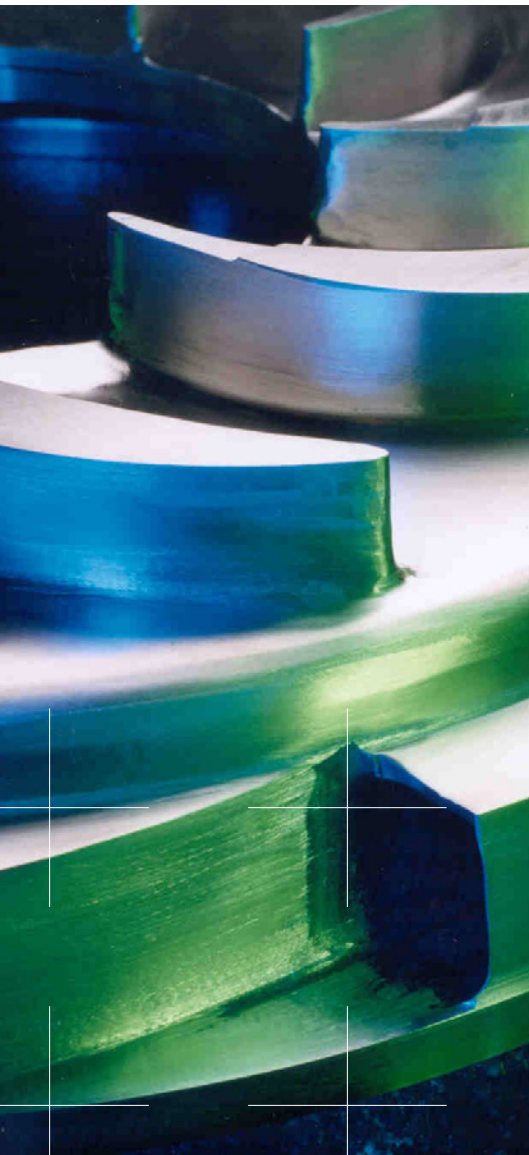
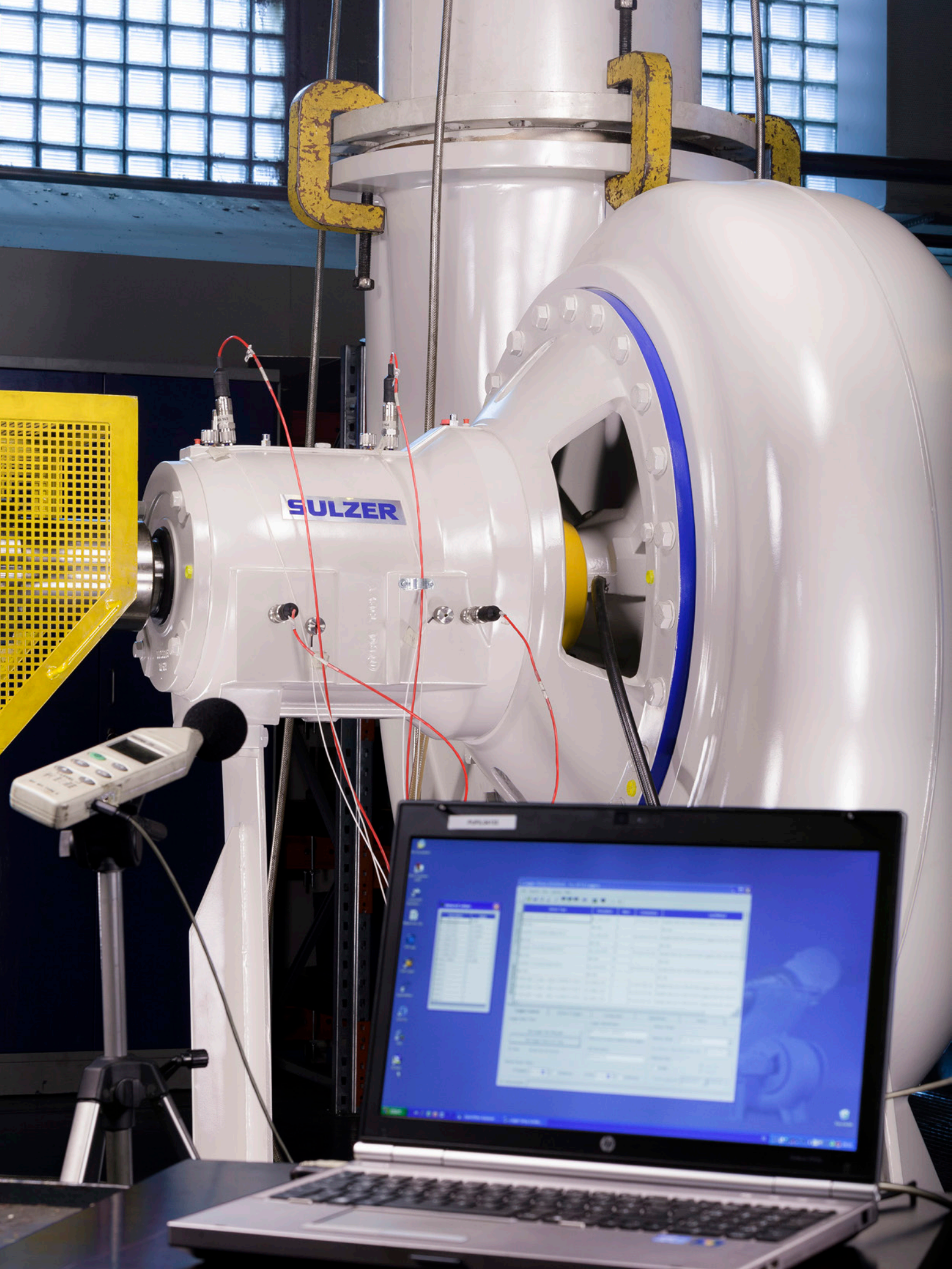


