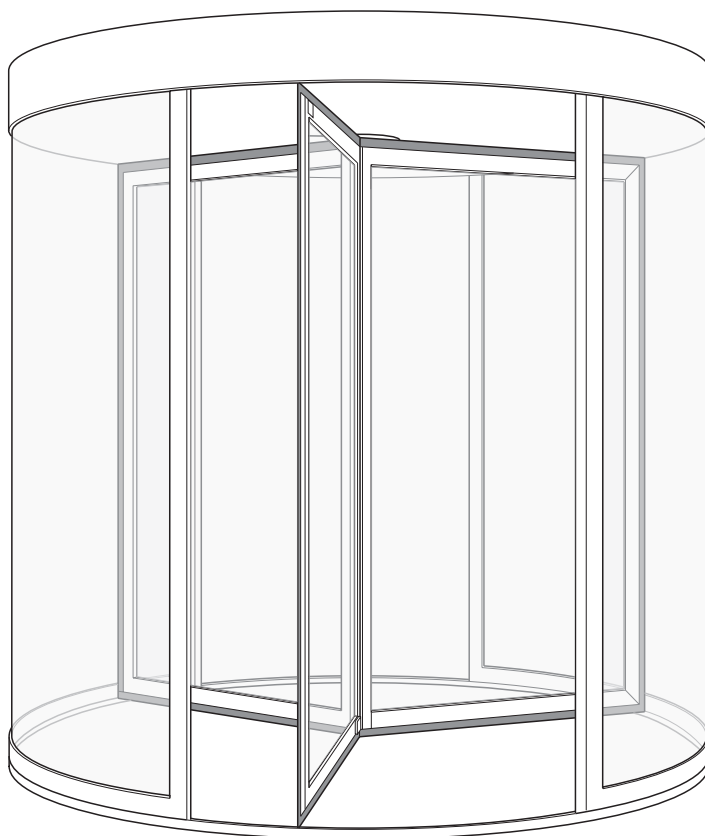




Revolving door TSA 325 NT

EN Installation instructions

131904-05

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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 word.

Warning symbol	Warning word	Meaning
	WARNING	Danger to persons. Non-compliance may result in death or serious injuries.
	CAUTION	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 information"; Information on avoiding material damage, understanding a concept or optimising the operation sequences
	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.

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.

1 Security

To ensure personal safety, it is important to follow these safety instructions.
These instructions must be kept.

1.1 Intended use

- The revolving door TSA 325 NT is solely suitable for use in entrances and interior areas of pedestrian traffic in commercial plants and public areas.
- The revolving door TSA 325 NT may not be used as a fire or smoke proof door drive.
- The variants of the revolving door TSA 325 NT with break-out leaves is suitable for use in escape and rescue routes.

1.2 Safety instructions

- The mandatory installation, maintenance and repair work must be performed by properly trained personnel authorised by GEZE.
- The country-specific laws and regulations are to be observed during safety-related tests.
- GEZE is not liable for any injuries or damage whatsoever resulting from unauthorised changes to the system.
- GEZE does not accept any warranty for combinations with third-party products.
- Furthermore, only original GEZE parts may be used for repair and maintenance work.
- Connection to the mains voltage must be carried out by a qualified electrician. The mains connection and equipment ground conductor test must be performed in accordance with VDE 0100 Part 610.
- Before connecting the onsite power supply circuit, a ground connection must be completed (connect to equipotential bonding).
- Use an on-site automatic cut-out as the line-side disconnecting device with locking option, the dimensioning of which is matched to the type, cross-section, type of routing and ambient conditions of the on-site feeder. GEZE recommends separate fuse protection for the door drive.
- Protect the button program switch (TPS-KDT) against unauthorised access.
- In compliance with Machinery Directive (2006/42/EC), a risk analysis must be performed and the door system identified in accordance with CE Marking Directive 93/68/EEC before the door system is commissioned.
- Observe the latest versions of directives, standards and country-specific regulations, in particular:
 - ASR A1.7 "Doors and gates"
 - EN 16005: 2012 "Power operated pedestrian doorsets – Safety in use– Requirements and test methods"
 - VDE 0100-600 "Installation of low-voltage systems - Part 6 Tests"
 - Accident-prevention regulations, especially DGVV A1 "General regulations" and BGV A2 "Electrical installations and equipment"
 - DIN EN 60335-2-103 "Household and similar electrical appliances; Particular requirements for drives for gates, doors and windows"
- Use lifting tools adapted to the weights of the system parts.
- Check the weight distribution in the ceiling construction before lifting.
- Observe the Load Handling Regulation (LasthandhabV).

The following table lists the weights of the individual components depending on their diameter (passage height here 2500 mm, canopy height 200 mm, without air curtain).

Other equipment options and canopy heights may deviate:

	Floor ring	Fixed panel	Ceiling structure	Door leaf	Drive unit	Ceiling panel
Ø 2400	25 kg	70 kg	70 kg	70 kg	80 kg	100 kg
Ø 3000	35 kg	90 kg	90 kg	85 kg	80 kg	140 kg
Ø 3600	50 kg	105 kg	120 kg	100 kg	80 kg	200 kg

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

- Children shall not play with the appliance.
- Cleaning and maintenance shall not be carried out by children without supervision.
- The door system must be unplugged from the mains connection during maintenance and cleaning work.
- No persons may pass through the door system during repair or maintenance work.

1.3 Safety conscious working

- Secure workplace against unauthorised entry.
- Watch the swivelling range of long system parts.
- Never carry out work with a high safety risk (e.g. installing the drive, cover or door leaf) while alone.
- Secure the cover/drive panels against falling.
- Only use the cables prescribed in the cable plan provided. Cables must be shielded in compliance with the wiring diagram.
- Secure loose, internal drive cables with cable ties.
- Before working on the electrical system:
 - Disconnect the drive from the 230 V mains and check to ensure that it is not supplied with power.
 - disconnect the control unit from the 24-V rechargeable battery.
 - note that if an uninterruptible power supply (UPS) is used, the system will still be supplied with power despite the fact that the power supply is disconnected.
- Always use insulated wire-end ferrules for wire cores.

- Attach safety stickers to glass door leaves (Mat. no. 136518).
- Danger of injury with opened drive. Hair, clothing, cables, etc. can be drawn in by rotating parts.
- Danger of injury caused by unsecured crushing, impact, drawing-in or shearing spots!
- Danger of injury due to broken glass!
- Danger of injury due to sharp edges in the drive!
- Danger of injury during installation through freely moving parts!
- Use ladders or suitable protective equipment when working at height!

Working on the air curtain

- Use suitable lifting tools when installing the air curtain.
- The air curtain must be connected by a specialist company.
- When working on the air curtain, watch out for sharp edges and elevated temperatures. Observe and comply with the manufacturer's specifications.

1.4 Inspection of the installed system

Measures for protection and prevention of pinching, impact, shearing or drawing-in spots:

- ▶ Complete the check points according to the check list in the document "Commissioning and service".
- ▶ Check the function of safety sensors and movement detectors.
- ▶ Check protective earth connection to all metal parts that can be touched.

