Together we develop solutions.

As easy as that.

Lenze

1

Developing ideas

Are you looking to build the best machine possible? Do you already have some initial ideas? Then let's get these down on paper starting with small, detailed, yet innovative steps and work our way to a completely new machine. Working together, we will develop an intelligent and sustainable concept that is perfectly aligned with your specific requirements.

2

Drafting concepts

We welcome the challenges of your machine tasks. We will support you with our comprehensive expertise and provide you with valuable concepts to make your machine innovations a reality. We take a holistic view of each individual motion and control function and develop consistent, end-to-end drive and automation solutions for you – keeping everything as easy as possible and only as extensive as necessary.

Lenze makes many things easy for you.

We are motivated and committed to working with you to create the best possible solution that sets your ideas in motion – regardless of whether you are looking to optimize an existing machine or develop a new one. We strive to make things easy and seek perfection therein. This is ingrained in our thinking, in our service, and in every detail of our products. It's as easy as that!

3

Implementing solutions

Our easy formula for satisfied customers is to establish an active partnership with fast decision making processes and an individually tailored proposal. It's as easy as that. We have been applying this principle for many years to meet the ever more specialized customer requirements in the field of machine engineering.

4

Manufacturing machines

Functional diversity in perfect harmony: as one of the few full-range providers in the market, we can provide you with precisely those products that you actually need for any machine task – no more and no less. Our L-force product portfolio, a consistent platform for implementing drive and automation tasks, is invaluable in this regard.

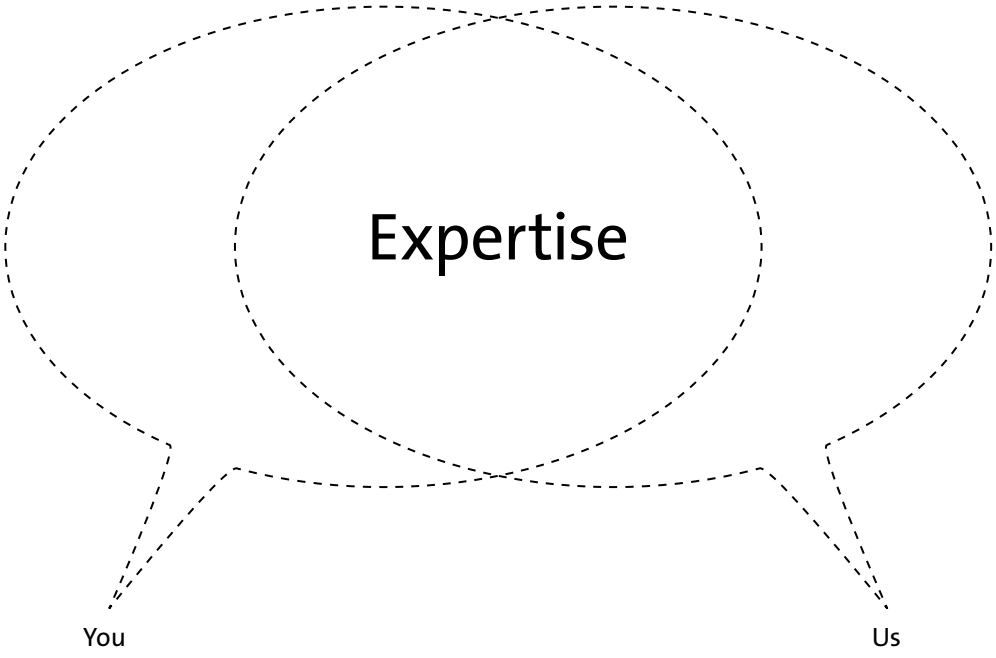
5

Ensuring productivity

Productivity, reliability and new peak performance on a daily basis – these are our key success factors for your machine. After delivery, we offer you proactive service concepts to ensure continued safe operation. The primary focus here is on technical support, based on the excellent application expertise of our highly-skilled and knowledgeable after-sales team.

A unique range of functions for your machine tasks.

Are you looking to implement modern machine or system concepts or modernize existing installations? With comprehensive knowledge, extensive machine design experience and innovative software, we are on hand to support you in all of your product selection decisions, as well as all issues relating to energy efficient drive dimensioning, project planning and commissioning. These services help ensure that you get the right drive solution and a lean process throughout your value-added chain. Over the next few pages we present some options for precisely tailored implementation of your machine tasks based upon 12 defined drive solutions. It's as easy as that!



12 drive solutions for all requirements.

