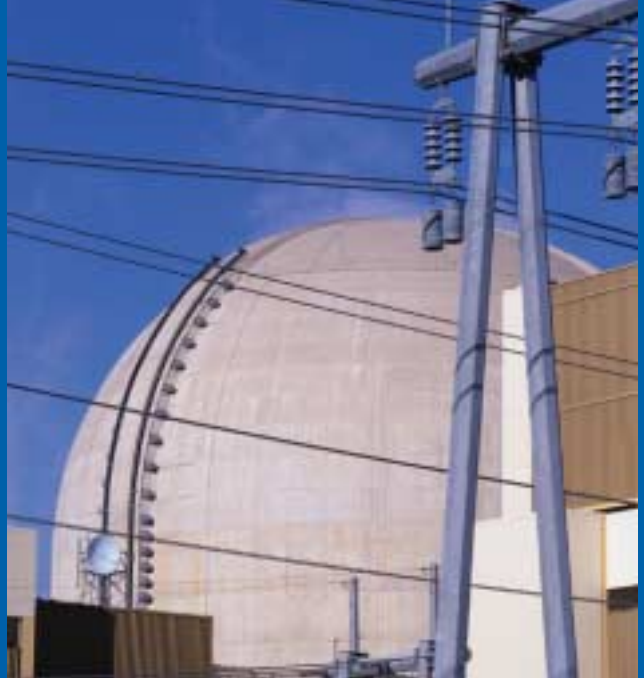
SULZER

Sulzer Pumps for the Power Generation Industry

The Heart of Your Process



Benefit from Sulzer Pumps' experience in pumping solutions for power generation

It's proven technology– even in remote locations.

Expertise

Sulzer Pumps' success is founded on expertise. Our know-how and competitiveness is based on over 140 years of experience in the manufacturing of pumps. Sulzer Pumps offers products for all types of power plants – nuclear reactor, fossil fired, geothermal, combined cycle, large and small industrial power plants. We offer an extensive range of innovative products and services. Sulzer delivers boiler feed, condensate extraction, boiler circulator, cooling water and auxiliary pumps, as well as specialized safety related pumps for nuclear power plants. We are leading in boiler feed pumps for supercritical fossil-fuel fired power plants.

Our technology for high efficiency and reliability.

Reliability

We have a successful track record of improving our customers' profitability by setting new standards in efficiency and reliability. Millions of people around the world are benefiting from a more reliable power supply as a result.

Reliability of your pumping solution depends on the proper product design, the right selection, the manufacturing and delivery process, aftermarket service and all associated support. Sulzer pumps for the power generation are universally respected for their innovative and sturdy design.

The latest manufacturing technology together with strict quality control procedures assure high levels of efficiency and performance over a full range of process conditions. Sulzer Pumps tests all pumps before delivery.

Leading in pump design and evaluation.

Research

Research and development have always received top priority at Sulzer Pumps. Basic research focuses on hydraulics, cavitation, erosion, corrosion and mechanical design (particularly rotor dynamics), which is then applied to advance product development. Our engineers work closely with customers all over the world on the practical implementation of innovative ideas. At any point, our customer can call upon the diverse expertise of the many research specialists working in our laboratories. Successful research and development activities require continuous investment.

Beyond immediate job results, Sulzer Pumps' commitment to research and development benefits our customers by ensuring that they have a stable business partner at the leading edge of pump technology.

We go further to reduce cost and increase savings.

Innovation

Deep knowledge in products, processes and services.

Sulzer Pumps' innovative technological solutions and equipment support the sophisticated processes applied in power generation. Sulzer Pumps has always been at the forefront of pre-engineered and engineered pump designs, using the widest range of materials to produce reliable equipment to handle a full range of pressures and temperatures.

Presence

With 14 manufacturing facilities strategically located around the globe Sulzer Pumps combines the advantages of being a global company with the ability to be your local partner. We take care of our customer relationship through our focused sales and service people with a high-level know-ledge. Their work – and yours – is complemented by our global knowledge support and good sales documentation. Local tendering and order handling ensures quick response to all your pumping needs. In addition to our dedicated personnel and competencies, Sulzer Pumps benefits from the ability to transfer manufacturing of either parts or complete pumps between plants which guarantees the most efficient utilization of our world-wide facilities.

World class products – world class service.

