

Chain conveyor system VarioFlow *plus*

Assemblies

Valid for the following types:

3 842 546 120 – ...125	3 842 552 940 – ...942	3 842 555 820 – ...823
3 842 547 380 + ...381	3 842 552 984 + ...985	3 842 558 000 – ...007
3 842 547 516 – ...533	3 842 553 037 + ...038	3 842 998 291 + ...742
3 842 547 712 + ...713	3 842 553 914 + ...915	3 842 998 774 – ...776

Assembly instructions
3 842 571 623/2023-09

Replaces:
3 842 571 425/2023-05
ENGLISH



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

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An example configuration is shown on the title page. The delivered product may thus vary from the illustration.

The original assembly instructions are in German.

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DE	3 842 571 622	Kettenfördersystem VarioFlow <i>plus</i> Baugruppen	Deutsch
EN	3 842 571 623	Chain conveyor system VarioFlow <i>plus</i> modules	English
FR	3 842 571 624	Système de transport à chaîne VarioFlow <i>plus</i> modules	Français
IT	3 842 571 625	Sistema di trasferimento a catena VarioFlow <i>plus</i> moduli	Italiano
ES	3 842 571 626	Sistema de transporte por cadenas VarioFlow <i>plus</i> módulos	Español
PT	3 842 571 627	Sistema transportador de correntes VarioFlow <i>plus</i> módulos	Português
ZH	3 842 571 628	鏈式輸送系統 VarioFlow <i>plus</i> 组件	中文
CS	MTCS 571 622	1) Řetězový dopravníkový systém VarioFlow <i>plus</i> moduly	Česky
PL	MTPL 571 622	1) Podzespoły systemu przenośników łańcuchowych VarioFlow <i>plus</i>	Polski
HU	MTHU 571 622	1) Láncvonóelemes szállítóberendezés VarioFlow <i>plus</i> részegységek	Magyar
RO	MTRO 571 622	1) Sistem de transport cu lanț VarioFlow <i>plus</i> subansambluri	Română
		1) Only as PDF / 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:

- 3 842 998 291, drive kit head drive, connection drive, center drive (VF*plus* Var)
- 3 842 998 742, drive kit curve wheel drive (VF*plus* Curve Var)

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

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 entire document, especially chapter 2 "Safety instructions", section 3 "General notes on property and product damage" and the supplementary document "Safety instructions for mounting assemblies" (see Table 1), before using the product.

1.2 Required and supplementary documentation

- Only commission 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
 Employee safety training ¹⁾	3 842 527 147	
 Declaration of incorporation	3 842 358 761	
 Safety instructions for mounting assemblies	RB05299486	
MT <i>pro</i> ²⁾ Spare parts list software download		

¹⁾ Download at: www.boschrexroth.com/mediadirectory

²⁾ Download at: www.boschrexroth.com/mtpro

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 includes safety instructions in chapter 2.6 "Product-specific safety instructions" and chapter 3 "General notes on property and product damage" as well as before a sequence of actions or before an instruction whenever there is a risk of injury or damage to property. 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
 ► Measures 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 serious 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 action steps are subsequent.

2 Safety instructions

The residual risks specified here relate to the individual components/assemblies described in these instructions.

The residual risks listed here do not replace the required risk assessments and tests by the creator and user of the required chain conveyor systems created from the Bosch Rexroth components. A residual risk assessment of the system created from Bosch Rexroth components is not part of the delivery of components (see also 2.8 Owner responsibilities).

For information on your own risk assessments, please refer to the supplementary document "Safety instructions on mounting assemblies, RB05299486".

2.1 About this chapter

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 chapter and follow the safety instructions in this document.

- ▶ Read this documentation carefully and completely before you start working with the product.
- ▶ Keep the documentation 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 a partly completed machinery.

You may use the product as follows:

- For installation in a Rexroth VarioFlow *plus* transfer system.
- For the maximum load / section load see Technical Data on page 203.
- For ambient conditions, see page 203.

The product is strictly intended for professional use and not for private use. Intended use also includes having read and understood these instructions, especially chapter 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 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.
- Transporting people on the product or transported material.
- Persons climbing onto the product – Do not climb on 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 regarding the use of lifting gear and corresponding 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 potential hazards and take appropriate safety measures based on their technical training, knowledge, experience, and understanding of the relevant regulations pertaining to the work being performed. Qualified personnel must comply with the relevant technical regulations and have the necessary expertise.

In the case of pneumatic products, for example, expertise means:

- The ability to read and fully understand pneumatic diagrams.
- Thorough understanding of the interactions between safety equipment in particular.
- Understanding the function and assembly of pneumatic components.



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2.5 General safety instructions

- Observe the 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.
- Heed all the 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 react.
- 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 (for example, 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 any mechanical loads under any circumstances. Never use the product as a handhold or step. Do not place any objects on the product.
- Always secure the product against tipping over.

During transport During assembly

- Observe the transport instructions on the packaging.
- Inspect the product for obvious 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 commissioning, make sure that all seals and plugs for the plug-in connections are correctly installed and undamaged to prevent fluids and debris from infiltrating the product.

- | | |
|------------------------------------|---|
| During commissioning | <ul style="list-style-type: none"> • Allow the product to acclimatize for a few hours prior to commissioning in order to prevent water condensation from forming in the housing. • Make sure that all the electrical and pneumatic connections are either in use or covered. • Check the safety requirements according to DIN EN 619. • Only commission 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 | <ul style="list-style-type: none"> • Make sure that only authorized personnel perform the following tasks within the scope of the product's intended use: <ul style="list-style-type: none"> – Starting or operating the system, or interfering with its normal operation. – Operating component or part adjusters. • Only allow people to be in the immediate vicinity of the product when it is operating if they are authorized by the owner to be there. This also applies when the product is idle. • Make sure that: <ul style="list-style-type: none"> – 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. |
| EMERGENCY STOP, malfunction | <ul style="list-style-type: none"> • After an EMERGENCY STOP or a malfunction, only switch the system back on once you have established and rectified the cause of the fault. |
| During servicing and repair | <ul style="list-style-type: none"> • Make sure that access to maintenance and inspection points is kept unobstructed. • Perform the prescribed maintenance work at the intervals specified in chapter 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 | <ul style="list-style-type: none"> • Dispose of the product in accordance with the regulations in your country. |

2.7 Personal protective equipment

As the system owner or operator, you are personally responsible for ensuring the use of appropriate protective equipment when the product is being used. All component parts of the personal protective equipment must be free of damage.

- ▶ Appropriate protective equipment should be worn when handling/using the product (e.g. safety shoes, close-fitting clothing, a hair net for long, loose hair).

2.8 Owner responsibilities

- ▶ Before the initial commissioning or re-commissioning of a conveyor system, carry out a risk assessment in accordance with DIN EN ISO 12100. The information listed in the "Safety instructions on mounting assemblies, RB05299486" may only be used as examples for the operating manual and risk assessment of your individually designed conveyor system. The claim to the warranty is invalidated if no original spare parts are used.
- ▶ Provide safety-related instructions to the operating personnel before the initial commissioning 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 incorrect assembly, 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 corrosive cleaning agents.
- ▶ Do not use a pressure washer for cleaning.

4 Scope of delivery

The scope of delivery includes the following:

- Various VarioFlow *plus* assemblies in accordance with your order. Please use the shipping documents to check that the consignment is complete.
- 1 assembly instruction "VarioFlow *plus* assemblies"

4.1 Condition on delivery

Modules fully or partially assembled

5 About this product

5.1 Specifications

5.1.1 Use of VarioFlow *plus* assemblies

Standardized modules for assembly into a conveyor system for use in the food & packaging industries, health care, assembly lines, the automotive & electronics industries, or the interlinking of machines.

5.1.2 Version of VarioFlow *plus* assemblies

- Basic version made of aluminum (system AL)
- Stainless steel version for more stringent hygiene requirements (system STS)
- Workpiece pallet system for parts that cannot be transported directly on the conveyor chain.

5.2 Product description

- A:** Foot
B: Strut profile
E: Straight section
H: Holder
K: Curve wheel
M: Horizontal sliding curve
N: Roller curve
O: Vertical sliding curve
P: Assembly module
Q: Return unit
R: Basic unit
U: Conveyor chain
V: Lateral guide
W: Drive kit

¹⁾ Size shown

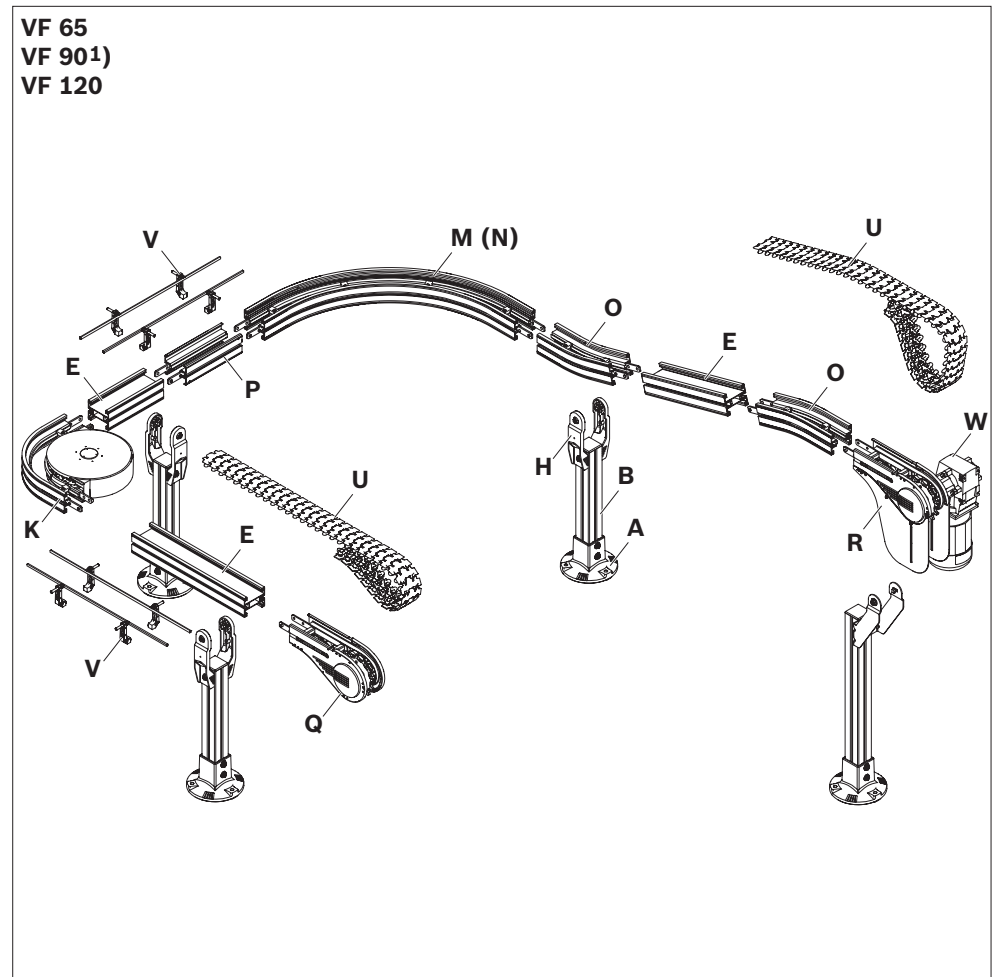
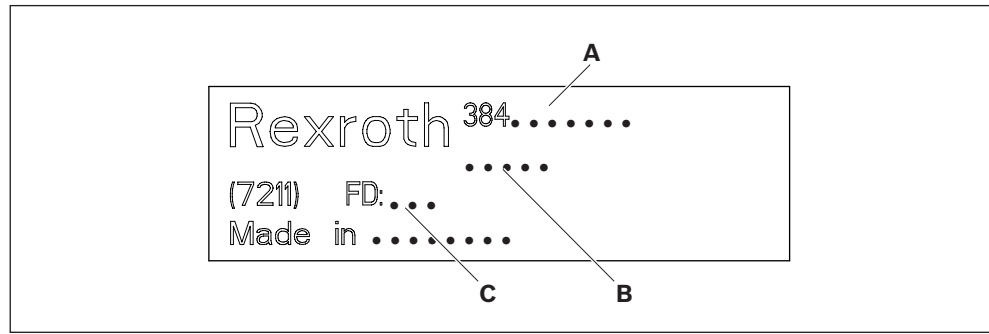


Fig. 1: VarioFlow *plus* assemblies

562 411-01

5.3 Identification of the product

- A:** Material number
(order number)
- B:** Designation
- C:** Production date



562 411-02

Fig. 2: Nameplate

6 Transport and storage

- ▶ Observe the transport instructions on the packaging.
See the delivery documents for the transport weight
- ▶ Secure the product against tipping over!
- ▶ Always maintain the ambient conditions during storage and transport
(see page 203).

6.1 Transporting the product



WARNING

Suspended loads may fall!

Falling objects can result in severe injury (or even death).

- ▶ Use only slings with sufficiently high bearing loads (for product weight, see delivery documents).
- ▶ Make sure the lifting straps are correctly fastened before lifting the product!
- ▶ Secure the product against tipping over when lifting!
- ▶ Make sure that no one but the operator is in the danger zone during lifting and lowering!

6.2 Storing the product

- ▶ Only set the product down on a flat surface.
- ▶ Protect the product from mechanical stress.
- ▶ Protect the product from environmental influences, such as dirt and moisture.
- ▶ Observe the ambient conditions (see page 203).
- ▶ Support the product so that there is no load on motors that are installed in a suspended position.

7 Installation

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 page 203).

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.

7.3 Required tools

- Hex wrench (open-end) SW13
- Hex socket wrenches SW3, SW4, SW5
- Pozidriv screwdriver PZ2
- Hammer or rubber mallet
- Spirit level
- Chain assembly tool VF 65-120 (3842 557 025)
- Chain assembly tool VF 160-320 t7 (3842 571 259)
- Sliding rail assembly tool (3842 549 738)
- Drilling jig (3842 553 518)
- Miter cutter (3842 547 982)
- Safety coupling adjusting tool (3842 549 388)
- Lateral guide bending tool (3842 528 531)

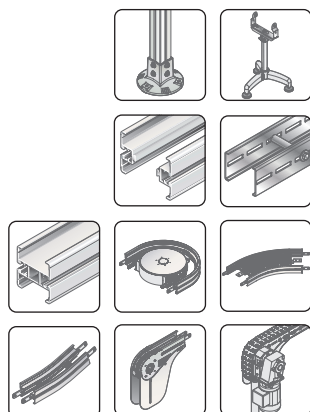
7.4 Symbols used

Table 4: Symbols used

	Connection with T-bolt and flange nut. ► Make sure the T-bolt is in the correct position when inserting it into the slot and tightening it. The notch at the head of the screw 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
 $M_D = 20\text{Nm}$	Hex wrench • SW = wrench size ... mm • M_D = required tightening torque ... Nm
 $M_D = 8\text{Nm}$	Hex socket wrench • SW = wrench size ... mm • M_D = required tightening torque ... Nm
	Screwdrivers for cross-head screws • PZ ... = Pozidriv cross-head screw driver, size ... • PH ... = Phillips cross-head screw driver, size ...
 gleitmo 585 K Anti-Seize	► Apply the following grease: – gleitmo 585 K: gleitmo 585 K, www.fuchs-lubritech.com – Anti-Seize: Food Grade Anti-Seize/Loctite 8014, www.henkel.com
 Loctite 243 Loctite 601	► Secure the screws with the following adhesives: – 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. ► Discard or otherwise use the parts.
	Graphical depiction of the installation steps. The numbers correspond to the sequence of installation steps, in accordance with the instructions in the accompanying text.
	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, the back or the bottom side of the product.
	For the assembly videos for download, please refer to www.boschrexroth.com, service downloads VarioFlow <i>plus</i> assembly of the system • http://dc-emea.resource.bosch.com/media/de/service_4/downloads_2/montagetechnik_2/VFplus_Service_-_Allgemein_SD_480p.m4v • http://dc-emea.resource.bosch.com/media/de/service_4/downloads_2/montagetechnik_2/VFplus_Service_-_Detail_SD_480p.m4v

7.5 Product installation

Assembly sequence for a VarioFlow *plus* system:



1. Pre-assembling the leg sets
(system AL see page 18, system STS see page 41).
2. Pre-assembling open-type section profiles
(system AL see page 19, system STS see page 42).
3. Mounting the section assemblies on leg sets.
 - Straight section (system AL see page 22, system STS see page 44).
 - Curve wheel (system AL see page 23, system STS see page 45).
 - Curve wheel drive (only for system AL, see page 25).
 - Horizontal curve (system AL see page 26, system STS see page 47).
 - Vertical curve (system AL see page 29, system STS see page 49).
 - Assembly module (system AL see page 34, system STS see page 54).
 - Connection drive (system AL see page 27, system STS see page 60).
 - Center drive (system AL see page 40, system STS see page 61).
 - Return unit (system AL see page 36, system STS see page 57).
 - Base unit (system AL see page 37, system STS see page 58).

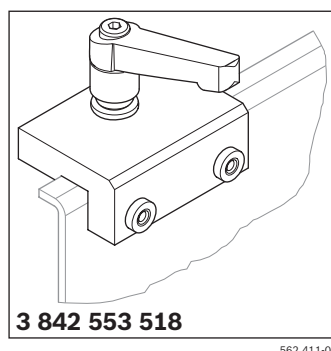


Fig. 3: Drilling jig



Please note:

In the course of assembly the user must drill holes in the section and support profile for subsequent retention of the sliding rail.

- In the case of the section profile, you can drill the holes before or after assembly.
- In the case of the support profile, you should drill the holes before assembly.
- In the case of the system AL, there is a groove in the section profile and support profile to guide drilling.
- In the case of the system STS, you need the **3842 553 518** drilling jig which can be attached on both sides flush with the end of the section profile or support profile.



4. For VarioFlow *plus* 160, ..240, ..320 only: Install the support profile (see straight section, curves, return unit, head drive).
5. Install the sliding rail (see page 77 and the following).
6. Install the conveyor chain (see page 86 and the following).
7. Install the lateral guide (see page 109 and the following).
8. Install the drive unit (see page 175 and the following).

7.5.1 System AL

Leg sets

Required accessories:

- Foot (A)
- Strut profile (B)
- Cover cap (C)
- Floor dowel (D)
- Washer (E)

A₁: 3842 544 875

A₂: 3842 540 173

B₁: 3842 990 350/L

B₂: 3842 993 133/L

C₁: 3842 511 876

C₂: 3842 529 039

D: 3842 540 668

E: 3842 546 717

(t = 1 mm)

3842 546 718

(t = 3 mm)

- Mount the leg sets.

Optional accessories:

- Contact washers M8 (H)

H, VF 65- 3842 571 621

320:



Please note:

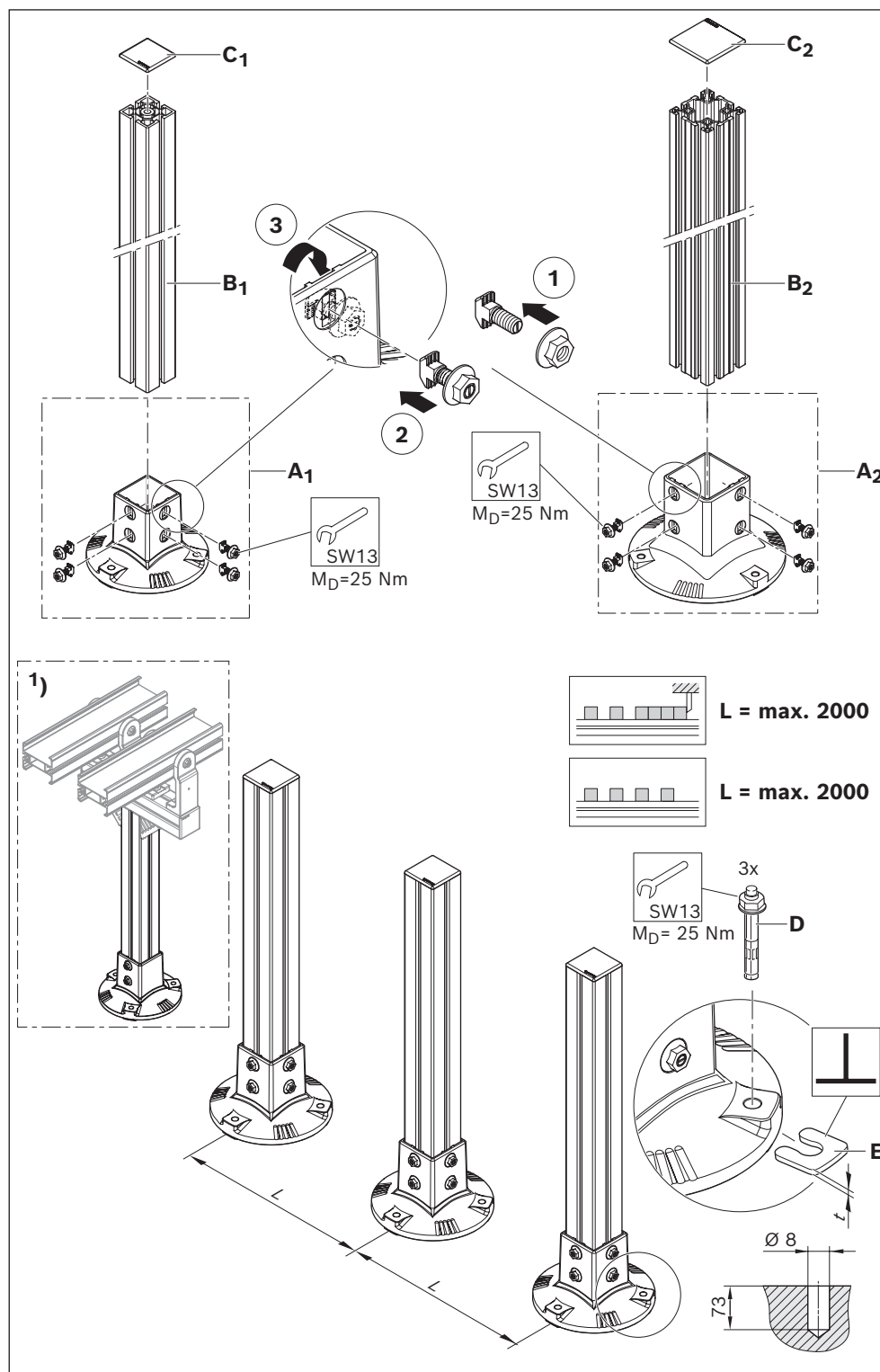
For a diverting connection, the contact washers must be mounted under the flange nuts or the washers (E) in order to break through the coating.



Please note:

- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

¹⁾ Example with T-beam profile and supporting brackets



562 411-04

Fig. 4: System AL, installing leg set

Required accessories:

- Section profile (F)
- Cross connector (G)
- Support profile (H, only for VF 160 / VF 240 / VF 320)

F,6070 mm: **3842 546 647**3000 mm: **3842 546 670**L mm: **3842 996 026/L****G, VF 65: 3842 546 672****G, VF 90: 3842 546 673****G, VF 120: 3842 546 674****G, VF 160: 3842 546 675****G, VF 240: 3842 546 676****G, VF 320: 3842 546 677**

- Pre-assembling open-type section profiles.

**Please note:**

- Install the support profile (H) last, after curves, return unit, and drive.

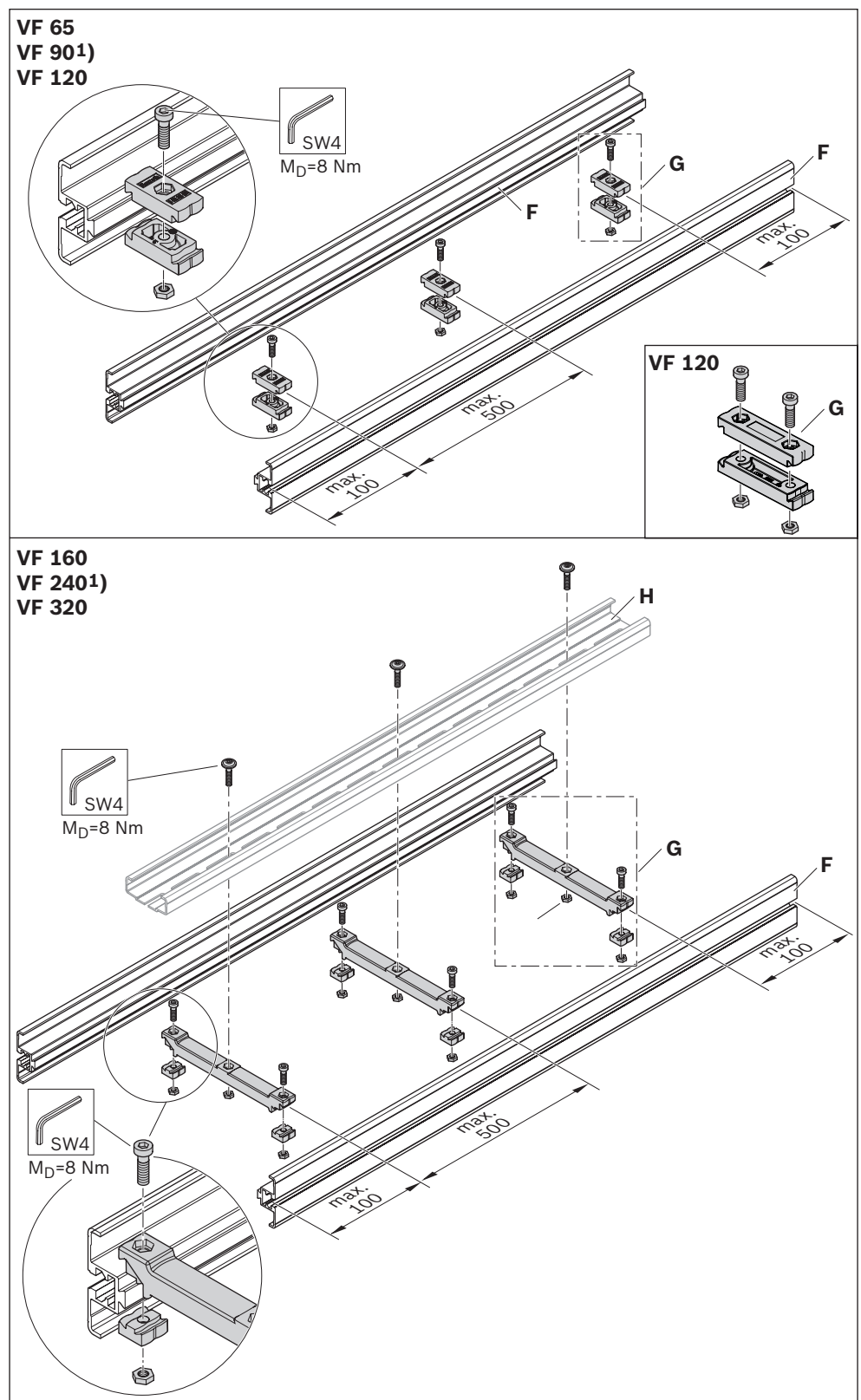
The support profile (H) extends into the curves (see pages 26, 29).

- In order to fix the sliding rail in place, make drill holes in the support profile prior to assembly (positions as shown on pages 26, 29, 36).

H,6070 mm: **3842 546 705**3000 mm: **3842 547 904**L mm: **3842 996 028/L**

1) Size shown

Pre-assembling open-type section profiles

**Fig. 5: System AL, pre-assembling open-type section profiles**

562 411-05

Required accessories:

- Holder (J)

J, VF 65: 3842 546 625

J, VF 90: 3842 546 626

J, VF 120: 3842 546 627

J, VF 160: 3842 546 628

J, VF 240: 3842 546 629

J, VF 320: 3842 546 630

- Install the section profile on the leg sets.

Optional accessories:

- Contact washers M8 (H)

H, VF 65-320: 3842 571 621

**Please note:**

For a diverting connection, the contact washers must be mounted under the flange nuts or the washers (E) in order to break through the coating.

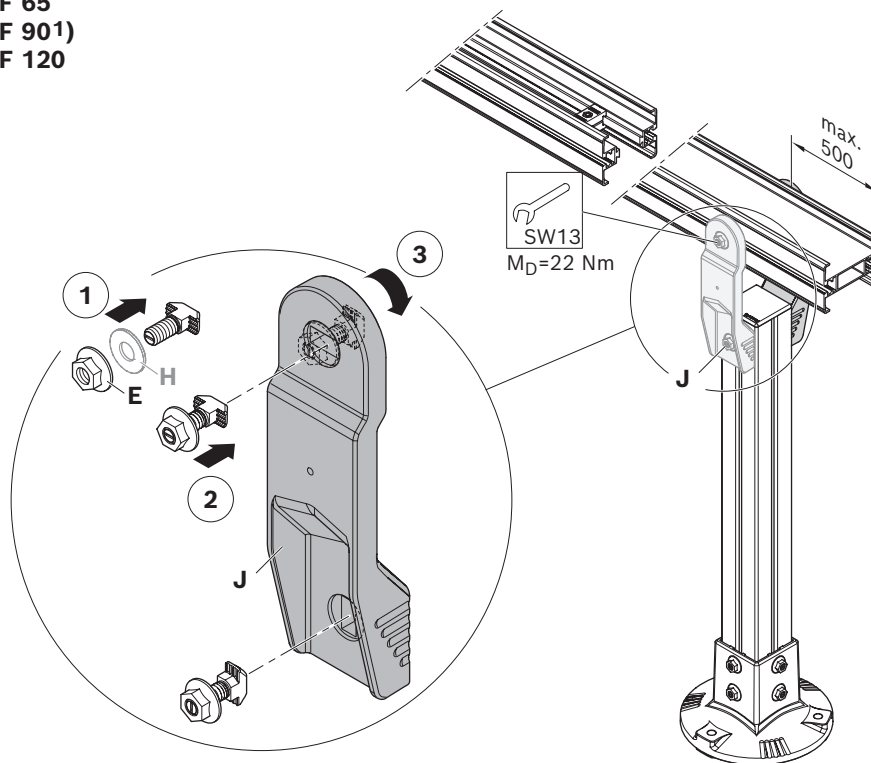
**Please note:**

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

Section on leg set

VF 65
VF 90¹⁾
VF 120



VF 160
VF 240¹⁾
VF 320

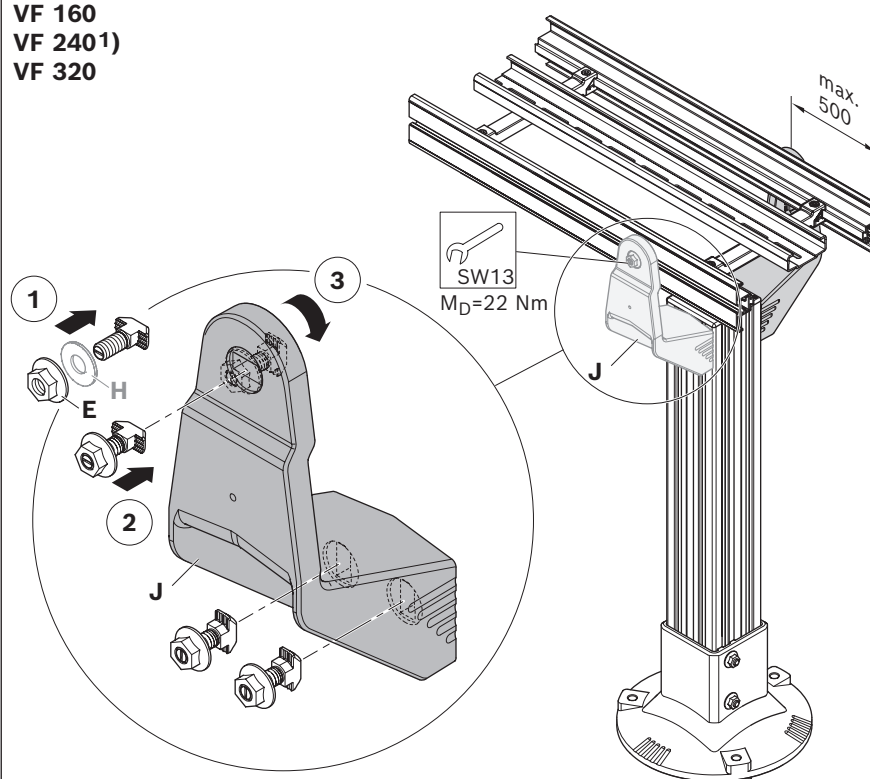


Fig. 6: System AL, installing section on leg sets

562 411-06

Required accessories:

- Supporting bracket AL (A), fittings from top
- Supporting bracket AL (B), fittings from side

- Install the section profile on the leg sets.

Optional accessories:

- Contact washers M8 (H)

H, VF 65- 3842 571 621
320:



Please note:

For a diverting connection, the contact washers must be mounted under the flange nuts or the washers (E) in order to break through the coating.



Please note:

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

Section on leg set

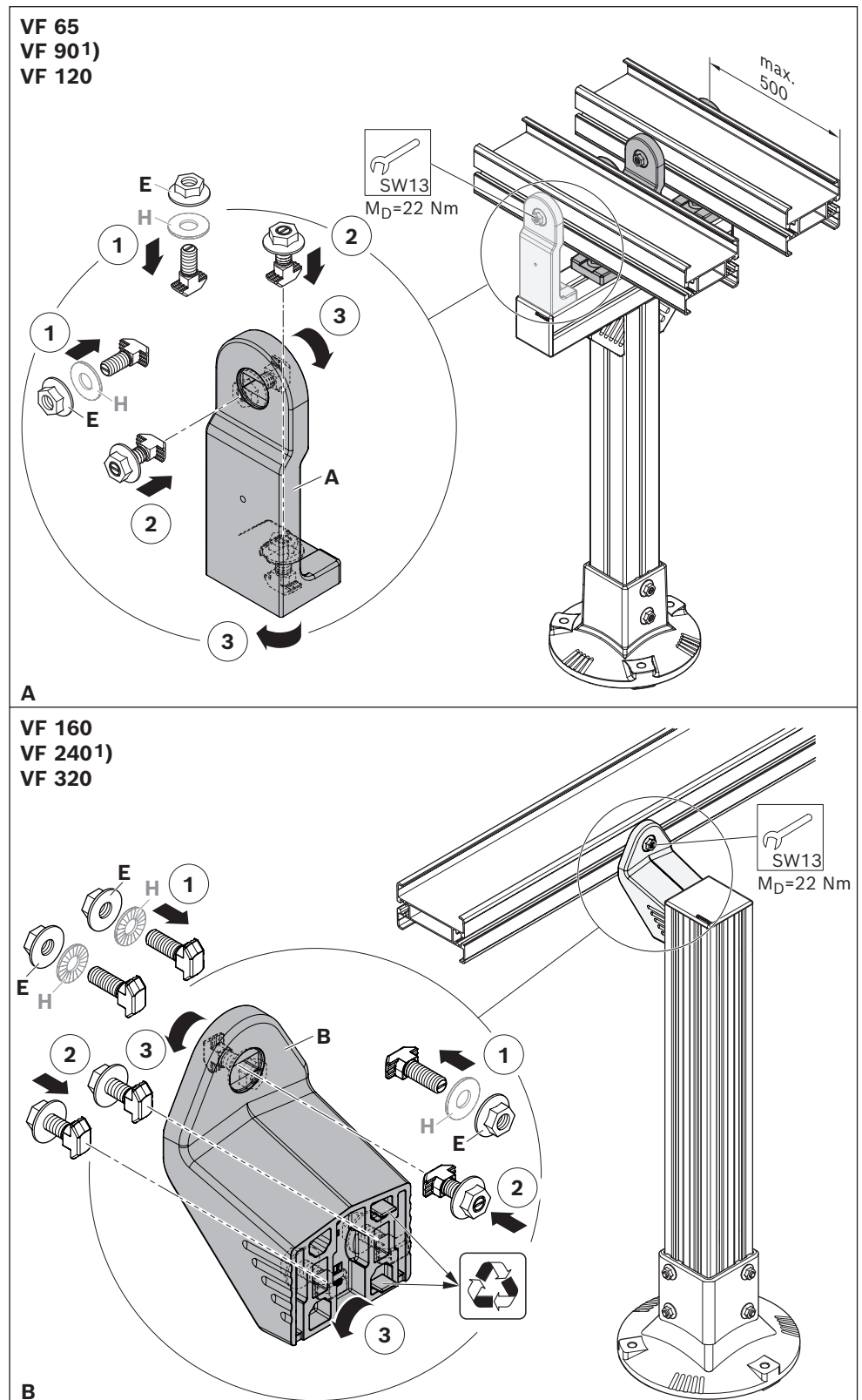


Fig. 7: System AL, installing section on leg sets

562 411-191

Required accessories:

- Profile connector (K)

K: 3842 530 277

¹⁾ Size shown

Straight section

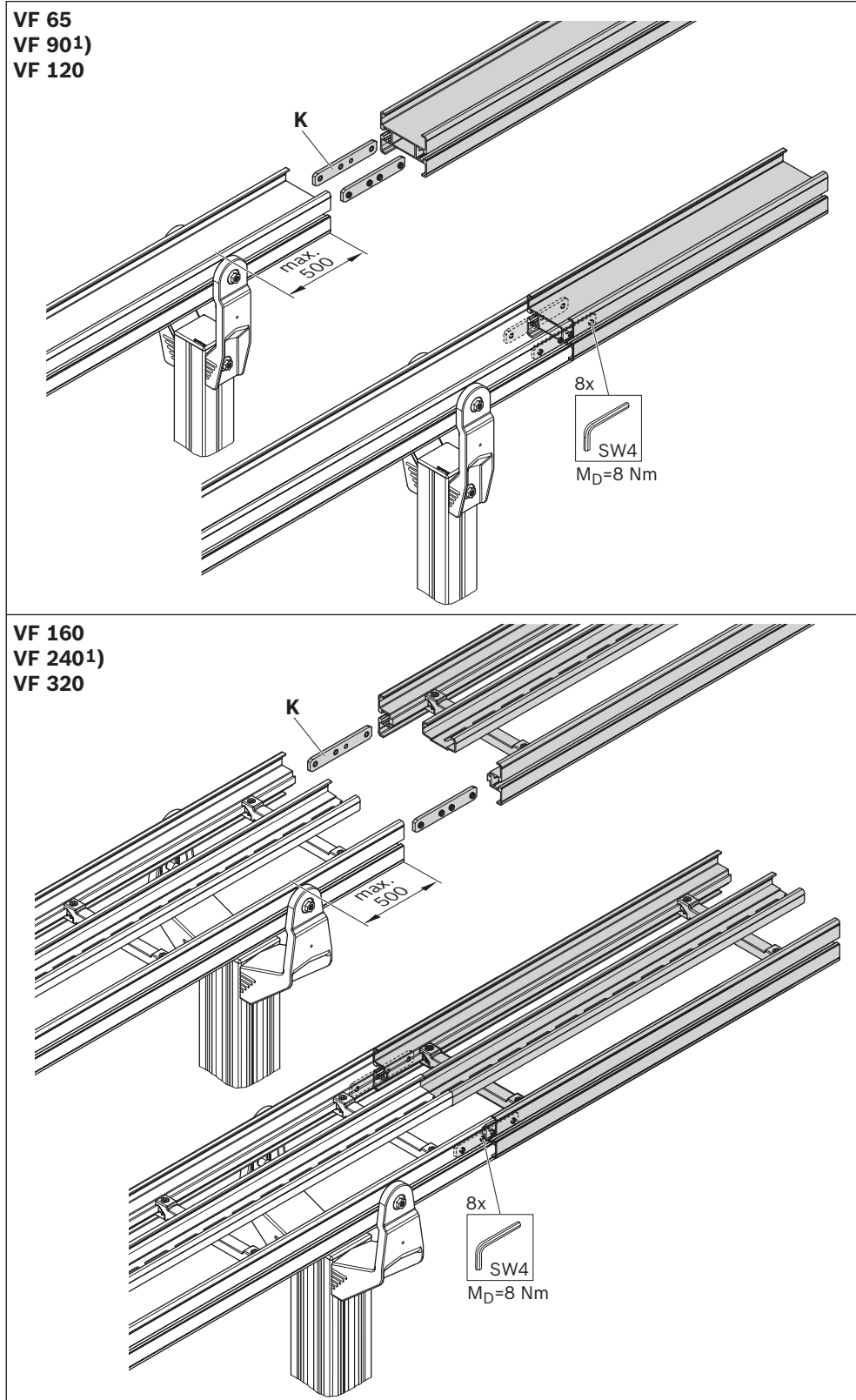


Fig. 8: System AL, installing straight section

562 411-07

Curve wheel

Required accessories:

- Curve wheel (L)
- Only if required:
Protective cover (M)

L, VF 65,
 30°: **3842 547 048**
 45°: **3842 547 049**
 90°: **3842 547 050**
 180°: **3842 547 051**

L, VF 90,
 30°: **3842 547 052**
 45°: **3842 547 053**
 90°: **3842 547 054**
 180°: **3842 547 055**

L, VF 120,
 30°: **3842 547 056**
 45°: **3842 547 057**
 90°: **3842 547 058**
 180°: **3842 547 059**

M, VF 65,
 30°: **3842 551 545**
 45°: **3842 551 546**
 90°: **3842 551 547**
 180°: **3842 551 548**

M, VF 90,
 30°: **3842 551 549**
 45°: **3842 551 550**
 90°: **3842 551 551**
 180°: **3842 551 552**

1) Size shown

2) Drilled hole for fixing the sliding rail on the chain inlet (top = conveying) (see page 76 and following). Use the drilling jig **3842 553 518**

3) Drilled hole for fixing the sliding rail on the chain inlet (bottom side = chain return) (see page 76 and following). Use the drilling jig **3842 553 518**

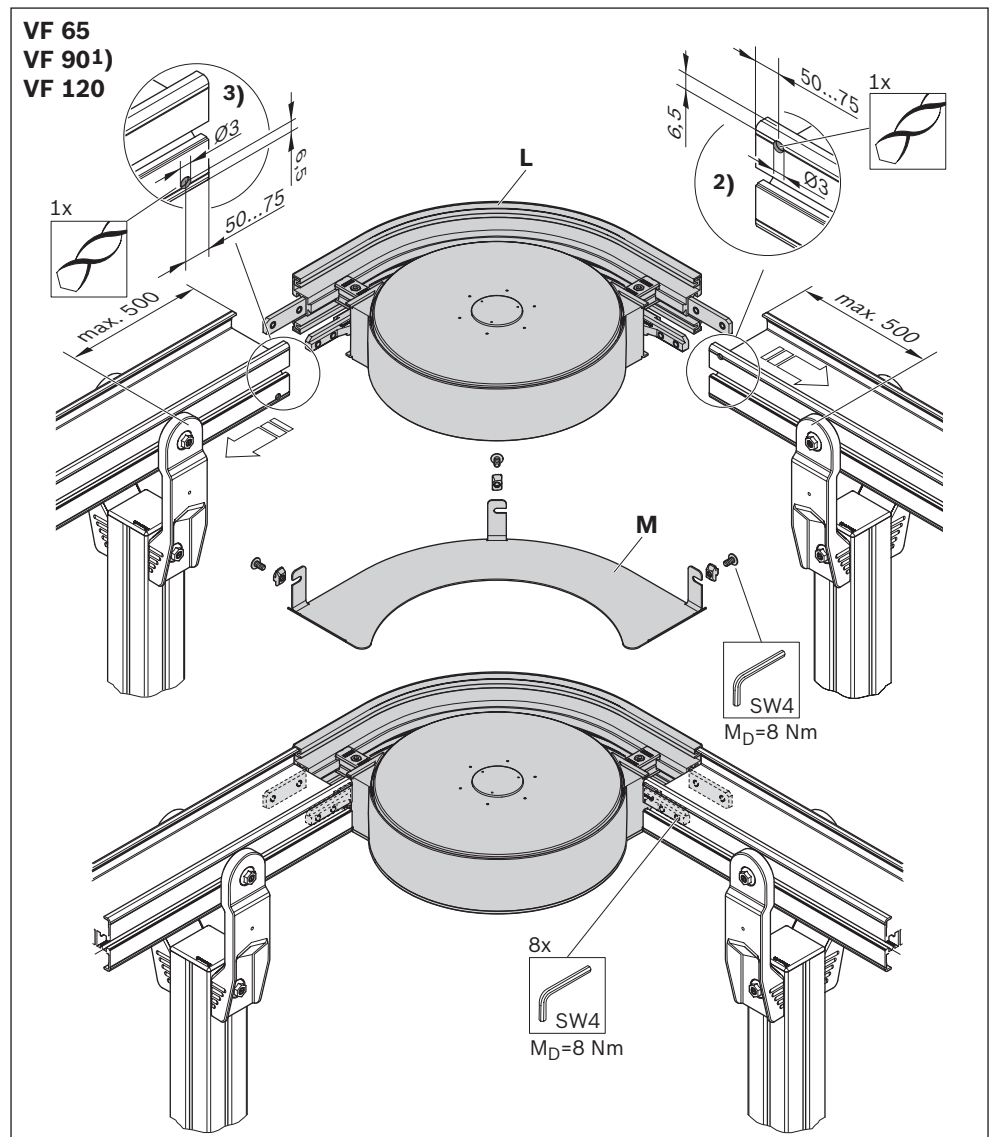


Fig. 9: System AL, installing curve wheel

**Please note:**

- For circuit systems without chain return in the bottom run (using a curve wheel or connection drive), use the protective cover (M) and closed profiles as a safety guard to prevent access from below.

Required accessories:

- Curve wheel 180° (N)
- Drive kit (O), gear motor installation (see page 185).

N, VF 65: **3842 547 380**

N, VF 90: **3842 547 381**

O: **3842 998 742**

1. Install the curve wheel.
2. Mount the cover (x) on the mounting bracket (y).
3. Tighten the screws (z) until they are flush with the outer surface.
4. Install the flange (O) in the correct position (see 3)), flange can only be installed in the correct position.

**Please note:**

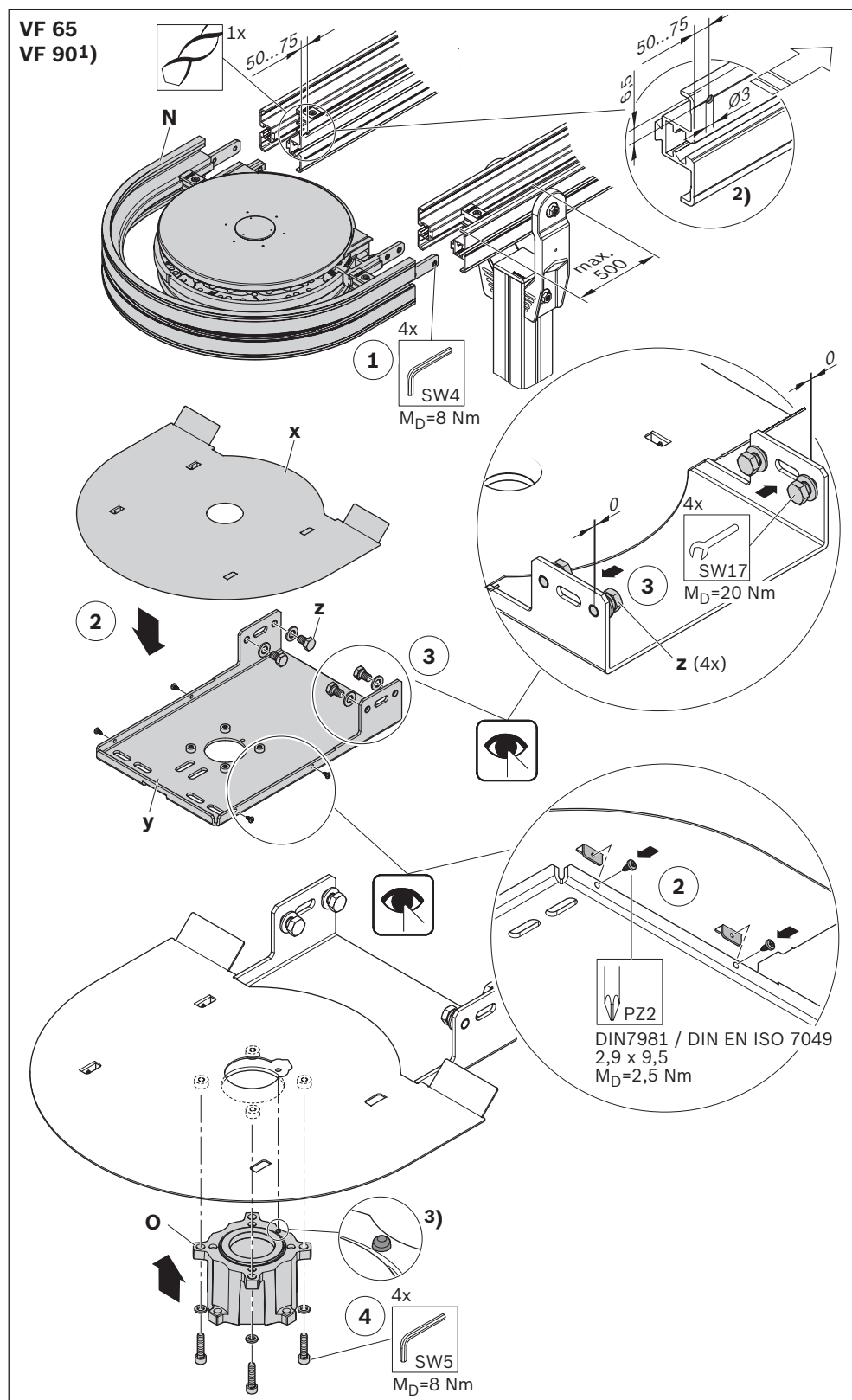
- Support the curve wheel drive (leg set not included in scope of delivery).
- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

Further information can be found on page 25.

1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following). Use the drilling jig **3842 553 518**

Installing the curve wheel drive



562 411-09

Fig. 10: System AL, installing curve wheel drive

5. Install the pre-assembled mounting bracket (y).
6. Mount the leg set (v).



- Do not tighten the screws of steps 5 and 6 completely before installation of the gear motor.
7. Mount the leg set (P, not included in the scope of delivery).
- Further assembly steps:
 - Sliding rail installation (see page 76)
 - Gear motor installation (see page 185).

1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following).
Use the drilling jig **3842 553 518**

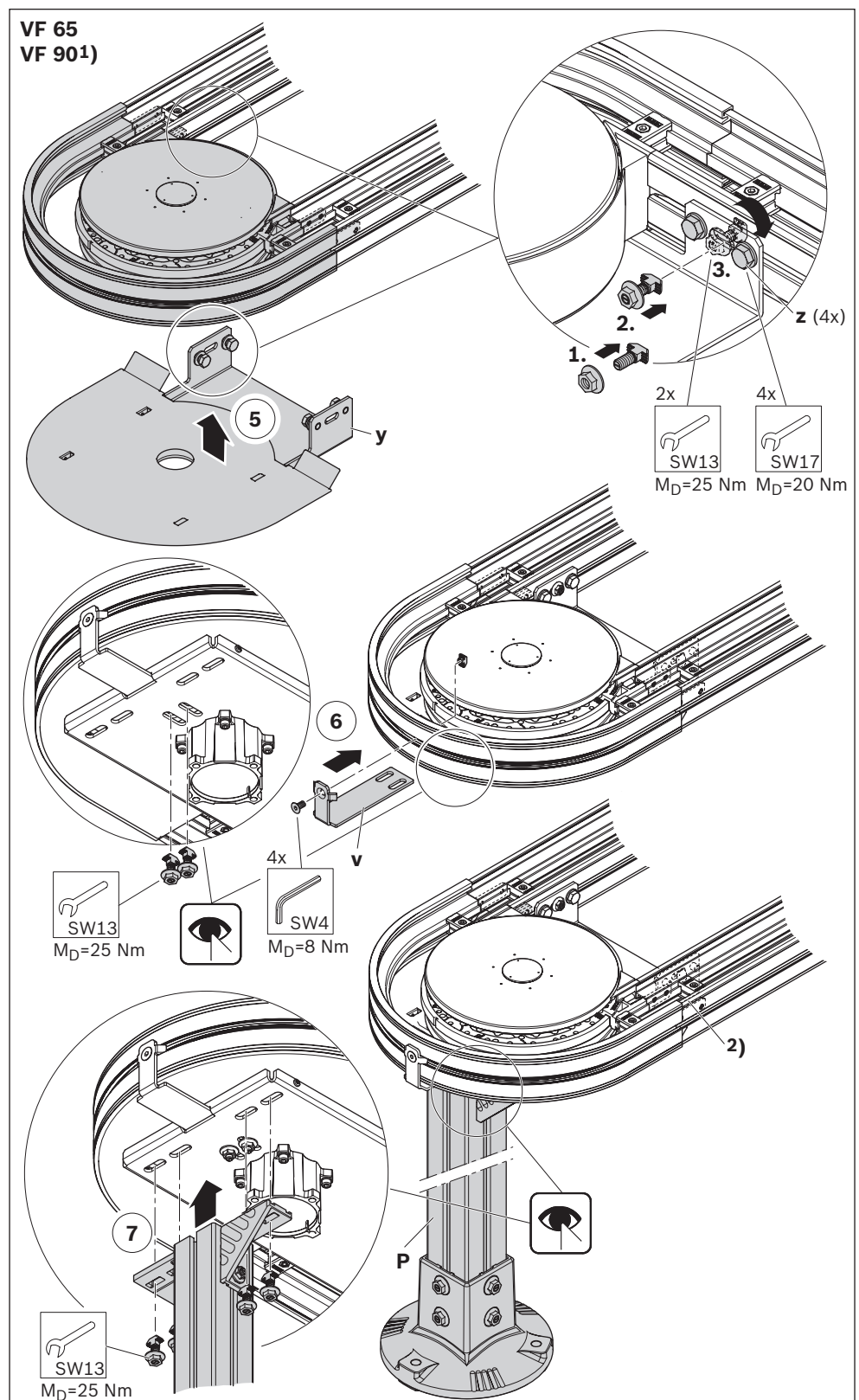


Fig. 11: System AL, installing curve wheel drive

562 411-10

Required accessories:

- Horizontal sliding curve (Q)

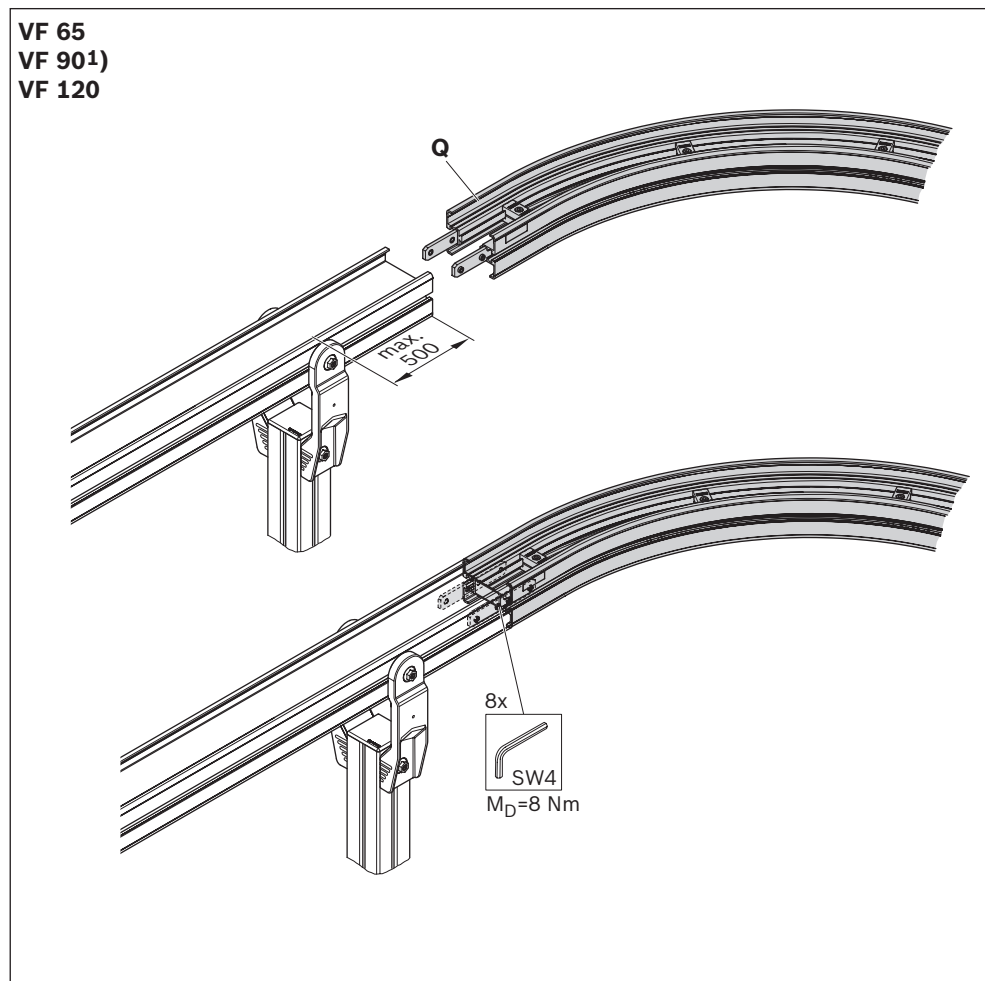
Q, VF 65,
 30°, R700: **3842 547 072**
 45°, R700: **3842 547 073**
 90°, R700: **3842 547 074**

Q, VF 90,
 45°, R500: **3842 547 075**
 90°, R500: **3842 547 076**
 30°, R700: **3842 547 077**
 45°, R700: **3842 547 078**
 90°, R700: **3842 547 079**

Q, VF 120,
 30°, R700: **3842 547 080**
 45°, R700: **3842 547 081**
 90°, R700: **3842 547 082**

1) Size shown

Horizontal sliding curve



562 411-11

Fig. 12: System AL, installing horizontal sliding curve



Please note:

The friction which arises in sliding curves increases the required chain tensile force.

- With sliding curves always use the **Advanced** or **Premium** sliding rails for the entire system.

**Please note:**

The chain guide must not touch the roller (see 3)).

- Roller must be freely movable
- Observe the gap dimension

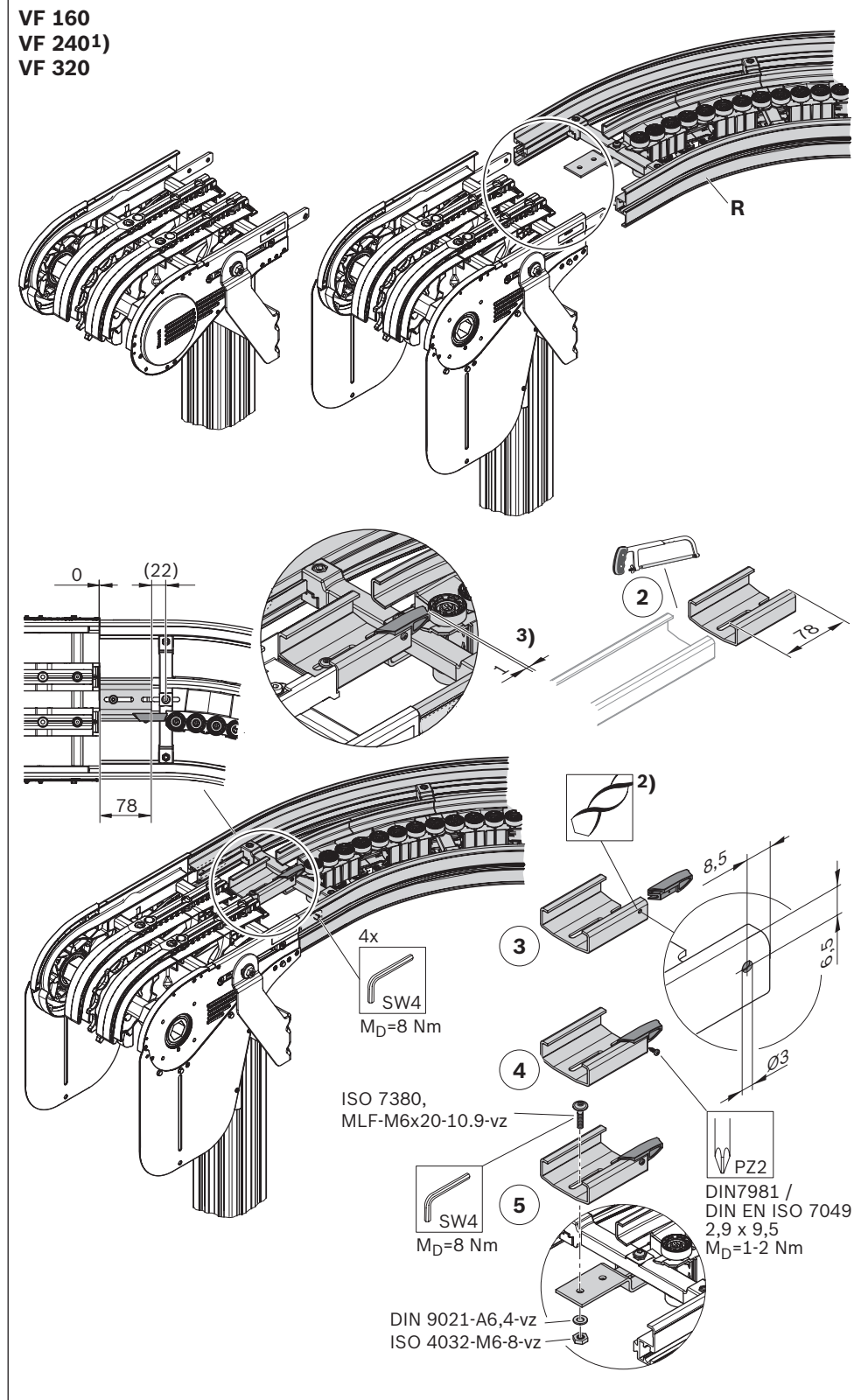
1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following).

3) Use the drilling jig

3842 553 518

Horizontal roller curve in base unit / return unit



562 411-13

Fig. 14: System AL, installing horizontal roller curve in base unit / return unit

Required accessories:

- Vertical curve AL (S)

S, VF 65,

5°, R500: **3842 547 083**

7.5°, R500: **3842 547 084**

15°, R500: **3842 547 085**

30°, R500: **3842 547 086**

45°, R500: **3842 547 087**

90°, R500: **3842 559 126**

S, VF 90,

5°, R500: **3842 547 088**

7.5°, R500: **3842 547 089**

15°, R500: **3842 547 090**

30°, R500: **3842 547 091**

45°, R500: **3842 547 092**

90°, R500: **3842 559 127**

S, VF 120,

5°, R500: **3842 547 093**

7.5°, R500: **3842 547 094**

15°, R500: **3842 547 095**

30°, R500: **3842 547 096**

45°, R500: **3842 547 097**

90°, R500: **3842 559 128**

**Please note:**

The friction which arises in vertical curve increases the required chain tensile force.

- ▶ With vertical curves always use the **Advanced** or **Premium** sliding rails for the entire system. See sliding rail installation (page 76 and following).

1) Size shown

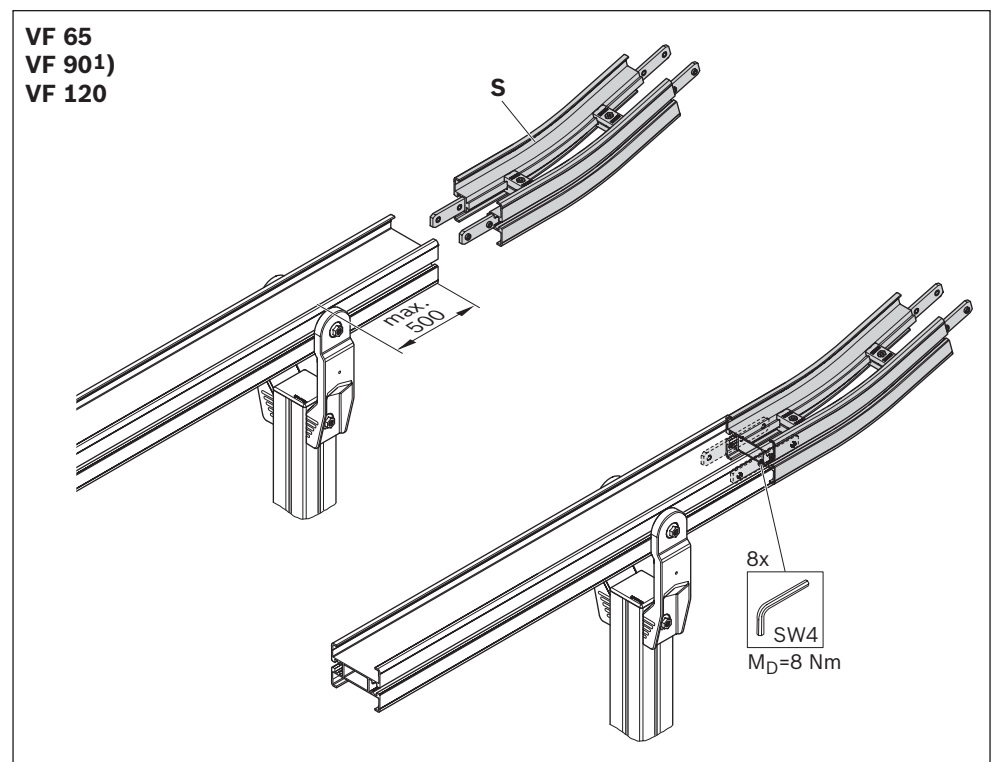
Profile connector, adjustable: 0-5°

Required accessories:

- Profile connector, adjustable 0-5° (T)

T: **3842 559 130**

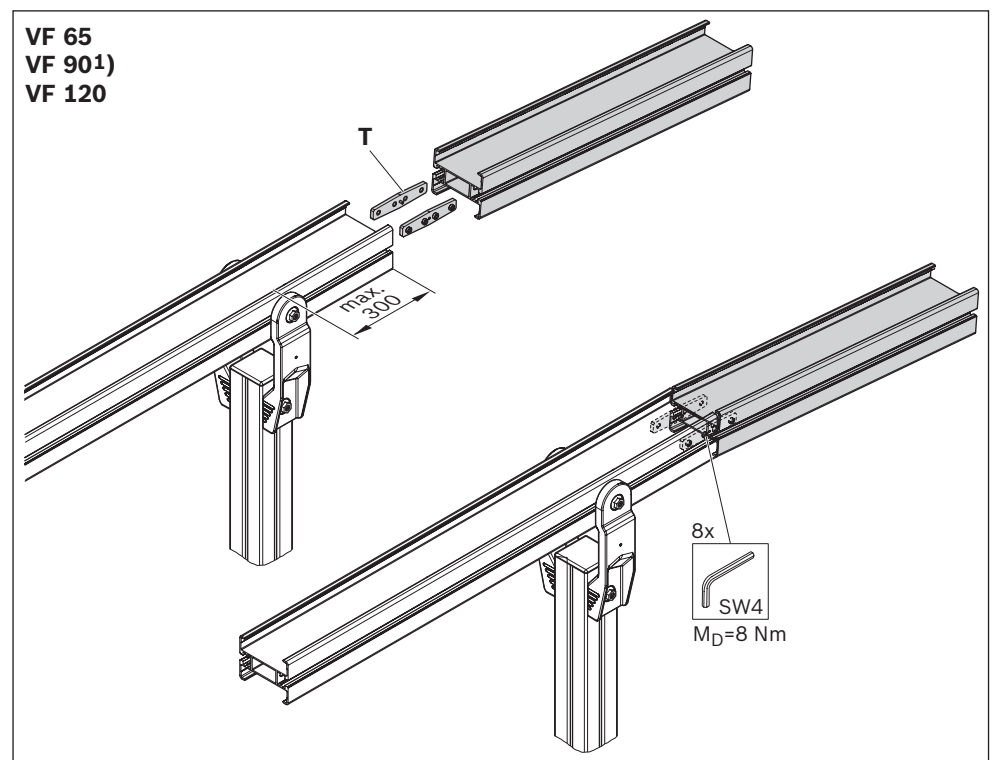
Vertical curve AL, VF 65 / VF 90 / VF 120



562 411-14

Fig. 15: System AL, installing vertical curve AL, VF 65 / VF 90 / VF 120

Profile connector adjustable 0-5°



562 411-15

Fig. 16: System AL, installing profile connector adjustable 0-5°

Vertical curve AL, VF 160 / VF 240 / VF 320

- First install the sliding rails and chain guides for the chain return on the bottom side of the curve.

Required accessories:

- Vertical curve AL (S)
- **Advanced** or **Premium** sliding rails

3842 546 116

S, VF 160,5°, R500: **3842 547 098**7.5°, R500: **3842 547 099**15°, R500: **3842 547 100**30°, R500: **3842 547 101**45°, R500: **3842 547 102****S, VF 240,**5°, R500: **3842 547 103**7.5°, R500: **3842 547 104**15°, R500: **3842 547 105**30°, R500: **3842 547 106****S, VF 320,**5°, R500: **3842 547 107**7.5°, R500: **3842 547 108**15°, R500: **3842 547 109**30°, R500: **3842 547 110**

1. Install the chain guides.

2. Install the sliding rail.



1) Size shown

2) Running direction of the returning chain on the bottom side of the profile.

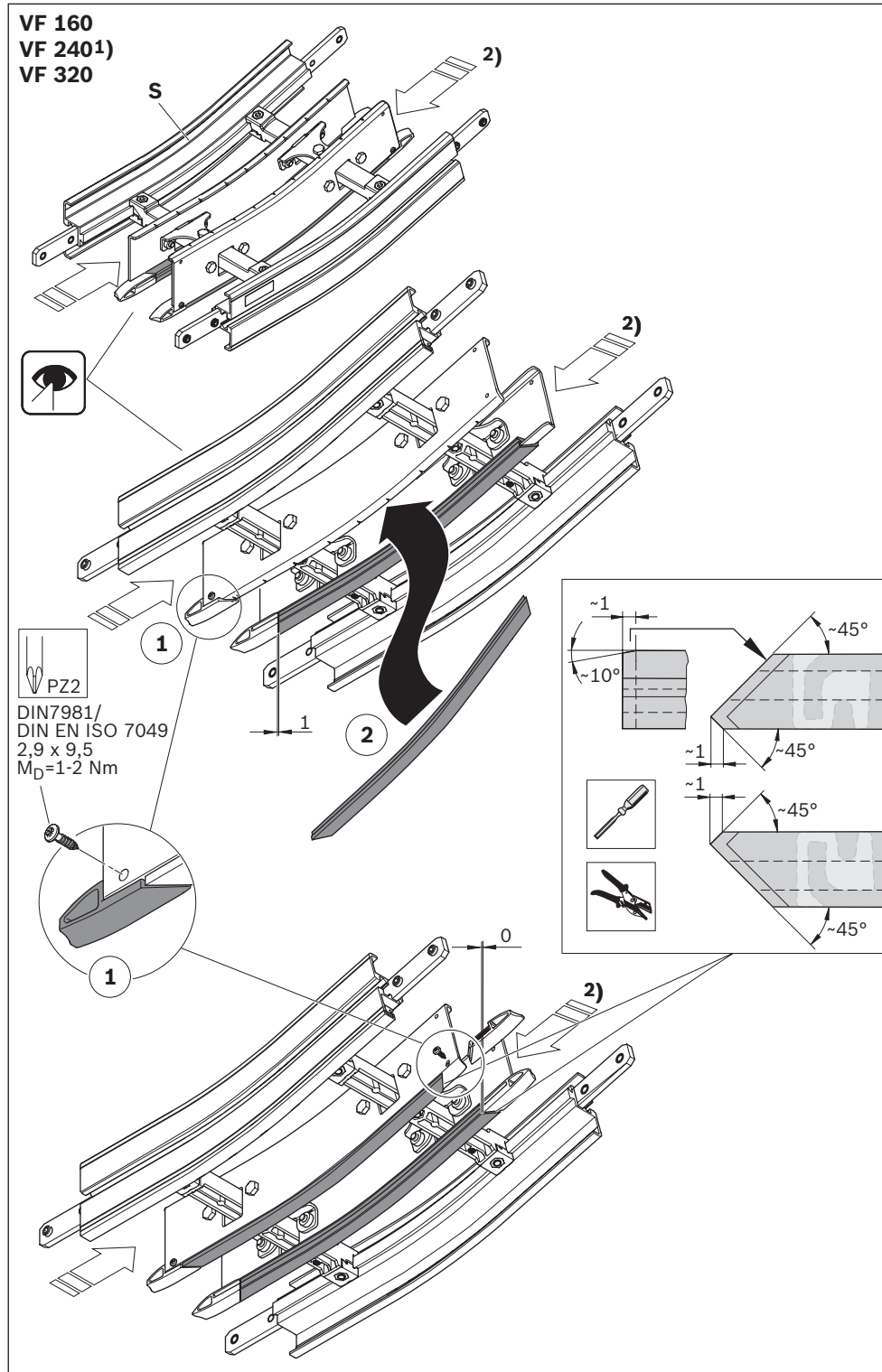
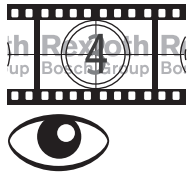


Fig. 17: System AL, vertical curve AL, upward: Installing sliding rail for chain return

562 411-16

1. Install the chain guides.
2. Install the sliding rail.



- 1) Size shown
- 2) Running direction of the returning chain on the bottom side of the profile.

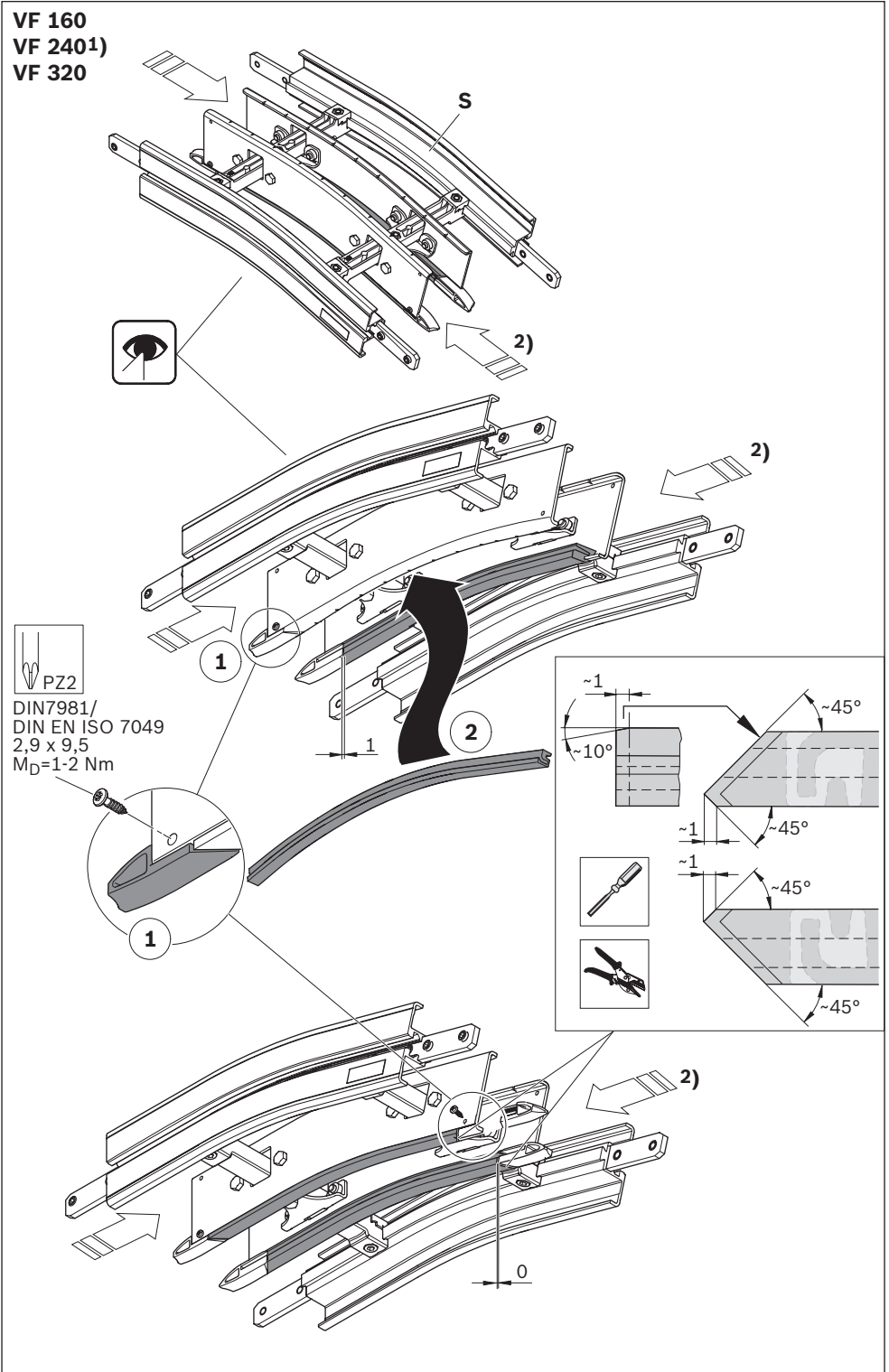


Fig. 18: System AL, vertical curve AL, downward: Installing sliding rail for chain return

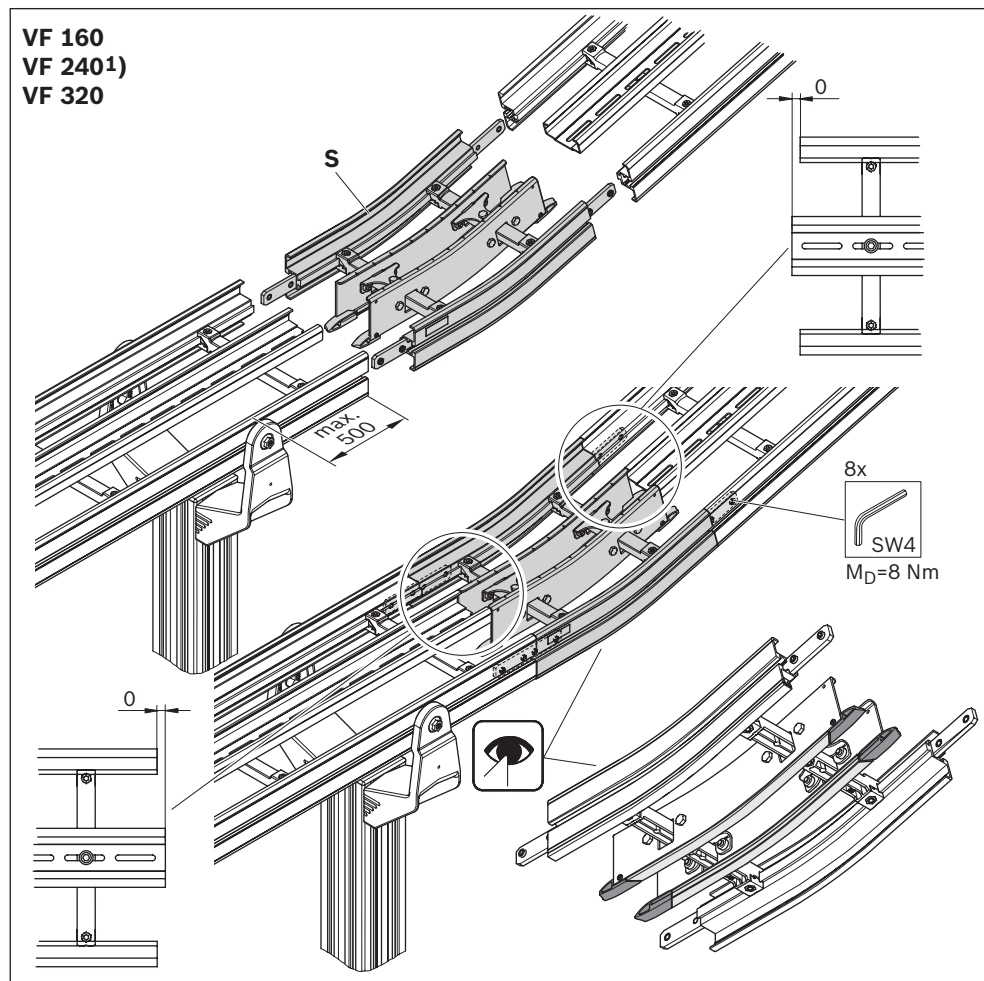
562 411-17

**Please note:**

The friction which arises in vertical curve increases the required chain tensile force.

- With vertical curves always use the **Advanced** or **Premium** sliding rails for the entire system. See sliding rail installation (page 76 and following).

¹⁾ Size shown



562 411-18

Fig. 19: System AL, installing vertical curve AL, VF 160 / VF 240 / VF 320



Please note:

The friction which arises in vertical curve increases the required chain tensile force.

- With vertical curves always use the **Advanced** or **Premium** sliding rails for the entire system. See sliding rail installation (page 76 and following).

1) Size shown

Vertical curve AL at basic unit/return unit

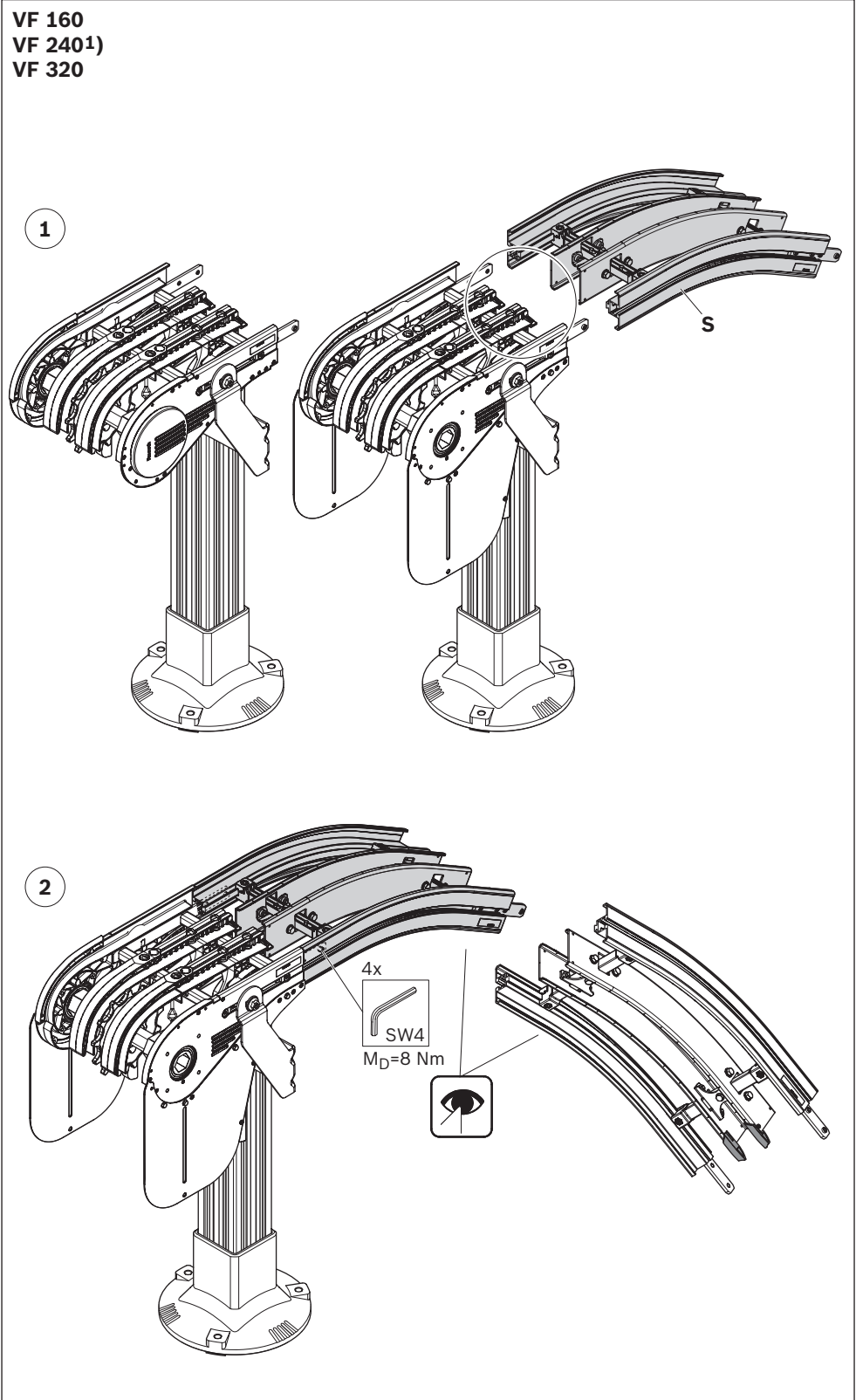


Fig. 20: System AL, installing vertical curve AL on base unit/return unit

562 411-19

Required accessories:

- Assembly module (U)

U: 3842 547 899

**Please note:**

- Install the assembly module where it can be easily accessed during subsequent operation. This facilitates the installation, inspection, and replacement of the conveyor chain.
- The drilled holes for fixing the sliding rail in position (see 2)) must be towards the front in the conveying direction.
- Sliding rail interruption is only required on the side to be opened.
- For size 160-320:
Do not interrupt the support profile with a sliding rail to increase the smooth running.

1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following). Use the drilling jig **3842 553 518**

Assembly module

VF 65
VF 901)
VF 120

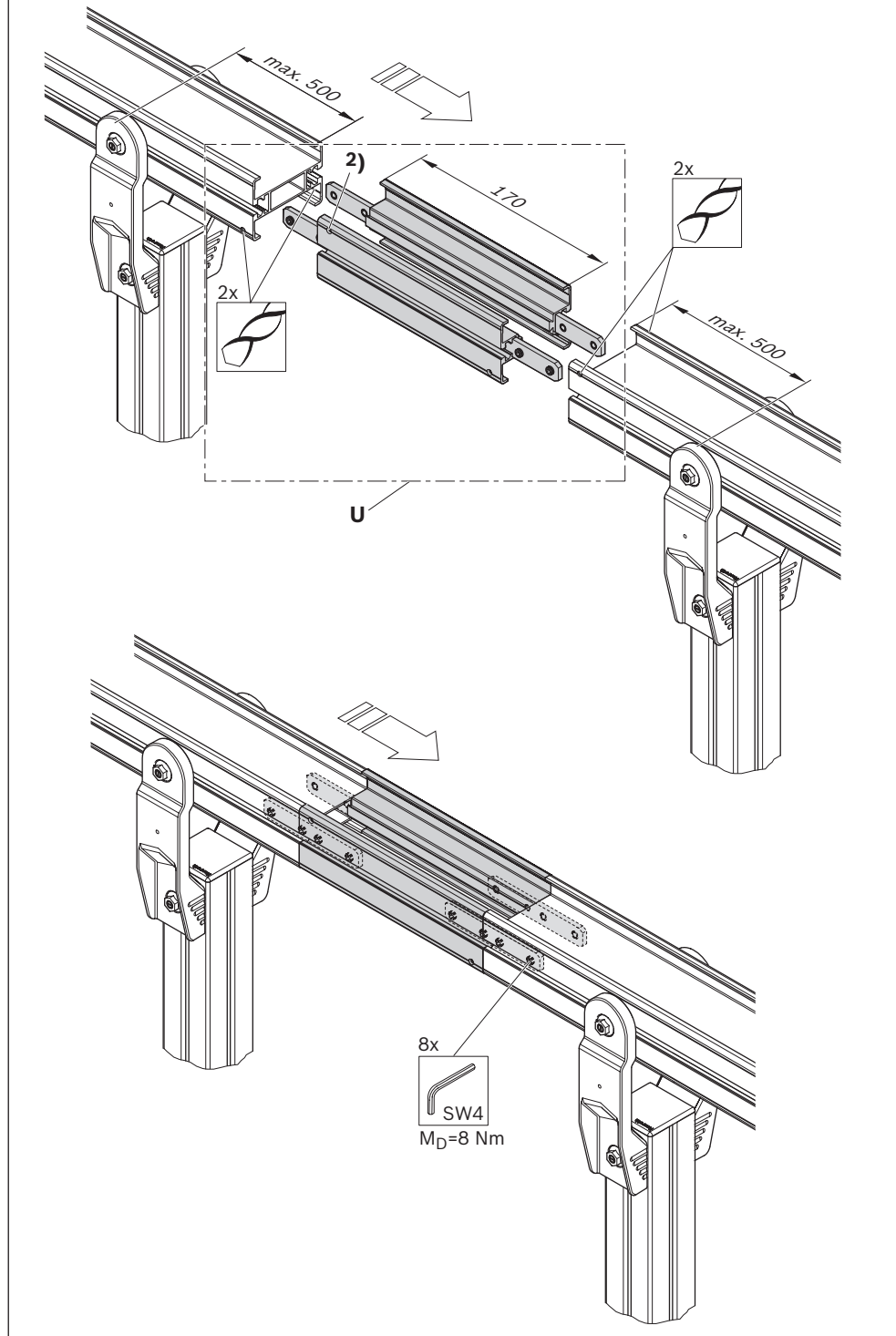


Fig. 21: System AL, installing assembly module

562 411-20

Opening/closing the assembly module

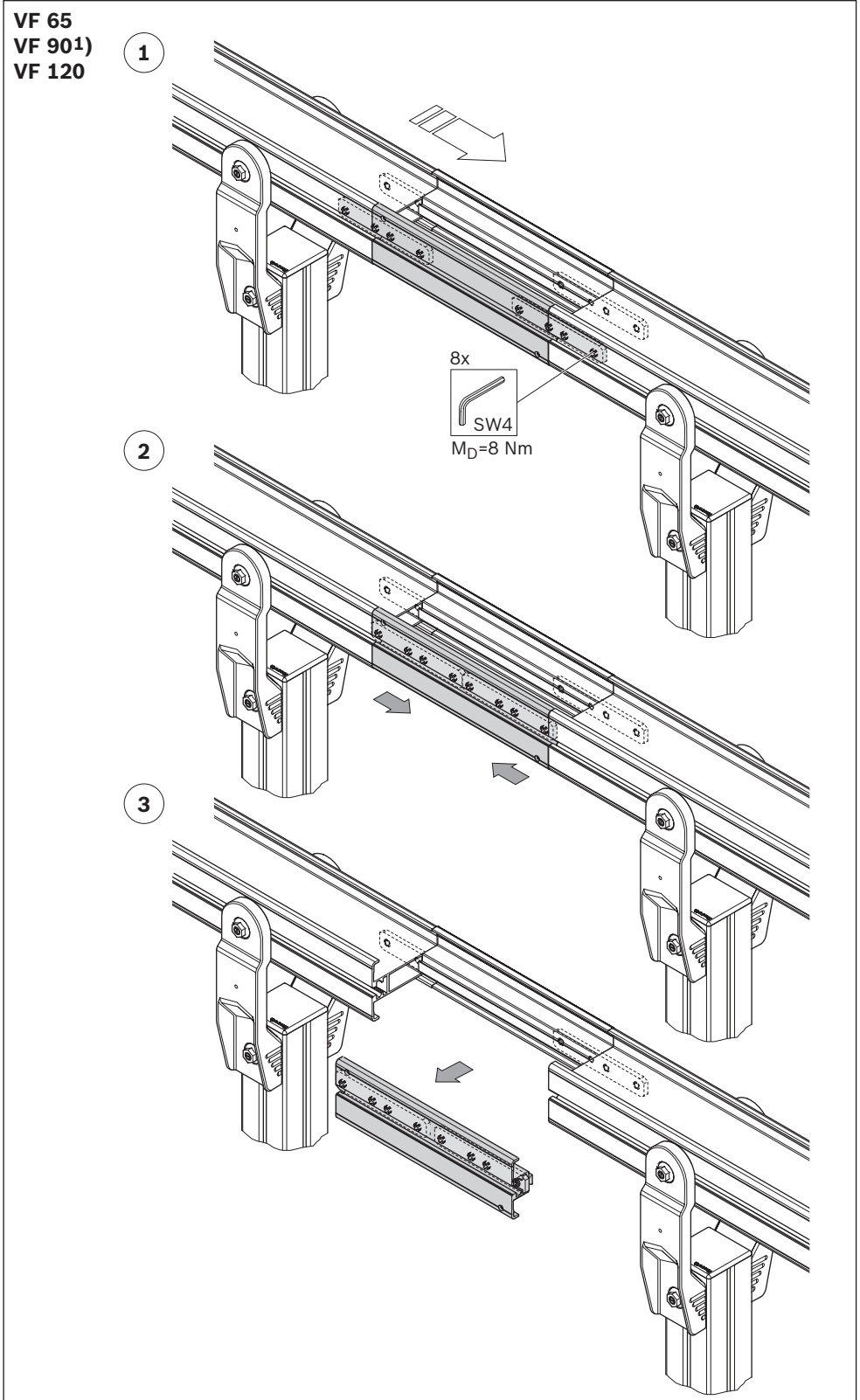


Fig. 22: System AL, opening/closing assembly module

562 411-21

Required accessories:

- Return unit (V)

V, VF 65: 3842 547 516

V, VF 90: 3842 547 517

V, VF 120: 3842 547 518

V, VF 160: 3842 547 519

V, VF 240: 3842 547 520

V, VF 320: 3842 547 521

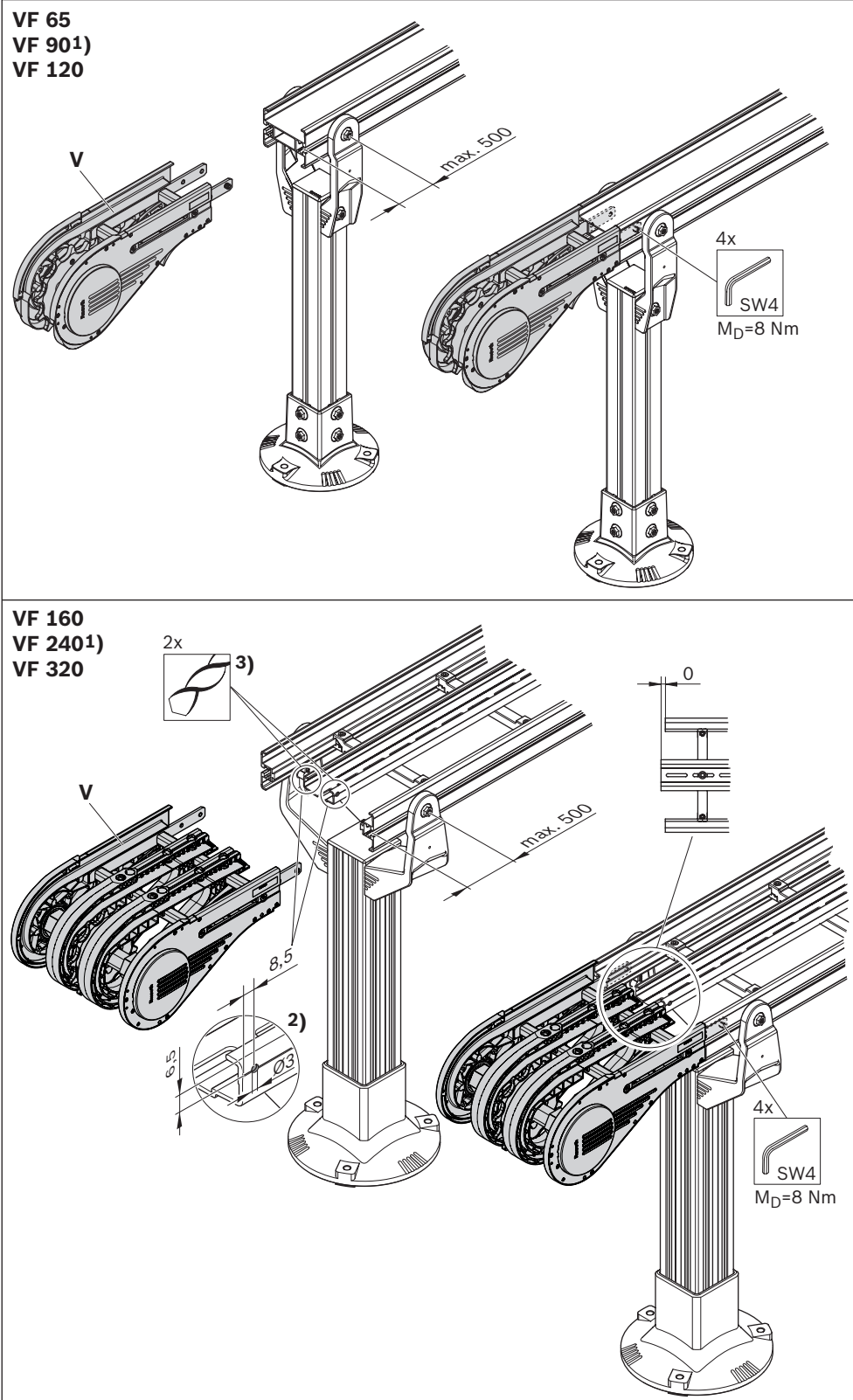
**Please note:**

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

¹⁾ Size shown

²⁾ Drilled hole for fixing the sliding rail (see page 76 and following).

