

# *Top Technology for Wood Machining*

*CNC-machining centres  
for handicraft businesses  
and industry*

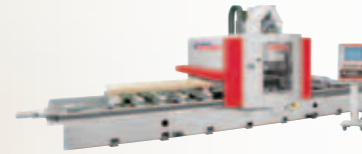
**HAMUEL**  
**REICHENBACHER**  
Members of the SCHERDELGroup



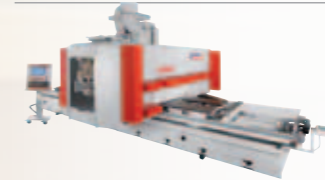
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## Furniture and interior construction

Object construction

## Wood construction and building elements

Staircase, door and window construction

Shipbuilding

## Façade engineering technology

### REICHENBACHER wood machining

Wood is a living, but also delicate material, for the machining of which apart from the required precision also the careful handling of its surfaces is of importance.

Once the component has been clamped, 5-axes technology allows for the milling head to be moved all around it, thus eliminating a repeated clamping operation and unnecessary set-up time, while permitting an enormous increase in production efficiency.

No matter what job is to be done – the machining centres of Reichenbacher Hamuel make are real all-rounders and prove their utmost flexibility in milling, sawing, grinding, drilling and measuring.





### From machine builder to system supplier

The selection of a suitable combination of proven standard components from a modular system provides access to many versions of equipping a unit. In addition to compact units with mobile portals, manufacturing cells are available, where a stationary portal is supplemented by several mobile tables.

The customer experiences a new dimension of working speed and repeatability when machining fronts, parts for interior construction, wooden decors, musical instruments, as well as when machining surfaces for model and mould construction and for all other wooden products.

Demands exceeding the possibilities of mere wood machining, for example those made in manufacturing big model parts, can be met by our comprehensive range of products without any problem.

### Technology for perfect 5-axes machining

First-class quality and high safety standards – those who have used one of our machines appreciate the know-how gathered over more than 60 years. The inventiveness, flexibility, precision and reliability of our machines have convinced our customers who manufacture doors, staircases, windows, building elements, furniture and many other products from wood, the high-value natural material.

#### REICHENBACHER STANDS FOR:

- More than 30 years of experience in 5-axes and multi-axes technology
- Best quality at high machining forces and great cutting depths
- Safe clamping of large, flat components, as well as of small and intricate components
- Assurance of absolute user safety
- Minimum downtime to ensure cost-efficient production



Machining of staircase strings on an ECO with 2 automatic beam tables.



Machining of a furniture body part with a 15-spindle drilling unit in an ARTIS.

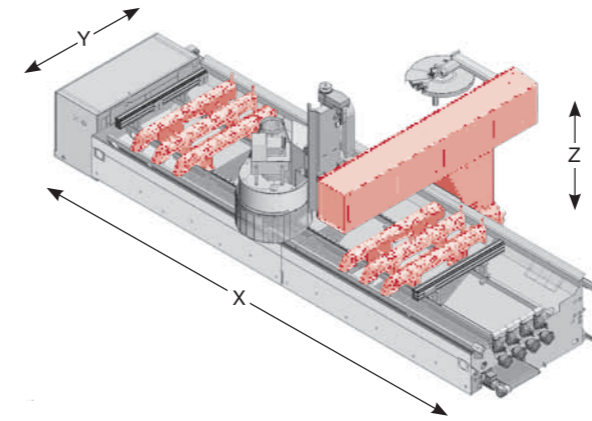


Cardanic 5-axes working unit (spindle 24 kW, undercut -20°) for the machining of solid wood.



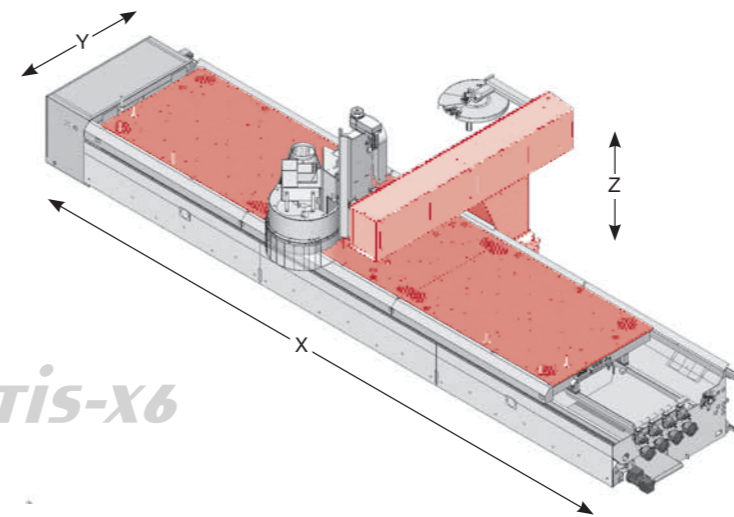
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**ARTIS-X4**

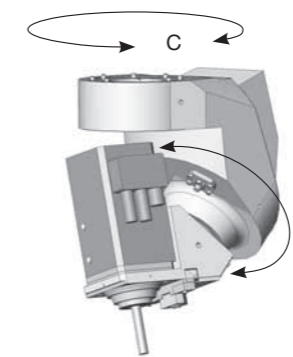


Characteristic for the **ARTIS** series is its substructure with a fixed machine table. The compact machine body is in welded design. The tools perform all feed movements. Loading is effected either from the front or the rear longitudinal side of the machine. The unit moves in the Y- and Z-direction on the cantilever that can in turn be displaced in the X-direction. The illustration shows a machine with a console table.

**ARTIS-X6**



The X-drive employs the proven and unique Reichenbacher Hamuel principle of a pre-stressed gear system. This guarantees high positioning accuracy and minimises gear rack wear throughout the entire life of the machine. Together with process-optimised control functionality, digitally driven axes with absolute measuring systems warrant for best machining results. The illustration shows a machine with a grooved table.



Part even of the standard scope of supply of the **ARTIS** is a cardanic working head and thus a full-value 5-axes machining unit. It is attached to the Z-slide. The spindle is installed at the rotary housing of the B-axis.

