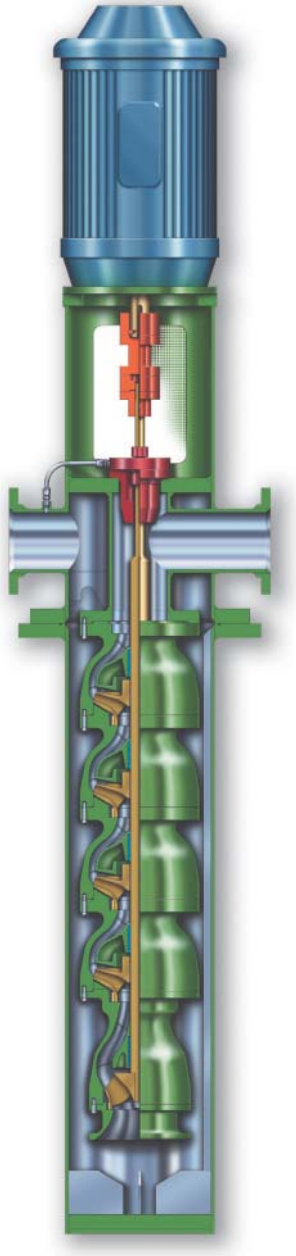
SULZER

# JD Vertical Multistage Can Pumps



The Heart of Your Process

# Sulzer Pumps

Sulzer Pumps combines more than 135 years of experience in pump development and manufacturing with a deep commitment to fully understand the needs of our customers.

Our detailed process and application knowledge has allowed us to develop innovative pumping solutions for our focus segments including tailor made systems if required. Our active research & development supports this customer-oriented approach.

Sulzer Pumps has sales and service facilities in all the major markets of the world to provide fast and flexible response and support.

# Extensive Product Range

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

- Oil & Gas
- Hydrocarbon Processing
- Pulp & Paper
- Power Generation
- Water & Wastewater
- Food, Metals & Fertilizers

## Vertical Canned Pumps

These pumps are used in many applications where the available NPSH is insufficient to allow the installation of more conventional pump types.  NPSH requirements of the pump are met by simply adjusting the length of the pump and can. The advantage is minimal floor space usage. Because the pump typically operates within a suction can, ideal suction conditions are provided within the normal operating envelope. Vertical can pumps are typically used in oil and gas, hydrocarbon processing, power generation and general industrial applications. Although commonly supplied with a suction can, JD pumps are optionally available without a can.

## Applications

Sulzer JD pumps are specified wherever limited NPSH is available, either due to system constraints or liquids operating near to their vapour pressure. Typical uses include high temperature condensate extraction pumps in power generation plants, pumping liquefied gasses as well as general refining and industrial applications. Installing a Sulzer JD pump makes certain reliable suction performance is maintained no matter how marginal the process conditions may seem.

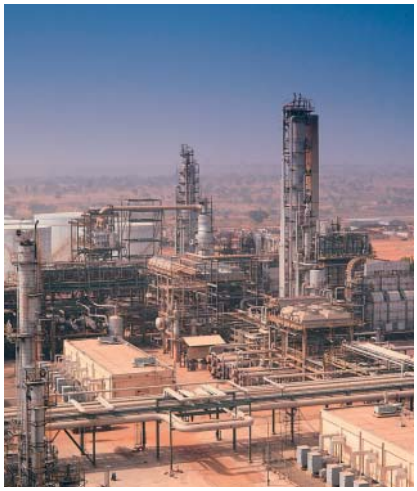
## Design

A vertical multistage high pressure design, the JD range features many standard and optional features to ensure both long and reliable operation. Hydraulic profiles designed using CFD technology ensures high efficiency and reliable operation. The individual stage bowls are of cast construction and feature with thick walled design for high pressure operation. Rugged, high strength fabricated discharge heads and suction cans are designed to suit a wide variety of applications. All fabrications are designed as per ASME – section VIII. API 610 versions are available for use in refineries and petrochemical plants. Heavy-duty shaft systems are used and, combined with product lubricated bearings in each bowl, stable shaft rotation is ensured. Abrasive or high temperature applications may require alternative bearing materials to be specified from the wide range of standard options that are available. For marginal duties a low NPSHr 'Q' first stage hydraulic is available. Using the 'Q' stage minimizes pump length while maximizing NPSH margin for economic and reliable operation.

