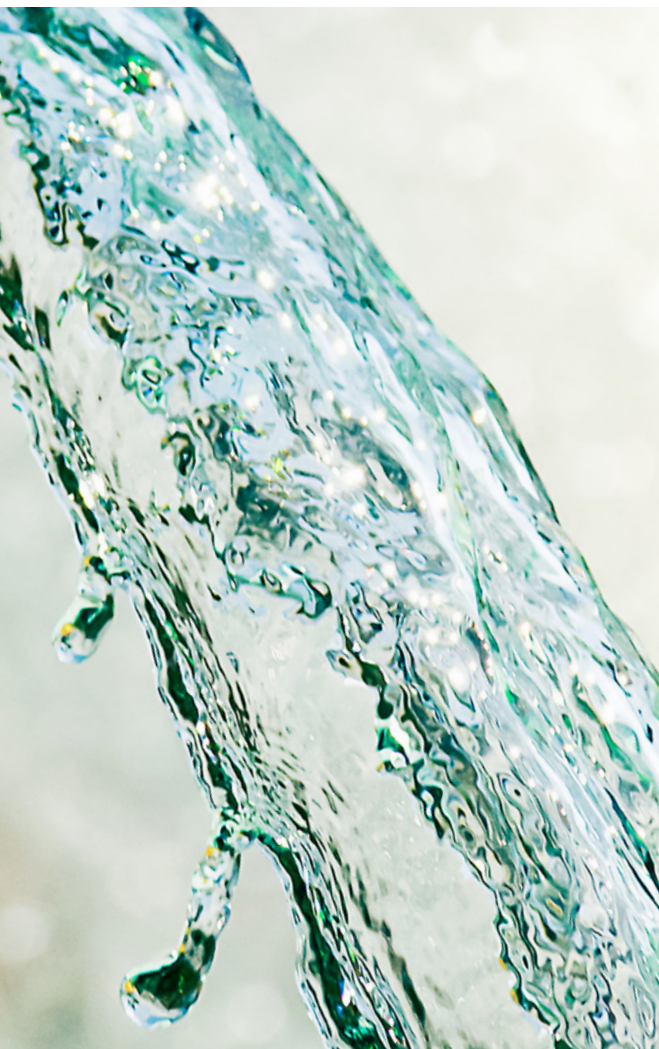




Committed to excellence

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# Pumping and mixing solutions for mine water management









# The Sulzer advantage

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Managing water resources is one of the major challenges of the mining industry today. Sulzer develops the right pumping solutions in response to requirements by the mining companies. These are driven by the need to control the use of water resources, understand the environmental impact and consider the fact that water can be both scarce and expensive.

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## Designed to your needs

- Sulzer works closely with its customers to develop and design the optimum pumping solution for an individual application or the entire mine dewatering system
- Because the reliability of a pumping system is often dependent on its design, Sulzer's experienced team of engineers dedicates their know-how to each customer's success



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## Focused on efficiency

- Selecting the right pump is one key factor in boosting operational efficiency; Sulzer is the specialist to provide efficient pumping solutions
- Thanks to leading-edge products, Sulzer contributes to improving customers' equipment efficiency



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## Global presence

Sulzer is truly a global corporation with production plants as well as sales and service locations all over the world.







# Reliable mine water expertise

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Reliability is crucial in mining. Due to erosion, corrosion and lack of regular maintenance, pump efficiency and reliability are continuously challenged. We are well aware of the harsh conditions and develop state-of-the-art equipment, capable of meeting even the most demanding needs of the mining customers.

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## Proven expertise

- By working with Sulzer, you benefit from:
- Proven application experience and know-how
- Custom-engineered solutions to meet specific application needs
- Well-placed sales, service and delivery network close to you

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## Value you can count on

- Extending mean time between maintenance (MTBM)
- Lowest cost of ownership due to high efficiencies and optimal selection
- High product reliability and quality
- Innovative technologies and material selection
- Specialist competence in corrosive and erosive applications, built on leading material technology and proven field experience
- Pump designs consider both materials of construction and hydraulic requirements to optimize performance in the field
- Continuous research and ongoing product development to meet evolving requirements
- Extensive product coverage

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## Extensive product coverage

Sulzer offers a comprehensive portfolio of innovative pumps and other process equipment for mine water management applications, from light-weight and robust submersible dewatering pumps to high-lift centrifugal end-suction and multistage pumps for the removal of clean and dirty water in abrasive and corrosive environments.

- Submersible drainage pumps with built-in intelligence
- End-suction single-stage pumps in wear-resistant materials
- Multistage pumps for medium to super high heads
- Vertical centrifugal and vertical turbine pumps
- Axially split case double suction pumps
- Mixers and agitators
- Containerized solutions
- Barges and pontoons
- Packaged solutions

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With thousands of installations around the world, Sulzer products and services have stood the test of time.

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# Typical mine water applications

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## 1 Open pit mine dewatering

Depending on the mine depth, single lift or staging systems with booster pumps may be utilized.

Pit-installed pumps on pontoons or barges commonly use submersible, vertical turbine or end suction self-priming pump technologies.

For booster stations submersible pumps connected in series, single-stage end-suction or multistage pumps can be used. These solutions can be provided in containerized units for ease of installation and transportation.

## 2 Underground mine dewatering

There are several applications in underground mines where pumps are utilized.

