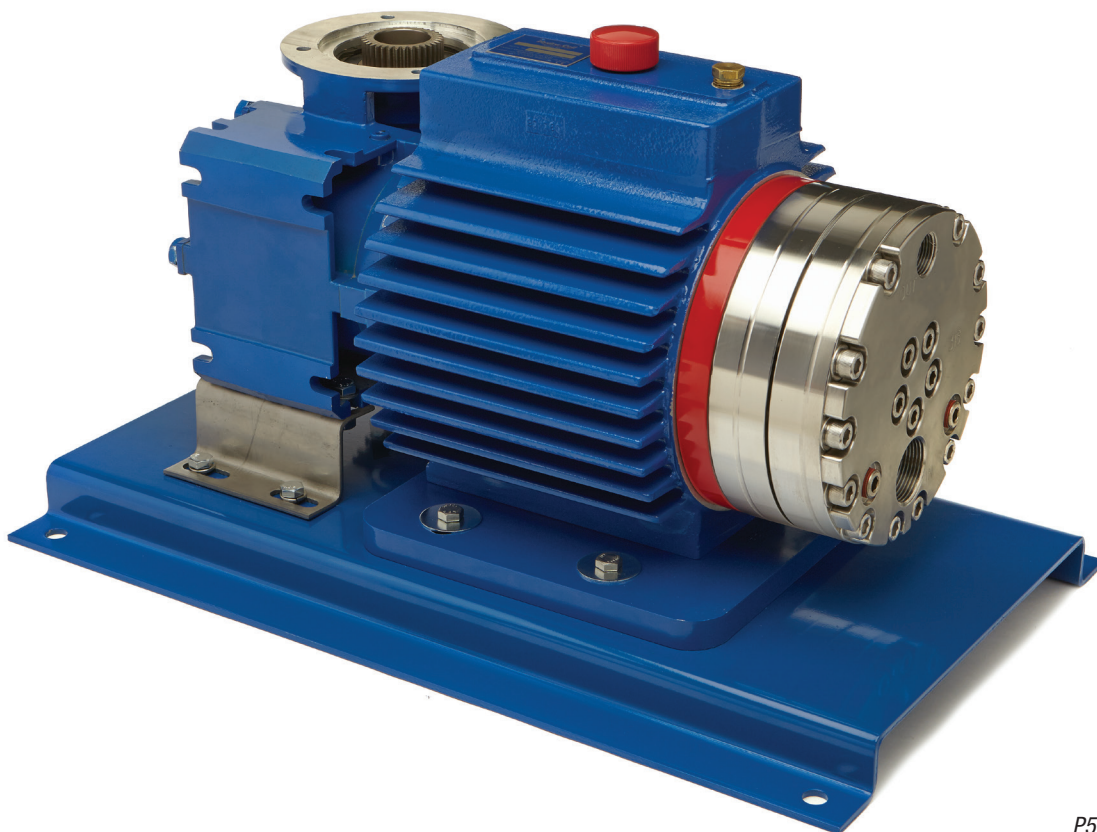


# P500 PRO SERIES METERING PUMPS

Maximum Flow Rate: 1243 L/hr (425.9 US gph)

Maximum Pressure: 172 bar (2500 psi) for Metallic Pump Heads

## **WANNER™** HYDRA-CELL® PRO METERING PUMP SOLUTIONS



*P500 with Stainless Steel pump head*

### **A higher standard of metering performance and energy efficiency.**

- Integrates **Wanner Hydra-Cell® Pro** seal-less pump technologies for the highest levels of volumetric and energy efficiencies across the full turndown – 0 to max flow – for accurate metering performance.
- Patented ADPC (Advanced Diaphragm Position Control) technology protects diaphragms under closed or restricted inlet conditions.
- Seal-less design with no mechanical dynamic seals, packing, or cups to leak, wear or replace.
- Compact design with multiple diaphragms in a single pump head.
- Virtually pulse-free flow – eliminates pulsation dampeners in most applications, reduces pipe strain and acceleration head losses.
- Exceeds API 675 standards for steady-state accuracy ( $\pm 1\%$ ), linearity ( $\pm 3\%$ ), and repeatability ( $\pm 3\%$ ) over a wide adjustable range.
- Hydraulic oil management system replenishes on every back stroke, for superior accuracy and reliable operation at low- and high-suction pressures.
- Unique valve design and material options reliably handles a wide range of viscosities and shear sensitivities, plus corrosive liquids, abrasives, slurries and suspended solids.
- Pumped liquid is 100% contained, preventing degradation, contamination and emissions.
- Lower total cost of ownership in acquisition, operation, service, maintenance, and energy use.



