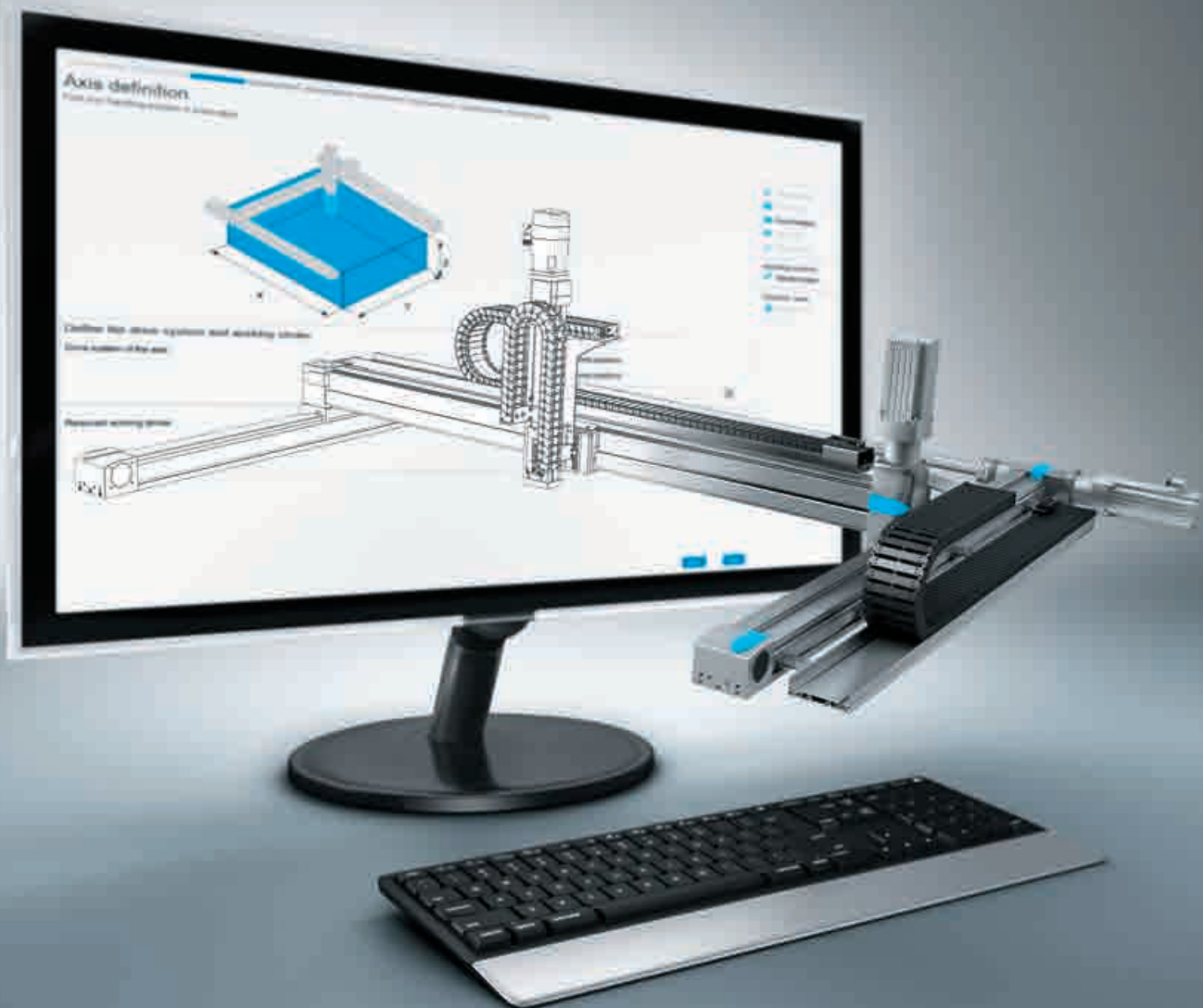
