

Ultra-high pressure pumps

M-Baureihe (58000 psi / 4000 bar)

70 M | 150 M | 185 M | 250 M | 400 M

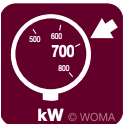
550 M | 1000 M

WOMA®Pumps

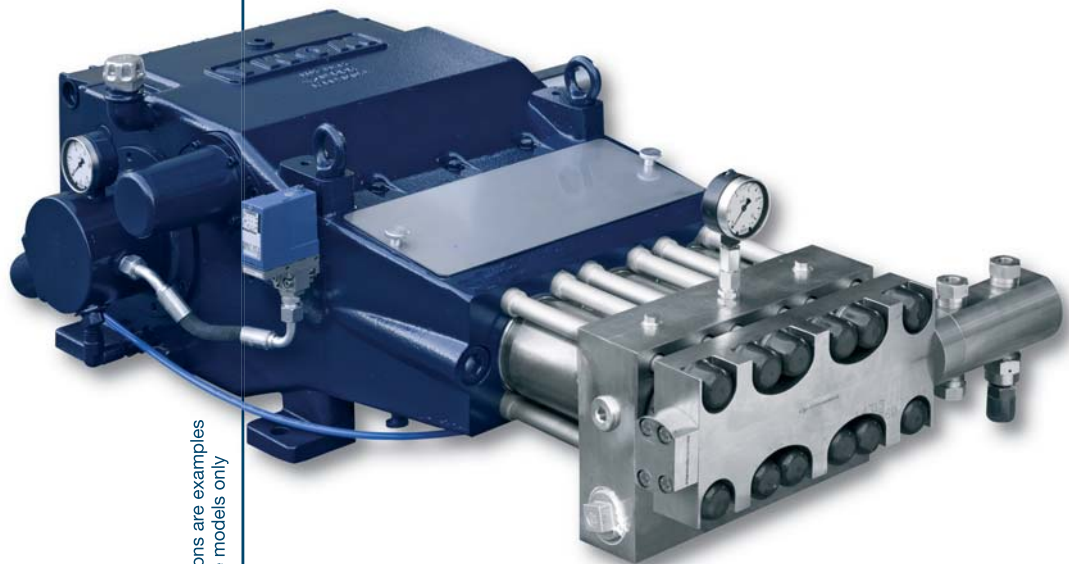
Our M-series high-pressure plunger pumps feature our patented HCV® valve technology and have mastered operating pressures up to 58000 psi/4000 bar. They are ideally suited for cutting and demolition projects as well as for stripping coatings and derusting.

Being slow-speed pumps, their operation is low-wear, resulting in long life and longer operation between maintenance cycles. An auxiliary drive shaft makes it possible to double the output when required, by adding another pump to the drive train. The modular design allows you the flexibility to change the output power specifications by simply replacing an interchangeable plunger conversion set. The M-series has gearbox cooling and satisfies both the ATEX as well as API standard*. Not least of all, this pump series can operate at suction flow temperatures up to 65°C, and if required even up to 90°C**.

* pressure-dependent and volume flow-dependent, ** optional



Example of an available model



All illustrations are examples
of available models only

WOMA® Ultra-high pressure pump 250 M

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Technical Features

Basics

- Two height levels of the drive shaft by repositioning the pump
- Good accessibility in any assembly situation
- Very long life

Gear Box

- Proven industrial gear box with pressurized oil lubrication and 3 available gear ratios (WOMA® standard)

Pump head

- Stress-free pump head in central valve design
- High volumetric efficiency due to minimal dead space

Interchangeable plunger set

- Armoured cylinder
- Interchangeable plunger set system, equipped with hard metal plungers and dynamic sealing system
- Newly developed, static metal seals in the zone of dynamic stress
- Low-pulsation operation thanks to optimised valve kinematics
- Maintenance-friendly

