MILLING SOLUTIONS FOR THE AUTOMOTIVE INDUSTRY.
BORN WITH THE ZIMMERMANN DNA. A MACHINE IN THE IMAGE OF THE PEOPLE WHO MADE IT.

Milling machines built with pioneering technology. And whose most important component is dedication. People who work tirelessly to achieve outstanding precision. That is the essence of the Zimmermann DNA. Because as a leader offering top-quality, high-performance portal milling machines and horizontal machining centers “Made in Germany”, the most vital elements are confidence and reliability. And this applies to the people just as much as it does to the machines. It is the ambition that burns in every member of our workforce and in every single component of our machines. And it inspires the promise that we make to our customers: A Zimmermann will never let you down.

“PIONEERING TECHNOLOGY, DYNAMIC, RELIABLE. A ZIMMERMANN WILL NEVER LET YOU DOWN.”

TYPICAL ZIMMERMANN: PRECISE DOWN TO THE LAST DETAIL.

At Zimmermann, we share your passion for outstanding precision and total attention to detail. With milling solutions that mobilize the automotive industry – from model making and mold construction, through vehicle design and on to the production of jigs and gages. In cooperation with you, we develop individual system concepts that surpass the requirements for your application. Because when it comes to the efficient implementation of the overall process and the best possible surface quality for the finished product, our tolerances are practically zero. Just like those of our machines.
"When it comes to automotive development, speed is of the essence. We work under immense time and cost pressure to create ready-to-drive prototypes in just a few months. For this to be possible, we need machines that guarantee top production quality and minimum downtimes. Our four FZ37 and FZ35 machines are all outstandingly reliable and cope with this pressure superbly.

The Zimmermann Service Team’s rapid reaction and delivery times are very important to us. Because only if all the components interact seamlessly can we achieve high-precision machining, improve vehicle performance and assert ourselves in a competitive environment."
CUSTOM-BUILT MULTI-PURPOSE SOLUTION: ZIMMERMANN FOR SCHRÖTER MODELLBAU.

“We have been working together with Zimmermann on a basis of trust and confidence for many years. We now possess five portal milling machines that constantly make us a pioneering partner for our customers. Our Zimmermann milling machines can handle practically any material – from polystyrene to steel.

Whether it be design models, motor sports applications, cubing models, prototypes, 5-axis milled parts, molding patterns, sheet steel forming tools or composite components – we always manufacture in close proximity to our customers. And we can always fully rely on our Zimmermann machines.”

Maximilian Lörzel, Managing Director, Schröter Modellbau
INDUSTRY EXPERTISE AND AREAS OF APPLICATION

Vehicle design
In the vehicle design field in particular, it is necessary to achieve precise results and outstanding surface quality. Because here every little detail counts. And wherever functional, ergonomic and esthetic geometries are required, milling machines made by Zimmermann will surpass your expectations. Because Zimmermann’s milling solutions work to minimal tolerances that maximize the precision of the resulting products. Alongside the customized working areas that permit the 1:1 machining of vehicle models, the small interfering contours of the Zimmermann milling heads also play a central role. With our machines, your visions become a reality.

Prototype construction
From composites to steel – Zimmermann’s versatile machine concepts make it possible to handle a huge range of different materials. Depending on the type of application and intended use, we will work with you to configure an appropriate milling solution that guarantees you all the performance you need. Thanks to our many years of experience in both the dry and wet machining of aluminum and composites, you can rely on Zimmermann’s milling solutions to deliver high-precision results. And always to be exceptionally economical within the context of the overall milling process.

Model making and mold making
With Zimmermann’s milling solutions, model and mold makers give form to the first draft designs of a product. Whether the demand is for individual parts or small series – whenever outstanding precision is required, Zimmermann is the solution. And has been for more than 60 years. Thanks to the close partnership between Zimmermann and all its customers, the company has been able to closely address the needs of the industry from the day it was founded and develop the corresponding milling solutions. And that is as true today as it always has been.

