





ALMOST UNLIMITED
FIELDS OF APPLICATION
FOR MULTI-AXIS SYSTEMS













**Positioning** 

**Palletizing** 

**Feeding** 

Moving

**Equipping** 

## **New standard for**

ready-to-install sub-systems:

easier to select and configure,

## install faster and get started

## MULTI-AXIS SYSTEMS MADE EASY. EVERYTHING FROM A SINGLE SOURCE

Bosch Rexroth now makes the path to a ready-to-install sub-system unbeatably simple. 30 years of linear axis expertise have gone into the new multi-axis modular system and the completely revised LinSelect selection tool. There is no easier or faster way to select, configure and commission Cartesian multi-axis systems from standardized best-in-class components. You'll benefit from the latest generation of multi-axis systems from Bosch Rexroth: You'll receive ready-to-install, scalable positioning, handling and dispensing solutions made of proven and perfectly matched components, including all attachment parts, cable systems, motors and drive controllers – all from a single source, all from one company.

And if your fully assembled, fully integrable sub-system needs to be able to do even more, then take a look at the next step: Smart MechatroniX (from page 16) expands the components to include sensors, electronics and software – with completely new solution approaches and business models. WE MOVE, YOU WIN.

A smart solution as a complete kit – including sensors, electronics and software: Smart Function Kit for Dispensing or Handling. Page 16

















**Picking** 

Stacking

Dispensing

Discharging

Sorting

Checking

Mounting

Screwing

## A customized multi-axis system with just a few clicks

You can easily check whether the latest generation of the LinSelect selection tool fulfills what is stated in the specifications – "simpler, faster and better than anything you know": Download LinSelect (see link below) and try the tool for yourself. Or find out about the most important innovations and highlights here in advance.

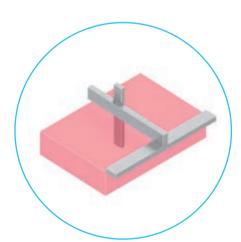


www.boschrexroth.com/linselect

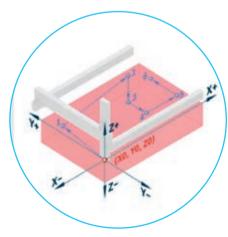
#### **30 YEARS OF LINEAR AXIS KNOW-HOW INSIDE**

Experience the concentrated expert knowledge of a leading supplier in linear motion technology – and as part of the Bosch Group also as a leading user – in every selection step of the new LinSelect. You are graphically guided and asked for a few parameters. This allows you to easily and quickly generate the appropriate reference cycle for your application, then receive detailed information and choices on running performance, such as repeatability, for example. You can easily put together your own system from standardized best-in-class components, including electrics, software, drive and motor, with just a few clicks and without any engineering effort.

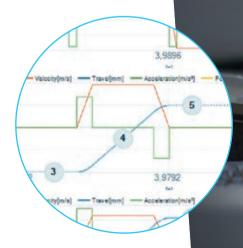
As a result, you will receive a recommendation in different performance variants and price settings – just as you are used to in a private context from online shops. You can then transfer the system data directly to the configurator and place your order. The CAD models are automatically available at Bosch Rexroth. By the way, commissioning is similarly fast. Could it be any easier?



▲ Simple selection via graphical interfaces instead of input fields



 Simply select a reference cycle instead of creating complex travel profiles



Simply use interactive graphics instead of confusing tables



## LINSELECT - SIMPLE SELECTION, MINIMAL ENGINEERING



## FEW PARAMETERS, FULL SCOPE - MANY ADVANTAGES



- Select mechanics/motors/drive controllers in a single tool
- ► Fast engineering, fast result, shorter time-to-market

#### Intuitive:

- Years of application experience implemented in easy-to-use interfaces
- Visual support through interactive graphics and animations

#### Intelligent:

- Input of few parameters output of prepared complex results with all relevant data
- ► Transparent result overview with clear recommendation depending on performance requirements, delivery time or price

#### Interactive:

- Continuous tool chain: Automatically transfer result to the online configurator, finish configuration, order and generate CAD data
- Central project for link management and documentation, bundled access to all project information – no decentralized storage, no long searches



