

# Woodworking

Solutions for Woodworking

THE KNOW-HOW FACTORY

**THE KNOW-HOW FACTORY**

# ZIMMER GROUP

## COMMITTED TO OUR CUSTOMERS

**WE HAVE SUCCEEDED FOR YEARS BY OFFERING OUR CUSTOMERS. INNOVATIVE AND INDIVIDUALIZED SOLUTIONS. ZIMMER HAS GROWN CONTINUOUSLY AND TODAY WE HAVE REACHED A NEW MILESTONE: THE ESTABLISHMENT OF THE KNOW-HOW FACTORY. IS THERE A SECRET TO OUR SUCCESS?**

**Foundation.** Excellent products and services have always been the foundation of our company's growth. Zimmer is a source of advanced solutions and important technical innovations. This is why customers with high expectations for technology frequently find their way to us. When things get tricky, Zimmer Group is in its best form.

**Style.** We have an interdisciplinary approach to everything we do, resulting in refined process solutions in twenty areas of technology. This applies not just to development but also to production. Zimmer Group serves all industries and stands ready to resolve even the most unique and highly individualized problems. Worldwide.

**Motivation.** Customer orientation is perhaps the most important factor of our success. We are a service provider in the complete sense of the word. With Zimmer Group, our customers have a single, centralized contact for all of their requirements. We approach each customer's situation with a high level of competence and a broad range of possible solutions.



# LIMITLESS PRODUCTION

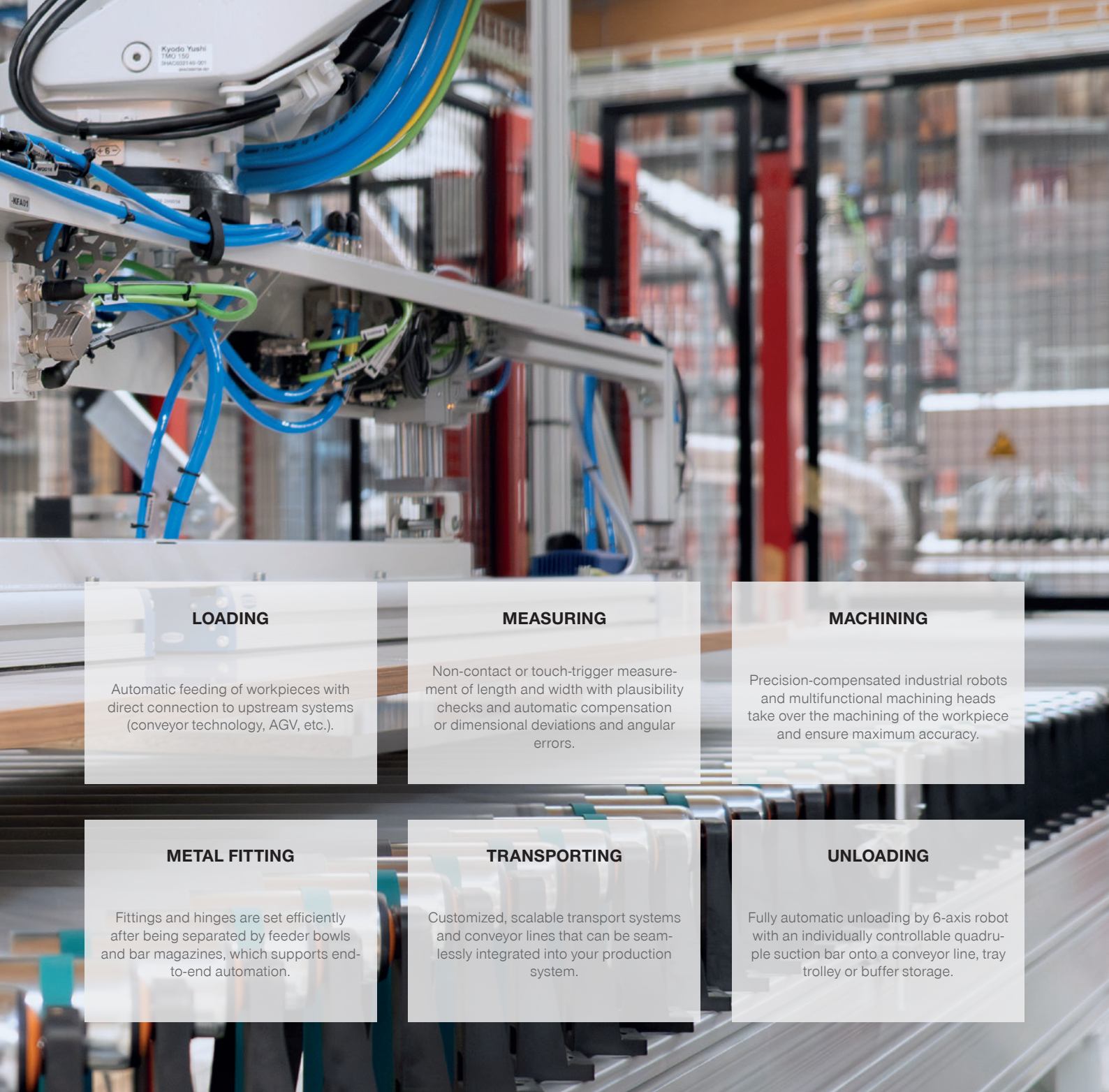
WOODWORKING FOR EVERY CHALLENGE



## INNOVATIONS IN WOODWORKING

In today's woodworking industry, the goal is clear: maximum variety for batch size 1 - without compromising on cycle time, quality or availability. As an automation partner, this is precisely why we have been developing high-tech solutions along the entire process chain for decades: from highly complex machining systems for cabinet parts to intelligent sorting and decoupling cells – scalable, productive and consistently designed for industrial processes. Our strength lies in thinking systematically: Using state-of-the-art develop-

ment and simulation methods, we design and build complete manufacturing and assembly cells that can be flexibly adapted to changing workpieces and production requirements. Whether it's precise, robot-based machining systems with customized conveyor lines, handling with high-performance EOATs or a stable material flow through sorting and decoupling cells – we deliver customized, individual and scalable solutions that fit your processes perfectly and grow with your requirements.