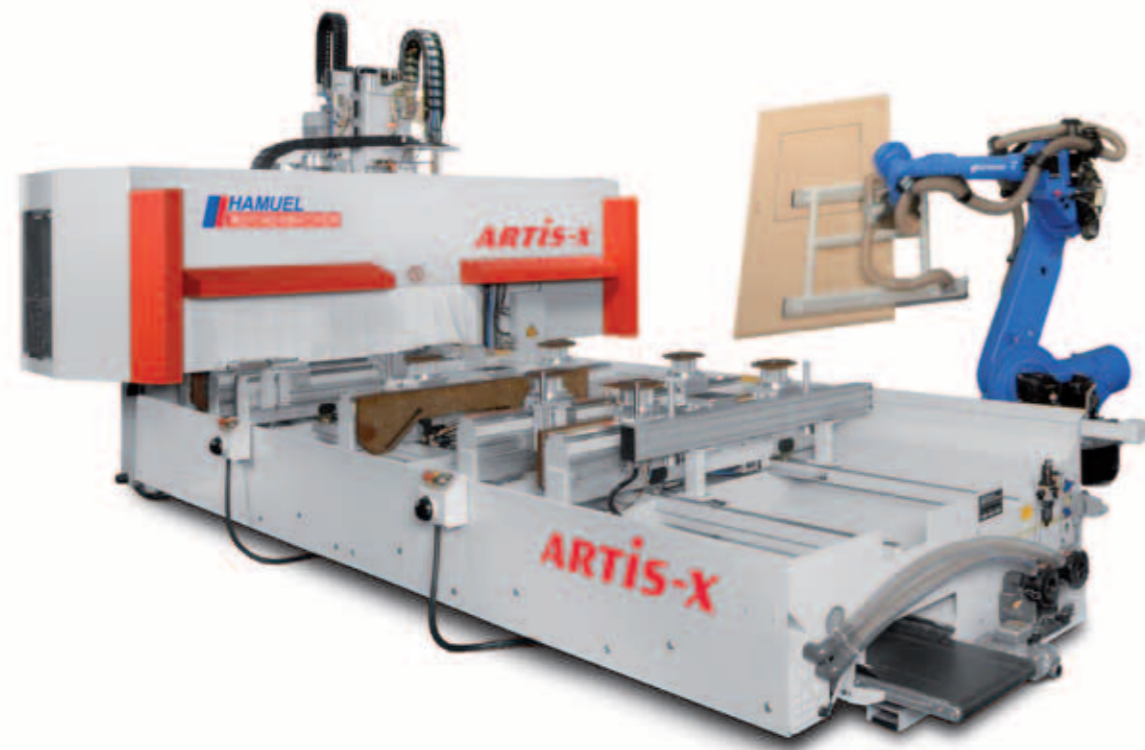
## Manufacturing to highest standards

Typical orders received by small and medium-sized handicraft businesses are characterised by high quality demands made on recurrent components and the flexibility required by small numbers of pieces. The CNC-machining centre ARTIS-X from Reichenbacher Hamuel satisfies these demands for efficient and flexible machines at a good price-performance ratio. Short set-up times, a variety of machining options and ease of operation are essential preconditions for directing the focus of technical progress in handicraft businesses to a small number of important investments and, thus, to achieving a purposeful increase in production efficiency.

Machines of Reichenbacher Hamuel make are renowned for their consistently high output and excellent up-time at utmost mechanical load capacity. They are characterised by their long operational life, easy handling and low maintenance requirements. For decades, first-class machining quality has been the top priority of Reichenbacher Hamuel. All these assets are to be found in the two expandable basic versions of the modular 5-axes ARTIS-X machining centre.

### The ARTIS system:

- 5 axes with interface for a multi-spindle drilling unit
- Multi-spindle drilling unit with 15 or 25 spindles
- Plate tool magazine with 22 places and pick-up or chain tool magazine with 36 places
- Encased machine portal with safety bumpers
- Plane table, grooved table, beam table or automatic beam table
- Siemens Sinumerik 840D sl control system



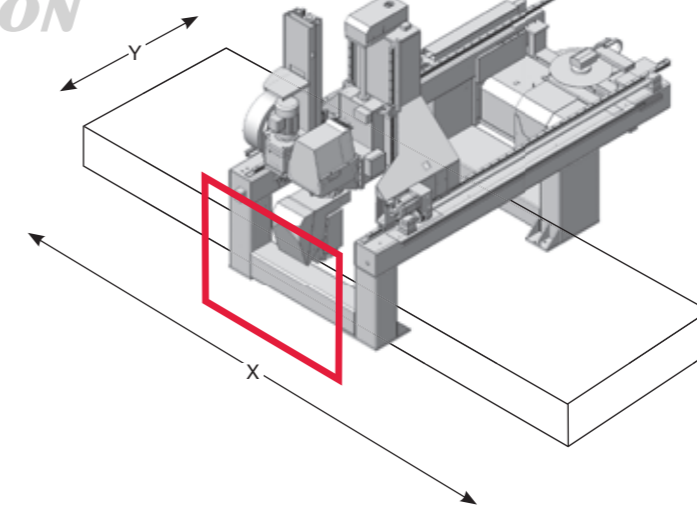
Safeguarding of the entire working area by safety bumpers provides for optimum loading possibilities: no safety shut-off mats are necessary and there are no limitations to alternate loading. The two basic types, part of whose standard scope of supply is a cardanic working head and thus a full-value 5-axes machining unit, only differ in terms of their table lengths. Their various versions span all areas, from handicraft applications to industrial requirements. The different table designs – plane table, grooved table, beam table and automatic beam table – meet every user's needs. The machine bed is in solid welded design. Exact positioning of the unit's cantilever in the X-direction is effected by ground precision guides and a rack drive powered by highly dynamic and maintenance-free servo drives.

ARTIS	Basic concept of the machine		
<b>Unit configuration</b>	5-axes milling units with cardanic spindle		
<b>Additional units</b>	Multi-spindle drilling units with 15 to 25 spindles Multi-spindle drilling units with 26 spindles (rotating)		
<b>Types of spindles</b>	Reckert make Power 14 kW Speed 24,000 rpm Tool holder HSK F64		
<b>Tool changers</b>	Tool changers with 22 or with 36 places Pick-up for saw blades		
<b>Extraction and chip removal</b>	Extraction hood (rigid) Chip conveyor		
<b>Machine table design</b>	HPL table plate (smooth or grooved) Aluminium table plate (smooth or grooved) Manual beam table (system RH or Schmalz) Automatic beam table		
<b>Working area (strokes of the axes)</b>	X-direction: ARTIS X4 = 4,760 mm ARTIS X6 = 6,760 mm	Y-direction: ARTIS X4 = 1,550 mm ARTIS X6 = 1,550 mm	Z-direction: ARTIS X4 = 485 mm ARTIS X6 = 485 mm
<b>Workpiece clamping</b>	Vacuum clamping devices Pneumatic clamping devices Special clamping devices		
<b>Control systems</b>	Siemens Sinumerik 840D sl (operator surface HMI Operate, Win7)		
<b>Control options</b>	Mobile operator desk HT2 hand-held unit (as an option) HT8 hand-held unit (as an option) Control extension (Siemens machining package milling) Control option remote diagnostics (Teamviewer) Control option machine data recording Control option OEM runtime license		
<b>Safety equipment</b>	Enclosure of the mobile portal including safety bumpers Light barrier (as an option) Safety fence (as an option) Laser scanners (as an option)		
<b>Additional equipment</b>	Loading and unloading systems Torque support for supplementary units Blasting nozzles Blast air ionisation	Broken tool detection Tool recognition system Laser projector	

Subject to changes inspired by technical progress.

