



WOMA® ULTRA-HIGH-PRESSURE UNITS

Powerful and reliable: mobile and stationary high-pressure units for water jetting and cleaning applications up to 3,000 bar.



WATER AS A TOOL

WOMA is a leading manufacturer of high-pressure pumps, high-pressure units and accessories for cleaning and removal in industrial applications. For more than 60 years WOMA has been supplying high-pressure technology to customers all over the world. Through consequent research and development, we have today mastered systems with water pressure of up to 4,000 bar. As part of the Kärcher Group, through the international distributor and service network of the market leader in cleaning technology we are able to reach a growing international target market.

The revolutionary idea of using the mechanical effects of flowing water for cleaning with enormous pressures is the driving force of WOMA since its foundation in 1962.



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ECOTHERM

Effective cleaning with hot water.

The hot water cleaner EcoTherm reaches performance levels, which otherwise are only achieved by bigger high-pressure units. This is because cleaning with hot water is more efficient and effective than with cold water, especially in the environment of oily contamination. For comparable cleaning tasks, a much lower operating pressure is usually sufficient.

Advantages at a glance:

- The extremely reliable and durable 70Y high-pressure plunger pump impresses with its high-quality construction. With its compact design and low weight, the 52Y is an interesting alternative in intermittent operation.
- Economical and robust diesel engine (53 kW) with automatic start-stop.
- The unit and the heater are operated via a common, modern and intuitive control.
(For detailed information on our device controls, see page 16 onwards).
- The compact and weight-optimized single-axe trailer is approved as a trailer up to 80 km/h and can be brought to site with almost any middle-class car.
- With up to 95 °C facades, small pipes, industrial flooring and other surfaces can be easily cleaned, oil and grease can be washed away and coating can be removed.
- The tank system with two chambers including a safety trough prevents the leakage of fluids such as fuel, oil or softeners.
- Automatic shutdown of the heating elements when there is no water supply increases safety and saves energy costs.
- Maximum safety for the user: The system is pressure free as long as the high-pressure gun is not activated.
- Pre-equipped for radio remote control.
- 24 volt control voltage for unit control, high battery capacity at 24V control voltage and optimised cold start characteristics.

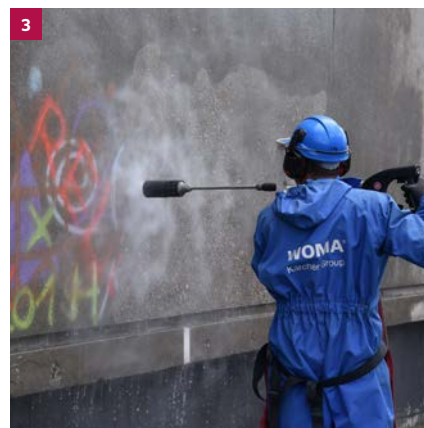
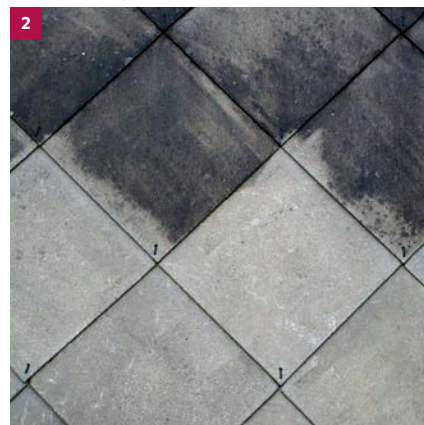
Technical Data EcoTherm

Unit type	ET 600	ET 800	
Max. pressure bar	600	800	
pump type	70Y	70Y	52Y
Max. volume flow in l/min	40	32	29
Max. water temperature in °C	95		
Heating oil tank in l	175		
Fuel tank in l	175		
Water tank in l	75		
Weight incl. operating material in kg	2,100		
Measures in mm (L x W x H)	4,150 × 1,950 × 2,240		

1 Graffiti and layers of paint can be easily removed from walls and facades with hot water.

2 Soiled floors and surfaces can be cleaned by using the EcoTherm.

3 Working with hot water can be carried out faster, more thoroughly and more economically.





**AVAILABLE
FOR RENT!**



ECOMASTER MK3

The mobile power pack.

