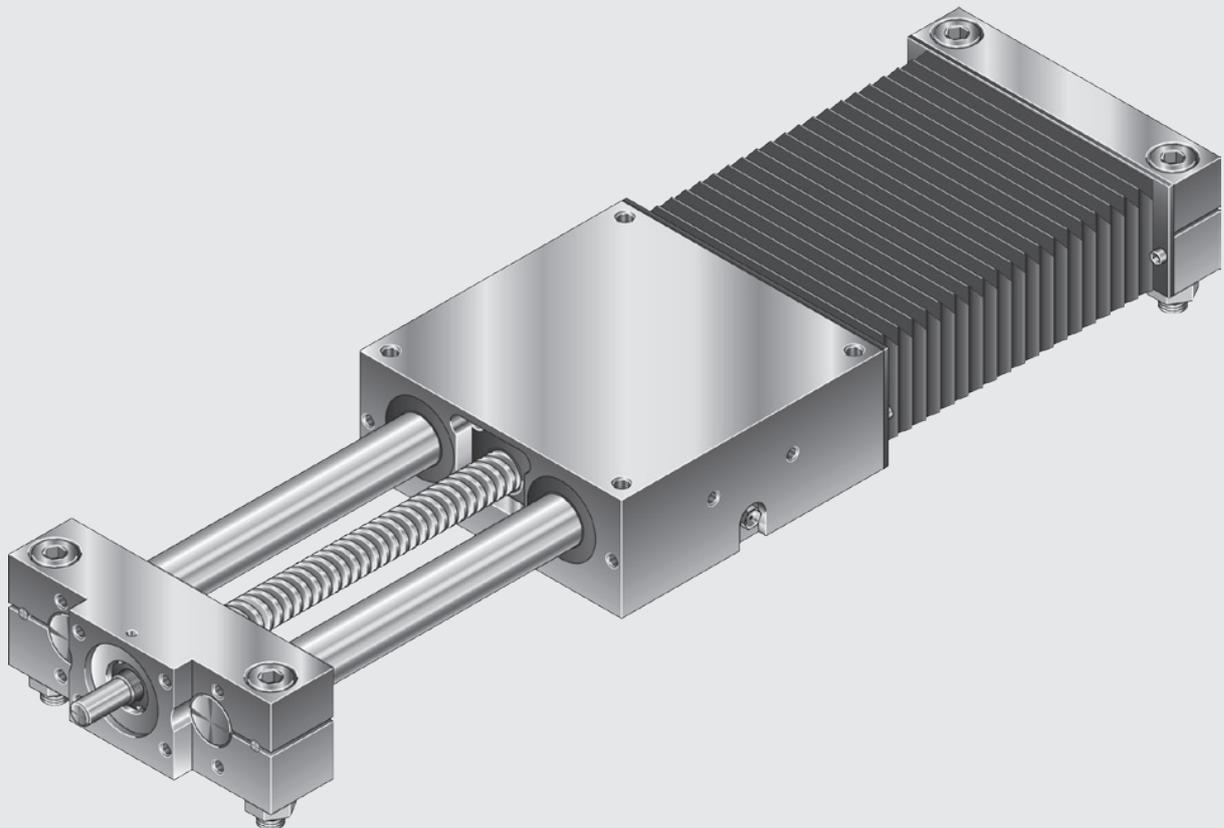


# Linear Motion Slides SGK, SOK

R320103079/2013-03  
Replaces: 2004-03  
EN

## Instructions



This data has been provided solely for the purpose of product description. Any references to possible uses are provided merely as a convenience and shall be understood as application examples or suggestions. Catalog data may not be construed as guaranteed characteristics. 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.

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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.

Die vorliegende Dokumentation ist in folgenden Sprachen verfügbar.  
This documentation is available in the following languages.  
La présente documentation est disponible dans les langues suivantes.  
La presente documentazione è disponibile nelle lingue seguenti.  
Esta documentación está disponible en los siguientes idiomas.  
A documentação está disponível nas seguintes línguas.

DE Deutsch (Originaldokumentation)  
EN English  
FR Français  
IT Italiano  
ES Español  
PT Português

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# 1 About this documentation

## 1.1 Scope and purpose of the documentation

This documentation applies to the following products:

- Linear Motion Slides SGK, SOK as described in the “Linear Motion Slides” catalog.

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

This documentation contains important information for proper and safe installation, operation, maintenance and deinstallation of Linear Motion Slides 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 Linear Motion Slides and must be adhered to.

**Table 1: Required documentation**

	Title	Document number	Document type
	Safety Instructions for Linear Motion Systems	R320103152	Safety instructions
	Linear Motion Slide	R310 3001	Catalog
	Instructions for associated motors and controllers		Instructions
	IndraDrive C for Linear Motion Systems	R310 2735	Catalog
	IndraDrive Cs for Linear Motion Systems	R310 2735	Catalog
	Material safety data sheet for Dynalub 510	R320103160	Catalog
	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](http://www.boschrexroth.com/mediadirectory)

## 1.3 Presentation of information

To enable you to work rapidly and safely with the Linear Motion Slide 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 and source 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 and source 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 Z535.6 - 2006**

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

ENGLISH

### 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
SGK	Linear Motion Slide ( <b>S</b> ), closed type ( <b>G</b> ), with Ball Screw Drive ( <b>K</b> )
SOK	Linear Motion Slide ( <b>S</b> ), open type ( <b>O</b> ), with Ball Screw Drive ( <b>K</b> )
BS	Ball Screw

## 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:

- Linear Motion Slide SGK/SOK according to the ordered configuration
- “Safety Instructions for Linear Motion Systems”
- Instructions for “Linear Motion Slides SGK/SOK”
- Final inspection certificate
- ▶ Immediately upon receipt of the delivery, check for completeness against the delivery note and notify the shipping agent or Bosch Rexroth AG if any parts are missing.

### 3.1 Delivery

- Linear Motion Slides with drive unit (closed and open construction form) SGK and SOK are delivered as completely assembled units. Also assembled are the bellows, motor attachment and motor, if these options were included in the order. All further attachments, such as switches, switching cams, cable ducts, etc., are delivered as separate parts along with the slide. Linear Motion Slides with drive unit are delivered prelubricated with grease.
- Linear Motion Slides without drive unit (closed and open construction form) SGO and SOO are delivered as non-assembled units. Shafts and end blocks are provided. The carriage is mounted as a sub-assembly without pre-greasing. Initial grease lubrication must be performed by the customer in accordance with the instructions provided. If bellows have been ordered, these are mounted on frames and included in the delivery. Fastening screws are not included in scope of delivery.
- Linear Motion Slides in open construction form (with and without drive unit) SOK and SOO: The precision steel shafts are screw-fastened to the shaft support rails.

### 3.2 Accessories

The following accessories are available:

- Mounting accessories
- Switches
- Motor attachment kit (motor mount, coupling, timing belt side drive)



Dimensions, part numbers, additional mounting accessories, and further information ➔ “Linear Motion Slides” catalog.

## 4 Product description

### 4.1 Features

Linear Motion Slides with ball screw drive are an economical linear axis version for high feed forces.

The mechanics are based on proven ball screw assemblies (BS) in all common diameter and lead combinations, which convert the rotary motion of the motor into linear motion of the carriage.

For vertical mounting orientations it should be remembered that the ball screw assembly is not self-locking, and the carriage must therefore be secured to stop it from dropping down.

#### SGK

Especially suited for environments with heavy contamination. Self-supporting guides allow mounting of bellows that are closed on all sides.

#### SOK

Enhanced rigidity through use of supported shafts, permitting longer lengths than with the SGK model.

Technical data and dimensions ➔ “Linear Motion Slides” catalog.

### 4.2 Equipment description

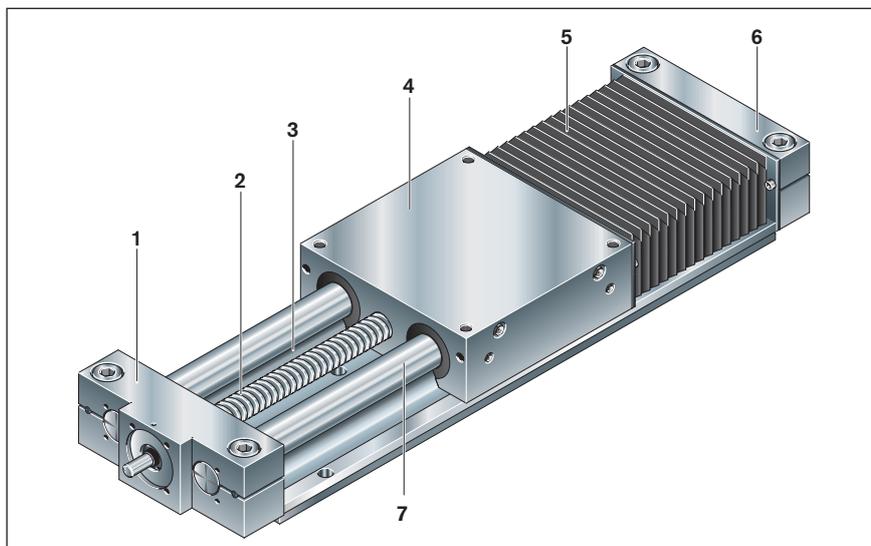


Fig. 1: Components of the Linear Motion Slide with ball screw drive

A Linear Motion Slide with ball screw drive has the following components:

- 1 Fixed bearing end block
- 2 Precision ball screw assembly
- 3 Shaft support rails (for open version SOK only)
- 4 Carriage with four Super Linear Bushings (closed or open type)
- 5 Polyurethane bellows-type protective cover
- 6 Floating bearing end block
- 7 Steel shafts

### 4.3 Identification

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

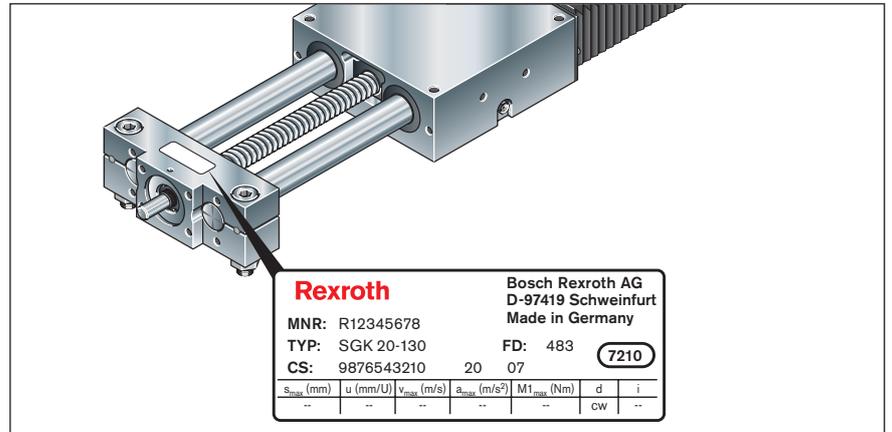


Fig. 2: Nameplate

The nameplate of the Linear Motion Slide carries the following information:

**Table 5: Details given on nameplate**

Nameplate details	Meaning
MNR	Part number
TYP	Type designation and size
CS	Customer order number
FD	Date of manufacture
<b>7210</b>	Manufacturing location

On the nameplate you will find additional technical data for start-up. With these parameters and the EasyWizard software, starting up linear systems is easy, fast and effective ► 7.1 on page 35.

## 5 Transport and storage

### 5.1 Transporting Linear Motion Slides

#### **! WARNING**

##### **Risk of Linear Motion Slide 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 carriage and fasten with care.
- ▶ Do not stand under hoisted loads.

#### **NOTICE**

##### **Risk of damage to motor attachment through vibrations or shocks!**

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 Linear Motion Slide, take note of the weight  
➔ “Linear Motion Slides” catalog, “Technical Data” section.
2. Hoist the Linear Motion Slide as shown in the illustration using suitable load hoisting equipment.

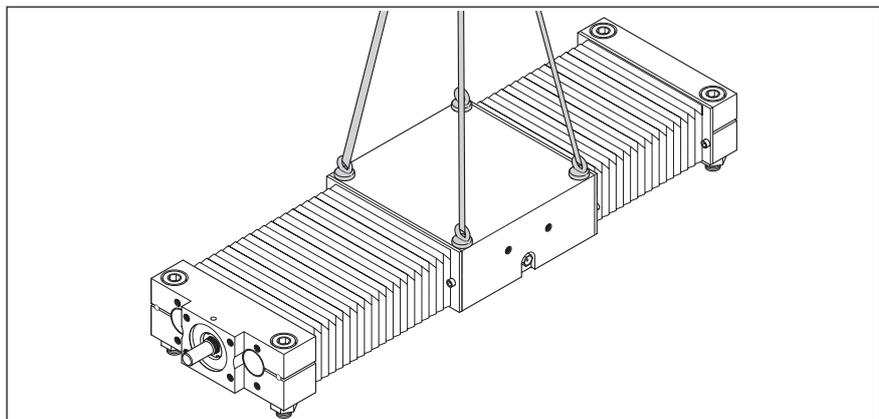


Fig. 3: Hoisting the Linear Motion Slide

### 5.2 Storing Linear Motion Slides

#### **NOTICE**

##### **Risk of damage due to incorrect storage!**

Potential corrosion of Linear Motion Slide parts.

- ▶ Store the Linear Motion Slide only in dry, roofed areas.
- ▶ Protect the Linear Motion Slide from humidity and corrosive agents.

## 6 Mounting

Dimensions and part numbers of the individual components  
➔ “Linear Motion Slides” catalog.

### **⚠ WARNING**

#### **Risk of Linear Motion Slide 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 carriage and fasten with care.
- ▶ Do not stand under hoisted loads.

#### **Risk of Linear Motion Slide crashing down in vertical or hanging installations due to lack of protection against falling loads!**

Severe personal injury or even death.

- ▶ Secure the Linear Motion Slide against dropping.
- ▶ Do not stand under the Linear Motion Slide in the hazard zone.

- ▶ Before hoisting the Linear Motion Slide, take note of the weight  
➔ “Linear Motion Slides” catalog, “Technical Data” section.

### 6.1 Unpacking the Linear Motion Slide

1. Before hoisting the Linear Motion Slide, take note of the weight  
➔ “Linear Motion Slides” catalog, “Technical Data” section.
2. Lift the Linear Motion Slide out of the packaging and remove packaging material.
3. Dispose of the packaging material according to the local regulations in your country.

### 6.2 Required accessories

- ▶ Use suitable screws for fastening.

### 6.3 Installation conditions

- ▶ Consider the operating conditions ➔ 13 on page 54 and “Linear Motion Slides” catalog.
- ▶ For special operating conditions, please ask.

#### NOTICE

##### Risk of damage due to non-permissible loads!

Damage to the product.

- ▶ Do not attach any overhanging loads.

### 6.4 Mounting orientation

The Linear Motion Slide can generally be mounted in any orientation.

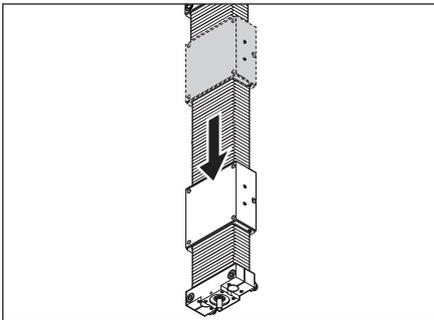


Fig. 4: Secure the carriage and shafts in vertical installations

#### ! WARNING

##### Risk of carriage and shafts crashing down in vertical or slanting installations due to lack of arrestor devices!

Severe personal injury or even death.

- ▶ In vertical or slanting installations, secure the carriage of the Linear Motion Slide so that it cannot drop down.
- ▶ Use suitable screws to clamp the shafts in the end blocks.
- ▶ Do not stand in line with the direction in which the carriage or shafts could fall.

