

# HDP 800

## 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. 3700 kg

Energy efficient →

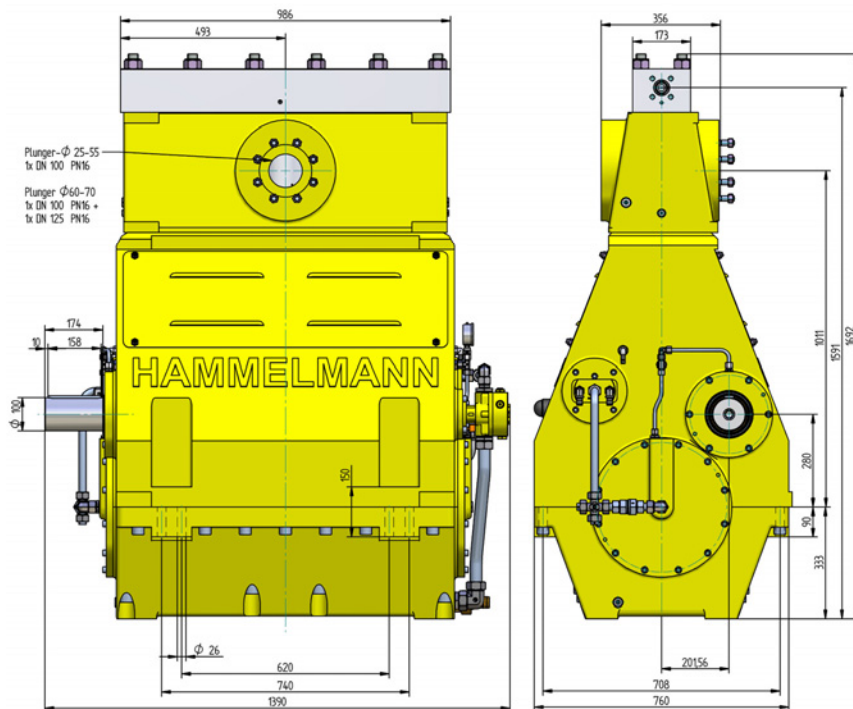


### Features

- Power ratings up to 800 kW
- Vertical 5 cylinder design
- Wide variety of complementary ancillaries

### Quality and reliability

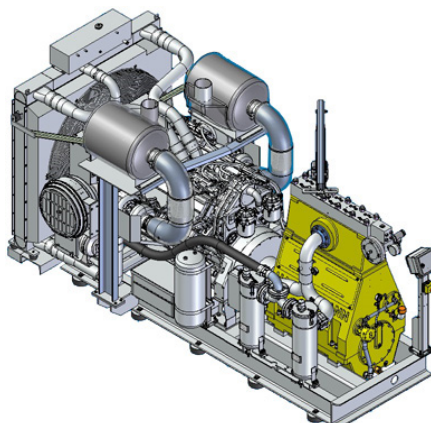
- Stainless steel pump head free of alternating stress
- Cross head piston bellows seal
- Choice of 'application specific' seal assemblies
- Solid ceramic or tungsten carbide plungers
- Choice of bronze or stainless steel suction chamber
- Crank section calculation by 'Finite element method' ensures long working life under continuous load
- Twin helical integral reduction gear with crankshaft supported by 4 bearings
- Pressurised oil lubrication system with oil cooler/filter



### Stationary unit with diesel engine

Length: 3970 mm  
Width: 2100 mm  
Height: 2225 mm  
Weight: approx. 9200 kg  
at 839 kW and  
without full fuel tank

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.



# HDP 800 series, technical data

## Performance parameters (Standard design)

**CALDER**

| HDP        | Q<br>[l/min] | Required power rating [kW] |       |       |       |           | D  | r. p. m.  |     |
|------------|--------------|----------------------------|-------|-------|-------|-----------|----|-----------|-----|
|            |              | 500                        | 560   | 630   | 710   | 800       |    | n 1       | n 2 |
|            |              | Operating pressure [bar]   |       |       |       |           |    |           |     |
| 804        | 87*          | 2900*                      | 3000* |       |       |           | 28 | 1500      | 315 |
|            | 105*         | 2400*                      | 2700* | 3000* |       |           |    | 1500/1800 | 380 |
|            | 129*         | 2000*                      | 2200* | 2500* | 2800* | 3000*     |    | 1800      | 465 |
|            |              |                            |       |       |       |           |    |           |     |
|            | 118 / 114*   | 2300*                      | 2500* | 2600* |       |           | 32 | 1500      | 315 |
|            | 142 / 138*   | 1870                       | 2100* | 2400* | 2600* |           |    | 1500/1800 | 380 |
|            | 174 / 168*   | 1520                       | 1710  | 1920  | 2200* | 2400*     |    | 1800      | 465 |
|            |              |                            |       |       |       |           |    |           |     |
|            | 141 / 138*   | 1880                       | 2100* | 2200  |       |           | 35 | 1500      | 315 |
| 170 / 166* | 1560         | 1750                       | 1960  | 2200* |       | 1500/1800 |    | 380       |     |
| 208 / 204* | 1270         | 1430                       | 1610  | 1810  | 2000* | 1800      |    | 465       |     |

