

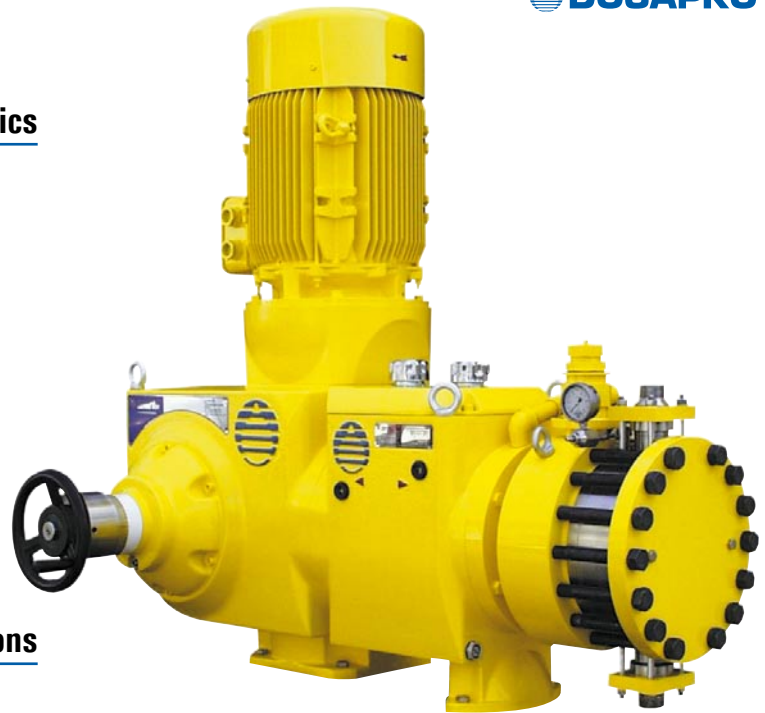
# PRIMEROYAL<sup>®</sup> P and R dosing pumps

Hydraulically actuated diaphragm liquid end • Packed plunger liquid end • PRIMEROYAL<sup>®</sup> P: flow rate up to 15665 l/h - pressure up to 311 bar • PRIMEROYAL<sup>®</sup> R: flow rate up to 15882 l/h - pressure up to 500 bar



## Main mechanical characteristics

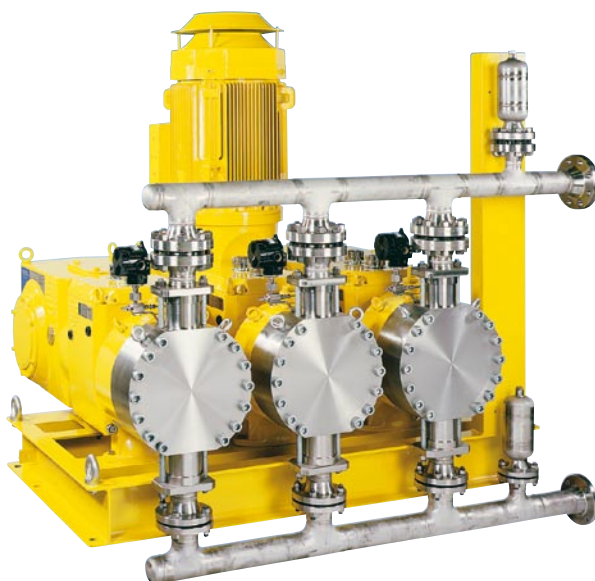
- Reciprocating dosing pumps with variable stroke length
- Stroke micrometric adjustment while running or stopped
- Fixed stroke version available
- Multiplexing capability up to 2x3 heads
- Maximum stroke length: 75 mm
- Stroke speeds at 50 Hz - 1500 rpm:  
48, 73, 93, 117, 146 and 175 spm
- Design end loads:
  - PRIMEROYAL<sup>®</sup> P: 2500 daN
  - PRIMEROYAL<sup>®</sup> R: from 4200 to 5000 daN



*PRIMEROYAL<sup>®</sup> R dosing pump, Simplex version  
equipped with a diaphragm liquid end*

