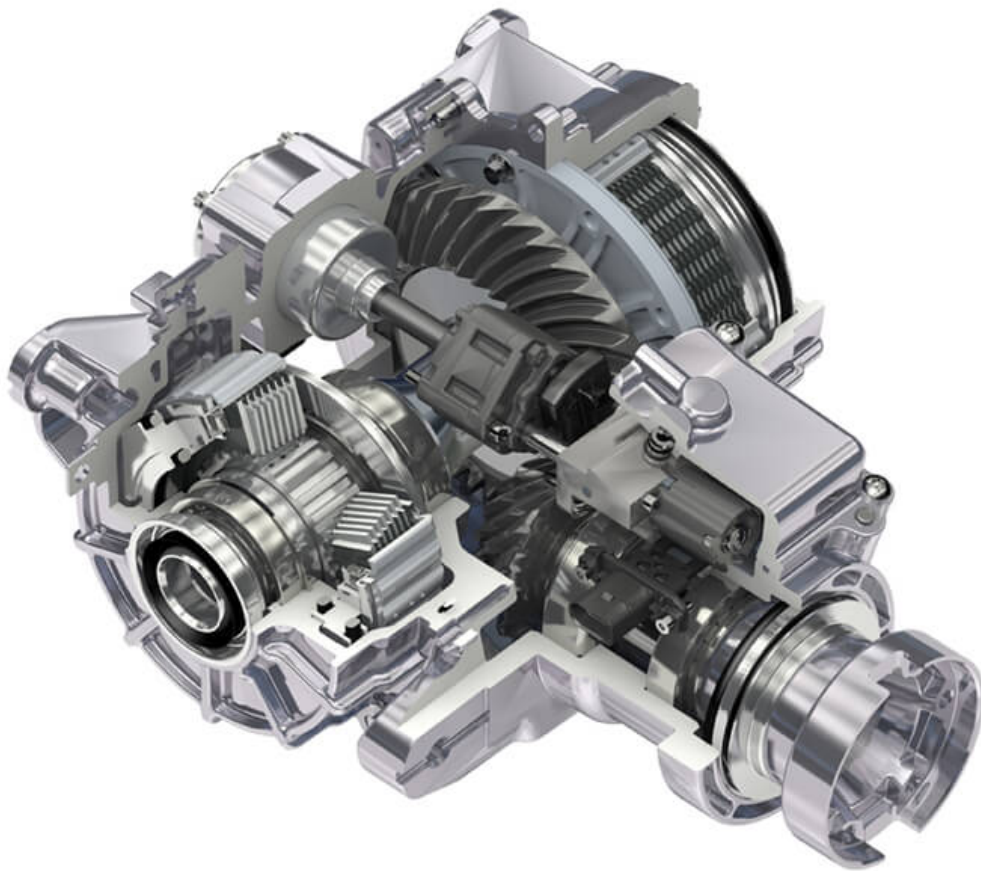




GKN supplies innovative AWD system to Ford Focus RS



New version of Twinster technology enables remarkable performance and handling

GKN 2026

Frankfurt, Germany, 14 September 2015:GKN Automotive, the global leader in driveline technologies, has developed a new version of its Twinstar torque vectoring all-wheel drive (AWD) system for the Ford Focus RS. An innovative combination of new gearing ratios and control algorithms over-speed the rear wheels, helping Ford to create a car with unprecedented dynamics, feel and handling.

The Twinstar technology developed specifically for the Ford Focus RS will be on display at GKN's stand (H 5.1, B32) at the IAA Motor Show.

GKN Automotive President Engineering Peter Moelgg said: "GKN's AWD technologies and torque vectoring expertise are helping auto manufacturers take their cars into new territories. AWD is becoming the driveline of choice for performance cars because it's the most effective way of putting power onto the road with precision, efficiency and intelligence."

GKN was awarded the Ford Focus RS programme just 18 months ahead of launch. In that time GKN engineers designed and integrated both the Torque Vectoring Rear Drive Module (RDM), as well as the Power Transfer Unit (PTU) and CVJ sideshafts into the base front wheel drive platform. This required major reconfiguring of the system componentry to fit the packaging space available. GKN's in-house software and calibration teams worked in collaboration with Ford and its vehicle dynamics engineers on new control algorithms for the torque vectoring system to give the driveline four different driving modes

GKN Driveline Vice President of Global Product Technology Dr Ray Kuczera said: "GKN is the only supplier with the expertise and capability to deliver this diverse hardware as well as the vehicle integration through software and performance calibrations. To deliver torque vectoring systems of this calibre requires engineers who understand vehicle dynamics and have the ability to partner with an automaker on vehicle level attributes. The result of this partnership with Ford demonstrates how driveline innovation can influence vehicle dynamics and raise handling performance to a new level."

HOW GKN'S SYSTEM WORKS

The Ford Focus RS uses a GKN AWD system with a PTU and an RDM utilizing the Twinstar twin clutch system. GKN's Twinstar technology can apply torque to one or both wheels independently, enabling the vehicle's dynamic torque vectoring functions across its entire speed range.

The latest version of the Twinstar in the Focus RS uses new gearing ratios that deliver more torque to the rear wheels than previous applications. When AWD is engaged, the Twinstar drives the rear wheels faster than the front.

This overspeeding of the rear fundamentally changes the way the car feels and handles. In curves, the Twinstar makes the rear end of the vehicle turn in more sharply, responding more immediately to the driver's inputs. In Ford's "drift mode", the AWD system delivers even more torque to the rear axle, delivering enough torque to the rear wheels for the RS to achieve a controlled "drift" through corners.

Some "torque vectoring" systems use the braking system to achieve simple vectoring effects but these can actually slow the vehicle down. Fully dynamic torque vectoring requires an intelligent driveline that can apply increasing tractive force directly to individual wheels. This produces purer performance and feel, while also preventing excessive brake wear.

GKN Driveline's Senior Director of AWD Product Technology, Edward Kwon, concluded: "AWD programmes like the Ford Focus RS are rewriting the rules for drivelines - and GKN innovations help make them possible. Our dynamic torque vectoring expertise helps create halo models that set new benchmarks for performance. By working with GKN on the standard AWD system and the torque vectoring version, automakers can realise the best possible result for their global platform."

SHARE THIS STORY

....



© GKN PLC. Company number 4191106. All rights reserved. GKN plc is registered in England.
Registered office PO Box 55, Ipsley House, Ipsley Church Lane, Redditch, Worcestershire B98 0TL

Designed and built by Excite (<http://www.excitecommunications.co.uk>)

GKN 2026

Contact us (</frankfurt/contact-us>)

Terms and conditions (<http://www.gkn.com/Pages/Terms-and-conditions.aspx>)

Privacy Policy (<http://www.gkn.com/Pages/Privacy-policy.aspx>)

Cookie Policy (<http://www.gkn.com/Pages/Cookie-policy.aspx>)

-
driveline