

**SULZER**

Sulzer Pumps

# Sulzer Pumps for the Hydrocarbon Processing Industry



The Heart of Your Process



## Your Experienced Industry Partner

As a global leader in pump design and manufacture, Sulzer Pumps is recognized for delivering the excellent product quality and performance reliability required for a wide range of applications in the Hydrocarbon Processing Industry.

### Synfuels

Oil sands, oil shale and extra heavy crudes present significant opportunities and challenges to the petroleum industry. Developing these resources demands a specialized knowledge base, advanced technologies and a highly-skilled workforce. Customers look to Sulzer Pumps for the flexibility and reliability needed to address both the unique and routine pumping challenges in this market.

### Refining

Sophisticated process technology, along with advanced equipment and materials engineering are essential to convert crude oil into fuel for transportation and products for everyday life. Sulzer Pumps supplies engineered pump designs in a wide array of materials to handle the variety of process liquids and ranges of pressures and temperatures in these processes. As a proven and reliable industry partner, Sulzer Pumps helps customers develop practical refining solutions, meet the latest industry standards and protect the environment.

### Gas Processing

The world's vast supplies of natural gas require the removal of contaminants in preparation for its delivery to fulfill the market needs for this valuable resource. Our customers recognize Sulzer Pumps as a reliable and innovative partner in natural gas conditioning plants, Natural Gas Liquids (NGL),

Liquefied Petroleum Gas (LPG) separation, Gas-to-liquid (GTL), and Liquefied Natural Gas (LNG) plants. Our knowledge of these sophisticated processes and extensive pump portfolio ensure that Sulzer can provide you with the correct answers to your pumping challenges.

### Petrochemical Industry

Safety, reliability and emission containment are top priorities in the petrochemical industry. With extensive applications know how and alloy foundry engineering expertise, Sulzer Pumps helps customers address these concerns with pumping solutions that improve equipment, increase Mean Time Between Failure (MTBF) and reduce Total Life Cycle Cost (TLCC).

