



**Carl Hamm**  
**Pipes | Pumps | Solutions**



**ECOTRANS  
MULTISAFE PUMP**  
The Solution for  
your appliances





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## *EcoTrans MULTISAFE® Pump*

The universal solution for  
low pressures up to 16 bar



# Characteristics

- + Area of application**  
 The EcoTrans MULTISAFE® pump is used for the transport of abrasive, aggressive, highly viscous or toxic fluids and, especially, for metering and feeding of filter presses, reactors and spray driers.
- + Flow range**  
 The EcoTrans MULTISAFE® is designed for a flow rate of 2 to 20 m<sup>3</sup>/h and achieves operating pressures of up to 16 bar, thus providing a genuine alternative to the pumps that hitherto have been used in low-pressure applications.
- + Innovative**  
 The EcoTrans series of pumps already complies with the requirements for „Industry 4.0“. It offers operators optimum integration in common process control systems and early fault detection that is unique in this class.
- + Reliable**  
 Irrespective of pressure and viscosity, the pump ensures continuous low-wear conveyance with low pulsation.
- + Flexible**  
 The flow can be controlled without the use of an additional frequency converter owing to the bypass capacity regulating unit in the hydraulic system.
- + Different sizes to suit the available space**  
 The new generation of MULTISAFE® pumps with their space and weight-saving design is available in 3 sizes (figures 2-4).
- + Durable**  
 Pumps designed with the tried-and-tested FELUWA MULTISAFE® technology are ideally suited for conveying critical fluids of different consistencies (also with particles). A number of different materials is available for fluid-wetted parts.
- + Safe**  
 The pressure relief valve fitted within the hydraulic system ensures that any overload situation during operation is reliably prevented.
- + Ready for use**  
 The delivery period for the EcoTrans MULTISAFE® pump is only 2 weeks, making it readily available for projects at short notice.

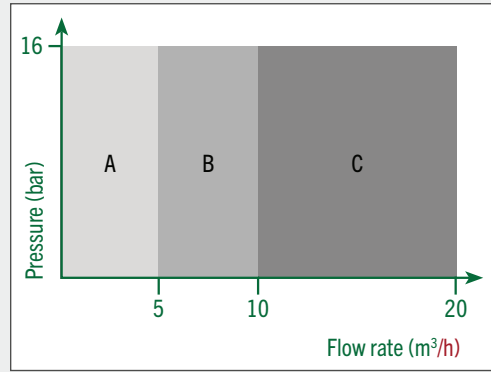


Fig. 1: A = EcoTrans MULTISAFE® 5 B = EcoTrans MULTISAFE® 10  
 C = EcoTrans MULTISAFE® 20

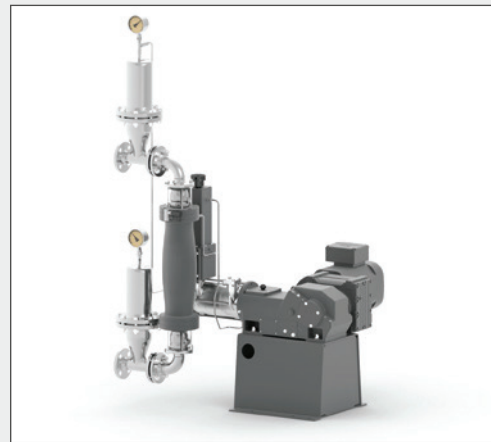


Fig. 2: EcoTrans MULTISAFE® 5  
 1 DS = single-headed design



Fig. 3: EcoTrans MULTISAFE® 10  
 2 DS = double-headed design



Fig. 4: EcoTrans MULTISAFE® 20  
 2 x 2 DS = four-headed design using electronic crankshaft coupling for 2 EcoTrans MULTISAFE® 10 pumps



# Advantages

**+ Tried-and-tested MULTISAFE® technology**  
 Only the valves, pipes and hose-diaphragms come into direct contact with the medium. This means that the pump casing does not require expensive special materials such as duplex stainless steel. In view of the fact that the piston seals only come into contact with the hydraulic liquid, they have an extended service life. This reduces maintenance costs and significantly increases the availability of the pump.

**+ Efficient**  
 FELUWA hose-diaphragm piston pumps achieve a hydraulic efficiency of up to 98 %, the highest of all pump technologies. The EcoTrans MULTISAFE® combines high efficiency with low energy consumption.

**+ Maximum availability and low maintenance costs**  
 The high degree of volumetric efficiency and low energy consumption as well as the long service life of the wear parts reduce the operating and maintenance costs to a minimum. With a service life of more than 20,000 operating hours, the hose-diaphragms are not a typical wear part. In consequence, the cost of spare parts only amounts to approx. 2 % of the purchase cost (CAPEX) per year (figures 5+6).