### 6.5 Fastening the Linear Motion Slide SGK to the adjoining structure

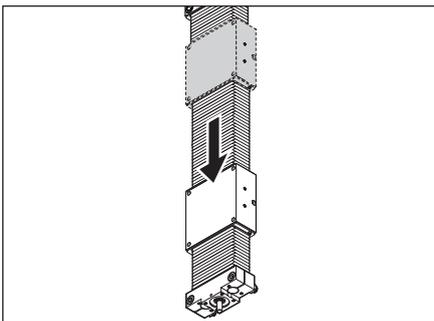


Fig. 5: Secure the carriage and shafts in vertical installations

#### ! WARNING

##### Risk of carriage and shafts crashing down in vertical or slanting installations due to lack of arrestor devices!

Severe personal injury or even death.

- ▶ In vertical or slanting installations, secure the carriage of the Linear Motion Slide so that it cannot drop down.
- ▶ Use suitable screws to clamp the shafts in the end blocks.
- ▶ Do not stand in line with the direction in which the carriage or shafts could fall.

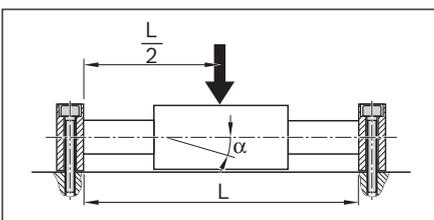


Fig. 6: Check the shaft inclination

#### NOTICE

##### Incorrect fastening may cause the Linear Motion Slide to work loose or become distorted!

Damage to the Linear Motion Slide.

- ▶ Select an appropriate number of supports to meet the requirements on system dynamics.
- ▶ Consider the permissible shaft inclination in the linear bushings ➔ “Linear Motion Slides” catalog.

1. Select appropriate fastening screws for the mounting scenario. For vertical and slanting installations, use longer screws.
2. Secure the screws so that they will not work loose (e.g. using adhesive, self-locking coating, or similar).
3. Align the end blocks.
4. Fasten the Linear Motion Slide to the adjoining structure with screws passing through the end blocks. This will clamp the shafts in the end blocks. Take note of the tightening torques ➔ 13.1 on page 54.

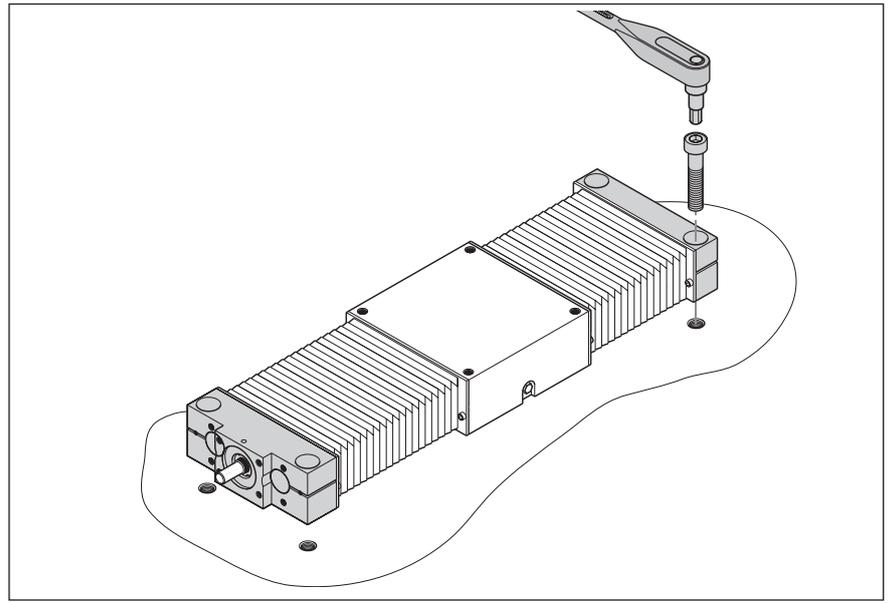


Fig. 7: Fastening the end blocks

5. After all screws have been tightened, check whether the carriage moves easily.
6. If the carriage is difficult to move, loosen the screws and re-align the end blocks.

## 6.6 Fastening the Linear Motion Slide SOK to the adjoining structure

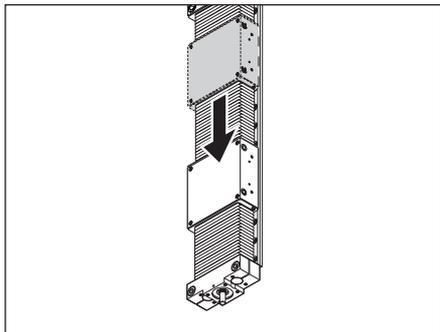


Fig. 8: Secure the carriage and shafts in vertical installations

### **! WARNING**

**Risk of carriage and shafts crashing down in vertical or slanting installations due to lack of arrestor devices!**

Severe personal injury or even death.

- ▶ In vertical or slanting installations, secure the carriage of the Linear Motion Slide so that it cannot drop down.
- ▶ Use suitable screws to clamp the shafts in the end blocks.
- ▶ Do not stand in line with the direction in which the carriage or shafts could fall.

1. Select appropriate fastening screws for the mounting scenario. For vertical and slanting installations, use longer screws.
2. Secure the screws so that they will not work loose (e.g. using adhesive, self-locking coating, or similar).
3. Remove the bellows (if present) ➡ 10.4 on page 48.
4. In versions with bellows, lay bellows support rails on the shaft support rails and align them.
5. Align the first shaft support rail.
6. Fasten the first shaft support rail and bellows support rail using screws as per DIN 6912. Take note of the tightening torques ➡ 13.1 on page 54.

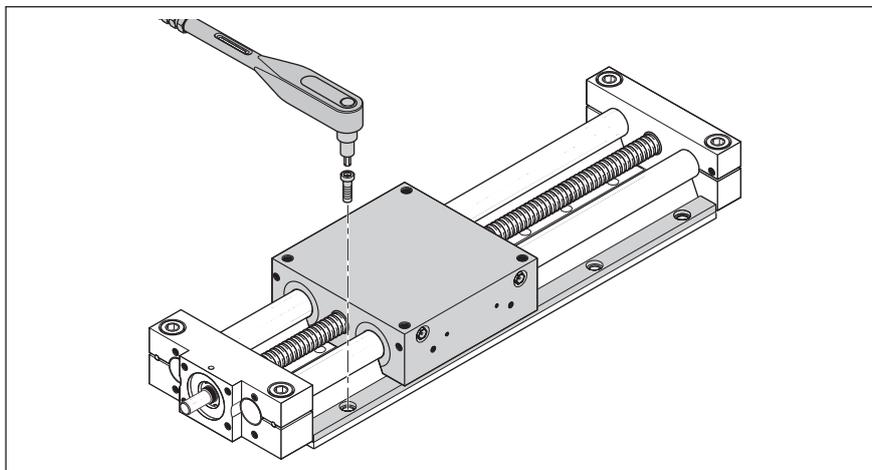


Fig. 9: Fastening the shaft support rails

7. To fasten the second shaft support rail, move the carriage to one end of the Linear Motion Slide and drive in one screw for a few turns without tightening it ➡ ☒ Fig. 9 on page 14.

8. Move the carriage to the other end and tighten the screw. Take note of the tightening torques ➔ 13.1 on page 54.

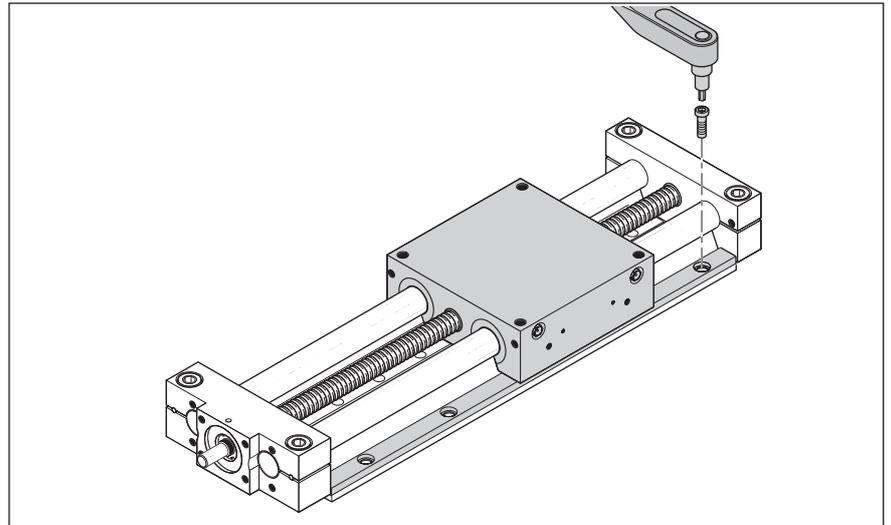


Fig. 10: Fastening the second shaft support rail

9. To tighten the other screws, always move the carriage near to them.
10. After all screws have been tightened, check whether the carriage moves easily.
11. If the carriage is difficult to move, remove the screws and re-align the second shaft support rail.
12. Remove the bellows (if present) ➔ 6.7 on page 15.

## 6.7 Mounting of bellows to the SOK

1. Insert the inner frame (1) into the first or last fold of the bellows so that it will clamp one reinforcing rib of the bellows in place.

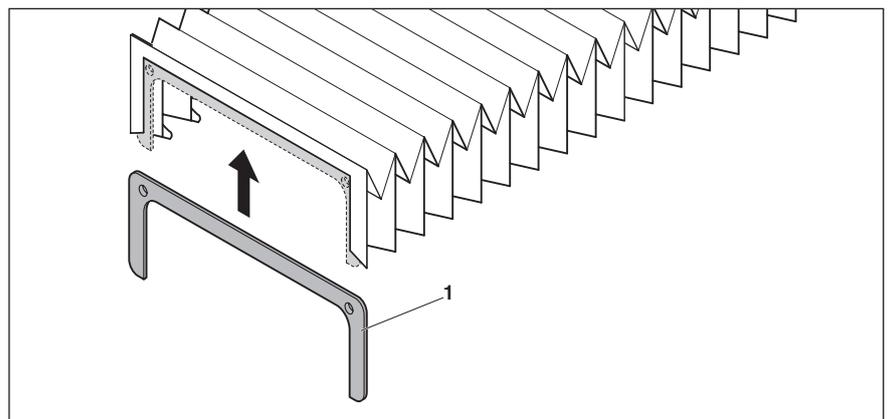


Fig. 11: Inserting the inner frame

- Align the bellows and the inner frame (1) with the outer frame (2).

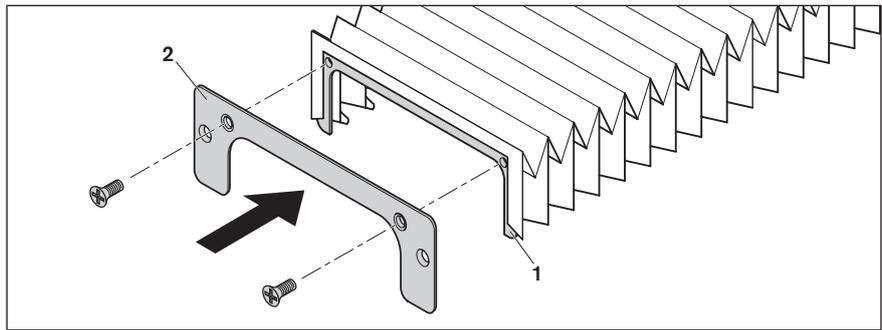


Fig. 12: Fastening the outer frame

- Fasten the outer frame (2) to the inner frame (1).
- Insert one side of the bellows assembly by fitting it around one shaft along its entire length.

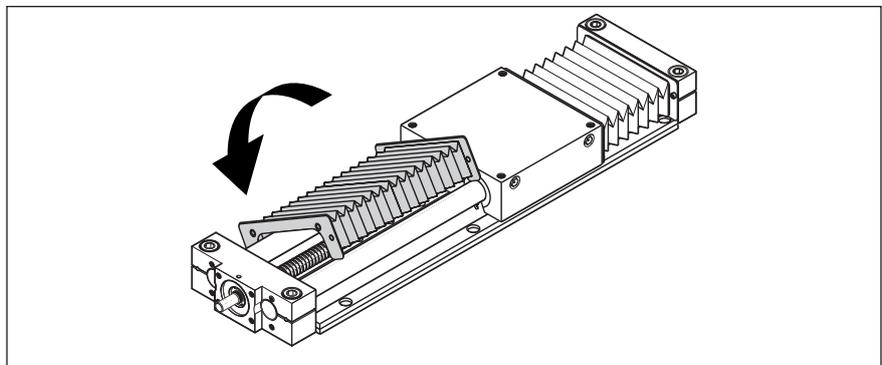


Fig. 13: Inserting the bellows

- Then fit the other side fold by fold, inclining each fold downward around the second shaft and allowing it to snap into place.

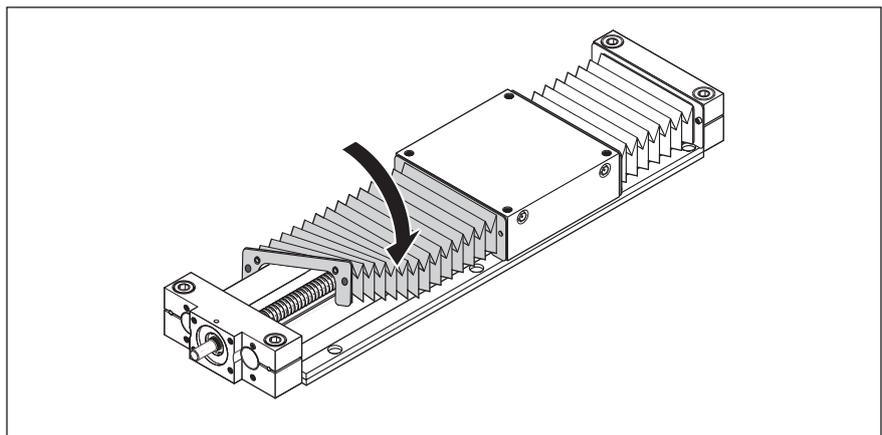


Fig. 14: Fitting the folds around the second shaft

- Align the bellows with the carriage, the floating bearing and the fixed bearing and fasten to the end blocks and the carriage with screws. Take note of the tightening torques ➔ 13.1 on page 54.

## 6.8 Mounting the electric drive

### NOTICE

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

Damage to the Linear Motion Slide.

- Keep within specified maximum values.

Technical data and maximum values ➡ “Linear Motion Slides” catalog.

The Linear Motion Slides SGK/SOK have the following drive options:

- Motor (1) with motor mount and coupling (2)
- Motor (1) with timing belt side drive (3)

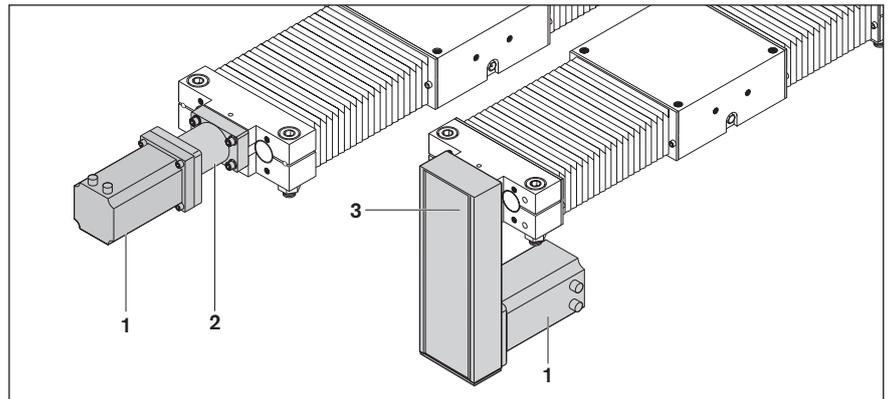


Fig. 15: Drive options for Linear Motion Slides SGK/SOK

### 6.8.1 Mounting the motor via motor mount and bellows coupling



The screw journal of the Linear Motion Slide and the motor journal must be completely free of grease and oil before assembly. Take note of the tightening torques ➡ 13.1 on page 54.

