

HDP 140 High Pressure Pump Series

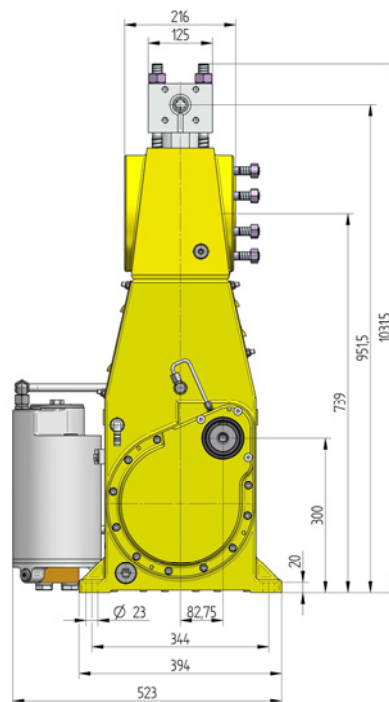
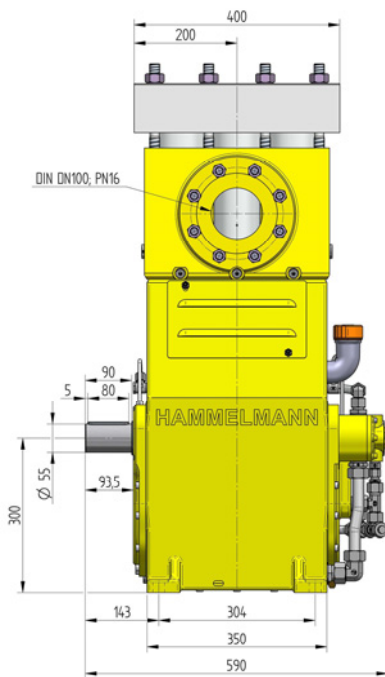
Design criteria

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. 838 lbs

Energy efficient →



Features

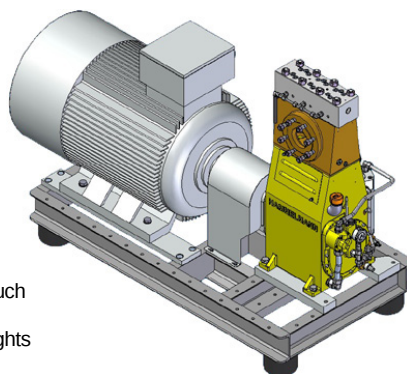
- Power ratings up to 190 HP
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

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 electric motor

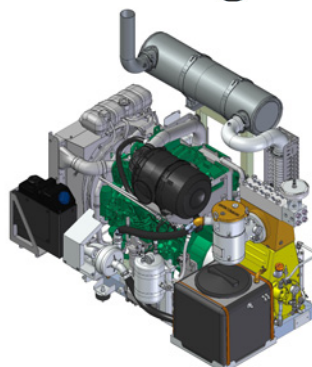
Length: 76.8 inch
Width: 33.5 inch
Height: 52 inch
Weight: approx. 3528 lbs at 147 HP



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

Stationary unit with diesel motor

Length: 82.7 inch
Width: 51.2 inch
Height: 63 inch
Weight: approx. 3672 lbs at 214 HP without full fuel tank



HAMMELMANN®

HDP 140 series, technical data

Performance parameters (Standard design)

