



*High-tech on board
Suction dredger
innovation*



Standard series

Custom designs

Pump technology

Equipment

Modernisations

Automation technology



Increased efficiency and innovation for economic success

Habermann develops and manufactures suction dredgers in various sizes, as well as the necessary equipment. The suction dredger range is rounded off by numerous services.

The first Habermann suction dredger was produced as early as 1957 in the form of a pontoon built around a dredging pump. The development of suction dredgers has since become our key task.

Contract dredging work – a new dimension in industrial services

Besides the sale of suction dredgers, our services also include contract dredging work. Here our own employees operate our own machines and thereby ensure the perfect complement to conventional product sales.

Many years of experience

The findings and experience obtained from the construction and operation of our suction dredgers account for the high level of performance of our products and enable us to set new standards in the field of suction dredger technologies.

The development process continues

The suction dredgers are continuously being developed further in terms of efficiency and ease of maintenance. Together with a nationwide service network of highly experienced suction dredger specialists for our own fleet of dredgers, we are able to offer optimum technological and logistics services in the market.

Why not take advantage of our many years' experience and knowledge of the market?

EVEN THE BEST-EQUIPPED WET MINING DEVICES CAN BE FURTHER IMPROVED BY US.

Habermann Mineral Systems suction dredger technology

The complete range

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light and compact

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for large dredger projects

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for specialists

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Light and compact: System 2002

So far over 50 units have been built of the „System 2002“ model, and its predecessor, the „System 2000“.

The established System 2002 is an extensively standardised dredger model with a **light, compact design** and very high-quality equipment as standard for the series, an optimised suction pipe automation system, optional extras, and dredging pumps with nominal diameters from 200mm to 400mm. Despite the standardisation, the configuration of your suction dredger is **flexibly adapted to your wishes and suggestions**.

The optimised arrangement of the assemblies reduces friction losses in the suction and pressure pipes, increasing the amount of solid material dredged.

The spacious cabin is positioned above the suction pipe on a raised platform, thus offering the operating personnel an optimal 360° view.



Jet system as series standard



Reducing energy costs: System 2002 with transformer station

In order to counteract the trend of rising energy costs, it is worthwhile in the long run to operate even relatively small suction dredger systems using a medium-voltage power supply. With conventional 400V supply, significant voltage drops occur, particularly with cables over 200m in length.

Our version with fully integrated transformer station offers you the solution to this problem.

System 2002 characteristics:

- Jet equipment as series standard
- Optimised productivity and energy efficiency
- Optimised suction pipe automation system/improved suction pipe control
- Frequency-controlled suction pipe winch; where required, manual control at various speeds is possible
- Depth measurement system integrated into suction pipe winch

Optional extras:

- On-board crane, electric or manual
- Security package (window latches, door latch, alarm system)
- Rear winches
- GPS extraction control system
- Cabin air suspension



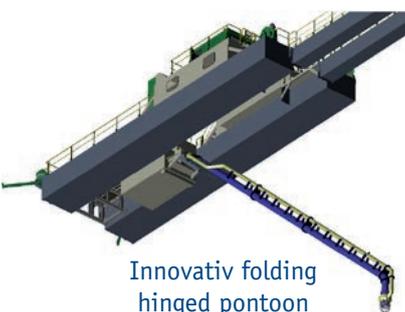
| Performance characteristics: | |
|-------------------------------------|---|
| max. conveying distance | 500 m (without intermediate pump station) |
| max. extraction depth | 25 m |
| max. conveying rate | 1000 tph |
| max. particle size | 200 mm |



The solution for major dredging projects: System 3000

The System 3000 is based on a catamaran design, and is particularly well suited to **large and long-term dredging projects.**

The special feature of System 3000 is its two central pontoons, which are accessible on foot. The positioning of all auxiliary and ancillary units in these pontoons, which are located at the sides of the suction pipe, makes this series significantly shorter than „old“ dredgers, and therefore very compact.



