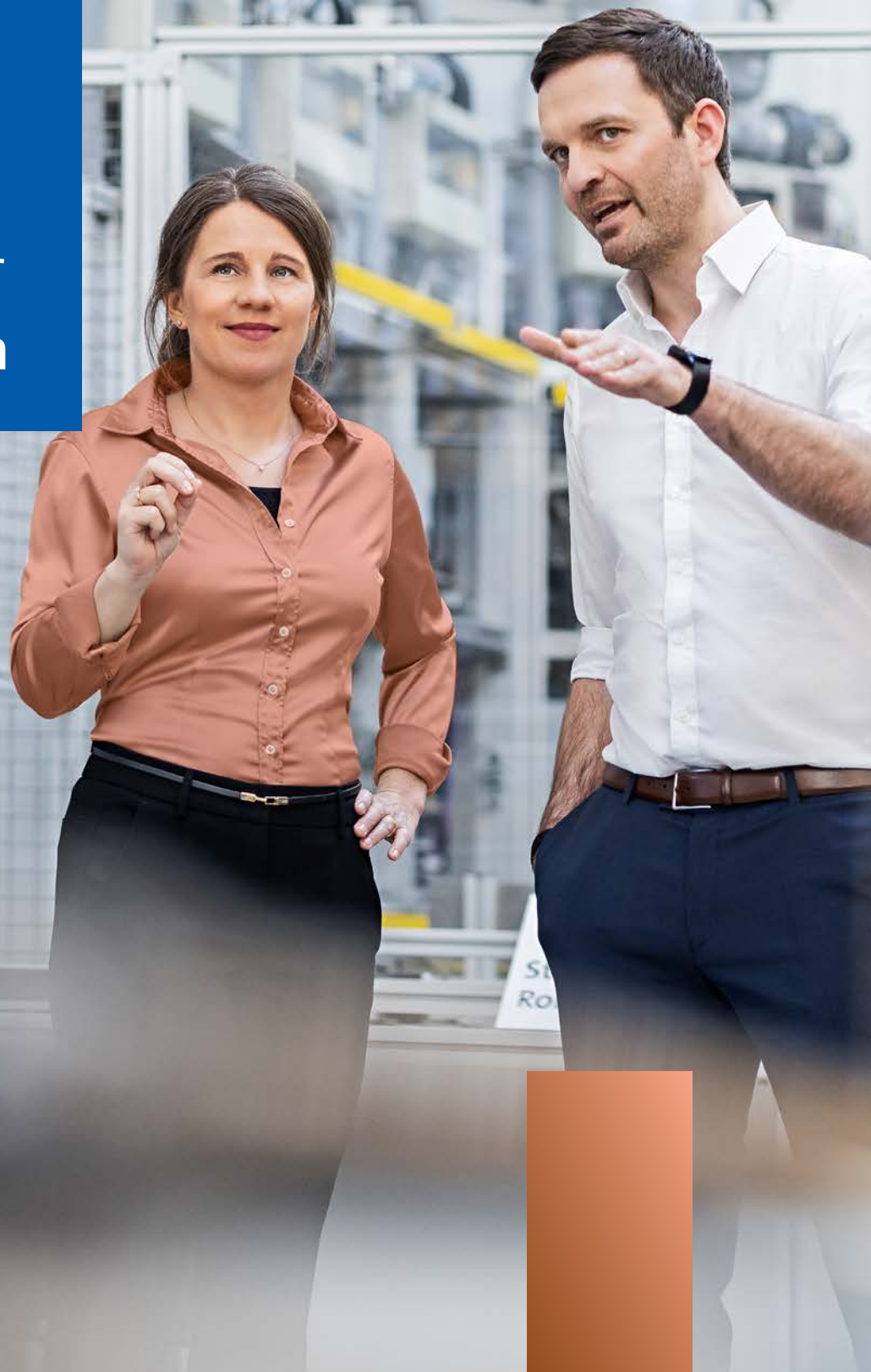



Lenze Automation Systems

# Solutions for Automation





We implement  
your ideas with  
**enthusiasm**  
in motion

As one of the leading automation and drive-technology specialists with extensive know-how and a worldwide network of experts, we work closely with you to find the best solution for your needs. We love being able to set your ideas in motion, Whether you want to upgrade an existing machine or develop a completely new one.

