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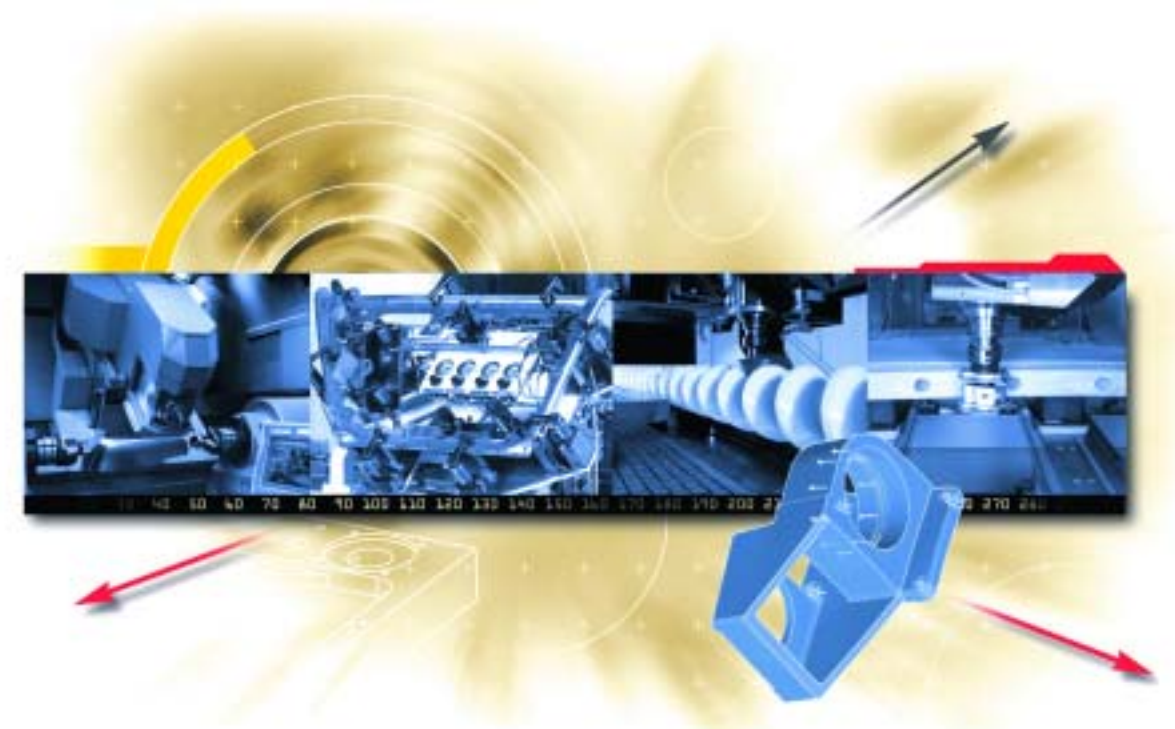
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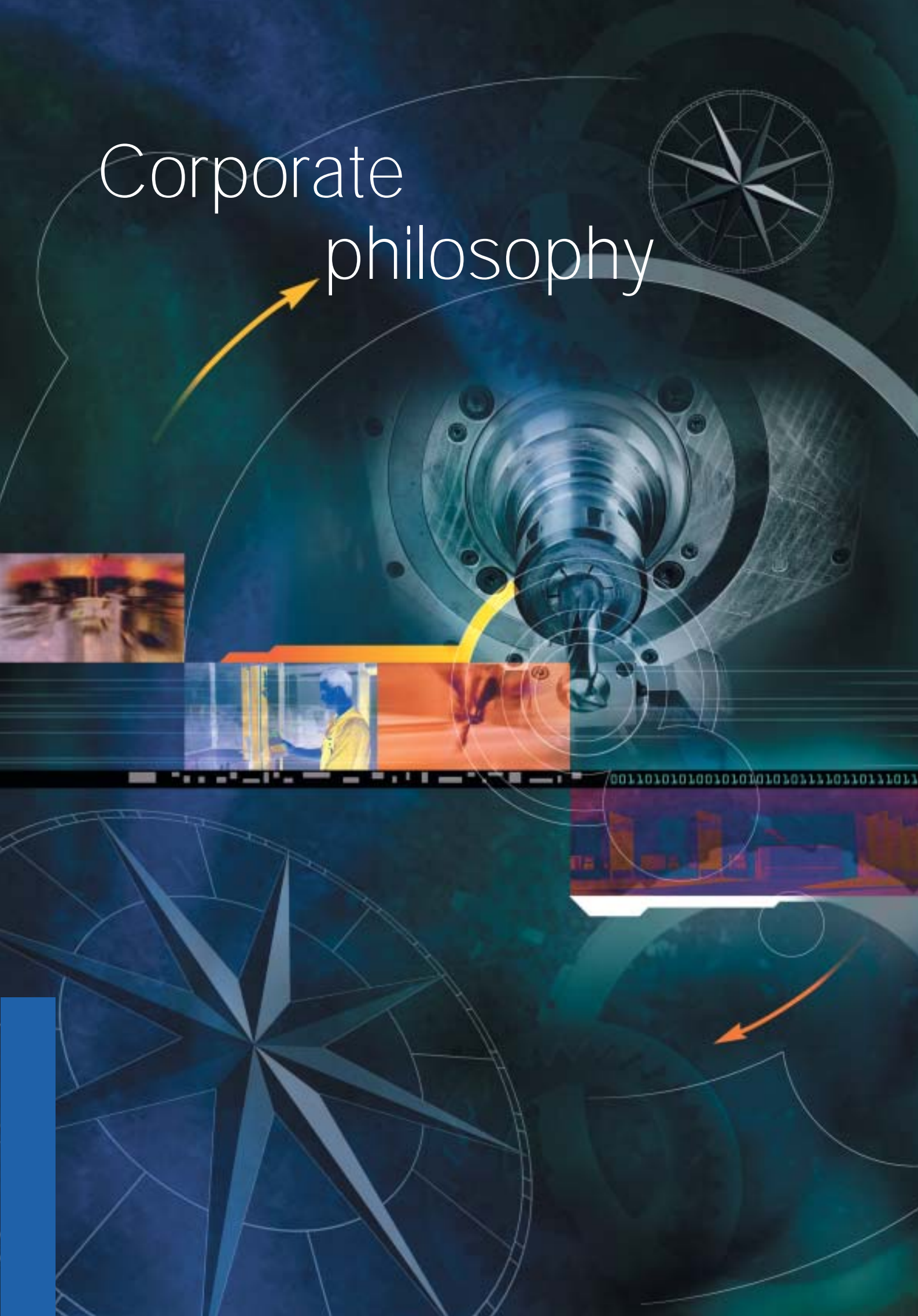
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- Machining of metal
- Machining of non-ferrous materials
- Machining of plastics
- Woodworking