³⁾ Use the drilling jig
3 842 553 518

Return unit

562 411-22

Fig. 23: System AL, installing return unit

Required accessories:

- Basic unit (W), protective panels (z) not assembled.
- Holder (X)
- Chain sprocket (Y)

W, VF 65: **3842 546 120**

W, VF 90: **3842 546 121**

W, **3842 546 122**

VF 120:

X, VF 65: **3842 547 442**

X, VF 90: **3842 547 443**

X, VF 120: **3842 547 444**

Y, VF 65: **3842 553 047**

Y, VF 90: **3842 553 048**

Y, VF 120: **3842 553 049**

**Please note:**

- You can also install the protective panels (z) later, after closing the conveyor chain.
- Chain sprocket required for ascending and descending sections or to prevent the chain bag from swiveling out.
- ▶ Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.
- ▶ Further assembly steps:
 - Sliding rail installation (see page 76).
 - Gear motor installation (see page 175, 176).

¹⁾ Size shown

²⁾ The Machinery Directive 2006/42/EC requirement for captive screws on protective covers is fulfilled if this lock washer (z) is fitted.

Basic unit

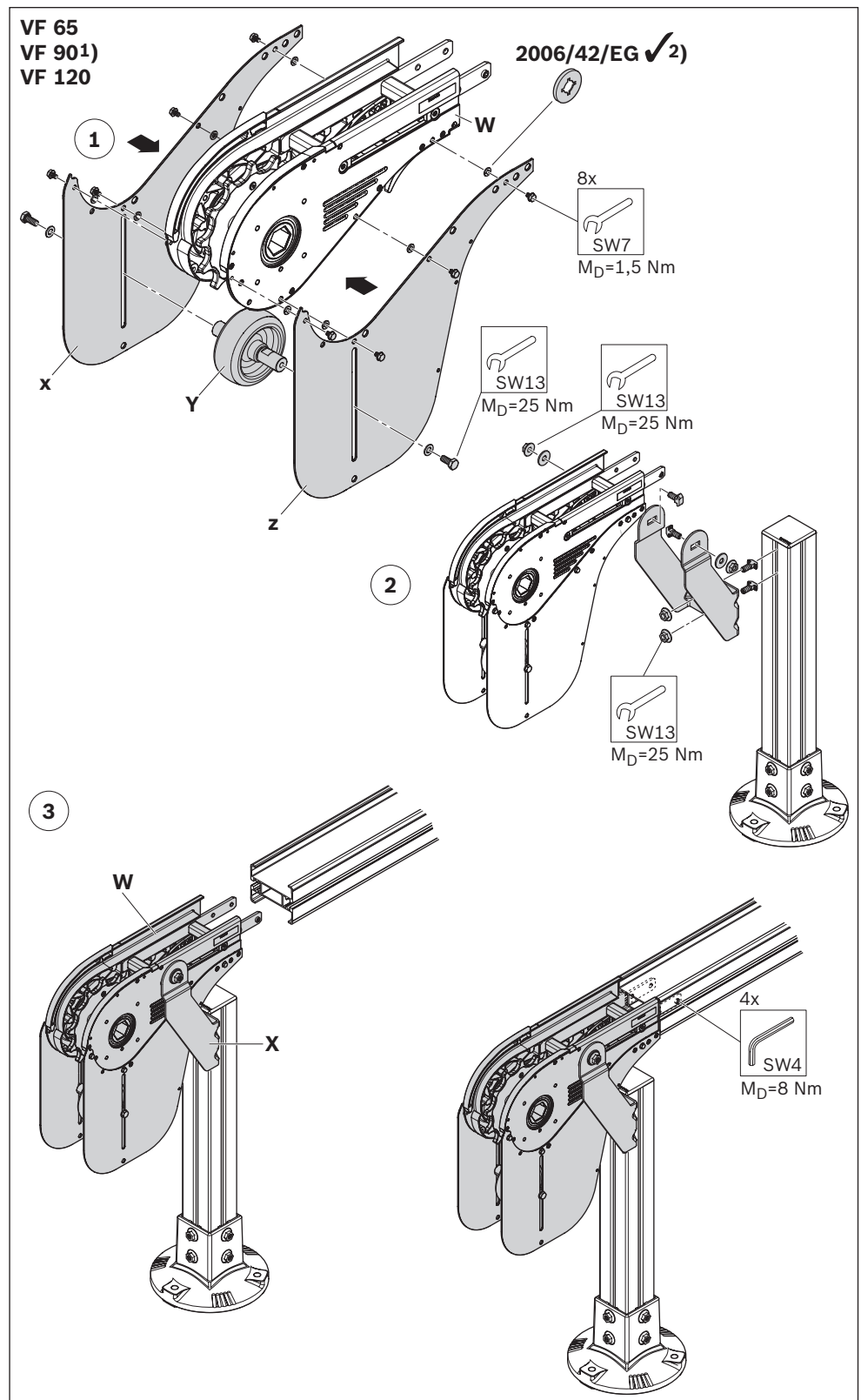


Fig. 24: System AL, installing base unit, VF 65 / VF 90 / VF 120

562 411-23

Required accessories:

- Basic unit (W) with unassembled protective panels (z).
- Holder (X)
- Chain sprocket (Y)

W, VF 160: **3842 546 123**

W, VF 240: **3842 546 124**

W, VF 320: **3842 546 125**

X, VF 160: **3842 547 445**

X, VF 240: **3842 547 446**

X, VF 320: **3842 547 447**

Y, VF 160: **3842 553 057**

Y, VF 240: **3842 553 058**

Y, VF 320: **3842 553 059**

**Please note:**

- You can also install the protective panels (z) later, after closing the conveyor chain.
- Chain sprocket required for ascending and descending sections or to prevent the chain bag from swiveling out.
- ▶ Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.
- ▶ Further assembly steps:
 - Sliding rail installation (see page 76).
 - Gear motor installation (see page 175, 176).

1) Size shown

2) The Machinery Directive 2006/42/EC requirement for captive screws on protective covers is fulfilled if this lock washer (z) is fitted.

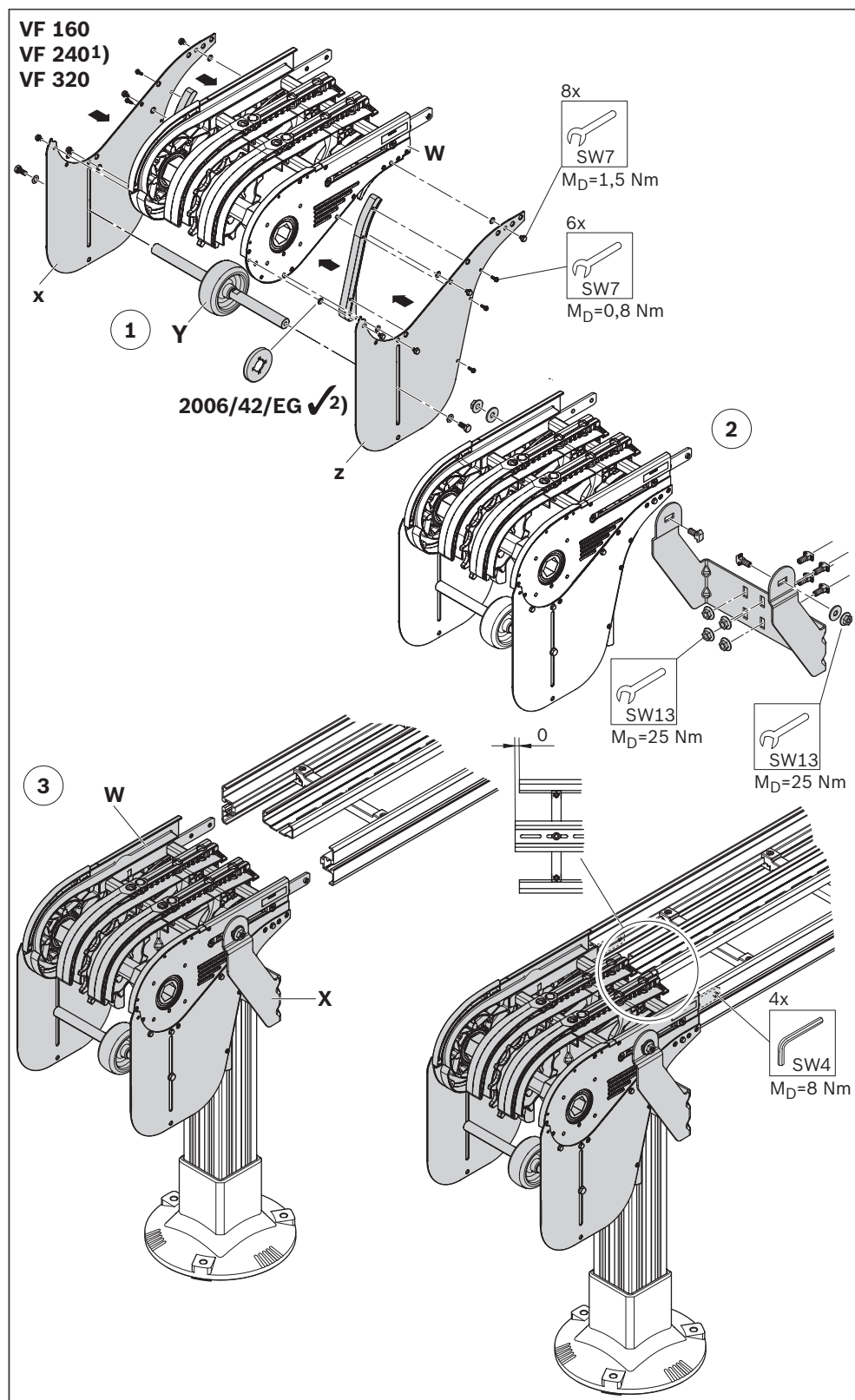


Fig. 25: System AL, installing base unit, VF 160 / VF 240 / VF 320

562 411-24

Required accessories:

- Connection drive (Z), assembled with protective case (y)
- Connection kit,
 - passive
 - active

Z, VF 65: **3842 547 712**

Z, VF 90: **3842 547 713**

For connection kits, see chapter 7.5.8
Connection kit, page 95

**Please note:**

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

Drilled hole for fixing the sliding rail (see page 76 and following).
Use the drilling jig **3842 553 518**

Connection drive

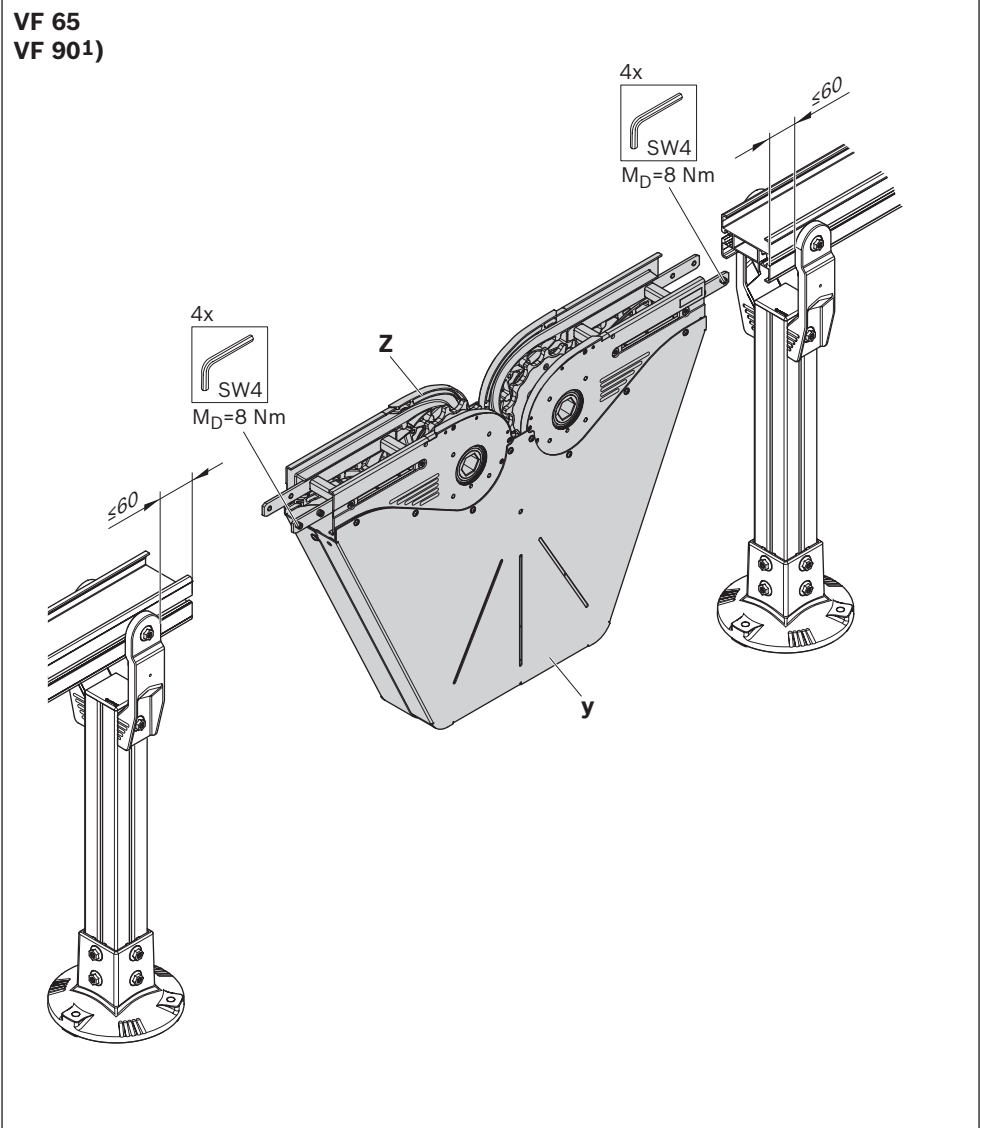


Fig. 26: System AL, installing connection drive

562 411-25

Required accessories:

- Center drive (ZA)

ZA, VF 65: 3842 552 940

ZA, VF 90: 3842 552 941

ZA, VF 120: 3842 552 942

**Please note:**

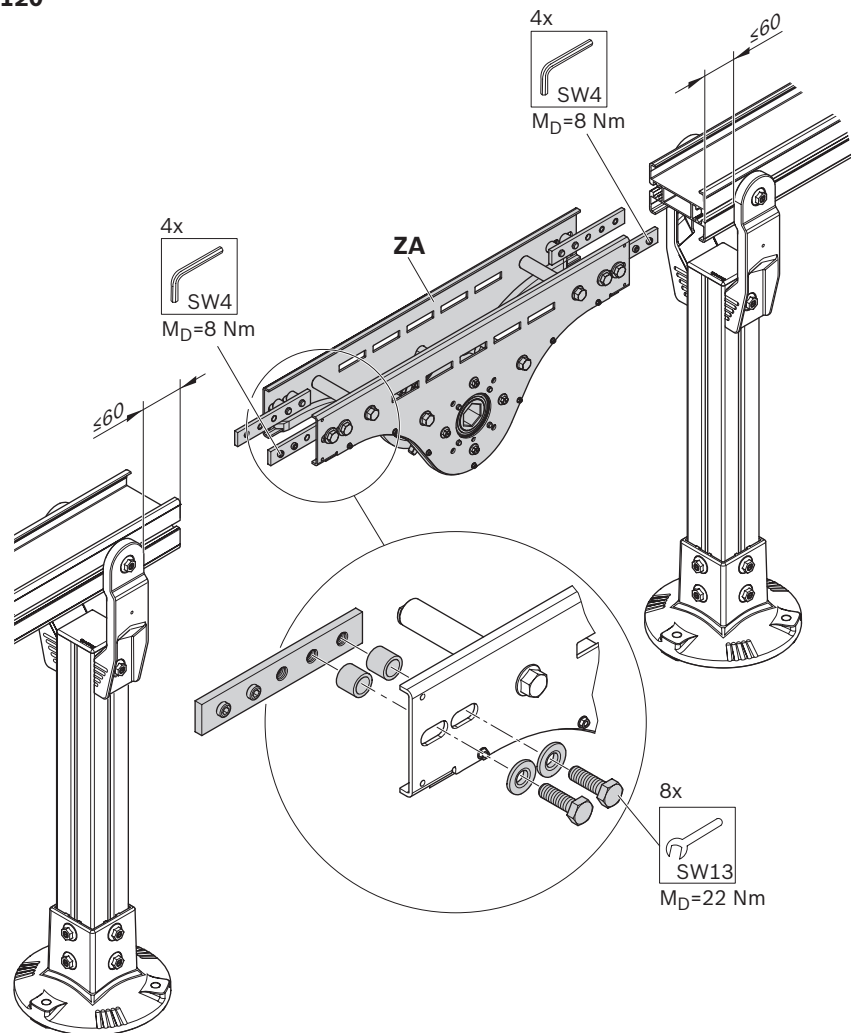
A center drive and transmission drive combination is not possible.

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

Center drive

VF 65
VF 90¹⁾
VF 120



562 411-26

Fig. 27: System AL, installing center drive

7.5.2 System STS

Leg sets

Required accessories:

- Foot (A)
- Tube (B)
- Flange (C)
- Holder (G), see page 43

A₁: 3842 533 307

A₂: 3842 533 309

B: 3842 993 308/L

C: 3842 547 892

- Mount the leg sets.



Please note:

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

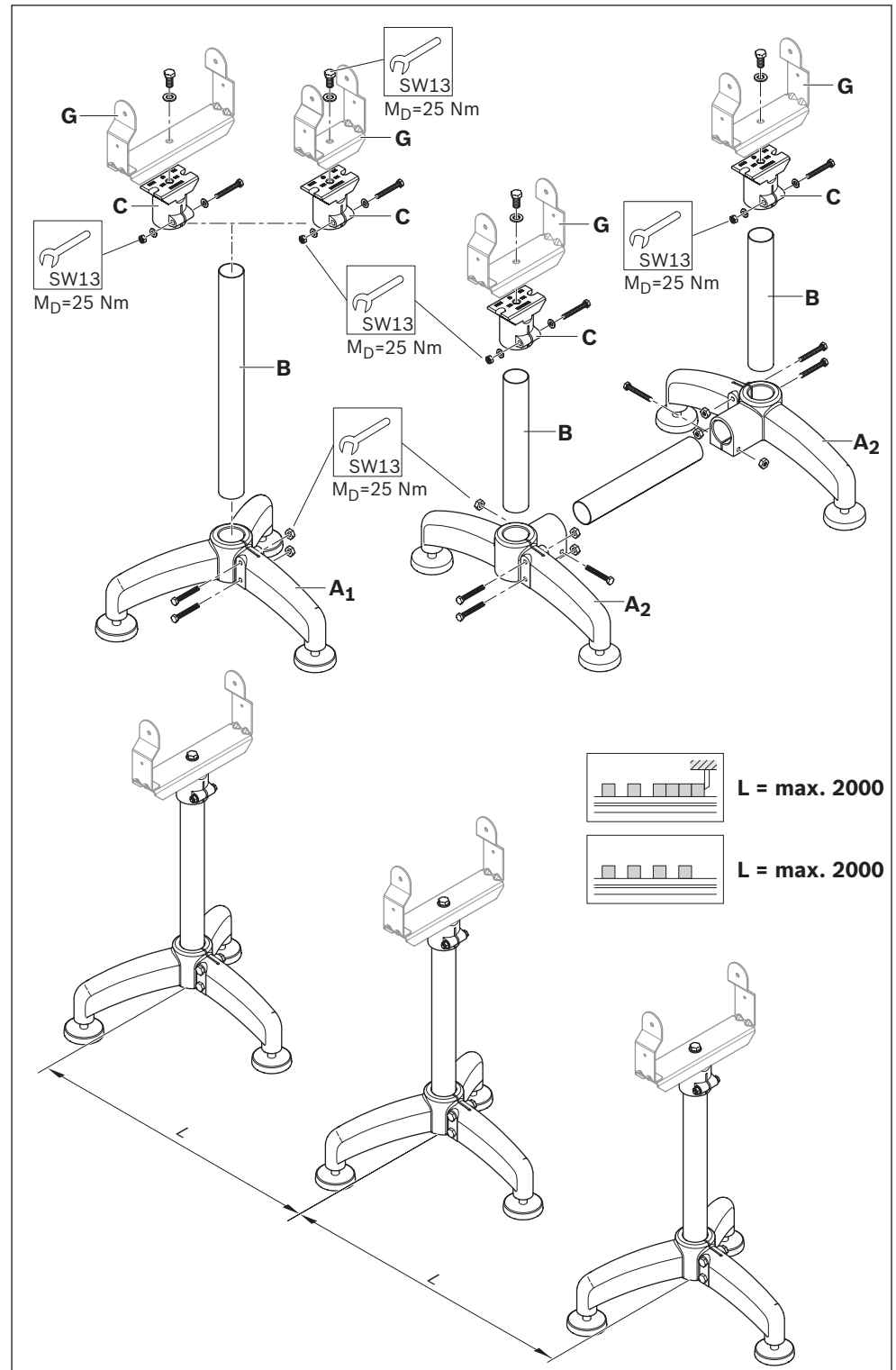


Fig. 28: System STS, installing leg sets

562 411-27

Required accessories:

- Section profile (D)
- Cross connector (E)
- Support profile (F, only for VF 160 / VF 240 / VF 320)

D,	
3024 mm:	3842 546 649
3024 mm:	3842 547 905
L mm:	3842 996 027/L
E, VF 65:	3842 546 684
E, VF 90:	3842 546 685
E, VF 120:	3842 546 686
E, VF 160:	3842 546 687
E, VF 240:	3842 546 688
E, VF 320:	3842 546 689

- Pre-assembling open-type section profiles.

**Please note:**

- Install the support profile last, after the curves, return unit and drive.

The support profile (F) extends into the curves (see pages 47, 49).

- In order to fix the sliding rail in place, make drill holes in the support profile (positions as shown on pages 47, 49, 57).

F,	
3024 mm:	3842 546 700
3024 mm:	3842 547 906
L mm:	3842 996 029/L

1) Size shown

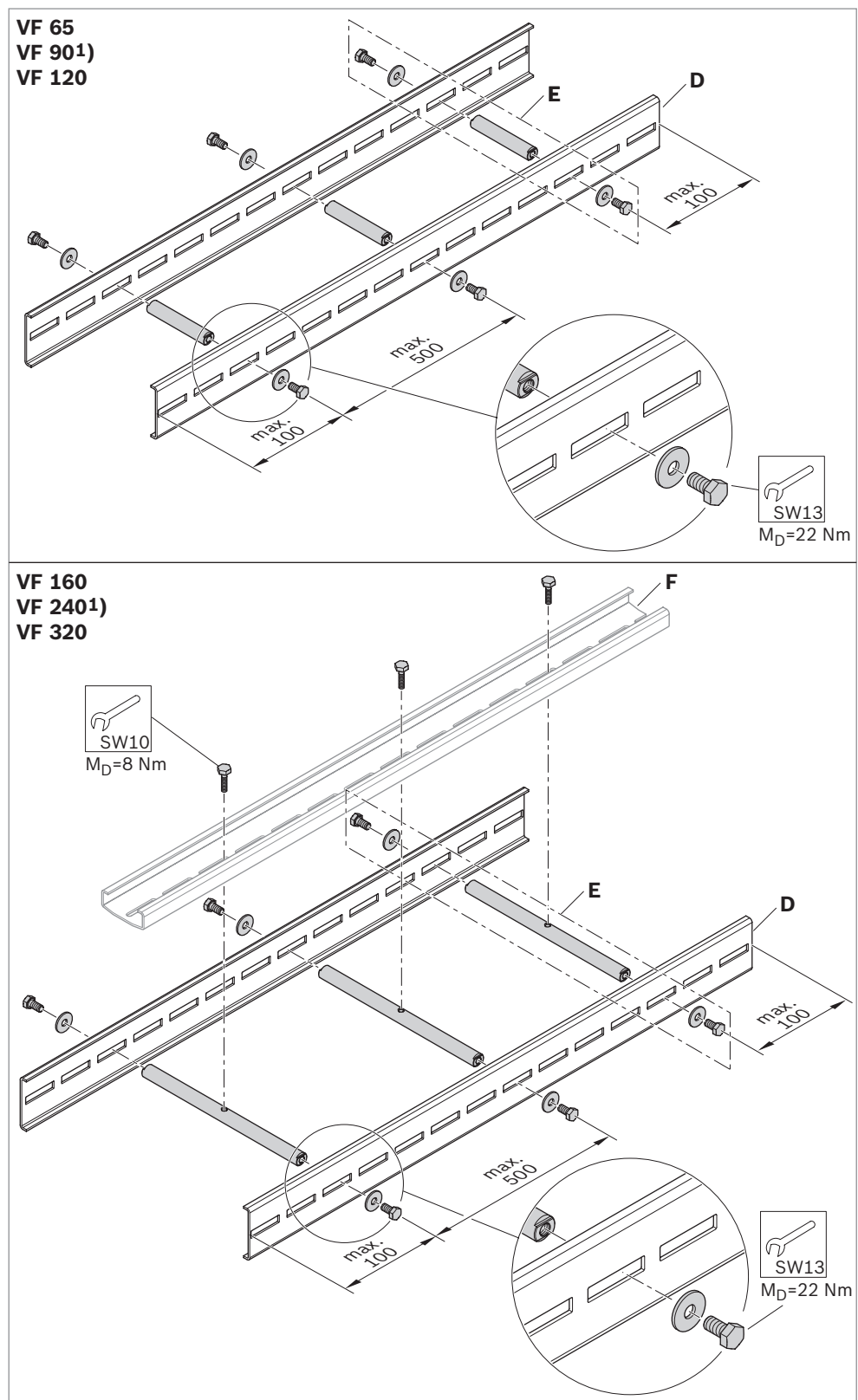
Pre-assembling section profiles

Fig. 29: System STS, pre-assembling section profiles

562 411-28

Required accessories:

- Holder (G)

G, VF 65: **3842 546 658**

G, VF 90: **3842 546 659**

G, VF 120: **3842 546 660**

G, VF 160: **3842 546 661**

G, VF 240: **3842 546 662**

G, VF 320: **3842 546 663**

- Install the section profile on the leg sets.

**Please note:**

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

¹⁾ Size shown

Section on leg set

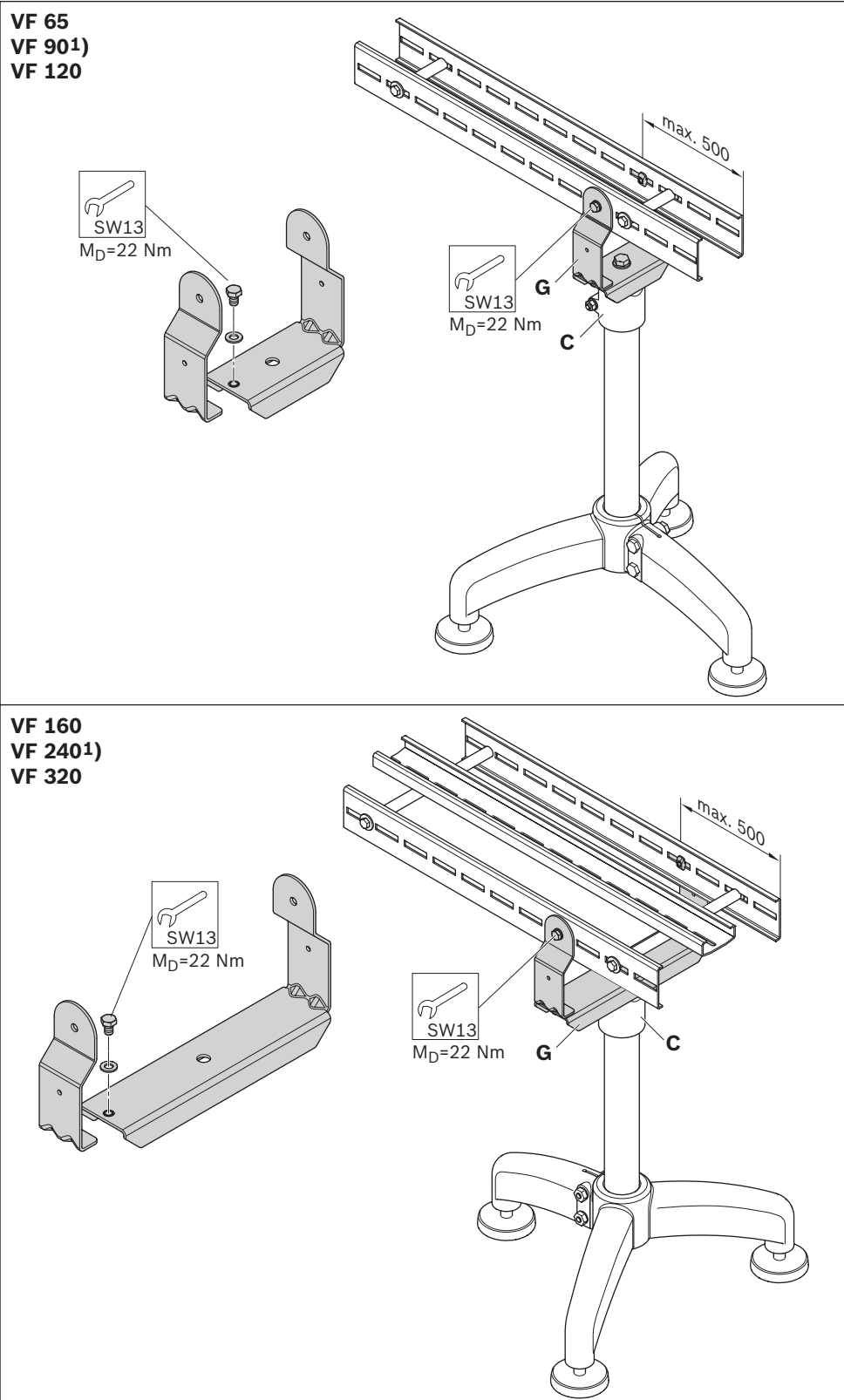


Fig. 30: System STS, installing section on leg sets

562 411-29

Required accessories:

- Profile connector (H)

H: 3842 547 895

¹⁾ Size shown

Straight section

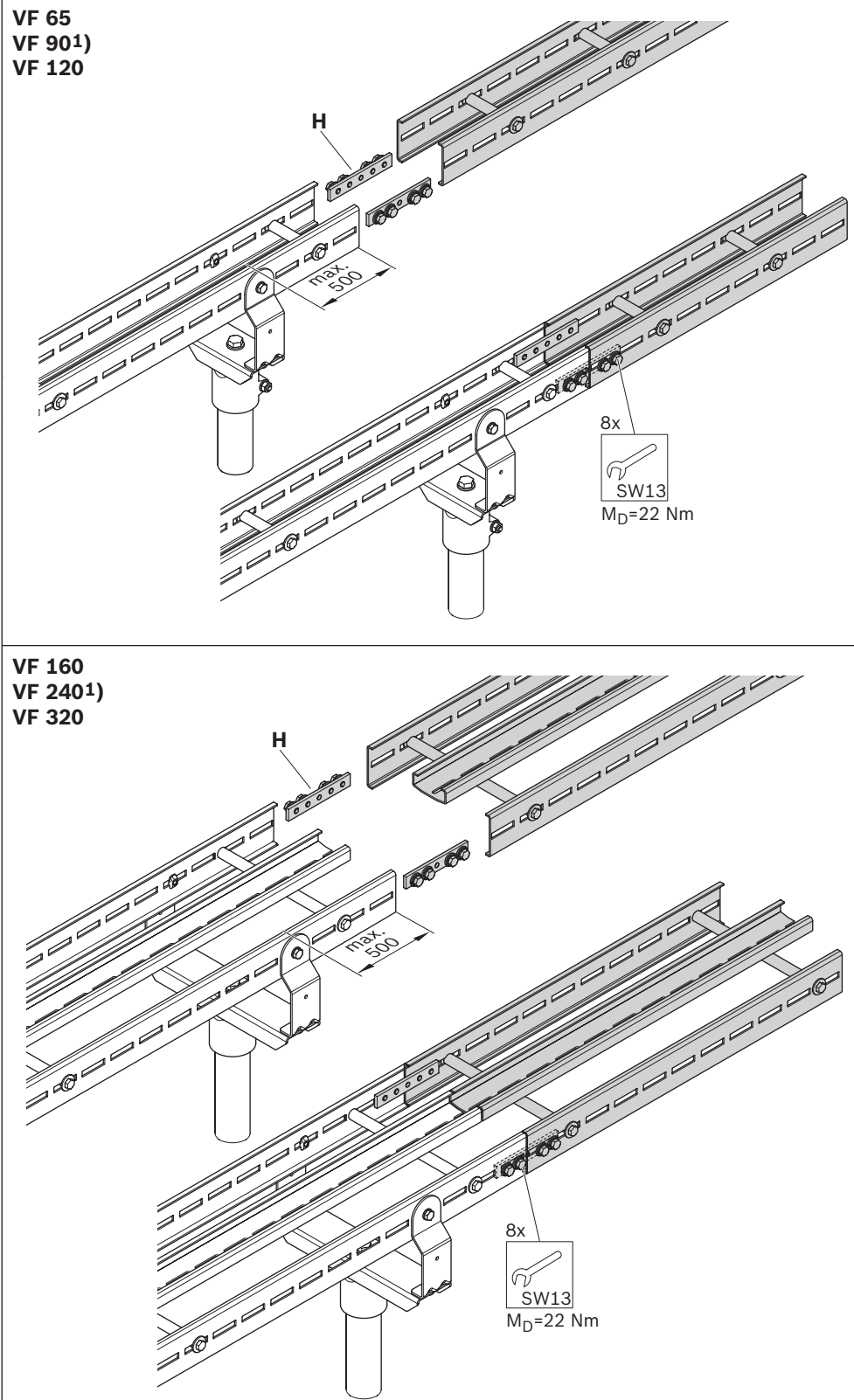


Fig. 31: System STS, installing straight section

562 411-30

Curve wheel

Required accessories:

- Curve wheel (J)

J, VF 65,

30°: **3842 547 111**

45°: **3842 547 112**

90°: **3842 547 113**

180°: **3842 547 114**

J, VF 90,

30°: **3842 547 115**

45°: **3842 547 116**

90°: **3842 547 117**

180°: **3842 547 118**

J, VF 120,

30°: **3842 547 119**

45°: **3842 547 120**

90°: **3842 547 121**

180°: **3842 547 122**

1) Size shown

2) Drilled hole for fixing the sliding rail on the chain inlet (top = conveying) (see page 76 and following).

3) Drilled hole for fixing the sliding rail on the chain inlet (bottom side = chain return) (see page 76 and following).

4) Use the drilling jig **3842 553 518**

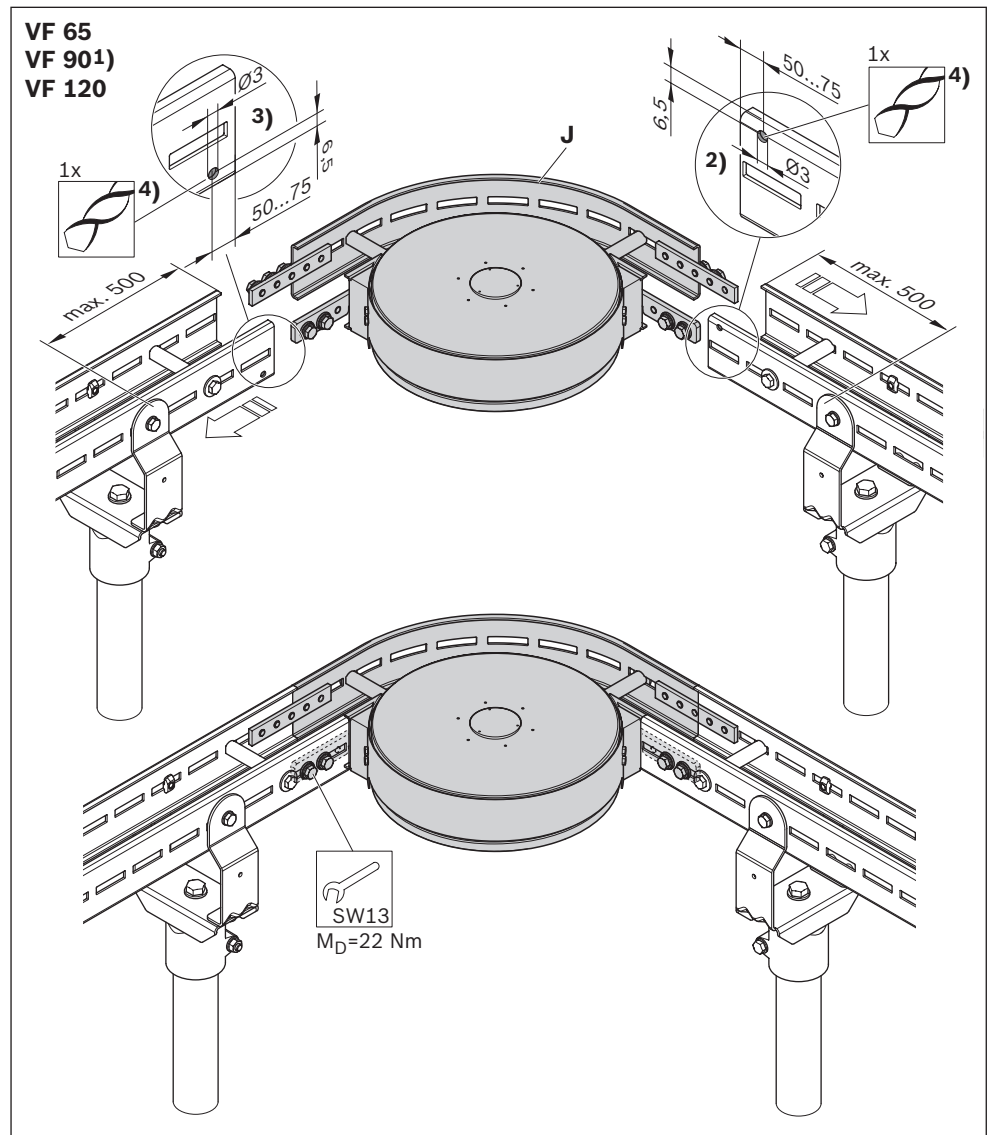


Fig. 32: System STS, installing curve wheel

562 411-31

Required accessories:

- Horizontal sliding curve (K)

K, VF 65,

- 30°, R700: **3842 557 051**
- 45°, R700: **3842 557 052**
- 90°, R700: **3842 557 053**

K, VF 90,

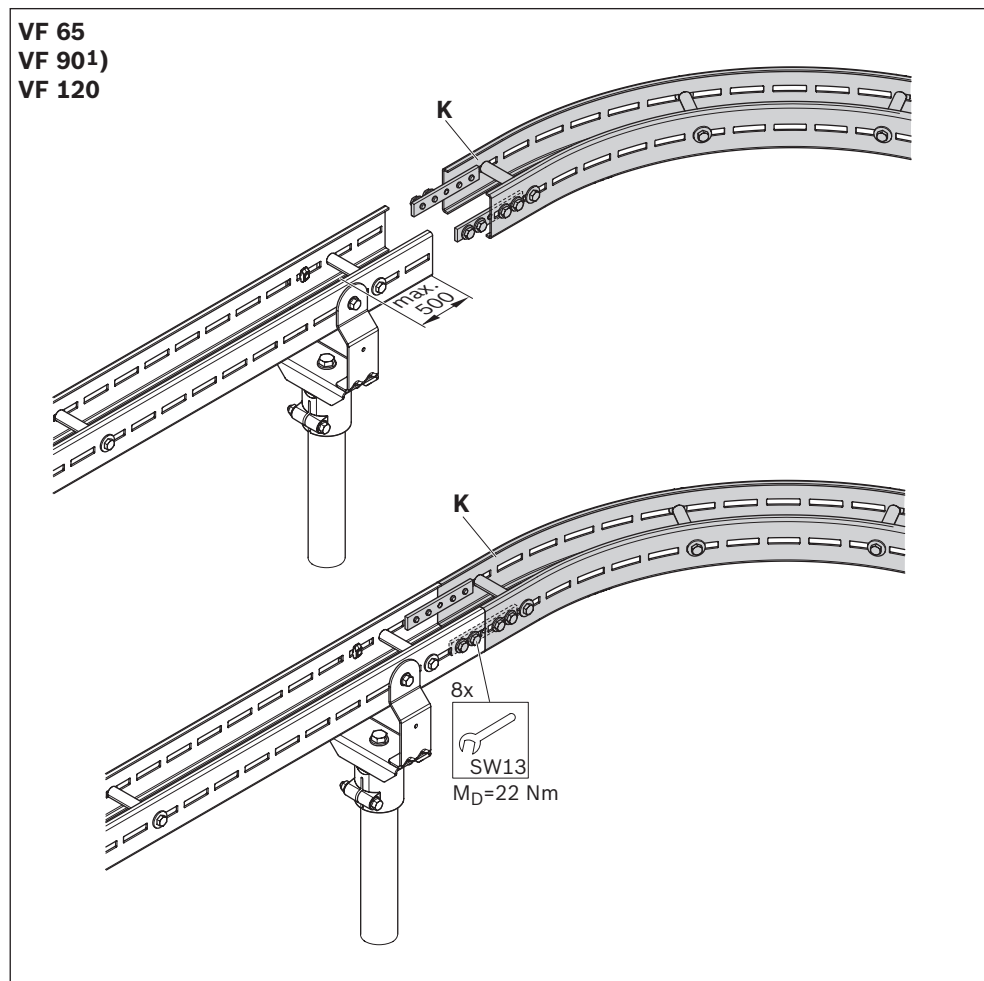
- 45°, R500: **3842 557 054**
- 90°, R500: **3842 557 055**
- 30°, R700: **3842 557 056**
- 45°, R700: **3842 557 057**
- 90°, R700: **3842 557 058**

K, VF 120,

- 30°, R700: **3842 557 059**
- 45°, R700: **3842 557 060**
- 90°, R700: **3842 557 061**

¹⁾ Size shown

Horizontal sliding curve



562 411-32

Fig. 33: System AL, installing horizontal sliding curve

**Please note:**

The friction which arises in sliding curves increases the required chain tensile force.

- With sliding curves always use the **Advanced** or **Premium** sliding rails for the entire system.

Required accessories:

- Horizontal roller curve (L)

L, VF 160,

30°: **3842 547 123**

45°: **3842 547 124**

90°: **3842 547 125**

180°: **3842 547 126**

L, VF 240,

30°: **3842 547 127**

45°: **3842 547 128**

90°: **3842 547 129**

180°: **3842 547 130**

L, VF 320,

30°: **3842 547 131**

45°: **3842 547 132**

90°: **3842 547 133**

180°: **3842 547 134**

**Please note:**

The chain guide must not touch the roller (see 3)).

- The roller must be freely movable.
- Observe the gap dimension.

1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following).

4) Use the drilling jig

3 842 553 518

Horizontal roller curve in section

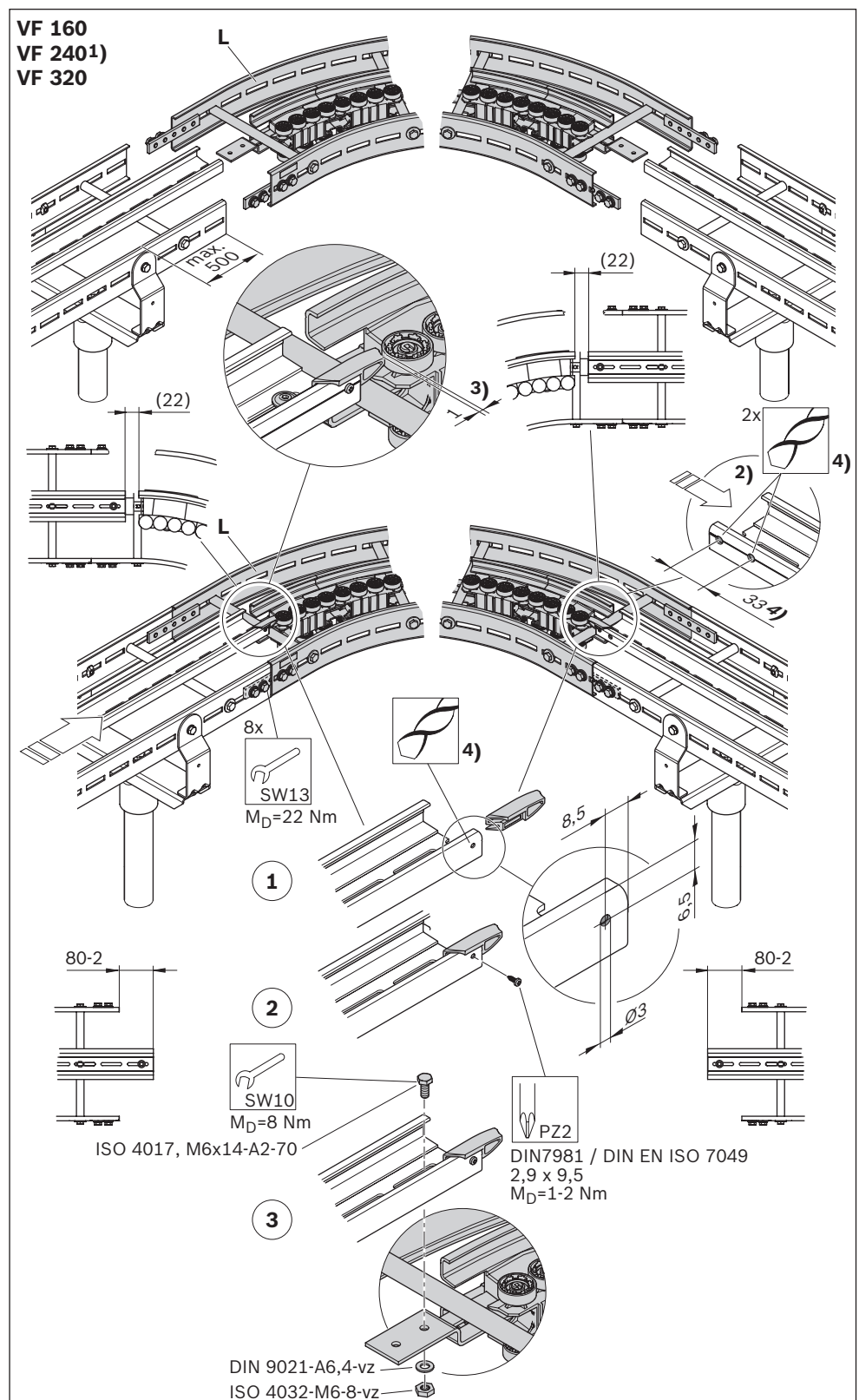


Fig. 34: System STS, installing horizontal roller curve in section

562 411-33

Required accessories:

- Horizontal roller curve (L)

L, VF 160,

30°: **3842 547 123**45°: **3842 547 124**90°: **3842 547 125**180°: **3842 547 126**

L, VF 240,

30°: **3842 547 127**45°: **3842 547 128**90°: **3842 547 129**180°: **3842 547 130**

L, VF 320,

30°: **3842 547 131**45°: **3842 547 132**90°: **3842 547 133**180°: **3842 547 134****Please note:**

The chain guide must not touch the roller (see 3)).

- The roller must be freely movable.
- Observe the gap dimension.

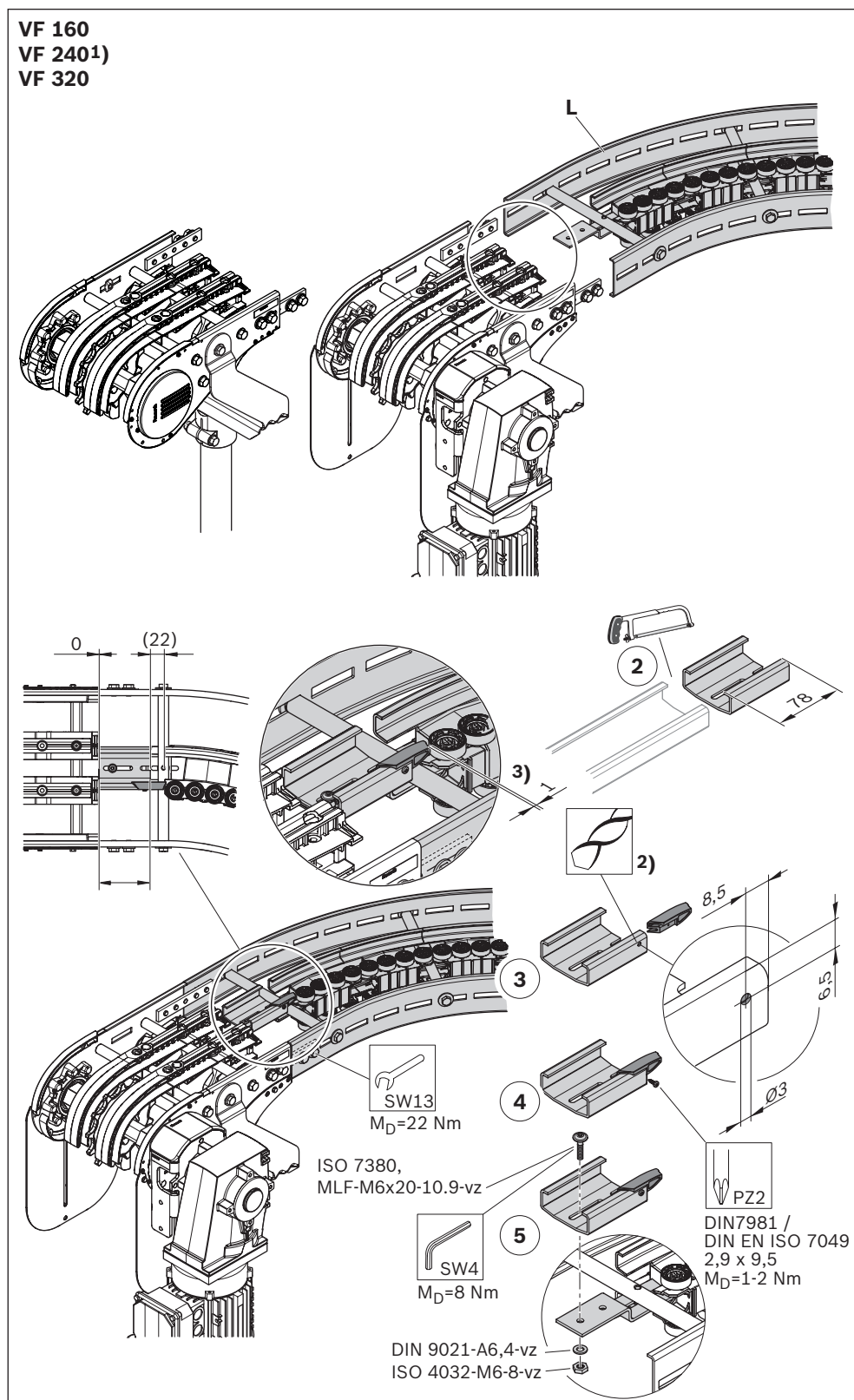
1) Size shown

2) Use the drilling jig

3842 553 518

Drilled hole for
fixing the sliding rail
(see page 76 and following).

Horizontal roller curve in base unit/return unit



562 411-34

Fig. 35: System STS, installing horizontal roller curve on base unit/return unit

Required accessories:

- Vertical curve STS (M)

M, VF 65,

5°, R500:	3842 547 135
15°, R500:	3842 547 136
30°, R500:	3842 547 137
45°, R500:	3842 547 138

M, VF 90,

5°, R500:	3842 547 139
15°, R500:	3842 547 140
30°, R500:	3842 547 141
45°, R500:	3842 547 142

M, VF 120,

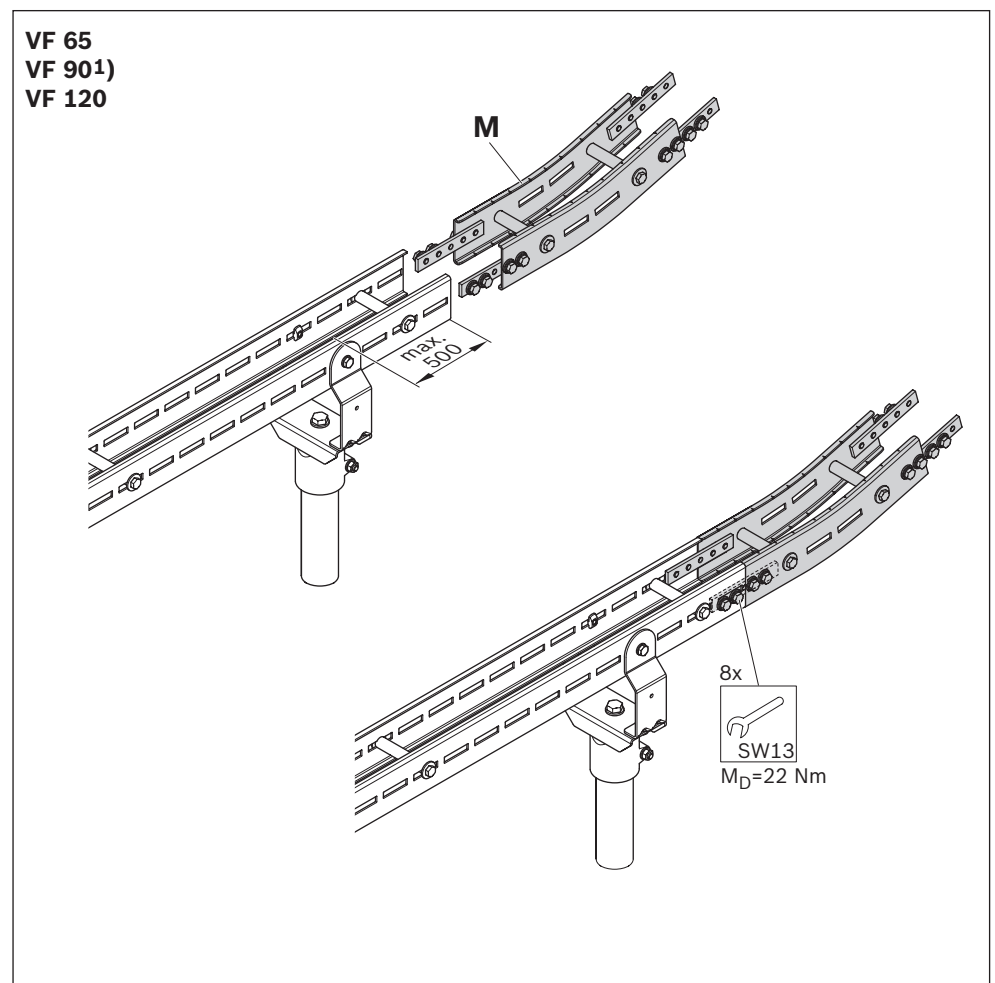
5°, R500:	3842 547 143
15°, R500:	3842 547 144
30°, R500:	3842 547 145
45°, R500:	3842 547 146

**Please note:**

The friction which arises in vertical curve increases the required chain tensile force.

- With vertical curves always use the **Advanced** or **Premium** sliding rails for the entire system. See sliding rail installation (page 76 and following).

Vertical curve STS, VF 65 / VF 90 / VF 120



¹⁾ Size shown

Fig. 36: System STS, installing vertical curve STS, VF 65 / VF 90 / VF 120

562 411-35

First install the sliding rail and guides for the chain return²⁾ on the bottom side of the curve.

- Vertical curve STS (M)
- **Advanced** or **Premium** sliding rails

M, VF 160,

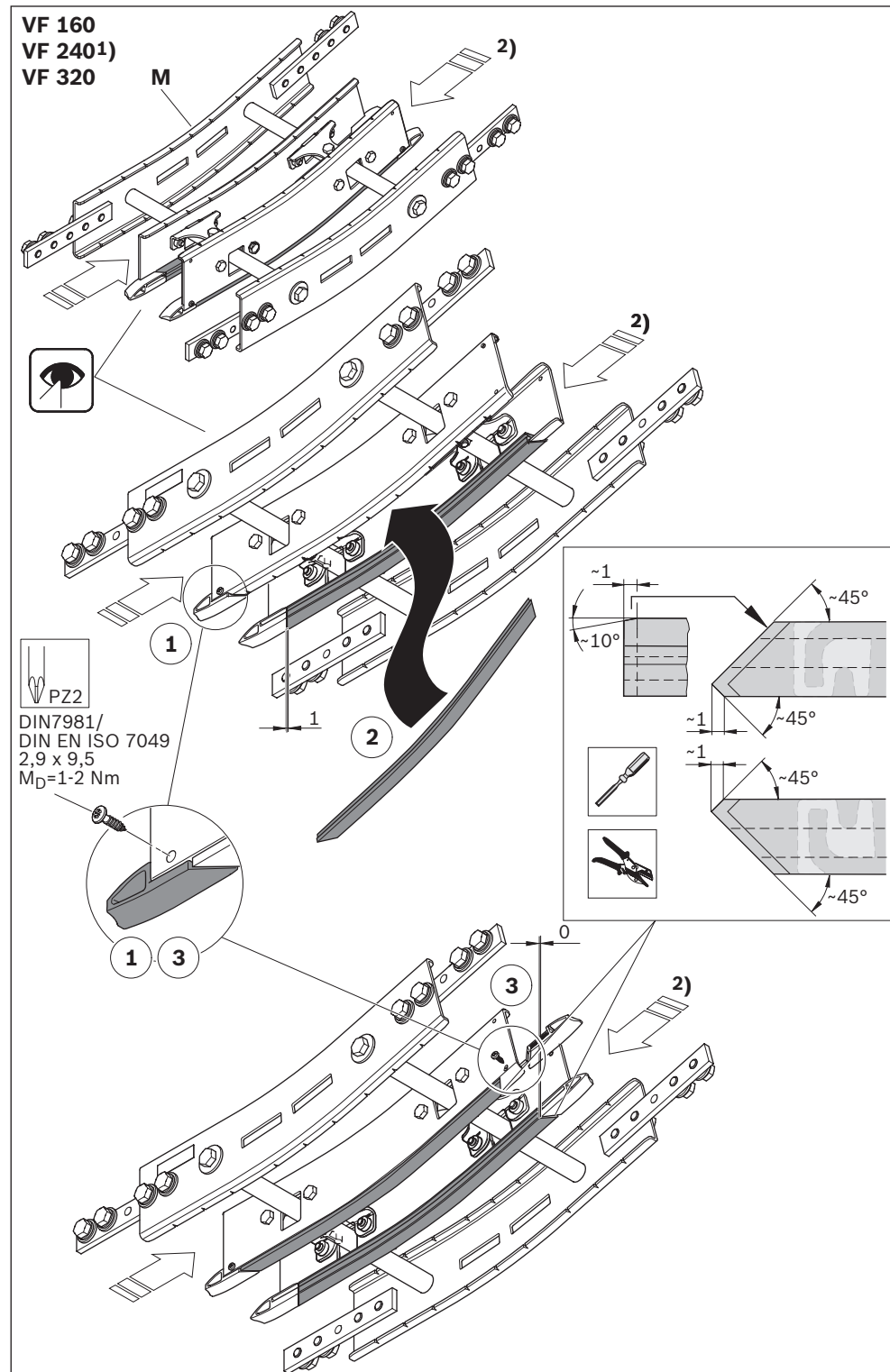
5°, R500:	3842 547 147
15°, R500:	3842 547 148
30°, R500:	3842 547 149
45°, R500:	3842 547 150

M, VF 240,
5°, R500: **3842 547 151**
15°, R500: **3842 547 152**
30°, R500: **3842 547 153**

M, VF 320,
5°, R500: **3842 547 154**
15°, R500: **3842 547 155**
30°, R500: **3842 547 156**

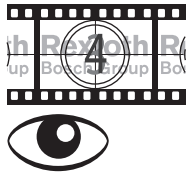
-

2) Running direction of the returning chain on the bottom side of the profile.



562 411-36

1. Install the chain guides.
2. Install the sliding rail.



- 1) Size shown
- 2) Running direction of the returning chain on the bottom side of the profile.

VF 160
VF 240¹⁾
VF 320

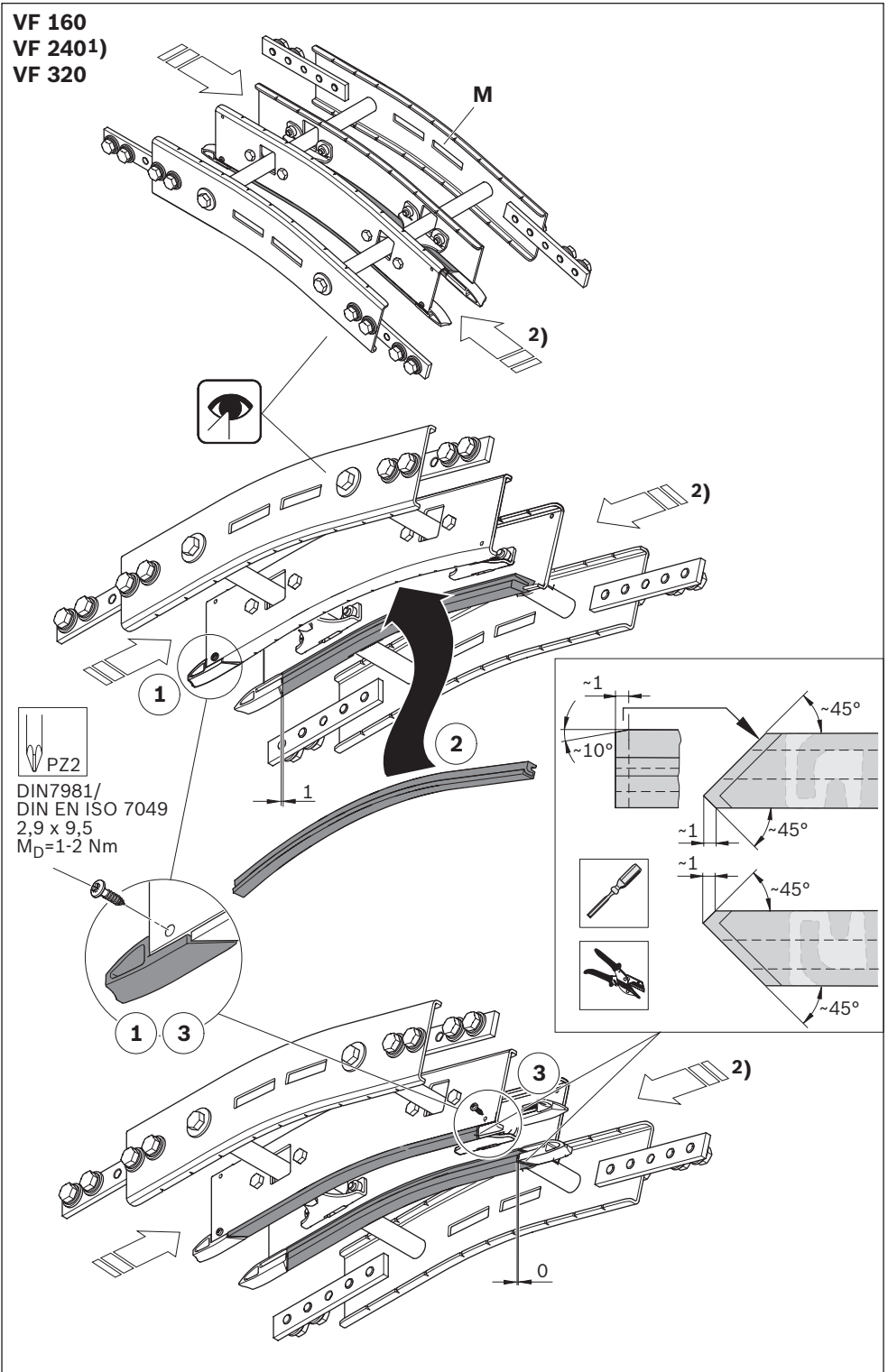


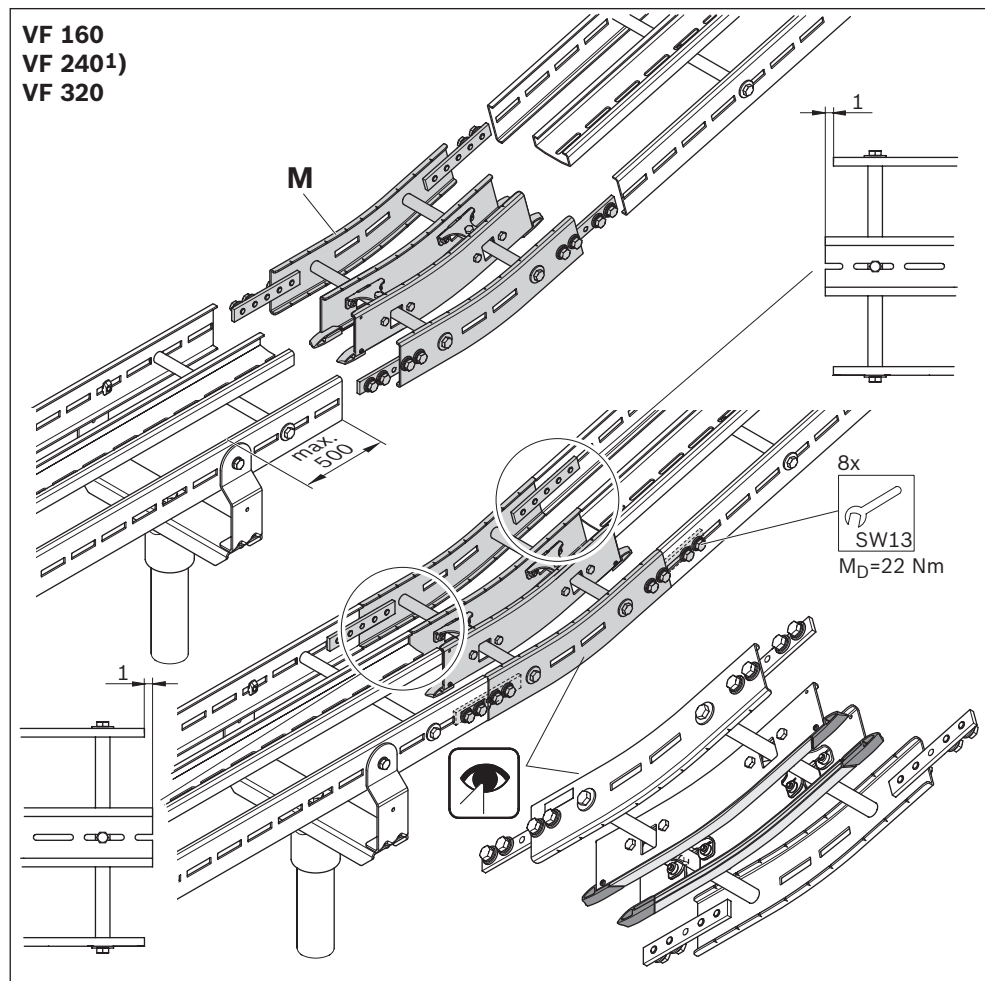
Fig. 38: System STS, vertical curve STS, downward: Installing sliding rail for chain return

**Please note:**

The friction which arises in vertical curve increases the required chain tensile force.

- With vertical curves always use the **Advanced** or **Premium** sliding rails for the entire system. See sliding rail installation (page 76 and following).

¹⁾ Size shown



562 411-38

Fig. 39: System STS, installing vertical curve STS, VF 160 / VF 240 / VF 320



Please note:

The friction which arises in vertical curve increases the required chain tensile force.

- With vertical curves always use the **Advanced** or **Premium** sliding rails for the entire system. See sliding rail installation (page 76 and following).

1) Size shown

Vertical curve STS at basic unit/return unit

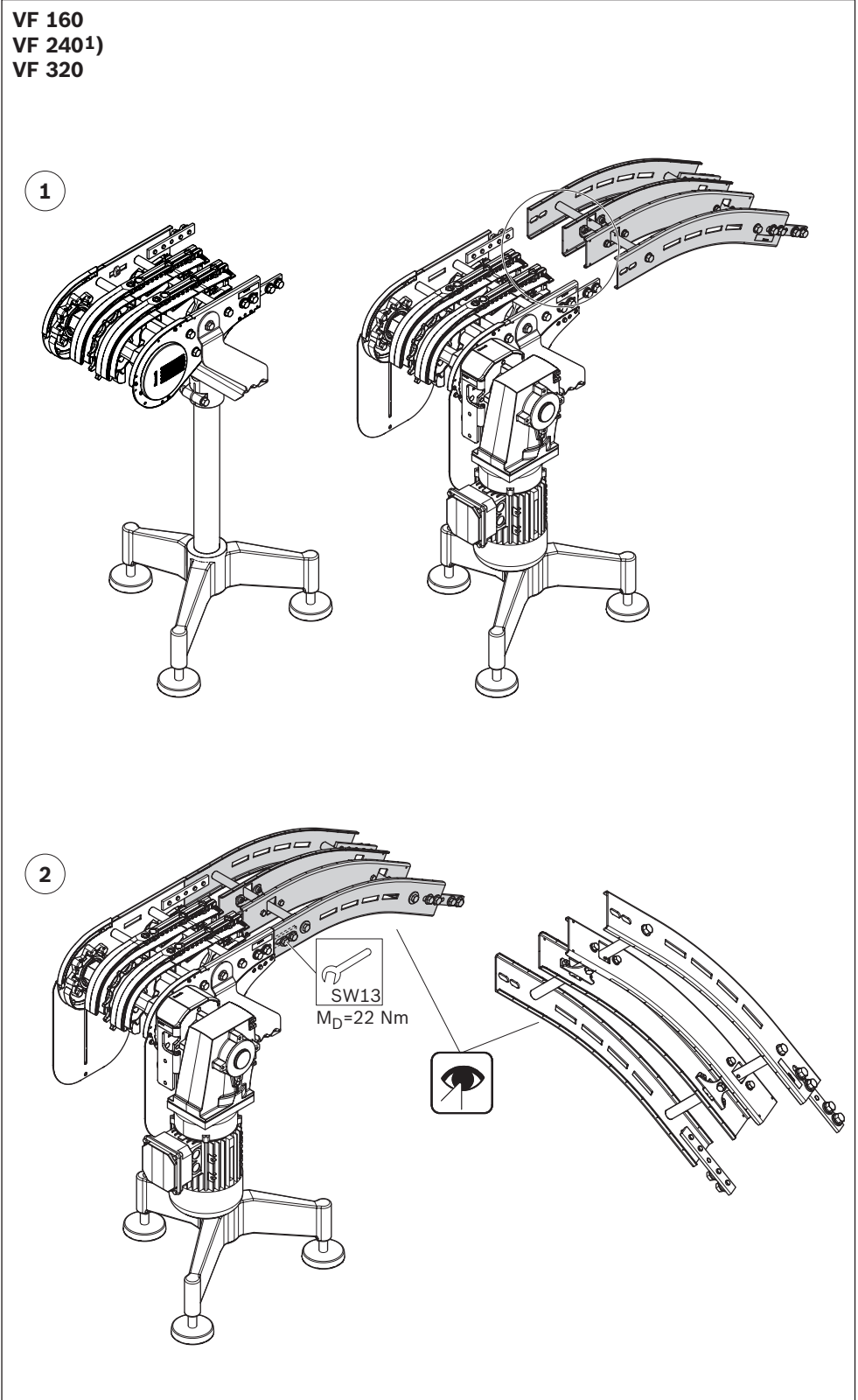


Fig. 40: System STS, installing vertical curve STS at basic unit/return unit

562 411-39

Required accessories:

- Assembly module (N)

N: 3842 547 900

**Please note:**

- Install the assembly module where it can be easily accessed during subsequent operation. This facilitates the installation, inspection, and replacement of the conveyor chain.
- The drilled holes for fixing the sliding rail in position (see 2)) must be towards the front in the conveying direction.
- Sliding rail interruption is only required on the side to be opened.
- For size 160-320:
Do not interrupt the support profile with a sliding rail to increase the smooth running.

1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following). Use the drilling jig 3842 553 518

Assembly module

VF 65
VF 90¹⁾
VF 120

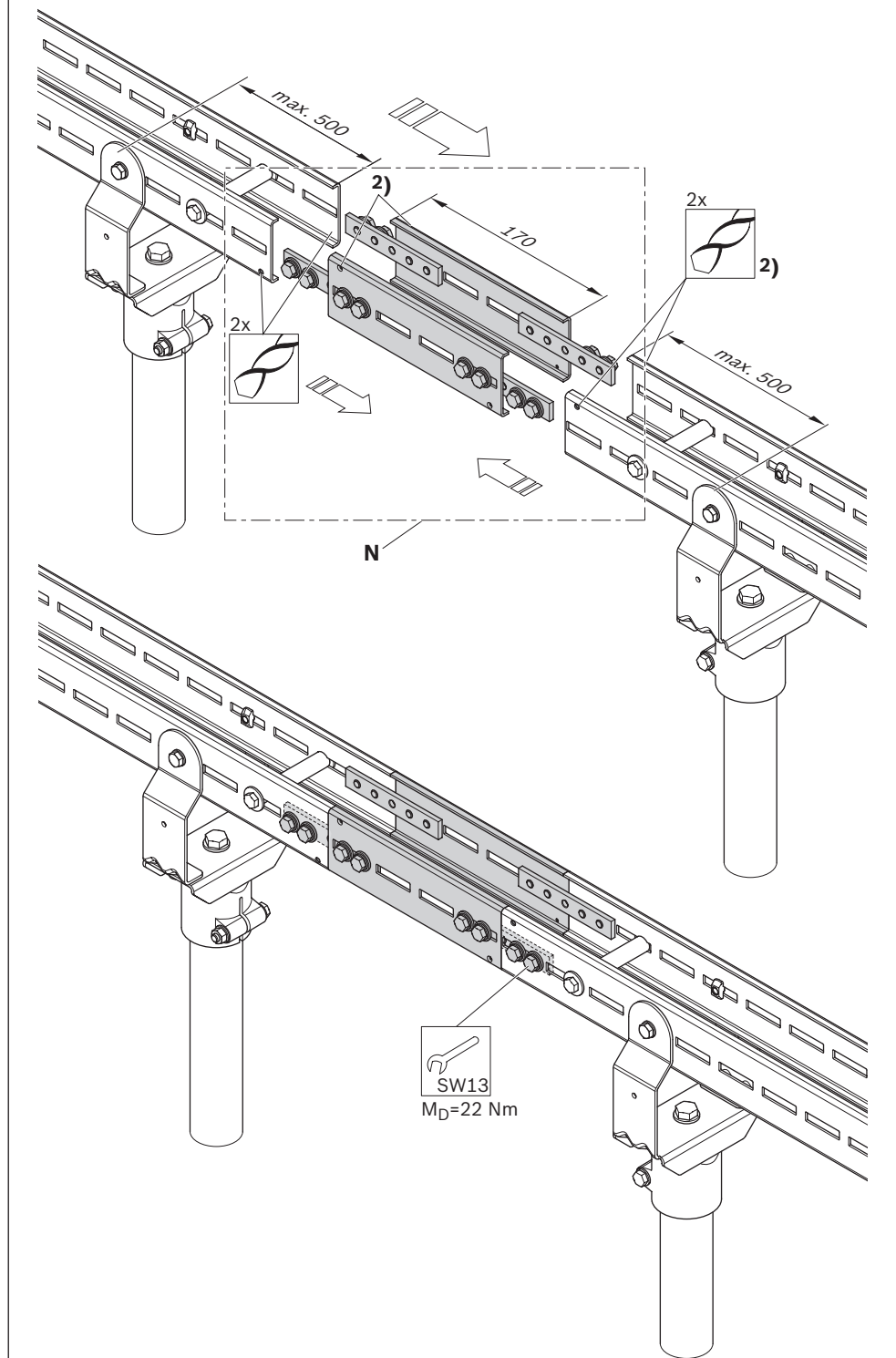


Fig. 41: System STS, installing assembly module

562 411-40

Opening/closing the assembly module

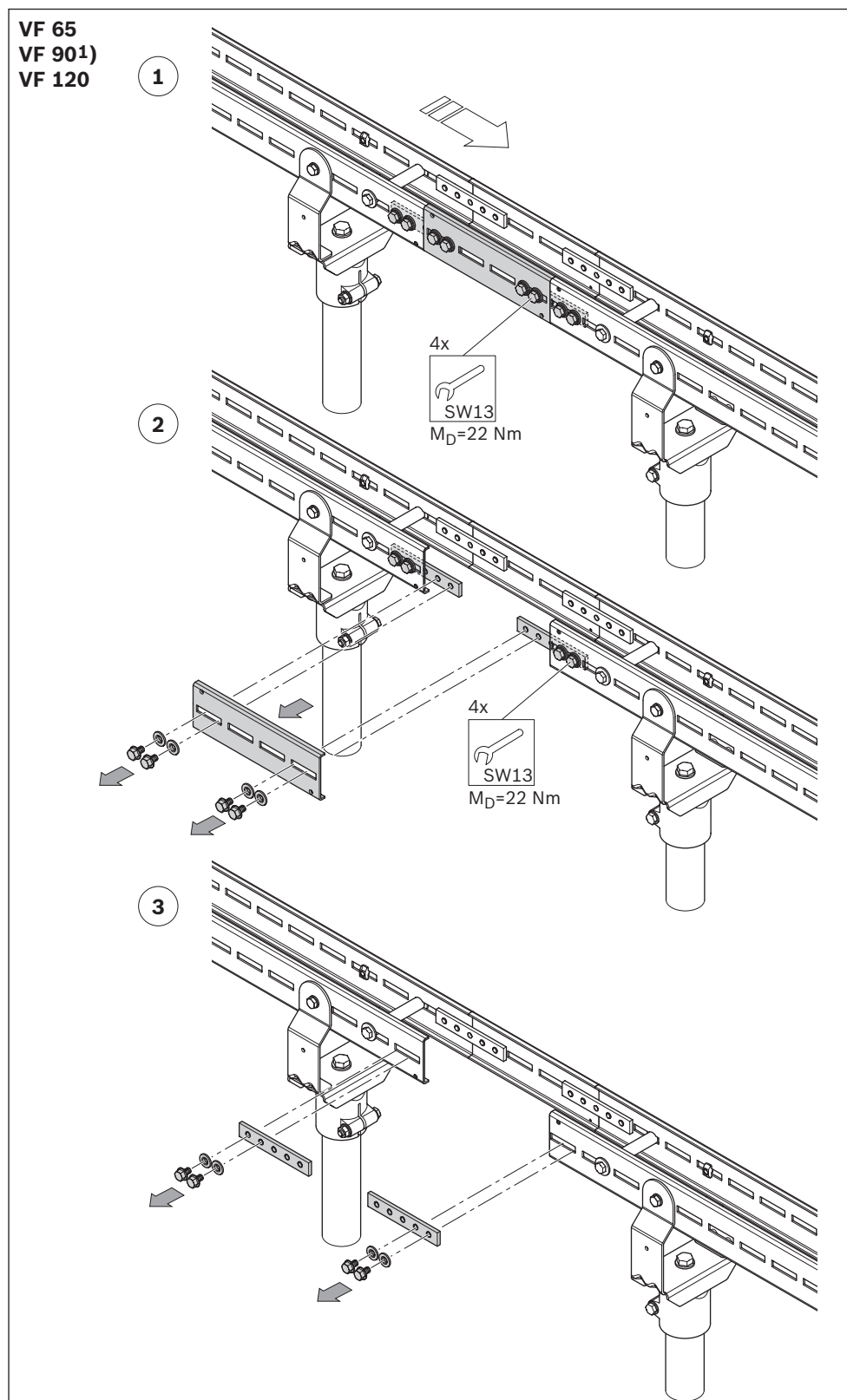


Fig. 42: System STS, opening/closing assembly module

562 411-41

Profile connector STS Clean Section

Required accessories:

- Profile connector STS Clean Section (O)

O: 3842 552 927

- Install the profile connector.



Please note:

- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

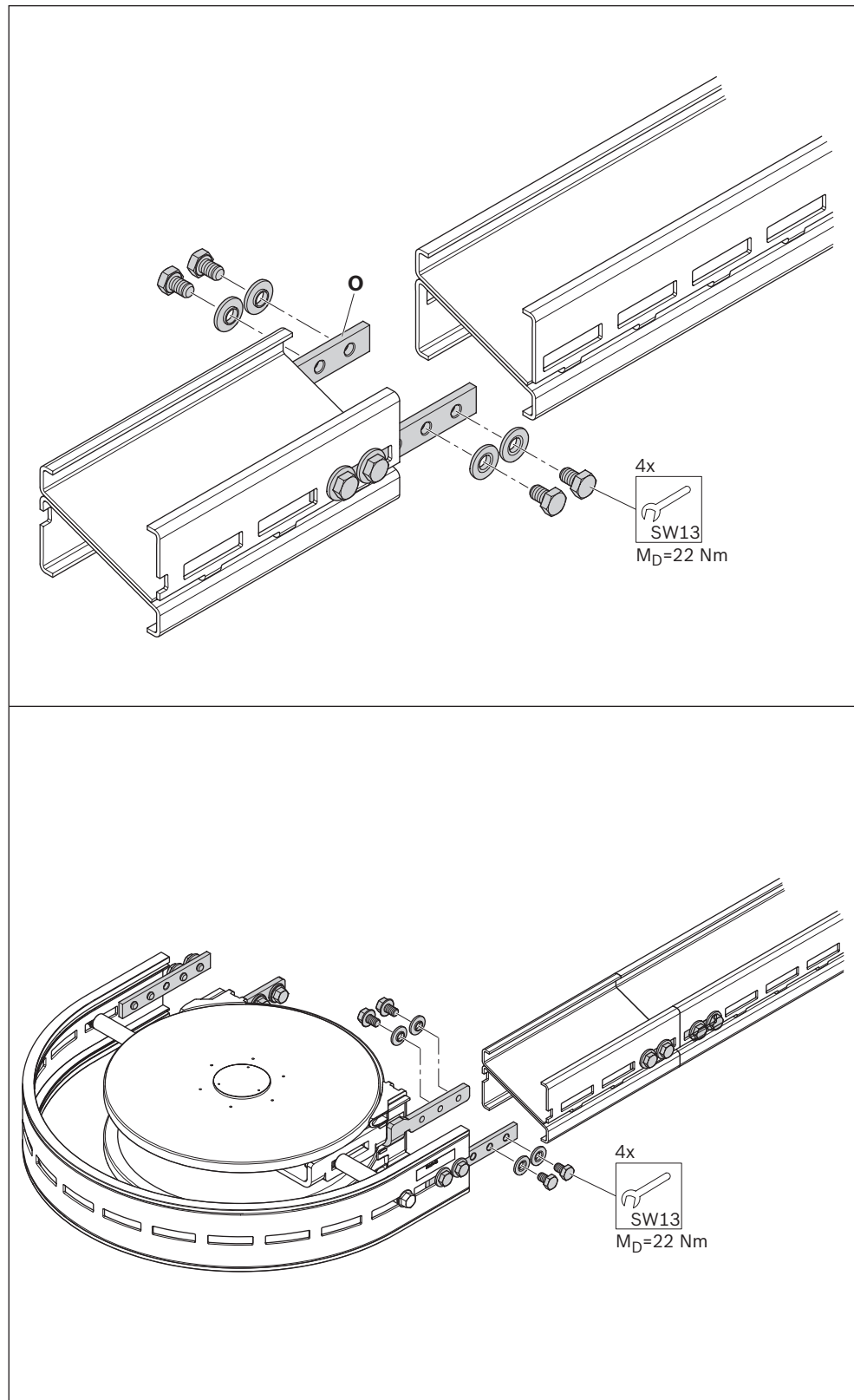


Fig. 43: System STS, overview

562 411-42

Required accessories:

- Return unit (P)

P, VF 65: 3842 547 528

P, VF 90: 3842 547 529

P, VF 120: 3842 547 530

P, VF 160: 3842 547 531

P, VF 240: 3842 547 532

P, VF 320: 3842 547 533

**Please note:**

- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following).

3) Use the drilling jig 3842 553 518

Return unit

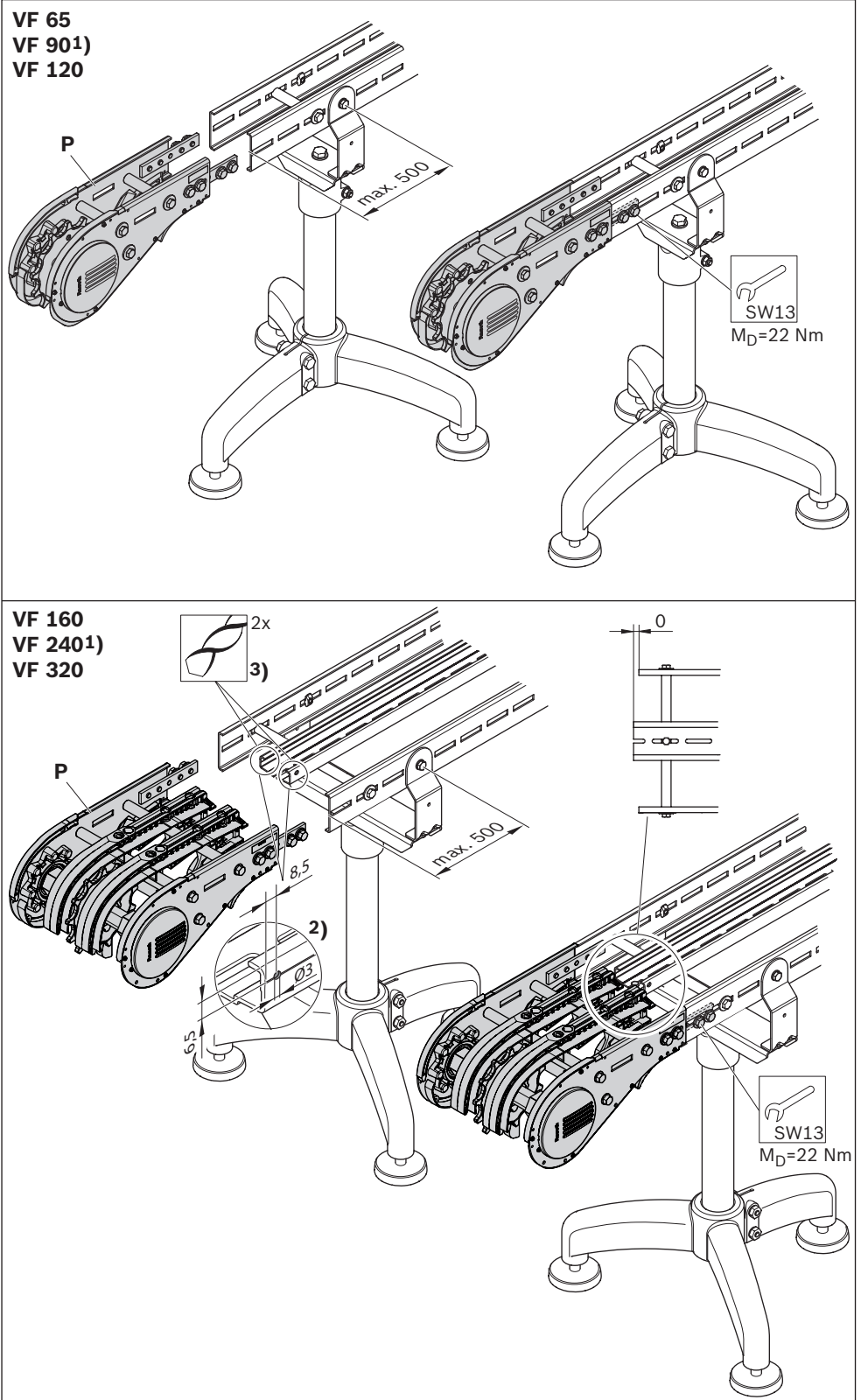


Fig. 44: System STS, installing return unit

562 411-43

Required accessories:

- Base unit (Q), protective panels (x) not assembled.
- Chain sprocket (R)
- Holder (S)

Q, VF 65: 3842 547 522

Q, VF 90: 3842 547 523

Q, VF 120: 3842 547 524

R, VF 65: 3842 553 047

R, VF 90: 3842 553 048

R, VF 120: 3842 553 049

S, VF 65: 3842 559 114

S, VF 90: 3842 559 115

S, VF 120: 3842 559 116

**Please note:**

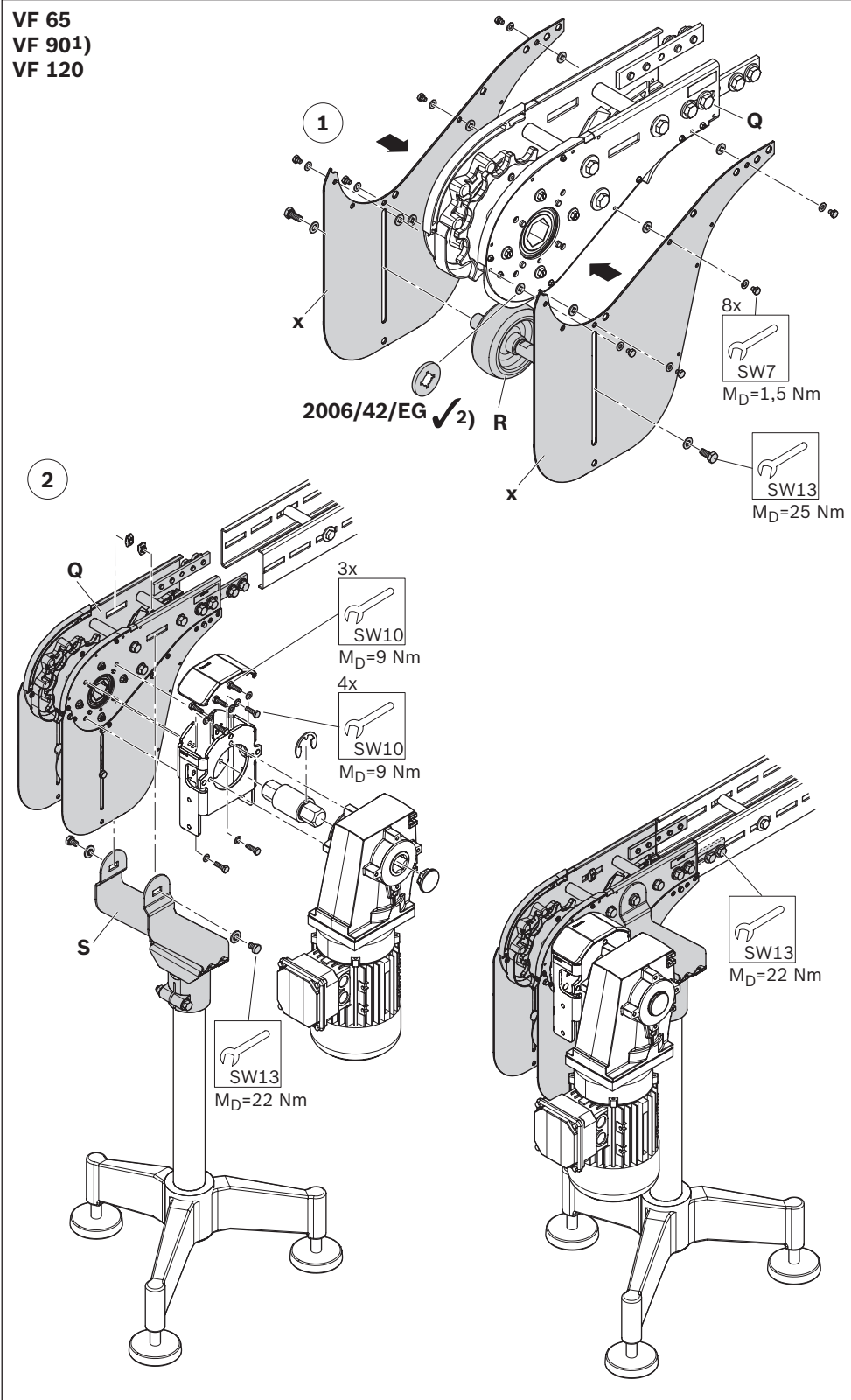
- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.
- Protective panels (x) can also be installed later, after closing the conveyor chain.
- Chain sprocket required for ascending and descending sections or to prevent the chain bag from swiveling out.
- Further assembly steps:
 - Sliding rail installation (see page 76).
 - Gear motor installation (see page 175, 176).