1.5 Environmentally conscious working

- When disposing of the door system, separate the different materials and have them recycled.
- Do not dispose of batteries and rechargeable batteries with household waste.
- Comply with the statutory regulations when disposing of the door system and the batteries/storage cells.
- Dispose of silicone residue according to local official regulations.

2 Tools and aids

2.1 General tool set

- | | |
|--|--------------------------------------|
| ▫ Tape measure | ▫ Torx wrench T x 20 |
| ▫ Marking pen | ▫ Side-cutting pliers |
| ▫ Torque spanner | ▫ Crimping pliers for cables |
| ▫ Allen key in common sizes - including 7 mm | ▫ Electric drill |
| ▫ Open-ended wrench in common sizes | ▫ Mitre saw |
| ▫ Screwdriver set | ▫ Level |
| ▫ Personal protective equipment (PPE) | ▫ Protective glasses |
| ▫ Safety shoes min. class 3 | ▫ Cut protection work gloves level 3 |
| ▫ Helmet | ▫ Suitable work clothing |
| ▫ Ladder or protective scaffolding | |

2.2 Special tools

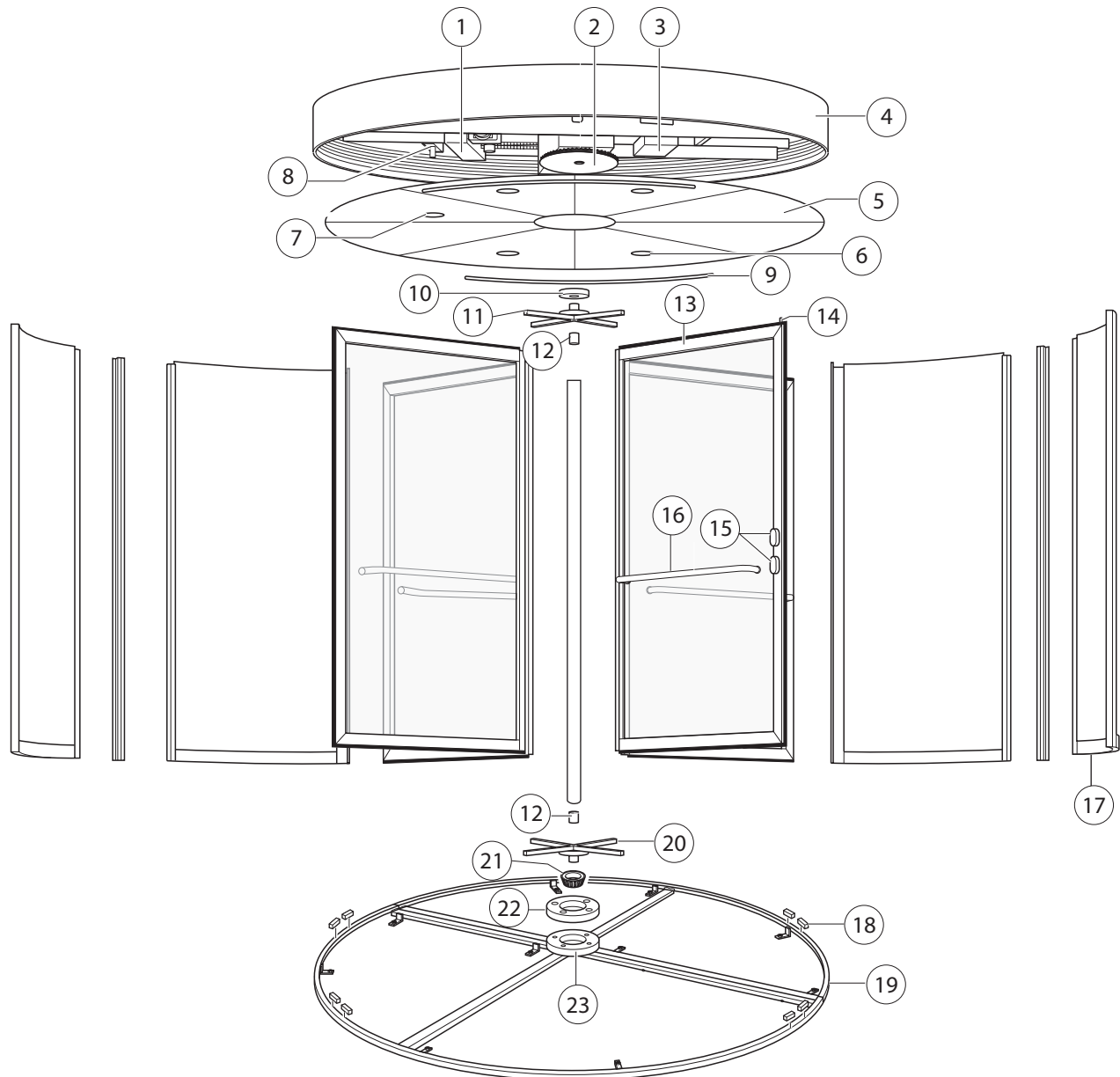
Tool	Size/remark
GEZEconnects	
Diagnostic device GEZE ST220	
Ring force gauge	
Hammer drill	
Welding equipment	
Cordless screwdriver	
Threader for M4–M8	and corresponding drills
Specialised tool: combination spanner, angled, size 13 mm	ID no. 86838
Glass suction device	for curved glass surfaces
Tension belts	4 piece with sufficient length (4–5 m)

Tool	Size/remark
Tested lifting tools	e.g. Genie Hoist 3.8 or GH 5.6 (min. lifting capacity 160 kg; max. lifting height 3.8 m or 5.6 m)
Levelling device	
Ladder	
Ceiling lift	
Hoist unit	
Pneumatic punch	
Carrying strap	
Small scaffolding unit	
Barrier tape	
Cable reel with GFCI	

2.3 Consumables

Designation	Detailed description/Remark
Silicone / silicone spray	▫ Permitted for glass installation (laminated safety glass) ▫ Check local specifications to determine whether silicone / silicone spray is permitted
Soap water	
Lithium soap universal lubricant on a mineral oil basis for the bearings	e.g. Würth multi-purpose grease I
Suitable underlay material/evening-out material for floor ring	

3 Structure



- | | | | |
|----|---|----|---|
| 1 | Motor | 13 | Side-hung casement |
| 2 | Top bearing | 14 | Locking bolts |
| 3 | Control unit | 15 | Bolt lock |
| 4 | Ceiling canopy | 16 | Handle |
| 5 | Lower ceiling panels | 17 | Side panels |
| 6 | Openings for LED lights (optional) | 18 | Blocks for side element profiles (optional) |
| 7 | Opening for automatic locking system (optional) | 19 | Floor ring |
| 8 | Automatic locking system (optional) | 20 | Lower turnstile |
| 9 | Covers (only for manual doors) | 21 | Floor bearing |
| 10 | Foamed plastic disk | 22 | Bearing ring/bearing housing below |
| 11 | Upper turnstile with shaft | 23 | Bearing plate/spacer |
| 12 | Insert sleeve centre rod | | |

4 Installation

4.1 Preparations to be made on site



Check the preparations made on site by the customer to ensure proper installation:

- Type and load capacity of the façade construction or suspending frame.
- Evenness of the installation surface.
- Cable plan requirements.
- Observe installation height/metre level mark at the construction site.

