rexroth
A Bosch Company

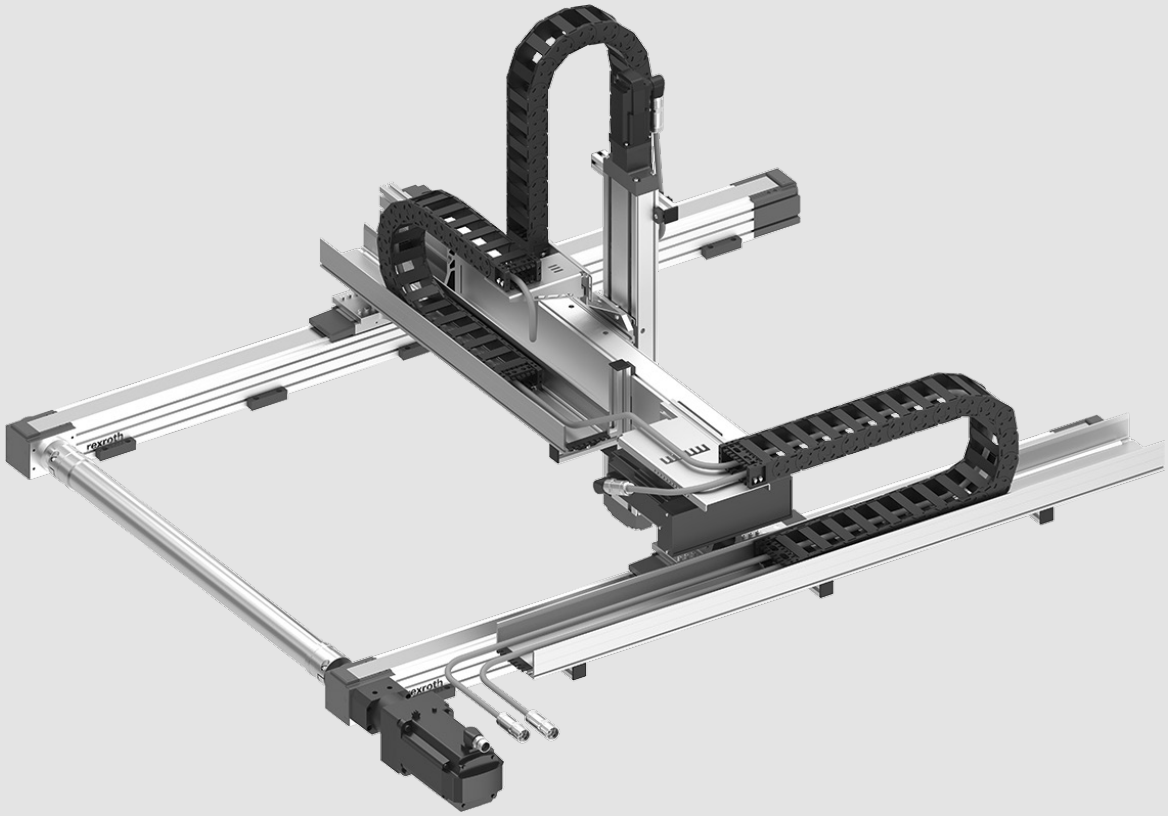
Multi-axis systems

R320103109/2022-07

EN

Instructions

ENGLISH



The data specified above only serves to describe the product. No statements concerning a certain condition or suitability for a certain purpose can be derived from our information.
The information given does not release the user from the obligation of own judgment and verification.
Please note that our products are subject to a natural process of wear and aging.

The title page contains an illustration of a sample configuration. The product as delivered can differ from the illustration.

The original instructions are in German.

If the product is passed on, it must include these instructions and the safety instructions for linear motion systems.

These operating instructions are available in the following languages.

DE German (Original document)
EN English

Contents

1 About these instructions

1.1 Validity of the documentation

This documentation applies to the following products:

- Multi-axis systems.

This documentation is intended for installers, operators and system owners.

This documentation contains important information for the proper and safe installation, operation and maintenance of the product and for troubleshooting simple errors oneself.

▶ Before commencing any work with the product, be sure to read these Instructions and the "Safety Instructions for linear motion systems" carefully and completely.

1.2 Required and supplementary documentation

Documentation which is indicated by the book symbol 🕮 must be obtained before handling the product and must be observed:

Table 1: Required documentation

	Title	Document number	Document type
🕮	Safety instructions for linear motion systems	R320103152	Safety instructions
🕮	Instructions for linear modules	R320103169	Instructions
🕮	Compact module instructions	R320103178	Instructions
🕮	Multi-axis system connection brackets X-Y axis	R320103203	Instructions
🕮	Multi-axis system connection brackets X-Z axis	R320103204	Instructions
🕮	Multi-axis system connection plate Y-Z axis	R320103205	Instructions
🕮	Multi-axis system cleated sheet for cable drag chain	R320103206	Instructions
🕮	Lifting a multi-axis system	R320103207	Instructions
🕮	Multi-axis system profile for EFK	R320103216	Instructions
🕮	Rexroth catalogs for drive technology		
🕮	Product data sheet for Dynalub 510	R3102052	
🕮	Safety data sheet for Dynalub 510	R320103160	
🕮	Product data sheet for Dynalub 520	R310 2053	
🕮	Safety data sheet for Dynalub 520	R320103161	
🕮	Mounting instructions for the other components		

The Rexroth documentation is available for download at www.boschrexroth.com/en/xc/myrexroth/media-directory.

https://www.boschrexroth.com/mediadirectory

1.3 Presentation of information

To enable users to work rapidly and safely with the product while following these instructions, this documentation uses standardized safety instructions, symbols, terms and definitions, and abbreviations. These are explained in the following sections.

1.3.1 Safety instructions in this document

This document contains safety instructions preceding any actions that involve a risk of personal injury or damage to property. The safety precautions described must be adhered to.

Safety instructions are structured as follows:

⚠ SIGNAL WORD

Type of hazard!

Consequences if ignored.

▶ Hazard prevention measure.

- Warning sign: draws attention to the hazard
- Signal word: indicates the severity of the hazard
- Type of hazard: indicates the type or source of hazard
- Consequences: describes the consequences that may occur if precautions to avoid the hazard are not taken
- Hazard prevention measure: indicates how to avoid the hazard

The safety instructions cover the following hazard classes. The hazard class describes the risks involved if the safety instruction is not complied with.

Table 2: Hazard classes as per ANSI Z535

Warning sign, signal word	Meaning
⚠ DANGER	Indicates a hazardous situation which will result in death or serious injury if not avoided.
⚠ WARNING	Indicates a hazardous situation which may result in death or serious injury if not avoided.
⚠ CAUTION	Indicates a hazardous situation which may result in minor or moderate injury if not avoided.
NOTICE	Property damage: The product or surroundings may be damaged

1.3.2 Symbols

The following symbols indicate notes which are not related to safety but make the documentation easier to understand.

Table 3: Meaning of the symbols

Symbol	Meaning
	If this information is not observed, the product will not be optimally used / operated.
▶	Single, independent work step
1. 2. 3.	Numbered work steps The numbers indicate the sequence of the work steps.
➠	See (general reference)
➠ 7	See section 7
➠ ☒ Fig. 7.1	See figure 7.1
	Screw with strength class...
⊘	Tightening torque
μ	Friction factor for screws

1.3.3 Abbreviations

The following abbreviations are used in this documentation:

Table 4: Abbreviations and definitions

Abbreviation	Meaning
CMS	Cartesian motion systems (multi-axis systems)
CKK	Compact modules with ball rail system and ball screw assembly
CKR	Compact modules with ball rail system and toothed belt drive
MKK	Linear modules with ball rail system and ball screw assembly
MKR	Linear modules with ball rail system and toothed belt drive
BASA	Ball screw assembly

2 Safety instructions

The general safety instructions for this product can be found in the documentation "Safety Instructions for linear motion systems". You must have read and understood these before handling the product.

3 Scope of delivery

Scope of delivery depending on the order.

3.1 Condition as delivered

Depending on the configuration and CMS type (complete or partially assembled)

3.2 Accessories

- Required fastening accessories ➠ Catalog and instructions for the individual axes
- Connection brackets and plates are partially pre-assembled
- Additional fastening and positioning elements are included
- Mounting the connection brackets and plates according to the enclosed instructions
- Z-interface

