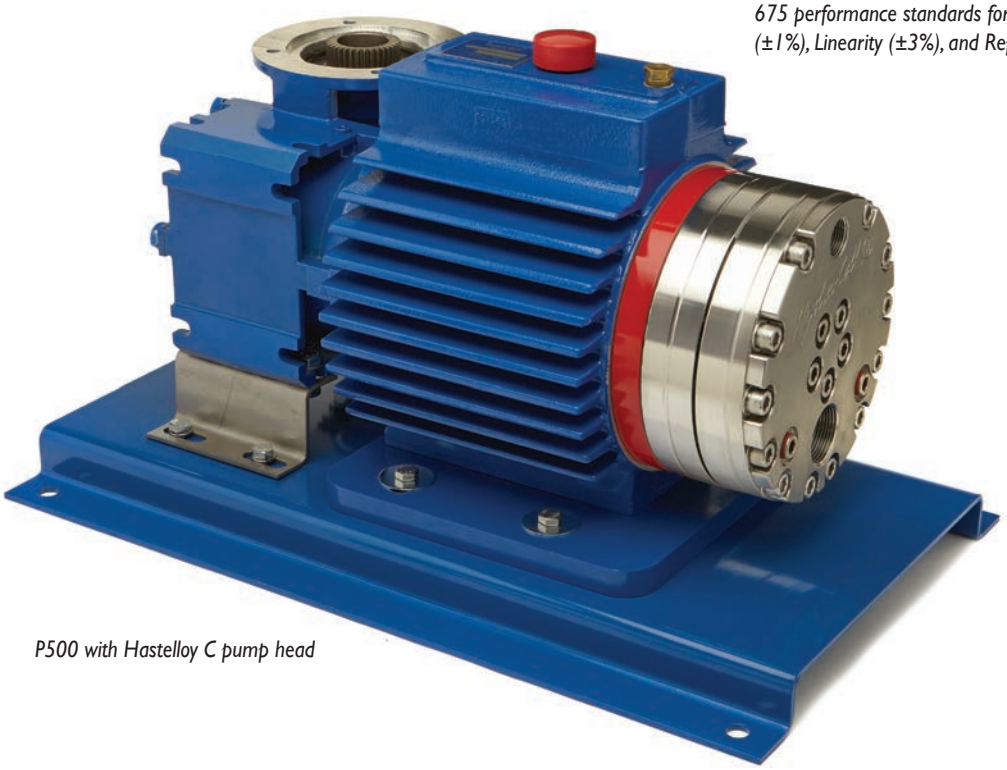
Hydra-Cell®
METERING SOLUTIONS™

P500 Series

Maximum Flow Rate: 425.9 gph (1343.5 lph)
Maximum Pressure: 2500 psi (172 bar) for Metallic Pump Heads

Hydra-Cell Metering Solutions pumps meet or exceed API 675 performance standards for Steady-State Accuracy (±1%), Linearity (±3%), and Repeatability (±3%).



P500 with Hastelloy C pump head

Metering Pumps with "Pulse-Free" Linear Flow

- Handles a wide range of fluids from clear water to thick slurries
- Electronic flow control increases accuracy and reliability
- Smaller footprint saves valuable space
- One pump covers a wide range of flows and pressures - reducing inventory requirements with fast, simple field conversion
- Duplexing option doubles capacity and equipment savings
- Hydraulically-actuated, balanced diaphragms provide superior performance across entire pressure range
- Rugged construction with a variety of affordable choices for liquid end, diaphragm and check valve materials
- Seal-less design means no seals, cups, or packing to leak or replace
- A replenishment valve in every piston assembly ensures optimum actuating oil on every stroke for continuous accuracy

Wanner Engineering, Inc.™

Performance

Flows are based upon lab testing of multiple pumps. However, flows listed are approximate values and pumps must be calibrated once installed into any system. Flow variations will occur, but calibration will ensure proper pump performance.

