HABERMANN
SUCTION DREDGER
BY DÜCHTING PUMPEN

SUCTION DREDGER

INNOVATIONS - HIGH-TECH ON BOARD.

PRODUCT OVERVIEW

Standard and Custom Designs ■ Pump Technology ■ Equipment

DUCHTING
PUMPEN

COMPANY PROFILE

HABERMANN SUCTION DREDGER BY DÜCHTING

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

HABERMANN SUCTION DREDGER BY DÜCHTING PUMPEN

Years of knowledge and expertise

The first Habermann suction dredger was produced in 1957 in the form of a pontoon built around a dredging pump. The 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.
Particular emphasis was placed on the transfer of knowledge. It is possible to fall back on the entire know-how of Habermann, including drawings, spare parts lists and circuit diagrams.

The concept behind the productline

Habermann has been committed to the development and production of technically advanced suction dredgers for decades. DÜCHTING will keep the proven product quality under a new name and our engineering expertise will further more advance the suction dredger technology. The suction dredgers are continuously being developed in terms of efficiency, economic success and ease of maintenance.

Better service through international network

Current and future customers benefit from the international DÜCHTING network.

Partners in over 50 countries are now successively trained in the Suction Dredger Technology to ensure future installation- and maintenance-service, as well as simplified communication with the engineering specialists at the German headquarters.

SYSTEM 2002

OUR STANDARD DESIGN FOR YOUR INDIVIDUAL DREDGING PROJECT

Individual Design

Despite the standardization, the configuration of your suction dredger is flexibly adapted to your specifications and requirements.

Optimal construction

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

Perfect Overview

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

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 standardized suction dredger model featuring a **light, compact design** with high quality equipment as Standard features of the series includes an optimised suction pipe automation system, optional extras, and dredging pumps with nominal diameters from 200mm to 400mm.

Performance:

- max. conveying distance **500 m**
- max. conveying rate **25 m**
- max. extraction depth **1000 tph**
- max. particle size **200 mm**

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.

Characteristics:

- Jet equipment as series standard
- Optimized productivity and energy efficiency
- Optimized 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

SYSTEM 3000

THE SOLUTION FOR MAJOR DREDGING PROJECTS

Optimal Positioning

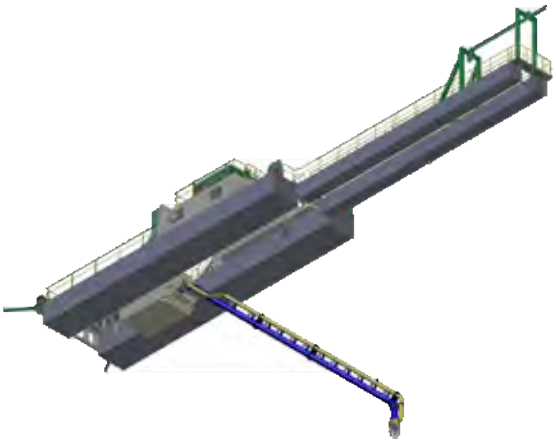
The special feature of System 3000 is its two central pontoons, which are accessible on foot. The dredging pump, which sits approximately 1 meter below the waterline, can be started at any time without being primed first.

Generous Space

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.

Effectively Unsinkable

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.



Catamaran design for System 3000

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

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

Performance:

- max. conveying distance **500 m**
- max. conveying rate **30 m**
- max. extraction depth **1000 tph**
- max. particle size **200 mm**

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 folding hinged pontoon

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
- Special pump placement allows extreme high solids concentration

Optimal Benefits:

- Operability
- Ease of service
- Occupational safety and operating reliability
- Accessibility of critical components
- Use of the modular construction system developed for the contract dredging business