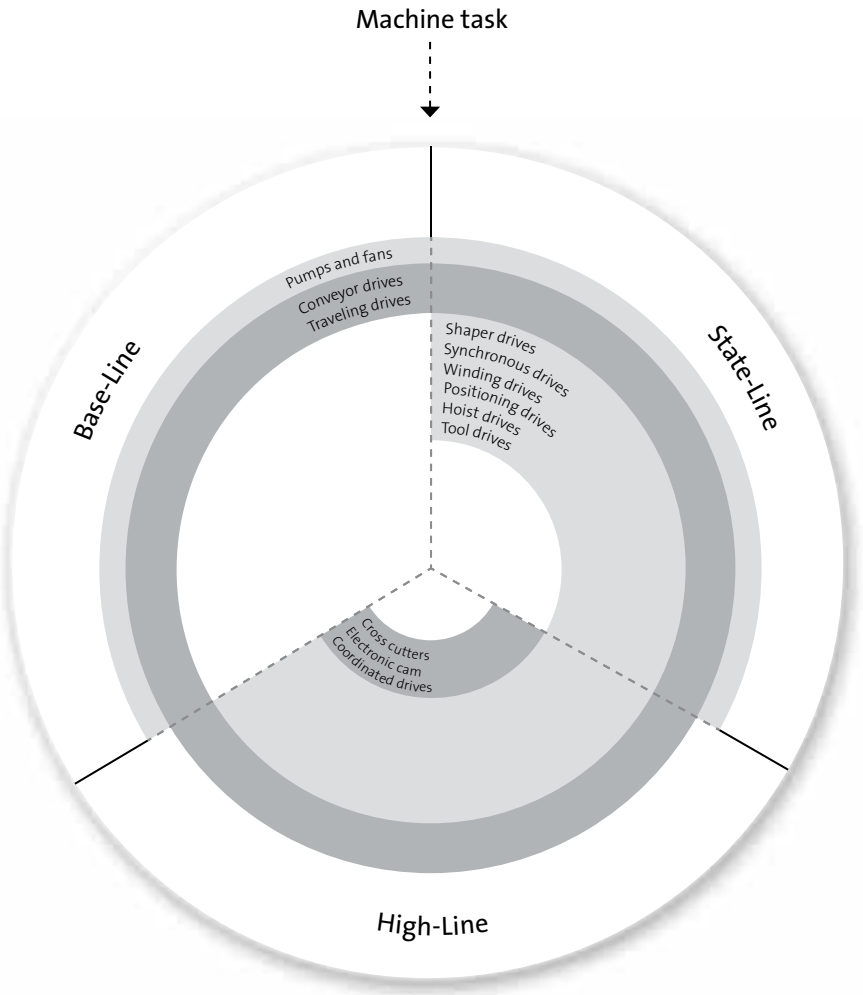
With our extensive L-force product portfolio, we can offer you all the automation products and drives you require to implement your machine tasks. This leads to energy-efficient drive solutions – which we call "BlueGreen Solutions".

To make it easier for you to compile these solutions, we have summarized the most important tasks in 12 drive solutions. This approach will help you find the right drive quickly, with scaling based on what is required of the drive.

For basic tasks:
Base-Line.

For more comprehensive tasks:
State-Line.

For the most sophisticated tasks with the highest precision and greatest dynamic performance:
High-Line.



Easy solutions for all systems: Conveyor drives.

If you have material that you need to transport and sort, you require reliable conveyor drives. These drives are a key component of warehouse and logistics systems and between the various processing stations of a manufacturing system. For example, when conveying general products, inverters adapt the speeds dynamically to the flow of goods. With bulk materials, on the other hand, constant speeds are achieved by using geared motors.

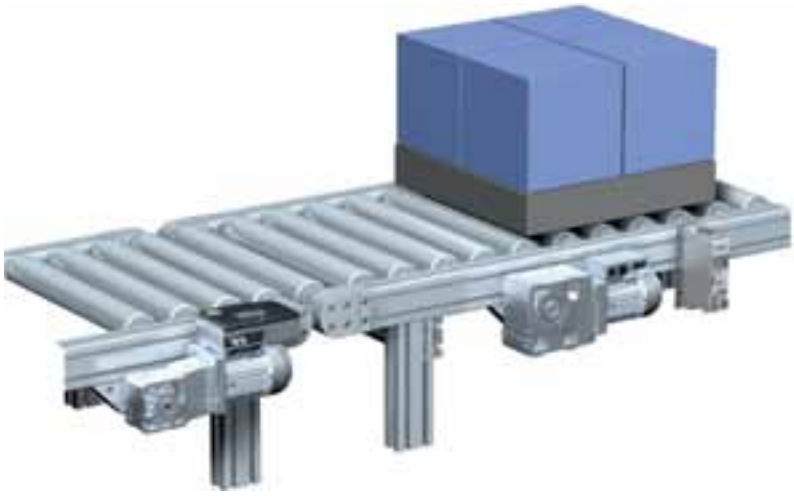
Typical applications
- Roller conveyors
- Belt conveyors
- Screw conveyors
- Ejectors
- Spiral conveyors

Our product recommendations for your machine tasks.

