RÜBIG

DRIVING SUCCESS

Industrial Furnaces | Heat Treatment | Die Forge | Technology




RUBIG developed into a globally active system supplier of finished components through material and machining expertise.

RUBIG GROUP

Since the establishment of RUBIG in 1946, the company has developed from a drop forge into a globally operating metal centre of excellence.

The unique synergy potential resulting from close cooperation between RUBIG Industrial Furnaces, Heat Treatment and Die Forge maximises customer benefits. The knowledge and experience from all company divisions make metal durable! More than 350 employees work on behalf of the customers. Nationally and internationally.

Technology

RUBIG is continuously expanding its global technology leadership as a materials specialist in metalworking and is developing into a system supplier for components and products in the metal industry. The innovation process is the driver for new technologies and product developments. High quality is part of our self-image.

International

Globalisation opens up new sales markets for RUBIG. As a global player in product and component manufacturing, the company is constantly expanding its innovation leadership in these fields. This enables the Austrian site to be expanded and strengthened in the long term.

Quality management

RUBIG has been working with the materials steel, aluminium and titanium for many decades. During this period, a great deal of knowledge and experience has been gained in the areas of forging technology, manufacturing technology, hardening technology and systems technology. These synergetically obtained results in combination with the knowledge of metallurgy and materials processing are the foundation for customer-specific process developments, materials investigations and damage analyses.

RUBIG INDUSTRIAL FURNACES

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With MICROPULS® and GASCON technology, RUBIG Industrial Furnaces represents the premium nitriding and coating technology on the heat treatment market. RUBIG partners all over the world rely on our expertise in nitriding and coatings. RUBIG customers benefit from more than 25 years of development experience in the field of customised heat treatment systems for a wide range of industrial sectors, from contract hardening shops to fully automated industrial operations.

MICROPULS® technology

With its MICROPULS® technology, RUBIG Industrial Furnaces represents successful and innovative heat treatment solutions in the field of plasma nitriding and coating. Powerful, modular and precise MICROPULS® generators developed in-house by RUBIG make this possible.

MICROPULS® EVEREST

The plasma nitriding system

Optimised processes enable an exceptional filling level and thus the highest possible economic efficiency.

MICROPULS® PROCOAT

The coating system

This RUBIG coating system is used to produce hard coatings in the premium segment.

MICROPULS® DIAMOND Xtended

The DLC coating system

Innovative DLC coatings from RUBIG - for that certain something extra in the coating sector.

GASCON technology

The GASCON technology of RUBIG Industrial Furnaces represents highly efficient and advanced gas nitriding. The modular systems, which are tailored to customer requirements, are impressive due to their excellent service life and the possibility of sensor-controlled regulation during gas nitriding and gas nitrocarburising.

GASCON K2

Gas nitriding system

RUBIG customers scale completely new heights and previously unknown territories with the new GASCON K2.

Surface Improvement by RUBIG

The RUBIG SIR programme represents the development of systems and processes for optimum performance enhancement of the surface of tools and components made of steel materials in the interests of environmental protection! SIR enables a reduction in hard finishing, offers production integration, partial nitriding and process combinations. In addition, the lowest possible emissions are produced with minimal gas consumption and service lives are extended. A saving of around 20% is possible by eliminating hard finishing.

Sectors

Contract heat treatment, automotive, aviation, mechanical engineering, toolmaking, safety engineering and many more.

Certifications
ISO 9001
IQ-Net

RUBIG HEAT TREATMENT

Heat treatment of steel and aluminium materials

The requirements

for modern products are increasing daily, and with them the requirements for all materials. The required property profile of these materials is largely determined by the heat treatment carried out. RUBIG Heat Treatment has been the recognised specialist for the heat treatment of steel and aluminium materials since the 1980s. The range of services extends from expert materials testing in our in-house materials laboratory through to the selection of the appropriate heat treatment process. RUBIG offers ideal and individual solutions for every type of heat treatment problem.

Case hardening - R.CARB+®
Case hardening is the most traditional of the thermochemical heat treatment processes. The HighCarb process allows components to be exposed to higher temperatures during use.