HCV®-Technology

Hydrostatically Compensated Valves

The unique, patented central valve design

- Extremely long life
- Absorption of very high stresses
- High fatigue strength
- Minimal maintenance costs

Additional equipment

- Pneumatically operated 2/2-way directional bypass valve
- Check valve for 3/2-way directional functions

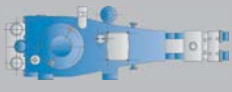



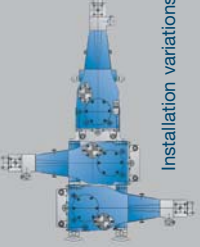
Special model

- Pump head, interchangeable plunger set and valves in special materials for aggressive media being pumped, e.g. sea water
- Water temperature above 65°C

Directives and standards


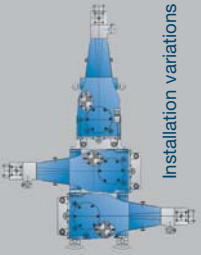

- ATEX 94/9/EC
- API 674 (pressure and volume flow-dependent)
- Quality management system according to DIN ISO EN 9001

Features of the M-series

	Plunger-diameter (mm)	Gear ratio			Crankshaft (rpm)	Required driving power (HP/kW)	Max. flow rate (USG pm/l/min)	Max. operating pressure (psi / bar)	
		Pinion shaft (rpm) 1500	Pinion shaft (rpm) 1800	Pinion shaft (rpm) 2100					
 70 M	10	-	-	-	825	52.3 / 39	2.0 / 7.4	43500 / 3000	
	10	-	-	-	750	48.3 / 36	1.8 / 6.7	43500 / 3000	
	12	-	-	-	825	65.7 / 49	3.0 / 11.2	36250 / 2500	
	12	-	-	-	750	59.0 / 44	2.7 / 10.2	36250 / 2500	
 150 M  Installation variations	12	-	-	4.57	460	91.2 / 68	3.3 / 12.6	43500 / 3000	
	12	-	3.69	-	488	96.6 / 72	3.5 / 13.4	43500 / 3000	
	12	-	4.57	-	394	77.8 / 58	2.9 / 10.8	43500 / 3000	
	12	2.96	-	-	507	100.6 / 75	3.7 / 13.9	43500 / 3000	
	12	3.69	-	-	407	80.5 / 60	2.9 / 11.1	43500 / 3000	
	12	4.57	-	-	328	64.4 / 48	2.4 / 9.0	43500 / 3000	
	14	-	-	4.57	460	105.9 / 79	4.6 / 17.6	36250 / 2500	
	14	-	3.69	-	488	112.6 / 84	4.9 / 18.7	36250 / 2500	
	14	-	4.57	-	394	91.2 / 68	4.0 / 15.1	36250 / 2500	
