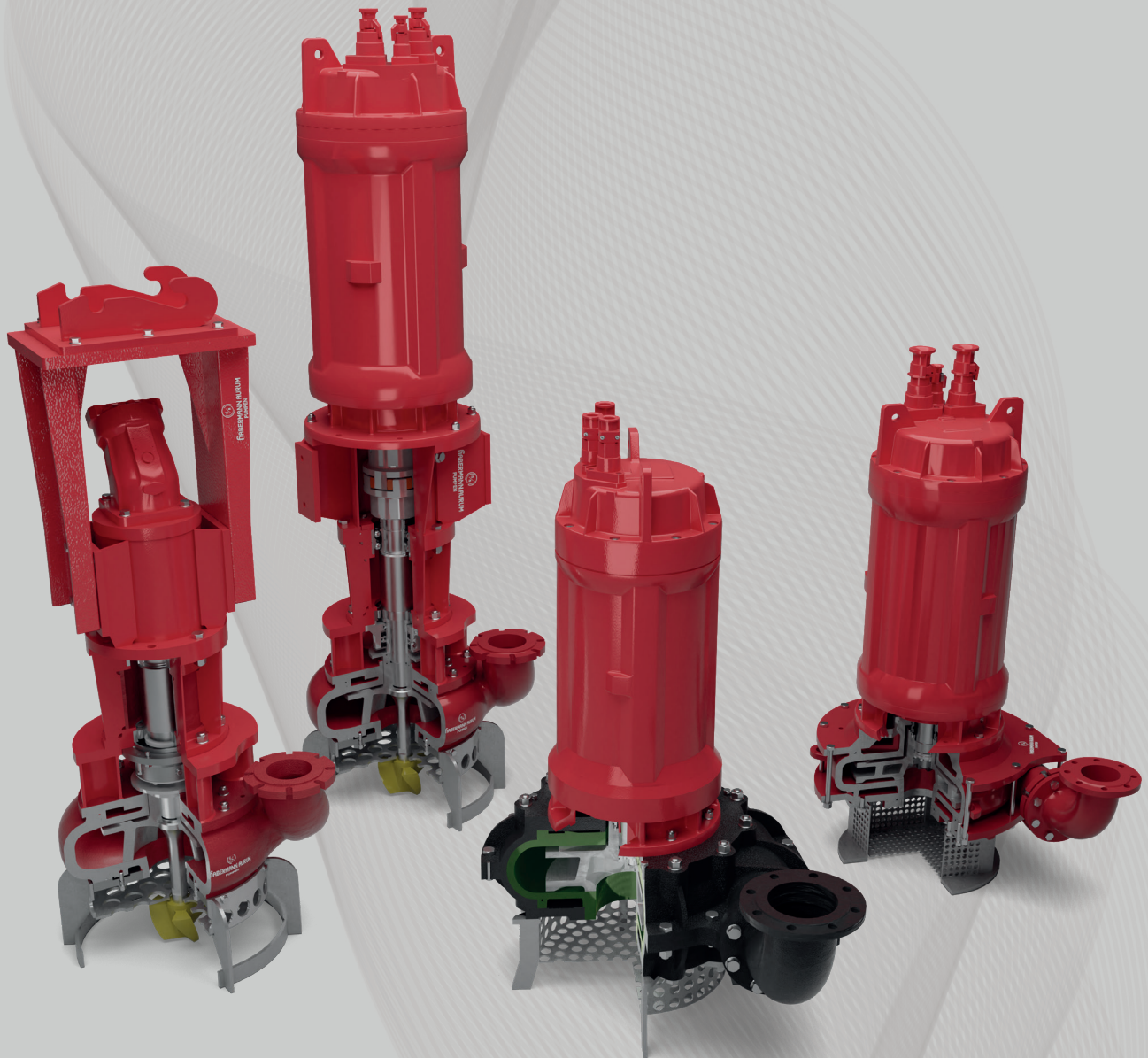




# HABERMANN AURUM PUMPEN



**CHALLENGER® & HERACLES®**  
SUBMERSIBLE PUMPS FOR SOLIDS

MADE IN GERMANY



**HABERMANN AURUM PUMPEN** has been offering reliable solutions and extensive know-how in slurry transportation since 1927.

# 1927

Habermann Aulum Pumpen is one of the leading manufacturers of centrifugal pumps, ideal for processing slurries. With almost 100 years of experience and more than 30,000 pumps installed worldwide, serving various applications, we have built a strong market position across the globe. Our fundamental goal is to create the most durable and sustainable industrial pumps by combining

our multi-decade experience with the state-of-the-art technologies. Our pumps are integrated into a wide variety of industries, such as: mining and mineral processing, energy industry, metallurgy, chemical and pigment industries, tunnelling and special civil engineering. We are continuously improving our pumping systems to ensure their exceptional quality and optimal performance capabilities. Based on the technical skills of our work force, we customize and manufacture pumps you can rely on, most of which have been in trouble-free operation for more than 60 years, which speaks for their longevity, safety and efficiency.





We always ensure your industrial needs are covered with our proven operational designs combined with the most reliable and robust materials to make a functional unit. Thanks to our in-house engineering we can find solutions to any pumping system demand, regardless of technical complexity or application conditions.

We have built an excellent quality profile, which allowed us to establish Habermann AURUM as a high-valued and reliable partner for industrial pumping systems. We proudly design, produce and install our pumps all over the world. Through our network of partners and branch offices, our market

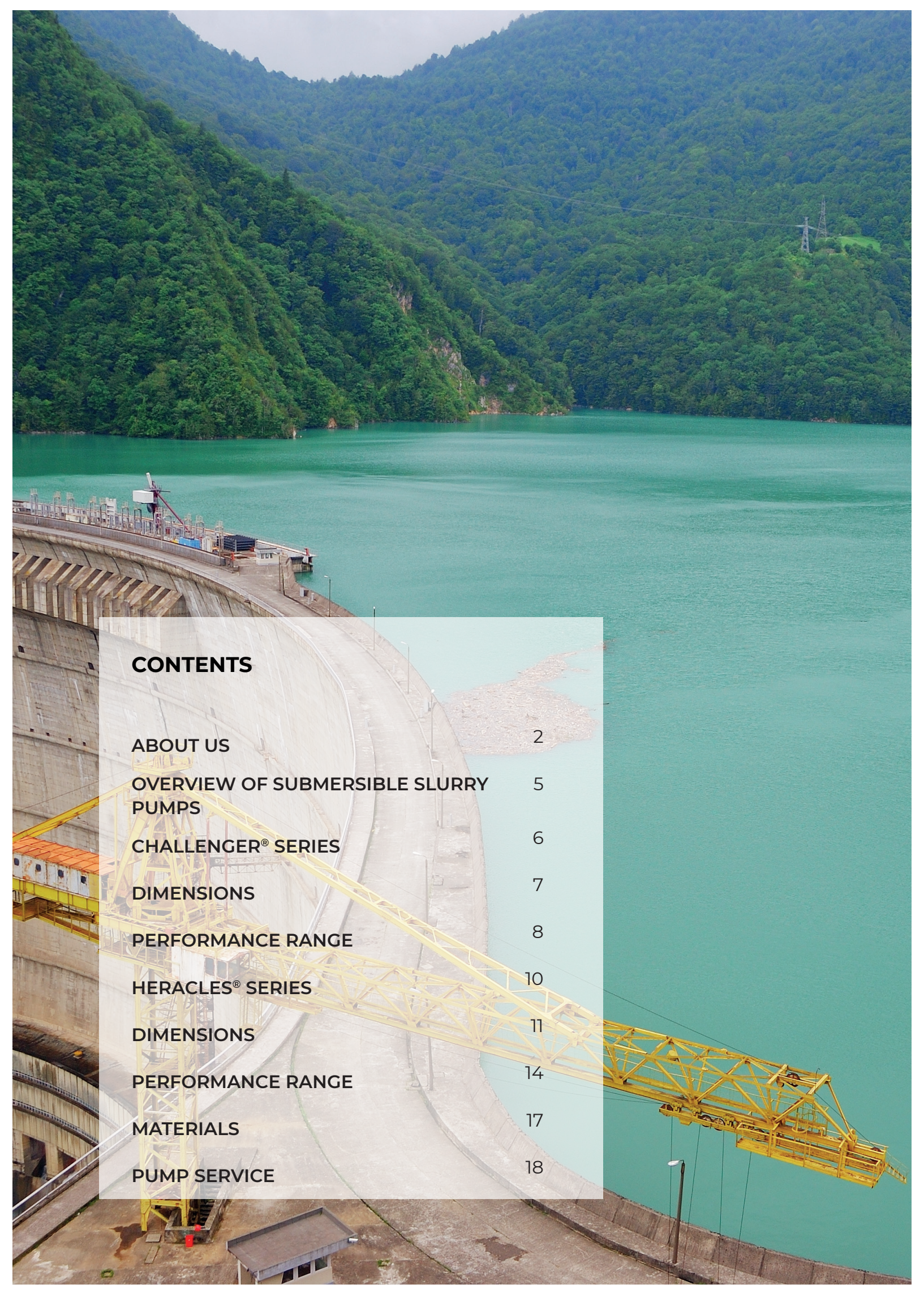
presence extends across continents from Europe to America, Asia and Africa. We are well prepared to meet current and future market demands and to support our customers in the best possible way.

