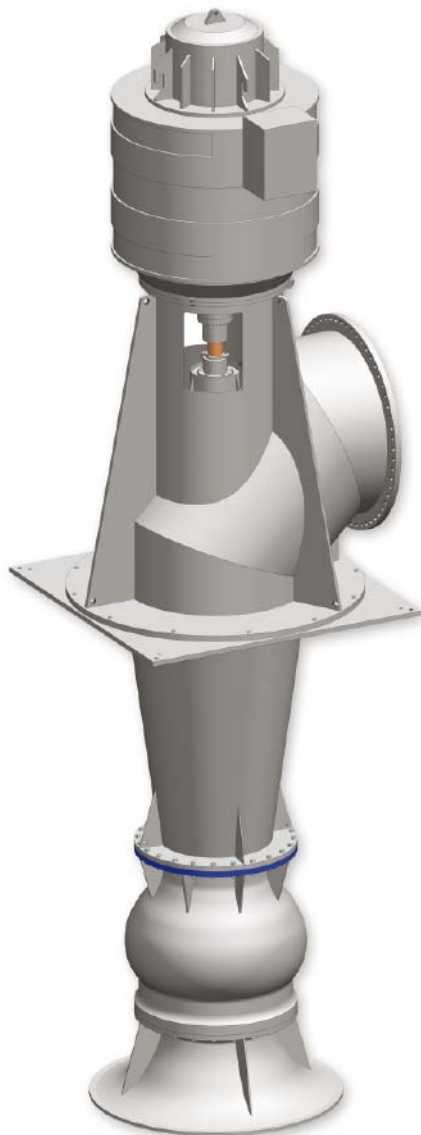


SULZER

Sulzer Pumps

SJT Vertical Turbine Pumps



The Heart of Your Process

Sulzer Pumps

Sulzer Pumps is a world leader in reliable products and innovative pumping solutions. Our advanced research and development, detailed process and application knowledge together with a comprehensive understanding of market demands keeps us consistently at the leading edge of technical development. Our global network of modern manufacturing and packaging facilities together with sales offices, service centers and representatives located close to major markets provide fast responses to customer needs.

Sulzer Pumps has a long history of providing innovative pumping solutions to business partners in the following industries:

- Oil and Gas
- Hydrocarbon Processing
- Pulp and Paper
- Power Generation
- General Industry
- Chemical Process Industry
- Water and Wastewater



Sulzer Pumps Houston manufacturing site

Application Knowledge for Better Efficiency

Vertical Turbine Pumps

Vertical turbine pumps are typically used whenever a liquid needs to be pumped upward from ground water tables (deep well pumps), manmade underground storage (caverns) or open bodies of liquid such as oceans, rivers, lakes, cooling ponds, tanks and sumps. Vertical turbine pumps are also used in inline applications such as pipelines, booster and low-NPSH systems.

Advantages of SJT

- Minimum use of floor space.
- The NPSH available can be at the lowest level to satisfy the NPSH requirements of the pump.
- No priming required, the pump bowl assembly is submerged in the fluid being pumped.
- The vertical turbine is highly versatile and adaptable in terms of both location and pump length.
- The vertical turbine pump is adaptable to various design codes.
- Easily modified for changing hydraulic conditions.
- Less wear due to low operating speed.
- Sulzer hydraulics deliver high pump efficiencies.
- Standard motors of all makes are easily matched.

Extensive Product Range

The Sulzer SJT is an “engineered to order” vertical turbine pump and has a capacity range of up to 55,000 m³/h (240,000 USgpm) with a total maximum single stage head of up to 115 m (360 ft) in sizes up to 3,000 mm (120 inches) in bowl diameter.

Replaceable hardened wear rings help to ensure long life and facilitate maintenance. A variety of design options such as weed cutting vanes, rifle and cross drilled shafts (for external lubrication at bear-

ing journal) and hardfacing can be incorporated to best match the pump to the application to maximize equipment longevity.

Above and below base discharge connections are available to suit existing pipe design variants. Performance and hydro testing is in accordance with the Hydraulic Institute Standards. The SJT pump is engineered to balance high efficiency, low submergence and NPSH considerations.