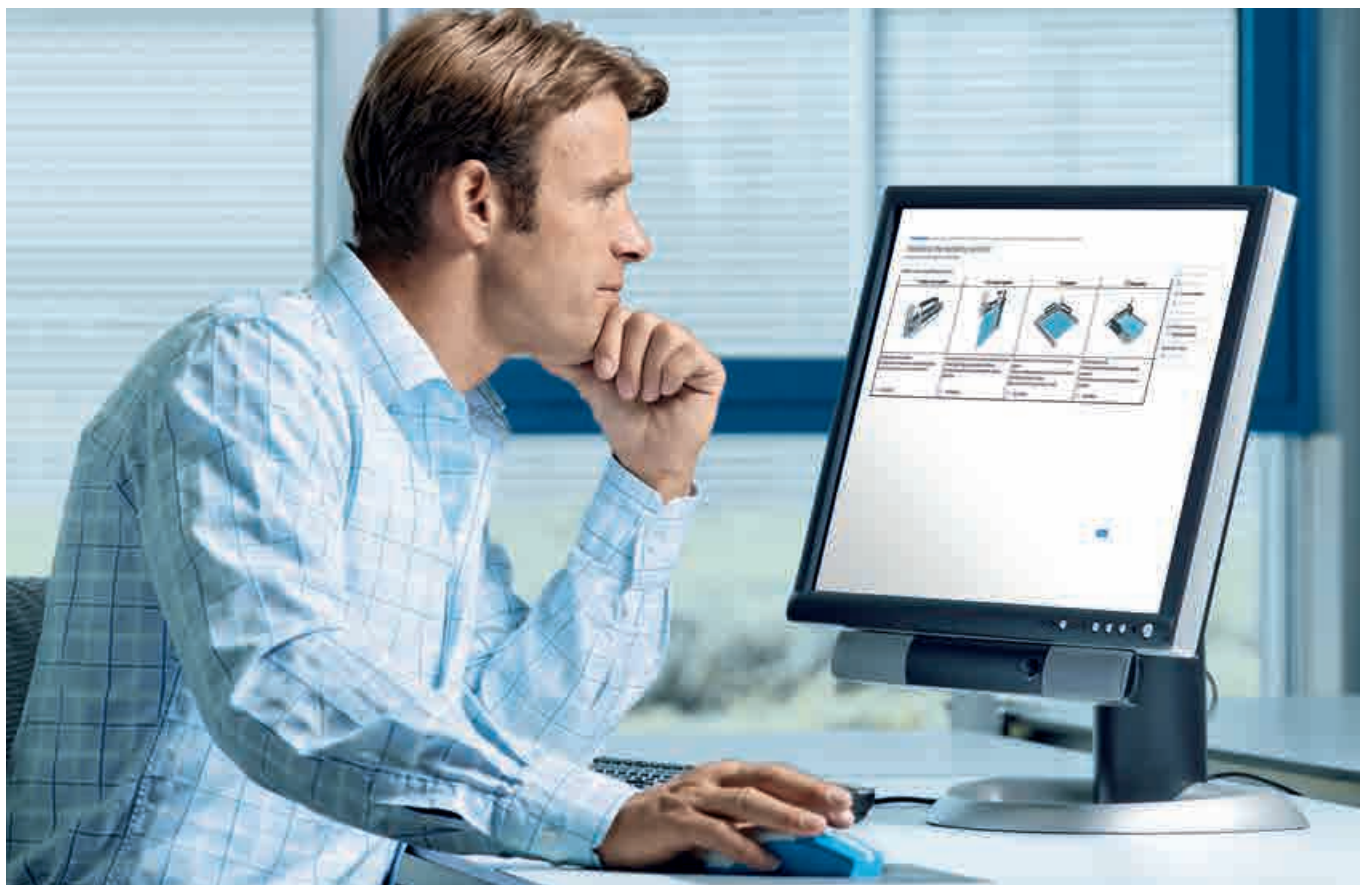