# Corporate philosophy



## Corporate philosophy



*Acceptance of responsibility by the staff, in addition to commitment, creativity and competence, are central features of the corporate philosophy.*

### Success – thanks to an innovative approach

Our corporate philosophy is based on the creation of solutions which will provide our customers with the maximum benefit, thanks to state-of-the-art technology and individually designed,



cost-optimized procedures. The focus of our corporate policy and actions is on people. Our relationships with customers, suppliers, partner companies and staff alike are characterized by respect for the wishes and requirements of the individuals concerned. This approach, founded on moral and ethical principles, means that we can all work together to produce progressive and creative solutions. Here, we attach great importance to the recognition of individual achievements, the provision of scope for decision-making, the encouragement of initiative and positive thinking, and the possibility of an ongoing learning process thanks to vocational and in-



service training. As part of our corporate policy we also accept responsibility for the welfare of both staff and customers. With our innovative approach, we constantly strive to enhance quality and efficiency. We help our customers to be successful by ensuring that they are always a step ahead of their competitors. That makes Hamuel Reichenbacher a reliable partner.



### Experience, expertise and synergy effects

The fact that we can call on more than 75 years' experience in mechanical engineering and around 30 years' expertise in CNC machining speaks for itself: Today, more than 2000 CNC machines from the Hamuel Reichenbacher company network are involved in processing many different materials worldwide. The success of our innovative approach is confirmed by the large number of in-house developments and patents, as well as by the official Award of the State of Bavaria for outstanding contributions to technology. With around 250 employees, Hamuel Reichenbacher belongs to the SCHERDEL Group, which operates on a global basis. The benefit from the resulting synergy effects is immense.



# Company history – from machine-maker to system-provider

Hamül Th. Kirschbaum GmbH & Co. KG  
Hamül Maschinenbau Plauen GmbH & Co. KG

**1927**

The Company known as Hamül is founded by Hans Mühlhöfer and Theodor Kirschbaum in Marktredwitz.

**1936**

The Company makes a name for itself as a manufacturer of tool holders, lathe centers and accessories for machine tools.

**1945**

At the end of the War a great effort is required to rebuild the Company.

**1962**

Continuing success – this time with the manufacture of components for lathes. Automatically controlled coordinate tables are developed and put on the market.

**1968**

A numerically controlled coordinate table arouses great interest at the machine-tool

exhibition in Hanover. At that time in the Federal Republic of Germany there are only about 50 machine tools equipped with numerical control.

**1970**

The Company continues to make good progress thanks to the manufacture of coordinate tables.

**1976**

Hamül takes over the firm of Schirmmacher, an important supplier. This is the start of the Company's activity in Meeder near Coburg and, in the years to come, this location expands still further.

**1978/79**

In addition to jigs and fixtures, the range of products includes steel telescopic covers. The Company is now engaged in the development and series production of precision coordinate tables, long beds for CNC machining centers and components for moving column-type machines made by

the firms of Chiron and Stama.

**1982/83**

For the firm of MBB in Augsburg the Company now develops and manufactures two high-speed milling machines for machining integral components made of aluminium for the aviation industry. The machines can process parts up to 8 metres in length.

**1985**

Hamül is now working at the forefront of technology and, in cooperation with the Technical University in Darmstadt, the Company constructs the first high-speed machining center made of polymer concrete.

**1987**

The Company now becomes part of the SCHERDEL Group. The construction of a laser welding installation for welding car roofs means that the range of products can be extended.

**1990**

Hamül obtains the contract to overhaul and modernize all the portal milling machines at the DASA factory in Augsburg.

**1997**

At the Hanover Trade Fair Hamül presents SHAPE 2000, the newly developed, universal portal milling machine.

**1998**

Founding of a 100% subsidiary called Hamül Maschinenbau Plauen GmbH & Co. KG, which is also integrated into the SCHERDEL Group. A modern production unit for welded steel structures with an individual weight of up to 20 tonnes is set up in Plauen. The premises have an area of 3800 square metres.

**1999-2002**

In cooperation with Alstom Power AG the Company develops the high-speed turning and milling machines HSTM-800 and

HSTM-2000. Eleven of these machines are in use and they can carry out all the machining procedures for crankshafts and turbine blades in a single clamping process.

**2004**

Hamül founds a 100% subsidiary called Reichenbacher Hamuel GmbH. Here, Hamül continues the manufacture and development of the range of products hitherto made by Reichenbacher GmbH.

**1954**

The Company is founded on 4th August 1954 by the graduate engineer, Hermann Reichenbacher.

**1955**

The first products are put on the market: manually-operated sculptor's copying machines revolutionize the traditional method of woodcarving, making the name of Reichenbacher famous throughout the world.

