



WOMA® HIGH-PRESSURE PUMPS

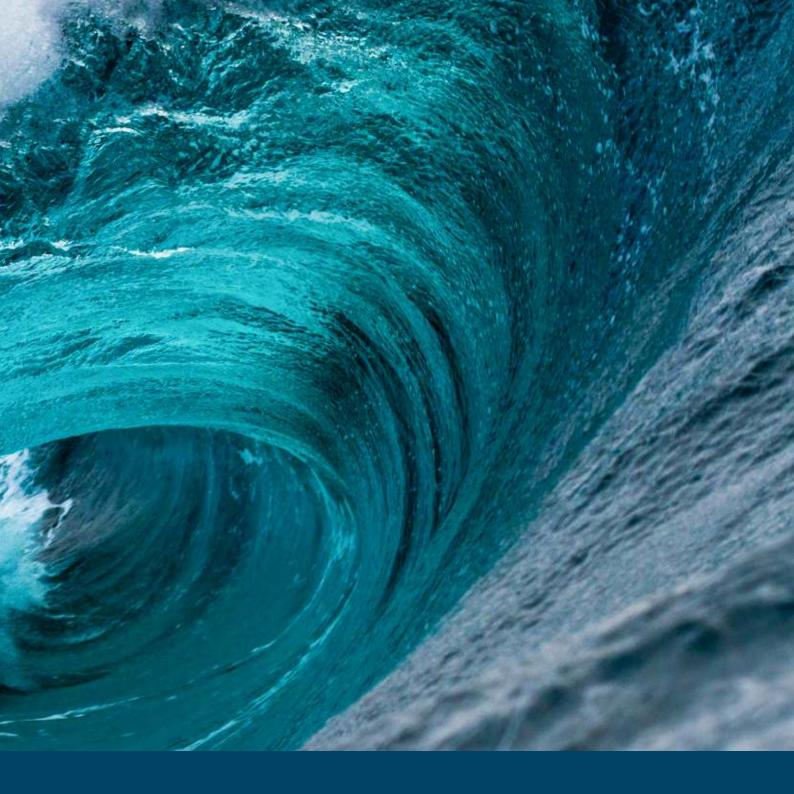
Reliable and powerful plunger pumps from 250 – 3,000 bar.



WATER AS A TOOL

WOMA high-pressure plunger pumps are characterised by their solid construction and excellent workmanship. The diverse range of pumps offers the right high-pressure pump for almost every high-pressure application, especially in the field of high-pressure water jet technology. Among the numerous options available for WOMA pumps is the Twin-Concept. In the range of gearbox sizes 150 to 700, this concept allows a second pump of a smaller or equal size to be connected to the free end of the drive shaft. In addition, all pumps apart from the 3-series are available as ATEX versions on request.

WOMA also offers a large selection of accessories ranging from pressure gauges, switching and regulating devices, through to various safety devices. The WOMA experts will always be glad to help you choose the right pump, regulating devices and accessories. Our application engineers will also advise you on site: together we will work with you to determine the ideal settings for pumps, devices and accessories to solve the individual application task.



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M-SERIES (3,000 BAR)

Power packs with extremely high pressures.

In combination with the wide range of WOMA water tools, the M-series highpressure plunger pump with its operating pressures of up to 3,000 bar is the right choice for cutting, dismantling or decoating work. The M-series offers a suitable high-pressure pump for applications requiring ultra-high-pressures.

The range starts with the compact 70M with a required driving power of 45 kW through to the 500M pump, which demands a corresponding driving power of 402 kW. What all the pumps from the M-series have in common is extreme stability due to their premium quality materials in combination with accurate manufacturing and a well thought-out design.

The robust carbide plungers are leaded in precise guide rings, cooled by the sealing water system, and protected against dirt or damage for a long service life. The proven central valve design is decisive for the outstanding efficiency of the M-series.