Innovativ folding hinged pontoon

The cross-section of the catamaran pontoon is generously dimensioned, ensuring that plenty of space is available here for machinery, switch cabinets, transformers and a workshop.

The length of the accessible pontoon depends on the required installations. Systematic partitioning and the central arrangement of the accessible pontoons, as well as the fact that there are no pumps inside the pontoons, make these vessels effectively unsinkable.

The System 3000 suction dredgers are available with our dredging pumps in nominal diameters of 200mm to 400mm.

Catamaran design for System 3000



The System 3000 was initially developed for our own contract dredging business. The technical requirements were therefore designed by our experienced dredger experts and tested in practice.

This means you get optimal

- operability
- service-friendliness
- occupational safety and operating reliability
- accessibility of critical components
- use of the modular construction system developed for the contract dredging business



The 3000 suction bottom-dredger – the new performance dimension

With its lowered pump pontoon, this dredger type opens up a completely new range of performance options for bottom-dredging operations.

The catamaran dredger of the 300 series already has a higher suction capacity in the lower performance range than the older dredgers of the 350 series.

The dredging pump, which sits approximately 1 meter below the waterline, can be started at any time without being primed first.

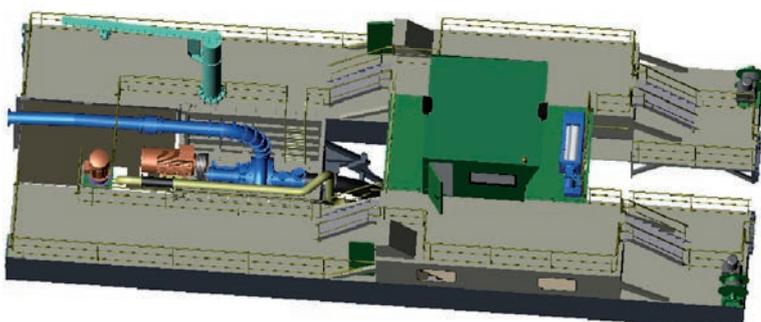
Innovative Design

For installation purposes on the suction-side connection, the pontoon can simply be folded upwards on its hinges.