3.3 Overview of multi-axis systems

Type 2HA

Type 2HB

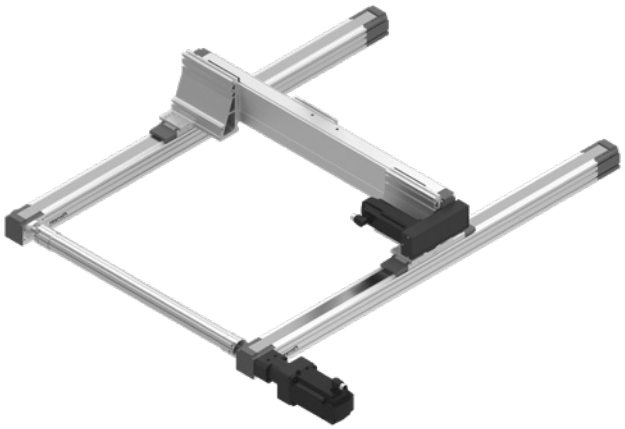


Fig. 1: CMS types

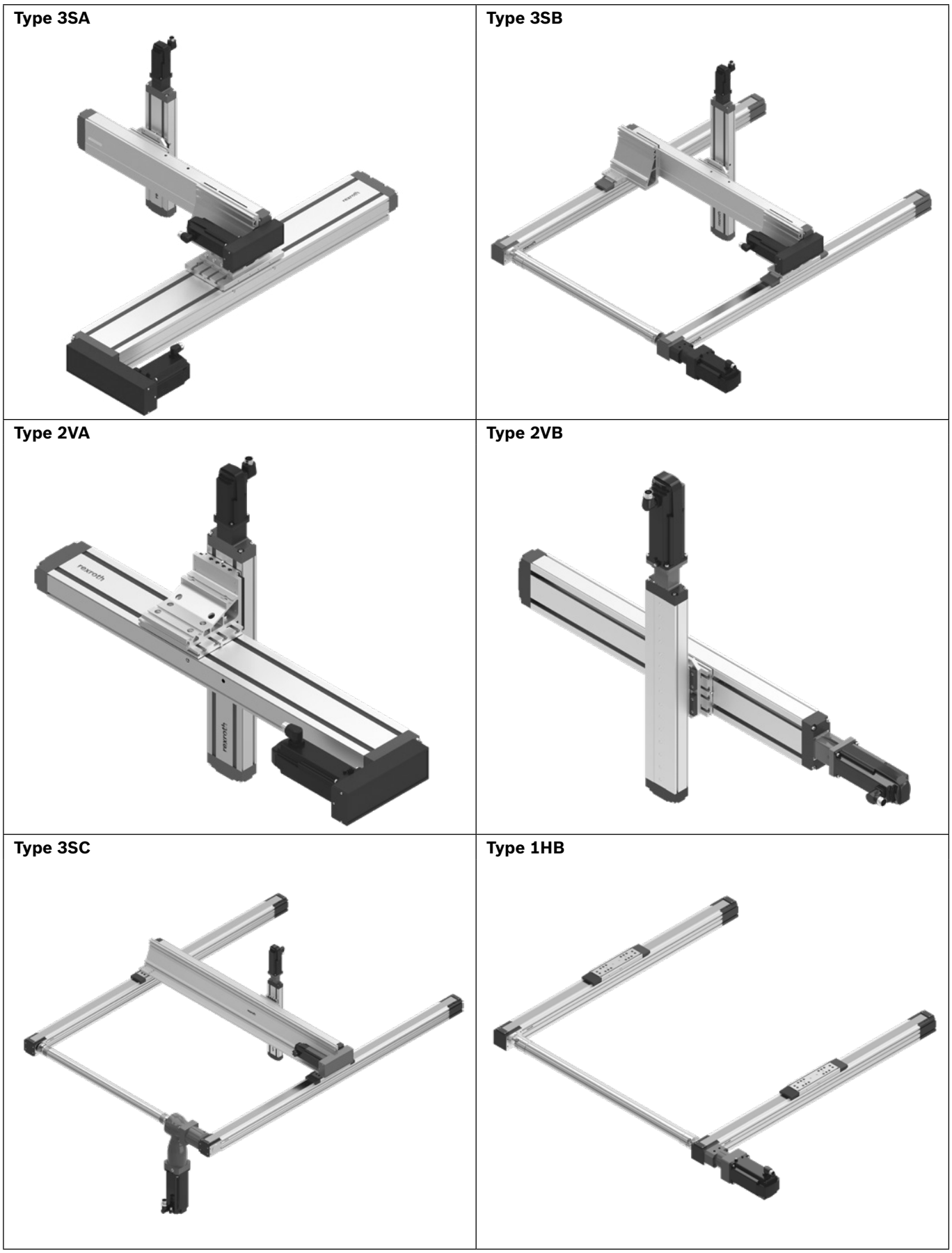


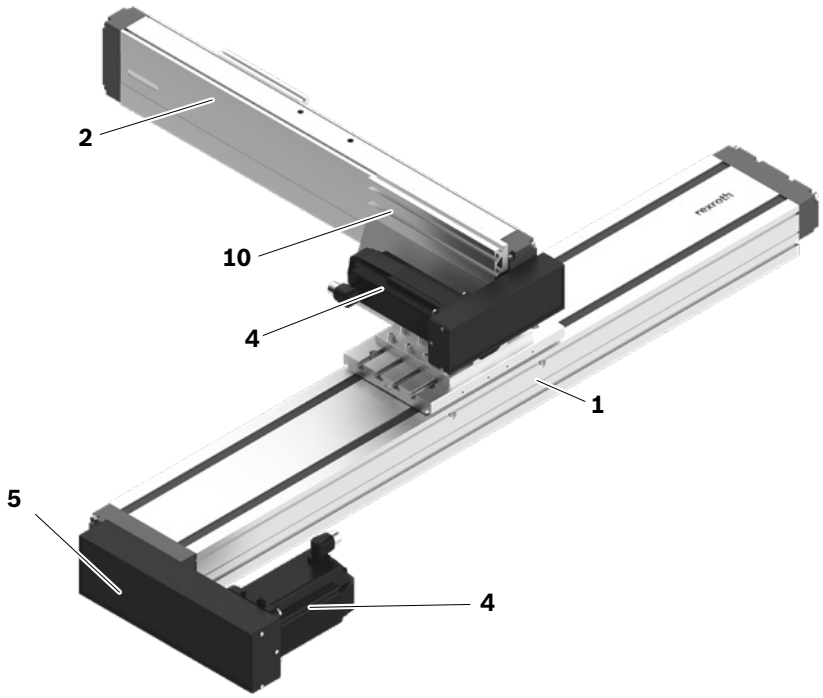
Fig. 2: CMS types

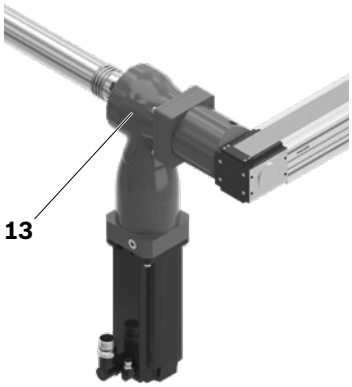
4 Product description

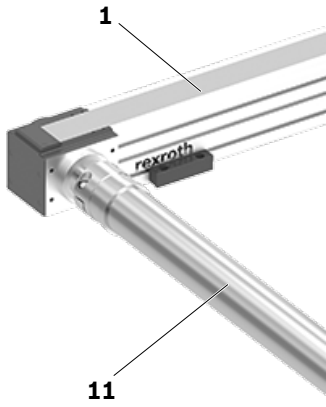
4.1 Performance description

The technical data depend on the configuration and are included in the technical delivery information.

4.2 Device description

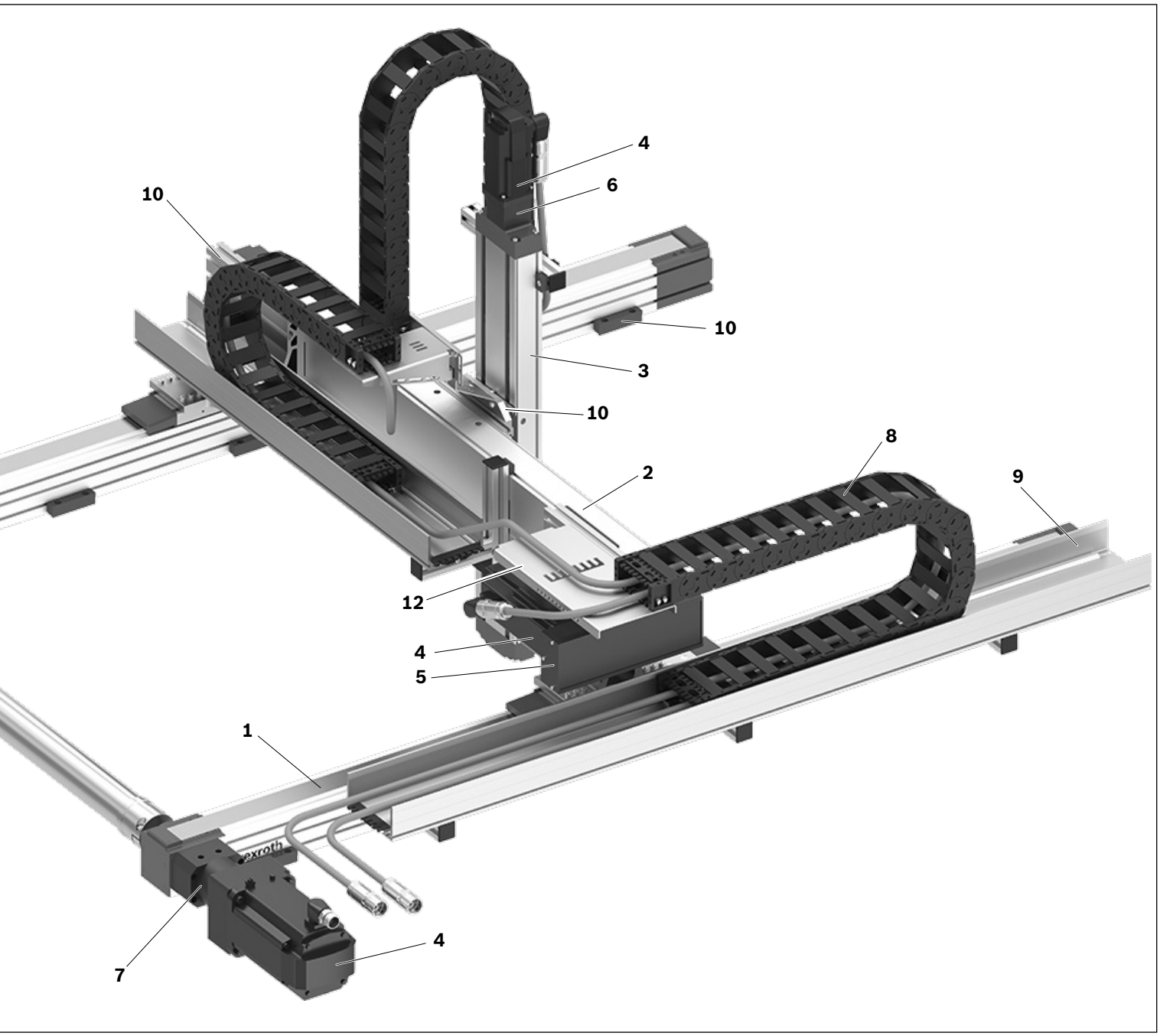






1 X-axis/axes
2 Y-axis
3 Z-axis
4 Motor (connection e.g. via belt side drive (**5**), flange and coupling (**6**), gearing (**7**)
5 Belt side drive
6 Flange and coupling
7 Gearing
8 Cable drag chains with cable
9 Storage tray
10 Connection elements (e.g. connection brackets, clamping fixtures, etc.)
11 Connecting shaft
12 Cleated sheet
13 Angular gear

Fig. 3: Components of a multi-axis system (examples)


4
6
10
10
3
10
8
2
9
12
4
5
1
4
7

4.3 Identification of the product

The name plate applies to the entire CMS, not to an individual axis!

