



ZF 9000 – a new transmission series for demanding marine applications

- **The new ZF 9000 series offers features which are often essential for government applications.**
- **In addition to standard accessories such as trailing pumps, PTOs (Power Take Offs) and various mounting systems, some models are also offered with PTIs (Power Take Ins) for loitering operations, driven by electric or hydraulic motors.**

Engine powers, and therefore torques, are continuously increasing, therefore the ZF 9000 transmission series has been designed to meet present demands – typically engines up to 3700 kW (5000 hp) at 2100 rpm – with capacity for further growth. This latest driveline technology offered by ZF Marine is suitable for all types of vessels, with the most demanding operating profiles.

The ZF 9000 series, available in many configurations – parallel offset (vertical or horizontal), down-angle and vee-drive – is especially interesting for government vessels which often require very compact, lightweight and high performance propulsion systems. Additional design flexibility is provided by a wide range of ratios, starting at approximately 1.5 and extending up to approximately 5.2.

Drive Security

With more than 70 years of experience in naval, coast guard and marine police applications, ZF Marine has acquired in-depth expertise in the design of propulsion systems of all types of patrol vessels. The products, meeting the highest quality standards, are renowned for compactness, robustness and reliability, characteristics which make them ideally suitable for fast vessels with important duties. Depending on the application, models are available with light alloy or cast iron casings and various accessories. Besides the compact and light weight design, the ZF 9000 series was also developed to meet the stringent noise and vibration requirements, as specified in ISO8579-2.



Meeting customers needs

Apart from accessories such as trailing pumps, PTOs and various mounting systems, some models have optional PTIs for electric or hydraulic slow-speed propulsion. A PTI enables the vessel to carry out extensive patrol duties using only an auxiliary power source. This extends the operating range and increases the time between overhauls of the main engines. Such features, combined with ZF Marine's global after-sales service, have resulted in ZF transmissions becoming the first choice for many of the worlds' navies and coastguards.

First applications

The first models of the ZF 9000 series were the ZF 9300 NCB transmissions recently delivered to the German shipyard, Abeking & Rasmussen. These will be installed in two 60m SWATH (Small Water Area Twin Hull) pilot station vessels operated by the German Government. Other ZF 9000 series applications include a Search and Rescue vessel for the Chinese authorities as well as fast ferries and luxury motor yachts.

Caption:

ZF 9055 marine transmission.

Photos: ZF

Press contact:

Peter Herring, PR & Communication,

Phone: +49 7541 77-3335, Fax: +49 7541 77-90 3335;

E-Mail: peter.herring@zf.com

ZF is a leading worldwide automotive supplier for Driveline and Chassis Technology with approximately 64,000 employees at 119 locations in 25 countries. In 2008, the ZF Group achieved sales of approximately EUR 12.6 billion. In order to continue to be successful with innovative products, ZF annually invests about five percent of its sales in Research & Development.

The "Marine Propulsion Systems" business unit of the ZF Group is one of the world's largest supplier of marine propulsion systems, covering all applications in a power range from 10 to 14,000 kW, with transmissions, propellers, surface



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drives, controls, complete shaft-line systems and components, and has manufacturing facilities in Italy, Germany, USA, Brazil, Taiwan and China. ZF Marine is coordinated through its headquarters at ZF Padova, Italy, and has 11 plants located in 7 countries with 1,200 employees. In 2007, the sales turnover was 264 million Euro.

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