HDP 200 High Pressure Pump Series

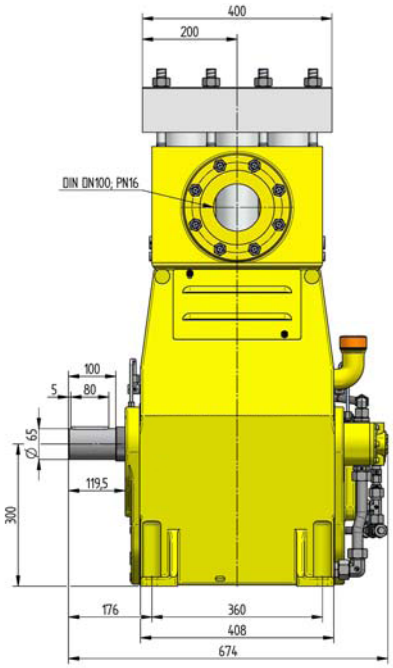
Design criteria

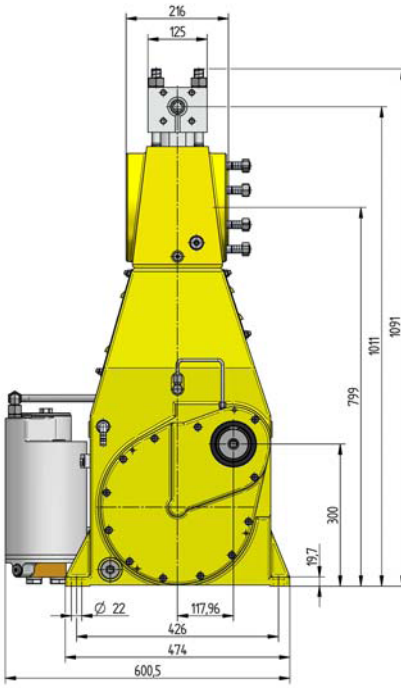
Calder high pressure pumps are built to operate at the continuous maximum duty stated in the performance parameters. Just compare the crankshaft speed, average plunger speed, plunger diameter, and power rating.



High pressure pump

Weight: approx. 525 kg



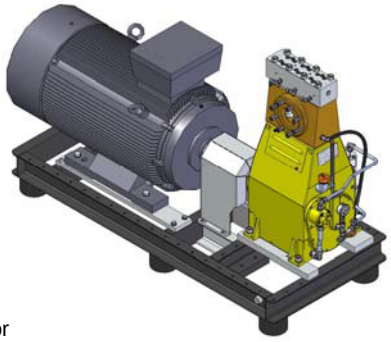


Features

- Power ratings up to 200 kW
- Vertical 3 cylinder design
- Wide variety of complementary ancillaries

Stationary unit with electric motor

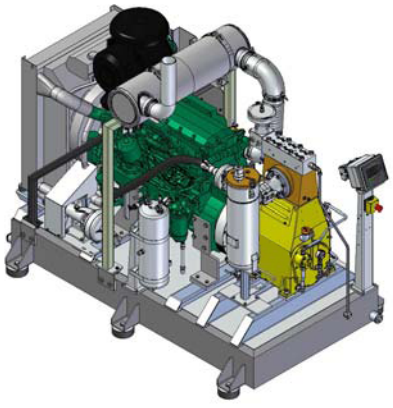
Length: 2038 mm
Width: 850 mm
Height: 1380 mm
Weight: approx. 2000 kg at 160 kW



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: 2560 mm
Width: 1540 mm
Height: 2050 mm
Weight: approx. 3200 kg at 235 kW with 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

HDP 200 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] / Operating pressure [bar] 75	90	110	132	160	200	D	r.p.m. n 1	r.p.m. n 2
204	21/20*	1900	2300*	2850*	3200*			17,5	1500	416
	25/23*	1550	1900	2350*	2800*	3200*			1500/1800	495
	30/28*	1350	1600	2000*	2350*	2850*	3200*		1800/2150	593
	29/28*	1450	1750	2100*	2500*	2800*		20	1500	416
	34/33*	1200	1450	1750	2150*	2600*	2800*		1500/1800	495
	41/40*	1000	1200	1500	1750	2150*	2800*		1800/2150	593
203	43	950	1150	1350	1650	1800		25	1500	416
	52	800	1000	1150	1350	1650	1800		1500/1800	495
	62	650	800	950	1150	1400	1750		1800/2150	593
	55	750	900	1100	1300	1430		28	1500	416
	65	600	750	900	1100	1300	1430		1500/1800	495
	78	500	600	750	900	1100	1400		1800/2150	593
202	61	650	770	950	1150	1240		30	1500	416
	73	540	650	800	950	1150	1240		1500/1800	495
	87	450	550	650	800	950	1200		1800/2150	593
	78	520	630	770	930	1030		33	1500	416
	92	440	530	650	780	950	1030		1500/1800	495
	110	370	450	550	660	800	1000		1800/2150	593
	84	470	570	690	830	910		35	1500	416
	100	400	480	580	700	850	910		1500/1800	495
	120	330	400	490	580	710	880		1800/2150	593
	111	360	440	530	640	700		40	1500	416
	132	300	370	450	540	650	700		1500/1800	495
	158	250	310	370	450	540	690		1800/2150	593
	143	290	350	420	510	550		45	1500	416
	169	240	290	350	420	510	550		1500/1800	495
	202	200	240	300	360	430	540		1800/2150	593
	178	230	280	340	410	450		50	1500	416
	211	200	230	290	340	420	450		1500/1800	495
	252	160	200	240	290	350	440		1800/2150	593
	216	190	230	280	340	370		55	1500	416
	254	160	190	240	280	340	370		1500/1800	495
	303	140	160	200	240	290	360		1800/2150	593
	254	160	190	240	280	310		60	1500	416
	300	140	160	200	240	290	310		1500/1800	495
	359	110	140	170	200	240	300		1800/2150	593
	298	140	170	200	240	270		65	1500	416
	355	120	140	170	200	250	270		1500/1800	495
	425	100	120	140	170	210	260		1800/2150	593
	346	120	140	170	210	230		70	1500	416
	409	100	120	150	180	210	230		1500/1800	495
	489	80	100	120	150	180	220		1800/2150	593

*Ultra high pressure

HDP	Seal **	Sealing system
204	Dynamic	Tungsten carbide plunger & bushing
	Packing	Special ceramic plunger *** / packing
203	Dynamic	Ceramic plunger / bronze bushing
	Packing	Ceramic plunger / packing
202	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. 3000 bar.

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

Energy efficient

- Rod force: 88 kN
- Stroke: 75 mm
- Mean piston speed at n_2
  416 r.p.m. = 1,04 m/sec
  495 r.p.m. = 1,24 m/sec
  593 r.p.m. = 1,48 m/sec

Typical high pressure pump units



- Mobile unit with electric motor



- Road going trailer or stationary units with sound damping cover



- 10 or 20 foot sound damped container versions

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

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