Serving diverse power markets

Fossil Fuel

Sulzer Pumps is a leading developer and manufacturer for boiler feed pumps in subcritical and supercritical plants, cooling water pumps, condensate extraction pumps, and auxiliary services.

Combined Cycle

Providing technical expertise in a broad spectrum of pumping applications benefits our customers. These applications involve natural gas, boiler feed, auxiliary, condensate and cooling water.

Nuclear Power

Sulzer Pumps – Innovator and major pump supplier worldwide for primary, secondary, safety systems and mechanical seals to ensure effective and reliable pumping solutions.

Industrial Power

Engineering and implementing reliable, cost effective pumping solutions to meet the demands of a continually evolving power generation industry is our focus.

Flue Gas Desulphurization

Sulzer Pumps offers a wide range of products for flue gas desulphurization plants which are economical in operation and of high technical standing.

Pumps for the most critical applications and demanding conditions

Product technology	Product type	Boiler feed	Condensate extraction	Cooling water	Flue gas desulph.	Nuclear services	Auxiliaries
Barrel Pumps	HPT	●				●	
	GSG	●				●	
	CP	●				●	
Horizontal Split Pumps	SMN/SMNV			●			●
	ZPP			●			●
	HSA/HSB			●			●
	MSD/MSE	●				●	●
Ring Section Pumps	MBN/MC/MD/ME	●	●				●
Vertical Pumps	JD		●				
	BK/BKC		●	●		●	●
	BDC		●				
	TTMC		●				
	VCR		●			●	
	JT/JM/JP			●		●	●
	BS/BSm/BSn/BPn			●		●	●
	RV/RVQ					●	
Two Stage Pumps	BBT/BBT-D	●					●
Single Stage Pumps	BBS	●					●
	HZB	●					●
	CD	●				●	●
	OHH/ZA/ZE/ZF	●				●	●
	ZU	●					
	A/CPT						●
	ZAP/WPP				●		
	CVDS					●	
	CVIC/CV					●	

Boiler Feedwater Pumps

Boiler feedwater service is one of the most demanding pump services within a power plant. Sulzer Pumps supplied thousands of pumps in services ranging from small industrial boilers to the largest coal fired power plants around the globe.

Sulzer Pumps is a full-line supplier of boiler feedwater pumps and offers segmental ring section pumps or horizontal split case pumps for small industrial boiler applications up to today's largest combined cycle power plants.

For higher pressure requirements of fossil fuel power plants, Sulzer Pumps has a full line of double case barrel type pumps. For nuclear power applications we have complete range of safety related pumps used for high-pressure water services.

Boiler feedwater pump reliability and availability in today's power plant is dependent upon proper application, features and equipment, shop testing, correct field installation, pump operation training, and conducting routine maintenance and service work. Working with a full-service pump supplier such as Sulzer Pumps is essential to reliable pump installations – indispensable for supplying on-demand power to the customers.

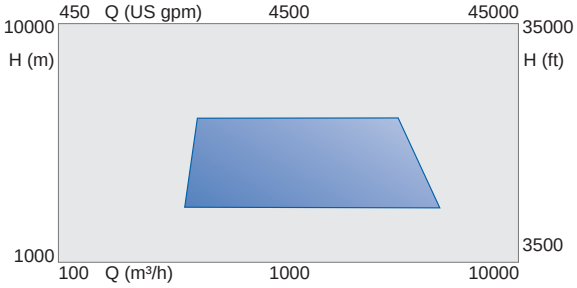
New modular, standardized plant designs no longer use redundant equipment. To meet the high demands on dependability, factory pump tests are performed on all critical service pumps prior to shipping. Performance, vibration and hot water suction transient rest (when required) are performed to discover any potential problems before they occur in the field.

Barrel Casing Pumps

HPT Multistage Barrel Casing Boiler Feed Pumps

The pumps are specifically designed for boiler feed applications in thermal power stations. These pumps are optimized to provide high efficiency operation over an extended period of time, reducing operation and maintenance costs. High availability and robust construction makes them all suitable for cyclic operation.