The EcoMaster MK3 is a compact, high-performance unit for the maintenance of large structures and industrial plants, but also for many other applications in the industry, in the maritime sector, in the construction industry as well as in municipal services. The ultra-high-pressure water jet unit is designed as a mobile trailer with a diesel engine.

Advantages at a glance:

- The heart of the EcoMaster MK3 are the powerful and reliable ultra-high-pressure pumps of the M-Series, Type 190M and Type 250M.
- Available in three versions with an operating pressure of 2,500 bar, 2,800 bar or 3,000 bar.
- The modern and clear control system enables intuitive operation of the high-pressure system in the harsh construction site environment. (For detailed information on our device controls, see page 16 onwards).
- Available in engine classes with stage 3a or stage V with the latest exhaust emission standard.
- Ideal for the removal of coating and concrete refurbishment, as well as for the separation and cutting of various materials.
- Maximum safety for the user: The system is pressure-less as long as the high-pressure gun is not activated.
- Low-noise operation and unit protection due to the noise protection hood made from aluminium.
- Road approval as trailer up to 80 km/h.
- Pre-equipped for radio remote control.

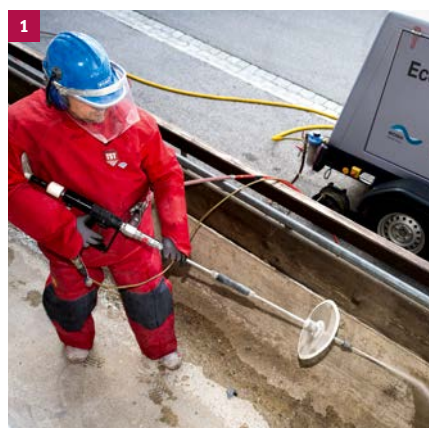
Technical Data EcoMaster MK3

Unit type	190M	250M	190M	250M	190M	250M
Max. pressure in bar	2,500		2,800		3,000	
Max. volume flow in l/min	26	32	20	25	18	21
Stage 3a weight incl. operating fluids in kg	2,750		2,750		2,750	
Measures in mm (L x W x H)	≈ 4,450 × 2,030 × 2,190		≈ 4,450 × 2,030 × 2,190		≈ 4,450 × 2,030 × 2,190	
Stage 5 weight incl. operating fluids in kg	2,915		2,915		2,915	
Measures in mm (L x W x H)	≈ 4,450 × 2,030 × 2,320		≈ 4,450 × 2,030 × 2,320		≈ 4,450 × 2,030 × 2,320	

1 With the WOMA high-pressure guns and operating pressures of up to 3,000 bar, even selective concrete removal is possible.

2 In combination with the WOMA TD3000 SCS, the EcoMaster MK3 is ideally suited for the uncovering of steel reinforcements and reinforcing bars.

3 4 Whether manually using the hand lance or the Magnet Lizard, even multi-layer paints and antifouling coatings are no challenge.





ECOMASTER LARGE UNIT-SERIES

Powerful systems for high requirements.

With the highest level of reliability and an equally large range of services, WOMA combustion- and large electrical units are suitable for the most demanding tasks and applications.

WOMA large units are characterized by their flexibility and robustness. The modular design allows a fast and flexible use for all tasks in mobile and stationary high-pressure water applications.

The following unit versions are available:

› Modell Classic:

the basic unit, robust and easy to use

Designed for the operation with a Dump Gun or with a manual overflow valve for mechanic water tools.

› Modell Advanced:

the control with that certain extra

Fitted with a pneumatic overflow valve. Suitable for the operation of electronic water tools and offering the highest level of safety.

› Modell Expert:

the expert solution for the highest demands

Equipped with a pneumatic overflow valve and automatic pressure speed control via the motor, the version is designed for the highest demands on sustainability and efficiency. Suitable for the operation of electronic water tools. Optional multi-user solutions can be integrated.