Vacuum hardening - R.VAC+®
Vacuum hardening is the hardening process for distortion-sensitive precision components, moulded parts and tools that have high requirements for a clean, bright surface. Vacuum carburising or pressure carburisation processes in combination with helium quenching (HELIVAC) can exploit the full potential of the material.

Hard material coating - PLASTIT®
PACVD (Plasma Assisted Chemical Deposition) coating systems offer wear protection and reduced coefficient of friction as well as improved corrosion resistance. The RUBIG staff are happy to advise all customers on the choice of coating and the important issues involved, such as steel grade, heat treatment and surface condition.

Certifications: ISO 9001, IQ-Net, VDA 6.1, EN 9100

Plasma nitriding - PLASNIT®

The first choice for components subject to wear and dynamic loads.

Gas nitriding - R.NIT+®

Gas nitriding enables very good wear protection and high corrosion resistance with high economic efficiency at the same time.

RUBIG Slovakia

In the production and sales branch, heat treatment technologies such as case hardening, plasma and gas nitriding as well as vacuum hardening and annealing are carried out for the Slovak market.

Aluminium heat treatments

If you want aluminium components with low warpage and residual stress properties, you can rely on RUBIG ALU for heat treatment. Short lead times with premium quality delight RUBIG customers. The heat treatments provide a thermal effect to positively influence the material properties of aluminium. RUBIG offers various aluminium states (e.g. T4, T5, T6, T7) with different quenching options (such as air, polymer and water quenching).

Sectors

Mechanical engineering, automotive, toolmaking, safety engineering, leisure, transport, aviation, medical technology, racing and many more.

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RUBIG COMPETENCE CENTER

Concentrated knowledge based on years of experience

Research & Development

RUBIG supplies profound know-how to optimise or further develop the customers' components. RUBIG provides support in finding suitable and practicable combinations of material, manufacturing, heat treatment and coating for the tasks and for a given stress situation.

Material analyses

Determination of the chemical composition of unknown metallic materials or in the case of suspected material mix-ups, for incoming inspection to ensure material delivery quality or to narrow down the origin of foreign particles etc.

Hardness testing

Hardness testing of metallic components and workpieces, hardness progression measurements etc. as well as hardness testing of thin hard material layers by means of an instrumented penetration method or hardness testing of weld seams.

Structural assessments

Qualitative and quantitative microstructure characterisation as a crucial means of assessing the basic material properties and for evaluating the heat treatment condition.

Residual austenite determinations

Radiographic determination of the residual austenite content as a quality assessment for a heat treatment carried out or as a conformity check as to whether a specified residual austenite limit value has been complied with.

Residual stress measurements

Radiographic measurement of residual stresses or residual stress curves in component edge zones in order to achieve decisive knowledge about load capacity and fatigue strength or about influences from mechanical or spark erosion manufacturing.

Material testing

Determination of material grade, manufacturing process and heat treatment for unknown components, quality checks of components with specified target values (conformity tests), metallurgical and radiographic assessments of components with regard to their intended use and their behaviour under stress, damage analyses to find causes, fault prevention and component optimisation.

Failure analyses

Identification of damage mechanisms, determining causes of damage and deriving necessary and practicable measures to prevent damage.

Corrosion tests

Assessing corrosion damage, determining the causes of corrosion, deriving suitable and practicable preventive measures, carrying out corrosion tests to determine the corrosion resistance of components.

Seminars & training

The training courses teach the theory and give practical experience in the field of heat treatment. The seminars are aimed specifically at design engineers, fabricators and work planners who do not yet have any knowledge of this special manufacturing technology or who want to deepen their existing knowledge.

Sectors

→ Manufacturing companies and engineering offices from all industrial sectors
→ Experts, insurances

Strategic partnerships

→ Steel manufacturers
→ Universities, research institutions, universities of applied sciences
→ R&D departments of other companies

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RUBIG
DIE FORGE

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The Franz RÜBIG & SÖHNE drop forge was founded in 1946 and is the parent plant of the RUBIG Group. The main focus is on the development of optimal solutions for specific customer needs, from the raw part to the ready-to-install series part.

