

ZOLLERN

Solid metals. Fine solutions.

Drive Technology
Automation



The ZOLLERN-Group

With first-class products and customized solutions in the sectors drive technology, investment casting, sand casting and forging as well as steel profiles we are one of the leading manufacturers – worldwide.

As one of the oldest family-run businesses in Germany we are proud to look back on an impressive 300-year history during which we have merged tradition with innovation. Our main focus is on excellent quality and service.

Welcome to the world of ZOLLERN, where experience and progress go hand in hand to offer our customers the best solutions and products for their requirements in various industrial sectors.

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Services

Experience and innovation



ZOLLERN Automation

In today's world, economic production processes and high system availability are key to corporate success. In this context, part transport, transfer and infeed, intermediate workpiece storage and part palletisation are integral to the task of automation and rationalisation.

ZOLLERN plans, designs and manufactures automation systems and plants for customers in the mechanical engineering, automotive, wood and furniture industries among other sectors on a world-wide basis.

The Drive Technology division at our second-largest site in Herbertingen has evolved into the largest business area within the ZOLLERN Group. The Automation unit is also part of this division.



» ZOLLERN supplies precision linear axes, gantries and turnkey plants to meet the high standards of a range of industrial sectors. «



Experienced staff, custom-built solutions and products

Its mission is to provide a one-stop service.

Competent and highly motivated staff develop and implement individual products and solutions for customers all over the world.

Their know-how, experience and problem-solving expertise guarantee the international success of the ZOLLERN Group.

Staff from the sales, design and assembly departments support and guide our customers through the project engineering, development and implementation of complex solutions in automation technology. Close contact with our customers is fundamental to our work.

A comprehensive range of services right from the planning stage

- Years of project experience
- CAD templates and models
- On-site project meetings and plant inspections
- Detailed offers

Fields of application and industry solutions



ZOLLERN linear axes, linear and gantry axes and traversing axes are used in a wide variety of industries and sectors.

Automotive and automotive supply industry

Handling equipment in body shop and body-in-white lines, framing units, motors and transmission engineering, traversing axes for welding and handling robots, feeders for press lines

Plant engineering

Test facilities, assembly lines and heating and cleaning systems

Mechanical engineering

Linkage of machine tools and machining centres, workpiece and tool handling equipment, handling systems for injection moulding, broaching and packaging machinery

Commercial vehicle industry

Truck axle assembly, handling equipment for body shops

Aerospace industry

Production and assembly lines, test facilities

Wood working and furniture industry

Handling equipment for wooden panels and furniture elements

Food, beverage and tobacco industry

Handling equipment for tobacco boxes, drinks crates, bottles and food packaging

Logistics, palletisation and conveyor technology

Handling equipment for pallets, palletisation of metal and plastic products, containers, etc.

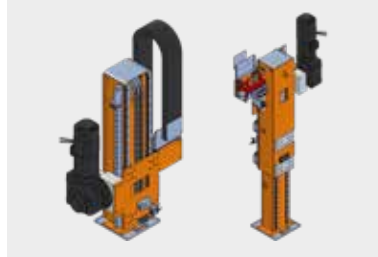
ZOLLERN has numerous reference projects and plants in these industrial sectors.

Product overview



Linear axes and modules (ZLB, ZLD)

Load: 15 kg to 7,000 kg
Nominal stroke: 5500 to 7,000 mm
(max. per individual axis)



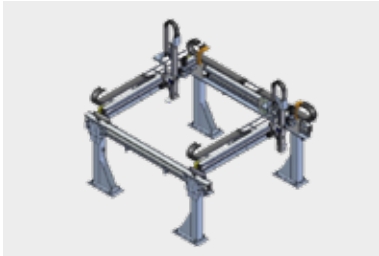
Telescopic axes (ZTA)

Load: 200 kg, 300 kg,
600 kg and 1,600 kg
Nominal stroke: up to 4,000 mm



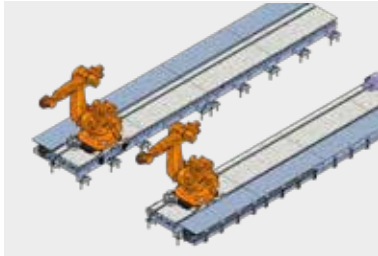
Rotary modules (ZDM)

rotation angle +/- 180°



Line and gantry portals

Variable combination of linear and telescopic axes, load and nominal stroke according to chosen option, available in ground-level or overhead versions



Robot travelling axes (RVA)

Load: up to 4,000 kg
Nominal stroke: up to 50,000 mm



Traversing axes (ZVA)

Load: 2 x 500 kg to 8,000 kg
Nominal stroke: up to 50,000 mm



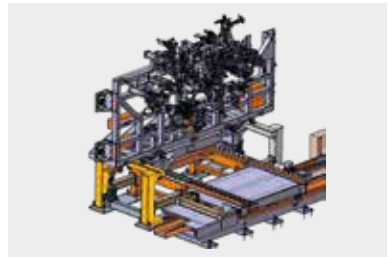
Level lifters and lift columns

Load: up to 1,600 kg
Lifting height: up to 15,000 mm



High-speed conveyors

Nominal stroke: up to 50,000 mm



Framing

Flexible clamping frame transport and storage units for automotive body-in-white shops, available in ground-level or overhead versions



Plant and system solutions for machine tools

Special transfer solutions for complete production lines and machine tool linkage



System solutions for body-in-white and press lines

For use in automotive body shops

Linear axes and modules



Linear axis range

ZLB linear axis with shaft (hollow or solid)

ZLD linear axis with profile

ZOLLERN linear modules and gantry axes

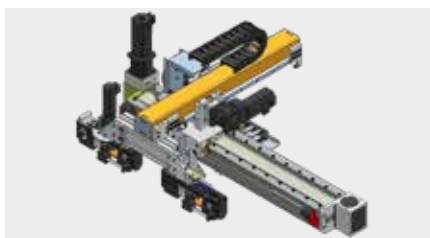
are found in automotive engineering, machine tool and metal processing applications, e.g. in the form of dual and multi-axis gantry systems and surface gantries.