SULZER

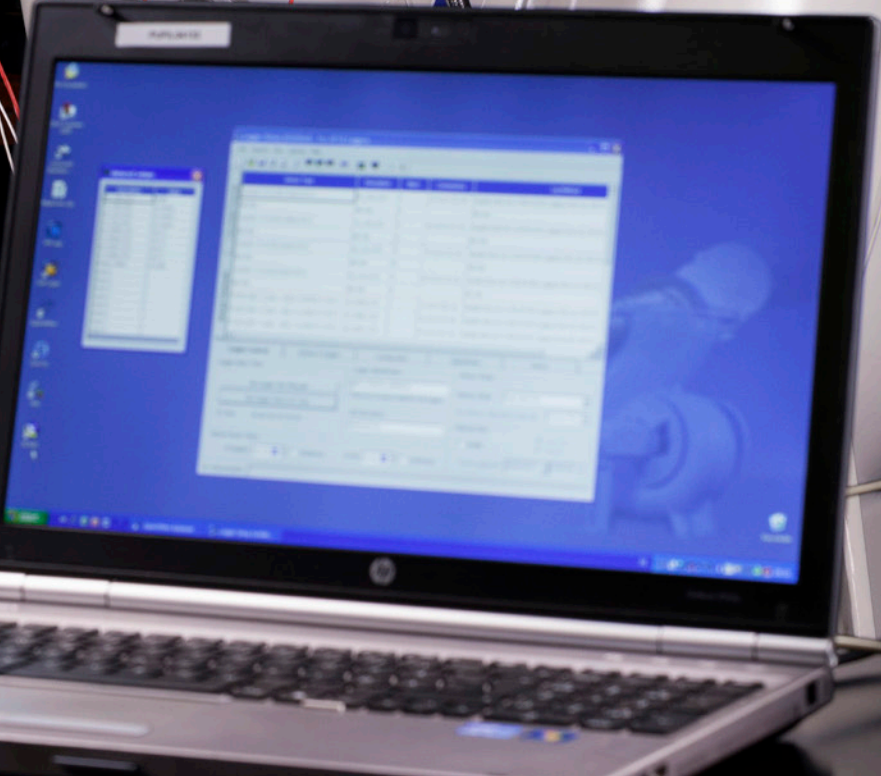
Pump services for Asia-Pacific region

Sulzer offers an extensive range of pumps services, with the objective of enhancing reliability, efficiency and extending the shelf life of your pumps for all industrial and commercial applications.





