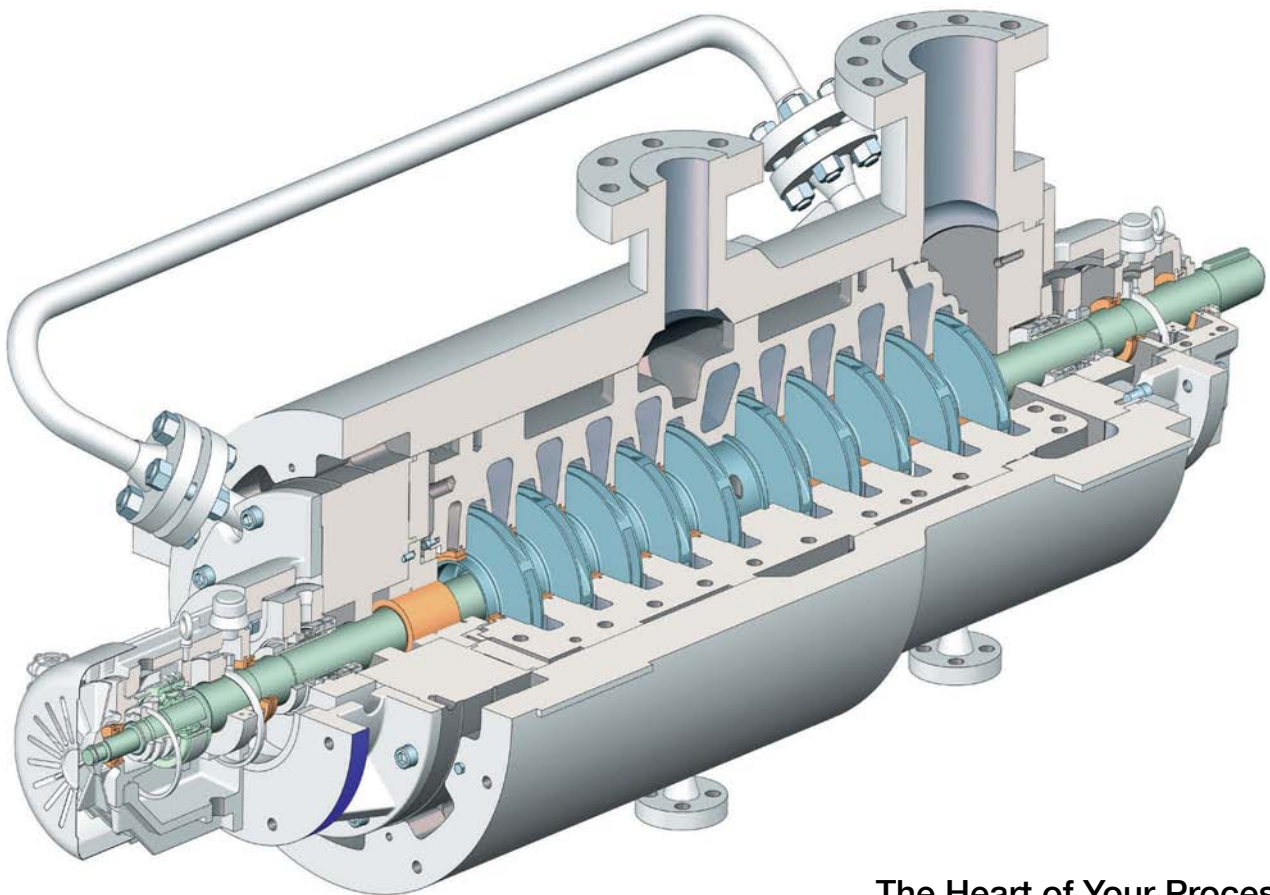


# CP Horizontal Double Casing Radially Split Multistage Pump



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

## Core CP Manufacturing Centers



Portland, USA



Leeds, UK

## Superior Reliability in Pumping Ensures Improved Productivity

### Oil and Gas

There are thousands of CP pumps operating around the world on water flood, crude shipping, product pipeline, LPG pipeline, supercritical ethylene and supercritical CO<sub>2</sub> duties. Onshore or offshore, the CP is widely used in all applications where ISO 13709 (API 610) BB5 pumps are specified.