## Main liquid end configurations

- Packed plunger liquid end ("UT"):
  - Liquid end body: 316L stainless steel
  - Plunger: 316L chromium oxide coated
  - Flushing ring
- Diaphragm liquid end ("H"):
  - Liquid end body: 316L stainless steel
  - Diaphragm: PTFE
  - Hydraulically actuated diaphragm
  - "HPD" patented design, life currently exceeding 20,000 hours



*PRIMEROYAL<sup>®</sup> R dosing pump, Triplex - Version with fixed stroke*

## Main electrical characteristics

- Motor power supply: 400 V - 50 Hz - 3 phase as standard. Other voltages/frequencies on request
- Electric equipment for non hazardous or hazardous area, large variety of protections and insulations
- Conforming to the European standards, Nema motors available

## Options

- Double or triple diaphragm
- Diaphragm failure detection
- Cooling/heating jacket
- Thermal barrier
- Special materials
- Food grade design
- Slurry configuration
- Special valves
- Automatic flow rate adjustment: electronic servomotor (waterproof or explosion-proof), pneumatic servomotor
- Remote head
- Stroke counter
- Low temperature
- Sand-proof
- Special designs available

## Performance

- Conformity to API 675 for adjustable stroke version
- Conformity to API 674 for fixed stroke version
- In accordance with ATEX CE EX II 2G/D c T3 or T4 on request

### PRIMEROYAL® P

#### 316L chromium oxide coated plunger and 316L stainless steel liquid end ("UT")

Ø Plunger (mm)	Swept volume (cm <sup>3</sup> )	Stroke speed max. (spm) Motor speed 1500 rpm	Flow rate max. (l/h)		Pressure max. (bar)	Connections
			10 bar	P. max.		
31.8	59.38	175	598	526	311	1" - VV1 m
38.1	85.51	175	861	790	215	1" - VV1 m
44.5	116.38	175	1173	1103	158	1" - VV1 m
50.8	152.01	175	1532	1464	120	1" 1/2 - VV1 m
57.2	192.39	175	1939	1873	95	1" 1/2 - VV1 m
63.5	237.52	175	2394	2330	76	1" 1/2 - VV1 m
69.9	287.40	175	2896	2834	63	1" 1/2 - VV1 m
79.4	371.12	175	3740	3683	48	1" 1/2 - VV1 m
88.9	465.54	175	4692	4639	38	3" - VV1 m
101.6	608.05	146	5113	5074	29	3" - VV1 m
127	950.08	146	7989	7963	18	3" - VV1 m
152.4	1368.11	146	11505	11495	12	4" - VV1 m
177.8	1862.15	146	15659	15665	9	4" - VV1 m

#### HPD diaphragm and metallic liquid end ("H")

	Ø Plunger (mm)	Swept volume (cm <sup>3</sup> )	Ø Diaphragm (mm)	Stroke speed max. (spm) Motor speed 1500 rpm	Flow rate max. (l/h)		Pressure max. (bar)	Connections
					10 bar	P. max.		
Single diaphragm	50	147.26	166	146	1225	1096	85	1" - VV1 m
	55	178.18	166	146	1482	1326	85	1" - VV1 m
	145	1238.47	366	117	8259	8201	15	3" - VH3 - 300 lbs
	160	1507.96	366	117	10056	10027	12	3" - VH3 - 300 lbs
Double diaphragm	32	60.31	168	175	601	461	300	1" - VV1 m
	40	94.24	168	175	940	798	198	1" - VV1 m
	50	147.26	168	175	1468	1330	127	1" 1/2 - VV1 m
	55	178	168	175	1777	1641	105	1" 1/2 - VV1 m
	63	233.79	268	175	2332	2202	80	2" - VV1 m
	70	288.63	268	175	2879	2736	64	2" - VV1 m
	80	376.99	268	175	3760	3631	49	2" - VV1 m
	90	477.12	268	146	3970	3824	35	2" - VV1 m
	100	589.04	268	146	4902	4819	31	2" - VV1 m
	115	779.01	308	146	6482	6409	24	3" - VV3 - 300 lbs
	125	920.38	308	146	7659	7597	20	3" - VV3 - 300 lbs
130	994.98	308	146	8284	8218	18	3" - VV3 - 300 lbs	