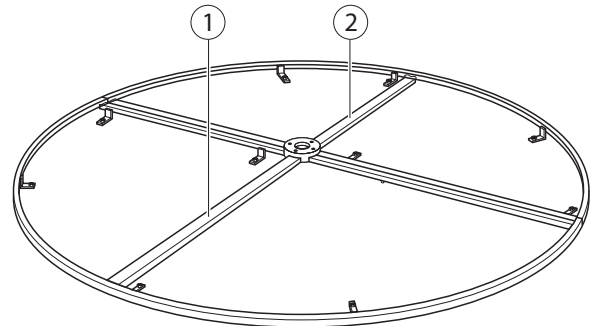
4.2 Mounting the revolving door TSA 325 NT



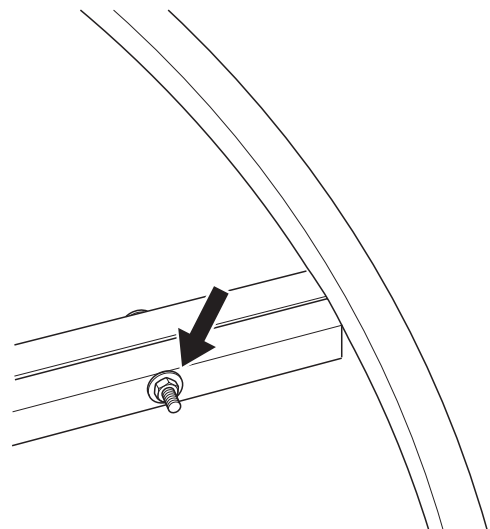
- ▶ Secure workplace against unauthorised entry.
- ▶ Always work with a second person.
- ▶ Use a stepladder or step stool.
- ▶ Keep inside area of track clean.

4.2.1 Mounting the floor ring

- ▶ Lay 2 floor ring halves (1) and (2) together.
- ▶ Determine the position of the floor ring.



- ▶ Screw the 2 floor ring halves together using screws, nuts and washers.



4.2.2 Aligning the floor ring

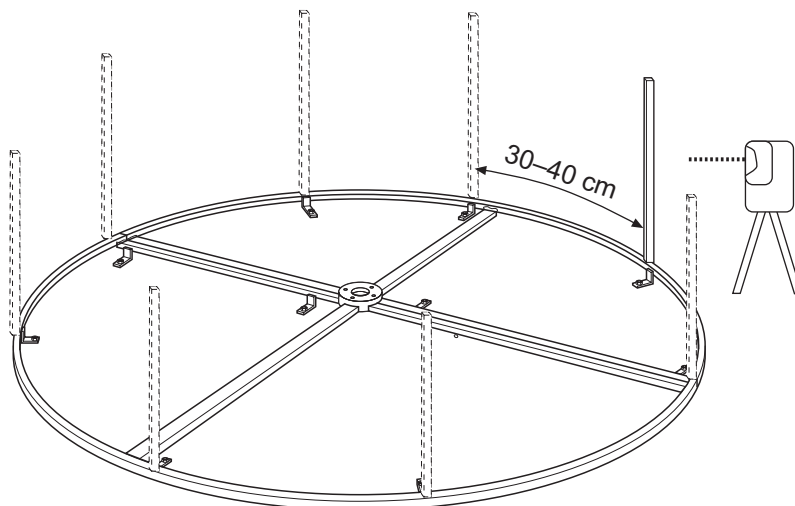


- In order to ensure trouble-free functioning of the revolving door TSA 325 NT, the floor ring must be aligned perfectly level (± 1 mm).

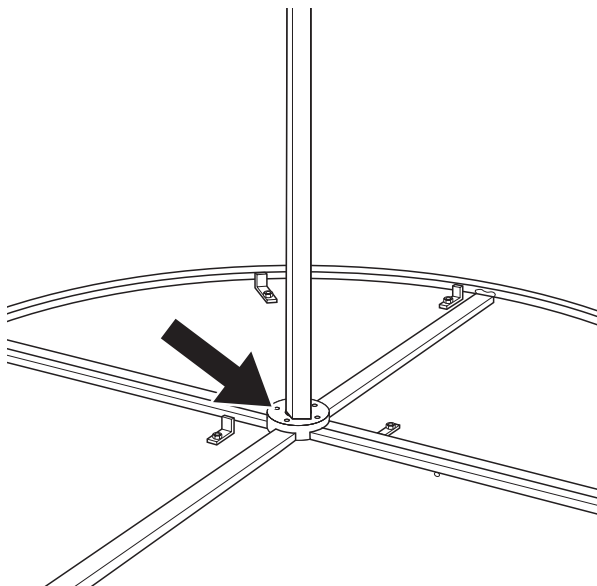


Top edge of finished floor level = Top edge of floor ring

- ▶ Align the floor ring every 30–40 cm using a levelling device and underlay it.



- ▶ Align the drive box as well for underfloor installation, see section 5.6 Revolving door in all-glass version (TSA 325 NT GG) on page 50.
- ▶ Aligning the centre of the floor ring:
The centre of the floor ring has to have the same height as the outer floor ring (height of centre = height of outer edge)



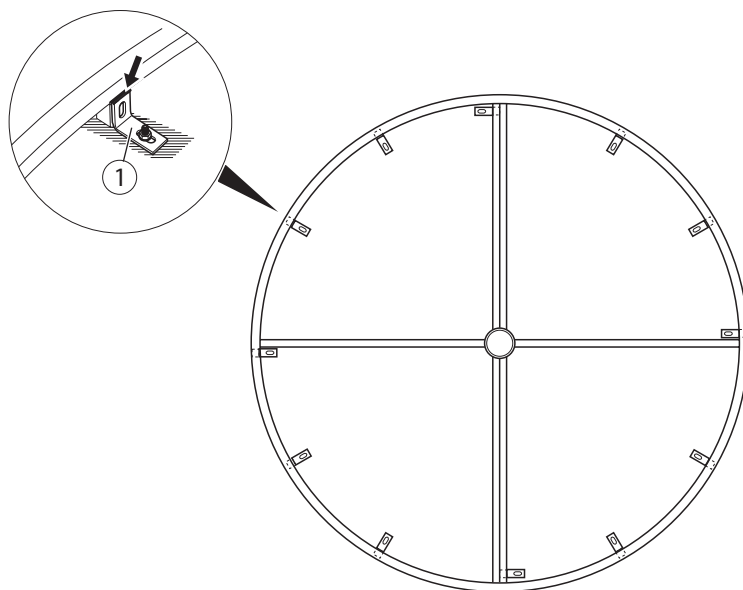
Mounting the revolving door TSA 325 NT without the floor ring is also possible optionally if the finished floor level has a sufficient load-bearing capacity.



- The installed floor ring must be protected against loading until the screed is poured.
- The visible stainless steel surface must be protected with tape!