M-series 70M
M-series 150M
M-series 190M
M-series 250M
M-series 330M
M-series 400M
M-series 550M



TECHNICAL DATA

Performance data 70M

Pinior	n shaft	Crank shaft	P	10	P12 2,500 bar			
750 1/min	825 1/min		3,00	10 bar				
Gear	Gear ratio 1/min		kW	l/min	kW	l/min		
	1.00	825	33	6.0	45	9.8		
1.00		750	30	5.5	41	8.9		

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Performance data 150M

Performance	e data 150M									1
Pinior	n shaft	Cuanty shaft	P	P12		14	P	16	P18	
1,500 1/min	1,800 1/min	Crank shaft	3,000 bar*		2,500 bar		2,000 bar		1,500 bar	
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
2.96		507	69	12	83	17	95	26	93	34
	3.69	488	67	12	80	17	92	25	89	32
3.69		407	56	10	67	14	77	21	75	27
	4.57	394	54	9	64	14	74	20	72	26
4.57		328	45	8	54	11	62	16	60	22

Performance data 190M

Pinio	n shaft	Crank shaft	P	P15		16	Pi	18	P20	
1,500 1/min	1,800 1/min		3,000 bar		2,800 bar		2,500 bar		2,000 bar	
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
	4.25	424	99	18	106	20	122	26	124	34
4.25		353	83	15	89	17	102	22	103	28

Performance data 250M

Pinio	n shaft	Crank shaft	P15 3,000 bar		P	16	Р	18	P20	
1,500 1/min	1,800 1/min				2,800 bar		2,500 bar		2,000 bar	
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
	3.57	504	118	21	126	25	145	32	148	40
3.04		493	115	21	124	24	142	31	145	39
3.57		420	98	18	105	20	121	26	123	33

Performance data 330M

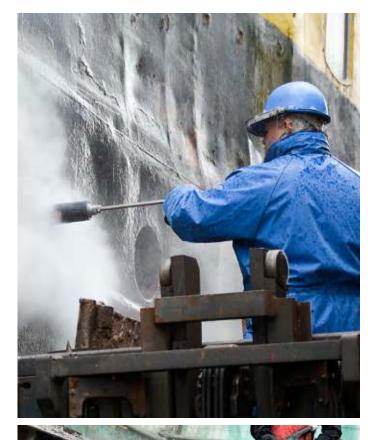
Pinior	n shaft	Crank shaft	F	218	P	20	P22 2,000 bar		
1,500 1/min	1,800 1/min		3,00)0 bar	2,50	0 bar			
Gear	ratio	1/min kW l/min		l/min	kW	l/min	kW	l/min	
	4.23	426	196	35	207	45	206	56	
4.23		355	163	29	172	38	172	47	

Performance data 400M

Pinior	n shaft	Cuanty shaft	F	P18	Р	20	P22 2,000 bar		
1,500 1/min	1,800 1/min	Crank shaft	3,00	00 bar	2,50	0 bar			
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	
2.96		507	233	42	246	54	245	67	
	3.60	500	230	42	243	53	242	66	
3.60		417	191	35	203	44	202	55	

Performance data 550M

Pinic	on shaft	Crank shaft	Р	22	P	24	P	26	P28	
1,500 1/min	1,800 1/min	Crank shaft	3,00	3,000 bar		2,500 bar		0 bar	2,000 bar	
Gea	Gear ratio 1/min		kW	l/min	kW	l/min	kW	l/min	kW	l/min
3.30	3.96	455	336	61	343	75	402	88	384	105
	4.60	391	289	53	295	65	346	76	331	91
3.96		379	280	51	286	63	335	73	320	88
4.60		326	241	44	246	54	288	63	275	75



Cleaning of ships and buoys

The cleaning applications of ships and buoys in ultra-high-pressure water jetting are manifold. Starting with the simple surface cleaning, over to the removal of algae, shells and other deposits up to the paint removal – WOMA offers the suitable solution for each task.