Features

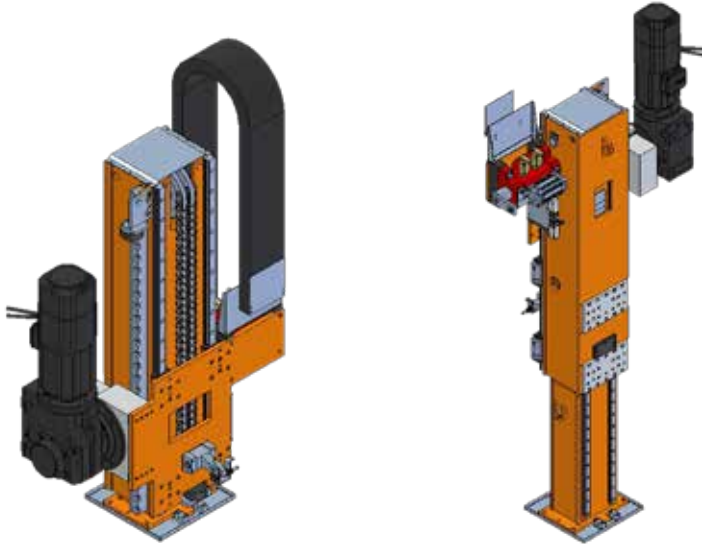
- Max. traversing distances for single guide rails 5,500 - 7,000 mm
- Traversing distances can be extended by joining single rails together
- Can be upgraded to 2 or more independently driven carriages on one gantry axis
- Customised drive mounting solutions
- Any installation position
- Combination and mounting options with other ZOLLERN axes to create dual and multi-axis gantry systems
- Some corrosion-protected versions also available
- Wide range of accessories: supports, drip pans, energy chains, switch mounting, anti-lowering devices
- Heavy-load axes also available (up to 7,000 kg)

Properties

- Load range from 15 kg to 7,000 kg according to series
- Vertical and horizontal installation
- High flexural and torsional rigidity
- Bogie truck in torsionally rigid light metal design with rollers mounted on roller bearings
- With toothed belt or gear rack and pinion drive



Telescopic axes



Telescopic axis range

ZTA 200, ZTA 300, ZTA 600 and ZTA 1600

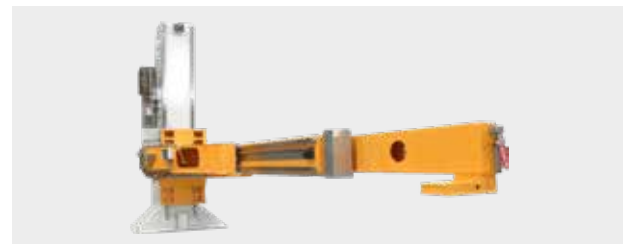
ZOLLERN telescopic axes are used in a variety of applications in the automotive, machine tool and metal processing sectors, e.g. as dual or multi-axis gantry systems, surface gantries, or where normal linear axes cannot be used due to space limitations (e.g. low ceiling).