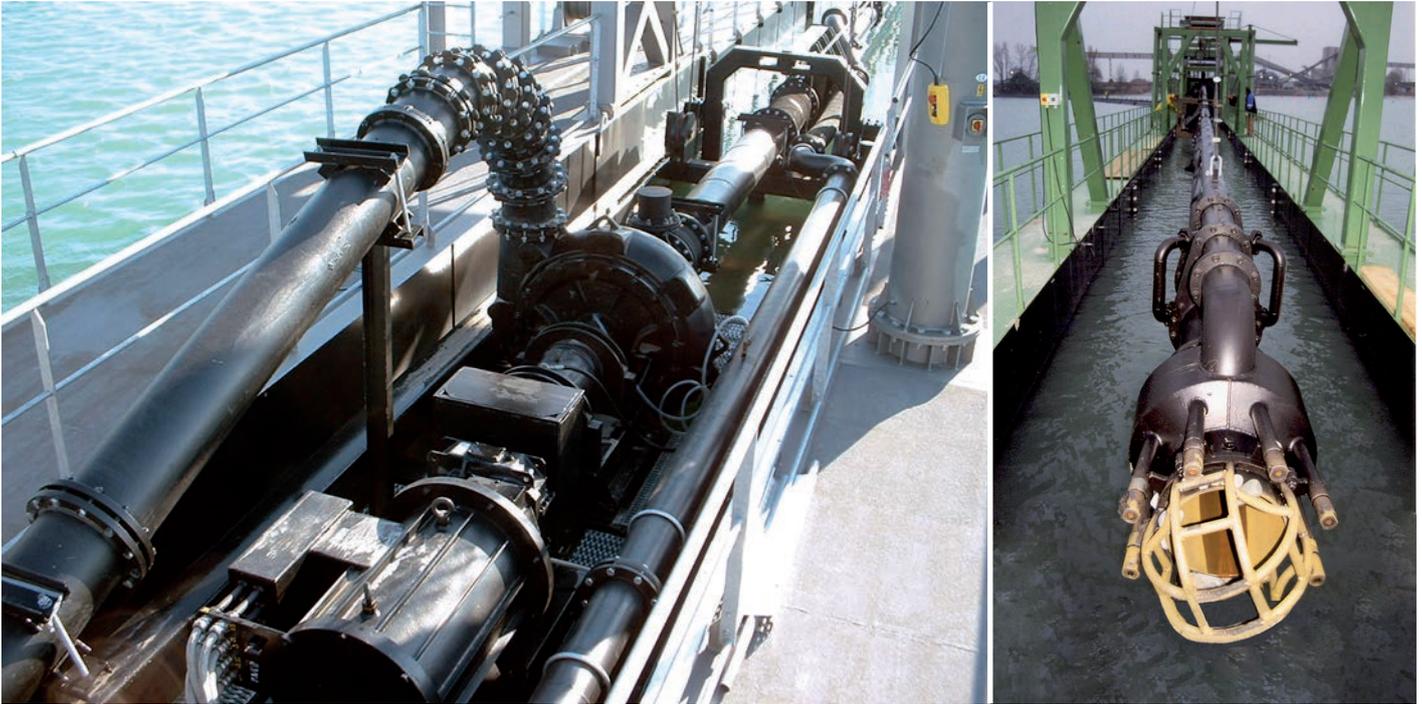


Suction bottom-dredger characteristics:

- Designed for dredging depths of up to 30 m
- Dredging pumps below the waterline in dry installation
- Pump pontoon with folding hinged function
- Pump can be started without priming



Dredging pumps below the waterline in dry installation

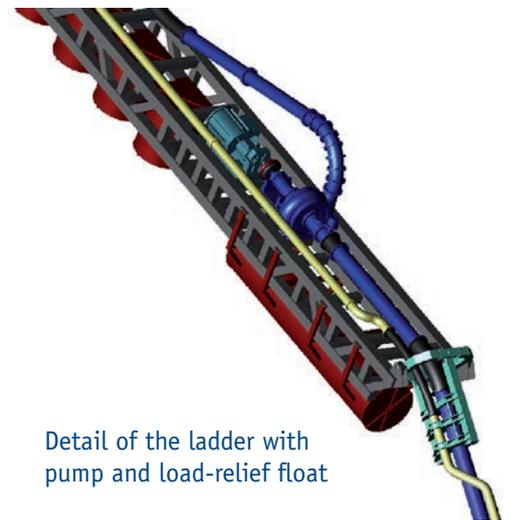


The 3000 deep suction dredger – highlight of innovation

The technical basis for our deep suction dredger is the underwater pump – a concept that has been used and further refined by us for more than 25 years.

The highlight of this innovation is today's 3000 series dredger with underwater pump. Here the pump and drive are installed on a lowerable ladder structure. The pump and the underwater motor are lowered up to 20 m during dredger operation. The attached suction pipe is gimbaled in order to divert mechanical loads resulting from the suction pipe line sliding down inclines.

State-of-the-art deep suction dredgers are used for dredging depths of up to 80 m. The versions built up to now cover a performance range of up to 1000 tph. The position of the underwater ladder, the suction pipe and the drives is recorded by a computer, visualised on a screen and monitored. If predefined angles are exceeded or overdredging occurs, the winches are automatically blocked.



Detail of the ladder with pump and load-relief float

Deep suction dredger characteristics:

- Working depths of up to 80 m
- Entire drive unit lowerable to 20 m
- Pump type KBPL 200-400



The 3000-series cutting wheel dredger for extremely difficult deposits

The cutting wheel dredger is a model in the successful 3000 series, which has proven its effectiveness excellently, both in our own contract dredging fleet, and in use by our customers.

