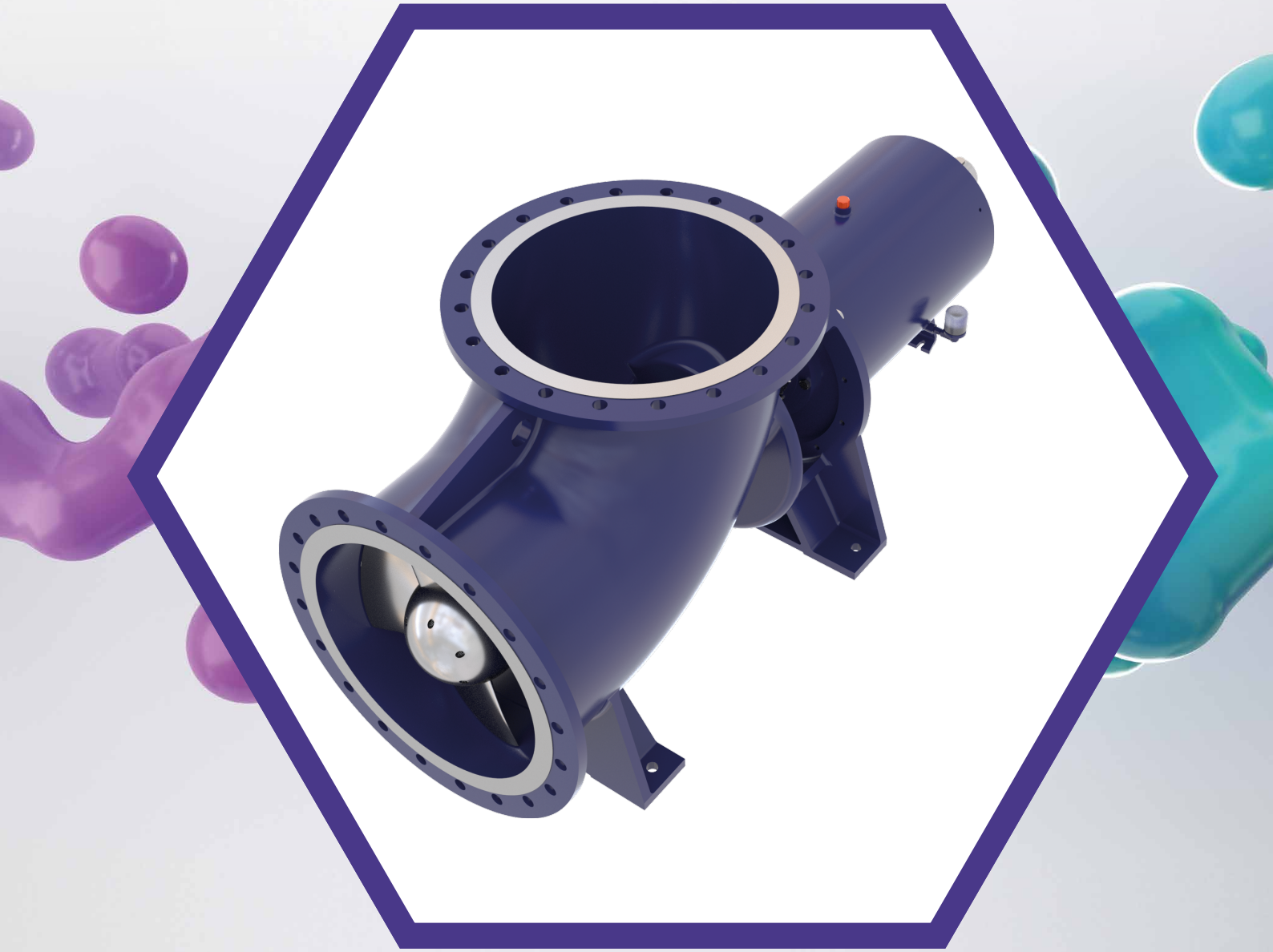