# Handling Guide Online

**FESTO**





**You need complete systems.  
You want reduced complexity.  
We are your dependable solutions partner.**

**→ WE ARE THE ENGINEERS  
OF PRODUCTIVITY.**

### **Handling systems from Festo: versatile, economical, perfectly fitting**

Perfectly fitting, economical, dynamic and flexible: create the perfect system using the extensive range of handling systems and Cartesian robots from Festo. And our ready-to-install systems, software and services reduce your engineering time and effort. We support you from the design stage through to installation and commissioning. That allows you to concentrate entirely on your core business and increase your productivity.

Engineering with the Handling Guide Online: efficient, intuitive and fast. With the online tool, you can configure and order your handling system in record time. It incorporates all the knowledge of our experts, so all you have to do is enter the data for your application. The Handling Guide Online automatically works out suitable solutions, including CAD model, technical data and net price. With EPLAN, you can design and document circuit diagrams quickly and easily. All you have to do is select the system you want and you can immediately order it from the Online Shop. There's no faster or simpler way to get the right handling system.

Additional information:  
→ [www.festo.com/handling](http://www.festo.com/handling)

To the Handling Guide Online:  
→ [www.festo.com/handling-guide](http://www.festo.com/handling-guide)

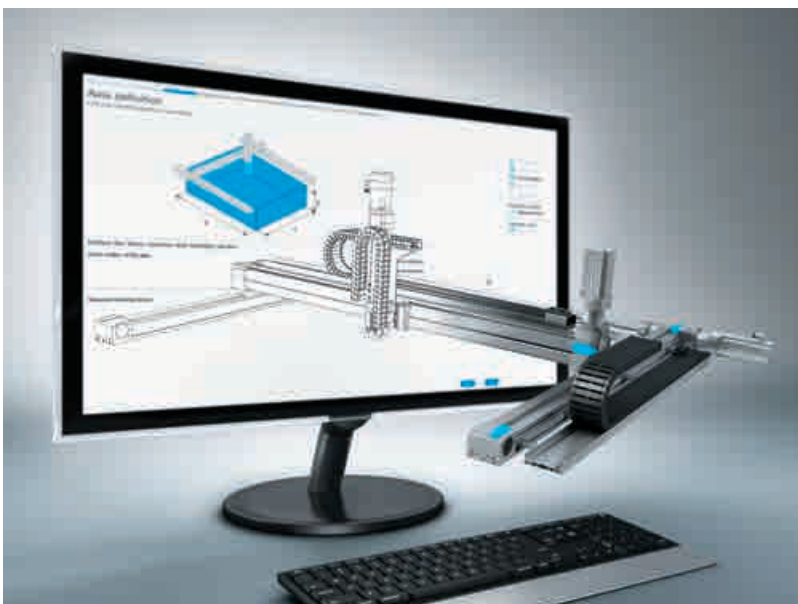
## Why is it worthwhile to use Cartesian robots?

The answer is simple: Cartesian robots from Festo offer many benefits. They are always exactly right for the task and are never oversized. In addition, the use of electric and pneumatic technologies or a mix of the two also makes them very flexible and offers excellent value for money. This full flexibility is especially noticeable when it comes to load, dynamic response, working space and mechanical design of the high-speed versions and compact systems. The space-optimised systems with freely scalable strokes are designed specifically for the application. They require less space for movement and lend themselves more easily to customised and modular adaptation to application conditions. This enables maximum working space coverage.

Their mechanical design makes the systems easy to program; for example, only one axis needs to be activated for vertical movements. Functions such as energy switch-off in the normal position also make the handling systems very energy efficient, while the Cartesian robots from Festo are also easy to maintain and service.

## The quickest way ever to the right handling system

There really is no quicker or easier way: the Handling Guide Online considerably increases your engineering efficiency and gives you the certainty that your system is correctly sized. From design to delivery and installation only takes around 3 weeks.



### Benefits

**Quick:** Find the right handling system, including CAD model and commissioning file, in 20 minutes.

**Intuitive:** The Handling Guide Online is very easy to use and features structured data prompts.

**Efficient:** Greatly reduces engineering time and effort since the design is ready in just a few minutes.

**Planning reliability:** The net price is displayed immediately, allowing you to calculate your costs with certainty.

**Shorter time-to-market:** Only around 3 weeks from configuration and ordering to delivery and installation. It helps you reach your goal more quickly.

**Versatile:** The Handling Guide Online now also includes highly dynamic and compact handling systems. So nothing is left to be desired. If you still cannot find what you need, we will design it for you.

## Highlights of the handling system at a glance

Our ready-to-install systems provide you with a fast and reliable solution for your application that is fully assembled, tested and perfectly coordinated – electric, pneumatic or a mix – and includes energy chain, connection technology and matching drive package.