Additional and freely selectable options for all versions:

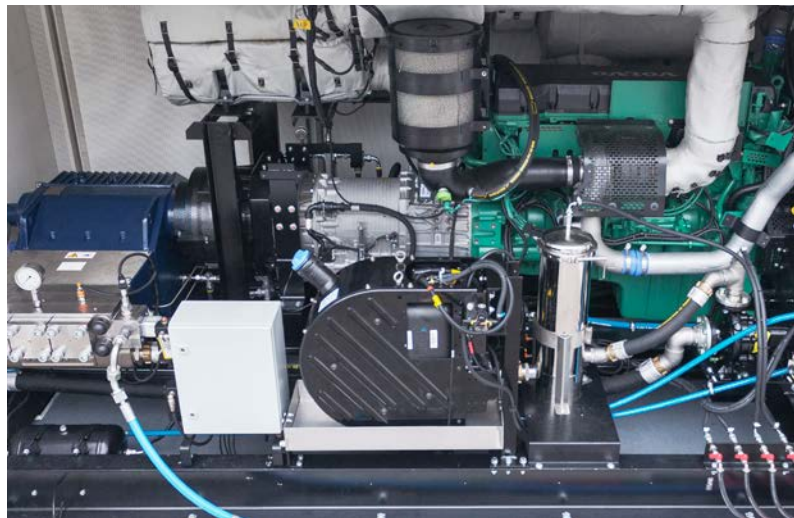
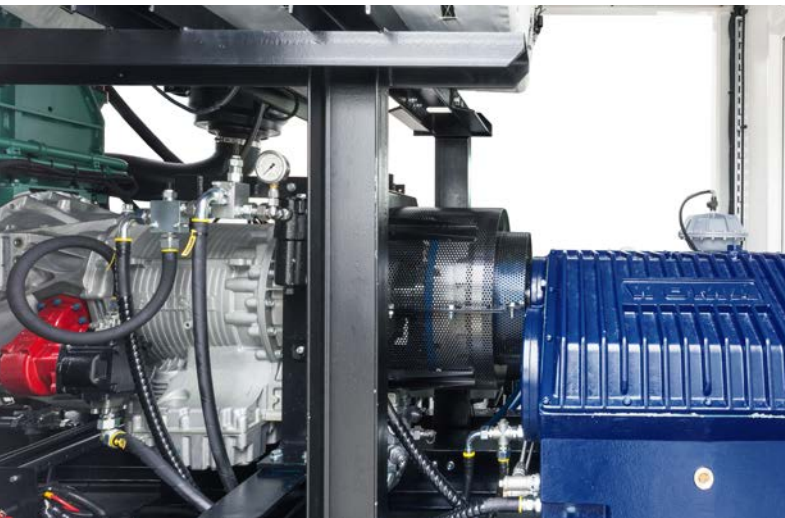
- Container housing
- Sound insulation
- EXI control



**AVAILABLE
FOR RENT!**



NOW FULLY AUTOMATED



ECOMASTER ZWG

Powerful, versatile and efficient in every situation.

The EcoMaster ZWG is controlled by an integrated intermediate gearbox in a power range from 50 to 500 kW. It covers the full range of high-pressure applications in the industry while optimizing fuel consumption during the operation.

Advantages at a glance:

- Reduction of fuel consumption and reduction of CO² emissions with the right engine speed for the application.
- The power range from 50 to 500 kW can be regulated via the integrated, multi-stage intermediate gear.
- With six available gears, the user always has the optimal pressure-liter combination at his disposal.
- Capacity and fuel consumption are constantly readable, with full control over the operating costs occurred.
- In automatic mode, gear changes take place during operation and without significant changes in the recoil forces.
- With the additional available overdrive, the engine is in the optimal consumption range with maximum output at the same time. This provides the full liter capacity of the machine at comparably low fuel consumption.
- Due to the speed reduction, the noise emission is significantly reduced.
- Pre-equipped for the use of the WOMA radio remote control.
- One device for changing applications:
 - › High-pressure gun work between 27 and 34 l/min
 - › Pipe cleaning applications between 84 and 183 l/min
 - › Tank cleaning applications from 112 to 264 l/min
 - › and many more



Equipped for the diverse industrial cleaning routine.

