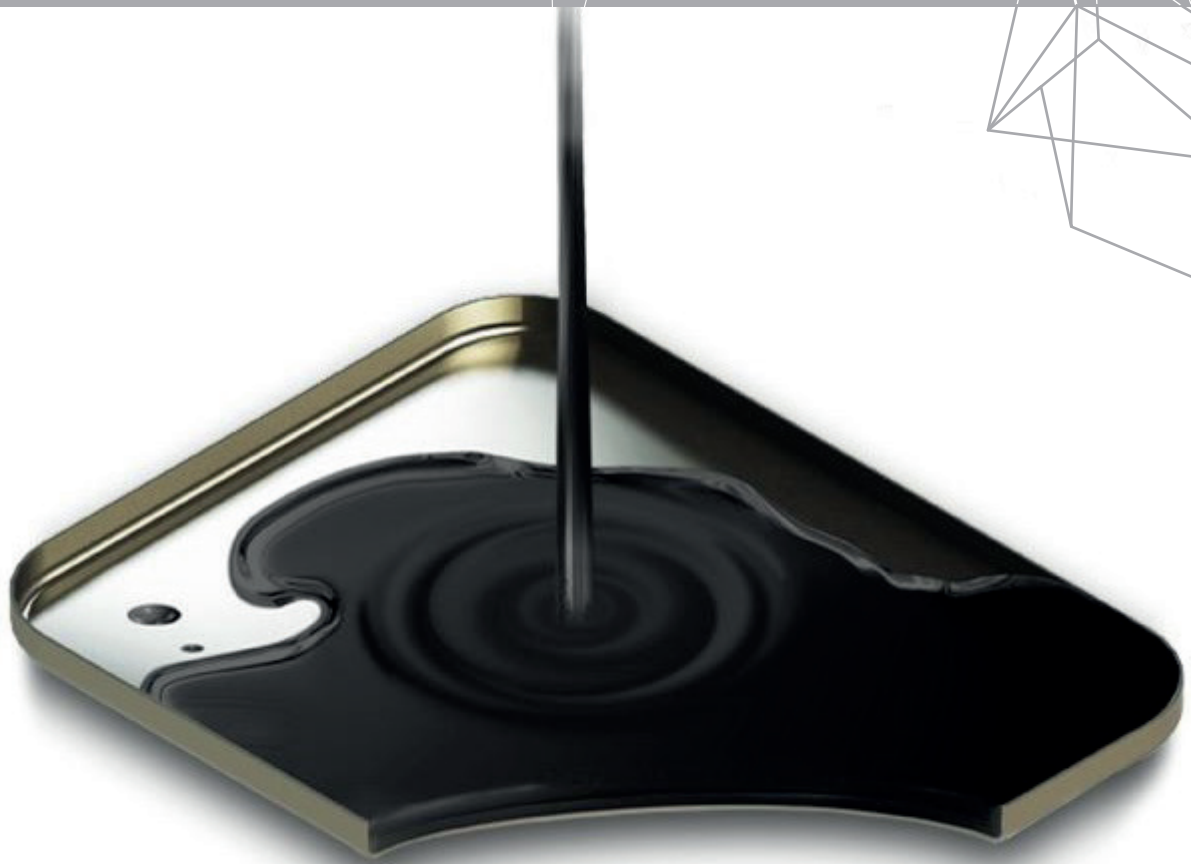
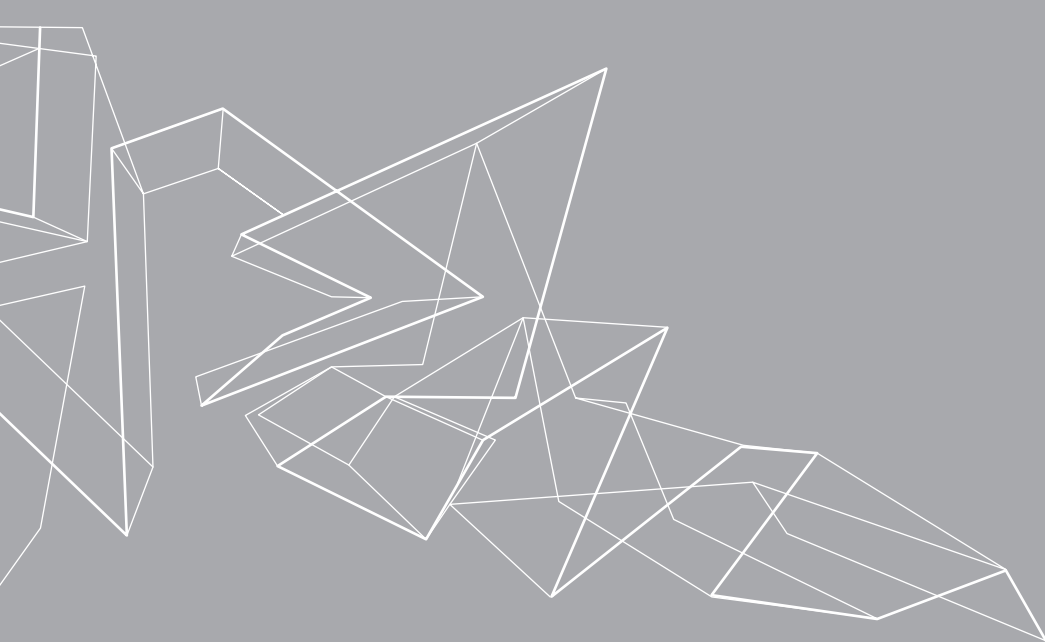