O Best delivery time 0

CMS-35B-22-2

Price O

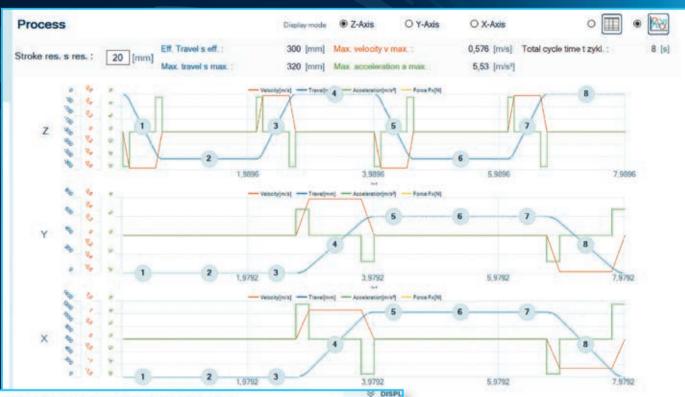
Delivery time O

#### **◆ SIMPLE INPUT**

Choose from 2 to 3 reference cycles – the system shows you the corresponding animation. Then simply define your desired system with 6 to 8 parameters for travel, time and mass – LinSelect does the rest.

#### **▼ DETAILED OUTPUT**

LinSelect transforms your inputs into detailed characteristic curves for each axis. You have at least two reference cycles to choose from per portal which allow continued customization as you work through them.



#### S4H-3SB-21-2 / 200 / 500 /800 / 5 / 5 /3

#### Configuration

Max. travel Z	200	[mm] (Sub-product CKK-090-NN-1)
Max. travel Y	500	[mm] (Sub-product CKR-110-NN -1)
Max. travel X	800	[mm] (2 x Sub-pflroduct MKR-065-NN-3)
Mechanical drive Z	5	Ball screw drive / BASA 12x5
Mechanical drive Y	5	Assembly belt drive / gear PG005S-MF i=5
Mechanical drive X	3	Assembly belt drive / gear PG060 i=3
Motor Z	MS2N03-BOBYN	MS2N03-BOBYN
Holding brake Z	Υ	With holding brake Single-cable connecting technology Convection cooling
Motor Y	MS2N04-BOBTN	MS2N04-BOBTN
Holding brake Y	Y	With holding brake Single-cable connecting technology Convection cooling
Motor X	MS2N04-COBTN	MS2N04-COBTN
Holding brake X	Y	With holding brake Single-cable connecting technology Convection cooling
Automation & drive package		CtrlX, PR21,WEB HMI
Function Kit		Handling

#### **■ QUICK RESULT**

You'll receive an overview of the possible variants along with a recommendation depending on performance requirements, price or delivery time.

(i)

You prefer to work differently? We will also show you other ways to select and configure – as individually as you like. ▶ Page 22

## **Best-in-class linear axes for movements in space**



#### **COMPACT MODULES**



### CKK – compact linear axis with two integrated ball rail systems and ball screw assembly

#### **Properties**

- ▶ 5 sizes from CKK-070 to CKK-200
- ▶ Precision aluminum profile with two preloaded ball rail systems
- ▶ Drive via precision ball screw assembly
- Protection of the installation elements by cover plate and cover strips
- ► Max. travel 1,800 mm
- ► High travel speeds of up to 1.6 m/s
- ► Any lengths available in mm steps



### $\mbox{CKR}$ – compact linear axis with two integrated ball rail systems and toothed belt drive

#### **Properties**

- ▶ 4 sizes from CKR-190 to CKR-200
- Precision aluminum profile with two preloaded ball rail systems
- Robust toothed belt drive (allows longer lengths than CKK module)
- Intelligent toothed belt guide protects internal components
- ► Max. travel 3,000 mm
- ► High travel speeds of up to 5 m/s
- ► Any lengths available in mm steps





### MKR – compact linear module with integrated ball rail system and toothed belt drive

#### Properties

- ▶ 4 sizes from MKR-065 to MKR-140
- Extremely compact aluminum profile with preloaded ball rail system
- High-performance toothed belts for high travel speeds of up to 5 m/s
- Corrosion resistant steel cover strip
- ► Max. travel 3,000 mm
- ► Any lengths available in mm steps



