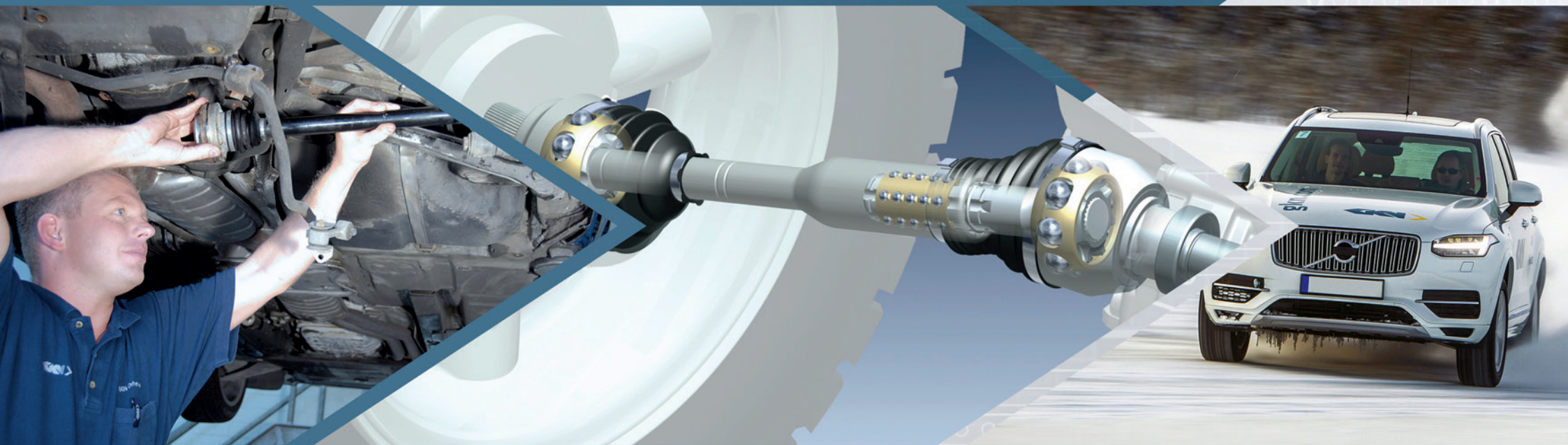




GKN Ballspline Technology



Exclusively from GKN Automotive: Ballspline technology in OE quality for the aftermarket

SPIDAN
Original GKN Parts

Ideas in Motion ➤

The technology for extreme conditions

SUVs are no longer predominantly used as off-road vehicles, but instead as cars for daily driving on our roads. This means that the requirements for these vehicles have also changed. New generation SUVs combine in an ideal way the comfort of a car with various off-road features. To achieve these combined features, a special design of the suspension is necessary. This results in wheel movements that exceed the requirements for standard sideshafts.

With Ballspline technology, GKN Automotive has developed a perfect solution that is already being used in many Volvo and Land Rover models. It is inevitable that more and more reputable vehicle manufacturers will start to use Ballspline technology in their SUVs in the future.

Our new generation of driveshafts

- OE-identical driveshaft with ball-bearing slide compensation
- Premium solution for the requirements of SUVs
- High performance in the smallest possible size
- Configurations with SX Countertrack joints in the product range



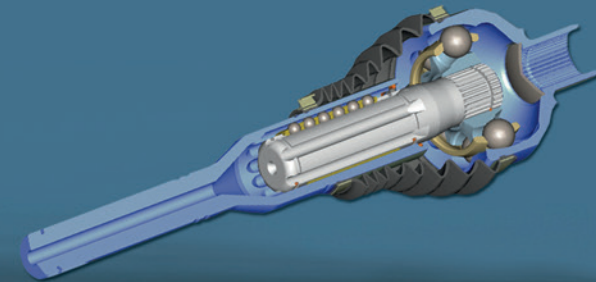
SX-Ballspline SIO



UF-Ballspline-UF

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), independent of deflection angle
- Extreme displacement length of 75mm and more, independent of deflection angle
- High accuracy and stability, even at high speeds and high acceleration or deceleration





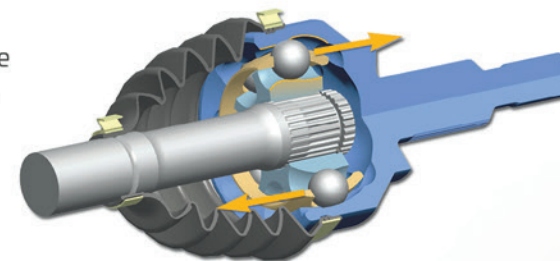
A strong team: Countertrack (SX) and Ballspline

The combination of Countertrack (SX) and Ballspline technologies represents a premium solution for extreme plunge capability and high installation angles at the same time as being the smallest of its size.