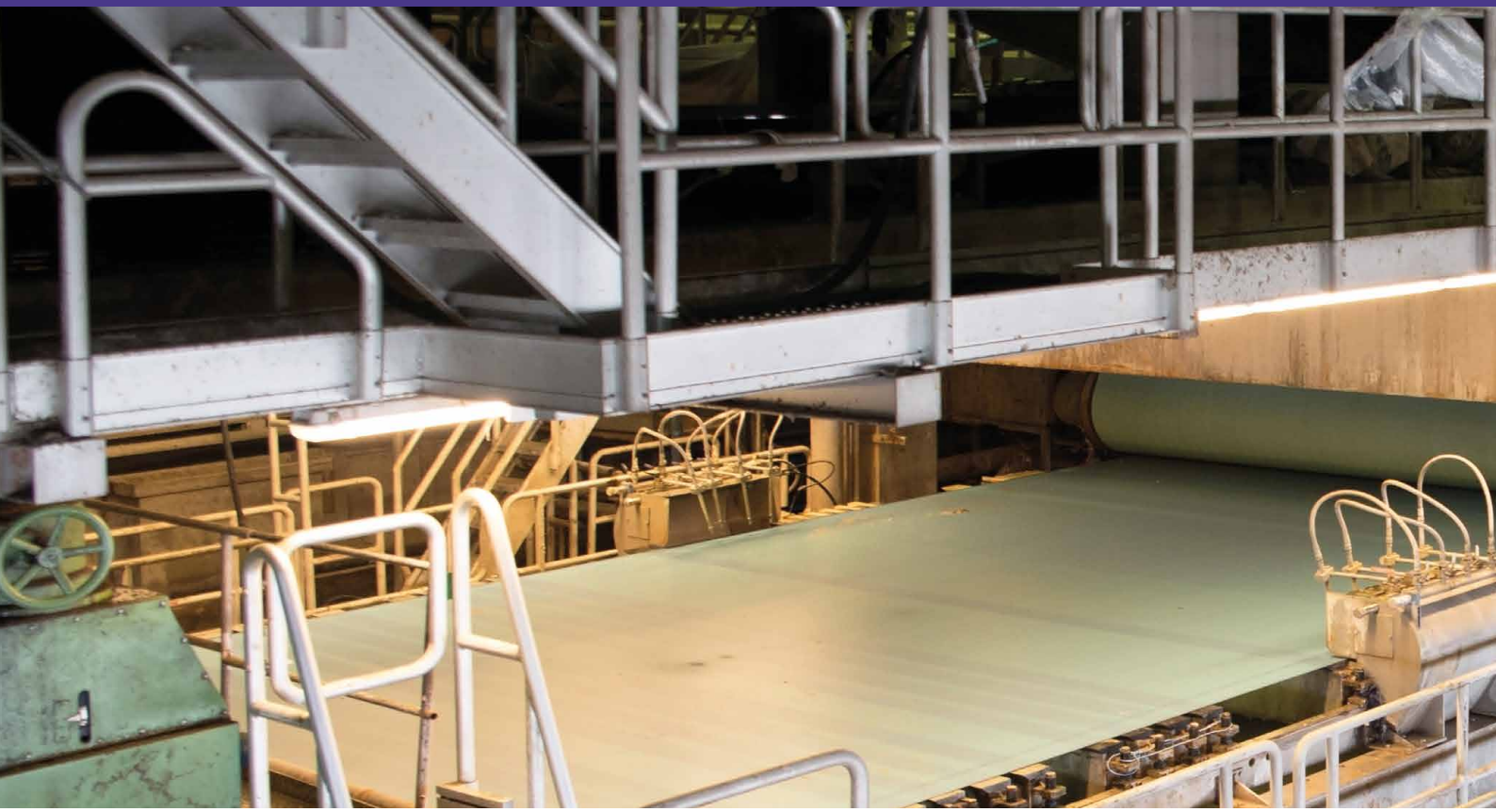
RHEINHÜTTE PUMPEN

