

WEAR ISSUE SOLUTIONS

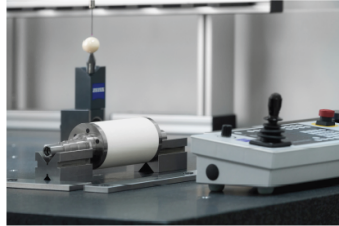
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Principle

Complete solutions for critical mechanical machine components and assemblies subject to wear.

Starting from design to engineering up to complete manufacturing. Knowledge and experience is used directly from the design phase, where all aspects to the realization of reproducible solutions are immediately included. Based on each specific application, all aspects including material selection, tolerances and manufacturing technology are analyzed.

SPIKKER SPECIALS
THE EXPERTS IN WEAR AND CUTTING PARTS



Advantages

- Design for each specific application.
- One stop solution from design up to and including manufacturing.
- Process efficiency due to direct integration knowledge and experience.
- Overall cost reduction.

Disadvantages

- Design limitations due to high end material dimension restrictions.
- Limited applicability due to impact at other required properties.
- Manufacturing technology restrictions.
- Initial investment.

Production constraints and limits

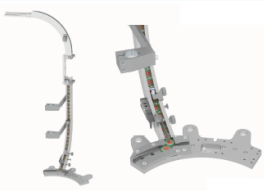
- + Most effective from small series due to higher manufacturing costs for machining of hardened materials.
- Stable geometry with narrow tolerances (up to +/- 0,002) due to material properties of hardened materials.
- Selective choice of hardened materials specific for the application. Materials can be combined according purpose of application.
- Possibility of repair and overhaul without decrease of quality and performance due to fully hardened materials.

- Fully hardened materials as carbide and ceramic require machining through grinding and/or EDM. Limited machining possible through milling and or turning.
- Limited geometry and dimensions for carbide and ceramic due to material dimension availability.
- Combining hardened materials can be restricted due to available bonding techniques.
- Design and manufacturing of fully hardened components require knowledge and experience due to multiple machining phases.

Cost

Due to the wide range of solutions, exact technology costs are defined by choice of materials and manufacturing technology. With focus on performance improvement, overall cost reduction must justify possible higher technology costs.

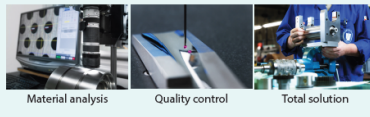
Examples



Total solution bottle crown transport for beverage equipment. Redesign including use carbide and PM steel combinations.



High end material combinations including carbide, ceramic, PM steel and PKD. Mechanical material bonding as well as brazing and adhesives.



Material analysis Quality control Total solution

High-tech production environment for outstanding quality

Comprehensive and diverse in production technologies for greater flexibility and capacity. Fully climate-controlled for maximum and constant precision.

Extensive range of machining techniques with CNC milling, turning, and turn milling. Up to 5-axis machining with robotic automation.

Up to 5-axis CNC tool grinding, surface grinding, and cylindrical grinding. Wire eroding (EDM) with robotic automation.

Joining techniques such as hard soldering, epoxy gluing, and TIG welding. Climate-controlled measuring chamber with various CMM measuring machines.

Wide range of equipment to analyze and check chemical and mechanical material properties.

Everything that is needed for comprehensive in-house high-precision machining of high-grade materials. This is how we guarantee the quality of our machine parts, compositions, and repairs.



High-grade materials for optimal performance

Focused specifically on each application, material selection is crucial for optimal performance. We make the difference by selecting the highest quality for maximum wear resistance and the longest possible service life.

Tungsten Carbide

Wide variety of grades and catered specifically to the required application. From industrial knives to complex guides.

Powder metallurgical steel

Tool steels and powder metallurgical steel with a micro-grain structure in particular are used because of their great resistance to abrasive wear and how well they can be machined into complex geometries. To maximize our machine parts' service life, these materials are always completely hardened using specific heat treatments.

Technical ceramics

Outstanding wear and corrosion resistance. For various parts, we use ceramics with joining techniques combined with other materials. Compositions we use include silicon nitride, aluminum oxide, and zirconium dioxide.

Polycrystalline diamond and other materials

Polycrystalline diamond (PCD), titanium, aluminum, copper, and engineering plastics. High-grade materials that are used where specific properties are required. Combined with other materials for specific parts or in complete compositions.





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