### LOADING

Automatic feeding of workpieces with direct connection to upstream systems (conveyor technology, AGV, etc.).

### MEASURING

Non-contact or touch-trigger measurement of length and width with plausibility checks and automatic compensation or dimensional deviations and angular errors.

### MACHINING

Precision-compensated industrial robots and multifunctional machining heads take over the machining of the workpiece and ensure maximum accuracy.

### METAL FITTING

Fittings and hinges are set efficiently after being separated by feeder bowls and bar magazines, which supports end-to-end automation.

### TRANSPORTING

Customized, scalable transport systems and conveyor lines that can be seamlessly integrated into your production system.

### UNLOADING

Fully automatic unloading by 6-axis robot with an individually controllable quadruple suction bar onto a conveyor line, tray trolley or buffer storage.

### MORE INFORMATION ON WOODWORKING

Click here for our solutions for the woodworking industry.



# MACHINES AND LINES SYSTEMS

## ROBOT-BASED PROCESSING MACHINE

The robot-based production line enables highly flexible drilling of furniture fronts and cabinet parts in batch size 1. An innovative shuttle carousel serves as a workpiece transport and clamping system, ensuring efficient and precise transportation throughout the entire system. Automated loading and unloading is seamlessly connected to the automated guided vehicle (AGV) systems and enables end-to-end automation. The powerful drill head has vertical and horizontal drill spindles as well as Clamex, milling and grooving units that enable versatile, high-precision machining. In addition, metal and plastic fittings are placed automatically from pre-equipped trays. An integrated component return system enables efficient rear-side machining of the workpieces

without the need for manual intervention. Direct integration into the customer's production control system ensures seamless production control. Despite its high performance, the system requires only a minimal amount of space and will impress you with high availability and simple maintenance.

Return of parts above the machine

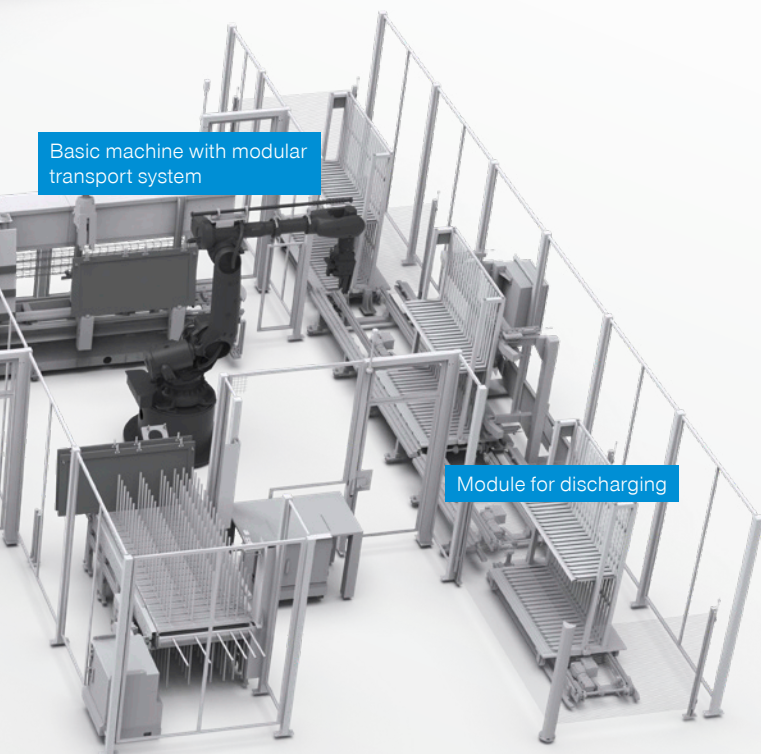
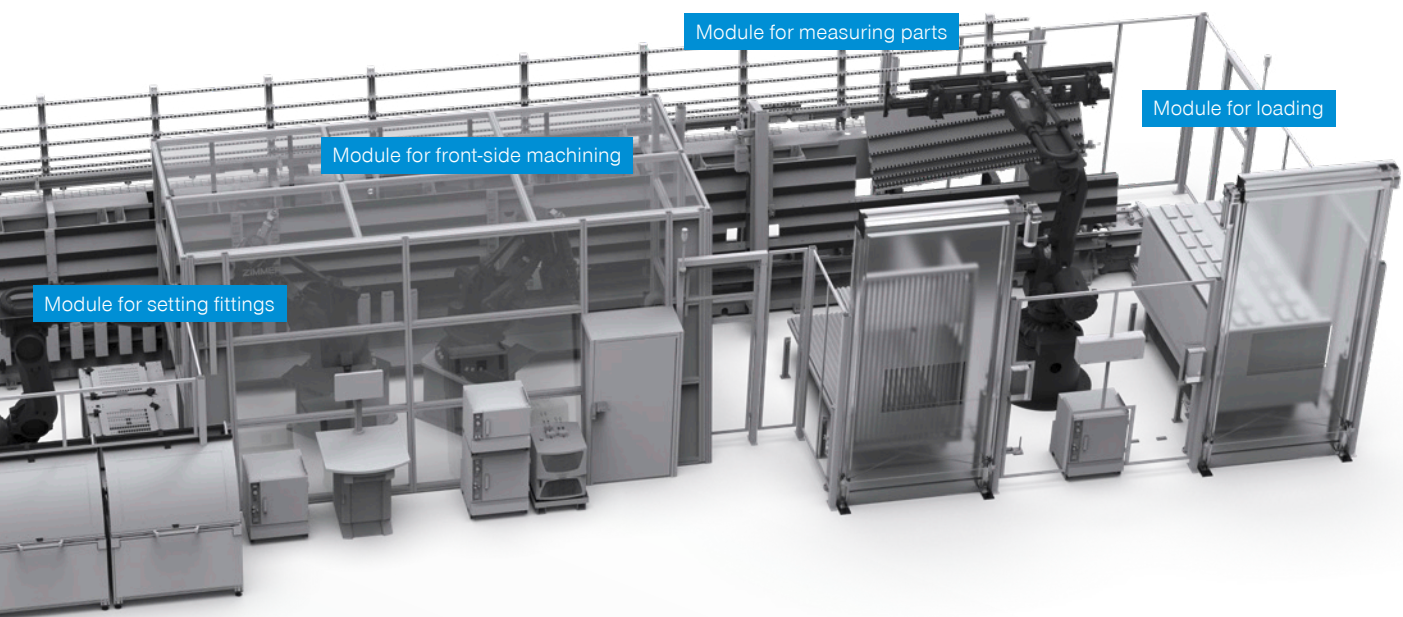
Module for unloading