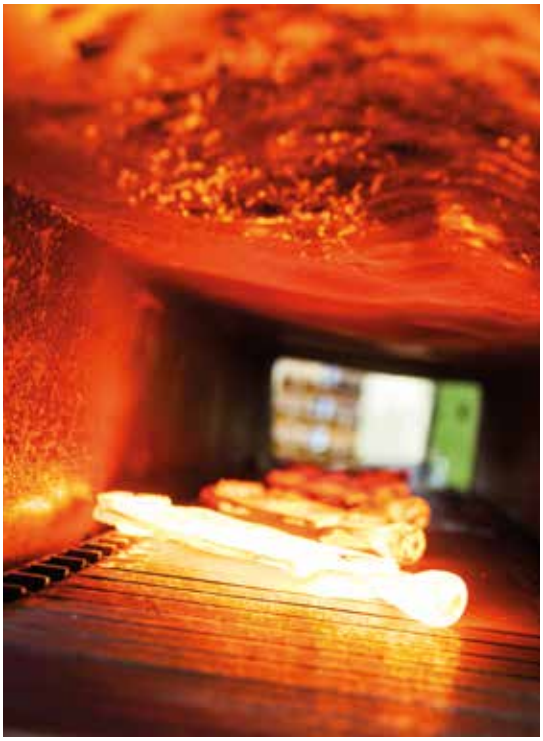
All the necessary tools are manufactured in-house in the company's own tool shop - this ensures the quality and punctual provision of all individual tool parts. In addition to the manufacture of its own products (such as linchpins, chain systems and hunting knives), the company focuses on the production of drop forgings to customer specifications as well as machining technology. This means that drop forged parts which are processed ready for installation can be offered from a single source. RUBIG also offers these technologies as contract machining.

Linchpins

Linchpins are used for connections and safeguarding on or between machines. Accordingly, the optimal design and quality of these safeguarding elements are important.
The RUBIG linchpin range includes more than 80 different shapes and sizes.

Chain systems

The ideal chains for harsh operating conditions:
The forged, detachable chains developed by RUBIG have a particularly favourable fibrous structure and microstructure due to the drop forging process and are characterised by high breaking loads and insensitivity to dirt. In addition to the proven Series T and Series C flat link chains, a newly developed heavy-duty drive chain, an innovative version of the Vaucanson chain and all associated sprockets are also produced.



Certifications
ISO 9001
IQ-Net

Hunting knives

Craftsmanship combined with high-tech manufacturing: drop-forged knives made of high-quality steels, vacuum-hardened, cryogenically treated and optionally DLC-coated. For the highest demands - innovative in design and individually customised.

Drop forged parts

From the blank to the ready-to-install series part: RUBIG takes over the forge-appropriate design and transition from the design drawing or sketch to the cost-effective series production. Years of experience guarantee drop forged parts manufactured with process reliability. Our own toolmaking guarantees absolute secrecy and flexibility.

RUBIG machining technology

Complete solutions from a single source: For the production of complex machined components, modern CNC turning and processing centres are used in the machining department. In addition to turning, drilling and milling, the possibilities of RUBIG machining technology also include gear cutting up to module 6, surface grinding and automated workpiece measurement.

Active quality assurance - more than just an obligation

Success through quality: As a traditional family business, RUBIG has a long-term approach and attaches great importance to sustainable business relationships. This requires a high level of customer satisfaction, which can only be achieved if customers' expectations are met on an ongoing basis. Not only impeccable product quality, but also perfectly organised processes, are the prerequisites for achieving this objective time and again.

Sectors

Agricultural technology, mechanical engineering, automotive, trade, construction, leisure, railway technology and many more.

RUBIG TECHNOLOGY

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INNOVATIVE STRENGTH THROUGH RESEARCH

The emphasis of RUBIG Technology lies in the development and testing of new technologies, in particular systems and processes for surface technology, heat treatment and production technology as well as in the establishment of series treatment and production with these technologies. The objective is to be able to offer our customers new solutions for wear and corrosion protection in addition to increasing fatigue strength. In order to be able to research successfully, RUBIG therefore relies on close international cooperation with universities, research institutions and companies.

RUBIG TECHNOLOGY CONTRACT WORK

Laser technology

The RUBIG laser machining centre offers various metalworking processes, such as laser build-up welding, laser hardening, laser cutting or laser welding (without filler metal). In addition, 3D laser cutting with dynamic cutting optics is also possible with this technology.

