

# HDP 140 High Pressure Pump Series

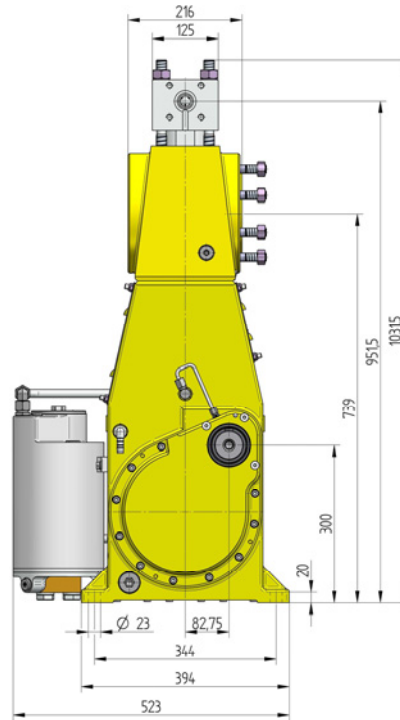
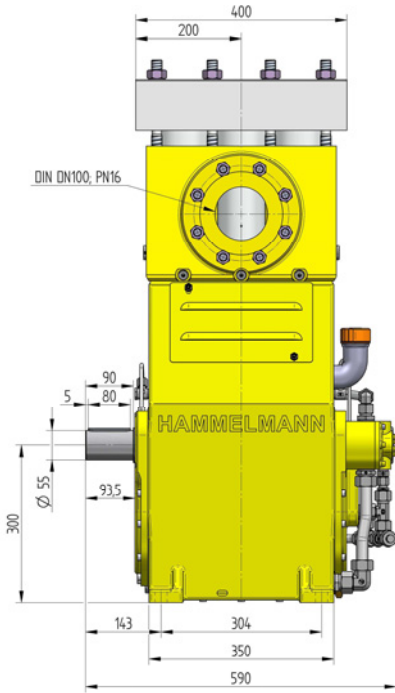
## Design criteria

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

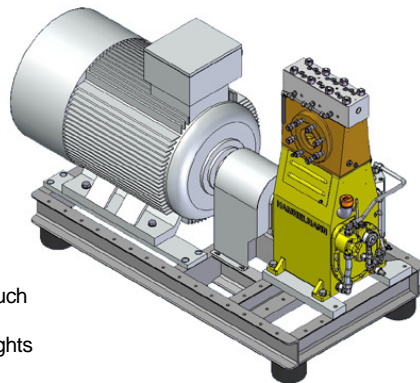
- Power ratings up to 140 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

### 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

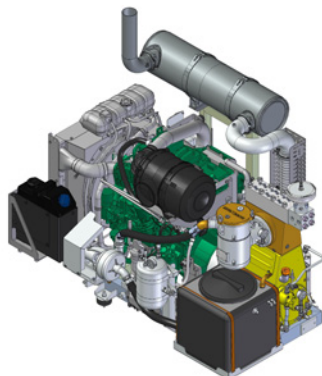
Length: 1950 mm  
 Width: 850 mm  
 Height: 1320 mm  
 Weight: approx. 1600 kg at 110 kW



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
		Operating pressure [bar]								
144	10*	2400*	3000*	4000*				15	1500	390
	12*	2000*	2450*	3300*	4000*		1500/1800		467	
	14*	1550	2000*	2750*	3300*	4200*	1800/2150		560	
	15/13*	1660	2030*	2750*	3200*		1500		390	
	18/16*	1390	1700	2320*	2780*	3200*	1500/1800		467	
	22/19*	1150	1410	1920	2310*	2820*	1800/2150		560	
144	19/18*	1270	1550	2110*	2540*	2800*	20	1500	390	
	23/21*	1060	1300	1770	2130*	2600*		1500/1800	467	
	27/25*	880	1080	1470	1770	2160*		1800/2150	560	
						2800*				

\*Ultra high pressure

143	30	810	990	1350	1620	1800	25	1500	390
	36	680	830	1140	1360	1660		1500/1800	467
	42	570	690	940	1130	1380		1800/2150	560
	37	640	780	1060	1280	1430		1500	390
	45	530	650	880	1060	1300		1500/1800	467
	53	450	540	740	890	1090		1800/2150	560

142	43	560	690	940	1130	1240	30	1500	390
	51	470	580	790	950	1160		1500/1800	467
	61	390	480	650	790	960		1800/2150	560
	52	470	580	790	930	1030		1500	390
	63	390	480	650	780	950		1500/1800	467
	75	330	400	550	650	800		1800/2150	560
	59	410	510	690	830	910		1500	390
	70	350	420	580	690	850		1500/1800	467
	84	290	350	480	580	710		1800/2150	560
	78	320	390	530	630	700		1500	390
	93	270	330	440	530	650		1500/1800	467
	111	220	270	370	440	540		1800/2150	560
	100	250	310	420	500	550		1500	390
	119	210	260	350	420	510		1500/1800	467
	142	170	210	290	350	430		1800/2150	560
	124	200	250	340	410	450		1500	390
	148	170	210	280	340	420		1500/1800	467
	177	140	170	240	280	350		1800/2150	560
	150	170	210	280	340	370		1500	390
	179	140	170	230	280	340		1500/1800	467
	214	120	140	190	230	290		1800/2150	560
	176	140	170	230	280	310		1500	390
	211	120	140	200	240	290		1500/1800	467
	252	100	120	160	200	240		1800/2150	560
207	120	140	200	240	270	1500	390		
248	100	120	160	200	240	1500/1800	467		
296	80	100	140	160	200	1800/2150	560		
240	100	130	170	210	230	1500	390		
287	90	110	140	170	210	1500/1800	467		
343	70	90	120	140	180	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

- 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** →

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

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