

SULZER

LENNTECH
WATER TREATMENT Solutions

SJS Submersible Pump



Main 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 Surface plate and discharge flange

- Fabricated to meet customer connection requirements

2 Column pipe

- Lineshaft 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.

Motor performance range

100 KW TO 2,200 KW

2 to 8 pole speeds

220 to 11,000 V

3 phase

50 Hz or 60 Hz

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

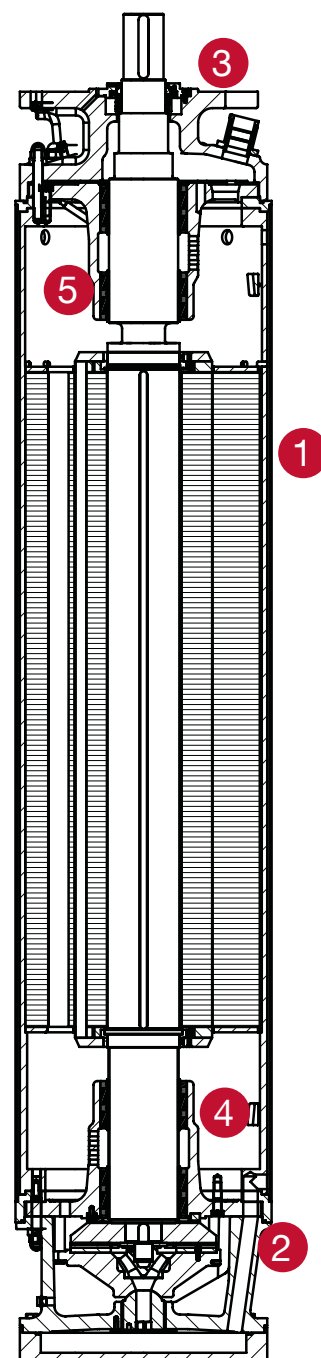
- To prevent contamination of the motor by the pumpage, a mechanical seal is provided at the motor shaft extension
- The expansion tank or accumulator assures the pressure in the motor is higher than in the pumpage

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



SJS Submersible Pump



Oil & Gas



Hydrocarbon
Processing
Industry



Power
Generation



Pulp and
Paper



General
Industry



Chemical
Processing
Industry

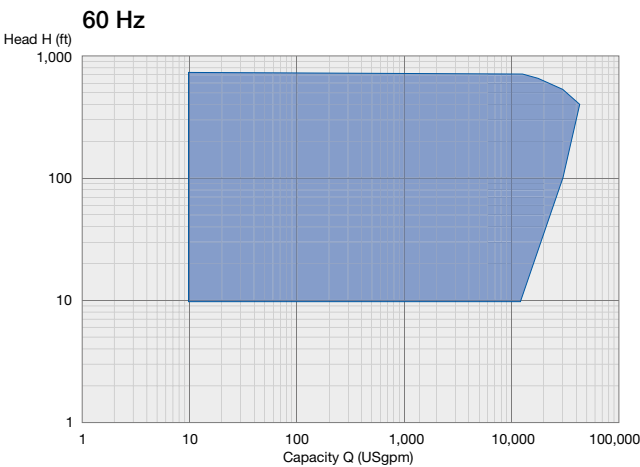
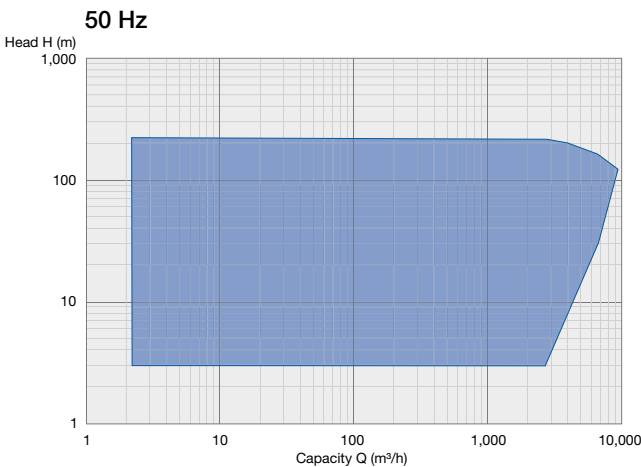


Water

Operating Data

50 Hz		60 Hz
up to 915 mm	Pump sizes	up to 36 inches
up to 10,000 m ³ /h	Capacities	up to 44,000 USgpm
up to 230 m	Heads	up to 750 feet
up to 40 bar	Pressures	up to 600 psi
up to 80°C	Temperatures	up to 180°F

Performance Ranges



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

We Do What We Say

Customer Partnership

- We are **reliable partners**.
- We provide a **high level of service**.
- We **make our customers more competitive**.



Committed People

- We drive **accountability**.
- We are **open and transparent**.
- We are **team players**.



Operational Excellence

- We **focus on results**.
- We take **initiative** and work within **established processes**.
- We **act safely**.



A Global Specialist at Your Doorstep

Sulzer is recognized for excellent product quality, performance reliability and technical innovation. A truly global company, we are close to customers with:

- a network of 22 manufacturing facilities
- more than 60 service centers
- worldwide sales office presence





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