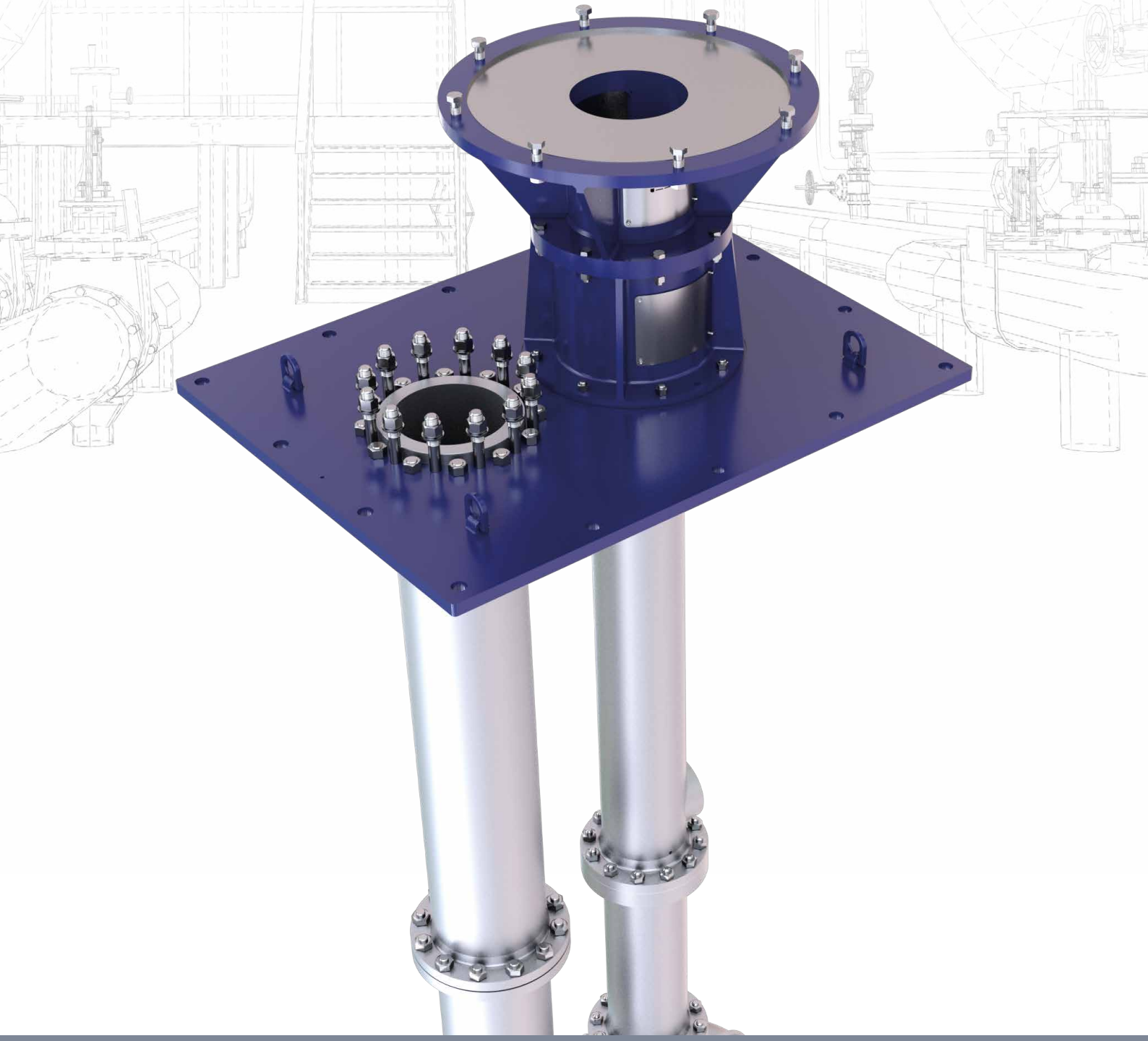