SULZER



Reliable and expert service solutions

Throughout modern industry, pumps play a vital role in powering processes across the world and Sulzer has the expertise and the resources to deliver long-term reliability and efficiency. From essential maintenance to retrofits and re-engineering, we have a comprehensive range of engineering solutions to enhance operational performance and extend availability.



Power generation



Upstream oil and gas



Downstream oil and gas



Petrochemicals and fertilizers



Mining



Pulp and paper

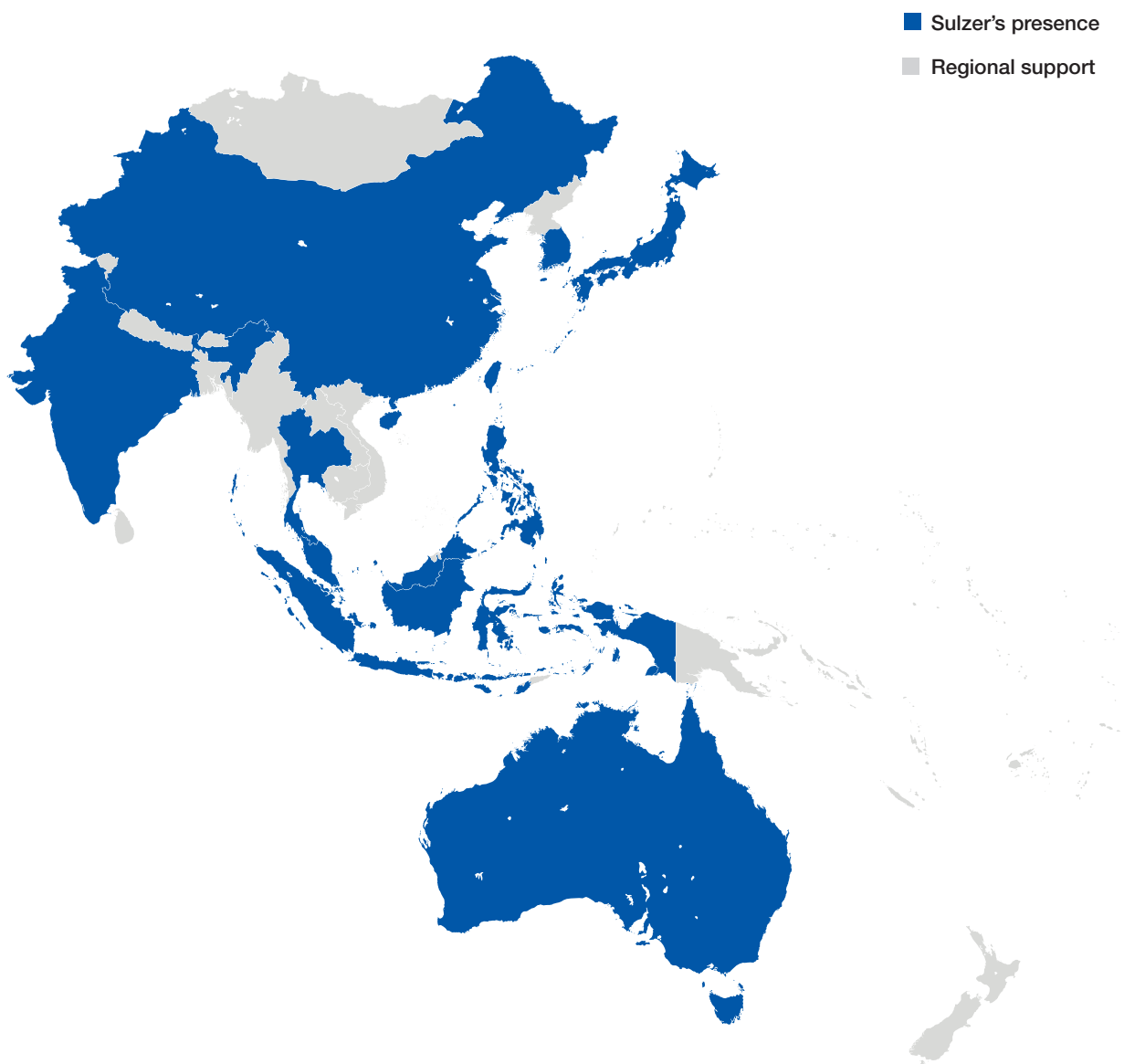


General industries

Life-cycle solutions for a sustainable world.

