

HDP 140 High Pressure Pump Series

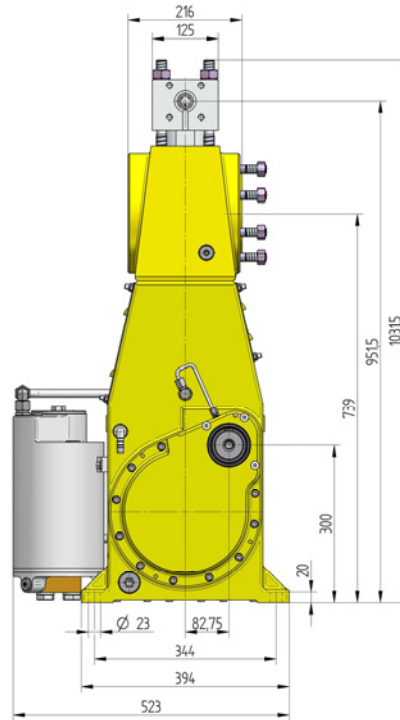
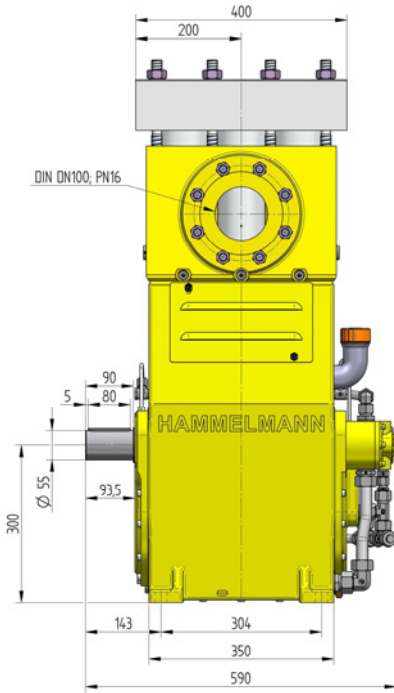
Design criteria

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. 380 kg

Energy efficient →



Features

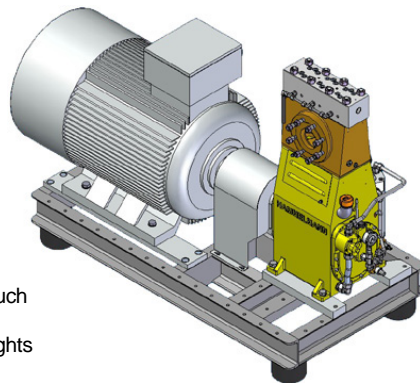
- Power ratings up to 140 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

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 electric motor

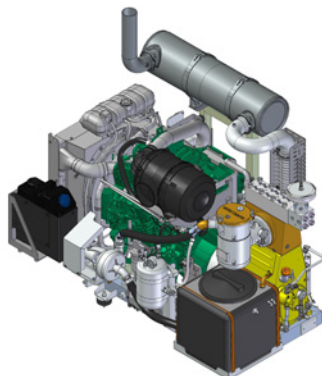
Length: 1950 mm
Width: 850 mm
Height: 1320 mm
Weight: approx. 1600 kg at 110 kW



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: 2100 mm
Width: 1300 mm
Height: 1600 mm
Weight: approx. 1665 kg at 160 kW without full fuel tank



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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 [l/min]	Required power rating [kW]						D	r.p.m.		
		45	55	75	90	110	140		n 1	n 2	
144	9,9*	2300*	2800*	3800*	4000*			15	1500	390	
	12*	1880	2300*	3100*	3800*	4000*			1500/1800	467	
	14*	1570	1920	2600*	3100*	3800*	4000*		1800/2150	560	
	15/13*	1660	2000*	2800*	3200*				17,5	1500	390
	18/16*	1380	1700	2300*	2800*	3200*				1500/1800	467
	22/19*	1150	1410	1920	2300*	2800*	3200*			1800/2150	560
19/18*	1270	1550	2100*	2500*	2800*		20	1500	390		
23/21*	1060	1300	1770	2100*	2600*	2800*		1500/1800	467		
27/25*	880	1080	1470	1770	2200*	2800*		1800/2150	560		

- Rod force: 88 kN
- Stroke: 55 mm
- Mean piston speed at n₂
- 390 r.p.m. = 0,72 m/sec
- 467 r.p.m. = 0,86 m/sec
- 560 r.p.m. = 1,03 m/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

HDP	Q [l/min]	Required power rating [kW]						D	r.p.m.		
		45	55	75	90	110	140		n 1	n 2	
143	30	810	1000	1350	1620	1800		25	1500	390	
	36	680	830	1130	1360	1660	1800		1500/1800	467	
	43	570	700	940	1130	1380	1760		1800/2150	560	
	37	650	800	1080	1300	1430			28	1500	390
	45	540	660	900	1080	1320	1430			1500/1800	467
	53	450	550	750	900	1100	1400			1800/2150	560
142	43	560	700	940	1130	1240		30	1500	390	
	51	470	580	780	940	1150	1240		1500/1800	467	
	61	400	480	650	800	960	1220		1800/2150	560	
	52	470	570	780	930	1030		33	1500	390	
	63	400	480	650	780	950	1030		1500/1800	467	
	75	320	400	540	650	800	1010		1800/2150	560	
	59	410	510	700	830	910		35	1500	390	
	70	350	420	580	700	850	910		1500/1800	467	
	84	300	350	480	580	710	900		1800/2150	560	
	78	320	400	530	630	700		40	1500	390	
	93	260	320	440	530	650	700		1500/1800	467	
	111	220	270	370	440	540	700		1800/2150	560	
	99	250	310	420	500	550		45	1500	390	
	119	210	260	350	420	510	550		1500/1800	467	
	143	170	210	300	350	430	540		1800/2150	560	
	124	200	250	340	410	450		50	1500	390	
	148	170	210	280	340	410	450		1500/1800	467	
	178	140	170	240	280	350	440		1800/2150	560	
	150	170	210	280	340	370		55	1500	390	
	179	140	170	230	280	340	370		1500/1800	467	
	215	120	140	200	230	300	360		1800/2150	560	
	176	140	170	230	280	310		60	1500	390	
	211	120	140	200	240	300			1500/1800	467	
	253	100	120	160	200	240	310		1800/2150	560	
207	120	150	200	240	270		65	1500	390		
248	100	120	170	200	250	270		1500/1800	467		
297	80	100	140	170	200	260		1800/2150	560		
240	100	130	170	210	230		70	1500	390		
288	100	110	140	170	210	230		1500/1800	467		
345	70	100	120	140	180	220		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. 3200 bar

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

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

Energy efficient →

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

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