### MKR-145 – compact linear module with two integrated ball rail systems and toothed belt drive

#### **Properties**

- ▶ 4 sizes from MKR-065 to MKR-110
- Compact aluminum profile with high inherent rigidity and two preloaded ball rail systems
- ▶ High-performance toothed belt for high travel speeds up to 5 m/s
- ► Max. travel 2,150 mm
- ► Any lengths available in mm steps

## **Compactness meets** modularity: drive controls and motors



#### ctrIX DRIVE - THE MOST COMPACT DRIVE SYSTEM

In addition to the proven drives such as from the HCS01 series, the world's most compact modular drive system is now available with ctrIX DRIVE. For absolutely future-proof multi-axis solutions. The ctrlX CORE control hardware is optionally integrated in the drive housing - saving you up to 50 percent space in the control cabinet. And even more in combination with the modern MS2N motors, as these offer up to 30 percent higher power density. It couldn't be more compact.

#### **Complete performance package**

Particularly in complex multi-axis machine systems, the multi-variant and scalable drive portfolio can demonstrate its strengths. With ctrlX DRIVE, all system components can be freely combined with each other - plus the option of comprehensive extensions of the hardware/software functions.

With a reaction time of around 4 ms. ctrlX SAFETY will offer one of the fastest SafeMotion solutions on the market in the future. Energy management functions ensure energy efficiency, and the patented Smart Energy Mode reduces peak drive loads by up to 70 percent. In addition, ctrlX DRIVE has an extremely robust EMC design.

▲ ctrlX DRIVE: the new modular drive system, optionally with integrated control





CTTIX

#### **POWERFUL SERVOMOTORS**

Our servo motors are the perfect team players in the ctrlX DRIVE portfolio. Boasting compact dimensions, they combine optimum dynamics with maximum precision of position, rotary speed, and torque values. Ideal for complex multi-axis systems.

#### **Virtual commissioning**

Developers have access to the digital twin of the motor, which is stored in a dimensioning tool and in the ctrlX DRIVE controller. Planning and dimensioning of even complex drive systems can therefore be virtualized quickly and reliably. Every motor is transformed into a data source for intelligent machines or i4.0 applications.

#### HIGHLIGHTS ctrlXDRIVE SYSTEM

#### **More productivity**

- Converters and supply units with high peak power ratings
- Flexible power supplier concept space saving, flexible, energy-efficient

#### **Fewer components**

- ▶ 50 % less installation space in the control cabinet
- ▶ Perfect for 300 mm control cabinet
- Integrated ctrIX CORE saves 100 % control installation space

#### Less engineering

- Intelligent functions (multi-Ethernet, multi-encoder, integrated web server etc.)
- Easy diagnosis
- ► Less effort for engineering and wiring
- ► Single-cable technology

#### **HIGHLIGHTS MS2N SERVOMOTORS**

#### More productivity

- ► High torque density for greater power
- ▶ 5 sizes from MS2N03 to MS2N07
- Maximum dynamics of the servo axes due to low motor inertia and high overload capability

#### **Fewer components**

- Robust single-cable connection
- MS2N with integrated SafeMotion encoder no further safety components required
- ▶ Motor as torque sensor makes external sensors redundant

#### Less engineering

- Plug-and-play encoder data memory for faster commissioning
- ▶ Digital twin of the thermal motor model

## Good to know: all the details of a completely well thought-out system

Practicality does not only become apparent in the tough day-to-day industrial operation, it can already be recognized beforehand by the many clever details, predefined interfaces and add-on parts as well as flexible options. Typical Bosch Rexroth.

#### **GENERAL INFORMATION**

#### **Installation position**

The multi-axis systems are designed for use in a horizontal installation position on a flat surface.

#### **Ambient conditions**

Please note for use:

- ► Avoid extreme room temperatures
- ► Steer clear of pollution
- ► Maintain dry environment
- ► Stay away from chemical impact
- ► Elude shocks/vibrations

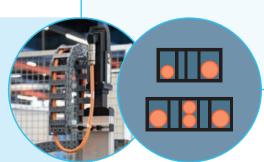
#### Lubrication/maintenance

Multi-axis systems come with initial greasing and are designed for grease lubrication.