### Ready-to-install

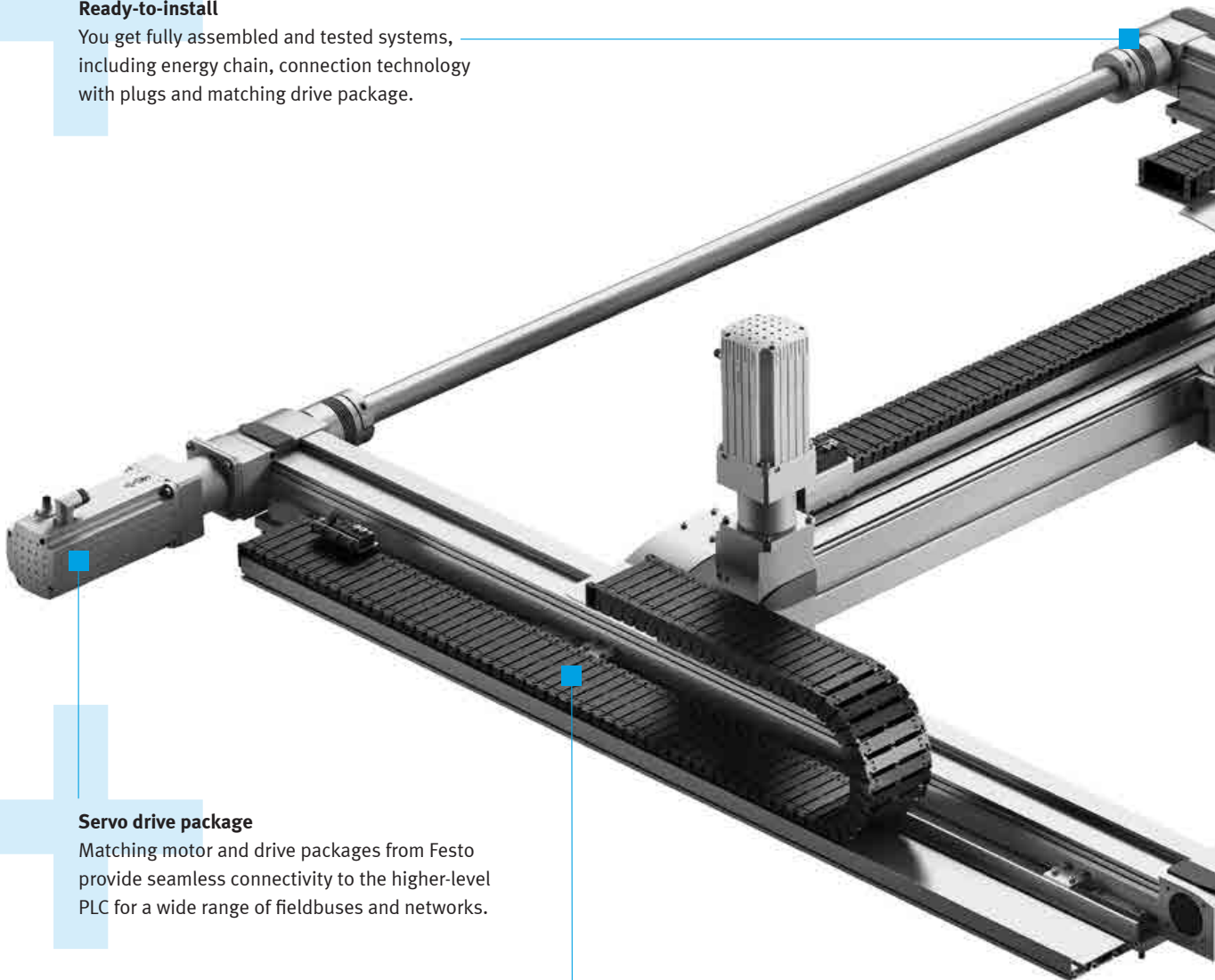
You get fully assembled and tested systems, including energy chain, connection technology with plugs and matching drive package.

