

ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

ProMinent®

ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

NEW hydraulic motor driven metering pumps provide precise and safe metering for high pressure applications.

The Hydro Series is available in two pump sizes: Hydro/2 pumps range from 2.2 to 15.3 gph (8.4 to 58 L/h); Hydro/3 pumps range from 6 to 38 gph (23 to 144 L/h). SS liquid ends operate at maximum backpressures of 928 or 362 psi (64 / 25 bar); PVDF at 232 psi (16 bar). Maximum stroke length is 0.6" (15mm) and is adjustable within 1% accuracy. Repeatability is +/-1% between 20 and 100% of stroke length when installed and operated according to instructions.

ProMinent® Hydro Main Pump H

The ProMinent® Hydro main pump is a hydraulic diaphragm metering pump enclosed in a sturdy cast aluminum housing. Each pump comes with a NEMA 56C flange as standard. The Hydro/2 is driven by a 3/4 HP single or 3-phase motor; the Hydro/3 by a 1 HP (3-phase) or 1-1/2 (single phase) motor. Both sizes offer three gear ratios, two liquid end sizes and two liquid end materials (PVDF, SS).

All Hydro pumps are equipped with an integrated hydraulic pressure relief valve to prevent damage due to pressure overload; a three-layer safety diaphragm and a diaphragm failure monitor to prevent hydraulic oil from mixing with the chemical by signalling rupture of any layer.

ProMinent® Hydro Double-Headed Version D

The double-headed version is equipped with two liquid ends, which operates in push/pull action, 180° out of phase. Each liquid end is provided with a separate stroke length-adjusting knob, enabling each liquid end to operate at a separate, independent feed rate.

ProMinent® Hydro Add-On Pumps Version A

The Hydro add-on pumps apply the same principles as the simplex pumps and can operate as a single or double-headed version.



Technical Data: Hydro/2 and Hydro/3 Hydraulic Diaphragm Metering Pumps

ProMinent® Hydro Technical Data:

At 60 Hz (1750 rpm) Capacity at Max. Backpressure				Max. Stroke Rate	Output per Stroke	Max. Suction Lift (water)	Max. Suction Pressure	Suction/ Discharge Connector*	Approximate Shipping Weight w/o Motor
Version	psig (bar)	U.S. GPH	(L/h)	Stroke/ min.	mL/ stroke	ft. (m)	psig (bar)	in. (DN)	lbs. (kg.)
HP2aH**									
064007 PVDF	232 (16)	2.2 (8.4)		72	2	10 (3)	14.5 (1)	1/2 (10)	47.5 (21.5)
064007 SST	928 (64)	2.2 (8.4)		72	2	10 (3)	14.5 (1)	3/8 (10)	50.0 (22.7)
064015 PVDF	232 (16)	4.7 (18)		150	2	10 (3)	14.5 (1)	1/2 (10)	47.5 (21.5)
064015 SST	928 (64)	4.7 (18)		150	2	10 (3)	14.5 (1)	3/8 (10)	50.0 (22.7)
064018 PVDF	232 (16)	5.5 (21)		180	2	10 (3)	14.5 (1)	1/2 (10)	47.5 (21.5)
064018 SST	928 (64)	5.5 (21)		180	2	10 (3)	14.5 (1)	3/8 (10)	50.0 (22.7)
025019 PVDF	232 (16)	6 (23)		72	5.3	10 (3)	14.5 (1)	1/2 (10)	47.5 (21.5)
025019 SST	362 (25)	6 (23)		72	5.3	10 (3)	14.5 (1)	3/8 (10)	50.0 (22.7)
025040 PVDF	232 (16)	12.6 (48)		150	5.3	10 (3)	14.5 (1)	1/2 (10)	47.5 (21.5)
025040 SST	362 (25)	12.6 (48)		150	5.3	10 (3)	14.5 (1)	3/8 (10)	50.0 (22.7)
025048 PVDF	232 (16)	15.3 (58)		180	5.3	10 (3)	14.5 (1)	1/2 (10)	47.5 (21.5)
025048 SST	362 (25)	15.3 (58)		180	5.3	10 (3)	14.5 (1)	3/8 (10)	50.0 (22.7)
HP3aH**									
064019 PVDF	232 (16)	6 (23)		72	5.3	10 (3)	14.5 (1)	1/2 (10)	67.5 (30.6)
064019 SST	928 (64)	6 (23)		72	5.3	10 (3)	14.5 (1)	3/8 (10)	70.0 (31.8)
064040 PVDF	232 (16)	12.6 (48)		150	5.3	10 (3)	14.5 (1)	1/2 (10)	67.5 (30.6)
064040 SST	928 (64)	12.6 (48)		150	5.3	10 (3)	14.5 (1)	3/8 (10)	70.0 (31.8)
064048 PVDF	232 (16)	15.3 (58)		180	5.3	10 (3)	14.5 (1)	1/2 (10)	67.5 (30.6)
064048 SST	928 (64)	15.3 (58)		180	5.3	10 (3)	14.5 (1)	3/8 (10)	70.0 (31.8)
025048 PVDF	232 (16)	15.3 (58)		72	13.4	10 (3)	14.5 (1)	3/4 (15)	67.5 (30.6)
025048 SST	362 (25)	15.3 (58)		72	13.4	10 (3)	14.5 (1)	1/2 (15)	70.0 (31.8)
025100 PVDF	232 (16)	31.7 (120)		150	13.4	10 (3)	14.5 (1)	3/4 (15)	67.5 (30.6)
025100 SST	362 (25)	31.7 (120)		150	13.4	10 (3)	14.5 (1)	1/2 (15)	70.0 (31.8)
025120 PVDF	232 (16)	38.0 (144)		180	13.4	10 (3)	14.5 (1)	3/4 (15)	67.5 (30.6)
025120 SST	362 (25)	38.0 (144)		180	13.4	10 (3)	14.5 (1)	1/2 (15)	70.0 (31.8)