**The 1960s**

Multi-spindle drilling machines, copy-milling machines, automatic machines for manufacturing upholstery framework

and special machines for the production of doors and kitchen furniture: these products increase the efficiency of production processes in industry and the craftsman's trade.

Development of the automatic copying processes continues. The first milling machine with visual control for processing chip boards presents new opportunities.

**1972**

Reichenbacher manufactures the RANC-AM machine series, the first numerically controlled machining center for wood-working. The Company is now moving from machine-maker to system-provider.

**1974**

The machine type known as RANC-AM goes into series production for the first time, arousing great interest all over Europe. Since the development costs are spread over the whole series, this machine is extremely profitable. It combines a high level of productivity with a reasonable price.

**1979/1991**

Awards of the State of Bavaria in 1979 and 1991 for outstanding contributions to technology.

**1985**

5-axis milling units are equipped with a

cardan head for the first time.

Reichenbacher thus makes it possible to machine parts with a three-dimensional structure.

**1997**

The machine series known as VISION sets new standards in the field of wood-working. Its main advantages are: first-class machining, outstanding milling quality and a uniform safety concept.

**1999**

The ECO series, with its protected manufacturing cells, presents a combination of innovative procedures for machining composite materials. Thanks to state-

of-the-art, multi-channel technology the ECO model is well ahead of its time. It ensures a high level of productivity when machining fiber-reinforced sandwich boards for the aviation industry, for example.

**2004**

The Company known as Reichenbacher Hamuel GmbH is founded as a 100% subsidiary of Hamül Werkzeugfabrik Th. Kirschbaum GmbH & Co. KG. It is integrated into the SCHERDEL Group. To an increasing extent, the Company is becoming a system provider for complete manufacturing solutions. The ECO series proves successful in the field of aluminium machining for the automobile industry and automotive parts suppliers.

SCHERDEL



# Machining of steel and iron



## Machining of steel and iron



*The application of state-of-the-art technology: The laser cutter is a high-precision tool.*

Thanks to highly efficient roughing-down work and a dynamic finishing process, workpieces can be machined in a single clamping procedure with optimum precision and a considerable saving in time. In particular, each of the milling head's components must be rigid in order to achieve a high degree of precision and a first-class surface finish in the case of extremely complex geometry, extra-long tools and high feed-rates combined with high rotational speeds. The use of high-speed cutting technology (HSC) means that increasingly efficient cutting materials can be used. This results in a drastic reduction in machining time, and, in most cases, manual finishing work is no longer necessary – another immense competitive advantage. The excellent dynamic qualities of the machines with their highly efficient tool-



exchange systems also ensure the desired cost-optimized procedures in mechanical engineering, tool-, model- and mould-making. Depending on the task in hand, the services provided range from the construction of complete new machining centers to the manufacture of individual components for the modernization of existing large-scale machines: machine bases, CNC circular axes on hydrostatic bearings, coordinate and single-axis tables, flexible tool magazines or sturdy machine housings often make a decisive contribution to the improvement of production processes.





# Machining of non-ferrous materials



## Machining of non-ferrous materials



*High-tech machines for making these semi-finished products are used in the car- and waggon-manufacturing industry as well as for the production of cladding panels. They can carry out complete 5-axis machining with optimum efficiency.*

High-speed machining of light metal has become increasingly important, particularly from the point of view of weight saving. CNC machining centers from the Hamuel Reichenbacher company network produce perfect results when milling, drilling, cutting and measuring extruded profiles and technical components with complex geometry and of widely varying types. The automobile industry and automotive parts suppliers; the railway and aviation industries; aluminium forging-press departments and the tool- and mould-making



industry with its portal machining centers for free-form surface machining – all of these benefit from low-cost component production yet meet the highest technical standards. The control technology, which is extremely efficient and easy to operate, also contributes to a cost-optimized production process. Additional features include tool coding and tool changer systems, protective cabins for noise reduction or as a

safety measure, interfaces which link up with professional programming systems and a well-devised residue-disposal system. These are available for each product series and for all special machines as well. If, in addition to efficient machining, the requirement is for a large cutting capacity or outsize workpieces, then the



big gantry machining centers are the first choice. These machines have a high milling capacity and feed force, similar to that used in steel processing, which makes them the top-notchers in machining non-ferrous materials.







