

The Perfect Symbiosis: Meister Abrasives' Ceralox & Alfons Schmeier's 410A Sulfur Free

When looked up in the Cambridge dictionary, across the word "symbiosis" one reads: "a close connection between different types of organisms in which they live together and benefit from each other". (Cambridge) Although the definition of the word has a purely biological origin, its notion has been long ago adopted into the business world.



—Illustration 1: Wheel bearing

Organizations have recognized that building strong equally-dependent relationships is mutually beneficial and creates a unique added value for the customer that would otherwise not be achieved had the companies acted individually. Funneling the concept of symbiosis from the strategic business level to that of R&D and translating it to the grinding industry, Meister Abrasives and Alfons Schmeier have proven that working together to offer a combined solution results in an unmatched benefit for the customer. Meister's Ceralox and Schmeier's 410A Sulfur Free are a true symbiotic creation for the bearing industry.

In the production of rolling bearings (Illustration 1), grinding is one of the most important process steps which affects the raceways as well as all other functional surfaces and diameters. In this context, not only shortest machining times are paramount, but also the accuracies of the components. The latter require a high degree of constant surface quality and exact compliance with the dimension-, form- and position tolerances. An improved tool life, which is achieved by a high dressing interval and low dressing amounts, is the prerequisite for an optimal machining process.

Meister Abrasives' Ceralox product solutions

Innovated by and proprietary to Meister Abrasives, the Ceralox bond has become an industry-wide standard due to its outstanding grain properties and possibility for complex wheel shapes in highly porous structures. Elaborately developed by the brand's engineers, the Ceralox bond both maintains 100% of the grain properties of the sintered aluminum oxide abrasive and achieves maximum bond strength in the ceramic bond. Drawing on its decades-long expertise in developing CBN and diamond tools in ceramic bond systems, Meister Abrasives has succeeded in introducing a unique solution to the market suited for reaching peak efficiency during high-performance processes, as is the grinding of rolling bearings. Meister Ceralox tools have been the benchmark in the high-performance grinding processes from their very first inception and it is impossible to imagine the highly competitive rolling bearing industry without them.

Alfons Schmeier's 410A Sulfur Free product solutions

Instead of being sulfurized, Alfons Schmeier's 410A Sulfur Free honing

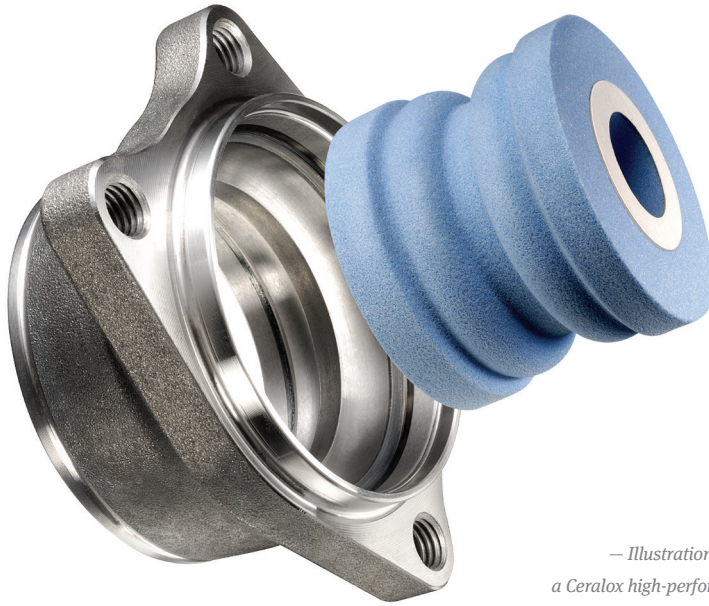
stones and cups are carefully waxed, making them entirely sulfur-free, thus, eliminating possible harms for the machine equipment, the operating staff, and the environment. Genuinely combining sintered and white corundums, 410A Sulfur Free solutions exhibit an up to three times better tool life and a significantly improved performance, leading to a better cost per part. Manufacturers can now cut on the maintenance costs for the machines, the expensive handling of health-related issues, and eliminate the complex and costly process of disposing of sulfur.

A potent symbiosis between Swiss quality and German precision

Meeting customers' requirements in terms of surface roughness, tool life, and process times and costs requires a close collaboration between the application engineer and the customer, and customization of the solution parameters – something that both Meister and Schmeier are highly adept at. Building on decades-long expertise and industry knowledge, the brands' engineers took the bold decision to combine Meister Abrasives' Ceralox grinding solution (Illustration 2) with Alfons Schmeier's 410A Sulfur Free finishing solution (Illustration 3) in the quest of finding optimal solutions for processing

wheel bearings. This integrated approach has proven to consistently achieve at least a double tool life compared to other standard solutions and surpass the challenging-to-reach surface roughness of Ra 0.06.

By coordinating the grinding and honing processes and matching the two solutions to each other, maximum performance, as well as process optimization and stability can be achieved. Additionally, being sulfur-free, 410A reduces certain accompanying costs, such as those related to oil cleaning. It is only by complementing Meister's grinding tools with Schmeier's finishing tools that the properties of each product solution can be enhanced enabling the customer to exploit the full set of benefits of that this combined application holds.



— Illustration 2: Bearing wheel with a Ceralox high-performance grinding wheel



— Illustration 3: Bearing wheel with 410A Sulfur Free cup and honing stone

The most significant intangible value-added for the customer, however, lies in having a single-source solution and a streamlined chain of responsibility, thus, assuring quick reaction times. The fusion of Swiss quality and German precision is a potent symbiosis allowing the end user to benefit from an optimal solution that goes beyond the product itself into a holistic process optimization.

About MEISTER ABRASIVES AG

Meister Abrasives is a leading and highly innovative company with extensive experience in developing and manufacturing customized cutting-edge industrial superabrasive tools for high-precision grinding applications. Founded

in 1951 in Switzerland, Meister Abrasives is synonymous to exceptional quality, precision, and individualized customer solutions

– values inherent not only to the brand but also to the land in which it originated – Switzerland. Being at the forefront of technological innovation, Meister Abrasives is dedicated to its quest of creating innovation with a higher meaning through processes optimization, sustainable use of resources, control of own manufacturing processes, and uncompromising attitude to quality in customer care, facilitated by the brand's international structure with family values.

Visit meister-abrasives.com or contact sales@meister-abrasives.ch for more information.

About SCHLEIFSCHLEIBENFABRIK ALFONS SCHMEIER GMBH & CO. KG

Founded in 1946 in Helmbrechts, Germany, Alfons Schmeier is an innovative company, leader in application technology and production with ample experience in manufacturing internal grinding and finishing industrial tools. The Alfons Schmeier name evokes the brand's values of highest precision, utmost quality, and personalized customer solutions.

Visit a-schmeier.de or contact as@a-schmeier.de for more information.