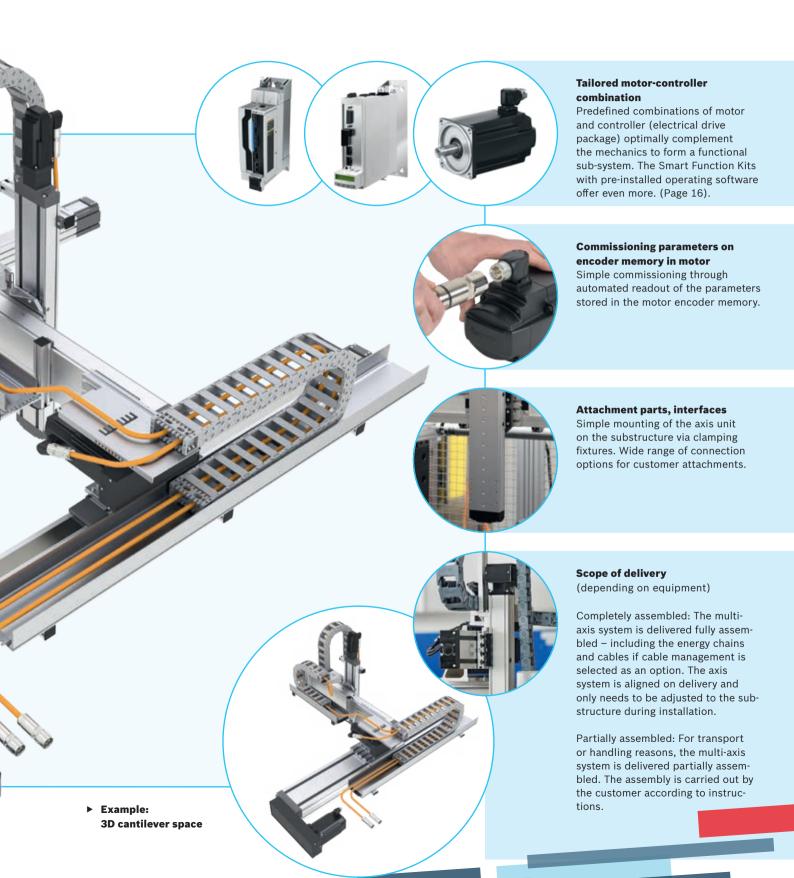
#### **Cable management**

Multi-axis systems are optionally available with energy chains and cables (plug connection). With plenty of free cross-sections in the energy chains for your own cable routing.









## Flexible in every respect: 8 combinations of axes for precise handling



- ▶ 4 sizes
- ► Max. payload\* 62 366 kg
- ► Travel range [mm] x-axis min. 60, max. 3.000



- ▶ 8 sizes
- ► Max. payload\* 25 205 kg
- ► Travel range [mm] x-axis min. 60, max. 3.000 y-axis min. 60, max. 2.869



- ▶ 8 sizes
- ► Max. payload\* 10 61 kg
- ► Travel range [mm] y-axis min. 50, max. 3.000 z-axis min. 40, max. 1.590

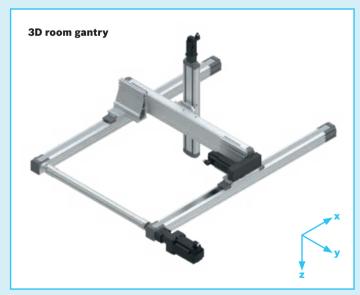


- ▶ 12 sizes
- ► Max. payload\* 2 61 kg
- ► Travel range [mm] y-axis min. 40, max. 3.000 z-axis min. 40, max. 1.590

8 predefined axis combinations in 68 sizes offer you a lot of freedom for all common handling tasks. The travel ranges can be configured in all axial directions in mm increments. This allows you to make optimum use of installation space, obtain maximum flexibility during installation and adapt your sub-system perfectly to your application.



- ▶12 sizes
- ► Max. payload\* 5 82 kg
- ► Travel range [mm] x-axis min. 40, max. 3.000 y-axis min. 40, max. 1.200



