

HDP 140 High Pressure Pump Series

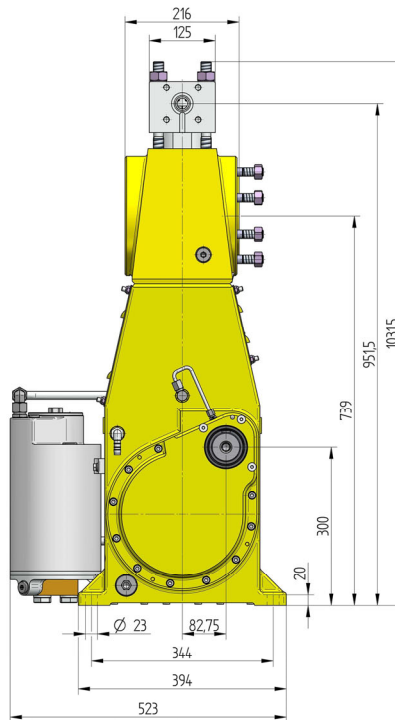
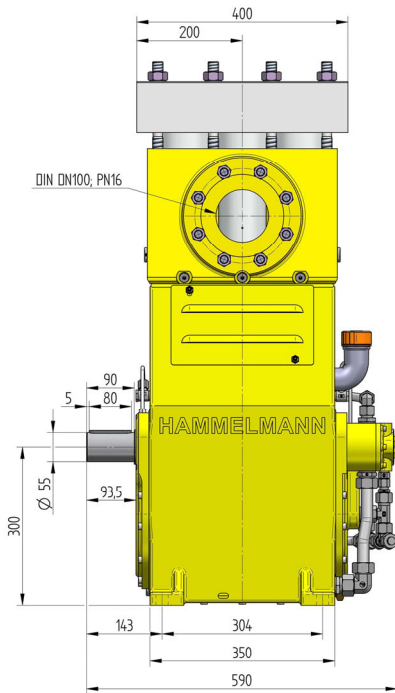
Design criteria

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 →

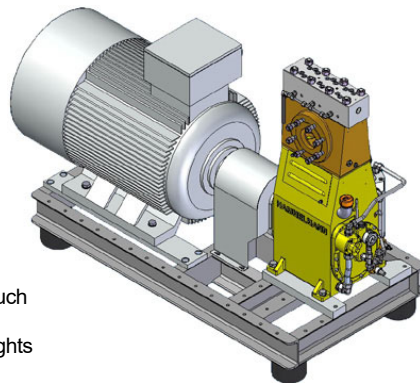


Features

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

Stationary unit with electric motor

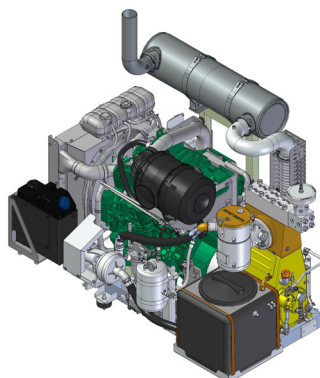
Length: 1950 mm
Width: 850 mm
Height: 1320 mm
Weight: approx. 1600 kg at 110 kW



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



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

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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	
		Operating pressure [bar]									
144	11/9,9* 13/12* 16/14*	2300* 1880 1570	2800* 2300* 1920	3800* 3100* 2600*	4500* 3800* 3100*	4500* 3800* 3800*		15	1500 1500/1800 1500/1800/2150	390 467 560	
	15/13* 18/16* 22/19*	1660 1380 1150	2000* 1700 1410	2800* 2300* 1920	3200* 2800* 2300*	3200* 2800* 2800*	3200*	17,5	1500 1500/1800 1500/1800/2150	390 467 560	
	18/16* 21/19* 26/23*	1360 1140 950	1670 1400 1160	2300* 1900 1580	2700* 2300* 1900	3000* 2800* 2300*	3000*	19,3	1500 1500/1800 1500/1800/2150	390 467 560	
	19/18* 23/21* 27/25*	1270 1060 880	1550 1300 1080	2100* 1770 1470	2500* 2100* 1770	2800* 2600* 2200*	2800* 2800*	20	1500 1500/1800 1500/1800/2150	390 467 560	
	*Ultra high pressure										
	143	29,7 36 43	810 680 570	1000 830 700	1350 1130 940	1620 1360 1130	1800 1660 1380	1800 1800 1760	25	1500 1500/1800 1500/1800/2150	390 467 560
		37 45 53	650 540 450	800 660 550	1080 900 750	1300 1080 900	1430 1320 1100	1430 1430 1400	28	1500 1500/1800 1500/1800/2150	390 467 560
		142	43 51 61	560 470 400	700 580 480	940 780 650	1130 940 800	1240 1150 960	1240 1220	30	1500 1500/1800 1500/1800/2150
	52 63 75		470 400 320	570 480 400	780 650 540	930 780 650	1030 950 800	1030 1010	33	1500 1500/1800 1500/1800/2150	390 467 560
	59 70 84		410 350 300	510 420 350	700 580 480	830 700 580	910 850 710	910 900	35	1500 1500/1800 1500/1800/2150	390 467 560
	78 93 111		320 260 220	400 320 270	530 440 370	630 530 440	700 650 540	700 700	40	1500 1500/1800 1500/1800/2150	390 467 560
	99 119 143		250 210 170	310 260 210	420 350 300	500 420 350	550 510 430	550 540	45	1500 1500/1800 1500/1800/2150	390 467 560
124 148 178	200 170 140		250 210 170	340 280 240	410 340 280	450 410 350	450 440	50	1500 1500/1800 1500/1800/2150	390 467 560	
150 179 215	170 140 120		210 170 140	280 230 200	340 280 230	370 340 300	370 360	55	1500 1500/1800 1500/1800/2150	390 467 560	
176 211 253	140 120 100		170 140 120	230 200 160	280 240 200	310 300 240	310	60	1500 1500/1800 1500/1800/2150	390 467 560	
207 248 297	120 100 80		150 120 100	200 170 140	240 200 170	270 250 200	270 260	65	1500 1500/1800 1500/1800/2150	390 467 560	
240 288 345	100 100 70		130 110 100	170 140 120	210 170 140	230 210 180	230 230 220	70	1500 1500/1800 1500/1800/2150	390 467 560	

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

- 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

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 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

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