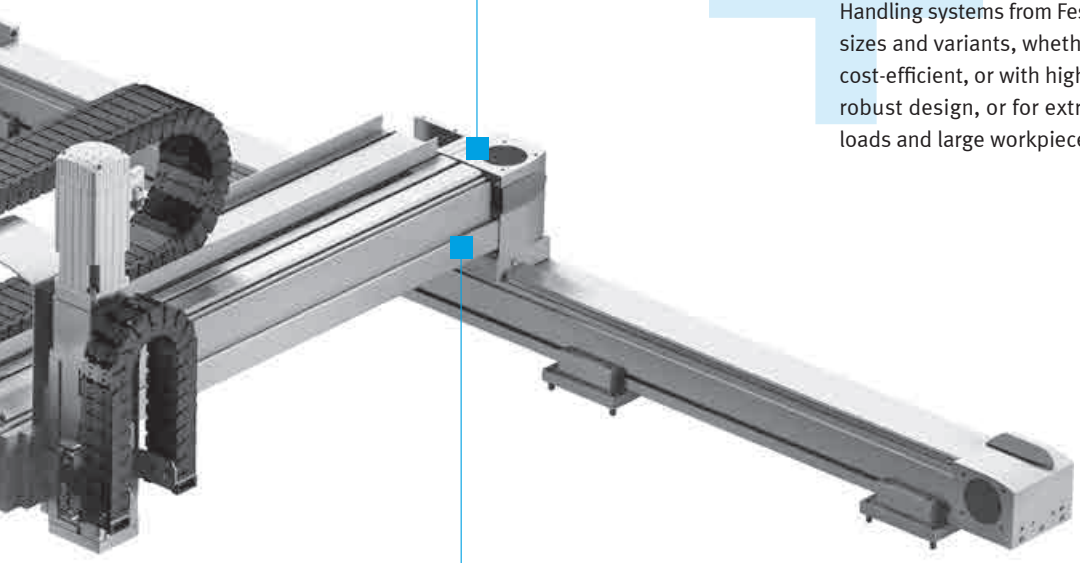
### Servo drive package

Matching motor and drive packages from Festo provide seamless connectivity to the higher-level PLC for a wide range of fieldbuses and networks.

### Integrated energy chain concept

The tubing and cables are routed through energy chains, ensuring outstanding operational and process reliability of the handling systems. Energy chains made of ESD material are available as an option if required for your configuration.





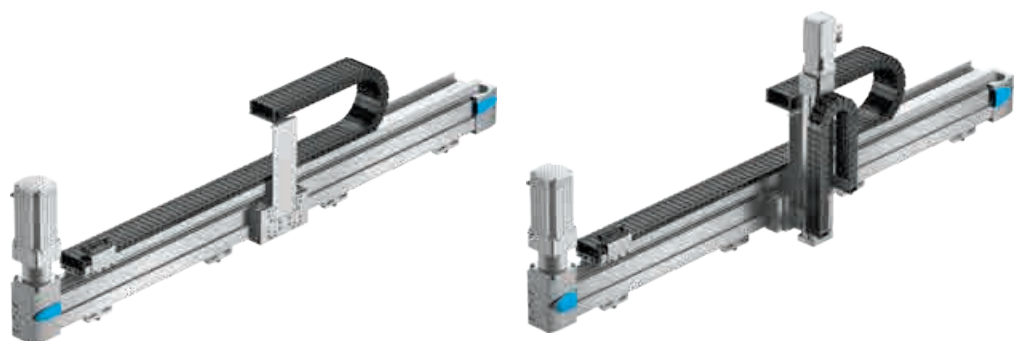
### Scalable or modular system approach

Handling systems from Festo come in lots of different sizes and variants, whether extremely compact and cost-efficient, or with high mechanical rigidity and robust design, or for extremely light or heavy payloads and large workpieces of up to 50 kg.

### Technology mix

Serial and parallel kinematic principles for the toothed belt and spindle axes are available as well as electric or pneumatic Z-axes so you always have the perfect technology.

## 1D handling system and 2D handling system

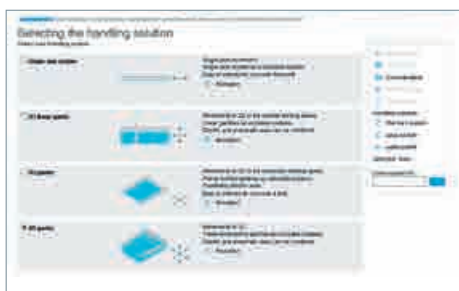


## The Handling Guide Online – the fast route to your handling system

The Handling Guide Online is a configuration and ordering platform in one. This unique online engineering tool helps you to configure and order your standard handling system. It minimises your engineering time and effort and guides you to the right solution in record time.

