

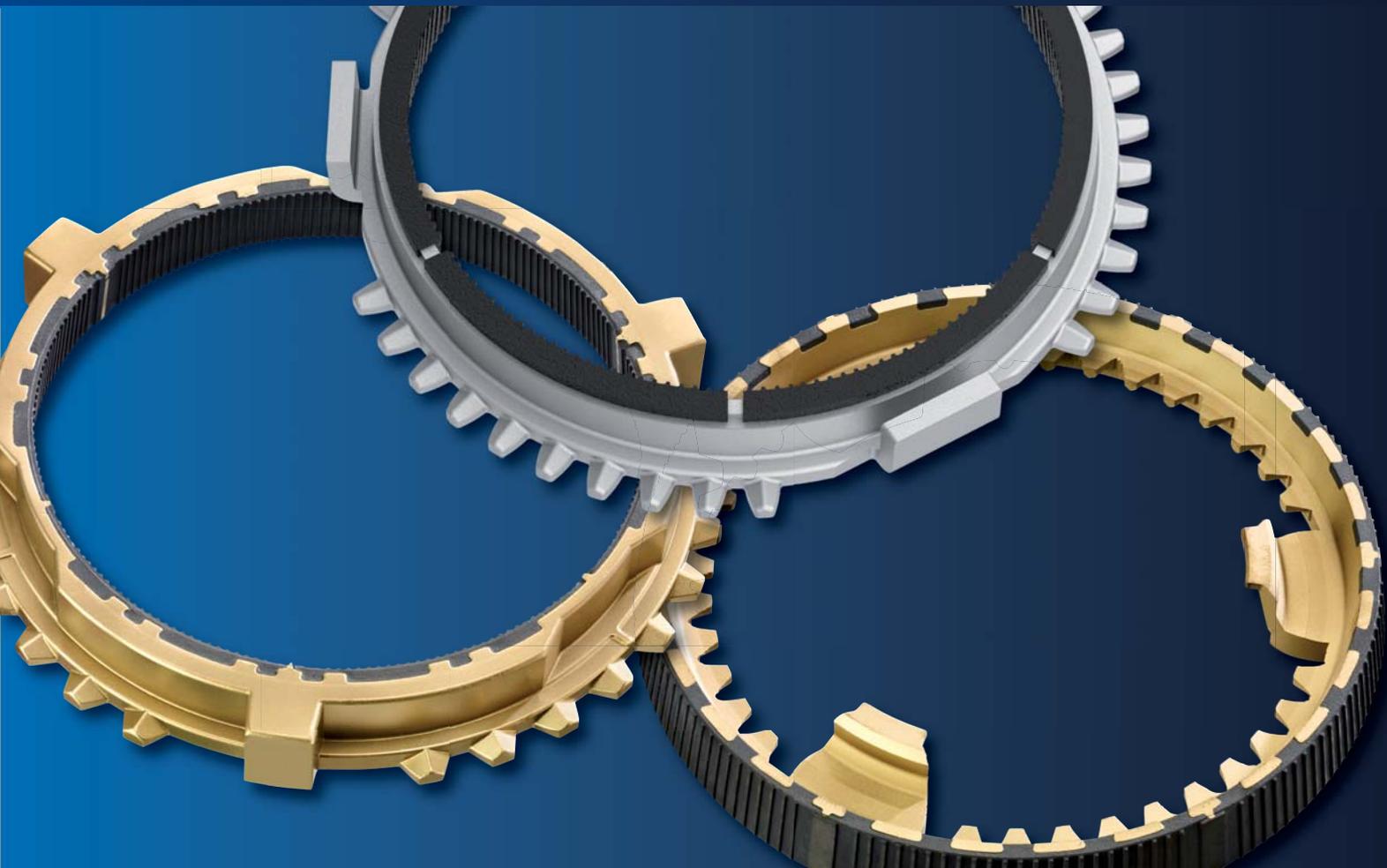


OTTO FUCHS
Dülken GmbH & Co. KG



DELIVERING HIGH-PERFORMANCE MATERIALS IN TERMS
OF FORM AND FUNCTION

ADDING VALUE RIGHT FROM THE START





THE COMPANY

OTTO FUCHS Dülken specialises in the innovative processing of non-ferrous metals. We fabricate more than just products – we develop comprehensive solutions for national and international companies.