1. Push the motor mount (1) into the locating feature on the Linear Motion Slide and screw down using four screws (2). Take note of the specified tightening torques ➡ Table 21 on page 54.

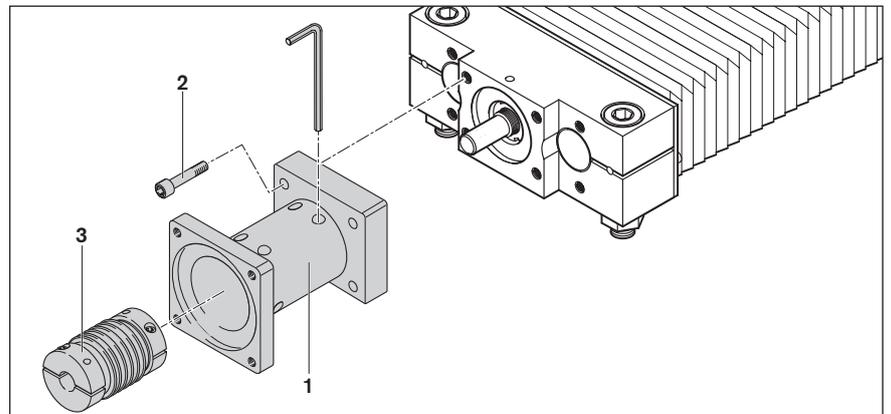


Fig. 16: Mounting the motor mount and coupling

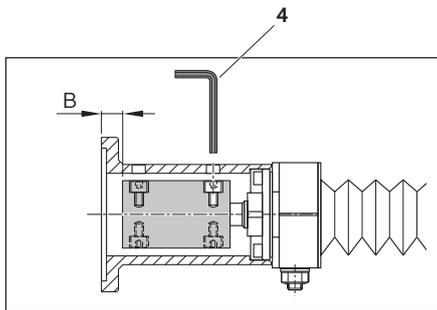


Fig. 17: Mounting screws of the coupling

2. Insert the coupling (3) into the motor mount and push it onto the screw journal of the Linear Motion Slide until a mounting screw of the coupling becomes accessible through the hole in the motor mount.

3. Adjust dimension B as specified in the table.

Table 6: Adjusting dimension B

Motor	B (mm)						
	12-85	16-100	20-130	25-160	30-180	40-230	50-280
MSM 031B	5.5±0.1	5.5±0.1	—	—	—	—	—
MSM 031C	—	—	11.0±0.1	—	—	—	—
MSK 030C	—	—	5.0±0.1	—	—	—	—
MSK 040C	—	—	10.5±0.1	15.0±0.1	15.0±0.1	—	—
MSM041B	—	—	12.5±0.1	21.0±0.1	21.0±0.1	—	—
MSK 060C	—	—	—	—	—	17.5±0.1	17.5±0.1
MSK 076C	—	—	—	—	—	14.0±0.1	14.0±0.1

4. Tighten the mounting screws (4) with the specified tightening torque  $M_{A \max}$ .

Table 7: Tightening torques for coupling

Size	20-130/25-160/30-180		40-230/50-280
8.8	M5	M6	M6
⊙ $M_{A \max}$ (Nm)	8	14	13

5. If necessary for tightening of the second screw (4a), move the carriage (6) so that the screw journal (5) turns.

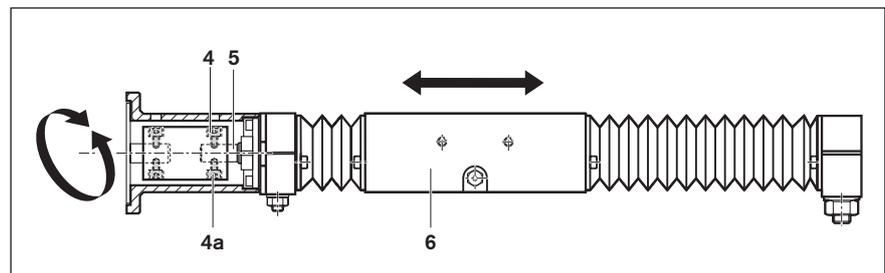


Fig. 18: Moving the carriage

- Insert the motor into the locating feature of the motor mount and coupling.

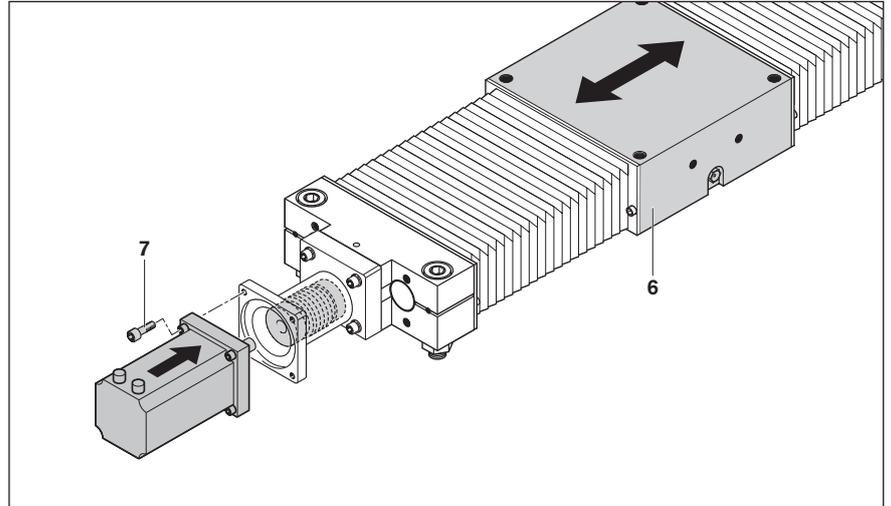


Fig. 19: Fastening the motor

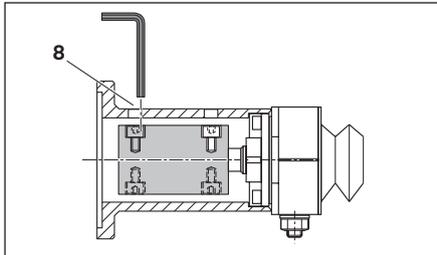


Fig. 20: Motor-side mounting screws of the coupling

- Tighten the four screws (7) to the specified tightening torque ➔ Table 21 on page 54.
- Tighten the motor-side mounting screws (8) of the coupling with the specified tightening torque ➔ Table 7 on page 18.
- If necessary for tightening of the second screw, release the motor brake and move the carriage (6) so that the screw journal turns.

### 6.8.2 Mounting the motor via motor mount and jaw coupling



The screw journal of the Linear Motion Slide and the motor journal must be completely free of grease and oil before assembly.

- Slide one coupling half onto the screw journal of the Linear Motion Slide (1) and the other onto the motor journal (2).

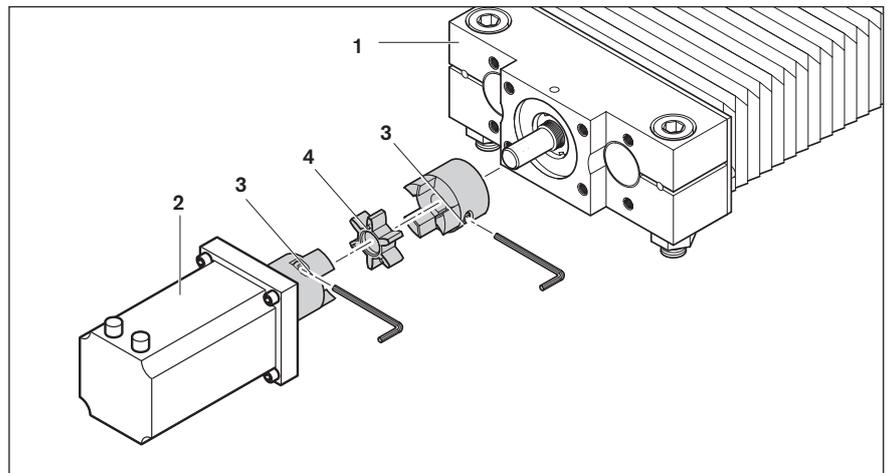


Fig. 21: Fitting the coupling halves

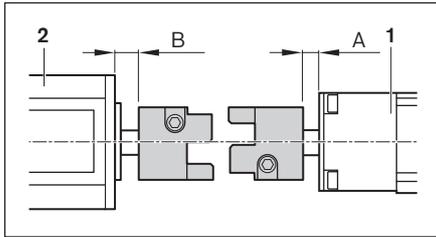


Fig. 22: Dimensions for jaw coupling

- Adjust dimensions A and B as specified in the table.

**Table 8: Dimensions and tightening torques for the jaw coupling**

Size	A (mm) ± 0.1	B (mm) ± 0.1	M <sub>A</sub> (Nm)
12-85, 16-100	1.2	4.0	1.34

- Tighten the screws (3) on the coupling halves to the tightening torque M<sub>A</sub> ➔ Table 8 on page 20.
- Slide the spider (4) onto one of the coupling halves.
- Slide the motor mount over the system-side coupling half into the locating feature of the Linear Motion Slide and screw down to the specified tightening torque ➔ Table 21 on page 54.

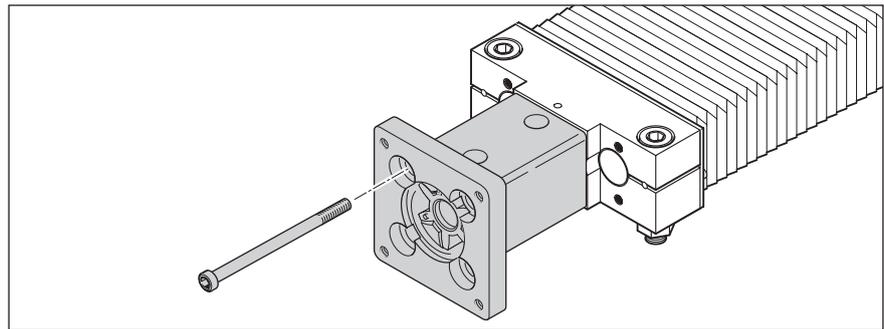


Fig. 23: Fastening the motor mount

- Align the motor and motor-side half of the coupling to the mating coupling half on the system side.

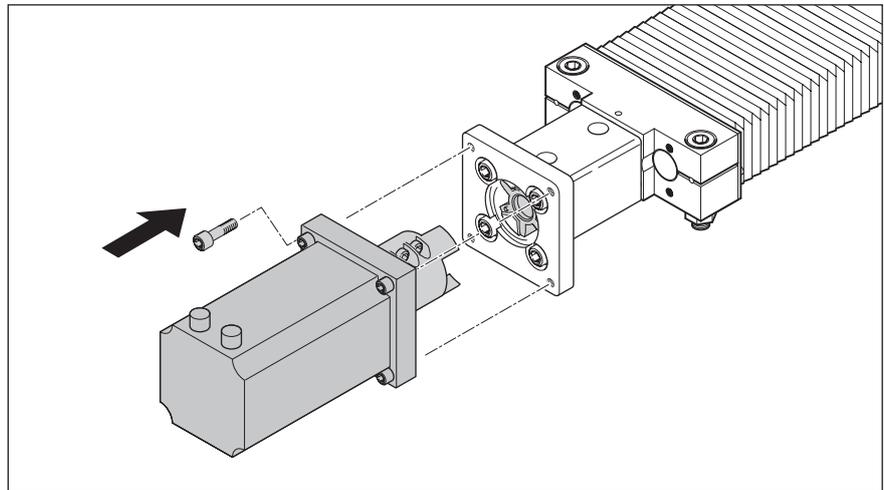


Fig. 24: Aligning the coupling halves

- Press the mating parts of the coupling together firmly.
- Align the motor with the locating feature of the motor mount, push it into the locating feature and screw down to specified tightening torque ➔ Table 21 on page 54.

### 6.8.3 Mounting the motor via timing belt side drive

The timing belt side drive can be installed in four directions at either end.

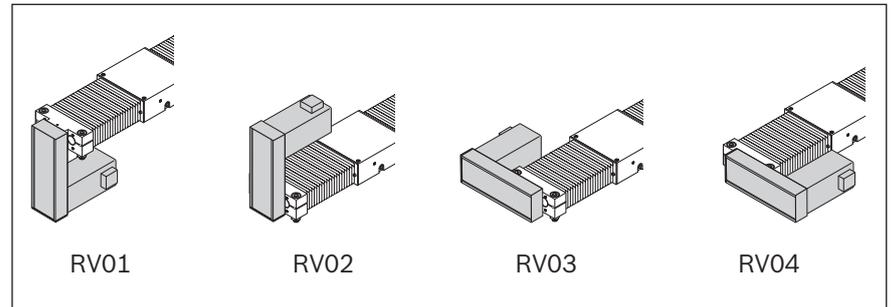


Fig. 25: Attachment options for the timing belt side drive

#### Mounting the housing and system-side belt pulley

1. Close any unused holes with plugs.
2. Screw-fasten the housing of the timing belt side drive to the Linear Motion Slide. Take note of the specified tightening torques  
 ➔ Table 21 on page 54.

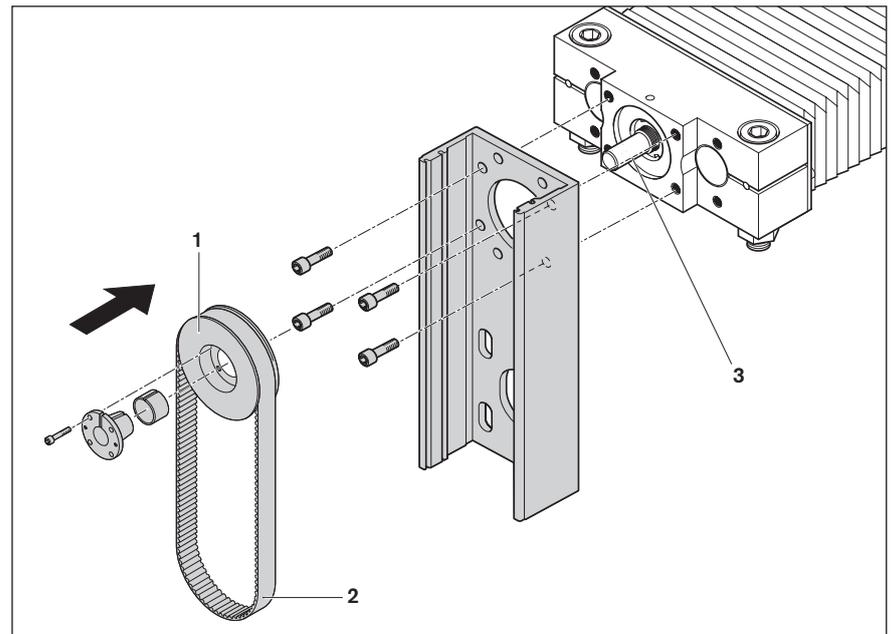


Fig. 26: Mounting the timing belt side drive

3. Push the flanged belt pulley (1) with fitted toothed belt (2) onto the journal of the Linear Motion Slide.

### NOTICE

#### Risk of insufficient lubrication due to use of wrong lubricants!

Damage to the Linear Motion Slide.

- ▶ Do not use oil with MoS<sub>2</sub> additives!

