

PRIMEROYAL® Series

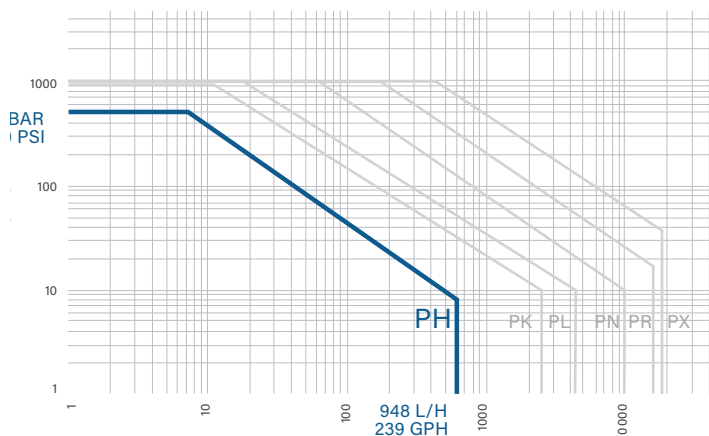
API 675 Metering Pump

Models PK and PKG

The PRIMEROYAL® metering pumps are versatile, reliable pumps that consistently and accurately inject chemicals. The pumps' field-proven design enables precise control of the pump delivery rate with a +/-1% steady state accuracy, over a range to 10 to 100% of the nominal flowrate. They feature a compact, variable eccentric drive that changes the stroke length by changing the position of the center of the shaft in the eccentric.

Models PK and PKG provide accurate dosing of a broad spectrum of fluids used in many industrial processes due to their modular design which offers several types of liquid ends, capacity control and other configuration options to meet the specific requirements of your process application.

Simplex PRIMEROYAL® Pumps



PKG pump - GSD liquid end

	50 Hz motor	60 Hz motor
Flow rate	Up to 2,500 L/h	Up to 659 gph
Pressure	Up to 930 bar	Up to 13,488 psi
Thrust	475 daN	1,067 lbf
100% stroke	40 mm	1.57 in
Ambient T° Standard	-10 to +55 °C	+14 to +131 °F
Low T° design	-40 to +55 °C	-40 to +131 °F

Applications

- **Water/Wastewater Treatment:** Municipal (drinking) water treatment: disinfection, fluoridation, coagulation/flocculation, pH control, water conditioning before and/or after RO treatment in desalination plant, and more.
- **Industrial Water Treatment:** protection of installation such as boilers and hydraulic systems to prevent scale and corrosion
- **Chemistry/Petrochemistry:** injection of additives, injection of co-catalyst such as TEAL for polyethylene and polypropylene production, injection of sulphuric acid into water to produce diluted sulphuric acid
- **Refinery/Downstream:** Injection of chemicals for separation and treatment of refined products, injection of paraffin inhibitor into fuel storage tanks
- **Oil and Gas:** injection of biocide, corrosion/scale inhibitors, H2S scavengers to protect piping and other assets and maintaining production rates, transfer of steam condensate
- **Food and Beverage:** Injection of enzymes in starch production, injection of caustic soda for process water neutralization in refining and distilling applications

General Specifications

Accuracy	± 1% over a range of 10 to 100% nominal flowrate
Flow rate adjustment	Micrometric adjustment of stroke while running or stopped
Maximum stroke	40 mm (1.57 in)
Frequencies at 50 Hz 960 rpm	39 and 120 spm
Frequencies at 50 Hz 1,440 rpm	59, 100, 144 and 180 spm
Frequencies at 60 Hz 1,140 rpm	47 and 144 spm
Frequencies at 60 Hz 1,725 rpm	71, 120, and 173 spm
Thrust	475 daN (1,068 lbf)
Ambient operating temperature	Standard: -10°C to 50°C (14°F to 122°F) Low temperature option: -40°C to 50°C (-40°F to 122°F)
API675	Conforms (exemptions available on request)
ATEX	Conforms to TEX CE EX II 2G/D c T3 with ATEX motor ATEX for plastic liquid ends, please consult us For packed plunger liquid ends, in area 1 consult us
Suction	2 m (6.57 ft) water on M, H and P liquid ends 4 m (13 ft) water on UT liquid ends 6 m (19.7 ft) water on N and NX liquid ends