### Face dewatering and stage pumping

Pumps are used to remove water from mine faces and stopes. Water is transported in stages to collection stations where larger pumps are located along the drift and ramp. Normally smaller drainage pumps are used at the mine faces, medium-sized pumps for pumping between stages, and larger pumps to move the water between different levels.

### Shaft bottom drainage

Mine water from all parts of the mine is collected in the shaft bottom sump and then transported to the main drainage pump station. The high-performance submersible pumps fulfill the requirements, meeting the demands for both high head and high volume.

### Main drainage pump station

Several pump types and technologies can be used in main drainage applications such as multistage pumps for pre-settled water for single high-lift applications, series-connected single-stage centrifugal pumps or staged pump systems with intermediate stations. For more abrasive liquids, wear-resistant end-suction pumps designed to handle both abrasive and corrosive liquids containing solids are used.

### Pump as turbine

Utilizing the high static heads available, the HPH pump can also be adapted for the purpose of energy recovery.

## 3 Water intake and water supply

Water stations transport water into the mine from various sources, and the technology requirements will vary according to the site layout. The Sulzer vertical turbines and horizontal end-suction pumps or a combination of both technologies are the most commonly used solution depending on the design of the pump station.

## 4 Process water

Process water is required for different applications in the minerals processing industry. The most common pump types used in these applications are end-suction process pumps and vertical pumps. The materials of construction will depend on the water source, e.g. sea water, reclaimed water, etc.

## 5 Process dewatering

Process dewatering generally refers to the separation of solids and liquids within minerals processing. This may be from thickeners, separators or filters, all requiring pumps of some description. End-suction pumps are the most commonly used pumps in this application.

## 6 Tailing ponds and water reclamation

The scarcity and cost of water means that wastewater treatment and recycling for reuse are important processes within mines. Water is reclaimed from tailings ponds, lagoons and the downstream of minerals processing by vertical, horizontal and submersible pumps. In some instances, water treatment may be required prior to use.





## 7 Water treatment

Minerals processing requires process water feed at various stages. The quality of the water is highly important and therefore some level of treatment is needed before it enters the process. A combination of submersible pumps, horizontal process pumps and vertical pumps are commonly used in the feed to the process.

## 8 Mine sites

Other common applications for pumps at mine sites are tire washing plants, washdown of plant and machinery, and dust suppression. End-suction pumps are most commonly used, and these may be fed by submersible or vertical pumps.

# Applications

Segment		Product portfolio							
	Process and applications	Submersible dewatering	Submersible wastewater	End-suction process	Multistage	Vertical/vertical turbine	Axially split case double suction	Mixers and agitators	Packaged solutions
Open pit	Drainage	●	●	●	●	●		●	●
	Booster pumping	●		●	●	●			●
	Active dewatering	●				●			
	Face dewatering / stage pumping	●							
Underground	Shaft bottom drainage	●	●			●			
	Main drainage	●		●	●	●			●
	Stope pumping	●							
	Pump as a turbine				●				
	Booster pumping	●		●	●	●			●
	Settling ponds and sumps	●	●					●	
Processing plant	Water intake / water supply	●	●	●	●	●	●	●	●
	Process water	●	●	●	●	●		●	●
	Process dewatering			●					
	Settling ponds and sumps	●	●			●		●	
	Wash down sumps	●	●			●		●	
Tailings area	Water reclamation	●	●	●	●	●		●	
	Returned water		●	●		●			
	Booster pumping	●		●		●			●
	Tailings sumps	●	●			●		●	
WWTP	Primary / secondary treatment	●	●	●	●	●		●	
	Tertiary / ZLD (Zero Liquid Discharge) treatment	●	●	●	●	●	●		
Mine site	Dust suppression	●	●	●					
	Tire wash	●	●	●	●	●		●	