### Three steps to your handling system:

[www.festo.com/handling-guide](http://www.festo.com/handling-guide)



#### 1st step:

Choose the type of handling system and enter your application data into the Handling Guide Online. The tool calculates appropriate handling systems, including price.



#### 2nd step:

Select the most suitable handling system from the list of suggestions. The correctly configured CAD model and the data sheet with all the relevant figures are immediately available for download.



#### 3rd step:

You can use additional options to configure your selected system in accordance with your requirements. Then add the preferred handling system to your shopping basket and confirm your order. Festo will deliver a ready-to-install system, including all user documentation in accordance with the EC Machinery Directive, as quickly as possible.

### Efficient commissioning:

The commissioning files are custom created in the Handling Guide Online on the basis of user input and the calculated system. They can be loaded directly into the motor controller. The sets of values are individually adapted to the handling system and consist of axis dimensions, motor characteristics, feed constants and dynamic data. A special feature is that the controller settings are automatically calculated based on the payload, the dead weight and the system dynamics entered by the user. This shortens the time-to-market for you or your users.

If you have specialised technical requirements, you can simply send the application data you have entered to our experts with a single mouse click, and receive a customised offer.

## Simply configure and order – handling systems and Cartesian robots

The ready-to-install systems provide you with fast and reliable solutions for standard applications: fully assembled, tested and perfectly coordinated, including energy chain, connection technology and matching drive package.

### 1D handling systems/single-axis systems



#### **Single-axis system YXCS: for movement in 1D**

The single-axis system with its high mechanical rigidity and sturdy design is ideal for long, one-dimensional strokes and large loads. A matching motor and motor controller package from Festo, as well as many other options, round off the ready-to-install complete system.

- Fully assembled and tested
- Energy chain for reliable operation
- Standardised interface for easy connection of individual front units

### 2D handling systems/linear gantries



#### **Linear gantry YXCL: for vertical movements in 2D**

High mechanical rigidity makes this linear gantry precise, even with very long strokes of up to 3000 mm in the Y direction. The tubing and cables are routed through energy chains, ensuring outstanding operational and process reliability.

- Fully assembled and tested
- User-friendly mounting and assembly, even during servicing



#### **Linear gantry YXCL-B: for vertical movements in 2D**

The linear gantry is ideal as a cost-efficient solution for simple handling tasks with medium strokes. Spindle or toothed belt axes combined with mini slides for vertical 2D working space.

- Space-optimised and pre-assembled
- Internal recirculating ball bearing guides are protected by an attached stainless steel cover strip
- Energy chain made of ESD material



#### **Highly dynamic linear gantry YXML: for maximum dynamic response in limited space**

The Cartesian high-speed robot offers maximum dynamic response with max. 95 picks/min, high flexibility and a compact design. Its mechanical design is based on the linear gantry EXCT. Ideal for flexible handling with free movement in the vertical plane even when installation space is limited.

- Slim design with very compact Z-axis
- Parallel kinematic principle
- Integrated energy chain

# Simply configure and order – handling systems and Cartesian robots

## 2D handling systems/planar surface gantries



### **Planar surface gantry YXCF: for horizontal movements in 2D**

With its high mechanical rigidity and sturdy design, this planar surface gantry can be used anywhere, whether with heavy workpieces or high payloads. At the same time, it is extremely precise – even with long strokes.

- Different sizes and variants are available
- Standardised interface for easy connection of individual front units
- Connecting shaft to the synchronous drive of the X-axes for large centre distances and heavy loads



### **Planar surface gantry YXCF-B: for horizontal movements in 2D**

Cost-efficient planar surface gantry in a compact format for small parts handling and simple tasks like positioning end effectors in test and inspection systems.

- Drive axis + guide unit in X direction for absorbing forces and torques in the gantry structure
- Clean look axes with weight-optimised design
- Energy chain made of ESD material



### **Compact planar surface gantry YXMF-1: for maximum working space coverage**

Where every millimetre counts, the compact planar surface gantry based on the EXCM shows its advantages. It combines outstanding functionality with an extremely compact, flat design and maximum working space coverage.

