

KE 2/...

Curve

3 842 999 727

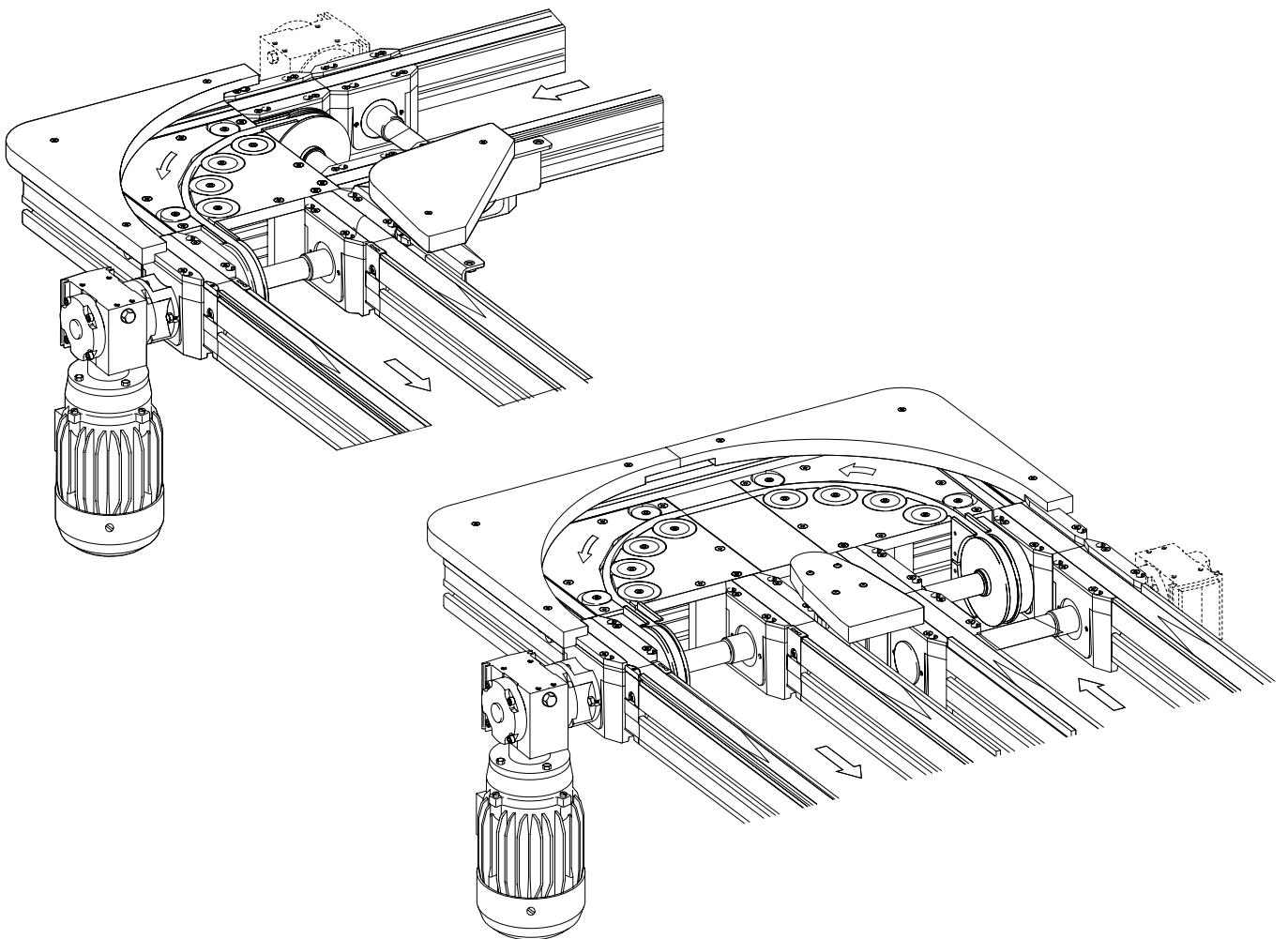
3 842 999 728

3 842 999 725

3 842 999 726

Assembly instructions
3 842 557 768/2018-12

Replaces: –
ENGLISH



The information in this manual is for product description purposes only. Any statements in this manual on how to use the product only constitute examples and recommendations. Catalog information is not binding. The information given does not release the user from the obligation of own judgment and verification. Our products are subject to natural wear and aging.

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The cover depicts a sample configuration. The actual product may vary.

The original assembly instructions are in German.

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Als gedruckte Version oder als PDF-Datei zum Download aus dem Medienverzeichnis:
www.boschrexroth.com/medienverzeichnis
Geben Sie in die Suchmaske (oben rechts, unter „Suche“) **3842 557 767** ein, dann klicken Sie auf „►Suche“.
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They come in a hard copy or a PDF file that can be downloaded from the media directory:
www.boschrexroth.com/mediadirectory
Enter **3842 557 768** in the search mask (at the top right, under “Search”), then click “►Search”.
- FR Les présentes instructions de montage sont disponibles dans les langues suivantes. Autres langues sur demande.
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- HU A jelen szerelési útmutató az itt megadott nyelveken áll rendelkezésre. További nyelvek rendelésre.
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Írja be a keresőmezőbe (jobbra fent, a „Search” alatt): **MTHU 557 767**, majd kattintson a „Search” gombra.
- RO Aceste instrucțiuni de montaj sunt disponibile în limbile enumerate aici. Alte limbi la cerere.
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Introduceți în masca de căutare (sus, în partea dreaptă, la „Search”) **MTRO 557 767** apoi faceți clic pe „►Search”.

3842 557 767	KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Kurve	DE Deutsch
3842 557 768	KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Curve	EN English
3842 557 769	KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Courbe	FR Français
3842 557 770	KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Curva	IT Italiano
3842 557 771	KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Curva	ES Español
3842 557 772	KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Curva	PT Português
3842 557 773	KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 弯道	ZH 中文
MTCS 557 767	¹⁾ KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Zatáčka	CS Český
MTPL 557 767	¹⁾ KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Łuk	PL Polski
MTHU 557 767	¹⁾ KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Kanyar	HU Magyar
MTRO 557 767	¹⁾ KE 2/90-O, KE 2/180-O, KE 2/90, KE 2/180 Curbă	RO Română

¹⁾ Not available in print.

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1 About this documentation

1.1 Validity of the documentation

This documentation applies to the following products:

- 3 842 999 727, KE 2/90 curve
- 3 842 999 728, KE 2/180 curve
- 3 842 999 725, KE 2/90-O curve
- 3 842 999 726, KE 2/180-O curve

This documentation is intended for fitters, operators, service engineers and system end users.

This documentation contains important information relating to the safe and proper assembly, transportation, commissioning, operation, use, maintenance and disassembly of the product, and on how to rectify simple faults yourself.

- Read this documentation in full prior to working with the product, particularly section 2 “Safety instructions” and section 3 “General notes on property and product damage”.

1.2 Required and supplementary documentation

- Only start up the product if the documentation marked with the book symbol  is available and you have understood and followed the instructions in it.

Table 1: Required and supplementary documentation

	Title	Document number	Document type
	Employees safety training ³⁾	3 842 527 147	
	Declaration of incorporation	3 842 358 433	
	MT _{pro} ¹⁾	3 842 539 057	With list of spare parts

¹⁾ Download from: www.boschrexroth.com/mtpro

²⁾ Not available in print. Download from the media directory:

³⁾ Download from the media directory:

www.boschrexroth.com/mediadirectory

1.3 Presentation of information

Standardized safety instructions, symbols, terms and abbreviations are used so that you can use this documentation to work quickly and safely with your product.

These are explained in the following sections to help you understand them better.

1.3.1 Safety instructions

This document contains safety instructions in Section 2.6 “Product-specific safety instructions” and Section 3 “General notes on property and product damage”, as well as before any sequence of actions or any required action which involves a risk of personal injury or property damage. Be sure to observe all safety precautions.

Safety instructions are set out as follows:

 SIGNAL WORD
Type and source of danger! Consequences of non-compliance ► Steps to prevent danger ► ...

- **Warning sign:** points out the danger
- **Signal word:** indicates the severity of the danger
- **Type and source of danger:** indicates the type and source of the danger
- **Consequences:** describes the consequences of non-compliance
- **Prevention:** states how the danger can be avoided

Table 2: Risk classes according to ANSI Z535.6-2006

Warning sign, signal word	Meaning
 DANGER	Indicates a hazardous situation that will result in serious injury or death if not avoided.
 WARNING	Indicates a hazardous situation that may result in severe injury or death if not avoided.
 CAUTION	Indicates a hazardous situation that may result in minor to moderate injury if not avoided.
NOTICE	Property damage: The product or the surrounding area could get damaged.

1.3.2 Symbols

The following symbols indicate important information that is not safety-relevant but increases the comprehensibility of the documentation.

Table 3: Meaning of the symbols

Symbol	Meaning
	If this information is not observed, the product cannot be used and/or operated as designed.
►	Single, independent action
1. 2. 3.	Numbered steps: the numbers indicate that the steps must be performed in order.

2 Safety instructions

2.1 About this section

The product has been manufactured in accordance with the generally accepted rules of current technology. Nevertheless, there is a risk of personal injury and property damage if you do not read this section and follow the safety instructions in this document.

- ▶ Read this documentation carefully and completely before you start working with the product.
- ▶ Keep these instructions accessible to all users at all times.
- ▶ Always include them when giving the product to a third party.

2.2 Intended use

The product is an incomplete machine.

You may use the product as follows:

- For installation in a Rexroth transfer system TS *2plus*
- For transporting Rexroth WT 2 workpiece pallets.
- Maximum load / section load: see Technical data in Section 16.
- Ambient conditions see Section 16.1.

The product is only intended for professional use and not for private use. Intended use also includes having read and understood these instructions, especially the section 2 “Safety instructions”.

2.3 Improper use

Any use other than that described in the section “Intended use” is considered improper and is not permitted.

Bosch Rexroth AG is not liable for any loss or damage resulting from improper use.

The user alone bears any risks associated with improper use.

The following foreseeable misuses also constitute improper use:

- Transporting goods other than those specified.
- Using the product without mounted protective covers (hexagonal shaft cover tubes).
- Using the product in accumulation operation as well as in reverse or overrun mode.
- Transporting people on the product or the transported material.
- Persons climbing onto the product
 - keep off the product.
- Private use.

2.4 Personnel qualifications

The activities described in this document require a basic knowledge of mechanical, electrical and pneumatic systems, as well as familiarity with the corresponding technical terms. Additional knowledge of using lifting gear and the associated slings is required for transporting and handling the product. To ensure safe use, these activities should therefore only be performed by qualified personnel or by an instructed person acting under the direction of such a person.

“Qualified personnel” refers to those who can recognize possible hazards and take the appropriate safety measures due to their professional training, knowledge and experience, as well as their understanding of the regulations relevant to the work being performed. Qualified personnel must comply with the relevant technical regulations and have the necessary expertise.



Bosch Rexroth offers training to support activities in specific areas.
You can find an overview of the training content online at:
<http://www.boschrexroth.de/didactic>

2.5 General safety instructions

- Observe applicable accident prevention and environmental protection regulations.
- Observe the safety rules and regulations of the country in which the product is being used.
- Only use Rexroth products that are in proper working order.
- Observe all notices on the product.
- Persons who assemble, operate, disassemble or maintain Rexroth products should not be under the influence of alcohol, drugs or medication that may affect their ability to respond.
- Use only original accessories and spare parts from Rexroth in order to prevent hazards to people due to unsuitable spare parts.
- Observe the technical data and ambient conditions specified in the product documentation.
- Only start up the product if it has been determined that the end product (e.g. a machine or system) into which the Rexroth products have been installed complies with national provisions, safety regulations and application standards.

2.6 Product-specific safety instructions

General

- Do not attempt to modify the product.
- Do not expose the product to unacceptable mechanical loads under any circumstances. Never use the product as a handhold or step. Do not place any objects on the product.

During transport During installation

- Always ensure that the product cannot topple over.
- Follow the transport instructions on the packaging.
- Inspect the product for transport damage.
- Lay cables and lines so that they cannot be damaged and no one can trip over them.

- Make sure the system component you are working on is depressurized and de-energized before assembling the product or inserting or removing plugs.
- Ensure that the system component cannot be switched back on.
- Before start-up, make sure that all seals and caps for the plug-in connections are correctly installed and undamaged in order to prevent fluids and debris from infiltrating the product.

During start-up

- Allow the product to acclimatize for a few hours prior to start-up in order to prevent water condensation from forming in the housing.
- Make sure that all electrical and pneumatic connections are either in use or covered.
- Check the safety requirements according to DIN EN 619.
- Only start up a product that has been completely installed.
- Make sure that all the safety equipment which forms part of the product is present, has been properly installed, and is fully functional. Do not move, bypass or disable any safety equipment.
- Do not reach into moving parts.
- Check the product for malfunctions.

During operation

- Make sure that only authorized personnel perform the following tasks as part of the intended use of the product
 - Starting or operating the system, or interfering with its normal operation.
 - Operating adjustment devices on components or parts.
- Only allow people to be in the immediate vicinity of the product when it is operating if they are authorized by the operator to be there. This also applies while the product is at a standstill.

EMERGENCY STOP, fault

- Make sure that:
 - There are no obstacles preventing access to the EMERGENCY STOP controls.
 - All delivery points, workstations and passages are kept clear.
- Do not use EMERGENCY STOP controls for routine stopping.
- Regularly check the EMERGENCY STOP controls to ensure that they are functioning properly.
- Following an EMERGENCY STOP or in the event of a fault or other irregularity, turn the product off and secure it against being switched back on.
- Do not reach into moving parts.
- An idle system is not necessarily a safe system, as stored energy can be released unintentionally or through improper maintenance procedures.
- After an EMERGENCY STOP or a fault, only switch the system back on when you have established and eliminated the cause of the fault.

During maintenance and servicing

- Make sure that access to maintenance and inspection points is kept unobstructed.
- Perform the prescribed maintenance work at the intervals prescribed in section 10.3 Maintenance.
- Make sure that no line connectors, connections or components are disconnected as long as the system is supplied with pressure and voltage. Secure the system against being switched back on.

During disposal

- Dispose of the product in accordance with the regulations in your country.

2.7 Personal protective equipment

- Wear appropriate protective clothing when handling the product (e.g. safety shoes, close-fitting clothing, a hair net for long, loose hair).

As the system user or operator, you are personally responsible for ensuring the use of appropriate protective equipment when the product is being used.

All components of the personal protective equipment must be intact.

2.8 Operator's obligations

- Before the start-up or re-commissioning of a conveyor system, run a risk assessment in accordance with DIN EN ISO 12100.
- Before the initial start-up, make sure there are no protruding or sharp-edged parts that may be a hazard to personnel working or moving in the area.
- Provide safety-related instructions to the operating personnel before initial start-up or re-commissioning, and then at regular intervals.

3 General notes on property and product damage

The warranty only applies to the delivered configuration.

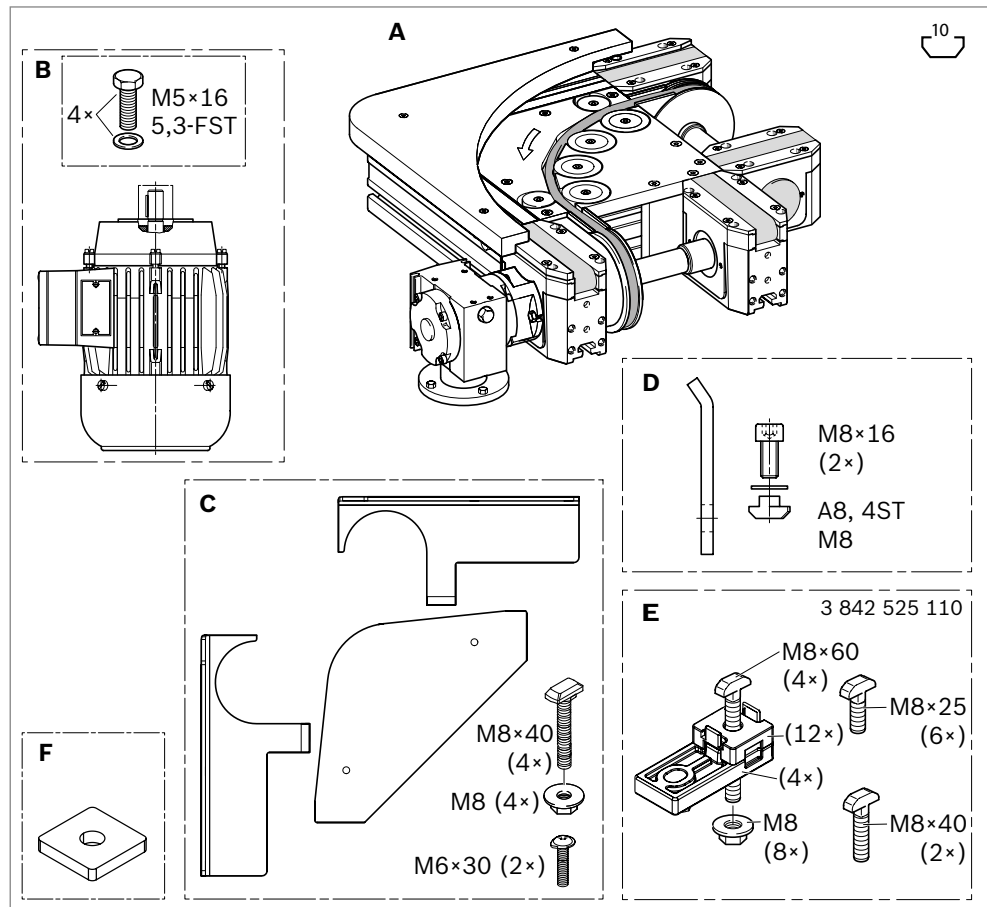
- The warranty is void in the event of faulty installation, commissioning and operation, as well as improper use and/or improper handling.

During cleaning

- Prevent cleaning agents from getting into the system.
- Never use solvents or aggressive cleaning agents.
- Do not use a pressure washer for cleaning.

4 Scope of delivery

- KE 2/90**
3 842 999 727
- A** KE 2/90 curve
 - B** 3-phase motor and fastening material
 - C** Inner guide
 - D** Bracket with two mounting kits M8 (for $b_{WT}=320$ and $b_{WT}=400$)
 - E** Connection kit
 - F** Spacer



557 767 -01

Fig. 1: KE 2/90 scope of delivery

KE 2/180**3 842 999 728**

- A** KE 2/180 curve
- B** 3-phase motor and fastening material
- C1** Inner guide ¹⁾
- C2** Inner guide ¹⁾
- D** Bracket with two mounting kits M8 (for bWT=320 and bWT=400)
- E** Connection kit
- F** Spacer

¹⁾ Variant-dependent

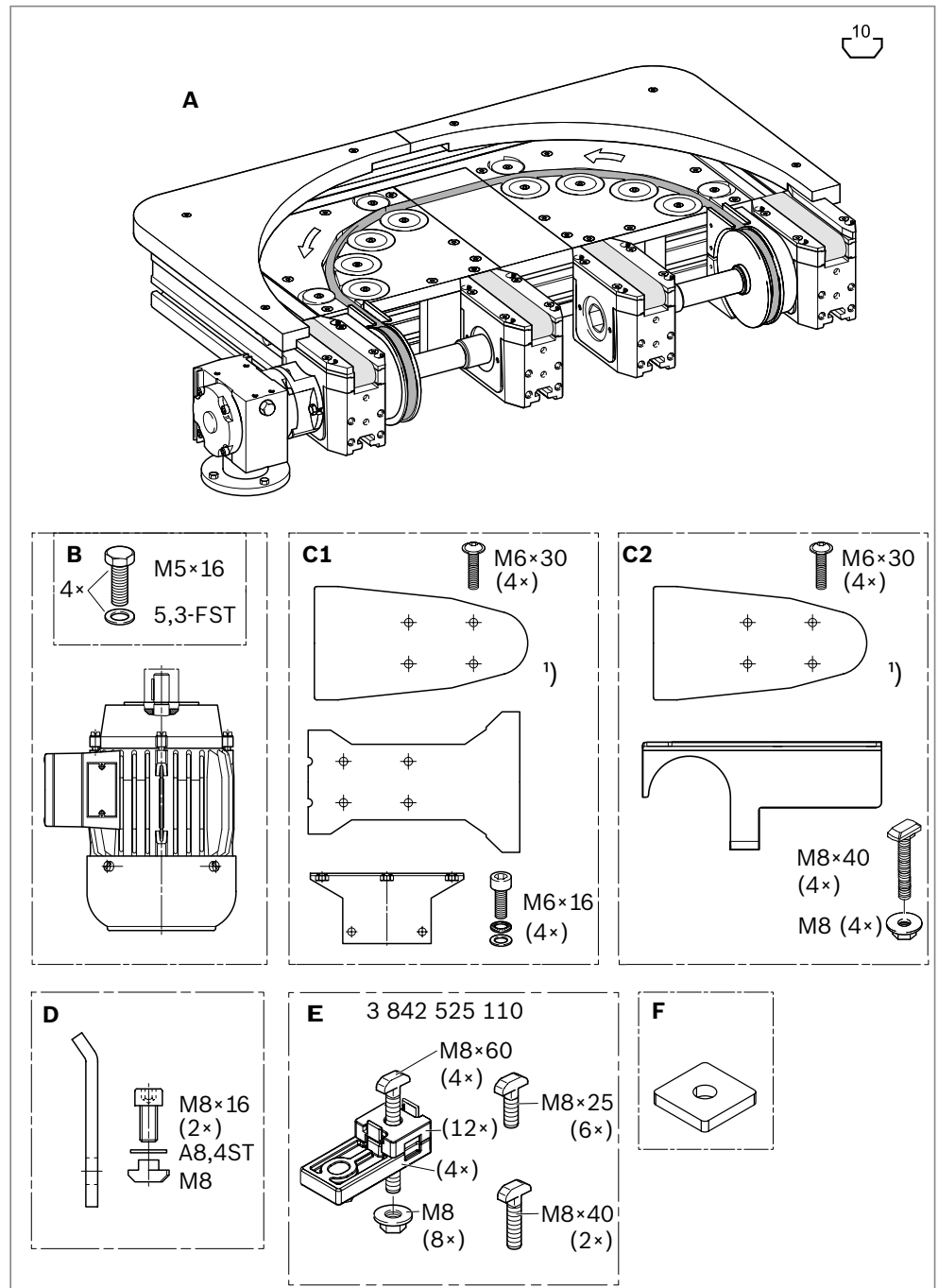


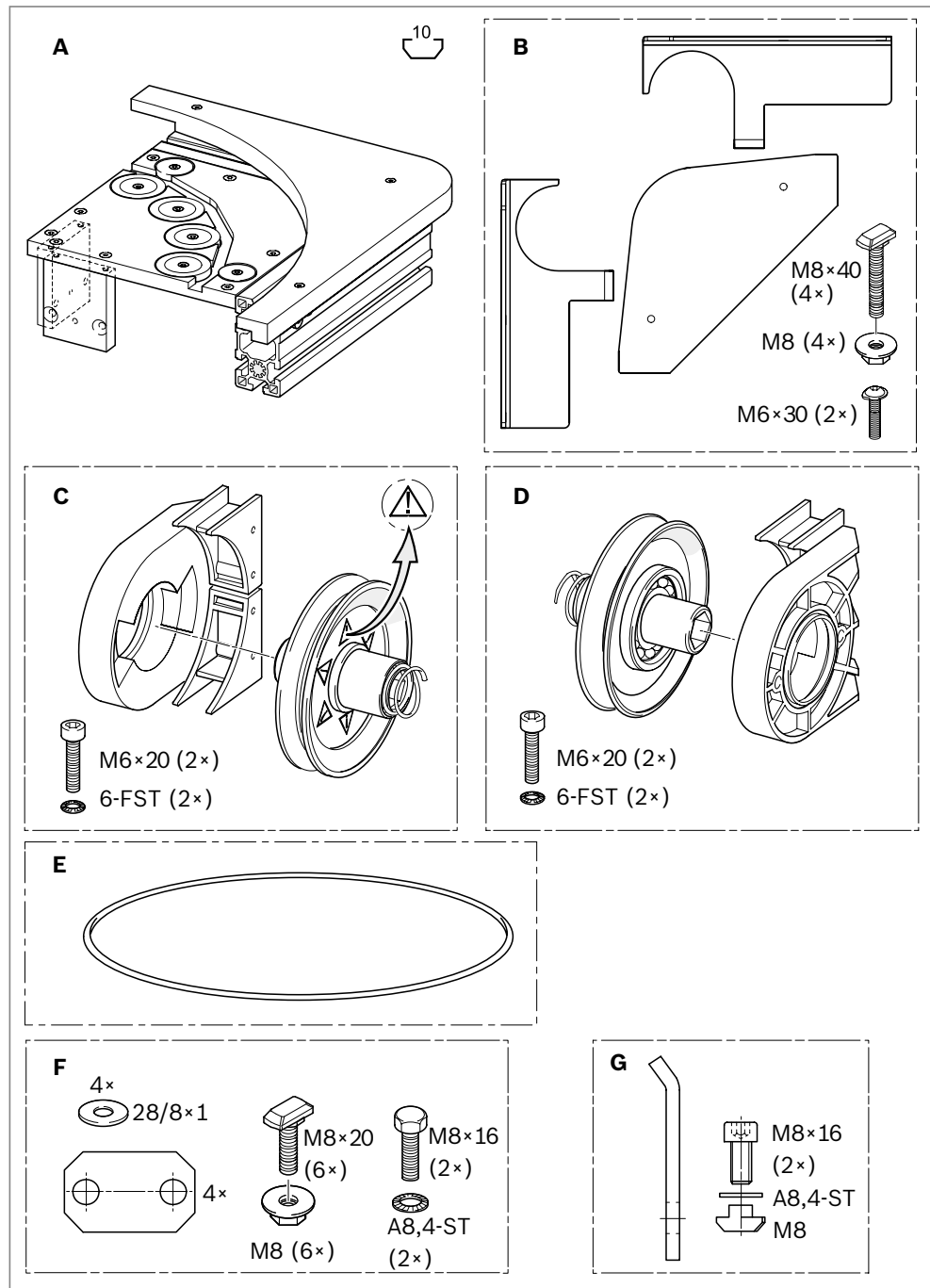
Fig. 2: KE 2/180 scope of delivery

557 767 -02

KE 2/90-O

3 842 999 725

- A** KE 2/90-O curve
- B** Inner guide
- C** Drive unit, marked with a yellow sticker
- D** Return unit
- E** Round belt (PUR)
- F** Attachment kit
- G** Bracket with two mounting kits M8 (for $b_{WT}320$ and $b_{WT}400$)



557 767 -03

Fig. 3: KE 2/90-O scope of delivery

KE 2/180-O
3 842 999 726

- A** KE 2/180-O curve
- B1** Inner guide ¹⁾
- B2** Inner guide ¹⁾
- C** Drive unit, marked with a yellow sticker
- D** Return unit
- E** Round belt (PUR)
- F** Attachment kit
- G** Bracket with two mounting kits M8 (for b_{WT}320 and b_{WT}400)

