rexroth
A Bosch Company

Omega Modules OBB

R320103025/2018-07
Replaces: 2011-12
EN

Instructions

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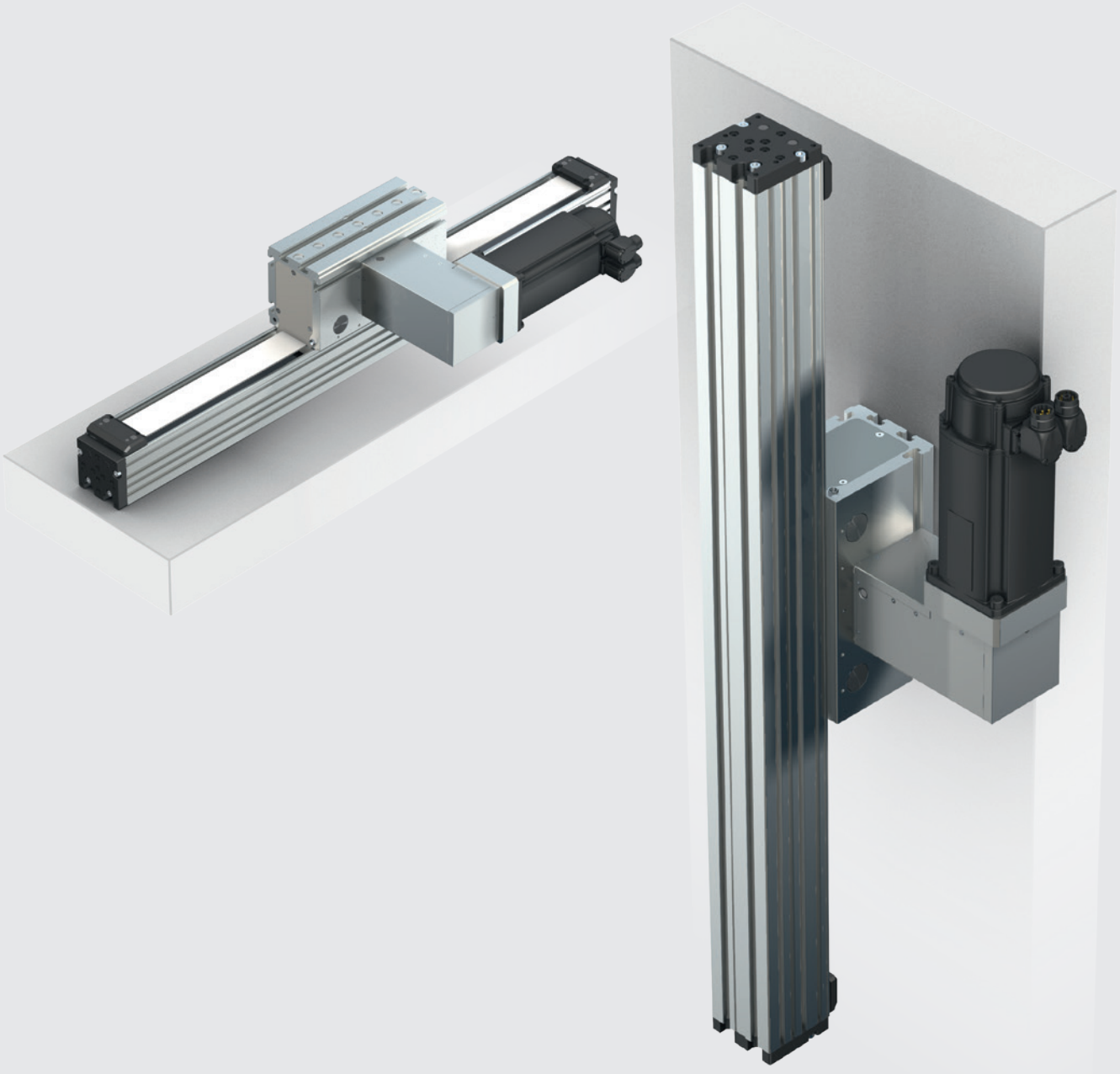

This data has been provided solely for the purpose of product description. No statement regarding any particular quality or suitability for any particular use can be derived from this information. The information does not release the user from making his/her own inspections and evaluations. It should be noted that our products are subject to a natural process of aging and wear and tear.

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

The original instructions are in the German language.

Any dissemination of the product must include these instructions and the “Safety Instructions for Linear Motion Systems”.

Die vorliegende Anleitung ist in folgenden Sprachen verfügbar.
These instructions are available in the following languages.
Les présentes instructions sont disponibles dans les langues suivantes.
Le presenti istruzioni sono disponibili nelle lingue seguenti.
Las presentes instrucciones están disponibles en los siguientes idiomas.
As presentes instruções estão disponíveis nos seguintes idiomas.

Dok.nr für weitere Sprachversionen - optional falls weitere eigenständige Sprachversionen vorhanden	Titel in jeweiliger Sprache - optional falls weitere eigenständige Sprachversionen vorhanden		
		DE	Deutsch (Originaldokumentation)
		EN	English
		FR	Français
		IT	Italiano
		ES	Español
		PT	Português

Contents

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1 About these Instructions

1.1 Scope and purpose of the documentation

This documentation applies to the following products:

- Omega Modules OBB as described in the “Omega Modules OBB” catalog.

This documentation is intended for assembly/installation personnel, line operators and machinery/plant users.

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

▶ Before working with the product, be sure to read this manual completely, paying particular attention to the “Safety instructions” section.

1.2 Required documentation

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

Table 1: Required documentation

	Title	Document no.	Document type
🕮	Safety Instructions for Linear Motion Systems	R320103152	Safety instructions
🕮	IndraDrive C for Linear Motion Systems	R310 2730	Catalog
🕮	IndraDrive Cs for Linear Motion Systems	R310 2735	Catalog
🕮	Material safety data sheet for Dynalub 510	R320103160	
🕮	Product data sheet for Dynalub 510	R310 2052	
🕮	System documentation of the machinery/ system manufacturer		
🕮	Manuals for the other machine/system components		

The Rexroth documentation is available for download at **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 sub-sections.

1.3.1 Safety instructions in these Instructions

These Instructions contain 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 avoidance precautions.

- Safety alert symbol: draws attention to the hazard
- Signal word: indicates the severity of the hazard
- Type of hazard: indicates the type or source of the hazard
- Consequences: describes the consequences that may occur if the hazard avoidance precautions are ignored
- Hazard avoidance precautions: indicates how to avoid the hazard

The safety instructions cover the following hazard levels. The hazard level describes the risks involved if the safety instruction is ignored.

Table 2: Hazard levels as per ANSI Z535

Safety alert symbol, Signal word	Meaning
⚠ DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
NOTICE	Damage to property: Risk of damaging the product or the surrounding environment.

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1.3.2 Symbols

The following symbols designate notes or cross-references that are not safety-relevant but increase the clarity of the documentation.

Table 3: Meaning of the symbols

Symbol	Meaning
	If this information is not observed, the product will not be used optimally.
▶	Single, independent work step
1. 2. 3.	Numbered work steps The sequence of the work steps is indicated by the numbers.
➠ 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 document:

Table 4: Abbreviations and definitions

Abbreviation	Meaning
OBB	Omega Module with Ball Rail System and Belt Drive

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 supply

The scope of supply includes:

- Omega Module
- Drive (motor and gear unit, pre-assembled), if ordered
- Switches, if ordered

3.1 Delivery

Delivery as ordered, e.g. complete with pre-assembled drive and/or switching system.

3.2 Accessories

The following accessories are available:

- Mounting accessories
- Shock absorbers
- Cable drag chain and fastening elements

 Dimensions and part numbers of the accessories and additional mounting accessories ➠ “Omega Modules OBB” catalog.

4 Product description

4.1 Features

Omega Modules (OBB) with ball rail systems and toothed belt drive for travel speeds up to 5.0 m/s. Omega Modules are ready-to-install linear axes for any desired mounting orientation in freely configurable lengths up to 5500 mm.

Because of their low travelling system mass, Omega Modules are ideally suited for operation as vertical axes, as the drive can be mounted as a stationary unit while the module frame executes the vertical motion.

4.2 Equipment description

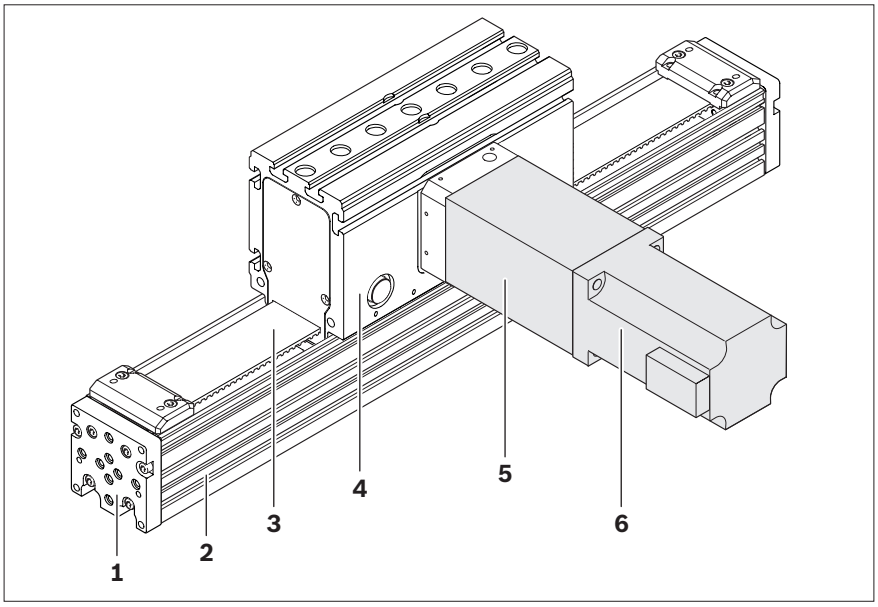

Fig. 1: **Components of the Omega Module (with drive)**

An Omega Module comprises the following components:

1 End plate for mounting attachments
2 Frame
3 Toothed belt
4 Carriage
5 Gear unit (straight version)
6 Motor

4.3 Identification of the product

The nameplate of the product carries the following information:

Table 5: Details given on nameplate

Nameplate details	Meaning
MNR	Part number
SYN	Serial number
FD	Date of manufacture
CS	Customer order number

- When ordering replacement parts, please always state all data given on the nameplate.

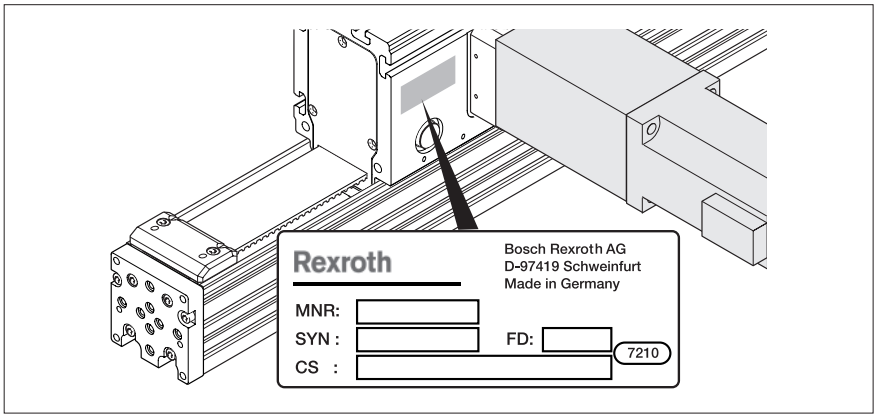

Fig. 2: **Nameplate**

5 Transport and storage

5.1 Transporting Omega Modules

Omega Modules are delivered pre-assembled and ready for installation.

WARNING

Risk of product crashing down due to inadequate load hoisting equipment!

Severe personal injury or even death.

- Use only safety-inspected and suitable load hoisting equipment.
- Attach load hoisting equipment only to the frame (main body) or at the designated points and fasten with care.
- Do not stand under hoisted loads.

NOTICE

Risk of damage to motor attachment through vibrations!

Motor may break off.

- When transporting the product with attached motor, always provide support for the motor.
  or
- Remove the motor before transporting the product.

