

ProMinent® ProMus

Hydraulic Diaphragm Metering Pumps

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Description:

The ProMus is a motor driven metering pump with a hydraulically actuated diaphragm. The drive case and the hydraulic unit are filled with a liquid that functions as a hydraulic coupling. A plunger connects the drive case with the hydraulic unit. The dosing diaphragm separates the hydraulic part of the pump from the dosing unit. The movement of the diaphragm depends on the amount of liquid displaced by the plunger.



Design Specifications:

The ProMinent ProMus is a motor driven metering pump incorporating a hydraulically balanced Teflon diaphragm. The drive case is cast iron incorporating a worm gear set (5 Ratios available) driving a rotating eccentric. The locking stroke adjuster varies the flow from 100% to 0% in 1% increments. The pump is built in accordance to API 675 standards. The hydraulic system transfers the rotating eccentric motion to diaphragm movement by way of a reciprocating plunger (8 plunger diameters available). The plunger and diaphragm are hydraulically coupled (no mechanical connection). Coupling compliance is precisely controlled by a mechanically actuated replenishment valve, which senses diaphragm position to admit coupling fluid as required. The coupling fluid is automatically degassed to maintain accuracy and drive case is protected from overload by a simple acting relief valve. The hydraulic system is separated from the fluid end by a Teflon diaphragm completely isolating the pumped fluid from the surroundings. The fluid end is currently available in Stainless Steel.

Benefits:

- Hydraulically actuated diaphragm ***ensuring a sealed pumping system for corrosive or toxic chemicals with superior leak protection***
- Built in accordance to API 675 standards ***suitable for heavy industrial applications and specifications***
- Robust cast iron drive construction ***ideal for applications such as boiler feeds, catalyst feed, dye injection and petrochemicals***
- Flexible design for a wide range of applications including ***water treatment and high pressure chemical refining***
- ***Fast and Easy field maintenance with minimal downtime***

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ProMus Series

		At 60 Hz (1750 rpm) Capacity at Max. Backpressure			Gear Ratio	Max. Stroke Rate	Suct./ Discharge Connector*
		psig	U.S. GPH	(L/h)		Stroke/ min.	FNPT/ BSP taper
Version Size 17		Plunger (in.)					
Version Size 17	3/8" Plunger	3500	0.61	(2.3)	50	35	1/4
	3/8" Plunger	3500	0.76	(2.8)	40	43	1/4
	3/8" Plunger	3500	1.02	(3.8)	30	58	1/4
	3/8" Plunger	3500	2.03	(7.6)	15	115	1/4
	3/8" Plunger	3500	2.44	(9.2)	12.5	138	1/4
	7/16" Plunger	3500	0.83	(3.1)	50	35	1/4
	7/16" Plunger	3500	1.04	(3.9)	40	43	1/4
	7/16" Plunger	3500	1.38	(5.2)	30	58	1/4
	7/16" Plunger	3500	2.77	(10.4)	15	115	1/4
	7/16" Plunger	3500	3.32	(12.5)	12.5	138	1/4
Version Size 30							
Version Size 30	5/8" Plunger	2080	1.80	(6.8)	50	35	1/4
	5/8" Plunger	2080	2.25	(8.5)	40	43	1/4
	5/8" Plunger	2080	3.00	(11.3)	30	58	1/4
	5/8" Plunger	2080	6.00	(22.7)	15	115	1/4
	5/8" Plunger	2080	7.20	(27.2)	12.5	138	1/4
	13/16" Plunger	1230	3.04	(11.5)	50	35	3/8
	13/16" Plunger	1230	3.80	(14.3)	40	43	3/8
	13/16" Plunger	1230	5.07	(19.1)	30	58	3/8
	13/16" Plunger	1230	10.1	(38.2)	15	115	3/8
	13/16" Plunger	1230	12.2	(46.1)	12.5	138	3/8
	1-1/8" Plunger	640	6.34	(24.0)	50	35	3/8
	1-1/8" Plunger	640	7.93	(30.0)	40	43	3/8
	1-1/8" Plunger	640	10.6	(40.1)	30	58	3/8
	1-1/8" Plunger	640	21.1	(79.8)	15	115	3/8
	1-1/8" Plunger	640	25.4	(96.1)	12.5	138	3/8
Version Size 40							
Version Size 40	1-3/4" Plunger	265	15.4	(58.2)	50	35	3/4
	1-3/4" Plunger	265	19.2	(72.6)	40	43	3/4
	1-3/4" Plunger	265	25.6	(96.9)	30	58	3/4
	1-3/4" Plunger	265	51.2	(193.8)	15	115	3/4
	1-3/4" Plunger	265	61.4	(232.4)	12.5	138	3/4
	2" Plunger	200	20.1	(76.0)	50	35	3/4
	2" Plunger	200	25.1	(95.0)	40	43	3/4
	2" Plunger	200	33.4	(126.4)	30	58	3/4
	2" Plunger	200	66.8	(252.8)	15	115	3/4
	2" Plunger	200	80.2	(303.5)	12.5	138	3/4
	2-1/4" Plunger	160	25.4	(96.1)	50	35	3/4
	2-1/4" Plunger	160	31.7	(119.9)	40	43	3/4
	2-1/4" Plunger	160	42.3	(160.1)	30	58	3/4
	2-1/4" Plunger	160	84.6	(327.8)	15	115	3/4
	2-1/4" Plunger	160	101.5	(384.2)	12.5	138	3/4

