

FLENDER GEAR UNITS



PURE ENERGY – EFFICIENT AND RELIABLE

PLANUREX 3: the best planetary
gear units for extraction plants

FLENDER EXPERTISE:
THE WIDE VARIETY OF
APPLICATIONS AND
PROCESSING PHILOSOPHIES
IN EXTRACTION PLANTS
REQUIRES TOP-QUALITY
PLANETARY GEAR UNITS.



THE CHALLENGES OF THE EXTRACTION HOUSE

THE DIFFUSER

The various drive designs for the diffuser require high-performance transmissions to ensure that the extraction process runs slowly and continuously.

At the same time, the drives should offer great reliability to provide security against downtime. Shaftmounted gear units must be as light as possible to decrease the load on the working machine.

THE MILL

Individual drive

The individual drive should be light and powerful to reduce the loads on the milling roller and the bearing to a minimum.

Central drive

Most mills that are centrally driven do not have redundant drive systems. For this reason, the best way to achieve process reliability is with a gear unit solution that is both powerful and robust.

From crushed cane to juice: everyone has their own philosophy regarding the milling procedure. But all operators agree on one point: the drive solution must be powerful, reliable and efficient.

MAXIMUM EXPERIENCE MEANS MAXIMUM PROCESS PERFORMANCE.

Benefit from the top plant performance made possible by the efficiency of the PLANUREX® 3 gear units. Rely on the highest power density and take advantage of the design options provided by the exceedingly compact gear unit series. Save installation space, weight and costs.

The steady torque steps of the PLANUREX 3 series avoid an oversized design and ensure that the gear unit has a perfect fit for your service factor needs. It's easy to select the most suitable solution, because PLANUREX 3 is developed with state-of-the-art technology based on the world's largest experience in planetary gear units.

3-D CAD design and the use of the latest FE calculation methods are a matter of course. At least with PLANUREX 3. Use our data when designing your plant

and profit from greater flexibility. Increase the reliability of your plant to ensure fail-safe operation under overload conditions. Due to the high overload capacity of PLANUREX 3, you benefit from the best gear unit for safe processes.

On the basis of the most extensive planetary gear unit experience in the world and our know-how as the leading manufacturer of wind turbine gear units, with PLANUREX 3 we develop unique solutions for the sugar industry which guarantee a high level of availability, productivity and efficiency.



EXTREMELY STRONG.

EXTREMELY COMPACT.

EXTREMELY EFFICIENT.

Flender gear units have been proving their worth in the sugar industry for decades. Energy efficiency, reliability and efficient use of the available space are the most important factors that motivate our customers.

The reliability of PLANUREX 3 offers the greatest potential for cost savings. Among other features, due to the long service life in all stages, with PLANUREX 3 we provide the quality you desire and the reliability you can expect with regard to plant availability.

The immediate advantages of using PLANUREX 3 gear units lie in the cost benefits for drive systems and driven machines. These advantages are influenced by various factors: Our gear units with a high power density are light and compact and thus reduce the load acting on the driven

machine. Optimized gear geometries and gear meshing reduce the friction and increase the energy efficiency. New gear design and top manufacturing quality increase the reliability and service life.

Compact gear units allow smaller and more economical driven machines and drive motors to be used. The rolling bearings on the input and output shafts are protected by high-performance seals as standard in order to achieve maximum plant availability in conjunction with low maintenance costs.



Nearly 2 billion tons of sugar cane need to be processed every year



The light and compact design of our gear units with a high power density offers several advantages.

YOUR BENEFITS AT A GLANCE

- **Low running costs and high efficiency** due to optimized gear geometries and the high level of manufacturing quality
- **Maximum flexibility for the mill design** due to maximum power density
- **Long service life** due to application-oriented design and top-class quality
- **Space-saving installation** with an oil supply system optionally mounted directly on the gear unit
- **Maximum variability for the connection to the machine shaft** due to a number of different design options for the output shaft.
- **Maximum plant availability** due to the use of high-performance seals as standard
- **Maximization of plant availability** due to optionally integrated Flender measuring systems
- **High-performance output shaft bearings** as an option to absorb axial forces from the machine draft

ONE PLATFORM, THREE SOLUTIONS: PLANUREX 3 FOR YOUR EXTRACTION HOUSE

The standard solution PLANUREX 3 was developed for applications that place high demands on compactness, quality and price-performance ratio. This makes PLANUREX 3 the perfect drive for your sugar cane extraction house. The high torque density of the design allows for very small roller distances – its low weight reduces the loading on the gear unit and machine significantly.