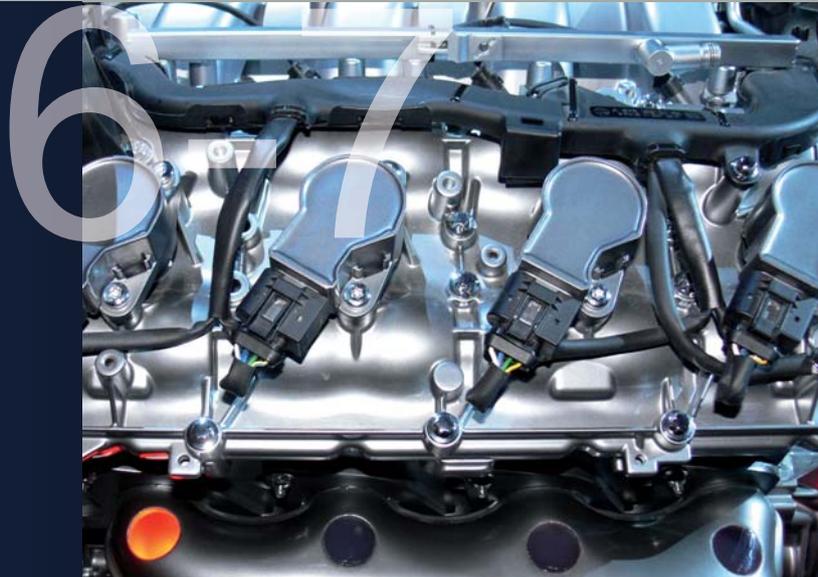
From the beginning through to complete customer satisfaction.

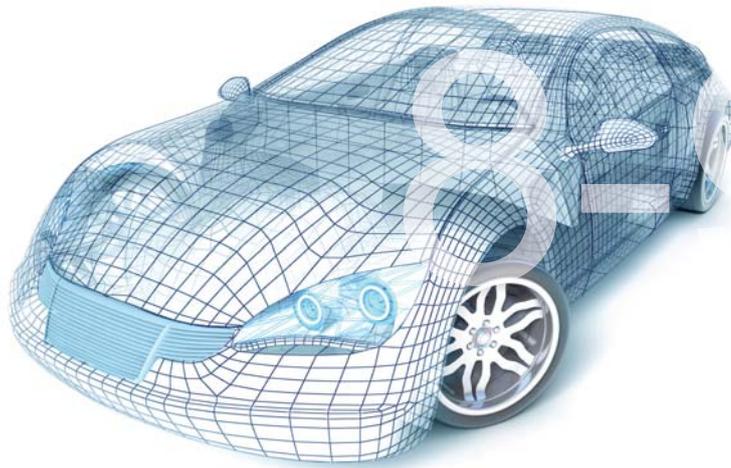
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THE KEY BUSINESS AREAS

We supply our quality products to a wide variety of industry sectors, ranging from the automotive industry, machinery and system construction, and electrical engineering through to the construction and sanitation industry. We offer a customer-specific, tailored service or series production as required.

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THE INNOVATIONS

We do not rest on our laurels. On the contrary, we combine traditional processes and materials with state-of-the-art production methods and continually develop both further. Our environmentally-aware corporate management also puts us one step ahead in the ecological stakes.

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THE MATERIALS

Copper-based alloys are our bread and butter; variety is our spice. With a range of materials comprising more than 60 standard and special alloys, new and amazing possibilities are always being created. And all without compromising on efficiency.

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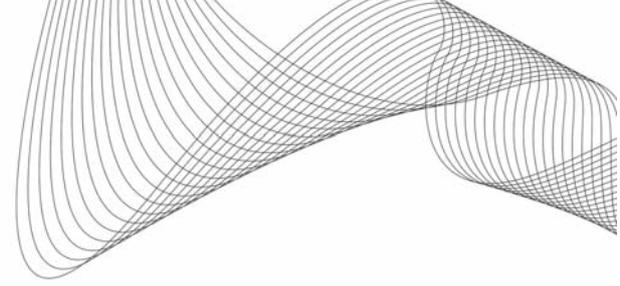
OTHER HIGHLIGHTS

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www.otto-fuchs-duelken.com



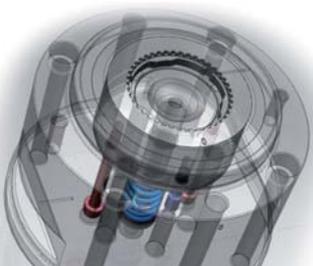
PROGRESS AND TRADITION

WE COMBINE THE TWO

A contingent from the 500-strong team of employees at OTTO FUCHS Dülken.



