

Lenze Material Handling and Logistics

# Solutions for Warehouse logistics



More than  
75 years  
experience in  
**warehouse  
logistics.**



**As one of the leading specialists in drive and automation technology, with extensive know-how and a worldwide network of experts in intralogistics, we always work with you closely to find the very best solution. We set your ideas in motion with great enthusiasm and an eye for what works. Irrespective of whether you want to improve existing equipment or develop a completely new machine.**

We cooperate with you in all phases of your projects in accordance with your individual requirements and aims. And when you devise an innovative overall concept, we are there to help you make it a concrete reality.

With our regional companies, our experts are active in over 45 countries around the world, working with you to develop the best solution for your warehouse application. Around the globe, well-known customers from this sector are among our customers.

**Develop innovative solutions together and benefit from the industry know-how of global experts:**

- Efficient and reliable mechatronic drive packages for typical and challenging applications
- Holistic automation systems from the drive to the cloud
- Use of open standards
- Integrated engineering
- Machine transparency through consistent data usage
- Global production with uniform Lenze quality standards
- Global service network and training program



# A comprehensive Lenze Automation Platform: Scalable for your machine

## Comprehensive and open

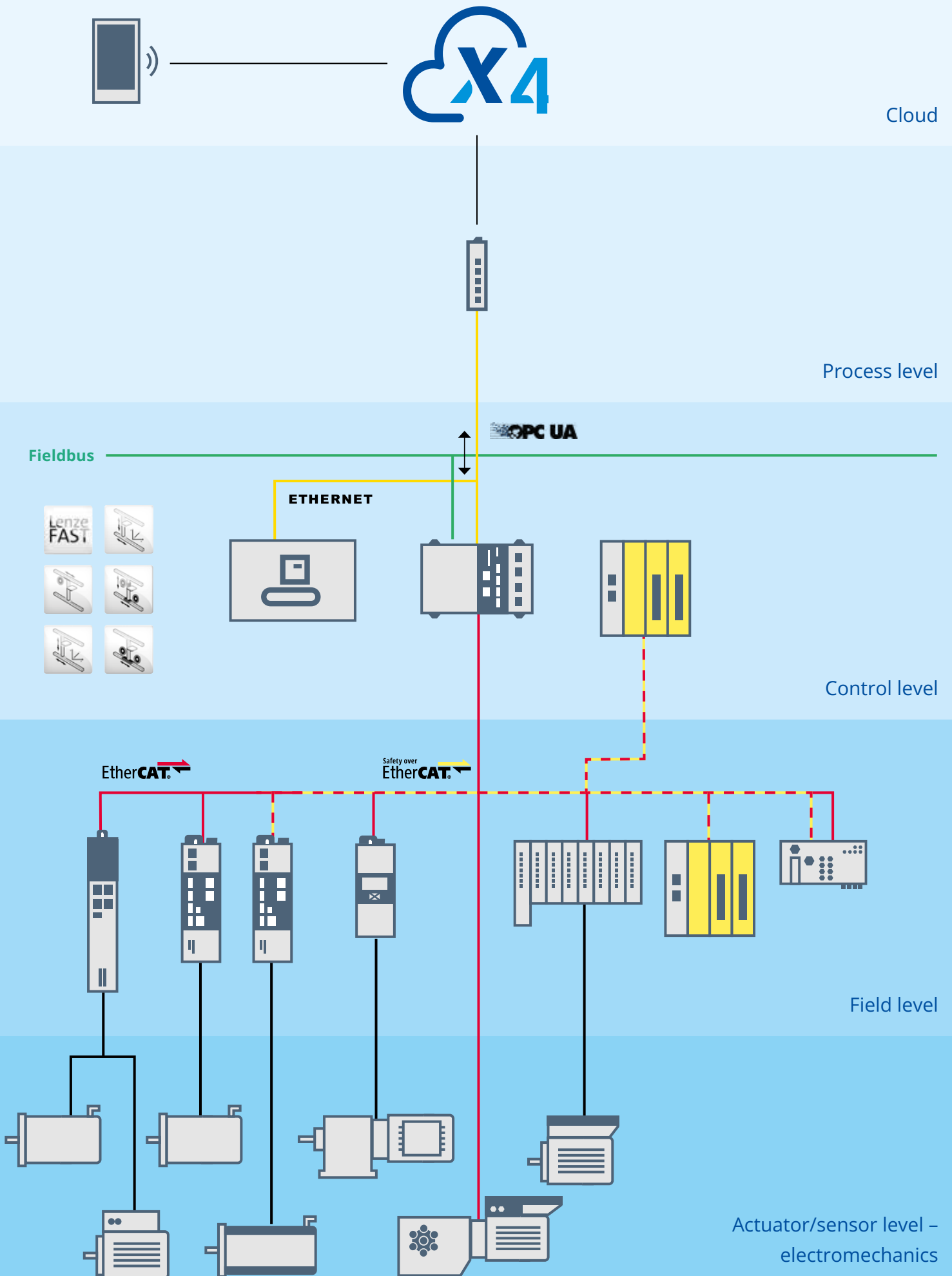
Our automation platform offers you everything from the control level to electromechanics for the implementation of a wide range of tasks. Thanks to our energy-efficient mechatronic portfolio you benefit from long-lasting quality and easy handling of all our products.