The name plate of the product contains the following information:

Table 5: Information on name plate

Item	Name plate information	Meaning
1	CNR	Customer's material number
2	TYP	Short product name
3	CS	Customer information
4	MNR	Material number
5	FD	Date of manufacture
6	7210	Manufacturing location
7		QR code

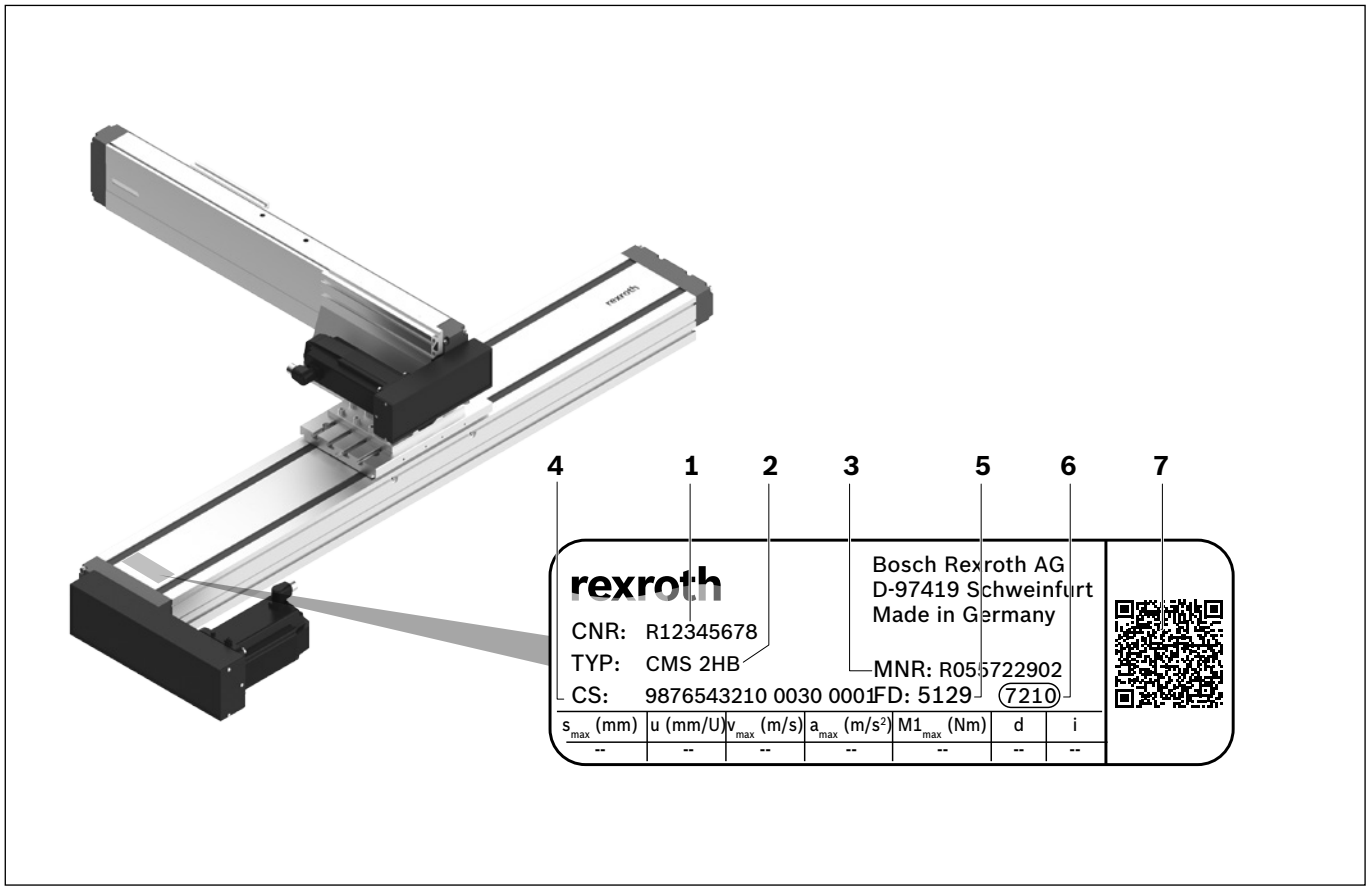


Fig. 4: Name plate

▶ When ordering wear parts, please always state all data given on the name plate.

5 Transport

5.1 Transporting the product / removal from the packaging

WARNING

Risk of product falling due to inadequate load handling equipment!

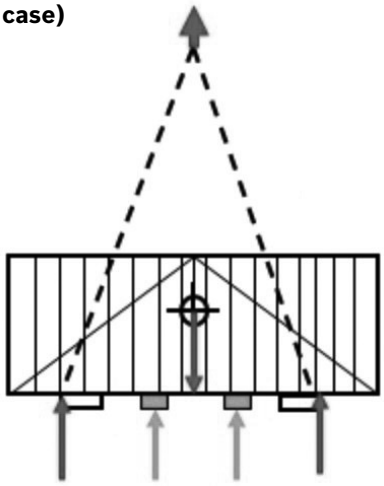
Death or severe injury.

- Use only inspected and suitable load handling equipment. Observe the weight ➠ Packaging!
- Observe the center of gravity
- Do not stand under suspended loads.

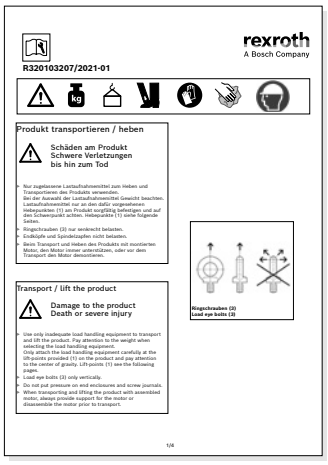
Transport locks and fastenings in the packaging prevent movements of the product during transport.

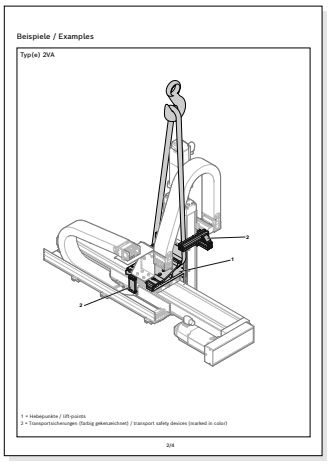
- Hoist the product using suitable lifting accessories. Fasten lifting accessories carefully at the designated points only. Observe the instructions R320103207.
- For small CMS with a total weight of less than 10 kg, removal from the packaging by hand is possible.

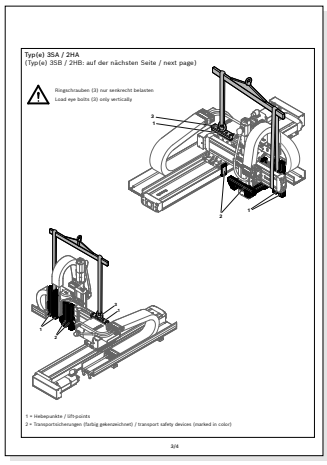
CMS transport in a single package (e.g. case)



CMS removal from the packaging. Observe the instructions R320103207.







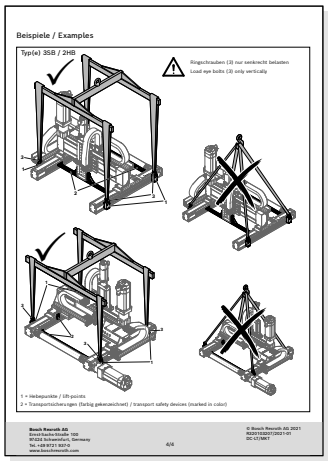


Fig. 5: Transporting the product / removal from the packaging

6 Preparation for mounting

Remove the transport kit (transport locks/ring bolts/transport braces).
➠ Instructions R320103207.

⚠ WARNING

Uncontrolled movements due to lack of self-locking of the product/carriage after removal of the transport locks!
Death or severe injury.
- ▶ Secure the product/carriage against dropping.
- ▶ Do not stand in the fall direction.

6.1 Preparing the mounting surfaces

▶ The mounting surface must be free of oil, grease and dust.

The transport braces do not replace any alignment of the X axes.

