

HDP 400-2 High Pressure Pump series

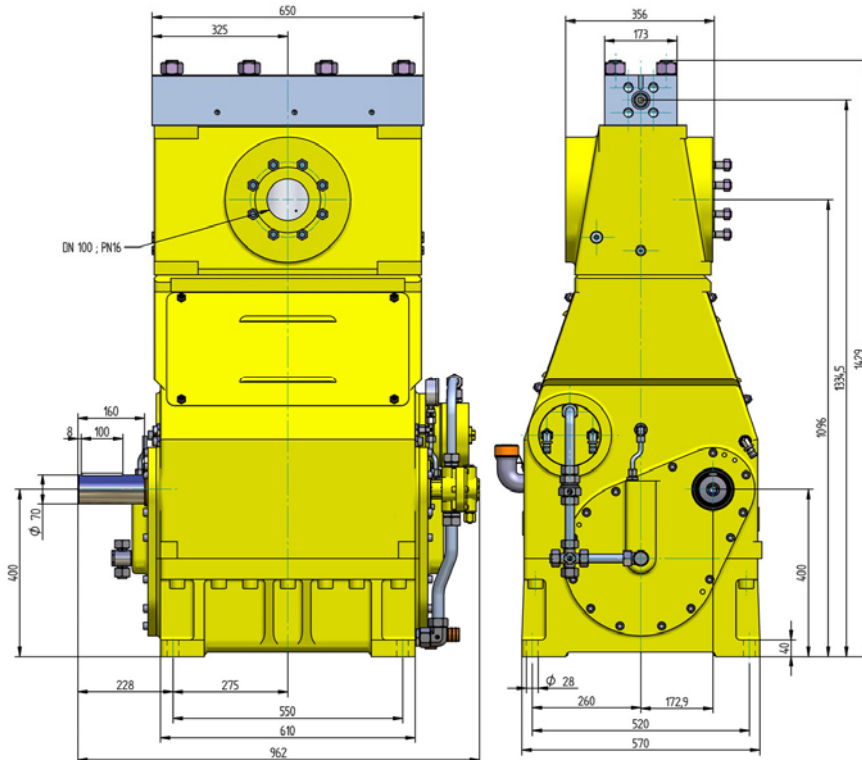
Design criteria

Hammelmann high pressure pumps are built to operate at the continuous maximum duty stated in the performance parameters. Just compare the crankshaft speed, average plunger speed, plunger diameter and power rating

High pressure pump

Weight: approx. 1700 kg

Energy efficient →



Features

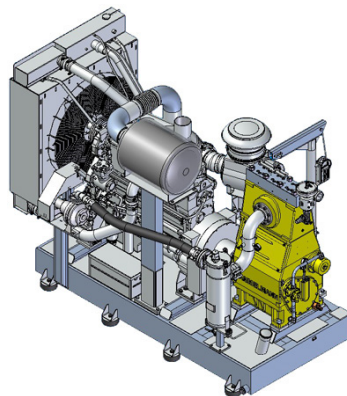
- Power ratings up to 400 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

Quality and reliability

- Crank section calculation by 'Finite element method' ensures long working life under continuous load
- Stainless steel pump head free of alternating stress
- Integral speed reduction gear
- Pressurised oil lubrication system with oil cooler/filter
- Bellows form hermetic seal between the suction chamber and crank section
- Solid ceramic or tungsten carbide plungers
- Choice of application specific seal assemblies
- Choice of bronze (standard) or stainless steel suction chamber

Stationary unit with diesel engine

Length: 3879 mm
 Width: 1439 mm
 Height: 2271 mm
 Weight: approx. 5350 kg at 405 kW



Main dimensions without accessories such as suction line, pressure regulator etc. All shown as right side drive. Detailed dimensional drawings and weights available on request.

Hammelmann GmbH
 Carl-Zeiss-Str. 6-8
 59302 Oelde • Germany

Phone (0 25 22) 76-0
 Fax (0 25 22) 76-444
 mail@hammelmann.de
 www.hammelmann.com

06/17 © Copyright Hammelmann GmbH Oelde, Germany.
 Subject to modification.