An ITT Brand

RPROP

Horizontal metal pump





The RPROP

Propeller Circulating Pump

The RPROP series has been developed for high capacities and achieves optimum NPSH values at high efficiencies due to the specially designed propeller blades.

Design features

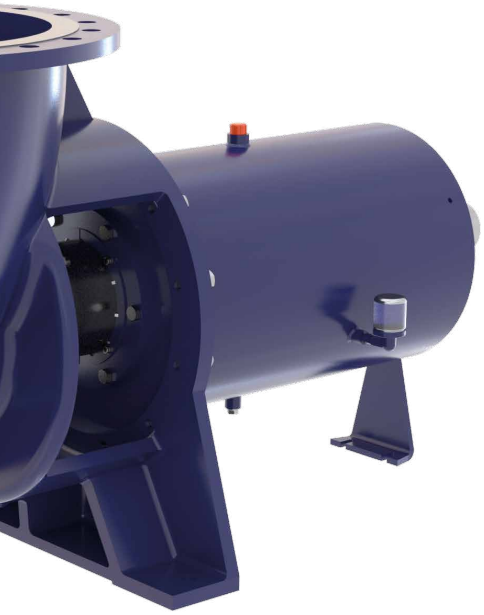
- Design: horizontal, single-stage
- Operating direction: in both flow directions possible
- Casing: cast tube bend (standard) or welded tube bend (FEA optimized)
- Impeller: Propeller or Inducer
- Bearing lubrication: oil lubrication
- Installation versions: Base plate, base frame, steel structure or stilt mounting
- Motor coupling: Direct coupled, with V-belt drive, with cardan shaft or with gear-box drive
- Ambient temperature: -20 °C to +60 °C (-4 °F to +140 °F)
- Solid content limit value: approx. 35 %

Options

- Flushing in different versions
- Temperature and vibration monitoring
- Equipment health monitoring with i-Alert®3
- Flange connections according to international standards
- Thermosyphon system
- Quench system
- Storage and priming tank
- Pump accessories

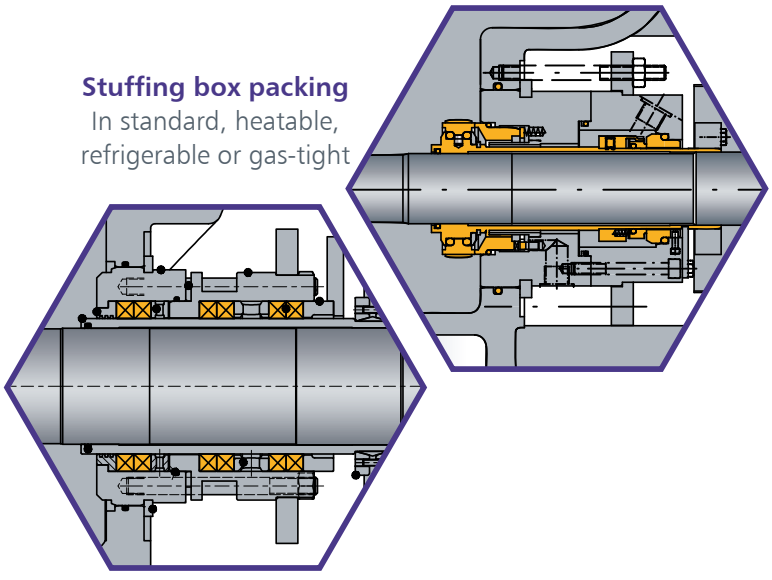
Technical data

	RPROP
Size DN	300 to 700
Q_{max} m^3/h (gpm)	8.500 (37424)
H_{max} m (ft)	6,5 (21)
Temperature °C (°F)	-20 to +150 (-4 to +302)
Standards	ISO 5199
Propeller impeller	Standard
Seal	Stuffing box packing, Mechanical seal