## Performance - Flow Capacities and Pressure Ratings

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

Metallic Pump Heads Only (L/hr)				Pump rpm	Gear ratio	Motor rpm
7 bar	34 bar	103 bar	172 bar			
55.1	53.5	49.7	45.6	25	60:1	1500
66.2	64.4	60.3	55.8	30	50:1	
83.2	81.2	76.3	71.5	37.5	40:1	
111.3	108.7	102.9	97.2	50	30:1	
133.7	130.8	124.2	117.7	60	25:1	
167.3	163.9	156.1	148.5	75	20:1	
223.3	219.1	209.3	199.8	100	15:1	
335.3	329.5	315.7	302.4	150	10:1	
447.3	439.8	422.0	405.1	200	7.5:1	
671.4	660.1	634.8	N/A	300	5:1	
895.4	881.3	N/A	N/A	400	7.5:1	3000
1343.5	1322.7	N/A	N/A	600	5:1	

#### Required Motor kW

0.18	0.37	0.55	0.75	1.1	1.5	2.2
4.0						

#### Notes:

- The motor kW are based on ambient temperature conditions up to 40°C. For ambient temperatures above 40°C, please contact Wanner International.
- Capacity data is shown for pumps with elastomeric diaphragms. Contact factory for performance characteristics of pumps with PTFE diaphragms.
- 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

Metallic Pump Heads Only (L/hr)				Pump rpm	Gear ratio	Motor rpm
7 bar	34 bar	103 bar	172 bar			
55.1	53.5	49.7	45.6	25	60:1	1500
66.2	64.4	60.3	55.8	30	50:1	
83.2	81.2	76.3	71.5	37.5	40:1	
111.3	108.7	102.9	97.2	50	30:1	
133.7	130.8	124.2	117.7	60	25:1	
167.3	163.9	156.1	148.5	75	20:1	
223.3	219.1	209.3	199.8	100	15:1	
335.3	329.5	315.7	N/A	150	10:1	
447.3	439.8	422.0	N/A	200	7.5:1	
671.4	660.1	N/A	N/A	300	5:1	
895.4	N/A	N/A	N/A	400	7.5:1	3000
1343.5	N/A	N/A	N/A	600	5:1	