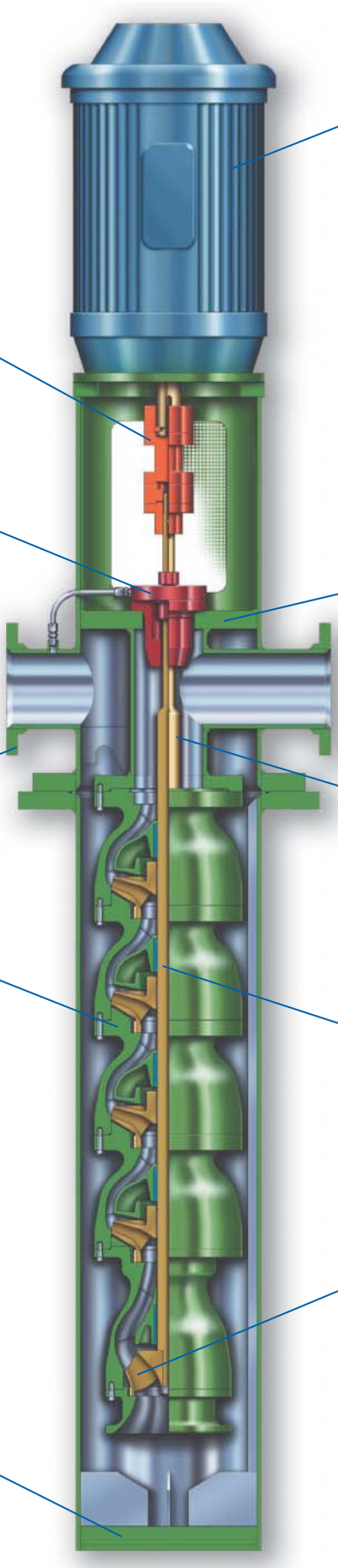
## Materials

A wide range of standard materials are available including;

- Cast parts – cast iron, carbon steels, 316SS and bronze
- Shafts – carbon steel, Monel, K-Monel and Nitronic 50
- Fabrications – carbon steel and 316SS
- Bearings – Carbon, cast iron, epoxy and Nitronic 60



# Design Features and Benefits



## Coupling
Adjustable flanged coupling fitted as standard. Design allows easy access for maintenance and adjustments. Meets rigid construction requirements.

## Seal
Various sealing arrangements are available to suit individual applications from single or double mechanical seals to graphite impregnated packing rings.

## Flanges
ANSI flanges are provided with ratings from 150# to 600# depending on the application. The suction flange can be provided with ANSI, plain end or Victaulic connections. Suction and discharge connections can also be provided with RTJ or ISO flanges.

## Bowls
Stage bowls have heavy-duty side walls and thick double drilled O-ring sealed faces for a standard 69 bar/1,000 psi rating (depending on pump size). Higher pressure designs are available. Materials selected to suit the application. Bowl bearings are formed from bronze or carbon bushes. Bearings are product lubricated.

## Can
Fabricated design. Baseplates also match ANSI standard flange dimensions. As a minimum, cans are rated to the same design pressure as the suction flange and are pressure tested to 1.5 time the design pressure.

## Driver
Solid shaft drivers.Thrust bearing in driver sized for all static and dynamic loads.

## Column Assembly
(Not shown.) Used when extra length is needed to achieve adequate NPSHR at the suction impeller. Close bearing spacing eliminates critical speed problems. Heavy-duty shafts assist rigidity. Flanged rising column joints are used for strength and simplicity of maintenance.