**+ Safe and reliable process**  
 The hermetically sealed double hose-diaphragm system guarantees safe and reliable transport of critical and environmentally hazardous fluids. Two hose-diaphragms, which are arranged one inside the other, are fitted in the pump head and ensure that the medium is safely contained and efficiently conducted whilst the periphery remains hermetically separated. This means that any leakage to the outside or contamination of the medium is precluded (fig. 7).

**+ Frequency converter**  
 The requirements for modern pump systems are continually changing. It is therefore recommended to equip the pump with a tailor-made frequency converter in order to be able to vary the volume flow within a large range while maintaining high efficiency.

**+ Hose-diaphragm condition monitoring**  
 The FELUWA Hose-Diaphragm Guard (HDG) permanently monitors the inner and outer hose-diaphragm and detects leakages early. Even with leakages at one hose-diaphragm operation can be maintained until the next planned service and contamination of the conveyed medium or contact to the hydraulics can be safely prevented (fig. 7).

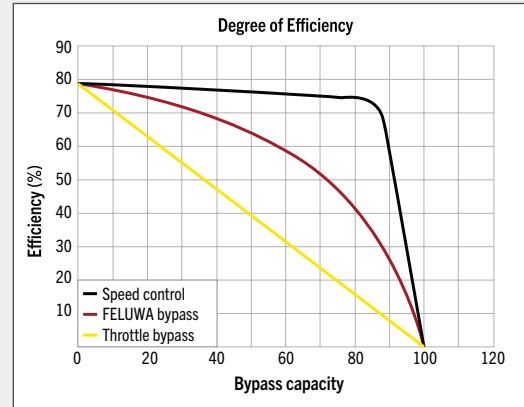


Fig. 5: Efficiency curves for different flow control systems.

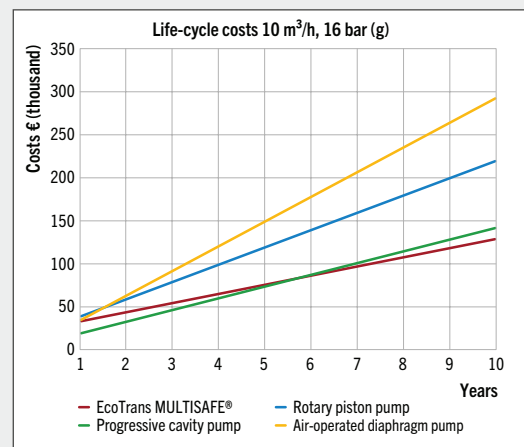


Fig. 6: Compared to conventional pump systems, the lifecycle costs are significantly lower owing to the low operating and maintenance costs.

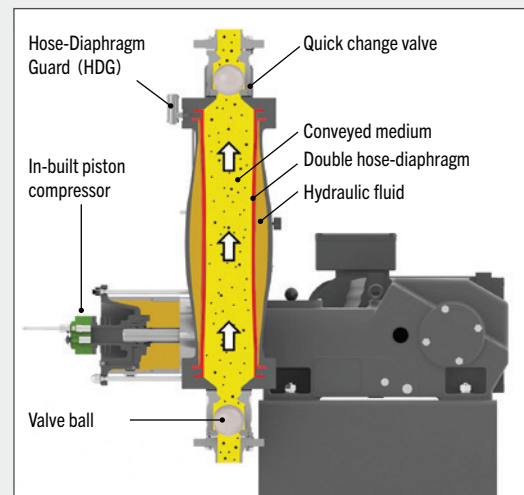


Fig. 7: The tried-and-tested MULTISAFE® technology ensures that environmentally hazardous fluids are transported safely and reliably.



# Options



## FELUWA DownFlow Technology (DFT)

For the purpose of transporting fluids containing solids with a tendency to sedimentation, FELUWA literally turns the traditional pumping principle upside down. In this case, the fluid is transported from the top downwards, thus using gravity to aid transport. This is a reliable method for avoiding sedimentation and any associated failure of the entire pump (fig. 8).



## In-built piston compressor

In order to reduce fluctuations in terms of pressure and flow, the EcoTrans MULTISAFE® pump has been designed as a modular system allowing the piston rod – which is guided on both sides – to be extended as a piston compressor. This reduces fluctuations in pressure to a minimum and ensures optimum damping, resulting in significantly more even and efficient transport with low-wear characteristics (fig. 9).



## Crankshaft coupling

Pulsation in the pipe system is efficiently prevented by coupling the crankshafts of several pumps. These pumps supplying the same pipe system can also be located apart from each other.



## Safety with all operating conditions

For us, safety has top priority; the pumps will not be damaged, even as a result of operating mistakes or in the case of extreme operating conditions. With the FELUWA Suction Guard (SG) we provide maximum protection of man and machine – not only in the case of excessive inlet pressure, but also in the case of a blocked suction pipe.