## Performance

- Conformity to API 675 for adjustable stroke version
- Conformity to API 674 for fixed stroke version
- In accordance with ATEX CE EX II 2G/D c T3 or T4 on request

### PRIMEROYAL® R

#### 316L chromium oxide coated plunger and 316L stainless steel liquid end ("UT")

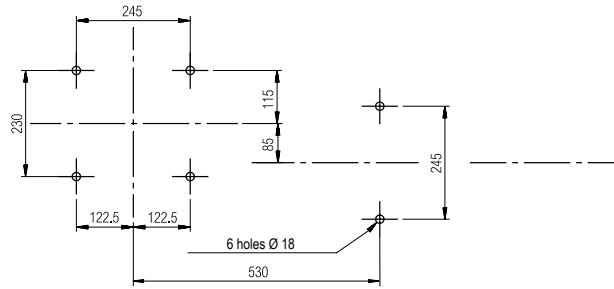
Ø Plunger (mm)	Swept volume (cm <sup>3</sup> )	Stroke speed max. (spm) Motor speed 1500 rpm	Flow rate max. (l/h)		Pressure max. (bar)	Connections
			10 bar	P. max.		
31.8	59.38	175	598	480	500	1" - VV1 m
38.1	85.51	175	861	738	435	1" - VV1 m
44.5	116.38	175	1173	1052	319	1" - VV1 m
50.8	152.01	175	1532	1413	244	1" 1/2 - VV1 m
57.2	192.39	175	1939	1821	192	1" 1/2 - VV1 m
63.5	237.52	175	2394	2279	155	1" 1/2 - VV1 m
69.9	287.40	175	2896	2783	128	1" 1/2 - VV1 m
79.4	371.12	175	3740	3630	99	1" 1/2 - VV1 m
88.9	465.54	175	4692	4586	79	3" - VV1 m
101.6	608.05	146	5113	5020	60	3" - VV1 m
127	950.08	146	7989	7909	38	3" - VV1 m
152.4	1368.11	146	11505	11440	26	4" - VV1 m
177.8	1862.15	146	15659	15615	19	4" - VV1 m

#### HPD diaphragm and metallic liquid end ("H")

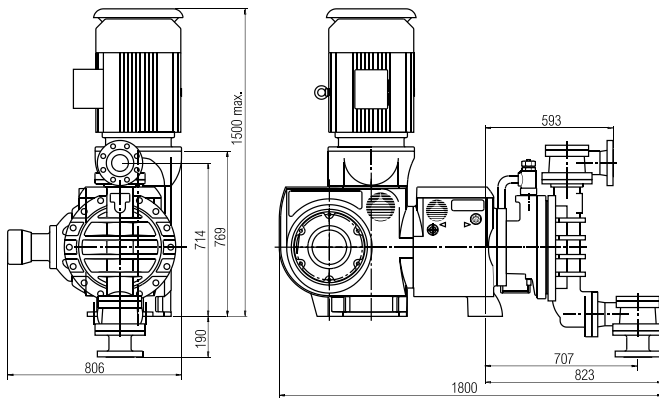
	Ø Plunger (mm)	Swept volume (cm <sup>3</sup> )	Ø Diaphragm (mm)	Stroke speed max. (spm) Motor speed 1500 rpm	Flow rate max. (l/h)		Pressure max. (bar)	Connections
					10 bar	P. max.		
Single diaphragm	145	1238.47	366	146	10306	10089	25	4" - VV3 - 300 lbs
	160	1507.96	366	146	12549	12338	24	4" - VV3 - 300 lbs
	180	1908.51	366	146	15882	15704	19	4" - VV3 - 300 lbs
Double diaphragm	40	94.24	168	175	940	721	300	1" - VV1 m
	50	147.26	168	175	1468	1229	254	1" 1/2 - VV1 m
	55	178.18	168	175	1777	1541	210	1" 1/2 - VV1 m
	63	233.79	268	175	2332	2108	160	2" - VV1 m
	70	288.63	268	175	2879	2648	129	2" - VV1 m
	80	376.99	268	175	3760	3519	99	2" - VV1 m
	90	477.12	268	146	3970	3811	78	2" - VV1 m
	100	589.04	268	146	4902	4705	63	2" - VV1 m
	115	779.01	308	146	6482	6305	48	3" - VV3 - 600 lbs
	125	920.38	308	146	7659	7493	40	3" - VV3 - 600 lbs
130	994.98	308	146	8284	8134	37	3" - VV3 - 600 lbs	