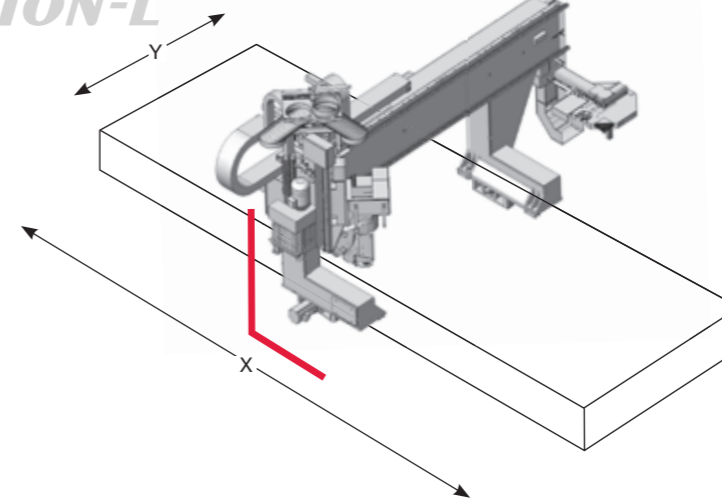


**vision**



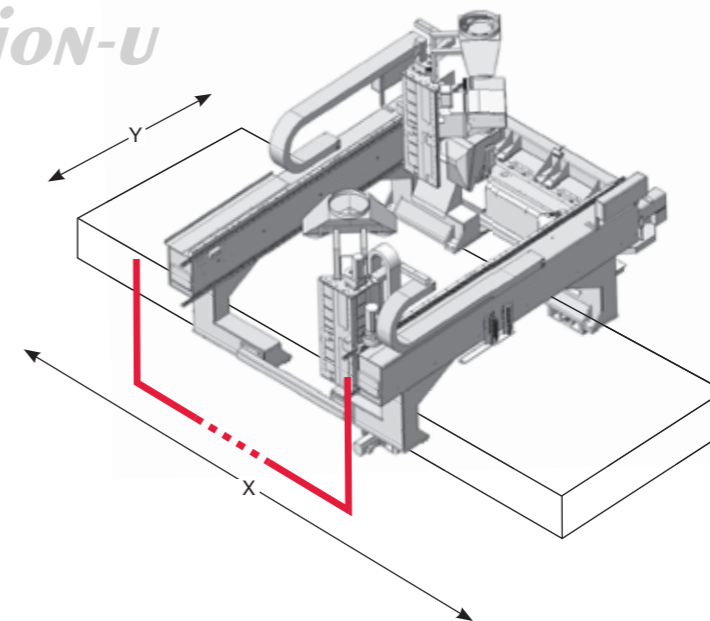
Characteristic for the **VISION** series is its machine substructure with a fixed table. The portal is mounted on this machine substructure and carries out the longitudinal movement (X-movement). All unit movements are performed within the enclosed portal equipped with safety bumpers. The main machine components are in ripped welded design to ensure an optimum rigidity or weight ratio, respectively. Thus, very good acceleration values can be obtained.

**vision-L**



The **VISION-L** allows for the mounting of up to two independent Y-slides one behind the other. Thus, the tools for a tool change can be taken from either of the two tool magazines while machining takes place in parallel, and the synchronous machining of two workpieces placed one behind the other can be effected – for example when 5-axes fork heads are used. The independent units are mounted on an L-shaped support and guarantee high up-time.

**vision-U**



Thanks to its U-shaped portal, the **VISION-U** offers a lot of varieties for parallel and single machining. This permits, for example, a tool change for both units from the same chain tool magazine while machining takes place at the respective other unit and omits the need to keep the same tool available twice. The use of up to two big cardanic 5-axes heads and of other comprehensive equipment guarantees maximum flexibility, such as the synchronous machining of two workpieces clamped one next to the other and/or one behind the other in an offset position.

## The components show what the machine can do

In many demanding applications, the basic version of the VISION series has already proven its capabilities at our customers. Its stability and precision correspond to the standards set by all Reichenbacher Hamuel machines. The machines excel by their good dynamics and are therefore predestined for reducing manufacturing costs while keeping productivity high. This is why these machining centres are an excellent choice for the order-related manufacturing even of the smallest batch sizes. Moreover, they offer an outstanding cost-/performance ratio.

The VISION-L and -U types supplement the reliable VISION series. What is so special about these machines is their variability in size and their multitude of different machining units to choose from. Up to four independent Y-slides are available to be combined in these units for single and parallel machining purposes. Thanks to their extremely rigid machine construction, a diversity of machining units can be used next to each other or one behind the other.

Equipped with a cardanic working head, the VISION Sprint permits the three-dimensional machining of freeform surfaces and contours. Given this multi-side machining in freely definable planes, there are almost no limits to flexibility.

### The VISION system:

- Even after 20 years we are still market leader with our safety concept for machines with mobile portals
- Enclosed portal made of sheet steel with safety bumpers
- No safety shut-off mats
- No safety barriers
- Safe view of the working process through generously dimensioned windows



The high-performance units in the portal are supplied with tools either by plate magazines with 12 or 24 places or by a joint chain magazine with up to 120 places. In this case maximum time savings are possible by performing tool change in parallel. Owing to their high transmissible torque, the hollow cone shanks used are particularly suitable for high-speed machining. To perfect flexibility, a multi-spindle drilling unit with individually controllable spindles can be added.

