

Powerturn IS/TS  
Powerturn F-IS/TS  
Powerturn F/R-IS/TS

EN Installation instructions

164692-01

**GEZE**

## Contents


1	Symbols and illustrations .....	3
2	Product liability .....	3
3	Security .....	3
3.1	Intended use.....	3
3.2	Standards.....	3
3.3	Reference documents.....	4
3.4	Safety notices.....	4
4	Tools and aids .....	4
5	Types of installation .....	4
5.1	Type of installation transom installation hinge side .....	4
5.2	Type of installation transom installation opposite hinge side .....	4
5.3	Types of installation, hinge action .....	5
5.4	Fitting dimensions for the installation types.....	6
6	Product description .....	8
6.1	Illustrations of the TS 5000 L passive leaf unit .....	8
6.2	Illustrations of the TS 4000 passive leaf unit .....	9
7	Installing the integrated Powerturn F closing sequence mechanism .....	10
8	Converting the TS units.....	12
8.1	TS 5000 L - conversion from DIN right to DIN left .....	12
8.2	TS 4000 - conversion from DIN right to DIN left .....	14
8.3	Connecting the mechanism for integrated closing sequence control of active and passive leaf .....	15
8.4	Install carry bar .....	20
8.5	Install hold-open magnet .....	20
8.6	Installing the electrical contact for passive leaf position monitoring .....	21
9	Function check .....	21
10	Commissioning.....	21
11	Service and maintenance .....	22
11.1	General information .....	22
11.2	Maintenance of mechanism for integrated closing sequence control .....	22
12	Troubleshooting .....	23

# 1 Symbols and illustrations

## Warning notices




In these instructions, warning notices are used to warn against material damage and injuries.

- ▶ Always read and observe these warning notices.
- ▶ Observe all measures marked with the warning symbol and warning message .

Warning symbol	Warning message	Meaning
	<b>CAUTION</b>	Danger to persons. Non-compliance can result in minor injuries.

## More symbols and illustrations

Important information and technical notes are highlighted to explain correct operation.

Symbol	Meaning
	means "important note"
	means "additional Information"
	Symbol for an action: This means you have to do something. ▶ If there are several actions to be taken, keep to the given order.

# 2 Product liability

In compliance with the liability of the manufacturer for his products as defined in the German "Product Liability Act", compliance with the information contained in this brochure (product information and intended use, misuse, product performance, product maintenance, obligations to provide information and instructions) must be ensured. Failure to comply releases the manufacturer from his statutory liability.

# 3 Security

## 3.1 Intended use

The Powerturn F-IS/TS integrated closing sequence control has been designed for mechanical control during the closing of double-leaf single-action swing leaf doors. The construction components required are a supplement to the Powerturn drive and must be installed according to these instructions.

The Powerturn F-IS/TS integrated closing sequence control

- is designed for use on fire and smoke protection doors.
- may be used on emergency exit systems.
- must not be used for hazardous areas.

The Powerturn IS/TS integrated closing sequence control

- must not be used on fire or smoke protection doors.
- may be used on emergency exit systems.
- must not be used for hazardous areas.

Any other use than the intended use, such as permanent manual operation of the Powerturn F, as well as any modification to the product, is not permitted.

Observe the "GEZE Product information for door closers".



The product should be installed or incorporated in such a way that effortless access to the product is guaranteed during any repairs and/or maintenance, and that any removal costs do not stand out of proportion to the value of the product.

## 3.2 Standards

In addition to the valid standards and regulations, DIN EN 1158 applies to the Powerturn.

### 3.3 Reference documents

- Powerturn installation instructions
- Powerturn wiring diagram
- Installation instructions for Powerturn mechanism for integrated closing sequence control
- TS 5000 L installation instructions
- TS 4000 installation instructions
- Installation instructions carry bar
- Installation instructions and wiring diagram hold-open magnet
- User information door closer

The diagrams are subject to change without notice. Use only the most recent version.

### 3.4 Safety notices

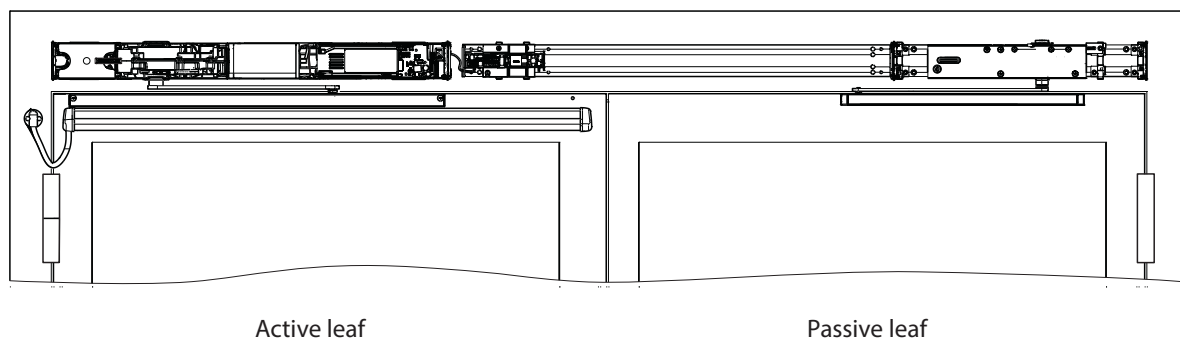
- !** The description of the overall installation of the drive is not the subject of these instructions. This information can be found in the Powerturn installation instructions. All the necessary safety notices for conversion or extension to a double-leaf version can be found on the following pages.

## 4 Tools and aids

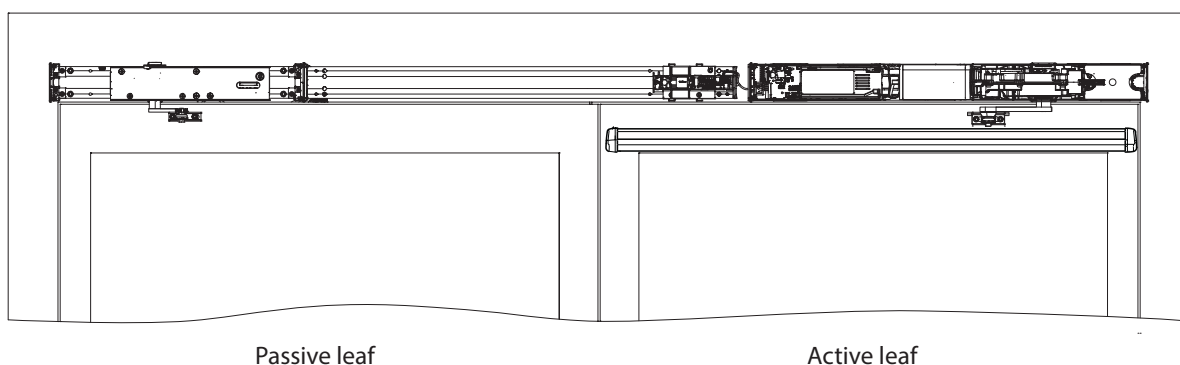
Tool	Size
Drill bit	Ø 2 mm
Open-ended spanner	SW 5.5
Allen key	1.5 mm
Allen key	2.5 mm
Pozidrive screwdriver	

## 5 Types of installation

### 5.1 Type of installation transom installation hinge side



### 5.2 Type of installation transom installation opposite hinge side



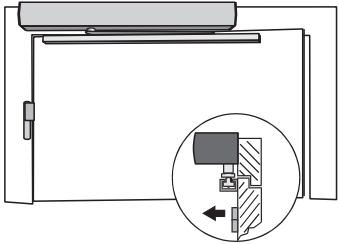
### 5.3 Types of installation, hinge action

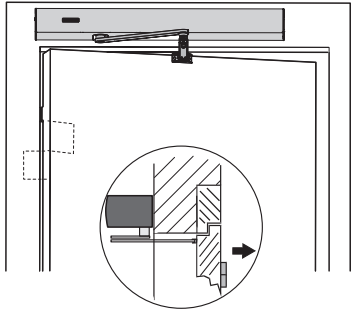
- ! The opening angle of the door always has to be limited by a door stop buffer.
- Loads due to wind pressure, negative pressure or excess pressure must be taken into account.

i We recommend the installation type involving link arms (wind) for the exterior doors.

The Powerturn IS/TS, Powerturn F-IS/TS, and Powerturn F/R-IS/TS permit, with respect to DIN left and DIN right, the following buffer stop types:

#### 5.3.1 Rail installation and link arm

Type of installation	Dimension	Powerturn F	TS 5000 L
<b>Transom installation hinge side rail</b>			
	Reveal depth LT [mm]	0	
	Door overlap Ü [mm]	0–15	
	Max. door opening angle TÖW [°] <sup>1)</sup>	133	180
	Standard roller guide rail L = [mm]	687	415
	Lever L = [mm]	330	333
	Hinge size [mm]	190	
	EN class	4–6	
	Max. door width [mm]	≤ 1600	≤ 1400

Type of installation	Dimension	Powerturn F	TS 4000
<b>Transom installation opposite hinge side link arm</b>			
	Reveal depth SD standard and with sensor link arm [mm]	0–160	
	Max. door leaf thickness [mm]	150	
	Max. door opening angle TÖW [°] <sup>1)</sup>	135	180
	Hinge size [mm]	190	
	EN class	4–7	
	Max. door width [mm]	≤ 1600	≤ 1600