Base-Line tasks
- MD, MF or MH standard three-phase AC motors with gearbox and brake
- Inverter Drives 8400 motec or 8400 BaseLine
- Inverter Drives SMV IP31

State-Line tasks
- MD or MH standard three-phase AC motors with gearbox and brake
- Inverter Drives SMV IP65
- Inverter Drives 8400 StateLine, HighLine, 8400 motec and 8400 protec

High-Line tasks
- SDSGS, MCS or MDXKS synchronous servo motors with gearbox, with or without brake
- Servo-Inverter i700 for multi-axis applications, Servo Drives ECS for multi-axis applications or Inverter Drives 8400 TopLine or Servo Drives 9400



Flexibility on track: Traveling drives.

With traveling drives, you are perfectly equipped for tasks such as moving payloads from one station to another. This transport often takes the form of vehicles, which travel either on a horizontal or inclined level. The tracking takes place by wheels, either rail-bound or freely rotating on the surface.

Typical applications
- Rail vehicles or trolleys
- Overhead and gantry cranes
- Monorail overhead conveyors
- Storage and retrieval units
- Automated guided vehicle systems

Our product recommendations for your machine tasks.

Base-Line tasks
- MD, MF or MH standard three-phase AC motors with gearbox and brake
- Inverter Drives 8400 motec or 8400 BaseLine
- Inverter Drives SMV IP31

State-Line tasks
- MD or MH standard three-phase AC motors with gearbox and brake
- GKK range of gearboxes with integrated disconnect clutch
- Inverter Drives 8400 StateLine or HighLine (optionally available with safety engineering)
- Inverter Drives SMV IP65, Inverter Drives 8400 motec and 8400 protec

High-Line tasks
- SDSGA, MCA or MQA asynchronous geared servo motors with gearbox and brake
- Inverter Drives 8400 protec EMS – especially for monorail overhead conveyors
- Servo Drives 9400 with integrated positioning control and optional safety functionality

Fresh air as a driving force: Pumps and fans.

Pumps and fans ensure efficient performance in any applications that involve transport and/or compression of liquid and gaseous substances. There are two basic operating principles here. Pistons and gear pumps or axial-flow fans work according to the principle of displacement, while centrifugal pumps and radial-flow fans operate with centrifugal force.

Typical applications
- Water supply
- Compressed air generation
- Fans for industrial machining processes
- Sewage and waste water treatment technology
- Refrigerating machines
- Vacuum pumps

Our product recommendations for your machine tasks.

Base-Line tasks
- MD or MH standard three-phase AC motors
- Inverter Drives 8400 motec or Inverter Drives SMV IP31 or IP65

State-Line tasks
- MD or MH standard three-phase AC motors
- Inverter Drives 8400 StateLine or Inverter Drives 8400 protec
- Inverter Drives SMV IP65 or 8400 protec

Form follows function – and vice versa: Shaper drives.

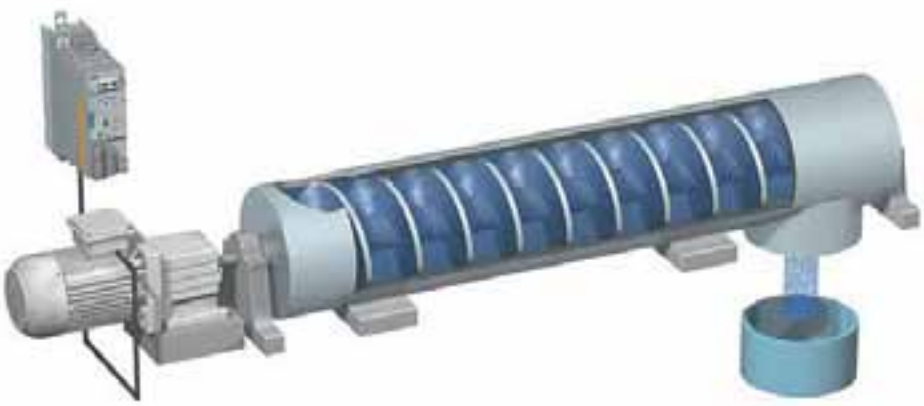
Shaper drives, used wherever raw materials are mixed and formed into their final shape, benefit from our scalable products for the wide range of different forming processes. These products operate either continuously or cyclically, depending on the respective requirements in each case.

Typical applications
- Extruders
- Presses
- Shakers
- Deep-drawing machines
- Metal chamfers

Our product recommendations for your machine tasks.

State-Line tasks
- All synchronous servo and asynchronous motors, possibly combined with gearboxes
- Inverter Drives 8400 TopLine or Servo Drives 9400

High-Line tasks
- All synchronous servo and asynchronous motors with high-resolution resolver, possibly combined with gearboxes or as direct drives
- Servo-Inverter i700 for multi-axis applications, Servo Drives ECS or Servo Drives 9400 in a multi-axis system with central mains supply



Create flow processes with ease: Synchronized drives.

Synchronized drives are generally used for processing continuous materials. They are ideally suited to the manufacture, transport, processing or finishing of products such as paper, foil, textile yarns and webs, metal sheets or wires.

