

# SULZER

Flow Equipment

## SJS submersible pump



# Main industries and applications

The Sulzer SJS represents the state-of-the-art in submersible pump design and meets the requirements of the following applications:

- Seawater lift
- Ballast water
- Mine dewatering
- Cooling water
- Municipal water supply
- Offshore firewater



Oil and gas



Hydrocarbon processing



Power generation



Pulp, paper and board



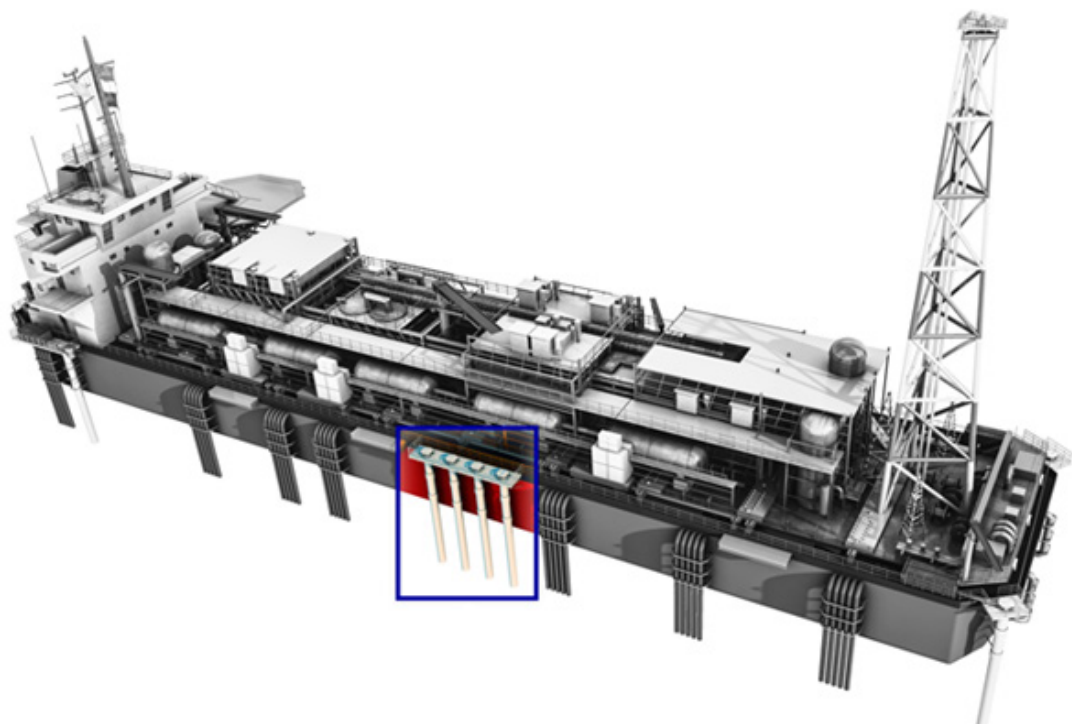
General industry



Chemical process industry



Water and wastewater



# Features and benefits

## 1 Surface plate and discharge flange

- Fabricated to meet customer connection requirements

## 2 Column pipe

- Line shaft and bearings are eliminated which allows the submersible motor and bowl assembly to operate at higher speeds possibly reducing pump and caisson size
- Column connections are flanged and designed to reduce friction and support the unit

## 3 Bowls and impellers

- Thousands of proven Sulzer hydraulic combinations to meet customer requirements

## 4 Bowl bearings

- Provide radial support and act to dampen vibration

## 5 Single piece cable

- No cable splices
- Terminations at terminal box and inside motor only

## 6 Inverted configuration

- When lower submergence or lower Net Positive Suction Head (NPSH) is required, the bowl assembly can be mounted below the motor
- The motor is then constructed with a flow sleeve outside of the motor frame to route flow from the bowl assembly, past the motor, and into the column pipe

## 7 Cathodic and anti-fouling protection

- Reduces marine growth and prolongs the Mean Time Between Removals (MTBR)



# Motor features and benefits

Motors are water-glycol filled submersible three phase, squirrel-cage induction type with IP-68 protection. All motors are designed for across the line starting and suitable for Variable Frequency Drive (VFD) operation.

## 1 Stator and windings

- Stator laminations and winding wire are held securely in the motor frame
- Polymer insulation and polyamide (PA) sheathing encapsulate the windings for operation in the water-glycol environment
- Squirrel cage rotor laminations are mounted on a ground stainless steel shaft designed to run well away from critical speeds

## 2 Motor radial and thrust bearings

- Motor rotor supported in spiral grooved carbon sleeve radial bearings
- High capacity, hydrodynamic thrust bearing designed for high temperature service and suitable for rotation in both directions
- Hardened steel ground, key driven thrust collar to assure flatness
- Graphite-composite thrust bearing shoes or pads sized for the pump thrust and motor / pump rotor weight
- Thrust bearing pedestal utilizes a central pivot to allow the entire thrust bearing to self-align and absorb any misalignment

## 3 Motor shaft seal

- To prevent contamination of the motor by the pumpage, a mechanical seal is provided at the motor shaft extension
- The expansion tank or accumulator assures the pressure in the motor is higher than in the pumpage