### Hydrocarbon Processing

CP pumps are found in crude charge, boiler feed and lean amine services in most gas plants, refin-

eries and petrochemical plants around the globe. They may also be used as power recovery turbines in hydrotreaters to save energy.

### Power Generation

The CP is used in boiler feed, condensate extraction and startup boiler feed services in both fossil fired and combined cycle power plants. It may also be used for safety related auxiliary feedwater duties in nuclear power plants.



# Applications

## Oil & Gas

- Water Injection
- Crude oil transfer
- Pipeline

## Power

- Boiler Feed
- High Pressure Safety Injection

## Hydrocarbon Processing

- Refinery
- Petrochemical

The CP is a horizontal, ISO 13709 (API 610) BB5 axially split double case multistage barrel pump, with an opposed impeller, between bearing design. It is suitable for high pressure, high speed, high temperature services requiring reliability and long service life.

The CP's rotating element is housed in a horizontally split inner case, which is itself contained in a cast or forged outer barrel. This design provides for easy maintenance and element removal without piping disturbance. Suction and discharge nozzles are normally positioned at top centerline, but can be rotated to meet specific



application requirements. Also, the CP can be supplied with a double-suction first stage for low NPSHa. The opposed impeller and double volute inner case minimize axial thrust and control radial balance. These pumps are principally used in oil production, specialized refinery applications and for boiler feed applications in power plants. They are particularly suited to low specific gravity applications where the back-to-back design and center bushing provide natural axial balance and additional shaft support.

## Sulzer Twistlock™ Design

The CP pump discharge cover incorporates the innovative Sulzer Twistlock™ design, which significantly reduces the pump assembly and disassembly time. This feature also leads to a decrease in the weight of the pump unit compared with the traditional heavy bolted design. The suction cover is a simple design that provides effective sealing and again eliminates the usual requirement of heavy bolting. End covers contain integral seal chambers that comply with the requirements of ISO 13709 (API 610) Table 6 and ISO 21045 (API 682). The traditional bolted design end covers can be made available for customers who mandate the arrangement as a technical requirement.



**Sulzer Twistlock™ technology for superior functionality, reduced overall weight and proven time savings for assembly and disassembly.**

# CP Design Features and Benefits

## Sealing

- O-Ring or pure graphite sealing rings for operating temperatures up to 425 °C (800 °F)

