CNC MILLING AND MACHINING CENTRES
The Company

EiMa Maschinenbau GmbH develops, manufactures and sells CNC milling and machining centres.

The company's portfolio includes machines used for 5-axis machining of various materials such as steel, aluminium, plastics, composites and wood.

The company was founded in 1985. Since then, the company’s know-how has expanded on an international level that is respected by customers in many different industries. To name just a few examples, EiMa systems are used in the automotive industry, aerospace and in model and mould making.

These are all areas in which there is a need for particularly high precision, a high degree of process reliability and individual solutions.

Our innovative engineering and our well-defined quality awareness have enabled us to establish an excellent reputation on these markets.

The use of future-orientated technologies, wide-ranging application experience and the ongoing training and further training of staff form the basis for our impressive results. Take advantage of our competence.
**Machining centre for high-volume components, mainly aluminium or ureol.**

Sturdy construction, mobile portal at the top, precise metal machining. The well thought-through, fully developed modular system guarantees optimum adaptation to any machining job and any workpiece size. Its range of possible uses extends from 1:1 models used in automobile design, to aircraft parts and boat hulls to railway construction components.

**The GAMMA XL series was developed for heavy HSC machining of high-volume components made of steel and aluminium.**

Its superb properties make it particularly well suited to the exacting demands of mechanical engineering, as well as for model and mould making. In this field too, the perfect modular system guarantees optimum adaptation to any machining job. The linear design in particular brings the user maximum dynamics combined with maximum accuracy thanks to the mechatronically calculated machine concept. You can choose between motor spindles with HSK-A63 and HSK-A100, and torques of between 120 Nm and 300 Nm.

### GAMMA L

**Controller:** Siemens 840D sl, Heidenhain iTNC 530

**5-axis milling heads:** C3, S3, C3E

**Drive technology:** X-axis: Toothed belt drive, Y-axis: Toothed belt drive, Z-axis: Toothed belt drive

**Protection:** Complete housing with folding sliding roof

**Tool changer:** 20 or 30 tools in the plate magazine

**Machine table:** Grey cast iron table with T-slots (optionally aluminium grid plate)

**Travel axis X-axis distances:** 2,500 mm to 3,500 mm

**Travel speed X-axis:** 60 m/min to 100 m/min

**Materials/applications:** Aluminium, plastics, model making, mould making, light steel machining

### GAMMA XL

**Controller:** Siemens 840D sl, Heidenhain iTNC 530

**Drive technology:** X-axis: Linear motor, Y-axis: Linear motor, Z-axis: Toothed belt drive

**Protection:** Complete housing with folding sliding roof

**Tool changer:** 20 or 30 tools in the plate magazine (optionally 60 to 200 places)

**Machine table:** Grey cast iron table with T-slots (optionally aluminium grid plate)

**Travel axis X-axis distances:** 2,500 mm to 3,500 mm

**Travel speed X-axis:** 40 m/min to 60 m/min

**Materials/applications:** Steel machining, heavy aluminium machining, model making, mould making
Model and mould making places its own particular set of demands on a machining centre. This series meets these demands in full – including for large-volume aluminium components, ureol or even light HSC steel machining.

In these areas too, the proven components of the modular system can be tailored to individual jobs. The linear design in particular brings the user maximum dynamics combined with maximum accuracy thanks to the mechatronically calculated machine concept. The machine has a fully developed chip management system, which impresses with its excellent chip disposal system that incorporates self-cleaning chip baffles plates and insensitive, high quality chip conveyors.

This particularly robust series has proven itself superbly in the heavy-duty HSC machining of high-volume steel and aluminium components.

It is used in the mechanical engineering and in the model and mould making. Of course, this machine can also be used for HSC steel machining operations. The modular principle means that the machining centre can be precisely tailored to meet the operator's individual needs. The mechatronically calculated machine concept guarantees maximum dynamics. You have a choice of motor spindles with HSK-A63 and HSK-A100, and torques of between 120 Nm and 300 Nm.

