

RSU

Horizontal metal pump





The RSU

Chemical circulation pump

Axial flow chemical circulation pumps in the RSU range are intended for large capacities, and achieve favourable NPSH values by means of a specially designed feed screw. This makes them particularly suitable for the circulation of various concentrations of acids, and of old or weak contaminated acids.

The Silicon Iron castings used are more than a match for this type of complex corrosive and abrasive service at high temperatures. The material is a Silicon Iron alloy, containing 15% Si, which has a very high resistance to corrosion in H_2SO_4 at any concentration, even at high temperatures.

Design features

- Design: horizontal, single-stage
- Bearing lubrication: grease lubrication
- Installation versions: Base plate, base frame or stilt mounting
- Motor coupling: Direct coupled or V-belt drive
- Ambient temperature: : -20 °C to +60 °C
- Solid content limit value: approx. 35 %

Options

- Equipment health monitoring with patented i-Alert®2
- Flange connections according to international standards
- Pump accessories



Applications

Their areas of application are acid reconcentration plant and spent acid evaporation plant, as well as the regeneration of waste acids and reaction liquors.

Type RSU circulation pumps have proved to be excellent in evaporation plants for weak H_2SO_4 acid, which occurs, for example, in the production of TiO_2 .

The circulation pumps used in these processes perform excellently, pumping acids at concentrations from 20 % to 95 %, at temperatures of up to 200 °C, and which contain up to 35 % of solid matter.

Technical data

	RSU
Size DN	400 to 500
Q_{max} m ³ /h (gpm)	3.400 (14970)
H_{max} m (ft)	6 (19.7)
Temperature °C (°F)	-20 to +150 (-4 to +302)
Standards	ISO 5199
Suction impeller	Standard
Propeller	Option
Seal	Hydrodynamic shaft sealing

Main features

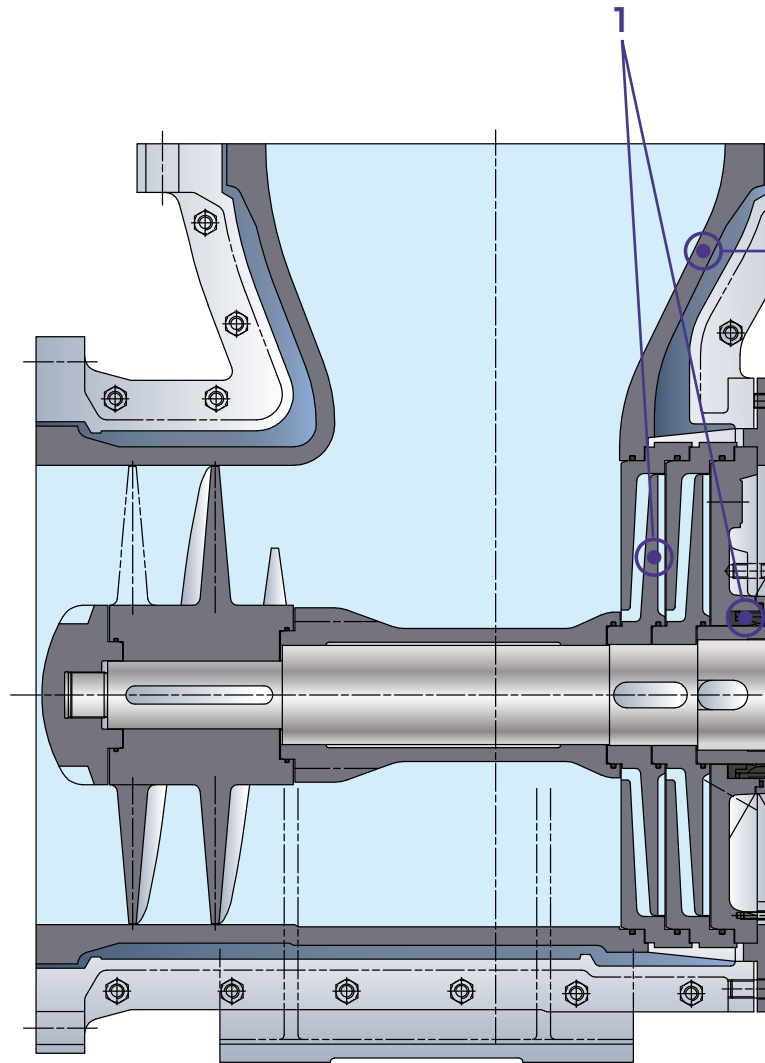
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Hydrodynamic shaft seal