SYSTEM 3000-U

THE 3000 DEEP SUCTION DREDGER – HIGHLIGHT OF INNOVATION

Under Water

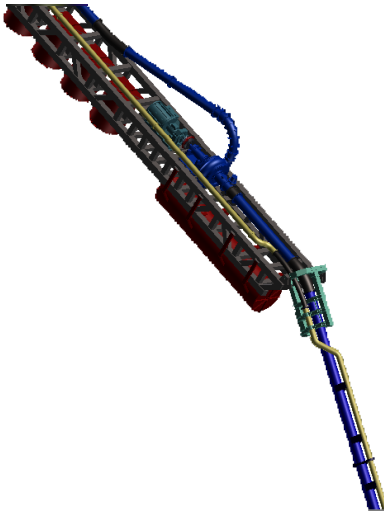
The Pump and underwater motor are lowered up to 20 m during dredger operation. The attached suction pipe is gimballed in order to divert mechanical loads resulting from the suction pipe line sliding down inclines.

Strong Persormance

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.

Automatic Blocking

The position of the underwater ladder, suction pipe and drives are recorded by a computer, displayed 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

Characteristics:

- The pump and drive are installed on a lowerable ladder structure
- Working depths up to 80 m
- Entire drive unit lowerable to 20 m
- Pump type WRX 200-400
- For grain size up to 200mm

SYSTEM 3000-S

THE 3000-SERIES CUTTING WHEEL DREDGER - FOR EXTREMELY DIFFICULT DEPOSITS

For Difficult Deposit

This dredger is predominantly used in extremely difficult, hard, or cohesive deposits. This dredger can achieve dredging depths of up to 40m.

Strong Tools

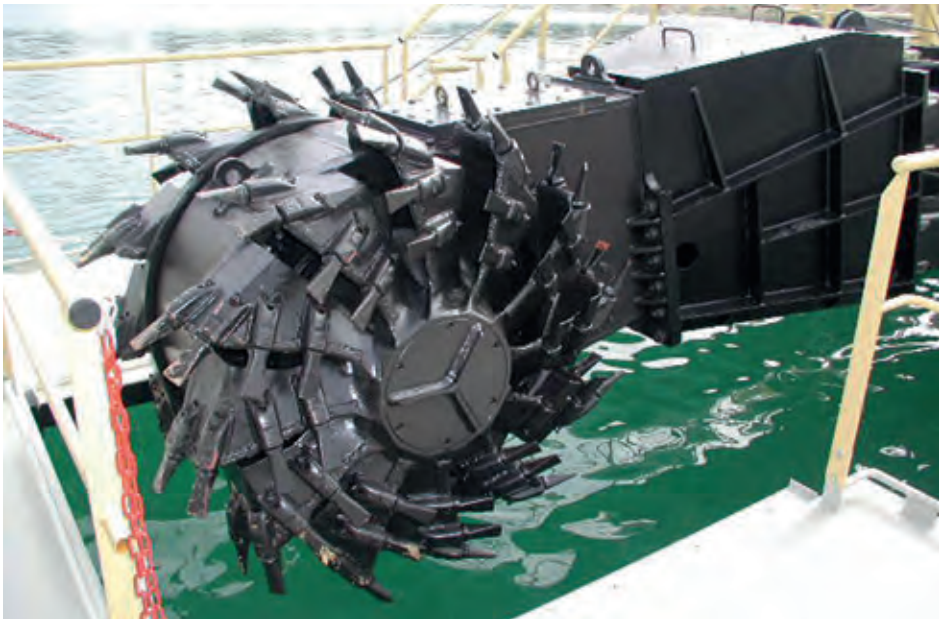
The cohesive or solid materials are detached by means of a cutting wheel fitted with extraction tools.