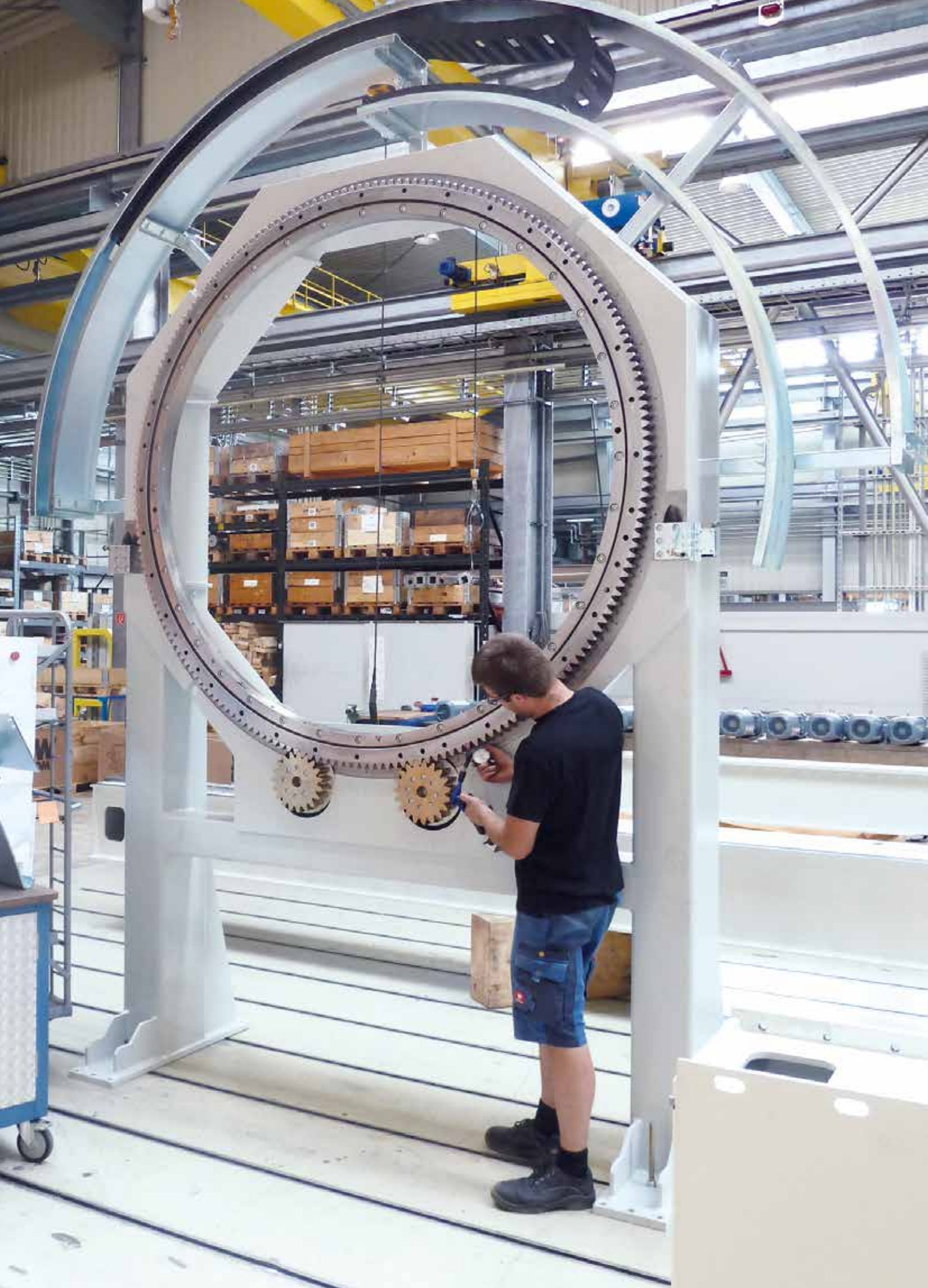
Features

- Space-saving telescopic axis
- Guide rails
- Customised drive mounting solutions
- Any installation position
- Combination and mounting options with other ZOLLERN linear axes to create dual and multi-axis gantry systems
- Fixing systems with stops in each position
- Can be combined with rotary modules

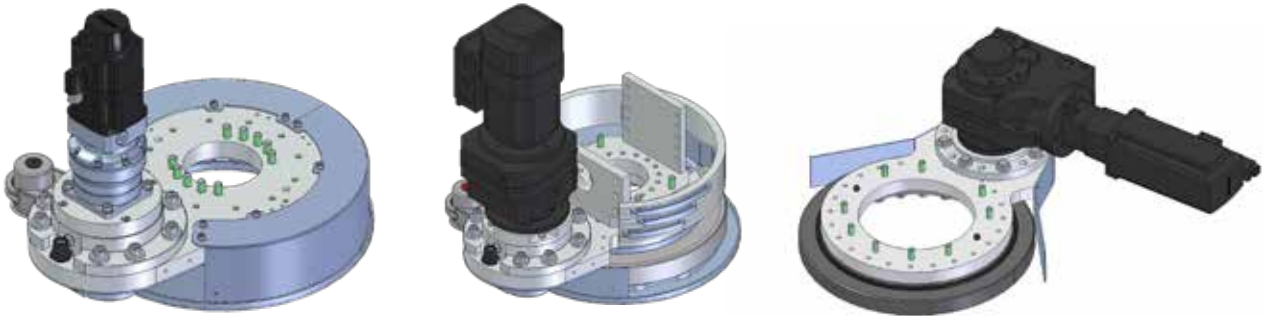
Properties

- Load range depending on construction type : ZTA 200 = 200 kg, ZTA 300 = 300 kg, ZTA 600 = 600 kg and ZTA 1600 = 1,600 kg
- Vertical and horizontal installation
- High flexural and torsional rigidity
- Driven via gear rack, pinion and roller chain
- Traversing distances from 2,000-3,000 mm plus customised lengths





Rotary modules and rotary systems



ZOLLERN rotary modules ensure exact rotational movements, e.g. in lines where workpieces and tools have to be rotated, in the form of a drum magazine system for clamping frame units or rotary multi-tooling units.

Rotary module features

- Facilitation of rotational movements
- Load range of up to 10,000 kg
- Mass moment of inertia up to 60,000 kg/m²
- Gear rack and pinion or pneumatic drive
- Traversing angle +/- 180°
- Combination and mounting options with other ZOLLERN linear axes
- High flexural and torsional rigidity

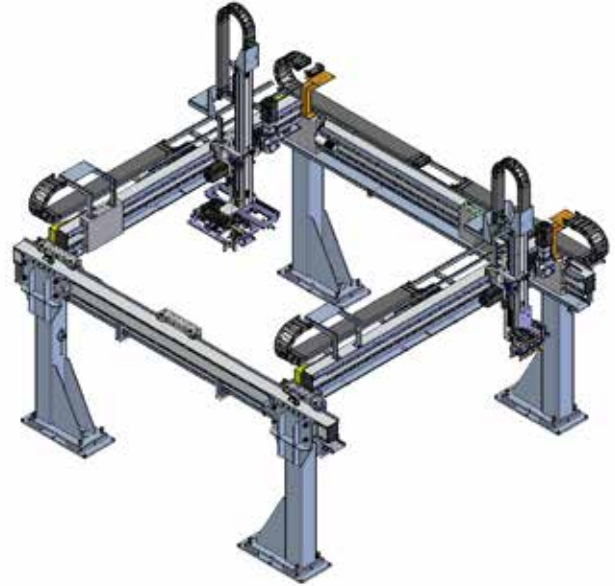
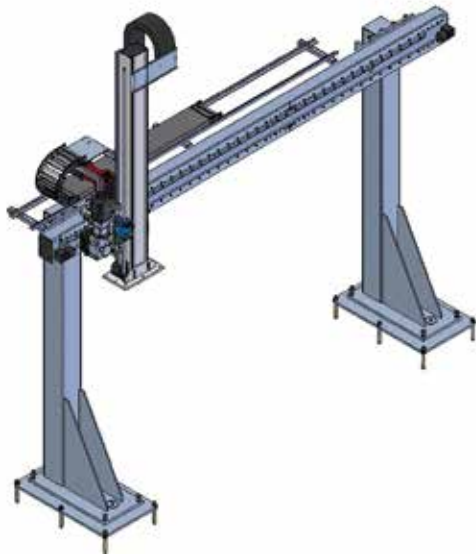
Rotary system features (drum magazine for framer units and multi-tooling applications)

- In framer unit applications, the clamping frames can be stored in vertical or horizontal drum magazines. That way the framer units take up less space and can be readily accessed.
- In multi-tooling applications, several tools and jigs can be fed into the working area in one station.





Line and gantry portals



ZOLLERN line and gantry portals

are designed for applications in the automotive, aerospace, machine tool and metal processing sectors.

