

HDP 800 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. 3700 kg

Energy efficient →

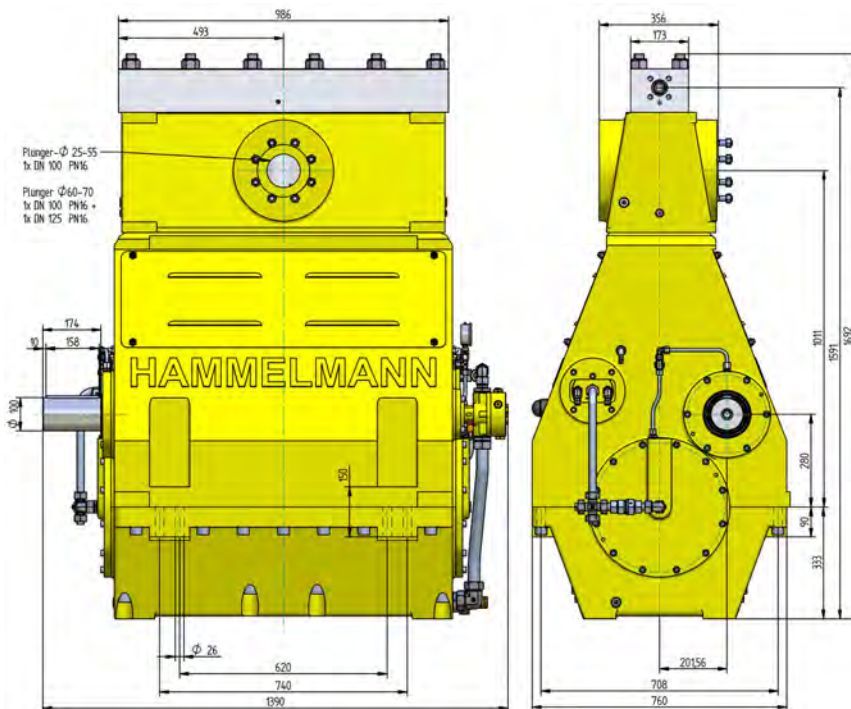


Features

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

Quality and reliability

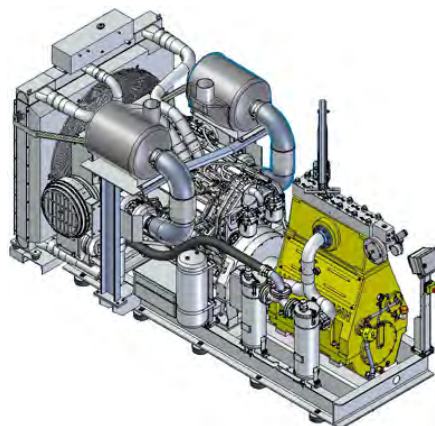
- Stainless steel pump head free of alternating stress
- Cross head piston bellows seal
- Choice of 'application specific' seal assemblies
- Solid ceramic or tungsten carbide plungers
- Choice of bronze or stainless steel suction chamber
- Crank section calculation by 'Finite element method' ensures 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.



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*	2900* 2400* 2000*	3000* 2700* 2200*	3000* 2600* 2500*	2800*	3000*	28	1500 1500/1800 1800	315 380 465	
	118 / 114* 142 / 138* 174 / 168*	2300* 1870 1520	2500* 2100* 1710	2600* 2400* 1920	2600*	2400*		32	1500 1500/1800 1800	315 380 465
	141 / 138* 170 / 166* 208 / 204*	1880 1560 1270	2100* 1750 1430	2200 1960 1610	2200*	2000*			35	1500 1500/1800 1800
803	188 227 278	1440 1200 980	1610 1340 1100	1670 1500 1230	1670 1400	1560	40			1500 1500/1800 1800
	238 287 351	1140 940 770	1270 1060 860	1320 1200 970	1320 1100	1230		45		1500 1500/1800 1800
	802	297 358 438	920 760 620	1030 860 700	1070 960 800	1070 900			1000	50
355 429 525		760 630 520	850 710 580	880 800 650	880 730	830	55		1500 1500/1800 1800	
428 516 631		640 530 430	720 600 500	740 670 550	740 620	700		60	1500 1500/1800 1800	315 380 465
507 612 748		550 450 370	610 510 410	630 570 470	630 520	600	65		1500 1500/1800 1800	315 380 465
588 709 868		470 400 320	530 440 360	550 500 400	550 450	510		70	1500 1500/1800 1800	315 380 465
675 814 996		410 340 280	460 380 310	480 430 350	480 400	440	75		1500 1500/1800 1800	315 380 465
744 898 1099		360 300 240	400 330 270	420 380 310	420 350	400		80	1500 1500/1800 1800	315 380 465
801 High flow		744 898 1099	360 300 240	400 330 270	420 380 310	420 350	400		80	1500 1500/1800 1800
		840 1013 1240	320 260 220	360 300 240	370 330 270	370 310	350	85		1500 1500/1800 1800
		952 1148 1405	280 240 200	320 260 220	330 300 240	330 270	310		90	1500 1500/1800 1800
	1188 1433 1753	230 200 160	260 210 170	270 240 200	270 220	250	100	1500 1500/1800 1800		315 380 465
	1452 1751 2143	200 160 130	210 180 140	220 200 160	220 180	210		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.

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

D = Piston/Plunger dia. [mm]
 n1 = Motor/Engine r.p.m. [1/min]
 n2 = Crankshaft r.p.m.[1/min]

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

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