Design Specifications

Model PK with Packed Plunger Type NX*

Flow rate		Pressure Max. 50 Hz Motor (kW)				Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)				Freq. (spm)		Connections ball valves	
		0.55	0.75	1.1	1.5	Motor Speed (rpm)				0.75	1	1.5	2	Motor Speed (rpm)			
10 bar	Pres. Max.	H	J	K	L	960	1,440	145 psi	Pres. Max.	H	J	K	L	1,140	1,750		
l/h		bar						gph		psi							
Ø 8 mm - Swept volume: 2.01 cm ³								Ø 0.31 in - Swept volume: 0.12 in ³								3/8" MP	
4.2	2.7	930				39		1.3	0.86	13,488				47		Ø 6.35 mm / 2.250 in - LD	
6.6	4.2	750	930				59	2.1	1.3	10,878	13,488				71		
11.6	7.3	450	650	930			100	3.7	2.3	6,527	9,427	13,488			120		
13.9	8.8	370	530	820	930	120		4.4	2.8	5,366	7,687	11,893	13,488	144			
16.7	10.5	310	440	700	930		144 ¹	Not applicable with a 60 Hz motor									
Ø 12 mm - Swept Volume: 4.52 cm ³								Ø 0.47 in - Swept Volume: 0.28 in ³								1/2"	
9.5	8	400				39		3.0	2.5	5,801				47		Ø 6.35 mm / 0.250 in - LD	
14.9	12.6	340	400				59	4.7	4.0	4,931	5,801				71		
26.1	22	200	280	400			100	8.3	7.0	2,901	4,061	5,801			120		
31.3	26.4	160	235	360	400	120		9.9	8.4	2,321	3,408	5,221	5,801	144			
37.5	31.7	130	195	300	400		144 ¹	Not applicable with a 60 Hz motor									

* This chart demonstrates the minimum and maximum flow rate and pressure of the pump. For other specifications, please consult your local representative.

¹To have a certification in zone 1, please add probes = CONSULT

²Do not use with 60 Hz Motor

LD = Hardener valves - double valve

Design Specifications

Model PK with Packed Plunger Type UT or N*

Flow rate		Pressure Max. 50 Hz Motor (kW)				Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)				Freq. (spm)		Connections ball valves	
		0.55	0.75	1.1	1.5	Motor Speed (rpm)				0.75	1	1.5	2	Motor Speed (rpm)			
10 bar	Pres. Max.	H	J	K	L	960	1,440	145 psi	Pres. Max.	H	J	K	L	1,140	1,725		
l/h		bar						gph		psi							
Ø 9.5 mm - Swept volume: 2.85 cm ³								Ø 0.37 in - Swept volume: 0.17 in ³								1/2"	
6.3	5	300				39		2.0	1.6	4,351				47			
9.6	7.7	300					59	3.0	2.4	4,351					71		
16.4	13.1	300					100	5.2	4.2	4,351					120		
19.6	15.7	257	300			120		6.2	5.0	3,727	4,351			144			
23.6	18.9	212	300				144 ¹	Not applicable with a 60 Hz motor									
Ø 38.1 mm - Swept Volume: 45.60 cm ³								Ø 1.5 in - Swept Volume: 2.78 in ³								1"	
102	100	38				39		32.3	31.7	551				47			
154	152	31	38				59	48.8	48.2	450	551				71		
262	259	15	25	38			100	83.1	82.1	218	363	551			120		
315	311	11	20	33	38	120		99.9	98.6	160	290	479	551	144			
378	373	8	15	27	38		144 ¹	Not applicable with a 60 Hz motor									