### Technical data

#### GAMMA T

- **Series:** GAMMA T
- **Controller:** Siemens 840D sl, Heidenhain iTNC 530
- **5-axis milling heads:** C3, S3, C3E
- **Drive technology:**
  - X-axis: Toothed belt drive
  - Y-axis: Toothed belt drive
  - Z-axis: Toothed belt drive
- **Protection:** Complete housing with folding sliding roof
- **Tool changer:** 20 or 30 tools in the plate magazine
- **Machine table:** Grey cast iron table with T-slots (optionally aluminium grid plate)
- **Travel axis**
  - X-axis: 2,500 mm to 3,500 mm
  - Y-axis: 1,500 mm to 3,000 mm
  - Z-axis: 1,000 mm to 1,500 mm
- **Travel speed**
  - X-axis: 50 m/min; 100 m/min
  - Y-axis: 60 m/min; 100 m/min
  - Z-axis: 40 m/min; 40 m/min
- **Materials/applications:** Aluminium, plastics, model making, mould making, light steel machining

#### GAMMA XT

- **Series:** GAMMA XT
- **Controller:** Siemens 840D sl, Heidenhain iTNC 530
- **5-axis milling heads:**
  - C3D4
- **Drive technology:**
  - X-axis: Toothed belt drive
  - Y-axis: Toothed belt drive
  - Z-axis: Toothed belt drive
- **Protection:** Complete housing with folding sliding roof
- **Tool changer:** 20 or 30 tools in the plate magazine (optionally 60 to 200 places)
- **Machine table:** Grey cast iron table with T-slots (optionally aluminium grid plate)
- **Travel axis**
  - X-axis: 2,500 mm to 3,500 mm
  - Y-axis: 1,500 mm to 3,000 mm
  - Z-axis: 1,000 mm to 2,000 mm
- **Travel speed**
  - X-axis: 50 m/min
  - Y-axis: 60 m/min
  - Z-axis: 40 m/min
- **Materials/applications:** Steel machining, heavy aluminium machining, model making, mould making
**GAMMA S**

This machine of a somewhat lighter design is extremely well suited to machining many different workpiece shapes and materials.

Aluminium, plastics and wood are its métier, along with the finishing of CFRP parts (carbon fibre and composites). The mobile portal at the top ensures that the usual high precision is also achieved in the production of models and moulded parts. The standard configuration includes a tool change facility for 12 tools and a modern 840D sl controller. Thanks to its geometry, the specially developed 5-axis head with a 12 kW spindle is also suitable for machining those difficult-to-reach points on workpieces.

**Technical data**

<table>
<thead>
<tr>
<th>Series</th>
<th>GAMMA S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller:</td>
<td>Siemens 840D sl (optionally Heidenhain iTNC 530)</td>
</tr>
<tr>
<td>5-axis milling heads:</td>
<td>C2, S2</td>
</tr>
</tbody>
</table>
| Drive technology: | X-axis: Toothed belt drive  
Y-axis: Toothed belt drive  
Z-axis: Toothed belt drive |
| Protection: | Complete housing |
| Tool changer: | 12 magazine places, pick-up magazine |
| Machine table: | Steel load-supporting members with threaded hole and a fitting groove (aluminium or cast iron table optionally) |
| Travel axis X-axis distances: | 3,000 mm  
Y-axis: 2,000 mm  
Z-axis: 1,000 mm |
| Travel speed: | X-axis: 70 m/min  
Y-axis: 70 m/min  
Z-axis: 40 m/min |
| Materials: | Aluminium, plastics, CFRP, wood |

**ALPHA**

This series offers you the ideal machine concept specifically for aluminium, plastic or steel profile machining.

