

# SULZER

Flow Equipment

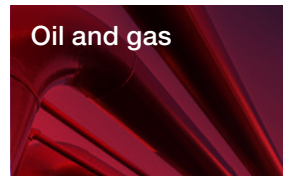
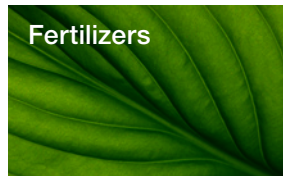
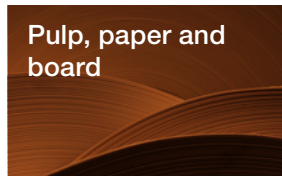
## VM vertically suspended sump pump



# Main industries and applications

The VM pump range has been designed for pumping all kinds of clean and contaminated liquids. Due to its great adaptability through a wide range of designs and hydraulics, the VM pump is perfectly suitable for all industrial sump pump applications such as:

- Industrial water
- Effluents
- Corrosive and abrasive mixtures
- Hazardous fluids
- Abrasive liquids and/or liquids containing large solids
- Abrasive fibrous slurries and/or fibrous slurries containing large solids
- Abrasive non-fibrous slurries and/or non-fibrous slurries containing large solids



## Features and benefits

Sulzer's VM pumps offer high performance and durability. The advanced design combined with a wide range of materials make the pumps more reliable while increasing operational efficiency. Key benefits include:

### High hydraulic selection versatility

- Modular construction with a wide range of available hydraulic designs allows optimized selection matching all application-specific requirements
- High interchangeability allows optimized pump and parts inventory

### Extensive material availability

- Wide range of materials including highly abrasion-resistant/corrosion-resistant options ensures exceptional resistance against wear in corrosive or abrasive pumping applications and guarantees high durability of the pump

### High reliability and durability

- Line shaft assembly with optimized intermediate bearing ensuring longer service life
- Flushing of highly reliable support bearing allows safe operation in extreme conditions
- Superior operational performance proven with longer maintenance-free operation

### Ease of assembly and maintenance

- Simple and robust construction allows easy dismantling/reassembly and facilitates maintenance of the pump

# Modular line shaft design

## 1 Heavy-duty cantilever bearing

- Two high-capacity grease-lubricated single row tapered roller bearings for axial and radial load to guarantee long bearing lifetime
- Axial adjustment to optimize clearances between casing and impeller

## 2 Shaft

- Heavy-duty shaft, single piece or coupled shaft for extended length
- Strong and rigid intermediate support bearing with shaft sleeve for longer lifetime and ease of maintenance

## 3 Column support pipe

- Robust assembly with sturdy support pipes to ensure perfect alignment between bearing frame and pump casing
- Upper side opening to prevent contact between liquid column and roller bearings

## 4 Hydraulics

- Modular construction with various Sulzer designs allows optimized hydraulic selection

## 5 Impeller options

- Various impeller designs to accommodate a wide range of applications (see hydraulic selection)

## 6 Suction options

- Standard suction bell design to improve suction conditions
- Strainer and extended length suction pipe available as options (see construction variants)