1. Before hoisting the Omega Module, take note of the weight
   ➠ “Omega Modules OBB” catalog, “Technical Data” section.
2. Hoist the Omega Module as shown in the illustration

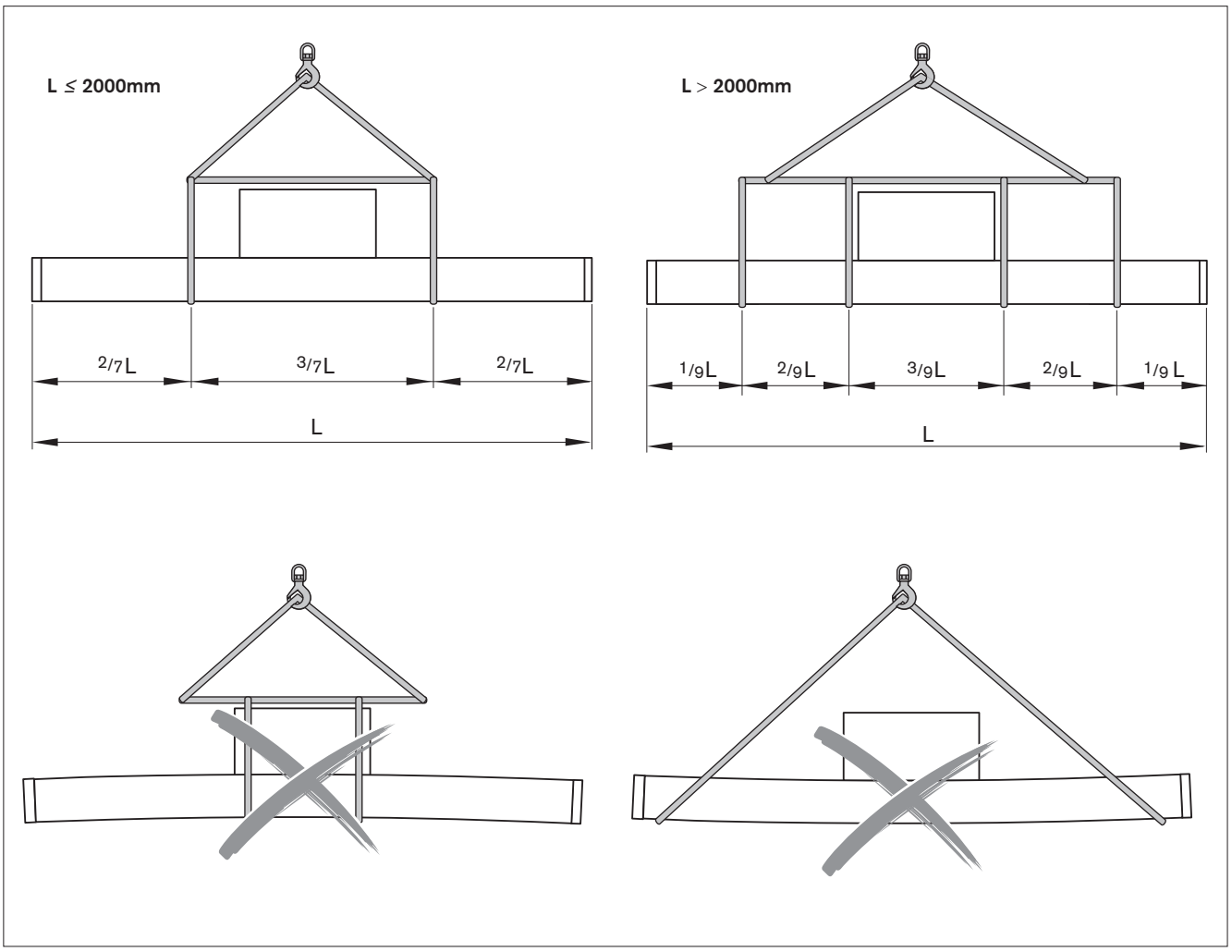

Fig. 3: **Hoisting the Omega Module**

5.2 Storing Omega Modules

NOTICE

Risk of damage due to incorrect storage!

Potential corrosion of product parts.

- Store the product only in dry, roofed areas.
- Protect the product against humidity and corrosive agents.

6 Mounting

Dimensions and part numbers of the individual components
➠ “Omega Modules OBB” catalog.

WARNING

Risk of product crashing down due to inadequate load hoisting equipment!

Severe personal injury or even death.

- Use only safety-inspected and suitable load hoisting equipment.
- Attach load hoisting equipment only to the frame (main body) or at the designated points and fasten with care.
- Do not stand under hoisted loads.

Risk of product crashing down in vertical or hanging installations due to lack of protection against falling loads!

Severe personal injury or even death.

- Secure the product against dropping.
- Do not stand under the product in the hazard zone.

▶ Before hoisting the Omega Module, take note of the weight
➠ “Omega Modules OBB” catalog, “Technical Data” section.

6.1 Required accessories

Required mounting accessories ➠ “Omega Modules OBB” catalog, “Mounting and Fastening Options” section.

6.2 Fastening the Omega Module to the adjoining structure

6.2.1 Mounting the Omega Module by the carriage (frame travels)

NOTICE

Incorrect fastening may cause product to work loose or become distorted!

Damage to the product.

- Fasten the product with the recommended fastening elements.
- Never secure or support the product by the end plates.
- Take note of the specified tightening torques.

- Locating holes **(1)** are provided for precise alignment when fastening the Omega Module by the carriage.
- Matching centering rings are available as mounting accessories.
- For detailed data and dimensions for locating holes, centering rings and the adjoining structure ➠ “Omega Modules OBB” catalog.

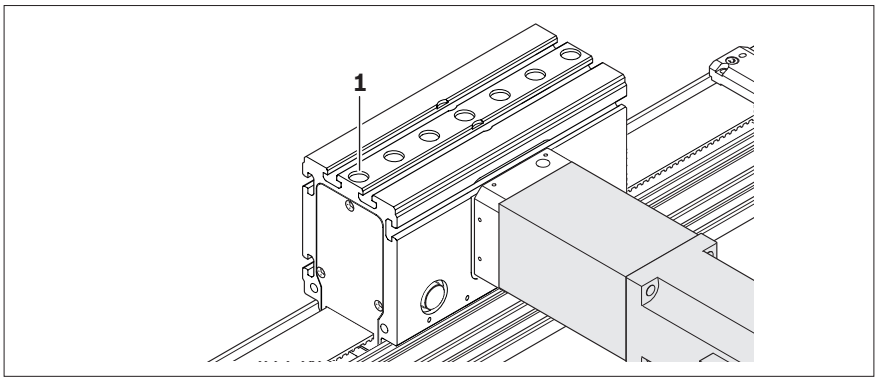

Fig. 4: **Locating holes on the carriage**

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- The Omega Module can be fastened at the top with clamping fixtures and sliding blocks. It can be fastened at the side using sliding blocks.
- Recommended number of clamping fixtures:
  3 pcs 2-hole clamping fixtures at the side opposite the motor
  2 pcs 2-hole clamping fixtures at the motor side
- Take note of the tightening torques ➠ “13.1 Tightening torques” on page 37
- Details of clamping fixtures and sliding blocks ➠ “Omega Modules OBB” catalog, “Mounting” section.

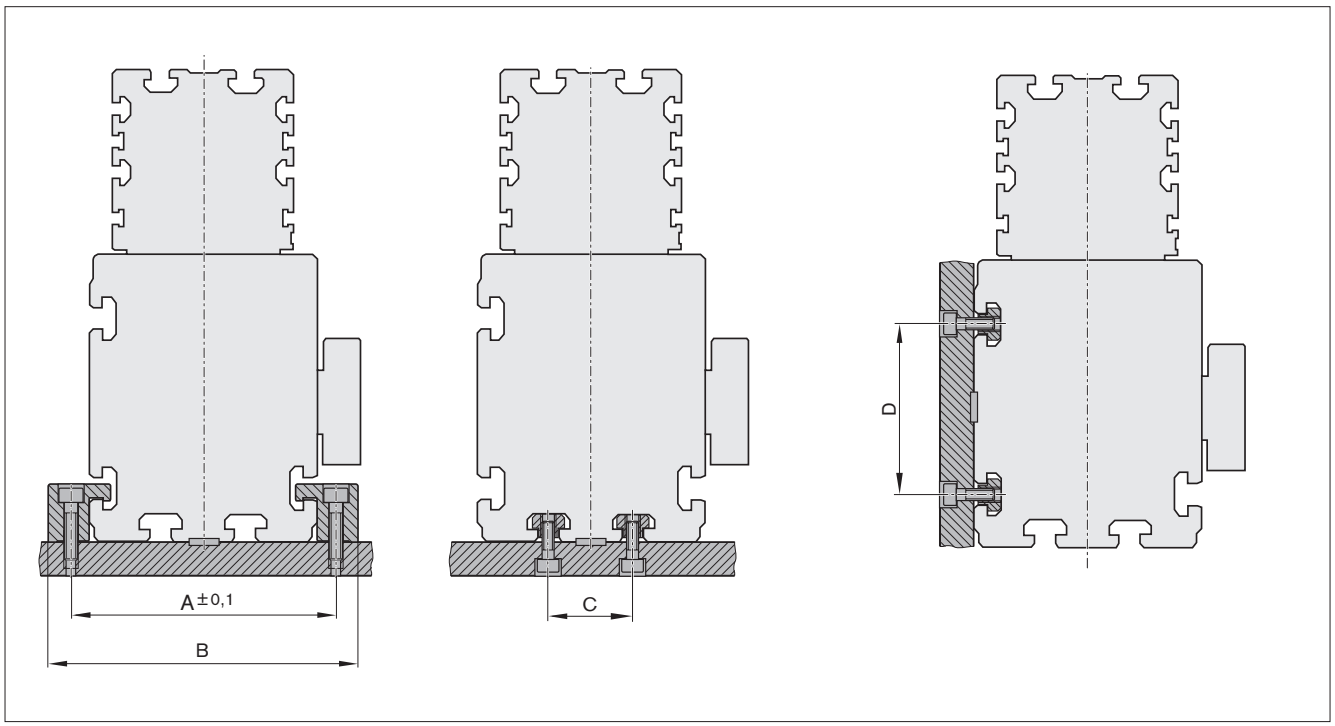

Fig. 5: **Mounting the Omega Module by the carriage**

6.2.2 Mounting the Omega Module by the frame

NOTICE

Risk of product damage due to incorrect mounting!

Damage to the product.

- Fasten the product with the recommended fastening elements.
- Never secure or support the product by the end plates.
- Take note of the specified tightening torques.

- When fastening by the frame, always leave a minimum distance of 5 mm from the end plates.

