

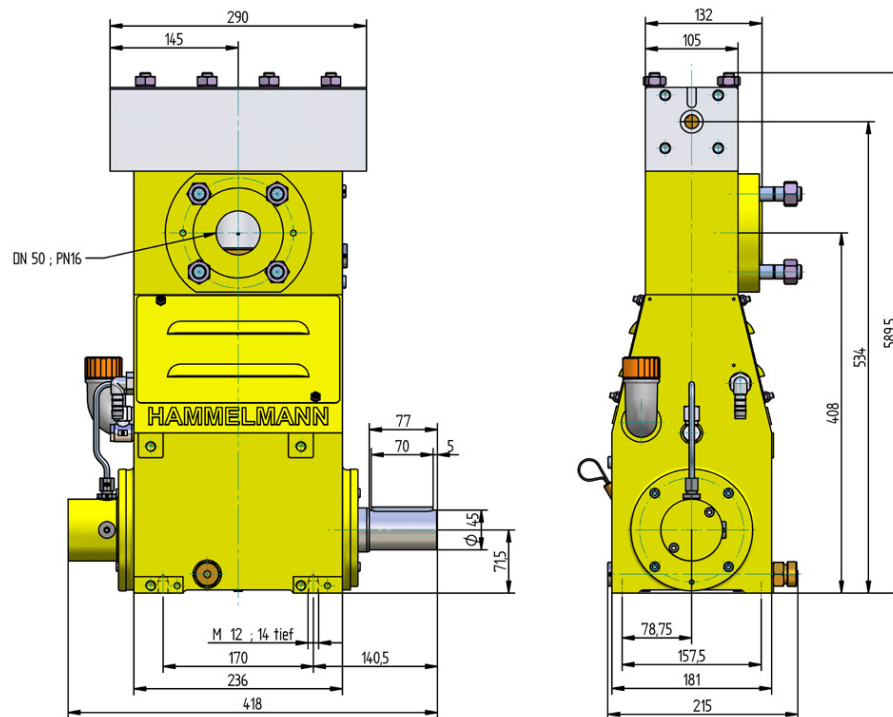
HDP 20 High Pressure Pump Series

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



Energy efficient →



Features

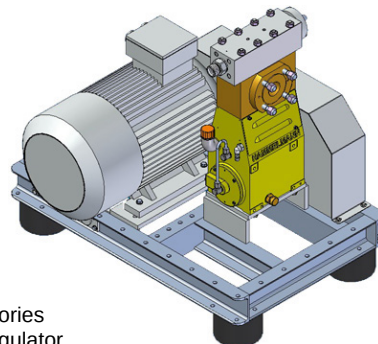
- Power ratings up to 18,5 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

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)

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).

Warning: This emergency 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	3700*	8	1500/1800/2150	
	2,7	1850	2500	3100			
	3,2	1540	2100	2600			
	3,7	1420	1940	2200	10	1500/1800/2150	
	4,4	1180	1610	2000			
	5,3	1000	1340	1660			
* increased permissible rod force to 19.1 kN							
23	3,7	1420	1800	1800	10	1500/1800/2150	
	4,4	1180	1610	1800			
	5,3	1000	1340	1660			
	5,7	1000	1340	1560	12	1500/1800/2150	
	6,9	820	1120	1380			
	8,2	680	930	1150			
22	9	630	860	1000	1500/1800/2150		
	11	530	720	880			
	12	460	630	730			
	15	400	530	650			
	16	350	480	560			
	20	300	400	500			
	25	230	310	360			
	30	200	260	320			
	37	160	220	250			
	45	130	180	220			
	51	120	160	180			
	62	100	130	160			
	67	100	120	140			
	81	70	100	120			
	85	70	100	110			
	102	60	80	100			

* increased permissible rod force to 19.1 kN

- Rod force: 17,6 kN
- Stroke: 30 mm
- Mean piston speed at n₂

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

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Subject to modification.

**Energy
efficient** →

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