



ZF Releases New Active Control Retractor Seat Belt System

- **Active seat belt systems can vibrate to warn drivers of potential danger and tighten the seat belt in anticipation of an accident**
- **ACR8 active control retractor is based on the SPR8 seat belt retractor pretensioner product family**
- **Compact design, lightweight, with new software functions**

Friedrichshafen. ZF is beginning volume production of its next generation Active Control Retractor - the ACR8. ACR8 combines active and passive vehicle safety, and is designed to tighten the seat belt in critical situations in advance of a potential impact. It can be triggered by information from on-board active safety and driver assist systems and can work in conjunction with systems such as autonomous emergency braking (AEB) or evasive steering assist (ESA). The system helps to keep the occupant in a better position while working in conjunction with other occupant restraints such as airbags during a crash.

The ACR8, short for Active Control Retractor, is ZF's newest generation of the active retractor pretensioner. ZF pioneered the technology in 2002 with Daimler and the technology has since expanded.

"The new generation is now launching in the market on the Mercedes-Benz CLS-Class and stands out thanks to its even more compact design, reduced weight and new software functions," says Norbert Kagerer, senior vice president of engineering at ZF's Occupant Safety Systems Business Unit. "This is another ZF contribution made toward Vision Zero – road transportation without emissions or accidents."

The ACR8 features a reversible, electromechanical pretensioner for pre-crash activation, comfort functions and haptic feedback, as well as a non-reversible, pyrotechnic pretensioner for safety in the event of an accident that is past the point of prevention. The new generation can be



PRESSE INFORMATION
PRESS RELEASE

Page 2/3, September 25, 2018

extended to include further functions, such as active locking in modified seating positions, sensing of the belt extension or sports mode for highly dynamic driving situations.

The ACR8 is based on ZF's SPR8 retractor pretensioner. SPR8 offers a product family based on modular design which can meet all automotive manufacturer requirements for seat belt systems, from the basic version through to the active control retractor technology offering advanced functions. The ACR8 allows upgrading of the seat belt system by building upon the SPR8 pretensioner technology and system configuration.

Thanks to the enhanced safety and comfort provided to vehicle occupants, active seat belt systems are growing more popular across vehicle segments from compact to mid-range and premium vehicles. In addition to familiar functions like seat belt slack reduction, combined with modern advanced driver assistance systems, there are optional features such as warnings via seat belt vibration (haptic feedback) and reversible pretensioning during the crash avoidance and pre-crash phase. In automated driving applications, the Active Control Retractor can also help to put the vehicle's occupants into an improved seating position in potentially critical situations. Seat belt systems work in conjunction with other safety systems, such as airbags, to help enhance occupant protection and control the level of force applied to human bodies.

The ACR8 also has the potential to be an integral part of automated driving systems. When switching from automated to manual driving, the active control retractor can prompt the driver to take over by pulsating the strap at high frequency as a warning in the event that the driver needs to take control and action may be required. This allows the seat belt system to be integrated into automated vehicles' user interfaces as an effective way of gaining the driver's attention.



PRESSE INFORMATION
PRESS RELEASE

Page 3/3, September 25, 2018

Caption:

ZF is launching its newest generation Active Control Retractor seat belt system (ACR8) on Mercedes-Benz CLS-Class – the two companies pioneered this technology that combines active and passive safety. The system can remove some seat belt slack before a crash and helps to keep occupants in a better position in crash situations.

Image: ZF

Press contacts:

John Wilkerson, Technology and Product Communications,
Phone: +1 734 812-6979, e-mail: john.wilkerson@zf.com

Robert Buchmeier, Head of Technology and Product Communications,
Phone: +49 7541 77-2488, e-mail: robert.buchmeier@zf.com

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.

For further press information and photos, please visit: www.zf.com