## 7 Discharge pipe

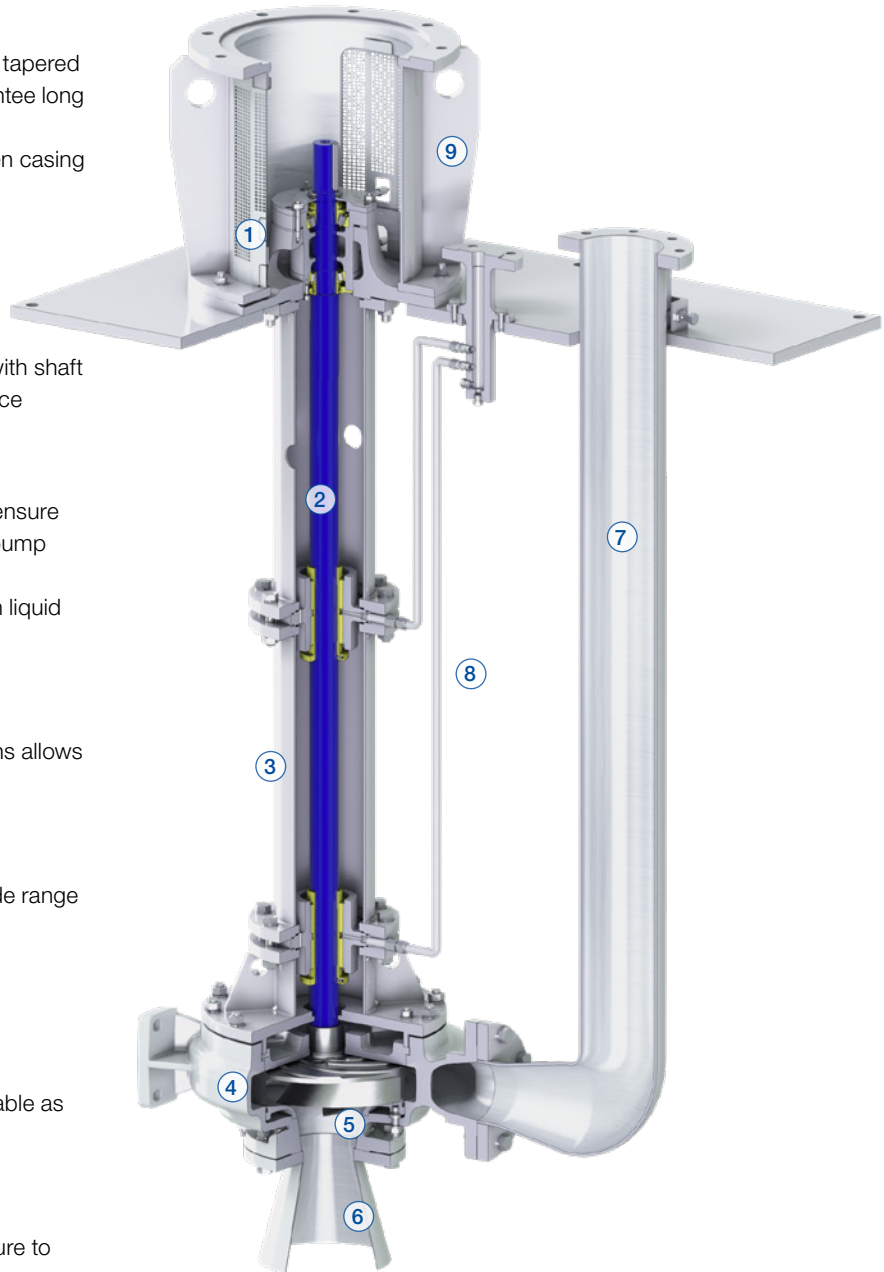
- Robust and simple design with adjustment feature to enable easy assembly
- EN PN 16 or ASME 150# discharge flange

## 8 Column bearing lubrication

- External flush for contaminated liquids
- Pumped liquid recirculation for clear liquids

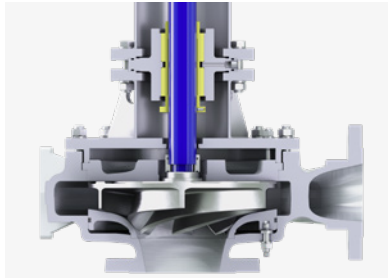
## 9 Drive options

- Transmission by direct drive with coupling or V-belts (see construction variants)
- Designed to accommodate IEC and NEMA motor

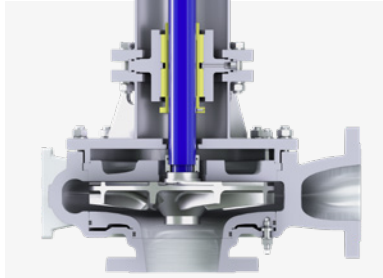


High reliability  
Minimum life cycle costs  
Easy maintenance

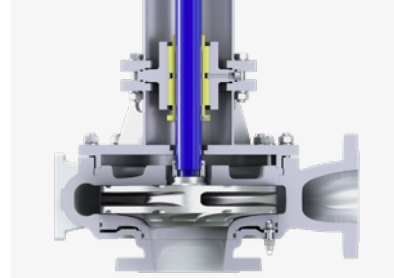
# Hydraulic selection



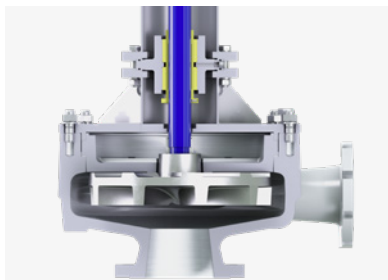
Open impeller for clear and slightly contaminated liquids