¹⁾ Variant-dependent

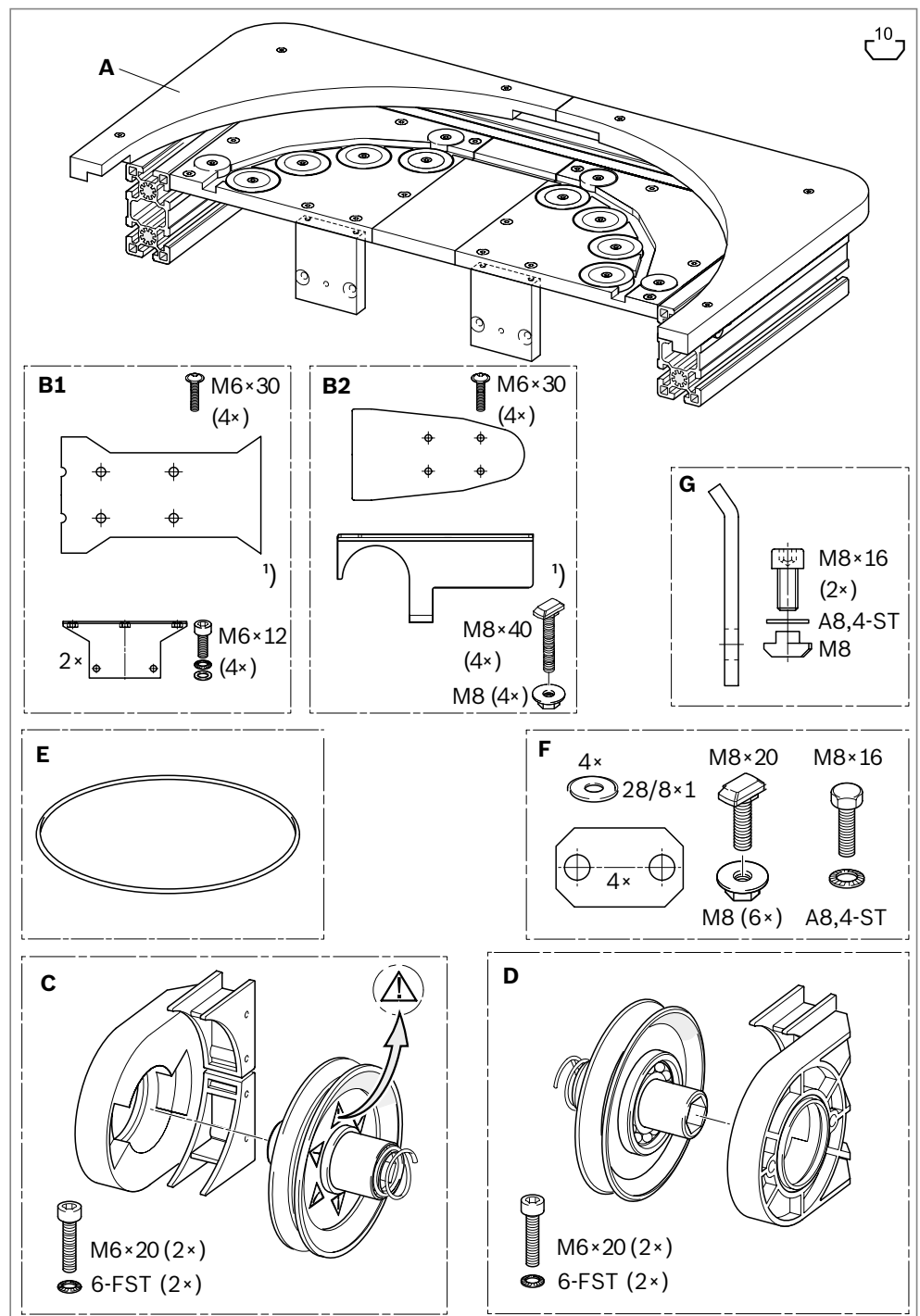


Fig. 4: KE 2/180-O scope of delivery

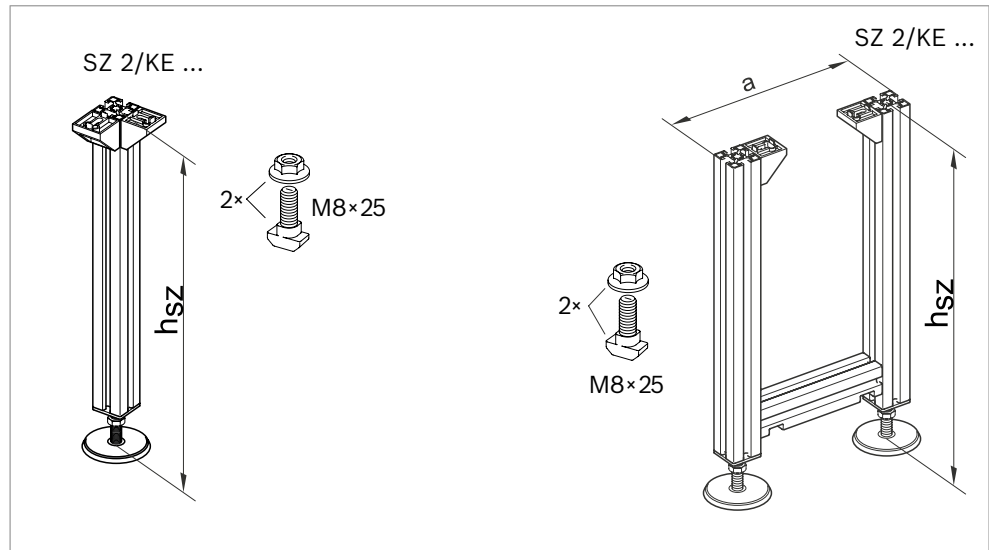
557 767 -04

4.1 Condition upon delivery

- K 2/90-O curve, KE 2/180-O curve; pre-assembled, without built-in drive.
- KE 2/90 curve, KE 2/180 curve; pre-assembled, with built-in drive.

4.2 Accessories

4.2.1 Leg sets



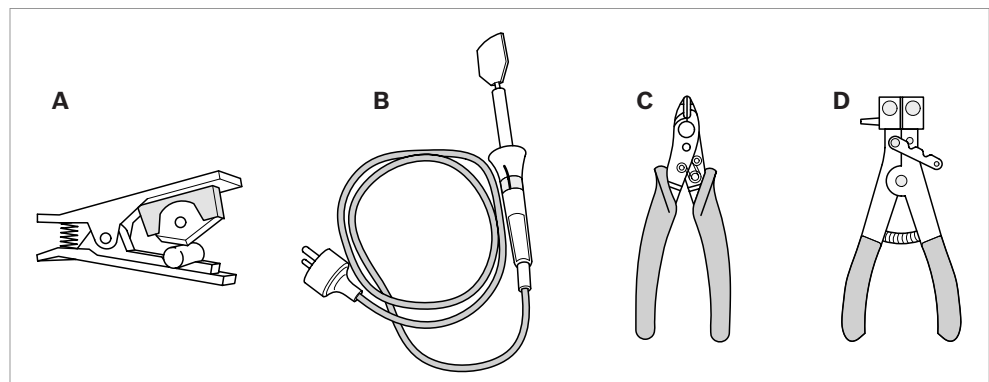
557 767 -05

Fig. 5: Assembly kit

4.2.2 Assembly kit

Assembly kit for PUR belt 3 842 518 903

- A** Cutting device
- B** Heating rod with welding mirror
- C** Side cutters
- D** Collet



557 767 -06

Fig. 6: Assembly kit

4.3 Specifications

The KE 2/... curves have a built-in drive at the curve end.

The KE 2/...-O curves do not have a built-in drive and are driven by the coupled drive of the belt section.

4.3.1 Using the KE 2/... curve

KE 2/...-O:

For installation in

- Belt section (BS 2/K)

KE 2/... :

For installation in

- Belt section (BS 2)
- Conveyor units (SE 2)
- Drive module (AS 2/B...)
- Return unit (UM 2/B)
- Section (ST 2/B...)

Redirecting WT 2 workpiece pallets.

4.3.2 Version KE 2/... curve

Extremely compact construction thanks to the motor-gear combination hanging down at the bottom.

Conveyor medium: Toothed belt and round belt.

Cable/plug or terminal-box motor connection.

Permitted conveyor media for the belt section and conveyor unit:

- Belt
- Toothed belt



The KE2/... is not designed to be combined with accumulation roller chains or flat top chains due to the danger of oil carryover.

5
About this product

5.1
Product description

5.1.1
KE 2/90 curve

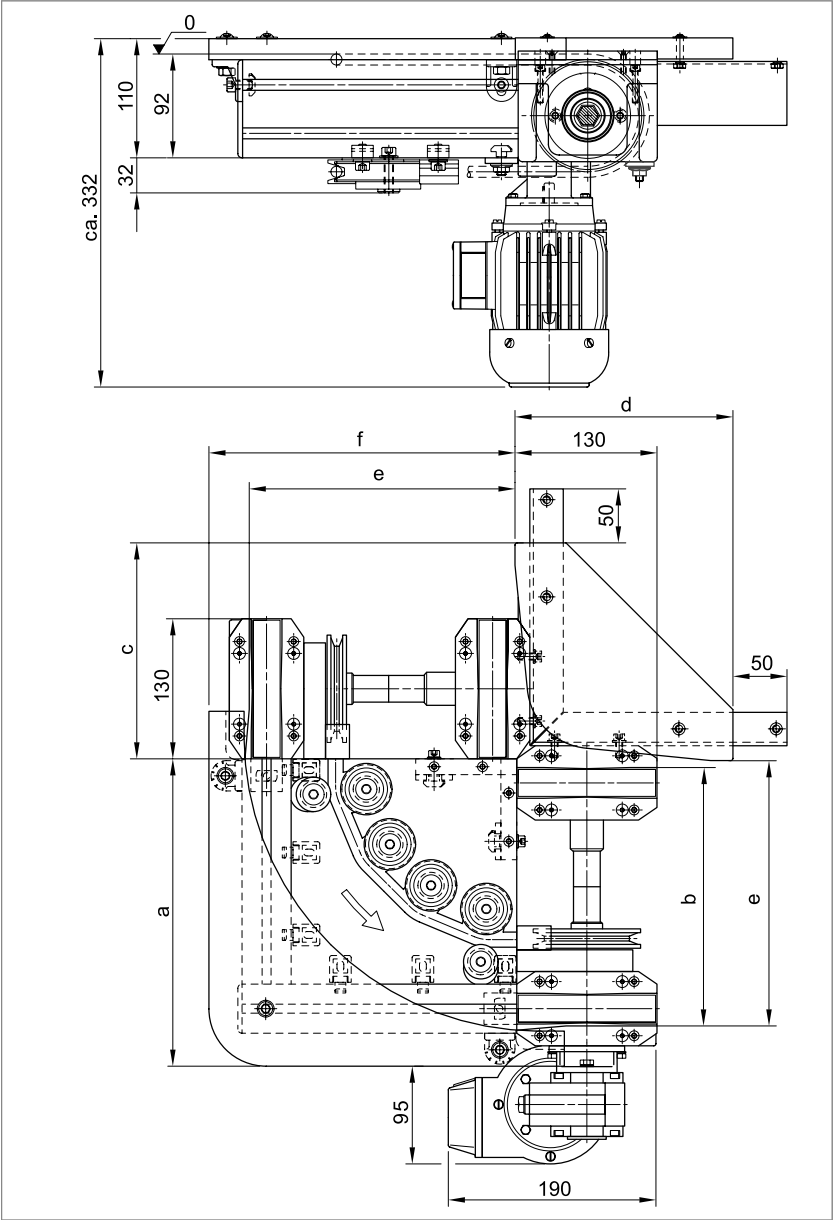
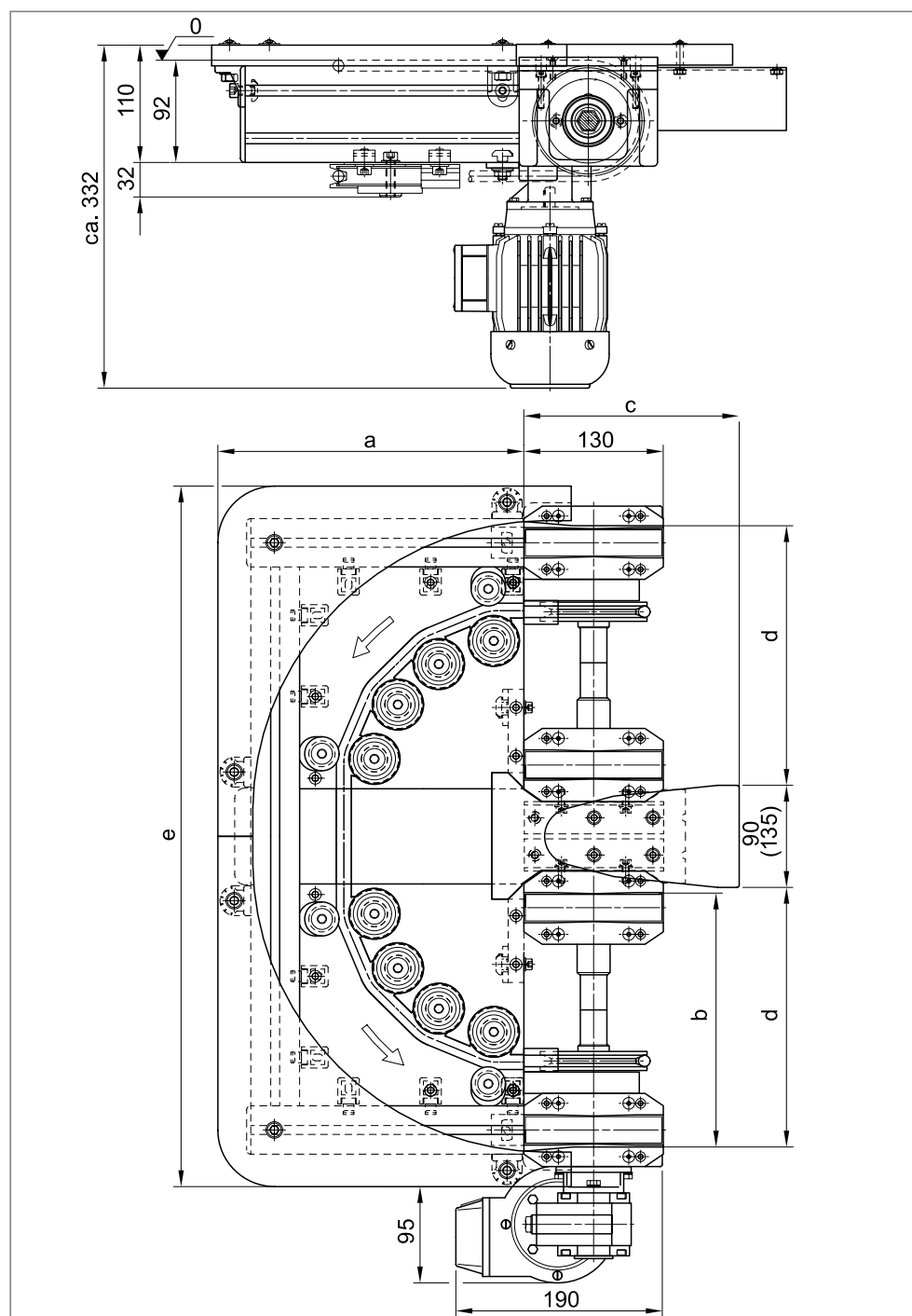


Fig. 7: Product description for KE 2/90

b [mm]	a/f [mm]	c/d [mm]	e [mm]
160	205.5	170	165.5 +1
240	285.5	200	245.5 +1
320	365.5	290	325.5 +1
400	445.5	355	405.5 +1

5.1.2 KE 2/180 curve

0= Conveying level



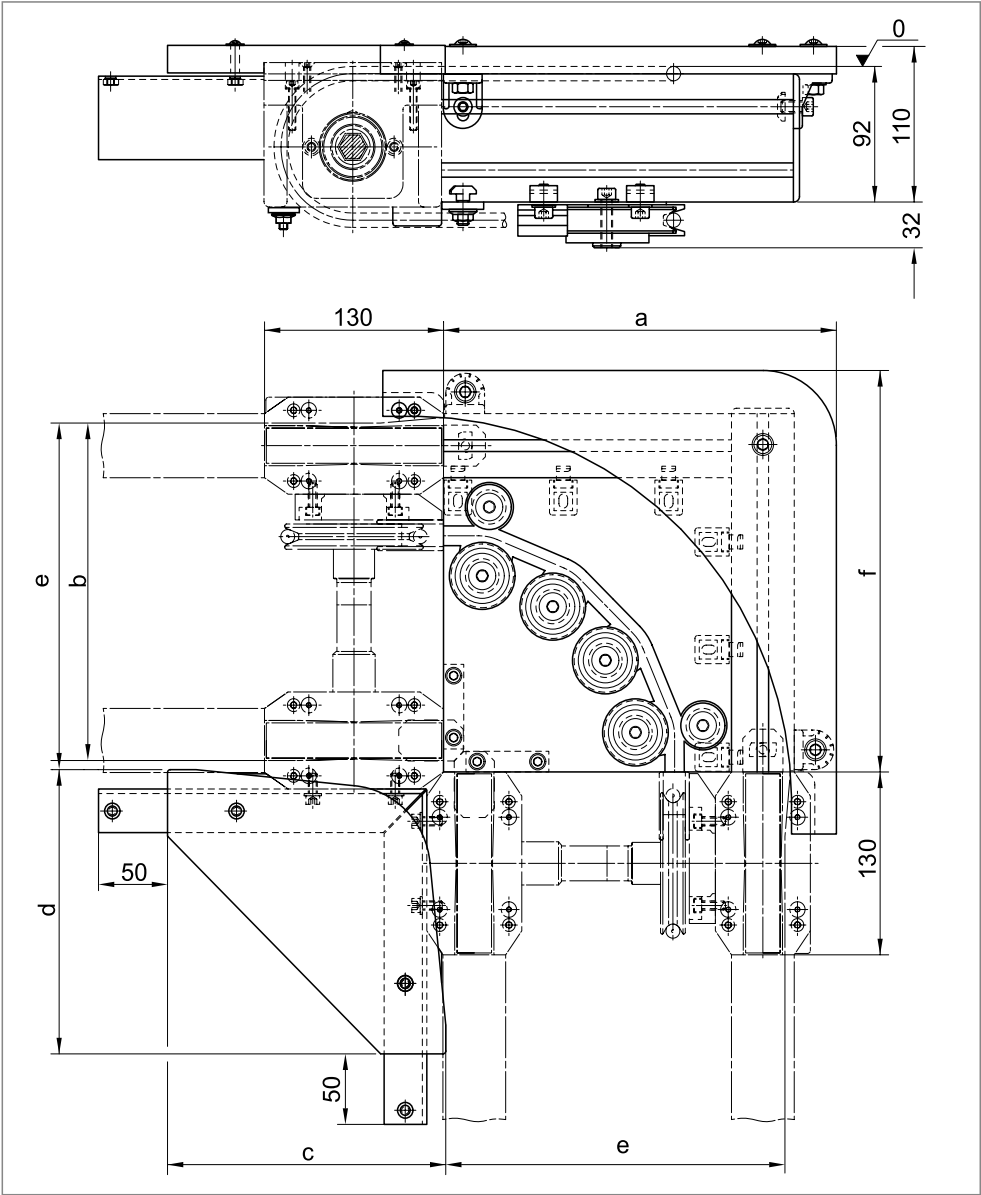
557 767 -08

Fig. 8: Product description for KE 2/180

b [mm]	a	e	c	d
160	205.5	501 (546)	170	165.5 +1
240	285.5	661 (706)	200	245.5 +1
320	365.5	821 (866)	290	325.5 +1
400	445.5	981 (1026)	355	405.5 +1

5.1.3 KE 2/90-O curve

0= Conveying level



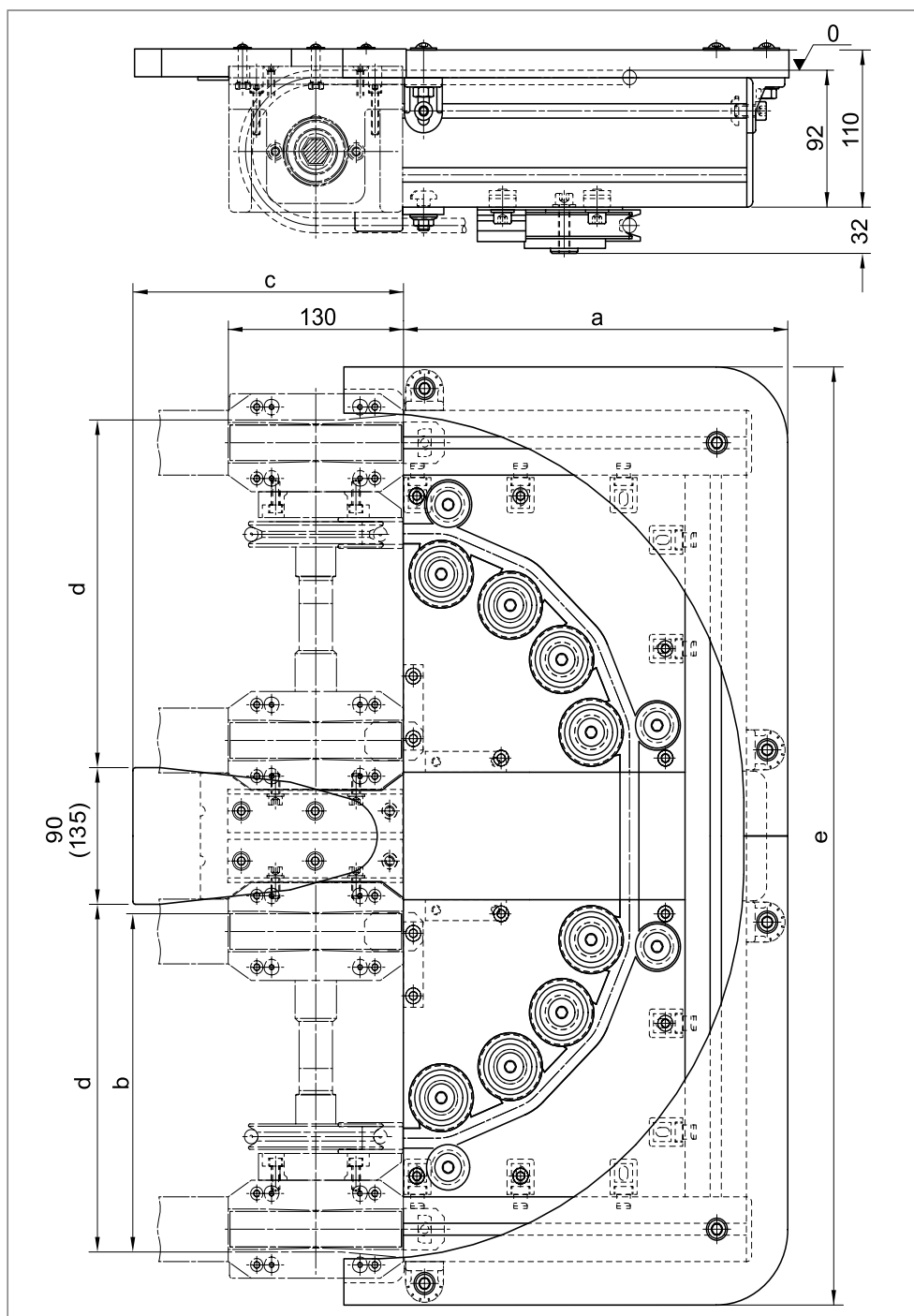
557 767 -09

Fig. 9: Product description for KE 2/90-O

b [mm]	a/f [mm]	c/d [mm]	e [mm]
160	205.5	170	165.5 +1
240	285.5	200	245.5 +1
320	365.5	290	325.5 +1
400	445.5	355	405.5 +1

5.1.4 KE 2/180-O curve

0= Conveying level



557 767 -10

Fig. 10: Product description for KE 2/180-O

b [mm]	a	e	c	d
160	205.5	501 (546)	170	165.5 +1
240	285.5	661 (706)	200	245.5 +1
320	365.5	821 (866)	290	325.5 +1
400	445.5	981 (1026)	355	405.5 +1

6 Transport and storage

- ▶ Follow the transport instructions on the packaging.
- ▶ Transport weight: see delivery documents.
- ▶ Secure the product to prevent toppling!
- ▶ Always observe the ambient conditions when storing and transporting the product, see section Section 16.1.

6.1 Transporting the product



WARNING

Risk of fatal injury due to falling objects and loads!

- ▶ Never stand or walk underneath suspended loads.
- ▶ Make sure that no one is in this danger zone.
- ▶ Only use suitable and tested lifting devices and slings.
Always observe the maximum load bearing capacity
(see delivery documents for the product weight).
- ▶ Check that the slings are securely fastened.
- ▶ Secure the load against tipping before you lift it.

6.2 Storing the product

- ▶ Only set the product down on a flat surface.
- ▶ Protect the product from
 - Mechanical influences.
 - Environmental influences such as dirt and moisture.
- ▶ Observe the ambient conditions, see Section 16.1.
- ▶ Support the product so that there is no load on suspended motors.

7 Assembly

7.1 Unpacking

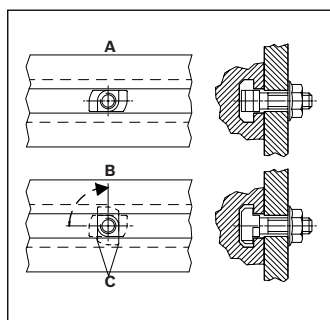
- Lift the product out of its packaging.
- Dispose of the packaging material in accordance with the applicable regulations in your country.

7.2 Installation requirements

- During installation, be sure to maintain the ambient conditions specified in the Technical Data, see Section 16.

7.2.1 Installation position

- Install the product level and plumb, at right angles, and axially parallel. This ensures proper functioning and prevents premature wear.



- A** Insertion position
- B** Clamping position
- C** Set in slot (torque support)

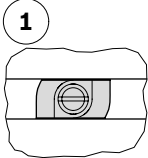
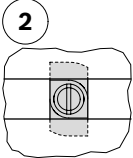
7.2.2 Fastening with T-bolts

- Fasten the TS 1, TS 2*plus*, TS 2*pv*, and TS 5 transfer systems and the VarioFlow chain conveyor systems with T-bolts and flange nuts.
- Make sure the T-bolt is in the correct position when inserting into the slot and tightening. The notch at the head of the bolt indicates the orientation of the T-bolt. This produces a frictional attachment in the longitudinal grooves of the profiles. When tightening the hexagon nut, the T-bolt head turns 90° into the correct clamping position, the tightening torque is 25 Nm.