- Experienced experts understand your requirements and goals
- A comprehensive automation platform consisting of modular software and scalable hardware
- Reliable drive systems for typical applications
- Use of open standards
- Global production with uniform Lenze quality standards
- Worldwide logistics concept
- Global service network and range of training courses offered



**Reduced engineering costs**

Shorter innovation cycles, higher customer requirements, a growing demand for tailored products and services as well as the shortest time-to-market are challenges faced by every machine builder. Efficient engineering is essential:

- An engineering tool chain that ensures system continuity is the basis of engineering logic, visualization, safety, security, and motion
- Predefined and tested modules that provide basic functions cut down on engineering costs and market introduction time.
- Modularization and scalability in software and hardware for flexibility and adaptation of the machine design

**Future-proof system**

For new, upcoming challenges, you require an open and highly modern system:

- Standard interfaces such as OPC UA for horizontal and vertical integration
- Simple integration of intelligent sensors
- Industry-standard interfaces for integrating third party products
- Open operating systems for the use of third-party software
- Simple and popular programming options
- Web-based visualization for use with standard browsers

**Smart factory support**

Support for connectivity, digitization and efficiency:

- Machine-to-machine communication
- Artificial intelligence with closed control loop for the machine parameters
- Access control and security mechanisms for an open yet secure solution
- Vertical integration into MES, ERP or cloud solutions
- Data collection and informative aggregation
- Big data analytics for performance assessments
- OEE improvement via error and state analysis
- Predictive maintenance and remote machine monitoring

**Safe and smart machines**

An integrated safety solution offers multiple advantages:

- Reduced space requirements for the machines when the shortest response times for ensuring constant operation are ensured
- Easy expandability and less wiring through the use of a safety bus system
- Lower system costs by reducing the space requirements and wiring complexity.
- Intelligent responses, e.g. reduced speed instead of machine shut down
- Better fault diagnostics thanks to more detailed error descriptions

**Rapid and cost-efficient diagnostics and maintenance**

Emergencies — how your customers receive rapid and efficient assistance in the event of an unplanned machine stop:

- Clear diagnostics data allowing rapid identification of the cause
- Easy access via remote login with full access to the visualization and the control system
- Automatic download of parameters and firmware when hardware is replaced
- Predictive maintenance for avoiding emergency scenarios
- Use of sensors and data analysis