#### Required Motor kW

0.37	0.55	0.75	1.1	1.5	2.2	3.0
4.0						

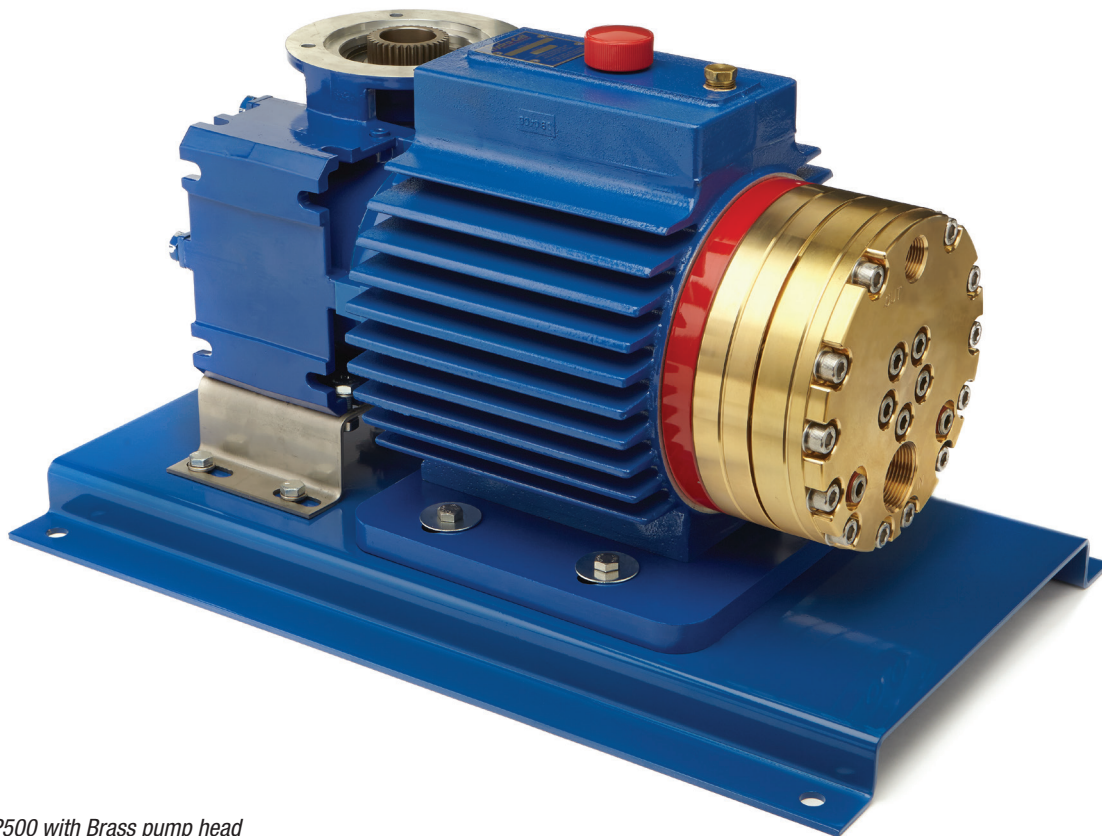
#### Notes:

- 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.
- Capacity data is shown for pumps with elastomeric diaphragms. Contact factory for performance characteristics of pumps with PTFE diaphragms.
- Contact factory for performance specifications.
- Based on using IE2 motors.
- For intermittent or reduced pressure duties, please contact Wanner International.

Due to the Wanner Engineering Continuous Improvement Program, specifications and other data are subject to change.

## Pump Data

<b>Diaphragms per Liquid End</b>	5
<b>Flow Control</b>	Electronic variable speed drive
<b>Maximum Discharge Pressure</b>	
Metallic Heads:	172 bar
<b>Maximum Inlet Pressure</b>	34 bar
<b>Maximum Liquid Operating Temperature</b>	
Metallic Heads:	121°C to 71°C
	<i>Consult factory for temperatures outside this range</i>
<b>Maximum Solids Size</b>	500 microns
<b>Inlet Port</b>	1 - 1/4 inch BSPT
<b>Discharge Port</b>	3/4 inch BSPT
<b>Shaft Rotation</b>	Reverse (bi-directional)
<b>Oil Capacity</b>	2.1 litres
<b>Weight (less motor)</b>	
Metallic Heads:	88.5 kg
<b>Dimensions (less motor)</b>	
Metallic Heads:	368.3 mm W x 609.6 mm D x 353.1 mm H