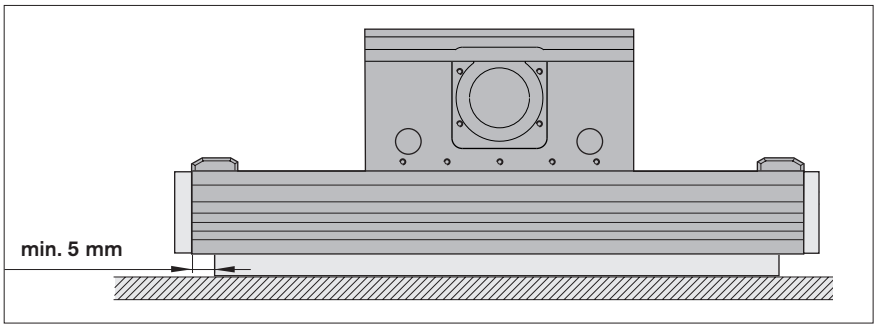

Fig. 6: **Minimum distance from the end plates**

- Mount the frame to the supporting structure using clamping fixtures or sliding blocks, as shown in the illushtration below.
- Recommended number of clamping fixtures:
  3 pcs 2-hole clamping fixtures per meter and side
- Take note of the tightening torque ➠ “13.1 Tightening torques” on page 37

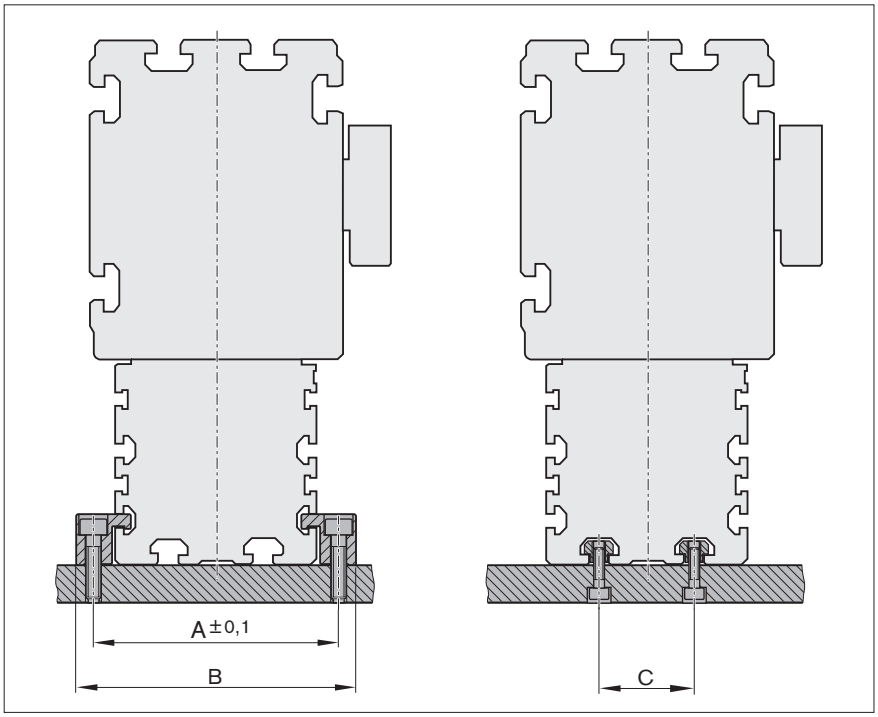

Fig. 7: **Mounting the Omega Module by the frame**

6.3 Removing transport lock

Carriages with clamping unit do not have transport lock.

NOTICE

Risk of damage to the product due to installed transport lock!

Damage to the product.

- Remove transport lock before Start-up.

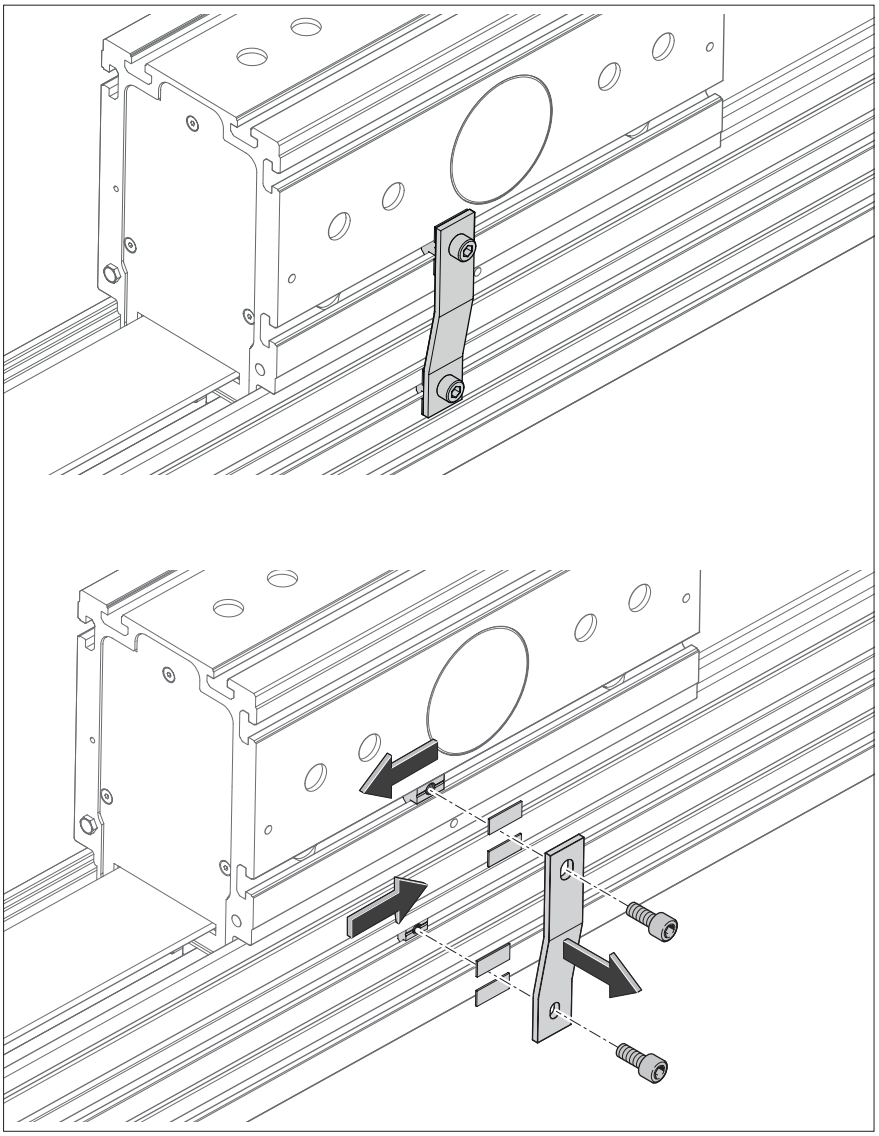

Fig. 8: **Removing transport lock**

6.4 Mounting the switching system, for traveling frame

6.4.1 Overview of switching system, for traveling frame

NOTICE

Potential collision due to wrong mounting of the switching system!

Damage to product, adjoining structure and workpieces.

- The entire switching system must be mounted on one side of the product.

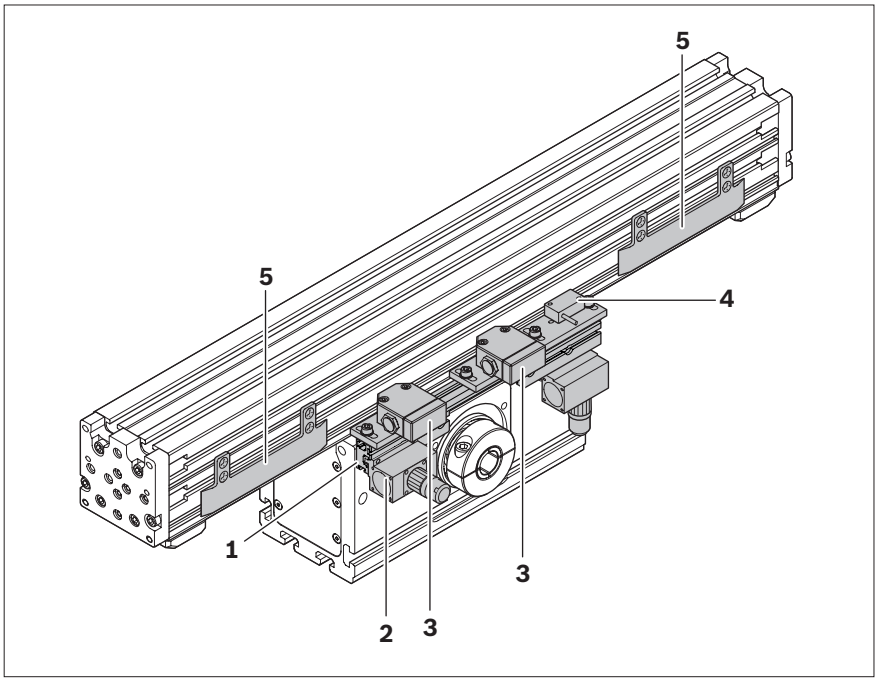

Fig. 9: **Switching system, for traveling frame**

The switching system with mechanical and proximity switches comprises the following components:

1 Switch mounting profile
2 Socket with plug
3 Mechanical switches
4 Proximity switch
5 Switching strips on the frame

6.4.2 Mounting the mechanical and proximity switches

Mounting the switches

1. Insert the sliding blocks **(1)** in the T-slot on the frame and screw down the switching strips **(2)**.

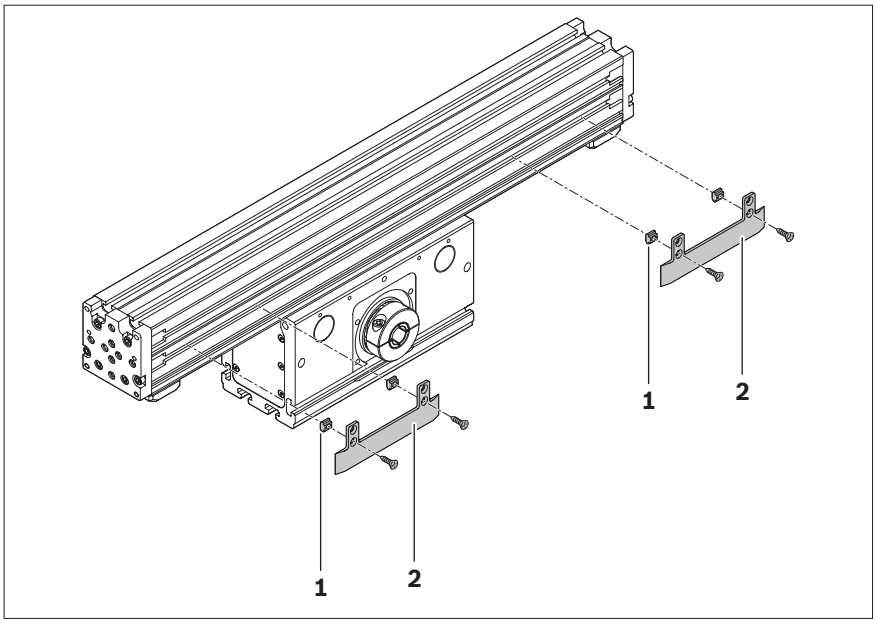

Fig. 10: **Mounting the switching strips**

2. Screw the switch mounting profile **(3)** down on the carriage.

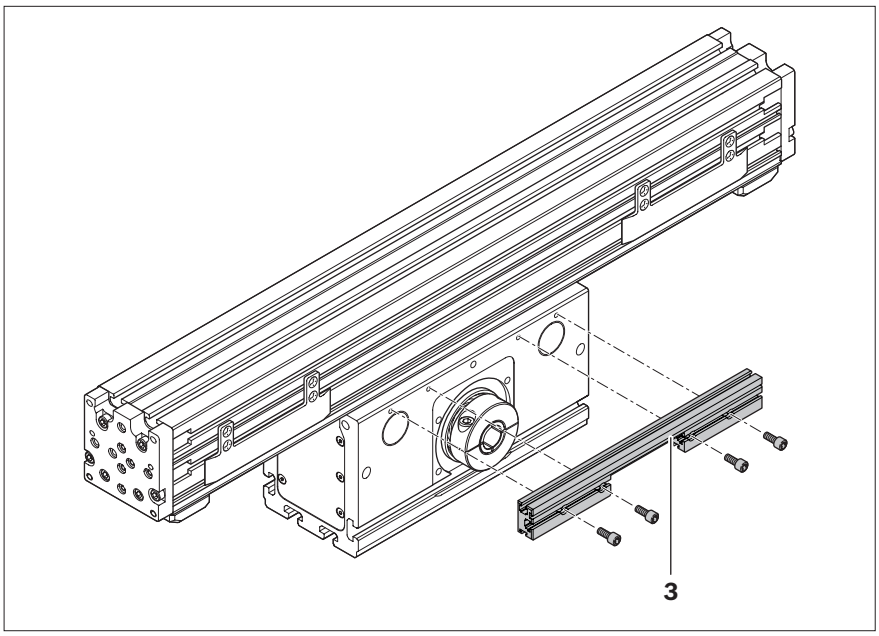

Fig. 11: **Mounting the switch mounting profile**

3. Screw the mechanical switches **(4)** and the proximity switch **(5)** to the switch mounting plate and fasten this to the mounting profile so that the switches face the frame.