Design Specifications

Model PK with Packed Plunger Type UT*

Flow rate		Pressure Max. 50 Hz Motor (kW)					Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)					Freq. (spm)		Connections ball valves
		0.55	0.75	1.1	1.5	2.2	Motor Speed (rpm)				0.75	1	1.5	2	3	Motor Speed (rpm)		
10 bar	Pres. Max.	H	J	K	L	M	960	1,440	145 psi	Pres. Max.	H	J	K	L	M	1,140	1,725	
l/h		bar							gph		psi							
Ø 44.5 mm - Swept Volume: 62.07 cm ³								Ø 1.75 in - Swept Volume: 3.79 in ³								1"		
139	138	27					39		44.1	43.7	392					47		
210	208	22	27				59		66.6	65.9	319	392					71	
357	354	10	17	27			100		113.7	112.2	145	247	392				120	
429	426	7	13	24	27		120		136.0	135.0	102	189	348	392			144	
514	510		10	19	27		144 ¹	Not applicable with a 60 Hz motor										
Ø 88.9 mm - Swept Volume: 248.29 cm ³								Ø 3.50 in - Swept Volume: 14.66 in ³								2"		
	557	5	6				39			176.6	72	87				47		
	844			6			59			267.6			87				71	
	1,432				6		100			454.0				87			120	
	1,718				5	6	120			544.6				72	87	144		
	2,062					6	144 ¹	Not applicable with a 60 Hz motor										

Design Specifications

Model PK with Metallic Single Diaphragm Liquid End Type M*

Flow rate		Pressure Max. 50 Hz Motor (kW)					Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)				Freq. (spm)		Connections ball valves	
		0.55	0.75	1.1	1.5	2.2	Motor Speed (rpm)				0.75	1	1.5	2	Motor Speed (rpm)			
10 bar	Pres. Max.	H	J	K	L	M	960	1,440	145 psi	Pres. Max.	H	J	K	L	1,140	1,725		
l/h		bar							gph		psi							
Ø 8 mm - Swept Volume: 2.01 cm ³ - Diaphragm: 92 mm									Ø 0.315 in - Swept Volume: 0.12 in ³ - Diaphragm: 3.62 in									1/2"
4.3	3.1	500					39		1.4	1.0	7,252				47			
6.5	4.6	500						59	2.1	1.5	7,252					71		
11.1	7.8	457	500					100	3.5	2.5	6,628	7,252				120		
13.3	9.4	381	500					120	4.2	3.0	5,526	7,252				144		
16	11.3	317	455	500				144	5.1	3.6	4,598	6,599	7,252			173		
20	14.1	254	364	500				180 ^{1 2}	Not applicable with a 60 Hz motor									
Ø 25 mm - Swept Volume: 19.63 cm ³ - Diaphragm: 182 mm									Ø 0.98 in - Swept Volume: 1.20 in ³ - Diaphragm: 7.2 in									1"
42	39	96					39		13.3	12.4	1,392				47			
63	59	79	96					59	20.0	18.7	1,146	1,392				71		
108	102	46	67	96				100	34.2	32.3	667	972	1,392			120		
130	123	39	55	85	96			120	41.2	39.0	566	798	1,233	1,392	144			
156	147	32	46	71	96			144	49.5	46.6	464	667	1,030	1,392		173		
195	184	25	37	57	79	96		180 ^{1 2}	Not applicable with a 60 Hz motor									