Features

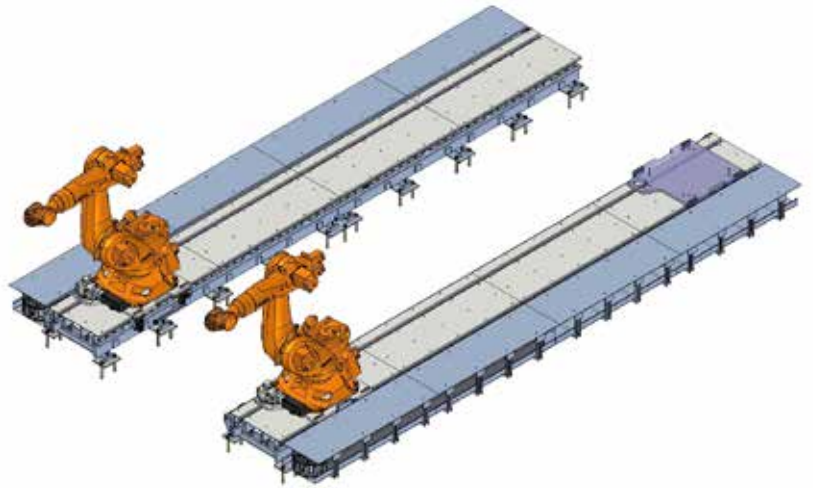
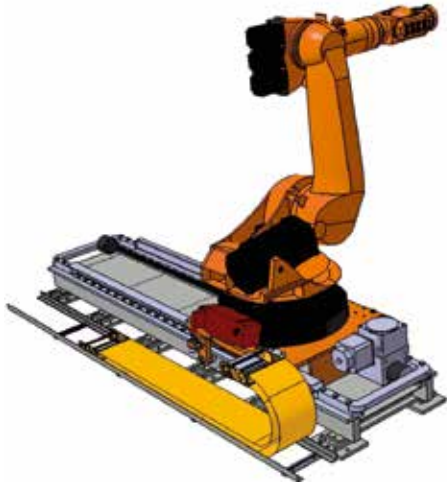
- Max. traversing distances up to 100,000 mm
- Implemented with X, Y and Z-axis
- Consisting of a combination of variable ZOLLERN linear and telescopic axes and rotary modules
- Can be upgraded to 2 or more independently driven carriage on one gantry axis
- Customised drive mounting solutions
- Can be supplied as independently operated drive packages
- Wide range of accessories: supports, drip pans, energy chains, switch mounting, anti-lowering devices

Properties

- Load range from 15 kg to 7,000 kg according to series
- Vertical and horizontal installation
- High flexural and torsional rigidity
- Bogie truck in torsionally rigid light metal design with rollers mounted on roller bearings
- With toothed belt or gear rack and pinion drive



Robot travelling axes



The **ZOLLERN robot travelling axes** can be used for robots of various types, e.g. ABB, Kuka, Fanuc, Stäubli and others.

Design

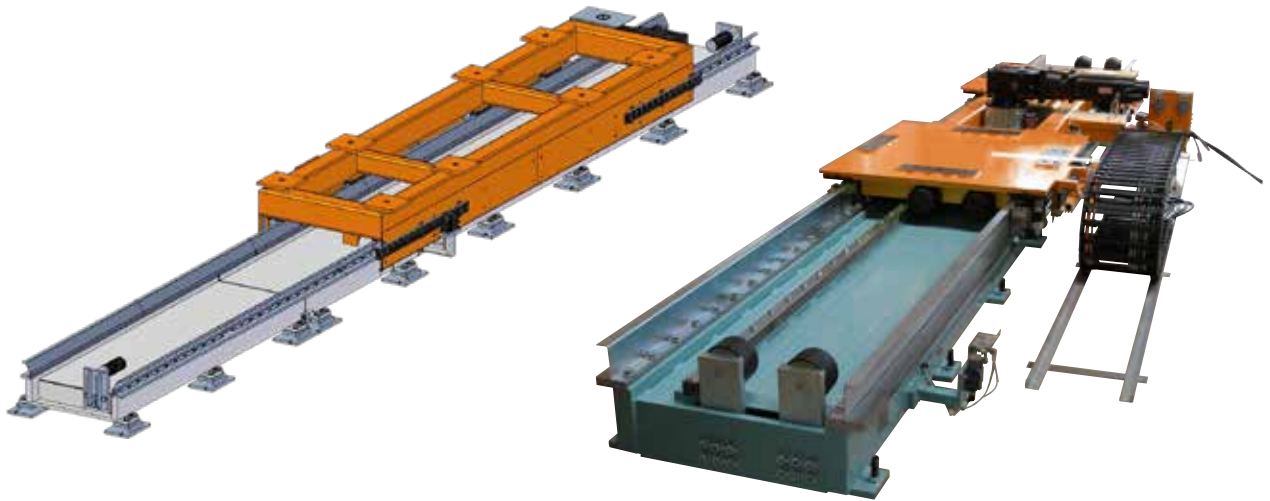
- Solid welded steel structure as base support
- Hardened and ground flat guideways
- Dirt wiping systems on roller brackets
- Torsionally rigid, solid carriage for carrying robot
- Carriage with individual and easily exchangeable roller blocks
- Gear rack and pinion drive with powerful drive motors
- Custom-built versions also available

Technical data

Max. load:	up to 6,000 kg
Carriage mass:	550 kg
Power transmission:	gear rack and pinion, helically toothed
Possible travelling speed:	1.5 – max. 3 m/s
Max. acceleration:	1 - 5 m/s ²
Repeat accuracy:	+/- 0.02 mm
Nominal stroke, min.-max:	1,000 - 40,000 mm
Nominal stroke increment:	500 mm
Mounting position:	floor, wall, ceiling



Traversing axes



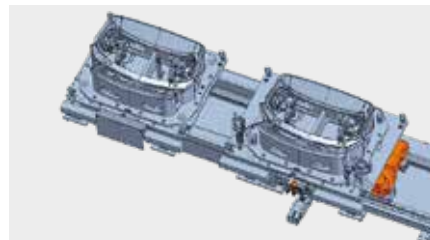
The **ZOLLERN traversing axis** is particularly suitable for tool or jig changing applications and for transporting large components. Transport weight from 2 x 500 kg to 8,000 kg