# Product range

Product type	Name	Capacities	Heads	Pressures	Temperatures
Submersible	J and XJ	up to 1'190 m³/h up to 5'440 USgpm	up to 200 m up to 754 ft.	up to 13 bar up to 190 psi	up to 40°C up to 104°F
	JC and XJC	up to 190 m³/h up to 865 USgpm	up to 76 m up to 308 ft.	up to 13 bar up to 190 psi	up to 40°C up to 104°F
	JS and XJS	up to 112 m³/h up to 475 USgpm	up to 36 m up to 131 ft.	up to 5.2 bar up to 75 psi	up to 40°C up to 104°F
	XFP	up to 9'720 m³/h (50 Hz) 10'800 m³/h / 47'560 USgpm (60 Hz)	up to 80 m (50 Hz) up to 95 m/310 ft. (60 Hz)	up to 15 bar up to 220 psi	up to 40°C up to 104°F
End-suction	AHLSTAR A/APT	up to 11'000 m³/h up to 48'400 USgpm	up to 160 m up to 526 ft.	up to 16/25 bar up to 230/360 psi	up to 180°C up to 356°F
	AHLSTAR WPP/T	up to 7'000 m³/h up to 31'000 USgpm	up to 110 m up to 360 ft.	up to 16/25 bar up to 230/360 psi	up to 180°C up to 356°F
	SNS	up to 1'400 m³/h up to 6'000 USgpm	up to 160 m up to 525 ft.	up to 16 bar up to 230 psi	up to 120°C up to 250°F
	CPE	up to 1'650 m³/h up to 7'000 USgpm	up to 275 m up to 900 ft.	up to 27.5 bar up to 400 psi	up to 260°C up to 500°F
Multistage	MBN	up to 700 m³/h up to 3'080 USgpm	up to 900 m up to 2'950 ft.	up to 100 bar up to 1'450 psi	up to 180°C up to 355°F
	HPH/HPL	up to 1'000 m³/h up to 5'000 USgpm	up to 1'800 m up to 5'000 ft.	up to 180 bar up to 2'610 psi	up to 105°C up to 220°F
Axially split	SMD	up to 24'000 m³/h up to 106'000 USgpm	up to 260 m up to 850 ft.	up to 34 bar up to 490 psi	up to 140°C up to 280°F
	ZPP	up to 25'000 m³/h up to 110'000 USgpm	up to 160 m up to 525 ft.	up to 20 bar up to 290 psi	up to 120°C up to 250°F
	Z22	up to 17'000 m³/h up to 75'000 USgpm	up to 220 m up to 720 ft.	up to 25 bar up to 362 psi	up to 140°C up to 280°F
Vertical	SJT	up to 62'000 m³/h up to 270'000 USgpm	up to 600 m up to 1'970 ft.	up to 64 bar up to 930 psi	up to 50°C up to 122°F
	VE/VN	up to 5'000 m³/h up to 22'000 USgpm	up to 750 m up to 2'460 ft.	up to 100 bar up to 1'450 psi	-150 a 400°C -238 a 752°F
	VA	up to 1'500 m³/h up to 6'600 USgpm	up to 100 m up to 328 ft.	up to 20 bar up to 290 psi	up to 120°C up to 248°F

# Product overview

## Submersible dewatering pumps

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### Submersible drainage pump J and XJ

#### Features and benefits

- Easy and fail-safe starting with optional AquaTronic
- Impeller in white cast iron and diffusers coated with oil-resistant nitrile rubber provide high abrasion resistance
- Double outer casing and good heat convection enable the pump to operate continuously at low levels – or even run dry without damaging the motor
- External inspection ports for the oil and motor chambers enable quick and easy evaluation of the shaft seal during service
- Conversion between high-volume and high-head hydraulics is managed with only a few parts, ensuring the right performance for the application

#### Key characteristics

Capacities	up to 1'190 m <sup>3</sup> /h / 5'440 USgpm
Heads	up to 200 m / 754 ft.
Motor power	up to 90 kW / 145 hp

#### Applications

- Water and dirty water mixed with light abrasives



### Submersible drainage center line pump JC and XJC

#### Features and benefits

- Easy and fail-safe starting with optional AquaTronic
- An impeller and wear ring in white cast iron as well as diffusers coated with oil-resistant nitrile rubber provide high abrasion resistance
- Double outer casing and good heat convection enable the pump to operate continuously at low levels – or even run dry without damaging the motor
- Due to the modular design, the same parts can be used for different pumps, which lowers the overall service costs
- High-efficiency motor and new hydraulics combined with low-friction bearings to reduce power losses
- Conversion between high-volume and high-head hydraulics is managed with only a few parts, ensuring the right performance for the application
- A slim design allows the pumps to fit in boreholes or other applications with limited installation space

#### Key characteristics

Capacities	up to 190 m <sup>3</sup> /h / 865 USgpm
Heads	up to 76 m / 308 ft.
Motor power	up to 11.8 kW / 18 hp

#### Applications

- Water and dirty water mixed with light abrasives





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## Submersible sludge pump JS and XJS

### Features and benefits

- Easy and fail-safe starting with optional AquaTronic
- A free-flow vortex impeller and pump volute make the pump ideal for pumping water mixed with solids of up to 48x60 mm
- Both the impeller and volute are made from heavy-duty ductile iron for maximum durability
- The top cover and motor housing are made of light-weight aluminum, which creates a pump that is very easy to handle and install
- High-efficiency motor and hydraulics combined with low-friction bearings to reduce power losses
- Non-overloading performance with two different impellers for each pump model. The small impeller allows the pump to run in low-level applications

### Key characteristics

Capacities	up to 112 m <sup>3</sup> /h / 475 USgpm
Heads	up to 36 m / 131 ft.
Motor power	up to 11.8 kW / 18 hp

### Applications

- Dirty water and water mixed with solids



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## Submersible sewage pumps type ABS XFP

### Features and benefits

- Premium-Efficiency IE3 motor in accordance with IEC 60034-30
- Excellent rag handling
- Specially designed impellers for reliable delivery of wastewater containing solids and fibrous material
- Hazardous locations: Approval for ATEX ATEX (Ex II 2G Ex h db IIB T4 Gb), FM and CSA available
- Quick and easy installation, safe operation, easy maintenance and service

### Key characteristics

Capacities	up to 2'700 l/s (50 Hz) / 3'000 l/s / 47'560 USgpm (60 Hz)
Heads	up to 80 m (50 Hz) / 95 m / 310 ft. (60 Hz)
Temperatures	up to 40°C / 104°F
Motor power	up to 550 kW (50 Hz) / up to 620 kW / 830 hp (60 Hz)

### Applications

- Industrial raw water and process water
- Hazardous locations



## MSHA pumps J MEX

Submersible drainage pumps J 10 - 350 MEX are approved explosion-proof mine pumps suitable for pumping water and dirty water mixed with light abrasive soil. Approved by MSHA (Mine Safety and Health Administration) and D.O.E.R. (Pennsylvania Department of Environmental Resources).