The high overload capacity provides operational reliability and stabilizes your process.



INDIVIDUAL DRIVE

Flender gear units for individual drives offer you a space-saving installation without specific requirements on a foundation and an oil supply system optionally mounted directly on the gear unit. Benefit additionally from a maximum of variability for the connection to the grinding roller through a number of different design options for the output shaft.

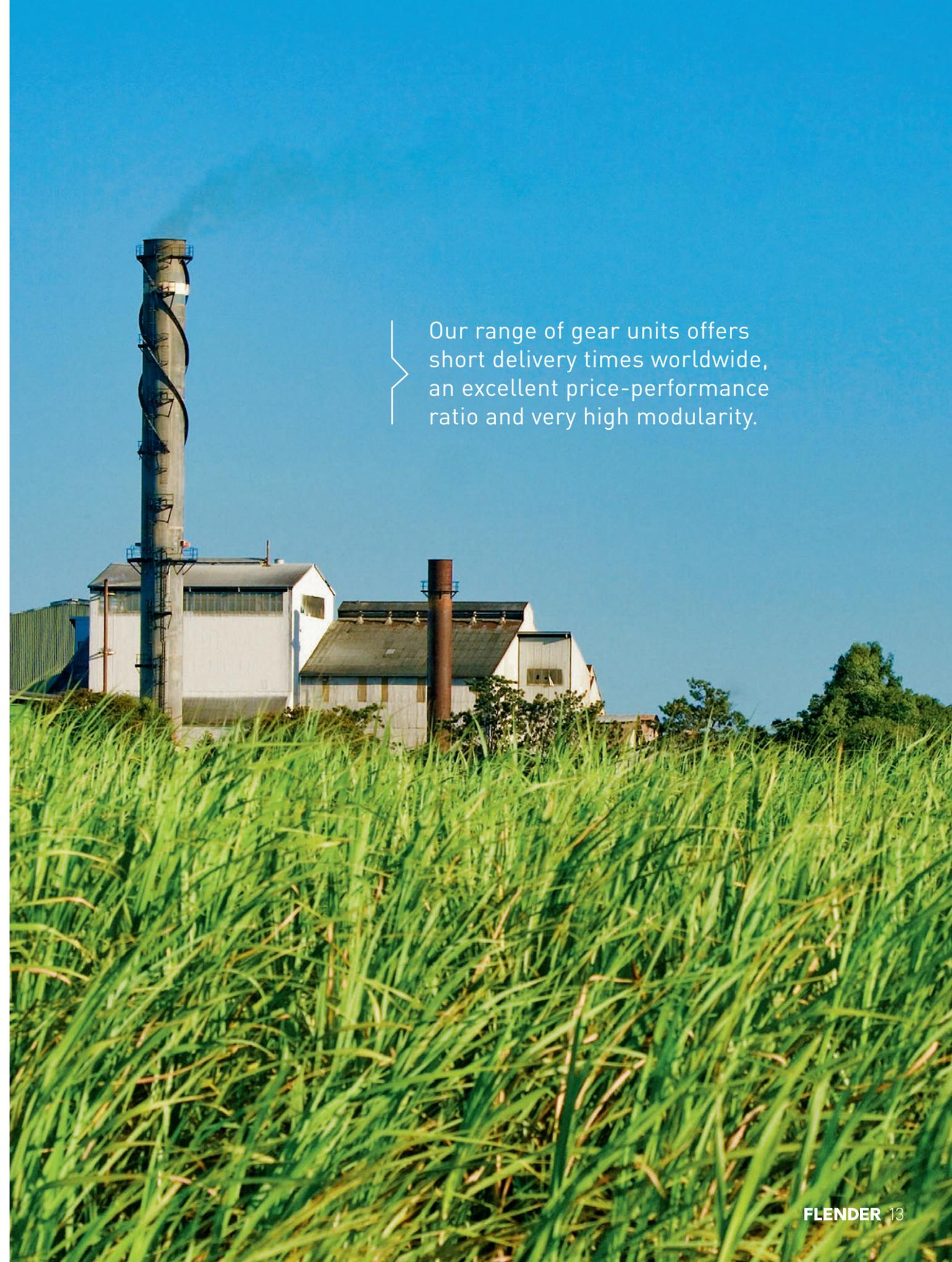
CENTRAL DRIVE

The application-oriented design and the top-class quality ensure a long service life of PLANUREX 3 gear units. Profit from maximum plant availability through the use of high-performance seals as standard. The robust central drives can absorb axial forces coming from the mill.