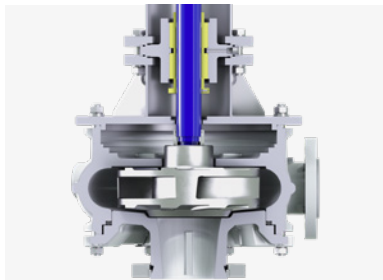
Non-clogging vortex impeller for liquids containing large particles



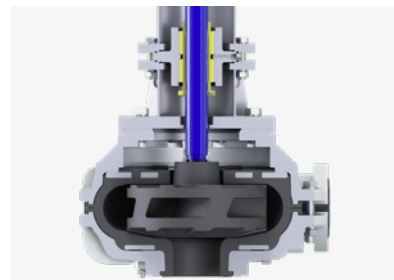
Wear-resistant impeller for abrasive liquids



Vortex impeller for slurries



Closed impeller for slurries



Closed (rubber-lined) impeller for slurries

## Construction variants

### Transmission options

- Direct drive with coupling
- Belt drive



### Suction design options

- Extended length suction pipe allowing lower-level pumping
- Suction strainer for large solids shielding



# Materials

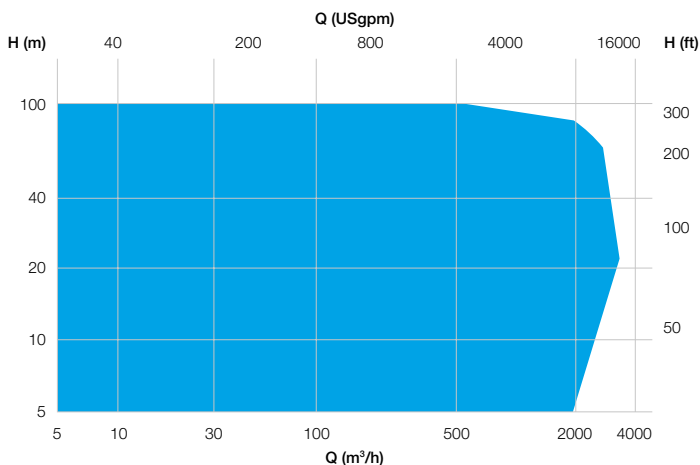
Material	Sulzer code	Specification	Hydraulics
Cast iron	53/F25	ASTM A48 Class 35 B	AHLSTAR NPP, EMTECH
Ductile cast iron	5H	ASTM A395 Grade 60-40-18	AHLSTAR A
Martensitic cast steel	4E/PH1	ASTM A747 type CB7Cu-2 (H900)	AHLSTAR A/WPP, EMTECH
Austenitic stainless steel	43 4U	ASTM A743 Grade CN-7M Avesta 654SMO (S32654)	EMTECH, PLR AHLSTAR A/NPP/WPP
Duplex stainless steel	41 4L/U55 4T/P5M	ASTM A890 Grade 3A ASTM A890 Grade 1B ASTM A890 Grade 5A	AHLSTAR A/NPP/WPP AHLSTAR A/NPP/WPP, EMTECH, PLR AHLSTAR A/NPP/WPP, EMTECH, PLR
Wear-resistant chromium iron	5B/EXR CRM FC1	ASTM A532 IIIA Gx100CrMo30-2 Gx160CrNiMo38-5-2	AHLSTAR WPP, PLR, EMW-M PLR, EMW-M PLR, EMW-M
Rubber-lined	NBR	Natural rubber	EMW-R

## Operating data

Capacities	Heads	Pressures	Temperatures	Maximum speed of rotation	Length*
up to 3'500 m <sup>3</sup> /h	up to 100 m	up to 20 bar	up to 120°C	up to 3'000 rpm	up to 6 m
up to 15'500 USgpm	up to 330 ft.	up to 290 psi	up to 250°F	up to 3'000 rpm	up to 20 ft.


\* From baseplate to volute suction flange (depends on operating parameters)

## Performance range



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**The Sulzer Flow Equipment division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.**

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The Flow Equipment division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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