This dredger is predominantly used in extremely difficult, hard, or cohesive deposits. The dredging depths of 40m are currently achievable.



The cohesive or solid materials are detached by means of a cutting wheel fitted with extraction tools. This wheel is mounted on a guide with extremely high bending strength, and during operation it cuts the material to be extracted away from the deposit.

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Cutting wheel dredger characteristics:

- Working depths of up to 40 m
- For extremely hard or cohesive deposits
- Pump type KBPL 200-400



Suction dredger with raised freeboard

Anything but standard – Custom designs from Habermann

In addition to the classic suction dredger types, we also develop and sell custom designs, such as mini suction dredgers, sludge suction dredgers, and many more.

First your requirements and specifications are determined and discussed. We then translate the results into an individual dredger concept.

All of the work, from project planning, through construction design to production and automation, is performed at our company. As a result, we are able to implement all applications into which a solid matter pump is integrated.



Diesel dredger in harbour of Palma de Mallorca

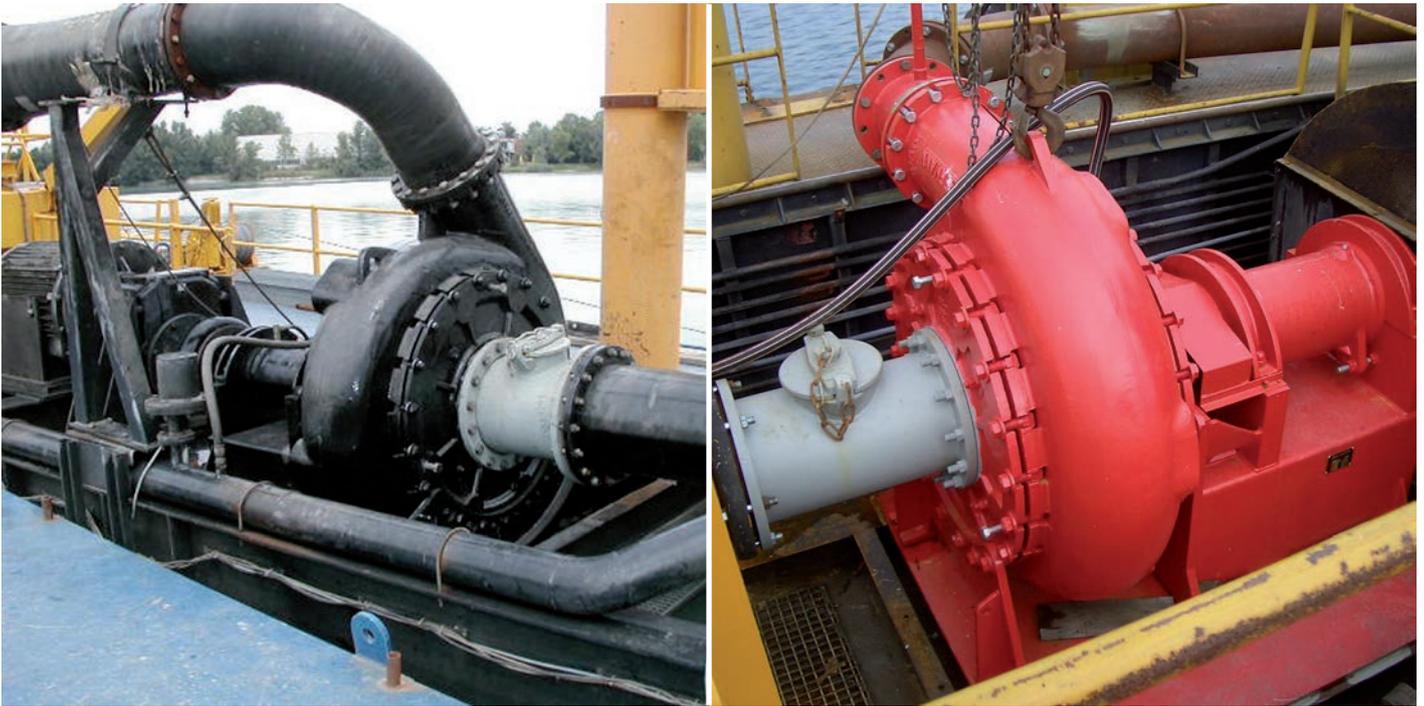


Custom suction dredger in a quartz pit in Sweden



Custom suction dredger as elevating dredger in quartz sand

You can also benefit from our many years of experience and expertise!



Habermann KBPL type pumps mounted on dredgers from other manufacturers

Also individually perfect: our suction dredger components

Our core technology is naturally also available for the modernisation of older suction dredgers, or for conversion work on dredgers from other manufacturers.