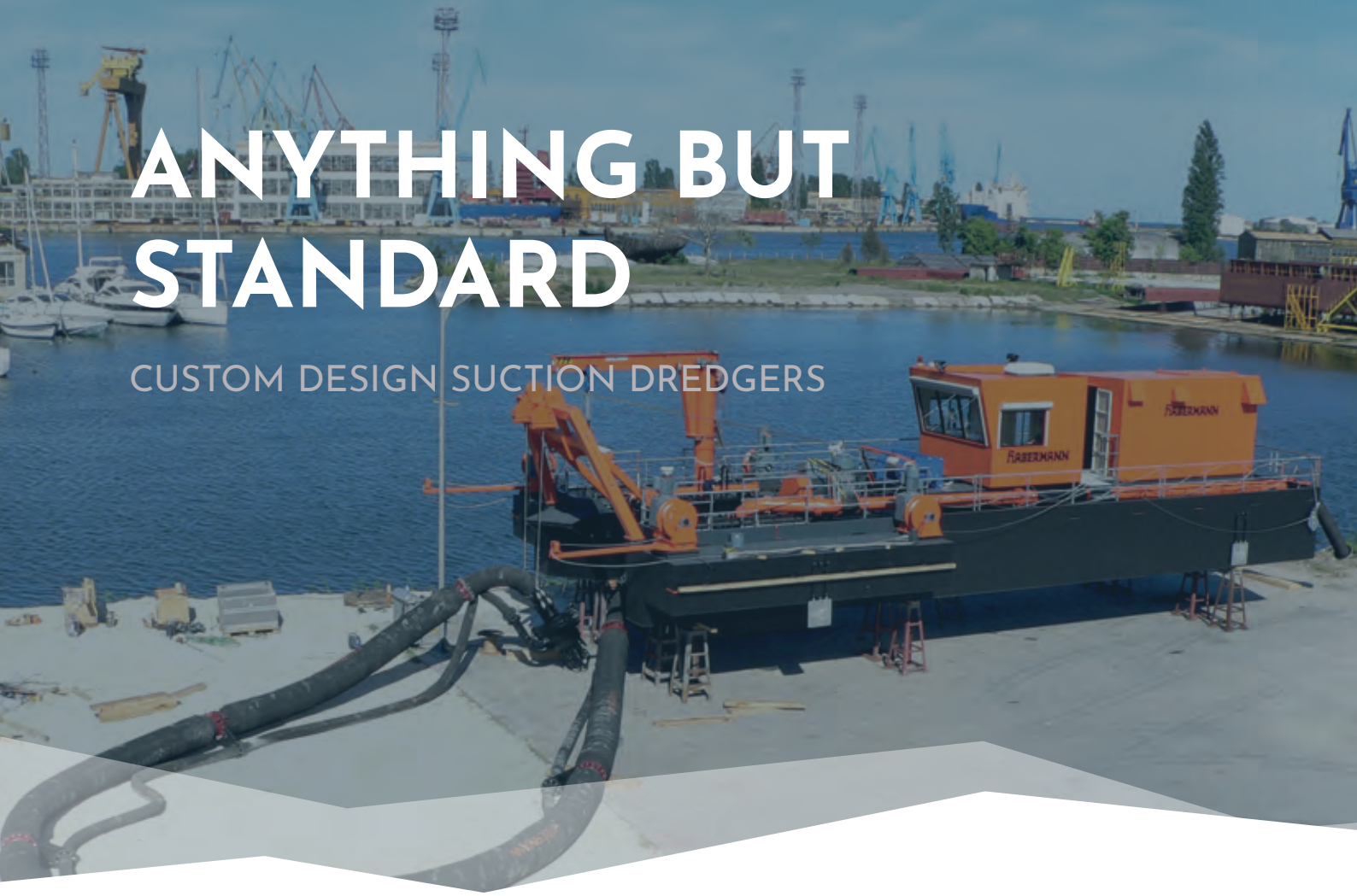
Extremly Solid

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.

Characteristics:

- Proven effectiveness
- Working depths up to 40 m
- For extremely hard or cohesive deposits
- Pump type WRX 200-400





ANYTHING BUT STANDARD

CUSTOM DESIGN SUCTION DREDGERS

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.