7.3 Required tools

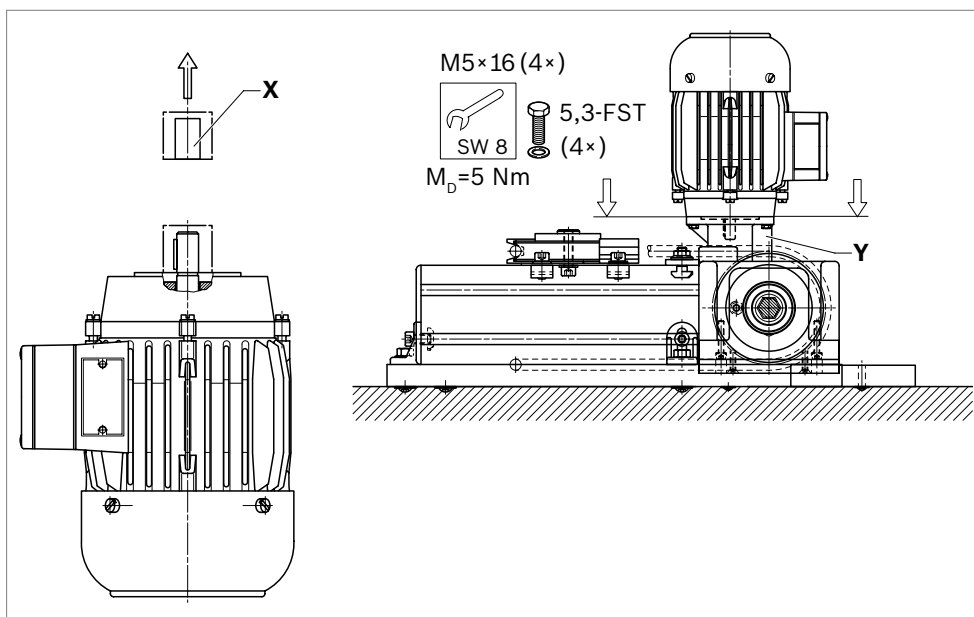
- Hex wrenches SW13, SW8.
- Hex socket wrenches SW3, SW4, SW5.
- Phillips screwdriver PZ2
- Spirit level
- Torque wrench

7.4
Symbols used

1  2  	Connection with T-bolt and flange nut. Make sure the T-bolt is in the correct position when inserting into the slot and tightening. The notch at the head of the bolt indicates the orientation of the T-bolt. 1 = T-bolt insertion position in the slot 2 = T-bolt clamping position in the slot Tightening torque: 25 Nm
 SW13 $M_D = 20Nm$	Hex wrench SW = wrench size ... mm M_D = required tightening torque ... Nm
 SW5 $M_D = 8Nm$	Hex socket wrench SW = wrench size ... mm M_D = required tightening torque ... Nm
 PZ2  PH3	Screwdrivers for cross-head screws PZ ... = Pozidriv cross recess, size ... PH ... = Phillips cross recess, size ...
   gleitmo 585 K Anti-Seize	Lubricate/lubricate with specific grease lubricant: • gleitmo 585 K: gleitmo 585 K, www.fuchs-lubritech.com • Anti-Seize: Food Grade Anti-Seize/Lotcite 8014, www.henkel.com
 Loctite 243  Loctite 601	Secure the screws with: • Loctite 243: medium strength (detachable), www.loctite.de • Loctite 601: high-strength screw retention (non-detachable), www.loctite.de
	The marked parts are not required for the described assembly. Dispose of the parts or use them for other purposes.
1 2 3	Graphical depiction of the installation steps. The numbers correspond to the sequence of installation steps, in accordance with the instructions in the accompanying text.
A B C X	Graphical depiction of the designation of components. The letters denote the components mentioned in the accompanying text.
	Detail view from a different direction, for example, on the back or bottom side of the product.

7.5 Installing the motor on the gear for KE 2/90 and KE 2/180

- The end faces of the motor and gear must be undamaged.
- Remove the yellow protective cap (X) from the motor shaft.
- The gear hub comes lubricated with anti-seize lubricant.
- Observe the clearance for mounting the motor, do not tilt the motor.
- Screw the motor in the proper position (terminal box) to the gear (Y) using the four hexagon screws provided.



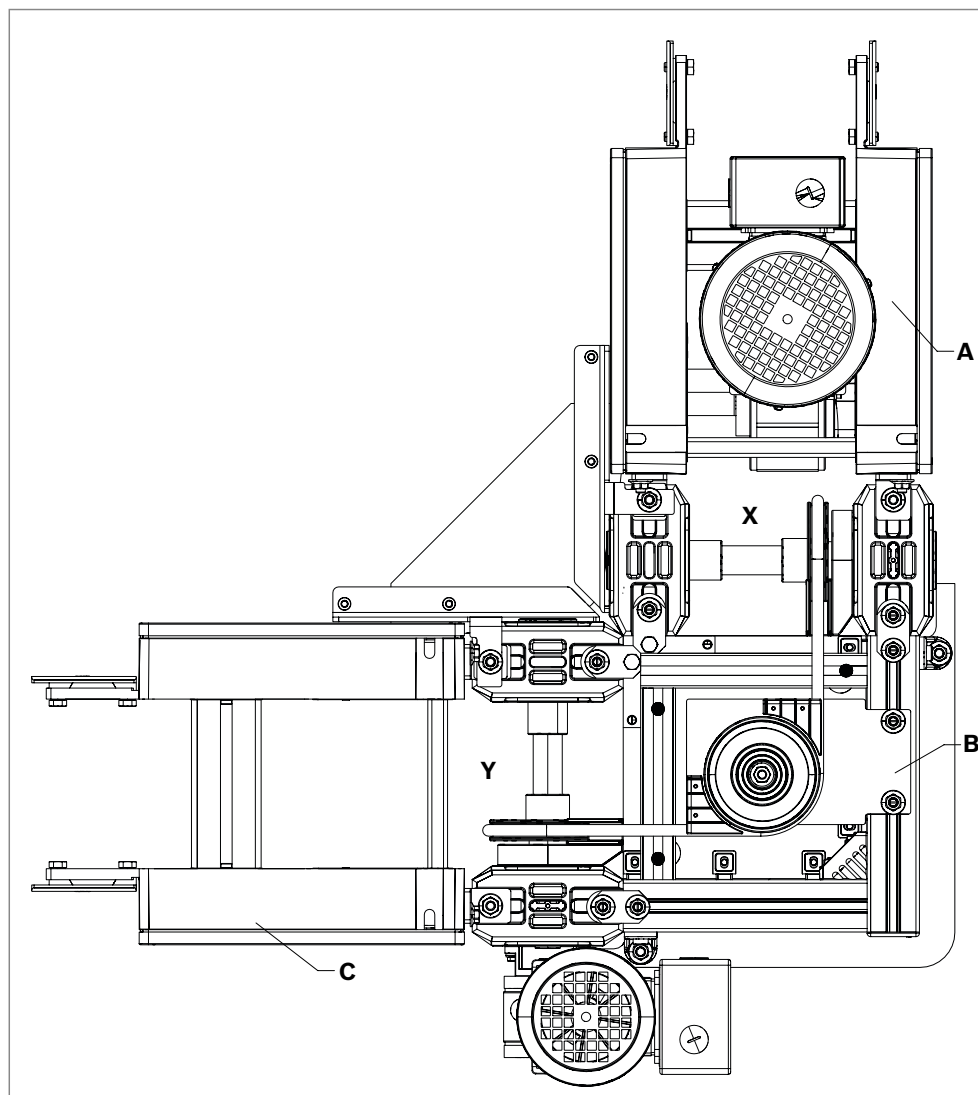
557 767 -11

Fig. 11: Installing the motor on the gear for KE 2/90 and KE 2/180

7.6 Installing the KE 2/90 curve

7.6.1 Installing KE 2/90 with drive module (AS 2/B) and return unit (UM 2/B)

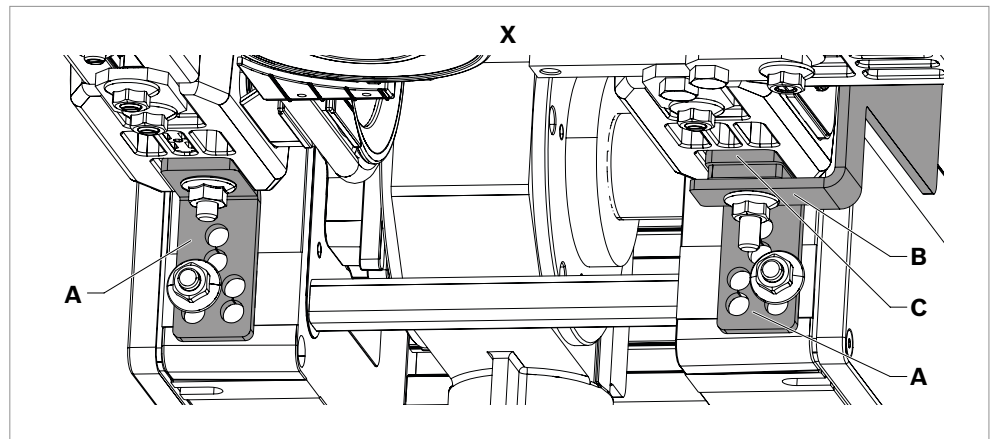
- A** AS 2/B drive module
- B** KE 2/90 curve
- C** UM 2/B return unit



557 767 -12

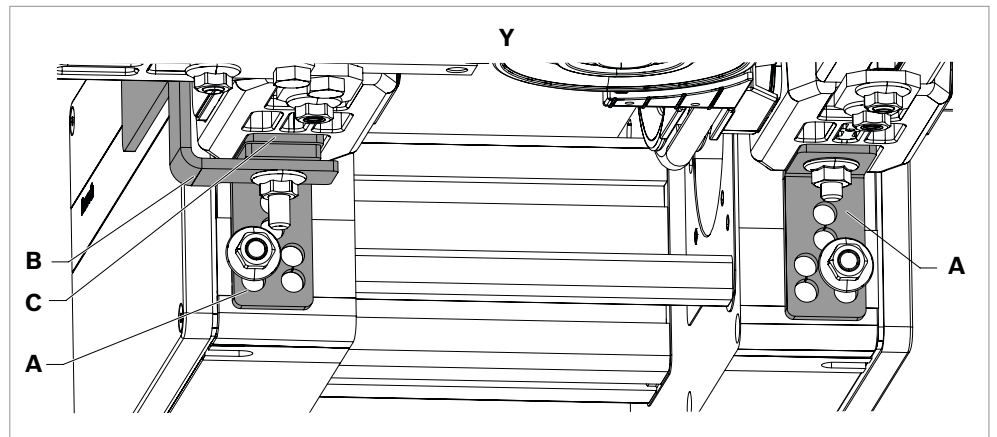
Fig. 12: Position of the connection kits (bottom view)

- A** Connection kit, 3842518828, (not included in the scope of delivery)
- B** Bracket (inner guide)
- C** Spacer, 3842557535



557 767 -13

Fig. 13: Detail "X", view from below.

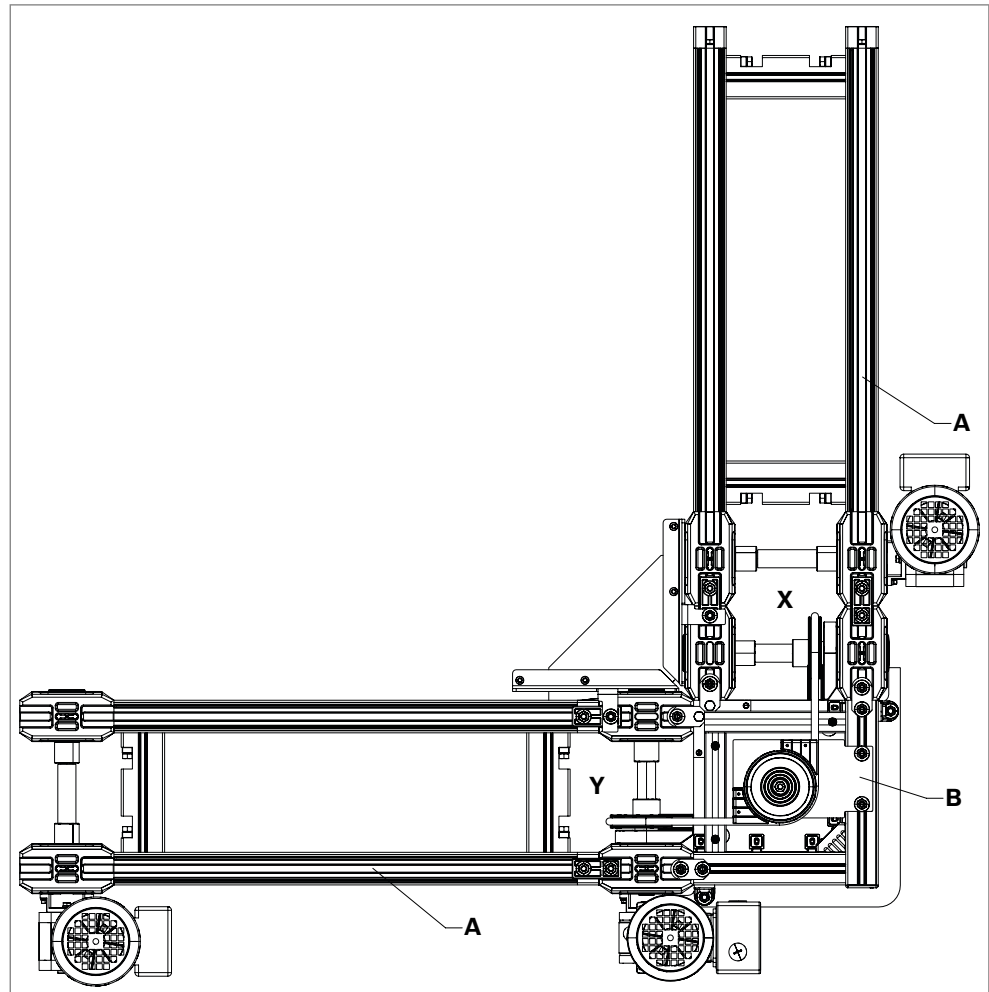


557 767 -14

Fig. 14: Detail "Y", view from below.

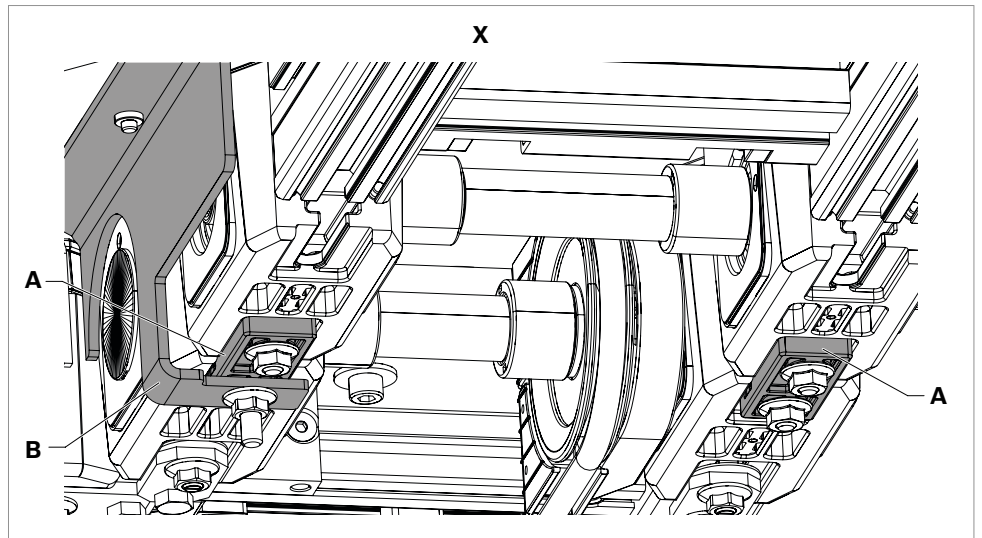
7.6.2 Installing KE 2/90 with belt sections (BS 2)

- A** BS 2 belt section
- B** KE 2/90 curve



557 767 -15

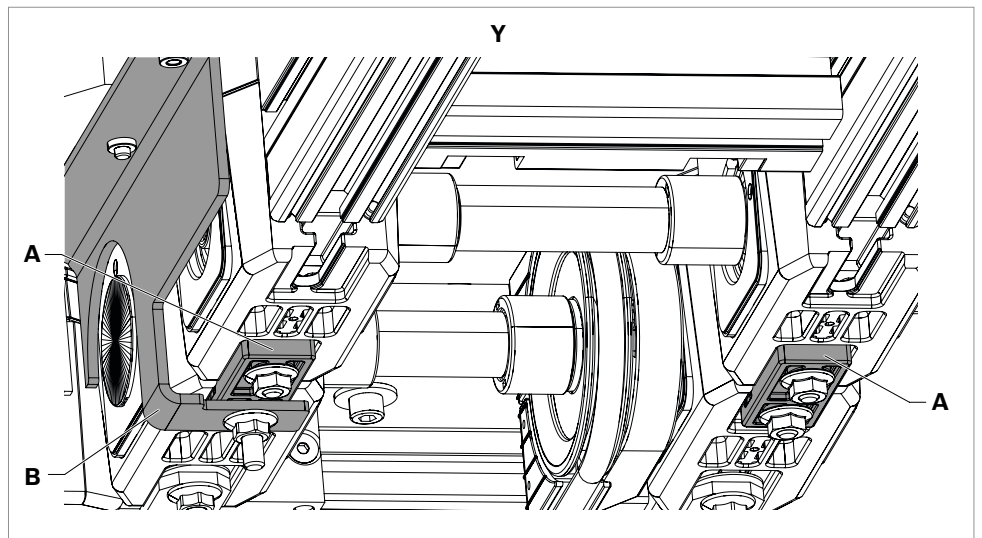
Fig. 15: Position of the connection kits (bottom view)



557 767 -16

- A** Connection kit,
3842525110
- B** Bracket (inner guide)

Fig. 16: Detail "X", view from below.



557 767 -17

Fig. 17: Detail "Y", view from below.

7.6.3 Installing the inner guide and bracket

b = track width

- 1. Attach two brackets to the drive and return head, each with an M8×40 T-bolt, flange nut, spacer, and connection kit.¹⁾
- 2. Saw off the guide ridge of the belt guide profile in the area of the inner guide.
- 3. Put on the inner guide.
- 4. Attach the inner guide using two oval flange head screws.
- 5. Fasten the bracket in the T-slot of the BS 2 (installation dimension “c” 300 or 420).

¹⁾ Connection kits:
Section 7.9

²⁾ Direction of transport, “pulling” transport

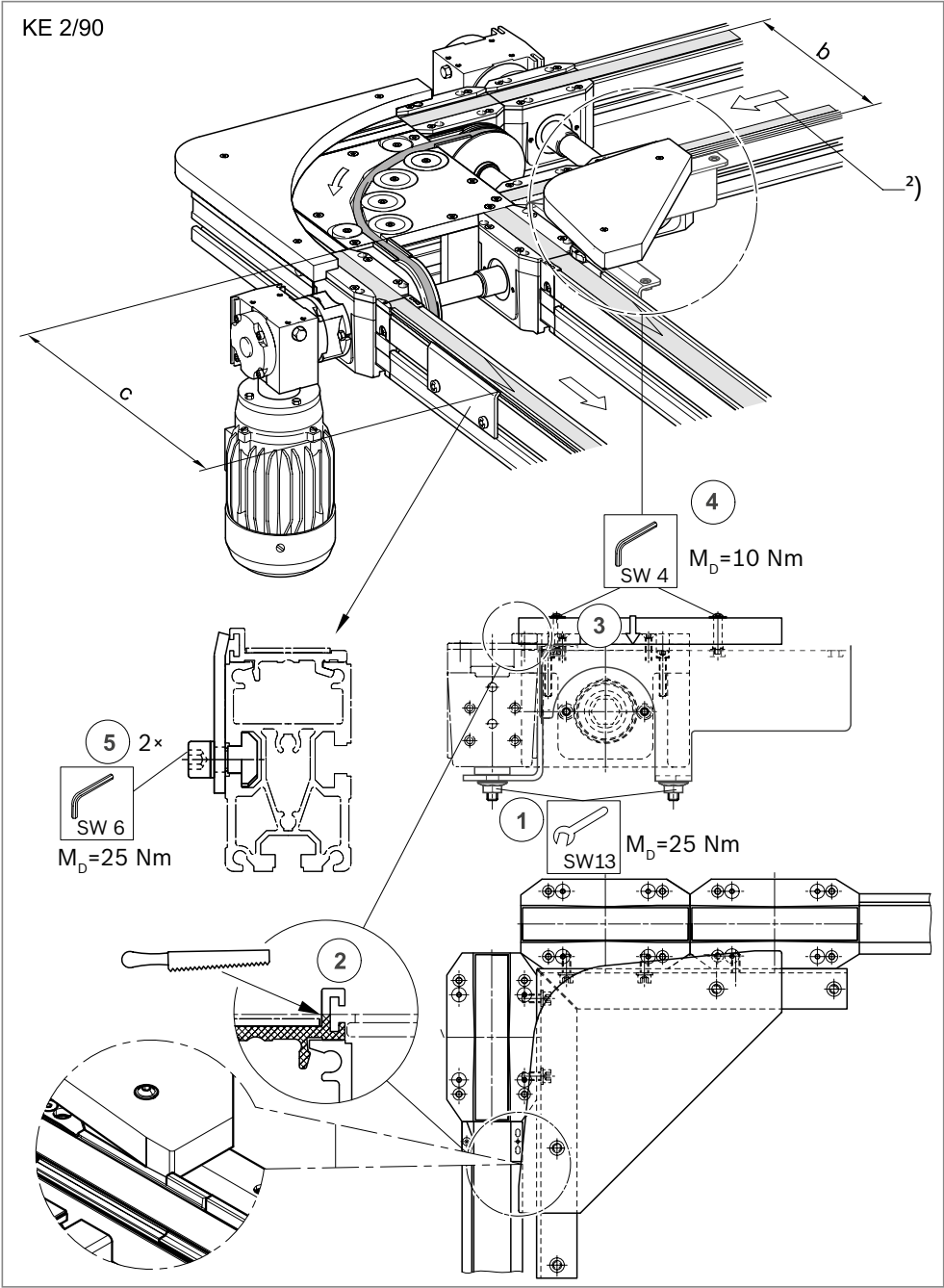


Fig. 18: Installing the inner guide and bracket

c [mm]	b [mm]
300	320
420	400

7.6.4 Installing the leg set

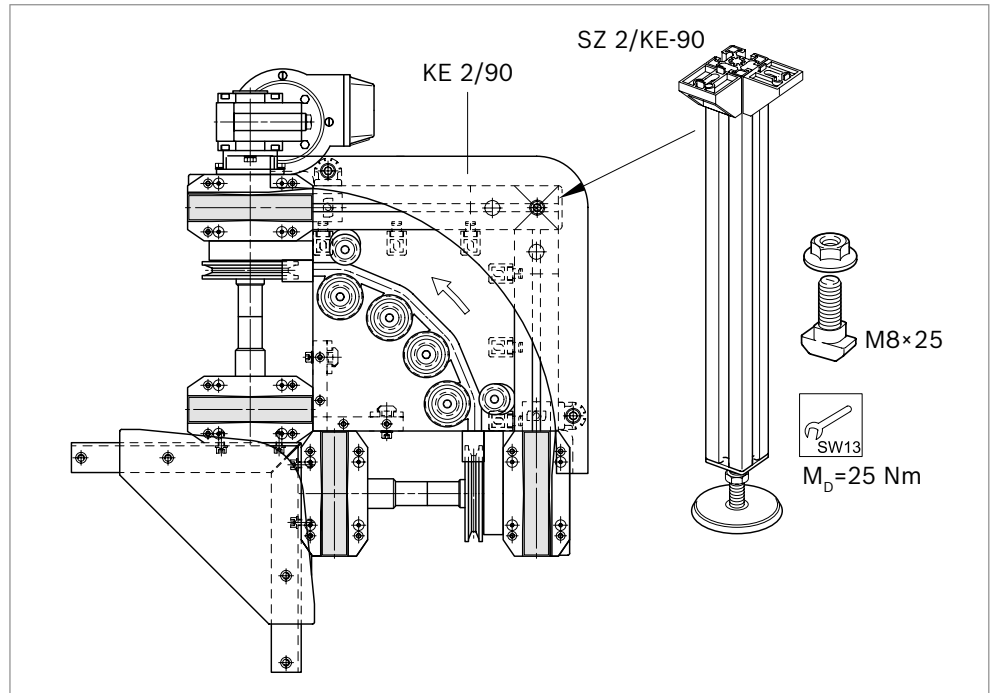
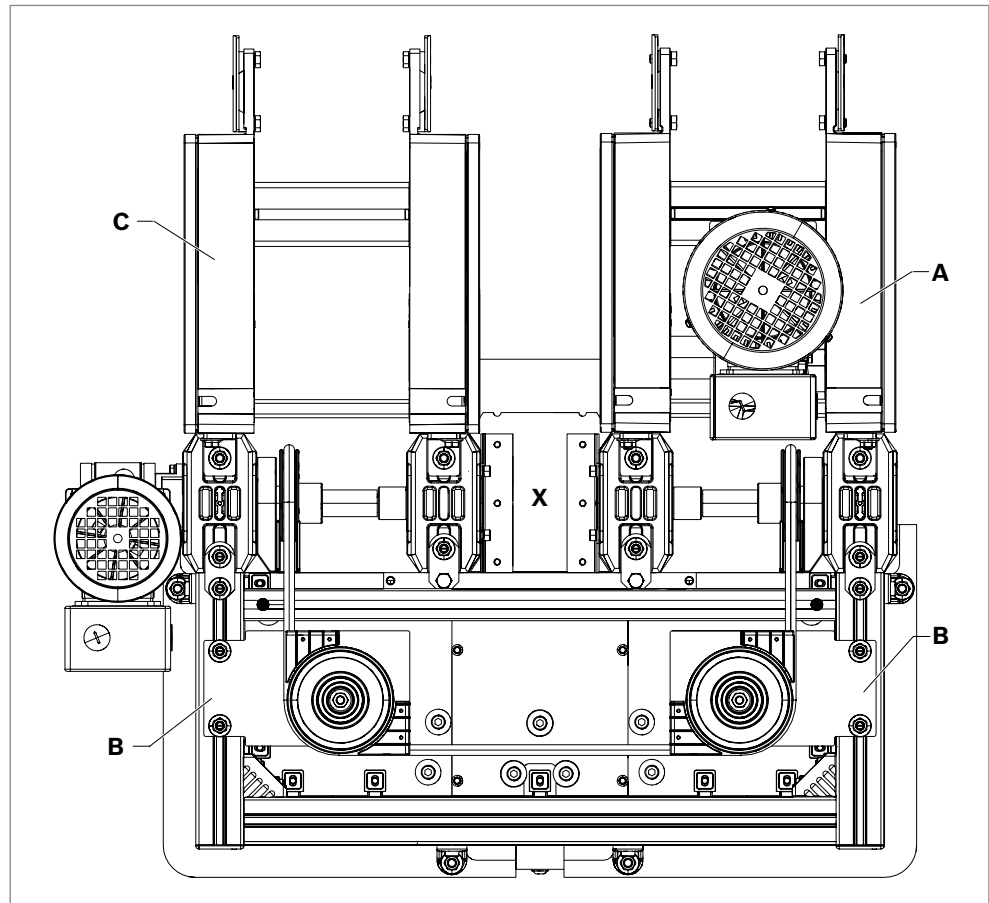


Fig. 19: Installing the leg set SZ 2/K-90

7.7 Installing the KE 2/180 curve

- A AS 2/B drive module
- B KE 2/180 curve
- C UM 2/B return unit

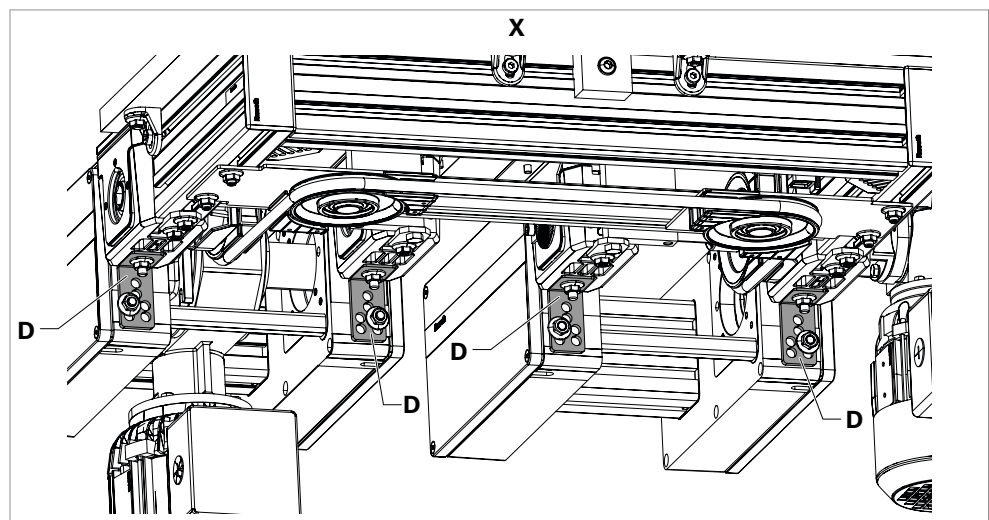
7.7.1 KE 2/180 with drive module (AS 2/B) and return unit (UM 2/B)