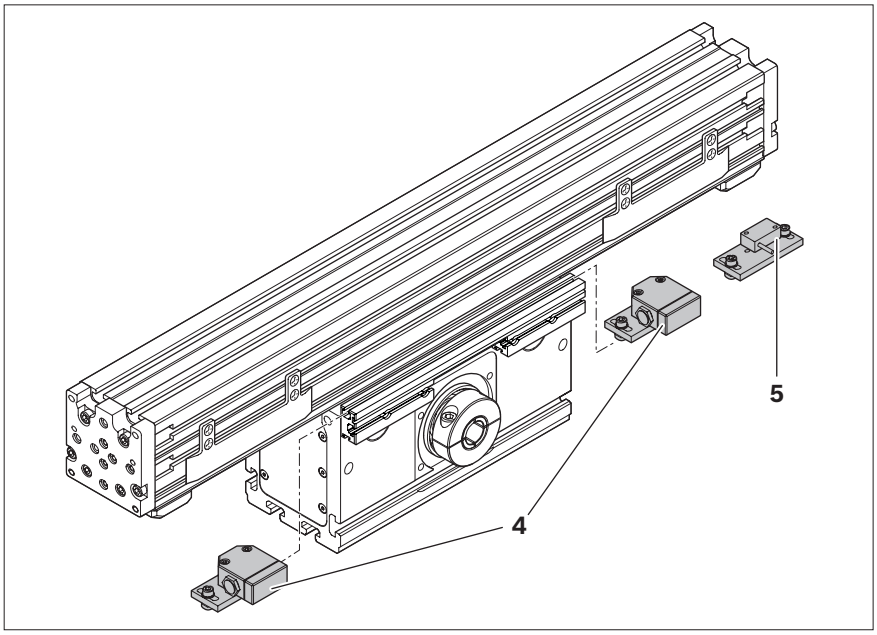

Fig. 12: **Mounting the mechanical and proximity switches**

4. Fasten the socket **(6)** to the mounting profile. The socket may be mounted in two directions, as shown below.

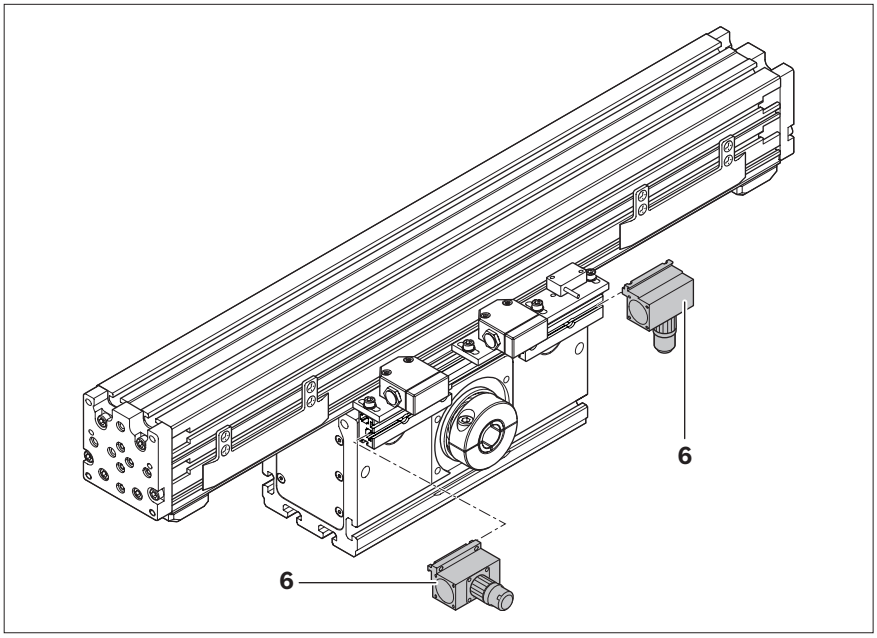

Fig. 13: **Installing the socket**

5. Align the mechanical and proximity switches using the oblong holes **(7)** in the switch mounting plates and fix them in place.

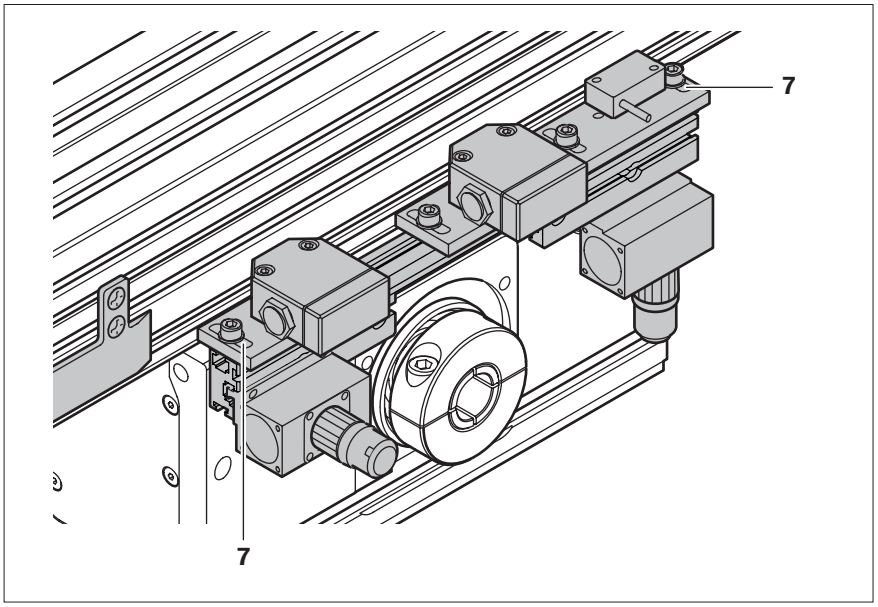

Fig. 14: **Aligning the switches**

6. Adjust the switching distances for the mechanical and proximity switches.

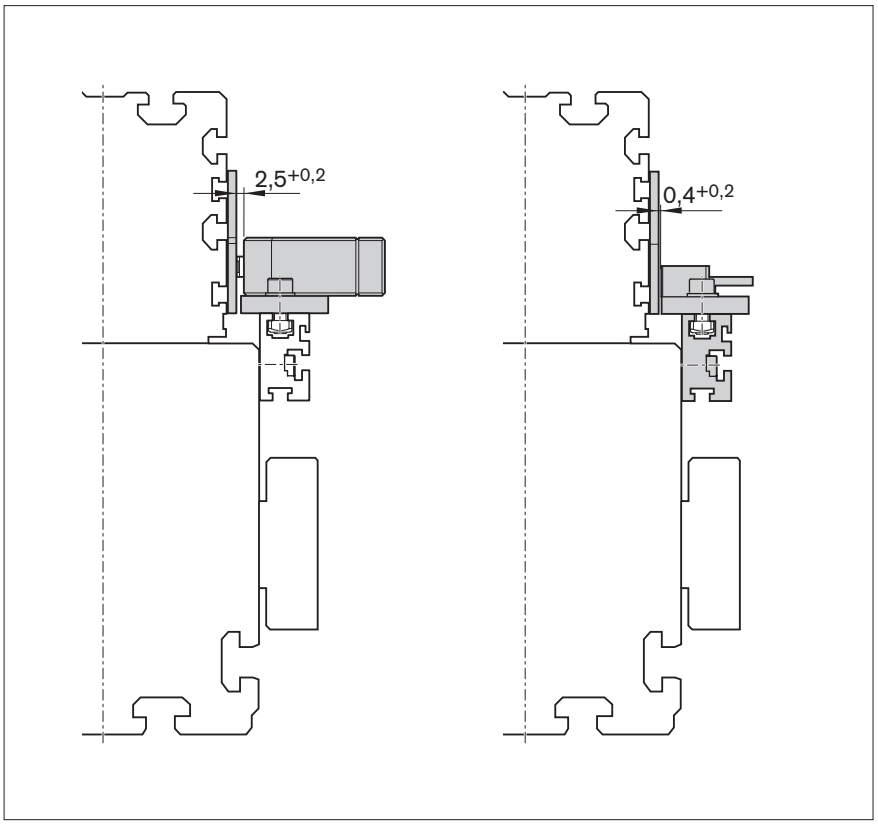

Fig. 15: **Adjusting the switching distances**

6.5 Mounting the switching system, for traveling carriage

6.5.1 Overview of switching system, for traveling carriage

NOTICE

Potential collision due to wrong mounting of the switching system!

Damage to product, adjoining structure and workpieces.

- The entire switching system must be mounted on one side of the product.

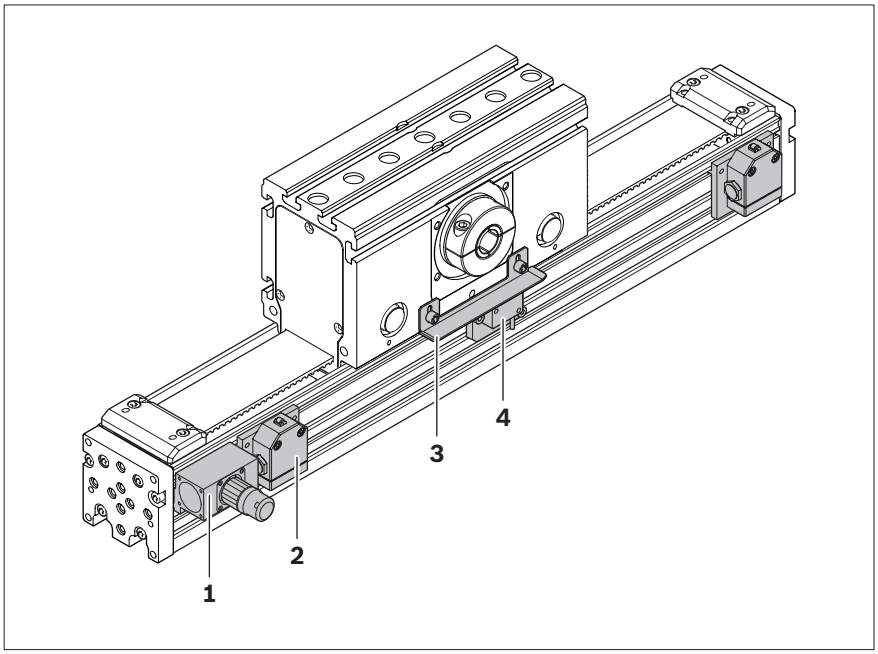

Fig. 16: **Switching system, for traveling carriage**

The switching system with mechanical or proximity switches comprises the following components:

1 Socket with plug

2 Mechanical switch

3 Switching cam

4 Proximity switch

6.5.2 Mounting the mechanical and proximity switches

Mounting the switches

1. Screw-fasten the mechanical **(1)** and proximity switch **(2)** to the switch mounting plate.
2. Insert the switch mounting plates with the switches into the T-slot of the module frame and secure them with set screws.