Engineered for Application Flexibility

Applications

SJT pumps are high capacity, medium to high head units widely used for raw water supply to process plants or refineries, condenser circulating service in nuclear or conventional power plants, as finished water booster pumps as well as for irrigation projects.

Common types of fluids handled include water, service water and wastewater.

Materials

The SJT can be manufactured from a variety of metallurgies to extend pump life and performance. The choice of materials and construction possibilities to meet special requirements (such as corrosion resistance) is virtually unlimited.



Materials	
Cast parts	cast iron, carbon steel, 316SS, duplex, super duplex, bronze
Shafts	12% chrome, 316SS, duplex, super duplex, monel
Fabrications	carbon steel, 316L, duplex, super duplex
Bearings	bronze, duplex, super duplex backed rubber

SJT Design Features and Benefits

Headshaft

Precision machined and sized for the application power input. Drive couplings connect headshaft with a vertical solid shaft motor.

Pumpshaft

The shaft is tailor-made to the service needs and sized individually for each installation; sized for maximum torque. A stepped shaft with sleeves can be supplied.

Bowl Bearings

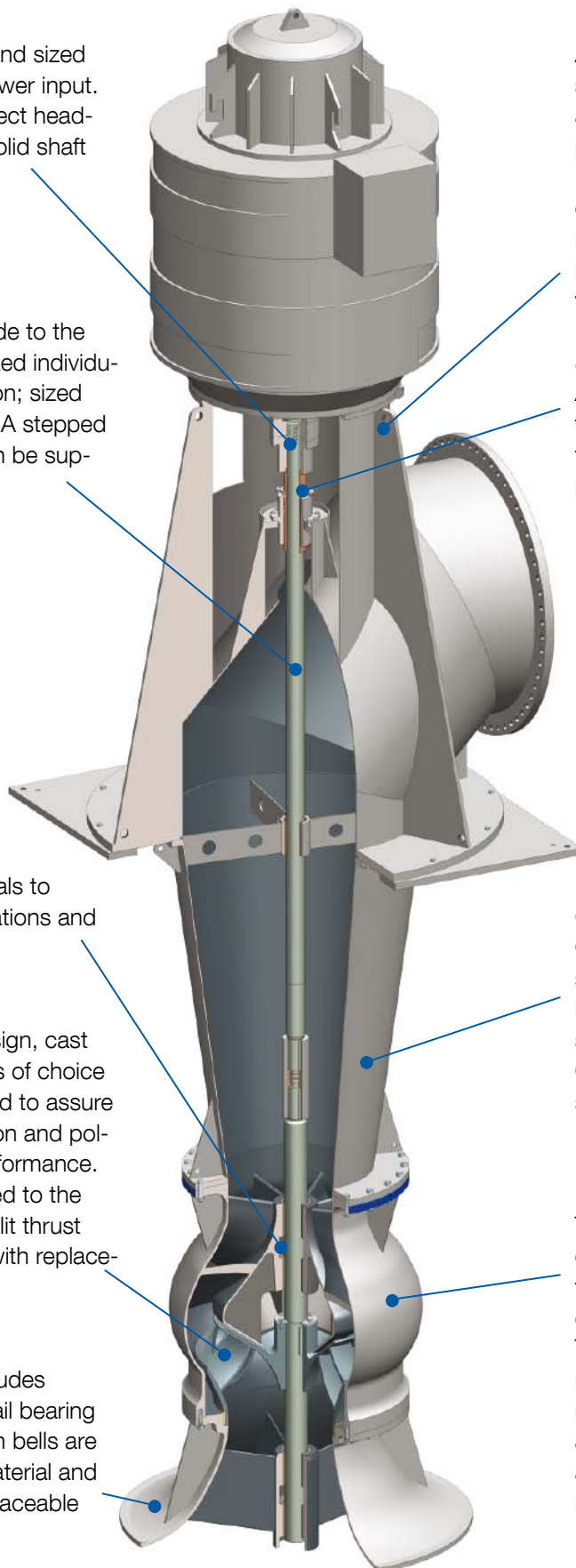
Bowls can be fitted with rubber, metal or dual (rubber and metal) bearings of many different materials to meet required applications and specifications.

Impeller

Impeller is closed design, cast from various materials of choice for versatility, balanced to assure vibration-free operation and polished to optimize performance. The impeller is secured to the shaft by a key and split thrust ring and is available with replaceable wear rings.

