

**Vertical sulfuric acid pump
type Ensival Moret VAS**



Vertical sulfuric acid pump type Ensival Moret VAS

The VAS pump range has been specifically designed for sulfuric acid pumping applications. Its proven and reliable design ensures higher mean time between maintenance (MTBM) while offering high mechanical performance. A specific VAS vertical turbine pump design for heat recovery systems is also available and offers the most reliable and safest pumping solutions for high-temperature sulfuric acid media.

Main applications

The VAS acid pump range has been designed to meet the requirements in H₂SO₄ production plants such as

- absorption tower
- drying tower
- heat recovery system

Features and benefits

Sulzer's VAS pumps offer high efficiency and durability. The advanced design combined with high-quality materials make the pumps more reliable allowing a significant reduction in the plant down time while increasing the operation efficiency. Key benefits include:

High corrosion resistance and durability

- Wide range of highly corrosion-resistant materials ensures exceptional resistance against wear in sulfuric acid pumping applications and guarantees high durability of the pump
- Highly efficient non-contacting sealing system which reduces head pressure ensuring minimized corrosion
- Unique and compact design with totally flooded single rise discharge column featuring only one air/liquid interface

High reliability

- Superior operational performance proven with longer maintenance-free operation, up to four years from first start-up
- Symmetrical design of diffuser casing minimizes radial loads and shaft deflection which ensures longer pump service life

Easy assembly and maintenance

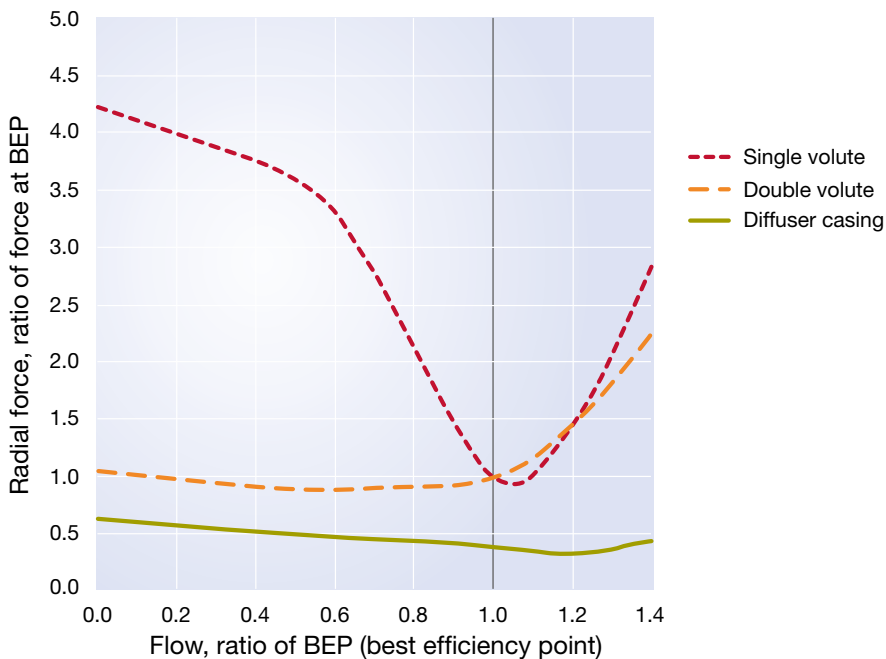
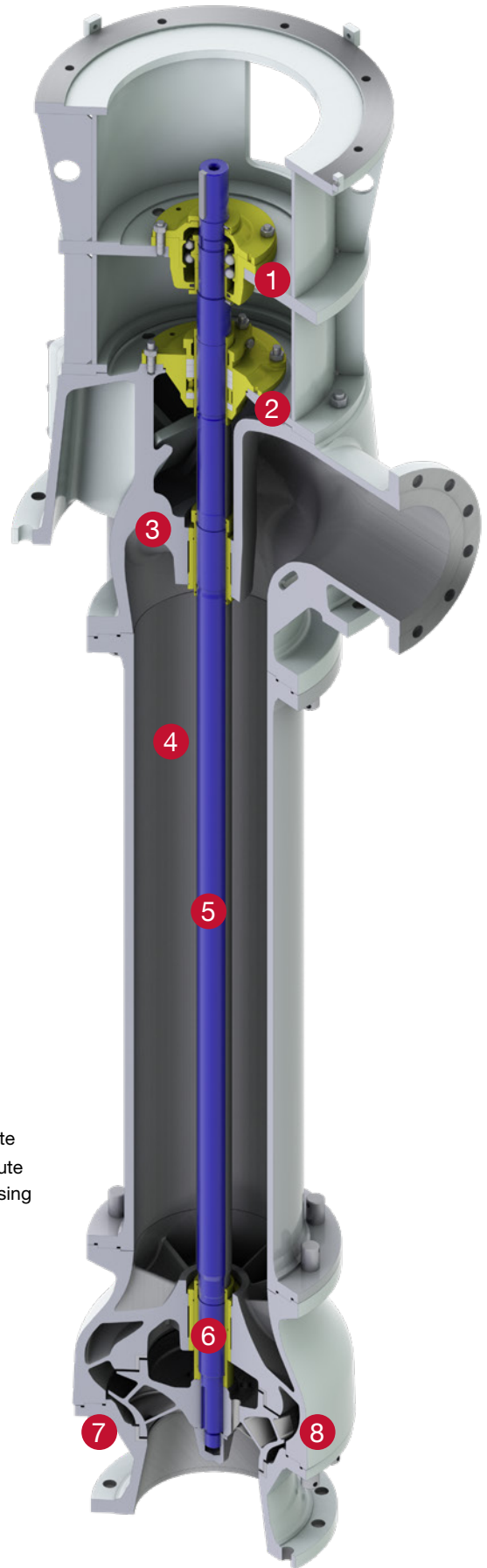
- Bolts are fully protected against corrosion which allows easy dismantling/reassembling and facilitates maintenance of the pump
- Symmetric design with circumferential mounting plate ensures easy assembly and installation of the pump and bolting to the tank