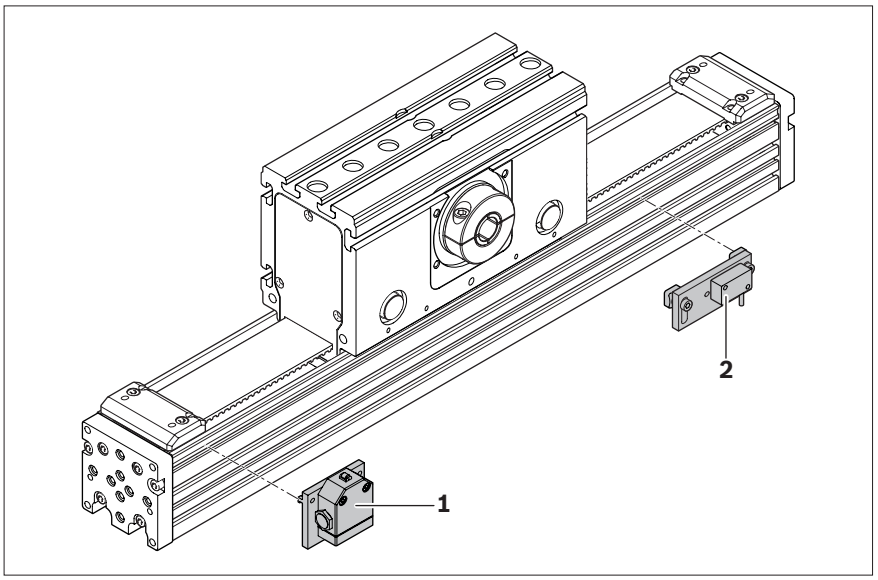

Fig. 17: **Mounting the switching cam**

3. Screw the switching cam **(3)** down on the carriage and adjust the switching distance to the switches.

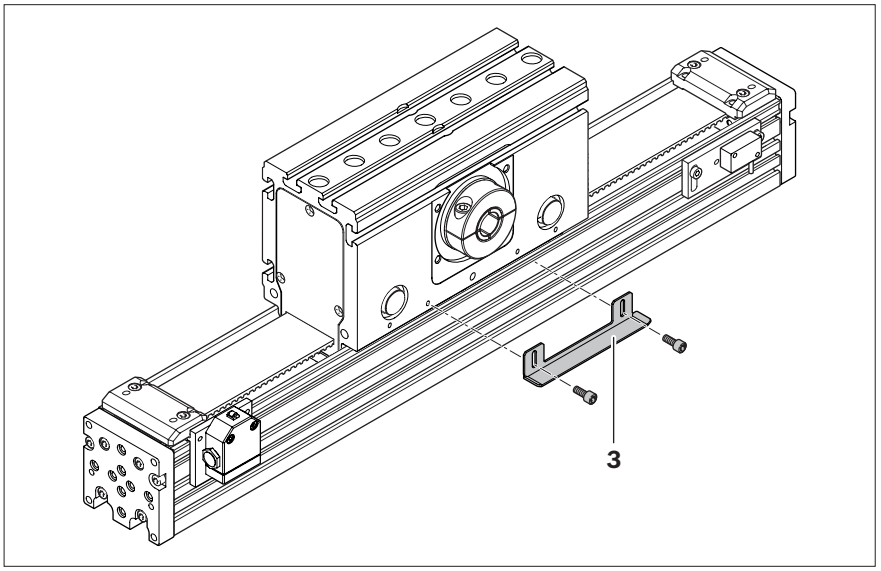

Fig. 18: **Mounting the switching cam to the carriage**

1. Set the switching distances by adjusting the switching cam.

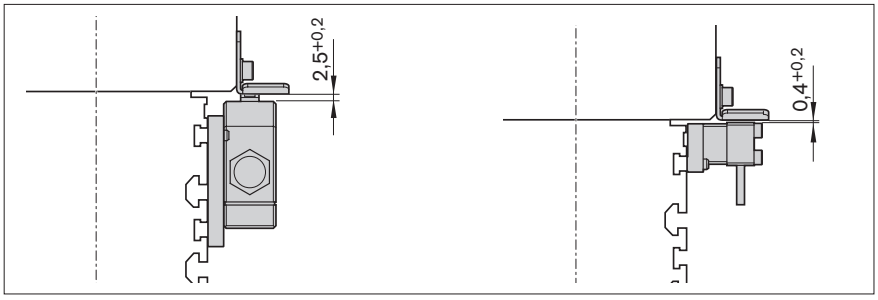

Fig. 19: **Adjusting the switching distances**

2. Insert the socket into the upper T-slot of the module frame and secure it with set screws ➠ “6.6 Installing the socket” on page 20.

6.6 Installing the socket

The socket can be mounted into whichever opening of the socket body suits best ➠ ☒ “Fig. 20: Socket mounting options” on page 20.

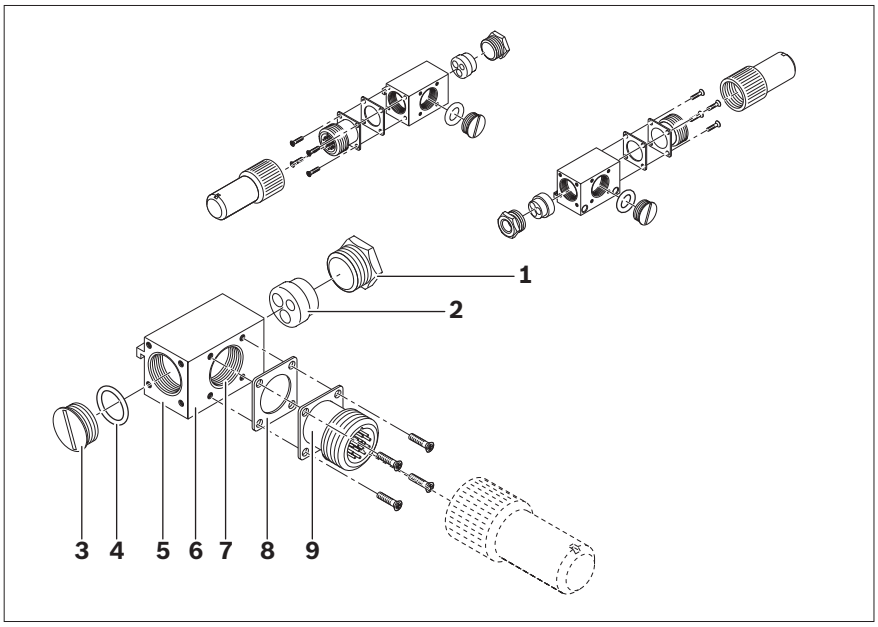

Fig. 20: **Socket mounting options**

1. If the gland has not been predrilled, drill holes for the cables.
2. Thread all cables through the compression screw **(1)**, the gland **(2)**, socket body **(6)**, and the cork seal **(8)**. When doing so, arrange the parts as required for the desired connection orientation **(7)** of the plug.
3. Close the unused opening **(5)** in the socket body **(6)** using the O-ring **(4)** and the screw plug **(3)**.
4. Solder the wires to the terminals in the flanged socket **(9)**. Make a pin assignment diagram.
5. Fasten the flanged socket **(9)** to the socket body **(6)**.
6. Press in the gland **(2)** using the compression screw **(1)**.
7. Insert the socket and the cable duct into a T-slot of the module frame and secure it with set screws ➠ “6.7 Mounting the cable duct” on page 21.
8. Perform a function check. When doing so, take note of the instructions in section “7 Putting into service” on page 31.

6.7 Mounting the cable duct

1. Measure off the required length of cable duct.
2. Cut the cable duct to size and deburr the edges.
3. Measure out the required cable exit positions, mark them, and drill the holes.

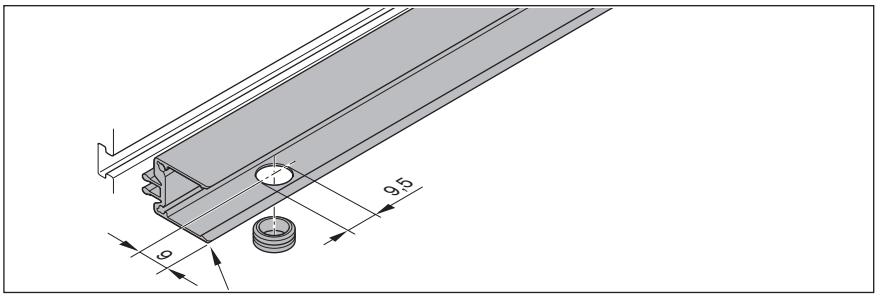

Fig. 21: **Preparing the cable duct for mounting**

4. If there are two few pre-drilled mounting holes, drill additional holes in the base of the cable duct (2.5 deep, ø 3.1).

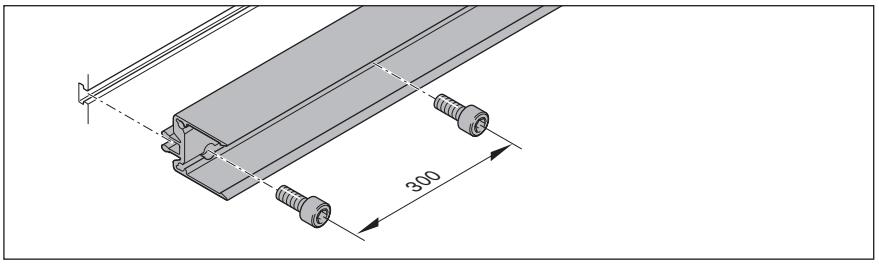

Fig. 22: **Drilling mounting holes**

5. Clip the duct into the T-slot on the linear axis and fix it in place with the mounting screws. Mounting screws M3, 8 mm long are provided. If more space is required in the cable duct, set screws M3, 8 mm long can be used.

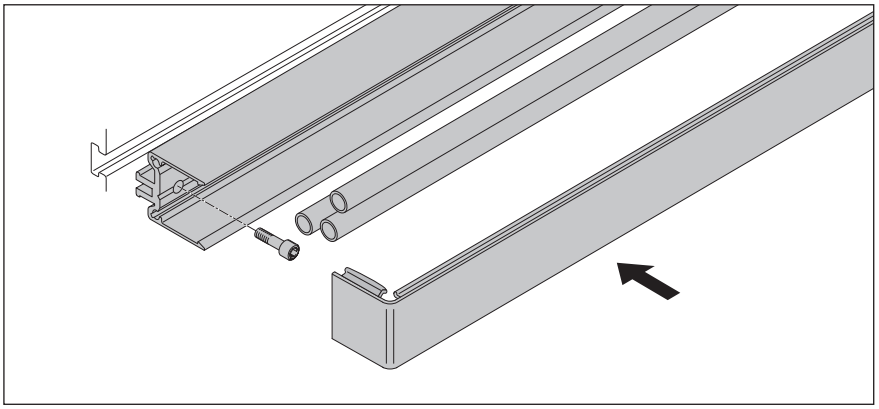

Fig. 23: **Mounting the cable duct**

6. Cut the cable grommets to size to suit the cable diameter and insert them. Five cable grommets are provided.
7. Lay the cables and wire them up.

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Mounting the cover strip to the cable duct end without an end closer

1. Measure out the cable duct cover strip, cut to size and deburr.
2. Clip in the cover strip.

Mounting the cover strip to the cable duct end with an end closer

1. Measure out the cable duct cover strip.

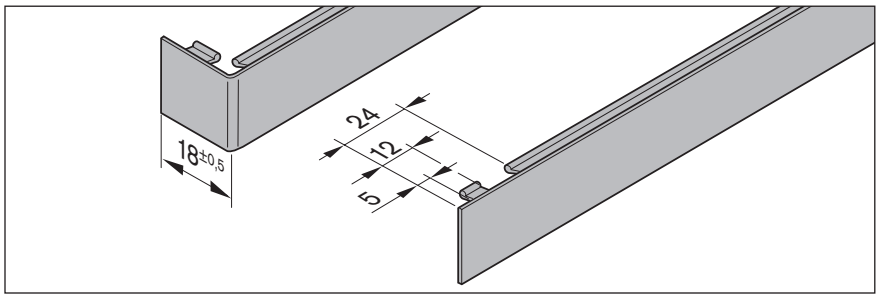


Fig. 24: **Measuring out the cable duct cover strip with an end closer**

2. Add 18 mm for each cable duct end closer.
3. Cut the cover strip to size and deburr.
4. Remove any webs at bending zones and the ends.
5. Bend the cover strip into shape and clip in.

6.8 Mounting the drive

NOTICE

Risk of excessive torque and rotary speed if limits are exceeded!

Install the motor vertically in order to avoid any strains and stresses due to the motor's weight!

The axial force F on the push-on sleeve must not be exceeded!

Damage to the product.

- ▶ Keep within specified maximum values.

Technical data and maximum values ➠ "Omega Modules OBB" catalog.

The OBB has the following drive options:

- Motor **(1)** with straight gear reducer **(2)**
- Motor **(1)** with angled gear reducer **(3)**

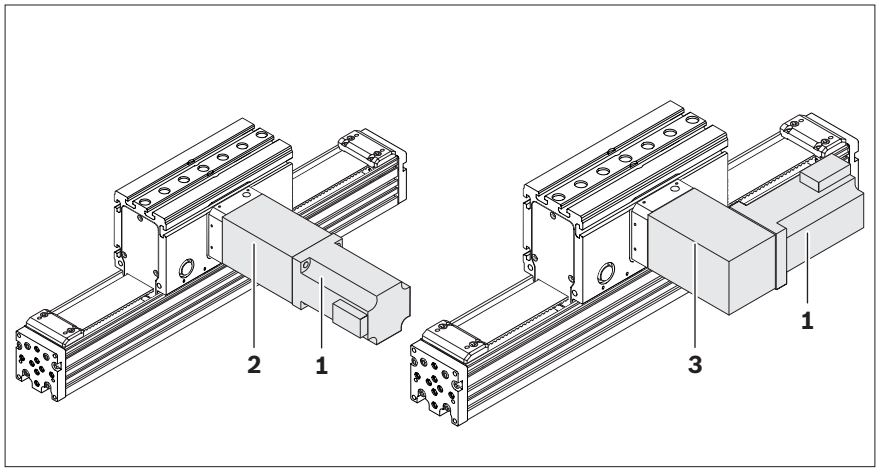


Fig. 25: **Drive options for the Omega Module OBB**

6.8.1 Mounting the motor to the gear

Take note of the tightening torques ➠ "13.1 Tightening torques" on page 37. The motor attachment procedure is described here for the straight gear reducer. The procedure for motor attachment via angled gear reducer is similar.