Synthetics Hybrid Technology



GRONBACH



GRONBACH – since 1964

Be inspired and motivated by the variety of our technologies and discover all the applications offered by modern hybrid technology.

GRONBACH is a market leader in the field of surface finishing and has remained for decades one of the best companies in the world for the processing of stainless steel, aluminium and synthetics. We manufacture design-oriented products, mechanical and kinetic components, sub-assemblies and complete OEM appliances. We supply world market leaders and are successfully active in the most varied of fields, for example in the domestic appliance industry, in the furniture, kitchen and sanitary sectors as well as in the the entertainment and automotive branches.

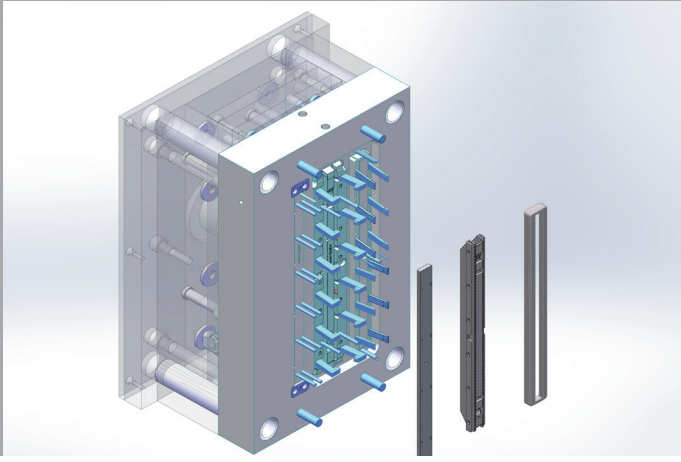
The GRONBACH Group is a flexible company consisting of four specialist sites located in Germany, Austria, Italy and Slovakia. However, our home is and will remain Wasserburg – a small town in Southern Bavaria.

The Wasserburg Site

The core skills of our site lie in the processing and surface finishing of metals and synthetics. Here you will find everything under one roof, from development to the manufacture of prototypes and serial production.

You will not encounter any 'that'll do' solutions at GRONBACH – just the opposite. We develop, produce and deliver exclusively customised products. We keep all processes lean, flexible and efficient. We also attach particular importance to the careful use of resources. We invest in sustainable energy concepts, operate the most up-to-date photovoltaic plants and use intelligent LED lighting systems.

What we accomplish in Wasserburg can be seen everywhere: as single components, for example furniture handles in aluminium design; as sophisticated assemblies such as our doors for microwave ovens; or as innovative household appliances like the GRONBACH Under-Furniture Vacuum Cleaner – winner of the distinguished German Design Award 2015. Our products stand out not only from the technical point of view, but they are also impressive due to their fine design.



