

## **Retrofit Solutions** Give Your Pump a Second Life

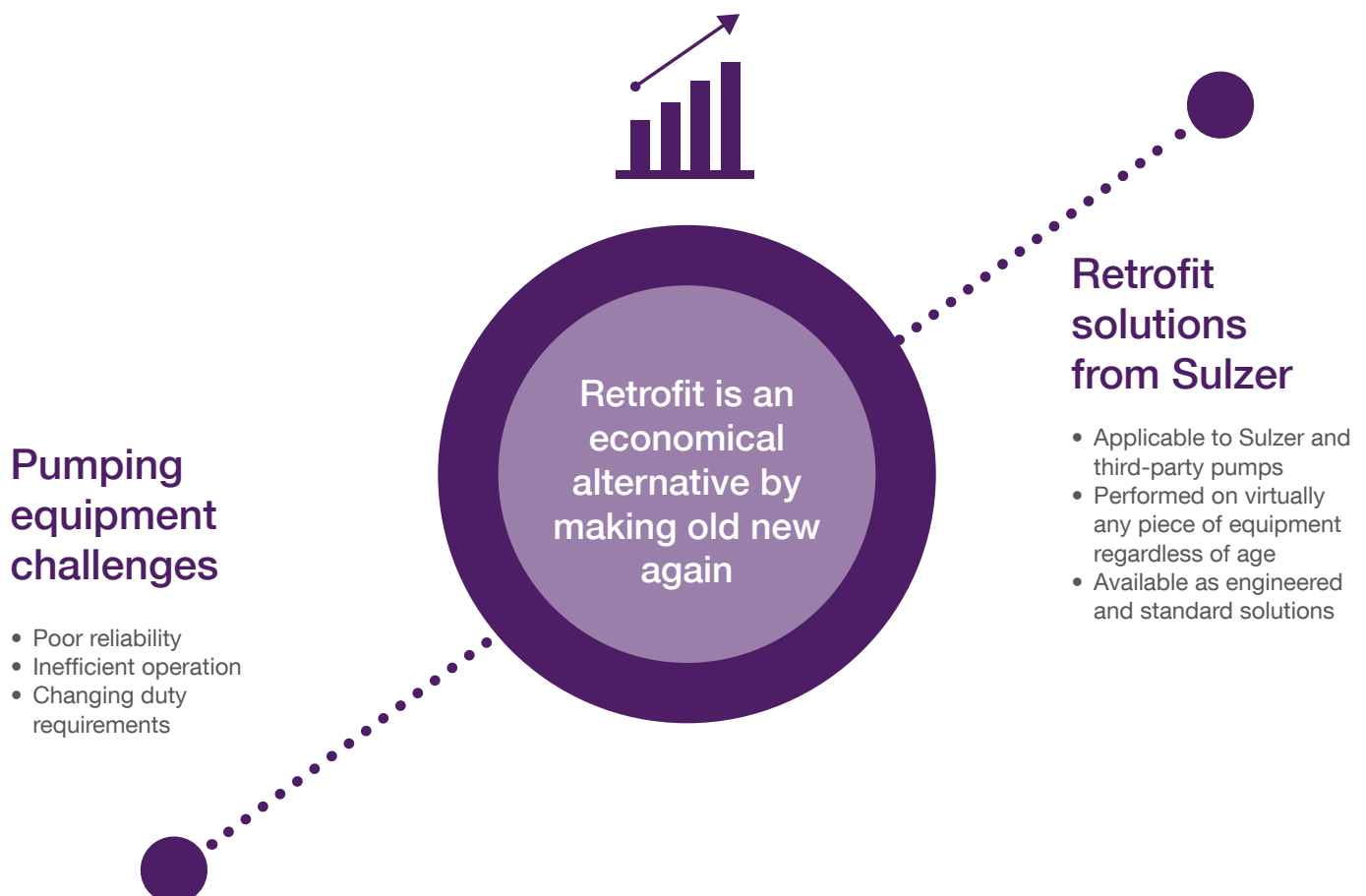




# Time for a Makeover

The retrofit market has been booming over the past years. New environmental regulations, tougher competition for more efficient and reliable equipment and technological advances contributed greatly to the popularity of retrofit as a solution to aging systems.