OTTO FUCHS Dülken, the specialist in sophisticated extrusion and precision forged products made from copper alloys, is part of the international OTTO FUCHS Group. With over 100 years of history, our family company skilfully combines tradition and progress. Sustainable economies and innovative solutions are just as much a priority for us as protecting traditional values is. The expertise of our often long-standing employees, who work enthusiastically and passionately for us, allows us to work together with our customers to create products and processes that set new standards. Short decision-making channels allow creative potential to be transformed into solutions for the most diverse industries and applications. This results in satisfied customers and long-term customer loyalty.





The 106,000 m² Dülken plant

OTTO FUCHS - TRADITION AND MODERNITY

MILESTONES OF A SUCCESS STORY

1941: Hans Joachim Fuchs purchases the company premises of the former Lower Rhine iron and machinery works from the city of Dülken, and establishes the OTTO FUCHS Dülken branch. Six months later brass products begin to be produced.

1950s: There is a boom in the production of profiles, rods and tubes.

1960s: Investments for the future are made, such as investments in a new 710 tonne vertical extrusion press and in the construction of the small forge shop.

1970: The extension of the casthouse, the drawing shop and the extrusion plant represent further important steps towards a successful future.

End of 1976: We enter new technological territory with the installation of the first indirect brass tube press. The well established indirect extrusion process is transferred to the tube presses.

1980s: The priorities of this time period are the consolidation of the plant as well as rationalisation and environmental protection measures, such as the extension of the casthouse, the treatment of waste water and noise protection.

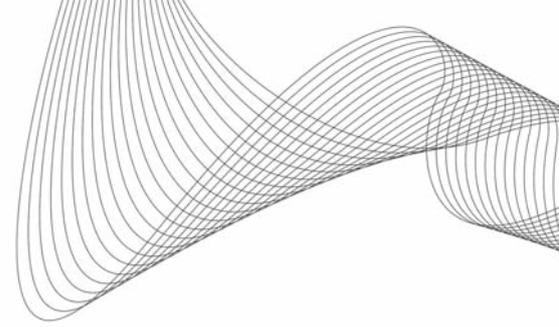
1994 and 1995: The Dülken plant extends its production capacities by commissioning two horizontal continuous casting machines.

2000: On 28 September 2000 the neighbouring plant premises of the former Gallus shoe factory are purchased. This acquisition allows the brass business to be concentrated in one place by relocating all of the mechanical end processing of synchroniser rings from Meinerzhagen.

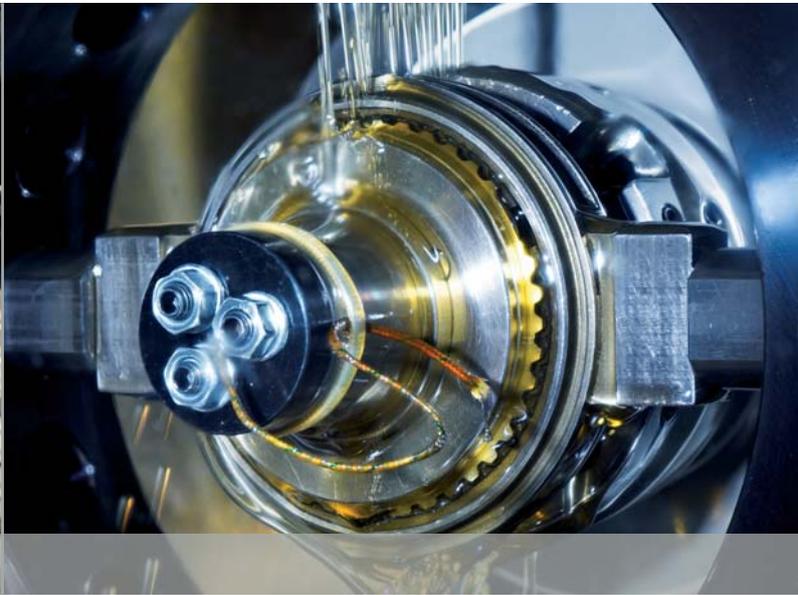
2009: The business becomes OTTO FUCHS Dülken GmbH & Co. KG. Establishing this wholly-owned subsidiary emphasises the independence of the Dülken site within the network of the OTTO FUCHS Group.