Furthermore, our platform is 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. Design engineers and users can feel confident that this openness makes our platform future-proof, keeping your core expertise in-house.





# Automation and suitable drive solutions for warehouse logistics

**Different industries such as wholesale and retail, fashion, food and beverages place varying demands on the automation of a warehouse. High speed, cost efficiency, maximum safety, energy efficiency and, increasingly, digitalization concepts are required.**

With us, you can realize the key benefits of an automated warehouse. As a leading drive and automation specialist, we not only provide a broad product portfolio for the implementation of the often complex tasks in warehouse logistics, but also an international team of experts. You are sure to benefit from years of industry experience and the latest know-how in intralogistics automation. Together we will develop individual solutions to meet your intralogistics challenges.



## Horizontal conveyor technology

- 1** Chain conveyor
- 2** Turntable
- 3** Corner transfer unit
- 4** Roller conveyor
- 5** Cross transfer carriage
- 8** Lifting station
- 12** Belt conveyor
- 15** Automatic loading and unloading system



### Automated storage systems





- 6** Storage and retrieval machine (pallet)
- 7** Storage and retrieval machine (pallet, freezer)
- 9** Automatic small parts warehouse (boxes)
- 10** Carousel warehouse
- 16** Mobile racking




### Automated handling systems

- 11** Pallet stacker
- 13** Palletizer
- 14** Film stretch machine
- 17** De-palletizer



## Preferred products for **horizontal conveyor technology**

Lenze Smart Motor	g500-H + m300 helical geared motors	g500-S + m300 shaft-mounted helical geared motors	g500-B + m300 bevel geared motors	o450 motor driven roller
Motor driven roller				
Power range	0.47 ... 1.36 kW	0.47 ... 1.36 kW	0.47 ... 1.36 kW	57/115 Watt (24/48 V)
Torque	4 ... 1500 Nm	6 ... 2050 Nm	6 ... 1200 Nm	max. 4 Nm
Energy efficiency	IE52*	IE52*	IE52*	comparable with IE7

Geared motors	g500-H helical geared motors	g500-S shaft-mounted helical geared motors	g500-B bevel geared motors
			
Power range	0.12 ... 55 kW	0.12 ... 55 kW	0.12 ... 55 kW
Torque	3 ... 14000 Nm	6 ... 19000 Nm	6 ... 20000 Nm
Energy efficiency	IE2/IE3*	IE2/IE3*	IE2/IE3*




\*Available in higher energy efficiency classes from 2025






Inverters	i-series i500 cabinet frequency inverter	i-series i550/i650 motec frequency inverter extension box	i-series i550 protec frequency inverter extension box	i-series i950 cabinet servo inverter
				
Design/Mounting	Cabinet	Wall or motor	Wall	Cabinet
Degree of protection	IP20	IP66/IP54	IP66	IP20
Mains connection/ Power range	0.25 ... 132 kW	Wall mounting 0.37 ... 45 kW Motor mounting 0.37 ... 22 kW	0.37 ... 75 kW	0.37 ... 110 kW
Market approvals	CE, UKCA, UL, DOE, KC, CCC	CE, UKCA, UL, DOE, CCC	CE, UKCA, UL, DOE, KC, CCC	CE, UKCA, UL, DOE, CCC
Digital input/ output	5/1	8 I/O expandable via IO-Link	5/1	4/1
Analog input/output				1/0
Communication	CANopen EtherCAT EtherNet/IP IO-Link-Slave Modbus RTU Modbus TCP POWERLINK PROFIBUS PROFINET	EtherCAT EtherNet/IP IO-Link-Master Modbus TCP PROFINET	CANopen EtherCAT EtherNet/IP IO-Link-Slave Modbus RTU Modbus TCP PROFINET	CANopen EtherCAT Ethernet EtherNet/IP PROFINET Safety bus FSoE PROFIsafe safety bus on PROFINET Operation with safety PLC
Functional safety	Stop functions: STO, SS1	Stop functions: STO, SS1	Stop functions: STO, SS1	Stop functions: STO, SS1
PLC functionality		Logic PLC		Logic PLC