### Features and benefits

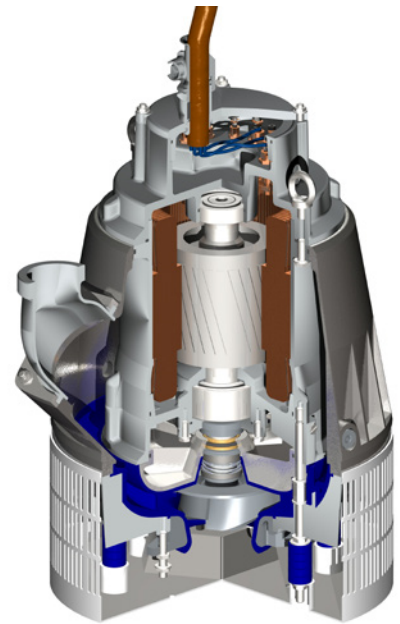
- Light-weight silumin parts make transport, handling and installation easy
- Stainless steel impeller, shaft and hardware as well as adjustable wear parts in oil resistant nitrile rubber provide a long life and high efficiency
- Double outer casing and good heat convection enable the pump to operate continuously at low levels – or even run dry without damaging the motor
- Compact design with durable silumin housing and mechanical shaft seals in silicon carbide provide a pump that you can rely on
- Seal minder moisture detector protects the pump if seal leakage occurs
- Due to the modular design, the same parts can be used for different pumps, which lowers the overall service costs
- High-efficiency motor and new hydraulics combined with low-friction bearings to reduce power losses
- Thermal overload protection shuts off the pump upon an overtemperature condition
- Conversion between high-volume and high-head hydraulics is managed with only a few parts, ensuring the right performance for the application
- Rigid stainless steel shaft with heavy-duty bearings gives vibration-free operation
- All J MEX series are equipped with MSHA-approved power cable and are supplied with a manual or automatic control panel

### Key characteristics

Capacities	up to 3'000 l/s / 47'560 USgpm (60 Hz)
Heads	up to 94 m / 310 ft. (60 Hz)
Temperatures	up to 40°C / 104°F
Motor power	up to 620 kW / 830 hp (60 Hz)

### Applications

- Water and dirty water mixed with light abrasives





## Single-stage, end-suction/overhung pumps

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### AHLSTAR pumps

#### Features and benefits

- AHLSTAR pumps save energy, sealing water and the environment
- Designed to meet the EN ISO 5199 standard, these pumps also comply with the EN 22858 (ISO 2858) standard
- The modular interchangeability of parts and components enables low spare parts inventory
- The pump range offers the lowest total cost shaft seal concept, with dynamic seal, mechanical seals and packing
- Every AHLSTAR is designed for fast and easy installation, maintenance and service

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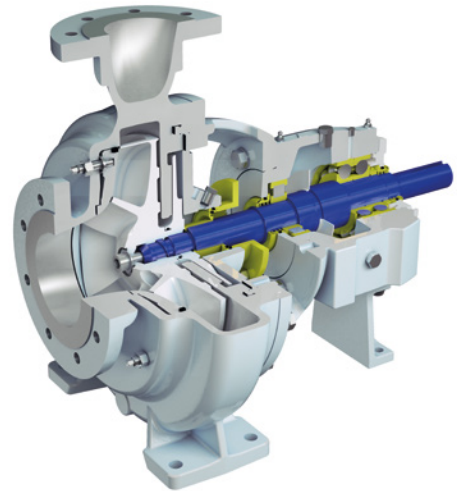
### AHLSTAR A/APT

#### Key characteristics

Capacities	up to 11'000 m <sup>3</sup> /h / 48'400 USgpm
Heads	up to 160 m / 525 ft.
Pressures	up to 16 / 25 bar, 230 / 360 psi, depending on material and size
Temperatures	up to 180°C / 356°F

#### Applications

- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries
- Solids-containing liquids
- Gas-containing liquids and self-priming applications
- Various demanding applications



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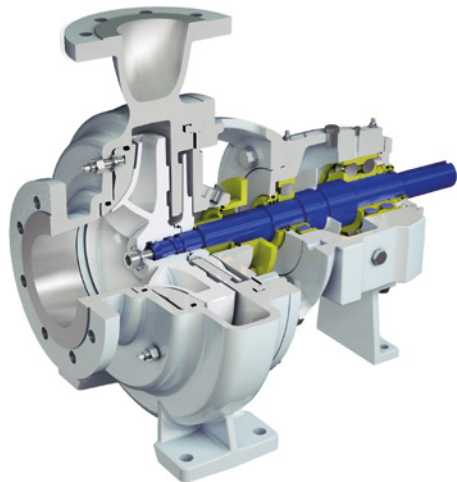
### AHLSTAR WPP/T

#### Key characteristics

Capacities	up to 7'000 m <sup>3</sup> /h / 31'000 USgpm
Heads	up to 110 m / 360 ft.
Pressures	up to 16 / 25 bar, 230 / 360 psi, depending on material and size
Temperatures	up to 180°C / 356°F

#### Applications

- Abrasive liquids
- Abrasive solids-containing liquids and slurries including self-priming applications