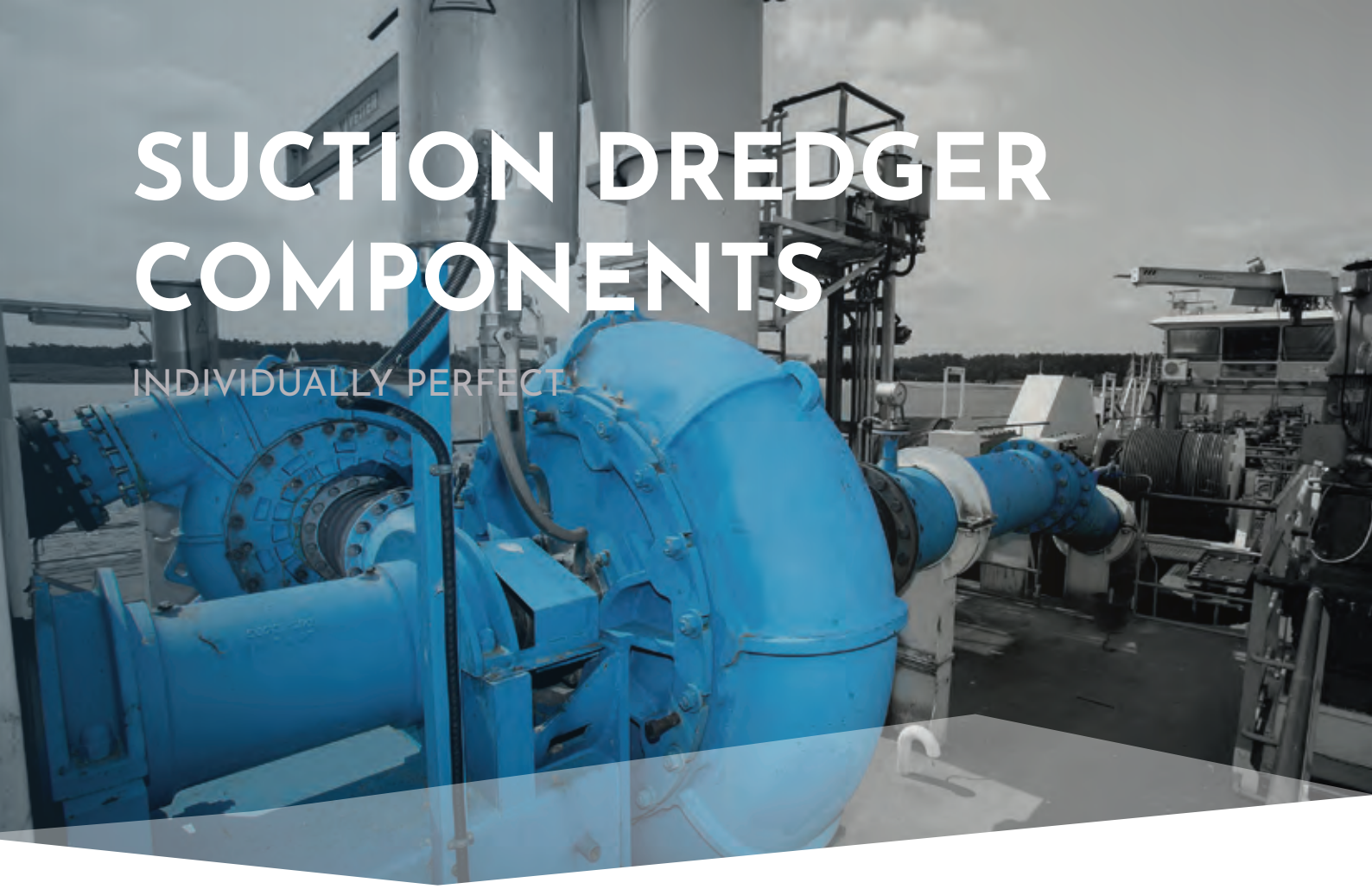
As a result, we are able to implement all applications into which a dredger pump is integrated.