4. Lightly oil the tensioning elements of the tensioning unit.
  5. Type 1: Push on the tensioning unit, lightly tighten the screw (1), align the hub.
- or
5. Type 2: Push on the tensioning unit. The tensioning elements must be completely inserted into the bore of the belt pulley.

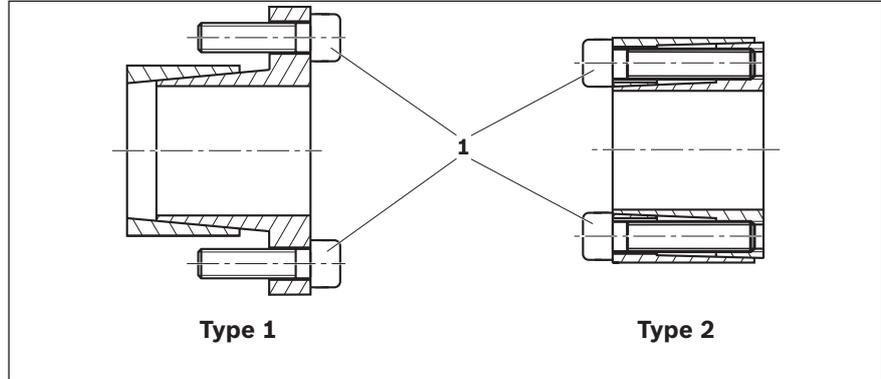


Fig. 27: Tensioning units Type 1 and Type 2

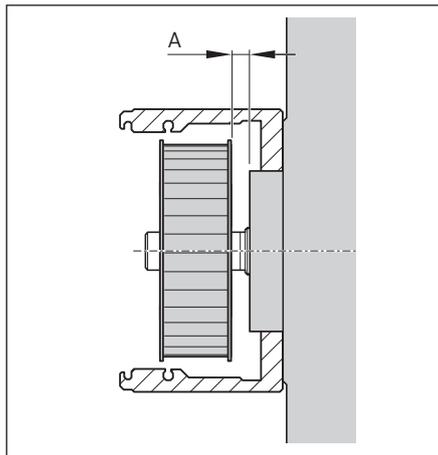


Fig. 28: Clearance A

6. Lightly tighten the screws (1).
7. Adjust clearance A to the housing.

Table 9: Clearances between the system-side belt pulley and the housing

Size	A (mm)	B (mm)
25-160	9.5	9.0
30-180		
40-230	11.0	10.0
50-280		

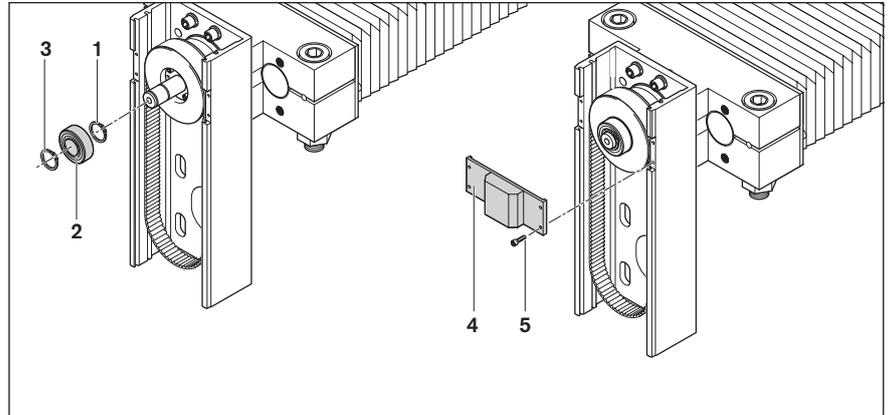
8. Tighten the screws cross-wise in several equal steps until the specified tightening torque is reached.

Table 10: Tightening torques for the tensioning units

$\mu = 0.125$	Type	M2.5	M3	M4	M5	M6
	max. (Nm)	1	-	-	2.9	6.0
	2	1.2	2.1	4.9	9.7	-

**Option: Mounting the counterbearing**

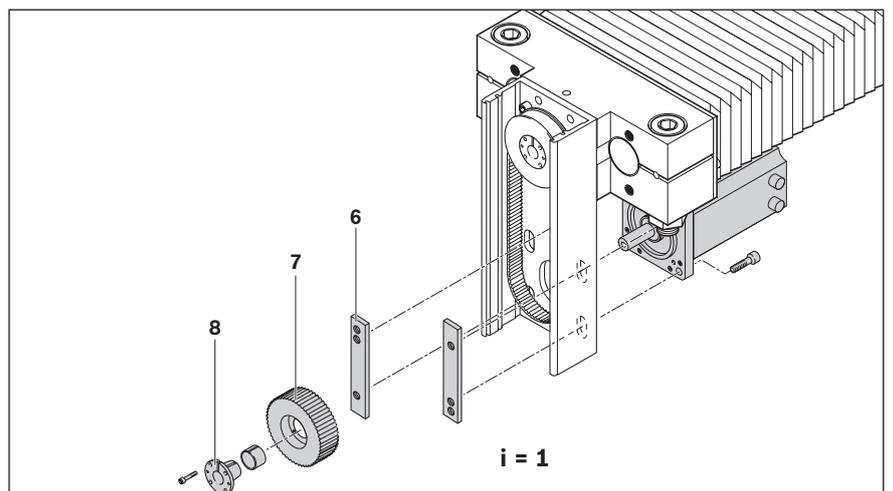
1. Push the first lock washer (1) onto the journal of the Linear Motion Slide to provide a stop.

Fig. 29: **Mounting the counterbearing**

2. Slide the bearing (2) by hand onto the journal of the Linear Motion Slide.
3. Slide the second lock washer (3) onto the journal of the Linear Motion Slide to secure the bearing.
4. Carefully push the bearing flange (4) onto the bearing and screw it down on the housing with screws (5), applying a tightening torque of 1.3 Nm.

**Mounting the motor-side belt pulley and the motor (i = 1)**

1. To make sure the motor-side belt pulley (7) can be easily inserted, pre-mount the motor as close to the Linear Motion Slide as possible using the motor anchor strips (6).

Fig. 30: **Mounting the motor and motor-side belt pulley (i = 1)**

2. Push the belt pulley (7) and tensioning unit (8) onto the motor journal and insert it into the belt.

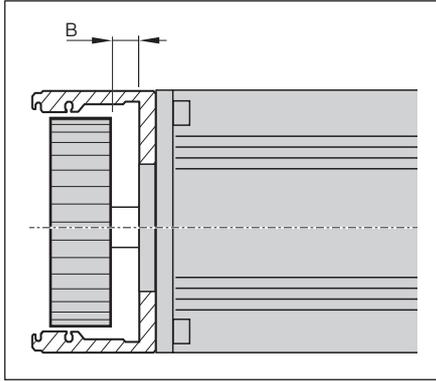


Fig. 31: Clearance B

3. Adjust clearance **B** to the housing ➔ Table 9 on page 22.
  4. Push on the Type 1 tensioning unit, lightly tighten the screws (**9**), align the hub.
- or
4. Push on the Type 2 tensioning unit. The tensioning elements must be completely inserted into the bore of the belt pulley.

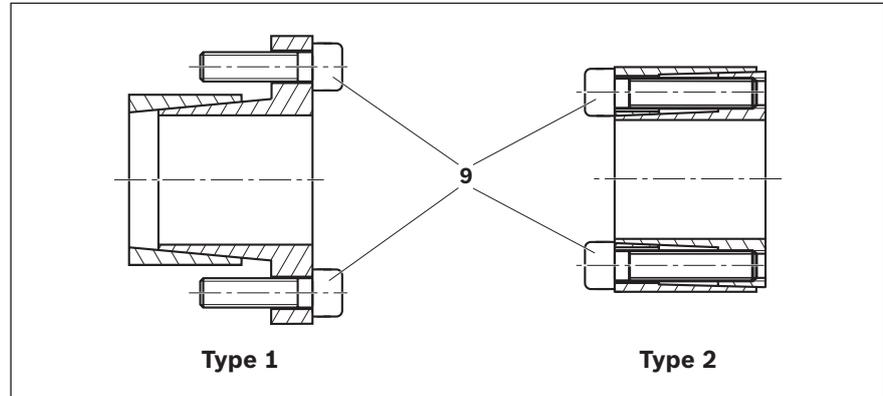


Fig. 32: Tensioning units Type 1 and Type 2

5. Evenly tighten the screws (**9**) cross-wise in several stages to the specified tightening torques ➔ Table 10 on page 22.
6. Loosen the motor mounting screws.
7. Drive suitable screws into the pretensioning threads (**2**) in the two motor anchor strips (**1**).

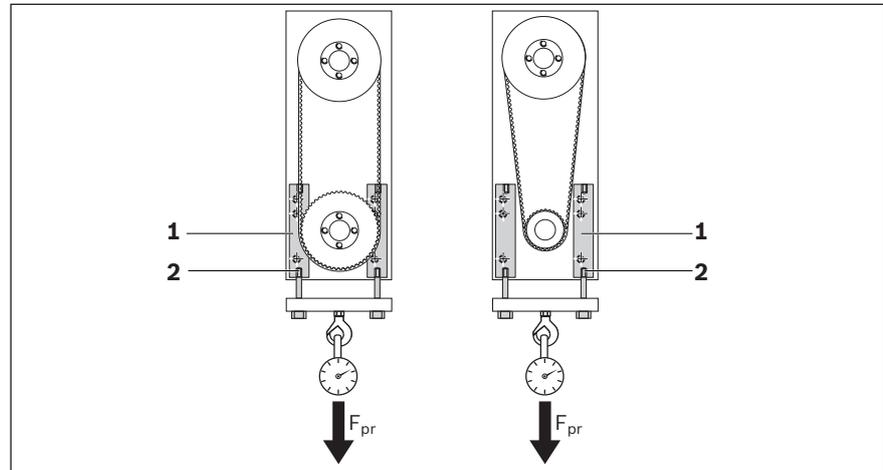


Fig. 33: Tensioning the belt

**i** The pretensioning force  $F_{pr}$  depends on the size of the unit, the motor, belt pulleys, and on the torque. It is indicated on the inside of the gear cover. If the timing belt side drive is not horizontal on assembly, take account of the force due to the weight of the motor!

8. Using the motor anchor strips, pull the motor away from the Linear Motion Slide with pretensioning force  $F_{pr}$  and tighten the mounting screws to the specified torque ➔ Table 21 on page 54.

**Mounting the motor-side belt pulley and the motor ( $i = 1.5 / l = 2$ )**

1. Push the belt pulley (1) and tensioning unit (2) onto the motor journal.

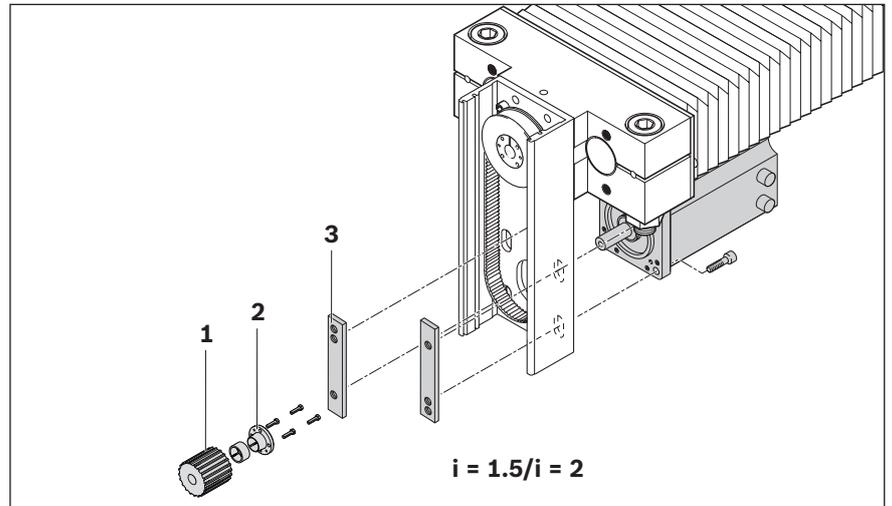


Fig. 34: **Mounting the motor and motor-side belt pulley ( $i = 1.5/2$ )**

2. To make sure the motor-side belt pulley can be easily inserted, pre-mount the motor as close to the Linear Motion Slide as possible using the two motor strips (3).

3. Adjust clearance **C** → Table 11 on page 25.

**Table 11: Pulley-to-motor clearances**

Size	C (mm)
25-160	16.0
30-180	
40-230	19.0
50-280	

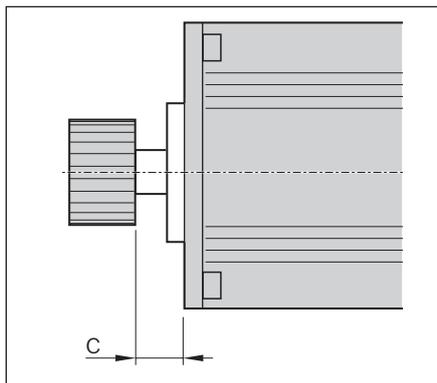


Fig. 35: **Clearance C**

4. Push on the Type 1 tensioning unit, lightly tighten the screw, align the hub.

or

4. Push on the Type 2 tensioning unit. The tensioning elements must be completely inserted into the bore of the belt pulley.

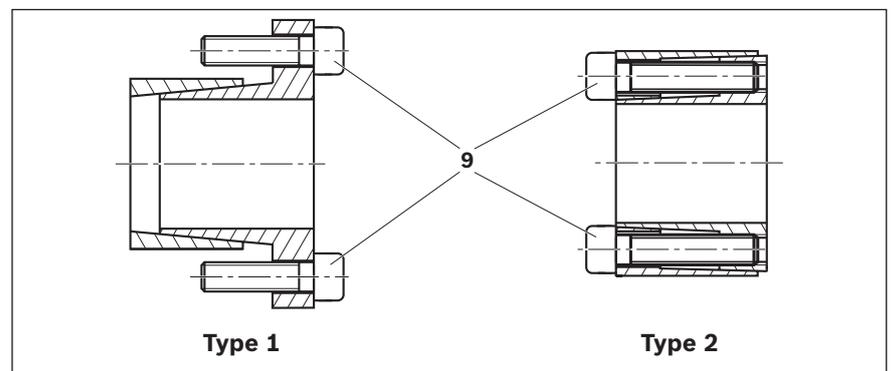


Fig. 36: **Tensioning units Type 1 and Type 2**

5. Evenly tighten the screws cross-wise in several stages to the specified tightening torques → Table 10 on page 22.

6. Loosen the motor mounting screws.
7. Drive suitable screws into the pretensioning threads (2) in the two motor anchor strips (1).

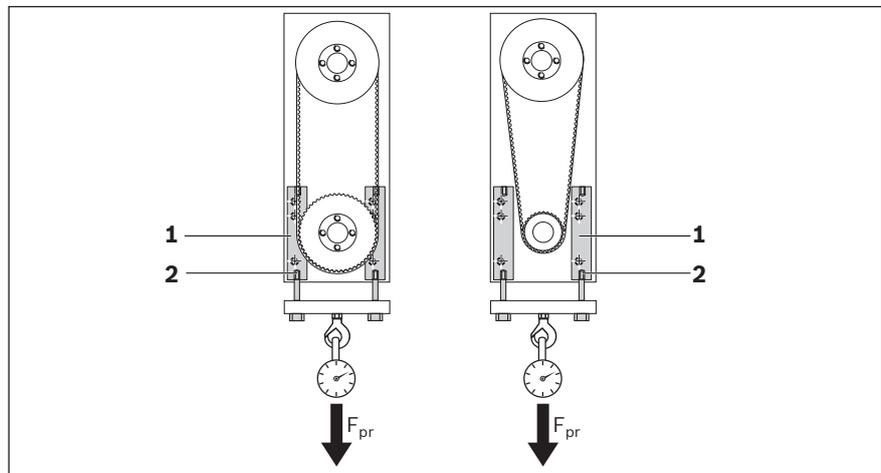


Fig. 37: Tensioning the belt



The pretensioning force  $F_{pr}$  depends on the size of the unit, the motor, belt pulleys, and on the torque. It is indicated on the inside of the gear cover. If the timing belt side drive is not horizontal on assembly, take account of the force due to the weight of the motor!