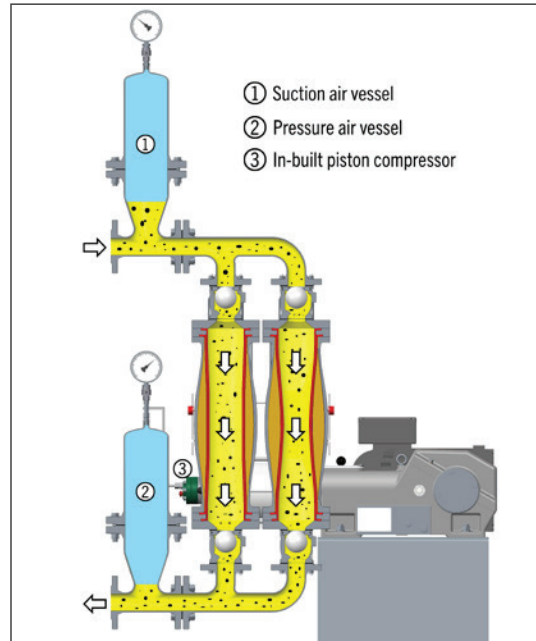


Fig. 8: The patented FELUWA DownFlow Technology reliably prevents sedimentation.

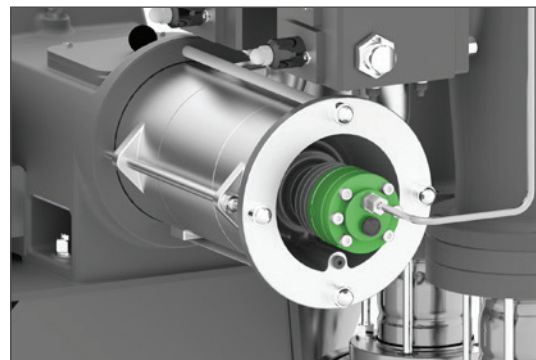
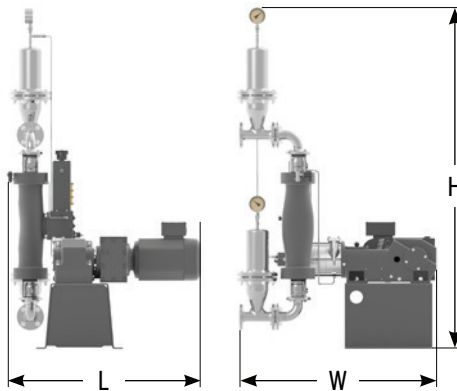


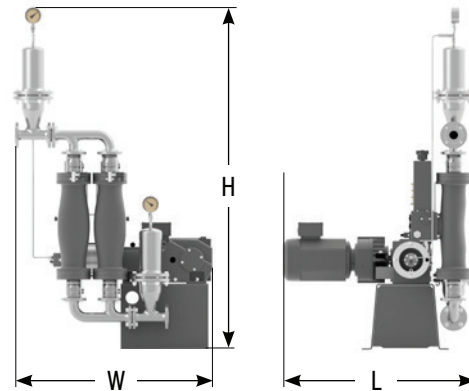
Fig. 9: The extended piston rod can serve as piston compressor to ensure continuous filling of the air vessel.

# Technical Data



## EcoTrans MULTISAFE® 5

L: 1176 mm W: 996 mm H: 2080 mm



## EcoTrans MULTISAFE® 10 + 20

L: 1176 mm W: 1216 mm H: 2080 mm

## EcoTrans MULTISAFE® 5 + 10

Suction side: DN50 PN16 acc. to EN1092-1  
 Discharge side: DN50 PN16 acc. to EN1092-1  
 Motor: 7.5kW, 50Hz, 400V, IP55, IE3

## EcoTrans MULTISAFE® 20

Suction side: 2x DN50 PN16 acc. to EN1092-1  
 Discharge side: 2x DN50 PN16 acc. to EN1092-1  
 Motor: 2x 7.5kW, 50Hz, 400V, IP55, IE3



# Carl Hamm

**Pipes | Pumps | Solutions**

Competence, experience, innovative thinking, modern manufacturing plants and motivated employees form the basis of our services.

With the flexibility of a modern, medium-sized company and the experience of our over 90-year history, we are well equipped to meet the requirements of the future.

The numerous certifications and technical approvals of course ensure that we serve our customers with the highest quality standards through the complete project phases.

Our product range focuses on water, waste water and power industries, tunnel construction and well sinking as well as open-pit and underground mining.

We as a competent partner ensure an added value for the specific customer needs: from the conceptual planning to professional production and punctual delivery.



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