Concrete repair

With the help of ultra-high-pressure technology, concrete can be removed quickly and safely. When concrete is removed using ultra-high-pressure water jets, it creates only very minimal vibrations in the construction. The steel reinforcement is exposed with accuracy, precision and without damage.

Paint Removal For the removal of paints and multi-layer coatings on ship walls, the ultra-high-pressure solutions in combination with the right water tools, such as the use of the WOMA Magnet Lizard, are the best choice.





Z-SERIES (1,500 BAR)

Power packs for industrial cleaning.

Energy efficiency and resource protection are challenges in industrial cleaning and decoating that can be successfully mastered by the WOMA Z-series.

Z-SERIES

With operating pressures up to 1,500 bar and nominal flow rates up to 435 l/min, the Z-series is extremely flexible in a wide range of applications. In particular as the centrepiece of the WOMA EcoMaster ZWG with an integrated intermediate gear, these high-pressure pumps are the general purpose solution for almost every application.

Good plunger guidance ensures a long service life for the sealing system. The pumps are fitted with plungers made of different materials depending on the requirements. Pumps with an operating pressure from 1,000 bar, for example, have robust carbide plungers for an exceptionally long service life. The central valve design of the pump results in a particularly efficient volumetric efficiency and, together with the low servicing costs, contributes to the remarkably low operating costs offered by the Z-series in this performance segment.



TECHNICAL DATA

Pinio	n shaft	Crank shaft	P19		Р	20	Р	22	Р	26	Р	30	P	35
1,500 1/min	1,800 1/min	Craik shart	1,50	00 bar 1,250 bar		1,000 bar		750 bar		570 bar		420 bar		
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
2.96		507	103	37	97	42	95	52	101	73	103	99	104	136
	3.69	488	100	36	93	40	91	50	97	71	99	95	100	130
3.69		407	83	30	78	34	76	41	81	59	83	79	83	109
	4.57	394	80	29	75	33	74	40	78	57	80	77	81	105
4.57		328	67	24	63	27	62	33	65	47	67	64	67	88

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Performance data 190Z

Pinio	n shaft	Crank shaft	Р	P24		P26		P28		30	P35	
1,500 1/min	1,800 1/min		1,500 bar		1,300 bar		1,150 bar		1,000 bar		720 bar	
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
	4.25	424	138	50	142	59	146	70	147	81	147	112
4.25		353	115	42	118	49	122	58	123	67	122	93

Performance data	250Z											i
Pinion shaft		Crank shaft	P2	24	P26		P28		P3	30	P35	
1,500 1/min 1,80	D 1/min	LI dilk Sildi l	1,500 bar		1,300 bar		1,150 bar		1,000 bar		720	bar
Gear ratio		1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
3	3.57	504	164	60	168	71	174	83	175	96	174	133
3.04		493	160	58	165	69	170	81	171	94	171	130
3.57		420	137	50	140	59	145	69	146	80	145	111

Performance data 330Z

Pinion	shaft	Crank shaft	Р	26	P	28	Р	30	P	35	P	45	Р	50
1,500 1/min	1,800 1/min		1,50	0 bar	1,30	0 bar	1,15	0 bar	850) bar	500) bar	400) bar
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
	4.23	426	222	81	225	95	231	110	236	152	234	257	232	319
4.23		355	185	67	188	79	192	92	197	127	195	214	193	266

Performance data 400Z

Pinio	Pinion shaft Crank shaft		P	26	P	28	Р	30	P	35	P45		Р	50
1,500 1/min	1,800 1/min		1,50	0 bar	1,30	0 bar	1,15	0 bar	850) bar	500) bar	400) bar
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
2.96		507	264	97	268	113	275	131	281	182	278	306	276	380
	3.60	500	261	95	265	112	271	129	277	179	274	302	272	375
3.60		417	217	79	221	93	226	108	231	149	229	252	227	312