Safety

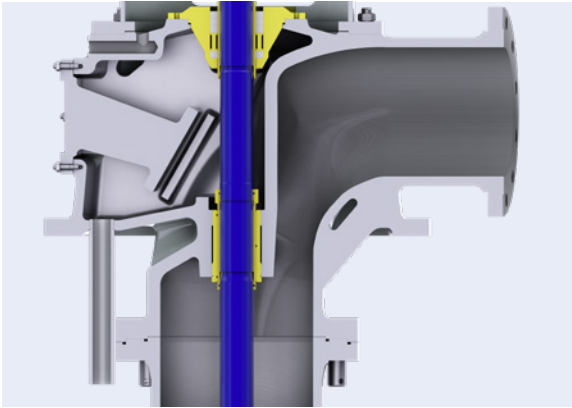
- Highest standard requirements of safety for staff and environment exceeded due to the unique design which reduces and prevents acid vapors

Design

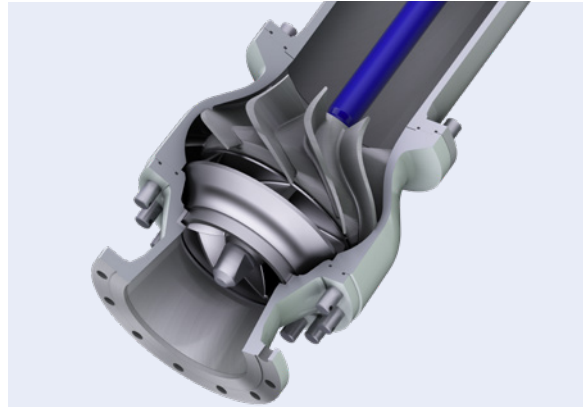
- 1 Heavy duty bearing frame**
 - Extended pump lifetime
- 2 Auxiliary packing rings**
 - Prevent acid vapors and minimize corrosion
- 3 Sealing with throttle bushing**
 - Non-contacting shaft seal which reduces head pressure and minimizes leakage overflow
- 4 Pump column totally flooded**
 - Only one air/liquid interface outside the discharge column to minimize corrosion damage
- 5 FEP (fluorinated ethylene propylene) lined shaft**
- 6 Closed impeller**
 - Offers high efficiency and low net positive suction head (NPSH)
- 7 Axial loads fully balanced by front/back casing wear rings and balancing holes**
 - Extended bearing lifetime
- 8 Symmetrical diffuser casing**
 - Lower level of radial thrust on a wide operation range