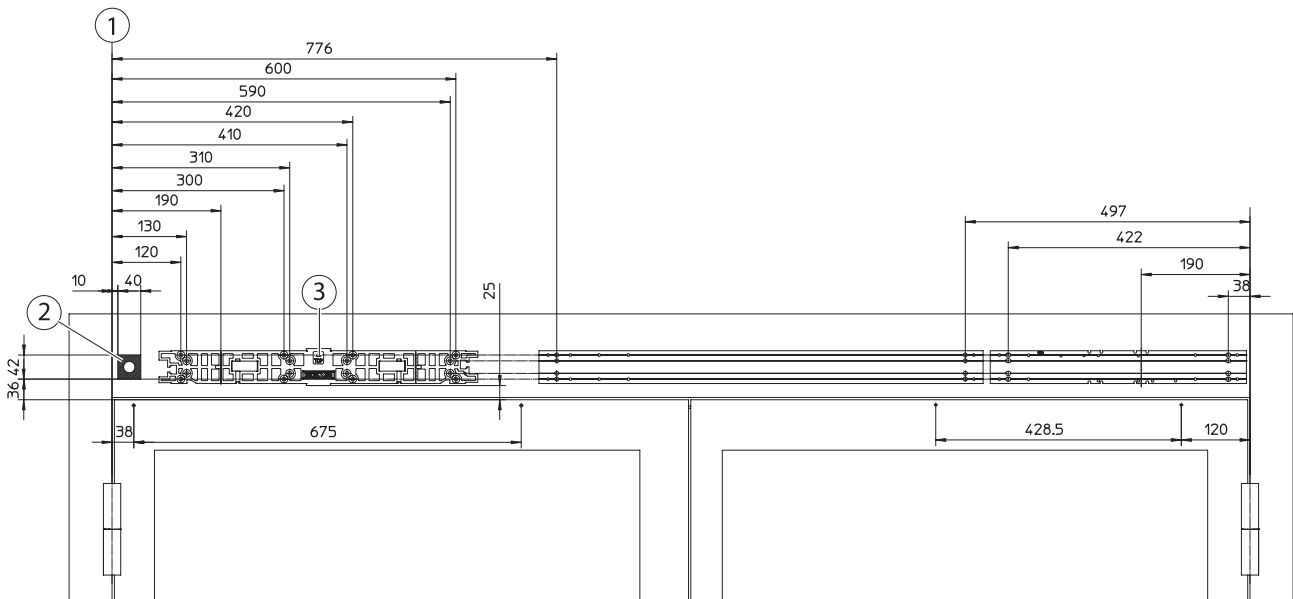
<sup>1)</sup> depending on the door construction and door hinges used

For other limits of use see:

- Powerturn installation instructions
- TS 5000 L installation instructions
- TS 4000 installation instructions

## 5.4 Fitting dimensions for the installation types

## 5.4.1 Type of installation transom installation hinge side



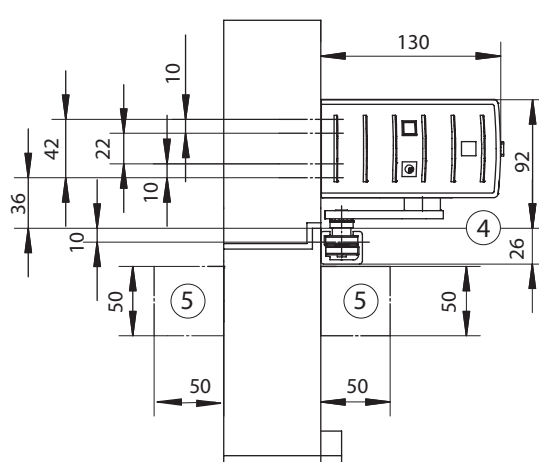
- 1 Dimensional reference - Centre of hinge/Upper edge of door
- 2 Covered line-feed possible in the hatched area, e.g.  $\text{Ø} 20$  mm for the mains connection or low-voltage connection
- 3 Orientation arrow for precise positioning of the mounting plate

**Fastening means**

	Steel/aluminium doors	Timber doors
Drive fastening	8 countersunk head screws M6 × 25 and riveting nuts M6	8 wood screws with countersunk head $\text{Ø}6 \times 50$
TS attachment	4 cylinder head screws M6 × 20 and riveting nuts M6	4 wood screws with cylinder head $\text{Ø}6 \times 50$
Intermediate base plate attachment	4 cylinder head screws M6 × 25 and riveting nuts M6	4 wood screws with cylinder head $\text{Ø}6 \times 50$
Fastening standard roller guide rail Powerturn	2 countersunk head screws M5 × 40 and riveting nuts M5	2 wood screws with countersunk head $\text{Ø}5 \times 50$
Fastening for the vertically adjustable TS 5000 L guide rail	2 countersunk head screws M5 × 40 and riveting nuts M5	2 wood screws with countersunk head $\text{Ø}5 \times 50$

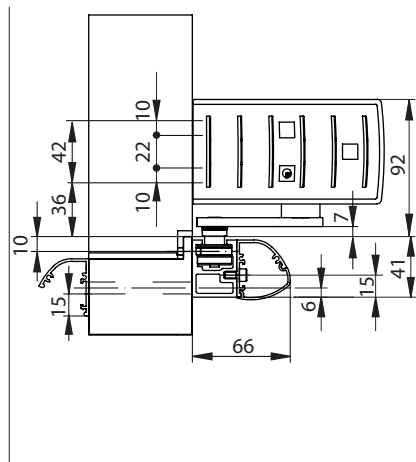
**Space requirement and fastening**

Standard roller guide rail Powerturn

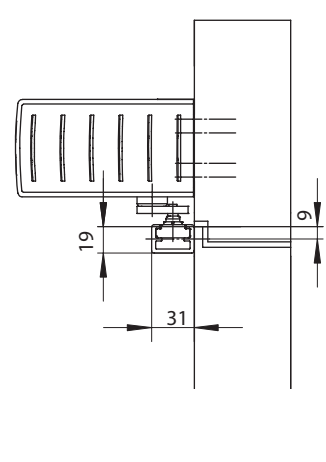


- 4 Base top edge of door
- 5 Space requirement for sensors

Sensor roller guide rail Powerturn



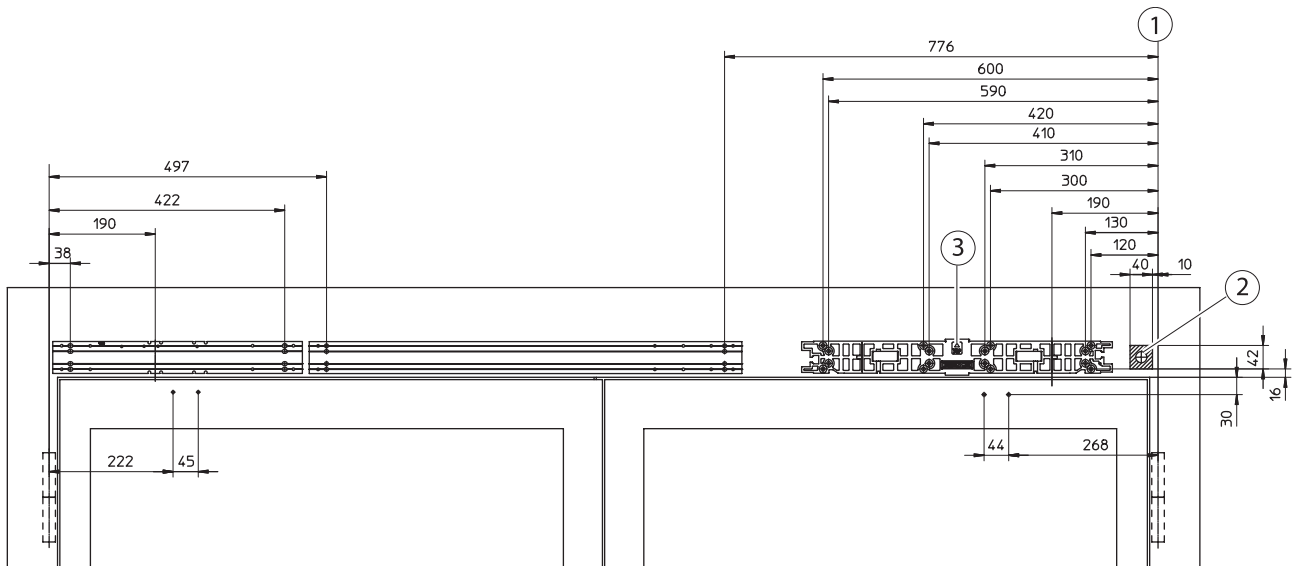
Guide rail TS 5000 L



5.4.2 Type of installation transom installation opposite hinge side

**Fastening - DIN right**

**Fastening DIN left**



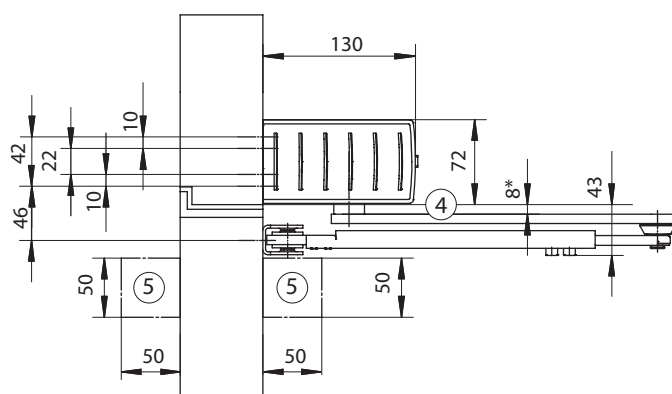
- 1 Dimensional reference centre of hinge/bottom edge of frame
- 2 Covered line-feed possible in the hatched area, e.g. Ø 20 mm for the mains connection or low-voltage connection
- 3 Orientation arrow for precise positioning of the mounting plate

**Fastening means**

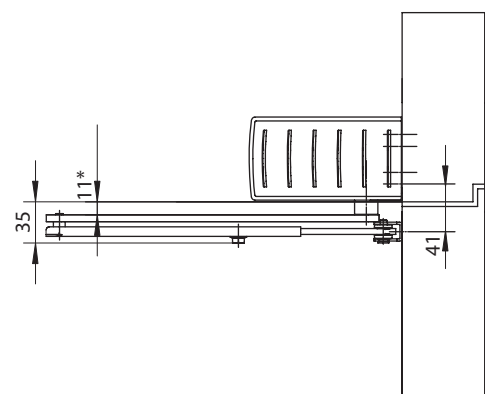
	Steel/aluminium doors	Timber doors
Drive fastening	8 countersunk head screws M6 × 25 and riveting nuts M6	8 wood screws with countersunk head Ø6 × 50
TS attachment	4 cylinder head screws M6 × 20 and riveting nuts M6	4 wood screws with cylinder head Ø6 × 50
Intermediate base plate attachment	4 cylinder head screws M6 × 25 and riveting nuts M6	4 wood screws with cylinder head Ø6 × 50
Fastening for the Powerturn link arm	2 cylinder head screws M6 × 16 and riveting nut M5	2 wood screws with cylinder head Ø5 × 20
Fastening for the TS 4000 link arm	2 cylinder head screws M5 × 16 and riveting nut M5	2 wood screws with cylinder head Ø5 × 20
Fastening the adapter for the Powerturn sensor link arm	2 countersunk head screws M6 × 20 and riveting nut M6	2 wood screws with countersunk head Ø5 × 35