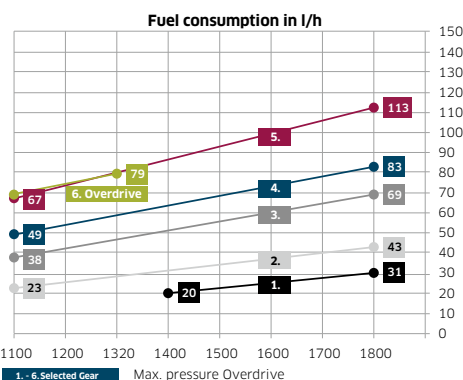
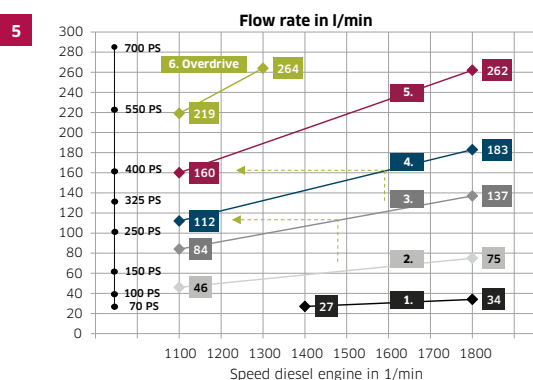
A selection of the numerous application possibilities of the EcoMaster ZWG series:

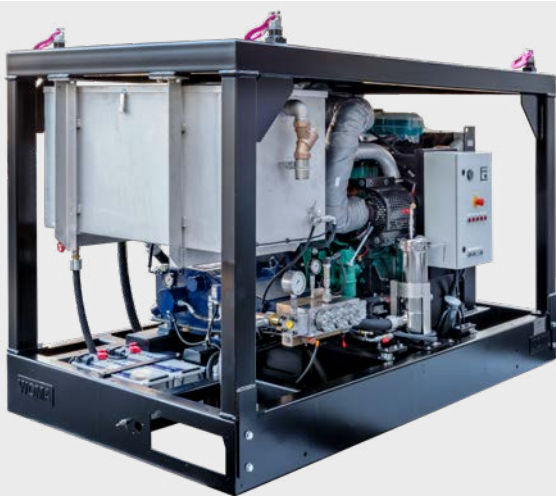
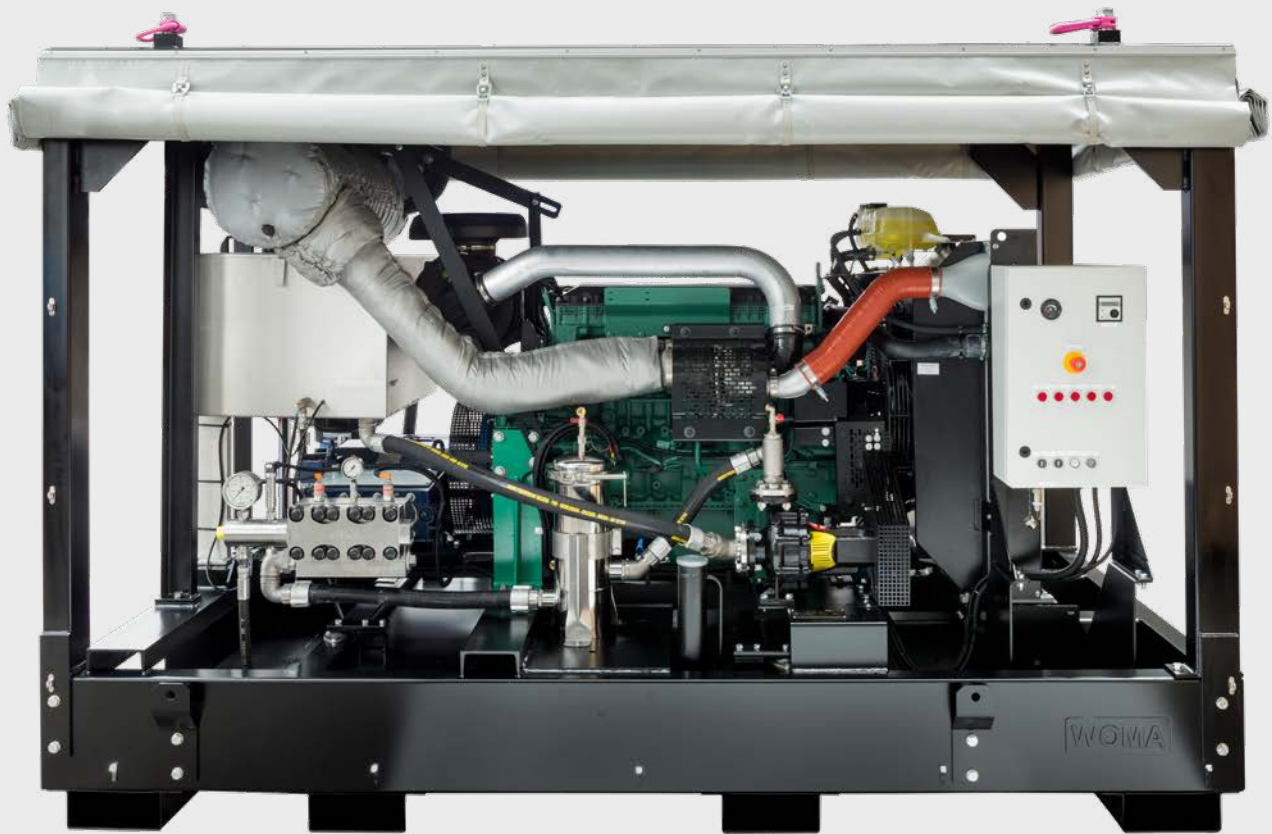
- 1 Heat exchanger cleaning
- 2 3 Manual and automated parts cleaning
- 4 Tank cleaning