ProMinent®

[illegible]

Specifications: ProMus

Pump type:	Hydraulically actuated diaphragm type liquid end
Maximum stroke length:	20mm
Materials of construction	
Housing:	Cast iron
Diaphragm:	Flat Teflon
Required Motor HP:	1/2 HP
Full load RPM:	1725
Drive:	Uses a hydraulic piston and mechanically actuated Oil replenishment valve to transfer the reciprocating Motion to a flat Teflon diaphragm
Gear ratios/stroke frequencies:	5 gear ratios; 35,43,58,115,138 strokes / minute Note: minimum stroke rate is 29 spm
Motor mounting flange:	Fits all NEMA 56 C frame motors
Motor coupling:	Direct coupled to worm gear shaft
Check valves:	size 17: double ball Size 30: single ball with option for double (Double ball needed over 500 psi) Size 40: single ball
Repeatability:	Steady state flow accuracy is +/- 1% over turndown Ratio of 10:1
Max fluid operating temp:	constant: 195 F (90 C) short term 250 F (120 C)
Max solids size :	0.3mm; if larger than this provisions must be made to remove them prior to suction inlet
Max viscosity:	200 mPas 500 mPas with valve springs
Recommend oil:	Mobilube SCH 75w-90 ProMinent PN: 1005823
Oil quantity:	1.5 quart (1.42 l)
Oil change interval:	Every 5000 hours
Stroke length adjustment:	Manual adjustment, automatic stroke length adjustment via 4 to 20 mA avail- able as an option
Pressure relief:	Integrated pressure relief to protect pump. External pressure relief must be used to protect system
Warranty:	2 years on drive, 1 year on liquid end
Factory testing:	each pump is tested for capacity at maximum pressure
Maximum inlet pressure:	14.5 psi

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:

