-bbox="425 417 1224 501" data-label="Text"> <p>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.</p> </div> <div data-bbox="995 501 1429 558" data-label="Text"> <p>PVC with Viton® seal 7809755 PVC with EPDM seal 7744374</p> </div> <div data-bbox="425 588 1224 674" data-label="Text"> <p>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.</p> </div> <div data-bbox="995 672 1429 728" data-label="Text"> <p>PVC with Viton® seal 7000300 PVC with EPDM seal 7744375</p> </div>	
<div data-bbox="181 821 360 932" data-label="Image"> </div> <div data-bbox="133 949 193 968" data-label="Text">2424/4</div> <div data-bbox="425 814 628 846"> <p>PVC ball valve</p> </div> <div data-bbox="425 877 1224 934" data-label="Text"> <p>1/2" PVC ball valve with 1/2" FNPT connections for all chemical tanks with 1/2" PVC tank drain fittings.</p> </div> <div data-bbox="995 934 1429 991" data-label="Text"> <p>PVC with Viton® seal 7000309 PVC with EPDM seal 7000311</p> </div> <div data-bbox="425 1050 1224 1106" data-label="Text"> <p>3/4" PVC ball valve with 3/4" FNPT connections for all chemical tanks with 3/4" PVC tank drain fittings.</p> </div> <div data-bbox="995 1104 1429 1161" data-label="Text"> <p>PVC with Viton® seal 7741668 PVC with EPDM seal 7741485</p> </div>	

Low Flow Pump Accessories: Mixers

Description	Part No.
U.S. Mixers	

Fig. 1



Electric mixers

Note: with any tank-mounted mixer, the inertia of fluid rotating in a polyethylene tank may cause the tank to move when the fluid level is low. Provision should be made to anchor the tank or to automatically shut the mixer off when the fluid level is low. **For U.S. only. For Canada mixers, see below.**

High speed mixer for water-like fluids in 15, 26 or 66 U.S. gallon tanks (Fig. 1):

Motor: 1/20 HP, 1550/1725 RPM, 115 VAC, 60 Hz, 1 ph., TEFC, with 8' Type SJ power cord, no on/off switch.

Shaft: 316 SS shaft/impeller (epoxy coated)

Mount: Four hole mounting flange with bolt holes, set at 5° angle for mounting directly on tank top.

Accessories: 1" diameter PVC metering pump suction pipe with bulkhead fitting for mounting to tank top.

Shipping weight: 9 lbs. (4 kg)

For 26 gallon tank (19" shaft)

7818588

For 66 gallon tank (34" shaft)

7818589

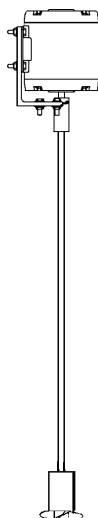
Shaft only (19" replacement)

7818590

Shaft only (34" replacement)

7818591

Fig. 2



High speed mixer for water-like fluids in 132 to 300 gallon tanks (Fig. 2):

Motor: 1/4 HP, 1725 RPM, 115/230 VAC, 60 Hz, TEFC. Power cord not included.

Shaft: 316 SS shaft/propeller. Shaft length: 36" (may be cut down for smaller tanks)

Mount: Bracket with bolt holes, for mounting directly on tank top.

Shipping weight: 27 lbs. (12 kg)

7818592

Shaft only (36" replacement)

7744506

Slow speed mixer for water-like fluids in 15, 26 Or 66 gallon tanks:

Motor: 1/3 HP, 60 RPM, 115 VAC, 50/60 Hz, 1 ph., TEFC. Power cord not included.

Shaft: 316 SS shaft w/ 1 set of impellers. Shaft length is 44" (may be cut).

Mount: Bracket w/ 4 bolt holes for mounting directly on tank top.

Shipping weight: 32 lbs.

7818594

Note: Motor not thermally protected.

Mixer mounting kit for 15 gallon tanks:

Polyethylene flange adapter for mounting mixers to metric flange. Includes all necessary hardware.

7744385

Mixer mounting kit for 26, 66, and 132 gallon tanks:

Polyethylene flange adapter for mounting mixers to metric flange. Includes all necessary hardware.