Performance data 550Z

Pinio	n shaft	Crank shaft	Р	30	P	35	P40		P45		P50	
1,500 1/min	1,800 1/min	Crank Shart	1,500 bar		1,300 bar		1,000 bar		800) bar	650 bar	
Gear	ratio	1/min	kW l/min		kW	l/min	kW	l/min	kW	l/min	kW	l/min
	3.96	455	340	124	405	171	413	227	423	291	428	362
	4.60	391	293	107	349	147	356	196	364	250	368	312
3.96		379	283	104	337	143	344	189	352	242	356	302
4.60		326	244	89	291	123	297	163	303	209	307	260

Performance data 700Z

Pinior	shaft	Currente als affe	Р	30	Р	35	Р	40	P	45	Р	50
1,500 1/min	1,800 1/min	Crank shaft	1,500 bar		1,300 bar		1,00	0 bar	800 bar		650) bar
Gear	ratio	1/min	kW l/min		kW	l/min	kW	l/min	kW	l/min	kW	l/min
	3.30	545	408	149	486	206	496	273	507	349	513	435
	3.45	522	390	143	465	197	474	261	485	334	491	416
3.30		455	340	124	405	171	413	227	423	291	428	362



Tank and vessel cleaning

Tanks and containers must be periodically cleaned from the inside to remove all contaminants. The tank cleaning heads from the TankMaster series ensure optimum interior cleaning results at minimal cleaning times.

Pipe cleaning

Pipes are the veins of plants in all industrial areas and must therefore always be free from deposits. The cleaning of pipes with high-pressure water even enables getting into hard to reach places.



Y-SERIES (1,000 BAR)

Power packs for compact systems.

The high-pressure pumps from the Y-series are exceedingly compact. Their small size and low weight make them especially suitable for use in compact high-pressure units.

With operating pressures of up to 1,000 bar, the Y-series is outstandingly suited to many different cleaning tasks, e.g. in the chemical industry, oil and gas industry, as well as for marine applications.

Depending on the fluid being used, the standard carbide plunger in the 70Y pump can be replaced by a fluid-resistant ceramic plunger. It is also possible to fit the pump with a suction valve lift for unpressurised circulation of the water within the pump head.

The newly developed 30Y high-pressure pump extends the performance spectrum of the Y-series even further. With a required driving power of 30 kW, it is capable of pumping up to 16.7 l/min at 1,000 bar. In addition the pumps offers favourable purchase and operating costs.







TECHNICAL DATA

Performance	data	30Y
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Pinio	1,000 1/min Crank shaft	F	215	
750 1/min	n 1,000 1/min		1,00	00 bar
Gear	r ratio	1/min	kW	I/min
	1.00	1,000	31	16.7
1.00			23	12.5

Performance (data	70Y
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Pinio	n shaft	Crank shaft	Р	15	P	16	P	18	P2	20
750 1/min	1,000 1/min		1,00	10 bar	1,00	0 bar	850	bar	700	bar
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
	1.00	1,000	41	22	47	25	50	32	52	40
1.00		750	31	16	35	19	38	24	39	30



2-SERIES (750 BAR)

Power packs for harsh environments.

The robust, yet inexpensive high-pressure pumps from the 2-series generate up to 750 bar. This makes them the preferred choice in particular for cleaning pipes, tube bundles and vessels.

Regardless of how harsh the day-to-day working conditions may be, the pumps from the 2-series are ideally equipped to handle them, and in doing so offer outstanding value for money. They are particularly easy to maintain and offer a long service life. The 2-series pumps are build with ceramic plungers, which are extremely resistant to alkaline and acidic liquids. Specially coated steel plungers that are extremely hardwearing and highly resistant to temperature shocks are available as an option. The plungers are additionally protected against contamination and damage by the newly integrated sealing water system.

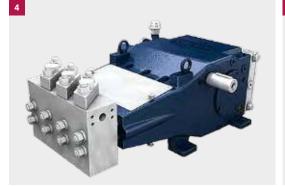
On customer request the 2-series is also available with increased inlet pressure.