Typical applications
- Systems used for rolling, drawing, stretching and coating
- Transport and alignment of continuous material
- Calenders
- Printing units with single drives

Our product recommendations for your machine tasks.

State-Line tasks
- MD, MF or MH standard three-phase AC motors with resolver, possibly combined with gearboxes
- Inverter Drives 8400 HighLine
- Inverter Drives SMV
- Inverter Drives 8400 motec or 8400 protec

High-Line tasks
- MD, MF or MH standard three-phase AC motors with high-resolution resolver
- Inverter Drives 8400 TopLine or Servo Drives 9400 with integrated drive function for "electronic gearbox"

Perfect tension in your machine processes: Winding drives.

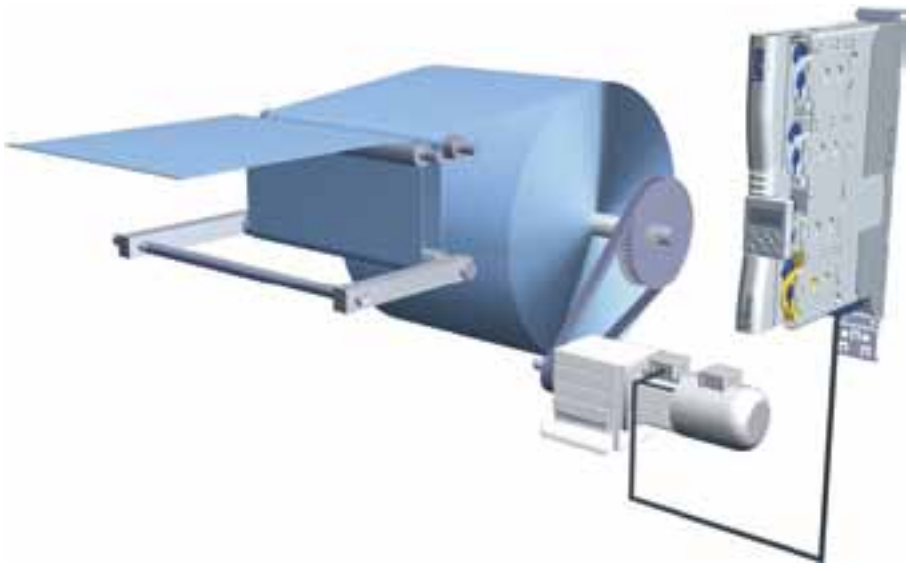
If you have to process continuous material, you will know that winding and unwinding the material is of key importance in securing a smooth and reliable process. Winding drives are the perfect solution for unwinding material stored on reels for a specific process and then winding it back up again once this process is complete – the synchronized drives are positioned between these two stations.

Typical tasks
- Winders for textiles, foils, paper and metal sheets
- Printing presses
- Packaging machines
- Continuous processing and finishing operations

Our product recommendations for your machine tasks.

State-Line tasks
- MD, MF or MH standard three-phase AC motors with resolver, possibly combined with gearboxes
- Inverter Drives 8400 HighLine

High-Line tasks
- MD, MF or MH standard three-phase AC motors with high-resolution resolver
- SDSGA, MCA or MQA asynchronous servo motors with high-resolution resolver, possibly combined with gearboxes or as direct drives
- Inverter Drives 8400 TopLine or Servo Drives 9400



Aiming for precision: Positioning drives.

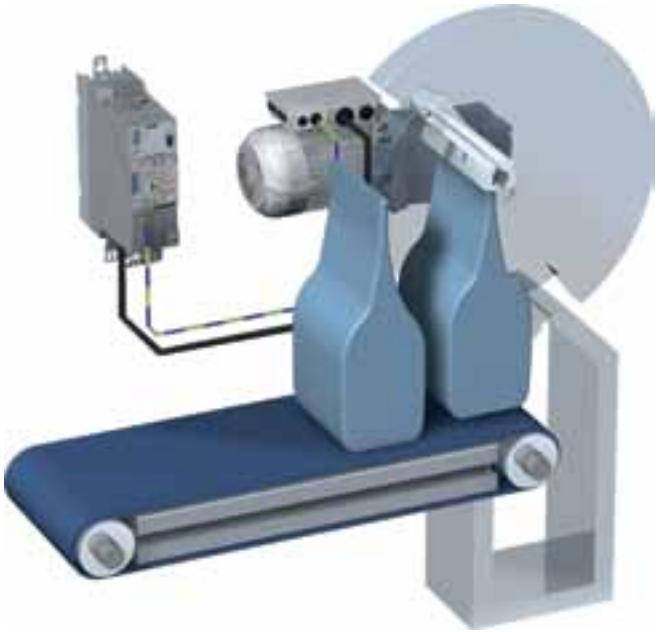
Do you need to move goods, materials or tools to precisely defined target positions? Positioning drives are ideally suited to this, operating either on a rotary or linear basis to move products towards their target position and guide moveable machine parts to a defined target location based on your requirements.