- Flat and compact for optimised use of space
- High payload



### **Highly dynamic surface gantry YXMF-2/3: maximum dynamic response in the installation space**

The gantry with robotic functionality has an excellent dynamic response of up to 100 picks/min and covers the working space of two SCARA robots. The working space of the XY planar surface gantry makes handling highly flexible with free planar movement.

- Extremely compact and flat design
- Excellent dynamic response thanks to extremely small moving mass
- Virtually free of vibration



# Simply configure and order – handling systems and Cartesian robots

## 3D handling systems/three-dimensional gantries



### Three-dimensional gantry YXCR: for three-dimensional movements in a space

The Cartesian robot is ideal for very long strokes of up to 3000 mm in the X direction – even with high loads. The combination of several axis modules means it can be used anywhere, for light to heavy workpieces or large payloads.

- Pneumatic and electric components are freely selectable
- With matching Festo motor and motor controller package, and energy chain
- Connecting shaft to the synchronous drive of the X-axes for large centre distances and heavy loads



### Three-dimensional gantry YXCR-B: extremely space-saving 3D gantry system

With an attractive price-performance ratio, for example for simple assembly tasks and small parts handling in the electronics industry.

- Configurable length and width and with different Z strokes
- Flexible motor positioning with choice of axial or parallel kits
- Driveless linear guide unit for supporting forces and torques in the gantry structure
- Energy chain made of ESD material



### Compact three-dimensional gantry YXMR-1: for high payloads in the smallest working space

The extremely space-saving 3D system is excellent at absorbing high forces and torques. It offers the same smooth running characteristics and high positioning precision.

- Flat and compact for optimised use of space
- High payload
- Configurable length and width
- With electric mini slide EGSC or pneumatic mini slide DGSL



### Highly dynamic three-dimensional gantry YXMR-2/3: for maximum performance

With up to 100 picks/min, the three-dimensional gantry based on the EXCH is highly dynamic as well as extremely compact and flat. The working space can be scaled in the X and Y direction.

- Optimum dynamic response with up to 100 picks/min
- 30% more efficient due to a lower moving mass
- Low centre of gravity: minimal overshoot, enhanced positioning accuracy and reduced demands on the frame

## 3D handling systems/cantilever systems



### Cantilever system YXCA-B:

The cost-effective 3D handling system with a cantilever Y-axis for freely accessible work space is ideal for use in linear assembly processes or desktop applications.

- Work space free of interference contours accessible from 3 sides
- Spindle and toothed belt axes with internal, protected recirculating ball bearing guide
- Meets the basic requirements of the electronics industry
- Energy chain made of ESD material

## Commissioning service for axis systems



We make sure that everything runs smoothly for you. Festo supports you with hardware, software and service. The commissioning service offered by our trained experts reduces your process costs and increases system availability. You are also freeing up your staff, saving time and getting completely reliable systems with the best possible performance.

### Our services:

- For reliable operation: checking the wiring, connections, motion paths and energy chains
- For optimum path travel: axis configuration and parameterisation
- For maximum performance: optimising the control parameters and homing
- For tested safety: activating the axes in test mode
- For secure knowledge: data backup and documentation
- For safe operation: instructing the machine operators, e.g. on error diagnostics and elimination of errors or on changing the position values
- The commissioning service is available for 1-axis, 2-axis and 3-axis systems, including in each case as a “safety package” for axis systems with safety module

## See, understand and apply straightaway: Service2see

Practical support for maintenance, commissioning and repair.



On our YouTube channel “Festo Service” we show you how you can configure, repair, commission and retrofit Festo products. Our new service perfectly complements the technical hotline – by watching

the video tutorials on your smartphone or tablet you can follow the correct sequence step by step and directly at the machine. And they are available around the clock!