We are your partner for uptime and enhanced performance for your pumping equipment. Our dedicated people provide unrivalled service and expertise to meet your operational needs – anytime, anywhere.

Comprehensive sales and service network in APAC





Your local contacts

Service centers

Australia

Maitland Service Center
54 Junction Street, Telarah
2320 Maitland, New South Wales
Tel: +61 (2) 4932 4411

Perth Service Center
70 Fawcett Crescent
6105 Perth Airport, WA
Tel: +61 8 6379 7373

Brisbane Service Center
342 - 344 South Pine Road
4500 Brendale, Queensland
Tel: +61 7 3205 3233

Salisbury Service Center
8/268 Evans Road
4107 Salisbury, Queensland
Tel: +61 7 3216 7055

Newcastle Service Center
9 Nelson Road
2285 Cardiff, New South Wales
Tel: +61 2 4954 7477

Sydney Service Center
14-16 Clyde Street
2116 Rydalmere, New South Wales
Tel: +61 2 9638 6333

Melbourne Service Center
334 Boundary Road
3026 Laverton North, Victoria
Tel: +61 3 9369 7699

China

Suzhou Service Center
No. 433 Jianlin Rd. New District
215151 Suzhou
Tel: +86 512 8187 3719

Nantong Service Center
No. 100 Qian Tang Jiang Road
Tong Zhou Bay New District, nantong
226333 Jiangsu Province
Tel: +86 186 6229 8003

Dalian Service Center
No. 20-2, Fuyun Street,
Shifu Village (Industrial Park)
Sanjianpu Street, Lushunkou District
Dalian 116043
Tel: +86 411 8758 1824

India

Mumbai Service Center
Unit No. B, Plot NO B-8
MIDC Industrial area Digha
400709 Navi Mumbai
Tel: +91 86 5730 2470

Vadodara Service Center
Plot No 707, GIDC, Manjusar, Savli,
Opposite Vasu Health Care,
Vadodara- 391 775
Tel: +91 7738052228

Indonesia

Purwakarta Service Center
Kawasan Industri Kota Bukit Indah
41181 Purwakarta
Tel: +62 264 8631 300

Balikpapan Service Center
Jl. Mulawarman No. 23
Sepinggan-Balikpapan Selatan
76115, Kalimantan Timur
Tel: +62 (542) 8213 700

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Semenyih Service Center
No. 12, Jalan Semtec 2
Semtec Park, 43500 Semenyih
Selangor
Tel: +60 387 276 275

Singapore

Singapore Service Center
10 Benoi Sector
Singapore 629845
Tel: +65 6800 0000

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Busan Sales Office
No 401, 241, Gyedong-ro,
Gimhae-si, Gyeongsangnam-do
(51004)
Tel: +82-70-4348-5765

Philippines

Manila Sales Office
6F Ayala Triangle Gardens Tower 2
Paseo de Roxas cor Makati Avenue
Makati City, Manila
Tel: +63 9278102925

Thailand

Thailand Sales Office
18/10 Moo 6, T. Nurmphra,
A.Muangrayong, Rayong
21000 Thailand
Tel: +66 81 926 7652

Benefits of servicing with Sulzer

As one of the world's leading pump manufacturers, with an illustrious history and track-record dating back to 1834, Sulzer provides a wide range of services and engineered solutions for all brands of large centrifugal, vertical and horizontal pumps.

