

HDP 170 High Pressure Pump Series

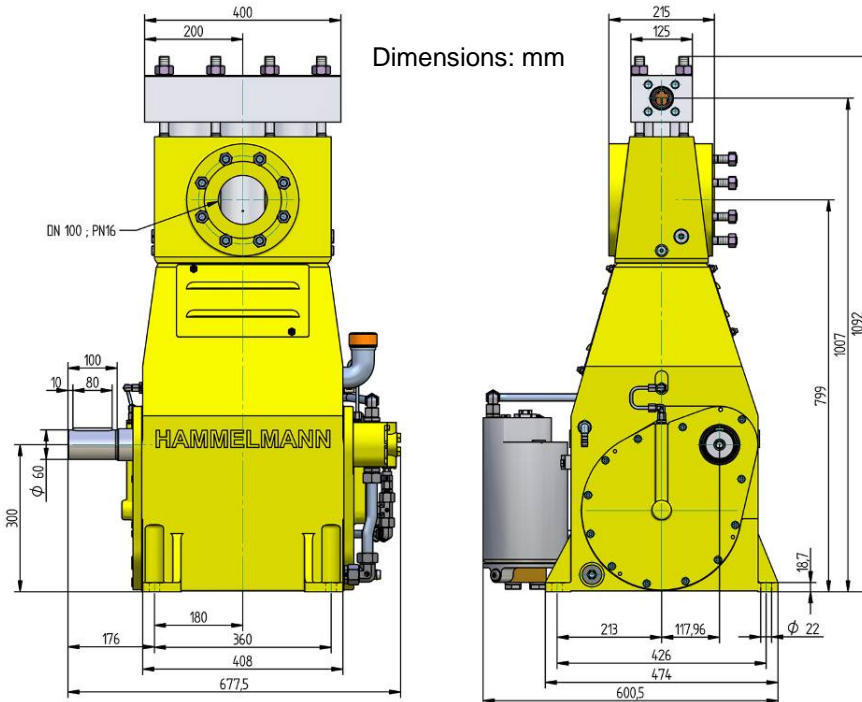
Design criteria

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.

Energy efficient →

High pressure pump

Weight: approx. 1150 lbs



Features

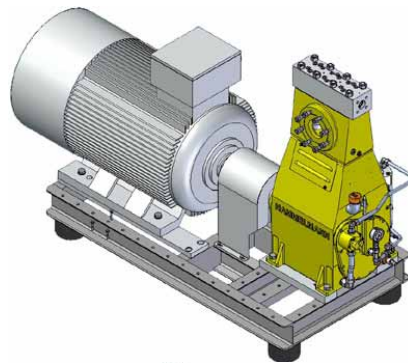
- Power ratings up to 230 HP
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

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
- Integral speed reduction gear
- Pressurised oil lubrication system with oil cooler/filter

Stationary unit with electric motor

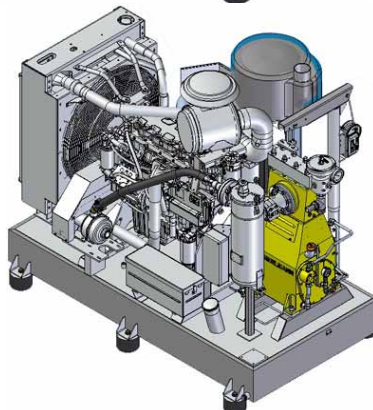
Length: 80 inch
Width: 34 inch
Height: 53 inch
Weight: approx. 4410 lbs at 210 HP



Main dimensions without accessories such as suction line, pressure regulator etc. Detailed dimensional drawings and weights available on request.

Stationary unit with diesel motor

Length: 94 inch
Width: 60 inch
Height: 78 inch
Weight: approx. 7700 lbs at 250 HP with full fuel tank



HAMMELMANN®

HDP 170 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 [GPM] | Required power rating [HP] | | | | | | D | r.p.m. | |
|-----|------------|----------------------------|--------|--------|--------|--------|-----------|-----------|--------|-----|
| | | 100 | 120 | 150 | 180 | 210 | 230 | | n 1 | n 2 |
| | | Operating pressure [psig] | | | | | | | | |
| 174 | 5.3 / 4.8* | 29700* | 35500* | 43500* | | | | 17,5 | 1500 | 385 |
| | 6.3 / 5.8* | 24700 | 29700* | 36300* | 43500* | 46400* | 1500/1800 | | 465 | |
| | 7.4 / 6.9* | 20300 | 24700 | 30500* | 36300* | 46400* | 1800/2150 | | 555 | |
| | 6.9 / 6.3* | 22500 | 26800 | 33400* | 37700* | | 20 | 1500 | 385 | |
| | 8.2 / 7.4* | 18900 | 22500 | 27600 | 33400* | 37700* | | 1500/1800 | 465 | |
| | 9.8 / 9.0* | 1600 | 18900 | 23200 | 27600 | 33400* | | 1800/2150 | 555 | |

- Rod force: 18,430 lbf
- Stroke: 2.95 inch
- Mean piston speed at n₂
- 385 r.p.m. = 3.2 feet/sec
- 465 r.p.m. = 3.8 feet/sec
- 555 r.p.m. = 4.6 feet/sec