8. Using the motor anchor strips, pull the motor away from the Linear Motion Slide with pretensioning force  $F_{pr}$  and tighten the mounting screws to the specified torque ➔ Table 21 on page 54.

#### Mounting the cover

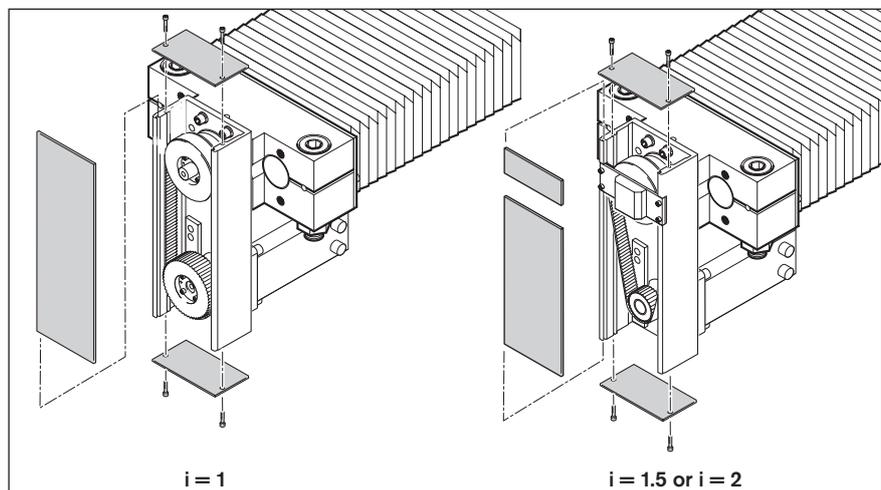


Fig. 38: Fastening the covers

1. Fasten all covers on the housing of the timing belt side drive.
2. Perform a function check.

## 6.9 Mounting the switching system

### NOTICE

#### Potential collision due to wrong mounting of the switching system!

Damage to the Linear Motion Slide, adjoining structure and workpieces.

- ▶ The entire switching system must be mounted on one side of the Linear Motion Slide.
- ▶ Move the carriage by hand to check for potential collision with the carriage or any attached workpiece.

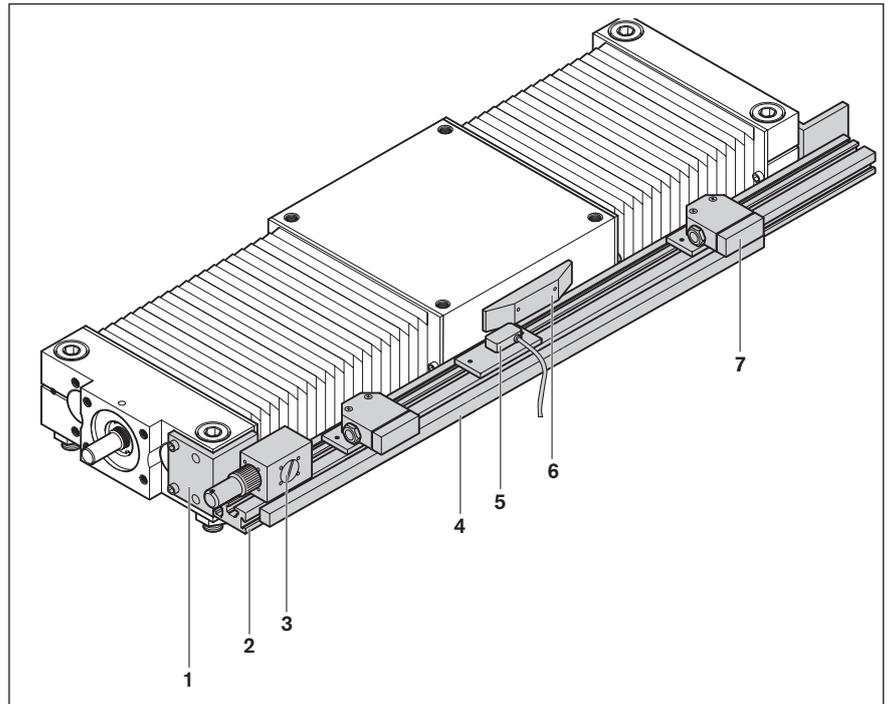


Fig. 39: Switching system with mechanical and proximity switches

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

- 1 Mounting bracket
- 2 Profiled support
- 3 Socket-plug
- 4 Cable duct
- 5 Proximity switch
- 6 Switching cam
- 7 Mechanical switch

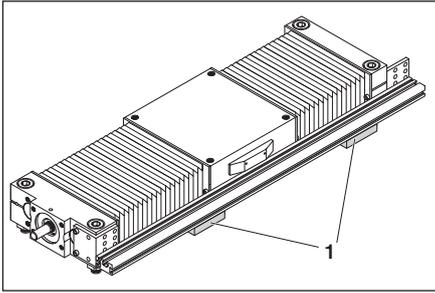


Fig. 40: Provide additional support for the profiled support

## NOTICE

### Measuring accuracy altered by special operating conditions!

Damage to the Linear Motion Slide and workpieces.

- ▶ In special operating conditions (e.g., vibrations, long strokes) the profiled support should be provided with additional support near the switches (1).

1. Mount the switching cam (2) to the carriage with two countersunk screws.

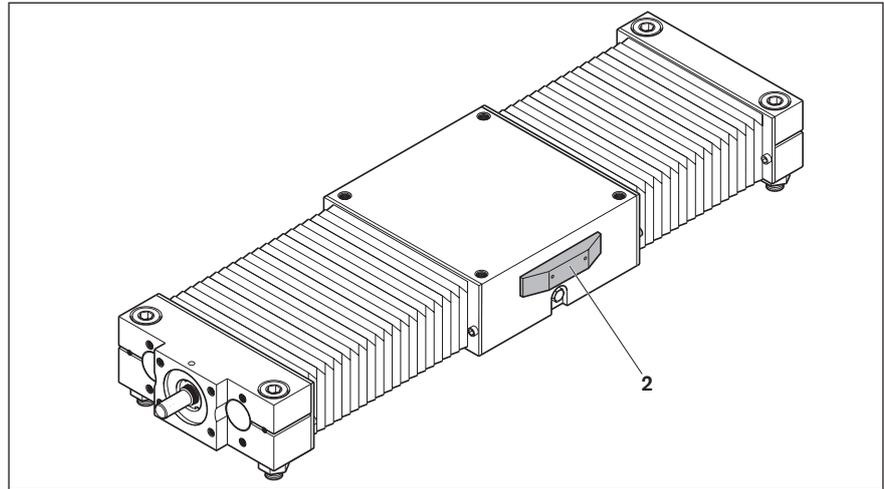


Fig. 41: Mounting the switching cam

**i** If the procedure described below is followed precisely when mounting the profiled support, the system can be easily adapted to the length of the carriage.

2. Cut the profiled support (4) to length and deburr the edges.

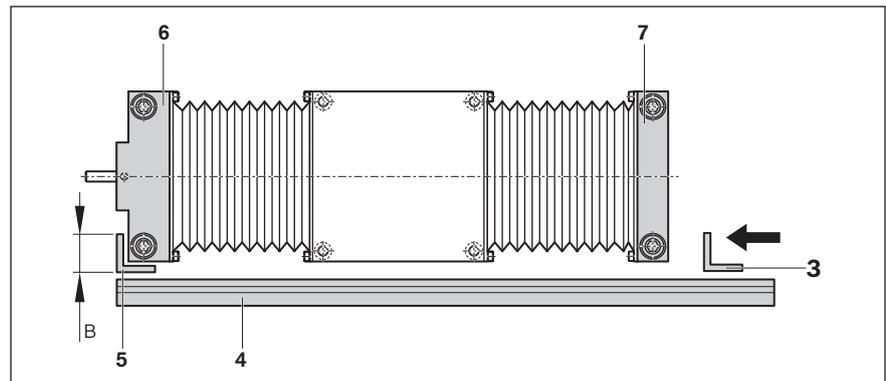


Fig. 42: Mounting the profiled support

3. Align the mounting bracket (5) for the fixed bearing side with the profiled support and screw it down → Table 12 on page 28.
4. Pre-mount the bracket (3) for the floating bearing side on the profiled support so that it can be moved back and forth.
5. Screw down the bracket (5) for the fixed bearing side to the fixed bearing end block (6).
6. Screw down the bracket (3) for the floating bearing side to the floating bearing end block (7).
7. Screw down the bracket (3) for the floating bearing side to the profiled support.

Table 12: Dimensions for bracket on fixed bearing side

Size	B (mm)
SGK / SOK 12- 85	27
SGK / SOK 16-100	30
SGK / SOK 20-130	40
SGK / SOK 25-160	
SGK / SOK 30-180	
SGK / SOK 40-230	
SGK / SOK 50-280	

### Mounting the mechanical switches

1. Solder the wiring to the switch.
2. Screw the switch to the switch mounting plate.
3. Fasten the switch mounting plate to the profiled support using square nuts.
4. Set the switch activation points/distances by adjusting the switch  
 ➔ Table 13 on page 29.

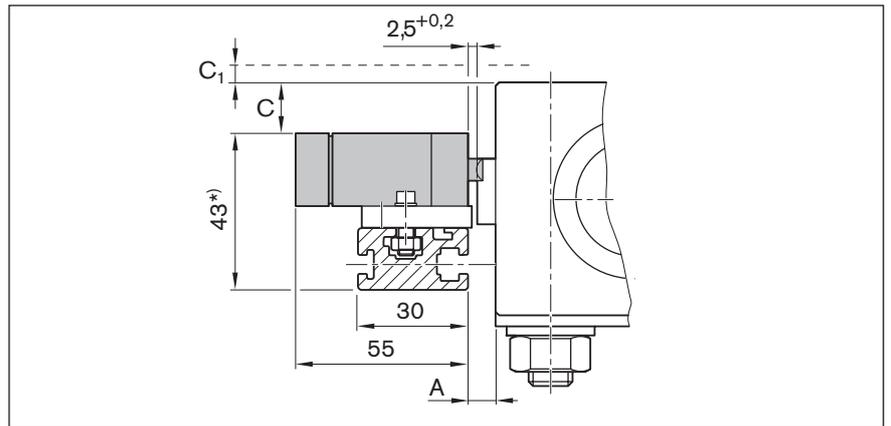


Fig. 43: Switch activation distances for mechanical switches

Table 13: Switch activation distances for mechanical switches

Size	Dimensions (mm)		
	A	C	C <sub>1</sub> <sup>1)</sup>
<b>SGK 12-85</b>	5.5		4
<b>SGK 16-100</b>	5.5		6
<b>SGK 20-130</b>	6.5	4	
<b>SGK 25-160</b>	6.5	7	
<b>SGK 30-180</b>	7.5	14	
<b>SGK 40-230</b>	9.0	2	
<b>SGK 50-280</b>	9.0	2	
<b>SOK 12-85</b>	5.5		2
<b>SOK 16-100</b>	5.5		2
<b>SOK 20-130</b>	6.5	6	
<b>SOK 25-160</b>	6.5	9	
<b>SOK 30-180</b>	7.5	17	
<b>SOK 40-230</b>	9.0	7	
<b>SOK 50-280</b>	9.0	9	

1) The switch projects beyond the upper edge of the carriage.

### Mounting the proximity switches

1. Screw the switch to the switch mounting plate.
2. Fasten the switch mounting plate to the profiled support using square nuts.
3. Set the switch activation points/distances by adjusting the switches  
 ➔ Table 14 on page 30.

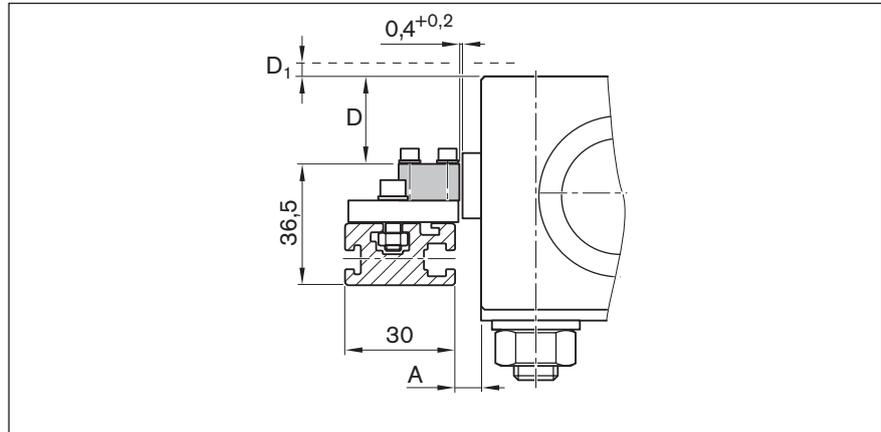


Fig. 44: Switch activation distances for proximity switches

Table 14: Switch activation distances for proximity switches

Size	Dimensions (mm)		
	A	D	D1 <sup>1)</sup>
<b>SGK 12-85</b>	5.5		3.5
<b>SGK 16-100</b>	5.5	0.5	
<b>SGK 20-130</b>	6.5	10.5	
<b>SGK 25-160</b>	6.5	13.5	
<b>SGK 30-180</b>	7.5	20.5	
<b>SGK 40-230</b>	9.0	8.5	
<b>SGK 50-280</b>	9.0	8.5	
<b>SOK 12-85</b>	5.5		1.5
<b>SOK 16-100</b>	5.5	4.5	
<b>SOK 20-130</b>	6.5	12.5	
<b>SOK 25-160</b>	6.5	15.5	
<b>SOK 30-180</b>	7.5	23.5	
<b>SOK 40-230</b>	9.0	13.5	
<b>SOK 50-280</b>	9.0	15.5	

1) The switch projects beyond the upper edge of the carriage.

### Installing the socket

The scope of delivery includes two glands for cable entry into the socket. One gland is pre-drilled with holes to take the cables of two mechanical and one proximity switch.

The socket can be mounted in any cavity in the socket body as required.

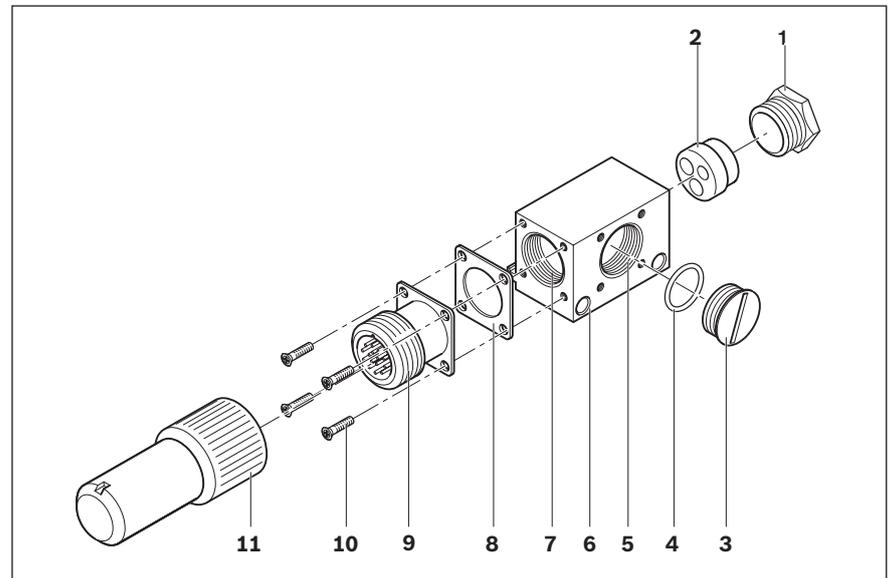


Fig. 45: Socket and socket body

1. For glands which have not been pre-drilled, 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. Connect up/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) with the screws (10).
6. Press in the gland (2) using the compression screw (1).
7. Hook the socket into the profiled support and secure it with set screws!
8. Solder the wires to the terminals in the plug (11).
9. Perform a function check. When doing so, take note of the instructions in section 7 on page 35 .