***Tradition meets modern technologies.***



[www.habermann-aurum-pumpen.de](http://www.habermann-aurum-pumpen.de)





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# CHALLENGER® & HERACLES®

## SUBMERSIBLE MOTOR PUMPS

Challenger® and Heracles® series are flexible designs that were specifically developed for heavy-duty applications. These robust pumps are typically used in mining, extraction of fine sand, sludge dumps, drainage of dams and dredging lakes, ponds, and rivers. Their design features directly flanged connection with submersible motor for wet installations. The hydraulic motor driven pumps can also be used for dry installations.

### KEY ADVANTAGES

● **Innovative technology**

The pumps are designed and manufactured using the latest technologies.

● **High wear-resistance**

The most robust and long-proven designs of HPK, NPW and KB series are used for the construction of these pumps.

● **High efficiency**

New technologies in pump production enable better geometry of the slurry flow path, which significantly improves unit's efficiency and extends wear life of all wet parts compared to other pump manufacturers. The three main differences between Heracles® and Challenger® are the drive method, the ball passage dimension and the shaft seal type. These pumps can be adapted to the properties of the process media, which makes them suitable for use with neutral, alkaline and lightly acidic media.

### MAIN CHARACTERISTICS

Capacity	Challenger®	Heracles®
Max. Flow rate (m³/h)	950	1000
Max. Head (m.l.c)	56	52
Pump speed (min <sup>-1</sup> )	1470	1475
Discharge nozzle diameter (DN)	65 – 250	100 - 250
Max. Immersion depth (m) without compensating pipe	30	30
Temperature (°C)	12 - 40	12 - 40
Standard cable length (m)	8	8
Corrosion resistant at pH	5 – 9	5 - 9





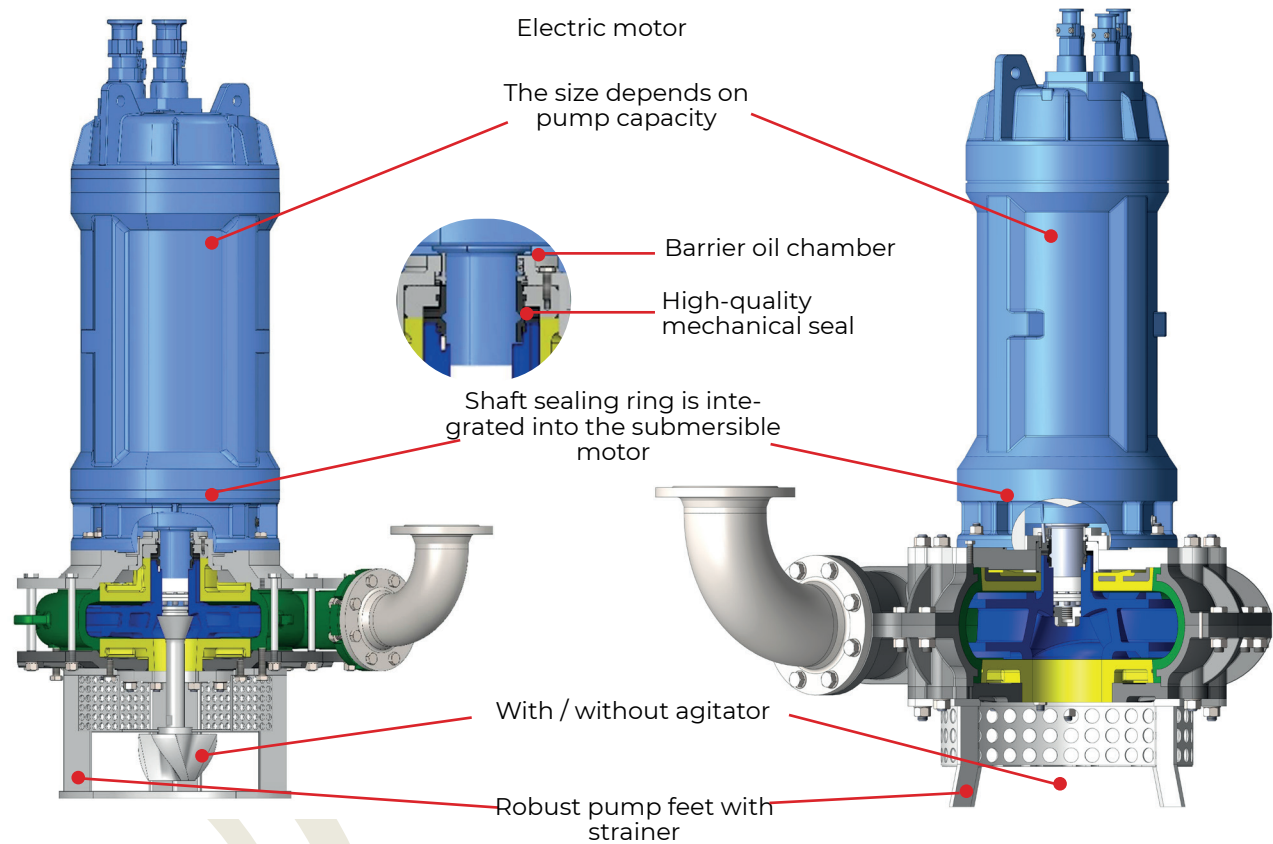
# CHALLENGER®

## SUBMERSIBLE PUMP FOR MEDIUM TO HEAVY WEAR APPLICATIONS

Challenger® comes with various drive options and hydraulic sizes, which allows optimum pump configuration to perfectly match specific application requirements. The pump is easily transportable and user friendly. There are two designs available: pump with metal liner (CRM) and pump with polyurethane APFlex® lining (CRP). Both pumps are available with and without an actuator. The CRP version is perfectly suitable for pumping mud with high pH value or alkalis.

Challenger® CRM

Challenger® CRP



### TECHNICAL DATA

MAX. CAPACITY:

950 m³/h

MAX. HEAD:

56 mFls

MAX. SPEED:

1470 min⁻¹

CABLE LENGTH FROM:

8 m

MAX. IMMERSION DEPTH:

30 m

TEMPERATURE RANGE:

+12°C to +40°C



Motors, pump designs, as well as additional components are compatible with one another and can be easily combined, therefore create an individual design depending on the application.