- 5 **Volume flow and fuel consumption**
Depending on the shifted gear at 1,000 bar using the example of WOMA EcoMaster D 700Z ZWG

Technical Data

Unit type	550Z	700Z
Max. pressure in bar	850 - 1,500	750 - 1,500
Volume flow in l/min	25 - 259	27 - 264





ECOMASTER CLASSIC

Simply to use, simply robust, simply efficient.

The EcoMaster Classic are designed for the usage in rough conditions. They persuade with their compact, robust and low-maintenance construction and simple operation. This makes the high-pressure units versatile and flexible, even in extreme climatic regions or under difficult environmental conditions.

Advantages at a glance:

- All devices are fitted with robust, low maintenance and strong performance WOMA high-pressure pumps.
- The compact design with stable frame construction enables easy usage in difficult areas.
- Equipped with crane hooks for easy transport, the WOMA EcoMaster Classic is also optionally available as a trailer construction.
- The EcoMaster Classic aggregates are particularly suitable for heavy soiling and caking in the industry, as e.g. commonly found in heat exchangers, meshes, filters and pipes.
- The EcoMaster Classic offers the optimal equipment for the refurbishment and removal of concrete or coating, as well as for industrial cleaning.
- The large supply tank also ensures a calm water cycle in areas with limited supply of fresh water.
- Low operational costs due to high service life, minimal maintenance costs and simple servicing.



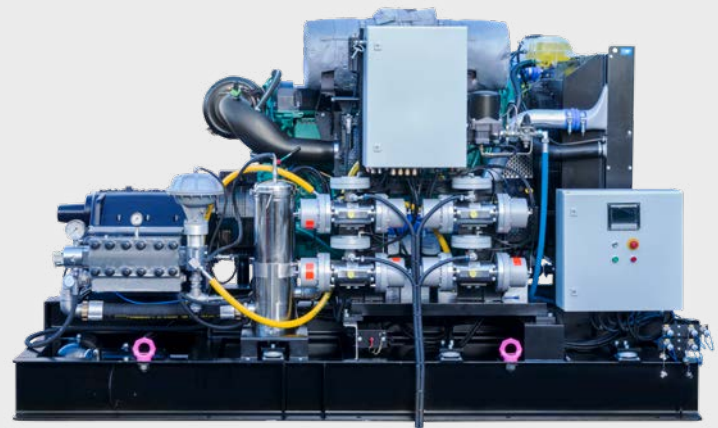
1 2 The EcoMaster D 250M Classic, with an operational pressure of up to 3,000 bar, offers the necessary performance for the removal of concrete and coating.