## Cover Fixing Options

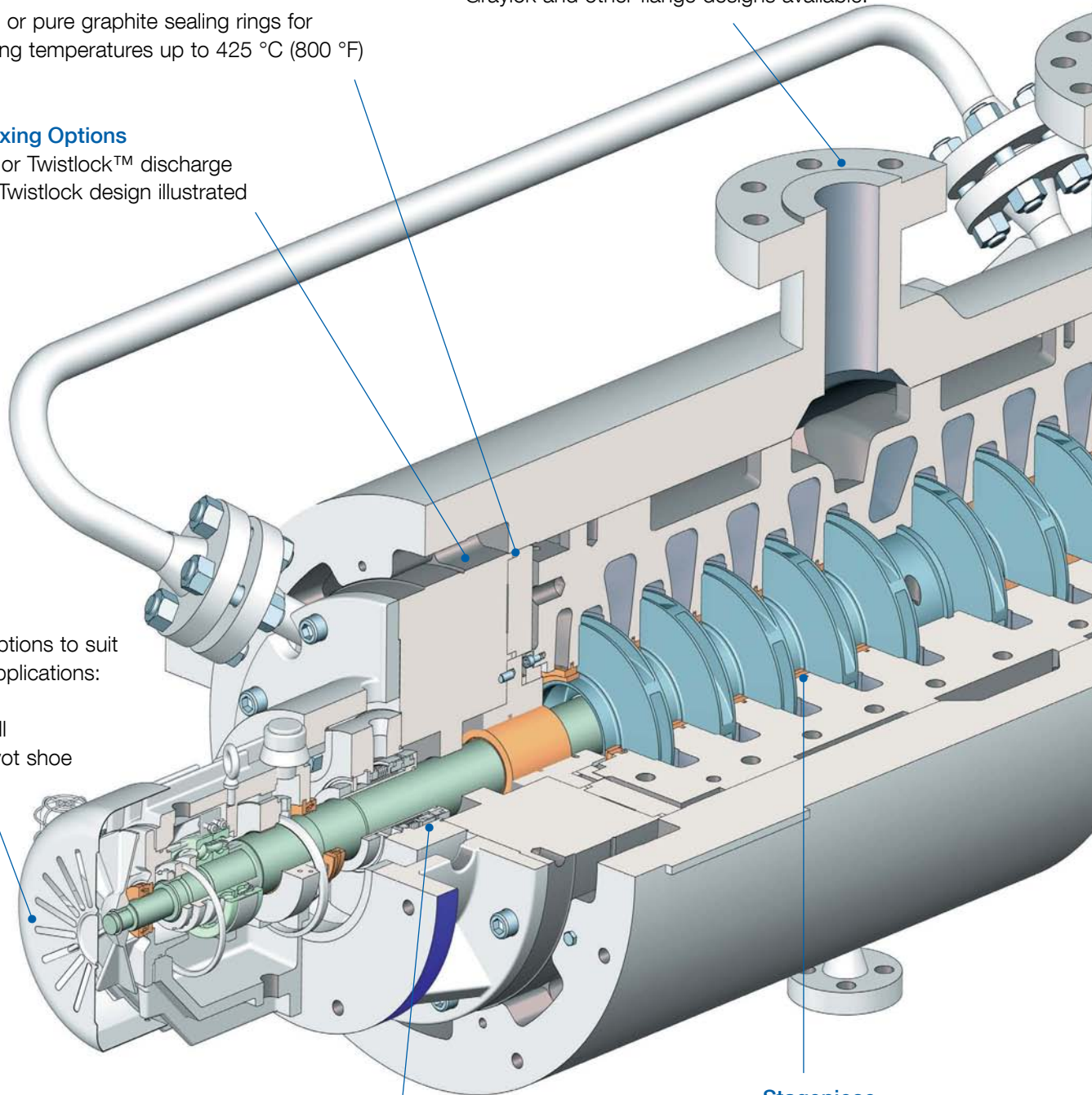
- Bolted or Twistlock™ discharge cover (Twistlock design illustrated here)

## Bearings

- Bearing options to suit specific applications:  
Ball/ball  
Sleeve/ball  
Sleeve/pivot shoe

## Flanges

- Ratings up to ASME B16.5 Class 2500 with option to have suction end rated equal to discharge.
- Graylok and other flange designs available.