# Machining of plastics and composite materials

## Machining of plastics and composite materials



*Moulded plastic, whether as a deep-drawn part or as a glass-fiber reinforced component, represents a segment of the market in which manufacturers from the automotive, large-scale model and aviation industries rely on the outstanding quality of products from the Hamuel Reichenbacher company network.*

The processing of plastic covers a wide field: This includes the trimming of vacuum-formed parts, free formed carbon-fiber and glass-fiber reinforced parts and the heavy-duty machining of technical plastic parts, such as filter mats, for example. Here, CNC machining centers have to deal with extremely different requirements: On the one hand the requirement may be for a high milling feed-rate with a low level of chip removal and a high rotational speed of the milling spindle. This requirement can only be met by a high-



performance CNC control system. On the other hand, when machining thermoplastics the manufacturing cell must be able to provide a high level of chip removal with the lowest possible rotational speed of the spindle. These criteria can only be met by using current-regulated spindle technology. In the Hamuel Reichenbacher company net-



work this asset is a standard feature, as is an oriented spindle support. For composite materials, the highest possible standards of machining are required – in caravan production, for example, where the side panels have a layered structure made of aluminium, polyurethane foam and wood. Here, extremely high demands are made on the machining equipment and the capacity of the milling spindles must be optimized throughout the whole rotational speed range.

Specialists in interior fittings for vehicles; manufacturers of plastic technical components, spiral conveyors, display packaging or plexiglass parts for medical technology; those involved in processing foamed materials; and manufacturers of lightweight components for aircraft construction – they all rely on the expertise, dependability and first-rate technical skills available in the Hamuel Reichenbacher company network.



# Woodworking



## Woodworking

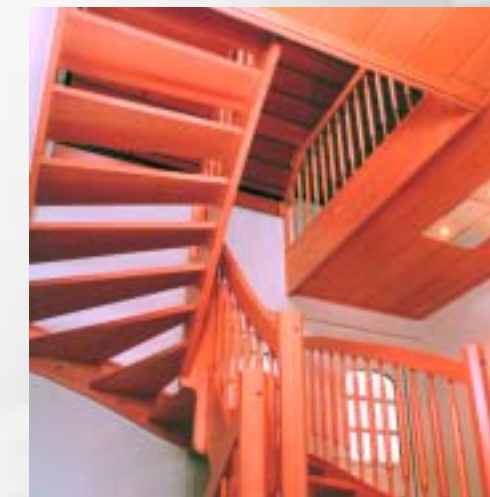


*When used for woodworking, CNC machining centers from the Hamuel Reichenbacher company network ensure a cost-optimized production process.*

Wood is a sensitive material which is easily damaged. Woodworking not only requires precision but also careful treatment of the surface. Thanks to 5-axis technology the milling head can be moved right round the workpiece in a single clamping process. There is no need for repeated clamping procedures, which means a great



saving of time and an immense increase in productivity. No matter what the task in hand, the machining centers made by the Hamuel Reichenbacher company network are flexible enough to tackle any job – whether it's milling, sawing, grinding, drilling or measuring. Thanks to the system's modular design, the basic unit can be fitted with a wide variety of proven standard



components, appropriately combined for the work in question. In addition to compact, movable por-



tal machines, manufacturing cells with several mobile tables and upright portal are also available. For the customer this means a new experience in relation to working speed and repeatability: for the machining of front panels, interior



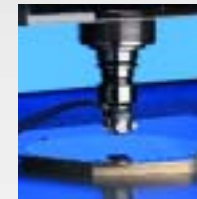
fixtures, decorative woodwork and musical instruments; for surface treatment in model- and mould-making; and for any other products made of wood. Any requirements which are not immediately connected with woodworking – for example in the production of large-scale models or when there is a need for metalworking in addition to woodworking – can be met without difficulty thanks to the extensive range of products available within the Hamuel Reichenbacher company network.





