



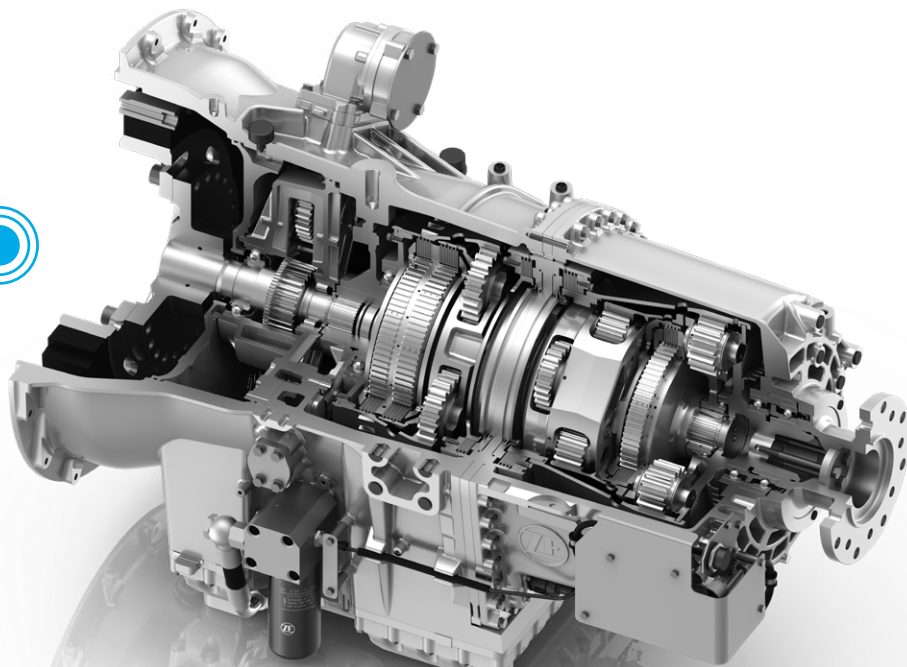
Reliability is Key

ZF transmission systems for the oil and gas industry



Functional powerhouse

The 8 TX automatic transmission for well servicing: lightweight, powerful, and durable – designed for the application in high pressure pumping applications.



-33%

Weight savings*

compared to the lightest competitor product of the same class

Making the difference – powershifting and power density

ZF exactly customized the 8 TX to the specific requirements for well servicing. It offers eight gears and particularly harmonious gear transitions as well as a high spread of gear ratios. Together with the very robust basic design, this minimizes both component stress and wear and results in a reliable, durable transmission with very low life cycle costs.

* according to market comparison based on freely accessible product information in 2013

Fulfilling our ambition

What makes it literally unique, however, is its special design: Thanks to state-of-the-art BUS communication and modular programming possibilities, the ZF transmission operates without a torque converter.

Trouble-free continuous operation is ensured by a flexible coupling with the latest damping technology which prevents the transfer of engine vibrations. Furthermore, the 8 TX dissipates less heat thanks to its sophisticated design.

ZF integrated the complete electronic controls into the transmission. Additional optimizations such as an all aluminum housing make the ZF transmission the lightest transmission currently available in its class: It weighs only **1,238 kg** (8 TX 2600) or **1,243 kg** (8 TX 3000) including the coupling and without oil. Regardless of that, the 8 TX offers a high level of flexibility: Two power take-offs are also available. Also installation and removal of the ZF transmission is simplified thanks to its three lifting points, it can be safely and easily moved into its needed position.