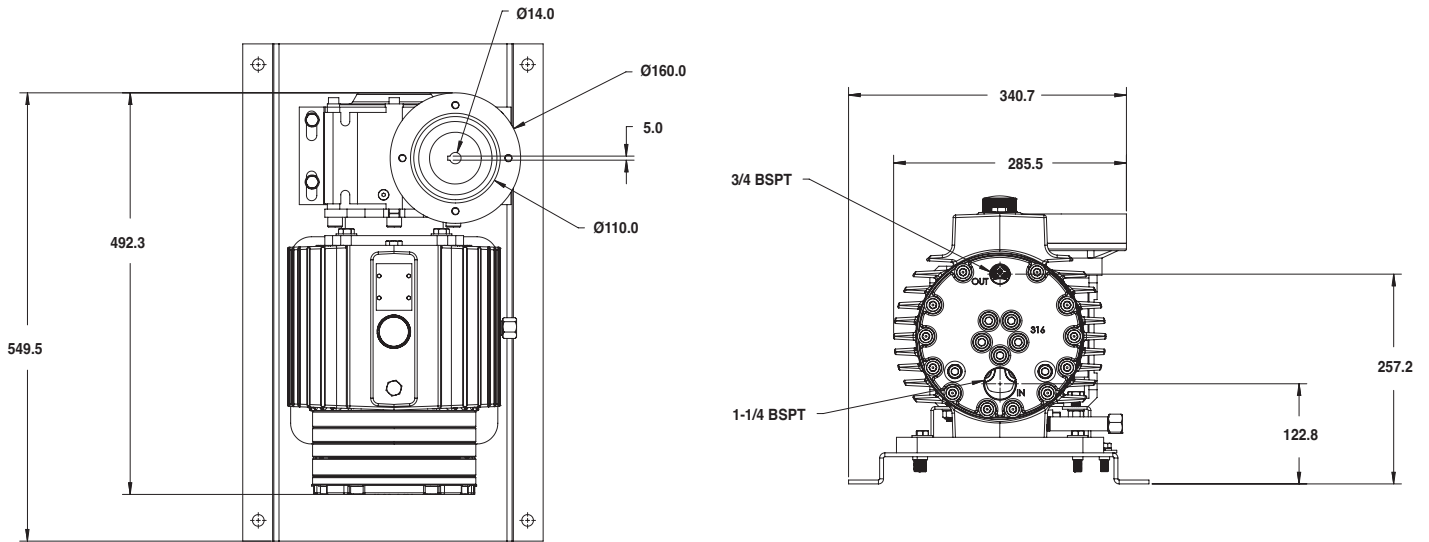


P500 with Brass pump head

Due to the Wanner Engineering Continuous Improvement Program, specifications and other data are subject to change.

## Metallic Pump Heads mm

### Metallic Pump Heads



**Note:** Dimensions are for reference only. Contact factory for certified drawings.

## Metering and Dosing Control Options

### Electronic Flow Rate Adjustment for Local Control

- Force-cooled Drives supplied as standard
- 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*

## Accessories, Options and Services

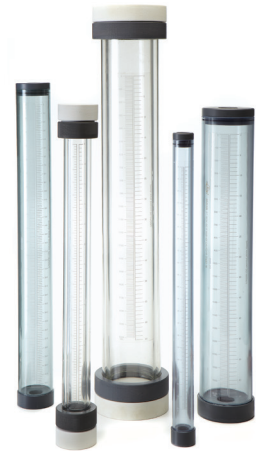
Consult Wanner International for complete details about available accessories and options as well as special services.

- Manifolds and Flanges
- Multiplexing Capability
- Different Gearbox Ratios
- Oil Cooler Systems
- Actuating Oils
- Magnetic Drain Plug
- Motors (Standard/Hazardous-duty)
- Controllers
- 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
- Customisation Services
- Process liquid end built with NACE and 3.1 traceability material certification



## 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 (BSPT Ports)	Back Pressure 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	149	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	2650	316 SST	24 - 172	149		111-706-B



\* Diaphragm material is PTFE on all models. Other materials available on request.  
Hastelloy® C is a registered trademark of Haynes International, Inc.

Due to the Wanner Engineering Continuous Improvement Program, specifications and other data are subject to change.

