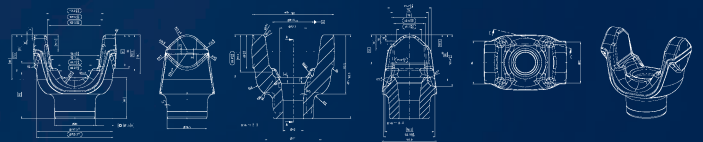
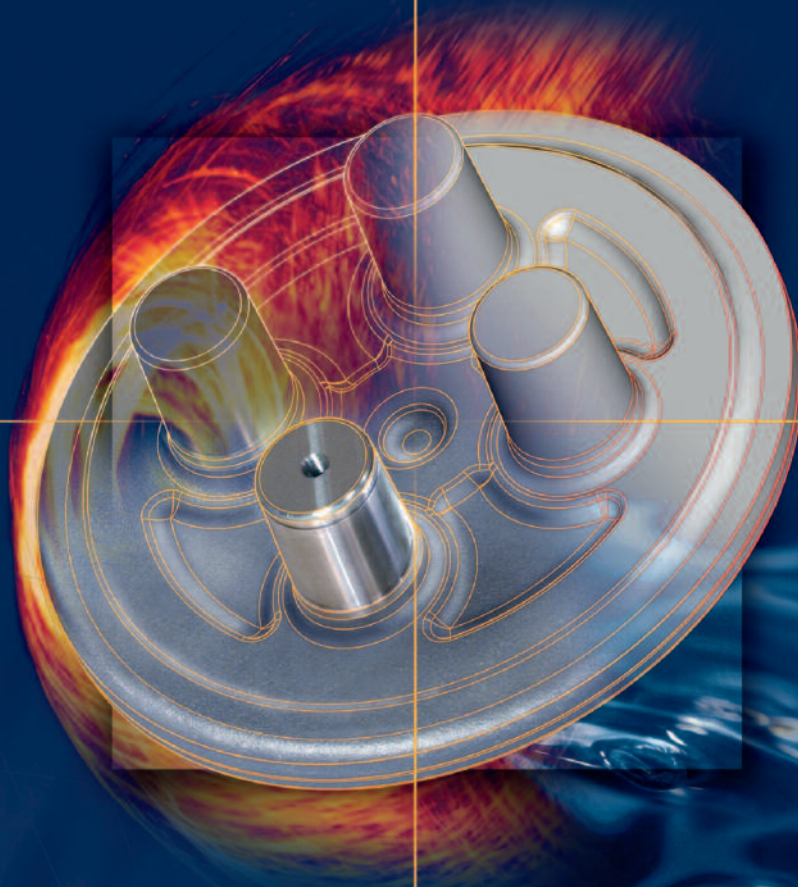


Hammer Fridingen werk


HF-Czechforge



THE COMPANY

Quality and attention to detail –
The keys to our success

On water, land and in the air – precision, outstanding quality and reliability are critical factors wherever our products are used. After all, there is often much more than business success at stake. The products we manufacture for our customers frequently perform vital but hidden tasks under the toughest conditions. These include cars, commercial and special vehicles on roads, construction sites and rails around the world – and even in space.

The tradition of drop-forging in the site of Fridingen goes back to 1935. After the change of corporate form to Hammerwerk Fridingen GmbH in 1953, our company transformed itself into an innovative full-service partner for forming and machining technologies. In 2007, we extended our capacity with a new facility in Cheb (CZ). Now, with over 500 experienced employees, we offer a broad range of products for our customers both at home and abroad.

ACCURACY AND EFFICIENCY

From the idea
to the ready-to-install product

The partner for individual metal products. We offer our customers the processes required for manufacturing high quality drop-forged and hot-press forged components – all from a single supplier. Simulations ensure that the concept is feasible, help to save material resources and increase the efficiency of the CAD/CAM-supported design. Our pressing and hammer forging equipment for forming is state-of-the art – as are our machines and technologies for further stages of machining.

Our meticulous process control system allows us to achieve our goal – that customers can depend on our products in everyday use.

METAL FORMING TECHNOLOGY

- PRESSING & HAMMER MILL PRODUCTION
- CAD/CAM
- HEAT TREATMENT

MACHINING TECHNOLOGY

- TURNING
- MILLING
- GRINDING
- GEAR TOOTH FORMING
- SURFACE TREATMENT
- ASSEMBLY
- HEAT TREATMENT



INTELLIGENT DESIGN

Example: Heavy-duty planet carrier

The correct pre-distribution of the material is a crucial factor in the manufacturing process wherever metal products have to transmit high torques. Take the example of planet carriers, which are used for assembling helicopter rotor blades or as rotating assemblies for wind turbines and cranes. Usually, these only operate at relatively low r.p.m. and have to be positioned very precisely. Hammerwerk Fridingen has been making planet carriers for over three decades. These products are manufactured in a multiple-stage forming and machining process in all sorts of sizes, shapes and designs: as a ring, ring with protrusion or ring with studs. These parts carry the planet gear wheels, to which the component owes its name.