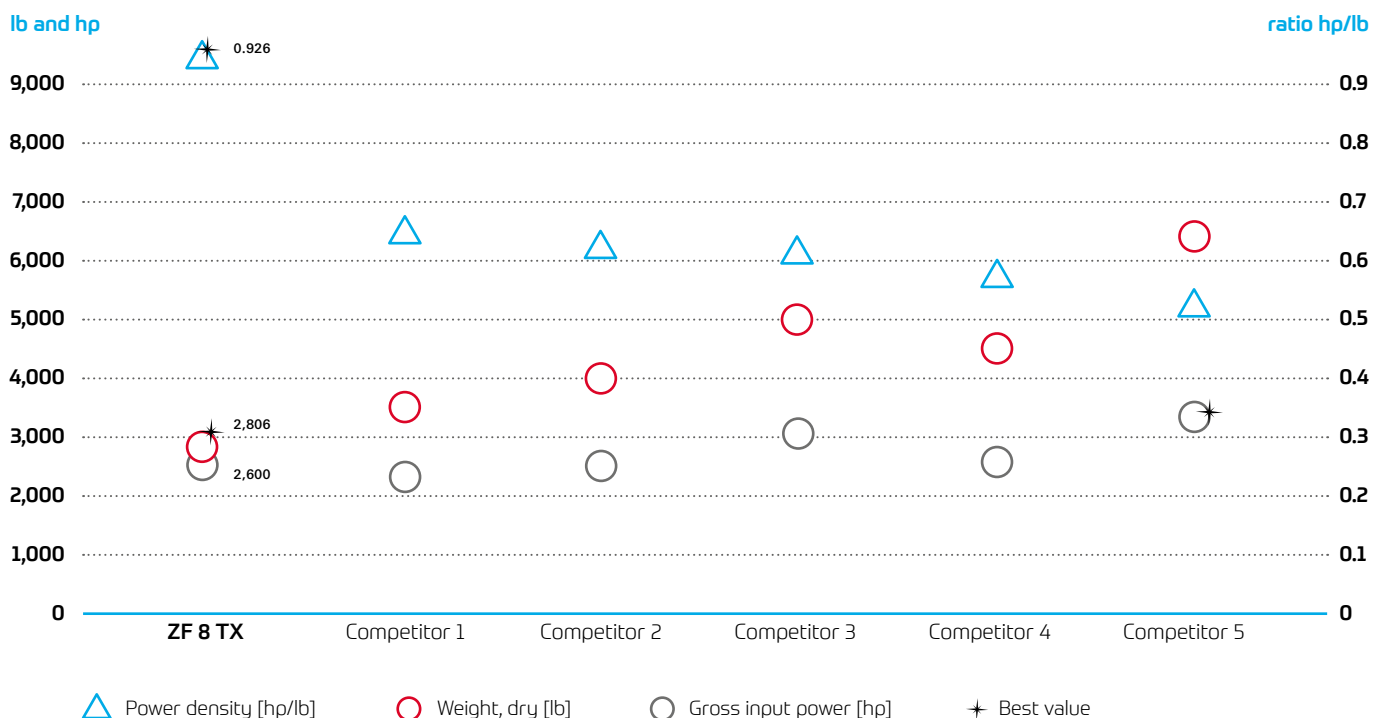


Smart Operation Management

- Activation management for coming online and pressure testing
- Targeted control of pressure and volumetric flow rate
- Statistics memory for recording operating data
- Data logging for detailed analysis of special events
- Oil health monitoring and oil level sensing system
- GPS position of the unit for easy location and optimized route planning
- Self-learning shifting behavior
- Tracking and analysis of fuel economy of the engine (if supported by the engine)

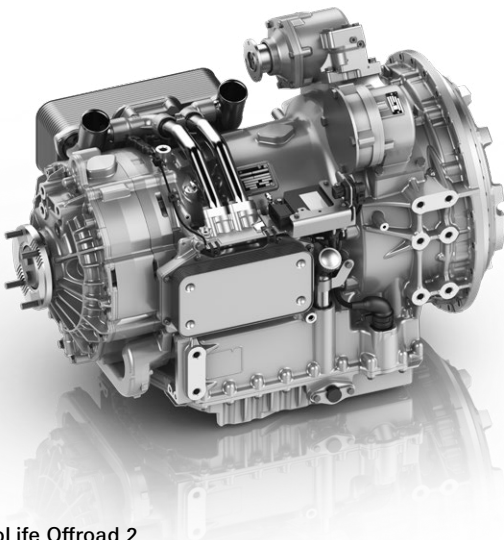
“ Due to the extreme conditions in oil and gas fields, we rely on robust and reliable equipment, which includes the 8 TX. ”

says Volker Hein from GOES GmbH.