VISION	Basic concept of the machine		
<b>Unit configuration</b>	3-axes milling units with vertical spindle 4-axes milling units with vertical spindle 5-axes milling units with cardanic spindle		
<b>Additional units</b>	Multi-spindle drilling units with 5 to 60 spindles Sawing units Printing and labelling system		
<b>Types of spindles</b>	Reckert make Power 4.6 kW – 55 kW Speed 0 – 60,000 rpm Tool holder HSK F25 – B80	Omlat make Power 3.5 kW – 20 kW Speed 0 – 45,000 rpm Tool holder HSK F25 – B80, ER 25, SK 40	
<b>Tool changers</b>	Tool changers with 12 to 80 places Pick-up for saw blades Pick-up for special units		
<b>Extraction and chip removal</b>	Extraction hood (rigid or adjustable in height) Chip conveyor Cleaning stations		
<b>Machine table design</b>	HPL table plate (smooth or grooved) Aluminium table plate (smooth or grooved) Manual beam table (system RH or Schmalz) Automatic beam table Steel bars with fitted and threaded bushes		
<b>Working area (strokes of the axes)</b>	X-direction: VISION I = 3,740 mm VISION II = 6,140 mm VISION III = starting at 6,940 mm (extension in steps of 800 mm)	Y-direction: VISION = 1,600 mm VISION T = 2,200 mm VISION TT = starting at 2,800 mm (extension in steps of 300 mm)	Z-direction: VISION = 480 mm VISION H = 780 mm
<b>Workpiece clamping</b>	Vacuum clamping devices Pneumatic clamping devices Special clamping devices		
<b>Control systems</b>	Siemens Sinumerik 840D sl (operator surface HMI Operate, Win7) Heidenhain – TNC 640		
<b>Control options</b>	Mobile operator desk Suspended operator desk HT2 hand-held unit (as an option) HT8 hand-held unit (as an option)	Control extension (Siemens machining package milling) Control option remote diagnostics (Teamviewer) Control option machine data recording Control option OEM runtime license	
<b>Safety equipment</b>	Enclosure of the mobile portal including safety bumpers Light barrier (as an option) Safety fence (as an option) Laser scanners (as an option)		
<b>Additional equipment</b>	Loading and unloading systems Torque support for supplementary units Blasting nozzles Blast air ionisation Minimum quantity lubrication	Rotary feed-through for coolant Broken tool detection Tool recognition system Camera system Laser projector	

Subject to changes inspired by technical progress.



## Highly efficient staircase production

This machine uses three additional milling motors for your staircase production. These units are mounted to the Y-slide and connected to the cardanic head. Each milling motor moves downward individually and is equipped with collet chucks.

As a standard, in staircase production a motor (9.0 kW) is used for shaping the outer contours of strings and steps. Another motor (6.7 kW) processes the slots and grooves at the steps and strings. The design of the third milling motor (6.7 kW) with integrated height-tracing (float-mounted) permits the manufacture of high-precision profiles at steps and strings. This concept allows for the main processes in staircase production to be assigned to several milling spindles.

Thus, tool changing time is minimised. The utilisation of the main milling motor at the cardanic working head is limited to horizontal and freeform processes, as well as to sawing processes at the steps. Moreover, the tool changing system moves along in the X-axis next to the main milling motor. Compared to other solutions, thanks to a reduction in tool changing time this machine concept results in a savings potential of about 20 % in staircase production.

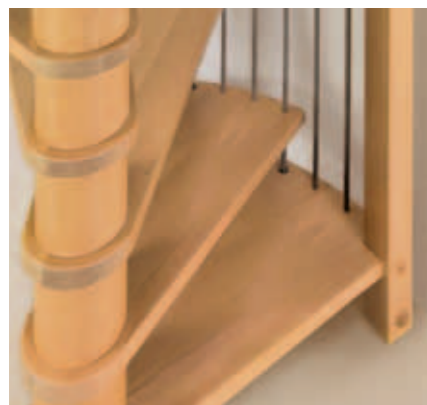
### The VISION-ST system:

- Free design of all conceivable types of staircases and their fully automatic production
- Best quality at high machining forces and great cutting depths
- Safe clamping of big flat components, as well as of small and curved components
- Assurance of absolute user safety
- Easy cleaning with little effort
- Minimum downtime for cost-effective production



VISION ST	Basic concept of the machine		
<b>Unit configuration</b>	5-axes milling units with cardanic spindle		
<b>Additional units</b>	3 vertical milling motors incl. 2 tracing rings Multi-spindle drilling units with 5 to 15 spindles		
<b>Types of spindles</b>	Reckert make Power 15 kW Speed 1,000 – 24,000 rpm Tool holder HSK F63		
<b>Tool changers</b>	Tool changers with 12 to 80 places Pick-up for saw blades		
<b>Extraction and chip removal</b>	Extraction hood (rigid) Chip conveyor		
<b>Machine table design</b>	Manual beam table (system staircase RH) Automatic beam table		
<b>Working area (strokes of the axes)</b>	X-direction: VISION-ST = 6,140 mm	Y-direction: VISION-ST = 1,600 mm	Z-direction: VISION-ST = 480 mm
<b>Workpiece clamping</b>	Vacuum clamping devices Pneumatic clamping devices Special clamping devices		
<b>Control systems</b>	Siemens Sinumerik 840D sl (operator surface HMI Operate, Win7)		
<b>Control options</b>	Mobile operator desk Suspended operator desk HT2 hand-held unit (as an option) HT8 hand-held unit (as an option)	Control extension (Siemens machining package milling) Control option remote diagnostics (Teamviewer) Control option machine data recording Control option OEM runtime license	
<b>Safety equipment</b>	Enclosure of the mobile portal including safety bumpers Light barrier (as an option) Safety fence (as an option)		
<b>Additional equipment</b>	Torque support for supplementary units Blasting nozzles Broken tool detection	Tool recognition system Laser projector	

Subject to changes inspired by technical progress.



3x positionable milling motors mounted at the front of the Y-slide and connected to the cardanic working head.



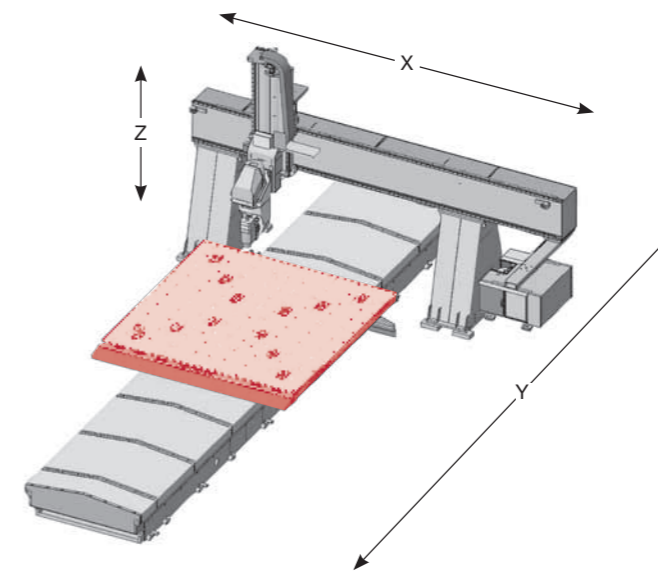
Clamping device left and right for the alternate machining of steps. Suction cup design: central suction cup and thus no need to change the device.