Features

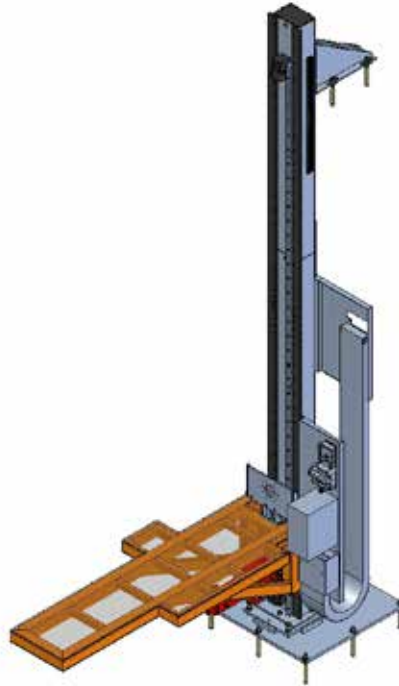
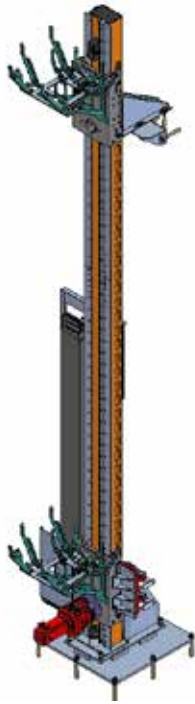
- Solid welded steel structure as base support
- Hardened and ground flat guideways
- Dirt wiping systems on roller brackets
- Torsionally rigid, solid tubular steel frame carriage for carrying jig
- Bogie truck with individual and easily exchangeable roller blocks
- Gear rack and pinion drive with powerful drive motors

Properties

- Jig load approx.: 2 x 500 kg - 8,000 kg
- Jig height up to approx.: 2,700 x 5,000 mm
- Repeat accuracy:
 - +/- 0.3 mm without pneumatic fixing
 - +/- 0.05 mm with pneumatic fixing
- Axis height floor - upper edge of frame approx.: 450 mm - 600 mm or higher



Level lifters and column lifts



ZOLLERN level lifters are used in particular for transporting parts vertically over one or more floor levels.

Design

ZOLLERN lifts are notable for their

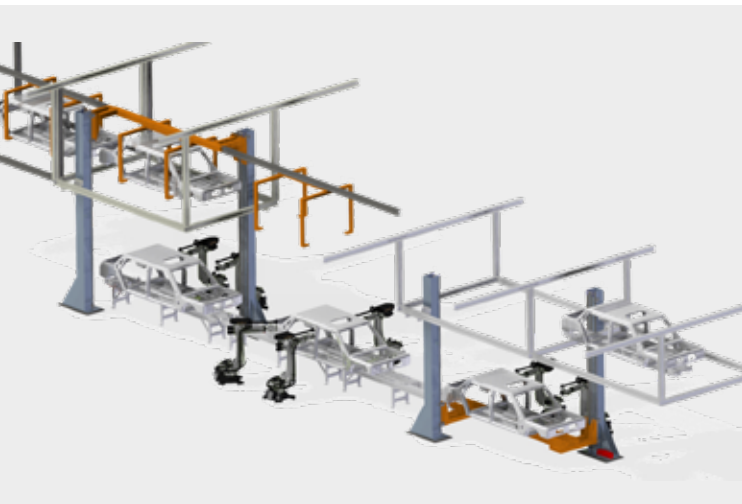
- compact construction
- high uptime availability
- exact positioning
- high running
- excellent accessibility of all components, e.g. motor, bearings, etc.

The lift consists principally of the standardised axis systems with hardened flat guide-ways and gear rack-and-pinion drive (optional: toothed belt drives and custom solutions).

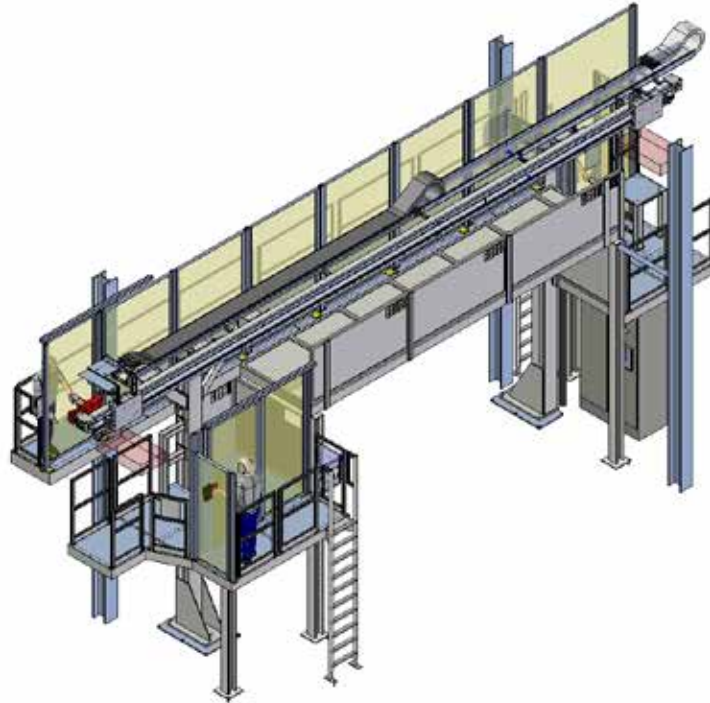
Technical data

Load:	2,000 kg
Lifting heights:	up to 15,000 mm
Repeat accuracy:	+/- 0.2 mm

Combinable with overhead transfer or floor axis/belt conveyor for higher loads within an axis system.



High-speed conveyors



ZOLLERN high-speed conveyors are used for covering longer distances within the production process. The insertion and removal of the parts is usually done with articulated robots.

Features

Zollern high-speed conveyors are notable for their

- compact construction
- high uptime availability
- high positioning accuracy
- high running
- excellent accessibility of all components, e.g. motor, bearings, etc.