NOTICE

Risk of damage due to faulty mounting surface!
Damage to the product.
- ▶ Ensure flatness and height offset and sufficient rigidity of the mounting surface

6.1.1 Flatness of mounting surfaces

Table 6: Flatness of mounting surface

X axis Type	Flatness (mm) Stroke (mm) up to 1000	Stroke (mm) 1 001-2 000	Stroke (mm) 2 001-3 000
2HA-08 - 2HA-11	0.2	0.4	0.6
2HA-20 - 2HA-23			
2HA-30 - 2HA-33			
2VA-20 - 2VA-23			
2VA-30 - 2VA-33			
2VB-10 - 2VB-11			
2VB-20 - 2VB-23			
2VB-30 - 2VB-33			
2VB-40 - 2VB-41			
3SA-10 - 3SA-11			
3SA-20 - 3SA-23			
3SA-30 - 3SA-31			
1HB-20	0.3	0.5	0.8
1HB-30			
1HB-40			
1HB-50			
2HB-20 - 2HB-21			
2HB-30 - 2HB-31			
2HB-40 - 2HB-41			
2HB-50 - 2HB-61			
3SB-20 - 3SB-23			
3SB-30 - 3SB-31			
3SB-40 - 3SB-41			
3SB-50 - 3SB-61			
3SC-22 - 3SC-23			
3SC-30 - 3SC-31			
3SC-40 - 3SC-41			

6.1.2 Height offset of mounting surfaces

(only necessary with two X axes!)

Table 7: Height offset of mounting surfaces

X axis Type	Height offset (mm) Stroke (mm)		
	up to 1000	1 001-2 000	2 001-3 000
2HB-20 - 2HB-21	0.2	0.4	0.6
2HB-30 - 2HB-31			
3SB-20 - 3SB-23			
3SB-30 - 3SB-31			
3SC-22 - 3SC-23			
3SC-30 - 3SC-31			
1HB-20	0.3	0.5	0.8
1HB-30			
1HB-40			
1HB-50			
2HB-40 - 2HB-41			
2HB-50 - 2HB-61			
3SB-40 - 3SB-41			
3SB-50 - 3SB-61			
3SC-40 - 3SC-41			

6.1.3 Sufficient rigidity

NOTICE

Risk of damage due to faulty mounting base!

Damage to the product.

- The mounting base must have sufficient rigidity and mass

6.2 Installation conditions

- Note the operating conditions ➠ 16.1 on page 23.
- For special operating conditions, please contact us.
- The installation position of the X axes is only permitted horizontally (position of the carriage at the top)

NOTICE

Risk of damage due to improper loads!

Damage to the product.

- Do not attach any projecting loads.

⚠ WARNING

Danger of uncontrolled movements of the carriage due to lack of protection!

Death or severe injury.

- Secure the carriage against dropping.
- Do not stand in the fall direction of the carriage.

7 Mounting

7.1 General instruction for mounting

▶ See "6 Preparation for mounting" on page 12.

⚠ WARNING

Risk of product falling/toppling due to lack of protection!

Damage to the product/injuries

▶ Mounting of the axes must be performed by two persons.

7.1.1 Connection brackets and plates

- Connection brackets and plates are pre-assembled
- Additional fastening and positioning elements are included in the scope of delivery.
- Mounting the connection brackets and plates ➠ Relevant instructions ➠ Table 1

7.2 Mounting the X axis (type 2HA / 3SA / 2VA / 2VB)

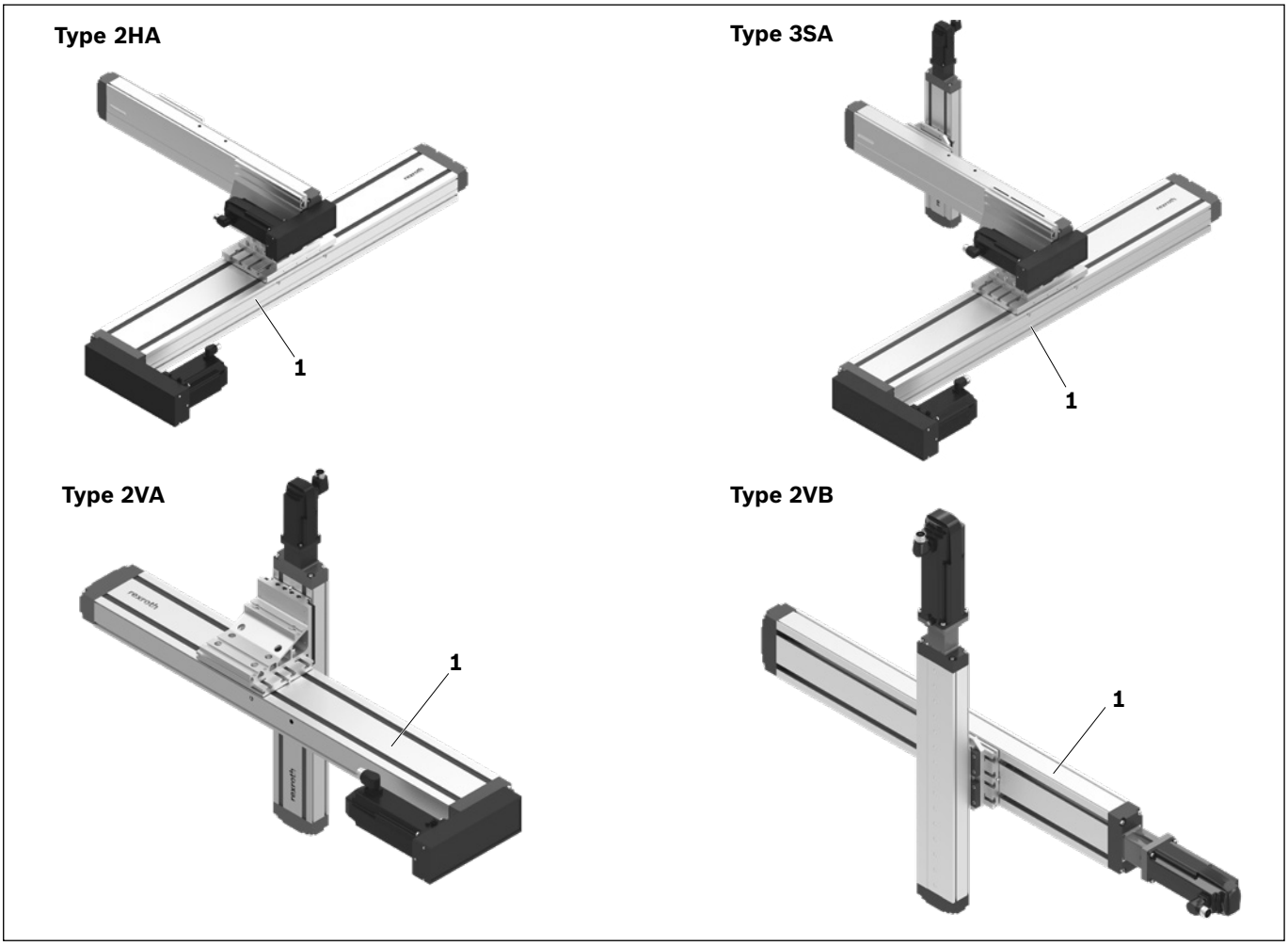


Fig. 6: Fastening type 2HA / 3SA / 2VA / 2VB to adjoining structure

▶ X axis (**1**): Fasten the compact module with clamping fixtures. ➠ Compact module instructions