Interpolating 5-axes machining. The handrail is completely machined and cut to length. Design and programme established by your software company.

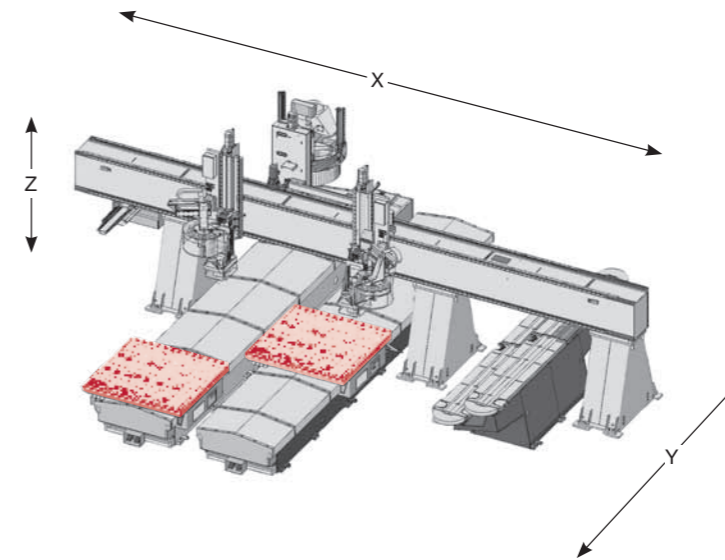


**ECO-A**



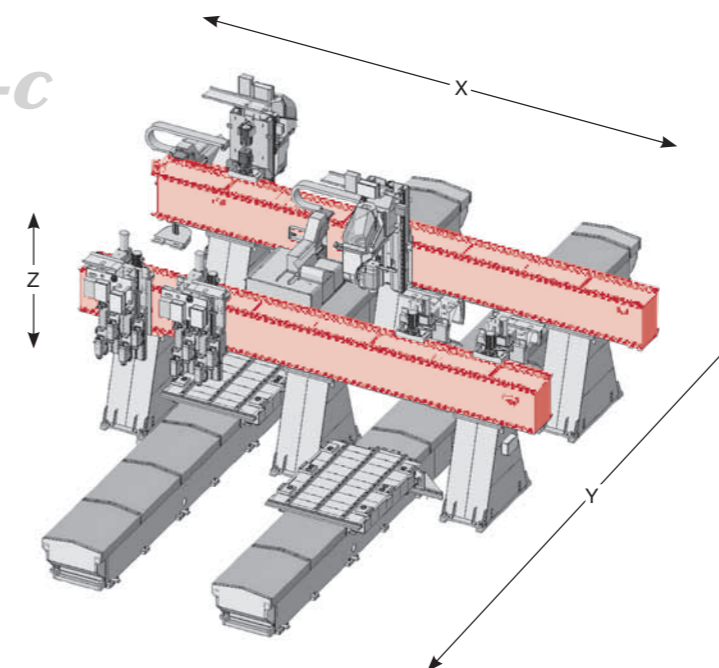
A fixed, low-vibration 2-column portal with one mobile machining table is the characteristic feature of the **ECO-A**. The machining dimensions, the configuration of its units, the tool changer, the clamping system for the workpieces, etc. can individually be adapted to customer specifications. The same applies to all machines of the ECO series.

**ECO-B**



A fixed, low-vibration 2-column portal with two mobile machining tables is the characteristic feature of the **ECO-B**. The tables are arranged directly next to each other and can be coupled to allow for the machining of large components.

**ECO-C**



A fixed, low-vibration 3-column portal with two mobile machining tables is the characteristic feature of the **ECO-C**. The tables are arranged between the left and centre portal column or between the centre portal column and the right one, respectively. Given the large distance between the tables and the existence of two machining units, this permits the completely independent processing of components on the two halves of the machine.

## A synonym for flexibility

The ECO machining centres, a series of utmost flexibility and efficiency, are proof of the experience Reichenbacher Hamuel has acquired in the field of special engineering. The ECO series combines all qualities of Reichenbacher Hamuel, such as reliability, swiftness and precision, to apply them to all types of machining. The low-vibration portal, which rests on two or three columns depending on the size and execution of the tables, carries one or several slides (as an option also at the rear side of the portal) that perform the transverse and vertical movements of the working units.

Depending on the manufacturing tasks at hand, the ECO can be equipped with one or two machining units controllable via separate NC-channels. The basic machine possesses one or two mobile machining tables. Moreover, there is the option of installing supplementary machine tables, for example to carry out set-up work while the machine is in alternate operation and to avoid production interruptions for loading purposes. Loading of the machining tables can be effected from three sides. The great variety of configurations always warrants for utmost production efficiency and up-time.

### The ECO system:

- **The great variety of configurations always warrants for utmost production efficiency and up-time.**
- **Operation in parallel on two independent machining tables, which can also be coupled**
- **5-axes fork-shaped or cardanic head for high-precision machining**
- **Upon request, customised solutions for machine table configuration or CNC-control system design will be projected and offered**



A coordinate table, a programmable beam table with quick-clamping devices, and an automatic pin table permit the order-specific production of components of batch size 1 to the same quality standards as applied to serial production. The ECO is definitely no off-the-shelf machine. Your suggestions and requests will become the basis of our planning and elaborate offer.

Of course, our projecting and offer submission will take into account your wishes as to special machine dimensions, customised solutions regarding the configuration of the machine table or the design of the CNC-control system. At Reichenbacher Hamuel the ECO is not merely a machine, but part of a system.

ECO	Basic concept of the machine		
<b>Unit configuration</b>	3-axes milling units with vertical spindle 4-axes milling units with vertical spindle 5-axes milling units with cardanic or fork-shaped spindle		
<b>Additional units</b>	Multi-spindle drilling units with 5 to 60 spindles Sawing units Printing and labelling system		
<b>Types of spindles</b>	Reckert make Power 4.6 kW – 55 kW Speed 0 – 60,000 rpm Tool holder HSK F25 – B80	Omlat make Power 3.5 kW – 20 kW Speed 0 – 45,000 rpm Tool holder HSK F25 – B80, ER 25, SK 40	
<b>Tool changers</b>	Tool changers with 12 to 80 places Pick-up for saw blades Pick-up for special units		
<b>Extraction and chip removal</b>	Extraction hood (rigid or adjustable in height) Chip conveyor Cleaning stations		
<b>Machine table design</b>	HPL table plate (smooth or grooved) Aluminium table plate (smooth or grooved) Manual beam table (system RH or Schmalz) Automatic beam table Steel bars with fitted and threaded bushes		
<b>Working area (strokes of the axes)</b>	X-direction: Customer-specific	Y-direction: Customer-specific	Z-direction: Customer-specific
<b>Workpiece clamping</b>	Vacuum clamping devices Pneumatic clamping devices Special clamping devices		
<b>Control systems</b>	Siemens Sinumerik 840D sl (operator surface HMI Operate, Win7) Heidenhain – TNC 640		
<b>Control options</b>	Mobile operator desk Suspended operator desk HT2 hand-held unit (as an option) HT8 hand-held unit (as an option) Control extension (Siemens machining package milling) Control option remote diagnostics (Teamviewer) Control option machine data recording Control option OEM runtime license		
<b>Safety equipment</b>	Mobile tables with safety bumpers Light barrier (as an option) Safety fence (as an option) Laser scanners (as an option)		
<b>Additional equipment</b>	Loading and unloading systems Torque support for supplementary units Blasting nozzles Blast air ionisation Minimum quantity lubrication	Rotary feed-through for coolant Broken tool detection Tool recognition system Camera system Laser projector	