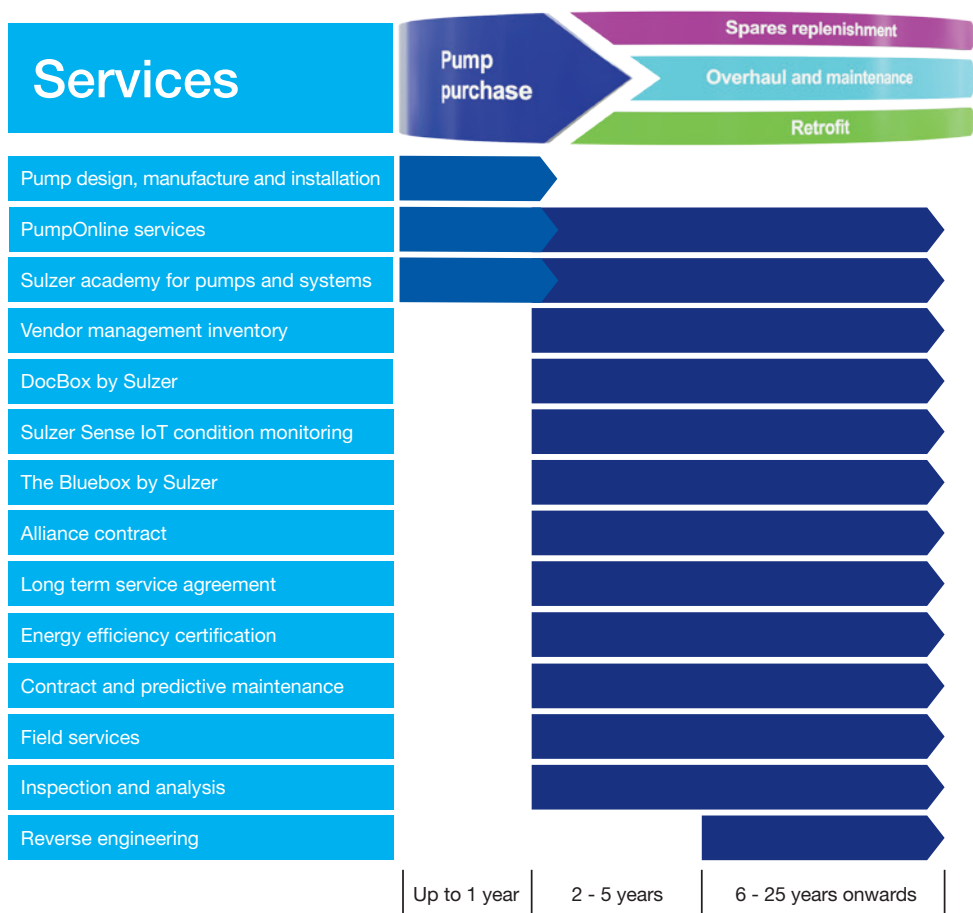
Our expertise and experience ensure your pumps deliver enhanced reliability and efficiency as well as extended service life in all industrial and commercial applications. With more than 150 years

of accumulated pump manufacturing, engineering and servicing experience, your pumps will be in the hands of world-renowned technical experts.

Our pursuit for innovation and reinvention has also seen our engineers develop a comprehensive suite of intuitive digital solutions that optimize performance and complement your pumps' servicing and operational requirements.

Pump lifecycle services overview

Right from pump manufacture through life cycle operations of your pump, Sulzer has a comprehensive range of digital-based, logistics and engineering services, ensuring the operational continuity of your pump systems in a sustainable manner.



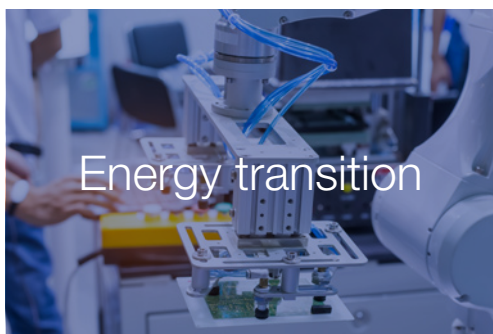
21st century pump services

Our customer support structure for pumping assets is designed to provide the most cost-effective solutions for each application, enabling operators to maximize productivity and keep downtime to an absolute minimum.