Modern Hybrid Technology: Metal sheets and plastic carriers are bound to each other in an injection-mould process

Hybrid Design – Combining Knowledge in a New Way

Many things have changed since we were founded in 1964. But one thing has remained unchanged over the years. GRONBACH has kept pace with the times. Our manufacturing plants are fully up-to-date and - then as now – fully meet the particular requirements of our customers. We have our own comprehensive development department, a tool-making shop and a team of experts who are exclusively devoted to the development of technologies and the optimisation of manufacturing processes.

You will not find much off-the-shelf machinery and equipment at GRONBACH. We prefer to design them ourselves. The combination of diverse possibilities offered by our various manufacturing technologies and processes is especially motivating. You can see many examples of this in our factories – one of them is the synthetics hybrid back injection/ moulding technology.

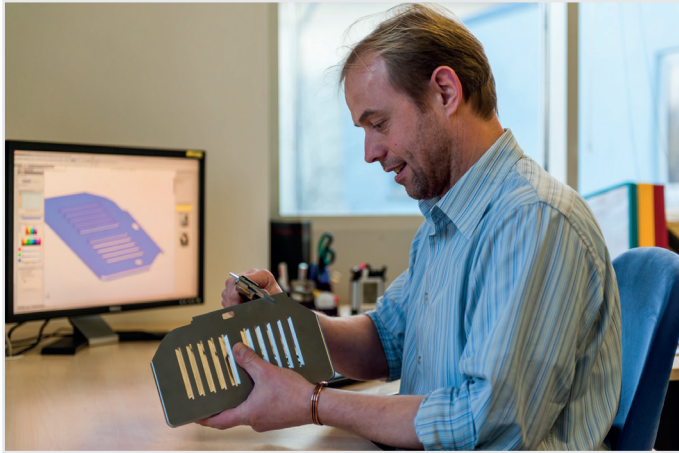
Back Injection Moulding – Technology of the Future

We have been processing sheet metal since the first days of our company. We mastered the injection moulding of synthetics in the '70s and we have our own assembly hall for the bonding of various materials. We are now combining this expertise in a new way. With back injection moulding we are able to unite different materials into one component, thus benefiting from the advantages of each specific material.

- Who can back-inject coiled sheet metal, metal foil and even glass?
- Who can recommend the most diverse bonding agents?
- Who knows the high quality requirements of design components better?

Back injection moulding opens up many incredible opportunities that we would like to implement in partnership with you. A high level of freedom of design, substance-to-substance bonding, the integration of functions, and much more are all possible with this technique. Together, we can develop the best and most economical technique for your component.

We have over 50 years of experience at your disposal – set us a challenge!



Everything Under One Roof

GRONBACH has everything required for hybrid technology. We know the materials and have decades-long knowledge about their uses, behaviour and potential. This expertise is indispensable for successful back injection moulding.

We can design the ideal tools and thus optimally compensate for the warping from shrinkage and linear expansion. We are also experts in a multitude of manufacturing and bonding processes. This and much more singles us out as one of the leading manufacturers of hybrid components. GRONBACH combines knowledge, experience and creativity in the development of:

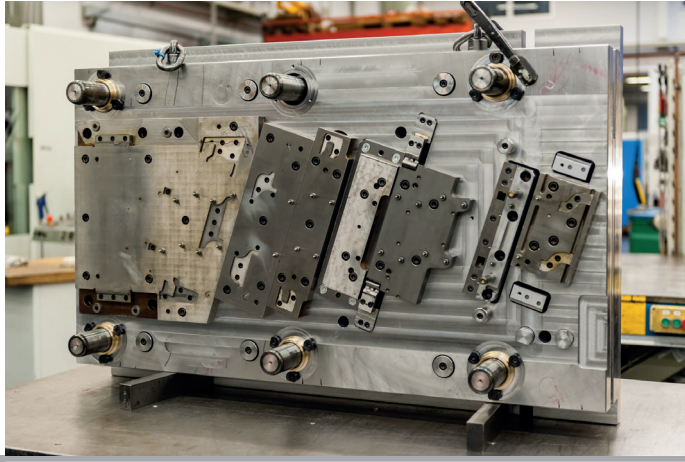
- Metal foil back injection
- Metal back injection
- Glass back injection

Development and Design

Anybody wishing to produce a good hybrid component needs first and foremost good design engineers. And we have got them. Our engineers are experienced, technically skilled and well-versed in the requirements of many fields. You can rely on them with certainty to develop a first-class technical and economical solution for your application:

- Highly complex injection moulds based on mould-flow analysis and numerical simulation processes.
- Sheet tools for stamping, bending and deep-drawing of visible components, ensuring the highest requirements in form and design are met.