1) Size shown

2) The Machinery Directive 2006/42/EC requirement for captive screws on protective covers is fulfilled if this lock washer (x) is fitted.

Basic unit

VF 65
VF 90¹⁾
VF 120

**Fig. 45: System STS, installing base unit, VF 65 / VF 90 / VF 120**

562 411-44

Required accessories:

- Base unit (Q), protective panels (x) not assembled.
- Chain sprocket (R)
- Holder (S)

Q, VF 160: 3842 547 525

Q, VF 240: 3842 547 526

Q, VF 320: 3842 547 527

R, VF 160: 3842 553 057

R, VF 240: 3842 553 058

R, VF 320: 3842 553 059

S, VF 160: 3842 559 117

S, VF 240: 3842 559 118

S, VF 320: 3842 559 119

**Please note:**

- ▶ Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.
- Protective panels (x) can also be installed later, after closing the conveyor chain.
- Chain sprocket required for ascending and descending sections or to prevent the chain bag from swiveling out.
- ▶ Further assembly steps:
 - Sliding rail installation (see page 76).
 - Gear motor installation (see page 175, 176).

1) Size shown

2) The Machinery Directive 2006/42/EC requirement for captive screws on protective covers is fulfilled if this lock washer (x) is fitted.

3) Use the drilling jig

3 842 553 518

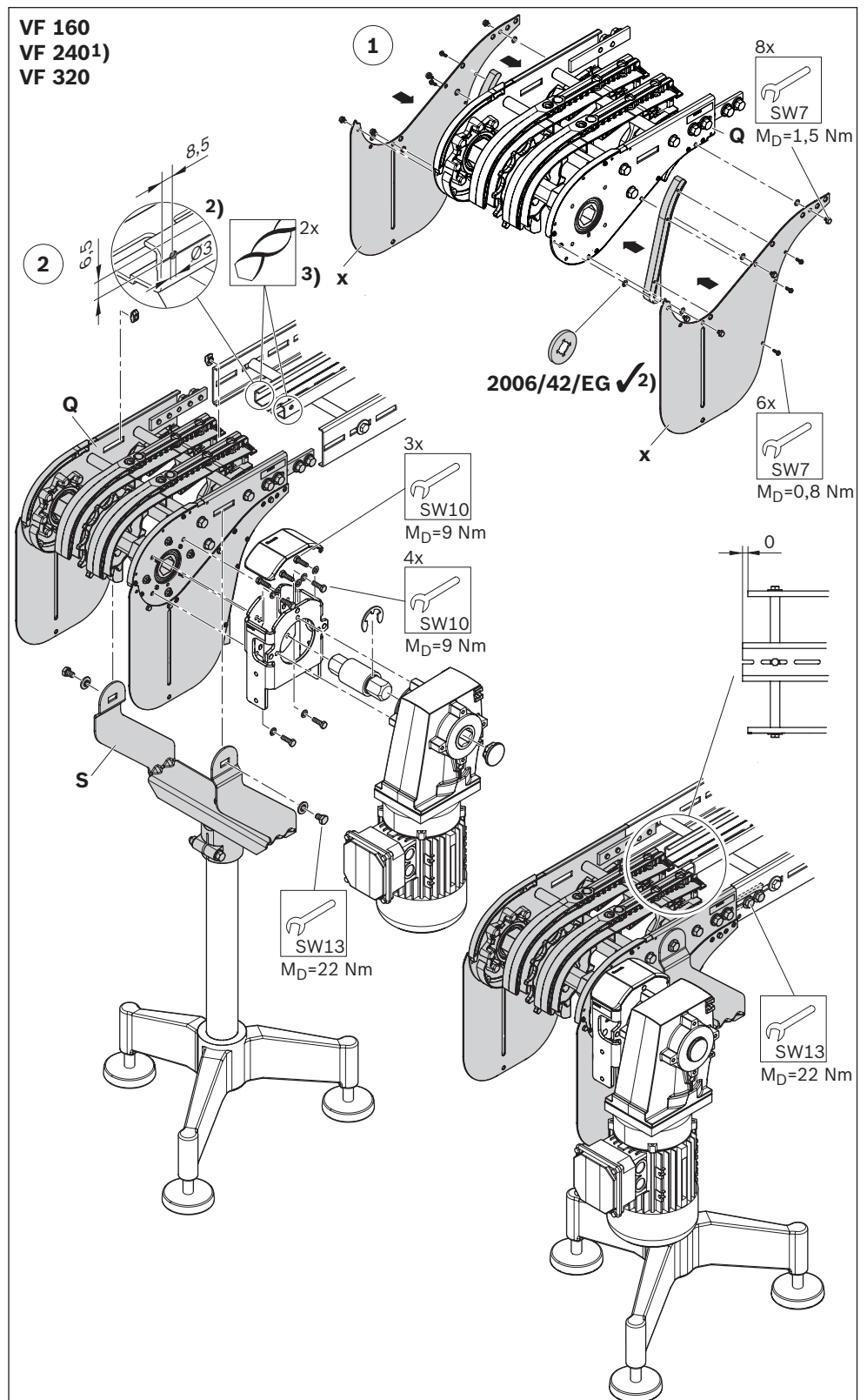


Fig. 46: System STS, installing base unit, VF 160 / VF 240 / VF 320

562 411-45

Required accessories:

- Connection drive (T),
mounted with side
plate (y)
- Connection kit,
– passive
– active

T, VF 65: **3842 553 914**

T, VF 90: **3842 553 915**

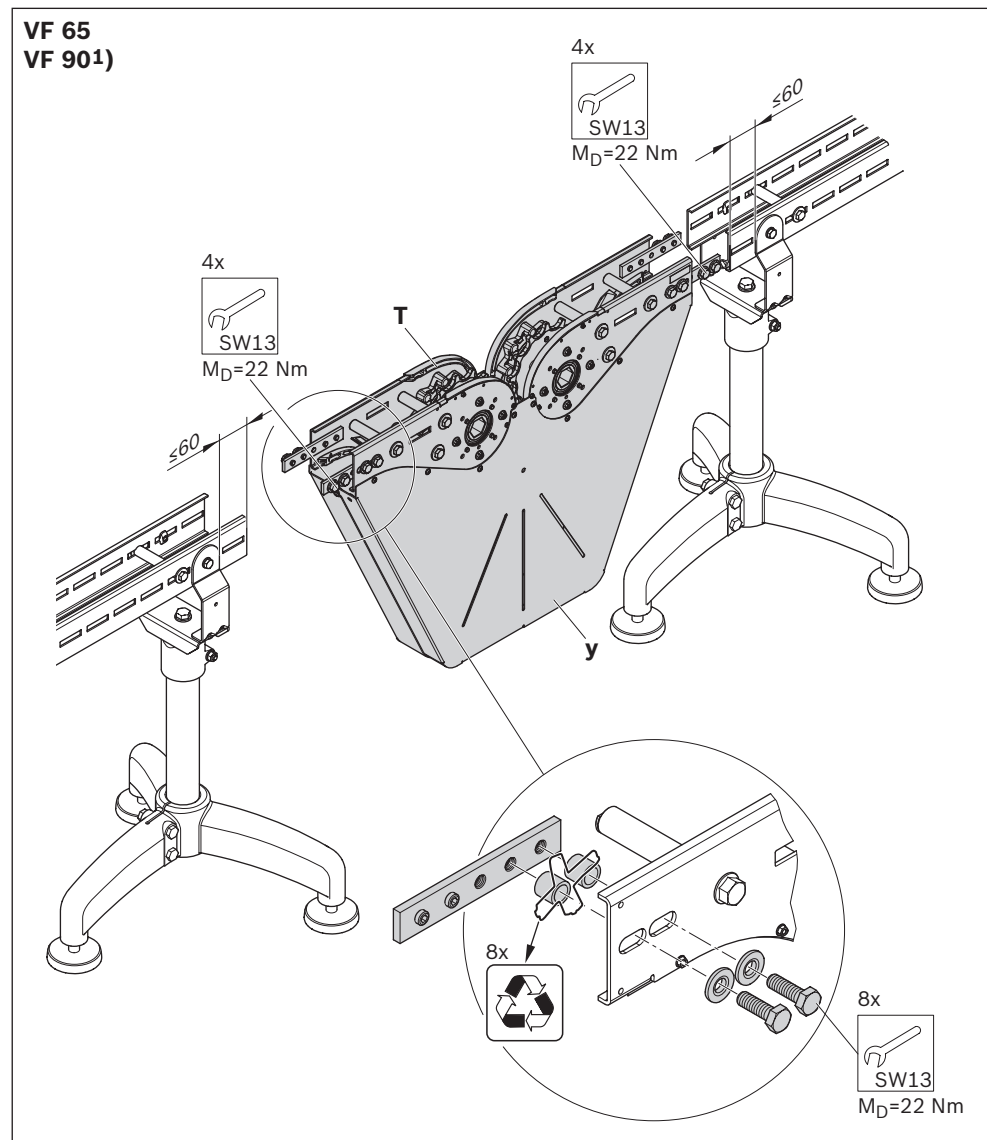
For connection kits, see
chapter 7.5.8 Connection kit,
page 95

**Please note:**

- Secure the leg sets
and the VarioFlow *plus*
assemblies against
toppling over during
installation until the
system has been
screwed to the floor.

1) Size shown

Drilled hole for
fixing the sliding rail
(see page 76 and following).

Connection drive

562 411-46

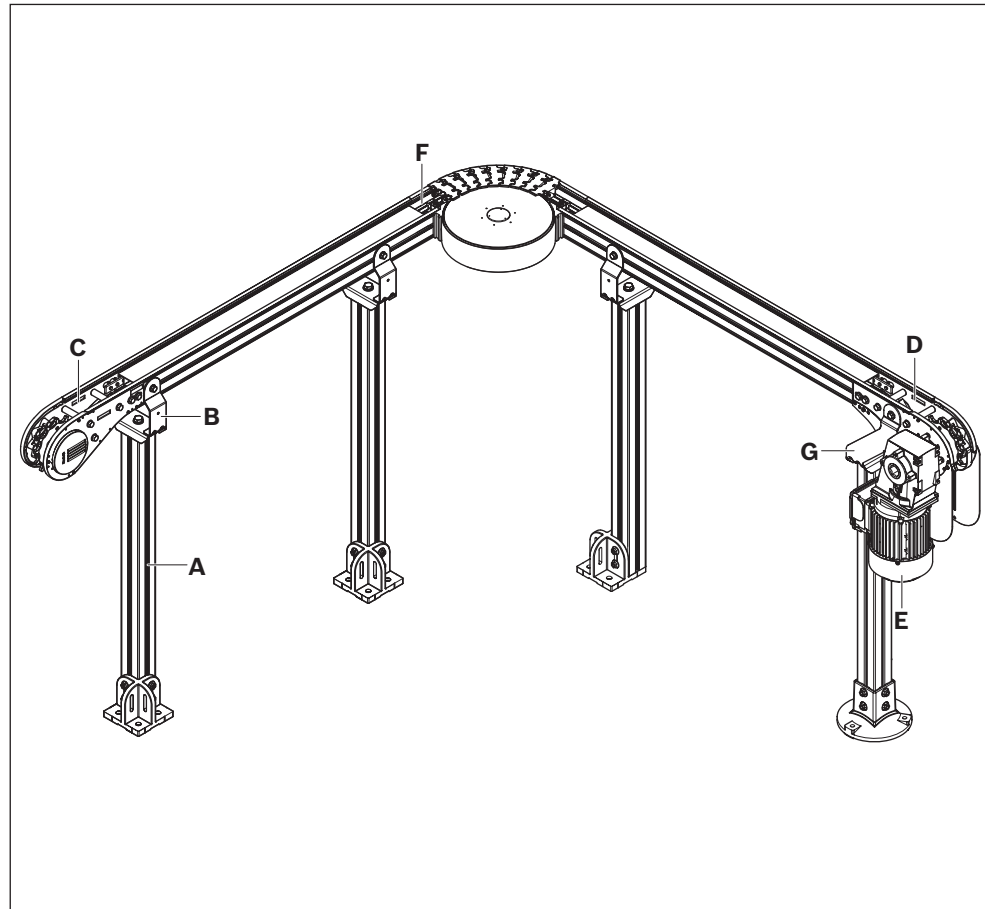
Fig. 47: System STS, installing connection drive

7.5.3 System ESD

Overview

Required accessories:

- Leg set
(A, see page 63)
- Holder
(B, see page 64)
- Return unit
(C, see page 65)
- Basic unit
(D, see page 65)
- Gear motor
(E, see page 179)
- Curve wheel
(F, see pages 61, 67)
- Leg set support (G)



562 411-48

Fig. 49: System ESD, overview

Leg sets, motor support

Required accessories:

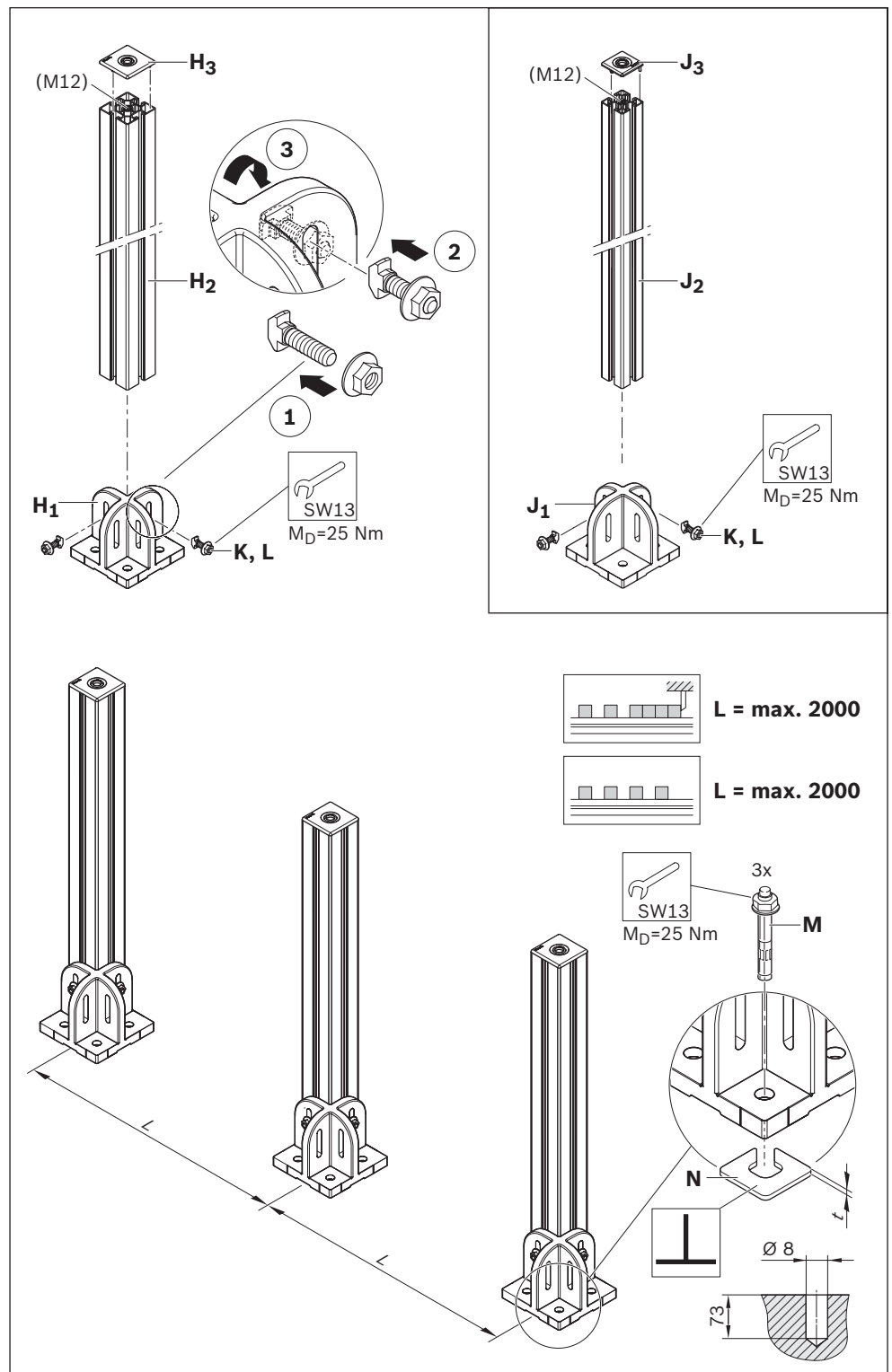
- Foot (H₁, J₁)
- Strut profile (H₂, J₂)
- Cover cap (H₃, J₃)
- T-bolt (K)
- Flange nut (L)
- Floor dowel (M)
- Washer (N)

H₁: 3842 527 553**H₂:** 3842 992 444 / L**H₃:** 3842 548 808 (gray)
3842 548 809 (ESD)**K:** 3842 528 721**L:** 3842 345 081**J₁:** 3842 527 553**J₂:** 3842 992 426 / L**J₃:** 3842 548 752 (gray)
3842 548 753 (ESD)**K:** 3842 528 721**L:** 3842 345 081**M:** 3842 526 561**N:** 3842 528 189
(t = 1 mm)
3842 528 191
(t = 4 mm)

► Mount the leg sets.

**Please note:**

- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

**Fig. 50: System ESD, installing leg sets/motor support**

562 411-49

Required accessories:

- Holder (O)
- T-nut MGE (P)

O, VF 65: **3842 546 658**

O, VF 90: **3842 546 659**

P: **3842 530 287**

Use the T-nut MGE (P) instead of the T-nut STS (see 2)) from the scope of delivery.

- Install the section profile on the leg sets.

**Please note:**

- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

2) T-nut (scope of delivery)

Section on leg set

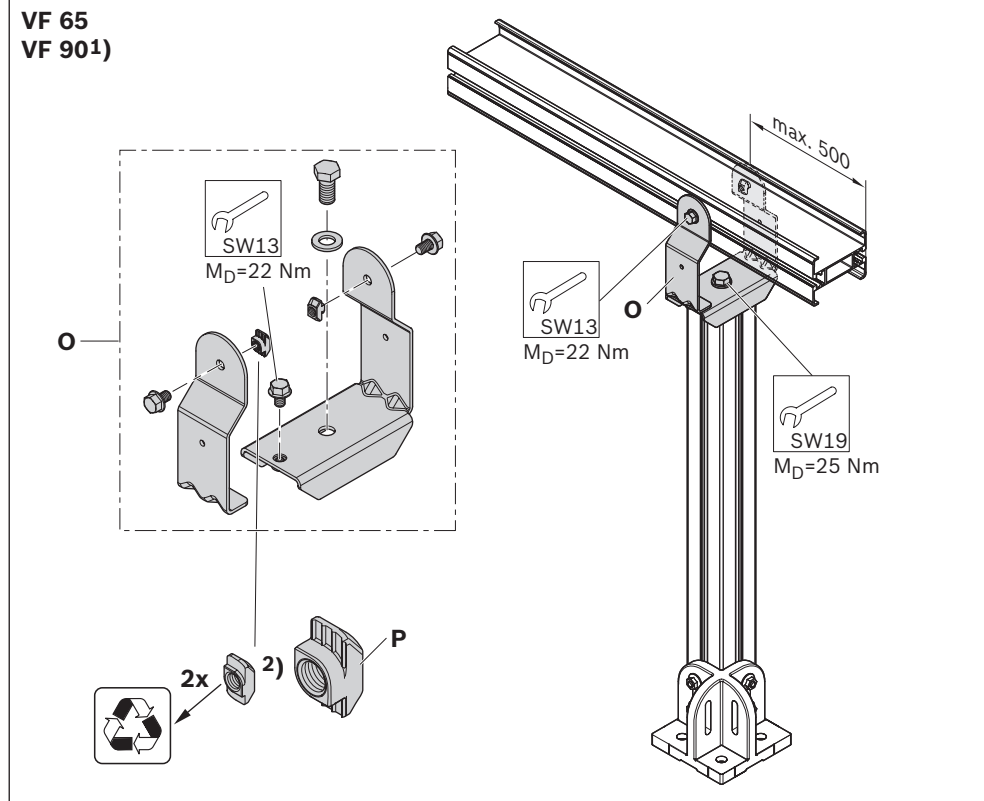


Fig. 51: System ESD, installing section on leg sets

Required accessories:

- Curve wheel 180° (Q)
- Drive kit (S), gear motor installation (see page 185).

Q, VF 65: **3842 553 032**Q, VF 90: **3842 553 036**S: **3842 998 742**

1. Install the curve wheel.
2. Mount the cover (x) on the mounting bracket (y).
3. Tighten the screws (z) until they are flush with the outer surface.
4. Install the flange (S) in the correct position (see 3)), flange can only be installed in the correct position.

**Please note:**

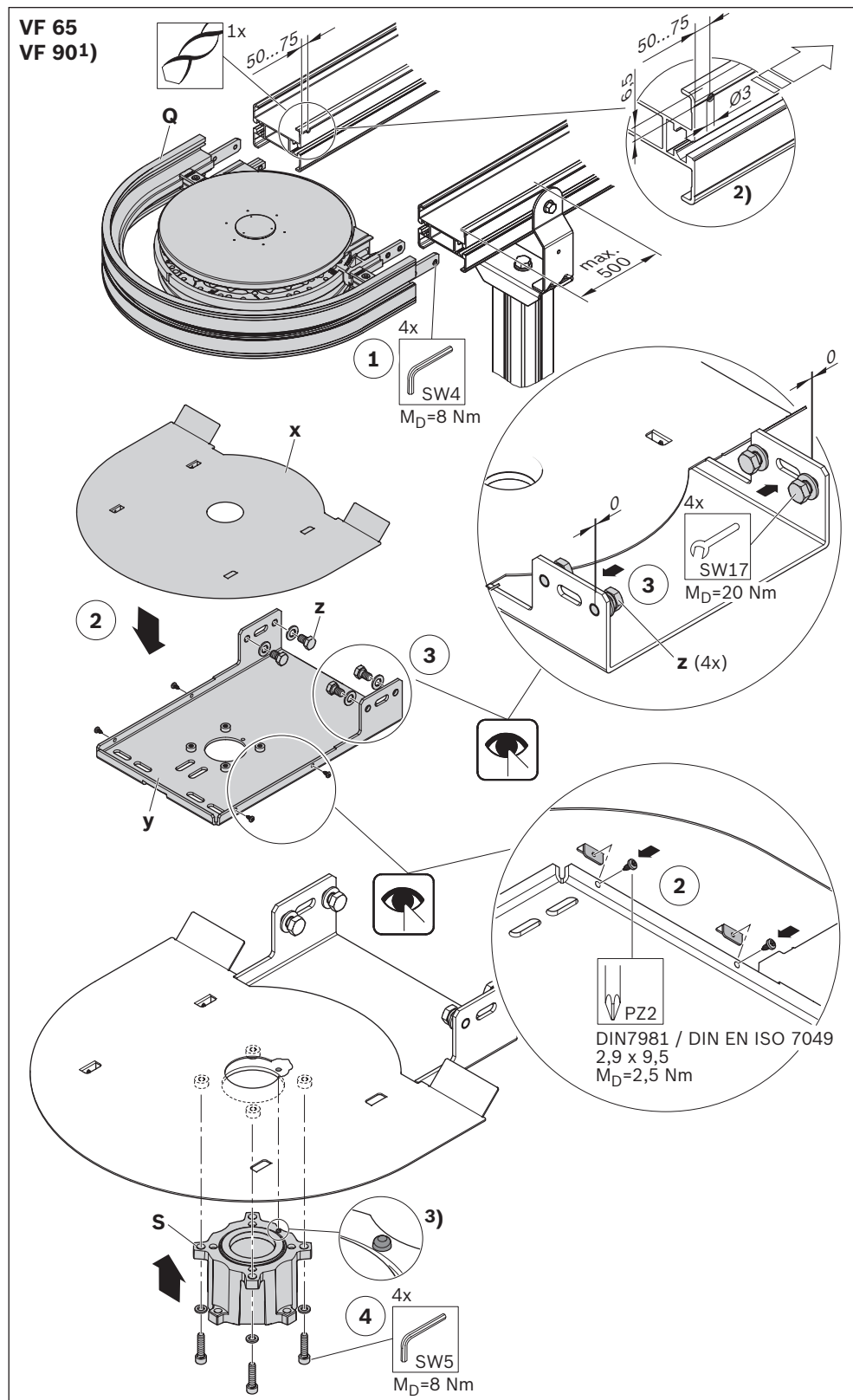
- Support the curve wheel drive (leg set not included in scope of delivery).
- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

Further information can be found on page 25.

1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following).

Installing the curve wheel drive



562 411-52

Fig. 53: System ESD, installing curve wheel drive

5. Install the pre-assembled mounting bracket (y).
6. Mount the leg set (v).



Please note:

- ▶ Do not tighten the screws of steps 5 and 6 completely before installation of the gear motor.
7. Mount the leg set (T, not included in the scope of delivery).
- ▶ Further assembly steps:
 - Sliding rail installation (see page 76).
 - Gear motor installation (see page 185).

1) Size shown

Drilled hole for fixing the sliding rail (see page 76 and following).

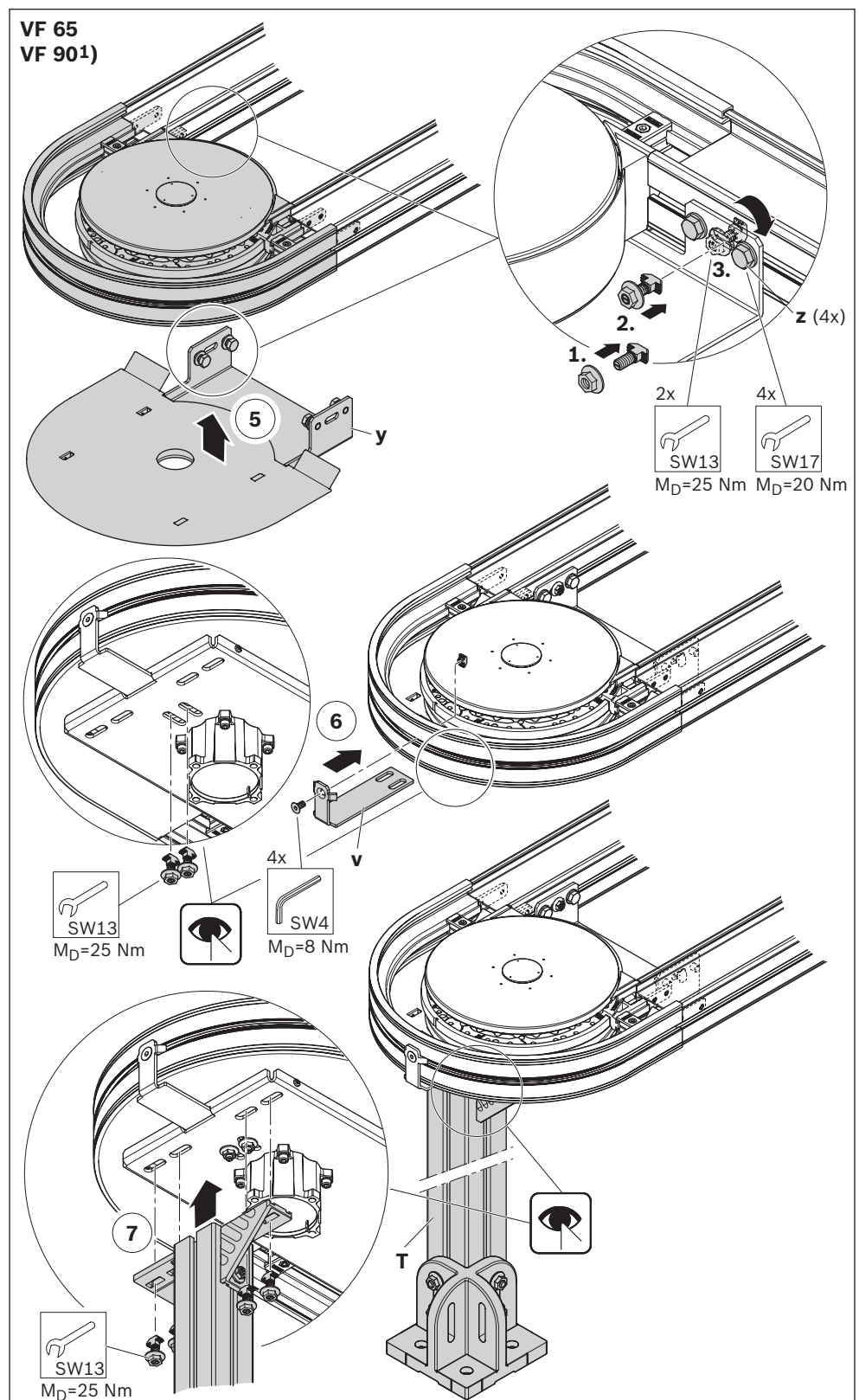


Fig. 54: System ESD, installing curve wheel drive

562 411-53

Required accessories:

- Return unit (U)
- Adapter AL-STS

U, VF 65: **3842 547 528**

U, VF 90: **3842 547 529**

AL-STS: **3842 552 948**

**Please note:**

- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

2) Drilled hole for fixing the sliding rail (see page 76 and following).

Return unit

VF 65
VF 90¹⁾
VF 120

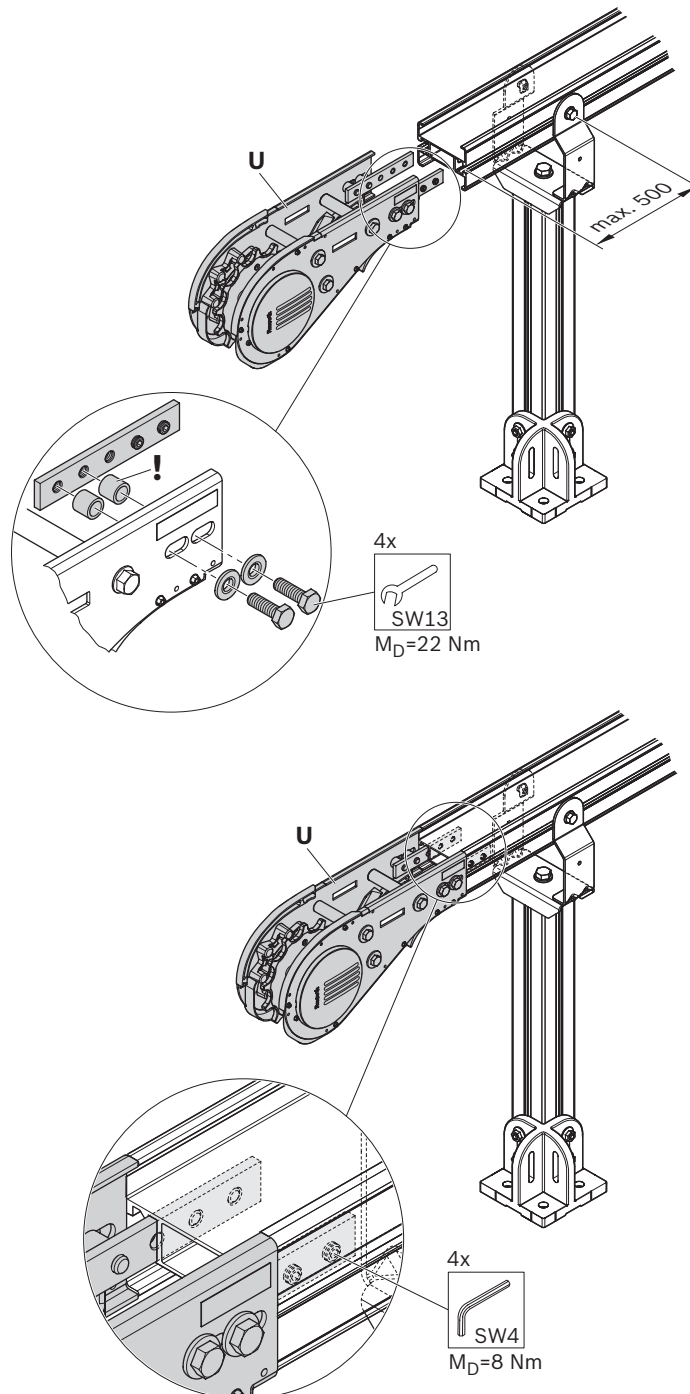


Fig. 55: System ESD, installing return unit

562 411-54

Required accessories:

- Basic unit (V), protective panels (y) not assembled.
- Adapter AL-STS
- Chain sprocket (W)
- Holder (X)

V, VF 65: 3842 547 522

V, VF 90: 3842 547 523

AL-STS: 3842 552 948

W, VF 65: 3842 553 047

W, VF 90: 3842 553 048

X, VF 65: 3842 559 114

X, VF 90: 3842 559 115

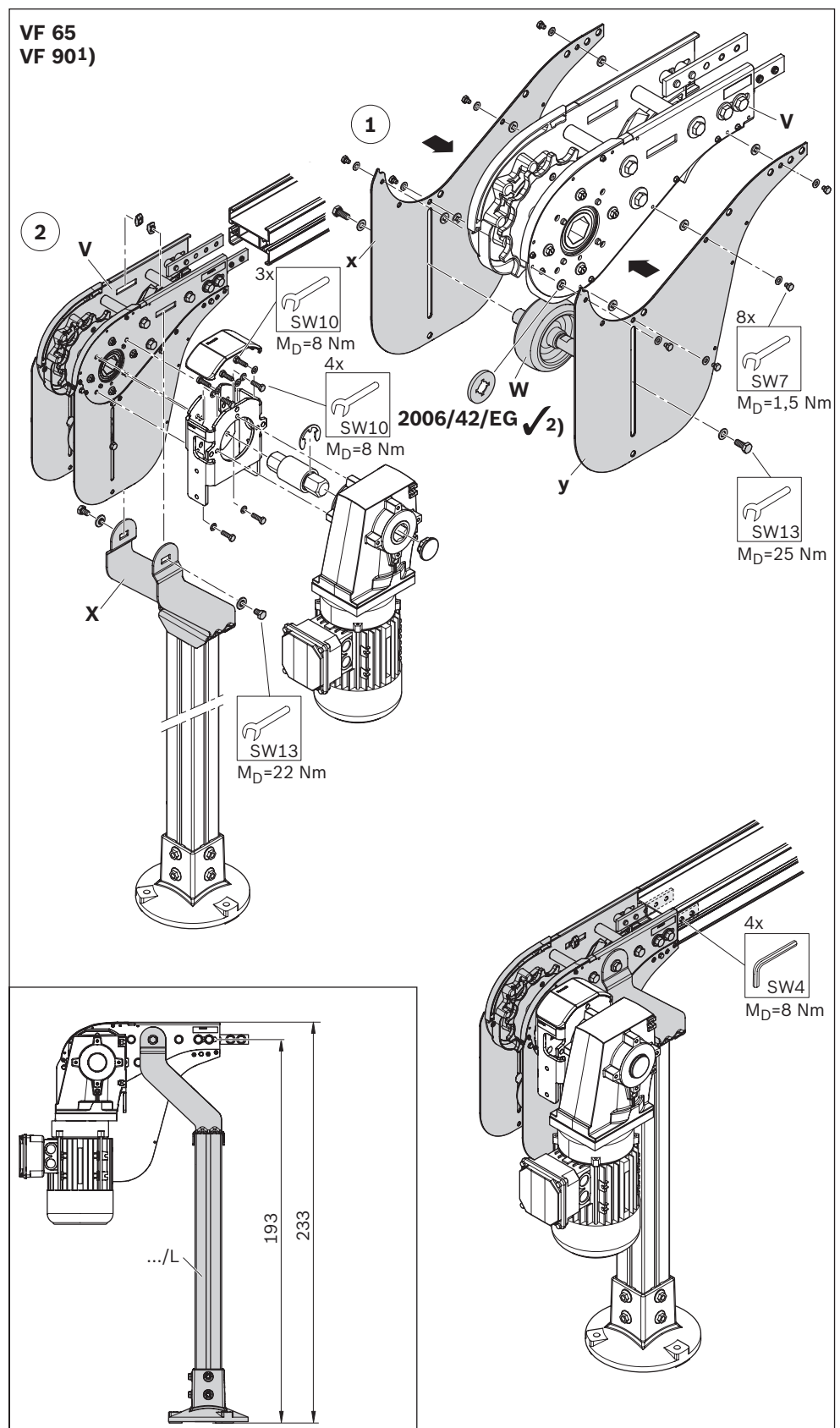
**Please note:**

- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.
- The protective panels (y) can also be installed later, after closing the conveyor chain.
- Chain sprocket required for ascending and descending sections or to prevent the chain bag from swiveling out.
- Further assembly steps:
 - Sliding rail installation (see page 76).
 - Gear motor installation (see page 175, 176).
 - Assemble the motor support (see page 63).

1) Size shown

2) The Machinery Directive 2006/42/EC requirement for captive screws on protective covers is fulfilled if this lock washer (y) is fitted.

Basic unit

**Fig. 56: System ESD, installing the basic unit**

562 411-55

Required accessories:

- Connection drive (Y), assembled with protective case (z)
- Connection kit,
 - passive
 - active
- Adapter AL-STS

Y, VF 65: **3842 553 914**

Y, VF 90: **3842 553 915**

AL-STS: **3842 552 948**

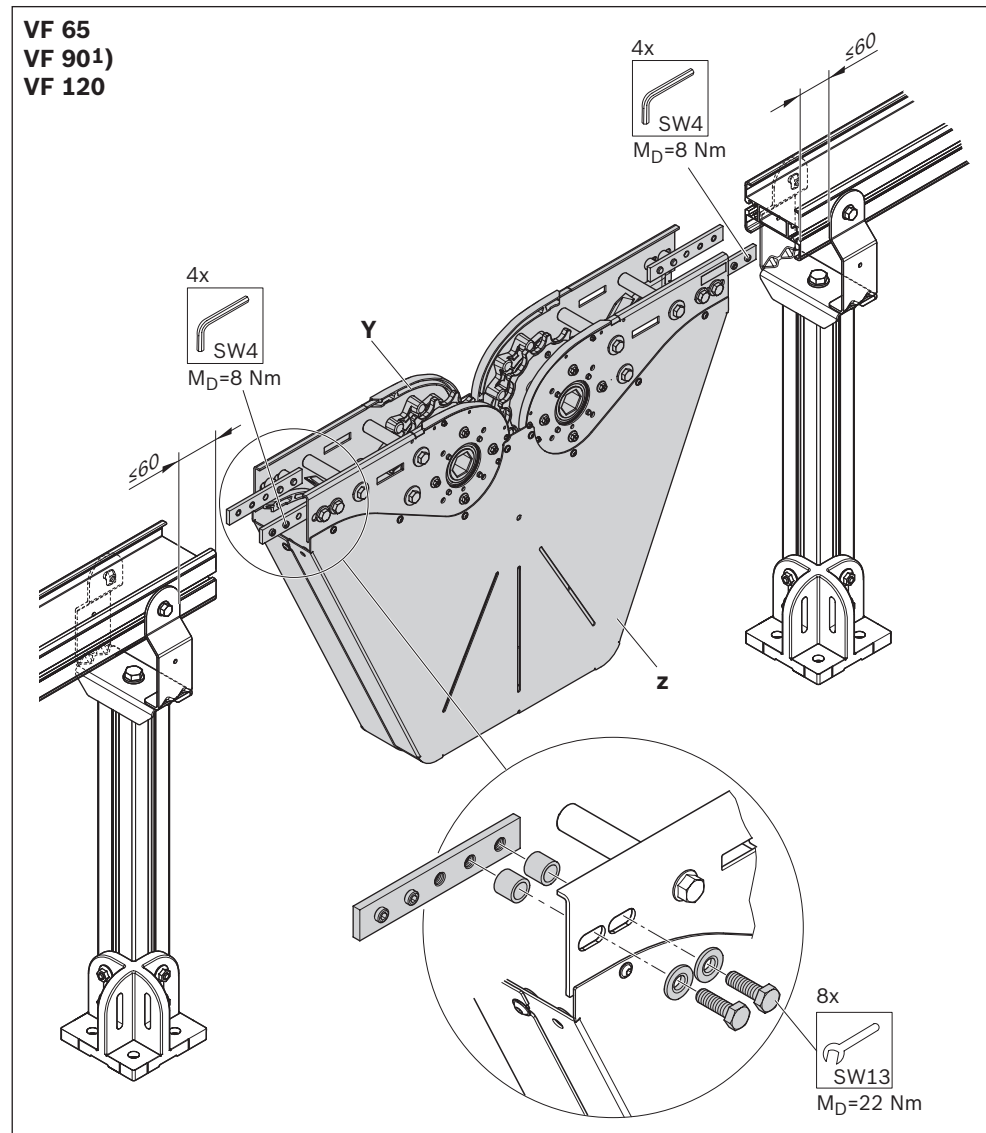
For connection kits,
see chapter 7.5.8
Connection kit, page 95

**Please note:**

- Secure the leg sets and the VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

Drilled hole for
fixing the sliding rail
(see page 76 and following).

Connection drive

562 411-56

Fig. 57: System ESD, installing connection drive

Required accessories:

- Center drive (Z)
- Adapter AL-STS

Z, VF 65: 3842 552 940

Z, VF 90: 3842 552 941

Z, VF 120: 3842 552 942

AL-STS: 3842 552 948

**Please note:**

A center drive and transmission drive combination is not possible.

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown

Drilled hole for fixing the sliding rail (see page 76 and following).

Center drive

**VF 65
VF 901)
VF 120**

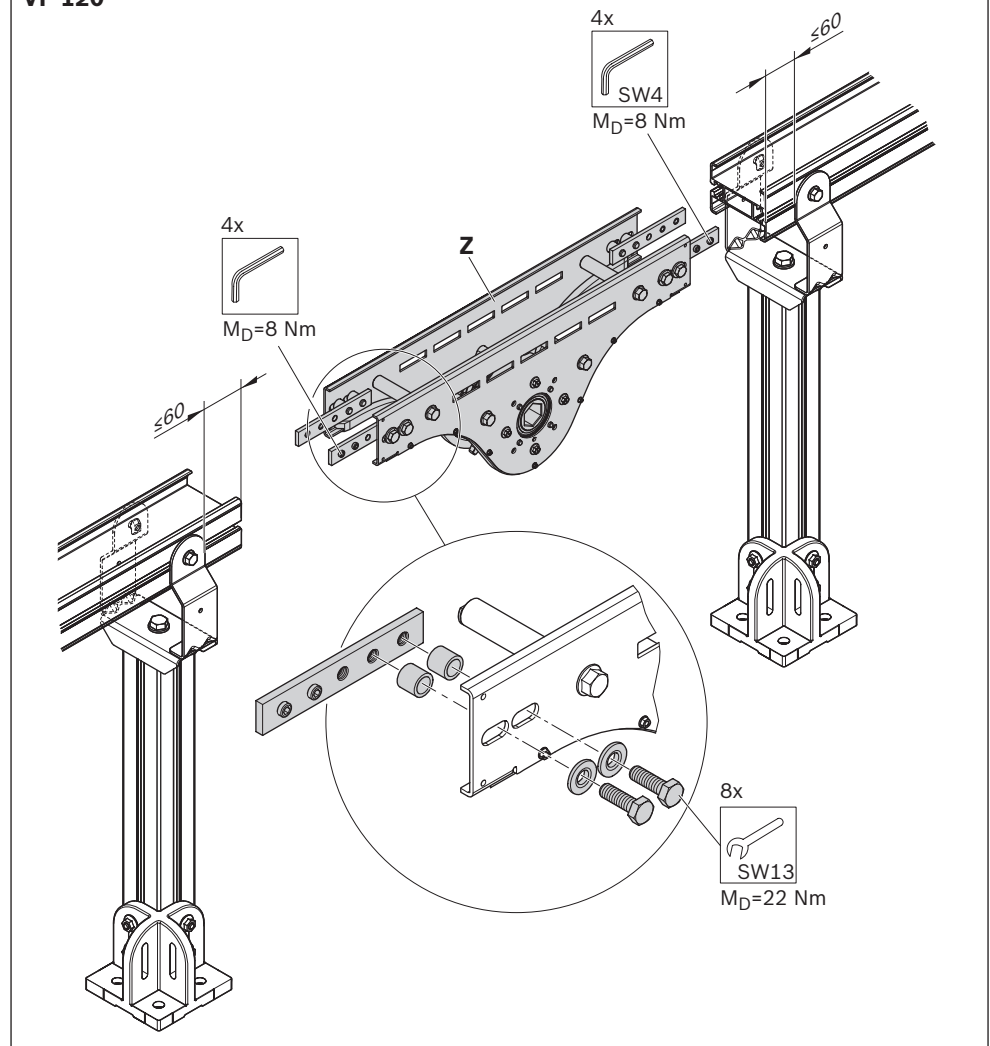


Fig. 58: System ESD, installing center drive

562 411-57

7.5.4 Alpine conveyor

90° return unit AL, STS

Required accessories:

- 90° return unit (A)

A, VF 65: **3842 552 984**

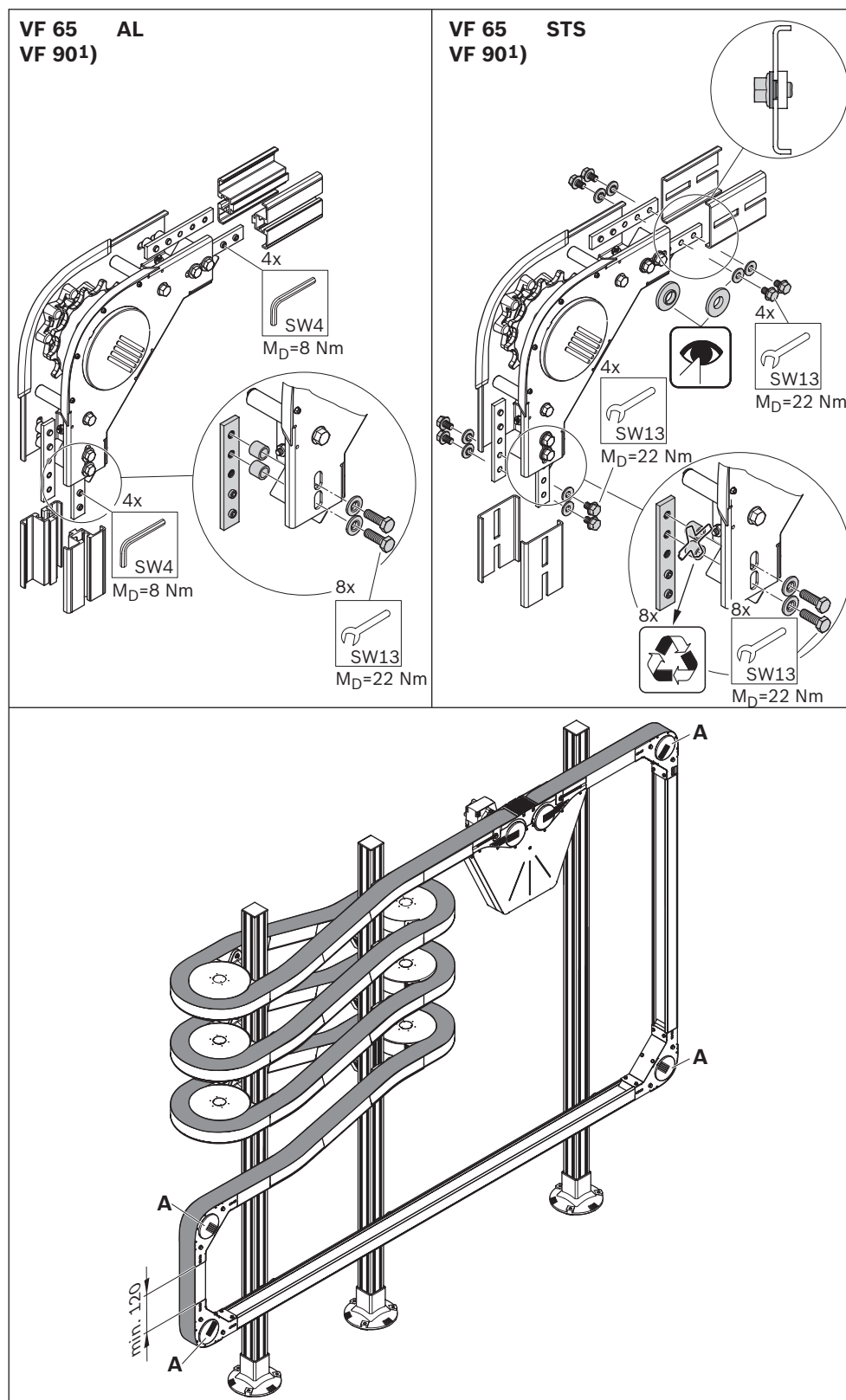
A, VF 90: **3842 552 985**



Please note:

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

1) Size shown



562 411-58

Fig. 59: Example of installation of alpine conveyor with connection drive, 90° return unit

Alpine conveyor connection kit

Required accessories:

- Drive kit (B)
- Connection kit (C)

B: 3842 998 742

C: 3842 998 776

1. Open the hex socket on the upper side of the curve wheel.
2. Install the drive kit (B, see pages 24 + 185).
3. Install the connection kit (C₁, C₂, C₃).

**Please note:**

- Secure the leg sets and VarioFlow *plus* assemblies against toppling over during installation until the system has been screwed to the floor.

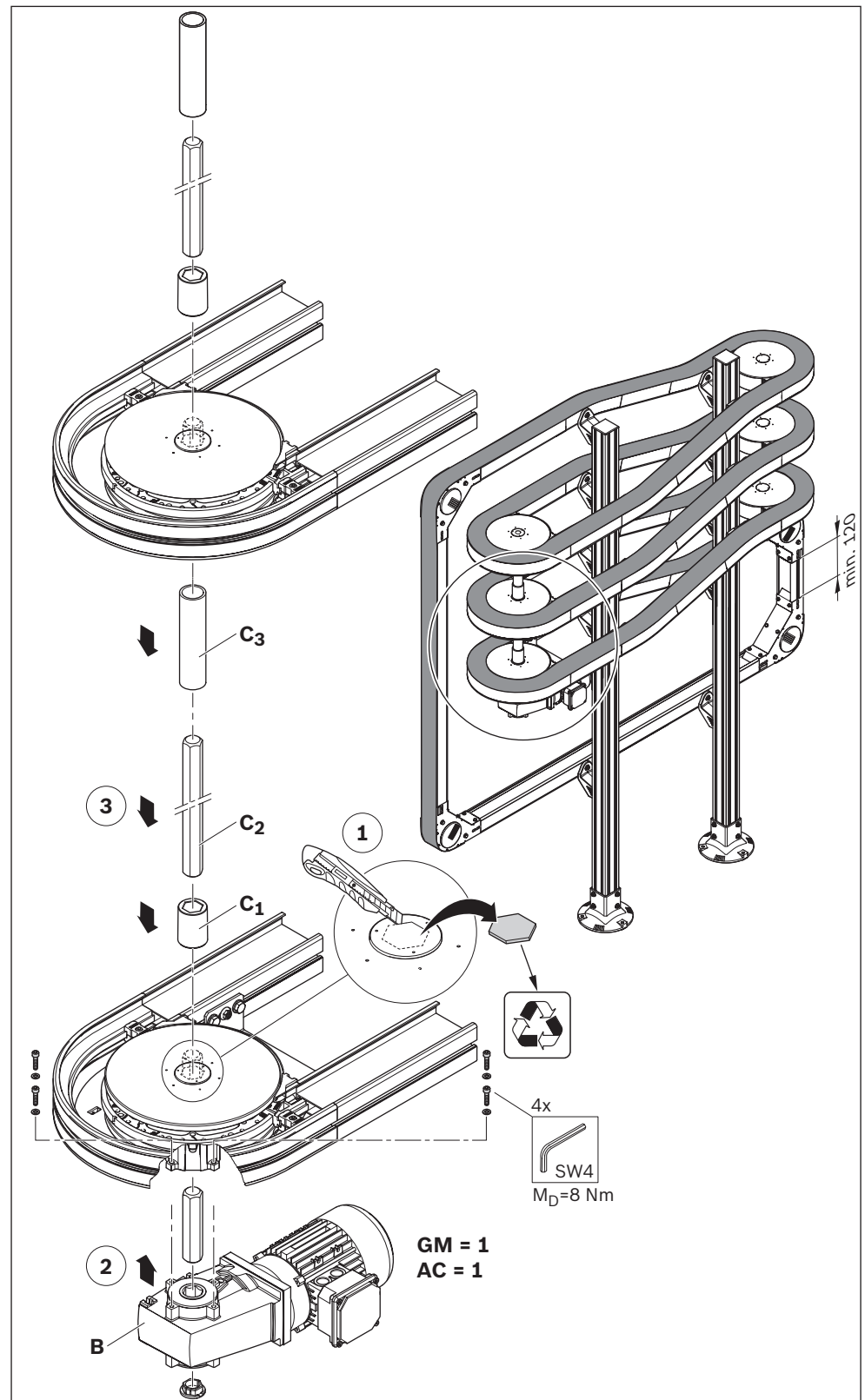


Fig. 60: Example of installation of alpine conveyor with curve wheel drive, connection kit

562 411-59

7.5.5 Wedge conveyor

Required accessories:

- Adjustment unit (A)
- Crank handle (B)
- Connection kit (C)
- Profile rail D12 (D)
- Bracket 60x60 (E)
- T-bolt HS10-M8x20 (F)
- Flange nut M8 (G)
- ISO 4762-M6x16 (H)

A: 3842 547 971

B: 3842 547 990

C: 3842 547 729

D: 3842 993 306/...

E: 3842 523 546

F: 3842 528 715

G: 3842 345 081

- Install the wedge conveyor.

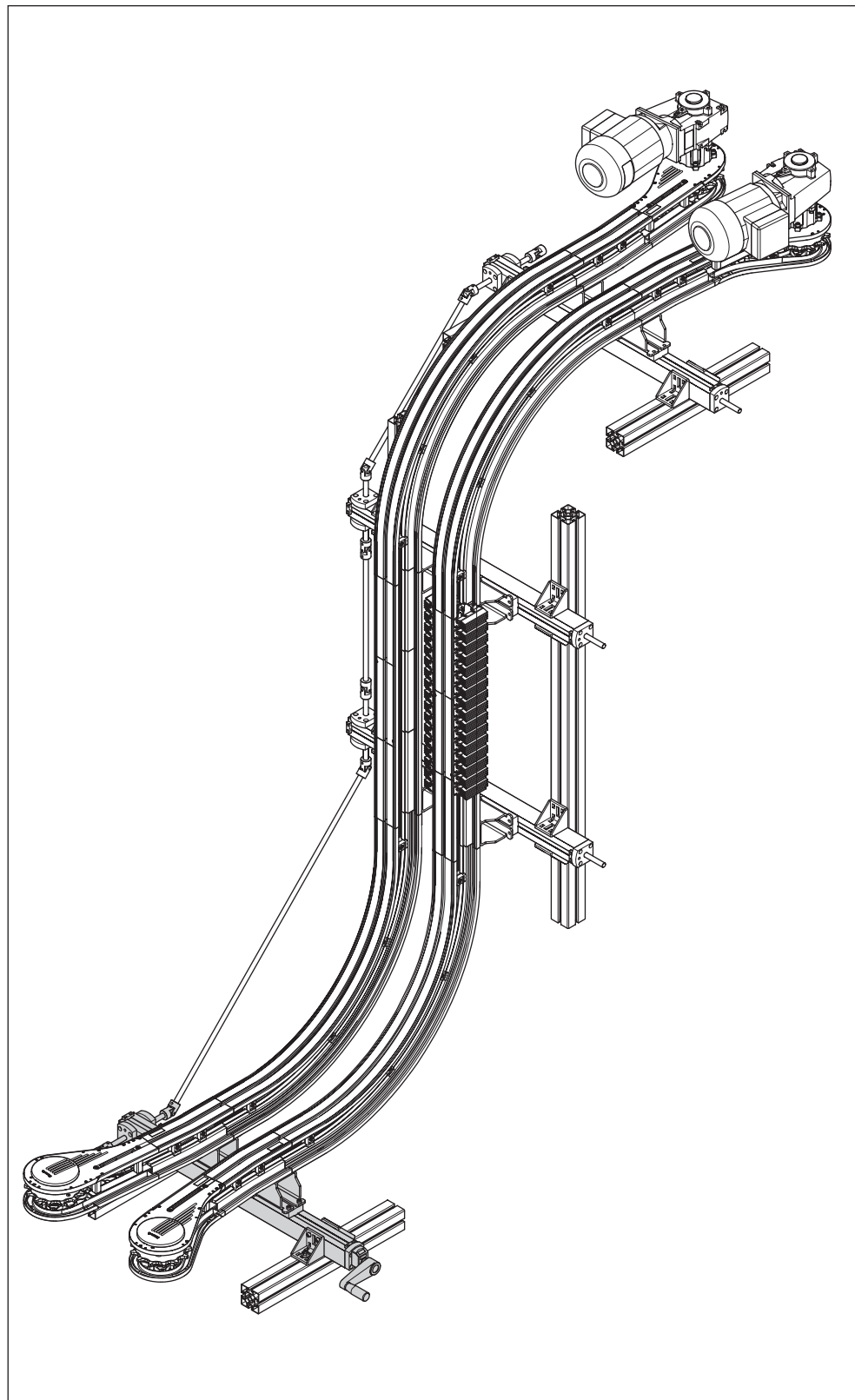


Fig. 61: Installing adjustment unit (1/2)

562 411-60

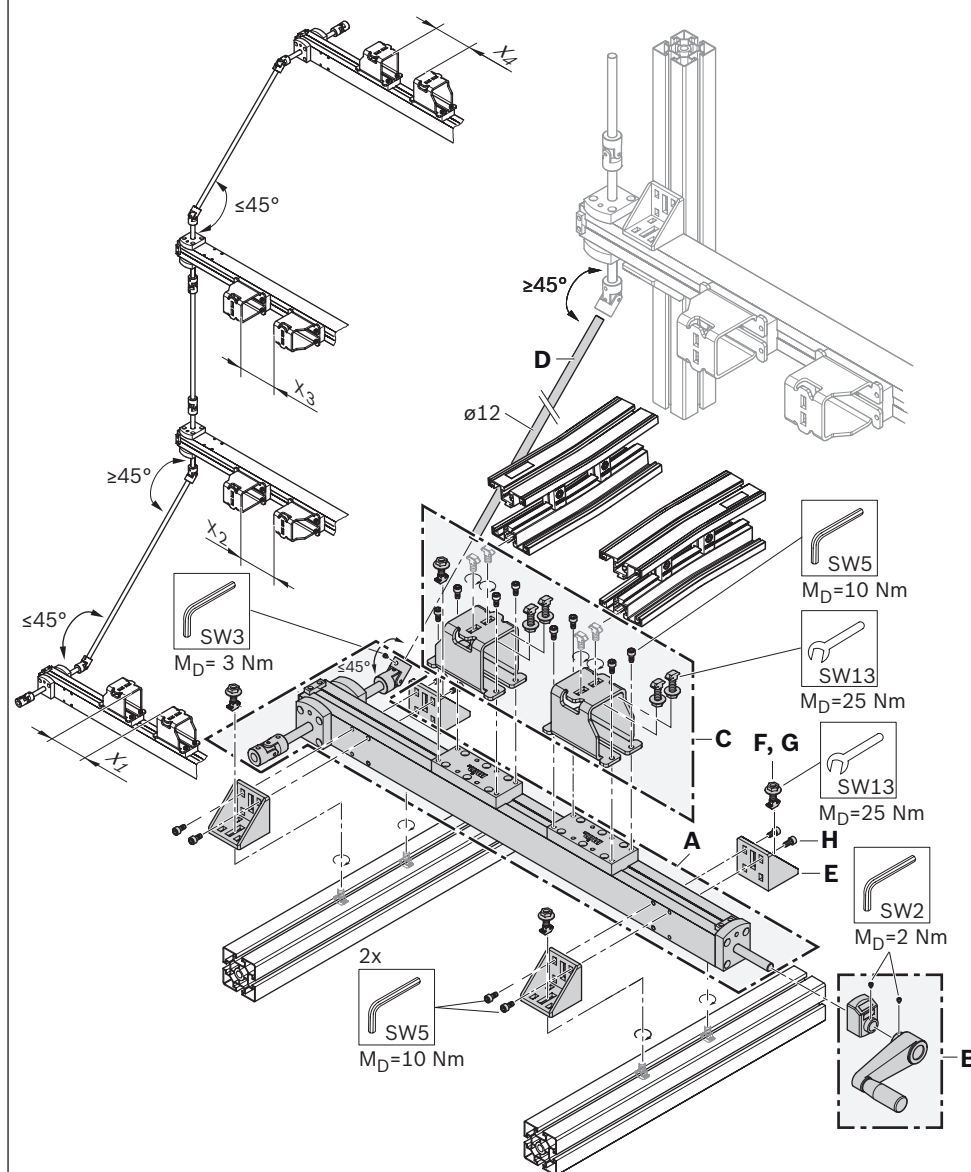


Fig. 62: Installing adjustment unit (2/2)

562 411-61

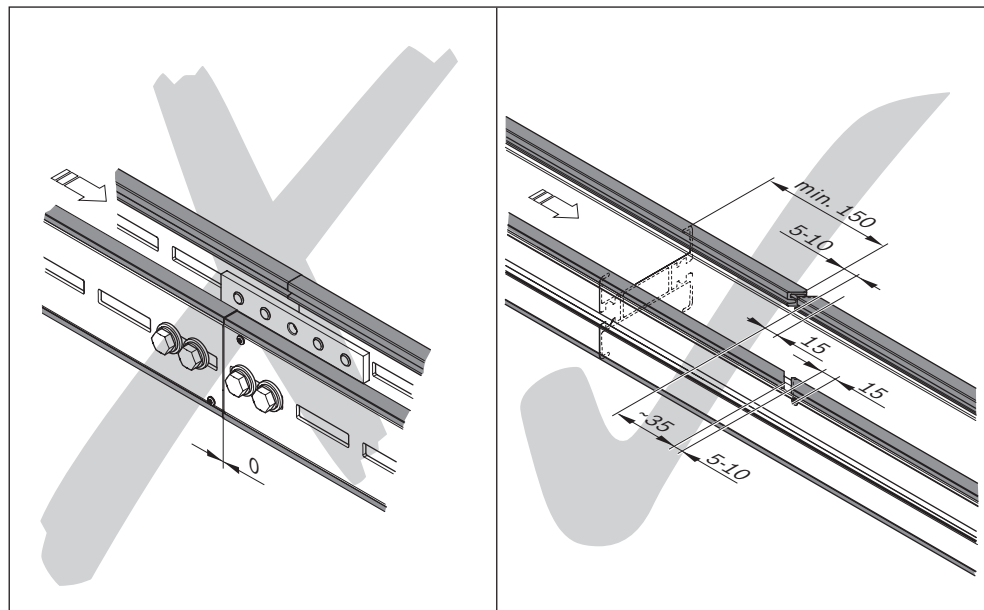
7.5.6 Sliding rail



Please note:

- If possible, install the sliding rail in a single piece **1)2)3)** extending across all the assemblies without any breaks.

- 1) Length 10 m max.
- 2) If a break is required, **never** place it at a module interface, always overlap the interface by at least 150 mm.
- 3) Place the break in the sliding rail ~ 150 mm after horizontal sliding curves on the inside of the curve. This expansion joint is required due to the higher loading of the inside of the curve.



562 411-62

Fig. 63: Sliding rail interface

- Always install the sliding rail in the running direction of the chain.
 - For the conveying side, start at the return unit.
 - For the chain return, start on the bottom side of the base unit.
 - "Chain start" = zero-gap.
- Fix each beginning of the sliding rail.

Conveying side:

 - After the return unit (section and support profile)
 - After a curve wheel (inside of the section profile)
 - After a roller curve (inside of the support profile)

Chain return:

 - After the base unit
 - After a curve wheel (inside of the section profile)

Required accessories:

- Sliding rail (A)
- Assembly tool for sliding rail (B)
- Screws (C) for fixing the sliding rail in place.

B: 3842 547 463

C, AL: 3842 547 908

STS: 3842 533 915

1. Cut the start of the sliding rail to shape.
2. Press the start of the sliding rail onto the section profile.
3. Attach the assembly tool and slide the section profile along it. In this way, you form the sliding rail on the section profile.
4. Fix the start of the sliding rail in place by screwing it down (AL: countersunk screw, STS: oval-head screw).

1) Size shown

Sliding rail (section profile)

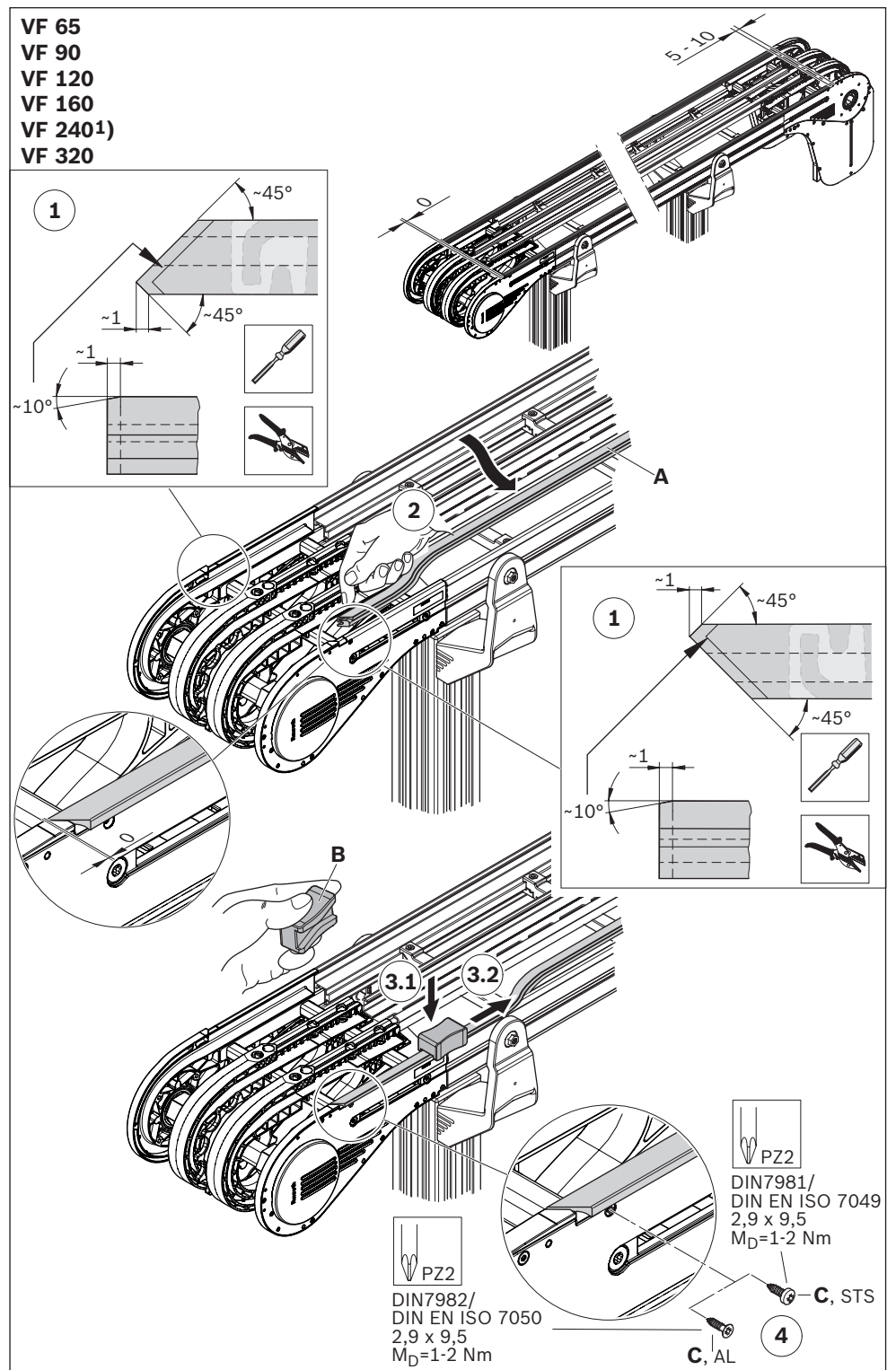
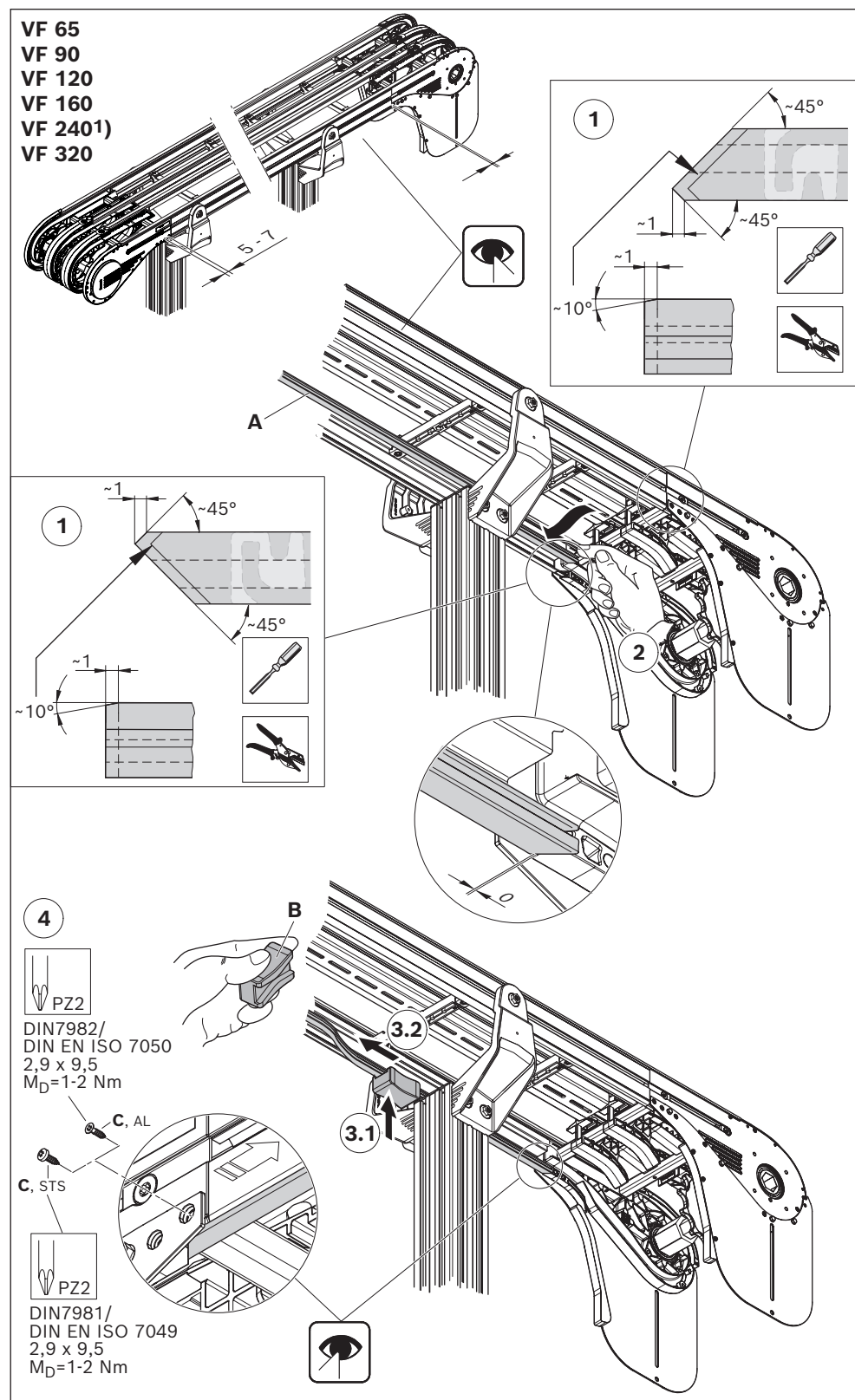


Fig. 64: Installing sliding rail (section profile)

Sliding rail (section profile, chain return)

1. Cut the start of the sliding rail to shape.
2. Press the start of the sliding rail onto the section profile.
3. Attach the assembly tool and slide the section profile along it. In this way, you form the sliding rail on the section profile.
4. Fix the start of the sliding rail in place by screwing it down (AL: countersunk screw, STS: oval-head screw).

1) Size shown



562 411-64

Fig. 65: Installing sliding rail (section profile, chain return)

Required accessories:

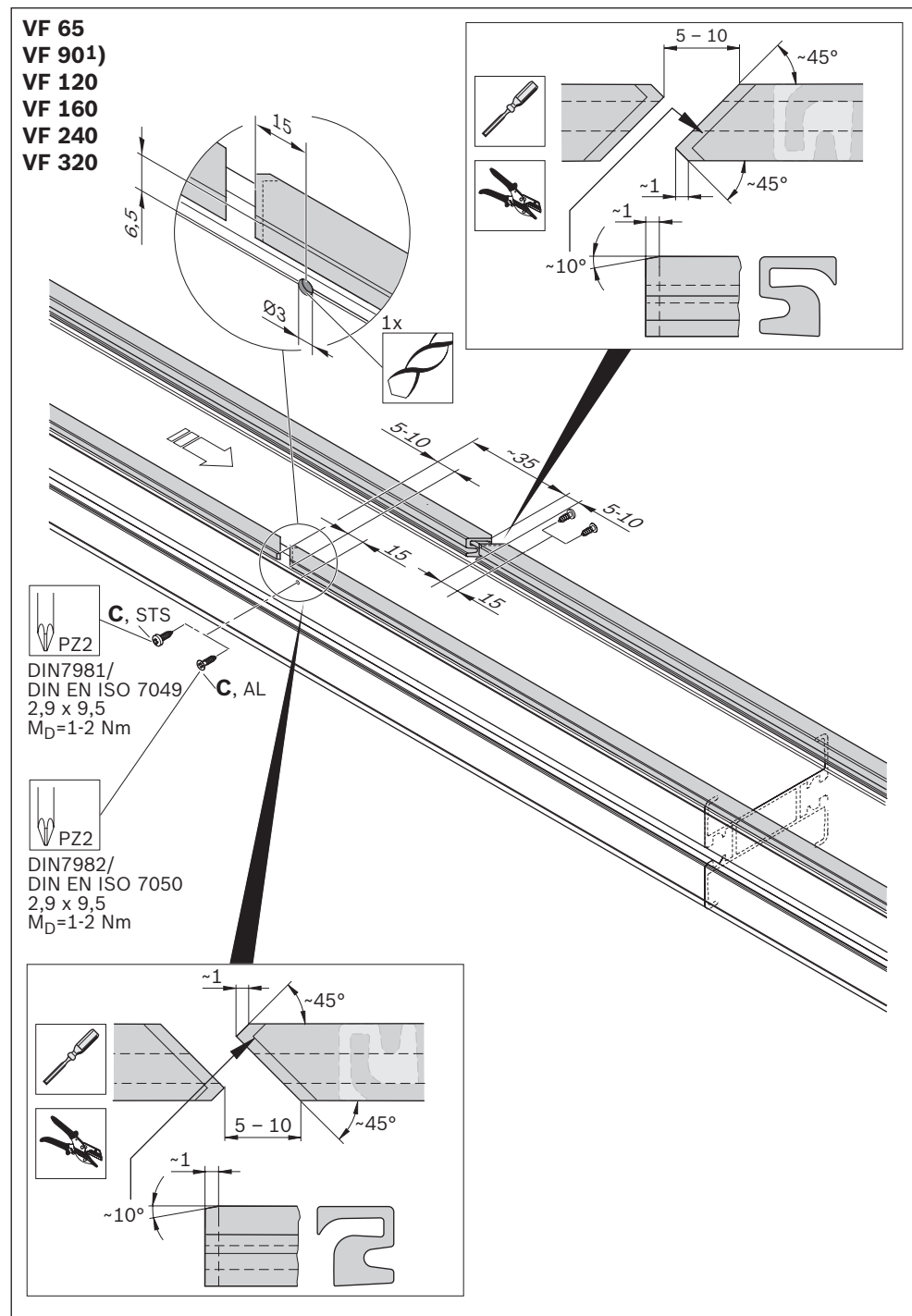
- Sliding rail (A)
- Assembly tool for sliding rail (B)
- Screws (C) for fixing the sliding rail in place.

B: 3842 547 463**C, AL:** 3842 547 908**STS:** 3842 533 915

1. Cut the start of the sliding rail to shape.
2. Press the start of the sliding rail onto the section profile.
3. Attach the assembly tool and slide the section profile along it. In this way, you form the sliding rail on the section profile.
4. Use the drilling jig 3842 553 518.
5. Fix the start of the sliding rail in place by screwing it down (AL: countersunk screw, STS: oval-head screw).

1) Size shown

Sliding rail (longitudinal end connection for connecting sliding rails)

**Fig. 67: Installing sliding rail (longitudinal end connection for connecting sliding rails)**

562 411-66

Required accessories:

- Sliding rail (A)
- Assembly tool for sliding rail (B)
- Screws (C) for fixing the sliding rail in place.

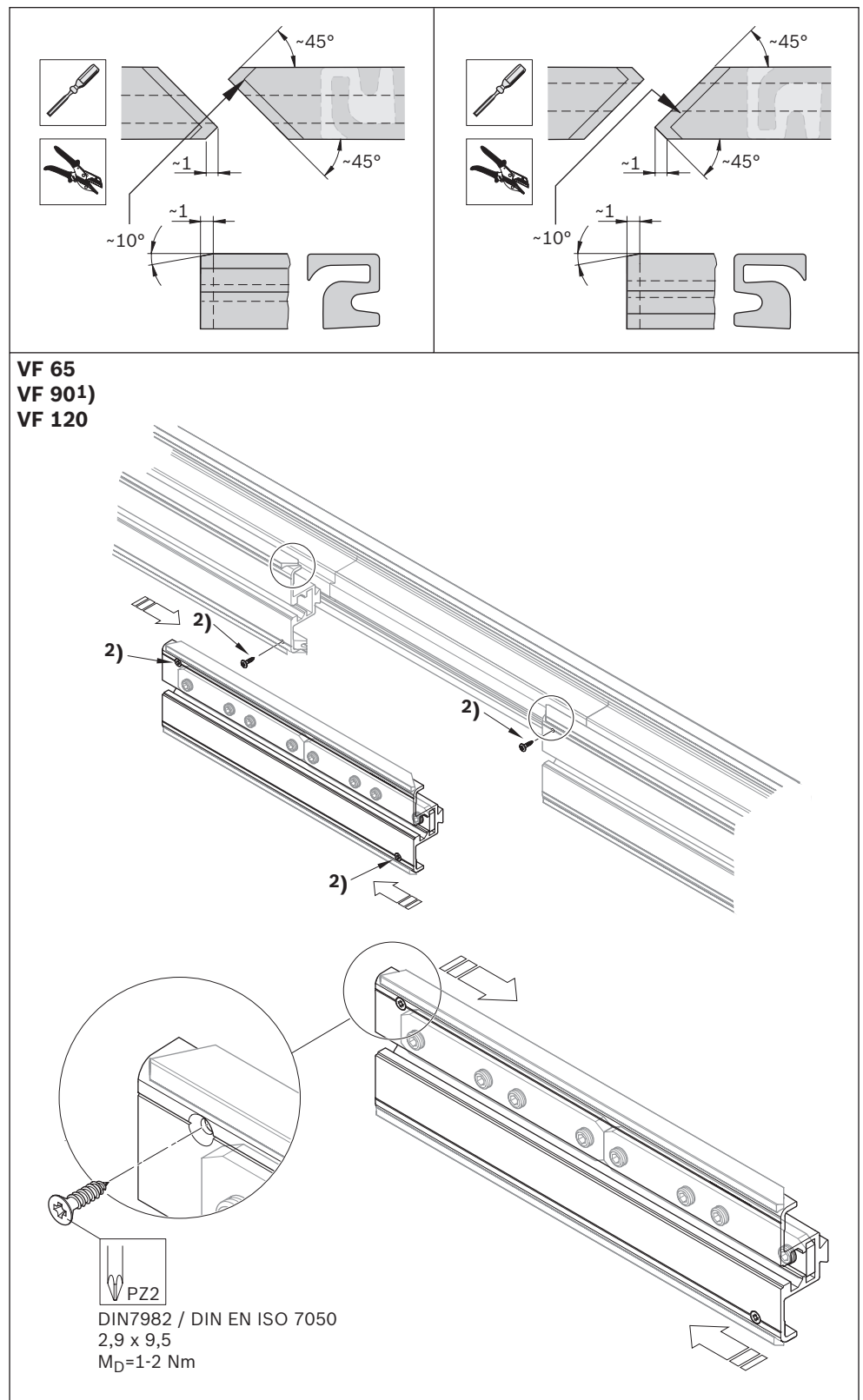
B: 3842 547 463**C, AL:** 3842 547 908

STS: 3842 533 915

**Please note:**

- ▶ Fix the start of the sliding rail (forward conveying direction, see 2)) by screwing it on. The drilled holes are already in place.
 - Sliding rail interruption is only required on the side to be opened.
 - For size 160 - 320:
Do not interrupt the support profile with a sliding rail to increase the smooth running.
- 1) Size shown
2) Sliding rail fastening
(AL: countersunk screw,
STS: oval-head screw)

Sliding rail, system AL assembly module, only for VF 65 / VF 90 / VF 120

**Fig. 68: Installing sliding rail, system AL assembly module**

Sliding rail, system STS assembly module, only for VF 65 / VF 90 / VF 120

Required accessories:

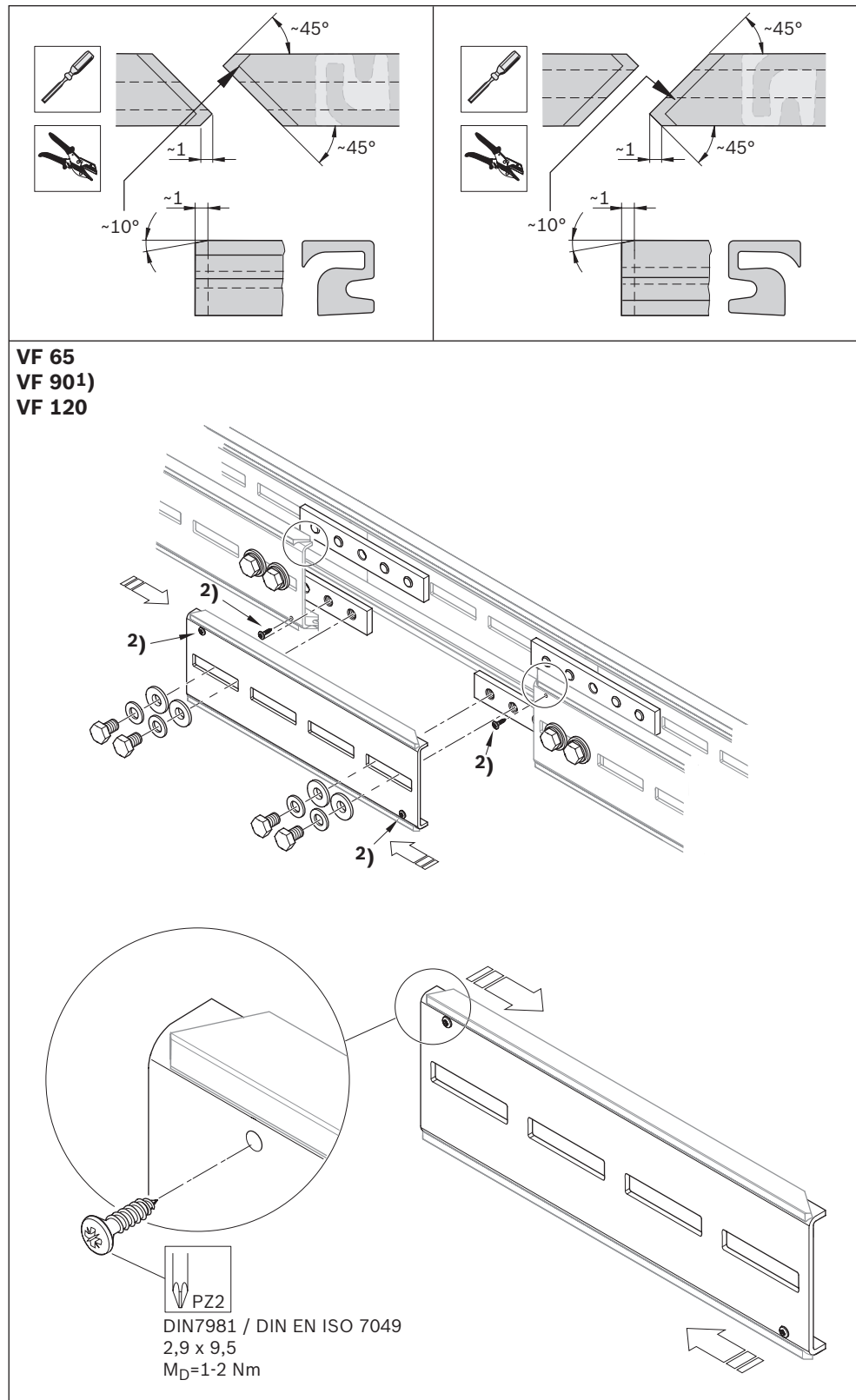
- Sliding rail (A)
- Assembly tool for sliding rail (B)
- Screws (C) for fixing the sliding rail in place.

B: 3842 547 463**C, AL:** 3842 547 908**STS:** 3842 533 915**Please note:**

- Fix the start of the sliding rail (forward conveying direction, see 2)) by screwing it on. The drilled holes are already in place.
- Sliding rail interruption is only required on the side to be opened.
- For size 160 - 320: Do not interrupt the support profile with a sliding rail to increase the smooth running.

1) Size shown

2) Sliding rail fastening
(AL: countersunk screw,
STS: oval-head screw)



562 411-68

Fig. 69: Installing sliding rail, system STS assembly module

Required accessories:

- Sliding rail straight section (D), STS

D, STS: **3842 552 970**

1. Cut the start of the sliding rail to shape and round it off.
2. Mount the sliding rail on the section profile.
Ensure that there are no gaps or differences in level at sliding rail transitions.
3. Fix the sliding rail in position with blind rivets.