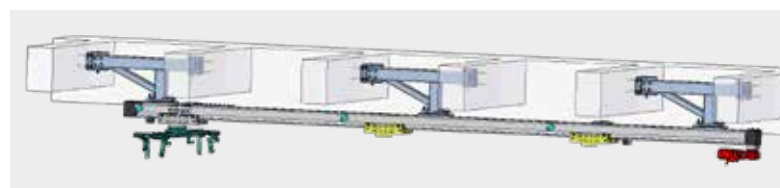
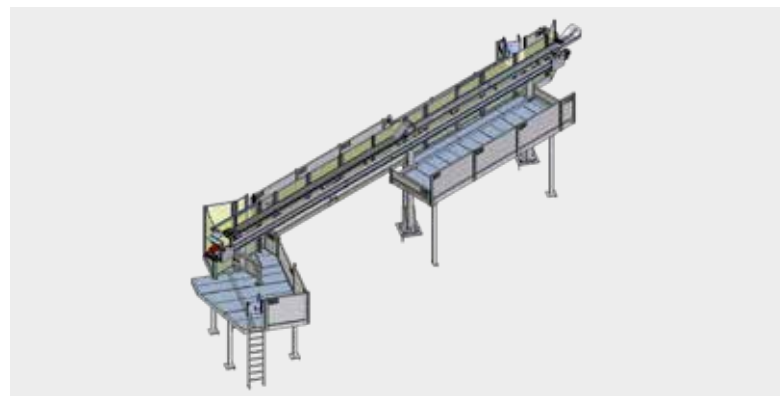
The high-speed conveyor consists principally of our standardised axis systems with hardened flat guide-ways plus our gear rack and pinion or toothed belt drive. This makes it possible to achieve very short cycle times and high transfer speeds.

Properties

Depending on the design and component load, the following speed and acceleration values can be achieved:

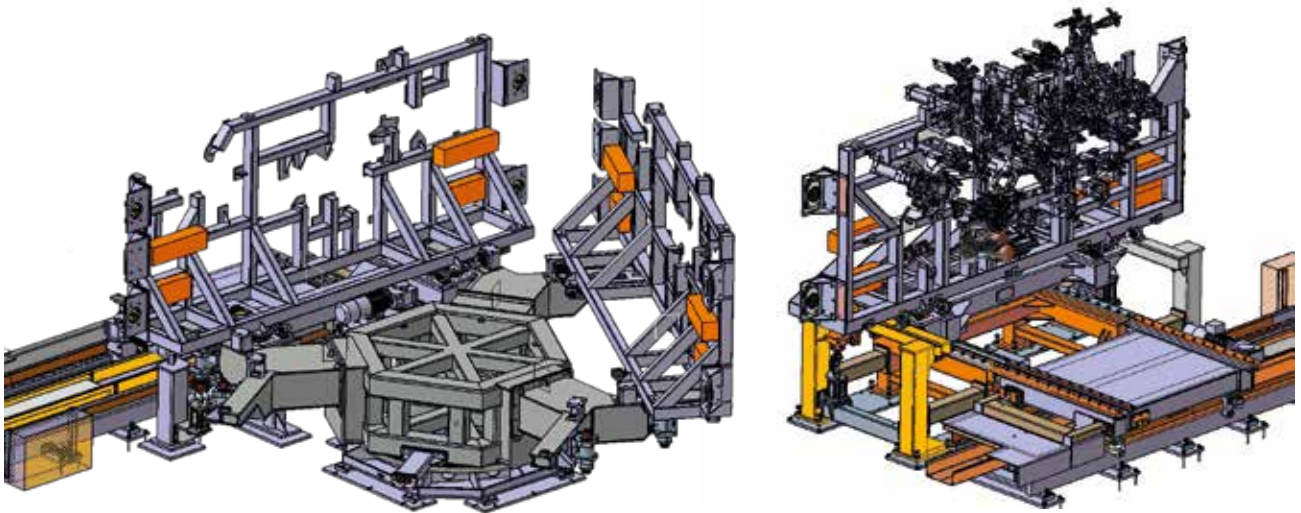
- Gear rack and pinion drive $v = 3 \text{ m/s}$ and $a = 2 \text{ m/s}^2$ or
- Toothed belt drive $v = 6 \text{ m/s}$ and $a = 2 \text{ m/s}^2$

The conveying distance can be up to 50 m.



Framing

Transport and storage units for clamping frames
(for automotive body-in-white shops)



ZOLLERN framer transfer units are used for transporting clamping frames for car side panels and roofs and as a clamping frame change system in car assembly lines.

Features

- Short clamping frame changeover times
- High flexibility in terms of numbers of clamping frames
- Compact size of overall system
- High reliability of clamping frame changeover
- Highly accurate transfer of clamping frame to geostation
- High system availability

Floor-based and overhead clamping frame systems:

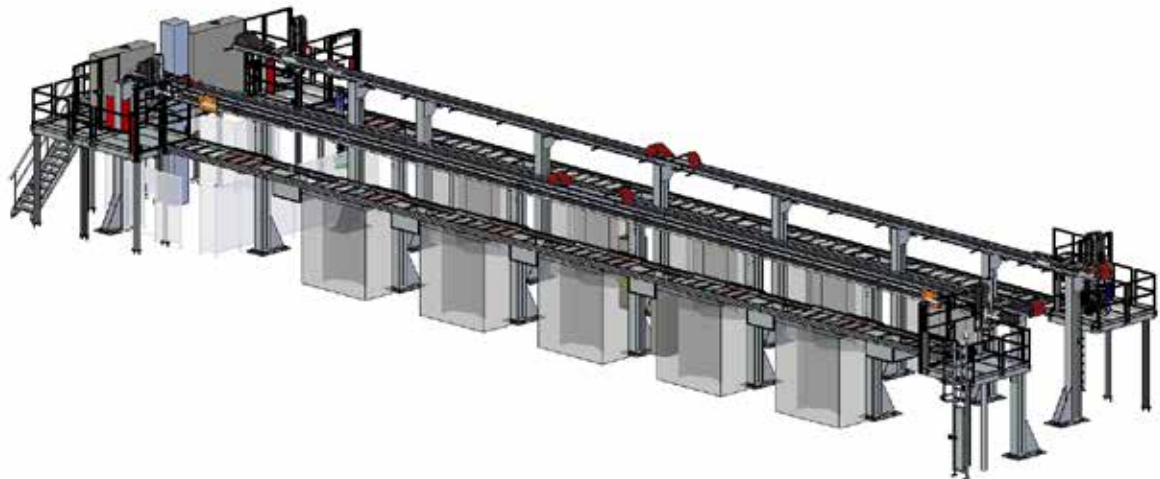
In this case, the clamping frames are transported and changed via floor-mounted axis systems or overhead transfer systems.