7.3 Mounting the X axis and Y axis (type 1HB / 2HB / 3SB / 3SC)

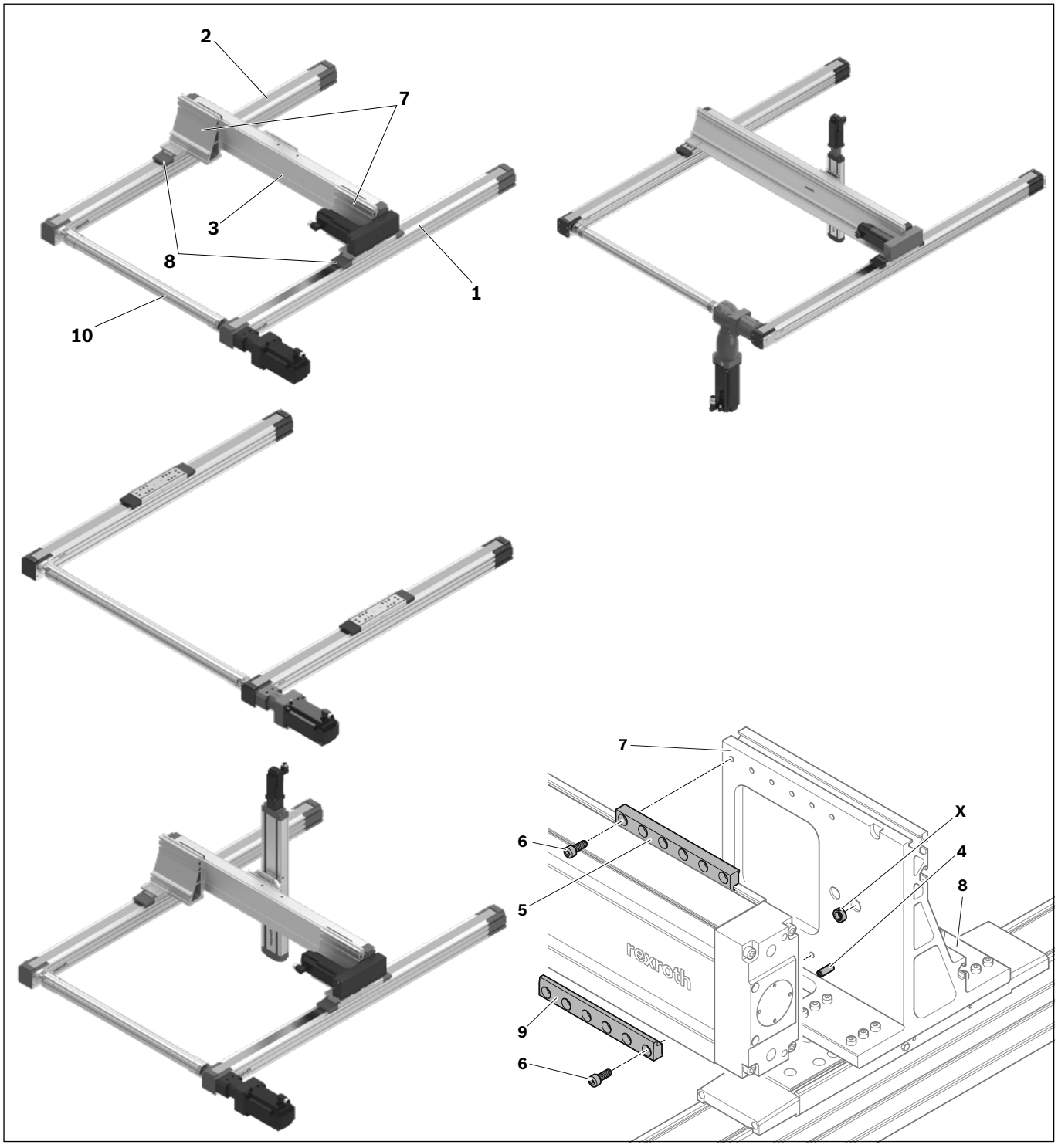


Fig. 7: Mounting of X / Y axis

1. Fasten the X axis (**1**) to the adjoining structure using clamping fixtures.
   ➠ Instructions for linear modules.
2. Align the X axis (**2**) parallel to the X axis (**1**) and pre-assemble it with clamping fixtures at the adjoining structure with center-to-center distance (length of Y axis).
3. Align the position of the carriages (**8**) of the X axes (**1**) and (**2**) to each other.
4. Position the Y axis (**3**) onto the connection brackets (**7**) on both sides with mounting pins (**4**) and stake out with centering rings. Fastening the Y axis (**3**) to the connection bracket (**7**) using the clamping fixture (**5**) and socket head cap screws (**6**). Installing the clamping fixture (**9**) analogously.
5. Move the Y axis (**3**) over the entire travel path of the X axes. In this way, the pre-assembled X axis (**2**) is aligned parallel to the X axis (**1**).
6. Fasten the X axis (**2**). ➠ Instructions for linear modules.
7. Assemble the connecting shaft (**10**) according to the manufacturer's specifications.

ENGLISH

7.4 Mounting the cable drag chain

- The energy chain for the X / Y axis is partially pre-assembled or included in the scope of delivery
- Reasonable pre-assignment of the cables ➠ 8.2 on page 17
- Fastening elements included in the scope of delivery

7.4.1 Fastening kit for cable drag chain on the Z axis

1. Fasten the fastening kit (**1**) to the Z axis (**3**) using the fastening elements provided (**2**).
2. Screw the first connector (**4**) of the energy chain (**5**) via sliding blocks (**6**), support (**7**) and socket head cap screw (**8**) to the fastening kit (**1**).
3. Fasten the second connector (**11**) analogously to the first connector on the cleated sheet (**9**).

▶ The cable holder (**10**) is used to fasten the cables by means of a cable ties (not included in the scope of delivery)

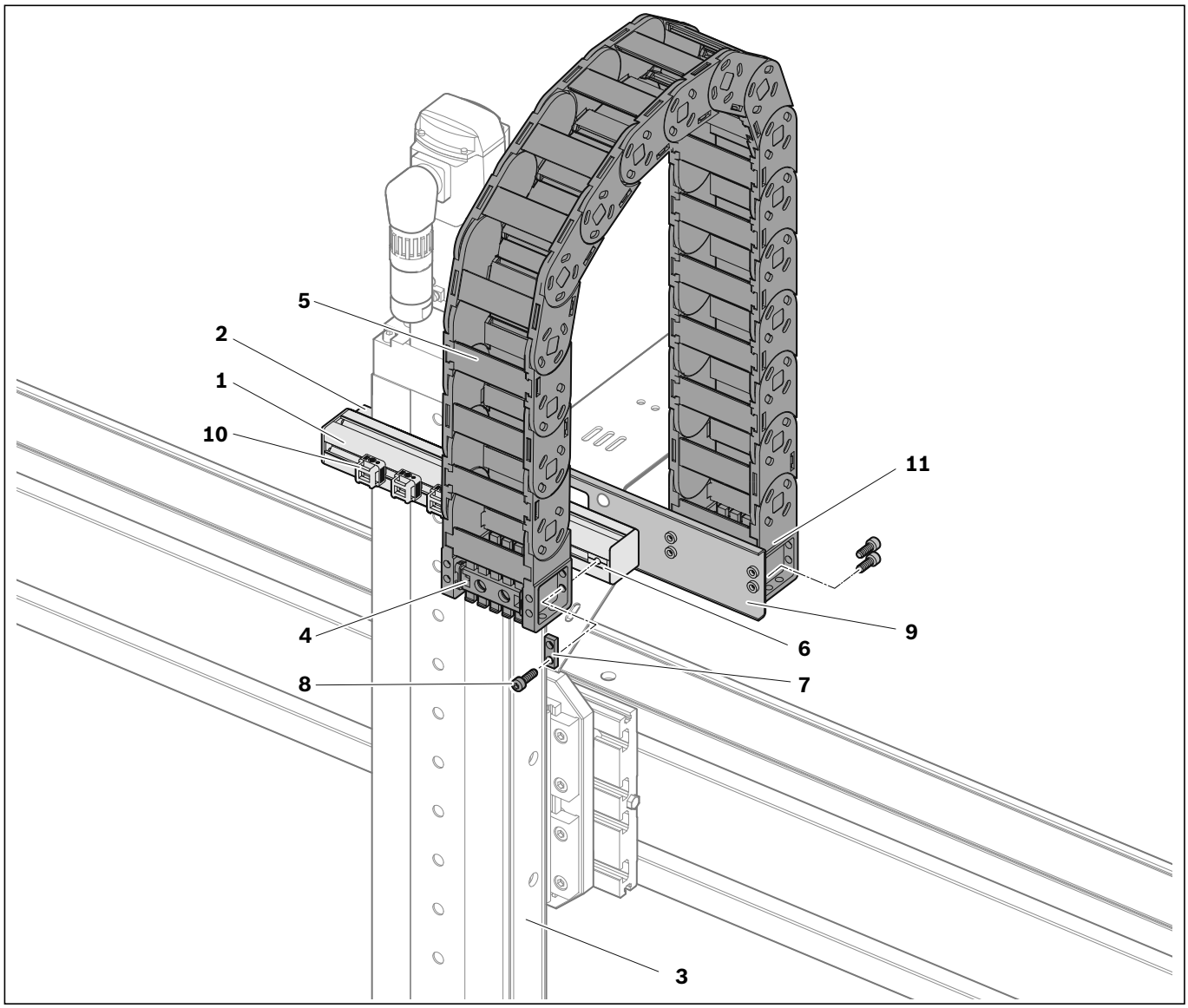


Fig. 8: Mounting the cable drag chain on the Z axis

8 Energy installation

8.1 Cables or hoses

8.1.1 Notes

- Both cables and hoses can be routed in the energy chains. These must be laid separately from each other. If necessary, insert additional separators.
- Lay cables and hoses free of twists and without mechanical load (ensure strain relief).
  Cables and hoses must be able to move freely in the bending radius of the energy chain.
  Minimum bending radius:
  - Rexroth cables: static: 5 x cable Ø; dynamic: 10 x cable Ø
  - Customer cables or hoses: observe the manufacturer's specifications
- Due to the construction, different spaces have already been pre-assigned by cables (e.g. motor cables). ➠ 8.2.

