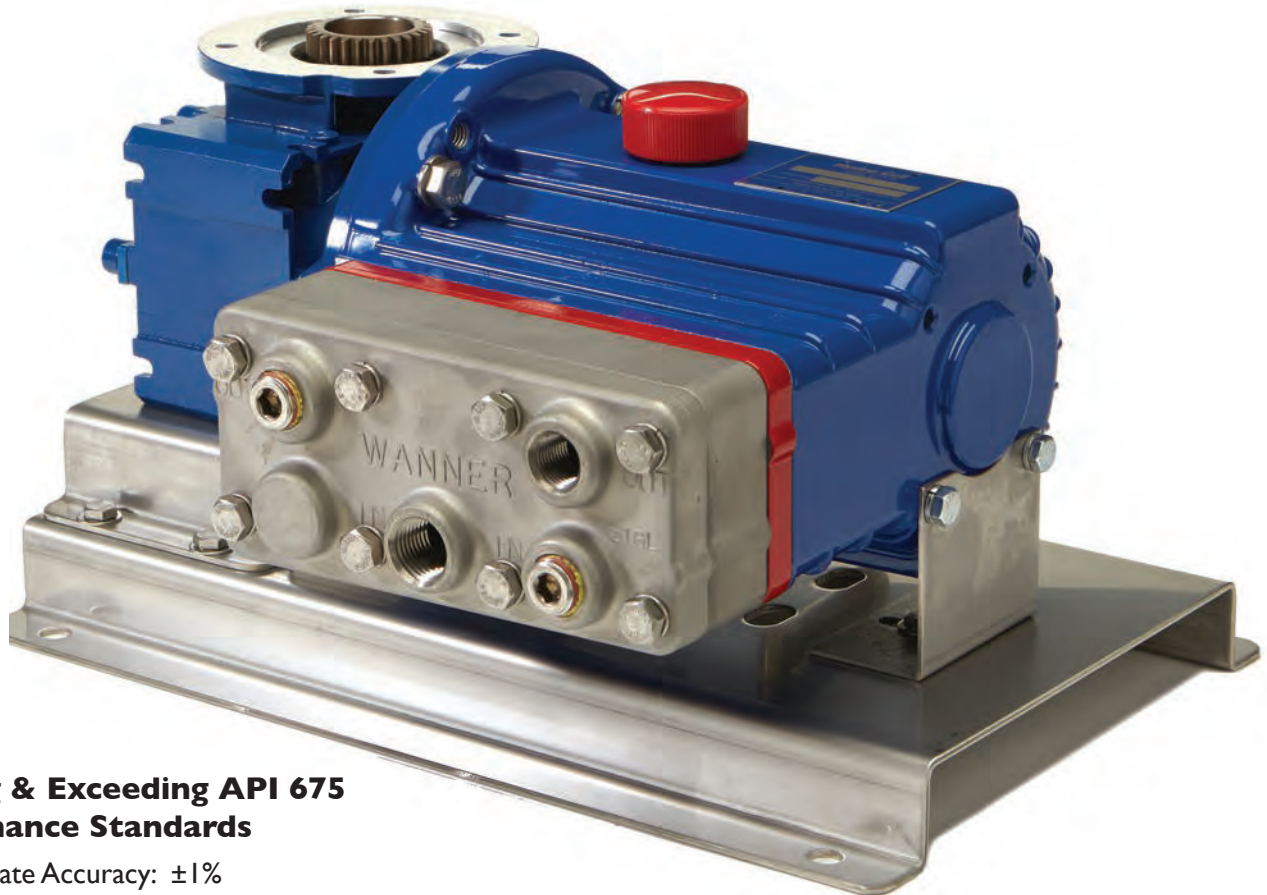


## P200 Series Electronic Precision Metering Pumps

Maximum Flow Rate: 255 L/hr

Maximum Pressure: 69 bar for Metallic Pump Heads

24 bar for Non-metallic Pump Heads



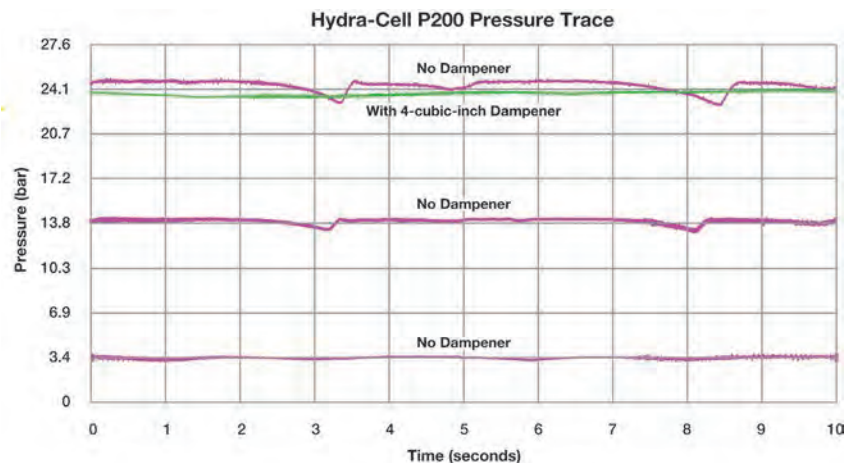
### Meeting & Exceeding API 675 Performance Standards

- Steady State Accuracy:  $\pm 1\%$
- Linearity:  $\pm 3\%$  (over a 10 to 1 turn-down as per API 675)
- Repeatability:  $\pm 3\%$
- Infinite turn-down achievable

### Unique Multiple Diaphragm Design for Linear, Pulse-free Flow

Hydra-Cell Metering Solutions P200 pumps feature three diaphragms in one pump head. This unique design enables Hydra-Cell to provide virtually “pulse-free” flow without the need to buy expensive pulsation dampeners.

- Minimises pipe strain and other maintenance; enhances operator safety
- Reduces acceleration/friction losses in the suction line
- Provides accurate metering with linear, constant flow



Hydra-Cell can eliminate the need for expensive pulsation dampeners because, as the graph shows, it provides virtually pulse-less flow.

## Performance - Flow Capacities and Pressure Ratings

For Synchronous Speed, Self-cooled Motors  
L/hr Maximum Flow at Designated Pressure

L/hr All Pumps		L/hr Metallic Pump Heads Only		Pump RPM	Gear Ratio	Motor RPM
7 Bar	17 Bar	34 Bar	69 Bar			
10.6	10.5	10.2	9.9	25	60:1	1500
12.8	12.6	12.3	11.9	30	50:1	
16.0	15.8	15.5	15.0	37.5	40:1	
21.3	21.1	20.7	20.0	50	30:1	
25.6	25.3	24.8	24.1	60	25:1	
32.0	31.6	31.1	30.2	75	20:1	
42.6	42.2	41.5	40.3	100	15:1	
63.9	63.2	62.2	60.5	150	10:1	
