



## ZF Products for Special Applications: The Right Solution for Every Challenge

- **Wet starting clutch DynamicPerform complements ZF's successful TraXon transmission**
- **PowerLine automatic transmission offers the perfect ratio of curb weight to torque and vehicle mass**
- **Directly More Powerful: ZF Presents Highly Flexible and Efficient Transfer Case VG 750 | 400 for All-Wheel Drive Commercial Vehicles**

Niche markets and special applications require specialized, individual solutions. ZF also develops products for applications and projects with small production volumes that contribute to higher productivity in daily use on and off the road.

### **TraXon DynamicPerform: Designed to meet the highest requirements**

At the Bauma trade show, ZF is presenting the new starting element DynamicPerform for its successful modular TraXon transmission. Mobile cranes, special vehicles and applications up to 3,000 Nm can use the wet starting clutch for wear-free maneuvering without overheating. Together with its high efficiency and long service life, this ideal product for challenging applications is being offered by ZF to manufacturers and service providers in the off-highway and construction industries. DynamicPerform brings new and familiar ZF qualities to the segment of three-axle to five-axle construction machines of up to 60 tons. As a wet starting clutch, DynamicPerform transmits the engine power through multidisks integrated in the module, which are cooled by an oil circuit. DynamicPerform thus keeps the clutch from overheating and enables nearly wear-free maneuvering on a lasting basis even with high friction loads. This prevents downtime and helps to immensely extend the service life of the driveline. Customers benefit from greater efficiency and lower maintenance costs, while the ease with which the clutch force can be applied and adjusted makes work easier for drivers.



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**TraXon: Individuality through diversity**

ZF designed TraXon according to the principle of modularity. Customers can flexibly and economically bring together the basic transmission with various starting elements for the respective application. This reduces service and maintenance costs, since it enables ZF to manufacture components in larger volumes. TraXon is highly efficient – primarily thanks to its suitability for engine torques of up to 3,000 Nm, its high transmission-ratio spread, its energy conversion efficiency of up to 99.7 percent and its outstanding, best-in-class power-to-weight ratio.

**PowerLine is conventional yet powerful**

PowerLine is an 8-speed automatic transmission that can transmit up to 1,200 Nm input torque at a fuel-reducing spread of 7.65 or 10 with a torque converter. Because PowerLine was designed for vehicles with a gross vehicle weight up to 110 tons, even the heaviest loads are not a problem. Nevertheless, its dry curb weight on the scale only amounts to 149 kilograms. The ZF transmission is also impressive when compared to the competition.

When put up against its competition, PowerLine is 45 percent lighter and reduces fuel consumption by up to ten percent. Its performs 30 percent better when accelerating and a third quieter in operation. An integrated dual torsional damper and an intelligent transmission control now mean that commercial vehicles intended for use at the depot can provide the same automatic shifting comfort you get in a passenger car. Automatic engine stop functionality and hybrid compatibility promise further potential savings.

**VG 750 | 400: Reliable and lightweight powerhouse**

Impressive reliability with very low weight, high performance and efficiency in compact dimensions, as well as flexible integration and application possibilities thanks to the systems competence of the technology company ZF: Featuring these and other advantages, the VG 750 | 400 represents the latest innovation in the ZF portfolio of transfer cases.

The VG 750 | 400 can thus accommodate high input torques of up to 12,500 Nm and maximum engine speeds of 4,500 rpm. This means it



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covers almost every all-wheel drive application in the low to medium power class. Even with this increased speed level, the transfer case usually does not require additional cooling because it works with low internal friction and is efficient. It lives up to the well-known reliability of ZF transfer cases, even for extreme applications. Nevertheless, it weighs in at just 160 kg – mainly thanks to its aluminum housing and various internal lightweight design features.

One of the great advantages of the transfer case is that it can be easily tailored to a wide variety of vehicle types, drivelines and applications. For example, the VG 750 | 400 sets the new standard for directly mounted systems. This space-saving expansion option is available on the market together with ZF's advanced PowerLine and 8HP90SX 8-speed automatic transmissions as well as with other automatic and manual transmissions.

Captions:

5) The new, wet-running DynamicPerform starting module for the modular ZF TraXon transmission allows multi-axle construction machines of up to 60 tons to maneuver almost without wear even under high friction loads.

6) Shifting qualities at the premium automotive level: The ZF 8-speed PowerLine is now setting the automatic transmission standard for commercial and special vehicles.

7) With the new VG 750 | 400 transfer case, ZF has put together a highly configurable, reliable and lightweight powerhouse for light and medium duty all-wheel drive commercial vehicles.

Images: ZF

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**ZF Friedrichshafen AG**

ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company has a global workforce of 146,000 with approximately 230 locations in some 40 countries. In 2017, ZF achieved sales of €36.4 billion. ZF is one of the largest automotive suppliers worldwide.

ZF allows vehicles to see, think and act. The company invests more than six percent of its sales in research and development annually – in particular for the development of efficient and electric drivelines and also in striving for a world without accidents. With its broad portfolio, ZF is advancing mobility and services in the automobile, truck and industrial technology sectors.

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