2010: OTTO FUCHS Dülken receives the highest ranking Renault Quality Award.

2011: Significant expansion of capacities for synchroniser rings and friction bearings.



OUR KEY BUSINESS AREAS

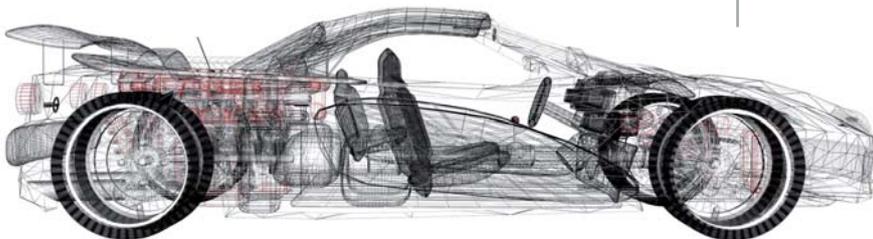


AUTOMOTIVE

There are virtually no cars in Europe that are not fitted with our components. As a specialist in high standards and quality, we are perfectly positioned to serve this industry, which is defined by the narrowest tolerances and high requirements. Time and again we set benchmark standards with synchroniser rings for manual, automatic and dual-clutch gearbox systems, through to bearing bushes for cars and commercial vehicles.

MACHINERY AND SYSTEMS

The technical and economic advantages of our fabrication technologies form a secure foundation for future-oriented constructions. Thanks to the outstanding combination of dynamic stability, excellent sliding and friction properties, corrosion resistance and a high degree of resistance to wear, our materials are the first choice for use in machinery and system construction. They are particularly suitable for use in hydraulic units and for high-performance machinery components such as printing and packaging machines.



Measurable quality and cost-efficiency, pro-environmental behaviour and health & safety allow us to be market leaders with our services, and to inspire enthusiasm among both our employees and our customers. Our challenge is to achieve our ambitious aims, going above and beyond the required levels of service. Our guiding principle is to be a reliable partner for our customers and a motivating employer for our employees, both today and in future. Our motto is high-tech with heart and mind.



ELECTRICAL ENGINEERING

In this field too, our customers are always inspired when we present our solutions. Our individuality and precision also have numerous applications here in the connection technology industry to provide good conductivity and a diverse range of designs. From semi-finished products through to finished products and ready-to-install complete components, we always have an exciting idea to hand.

SANITATION INDUSTRY

Traditional and contemporary materials for applications in the potable water sector contribute to the efficient conservation of resources and to modern consumer protection. The quality of our potable water is protected by our lead-free materials, such as the alloy Cuphin. Cuphin ideally meets the ever-stricter requirements for materials that come into contact with potable water. This means that products fabricated from semi-finished products of this alloy make an important contribution to assuring the quality of our most vital resource for life.

SPECIAL PRODUCTS

You have requests, we have ideas! Depending on individual customer requirements we therefore also search for, develop and fabricate completely unique components and materials. Be it profiles for cable cars, tubes for seating in churches, components for a grand piano, bronze-coloured choir stalls, primary material for art works and so much more; our products are as diverse as their areas of use. Just ask - we love challenges.



SYNCHRONISER RINGS

Finished forged synchroniser rings for reducing machining operations. One cost-effective solution is an individually developed carbon coating with excellent friction and wear properties.