# A comprehensive Lenze Automation Platform: Scalable for your machine

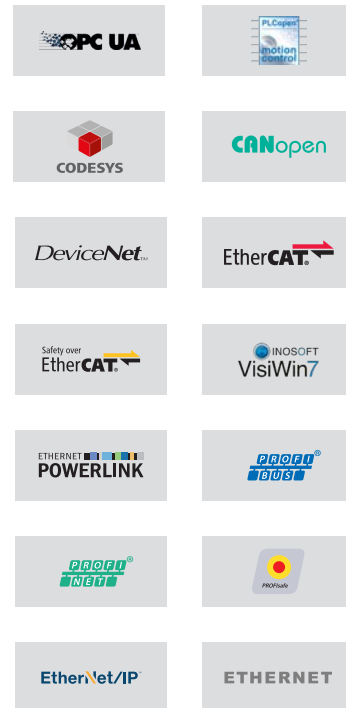
## Comprehensive and open

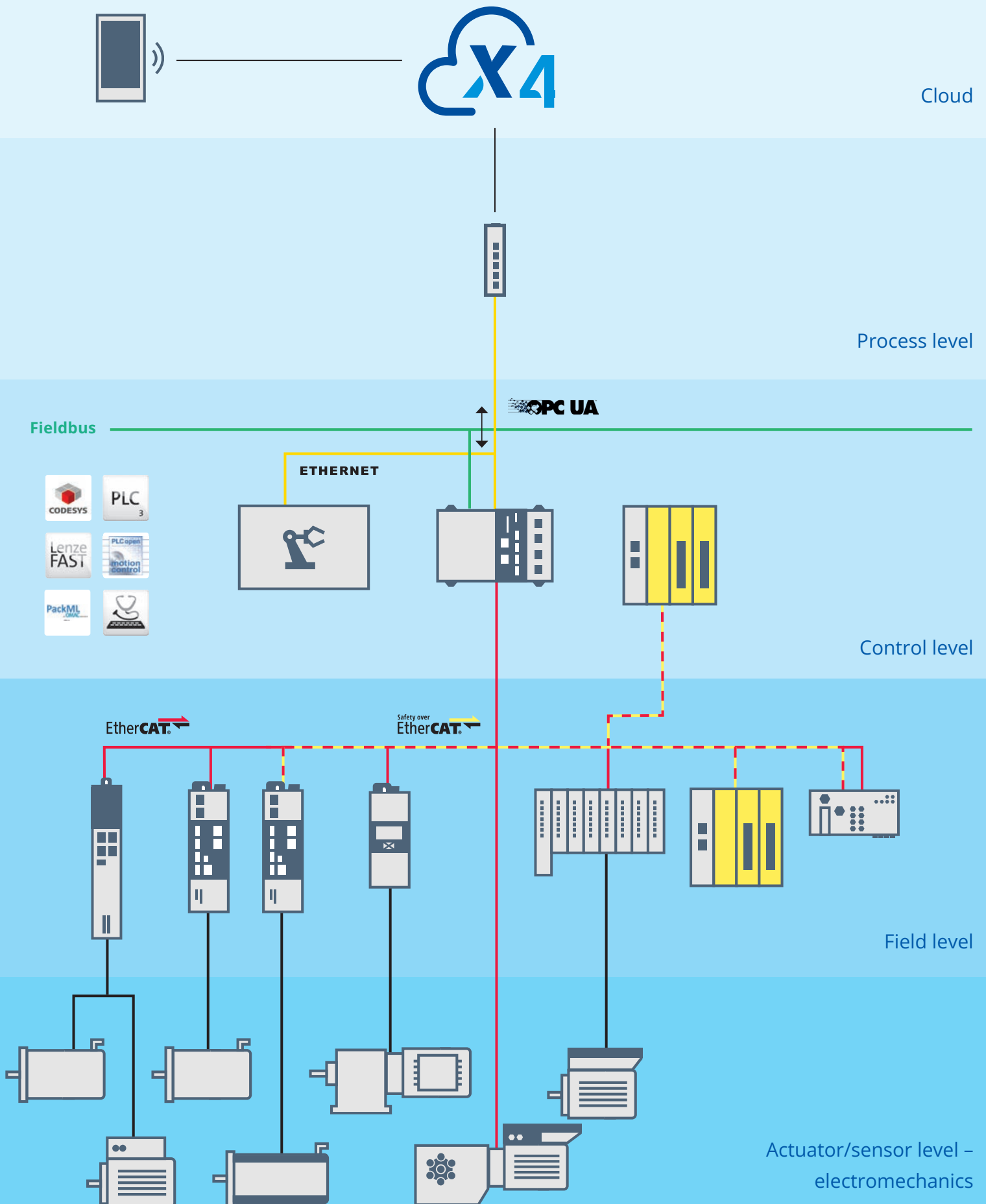
Our automation platform offers you everything from the control level to electromechanics for the implementation of a wide range of tasks. Thanks to our energy-efficient mechatronic portfolio of reliable technologies, you benefit from long-lasting quality and easy handling of all our products.

Furthermore, our platform is also open for the efficient integration of components from various partners.

## Compliance with market standards

We are able to network ourselves with control and drive systems at any time. This enables easy integration into higher-level line topologies. This openness makes mechanical engineers and users confident of being able to adapt to changes in the future. Keep your core expertise in-house and hold onto your competitive advantage.





## Digital Services

Added value  
with perspective  
for OEMs and  
end users

**For end customers, the supervision of the operating phase of a machine by the OEM is added value which is becoming increasingly important. In this context, digital services offer the possibility of tapping into new turnover potential and strengthening profitability in core service activities.**

Together with us, you will develop your tailored digital journey and define steps for your digital offerings which are feasible and realistic for you – today, tomorrow, and in the days that follow. With our digital product and solution portfolio, we support you in every phase of this endeavour.