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

HDP	Q [GPM]	Required power rating [HP]						D	r.p.m.	
		60	75	100	120	150	190		n 1	n 2
		Operating pressure [psi]								
144	2.6*	34800*	43500*	58000*				15	1500	390
	3.2*	29000*	35520*	47850*	58000*				1500/1800	467
	3.7*	22470	29000*	39870*	47850*	60900*			1800/2150	560
	4.0/3.4*	24070	29440*	39880*	46400*			1500	390	
	4.8/4.2*	20160	24650	33640*	40310*	46400*		1500/1800	467	
	5.8/5.0*	16680	20450	27840*	33500*	40890*	46400*	1800/2150	560	
5.0/4.8*	18420	22480	30600*	36830*	40600*		20	1500	390	
	6.1/5.5*	15370	18850	25670	30890*	37700*		1500/1800	467	
	7.1/6.6*	12760	15660	21320	25670	31320*		40600*	1800/2150	560
*Ultra high pressure										
143	7.9	11750	14360	19580	23490	26100		25	1500	390
	9.5	9860	12040	16530	19720	24070			1500/1800	467
	11.1	8270	10010	13630	16390	20010	26100		1800/2150	560
	9.8	9280	11310	15370	18560	20740		28	1500	390
	11.9	7690	9430	12760	15370	18850			1500/1800	467
	14.0	6530	7830	10730	12910	15810	20740		1800/2150	560
142	11.4	8120	10010	13630	16390	17980		30	1500	390
	13.5	6820	8410	11460	13780	16820			1500/1800	467
	16.1	5660	6960	9430	11460	13920	17980		1800/2150	560
	13.7	6820	8410	11460	13490	14940		33	1500	390
	16.6	5660	6960	9428	11310	13780	14940		1500/1800	467
	19.8	4790	5800	7980	9430	11600	13920		1800/2150	560
	15.8	5950	7400	10010	12040	13200		35	1500	390
	18.5	5080	6090	8410	10010	12330			1500/1800	467
	22.2	4210	5080	6960	8410	10300	13200		1800/2150	560
	20.6	4640	5660	7690	9140	10150		40	1500	390
	24.6	3920	4790	6380	7690	9430	10150		1500/1800	467
	29.3	3190	3920	5370	6380	7830	9860		1800/2150	560
	26.4	3630	4500	6090	7250	7980		45	1500	390
	31.4	3050	3770	5080	6090	7400	7980		1500/1800	467
	37.5	2470	3050	4210	5080	6240	7690		1800/2150	560
	32.7	2900	3630	4930	5950	6530		50	1500	390
	39.1	2470	3050	4060	4930	6090	6530		1500/1800	467
	46.7	2030	2470	3480	4060	5080	6240		1800/2150	560
	39.6	2470	3050	4060	4930	5370		55	1500	390
	47.3	2030	2470	3340	4060	4930	5370		1500/1800	467
	56.5	1740	2030	2760	3340	4210	5080		1800/2150	560
	46.5	2030	2470	3340	4060	4500		60	1500	390
	55.7	1740	2030	2900	3480	4210	4500		1500/1800	467
	66.5	1450	1740	2320	2900	3480	4350		1800/2150	560
	54.6	1740	2030	2900	3480	3920		65	1500	390
	65.5	1450	1740	2320	2900	3480	3920		1500/1800	467
	78.1	1160	1450	2030	2320	2900	3630		1800/2150	560
	63.4	1450	1890	2470	3050	3340		70	1500	390
	75.8	1310	1600	2030	2470	3050	3340		1500/1800	467
	90.6	1020	1310	1740	2030	2610	3190		1800/2150	560

HDP	Seal **	Sealing system
144	Dynamic	Tungsten carbide plunger & bushing
	Packing	Special ceramic plunger *** / packing
143	Dynamic	Ceramic plunger / bronze bushing
	Packing	Ceramic plunger / packing
142	Dynamic	Ceramic plunger / bronze bushing
	Packing	Ceramik plunger / packing

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

*** Special ceramic plungers up to max. 46,400 psi

D = Piston/Plunger dia. [mm]

n1 = Motor/Engine r.p.m.

n2 = Crankshaft r.p.m.

Conversion table

Rating 1 hp = 0,746 kW

Op. pressure 1 psi = 0,069 bar

Flow rate 1 gpm = 0,227 m³/h

- Rod force: 19,783 lbf
- Stroke: 2.20 inch
- Mean piston speed at n₂
390 r.p.m. = 2.36 feet/sec
467 r.p.m. = 2.82 feet/sec
560 r.p.m. = 3.38 feet/sec

Typical high pressure pump units



- Stationary unit with electric motor



- Road going or stationary trailer units with sound damping cover



10 or 20 foot sound damped container versions

Energy efficient →

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

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