DIFFUSER DRIVE

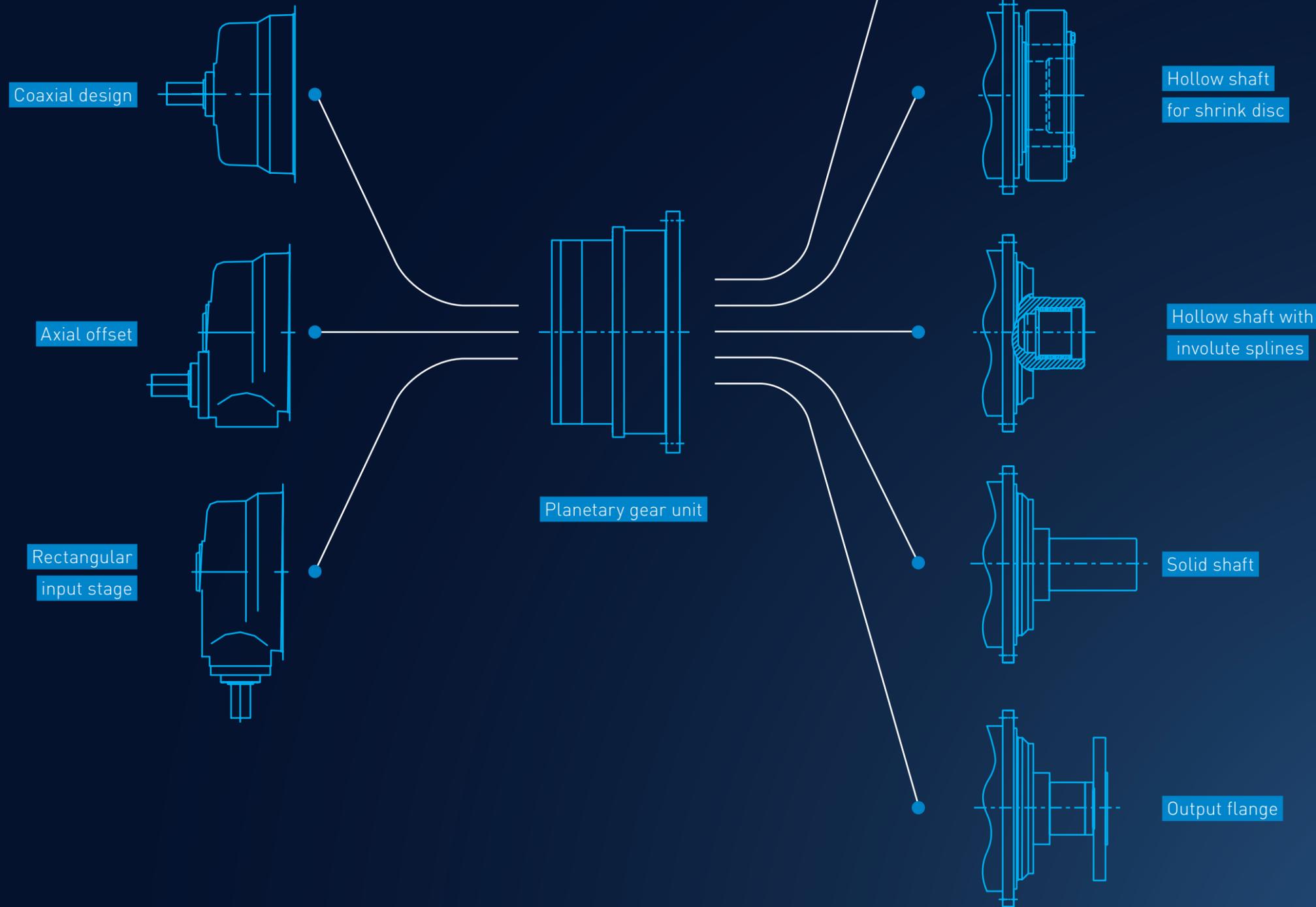
Flender gear units for diffusers offer a truly lightweight solution and, in addition to their reliability, they provide many connection options. The particular strength they offer is the ability to decrease the load on the working machine while simultaneously providing maximum flexibility by making plant planning and construction easier.