Subject to changes inspired by technical progress.

*Mature flexibility...*



© Thoni Treppen GmbH

*Top technology for staircase machining*



© Thoni Treppen GmbH



### **Strong for newel posts and handrails**

Efficient 5-axes machining is an important key to success in staircase manufacturing. The two basic types of the ARTIS-X, the standard versions of which already include a cardanic working head and thus a full-fledged 5-axes machining unit, merely differ in table lengths and table designs. The equipment configurations available span a range from applications in artisanry to the demands made by industry.

In the case of the ARTIS-X6 shown here, two newel post clamping units with six clamping devices, i.e. three devices per station, are fixed to the beams. Four newel posts can be clamped next to each other. The beam table with its eight consoles is arranged in the Y-direction and can manually be displaced in the X-direction in line with a scale.

The comprehensive safeguarding of the working area with safety bumpers ensures optimum loading possibilities; no pressure sensitive mats will be required and there are no limitations to alternate loading.



### **From a solo to a quartet**

A 5-axes main spindle and three supplementary milling units attached to the same support spread machining work to units particularly designed for staircase manufacturing. In standard application, one motor is used to form the outer contours of the strings and steps. Another motor realises the mortises and setting grooves at the strings and steps. The third milling motor is responsible for high-precision profiling at the steps and strings.

The automatic set-up table system reduces time and effort, and thus a higher production rate is achieved in the same period of time. As a result, the process planner in charge can respond with great flexibility in assigning the enormous range of components – various short or long strings, steps, handrails, newel posts or special parts – with respect to size, material and intricacy to that machine, which, owing to its technical configuration, will be capable of realising the machining modes in an optimum way. Different clamping units, such as jigs, newel post clamping devices or vacuum suction cups, permit the safe machining of all these staircase components.

A door at your fingertips...



© Bach Heiden AG

Perfect interaction in door manufacturing



© TPFUW-Teilenwerk GmbH



### Simultaneous CNC-technology for intricate components

The 5-axes machining centre ECO-1232-B Sprint consists of a fixed 2-column portal with two separate mobile machining tables, each of which is equipped with six support beams. The machining tables can electronically be coupled if the need arises. All customary lightweight construction materials, wood composites and plastics, as well as all highly compressed materials and other composites, can be machined without any problems. The two highly efficient 5-axes units with 24 kW spindles, each of which is equipped with a torque support, permit the use of additional heads from the tool magazine at any angular position.

Special scanning cycles ensure dimensionally accurate machining in all axes. Two tool magazines with 40 places, each, for maximum tool lengths of 400 mm, as well as two special pick-ups for circular saw blades 520 mm in diameter for cutting depths of up to 120 mm, allow for high flexibility. Efficient blasting nozzles guarantee optimum cleaning of the components and therefore high quality and long tool life.

There are almost no limits even where the materials are concerned: no matter whether MDF, wood composites, solid wood or industrial foams, CFRP, GFRP, glass or aluminium composites – all these are processed by the machining centre at high repeat accuracy.



### Complete machining without standstills

A modern high-efficiency machining centre has entirely been adapted to the requirements of a door manufacturer. This aimed at a significant reduction in machining times for the door manufacturer's range of special doors. The core part of the machining centre is a conventional CNC-milling machine of the VISION-III-TT-U series equipped with two 5-axes units, a vibration monitoring system and a chain tool magazine with 60 places.

The advantage of two machining units is an obvious one: while one unit is drilling a hole for a door viewer, the other is already being set up for the next production step, for example the milling of the vision panel cut-outs. Thus, standstills have become a thing of the past. The same principle is implemented using two pin tables. The pins are controlled in such a way that each door can be clamped to suit its distinct machining profile.

Two additional unit slides, which can be displaced by separate NC-axes, are located inside the machine bed. The highlight: on each slide there are two milling and drilling motors equipped with fixed tools (one for the lock case and one for the groove for the door fittings, each), which can be positioned with respect to each other.



### Siemens 840D (sl)

#### When using the SINUMERIK 840D you count on

- a maximum of performance and flexibility, above all for complex multi-axes lines
- consistent openness from the operation to the NC-core
- certified safety integrated functions for man and machine

#### Typical applications

High-performance milling and turning is one of the strengths of the SINUMERIK 840D sl. Further, the SINUMERIK 840D sl provides access to a nearly inexhaustible technological range: from grinding and laser machining to gearwheel machining, through to multi-tasking machining. With its superior system flexibility, the SINUMERIK 840D sl is the CNC of choice when opening up completely new technological fields.

#### Technological survey:

- Drive-based modular CNC
- Multi-technology CNC
- Up to 93 axes / spindles
- Up to 30 machining channels
- Modular panel concept
- Up to 19" colour display
- SIMATIC S7-300 PLC

### Heidenhain TNC 640

#### Programming suitable for the workshop

You can programme the usual milling, drilling and – with the TNC 640 – also turning operations right at the machine – in plain text dialogue, the workshop-oriented programming language used by HEIDENHAIN. With practical dialogues and conclusive pictures the TNC 640 will give you optimum guidance, of course also where turning operations are concerned.

#### Ease of operation

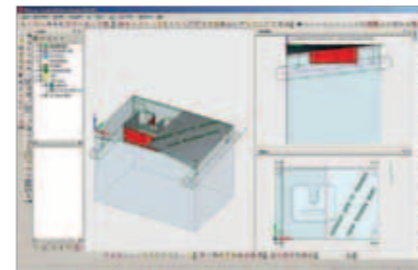
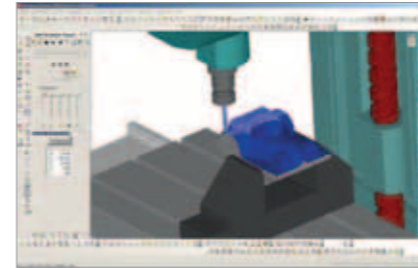
In the case of simple operations – such as the face milling and face turning of surfaces – there is no need for you to create a programme for the TNC 640. This is because it can just as easily be operated manually – by means of the direction keys or, if better fine-tuning is needed, by means of the electronic hand-wheel.