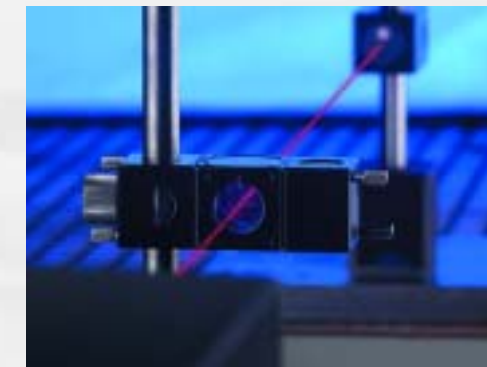
# Quality and service

## Quality and service



*Measurements to assess the dynamic and static variations in movement are of crucial importance in the manufacture of high-precision machines and installations.*

Machining centers and components from the Hamuel Reichenbacher company network are outstanding for their stability and trouble-free operation. As well as being extremely durable they are very easy to set-up, operate and service. The Service Department ensures that maintenance and repair work is done as quickly as possible: via a hotline, technicians are available more



or less round the clock. A detailed system of records provides information about every machine which the Company has made. The Hamuel Reichenbacher installations are equipped with a tele-diagnostic module which means that, from the parent company, maintenance, technical support and problem analysis can be provided for the machining centers worldwide. This in turn

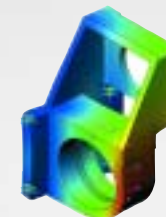
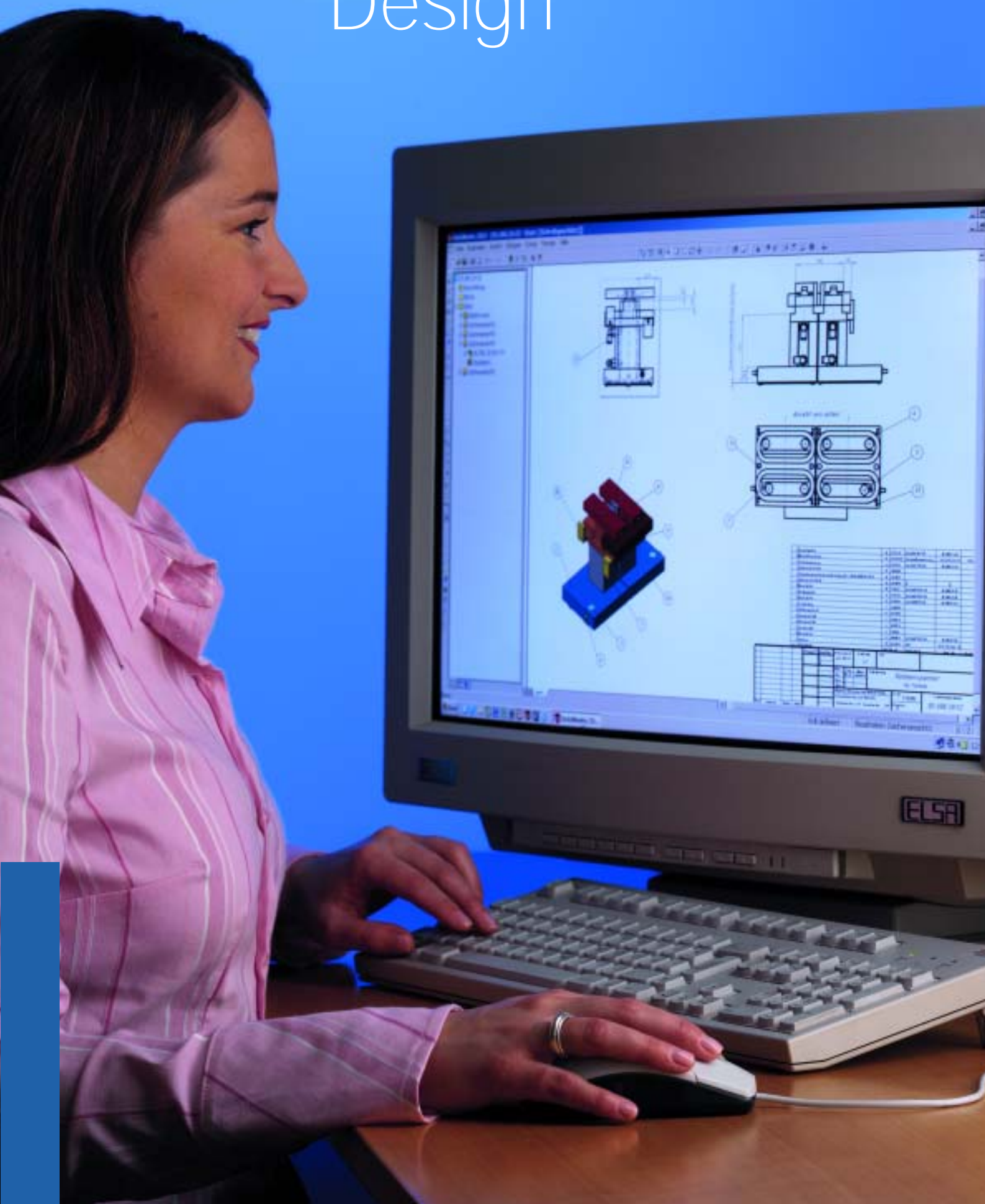