8.2 Energy chain distribution (for Rexroth motors)

8.2.1 Energy chain width 60 mm

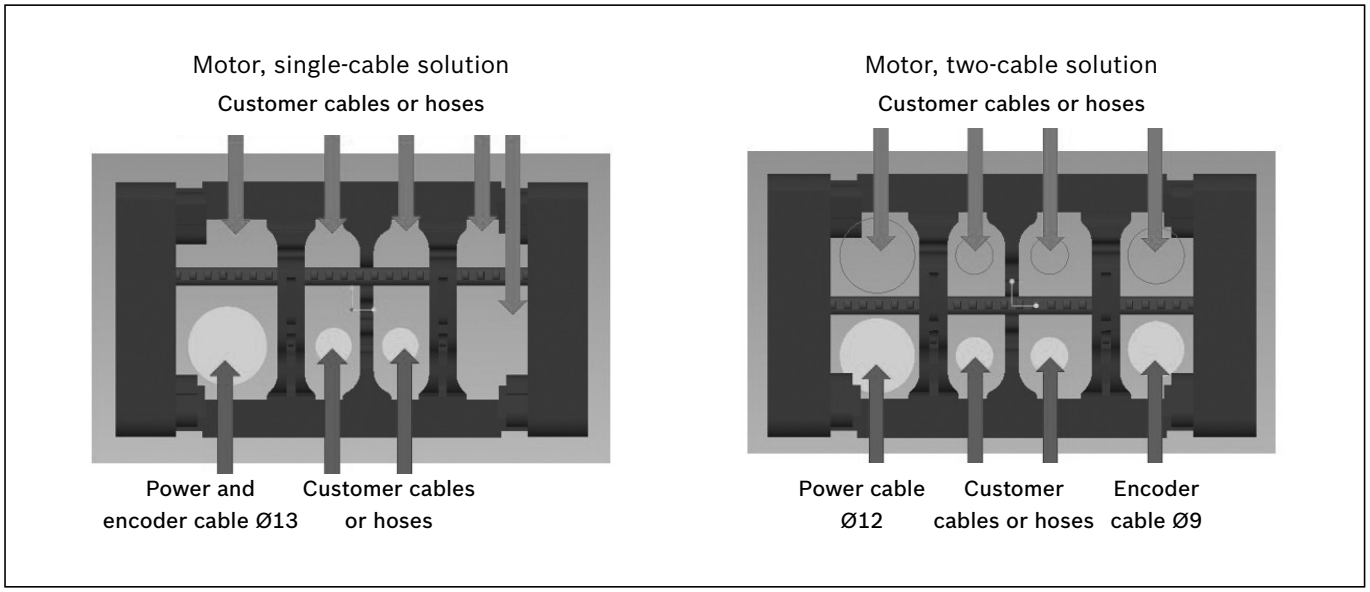


Fig. 9: Cable drag chain 60 mm

8.2.2 Energy chain width 85 mm

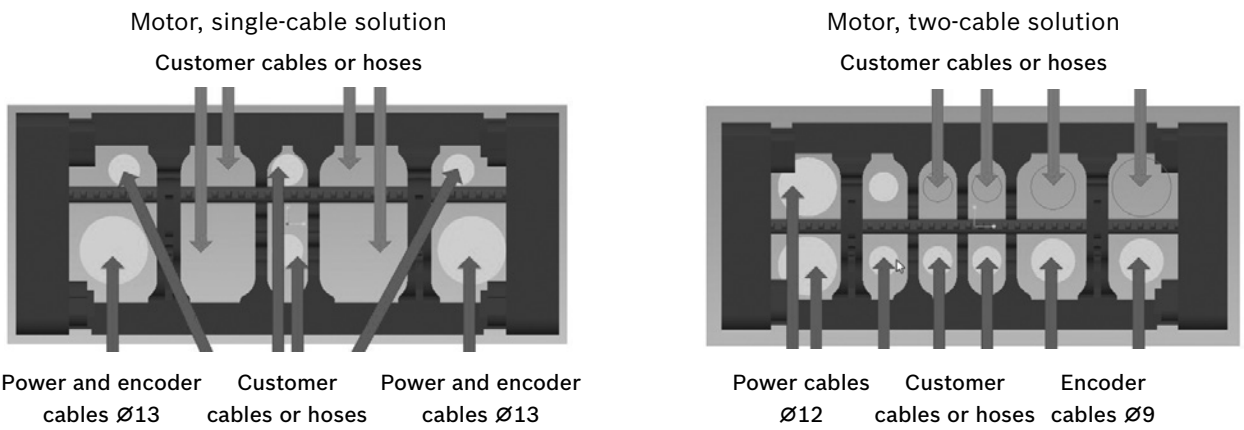


Fig. 10: Cable drag chain 85 mm

8.3 Routing

8.3.1 Energy chain of the Z axis:

- Laying customer-specific cables and hoses of the attachments in the corresponding chambers of the energy chain of the Z axis.

8.3.2 Energy chain of the Y axis:

- Moving the carriage of the Y axis into the end position so that the maximum possible length of the energy chain is positioned flatly.
- Laying cables and hoses from the energy chain of the Z axis into the energy chain of the Y axis.

9 Electrical connection

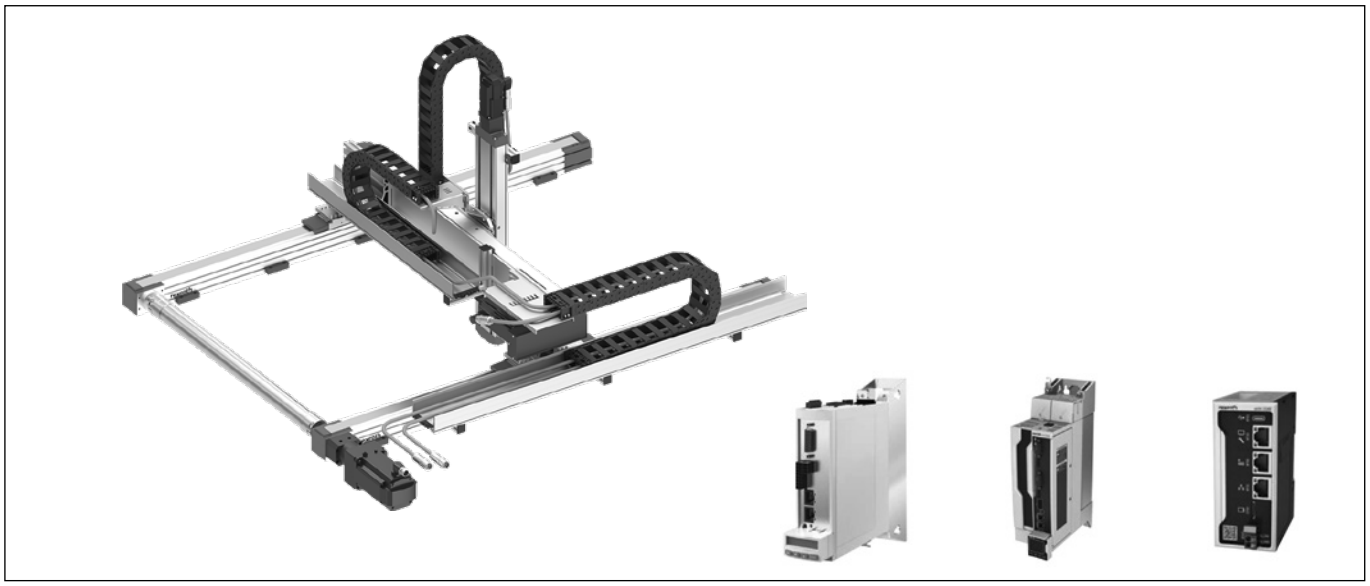


Fig. 11: Connecting the product electrically

WARNING

Risk of electric shock due to contact with live parts!

Death or severe injury.

- Before working on the electrical equipment, switch off the power supply and secure it against being switched on again.
- Follow the safety instructions given in the documentation for the controller used.
- Observe the safety regulations for working with high-voltage equipment!

- Keep the documentation for the motor/controller at hand.

10 Start-up

- Do not start up the product until it has been verified that the end product (for example a machine or system) into which the Rexroth product has been installed complies with the country-specific requirements, safety regulations and standards for the application.

10.1 Grounding

- Separate grounding of the individual axes is not necessary when using Rexroth motors.
- If motors of other manufacturers are used, this must be checked and implemented separately.

10.2 Start-up using parameters in motor encoder memory

- Only in combination with Rexroth motors and Rexroth drive controllers

Predefined and coordinated combinations of motor and controller (electric drive package) perfectly complement the mechanical system solution to form a functional subsystem.

Easy start-up is made possible by automatic reading of the mechanical and drive parameters stored in the motor encoder memory. Thanks to the automatic parameterization of the Rexroth drive controller, your system can be used faster than ever before. For instructions, see 17.4 on page 27.

Less engineering: With the plug-and-play encoder data memory for faster start-up, the motor becomes a data source for intelligent machines or i 4.0 applications.

After connecting the servo motor to the drive, it automatically reads the feedback memory with the kinematics parameters stored. This eliminates the need to manually enter the parameters, which significantly speeds up start-up.

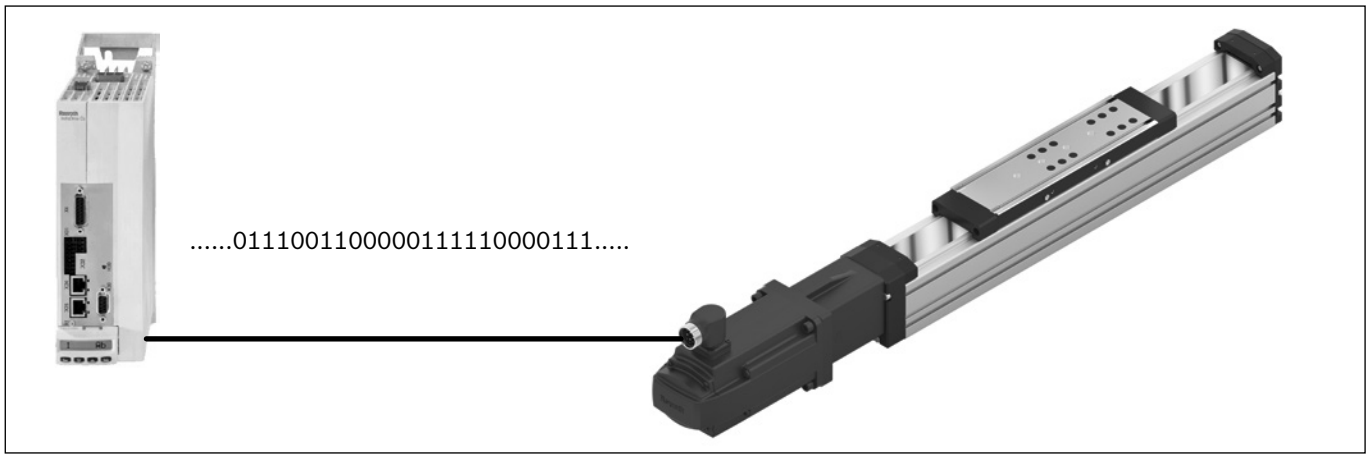


Fig. 12: Start-up

10.3 Checking the operating conditions

- Observe ambient temperature, load, travel speed and stroke ➠ Chapter "Operating conditions" on page 23.
- For special operating conditions, please contact us.

10.4 Test run, running in

WARNING

Dangerous movements! Risk of death, injury, serious physical injury or property damage!