4.2.3 Fastening the floor ring to the subsurface

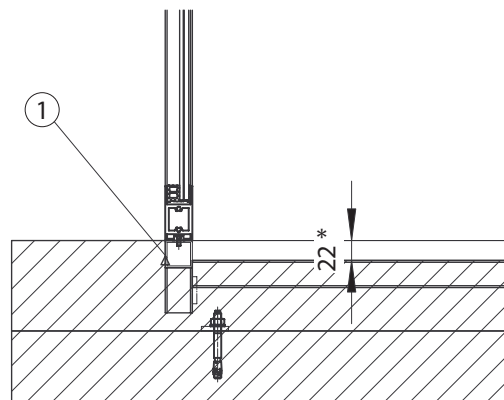
- ▶ Align the bracket (1) to the floor ring and screw it to the subsurface.
- ▶ Align the height of the floor ring once more at these points.
- ▶ Weld the bracket (1) to the base of the floor ring.
- ▶ Option: Mount the protective plates at BO systems.



4.2.4 Fill the floor ring space with screed.

- ! Take the screed height in the floor ring into account. The dimension of 22 mm in the drawing below refers to the standard entrance mats of GEZE.
- GEZE recommends sealing the surface of the screed in indoor areas.

- ▶ Fill the floor ring space (1) with screed.



* Refers to the standard GEZE entrance mats

- ! Before continuing system installation, the floor ring must be checked to ensure proper dimensions.

4.2.5 Installation without floor ring

The self-supporting drum structure of revolving door TSA 325 NT can be mounted directly on the top edge of the finished floor in certain circumstances.

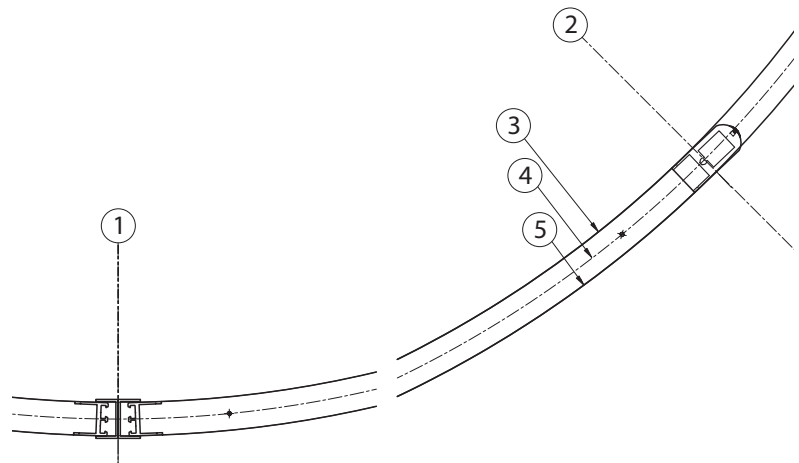


Installation without a floor ring is only permitted if the finished floor level is sufficiently load-bearing and even. Not possible for the all-glass, breakout and RC2 versions.

The placement of the mounting holes for the side elements is determined in three steps:

- Determine the centre of the door system.
- Mark the interior radius (3) of the side elements on the finished floor level.
- Determine the mounting points for the side elements.
 - 3-leaf doors 60°
 - 4-leaf doors 45°

- 1 System axis
- 2 Passage axis
- 3 Interior radius
- 4 Drilling radius for side panel attachment points
- 5 Exterior side panel radius



Determine the centre of the door system

- Precisely determine the centre of the door system and mark.

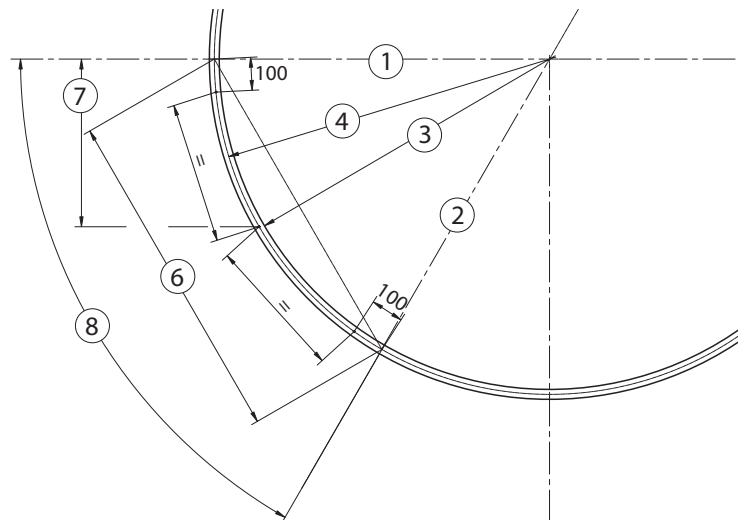
Mark the interior radius

- Mark the drilling radius for the side panel mounting points (4) from the centre of the door system.

Determine the mounting points for the side panels for 3-leaf door systems

- Determine the mounting points for the side panels based on the system axis (1) and the passage axis (2) according to the sketch.

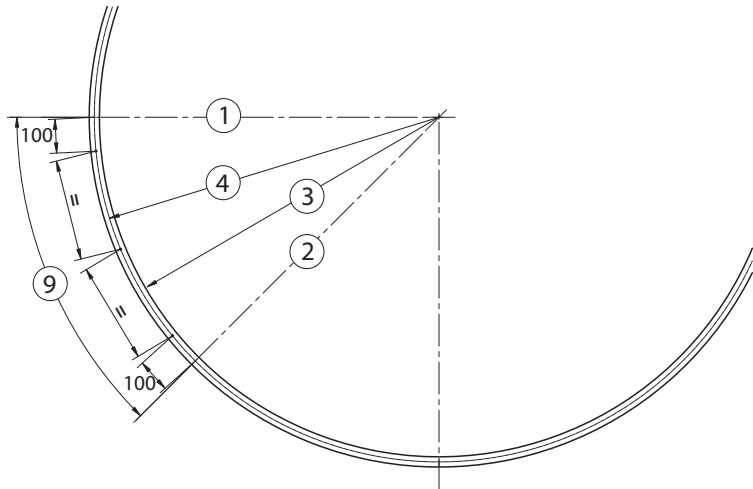
- 1 System axis
- 2 Passage axis
- 3 Interior radius
- 4 Drilling radius for side panel attachment points
- 5 Exterior side panel radius
- 6 Line length = drilling radius (4)
- 7 Line length/2
- 8 Arc size = $0.5 \times \text{floor ring}/3$



Determine the mounting points for the side panels for 4-leaf door systems

- Determine the mounting points for the side panels based on the system axis (1) and the passage axis (2) according to the sketch.

- 1 System axis
- 2 Passage axis
- 3 Interior radius
- 4 Drilling radius for side panel attachment points
- 9 Arc size = $0.5 \times \text{floor ring}/4$

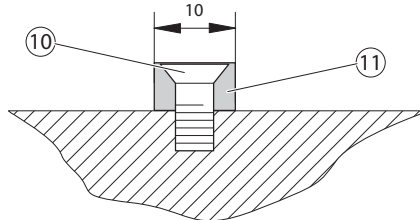


Attach floor blocks or M6 hex screws with 10 mm head width to the floor

- Screw floor blocks (11) into the floor with countersunk screws (10).