### OPTIONAL

TEMPERATURE RANGE:

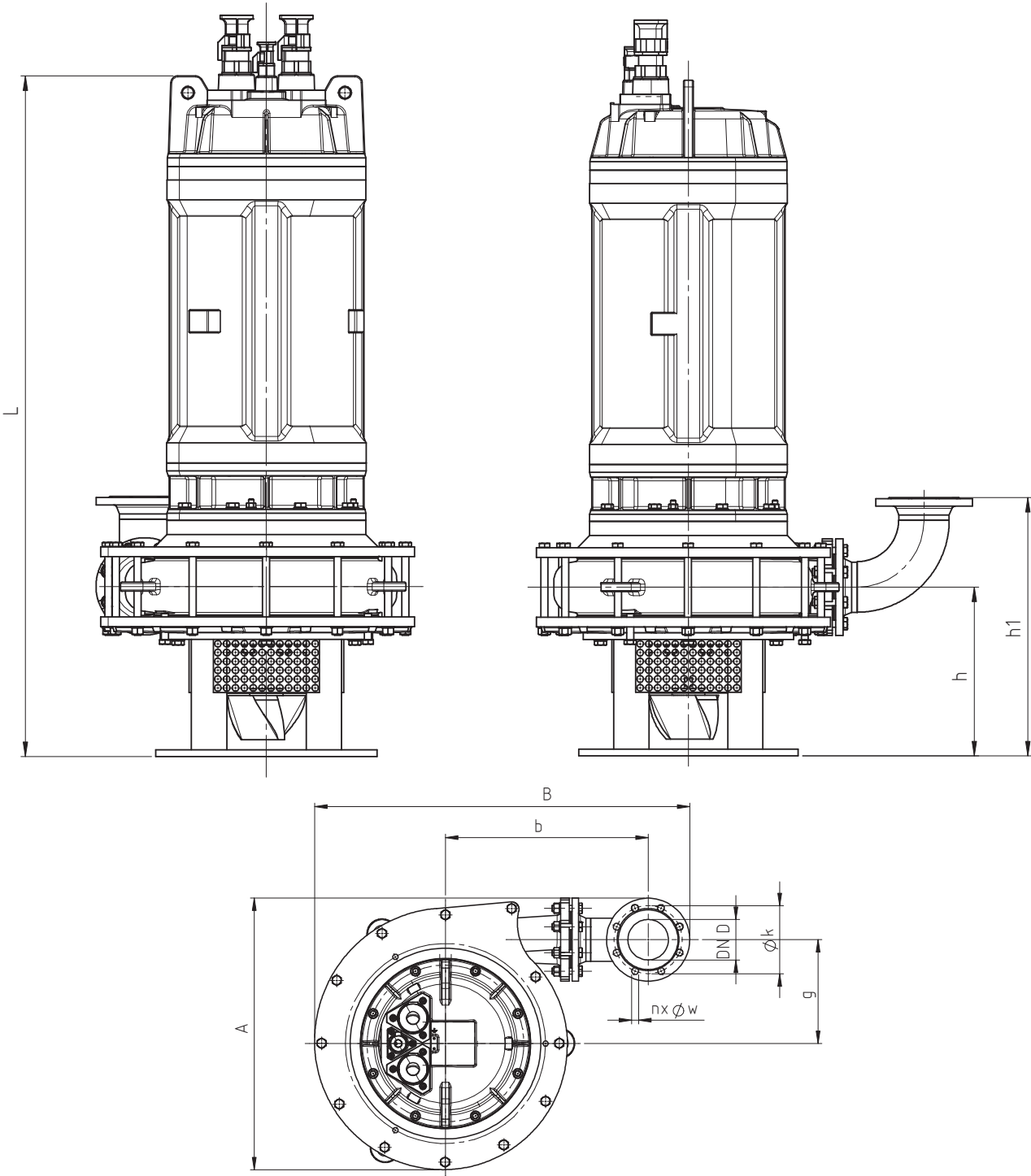
+4°C to +40°C

(with anti-condensate heater)

DISCHARGE NOZZLE DIAMETER: DN 32 – 300



OUTLINE DIMENSIONS FOR CHALLENGER® TYPE

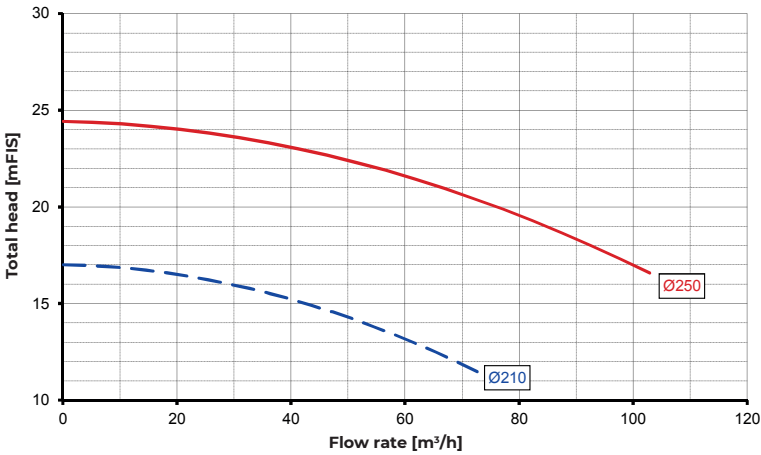


Pump Type	Poles Number	Motor power [kW]	A	B	DN D	b	g	$\phi k$	n	$\phi w$	h	h1	L	Weight [kg]
CRM-W 65/250	4	15	479	658	65	362	170	145	4	18	228,5	368,5	988	243
CRM-W 125/315	6	15	646,5	919	125	517,5	235	210	8	18	246,5	492	1023	370
CRM-W 125/315	4	37	646,5	919	125	517,5	235	210	8	18	246,5	492	1341	510
CRM 150/450	6	75	880	1200	150	667,5	320	240	8	22	420	703,5	1750	1550
CRM 150/630	8	75	1030	1377	150	735,5	405	240	8	22	450	733,5	1970	2160
CRM 250/630	8	132	1216	1772,5	250	984	450	350	12	22	on request		3280	