PVD technology

Together with RUBIG Technology and RUBIG Industrial Furnaces, we developed our own PVD system in order to be able to offer our customers an innovative overall package. During Physical Vapour Deposition (PVD), atoms and atom clusters are sputtered from a usually metallic target under high vacuum and condense to form a solid metallic layer on the component. Both the coating system and thickness can be defined based on specific customer requirements.

NitroPep

RUBIG NitroPep is an innovative coating solution that binds antimicrobial agents on metal and plastic surfaces. The benefit is the destruction of antimicrobial resistant pathogens by physical means. This coating was developed for door and grab handles in high-traffic public places.

OTHER RESEARCH FIELDS OF RUBIG TECHNOLOGY

Hydrogen production and fuel cell

Hydrogen will play a significant role in transport and the storage of renewable energy within a sustainable society. The newly developed RubiCon generator, a 50 KW power bundle, is ideally suited for fail-safe power supply thanks to freely selectable, highly accurate direct and pulsed alternating currents.

PEO

Here we speak of wear protection and surface refinement for aluminium-, titanium- and magnesium-based alloys. The material to be coated is submerged in an electrolyte bath. In the next step, an atmospheric plasma then causes ignition. This process causes localised melting of the surface, creating a dense oxide layer through the presence of elemental oxygen.

Graphene

Graphene is the name given to a special structure of carbon which, due to its honeycomb-like, flat layers that slide easily away from each other, is therefore well suited as a lubricant. Graphene has very good properties in terms of strength, wear and corrosion. However, this thin layer, with only one or just a few layers of atoms, is confronted with challenges when it comes to conventional steel surfaces. These kinds of layers can be produced easily and in large areas in the laboratory.

RUBIG INTER NATIONAL

Find out more at **www.rubig.com**

The RUBIG Group has been able to become one of the global players in the metal industry through technical know-how, entrepreneurial skills and years of experience. In addition, there are international sites in Germany, Slovakia, the USA and China, as well as customers in over 42 different countries.

RUBIG SK

//SLOVAKIA

The Slovakian sales and production subsidiary in Prievidza offers customised heat treatments for toolmakers, the plastics industry and plant engineering. The wide range of services includes a variety of procedures which, together with a personal consultation, enables the best and most individual solution. Case and vacuum hardening (R.CARB+® & R.VAC+®), hard material coating (PLASTIT®), plasma and gas nitriding (PLASNIT® & R.NIT+®), as well as annealing, protective gas hardening and many more.

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RUBIG ALU GERMANY

//GERMANY

RUBIG Alu in Pilsting has the most modern aluminium heat treatment facilities in Central Europe, where all production steps have been automated. Our employees on site take care of process monitoring, quality control and logistics.

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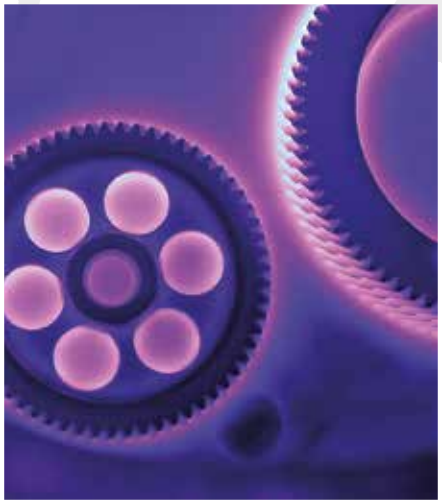

RUBIG US

//USA

RUBIG US in Rockford, Illinois acts as a service centre for service and maintenance work, troubleshooting, upgrades and calibrations, and provides support for application-specific issues. In addition to an on-site spare parts warehouse, a fully-fledged plasma nitriding system is also available for customer trials.

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RUBIG Industrial Furnaces (Taicang)

//CHINA

The RUBIG site in Taicang, Jiangsu Province functions as a sales and service branch in order to be able to serve customers from the automotive or aerospace industry, which is done promptly and with expertise. The opening of the site in Asia is intended to further strengthen the company's technological leadership in the manufacture of plasma and gas nitriding systems.

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