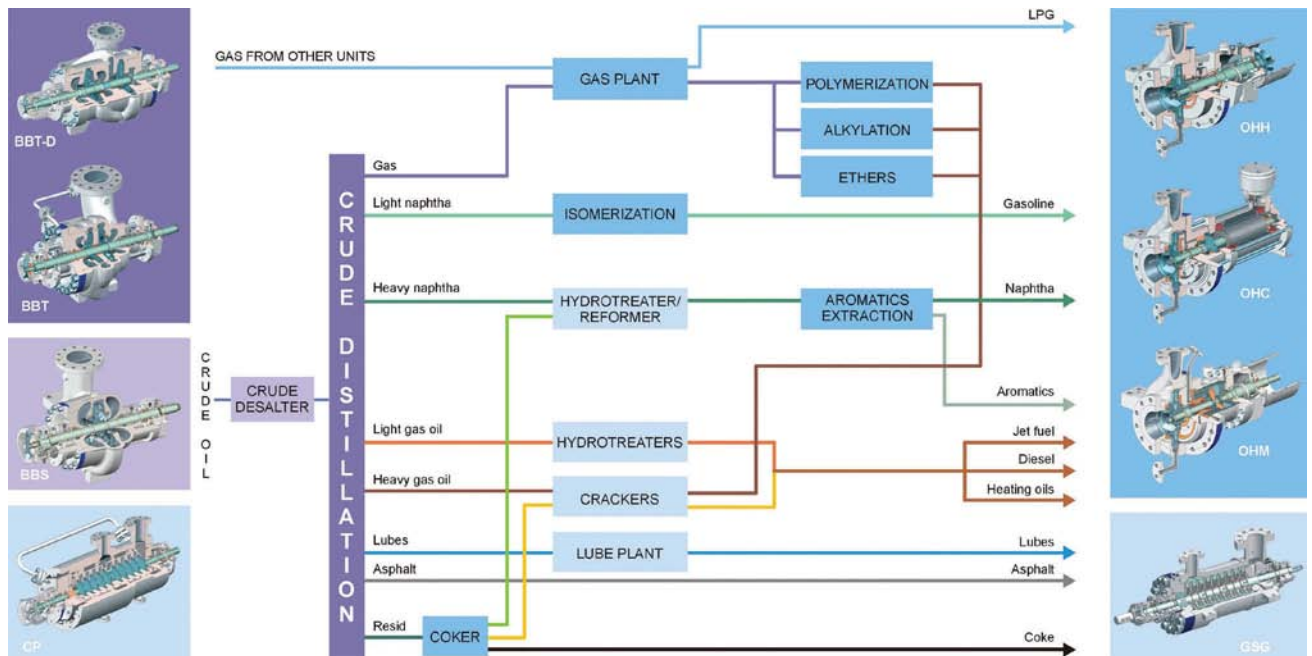
### Nitrogenous Fertilizers

Sulzer Pumps' extensive experience in the complex processes used by nitrogenous fertilizer industry ensures customers have the proper pumps required for reliable operation in the production of synthetic ammonia, nitric acid, ammonium nitrate and urea.



# Process Knowledge and Understanding

Sulzer Pumps understands the many sophisticated processes used the Hydrocarbon Processing Industry. With world-class technology solutions and equipment, Sulzer Pumps has designed a full-line of products to provide customers with a perfect fit for even the most demanding technical requirements.



Typical refinery process with Sulzer pumps.



## Meeting Your Needs

### Safety, Health and Environment

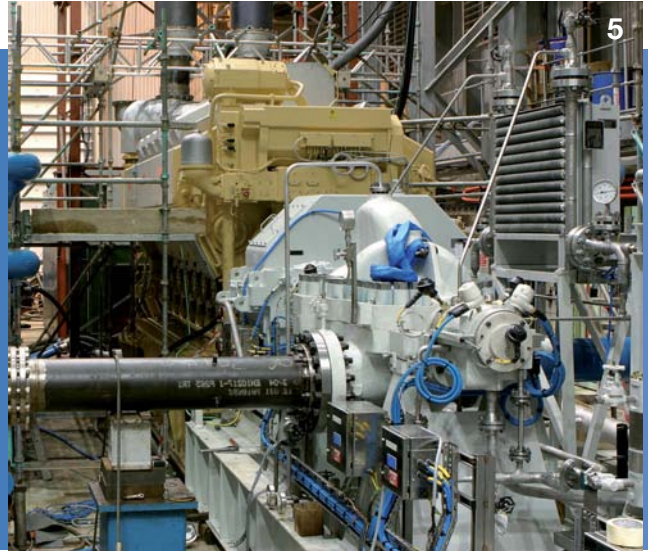
Health and safety is a top priority for Sulzer Pumps, in our own operations and our work with you. We document and evaluate safety performance indicators, including accident frequency and severity, at all sites on a monthly basis. Any accident is one too many. Across the company our long-term goal is to reduce the number of occupational accidents and illnesses to zero.

Our concern for health and safety extends to the environment as well. Sulzer Pumps considers the total life cycle of its products to limit environmental impact and help lower costs. Sulzer Pumps' total life cycle analysis includes the design, manufacturing, marketing, packaging, transportation, operation, recycling, and disposal of the products. We apply the same rigorous evaluation to the way we provide services. We focus on identifying relevant influences on product life cycle efficiency, including energy consumption during production, material usage and costs, and continually take action to make improvements.

### Customer Support Services

The continuous availability and high operating performance of pumps is the key target for Sulzer Pumps Customer Support Services organization. Through our highly experienced personnel and application knowledge, we provide you with a full range of service solutions to keep your pumps running.

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. Our service specialists based at either our manufacturing facilities or one of over 60 service centers around the world are dedicated to maintaining the performance of your pumps and associated equipment.



## The World's Best Production and Testing Facilities

To be close to our customers, Sulzer Pumps has production facilities on almost every continent. Our production sites in Germany, India, Mexico, Brazil, China and the United States are dedicated to offering a complete range of products for the Hydrocarbon Processing Industry.

All Sulzer Pumps manufacturing locations have certified Quality Management Systems in place conforming to the requirements ISO 9001:2000 standard, as well as ISO 14001 and OHSAS 18001.

To ensure a smoother commissioning and start-up, every Sulzer Pumps' manufacturing plant is equipped with excellent testing facilities, capable of demonstrating the required pump performance.

With long-term experience in rotating equipment, we are able to provide high quality packages and projects managed by global teams who understand the importance of customer relationships. As your challenges grow, whether they are technical, geographical or environmental, you can count on Sulzer Pumps' support.



