High Pressure Pump
Series HDP MC

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.

Features

- Power ratings up to 1500 HP
- Vertical 7 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
## HDP MC series, technical data

### Performance parameters - preliminary - (Standard design)

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

### HDP MC series, technical data

**HDP** | **Q [GPM]** | **Required power rating [HP]** | **Operating pressure [psig]** | **D r.p.m.** | **n1** | **n2**
--- | --- | --- | --- | --- | --- | ---
MC 4 | 33.3* | 43500* | 28 | 1500 | 320 |
 | 38.8* | 70000* | 1500/1800 | 385 |
 | 47.0* | 34800* | 1800 | 460 |
MC 3 | 70.5 | 17400 | 40 | 1500 | 320 |
 | 84.5 | 13600 | 1500/1800 | 385 |
 | 101.4 | 11300 | 1800 | 460 |
MC 2 | 111.4 | 13500 | 50 | 1500/1800 | 320 |
 | 134.1 | 11000 | 1500/1800 | 385 |
 | 160.2 | 9100 | 1800 | 460 |
MC 1 High flow | 276.4 | 5200 | 80 | 1500/1800 | 320 |
 | 331.6 | 4200 | 1800 | 460 |

**Note:** Ultra high pressure

| HDP | **Q [GPM]** | **Operating pressure [psig]** | **D r.p.m.** | **n1** | **n2** |
--- | --- | --- | --- | --- | ---
MC 4 | 53.9 / 52.3* | 26800 | 31900* | 35 | 1500/1800 | 320 |
 | 63.9 / 62.8* | 22500 | 28300 | 1800 | 460 |
 | 76.0 / 75.2* | 18900 | 26100 | 1800 | 460 |

**Seal:**

- **MC4:** Dynamic D 28 - Tungsten carbide plunger & bushing
- **MC3:** Dynamic - Tungsten carbide plunger / bronze bushing
- **MC2:** Dynamic D 50 -75 - Ceramic plunger / bronze bushing
- **MC1:** Ceramic plunger / packing

**Conversion table**

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

**In planning**

- Availability expected early 2012
- Rod force: 47,210 lbf
- Stroke: 3.94 inch
- Mean piston speed at n2: 320 r.p.m. = 3.5 feet/sec
- 385 r.p.m. = 4.2 feet/sec
- 460 r.p.m. = 5.1 feet/sec

**Mean piston speed at n2:**
- 385 r.p.m. = 4.2 feet/sec
- 460 r.p.m. = 5.1 feet/sec

**D = Piston/Plunger dia. [mm]**

**n1 = Motor/Engine r.p.m.**

**n2 = Crankshaft r.p.m.**

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