7744319

*(Other mixers available upon request)

Canada Mixers

High speed mixer for water-like fluids in 15, 26 or 66 gallon tanks:

Motor: 1/20 HP

Mount: includes mounting bracket

Shaft: 316 SS shaft and propeller

7356679

High speed mixer for water-like fluids in 132 to 300 gallon tanks:

Motor: 1/4 HP

Mount: includes PVC mounting flange

Shaft: 316 SS shaft and propeller

7818565

Note: Both mixers for Canada only.

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 _____

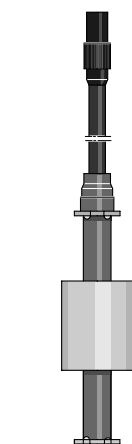
Mixer Type/Diameter: ____ Propeller _____ Impeller ____ Other _____

Low Flow Pump Accessories:

Float Switches for gamma series pumps

Description	Part No.
-------------	----------

Float switches, two stage



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 gamma 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

Ceramic weight for float switch



1086/4

1.53" dia. x 1.26"	with oval opening .51" x 1.06"
(39 mm x 32 mm)	(13 mm x 27 mm)

404004

With two-stage float switches with round connector, the weight is slid into position from below after the float has been removed.

Note: Not for use in fluoride application (e.g. hydrofluosilicic acid).

Low Flow Pump Accessories:

Suction Assemblies for gamma series pumps

Description	Part No.
-------------	----------

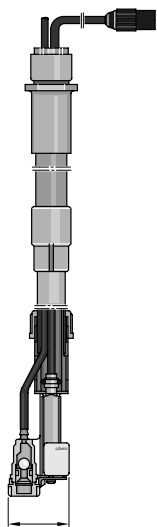
Suction assemblies, two-stage

Including foot valve, rigid supporting pipe, suction line and float switch with 6 ft. (2 m) cable. For use in drums or tanks with mixers, which could tangle flexible suction tubing or float switch cables.

two-stage: with 3-pole *round connector*, for early warning and eventual pump shut-down, for gamma.

PP version: EPDM seals, PE suction line

PVC version: Viton® seals, PVC suction line



Adjustable PP suction assembly, with bulkhead fitting for 1" opening and 2-stage float switch

For ProMinent gamma with PP foot valve, PE suction hose, PP supporting pipe and union. PP two-stage float switch with 3-pole round connector

Adjustable length (foot valve to bulkhead)

26" to 41" (660 mm to 1040 mm) for 26 - 220 gallon (140 - 830 L) tanks

Requires 1.0" hole in top of tank for bulkhead fitting

PP version

Suction line

1/4" x 3/16"

790368

1/2" x 3/8"

790370

2798/R

Low Flow Pump Accessories: Float Switches for D series pumps

Description	Part No.
-------------	----------

Float switches, single stage



2820/4

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

For minimum level indication with simultaneous shutdown of the metering pump. With a flat connector for direct connection to the D series ProMinent metering pumps.

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 flat connector	cable length	6 ft. (2 m)	790412
		15 ft. (5 m)	790470

PVC body, foamed PP float 7/8" (21 mm) dia., PE cable

PVC with flat connector	cable length	6 ft. (2 m)	790414
		15 ft. (5 m)	790468

PVDF body, PVDF float 1" (25 mm) dia., PE cable

PVDF with flat connector	cable length	6 ft. (2 m)	790416
		15 ft. (5 m)	790472

Float switch weights



1086/4

Ceramic weight

1.53" dia. x 1.26"	with oval opening .51" x 1.06"	
(39 mm x 32 mm)	(13 mm x 27 mm)	404003

With single stage float switch, the weight may be slid over the flat connector needed for D-pumps.

Note: Not for use in fluoride applications (e.g. hydrofluosilicic acid), use PVC weight.

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.

Low Flow Pump Accessories:

Suction Assemblies for D series pumps

Description	Part No.
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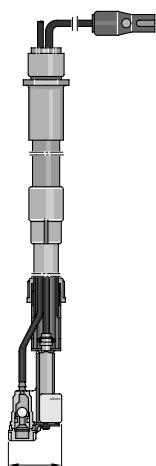
Suction assemblies, single-stage

Including foot valve, rigid supporting pipe, suction line and float switch with 6 ft. (2 m) cable. For use in drums or tanks with mixers, which could tangle flexible suction tubing or float switch cables.