557 767 -20

Fig. 20: Position of the connection kits (bottom view)

- D Connection kit,
3842518828

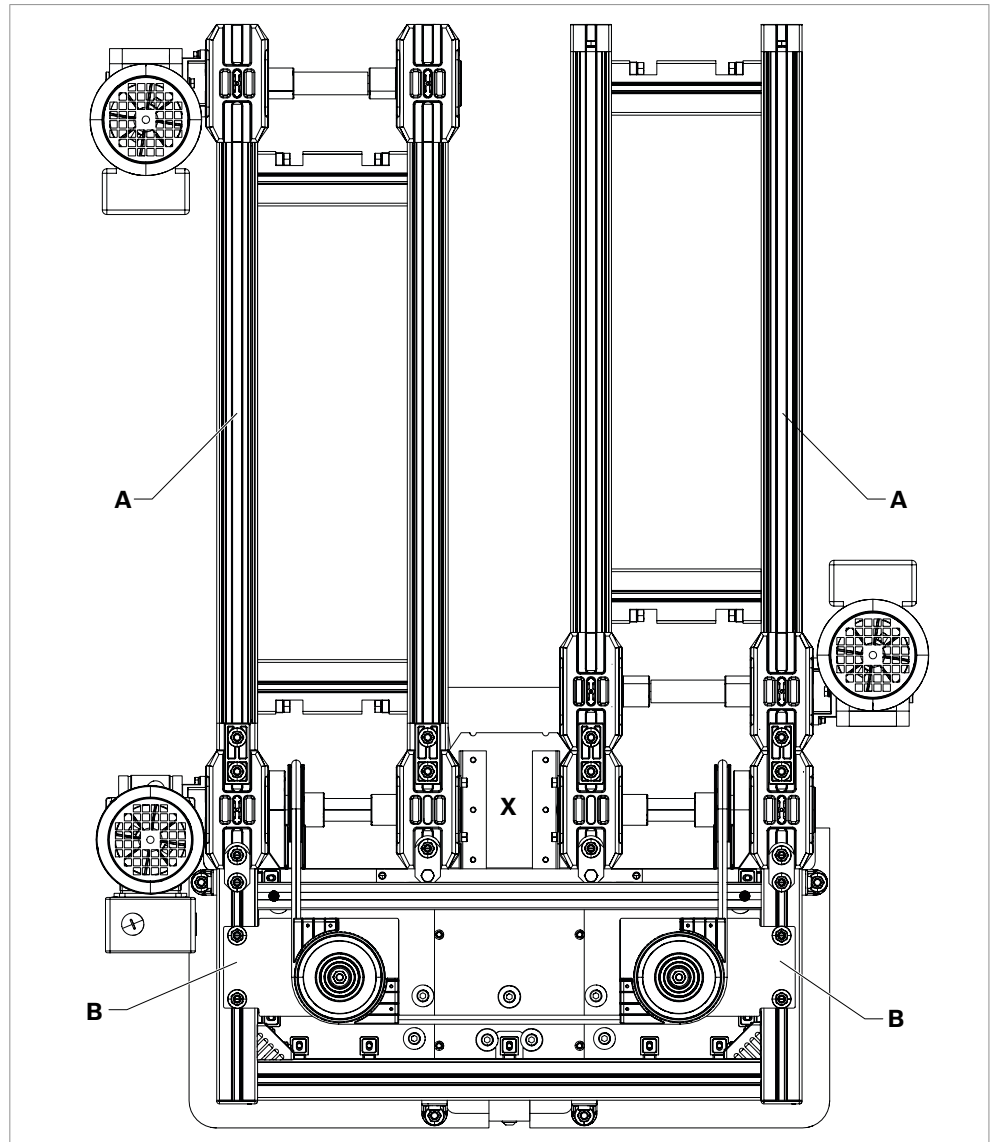


557 767 -21

Fig. 21: Detail "X", view from below.

- A** BS 2 belt section
- B** KE 2/180 curve

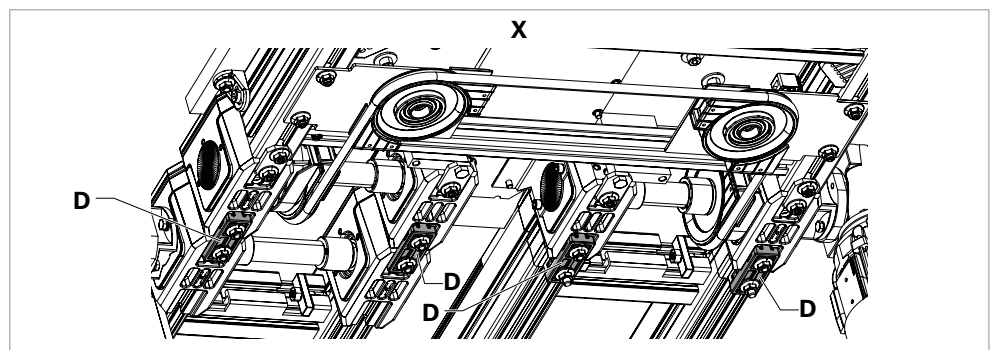
7.7.2 KE 2/180 with belt sections (BS 2)



557 767 -22

Fig. 22: Position of the connection kits (bottom view)

- D** Connection kit,
3842525110



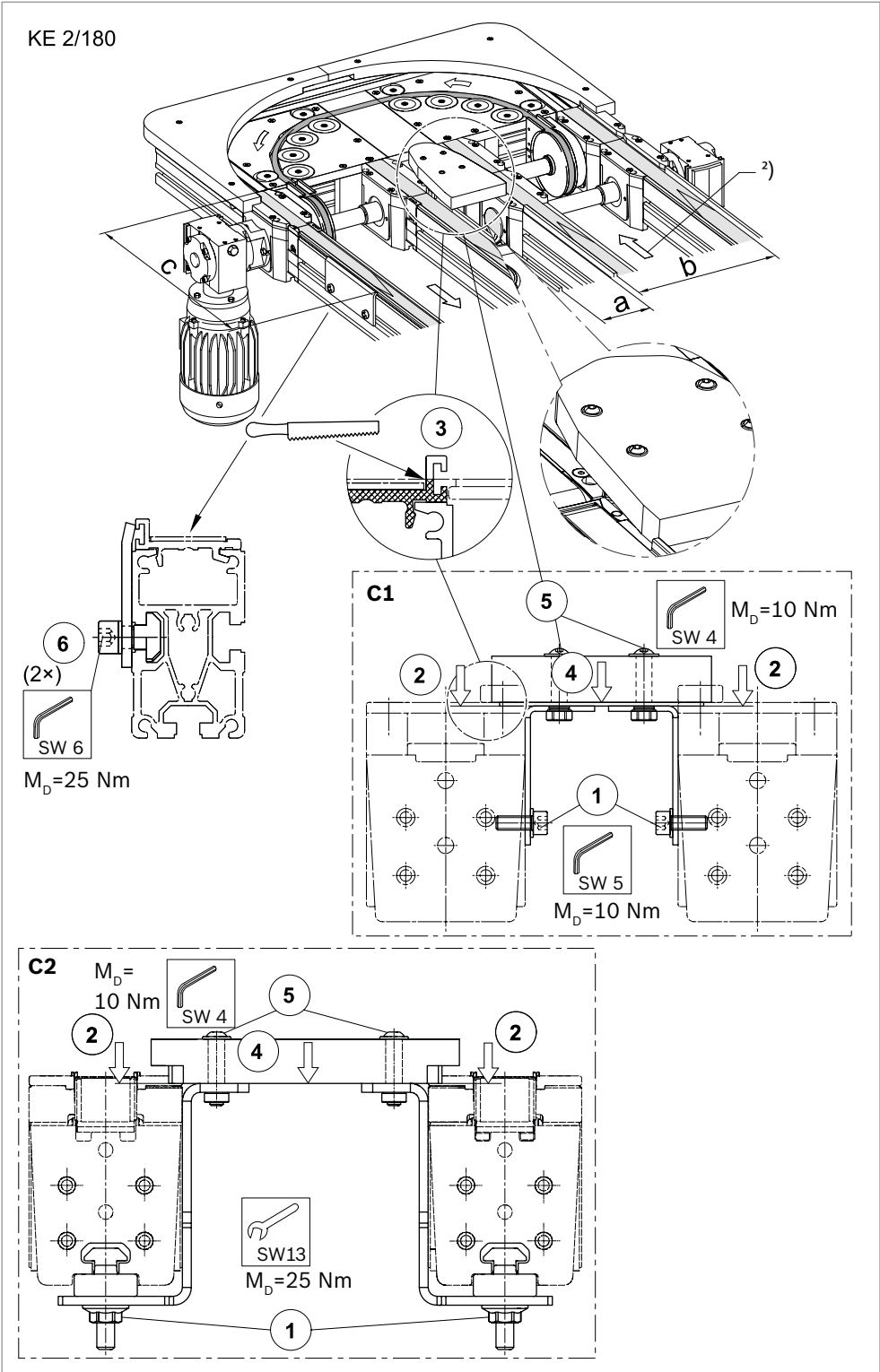
557 767 -23

Fig. 23: Detail "X", view from below.

- a** = section gap, 90 mm
or 135 mm
- b** = track width

1. Bracket variant “C1”:
Attach two brackets to the drive and return head, each with two M6×16 cylinder head screws, lock washers, and washers.
- Bracket variant “C2”:
Attach two brackets to the drive and return head, each with an M8×40 T-bolt, flange nut, spacer, and connection kit. ¹⁾
2. Put on the cover sheet.
3. Saw off the guide ridges of the belt guide profile in the area of the inner guide.
4. Put on the inner guide.
5. Attach the inner guide using four oval flange head screws M6×30.
6. Fasten the bracket in the T-slot of the BS 2 (installation dimension “c” 300 or 420).

7.7.3 Installing the inner guide and bracket



557 767 -24

Fig. 24: Installing the inner guide and bracket

c [mm]	b [mm]
300	320
420	400

¹⁾ Connection kits:
Section 7.9

²⁾ Direction of
transport, “pulling”
transport

7.7.4 Installing the leg set

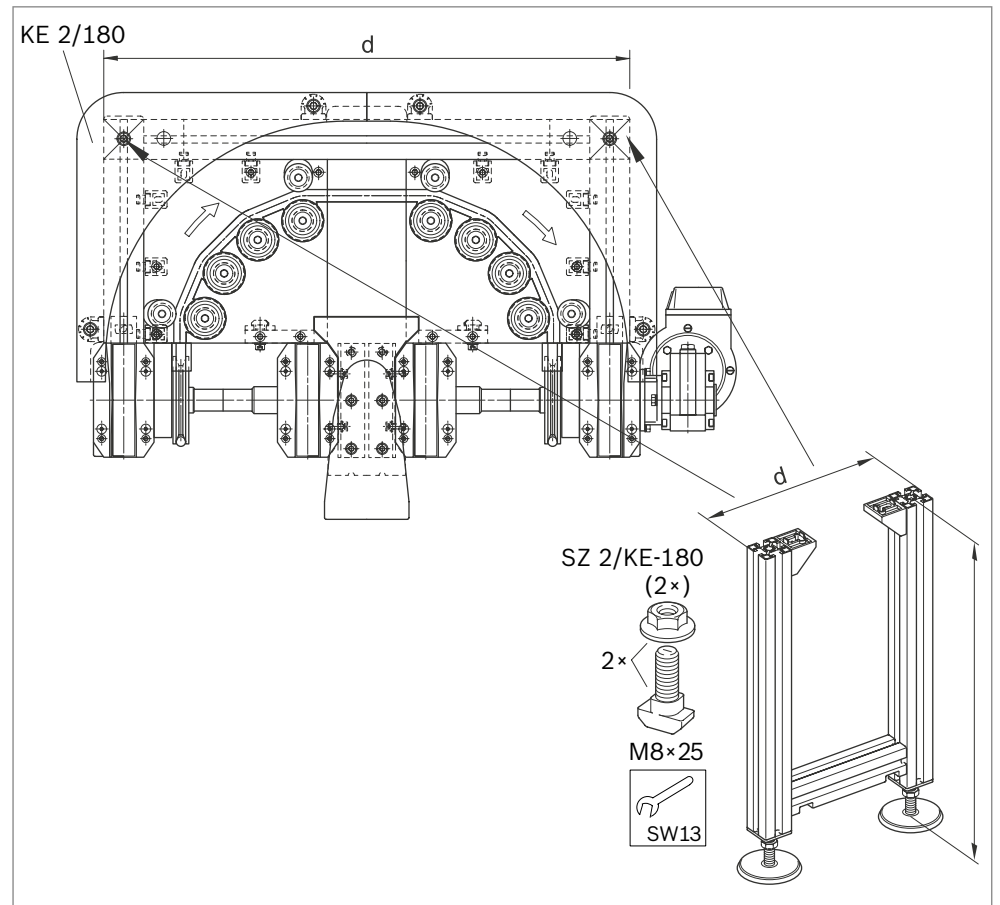
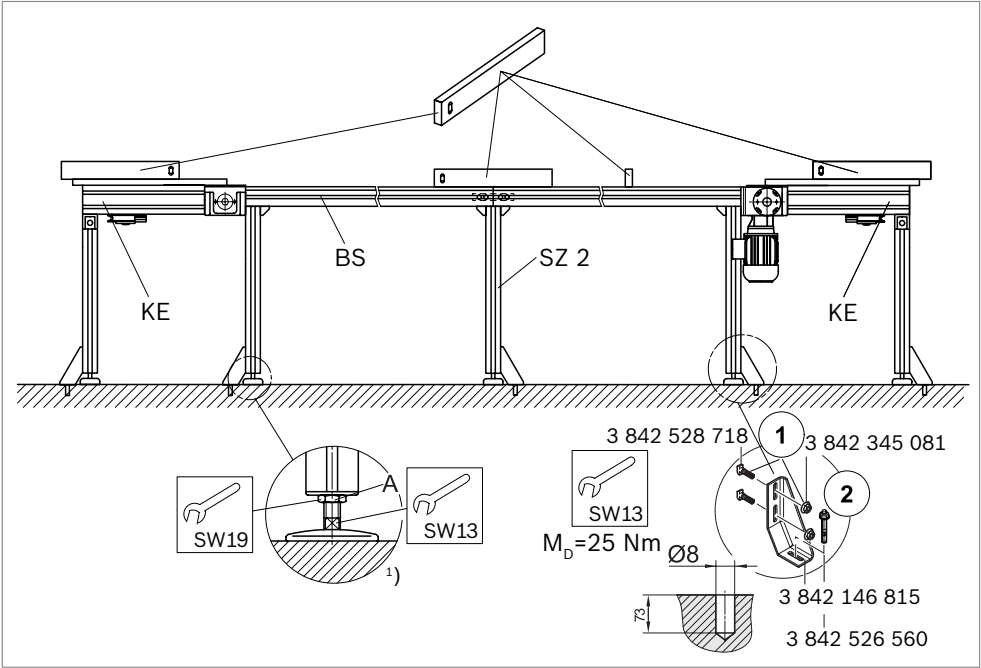


Fig. 25: Installing the leg set SZ 2/K-180

- 1. Align the system lengthwise and crosswise, adjust the spindles of the leveling feet accordingly, and tighten with the hexagon nut (A).
- 2. Screw the system to the floor using foundation bracket sets and floor dowels (see the Basic Mechanic Elements catalog).

1) Variant-dependent

7.8 Aligning the position



557 767 -26

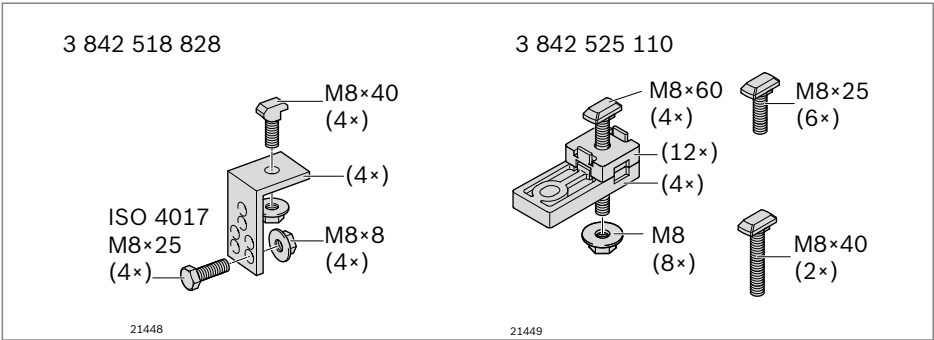
Fig. 26: Aligning the position

7.9 Overview of the connection kits

Table 5: Overview and use of the connection kits

	Return unit (return side)		
	UM 2/B	BS 2	KE 2/90 KE 2/180
Drive (drive side)			
AS 2/B-150, AS 2/B-250			3842518828
BS 2			3842525110 ¹⁾
KE 2/90 KE 2/180	3842518828	3842525110 ¹⁾	

1) Included in the KE 2/... scope of delivery



557 767 -27

Fig. 27: Connection kits

7.10 Installing the KE 2/90-O curve

7.10.1 Direction of transport

- A** BS 2/K belt section
- B** Drive unit for KE 2/90-O
- C** KE 2/90-O curve
- D** Return unit for KE 2/90-O
- E** BS 2/K belt section

¹⁾ Direction of transport; “pulling” transport

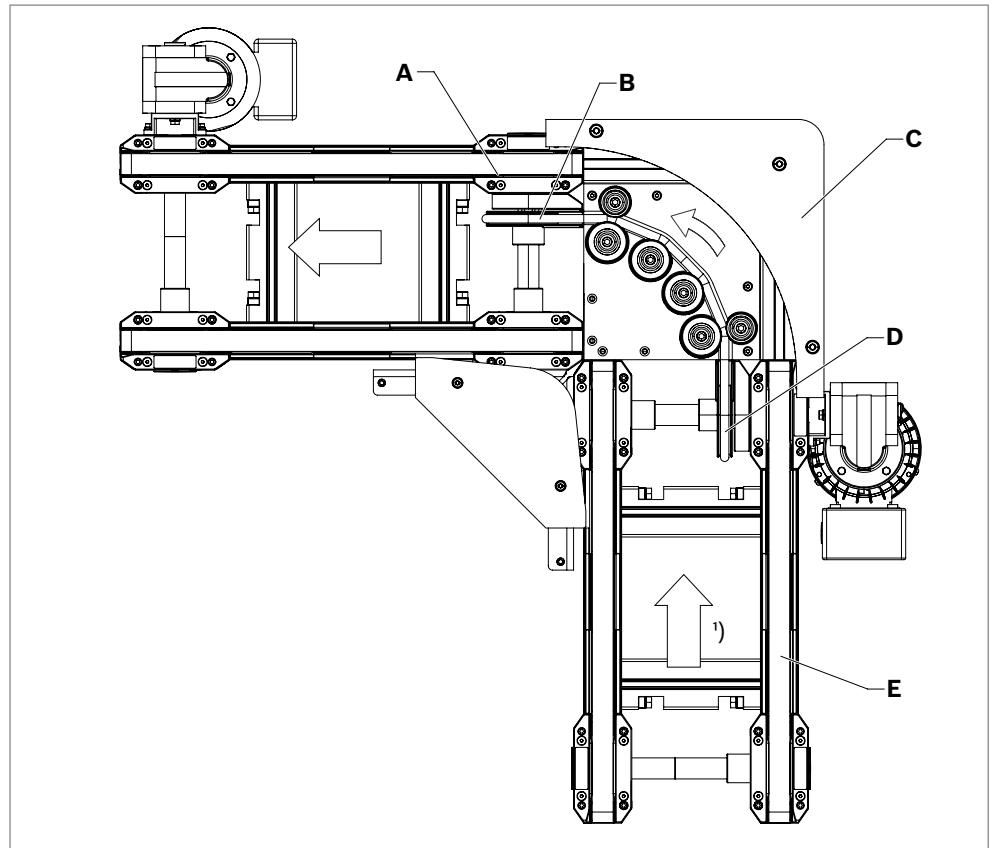
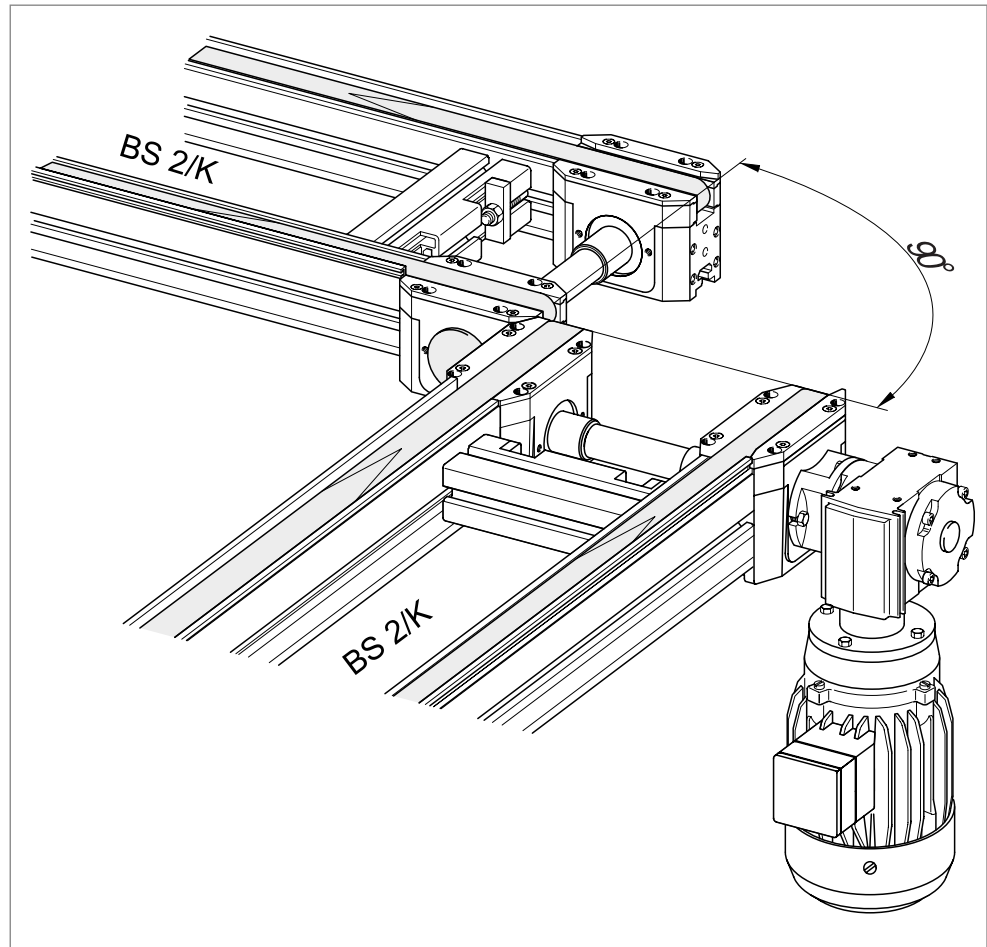


Fig. 28: Installation position of the “drive and return unit” in connection with the direction of transport.

7.10.2 Installing KE 2/90-O on BS 2/K

Step 1

- Place two BS 2/K belt sections on SZ 2 leg sets at a 90° angle.

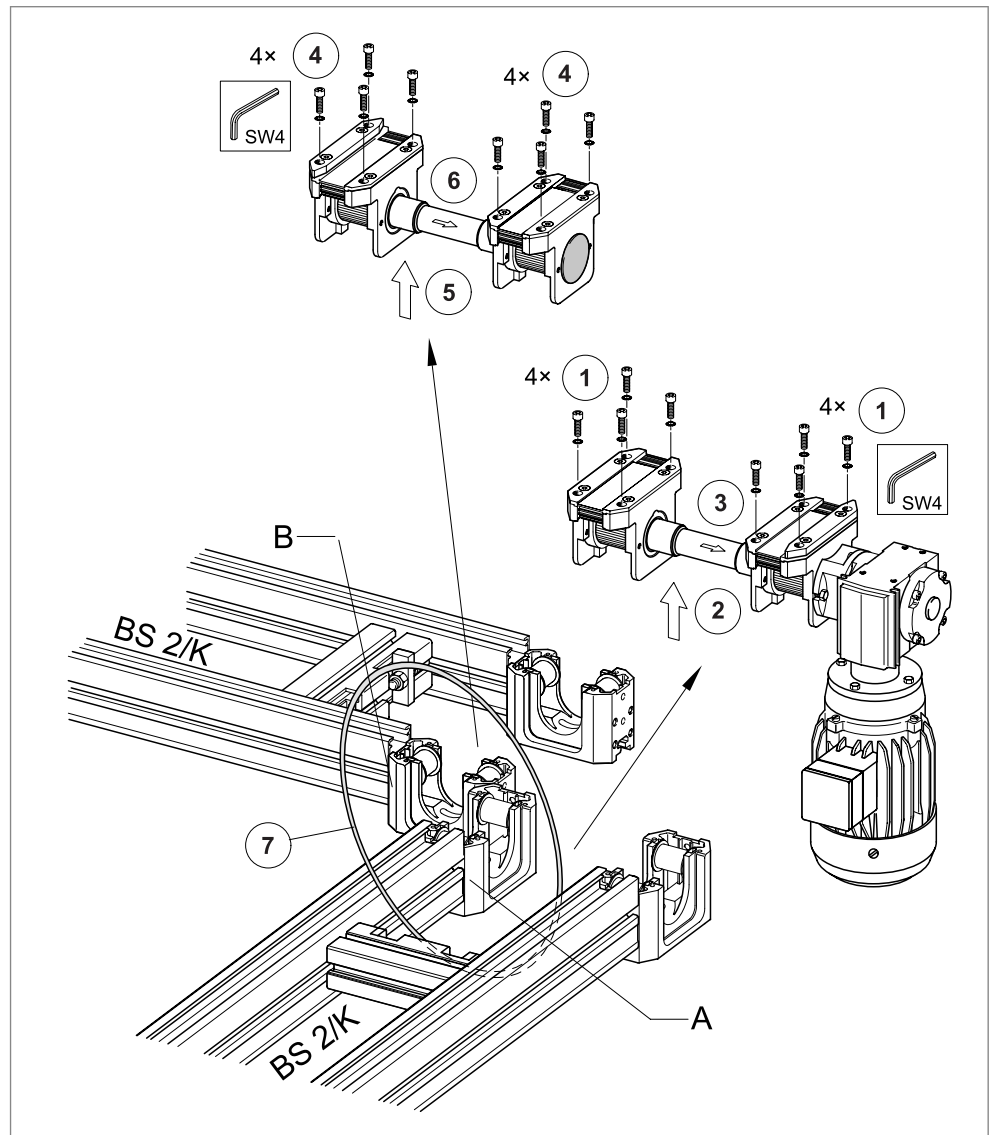


557 767 -29

Fig. 29: Installing KE 2/90-O on BS 2/K (1)

Step 2

1. Loosen four screws twice on the drive side of the first BS 2/K.
2. Remove the complete drive unit by lifting it up evenly, do not tilt it.
3. Pull the drive heads of the belt section off the hexagonal shaft. Remove the drive heads from the side.
4. Loosen four screws twice on the return side of the second BS 2/K.
5. Remove the complete return unit by lifting it up evenly, do not tilt it.
6. Pull the return heads of the belt section off the hexagonal shaft. Remove the return heads from the side.
7. Slip the PUR round belt over the drive heads (A) and (B) and lay it down there.