Do not stand in the product's range of movement.

Do not allow persons to inadvertently enter the danger area.

Never perform maintenance on running machines.

Secure the system against restart and unauthorized use during maintenance.

Securely fasten the product in the system or machine.
The product is not self-locking; this means that if it is used vertically or at an angle, it can drop or move uncontrollably.

To prevent this, the manufacturer/vendor must take precautions when installing in this manner. The Division Information Sheet on "Gravity-Loaded Axes" of DGUV Fachbereich Holz und Metall, the Woodworking and Metalworking Division of the German statutory accident assurance association (DGUV), and other sources offer further information on this topic.

Risk of burns due to hot surfaces! Temperatures above 60 °C are possible.

- Avoid touching the hot surface of, e.g., the motor.
- After switching off the product, let hot surfaces cool down before touching them.
- Pay attention to the clearance of the connecting cables from other components.

- Only start up the product after running successful tests under simulated production conditions.
- Move at low speed over the entire travel range.
- If necessary, optimize the interaction of the mechanical equipment and the electronics.

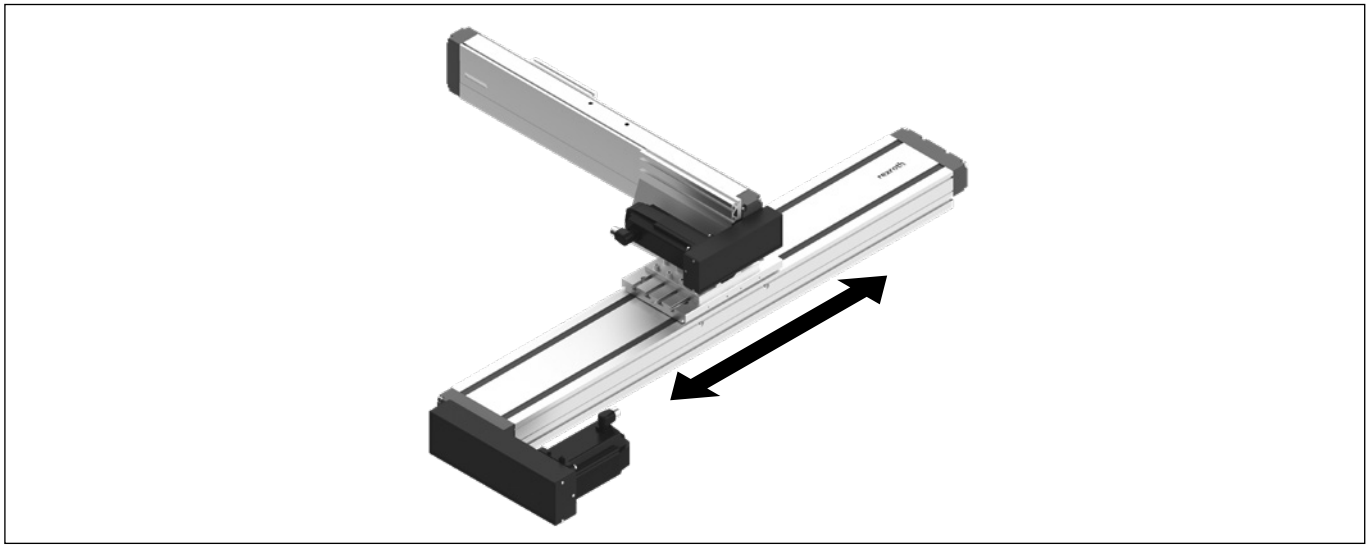


Fig. 13: Moving the carriage

ENGLISH

11 Operation

NOTICE
Lubricant may escape! Environmental contamination. ▶ Take suitable precautions to collect any leaking lubricant and dispose of it properly.
Risk of motor overheating when overloaded! Risk of fire. ▶ During operation, be sure to comply with technical data such as load capacities, torques, maximum rotary speeds, motor data, etc.

12 Repair / Maintenance / Lubrication

12.1 Repair

▶ Repairs to the linear axis should only be performed by Bosch Rexroth.

12.2 Maintenance

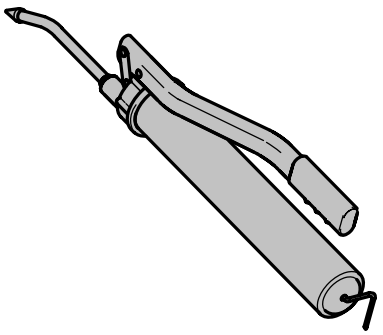


Fig. 14: Maintenance

▶ Maintenance is limited to re-lubrication. ➠ Notes in the instructions for the individual axes.

12.3 Lubrication

▶ The system comes with initial greasing.

13 Storing the product

NOTICE
Risk of damage due to improper storage! Potential corrosion of product parts. ▶ Store the product only in dry, covered areas. ▶ Protect the product from humidity and corrosive agents.

14 Disposal

The product contains a number of different materials: aluminum, steel, plastics, grease and possibly electronic components.

NOTICE

Environmentally hazardous materials can pollute the environment if not disposed of properly.

Environmental pollution.

- Collect any leaking lubricant and dispose of it properly.
- The product and its components must be recycled correctly and in compliance with all applicable national and international guidelines and regulations.

15 Technical data

The technical data depend on the configuration and are included in the technical delivery information.

16 Operating conditions

Table 8: Operating conditions

Operating conditions	Value
Ambient temperature with Bosch Rexroth servo motor	0 °C ... 40 °C, loss of performance above 40 °C
Ambient temperature for mechanical system (without dropping below dew point)	–10 °C ... 50 °C
Soiling	Not permissible

[1] Minimum travel range to ensure a reliable lubrication distribution.

16.1 Tightening torques

We use screws in the 8.8 strength class as standard. Any deviations are marked accordingly.

Table 9: Tightening torques

μ = 0.125	Hex socket head cap screws according to ISO 4762, DIN 6912 and DIN 7984													
	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M24
8.8 ⊘ $M_{A\ max}$ (Nm)	0.17	0.4	0.70	1.3	2.8	5.5	9.6	23	46	80	127	194	392	675
10.9 ⊘ $M_{A\ max}$ (Nm)	0,24	0.5	1.00	1.8	4.0	8.1	14.0	34	68	116	186	285	558	960
12.9 ⊘ $M_{A\ max}$ (Nm)	0.29	0.6	1.25	2.1	4.8	9.5	16.5	40	80	137	218	333	653	1 125

ENGLISH

17 Removal and replacement

In principle, removal and replacement of individual axes, service assemblies and electrical components within a multi-axis system may only be carried out by Bosch Rexroth in order to guarantee the properties of the Rexroth multi-axis system after replacement. This does not apply to the activities described in the instructions for the individual axes.

17.1 Replacement of linear axis in case of service

17.1.1 Replacement of linear axis without motor

The multi-axis system consists of an individual combination of Rexroth standard linear axes.

The operating data and limit values on the name plates of the single linear axes are valid for use as a separate single axis without interference contours.

Due to the use of the linear axes in a multi-axis system, restrictions or deviations of the specified operating data and limit values from the respective specifications on the name plate may occur.

The valid values of the individual axes for operation within a Rexroth multi-axis system must be taken from the "Technical delivery information" of the multi-axis system, which is enclosed with the delivery.

When installing and starting up an exchange axis, always use the operating and limit parameters from the "Technical delivery information" of the multi-axis system!

17.1.2 Replacement of linear axis with motor

Any values stored in the motor encoder memory are also only valid for use as separate individual axes without interference contours and may therefore differ from the values for operation within the multi-axis system.

Therefore, the values already set from the existing controller of the respective axis to be replaced must be used or, as in the case of a new setup, the values from the "Technical delivery information" of the multi-axis system must be adopted.

The operating parameters from the "Technical delivery information" of the multi-axis system always have priority when entering parameters!

When parameterizing individual axes within a multi-axis system again, always use the values of the "Technical delivery information" of the multi-axis system.

If the technical delivery information for your multi-axis system is no longer available:

Service and support information ➠ "18 Service and support" on page 29.

17.2 Replacement of motor controller in case of service

If a motor controller of your multi-axis system is replaced for service reasons, it must be reprogrammed/parameterized.

This is possible by importing application data from an existing backup.

Alternatively, the standard application data can be loaded from the motor encoder memories of the multi-axis system. ➠ 17.3.

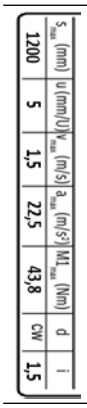
⚠ If one or more axes or motors of the multi-axis system have already been replaced for service reasons, it is essential to observe the chapter on "Replacement of linear axis for servicing". Here it is mandatory to use the "technical delivery information" enclosed with the multi-axis system for parameterization of the system.

17.3 Loading application data from motor encoder memory

17.3.1 Default values stored in the motor encoder memory at the factory (for Acurolink encoders)

The values on the name plate are already stored in the encoder data memory for all **MS2N motors with Acurolink encoder interface**, and already in the appropriate format (S and P parameters) for drives from Bosch Rexroth.