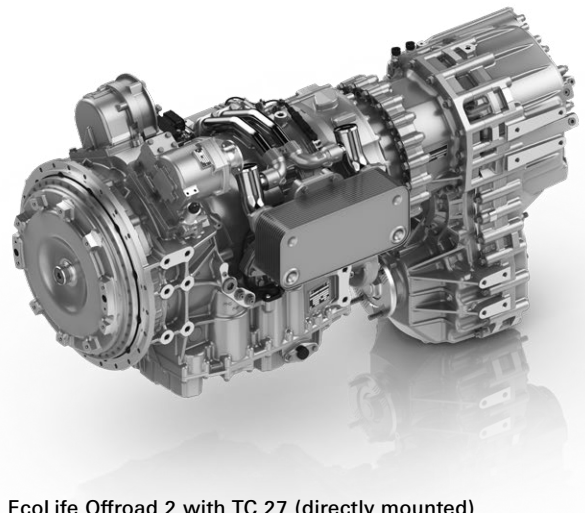


Tailormade transmission systems

ZF transmissions are designed for specific application conditions. The drive components ensure maximum performance, cost-effectiveness and comfort. Reliability and user-friendly operation guarantee maximum efficiency.



EcoLife Offroad 2



EcoLife Offroad 2 with TC 27 (directly mounted)

EcoLife Offroad 2

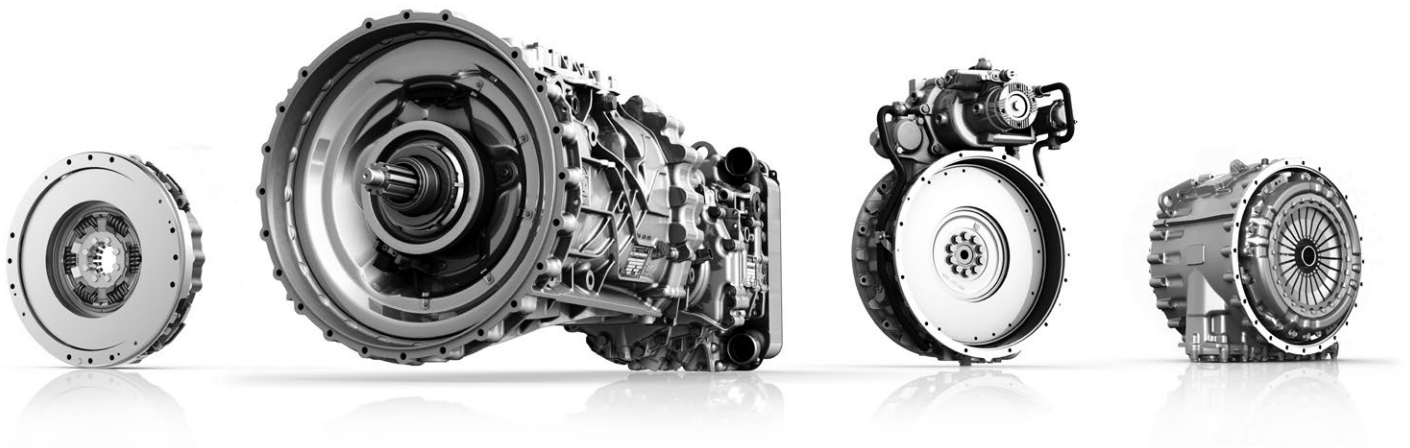
With the new EcoLife Offroad 2, ZF has designed a transmission system specifically for the harsh requirements in oil and gas production, such as in pumping systems, workover and coil tubing rigs, cementing and acidizing units. It enables particularly economic operations and handles more than 3,000 Nm of engine torque. The transmission system is precisely tailored to the respective facility and takes care of clutch actuation and shifting work for the user. An electronic monitoring system prevents any operating error.

Transfer Case TC 27

Drive and work efficiently with the EcoLife Offroad 2 and the directly mounted transfer case TC 27, making it the perfect match for workover rig applications. The lightweight TC 27 enables a higher payload or reduced fuel consumption, while a new suspension method reduces installation costs. Additionally, optional features such as a central electrical or pneumatic connection, a control unit directly on the transmission, and oil level and temperature sensors can be installed. With the EcoLife Offroad 2 and the TC 27, you get one solution for two power flows.