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## SNS range

### Features and benefits

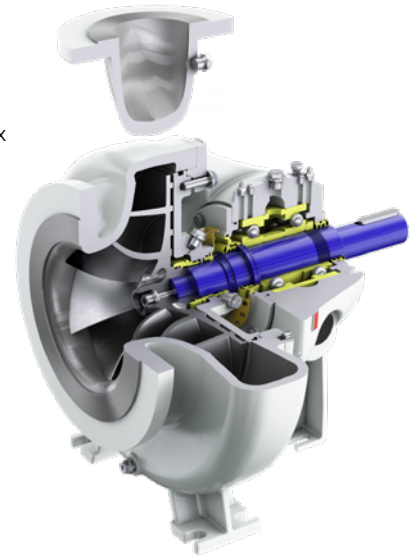
- Designed to meet the design requirements of EN 5199 international standard
- Exceeding the EU's (European Union) requirements for energy-related products (ErP)
- Highest efficiency across the whole pump range, exceeding the benchmark efficiency index MEI 0.7 (minimum efficiency index)
- New, state-of-the-art hydraulics ensure optimum capacity with low net positive suction head required (NPSHr)
- Low energy consumption, high standardization, easy installation and unique construction also equate to lower maintenance and operating costs

### Key characteristics

Capacities	up to 1'400 m <sup>3</sup> /h / 6'000 USgpm
Heads	up to 160 m / 525 ft.
Pressures	up to 16 bar / 230 psi
Temperatures	up to 120°C / 250°F

### Applications

- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries



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## CPE ANSI process pumps range ANSI / ASME B73.1

### Features and benefits

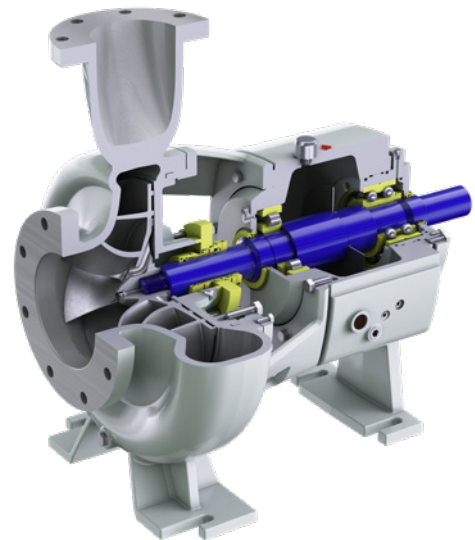
- The highest available efficiency on the ANSI process pump market providing clear savings in energy consumption
- Exceeds the requirements of all environmental (ECO) directives and the energy efficiency targets for pumps globally
- Maximized reliability thanks to shaft sealing conditions and heavy-duty bearing unit
- High standardization, easy installation and robust construction equate to reduced maintenance and operating costs
- The CPE pump uses NSF61 and NSF372 certified materials

### Key characteristics

Capacities	up to 1'650 m <sup>3</sup> /h / 7'000 USgpm
Heads	up to 275 m / 900 ft.
Pressures	up to 27.5 bar / 400 psi
Temperatures	up to 260°C / 500°F

### Applications

- Clean and slightly contaminated liquids
- Viscous liquids
- Fibrous slurries





## Radially-split, multistage, ring section pumps

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### MBN medium-pressure stage casing pump

#### Features and benefits

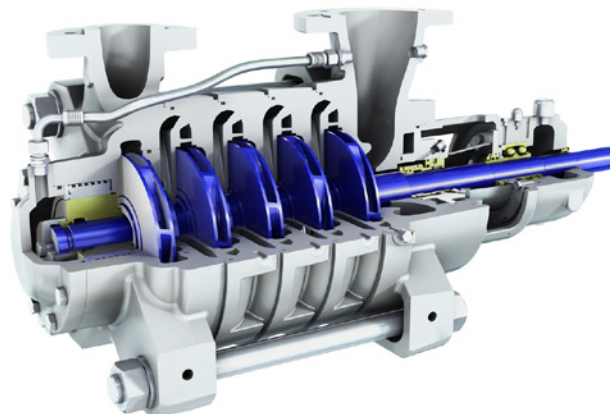
- Simple construction to minimize dimensions and reduce investment and maintenance costs
- High-quality cast impellers and diffusers for better efficiency
- Fast and easy impeller mounting
- Bearing unit can be serviced without disassembling the pumps
- Wide range of materials including chromium steel and duplex stainless steel grades

#### Key characteristics

Capacities	up to 700 m <sup>3</sup> /h / 3'080 USgpm
Heads	up to 900 m / 2'950 ft.
Pressures	up to 100 bar / 1'450 psi
Temperatures	up to 180°C / 355°F

#### Applications

- Feedwater pump
- High-pressure pump
- Mine dewatering applications



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### HPH/HPL high-pressure pump