Single-stage: with *flat connector* for D series pumps.

PP version: PP float switch, PE suction line

PVC version: PVC float switch, PE suction line



2798/F

Adjustable PP suction assembly, with bulkhead fitting for 1" opening and single-stage float switch for tanks

With PP foot valve, PE suction hose, PP supporting pipe and union.
PP single-stage float switch with flat connector

Length-adjustable

Size II 26" to 41" (660 mm to 1040 mm) for 26 - 220 gal. (140 - 830 L) tank

Requires 1.0" hole in top of tank for bulkhead fitting

PP version

Suction line

1/4" x 3/16"

790356

1/2" x 3/8"

790358

PVC version

1/4" x 3/16"

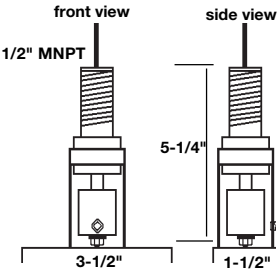
790350

1/2" x 3/8"

790352

Low Flow Pump Accessories: gamma Diaphragm-failure Detector, Signal Horn

Description	Part No.
Diaphragm-failure detector	



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 of a float switch PVC/PE, clear PVC column, tube connectors and connecting tube. Switch closure, max. contact rating 60 VAC, 300 mA, 5 W.

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

N/O
N/C

7803640
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 gamma/a & b pumps or could stop any gamma pump if plugged into the float switch port. Connections available upon request.

Signal horn and strobe light



Signal Horn

115 V, 60 Hz, 95 dB, NEMA 4X (e.g. in conjunction with fault annunciating relay or relay combination)

7705004



Amber signal strobe light

115 V, 60 Hz, NEMA 4X (e.g. for use in conjunction with fault annunciating relay or relay combination)

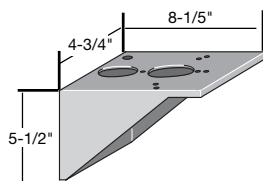
7914785

Low Flow Pump Accessories: Wall Brackets, Universal Switchover Box

Description

Part No.

Wall mounting bracket for metering pumps



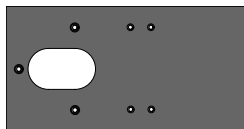
pk_1_092

Made of fiberglass-reinforced PPE, with wall-plugs and screws, accepting a gamma, beta, Pneumados, alpha or the D series metering pump. Pumps can be mounted either parallel or perpendicular to the wall, except the mikro g/5 and gamma/5 pumps, which can only be mounted parallel to the wall.

PPE wall mounting bracket

810164

Adapter plate



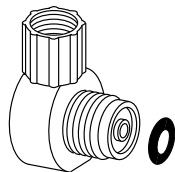
pk_1_121

With fixtures, for vertical wall-mounting of beta or gamma pumps with auto-degassing liquid ends. Used with PPE wall console.

PP adapter plate

1003030

Right-angled PVC threaded connector



Connector for the beta and gamma/L auto-degassing liquid ends required when mounting multifunction valves; optionally used to direct discharge flow upwards. Angle union 90°.

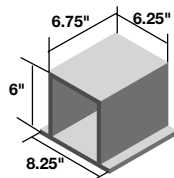
Type PCB (PVC/Viton®)

1003318

Type PCE (PVC/EPDM)

1003472

Floor mounting bracket for metering pumps



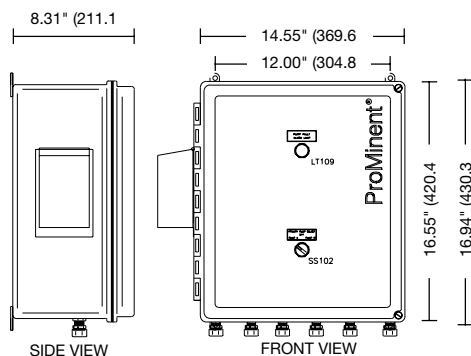
Polypropylene floor mounting bracket accepts pumps parallel to the floor.