## 4 Motor lubrication and cooling

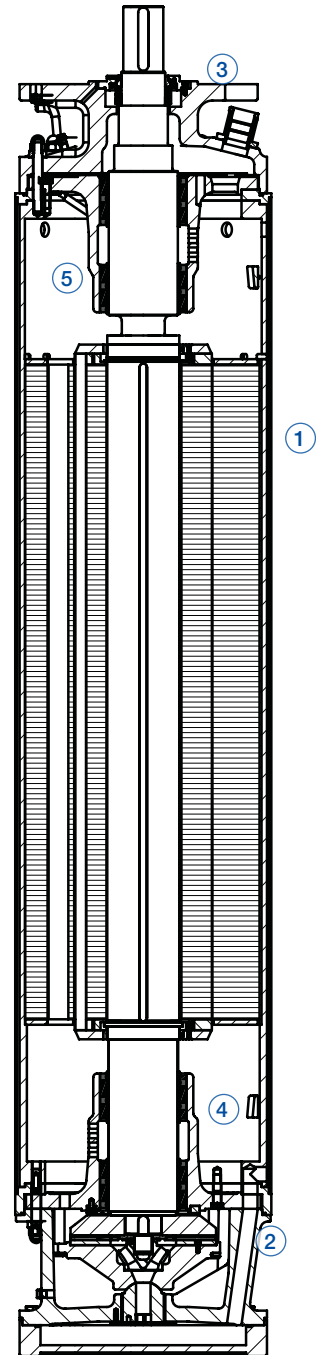
- High energy motors are filled with an environmentally friendly water-glycol solution to provide lubrication of the bearings and cooling of the motor's internal components
- Heat radiated out through the motor frame is taken away by pumpage flow outside of the motor
- If the inverted motor is supplied above the pump, the fluid passage around the outside of the motor is sized in this manner

## 5 Motor pressure compensation

- As the motor comes up to operating temperature, the water-glycol solution will expand
- To avoid over-pressuring the mechanical seal, an external tank or accumulator (inverted motor) is provided to compensate for this expansion

## Motor performance range

- 100 kW to 2'200 kW
- 2 to 8 pole speeds
- 220 to 11'000 V
- 3 phase



# Specifications

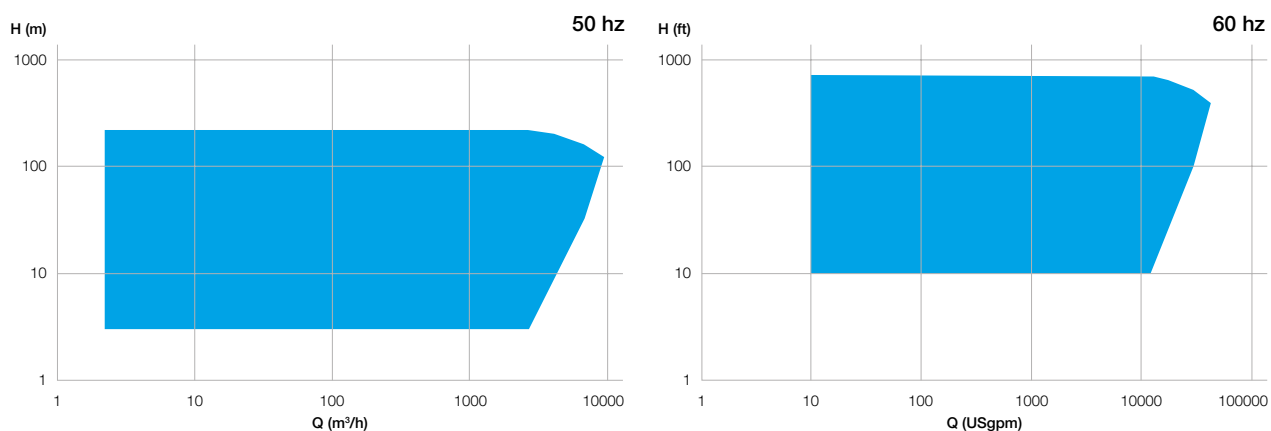
## Materials

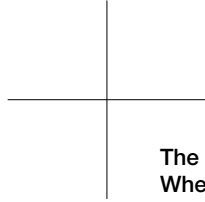
Pump part	I-1	I-2	S-1	S-6	A-8	D-1	D-2
Bowls	C.I.	C.I.	C.S.	C.S.	316SS	Duplex SS	Super duplex SS
Impellers	C.I.	Brz	C.I.	12% Chr.	316SS	Duplex SS	Super duplex SS
Column and heads	C.S.	C.S.	C.S.	C.S.	316SS	Duplex SS	Super duplex SS

## Operating data

	50 Hz	60 Hz
Pump sizes	up to 915 mm	up to 36 in.
Capacities	up to 10'000 m <sup>3</sup> /h	up to 44'000 USgpm
Heads	up to 230 m	up to 750 ft.
Pressures	up to 40 bar	up to 600 psi
Temperatures	up to 80°C	up to 180°F

## Performance range





**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.**

---

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.

---

E10126 en 9.2022, Copyright © Sulzer Ltd 2022

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.