* PVDF valves require MNPT connectors and SST valves require FNPT connectors.

** High viscosity liquid ends are available for viscosities of 1000 cPs and higher on the Hydro/2 025019, 025040 and 025060 versions and the Hydro/3 025048, 025100 and 025150 versions. Delivery is 4-6 weeks. Call factory for more information.

Note: Motors are not included. The Hydro/2 requires a 3/4 HP (single or 3-phase) motor; the Hydro/3 requires a 1 HP (3-phase) or 1-1/2 HP (single phase) motor. NEMA 56C flange is standard.

Wetted Materials of Construction

Material Code	Liquid end	Suction/Discharge Connectors	Seals	Balls
PVT	PVDF (Polyvinylidene fluoride)	PVDF (Polyvinylidene fluoride)	PTFE/Viton®	Ceramic
SST	316 Stainless steel	316 Stainless steel	PTFE/Viton®	Stainless Steel

Viton® is a registered trademark of DuPont Dow Elastomers.

Identity code: Hydro/2 (HP2a)

Series:
HP2a Hydro/2
Version a

H	Main power end
D	Main power end, duplexed
E	Main power end, for add-on drive
F	Main power end, duplexed for add-on drive
A	Add-on drive
B	Duplexed add-on drive

064007	Pump version:
064015	
064018	
025019	
025040	
025048	

SS	Liquid end material:
PV	
	316 Stainless steel
	PVDF

T	Seal material:
	PTFE/Viton® seal
	Viton® is a registered trademark of DuPont Dow Elastomers

0	Diaphragm type:
	Standard multi-layer diaphragm

0	Valve Springs:
1	
D	
	Without springs
	With 2 springs
	Double ball valve

0	Connectors:
	Standard (In accordance with technical data)

0	Labeling:
	Standard with logo

4	Power Supply:
0	
	Without motor, with NEMA 56C flange
	Add-on power end

0	Enclosure rating:
	Standard

0	Stroke sensor:
1	
	Without stroke sensor (Standard)
	With stroke sensor (Consult Factory)

0	Stroke length adjustment:
1	
2	
B	
D	
	Manual (standard)
	With stroke positioning motor, 230 V, 50/60 Hz
	With stroke positioning motor, 115 V, 50/60 Hz
	W/ stroke control motor 4 - 20 mA, 230 V, 50/60 Hz
	W/ stroke control motor 4 - 20 mA, 115 V, 50/60 Hz