TECHNICAL DATA

Performance data 702

Pinio	Pinion shaft Crank shaft		Р	20	Р	24	Ρ	26	Р	30	Р	35	Р	40	Р	45
750 1/min	1,000 1/min		650) bar	450) bar	400) bar	300) bar	220) bar	170) bar	135	5 bar
Gear	r ratio	1/min	kW	l/min												
	1.00	1,000	48	39	49	57	51	68	51	91	52	125	52	165	53	209
1.00		750	36	29	37	43	38	51	39	69	39	94	39	124	40	157

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Performance data 1002

Pinior	n shaft	Crank shaft	P	22	P26		P35		P40		P	45
1,500 1/min	1,800 1/min	Craik Shart	750 bar		550 bar		300) bar	230) bar	180) bar
Gear	ratio	1/min	kW l/min		kW	l/min	kW	l/min	kW	l/min	kW	l/min
3.00		500	54	38	56	54	57	102	58	134	57	171
	3.63	496	54	38	56	54	57	101	57	133	57	169
3.63		413	45	31	47	45	47	84	48	111	48	141

Performance data 1502

Pinio	n shaft	Crank shaft	Р	26	Р	30	Р	35	P	40	P	45
1,500 1/min	1,800 1/min		750 bar		565 bar		415 bar		320 bar		250 bar	
Gear	ratio	1/min	kW	l/min								
2.96		507	99	70	101	96	103	133	105	175	104	224
	3.69	488	95	68	97	92	99	128	101	169	100	215
3.69		407	79	56	81	77	83	106	84	140	84	179
	4.57	394	77	55	79	74	80	103	81	136	81	174
4.57		328	64	45	66	62	67	86	68	113	68	145

Performance data 1902

Pinio	n shaft	Crank shaft	P	30	P	35	P	40	P	45
1,500 1/min	0 1/min 1,800 1/min		750) bar	650) bar	500	bar	400	bar
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
	4.25	424	110	78	131	108	134	144	137	184
4.25		353	92	65	109	90	112	120	114	153

Performance data 2502

Pinion shaft		Cuanti shaft	P	30	P	35	P	40	P	45
1,500 1/min	1,800 1/min	Crank shaft	750 bar 650		0 bar 500 bar		bar	400 bar		
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
	3.57	504	131	94	156	129	159	171	163	219
3.04		493	128	91	153	126	156	167	159	214
3.57		420	109	78	130	107	133	143	136	182



Tank and silo cleaning

The internal cleaning is the central task of tank and silo maintenance. To keep production down times as little as possible, a quick and thorough cleaning is crucial. The dense spray pattern of the TankMaster cleaning heads guarantee optimum results in short times.



Heat exchanger cleaning

The processes in heat exchangers often lead to the formation of stubborn deposits, which, depending on the type, harden and reduce the flow or even completely block them. Regular and residue-free cleaning with high-pressure is therefore essential for the necessary process efficiency and safety.





ARP-SERIES (400 BAR)

Power packs for high flow rates and contaminated water.

In descaling or sewer cleaning, the water is often contaminated. WOMA also offers the right selection of reliable pumps for these conditions and heavy duty operations.

The ARP-series produces operating pressures of up to 400 bar and nominal flow rates of up to approx. 819 I/min.

ARP stands for Abrasive Resistant Pump. It is specially designed to handle long operating times, even for contaminated fluids with granular or fibrous solids up to 300 µm. The pump can be serviced directly on site without dismantling the pump head. Up to the gearbox size 250, the pump head of the ARP-series is available either as an inexpensive cast variant, or as a particularly robust design made of stainless steel. If required, super-duplex stainless steels can also be used for maximum durability.

If the system also pumps the fluid into an open consumer, the optional suction valve lift is an economical and space-saving alternative to a bypass valve.













