

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



Features and benefits

1 Foundation 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

- Hundreds 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

- Rotor supported by water-glycol lubricated high capacity radial bearings
- High capacity, hydrodynamic thrust bearing designed for high temperature service and suitable for rotation in both directions

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

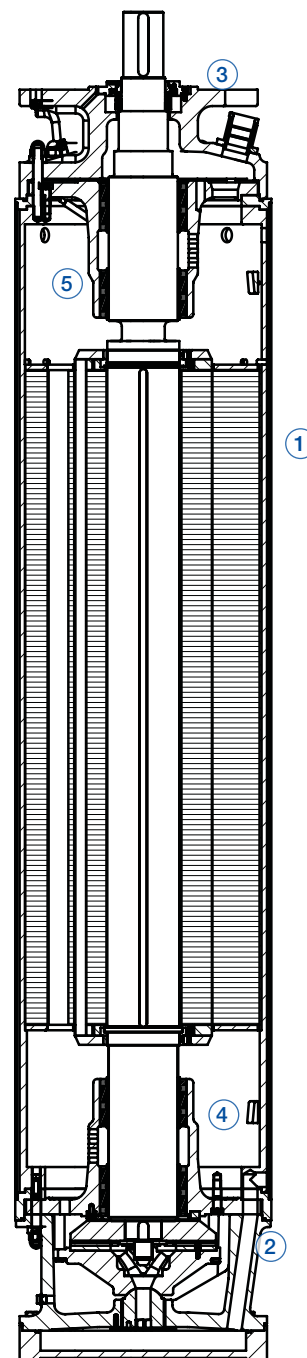
- High energy motors are filled with an environmentally friendly water-glycol solution to provide lubrication of the bearings and cooling of the motor's internal components
- Heat radiated out through the motor frame is taken away by pumpage flow outside of the motor
- If the inverted motor is supplied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

- 20 kW to 4'000 kW
- 2 to 8 pole speeds
- 380 to 13'800 V
- 50 to 60 Hz



Specifications

Materials

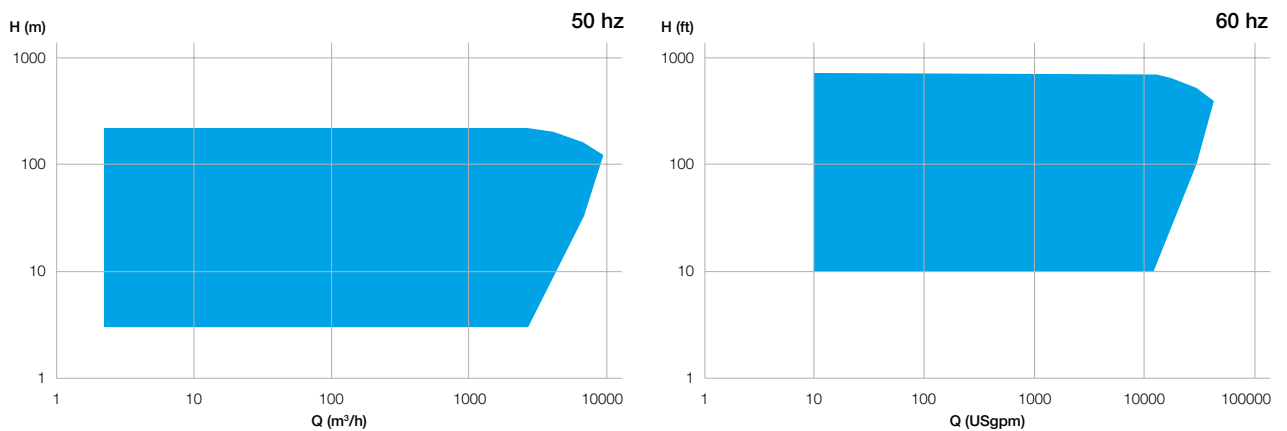
Pump part	A-8	D-1	D-2
Bowls	316SS	Duplex SS	Super duplex SS
Impellers	316SS	Duplex SS	Super duplex SS
Column and heads	316SS	Duplex SS	Super duplex SS

A-8, D-1 and D-2 materials as standard. Other materials and NORSOK material sourcing available on request.

Operating data

	50 Hz	60 Hz
Pump sizes	up to 1'100 mm	up to 42 in.
Capacities	up to 10'000 m ³ /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 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 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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