### Mounting the cable duct



The cable duct will accommodate up to two cables for mechanical switches and three cables for proximity switches.

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.

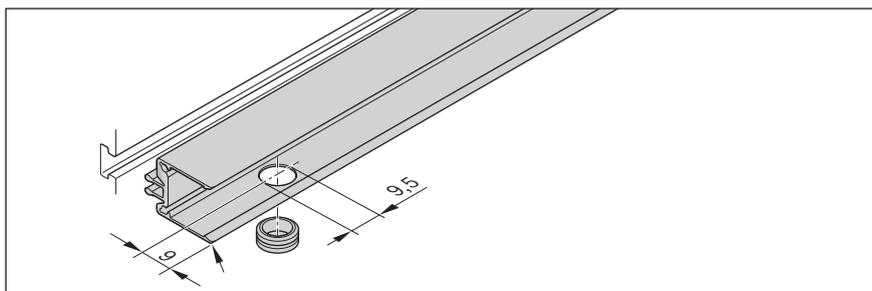


Fig. 46: Preparing the cable duct for mounting

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

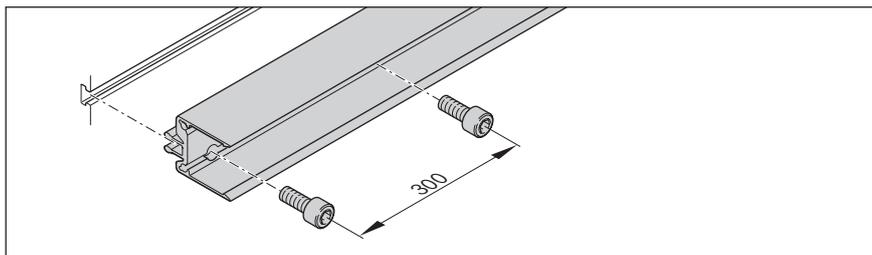


Fig. 47: Drilling mounting holes

5. Clip the duct into the T-slot on the Linear Motion Slide 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.

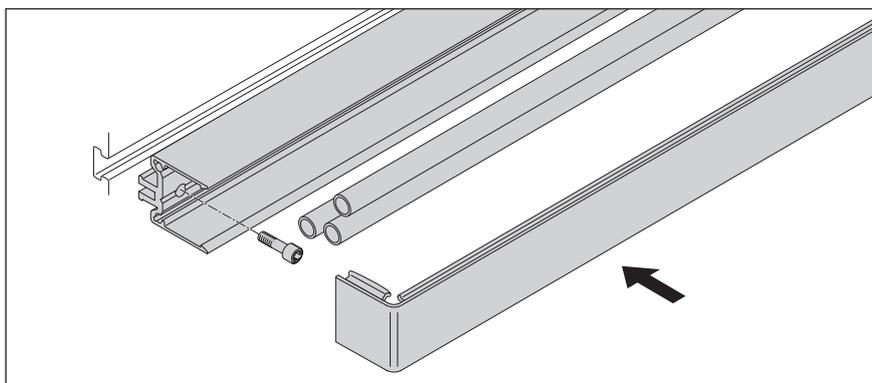


Fig. 48: Mounting the cable duct

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.

**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.

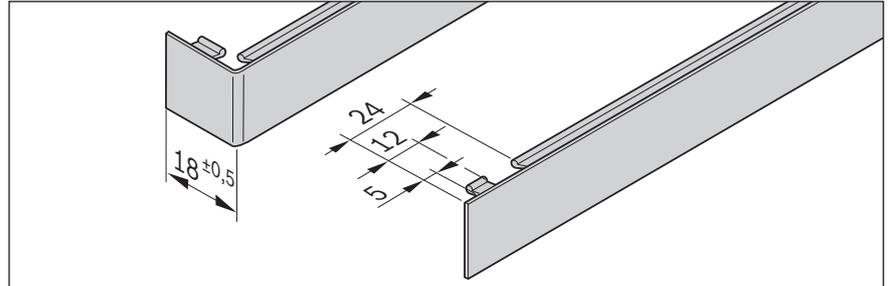


Fig. 49: Measuring out the cable duct cover strip with an end closer

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.

## 6.10 Connecting the electrical power supply to the Linear Motion Slide

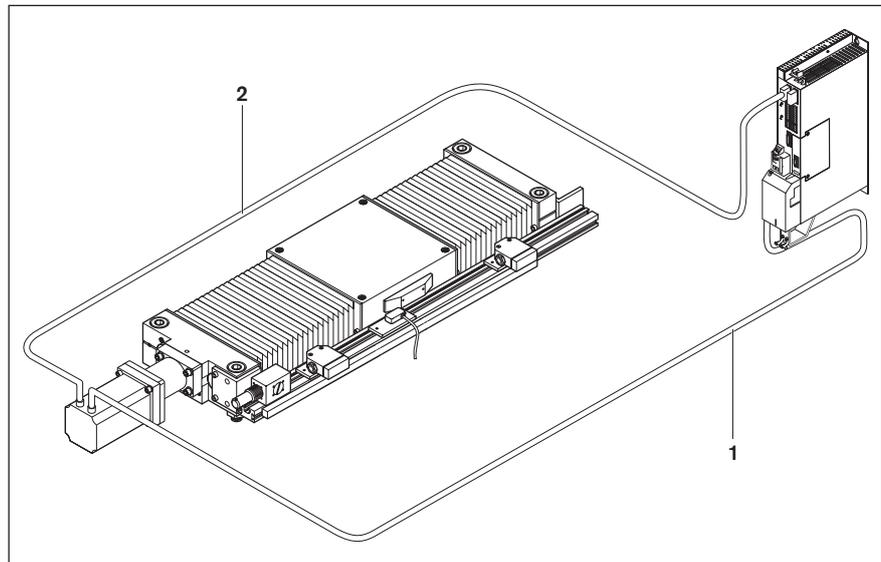


Fig. 50: Connecting the electrical power supply to the Linear Motion Slide

### **⚠ 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!
- ▶ Consult the documentation for the motor/controller used.
- ▶ Route the motor cables (**1**) at a distance from the encoder cables (**2**)!

## 7 Putting into service

- ▶ The Linear Motion Slide 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 Easy start-up thanks to integrated assistant

EasyWizard is an assistant that is integrated as a standard feature of Rexroth's engineering framework IndraWorks DS. It was designed to help users start-up linear systems easily, rapidly and safely. The simplified start-up procedure is based on preconfigured data sets and a linear system nameplate designed to dovetail with the assistant.

- Fast, simple and intuitive start-up
- Online help texts and supporting graphics guide you through the input fields.
- Plausibility checks for free data input
- Suitable for all Rexroth linear systems
- Parameter input errors are minimized by having the data on the nameplate and in the Wizard input mask arranged in a similar order.
- For system optimization after parameter input, the axis can be run in the test mode.

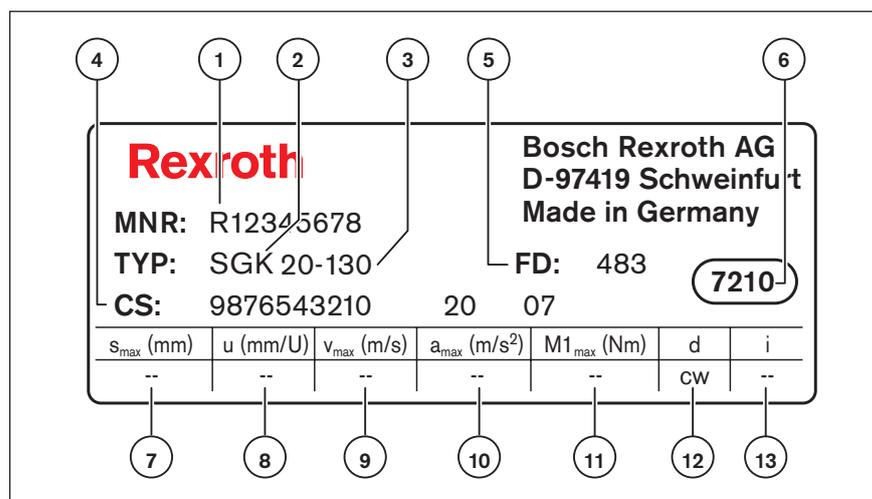


Fig. 51: Nameplate

- |  |   |
|--|---|
| 1 Part number                                    | 9 $v_{\max}$ – max. linear speed without gear unit (m/s)                |
| 2 Type designation                               | 10 $a_{\max}$ – max. acceleration without gear unit (m/s <sup>2</sup> ) |
| 3 Size   | 11 $M1_{\max}$ – max. drive torque at motor journal (Nm)                |
| 4 Customer information                           | 12 $d$ – motor torque for travel in positive direction                  |
| 5 Date of manufacture                            | 13 $i$ – gear ratio   |
| 6 Manufacturing location                         |   |
| 7 $s_{\max}$ – max. travel range (mm)            |   |
| 8 $u$ – lead constant without gear unit (mm/rev) |   |

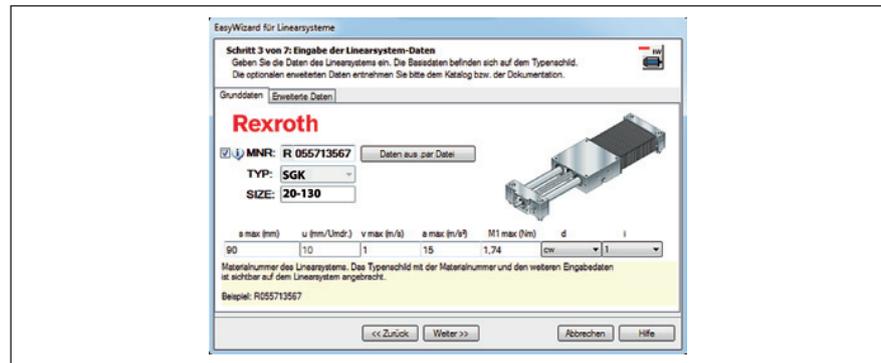


Fig. 52: Screen shot of the EasyWizard software

## 7.2 Checking the operating conditions

- ▶ Check the ambient temperature, operating loads, ball screw speed, travel speed, and stroke → 13 on page 54 and “Linear Motion Slides” catalog.
- ▶ For special operating conditions, please ask.

## 7.3 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 running in or operation, do not touch the motor or only when wearing suitable protective equipment (e.g. heat-resistant gloves).
- ▶ The Linear Motion Slide 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.

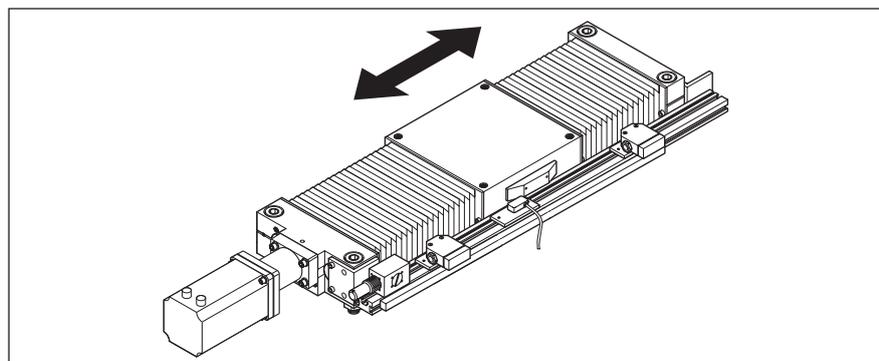


Fig. 53: Traversing the Linear Motion Slide

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

## 7.4 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 ➔ 6.9 on page 27.



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. ➔ product catalog.

- ▶ During operation, be sure to comply with technical data such as load capacities, moments, maximum rotary speeds, motor data, etc. ➔ "Linear Motion Slides" catalog.

## 9 Maintenance and repair

The only maintenance required is lubrication of the Ball Screw and the Linear Bushings using a commercially available manual grease gun. Basic lubrication is carried out by the manufacturer.

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

### 9.1 Lubrication

- ▶ Before using lubricants, read and take note of the corresponding material safety data sheets!

<i><b>NOTICE</b></i>
<p><b>Risk of property damage due to insufficient lubrication!</b></p> <p>Loss of performance and corrosion.</p> <ul style="list-style-type: none"> <li>▶ Lubricate the Linear Motion Slide every 500 operating hours or when the specified travel distance has been covered – whichever limit is reached first ➡ Table 16 on page 40.</li> </ul>
<p><b>Risk of insufficient lubrication due to use of wrong lubricants!</b></p> <p>Damage to Linear Motion Slide, reduction in relubrication intervals, travel in short-stroke applications, and load capacities; possible chemical interactions between plastic materials and lubricants.</p> <ul style="list-style-type: none"> <li>▶ Do not use lubricants containing solid particles (e.g. graphite or MoS<sub>2</sub>)!</li> <li>▶ Use only the recommended lubricants ➡ Table 15 on page 39.</li> </ul>
<p><b>Reduced lubrication intervals in special environmental conditions (dirt, vibrations, impacts, etc.)!</b></p> <p>Inadequate lubrication.</p> <ul style="list-style-type: none"> <li>▶ Reduce the recommended relubrication intervals to suit the given environmental conditions.</li> <li>▶ Even under normal operating conditions, the system must be relubricated <b>at the latest after 2 years</b> due to aging of the grease.</li> </ul>
<p><b>Performance altered by special operating conditions!</b></p> <p>Damage to the Linear Motion Slide.</p> <ul style="list-style-type: none"> <li>▶ Before putting the Linear Motion Slide into service under special operating conditions (➡ 13 on page 54) please consult Bosch Rexroth AG. This applies especially to environments with glass fiber or wood dust, solvents, extreme temperatures, and for short-stroke applications.</li> </ul>

### 9.1.1 Lubrication intervals

Every 500 operating hours or when a travel distance of  $3 \times 10^5$  m has been covered – whichever is reached first.

- ▶ For special operating conditions (e.g. unusual mounting configuration, dust, solvents, etc.), the lubricants must be adapted to the application case.
- ▶ For normal operating conditions, relubricate **after 2 years at the latest** (due to aging of grease).

### 9.1.2 Lubricant quantities

Linear Motion Slides have been designed for lubrication with grease only using a manual grease gun!

Do not use greases containing solid particles (e.g. graphite or  $\text{MoS}_2$ )!

Recommended lithium soap greases ➡ Table 16 on page 40.