PLAIN BEARING BUSHES

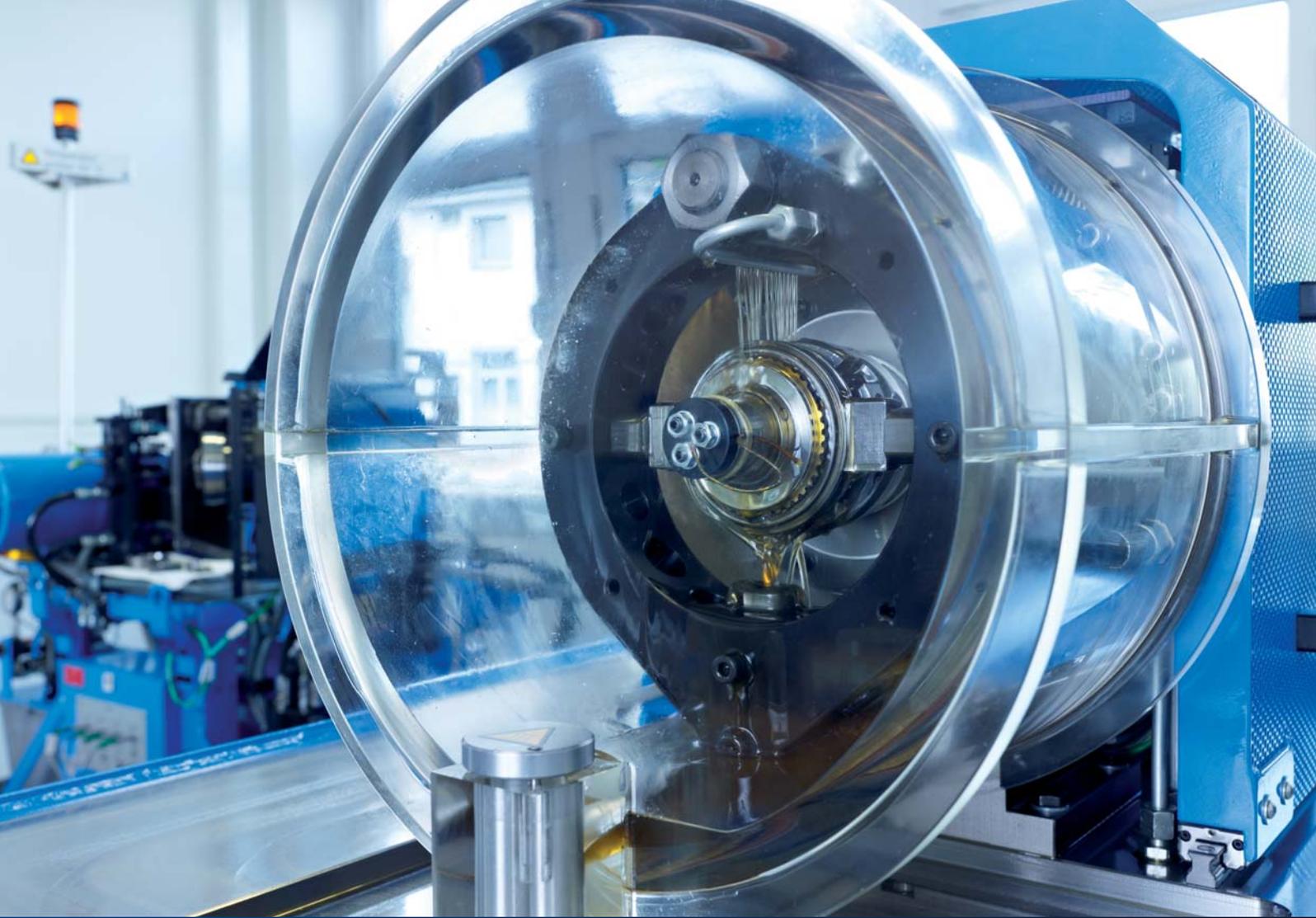
Ready-machined plain bearing bushes with maximum tolerance requirements made from high-performance materials.



SLIDING BLOCKS

Replacing forged components with extruded primary material cuts fabrication steps.





The combination of new materials and processes can reduce the number of preparation steps. We use our own machinery concepts for the further development of materials and processes. However, our greatest asset is and will remain our employees, whose expertise and practical experience we use time and time again. A prime example of this is one of our new innovations – rolled rings made from copper materials.





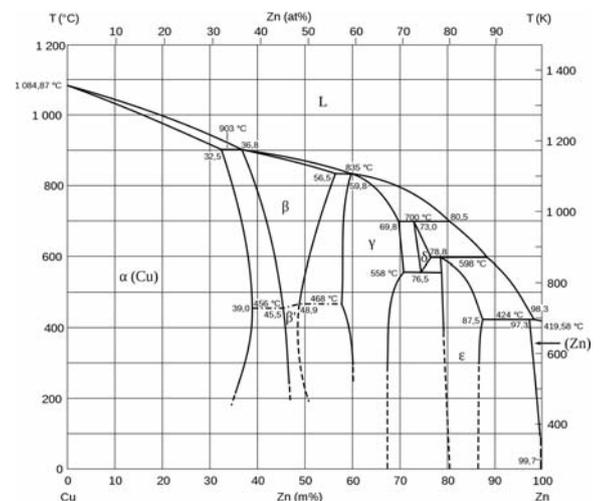
Hot work:
Melting the different alloy constituents while monitoring all fabrication parameters to be able to guarantee that the required end product properties are already present in the first fabrication step.



