

ProMinent® **CONCEPT^{PLUS}**

solenoid driven diaphragm type metering pump

Affordable - Versatile - Durable

The **CONCEPT^{PLUS}** pump series covers a capacity range of 0.16–3.57 gph (0.6–13.5l/h) at pressures 145 – 21 psig. Its compact construction and features make it ideal for use in flow proportional or on – off control chlorination applications. It easily mounts onto a tank or wall mount bracket and fits into other applications such as grinding systems, car-washing systems, finishing machines, etc. Adjustment of the pump capacity is via the stroke length in the range of 10-100% or can be set at 1 of the 4 stroke frequency settings. This gives an adjustment ratio of 1 : 40. In addition to manually setting the stroke frequency, the pump

can also be set up for external control for use with contact water meters for flow proportional chemical addition or accept a signal from any control system which can provide a voltage free pacing signal. Unlimited flexibility means saving on storage costs. The material combination of NPB and PPE is

available for dosing heads, providing a solution for almost every type of chemical in the area of water treatment. **CONCEPT^{PLUS}** offers uncompromising quality and reliability at the best possible price.



ProMinent® Concept Plus

Benefits

Affordability - (low operation and installation costs)

Durability - (PP and Acrylic liquid ends)

Versatility - compact construction ideal for tank or bracket mounted installations

- foot or wall mounting
- optional “external contact frequency control” available

CONCEPT^{PLUS}

ProMinent®

ProMinent® CONCEPT PLUS

solenoid driven diaphragm type metering pump

Technical Data

CONCEPT PLUS

Pump Type CNPA	Pump Capacity at Maximum Back Pressure				Max. Stroke Rate Stroke/ min.	Output per Stroke mL/ stroke	Max. Suction Lift (water)		Suction/ Discharge Connector O.D. x I.D. (in.)	Shipping Weight (approx.)	
	psig	(bar)	U.S. GPH	(L/h)			ft.	(m)		lbs.	(kg)
1000 NPB	145	(10)	0.16	(0.6)	180	0.06	20	(6)	1/4 x 3/16	3.97	(1.8)
1000 PPE	145	(10)	0.16	(0.6)	180	0.06	20	(6)	1/4 x 3/16	3.97	(1.8)
1601 NPB	232	(16)	0.26	(1.0)	180	0.09	20	(6)	1/4 x 3/16	3.97	(1.8)
1601 PPE	232	(16)	0.26	(1.0)	180	0.09	20	(6)	1/4 x 3/16	3.97	(1.8)
1002 NPB	145	(10)	0.53	(2.0)	180	0.19	16.4	(5)	1/4 x 3/16	3.97	(1.8)
1002 PPE	145	(10)	0.53	(2.0)	180	0.19	16.4	(5)	1/4 x 3/16	3.97	(1.8)
0704 NPB	102	(7)	1.03	(3.9)	180	0.36	13	(4)	1/4 x 3/16	3.97	(1.8)
0704 PPE	102	(7)	1.03	(3.9)	180	0.36	13	(4)	1/4 x 3/16	3.97	(1.8)
0308 NPB	43.5	(3)	2.11	(8)	180	0.74	6.56	(2)	1/2 x 3/8	3.97	(1.8)
0308 PPE	43.5	(3)	2.11	(8)	180	0.74	6.56	(2)	1/2 x 3/8	3.97	(1.8)
0213 NPB	21.76	(1.5)	3.57	(13.5)	180	1.25	4.92	(1.5)	1/2 x 3/8	3.97	(1.8)
0213 PPE	21.76	(1.5)	3.57	(13.5)	180	1.25	4.92	(1.5)	1/2 x 3/8	3.97	(1.8)

Liquid End Materials of Construction

Material Code	Dosing Head	Suction/Discharge Connectors	Seals	Valve Balls
PPE	Polypropylene	Polypropylene	EPDM	Ceramic
NPB	Acrylic	PVC	Viton®	Ceramic

Viton® is a registered trademark of DuPont Dow Elastomers. DEVELOPAN® diaphragm with PTFE coating in all models

Identity Code:

Series:
CNPa Concept PLUS

1000 0704* pump version:
1601 0308
1002 0213

PP NP Liquid end materials:
Polypropylene
Acrylic/PVC

B E Seals:
Viton B
EPDM
Viton is a registered trademark of DuPont Dow Elastomers

2 Liquid end version:
3 With bleed valve, w/o valve springs* (* 0704 PP model not available with bleed valve)
With bleed valve, w/ valve springs (consult factory for pricing)