Maximum Flow (gph) at Designated Pressure (psi)

Metallic Pump Heads Only (gph)				Pump	Gear	Motor
100 psi	500 psi	1500 psi	2500 psi	rpm	Ratio	rpm
17.48	16.96	15.74	14.47	30	60:1	1800
20.97	20.43	19.11	17.71	36	50:1	
26.39	25.73	24.20	22.67	45	40:1	
35.27	34.47	32.63	30.80	60	30:1	
42.37	41.47	39.37	37.31	72	25:1	
53.03	51.97	49.49	47.07	90	20:1	
70.78	69.46	66.35	63.34	120	15:1	
106.3	104.4	100.1	95.88	180	10:1	
141.8	139.4	133.8	128.4	240	7.5:1	
212.8	209.4	201.2	193.5	360	5:1	
283.9	279.4	268.7	258.6	480	7.5:1	3600
425.9	419.3	403.6	388.7	720	5:1	

Required Motor hp

1/4	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20

Maximum Flow (lph) at Designated Pressure (bar)

Metallic Pump Heads Only (lph)				Pump	Gear	Motor
7 bar	34 bar	103 bar	172 bar	rpm	Ratio	rpm
55.14	53.50	49.66	45.641	25	60:1	1500
66.16	64.44	60.28	55.85	30	50:1	
83.25	81.16	76.32	71.50	37.5	40:1	
111.26	108.75	102.92	97.16	50	30:1	
133.66	130.82	124.19	117.69	60	25:1	
167.27	163.93	156.11	148.49	75	20:1	
223.28	219.11	209.29	199.81	100	15:1	
335.31	329.47	315.67	302.45	150	10:1	
447.33	439.83	422.05	405.10	200	7.5:1	
671.4	660.6	634.8	610.4	300	5:1	
895.4	881.3	847.6	815.7	400	7.5:1	3000
1343.5	1322.7	1273.1	1226.3	600	5:1	

Required Motor kW

0.37	0.55	0.75	1.1	1.5	2.2
3	3.7	4	5.5	7.5	11

P500 Series

Hydra-Cell® METERING SOLUTIONS™

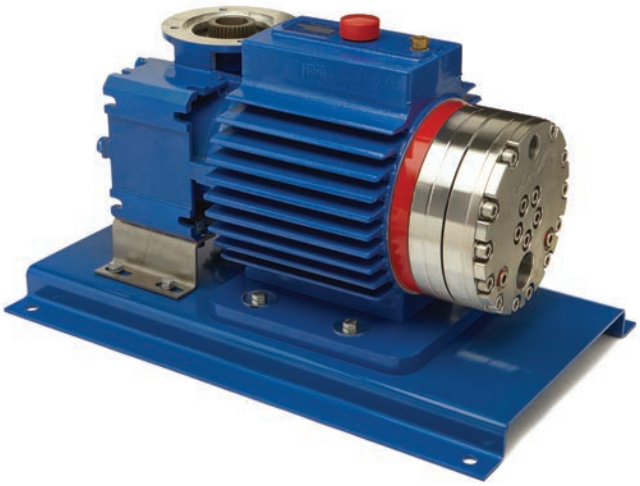
Pump Data

Diaphragms per Liquid End	5
Flow Control	Electronic variable speed drive
Maximum Discharge Pressure	
Metallic Heads:	2500 psi (172 bar)
Maximum Inlet Pressure	500 psi (34 bar)
Maximum Operating Temperature	
Consult factory for correct metallic head component selection for temperatures from 160 °F (71 °C) to 250 °F (121 °C).	
Metallic Heads:	250 °F (121 °C)
Maximum Solids Size	500 microns
Inlet Port	1-1/4 inch NPT or BSPT
Discharge Port	3/4 inch NPT or BSPT
Shaft Rotation	Bi-directional
Oil Capacity	2.2 US quarts (2.1 liters)
Weight (less motor)	
Metallic Heads:	192.1 lbs (88.5 kg)
Dimensions (less motor)	
For NEMA 56 motor frames only; see page 6 for other motor frame sizes.	
Metallic Heads:	14.5" W x 24.0" D x 13.9" H (368.3 mm W x 609.6 mm D x 353.1 mm H)