Diesel dredger in harbour of Palma de Mallorca

Pump station for various applications

„Micro“ dredger for coal-sludge

Custom suction dredger as elevating dredger in quartz sand



SUCTION DREDGER COMPONENTS

INDIVIDUALLY PERFECT

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

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

Your advantages:

- Use of state-of-the-art frequency converter technology for adapting pump speed
- 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 ► maintenance of the system can be performed by your own personnel
- Low spare part and maintenance costs per tonne

Retrofitting a new PLC suction pipe automation system

Retrofitting a new transformer station

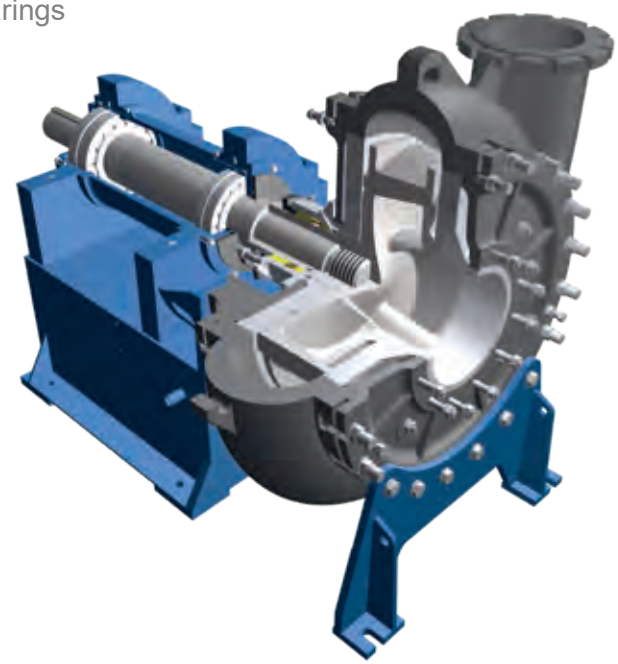
Retrofitting a jet system

HEAVY DUTY PUMPS WRX

DESIGNED FOR ABRASIVE MEDIUM WITH VERY HIGH SOLID CONTENT

Highly wear-resistant pump with closed impeller and wear plates on suction and bearing side.

- Pumping of slurry liquids with high sliding wear as well as on mechanical impact by high levels of coarse grain (grain size up to 200 mm)
- The design allows the use of very hard materials
  ► min. 600 HB
- Suction: axial
- Discharge: tangential
- Axially adjustable impeller
- Shaft sealing by stuffing box or mechanical seal
- Various impeller shapes are possible (e.g. 2- or 3-vaned)
- Different arrangements available (e.g. vertical)
- Back pullout design (the complete rotating assembly can be removed while the casing remains in its position)
- Durable, oil or grease lubricated bearings
- Direct or belt driven
- Usage as underwater pump through special assemblies possible
- Counterclockwise rotation design possible
- Rotatable housing



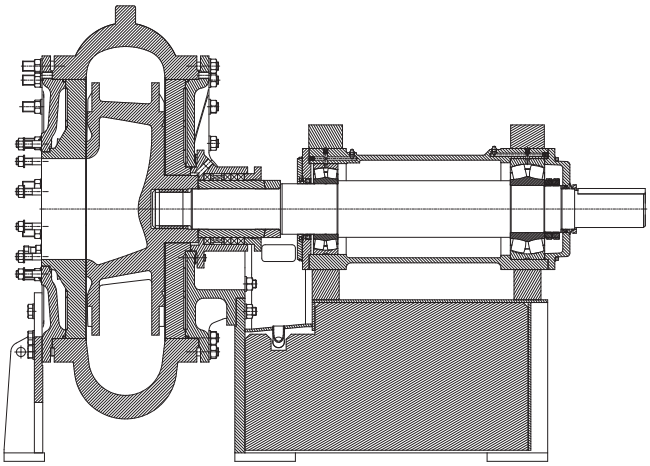
Materials

Material of construction depending on application and process parameters
e.g. High chrom cast, Duplex, rubberized, etc.

Fields of Application

Particularly suitable for pumping highly abrasive & corrosive liquids with fine to very coarse solids.