**Retrofit:** to adapt and improve existing equipment, by adding design features or new technology.



# The Sulzer Advantage

## Taking on your challenges

*Through its retrofit services, Sulzer gives your pump a second life by improving reliability, minimizing costs and adapting performance to changing processes. Sulzer provides tailored solutions that add sustainable value to your equipment.*

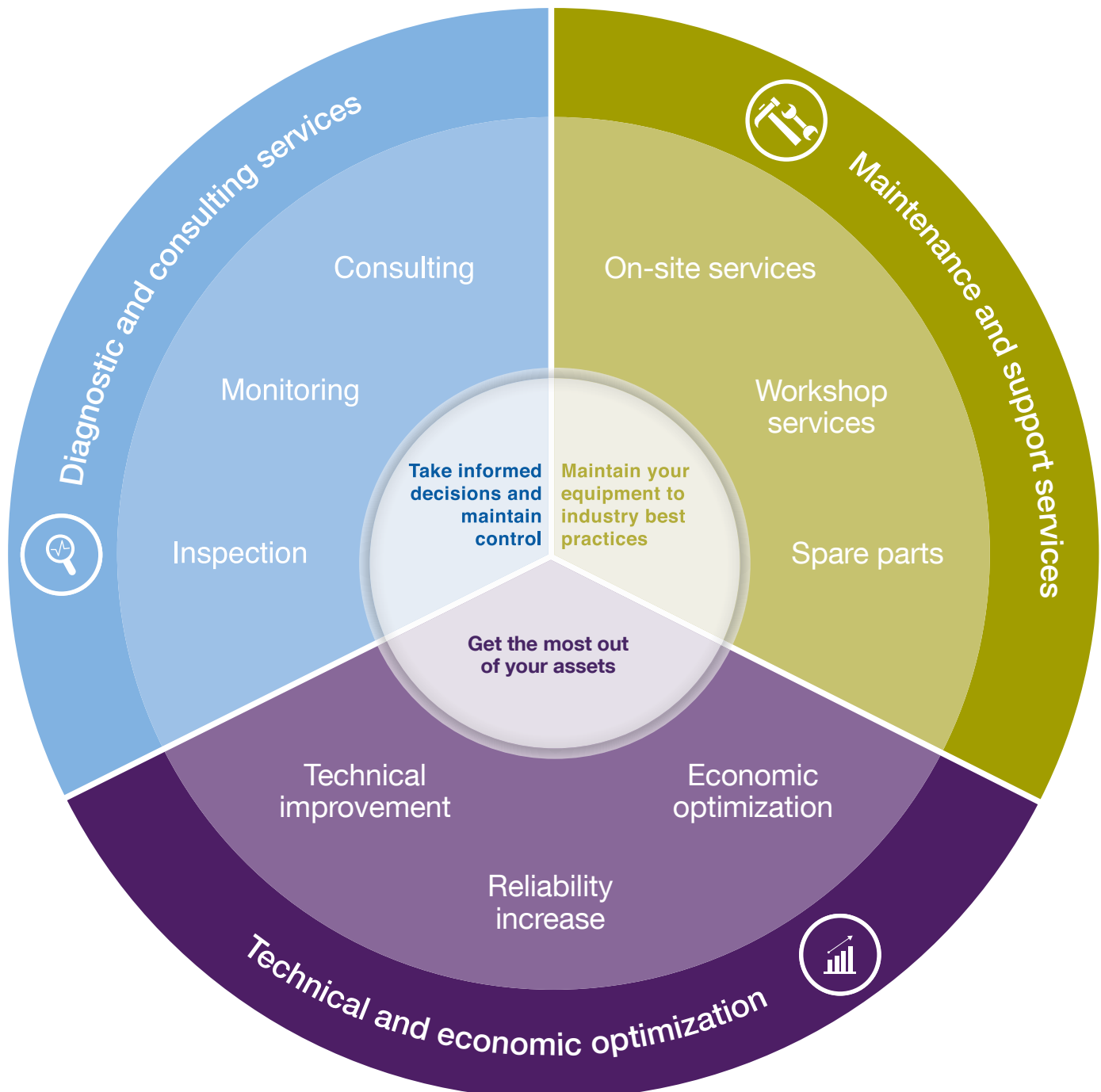


# Your Ideal Service Partner

## Our expertise dedicated to your success

*Sulzer has an exclusive service portfolio which includes diagnostic and consulting, maintenance and support services as well as technical and economic optimization. Our expertise and commitment always deliver reliability, responsiveness, rapid turn-around and innovative solutions.*

*Retrofit, as part of the technical and economic optimization, is fully integrated into the full service range.*