Typical applications
- Automatic assembly machines
- Rotary indexing tables
- Adjusting limit stops in production machines
- Traveling and hoist drives, e.g. in storage and retrieval units
- Tool changers

Our product recommendations for your machine tasks.

State-Line tasks
- MD, MF or MH standard three-phase AC motors with integrated motor
- Inverter Drives 8400 HighLine with integrated positioning control
- Inverter Drives 8400 protec with integrated positioning control

High-Line tasks
- All synchronous servo and asynchronous geared motors with or without brake
- Servo-Inverter i700 for multi-axis applications, Servo Drives ECS or Servo Drives 9400 with integrated positioning control



For high targets: Hoist drives.

Hoist drives are used whenever loads need to be raised and lowered. They securely maintain the specified positions, which are controlled using a limit switch or via sensors.

Typical tasks
- Goods elevators
- Crane systems and winches
- Hoists in storage and retrieval units
- Hoisting stations and scissor lift tables

Our product recommendations for your machine tasks.

State-Line tasks
- MD or MH standard asynchronous motors with gearbox and brake
- Inverter Drives 8400 motec or 8400 protec
- Inverter Drives 8400 HighLine with integrated brake logic and optional safety engineering

High-Line tasks
- SDSGA, MCA or MQA asynchronous geared servo motors with brake
- Inverter Drives 8400 TopLine or Servo Drives 9400 with integrated positioning control

Ideally equipped for efficient processes: Tooling drives.

A tooling drive determines the speed of a tool and thereby provides the necessary machining power. Whether your processes require material cutting or material machining operations, our extremely reliable drives will provide you with the results you are looking for.

Typical applications
- Machining centers
- Milling, drilling, turning and sawing machines
- Polishing and grinding machines

Our product recommendations for your machine applications.

State-Line tasks
- MD, MF or MH standard three-phase AC motors without resolver as direct drives or combined with gearboxes
- Inverter Drives 8400 StateLine or HighLine
- Inverter Drives SMV IP65, 8400 motec or 8400 protec

High-Line tasks
- MD, MF or MH three-phase asynchronous motors or asynchronous servo geared motors with resolver
- Inverter Drives 8400 TopLine with resolver evaluation
- Servo Drives 9400

All axes in motion together: Coordinated drives.

Coordinated drives, such as handling systems, offer you a great deal of flexibility. They are used to move goods, workpieces or tools on defined tracks or freely within a space. These drives are capable of implementing complex motion sequences.

Typical applications
- Six-axis articulated robots
- SCARA robots
- Gantry systems and linear X-Y-Z axis systems
- Parallel kinematics, e.g. hexapods
- Automatic assembly machines

Our product recommendations for your machine applications.

High-Line tasks
- Synchronous servo and asynchronous motors in the MCS, MDXKS and MCA ranges with high-resolution resolver and brake, possibly combined with low backlash planetary gearboxes from the GPA range
- Servo-Inverter i700 for multi-axis application, Servo Drives ECS and Servo Drives 9400 as a multi-axis system with central mains supply
- Inverter Drives 8400 motec or 8400 protec

Fully dynamic motion: Electronic cams.

Increased productivity and greater dynamic performance for all non-linear movements can be achieved using an electronic cam. It converts linear position information into cam-shaped motion profiles via a path-controlled profile generator. This allows you to implement smooth, low-impact motions that are gentle on both the materials and the equipment used to process them.

Typical applications
- Packaging machines
- Bag form, fill, and seal machines
- Automatic assembly machines
- Bookbinding machines
- Wood working machines
- Textile machines

Our product recommendations for your machine applications.

High-Line tasks
- MD, MF or MH standard three-phase AC motors with high-resolution resolver
- All synchronous servo and asynchronous motors with high-resolution resolver, possibly combined with gearboxes or as direct drives
- Inverter Drives 8400 TopLine
- Servo Drives 9400 in a multi-axis system with central mains supply