- Gravel and Sand Industry
- Special foundation
- Mechanized tunneling
- Mining and Ash Handling
- Furnaces
- Offshore applications
- Sugar industry
- Refineries
- Flotation processes



Technical Data

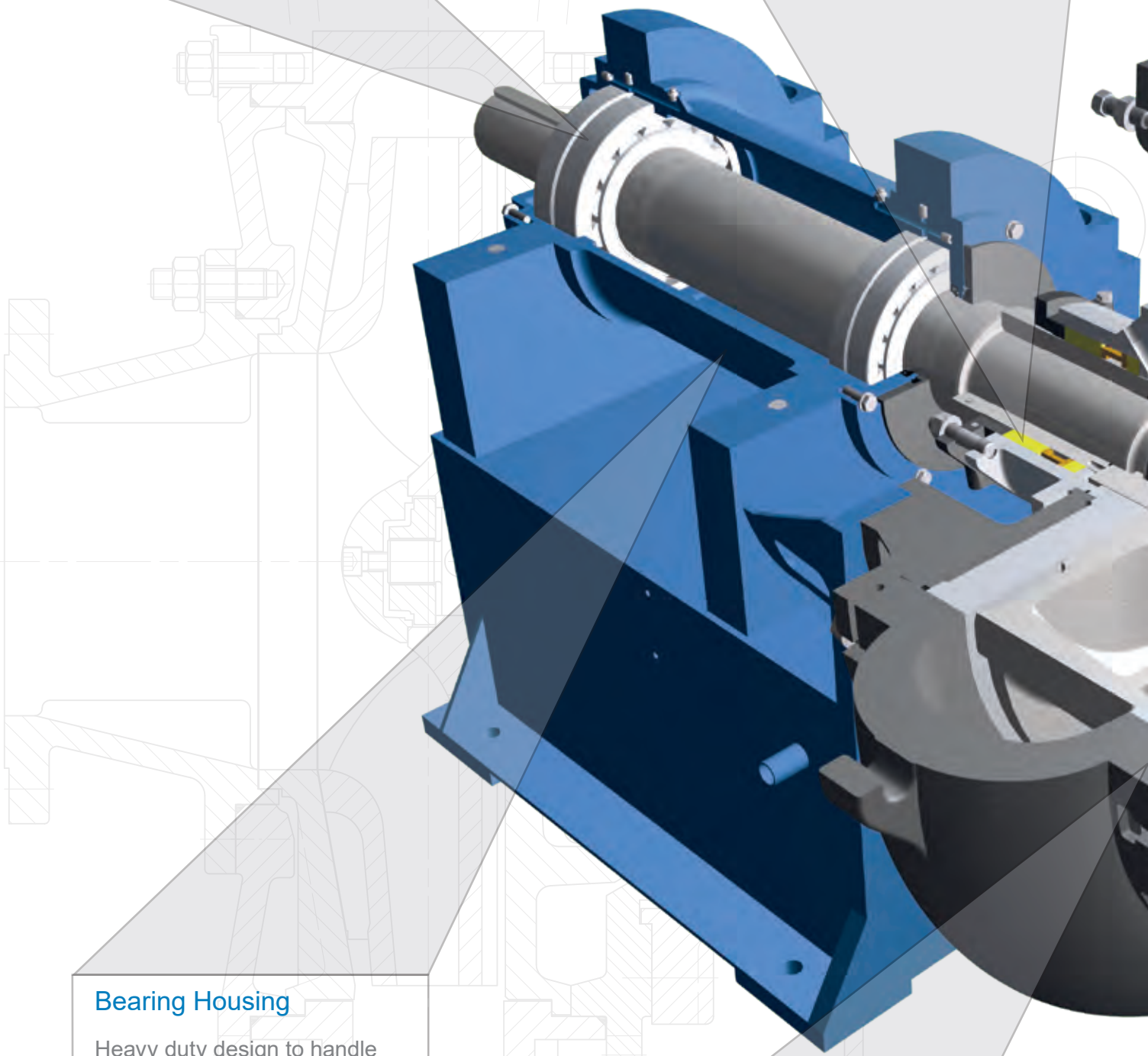
Pump Size:	**DN 80 to DN 500** 3“ to 20“
max. Pressure:	**10 bar / 16 bar** (150 PSI / 230 PSI)
max. Flow:	**5000 m³/h** (24000 gpm)
Total head:	**up to 90 m** (300 ft)
Rotating Speed:	**up to 1500 rpm**