By using appropriate accessories such as rod loaders and a rod magazine, automatic clamping fixtures and workpiece portal grippers from the EiMa system kit, the machine can be converted into an unmanned production cell if desired. The system has proved to be extremely successful in practical use, resulting in tail lifts, roof railings, window parts, sailing masts and many other workpieces being made on the ALPHA.

**Technical data**

<table>
<thead>
<tr>
<th>Series</th>
<th>ALPHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller:</td>
<td>Siemens 840D sl</td>
</tr>
<tr>
<td>5-axis milling heads:</td>
<td>C3, S3, C3E</td>
</tr>
</tbody>
</table>
| Drive technology: | X-axis: Toothed belt drive or linear motor  
Y-axis: Ball screw drive  
Z-axis: Ball screw drive |
| Protection: | Mobile cabin or complete housing |
| Tool changer: | 12/24 magazine places, pick-up magazine for special tools; special design on request |
| Machine table: | Steel load-supporting members or clamps, manual or CNC-controlled; optionally steel frame table. Individual adptable clamping stations |
| Travel axis X-axis distances: | 2,500 mm to approx. 20,000 mm  
Y-axis: 1,000 mm to approx. 1,500 mm  
Z-axis: 300 mm to approx. 1,500 mm |
| Travel speed: | X-axis: 40 m/min to max. 100 m/min  
Y-axis: 40 m/min to max. 60 m/min  
Z-axis: max. 60 m/min |
| Materials: | Steel, aluminium, plastics |
OMEGA

The OMEGA offers the optimum solution wherever there is a need for the precise machining of large-surface components.

It is used very successfully in a wide variety of industries: Vehicle, caravan and wagon construction, prefabricated house building, and also Plexiglas and sheet metal working are just a few examples. Specially developed clamping fixtures, handling systems and the networking of production lines guarantee both competition advantages and an excellent price/performance ratio.

Technical data

<table>
<thead>
<tr>
<th>Series:</th>
<th>OMEGA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller:</td>
<td>Siemens 840D sl</td>
</tr>
<tr>
<td>5-axis milling heads:</td>
<td>C3, S3, C3E, S2, C2</td>
</tr>
<tr>
<td>Drive technology: X-axis</td>
<td>Toothed belt drive or linear motor</td>
</tr>
<tr>
<td>Y-axis</td>
<td>Ball screw drive</td>
</tr>
<tr>
<td>Z-axis</td>
<td>Ball screw drive</td>
</tr>
<tr>
<td>Protection:</td>
<td>Mobile cabin or complete housing</td>
</tr>
<tr>
<td>Tool changer:</td>
<td>12/24 magazine places, pick-up magazine for special tools; special design on request</td>
</tr>
<tr>
<td>Machine table:</td>
<td>Steel load-supporting members or clamps, manual or CNC-controlled; optionally steel frame table. Individual adaptable clamping stations</td>
</tr>
<tr>
<td>Travel axis X-axis distances:</td>
<td>2,500 mm to approx. 20,000 mm</td>
</tr>
<tr>
<td>Y-axis</td>
<td>1,000 mm to approx. 4,500 mm</td>
</tr>
<tr>
<td>Z-axis</td>
<td>300 mm to approx. 1,500 mm</td>
</tr>
<tr>
<td>Travel speed: X-axis</td>
<td>40 m/min to max. 100 m/min</td>
</tr>
<tr>
<td>Y-axis</td>
<td>40 m/min to max. 60 m/min</td>
</tr>
<tr>
<td>Z-axis</td>
<td>max. 60 m/min</td>
</tr>
<tr>
<td>Materials:</td>
<td>Aluminium, plastics, wood, composites</td>
</tr>
</tbody>
</table>

SIGMA

With its double-table design, the SIGMA is second to none in terms of unit costs.

In tandem with a double head (SIGMA DD series), double-table machining also eliminates those non-productive times. This is almost like having a second machine. This advantage really makes itself felt in the machining of large, long profiles or nesting parts with long workpiece machining times. Here too, specially developed additional features such as clamping fixtures and handling systems supplement the machine to create individual machining cells.