Module for measuring parts

Module for machining

Module for loading

Module for setting fittings



## ROBOT-BASED PROCESSING MACHINE

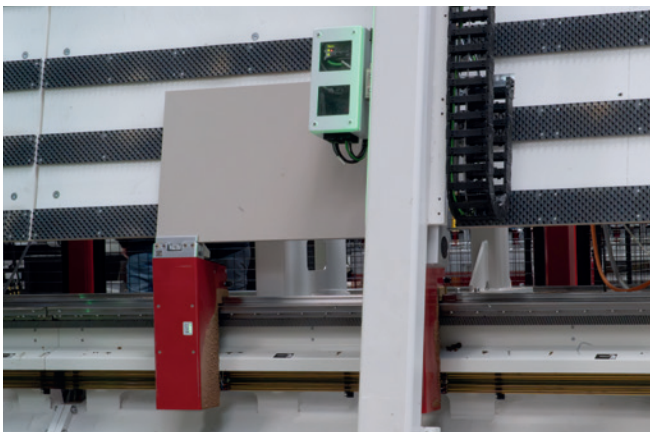
The highly flexible production line for machining furniture fronts in batch size 1 combines a shuttle carousel as a workpiece transport and clamping system with precision-compensated industrial robots. A drilling head with 17 vertical spindles, a milling spindle and buffer setting unit, as well as an integrated drilling head for rear-side machining, enable complete machining in a single process step. Fittings and hinges are set after separation from feeder bowls and bar magazines. The furniture fronts are automatically loaded and unloaded in tray trolleys, with storage systems that guarantee uninterrupted trolley changes. Direct integration into the customer's production control system ensures a seamless production process.

# ROBOT-BASED PROCESSING MACHINE

## PROCESSING CABINET PARTS

### LOADING

In the loading module, the workpieces are fed automatically – either track by track from the new part stack or as individual parts from the tray trolley (e.g., for rear side machining). A 6-axis robot equipped with an individually controllable suction bar handles separation and alignment (with a plausibility check) and places the parts in the correct position in the shuttles.