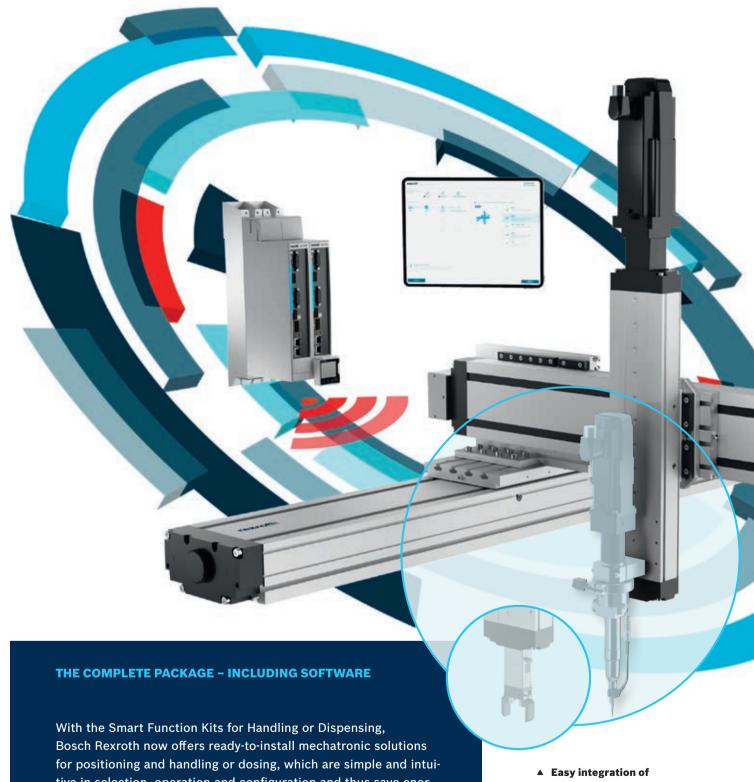
- ▶ 10 sizes
- ► Max. payload\* 10 160 kg
- ► Travel range [mm] x-axis min. 60, max. 3.000 y-axis min. 60, max. 2.753 z-axis min. 40, max. 1.625



- ▶8 sizes
- ► Max. payload\* 2,5 32,5 kg
- ➤ Travel range [mm]
  x-axis min. 50, max. 3.000
  y-axis min. 40, max. 880
  z-axis min. 40, max. 1.325



- ▶ 6 Baugrößen
- ► Max. payload\* 34,5 65,5 kg
- ► Travel range [mm] x-axis min. 60, max. 3.000 y-axis min. 345, max. 2.350 z-axis min. 50, max. 1.590



With the Smart Function Kits for Handling or Dispensing,
Bosch Rexroth now offers ready-to-install mechatronic solutions
for positioning and handling or dosing, which are simple and intuitive in selection, operation and configuration and thus save enormous time in engineering compared to conventional systems. How?
With predefined kits that can be quickly dimensioned. In addition,
the pre-installed, application-specific software enables a plug-andproduce commissioning via wizard and graphical programming
via drag & drop, without any programming knowledge (Zero
Programming). See for yourself how smart and easy it is to use.

▲ Easy integration of process-specific peripherals such as grippers or dispensing heads due to open interfaces

## **Es geht noch smarter: Smart Function Kit for Handling oder Dispensing**

 Pre-installed software for fast, intuitive commissioning of the application-specific sub-system

rexroth



#### STRAIGHTFORWARD PRODUCT SELECTION

- ▶ Predefined, coordinated hardware components and software
- ▶ Fast selection and dimensioning with LinSelect
- ► All components from a single supplier with proven Rexroth quality



#### **PLUG & PRODUCE**

- Delivered in a single package, including pre-installed operating software
- ► Only a small number of interfaces thanks to an integrated control system
- ► Easy wiring thanks to pre-assembled cables
- ► Guided start-up via our wizard
- ▶ Auto parameterization of the overall system
- ▶ Referencing the axes



#### **ZERO PROGRAMMING**

- ▶ No programming knowledge required
- ▶ Simple and graphical programming of the process
- ▶ Browser-based Web HMI, can be used on various devices
- ► Modern and intuitive design



#### **OPEN INTERFACES**

- ► Simple connection to higher-level control system
- ▶ Data access via ReST programming interface
- ▶ IoT connection via OPC-UA