#### Features and benefits

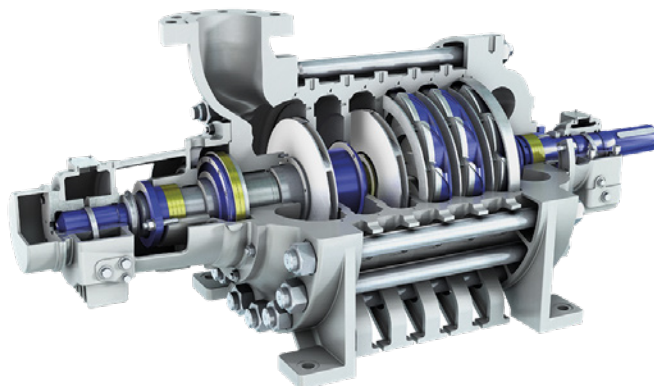
- Designed for operation at two or four pole motor speed
- Wide range of materials including duplex stainless steel grades and chrome steel internals
- Options to supply wear-resistant coatings such as tungsten coating to extend pump life
- Ease of maintenance through split bearing housing
- Robust construction makes it suitable for harsh mining conditions
- Condition monitoring capabilities provide effective scheduling of maintenance
- High-velocity areas protected by replaceable plates. These avoid a need for expensive remachining of high-cost casings
- Exclusive Sulzer wear limit switch monitors balance disc wear

#### Key characteristics

Capacities	130 - 1'000 m <sup>3</sup> /h / 5'000 USgpm
Heads	120 to 1'800 m / 5'000 ft.
Pressures	up to 180 bar / 2610 psi
Temperatures	up to 105°C / 220°F

#### Applications

- Clear or slightly polluted water with abrasive particles
- Used as a medium to super high-head pump in deep mining applications
- High-pressure pump
- Mine dewatering applications
- Pump as a turbine



## Axially split pumps

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### SMD axially split, double suction pump

#### Features and benefits

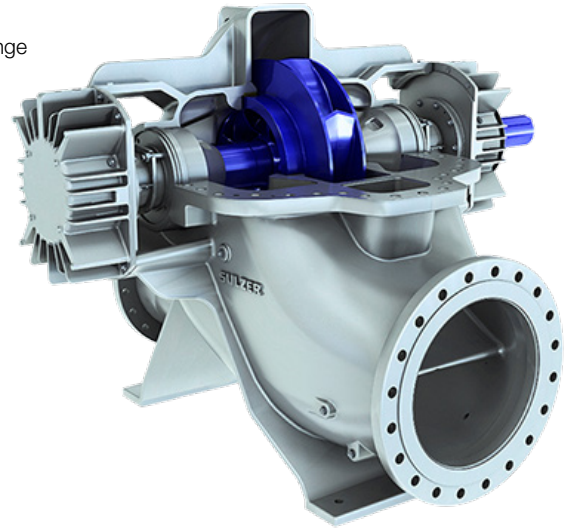
- Optimum hydraulic fit with high efficiency maintained over a wider flow range
- Exceptionally low Net Positive Suction Head Required (NPSHR) value not only at the best efficiency point but also on overload
- Maintenance-friendly features; excellent interchangeability of parts
- Horizontal and vertical constructions

#### Key characteristics

Capacities	up to 24'000 m <sup>3</sup> /h / 106'000 USgpm
Heads	up to 260 m / 850 ft.
Pressures	up to 34 bar / 490 psi
Temperatures	up to 140°C / 280°F

#### Applications

- Water intake, transport and supply
- Desalination
- Water treatment
- Industrial water applications



### ZPP double suction, axially split single-stage centrifugal pump

#### Features and benefits

- Long and trusted experience in all industrial segments
- Excellent performance
- Suitable for the most demanding industrial requirements
- Exceeds requirements of international ISO 5199 standard
- Unique and superior design features minimize life cycle costs
- Quick and easy installation, safe operation, easy maintenance and service

#### Key characteristics

Capacities	up to 25'000 m <sup>3</sup> /h / 110'000 USgpm
Heads	up to 160 m / 525 ft.
Pressures	up to 20 bar / 290 psi
Temperatures	up to 120°C / 250°F

#### Applications

- Clean and slightly contaminated liquids
- Viscous liquids
- Low-consistency fibrous slurries





## Z22 double suction axially split single-stage pump

### Features and benefits

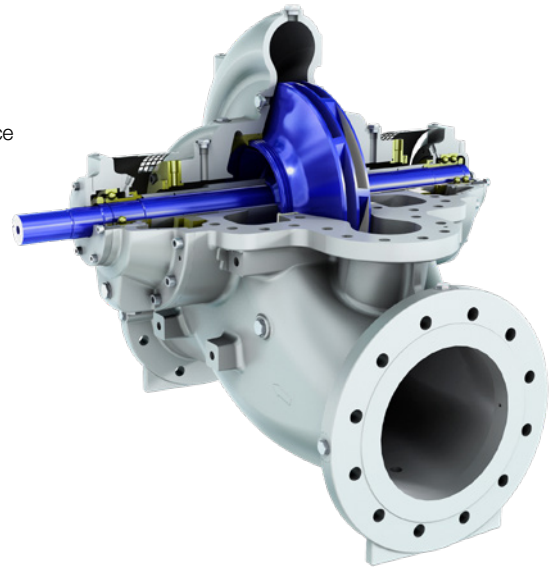
- Long and trusted experience in all industrial segments
- Unique, patented and superior design features minimize life cycle costs
- Quick and easy installation, reliable operation, easy maintenance and service

### Key characteristics

Capacities	up to 17'000 m <sup>3</sup> /h / 75'000 USgpm
Heads	up to 220 m / 720 ft.
Pressures	up to 25 bar / 362 psi
Temperatures	up to 140°C / 280°F

### Applications

- Clean and slightly contaminated liquids
- Viscous liquids
- Low-consistency fibrous slurries