## Preferred products for automated storage systems

Geared motors	<b>g500-H</b> helical geared motors	<b>g500-S</b> shaft-mounted helical geared motors	<b>g500-B</b> bevel geared motors
			
Power range	0.12 ... 55 kW	0.12 ... 55 kW	0.12 ... 55 kW
Torque	3 ... 14000 Nm	6 ... 19000 Nm	6 ... 20000 Nm
Energy efficiency	IE2/IE3*	IE2/IE3*	IE2/IE3*

Servo motors	<b>MCA asynchronous</b> servo motors	<b>MQA asynchronous</b> servo motors	<b>m850 synchronous</b> servo motors
			
Power range	0.8 ... 53.8 kW	10.6 ... 60.2 kW	0.11 ... 9.2 kW
Torque	2.3 ... 290 Nm	76 ... 325 Nm	0.18 ... 67 Nm
Protection class EN 60529	IP54/65	IP54/65	IP54/65
Market approvals	CE, UKCA, UL, DOE, CCC	CE, UKCA, UL, DOE, CCC	CE, UKCA, UL, DOE, CCC

\*Available in higher energy efficiency classes from 2025

Controllers	c520
	
CPU technology	Intel® Atom™ 1.6 GHz
Operating system	RT Linux
Retain data	1,024 kB
Interface	1x EtherCAT master 1x Ethernet 1000 Mbps 2x USB 2.0
Optional interface	PROFINET device
Communication	EtherCAT master EtherCAT slave PROFINET IO-Device Ethernet 1000 Mbps





Inverters	i-series i500 cabinet frequency inverter	i-series i950 cabinet servo inverter
		
Design/Mounting	Cabinet	Cabinet
Degree of protection	IP20	IP20
Mains connection/ Power range	0.25 ... 132 kW	0.37 ... 110 kW
Market approvals	CE, UKCA, UL, DOE, KC, CCC	CE, UKCA, UL, DOE, CCC
Digital input/output	5/1	4/1
Analog input/output		1/0
Communication	CANopen EtherCAT EtherNet/IP IO-Link-Slave Modbus RTU Modbus TCP POWERLINK PROFIBUS PROFINET	CANopen EtherCAT Ethernet EtherNet/IP PROFINET Safety bus FSoE PROFIsafe safety bus on PROFINET Operation with safety PLC
Functional safety	Stop functions: STO, SS1	Stop functions: STO, SS1
PLC functionality		Logic PLC





## Preferred products for automated handling systems

Controllers	c520
	
CPU technology	Intel® Atom™ 1.6 GHz
Operating system	RT Linux
Retain data	1,024 kB
Interface	1x EtherCAT master 1x Ethernet 1000 Mbps 2x USB 2.0
Optional interface	PROFINET device
Communication	EtherCAT master EtherCAT slave PROFINET IO-Device Ethernet 1000 Mbps

\*Available in higher energy efficiency classes from 2025

Frequency inverters	i-series i500 cabinet frequency inverter	i-series i750 cabinet servo inverter	i-series i950 cabinet servo inverter	i-series i550 motec frequency inverter
				
Design/Mounting	Cabinet	Cabinet	Cabinet	Wall or moto
Degree of protection	IP20	IP20	IP20	IP66
Mains connection/ Power range	0.25 ... 132 kW	1.1 ... 15 kW	0.37 ... 110 kW	0.37 ... 45 kW
Market approvals	CE, UKCA, UL, DOE, KC, CCC	CE, UKCA, UL, DOE, CCC	CE, UKCA, UL, DOE, CCC	CE, UKCA, UL, DOE, CCC
Digital input/output	5/1	2/0	4/1	8 I/O expandable via IO-Link
Analog input/output			1/0	
Communication	CANopen EtherCAT Ethernet EtherNet/IP IO-Link-Slave Modbus RTU Modbus TCP POWERLINK PROFIBUS PROFINET	CIP-Safety EtherCAT EtherNet/IP IO-Link-Master Modbus TCP PROFINET	CANopen EtherCAT Ethernet EtherNet/IP PROFINET Safety bus FSoE PROFIsafe safety bus on PROFINET Operation with safety PLC	EtherCAT EtherNet/IP IO-Link-Master Modbus TCP PROFINET
Functional safety	Stop functions: STO, SS1	Stop functions: STO, SS1	Stop functions: STO, SS1	Stop functions: STO, SS1
PLC functionality		Logic PLC	Logic PLC	Logic PLC