**Space requirement and fastening**

Powerturn link arm



Link arm TS 4000

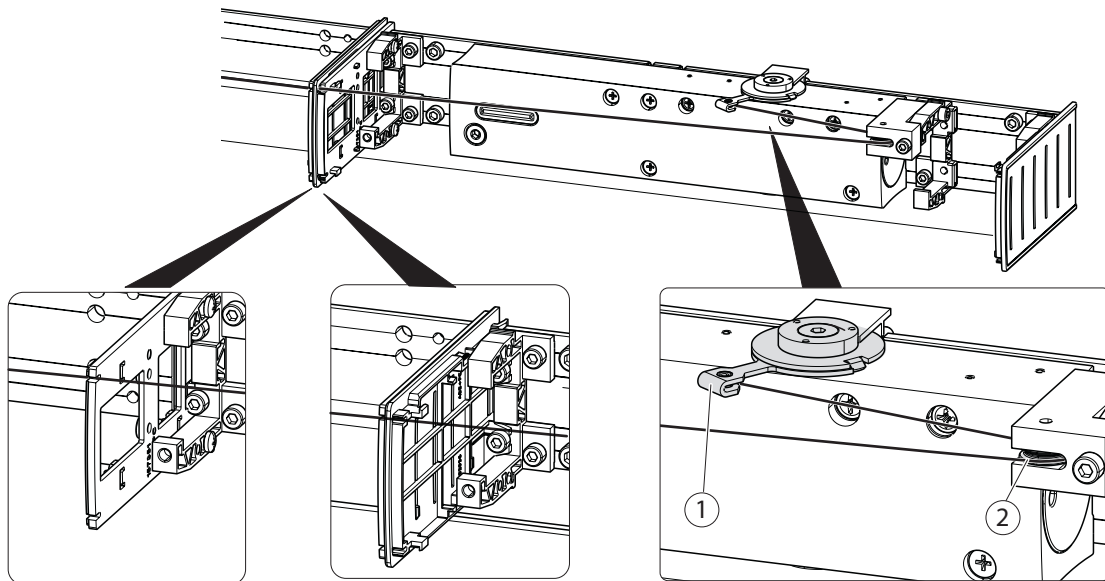


- 4 Base lower edge of lintel
- 5 Space requirement for sensors
- \* Important functional dimension

## 6 Product description

### 6.1 Illustrations of the TS 5000 L passive leaf unit

#### 6.1.1 TS 5000 L passive leaf unit transom installation hinge side DIN right

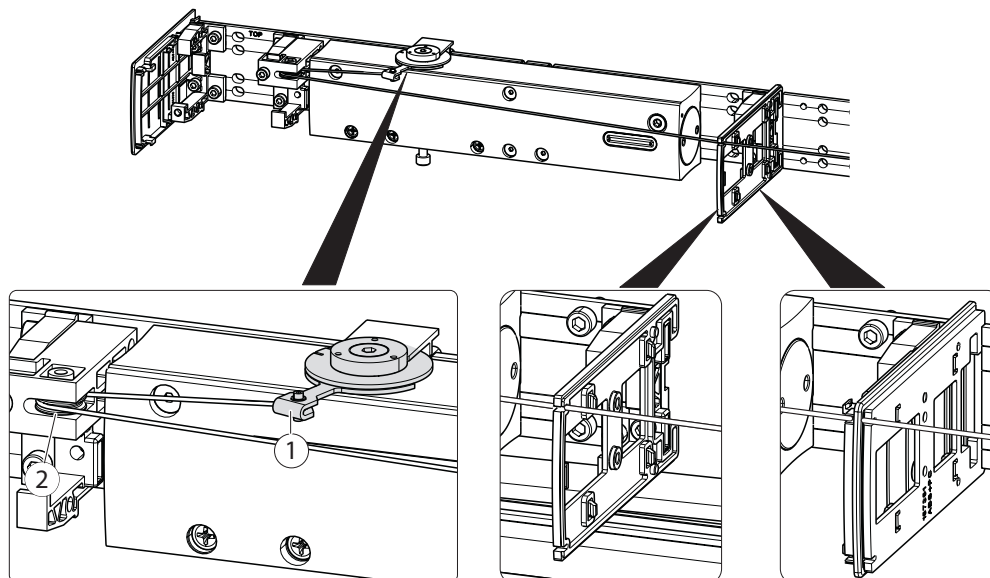


Single side panel (for continuous cover)

Double side panel (for split cover)

- 1 Rocker for integrated closing sequence control
- 2 Deflection pulley

#### 6.1.2 TS 5000 L passive leaf unit transom installation hinge side DIN left



Single side panel (for continuous cover)

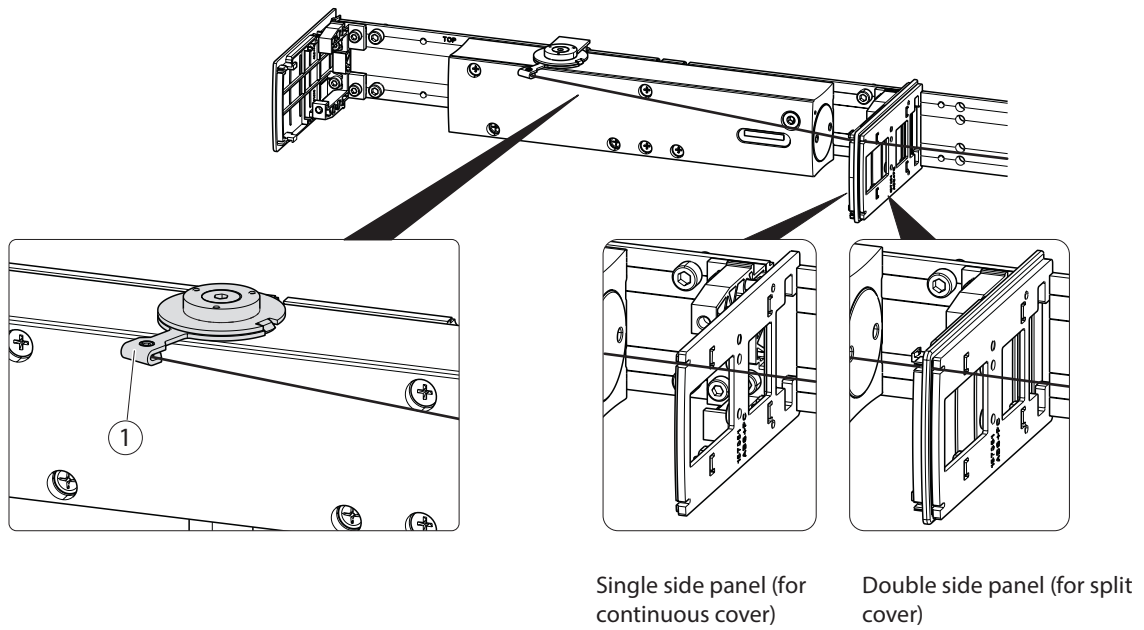
Double side panel (for split cover)