Mechanical seal
Single-acting, double-acting and stationary versions

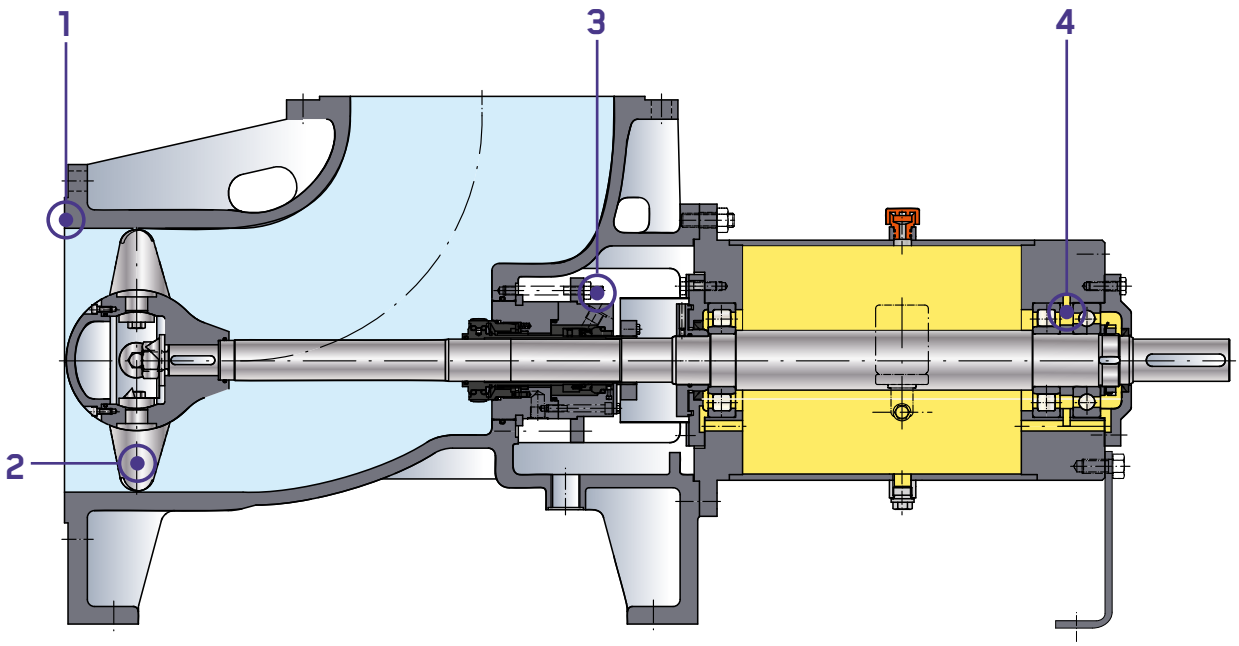
Stuffing box packing
In standard, heatable, refrigerable or gas-tight



Applications

- Fertilizers
- Crystallization plant
- Seawater
- Phosphoric acid
- Flue gas scrubber
- Seawater
- Brine
- Titanium dioxide
- Paper pulp

Main features



1 Robust, thick-walled cast casing for torsion-free absorption of the nozzle load. Flanges according to DIN PN 10.

2 The adjustable propeller blades extend the performance range coverage at design speed. After adaptation to the customer-specific operating point, the blades are tightly welded before delivery.

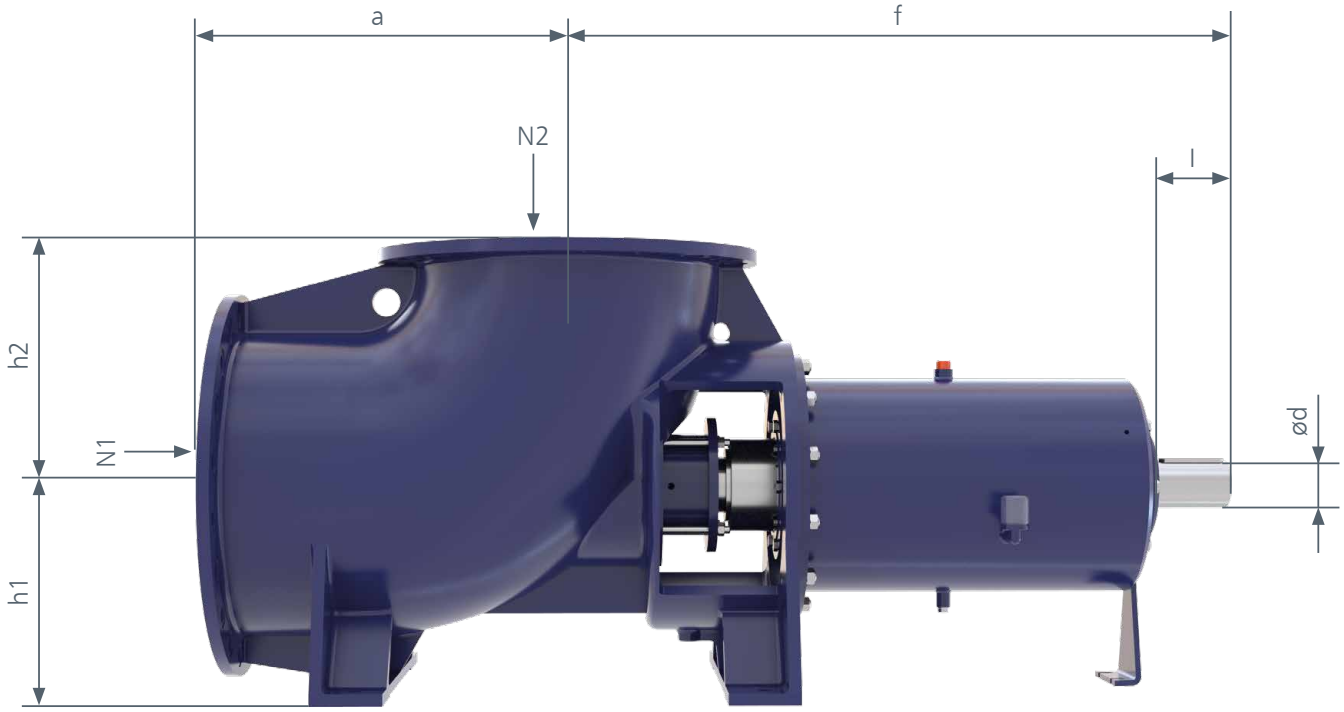
In addition, the adjustable blades enable operation in both flow directions.