*Ultra high pressure 46400 psig only for stationary units

| HDP | Q [GPM] | 100 | 120 | 150 | 180 | 210 | 230 | D | 1500 | 385 |
|-----|---------|-------|-------|-------|-------|-------|-------|----|-----------|-----|
| 173 | 10.6 | 14500 | 17400 | 21000 | 23900 | | | 25 | 1500/1800 | 465 |
| | 12.7 | | 14500 | 17400 | 21000 | 23900 | | | 1800/2150 | 555 |
| | 15.0 | | | 14500 | 17400 | 21000 | 23900 | | | |

Typical high pressure pump units

| HDP | Q [GPM] | Required power rating [HP] | | | | | | D | r.p.m. | |
|-------|---------|----------------------------|-------|-------|-------|-----------|-----------|-----------|--------|-----|
| | | 100 | 120 | 150 | 180 | 210 | 230 | | n 1 | n 2 |
| 172 | 15.0 | 10000 | 12000 | 14500 | 16700 | | | 30 | 1500 | 385 |
| | 18.2 | 8400 | 10000 | 12300 | 14500 | 16700 | 1500/1800 | | 465 | |
| | 21.6 | 7000 | 8400 | 10300 | 12300 | 14500 | 1800/2150 | | 555 | |
| | 20.9 | 7400 | 8800 | 10900 | 12300 | | 35 | 1500 | 385 | |
| | 24.8 | 6100 | 7400 | 9000 | 10900 | 12300 | | 1500/1800 | 465 | |
| | 29.8 | 5100 | 6200 | 7500 | 9100 | 11000 | | 1800/2150 | 555 | |
| | 27.5 | 5700 | 6800 | 8300 | 9400 | | 40 | 1500 | 385 | |
| | 32.7 | 4600 | 5700 | 7000 | 8300 | 9400 | | 1500/1800 | 465 | |
| | 39.3 | 3900 | 4600 | 5800 | 7000 | 8400 | | 1800/2150 | 555 | |
| | 35.1 | 4500 | 5400 | 6500 | 7400 | | 45 | 1500 | 385 | |
| | 42.0 | 3800 | 4500 | 5500 | 6500 | 7400 | | 1500/1800 | 465 | |
| | 50.2 | 3000 | 3800 | 4500 | 5500 | 6700 | | 1800/2150 | 555 | |
| | 43.6 | 3600 | 4400 | 5400 | 6100 | | 50 | 1500 | 385 | |
| | 52.3 | 3000 | 3600 | 4400 | 5200 | 6100 | | 1500/1800 | 465 | |
| | 62.6 | 2500 | 3000 | 3600 | 4400 | 5400 | | 1800/2150 | 555 | |
| | 52.8 | 2900 | 3600 | 4400 | 4900 | | 55 | 1500 | 385 | |
| | 63.1 | 2500 | 2900 | 3600 | 4400 | 4900 | | 1500/1800 | 465 | |
| | 75.2 | 2000 | 2500 | 3000 | 3600 | 4400 | | 1800/2150 | 555 | |
| | 62.3 | 2500 | 3000 | 3600 | 4200 | | 60 | 1500 | 385 | |
| | 74.4 | 2000 | 2500 | 3000 | 3600 | 4200 | | 1500/1800 | 465 | |
| 89.2 | 1700 | 2000 | 2500 | 3000 | 3800 | 1800/2150 | | 555 | | |
| 73.9 | 2100 | 2500 | 3000 | 3500 | | 65 | 1500 | 385 | | |
| 88.2 | 1700 | 2100 | 2600 | 3000 | 3500 | | 1500/1800 | 465 | | |
| 105.9 | 1500 | 1700 | 2200 | 2600 | 3200 | | 1800/2150 | 555 | | |
| 84.7 | 1700 | 2200 | 2600 | 3000 | | 70 | 1500 | 385 | | |
| 101.4 | 1500 | 1700 | 2200 | 2600 | 3000 | | 1500/1800 | 465 | | |
| 121.4 | 1300 | 1500 | 1900 | 2200 | 2800 | | 1800/2150 | 555 | | |



- Mobile unit with electric motor



- Road going trailer or stationary units with sound damping cover



- 10 or 20 foot sound damped container versions

| HDP | Seal ** | Sealing system |
|-----|---------|---------------------------------------|
| 74 | Dynamic | Tungsten carbide plunger & bushing |
| | Packing | Special ceramic plunger *** / packing |
| 173 | Dynamic | Ceramic plunger / bronze bushing |
| | Packing | Ceramic plunger / packing |
| 172 | Dynamic | Ceramic plunger / bronze bushing |
| | Packing | Ceramik plunger / packing |

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

Conversion table
Rating 1 hp = 0,746 kW
Op.pressure 1 psi = 0,069 bar
Flow rate 1 gpm = 0,227 m³/h



- ** The dynamic high pressure sealing extends the advantages of the labyrinth design with further increased efficiency.
- *** Special ceramic plungers up to max. 43500 psig.

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

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