- 1 Rocker for integrated closing sequence control
- 2 Deflection pulley

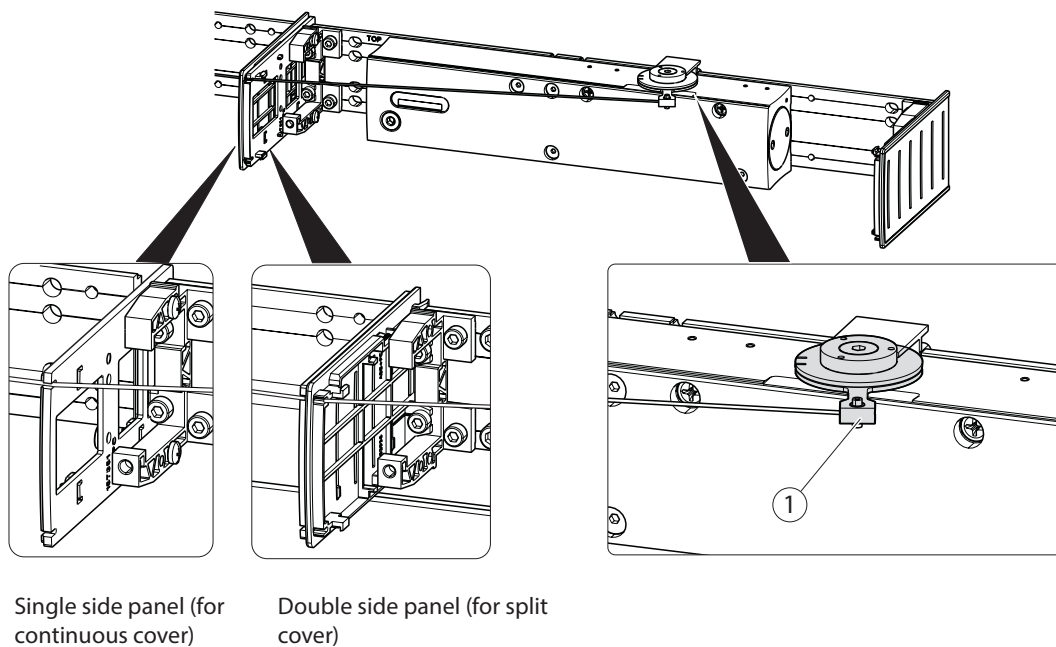


## 6.2 Illustrations of the TS 4000 passive leaf unit

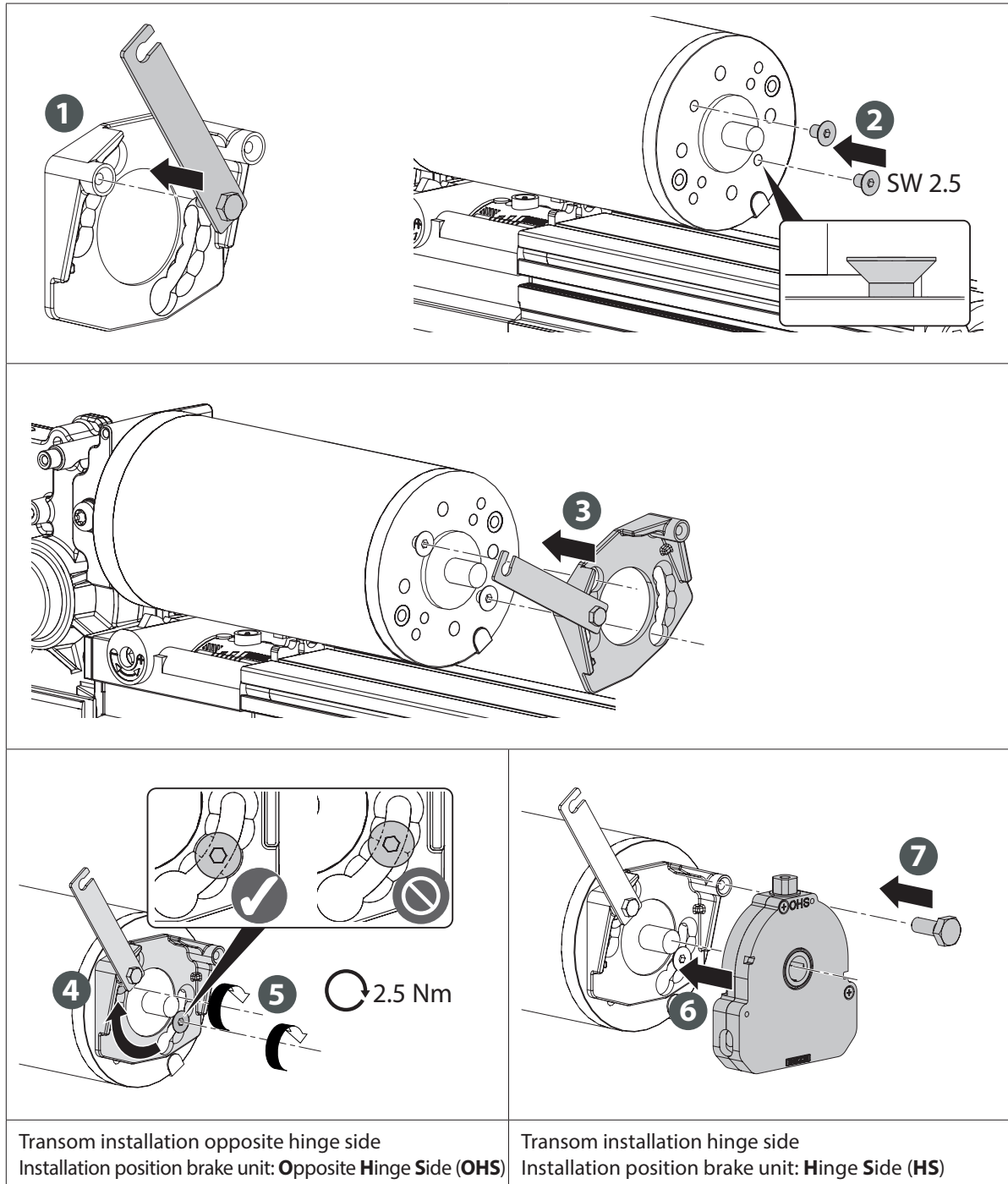
### 6.2.1 TS 4000 passive leaf unit transom installation opposite hinge side DIN right

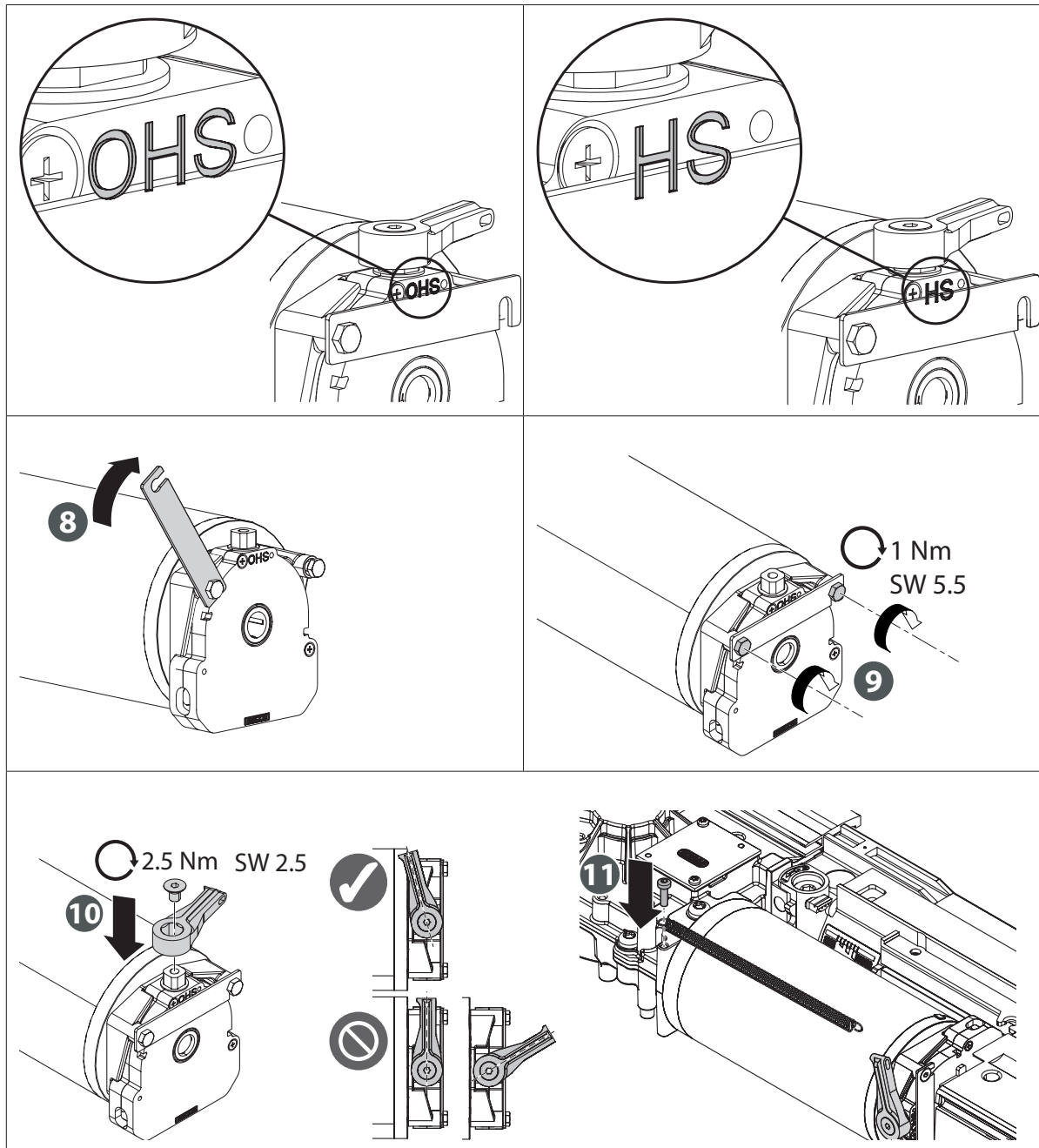


### 6.2.2 TS 4000 passive leaf unit transom installation opposite hinge side DIN left



## 7 Installing the integrated Powerturn F closing sequence mechanism

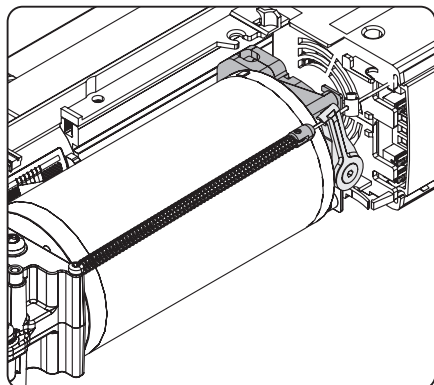




► During installation of the setting lever, pay attention to the alignment of the mechanism for integrated closing sequence control (see below).

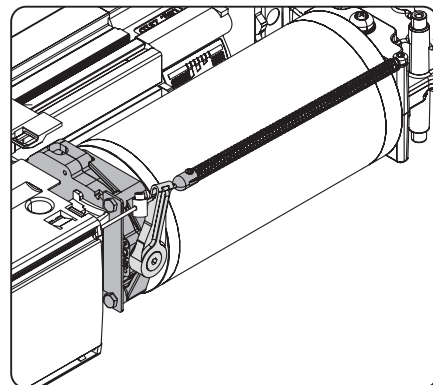
Types of installation:

- Transom installation - hinge side, DIN left
- Transom installation - opposite hinge side, DIN right



Types of installation:

- Transom installation - hinge side, DIN right
- Transom installation - opposite hinge side, DIN left