0	Hydraulic Oil:
1	
	Standard
	Food products grade

HP2a	H	025040	SS	T	0	0	0	0	4	0	0	0	0
------	---	--------	----	---	---	---	---	---	---	---	---	---	---

Identity code: Hydro/3 (HP3a)

Series:
HP3a Hydro/3
Version a

H	Main power end
D	Main power end, duplexed
E	Main power end, for add-on drive
F	Main power end, duplexed for add-on drive
A	Add-on drive
B	Duplexed add-on drive

064019
064040
064048
025048
025100
025120

Pump version:

SS
PV

Liquid end material:

SS	316 Stainless steel
PV	PVDF

T	PTFE/Viton® seal
---	------------------

Viton® is a registered trademark of DuPont Dow Elastomers

Diaphragm type:

0	Standard multi-layer diaphragm
---	--------------------------------

Valve Springs:

0	Without springs
1	With 2 springs
D	Double ball valve

Connectors:

0	Standard (In accordance with technical data)
---	--

Labeling:

0	Standard with logo
---	--------------------

Power Supply:

4	Without motor, with NEMA 56C flange
0	Add-on power end

Enclosure rating:

0	Standard
---	----------

Stroke sensor:

0	Without stroke sensor (Standard)
1	With stroke sensor (Consult Factory)

Stroke length adjustment:

0	Manual (standard)
1	With stroke positioning motor, 230 V, 50/60 Hz
2	With stroke positioning motor, 115 V, 50/60 Hz
B	W/ stroke control motor 4 - 20 mA, 230 V, 50/60 Hz
D	W/ stroke control motor 4 - 20 mA, 115 V, 50/60 Hz

Hydraulic Oil:

0	Standard
1	Food products grade

HP3a H 064040 SS T 0 0 0 0 4 0 0 0 0

Specifications: Hydro 2 and 3

<i>Pump type:</i>	Hydraulically actuated diaphragm type liquid end		
<i>Maximum stroke length:</i>	0.6" (15 mm)		
<i>Materials of construction</i>			
<i>Housing:</i>	Acrylic resin coated cast aluminum		
<i>Diaphragm:</i>	Multilayer PTFE		
<i>Liquid end options:</i>	<p>PVT* - PVDF Liquid end with PTFE seals, ceramic valve balls and PTFE faced multilayer diaphragm</p> <p>SST - 316 SS Liquid end with PTFE seals, stainless steel valve balls and PTFE faced multilayer diaphragm</p>		
<i>Required Motor HP:</i>	<p>Hydro/2: 3/4 Hp (0.56 KW) single or 3-phase</p> <p>Hydro/3: 1 Hp (0.746 KW) 3-phase or 1.5 Hp (1.1 KW) single phase</p>		
<i>Full Load RPM:</i>	1725 RPM		
<i>Drive:</i>	Worm gear and cam driven piston		
<i>Gear ratios and stroke frequencies:</i> <i>(with 1725 RPM motor)</i>	3 gear ratios; 72, 150, 180 strokes / minute		
<i>Motor mounting flange:</i>	Fits all NEMA 56 C frame motors (motors not included with pump)		
<i>Motor coupling:</i>	Flexible coupling included with pump		
<i>Check valves:</i>	Single ball check on suction and discharge as standard, double ball checks available as an option as per identcode		
<i>Repeatability:</i>	+/-1% in the stroke length range of 20-100% when installed and operated according to instructions		
<i>Maximum fluid operating temperatures:</i>	<u>Material</u>	<u>Constant</u>	<u>Short Term</u>
	PVT	149°F (65°C)	212°F (100°C)
	SST	194°F (90°C)	248°F (120°C)
<i>Maximum solids size in fluid:</i>	0.3 mm; if larger than this provisions have to be made to remove them before coming into the suction line		
<i>Lubrication:</i>	Oil lubricated, (common hydraulic and gear oil)		
<i>Recommended oil:</i>	Mobilube 1 SCH 70 W - 90, ProMinent Part # 1005823		
<i>Oil quantity:</i>		<u>Single Head</u>	<u>Dual Head</u>
	Hydro 2	0.66 Gallons (2.5 Litres)	0.77 Gallons (2.9 Litres)
	Hydro 3	0.92 Gallons (3.5 Litres)	1 Gallon (4.0 Litres)
<i>Recommended oil change interval:</i>	Every 5000 operating hours		
<i>Stroke frequency control:</i>	Remote or automatic frequency control optional with SCR control & DC motor or AC motor and inverter		
<i>Stroke sensor:</i>	Available as an option via the pump identcode		
<i>Stroke length adjustment:</i>	Manual adjustment, automatic stroke length adjustment via 4 to 20 mA available as an option		
<i>Diaphragm failure indication:</i>	Standard feature on all Hydro pumps		
<i>Pressure relief:</i>	Integrated preset hydraulic pressure relief valve is a standard feature on all Hydro pumps		
<i>Sound level:</i>	Less than 70 dB		
<i>Configurations available:</i>	<p>Main drive single head</p> <p>Main drive dual head (180 shifted)</p> <p>Add-on single head</p> <p>Add-on dual head</p>		
<i>Warranty:</i>	2 years on drive, 1 year on liquid end		
<i>Factory testing:</i>	Each pump is tested for capacity at maximum pressure		