Suction Bell

Each suction bell includes anti-vortex ribs and tail bearing bushings. The suction bells are standard cast iron material and are available with replaceable wear rings.



Discharge Head

An above ground discharge head is standard. The integral driver stand allows easy access to removable packing/seal box and coupling. Each standardized discharge elbow comes with a segmented bend / motor stool and utilizes a stuffing box designed to accommodate various mechanical seals.

Shaft Seal

A packed stuffing box is provided for reliable sealing and easy maintenance. Mechanical seals can be provided.

Column Assembly

Column pipes are flanged. Line shafts are connected by split ring, key and sleeve couplings. Line shaft bearings are replaceable. Column assemblies have integral spiders for column diameter above 14”.

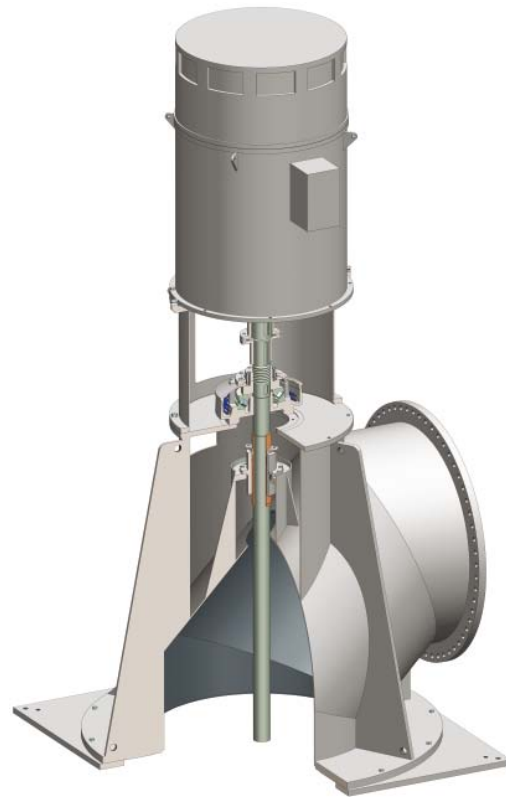
Bowl

The SJT bowl design combines the energy conversion and diffusion of the intermediate bowl and discharge case in one single casing. This reduces the required components and allows for a direct connection to the column pipe. Bowls are standard cast iron material and are available with replaceable wear rings.

Thrust Bearing Assembly

Thrust bearing assemblies are available when required by the application. They are built to handle all the down thrust produced by the pump and any momentary up thrust may occur. The flexible coupling with spacer allows servicing the thrust bearing and mechanical seal as needed. A one-piece fabricated motor stand housing is bolted down over the discharge head to protect the bearing and support the motor.

Optional features include sandstorm protection, special means for cooling and a constant level oil lubricator.