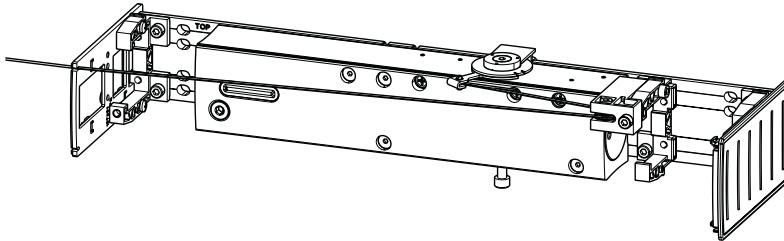


## 8 Converting the TS units

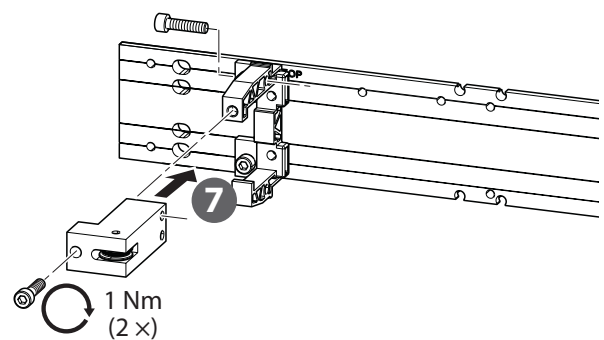
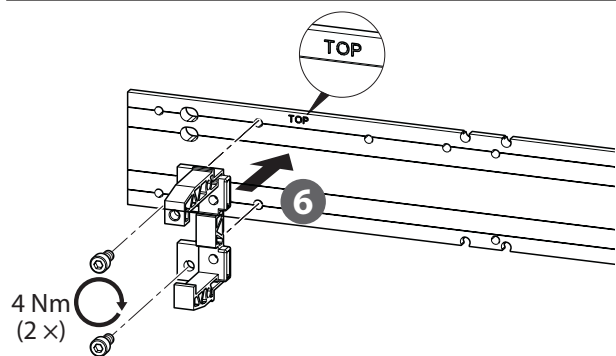
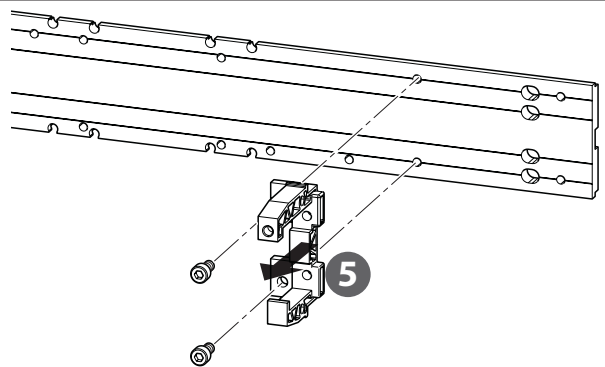
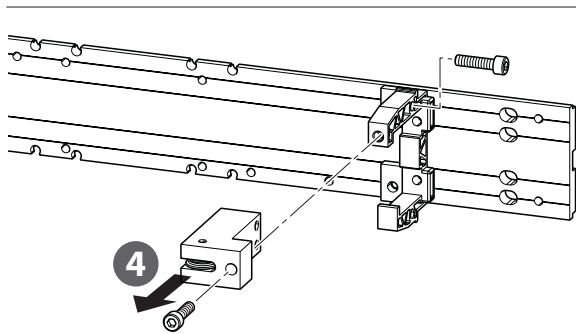
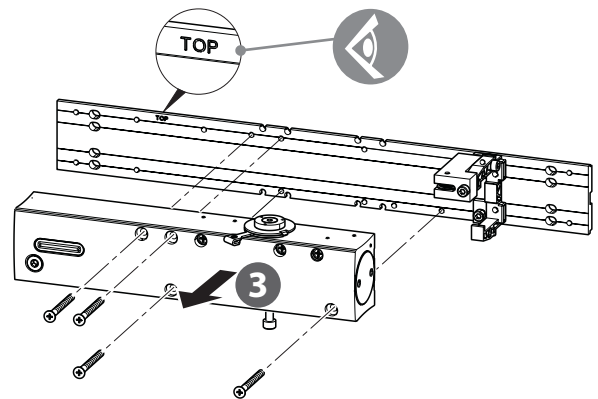
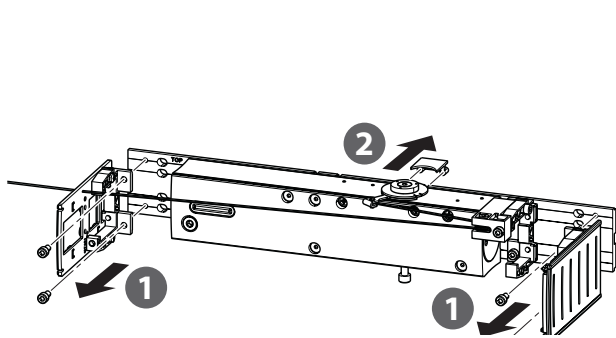
### 8.1 TS 5000 L - conversion from DIN right to DIN left

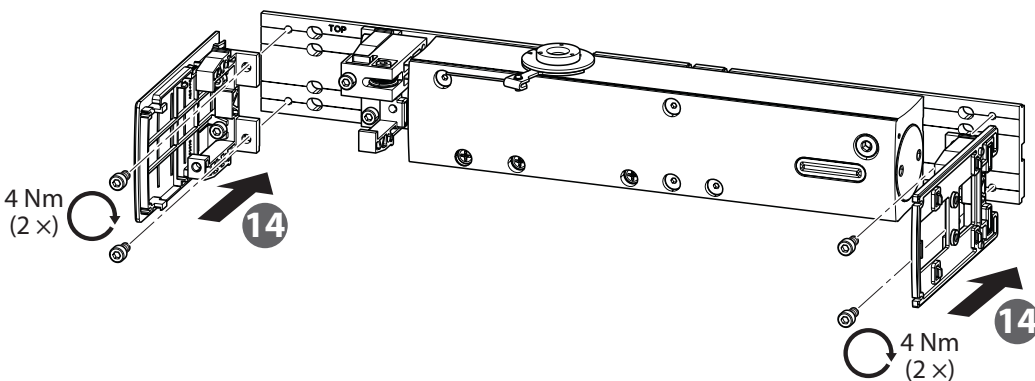
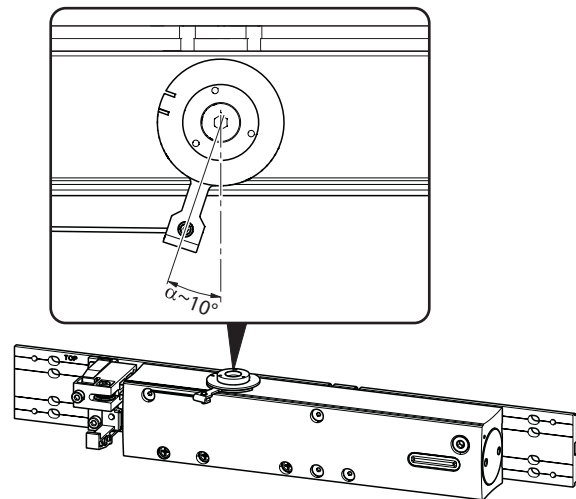
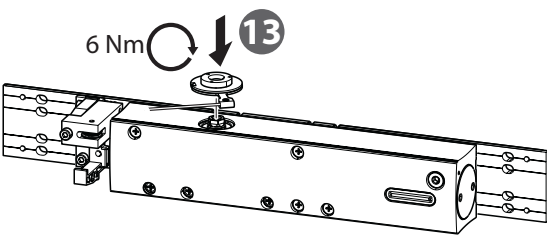
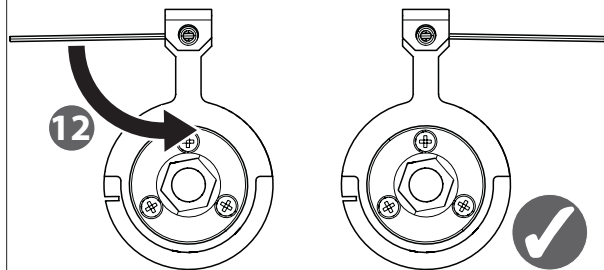
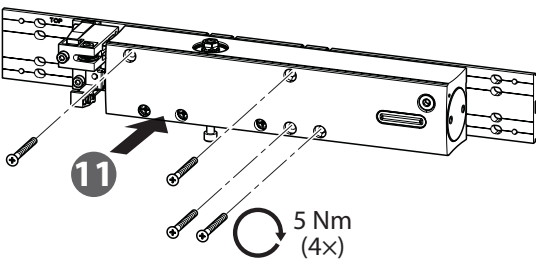
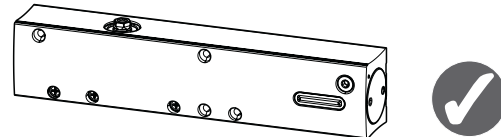
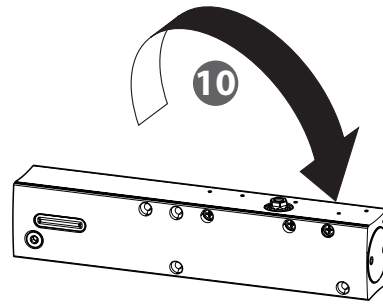
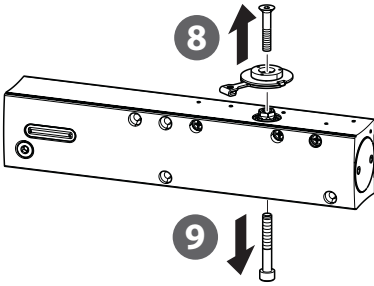
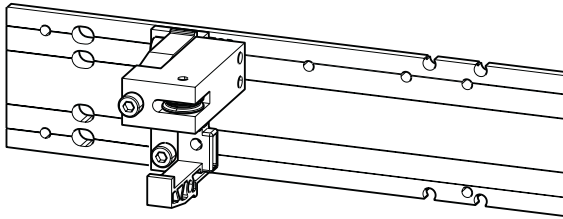
**!** This chapter describes the conversion work necessary if TS 5000 L is to have a DIN **left** installation.