#### External programme creation

External programming of the TNC 640 is just as convenient. Its fast Ethernet interface warrants for the shortest transfer times even of more comprehensive programmes.

#### Universal use

The TNC 640 can be used for HSC- and 5-axes machining for machines with up to 18 axes.



### Licom AlphaCAM

Licom AlphaCAM is one of the leading CAD / CAM-solutions and perfect for any application from simple 2-axes machining up to the programming of intricate 5-axes tasks.

#### Core functions

All Licom AlphaCAM modules use consistent common core functions for designing lines, auxiliary lines, arcs, circles, polygons, splines and ellipses, or for modelling 3D-surfaces.

#### Advanced milling

Licom AlphaCam is the optimum choice for the milling of intricate contours, the broaching of pockets, or the efficient machining of bore holes.

#### Multi-side machining

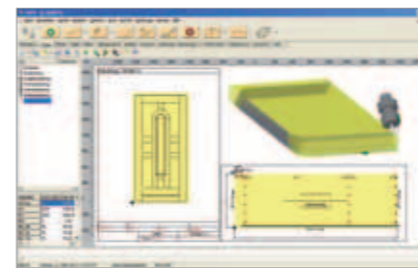
Multi-side machining on machining centres with 4- or 5-axes indexation can easily be programmed in AlphaCAM.

#### 3D-milling

Numerous 3D-roughing and finishing strategies for surfaces, STL-bodies and other native CAD-solid-models are at your disposal in AlphaCAM.

#### 3D-engraving

Graphics and texts can easily be established and edited by means of the efficient 3D-engraving function of AlphaCAM.



5-axes machining and layout programmes for door frame elements in NC-HOPS.

### NC-HOPS

The use of NC-Hops as a CAD / CAM application permits the visualisation of dynamic components within a very short time. This maximises productivity and is a fast way to a finished product. Its powerful macro technology and the always up-to-date graphical representation support the user in creating predefined or variable components.

A flexible library concept guarantees the continuous enhancement of self-defined working processes and complete components. The neutral component description, which is not linked to a certain machine, omits the need to programme time-consuming approach and return movements, positioning sequences or special functions at the machine. The conversion of drawing data into the CNC-machine language is done within the framework of a well-engineered post processor concept.

Tool-specific safety and approach distances, as well as feed rates, guarantee the highest degree of safety possible. 3D-visualisation shows travel distances and tool orientation and clearly depicts the entire component. Using the mouse, any view of the component can be shown. The system safely translates these machining strategies, which are independent of a specific machine, into the language applicable to the respective type of control system used.



Machining centre type ECO with tables that can be coupled for the processing of plate sizes up to 3.3 x 7.0 m.



VISION with pin table: 12 corner steps are machined within 12 minutes (including set-up).



VISION-III-T for machining walls for wooden houses up to dimensions of 13,500 x 3,200 x 250 mm.



Working units of a VISION-ST (staircase production) with 5 axes and three additional milling motors.



Glulam-machining (up to 50 m) with a 5-axes working unit (spindle 55 kW, saw blade 800 mm).



ECO with 2 tables and 4 units for nesting, including tool changers with 12 places to move along.



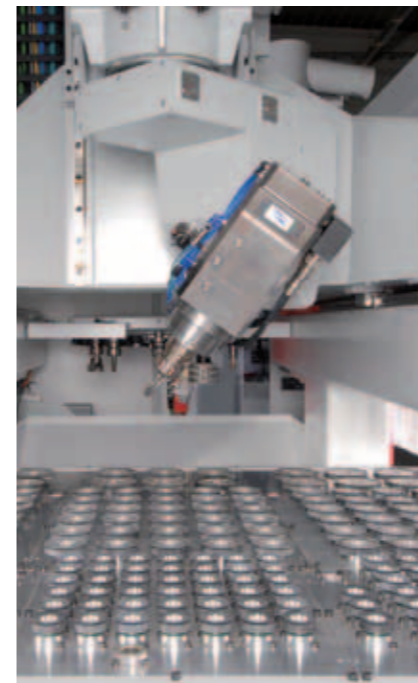
ARTIS with special clamping devices for the machining of doors, furniture, tables and acoustic panels.



Automatic beam table with individually controllable clamping devices for the machining of round window arches.



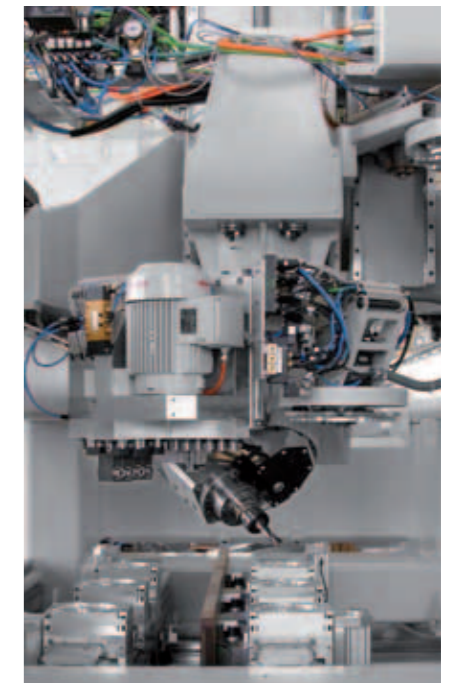
Door machining with cut-out on a VISION with automatic beam table.



Completely new possibilities open up for the production of individual pieces, when a pin table is used – a unique table and clamping version.



ARTIS-X with automatic beam table, multi-spindle drilling unit with 25 places and chain tool magazine with 36 places.



Up to four units warrant for maximum flexibility at high efficiency.