**Table 15: Recommended lubricant**

Grease Consistency class NLGI 2 as per DIN 51818	Part number
We recommend: Dynalub 510 (Bosch Rexroth)	Cartridge (400 g) R341603700 Bucket (5 kg) R341603500
May also be used: Elkalub GLS 135 / N2 (Chemie-Technik) Castrol Longtime PD2 (Castrol)	

Table 16: Lubricant quantities for SGK/SOK

Size	Construction form		Relubrication quantity (g)			Travel (km)
	with drive unit	BS d <sub>0</sub> xP	S1	S2	S3	
12-85	SGK	8x2.5	3.5	-	-	125
	SOK	8x2.5	-	3.9	2.6	125
16-100	SGK	12x5	6.0	-	-	250
		12x10	6.0	-	-	500
	SOK	12x5	-	5.6	3.7	250
		12x10	-	5.6	3.7	500
20-130	SGK	16x5	8.4	-	-	250
		16x10	8.4	-	-	500
		16x16	8.4	-	-	800
	SOK	16x5	-	9.8	6.5	250
		16x10	-	9.8	6.5	500
		16x16	-	9.8	6.5	800
25-160	SGK	20x5	9.8	-	-	250
		20x20	9.8	-	-	1000
		25x10	9.8	-	-	500
	SOK	20x5	-	16.7	11.2	250
		20x20	-	16.7	11.2	1000
		25x10	-	16.7	11.2	500
30-180	SGK	20x5	16.3	-	-	250
		20x20	16.3	-	-	1000
		25x10	16.3	-	-	500
	SOK	20x5	-	25.1	16.7	250
		20x20	-	25.1	16.7	1000
		25x10	-	25.1	16.7	500
40-230	SGK	32x5	35.8	-	-	250
		32x10	35.8	-	-	500
		32x20	35.8	-	-	1000
		32x32	35.8	-	-	1600
	SOK	32x5	-	26.5	17.7	250
		32x10	-	26.5	17.7	500
		32x20	-	26.5	17.7	1000
		32x32	-	26.5	17.7	1600
50-280	SGK	32x5	55.8	-	-	250
		32x10	55.8	-	-	500
		32x20	55.8	-	-	1000
		32x32	55.8	-	-	1600
	SOK	32x5	-	69.8	46.5	250
		32x10	-	69.8	46.5	500
		32x20	-	69.8	46.5	1000
		32x32	-	69.8	46.5	1600

### 9.1.3 Lubricating the Linear Motion Slide

Linear Motion Slides have been designed for lubrication with grease only. Do not use greases containing solid particles (e.g. graphite or MoS<sub>2</sub>)! Recommended lithium soap grease ➔ Table 15 on page 39.

There are lube nipples on both sides of the carriage. Lubricating from one side only is sufficient.

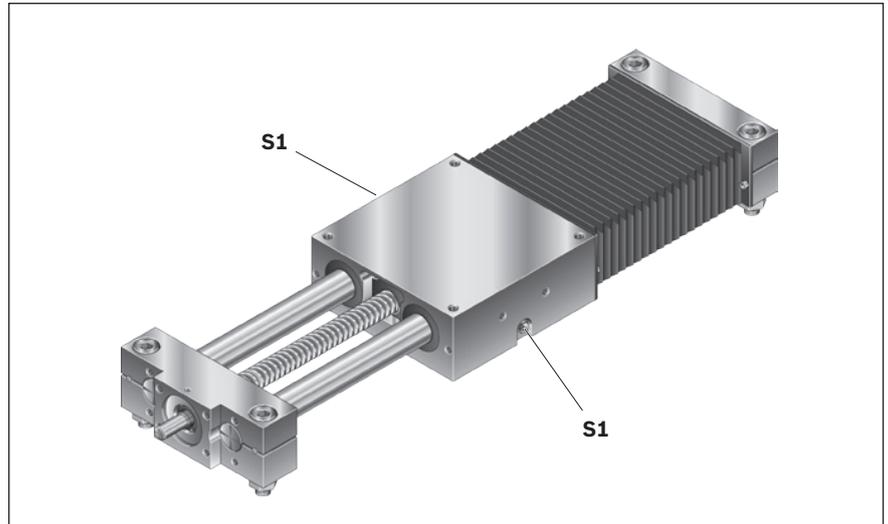


Fig. 54: Lubricating the Linear Motion Slide SGK

**S1** = One-point lubrication in closed-type construction form SGK

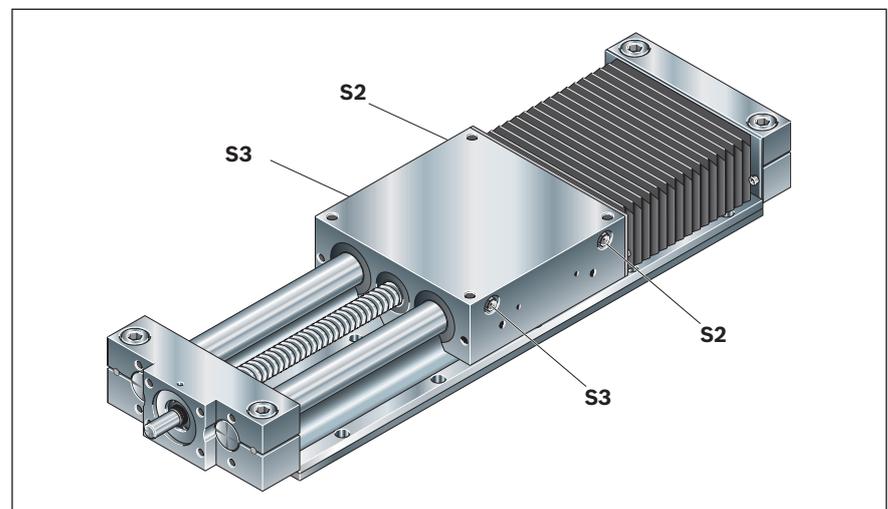


Fig. 55: Lubricating the Linear Motion Slide SOK

**S2** = Lube nipple in the open type SOK for the linear bushing pair on the floating bearing side, and for the ball screw drive.

**S3** = Lube nipple in the open type SOK for the linear bushing pair on the fixed bearing side.

**Table 17: Lube nipples according to size**

Size SGK/SOK	Lube nipple
12-85 ... 20-130	DIN 3405 AM 6
25-160 ... 50-280	DIN 3405 AM 8x1

1. Check that the operating conditions are normal  
    ➡ “13 Operating Conditions” on page 54.
2. Clean shafts, if necessary.
3. Lubricate the Linear Motion Slide using a manual grease gun. Move the carriage back and forth and repeat the lubricating procedure. When doing so, weigh out the quantity of grease per stroke ➡ Table 16 on page 40.
4. For the open type SOK, lubricate one S2 and one S3 lube nipple in each case ➡  Fig. 55 on page 41.  
    The lubricant will reach the Linear Bushing guides and the Ball Screw Assembly during the lubricating procedure.

## 9.2 Repairs

Repairs to Linear Motion Slides may only be carried out by Bosch Rexroth.

## 10 Removal and replacement

To assure the accuracy of the Linear Motion Slide after replacement of assemblies (e.g. ball screw assembly, carriage, frame, screw supports, 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.

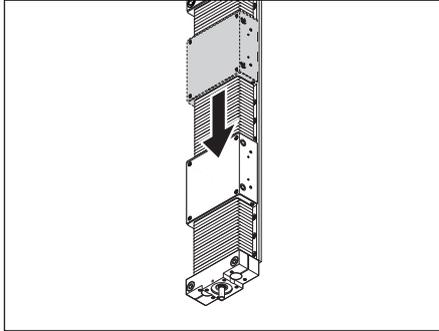


Fig. 56: Secure the carriage and shafts in vertical installations

### **⚠ WARNING**

#### **Risk of carriage and shafts crashing down in vertical or slanting installations due to lack of arrestor devices!**

Severe personal injury or even death.

- ▶ In vertical or slanting installations, secure the carriage and shafts of the Linear Motion Slide against dropping down before loosening the mounting screws.
- ▶ Do not stand in line with the direction in which the carriage or shafts 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.

### 10.1 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. For mechanical switches, unsolder the wiring.
2. Unscrew the switch mounting plate.
3. Unscrew the switch.

## 10.2 Removing the cable duct

1. Use a screwdriver to prize open the cover strip at the end of the cable duct.

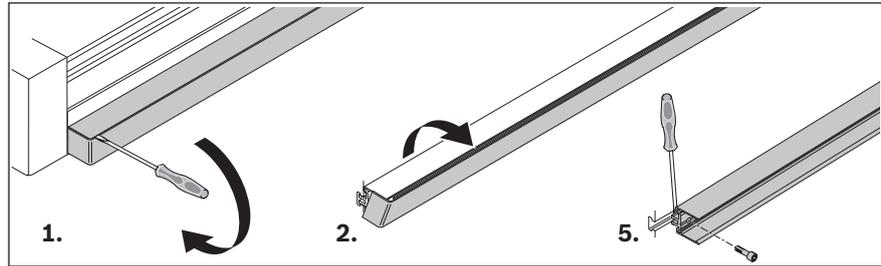


Fig. 57: Removing the cable duct

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.

## 10.3 Removing the drive

### 10.3.1 Removing the motor with motor mount and coupling

#### Removing the motor with motor mount and bellows coupling

1. Shift the carriage (2) back and forth until the fixing screws on the motor side of the coupling are accessible through the holes in the motor mount. Remove the motor-side screws from the coupling.

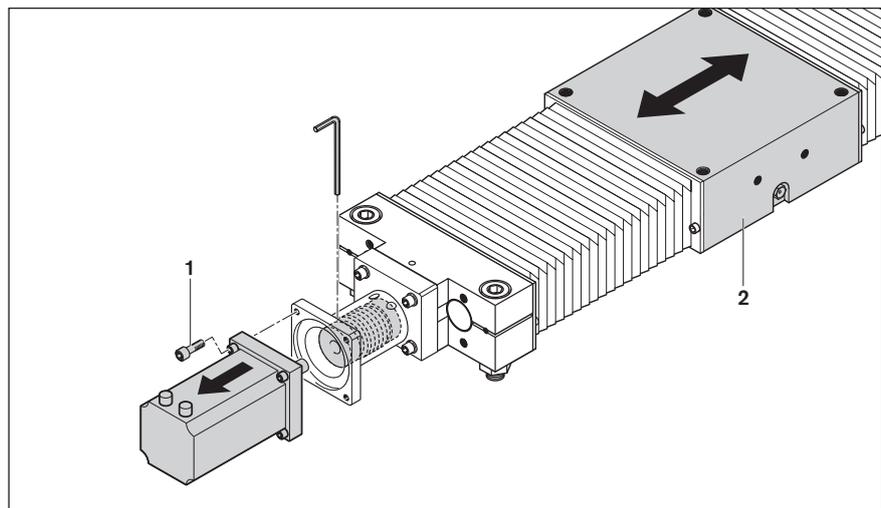


Fig. 58: Removing the motor / motor mount and bellows coupling

2. Unscrew four screws (1).
3. Pull the motor out of the motor mount and coupling.

4. Remove the screws (3) on the motor mount.

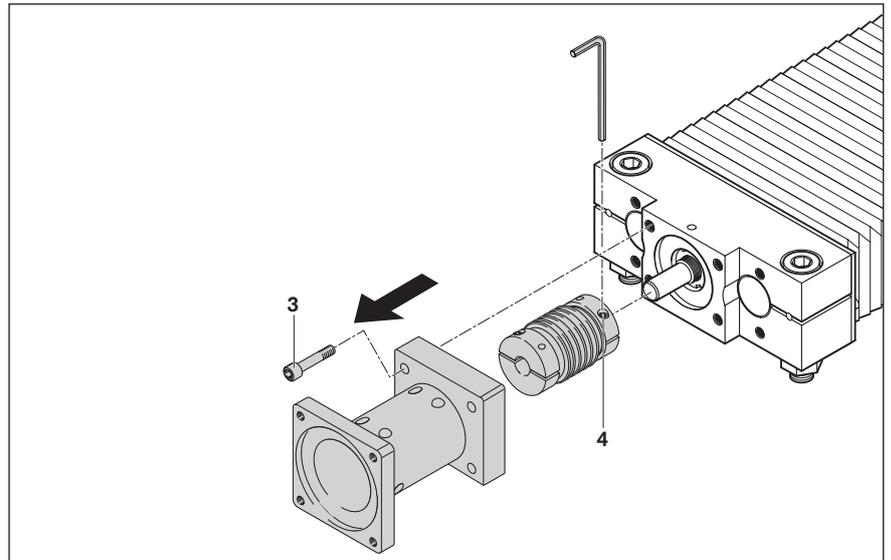


Fig. 59: Remove the motor mount and bellows coupling

5. Pull the motor mount off the Linear Motion Slide.
6. Remove the screws (4) from the coupling on the screw journal side.
7. Pull off the coupling.

#### Removing the motor with motor mount and jaw coupling

1. Unscrew four screws (1).

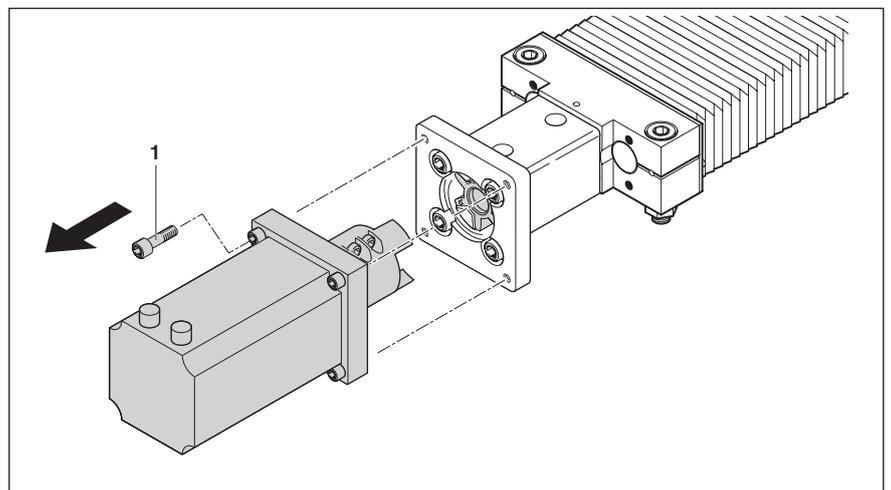


Fig. 60: Removing the motor / motor mount and jaw coupling

2. Pull the motor out of the motor mount and coupling.

3. Remove the four screws from the motor mount.

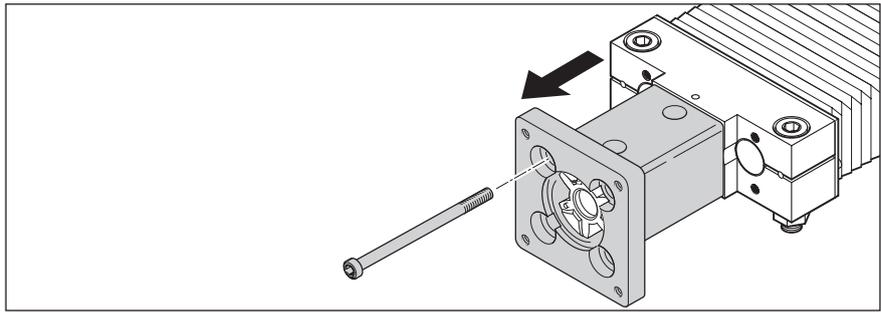


Fig. 61: Removing the motor mount / jaw coupling

4. Pull off the motor mount.
5. Remove the screw on the coupling half at the screw journal of the Linear Motion Slide and the screw on the coupling half at the motor.

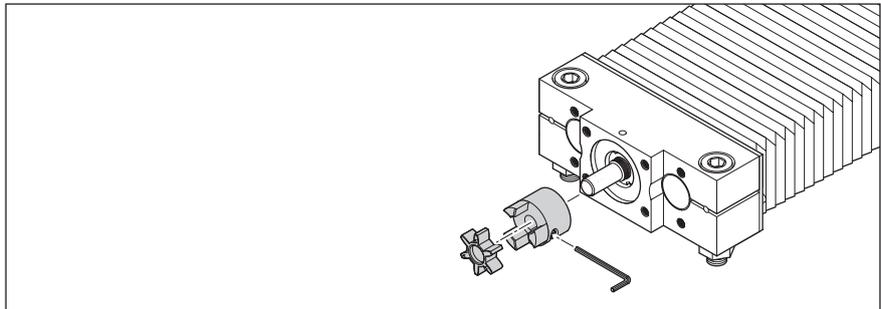


Fig. 62: Removing the jaw coupling

6. Pull off the coupling halves.

### 10.3.2 Removing the motor with timing belt side drive

#### **⚠ CAUTION**

**Potential uncontrolled motion of the pretensioned toothed belt when loosening the screws!**

Risk of injury.