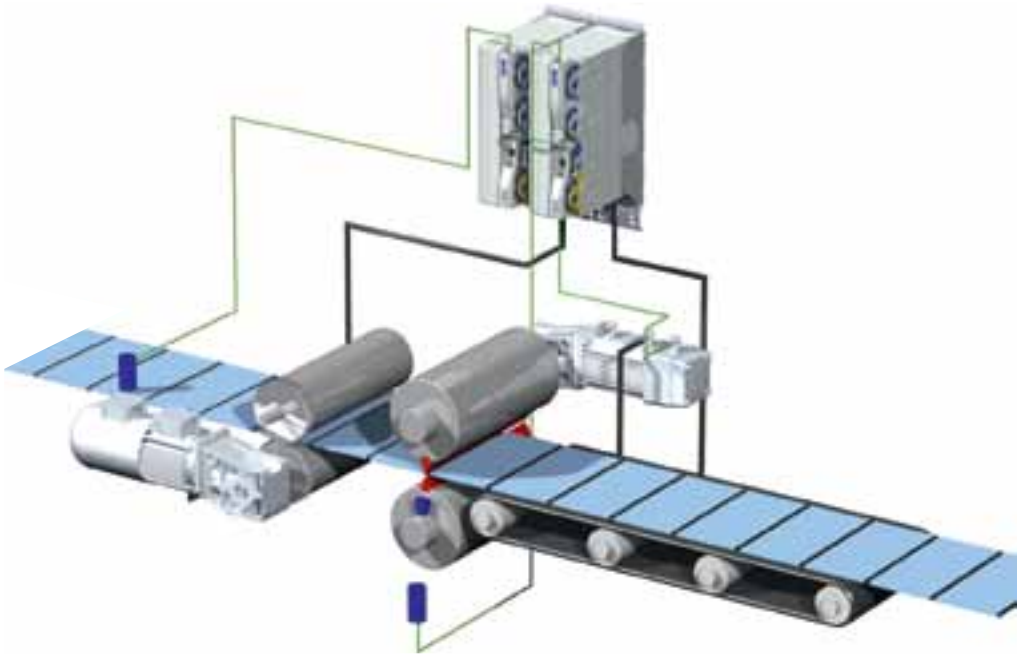
Rhythm in motion: Cross cutters and flying saws.

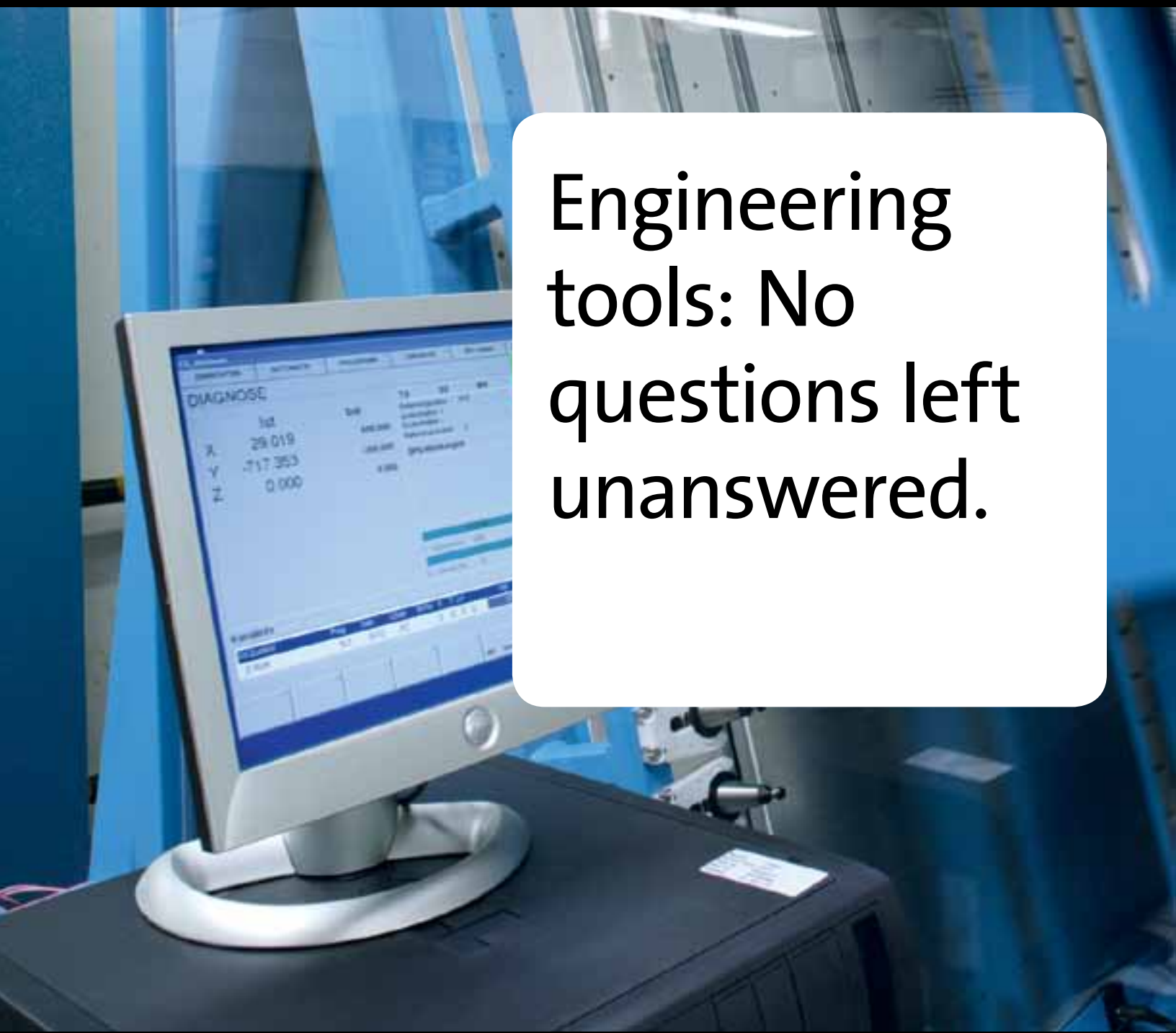
You can achieve the right cycle speed for continuous machining processes with our cross cutters or flying saw. All continuous materials you are looking to cut or process cyclically while in motion are fed optimally to the subsequent manufacturing processes using the cross cutter.