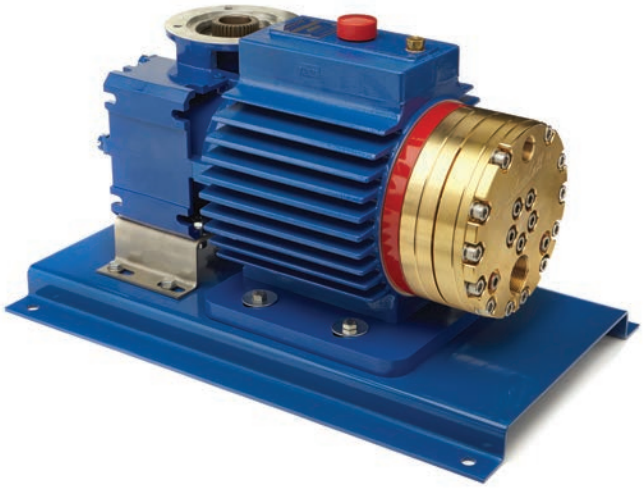
Accessories, Options and Services

Consult Wanner Engineering for complete details about available accessories and options as well as special services.

- Manifolds and Flanges
- Multiplexing Capability
- Different Gearbox Ratios
- Oil Cooler Systems
- Actuating Oils
- Magnetic Drain Plug
- Motors (Standard/Hazardous-duty)
- Controllers
- Control Freak™ Touch-screen Metering Controller
- SmartDrive Motor-Controller
- Calibration Cylinders
- Back Pressure Valves
- Pressure Relief Valves
- Pulsation Dampeners
- Demonstration (Cutaway) Units
- Testing Services
- System Components, Priming Kits and Plugs
- Replacement Part Kits and Tool Kits
- Customization Services