Bearings

Oil or grease lubricated heavy duty bearings.

Shaft Seal

Stuffing box or mechanical seal.

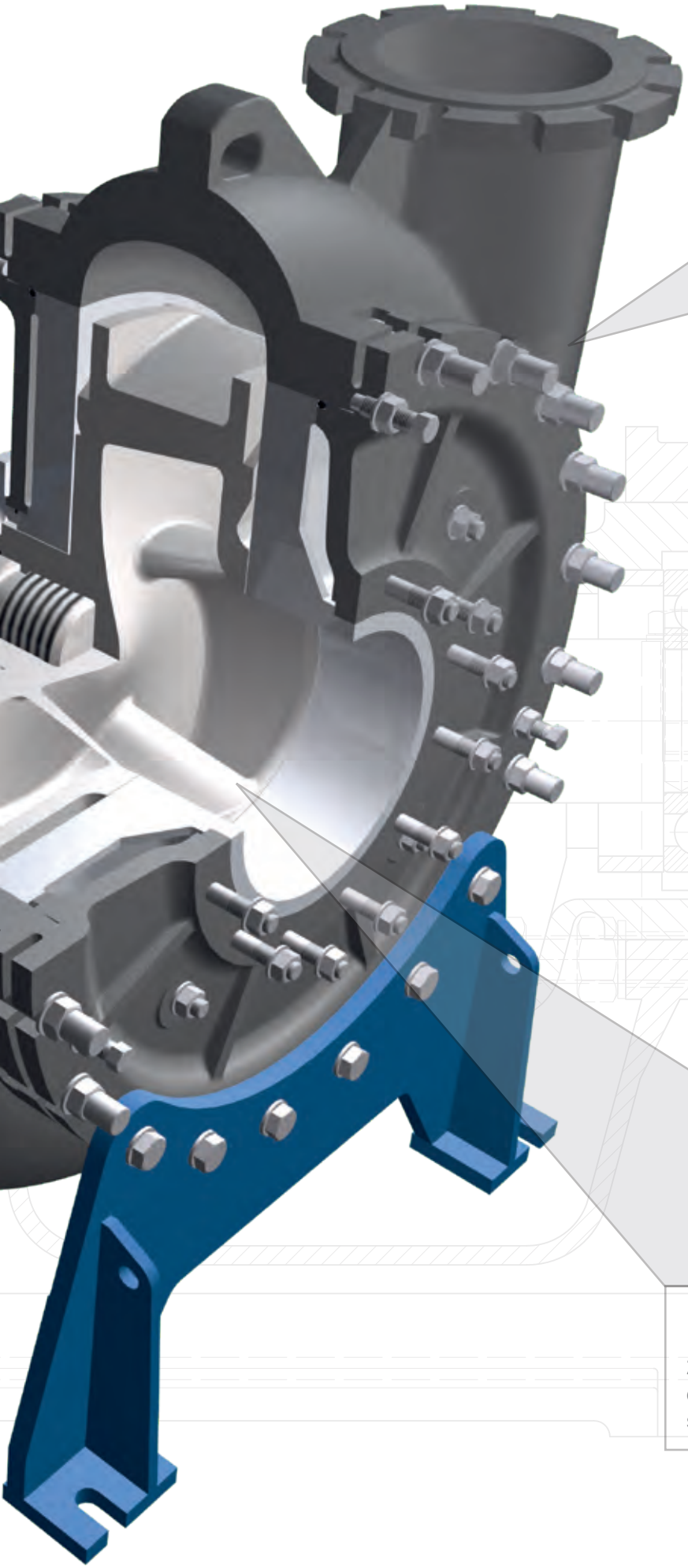


Bearing Housing

Heavy duty design to handle high forces.