TECHNICAL DATA

Performance data 150ARP

Pinio	n shaft	Crank shaft	P	40	P	45	Р	50	Р	55	Р	60
1,500 1/min	1,800 1/min	Craik Sildit	320) bar	250) bar	200) bar	170) bar	140) bar
Gear	ratio	1/min	kW	l/min								
2.96		507	105	175	104	224	103	277	107	337	105	402
	3.69	488	101	169	100	215	100	267	103	324	101	387
3.69		407	84	140	84	179	83	222	86	270	84	323
	4.57	394	81	136	81	174	80	216	83	262	82	312
4.57		328	68	113	68	145	67	180	69	218	68	260

Performance data 190ARP

Pinion shaft	Crank shaft	F	50	Р	55	P	50	P	65
1,500 1/min 1,800 1/	min	32	320 bar 250 bar		250 bar		210 bar		
Gear ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
4.25	424	136	229	130	279	155	332	153	392
4.25	353	114	191	108	233	129	277	128	326

Performance data 250ARP

Pinion shaft		Crank shaft	Crank shaft P50		P55		P60		P65	
1,500 1/min	1,800 1/min		320 bar 250 bar		250 bar		210 bar			
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
	3.57	504	162	273	155	332	184	396	182	466
3.04		493	159	267	151	325	180	387	178	456
3.57		420	135	227	129	277	153	330	152	389

Performance data 330ARP

Pinio	n shaft	Crank shaft	Р	55	P	65	
1,500 1/min	1,800 1/min		340) bar	240 bar		
Gear	ratio	1/min	kW	l/min	kW	l/min	
	4.23	426	240	380	239	537	
4.23		355	200	317	200	447	

Performance data 400ARP

Pinior	n shaft	Crank shaft	P	55	P	55	
1,500 1/min	1,800 1/min		340) bar	240 bar		
Gear	ratio	1/min	kW	l/min	kW	l/min	
2.96		507*	286	453	285	640	
	3.60	500	282	447	281	631	
3.60		417	235	372	234	526	

Performance data 550ARP

Pinio	on shaft	Crank shaft	Р	60	P	65	P	70	P	75
1,500 1/min	1,800 1/min		400) bar	400 bar		330 bar		290 bar	
Gea	r ratio	1/min	kW	l/min	kW	l/min	kW	l/min	kW	l/min
3.30	3.96	455	384	518	451	608	435	710	440	819
	4.60	391	331	446	388	523	374	611	379	705
3.96		379	320	431	376	506	362	592	367	682
4.60		326	276	371	324	436	312	509	316	587

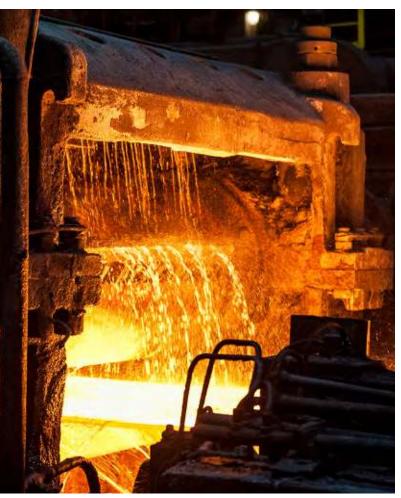
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Hydromechanical descaling

Hydromechanical descaling is mainly used where the uncompromising quality of hot rolling products is required. For proper and effective descaling results, the correct volume flow and pressure as well as the distance and angle of the nozzle bar are of crucial importance.



Sewer cleaning

In the sewer cleaning dirty fluids are common. For pumps of the ARP series, conditions with granular or fibrous solids up to 300µm are no problem.



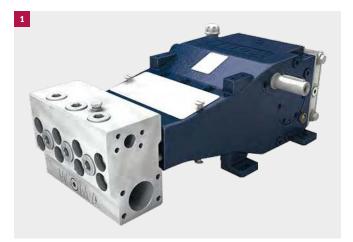


3-SERIES (250 BAR)

Power packs for cleaning and flushing.