## General dimensions (in mm)

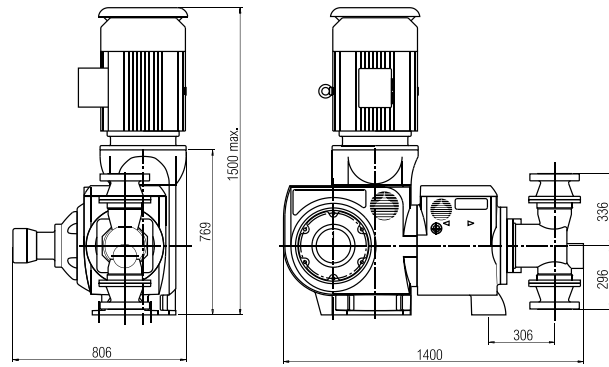
The general dimensions are given as an indication only.  
 The dimensions given correspond to the maximum dimensions (largest liquid end, most powerful motor).



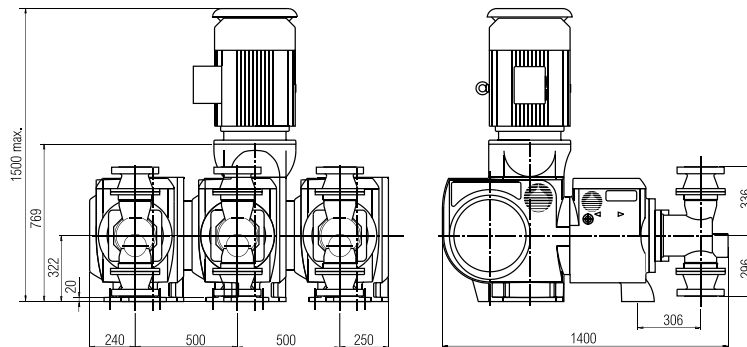
**PRIMEROYAL® P and PRIMEROYAL® R**  
**Diaphragm liquid end simplex configuration**



**PRIMEROYAL® P and PRIMEROYAL® R**  
**Packed plunger liquid end simplex configuration**



**PRIMEROYAL® P and PRIMEROYAL® R**  
**Packed plunger liquid end triplex power pump configuration**



## Weight and packing

### Adjustable stroke

Version	Net Weight (*) kg	Gross Weight (*) kg	Packing (mm) (L x W x H)
PRIMEROYAL® P/R simplex	900	1100	1650 x 1500 x 1400
PRIMEROYAL® P/R duplex	1800	2055	2250 x 1500 x 1400
PRIMEROYAL® P/R triplex	2400	2700	2950 x 1500 x 1400

(\*) Approximately

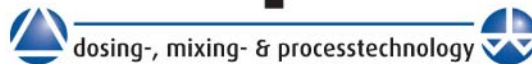
### Fixed stroke

Version	Net Weight (*) kg	Gross Weight (*) kg	Packing (mm) (L x W x H)
PRIMEROYAL® P/R simplex	1000	1180	1600 x 1000 x 1700
PRIMEROYAL® P/R duplex	2050	2300	1500 x 1250 x 2300
PRIMEROYAL® P/R triplex	3300	3600	1500 x 1700 x 2300

(\*) Approximately

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