PP floor mounting bracket

7740361

Universal Switchover Box

Automatic backup protection for ProMinent® microprocessor based electronic metering pumps. Accepts Manual, 4-20 mA Analog, or External contact modes of operation, and can switch operation back and forth between two metering pumps based on an external dry contact opening and closure. Pumps must be equipped with an alarm relay output. The unit is equipped with a 120 VAC power cord and a weatherproof duplex receptacle for metering pumps power. Specify control mode of metering pumps when ordering (i.e. Remote 4-20 mA analog Pacing or Water Meter Contact Pacing).



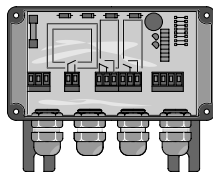
7951130

Low Flow Pump Accessories: Relay Combination, Contact Repeater

Description

Part No.

Switchgear



1491/4

Relay combination

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

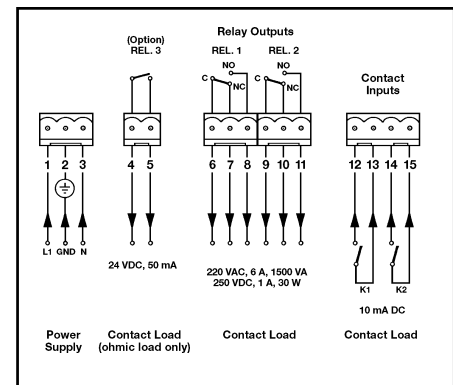
When contact K2 is closed - relay 2 pulls in

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



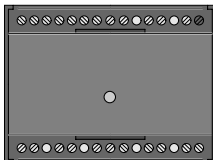
Power cord, 6 ft. (2 m) 115 V plug

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).

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

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

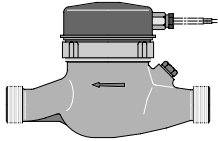
Description

Part No.

Pulse-type water meters for potable water

Contact water meter – US GPH

max. operation temperature 104°F.

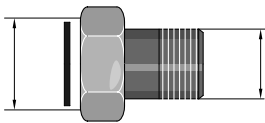


1137/4

Pipe Coupl. Size in.	Min. Flow Rate in			Max. Flow Rate in			Press. Loss Max. Flow Rate		
	GPM	GPH	(L/h)	GPM	GPH	(L/h)	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 (MNPT x FNPT).

*Please specify pulse rate desired



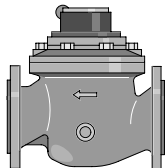
1139/4

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

3/4"	7359021
1"	7359022
1-1/2"	7359023
2"	7359024

Contact water meter – US GPH

max. operation temperature 104°F.



1138/4

Min. Flow Rate in			Max. Thru-Put		Pipe Coupl. Size in.	Install. Length in.	Standard Gallon/ Pulse	Weight lb. (kg)	
GPM	GPH	(L/h)	GPM	GPH					
2.6	156	(590)	650	39000	3" ASA	9" (225 mm)	10	42 (19)	7304512
4	240	(908)	1100	66000	4" ASA	10" (251 mm)	10	51 (23)	7304513
11	660	(2498)	1875	112500	6" ASA	12" (298 mm)	25	89 (40)	7304514

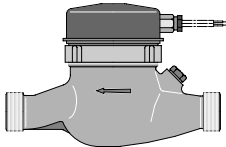
Pulse rates

		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

Low Flow Pump Accessories:

Pulse-type Water Meters – GPH Scale

Description	Part No.																																																		
Contact water meter – US GPH																																																			
Warm water up to 248°F																																																			
	ND 16, design M-T-H-KGm, as above.																																																		
	<table><tr><th>Pipe Coupl. Size in.</th><th colspan="3">Min. Flow Rate in</th><th colspan="3">Max. Flow Rate in</th><th colspan="2">Press. Loss Max. Flow Rate</th><th></th></tr><tr><th></th><th>GPM</th><th>GPH</th><th>(L/h)</th><th>GPM</th><th>GPH</th><th>(L/h)</th><th>psig</th><th>(bar)</th><th></th></tr><tr><td>3/4"</td><td>0.5</td><td>30</td><td>(113)</td><td>20</td><td>1200</td><td>(4542)</td><td>14.5</td><td>(1)</td><td>7304480</td></tr><tr><td>1"</td><td>0.6</td><td>36</td><td>(136)</td><td>50</td><td>3000</td><td>(11356)</td><td>14.5</td><td>(1)</td><td>7304483</td></tr><tr><td>1-1/2"</td><td>1.0</td><td>60</td><td>(227)</td><td>100</td><td>6000</td><td>(22712)</td><td>14.5</td><td>(1)</td><td>7304484</td></tr></table>	Pipe Coupl. Size in.	Min. Flow Rate in			Max. Flow Rate in			Press. Loss Max. Flow Rate				GPM	GPH	(L/h)	GPM	GPH	(L/h)	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
	Pipe Coupl. Size in.	Min. Flow Rate in			Max. Flow Rate in			Press. Loss Max. Flow Rate																																											
		GPM	GPH	(L/h)	GPM	GPH	(L/h)	psig	(bar)																																										
	3/4"	0.5	30	(113)	20	1200	(4542)	14.5	(1)	7304480																																									
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1-1/2"	1.0	60	(227)	100	6000	(22712)	14.5	(1)	7304484																																										

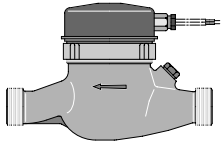
Note: Price includes two screw fittings.

*Please specify pulse per gallon rate desired.

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

Description

Part No.



1137/4

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

$Q_{max} = Q_n$ NG = Nominal size (m3/h)	Connections in.	Overall length w/o unions mm	Standard K factor	
5	3/4"	190 mm (7.5")	1	304434
10	1"	260 mm (10.2")	1.5	304435
20	1-1/2"	300 mm (11.8")	2	304436
30	2"	270 mm (10.6")	4	304438

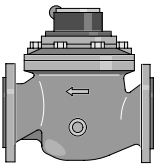
Note: Price includes two screw fittings.

*Please specify pulse per litre 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

Q_{max}/Q_n (m3/h)	Connections in.	Overall length mm	Pulse spacing	
110/55	3" ASA	225 mm (9")	Please call	304439
180/90	4" ASA	251 mm (10")		304442
350/175	6" ASA	298 mm (12")		304443

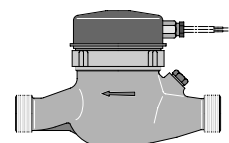
Low Flow Pump Accessories:

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



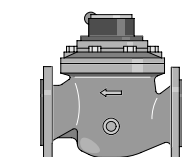
1137/4

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

Q_{max}/Q_n (m3/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.

*Please specify pulse per litre rate desired.



1138/4

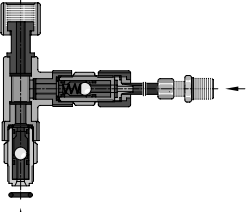
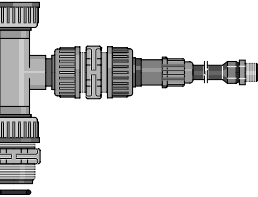
Pulse-type water meters, for hot water up to 120°C, 3" ...6" flanged

as above.

Q_{max}/Q_n (m3/h)	Connections in.	Overall length mm	Pulse spacing	
100/40	3" ASA	225 mm (9")	Please call	304490
150/60	4" ASA	251 mm (10")		304495
300/150	6" ASA	298 mm (12")		304498

Low Flow Pump Accessories: Flushing Devices

Description	Part No.
Flushing devices	

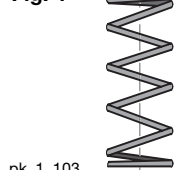
<div> <div>Fig. 1</div>  <div>2152/3</div> </div>	<p>To flush and clean liquid end, discharge line and injection valve, and to protect against deposits and crystallization. Manual or timer-controlled device. To be fitted to the suction connector of the metering pump (also suitable for retrofitting). The automatic version comprises flushing device, timer, solenoid valve and the required connectors.</p>	
	<p>Flushing device, manual, PP4/PP5 version</p>	
	<p>For tubing connectors 1/4" x 3/16" and 1/2" x 3/8" (Fig. 1)</p>	809909
	<p>For 1/2" MNPT connection for g/4 PP4/5, g/5 0423 and 0230 (Fig. 2) For 1/2" MNPT connection for g/5 PP4/5 series</p>	7809917 7809919
<div> <div>Fig. 2</div>  <div>2160/3</div> </div>	<p>Flushing device, manual, PVC version</p>	
	<p>For tubing connectors 1/4" x 3/16" and 1/2" x 3/8" (Fig. 1)</p>	809925
	<p>For 1/2" MNPT connection for g/5 0423 and 0230 (Fig. 2)</p>	7809926
	<p>Note: Call for info on automatic devices.</p>	

Low Flow Pump Accessories: Special Valve Springs and Valve Balls

Description	Part No.
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Valve springs

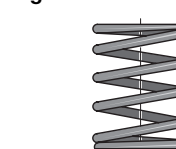
Fig. 1



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



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.