Design Specifications

Model PK with Metallic Double Diaphragm Liquid End Type M*

Flow rate		Pressure Max. 50 Hz Motor (kW)					Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)				Freq. (spm)		Connections ball valves	
		0.55	0.75	1.1	1.5	2.2	Motor Speed (rpm)				0.75	1	1.5	2	Motor Speed (rpm)			
10 bar	Pres. Max.	H	J	K	L	M	960	1,440	145 psi	Pres. Max.	H	J	K	L	1,140	1,725		
l/h		bar							gph		psi							
Ø 8 mm - Swept Volume: 2.01 cm ³ - Diaphragm: 92 mm									Ø 0.315 in - Swept Volume: 0.12 in ³ - Diaphragm: 3.62 in									1/2"
4.3	2.9	350					39		1.4	0.9	5,076				47			
6.5	4.3	350						59	2.1	1.4	5,076					71		
11.1	7.3	350						100	3.5	2.3	5,076					120		
13.3	8.8	350						120	4.2	2.8	5,076					144		
16	10.5	317	350					144	5.1	3.3	4,598	5,076				173		
20	13.2	254	350					180 ^{1 2}	Not applicable with a 60 Hz motor									
Ø 25 mm - Swept Volume: 19.63 cm ³ - Diaphragm: 182 mm									Ø 0.98 in - Swept Volume: 1.20 in ³ - Diaphragm: 7.2 in									1"
42	38	96					39		13.3	12.0	1,392				47			
63	57	79	96					59	20.0	18.1	1,146	1,392				71		
108	98	46	67	96				100	34.2	31.1	667	972	1,392			120		
130	118	39	55	85	96			120	41.2	37.4	566	798	1,233	1,392	144			
156	142	32	46	71	96			144	49.5	45.0	464	667	1,030	1,392		173		
195	178	25	37	57	79	96		180 ^{1 2}	Not applicable with a 60 Hz motor									

Design Specifications

Model PK with HPD Diaphragm Liquid End: Metallic Type H*

Flow rate		Pressure Max. 50 Hz Motor (kW)					Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)				Freq. (spm)		Connections ball valves	
		0.55	0.75	1.1	1.5	2.2	Motor Speed (rpm)				0.75	1	1.5	2	Motor Speed (rpm)			
10 bar	Pres. Max.	H	J	K	L	M	960	1,440	145 psi	Pres. Max.	H	J	K	L	1,140	1,725		
l/h		bar							gph		psi							
Ø 20 mm - Swept Volume: 12.57 cm ³ - Diaphragm: 106 mm									Ø 0.79 in - Swept Volume: 0.77 in ³ - Diaphragm: 4.2 in								1/2"	
27	21	151					39		8.6	6.7	2,190				47			
42	33	124	151					59	13.3	10.5	1,798	2,190				71		
71	56	73	104	151				100	22.5	17.8	1,059	1,508	2,190			120		
85	68	61	87	133	151		120		26.9	21.6	885	1,262	1,929	2,190	144			
103	82	50	72	111	151		144		32.7	26.0	725	1,044	1,610	2,190		173		
128	102	40	58	89	124	151		180 ¹	Not applicable with a 60 Hz motor									
Ø 32 mm - Swept Volume: 32.17 cm ³ - Diaphragm: 106 mm									Ø 1.26 in - Swept Volume: 1.96 in ³ - Diaphragm: 4.2 in								1/2"	
71	66	59					39		22.5	20.9	856				47			
108	100	48	59					59	34.2	31.7	696	856				71		
183	170	28	41	59				100	58.0	53.9	406	595	856			120		
220	204	23	34	52	59		120		69.7	64.7	334	493	754	856	144			
264	245	18	28	43	59		144		83.7	77.7	261	406	624	856		173		
330	307	14	22	34	48	59		180 ¹	Not applicable with a 60 Hz motor									

Design Specifications

Model PK with HPD Diaphragm Liquid End: Plastic Type P*

Flow rate		Pressure Max. 50 Hz Motor (kW)			Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)			Freq. (spm)		Connections ball valves	
		0.55	0.75	1.1	Motor Speed (rpm)				0.75	1	1.5	Motor Speed (rpm)			
10 bar	Pres. Max.	H	J	K	960	1,440	145 psi	Pres. Max.	H	J	K	1,140	1,725		
l/h		bar					gph		psi						
Ø 32 mm - Swept Volume: 32.17 cm ³ - Diaphragm: 106 mm							Ø 1.26 in - Swept Volume: 1.96 in ³ - Diaphragm: 4.2 in							1/2"	
71		10			39		22.5		145			47			
108		10				59	34.2		145				71		
183		10				100	58.0		145				120		
220		10			120		69.7		145			144			
264		10				144	83.7		145				173		
330		10				180 ¹	Not applicable with a 60 Hz motor								

* This chart demonstrates the minimum and maximum flow rate and pressure of the pump. For other specifications, please consult your local representative.