557 767 -30

Fig. 30: Installing KE 2/90-O on BS 2/K (2)

! WARNING

Hexagonal shafts on the return unit and drive

Clothing, long hair and body parts can get caught by the hexagonal shafts.

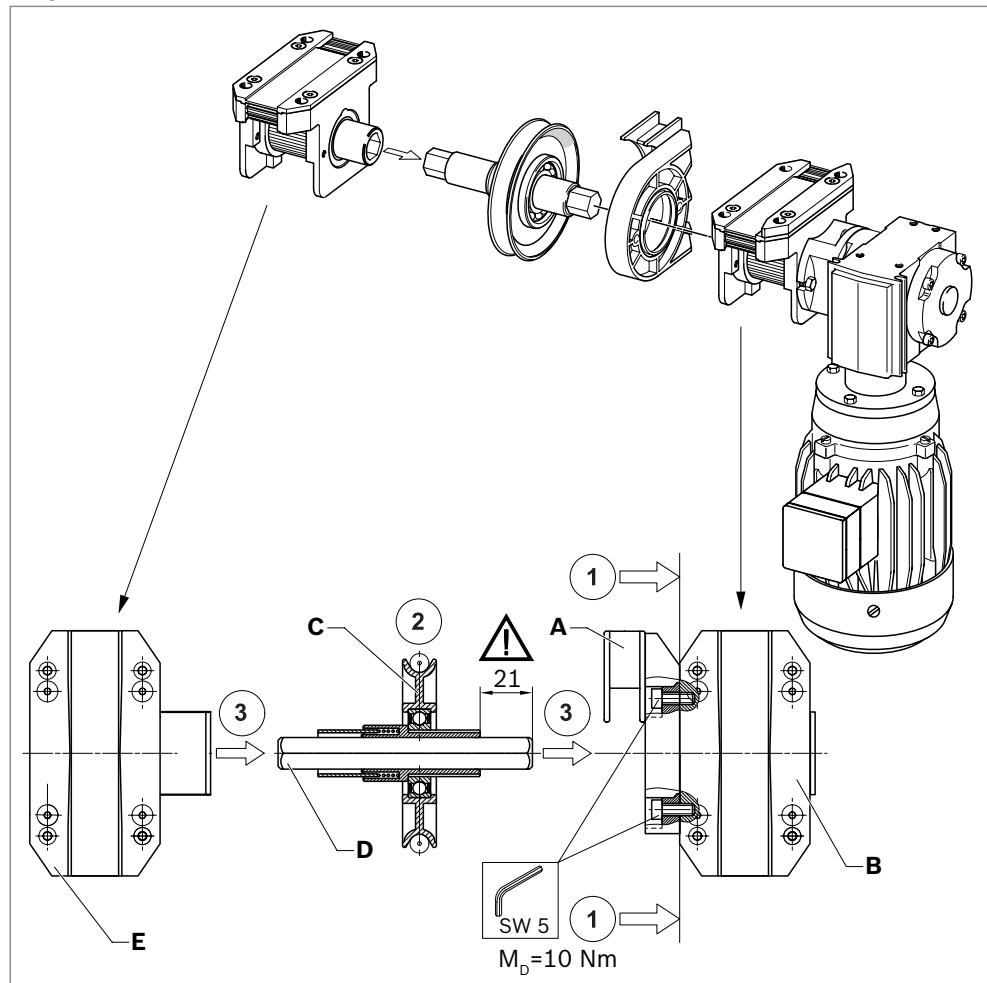
- Install all cover tubes.
- Make sure that all the hexagonal shafts are completely covered.



During the installation of the KE 2 /...- O drive and return unit, the belt section cover tubes (l = 53.5 mm) are dispensed with.

Step 3

1. Install the holder with belt covers (A) on the return housing (B).
2. Press the return wheel (C) onto the hexagonal shaft (D).
3. Insert the assembly with the return housings (B) and (E) and have the return unit ready for later installation.



557 767 -31

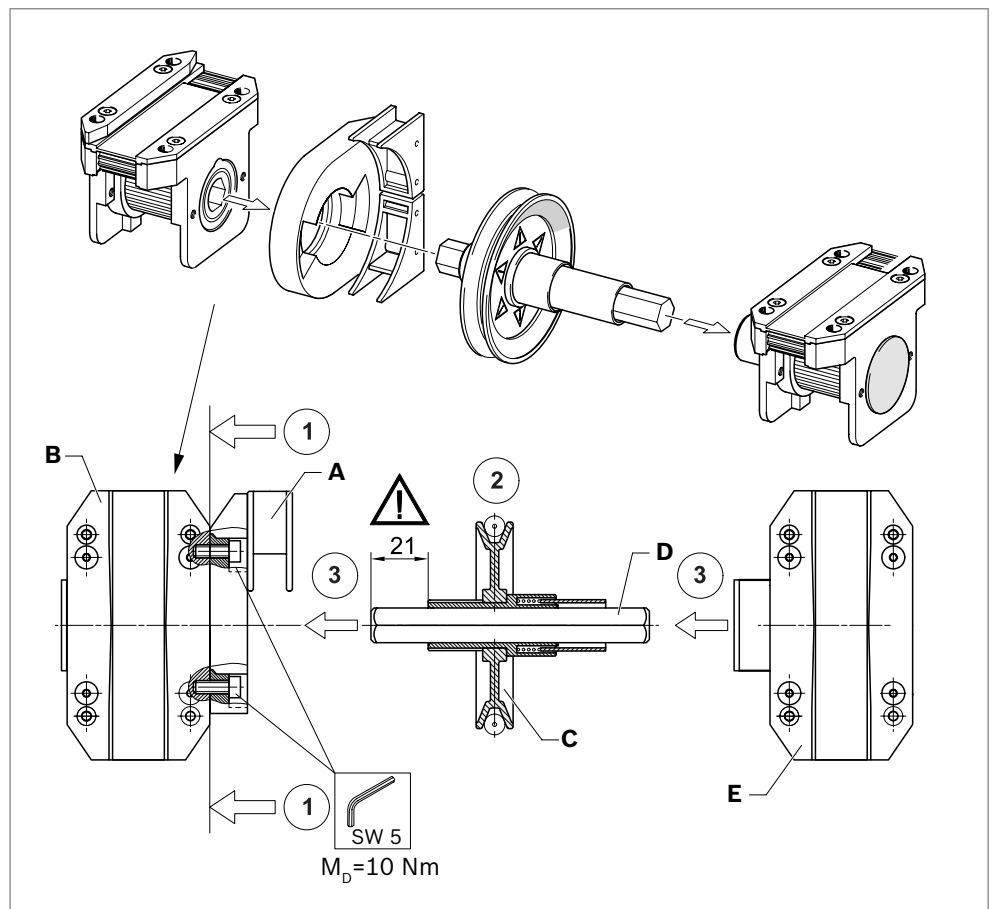
Fig. 31: Installing KE 2/90-O on BS 2/K (return unit of KE2/90-O) (3)



Observe the 21 mm installation dimension!

Step 4

1. Install the holder with belt covers (A) on the drive housing (B).
2. Press the drive wheel (C) onto the hexagonal shaft (D).
3. Insert the assembly with the drive housings (B) and (E) and have the drive unit ready for later installation.



557 767 -32

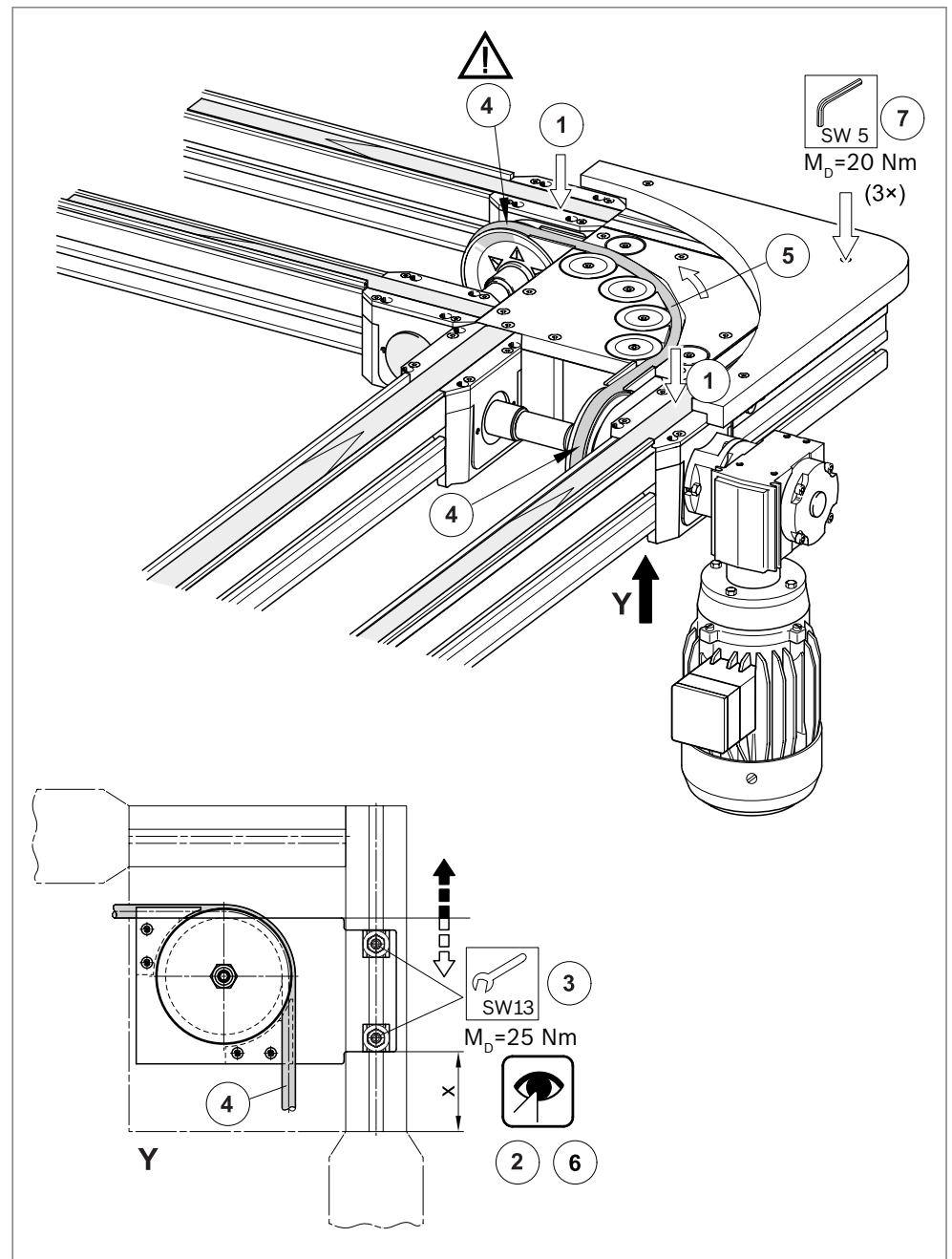
Fig. 32: Installing KE 2/90-O on BS 2/K (4) (drive unit of KE2/90-O)



Observe the 21 mm installation dimension!

Step 6

1. Install the drive and return unit in the BS 2/K.
2. Check dimension "X", see table.
3. Attach the clamping device.
4. Insert the round belts above and below the return units.
5. Pull the round belt over the upper guide rollers. This will achieve the prescribed belt tension.
6. Check that the round belt is not touching the lower run.
7. Attach the outer guide.



557 767 -34

Fig. 34: Installing KE 2/90-O on BS 2/K (6)

Table 6: Dimension "X"

x [mm]	b [mm]
55	160
64	240
144	320
224	400



Observe dimension "X" and do not change the belt tension.

7.10.3
Installing the inner guide on KE 2/90-O

Step 7

1. Attach two brackets to the drive and return head, each with an M8×40 T-bolt, flange nut, spacer, and attachment kit.
2. Saw off the guide ridges of the belt guide profiles in the area of the inner guide.
3. Put on the inner guide.
4. Attach the inner guide using 2 oval flange head screws.
5. Fasten the bracket in the T-slot of the BS 2/K (installation dimension “c”).

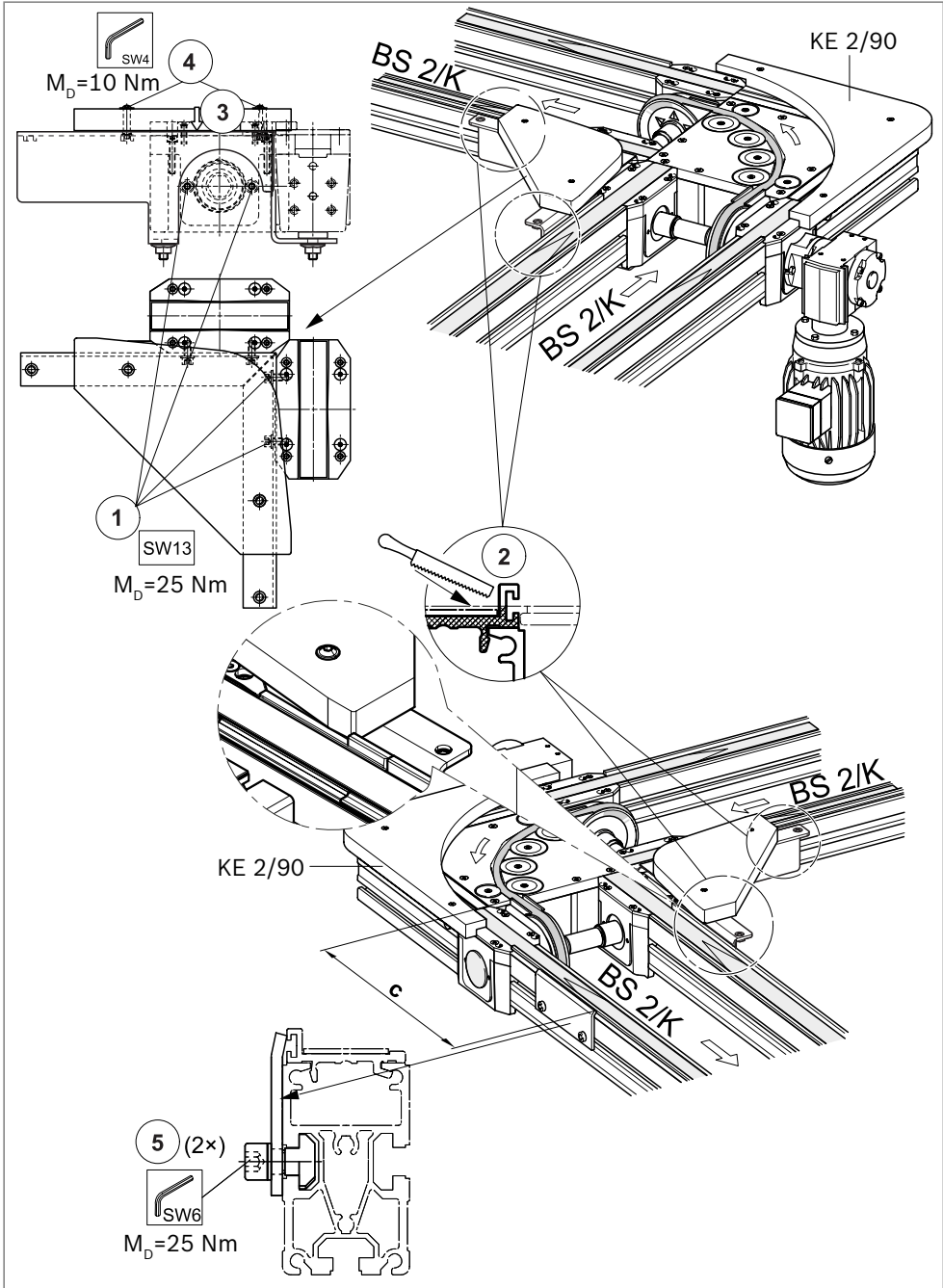


Fig. 35: Installing KE 2/90-O on BS 2/K (7), inner guide

c [mm]	b [mm]
300	320
420	400

The installation of the KE 2/90-O on the BS 2/K is complete.

7.11 Installing the KE 2/180-O curve

7.11.1 Direction of transport

- A** BS 2/K belt section
- B** Drive unit for KE 2/180-O
- C** KE 2/180-O curve
- D** Return unit for KE 2/180-O

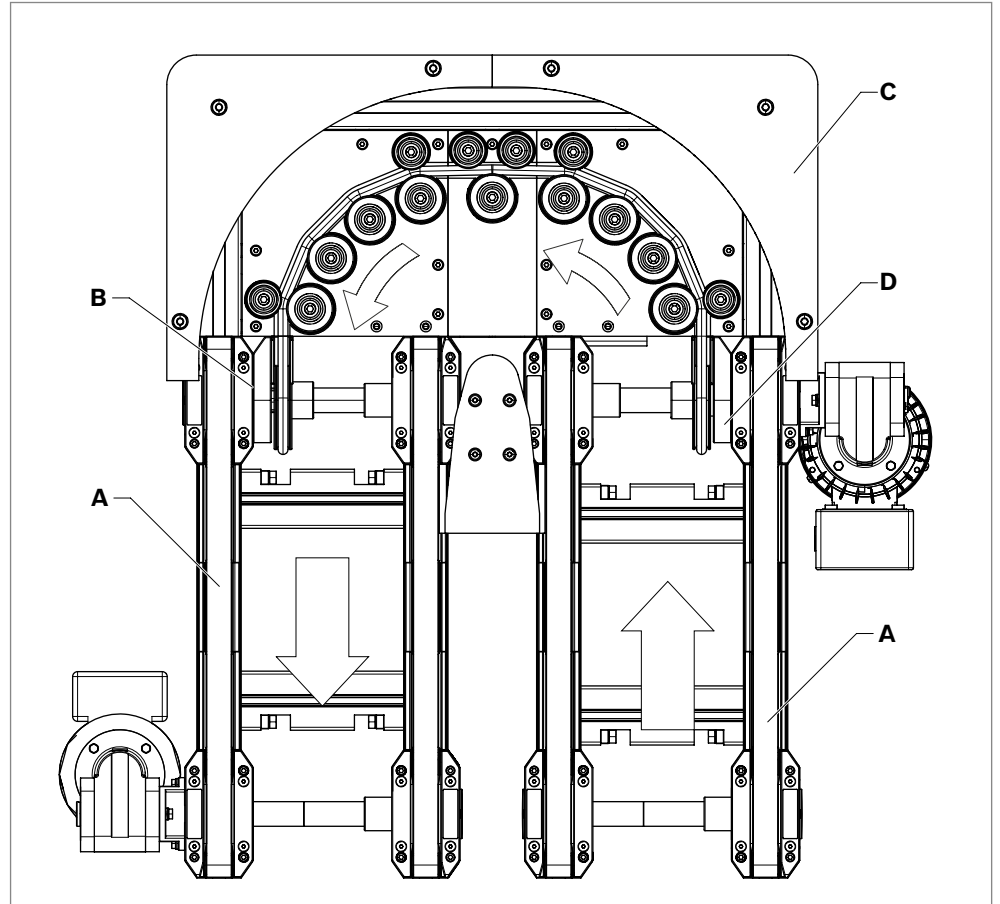


Fig. 36: Installation position of the “drive and return unit” in connection with the direction of transport.

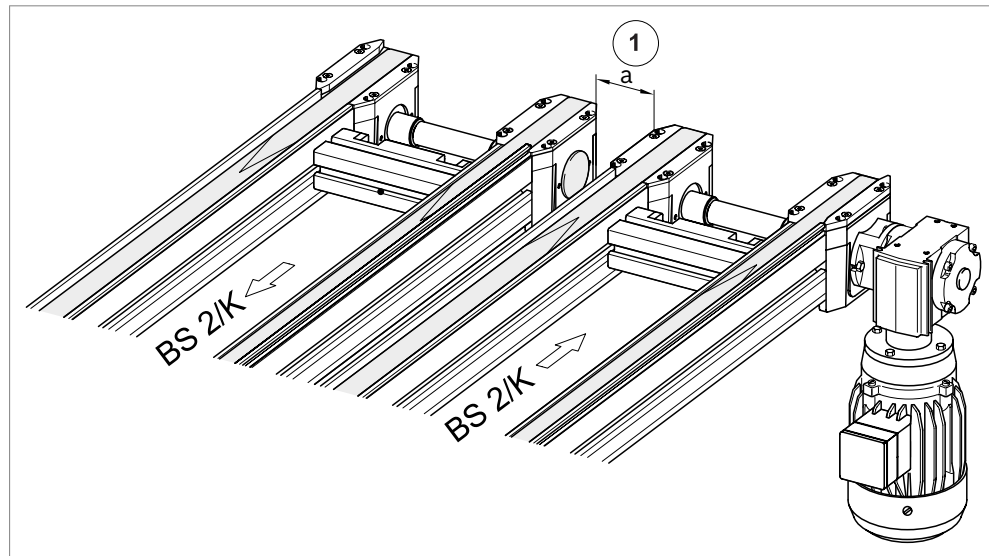
557 767 -36

7.11.2 Installing KE 2/180-O on BS 2/K

Step 1

a = section gap,
90 mm or 135 mm

1. Erect two BS 2/K belt sections at distance "a".



557 767 -37

Fig. 37: Installing KE 2/180-O on BS 2/K (1)

Step 2

1. Loosen four screws twice on the drive side of one BS 2/K.
2. Remove the complete drive unit by lifting it up evenly, do not tilt it.
3. Pull the drive heads of the belt section off the hexagonal shaft. Remove the drive heads from the side.
4. Loosen four screws twice on the return side of the other BS 2/K.
5. Remove the complete return unit by lifting it up evenly, do not tilt it.
6. Pull the return heads of the belt section off the hexagonal shaft. Remove the return heads from the side.
7. Slip the PUR round belt over the drive heads (A) and (B) and lay it down there.

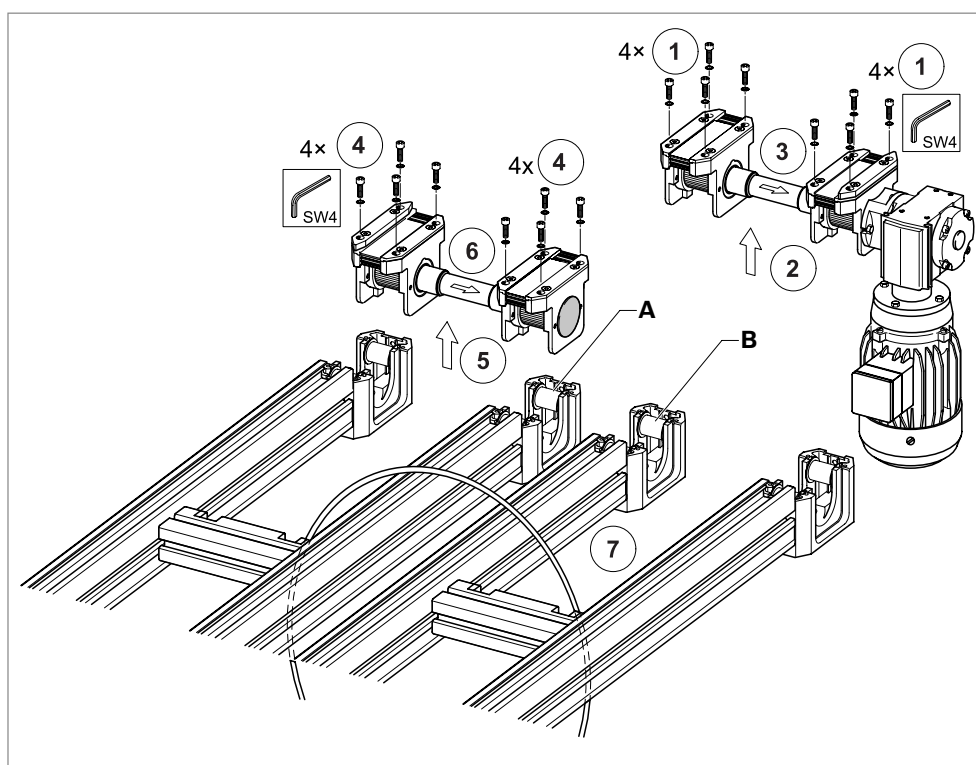


Fig. 38: Installing KE 2/180-O on BS 2/K (2)

! WARNING

Hexagonal shafts on the return unit and drive

Clothing, long hair and body parts can get caught by the hexagonal shafts.

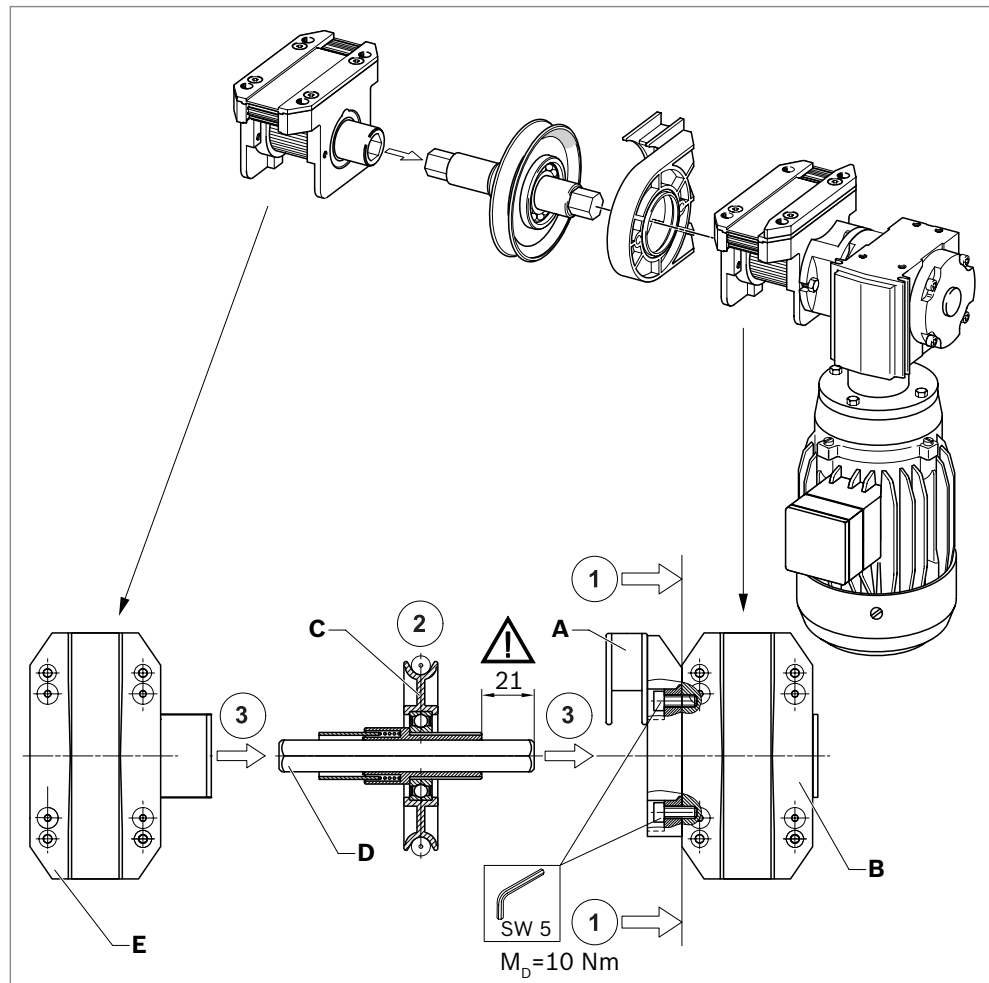
- Install all cover tubes.
- Make sure that all the hexagonal shafts are completely covered.