3 Pipe cleaning

Technical Data

Unit type	EcoMaster D 250M Classic	EcoMaster D 250M Classic	EcoMaster D 190Z Classic	EcoMaster D 150Z Classic	EcoMaster D 150Z Classic	EcoMaster D 250Z Classic
Max. pressure in bar	2,800	3,000	1,500	1,500	750	750
Max. volume flow in l/min	25	21	50	36	68	94
Weight in kg	2,500	2,500	2,500	2,500	2,500	2,500
Measures in mm (L x W x H)	2,880 × 1,510 × 1,820		2,880 × 1,510 × 1,820		2,880 × 1,510 × 1,820	

Unit type	EcoMaster D 250 Z Classic			EcoMaster D 250Z Classic
Max. pressure in bar	1,500	1,000	720	400
Max. volume flow in l/min	60	96	133	219
Weight in kg	3,425	3,425	3,425	3,425
Measures in mm (L x W x H)	3,200 × 1,720 × 2,200	3,200 × 1,720 × 2,200	3,200 × 1,720 × 2,200	3,200 × 1,720 × 2,200



INDIVIDUAL SYSTEMS

According to your wishes and requirements.

Besides the standard units, we design and produce individual high-pressure water jet devices according to customer requirements. The configuration is flexible depending on the requirements. Whether it is mobile or stationary, with diesel engine or electric motor – our experts find the best solution even for complex applications or challenging working conditions.

Advantages at a glance:

- The system design is always modular and can be either stationary as a Skid Unit respectively with container housing, or can be mobile as a trailer, as a truck installation or even as a flat wagon.
- All pressure stages and volume flows within the WOMA portfolio are available – with up to 3,000 bar, and approximately 1,700 l/min.
- Drive via powerful, efficient diesel engines or alternatively with electric drive for stationary operation.
- Multi-consumer valves enable pressure surge-free, safe working with several consumers with one device.
- The Integration of the machine control into existing control systems is possible without any problems.
- With WOMA's unique Twin-Jet solution, two high-pressure pumps can be operated independently from each other with one drive. Thus, the system offers two workplaces with water tools in one unit.

Examples of further options:

- Container housing
- Flat wagon or trailer solution
- EXI control or 24V
- Highly efficient pressure control by frequency converter
- Different sizes of fuel and water tanks
- Individual colour design
- and many more



Whether mobile or stationary unit, with or without container housing: a flexible unit configuration can be made according to your wishes and requirements.



UNIT CONTROLLERS

Clear and intuitive.

The intuitive WOMA unit controllers for mobile and stationary applications are available in two versions with 4.3" or 7" display. With integrated SPS and CAN master capability, this is the perfect solution for high-pressure applications that require an innovative control and visualization system.