- ▶ Take care when unscrewing the mounting screws on the motor.



When removing the timing belt side drive, please take account of the different attachment options ➔ 10.3.2 on page 47.

1. Remove the covers from the housing as required.

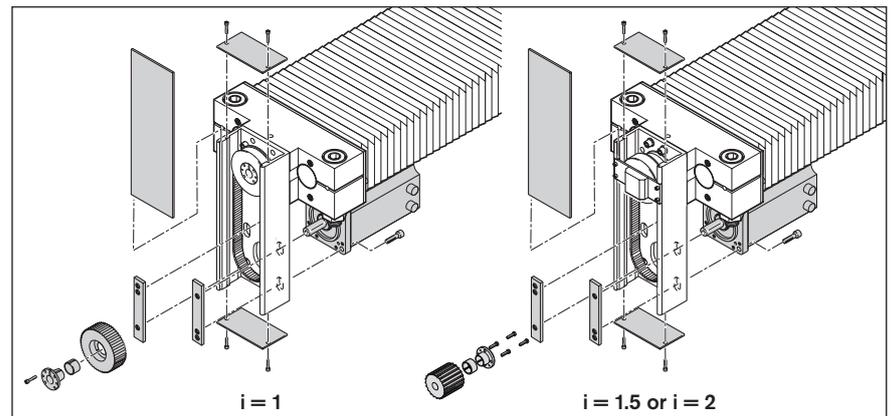


Fig. 63: Removing the motor with timing belt side drive

#### **Gear ratio $i = 1$ :**

2. Loosen the motor mounting screws.
3. Push the motor as close as possible to the Linear Motion Slide.
4. Loosen the tensioning unit on the motor-side belt pulley. Tapped holes for jack screws are provided in the tensioning units as dismantling aids.
5. Remove the mounting screws from the motor. Remove the motor and the motor anchor strips.

#### **Gear ratio $i = 1.5$ or $i = 2$ :**

2. Loosen the motor mounting screws.
3. Push the motor as close as possible to the Linear Motion Slide.
4. Remove the mounting screws from the motor. Remove the motor and the motor anchor strips.
5. Loosen the tensioning unit on the belt pulley. Tapped holes for jack screws are provided in the tensioning units as dismantling aids.
6. Remove the belt pulley with tensioning unit.

## 10.4 Removing the bellows

1. Remove the motor → 10.1 on page 43.
2. Unscrew the bellows mounting frames from the carriage and the end blocks.

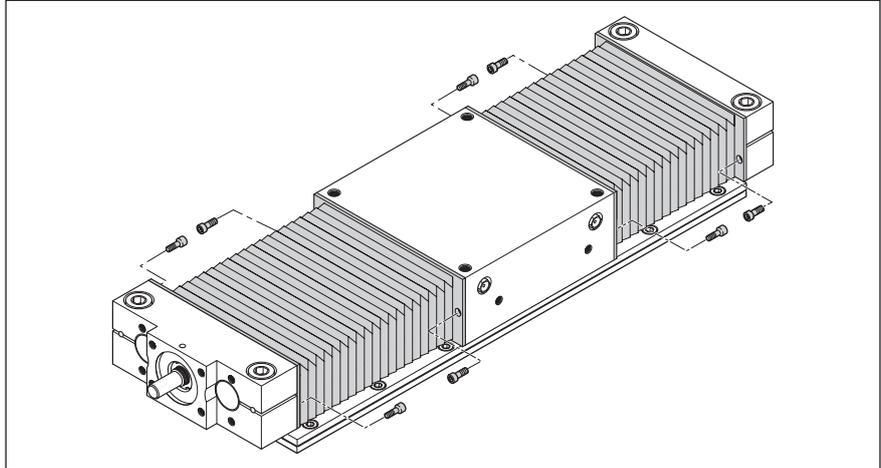


Fig. 64: Removing the bellows

### Removing the bellows from the SOK

- ▶ Grip the bellows at one corner and pull upward on one side. This will twist the folds in bellows, allowing them to be eased off over the shafts.

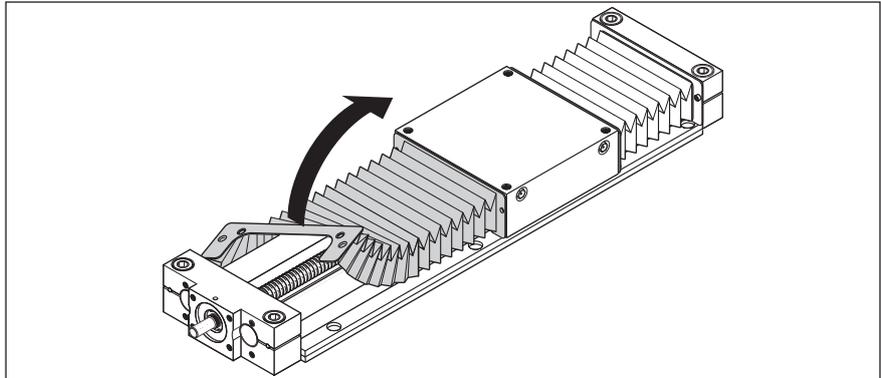


Fig. 65: Pulling off the bellows



## 10.5 Overview of replacement parts for Linear Motion Slides SGK

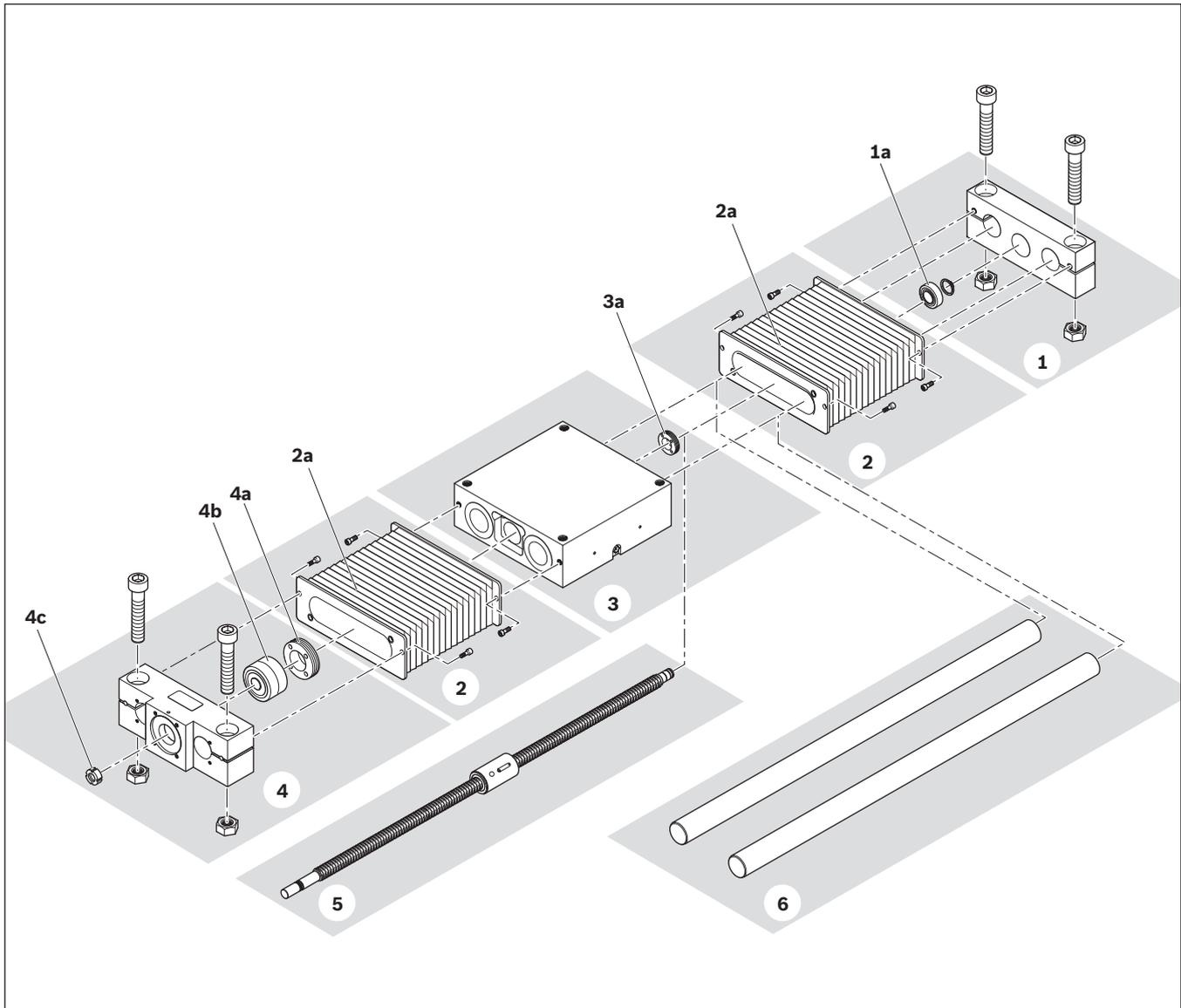


Fig. 66: Replacements parts for SGK

**Table 18: Replacement parts for SGK**

Item	Description	Replacement part
<b>1</b>	<b>Floating bearing</b>	
<b>1a</b>	Deep groove ball bearing	x
<b>2</b>	<b>Cover</b>	
<b>2a</b>	Bellows-type	x (length-dependent)
<b>3</b>	<b>Carriage</b>	x
<b>3a</b>	Ring nut	x
<b>4</b>	<b>Fixed bearing</b>	
<b>4a</b>	Ring nut	x
<b>4b</b>	Angular-contact thrust ball bearing	x
<b>4c</b>	Slotted nut	x
<b>5</b>	<b>Ball screw assembly BS</b>	x (length-dependent)
<b>6</b>	<b>Shafts</b>	x (length-dependent)

- ▶ When ordering replacement parts, please always state all data given on the nameplate ➔ 4.3 on page 9.
- ▶ To order replacement parts, please contact your local Bosch Rexroth sales partner. These can be found on the Internet at [www.boschrexroth.com/contact](http://www.boschrexroth.com/contact)
- ▶ In urgent cases, our Bosch Rexroth Customer Service helpdesk and hotline staff will be happy to assist you in any way they can.  
Telephone: +49 (0) 9352 40 50 60  
E-mail: [servicelt@boschrexroth.de](mailto:servicelt@boschrexroth.de)

## 10.6 Overview of replacement parts for Linear Motion Slides SOK

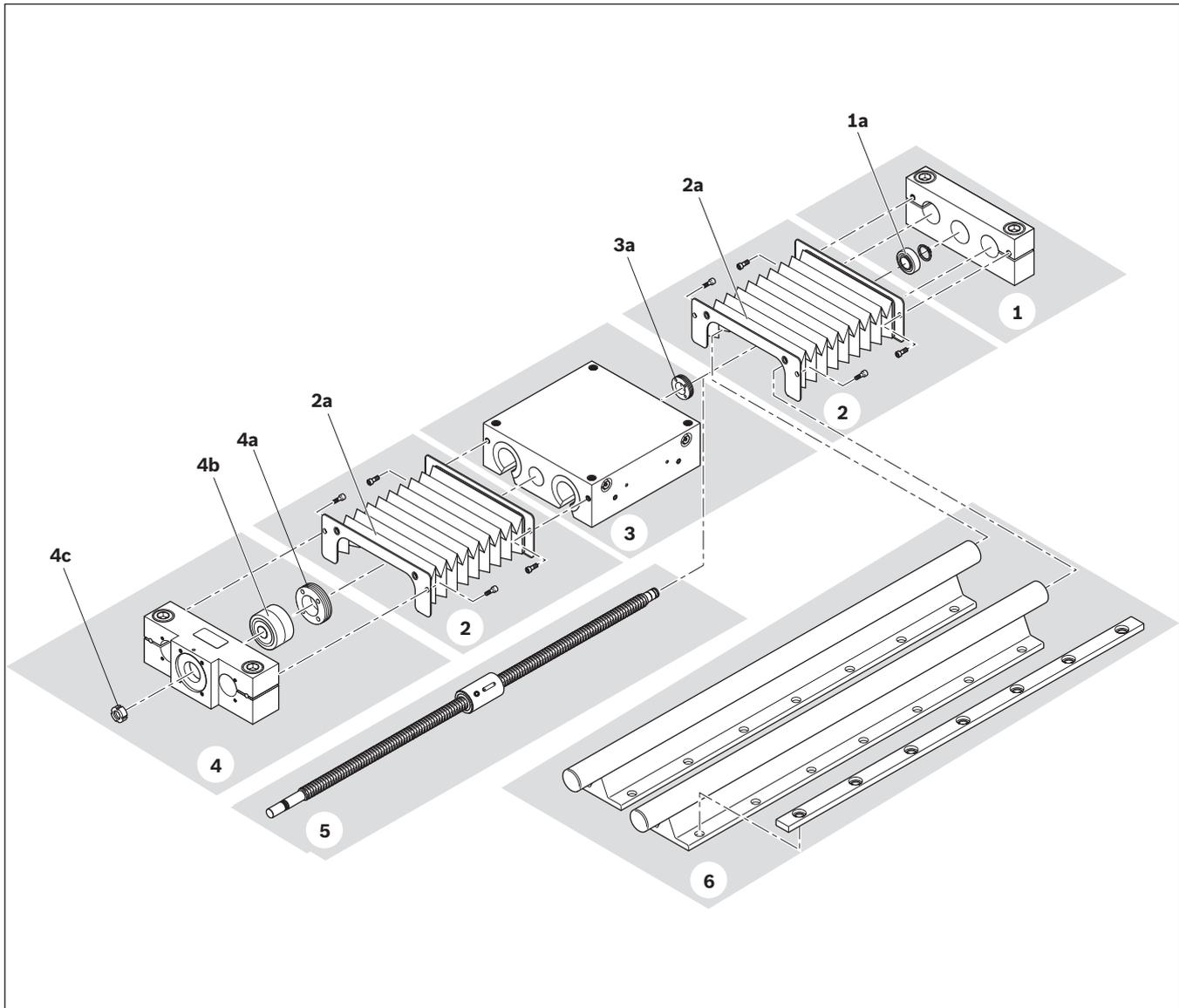


Fig. 67: Replacement parts for SOK

**Table 19: Replacement parts for SOK**

Item	Description	Replacement part
<b>1</b>	<b>Floating bearing</b>	
<b>1a</b>	Deep groove ball bearing	x
<b>2</b>	<b>Cover</b>	
<b>2a</b>	Bellows-type	x (length-dependent)
<b>3</b>	<b>Carriage</b>	x
<b>3a</b>	Ring nut	x
<b>4</b>	<b>Fixed bearing</b>	
<b>4a</b>	Ring nut	x
<b>4b</b>	Angular-contact thrust ball bearing	x
<b>4c</b>	Slotted nut	x
<b>5</b>	<b>Ball screw assembly BS</b>	x (length-dependent)
<b>6</b>	<b>Shafts with shaft support rails</b>	x (length-dependent)

- ▶ When ordering replacement parts, please always state all data given on the nameplate ➔ 4.3 on page 9.
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- ▶ In urgent cases, our Bosch Rexroth Customer Service helpdesk and hotline staff will be happy to assist you in any way they can.  
Telephone: +49 (0) 9352 40 50 60  
E-mail: [servicelt@boschrexroth.de](mailto:servicelt@boschrexroth.de)



## 14 Service and support

Our Bosch Rexroth Customer Service helpdesk and hotline staff will be happy to assist you in any way they can.

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