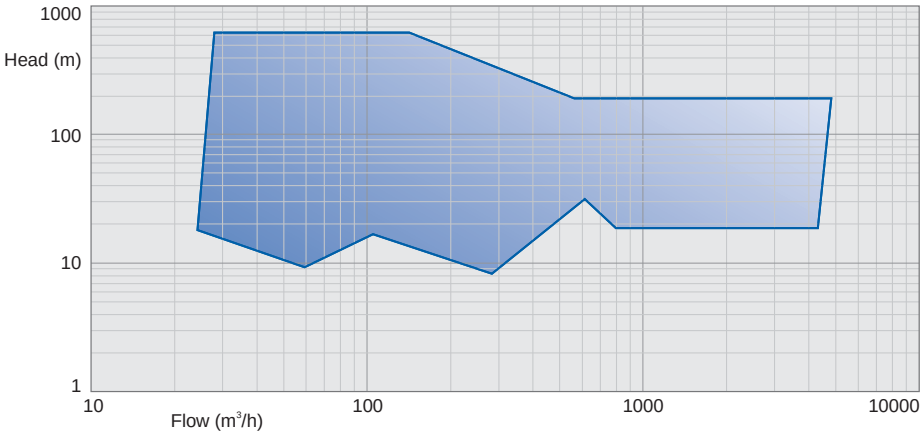
## Discharge Head
Stress relieved steel fabricated steel construction. Fully pressure tested. Extra heavy-duty baseplates.

## Top Shaft
Attaches to the coupling and main shaft assembly. Material selected to match the duty. In typical API applications the shaft is designed as a single piece unit.

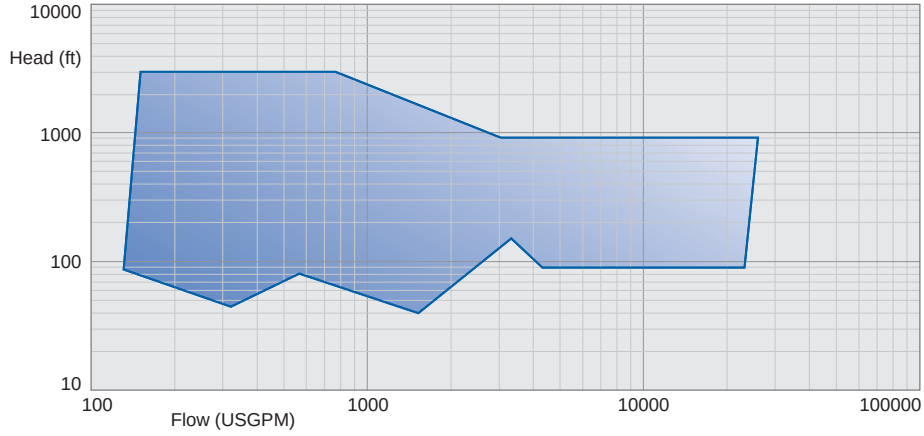
## Pump Shaft
Available in various materials to suit the application. Dimensioned to transmit maximum torque and thrust loads. Machined to meet the requirements of ANSI 58.1 and AWWA E101.

## Q Stage
Low NPSHR first stage designs available to minimize pump and can  length. All Q impellers are manufactured from 316SS for maximum performance and minimum wear. The optional Q-Stage drastically lowers NPSH requirements and thus allows for shorter can and pump lengths.

# Performance Range




**JD 50 Hz**




**JD 60 Hz**

# Operating Data

| | JD 50 Hz | JD 60 Hz |
|---|---|---|
| Pump sizes | 200 to 1,220 mm | 8 to 48 inches |
| Capacity | 4,750 m³/h | 25,000 USGPM |
| Head | 704 m | 2,310 ft |
| Pressure (size dependant) | 69 bar | 1,000 psi |
| Temperature | -40 to 204 °C | -40 to 400 °F |

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Check our worldwide offices at
**www.sulzerpumps.com**