

Hydra·Cell[®]

METERING SOLUTIONS™

P400 Series

Maximum Flow Rate: 242.8 gph
Maximum Pressure: 1000 psi (69 bar) for Metallic Pump Heads
350 psi (24 bar) for Non-metallic Pump Heads



P400 with Polypropylene pump head

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



P400 with Brass pump head



P400 with Stainless Steel 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

P400 Series

Performance* Maximum Flow at Designated Pressure

All Pumps (gph)		Metallic Pump Heads Only (gph)		Pump rpm	Gear Ratio	Motor rpm	
100 psi	250 psi	500 psi	1000 psi				
9.637	9.280	8.491	6.464	30	60:1	1800	
11.652	11.283	10.452	8.269	36	50:1		
14.66	14.30	13.37	11.21	45	40:1		
19.73	19.31	18.30	15.96	60	30:1		
23.79	23.32	22.24	19.75	72	25:1		
29.87	29.34	28.15	25.45	90	20:1		
40.011	39.375	38.00	34.94	120	15:1		
60.290	59.438	57.70	53.92	180	10:1		
80.569	79.501	77.41	72.90	240	7.5:1		
121.1	119.6	116.8	110.9	360	5:1		
161.69	159.75	156.22		480	7.5:1		3600
242.80	240.01			720	5:1		

* Capacity data is shown for pumps with elastomeric diaphragms. Consult factory for performance characteristics of pumps with PTFE diaphragms.

Required Motor hp

1/4	1/2	3/4	1	1-1/2	2
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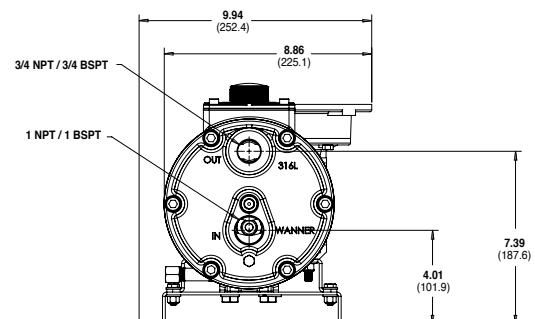
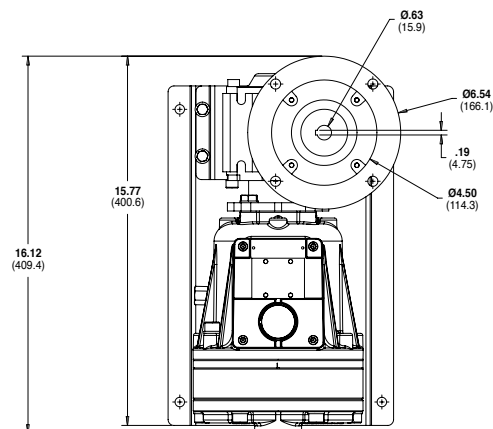
Pump Data

Diaphragms per Liquid End	3
Flow Control	Electronic variable speed drive
Maximum Discharge Pressure	
Metallic Heads:	1000 psi (69 bar)
Non-metallic Heads:	PVDF- 350 psi (24 bar) Polypropylene- 250 psi (17 bar)
Maximum Inlet Pressure	250 psi (17 bar)
Maximum Operating Temperature	
Metallic Heads:	250 °F (121 °C)*
Non-metallic Heads:	140 °F (60 °C)
Inlet Port	1 inch NPT or BSPT
Discharge Port	3/4 inch NPT or BSPT
Weight (less motor)**	
Metallic Heads:	65.5 lbs (29.7 kg)
Non-metallic Heads:	52.5 lbs (23.8 kg)
Dimensions (less motor)**	
Metallic Heads:	9.94" W x 16.12" D x 10.29" H (252.4 mm W x 409.4 mm D x 261.3 mm H)
Non-metallic Heads:	9.94" W x 17.29" D x 10.29" H (252.4 mm W x 439.2 mm D x 261.3 mm H)

* Consult factory for correct component selection for temperatures from 160 °F (71 °C) to 250 °F (121 °C).

** For 56C motor frame only. Consult factory for other motor frame sizes.

Representative Drawings Inches (mm)



Metallic Pump Heads

P400 Series

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	4	0	0									

Pump Model Size (Digits 1-4)

P400 For all P400 Pumps (Kel-Cell with Optimized Valve Pocket)

Pump Version (Digit 5)

N NPT Ports or ANSI Flanges (NEMA motors only)
M BSPT Ports or ANSI Flanges (IEC motors only)

Pump Head / Retainer Material (Digit 6)

B Brass / Hastelloy C
C Cast Iron / Hastelloy C
M PVDF / PVDF
P Polypropylene / Polypropylene
R 316L Stainless Steel (ANSI flange class 150 x 600) / Hastelloy C
S 316L Stainless Steel (NPT or BSPT) / Hastelloy C
T Hastelloy CW12MW / Hastelloy C

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

A Atlas / PTFE O-rings (Synthetic oil)
E EPDM (EPDM-compatible oil)
X FKM (Synthetic oil)
J PTFE (Food-contact oil)
P Neoprene (Synthetic oil)
T Buna-N (Synthetic 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 / 316L SST / Nitronic 50
TT Hastelloy C / Hastelloy C / Hastelloy C
SC Elgiloy / Ceramic / Ceramic
TC Hastelloy C / Ceramic / Ceramic
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)
030	30:1	(56C Motor Frame)
025	25:1	(56C Motor Frame)
020	20:1	(56C Motor Frame)
015	15:1	(56C Motor Frame)
010	10:1	(56C Motor Frame)
007	7.5:1	(56C Motor Frame)
A07	7.5:1	(143/145TC Motor Frame)
005	5:1	(56C Motor Frame)
A05	5:1	(143/145TC Motor Frame)

Base Plate (Digit 13)

C Carbon Steel (Epoxy painted)
S 316L Stainless Steel

Accessories, Options & Services

Consult the Hydra-Cell Metering Solutions catalog for complete details about available accessories and options as well as special services.

- Manifolds and Flanges
- Multiplexing Capability
- Different Gearbox Ratios
- Oil Systems and Kits
- Actuating Oils
- Motors (Standard/Explosion-proof)
- 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



Hydra-Cell Metering Solutions demonstration unit complete with the Control Freak™ touch-screen metering controller.

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METERING SOLUTIONS™

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