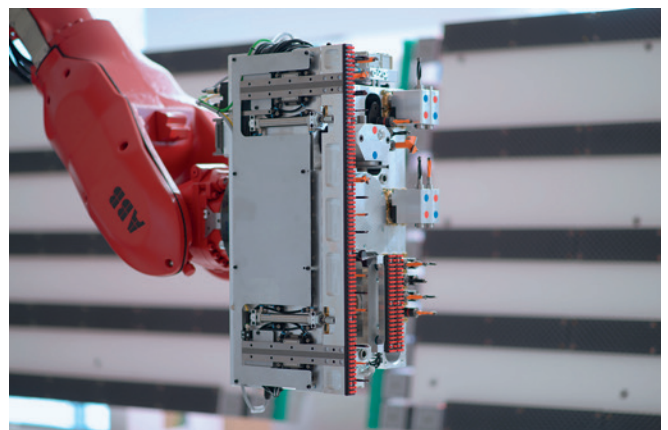
### MEASURING

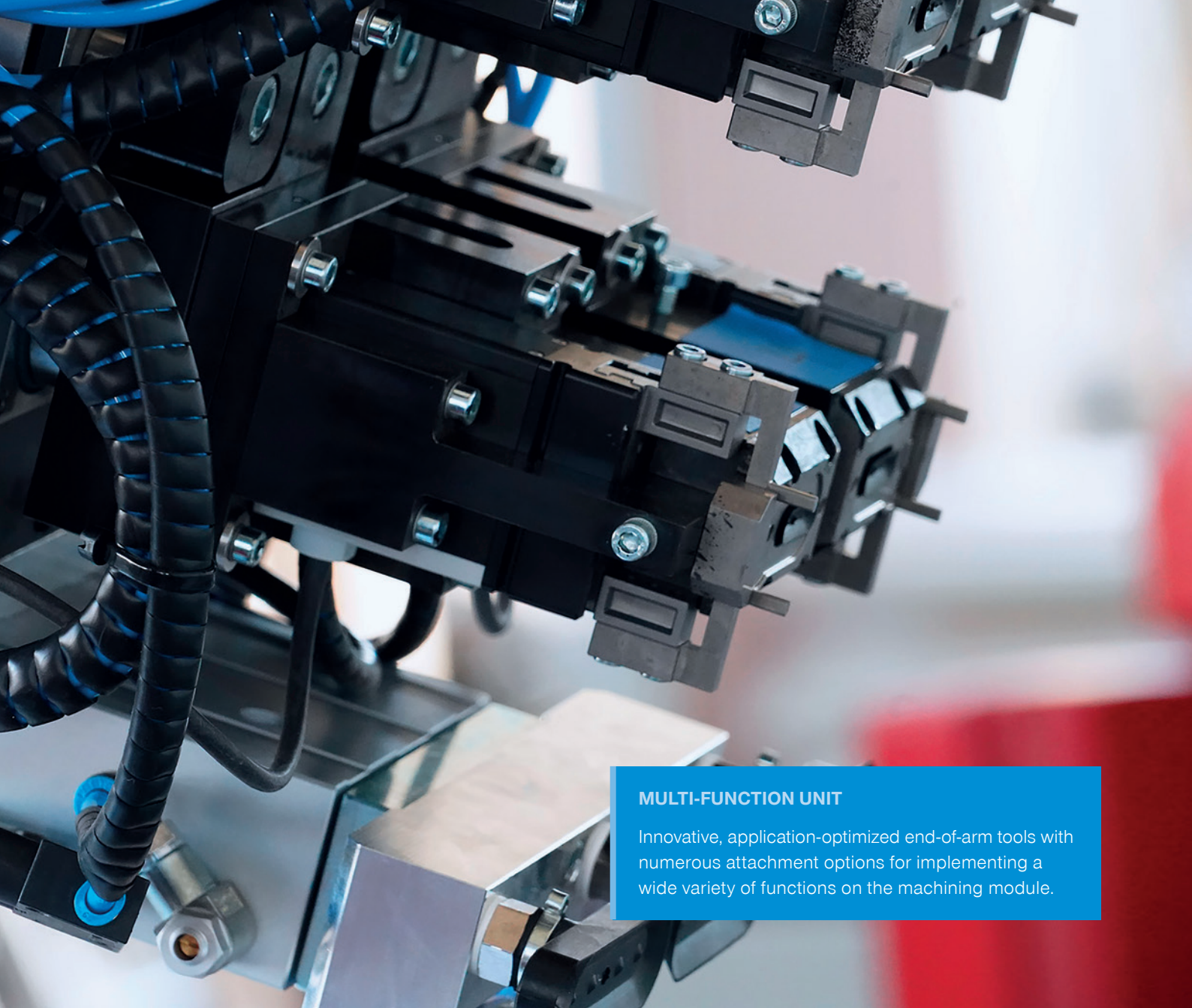
The workpieces are measured in length and width in a continuous, non-contact process. A plausibility check verifies that parts have been provided correctly. Dimensional deviations and angular errors are then automatically compensated for.

### MACHINING

Precision-compensated industrial robots and multifunctional machining heads with individually adjustable machining units handle the drilling operations and ensure maximum accuracy. The modular multifunctional head is used to implement various functions on the machining module and is set up on a project-to-project basis to minimize space requirements and tool change time. A drilling unit is available for single and seriesdrilling operations.

- ▶ Versatile machining, even when high cycle rates are required
- ▶ Vertical drill spindles with quick-action chuck
- ▶ Horizontal drill spindles with Weldon tool holder
- ▶ End mill, vertical and horizontal Clamex, grooving saw, foot drill and hinge drilling unit



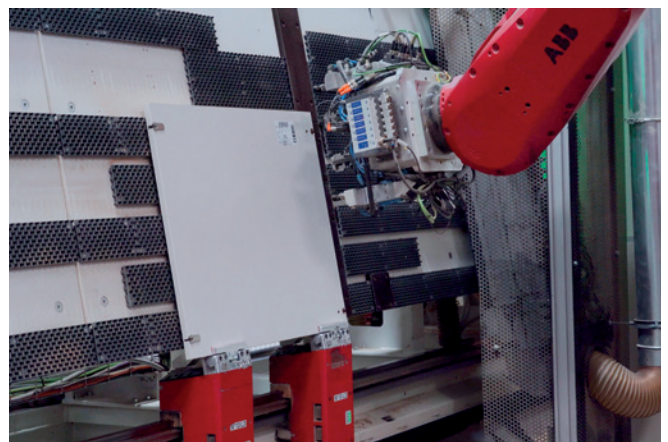


#### MULTI-FUNCTION UNIT

Innovative, application-optimized end-of-arm tools with numerous attachment options for implementing a wide variety of functions on the machining module.

#### SETTING FITTINGS

Fittings and hinges are set efficiently after being separated by feeder bowls and bar magazines, which supports end-to-end automation. The machining robot uses a multi-head fitting setter to set various types of fittings as programmed. Alternatively, the fittings can be loaded manually onto stackable trays at a transfer station. From there, the robot removes the individual trays and positions them in a removal station, which aligns the trays. The fittings are picked from this removal station.





### **MODULAR TRANSPORT SYSTEM**

The transport modules ensure safe, automated workpiece transport within the system. Thanks to their modularity, flexibility and scalability, the systems can be used either as a transport system or a handling system.

# ROBOT-BASED PROCESSING MACHINE

## MACHINING FURNITURE PARTS



### TRANSPORTING

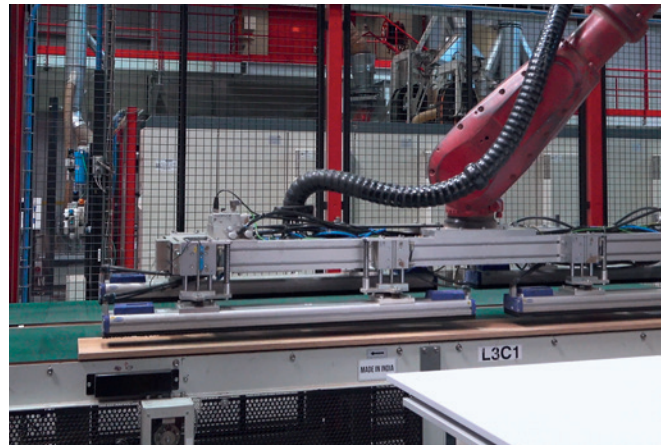
Whether it's a modular transport system or a conveyor line – our complete solutions include shuttle systems and conveyor systems such as roller conveyors, belt conveyors, strap conveyors and angled transfer units, all with outstanding adaptability and flexibility.

We ensure that your material flow stays not only efficient but also flexible and sustainable.

### UNLOADING

Unloading is carried out fully automatically by a 6-axis robot equipped with an individually controllable quadruple suction bar, which grips the workpieces securely and deposits them with consistent precision. In this process, the placement is dynamically prioritized: Depending on the workload and subsequent process, the parts are either deposited on the conveyor line, in the tray trolley or in a buffer storage.