Wear Plates

On suction and discharge side.



Volute Casing

Durable volute casing with extra large wall thickness.

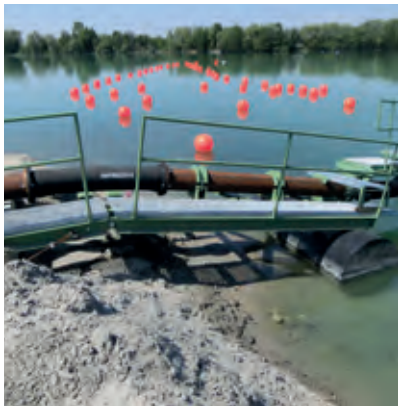
Impeller

2- or 3-vaned impeller with large diameter for low, wear-reducing speeds.

ALL ABOARD:

THE EQUIPMENT

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



Abrasion-resistant dredger hoses

System pipe bends made from cast material

Pontoons without walkway

Pontoons with walkway

Suction pipe and mooring winches

QUALITY THROUGH EXPERIENCE

DÜCHTING PUMPEN IS A PRIVATELY OWNED GERMAN COMPANY WITH EXPERIENCE IN THE FIELD OF ADVANCED CENTRIFUGAL PUMPS FOR USE IN MANY DIFFERENT INDUSTRIES SINCE 1938.

Our motto “Quality Through Experience” forms the basis of our sophisticated product range. The capabilities of our company in the construction, manufacturing, testing and commissioning of our products is highly respected in the industries we serve.
Our reputation is based on a sustainable company policy, focusing on efficiency, reliability, innovation and thorough customer after-sales service which is provided by partners in the countries where our products are installed.

Habermann Suction Dredger is a DÜCHTING brand.
For more info visit: www.DUECHTING.com

DÜCHTING PUMPEN

FLUE GAS DESULFURIZATION

To protect the environment, the flue gas is purified worldwide in coal-fired power plants. Customers benefit in particular from the mineral cast pumps from Düchting. The SICcast material was specially developed for this application and is still the most durable material for the transport of gypsum and limestone slurry.

MINING

Düchting supplies pumps for almost every application for both underground and surface mining. In underground mining, especially the dewatering is to be emphasized. For surface mining both multistage and single-stage centrifugal pumps from Düchting are used for a variety of processes.

WATER TREATMENT

In addition to the high-pressure pumps for the reverse osmosis process, Düchting also supplies booster pumps, intake pumps and a large selection of process pumps for seawater desalination.

INDUSTRY / OIL & GAS

In industrial applications Düchting delivers a wide range of products. From high-pressure pumps, over single-stage metallic pumps, to SICcast mineral cast pumps, almost every series is used in one of the various applications.

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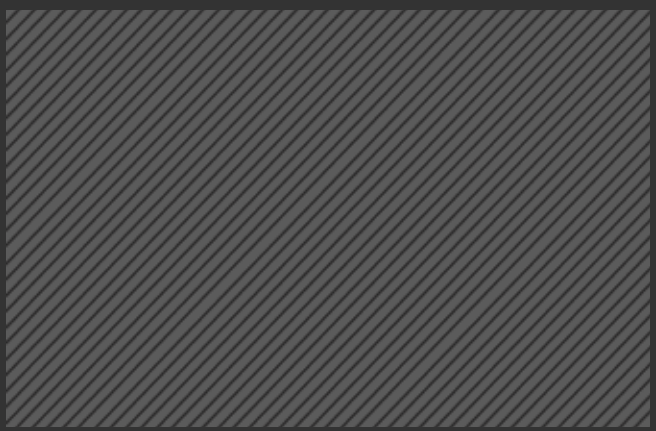

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