Typical applications
- Cutting
- Sawing
- Punching
- Welding
- Embossing
- Perforating paper, metal and foil webs, as well as wood or plastics

Our product recommendations for your machine applications.

High-Line tasks
- MD, MF or MH standard three-phase AC motors with high-resolution resolver
- All synchronous servo and asynchronous motors with high-resolution resolver, possibly combined with gearboxes or as direct drives
- Inverter Drives 8400 TopLine or Servo Drives 9400

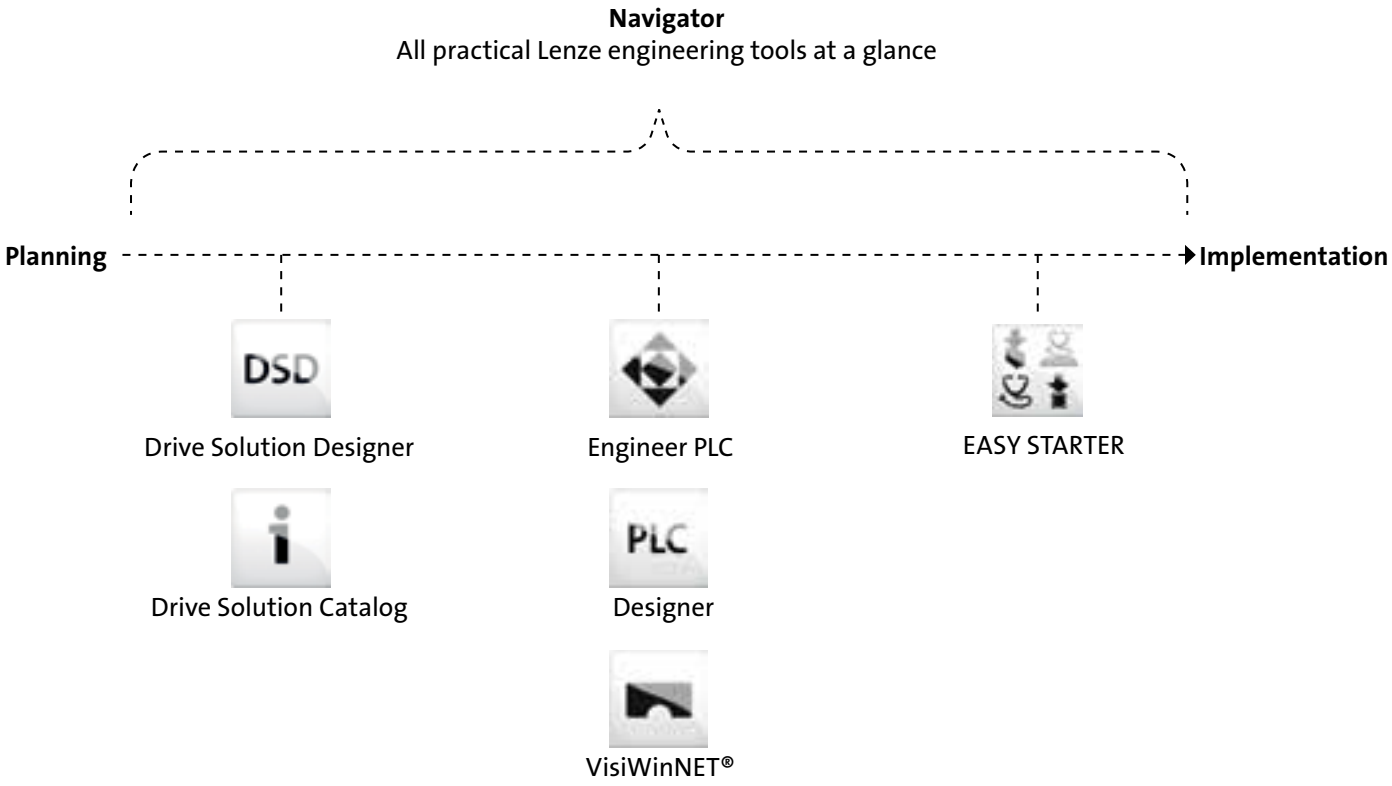




Engineering tools: No questions left unanswered.

Software solutions for easy engineering.