	14	2.96	-	-	507	118.0 / 88	5.2 / 19.5	36250 / 2500	
	14	3.69	-	-	407	93.9 / 70	4.1 / 15.6	36250 / 2500	
	14	4.57	-	-	328	76.4 / 57	3.3 / 12.6	36250 / 2500	
	16	-	-	4.57	460	114.0 / 85	6.3 / 23.7	29000 / 2000	
	16	-	3.69	-	488	122.0 / 91	6.7 / 25.2	29000 / 2000	
	16	-	4.57	-	394	98.0 / 73	5.4 / 20.3	29000 / 2000	
	16	2.96	-	-	507	126.1 / 94	6.9 / 26.1	29000 / 2000	
	16	3.69	-	-	407	100.6 / 75	5.5 / 21.0	29000 / 2000	
	16	4.57	-	-	328	82.0 / 61	4.5 / 16.9	29000 / 2000	
	18	-	-	4.57	460	111.3 / 83	8.1 / 30.8	21750 / 1500	
	18	-	3.69	-	488	118.0 / 88	8.6 / 32.7	21750 / 1500	
	18	-	4.57	-	394	95.2 / 71	7.0 / 26.4	21750 / 1500	
	18	2.96	-	-	507	123.4 / 92	9.0 / 34.0	21750 / 1500	
	18	3.69	-	-	407	99.2 / 74	7.2 / 27.3	21750 / 1500	
	18	4.57	-	-	328	79.1 / 59	5.8 / 22.0	21750 / 1500	
	 185 M  Installation variations	14	-	-	4.57	460	124.7 / 93	4.5 / 17.1	43500 / 3000
		14	-	3.69	-	488	131.4 / 98	4.8 / 18.2	43500 / 3000
		14	-	4.57	-	394	106.0 / 79	3.9 / 14.7	43500 / 3000
		14	2.96	-	-	507	136.8 / 102	5.0 / 18.9	43500 / 3000
14		3.69	-	-	407	110.0 / 82	4.0 / 15.2	43500 / 3000	
14		4.57	-	-	328	88.5 / 66	3.2 / 12.2	43500 / 3000	
15		-	-	4.57	460	134.1 / 100	5.3 / 19.9	40600 / 2800	
15		-	3.69	-	488	144.8 / 108	5.6 / 21.1	40600 / 2800	
15		-	4.57	-	394	115.3 / 86	4.5 / 17.1	40600 / 2800	
15		2.96	-	-	507	148.9 / 111	5.8 / 21.9	40600 / 2800	
15		3.69	-	-	407	119.3 / 89	4.6 / 17.6	40600 / 2800	
15		4.57	-	-	328	96.6 / 72	3.8 / 14.2	40600 / 2800	
16		-	-	4.57	460	139.5 / 104	6.1 / 23.0	36250 / 2500	
16		-	3.69	-	488	147.5 / 110	6.5 / 24.5	36250 / 2500	
16		-	4.57	-	394	119.3 / 89	5.2 / 19.7	36250 / 2500	
16		2.96	-	-	507	154.2 / 115	6.7 / 25.4	36250 / 2500	
16		3.69	-	-	407	123.4 / 92	5.4 / 20.4	36250 / 2500	
16		4.57	-	-	328	99.2 / 74	4.4 / 16.5	36250 / 2500	