Tool making
Whenever complex tools have to be manufactured, Zimmermann’s milling solutions are the perfect answer for your application. To meet the growing demands of the industry, it is necessary to supply milling solutions of outstanding versatility for the machining of different materials such as zamak, steel and cast iron. The use of motor spindles, combined with powerful torque motors in the rotation axes of Zimmermann’s milling machines, makes it possible to achieve high-precision results in a record time.

HOW ARE OUR MACHINES ADAPTED TO THEIR TASKS? ON AN APPLICATION-SPECIFIC BASIS.
Cubing
The high level of mechanical precision of all Zimmermann milling solutions means that they are particularly suitable for the production of many different types of cubing models. With Zimmermann's high-precision milling machines, there is no need to rework any parts. This has a massive impact on the overall machining time and permits the high-speed production of top-quality, high-precision models. Based on our many years of experience in the field of clamping technology, we will work with you to develop the optimum machine concept for your application.

Jig and gage construction
Large working areas, maximized surface quality and outstanding precision – whenever you need outstanding precision for your jig and gage construction activities, Zimmermann can supply an unrivalled range of machines. The low-wear, rack-and-pinion drive technology and great structural stability ensure an optimum milling process. The additional component cooling guarantees that the temperature is held constant – you can always rely on the quality of Zimmermann's milling solutions for a vast range of different materials.
MACHINE CHARACTERISTICS

UPWARD-TRAVELING PORTAL MILLING MACHINES.

The upward-traveling portal milling machines make it possible to create machine concepts with differently-sized operating ranges. The gantry construction with fixed side walls ensures constant weight distribution and consequently guarantees precise results.

1. The reinforced, structurally rigid portal that travels upward ensures even more dynamic machining of the workpieces.
2. The high bending strength of the robust vertical slide permits considerable freedom of action in the Z working range.
3. Zero-play portal drives are mounted on either side outside of the protected area and have dual guides and an extended base for optimum stability.
4. Cast iron clamping table with T-slots, anchored to the machine base.
5. Full protective housing thanks to closed side walls, rear wall and front-mounted sliding door with generously sized windows.
6. Compound-filled, trapezoidal side columns with large seating area.
DOWNWARD-TRAVELING PORTAL MILLING MACHINES.

Sophisticated, practical technology with a classical design: the downward-traveling portal milling machines permit access from all sides and are therefore ideal whenever space is limited.

1. Weight-optimized portal that travels downwards for excellent dynamics and precision
2. Reinforced portal ensures even greater stability and precision, thus making your milling operations even faster
3. Enlarged Z-axis section with larger cross-slide plate
4. Dustproof bellows in the Y- and Z-axis, telescopic steel covers in the X-axis
5. Free-standing machine bed
6. Optional: Wet machining
AN INTEGRAL PART OF ANY ZIMMERMANN MACHINE: MODULARITY.

A modular system concept underpins every Zimmermann portal milling machine. Travel path, drive technology, milling head, make and type of the controller as well as other accessories can be specified and combined individually depending on the area of application and the intended use.

Drives
Our milling solutions make use of the optimum drive for the machine concept in question. The extremely dynamic and particularly low-maintenance rack-and-pinion drive provides excellent performance at a reasonable cost. All imaginable axis lengths are possible and cover an extremely wide range of applications. The classic among the drive designs is the ball screw drive. It is characterized by its high precision, low cost and outstanding economic efficiency. The linear motor is the ideal solution for applications involving largely stationary masses.

Safety
To protect them against contamination, the guide components as well as the drive and measurement systems on the Y- and Z-axis are covered by dust-proof bellows. The X-axis is equipped with lamella covers. The side walls form the machine housing. Sliding doors or folding doors with generously sized windows are mounted at the front. An optional cover for the working area prevents the escape of removed material as well as of coolants and lubricants. At the back, the machines are sealed off by either a fully enclosed tool changer or a second door.
Measuring systems
The three linear axes in Zimmermann milling machines have direct Heidenhain linear encoders with glass scales. These measuring systems have a compressed-air barrier to protect them against contamination. The A and C rotation axes are equipped with high-resolution angular measurement systems depending on machine type.

