ZF unveils new motorsport gearbox

- **8P45R motorsport gearbox even more dynamic**
- **New design more efficient and lighter**

SCHWEINFURT – The 8HP ZF automatic gearbox has proven its qualities in the BMW M235i Racing Cup since the 2014 season. Now, ZF introduces the next evolution – the 8P45R motorsport gearbox. It is even more dynamic, lighter and consequently perfectly suited for use in motorsport.

Previously, an automatic gearbox was considered a somewhat unusual construction in motorsport; however, ZF paved the way for this new solution during the 2014 season. The automated 8HP gearbox eases the workload considerably for BMW M235i Racing Cup competitors, and allows the racing drivers to stay almost completely focused on their environment and on the track. Mechanical damage as a result of shift mistakes is also excluded as are fatal blockages and dynamically unbalancing shocks on the driven axle.

Whereas the previous automatic gearbox was based on a standard production line design and modified software, ZF now sees good potential for a pure motorsport planetary gearbox. The aims of the redesign: ratios, shift points and shift speed should fulfill the greater demands in motorsport without compromise. ZF also attached value to low weight.

The designers retained the fundamental design and assembly scheme – comprised of four planetary gear sets and five shift elements – from the previous 8HP gearbox. One of several new features is the omission of a converter in the gearbox. The pulling away or drive-off process is implemented by internal shift elements. A vibration damper upstream from the gearbox input prevents damage through engine oscillations.

The gear ratio spacing is closer and the rev drops between gears have been reduced. Normally only the first six gears of the former
8HP gearbox were used when racing. In the new transmission all eight gears are spaced sensibly in the operating range.

By omitting the converter and other reduction measures, the designers saved about 15 per cent on weight. The internal power loss was also reduced significantly.

Throughout the 2015 season, the new gearbox underwent a test and dyno testing programme; its first race is on the agenda at the beginning of November with BMW. ZF plans the transmission’s market launch in the second quarter of 2016. Initially, the 8P45R gearbox is exclusively available for the BMW M235i. In the future, it is also envisaged for use in other manufacturers’ sportscars.

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ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company, which acquired TRW Automotive on May 15, 2015, is now represented at about 230 locations in some 40 countries. The two companies, which were still independent in 2014, achieved a sales figure exceeding €30 billion with 134,000 employees. As in previous years, both companies have invested approximately 5 percent of their sales in Research and Development (recently €1.6 billion) in order to be successful with innovative products. ZF is one of the top three automotive suppliers worldwide.

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