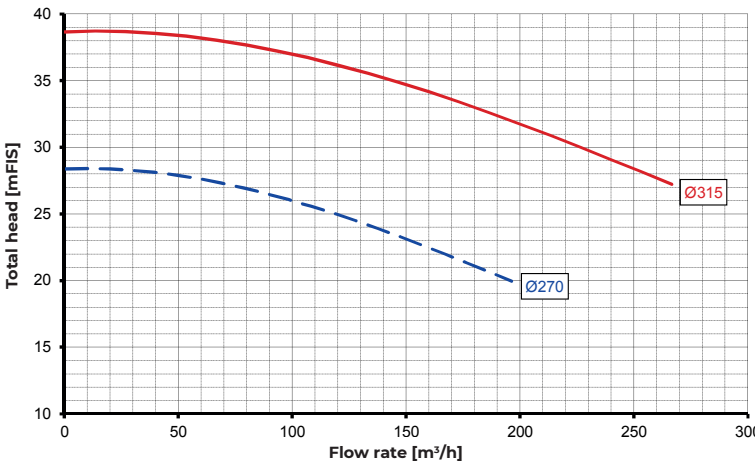


8 PERFORMANCE RANGE



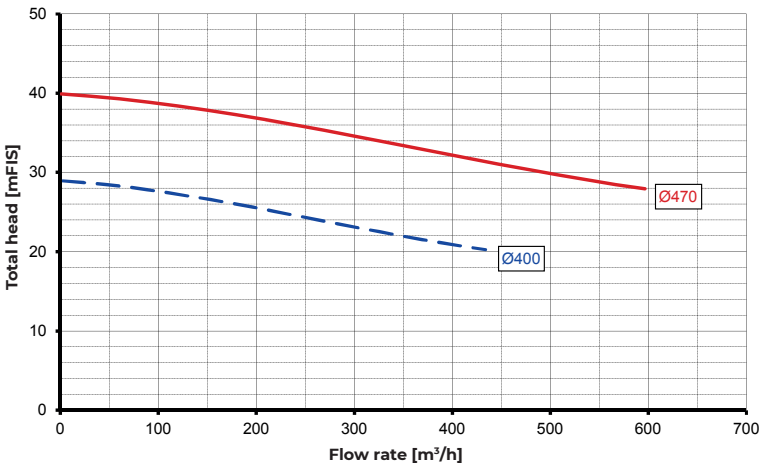
CRM 65/250 W

Pump speed  $n = 1450 \text{ min}^{-1}$   
Impeller diameter = 250 mm  
Number of blades = 4  
Particle size = 20 mm  
Impeller type = open



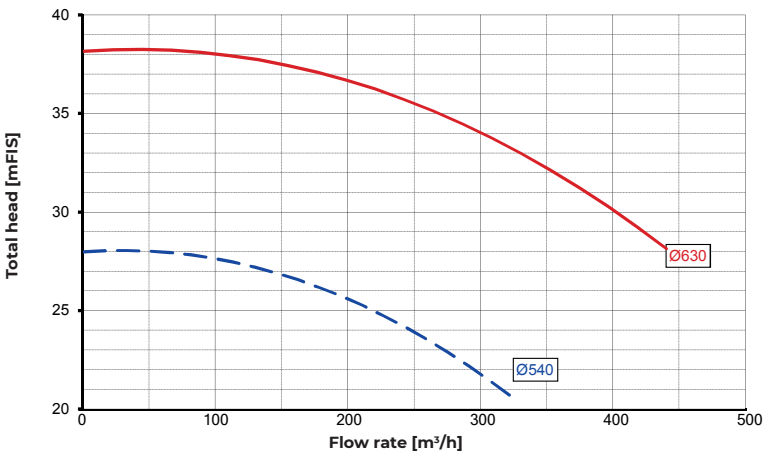
CRM 125/315 W

Pump speed  $n = 1460 \text{ min}^{-1}$   
Impeller diameter = 315 mm  
Number of blades = 4  
Particle size = 30 mm  
Impeller type = open



CRM 150/450

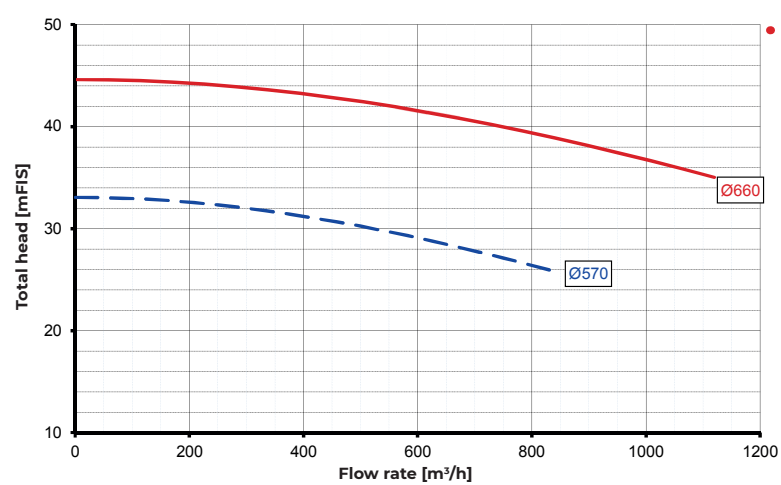
Pump speed  $n = 980 \text{ min}^{-1}$   
Impeller diameter = 470 mm  
Number of blades = 3  
Particle size = 50 mm  
Impeller type = open



CRM 150/630

Pump speed  $n = 750 \text{ min}^{-1}$   
Impeller diameter = 630 mm  
Number of blades = 3  
Particle size = 60 mm  
Impeller type = open





CRM 250/630

Pump speed  $n = 730 \text{ min}^{-1}$   
Impeller diameter = 660 mm  
Number of blades = 4  
Particle size = 60 mm  
Impeller type = open



PERFORMANCE RANGE TYPE CHALLENGER

No.	Pump Type	Poles Number	$n \text{ min}^{-1}$	DN D mm	Q $\text{m}^3/\text{h}$	H m Fl.S.	Particle size $\varnothing$ mm	Motor kW	Current 400 V A	Weight kg
1	CRM-W 65/250	4	1460	65	80	19	20	15	33,5	243
2	CRM-W 125/315	6	1460	125	250	28	30	37	69	510
3	CRM-W 125/315	4	955	125	150	13	30	15	30	370
4	CRM 150/450	6	980	150	500	30	50	75	137	1550
5	CRM 150/630	8	740	150	370	33	60	75	143	2160
6	CRM 250/630	8	730	250	600	42	60	132	250	3280





# HERACLES®

## HEAVY DUTY SLURRY PUMP

These pumps were developed for handling slurries with coarse particles. Heracles® has a very robust design equipped with gland packing seal. The pumps are made of highly wear and corrosion resistant materials, which ensures their exceptional reliability and makes them less sensitive to cavitation. It can be optionally coupled with electric or hydraulic motor.

### KEY FEATURES

1. Drive system: optionally with electric or hydraulic motor (read more on page. 12)
2. Easy drive disassembly by using simple coupling system
3. Mounting arrangement according to customer requirements
4. Robust bearings guarantee smooth running under high load applications
5. Optimum system reliability supported by special radial shaft seal
6. Space-saving configuration by positioning compact pressure nozzle along the pump shaft axis
7. Pump casing made of highly wear-resistant tempered cast steel
8. Standard built-in agitator