The clamping frames are loaded into the "GEOBOX" via Y-axis carriage or a pusher.

Depending on the required number of clamping frames, they are stored in vertical or horizontal drum magazines or so-called stations.



Plant and system solutions for machine tools



ZOLLERN plant and system solutions consisting of **linear axes and gantries**

are used for linking and automating machine tools and machining centres as well as transporting workpieces and tools.

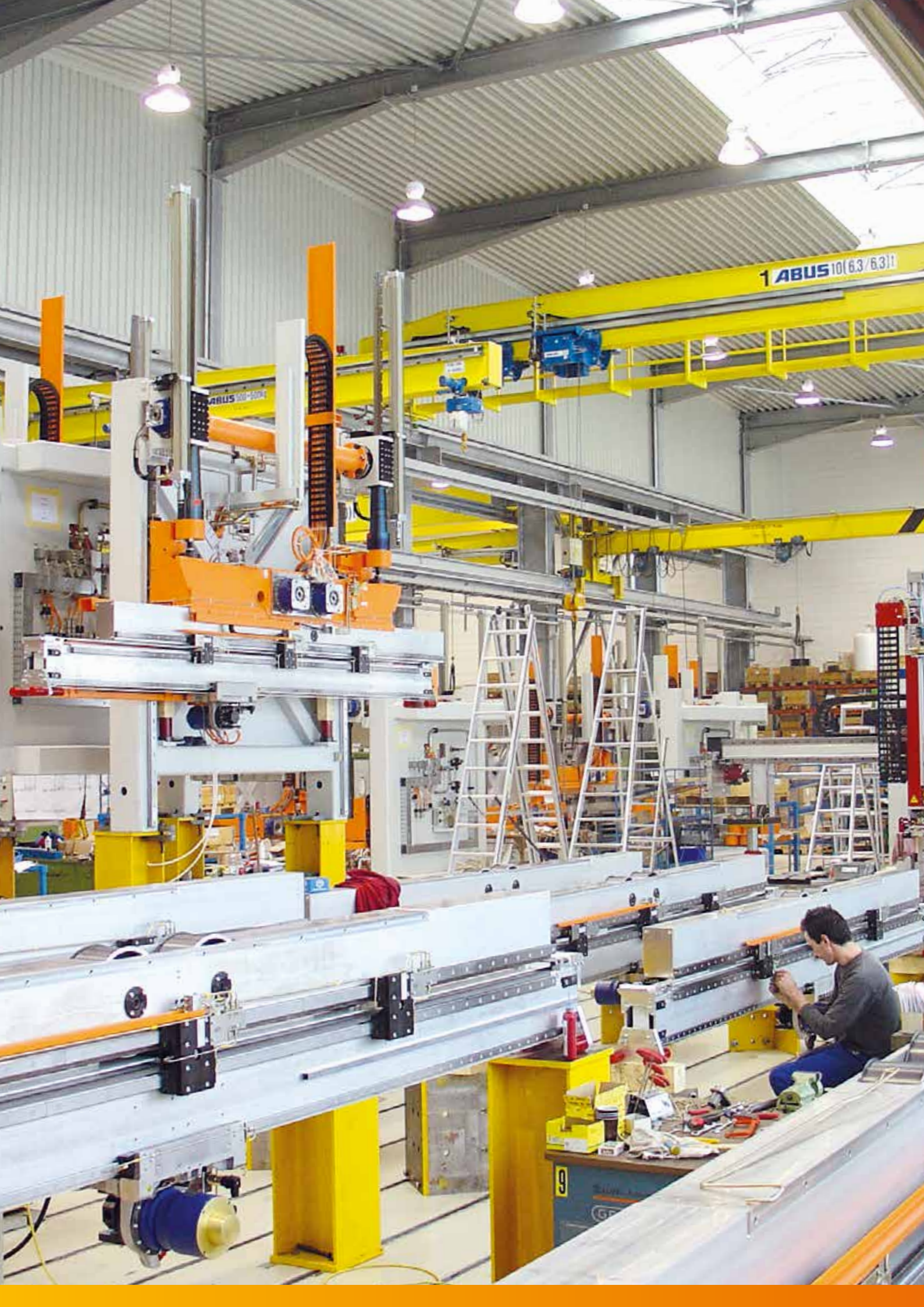
- Overall project engineering, integration of all major makes of machine tools and system implementation
- Gripper systems for workpieces and tools

Gantry robots are an efficient method of machine tool automation. By loading from the top, e.g. via hatches, they ensure that the machine remains accessible.

Plant and system solutions

- One-stop supplier of turnkey systems with NC and PLC controls
- Design and execution of customised automation and rationalisation solutions
- Multi-axis gantry systems for loading and unloading machines and machining centres
- Line assembly, commissioning, production support
- Reference plants in all key industrial sectors
- System solutions with conveyor technology, safety equipment and plant control systems





System solutions for body-in-white and press lines



ZOLLERN plant and system solutions consisting of **linear axes and gantries** are used for linking and automating body-in-white lines in the automotive engineering industry.

ZOLLERN linear and gantry axes can be integrated into the body-in-white line and combined with each other as overhead axes, framing stations and robot traveling and traversing axes.