From the planning phase of your machine, all the way up to actual implementation, you will make many decisions that have a major impact on the functions and efficiency of your machine. Our engineering software tools are available to help you simplify your project.



Navigator: Ensures easy operator guidance.

Get where you want to be faster with convenient navigation through all of Lenze's engineering tools.

The benefits for you

- All the practical Lenze engineering tools at a glance
- Tools are easily and quickly selected
- Tools accelerate and simplify engineering processes

Drive Solution Designer (DSD): Helps you achieve efficient drive dimensioning quickly.

Simplified drive dimensioning for the best possible energy efficiency.

The benefits for you

- Well-founded knowledge of drive applications, such as physical aspects of drives, options and energy efficiency
- Calculations with individual process data and speed profiles
- Complete drive structure for the requirements of the machine
- Lenze BlueGreen Solution: documentation of the energy consumption and highlighting of optimization potential with the Energy Performance Certificate

Drive Solution Catalog (DSC): Simply select online and send a request.

Makes it easy to select, configure and inquire about Lenze products.

The benefits for you

- Electronic catalog for selecting products
- Easy compilation of products and accessories using the configuration tool
- Comprehensive information on the products
- CAD data of all standard products
- PDF documents directly downloadable

Engineer: Your uniform, complete engineering software.

Multi-device engineering, from project planning through operation.

The benefits for you

- For all products in our L-force portfolio
- Practical user interface
- Easy handling thanks to graphical interfaces
- Can be used in all project phases (project planning, commissioning, production)
- Parameter setting and configuration

VisiWinNET®: Fast and efficient visualizations.

Easy visualization, from classic tasks all the way up to complex applications.

The benefits for you

- Uniform, comprehensive integrated visualization software
- For classic, machine-based operation & monitoring (HMI), as well as sophisticated SCADA systems employing client/server technology
- Fast application programming
- Platform-independent, multi-user system
- Visualization modules with ready-made templates
- Vertical communication
- Cross-platform applications can be created for Windows CE and Windows XP

PLC Designer: For programming processes.

Easy programming and commissioning of our PLC products.

The benefits for you

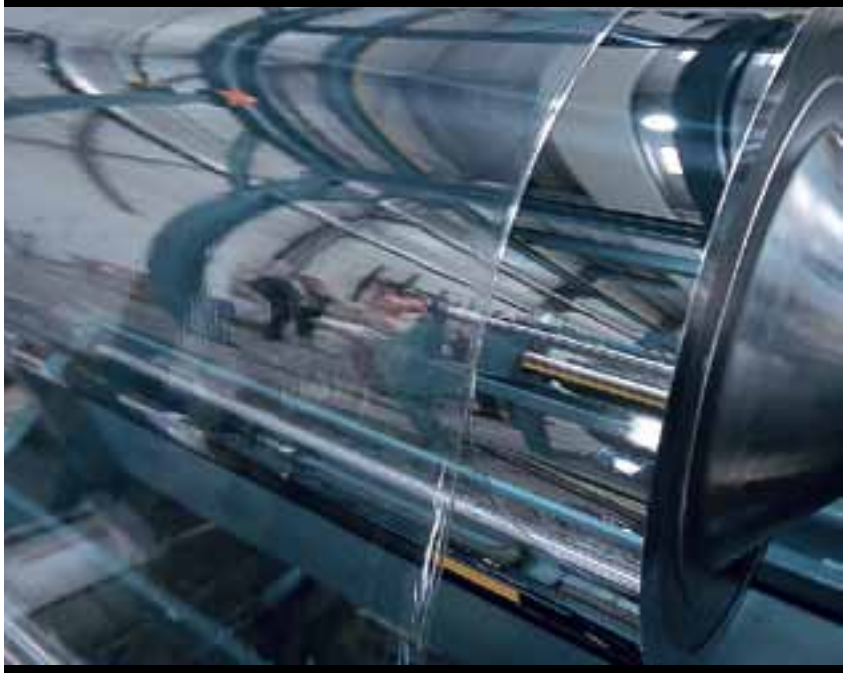
- Create your own applications
- Programming of Logic & Motion in line with IEC 61131-3 (AWL, KOP, FUP, ST, AS and CFC Editor) based on CODESYS V3
- Certified function blocks in line with PLCopen Part 1 + 2
- Graphical DIN 66025 Editor (G-Code) with DXF import
- Integrated visualization for easy process diagrams
- Have all important information available at a glance when commissioning

EASY Starter: Easy-to-use tool for service technicians.

Fast commissioning – an easy way to ensure productivity.

The benefits for you

- Specifically designed for commissioning and maintaining Lenze products
- Graphical interface with just a few buttons
- Easy online diagnostics, parameter setting and commissioning
- No risk of accidental application modifications
- Loading finished applications to the device



We are excited to help get your ideas moving forward! Learn more about our approach, our way of thinking, our vision and how we can make things easier for you in the future. Please feel free to contact us directly or visit us at:

www.Lenze.com