#### 8.1.1 TS 5000 L is delivered for DIN right installation from the factory



#### 8.1.2 Converting the TS 5000 L

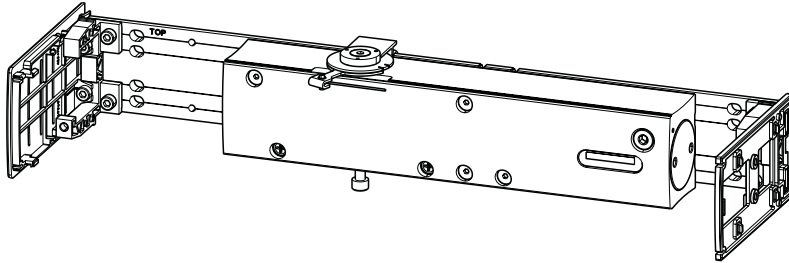




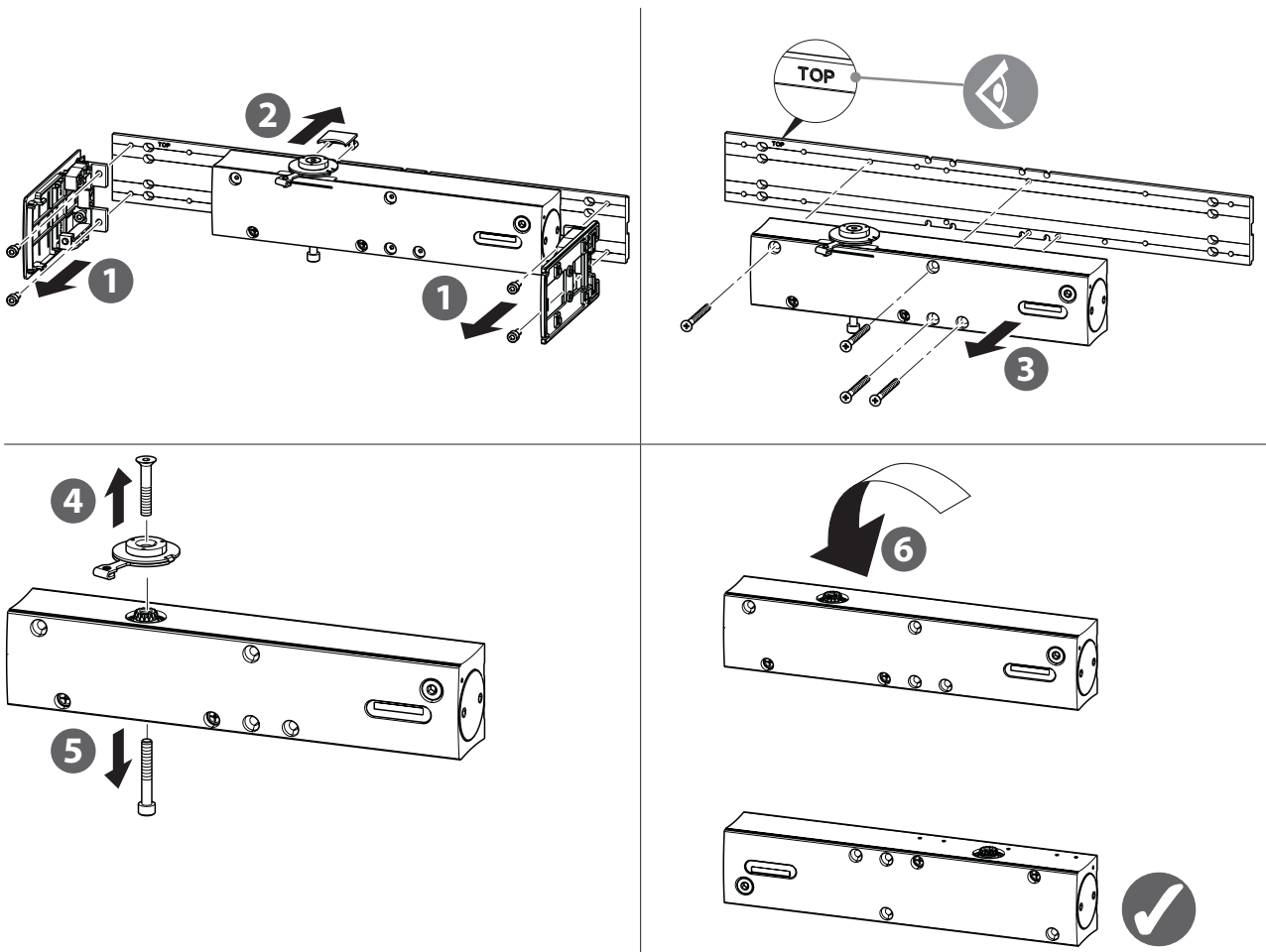
## 8.2 TS 4000 - conversion from DIN right to DIN left

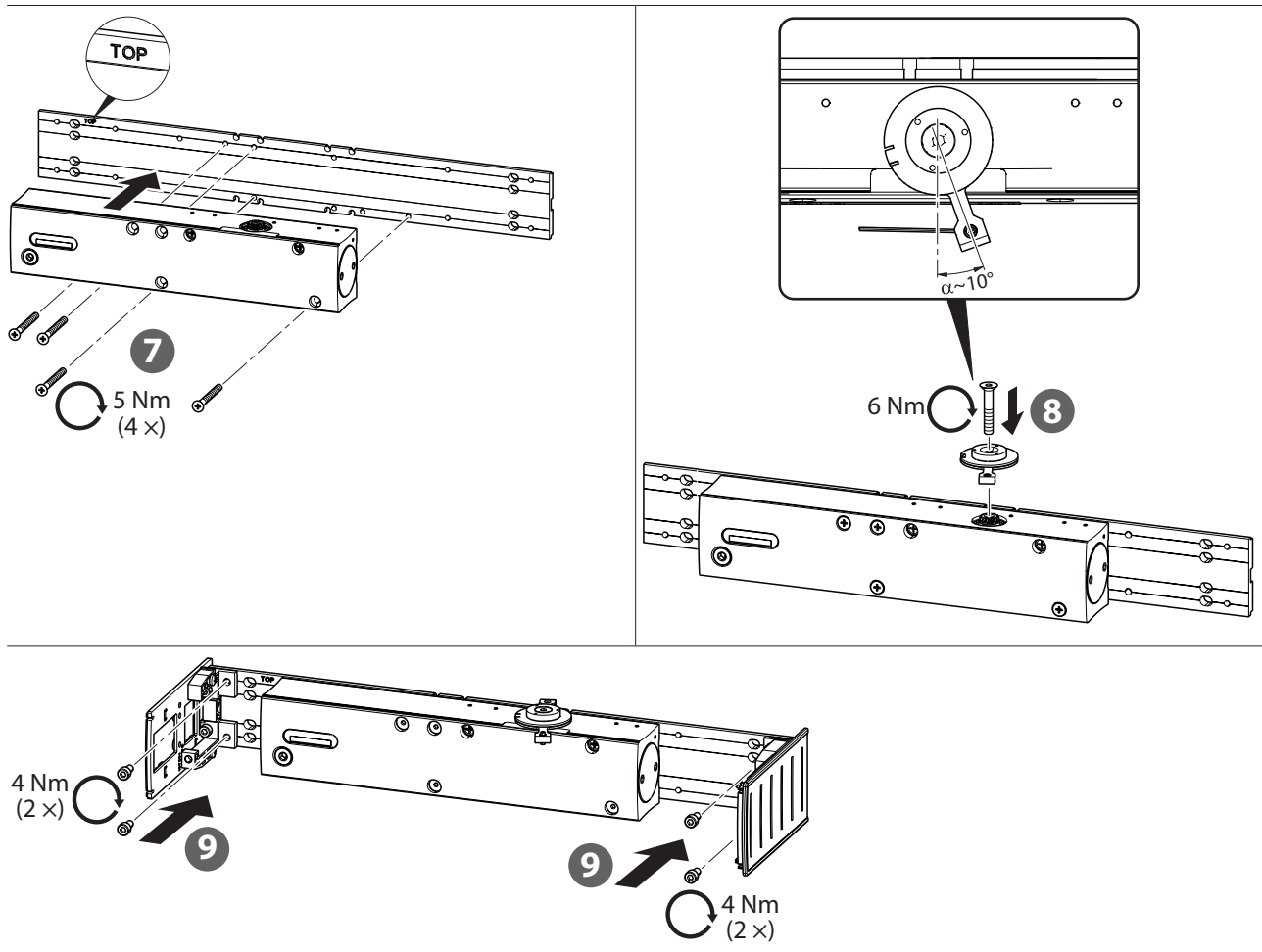
**!** This chapter describes the conversion work necessary if TS 4000 is to have a DIN **left** installation.

8.2.1 TS 4000 transom installation opposite hinge side is delivered for DIN right installation from the factory



8.2.2 Converting the TS 4000





### 8.3 Connecting the mechanism for integrated closing sequence control of active and passive leaf

- ▶ Install the drive and lever. For drive installation, see installation instructions Powerturn, “prepare for installation” and “Installation” sections. For TS installation, see the chapter 5.4.
- ▶ Installation of the guide rail and lever of the TS 5000 L-shaft and the adjustment of the valves, see TS 5000 L installation instructions.



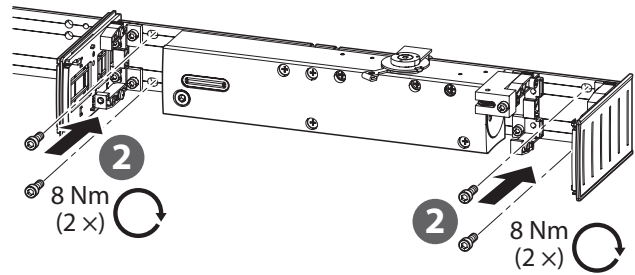
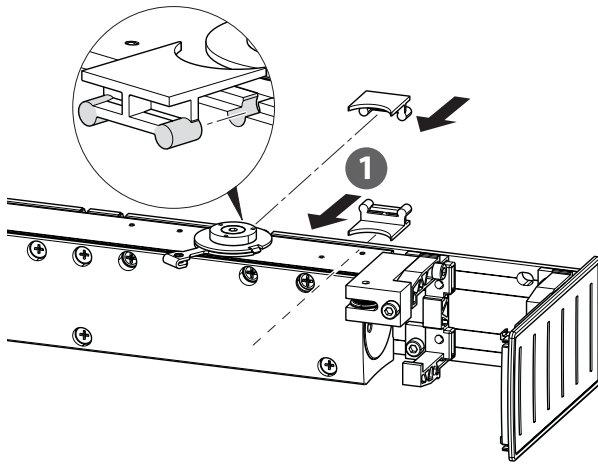
- Installation of the link arm of the TS 4000 and the adjustment of the valves, see TS 4000 installation instructions.
- Use the pre-mounted screw in the TS 4000 shaft for fastening the link arm on the TS 4000-shaft.

- ▶ Use the pre-mounted screw in the TS 5000 L-shaft for fastening the lever, not the screw enclosed with the screw accessories for the TS 5000 guide rail.