## TODAY

**What is happening?**

- Connection of all machines to a central cloud infrastructure without special IoT know-how
- Remote maintenance and condition monitoring from any mobile device with a web browser
- Autonomous creation of dashboards with the aid of widgets at the click of a mouse

**Benefits for OEMs**

- Secure and transparent access to remote maintenance
- Reduction in commissioning costs
- Reduction in support costs through efficient remote maintenance
- Retrospective fault analysis

**Benefits for End users**

- Secure and transparent access to remote maintenance
- Higher machine availability through faster fault elimination by the OEM

## TOMORROW

**What will happen?**

Optimization of availability, throughput, and production yield with the aid of KPIs (OEE, MTBF) in real time.

**Benefits for OEMs**

- New turnover potential via digital added value services related to one's own machines
- Record of the contractually assured machine availability
- Optimization of machines based on recorded data

**Benefits for End users**

- Reduction in unplanned downtimes because the reasons for the downtime are known
- Realtime and historical OEE data are displayed
- More efficient utilization of the entire machine outfit
- Performance analysis within a multipoint line configuration

## IN THE FUTURE

**What comes next?**

Increased availability and process quality via predictive analytics.

**Benefits for OEMs/ End users**

- Higher OEE
- Better product and process quality
- Plannable maintenance periods
- Longer maintenance intervals and lower maintenance costs
- Foray into new business models
  - Pay per use
  - Performance-based
  - Contracting
  - ...



**Lenze FAST**  
Efficient  
software  
engineering





Lenze FAST is based on the experience from several thousand realised applications.

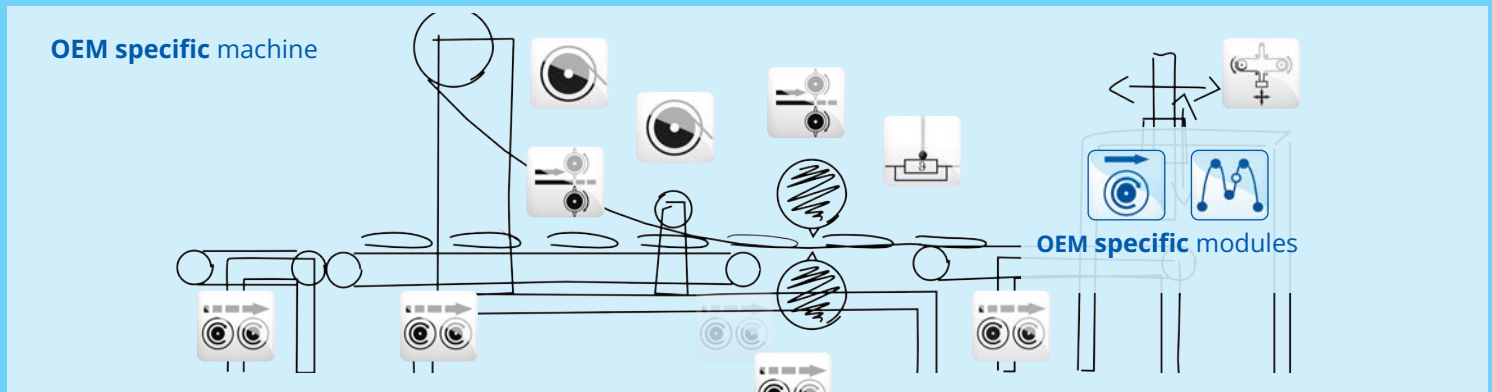
**The engineering process is becoming increasingly digital. Whether it is higher machine flexibility which allows for batch sizes of 1 or improved productivity: Machine software is increasingly becoming the focus.**

Our modular software system, the Lenze FAST Application Software Toolbox, incorporates the experience from several thousand realised applications. Ready-made and tested technology modules reduce development time for technology-specific basic functions, thereby simplifying the implementation of machine functions.

For better software quality, the technology modules can easily be reused. They can be used directly by the OEM or form the basis for the development of custom modules, thus allowing a machine to be programmed efficiently.

A structured programming layout takes place via the Application Template.

## FAST Application Template



## FAST Technology Modules



# EASY Engineering Tools

## The right software tool for every task

### Do you want to plan, build or commission machines?

Adjust existing machines or run diagnostics?  
Regardless of whether you require simple  
applications or maximum precision and dynamics:  
You can choose the right tools for you and  
perform your engineering more rapidly and easily.