keeps machine down-time to a minimum and reduces costs. Hamuel Reichenbacher's innovative approach is evident not only in mechanical engineering but in After Sales Service as well. Of course, service also includes an ongoing dialogue and exchange of ideas with the customer.

Technical support, the transfer of know-how and the optimization of production processes all help to avoid machine down-time and loss of production. The Hamuel Reichenbacher company network provides a special training programme to keep machine operators and maintenance staff up-to-date with the latest technical developments. This includes courses for CNC programming, as well as for CAD programming systems.



# Design



*At the design stage of components, analysis carried out in accordance with the Finite Element Method (FEM) is a decisive factor for the optimization of mechanical structures and intrinsic forms.*

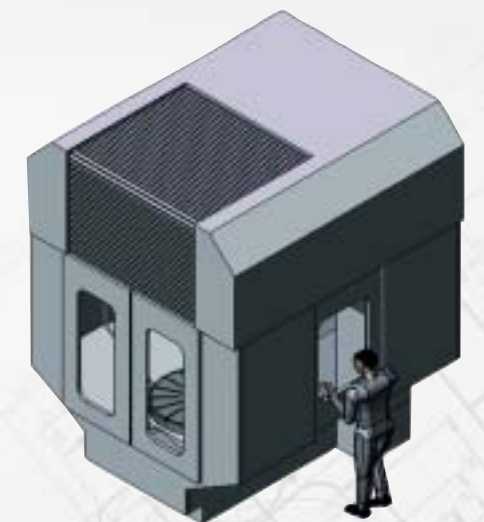
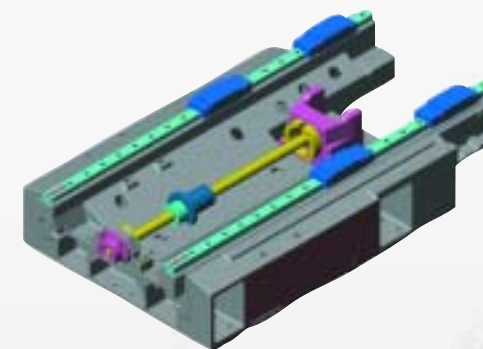
## Design