Numerous modernisation projects in countless countries have already significantly increased the efficiency of older dredger systems here.



Retrofitting a new PLC suction pipe automation system



Retrofitting a jet system



Retrofitting a new transformer

Your advantages:

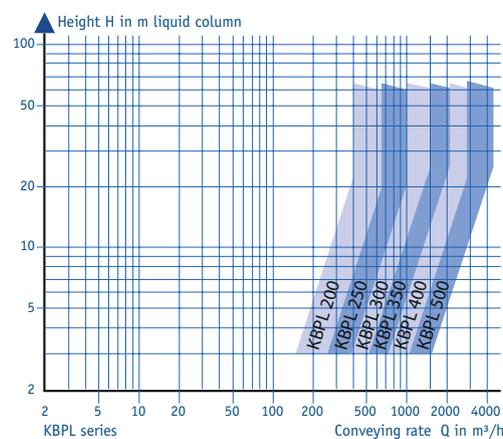
- Use of state-of-the-art frequency converter technology for changing the speed of the pumps
- State-of-the-art pump technology for efficient energy and wear parts management
- Low investment amount with full Habermann performance
- Increasing the conveying rate and homogenising the material flow through the combination of the jet equipment and the suction pipe automation system
- Reduced personnel requirements due to the suction pipe automation system
- Robust technology à maintenance of the system can be performed by your own personnel
- Low spare part and maintenance costs per tonne



A case for the toughest conditions: dredging pump of type KBPL

Where exposure to high to extremely high levels of wear is to be expected, the single-stage centrifugal pump KBPL is the right choice.

Appropriately dimensioned wall thicknesses take into account the stress resulting from the sliding wear (fine solids) and the impact stress resulting from the high proportions of coarse particles.



Construction and materials

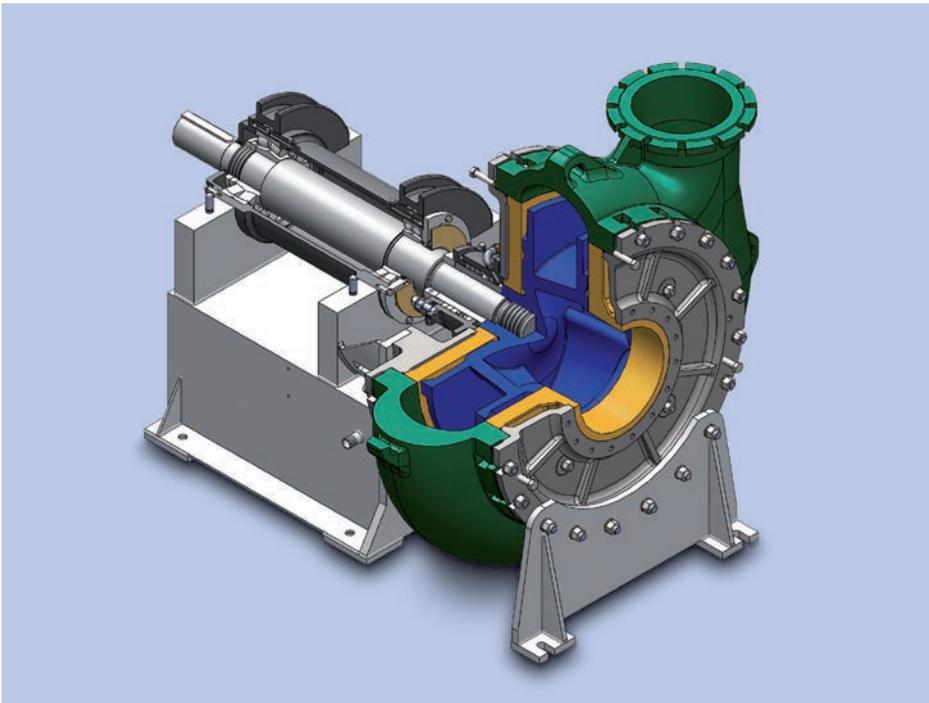
Single-stage centrifugal pump with closed or (depending on the overall size) semi-open impeller and wear plates on the suction and drive sides. The materials used for the hydraulic part of the pump are cast-iron materials adapted to the application from our own stainless steel foundry. Some of these materials are listed below.

