

High Pressure Pump Series HDP 800

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. 3700 kg

Energy
efficient →

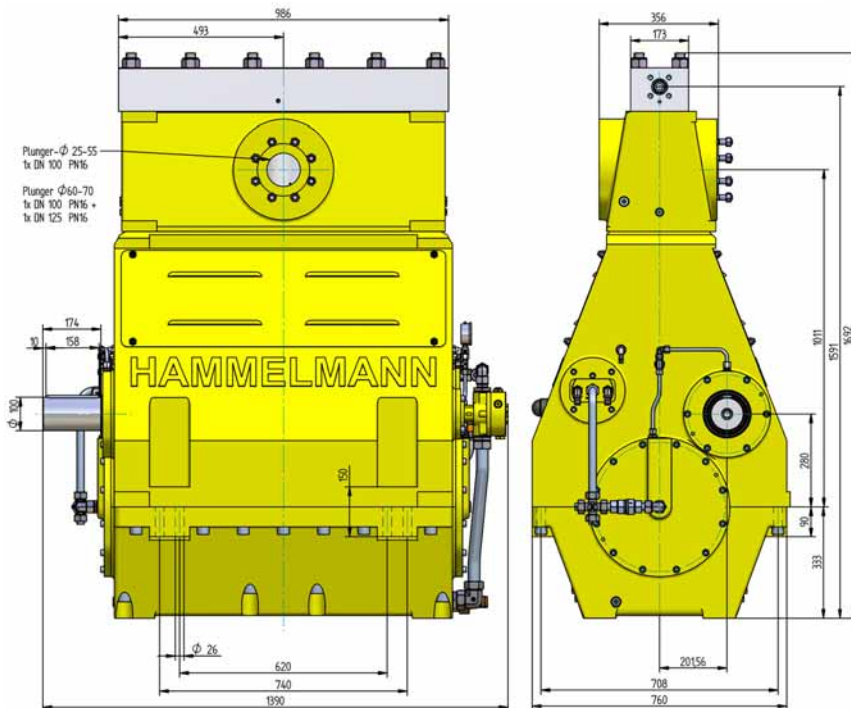


Features

- Power ratings up to 800 kW
- Vertical 5 cylinder design
- Wide variety of complementary ancillaries

Quality and reliability

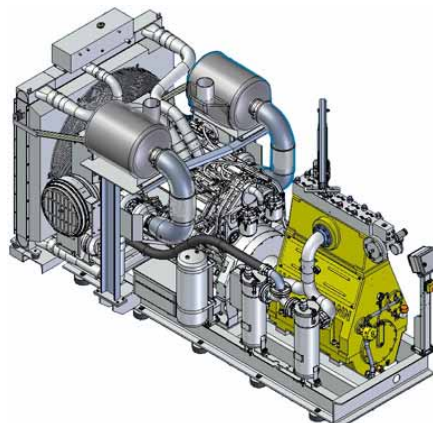
- Stainless steel pump head free of alternating stress
- Cross head piston bellows seal
- Choice of 'application specific' seal assemblies
- Solid ceramic or tungsten carbide plungers
- Choice of bronze or stainless steel suction chamber
- Crank section calculation by 'Finite element method' ensures long working life under continuous load
- Twin helical integral reduction gear with crankshaft supported by 4 bearings
- Pressurised oil lubrication system with oil cooler/filter



Stationary unit with diesel engine

Length: 3970 mm
Width: 2100 mm
Height: 2225 mm
Weight: approx. 9200 kg
at 839 kW and
without full fuel tank

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.



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HDP 800 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.		
		500	560	630	710	800		n 1	n 2	
		Operating pressure [bar]								
804	87* 105* 129*	3000* 2500* 2100*	2800* 2350*	3000* 2600*	2900*	3000*	28	1500 1500/1800 1800	315 380 465	
	141 / 139* 170 / 166* 208 / 203*	1850 1500 1250	2150* 1700 1400	2200* 1950 1600	2200*	2100*		35	1500 1500/1800 1800	315 380 465
803	188 227 277	1430 1190 980	1600 1320 1100	1670 1480 1230	1670 1390	1570	40		1500 1500/1800 1800	315 380 465
	238 288 353	1130 930 770	1270 1040 870	1320 1170 970	1320 1100	1240		45	1500 1500/1800 1800	315 380 465
	802	297 357 437	920 750 630	1030 840 700	1070 950 790	1070 890	1000		50	1500 1500/1800 1800
357 429 522		760 620 520	850 700 580	880 780 650	880 730	830	55	1500 1500/1800 1800		315 380 465
430 516 628		640 520 430	710 580 490	740 660 550	740 620	690		60	1500 1500/1800 1800	315 380 465
509 611 745		540 440 370	610 500 410	630 560 470	630 530	590	65		1500 1500/1800 1800	315 380 465
591 709 864		470 380 320	520 430 360	540 480 400	540 450	510		70	1500 1500/1800 1800	315 380 465
675 814 992		410 330 280	450 370 310	470 420 350	470 390	440	75		1500 1500/1800 1800	315 380 465
748 897 1094		360 290 240	400 330 270	410 370 310	410 350	390		80	1500 1500/1800 1800	315 380 465
801 High flow		748 897 1094	360 290 240	400 330 270	410 370 310	410 350	390		80	1500 1500/1800 1800
		844 1013 1241	310 260 210	350 290 240	370 330 270	370 310	340	85		1500 1500/1800 1800
		957 1148 1399	280 230 190	310 260 210	330 290 240	330 270	310		90	1500 1500/1800 1800
	1193 1432 1745	230 190 150	250 210 170	260 230 190	260 220	250	100	1500 1500/1800 1800		315 380 465
	1459 1751 2133	190 150 130	210 170 140	220 190 160	220 180	200		110	1500 1500/1800 1800	315 380 465

*Ultra high pressure

- Rod force: 210 kN
- Stroke: 100 mm
- Mean piston speed at n₂
315 r.p.m. = 1,06 m/sec
380 r.p.m. = 1,27 m/sec
465 r.p.m. = 1,54 m/sec

Typical high pressure pump units



- Stationary unit with diesel motor



- Diesel unit in container with workshop



- Stationary unit with electric motor

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. [1/min]
n2 = Crankshaft r.p.m. [1/min]

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
804	Dynamic D 28	Tungsten carbide plunger & bushing
	Dynamic D 35	Tungsten carbide plunger / bronze bushing
803	Dynamic	Ceramic plunger / bronze bushing
	Packing	Ceramic plunger / packing
802	Dynamic D 50 -75	Ceramic plunger / bronze bushing
	Packing D 50 - 80	Ceramic plunger / packing
801	Packing	Ceramic plunger / packing

** The dynamic high pressure sealing extends the advantages of the labyrinth design with further increased efficiency.

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