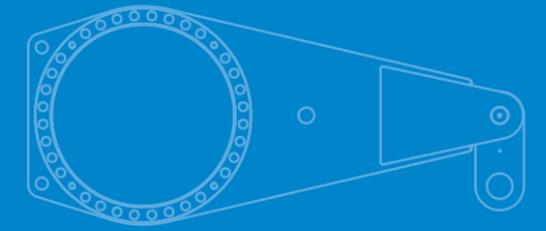
Our range of gear units offers short delivery times worldwide, an excellent price-performance ratio and very high modularity.

PLANUREX 3 AT A GLANCE

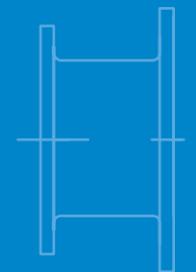
17 sizes for torques up to 10,000 kNm



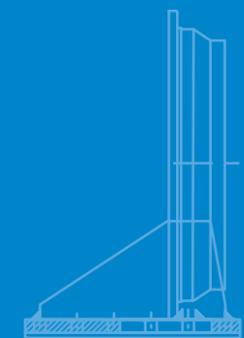
ADDITIONAL COMPONENTS



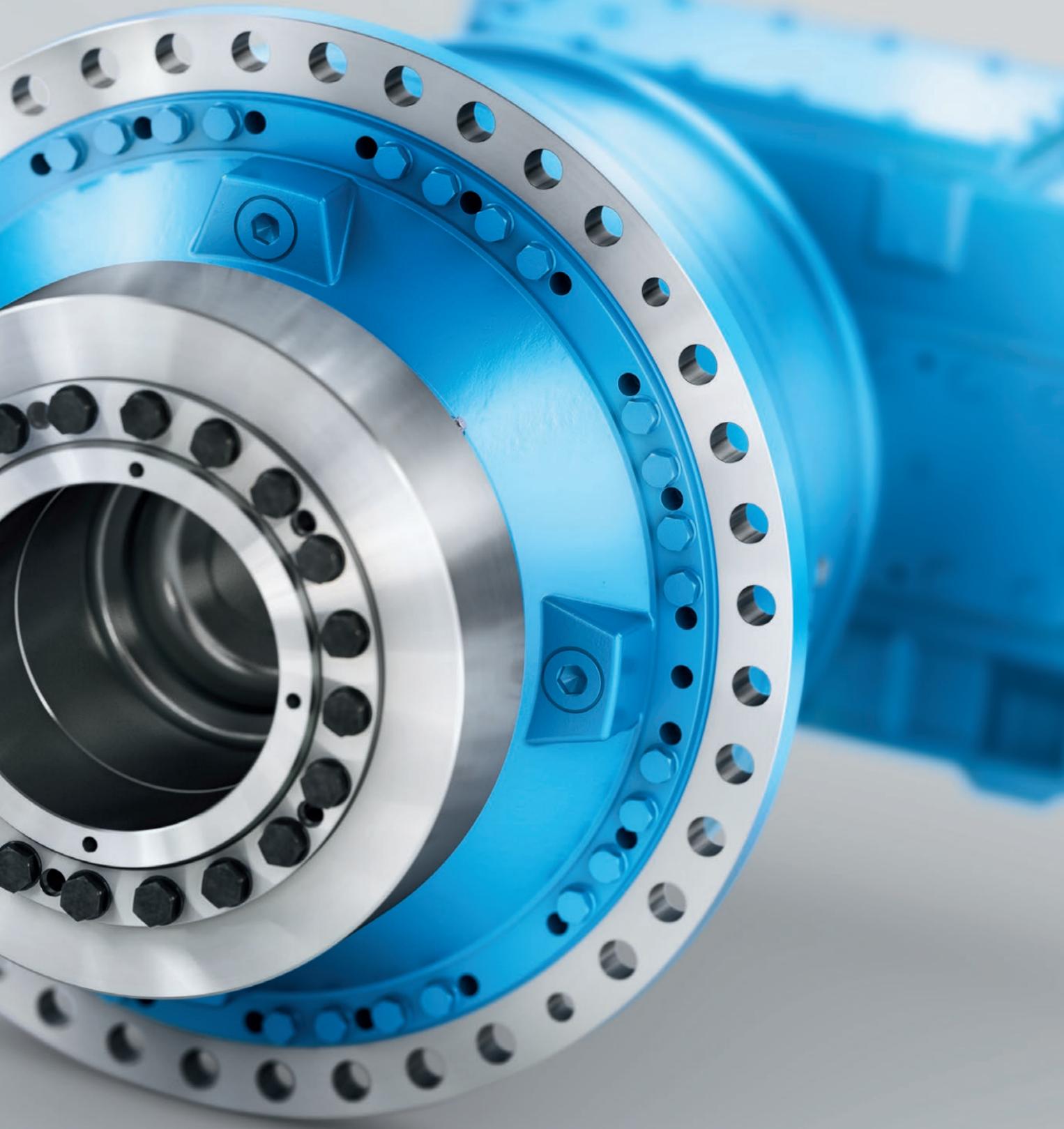
Torque arm



Motor bell housing



Gear housing base



OUR DRIVE SYSTEM EXPERTISE

Consultancy

Our customers exploit our interdisciplinary know-how, our application expertise, our innovative strength and, last but not least, our experience in order to find the perfect drive system for their individual requirements.

Reduced engineering time, lower costs

Flender Service

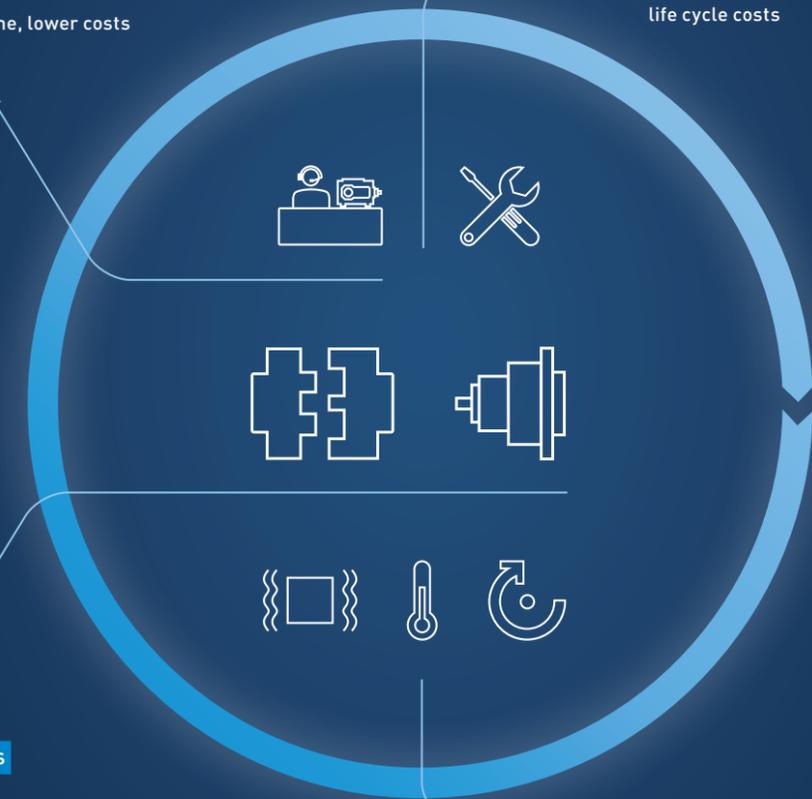
From diagnostics and support to spare part and repair services to maintenance and retrofitting services – the Flender service portfolio enables individual solutions to be created that are precisely tailored to meet the needs of our customers. Thus, a gear unit remains an original Flender gear unit.

Greater plant availability, lower life cycle costs

Qualitative Products

We offer a broad variety of gear units, couplings and generators and associated services, with a focus on key industries such as wind power, cement, mining or sugar. Flender products combine the latest technology with extremely high quality.

Greater efficiency, higher reliability



Maintenance support, failure prediction and diagnostics: AIQ makes Flender gearboxes smarter than ever before. Our gearboxes can be equipped with sensor technology and intelligent tools for drivetrain and process automation.