Servo motors	MCA asynchronous servo motors	MCS synchronous servo motors
		
Power range	0.8 ... 53.8 kW	0.25 ... 15.8 kW
Torque	2.3 ... 290 Nm	0.8 ... 86 Nm
Protection class EN 60529	IP54/65	IP54/65
Market approvals	CE, UKCA, UL, DOE, CCC	CE, UKCA, UL, DOE, CCC

The image shows a vast industrial storage system, likely a pallet rack or a similar automated storage and retrieval system. The structure is composed of numerous vertical metal columns and horizontal beams, creating a dense grid of storage spaces. A central aisle is visible, where a blue control unit or machine is positioned. The lighting is bright, highlighting the metallic surfaces and the organized layout of the facility. The overall scene conveys a sense of scale and precision in industrial engineering.

**Lenze FAST**  
Efficient  
software  
engineering

Machine  
solution for  
**storage and  
retrieval units**

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

**The Lenze FAST machine solution for storage and retrieval units is a ready-made PLC project for automation technology from Lenze, into which all ready-made drive concepts have already been integrated. Selection of the required components and adjustments is performed via simple parameterization.**

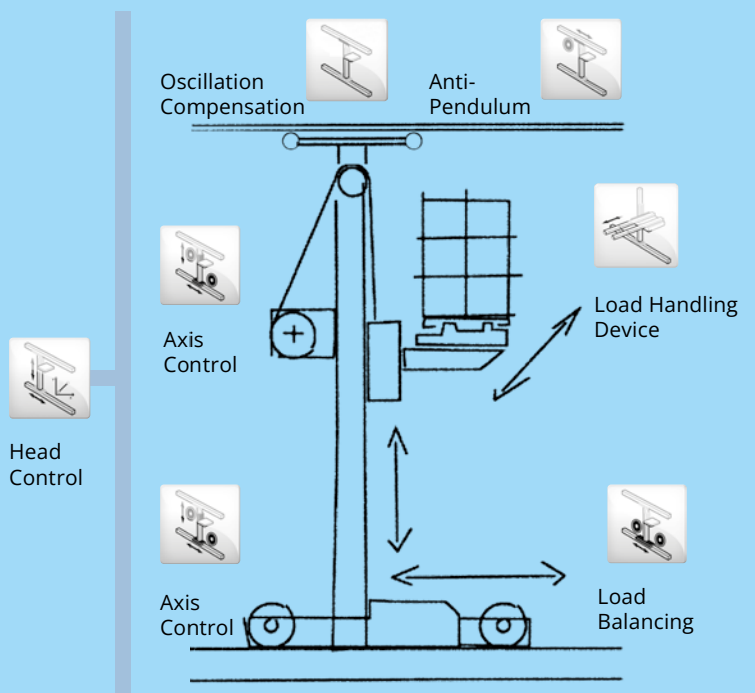
Auto tuning allows for further simplification during commissioning by automatically calibrating all drive parameters, leading to optimum, dynamic control performance. This applies to all components in the carriage and lifting unit.

We made it possible to execute the most important control commands independently of the higher-level controller by means of a graphical user interface which simplifies the commissioning. The open IEC 61131 environment also makes it possible to integrate your specific know-how or additional functions.

**FAST Technology Modules**



**FAST machine solution storage and retrieval**



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





**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



## 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, the fast and smooth restoration of the machines' functions in an emergency is ensured.

A large number of our services can be used online at any time. You can of course also get personal support and advice from our specialists.



24/7 Lenze expert helpline

### Online support

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 need to replace a complete device or some parts? We send you a corresponding quote quickly with our online service.

### Original repairs from Lenze

In some cases, repairing a Lenze drive instead of replacing it could be a better alternative in terms of quality and cost-savings. 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

To ensure maximum machine availability, our maintenance package includes additional services that proactively safeguard your operations. We analyze your requirements together and customize your plan based on our many years of expertise in this field.



Original repair

# Lenze

engineered to win

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