0 Hydraulic Connector:
Standard (In accordance with technical data)

0 Labeling:
Standard with logo

A Electrical connection:
D 1 ph 230 V 50/60 Hz (Euro plug)
U 1 ph 115 V 50/60 Hz (US/Canada plug)
1 ph 230 V 50/60 Hz (US/Canada plug)

0 External control:
B Standard (w/o external control)
With external control (2m cable)

1 Accessories:
With accessories (foot valve, injection valve, tubing)

CNPa 1000 NP B 2 0 0 D 0 1

ProMinent Fluid Controls, Inc. (USA)
136 Industry Drive
Pittsburgh, PA 15275
Tel: (412) 787-2484
Fax: (412) 787-0704

ProMinent Fluid Controls Ltd. (Canada)
490 Southgate Drive,
Guelph, ON N1G 4P5
Tel: (519) 836.5692
Fax: (519) 836.5226

Please visit us on the web
(USA) www.prominent.us
(Canada) www.prominent.ca
(Germany) www.prominent.com
pn: 7750012

ProMinent® CONCEPT PLUS

ProMinent® CONCEPT

Solenoid Diaphragm Metering Pump

FEATURES

- Microprocessor-based
- Manual or Manual/External Control
- Continuous stroke length adjustment from 0 to 100%
- Maximum stroke length: 1.25 mm
- Maximum stroke rate: 120 spm
- Repeatability +/- 2% when used according to operating instructions
- Capacity range 0.26-3.91 gph (1.0-14.8 L/h)
- Liquid end materials: PP, Acrylic



ProMinent's CONCEPT metering pump is easy to operate and proven for accuracy and reliability. It is used in water preparation and treatment processes for pumping alkaline solutions, acids, disinfectants, flocculants and biocides.

The Drive Unit

Pump housing: Fiberglass-reinforced PPE plastic, with a NEMA 4X enclosure rating to protect against corrosion, dust and water.

Solenoid drive: Short-stroke solenoid with a maximum stroke length of 0.05" (1.25 mm).

The Diaphragm

Constructed of fabric-reinforced EPDM vulcanized onto a steel core and a PTFE facing. It is chemically resistant against virtually all process fluids and can be used over a wide temperature range.

Control

Control options are Manual or Manual/External Pulse. A three position switch sets the stroke rate at 100%, 50% or 25% (120/60/30 spm) with manual control and at 100% (120 spm), 50% (60 spm) or external pulse/off with combined control. Pulse control requires an optional universal control cable.

The Liquid End

Reliability and metering accuracy are achieved by the use of double ball check valves on the suction and discharge ports of the CONCEPT metering pumps.

Liquid end materials are Polypropylene with EPDM seals (PP) or Acrylic/PVC with Viton® seals (NP). All liquid ends have ceramic valve balls.

Ambient Temperature Range: 14°F (-10°C) to 113°F (45°C).

Max. solids size in fluid: 1/4" valves: 15µ; 1/2" valves: 50µ

Power Supply: 115 VAC, single phase, 50/60 Hz, with a 1.15 service factor. Supplied with a 6' (2m) 2 wire + ground power cord.

Warranty: Two years on drive, one year on liquid end

Industry Standards: CSA approval available at additional cost in U.S., standard in Canada. CE available.