HAMMELMANN®

Technical data, series HDP 400-2

Performance parameters (Standard design)

HDP	Q [l/min]	Required power rating [kW]					D	r. p. m.	
		200	250	300	350	400		n 1	n 2
		Operating pressure [bar]							
404	45*	2400*	3000*				28	1500	340
	55*	2000*	2500*	3000*				1500/1800	410
	65*	1650	2100*	2500*	2900*	3000*		1800	490
	61 / 58*	1800	2250*	2600*			32	1500	340
	73 / 70*	1550	1850	2300*	2600*			1500/1800	410
88 / 84*	1300	1550	1850	2250*	2600*	1800		490	
73 / 71*	1500	1850	2200*			35	1500	340	
89 / 85*	1200	1500	1800	2150*			1500/1800	410	
107/103	1000	1300	1500	1800	2000*		1800	490	
*Ultra high pressure									
403	95	1150	1400	1670			40	1500	340
	115	950	1150	1400	1670			1500/1800	410
	137	800	1000	1200	1400	1600		1800	490
	125	850	1050	1300			45	1500	340
	150	700	900	1050	1250			1500/1800	410
180	600	750	900	1050	1200	1800		490	
402	152	720	880	1070			50	1500	340
	183	600	750	880	1050			1500/1800	410
	218	500	620	750	880	1000		1800	490
	184	590	740	880			55	1500	340
	222	490	610	720	860			1500/1800	410
	265	400	510	610	720	830		1800	490
	223	490	600	740			60	1500	340
	269	400	500	600	710			1500/1800	410
	321	330	420	500	590	680		1800	490
	263	410	520	630			65	1500	340
	317	340	430	520	600			1500/1800	410
	379	280	360	430	500	580		1800	490
	306	350	440	540			70	1500	340
	369	290	370	430	510			1500/1800	410
	441	240	310	370	430	490		1800	490
350	300	390	470			75	1500	340	
422	260	320	380	450			1500/1800	410	
504	210	270	320	380	430		1800	490	
396	270	340	410			80	1500	340	
477	220	280	340	400			1500/1800	410	
570	190	240	280	330	380		1800	490	
401 High flow	396	270	340	410			80	1500	340
	477	220	280	340	400			1500/1800	410
	570	190	240	280	330	380		1800	490
	438	240	310	370			85	1500	340
	528	200	260	310	360			1500/1800	410
	631	170	210	260	300	340		1800	490
	496	220	270	330			90	1500	340
	598	180	220	270	320			1500/1800	410
	715	150	190	220	260	300		1800	490
	617	170	220	260			100	1500	340
	744	140	180	220	250			1500/1800	410
	889	120	150	180	210	240		1800	490
	756	140	180	220			110	1500	340
	912	120	150	170	210			1500/1800	410
	1090	100	120	150	170	200		1800	490
903	120	150	180			120	1500	340	
1078	100	130	150	180			1500/1800	410	
1289	90	110	130	150	170		1800	490	

Note: Actual flow rates for water as pumped medium (volumetric efficiency has already been taken into account).

- Rod force: 210 kN
- Stroke: 80 mm
- Mean piston speed at n2
340 r.p.m. = 0,9 m/sec
410 r.p.m. = 1,1 m/sec
490 r.p.m. = 1,3 m/sec

Typical high pressure pump units



- Diesel unit in container

Energy efficient →

Hammelmann plunger pumps convert 93 to 98 % of the shaft power to hydraulic energy.

D = Piston/Plunger dia. [mm]
n1 = Motor/Engine r.p.m.
n2 = Crankshaft

Conversion table
Rating 1 kW = 1,34 HP
Op. Pressure 1 bar = 14,5 psi
Flow rate 1 l = 0,264 US gallon
1 l = 0,22 Imp. gallon

HDP	Seal**	Sealing system
404	Dynamic D 28	Tungsten carbide plunger & bushing
	Dynamic D 35	Tungsten carbide plunger / bronze bushing
403	Dynamic	Ceramic plunger / bronze bushing
	Packing	Ceramic plunger / packing
402	Dynamic D 50 -75	Ceramic plunger / bronze bushing
	Packing D 50 - 80	Ceramic plunger / packing
401	Packing	Ceramic plunger / packing

** The dynamic high pressure sealing extends the advantages of the labyrinth design with further increased efficiency.

HAMMELMANN®