	Pressure Rating psig (bar)		Material of Construction	Part No.
Suction and Discharge Valves Model #'s: G/b 1000,1601, 1201, 0803,1002; BT/4 & G/L 1000, 1601, 1602, 1005, 1605 (Fig. 1)	1	(0.05)	316 SS	469406
	14	(1.0)	316 SS	469401
Suction and Discharge Valves, and Injection Valves Model #'s: G/b 0308, 0215, 0212, all g/5's (except 0423, 0230 and PP4/PP5), plus Injection Valves: Models 1000, 1601, 1201, 0803, and 1002 BT/4 & G/L 0708, 0413, 0220, 1008, 0713, 0420, 0232 (Fig. 2)	1	(0.05)	Hastelloy C	469403
	7	(0.5)	Hastelloy C	469404
	7	(0.5)	PVDF-coated Hastelloy C	818590
	14	(1.0)	Hastelloy C	469413
	14	(1.0)	PVDF-coated Hastelloy C	818536
	29	(2.0)	Hastelloy C	469410
Suction and Discharge Valves Model #'s: G/b 1002 PP4/PP5, 0423, 0230, plus Injection Valves: Models 0423, 0230	1	(0.05)	Hastelloy C	469114
	1	(0.05)	302 SS	7469401
	7	(0.5)	Hastelloy C	469115
	7	(0.5)	PVDF-coated Hastelloy C	818515
	14	(1.0)	Hastelloy C	469119
Suction and Discharge Valves: Model #'s: G/b 1006, 1310, 0813 PP4/PP5 only, plus Injection Valves: Models 1006, 1310 and 0813 PP4/PP5	1	(0.05)	Hastelloy C	469107
	1	(0.05)	302 SS	7469404
	7	(0.5)	Hastelloy C	469108
	7	(0.5)	PVDF-coated Hastelloy C	818516
	14	(1.0)	Hastelloy C	469116
Discharge Valves Model #'s (w/ auto-degassing): G/b NS and ES 1601/02, 1201/03, 0803/06, 1002/03 BT/4 & G/L 1601,1602, 1005, and 1605	21	(1.5)	Hastelloy C	791052

***Note:** Valve springs for NS/ES liquid ends can only be used with the discharge valve.

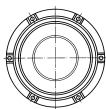
Valve Balls

	Material	Dimensions in. (mm)		Part No.
For use with 4.8 mm valve	PTFE	1/4"	(4.8)	7404205
	SS	1/4"	(4.8)	7404233
	Ceramic	1/4"	(4.8)	404201
For use with 9.5 mm valve only	PTFE	1/2"	(9.5)	7404206
	SS	1/2"	(9.5)	7404240
For use with 9.2 mm (standard) valve	Ceramic	1/2"	(9.2)	404281

Low Flow Pump Accessories: Pump Diaphragms and Fluoride Saturator

Description	Part No.
-------------	----------

Viton® pump diaphragm



1047_4_1

ProMinent pump diaphragm made from a steel core with Viton® facing.
Particularly suited for media tending to crystalize.
Maximum working pressure 87 psig (6 bar).

Type, for pump type:

g/41601; D 1601	811303
g/41201; D 1201	811304
g/4 0803; D 0803	811305
g/4 1002, g/5 1602; alpha 1001, 1002, 1003; D 1002	811306
g/4 0308; g/5 1605, 1006; D 0308	811307
g/4 0215; g/5 1310, 0613; D 0215	811308
g/5 0813, 0417	811309
g/5 0423, 0230	811310

Fluoride Saturator

Automatic, up-flow type saturator for use with polyethylene, 66 gallon tank.	7740830
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