- ▶ Gentle unloading via controlled movement profiles
- ▶ AGV integration without friction losses
- ▶ Automatic adaptation to part mix and material flow
- ▶ Scalable and future-proof



### SOFTWARE

visualZ is the graphical HMI user interface for displaying the system with a clear breakdown of the individual functional areas and stations. It clearly displays application-specific process parameters and supports a fast and intuitive interaction, operation and parameterization of all units installed in the system during operation. Direct access to the event log and order management increases convenience, efficiency and work safety while reducing the risk of operator errors.

# SORTING AND DECOUPLING CELLS

## SORTING CABINET PARTS

### TRAVELING AXLE VERSION OR ROUND CELL VERSION

In addition to drilling, Zimmer Systems also offer solutions for sorting furniture parts – either integrated into the overall process or as a stand-alone solution. Modern sorting systems enable high-performance, adaptable material flow control with throughput rates of 2.0 to 25.0 parts per minute. Storage and retrieval are handled via separate conveyor levels to ensure a smooth material flow. Robot-based cells can handle several parts simultaneously, thereby increasing

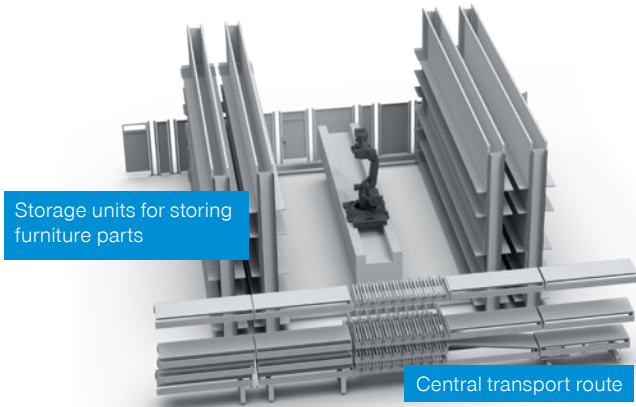
process speed and reducing downtimes. The storage volume is flexible and can be customized to meet individual needs. The cell with a traveling axle is suitable moderate throughput and high volume (at least 4-5 cycles/min, higher performance when several cells are arranged side by side). The round cell, on the other hand, is designed for component sorting with a high throughput and limited volume (at least 5-5.5 cycles/min, scalable by arranging cells in parallel).



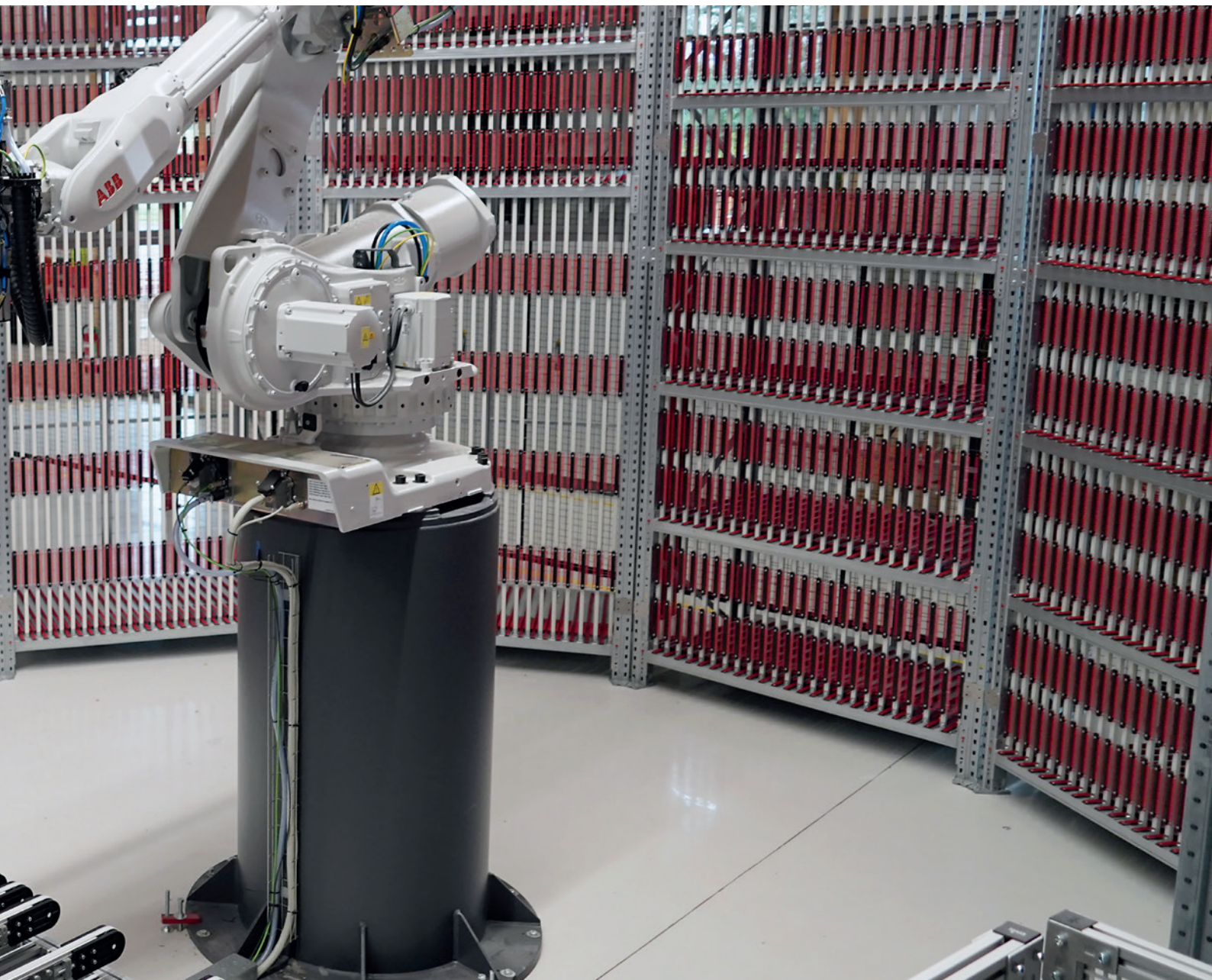
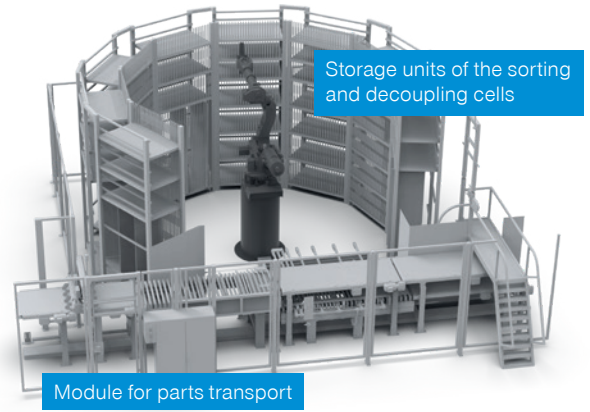
### INFORMATION