## Vertical pumps

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### JTS standard vertical turbine pump

#### Features and benefits

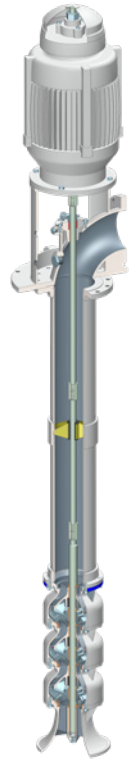
- Reliable pump with standard configurations for short lead time
- Packed stuffing box for reliable sealing and simple maintenance, mechanical seal is optional
- Rubber-lined product-lubricated bearing in bowls and columns for long maintenance-free periods, other bearing materials are also available
- Suction bell provided with anti-vortex ribs, tail bearing, and replaceable wear rings or bowl liner
- Axial thrust bearing in pump or in motor

#### Key characteristics

Capacities	up to 5'678 m <sup>3</sup> /h / 25'000 USgpm
Heads	up to 340 m / 1'100 ft.
Pressures	up to 36 bar / 525 psi
Temperatures	up to 85°C / 185°F

#### Applications

- Water intake



### SJT vertical turbine pump

#### Features and benefits

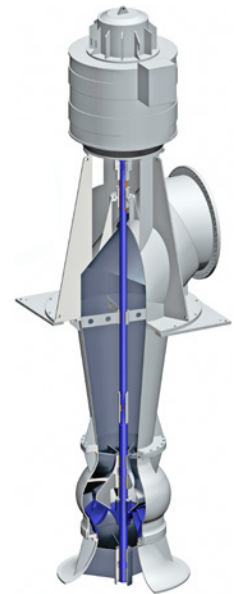
- Optimized hydraulics for high efficiency
- Packed stuffing box for reliable sealing and simple maintenance; mechanical seal is optional
- Rubber-lined product-lubricated bearing in bowls and columns for long maintenance-free periods; other bearing materials are also available
- Optional spacer coupling allows servicing of seal and thrust bearing as required

#### Key characteristics

Capacities	up to 62'000 m <sup>3</sup> /h / 270'000 USgpm
Heads	up to 110 m per stage / 350 ft. per stage
Pressures	up to 64 bar / 930 psi
Temperatures	up to 50°C / 122°F

#### Applications

- Cooling water
- Water intake





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## VE/VN heavy-duty vertical turbine pump

### Features and benefits

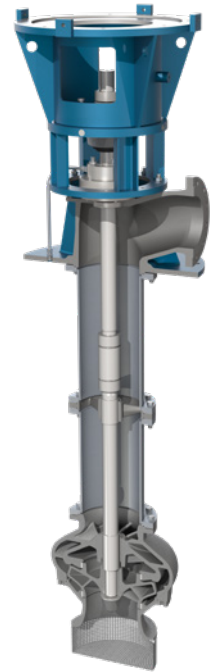
- Designed for heavy-duty applications in various industries
- Exceeds the requirements of ISO 13709 (API 610) 11th edition, type VS1/VS6
- Wide range of materials and variant designs (high temperature, high pressure, high length, double casing, etc.)
- Reliable design ensures longer maintenance-free operation
- Easy assembly and maintenance

### Key characteristics

Capacities	up to 5'000 m <sup>3</sup> /h / 22'000 USgpm
Heads	up to 750 m / 2'460 ft.
Pressures	up to 100 bar / 1'450 psi
Temperatures	from -150 to 400°C / from -238 to 752°F

### Applications

- Clear and contaminated sump
- Corrosive liquid



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## VA cantilever sump pump

### Features and benefits

- Simple and robust design with ease of maintenance
- All types of hydraulics available: semi-open, open, closed or vortex impellers
- No sealing required
- No intermediate bearing
- Dry running allowed

### Key characteristics

Capacities	up to 1'500 m <sup>3</sup> /h / 6'600 USgpm
Heads	up to 100 m / 328 ft.
Pressures	up to 20 bar / 290 psi
Temperatures	up to 120°C / 248°F

### Applications

- Clear and contaminated sump
- Corrosive, encrusting liquids and slurries



## CS submersible pumps

### Features and benefits

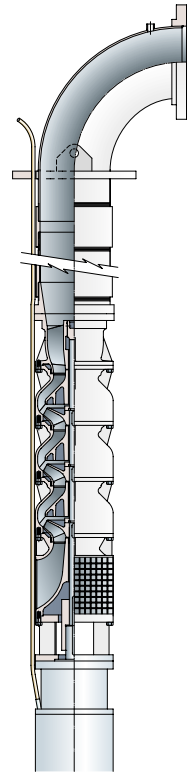
- Pre-configured design offering a broad range of corrosion-resistant materials and build options
- Always primed for immediate use
- Easily modified for services where falling water levels are common
- Flood proof as all parts including the motor are designed to operate in water
- Easy installation and removal of discharge pipe
- Simple design with less parts for wear and tear
- Longer pipe joint sections reduce installation costs
- Heavy-duty cast bowls and impellers
- Heavy-duty single piece cast suction case/motor bracket
- Viton rubber bearings
- Adjustable thrust plug

### Key characteristics

Capacities	up to 565 m <sup>3</sup> /h / 2'500 USgpm
Heads	up to 460 m / 1'500 ft.
Pressures	up to 55 bar / 650 psi
Temperatures	up to 135°C / 275°F