During the installation of the KE 2 /...- O drive and return unit, the belt section cover tubes (l = 53.5 mm) are dispensed with.

Step 3

1. Install the holder with belt covers (A) on the return housing (B).
2. Press the return wheel (C) onto the hexagonal shaft (D).
3. Insert the assembly with the return housings (B) and (E) and have the return unit ready for later installation.



557 767 -39

Fig. 39: Installing KE 2/180-O on BS 2/K (return unit of KE 2/180-O) (3)



Observe the 21 mm installation dimension!

Step 4

1. Install the holder with belt covers (A) on the drive housing (B).
2. Press the drive wheel (C) onto the hexagonal shaft (D).
3. Insert the assembly with the drive housings (B) and (E) and have the drive unit ready for later installation.

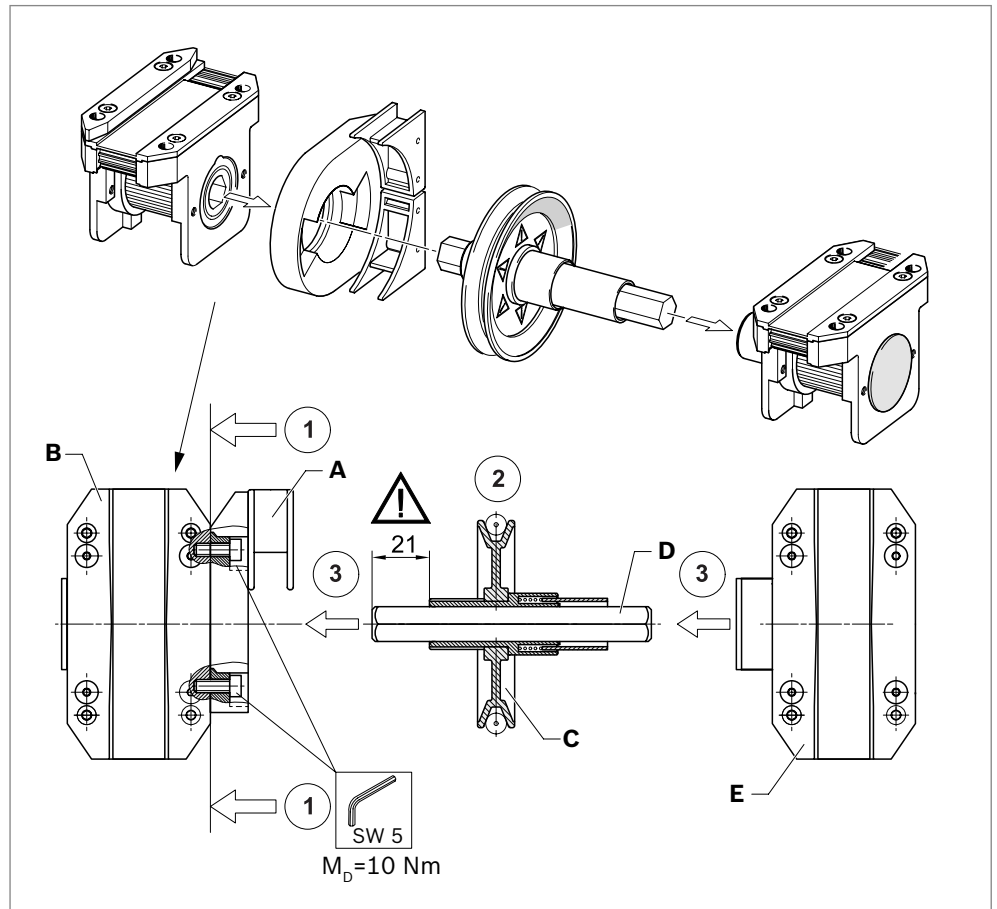


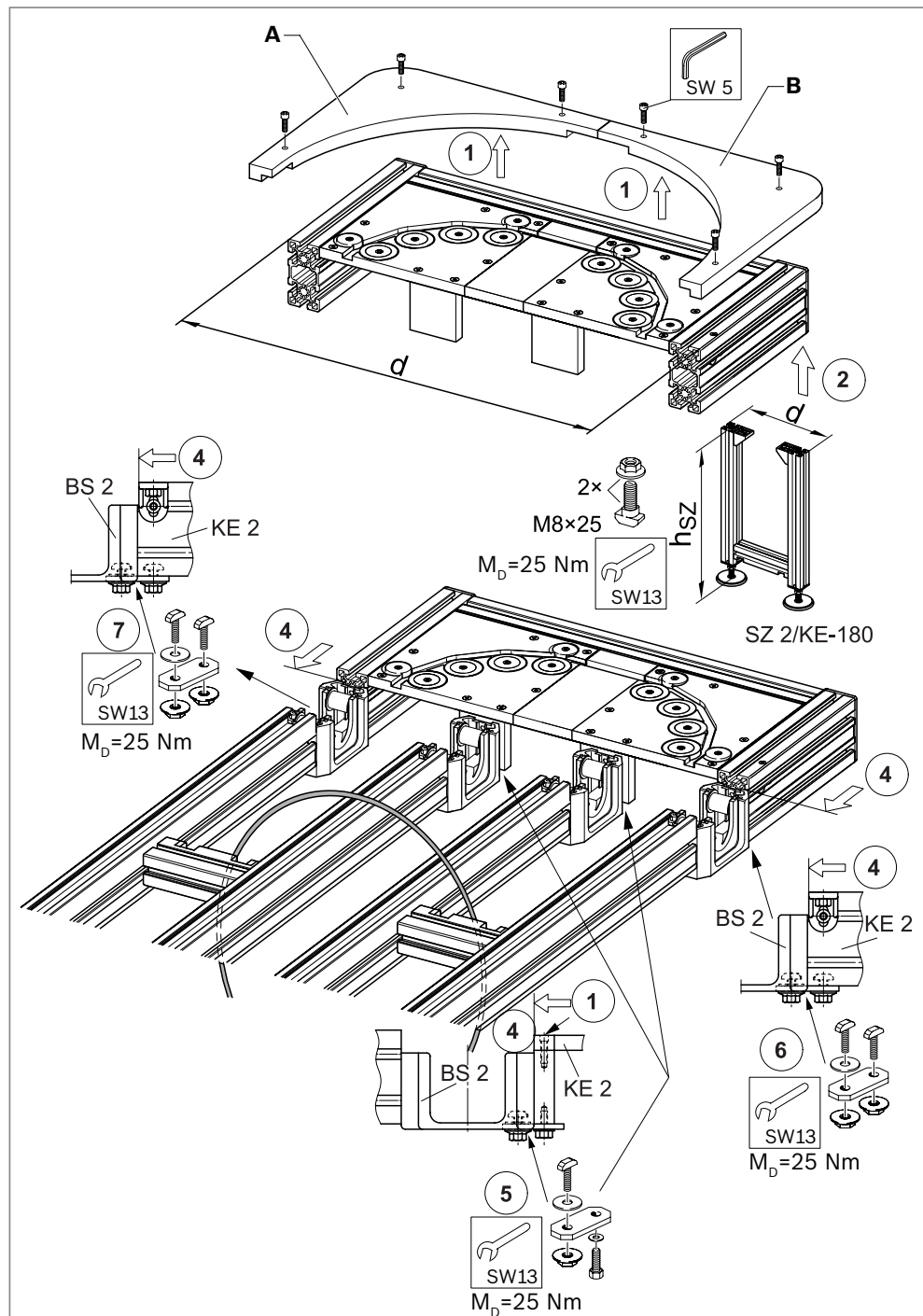
Fig. 40: Installing KE 2/180-O on BS 2/K (drive unit of KE2/180-O) (4)



Observe the 21 mm installation dimension!

Step 5

1. Unscrew the outer guides (A) and (B) of the KE 2/180-O.
2. Install an SZ 2/KE leg set (see the TS 2 catalog) under the KE 2/180-O curve.
3. Attach the tabs from below to the (inner) drive heads of the BS 2/K using an M8×20 T-bolt, 28/9×1 shim, and M8 flange nut. ¹⁾
4. Push KE 2/180-O onto the BS 2/K belt sections.
5. Attach the KE 2/180-O to the tabs from below using two M8×16 hexagon screws and locking screws.
6. Curve infeed: Attach a tab under BS 2/K and KE 2/180-O using two M8×20 T-bolts and M8 flange nuts, and the 28/9×1 shim under BS 2/K. ¹⁾
7. Curve outfeed: Attach a tab under BS 2/K and KE 2/180-O using two M8×20 T-bolts and M8 flange nuts, and the 28/9×1 shim under BS 2/K. ¹⁾



557 767 -41

Fig. 41: Installing KE 2/180-O on BS 2/K (5)

¹⁾ Attachment kit (F) (Fig. 4).

Step 6

- a** = section gap; 90 mm or 135 mm
b = track width

1. Install the drive and return unit in the BS 2/K.
2. Check dimension "X", see table.
3. Attach the clamping device.
4. Insert the round belt above and below the return units.
5. Pull the round belt over the upper guide rollers. This will achieve the prescribed belt tension.
6. Check that the round belt is not touching below.
7. Attach the outer guides.

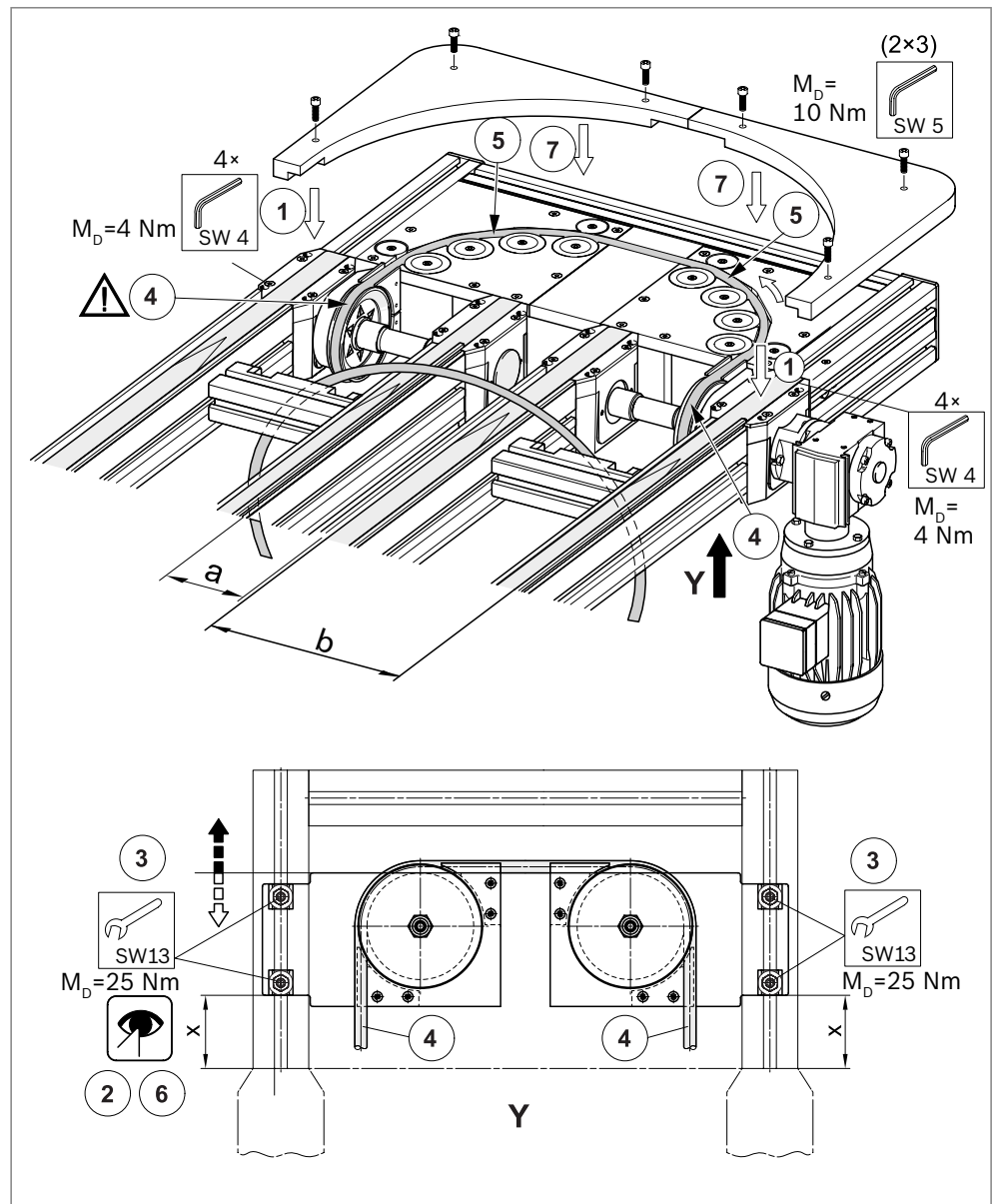


Fig. 42: Installing KE 2/180-O on BS 2/K (6)

Table 7: Dimension "X"

x [mm]		b [mm]
55		160
64		240
a = 90	a = 135	-
144	99	320
224	179	400

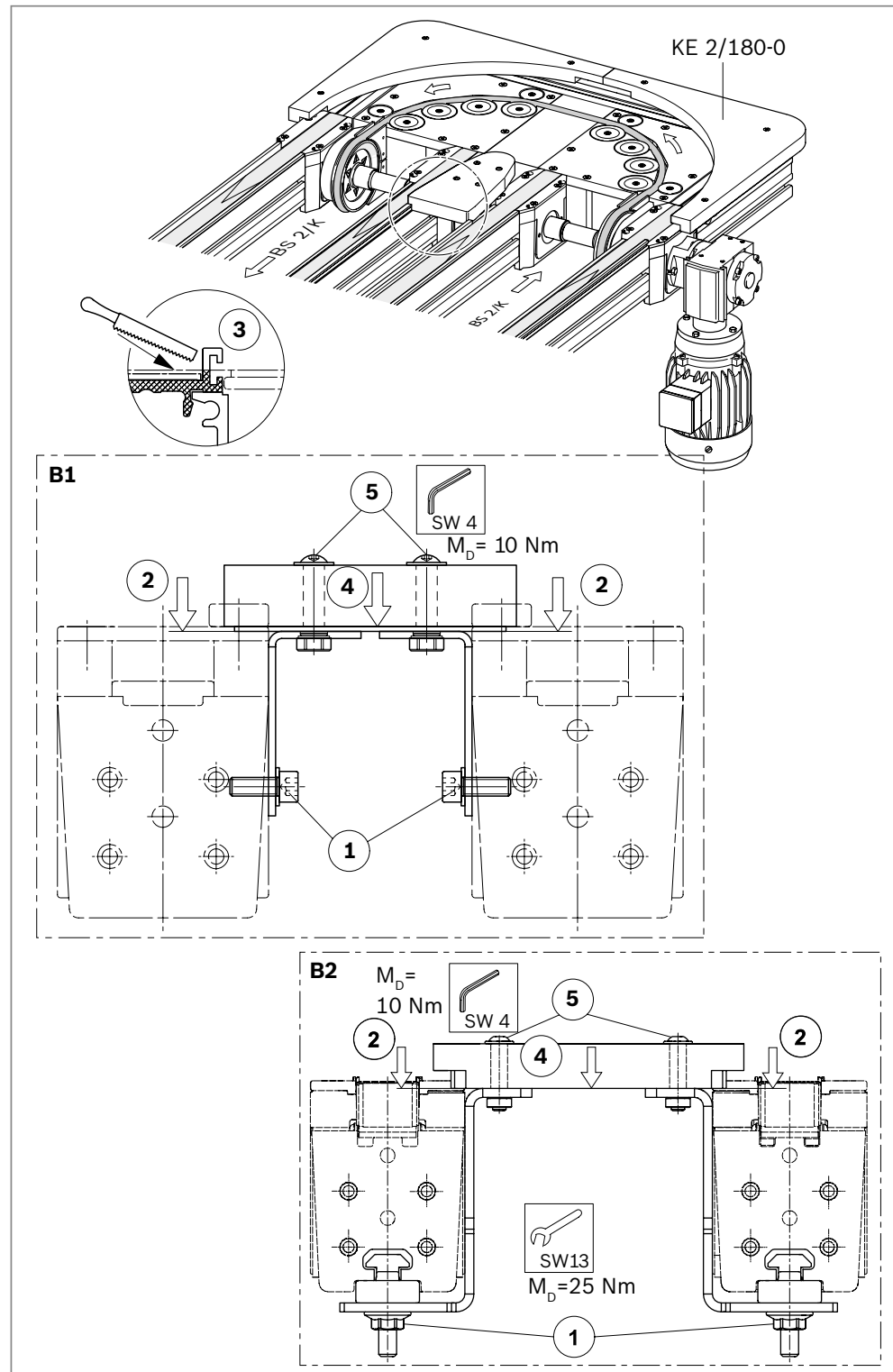


Observe dimension "X" and do not change the belt tension.

7.11.3 Installing the inner guide on KE 2/180-O, BS 2/K

Step 7

1. Bracket variant "B1":
Attach two brackets to the drive and return head, each with two M6×16 cylinder head screws, lock washers, washers, and attachment kit. Bracket variant "B2": Attach two brackets to the drive and return head, each with an M8×40 T-bolt, flange nut, spacer, and attachment kit. ¹⁾
2. Put on the cover sheet.
3. Saw off the guide ridge of the belt guide profile in the area of the inner guide.
4. Put on the inner guide.
5. Attach the inner guide using four oval flange head screws, see Pos. (B) in Fig. 4.



¹⁾ Variant-dependent

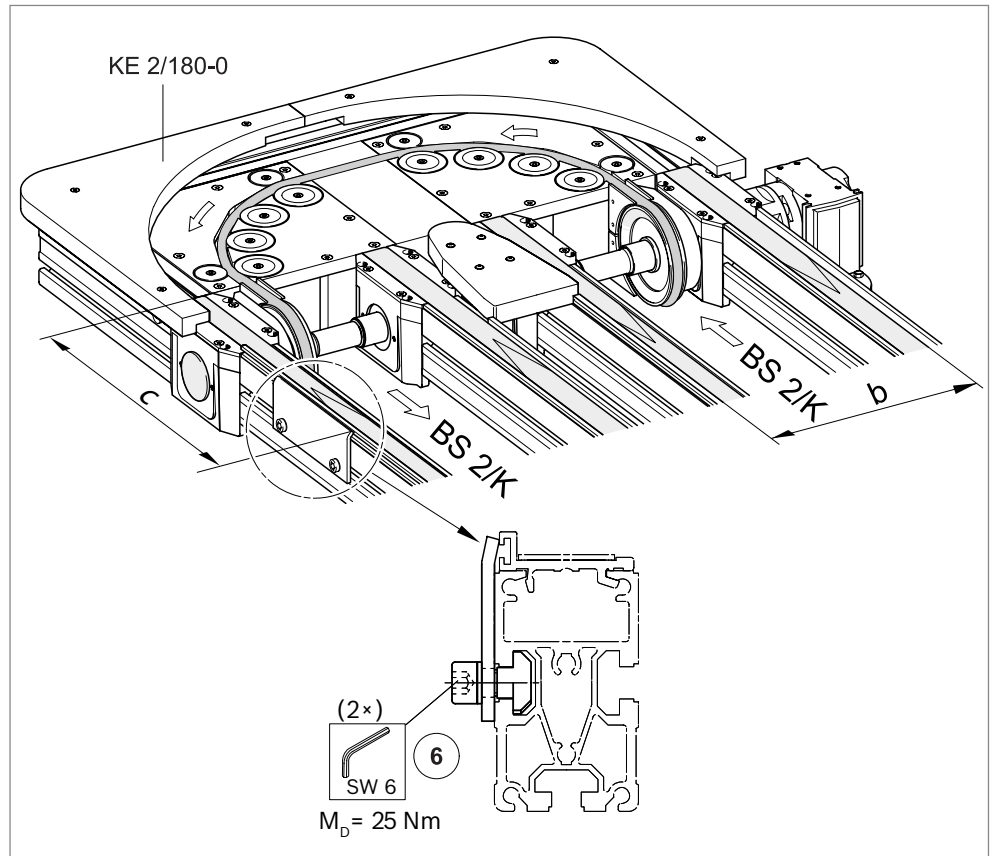
Fig. 43: Installing KE 2/180-O on BS 2/K (7), inner guide

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Step 7 continued

b = track width

6. Fasten the bracket in the T-slot of the BS 2/K (installation dimension "c"). See Pos. (G) in Fig. 4.



ENGLISH

Fig. 44: Installing the inner guide on KE 2/180-O (7)

c [mm]	b [mm]
300	320
420	400

The installation of KE 2/180-O on BS 2/K is complete.

7.12 Installation



An EMERGENCY STOP device for the transfer system must be provided by the customer!

The motor connection must be performed by a qualified electrician (VDE regulation VDE 0100)!

7.13 Motor connection

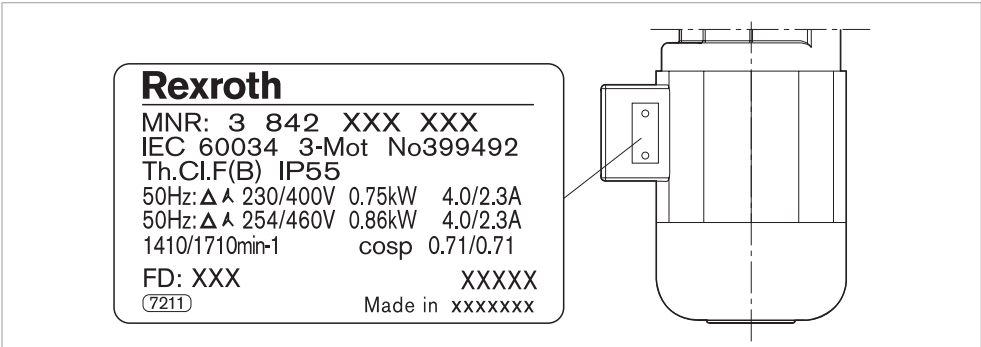


Fig. 45: Nameplate (example)

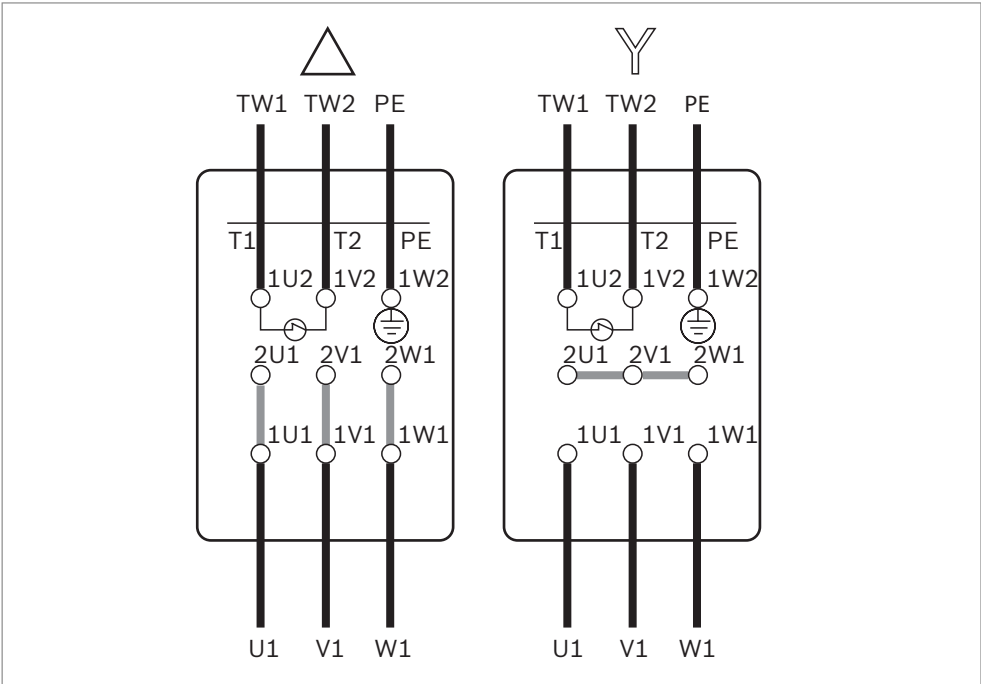


Fig. 46: Connection diagrams

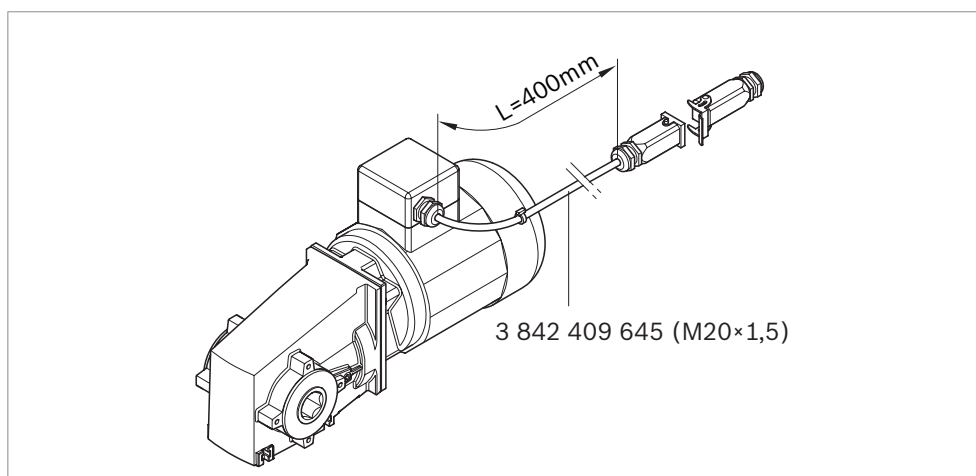
Please note

- The information on the nameplate, Fig. 45
- The connection diagrams, Fig. 46
- The connection diagram in the terminal box

The electrical connection must be made according to this information.

- Route the cable in such a way that it will not get damaged during operation.

The motor is fitted with a bimetal temperature monitoring switch (potential-free thermal contact, 230 V AC, 300 mA) - if the switch is triggered, the motor must be de-energized!



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Fig. 47: Optional connection line



Observe the pre-fuse!

8 Start-up

CAUTION

Sudden movements, falling workpiece pallets

Injuries caused by falling objects.

- ▶ Make sure that the product has been installed correctly by qualified personnel (see Section 2.4) before starting it up.

NOTICE

Malfunctions due to incorrect assembly and start-up

The product can get damaged and its service life shortened.

- ▶ Start-up requires basic mechanical and electrical knowledge.
- ▶ The product may only be put into operation by qualified personnel (see Section 2.4)

- Before the start-up or re-commissioning of a transfer system, run a risk assessment in accordance with DIN EN ISO 12100.
- According to EU Machinery Directive 2006/42/EC, you must equip the transfer system with EMERGENCY STOP devices.
- The surfaces of motors and gears can reach temperatures of up to 65 °C under certain load and operating conditions. In these cases, you must comply with the respective applicable accident prevention regulations (UVV) by taking appropriate constructive measures (safety equipment) or by affixing/displaying appropriate warning signs!
- Make sure that all the electrical and pneumatic connections are either in use or covered. Make sure that all bolted connections and plug-in connections are properly seated. All relevant protective covers must be fitted.
- Only inspect and adjust transfer systems that are in motion or operation when the safety equipment is in place.
- Observe DIN EN ISO 13857 when you remove or replace safety guards and/or bypass safety equipment.
- Test runs with open protective covers should only be performed by a competent person using tip switches and if no interference from other switching devices exists.
- Only start up the product if all safety equipment has been installed in the system and is functional.
- Only start up a product that has been completely installed.



The KE 2/90-O and KE 2/180-O curves are not suitable for accumulation operation and may not be used in reverse or overrun mode. Accumulation separation must be provided by the customer.