FIERY ENTHUSIASM0 MATERIAL PRODUCTION



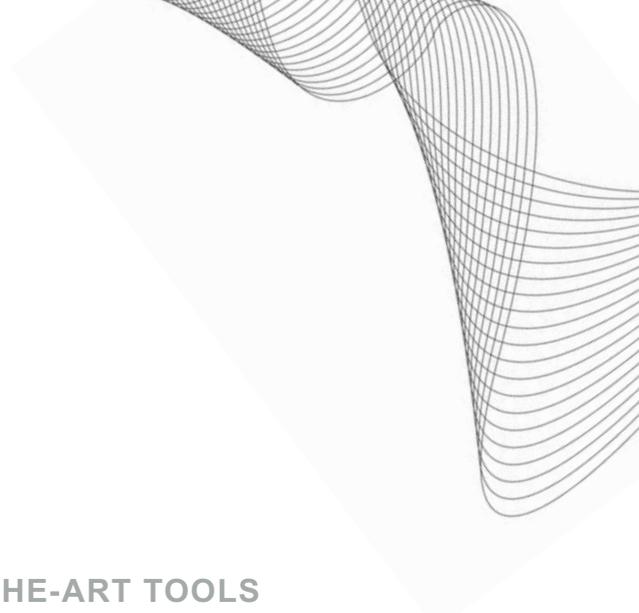
The basis for our success and the secret of our quality is our in-house material production. The different alloying elements are alloyed in-house; the desired material properties are matched to the next process steps. We use horizontal and vertical casts in small to medium-sized plants to ideally meet all quantity requirements. Our in-house experts, and also universities and institutes, assess the structure of the alloys and either develop them further or redevelop them. As a socially responsible company, we highly value sustainability and recycle up to 100% of our production waste. We are also happy to help our customers with any questions on recycling.





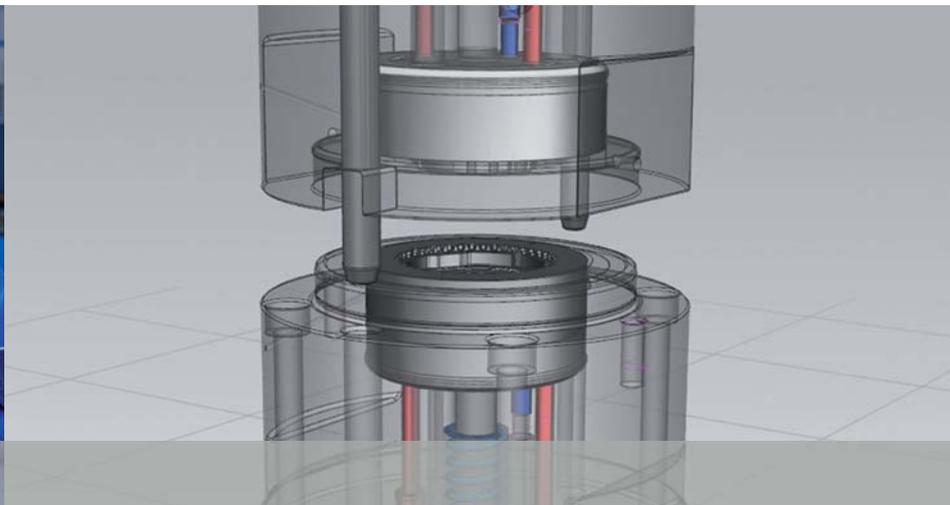
Our in-house tool manufacturing includes processing tool steels using a variety of procedures such as electric discharge machining, wire electric discharge machining and milling, to name but a few. Wherever expertise is required, we have the qualified employees, the necessary experience and the best possible technology. And we always have the same motto: you can achieve so much more as a team!