### The benefits at a glance

- + Step-by-step instructions
- + Practical and intuitive
- + Available around the clock
- + Quick support without having to wait
- + Overview of the required tools
- + Information on the time required and the level of difficulty
- + Image comparisons to avoid typical sources of errors

## CPX-E: interface for easy actuation of handling systems



### Creating handling applications is straightforward with the CPX-E motion licence

With the “Motion and robotics” software licence for the controller CPX-E-CEC-M1-xx, you get a user-friendly solution that enables to design handling quickly and conveniently. The two licences are available in the Festo AppWorld → [www.festo.com/appworld](http://www.festo.com/appworld)

### CPX-E: the interface for many functions

As the interface between the host controller and modular automation solution, CPX-E is the point where pneumatics, electric drive technology as well as sensors and camera systems come together. The integrated decentralised control function is realised in the decentralised network via EtherCAT® masters. EtherCAT® is also used for the direct connection of servo drives. IO-Link® provides greater flexibility for point-to-point communication.

### PTP or CP: what licence do you need?

#### PTP licence

The point-to-point interpolation offered by the PTP licence lets you actuate simple kinematics. The graphic visualisation for the handheld operator unit CDSA-D3-RV is linked to a teach-in function. The PTP licence is ideal for applications such as pick & place, loading/unloading, etc.

#### CP-Lizenz

The Cartesian linear and circular interpolation for orientation is perfectly suited to contour applications. The graphic visualisation for the handheld operator unit CDSA-D3-RV is linked to a teach-in function.

## Tailored to your requirements – application-specific solutions and control cabinets



### Individually developed

In addition to flexible standard products, Festo also develops handling systems based entirely on your individual, industry-specific requirements, for example with freely definable axis geometries for shorter cycle times or for integration into machines with minimal space requirements.

### The benefits to you:

- Optimised performance
- Customised solutions for special applications
- Fast planning, design and assembly
- Optional: customised gripper solutions



### Matching control cabinet solutions

The matching control cabinet for your handling system for simple control tasks, pick & place applications or complex control systems for coordinated, highly dynamic and precise movement sequences with up to 6 axes. Festo control cabinets for control systems provide protection for control components for single-axis and multi-axis systems.

Take advantage of our specialists' many years of experience and know-how and describe your project requirements to us. We will take care of the rest.

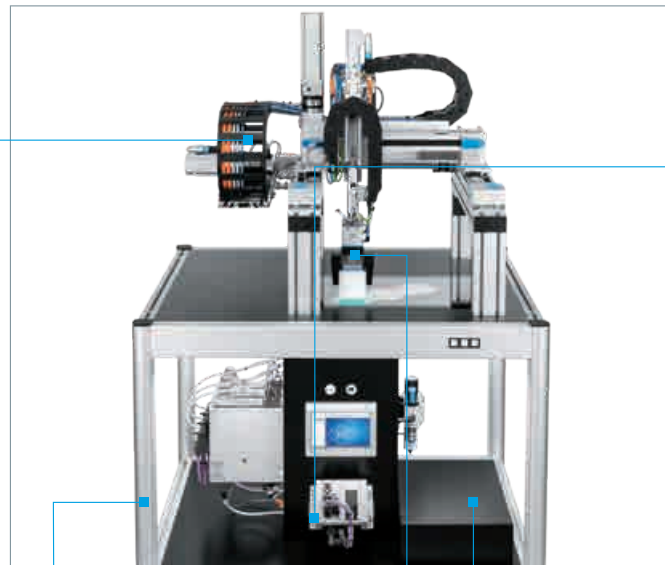
# Simply complete: everything from a single source ...

Optimally coordinated hardware, software and services from one supplier: Festo. The complete, worry-free package extends from design engineering and advice on hardware to application-specific commissioning and after-sales service and training. It will enable you to quickly put your handling system to optimum use, lower your process costs and increase system availability.

## Kinematic system



Our highly dynamic mechanical systems with integrated energy chain are available in numerous sizes and stroke ranges.



## Controller



For centralised control directly in the system or decentralised control in the control cabinet.

## Frames



Tested frames you can rely on. Designed to match every kinematic system and application, in aluminium or steel.

## Front unit



Rotating, gripping or vacuum: you receive lightweight, precise and powerful solutions.

## Service



Our experts take care of your handling systems. From commissioning and training to after-sales service, we are there to help.

### Maximum productivity is a question of ambition

Do you share this attitude? We will be glad to help you achieve this goal – through our four outstanding qualities: • Security • Efficiency • Simplicity • Competency

We are the engineers of productivity.

Discover new dimensions for your company:

→ [www.festo.com/whyfesto](http://www.festo.com/whyfesto)