85.1	84.3	83.0	80.8	200	7.5:1	
127.7	126.5	124.6	121.3	300	5:1	
170.3	168.7	166.1	161.8	400	7.5:1	3000
255.4	253.0	249.2	242.8	600	5:1	

Required Motor kW

0.18	0.37	0.75
------	------	------

**Notes:**

- The motor kW are based on ambient temperature conditions up to 40°C. For ambient temperatures above 40°C, please contact Wanner International.
- Contact factory for performance specifications.
- Based on using IE2 motors.
- For intermittent or reduced pressure duties, please contact Wanner International.

For 10:1 Turndown, Self-cooled Motors  
L/hr Maximum Flow at Designated Pressure

L/hr All Pumps		L/hr Metallic Pump Heads Only		Pump RPM	Gear Ratio	Motor RPM
7 Bar	17 Bar	34 Bar	69 Bar			
10.6	10.5	10.2	9.9	25	60:1	1500
12.8	12.6	12.3	11.9	30	50:1	
16.0	15.8	15.5	15.0	37.5	40:1	
21.3	21.1	20.7	20.0	50	30:1	
25.6	25.3	24.8	24.1	60	25:1	
32.0	31.6	31.1	30.2	75	20:1	
42.6	42.2	41.5	40.3	100	15:1	
63.9	63.3	62.2	60.5	150	10:1	
85.1	84.3	83.0	80.8	200	7.5:1	
127.7	126.5	124.6	121.3	300	5:1	
170.3	168.7	166.1	161.8	400	7.5:1	3000
255.4	253.0	249.2	242.8	600	5:1	

Required Motor kW

0.18	0.25	0.37	0.55	0.75	1.1
1.5					

**Notes:**

- The motor kW are based on ambient temperature conditions up to 25°C. For ambient temperatures above 25°C, Force-cooled Motors may be required. Please contact Wanner International.
  - Contact factory for performance specifications.
  - Based on using IE2 motors.
  - For intermittent or reduced pressure duties, please contact Wanner International.
- See Page 6 for Electronic Flow Rate Controller.

