

HDP 140 High Pressure Pump Series

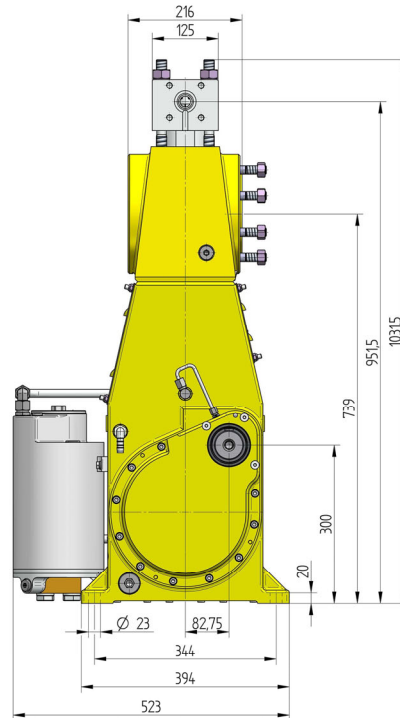
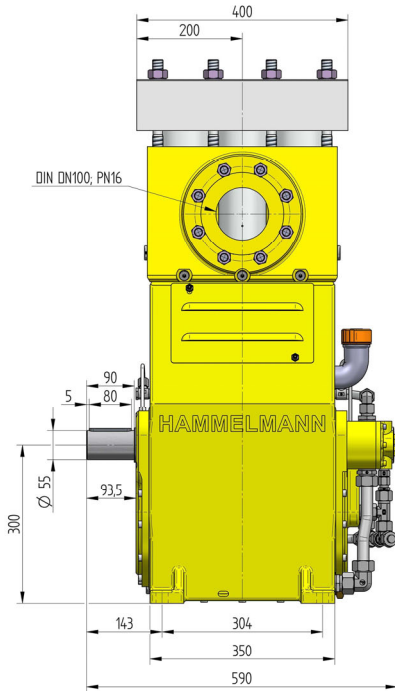
Design criteria

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. 380 kg

Energy efficient →

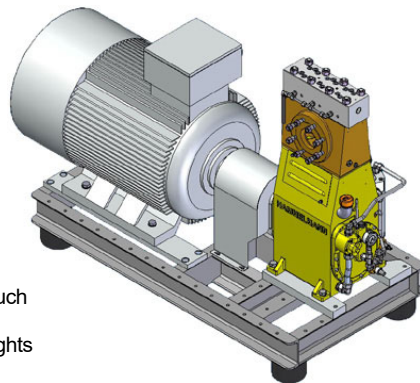


Features

- Power ratings up to 140 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

Stationary unit with electric motor

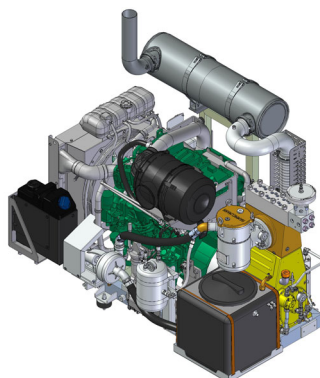
Length: 1950 mm
Width: 850 mm
Height: 1320 mm
Weight: approx. 1600 kg at 110 kW



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: 2100 mm
Width: 1300 mm
Height: 1600 mm
Weight: approx. 1665 kg at 160 kW without full fuel tank



Quality and reliability

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



+44 1905 751790
sales@calder.co.uk
www.calderltd.com

Calder Ltd
Prescott Drive
Worcester
WR4 9NE
United Kingdom

HAMMELMANN®

HDP 140 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] | | | | | |
|--------|-----------|----------------------------|-------|-------|-------|-------|-------|
| | | 45 | 55 | 75 | 90 | 110 | 140 |
| | | Operating pressure [bar] | | | | | |
| 144 | 11/9,9* | 2300* | 2800* | 3800* | 4500* | | |
| | 13/12* | 1880 | 2300* | 3100* | 3800* | 4500* | |
| | 16/14* | 1570 | 1920 | 2600* | 3100* | 3800* | 4500* |
| | 15/13* | 1660 | 2000* | 2800* | 3200* | | |
| | 18/16* | 1380 | 1700 | 2300* | 2800* | 3200* | |
| | 22/19* | 1150 | 1410 | 1920 | 2300* | 2800* | 3200* |
| | 18/16* | 1360 | 1670 | 2300* | 2700* | 3000* | |
| | 21/19* | 1140 | 1400 | 1900 | 2300* | 2800* | 3000* |
| | 26/23* | 950 | 1160 | 1580 | 1900 | 2300* | 3000* |
| | 19/18* | 1270 | 1550 | 2100* | 2500* | 2800* | |
| 23/21* | 1060 | 1300 | 1770 | 2100* | 2600* | 2800* | |
| 27/25* | 880 | 1080 | 1470 | 1770 | 2200* | 2800* | |

| D | r.p.m. | |
|------|----------------|-----|
| | n 1 | n 2 |
| 15 | 1500 | 390 |
| | 1500/1800 | 467 |
| 17,5 | 1500 | 390 |
| | 1500/1800 | 467 |
| 19,3 | 1500 | 390 |
| | 1500/1800 | 467 |
| 20 | 1500 | 390 |
| | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |

- Rod force: 88 kN
- Stroke: 55 mm
- Mean piston speed at n₂
- 390 r.p.m. = 0,72 m/sec
- 467 r.p.m. = 0,86 m/sec
- 560 r.p.m. = 1,03 m/sec

Typical high pressure pump units



- Stationary unit with electric motor



- Road going or stationary trailer units with sound damping cover



- 10 or 20 foot sound damped container versions

Energy efficient →

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

*Ultra high pressure

| | | | | | | | |
|-----|-----|-----|------|------|------|------|------|
| 143 | 30 | 810 | 1000 | 1350 | 1620 | 1800 | |
| | 36 | 680 | 830 | 1130 | 1360 | 1660 | 1800 |
| | 43 | 570 | 700 | 940 | 1130 | 1380 | 1760 |
| | 37 | 650 | 800 | 1080 | 1300 | 1430 | |
| | 45 | 540 | 660 | 900 | 1080 | 1320 | 1430 |
| 53 | 450 | 550 | 750 | 900 | 1100 | 1400 | |

| | | |
|----|----------------|-----|
| 25 | 1500 | 390 |
| | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| | 1500 | 390 |
| 28 | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |

| | | | | | | | |
|-----|-----|-----|-----|-----|------|------|------|
| 142 | 43 | 560 | 700 | 940 | 1130 | 1240 | |
| | 51 | 470 | 580 | 780 | 940 | 1150 | 1240 |
| | 61 | 400 | 480 | 650 | 800 | 960 | 1220 |
| | 52 | 470 | 570 | 780 | 930 | 1030 | |
| | 63 | 400 | 480 | 650 | 780 | 950 | 1030 |
| | 75 | 320 | 400 | 540 | 650 | 800 | 1010 |
| | 59 | 410 | 510 | 700 | 830 | 910 | |
| | 70 | 350 | 420 | 580 | 700 | 850 | 910 |
| | 84 | 300 | 350 | 480 | 580 | 710 | 900 |
| | 78 | 320 | 400 | 530 | 630 | 700 | |
| | 93 | 260 | 320 | 440 | 530 | 650 | 700 |
| | 111 | 220 | 270 | 370 | 440 | 540 | 700 |
| | 99 | 250 | 310 | 420 | 500 | 550 | |
| | 119 | 210 | 260 | 350 | 420 | 510 | 550 |
| | 143 | 170 | 210 | 300 | 350 | 430 | 540 |
| | 124 | 200 | 250 | 340 | 410 | 450 | |
| | 148 | 170 | 210 | 280 | 340 | 410 | 450 |
| | 178 | 140 | 170 | 240 | 280 | 350 | 440 |
| | 150 | 170 | 210 | 280 | 340 | 370 | |
| | 179 | 140 | 170 | 230 | 280 | 340 | 370 |
| | 215 | 120 | 140 | 200 | 230 | 300 | 360 |
| | 176 | 140 | 170 | 230 | 280 | 310 | |
| | 211 | 120 | 140 | 200 | 240 | 300 | |
| | 253 | 100 | 120 | 160 | 200 | 240 | 310 |
| | 207 | 120 | 150 | 200 | 240 | 270 | |
| | 248 | 100 | 120 | 170 | 200 | 250 | 270 |
| | 297 | 80 | 100 | 140 | 170 | 200 | 260 |
| | 240 | 100 | 130 | 170 | 210 | 230 | |
| 288 | 100 | 110 | 140 | 170 | 210 | 230 | |
| 345 | 70 | 100 | 120 | 140 | 180 | 220 | |

| | | |
|----|----------------|-----|
| 30 | 1500 | 390 |
| | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| | 1500 | 390 |
| 33 | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| 35 | 1500 | 390 |
| | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| | 1500 | 390 |
| 40 | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| 45 | 1500 | 390 |
| | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| | 1500 | 390 |
| 50 | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| 55 | 1500 | 390 |
| | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| | 1500 | 390 |
| 60 | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| 65 | 1500 | 390 |
| | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |
| | 1500 | 390 |
| 70 | 1500/1800 | 467 |
| | 1500/1800/2150 | 560 |

| HDP | Seal ** | Sealing system |
|-----|---------|---------------------------------------|
| 144 | Dynamic | Tungsten carbide plunger & bushing |
| | Packing | Special ceramic plunger *** / packing |
| 143 | Dynamic | Ceramic plunger / bronze bushing |
| | Packing | Ceramic plunger / packing |
| 142 | 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 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

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

*** Special ceramic plungers up to max. 3200 bar

HAMMELMANN®