MODERN TOOL MACHINERY FOR STATE-OF-THE-ART TOOLS

INNOVATIONS IN MATERIAL AND PROCESS TECHNOLOGY



Sophisticated shapes are required to create sophisticated designs. The extruded and forged tools developed in-house are also manufactured here. Innovative process technologies such as electric and wire electric discharge machining, and manual finishing are our strengths. To be able to achieve the same tolerances for the end product time and again across many thousands of items, we construct complex multi-component tools made from tool steels with a high level of stability. Volume changes to copper materials that are processed when hot are already included in the tool dimensions. Simulation processes contribute to ensuring the tools are designed correctly.

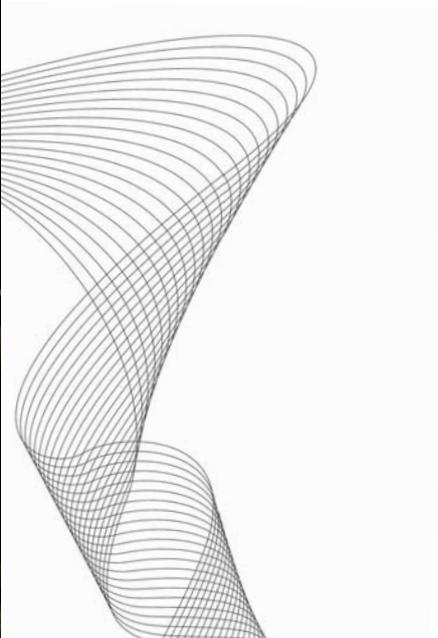


Extruded products such as rods and tubes up to 45 m in length are manufactured on hydraulic presses in direct or indirect processes. A wide spectrum of compressions allows a diverse range of dimensions to be produced.



EXTRUSION PRESSES

FROM LIGHT TO HEAVY, SMALL TO LARGE

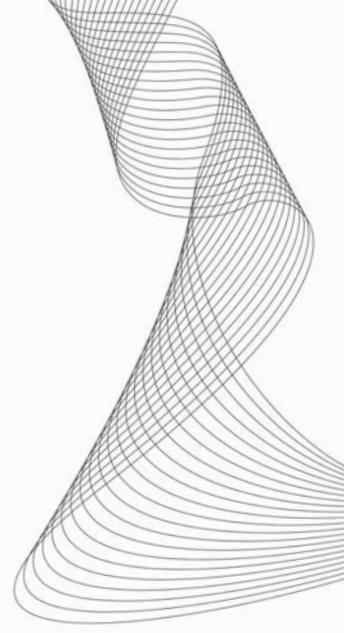


We manufacture round or profiled rods and tubes from sophisticated materials for diverse applications. Our tubes are pressed seamlessly or through die bridges. The profiles are created to order according to customer specifications. We are happy to advise right from the project stage with technical consulting and development services. It is therefore no wonder, and certainly no coincidence, that the applications of our products and our expertise are as diverse as the possible dimensions and alloys. Creating small quantities for niche applications is just as standard for us as large quantities for series production. One of our particular strengths is the production of seamless tubes, which are either unprocessed or finished for friction bearings.



The large-scale production of synchroniser rings using different press concepts is our speciality. Complex friction bearings, slide shoes subject to heavy use and other forged components in small and medium-sized series complete our portfolio.