Material qualities:

- HBN 440 Ni-Hard IV successor, brittle to 600 HB, sensitive to impacts
- HBN 450 highly wear-resistant cast iron, heat-treatable up to 650 HB
- HBN 480 corrosion-resistant cast iron, heat-treatable up to 550 HB
- Rubber or polyurethane for fine media

Performance characteristics:

| | |
|---|-------------------------------|
| Capacity up to | 50 - 5000 [m³/h] |
| Förderhöhe Conveying height single-stage, up to | 85 [m liquid column] |
| Nominal connection diameters | DN 100 to DN 500 |
| Maximum operating pressure | PN 10, PN 16 |
| Normal suction up to | 8 [m water column] |
| High corrosion resistance at pH | Depending on material 0 to 14 |



*Habermann pumps are not just found
on our suction dredgers!
www.habermann-m-s.de*

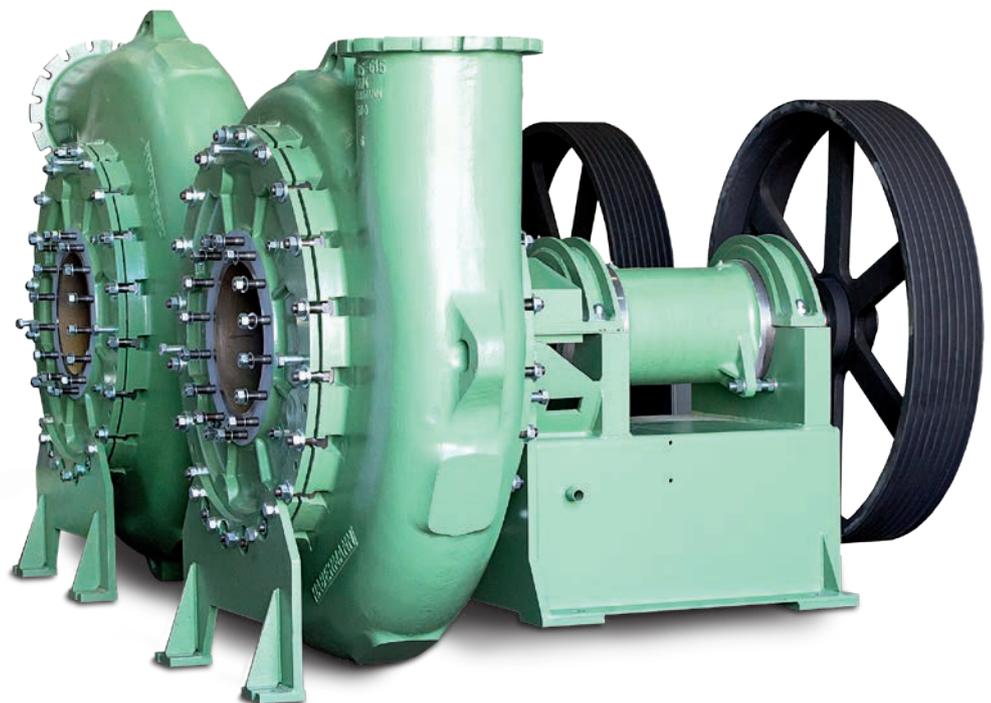
Efficient and robust: dredging pump of type KBPL