Tool Making

In our workshops we have a first-class infrastructure and technical facilities. We produce high-precision tools for a variety of applications and specifications:

- Stamping and shaping tools
- Injection moulds
- Progressive dies
- Equipment

For tool-making at GRONBACH, we use exclusively high-quality steels, the most up-to-date techniques for heat treatment, surface finishing and also standard components from leading manufacturers. If desired, we also deliver customised test equipment so that you can be certain of a consistently high quality in serial production.

Processes

There will always be a whole team working for you at GRONBACH. However, you will only have to remember one face – that of the GRONBACH Project Leader. He will lead you through the project, discuss the engineering plans with you, explain technical details and keep you up-to-date.

In order to identify the manufacturing and assembly features of the components at an early stage, we compile so-called 'fault probability' and 'fault effect' analyses, as early as in the development stage. In this way, we avoid unpleasant surprises right from the start.

Hybrid Technology

=

Engineering

+

Tool Assembly

+

Transforming
Metal Sheets

+

Bonding Agent

+

Injection Mould

Manufacturing

We have a large and extended amount of plant and equipment at our disposal at our facility in Wasserburg. Using the most up-to-date installations and a high level of automation, we can manufacture economically, quickly and in large quantities.

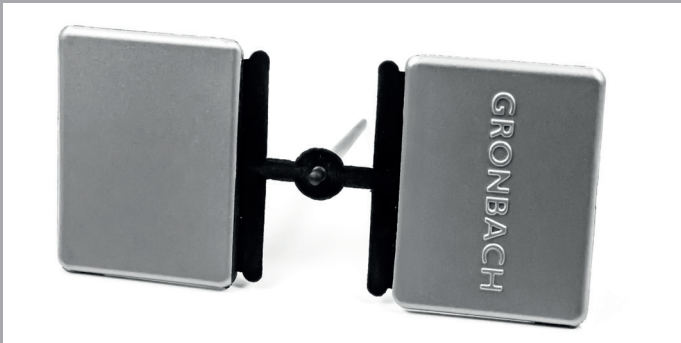
- Injection mould equipment for synthetics with a closing force of up to 250 tons
- Presses with up to 500 tons pressing force
- Servo eccentric presses for precise and complicated forming processes
- Modern plant and equipment for turning and milling operations
- Partial- and fully-automated laser welding, manufacturing and assembly processes
- Automatic aluminium anodising plant, enabling exact repetition of the colouring process with robot-assisted surface treatment
- Plant for welding and bonding of synthetic components
- Enclosed powder-coating plant producing perfect surfaces

Individuality in Serial Production

GRONBACH can offer a whole range of surfaces for aluminium and stainless steel. We employ the most up-to-date mechanical as well as chemical processes. We master the most varied of printing techniques and employ robot-controlled grinding and polishing equipment to ensure 100% reproducibility. There are almost no limits as far as your wishes in form, colour and structure are concerned! In combination with the back injection process, we can produce customised solutions of the highest quality – either in small or large quantities.

For your application, synthetics hybrid technology from GRONBACH also means:

- No compromises in design and material
- Injection moulding with a high level of automation
- Certainty of spare parts for years to come



1. Foil Back Injection – decorative diversity

Your desires really have no limits here. Back injection of foils allows you to select from a multitude of colours and designs, integrate your logo, freely imprint the component with your own ideas and integrate functional elements. But that is not all – foils also improve the scratch resistance of your components.



2. Sheet Back Injection – the supreme discipline of our technicians

Sheet back injection is our speciality. All our knowledge of moulding and forming of materials comes into play here, combined with equipment for the application of bonding agents that we designed ourselves. All the steps required for this process are therefore integrated in our company. Where else can you find that?



3. Glass Back Injection – something brilliant for specific applications

For all those who are looking for something special: we also back inject glass. For a long time now, we have been bonding high-quality glass. Now we have developed glass back injection for specific applications.



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