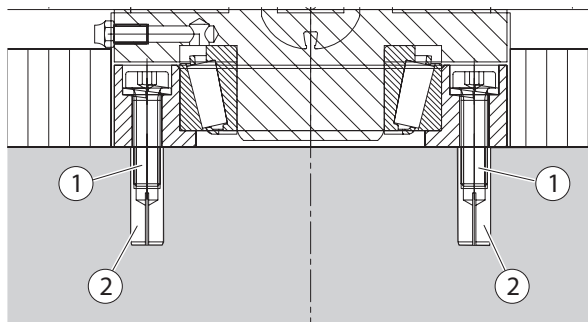
Alternatively:

- Screw M6 hex screw with 10 mm head width into the floor.



Attach floor bearing housing

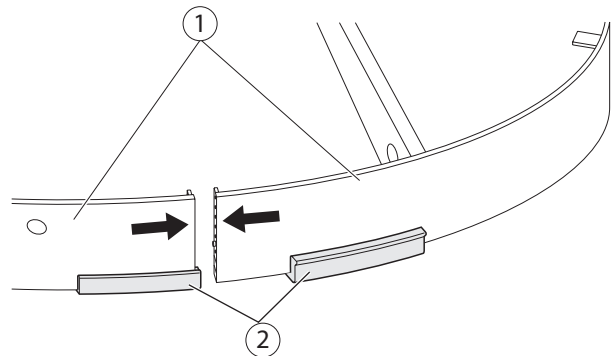
- Attach floor bearing housing to the finished floor, e.g. with M8 knock-in anchors (ID 121724) (2) and associated screws, e.g. M8 × 34/40 mm (1).



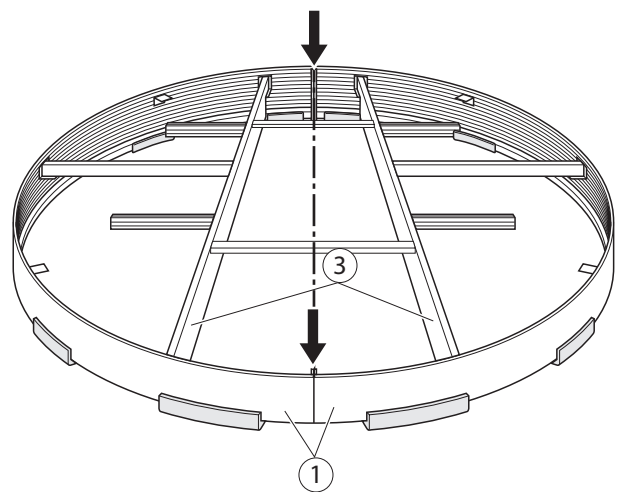
4.2.6 Mounting the ceiling ring

- ! ▶ When mounting the ceiling canopy use supports (2).

- ▶ Connect the 2 half-shells (1) of the ceiling canopy.



- ▶ Screw the 2 half-shells (1) (see arrows).
 ▶ Check the radius of the ceiling construction.
 Mount 2 spacers (approx. 4–5 mm) if necessary
 between the halves of the ceiling on the canopy.



For larger systems:

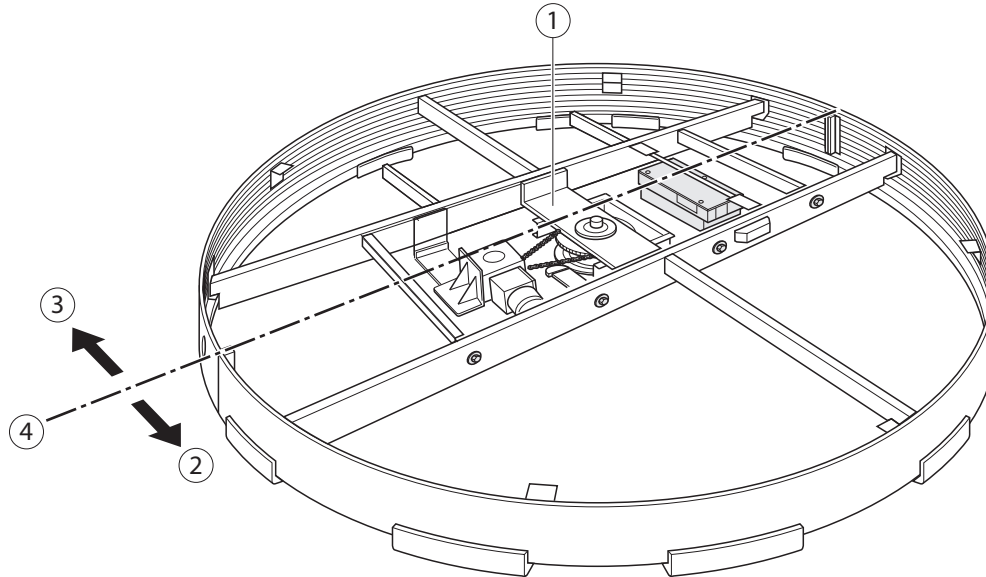
- ▶ Place the 2 bars (3) with cross bars into the mounted half-shells.

4.2.7 Mounting the drive unit



The drive unit (1) can be supplied premounted or separately.

- Mount the drive unit (1) parallel to the system axis (4).

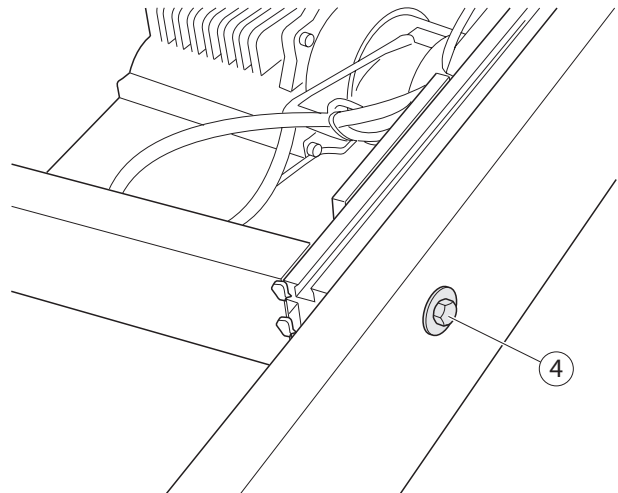


- 2 Outside
- 3 Inside



The system axis often also corresponds to the façade axis.

- Screw the drive unit (1) to the bars using 8 screws (4).



4.2.8 Lifting the ceiling canopy

**WARNING!**

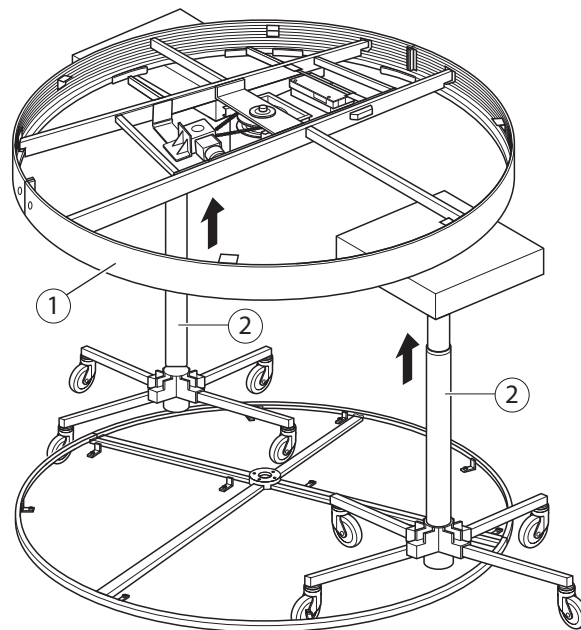
The ceiling canopy is very heavy (approx. 200 kg).