3 All shaft sealing variants are in cartridge design (no adjustment necessary).
The fixing system of the cartridge unit allows its replacement without dismantling the bearing bracket.
The shaft sealing systems are interchangeable without any design changes to the pump casing.

4 The hydraulic loads are absorbed by a robust, oil-lubricated bearing, which is also ideally suited for V-belt drives.

The drawings essentially correspond to the execution. We reserve the right to make design changes.

Pumps & installation dimensions



Size	Pump dimensions				Shaft end		Flange dimensions	
	a	f	h_1	h_2	ød	l	N1	N2
300	475	850	300	300	48	110	300	300
400	505	1100	310	325	60	110	400	400
500	650	1190	375	425	75	140	500	500
600	725	1425	425	500	100	170	600	600
700	900	1500	500	585	110	170	700	700

N2 = Pressure flange

All dimensions are shown in millimetres.

Metal materials

The range of metallic materials includes a wide range of very different types of material which are distinguished mainly by their alloy composition, their structure and their manufacturing process. This gives each material its characteristic properties and allows an optimal material to be selected to suit the application.

1.4408

Fully austenitic chromium nickel molybdenum steels with a good general resistance to corrosion. These materials are suitable for pumping almost all organic liquids, 50 % caustic soda up to 90 °C (194 °F), KTL paint, pure phosphoric acid, dry chlorine, liquid sulphur, PTA and many other media.

1.4517

Duplex (Semi-austenitic), molybdenum and copper alloyed material with a high resistance to pitting and stress corrosion. This material is one of the super duplex steels. It can be used with crude phosphoric acid, containing solids at up to 100 °C (212 °F), hot sea water, many solutions containing chloride, FGD suspensions and sulphuric acid at all concentrations at low temperatures.

1.4529S

A high grade special material having a high resistance to acidic media containing solids and rich in chlorides. Used in absorber and quencher fluids of the FGD, for acidic and chloride containing gypsum slurries, in the manufacture of phosphoric acid, in vaporisation and crystallisation processes and also for hot sea water.

R 3020

Fully austenitic special stainless steel with a high molybdenum and copper content. High resistance to pitting, stress corrosion and intercrystalline corrosion. Suitable for 70 % caustic soda up to 200 °C (392 °F), sulphuric acid at all concentrations at low and medium temperatures, sulphuric acid pickling solutions, in certain areas of the manufacture of phosphoric acid, for pumping solutions with a high chloride content and in spin baths.

2.4686

Highly resistant nickel-base alloys for special applications such as liquids containing high chloride, hydrochloric acid, FGD liquids, very heavily contaminated phosphoric acid, hypochlorites and solutions with oxidising chlorides.

1.4539

Fully austenitic special stainless steel with a high molybdenum and copper content and high resistance to pitting, stress corrosion and intercrystalline corrosion. This material is one of the super duplex steels. It can be used with crude phosphoric acid, containing solids at up to 100 °C (212 °F), hot sea water, many solutions containing chloride, FGD suspensions and sulphuric acid at all concentrations at low temperatures. The material also has good general weldability.