Table 10: Presetting the axis-specific values in the motor encoder data memory



Designation on the name plate		Parameter number		Designation
S_{max}	(mm)	S-0-0049	mm	Position limit value positive
		S-0-0050	mm/rotary motion	Position limit value negative
u	(mm/rev)	S-0-0123	mm/rotary motion	Feed constant
V_{max}	(m/s)	S-0-0091	mm/min	Travel speed limit bipolar
a_{max}	(m/s²)	S-0-0138	mm/s²	Acceleration limit bipolar
M_{1max}	(Nm)	P-0-0109	%	Peak torque/force limitation
d		S-0-0055	Position scaling Negation? Yes/No	Position polarities
i		S-0-0121	Turns input	Load gear input revolutions
		S-0-0122	Turns output	Load gear output revolutions

In addition to the axis-specific data, general parameter settings for "linear" axes are predefined and stored in the encoder memory:

Table 11: Fixed preset parameters for weighting type for position, travel speed, acceleration and torque/force data

Parameter number	Designation	Preset in encoder memory		
S-0-0076	Weighting type for position data	Translative weighting	Preferential weighting, reference to load	Unit mm, absolute format
S-0-0044	Weighting type for speed data			Unit mm/min
S-0-0160	Weighting type for acceleration data			Unit mm/s²
S-0-0086	Weighting type for torque/force data	Percentage weighting		Unit N or Nm
S-0-0278	Maximum travel range	Fixed value 5000 mm (note: does not correspond to "S_{max}" from the name plate)		

In case the customer wants to perform "drive-controlled referencing to fixed stop" (which is not recommended by Bosch Rexroth), certain parameters are limited to protect the mechanics and are also stored in the Acurolink encoder memory.

The default setting for "Set dimensional reference" is "Current position" and not "To fixed stop"!

ENGLISH

Table 12: Set preceding parameter settings for referencing or zero dimension

Parameter number	German description	Preset in encoder memory
S-0-0530	Blocking threshold	Preset to 10% of F_{max} (or 10% of M_{1max})
S-0-0041	Reference run speed	1 mm/s
S-0-0042	Reference run acceleration	100 mm/s²
S-0-0150	Reference dimension offset encoder 1	5 mm
S-0-0052	Reference dimension encoder 1	0.000 mm
S-0-0147	Reference run parameter	Setting dimension reference via "Current position" At the end of the referencing process ➠ STOP
S-0-0448	Setting control word absolute measure	Permission for C0600 command drive-controlled referencing at abs. measuring system ➠ NO

The parameter P250 system identification contains information which is already available as text on the name plate. This is helpful if the attached name plate has become unrecognizable or is no longer accessible.

Table 13: Informative parameters

Parameter number	Designation	Preset in encoder memory
P-0-0250	System identification	Text information of the name plate Material number; size; customer information; manufacturing location

17.4 Loading the default values stored in the motor encoder memory into the drive.

The values from the motor encoder memory can be loaded with just a few mouse clicks into the drive controller during start-up using the engineering tools "CtrlX-WORKS" or "Indraworks".

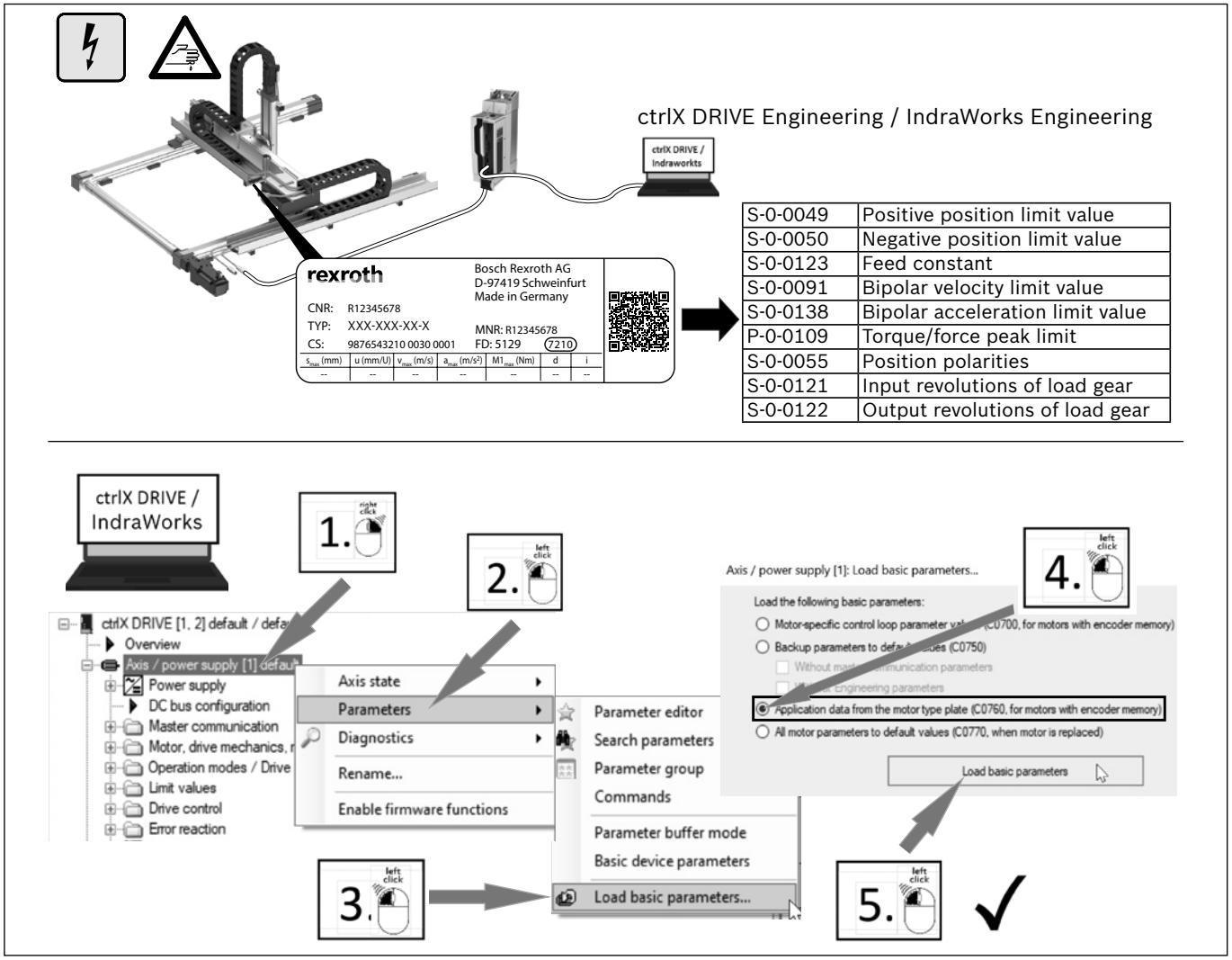


Fig. 15: Loading the values stored in the motor encoder memory into the drive.

17.5 Checking the operating conditions

- Take note of the permitted ambient temperature, load, rotary speed, linear travel speed and maximum travel range!
- For special operating conditions, please contact us.

17.6 Initial start-up

⚠ WARNING

Risk of collisions due to overshooting end positions!

Damage to the product.

- Observe the maximum travel range.
- Maintain a safety distance on both sides for all axes.
- Check direction of rotation/resulting direction of travel before moving.
- Move slowly.
- Ensure that the travel range is clear.

ENGLISH

1. Make sure that the travel area is unobstructed. The piston rod is fully retracted on delivery.
2. Determine position of stroke center for each axis
3. Slowly move axis 1 in the "Jog mode" until the axis is in the stroke center.

   This position is recommended as zero position by Bosch Rexroth.
4. Set parameter S-0-0052 "Reference dimension encoder 1" to 0.000 mm (corresponds to the default value), and set the absolute dimension in the drive.

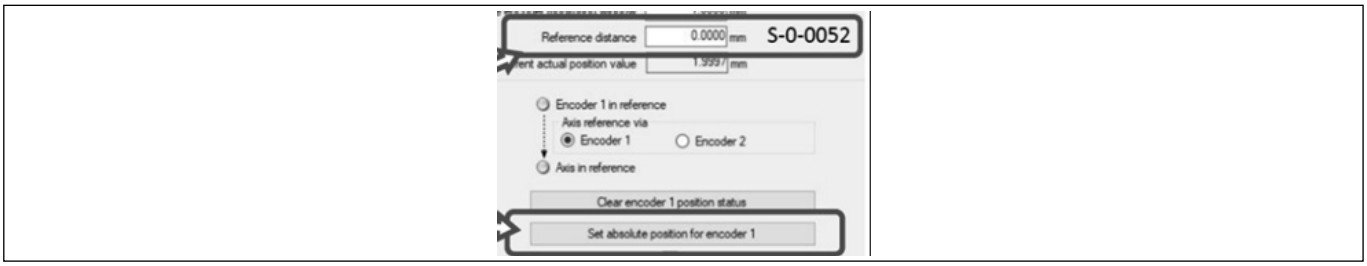


Fig. 16: Setting parameters and absolute dimension in the drive

5. The current actual position value jumps to 0 mm.
6. The software limit switches (S-0-0049 and S-0-0050) are automatically set to the correct value in relation to "S_{max}".
7. Repeat step 3-5 for the remaining axes

18 Service and support

In case of problems, please contact our customer service help desk:

Phone: +49 (0) 9352 40 50 60
E-mail: Service@boschrexroth.de

Return address:

Bosch Rexroth AG
SERVICE
Röntgenstraße 5
97424 Schweinfurt

We will be able to help you quickly and efficiently if you have the following information ready:

- Information on the name plate of the respective axes, in particular the material and serial number
- Coordinate designation of the axes according to Bosch Rexroth
- "Technical delivery information" of the multi-axis system provided with the delivery
- Detailed description of the malfunction and conditions
- Contact telephone number and email address in case of any questions

rexroth
A Bosch Company

Bosch Rexroth AG
Ernst-Sachs-Straße 100
97424 Schweinfurt, Germany
Tel. +49 9721 937-0
Fax +49 9721 937-275
www.boschrexroth.com

Find your local contact person here:
www.boschrexroth.com/contact

Subject to modifications

Printed in Germany
R320103109/2022-07