**Best-in-class** 

- ▶ Open software platform that can be extended via apps
- ► Easy connection of application-specific end effectors



components of linear motion technology from Bosch Rexroth



completely new solutions and business models for the Factory of the Future



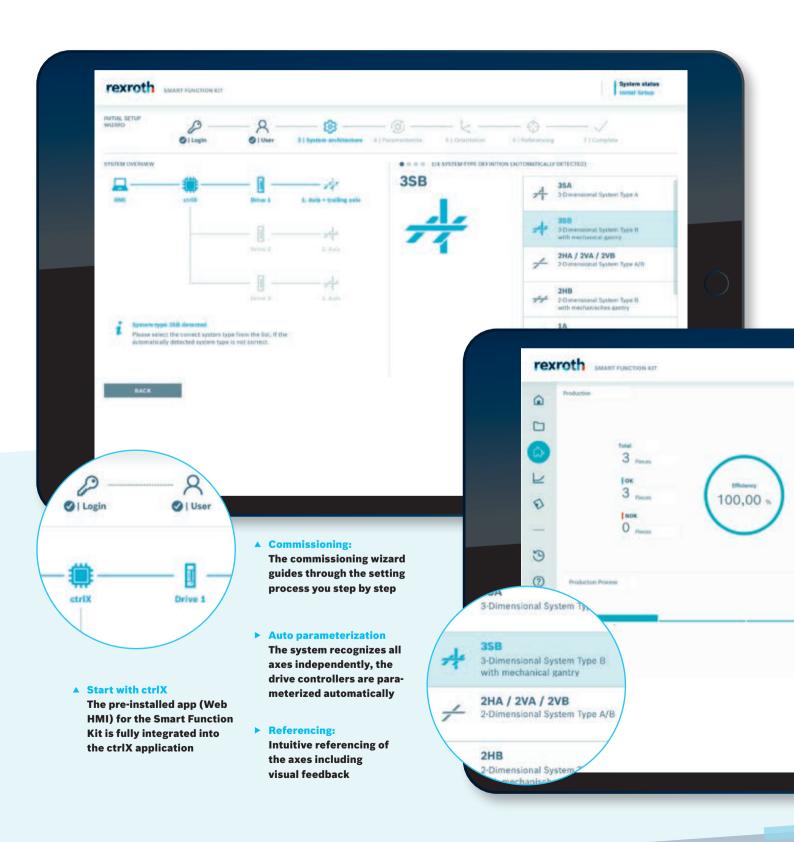
Find out more: www.boschrexroth.com/ smart-mechatronix

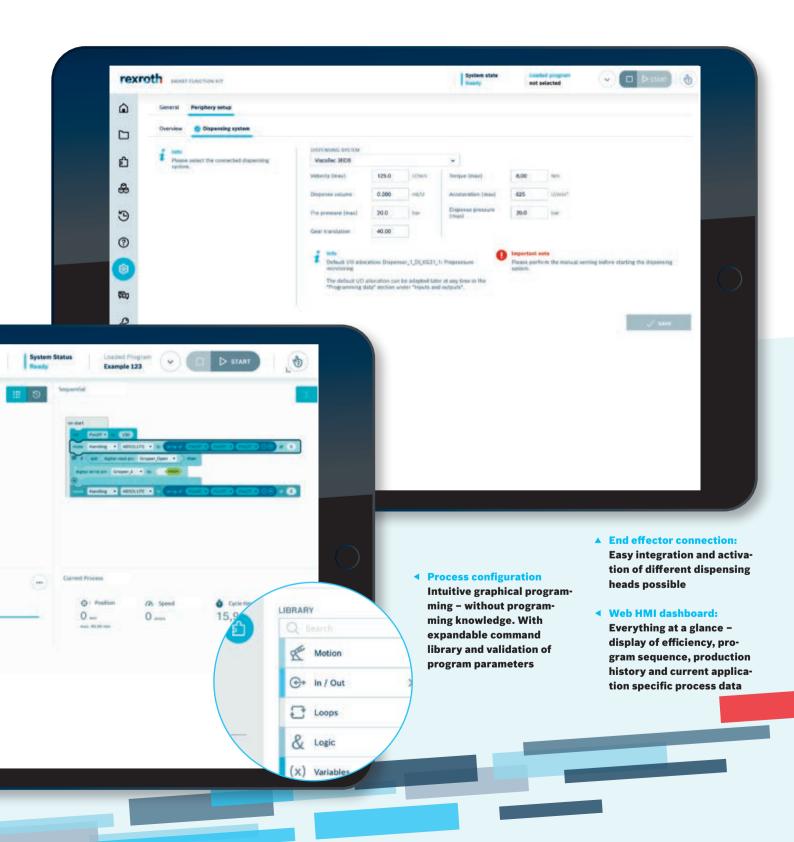
#### **SMART MECHATRONIX: PLUG & PRODUCE, PERFORM, PROCEED**

With the new Smart MechatroniX solution platform, which combines best-inclass linear motion technology components with sensors, electronics and software, Bosch Rexroth is responding to market trends in factory automation on the way to the Factory of the Future. The resulting solutions are versatile and open up completely new business models. They allow quick commissioning, offer full process transparency and ensure a short time to market and high productivity.