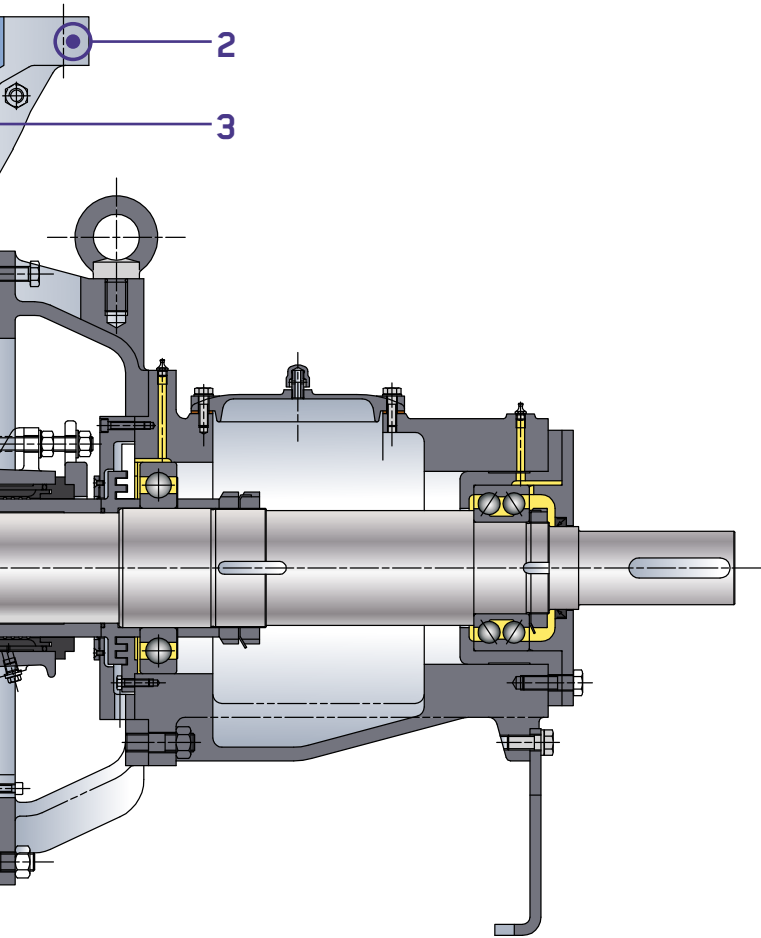
The hydrodynamic shaft seal works without contact and without wearing parts. It requires no maintenance of any sort and is particularly suitable for continuous operation. With the aid of downstream auxiliary propellers the shaft gland is completely relieved hydrodynamically from the pump and inlet pressure. The medium is kept away from the shaft gland.

When the pump is operating a liquid ring appears in the auxiliary impeller which isolates the inner pump chamber from the atmosphere without any leakage. The hydrodynamic shaft seal thus only functions fully during operation of the pump. After switching off the pump a stationary seal takes over the task of sealing the shaft gland from the outside. For this a choice can be made between a simple packing gland or a pneumatic system.

The hydrodynamic shaft seal, with few exceptions, is suitable for all pure or solids bearing media which occur in the chemical industry.



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



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Solid design

To protect it from external forces the pump casing is embedded in an S.G. Iron, GGG 40.3, armoured housing by means of an resistant sealing compound. The bearing bracket is also made of GGG 40.3.