Risk of injury due to falling ceiling canopy.

- ▶ Only lift the ceiling canopy by means of suitable aids (e.g. pneumatic press).
- ▶ Do not stand under the raised ceiling ring.
- ▶ Check the weight and weight distribution in the ceiling construction before lifting!
- ▶ Use lifting tools adapted to the weight of the ceiling construction.



- ▶ Use lifting tools (2) in the passage area and raise the ceiling canopy (1) at least 4 cm over the side panel height.

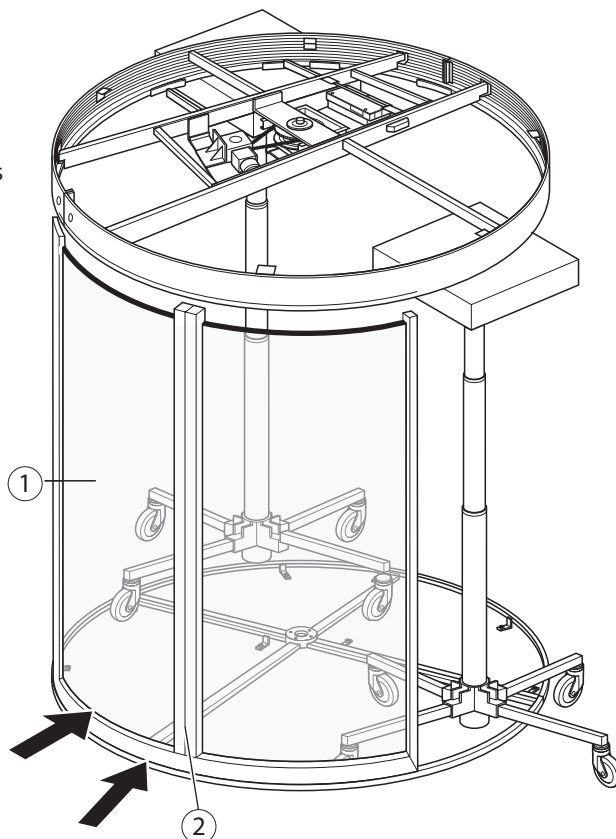


4.2.9 Inserting the side panel



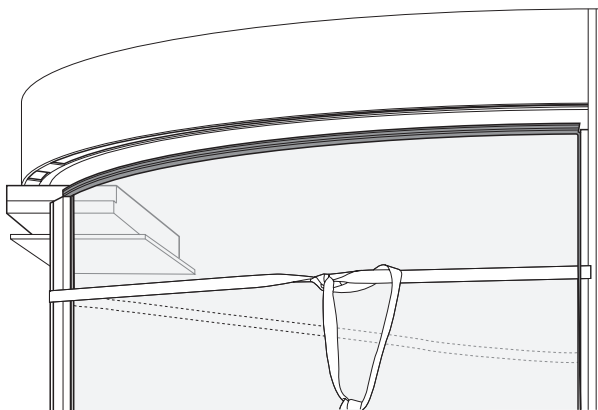
When subsequently glazing the side panels, the rules for using glazing blocks (see Gluske "Klotzfibel" glass installation guide) must be observed.

- ▶ Insert and align the side elements (1) into the blocks in the floor ring.
- ▶ Bond the glass packer into the H profile.
- ▶ Insert the H profile (2) between the side elements.
- ▶ Attach adhesive seals under the external side panels and also under the profiles to seal against non-pressurised water (see arrow).





- Secure the inserted side elements against falling over by using a strap in the upper third.



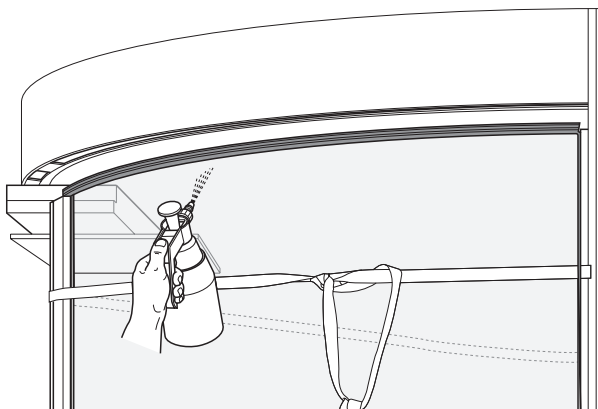
- Spray soap water or silicone spray onto the upper rubber of the side elements and ceiling canopy.
- Lower the ceiling canopy carefully onto the side element profiles.
- Insert 2 glazing packers (min. 2 mm).



The ceiling canopy has to lie evenly on all the side element profiles.

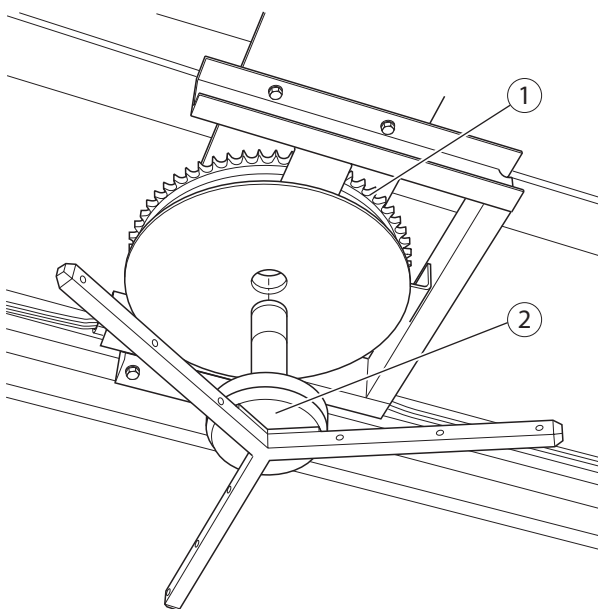


- If the glass has high tolerances, black silicone or wet glue may be used as an alternative to the rubber seal.

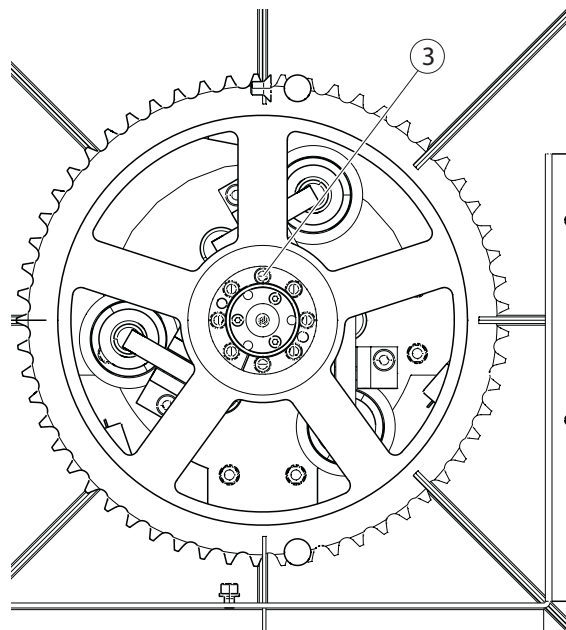


4.2.10 Mounting the turnstile

- Insert the turnstile (2) into the chain wheel (1) and fasten it.