Sulzer Pumps Germany



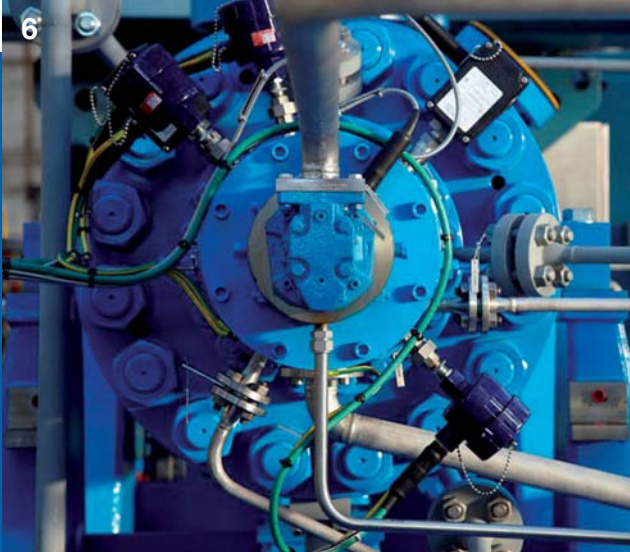
Sulzer Pumps India



Sulzer Pumps Mexico



Sulzer Pumps Brazil



## Creating Complete Value

As a world leader in pumping solutions, Sulzer Pumps has the in-depth understanding and full-line supply to meet customers' needs and deliver value through efficiency and performance.

Product Technology	Product Type	Synfuels	Refining	Gas Processing	Petrochemical Industry	Nitrogenous Fertilizers
Single Stage Pumps	OHH/OHHL	•	•	•	•	•
	OHV/OHVL	•	•	•	•	•
	OHM	•	•	•	•	•
	CPT/APT	•	•	•	•	•
	BBS/CD	•	•	•	•	•
Two Stage Pumps	BBT	•	•	•	•	•
	BBT-D	•	•	•	•	•
Barrel Pumps	GSG	•	•	•	•	•
	CP	•	•	•	•	•
Axially Split Pumps	MSE/MSD/MSD2	•	•	•	•	•
Vertical Pumps	SJD (API)	•	•	•	•	•
	SJP	•	•	•	•	•
	SJM	•	•	•	•	•



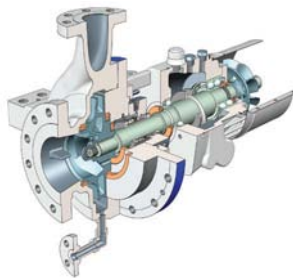
## Single Stage Pumps (API-OH2, API-OH3)

### OHH/OHHL

The OHH (API-OH2) overhung process pump is designed for use in heavy duty refinery services, petrochemical plants, and offshore services. It is designed according to ISO 13709 (API 610) and ISO 21049 (API 682). The OHHL provides an optimum hydraulic fit for low flow / high head single stage process pump applications.

**Pressure 52 bar / 740 psi**

**Temperature 428 °C / 800 °F**

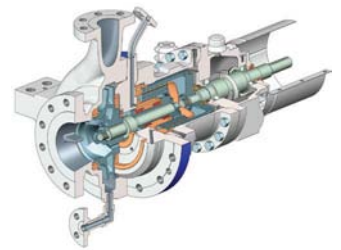


### OHM

The OHM overhung API 685 process pump includes the latest in sealless pump technology. It is a horizontal, single-stage, radially split, centerline mounted pump with a high-efficiency magnetic coupling.

**Pressure 52 bar / 740 psi**

**Temperature 250 °C / 480 °F**

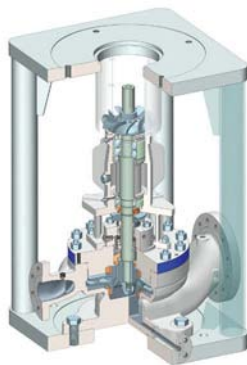


### OHV/OHVL

The OHV ISO 13709 (API 610) OH3 range of inline pumps is used in refineries, oil and gas production, pipeline boosting and offshore applications where space is confined. The small footprint of the OHV inline pump means a smaller foundation or no foundation at all. The OHVL provides an optimum hydraulic fit for low flow / high head single stage process pump applications.

