



Drive shafts with Ballspline technology

Comfort and safety on and off the road

Most SUVs today are primarily used in normal road traffic, ideally combining the comfort of a passenger car with basic off-road capabilities. A specially designed suspension is required to achieve this combination of driving characteristics, with wheel movements that exceed the demands placed on a standard sideshaft.

As one of the leading OE development partners, GKN originally developed a new generation of drive shafts with Ballspline technology for the Volvo XC90, XC60 and XC40 models, which is now also available on the independent aftermarket – **exclusively from GKN Automotive.**

The new generation of SUV drive shafts:

- > OE-identical drive shaft with integrated ball-bearing length compensation
- > Premium solution for the specific demands of SUVs
- > High performance in the most compact design
- > Engineered for extreme displacement travel and large installation angles
- > Configurations available with SX Countertrack® joints, offered exclusively as a GKN Automotive combination.



OE technology for the aftermarket

The Ballspline plunge unit – a product of highest efficiency

The Ballspline plunge unit is a high-precision linear motion bearing. Its balls run between the deep-cut profiles of two section shafts.

This permits zero-backlash axial displacement and the transmission of torque at the same time.

Main features:

- > Excellent NVH performance (NVH = noise, vibration, harshness)
- > Extreme displacement length of up to 70 mm
- > High accuracy and stability, even at high speeds and high acceleration or deceleration



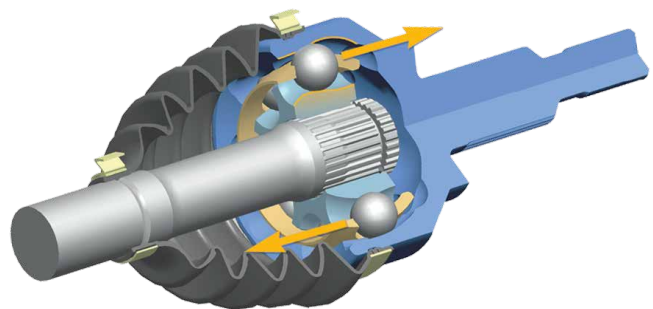
Ballspline and SX Countertrack® – a strong team

The combination of Countertrack® SX and Ballspline technologies represents a premium solution for extreme plunge capability and large installation angles, all in a highly compact design.

In vehicles with demanding installation conditions (such as SUVs with installation angles of 10° or more), sids shafts with reduced heat generation and compact design are essential drivetrain components.

The SX Ballspline sids shaft solution uses the Countertrack® SX joint at both ends. This allows deflection angles of up to 52° on the wheel side and over 35° on the differential side.

The joint design delivers maximum performance in minimal space, and its significantly improved efficiency (50–60% less energy loss compared to conventional Rzeppa joints) helps to reduce CO₂ emissions and fuel consumption.



The SX joint achieves its high performance using the countertrack principle. The ball tracks open in opposite directions (indicated by the yellow arrows) and feature an S-shaped profile (yellow contour).

Our sales brands:



GKN Driveline Service GmbH

Junkersring 63, 53844 Troisdorf, Germany
www.gknautomotive.com