## INTUITIVE, EASY-TO-USE SOFTWARE – NO PROGRAMMING KNOWLEDGE REQUIRED

Thanks to the modern, intuitive Web HMI, the software is ready for immediate use, with no previous knowledge required. The commissioning wizard guides you through the setting process step by step, programming is done by drag and drop. It couldn't be any simpler or faster.





## **Smart Function Kits: System overview**

#### **DRIVE AND CONTROL**

- ctrlX DRIVE controller of the latest generation
- ► ctrlX CORE control integrated
- ▶ Open interface for i4.0 via OPC-UA
- ► Building blocks for connection to higher-level control system
- ► ReST programming interface
- ► Pre-installed engineering and runtime apps easy to extend individually
  - ( scope of delivery, optional)

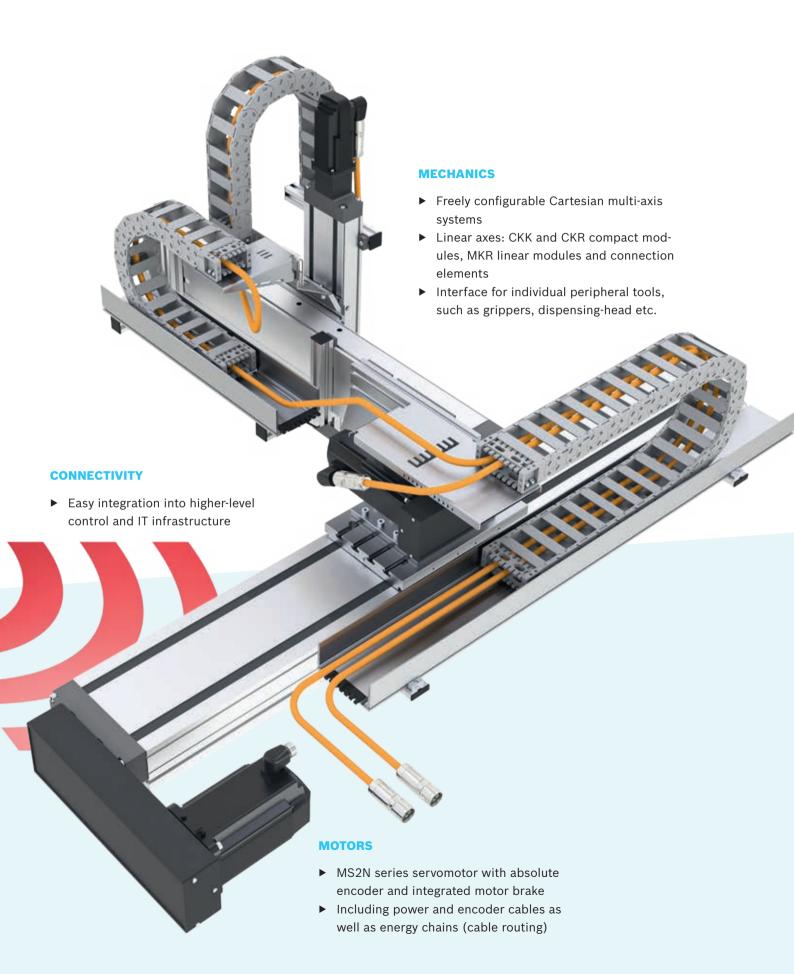




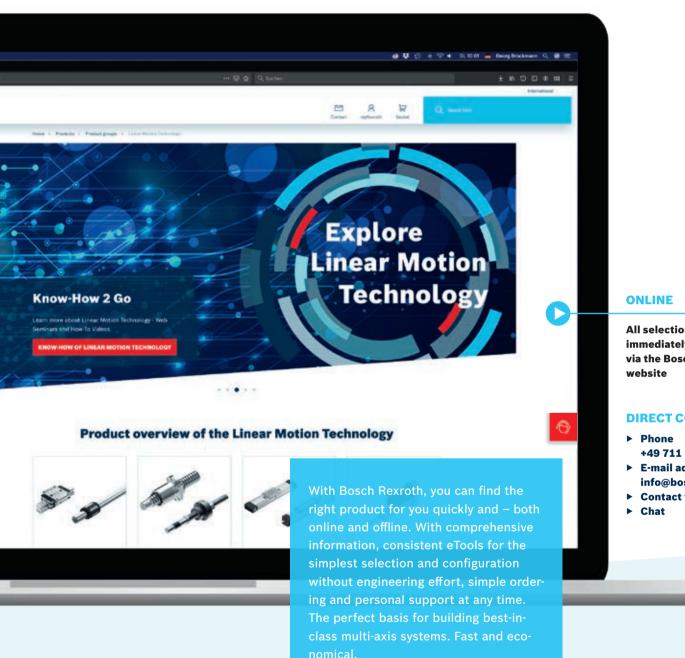
#### **BROWSER-BASED WEB HMI**

- ► Pre-installed, intuitive software with application-specific features
- ► No programming knowledge required graphical programming via drag & drop
- ► Runs on various end devices starting at 10 inches





## **Perfect fit:** Choose the best way to your product



All selection aids are immediately available via the Bosch Rexroth

#### **DIRECT CONTACT**

- +49 711 51046-0
- E-mail address info@boschrexroth.de
- **Contact form**













www.boschrexroth.com/lt



possible, depending on the level of information and requirements. That is our claim. With the latest generation of the central selection tool LinSelect, you can find the right product selection with just a few parameters, transfer it to the configurator, generate 3D models if required and order conveniently. You can also use the direct contact at any time!



#### **ORDER**

- ▶ eShop
- **▶** Price information

# Linear motion technology servicing: maximum machine availability and productivity



Rexroth servicing for linear motion technology means partnership over the entire life cycle of your systems. We are there to help you in 80 countries around the world. From emergency repairs to field service, with original spare parts, modernization and predictive maintenance services. And beyond that with an extensive training portfolio. Working together, we increase your productivity and ensure maximum availability.



#### **REPAIRS**

- Analysis
- ▶ Expert overhauls
- Cost control