Shaft seals:

- Hydraulically balanced gland packing
- Mechanical shaft seal, type HGD-I
- Hydrodynamic shaft seal

Custom designs:

- also as underwater pump
- various impeller shapes
(e.g. 2 or 3-blade)
- available in vertical design
- left-handed pump for diesel
drive system





Pipe: In the standard nominal diameters DN200-400, fully flanged Materials: X42-X60 or plastic | custom dimensions on request

All aboard: equipment

All accessory parts required for the operation of a suction dredger system can naturally be ordered from Habermann. We either produce them in our own workshops, or purchase them from renowned manufacturers.

The complete range:
T +49 2302 87818-15
info@habermann-m-s.de



Abrasion-resistant dredger hoses



System pipe bends made from Habermann cast material HBS4100



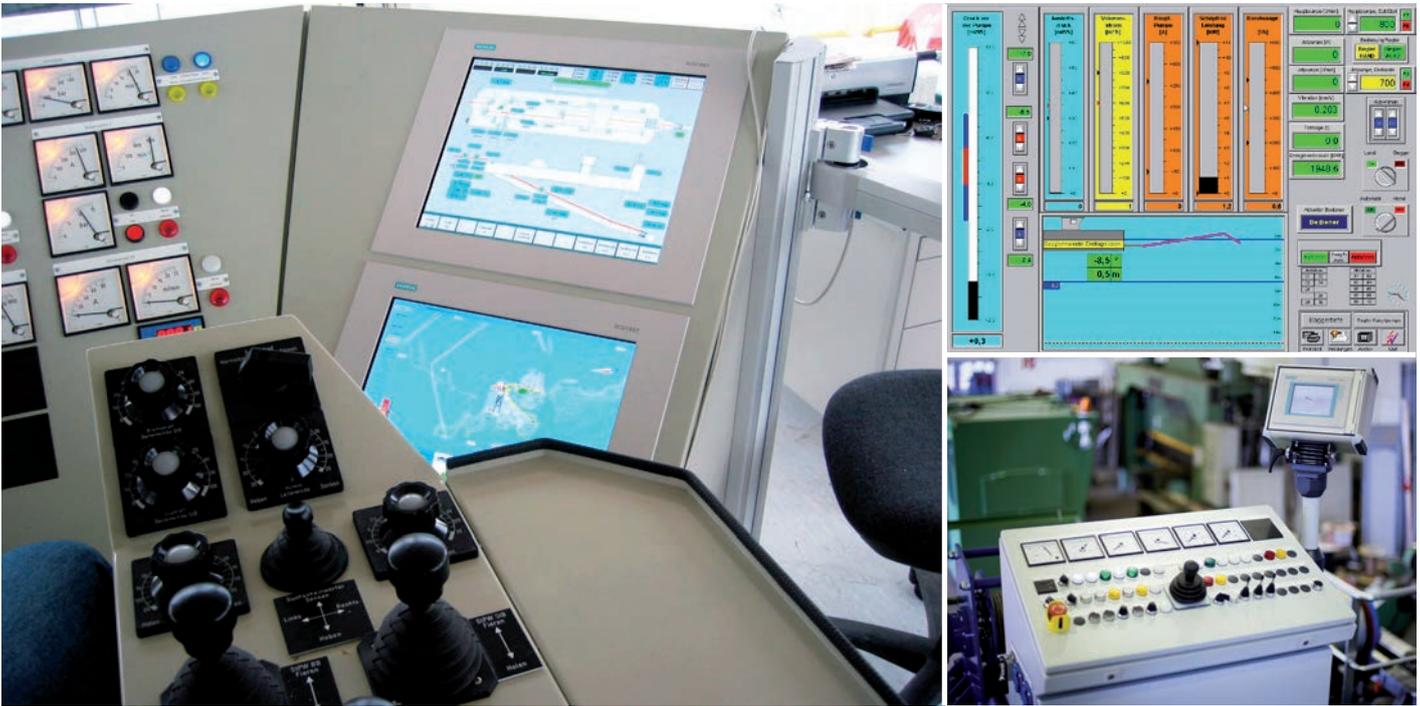
Pontoons without platform



Pontoons with platform



Suction pipe and mooring winches



The entire bandwidth of process automation

Habermann Mineral Systems GmbH has its own experts in the field of plant automation and process control. Due to this fact the company is able to choose all necessary components on the shortest way and properly realize them in each project.

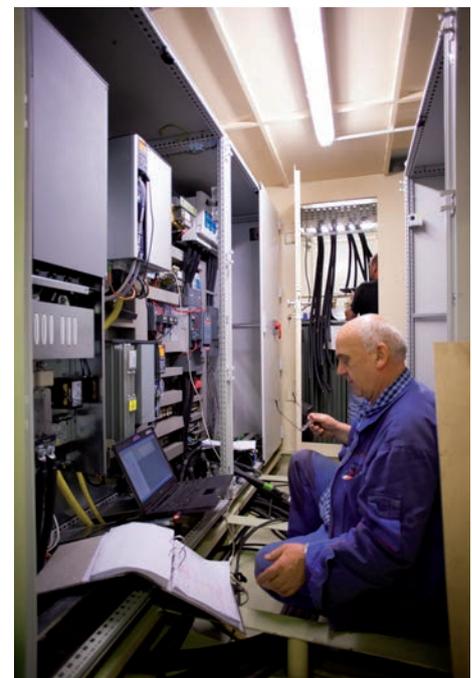
The main focal points are:

- Suction dredger control systems and automation
- Pump drive and control technology
- Regulating and control technology for the drinks industry
- Visualisation and remote maintenance equipment

Besides project consulting, planning and software programming, the electrical components are assembled in our own switch cabinet construction department, tested at the factory, assembled on site and put into operation.