The gear reducer is pre-assembled for motor attachment. The push-on sleeve for the motor journal is integrated in the gear flange.

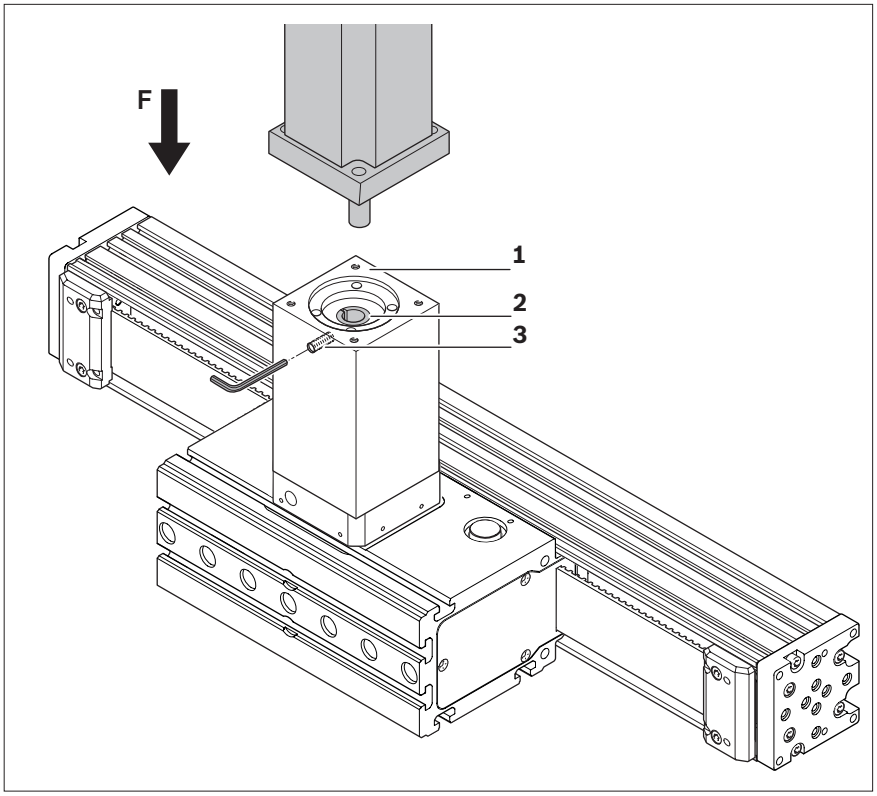


Fig. 26: **Pre-mounting the motor to the gear reducer**

1. Turn the push-on sleeve **(2)** until the set screw **(3)** is accessible through the hole in the gear flange **(1)**.
2. Loosen the set screw **(3)**.
3. Carefully insert the motor into the push-on sleeve and position it on the gear flange. Do not exceed the maximum axial force! ➠ Table 6
4. Screw the motor down to the gear flange **(4)**.
5. Tighten the set screw **(3)** to the specified tightening torque ➠ “13.1 Tightening torques” on page 37.

Table 6: Maximum axial force for motor mounting

	F_{max} (N)
OBB 55	30
OBB 85	40
OBB 120	60

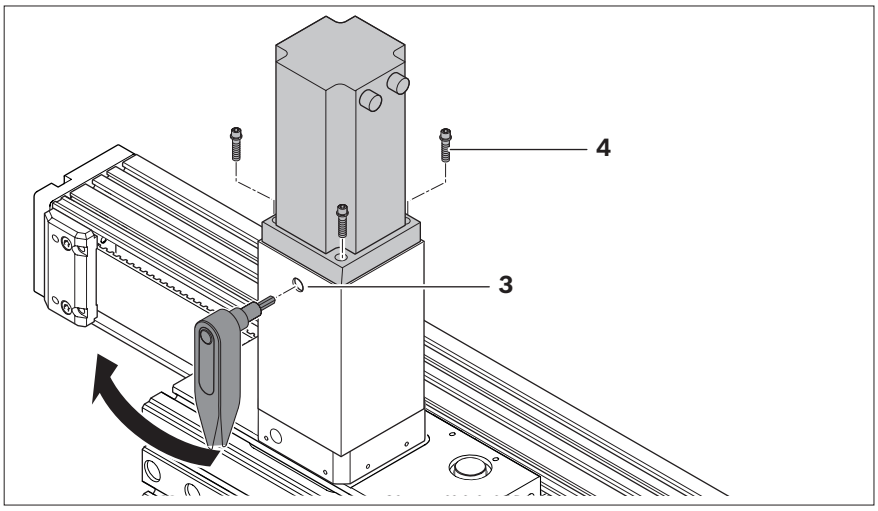


Fig. 27: **Fastening the motor to the gear**

6.8.2 Customer specific motor attachment

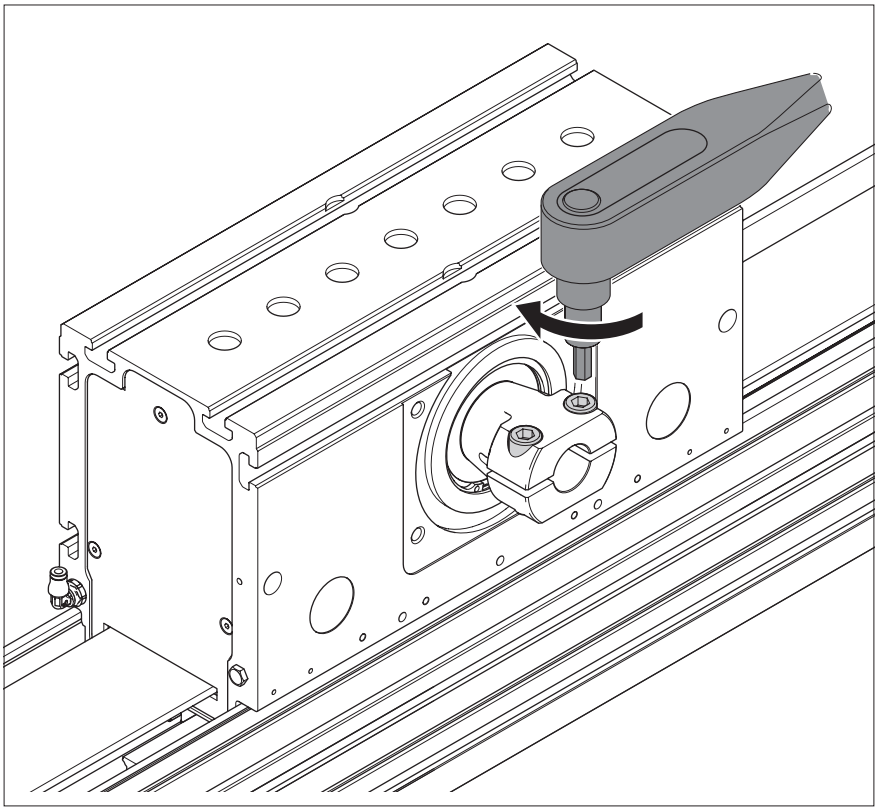


Fig. 28: **Drive shaft**

1. Tighten two screws each for clamping the motor drive shaft with tightening torque M_A in accordance with the table.

Table 7: Tightening torque M_A

OBB	055	085	120
8.8, µ = 0.125	M6x20 DIN 6912	M8x30 ISO 4762	
12.9, µ = 0.125			M10x35 ISO 4762
⊘ **M_A** (Nm)	9.5	23.0	80.0

6.9 Attaching equipment from the EasyHandling System

The end plates of the Omega Modules feature mounting holes, threads and locating holes for attachment of add-on modules from the EasyHandling System (Easy-2-Combine interface).

For dimensions and further information ➠ “Omega Modules OBB” and “EasyHandling Connection Technology” catalogs.

NOTICE

Avoid excessive bending loads on the frame when attaching equipment!

Follow the mounting instructions for the add-on modules!

Damage to the product.

- Do not exceed the stated values.

▶ See illustration for examples.

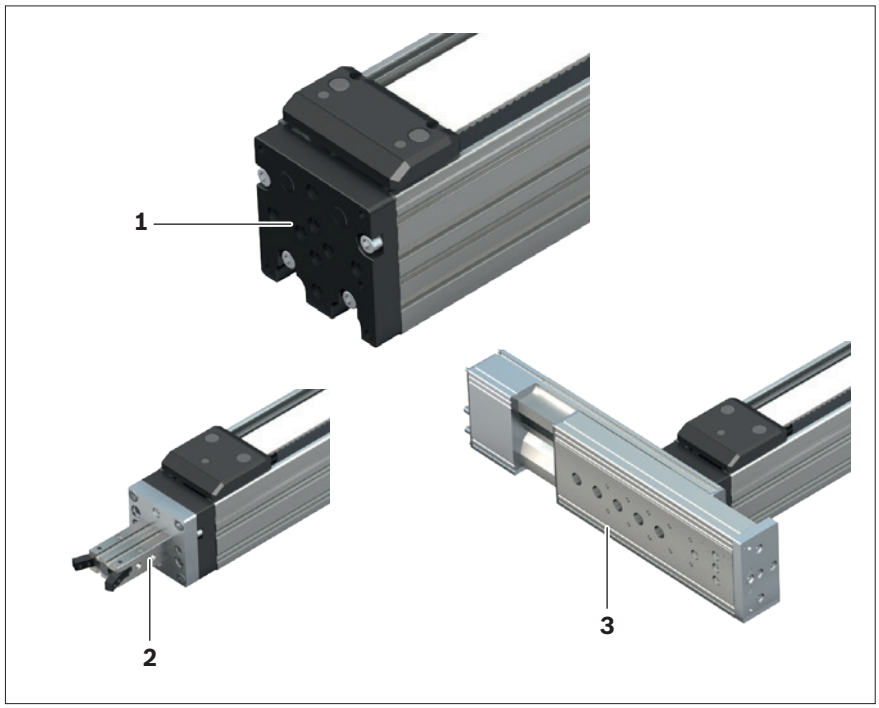


Fig. 29: **Attachment examples for add-on modules**

1 End plate (Easy-2-Combine interface)
2 Gripper
3 Rotary Compact Module

6.9.1 Attaching a gripper to the end plate (mounting example)

The mounting procedure for a gripper from the EasyHandling System is described here as an example. Other add-on modules are fastened in a similar way. Follow the specific mounting instructions for the respective add-on module.

1. Insert centering rings **(2)** in the locating holes on the end plate **(3)**.
2. Position the gripper with its mounting plate **(1)** on the end plate and the centering rings and screw it down by driving fastening screws into the threads **(4)** in the end plate.

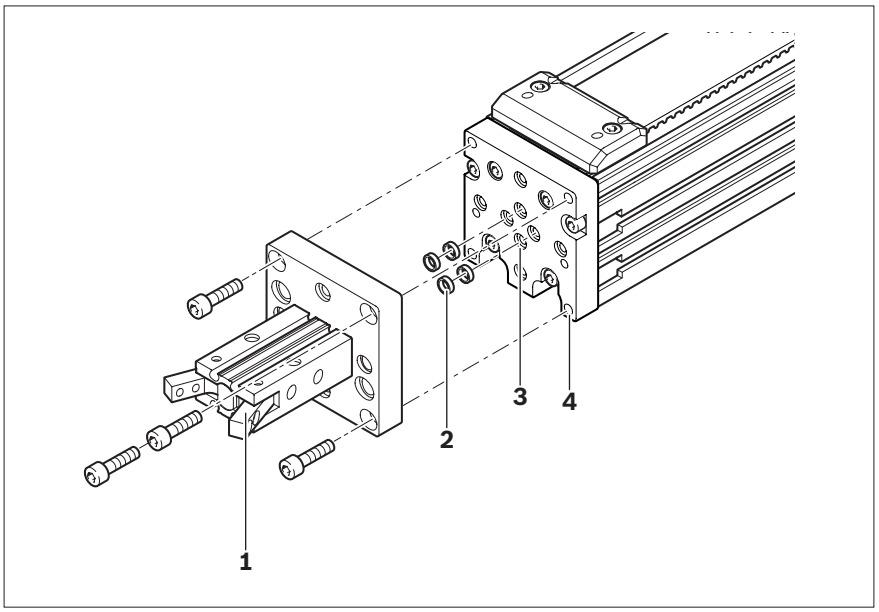


Fig. 30: **Mounting example for a gripper**

6.10 Mounting the accessories

6.10.1 Mounting shock absorbers

CAUTION

Risk of injury due to colliding parts!

