

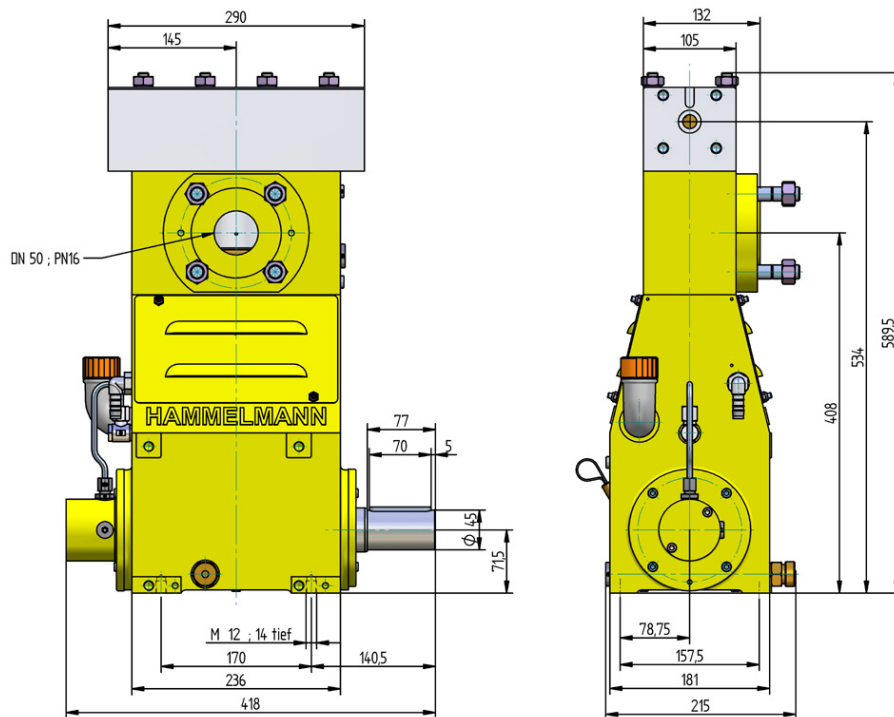
HDP 20 High Pressure Pump Series

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

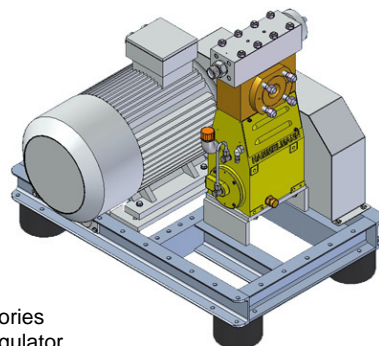
- Power ratings up to 18,5 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

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)

HAMMELMANN®

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	3700*	8	1500/1800/2150	625	
	2,7	1850	2500	3100			750	
	3,2	1540	2100	2600			900	
	3,7	1420	1940	2200			625	
	4,4	1180	1610	2000				750
5,3	1000	1340	1660	900				
23	3,7	1420	1800	1800	10	1500/1800/2150	625	
	4,4	1180	1610	1800			750	
	5,3	1000	1340	1660			900	
	5,7	1000	1340	1560			625	
	6,9	820	1120	1380				750
	8,2	680	930	1150				900
22	9	630	860	1000	15	1500/1800/2150	625	
	11	530	720	880			750	
	12	460	630	730			625	
	15	400	530	650				750
	16	350	480	560			625	
	20	300	400	500				750
	25	230	310	360			625	
	30	200	260	320				750
	37	160	220	250			625	
	45	130	180	220				750
	51	120	160	180			625	
	62	100	130	160				750
	67	100	120	140			625	
	81	70	100	120				750
	85	70	100	110			625	
102	60	80	100	750				

* 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

Energy efficient →

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