TECHNICAL DATA

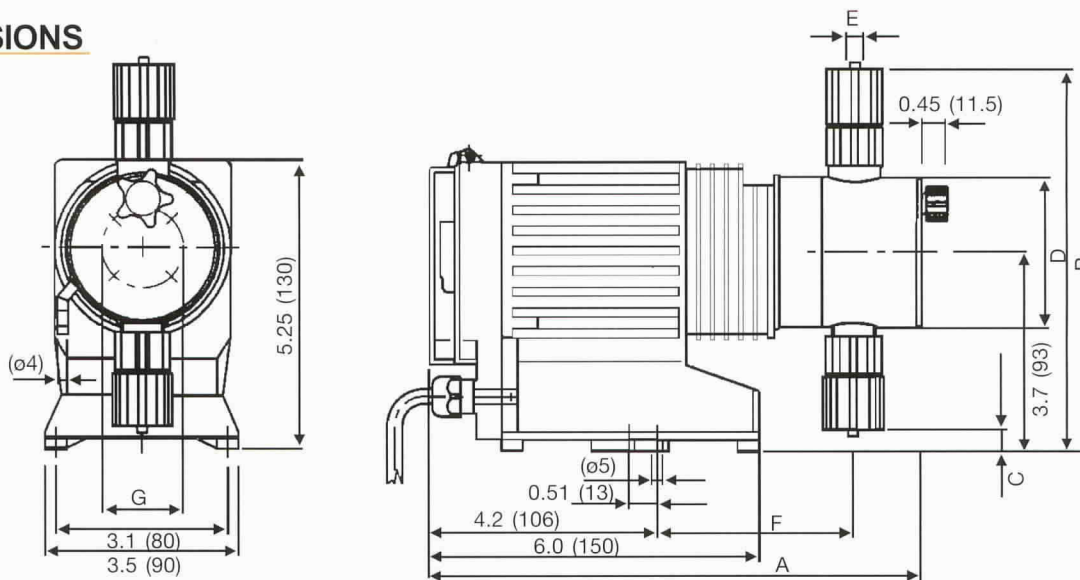
Pump Version	Capacity at Maximum Backpressure			Capacity at 1/2 Maximum Backpressure			Standard Suction/Discharge Connectors O.D. x I.D. inches	Pre-Primed Suction Lift		Shipping Weight
	psig (bar)	U.S. GPH (L/h)	mL/stroke	psig(bar)	U.S. GPH (L/h)	mL/stroke		ft. (m)		
CONb										
1601	232 (16)	0.26 (1.0)	0.14	116 (8)	0.32 (1.2)	0.17	1/4 x 3/16	19.7 (6)		5.5 (2.5)
1201	174 (12)	0.45 (1.7)	0.24	87 (6)	0.50 (1.9)	0.27	1/4 x 3/16	19.7 (6)		5.5 (2.5)
0803	116 (8)	0.90 (3.4)	0.48	58 (4)	1.00 (3.8)	0.53	1/4 x 3/16	9.8 (3)		5.5 (2.5)
0308	44 (3)	2.22 (8.4)	1.17	21 (1.5)	2.40 (9.1)	1.27	1/2 x 3/8	19.7 (6)		6.0 (2.7)
0215	21 (1.5)	3.91 (14.8)	2.05	14 (1)	4.20 (15.8)	2.20	1/2 x 3/8	4.9 (1.5)		6.4 (2.9)

Technical information subject to change

Part # 7750012

CT-CON-1/01-NA

DIMENSIONS



Dimensions in inches (mm)

CONCEPT		A	B	C	D	E	F	G
1601, 1201	PP	8.9 (225)	7.1 (180)	0.4 (11)	2.8 (70)	1/4 x 3/16	3.5 (88)	1.5 (38)
0803	NP	8.8 (223)	6.8 (173)	0.5 (13)	2.8 (70)	1/4 x 3/16	3.5 (88)	1.5 (38)
0308	PP	8.6 (218)	7.1 (180)	0.4 (11)	2.8 (70)	1/2 x 3/8	3.2 (82)	2.0 (50)
	NP	8.5 (216)	7.1 (181)	0.2 (5)	3.3 (85)	1/2 x 3/8	3.2 (82)	2.0 (50)
0215	PP	8.6 (218)	7.5 (191)	0.0 (0)	3.5 (90)	1/2 MNPT	3.3 (83)	2.6 (66)
	NP	8.5 (216)	7.4 (189)	-0.1 (-3)	3.9 (100)	1/2 MNPT	3.3 (83)	2.6 (66)

METERING SYSTEMS

Chemical Tanks

Translucent UV-stabilized polyethylene tanks with gallon/Litre scale, screw cap and mounting platform for metering pump.



Capacities: 15-132 gallons (60-500 L)

Max. Allowable Temperature: 180°F (82°C)

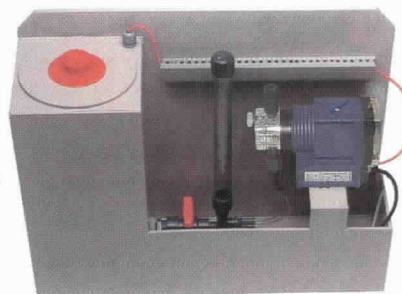
Tank Opening Diameter: 6.5" (1.65mm)



CHLOROPACK System

Compact feed system designed for easy chemical delivery in low flow applications with limited space requirements.