¹Do not use a 60 Hz motor

NS = Single valve

Design Specifications

Model PKG with Metallic Liquid End with GSD Diaphragm Type H*

Flow rate		Pressure Max. 50 Hz Motor (kW)					Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)					Freq. (spm)		Connections ball valves	
		0.55	0.75	1.1	1.5	2.2	Motor Speed (rpm)				0.75	1	1.5	2	3	Motor Speed (rpm)			
10 bar	Pres. Max.	H	J	K	L	M	960	1,440	145 psi	Pres. Max.	H	J	K	L	M	1,140	1,725		
l/h		bar							gph		psi								
Ø 40 mm - Swept Volume: 50.27 cm ³ - Diaphragm: 145 mm									Ø 1.57 in - Swept Volume: 3.07 in ³ - Diaphragm: 5.7 in									1/2"	
105	96	37					39		33.3	30.4	537					47			
160	147	31	37					59	50.7	46.6	450	537					71		
271	249	17	26	37				100	85.9	78.9	247	377	537				120		
325	298	13	21	33	37		120		103.0	94.5	189	305	479	537		144			
390	358	10	16	27	37			144	123.6	113.5	145	232	392	537			173		
488	448	7	12	21	31	37		180'	Not applicable to a 60 Hz motor										
Ø 100 mm - Swept Volume: 314.16 cm ³ - Diaphragm: 225 mm									Ø 3.94 in - Swept Volume: 19.17 in ³ - Diaphragm: 8.86 in									2"	
	676		5				39			214.3		73				47			
	1,023		4	5				59		324.3		58	73				71		
	1,734				5			100		549.7				73			120		
	2,080				4	5	120			659.4				58	73	144			
	2,500					5		144'	Not applicable to a 60 Hz motor										