### TECHNICAL DATA

**MAX. CAPACITY:**

1000 m<sup>3</sup>/h

**MAX. HEAD:**

52 m.l.c

**MAX. SPEED:**

1475 min<sup>-1</sup>

**CABLE LENGTH FROM:**

8 m

**MAX. IMMERSION DEPTH:**

30 m

**TEMPERATURE RANGE:**

+12°C to +40°C

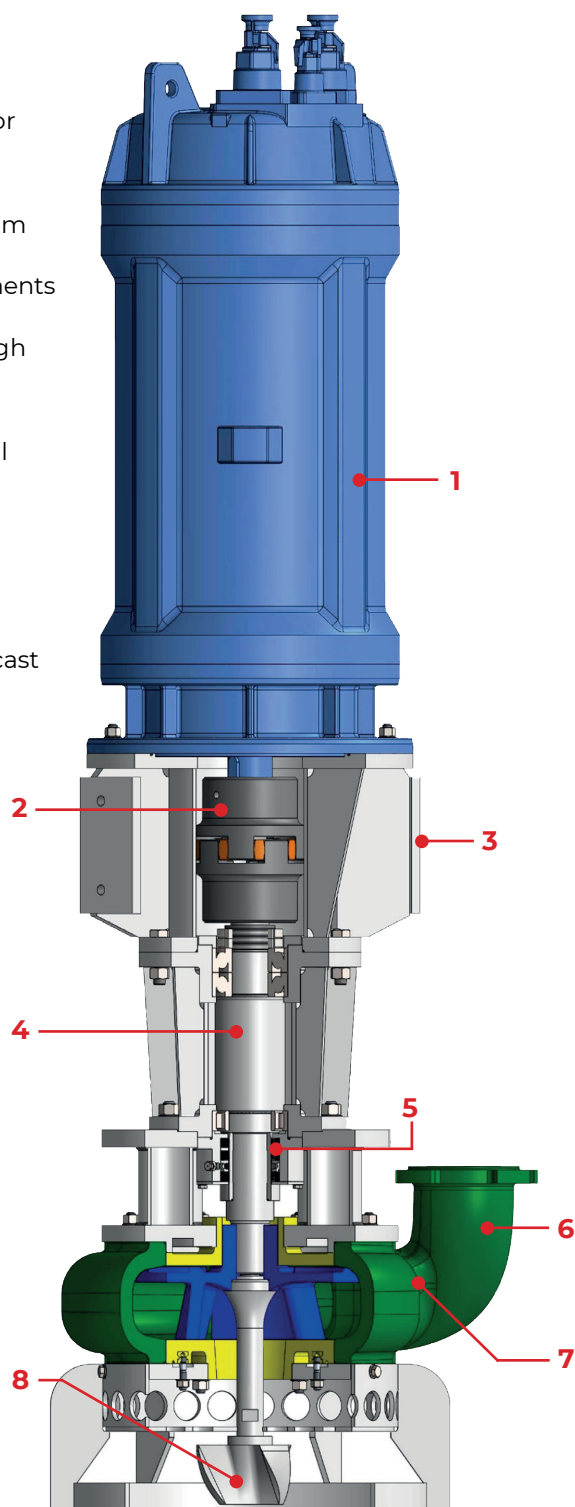
**OPTIONAL  
TEMPERATURE RANGE:**

+4°C to +40°C

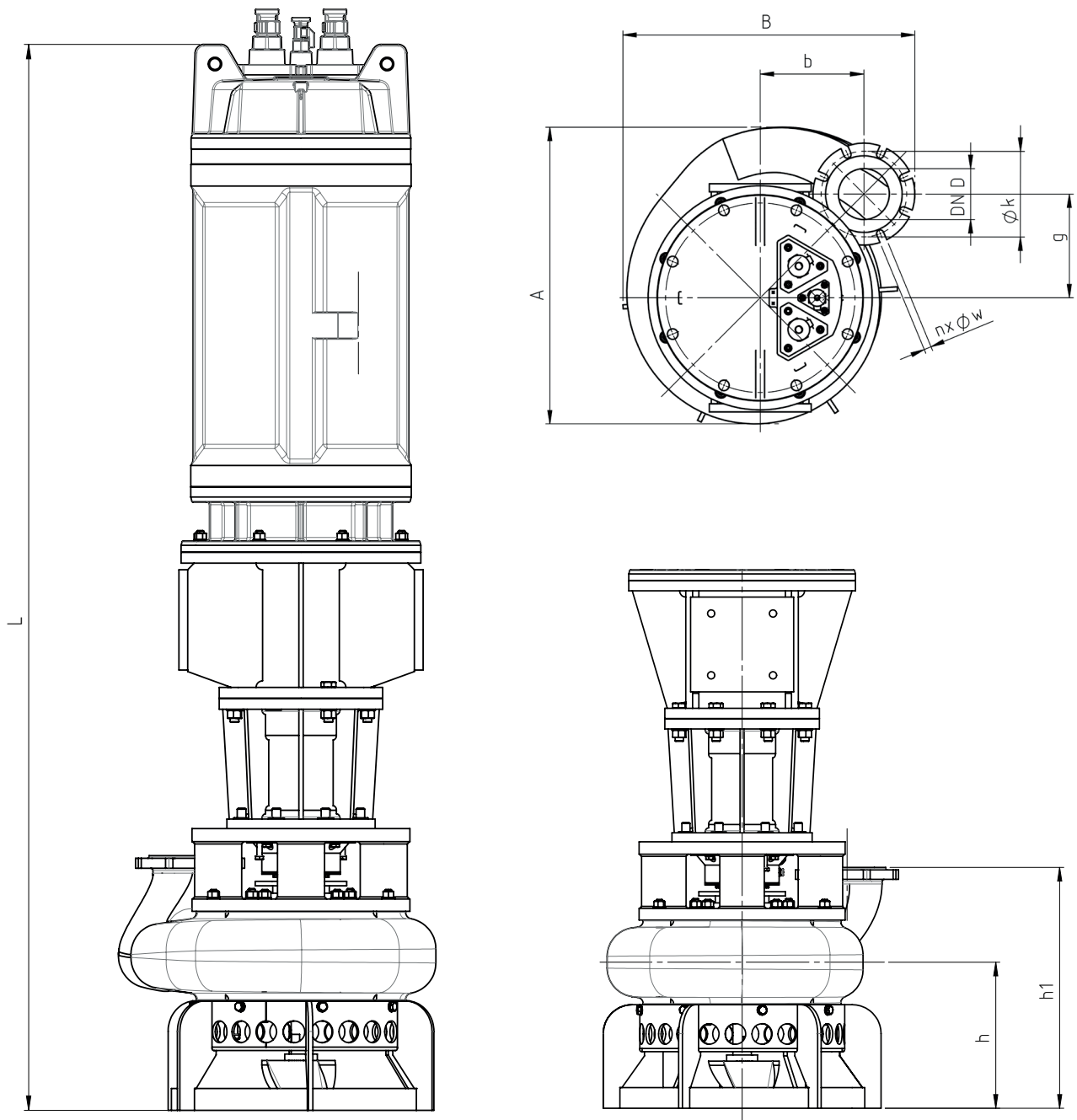
(with anti-condensate heater)