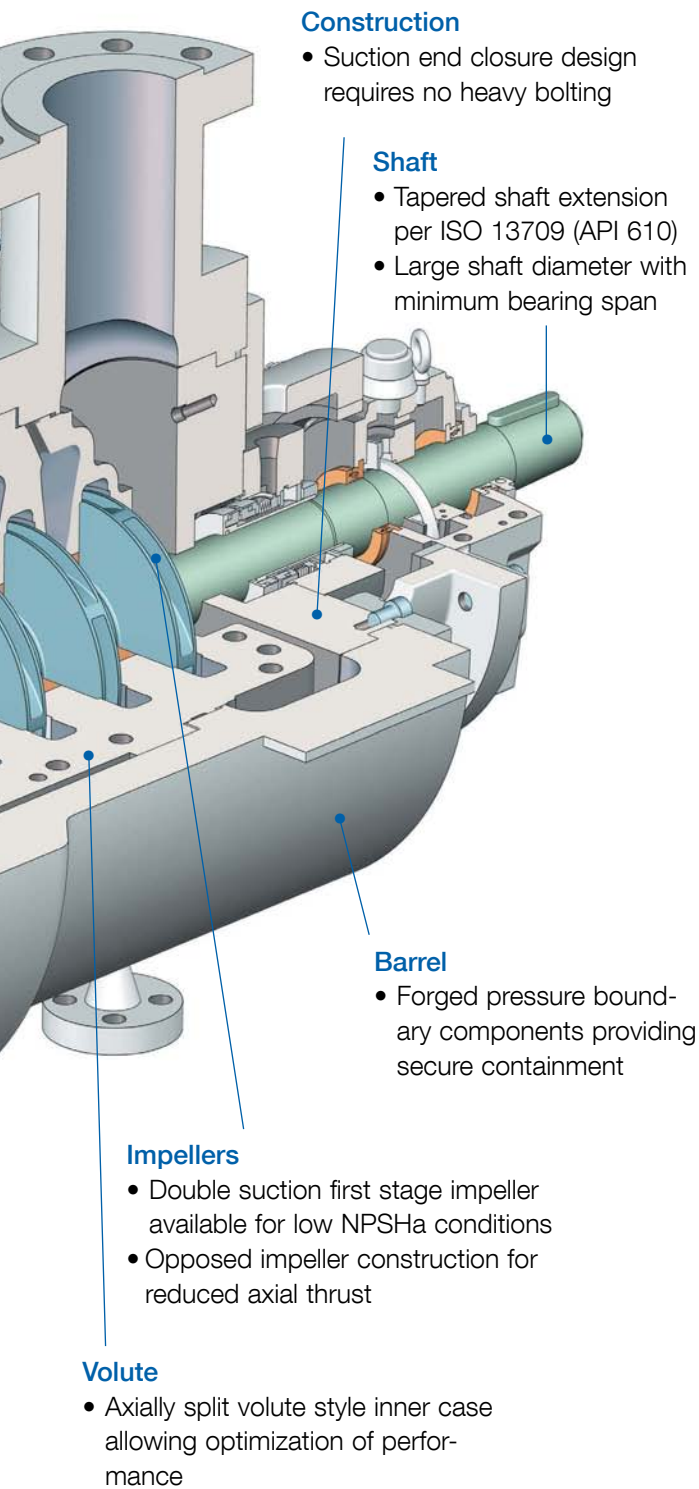


## Stagepiece

- Bridged stagepiece construction for reduced number of wear part components

## Seal Chambers

- ISO 13709 (API 610) seal chamber dimensions.
- Seal chamber is designed for ISO 21049 (API 682) cartridge type seals and seal systems