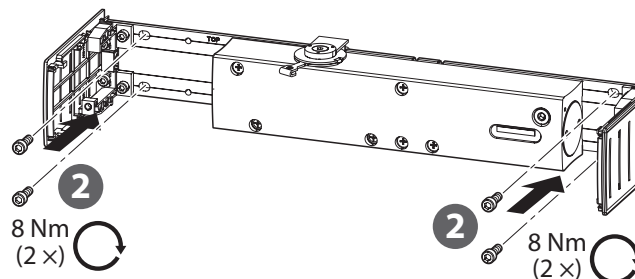
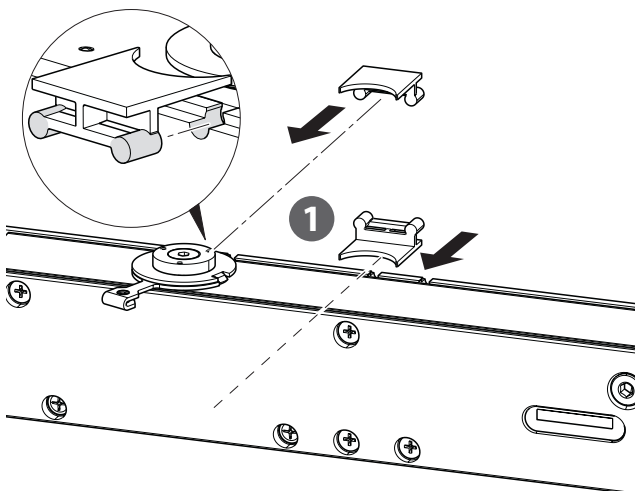
### 8.3.1 Mounting the door closer unit

**i** For the installation dimensions, see chapter 5.4.

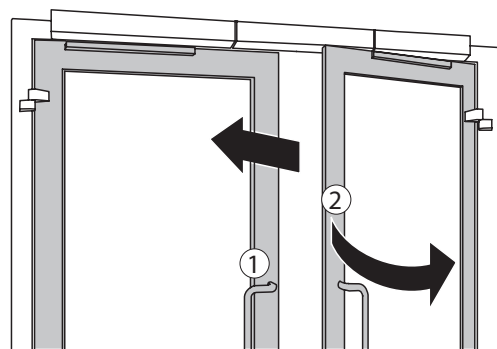
#### TS 5000 L



#### TS 4000



Connection of the active and passive leaf drive:

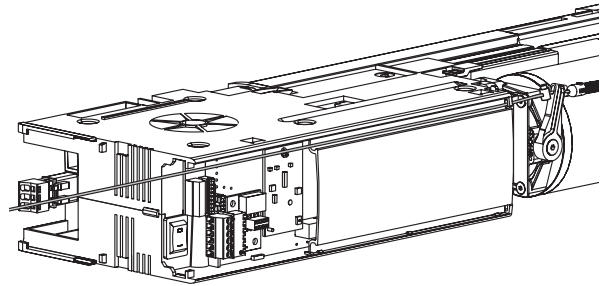
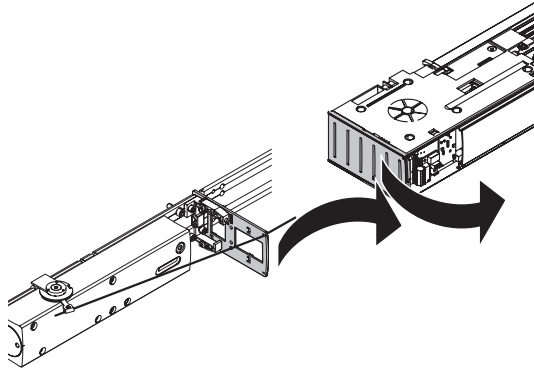


Passive leaf (1)

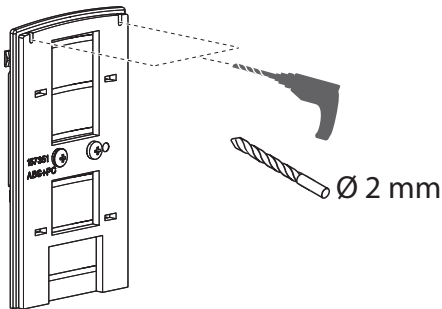
Active leaf (2)



- ▶ With continuous cover, remove the side panels.

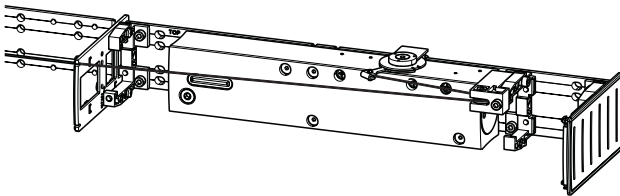


- ▶ Drill the passage in the side panel for the split cover and deburr (depending on the route of the wire cable):

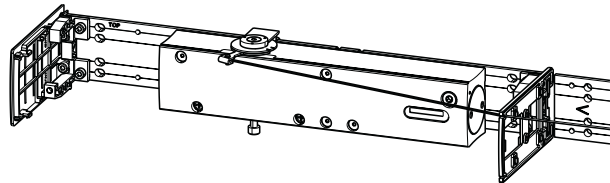


Route of wire cable near the passive leaf unit:

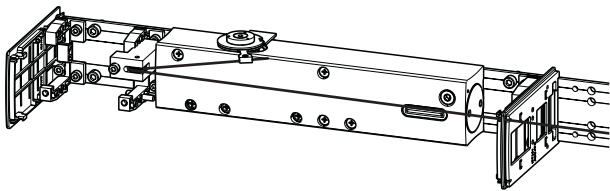
**TS 5000 L DIN right**



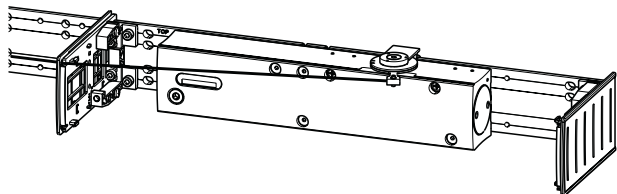
**TS 4000 DIN right**



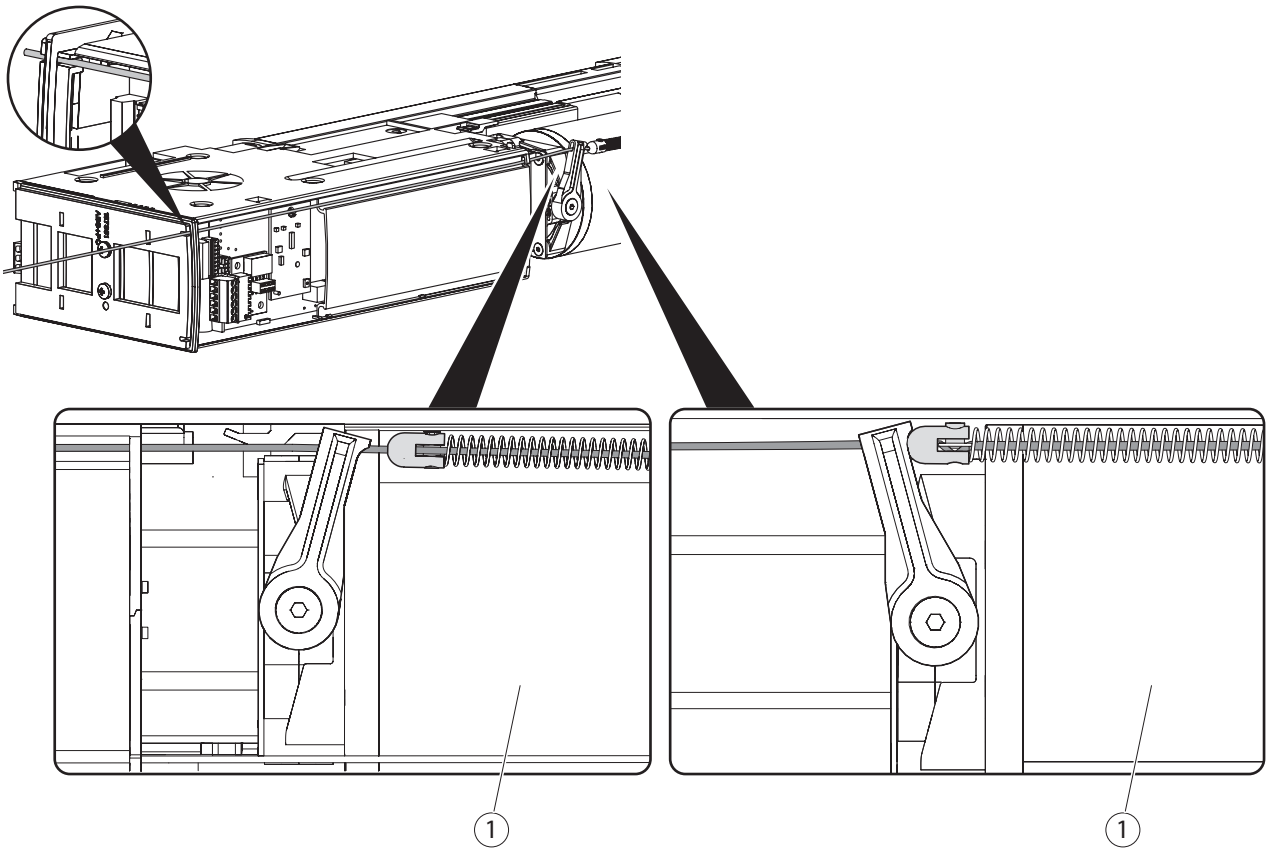
**TS 5000 L DIN left**



**TS 4000 DIN left**



Route of wire cable near the control:



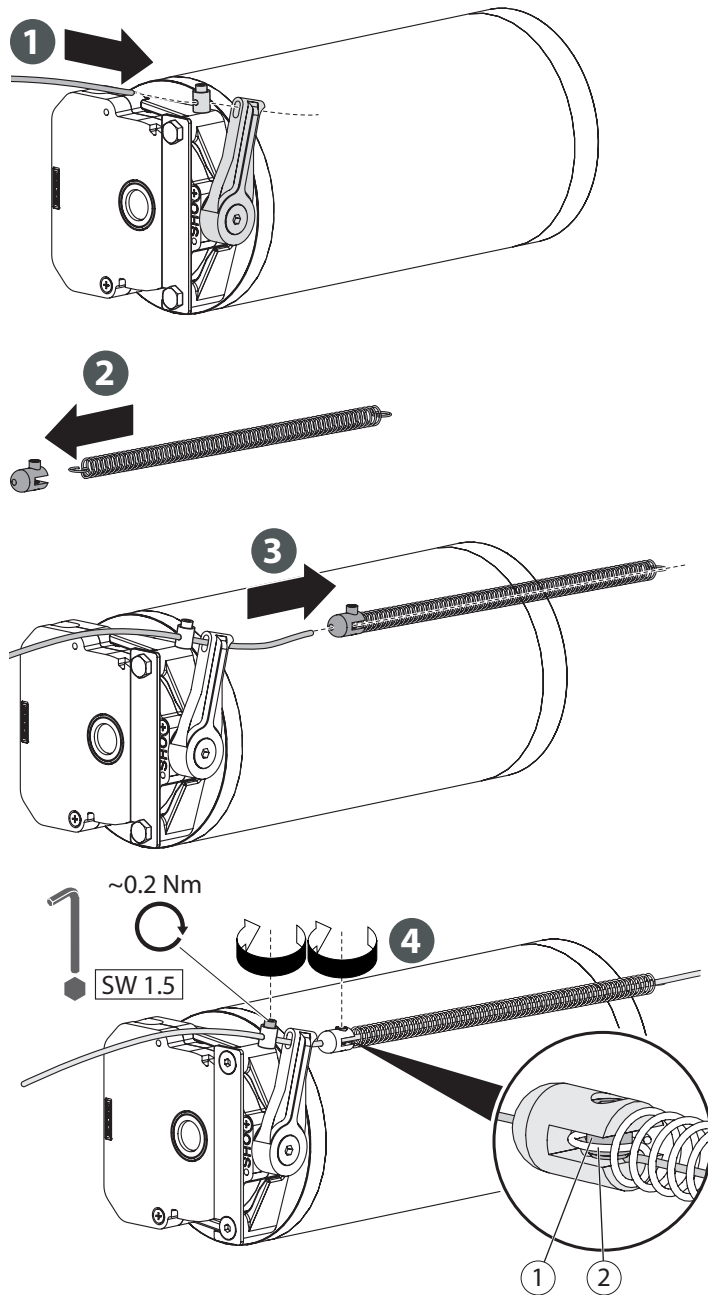
Position of setting lever with the brake closed

1 Motor

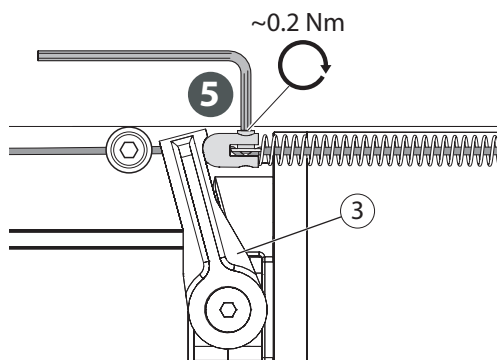
Position of setting lever with the brake opened

1 Motor

**Attach the wire rope and spring on the wire rope tensioner**

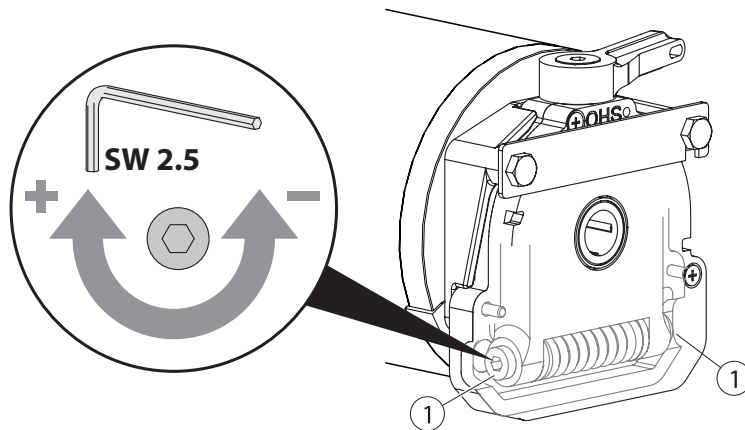


Set screw (1), tension spring (2)



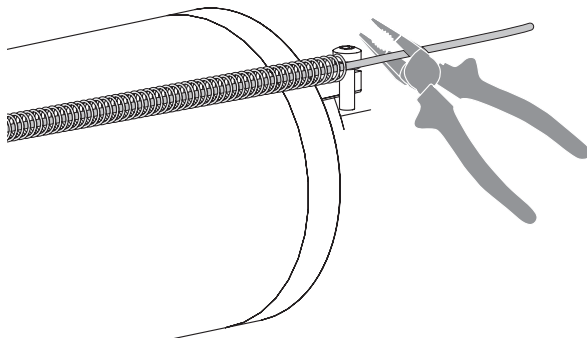
Position of the setting lever (3) = brake opened, active leaf closing.

**Set the retaining action of the integrated closing brake**



The correct setting of the entire mechanism for integrated closing sequence control has been achieved when, with the brake closed and passive leaf closed, the setting lever takes up the position as designated for the open brake.

- ! The wire rope must be tensioned both with opened and closed integrated closing brake between the passive and active leaf unit.



8.4 Install carry bar

- ! **CAUTION!**  
**Danger of crushing.**  
**Body parts can become caught between the door leaves**
  - ▶ Install carry bar.

A carry bar must be installed in order to protect the main closing edge.  
 ▶ Install the carry bar in compliance with the included installation instructions.

8.5 Install hold-open magnet

A hold-open magnet must be installed for the hold-open function of the passive leaf.  
 ▶ Install the hold-open magnet so as to ensure sufficient door opening.  
 The hold-open magnet must be permanently and reliably attached to the building.  
 ▶ Safeguard the connection cable between the hold-open magnet and the Powerturn against outside access.  
 ▶ Connect the hold-open magnet in compliance with the included wiring diagram and the Powerturn wiring diagram, "Hold-open system Powerturn F-IS/TS, F/R-IS/TS" section.

## 8.6 Installing the electrical contact for passive leaf position monitoring

To monitor the position of the passive leaf, the enclosed electrical contact must be installed on the passive leaf to ensure the proper function of the closing sequence control of the door leaves in the Powerturn's automatic mode



If necessary, information must be obtained from the door manufacturer if the passive leaf is mechanically treated for installation of the contact and wiring.

See the wiring diagram, section "2-leaf drives" on connection of the contact to the Powerturn control.

## 9 Function check

- ▶ Open the active and passive leaves up to the waiting position.
- ▶ Release the passive and active leaves.

The passive leaf must start the closing movement immediately.

The active leaf must remain in position until the brake is opened by the mechanism for integrated closing sequence control on the passive leaf.

The active leaf closes.

Further test requirements: see national/international standards and regulations.

## 10 Commissioning

- For adjusting the Powerturn spring force, see the Powerturn installation instructions, "Settings" section.
- For spring force setting of the TS 5000 L and TS 4000, see the installation instructions TS 5000 L and TS 4000.
- For electrical connection, see the Powerturn wiring diagram, "Mains connection" section.
- The passive leaf must be closed for the Powerturn F/R-IS/TS teaching process. The Powerturn must be taught in as a single leaf door, see Powerturn wiring diagram, "Commissioning and service" section.
- The Powerturn parameters must be set on the basis of the specifications of the Powerturn wiring diagram, section "2-leaf drives". These settings can be used to complete the electrical function test.

## 11 Service and maintenance

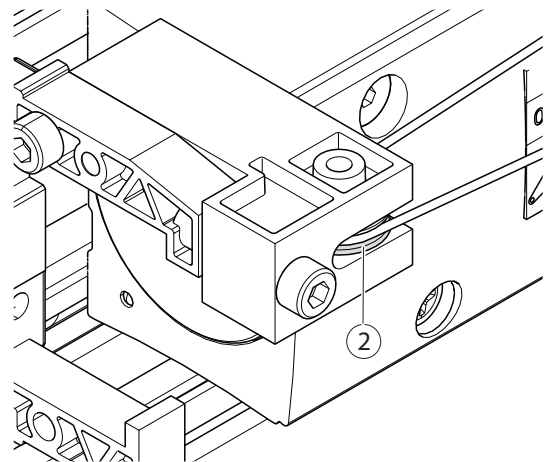
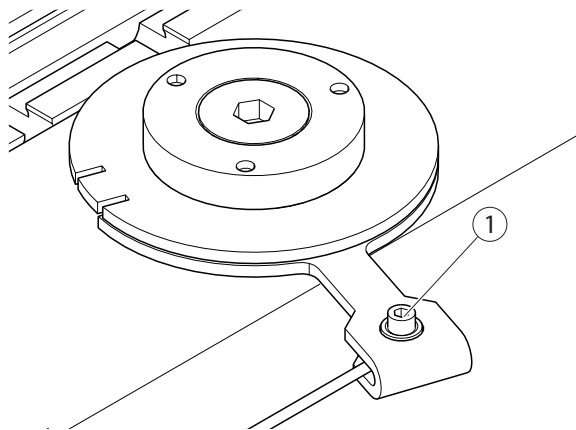
### 11.1 General information

The maintenance work on the closing sequence control must be carried out by an expert during the maintenance cycle of the Powerturn drive.

- For maintenance instructions for the Powerturn swing door drive, see Powerturn installation instructions "Service and maintenance" section.
- For maintenance instructions for the door closer, see the door closer user information.

### 11.2 Maintenance of mechanism for integrated closing sequence control

- ▶ Clean hold-open magnet and test door hold-open capabilities.
- ▶ Check rope for integrated closing sequence control to ensure it is under tension; increase tension if needed or exchange wire rope if damaged.
- ▶ Check rocker for integrated closing sequence control for secure attachment to the door closer; tighten screw if needed or exchange the rocker for integrated closing sequence control if damaged.



- ▶ Check castor (1) in the rocker for integrated closing sequence control to ensure it moves and turns easily. If it is stiff, exchange the rocker for integrated closing sequence control and castor together.

For TS 5000 L:

- ▶ Check the deflection pulley (2) for smooth function; lubricate and ensure smooth running function if needed.

## 12 Troubleshooting

For troubleshooting and fault elimination see the fault table in the Powerturn wiring diagram, "Fault messages" section.

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