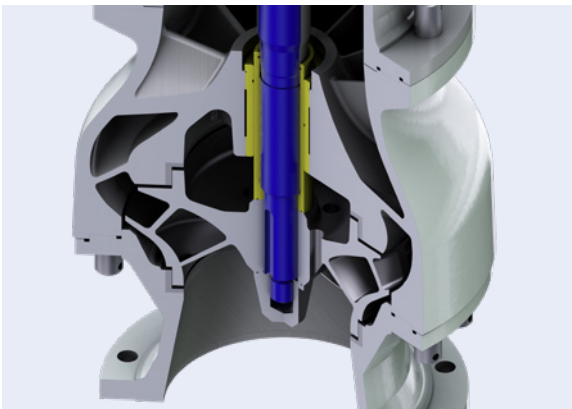
Construction details



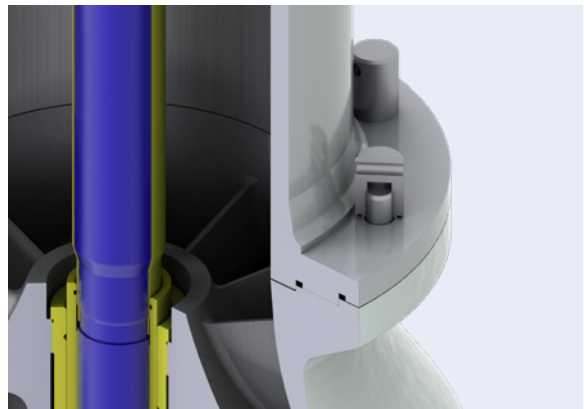
Collector pipe takes leakage overflow back to the tank without contact with support column



Symmetrical diffuser casing ensures lower radial loads on a wide range of operation



Axial balancing by front/back wear rings and balancing holes



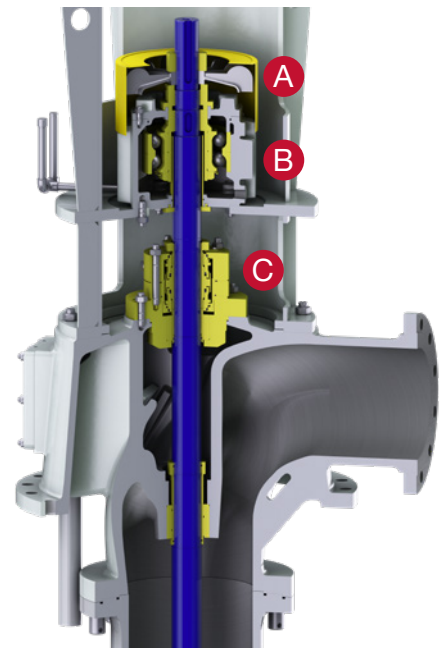
Mating faces fully protected against corrosion by three-fold sealing

Additional design features

VAS pump range for heat recovery systems

Specific construction for high-temperature sulfuric acid applications up to 250°C / 480°F:

- Efficient air-cooled bearing housing system with air fins and bearing fan significantly reduces temperature and avoids risks of overheating (A)
- Oil-lubricated bearing (B)
- Reliable design by single mechanical seal with flushing API 32
- Innovative design with back-to-back dual pressurized mechanical seal ensures maximum safety and reliability due to the absence of contact with the pumped liquid (C)
- Flow and pressure always controlled through a monitoring panel



Vertical sulfuric acid pump type Ensival Moret VAS



Oil and gas



Hydrocarbon processing



Power generation



Pulp, paper and board



General industry



Chemical process industry

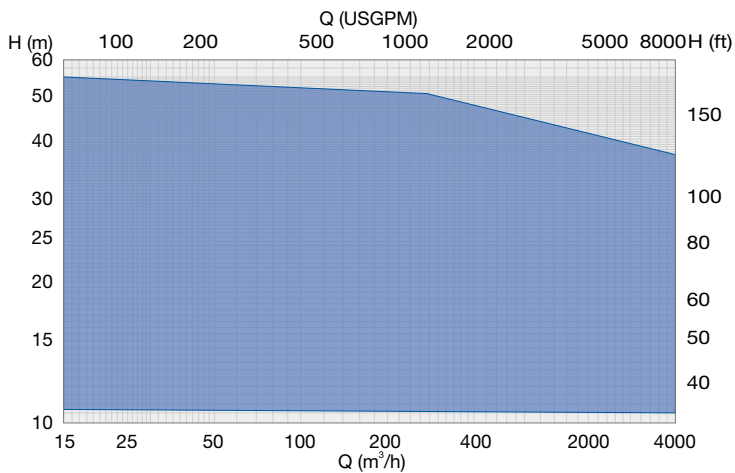


Water and wastewater

Operating data

50 Hz		60 Hz
up to 4'000 m ³ /h	Capacities	up to 17'500 USgpm
up to 45 m	Heads	up to 148 ft
up to 20 bar	Pressures	up to 290 psi
up to 150°C	Temperatures	up to 291°F
up to 1'500 rpm	Maximum speed of rotation	up to 1'800 rpm

Performance range



Higher capacities and heads available upon request.

Materials

Pump part	Material
Pump casing	Acid-proof cast iron or special stainless steel
Impeller and wear rings	Special stainless steel
Sleeve bearings	Ferro-silicium or special alloy
Shaft	Duplex stainless steel with FEP lining



www.sulzer.com

E10481 en 10.2018, Copyright © Sulzer Ltd 2018

This brochure is a general presentation. It does not provide any warranty or guarantee of any kind. Please, contact us for a description of the warranties and guarantees offered with our products. Directions for use and safety will be given separately. All information herein is subject to change without notice.