

HDP 300 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. 2,360 lbs

Energy efficient →

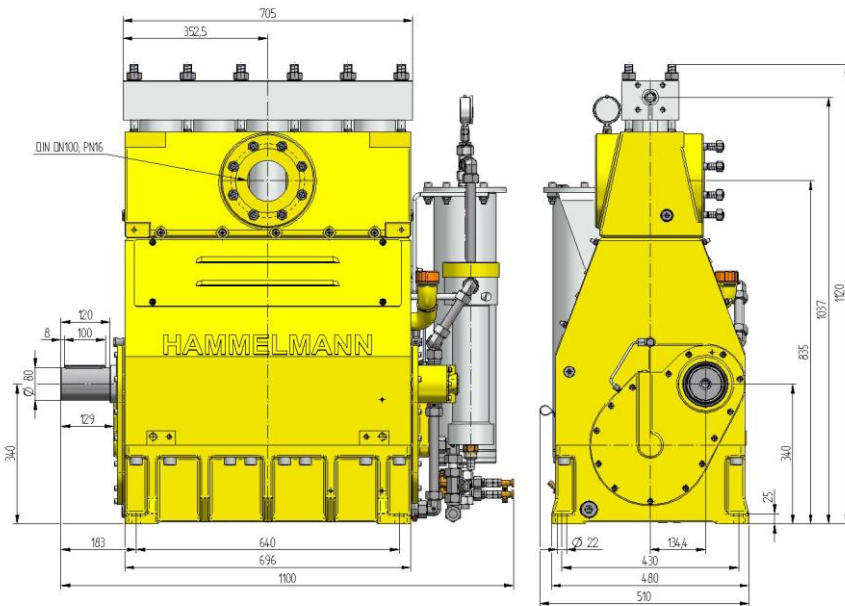


Features

- Power ratings up to 400 HP
- Vertical 5 cylinder design
- Wide variety of complementary ancillaries

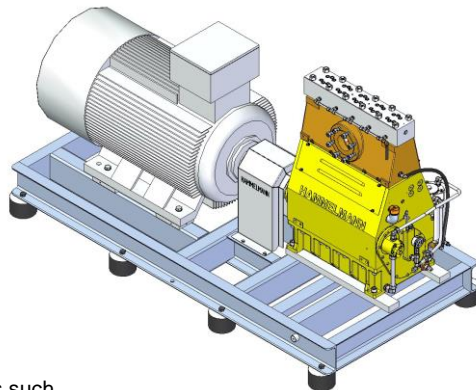
Quality and reliability

- Crank section calculation by 'Finite element method' ensures long working life under continuous load
- Stainless steel pump head free of alternating stress
- Crankshaft supported by 3 bearings and incorporating twin helical speed reducing gears
- 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

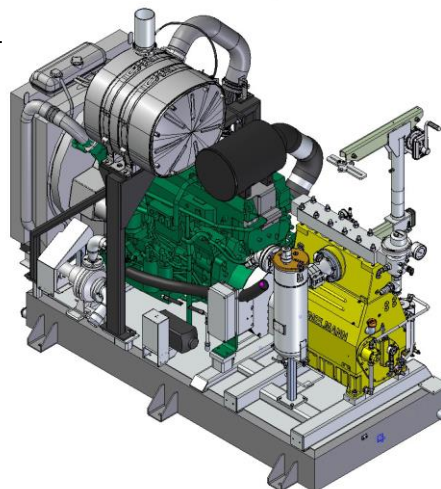
Length: 101 inch
Width: 50.8 inch
Height: 56.7 inch
Weight: approx. 7,055 lbs at 335 HP



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.