**DISCHARGE NOZZLE DIAMETER:**

DN 100 – DN 250



OUTLINE DIMENSIONS FOR HERACLES® TYPE

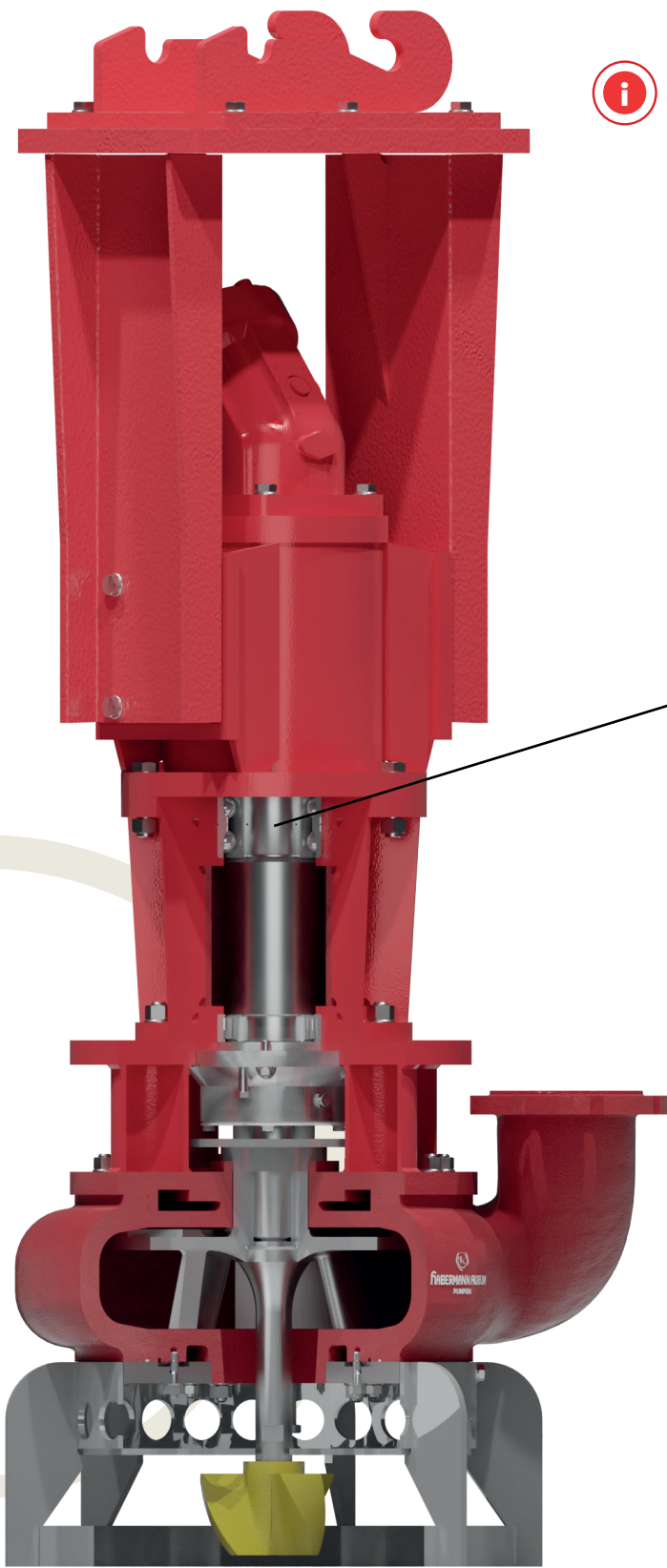


Pump Type	Poles Numberl	Motor power [kW]	A	B	DN D	b	g	$\phi k$	n	$\phi w$	h	h1	L	Weight [kg]
HS 100/290	4	30	523	524	100	191	191	180	8	18	327,5	557,5	2100	705
HS 125/400	6	30	736.5	707	125	254,5	254,5	210	8	18	354	584	2250	970
HS 125/400	4	90	736.5	707	125	254,5	254,5	210	8	18	354	584	2450	1600
HS 150/400	6	37	735.5	741	150	268,5	268,5	240	8	22	371,5	721,5	2270	1080
HS 150/400	4	90	735.5	741	150	268,5	268,5	240	8	22	371,5	721,5	2480	1670
HS 200/525	8	75	1060	1465	200	790	400	295	8	22	445	812	2845	2860
HS 200/525	6	160	1060	1465	200	790	400	295	8	22	445	812	3075	3450
HS 250/580	8	132	1710	1220	250	956	-	355	12	26	520	970	3155	3450
HS 250/580	6	250	1710	1220	250	956	-	355	12	26	520	970	3375	3900



HERACLES® PUMP WITH HYDRAULIC MOTOR

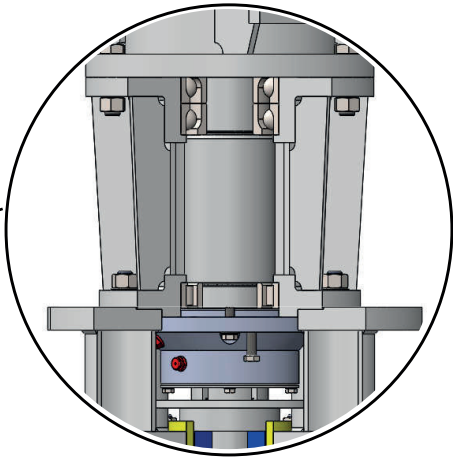
Pump units with hydraulic drive are specially designed for direct coupling on top of mobile construction machinery, such as crawlers or wheeled excavators. These pumps are directly connected to the hydraulic circuit/unit and as a result can be controlled from the operator's cab.



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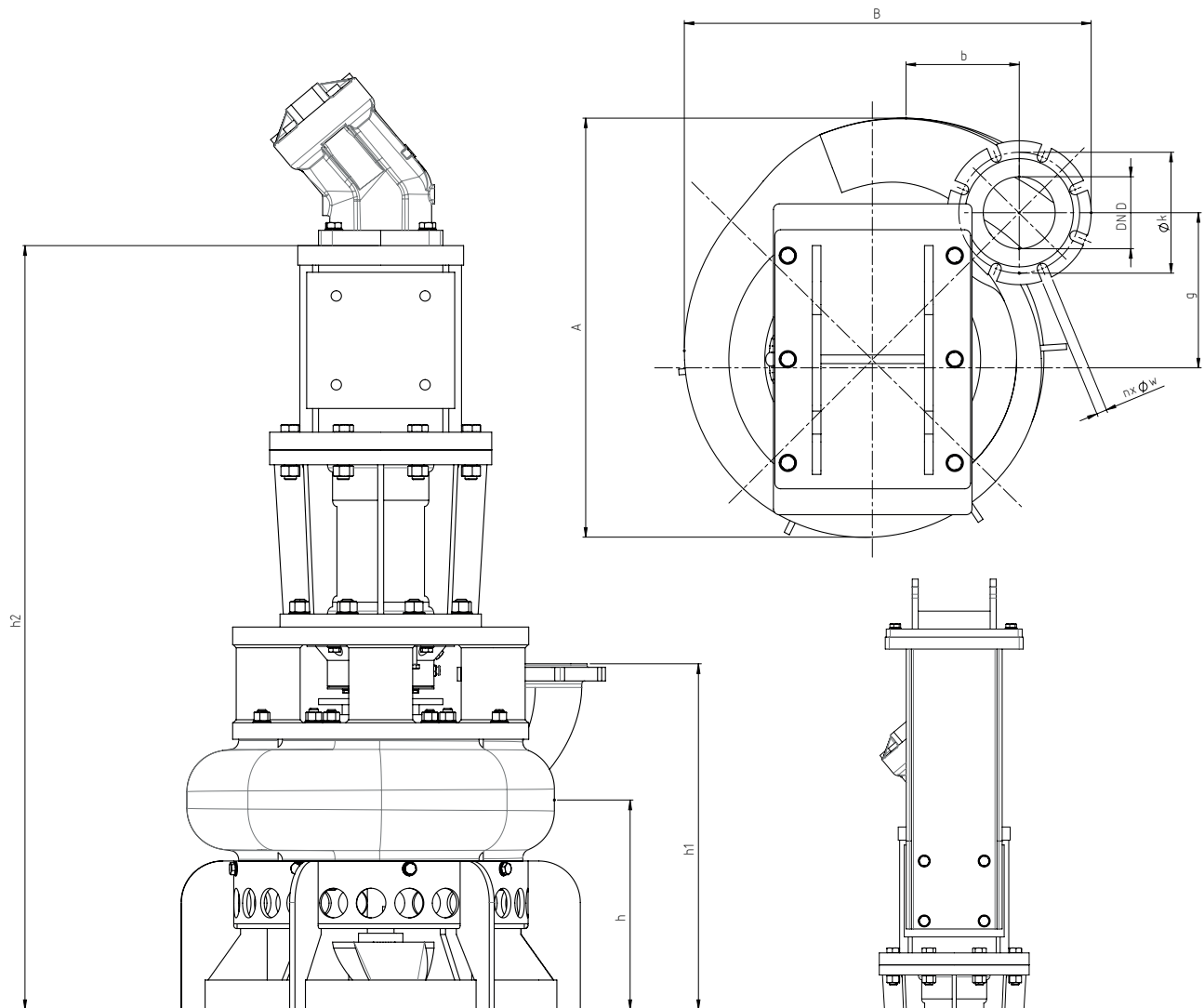
An accurate selection of the submersible pump depends on a number of factors. In addition to load-carrying capacity, maximum flow rate of the hydraulic oil and maximum operating pressure of the corresponding construction equipment must be considered.