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	_____

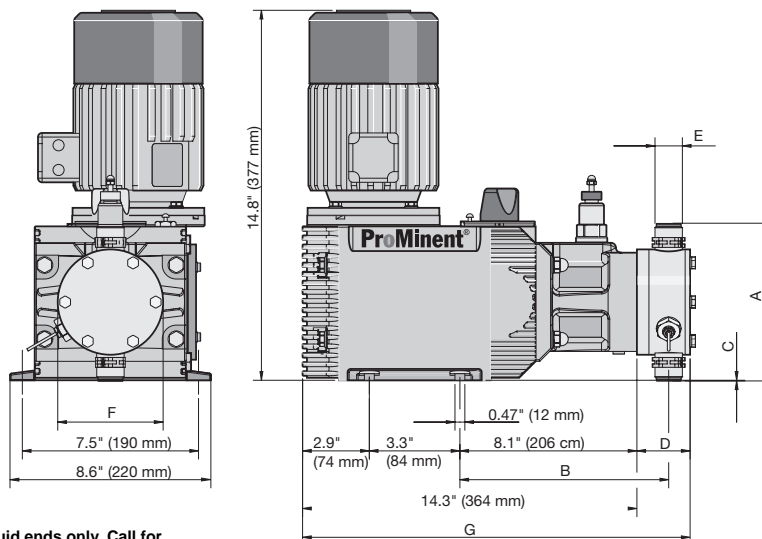
Discharge conditions:

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

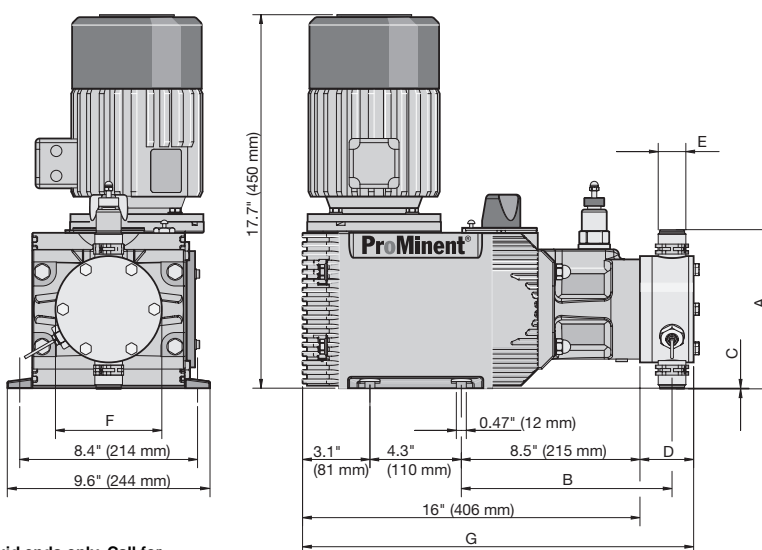
Dimensions: Hydro/2 and Hydro/3 Hydraulic Diaphragm Metering Pumps