Stationary unit with diesel engine

Length: 120.5 inch
Width: 61.8 inch
Height: 102.4 inch
Weight: approx. 9,921 lbs at 422 HP with full fuel tank



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Technical data, series HDP 300

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.	
		150	180	210	270	340	400		n 1	n 2
		Operating pressure [psi]								
304	9.2 / 8.7*	23930	28280	36250*	46400*			17,5	1500	411
	11.1/10.3*	19580	23930	28280	36250*	46400*		1500/1800	493	
	13.5/12.4*	16680	19580	23930	33350*	37700*	46400*	1800/2150	591	
	12.1/11.1*	18130	21750	26830	36250	40600*		20	1500	411
	14.5/13.5*	15230	18130	21750	27550	34800*	40600*	1500/1800	493	
17.4/16.4*	13050	15230	18850	23200	29000*	37700*	1800/2150	591		
* Ultra high pressure										
303	18.5	11750	14070	16970	21320	26100		25	1500	411
	22.7	9720	11600	14070	17690	22040	26100	1500/1800	493	
	26.7	8120	9720	11750	14790	18420	23200	1800/2150	591	
	23.2	9280	11170	12040	16970	20740		28	1500	411
	28.2	7690	9280	11310	14070	17550	20740	1500/1800	493	
33.3	6530	7830	9430	11750	14790	18850	1800/2150	591		
302	26.7	8120	8270	11750	14790	17980		30	1500	411
	32.2	6670	8120	9720	12180	15230	17980	1500/1800	493	
	38.3	5660	8270	8270	10300	12910	15950	1800/2150	591	
	30.6	7110	8560	10300	12910	15810		32	1500	411
	36.7	5950	7110	8560	10730	13490	15810	1500/1800	493	
	43.8	4930	5950	7250	8990	11310	14210	1800/2150	591	
	36.7	5950	7110	8700	10880	13200		35	1500	411
	44.1	4930	5950	7250	8990	11310	13200	1500/1800	493	
	52.8	4210	4930	6090	7540	9430	11600	1800/2150	591	
	48.8	4500	5510	6670	8270	10150		40	1500	411
	58.3	3770	4500	5510	6820	8560	10150	1500/1800	493	
	69.7	3190	3770	4640	5800	7250	8990	1800/2150	591	
	62.6	3630	4350	5220	6530	7980		45	1500	411
	74.4	3050	3630	4350	5510	6820	7980	1500/1800	493	
	89.0	2470	3050	3630	4500	5660	6960	1800/2150	591	
	77.9	2900	3480	4210	5220	6530		50	1500	411
	92.9	2470	2900	3480	4350	5510	6530	1500/1800	493	
	111.1	2030	2470	2900	3630	4640	5510	1800/2150	591	
	94.2	2470	2900	3480	4350	5370		55	1500	411
	112.5	2030	2470	2900	3630	4500	5370	1500/1800	493	
	134.4	1740	2030	2470	3050	3770	4640	1800/2150	591	
	110.4	2030	2470	2900	3630	4500		60	1500	411
	132.5	1740	2030	2470	3050	3770	4500	1500/1800	493	
	158.4	1450	1740	2030	2610	3190	3920	1800/2150	591	
	129.6	1740	2030	2470	3190	3920		65	1500	411
155.5	1450	1740	2030	2610	3190	3770	1500/1800	493		
185.9	1160	1450	1740	2180	2760	3340	1800/2150	591		
150.2	1450	1740	2180	2760	3340		70	1500	411	
180.3	1310	1450	1740	2320	2760	3340	1500/1800	493		
216.0	1020	1310	1450	1890	2320	2900	1800/2150	591		
196.4	1160	1380	1670	2100	2470		80	1500	411	
235.5	940	1160	1380	1740	2180	2470	1500/1800	493		
282.2	800	940	1160	1450	1810	2180	1800/2150	591		

- Rod force: 88 kN
- Stroke: 3 inch
- Mean piston speed at n₂
411 r.p.m. = 3.35 feet/sec
493 r.p.m. = 4.0 feet/sec
591 r.p.m. = 4.86 feet/sec

Typical high pressure pump units



- Stationary diesel unit in BDF-Container with workshop



- Stationary electric unit



- Electric unit in container

** 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

Conversion table

Rating 1 hp = 0,746 kW

Op.pressure 1 psi = 0,069 bar

Flow rate 1 gpm = 0,227 m³/h



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

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