\*Ultra high pressure

|     |     |      |      |      |      |      |    |           |     |
|-----|-----|------|------|------|------|------|----|-----------|-----|
| 803 | 188 | 1440 | 1610 | 1670 |      |      | 40 | 1500      | 315 |
|     | 227 | 1200 | 1340 | 1500 | 1670 |      |    | 1500/1800 | 380 |
|     | 278 | 980  | 1100 | 1230 | 1400 | 1560 |    | 1800      | 465 |
|     | 238 | 1140 | 1270 | 1320 |      |      | 45 | 1500      | 315 |
|     | 287 | 940  | 1060 | 1200 | 1320 |      |    | 1500/1800 | 380 |
|     | 351 | 770  | 860  | 970  | 1100 | 1230 |    | 1800      | 465 |

|     |      |     |      |      |      |      |    |           |     |
|-----|------|-----|------|------|------|------|----|-----------|-----|
| 802 | 297  | 920 | 1030 | 1070 |      |      | 50 | 1500      | 315 |
|     | 358  | 760 | 860  | 960  | 1070 |      |    | 1500/1800 | 380 |
|     | 438  | 620 | 700  | 800  | 900  | 1000 |    | 1800      | 465 |
|     | 355  | 760 | 850  | 880  |      |      | 55 | 1500      | 315 |
|     | 429  | 630 | 710  | 800  | 880  |      |    | 1500/1800 | 380 |
|     | 525  | 520 | 580  | 650  | 730  | 830  |    | 1800      | 465 |
|     | 428  | 640 | 720  | 740  |      |      | 60 | 1500      | 315 |
|     | 516  | 530 | 600  | 670  | 740  |      |    | 1500/1800 | 380 |
|     | 631  | 430 | 500  | 550  | 620  | 700  |    | 1800      | 465 |
|     | 507  | 550 | 610  | 630  |      |      | 65 | 1500      | 315 |
|     | 612  | 450 | 510  | 570  | 630  |      |    | 1500/1800 | 380 |
|     | 748  | 370 | 410  | 470  | 520  | 600  |    | 1800      | 465 |
|     | 588  | 470 | 530  | 550  |      |      | 70 | 1500      | 315 |
|     | 709  | 400 | 440  | 500  | 550  |      |    | 1500/1800 | 380 |
|     | 868  | 320 | 360  | 400  | 450  | 510  |    | 1800      | 465 |
|     | 675  | 410 | 460  | 480  |      |      | 75 | 1500      | 315 |
|     | 814  | 340 | 380  | 430  | 480  |      |    | 1500/1800 | 380 |
|     | 996  | 280 | 310  | 350  | 400  | 440  |    | 1800      | 465 |
|     | 744  | 360 | 400  | 420  |      |      | 80 | 1500      | 315 |
|     | 898  | 300 | 330  | 380  | 420  |      |    | 1500/1800 | 380 |
|     | 1099 | 240 | 270  | 310  | 350  | 400  |    | 1800      | 465 |

|               |      |     |     |     |     |     |     |           |     |
|---------------|------|-----|-----|-----|-----|-----|-----|-----------|-----|
| 801 High flow | 744  | 360 | 400 | 420 |     |     | 80  | 1500      | 315 |
|               | 898  | 300 | 330 | 380 | 420 |     |     | 1500/1800 | 380 |
|               | 1099 | 240 | 270 | 310 | 350 | 400 |     | 1800      | 465 |
|               | 840  | 320 | 360 | 370 |     |     | 85  | 1500      | 315 |
|               | 1013 | 260 | 300 | 330 | 370 |     |     | 1500/1800 | 380 |
|               | 1240 | 220 | 240 | 270 | 310 | 350 |     | 1800      | 465 |
|               | 952  | 280 | 320 | 330 |     |     | 90  | 1500      | 315 |
|               | 1148 | 240 | 260 | 300 | 330 |     |     | 1500/1800 | 380 |
|               | 1405 | 200 | 220 | 240 | 270 | 310 |     | 1800      | 465 |
|               | 1188 | 230 | 260 | 270 |     |     | 100 | 1500      | 315 |
|               | 1433 | 200 | 210 | 240 | 270 |     |     | 1500/1800 | 380 |
|               | 1753 | 160 | 170 | 200 | 220 | 250 |     | 1800      | 465 |
|               | 1452 | 200 | 210 | 220 |     |     | 110 | 1500      | 315 |
|               | 1751 | 160 | 180 | 200 | 220 |     |     | 1500/1800 | 380 |
|               | 2143 | 130 | 140 | 160 | 180 | 210 |     | 1800      | 465 |

**Note: Actual flow rates for water as pumped medium (volumetric efficiency has already been taken into account).**

- Rod force: 210 kN
- Stroke: 100 mm
- Mean piston speed at n<sub>2</sub>  
315 r.p.m. = 1,06 m/sec  
380 r.p.m. = 1,27 m/sec  
465 r.p.m. = 1,54 m/sec

Typical high pressure pump units



- Stationary unit with diesel motor



- Diesel unit in container with workshop



- Stationary unit with electric motor

**Energy efficient** →

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

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

| HDP | Seal**            | Sealing system                            |
|-----|-------------------|-------------------------------------------|
| 804 | Dynamic D 28      | Tungsten carbide plunger & bushing        |
|     | Dynamic D 35      | Tungsten carbide plunger / bronze bushing |
| 803 | Dynamic           | Ceramic plunger / bronze bushing          |
|     | Packing           | Ceramic plunger / packing                 |
| 802 | Dynamic D 50 - 75 | Ceramic plunger / bronze bushing          |
|     | Packing D 50 - 80 | Ceramic plunger / packing                 |
| 801 | Packing           | Ceramic plunger / packing                 |

D = Piston/Plunger dia. [mm]  
n1 = Motor/Engine r.p.m. [1/min]  
n2 = Crankshaft r.p.m. [1/min]

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

**HAMMELMANN®**