1.4541

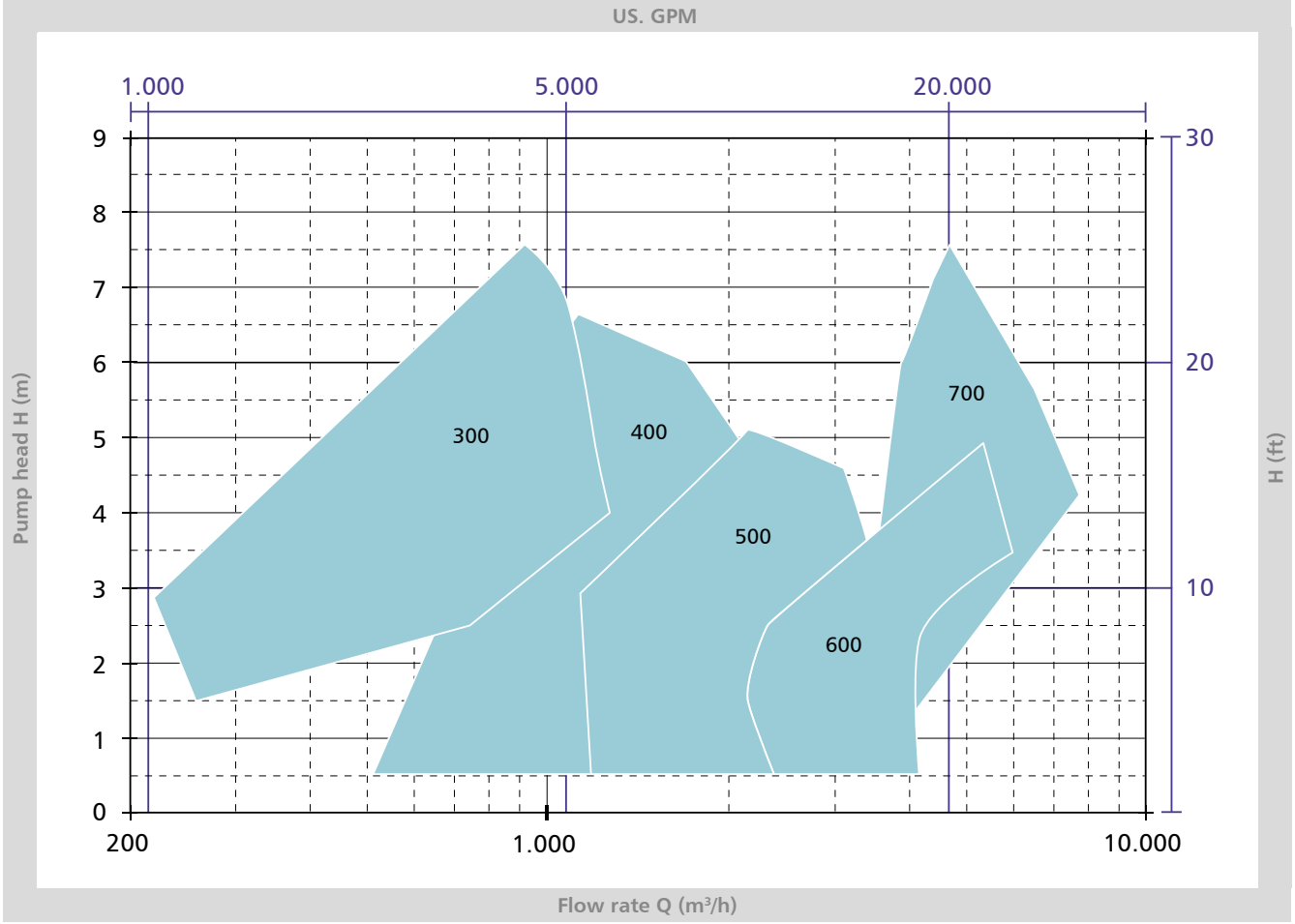
High-quality, molybdenum-free material, which is suitable for applications such as pumping nitrate salt solutions, media containing nitric acid with medium concentration, as well as organic nitrogen compounds such as amino acids. The material also has good general weldability.

1.4571

Fully austenitic chromium nickel molybdenum steels with a good general resistance to corrosion. These materials are suitable for pumping almost all organic liquids, caustic soda, pure phosphoric acid, organic acids, chloride-free salt solutions and many other media where product purity is important. The material also has good general weldability.

Capacity ranges

RPROP : 50 Hz



300 : n = 500-1500/min
400 : n = 500-1200/min
500 : n = 500-850/min
600 : n = 500-750/min
700 : n = 400-630/min

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