Performance range

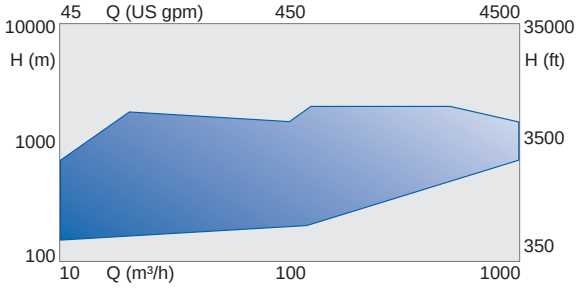


Pressure 450 bar / 6525 psi
Temperature 250° C / 480° F

GSG Radially Split Barrel Casing Pumps

GSG radially split barrel casing pumps are used in boiler feed applications, oil production and refining. Their design is optimized for synchronous speed direct drive applications thus avoiding unnecessary and expensive construction features. The GSG utilizes a full cartridge pullout design on sizes 100 and larger. A back-to-back option is also available.

Performance range



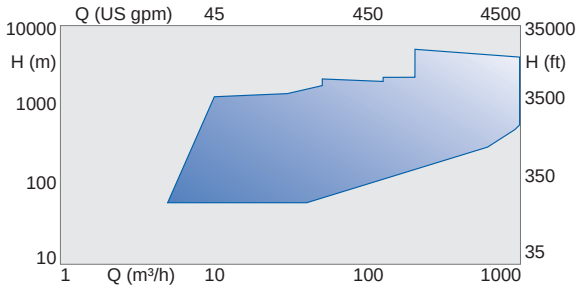
Pressure 250 bar / 3625 psi
Temperature 425° C / 800° F

Ring Section and Axially Split Pumps

MBN/MC/MD/ME Ring Section Multistage Pumps

This modular series of ring section multistage pumps consist of MBN, MC, MD and ME ranges. Ideal for feedwater condensate supply in industrial plants and power stations. M series pumps are diffuser style casings held together by external tie bolts. A wide range of common hydraulic components is used.

Performance range

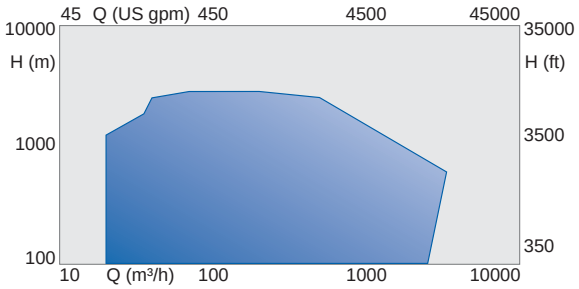


Pressure 350 bar / 5075 psi
Temperature 210° C / 410° F

MSD/MSE Horizontal Split Multistage Pumps

MSD/MSE pumps are horizontal split case volute style multistage pumps used for high pressure applications in the power industry, designed in accordance to ISO 13709 (API 610) requirements. Axial thrust is compensated by back-to-back impeller configuration.

Performance range



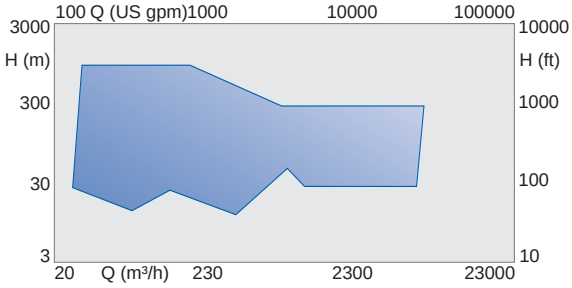
Pressure 310 bar / 4500 psi
Temperature 200° C / 400° F

Vertical Pumps

JD Vertical Condensate Pumps

The JD range of vertical pumps is ideal for applications where NPSHA is limited. The pumps are used in a wide range of applications ranging from simple industrial booster pumps to high pressure condensate return and heater drain pumps in power plants.

Performance range

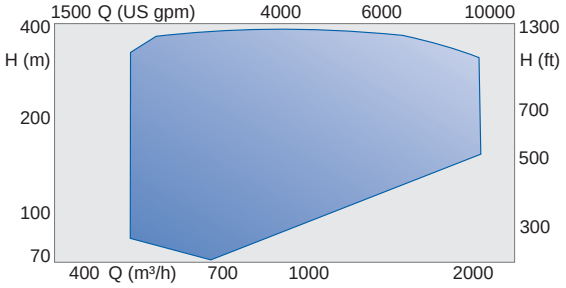


Pressure 40 bar / 570 psi
Temperature 150° C / 300° F

BDC Vertical Double Suction Condensate Pumps

Vertical, radially split casing pump with vertical can, in single or multistage design. Closed or double suction first stage impeller.