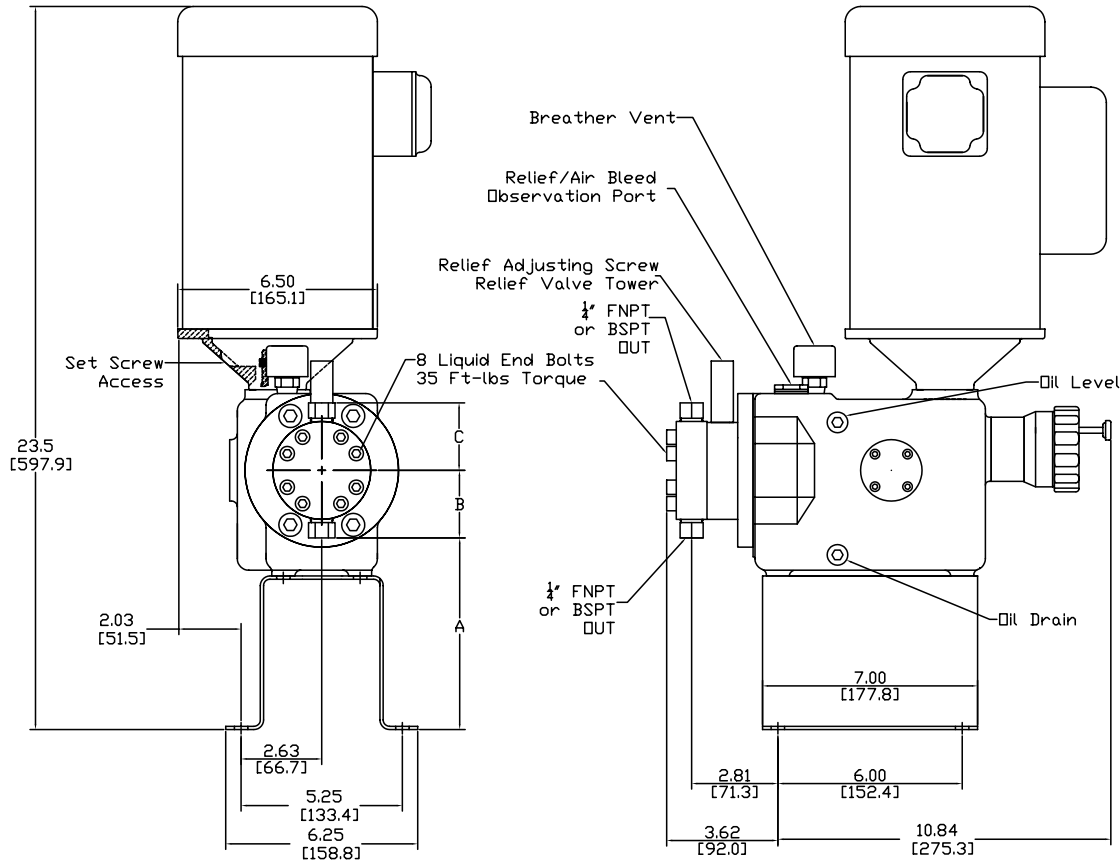
Back-pressure min./max.	psig (bar) _____
Discharge head min./max.	ft. (m) _____
Negative discharge head min./max.	ft. (m) _____
Length of discharge line	ft. (m) _____
Size (I.D.) of discharge line	in. (mm) _____
Number of valves and fittings in discharge line	_____

System sketch:

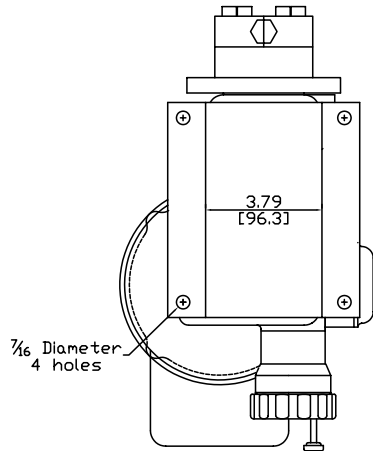
Dimensions: ProMus (Size 17)

Hydraulic Diaphragm Metering Pumps

Dimensions in inches (mm)



Size 17
Plunger Diameters $\frac{3}{8}$ " & $\frac{7}{16}$ "



ProMus 17A
17B SS
A2
HC

	A	B	C
1	6.24 [158.4]	2.20 [55.8]	2.20 [55.8]
2	5.38 [136.5]	3.06 [77.8]	3.06 [77.8]
3	6.24 [158.4]	2.20 [55.8]	3.06 [77.8]

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Sixth Place in the Ident Code