Developing  
ideas



**EASY System Designer**  
Plan automation solutions

Implementing  
solutions



**Drive Solution Designer**  
Design drive solutions

Conception | Product selection | Dimensioning  
Quotation requests | Ordering



Drafting  
concepts

Manufacturing  
machines

Ensuring  
productivity



**PLC Designer**  
Program the controller



**EASY UI Designer**  
Machine visualization



**EASY Starter**  
Parameterization and operation

Parameterization | Configuration | Programming  
Debugging | Setup | Interface design

Commissioning |  
Diagnostics |  
Troubleshooting

# Engineering Services

## Together we develop solutions

### Concept Engineering

The basis for the best solution for your machine task is that we first learn to understand your processes and your organization.

Building on this, we show your engineers how your machines can be developed efficiently and fully utilizing all possibilities with our automation solutions.

### Project Engineering

The use of a Lenze automation system provides you with long-term advantages, but also short-term challenges.

Integrated project management supports smooth workflows when creating your

- functional concepts,
- hardware concepts and
- engineering concepts.



**Concept**  
Engineering



**Project**  
Engineering



**We support  
you throughout  
all phases of  
the engineering  
process.**

With scalable  
hardware,  
modular software  
and brainware.

### **Project Realization**

We offer you a complete solution by also assuming responsibility for the electrical design and the commissioning of the system.

### **Technical Training**

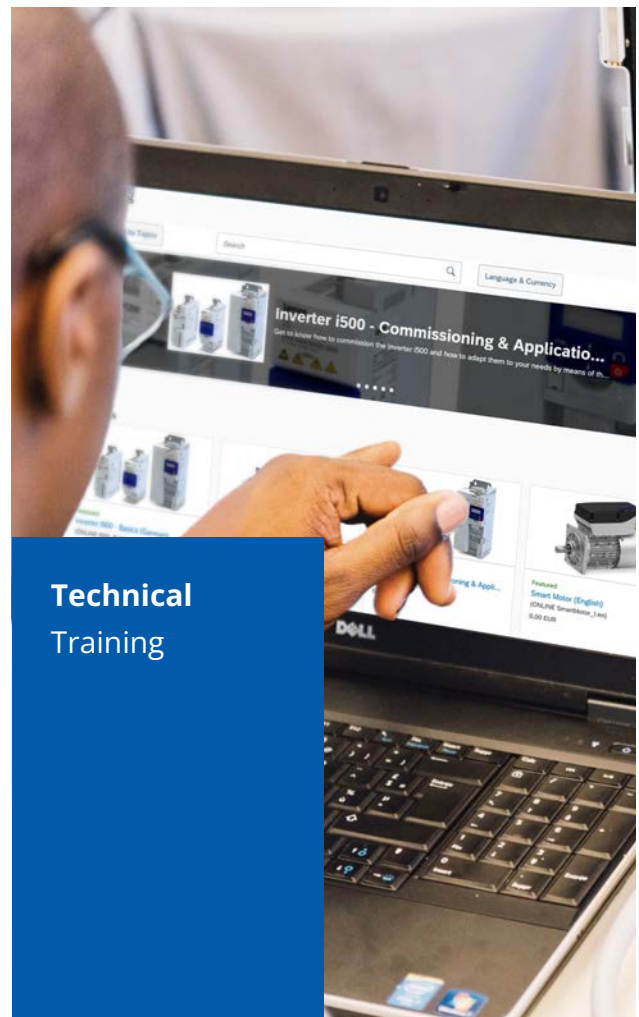
With an individualised training concept, we prepare you for the planning, implementation, and operation of your machine.

Our training courses are application- and practice-oriented and enable you to immediately integrate what you have learned into your day-to-day work.

To offer you flexibility and time savings, our offerings include on-site training programmes, online training and video tutorials.



**Project  
Realization**



**Technical  
Training**

A man with a beard and glasses, wearing a black polo shirt with a 'lenze' logo and 'Chris Martin' name tag, is working on a motor assembly. He is holding a grey motor housing and a metal component. The background shows a factory environment with metal structures and a computer monitor with a keyboard in the foreground.