1) Size shown

STS sliding rail, section profile

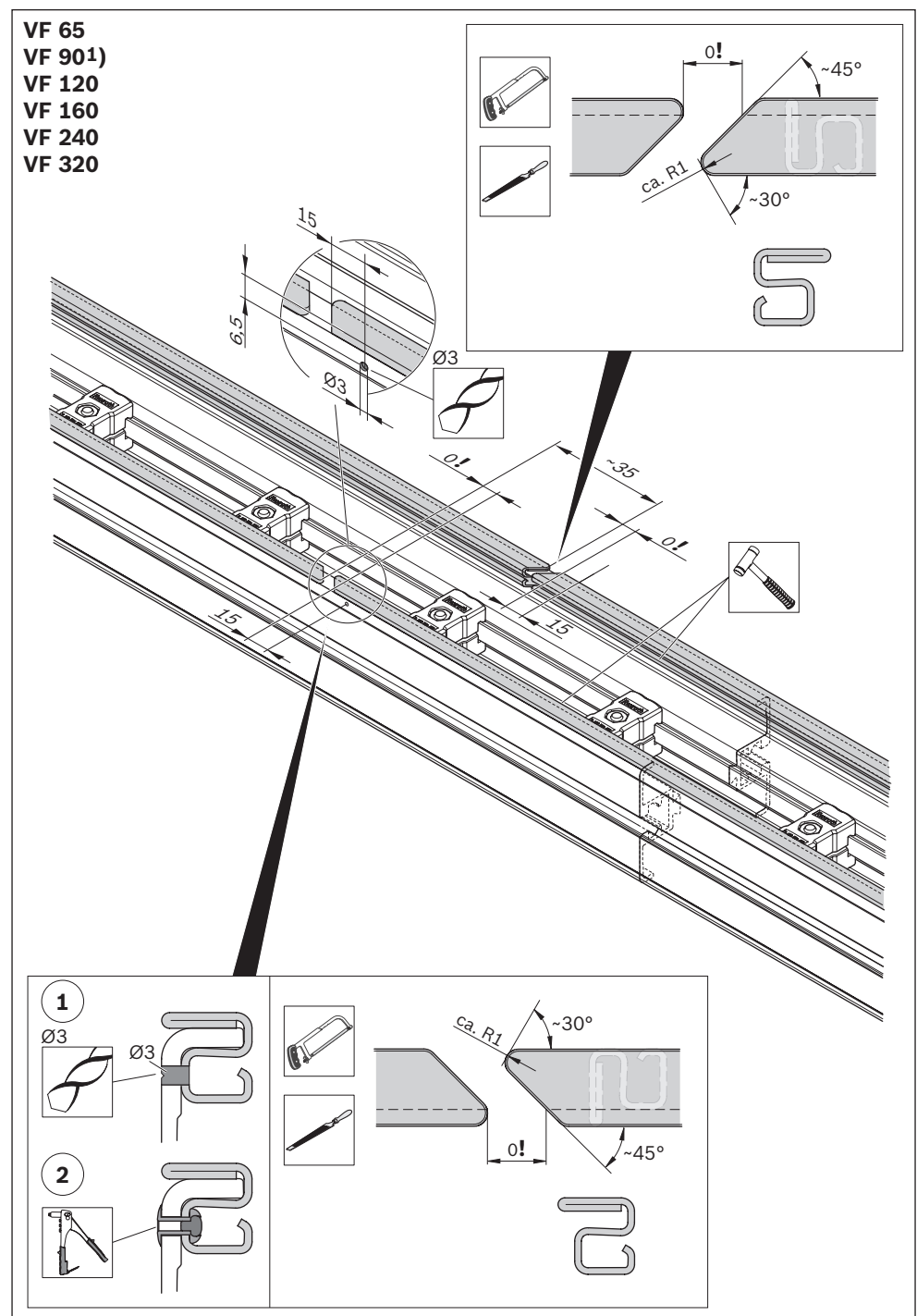


Fig. 70: Installing STS sliding rail, section profile

STS sliding rail, curve wheel 30°, 45°, 90°

Required accessories:

- Sliding rail curve wheel 30°, 45°, 90° (E), STS

E, VF 65,

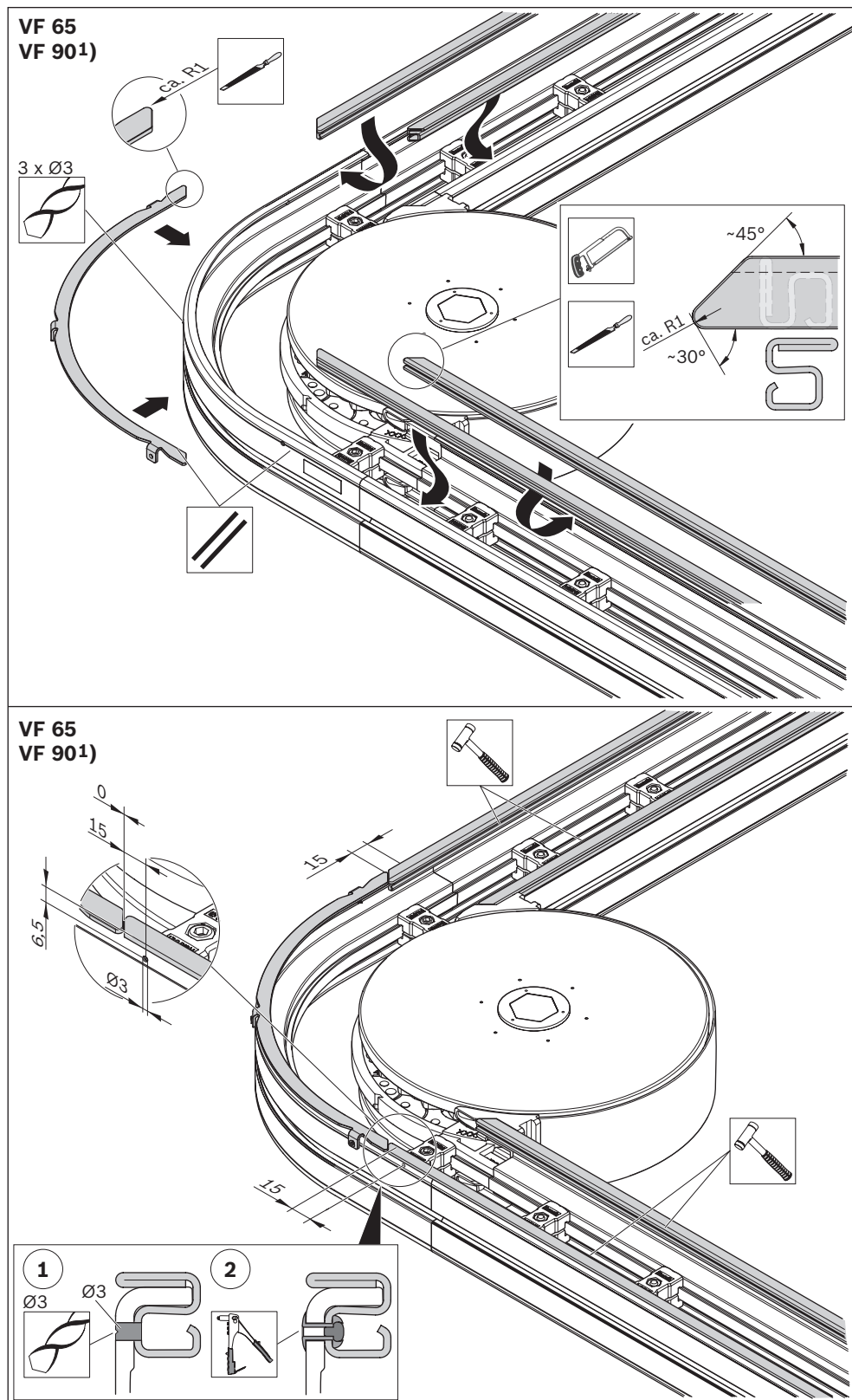
30°: **3842 557 030**45°: **3842 557 031**90°: **3842 552 972**

E, VF 90,

30°: **3842 557 032**45°: **3842 557 033**90°: **3842 552 974**

1. Round the ends of the sliding rail off.
2. Mount the sliding rail on the curve wheel.
Ensure that there are no gaps or differences in level at sliding rail transitions.
3. Fix the sliding rail in position with blind rivets.

1) Size shown



562 411-70

Fig. 71: Installing STS sliding rail, 90° curve wheel

Required accessories:

- Sliding rail, curve wheel 180° (F), STS

F, VF 65: **3842 552 973**

F, VF 90: **3842 552 975**

1. Round the ends of the sliding rail off.
2. Mount the sliding rail on the curve wheel.
Ensure that there are no gaps or differences in level at sliding rail transitions.
3. Fix the sliding rail in position with blind rivets.

1) Size shown

STS sliding rail, curve wheel 180°

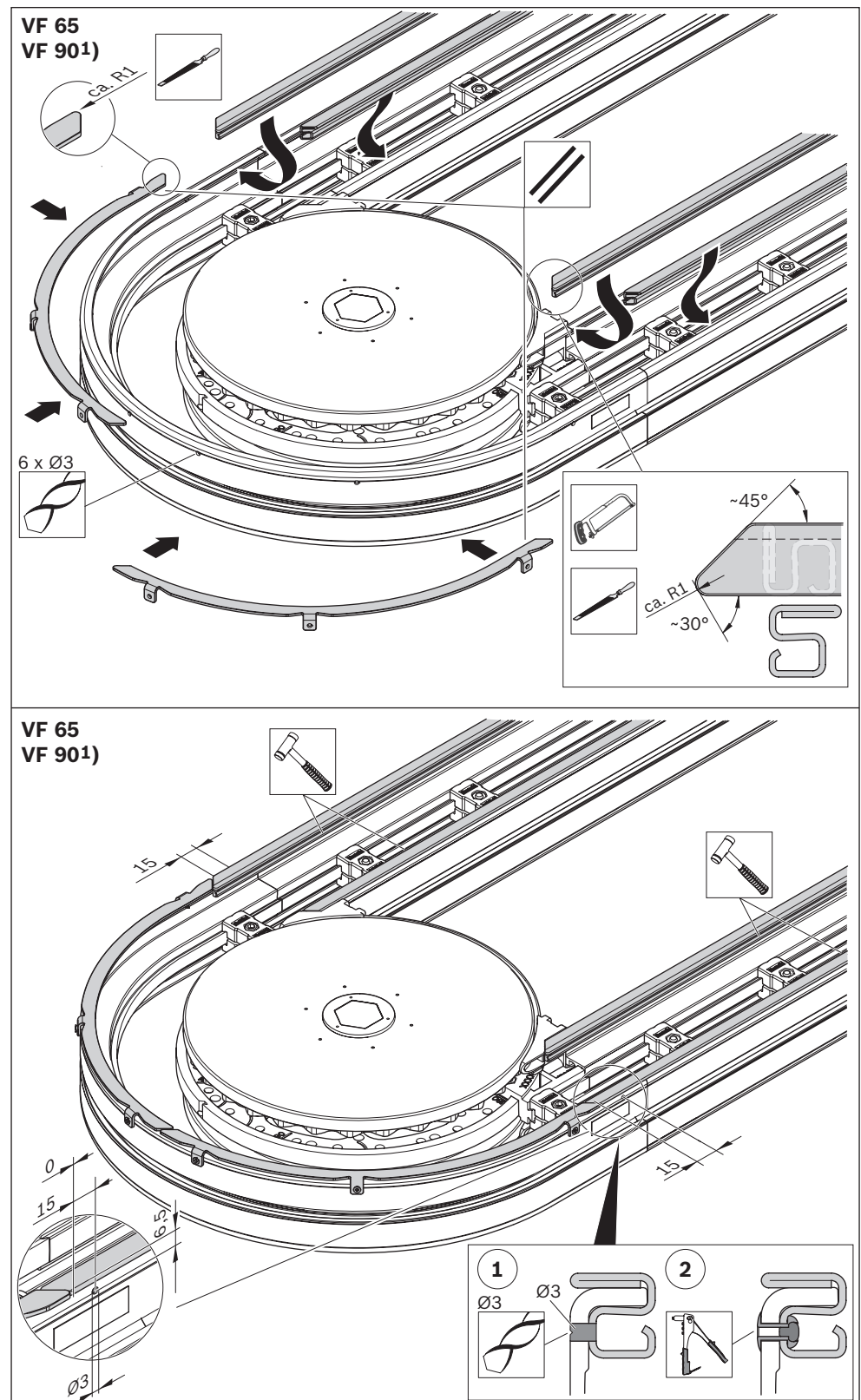


Fig. 72: Installing STS sliding rail, curve wheel 180°

562 411-71

7.5.7 Conveyor chain

Conveyor chain, VF 65 / VF 90 / VF 120

Required accessories:

- Assembly tool for conveyor chain (A)
- Chain sprocket (B)

A:	3842 557 025
B, VF 65:	3842 553 047
B, VF 90:	3842 553 048
B, VF 120:	3842 553 049

1. Insert the conveyor chain into the section on the bottom side of the base unit.
2. Push/pull the conveyor chain over the base unit drive gear.
3. Bring the ends of the chain together and use the assembly tool to close the chain (see page 88).
4. Install the base unit guard plates.



Please note:

The conveyor chain lengthens as its overall period of operation increases (the chain bag enlarges and projects beyond the guard plates). The **chain sprocket** is required for ascending and descending sections or to prevent the chain bag from swiveling out.

- Remove a few chain links from the conveyor chain after a break-in period of approx. 40 hours (see page 89).

¹⁾ Size shown

²⁾ The Machinery Directive 2006/42/EC requirement for captive screws on protective covers is fulfilled if this lock washer (x) is fitted.

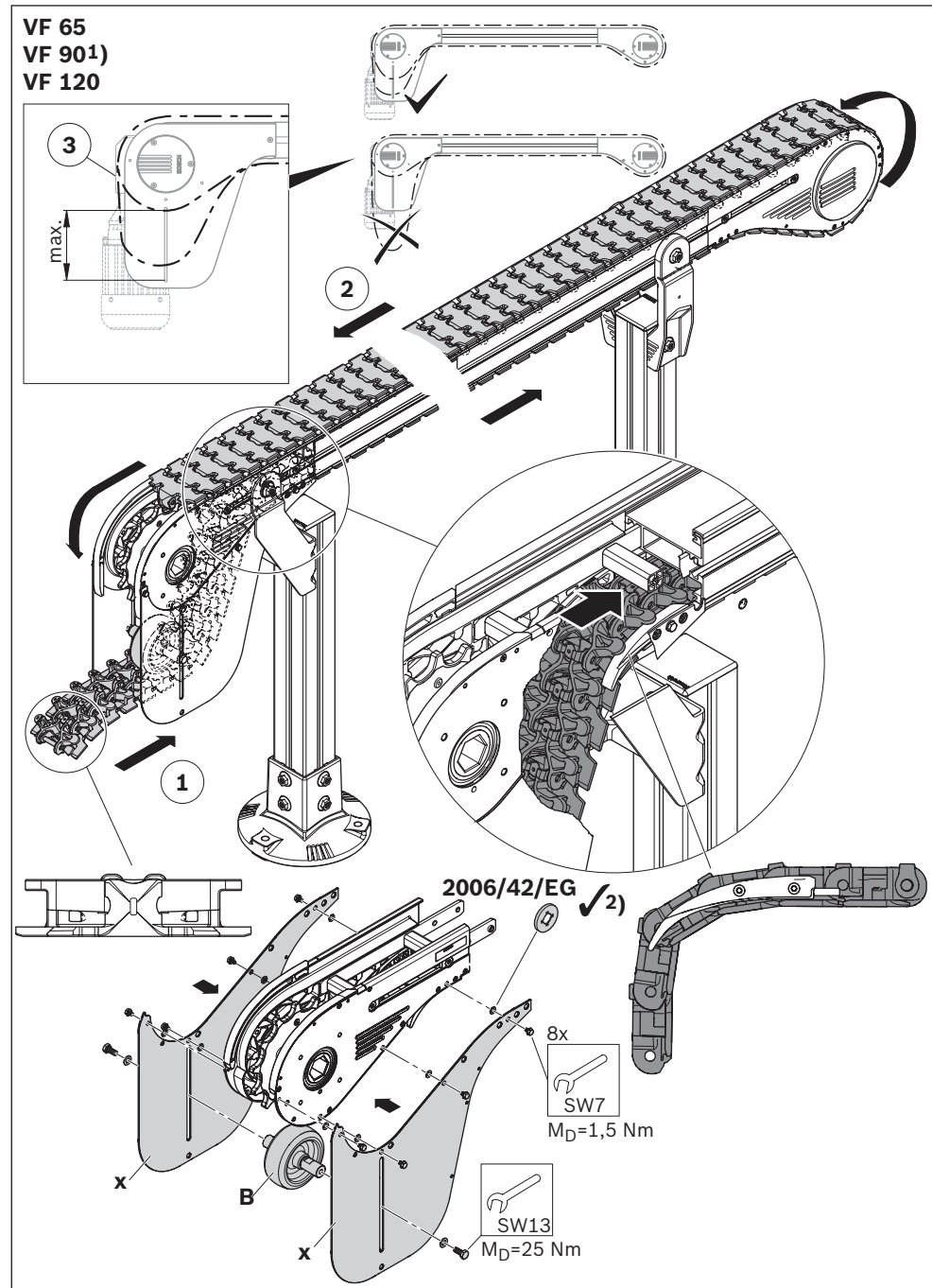


Fig. 73: Installing conveyor chain, VF 65 / VF 90 / VF 120

562 411-72

Required accessories:

- Assembly tool for conveyor chain (A)
- Chain sprocket (B)

A:	3842 571 259
B, VF 160	3842 553 057
B, VF 240	3842 553 058
B, VF 320	3842 553 059

1. Insert the conveyor chain into the section on the bottom side of the base unit.
2. Push/pull the conveyor chain over the base unit drive gear.
3. Bring the ends of the chain together and use the assembly tool to close the chain (see page 90).
4. Install the base unit guard plates.

**Please note:**

The conveyor chain lengthens as its overall period of operation increases (the chain bag enlarges and projects beyond the guard plates). The **chain sprocket** is required for ascending and descending sections or to prevent the chain bag from swiveling out.

- Remove a few chain links from the conveyor chain after a break-in period of approx. 40 hours (see page 91).

1) Size shown

2) The Machinery Directive 2006/42/EC requirement for captive screws on protective covers is fulfilled if this lock washer (x) is fitted.

Conveyor chain, VF 160 t7 / VF 240 t7 / VF 320 t7

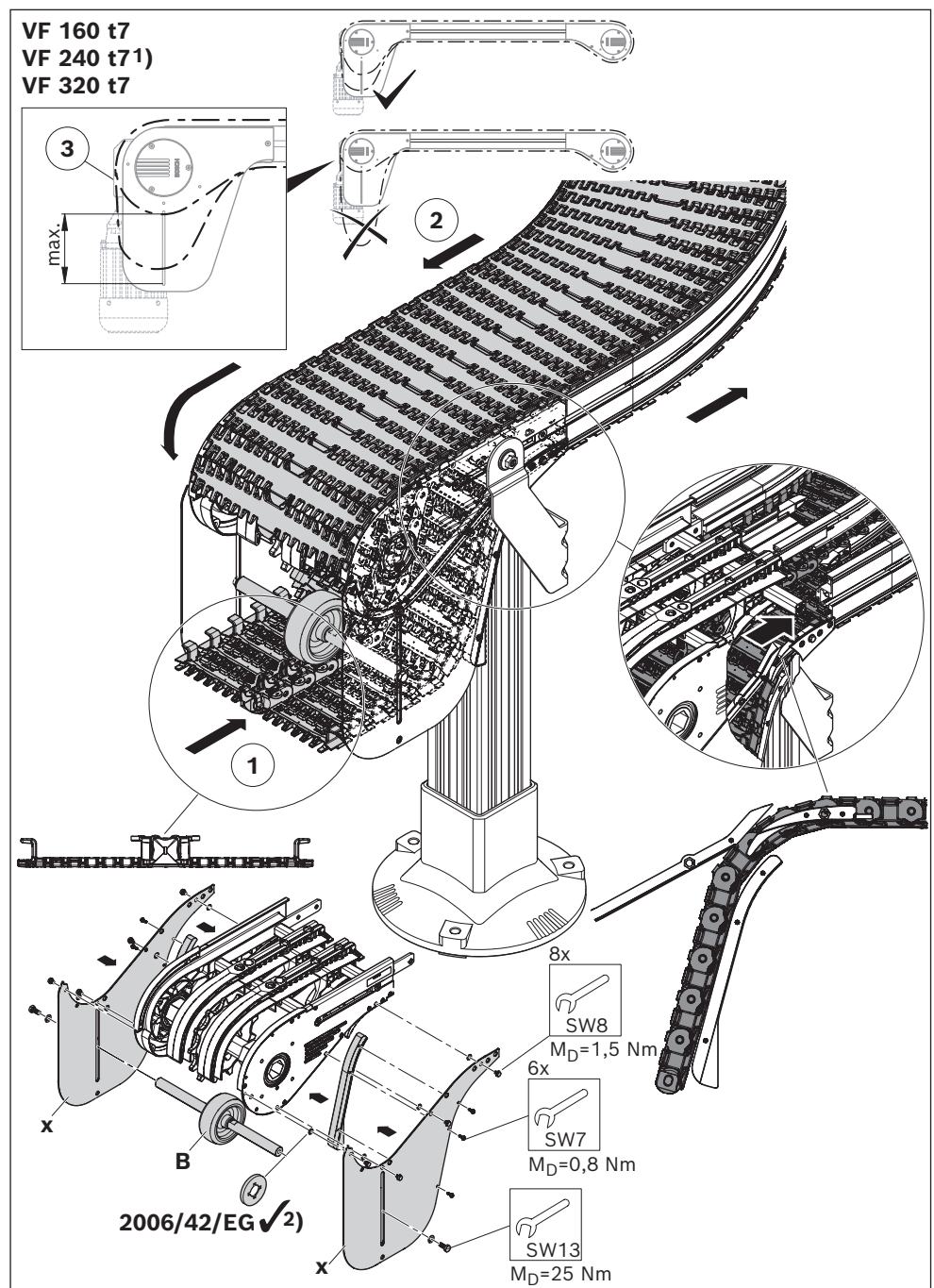


Fig. 74: Conveyor chain assembly, VF 160 t7 / VF 240 t7 / VF 320 t7

Assembly tool for VarioFlow *plus* chain

Closing (extending) the conveyor chain, VF 65 / VF 90 / VF 120

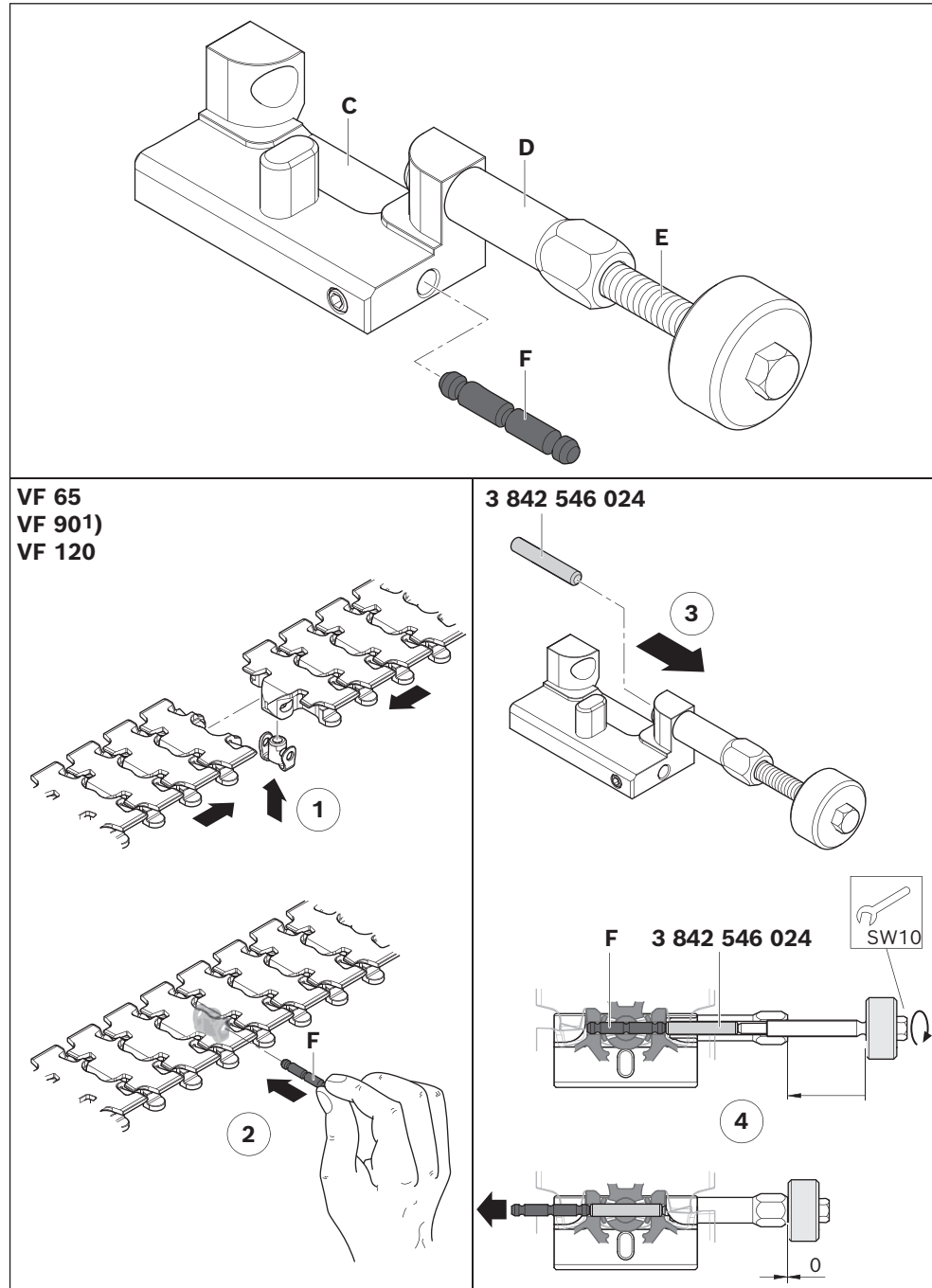
Required accessories:

- Assembly tool for conveyor chain **(3842 557 025)** consisting of:
 - Base plate (C)
 - Threaded sleeve (D)
 - Spindle (E)
 - Assembly pin (F)
- Close (extend) the conveyor chain (VF 65 / VF 90 / VF 120).

1) Size shown

**Please note:**

- Check the established connection for ease of movement.

**Fig. 75: Closing (extending) the conveyor chain, VF 65 / VF 90 / VF 120**

562 411-74

Required tools:

- Assembly tool for conveyor chain, **3842 557 025**.

- Open (shorten) the conveyor chain (VF 65 / VF 90 / VF 120).

1) Size shown

Opening (shortening) the conveyor chain, VF 65 / VF 90 / VF 120

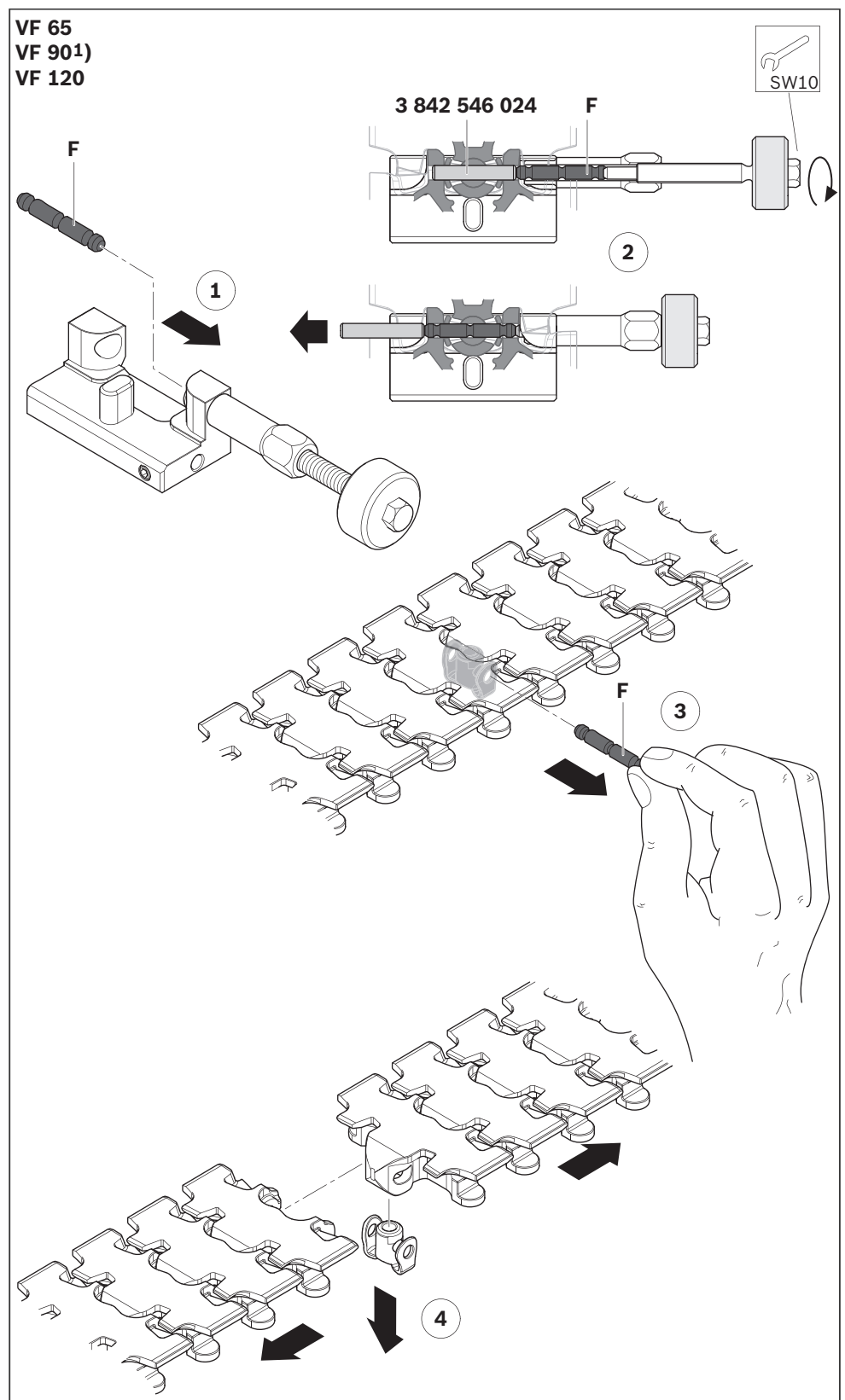


Fig. 76: Opening (shortening) the conveyor chain, VF 65 / VF 90 / VF 120

562 411-75

Closing (extending) the conveyor chain, VF 160 t7 / VF 240 t7 / VF 320 t7

Required accessories:

- Assembly tool for conveyor chain, **3842 571 259**.
- Close (extend) the conveyor chain (VF 160 t7 / VF 240 t7 / VF 320 t7).

1) Size shown



Please note:

- Check the established connection for ease of movement.

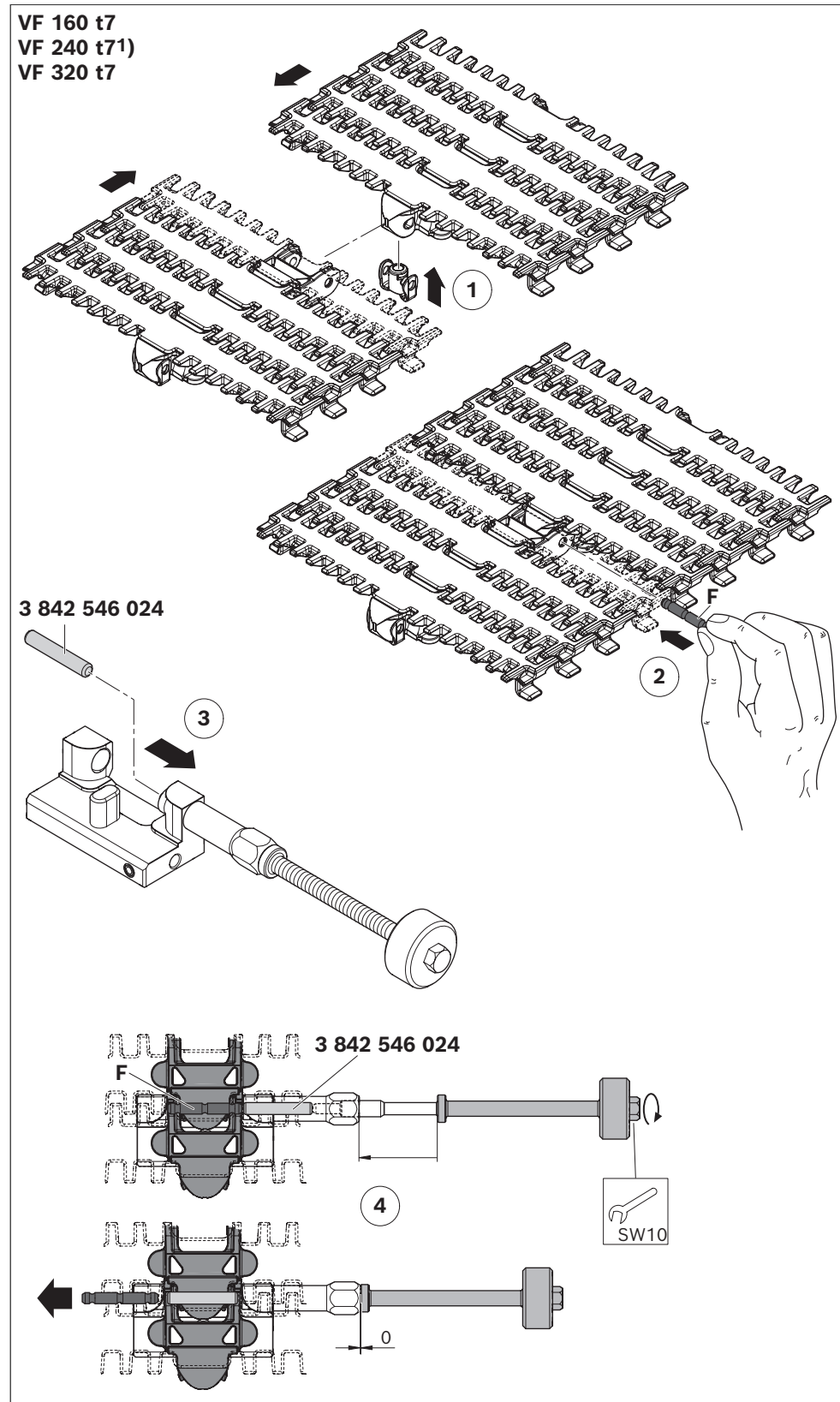


Fig. 77: Closing (extending) the conveyor chain, VF 160 t7/ VF 240 t7/ VF 320 t7

562 411-76

Required tools:

- Screwdriver size 2
- Assembly tool for conveyor chain, **3842 571 259**.

- Open (shorten) the conveyor chain (VF 160 t7/ VF 240 t7/ VF 320 t7).

1) Size shown

Opening (shortening) the conveyor chain, VF 160 t7 / VF 240 t7 / VF 320 t7

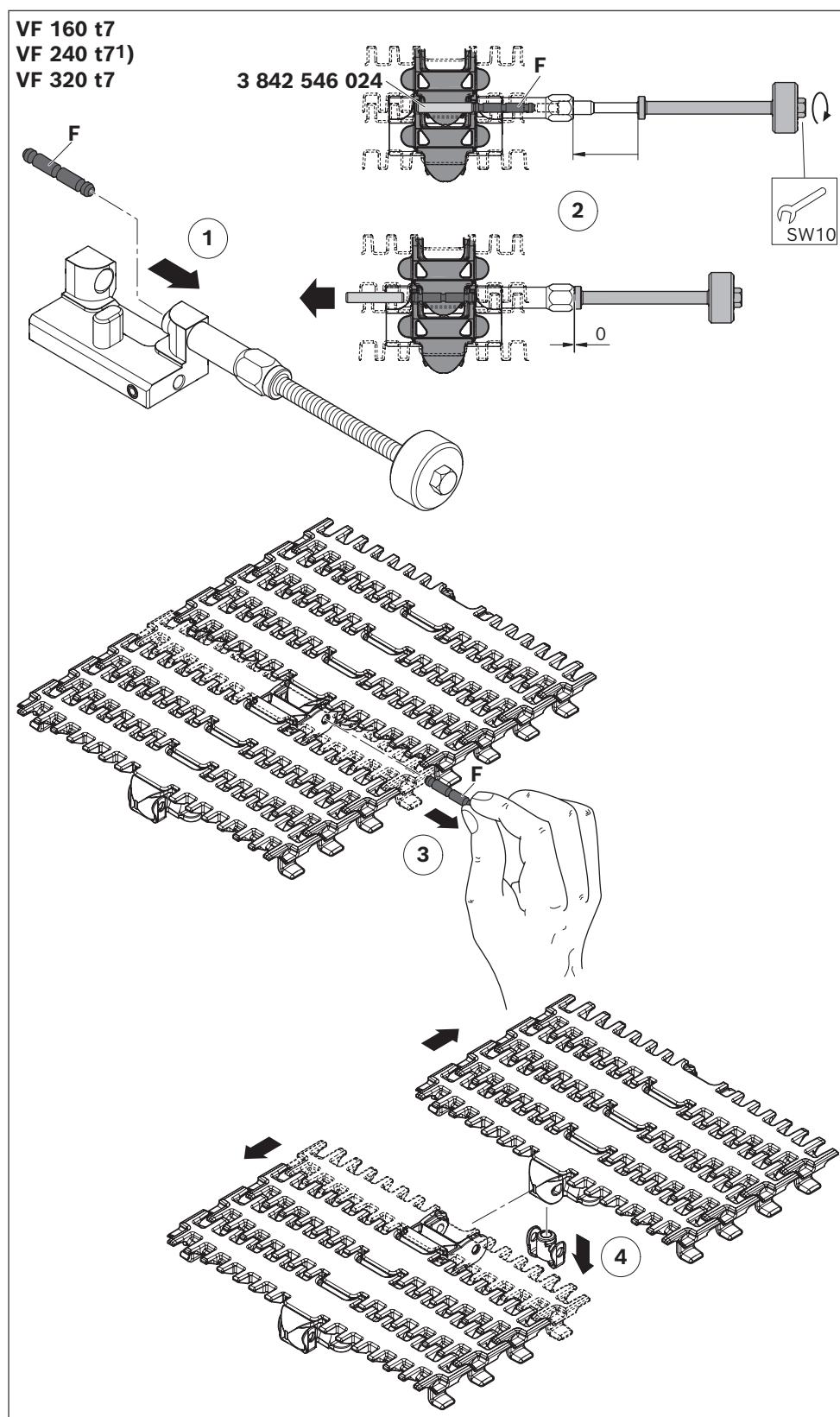


Fig. 78: Opening (shortening) the conveyor chain, VF 160 t7 / VF 240 t7 / VF 320 t7

562 411-76

Roller cleat D35

Required accessories:

- Roller cleat D35 (G)

G, VF 65-120: **3842 546 107**

G, VF 160: **3842 564 331**

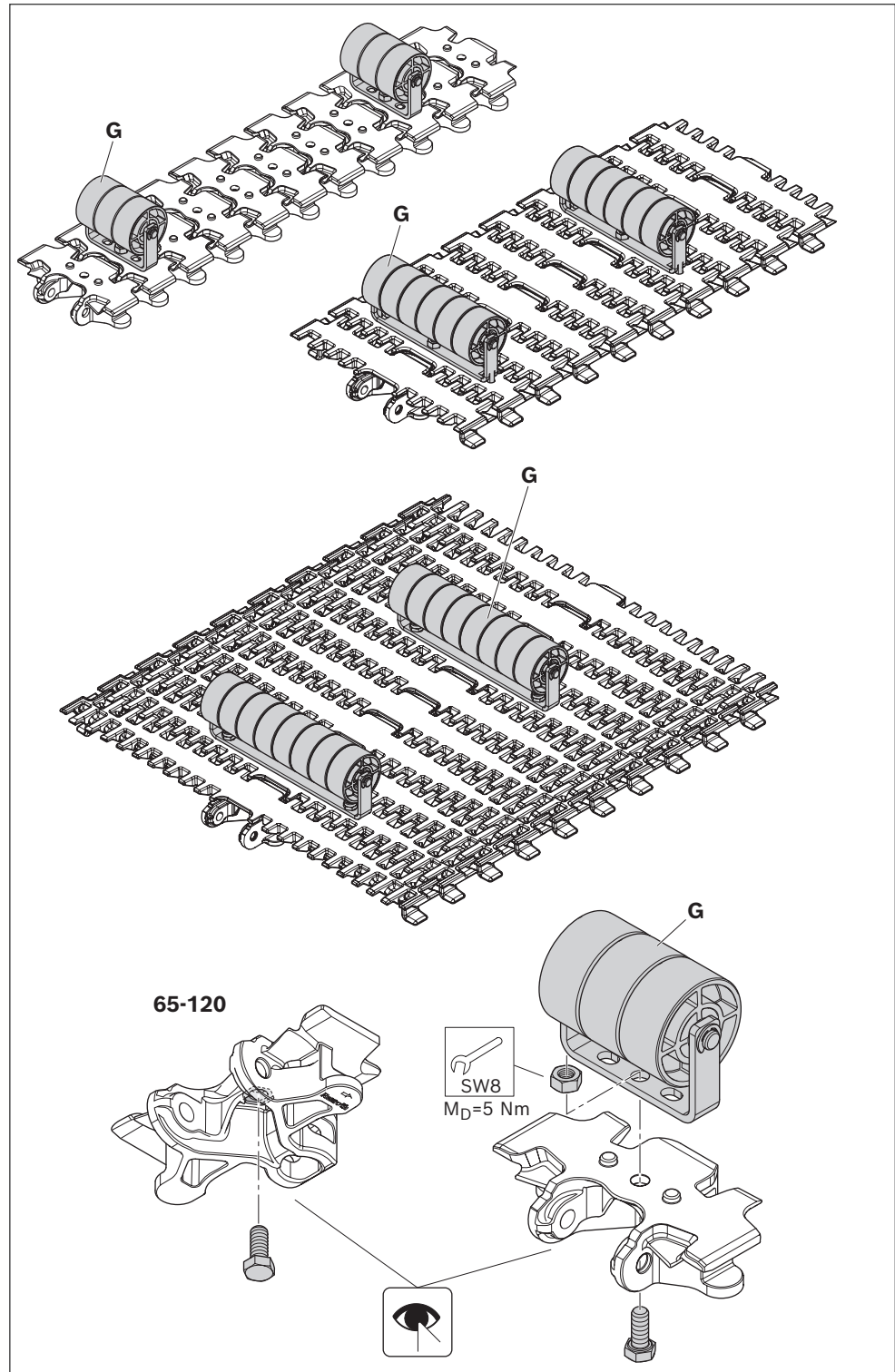
G, VF 240-320: **3842 553 028**

- Install the roller cleat.



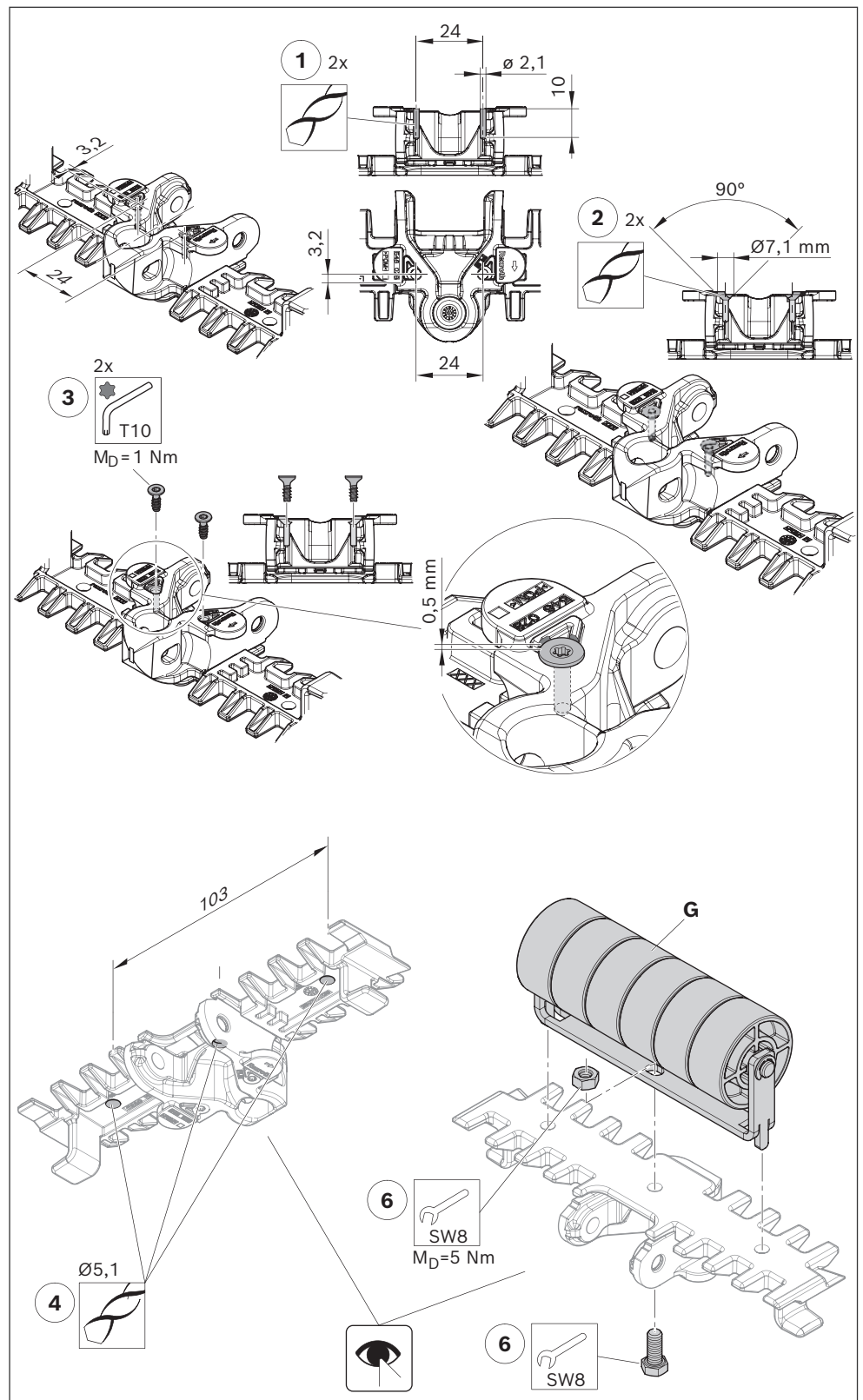
Please note:

- Remove a few chain links from the conveyor chain after a break-in period of approx. 40 hours (see pages 89, 91).



562 411-78

Fig. 79: Installing the roller cleat D35, VF 65-120 (1/3)



562 411-79

Fig. 80: Installing the roller cleat D35, VF 160 (2/3)

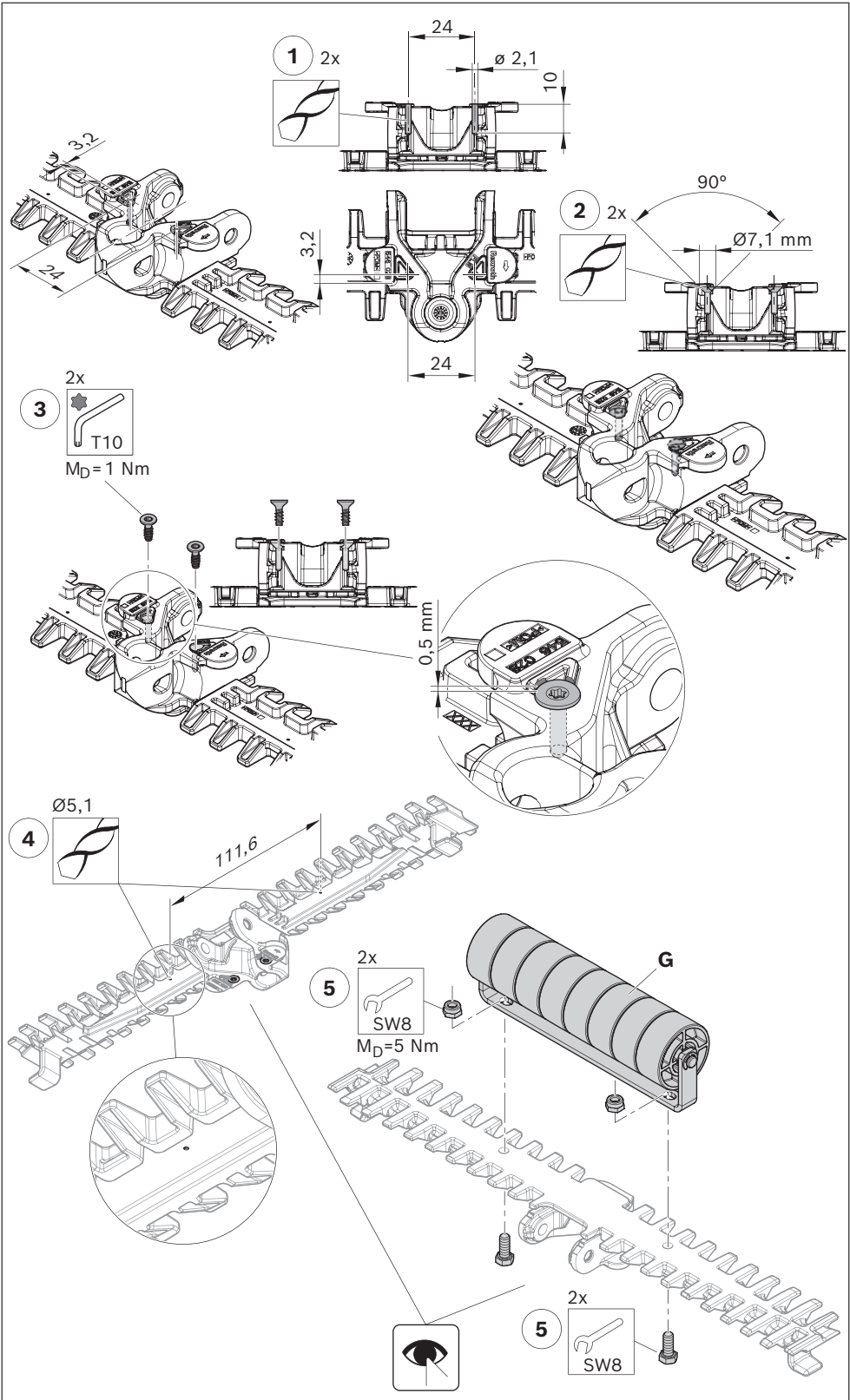


Fig. 81: Installing the roller cleat D35, VF 240-320 (3/3)

562 411-80

7.5.8 Connection kit

Passive connection kit

Required accessories:

- Passive connection kit (A)

A, VF 65:	3842 549 015
A, VF 90:	3842 549 016
A, VF 120:	3842 549 017
A, VF 160:	3842 549 018*)

*) Only for flat conveyor chain t7.

1. Install the side plates (a).



Please note:

The connection kit only functions fault-free if the correct distance between the base unit and return unit exists and the roller element has the correctly aligned conveyor height (the static friction chain is 2 mm higher than the flat conveyor chain).

2) System AL: The distance is correct if the centering tab abuts the end of the slot.

3) System STS: The distance is correct if the side plate abuts the head of the screw.

4) Static friction chains 65 - 120 and flat conveyor chain 160 t7: The conveyor height is correct if the centering tab abuts the top of the slot.

5) Flat conveyor chain 65 - 120: The conveyor height is correct if the centering tab rests on the bottom of the slot.

2. Clip the roller element (b) into the side plates.

1) Size shown, between base unit AL and return unit AL

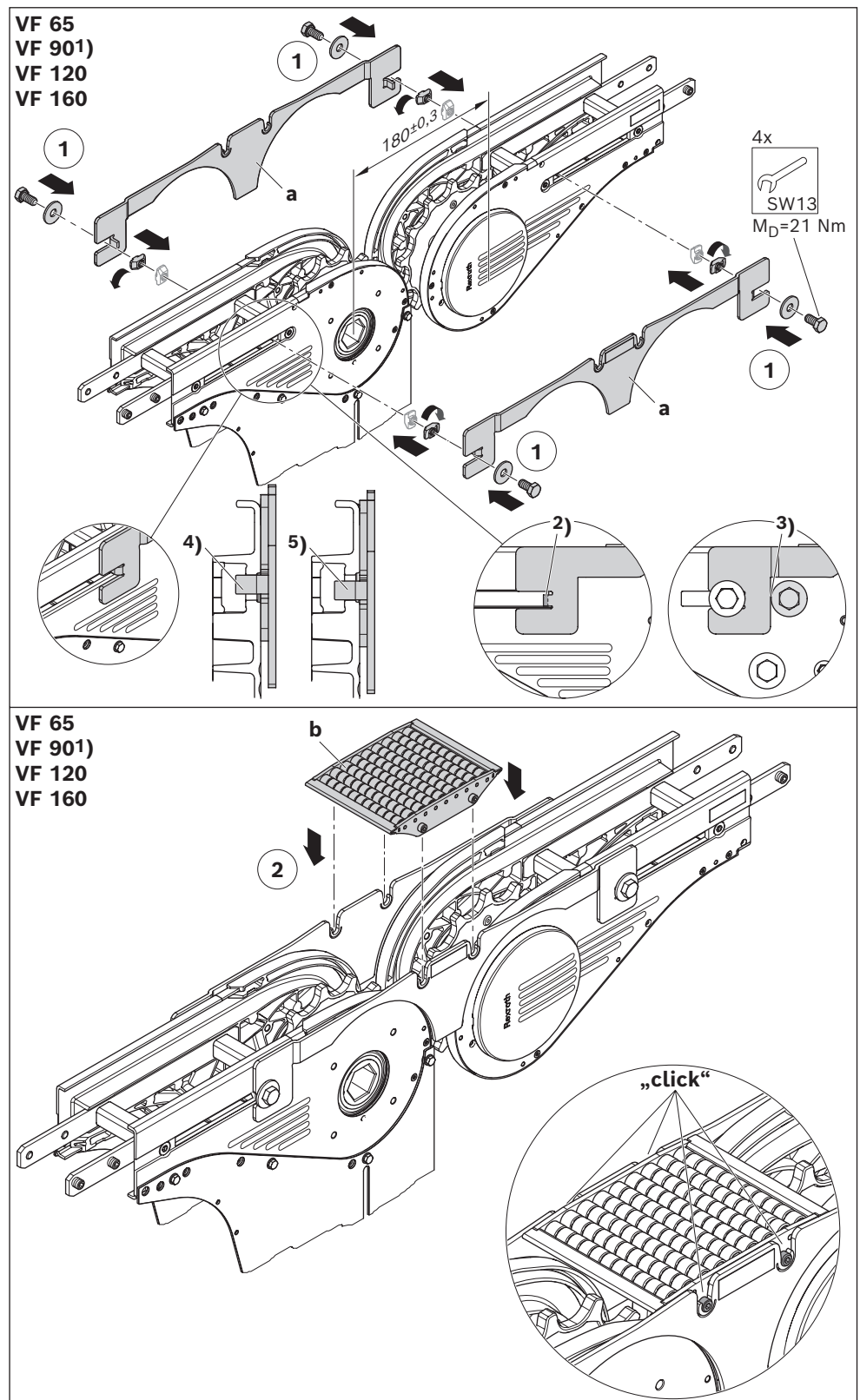


Fig. 82: Installing the passive connection kit

Required accessories:

- Connection kit short passive bridge:
 - For flat conveyor chain (B)
 - For static friction chain (C)

B, VF 65: **3842 558 050**B, VF 90: **3842 558 051**B, VF 120: **3842 558 052**B, VF 160: **3842 558 081^{*)}**C, VF 65: **3842 558 078**C, VF 90: **3842 558 072**C, VF 120: **3842 558 080**

*) Only for flat conveyor chain t7.

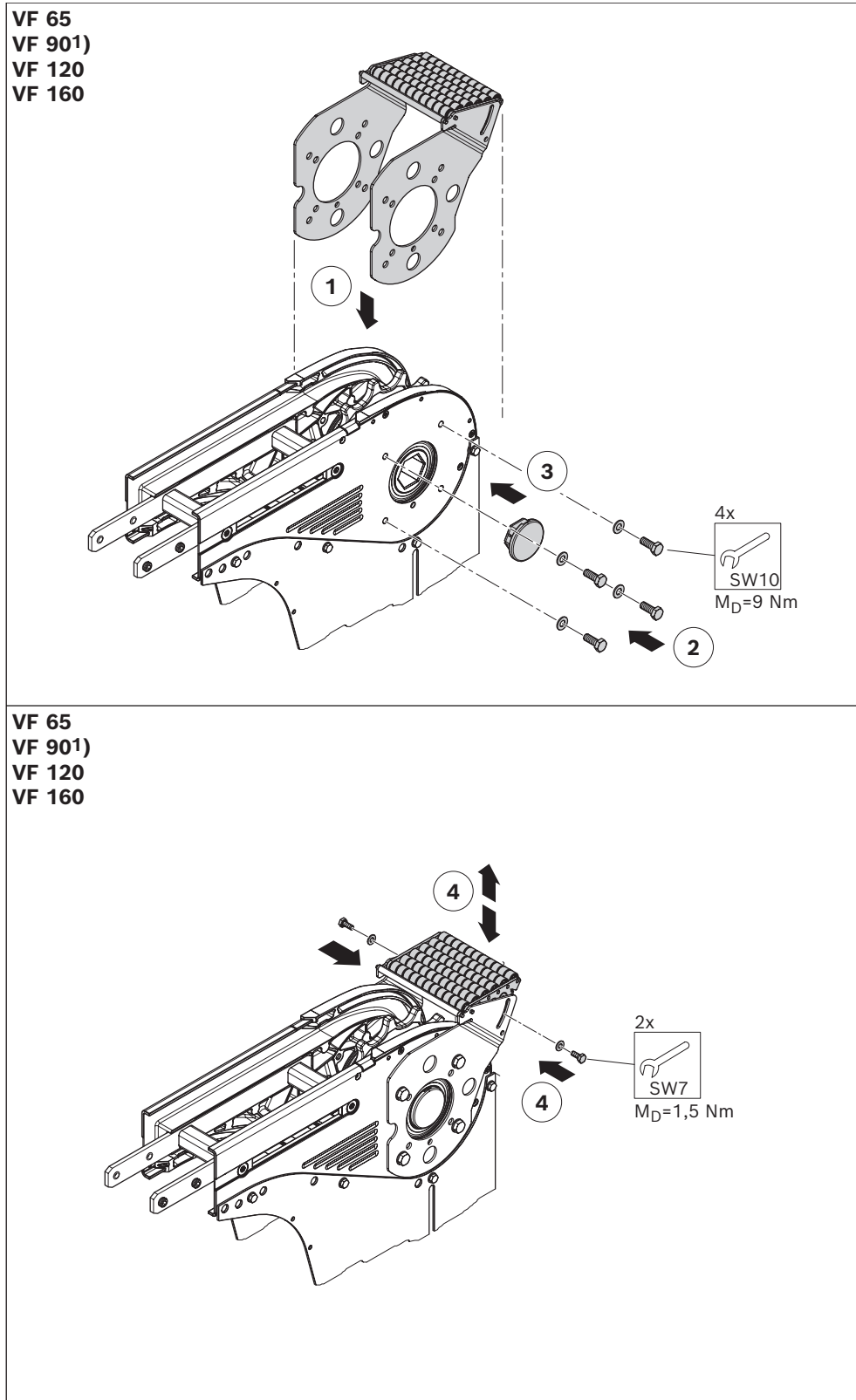
1. Install the connection kit on a basic unit or return unit (steps 1 to 3).
2. Adjust the angle of inclination ($0^\circ - 15^\circ$) of the roller element and fix it by means of a screw (step 4).

**Please note:**

The connection kit only functions fault-free if the correct distance between the base unit and return unit exists and the roller element has the correctly aligned conveyor height (the static friction chain is 2 mm higher than the flat conveyor chain).

1) Size shown, to base unit AL

Short passive bridge connection kit

**Fig. 83: Installing the passive connection kit**

562 411-82

Short sliding bridge connection kit

Required accessories:

- Short sliding bridge connection kit:
– for flat conveyor chain

VFplus 65:	3842 571 170
VFplus 90:	3842 571 171
VFplus 120:	3842 571 172
VFplus 160:	3842 571 206 ^{*)}
VFplus 240:	3842 571 207 ^{*)}
VFplus 320:	3842 571 208 ^{*)}

^{*)} Only for flat conveyor chain t7.

1. Install the connection kit on a basic unit or return unit (steps 1 to 3).
Do not yet fully tighten the screws.
2. Adjust the angle of inclination ($0^\circ - 15^\circ$) of the sliding bridge and fix it by means of screws (step 4 - 6.3).

**Please note:**

The connection kit only functions fault-free if the distance between base unit and return unit is correct and if the conveyor height is correctly aligned. For this purpose, the sliding bridge can be moved horizontally.

1) Size shown, to base unit AL

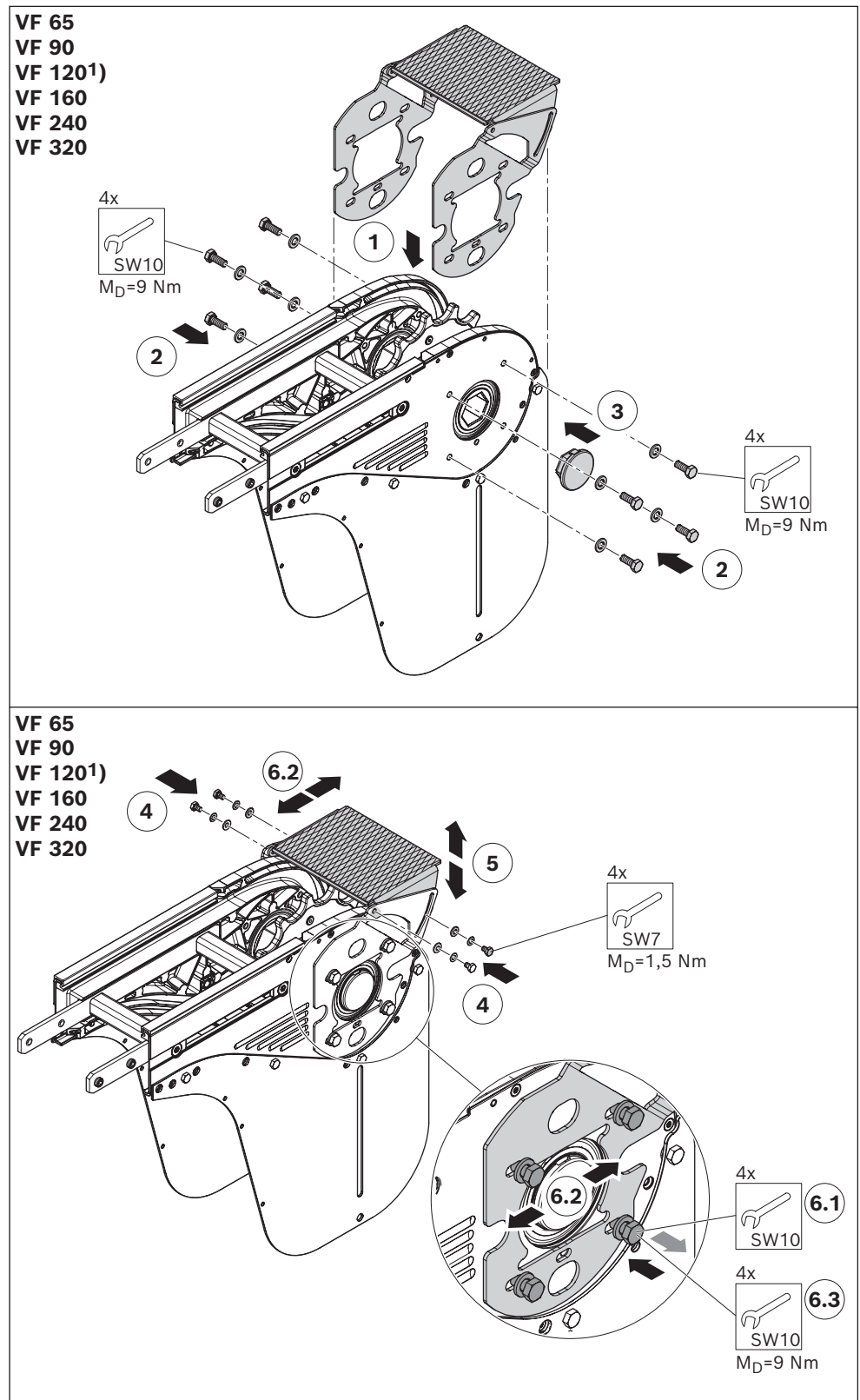


Fig. 84: Installing the short sliding bridge connection kit

562 411-185

Required accessories:

- Connection kit, active roller bridge:
 - For flat conveyor chain and static friction chain (E)
 - For flat conveyor chain (F)

E, VF 65: **3842 555 820**E, VF 90: **3842 555 821**E, VF 120: **3842 555 822**F, VF 160 t7: **3842 555 823^{*)}**

*) Only for flat conveyor chain t7.

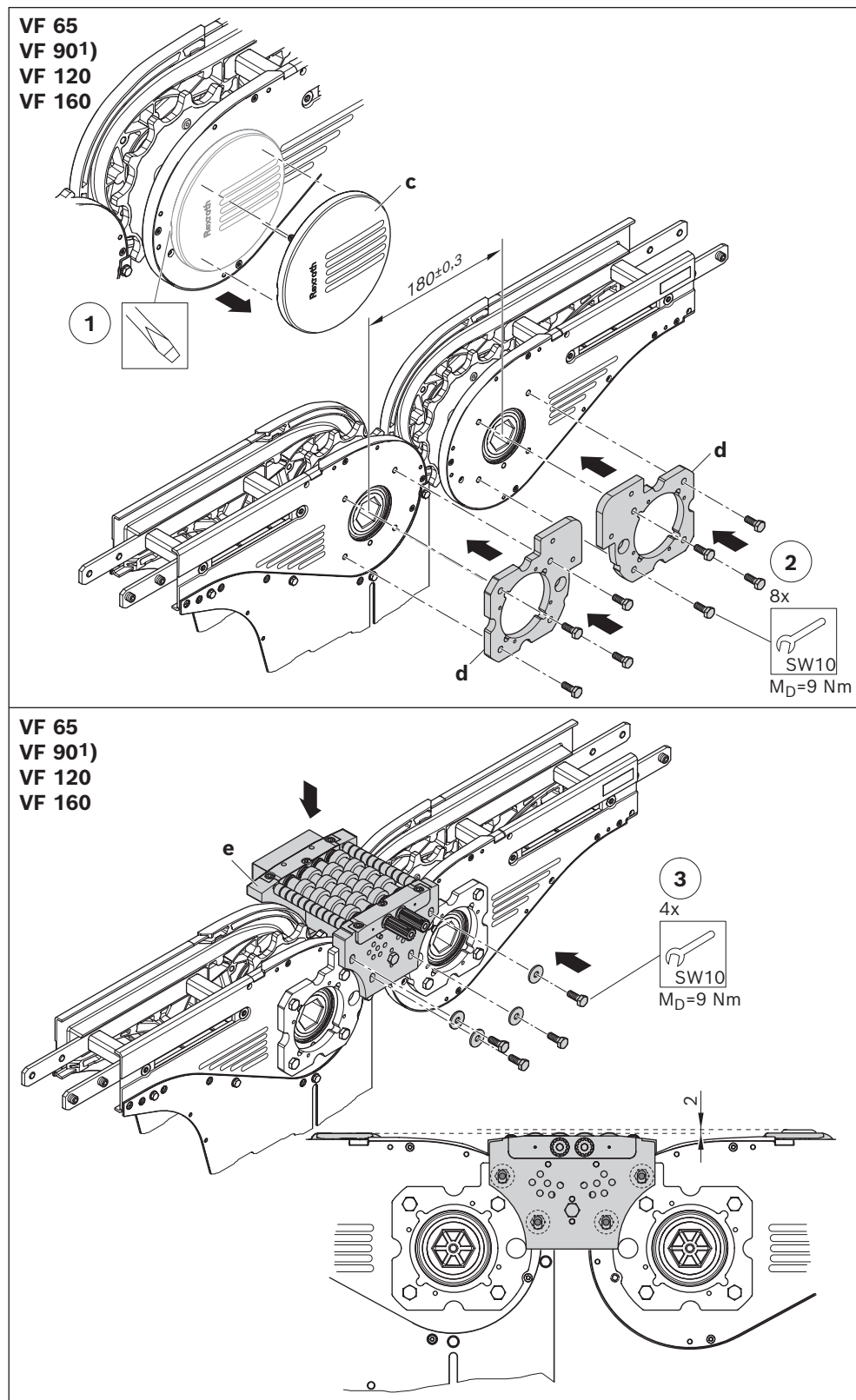
1. If necessary only:
Disassemble the cover cap (c).
2. Install the adapter plates (d).
3. Install the roller element (e).

**Please note:**

The connection kit only functions fault-free if the correct distance between the base unit and return unit exists and the roller element has the correctly aligned conveyor height (the static friction chain 65 - 120 and the flat conveyor chain 160 t7 are 2 mm higher than the flat conveyor chain 65 - 120).

- Align the conveyor height of the roller element (with the aid of two pieces of chain on both sides of the roller element).

1) Size shown, between base unit AL and return unit AL

Active connection kit**Fig. 85: Installing the active connection kit (1/4)**

562 411-83

Active connection kit:

4. Install the sliding rail and conveyor chain before installing the drive of the connection kit.

1) Size shown

Connection drive for bridging the conveyor trench

2) The Machinery Directive 2006/42/EC requirement for captive screws on protective covers is fulfilled if this lock washer (x) is fitted.

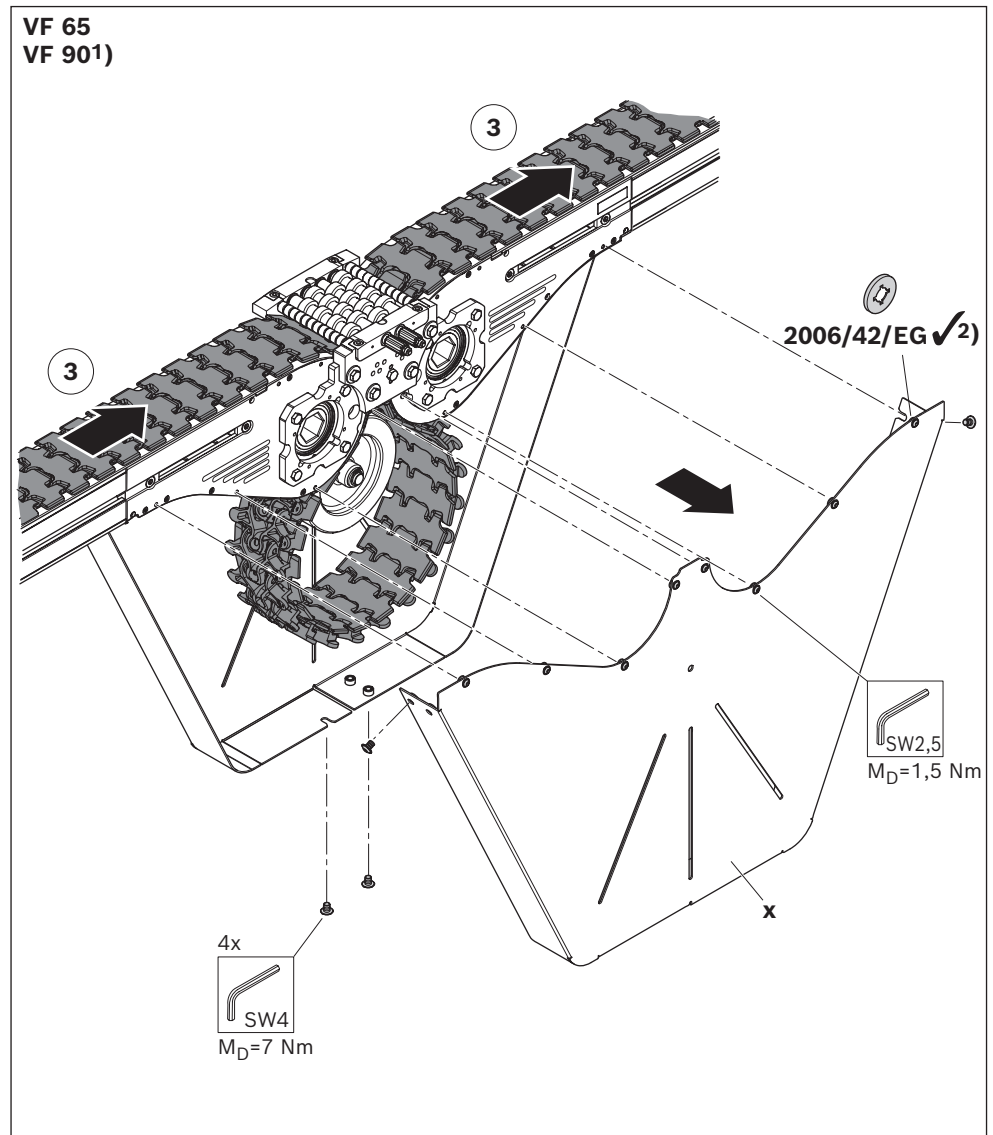


Fig. 86: Installing the connection drive (2/4)

562 411-84

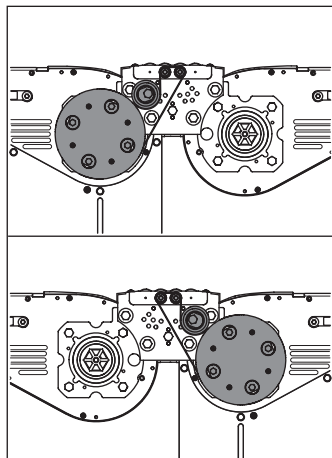
ENGLISH

5. Install the toothed belt wheel (f).



Please note:

- You should preferably install the toothed belt wheel on the base unit (drive).



562 411-85

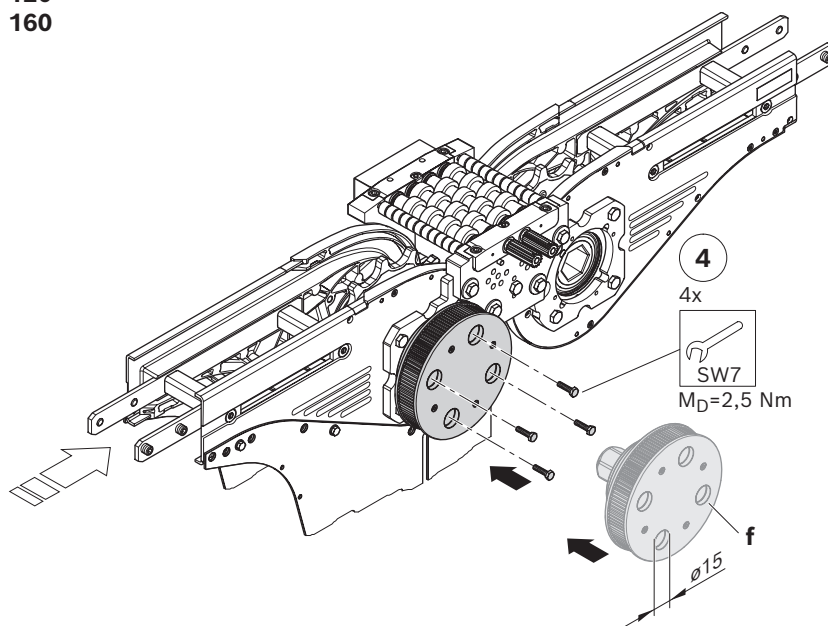
Fig. 87: Position of toothed belt wheel

6. Install the toothed belt (g).
7. Install the tensioner pulley (h) and tighten the toothed belt.

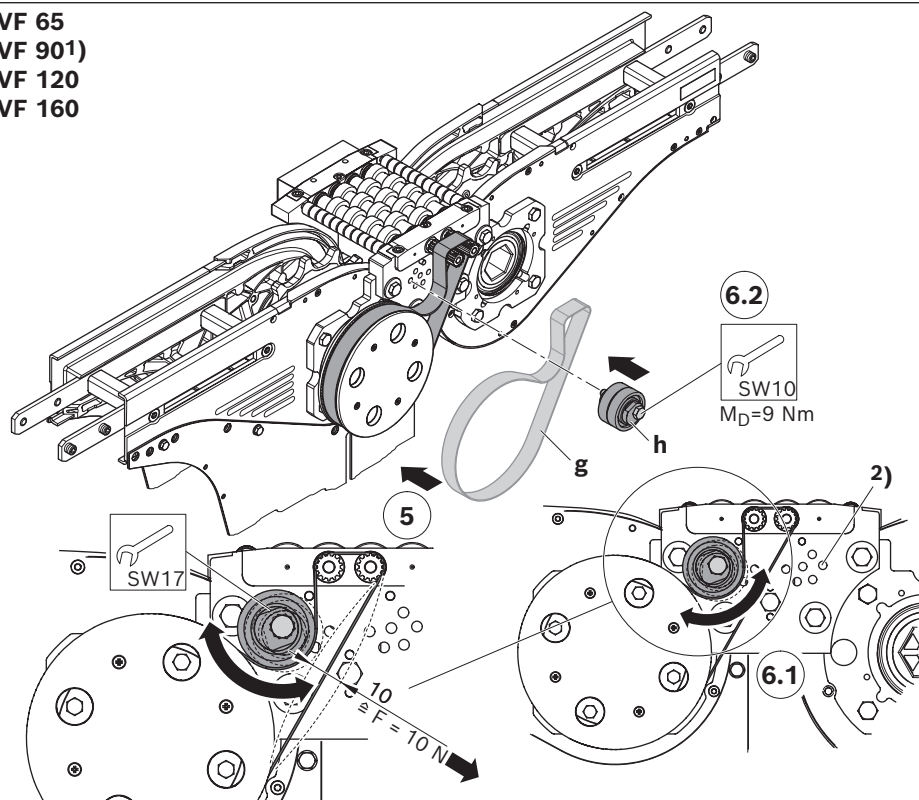
1) Size shown, between base unit AL and return unit AL

2) It is possible to place the tensioner pulley in different positions, depending on the length of the toothed belt.

VF 65
VF 901)
VF 120
VF 160



VF 65
VF 901)
VF 120
VF 160



562 411-86

Fig. 88: Installing the active connection kit (3/4)

8. Install the protective cover of the drive (j).
9. Install the cover sheet (k).

1) Size shown, between base unit AL and return unit AL

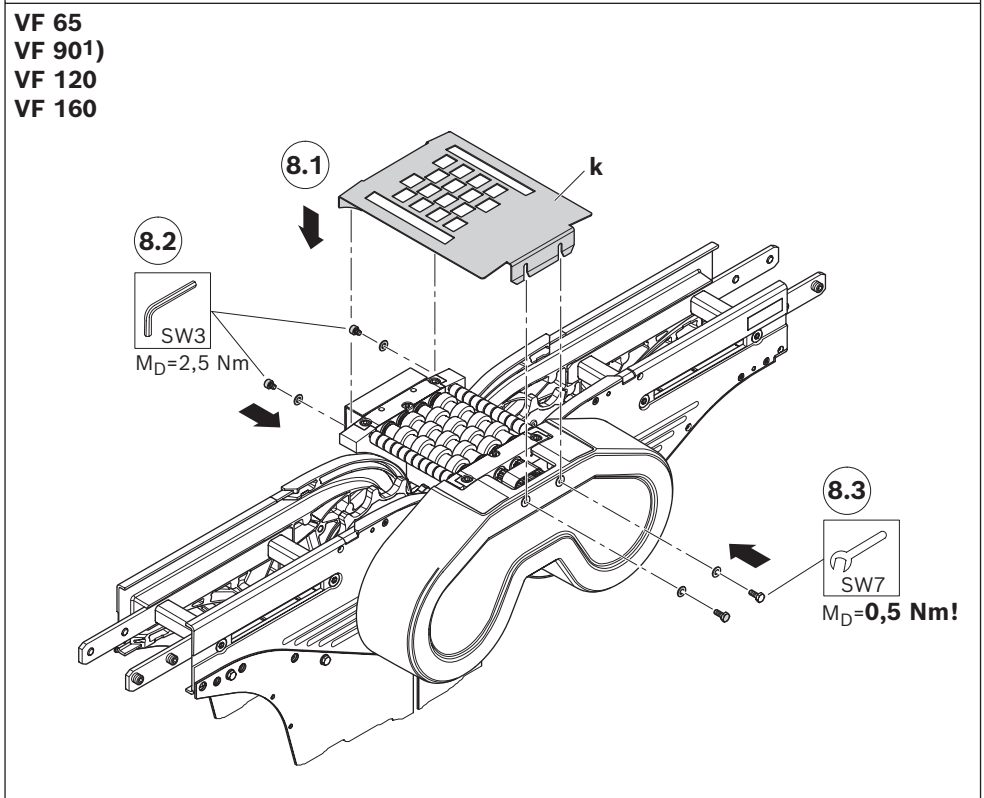
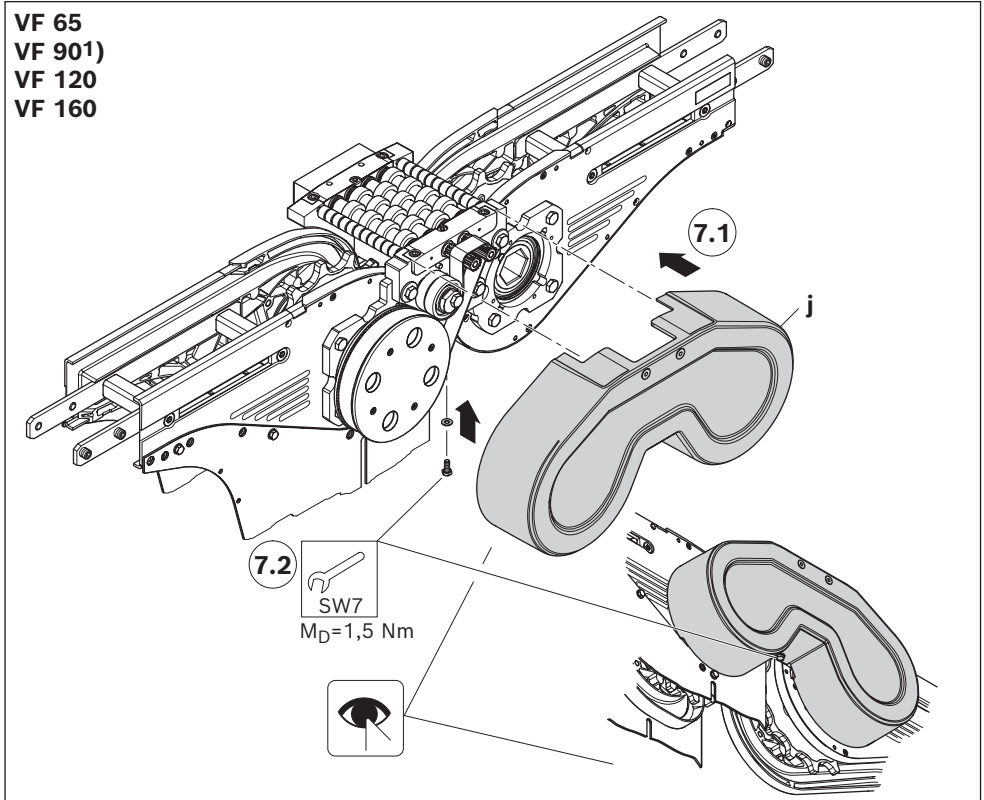


Fig. 89: Installing the active connection kit (4/4)

562 411-87

Required accessories:

- Connection kit, active machine connection:
 - For flat conveyor chain and static friction chain (G)
 - For flat conveyor chain (H)

G, VF 65: **3841 055 718** (R)
3841 055 719 (L)

G, VF 90: **3841 055 720** (R)
3841 055 721 (L)

G, VF 120: **3841 055 722** (R)
3841 055 723 (L)

H, VF 160: **3841 055 724*** (R)
3841 055 725* (L)

*) Only for flat conveyor chain t7.

1. If necessary only:
Disassemble the cover cap (c).
2. Install the adapter plate (d).
3. Install the roller element (e).

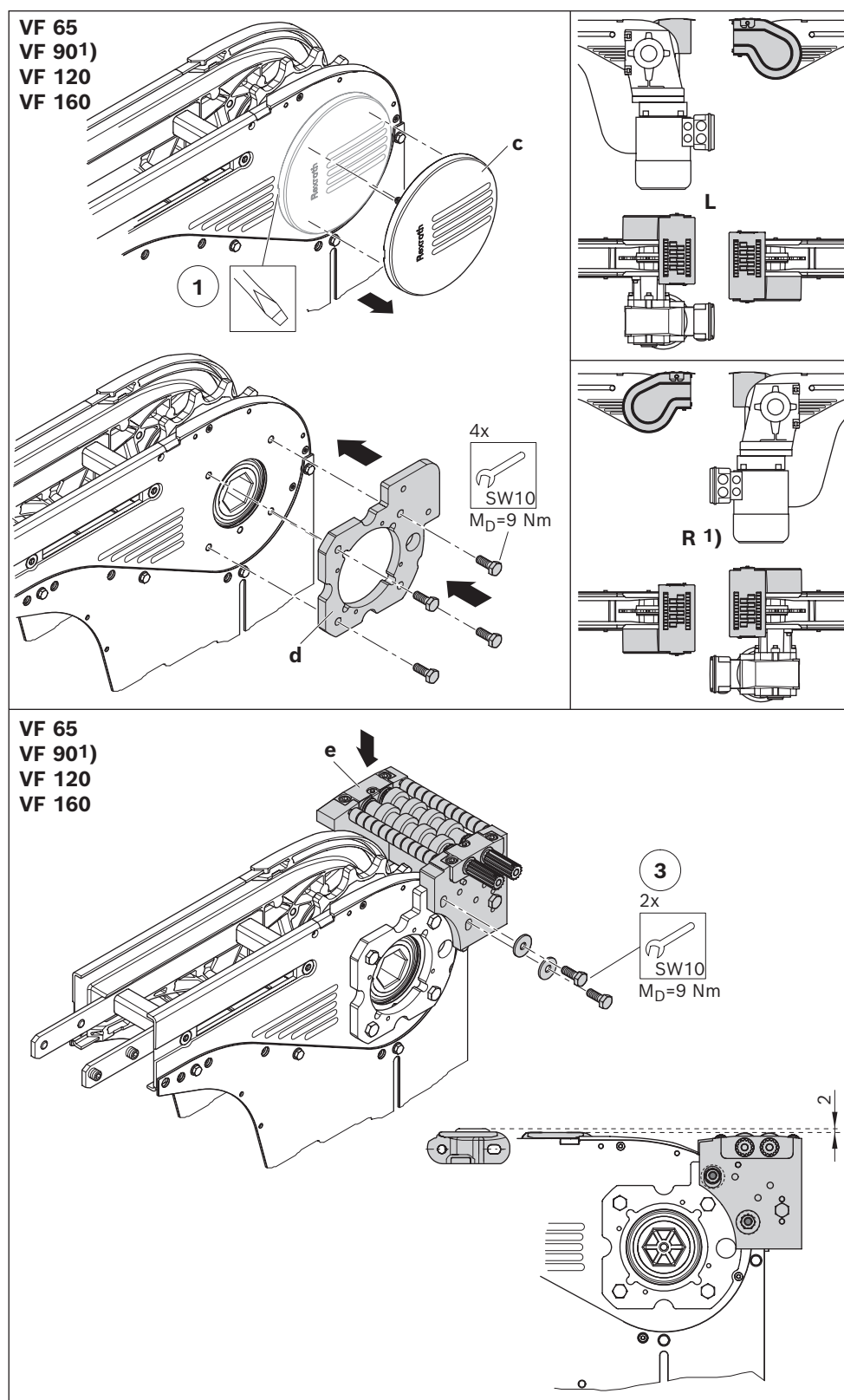
**Please note:**

The connection kit only functions fault-free if the roller element has the correctly aligned conveyor height (the static friction chain 65 - 120 and the flat conveyor chain 160 t7 are 2 mm higher than the flat conveyor chain 65 - 120).

- Align the conveyor height of the roller element (with the aid of two pieces of chain).

¹⁾ Size shown, right-hand installation position (R)

Active connection kit, machine connection



562 411-88

Fig. 90: Installing the active connection kit, machine connection (1/3)

4. Install the toothed belt wheel (f).



Please note:

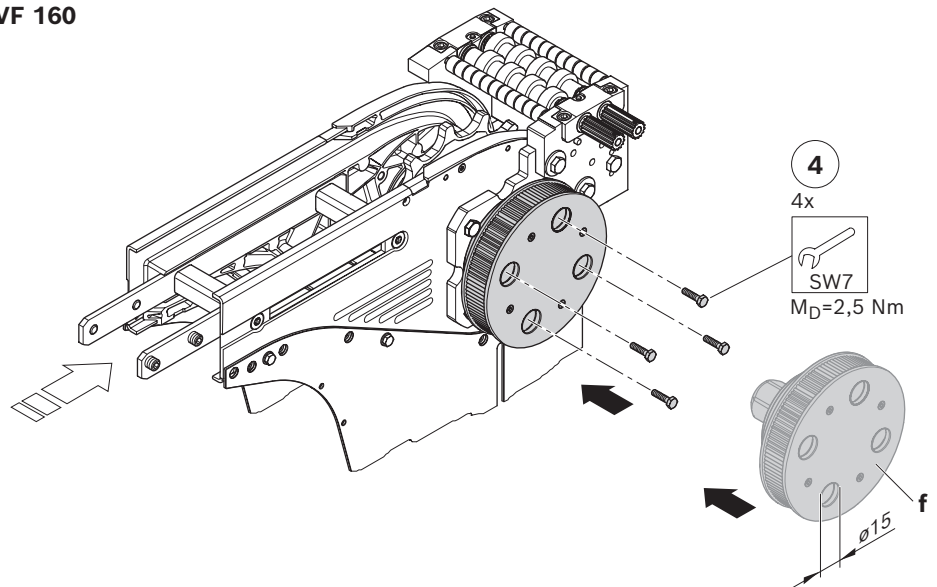
Always install the toothed belt wheel on the base unit (drive).

5. Install the toothed belt (g).
6. Install the tensioner pulley (h).

1) Size shown

2) It is possible to place the tensioner pulley in different positions, depending on the length of the toothed belt.

VF 65
VF 901)
VF 120
VF 160



VF 65
VF 901)
VF 120
VF 160

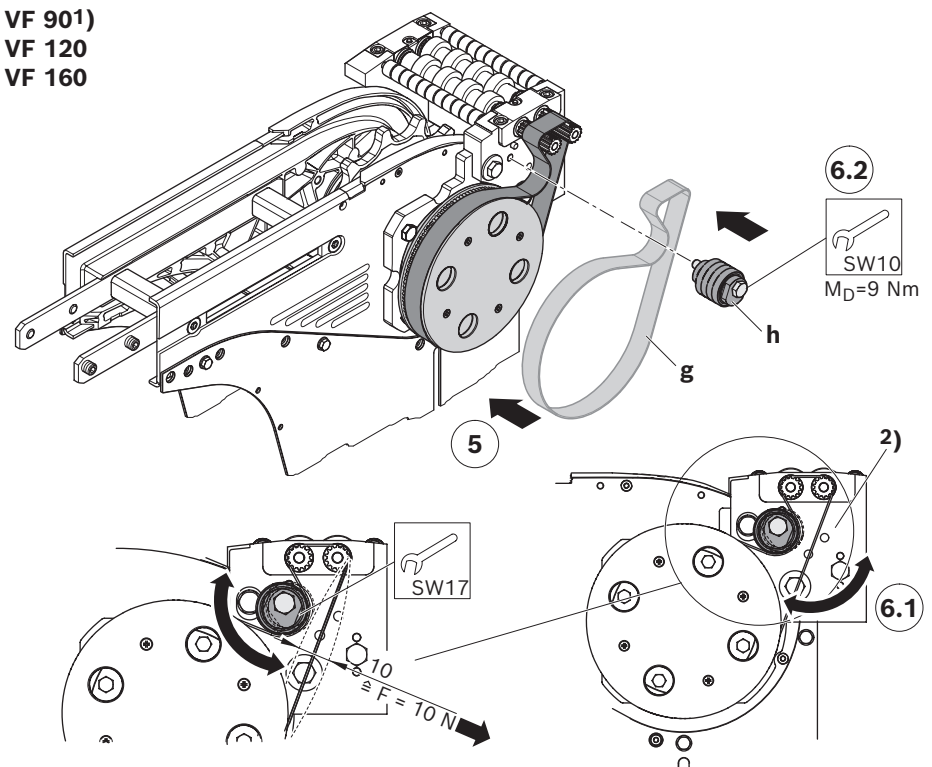


Fig. 91: Installing the active connection kit, machine connection (2/3)

562 411-89

7. Install the protective cover of the drive (j) and the rear cover (k).
8. Install the protective cover of the roller element (l).

1) Size shown

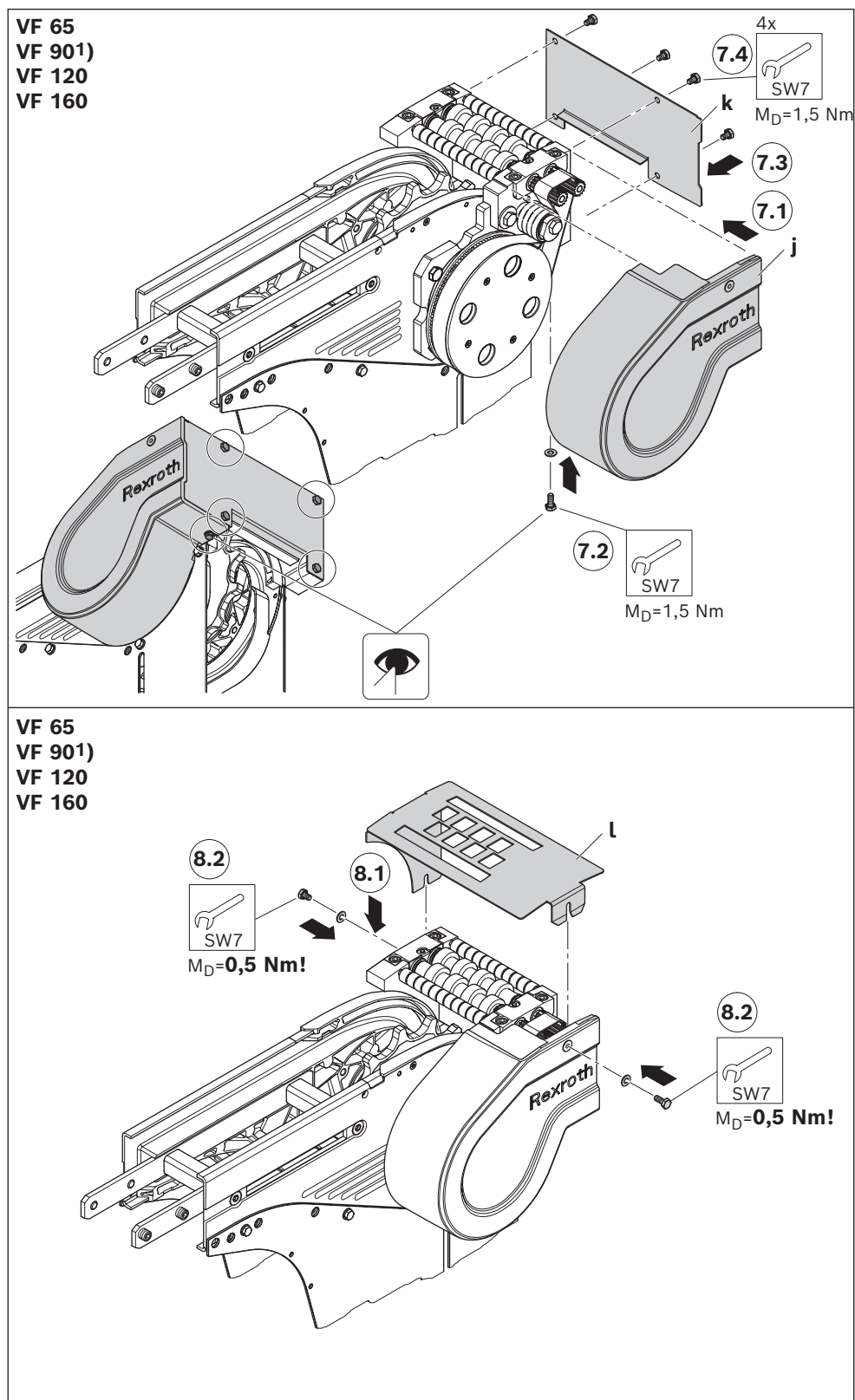


Fig. 92: Installing the active connection kit, machine connection (3/3) lateral guide

Required accessories:

- Connection kit, active machine variant:
 - For flat conveyor chain and static friction chain (I)
 - For flat conveyor chain (J)

I, VF 65:

left: **3841 558 000**right: **3841 558 001**

I, VF 90:

left: **3841 558 002**right: **3841 558 003**

I, VF 120:

left: **3842 558 004**right: **3842 558 005**

J, VF 160:

left: **3842 558 006^{*)}**right: **3842 558 007^{*)}**

*) Only for flat conveyor chain t7.