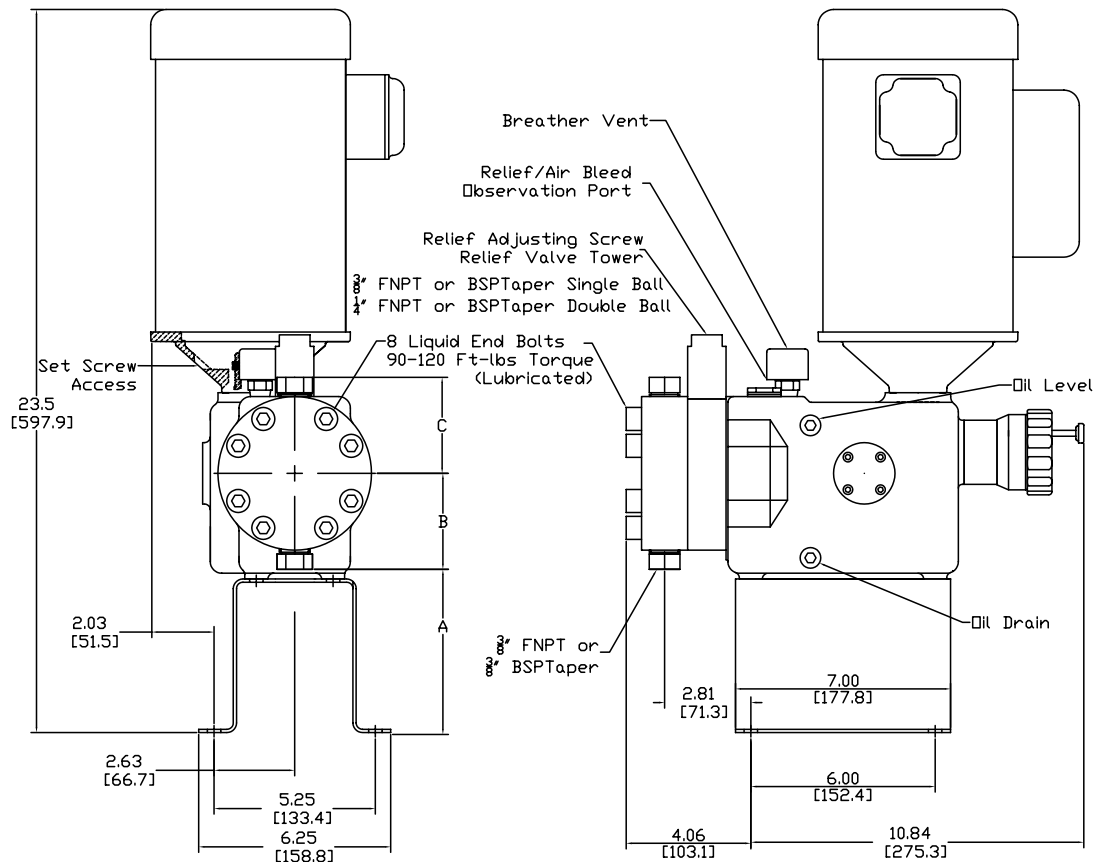
Size 17 (plunger sizes 3/8" and 7/16")

Detailed measurement data sheets available upon request.

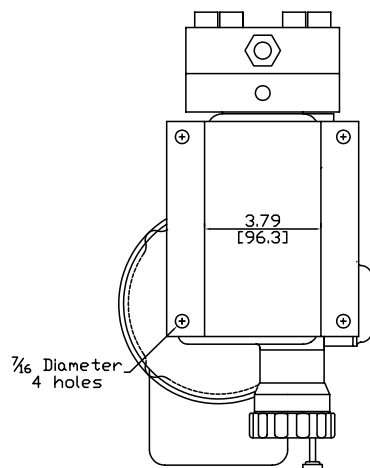
Dimensions: ProMus (Size 30)

Hydraulic Diaphragm Metering Pumps

Dimensions in inches (mm)



Size 30
Plunger Diameter 5/8"



ProMus 30A SS
A2 HC

	A	B	C
1	5.37 [136.5]	3.13 [79.4]	3.13 [79.4]
2	4.11 [104.5]	4.32 [109.8]	3.92 [99.6]
3	5.37 [136.5]	3.13 [79.4]	3.92 [99.6]

X X X . .

