



# Power packs

ZF planetary gearboxes for industrial applications



# Partner for large industrial drive solutions

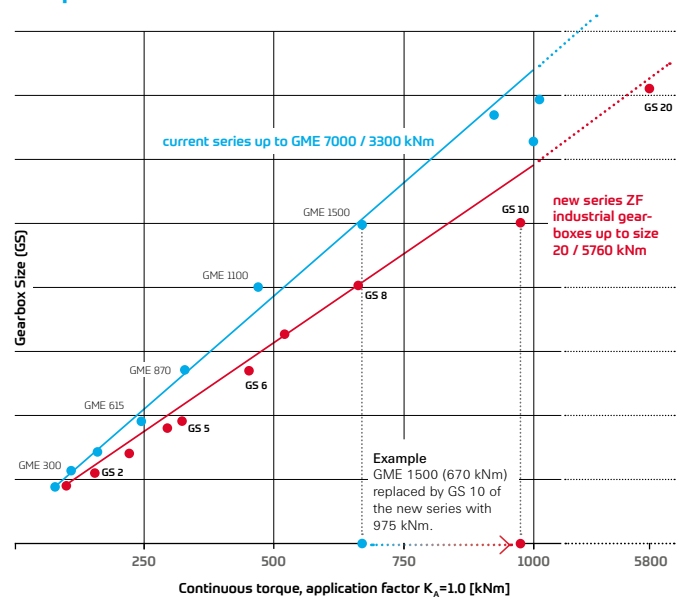
A wide product range, combined with a high level of engineering expertise, decades of experience, the highest production quality, global services and the lead in the area of condition monitoring systems make ZF a valuable partner for its customers.

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.