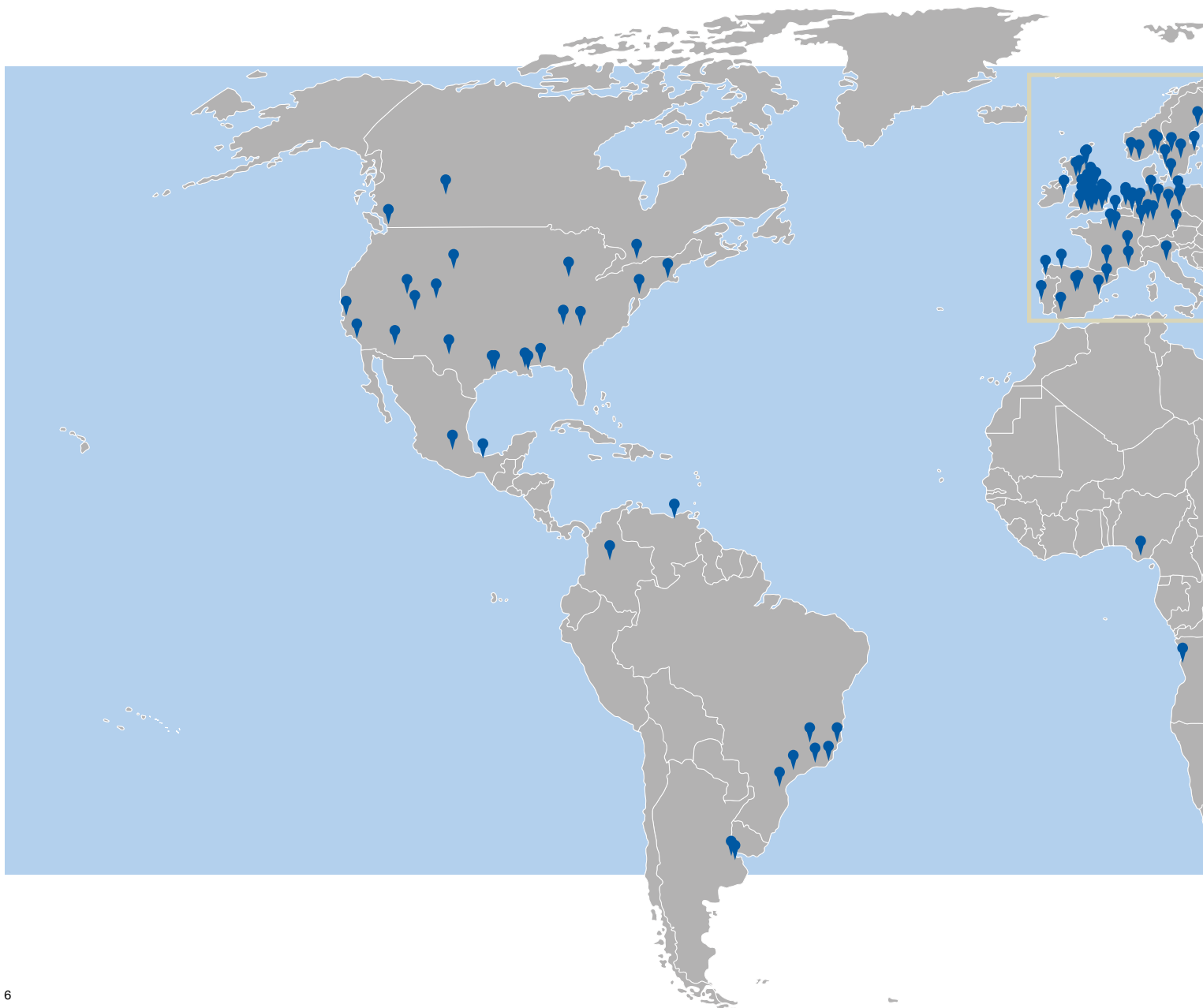
# Our Footprint Spans Across the Globe

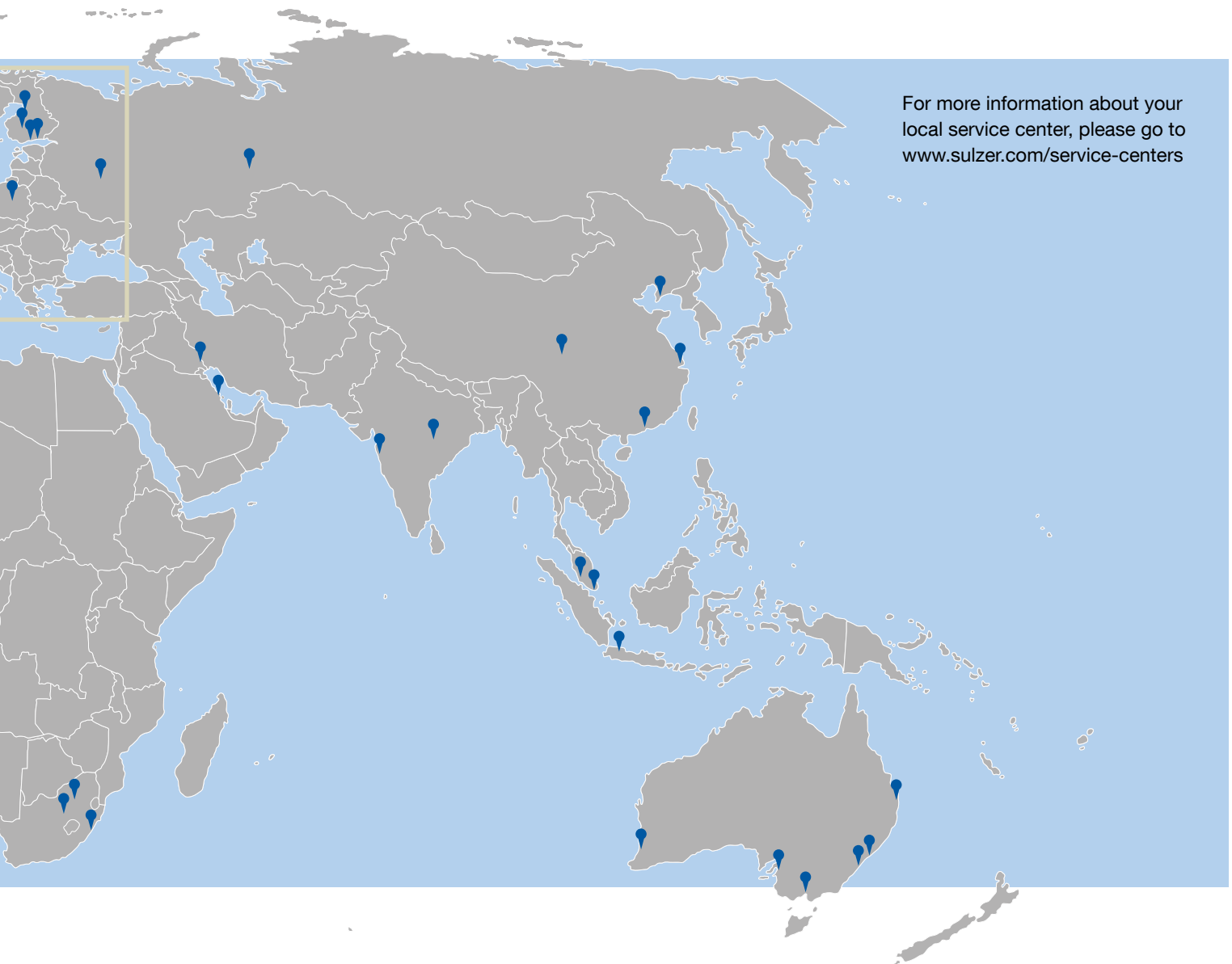
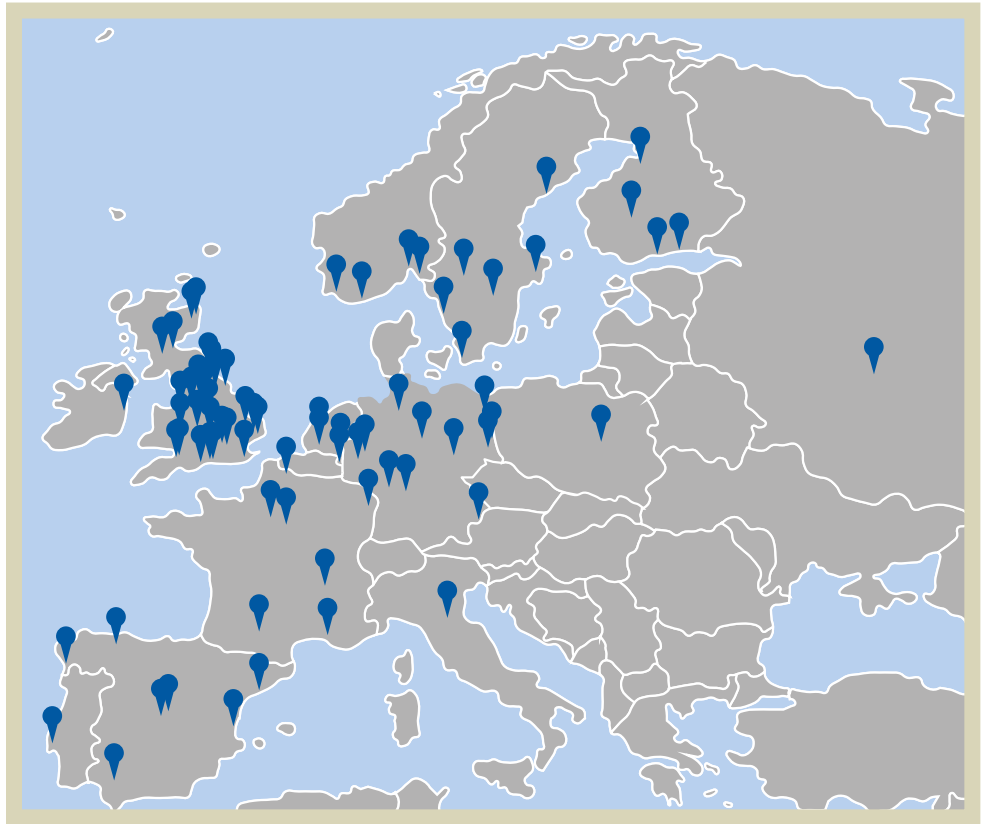
## A global approach for a local presence, 24/7

*Because challenges occur unexpected, Sulzer provides solutions customized to your needs - whenever and wherever.*

Operating one of the largest service networks in its field, Sulzer is close to your business with more than 100 service facilities around the world. Each service center is equipped with machine tools, balancing equipment and inspection facilities, and is staffed by specialists dedicated to supporting customers and their equipment.