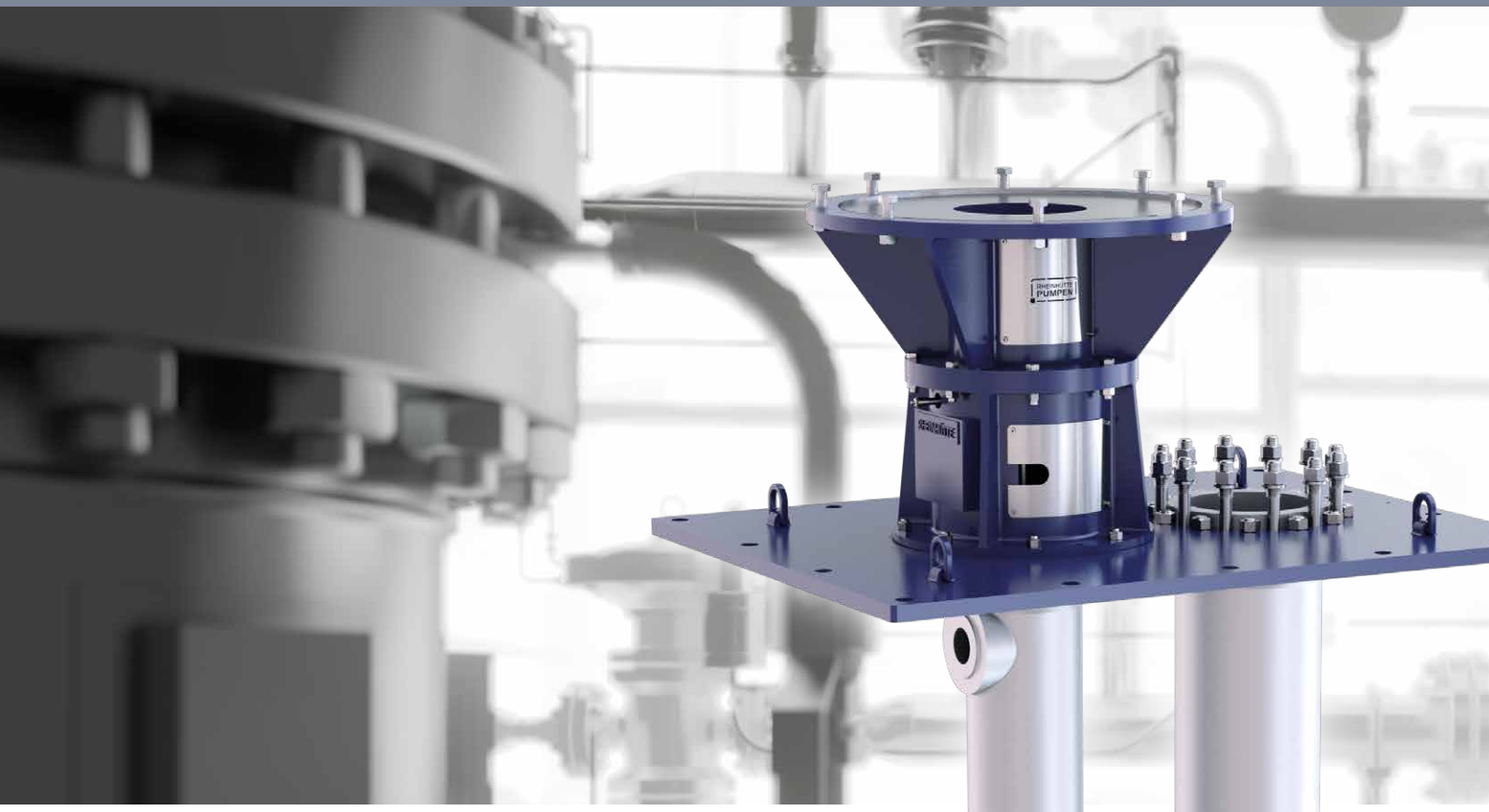
RHEINHÜTTE PUMPEN