Performance range

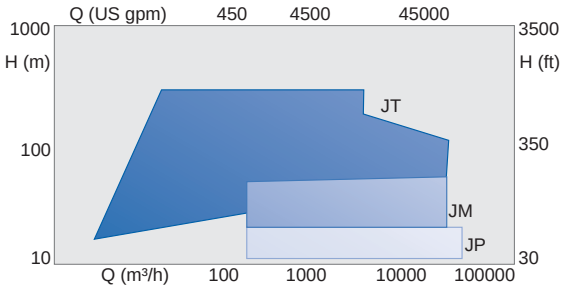


Pressure 40 bar / 570 psi
Temperature 150° C / 300° F

JT/JM/JP Vertical Mixed or Axial Flow Pumps

JT/JM/JP series are vertical mixed or axial flow pumps with the widest range of hydraulic geometries to allow a full coverage of flows and heads. They are ruggedly designed for long years of trouble free, continuous usage. The basic components of head, columns pipe and bowl assembly are customized to meet a large range of applications, i.e. condenser cooling water, water intake, etc.

Performance range

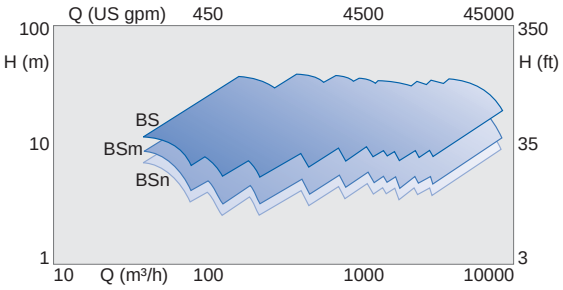


Pressure 40 bar / 570 psi
Temperature 85° C / 185° F

BS/BSn/BSm Vertical Single Stage Semi-Axial Pumps

These vertical pumps are normally single stage semi-axial pumps manufactured in unit construction. With minor modifications, they can comply with API 610 requirements. The overall performance range provides for discharge and delivery heads of 4 up to 30 m.