Key to the success of Sulzer is its capability to fully test retrofit solutions prior to delivery to ensure performance and problem-free commissioning. Sulzer runs test beds all over the world – each dedicated to the needs of specific applications and markets.





For more information about your local service center, please go to [www.sulzer.com/service-centers](http://www.sulzer.com/service-centers)

# Dedicated Service Solutions for Leading Industries

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*Sulzer, thanks to its extensive experience and wide service portfolio, provides cutting-edge service solutions in many industries.*

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## Oil and gas



As a world-leader in the oil and gas industry, Sulzer understands that availability, reliability and efficiency are keys. With a constant desire to push back technical barriers, we provide services to meet the most stringent specifications in the upstream, midstream and downstream fields.

## Power generation



Sulzer has many years of experience in the maintenance of turbines, pumps, compressors, generators and motors used in both conventional and renewable power generation applications. You set out the challenge and we provide the right solution.

## Water and more



Customer relations have enabled Sulzer to build up strong application expertise in the water and wastewater areas. From breakdown to maintenance and monitoring services, we take care of your investment throughout its lifetime.



# Combining Experience and Technology for Successful Solutions

*With a unique range of experience and technologies to support retrofit projects, Sulzer offers competitive retrofit solutions allowing existing equipment to be adapted to evolving needs.*

## Improved hydraulic design

- World leading expertise applied to re-rating or solving performance problems on existing equipment
- Proven solutions applied where practical, or new designs developed from first principles when necessary, to provide bespoke hydraulic solutions
- State-of-the-art hydraulic tools applied to achieve optimum efficiency and smooth hydraulic operation
- Computational Fluid Dynamics, using our own unique software, available to verify and fine tune performance
- Model testing, when necessary, both virtually and in the test lab, to validate real world performance



## Mechanical design upgrades

- Adaptation/modification of any existing equipment in order to achieve improved reliability and extended life
- Upgrades at component level through full pump modernization/cartridge replacement applying cutting-edge design methods
- Designers with sound product knowledge, third-party equipment experience as well as with many years of equipment design
- All work conducted in accordance with industry and Sulzer in-house design standards, with critical design loadings and stress levels fully assessed
- Advanced rotordynamic modeling capabilities ensure rotating element stability and smooth running under all anticipated performance conditions



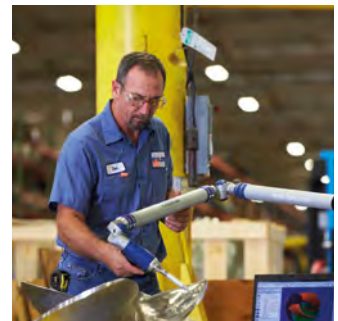
## Higher-grade materials and coatings

- Fundamental understanding of the root causes of corrosion and erosion issues within pumps is applied to overcoming wear problems in service
- Improvements to detail of internal flow paths, in conjunction with modern wear resistant materials, are utilized to achieve significant life extensions
- Detailed knowledge on materials and coatings and metallurgical failure analysis applied to resolving corrosion and/or component failures



## Re-engineering

- A process used to augment our capabilities during overhaul, repair and/or retrofit of third-party equipment, 3D coordinate measurement tools used to capture complex component geometry
- Re-engineered parts developed in full accordance with Sulzer standards, benefitting from Sulzer know-how and product quality standards
- Process fully controlled and documented from initial findings through design and manufacture to final inspection



# Online Retrofit Solution Finder

There is a wide range of conditions that can lead to pump related performance problems. Sulzer designed the Retrofit Solution Finder, an online tool to guide users to potential retrofit solutions for many common pump performance and process related problems.

Visit [www.sulzer.com/retrofit-solution-finder](http://www.sulzer.com/retrofit-solution-finder) to access the online solution finder.



For more information about retrofit solutions, please visit [www.sulzer.com/retrofit](http://www.sulzer.com/retrofit)  
or please contact [retrofit@sulzer.com](mailto:retrofit@sulzer.com)

For more information, please contact [retrofit@sulzer.com](mailto:retrofit@sulzer.com)  
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