- Let the system run only briefly (max. 2 s) and make sure the motor is rotating in the proper direction.

To switch the motor's rotational direction, switch any two wires (L1, L2 or L3, connection diagrams).



For motors that come with a fitted plug, correct the rotational direction in the control cabinet or at the socket contact (socket side). This makes replacement easier.

8.1 Residual risk

WARNING

“Round belt” conveyor medium on KE 2/... curve

Clothing or long hair can become entangled; risk of crushing or pulled out hair.

- Keep hands out of the pinch point
- Wear suitable protective clothing (hair net).

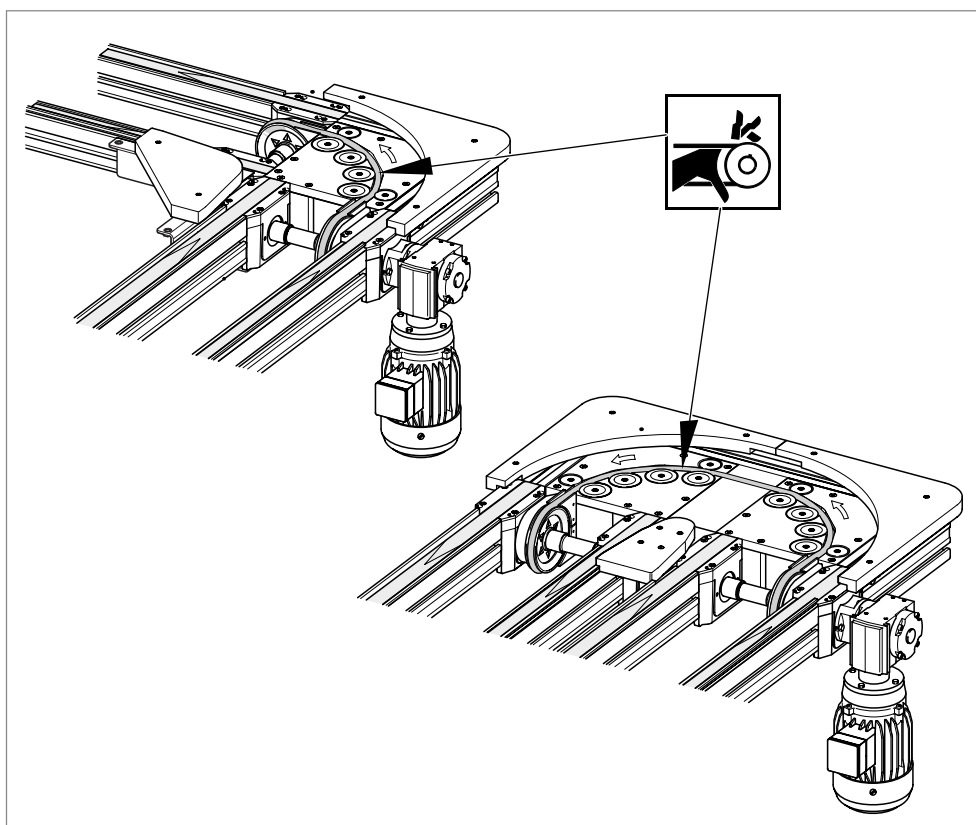


Fig. 48: Pinch point on KE 2/ ... (using KE 2/90 and KE 2/180 as an example)

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9 Operation

CAUTION

Hot electric motor surfaces during operation!

Risk of burns from touching hot surfaces above 65 °C.

- Install appropriate safety guards.

9.1 Notes regarding operation

9.1.1 Wear

- Individual components are subject to unavoidable wear by their very nature. Constructive measures and the selection of materials help ensure functional reliability over the full service life. However, wear is also dependent on the operating, maintenance and ambient conditions at the place of use (resistance, contamination).
- Overloading conveyor sections can impair the function of the conveyor medium and lead to the premature breakdown of motors and gears.

9.1.2 Measures to reduce wear

The following commonsense measures will reduce wear:

- Switch off the conveyor section during system shutdowns, for example, during breaks, at night, and on weekends.
- Do not select a higher speed for the conveyor section than that required for the corresponding function.
- Abrasive media greatly increase wear - clean the system regularly.

9.1.3 Loading the workpiece pallet

The modular units are designed and tested under the assumption that the workpiece pallets (WT) will not all have the same weight on a circulating conveyor section.

Workpiece pallets are both loaded and unloaded.

Significantly different weights may require special measures to avoid malfunctions.

This applies to:

- The permitted accumulation length before stop gates.
- Damper functionality.
- Dampened stop gates.

9.1.4 Environmental influences

- Avoid contact with highly acidic or alkaline materials.

Resistance to media preexists.

For example:

- Water
- Mineral oil
- Lubricating greases
- Detergent

If in doubt about the resistance to certain chemicals, we recommend contacting your Rexroth specialist.

For example:

- Test oil
- Doped oils
- Aggressive cleaning agents
- Solvents
- Brake fluid

Abrasive media and objects greatly increase wear.

For example:

- Sand
- Silicates
- Pumice dust
- Glass shards
- Metal shavings
- Lost parts

Resistance to media does not simultaneously mean that functional reliability is guaranteed under all circumstances:

- Liquids that thicken on evaporation and are highly viscous or sticky can lead to malfunctions.
- Lubricating media can lead to a loss in the drive power that is transmitted via friction.

In such instances, special care must be taken when planning the system and the maintenance and cleaning intervals must be shortened.

10 Maintenance and repair

WARNING

Risk of fatal injury due to high voltage!

- ▶ Observe the “five safety rules” in accordance with DIN VDE 0105-100.



Maintenance and repair work may only be carried out by a qualified electrician.

CAUTION

Hot electric motor surfaces during operation!

Risk of burns from touching hot surfaces above 65 °C.

- ▶ Install appropriate safety guards.
- ▶ Let the system cool down for at least 30 minutes before performing maintenance and/or repair work.

- Only inspect and adjust transfer systems that are in motion or operation when the safety equipment is in place.
- Observe DIN EN ISO 13857 when you remove or replace safety guards and/or bypass safety equipment.
- Test runs with open paneling should only be performed by a competent person using tip switches and if no interference from other switching devices exists.

10.1 Cleaning and care

NOTICE

Bearings and toothed belt

Degreasers and aggressive media on the bearings and toothed belt lead to:

- Malfunction
- and
- A shortened service life

- ▶ Keep degreasers and aggressive cleaning agents away from the bearings and toothed belt.
- ▶ Only clean the entire product with a damp cloth.

10.2 Maintenance

- A** Motor
- B** Gear
- C** Toothed belt
- D** Round belt

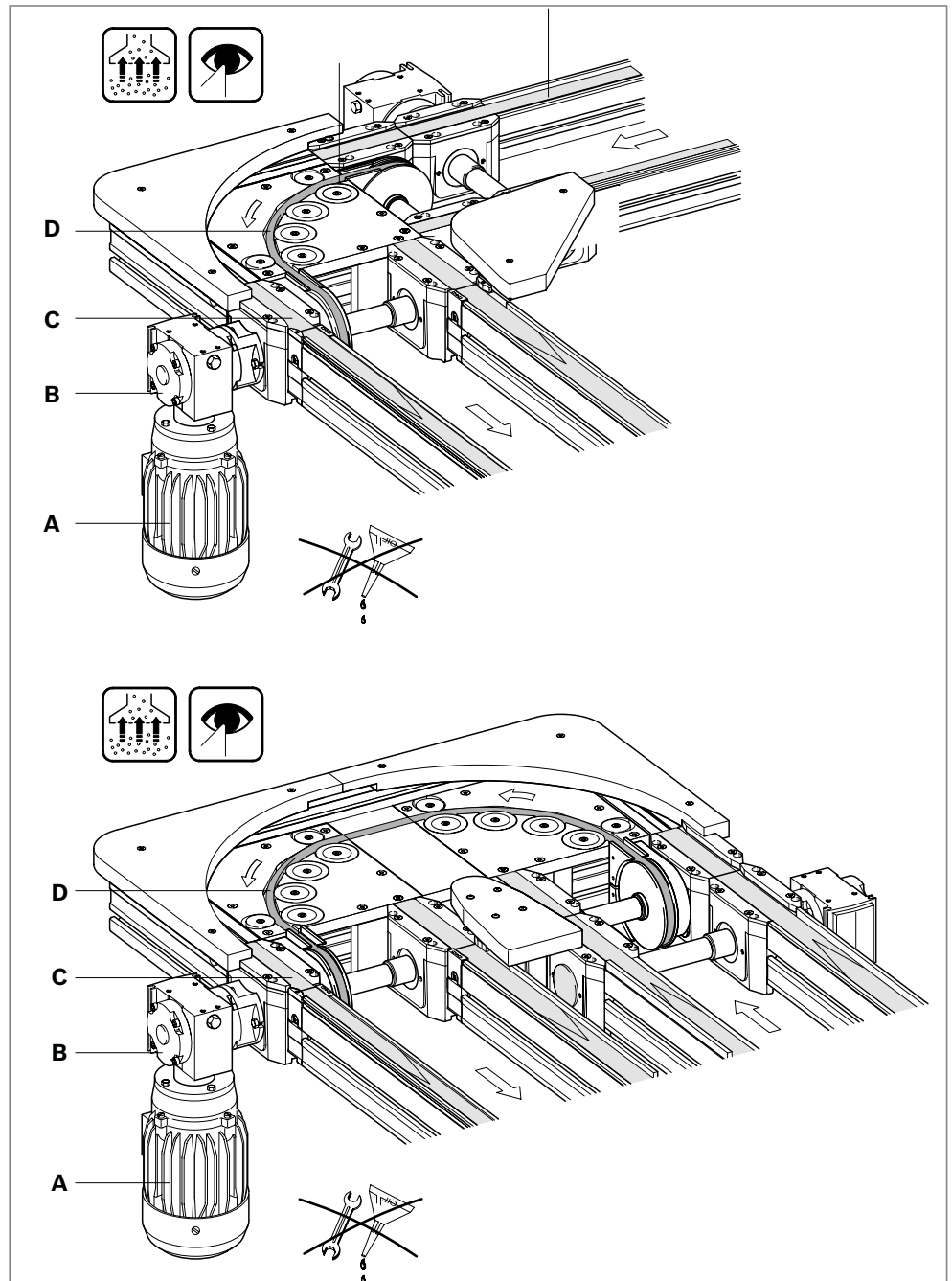


Fig. 49: Maintenance overview

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Bearings

The bearings have lifelong lubrication and are maintenance-free under normal operating conditions.

Gear (Fig. 49, Pos. B)

- ▶ Perform a regular visual inspection.

Check the gear housing regularly for leaks.

Motor

To ensure adequate cooling of the motors (Fig. 49, Pos. A), regularly remove dirt and accumulations of dust:

- from the surface of the motor.
- from the intake openings on the fan hood.
- from between the cooling ribs.

The cleaning intervals are dependent on the ambient and operating conditions.

Toothed belt (Fig. 49, Pos. C)

- ▶ Perform a regular visual inspection, especially for wear on the weld point.
Check the travel direction (in the direction of the arrow).

Round belt (Fig. 49, Pos. D)

- ▶ Regularly clean and vacuum the belt wear.
- ▶ Perform a visual inspection; replace once the wear limit is reached (belt diameter $\leq \varnothing 9$ mm).
- ▶ Check the belt tension, replace belt if necessary.

10.3 Replacing the toothed belt

Dismantling:

1. Slacken the round belt and remove it from the drive or return pulleys.
2. Unscrew the inner guide.
3. Unscrew the outer guide.
4. Loosen the four screws twice in the drive or return parts.
5. Remove the complete drive or return unit by lifting it up evenly, do not tilt it.
6. Disconnect the hexagonal shaft connection and remove the defective toothed belt from the side.

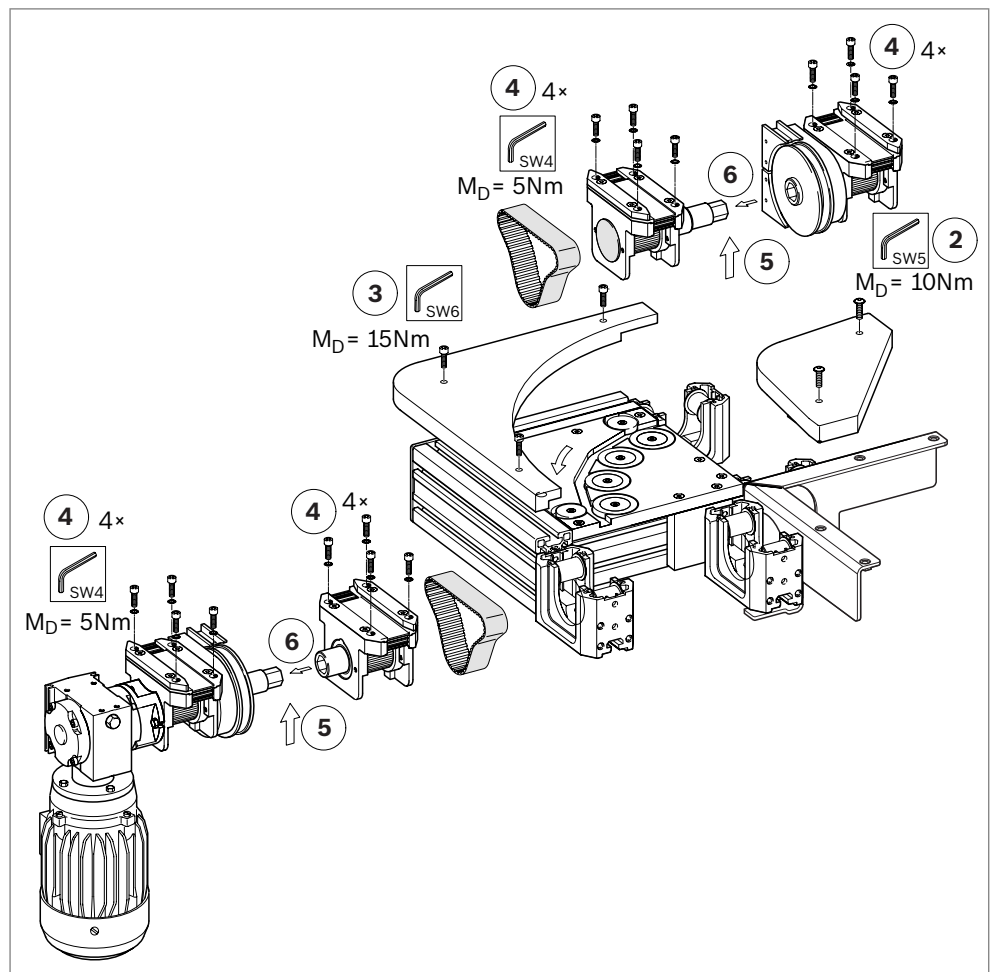
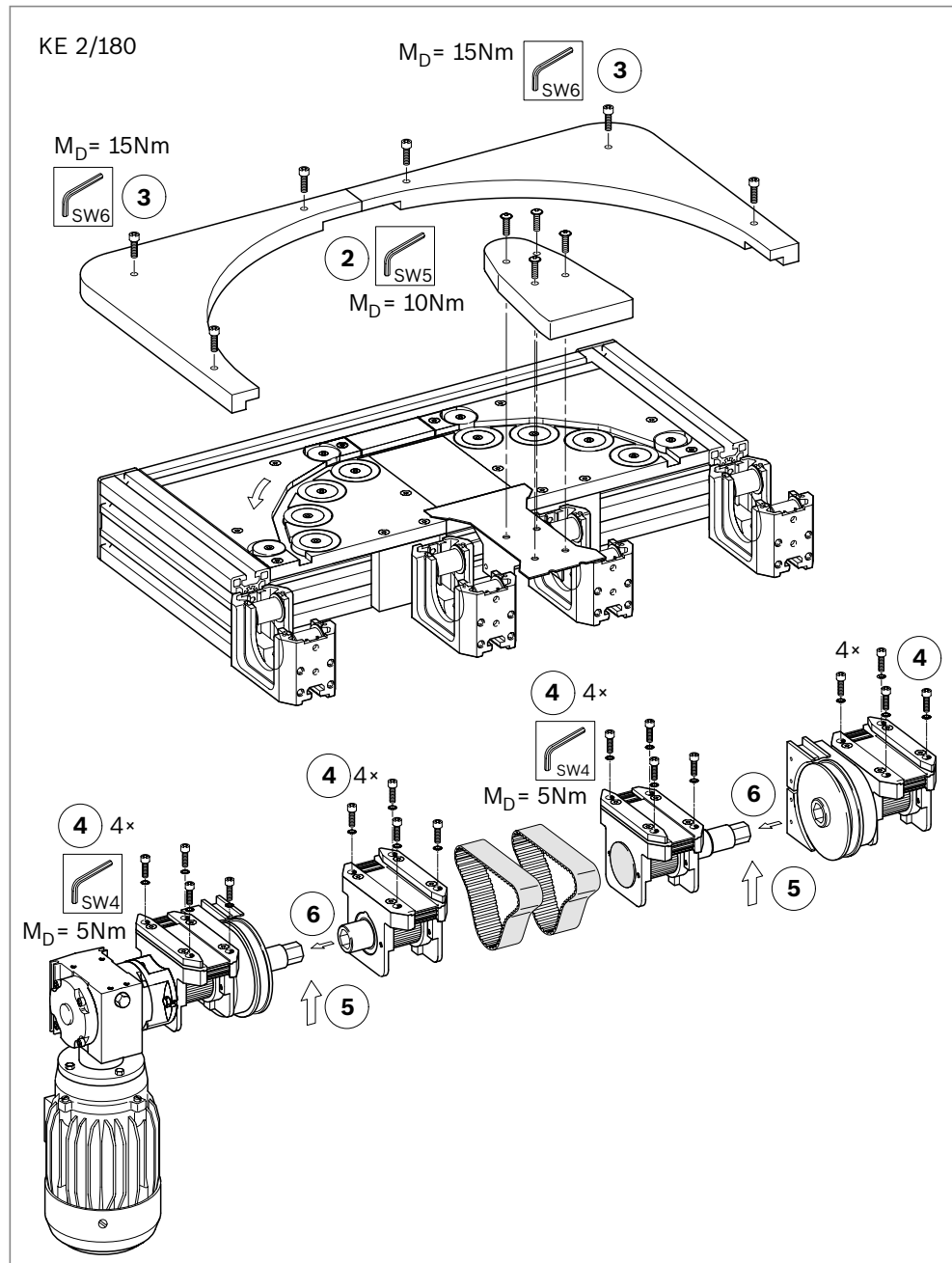


Fig. 50: Replacing the toothed belt for KE 2/90

Dismantling:

1. Slacken the round belt and remove it from the drive or return pulleys.
2. Unscrew the inner guide.
3. Unscrew the outer guide.
4. Loosen the four screws twice in the drive or return parts.
5. Remove the complete drive or return unit by lifting it up evenly, do not tilt it.
6. Disconnect the hexagonal shaft connection and remove the defective toothed belt from the side.



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Fig. 51: Replacing the toothed belt for KE 2/180

Replacement toothed belt order no.: 3 842 517 906

The new toothed belt is installed in reverse order, Fig. 50 and 51.



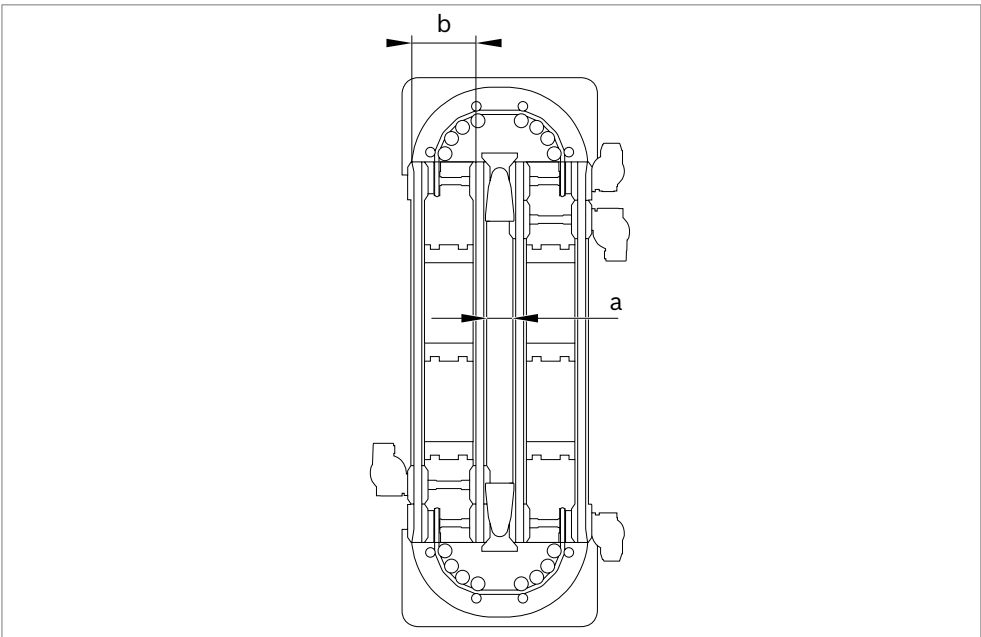
Installing the drive or return unit:
Insert evenly into the lower parts, do not tilt. Tighten the four fixing screws alternately and diagonally.

7. Check the travel of WT 2.

10.4 Replacing the round belt

Table 8: Blank length

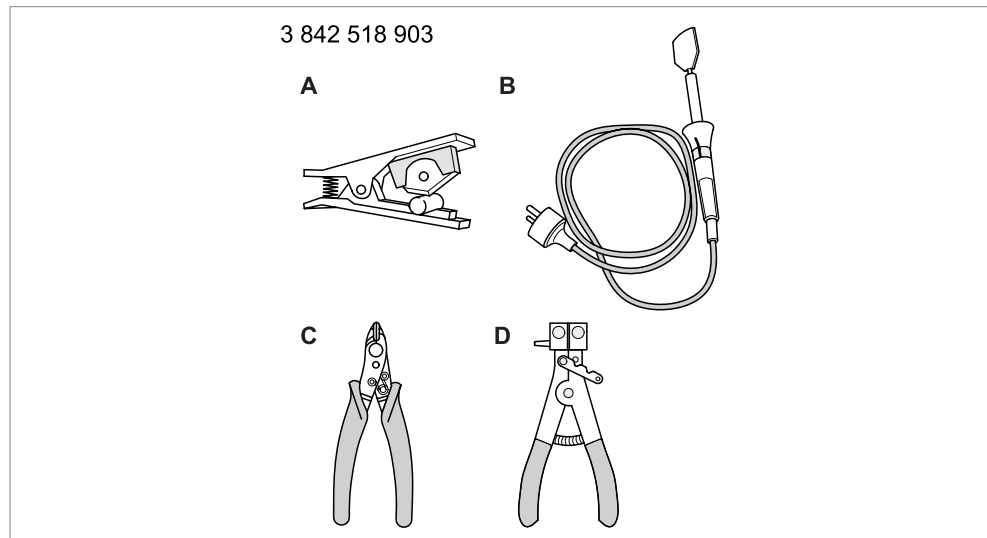
Blank length L [mm]	Design no. + b, a ¹⁾ [mm]
835	3 842 999 727 KE 2/90; 160×160
1310	3 842 999 728 KE 2/180; 160×160; a=90
1395	3 842 999 728 KE 2/180; 160×160; a=135
1075	3 842 999 727 KE 2/90; 240×240
1790	3 842 999 728 KE 2/180; 240×240; a=90
1345	3 842 999 727 KE 2/90; 320×320
2355	3 842 999 728 KE 2/180; 320×320; a=90 + a=135
1610	3 842 999 727 KE 2/90; 400×400
2860	3 842 999 728 KE 2/180; 400×400; a=90 + a=135
1875	3 842 999 728 KE 2/180; 240×240; a=135



To ensure functional reliability, we recommend only using the original Rexroth replacement round belt with order no. 3 842 518 875, (unwelded material sold by the meter). Please refer to Table 9 for the required blank lengths.

10.4.1 Welding

- A** Cutting device
- B** Heating rod with welding mirror
- C** Side cutters
- D** Collet



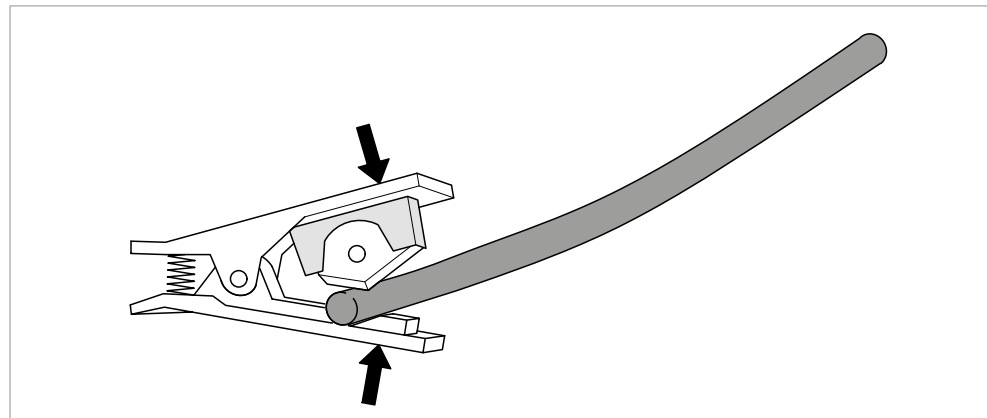
557 767 -51

Fig. 52: Assembly kit



Weld the PUR round belt with the assembly kit.
Rexroth order no. 3 842 518 903

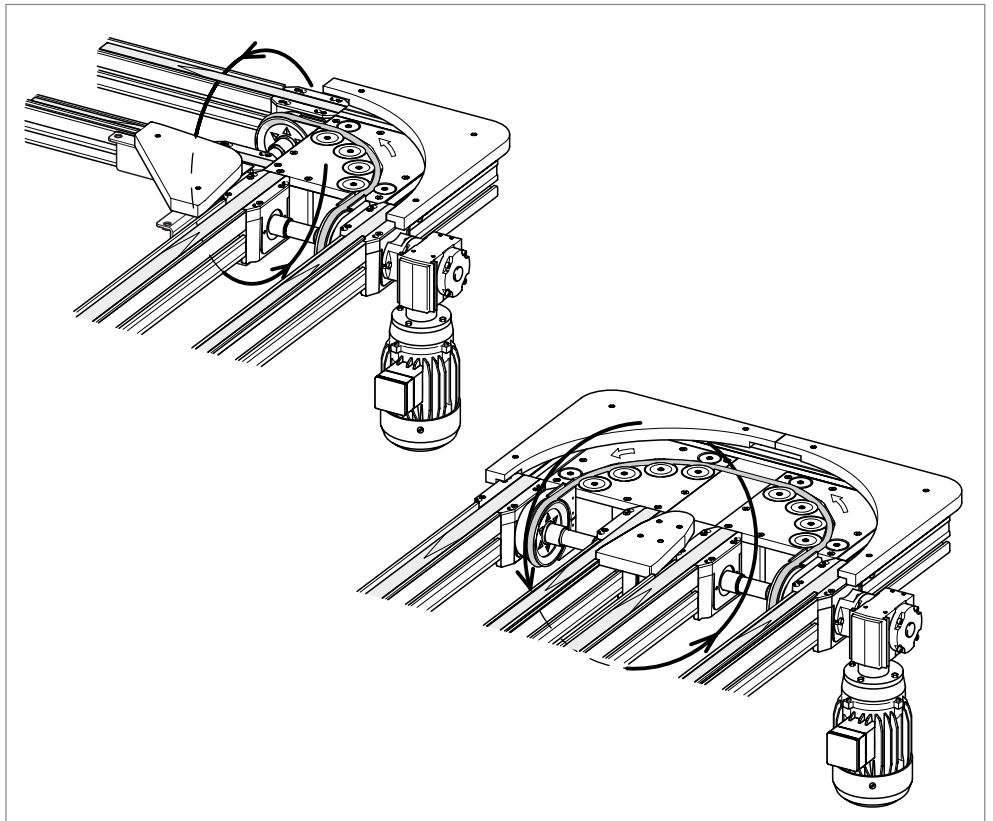
1. Check the cut surfaces of the belts ends.
They must be smooth and absolutely clean.
If necessary, use the cutting device to cut them at 90° to the travel direction of the belt (Fig. 53).