An ITT Company

GVRN

Vertical Metal Pump





The GVRN

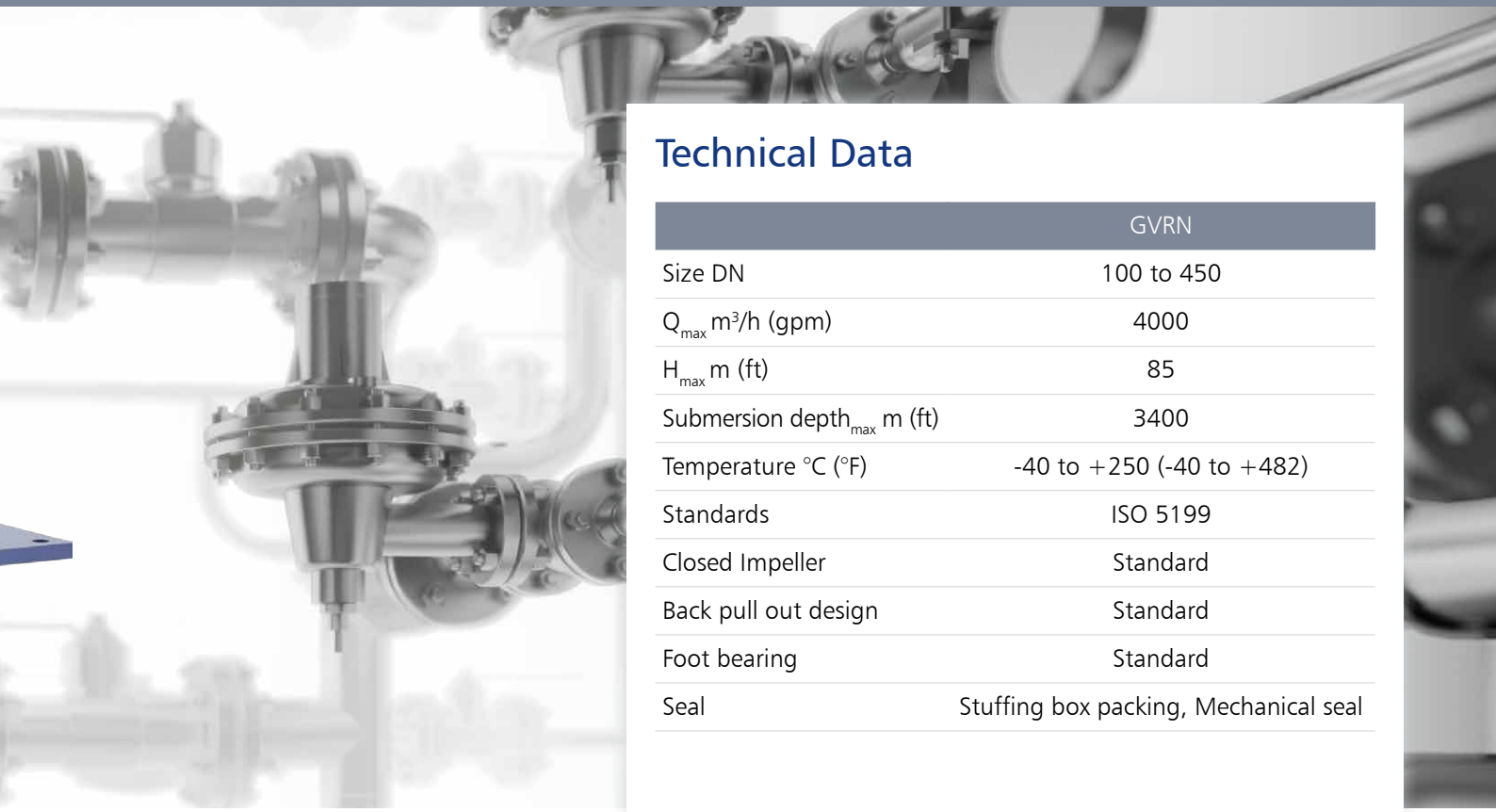
Special pump for almost all sulphuric acid applications

The GVRN pump range has been specially designed for use in sulphuric acid. 9 sizes are available to cover the widest range of difficult and sophisticated applications as possible.

Design Features

- Design: vertical, single-stage
- Casing design: double volute casing
- Pump installation: wet or dry
- Bearing lubrication: grease lubrication
- Sleeve bearing lubrication:
  by the pumped medium or external lubrication
- Installation versions: Vessels in medium or steel structure (dry installation)
- Ambient temperature:
  -20 °C to +60 °C (-4 °F to +140 °F)