Clamping technology
Zimmermann’s milling solutions benefit from the most suitable clamping technology depending on the batch size, machining variance or retooling cycles. Flexible clamping solutions and specific mechanisms for individual components are both equally possible.

Control systems
Zimmermann’s milling solutions are available with different makes and types of controllers. Modern controllers offer many different functions for optimizing the milling trajectory. Measuring probes, tool measurement and measuring software are available as options. They make it possible to configure the Zimmermann milling solutions perfectly for the intended application.

Automation
The automation capabilities of all Zimmermann milling solutions help increase productivity and boost economic efficiency. From the unstaffed operation of multiple machines, through turnkey solutions and on to minimized setup times thanks to innovative handling solutions and intelligent clamping technologies – the automation capabilities of Zimmermann’s milling solutions help create a consistently more efficient milling process.
“IT IS ONLY IF YOU BUILD THE HEART OF THE MACHINE YOURSELF THAT YOU CAN KNOW HOW IT BEATS.”

Spindle torque/power diagram VH30.
HEADS WITH CHARACTER – AND A HIGH-PERFORMANCE DRIVE.

The Zimmermann milling heads lie at the very heart of our machines. And they have a unique character if you look at everything they can achieve. When you put together your custom-designed system concept from our range of products, you need to decide on the right Zimmermann milling head in the light of the materials you machine, the desired material removal rate and the demanded surface quality.

The patented 2- and 3-axis fork-type heads are designed as cast iron monoblock components. This design boasts outstanding thermal stability combined with optimized oscillation and vibration damping. The large swiveling angle, the axis speeds and the acceleration of all Zimmermann milling heads ensure their outstanding dynamic behavior. The high-performance 2- and 3-axis milling heads range from powerful and versatile through to lean and compact. But that’s not all: Whenever our customers purchase from Zimmermann, we give them advice and support that is just as precise as the milling performance of our machines.

Every Zimmermann milling solution is specially conceived to meet the requirements of your specific milling application by ensuring that all the different components interact perfectly. For this to be possible, they must be optimally harmonized. We offer an extensive modular accessories system to meet the demands of your machine type, intended application and material. Because only when you have the right complementary solutions can your production process run smoothly and seamlessly.
OUR MACHINES ARE AT WORK WORLDWIDE.
SO IS OUR SERVICE.

With every Zimmermann solution, our customers acquire not only high-performance machines with a vast working area, outstanding dynamics, maximized material removal rates and unrivalled surface quality but, even more importantly, peace of mind and security. Their confidence is based on our impressive service capabilities. And not just when they buy their Zimmermann solution but for many years afterwards. Anywhere in the world.

“THE MOST IMPORTANT CRITERION IN
OUR CUSTOMERS’ PURCHASING DECISIONS:
TRUST.”

Quick, easy access:
our Service Hotline.
Our Service Team is waiting for you, wherever you are in the world. Even outside of normal working hours. Our Service Hotline staff will solve any production-related problems quickly and efficiently: Whether through modern remote diagnostic technology, online troubleshooting or the targeted guidance of your in-house Service Team’s repair activities via webcam – the most important first step is always to identify the problem quickly and accurately in order to minimize milling downtimes.

+49 7158 948955-237
SERVICE-HOTLINE WORLDWIDE

Optimized machine uptimes:
our on-site service.
The Zimmermann Service Team is ready and waiting to provide on-site assistance and will make sure that your machines are up and running and giving you all the economic efficiency you demand. And you benefit from a comprehensive service offering: From regular inspections of your machine, through the overhauling and repair of your system and on to modernization measures – we provide support for every aspect of your milling application.
Short reaction times: our spare parts service.
It is not just our machines that work tirelessly on your behalf. Our support service is also there for you. If ever a Zimmermann machine has to be shut down due to a damaged part, then one thing is more important than anything else: fast delivery of the spare part. And that’s where we come into our own. 95% of all spare parts are immediately available and we guarantee shortest delivery times anywhere in the world. But that’s not all: Our worldwide service network ensures that the spare part is installed professionally on-site so that your machine is immediately ready to resume production.