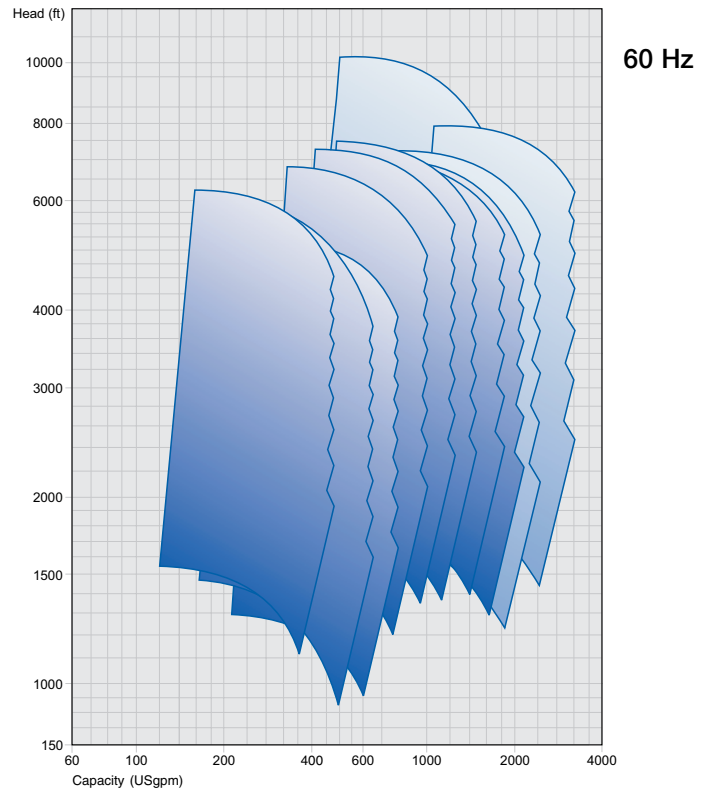
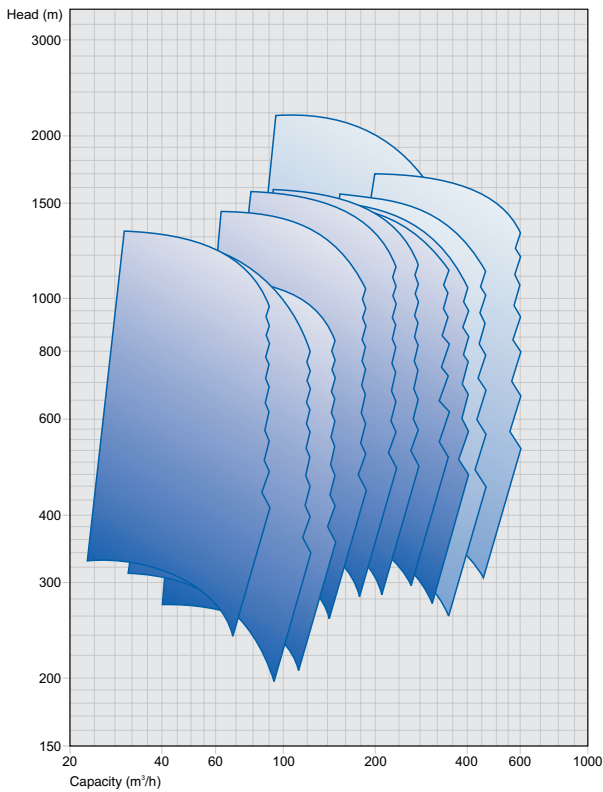
### Standard Features

- Compliance with ISO 13709 (API 610) requirements
- Hot alignment feature for temperatures above 120°C (250°F)
- Designed to accommodate temperatures between -50 °C (-46 °F) to 425°C (800°F)
- Pump feet located on horizontal centerline
- Inner bundle arrangement (rotating element and volute case) for ease of changeouts
- Seal chambers for single/double seals to ISO 13709 (API 610) Table 6
- Flanged stationary wear parts to control interstage leakage
- Double volute inner case for radial thrust balance
- Replaceable or integral impeller hub and eye rings
- Dynamically balanced impellers and rotating element
- NEMA taper shaft extensions for spacer couplings
- Rotation counterclockwise, as viewed from the driver

### Options

- Twistlock™ discharge cover for quick assembly/disassembly
- Super Bolt™
- Bearing arrangements and lube systems
- Seals and piping
- Cooling jackets
- Custom baseplate for special drivers
- Metallurgy combinations
- Top/side or side/side or bottom nozzle locations
- Bolted endcovers
- Non-metallic wear parts
- De-staged construction
- Hydraulic fit couplings
- Clockwise rotation, as viewed from the driver
- Full cartridge design
- Additional inspection and NDT (to meet ISO 13709 (API 610) bulleted requirements)
- Instrumentation including vibration, temperature and pressure monitoring
- ISO 21049 (API 682) seal flush plans

# CP Performance Ranges



Note: Head and capacity lines from maximum (runout) to minimum.