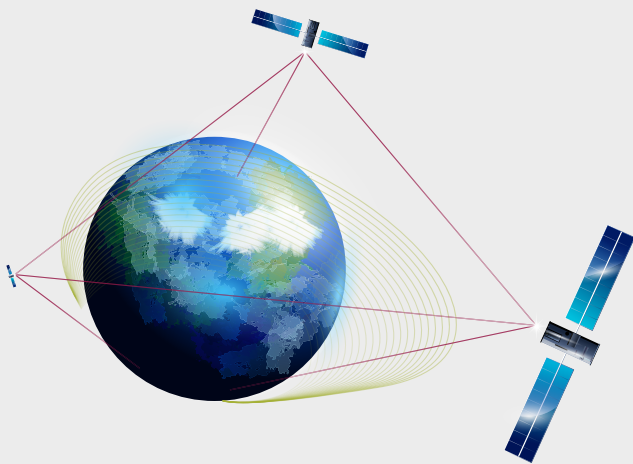
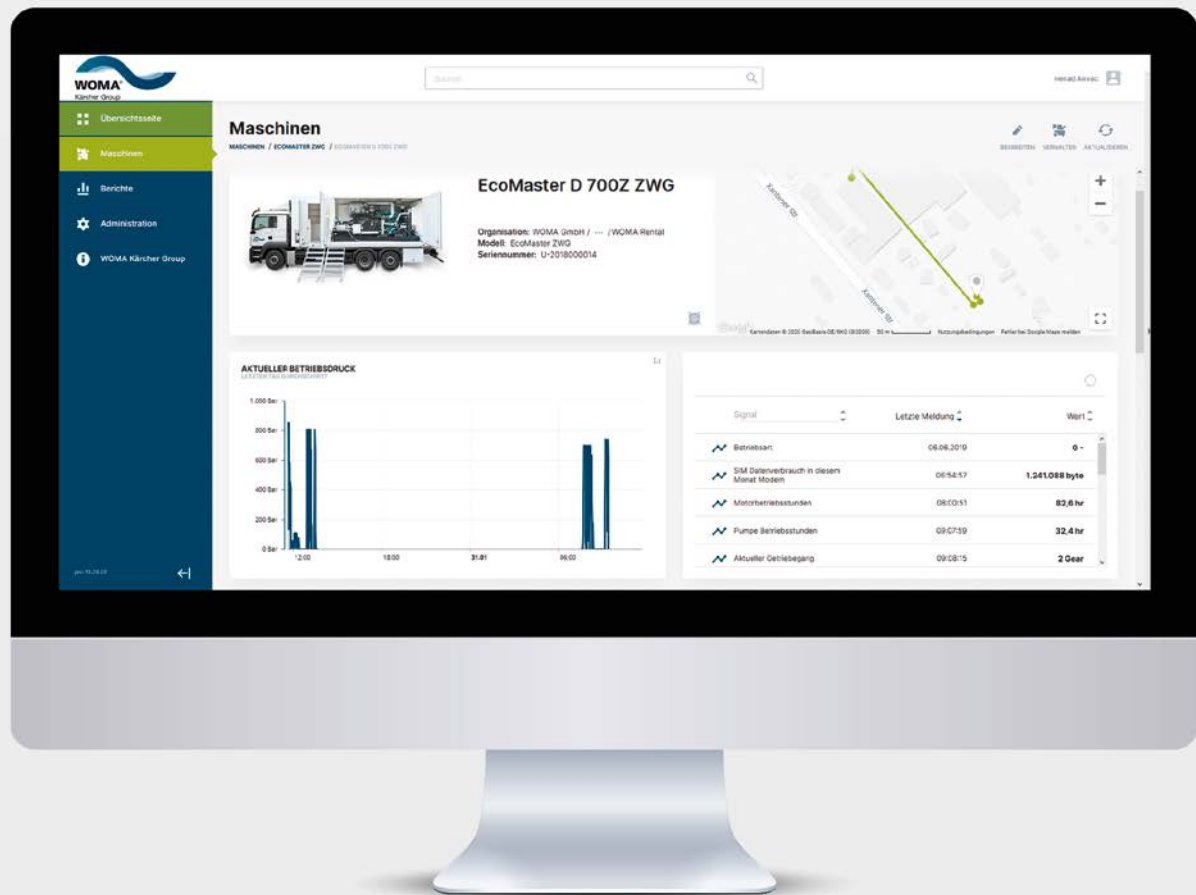


Advantages at a glance:

- Set the desired operating parameters directly on the display or via the radio remote control.
- Display of all relevant pump, motor and gearbox data directly on the display or via the radio remote control.
- Display of incidents of the pump, the engine and the automatic transmission directly on the display.
- Collection of all incidents and events in a log file.
- USB interface for software updates and export of the log file.
- Integrated RFID system with three authorization levels in diesel units.
- Operation via integrated buttons and a jog dial, for easy handling with gloves.
- Decentralized I/O modules for the acquisition of sensor data and control of actuators.
- Shock and vibration resistant, protection class IP65.
- 32 different languages included.
- For diesel engines the WOMA telematics-system is pre-equipped.
- Expert devices optionally also adaptable for multi-consumer operation.

Control variants and functions

Unit type	Classic		Advanced	Expert
Unloader valve	-	Manual overflow valve	Pneumatic overflow valve	Pneumatic overflow valve or 2/2W-Bypass valve
Pressure regulation/-control	Pressure regulation via nozzle	Manual pressure regulation on OV	Manual pressure regulation via PN-Hand control	Automatic pressure-speed-control
Speed control/-regulation	Manual speed control			Automatic pressure-speed-control
Display	4.3"			4.3" (5 – 8l units) 7" (13 – 16l units)
Water tools	Foot valve (DG) or Dump-Gun	Water tools with valve	Water tools with electrical switching contact	
Modes	Dump-Gun-mode	Manual mode		Automatic mode Large consumer operation Small consumer operation
Remote control				pre-equipped



TELEMATICS SOLUTION

Worldwide availability with maximum data security.