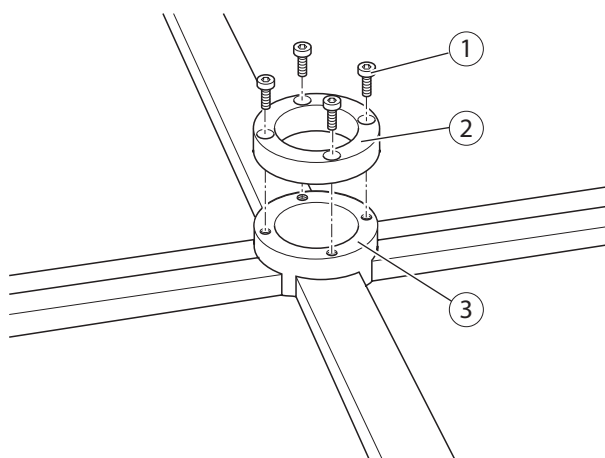


- Tighten the screws (3) of the clamping ring on the chain wheel crosswise to 16.5 Nm.

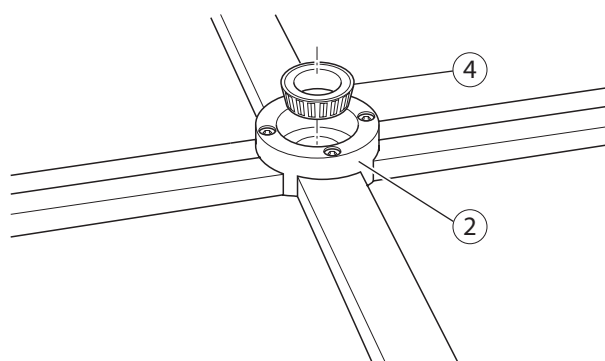


4.2.11 Inserting the floor bearing

- Screw the bearing ring (2) to the bearing plate (3) using the 4 screws (1).
- Grease the bearing housings of the bearing ring (2) well.

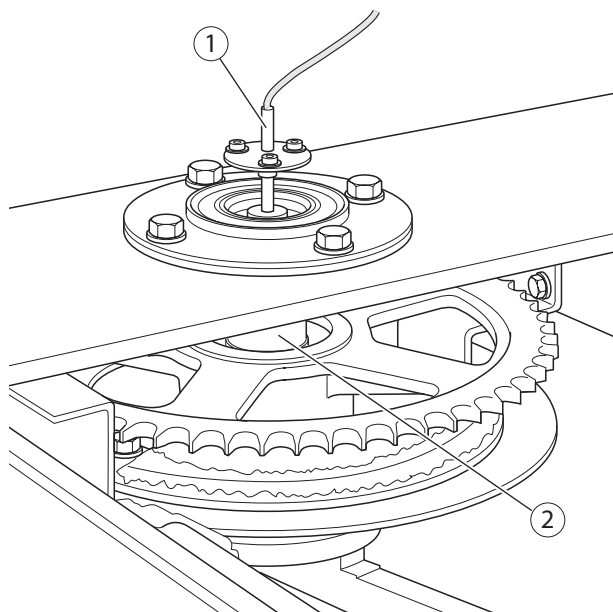


- Grease the floor bearing (4) well and insert it into the bearing ring (2).



4.2.12 Mounting the collector ring

- Screw the collector ring (1) to the bearing shaft (2) of the turnstile.

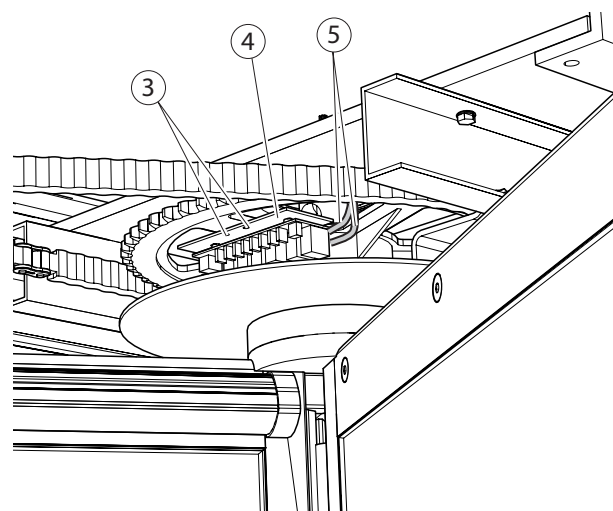


- Screw the circuit board DCU602 (4) to the chain wheel using the 2 screws (3).
- Connect the 2 cables (5) of the collector ring to the circuit board.
- Check chain length.



The DCU602 circuit board (4) can also be delivered separately.

View from below:

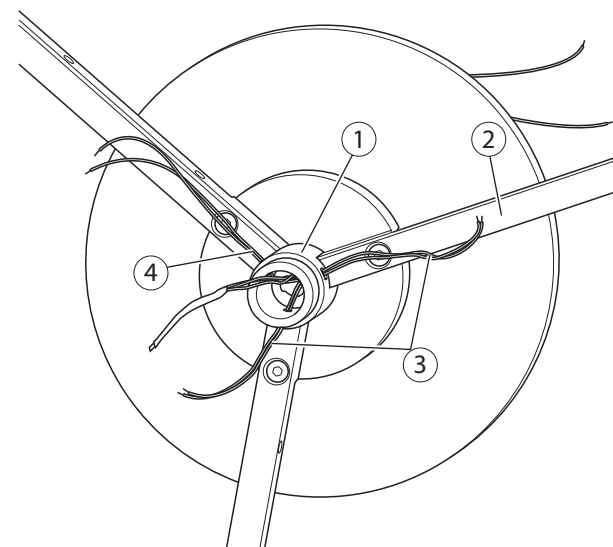


4.2.13 Mounting the centre rod retainer

- Slide the centre rod retainer onto the top turnstile.
- Thread 2 cables (4) each for the mobile safeguarding device through the turnstile (2) and the centre rod retainer (1).

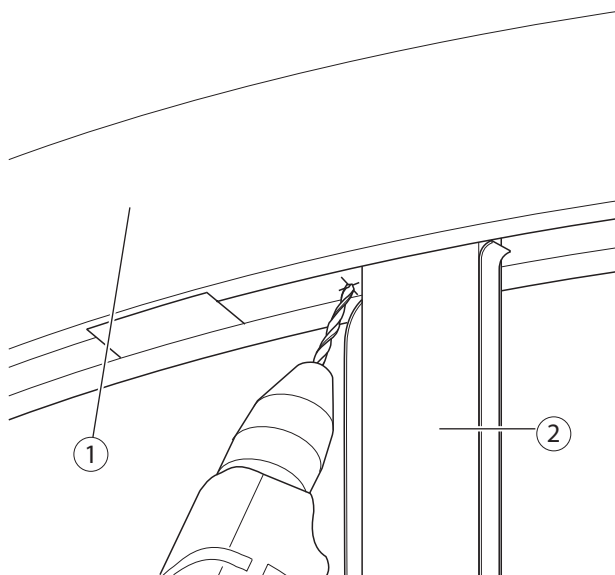


The cable routing is only placed above in the bearing arms with the "mobile safeguarding device" option.