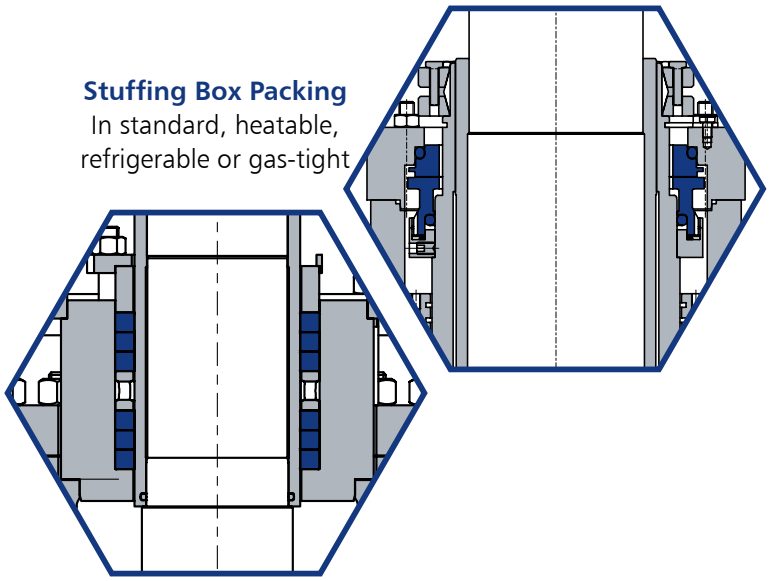


Technical Data

	GVRN
Size DN	100 to 450
Q_{max} m³/h (gpm)	4000
H_{max} m (ft)	85
Submersion $depth_{max}$ m (ft)	3400
Temperature °C (°F)	-40 to +250 (-40 to +482)
Standards	ISO 5199
Closed Impeller	Standard
Back pull out design	Standard
Foot bearing	Standard
Seal	Stuffing box packing, Mechanical seal

Mechanical Seal
Single-acting and
double-acting versions

Stuffing Box Packing
In standard, heatable,
refrigerable or gas-tight



Options

- Temperature and vibration monitoring
- Flange connections according to international standards
- Suction tube and/or suction strainer design
- Gas supply systems
- High temperature design with encapsulated screw connections and single acting gas lubricated mechanical seal
- Pump accessories

Applications

Usable in almost all sophisticated H_2SO_4 applications.

Materials 1.4136S / RHRS

Corrosion and erosion resistant high alloy ferritic cast steel. Typical applications are highly concentrated sulphuric acid up to 225 °C (437 °F), oleum, fertilizer RHRS production, crude phosphoric acid containing solids.

Main Features



1. Stable shaft supported by grease-lubricated angular contact ball bearings above the support flange and corrosion-resistant sleeve bearings with medium lubrication.