## Ordering Information

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									

Digit	Order Code	Description
1-4	P500	For all P500 Pumps ADPC (Advanced Diaphragm Position Control System)
5		<b>Pump Version</b>
	N	NPT Ports (NEMA motors only)
	M	BSPT Ports (IEC motors only)
6		<b>Pump Head / Retainer Material</b>
	B	Brass / Hastelloy C
	S	316L Stainless Steel / Hastelloy C
	T	Hastelloy C / Hastelloy C
7		<b>Diaphragm &amp; O-ring Material / Oil</b>
	A	Aflas / PTFE o-ring (Synthetic oil)
	K	Aflas / PTFE O-rings (Food-contact oil)
	G	FKM (Standard oil)
	S	FKM (Food-contact oil)
	X	FKM (Synthetic oil)
	T	Buna-N (Standard oil)
	F	Buna-N (Food-contact oil)
	Y	Buna-N (Synthetic oil)
8-9		<b>Check Valve Material (Valve Spring / Valve Seat / Valve)</b>
	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

10-12	Gearbox Ratio / 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)

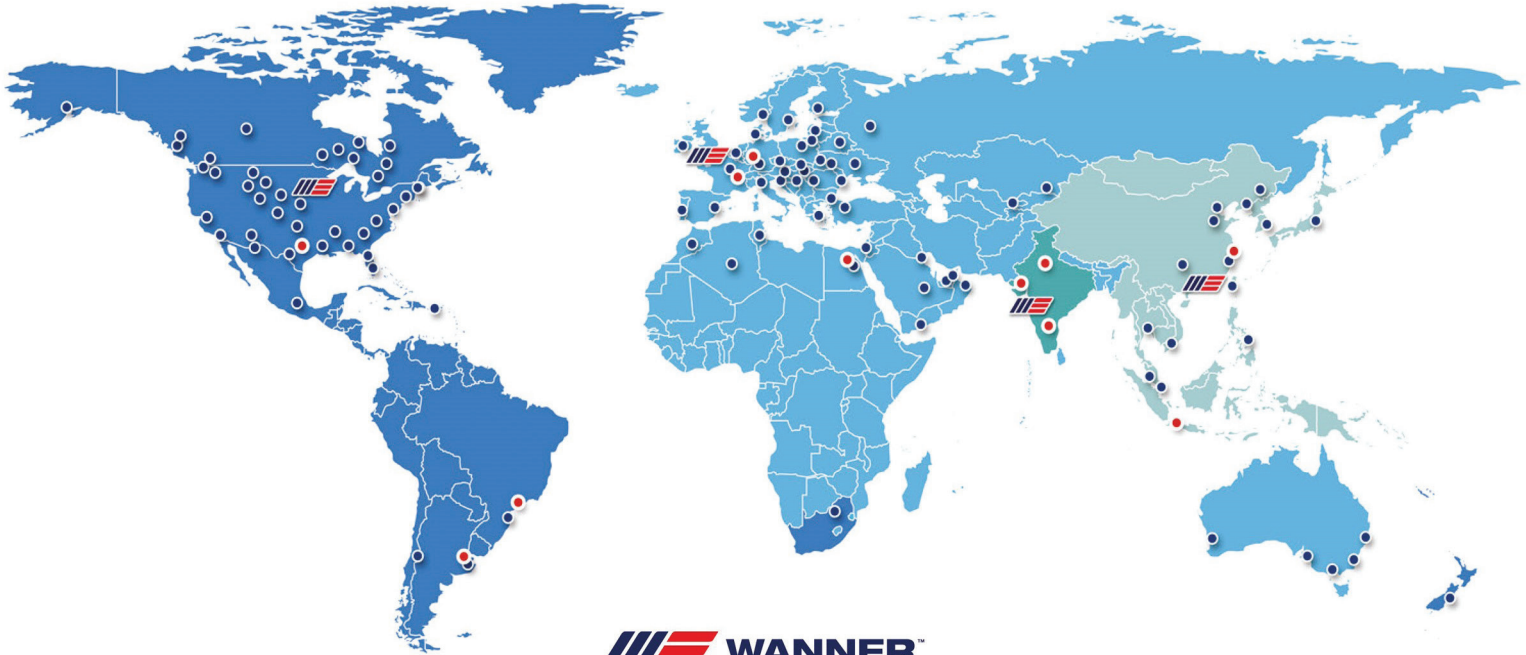
*Note: Largest motor rating: 2kW 4-pole motor. These are Wanner standard options. Other flange sizes are available upon request.*

13	Baseplate
H	Carbon Steel (Epoxy painted) size 75

### Notes:

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

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