The advent of Industry 4.0, together with advancements in manufacturing technology, has led to a data-driven landscape enabling pumps to be more flexible and more efficient. Sulzer has pioneered cutting-edge technology for pump monitoring as well as parts manufacturing and

these solutions are helping operators to optimize performance and reduce costs. Innovative engineering and expert field support ensure that all pumps can be perfectly matched to their task.

Modern industry is under pressure to reduce its carbon footprint and every asset can contribute through improved energy efficiency. Our expertise in pumps, and all other rotating equipment, enables us to support customers with the most effective and reliable solutions, helping them to optimize their business.



Energy efficiency

Cost efficiency

Operational efficiency

Digital solutions

BLUE BOX™

A proprietary award-winning** software solution that optimizes any pump system and process, maximizing your asset investment while reducing operating risk. Combining IoT and advanced analytics, it delivers predictive maintenance and optimization potential. By using real-world data and machine learning, gain insights into anomalous behavior and prevent imminent failures. (**Gold certificate Industry 4.0 at the Swiss Digital Economy Awards)

Doc Box by Sulzer

A set of 3-step modular-based services to help you optimize your pumps' reliability, efficiency and performance. Systematically identify root cause from problematic or 'bad actor' pumps through data-driven processes. Targeted actions are recommended to common issues such as high vibration, temperature, pressure pulsations and other factors that may affect your pumps.

Sulzer Sense IoT condition monitoring

Sulzer Sense condition monitoring is a unique solution that, in combination with Sulzer's online cloud service, allows you to remotely view the operating status of all the pumps and other rotating equipment at your facility. Wireless sensors attached to the pump measure temperature and vibration on three axis and allow you to optimize preventive maintenance and enable troubleshooting.

PumpsOnline services

Allows you to access equipment-related information in an easy-to-use internet-based service anytime, anywhere. You will have instant access to materials such as technical product documentation and drawings. You can also track your product condition, view the equipment trend data, identify spare parts, check spare parts availability, place an order with us or view your order status. Sulzer's online service helps you to increase productivity, efficiency and cost savings by automating information sharing processes.



Vendor Management Inventory (VMI)

A typical pump requires a substantial volume of spares throughout its lifecycle, multiply by the number for your facility—the number adds up. Eliminate the associated warehousing and manpower costs of maintaining a substantial volume of spares by subscribing to Sulzer’s advanced inventory management system. Receive spares in an agreed timeline, bound by a service level agreement.



Asset optimization

Take a strategic assessment of your pump assets’ operational viability in response to market demand, industry changes and production requirements. Instead of looking at individual production units in silos, we’ll conduct rigorous discovery sessions to gain an in-depth understanding of your strategic perspectives across operational, maintenance and production processes etc. This allows us to formulate the most cost-effective asset optimization recommendations and implementation to ensure you the efficiency of your pumps.



Alliance contract

Short on manpower or required in-house pumping expertise? We can be your on-site team with dedicated Sulzer experts taking care of your pumps 24/7. We’ll work with your maintenance teams on an overarching strategy that covers all components from scheduled maintenance and overhaul to preventive maintenance and spares, using a service level agreement that ensures 100% reliability and business continuity.

Long term service agreements

Performance-based long-term service agreements (LTSA) offer reliable plant maintenance solutions to help you manage the life-time costs of pumps. Clearly defined performance indicators and managed risk transfer ensure that you only pay for solutions benefitting your operations.

Sulzer academy for pumps and systems

Tap into Sulzer’s deep domain knowledge and expertise on pumps. We provide a variety of training courses for engineers, operators, and maintenance personnel. Various competencies and knowledge on the latest technology, theoretical principles, hydraulics, hands-on training and more, are covered under the academy’s varied course syllabus.



Engineering services

Contract and predictive maintenance

We offer contracted service agreements to support the operational reliability of all your pumps. Predictive maintenance offers opportunities to uncover underlying issues with your pumps before they escalate and impact your operations negatively.