2. Service-friendly cartridge-type shaft seal with stuffing box packing and locking ring.

3. Plated sole plate and bolting connections available.

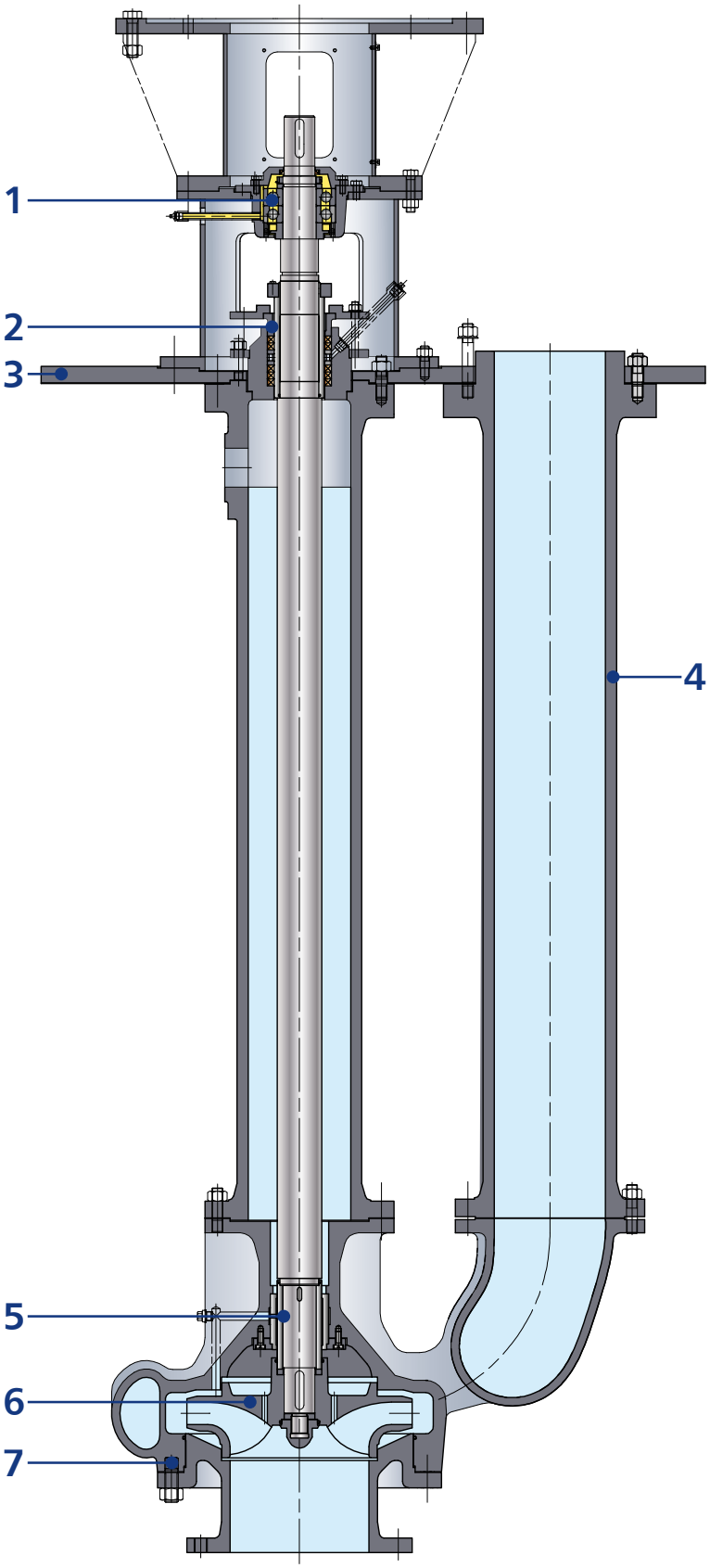
4. Simple adaptation of the pump to existing plant dimensions, through flexible design of the sole plate and flexible positioning of the pressure pipe on the sole plate.

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

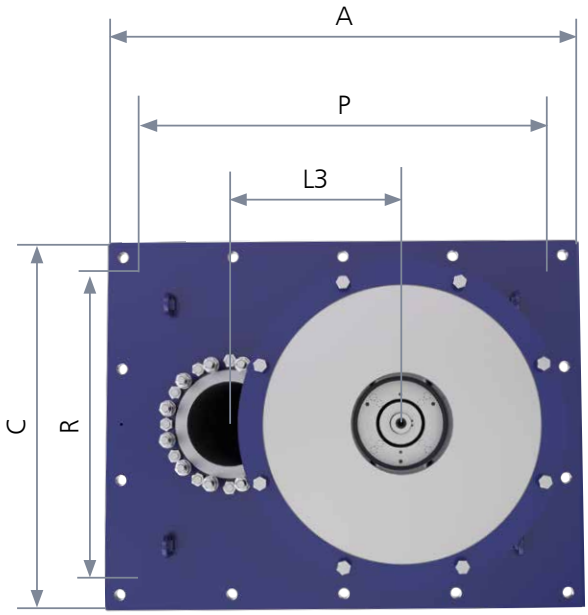
5 Long sleeve bearing service life, thanks to radial load compensation in the double volute, and flow erosion in the hydraulics minimized through reduced flow speeds in the double volute.

6 Broad range of hydraulics designed for the operational aspects of modern sulphuric acid plants.
Optimum efficiency of over 80 %.

7 Cast version with generous wall thickness for a long service life, and a cost-optimized welded design variant is also available.