Tested worldwide: the CE mark.
All Zimmermann milling solutions comply with the European machinery regulations. The CE mark is confirmation that the product conforms to the corresponding EU regulations. The EU regulations define the binding legal requirements in the European Union. All our product series have not only the corresponding CE mark but also an EU Declaration of Conformity. This guarantees that every milling machine with this label complies with the underlying health and safety requirements set out in the applicable EU regulations. For more information on the CE mark for all Zimmermann milling solutions, simply contact our Service Hotline.
Guaranteed functionality: Maintenance and upkeep.

Regular maintenance and upkeep of milling machines minimize downtimes and stoppage-related costs and extend the service life of the machines. To meet the needs of these complex systems, it is necessary to pay close attention to all the machine functions. From the machine’s current condition, through the wear level of critical components and on to the documentation of all the factors. We will advise you concerning preventive measures because this is the only way of guaranteeing the unrestricted functionality of the milling solution in the long term. Maintenance and upkeep activities should be performed at regular intervals. The exact maintenance interval depends on the utilization level, the technology and the nature of the machining operations performed.

Flexible problem-solving: our remote maintenance.

Do you have a malfunction to report and need rapid support? At Zimmermann, we can access your machine via the Internet if necessary and identify and correct any problems quickly and efficiently. Our remote maintenance team is able to call up all the diagnostic and service menus. Zimmermann’s remote maintenance of CNC-controlled machine tools provides you with direct support – wherever your company is located.
Milling solutions with brains: our training offer.

Our service does not end when you buy your Zimmermann machine. We actively accompany you in the commissioning of our machines and help you to get to know and love them. Because it is not until users know how they can achieve outstanding precision with a solution from Zimmermann that they can produce the best possible results. At one of our multi-day training courses, you will find out everything you need to know about using, operating and maintaining our milling solutions. Working in cooperation with you, our service staff perform milling tests and machine workpieces. Because however good things may sound in theory, we prefer to prove them in practice. As you know, a Zimmermann will never let you down.
PRODUCT OVERVIEW

PORTAL MILLING MACHINES

<table>
<thead>
<tr>
<th>MACHINE TYPES</th>
<th>FZ25</th>
<th>FZ30/FZ35</th>
<th>FZ37</th>
<th>FZ42</th>
<th>FZ100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td><strong>On the Lighter Side.</strong></td>
<td><strong>Proven Technology.</strong></td>
<td><strong>The All-Rounder.</strong></td>
<td><strong>On the Heavy Side.</strong></td>
<td><strong>Unique and Productive.</strong></td>
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<tr>
<td><strong>Working Ranges</strong></td>
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<tr>
<td>X-Axis</td>
<td>7 000 mm</td>
<td>3 000 – 6 000 mm</td>
<td>3 000 – 40 000 mm</td>
<td>3 000 – 40 000 mm</td>
<td>3 000 – 40 000 mm</td>
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<tr>
<td>Y-Axis</td>
<td>3 500 mm</td>
<td>2 360 – 3 360 mm</td>
<td>2 500 – 6 000 mm</td>
<td>2 500 – 6 000 mm</td>
<td>2 500 – 6 000 mm</td>
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<tr>
<td>Z-Axis</td>
<td>2 000 mm</td>
<td>1 000 – 1 500 mm</td>
<td>1 000 – 3 000 mm</td>
<td>1 000 – 3 000 mm</td>
<td>1 000 – 3 000 mm</td>
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| Milling Heads / Spindels | | | | | |
| VH10 | 34/41 kW, 39/49 Nm | 34/41 kW, 39/49 Nm | 34/41 kW, 39/49 Nm | 24 000 rpm, HSK-A63 | 24 000 rpm, HSK-A63 |
| VH20 | 39/52 kW, 32/43 Nm | 39/52 kW, 32/43 Nm | 39/52 kW, 32/43 Nm | 24 000 rpm, HSK-A63 | 24 000 rpm, HSK-A63 |
| VH30 | 60/79 kW, 95/126 Nm | 60/79 kW, 95/126 Nm | 74/78 kW, 73/92 Nm | 22 000 rpm, HSK-A63 | 22 000 rpm, HSK-A63 |
| VH40 | 70/86 kW, 167/229 Nm | 70/86 kW, 167/229 Nm | 70/86 kW, 167/229 Nm | 15 000 rpm, HSK-A100 | 15 000 rpm, HSK-A100 |
| VH60 | 63/82 kW, 300/391 Nm | 63/82 kW, 300/391 Nm | 74/78 kW, 73/92 Nm | 63/82 kW, 300/391 Nm | 63/82 kW, 300/391 Nm |
| M3ABC | 74/78 kW, 73/92 Nm | 74/78 kW, 73/92 Nm | 74/78 kW, 73/92 Nm | 100/132 kW, 46/62 Nm | 100/132 kW, 46/62 Nm |

