

# HDP 140 High Pressure Pump Series

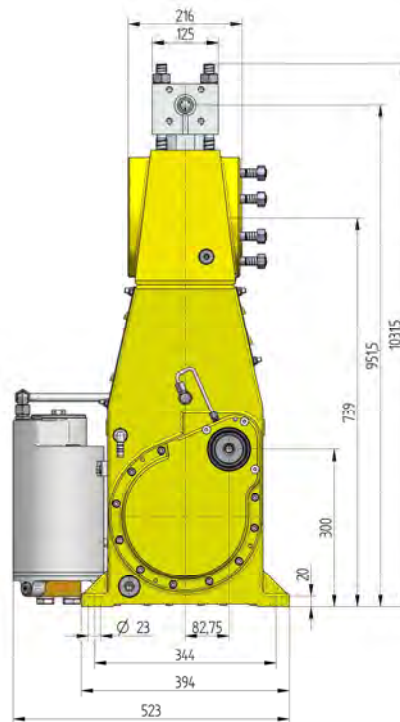
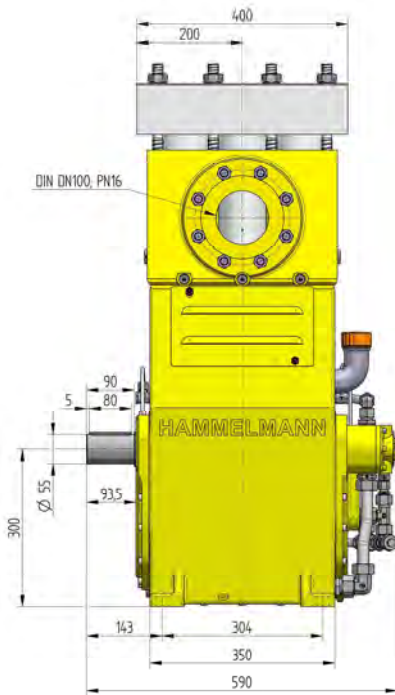
## Design criteria

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

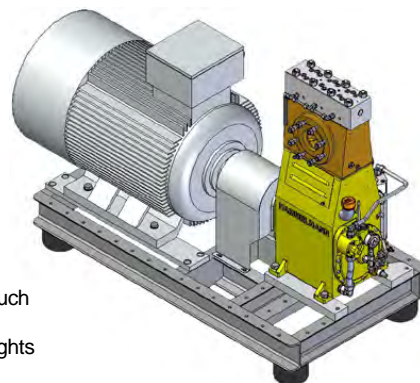
- Power ratings up to 140 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

## 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

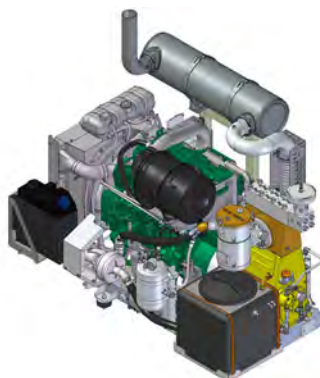
Length: 1950 mm  
 Width: 850 mm  
 Height: 1320 mm  
 Weight: approx. 1600 kg at 110 kW



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



# 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*	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*			1800/2150	560
19/18*	1270	1550	2100*	2500*	2800*	20	1500	390		
23/21*	1060	1300	1770	2100*	2600*		1500/1800	467		
27/25*	880	1080	1470	1770	2200*		1800/2150	560		

- Rod force: 88 kN
- Stroke: 55 mm
- Mean piston speed at n<sub>2</sub>
- 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** →

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

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		1500/1800	467	
	43	570	700	940	1130	1380		1800/2150	560	
	37	650	800	1080	1300	1430		28	1500	390
	45	540	660	900	1080	1320			1500/1800	467
	53	450	550	750	900	1100			1800/2150	560
142	43	560	700	940	1130	1240	30	1500	390	
	51	470	580	780	940	1150		1500/1800	467	
	61	400	480	650	800	960		1800/2150	560	
	52	470	570	780	930	1030	33	1500	390	
	63	400	480	650	780	950		1500/1800	467	
	75	320	400	540	650	800		1800/2150	560	
	59	410	510	700	830	910	35	1500	390	
	70	350	420	580	700	850		1500/1800	467	
	84	300	350	480	580	710		1800/2150	560	
	78	320	400	530	630	700	40	1500	390	
	93	260	320	440	530	650		1500/1800	467	
	111	220	270	370	440	540		1800/2150	560	
	99	250	310	420	500	550	45	1500	390	
	119	210	260	350	420	510		1500/1800	467	
	143	170	210	300	350	430		1800/2150	560	
	124	200	250	340	410	450	50	1500	390	
	148	170	210	280	340	410		1500/1800	467	
	178	140	170	240	280	350		1800/2150	560	
	150	170	210	280	340	370	55	1500	390	
	179	140	170	230	280	340		1500/1800	467	
	215	120	140	200	230	300		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		1800/2150	560	
207	120	150	200	240	270	65	1500	390		
248	100	120	170	200	250		1500/1800	467		
297	80	100	140	170	200		1800/2150	560		
240	100	130	170	210	230	70	1500	390		
288	100	110	140	170	210		1500/1800	467		
345	70	100	120	140	180		1800/2150	560		

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

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

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