1. If necessary only:
Disassemble the cover cap (a).
2. Mount the adapter plate (b) with washer (c).
3. Install the protective profile (d).
4. Install the belt element (e).

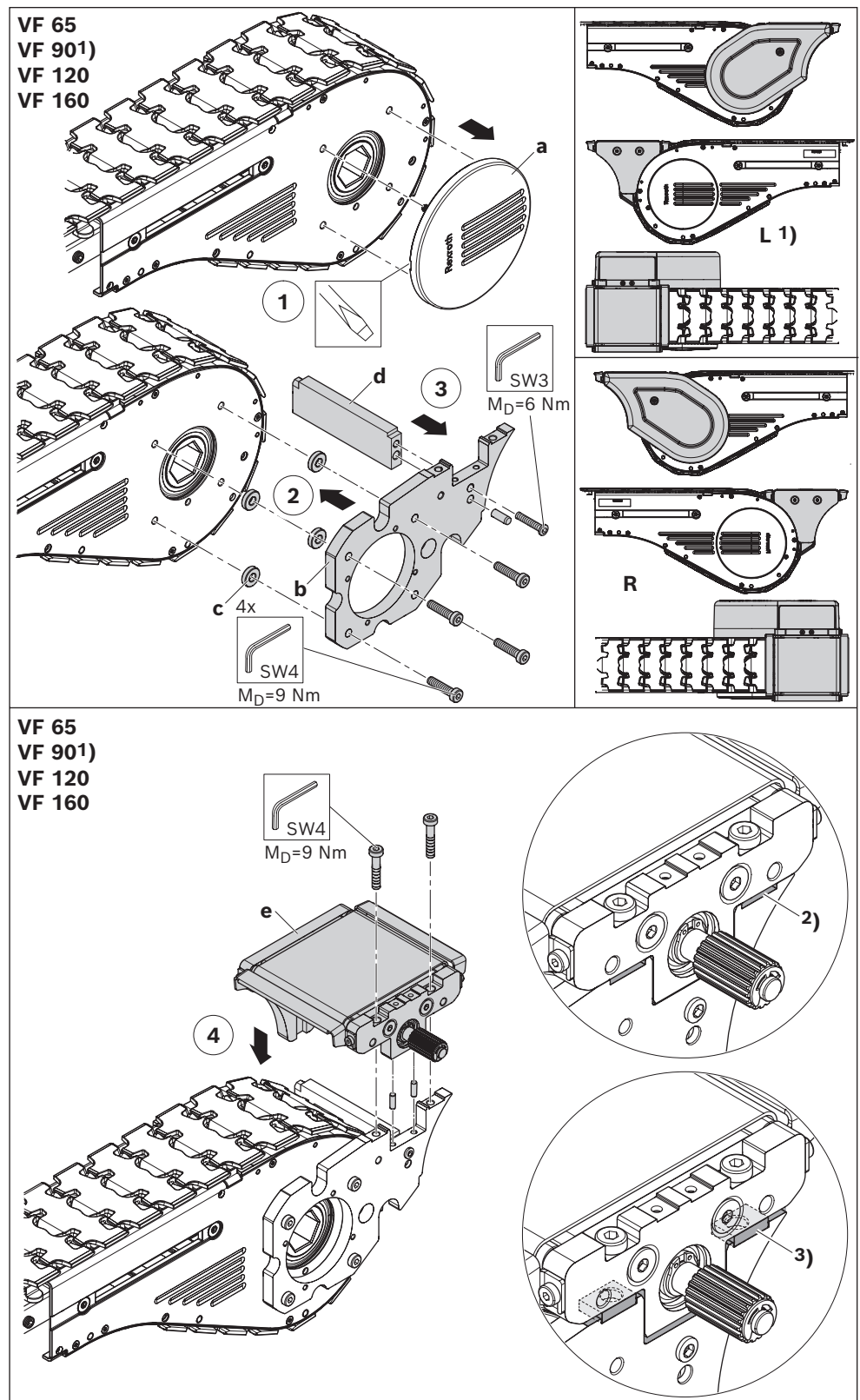
**Please note:**

The connection kit only functions fault-free if the belt bridge has the correctly aligned conveyor height (the static friction chain 65 - 120 is 2 mm higher than the flat conveyor chain).

- **For the static friction chain and the flat conveyor chain VF 160 t7, install additional plates.**

- 1) Size shown, left mounting position (L), flat conveyor chain
- 2) **Without** spacer plates when operating with flat conveyor chain 65 - 120
- 3) **With** spacer plates (included in the scope of delivery) when operating with static friction chain 65 - 120 and flat conveyor chain 160 t7

Active connection kit belt (belt bridge)

**Fig. 93: Installing the active belt connection kit (belt bridge) (1/4)**

562 411-91

5. Install the toothed belt wheel (f).
6. Install the toothed belt (g).
7. Install the tensioner pulley (h).

**Please note:**

The eccentric position is different for flat conveyor chain and static friction chain.

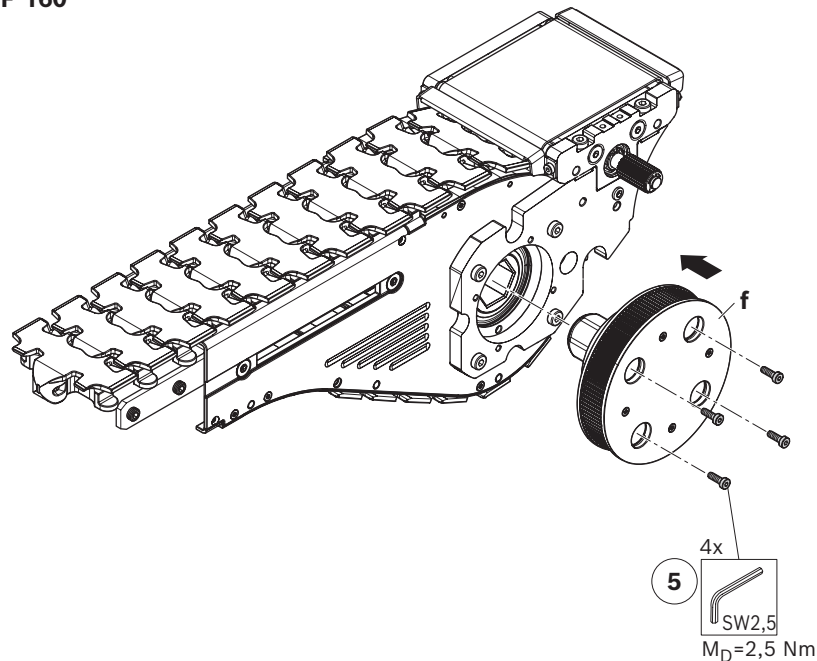
With the static friction chain, the eccentric is not fully tensioned.

1) Size shown, left mounting position (L), flat conveyor chain

2) Eccentric position:
Flat conveyor chain 65 - 120

3) Eccentric position:
Flat conveyor chain 160 t7 and
static friction chains 65 - 120

VF 65
VF 901)
VF 120
VF 160



VF 65
VF 901)
VF 120
VF 160

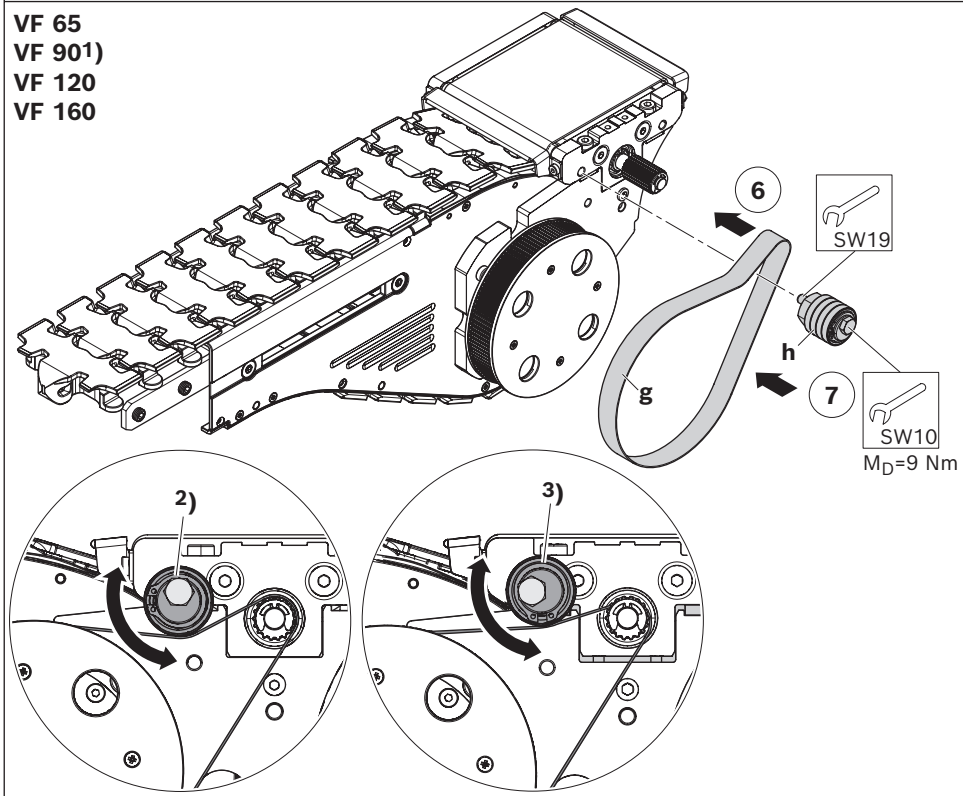


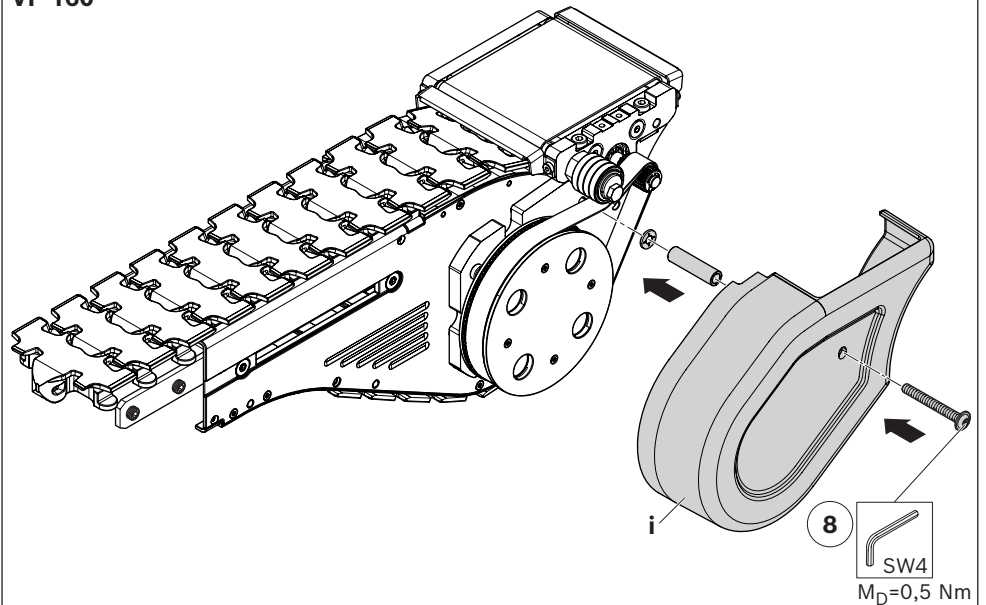
Fig. 94: Installing the active belt connection kit (belt bridge) (2/4)

562 411-92

8. Install the protective cover (i) of the drive.
9. Install the cover sheet (j).

1) Size shown, left mounting position (L), flat conveyor chain

VF 65
VF 901)
VF 120
VF 160



VF 65
VF 901)
VF 120
VF 160

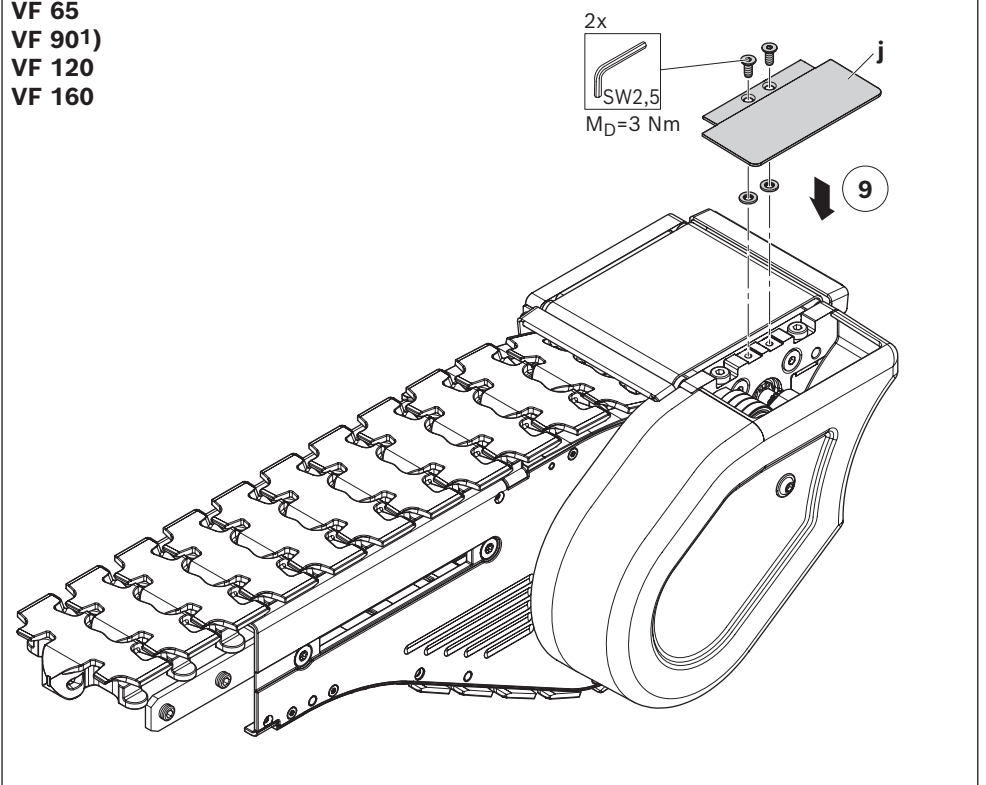


Fig. 95: Installing the active belt connection kit (belt bridge) (3/4)

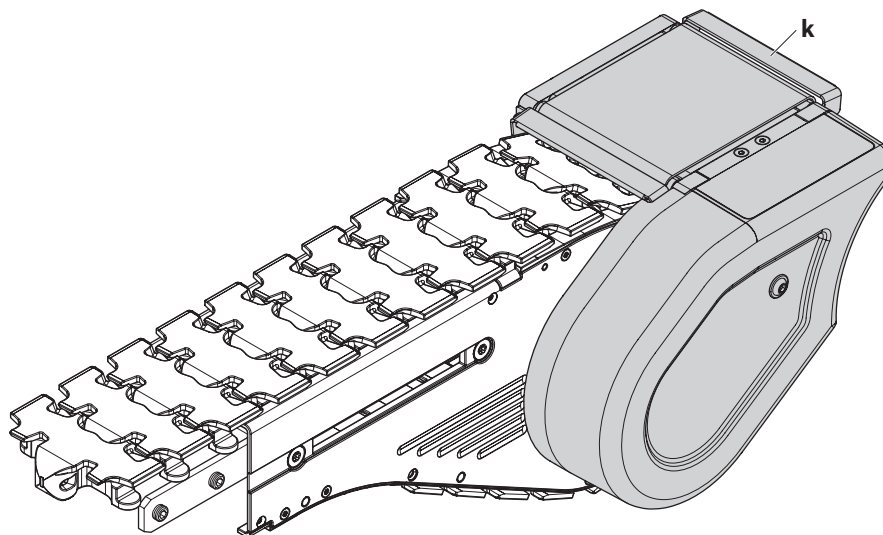
562 411-93

**Please note:**

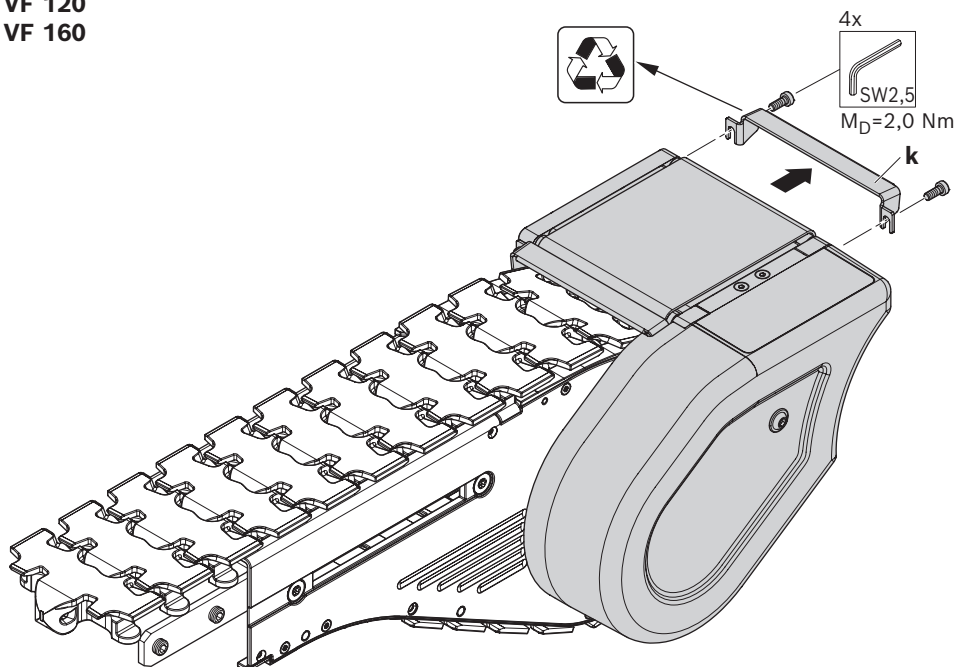
The transfer element (k) is only required if an additional VarioFlow *plus* unit is connected to the belt bridge.

1) Size shown, left mounting position (L), flat conveyor chain

VF 65
VF 901)
VF 120
VF 160



VF 65
VF 901)
VF 120
VF 160



562 411-94

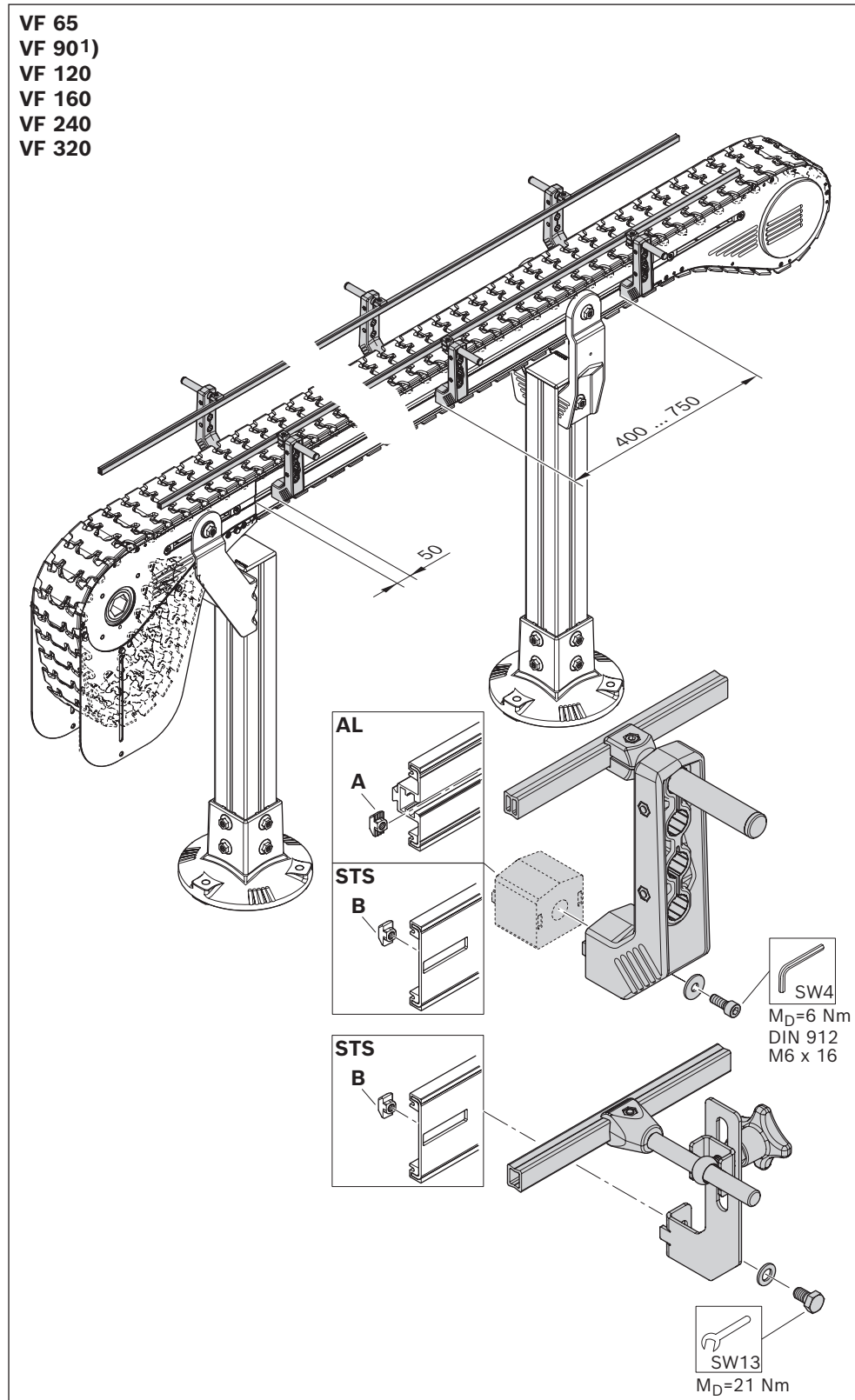
Fig. 96: Installing the active belt connection kit (belt bridge) (4/4)
(at the top with the transfer element; below, the transfer element is removed)

7.5.9 Lateral guide

Installing the lateral guide

► Install the lateral guide.

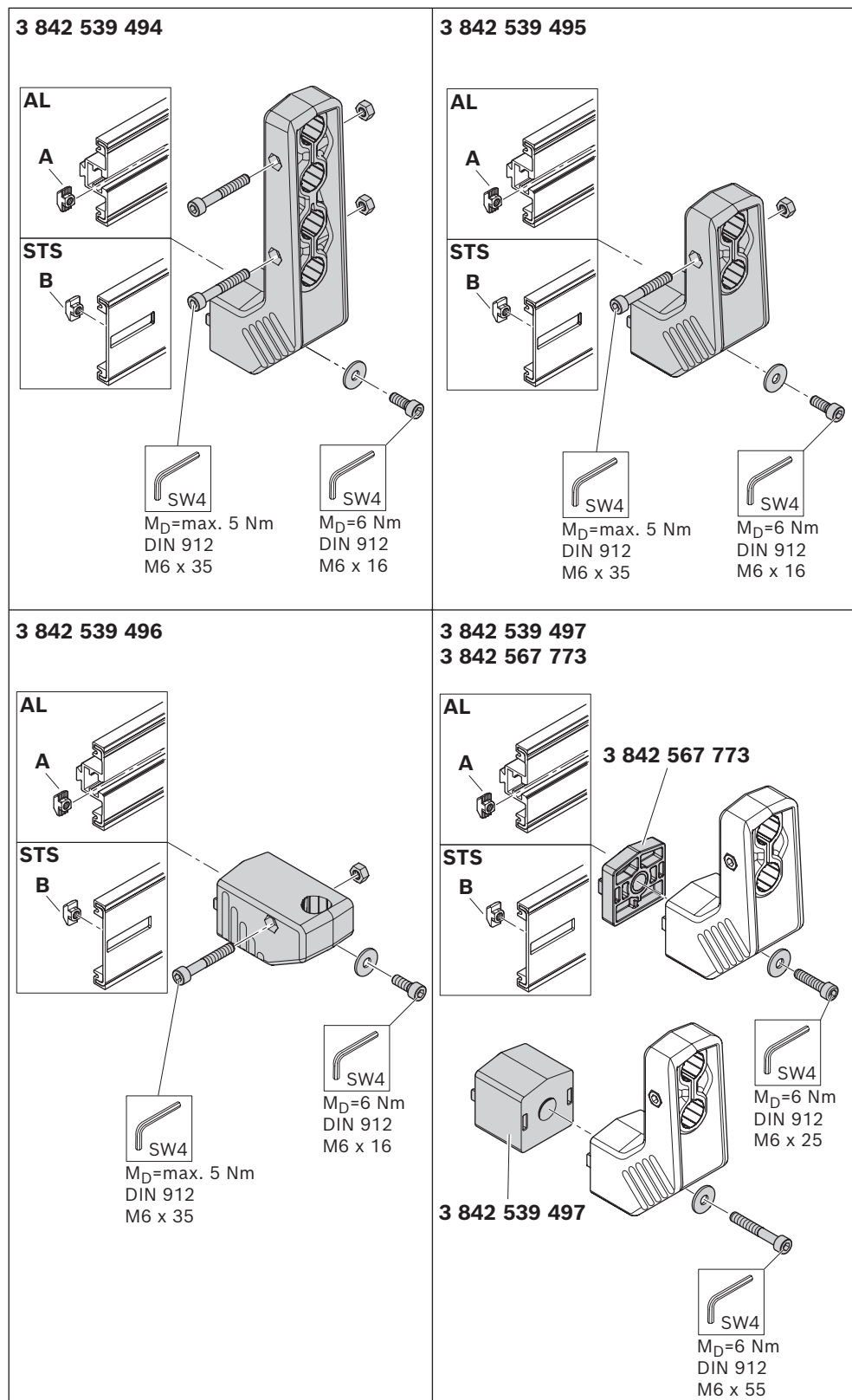
1) Size shown



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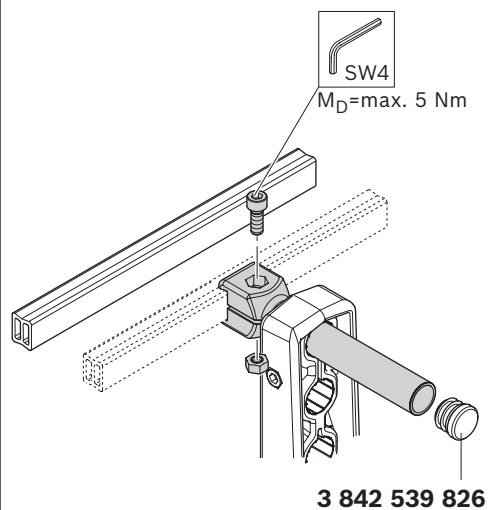
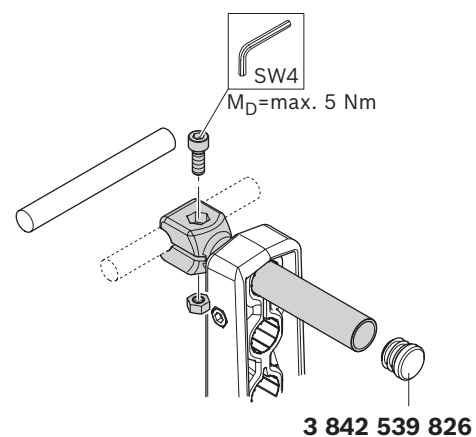
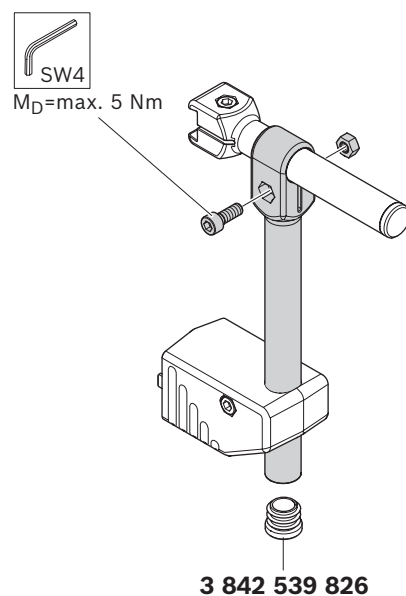
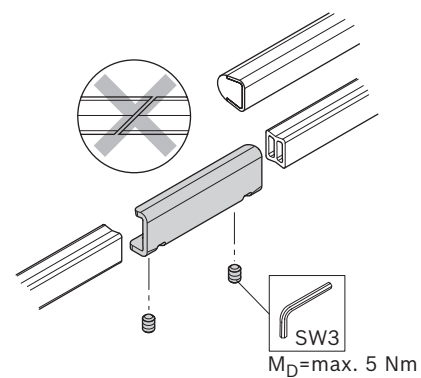
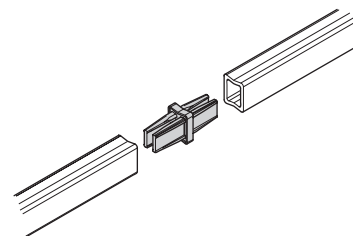
Fig. 97: Installing the lateral guide

Lateral guide accessories



562 411-96

Fig. 98: Lateral guide accessories (1/8)

3 842 539 499**3 842 539 498****3 842 539 500****3 842 539 613****3 842 539 345****Fig. 99: Lateral guide accessories (2/8)**

562 411-97

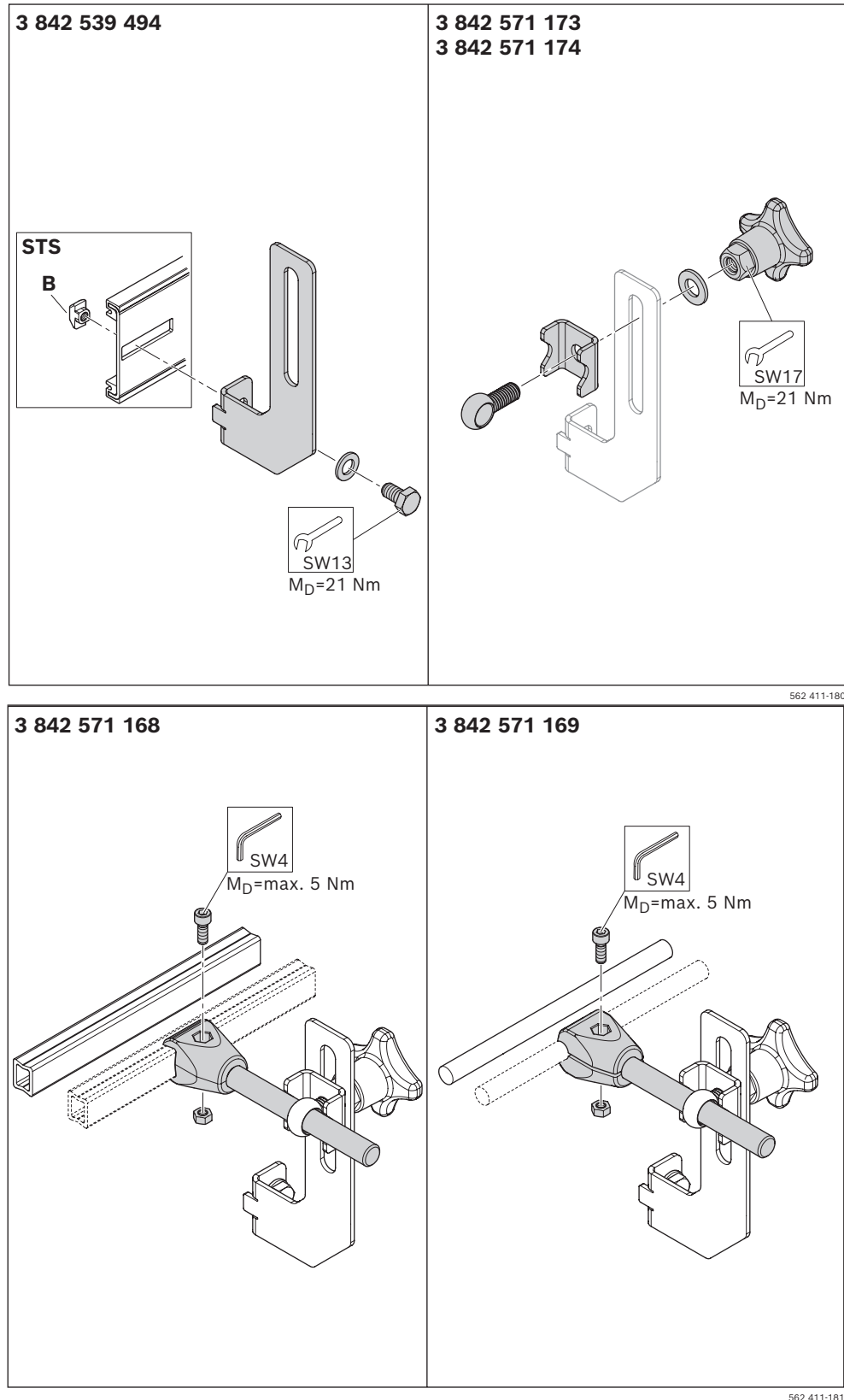
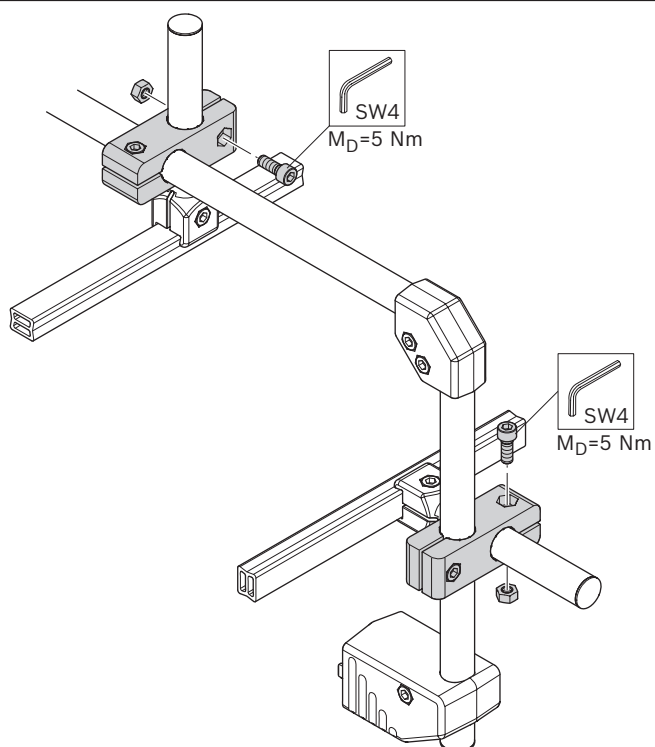
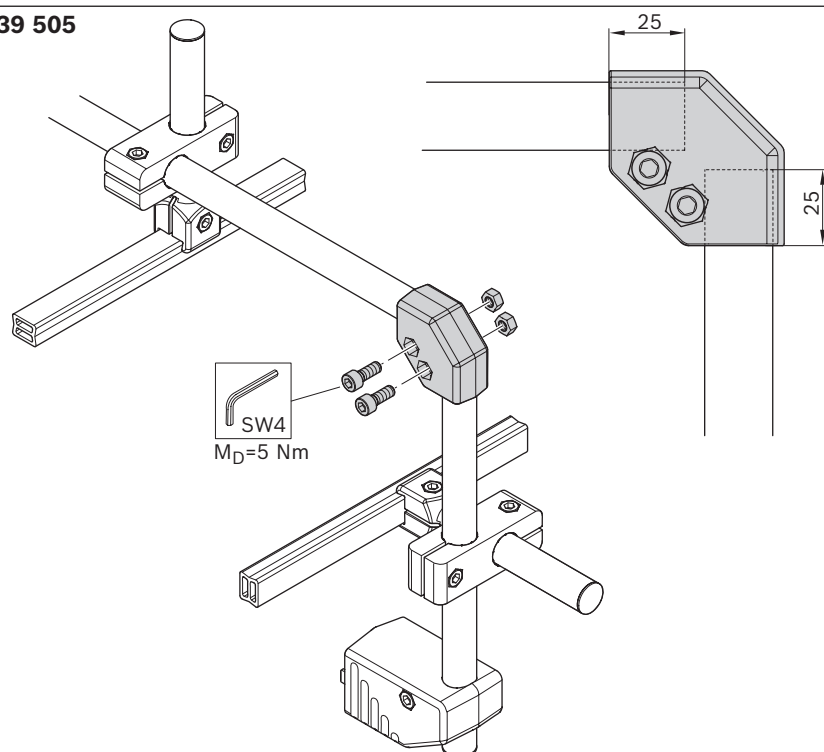


Fig. 100: Lateral guide accessories (3/8)

3 842 539 501

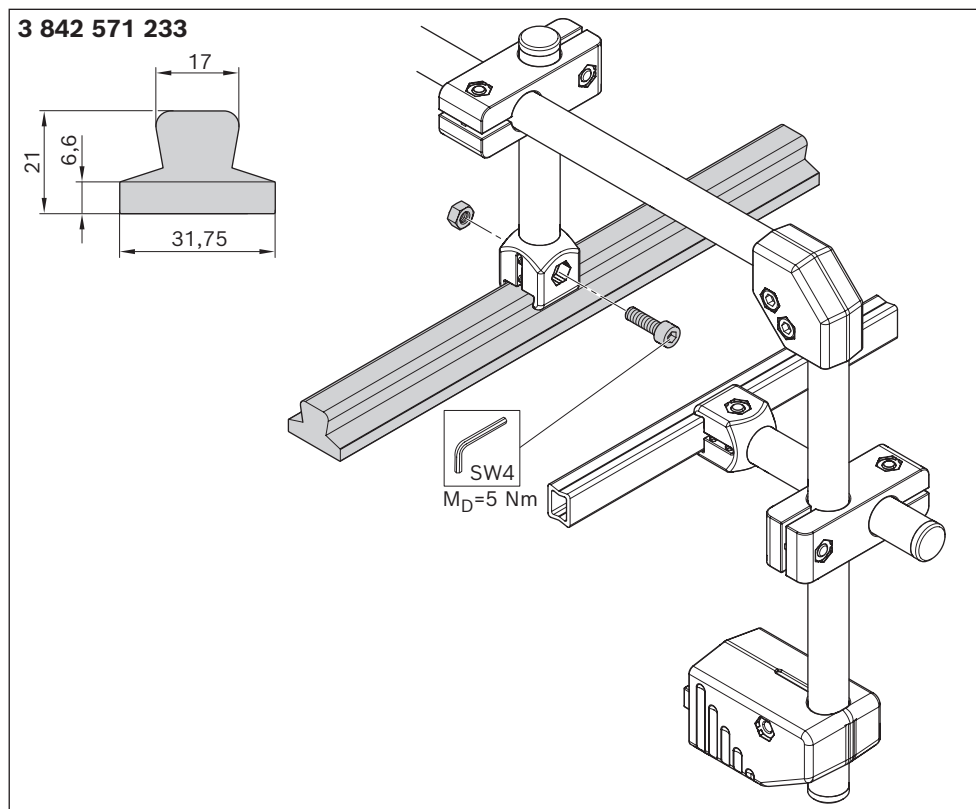


3 842 539 505



562 411-98

Fig. 101: Lateral guide accessories (4/8)



562 411-182

Fig. 102: Lateral guide accessories (5/8)

Holding bracket VFPLUS SENSOR

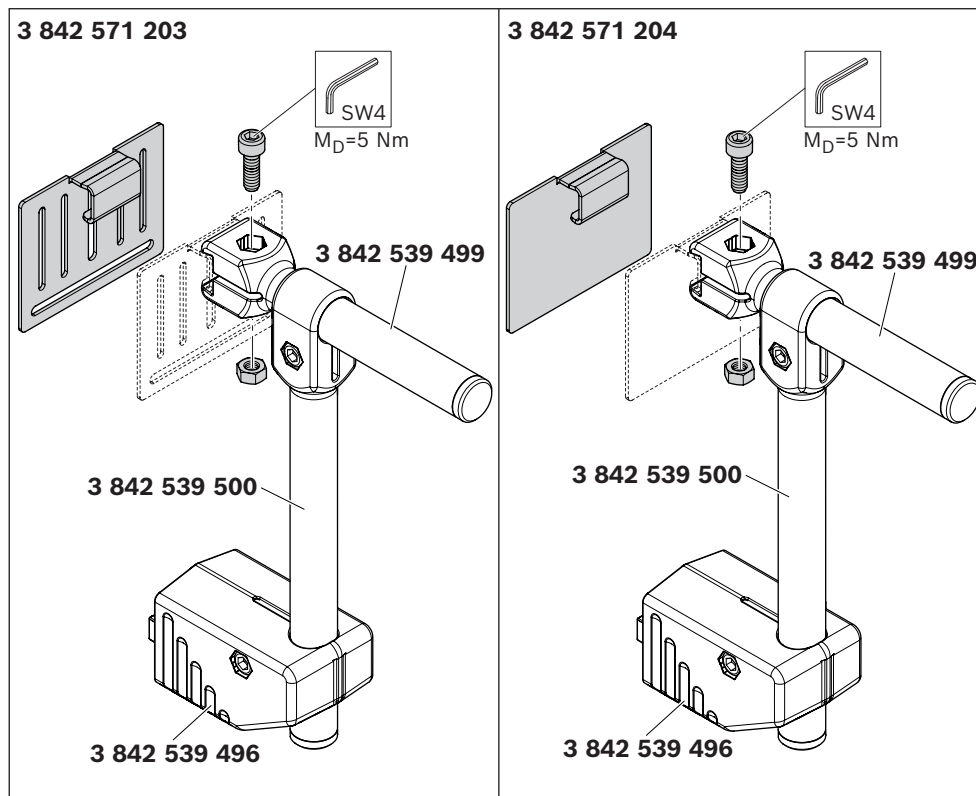
- Holder VFplus sensor:
3 842 571 203
- Holder VFplus sensor var
(without hole pattern):
3 842 571 204

Required accessories:

- Clamping holder C L100
3 842 539 499

Optional accessories:

- Clamping holder,
vertical D18 L160
3 842 539 500
- Holder L45 **3 842 539 496**



562 411-186

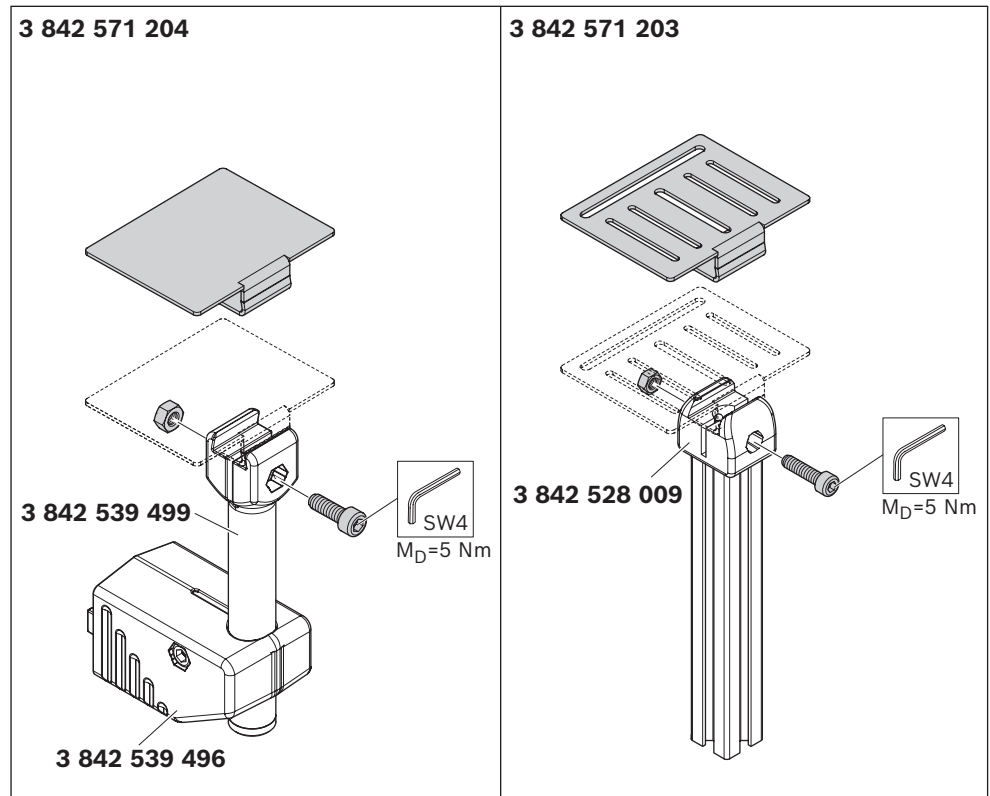
Fig. 103: Lateral guide accessories (6/8)

**Holding bracket VFPLUS
SENSOR**

- VFplus sensor holder:
3 842 571 203
- Holder VFplus sensor var
(without hole pattern):
3 842 571 204

Required accessories:

- Clamping holder C L100
3 842 539 499
- Holder L45 **3 842 539 496**
- Clamping head
3 842 528 009
(profile see Fig. 103)

**Fig. 104: Lateral guide accessories (7/8)**

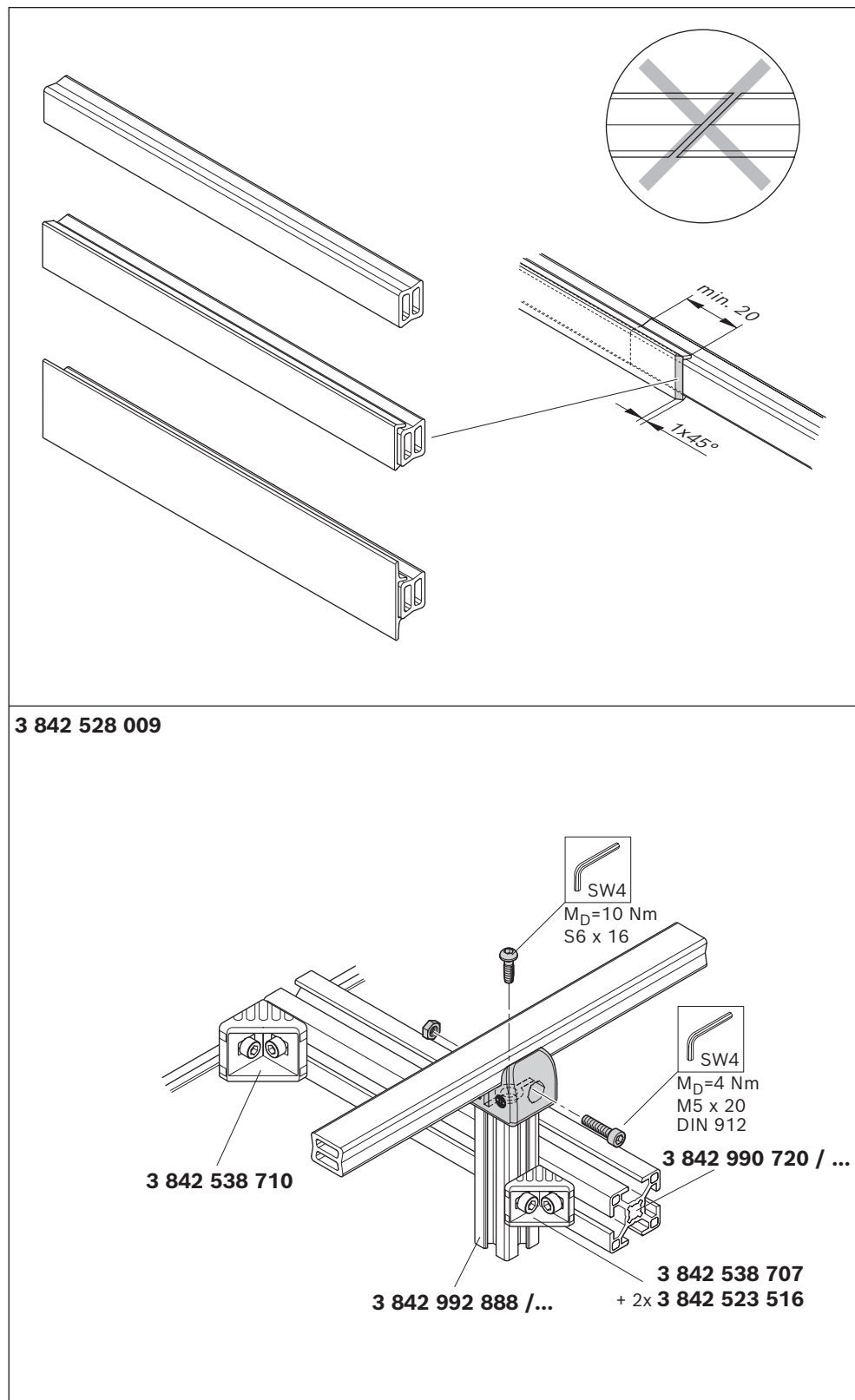


Fig. 105: Lateral guide accessories (8/8)

562 411-99

Adjustable lateral guide

Required accessories:

- Adjustment unit (A)
- Assembly kit (B)

A: 3842 547 707

B: 3842 547 718

- Install the adjustable lateral guide.

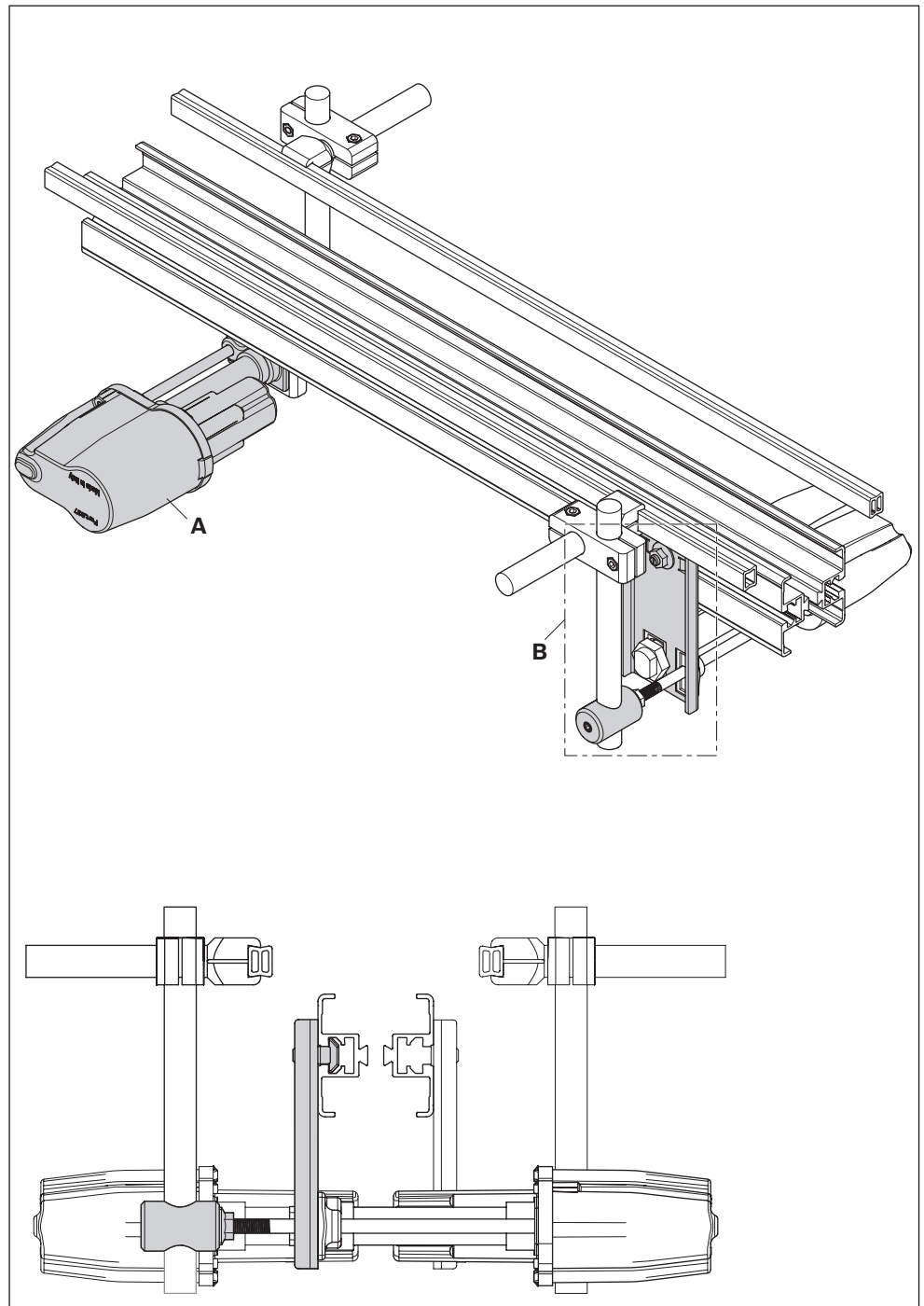
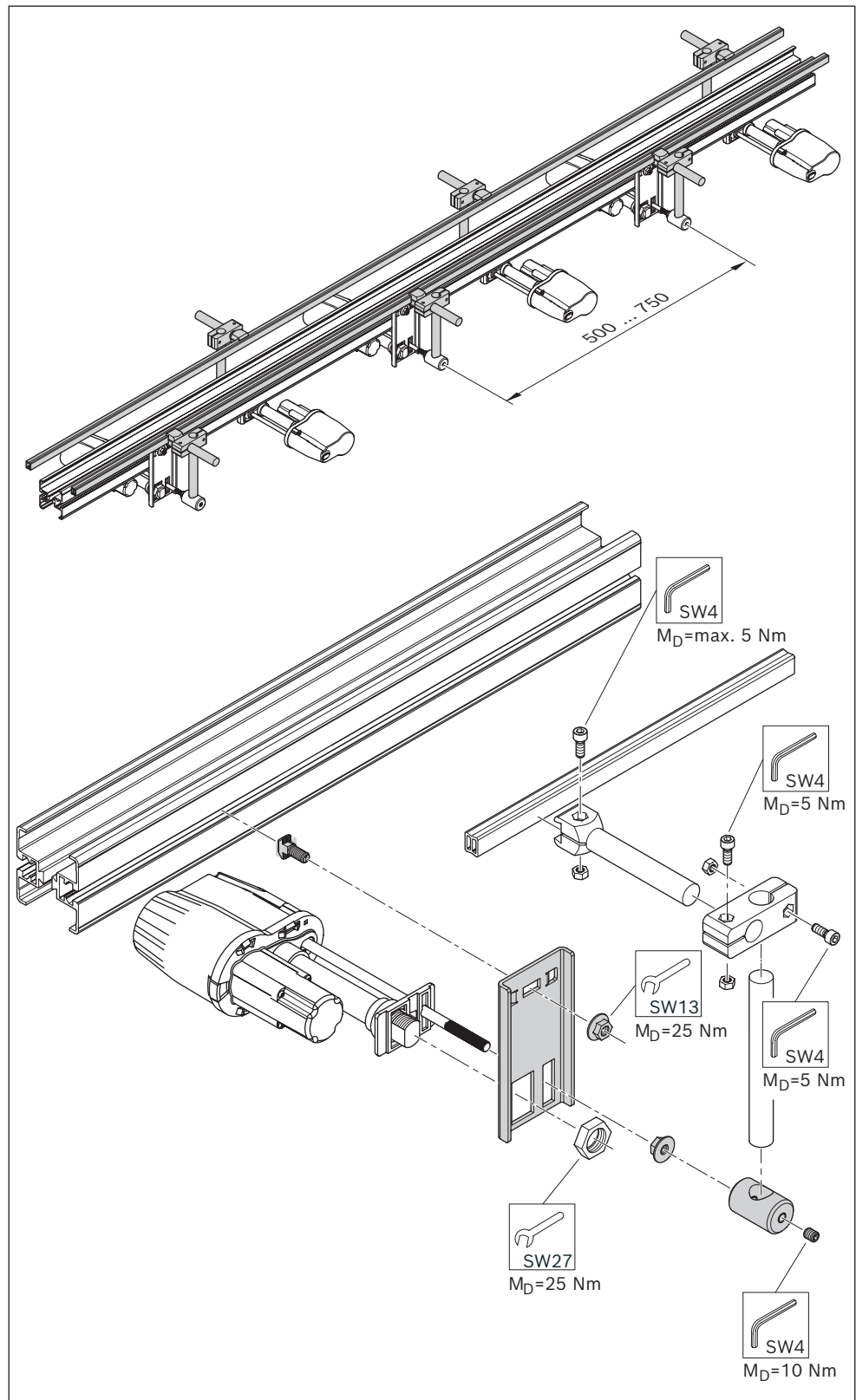


Fig. 106: Lateral guide: Adjustable lateral guide (1/4)

562 411-100



562 411-101

Fig. 107: Lateral guide: Adjustable lateral guide (2/4)

Adjustment range, function

With each pressure pulse, the adjustment unit switches by 2 mm. After 16 switching operations the adjustment unit returns to its initial position.

Pneumatic diagram (see page 120)

- Center-centered adjustment (A)
- Adjust the sides separately (B)

**Please note:**

- Connect a maximum of 8 adjustment units in series.

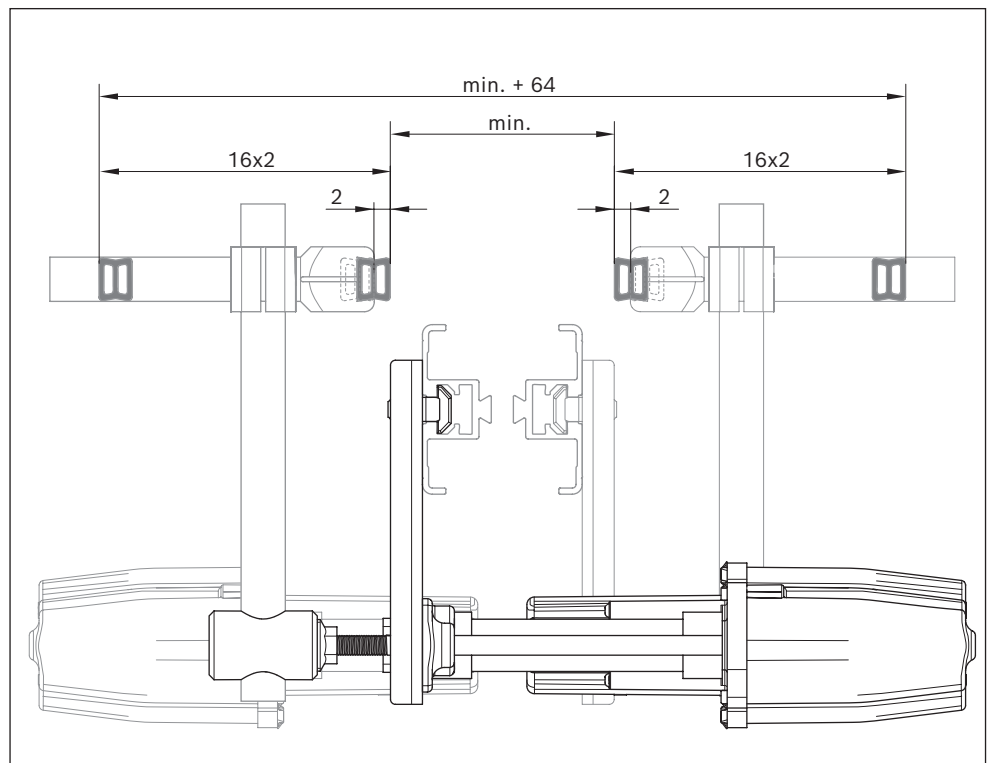
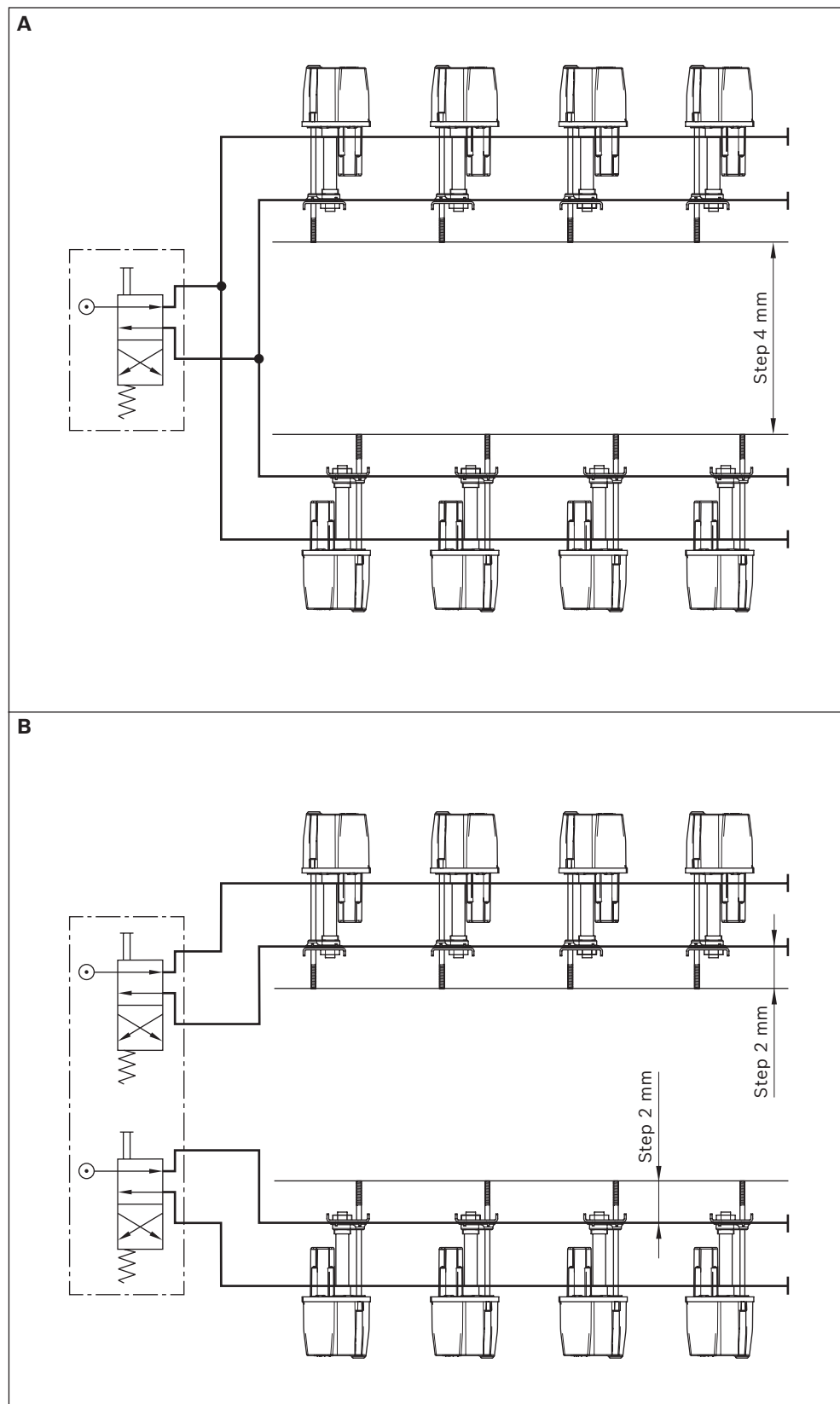


Fig. 108: Lateral guide: Adjustable lateral guide (3/4)

562 411-102

Pneumatics

- Oiled or non-oiled, filtered, dry compressed air.
- Operating pressure: 4 - 5 bar



562 411-103

Fig. 109: Lateral guide: Adjustable lateral guide (4/4)

VarioFlow *plus* flow control barrier**Required accessories:**

- VarioFlow *plus* flow control barrier (C)

C: 3842 553 070

► Install the barrier.

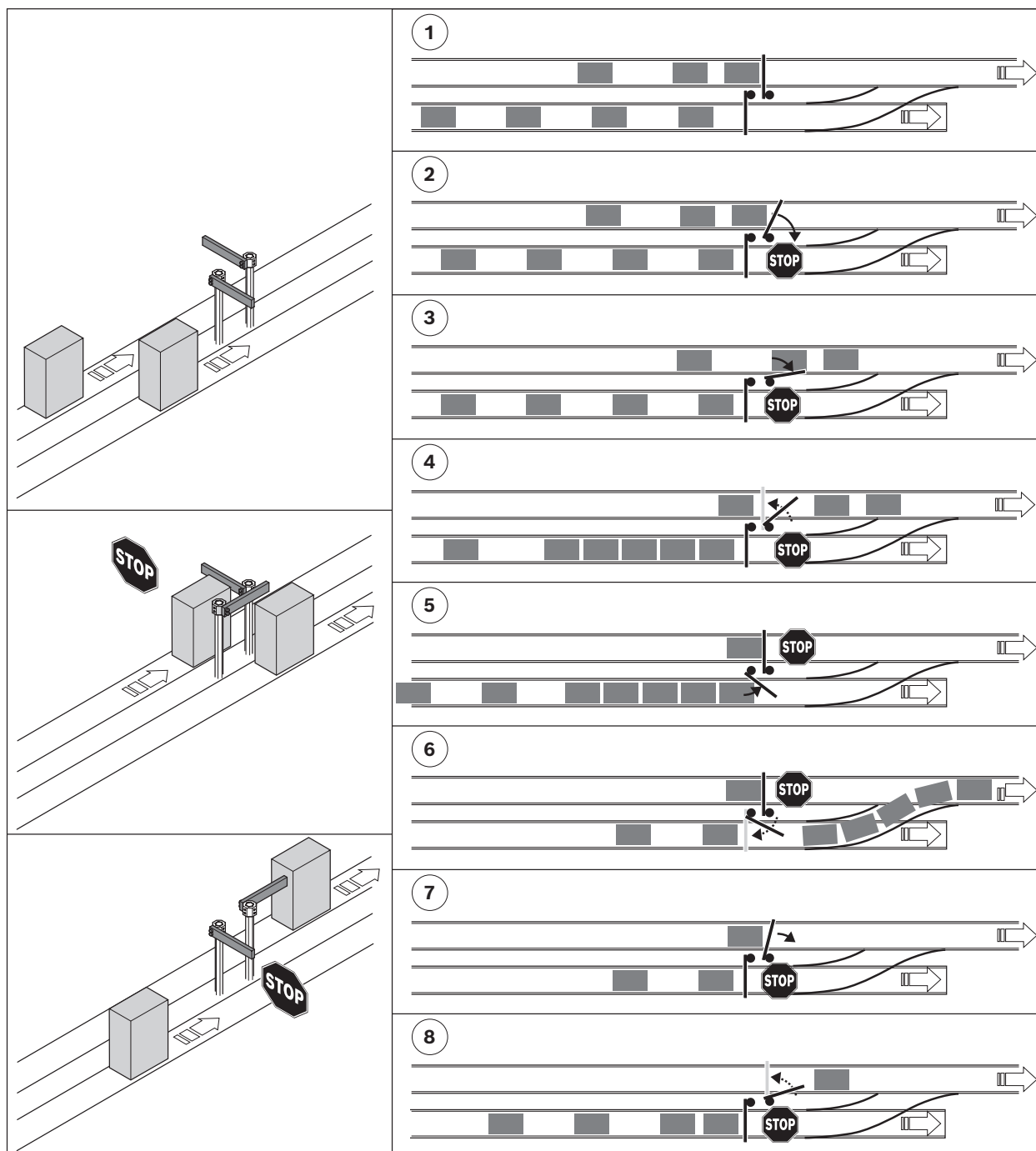
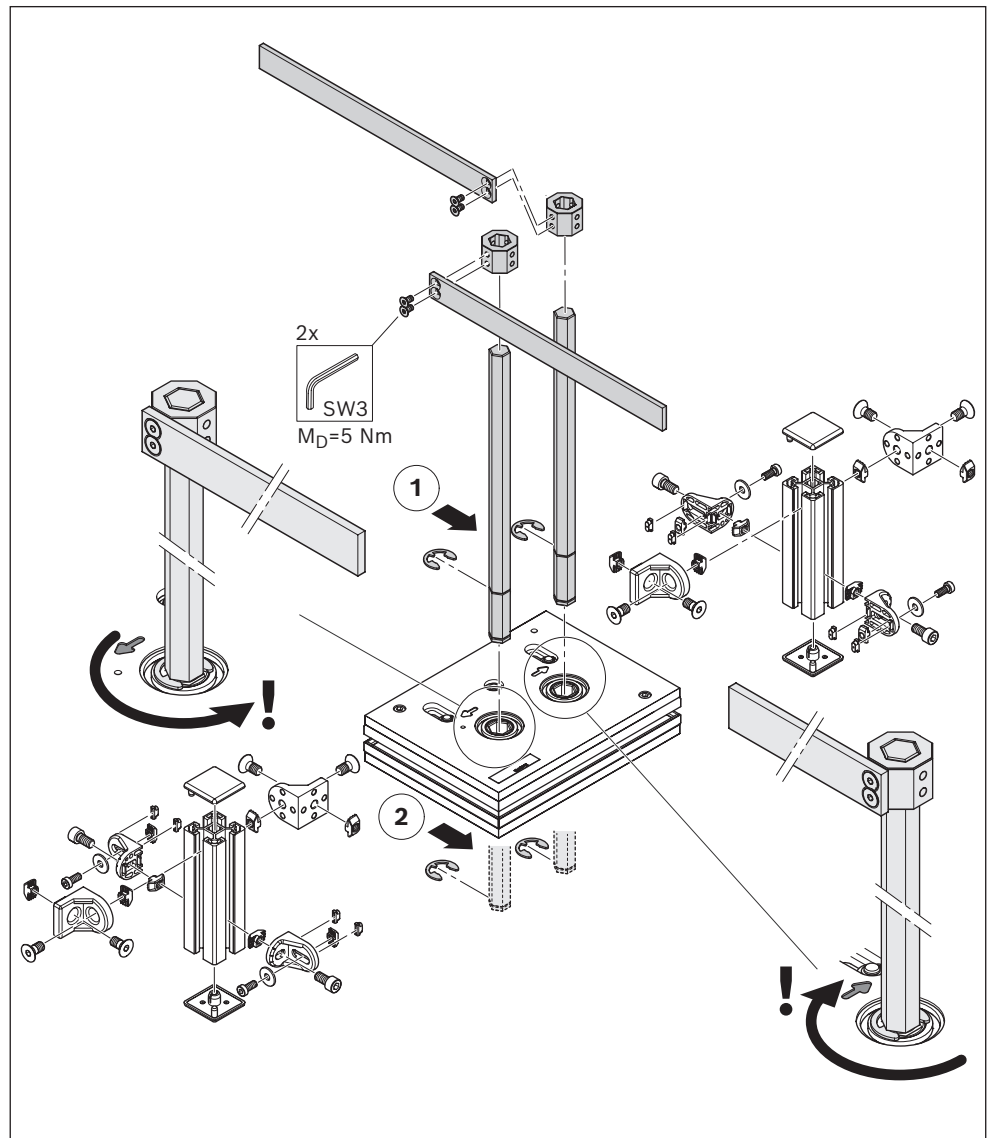


Fig. 110: Lateral guide: Barrier (1/4)



562 411-105

Fig. 111: Lateral guide: Barrier (2/4)

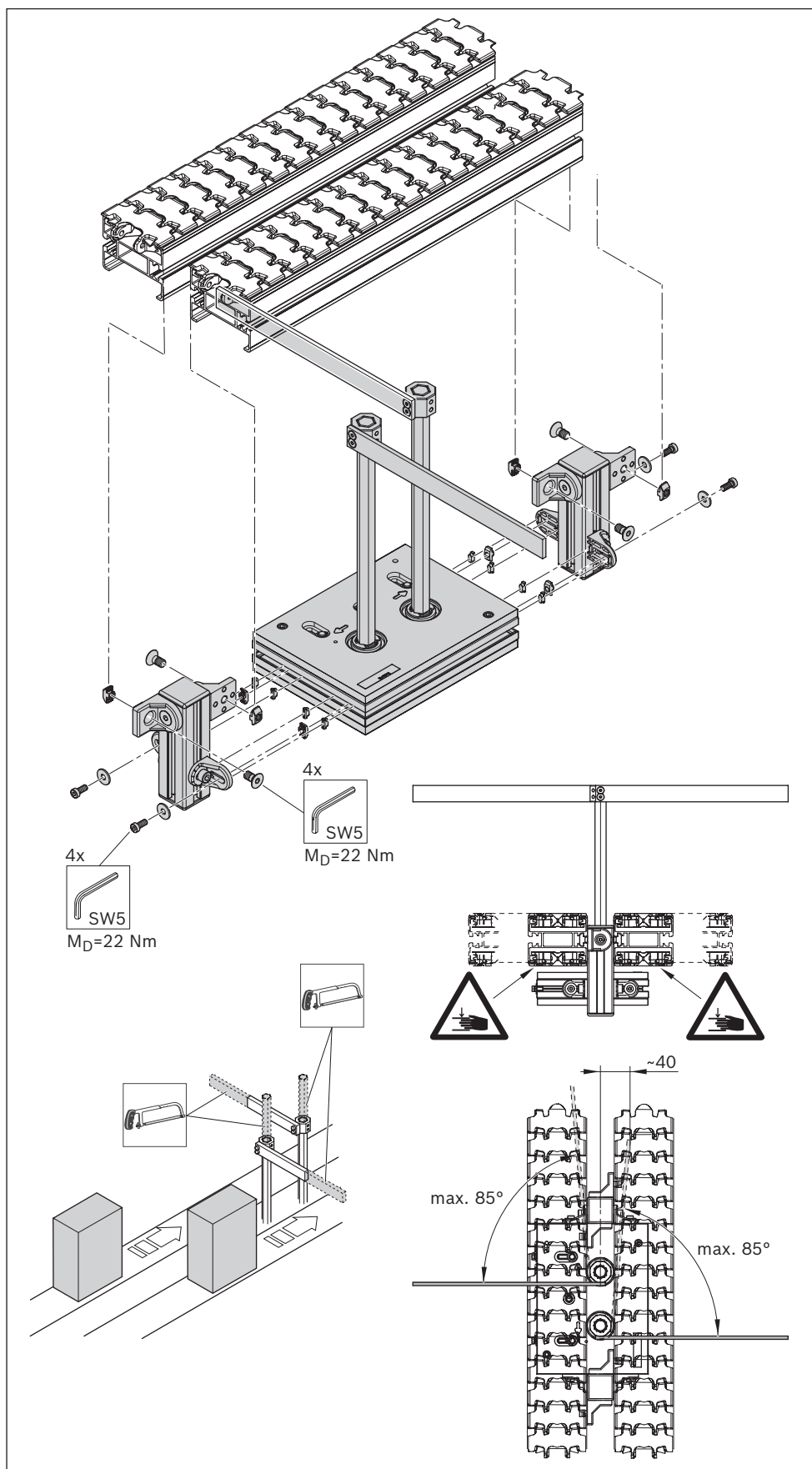
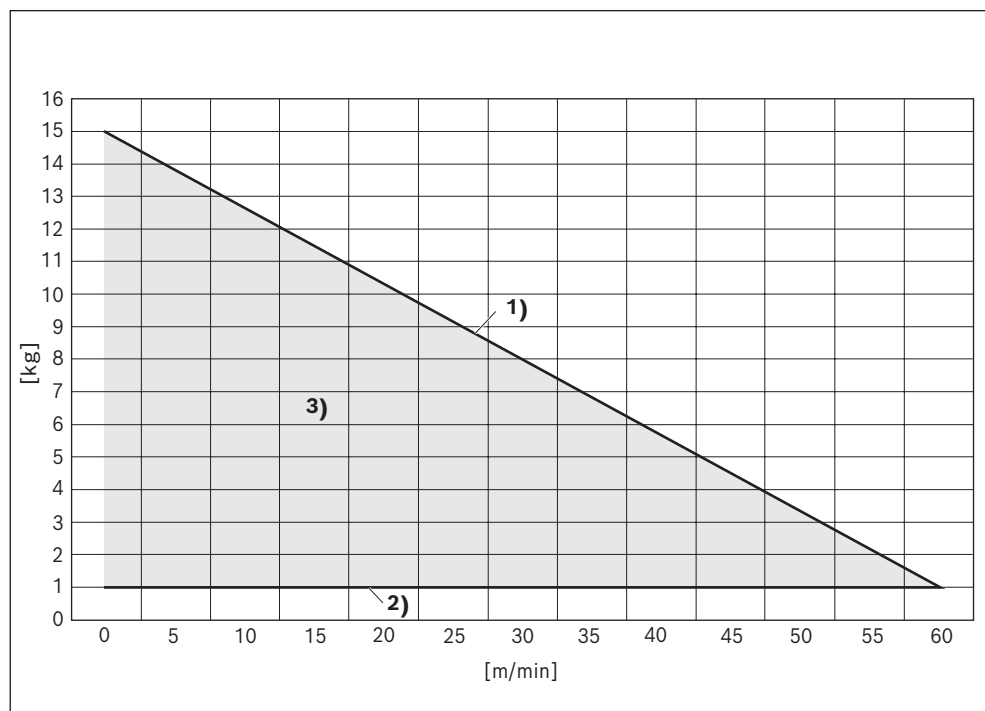


Fig. 112: Lateral guide: Barrier (3/4)

562 411-106



562 411-107

Fig. 113: Lateral guide: Barrier (4/4)

- 1) Maximum permissible load
- 2) Minimum load (1 kg)
- 3) Permissible range of functions

Universal diverter

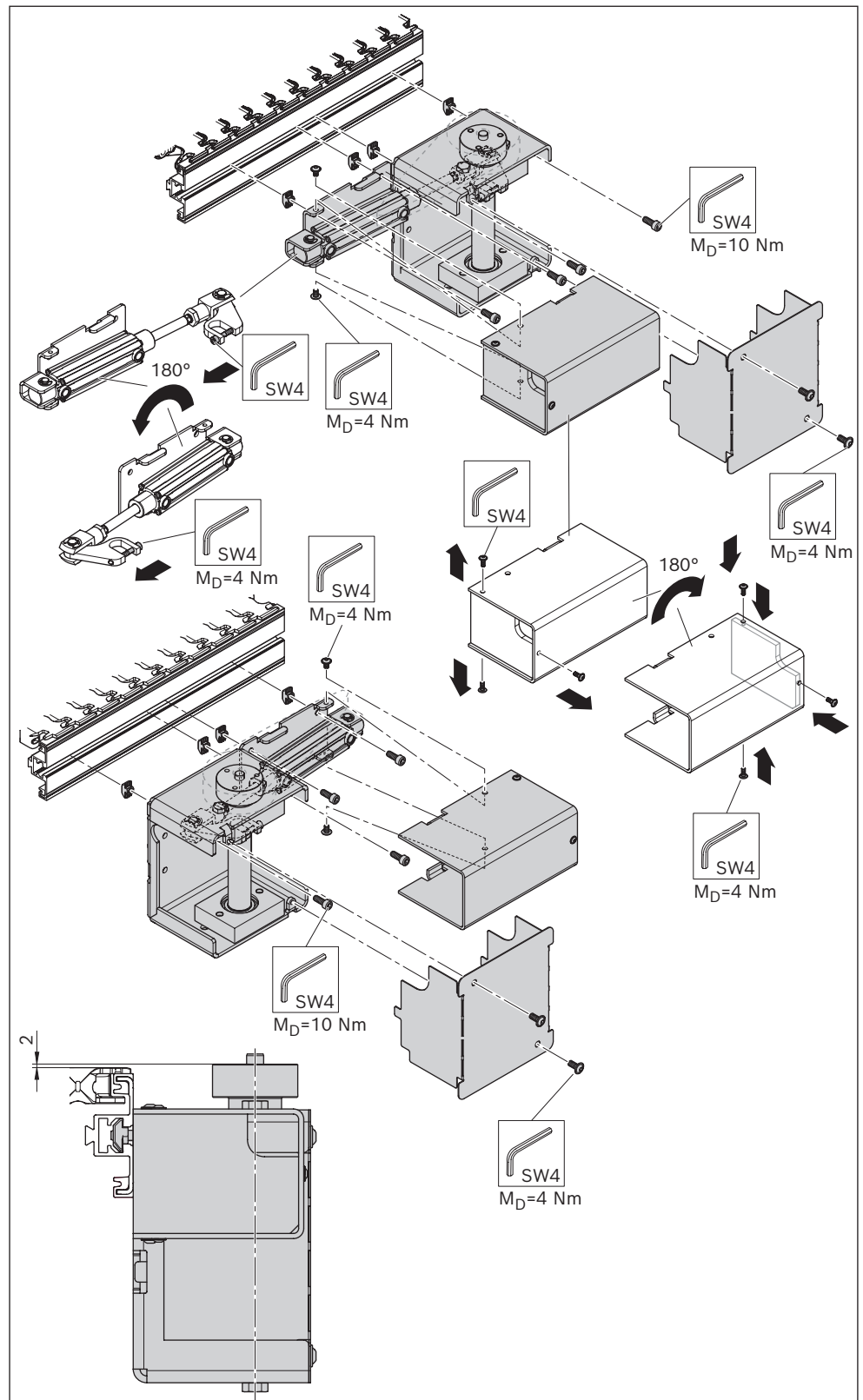
Required accessories:
Universal diverter (D)**D: 3842 547 703**

- Install the universal diverter.

The diverter can be universally installed on both sides on the left and right of the section.

For this purpose, the cylinder must be rotated by 180° before insertion and the holder must be installed on the other side.

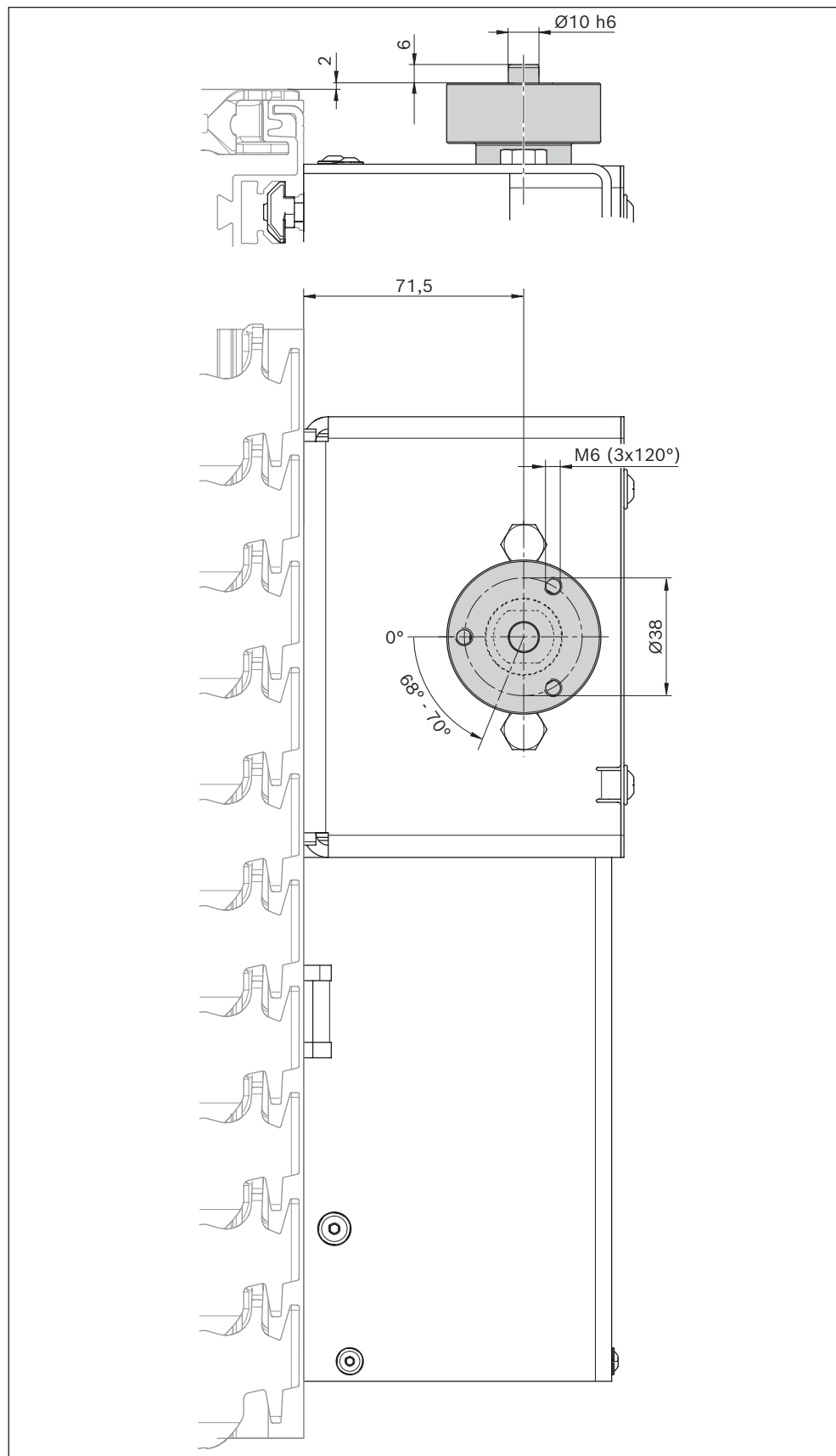
The housing (main body) and the holder with cylinder are installed on the profile slot with 4 T-nuts. The cover is symmetrical and screw-fitted to the holder

**Fig. 114: Lateral guide: Universal diverter (1/2)**

562 411-108

Pneumatics

- Oiled or non-oiled, filtered, dry compressed air.
- Operating pressure: 4 to 5 bar



562 411-109

Fig. 115: Lateral guide: Universal diverter (2/2)

Required accessories:
Pressure roller (E)

E: 3842 552 950

- Install the pressure roller.

Pressure roller

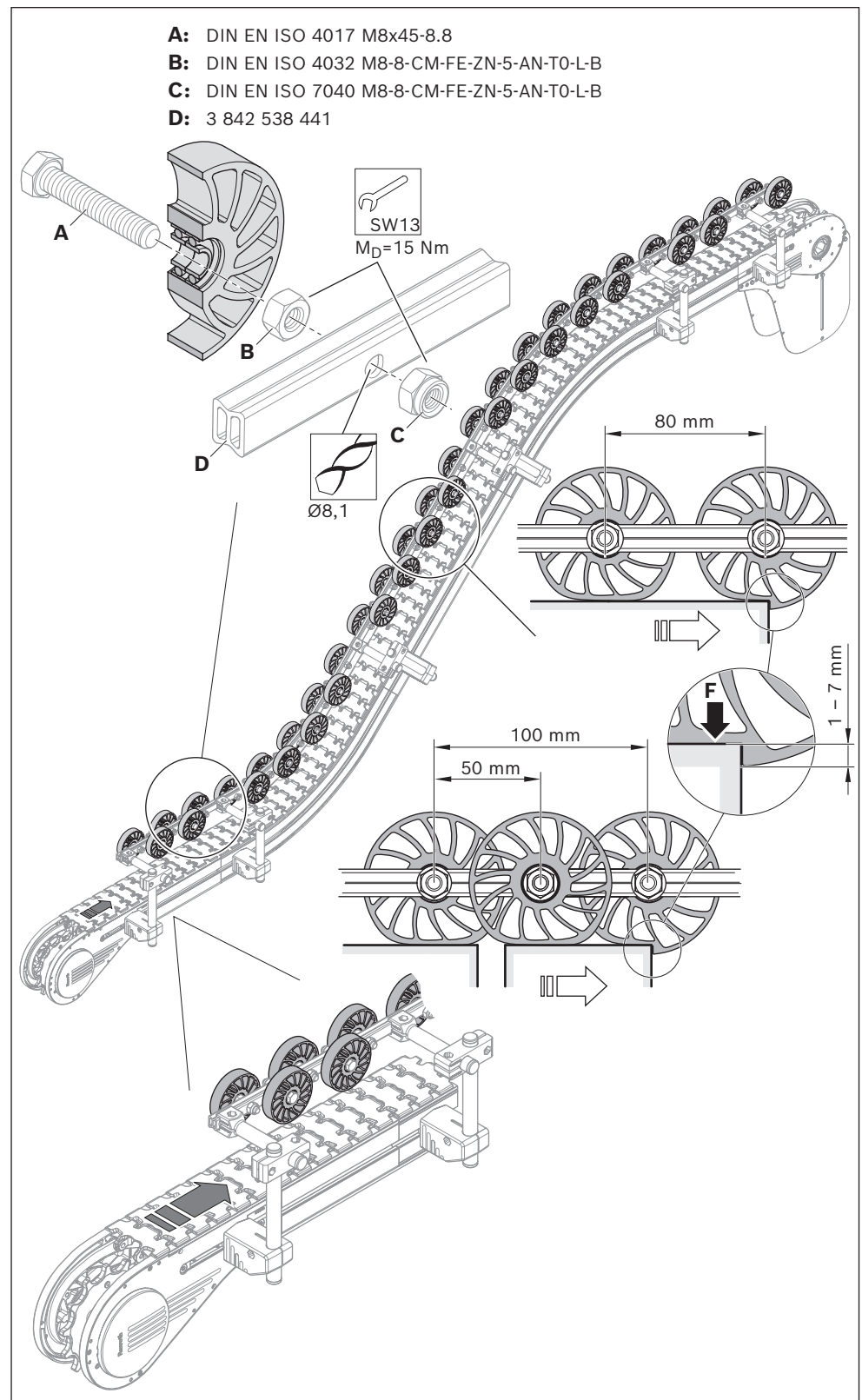


Fig. 116: Lateral guide: Pressure roller (1/2)

562 411-110

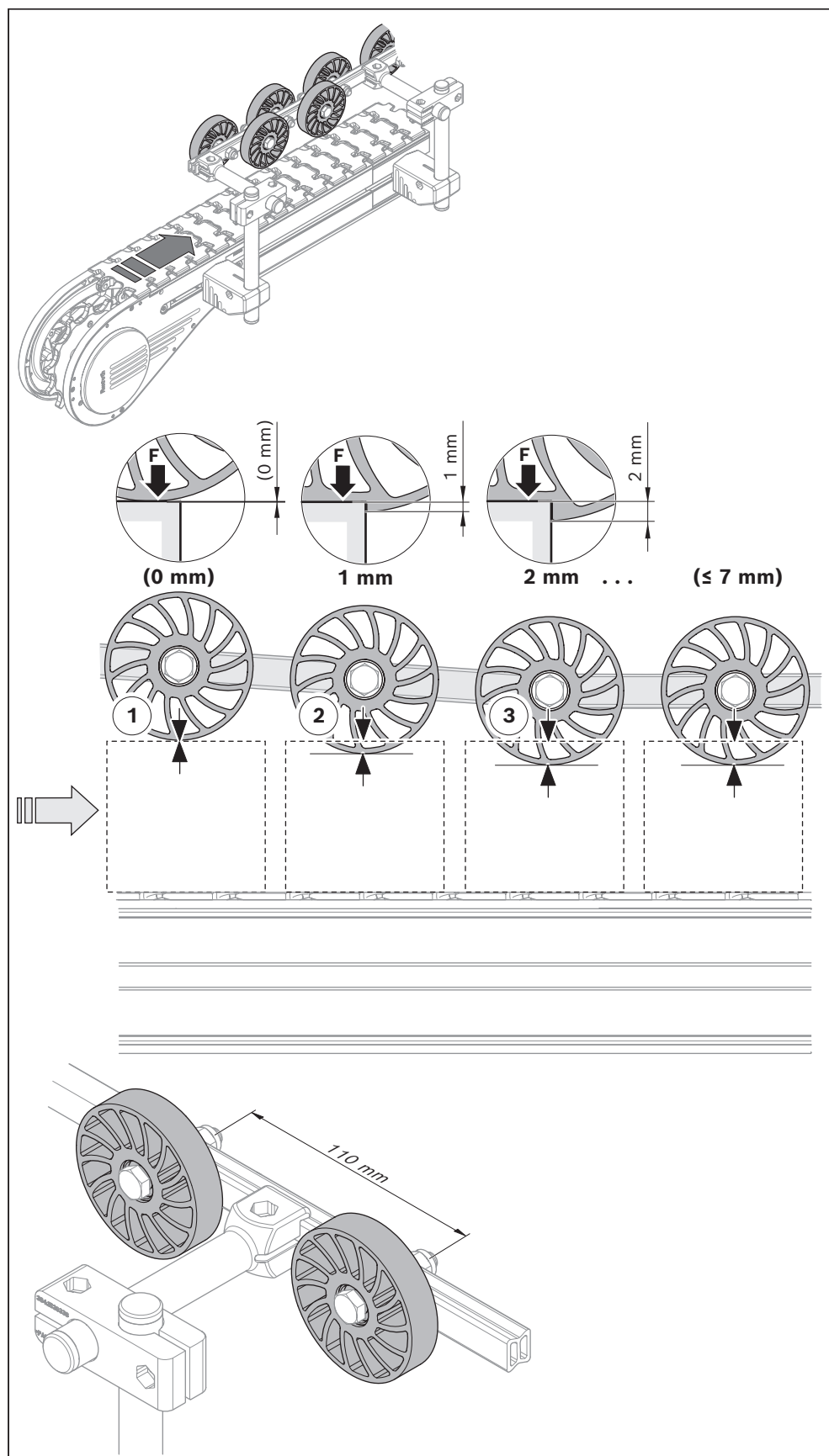


Fig. 117: Lateral guide: Pressure roller (2/2)

562 411-111

**Please note:**

The sliding plate must be aligned **level** to the conveyor level.