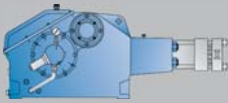

1mm = 0.03937 inch • 1kW = 1.341 HP; 1 kW = 1.36 PS • 1 liter = 0.2641 US.liq.gal • 1 l/min. = 0.26417 USG pm = 0.22 IMPG pm • 1 USG pm = 3.785 liter/s • 1 bar = 14.503 psi

Features of the M-series

	Plunger-diameter (mm)	Gear ratio			Crankshaft (rpm)	Required driving power (HP/kW)	Max. flow rate (USG pm/l/min)	Max. operating pressure (psi / bar)	
		Pinion shaft (rpm) 1500	Pinion shaft (rpm) 1800	Pinion shaft (rpm) 2100					
185 M	18	-	-	4.57	460	144.8 / 108	7.9 / 30	29000/2000	
	18	-	3.69	-	488	154.2 / 115	8.4 / 31.8	29000/2000	
	18	-	4.57	-	394	124.7 / 93	6.8 / 25.7	29000/2000	
	18	2.96	-	-	507	159.6 / 119	8.7 / 33.1	29000/2000	
	18	3.69	-	-	407	128.7 / 96	7.0 / 26.5	29000/2000	
	18	4.57	-	-	328	103.3 / 77	5.0 / 19	29000/2000	
250 M   Installation variations	15	-	-	4.52	464	144.8 / 108	5.3 / 20	43500/3000	
	15	-	3.57	-	504	156.9 / 117	5.8 / 22	43500/3000	
	15	-	4.52	-	398	123.4 / 92	4.8 / 18	43500/3000	
	15	3.04	-	-	493	152.9 / 114	5.5 / 21	43500/3000	
	15	3.57	-	-	420	130.1 / 97	5.0 / 19	43500/3000	
	15	4.52	-	-	331	103.3 / 77	4.0 / 15	43500/3000	
	16	-	-	4.52	464	155.6 / 116	6.1 / 23	40600/2800	
	16	-	3.57	-	504	168.9 / 126	6.9 / 26	40600/2800	
	16	-	4.52	-	398	132.8 / 99	5.3 / 20	40600/2800	
	16	3.04	-	-	493	165.0 / 123	6.6 / 25	40600/2800	
	16	3.57	-	-	420	140.8 / 105	5.5 / 21	40600/2800	
	16	4.52	-	-	331	110.0 / 82	4.5 / 17	40600/2800	
	18	-	-	4.52	464	178.4 / 133	7.7 / 29	36250/2500	
	18	-	3.57	-	504	193.1 / 144	8.5 / 32	36250/2500	
	18	-	4.52	-	398	152.9 / 114	6.9 / 26	36250/2500	
	18	3.04	-	-	493	189.1 / 141	8.2 / 31	36250/2500	
	18	3.57	-	-	420	161.0 / 120	7.1 / 27	36250/2500	
	18	4.52	-	-	331	127.4 / 95	5.5 / 21	36250/2500	
	20	-	-	4.52	464	181.0 / 135	9.8 / 37	29000/2000	
	20	-	3.57	-	504	197.1 / 147	10.6 / 40	29000/2000	
	20	-	4.52	-	398	156.6 / 116	8.5 / 32	29000/2000	
	20	3.04	-	-	493	193.1 / 144	10.6 / 40	29000/2000	
	20	3.57	-	-	420	163.6 / 122	9.0 / 34	29000/2000	
	20	4.52	-	-	331	128.7 / 96	7.1 / 27	29000/2000	
	400 M 	18	-	-	4.23	496	304.4 / 227	11.1 / 42	43500/3000
		18	-	3.60	-	500	307.1 / 229	11.1 / 42	43500/3000
		18	-	4.23	-	425	261.5 / 195	9.5 / 36	43500/3000
		18	2.96	-	-	506	311.1 / 232	11.4 / 43	43500/3000
		18	3.60	-	-	416	256.1 / 191	9.2 / 35	43500/3000
		18	4.23	-	-	354	217.2 / 162	7.9 / 30	43500/3000
20		-	-	4.23	496	323.2 / 241	14.0 / 53	36250/2500	
20		-	3.60	-	500	324.5 / 242	14.0 / 53	36250/2500	
20		-	4.23	-	425	276.2 / 206	11.9 / 45	36250/2500	
20		2.96	-	-	506	329.9 / 246	14.3 / 54	36250/2500	
20		3.60	-	-	416	270.9 / 202	11.9 / 45	36250/2500	
20		4.23	-	-	354	230.7 / 172	10.0 / 38	36250/2500	
22		-	-	4.23	496	320.5 / 239	17.4 / 66	29000/2000	
22		-	3.60	-	500	323.2 / 241	17.7 / 67	29000/2000	
22		-	4.23	-	425	275.0 / 205	15.1 / 57	29000/2000	
22		2.96	-	-	506	327.2 / 244	17.7 / 67	29000/2000	
22		3.60	-	-	416	269.5 / 201	14.5 / 55	29000/2000	
22		4.23	-	-	354	229.3 / 171	12.4 / 47	29000/2000	

1mm = 0.03937 inch • 1kW = 1.341 HP; 1 kW = 1.36 PS • 1 liter = 0.26417 US.liq.gal • 1 l/min. = 0.26417 USG pm = 0.22 IMPG pm • 1 USG pm = 3.785 liter/s • 1 bar = 14.503 psi