Repair and overhaul services

Whether it is contracted, ad-hoc or on an emergency basis, we'll take the pressure off your shoulders for all technical complications pertaining to Sulzer or non-Sulzer 3rd party pump repairs and return them to an operational-ready state.

Field services

On-site evaluation by experienced and expert engineers and personnel to identify the root cause, review pump, and recommend corrective actions.

- 24/7 emergency response
- Experienced field service teams
- Mechanical troubleshooting, inspections, data collection and recommendations report
- On-site equipment installation, commissioning and removal
- Optical alignment
- Vibration analysis
- Flow testing

Inspection and analysis

Reduce the risk of failure, production and monetary losses through pre-emptive inspection and analysis. This provides you with the confidence of understanding the condition of your equipment and opportunities for modifications to elevate the performance of your pumps.

Reliability and performance testing

- Optimizing energy consumption
- Minimizing the risk of emergency shutdowns
- Key parameters
 - Flow
 - Dynamic head
 - Efficiency
 - NPSH available / required
 - Temperature
 - Vibration levels
- Piping interfaces
- Bearing support and lubrication
- Seal arrangement including piping arrangements

Comprehensive inspections

- Magnetic particle inspection
- Positive material identification
- Non-destructive examination
- Liquid penetrant



Retrofit

New environmental regulations, tougher competition for more efficient and reliable equipment and technological advances have contributed greatly to the popularity of retrofits as a solution to aging systems. Our retrofit services, applicable for Sulzer and non-Sulzer branded pumps, give your pump a second life by minimizing costs for maximizing revenue generation, improving reliability while adapting performance to changing processes, and providing tailored solutions that add sustainable value to your equipment. Our deep expertise have seen us completed more than 4'000 retrofits globally.

Standard retrofit solution OHX

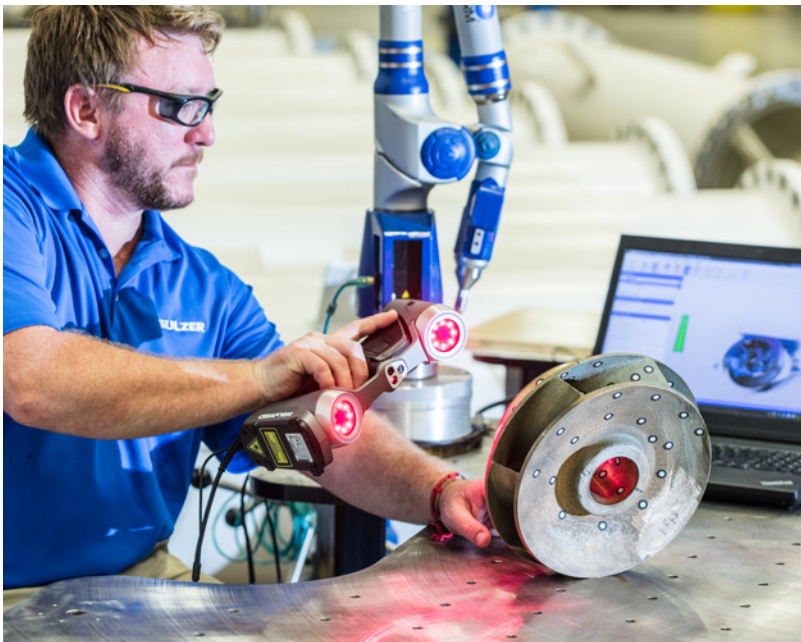
Extend pumps' lifecycle through a standardized drop-in back-pull-out retrofit solution. We give any OEM overhung pump improved reliability, minimized costs, added interchangeability, and adapted performance to changing processes.

Reverse engineering

Alleviate challenges of sourcing discontinued pump spares, component upgrades or quicker deliveries etc. Our re-engineering capabilities along with state-of-the-art equipment and technology such as additive manufacturing and 3D printing serve as a one-stop-shop to resolve all your challenges and getting access to parts quicker for operational continuity.