Accessories include PVC calibration column, isolation valve, and a single-stage float switch for minimum level indication and shutdown of the metering pump.



Material: welded polypropylene

Tank Capacity: 8 gallons (30 Litres)

Dimensions: 34"L x 18"H x 8.5"D
(86cm x 46cm x 22cm)

Empty Weight: 20 lbs. (44 kg)

ProMinent®

Identity code: alpha/b metering pumps

Series:
ALPb alpha pump Version b

		Pump version: Capacity at Maximum Backpressure (60 Hz power supply) U.S. <table border="1"> <thead> <tr> <th></th> <th>psig</th> <th>(bar)</th> <th>GPH</th> <th>(L/h)</th> </tr> </thead> <tbody> <tr> <td>1001</td> <td>145</td> <td>(10)</td> <td>0.37</td> <td>(1.4)</td> </tr> <tr> <td>1002</td> <td>145</td> <td>(10)</td> <td>0.76</td> <td>(2.9)</td> </tr> <tr> <td>1003</td> <td>145</td> <td>(10)</td> <td>1.11</td> <td>(4.2)</td> </tr> <tr> <td>0804</td> <td>109</td> <td>(7.5)</td> <td>1.32</td> <td>(5)</td> </tr> <tr> <td>0808</td> <td>109</td> <td>(7.5)</td> <td>2.51</td> <td>(9.5)</td> </tr> <tr> <td>0612</td> <td>80</td> <td>(5.5)</td> <td>3.70</td> <td>(14)</td> </tr> <tr> <td>0419</td> <td>58</td> <td>(4)</td> <td>5.68</td> <td>(21.5)</td> </tr> </tbody> </table>			psig	(bar)	GPH	(L/h)	1001	145	(10)	0.37	(1.4)	1002	145	(10)	0.76	(2.9)	1003	145	(10)	1.11	(4.2)	0804	109	(7.5)	1.32	(5)	0808	109	(7.5)	2.51	(9.5)	0612	80	(5.5)	3.70	(14)	0419	58	(4)	5.68	(21.5)
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ALPb
1001
PP1
0
6
0
D
0

Specifications: alpha/b

<i>Maximum stroke length:</i>	0.08" (2 mm) for models 1001, 1002, 1003 0.12" (3 mm) for models 0804, 0808, 0612, 0419		
<i>Materials of construction</i>			
<i>Housing:</i>	Glass-filled Luranyl [™] (PPE)		
<i>Diaphragm:</i>	PTFE faced EPDM with steel core and Nylon reinforcement		
<i>Liquid end options:</i>	Polypropylene, Acrylic/PVC		
<i>Enclosure rating:</i>	Open Drip Proof (ODP) motor, fan-cooled (use indoors or protected from outdoor elements)		
<i>Motor insulation class:</i>	F		
<i>Power supply:</i>	115 V or 230 VAC, 1 phase, 50/60 Hz (Note: different performance with 50 and 60 Hz power)		
<i>Service factor:</i>	1.10 (100 - 120 VAC or 200 - 240 VAC)		
<i>Motor protection:</i>	Thermal cutout switches motor off at 223°F (106°C), switches pump back on after motor has cooled		
<i>Check valves:</i>	Double ball		
<i>Repeatability of the metering:</i>	When used according to operating instructions, ±5%		
<i>Power cord:</i>	6 foot (2 m)		
<i>Ambient temperature range:</i>	14°F (-10°C) to 113°F (45°C)		
<i>Max. fluid operating temperatures:</i>	<u>Material</u>	<u>Constant</u>	<u>Short Term</u>
	Acrylic/PVC	113°F (45°C)	140°F (60°C)
	Polypropylene	122°F (50°C)	212°F (100°C)
<i>Average power consumption:</i>	115 V 60 Hz, 50 W, 0.9 A 230 V 60 Hz, 45 W, 0.35 A		
<i>Maximum starts/stops:</i>	60 per minute (0.5 sec. on, 0.5 sec. off)		
<i>Warranty:</i>	1 year		
<i>Industry standards:</i>	CSA inspection available at additional cost in U.S., standard in Canada. Electrical safety to DIN VDE 0700 / EN 335.1 / IEC 60335.1 standard		
<i>Valve threads:</i>	NP6 and PP: M20 x 1.5 (provided with adapters to 1/2" x 3/8" tubing)		
<i>Standard Production Test:</i>	100% tested for capacity at maximum pressure		
<i>Max. solids size in fluid:</i>	50μ		

Data required to size metering pumps and accessories

Complete this data sheet and fax it to ProMinent Pittsburgh at (412) 787-0704 or ProMinent Canada at (519) 836-5226 for a review of the system hydraulics and recommendations on pump and accessory selection.