Habermann Mineral Systems GmbH follows the maxim „**Everything from one single source**“. From the idea, through the concept and software compilation to the finished switch cabinet, you are provided with everything by an experienced and successful team.

This wide range allows us to offer the right solution for each different request.





Suction Dredger

Pumps
Spare parts
Equipment
Service

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Habermann Mineral Systems GmbH provides a team of young and experienced employees, who officially continue the decades-long Know How of the company Arthur Habermann GmbH & Co. KG in the field of wet mining of sand and gravel.

Our company develops and produces suction dredgers in different sizes and offers as well the complete equipment: pontoons, pipes and electrical control systems.



We are your partner for all former Habermann centrifugal pumps in the established linings and the spare parts/equipment in the sand and gravel industry.

Furthermore we are a trusted partner for pump repairs, assembling applications and maintenance, e.g. winter inspections of suction dredgers.

Benefit from our many years' experience and our market knowledge! Habermann can point to a successful career of more than 60 years on the market, with almost 400 sold suction dredgers and more than 70 contract dredgers. The experience from construction and the operation of our dredgers constitute the performance of today's products and allows us to set new standards in the field of suction dredger technology.

Together with our comprehensive service network and experienced suction dredger specialists we are optimally positioned on the market both technologically and logistically. Our well-practiced network of suppliers guarantees the well known Habermann quality in dredger construction and KBPL pumps.