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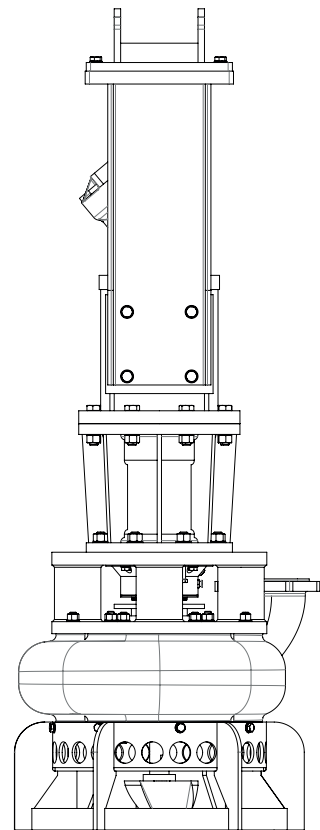


The hydraulic drive with variable speed combined with our agitator and low-wear impeller ensure an efficient and secure operation of the unit, as well as a long service life of all mounting parts.

# OUTLINE DIMENSIONS FOR HERACLES® TYPE WITH HYDRAULIC

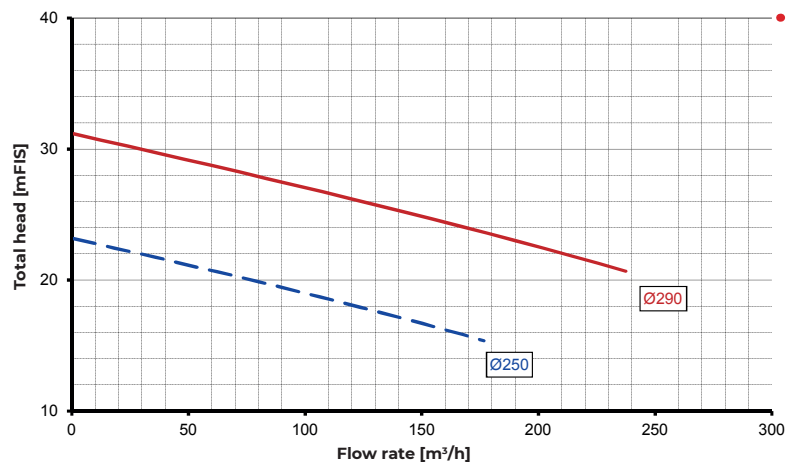


.....  
 Provided weight and dimensions are for the pump only, without mounting parts. Various hydraulic motors can be used.  
 .....



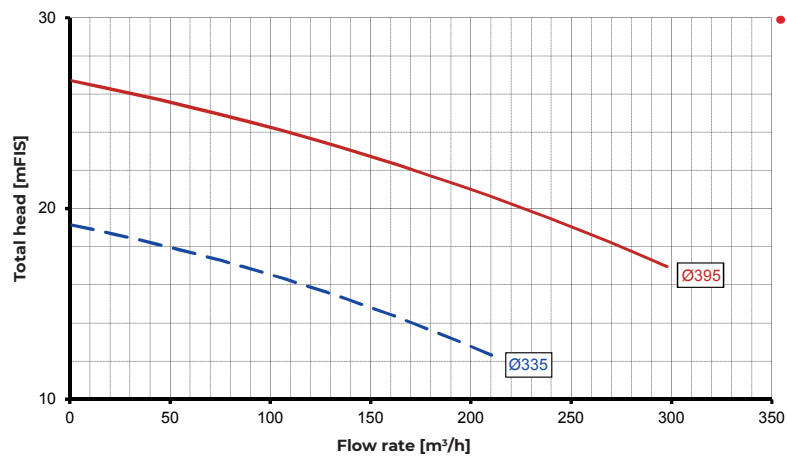
Pump Type	A	B	DND	b	g	Øk	n	Øw	h	h1	h2	Weight without motor [kg]
HS 100/290	523	524	100	191	191	180	8	18	327,5	557,5	1130	500
HS 125/400	736,5	707	125	254,5	254,5	210	8	18	354	584	1280	640
HS 150/400	735,5	741	150	268,5	268,5	240	8	22	371,5	721,5	1315	730
HS 200/525	1060	1465	200	790	400	295	8	22	445	812	1750	1850
HS 250/580	1710	1220	250	956	-	355	12	26	520	970		





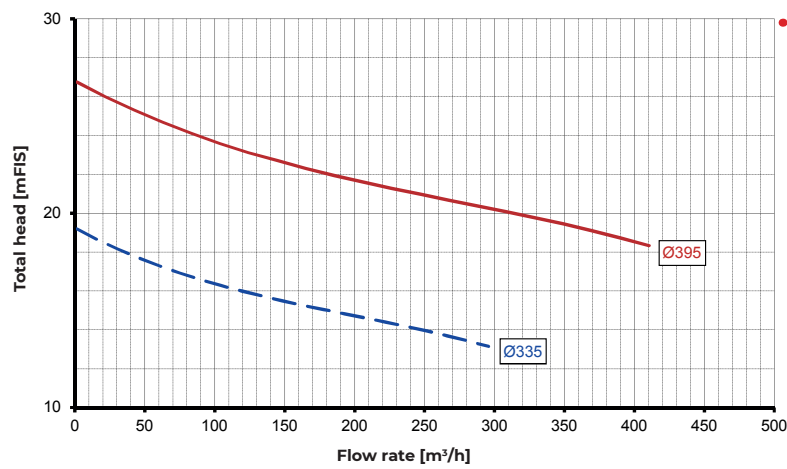
**HS 100/290**

Pump speed  $n = 1460 \text{ min}^{-1}$   
Impeller diameter = 290 mm  
Number of blades = 2  
Particle size = 50 mm  
Impeller type = open



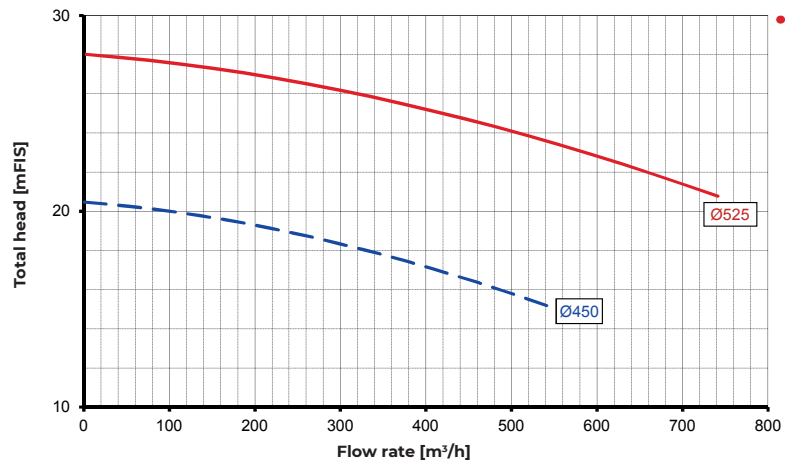
**HS 125/400**

Pump speed  $n = 970 \text{ min}^{-1}$   
Impeller diameter = 395 mm  
Number of blades = 2  
Particle size = 60 mm  
Impeller type = open