ZF offers customized transmissions for a wide range of pump systems – from drilling to cementing and more.

| | High pressure pumping units | Cementing and pumping units (mud pumps, nit- rogen units, etc.) | Rigs and coiled tubing units (drilling rigs, workover rigs, etc.) |
|--------------------|--------------------------------|--|--|
| 8 TX | ■ | | |
| EcoLife Offroad 2 | | ■ | |
| TraXon | | ■ | |
| TraXon Torque | | ■ | |
| TraXon PowerDivide | | ■ | |



TraXon with modules (Perform, PowerDivide and Torque)

TraXon, TraXon Torque, PowerDivide

The **TraXon** automatic transmission is made for applications up to 3,000 Nm. Its space-saving design in combination with newly designed gearsets turns TraXon into a benchmark in terms of the power-to-weight ratio. At the same time reliable and robust, TraXon offers a wide ratio range and enough horsepower for the hard day-to-day work from drilling to cementing and more. Easy to install and operate with options like remote control, TraXon is at home in vehicles or stationary platforms. One essential advantage of TraXon is its modular transmission design. This enables the basic transmission to be combined with three starting or shift modules, respectively, which make the transmission more economical in practice and giving manufacturers and operators the best possible flexibility for every application.

The dry single-disc or – for particularly high-torque applications – double-disc clutch **TraXon Perform** is robust and has proven worthwhile millions of times over. It is also possible to combine the basic transmission with a torque converter clutch. Also at high input torques, **TraXon Torque** can be operated with zero wear and high power. Another module is the engine-dependent PTO **PowerDivide**. It is installed between the transmission and vehicle engine following the sandwich principle and is especially attractive for applications where the auxiliaries require very high torques.

Technical data

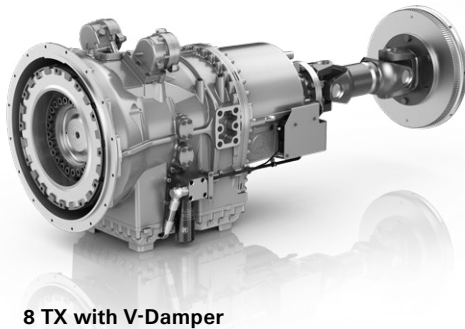
Workover rig

Dual use

Cementing

Pumping

EcoLife Offroad 2 + TC 27



8 TX with V-Damper



TraXon

Drilling

| | Automatic transmission | | | Powershift transmission | | | Transfer case |
|------------------------|------------------------|------------|------------|-------------------------|-----------|-------------------|-------------------|
| | TraXon | | | 8 TX 2600 | 8 TX 3000 | EcoLife Offroad 2 | TC 27 |
| Number of gears | 12 | 16 | 12 | 8 | 8 | 7 | – |
| Max. horse power [hp]* | 730 | 840 | 840 | 2,600 | 3,000 | 730 | – |
| Max. input torque [Nm] | 2,600 | 3,000** | 3,000** | 10,500 | 11,500 | 3,000 | 27,000 |
| Approx. weight [kg] | 253 | 290 | 265 | 1,238 | 1,243 | 456 | 250*** |
| Ratio range | 12.92-0.77 | 14.68-0.82 | 12.92-0.77 | 3.67-0.81 | 3.67-0.81 | 5.60-0.559 | 0.874 / 1.536**** |

| | Engine-dependent PTO PowerDivide | | |
|--------------------------|----------------------------------|-------------|-------------|
| | NMV 2000 L1 | NMV 2003 L1 | NMV 1600 L1 |
| Output torque [ft-lb] | 1,476 | 1,476 | 1,180 |
| Output torque [Nm] | 2,000 | 2,000 | 1,600 |
| PTO position | 12 o'clock | 3 o'clock | 12 o'clock |
| Length [in / mm] | 8.27 / 210 | | |
| Approx. weight [lb / kg] | 363 / 165 | | |
| Speed increasing factor | f = 1.21 | f = 1.21 | f = 1.54 |

* Indicative value only (engine auxiliaries are not covered)

** Up to 3,400 Nm / 2,508 ft-lb possible, depending on application

*** TC 27 L with differential

**** Ratio on-road / off-road

Fully committed to perfect service

We ensure the mobility of our customers worldwide and throughout the vehicle's entire service life with comprehensive repair services, reliable quality products, and technical systems expertise.

Globally present, locally anchored

As technology leader for driveline and chassis technology, ZF considers itself not only a manufacturer, but also a reliable partner who supports you throughout the life cycle of your vehicles. And that worldwide. Wherever you may need us, ZF Aftermarket supports you with its own comprehensive service network and the entire range of aftersales services.

From prompt genuine parts supplies via technical service, up to consultancy and training. Quickly, directly, reliably. In a nutshell: ZF Aftermarket links powerful top-quality products with excellent services to provide a unique, premium offer. Around the world, around the clock: ZF's service specialists are available anywhere and at any time.



Service-Center at a glance:
www.zf.com/service-center

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