## Mechanical Adjustment Controller for ATEX/Explosive Areas

All Min/Max flow rates in litres/hour

7 bar		17 bar		34 bar		69 bar		Pump rpm	Gearbox Ratio	Model Number	Required Motor Size & Frame
Min	Max	Min	Max	Min	Max	Min	Max				
2.0	10.2	1.9	10.0	1.9	9.8	1.6	9.4	5 - 24	25:1	MEC3 - 71B14	0.25kW / IEC 71 / 4-Pole
	12.8		12.6		12.3		11.8	5 - 30	20:1		
	17.1		16.9		16.5		16.0	5 - 40	15:1		
	25.6		25.3		24.8		24.1	5 - 60	10:1		
	34.1		33.7		33.1		32.2	5 - 80	7.5:1	MEC5 - 80B14	0.75kW / IEC 80 / 2-Pole
	51.1		50.6		49.8		48.4	5 - 120	5:1		
	68.1		67.5		66.4		64.6	5 - 160	7.5:1		
	102.2		101.2		99.6		97.0	5 - 240	5:1		

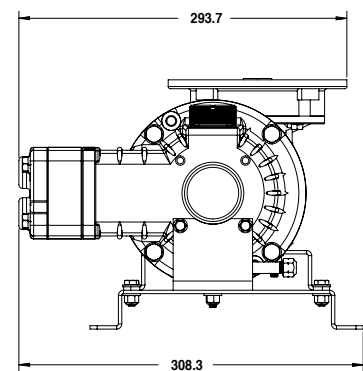
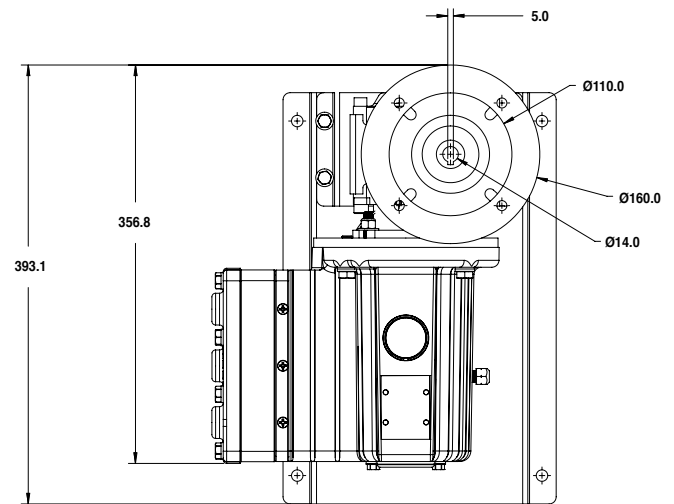
# P200 Series

## Specifications

<b>Diaphragms per Liquid End</b>	3
<b>Flow Control</b>	Electronic variable speed drive
<b>Maximum Discharge Pressure</b>	
Metallic Heads:	69 bar
Non-metallic Heads:	PVDF to 24 bar Polypropylene to 17 bar
<b>Maximum Inlet Pressure</b>	17 bar
<b>Maximum Liquid Operating Temperature</b>	
Metallic Heads:	121 °C - Consult factory for correct component selection for temperatures greater 71 °C.
Non-metallic Heads:	PVDF to 80 °C Polypropylene to 60 °C
<b>Maximum Solids Size</b>	200 microns
<b>Inlet Port</b>	1/2 inch BSPT
<b>Discharge Port</b>	3/8 inch BSPT
<b>Shaft Rotation</b>	Reverse (bi-directional)
<b>Oil Capacity</b>	0.95 litres
<b>Weight (less motor)</b>	
Metallic Heads:	19.0 kg
Non-metallic Heads:	14.9 kg
<b>Dimensions (less motor)</b>	
Metallic Heads:	396.1 mm W x 296.7 mm D x 227.8 mm H
Non-metallic Heads:	396.1 mm W x 306.3 mm D x 227.8 mm H
<b>Controllers</b>	
Mechanical Adjustment:	220 mm D x 155 mm H for <b>MEC3</b> (7.2 kg)
Electronic Controller:	215 mm W x 280 mm D x 300 mm H (10 kg)

## Representative Drawings (mm)

Metallic Pump Heads



P200 with Polypropylene pump head



P200 with Brass pump head

## Pump Ordering Information

A complete pump order number contains 13 digits based on the specified pump materials listed below. Contact your Hydra-Cell sales representative for accompanying motor drive options.