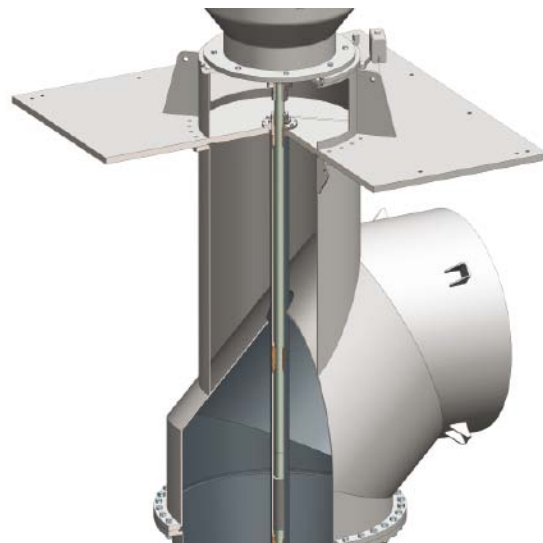


Multistage Construction

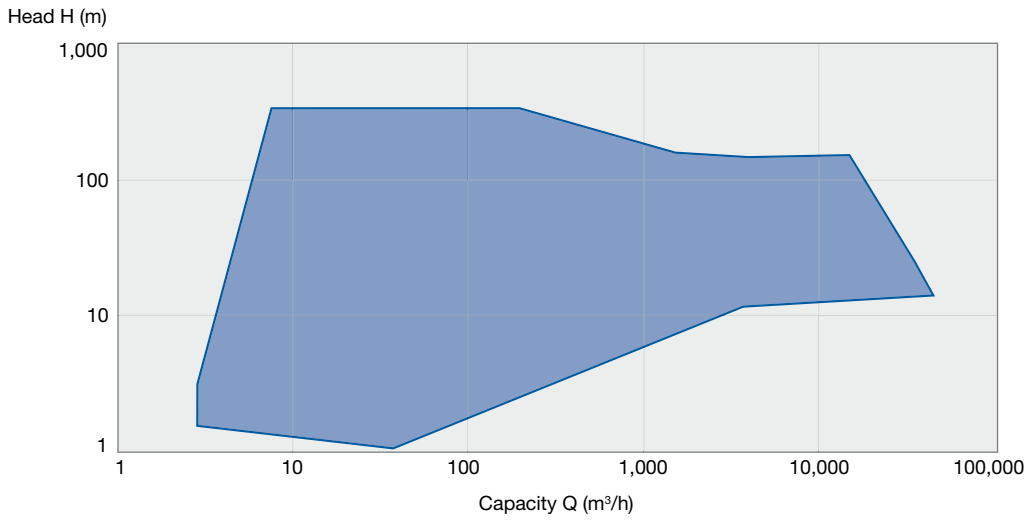
A multistage design of the SJT is available for increased head requirements up to 40 bar (600 psi).

Discharge Head

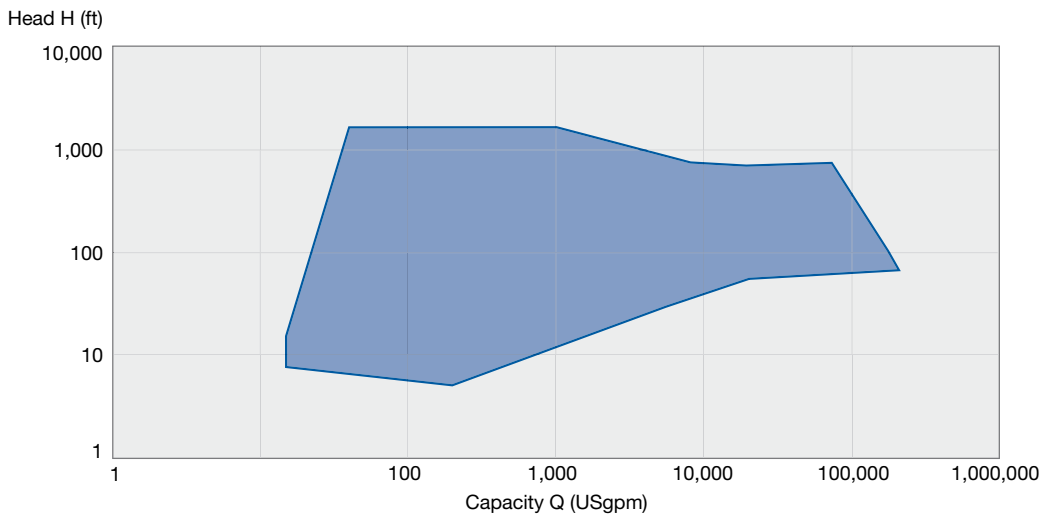
Below ground discharge head is available. Each comes with a segmented elbow designed to optimize pump efficiency. The elbows are fabricated in various materials to meet many required applications. The discharge nozzle can be either plain-end or flanged. The motor stand is mounted above ground and is designed to support the motor weight and provide maximum clearance for multiple stuffing box options. These options include gland packing, shaft tube and mechanical seal.



