Power packs

ZF planetary gearboxes for industrial applications
Partner for large industrial drive solutions

A wide product range, combined with a high level of engineering expertise, decades of experience, the highest production quality, global services and the lead in the area of condition monitoring systems make ZF a valuable partner for its customers.

ZF industrial gearboxes are reliable drive components which have proven their reliability for many years under a wide range of conditions.

The next generation of ZF industrial gearboxes also impresses with robustness and efficiency. Based on a newly created modular system, they offer a significant increase in torque density of up to 40% as well as extended flexibility for adapting required customer specifications.

Furthermore, the new ZF series offers numerous innovative solutions, such as hydraulically switchable gearboxes or stageless speed adjustment.
Operating figures

<table>
<thead>
<tr>
<th></th>
<th>from</th>
<th>up to</th>
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<tbody>
<tr>
<td>Nominal torque over 20 sizes</td>
<td>kNm</td>
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<td>Ratio range</td>
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Thanks to a flexible kit system ZF industrial drives offer a widely varied product range. This way transmissions can be perfectly matched to their intended application.
The next generation of ZF planetary gearboxes

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<tr>
<th>Gearbox size</th>
<th>Output torque $T_{2 \text{CONT}}$ kNm</th>
<th>D1 mm</th>
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<th>D3 mm</th>
<th>D4 mm</th>
<th>D5 mm</th>
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Gear ratio range

Based on a 2- or 3-stage planetary gearbox, the new ZF industrial gearbox series offers a concept with flexible drive stages:

• Angle stage
• Spur gear stage
• Additional planetary stage

The gear ratios of the 2- or 3-staged planetary gearboxes range between 25 and 450. Depending on the executed, additional drive concept or drive stage, a total range of ratios from 25 to 1500 is possible.

Due to the robust design of the ZF planetary gearboxes, torque peaks of up to 2-times of the rated torque are admissible. This allows for an optimized cost-effectiveness of the plant.
Customer-specific adaptions

Due to the possibility of various customer-specific adaptations, the new series offers the largest possible degree of flexibility:

- **Drive**: hydraulic, electric, belt pulley
- **Output**: hollow shaft / shrink disk, various shafts or hollow shaft versions
- **Foot and flange housing**: plug-on version with torque arm
- **Optional accessories**: such as couplings, brakes, cooling, heating and others

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### Ordering code

#### Type
- Gearbox, planetary

#### Position of input axle
- C: Coaxial
- H: Helical
- B: Bevel

#### Output
- H: Hollow shaft
- S: Solid with parallel key
- O: Outer spline
- I: Inner spline
- A: Application specific

#### Housing
- T: Torque arm
- B: Base frame
- F: Flange
- A: Application specific

#### Gear stages
- E: Electric
- H: Hydraulic
- A: Application specific

#### Input motor
- W: Without brake
- B: With brake

#### Input adaption
- S: Solid shaft with feather key
- F: Flange mounted motor or bracket for motor attachment*
- P: Piggy pack
- A: Application specific

#### Brake
- W: Without
- B: With brake

#### Cooling
- W: Without
- E: External cooling system
- H: Heating elements
- K: Internal cooling device

#### Mounting position
- HO: Horizontal
- VT: Vertical upwards
- VB: Vertical downwards

#### Others
- Project specific devices

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### Your advantages

The new ZF industrial gearbox series offers an individual configuration and a tailor-made drive solution based on a standardized modular system:

- Flexible
- Customer-specific
- Compact
- Reliable

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*for motor attachment with coupling or direct assembling via feather key
Excellent service worldwide

ZF offers professional service for industrial machinery and equipment in almost every region of the world. For customers this means short distances, fast reaction times, the right experts on short notice, and thus, a trouble-free operation.

Complete customer satisfaction is one of the top objectives which ZF wants to achieve with its products and services. This goal determines the quality of all the services linked to our products, starting with development and consultancy through to after-sales service.

ZF supports you as a reliable partner over the whole life cycle of your machines and equipment. The core activities in the service of large gearboxes are co-ordinated by the Witten headquarters and carried out on-site – including the whole spectrum of after-sales services from consultancy to training sessions, from product selection to commissioning, from quality optimisation to documentation.

Furthermore, with the division ZF Aftermarket the group has established a global service organisation which ensures that ZF products operate reliably over the whole life cycle. 33 ZF service companies and over 650 service partners in all the important markets ensure customer proximity and global deployment, combined with regional approaches which take into account the specific requirements of individual markets and applications.
Our services

Gearbox inspection and early damage detection
Predictive maintenance of the gearbox increases the availability of your machine or plant and improves the efficiency in operation. Our qualified service technicians possess extensive experience in detecting damages at an early stage with the assistance of proven inspection programmes and modern measuring- and testing equipment.

Repair
Our thorough knowledge of gearbox designs ensures a flawless and cost-optimised repair. Overhaul and new production of single parts as well as regrinding of gear teeth are carried out by us according to the original drawings. Prior to shipment, repaired gearboxes are tested according to strictest quality standards on our test benches and all results are recorded in a test protocol.

Spare parts
This service is characterized by speed, competence and worldwide efficient logistics. We supply original manufacturers’ spare parts – even after the end of series production – as well as spare part kits and conversion kits for existing equipment.

Documentation and support
Technical information and documentation sustainably ensure that all service activities are carried out with utmost care and competence. Spare-parts catalogues, operating instructions, repair manuals and diagnostic documentation are available.

Field Service
Our qualified and experienced service technicians provide fast support on the spot worldwide, ranging from visual inspection and endoscopy through to structure-borne sound measurement, repair and oil analysis.

Performance Management ProVID
In conjunction with variable sensors, a large number of relevant operating data can be generated. ZF-specific algorithms are used to evaluate the condition of the system and to define measures.

Service locations – worldwide availability

Vernon Hills, USA
Witten, Headquarters, Germany
Beijing, China
Santiago de Chile, Chile