Aftermarket spare parts

Original Sulzer pump spare parts ensure optimum pump performance. They are more than a simple 'new for old' replacement and can substantially improve the performance of your equipment. All parts for our pumps, from bearings and gaskets to impellers and casings, are available through the global customer support services network. For standard stock items, our consolidated warehousing and advanced logistics support quick deliveries of spare parts. Speak to our team for more information on other brands' spares such as Gothia, JMW, Warren pumps and more.



Case study: Taking solar power plant performance to new levels

Service: BLUE BOX

Location: Mojave desert, California, USA

Customer: Solar power plant operator



Challenge

Two concentrated solar power plants in Mojave desert in California depend on pumps to transfer fluid that contains heat energy to create steam, which drives a generator to produce electricity. The operators were keen to enhance the plants' efficiency and avoid downtime.

Solution

BLUE BOX was used to monitor and optimize plants' performance. It detects and flags anomalies, estimates the remaining lifetime of equipment and helps make data-driven decisions for preventive maintenance.

Impact

Uptime and reliability metrics improved and operational risks were mitigated, resulting in cost savings and higher revenues. As a result, Atlantica plans to roll out BLUE BOX to all its assets globally as part of its digitalization efforts.

Case study: Water injection pump brought back to life

Service: Repair and overhaul

Location: Gulf of Mexico

Customer: International oil major



Challenge

Two dormant water injection pumps of seven years on an offshore platform were required back online when extraction activities were kick-started again to take advantage of attractive oil prices. One of the pumps was leaking. The challenge of recommissioning with no details of its previous maintenance records proved challenging.

Solution

The pumps were designed and manufactured by Sulzer. An offshore pump engineer was dispatched for on-site inspection. A comprehensive overhaul of multiple components such as thrust and non-drive end bearings, were executed before reassembly by Sulzer's team of engineers.

Impact

Successful start-up of the first pump enabled the platform to start production while Sulzer laid out the maintenance plan for the second pump with consideration on the future needs of the platform. Sulzer's combination of expertise in the oil and gas sector, professional pump engineering and global service center network is helping to keep oil platforms efficient.

Case study:

Retrofitting crude oil transfer pump

Service: Retrofit

Location: Malaysia

Customer: Petronas



Challenge

Petronas inherited the Kinabalu platform from Shell Malaysia, which had been operating for 25 years. An upgrade was required to maximize oil recovery and debottleneck limitations of the platform. Reduced output from the well meant that the crude oil transfer pump needed to deliver much lower flow rates. The pump flow was also expected to vary over the next 5 years.

Sulzer was tasked with the challenge and had to adapt the equipment quickly to reduce any downtime.

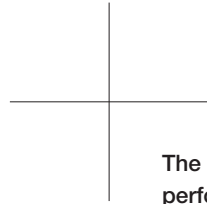
Solution

Sulzer provided state-of-the-art hydraulic expertise to offer the customer the best solution with a hydraulic rerate as the centerpiece. Sulzer supplied new low-flow, low-head hydraulics to meet the various duty conditions. The major difficulty in meeting three different duty points was resolved by throttling the flow and reducing the pressure using a discharge valve. This made the pump run closest to the best efficiency point. The new impeller design ensured minimal liquid recirculation so that power would not be wasted.

Impact

To optimize the investment, the solution included changing the rotor design while making use of the existing pump casing, motor, seal plan, and piping arrangement. No hot work – such as welding, grinding or cutting, etc. – was required on site. Except for the impeller, which needed to be optimized to the new duty, most spares are interchangeable. Therefore, the available inventory stock can be used for future maintenance. The general arrangement was maintained, and Sulzer achieved the customer's objectives.





The Sulzer Services division is your partner for uptime and enhanced performance for your rotating equipment and more. Our dedicated people provide unrivalled service and expertise to meet your operational needs – anytime, anywhere.

Through a network of over 100 service sites around the world, Sulzer provides cutting-edge parts as well as maintenance and repair solutions for pumps, turbines, compressors, motors and generators. We service our own original equipment, but also all associated third-party rotating equipment run by our customers, maximizing sustainability and life cycle cost-effectiveness. Our technology-based solutions, fast execution and expertise in complex maintenance projects are available at our customers' doorsteps ensuring minimal downtime.

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