

# HIRSCHMANN produces chassis components on a Supfina LCM TS

### High-tech precision for racing

From the race track to the road, HIRSCHMANN GmbH in Fluorn-Winzeln, Germany, is a leading developer and producer of race-car components, which are also used in high-end performance autos. Well-known manufacturers of such vehicles rely on first-rate spherical bearings from HIRSCHMANN. This has been proven time and again for race cars and for top-of-the-line road vehicles. With its special superfinished surface, this innovative bearing technology ensures less wear, longer service life, and optimised road holding. To achieve the extremely demanding precision of these components (spherical bearings and heavy-duty rod ends), HIRSCHMANN relies on a modular system solution: Supfina's LCM TS superfinishing machine.

### Joint, individual machine development

Before turning to Supfina, no machine on the market could address HIRSCHMANN's stringent production requirements. This is why HIRSCHMANN teamed up with Supfina to jointly develop an individual solution based on the Supfina LCM modular system, which was then custom-manufactured for HIRSCHMANN.

"The Supfina machine has really taken HIRSCHMANN forward," says CTO Rainer Harter, who applauded the pooling the two companies' innovative forces.

### More precise, economical, and flexible than conventional processes

Like HIRSCHMANN's components, Supfina's LCM TS has proven its endurance: Since 2016, the system has run problem-free and without interruption in three-shift operation. Because of the 6-axis robot's flexible loading in the machine room and the



integrated automation system, the setup time for batch changes is a maximum of 15 minutes.

Superfinishing of balls and spheres is essentially about creating the component's geometry and increasing the surface's contact area. A typical feature of the Supfina LCM TS's process is cross grinding, which ensures good lubricating and sliding properties during operation. One crucial difference from other grinding processes is that the tool self-sharpening during machining, which means that continuous or regular dressing isn't necessary. The Supfina LCM TS's results differ considerably from other fine machining processes, such as grinding or hard turning. Since the cutting forces and cutting speeds are small, the material's edge zone isn't damaged. Instead, the original microstructure is exposed again and the components' functional behaviour, thanks to the residual compressive stresses generated, is substantially improved. Furthermore, the superimposed movement produces a cross-grinding texture with excellent tribological properties.

### High customer satisfaction with Supfina LCM TS

Due to its quality and innovation standards, HIRSCHMANN's vertically integrated, complete quality management system

covers everything from raw materials to final products. Managed by CTO Rainer Harter and CEO Andreas Jesek, the company employs around 200 people and also has locations in the USA and China.

HIRSCHMANN's core competencies include first-rate spherical bearings, rotary tables and clamping systems. Clients include aerospace, motor racing, mechanical engineering, and shipbuilding companies, as well as producers of filling plants, rail vehicles, and wind turbines. HIRSCHMANN covers all the market's production requirements, from lot size 1 to individual customer solutions to series production.

Thanks to its vast experience and state-of-the-art machinery, HIRSCHMANN's process chain demonstrates exceptional repeatability for the production of microstructures. Against this background, the Supfina LCM TS integrates perfectly into HIRSCHMANN's business model.

According to the company, it fulfils all requirements with regard to quality, automation, resource efficiency and process reliability. Thanks to the superfinishing process, HIRSCHMANN adheres to the smallest tolerances for complex parts.

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