**Local roots,  
worldwide presence**

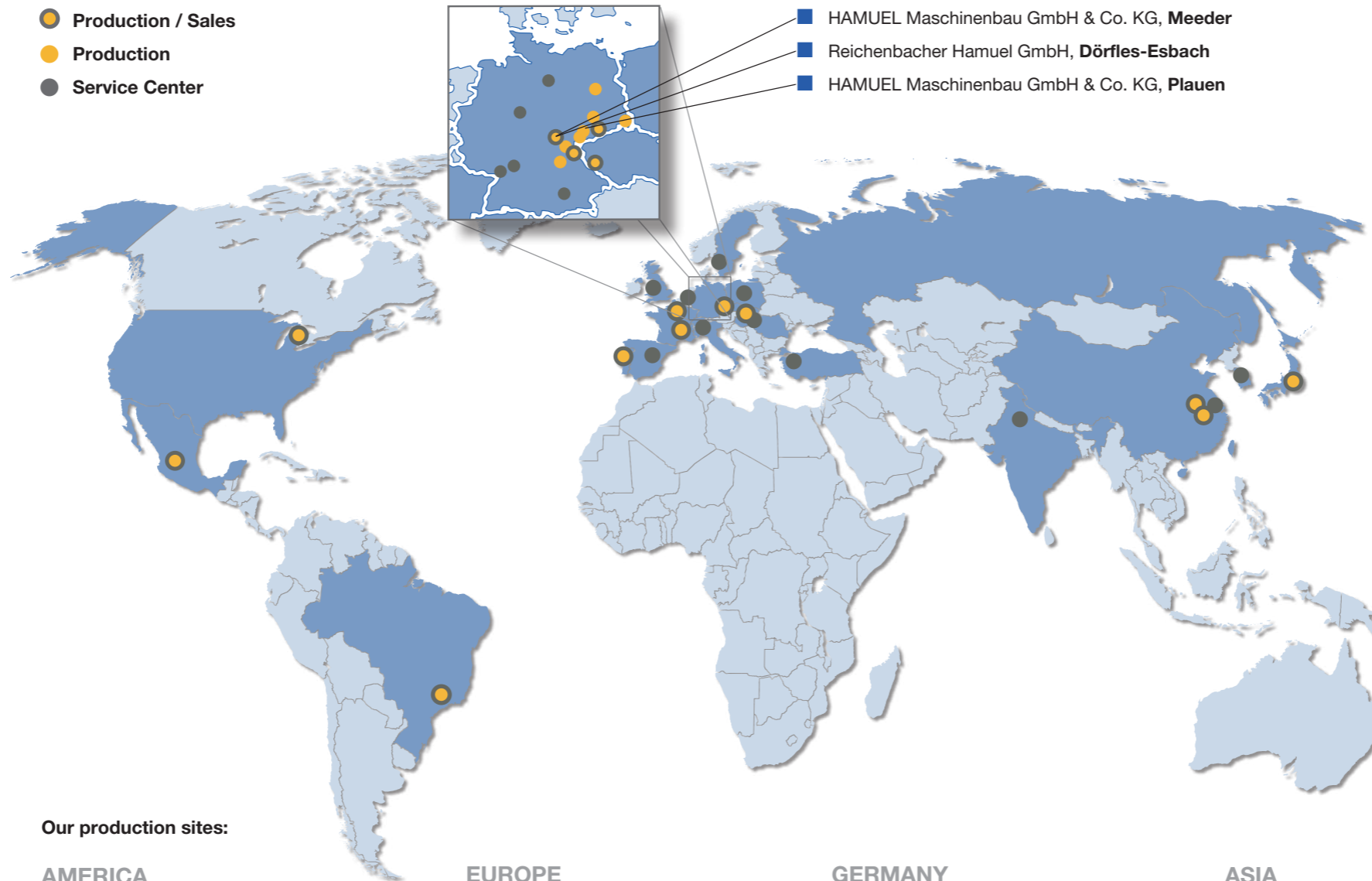
The SCHERDEL group of companies with its headquarters at Marktredwitz in the North-East of Bavaria has gone global featuring 29 locations with 37 production sites and more than 4,800 employees. The members of the SCHERDEL group offer to the market a wide range of products and services, while the individual companies are operating flexibly and autonomously in the market.

Each of these companies can resort to the longstanding experience and the know-how of the other members of the group. This results in precious synergies that will not only save the customer's time and money, but also present him with entirely new perspectives.

The fields of mechanical and plant engineering, as well as tool manufacture, of the SCHERDEL group alone employ more than 600 people. Our customers appreciate the strong synergies inherent in our group of companies, as in accordance with the "full-service-principle", they provide them with comprehensive solutions to their problems.



- Production / Sales
- Production
- Service Center



**Our production sites:**

**AMERICA**

Brazil, Sorocaba  
Mexico, Silao  
USA, Muskegon

**EUROPE**

France, L'Arbresle  
France, Beauvais  
Portugal, S. J. da Madeira  
Russia, Kaluga  
Slovakia, Myjava  
Czech Republic, Bor

**GERMANY**

Berlin  
Chemnitz  
Coburg  
Erlangen  
Marktredwitz  
and its region  
Marienberg  
Plauen  
Röslau  
Seiffhennersdorf  
Treuen

**ASIA**

China, Anqing  
China, Huzhou  
Japan, Aichi



**The HAMUEL REICHENBACHER  
group of companies**

The Reichenbacher Hamuel GmbH is part of the HAMUEL Reichenbacher group of companies. The other companies are the HAMUEL Maschinenbau GmbH & Co. KG at Meeder, as well as the HAMUEL Maschinenbau GmbH & Co. KG at Plauen. These three companies operate under the name of HAMUEL Reichenbacher.

Almost 100 years of experience in mechanical engineering, as well as about 30 years of know-how in CNC-machining are self-explanatory: nearly 4,000 CNC-machines produced by this group are in use in the most diverse industries all over the world. Many in-house developments and patents document the great inventive capacity of this group of companies.

**Our products:**

- HSC-turn-milling centres
- CNC-machining centres
- Multi-technology milling machines
- Portal milling machines
- Component manufacturing
- Mineral casting
- Software
- Machine installation
- Retrofit





### **Qualified service for your CNC-applications**

Our machining centres are renowned for their high capacity and up-time, their long service life and their particular ease of operation, assembly and service. A service unit responsible for the after-sales service for Reichenbacher Hamuel machines worldwide will be at your side so that you can make optimum use of these advantages.

### **Service department**

Our service department can be reached under the following telephone numbers:

Monday – Thursday from 7 a.m. to 5.30 p.m.

Friday from 7 a.m. to 3.30 p.m.

Customer hotline +49 9561-599-300

Spare part service +49 9561-599-400



### **Premium service**

Availability of our hotline:

Monday – Thursday from 5.30 p.m. to 10 p.m.

Friday from 3.30 p.m. to 10 p.m.

And on Saturday, Sunday and public holidays from 8 a.m. to 4 p.m.

- Guaranteed reaction within 24 hours
- Quick and uncomplicated remote servicing free of charge
- Fitters on-call duty also over the weekend
- Spare part availability and immediate delivery