#### **SPARE PARTS**

- ► Inexpensive
- ▶ Time-saving
- ► Spare parts from the original manufacturer
- ► Low storage costs



#### FIELD SERVICE

- Repairs on location
- ► Reduced downtimes
- Customer-specific service packages



#### **TRAINING**

- Professional assembly
- ► Replacing wear parts
- ▶ Damage analysis
- Rexroth Academy
- ▶ How-to videos





#### THE CHALLENGE

Today's machines for electrochemical machining (ECM) should have short cycle times and work with micrometer precision even over long travel distances. At the same time, use in corrosive salt spray places huge demands on the material. With the help of Rexroth components, the medium-sized EMAG Group developed a new modular and economical machine concept for use in such environments. It should be particularly compact and cover all process steps—from pre-cleaning and electrochemical machining to post-cleaning and testing.

#### THE REXROTH SOLUTION

The modular, corrosion-resistant six-axis system with an integrated high-precision IMS-I measuring system includes a complete sensor system and evaluation electronics in the runner blocks. The fully pre-assembled system is based on adapted standard modules from Rexroth's linear motion technology toolbox. The positive-locking connection technology allows quick final assembly with no need for time-consuming adjustment. An automated central lubrication system guarantees minimum maintenance and maximum service life.

#### **THE COMPONENTS**



Two three-axis systems



#### **THE RESULT**

"Rexroth achieved our goals as regards compactness, costs and flexibility."





#### **Bosch Rexroth AG**

Ernst-Sachs-Straße 100 97424 Schweinfurt, Germany www.boschrexroth.com/linear-motion-technology



#### Your personal contact

At your service. You can find your local Rexroth contact online at www.boschrexroth.com/contact



#### **Linear Motion Technology online**

Videos and tools and our online catalog as well as configurators and selection guides are available for downloading here:

www.boschrexroth.com/linear-motion-technology



#### **Dimensioning and selection tool LinSelect**

The direct way to download: www.boschrexroth.com/linselect

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### LINEAR MOTION TECHNOLOGY SERVICING GERMANY

- (workdays from 08:00 until 17:00)

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