**Pressure 2 bar / 740 psi**

**Temperature 230 °C / 450 °F**

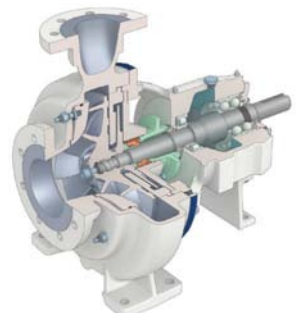


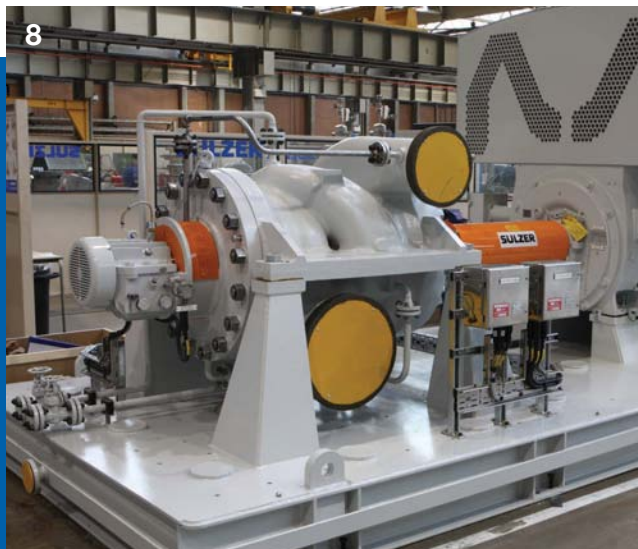
### CPT/APT

The CPT chemical process pump is designed for continuous operation in process industries for pumping clean, abrasive or corrosive liquids. This pump is designed to exceed ANSI (ASME B73.1M) pump standards. The AHLSTAR (APT) pumps in addition handle liquids containing gas or air and the pump can be modified with either internal or external gas removal construction which stabilizes the operation. The Sulzer Dynamic Seal is specifically designed for difficult liquids offering reliable operation and low total sealing costs.

**Pressure 16 bar / 230 psi**

**Temperature 260 °C / 500 °F**





## Single Stage Pumps (API-BB2)

### BBS/CD

BBS or CD ISO 13709 (API 610) BB2 pumps are primarily used in process applications in refineries and petrochemical plants. The broad pressure and temperature capabilities of this design allow it to be used in the most arduous applications while still providing long and trouble free service. The double suction impeller is particularly suited to low NPSHa applications.

**Pressure 100 bar / 1 450 psi**  
**Temperature 425 °C / 800 °F**

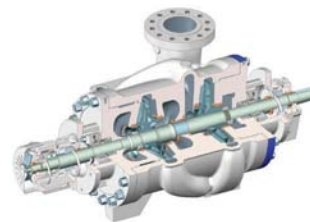


## Two Stage Pumps (API-BB2)

### BBT, BBT-D

These ISO 13709 (API 610) BB2 two stage pumps are designed for process applications in refineries and petrochemical plants. The design features large seal chambers able to accommodate ISO 21049 (API 682) seals. Standard options include a proven coke crusher design and a double suction first stage impeller for low NPSH applications.

**Pressure 100 bar / 1 450 psi**  
**Temperature 450 °C / 840 °F**





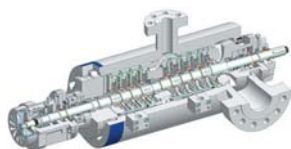
## Barrel Casing Pumps (API-BB5)

### GSG

GSG ISO 13709 (API 610) BB5 radially split barrel casing pumps are used in oil production, refining and boiler feed applications. Their design is optimized for direct drive applications thus avoiding unnecessary and expensive construction features. Their full cartridge design makes the most of the patented compact Sulzer Twistlock system of barrel closure. A back-to-back option is also available.

**Pressure 250 bar / 3 625 psi**

**Temperature 450 °C / 840 °F**



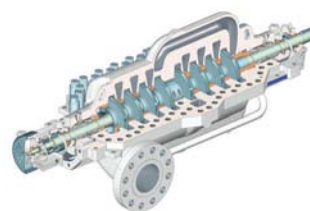
## Axially Split Pumps (API-BB3)

### MSE/MSD/MSD2

MSD ISO 13709 (API 610) BB3 multistage pumps are widely used in refineries, petrochemical plants, pipelines, water injection and power generation applications. The broad range of standard hydraulics and mechanical design options ensure optimum fit to customers duty requirements.