Implementation of solutions for body-in-white lines

- One-stop supplier of turnkey systems with NC and PLC controls
- Development of customer-specific automation and rationalisation solutions consisting of multi-axis gantry systems, robot systems (robot travelling axes) and lifting devices
- Handling and intermediate storage of car body parts
- Gripper systems for car body parts
- High flexibility and system availability
- Also feeder systems (press feeders) for upstream press lines
- Overall project engineering, line assembly, commissioning, production support



ZOLLERN Group

Product areas

Metals and shaping

// Investment casting parts



- Turbine components
 - Vanes / Blades / Shrouds / Heat Shields
- Structural Castings
 - Gas Turbines / Aero / Engines Defense / Medical / Industrial Components
- Automotive
 - Turbine Wheels / Waste gates / Vanes / Pins / Planet carriers
- Implants
 - Knees (Femur, Tibia) / Hipps
- Alloys
 - Super alloys / Cobalt Chrome alloys

// Sand casting parts



- Sand casting
- Croningguss / Maskenguss
- Ceramic casting
- Continuous casting
- Centrifugal casting

// Forgings



- Forgings made of pure copper and copper alloys
- Semi-finished products, open die forged, flat bars, round bar
- Drop forged parts
- Rings, seamlessly rolled
- Bushings, seamlessly forged
- Individual pieces, small series, large series

// Special profiles and finished parts



- Special profiles, coils, bars
- Customer-specific finished parts
- Profile types hot-rolled, cold-rolled, cold-drawn, induction-hardened

Drive technology and automation

// Gearboxes



- Travel drives
- Slewing gearboxes
- Winch gearboxes
- Industrial gear units
- Gearboxes for tunnel boring machines
- Sugar mill gearboxes
- Electric drive systems
- Condition Monitoring and Predictive Maintenance

// Winches



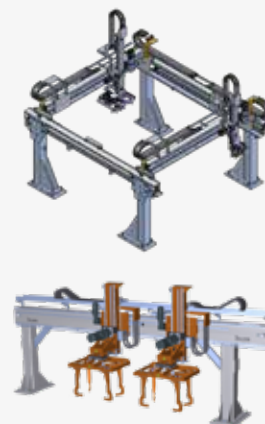
- Hoisting winches
- Free fall winches
- Pull winches
- Rescue boat winches
- Winch systems
- Winch gearboxes

// Electric motors



- Torque motors kits
- Synchronous motor kits
- Synchronous motor modules

// Automation, special systems



- Linear units, linear modules, gantry axes, portal units
- Telescoping axes
- Rotary modules, rotary tables
- Line gantries, area gantries
- Robot traverse axes, jig axes
- Storey lifter and lifting columns
- Fast conveyor
- Framing tenter handling / overhead systems
- Storage systems
- Complete systems with steel construction and control
- Special solutions
- Gripper

// Hydrostatic systems



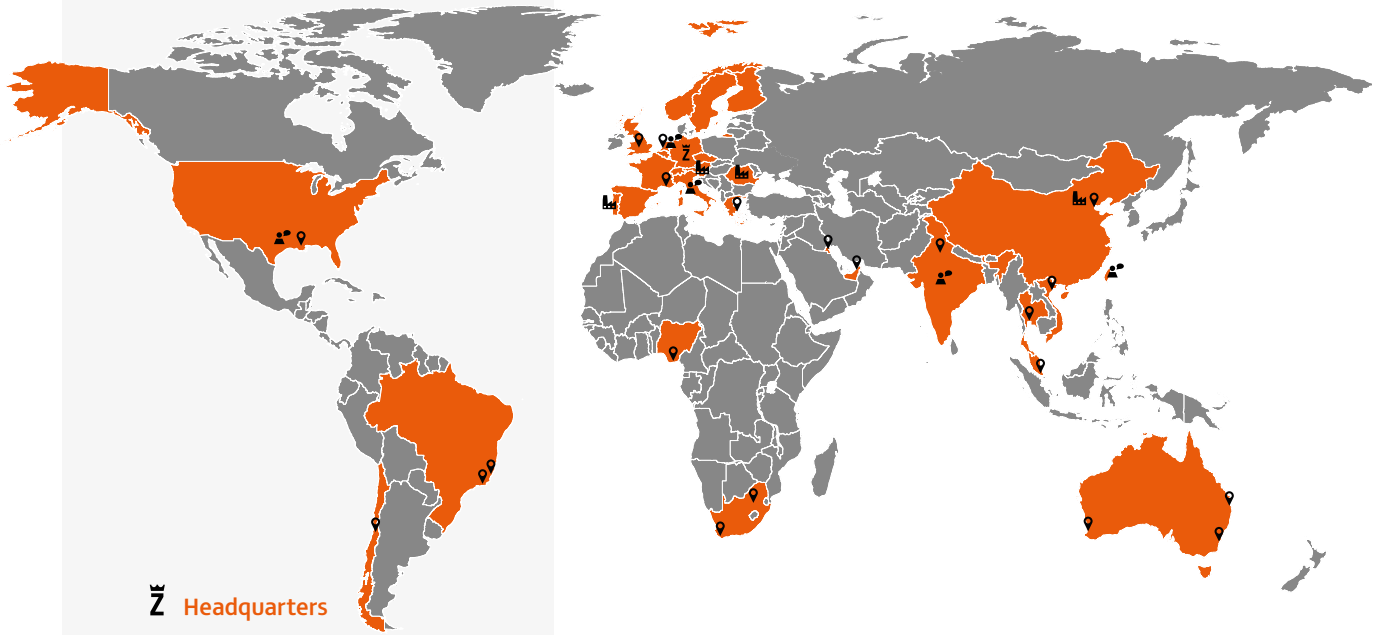
- Hydrostatic spindle units
- Hydrostatic rotary tables
- Aerostatic rotary tables
- Hydrostatic linear guides
- Hydrostatic center drive spindles
- Hydrostatic bearing components
- Hydrostatic special applications and test benches

// Rotary tables systems



- Roller bearing rotary tables
- Hydrostatic rotary tables
- Automatic pallet changing systems and linear axes
- Swiveling tables
- After sales service for products of ZOLLERN, Rückle and Eimeldingen

ZOLLERN



Z Headquarters

👤 Subsidiaries

Italy and southern Europe
 Netherlands and Northern Europe
 USA
 India and Southeast Asia
 Taiwan, China

🏭 Factories

Germany
 Portugal
 Romania
 Slovenia
 China

📍 Service partner

Australia
 Brazil
 Chile
 Greece
 Great Britain
 Kuwait
 Singapore
 South Africa
 Thailand
 Dubai
 USA
 Vietnam



ZOLLERN-worldwide



ZOLLERN-Products



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