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

### Pump Model Size (Digits 1-4)

**P200** For all P200 Pumps (Non Kel-Cell)

### Pump Version (Digit 5)

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

ATEX reducer must be ordered in conjunction with one of the ATEX Certification Kit Options below.

#### Category 2, Zone 1

Part Number	Description
ATEX-Z1-G03/P200	Kit-ATEX Category 2, Zone 1 IIB T4 G03/P200

#### Category 3, Zone 2

Part Number	Description
ATEX-Z2-G03/P200	Kit-ATEX Category 3, Zone 2 IIC T4 G03/P200

#### Notes:

- All options include Certificate, Oil Level Monitor, Earth Stud & Secondary ATEX Label.
- Extra oil is required to fill the oil bowl during installation of ATEX pumps. This oil is not included and must be ordered separately.

### Pump Head / Retainer Material (Digit 6)

**B** Brass / Hastelloy C  
**M** PVDF / PVDF  
**P** Polypropylene / Polypropylene  
**R** 316L Stainless Steel with ANSI RF Flanges, Class 300lb x 600lb / Hastelloy C  
**-** 316L Stainless Steel with DIN Flanges, Class PN40 DN20 x PN100 DN15♦  
**S** 316L Stainless Steel / Hastelloy C  
**-** 316L Stainless Steel with Tri-clamp (1" Inlet & 3/4" discharge) Flanges polished to 0.8 Ra♦  
**-** 316L Stainless Steel with Tri-clamp (1" Inlet & 3/4" discharge) Flanges polished to 0.4 Ra♦  
*Tri-clamp options include polishing of Pump Head, Valve Plate, Valves, Valve Seats, Springs & Retainers to 0.8 Ra or 0.4 Ra per above, Sanitary Drain along with TSE, Passivation, Surface Finish & Weld Procedure Certificates*  
**T** Hastelloy CW12MW / Hastelloy C  
♦ Selecting this option will result in a Wanner International generated Pump Code, stamped onto the pump.

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

**A** Aflfas / PTFE o-ring (Synthetic oil)  
**M** Atlas / PTFE o-ring & FKM drive case elastomers (Mesamoll oil)  
**E** EPDM (EPDM-compatible oil)  
**G** FKM (Standard oil)  
**S** FKM (Food-contact oil)  
**X** FKM (Synthetic oil)  
**J** PTFE (Food-contact oil)  
**W** PTFE (Synthetic oil)  
*Note: PTFE diaphragms require flooded suction.*  
**P** Neoprene (Standard oil)  
**R** Neoprene (Food-contact oil)  
**Z** Neoprene (Synthetic oil)  
**T** Buna-N (Standard oil)  
**F** Buna-N (Food-contact oil)  
**Y** Buna-N (Synthetic oil)

### 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

### Gearbox Ratio (Digits 10-12) IEC Motors

<b>060</b>	60:1	(63 B5 Motor Frame)
<b>050</b>	50:1	(63 B5 Motor Frame)
<b>040</b>	40:1	(63 B5 Motor Frame)
<b>B40</b>	40:1	(80 B5 Motor Frame)
<b>030</b>	30:1	(63 B5 Motor Frame)
<b>B30</b>	30:1	(80 B5 Motor Frame)
<b>025</b>	25:1	(63 B5 Motor Frame)
<b>020</b>	20:1	(63 B5 Motor Frame)
<b>B20</b>	20:1	(80 B5 Motor Frame)
<b>015</b>	15:1	(63 B5 Motor Frame)
<b>A15</b>	15:1	(71 B5 Motor Frame)
<b>010</b>	10:1	(63 B5 Motor Frame)
<b>A10</b>	10:1	(71 B5 Motor Frame)
<b>B10</b>	10:1	(80 B5 Motor Frame)
<b>007</b>	7.5:1	(63 B5 Motor Frame)
<b>A07</b>	7.5:1	(71 B5 Motor Frame)
<b>B07</b>	7.5:1	(80 B5 Motor Frame)
<b>005</b>	5:1	(63 B5 Motor Frame)
<b>A05</b>	5:1	(71 B5 Motor Frame)
<b>B05</b>	5:1	(80 B5 Motor Frame)