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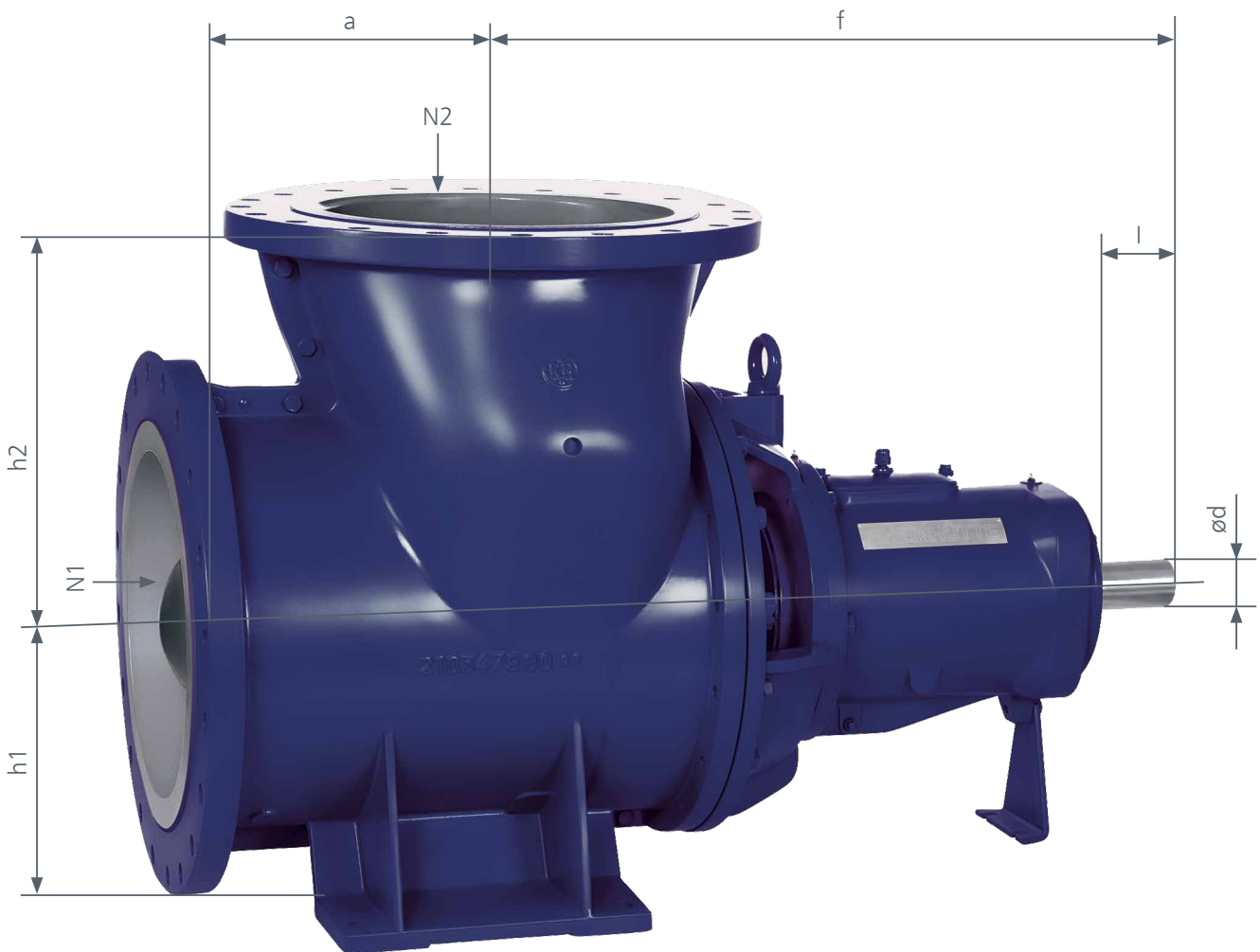
Material: SIGUSS

Rheinhütte Pumpen is one of the few pump manufacturers who offer this special material in their range. All pump parts of the RSU coming into contact with the pumped liquid are made of silicon cast iron (SIGUSS).

SIGUSS is a highly corrosion resistant chromium alloy silicon cast iron with a good resistance to wear and increased chemical resistance.

This material is chemically resistant to H_2SO_4 at all concentrations up to boiling point, therefore for all sulphuric acid applications including the evaporation of waste sulphuric acid, SIGUSS is virtually indispensable.