Features of the M-series

	Plunger-diameter (mm)	Gear ratio			Crankshaft (rpm)	Required driving power (HP/kW)	Max. flow rate (USG pm/l/min)	Max. operating pressure (psi / bar)
		Pinion shaft (rpm) 1500	Pinion shaft (rpm) 1800	Pinion shaft (rpm) 2100				
 <p>550 M</p>	22	-	-	4.60	456	450.6 / 336	16.4 / 62	43500/3000
	22	-	3.96	-	454	449.2 / 335	16.4 / 62	43500/3000
	22	-	4.60	-	391	386.2 / 288	14.0 / 53	43500/3000
	22	3.30	-	-	454	449.2 / 335	16.4 / 62	43500/3000
	22	3.96	-	-	378	374.1 / 279	13.5 / 51	43500/3000
	22	4.60	-	-	326	321.8 / 240	11.6 / 44	43500/3000
	24	-	-	4.60	456	460.0 / 343	20.1 / 76	36250/2500
	24	-	3.96	-	454	458.6 / 342	19.8 / 75	36250/2500
	24	-	4.60	-	391	394.3 / 294	17.2 / 65	36250/2500
	24	3.30	-	-	454	458.6 / 342	19.8 / 75	36250/2500
	24	3.96	-	-	378	382.2 / 285	16.6 / 63	36250/2500
	24	4.60	-	-	326	328.5 / 245	14.3 / 54	36250/2500
	26	-	-	4.60	456	540.4 / 403	23.5 / 89	36250/2500
	26	-	3.96	-	454	537.7 / 401	23.2 / 88	36250/2500
	26	-	4.60	-	391	462.6 / 345	20.1 / 76	36250/2500
	26	3.30	-	-	454	537.8 / 401	23.2 / 88	36250/2500
	26	3.96	-	-	378	447.9 / 334	19.5 / 74	36250/2500
	26	4.60	-	-	326	386.2 / 288	16.6 / 63	36250/2500
	28	-	-	4.60	456	516.3 / 385	28.0 / 106	29000/2000
	28	-	3.96	-	454	513.6 / 383	27.7 / 105	29000/2000
	28	-	4.60	-	391	442.5 / 330	24.0 / 91	29000/2000
28	3.30	-	-	454	513.6 / 383	27.7 / 105	29000/2000	
28	3.96	-	-	378	427.8 / 319	23.2 / 88	29000/2000	
28	4.60	-	-	326	368.8 / 275	20.1 / 76	29000/2000	
 <p>1000 M</p>	22	-	-	4.23	496	910.5 / 679	33.0 / 125	43500/3000
	22	-	3.69	-	488	895.8 / 668	32.5 / 123	43500/3000
	22	-	4.23	-	425	780.5 / 582	28.3 / 107	43500/3000
	22	3.00	-	-	500	917.2 / 684	33.3 / 126	43500/3000
	22	3.69	-	-	406	745.6 / 556	26.9 / 102	43500/3000
	22	4.23	-	-	354	650.4 / 485	23.5 / 89	43500/3000
	24	-	-	4.23	496	930.7 / 694	40.4 / 153	36250/2500
	24	-	3.69	-	488	914.6 / 682	39.6 / 150	36250/2500
	24	-	4.23	-	425	796.6 / 594	34.6 / 131	36250/2500
	24	3.00	-	-	500	937.4 / 699	40.7 / 154	36250/2500
	24	3.69	-	-	406	761.2 / 568	33.0 / 125	36250/2500
	24	4.23	-	-	354	663.8 / 495	28.8 / 109	36250/2500
	26	-	-	4.23	496	898.5 / 670	48.9 / 185	29000/2000
	26	-	3.69	-	488	882.4 / 658	48.1 / 182	29000/2000
	26	-	4.23	-	425	769.7 / 574	41.7 / 158	29000/2000
	26	3.00	-	-	500	905.2 / 675	49.1 / 186	29000/2000
	26	3.69	-	-	406	734.9 / 548	39.9 / 151	29000/2000
	26	4.23	-	-	354	641.0 / 478	34.9 / 132	29000/2000

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