Our expertise in logistics and woodworking extends to turnkey systems, decoupling and assembly cells for the furniture industry as well as highly flexible systems for batch size 1 and robot-assisted machining solutions.

Traveling axle sorting version



Round cell sorting version

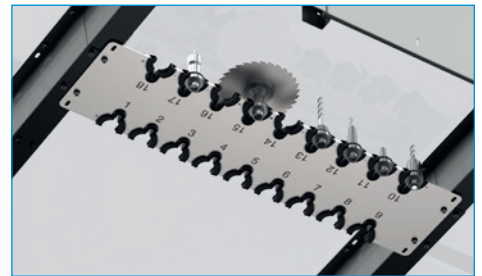


# RAPTOR MACHINING ROBOT

## THE MACHINING CELL

### RAPTOR MACHINING ROBOT

Raptor, the heart of the machining cell, was specially developed for the woodworking industry and carries out precise cutting, shaping, sanding and lacquering tasks. Its use helps to increase efficiency and reduce costs, as it completes complex tasks quickly, precisely and in a more space-saving manner than portal machines. Raptor has a multi-functional head with 2 flanges, a change interface for quick tool changes and will impress you with its internal energy supply system.

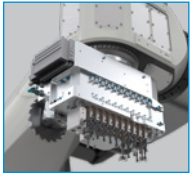


- 1 Quick-change interface**
- 1 Swivel-mounted multi-spindle head**
- 1 Swivel-mounted milling spindle**
- 2 Tool magazine**
- 3 Unit station**
- 4 Pin table**
- 5 Machining cell**