Pumps & installation dimensions

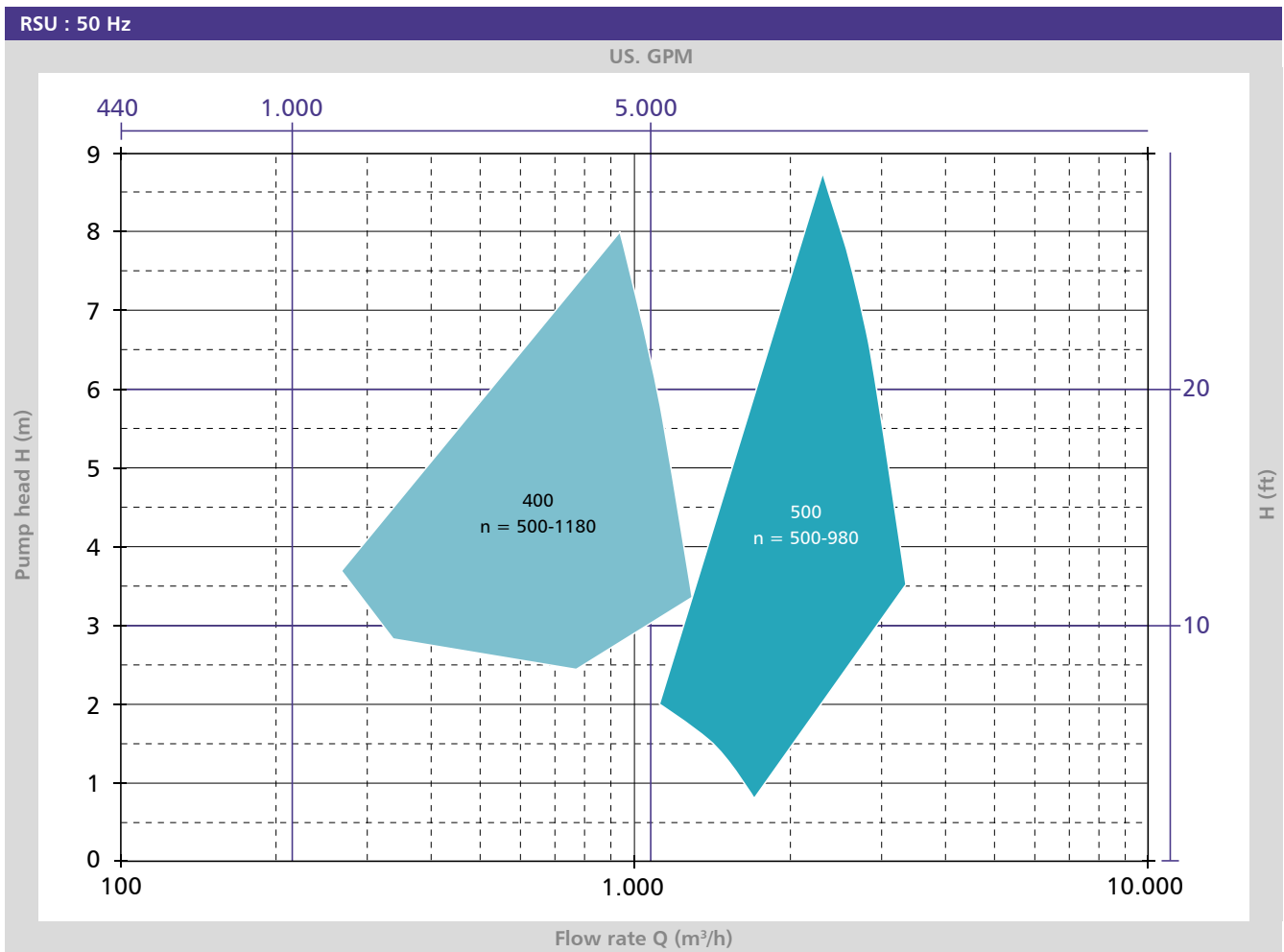


Size	Pump dimensions				Shaft end		Flange dimensions	
	a	f	h ₁	h ₂	ød	l	N1	N2
250	365	700	230	330	45	110	250	250
300	395	980	275	440	75	140	300	300

N2 = Pressure flange

All dimensions are shown in millimetres.

Capacity ranges





— An ITT Brand

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