Heavy duty products: our design department assists in planning the pre-distribution of materials.



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SIMULATION ENSURES MORE EFFICIENT FORMING

Example:
Ski lift cable clamps

Even though ski lift cable clamps are not employed all year round, they still have to ensure reliable operation whenever called upon. They clamp onto the circulating rope cable with a relatively constant level of force, thus helping to reduce excessive wear.

Before Hammerwerk Fridingen starts actual production of the cable clamps, the entire manufacturing process is simulated with the help of a special computer program. This calculates the mould fillings in the dies, possible forging errors in the blank, tool loads and temperature profile before even a single component has been made. This creates significant gains in efficiency: the simulation can be used in a feasibility study to provide the basis for a more precise offer. It makes it possible to test in advance both the producibility of a blank and the best sequence for the production stages.

Simulations are used before production to calculate the specific pre-forming geometry, which uses the minimum amount of material. The most advantageous sequences of stages and press sizes can then be integrated into the design phase. If the simulation shows a possible weakness in the blank, the corrective measures flow directly into the production of the tool with all the other information. As this approach reduces the number of production trials, it also reduces the costs for our customers, shortens production time and – because this approach uses less material – also helps to protect the environment.



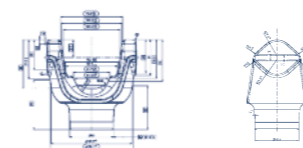
*Precise offers, less trials:
simulation reduces costs
and ensures high
delivery reliability.*

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PRECISION IN MACHINING

Example:

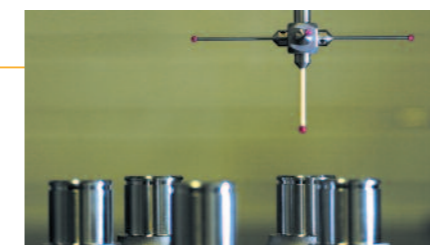
End Yoke with precise symmetry

Tiny deviations can have serious consequences – perfect symmetry is essential in fast-rotating components such as the end yoke in a prop shaft drive. Faults in this symmetry create an imbalance in the shaft, which can cause unpleasant vibrations. However, complex shapes such as the end yoke, in particular, require specific distances during trimming processes. In order to achieve the capability of 0.02 to 0.03 mm, we pay the greatest attention to absolute care and precision during forging and machining. This begins with the forging dies: these are aligned, guided and controlled. This ensures aluminium displacement between the upper and lower die. The precision slide-guiding leads to plane-parallel forgings.

Hammerwerk Fridingen manufactures high quality end yokes for many customers. They are used in luxury limousines and commercial vehicles as well as in well drilling equipment, agricultural machinery or other machines with prop shaft drives.



*Machining end yokes:
quality is the product
of perfection in detail.*



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METAL FORMING TECHNOLOGY

**A Broad Range of Products
 for the Toughest Challenges**

Our automated and manual manufacturing and metal working processes, allow us to offer an exceptionally wide range of drop forged products and hot extrusion components with a piece weight of 0.3 – 80 kg, a diameter of 50 – 425 mm and a length of up to 800 mm. We process alloyed and non-alloyed steels as well as AFP- and stainless steels in all forgeable qualities.

Design and tool-making are also important core areas of our business – as quasi internal service providers to the metal forming operations. We work in close co-operation with our customers to design / dimension the geometry of the blanks.

Simulations assist in ensuring that complex metal forming processes function correctly and make an important contribution to manufacturing safety. The tools are derived from the geometry of the blanks and are manufactured using the CAD/CAM chain on the most modern CNC-controlled machines. HSC-milling technology guarantees fast processing times and high product quality.

In our continuous throughput / rotary hearth ovens we perform all types of heat treatment in an open oven atmosphere.

MACHINING TECHNOLOGY

**The Secret of Our Success:
 Customer Satisfaction**

We have the very best equipment for all the most common processes in stock removal manufacturing. Our experience and know-how allow us to process all metallic materials perfectly according to specific customer requirements. For our customers these technical possibilities add up to significant advantages in commercial planning, optimised logistics, quick reaction times and complete solutions from a single supplier with no laborious searching for parts. Our cutting-edge, high-tech products guarantee that our partners also enjoy competitive advantages.



We understand:

High customer utility is the best way to assure our mutual future. In our company, customer orientation, flexibility, punctuality and assured, measurable high-end quality are the result of a philosophy that is lived by all our staff.

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