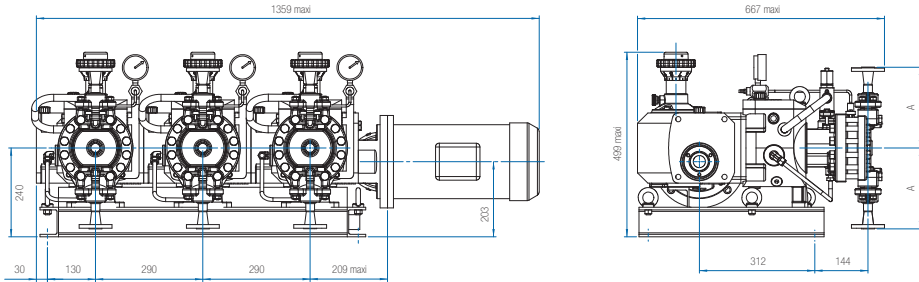
Design Specifications

Model PKG with Plastic Liquid End with GSD Diaphragm Type P*

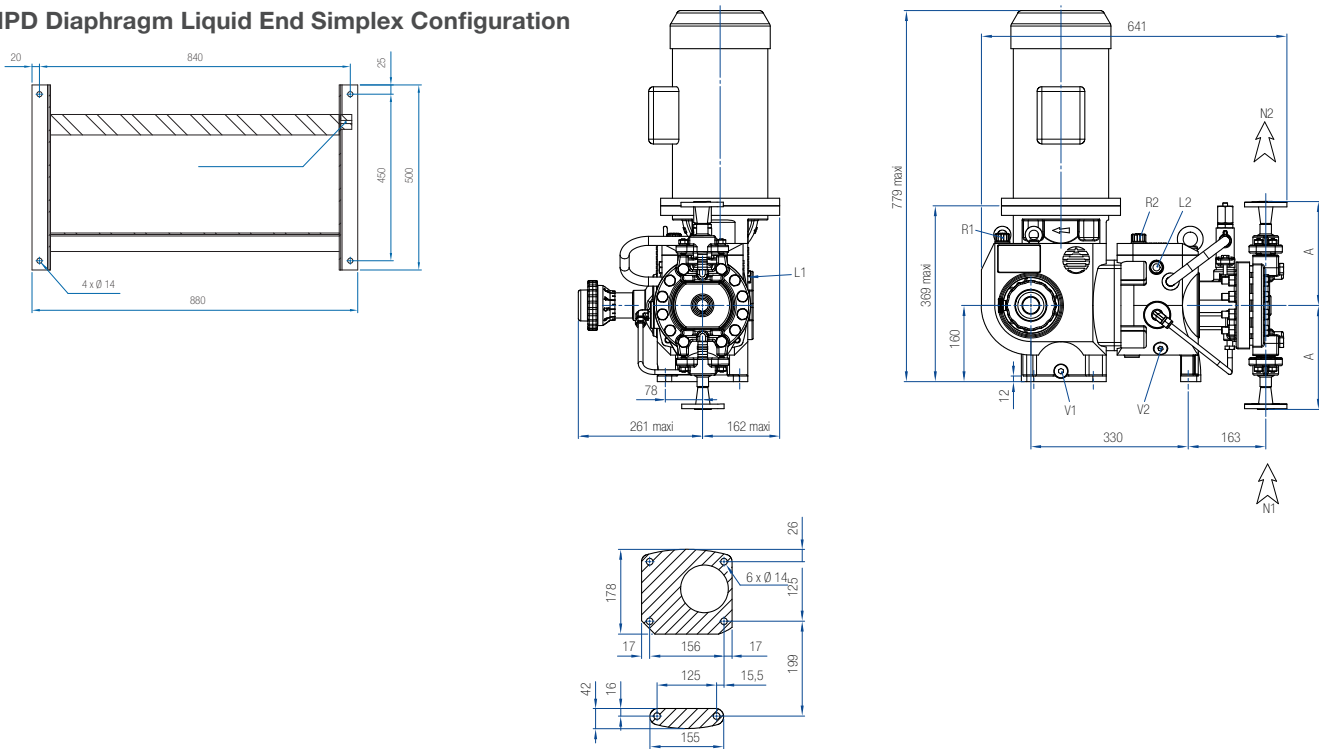
Flow rate		Pressure Max. 50 Hz Motor (kW)					Freq. (spm)		Flow rate		Pressure Max. 60 Hz Motor (HP)					Freq. (spm)		Connections ball valves	
		0.55	0.75	1.1	1.5	2.2	Motor Speed (rpm)				0.75	1	1.5	2	3	Motor Speed (rpm)			
10 bar	Pres. Max.	H	J	K	L	M	960	1,440	145 psi	Pres. Max.	H	J	K	L	M	1,140	1,725		
l/h		bar							gph		psi								
Ø 40 mm - Swept Volume: 50.27 cm ³ - Diaphragm: 145 mm									Ø 1.57 in - Swept Volume: 3.07 in ³ - Diaphragm: 5.7 in									1"	
105		10					39		33.3		145					47			
160		10						59	50.7		145						71		
271		10						100	85.9		145						120		
325		10					120		103.0		145					144			
390		10						144	123.6		145						173		
488		7	10					180'	Not applicable to a 60 Hz motor										
Ø 100 mm - Swept Volume: 314.16 cm ³ - Diaphragm: 225 mm									Ø 3.94 in - Swept Volume: 19.17 in ³ - Diaphragm: 8.86 in									1" 1/2	
	676		5				39			214.3		73				47			
	1,023		4	5				59		324.3		58	73				71		
	1,734				5			100		549.7				73			120		
	2,080				4	5	120			659.4				58	73	144			
	2,500					5		144'	Not applicable to a 60 Hz motor										

Dimensions

HPD Diaphragm Liquid End Triplex Configuration



HPD Diaphragm Liquid End Simplex Configuration



Weight and Packing

Version	Net weight		Gross weight		Packing	
	kg	lbs	kg	lbs	(L x W x H) mm	(L x W x H) in
Series PK						
Simplex	110	242	168	370	900 x 600 x 1,050	35.5 x 23.6 x 41.4
Series PKG						
Simplex	120	265	170	375	700 x 650 x 1,000	27.6 x 25.6 x 39.4