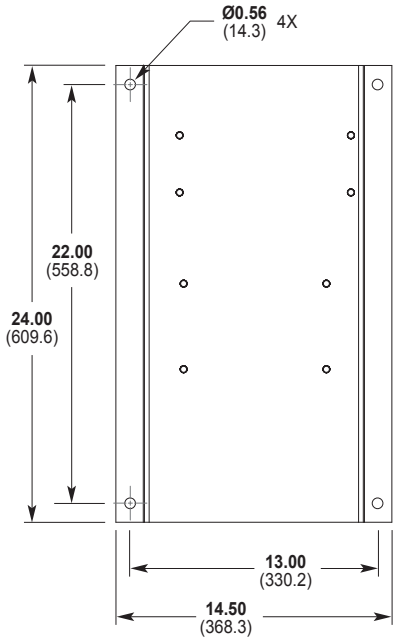
P500 with Stainless Steel pump head

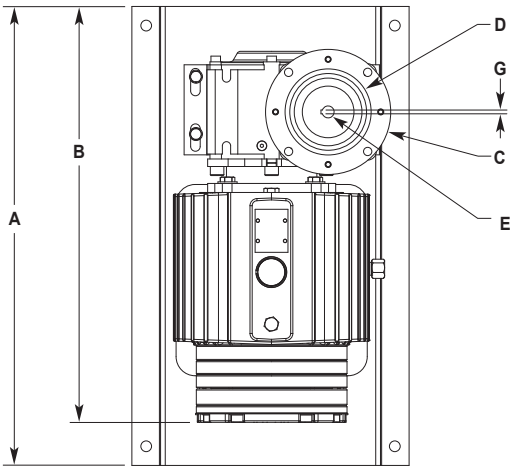


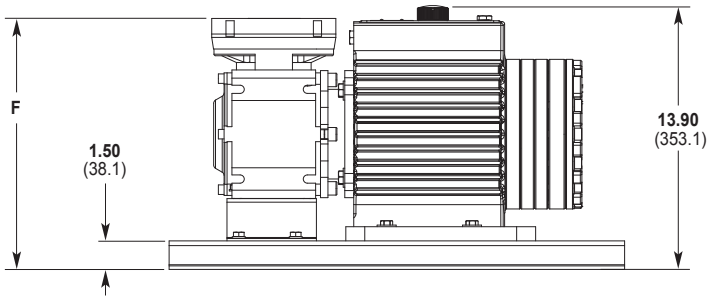
P500 with Brass pump head

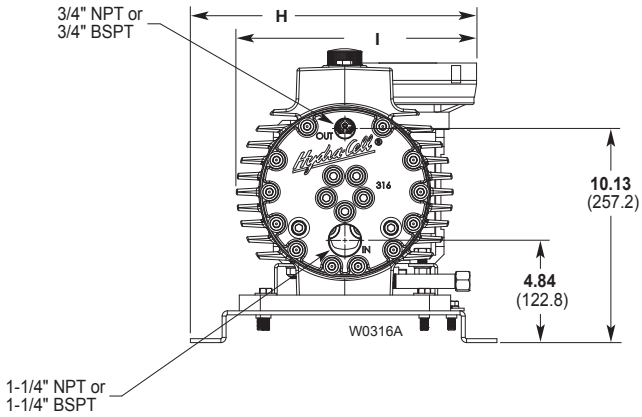
Representative Drawings

Metallic Pump Heads Inches (mm)









P500 representative drawings for C and D reducers (NEMA motor sizes 213/215TC and 254/256TC), please visit www.Hydra-Cell.com.

Dimensions: Inches (mm)

Input Frame Size	A	B	C	D	E	F	G (Square Key)	H	I
NEMA 56C	21.76 (552.6)	19.05 (495.3)	Ø 6.54 (Ø 166)	Ø 4.50 (Ø 114.3)	Ø 0.62 (Ø 15.7)	13.22 (335.9)	0.187 (4.75)	13.53 (343.7)	11.36 (288.5)
NEMA 143/145 TC	21.76 (552.6)	19.05 (495.3)	Ø 6.54 (Ø 166)	Ø 4.50 (Ø 114.3)	Ø 0.87 (Ø 22.2)	13.22 (335.9)	0.187 (4.75)	13.53 (343.7)	11.36 (288.5)
NEMA 182/183 TC	26.07 (585)	20.36 (517.1)	Ø 9.17 (Ø 233)	Ø 8.50 (Ø 218.9)	Ø 1.12 (Ø 26.6)	13.77 (349.75)	0.25 (6.35)	14.84 (376.9)	12.68 (322)
IEC 71 B5	21.64 (549.7)	18.93 (480.8)	Ø 6.54 (Ø 166)	Ø 4.33 (Ø 110)	Ø 0.55 (Ø 14)	13.42 (340.7)	0.196 (5)	13.41 (340.6)	11.24 (285.4)
IEC 80 B5	22.42 (569.6)	19.71 (500.6)	Ø 7.87 (Ø 200)	Ø 5.12 (Ø 130)	Ø 0.75 (Ø 19)	13.42 (340.7)	0.236 (6)	14.20 (360.6)	12.02 (305.3)
IEC 90 B5	22.42 (569.6)	19.71 (500.6)	Ø 7.87 (Ø 200)	Ø 5.12 (Ø 130)	Ø 0.94 (Ø 24)	13.42 (340.7)	0.314 (8)	14.20 (360.6)	12.02 (305.3)
IEC 100/112 B14	21.64 (549.7)	18.93 (480.8)	Ø 6.30 (Ø 160)	Ø 4.33 (Ø 110)	Ø 1.10 (Ø 28)	13.42 (340.7)	0.314 (8)	13.41 (340.6)	11.24 (285.4)

How to Order

A complete pump order number contains 13 digits based on the specified pump materials listed below.