Pumps & Installation Dimensions





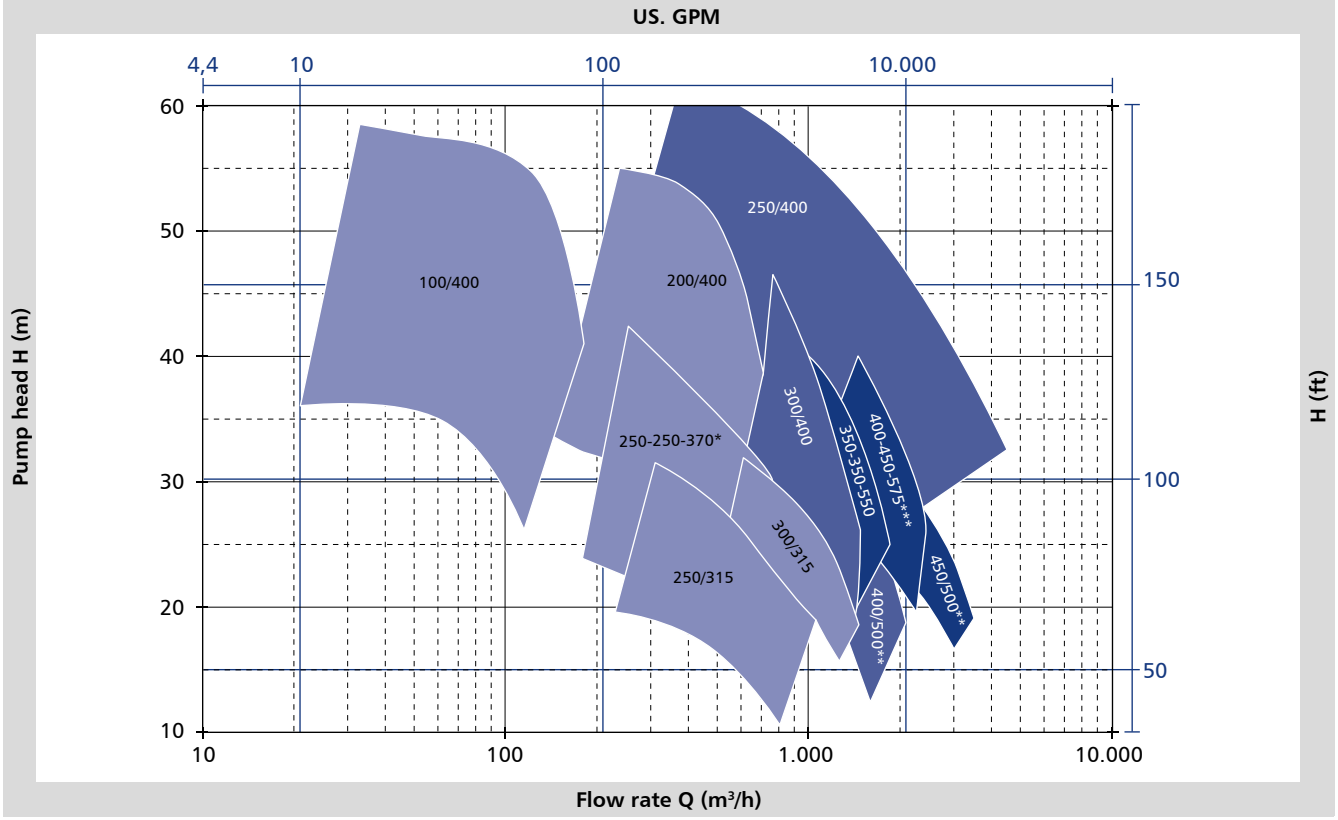
Size	BB	TT (Standard)	Pump dimensions			Sole plate				Opening for Installation		Flange dimensions	
			H	h1	ød	g	A	C	L3	P	R	N1	N2
100-400	1	1900	345	135	55	31	1040	830	375	810	600	125	100
200-400	1	2100	345	135	55	31	1260	980	450	1000	720	250	200
250-315	1	2100	345	135	55	31	1410	1090	500	1120	800	300	250
250-250-370	1	2100	345	135	55	48	1372	940	602	1194	762	250	250
300-315	1	2100	345	135	55	31	1505	1235	500	1215	945	300	300
250-400	2	2060	450	210	80	45	1630	1230	600	1250	940	300	250
300-400	2	2100	450	210	80	45	1630	1230	625	1340	940	350	300
400-500	2	2100	450	210	80	45	1870	1470	725	1600	1200	400	400
350-350-550	2V	2170	450	210	100	48	2060	1220	945	1830	1025	350	350
450-500	2V	2170	450	210	100	45	2000	1720	750	1800	1520	450	450
400-450-575	2V	2170	450	210	100	48	2337	1397	1140	2133	1194	400	450