Committed engineers and technicians work out tailor-made, technical solutions aimed at providing the maximum benefit for the customer. An individual, productivity-support service helps to clarify the customer's wishes in detail. 3-D designs are sent to the customer via online data



the Hamuel Reichenbacher company network will meet all requirements for many years to come.

transfer to ensure mutual agreement on all points. Using the Finite Element Method (FEM) it is possible to make calculations for the optimization of mechanical structures, intrinsic forms, natural frequency and frequency response characteristics. An elaborate process-development



system monitors the compatibility of the required software and all the production, assembly, test and logistic procedures, thus guaranteeing quality at every stage. This ensures that products from



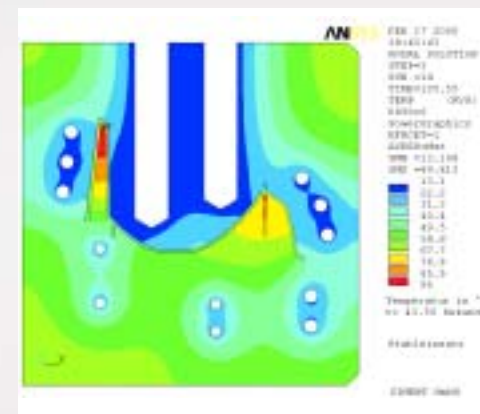
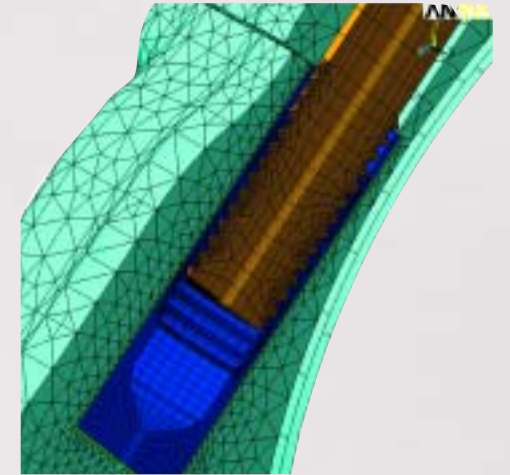
# A visionary approach with the future in mind



*A revolutionary idea: Parallel kinematic technology provides a new dimension of speed when machining workpieces.*

## Research and development

Within the Hamuel Reichenbacher company network the subsidiary known as Siment GmbH is responsible for research work. This company specializes in computer simulation and analysis using the Finite Element Method (FEM). In the making of machine tools it is extremely important, at the design stage, to obtain information about the potential characteristics of the components or about the attainable dynamic features of the drive mechanism. By means of their vibrational and modal analyses, FEM simulation techniques can take into account the rigidity values of the bearings and the linear guides, as well as of the ball-bearing guides and other elements of the drive mechanism and bearings. This provides optimum preliminary calculations. In the case of computer simulation, complex physical relationships and processes are demonstrated in relation to mechanical structures or in fluids, for example.



In addition, the research and development expertise available within the SCHERDEL Group can be called upon whenever an efficient laboratory infrastructure is required, in the case of materials research and development, for example. This ensures that the customer receives a top-quality product, tailored to his requirements in terms of efficiency and durability.

Thanks to a creative dialogue with customers, suppliers, partner companies and universities, and a constant awareness of developments in the global marketplace, the Hamuel Reichenbacher company network is able to produce ideas for machining centers of the future. Great importance is attached to the development of new patents and processes. A completely new concept of speed and dynamics has made technological developments possible which, in addition, will eventually lead to a reduction in mechanical components. However, with great innovative force, the traditional range of products is constantly being developed too, ensuring that they remain at the cutting edge of technology. "Made by Hamuel Reichenbacher" – that means: Meeting tomorrow's challenge – today.