We reserve the right to make technical changes without prior notice. *Other dimensions on request. *Other spindles on request. *Only FZ35. *MuST® Spindle Changing System.
<table>
<thead>
<tr>
<th>Machine Type</th>
<th>Thermo symmetrical</th>
<th>Compact and Flexible</th>
<th>Compact and Powerful</th>
<th>Horizontal</th>
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</thead>
<tbody>
<tr>
<td>FZU</td>
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<tr>
<td>FZ33 COMPACT</td>
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<tr>
<td>FZ40 COMPACT</td>
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<td>FZH</td>
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### Working Ranges

**X-Axis**: 2000 / 4000 / 6000 mm, 3000 mm, 1250 / 1500 mm

**Y-Axis**: 3500 mm, 2360 – 3360 mm, 2500 – 6000 mm, 3000 mm, 3000 / 4000 mm, 2900 mm, 1250 / 1500 mm

**Z-Axis**: 2000 mm, 1000 – 1500 mm, 1000 – 3000 mm, 1000 – 3000 mm, 1250 / 1500 mm

### Milling Heads / Spindles

#### VH10
- 34/41 kW, 39/49 Nm
- 24 000 rpm, HSK-A63

#### VH20
- 39/52 kW, 32/43 Nm
- 24 000 rpm, HSK-A63
- 40/53 kW, 48/63 Nm
- 25 000 rpm, HSK-A63

#### VH30
- 360/79 kW, 95/126 Nm
- 22 000 rpm, HSK-A63
- 25/31 kW, 119/148 Nm
- 20 000 rpm, HSK-A63
- 60/79 kW, 95/126 Nm
- 22 000 rpm, HSK-A63
- 74/78 kW, 73/92 Nm
- 30 000 rpm, HSK-A63

#### VH40
- 70/86 kW, 167/229 Nm
- 15 000 rpm, HSK-A100
- 70/86 kW, 167/229 Nm
- 15 000 rpm, HSK-A100
- 125/156 kW, 59/74 Nm
- 30 000 U/min, HSK-A63

#### VH60
- 63/82 kW, 300/391 Nm
- 15 000 rpm, HSK-A100
- 63/82 kW, 300/391 Nm
- 15 000 rpm, HSK-A100
- 93/102 kW, 444/575 Nm
- 8000 rpm, HSK-A100

#### MH® Changing System:
- 44/44 kW, 200/230 Nm
- 10 000 rpm, HSK-A100
- 45/60 kW, 344/454 Nm
- 5 000 rpm, HSK-A100
- 50/58 kW, 95/117 Nm
- 24 000 rpm, HSK-A63

### Additional Dimensions

Other dimensions on request. Other spindles on request. FZ35 only.

MuST® Changing System.

*We reserve the right to make technical changes without prior notice.*