Limbs or extremities may be crushed.

- Before mounting the shock absorber, secure the carriage or the frame.

The shock absorber **(2)** is premounted in a mounting bracket **(1)**.

1. Insert the provided sliding blocks **(3)** in the T-slots.
2. Push the mounting bracket with shock absorber onto the frame end and fasten using all 6 screws per side.

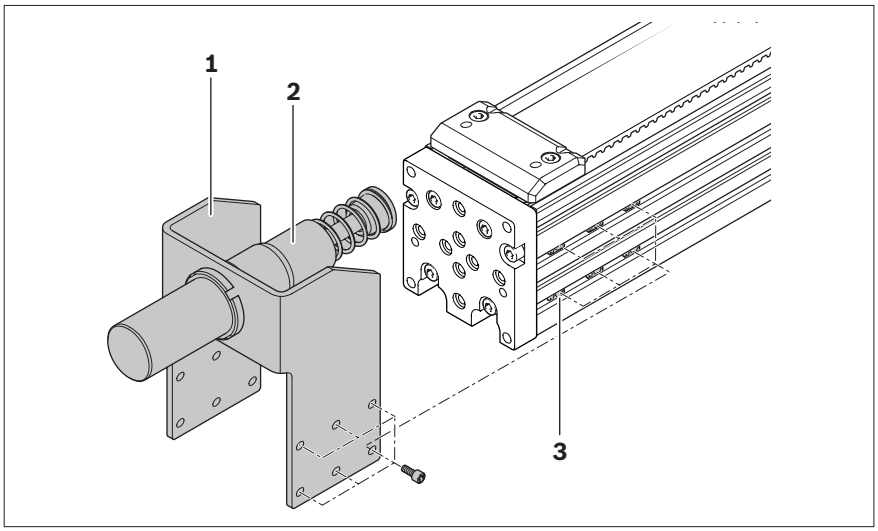


Fig. 31: **Mounting shock absorbers**

6.10.2 Mounting cable drag chains

WARNING

Risk of electrical shocks through touching live parts!

Severe personal injury or even death.

- Before commencing any electrical installation work, switch off the power supply and secure it against reactivation.

Mounting to the carriage:

1. Insert the provided sliding blocks **(1)** in the T-slots.
2. Screw-fasten the mounting profile **(2)** to the carriage.

Mounting to the frame:

3. Insert the mounting profile **(3)** into the T-slot in the frame and fix in place with straight pins. Fasten the cable drag chain **(4)** using sliding blocks in the T-slots of the mounting profiles.

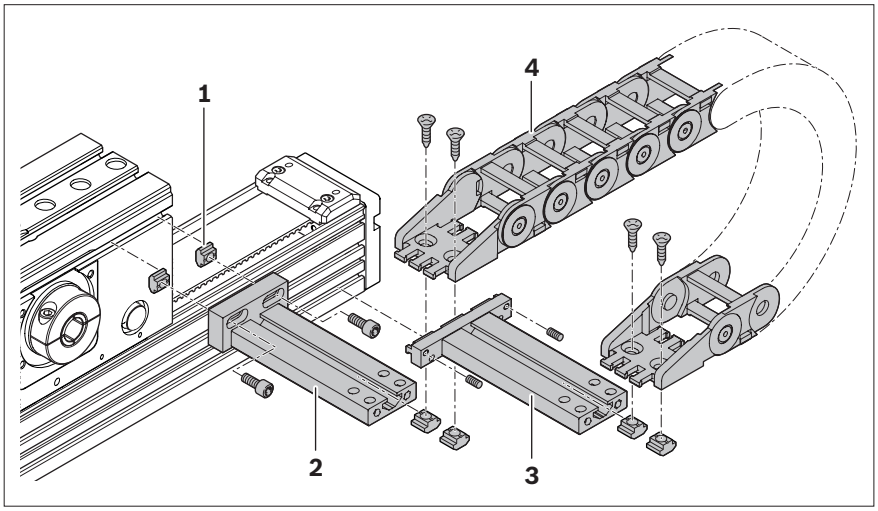


Fig. 32: **Mounting the cable drag chain**

6.11 Connecting the electrical power supply to the OBB

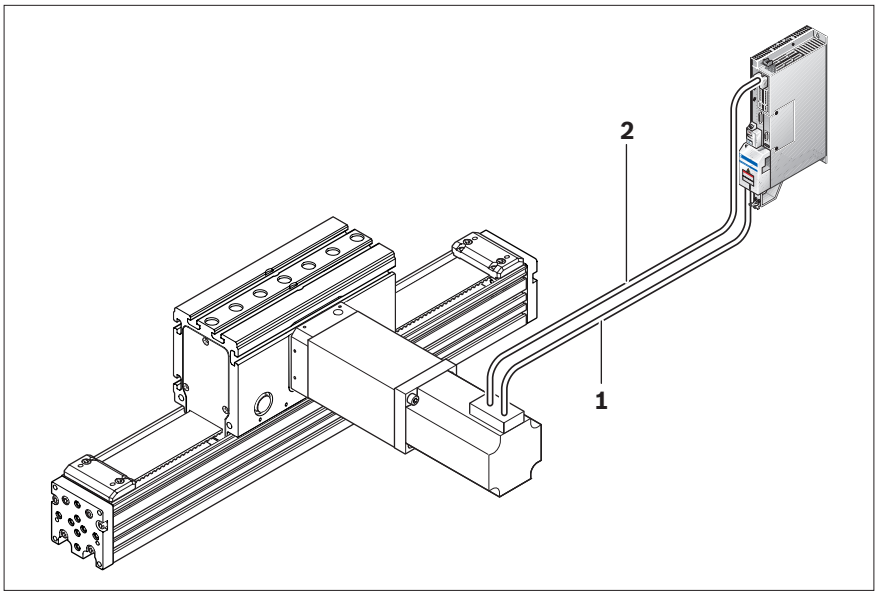


Fig. 33: **Connecting the electrical power supply to the OBB**

WARNING

Risk of electrical shocks through touching live parts!

Severe personal injury or even death.

- Before commencing any electrical installation work, switch off the power supply and secure it against reactivation.
- Follow the safety instructions given in the documentation for the controller used.

▶ Observe the safety regulations for working with high-voltage equipment!

1. Keep the documentation of the respective motor/controller handy for reference.
2. Route the motor cables **(1)** at a distance from the encoder cables **(2)**!

6.12 Connecting compressed air supply to carriage with Clamping Unit

Technical data and additional information ➠ “Omega Modules OBB” catalog.

WARNING

Risk of injury due to moving parts (as soon as compressed air is applied and the clamping element is released)!

Severe personal injury or even death.

- Before commencing any work, switch off the power supply and secure it against reactivation.
- Secure the frame against falling.
- Observe the safety regulations for working with compressed air!

CAUTION

The clamping unit may not be used as a braking unit! For use only when the axis is at a standstill!

Serious injuries. Risk of damage to the equipment.

- Use the clamping unit only to fix a position.
- In a vertical axis, the clamping unit prevents the axis from dropping down and can relieve the load on the motor.

NOTICE

Use only filtered and lubricated air!

Damage to the product.

- Check that suitable air is available.

- For carriages with integrated clamping unit there is a standard air port **(1)** at each end of the carriage opposite the lube nipples.
- The air port is designed for hoses with a diameter of Ø 4 mm.
- One air port per side is sufficient.
- See illustration for switching symbol.

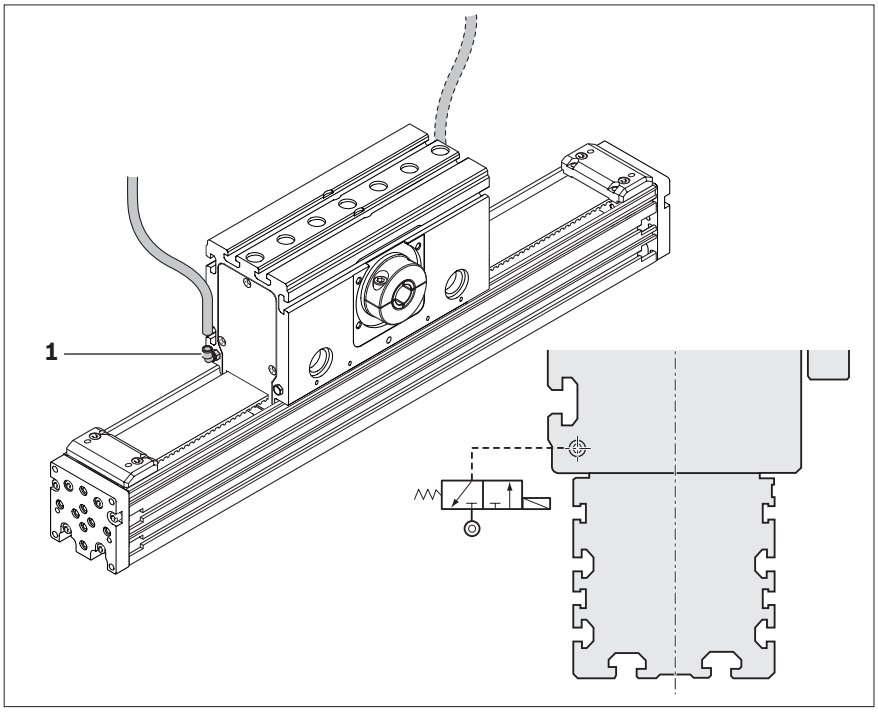


Fig. 34: **Connecting up the compressed air supply**

1. Connect the compressed air line with an appropriate fitting to the air port **(1)** in the carriage.
2. Perform a function check:
   When no pressure is applied, the clamping unit must clamp;
   with pressure it must release its hold.

7 Putting into service

- The product must not be put into service until it has been verified that the final 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.

7.1 Checking the operating conditions

- Take account of the ambient temperature, load, travel speed and stroke ➠ “Operating conditions” section and the “Omega Modules OBB” catalog.
- For special operating conditions, please ask.

7.2 Trial run, running in

WARNING

Risk of injury due to moving parts (e.g. carriage)!

Limbs or extremities may be crushed

- Do not attempt to grasp any moving parts while the system is in operation.

CAUTION

Motor becomes very hot during operation!

Risk of burns.

- During operation, do not touch the motor or only when wearing suitable protective equipment (e.g. heat-resistant gloves).

- The product may only be put into service after running successful trials under near-real production conditions.
- Traverse the unit at low speed over the entire travel range. While doing so, be sure to check the settings and the function of the limit switches.

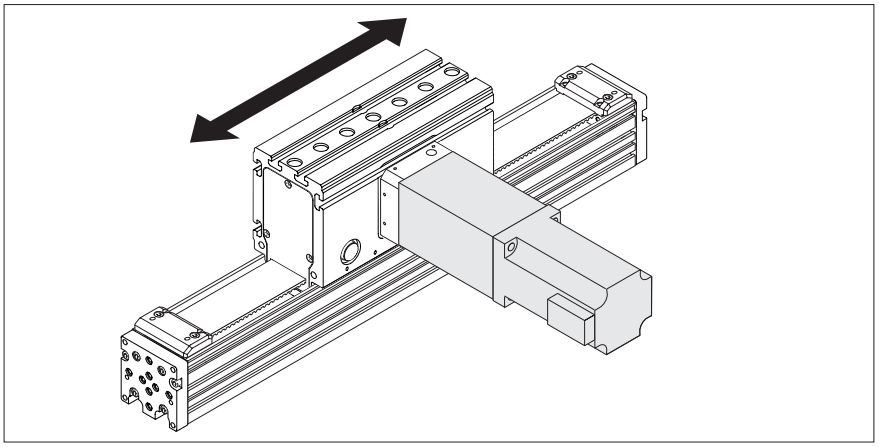


Fig. 35: **Traversing the carriage or the frame**

- If necessary, optimize the interaction of the mechanical system and the electronics.