## Torque increase

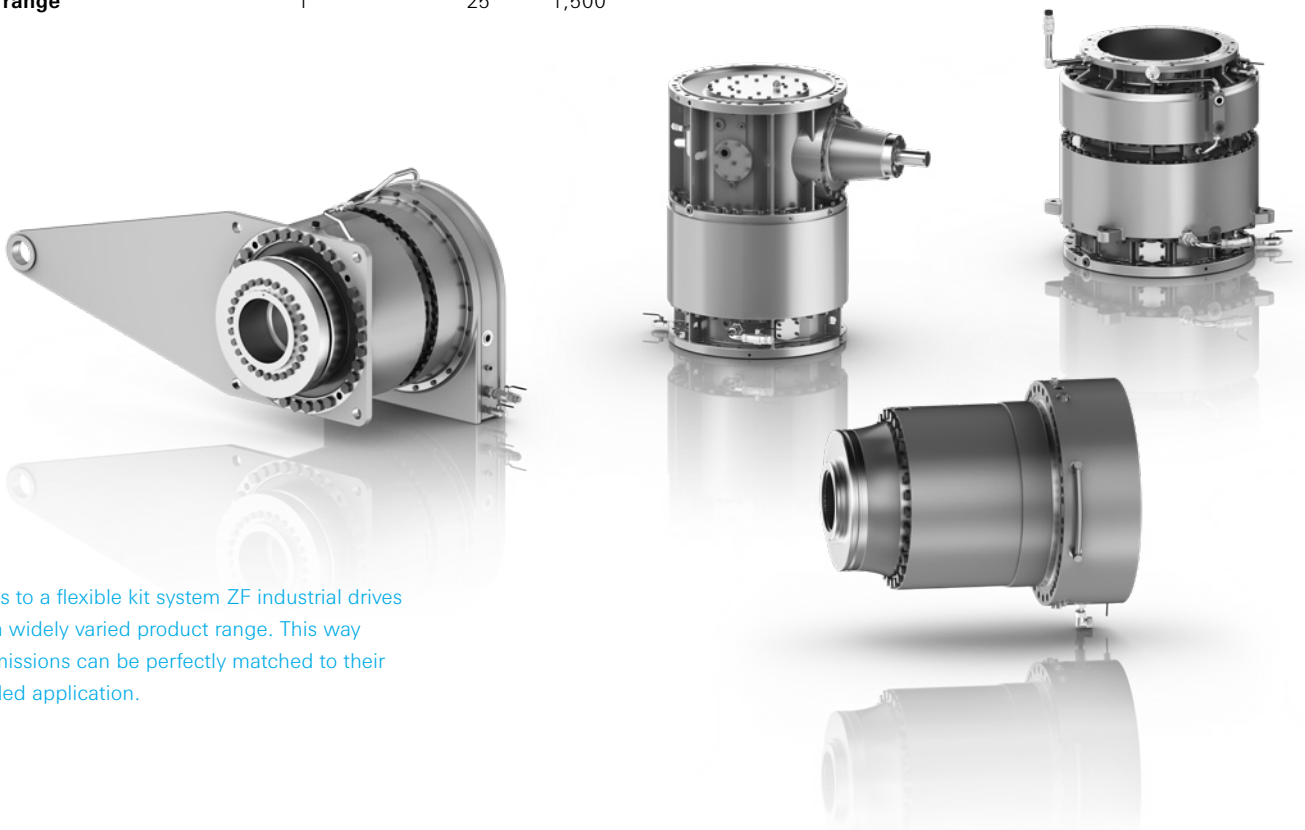






### Operating figures

		from	up to
<b>Nominal torque over 20 sizes</b>	kNm	98	5,800
<b>Ratio range</b>	i	25	1,500



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

Gearbox size	Output torque $T_{2 \text{ CONT.}}$ kNm	D1 mm	D2 mm	D3 mm	D4 mm	D5 mm	L1 mm	L2 mm	L3 mm
1	99	715	665	610	205	200	235	35	384
2	155	835	785	715	225	220	250	40	437
3	221	920	860	800	265	260	285	42	483
4	295	990	925	850	280	270	290	45	536
5	321	1055	990	915	290	280	295	47	547
6	451	1160	1085	1000	320	310	310	50	591
7	519	1235	1150	1065	360	350	345	55	643
8	661	1300	1215	1115	380	370	350	58	668
9	846	1385	1285	1180	400	390	375	60	720
10	975	1430	1325	1205	420	410	370	65	737
11	1232	1570	1470	1350	470	460	400	70	792
12	1572	1690	1580	1460	490	480	420	75	861
13	1815	1790	1675	1550	530	520	465	80	873
14	2117	1840	1725	1600	560	550	475	85	923
15	2480	1905	1780	1630	570	580	471	90	984
16	3046	2045	1905	1760	630	620	500	93	1054
17	3447	2105	1960	1800	670	660	575	95	1101
18	4101	2255	2110	1940	710	700	590	100	1170
19	4804	2395	2240	2080	790	780	640	110	1229
20	5800	2515	2365	2195	840	830	680	125	1317

## Gear ratio range

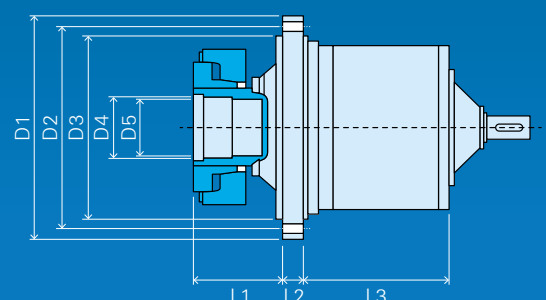
Based on a 2- or 3-stage planetary gearbox, the new ZF industrial gearbox series offers a concept with flexible drive stages:

- 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 40 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.



**Type**

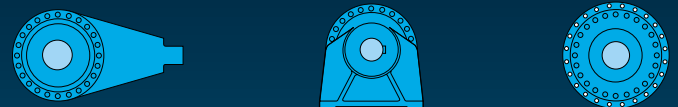
Hydraulic drive  
Electric drive

**Output side**

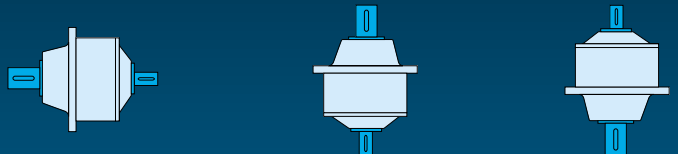
Hollow shaft  
Shaft with key  
Male splined shaft  
Female splined shaft

**Housing design**

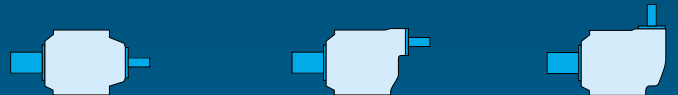
Torque arm  
Foot-mounted  
Flange-mounted

**Mounting position**

Horizontal  
Vertical, output upwards  
Vertical, output downwards

**Position of input shaft**

Coaxial (standard)  
Offset (spur gear stage)  
Angle-type (bevel gear stage)

**Electric drive**

Shaft with key  
Direct-attached motor  
Motor bell housing and coupling  
Belt transmission



## 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

## Customer-specific adaptations

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





# 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



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