**Pressure 310 bar / 4 500 psi**

**Temperature 200 °C / 400 °F**

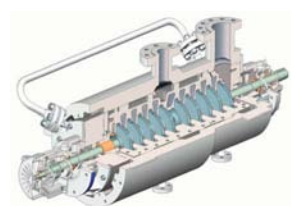


### CP

CP ISO 13709 (API 610) BB5 barrel pumps are axially split with opposed impeller and dual volute inner casing. They are particularly suited to low specific gravity applications where the back-to-back design and center bush provide natural axial balance and additional shaft support. These pumps can also utilize the Sulzer Twistlock design.

**Pressure 410 bar / 6 000 psi**

**Temperature 425 °C / 800 °F**





## Vertical Pumps (API-VS3, API-VS6)

### SJD (API)

The SJD ISO 13709 (API 610) VS6 range of vertical can pumps is ideal for applications where NPSHa is limited. The pumps are used in a wide range of applications and services in refineries, gas conditioning and separation plants, tank farms, petrochemical plants and pipeline stations. Their robust construction and wide hydraulic range make them ideally suited to process critical applications.

**Pressure 150 bar / 2 150 psi**  
**Temperature 205 °C / 400 °F**



### SJM

SJM ISO 13709 (API 610) VS3 mixed flow pumps are ruggedly designed for years of trouble free operation in a wide variety of applications. The basic components of head, column pipe and bowl assembly are combined and customized to perfectly match individual duty needs. In addition, the standard range of material options ensures the materials of construction can be matched to individual installation needs.

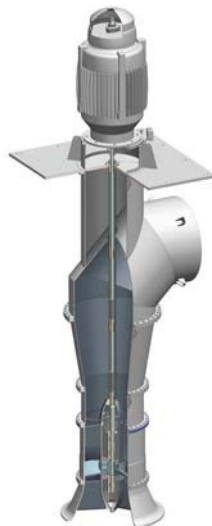
**Pressure 17 bar / 250 psi**  
**Temperature 135 °C / 275 °F**



### SJP

The SJP ISO 13709 (API 610) VS3 range of axial flow (propeller) pumps is specifically designed for high flow, low head duties. Widely used in irrigation, flood control, drainage and condenser circulation applications. SJP pumps are designed for continuous service for extended periods of time. The pumps are available in a range of metallurgies to match individual application needs.

**Pressure 2 bar / 30 psi**  
**Temperature 50 °C / 120 °F**





## ISO/ANSI Pumps for Petroleum Industry

Many auxiliary and non-hazardous applications in the Petroleum Industry do not require high pressure and high temperature pumps designed according to ISO 13709 (API 610). They can be served with robust, reliable pumps designed for lower pressure and temperature ranges. Sulzer Pumps' ISO 5199 and ANSI (ASME B73.1) pumps are ideally suited to such applications, including Oil and Gas production and transportation (Upstream) and Hydrocarbon Processing (Downstream). Our years of expertise and process understanding in the Petroleum Industry, combined with extensive ranges of pumps designed to different standards, allow our engineers to select the most suitable and cost-effective solution to your pumping requirements.

Sulzer Pumps' ISO/ANSI pump ranges are manufactured using the latest manufacturing technology and strict quality control procedures.

### Refinery Auxiliaries

In every refinery, the main line systems are supported by essential auxiliary processes, which require robust pump performance. Tank farms, blending and distribution terminals, tanker loading and unloading bays all need pumps that can be relied on to operate with maximum availability.

Product Technology	Product Type	Crude Oil Pre-treatment	Sweetening Processes	Blending, Storage, Distribution	Water and Effluent Treatment	Power and Steam Generation	Cooling Water
Single Stage Pumps	AHLSTAR - A	•	•	•	•	•	•
	AHLSTAR - N				•		
	AHLSTAR - W	•			•		
	CPT	•	•	•	•	•	•
Self Priming Pumps	AHLSTAR - A/N/W - LM series				•		•
Multistage Pumps	MBN		•			•	
Double Suction Pumps	ZPP						•
Vertical Sump Pumps	AHLSTAR - NV				•		
	AHLSTAR - NK				•		
	AHLSTAR - WK				•		

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



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