Performance range

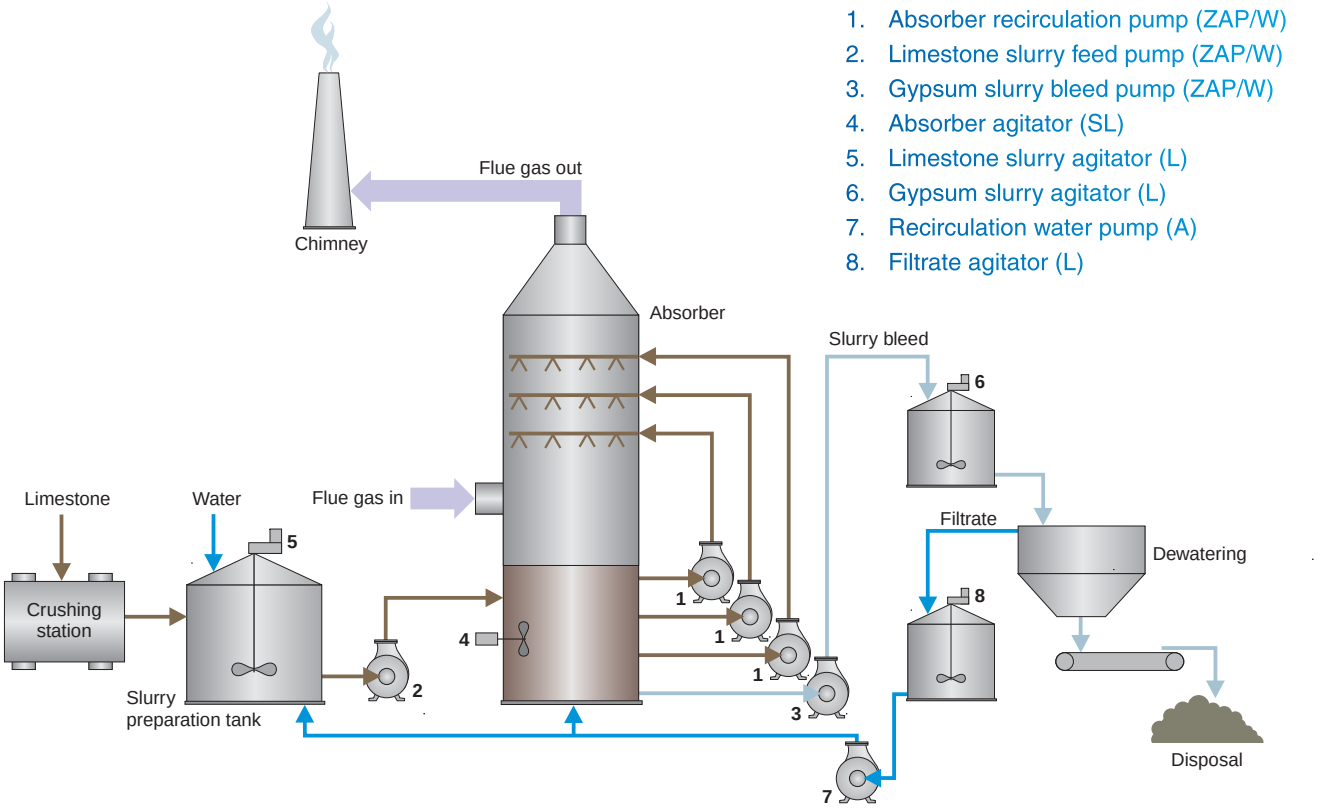


Pressure 10 bar / 145 psi
Temperature 85° C / 185° F

Pumps in Flue Gas Desulphurization

All over the world statutory legislation limits SO_2 emissions from large furnace plants. Since it is not always possible to reduce the harmful emission levels during the primary process, flue gas desulphurization plants are provided to achieve the required levels. In order to make such non-productive plants as economic as possible, it is necessary to optimize the desulphurization procedure and to obtain an economic and useful by-product such as gypsum. Almost as important to the overall plant economy are the reliability and low maintenance costs of the pumps installed.

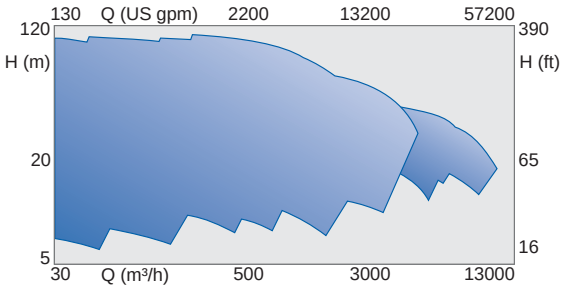
1. Absorber recirculation pump (ZAP/W)
2. Limestone slurry feed pump (ZAP/W)
3. Gypsum slurry bleed pump (ZAP/W)
4. Absorber agitator (SL)
5. Limestone slurry agitator (L)
6. Gypsum slurry agitator (L)
7. Recirculation water pump (A)
8. Filtrate agitator (L)



ZAP Single Stage Radially Split Pumps

These pumps are single stage, horizontal, radially split volute casing, back pull-out design. ZAP pumps comply with extreme requirements on corrosion and wear resistance in FGD processes. They fulfill high requirements as far as availability and service are concerned.

Performance range

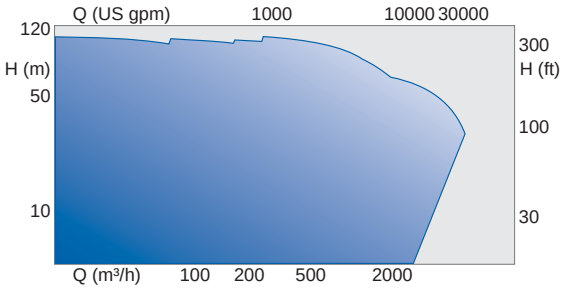


Pressure 350 bar / 5075 psi
Temperature 210° C / 410° F

AHLSTAR^{UP} W Wear Resistant Pumps

AHLSTAR^{UP} series type W pumps feature specially designed wear resistant hydraulics with materials that can withstand the most abrasive and erosive pumping applications. These include pumping of gypsum and limestone slurries.

Performance range



Pressure 10 bar / 145 psi
Temperature 85° C / 185° F

The world’s best production and testing facilities

Sulzer Pumps Germany

Sulzer Pumpen (Deutschland) GmbH located in Bruchsal is an internationally recognized and experienced manufacturer and service partner for pre-engineered as well as engineered pumps. The company offers a complete product range for the power generation and HPI industry to serve the requirements of customers worldwide. The management system follows the corporate-wide total quality management process and fully complies with the requirements of ISO 9001-2000, assessed and proved by Lloyds Register of Quality Assurance, and ISO 14001 assessed and proved by DEKRA.