A low price, inexpensive servicing, durable and service-friendly. With these characteristics, the 3-series is well suited for sewer and pipe cleaning applications. A good pump does not have to be complicated. The simple principle of the 3-series with its proven WOMA components makes the pump a reliable companion for all highpressure applications up to 250 bar. The pump can be adapted with simple means to accommodate the prevailing requirements.

The sealing system of the 3-series is particularly easy to service since it has very few wearing parts. As an alternative to the corrosion-resistant stainless steel pump head, an inexpensive version made of cast iron is available for the 1503 to 2503 series. Coated steel plungers are optionally available for even greater resistance to wear and thermal shock compared to the standard, fluid-resistant ceramic plungers.







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TECHNICAL DATA

Performance data 1003

Pinio	n shaft	Crank shaft	P	50	P	55	
1,500 1/min	1,800 1/min		150	0 bar	125 bar		
Gear	ratio	1/min	kW	l/min	kW	l/min	
3.00		500	59	211	60	257	
	3.63	496	59	210	59	254	
3.63		413	49	175	49	212	

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Performance data 1503

Pinion	shaft	Crank shaft	P	50	P	55	PE	50
1,500 1/min	1,800 1/min		200 bar		170 bar		140 bar	
Gear	ratio	1/min	kW	l/min	kW	l/min	kW	l/min
2.96		507	103	277	107	337	105	402
	3.69	488	100	267	103	324	101	387
3.69		407	83	222	86	270	84	323
	4.57	394	80	216	83	262	82	312
4.57		328	67	180	69	218	68	260

Performance data 1903

Pinion shaft	Crank shaft	P	50	P5	5	
1,500 1/min 1,800 1/min		250) bar	250 bar		
Gear ratio	1/min	kW	l/min	kW	l/min	
4.25	424	107	231	130	279	
4.25	353	90	192	108	233	

Performance data 2503

Pinio	n shaft	Crank shaft	P	50	P	55	
1,500 1/min	1,800 1/min		250	bar	250 bar		
Gear	ratio	1/min	kW	l/min	kW	l/min	
	3.57	504	128	275	155	332	
3.04		493	125	269	151	325	
3.57		420	107	229	129	277	

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Pipe and sewer cleaning

Removing blockages, minimizing odor nuisance or uncovering damaged areas - WOMA systems prove their worth in the field of pipe and sewer cleaning in many ways.





You need more than just a single high-pressure pump?

We also have suitable system solutions, tools and accessories for every application:

Cleaning

WOMA high-pressure cleaning solutions are used in the chemical and process industries around the world. Our high-pressure guns and TankMaster cleaning heads will completely remove all paint residues, impurities, resins and caking from tanks and vessels. We also offer suitable products and solutions for pipe and heat exchanger cleaning that deliver perfect results.

Removal

For ultra-high-pressure removal, we offer the right solutions for a wide range of industries and applications. For the removal of paints, rust products and anti-corrosion coatings with manual and remote controlled water tools, the right products are available for your tasks. In addition, WOMA high-pressure solutions can be used for emission-free decontamination and selective removal of concrete.

Cutting

WOMA cutting tools are widely used in the construction industry. The cutting of reinforced concrete, steels or ceramics takes place with construction site-suitable abrasive tools. It is also easy to cut containers, technical systems or building constructions into pieces. The water tools generate no heat at the cutting edges and work dust-free and with low vibrations.

With our experience to the right solution

You need advice and support for your application? Our application engineers have decades of cross-industry experience and will find the most appropriate water tool with the right parameters for your task.



WHATEVER THE TASK – WE HAVE THE SOLUTION.

WOMA GmbH Werthauser Straße 77-79 47226 Duisburg

P: +49 2065 304 0 F: +49 2065 304 200

info@woma.kaercher.com www.woma-group.com