### Applications

- Mine dewatering applications





## Agitators

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### Scaba top-mounted agitators

#### Features and benefits

- Scaba top-mounted series covers gear or belt-driven agitators mounted vertically on the tank top or bottom flange.
- Dry-installed agitators rely on a deep process knowledge, which enables us to tailor the agitators to meet your specific need. This ensures the required process result with a minimum energy input
- Versatile impeller options
- High-efficiency SHP propellers
- Good axial flow
- Scaba TreatX standardized agitators for water and wastewater treatment processes

#### Key characteristics

Impeller diameter	up to 6 m / 236 in.
Shaft length	up to 30 m / 100 ft.
Power	up to 450 kW / 600 hp
Temperatures	up to 180°C / 356°F

#### Applications

- Suspension of all kinds of slurries
- Mixing and storage of chemicals
- Wastewater treatment plants
- For slightly and heavily contaminated liquids



### SALOMIX™ L top-mounted vertical agitators

#### Features and benefits

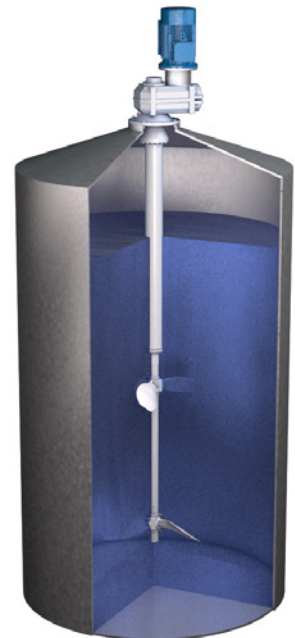
- The L-series covers gear or belt-driven agitators mounted vertically on the tank top or bottom flange
- Versatile impeller options meet any process needs in compliance with the rheology of the mixed fluid
- Maximum modular component flexibility
- Applicable to tanks from 1 to 2'500 m<sup>3</sup> / 88'285 ft<sup>3</sup>
- The large hydraulic coverage satisfies the most demanding requirements of industrial agitation applications

#### Key characteristics

Impeller diameter	up to 6 m / 236 in.
Shaft length	up to 30 m / 100 ft.
Power	up to 450 kW / 600 hp
Temperatures	up to 180°C / 356°F

#### Applications

- Suspension of all kinds of slurries
- Mixing and storage of chemicals
- Wastewater treatment plants
- For slightly and heavily contaminated liquids



# Proper maintenance drives cost savings and improves safety

When it comes to process equipment, performance is everything. Pumps, agitators and compressors need to be in working order at all times. Obtaining optimum working life from your equipment requires regular and efficient servicing. With Sulzer as your partner, you can always get the best out of your process. Our globally available Customer Support Services teams deliver fast, reliable and innovative solutions during the whole life cycle of your equipment.

## Reliability and safety

- Sulzer spare parts are specifically designed and engineered to fit your equipment
- Original spare parts ensure optimal performance and environmental and personal safety
- OEM service ensures top performance and safe operations
- Remote condition monitoring and on-site inspections keep your equipment in top shape and add peace of mind

## Availability and responsiveness

- You can always rely on getting the right help quickly
- High spare part availability for all product types and generations in regional spare part centers maximizes your uptime
- Local presence with inventories customized to fit your equipment
- Wide service center footprint for workshop repairs and field service means quick help if needed

## Process knowledge

- Large knowledge base helps us recommend the optimal solution for your application requirements and maximize process performance
- Vast experience from light to extremely demanding process applications
- Large installed base with over 200'000 delivered equipment for industrial use
- Our specialists are always available to offer support and share their know-how
- Pumping process studies and troubleshooting offer valuable insights
- Upgrades and retrofitting further improve your processes





# Services and spare parts for process industry equipment



## Spare parts

Sulzer has a worldwide network of spare part delivery centers to quickly deliver original spare parts from the stock or manufacture them promptly based on your order.



## Field services

Our field services cover installation, start-up service, regular inspections, troubleshooting, performance measurements, condition monitoring and more.



## Service centers

We offer full service for your process equipment and spare parts availability for daily maintenance and repairs, process optimization and know-how, and complete energy audits.



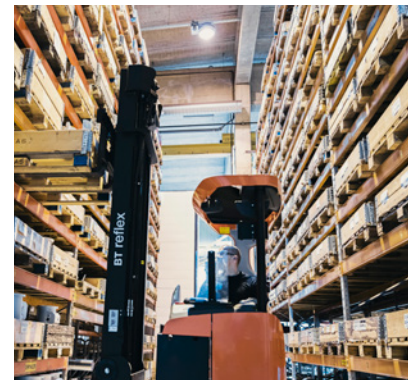
## Repairs

With our modern equipment and highly skilled personnel at our service centers we can repair and refurbish even the most demanding equipment back to its original performance. We also offer modernizations that enhance the performance or increase the lifetime of your equipment.



## Process optimization and know-how

With Sulzer at your doorstep, you can improve your competitive advantage and ensure safe operation. Our partnership program offers you customized solutions for your process improvements and future applications.



## Service contracts

If you need to free your own resources to other valuable tasks or if you want to save money by not keeping spare parts in your own stock, Sulzer can offer various service contract options for you.

**The Sulzer Flow 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 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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