Sulzer Pumps United Kingdom

Since the 1930’s, Sulzer Pumps (UK) Ltd. located in Leeds has grown from a small engineering company to an international supplier of engineered pumps with a focus on the power generation industry, the oil and gas, and HPI markets. Some of the world’s largest and most powerful pumps have been designed, manufactured, packaged and tested in Leeds for customers on all continents. Extensive facilities ensure the highest quality production from design and machining through to assembly and testing.

Sulzer Pumps United States

The Sulzer Pumps USA facility in Portland is a producer of engineered pumps focusing on the power generation, HPI and oil & gas production markets. Their quality control systems are independently audited to ISO 9001 standard.

Sulzer Pumps Houston is designed expressly to produce and test vertical pumps, and features the latest computerized machining equipment, a large fabrication shop, and a 180,000 gallon test laboratory.

Quality, environment, safety and occupational health

Product Life Cycle

Sulzer considers the total life cycle of its products to reduce cost as well as environmental impact. This includes the design, manufacturing, marketing, packaging, transportation, operation, recycling, and disposal of the products. Similar considerations apply to the provision of services. To identify relevant influences on product life cycle efficiency, Sulzer has implemented a screening tool that focuses on energy, material usage, and costs over simplified product life cycle. The tool generates “footprints”, showing costs, energy and material consumption, and environmental impact. It thereby helps to identify room for improvement, e. g. through a reduction in material used or the energy consumed. The tool has been successfully tested for selected products and will be used continuously to assess relevant Sulzer products.

Protection of the environment is our strategy.

Sulzer Pumps

Reliability and availability of pumping applications and equipment depends on the quality of its design, technical competency and manufacture. To achieve these goals, a Quality Management System covering all operations is essential. This covers not only our internal operations but also our relationship with the customers. Our innovative products and services create high life cycle value for our customers. We monitor our customers’ satisfaction in accordance with a planned procedure, and we utilize the feedback to improve our processes. In operations Quality Assurance (QA) begins with contract review and continues throughout the process in a planned and controlled way.

Our globally recognized Quality Management System complies with national and international standards using ISO 9001:2000 as its basis. All our manufacturing locations are certified in accordance with this international standard.

Example

At Sulzer Brazil S.A., the safety department and the internal accidents prevention committee, composed of employer and employee representatives, promote special safety campaigns. The Brazilian plant, where pumps are assembled, packaged and tested, has approximately 260 employees. Accidents rarely occur. A record was achieved in 2001-02, when 394 days passed without a single accident that involved a loss of working days. In 2003-04, another high mark of 364 accident free days was achieved. To supplement the governmental health plan, Sulzer Brazil maintains a private health care plan for all employees and their families. The employees acknowledge the positive internal climate with good relationships as well as high environmental, health and safety standards.

Continuous improvement is essential to our philosophy.

Maintaining and improving pumping performance

High Availability and Performance

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 process and application knowledge, we provide a full range of innovative service solutions to our customers to keep their pumps running.

Spare Parts Service

We supply original, high integrity spare parts for all our equipment. Quick response is ensured by consolidated warehousing and efficient logistics.

Our subassemblies and kits make pump maintenance at the plant fast and easy. Our spare parts are made of the same advanced materials as our new equipment. Sulzer Pumps' original spare parts are machined to the correct profiles, tolerances and clearances.

Field Service

Our highly experienced field service engineers with state-of-the-art equipment provide a wide range of field services for pumps. Our field services deliver enhanced equipment performance. For our customers this means improved overall availability and optimized inventory levels.

Repair Service

Our service organization is there to help with any planned shutdown of your plant or refurbishment of pumps. Our repair services cover nearly all kinds of pumps and rotating equipment including all process, multistage, double suction and vertical pumps.

As an essential part of our repair services, we carry out careful fault analyses and provide our customers with a professional assessment of repair needs including a cost estimate before the repair.

Equipment Retrofits

We have developed retrofit solutions to raise the equipment performance beyond the original values. Our upgrade and modernization services include all the steps from site analysis through rebuild of equipment to start-up and training. Our retrofit solutions target various benefits.

SULZER

Check our worldwide offices at
www.sulzerpumps.com