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Fig. 53: Check the belt end

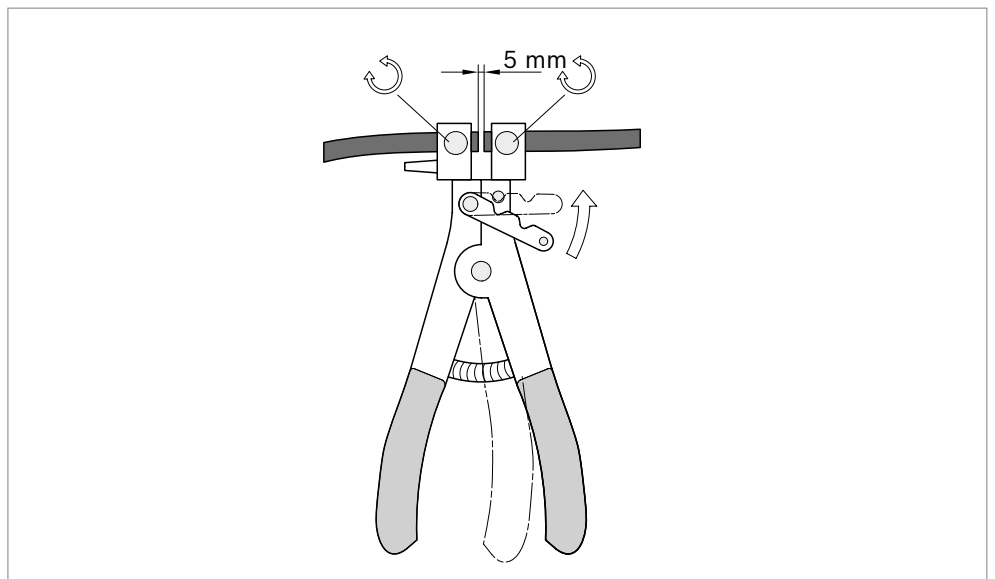
- Insert the round belt according to Fig. 54.



557 767 -53

Fig. 54: Insert the round belt

- Clamp the belt ends in the collet at approximately 5 mm from each other (Fig. 55).

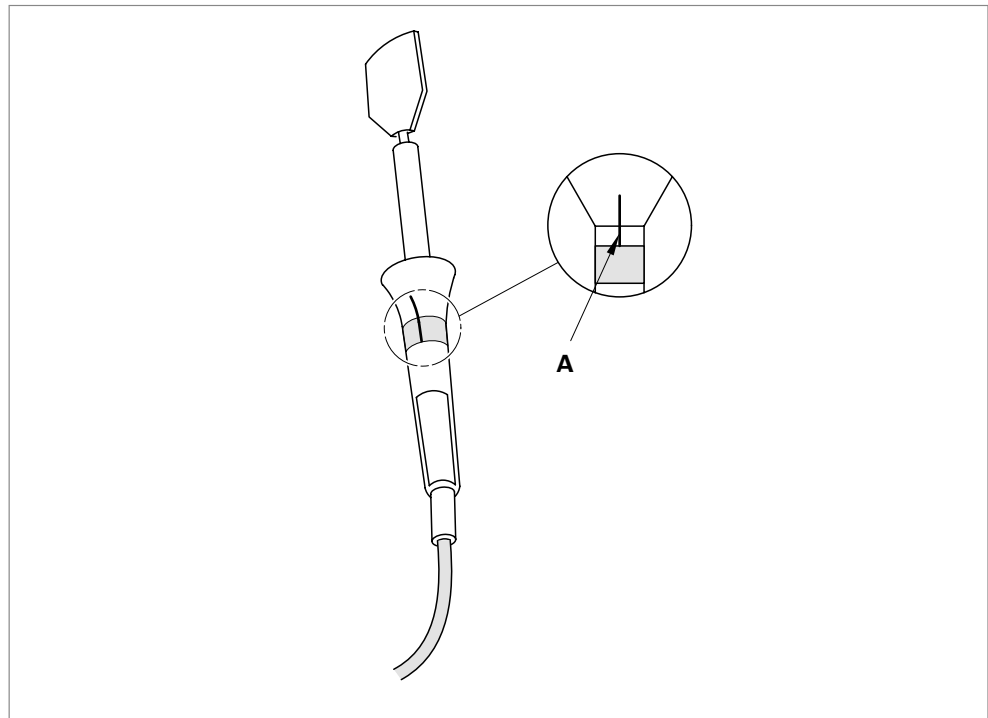


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Fig. 55: Clamp the belt ends

A Red marking, 285°

- Heat the welding mirror to a welding temperature of approx. 285°. (Fig. 56)



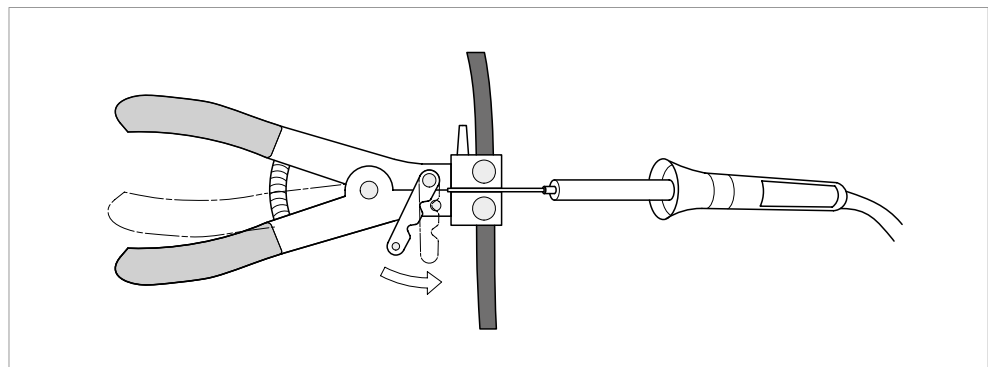
557 767 -55

Fig. 56: Welding temperature



To achieve a good connection between the belt ends, the weld point must only be so hot that the plastic melts but no bubbles form in the plastic, otherwise **overttemperature** exists.

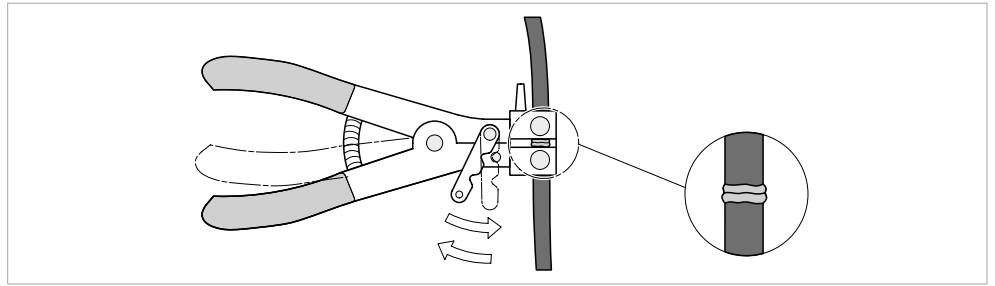
1. Push the heated welding mirror between the belt ends and lightly press the two belt ends against the welding mirror (Fig. 57).
2. Wait for around 10 seconds until a welding bead of approx. 2-3 mm has formed around the entire surface of the belts (can be influenced by a slight movement of the welding mirror).



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Fig. 57: Welding process

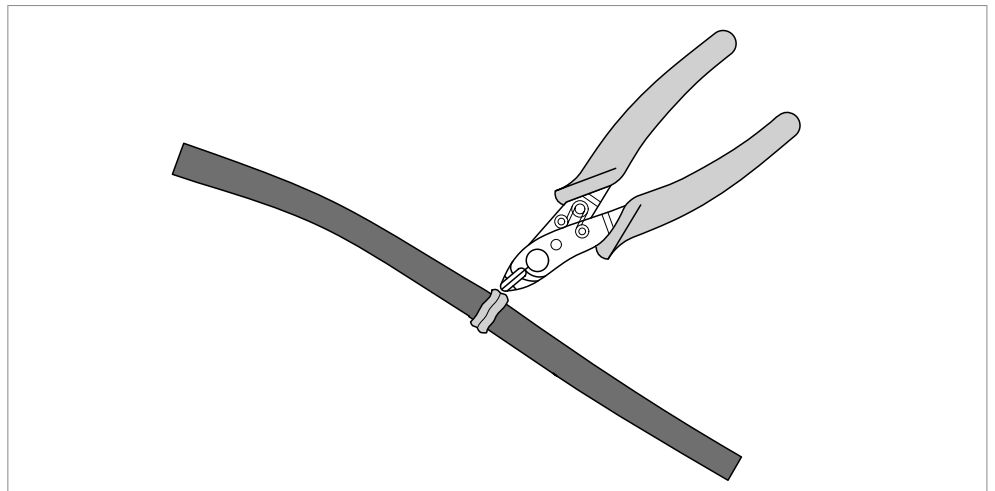
1. Remove the welding mirror without applying pressure to the ends of the belt and quickly press the belt ends together (Fig. 58). The pressing time is at least 5 min.
2. Allow the weld point to cool for about half an hour. After a cooling time of 5 minutes, you can shorten the total cooling time with cold water. Observe the cooling duration for safety reasons.



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Fig. 58: Press the belt ends together

1. Remove the welding bead with the side cutters (Fig. 59).
 2. The belt ends should be flush with each other.
- Even out small deviations by grinding or cutting them off.



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Fig. 59: Remove the welding bead

10.4.2
Insert the round belt in KE 2/90-O, KE 2/90 and tension

- b**
= track width
1. Check dimension “X”, see table.
 2. Attach the clamping device.
 3. Insert the round belts above and below the return units.
 4. Pull the round belts over the upper guide rollers. This will achieve the prescribed belt tension.
 5. Check that the round belt is not touching the lower run.

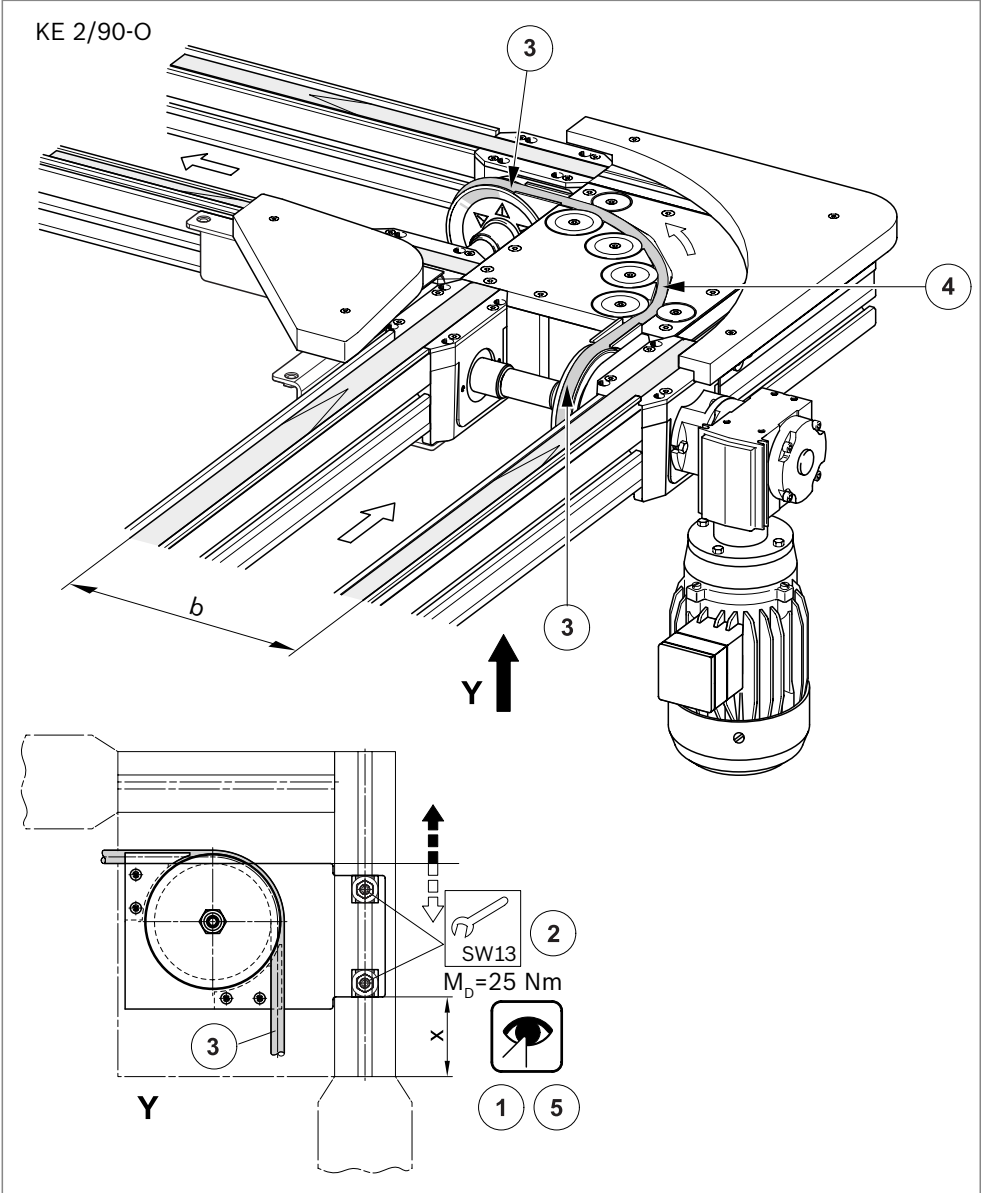


Fig. 60: Insert the round belt in KE 2/90-O2/90 and tension

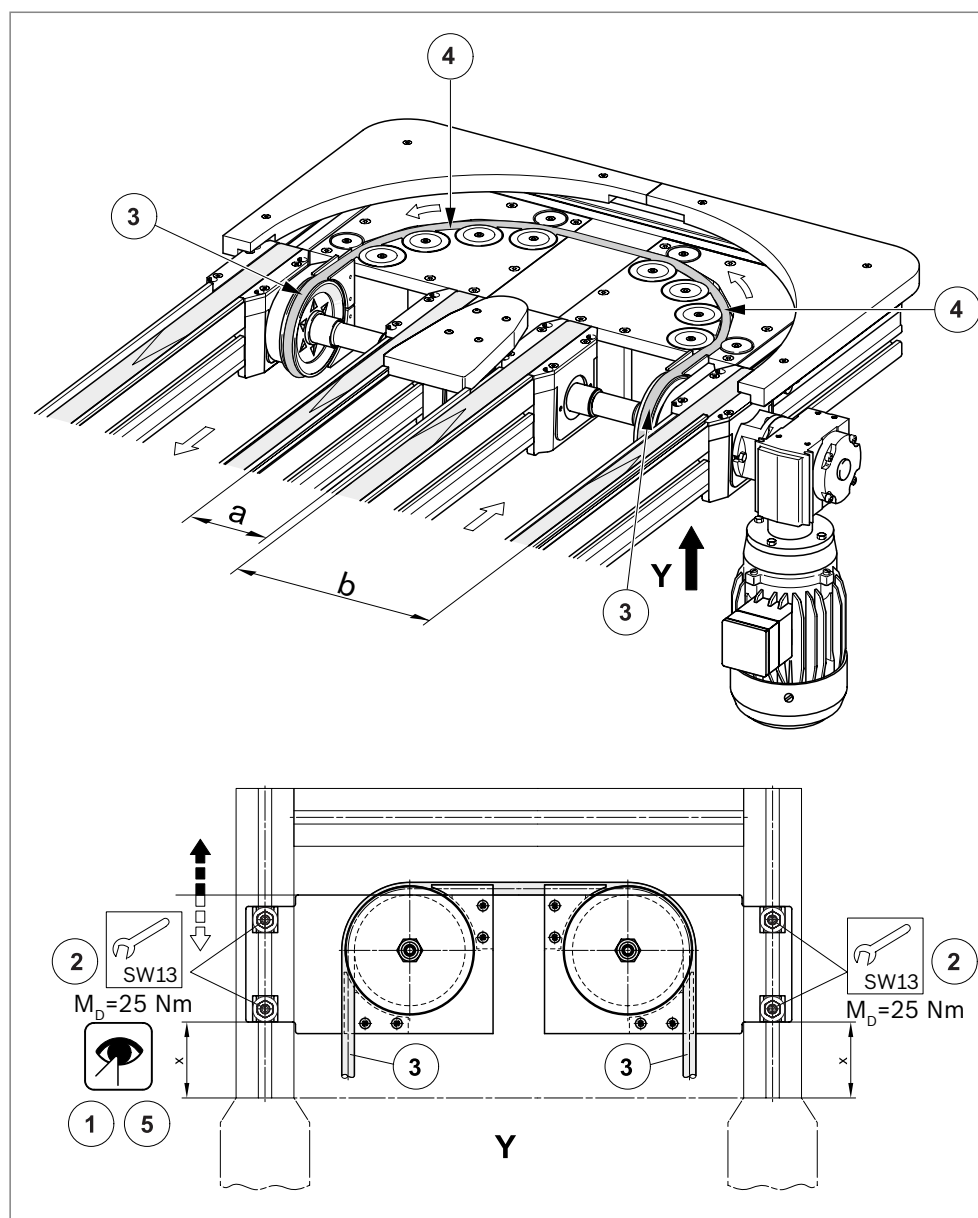
Table 9: Dimension “X”

x [mm]	b [mm]
55	160
64	240
144	320
224	400

10.4.3 Insert the round belt in KE 2/180-O, KE 2/180 and tension

- a** = section gap
b = track width

1. Check dimension "X", see table.
2. Attach the clamping device.
3. Insert the round belts above and below the return units.
4. Pull the round belts over the upper guide rollers. This will achieve the prescribed belt tension.
5. Check that the round belt is not touching the lower run.



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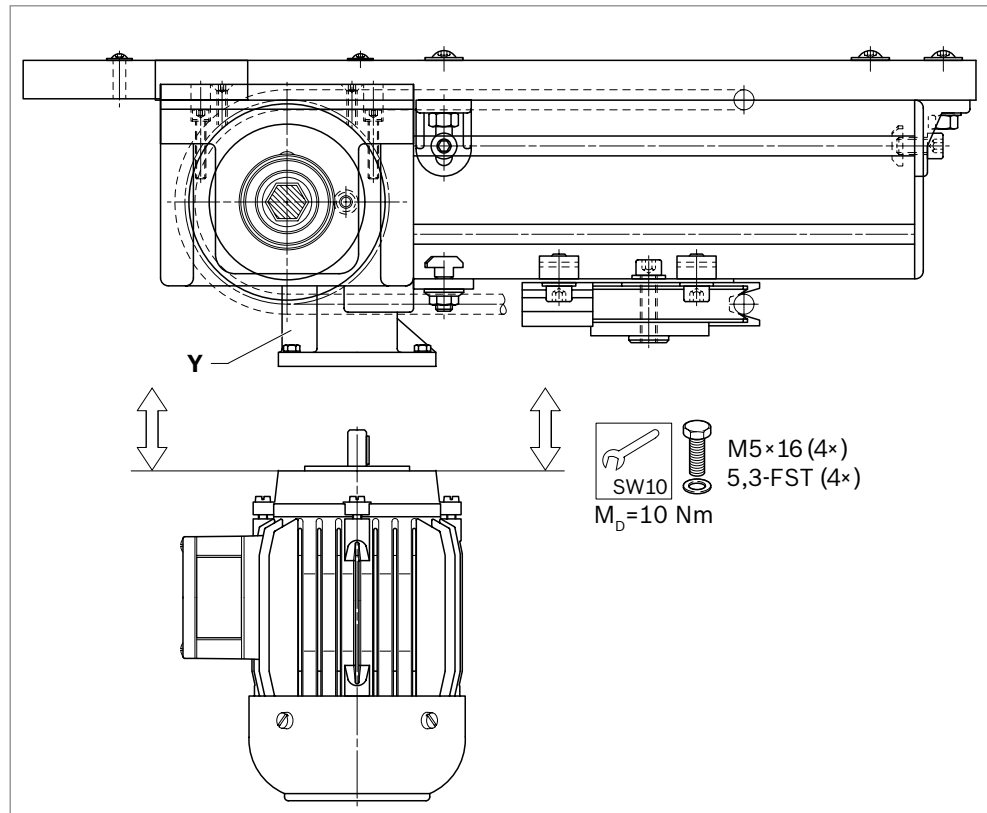
Fig. 61: Insert the round belt in KE 2/90-O/KE 2/180 and tension

Table 10: Dimension "X"

x [mm]		b [mm]
55		160
64		240
a = 90	a = 135	-
144	99	320
224	179	400

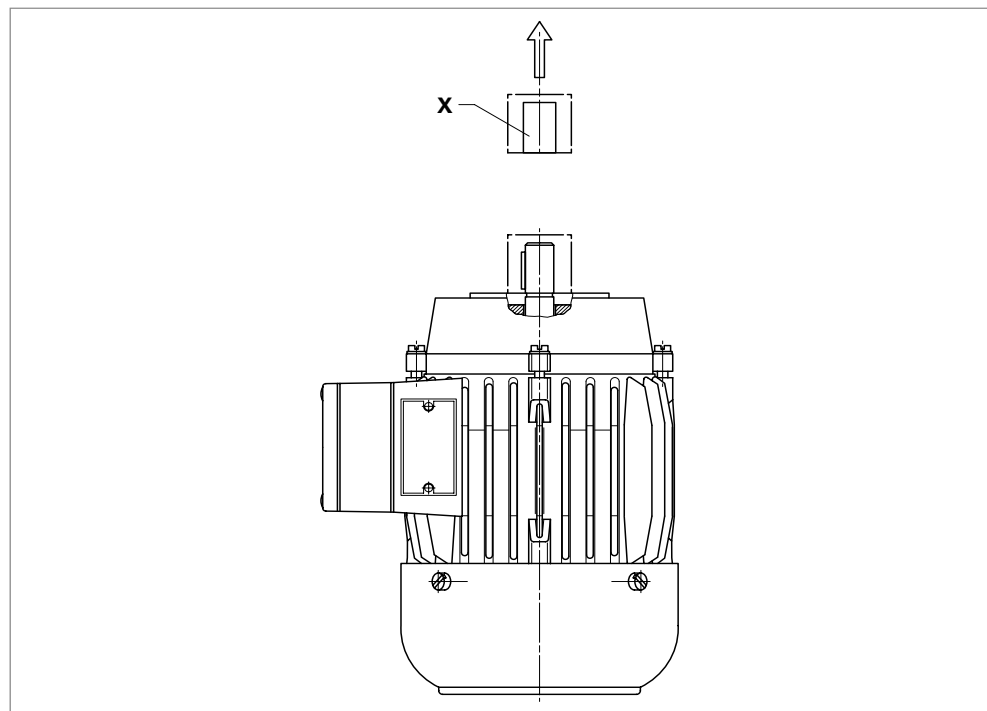
10.5 Replacing the motor

1. Loosen the four M5×16 (SW10) hexagon screws with 5.3-FST lock washers on the gear flange and remove the defective motor from the gear (Fig. 62)
2. Remove the yellow protective cap "X" from the motor shaft of the new motor (Fig. 63).
3. Screw the motor to the gear flange "Y" using four hexagon screws and lock washers (Fig. 62).



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Fig. 62: Replacing the motor, (1)



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Fig. 63: Replacing the motor, (2)

10.6 Replacement parts

See Section 1.2

11 Decommissioning

The product is a component that does not need to be taken out of service. Accordingly, this section has been left blank.

12 Disassembly and replacement

WARNING

Risk of fatal injury due to high voltage!

- ▶ Observe the “five safety rules” in accordance with DIN VDE 0105-100.



Maintenance and repair work may only be carried out by a qualified electrician.

WARNING

Risk of fatal injury due to falling objects and loads!

- ▶ Never stand or walk underneath suspended loads.
- ▶ Make sure that no one is in this danger zone.
- ▶ Only use suitable and tested lifting devices and slings. Always observe the maximum load bearing capacity (see delivery documents for the product weight).
- ▶ Check that the slings are securely fastened.
- ▶ Secure the load against tipping before you lift it.

12.1 Preparing the product for storage/later use

- Only set the product down on a flat surface.
- Protect the product from mechanical influences.
- Protect the product from environmental influences, such as dirt and moisture.
- Observe the ambient conditions, see Section 16.1.
- For products with a mounted motor: Support the product so that the motor is not placed under mechanical load.

13 Disposal



Please note:

- The materials used are environmentally friendly.
- They can be recycled or reused (components may have to be processed and replaced). Recyclability is ensured by the selection of materials and the ability to take the components apart.
- Careless disposal may lead to environmental contamination.
- **Disposal of electrical components:**
 - Electrical components, tools, batteries, and packaging must be recycled in accordance with environmental protection regulations.
 - Never dispose of electrical components, tools, and accumulators/batteries in household waste or commercial waste!
- **Only in EU countries:**
 - According to the currently valid EU Directive on Waste Electrical and Electronic Equipment (WEEE) and its implementation into national law, electrical components and devices that are no longer used must be collected, separated, and recycled in accordance with environmental protection regulations.
 - According to the currently valid WEEE EU Directive, exhausted or defective accumulators/batteries must be recycled.
 - According to the Directive, the product may not contain **any** foreign substances or foreign components when it is recycled.
- Dispose of the product in accordance with the regulations in your country.

14 Upgrading and modification

- Do not modify the product.
- The Bosch Rexroth warranty only applies to the configuration as delivered, and to approved upgrades. The manufacturer will not accept any warranty claims for systems with unapproved modifications or upgrades.

15 Troubleshooting and repair

- If you cannot correct a fault, go to www.boschrexroth.com to find the address to contact.

16 Technical data

- For dimensions, see the sales catalog TS 2*plus*, R999 000 395.
- Maximum load / section load: 30 kg / 1.0 kg/cm support surface length
- Noise emission: < 70 dB (A)

16.1 Ambient conditions

- The transfer systems have been designed for stationary use in a location that is protected from the elements.
- Operating temperature +5 °C to +40 °C
-5 °C to +60 °C at 20% reduced load
- Storage temperature -25 °C to +70 °C
- Relative humidity 5% to 85%, non-condensing
- Air pressure > 84 kPa, corresponds to an altitude < 1400 m above sea level
- Max. load capacity of floor: 1000 kg/m²
- At altitudes > 1400 m, the load values of the electric drives are reduced by 15%.
- The area should be kept free of mold, fungus, rodents and other vermin.
- Do not install or operate in the immediate vicinity of industrial equipment producing chemical emissions.
- Do not install or operate near sources of sand or dust.
- Do not install or operate in areas that are regularly subjected to high-energy forces caused, for example, by presses or heavy machinery.
- Resistant to many media that are commonly found in manufacturing, such as water, mineral oil, grease, and detergents. Contact your Rexroth representative if you have any doubts about resistance to specific chemicals, such as test oil, doped oils, corrosive detergents, solvents or brake fluid.
- Avoid prolonged contact with highly acidic or alkaline materials.

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