Desired capacity min./max.	GPH (l/h) _____
Available power supply	_____ V, _____ Hz, _____ phase
Working temperature min./max.	°F (°C) _____
Description of process fluid	_____
Concentration %	_____
Solids content %	_____
Absolute viscosity, cP	_____
Vapor pressure at working temperature	psig (bar) _____
Remarks (e.g. abrasive, developing gases and fumes, flammable, corrosive)	_____ _____
Suction conditions:	
Suction lift min./max., or	ft. (m) _____
Positive suction head min./max., or	ft. (m) _____
Pressure in chemical tank	psig (bar) _____
Length of suction line	ft. (m) _____
Size (I.D.) of suction line	in. (mm) _____
Number of valves and fittings in suction line	_____
Discharge conditions:	
Back-pressure min./max.	psig (bar) _____
Discharge head min./max.	ft. (m) _____
Negative discharge head min./max.	ft. (m) _____
Length of discharge line	ft. (m) _____
Size (I.D.) of discharge line	in. (mm) _____
Number of valves and fittings in discharge line	_____

System sketch

ProMinent® alpha/b

Accessory kits

Description	Part No.
Accessory kits	

Pump includes tubing, foot valve or injection valve as standard.

Accessory kits for alpha pumps: including 5 ft. (1.5 m) of suction tubing, 10 ft. (3 m) of discharge tubing, foot valve and injection valve:

Tubing Size (in.) (select to fit pump)	Material Code	Suction Tubing	Discharge Tubing	
1/2 x 3/8	PP1	PVC	PE	7809404
1/2 x 3/8	PP2, PP3	PVC	PE	7809406
1/2 x 3/8	NP6, NP3	PVC	PE	7809402

PVC 1/2" x 3/8" suction tubing is pliable, allowing foot valve to sink. PE discharge tubing is rigid. Pressure ratings are:

PVC: 7 psig PE: 100 psig.

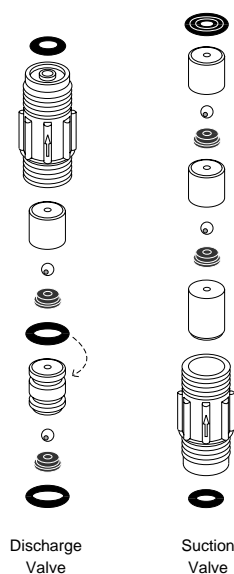
ProMinent® alpha/b Materials

Description

Part No.

Spare parts and Liquid ends

Complete liquid ends include pump head, valves, mounting screws, diaphragm and backplate. Spare parts kits includes:



PP, PE & NP
Liquid Ends
1 Diaphragm
1 Suction Valve
1 Discharge Valve
2 Adapter Sets
1 Valve Ball
1 Set of Seals

alpha/b

Liquid End Version	Material Code	Liquid End	Spare Parts Kit	Spare Valves Only (adapter sets not included)		Diaphragm
				Suction	Discharge	
1001,	PP1	791521	740388	792644	740350	811456
1002,	PP3	791523	740387	792646	740351	811456
1003	NP3	1001629	740385	792026	740348	811456
0804,	PP1	791522	740015	792644	740350	794175
0808,	PP2	791524	740017	792646	740351	794175
0612,	NP6	791526	740013	792026	740348	794175
0419						

alpha/a (old style)

Liquid End Version	Material Code	Liquid End	Spare Parts Kit	Spare Valves Only (adapter sets not included)		Diaphragm
				Suction	Discharge	
1001	PE1	7912322	912689	809439	809438	811456
	PE2	7912336	910769	809449	809448	811456
	NP3	7912321	912688	809413	809412	811456
1002, 1003	PP1	7912327	912689	809439	809438	811456
	PP2	7912337	910769	809449	809448	811456
	NP3	7912321	912688	809413	809412	811456
0804, 0808, 0612, 0419	PP1	7912338	7912693	809439	809438	791475
	PP2	7912339	7910771	809449	809448	791475
	NP6	7912340	7912692	809413	809412	791475