1. Install both sections on the same leg set using supporting brackets. Do not yet tighten the screws with the rated torque. For internal sections, use supporting bracket 3842 571 257. For each section, use a separate slot in the leg set and arrange them with a offset.
2. Install the sliding plate at one of the two sections. Do not yet tighten the screws with the rated torque.
3. Slide together the sections. Use the gage to align the sliding plate **level** to the chain and then tighten all screws.
4. Bend the outer tab up by 45° for trap guard.

Several plates can be installed behind each other.

Notice:

W10: Only for AL systems. Place drive and return unit offset from each other or for VF 65 - 120 (remove inner chain plate).

W14: For AL and STS systems. For STS_systems, the drive, the return unit and the cross connectors must be mounted offset to each other in the section. Otherwise, the fastening screws will collide.

Required accessories:

For central section support:

- Supporting bracket *VFplus* AL **3842 546 632**
- Supporting bracket SET **3842 571 257**

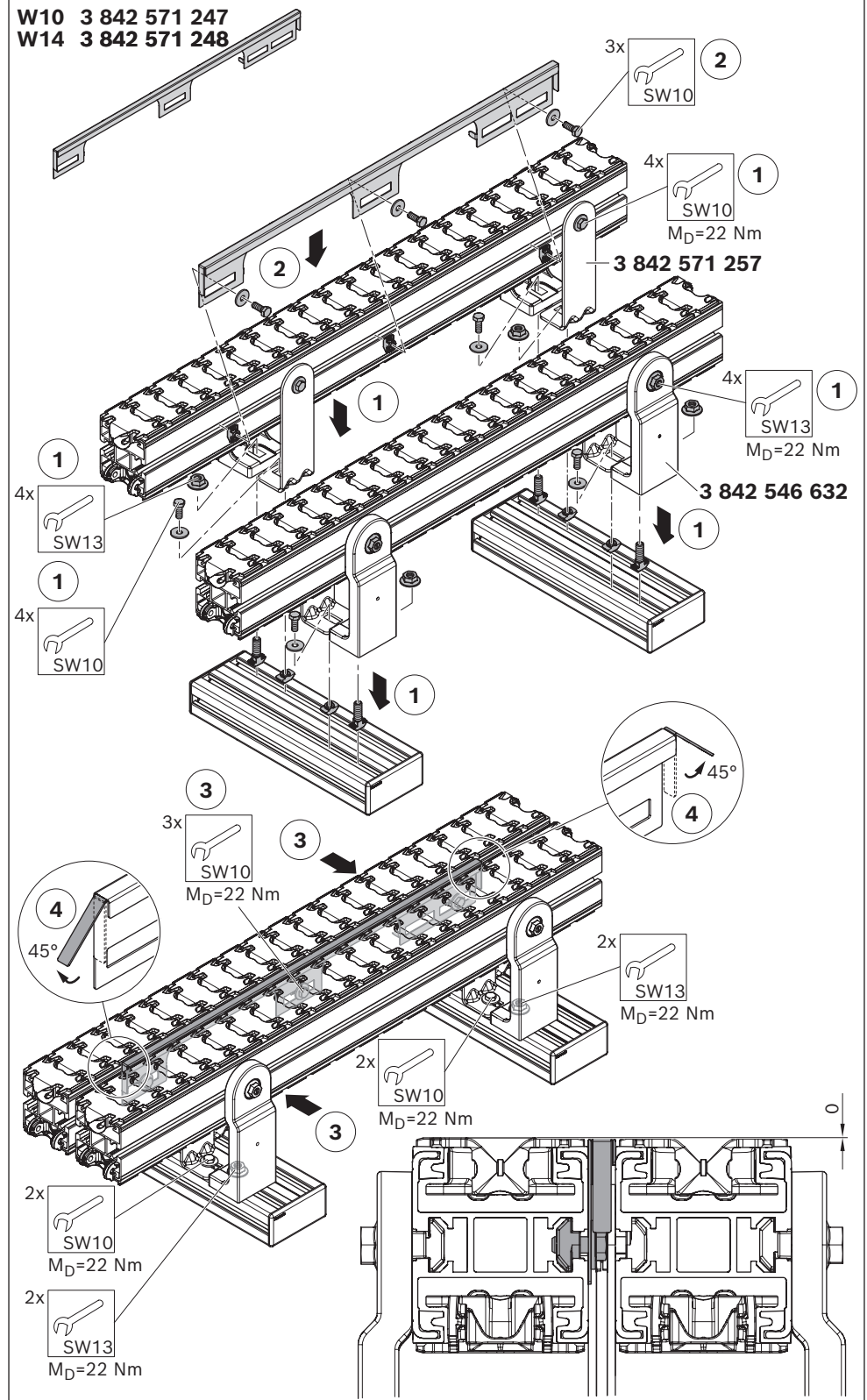


Fig. 118: Parallel transfer, standard installation

562 411-183

For transfer of particularly small products, stepped installation of the sliding plate may be useful. This is a special case.

1. Install both sections on the same leg set using supporting brackets. Do not yet tighten the screws with the rated torque. For internal sections, use supporting bracket 3842 571 257. For each section, use a separate slot in the leg set and arrange them with an offset.
2. Install the sliding plate at one of the two sections. Do not yet tighten the screws¹⁾ with the rated torque.
3. Align the sliding plate with an offset of approx. 0.2 mm to the two sections and tighten all screws. For this purpose, the clearance of can be used in the supporting brackets. In addition, the supporting brackets can be supported with spring plates²⁾ to realize a stepped offset. An offset of 0.2 mm +/- 0.1 is recommended.
4. Bend the outer tab up by 45° for trap guard.

²⁾ The spring plates must be created and adjusted by the customer.

Several plates can be installed behind each other.

Notice:

W10: Only for AL systems. Place drive and return unit offset from each other or for VF 65 - 120: remove inner chain plate

W14: For AL and STS systems. For STS systems, the drive, the return unit and the cross connectors must be mounted offset to each other in the section. Otherwise, the fastening screws will collide.

Parallel transfer, stepped installation

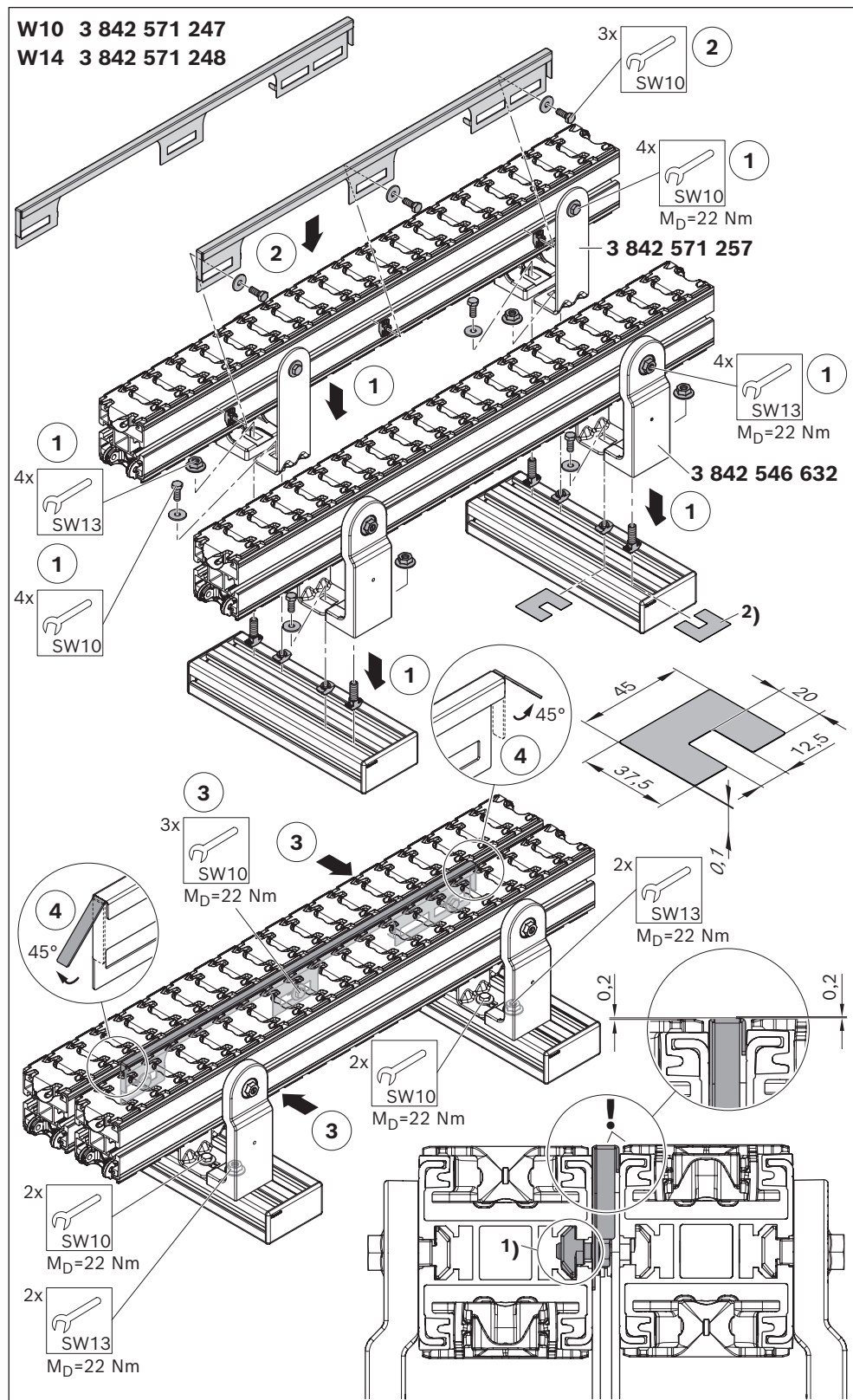


Fig. 119: Parallel transfer, stepped installation

562 411-184

7.5.10 Workpiece pallet system

VarioFlow workpiece pallet

Required accessories:

- Workpiece pallet (A)
- End piece (B)

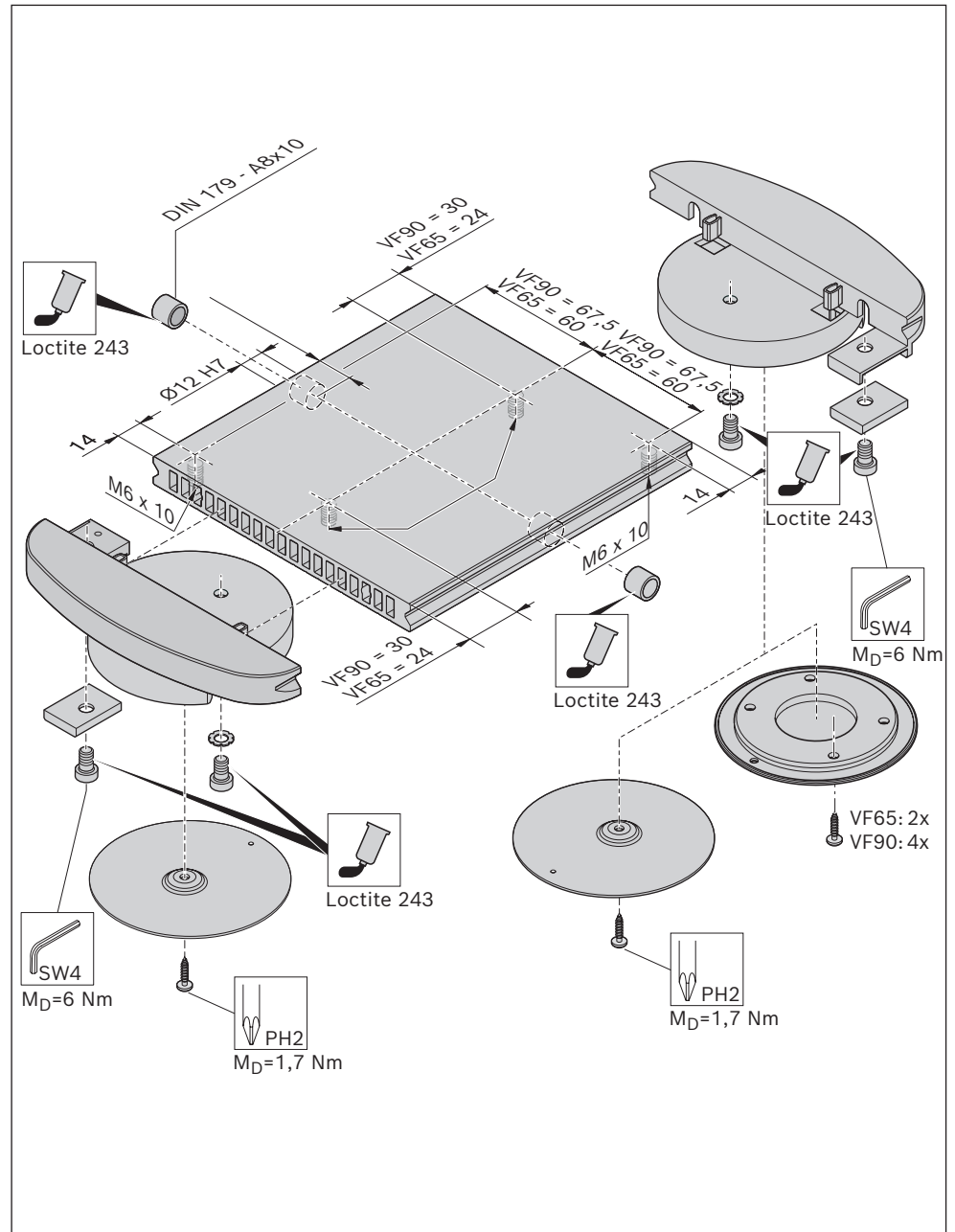
A, VF 65: 3842 541 888

A, VF 90: 3842 541 889

B, VF 65: 3842 541 902

B, VF 90: 3842 541 903

- Assemble the workpiece pallet.

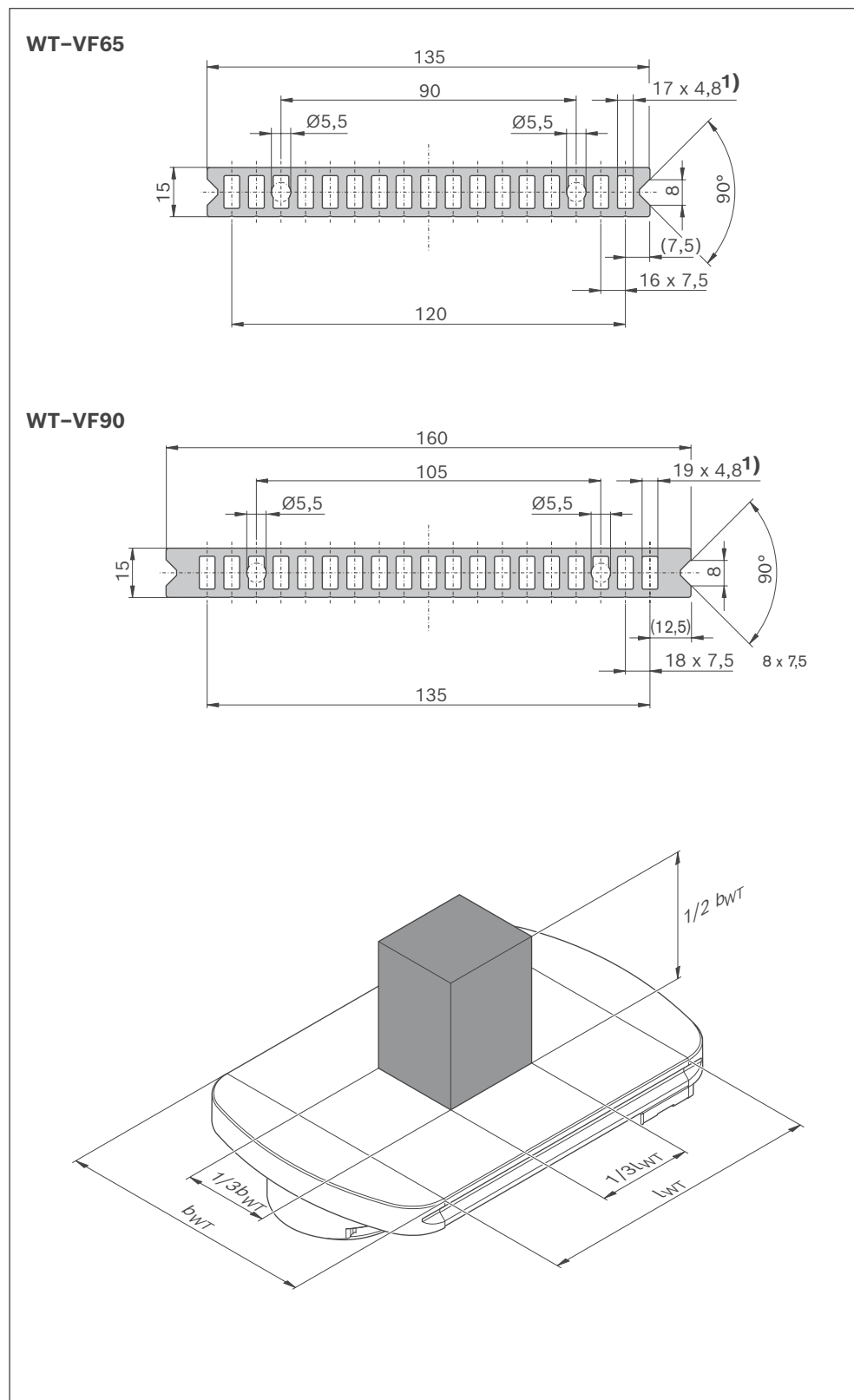


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Fig. 120: Workpiece pallet system, VarioFlow workpiece pallet (1/2)

562 411-112

1) Assembly tip: Suitable as central hole for M6
Optimum center of gravity range for smooth operation.



562 411-113

Fig. 121: Workpiece pallet system, VarioFlow workpiece pallet (2/2)

Required accessories:
Holder (C)

C: 3842 531 552

- Install the holder.

Holder (PA6) for lateral guide VFplus

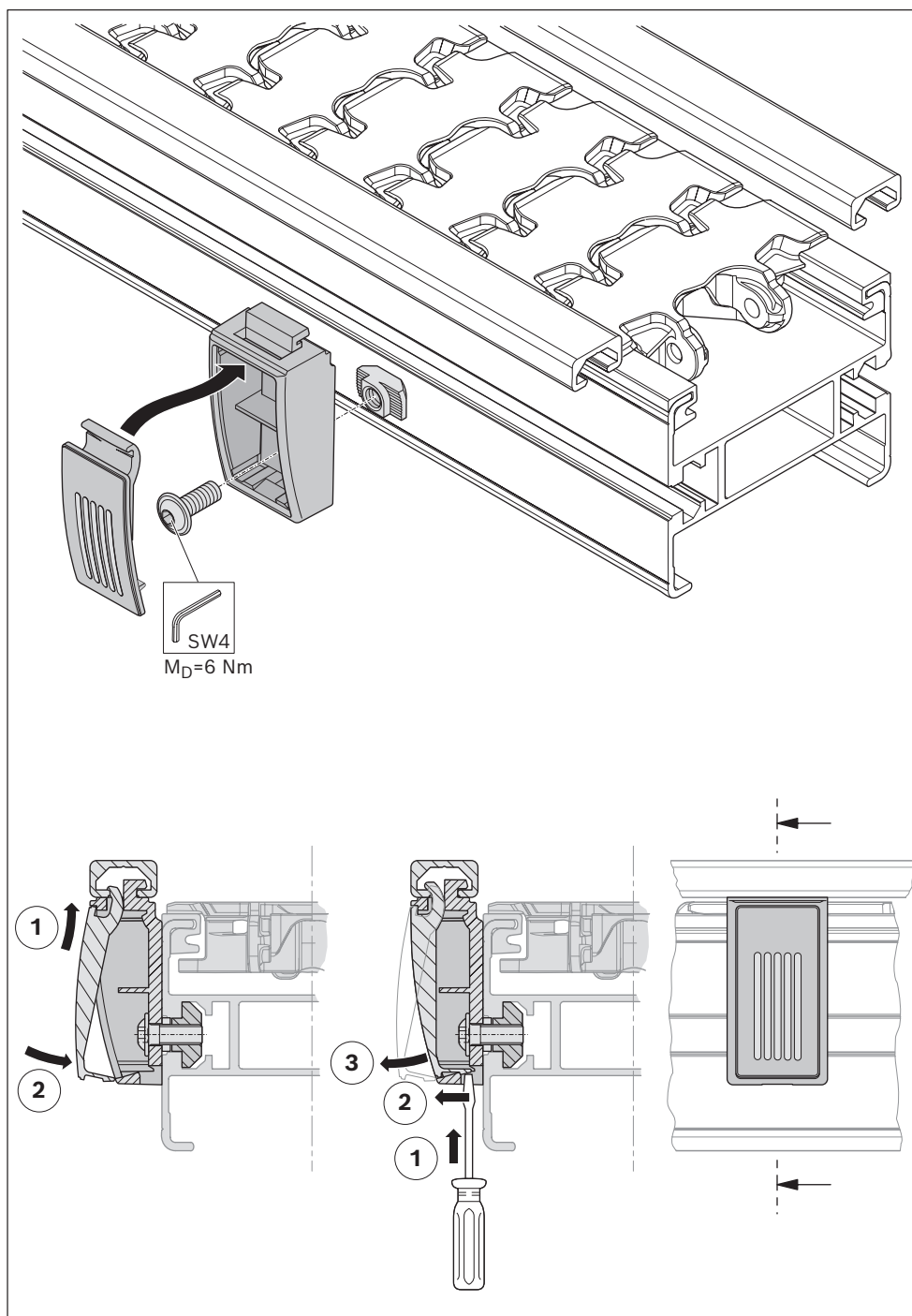


Fig. 122: Workpiece pallet system, holder for lateral guide

562 411-114

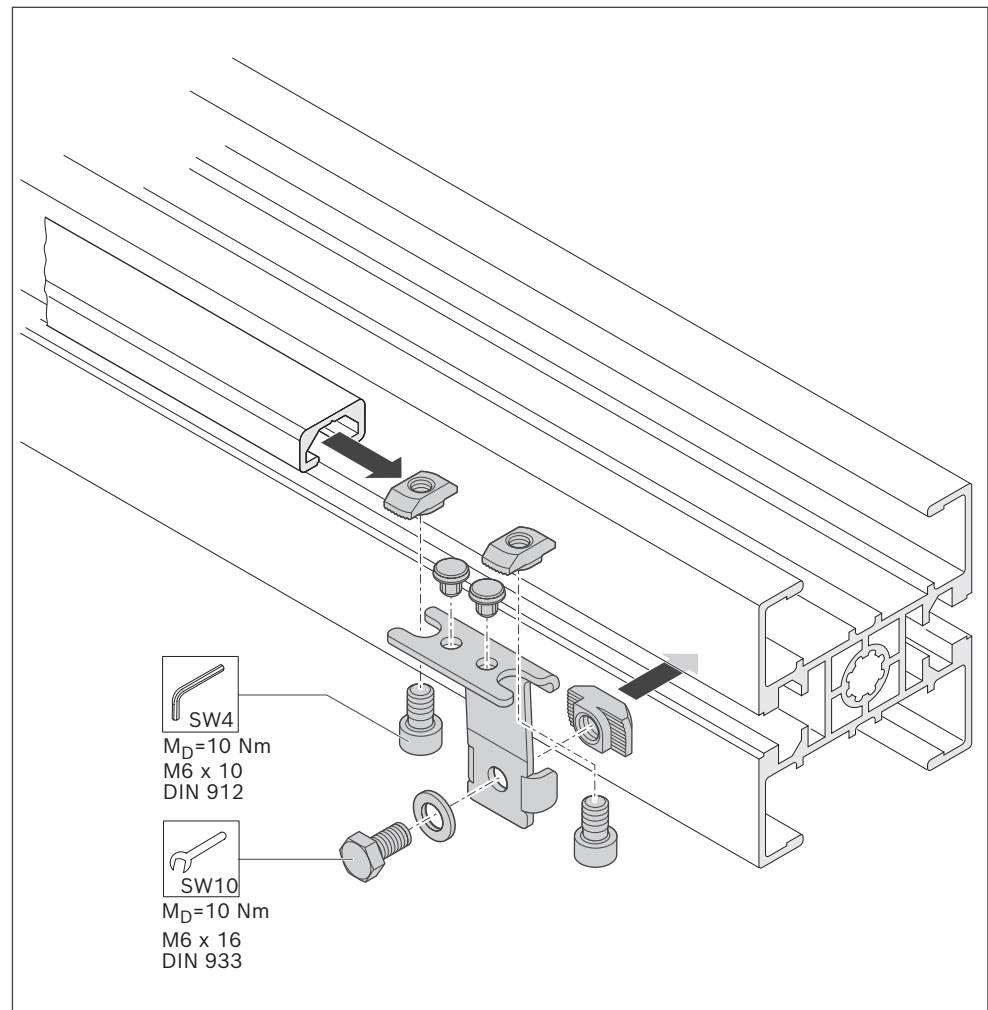
Required accessories:

- Holder for lateral guide (D)

D: 3842 532 980

- Install the holder.

Holder (steel) for lateral guide, WT VarioFlow



562 411-115

Fig. 123: Workpiece pallet system, holder for WT lateral guide

Required accessories:

- Holder for lateral guide (E)

E: 3842 557 005

- Install the holder.

Holder (steel) for lateral guide VFplus

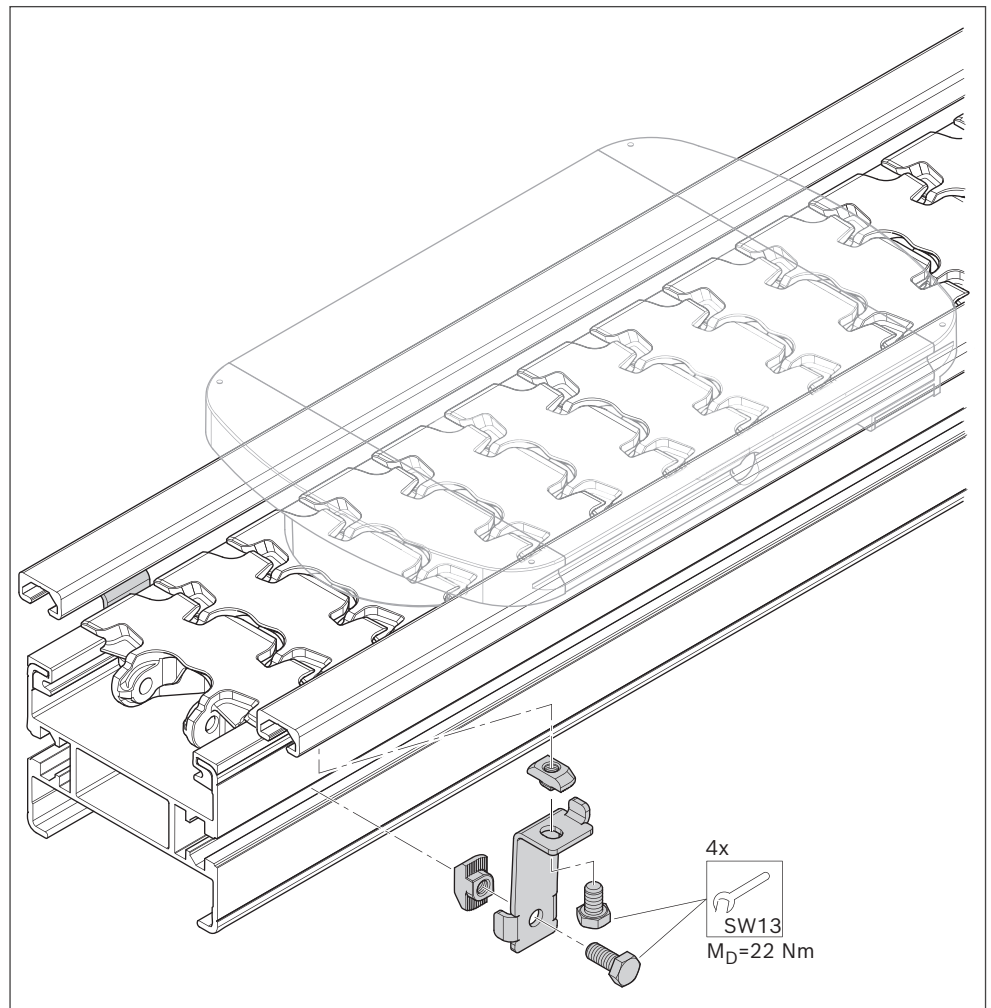


Fig. 124: Workpiece pallet system, holder for lateral guide

Curve wheel lateral guide VFplus

Required accessories:

- Lateral guide (F)

F, VF 65:

30°: **3842 547 949**45°: **3842 547 950**90°: **3842 547 951**180°: **3842 547 952**

F, VF 90:

30°: **3842 547 953**45°: **3842 547 954**90°: **3842 547 955**180°: **3842 547 956**

- Install the lateral guide.

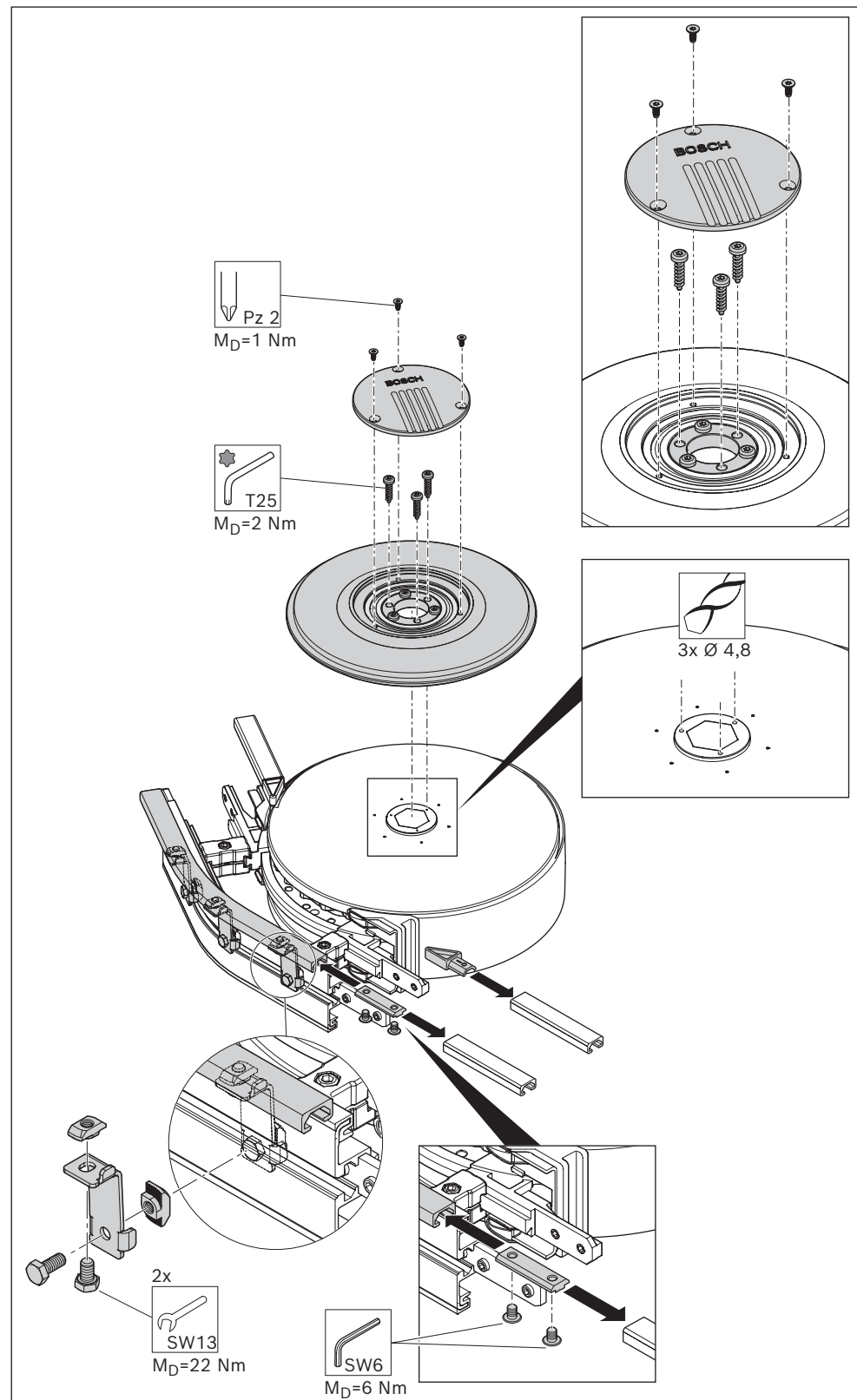
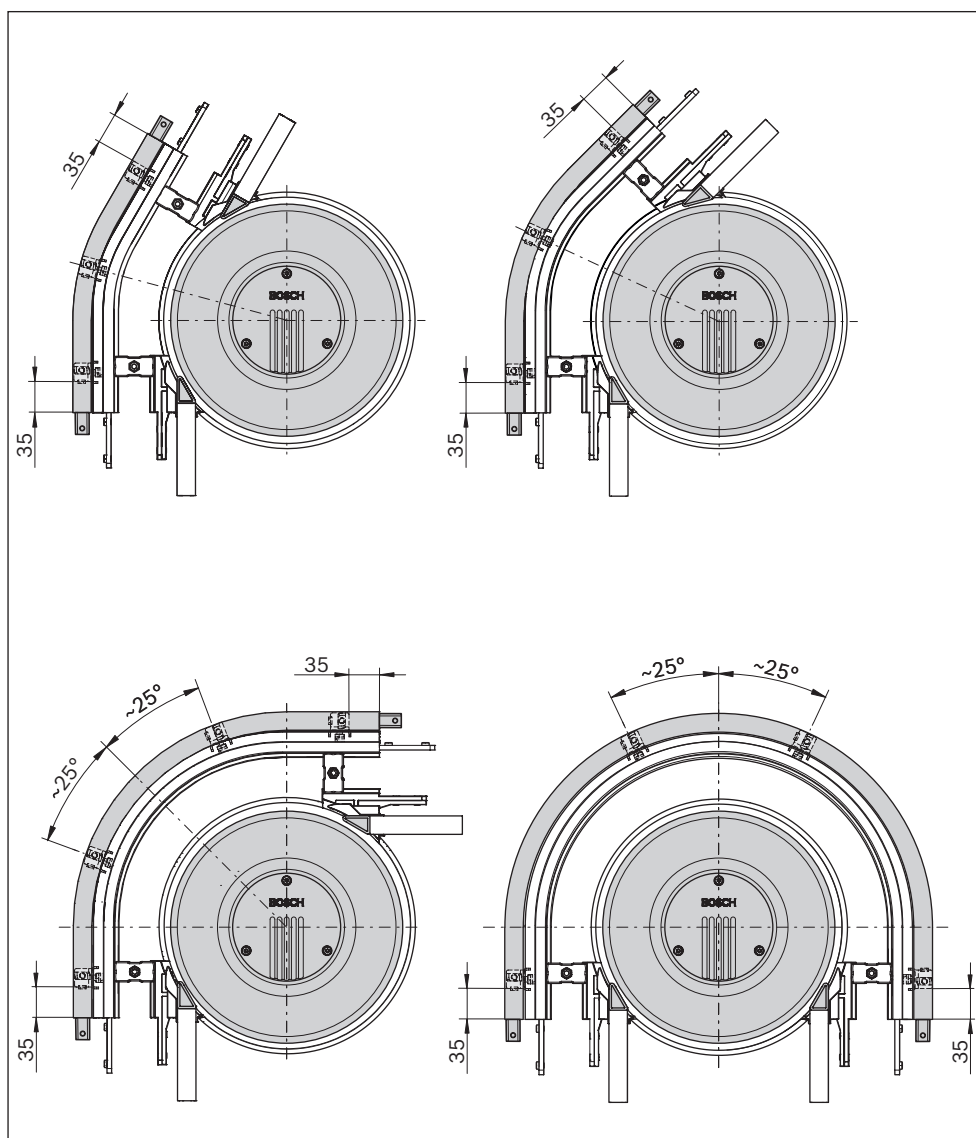


Fig. 125: Workpiece pallet system, lateral guide curve wheel (1/2)

562 411-117



562 411-118

Fig. 126: Workpiece pallet system, lateral guide curve wheel (2/2)

Stop gate VE-VF / VE-VF/M

Required accessories:

- Stop gate:
 - VE-VF (G1)
 - VE-VF/M (G2)

G1: 3842 528 852

G2: 3842 559 135

Optional accessories:

- Switch bracket SH VF/UV
(not included in the scope of delivery)

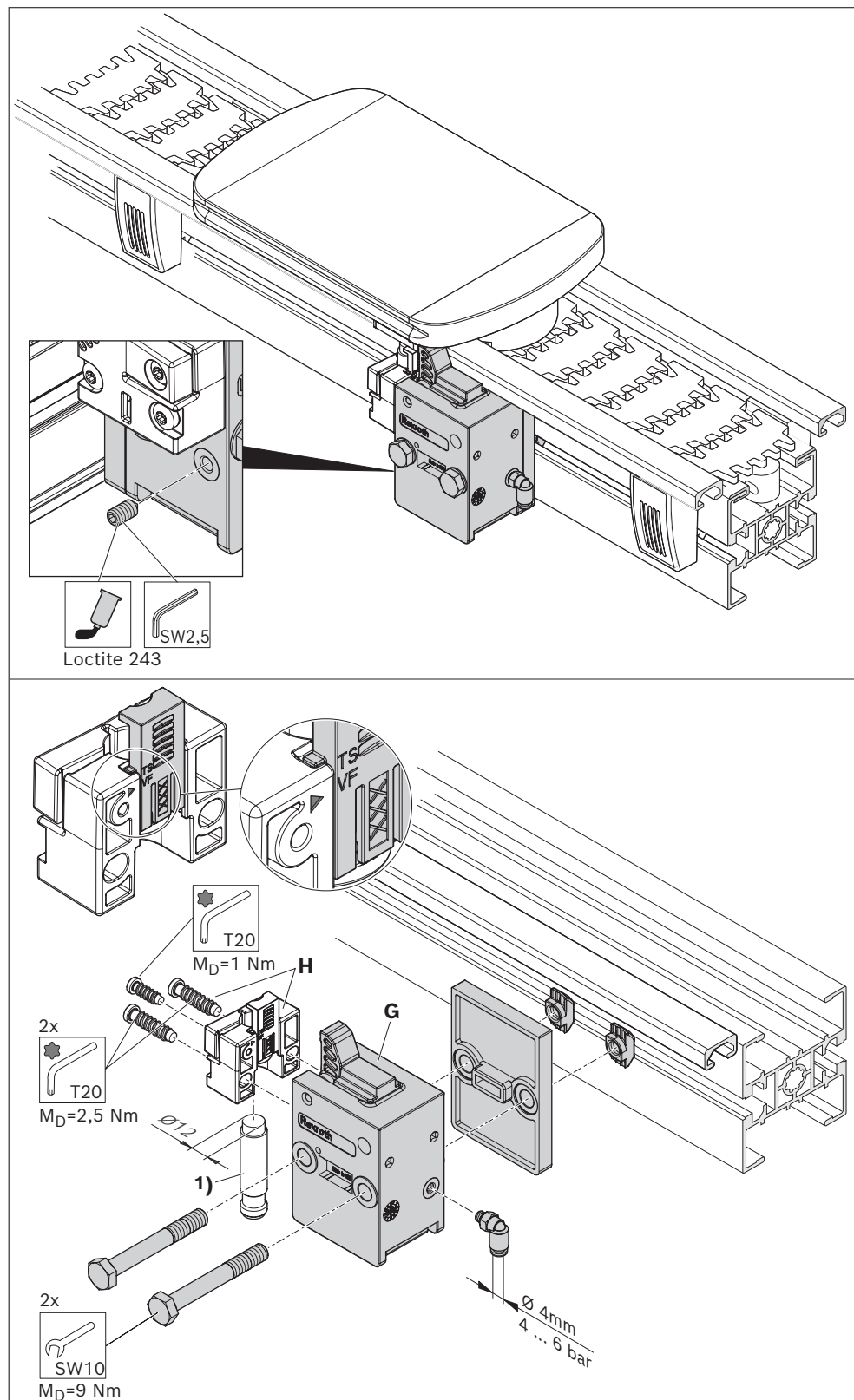
H: 3842 557 603

**Please note:****Safety instructions!**

The VE-VF and VE-VF/M stop gates are only designed for workpiece pallet separation in the Rexroth VarioFlow *plus* chain conveyor system. The VE-VF and VE-VF/M stop gates must not be loaded in reverse.

► Assemble the stop gate.

1) The sensor is not included in the scope of delivery.

**Fig. 127: Workpiece pallet system, stop gate VE-VF / VE-VF/M**

562 411-119

Required accessories:

- Return stop VF WT (J)

J: 3842 553 090

- Install the return stop.

Return stop VF WT

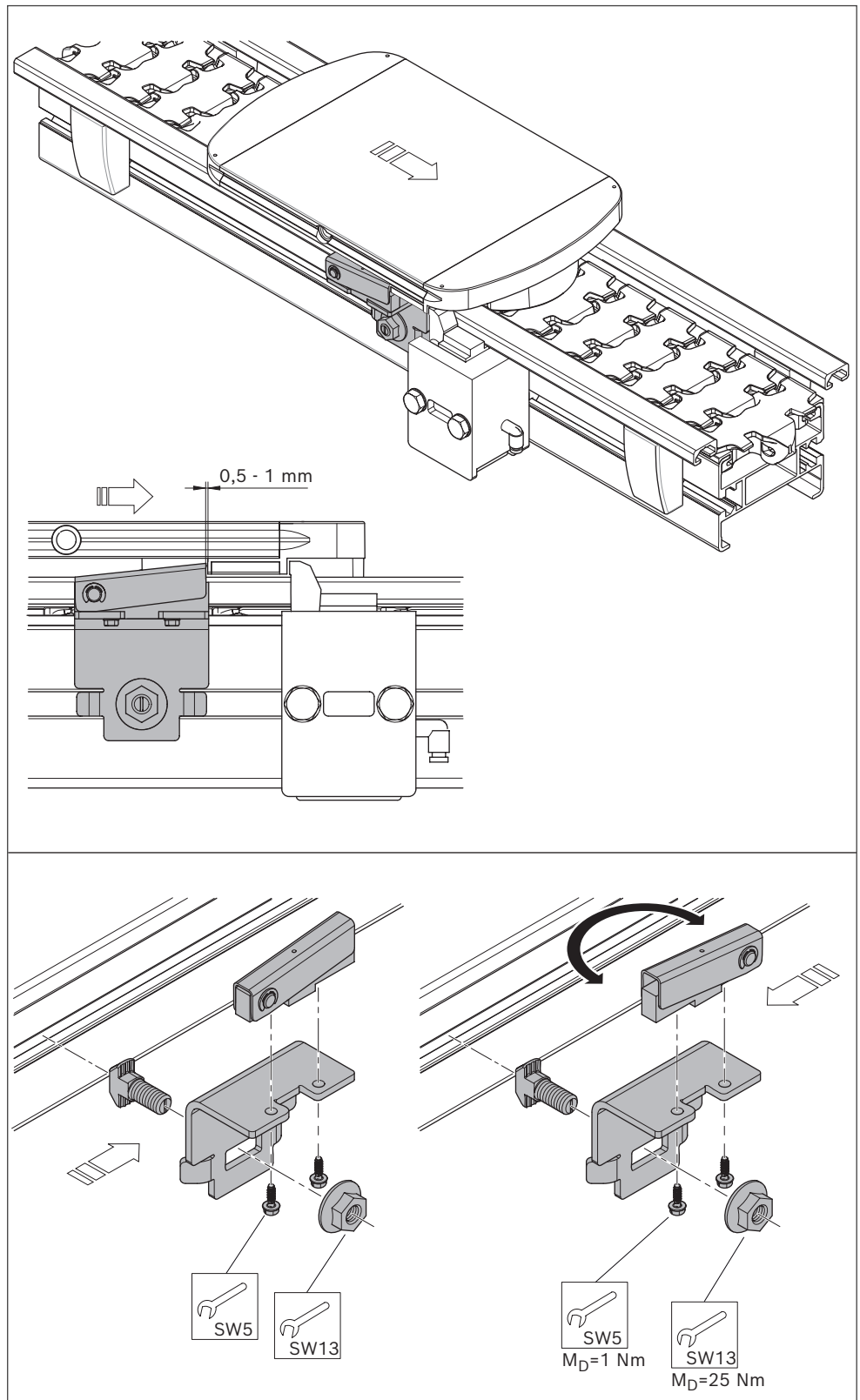


Fig. 128: Workpiece pallet system, return stop VF WT

562 411-120

Switch bracket SH VF/U

Required accessories:

- Switch bracket SH VF/U (K1)

K: 3842 557 603

- Install the switch bracket.

1) The sensor is not included in the scope of delivery.

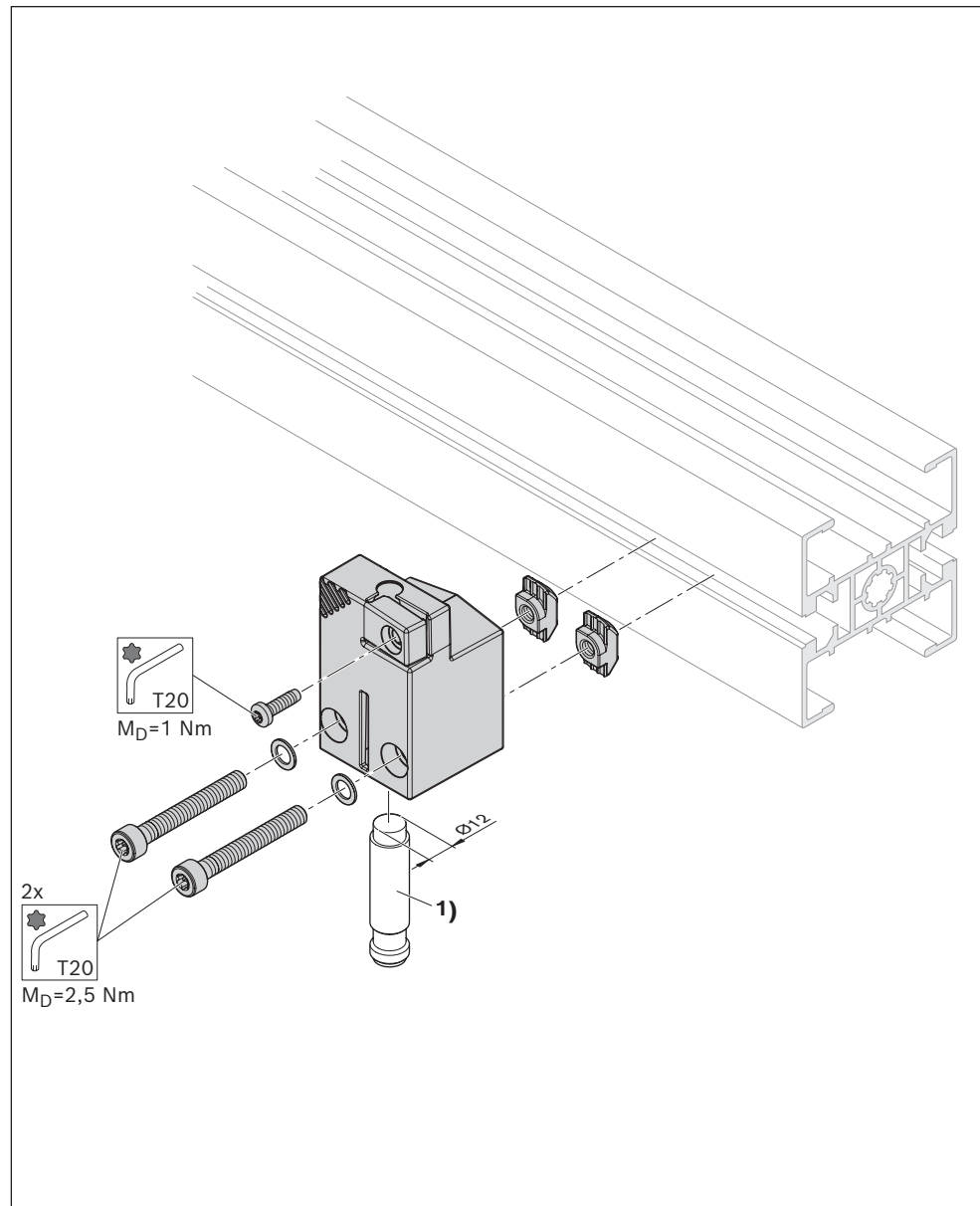
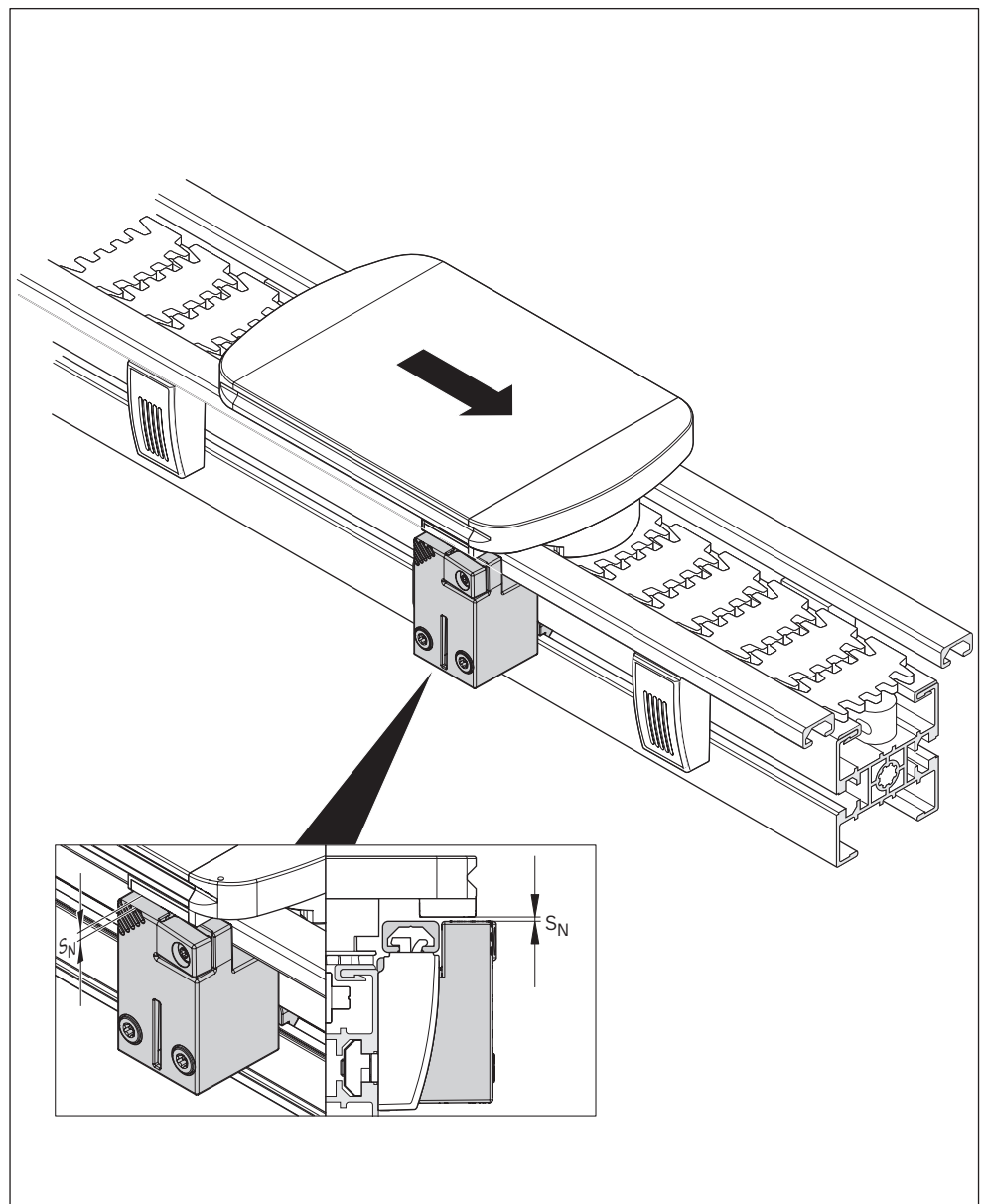


Fig. 129: Workpiece pallet system, switch bracket SH VF/U

562 411-121



562 411-122

Fig. 130: Workpiece pallet system, switch bracket SH VF/U

S_N : Switching distance of proximity switch = 2.1 mm

Switch bracket SH VF/UV

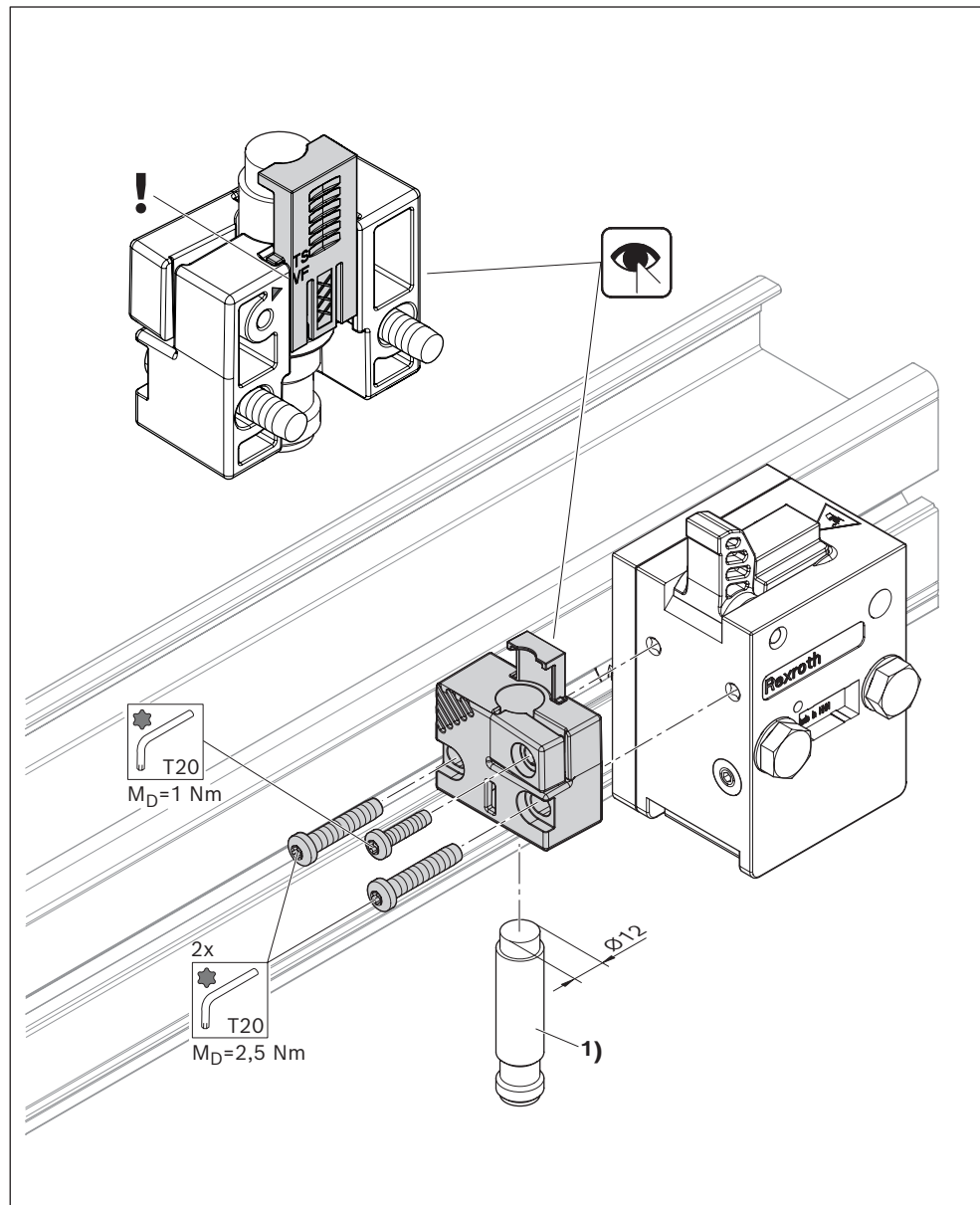
Required accessories:

- Switch bracket SH VF/UV (K2)

K: 3842 557 601

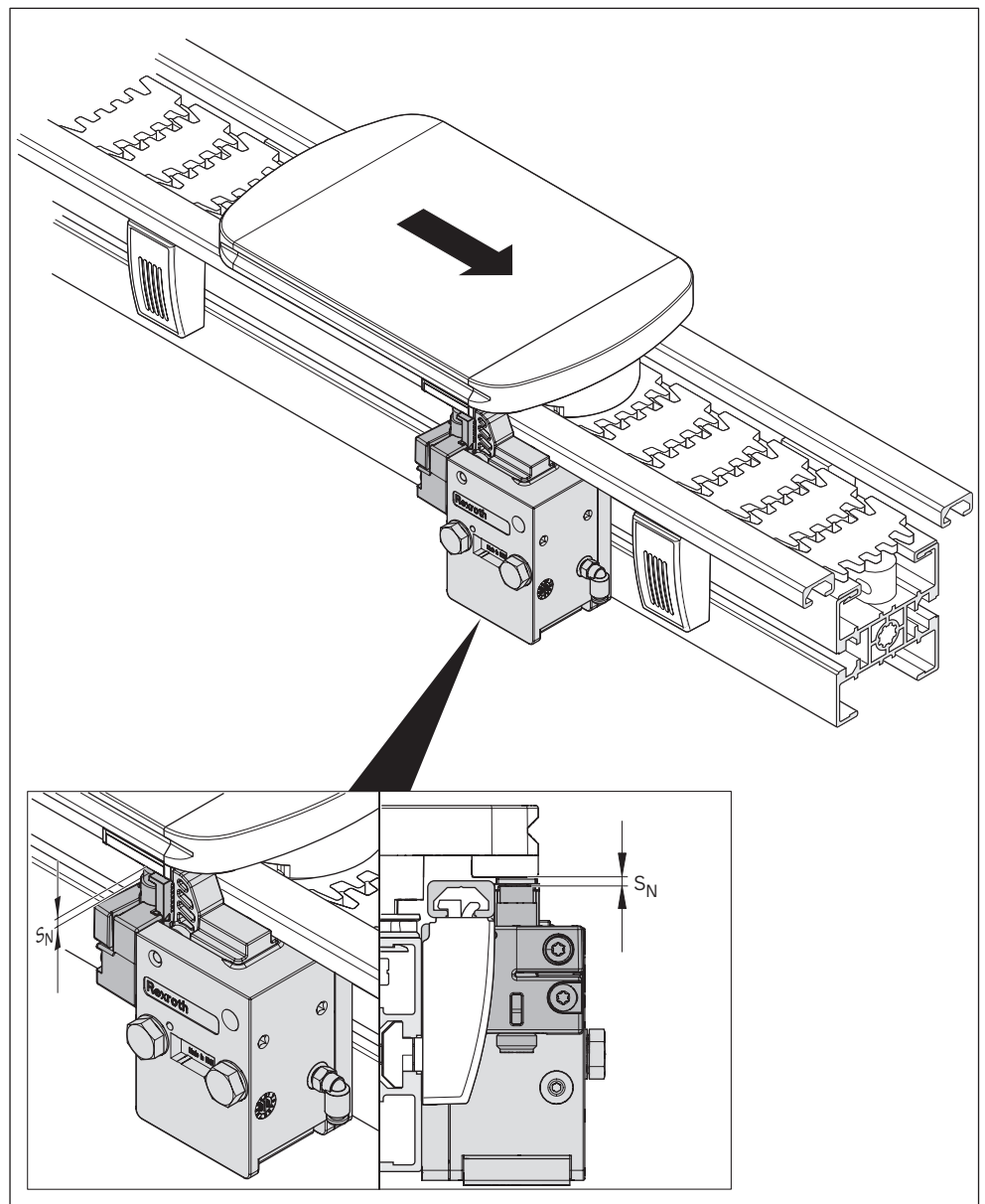
- Install the switch bracket.

1) The sensor is not included in the scope of delivery.



562 411-121

Fig. 131: Workpiece pallet system, switch bracket SH VF/UV



562 411-122

Fig. 132: Workpiece pallet system, switch bracket SH VF/UV

S_N : Switching distance of proximity switch = 2.8 mm

Required accessories:

- Positioning unit (L)

L: 3842 532 762



Please note:

Safety instructions!

- The VarioFlow WT positioning unit is intended for workpiece pallet positioning in the Rexroth VarioFlow chain conveyor system.
 - Before all repair and maintenance works, switch off the energy supplies (main switch, pressure reducing valve, etc.)!
 - In addition, measures are required to secure the system against being unintentionally switched on again, e.g. a corresponding warning sign.
- Install the positioning unit.

Positioning unit PE-VF/H

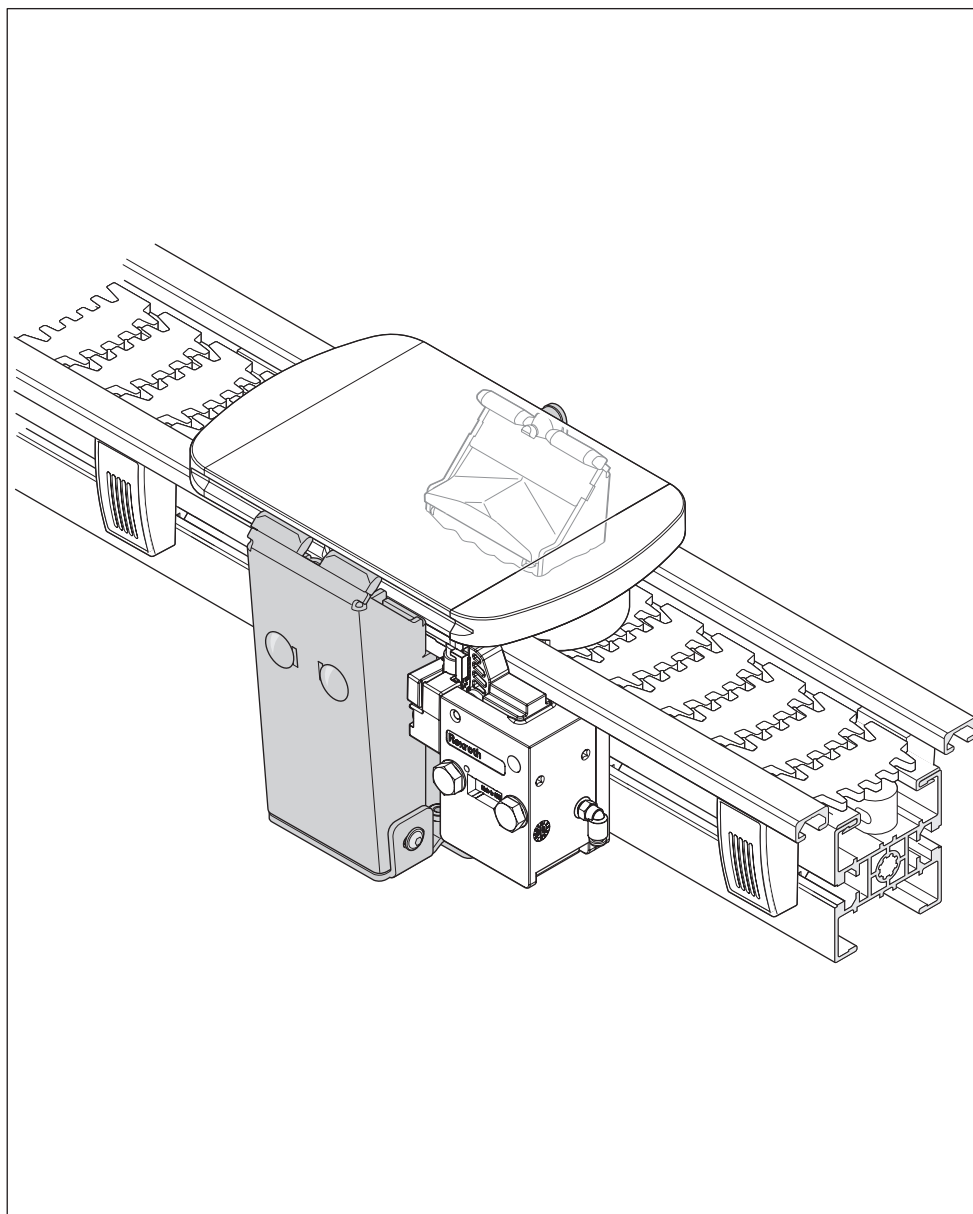


Fig. 133: Workpiece pallet system, positioning unit (1/3)

562 411-123

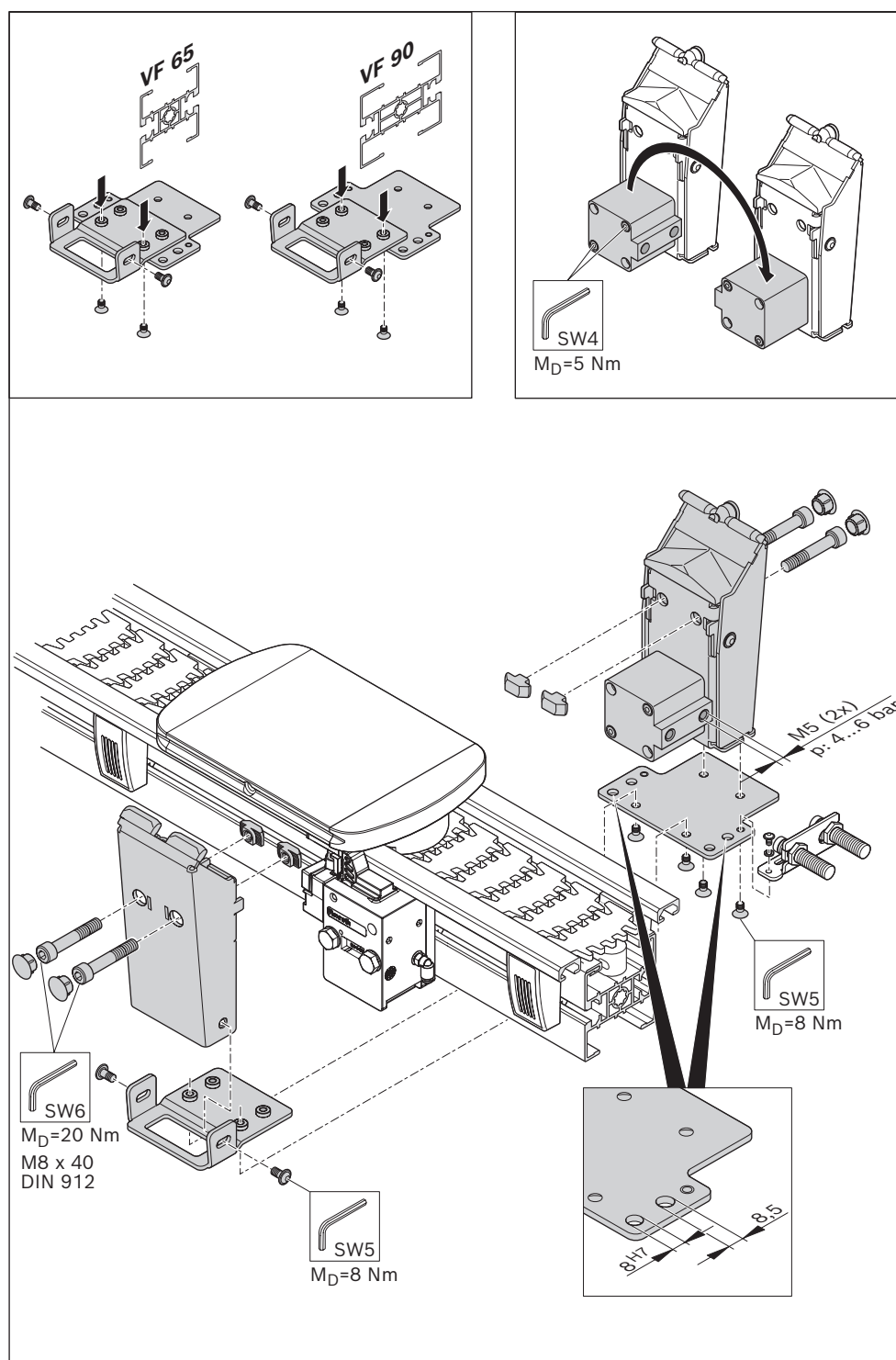
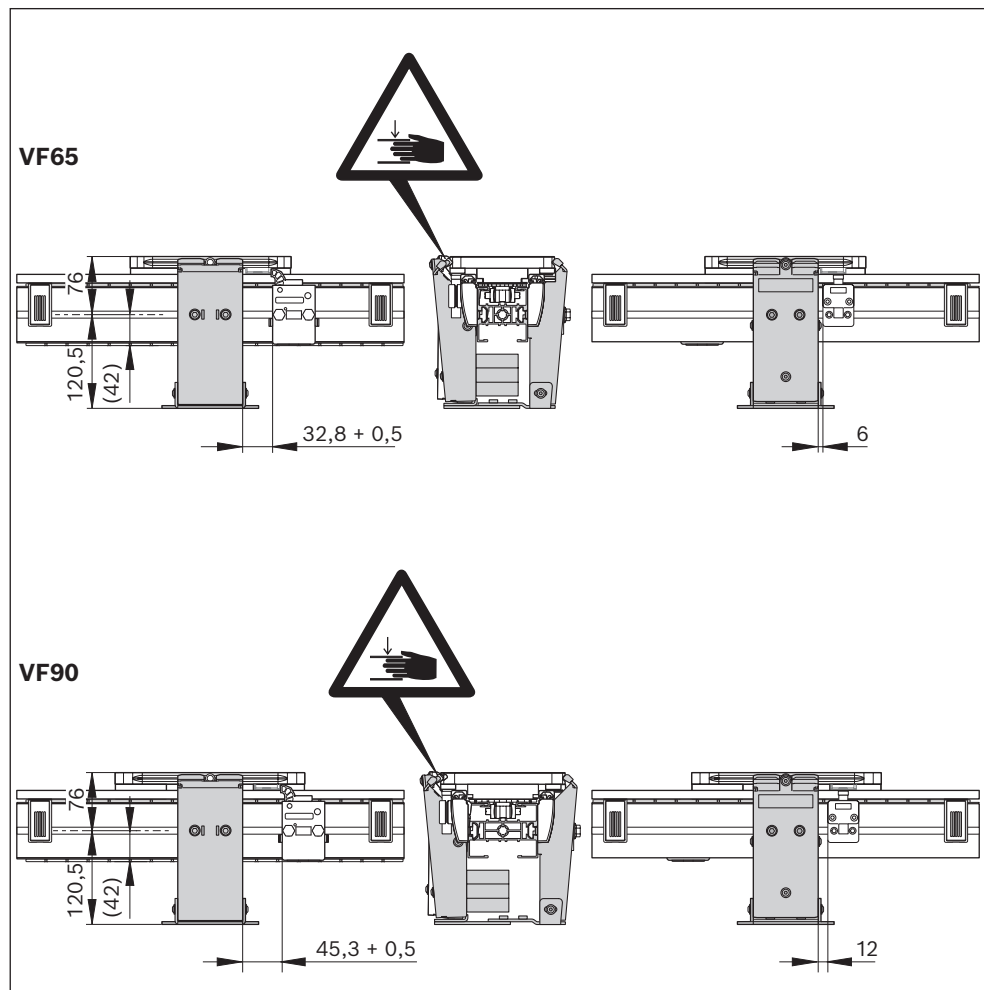


Fig. 134: Workpiece pallet system, positioning unit (2/3)

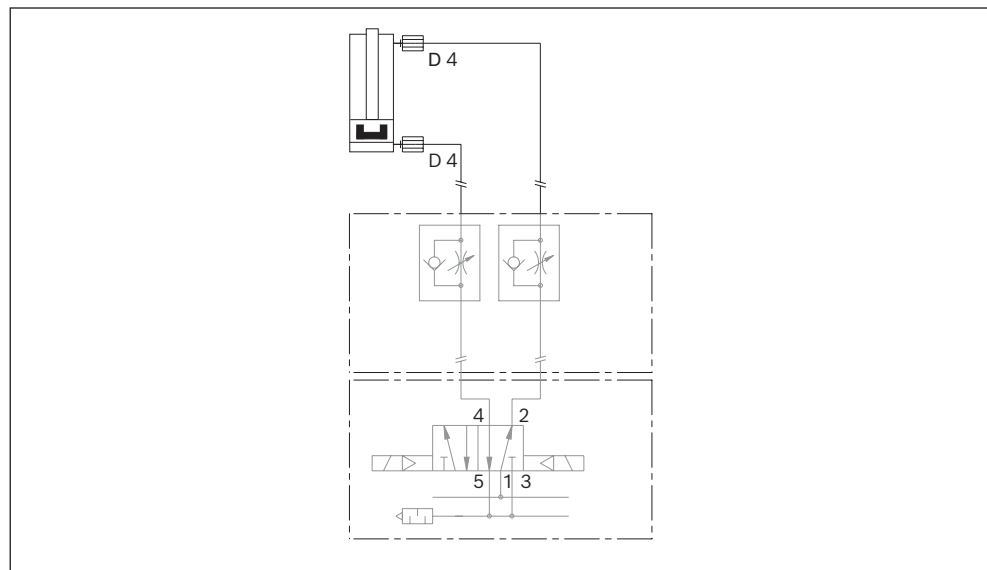
562 411-124

Commissioning:
Only operate the
positioning unit with
2 throttle check valves
(G 1/8", 0 821 200 187)!



562 411-125

Fig. 135: Workpiece pallet system, positioning unit (3/3)



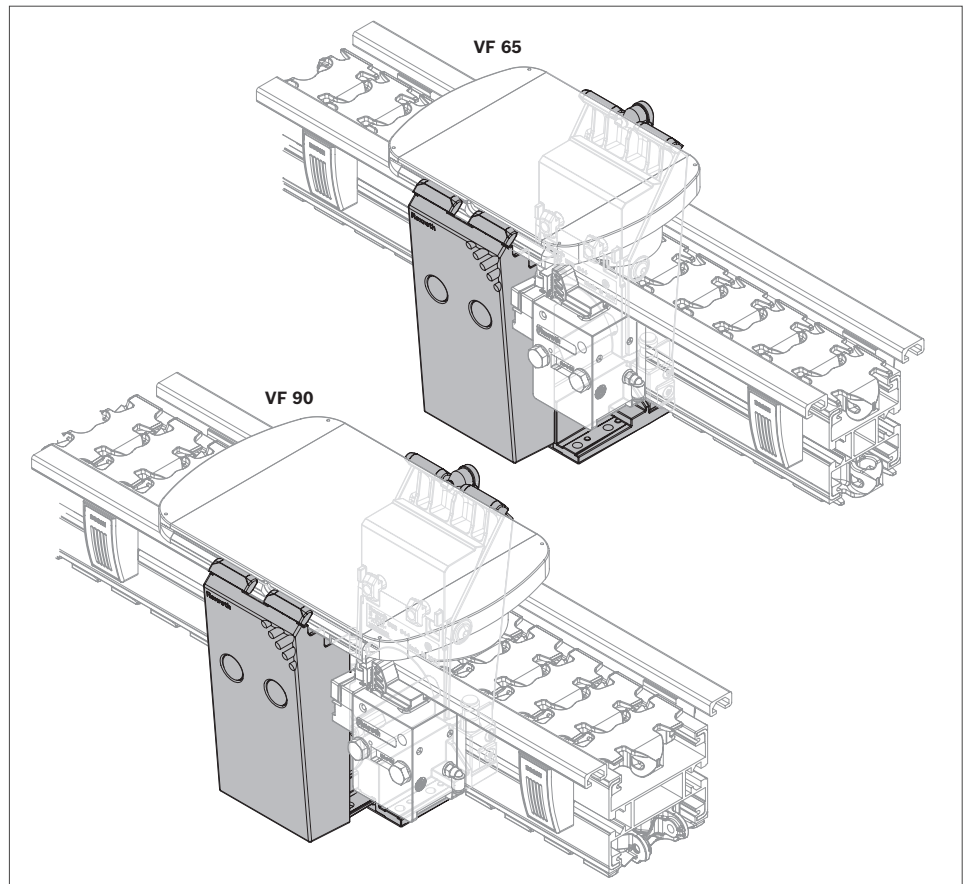
562411-126

Fig. 136: Circuit diagram positioning unit

Positioning unit PE-VF/C, VF 65, VF 90

**Please note:**

- The positioning unit PE-VF/C is intended for the positioning of workpiece pallets in the Rexroth VarioFlow *plus* chain conveyor system.
 - Before all repair and maintenance works, switch off the energy supplies (main switch, pressure reducing valve, etc.)!
 - In addition, measures are required to secure the system against being unintentionally switched on again, e.g. a corresponding warning sign.
- Install the positioning unit.

**Fig. 137: Workpiece pallet system, positioning unit (1/4)**

562 411-201

Positioning unit PE-VF, mounted as VF 65

Required accessories:

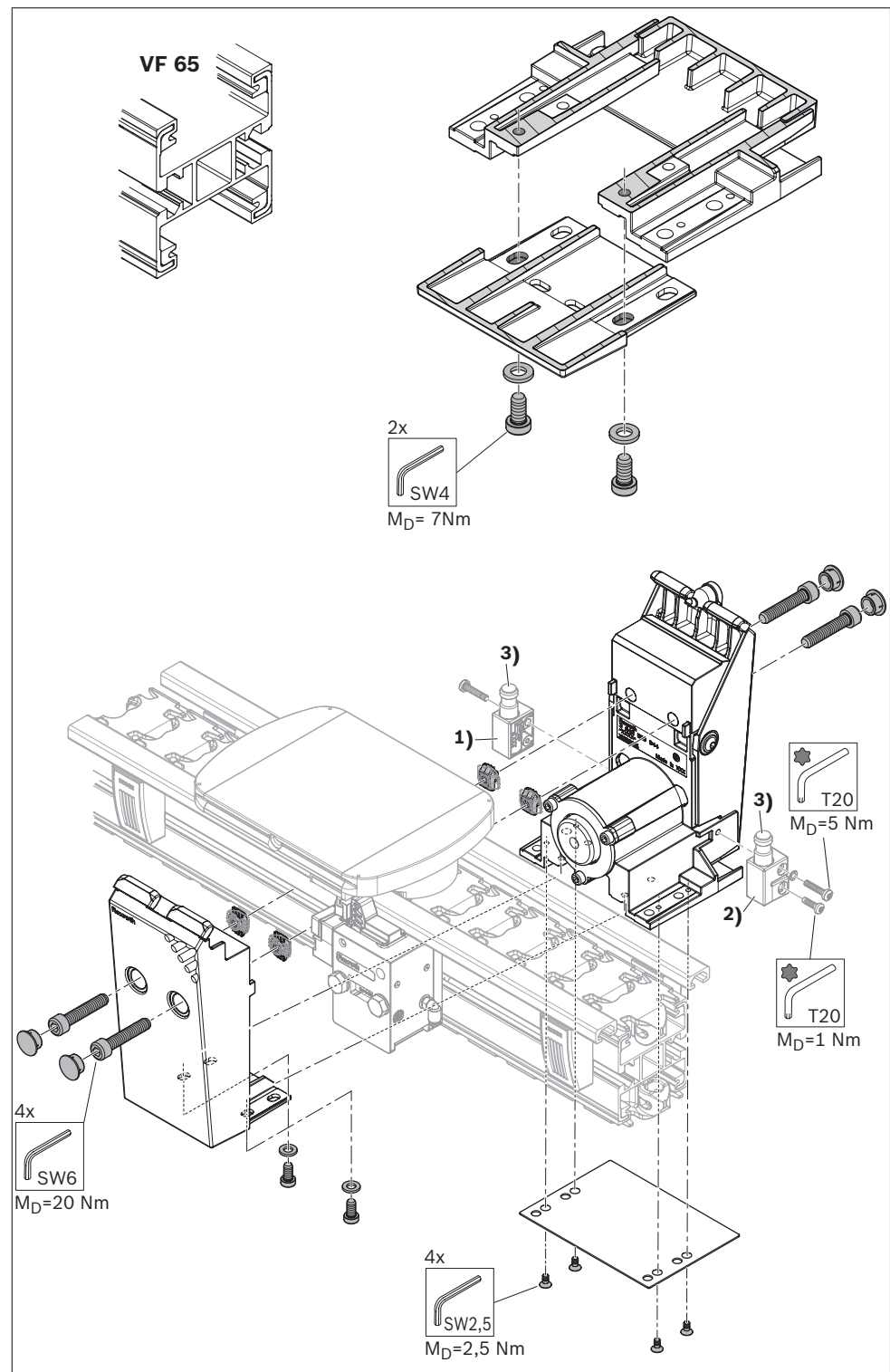
- Positioning unit, PE-VF/C (L1)

L1: 3842 557 090

¹⁾*: 3842 557 606

²⁾*: 3842 557 090

³⁾*: 3842 557 090



562 411-202

Fig. 138: Workpiece pallet system, positioning unit PE-VF/C (2/4), mounted on VF 65

Positioning unit PE-VF, mounted as VF 90

Required accessories:

- Positioning unit,
PE-VF/C (L1)

L1: 3842 557 090

¹⁾*: 3842 557 606

²⁾*: 3842 557 090

³⁾*: 3842 557 090

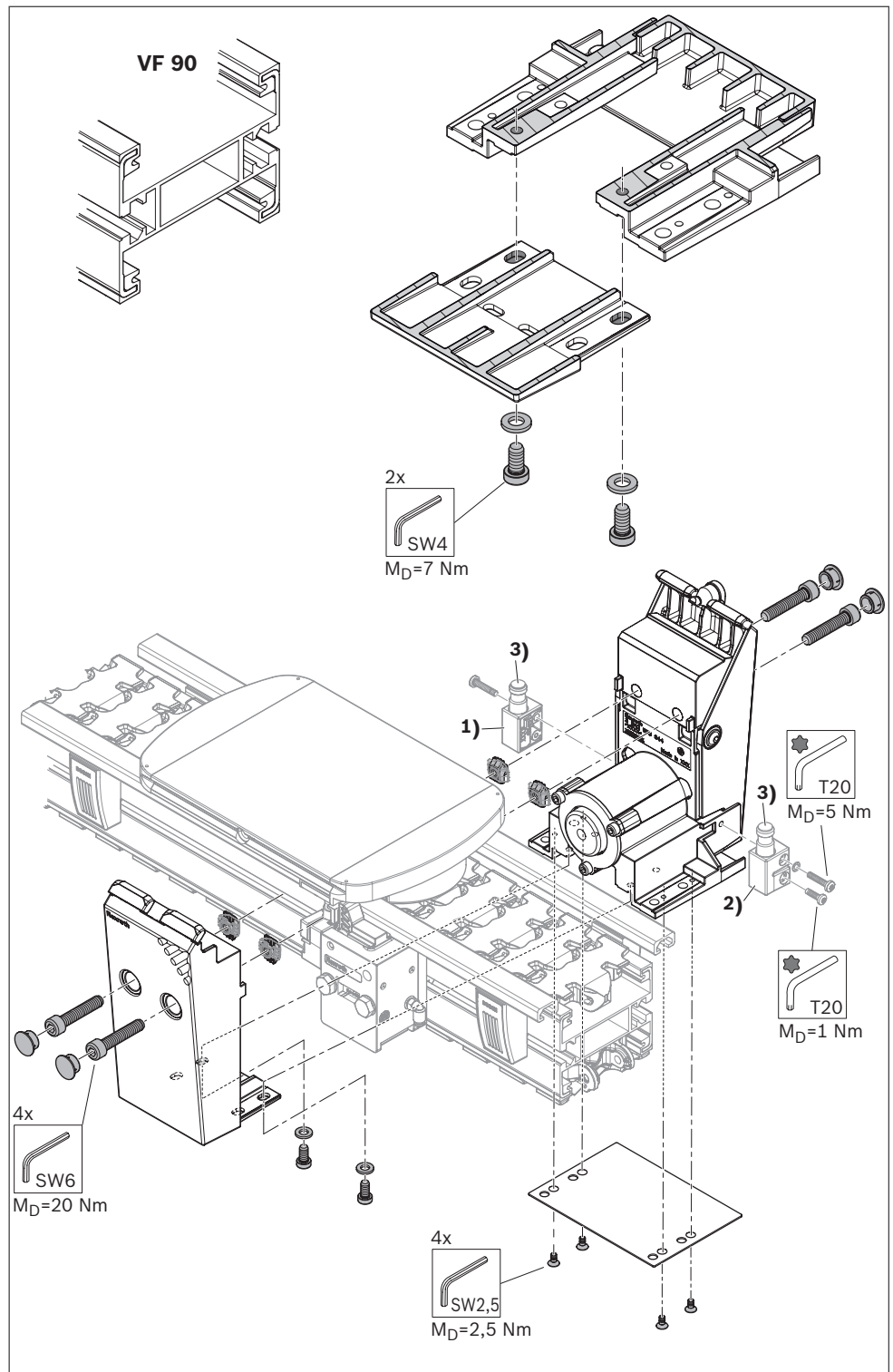
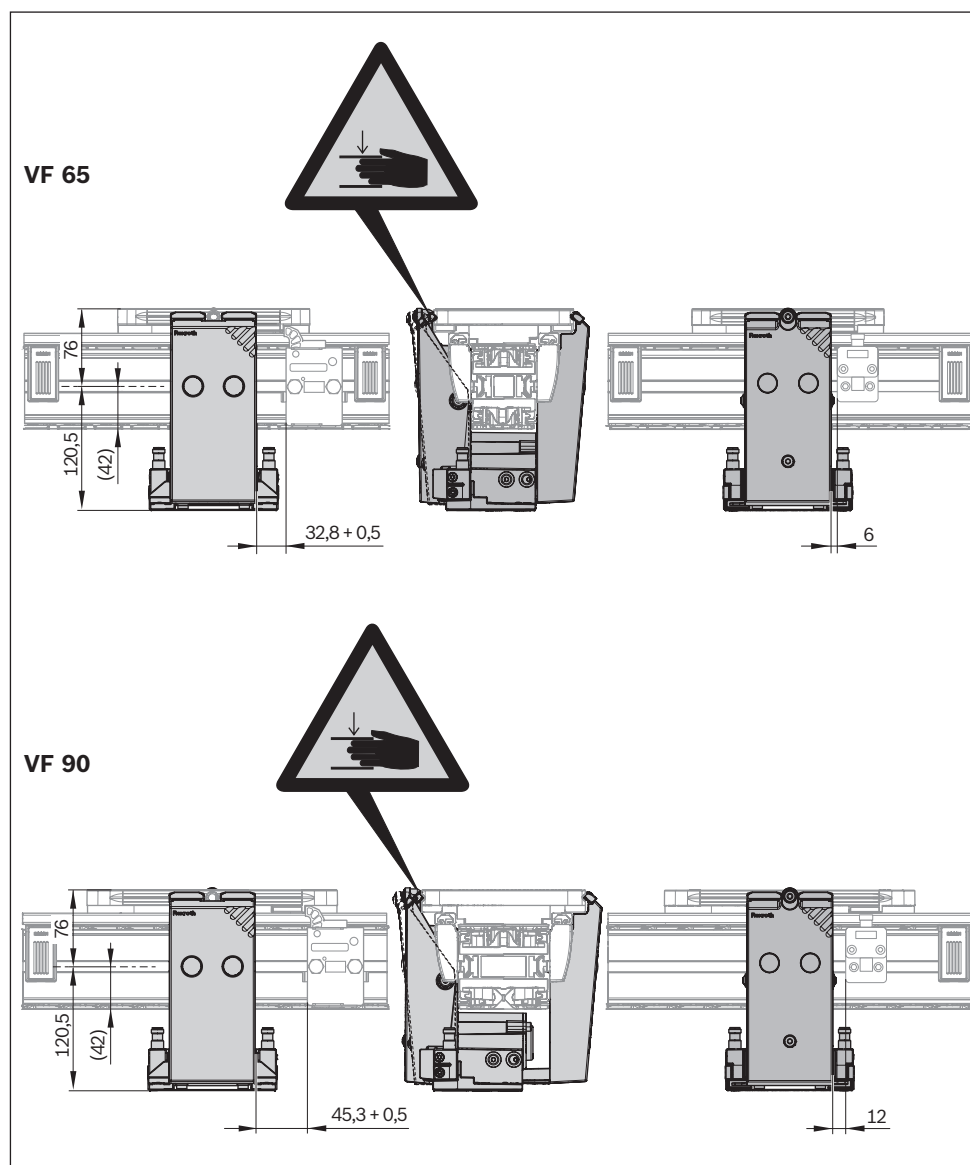


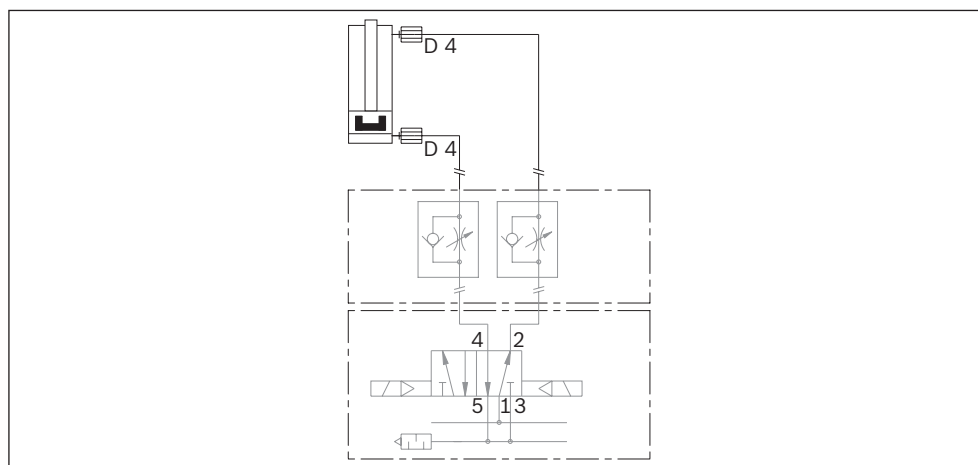
Fig. 139: Workpiece pallet system, positioning unit PE-VF/C (3/4), mounted on VF 90

Commissioning:
Only operate the
positioning unit with
2 throttle check valves
(G 1/8", 0 821 200 187)!