For vehicles with the highest demands for installation situation (e.g. SUVs with installation angles of up to 10° and more), sids shafts with reduced heat generation and small size are essential drive components.

With the SX Ballspline sids shaft solution, the Countertrack (SX) joint is used at one end or both ends. This allows deflection angles of up to 52° on the wheel side and over 35° on the differential side to be achieved.

This joint design therefore achieves the best possible performance with the smallest size and contributes to the reduction of CO₂ and fuel consumption of the vehicle through its significantly increased efficiency (50–60% lower losses compared to conventional Rzeppa joints).



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



Ballspline technology application examples from our extensive catalogue

LÖBRO order no.	SPIDAN order no.	Brand/ model	No. of vehicles*	Model year
305546	25323	VOLVO XC90	> 6.000	06/02–08/05
305547	25324	VOLVO XC90	> 6.000	06/02–08/05
305721	25498	VOLVO XC90	> 80.000	06/02–12/14
305722	25499	VOLVO XC90	> 80.000	06/02–12/14
305723	25529	VOLVO XC90	> 80.000	06/02–12/14
305724	25530	VOLVO XC60	> 2.000	11/10–02/17
305725	25531	VOLVO XC60	> 2.000	11/10–02/17
305726	25532	VOLVO XC60	> 5.700	07/08 >
305727	25533	VOLVO XC60	> 152.700	07/08 >
305889	25695	VOLVO XC90	> 80.000	06/02–12/14

* Europe, 2016





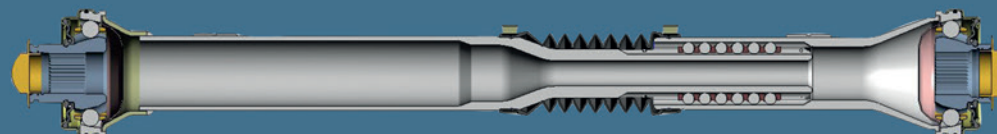
Propshafts with Ballspline technology: the dimension in displacement

To transmit torque effectively, a propshaft needs to rotate with as little vibration as possible and balance all dynamic movements that come with driving.

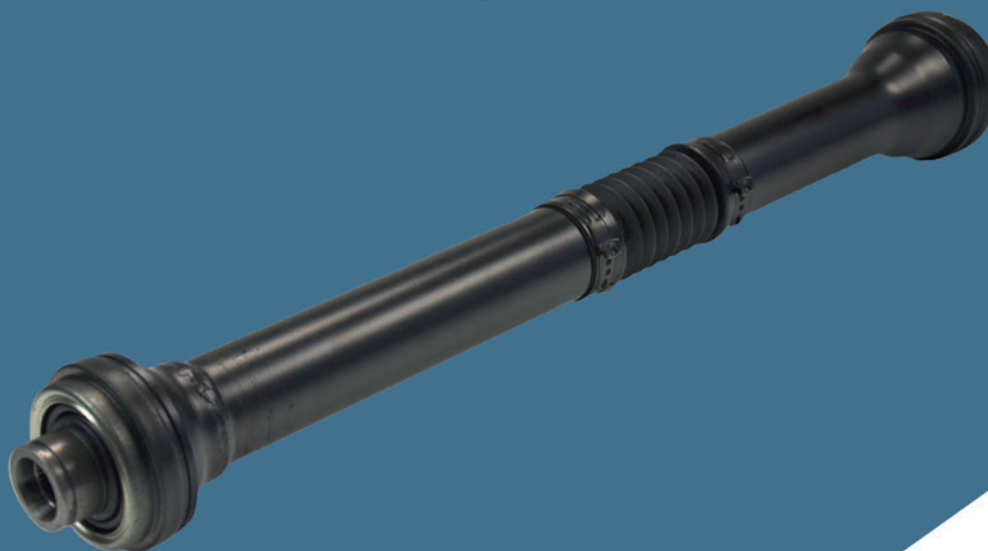
The perfect propshaft should adapt to the angles and spacing between transmission and axle quickly and smoothly. With Ballspline technology, GKN Automotive can do just that, setting new standards:

- Even and vibration-free longitudinal displacement through ball bearing
- Quick response through minimal friction
- More torque transmission and improved vehicle dynamics with reduced energy consumption

The tried and tested VW Amarok is the first to make use of the innovative propshafts with Ballspline technology in mass production.



Cross section of the Amarok propshaft
shows longitudinal ball bearing



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