7.3 Shifting the switches

CAUTION

Risk of electrical shocks through touching live parts (24 V)!

Minor injuries.

- Before commencing any work on the switches, switch off the power supply and secure it against reactivation.

Shifting mechanical or proximity switches

- If problems occur with the switches during the function check or trial run, re-adjust the switches ➠ 6.4 on Page 14 or 6.5 on Page 18.

The proximity switches have potted cables. If a replacement is required, we recommend ordering a new switch.

8 Operation

WARNING

Risk of electrical shocks through touching live parts!

Severe personal injury or even death.

- Before commencing any electrical installation work, switch off the power supply and secure it against reactivation.

CAUTION

Motor becomes very hot during operation!

Risk of burns.

- During operation, do not touch the motor or only when wearing suitable protective equipment (e.g. heat-resistant gloves).

NOTICE

Lubricant may escape during operation of vertical installations!

Environmental contamination.

- Take suitable precautions to collect any escaping lubricant and dispose of it in the proper way.

Motor will overheat when overloaded!

Fire risk.

- During operation, be sure to comply with technical data such as load capacities, moments, maximum rotary speeds, motor data, etc. ➠ “Omega Modules OBB” catalog.

9 Maintenance and repair

The only maintenance required is lubrication of the runner blocks using a commercially available manual grease gun. Basic lubrication is carried out by the manufacturer.

The end bearings are greased for life and will not require relubrication under normal operating conditions.

9.1 Lubrication

9.1.1 Notes on Lubrication

- Before using lubricants, read and take note of the corresponding material safety data sheets!
- The system has been prelubricated with Dynalub 510.
- The system is designed for grease lubrication with a manual grease gun only.
- The fabric layer of the PU tapes can be lubricated with a non-resinous, acid-free oil (sewing machine oil).

⚠ **Do not use greases containing solid particles (e.g., graphite or MoS_2)!**

⚠ **If other lubricants than those specified are used, this may lead to a reduction in the relubrication intervals, the achievable travel in short-stroke applications, and the load capacities. Possible chemical interactions between the plastic materials, lubricants and preservative oils must also be taken into account.**

⚠ **If the application conditions involve dirt, vibrations, impacts, etc., we recommend shortening the relubrication intervals accordingly. Even under normal operating conditions, the system must be relubricated at the latest after 2 years due to aging of the grease.**

Table 8: Recommended lubricants: Consistency class NGLI 2 per DIN 51818

Grease	Part number
We recommend: – Dynalub 510 (Bosch Rexroth)	Cartridge R341603700 5 kg bucket R341603500
May also be used: – Elkalub GLS 135 / N2 (Chemie-Technik) – Castrol Longtime PD2 (Castrol)	

Table 9: Lubricant quantities for Dynalub 510

		Lubricant quantity (cm^3)	Travel (km)
OBB 55	Lube nipple DIN 3405-AM8	1.6	3,000
OBB 85		5.6	6,000
OBB 120		5.6	3,000

9.1.2 Lubrication intervals

Every 500 operating hours or when the specified travel distance has been covered – whichever is reached first ➠ "Table 9: Lubricant quantities for

Dynalub 510" auf Seite 33le 8

NOTICE
Risk of property damage due to insufficient lubrication! Loss of performance and corrosion. ▶ Do not exceed the lubrication intervals.
Risk of insufficient lubrication due to use of wrong lubricants! Damage to the product. ▶ Use only the recommended lubricants ➠ Table 7
Performance altered by special operating conditions! Damage to the product. ▶ Before putting the product into service under special operating conditions, please consult Bosch Rexroth AG. This applies especially to environments with glass fiber or wood dust, solvents, extreme temperatures, and for short-stroke applications.

9.1.3 Lubricating the Omega Module via the carriage

There are lube nipples on both sides of the carriage. Lubricating from one side only is sufficient. The lubricant will reach the runner blocks.

1. Check that the operating conditions are normal ➠ "7.1 Checking the operating conditions" auf Seite 31
2. Lubricate Omega Modules using a manual grease gun. Weigh out the quantity of grease per stroke ➠ "Table 9: Lubricant quantities for Dynalub 510" auf Seite 33

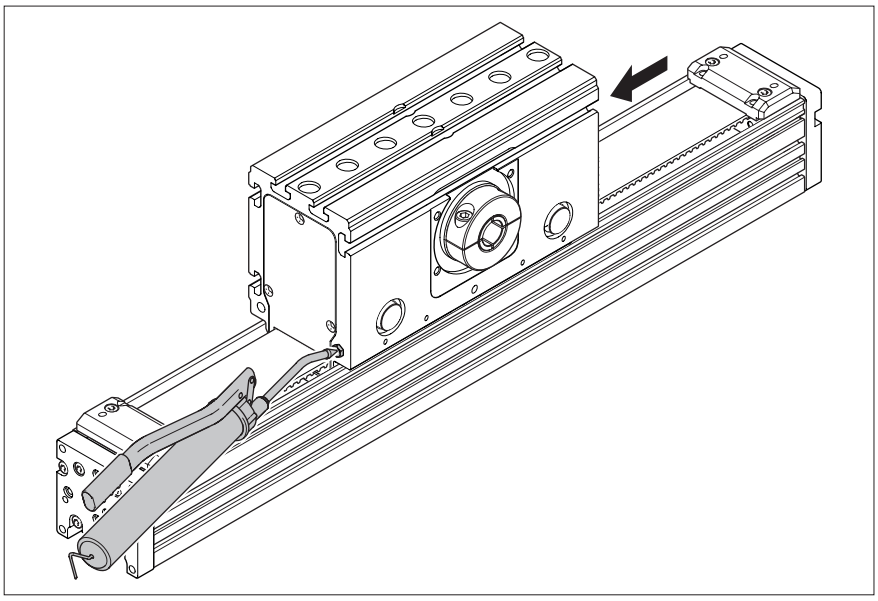


Fig. 36: **Lubricating the Omega Module**

9.2 Repairs

Repairs to the linear axis may only be carried out by Bosch Rexroth.

10 Removal and replacement

To assure the accuracy of the Omega Module after replacement of assemblies (e.g. toothed belt, Ball Rail Systems, carriage, frame, etc.), sub-assemblies may only be dismantled and replaced by Rexroth. The only exceptions to this rule are the work steps described in this section.

10.1 Removing the cable duct

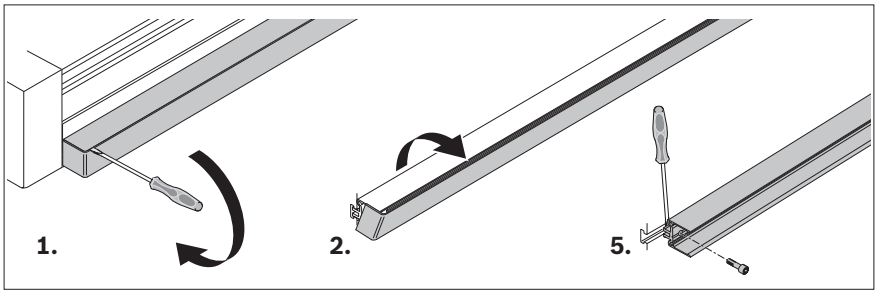


Fig. 37: **Removing the cable duct**

1. Use a screwdriver to prize open the cover strip at the end of the cable duct.
2. Ease the cover strip up and swivel it out.
3. Remove the cables.
4. Unscrew the mounting screws.
5. Use a screwdriver to lever the cable duct out of the profile T-slot.

10.2 Removing the switches

CAUTION

Risk of electrical shocks through touching live parts (24 V)!

Minor injuries.

- Before commencing any work on the switches, switch off the power supply and secure it against reactivation.

The proximity switches have potted cables. If a replacement is required, we recommend ordering a new switch.

1. To remove switches, follow the same procedure as for installing, but in reverse order ➠ 6.4 on Page 14 or 6.5 on Page 18.

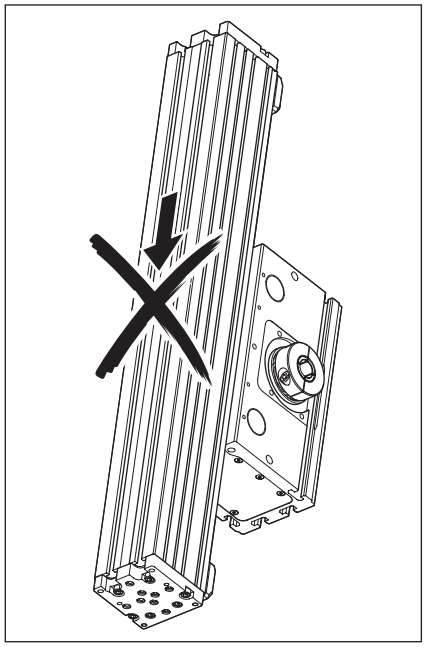


Fig. 38: **Secure the frame in vertical installations**

10.3 Removing the drive

WARNING

Risk of frame crashing down in vertical or slanting installations due to lack of arrestor devices!

Severe personal injury or even death.

- For vertically mounted or slanting product, secure the frame against dropping before loosening the mounting screws.
- Do not stand in line with the direction in which the frame could fall.

Risk of electrical shocks through touching live parts!

Severe personal injury or even death.

- Before commencing any electrical installation work, switch off the power supply and secure it against reactivation.

10.3.1 Removing the motor

1. Unscrew the mounting screws **(1)** on the motor.

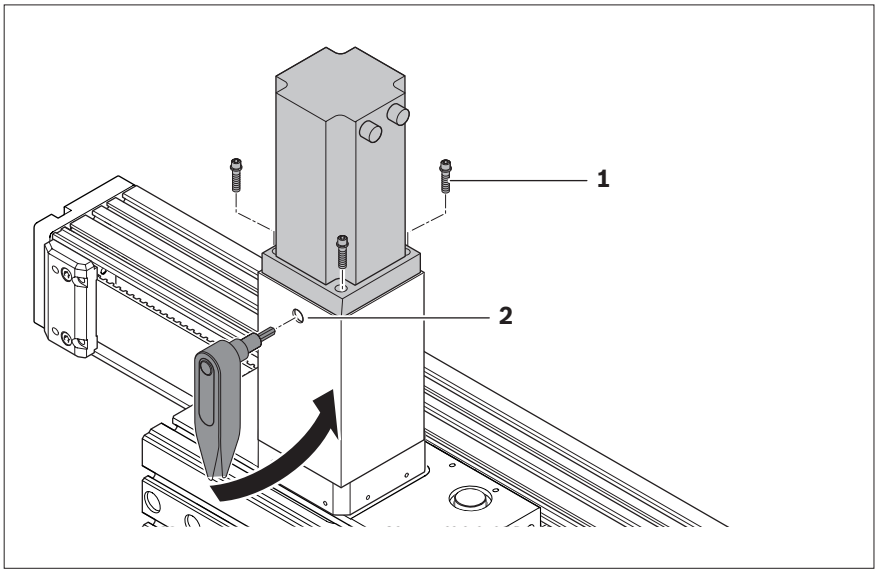


Fig. 39: **Removing the motor**

2. Loosen the set screw **(2)**.
3. Remove the motor.

11 Disposal

The Omega Module contains a number of different materials: aluminum, steel, plastics, grease and, where appropriate, electronic components.

NOTICE

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

Environmental pollution.

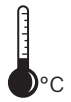
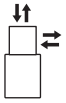
- Collect any escaping lubricant and dispose of it correctly.
- The Omega Module and its components must be disposed of correctly and in compliance with all applicable national and international guidelines and regulations.

12 Technical data

Technical data ➠ “Omega Modules OBB” catalog.

13 Operating conditions

Table 10: Operating conditions

Operating condition	Value	Symbol
Ambient temperature	0 °C ... 40 °C	
Load F_{comb}	≤ 0.2 C	
Travel speed	≤ 3 m/s	
OBB stroke	OBB 55 ≥ 110 mm OBB 85 ≥ 160 mm OBB 120 ≥ 135 mm	

13.1 Tightening torques

If not specified here, please refer to the corresponding publications for tightening torques for fastening screws.

14 Notes

rexroth
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Printed in Germany
R320103025/2018-07