Dimensions in inches (mm)



Height dimensions may vary.
Dimensions shown with SS liquid ends only. Call for
dimensions with PVDF liquid ends.

Type Hydro/ 2	A	B	C	D	E	F	G
064007, 064015, 064018							
PVDF	6.0 (152)	9.4 (239)	0.27 (7)	2 (50)	1/2" MNPT	4.3 (108)	16.3 (414)
SS	6.0 (152)	9.4 (239)	0.27 (7)	2 (50)	3/8" FNPT	4.3 (108)	16.3 (414)
025019, 025040, 025048							
PVDF	6.5 (165)	9.4 (240)	0.02 (0.5)	2 (51)	1/2" MNPT	4.3 (108)	16.3 (415)
SS	6.5 (165)	9.4 (240)	0.02 (0.5)	2 (51)	3/8" FNPT	4.3 (108)	16.3 (415)



Height dimensions may vary.
Dimensions shown with SS liquid ends only. Call for
dimensions with PVDF liquid ends.

Type Hydro/ 3	A	B	C	D	E	F	G
064019, 064040, 064048							
PVDF	6.5 (165)	9.4 (240)	0.5 (12.5)	2 (51)	3/4" MNPT	4.3 (108)	17.8 (457)
SS	6.5 (165)	9.4 (240)	0.5 (12.5)	2 (51)	1/2" FNPT	4.3 (108)	17.8 (457)
025048, 025100, 025120							
PVDF	7.5 (191)	9.7 (247)	0.02 (0.5)	2.6 (65)	3/4" MNPT	5 (128)	18.6 (471)
SS	7.5 (191)	9.7 (247)	0.02 (0.5)	2.6 (65)	1/2" FNPT	5 (128)	18.6 (471)

Detailed measurement data sheets available upon request.

ProMinent® Hydro/2 and Hydro/3 Spare Parts

Spare Parts

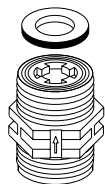
Spare parts kits include:

PVT Liquid ends

- 1 Diaphragm
- 1 Suction valve, complete
- 1 Discharge valve, complete
- 2 Valve balls
- 1 Set of seals, complete
(sleeve rings, ball seat rings, ball seals)

SST Liquid ends

- 1 Diaphragm
- 2 Valve balls
- 1 Set of seals, complete
(sleeve rings, ball seat rings)



Valve
Complete

Spare Parts Hydro/2

Material Code	Liquid End Complete	Spare Parts Kit	Valve Complete	Diaphragm
064007, 064015, 064018 with Liquid end FMH 25 - DN 10				
PVT	1004014	1005548	1002267	1005545
SST	1004378	1005549	809459	1005545
SST	1004378	**1005550	809459	1005545

025019, 025040, 025048 with Liquid end FMH 60 - DN 10

PVT	1004016	1005552	1002267	1005546
SST	1004379	1005553	809459	1005546
SST	1004379	**1005554	809459	1005546

**SS complete with 2 valves

Spare Parts Hydro/3

Material Code	Liquid End Complete	Spare Parts Kit	Valve Complete	Diaphragm
064019, 064040, 064048 with Liquid end FMH 60 - DN 10				
PVT	1004016	1005552	1002267	1005546
SST	1004379	1005553	809459	1005546
SST	1004379	**1005554	809459	1005546

025048, 025100, 025120 with Liquid end FMH 150 - DN 15

PVT	1004018	1005556	792517	1005547
SST	1004017	1005557	809404	1005547
SST	1004017	**1005558	809404	1005547

**SS complete with 2 valves



Multi-layer
Diaphragm