



MOBILITY

voestalpine RACING SOLUTIONS DRIVESHAFTS

WHEN PERFORMANCE MATTERS

Motorsport driveshafts are subjected to extreme conditions that often lead to failure. Unlike standard road vehicles, motorsport applications expose driveshafts to intense torque spikes, rapid load reversals, and aggressive suspension dynamics, all of which contribute to unique and demanding failure modes. Driveshafts often fail due to one of the following issues:

1. Torsional stress
2. Fatigue cracking
3. Excess impact/shock

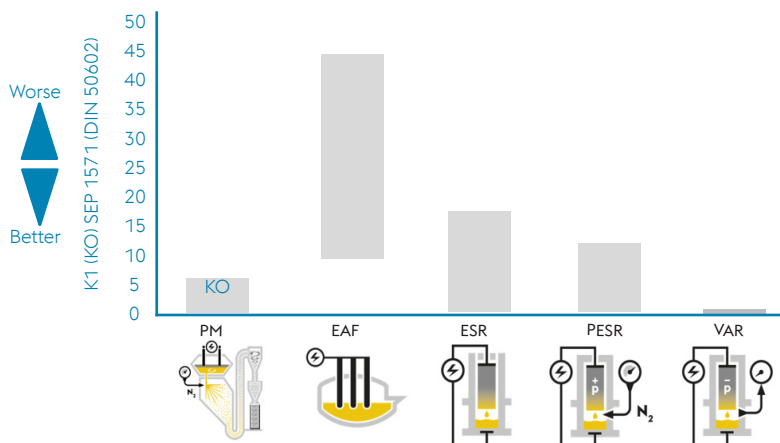
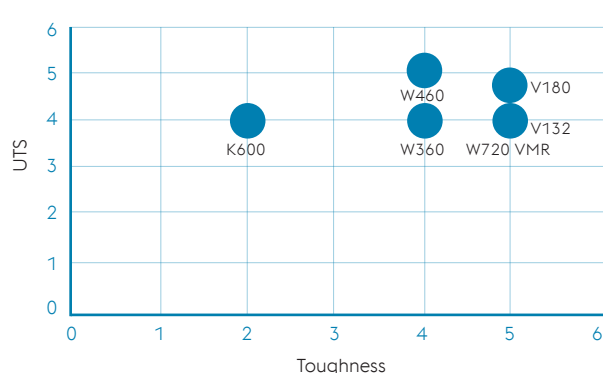
To reduce failure risk, choosing high-performance materials, applying precise heat treatments, and maintaining tight engineering tolerances is essential. Regular inspections help catch early wear, ensuring reliability under extreme racing conditions.

MATERIAL FAILURE & OUR SOLUTION

Material Related Failure	voestalpine Solution	Material Grades
Torsional (Twisting) Stress	High torsional strength	BÖHLER V180, V132, W360, W460, W720
Fatigue Cracking	Re-melted materials for inclusion control. Steels with a target hardness range of 48-57HRC to avoid being too brittle and raising crack initiation	BÖHLER V180, V132, W360, W460, W720
Impact/Shock Failure	Balance of high toughness & high strength materials	BÖHLER V132, V180, W360, W460, W720

COMPARISON OF PROPERTIES

CLEANLINESS VS. MELTING PROCESS



COMPARISON OF DRIVESHAFT STEELS

Property	BÖHLER V180	BÖHLER V132	BÖHLER K600	BÖHLER W360	BÖHLER W460	BÖHLER V720 VMR Maraging Steel
Steel Type	2% Ni Cr Mo + Si	2 % Ni Cr Mo	4% Ni Cr Mo	High C / CMV	High C / CMV	300 marage
Melting Route	Air Melt/ VIM + VAR	Air Melt + VAR	Air Melt	Air Melt + PESR	VAR X 2	Air Melt / VIM / VAR
UTS	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Fatigue	★★★★★	★★★★★	★★	★★★	★★★★★	★★★★★
Toughness	★★★★★	★★★★★	★★	★★★★★	★★★★★	★★★★★
Cleanliness	★★★★★	★★★★★	★★	★★★★★	★★★★★	★★★★★
Hardness	★★★★★	★★★★★	★★★★★	★★★	★★★★★	★★★★★
Specs	High Si 300 M	300 M / S155	1.2767 / ~EN 30 B	Bespoke	Bespoke	AMS 6514
Properties and Overview	Restricted to 300 °C max tempering	Restricted to 300 °C max tempering	Large shafts / air harden/ big sections = dimensional stability. Available in large diameters. Can be nitrided, 45-47 HRC core	Tempered above 500 °C carburizing nitriding / PVD coating	Tempered above 500 °C carburizing nitriding / PVD coating Ultimate polishability	Dimensional stability high notched toughness

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ONE STEP AHEAD.