

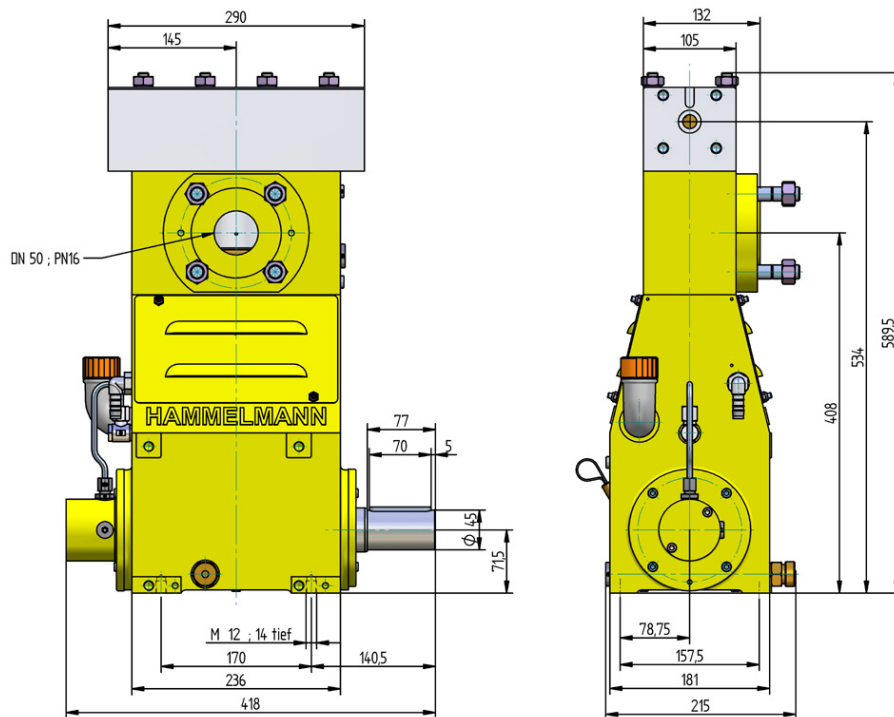
# HDP 20 High Pressure Pump Series

## Design criteria

Hammelmann high pressure pumps are built to operate at the continuous maximum duty stated in the performance parameters. Just compare the crank shaft speed, average plunger speed, plunger diameter and power rating.

### High Pressure Pump

Weight: 95 kg



### Features

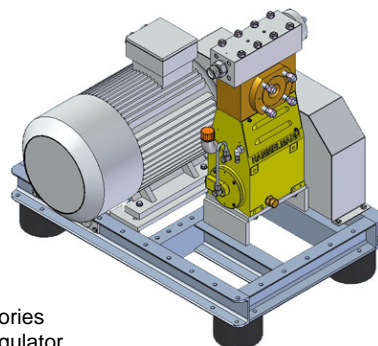
- Power ratings up to 18,5 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

### Quality and reliability

- Stainless steel pump head free of alternating stress
- Bellows form hermetic seal between the suction chamber and crank section
- Choice of application specific seal assemblies
- Solid ceramic or tungsten carbide plungers
- Choice of bronze (standard) or stainless steel suction chamber
- Crank section calculation by 'Finite element method' ensures long working life under continuous load
- Pressurised oil lubrication system

### Stationary unit with electric motor

Length: 1000 mm  
Width: 752 mm  
Height: 890 mm  
Weight: approx. 450 kg at 22 kW



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.



### Recommendations and standards

Machine directive 2006/42/EC  
ATEX 94/9/EC  
API 674 (with exceptions)

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# HDP 20 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.	
		11	15	18,5		n1	n2
		Operating pressure [bar]					
24	2,2	2200	3000	3800*	8	1500/1800/2150	625
	2,7	1850	2500	3100			750
	3,2	1550	2100	2600			900
	3,6	1400	1900	2250	10	1500/1800/2150	625
	4,4	1200	1600	2000			750
	5,4	980	1350	1650			900
23	3,6	1400	1800		10	1500/1800/2150	625
	4,4	1200	1600				750
	5,4	980	1350				900
	5,7	970	1300	1550	12	1500/1800/2150	625
	6,9	820	1100	1350			750
	8,2	690	930	1150			900
22	9	620	850	1000	15	1500/1800/2150	625
	11	530	720	880			750
	12	460	620	730	17,5		625
	15	380	520	640			750
	16	350	480	560	20		625
	20	290	400	490			750
	25	220	300	360	25		625
	31	190	250	310			750
	37	150	210	250	30		625
	45	130	180	220			750
	51	115	150	180	35		625
	62	95	130	160			750
	66	85	120	140	40		625
	82	75	100	120			750
	84	70	95	110	45		625
103	55	75	95	750			

\* increased permissible rod force to 19.1 kN

- Rod force: 17,6 kN
- Stroke: 30 mm
- Mean piston speed at n<sub>2</sub>

625 r.p.m. = 0,63 m/sec  
750 r.p.m. = 0,75 m/sec  
900 r.p.m. = 0,90 m/sec

Typical high pressure pump units



- Stationary unit with electric motor



- Stationary electric unit with sound damping cover

### 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

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

HDP	Seal**	Sealing system
24	Dynamic	Tungsten carbide plunger & bushing
	Packing	Special ceramic plunger*** / packing
23	Dynamic	Ceramic plunger / bronze bushing
	Packing	Ceramic plunger / packing
22	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. 2500 bar

**Energy efficient** →

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

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