*Note: These are Wanner standard options. Other flange sizes are available upon request.*

### Base Plate (Digit 13)

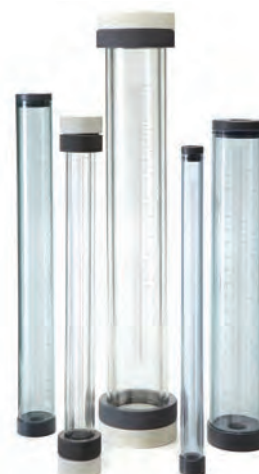
**C** Carbon Steel (Epoxy painted)  
**S** 304 Stainless Steel

### Notes:

- Please consult factory for rpm below 6.
- Constant torque drives are required to meet API 675 performance standards.
- Ensure that the motor chosen is capable of delivering the torque and power required over the full range of adjustment. (Contact Wanner International for values.)
- IEC motor size has been calculated assuming IE2 performance as defined by IEC 60034-30.

## Calibration Cylinders

Port Size	Cylinder Size (mL)	Cylinder Capacity (L/h)	Maximum Shaft (rpm)	Part Number BSPT Ports	Dimensions - mm	
					Height	Diameter
<b>PVC Cylinders</b>						
1/2"	200	24	75	111-001-B	482.6	38.1
3/4"	1000	120	300	111-003-B	558.8	63.5
1"	2000	240	600	111-004-B	508.0	94.0
2"	10000	1200	--	111-006-B	635.0	176.5.0
<b>Glass Cylinders</b>						
1/4"	30	3.6	36	111-010-B	355.6	35.6
1/2"	200	24	75	111-011-B	533.4	63.5
3/4"	1000	120	300	111-013-B	685.8	88.9
1"	2000	240	600	111-014-B	685.8	127.0



## Back Pressure & Pressure Relief Valves

Port Size	Maximum Flow (L/h) Pulsating	Wetted* Materials	Pressure Adjustment Range (bar)	Maximum Temp. (°C)	Part Number	
					Back Pressure Valves (BSPT Ports)	Pressure Relief Valves (BSPT Ports)
3/8" (DN 10)	757	Polypropylene	0.7 - 10.3	90	111-101-B	111-401-B
	757	PVDF	0.7 - 10.3	90	111-103-B	111-403-B
	757	316 SST	0.7 - 10.3	149	111-106-B	111-406-B
	757	Hastelloy C	0.7 - 10.3	149	111-110-B	111-410-B
3/8" (DN 10)	757	316 SST	3.5 - 24	149	111-107-B	111-407-B
	757	Hastelloy C	3.5 - 24	149	111-111-B	111-411-B
3/8" High Pressure (DN 10)	2650	316 SST	24 - 172	149		111-706-B
	2650	Hastelloy C	24 - 172	149		111-710-B



\* Diaphragm material is PTFE on all models. Other materials available on request.

Hastelloy® C is a registered trademark of Haynes International, Inc.

## Metering and Dosing Control Options

### Electronic Flow Rate Adjustment for Local Control

- Force-cooled Drives supplied as standard
- ATEX Dust Zone 2I (Ex tb III CTI25c Db)
- IP66 Standard
- Various flow rate adjustments options including:
  1. On-board potentiometer(s)
  2. On-board key-pad controller with flow rate display
  3. Removable, hand-held key-pad controller for authorised personnel only
  4. Use the 10:1 Turndown table on Page 2 to select the correct motor kW for ambient temperatures up to 25°C

**Maximum Flow at Designated Pressure** (see table on Page 2)



*On-board keypad control*

*Hand-held keypad control*

### Mechanical Flow Rate Adjustment for Local Control

- ATEX Zone I
- Linear fine adjustment scale on hand-wheel
- High reliability due to frictionless design
- Option to fit a mechanical lock to prevent unauthorised flow rate change



### Control Freak™ for Sophisticated Local Control

- Option available to control up to 6 x Hydra-Cell pumps with one Hydra-Cell “Control Freak”
- Multiple Variable Frequency Drive (VFD) options
- Enables programming for flow rate or totalisation
- Allows up to 10 x separate batch sequences
- Built-in Calibration mode



# P200 Series



**WANNER**

*Hydra-Cell*<sup>®</sup>  
Partners in over 70 Countries

## Standards Compliance



- API 675 performance testing, both witnessed and non-witnessed available. (Consult your local Wanner office for further details.)

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