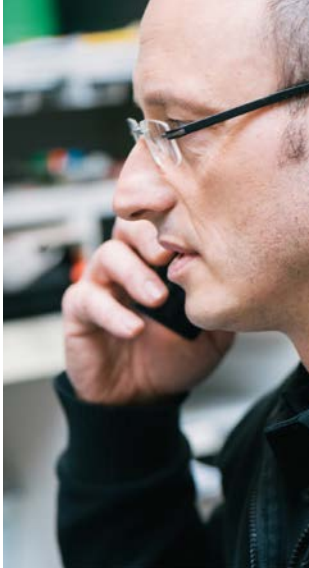
## Worldwide Services

**You can rely on every aspect of our high quality standards.**

Our service is designed to ensure the reliability of your machine and to guarantee its availability.

With proactive solutions that rule out any contingencies as far as possible and structured procedures that ensure the fast and smooth restoration of the machine's functions in an emergency.

A large number of our services can be used online at any time, or you can get personal help and advice from our specialists.

**24/7 Lenze expert helpline****Online Support**

Here you can directly request support and repairs for specific Lenze products or order spare parts and call up technical data and documentation.

Simply enter the material number or scan the type plate with our integrated scan function. All support information is immediately available to you at a glance.

**Replacement requirement**

Are you using Lenze equipment and do you need to replace a complete device or some parts?

We can send you a corresponding offer very quickly with our online service.

**Original repairs from Lenze**

In some cases, the fast repair of a high-quality Lenze drive may be a good alternative in terms of quality and economics to replacing the complete product. This helps you minimize costly downtimes in cases of emergency and means that you don't have to keep large stocks of spare parts.

**Maintenance with a plan**

So as to ensure maximum machine availability, our maintenance package includes additional services that proactively safeguard your operations. We analyze your requirements together and come up with customized concepts based on our many years of expertise in this field.

**Original Repair**



# Motion inside

75 years of experience  
in motion control of  
machines.



From the simple positioning of an axis to complex, coordinated multi-axis applications in a wide variety of areas in a wide range of industries.



Electronic cam, electrical shaft, and virtual master for precise axis movements.



Material-independent winding – with dancer controller for tension monitoring and traverse functions for precise winding.



Cross cutters and flying saws for cutting continuously produced parts into segments.







**Machines with axis controllers are our speciality.**  
Regardless of the materials, processing methods, scope of use, and applications.





A large orange industrial robotic arm is shown in motion, with a blurred background of a factory floor. The arm is positioned in the foreground, and its base is mounted on a black platform. In the background, there are several large industrial machines with yellow safety railings. The floor is light gray, and the ceiling has large white panels.

# Integrated robotics

- Higher productivity
- Quality control
- Reduction in hazardous manual tasks



**Various kinematics for various applications**



**Portal**

For heavy duty applications



**Delta**

For highly dynamic solutions



**Scara**

For rapid and precise handling



**Belts**

As a universal system



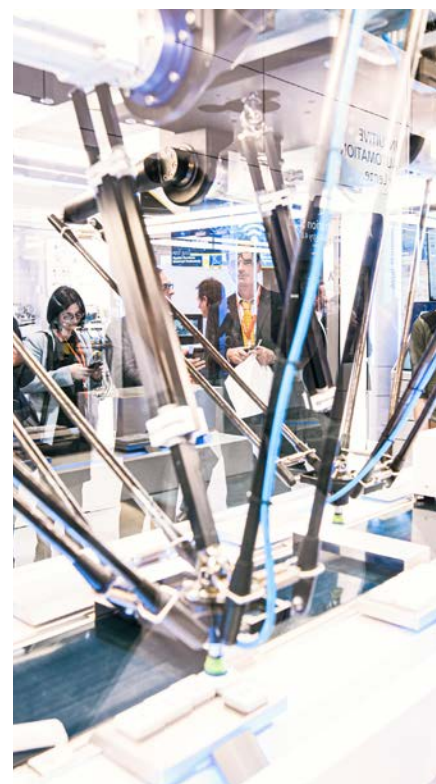
**Joints**

For typical palletizing applications



**The right solution for every application.**

Whether fast and precise or robust and resilient or flexible and universal. Modern robotics creates new possibilities.







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