



Torque for any given application

- **Efficient torque converters by ZF for construction machinery with engine torques of 500 up to 2,700 Newton meters.**
- **Individually adapted to any given application.**
- **The torque converter lock-up function ensures fuel savings and a high level of economic viability.**

What applies to commercial vehicles in general, is also valid for the special area of construction machinery: Requirements for vehicles are on the rise. Supposedly, they must be versatile, economically viable, and reliable while, naturally, they should be saving fuel in parallel. With its highly efficient and individually adaptable torque converter, ZF Friedrichshafen AG is successfully bridging this gap for its respective scope of responsibility. (fig. 7)

Millimeter-precise accuracy for manoeuvring, swift loading and unloading, a high and even level of power transfer, as well as quick and smooth shift processes: Construction machinery must be highly versatile and reliable. And this more than ever! So that wheel loaders, dump trucks, backhoe loaders, or telescopic handlers can successfully complete the tasks assigned by the respective owner/driver, all components of the driveline must be optimally harmonized with one another. Today, no one may imagine to work without the precious assistance granted by vehicles equipped with hydrodynamic torque converters. They move heavy weights which an ordinary clutch would be unable to cope with.

Here, the torque converter by ZF Sachs, the Powertrain and Suspension Components division of ZF Friedrichshafen AG, is particularly flexible: Depending on the engine's characteristics, the transmission's grading, and the type of machinery, hydraulic configurations vary. With a hydrodynamic diameter of 280 up to 440 millimetres, torque converters by ZF can easily be used for maximum torque transfers of 500 up to 2,700 Newton meters. Thus, not only the entire torque converter range of construction

machinery is covered, but also all individual requirements and requests of manufacturers and operators can be practically fulfilled. Moreover, the compact and weight-optimized design enabled by metal-shaping technology as well as the geometries of the oil circuit ensure maximum flexibility in the fields of vehicle peripheries. Thanks to individual adaptation of performance and model design to the respective application, the torque converter warrants top efficiency.

Since any kind of hydrodynamic power transfer generates high levels of fuel consumption, it must only be used where explicitly required. Therefore, after the setting off process, a torque converter lock-up clutch ensures that the torque flow between the engine and the transmission can be designed in a loss-free and thus, completely direct way. This design makes a considerable contribution to fuel consumption reduction and the economic viability of construction machinery. In order to live up to today's highly dynamic shift sequence requirements for transmissions, new freewheel concepts are applied to torque converters.

Research in the fields of hydrodynamics, the further development of lock-up clutches, as well as close cooperation with vehicle manufacturers and transmission producers have made ZF Sachs one of the leading European manufacturers for torque converters.

Picture caption:

7.) ZF Sachs torque converter

Picture: ZF



Presseinformation
Press Information

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ZF Sachs AG, the Powertrain and Suspension Components division of ZF, develops and produces vibration dampers and other components for chassis regulation as well as car and CV converters and clutches.

ZF is one of the world's leading automotive industry suppliers specializing in driveline and chassis technologies. With a workforce of 63,000 employees, the company operates 125 plants in 26 countries. ZF Group revenues in 2008 totaled €12.5 billion. ZF ranks as one of the top-10 automotive industry suppliers worldwide.

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