BB = Bearing bracket TT = Depth of submersion N2 = Pressure flange

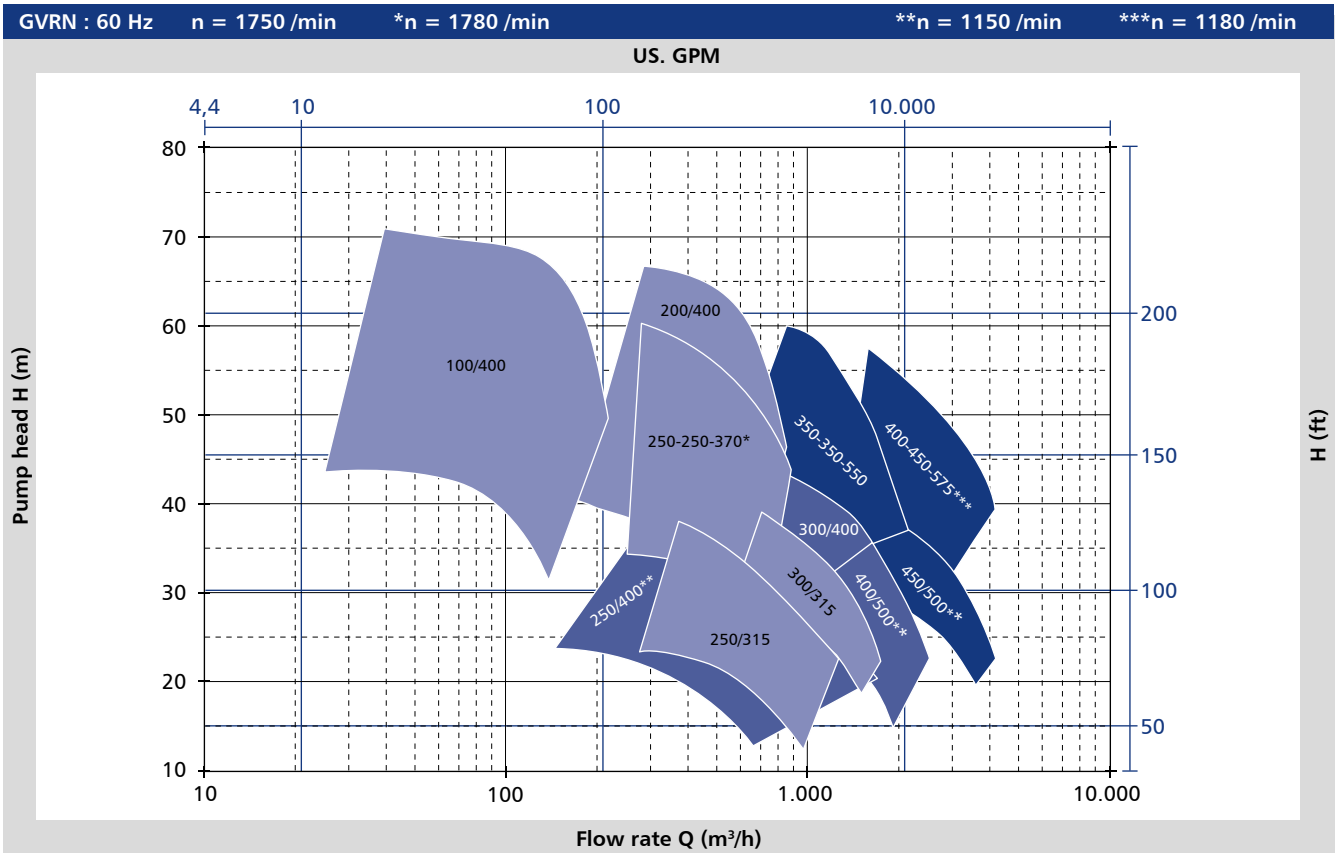
All dimensions are shown in millimetres.

Capacity Ranges

GVRN : 50 Hz n = 1450 /min *n = 1480 /min **n = 950 /min ***n = 980 /min



GVRN : 60 Hz n = 1750 /min *n = 1780 /min **n = 1150 /min ***n = 1180 /min



Bearing bracket 1 2 2v



RHEINHÜTTE PUMPEN

An ITT Company

ITT RHEINHÜTTE Pumpen GmbH
Rheingaustrasse 96-98
D-65203 Wiesbaden
T +49 611 604-0
info@rheinhuette.com
www.rheinhuette.com