1	2	3	4	5	6	7	8	9	10	11	12	13
P	5	0	0									

Pump Configuration (Digits 1-4)

P500	For all P500 Pumps (Advanced Diaphragm Position Control)

Pump Version (Digit 5)

N	NPT Ports (NEMA motors only)
M	BSPT Ports (IEC motors only)
X	ATEX BSPT Ports (IEC motors only)

Pump Head / Retainer Material (Digit 6)

B	Brass / Hastelloy C
S	316L Stainless Steel / Hastelloy C
T	Hastelloy C / Hastelloy C

Diaphragm & O-ring Material / Oil (Digit 7)▲

A	Aflas / PTFE O-rings (Synthetic oil)
X	FKM (Synthetic oil)
T	Buna-N (Standard oil)

▲ *See price list for different actuating oils available with these materials.*

Check Valve Material (Digits 8-9)
(Valve Spring / Valve Seat / Valve)

SS	Elgiloy / Nitronic 50 / Nitronic 50
TT	Hastelloy C / Hastelloy C / Hastelloy C
SD	Elgiloy / Tungsten Carbide / Tungsten Carbide
TD	Hastelloy C / Tungsten Carbide / Tungsten Carbide

Gearbox Ratio (Digits 10-12) NEMA Motors

060	60:1	(56C Motor Frame)
050	50:1	(56C Motor Frame)
040	40:1	(56C Motor Frame)
A40	40:1	(143/145TC Motor Frame)
030	30:1	(56C Motor Frame)
A30	30:1	(143/145TC Motor Frame)
025	25:1	(56C Motor Frame)
A25	25:1	(143/145TC Motor Frame)
020	20:1	(56C Motor Frame)
A20	20:1	(143/145TC Motor Frame)
015	15:1	(56C Motor Frame)
A15	15:1	(143/145TC Motor Frame)
B15	15:1	(182/184TC Motor Frame)
010	10:1	(56C Motor Frame)
A10	10:1	(143/145TC Motor Frame)
B10	10:1	(182/184TC Motor Frame)
007	7.5:1	(56C Motor Frame)
A07	7.5:1	(143/145TC Motor Frame)
B07	7.5:1	(182/184TC Motor Frame)
C07	7.5:1	(213/215TC Motor Frame)
D07	7.5:1	(254/256TC Motor Frame)
005	5:1	(56C Motor Frame)
A05	5:1	(143/145TC Motor Frame)
B05	5:1	(182/184TC Motor Frame)
C05	5:1	(213/215TC Motor Frame)
D05	5:1	(254/256TC Motor Frame)

Base Plate (Digit 13) NEMA Motors

H	Carbon Steel (Epoxy painted) for 0, A & B reducers, size 75
G	Carbon Steel (Epoxy painted) for C & D reducers

Gearbox Ratio (Digits 10-12) IEC Motors

A60	60:1	(71 B5 Motor Frame)
B60	60:1	(80 B5 Motor Frame)
A50	50:1	(71 B5 Motor Frame)
B50	50:1	(80 B5 Motor Frame)
A40	40:1	(71 B5 Motor Frame)
B40	40:1	(80 B5 Motor Frame)
A30	30:1	(71 B5 Motor Frame)
B30	30:1	(80 B5 Motor Frame)
B25	25:1	(80 B5 Motor Frame)
C25	25:1	(90 B5 Motor Frame)
B20	20:1	(80 B5 Motor Frame)
C20	20:1	(90 B5 Motor Frame)
B15	15:1	(80 B5 Motor Frame)
C15	15:1	(90 B5 Motor Frame)
B10	10:1	(80 B5 Motor Frame)
C10	10:1	(90 B5 Motor Frame)
D10	10:1	(100/112 B14 Motor Frame)
B07	7.5:1	(80 B5 Motor Frame)
C07	7.5:1	(90 B5 Motor Frame)
D07	7.5:1	(100/112 B14 Motor Frame)
B05	5:1	(80 B5 Motor Frame)
C05	5:1	(90 B5 Motor Frame)
D05	5:1	(100/112 B14 Motor Frame)

Base Plate (Digit 13) IEC Motors

H	Carbon Steel (Epoxy painted) size 75

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