Less downtime, optimized plant control

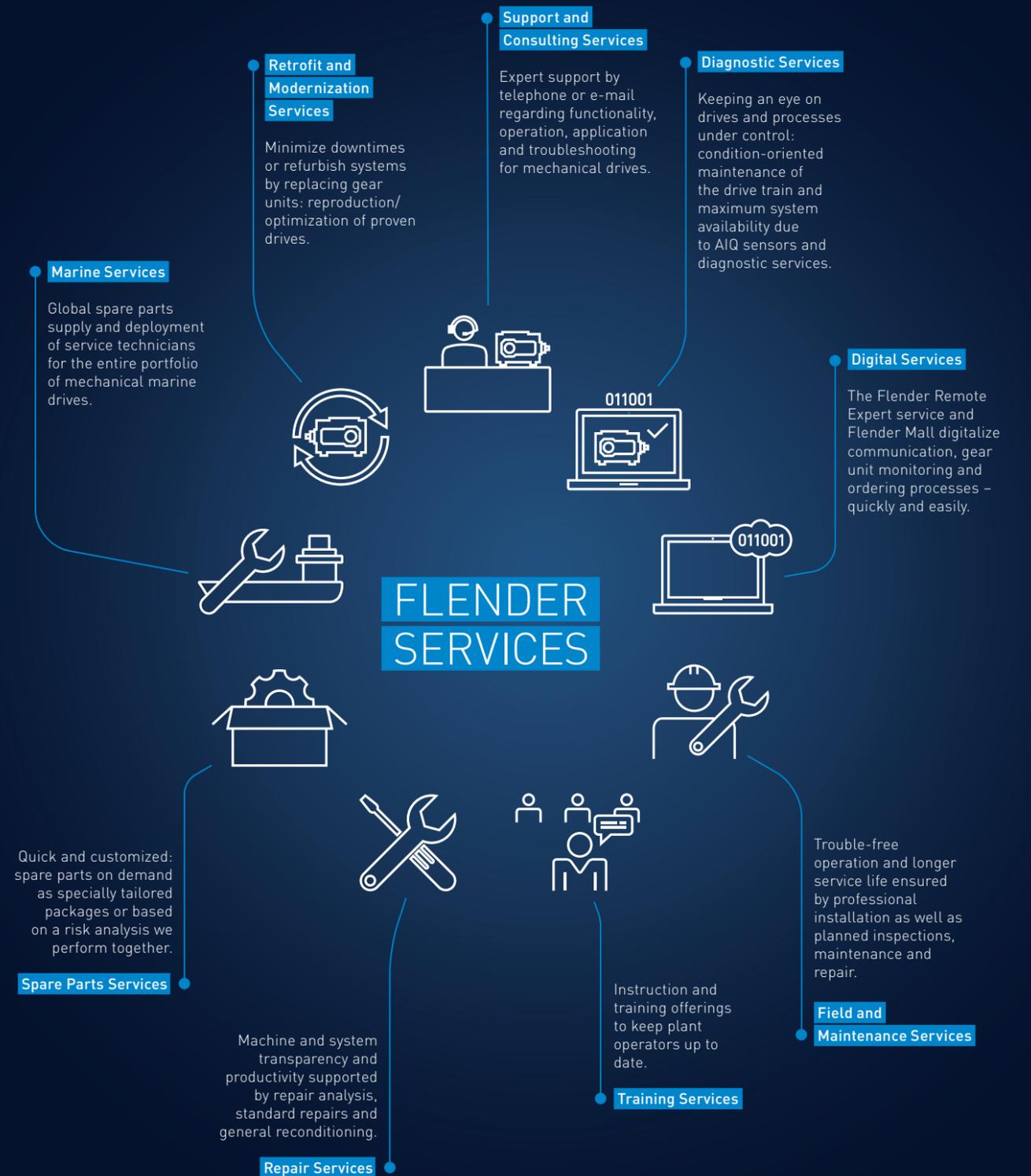


Reduce standstills, minimize downtimes and increase the productivity, flexibility and cost efficiency of your plant.

OUR SERVICE PORTFOLIO FOR GEAR UNITS AND COUPLINGS

Increasing complexity and the aspiration to achieve maximum production plant availability make process-oriented thinking and acting necessary in the sugar industry. Constantly increasing demands make it more and more important for sugar-processing plants to work at maximum productivity and efficiency. Flender services offer you important competitive advantages for your production processes as well as for power generation.

Let our service experts help you, from the planning and development to the operation and even modernization of your plant, and profit from our experience and in-depth know-how concerning your application – in more than 160 countries, seven days a week and around the clock.





WE
MOVE^{the}
WORLD

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