Technical data

<table>
<thead>
<tr>
<th>Series:</th>
<th>SIGMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller:</td>
<td>Siemens 840D sl</td>
</tr>
<tr>
<td>5-axis milling heads:</td>
<td>C3, S3, C3E, S2, C2</td>
</tr>
<tr>
<td>Drive technology: X-axis</td>
<td>Toothed belt drive or linear motor</td>
</tr>
<tr>
<td>Y-axis</td>
<td>Ball screw drive</td>
</tr>
<tr>
<td>Z-axis</td>
<td>Ball screw drive</td>
</tr>
<tr>
<td>Protection:</td>
<td>Complete housing, optionally extendable table</td>
</tr>
<tr>
<td>Tool changer:</td>
<td>12/24 magazine places, pick-up magazine for special tools; special design on request</td>
</tr>
<tr>
<td>Machine table:</td>
<td>Steel load-supporting members or clamps, manual or CNC-controlled; optionally steel frame table or aluminium tabletop. Individual adaptable clamping stations</td>
</tr>
<tr>
<td>Travel axis X-axis distances:</td>
<td>2,500 mm to approx. 20,000 mm</td>
</tr>
<tr>
<td>Y-axis</td>
<td>1,000 mm to approx. 6,000 mm</td>
</tr>
<tr>
<td>Z-axis</td>
<td>300 mm to approx. 1,500 mm</td>
</tr>
<tr>
<td>Travel speed: X-axis</td>
<td>40 m/min to max. 100 m/min</td>
</tr>
<tr>
<td>Y-axis</td>
<td>40 m/min to max. 60 m/min</td>
</tr>
<tr>
<td>Z-axis</td>
<td>max. 60 m/min</td>
</tr>
<tr>
<td>Materials:</td>
<td>Aluminium, plastics</td>
</tr>
</tbody>
</table>
Examples of special solutions

TESLA

This column machine with a movable table and an integrated rotary table impresses particularly with its high accuracy and rigidity.

It enables large components to be machined extremely economically and with great precision. In the example shown here, milling cuts and holes are being made on large CFRP helicopter components.

TESLA D

This double-sided column milling machine was developed for vehicle production, specifically for the simultaneous machining of a space frame on both sides of the vehicle.

It achieves the shortest cycle times combined with maximum accuracy. The machine can be used both as a stand-alone solution and on a production line. In this case, 3-axis machining operations are performed on aluminium or steel bodies. However, the machine can of course also be fitted with a 5-axis head.

TURNING AND MILLING CENTRE

Fitting a continuously turning rotary table to a GAMMA machine creates a very interesting variant.

In the example shown here, the table has a diameter of 1,600 mm and a maximum speed of 200 rpm. Depending on the particular application, a Capto tool holder can be installed on the 5-axis head or, as in this case, to a separate rotary slide. This allows, for example, a workpiece with an internal hole of Ø 350 mm to be hollowed out 1,300 mm deep.

KAPPA MC

This machine is a combination of a panel-cutting saw along with a drilling and milling machining centre.

The usual supplied formats of uncut panels can be used. Time-consuming tooling times with suckers or clamping fixtures are eliminated. The uncut panels can be machined individually or in a stack. The machining of free-form surfaces and notches, along with segmenting, are performed in a single clamping operation. Optimised workpiece nesting on the uncut panels significantly reduces the amount of raw material used.

Examples of special solutions

TURNING AND MILLING CENTRE

Fitting a continuously turning rotary table to a GAMMA machine creates a very interesting variant.

In the example shown here, the table has a diameter of 1,600 mm and a maximum speed of 200 rpm. Depending on the particular application, a Capto tool holder can be installed on the 5-axis head or, as in this case, to a separate rotary slide. This allows, for example, a workpiece with an internal hole of Ø 350 mm to be hollowed out 1,300 mm deep.