562 411-204

Fig. 140: Workpiece pallet system, positioning unit (4/4)



562 411-205

Fig. 141: Circuit diagram positioning unit

Required accessories:

- Section transfer (M)

M: 3842 535 001

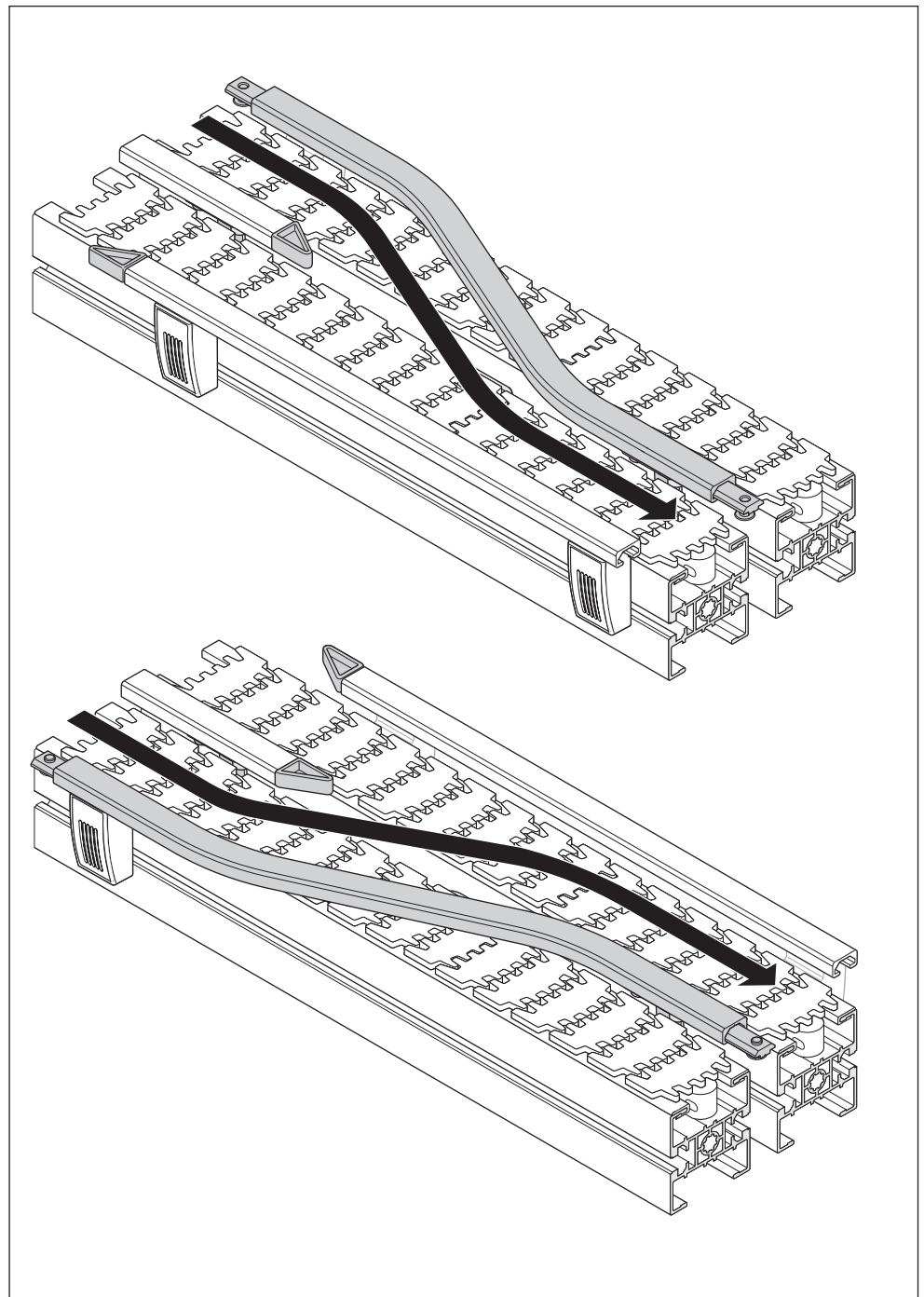
M: 3842 535 002

M: 3842 535 003

M: 3842 535 004

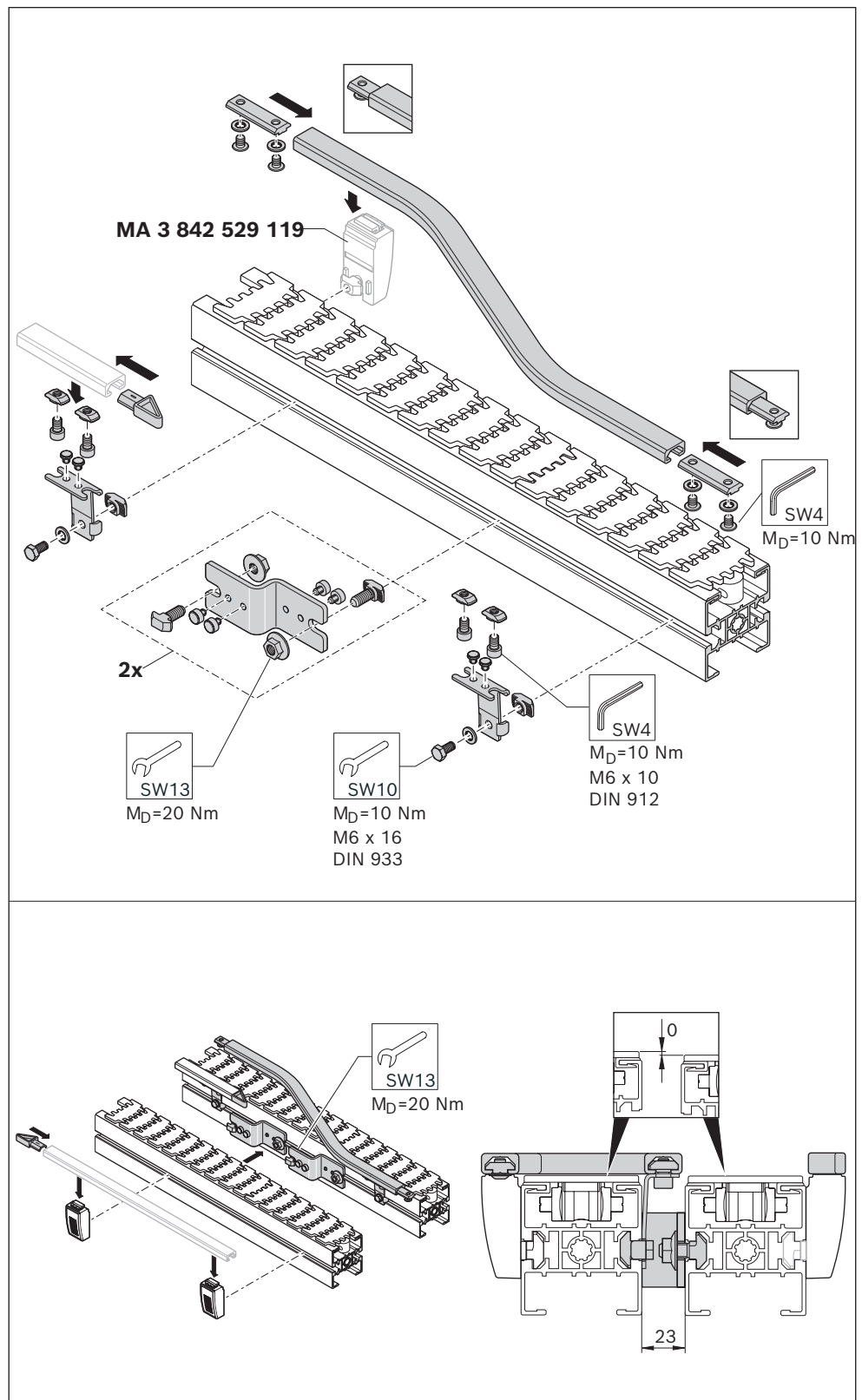
- Install the section transfer.

Section transfer VarioFlow



562 411-127

Fig. 142: Workpiece pallet system, VarioFlow section transfer (1/2)



562 411-128

Fig. 143: Workpiece pallet system, VarioFlow section transfer (2/2)

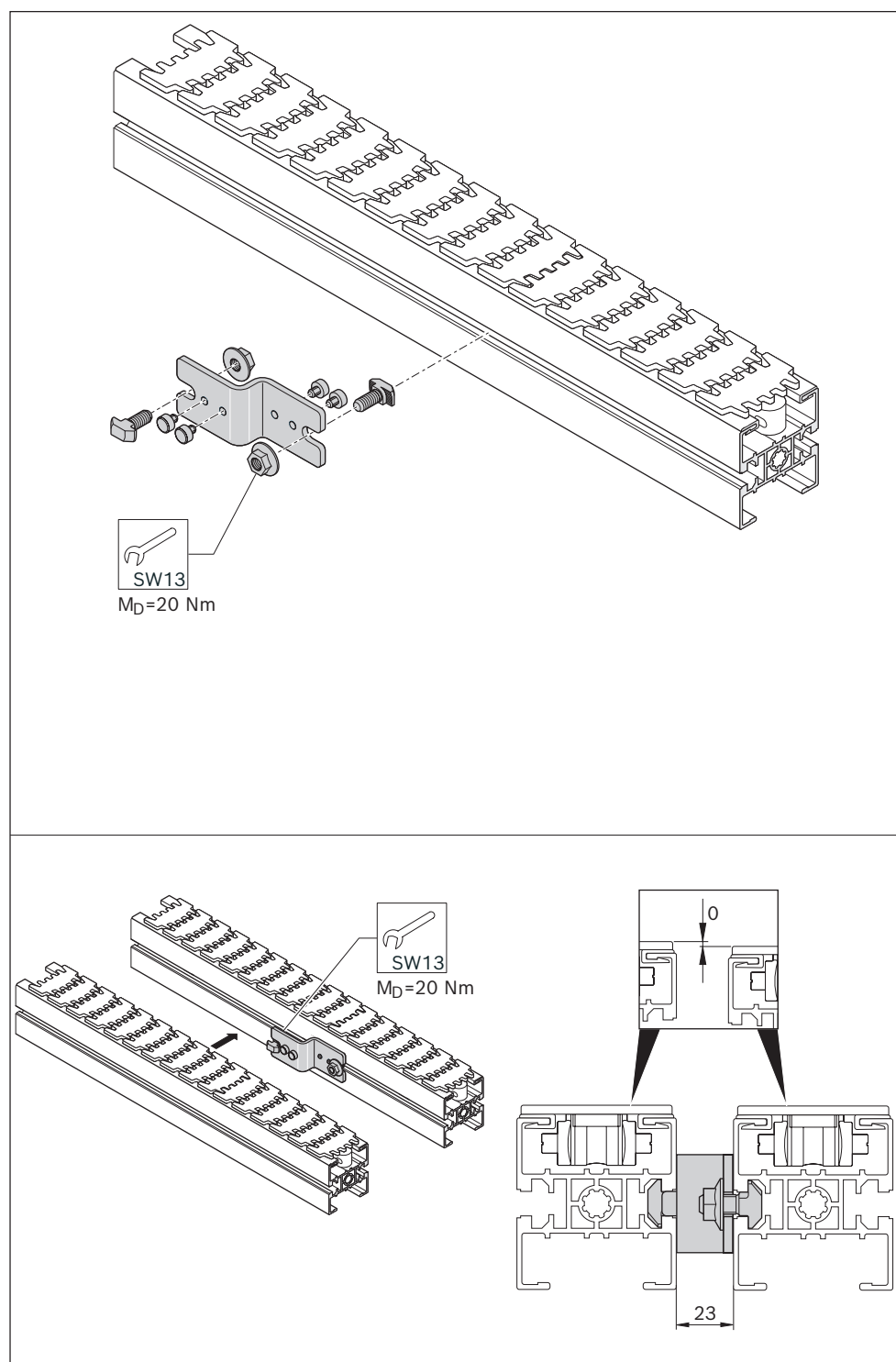
Required accessories:

- Section link (N)

N: 3842 532 998

- Install the section link.

Section link VarioFlow



562 411-129

Fig. 144: Workpiece pallet system, VarioFlow section link

Required accessories:

- Diverter kit (O)

O, VF 65,

45°, right: **3842 551 104**

45°, left: **3842 551 105**

90°, right: **3842 551 111**

90°, left: **3842 551 121**

O, VF 90,

45°, right: **3842 551 090**

45°, left: **3842 551 091**

90°, right: **3842 551 110**

90°, left: **3842 551 100**



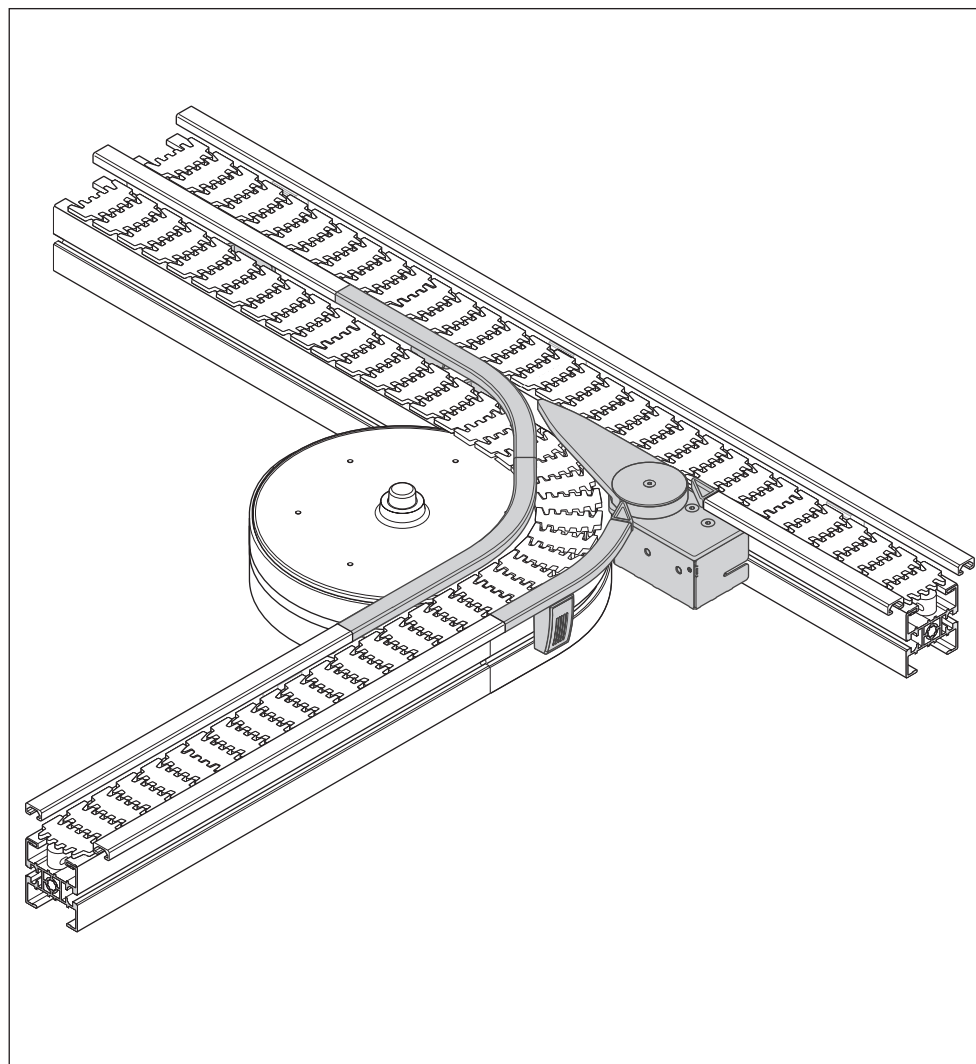
Please note:

Safety instructions!

The VarioFlow WT diverter is intended for steering the workpiece pallets in the Rexroth VarioFlow *plus* chain conveyor system.

- Install the diverter kit.

Diverter kit



562 411-130

Fig. 145: Workpiece pallet system, diverter kit (1/7)

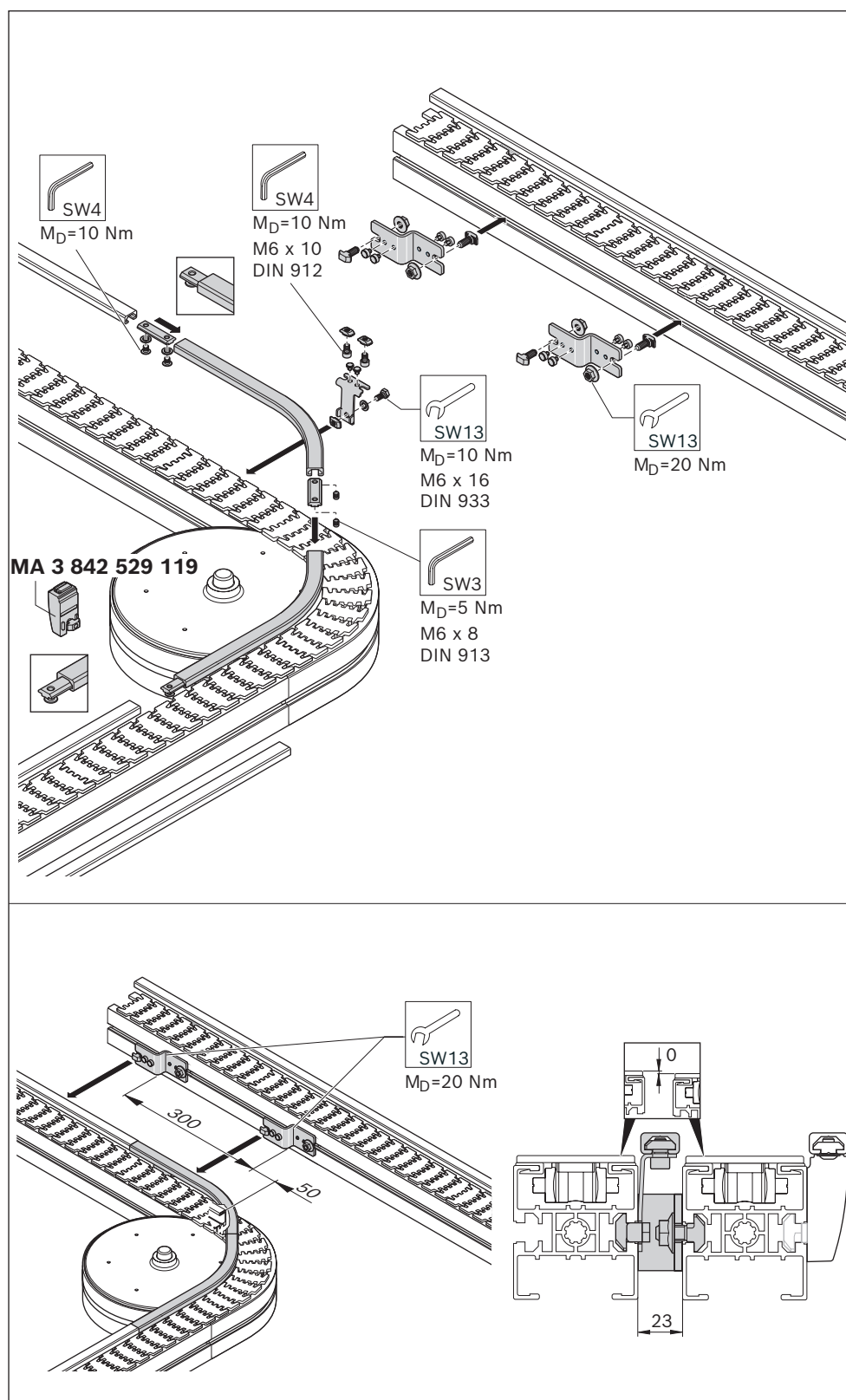
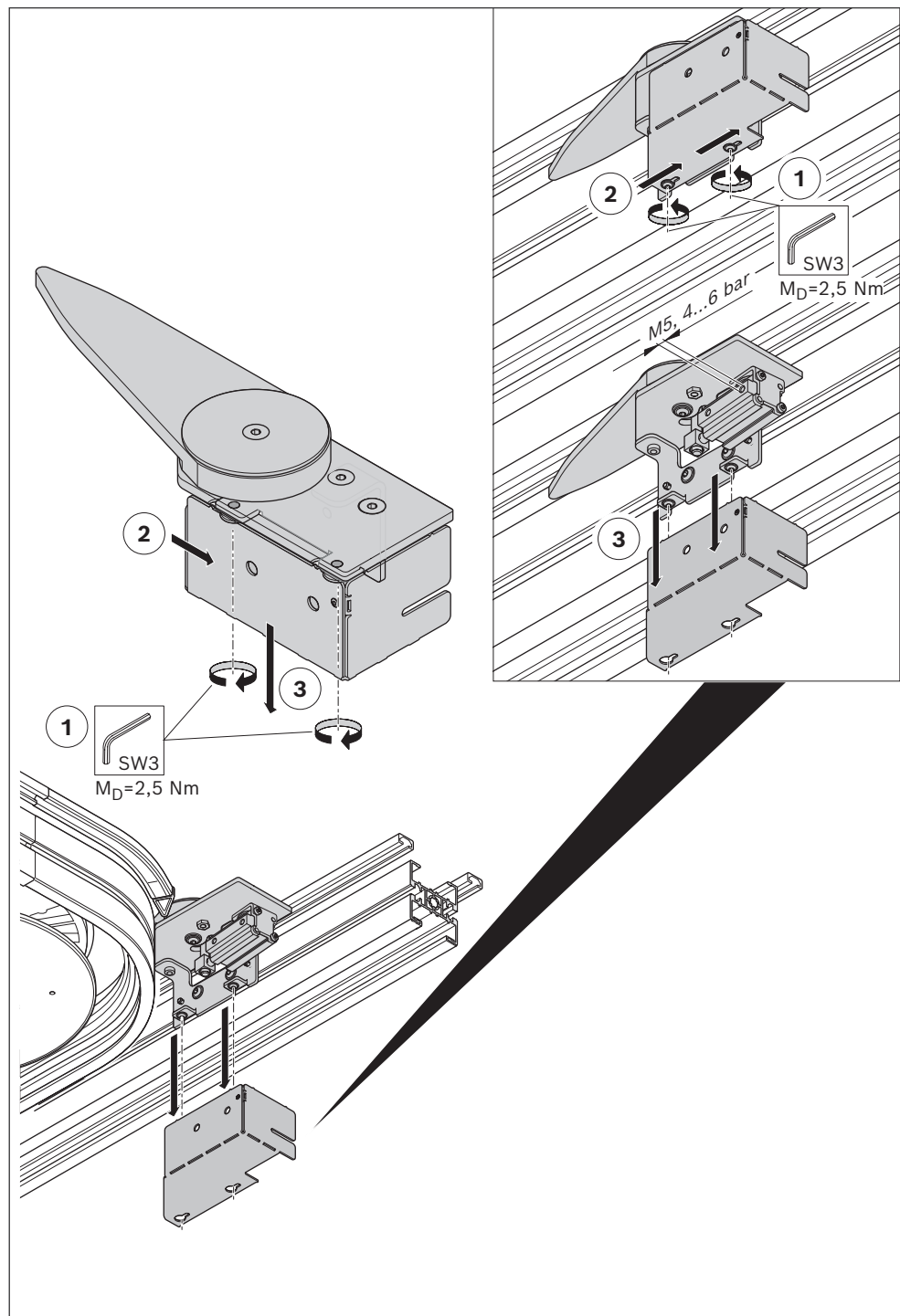


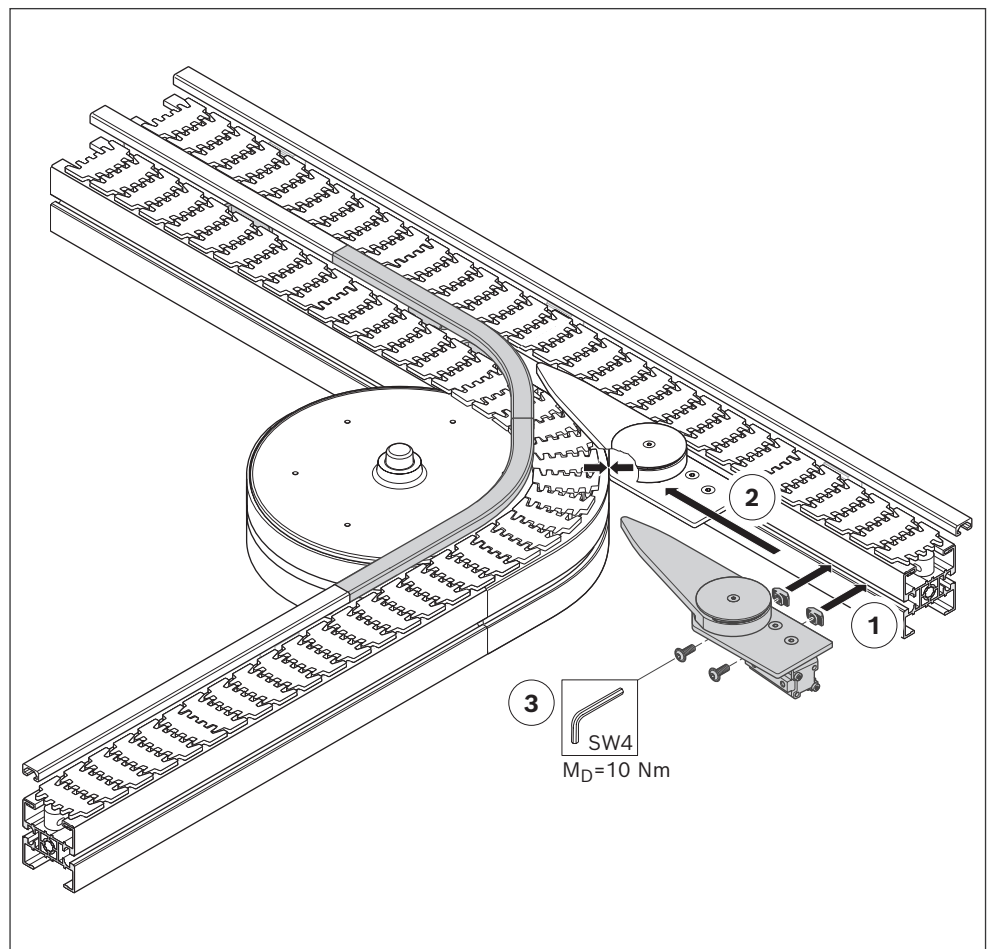
Fig. 146: Workpiece pallet system, diverter kit (2/7)

562 411-131



562 411-132

Fig. 147: Workpiece pallet system, diverter kit (3/7)

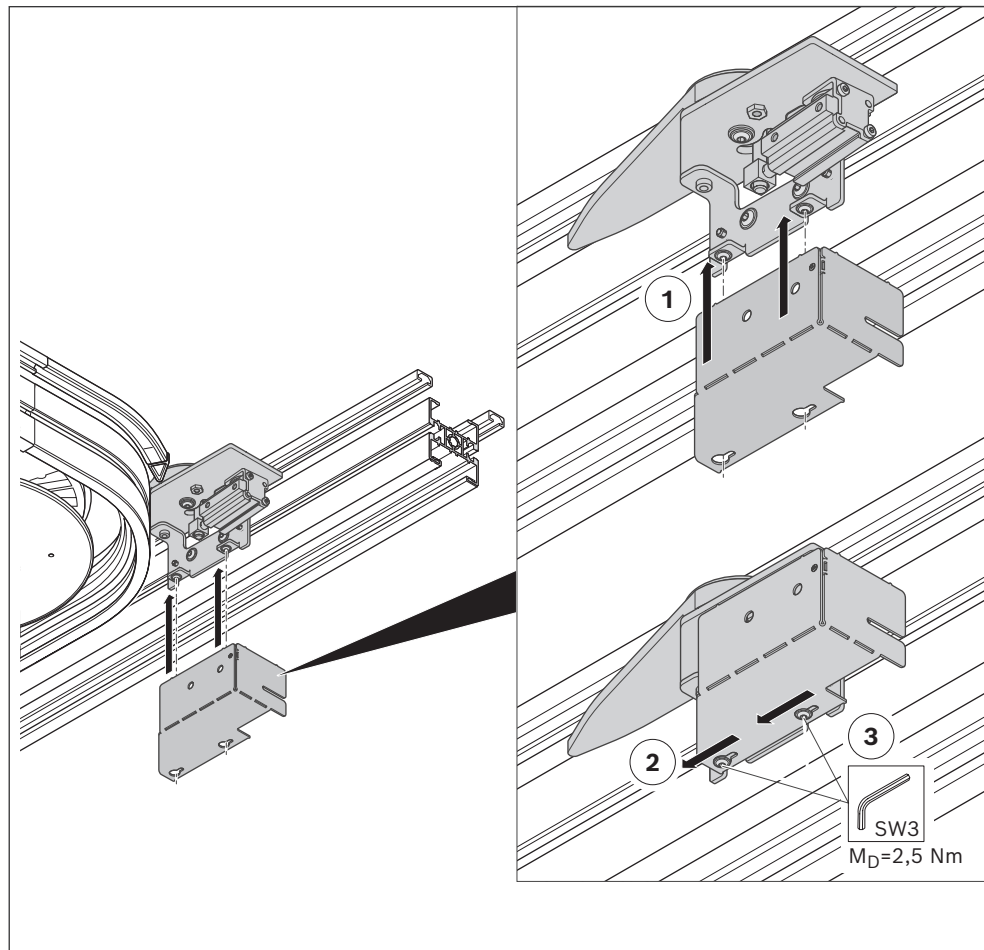


562 411-133

Fig. 148: Workpiece pallet system, diverter kit (4/7)

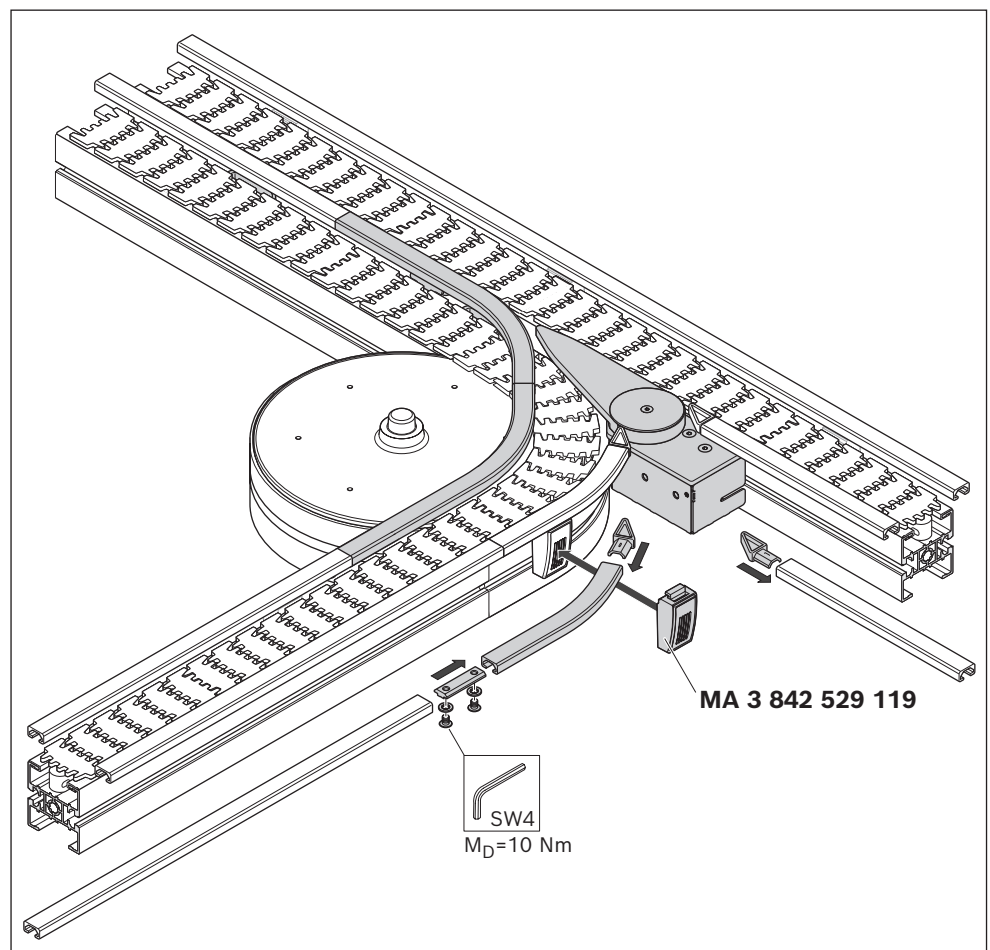
Commissioning:

Only operate the diverter with 2 throttle check valves (G 1/8", 0 821 200 187) in order to set the swiveling speed of the diverter blade and to dampen the impact to the stop.



562 411-134

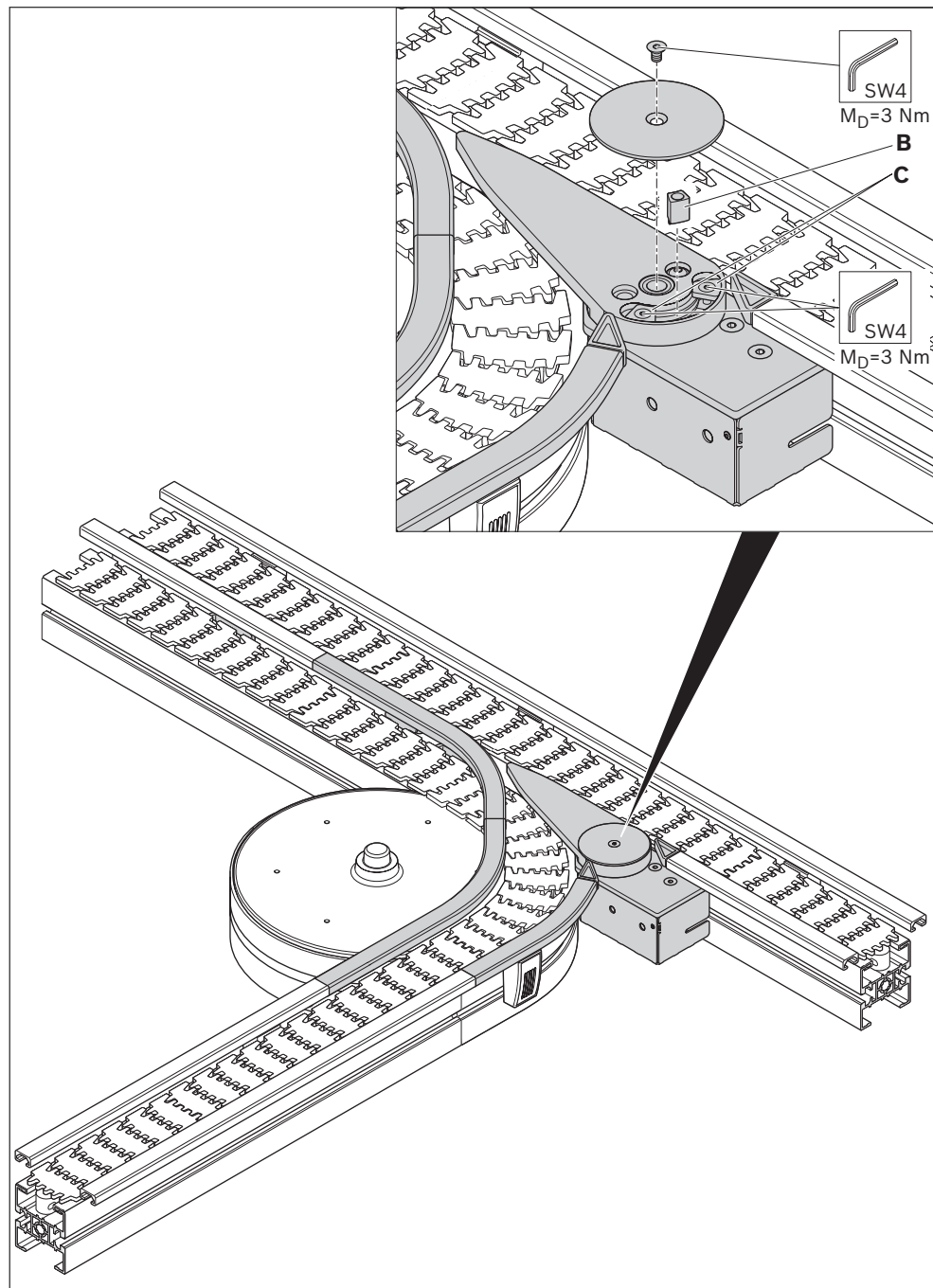
Fig. 149: Workpiece pallet system, diverter kit (5/7)



562 411-135

Fig. 150: Workpiece pallet system, diverter kit (6/7)

Only operate the diverter with 2 throttle check valves (G 1/8", 0 821 200 187) in order to set the swivel speed of the diverter blade and to dampen the impact to the stop.



562 411-136

Fig. 151: Workpiece pallet system, diverter kit (7/7)

Required accessories:

- Cross-diverter kit (P)

P, VF65,

45°, right: **3842 551 086**

45°, left: **3842 551 140**

90°, right: **3842 551 108**

90°, left: **3842 551 141**

P, VF90,

45°, right: **3842 551 084**

45°, left: **3842 551 139**

90°, right: **3842 551 074**

90°, left: **3842 551 138**

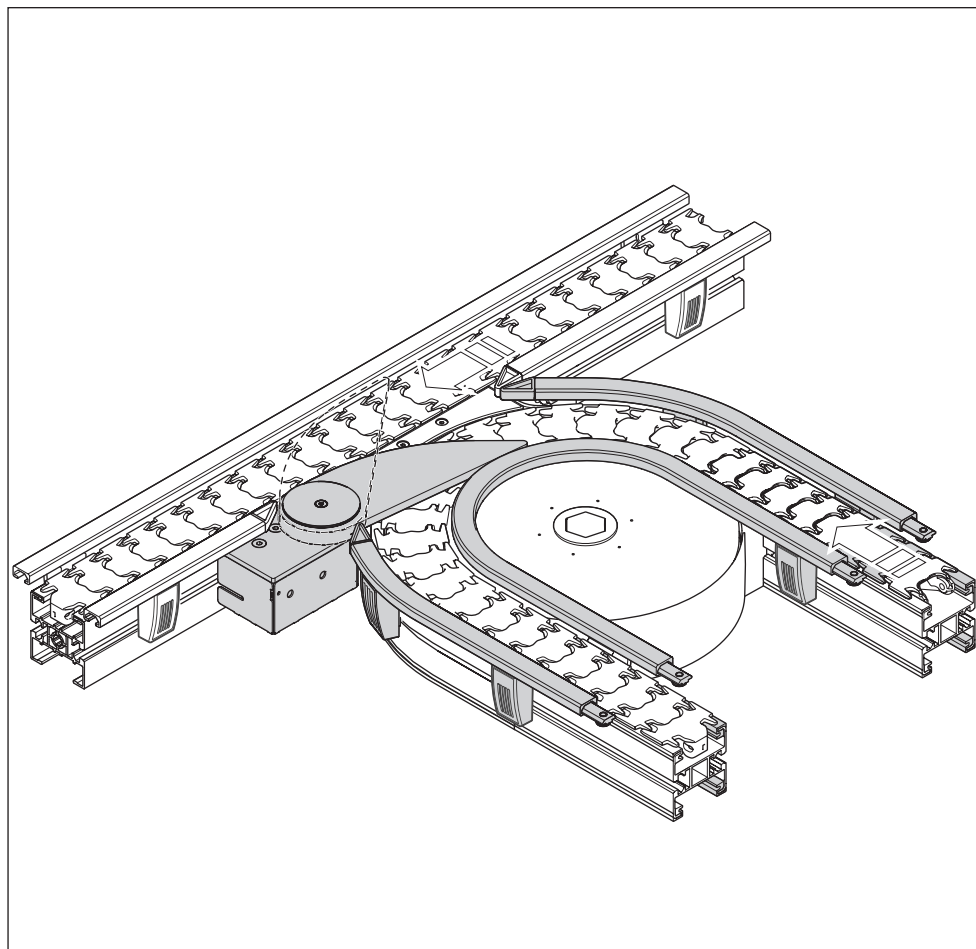


Please note:

Safety instructions!

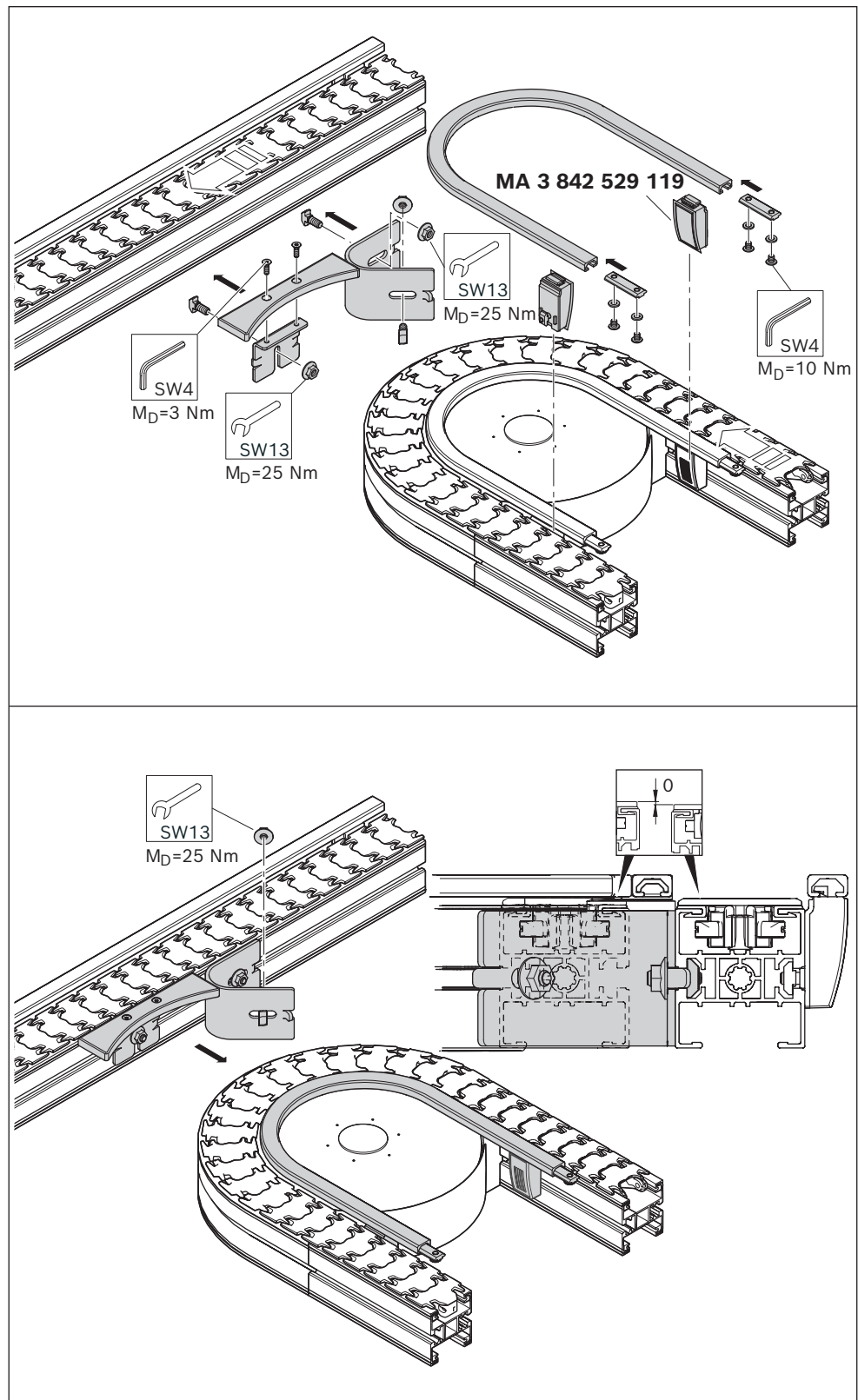
The VarioFlow *plus* WT diverter is intended for steering the workpiece pallets in the Rexroth VarioFlow *plus* chain conveyor system.

Cross-diverter kit



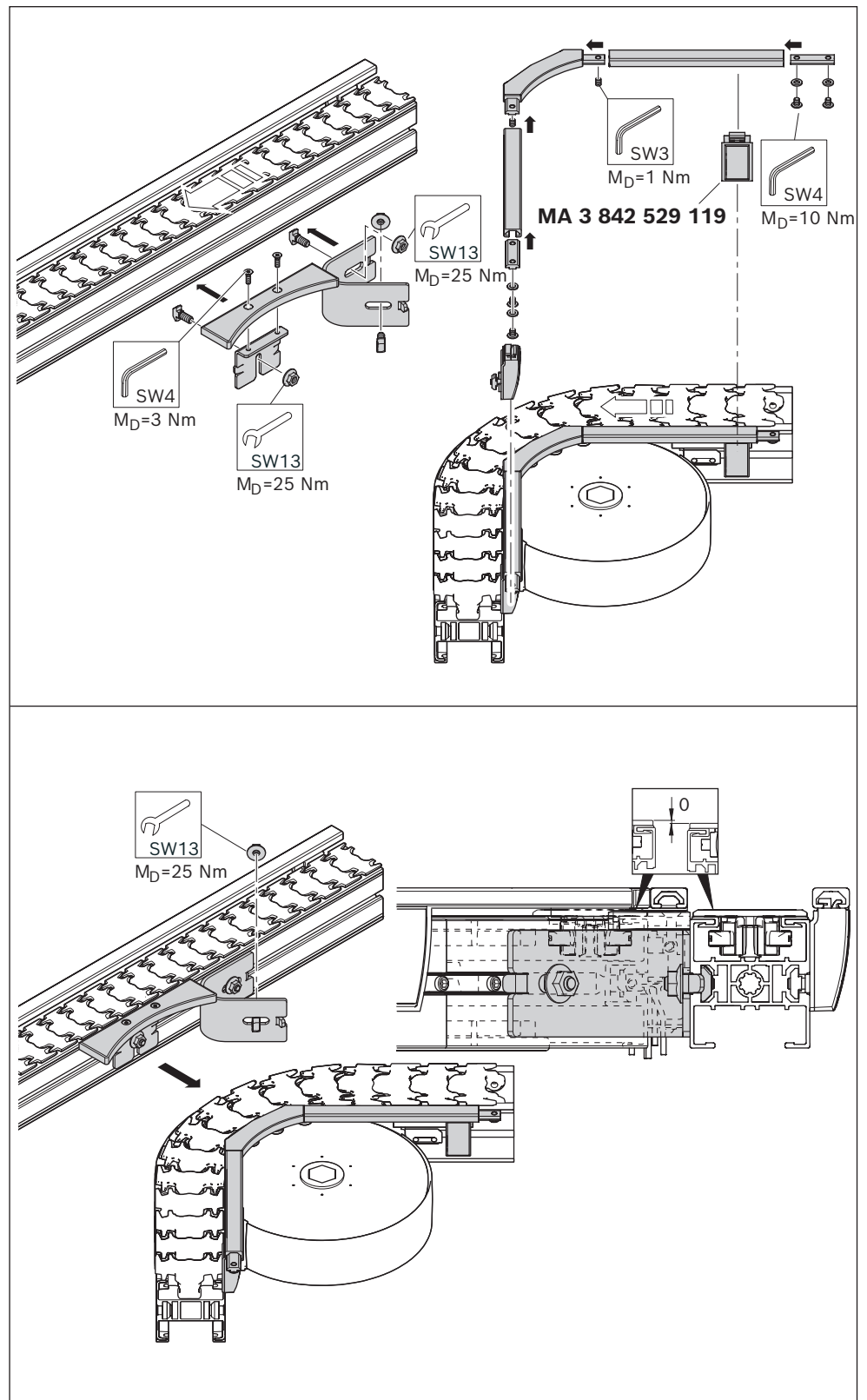
562 411-137

Fig. 152: Workpiece pallet system, cross-diverter kit



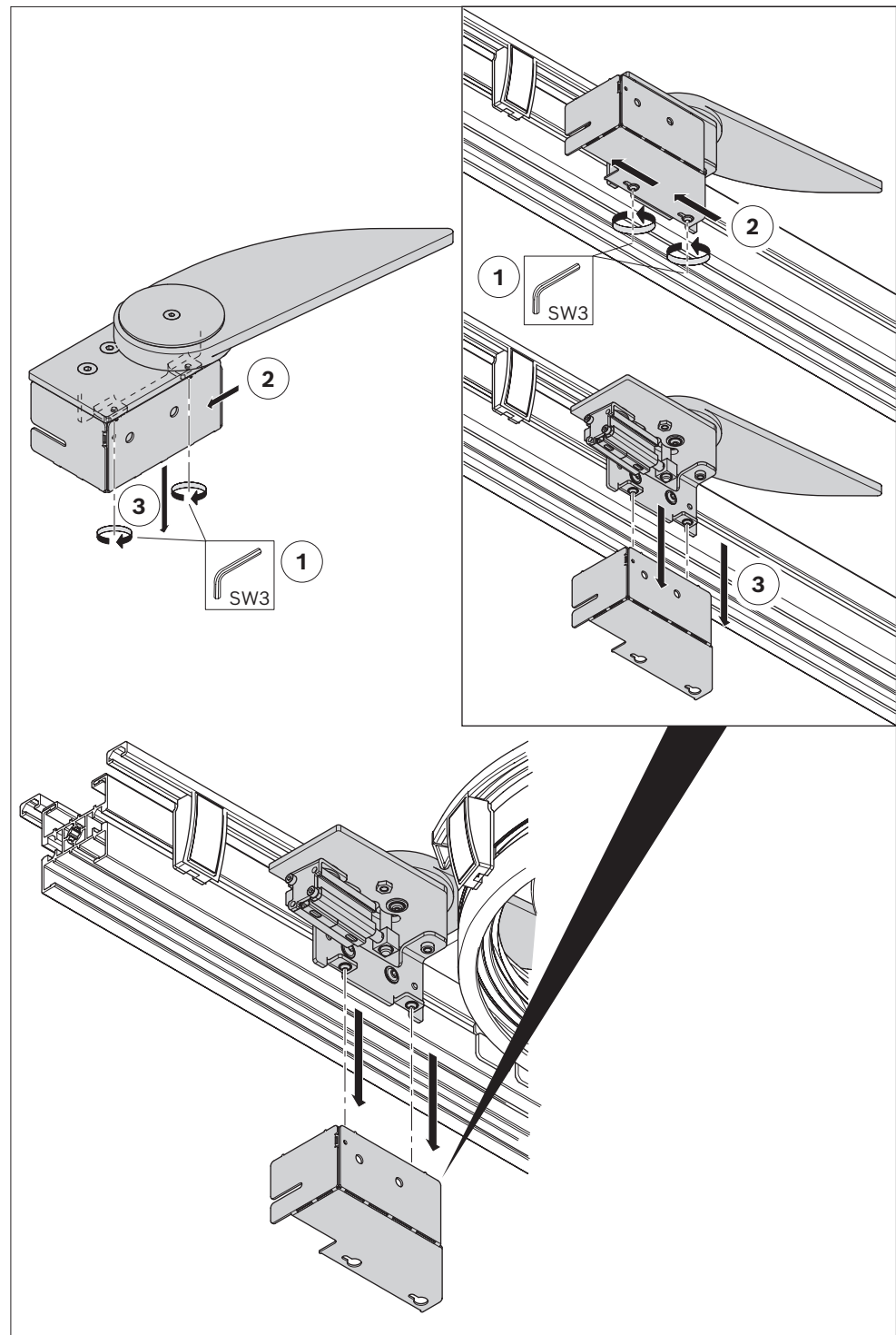
562 411-138

Fig. 153: Workpiece pallet system, 90° cross-diverters



562 411-139

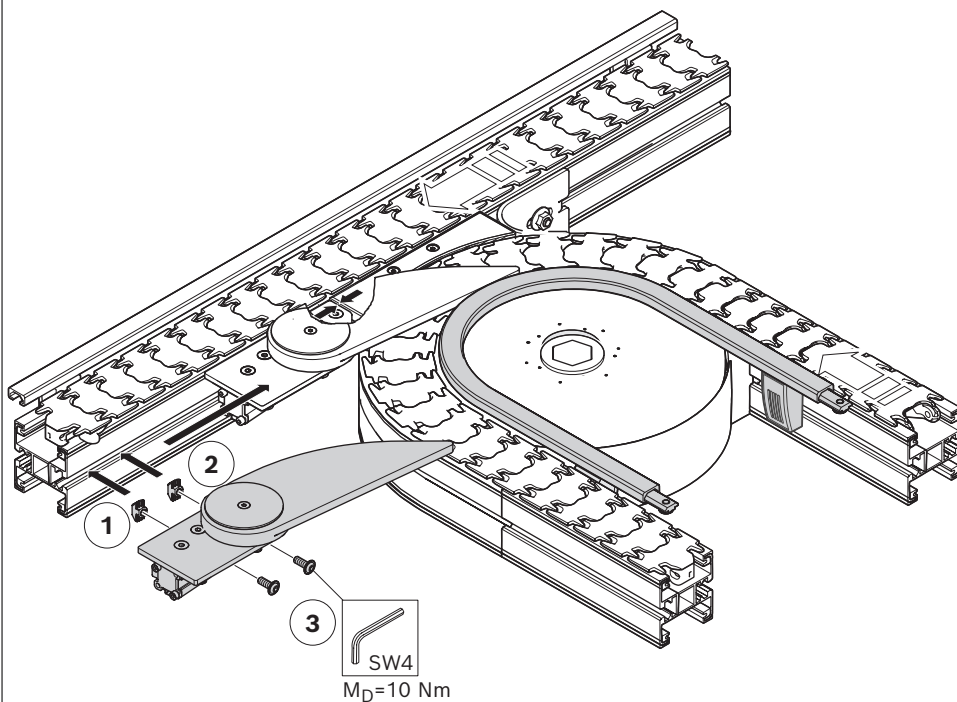
Fig. 154: Workpiece pallet system, 45° cross-diverters



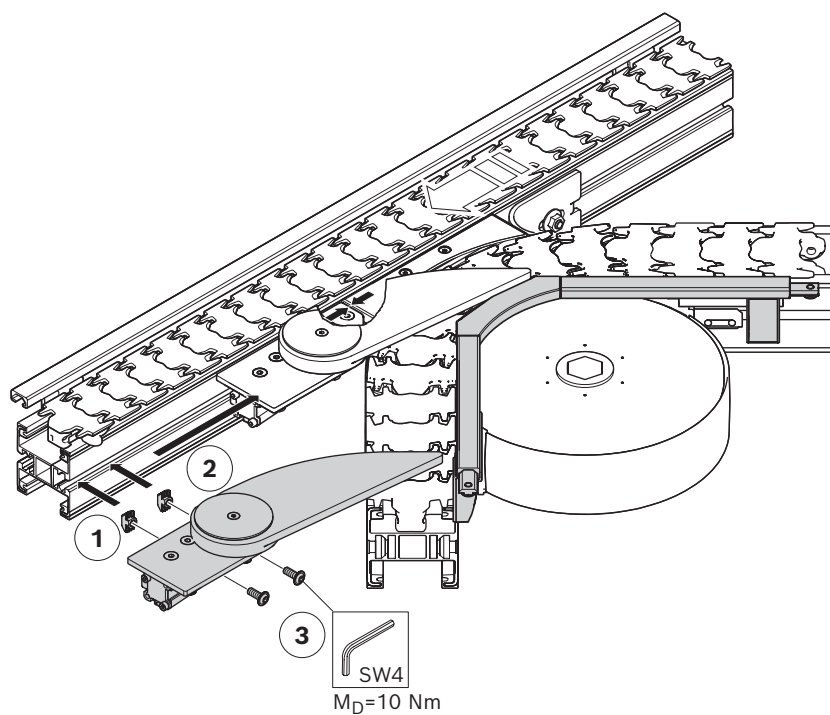
562 411-140

Fig. 155: Workpiece pallet system

90°

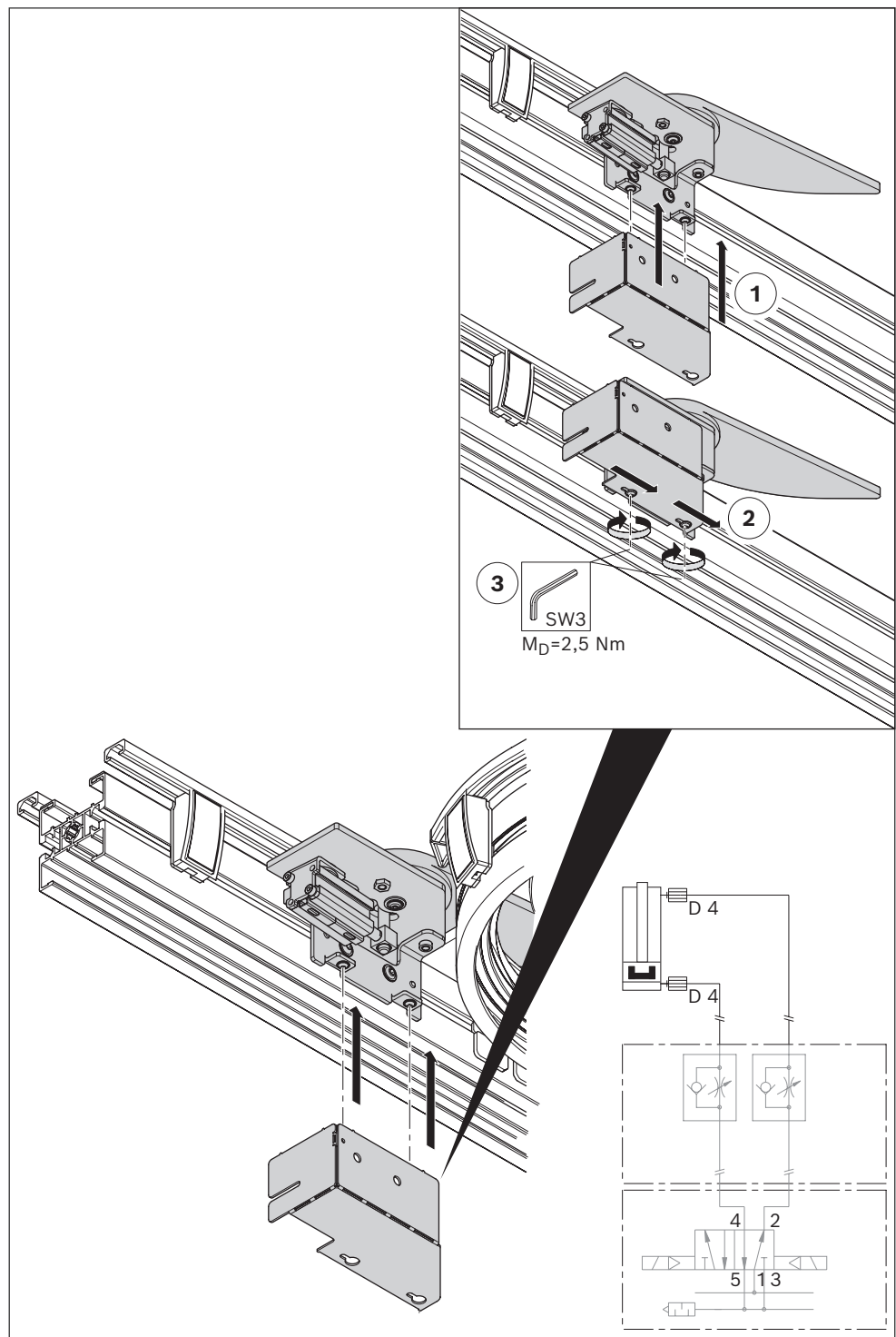


45°



562 411-141

Fig. 156: Workpiece pallet system, 90° cross-diverters (top), 45° cross-diverters (bottom)



562 411-142

Fig. 157: Workpiece pallet system (not included in the scope of delivery)

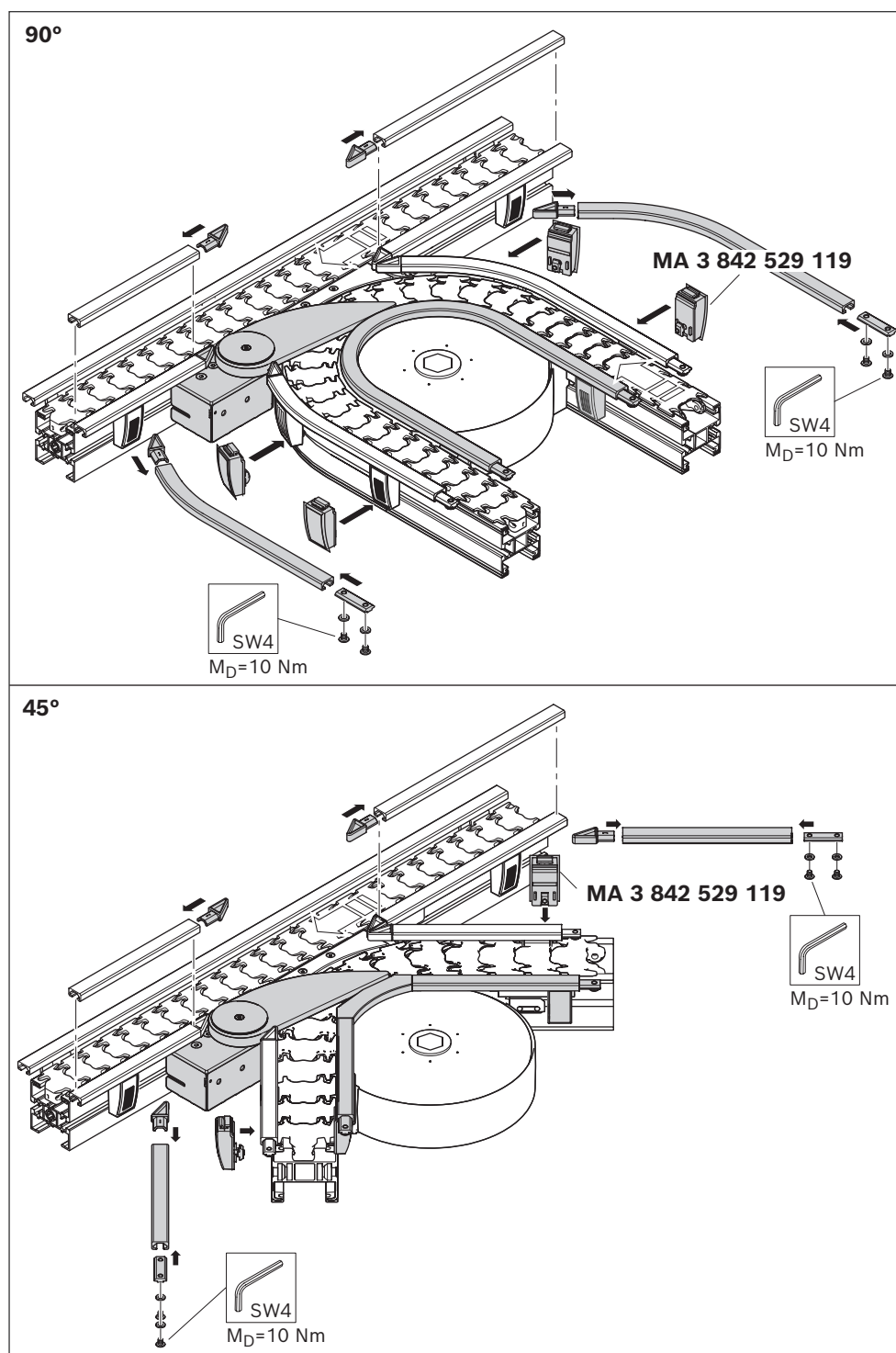
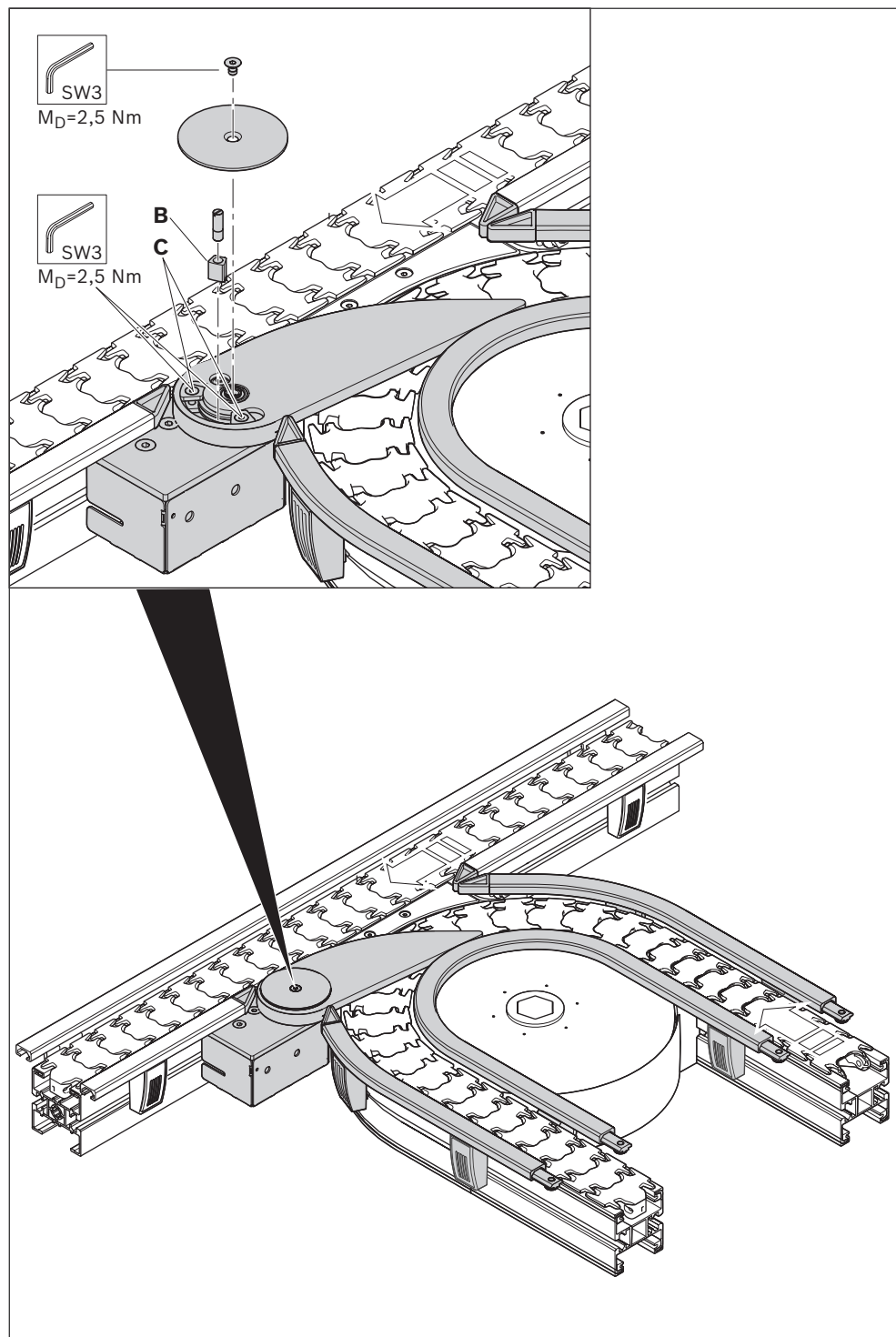


Fig. 158: Workpiece pallet system, 90° cross-diverters (top), 45° cross-diverters (bottom)

562 411-143



562 411-144

Fig. 159: Workpiece pallet system

Required accessories:

- Junction kit (Q)

Q, VF65,

45°, right/ **3842 551 122**
left:

90°, right: **3842 551 128**

90°, left: **3842 551 137**

Q, VF90,

45°, right/ **3842 551 122**
left:

90°, right: **3842 551 125**

90°, left: **3842 551 124**

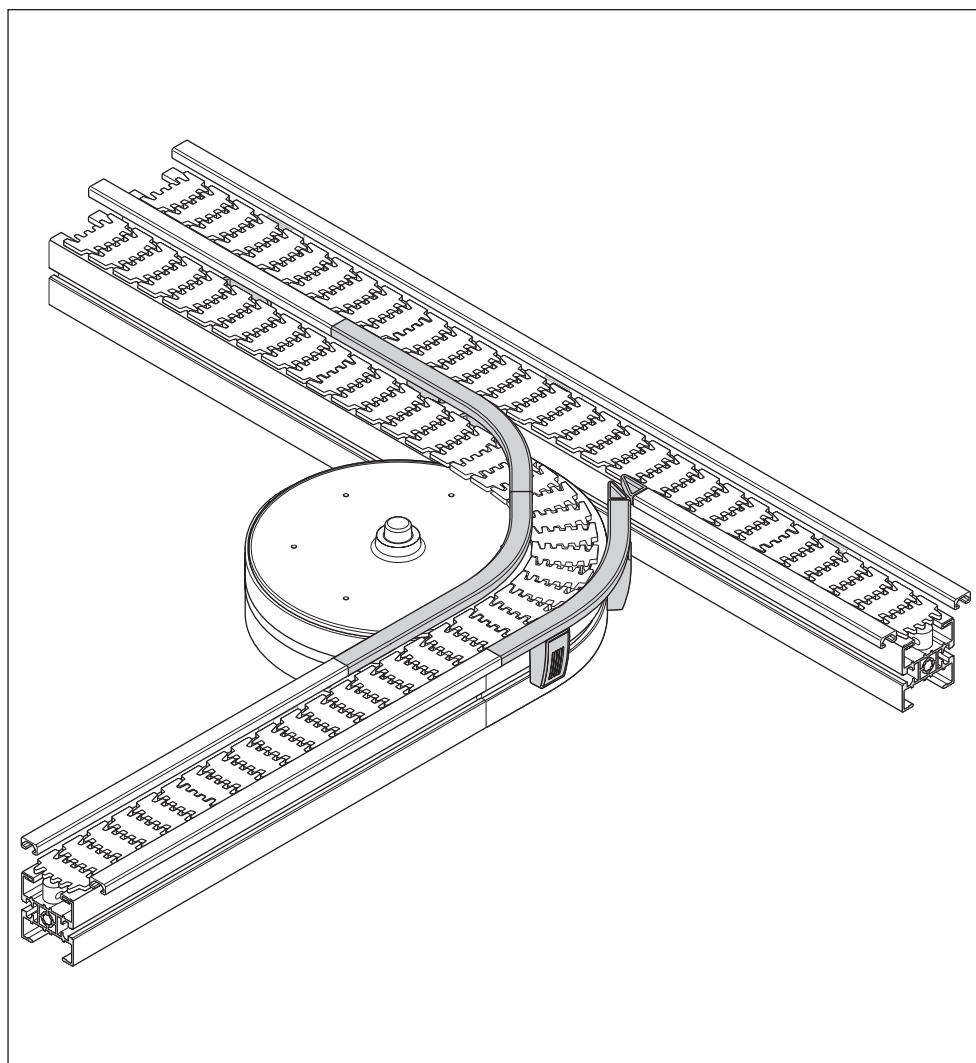


Please note:

Safety instructions!

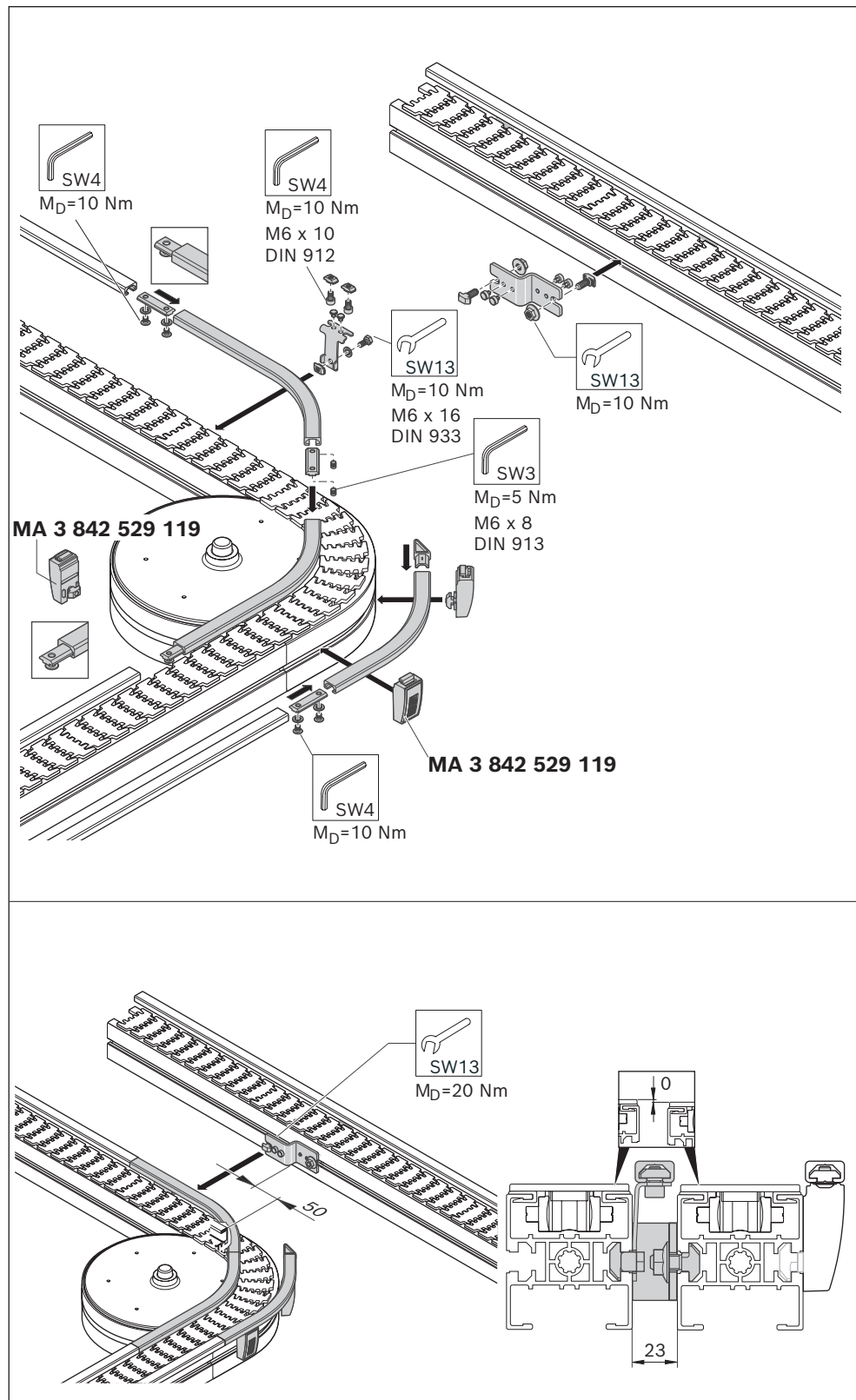
The VarioFlow WT junction is intended for steering the workpiece pallets in the Rexroth VarioFlow chain conveyor system.

Junction kit



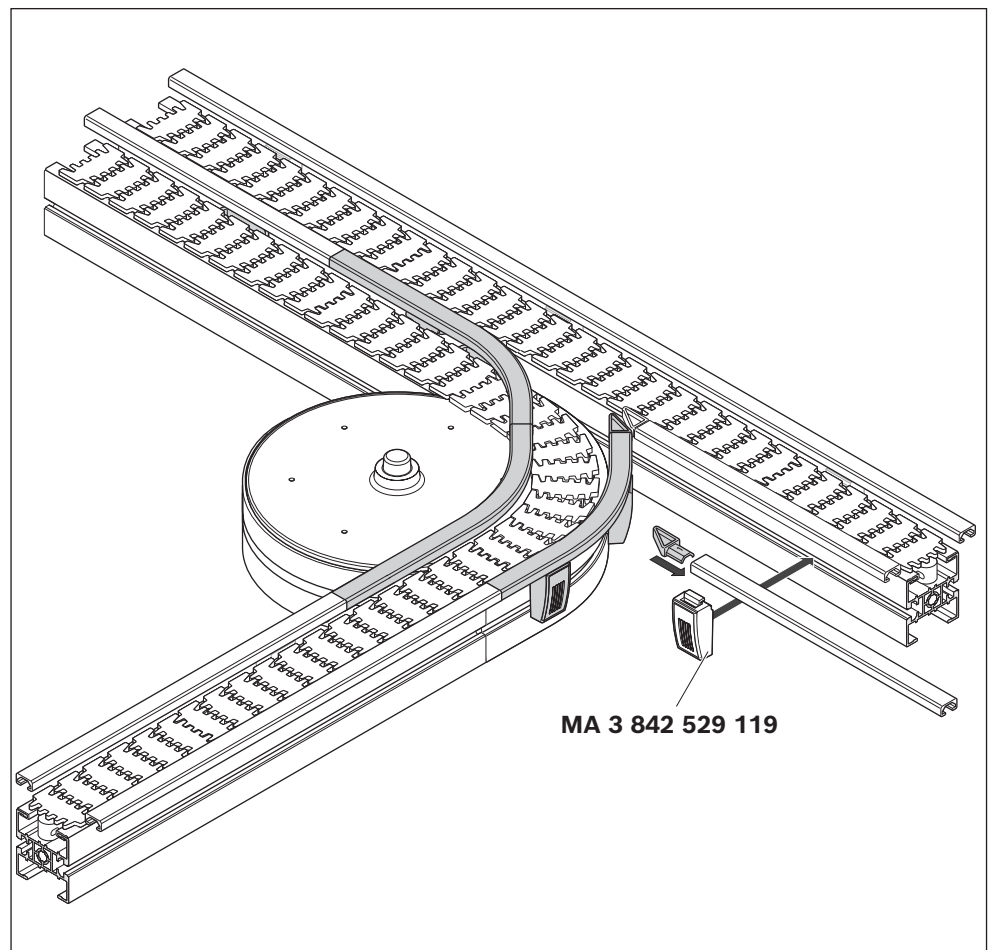
562 411-145

Fig. 160: Workpiece pallet system, junction kit (1/3)



562 411-146

Fig. 161: Workpiece pallet system, junction kit (2/3)



562 411-147

Fig. 162: Workpiece pallet system, junction kit (3/3)

Required accessories:

- Rocker (R)

R: 3842 547 464

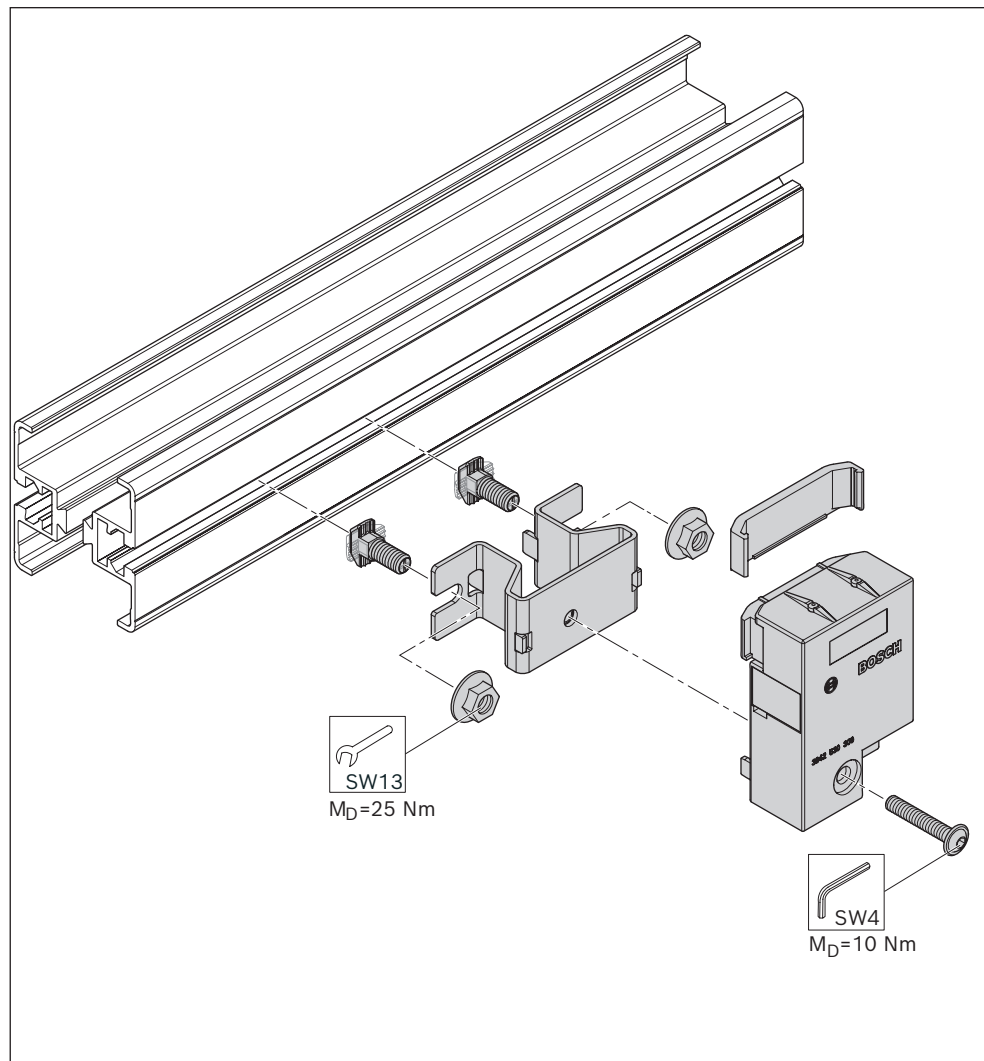
**Please note:****Intended use:**

Area monitoring for workpiece pallet in the Rexroth VarioFlow *plus* transfer system.
Electrical connections according to the applicable national regulations.
For Germany, the VDE regulation applies: VDE 0100!

Scope of delivery

- Rocker, ready for assembly.
- Assembly kit (in PE bag)

Rocker



562 411-148

Fig. 163: Workpiece pallet system, rocker (1/3)

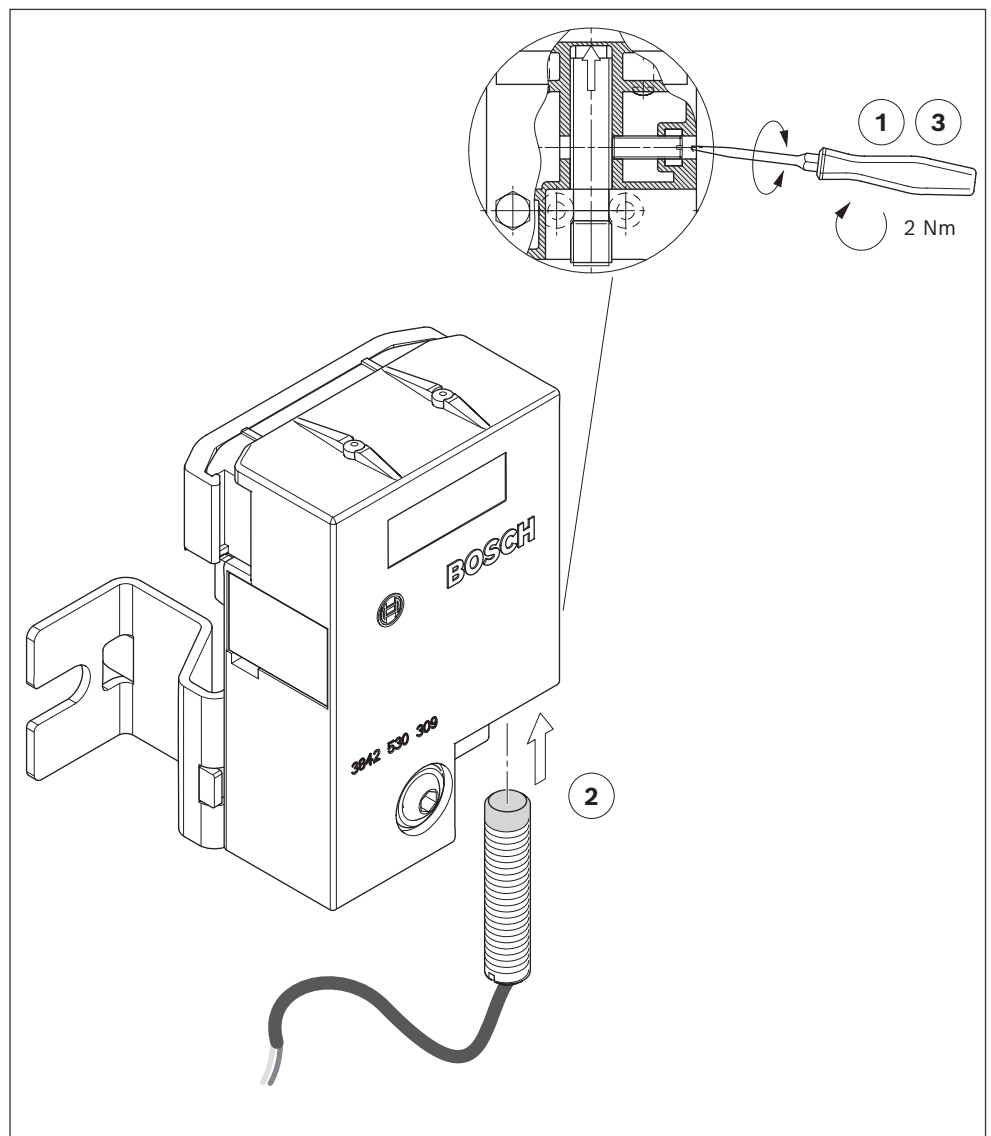
Use with proximity switch

For area monitoring on transfer systems. The spring-mounted rocker switch physically detects workpiece pallets. The metal element in the rocker switch enables detection via a proximity switch M12x1.5 mm with a switching distance of 4 - 6 mm. The mounting bore and headless setscrew for fixation are provided on site on the rocker.

1. Loosen the headless setscrew.
2. Slide the proximity switch into the bore up to the stop.
3. Fasten the proximity switch using the headless setscrew. Max. tightening torque: 2 Nm!

Mode of operation:

Rocker activated
> proximity switch
dampened



562 411-149

Fig. 164: Workpiece pallet system, rocker (2/3)

Use with pneumatic switch

The pneumatic switch (3 842 532 151) converts actuation of the rocker directly into a pneumatic signal. Simple, purely pneumatic accumulation pressure regulation can be established in conjunction with a pneumatic stop gate.

1. Remove the cover.
2. Push the pneumatic switch into the recess up to the stop.
3. Fasten the pneumatic switch with the screw. Max. tightening torque: 1.5 Nm!

Mode of operation:

Rocker not activated
> pneumatic switch
dampened

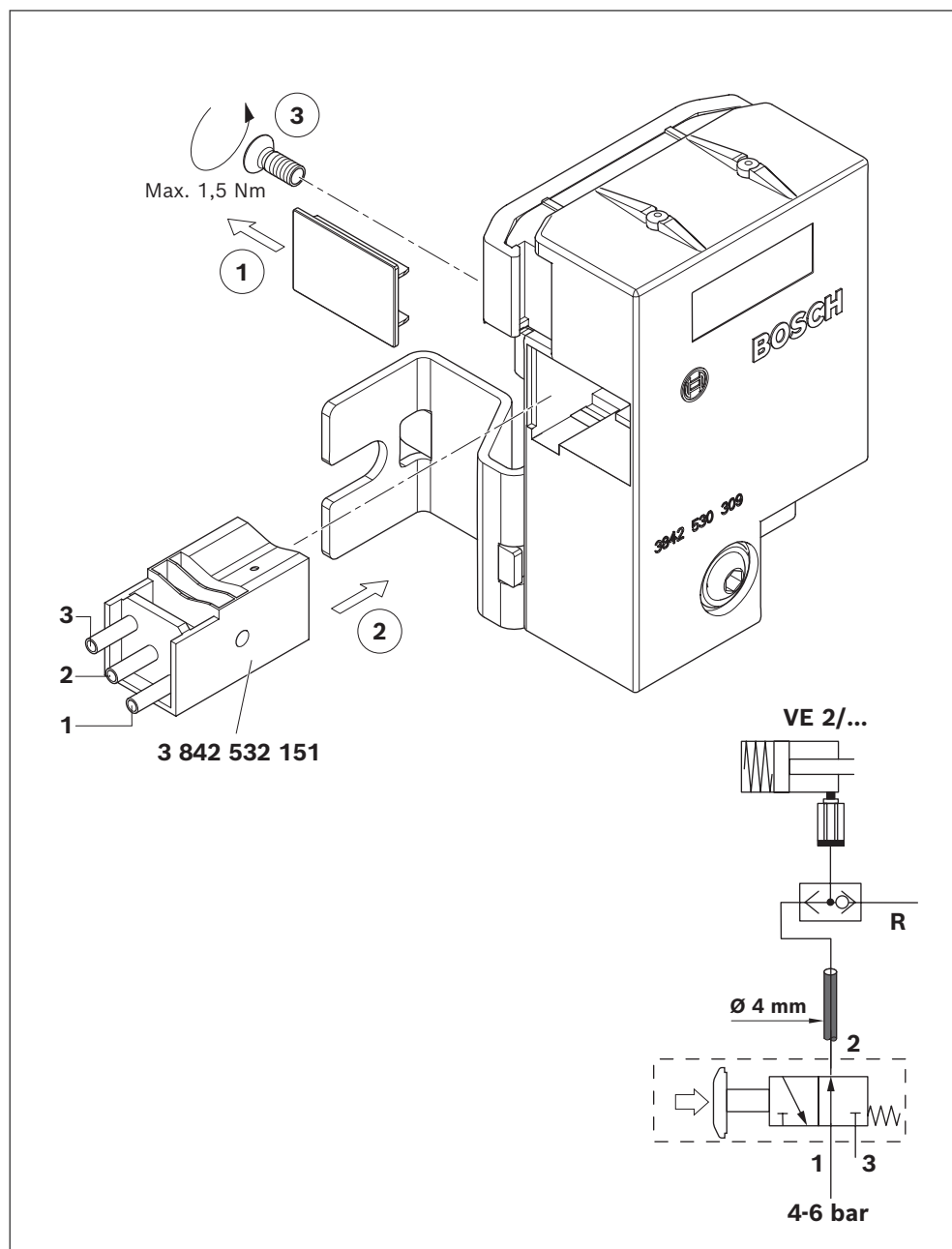


Fig. 165: Workpiece pallet system, rocker (3/3)

562 411-150

7.5.11 Gear motor

Base unit, system AL, gear motor GM = 1 installation

Required accessories:

- Drive kit without (A) or with (B) safety coupling.

A/B: 3842 998 291



Please note:

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- Install the gear motor.

Adjust the release torque of the safety coupling (see page 188).

1) Size shown

2) Flange can only be installed in the correct position (with opening facing downwards).

3) Cover cap is included in the scope of delivery of the basic unit.

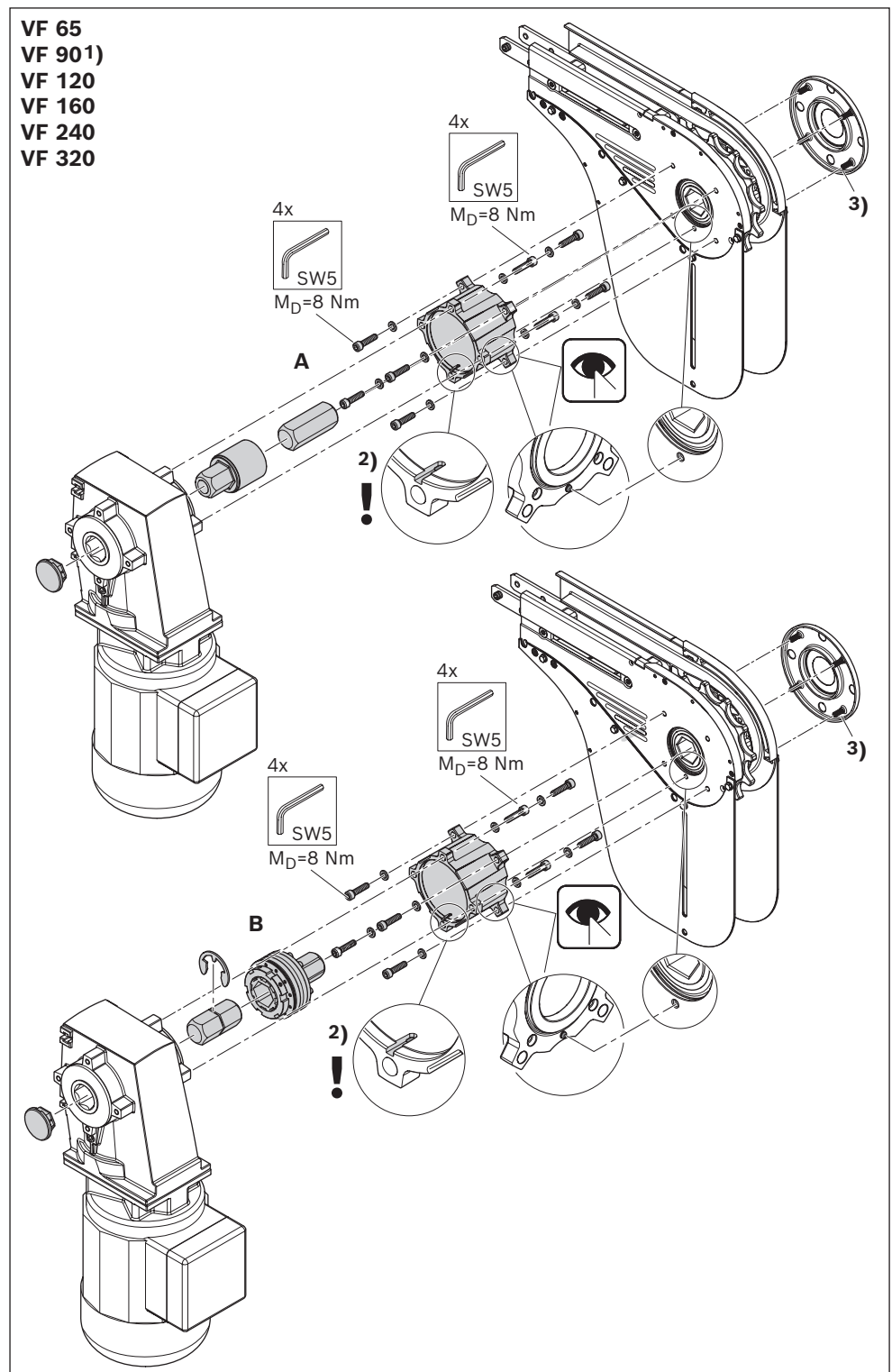


Fig. 166: Base unit, system AL, gear motor GM = 1 installation

562 411-151

Base unit, system AL, gear motor GM = 2 installation

Required accessories:

- Drive kit without (A) or with (B) safety coupling.