Sixth Place in the Ident Code

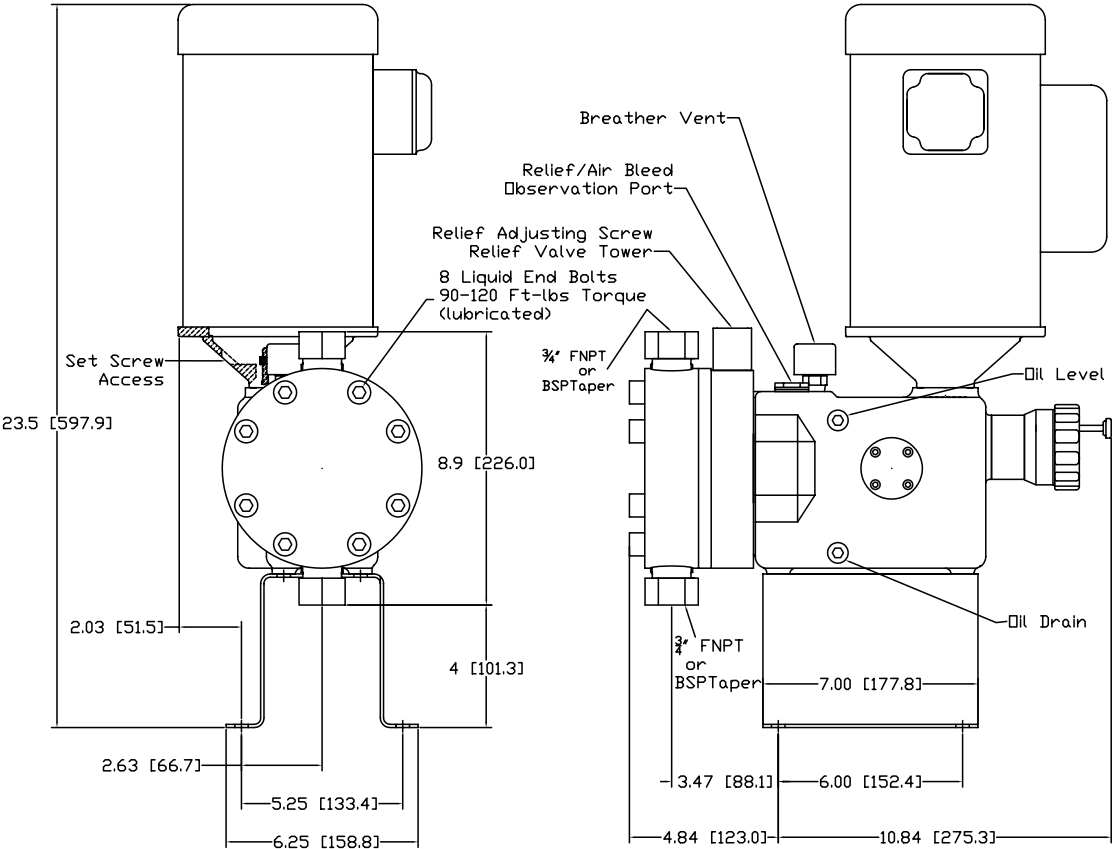
Size 30 (plunger sizes 5/8", 13/16" and 1-1/8")

Detailed measurement data sheets available upon request.

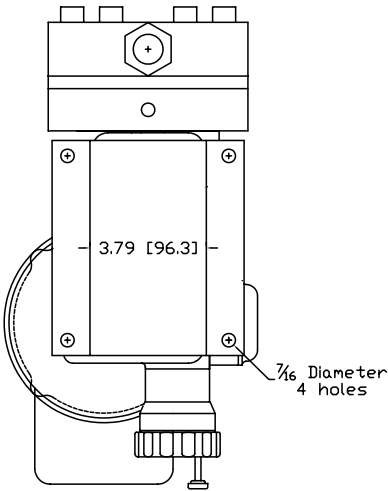
Dimensions: ProMus (Size 40)

Hydraulic Diaphragm Metering Pumps

Dimensions in inches (mm)



Plunger Diameters 1 3/4", 2" & 2 1/4"



Size 40 (plunger sizes 1-3/4", 2" and 2-1/4")

Detailed measurement data sheets available upon request.