EVOLUTION AND REVOLUTION - **MEETING THE HIGHEST STANDARDS**

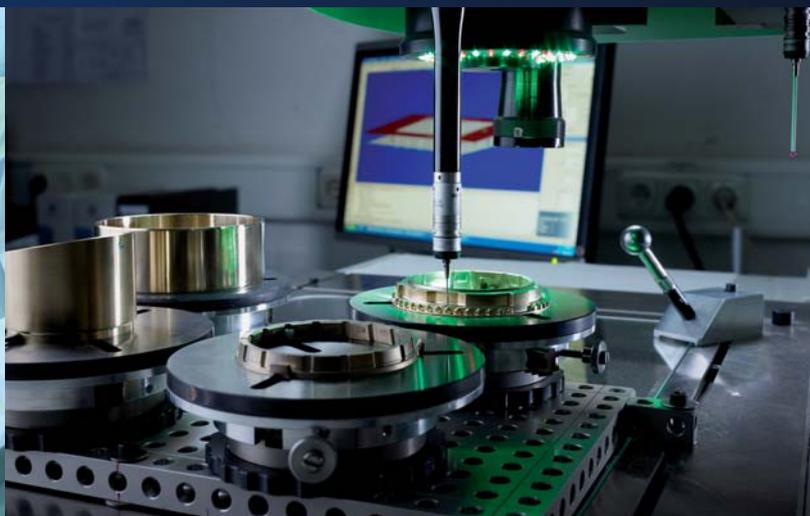


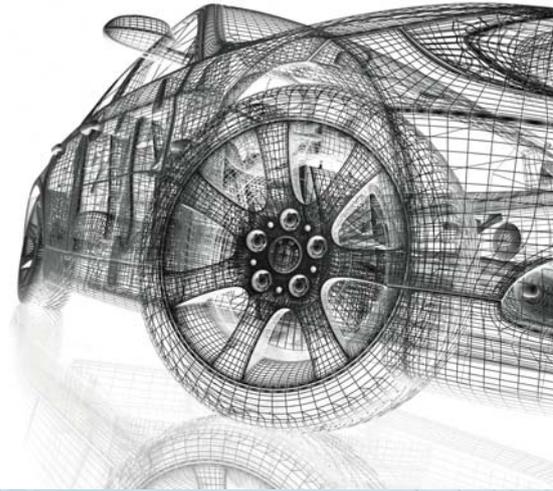
Ready-machined, exclusively forged and coated synchroniser rings are our particular strength. Interlinked processes, the highest quality and further developments for our customers consolidate our position in Europe and in the global market. The synchroniser rings are used in manual gearboxes, automatic gearboxes and the new, very popular, dual clutch gearbox systems. We are especially strict when it comes to quality: in-house test rigs, development work, numerous ISO certificates, and special customer-specific tests are some of the many reasons why we are a leading manufacturer of synchroniser rings and a long-term development and system partner to nearly all renowned automobile and gearbox manufacturers. And we have been for over 50 years.



All the certificates shown here are also available to download on the internet.

We can carry out all manner of tests in our in-house laboratory: chemical, mechanical and structural tests, and oil tolerance tests to name but a few. Reliable processes, ongoing sampling and inspections integrated into processes play their part and make it easy to see why all our numerous certifications were awarded on the first attempt.





**QUALITY
FOR YOUR SUCCESS**



OTTO FUCHS quality is almost proverbial and the company has been a pioneer in the industry for many years. Awards for quality and the satisfaction of our customers inspire our employees to develop new ideas and give their best performance - and we are happy to provide proof of this in black and white with our DIN ISO test certificates at any time.

OTTO FUCHS KG

Derschlagler Straße 26
D-58540 Meinerzhagen

Telefon +49 2354 73-0
Telefax +49 2354 73 - 201

info@otto-fuchs.com
www.otto-fuchs.com

OTTO FUCHS Oberflächentechnik GmbH

Poststrasse 57-59
D-71229 Leonberg

Telefon +49 7152 94 02 - 0
Telefax +49 7152 94 02 - 88

info@otto-fuchs-oberflaechentechnik.com
www.otto-fuchs-oberflaechentechnik.com

**OTTO FUCHS Hungary Sales department
c/o OTTO FUCHS KG**

Derschlagler Straße 26
D-58540 Meinerzhagen
Germany

Telefon +49 2354 73 316
Telefax +49 2354 73 241

info@otto-fuchs.com
www.otto-fuchs.com

OTTO FUCHS Technology (Shenyang) Co., Ltd.

No. 26 Purong Road
Shenbei New District
Shenyang, P. R. China, 110164

info@otto-fuchs.cn
www.otto-fuchs.cn

Schüco International KG

Karolinenstraße 1-15
D-33609 Bielefeld

Telefon +49 521 783 - 0
Telefax +49 521 783- 451

info@schueco.de
www.schueco.de

Weber Metals Inc.

16706 Garfield Avenue
Paramount CA 90723/USA

Telefon +1-562 602-0260
Telefax +1-562 602-0468

wmi@webermetals.com
www.webermetals.com

Foxtec-Ikhwezi (Pty) Ltd.

1 De Wet Road, West Bank
East London, 5218 East London, Südafrika

Telefon +27 (043) 7033500
Telefax +27 (043) 7033515

info@foxtec.org
www.foxtecikhwezi.co.za



OTTO FUCHS
Dülken GmbH & Co. KG



Heiligenstraße 70
41751 Viersen

Telefon +49 2162 956-6
Telefax +49 2162 956-762

duelken@otto-fuchs.com
www.otto-fuchs-duelken.com