A/B: 3842 998 291

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- ▶ Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- ▶ Install the gear motor.

Adjust the release torque of the safety coupling (see page 188).

Support

SEW gear motors are significantly heavier than the Bosch Rexroth standard motor/gear unit combinations. An additional support for the interfaces must therefore be provided. The support may be freely selected and is not included in the scope of delivery.

1) Size shown

2) Flange can only be installed in the correct position (with opening facing downwards).

3) Cover cap is included in the scope of delivery of the basic unit.

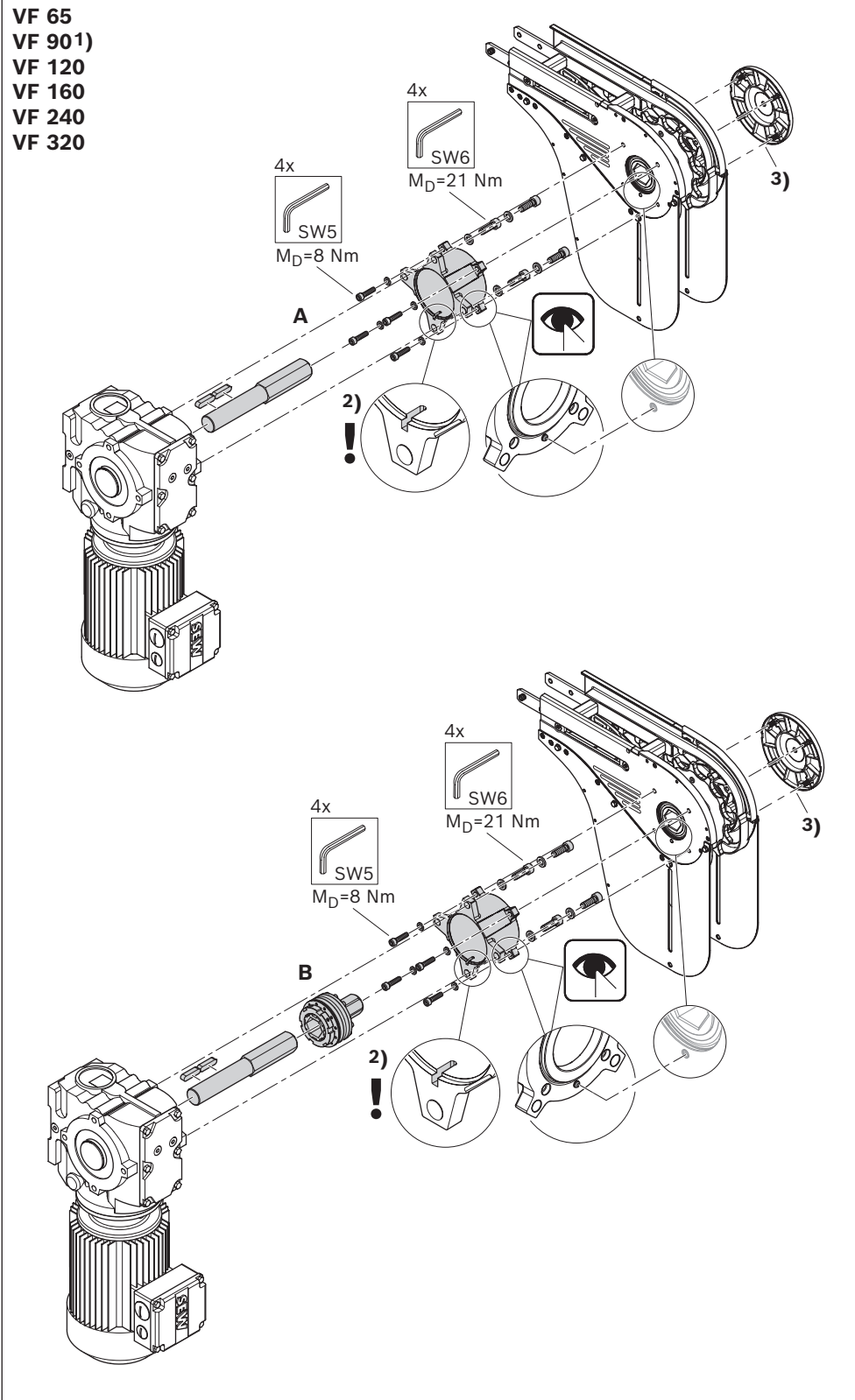


Fig. 167: Base unit, system AL, gear motor GM = 2 installation

562 411-152

Required accessories:

- Drive kit without (A) or with (B) safety coupling.

A/B: 3842 998 291

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- Install the gear motor.
- First, install the aluminum flange at the respective motor.

Adjust the release torque of the safety coupling (see page 188).

1) Size shown

2) Flange can only be installed in the correct position (with opening facing downwards).

3) Cover cap is included in the scope of delivery of the basic unit.

Base unit, system AL, gear motor GM = 3 installation with/without coupling

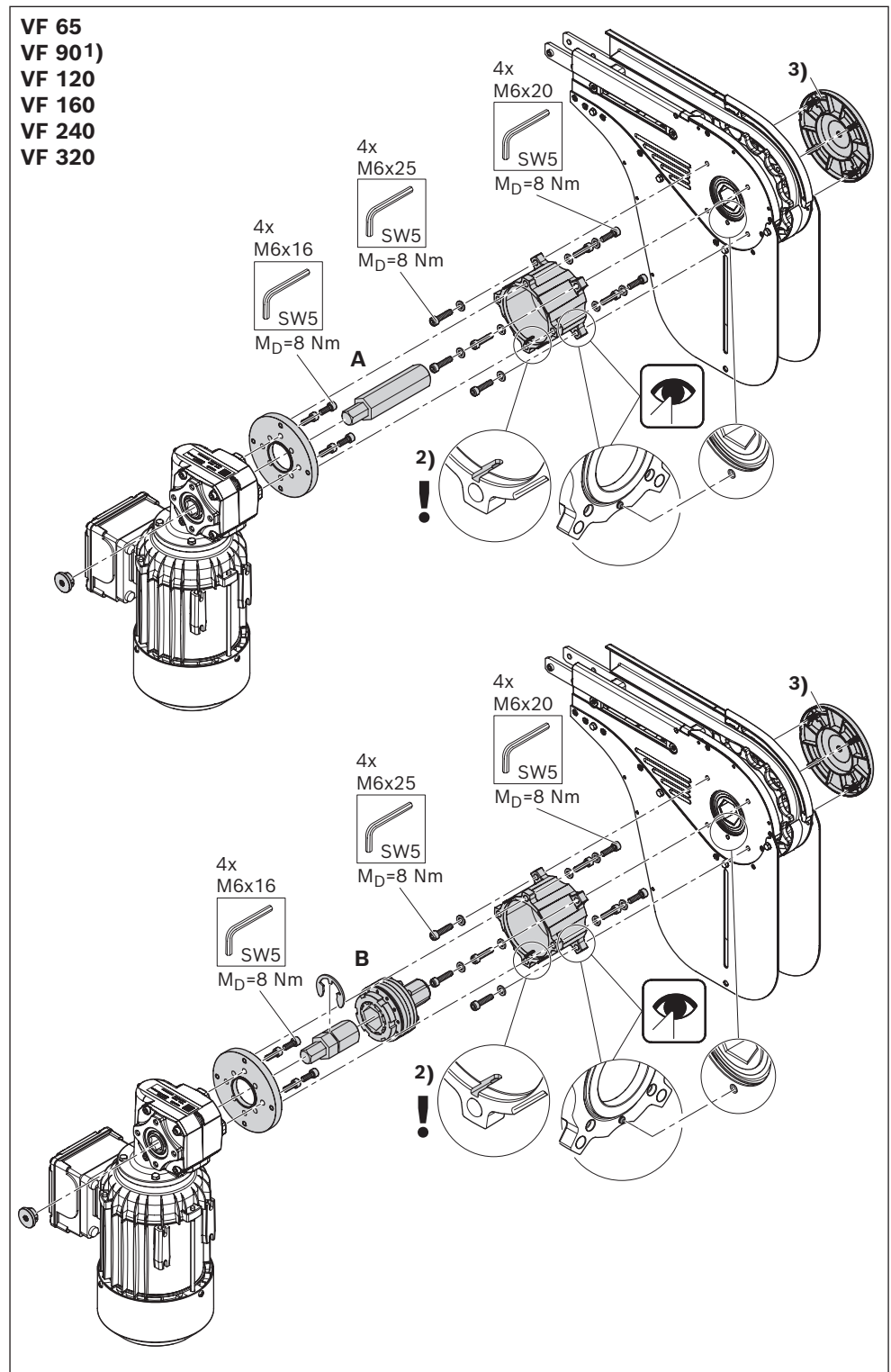


Fig. 168: Base unit, system AL, gear motor GM = 3 installation with/without coupling

Required accessories:

- Drive kit without (A) or with (B) safety coupling.

A/B: 3842 998 291

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- ▶ Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- ▶ Install the gear motor.
- ▶ First, install the aluminum flange at the respective motor.

Adjust the release torque of the safety coupling (see page 188).

Support

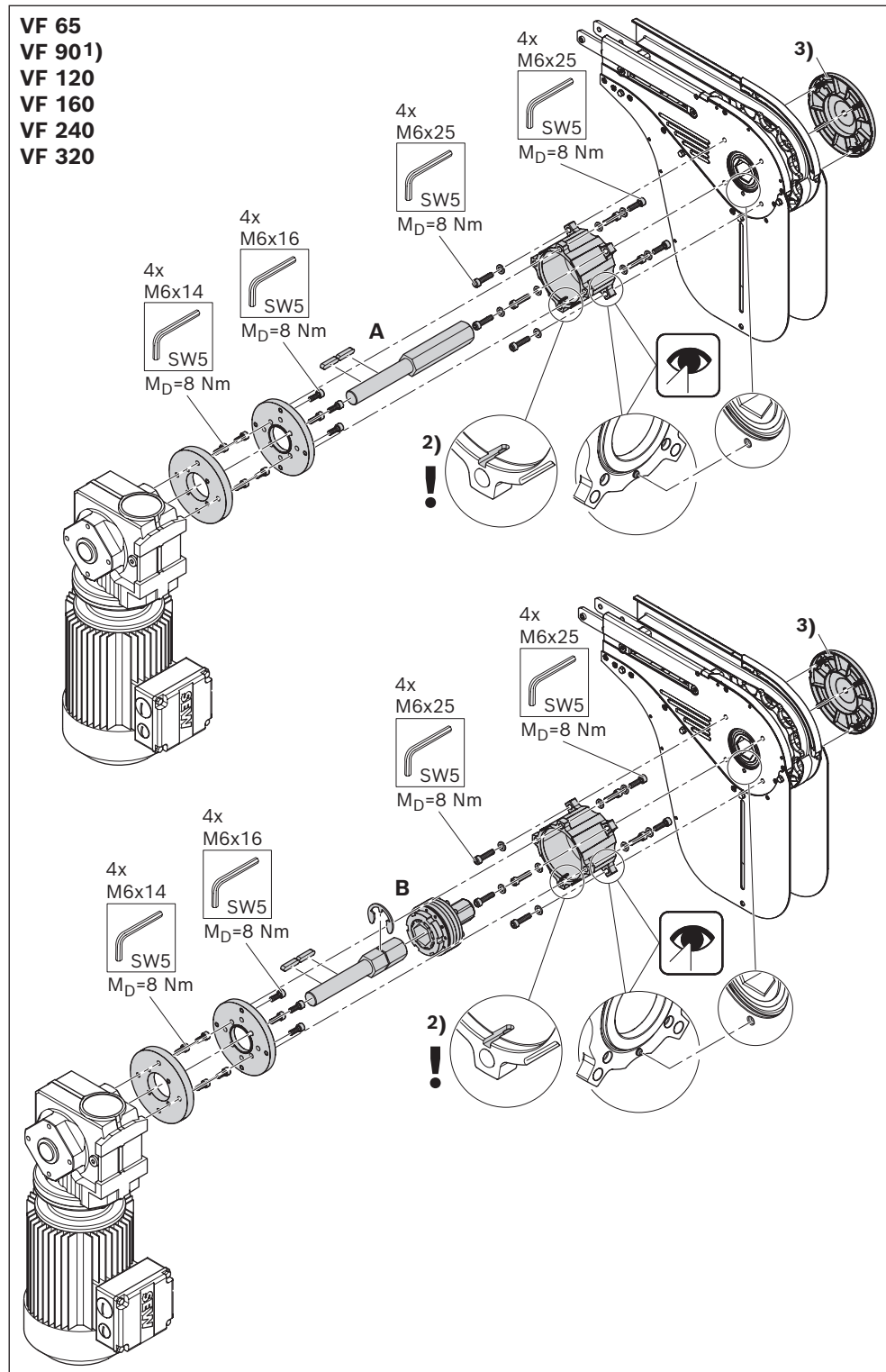
SEW gear motors are significantly heavier than the Bosch Rexroth standard motor/gear unit combinations. An additional support for the interfaces must therefore be provided. The support may be freely selected and is not included in the scope of delivery.

1) Size shown

2) Flange can only be installed in the correct position (with opening facing downwards).

3) Cover cap is included in the scope of delivery of the basic unit.

Base unit, system AL, gear motor GM = 4 installation with/without coupling



562 411-188

Fig. 169: Base unit, system AL, gear motor GM = 4 installation with/without coupling

Required accessories:

- Drive kit

3842 998 291

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- Install the gear motor.

Support

SEW gear motors are significantly heavier than the Bosch Rexroth standard motor/gear unit combinations. An additional support for the interfaces must therefore be provided. The support may be freely selected and is not included in the scope of delivery.

1) Size shown

2) Cover cap is included in the scope of delivery of the basic unit.

Base unit, system STS, gear motor installation

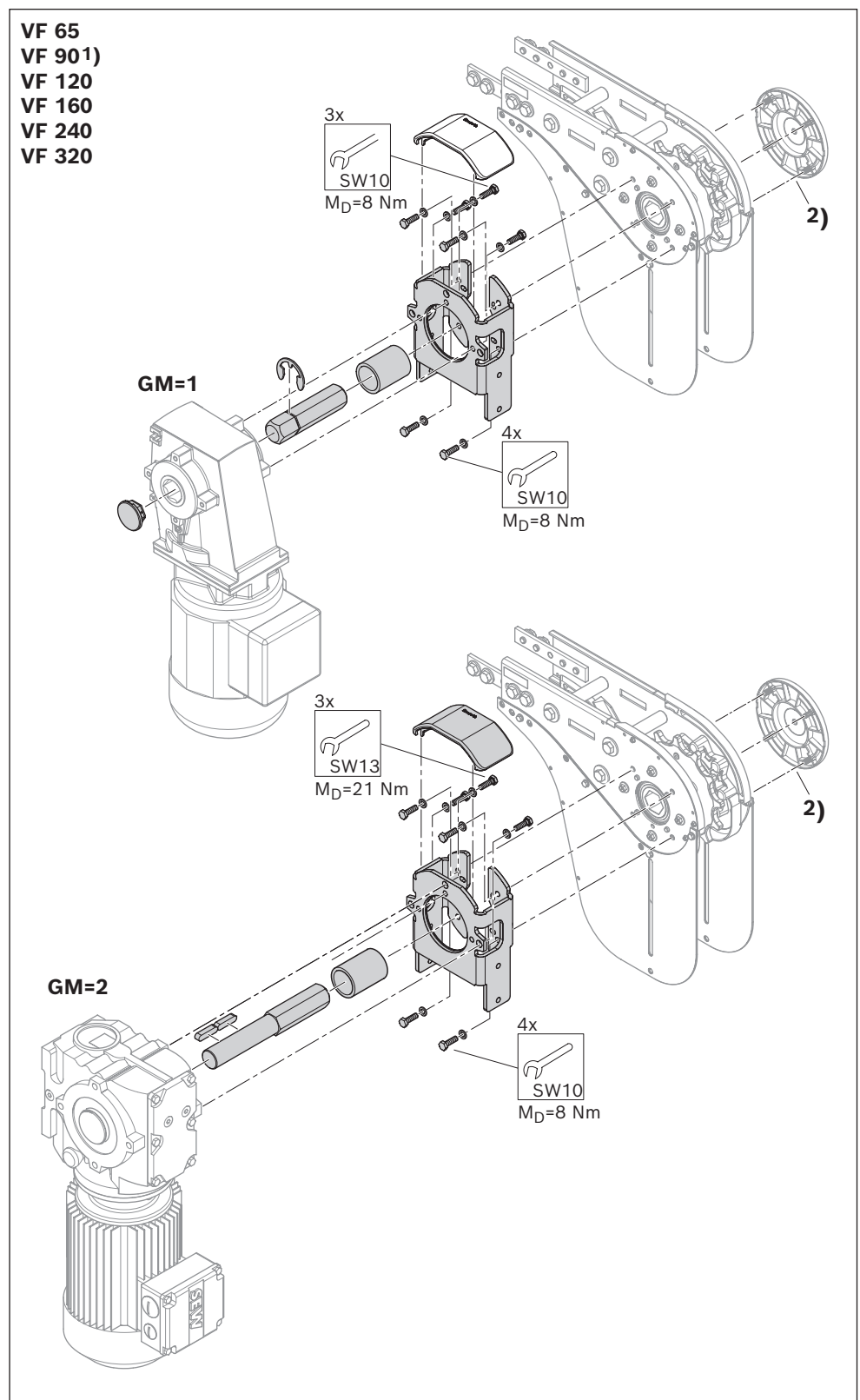


Fig. 170: Base unit, system STS, gear motor installation

562 411-153

Required accessories:

- Drive kit

3842 998 291

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- Install the gear motor.

Support

SEW gear motors are significantly heavier than the Bosch Rexroth standard motor/gear unit combinations. An additional support for the interfaces must therefore be provided. The support may be freely selected and is not included in the scope of delivery.

1) Size shown

2) Cover cap is included in the scope of delivery of the basic unit

Base unit, system STS, gear motor GM = 3/4 STS, flange installation

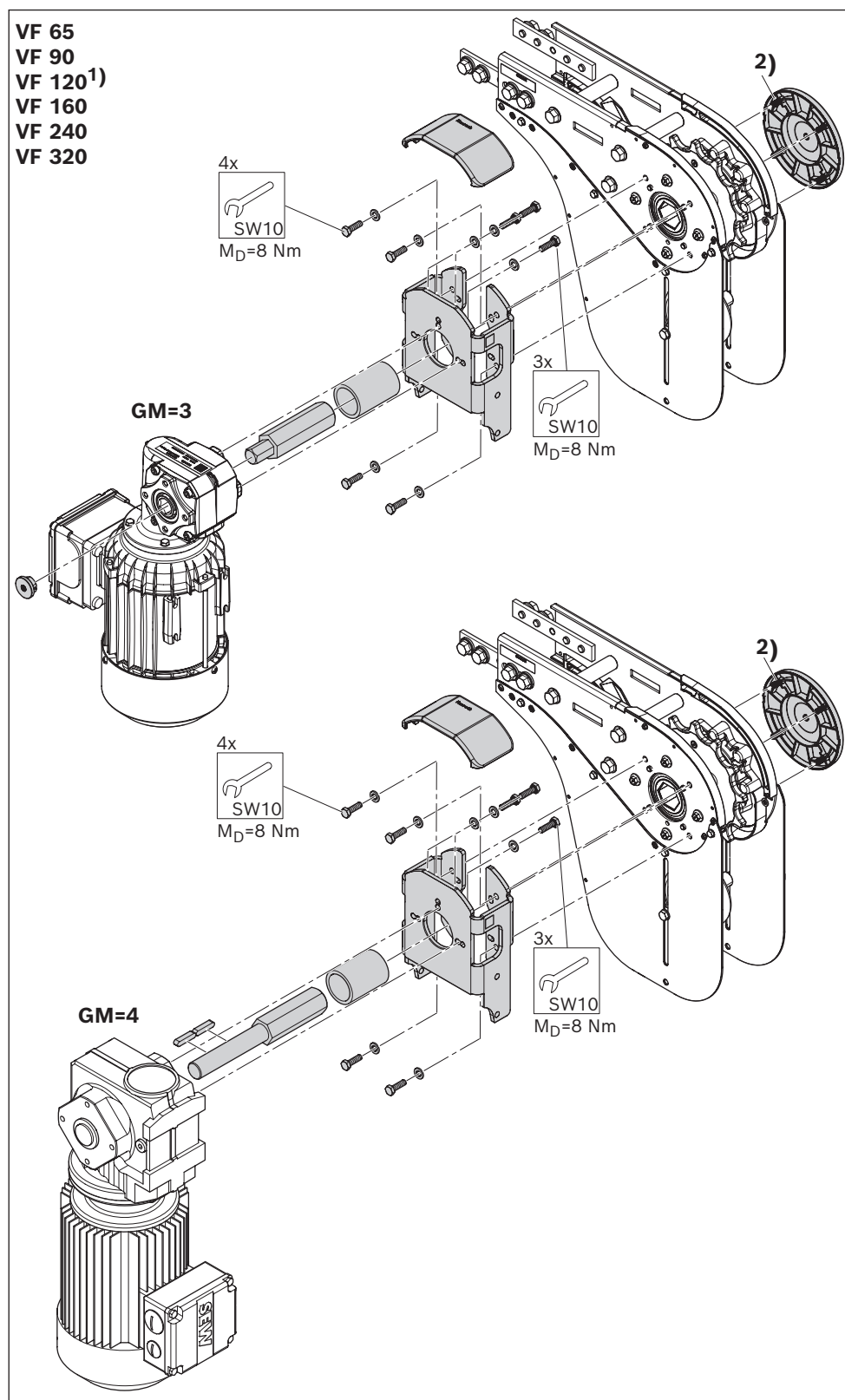


Fig. 171: Base unit, system STS, gear motor GM = 3/4 STS, flange installation

562 411-189

Required accessories

- Drive kit **3842 998 291**

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- Install the gear motor.

Adjust the release torque of the safety coupling (see page 188).

1) Size shown

Center drive, system AL/STS - illustrated installation with gear motor GM = 1

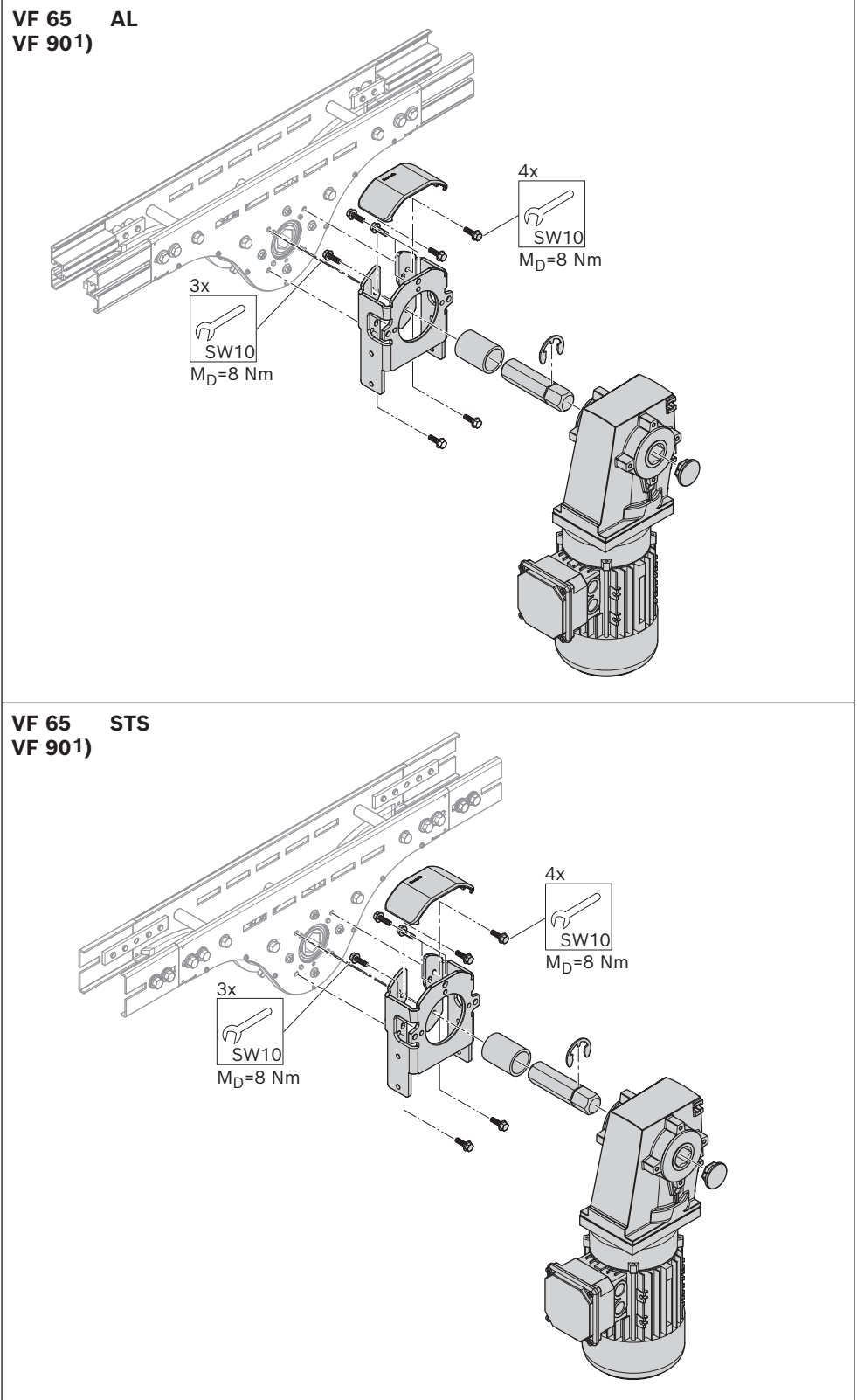


Fig. 172: Center drive, system AL/STS - illustrated installation with gear motor GM = 1

Required accessories:

- Transmission drive (C)

C: 3842 998 291

1. Remove the cover of the transmission drive.
2. Remove the guard plate behind the transmission drive.
3. Mount the transmission drive on the leg set and the base unit.

1) Size shown

2) Transmission shown on the left

Transmission drive, system AL - illustrated installation with gear motor GM = 1

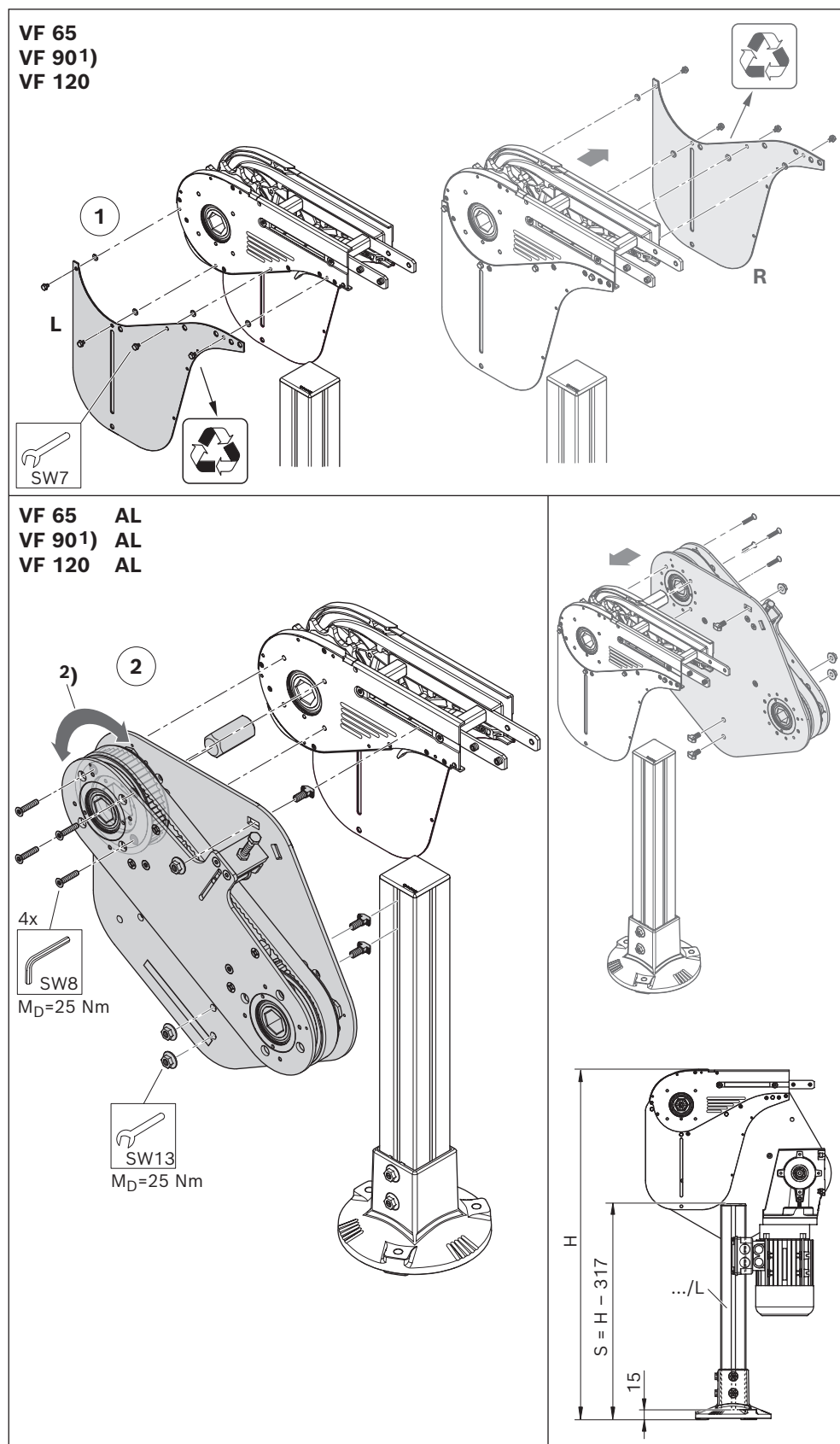


Fig. 173: Transmission drive, system AL - illustrated installation with gear motor GM = 1

Required accessories:

- Adapter transmission kit (D)

D: 3842 559 108

1. Attach the adapter plates to the side plate.
2. Insert the long shaft.
3. Install the transmission kit.

1) Size shown

2) Transmission shown on the left

Extension adapter transmission kit VF 160 / VF 320

VF 160
VF 240
VF 3201)

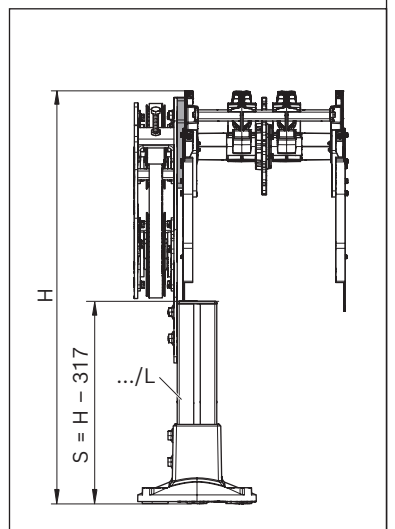
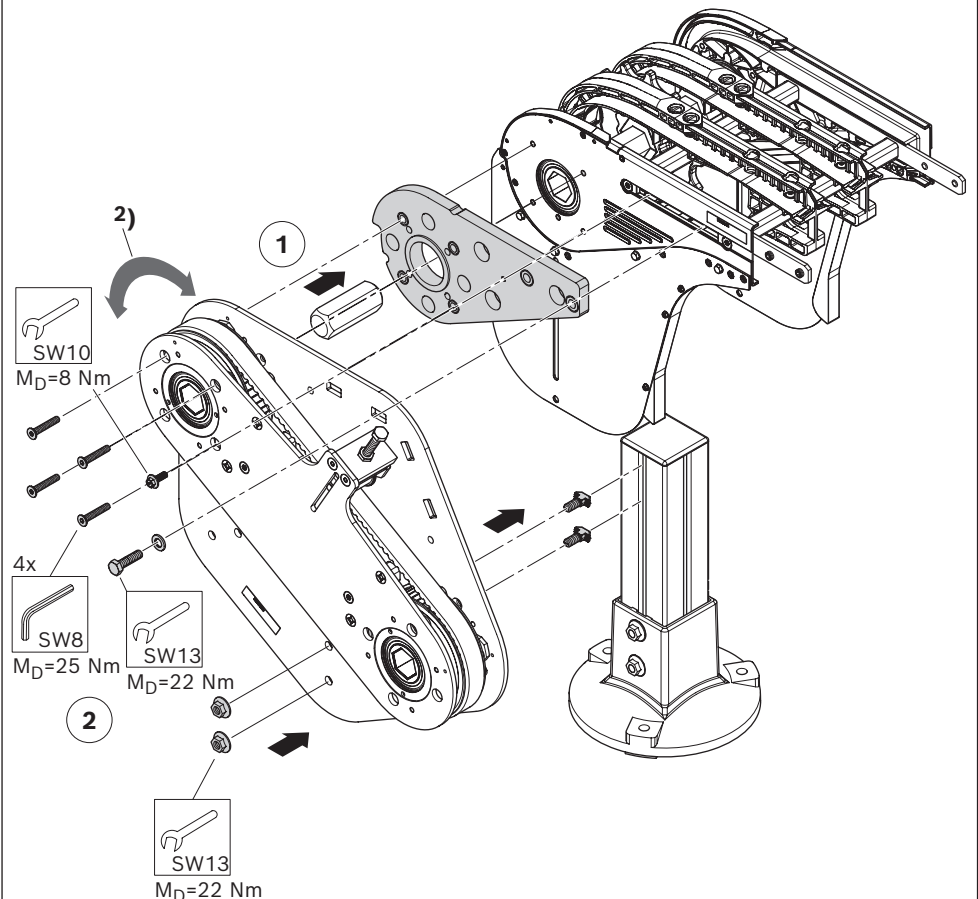


Fig. 174: Installing the adapter transmission kit

562 411-156

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!

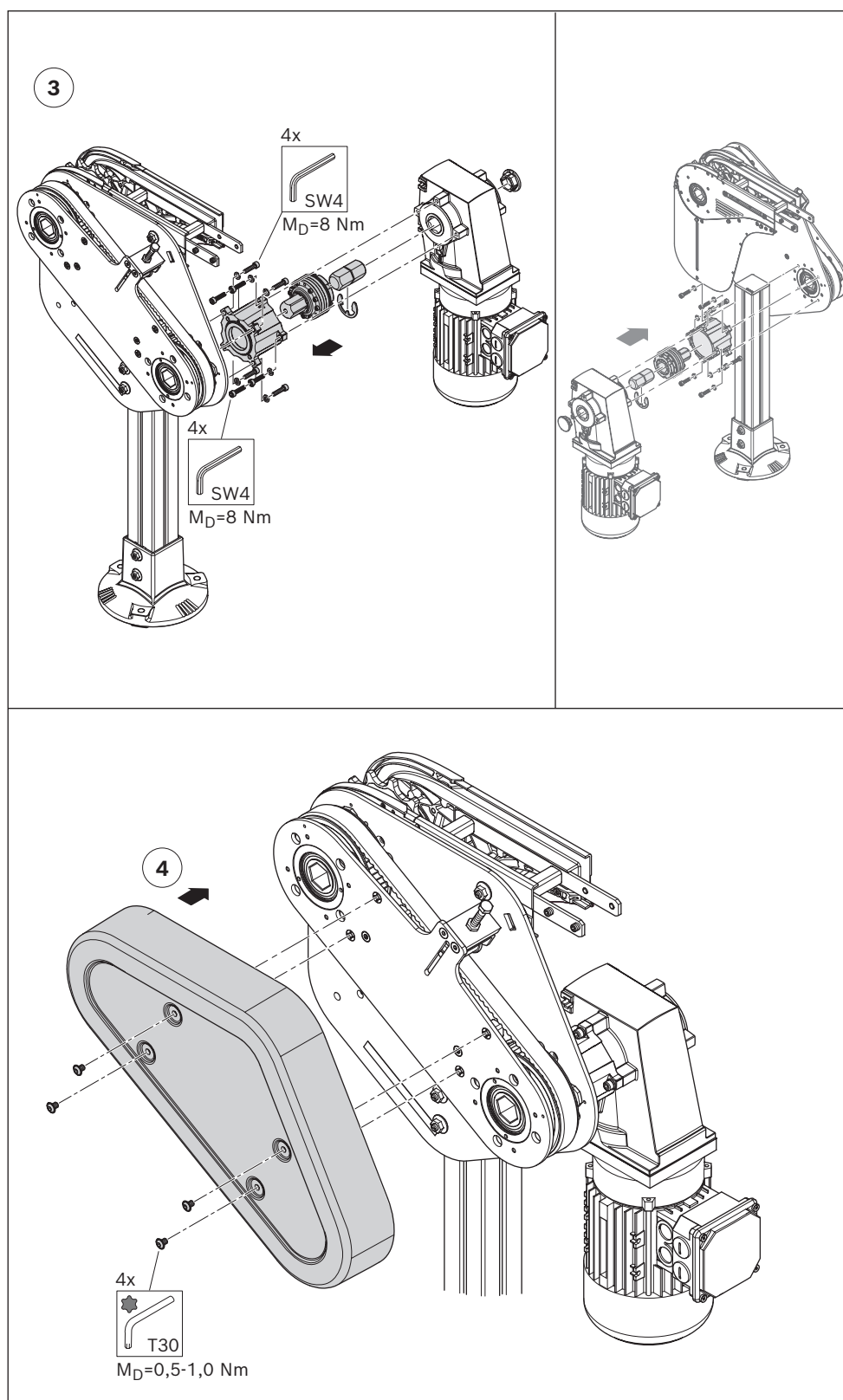
4. Install the gear motor.

Adjust the release torque of the safety coupling (see page 188).

5. Install the cover of the transmission drive.

2) Flange can only be installed in the correct position (with opening facing downwards).

3) Base unit scope of delivery



562 411-157

Fig. 175: Transmission drive, system AL, gear motor GM = 1 installation

Required accessories:

- Drive kit (E)

E: 3842 998 742

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- Install the gear motor.

Adjust the release torque of the safety coupling (see page 188).

1) Size shown

Curve wheel drive, gear motor installation

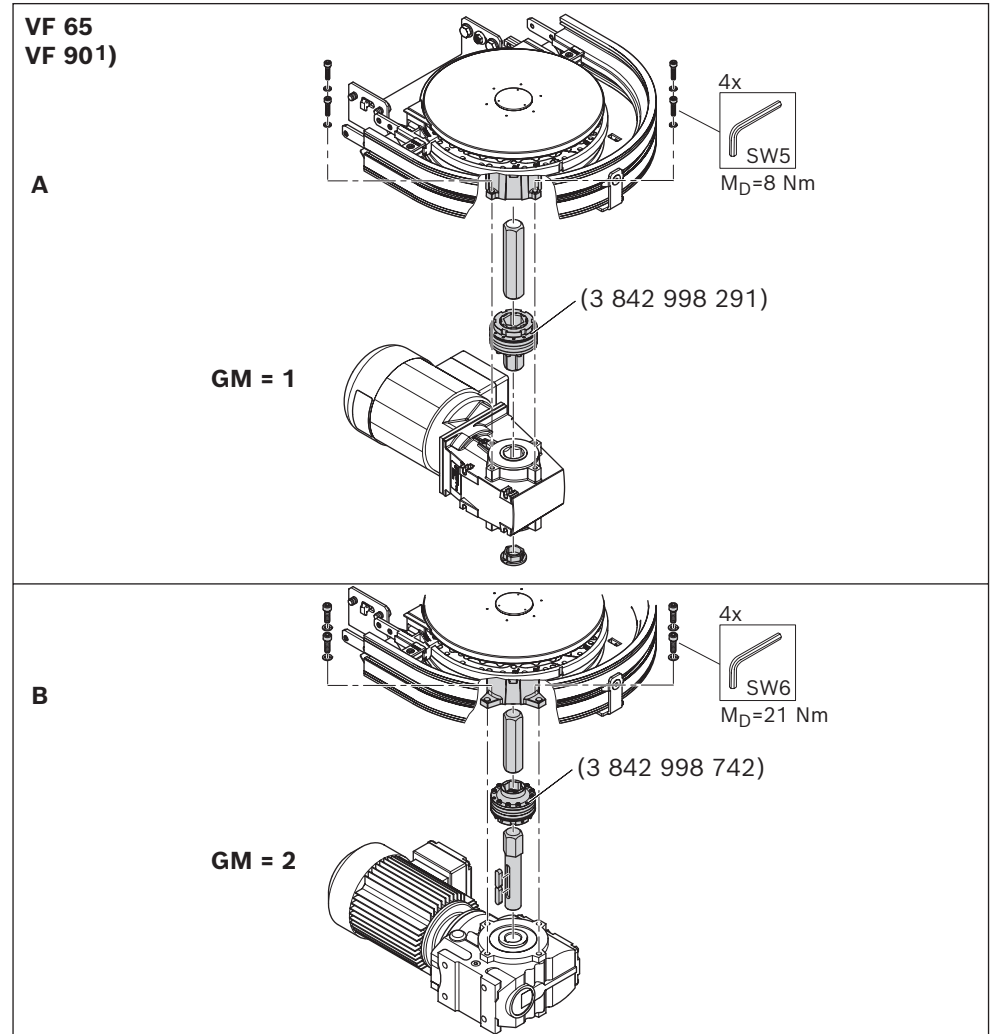


Fig. 176: Curve wheel drive, gear motor installation

Required accessories:

- Drive kit (E)

E: 3842 998 742

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 143) and check the rotational direction!
- Install the gear motor.

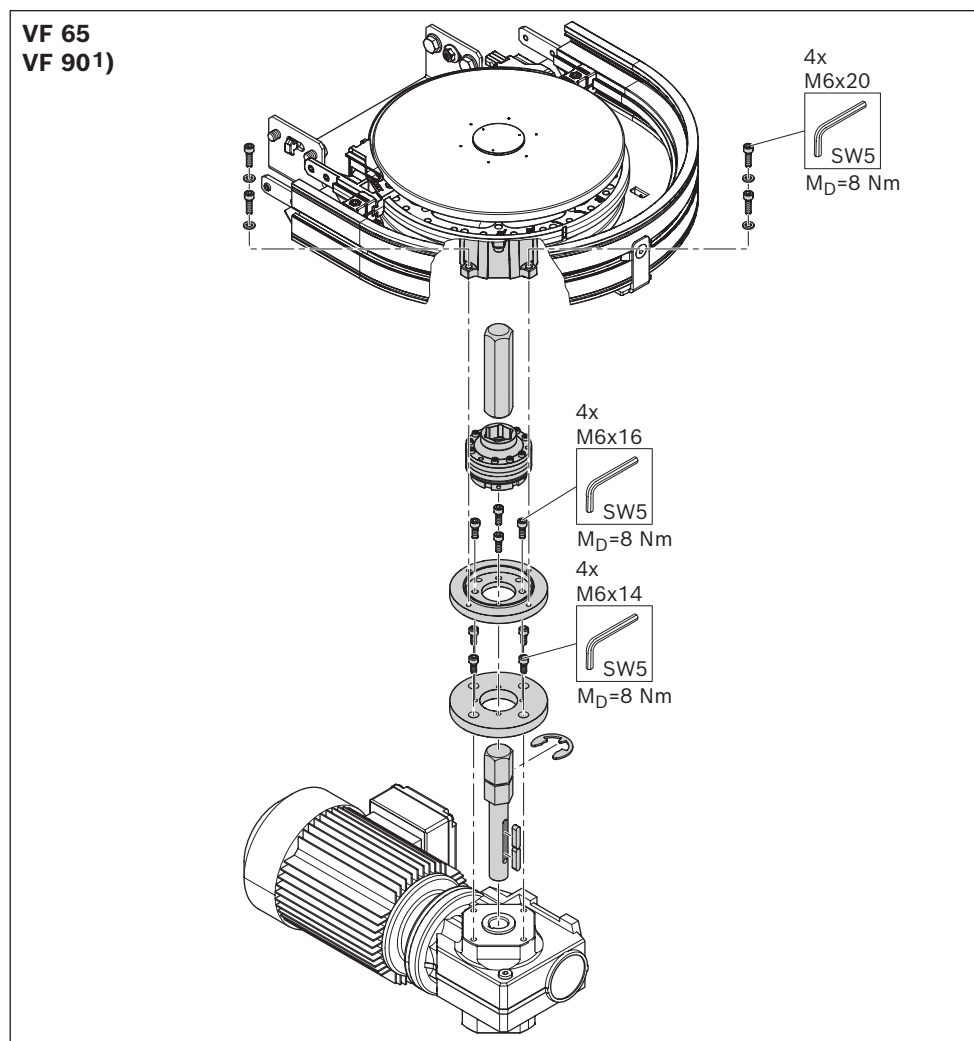
Adjust the release torque of the safety coupling (see page 188).

Support

SEW gear motors are significantly heavier than the Bosch Rexroth standard motor/gear unit combinations. An additional support for the interfaces must therefore be provided. The support may be freely selected and is not included in the scope of delivery.

1) Size shown

Curve wheel drive, gear motor GM = 4 installation



562 411-190

Fig. 177: Curve wheel drive, gear motor GM = 4 installation

Required accessories:

- Drive kit (E)

E: 3842 998 742

**Please note:**

The VarioFlow *plus* assemblies are not designed for reversible operation.

- Electrically connect the gear motor **before the assembly** (see page 88) and check the rotational direction!
- Install the gear motor.

As required, untighten the screws of the mounting brackets ³⁾ to align the drive kit (see page 66).

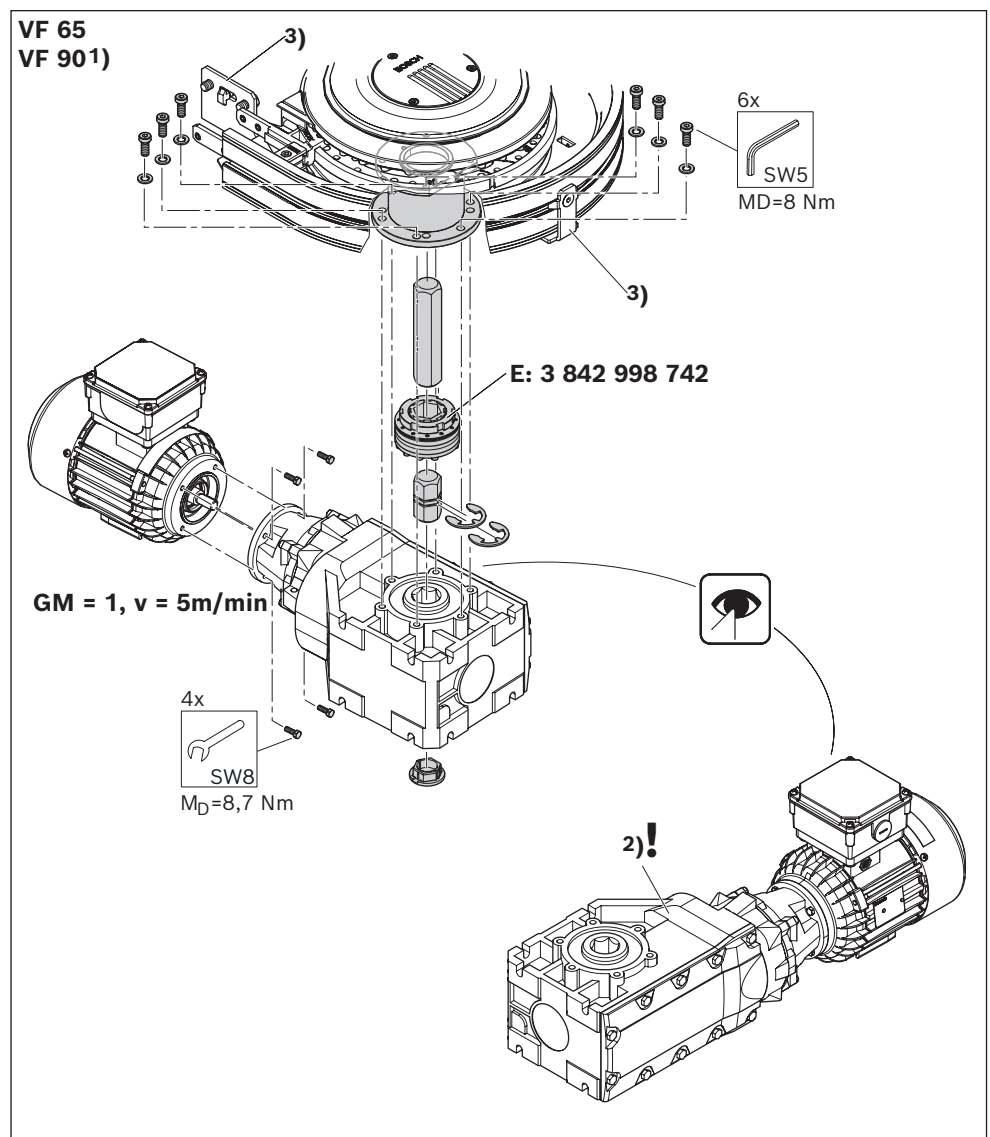
Adjust the release torque of the safety coupling (see page 188).

¹⁾ Size shown

NOTICE**Observe the installation position!**

Dry running of gear

- **Always observe the illustrated installation position (see fig. 159, ²⁾)!**

Curve wheel drive, gear motor installation, $v = 5\text{m/min}$ Fig. 178: Curve wheel drive, gear motor installation, $v = 5\text{m/min}$

Required accessories:

- Tool *VFplus* Safety Clutch, comprising:
 - Hook spanner (X_1)
 - Hexagonal shaft (X_2)
 - Lock washer (X_3)

**Please note:**

Safety coupling factory setting:

- **3842 998 291 / 3842 547 549:**

Coupling factory setting:
120 ($\pm 10\%$) = transferable drive torque 90 Nm

- **3842 998 742 / 3842 547 659:**

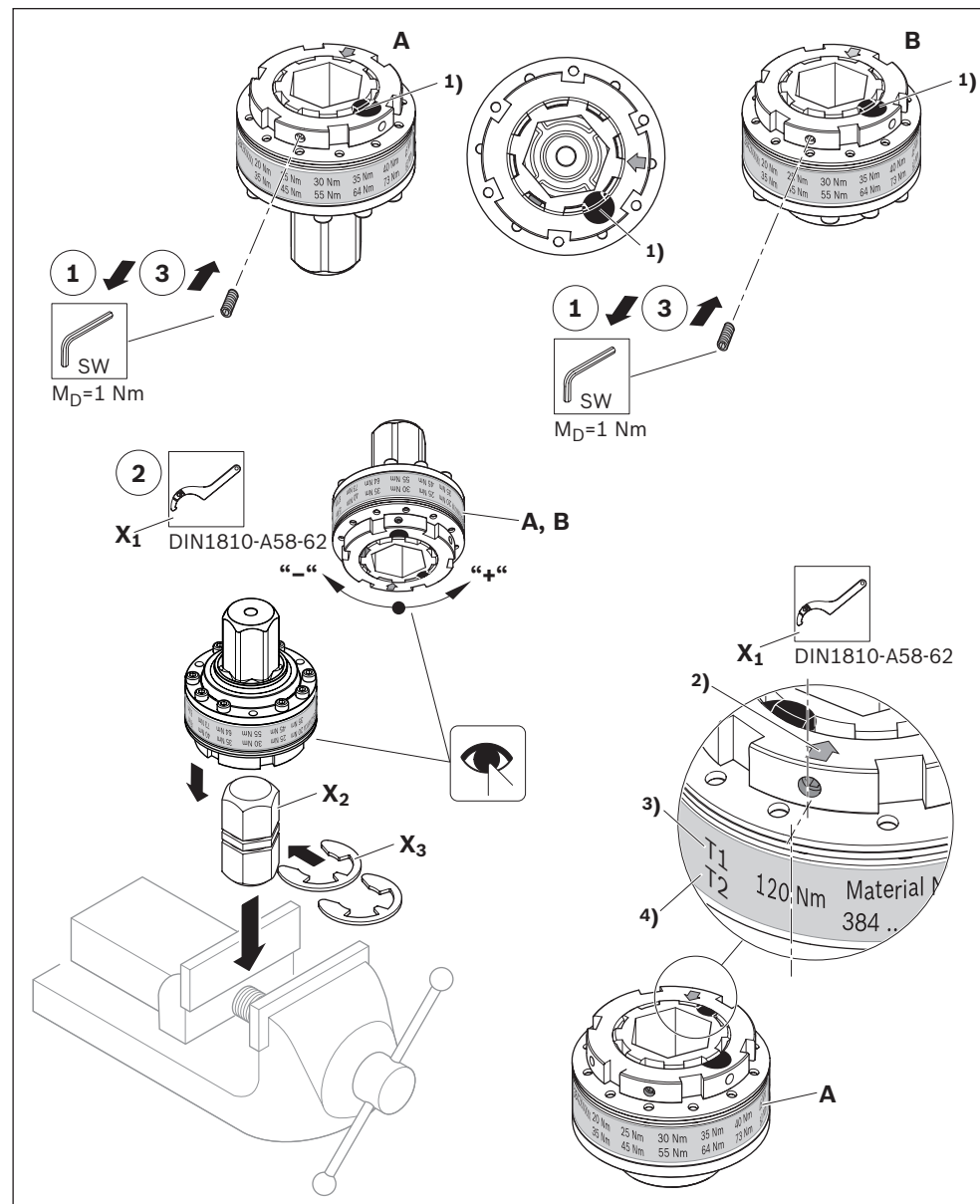
Coupling factory setting:
90 ($\pm 10\%$) = transferable drive torque 60 Nm

Change of factory setting:

Two belleville spring washers (35 - 125 Nm): Transferable drive torque $\times 1.25$ = Coupling setting

One belleville spring washer (20 - 70 Nm): Transferable drive torque $\times 1.25$ = Coupling setting

1. Disassemble the headless setscrew.
2. Turn the slotted nut to adjust the release torque.
 - Turn it in the direction marked "+" to increase the release torque.
 - Turn it in the direction marked "-" to reduce the release torque.

Safety coupling adjustment

562 411-160

Fig. 179: Safety coupling adjustment (1/2)

A = Connection of basic unit/curve wheel drive with Lenze gear motor (except $v = 5$ m/min)

B = Curve wheel drive connection with SEW gear motor

1) Factory setting marked with sealing wax.

2) Torque setting, factory setting (arrow/scale)

3) Scaling with 1 belleville spring washer (correct after modification, see page 190).

4) Scaling with 2 belleville spring washers (correct before delivery).

Required accessories:

- Tool *VFplus* Safety Clutch, comprising:
 - Hook spanner (X_1)
 - Hexagonal shaft (X_2)
 - Lock washer (X_3)

**Please note:**

Safety coupling
factory setting:

- **3842 998 291 / 3842 547 549:**

Coupling factory setting:
120 ($\pm 10\%$) = transferable
drive torque 90 Nm

- **3842 998 742 / 3842 547 659:**

Coupling factory setting:
90 ($\pm 10\%$) = transferable
drive torque 60 Nm

Change of factory setting:

Two belleville spring washers (35 - 125 Nm): Transferable drive torque $\times 1.25$ = Coupling setting

One belleville spring washer (20 - 70 Nm): Transferable drive torque $\times 1.25$ = Coupling setting

1. Disassemble the headless setscrew.
 2. Disassemble the slotted nut.
 3. Remove one spring.
 4. Install the slotted nut.
- Apply the slotted nut so that when it is applied (noticeable increase in force) the arrow coincides with the torque home position.

Attention:

The balls must engage in the holes of the belleville spring washers.

5. Install the headless setscrew.
6. Adjust the release torque (see page 188).

Safety coupling modification

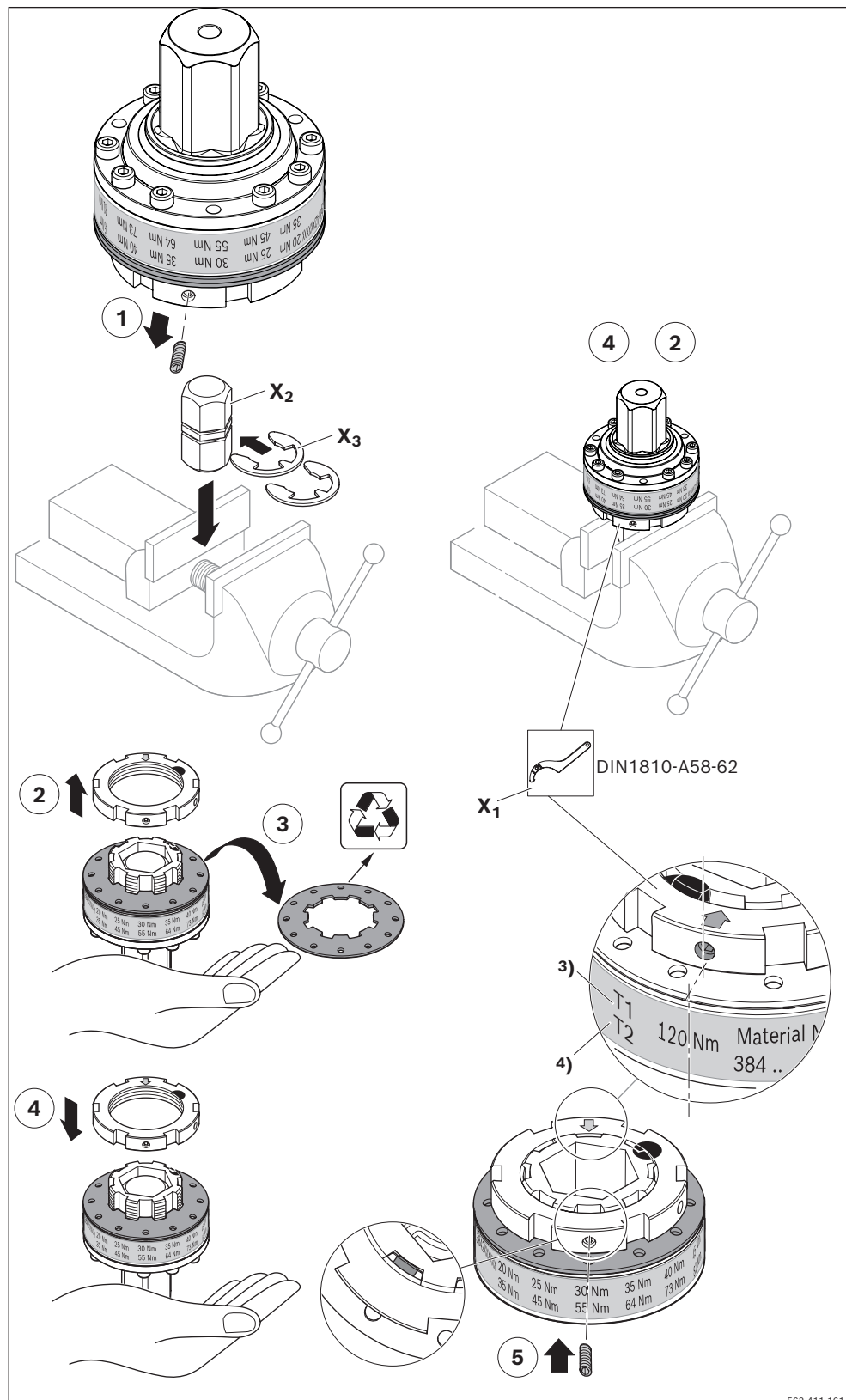


Fig. 181: Safety coupling modification

562 411-161

7.6 Electrical connection of the product

WARNING

High electrical voltage!

Risk of severe injury or death from electric shock.

- ▶ Disconnect the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.

The motor may only be connected by qualified personnel!

- ▶ Choose control and sensor elements in accordance with EN ISO 13849. Factor in the load being transported and the transport speed.
- ▶ Comply with VDE regulation VDE 0100 for Germany, or corresponding regulations in the country of use.

Motor connection

- ▶ Observe the available line voltage!
- ▶ Observe the electrical power requirement shown on the motor nameplate (see Fig. 181 on page 190).
- ▶ Connect the motor in either a wye or a delta connection in accordance with the wiring diagrams (see Fig. 182 on page 192, and the wiring diagram in the terminal box).
- ▶ The motor is fitted with a bimetal temperature monitoring switch (potential-free thermal contact, 230 V AC, 300 mA).
Wire the motor so that it is de-energized when the switch is triggered.
- ▶ Insert the cable so that it cannot get damaged during operation.

Checking the rotational direction of the motor

- ▶ Let the system run for a maximum of 2 s and make sure the motor is rotating in the correct rotational direction.
- ▶ To change the rotational direction of the motor:
Switch any two wires (U1, V1 or W1, see Fig. 182 on page 192).



Please note:

- ▶ 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.

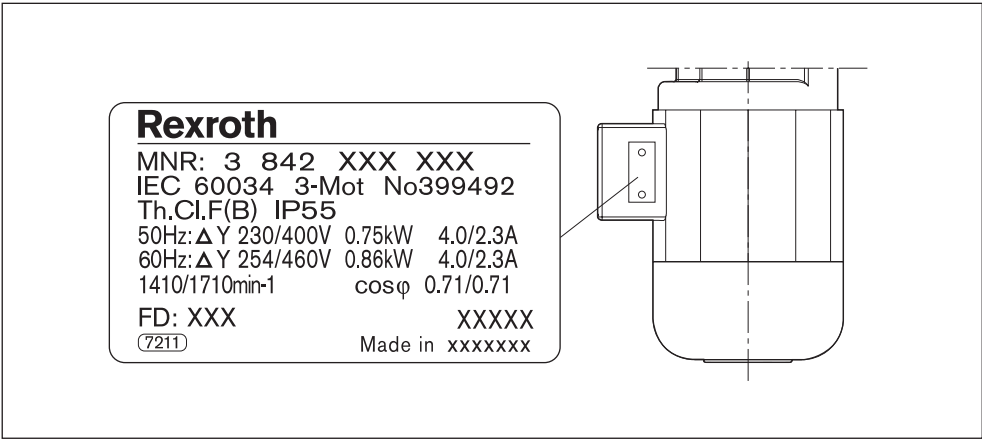


Fig. 182: Motor nameplate (example)

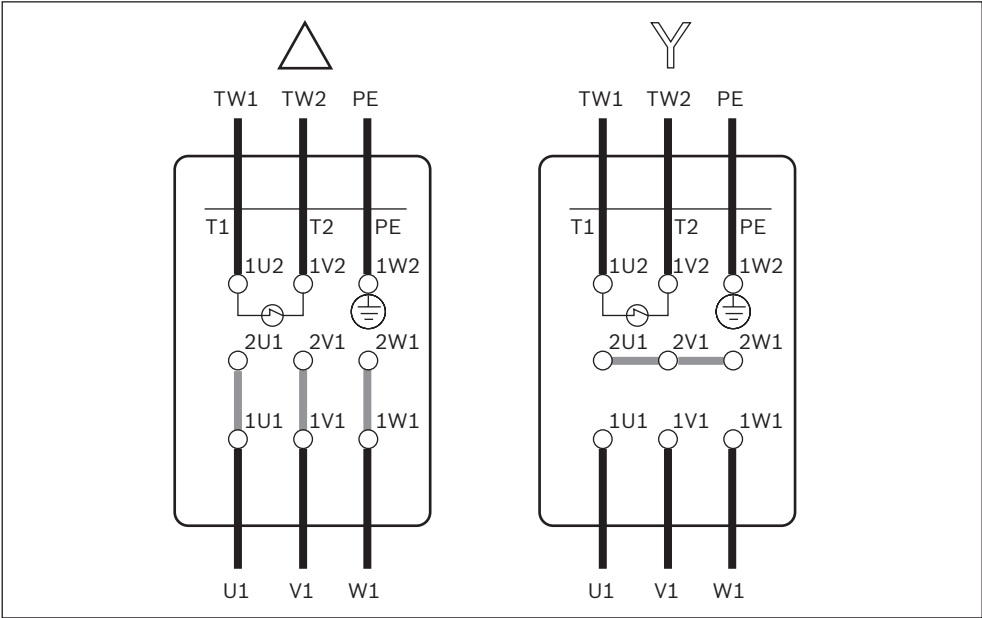


Fig. 183: Delta/ye connection diagrams

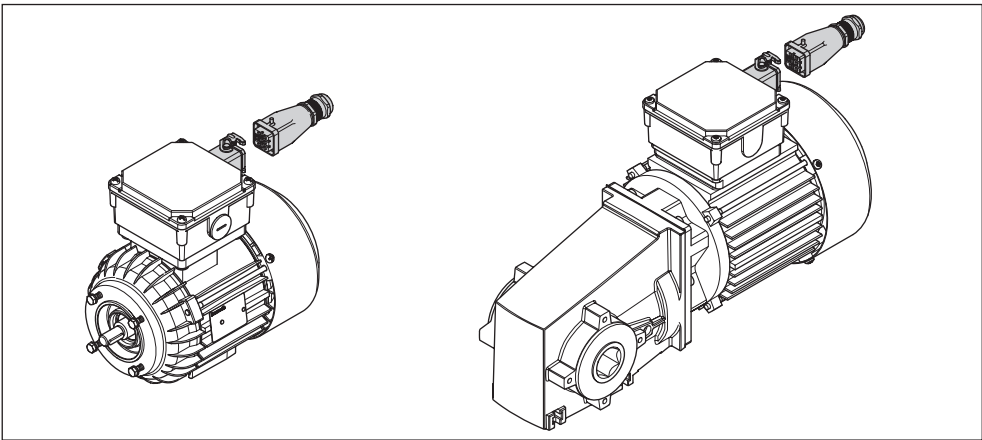
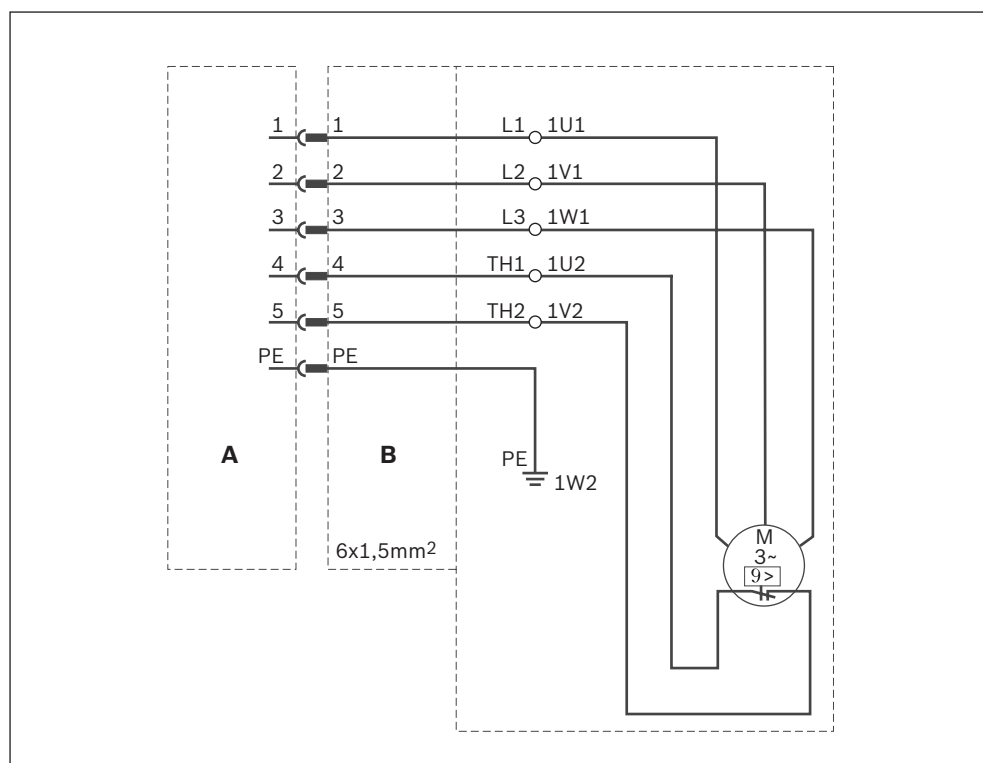


Fig. 184: Optional motor connection with plug (AT = S)



Installation_S-plan

Fig. 185: Motor connection with plug (AT = 1), circuit diagram

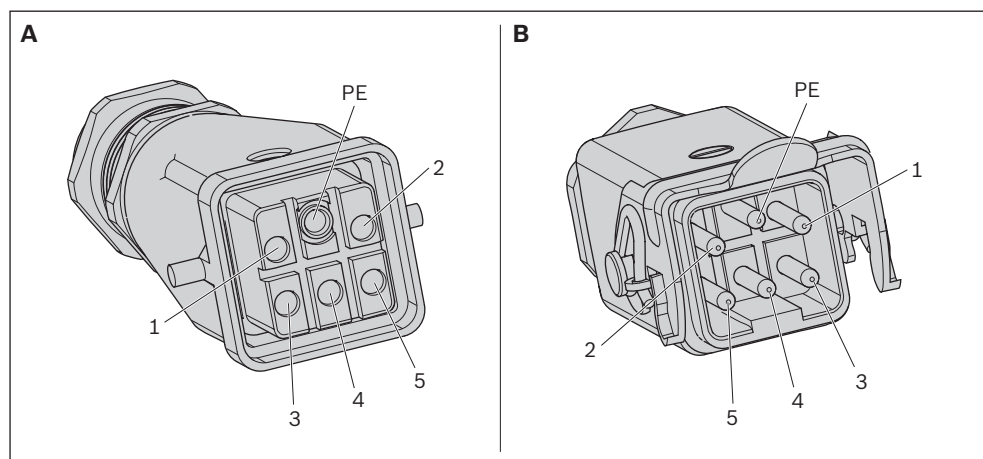
A: Connection cable side

B: Motor side

The push-in fitting consists of UL components.

Connection List

3~ motor connection terminals	Pin no.	Code
U1	1	L1
V1	2	L2
W1	3	L3
TW1	4	Th1
TW2	5	Th2
	PE	PE



Installation_Stecker

Fig. 186: Motor connection with plug (AT = 1), push-in fitting

A: Connection cable side

B: Motor side

8 Commissioning

8.1 Initial commissioning



CAUTION

Sudden movements, falling workpiece pallets

Injuries caused by falling objects.

- ▶ Make sure that the product has been assembled properly by qualified personnel (see page 10) before starting it up.

NOTICE

Malfunctions due to incorrect assembly and commissioning

The product can get damaged, shortening its service life.

- ▶ Commissioning requires basic mechanical, pneumatic and electrical knowledge.
- ▶ The product should only be commissioned by qualified personnel (see page 10).

- ▶ **Before the initial commissioning or re-commissioning of a conveyor system, carry out 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 control devices.**
- ▶ **The surfaces of motors and gears can reach temperatures of over 65 °C under certain load and operating conditions.
In these cases, comply with the respective applicable accident prevention regulations (UVV) by taking appropriate constructive measures (safety guards) or by affixing/displaying appropriate warning signs!**
- ▶ **Make sure that all electrical and pneumatic connections are either used or covered. Make sure that all screwed and plug-in connections are properly seated. All relevant protective covers must be fitted.**
- ▶ **Only inspect and adjust continuous conveyors that are in motion or operation when the protective equipment is in place.**
- ▶ **Observe EN ISO 13857 when you remove or replace protective equipment and/or bypass safety equipment.**
- ▶ **Test runs with open paneling should only be performed by a person with appropriate knowledge and experience using jog switches, and if there is no possibility of interference from other switching devices.**
- ▶ **Only commission the product if all safety equipment has been installed in the system and is ready for use.**
- ▶ **Only commission a product that has been completely installed.**

8.2 Re-commissioning after a standstill

- ▶ Follow the steps outlined for the initial commissioning.

9 Operation

CAUTION

Hot electric motor surfaces during operation!

Risk of burns from touching hot surfaces above 65 °C

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

9.1 Information on 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 safety 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 the conveyor sections can cause the conveyor medium to malfunction and lead to the premature breakdown of motors and gears.
- If pneumatically activated components are overloaded, it is not possible to guarantee their function.

9.1.2 Measures to reduce wear

The following obvious measures will reduce wear:

- ▶ Switch off the conveyor section during line downtime, e.g. during breaks, overnight, on the weekend.
- ▶ Only select conveyor section speeds that correspond to the particular function.
- ▶ **It is especially important to** avoid contamination caused by abrasive media (e.g. metal swarf or building dust, but also fine dust or sugar). Reduce the level of contamination through regular cleaning.

9.1.3 Environmental factors

- Our products are 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, aggressive cleaning agents, solvents or brake fluid.
- Avoid prolonged contact with highly reactive acidic or alkaline materials.
- Wear can increase significantly in the event of contamination – particularly with abrasive media in the environment, such as metal swarf or building dust, but also fine dust or sugar. Maintenance intervals should be significantly shortened under these circumstances.
- Resistance to media and contamination does not mean that functional safety is guaranteed in every case.
 - Liquids that thicken as they evaporate and become highly viscous or adhesive (sticky) can lead to malfunctions.
 - If they get carried onto systems with rollers, media which have lubricating properties can lead to a reduction in the drive power that is transmitted via friction.

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

10 Maintenance and repair



WARNING

High electrical voltage!

Risk of severe injury or death from electric shock.

- ▶ Disconnect the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.

High pneumatic pressure!

Risk of severe injury or death.

- ▶ Switch off the compressed air supply to the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.



CAUTION

Hot electric motor surfaces during operation!

Risk of burns from touching hot surfaces above 65 °C

- ▶ Install appropriate guards.
 - ▶ Let the unit cool down for at least 30 minutes before performing maintenance and/or repair work.
-
- ▶ Only inspect and adjust continuous conveyors that are in motion or operation when the protective equipment is in place.
 - ▶ Observe DIN EN ISO 13857 when you remove or replace protective equipment and/or bypass safety equipment.
 - ▶ Test runs with open paneling should only be performed by a person with appropriate knowledge and experience using jog switches, and if there is no possibility of interference from other switching devices.

10.1 Cleaning and care

NOTICE

Bearing failure

Applying grease-dissolving substances to the bearing points, e.g. during cleaning, leads to bearing failure. There is a risk of damage to property, and service life may be reduced.

- ▶ Keep degreasers or aggressive cleaning agents away from the bearings!
- ▶ Only clean the product with a damp cloth.

Conveyor chain failure

Applying grease-dissolving substances to the conveyor chain, e.g. during cleaning, leads to the failure of the conveyor chain. There is a risk of damage to property.

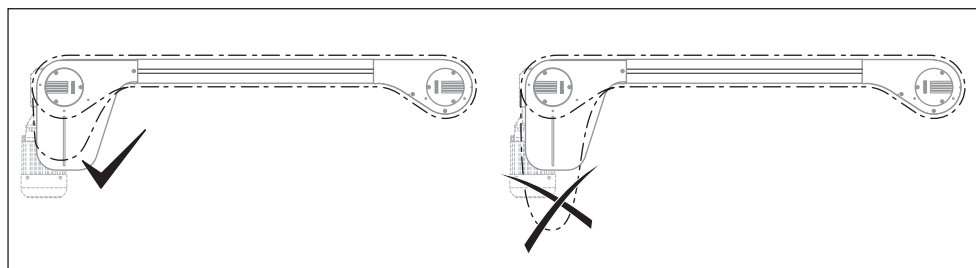
- ▶ Keep degreasers or aggressive cleaning agents away from the conveyor chain!
- ▶ Only clean the product with a damp cloth.

10.2 Inspection

10.2.1 Conveyor chain

During the break-in phase, but afterwards too, the conveyor chain lengthens as its overall period of operation increases (the chain bag enlarges and projects beyond the guard plates, see Fig. 187). A chain bag that is too large leads to increased noise emissions and wear at the point where the conveyor chain enters the drive unit.

- Remove a few chain links from the conveyor chain after a break-in period of approx. 40 hours.

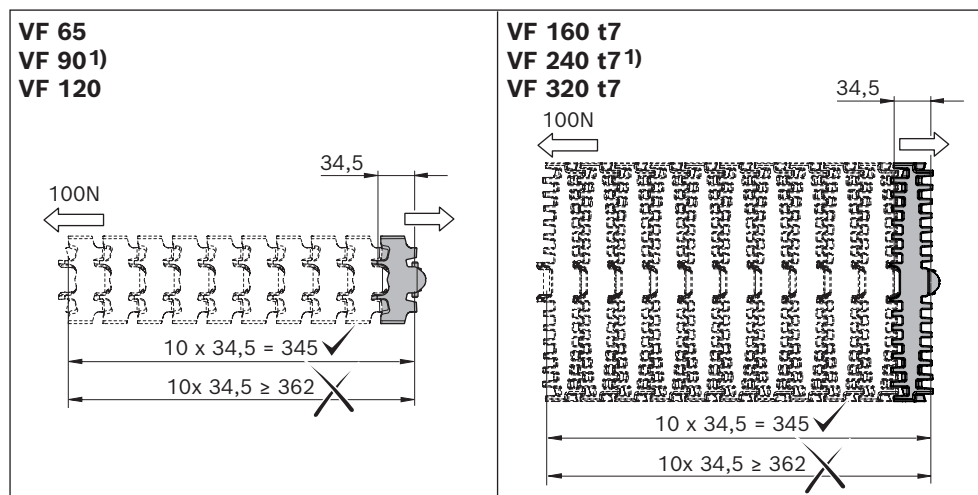


562 411-167

Fig. 187: Elongation of the conveyor chain

- Further inspections of the chain bag are necessary after 200 hrs, 400 hrs, 600 hrs, and then every 1000 hours.
 - The maximum permissible elongation of the conveyor chain is 5%.
- Replace the conveyor chain when this limit is reached.

Conveyor chains are wear parts.



562 411-168

Fig. 188: Max. permissible elongation (5%) of the conveyor chain

1) Size shown

10.2.2 Sliding rails

- Every 2000 h (approx. 83 days in 3-shift operation):
 - Visually check for break-in scoring of the sliding rails and the underside of the chain plates (in the head drive chain bag).
 - Clean the system of abrasive dust.

There is increased wear of the chain conveyor during the break-in phase which lasts for approx. 3 weeks.

- Clean more frequently.

Total max. permissible wear of the sliding rail and chain plate 0.7 mm.

Sliding rails are wear parts.

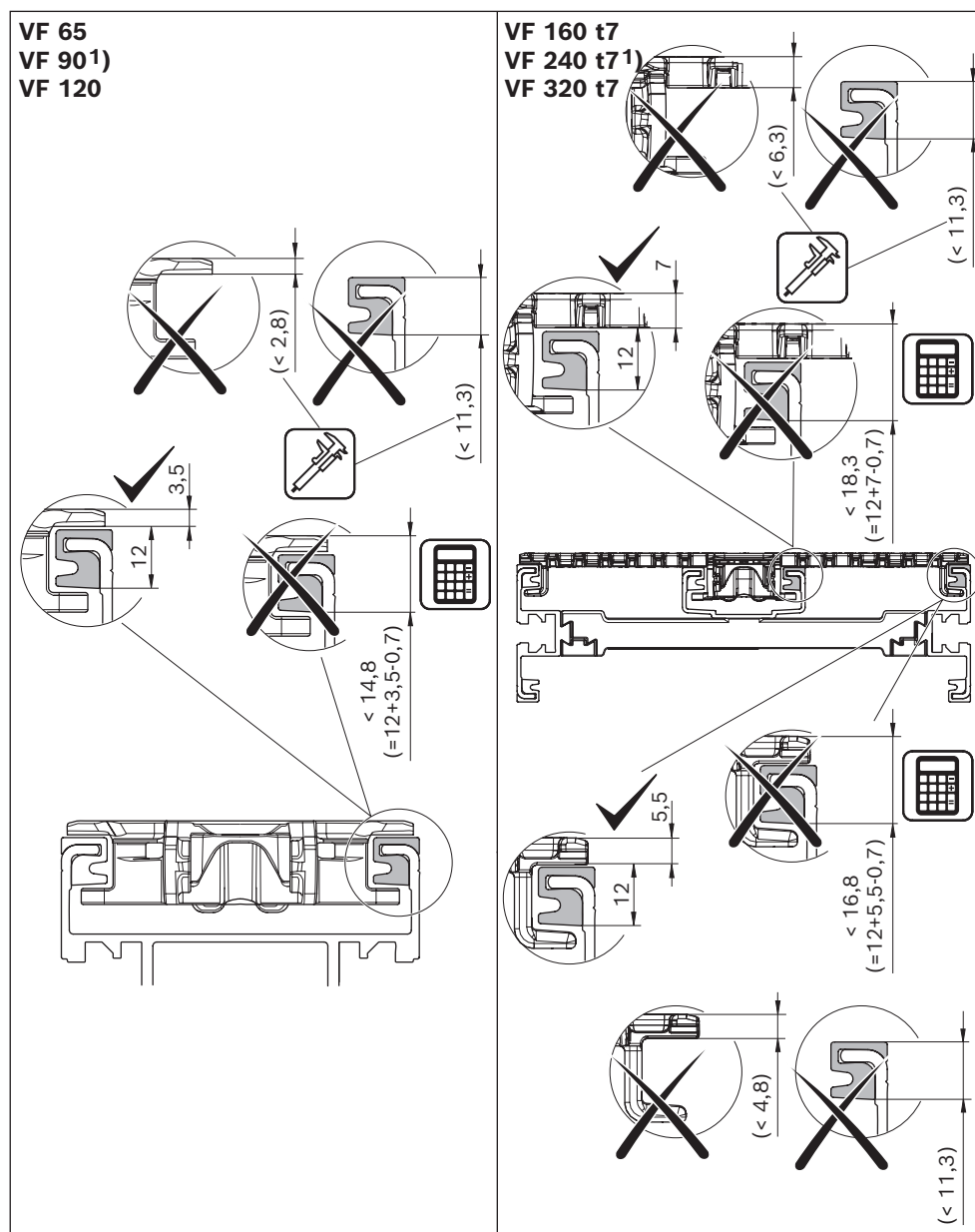


Fig. 189: Max. permissible wear (0.7 mm in total) of the sliding rail and chain plate

¹⁾ Size shown

10.2.3 Sliding curves

- Visually check for break-in scoring of the sliding rails in horizontal or vertical sliding curves every 250 operating hours.

Total max. permissible wear of the sliding rail and chain plate 0.7 mm.

Sliding rails are wear parts.

10.2.4 Roller curves

- In horizontal curves check that the roller bearings run smoothly. Replace worn sliding rails.

Total max. permissible wear of the sliding rail and chain plate 0.7 mm.

Sliding rails are wear parts.

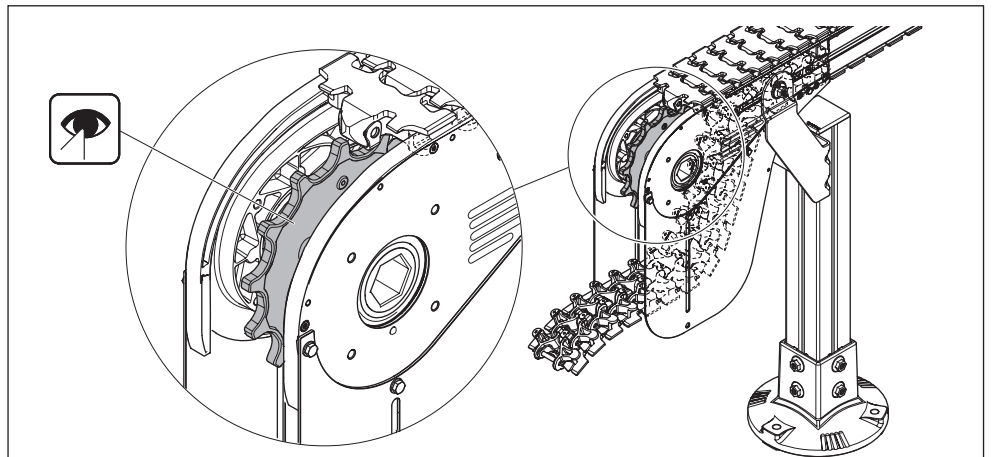
10.2.5 System as a whole

- Remove the conveyor chain from the chain conveyor every 2000 operating hours (when using horizontal or vertical sliding curves: every 500 h).
- Check the sliding rails and the underside of chain plates for break-in scoring.
- Also check for correct attachment and level of wear.

10.2.6 Wear of conveyor chains

- At the prescribed maintenance intervals (at the latest every 2000 hrs, or more frequently in the case of abrasive environments):
 - Open the conveyor chain.
 - Measure the wear with a measuring tool.
- Thickness of the sliding rail (for permissible wear, see page 27)
- Break-in scoring of the underside of the chain (for permissible wear, see page 27)
- Chain elongation (permissible elongation < 5%, see page 27)
- Drive gear: Visually check and feel the teeth of opened chain.
 - Tooth height must be maintained.
 - Teeth must not be pointed.

Drive gears are wear parts.



562 411-170

Fig. 190: Drive gear: Visually check and feel the teeth of opened chain.

Accumulation operation



Please note:

Sliding friction causes increased temperatures and increased wear. Maintenance intervals are therefore reduced.

- In the accumulation area visually check for break-in scoring of sliding rails and the underside of chain plates every 500 hours.

Total max. permissible wear of the sliding rail and chain plate 0.7 mm.

- Bosch Rexroth recommends continual system checks in accumulation operation.

10.3 Maintenance

10.3.1 Bearings

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

10.3.2 Gear

The gear is maintenance-free.

10.3.3 Motor

- To ensure adequate cooling of the motors, regularly remove dirt and dust deposits:
 - from the surface of the motor
 - from the intake openings on the fan hood
 - from between the cooling ribs

The cleaning intervals depend on the ambient and operating conditions.

10.4 Replacement of wear parts

10.4.1 Required tools

- Hex wrench (open-end) SW13
- Hex socket wrenches SW3, SW4, SW5
- Pozidriv screwdriver PZ2
- Caliper, 500 mm
- Rubber mallet
- Drift punch

10.4.2 Conveyor chain

- Conveyor chain replacement: see conveyor chain installation, page 87 and following.

10.4.3 Sliding rails

- Sliding rail replacement: see sliding rail installation, page 77 and following.

10.5 Spare parts

- See MTparts spare parts list, **3842 539 057** (www.boschrexroth.com/mtpro).

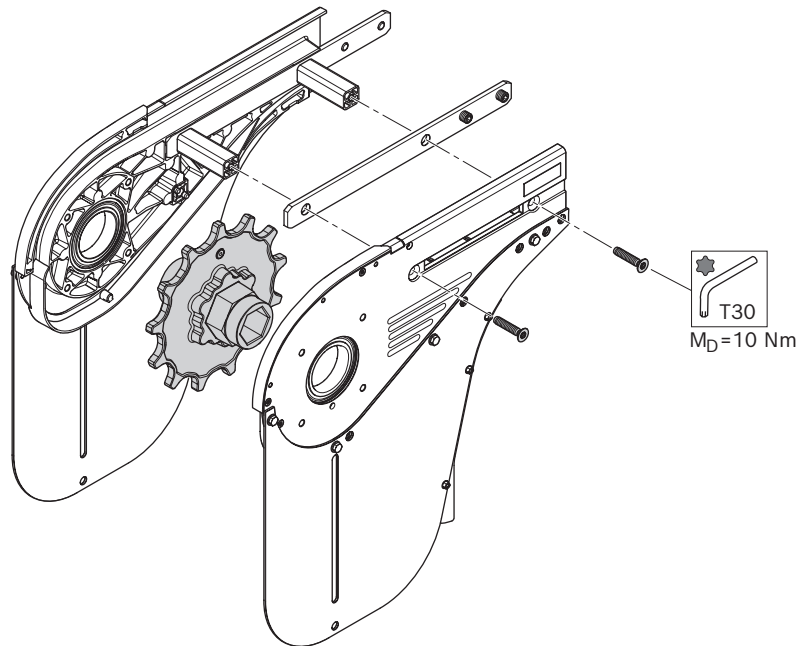
Disassembling the base unit

- See Base unit installation, page 37 (AL) / page 58 (STS).

1) Size shown

Drive gears

**VF 65
VF 901)
VF 120**



**VF 160
VF 2401)
VF 320**

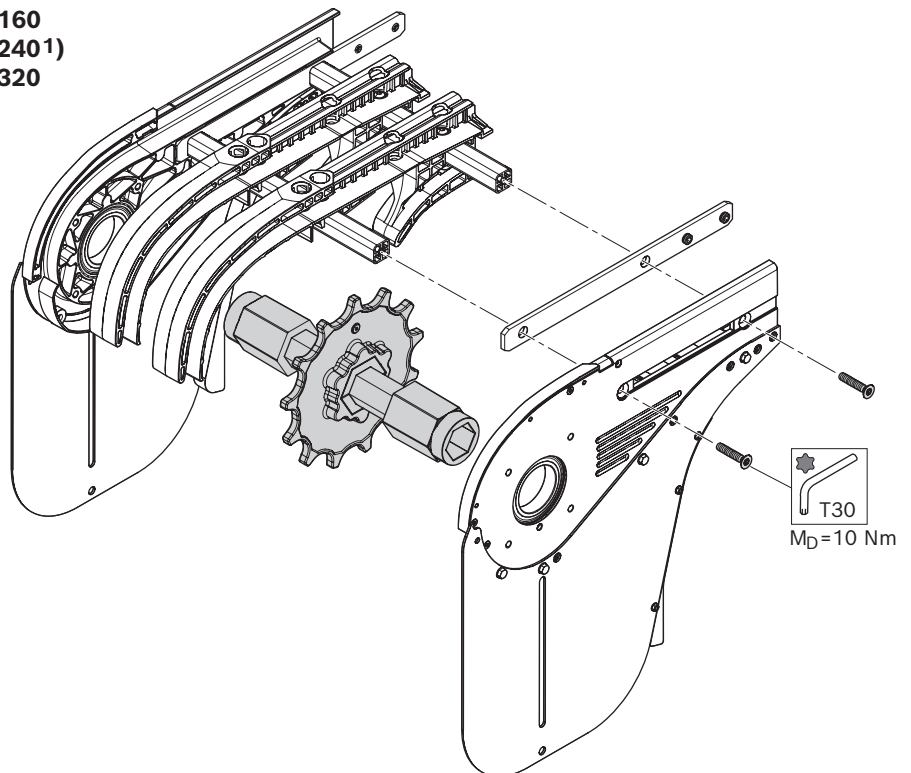


Fig. 191: Replacing drive gears

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11 Decommissioning

This product is an individual component which does not need to be decommissioned. Accordingly, this chapter has been left blank.

12 Disassembly and replacement



WARNING

High electrical voltage!

Risk of severe injury or death from electric shock.

- ▶ Disconnect the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.

High pneumatic pressure!

Risk of severe injury or death.

- ▶ Switch off the compressed air supply to the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.

Suspended loads may fall!

Falling objects can result in severe injury (or even death).

- ▶ Use only slings with sufficiently high bearing loads (for product weight see delivery documents).
- ▶ Make sure the lifting straps are correctly fastened before lifting the product!
- ▶ Secure the product against tipping over when lifting!
- ▶ Make sure that no one but the operator is in the danger zone during lifting and lowering!

12.1 Preparing the product for storage/later use

- ▶ Only set the product down on a flat surface.
- ▶ Protect the product from mechanical stress.
- ▶ Protect the product from environmental influences, such as dirt and moisture.
- ▶ Observe the ambient conditions (see page 203).
- ▶ For products with motor installed:
Support the product so that the motor is not placed under mechanical load.

13 Disposal

- 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.
- 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

If you cannot correct a fault, please contact one of the addresses you can find at www.boschrexroth.com.

16 Technical data

For chain conveyor system design: see sales catalog VarioFlow *plus*.

- For dimensions, see sales catalog VarioFlow *plus*.
- Maximum load: see sales catalog VarioFlow *plus*.
- Permissible section load of the conveyed goods: 30 N/chain link (34.5 mm)
- Noise emissions: < 70 dB (A)

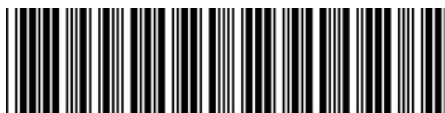
16.1 Ambient conditions

- The transfer systems have been designed for stationary use in a location that is protected from the elements.
- Operating temperature +0 °C to +60 °C
(effect of temperature on the load limit of the conveyor chain, see BKBsoft.)
- Storage temperature -25 °C to +70 °C
- Relative humidity 5% to 85%, non-condensing
- Air pressure: > 84 kPa, corresponds to an installation altitude
 < 1,400 m above sea level
- Permissible load capacity of floor: 1000 kg/m²
- At installation 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. If you are unsure about resistance against certain chemicals such as test oil, doped oils, aggressive cleaning agents, solvents, or brake fluid, we recommend that you consult your specialist Rexroth representative.
- Avoid prolonged contact with highly reactive acidic or alkaline materials.

Bosch Rexroth AG

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