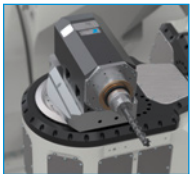




Quick-change interface



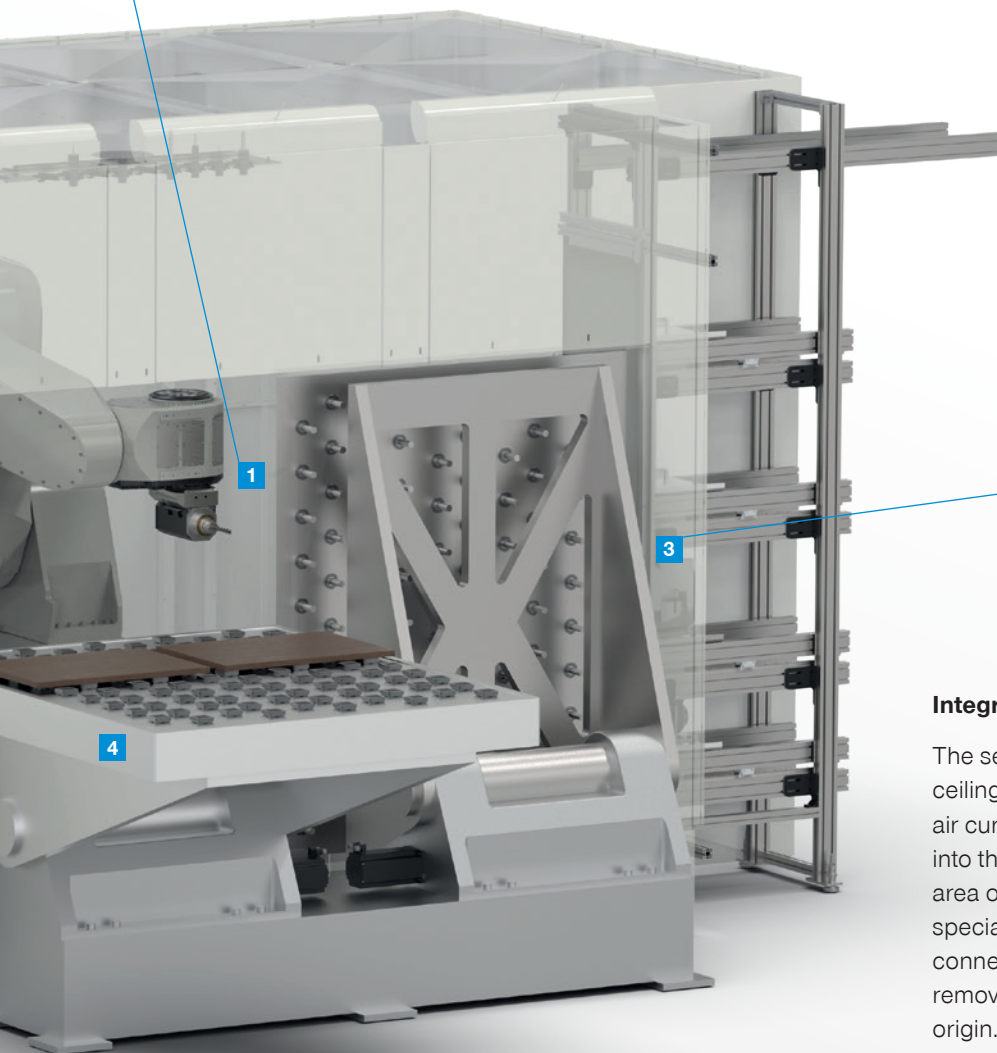
Swivel-mounted multi-spindle head



Swivel-mounted milling spindle

## OUR EXPERTISE – YOUR ADVANTAGE

- ▶ Different tasks with just one machine: Nesting, milling, pre-assembly, parts manipulation
- ▶ 6-sided machining without manual intervention or separate technical equipment
- ▶ High machining performance
- ▶ Maintenance-friendly and modular design = high availability times between machining steps
- ▶ Separation of machining and handling = short times between machining steps
- ▶ Spatial removal of dirt-prone components from the machining point



### Integrated extraction

The segmented blower unit on the enclosure ceiling creates a laminar air flow that serves as an air curtain. Chip and dust emissions are directed into the floor-side extraction unit in the machining area of workpiece clamping area with the aid of specially designed aerodynamics. Extraction connections on both sides ensure the controlled removal of chips and particles at their point of origin.

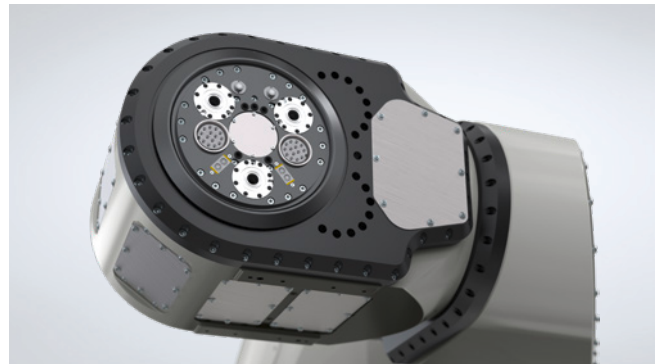
# RAPTOR MACHINING ROBOT

## IN DETAIL

### Quick-change interface

Designed for the automatic change of modules weighing up to 100 kg, the quick-change interface offers particular advantages for machining wood, plastic and fiber-reinforced composites. With various end-of-arm tools, like for sawing or milling, the Raptor can perform different machining tasks. This increases productivity and makes it easier to manufacture individual workpieces.

- ▶ High power transmission
- ▶ Holding by means of zero-point clamping systems
- ▶ Electrical, fluidic and pneumatic energy transmission



### Tool magazine

The tool magazine of the robot-based manufacturing cell allows a wide range of tools to be changed quickly and safely throughout the entire machining process.

- ▶ Quick and safe tool change
- ▶ Minimization of set-up times
- ▶ Increased efficiency through optimization of the manufacturing process



### MINIMUM THROUGHPUT TIMES

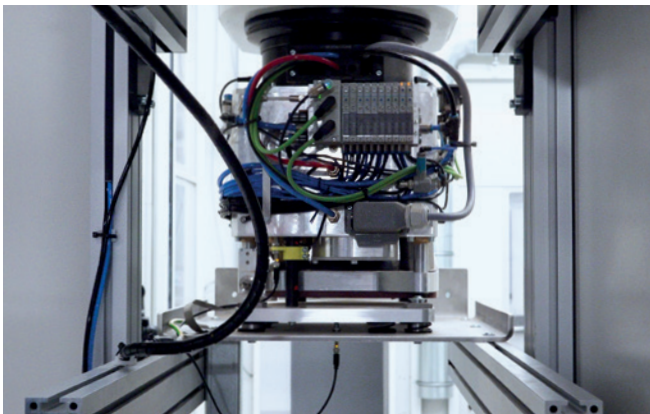
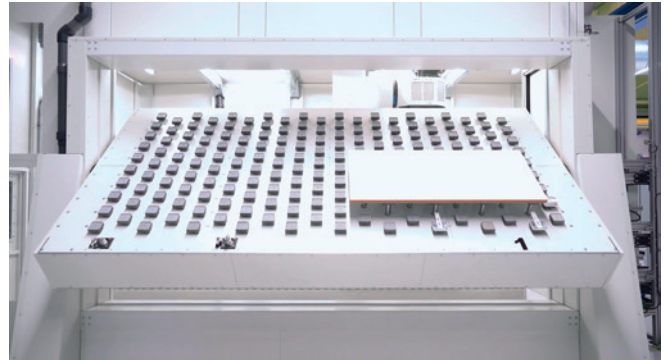
Nesting, milling, pre-assembly and part handling – all in one automated process. Thanks to complete 6-sided processing without manual intervention.



### Pin table

A universal, efficient and flexible turning table design (pendulum machining system) for clamping plate-shaped and flat workpieces with vacuum pins. The design enables flexible clamping, which reduces retooling times. Individually extendable cylinders and table designs with individually controllable extension strokes ensure problem-free machining on the revolving side and horizontally.

- ▶ Universal manual or automatic workpiece loading
- ▶ Individual selection and deselection of the vacuum and the opening stroke during machining



### Unit station

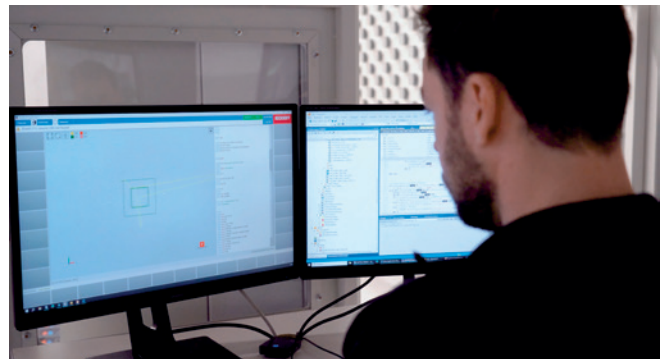
The aggregate station allows the storage of various interchangeable machining units, such as machining spindles, drilling units, individual machining units and even handling equipment in the form of a suction spider.