SJT Performance Ranges



50 Hz



60 Hz

Operating Data

	50 Hz	60 Hz
Pump sizes	150 to 3,000 mm	6 to 120 inches
Capacities	9 to 55,000 m ³ /h	40 to 240,000 USgpm
Heads	up to 115 m per stage	up to 380 feet per stage
Pressures	up to 40 bar	up to 600 psi
Temperatures	up to 230 °C	up to 450 °F

Maintaining and Improving Pump Performance

Sulzer Pumps – Customer Support Services

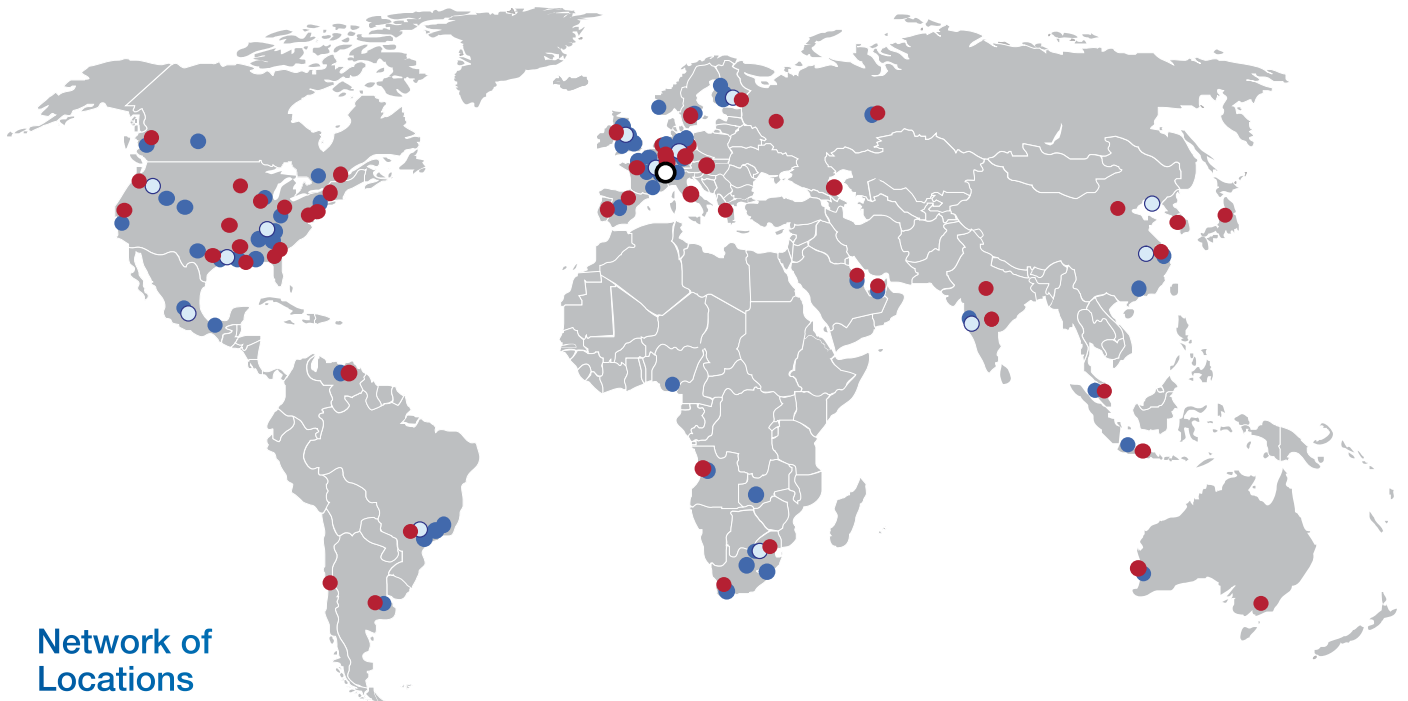
The continuous availability and high operating performance of pumps is the key target for our customer support service organization.

Through our highly experienced personnel and application knowledge, we provide a full range of innovative service solutions to our customers to keep their pumps running including:

- Spare Parts
- Field Services
- Repair Services
- Retrofits
- Maintenance Agreements
- Operation Agreements

Flexibility

With services ranging in scope from supplying a spare part to operating the pump under contract, we are uniquely placed to make your process run smoother. A dedicated team of our service specialists based at either our manufacturing facilities or one of over 60 service centers located around the world is dedicated to maintaining the performance of our customers' pumps and associated equipment. This service is not just limited to Sulzer products, all the pumps our customers operate can benefit from the support of Sulzer Pumps.



Network of Locations

- Divisional Headquarters
- Manufacturing Facility
- Customer Support Service Center (CSS)
- Sales Office

www.sulzerpumps.com

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