With the WOMA telematics-system, machine data are always in view: at any time, at any place. Full control with maximum data security. The WOMA telematics-system collects, transmits and evaluates the machine and operating data of WOMA high-pressure equipment in detail.

Via the secure WOMA Telematics DataPortal, users have an overview of all important data about machines and activities at any time and from any place via a dashboard. Planning and control with maximum data security has never been easier.

Advantages at a glance:

- Maximum data security, TPM security chip, TLS1.2 encryption according to EU and US regulations
- Multiband 4G LTE modem for worldwide use
- Real time positioning via GPS
- Access to machine and operating data of your WOMA high-pressure unit
- Web-based fleet management
- Remote diagnostics - also via WOMA Service
- API Interface of the DataPortal
- For temperature ranges from -40 °C to +80 °C
- Integrated eSIM card
- Made in Germany
- Reduced downtimes through optimal maintenance preparation

WOMA Telematics DataPortal

With WOMA's Telematics DataPortal all machines can be managed online and the entire telemetry data can be visualized. From the transmitted data a multitude of useful information is generated. With the help of the latest Big-Data technologies, detailed reports can be created. Whether current machine status or historical data history - all recorded data can be accessed at any time via desktop PC, tablet or smartphone.

The collected data of the new WOMA telematics system provide all useful information for a solid planning basis for operations, maintenance and investments - for more efficiency and success.

- Consumption values
- Creation of cleaning profiles
- Cleaning efficiency
- Annual planning
- Service planning
- Error memory and operating errors
- Investment planning
- Predictive Maintenance
- Preventive Maintenance

High-pressure pump:

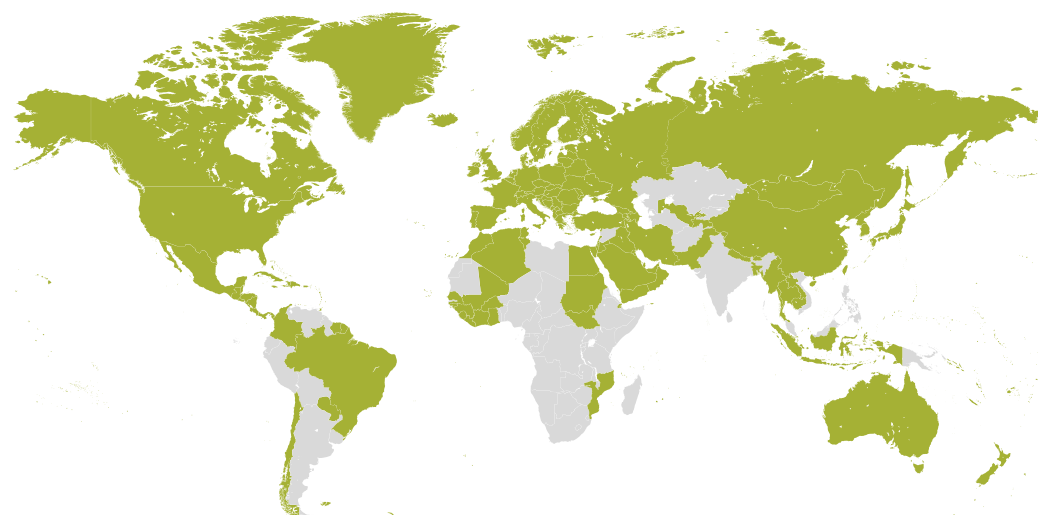
- Operating hours
- Actual pressure (operating pressure)
- Water pressure
- Filter differential pressure
- Oil temperature

Transmission:

- Current transmission gear

Engine:

- Engine Operating hours
- Engine speed
- Engine load
- Total fuel consumption
- Current fuel consumption



■ WOMA Telematics is available in these countries.

WHATEVER THE TASK – WE HAVE THE SOLUTION.

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