KAPPA MC

This machine is a combination of a panel-cutting saw along with a drilling and milling machining centre.

The usual supplied formats of uncut panels can be used. Time-consuming tooling times with suckers or clamping fixtures are eliminated. The uncut panels can be machined individually or in a stack. The machining of free-form surfaces and notches, along with segmenting, are performed in a single clamping operation. Optimised workpiece nesting on the uncut panels significantly reduces the amount of raw material used.
### Technical details and options

#### 5-axis milling heads

**C2**
- Aluminium profile machining, plastics machining and modelling
  - High rigidity thanks to fork design and large-dimensioned gears
  - Suitable for 5-axis simultaneous machining
  - Clamping in B-* and C-axis*
  - HSK-F63
  - 24,000 rpm
  - 15 kW / 111 Nm
  - Rotary feedthrough* for minimal quantity lubrication or air

**S2**
- Aluminium profile machining, CFRP and plastics machining
  - Minimal collision contour for optimal accessibility at the workplace
  - Suitable for 5-axis simultaneous machining
  - Clamping in B-* and C-axis*
  - HSK-F63
  - 24,000 rpm
  - 15 kW / 111 Nm
  - Rotary feedthrough* for minimal quantity lubrication or air

**C3**
- Aluminium and steel machining, modelling and mould making
  - High rigidity thanks to fork design and large-dimensioned gears
  - Direct measuring systems in B-* and C-axis*
  - 5-axis simultaneous machining
  - Clamping in B-* and C-axis*
  - HSK-A63
  - 22,000 rpm
  - 24 kW / 50 Nm
  - Rotary feedthrough* for minimal quantity lubrication, emulsion and air

**S3**
- Aluminium and steel machining, modelling and mould making
  - Minimal collision contour for optimal accessibility at the workplace
  - Direct measuring systems in B-* and C-axis*
  - 5-axis simultaneous machining
  - Clamping in B-* and C-axis*
  - HSK-A63
  - 22,000 rpm
  - 25 kW / 85 Nm
  - Rotary feedthrough* for minimal quantity lubrication, emulsion and air

**C3E**
- Aluminium profile machining
  - Small compensation movement.
  - High accessibility between tenoners for aluminium profile machining
  - Direct measuring systems in B-* and C-axis*
  - Clamping in B-* and C-axis*
  - HSK-A63
  - 22,000 rpm
  - 24 kW / 50 Nm
  - Rotary feedthrough* for minimal quantity lubrication, emulsion and air

**XCD4**
- Steel, cast iron and aluminium machining in modelling and mould making
  - Very rigid, dynamic milling head with directly driven torque motors
  - Direct measuring systems in B- and C-axis
  - 5-axis simultaneous machining
  - Clamping in B- and C-axis
  - Motor spindles with HSK-A63/HSK-A100
    - 30 kW / 743 Nm up to 60 kW / 75 Nm
    - Max. 24,000 rpm
    - Rotary feedthrough* for minimal quantity lubrication, emulsion and air

* Optionally

**MMS** = minimal quantity lubrication

#### Controllers

**Siemens 840D sl**
- With a control panel front OP 015A
- With 15" TFT colour display and integrated mouse
- Full CNC keyboard KB 483 C
- Machine control panel MCP 483

**Heidenhain iTNC 530**
- With a 15.1" flat colour monitor BF 150
- Keyboard TE 520 B
- Machine control panel MB 420

#### Accessories

**Wet machining**
- With scraper conveyor with intermediate floor
- Bar screen
- Belt filter system
- High-pressure pump
- Working area flushing

**Chain changer with 60 tools**

**Chain changer for 12 tools HSK-F63**

**Plate changer for 20 tools and tool dimensioning**

**Pick-up tool changer for 200 tools with double gripper**

**Heidenhain iTNC 530**
- With a 15.1" flat colour monitor BF 150
- Keyboard TE 520 B
- Machine control panel MB 420