## Operating Data

	50 Hz	60 Hz
<b>Capacities</b>	up to 1,000 m <sup>3</sup> /h	up to 4,400 USgpm
<b>Heads</b>	up to 7,000 m	up to 23,000 ft
<b>Pressures</b>	up to 425 bar	up to 6,250 psi
<b>Temperatures</b>	-50° to 425 °C	-46° to 800 °F
<b>Speeds</b>	up to 7,200 rpm	up to 7,200 rpm

Note: Higher performances met with custom designs.  
Head and flow at the best efficiency point.

# Maintaining and Improving Pump Performance

## Sulzer Pumps – Customer Support Services

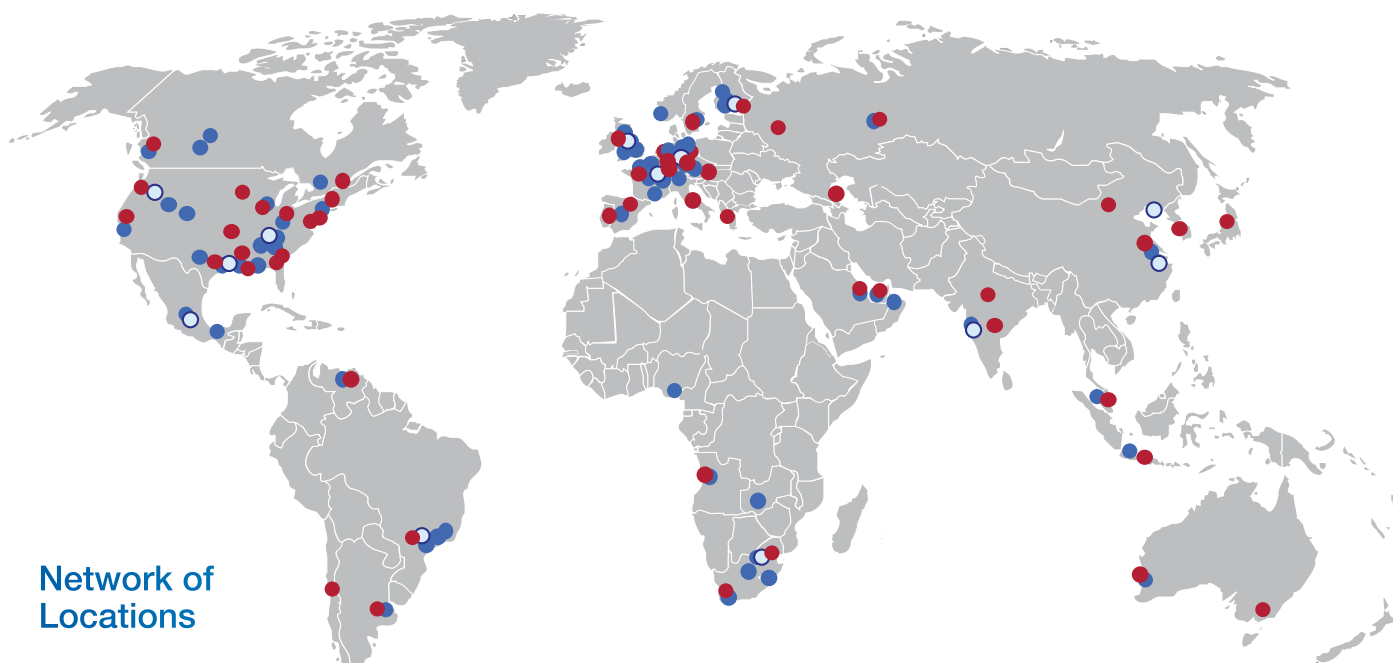
The continuous availability and high operating performance of pumps is the key target for our customer support service organization.

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](http://www.sulzerpumps.com)

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