- ▶ To protect against chips and dust, the machining units are located outside the machining area
- ▶ Removal or maintenance of the machining units without interrupting the process

### Software

The Raptor machining robot is controlled by an industry-standard CNC controller combined with a powerful CAM programming system that is well established in the industry – from design all the way to the finished machining.

- ▶ Software-based programming via a universal CAD-CAM system
- ▶ Efficient derivation of machining sequences from CAD data
- ▶ Seamless provision of CAM programs for the machining cell

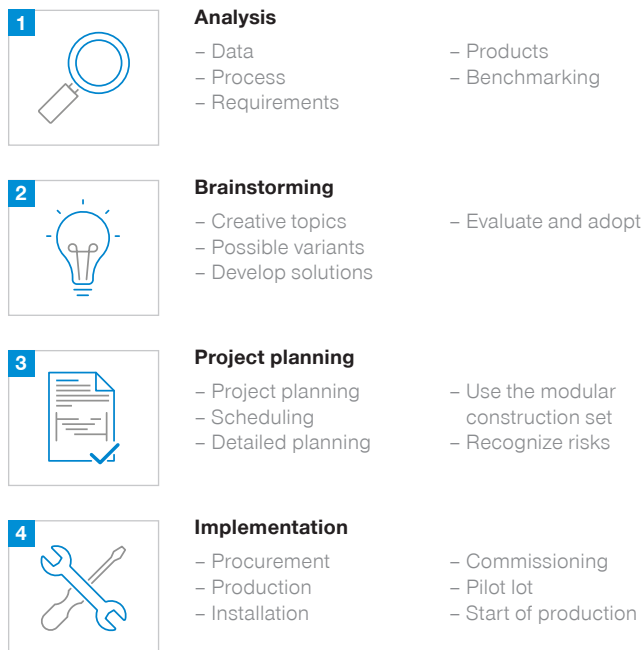


# ENGINEERING SYSTEMS

## ENGINEERING

Our standard for the technological maturity, degree of integration, quality, product duration, scope of function and performance of our products has grown continuously in recent decades. We offer an extensive product line including everything from system assemblies with low complexity and customized systems to high-end production systems that set the benchmark for performance in the industry with a digital twin and cloud connection. Our high implementation

efficiency is based on enabling process steps to be carried out simultaneously using state-of-the-art tools. Our references include nearly all global automakers and a wide range of major players from all industries, including everything from the food industry to mechanical engineering to consumer goods. Our standard is to be the world's leading manufacturer of system solutions and your partner.



### OUR EXPERTISE – YOUR ADVANTAGE

- ▶ Over 30 years of experience
- ▶ 40 employees in development and simulation
- ▶ Expertise in all industries
- ▶ Partner for mechanical, mechatronic and software solutions in automation
- ▶ Development partner of major OEMs

## CONTROL DEVELOPMENT COMPETENCIES

### E-CONSTRUCTION

- ▶ EPLAN

### M-CONSTRUCTION

- ▶ CREO PRO ENGINEER

### SIMULATION

- ▶ ISG Virtuos
- ▶ ABB RobotStudio
- ▶ Tecnomatix

### USER INTERFACES

- ▶ Beckhoff HMI
- ▶ Siemens WinCC
- ▶ Custom UI (C#)
- ▶ Custom UI (Angular / Node.js)

### HIGH-LEVEL LANGUAGE DEVELOPMENT

- ▶ C#
- ▶ Python
- ▶ Angular / Node.js

### DATABASES

- ▶ SQL
- ▶ MongoDB

### PLC PROGRAMMING

- ▶ Beckhoff (TC3)
- ▶ Siemens (TIA)

### ROBOT PROGRAMMING

- ▶ ABB
- ▶ Fanuc (special projects)

### DRIVE ENGINEERING

- ▶ Beckhoff
- ▶ Siemens
- ▶ SEW
- ▶ KEB
- ▶ ELMO

### BUS SYSTEMS / COMMUNICATION

- ▶ EtherCAT
- ▶ Profinet
- ▶ IO-Link
- ▶ MQTT

### VISION SYSTEMS

- ▶ Ensenso
- ▶ Cognex
- ▶ Keyence
- ▶ Baumer

The contents and data are correct as of printing. Edition 04/2026.

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## ZIMMER GROUP – THE KNOW-HOW FACTORY

**OUR KNOW-HOW FACTORY WORKS WITH ALL INDUSTRIES AND DELIVERS EVERYTHING FROM A SINGLE SOURCE. OUR PRODUCT RANGE IS FAR REACHING, BOTH IN ITS DEPTH AND ITS BREADTH.**

**DO YOU HAVE A DEVELOPMENT PROBLEM? WE'LL SOLVE IT! SET US A CHALLENGE IN RESEARCH AND DEVELOPMENT. COUNTLESS INNOVATIONS ORIGINATE FROM OUR COMPANY. WE ARE ENTHUSIASTIC ABOUT NEW PRODUCTS AND PRIDE OURSELVES ON OUR CORPORATE PIONEERING SPIRIT.**

### CONTACT – WORLDWIDE

With our current 19 global subsidiaries and partners in over 125 countries, we offer the excellent service of a technology leader. We look forward to hearing from you!



[www.zimmer-group.com/en-us/contact](http://www.zimmer-group.com/en-us/contact)

### ZIMMER GROUP SYSTEM TECHNOLOGY – THE SPECIALISTS FOR CUSTOM SOLUTIONS

With over 30 years of development experience, the system technology develops special solutions for handling and automation.



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### OUR NEW PRODUCTS

Zimmer Group is renowned as an innovator and for its pioneering spirit. Accordingly, each year we can offer new innovative and individual solutions. For current product highlights, refer to:



[www.zimmer-group.com/en-us/innovations](http://www.zimmer-group.com/en-us/innovations)

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