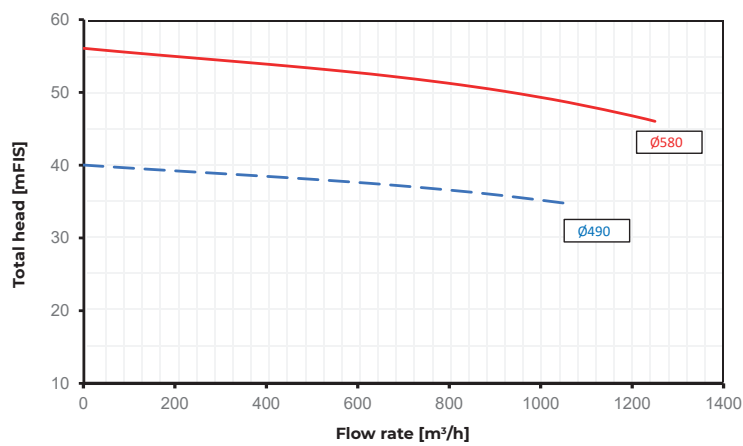
**HS 150/400**

Pump speed  $n = 970 \text{ min}^{-1}$   
Impeller diameter = 395 mm  
Number of blades = 2  
Particle size = 90 mm  
Impeller type = open



**HS 200/525**

Pump speed  $n = 725 \text{ min}^{-1}$   
Impeller diameter = 525 mm  
Number of blades = 3  
Particle size = 90 mm  
Impeller type = open



HS 250/580

Pump speed  $n = 980 \text{ min}^{-1}$   
Impeller diameter = 580 mm  
Number of blades = 3  
Particle size = 150 mm  
Impeller type = open



PERFORMANCE RANGE OF HERACLES®

No.	Pump Type	Poles Number	$n \text{ min}^{-1}$	DN mm	$Q \text{ m}^3/\text{h}$	H m F.L.S.	Particle size $\varnothing$	Motor kW	Current 400 V A	Weight kg
1	HS 100/290	4	1460	100	100	27	35	30	58	705
2	HS 125/400	6	970	125	160	23	50	30	59	970
3	HS 125/400	4	1460	125	220	52	50	90	165	1600
4	HS 150/400	6	970	150	300	20	50	37	72	1080
5	HS 150/400	4	1475	150	300	49	50	90	165	1670
6	HS 200/525	8	725	200	550	23	60	75	143	2860
7	HS 200/525	6	980	200	600	46	60	160	280	3450
8	HS 250/580	8	730	250	750	27	150	132	250	3450
9	HS 250/580	6	980	250	1000	49	150	250	465	3900





# INNOVATIVE POLYURETHANE APFlex®

Based on polyurethane’s excellent elastic properties, it is ideal for the inner lining of all wet parts exposed to the working media. APFlex® easily adapts to fine-grained slurries with particle size ranging from 0 to 5mm and in some cases up to 10mm, as well as high temperatures. It is highly resistant to chemically aggressive and corrosive media with high pH value from 0 to 14. Polyurethane lining is easily interchangeable and far more superior to any metal material when handling abrasive fine-grained media. Due to its excellent wear behavior, APFlex® lining reduces wear and maintenance of the pump wet end parts, which increases pump reliability and minimizes operating costs.



**APFlex® 10-01 Type**

Is abrasion and corrosion resistant, suitable for acids or alkalis and offers good oil resistance

**APFlex® 60-01 Type**

Is suitable for sand and gravel, particularly abrasion-resistant and exceptionally durable against reconditioned oils

**APFlex® 50-01 Type**

Is a further refined APFlex® 10-01, which enables higher temperature resistance

## POLYURETHANE CHARACTERISTICS

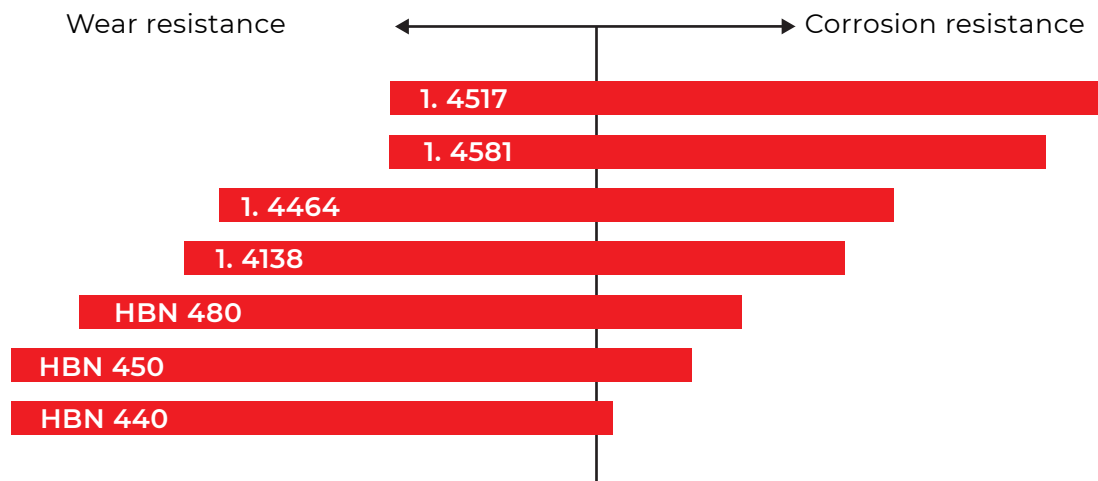
Type	APFlex® 10-01 (yellow)	APFlex® 60-01 (green)	APFlex® 50-01 (blue)
Shore hardness	A 88-90	A 75-80	A 88-90
Temperature	-30 to +75 °C	-30 to +75 °C	-30 to +95 °C
pH	0-14	5-9	0-14
Special features	Suitable for acids and alkalis	Extra abrasion resistant	Suitable for acids and alkalis



# CAST MATERIALS

Habermann Aurum Pumpen offers ultimate heavy-duty cast materials, which have been developed and improved over the years through our continuous research and testing. Our wear and corrosion resistant alloys were created specifically for pumps operating under high load conditions to ensure long-lasting performance when handling aggressive media. Due to their special composition and high hardness level, they significantly improve the mechanical properties of the pump components. In addition to high chrome tempered castings and duplex stainless steel, we offer our in-house cast materials HBN 440, HBN 450 and HBN 480 with Brinell hardness of up to 650 HB.

## WEAR AND CORROSION RESISTANCE OF VARIOUS AURUM PUMPEN MATERIALS



## MATERIAL REFERENCE AND ITS HARDNESS USING BRINELL SCALE

Material No.	Brinell Hardness (HB)
1.4517	230 - 300
1.4581	130 - 200
1.4464	230 - 300
1.4138	260 - 330
HBN 480	620
HBN 450	650
HBN 440	600







The best pump does  
what it is supposed to do:  
pump.



# PUMP SERVICE

Our professional team of experts is here to offer you complete optimization and repair services to ensure the safety and efficiency of your pumping system for many years. Our goal is to not only properly repair your pump, but to clarify why a possible failure could occur and ensure that all pump components are in fully operational condition.

## SPARE PARTS

With original spare parts from Habermann Aurum Pumpen, you get the highest quality and functionality when replacing individual components. Powered by our multi-decade experience and a vast network of partners, we can support you with suitable products and solutions globally.

## MODERNIZATION

Our modernization services allow you to modify and improve pumps and systems that have been in operation for a number of years. Whether you wish to maximize your production capacity or optimize specific processes within an application, we will assist you every step of the way. Thereby you can ensure an optimal performance across your network and extend your pump's shelf life without having to invest in new systems. We will work with you to find the best possible solutions that are tailored to your needs.

## MAINTENANCE AND REPAIR SERVICES

- ✓ System analysis
- ✓ Pump optimization
- ✓ Productivity assessment
- ✓ Pump commissioning and integration
- ✓ Maintenance and repair services

WE HAVE THE SOLUTION FOR YOU  
[aftersales@aurumpumpen.de](mailto:aftersales@aurumpumpen.de)





**HABERMANN AURUM  
PUMPEN**



PUMPS | VALVES | DREDGERS | ENGINEERING

**We look forward  
to working with you!**

**Habermann Aurum Pumpen GmbH**

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V. 08.2023