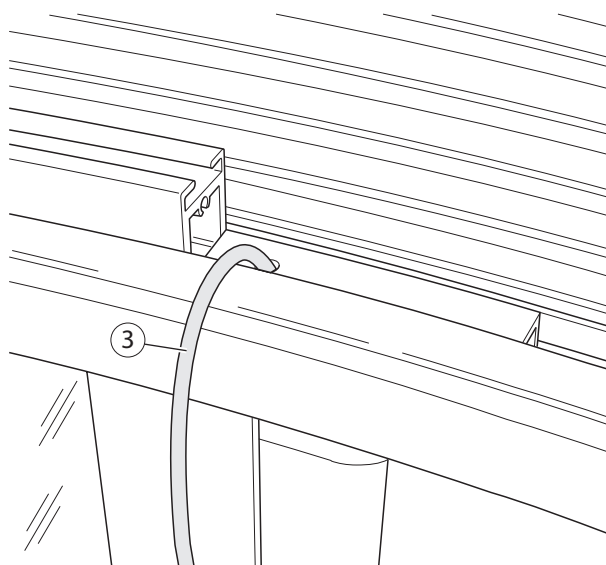


4.2.14 Drilling a cable guide for post safety

- Drill a hole for the post safety sensor cable routing at each post (2) through the ceiling canopy (1).

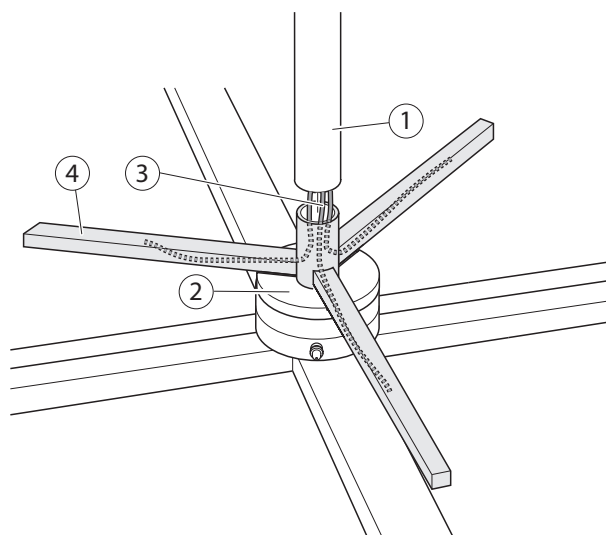


- Thread the post safety sensor (3) cable through the ceiling canopy.



4.2.15 Mounting the centre rod below

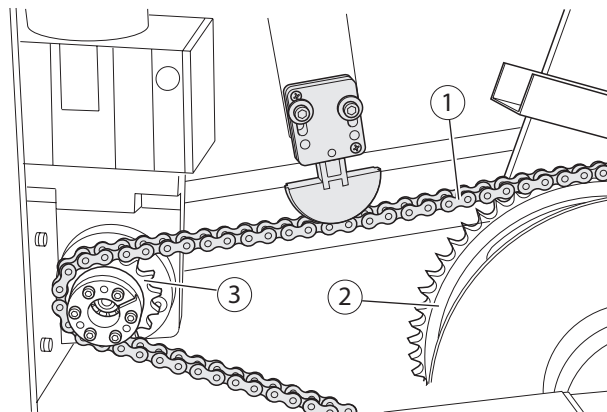
- Guide the cable (3) through the centre rod (1) and thread it into the lower turnstile (4).
- Place the centre rod (1) onto the lower turnstile (4) with bearing ring (2).



4.2.16 Inserting and aligning the drive chain

! The chain lock must be inserted from above.

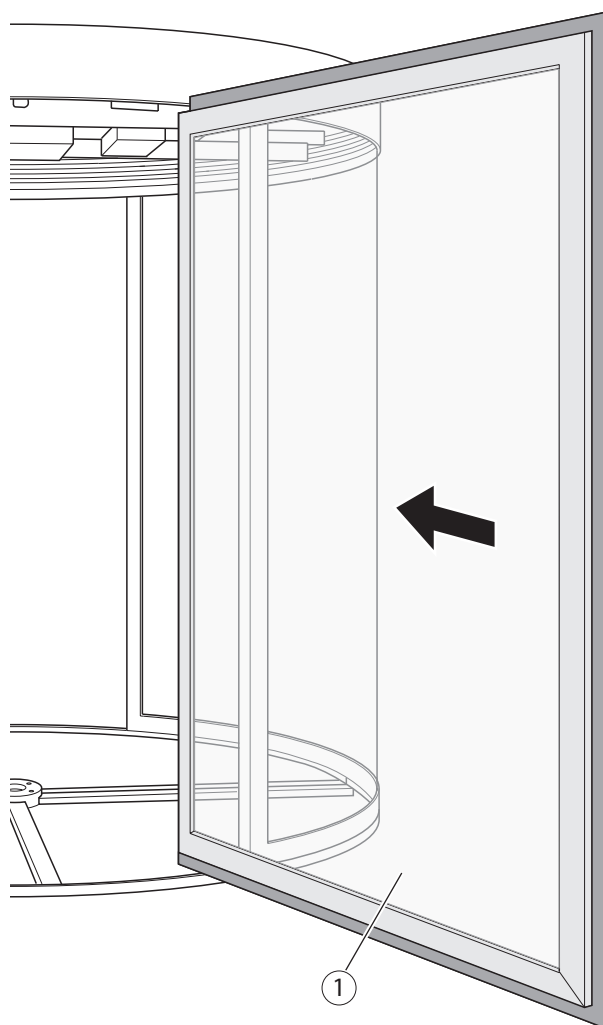
- ▶ Insert the drive chain (1).
- ▶ Check whether the drive pinion (3) and the chain wheel (2) are flush.



4.2.17 Mounting the side-hung casements

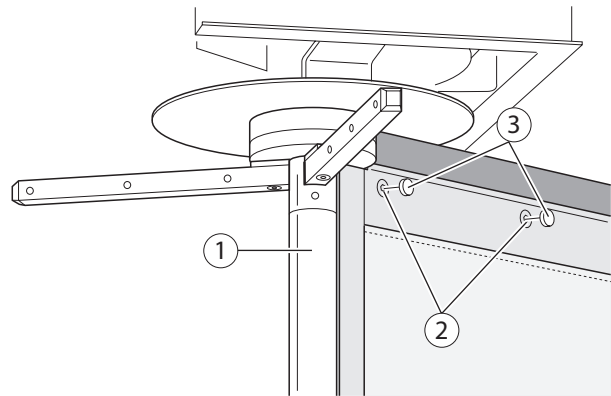
- ▶ Insert the side-hung casement (1).

! Side-hung casements must be blocked on the construction site according to the blocking rules when installing glass (see Gluske "Klotzfibel" glass installation guide).



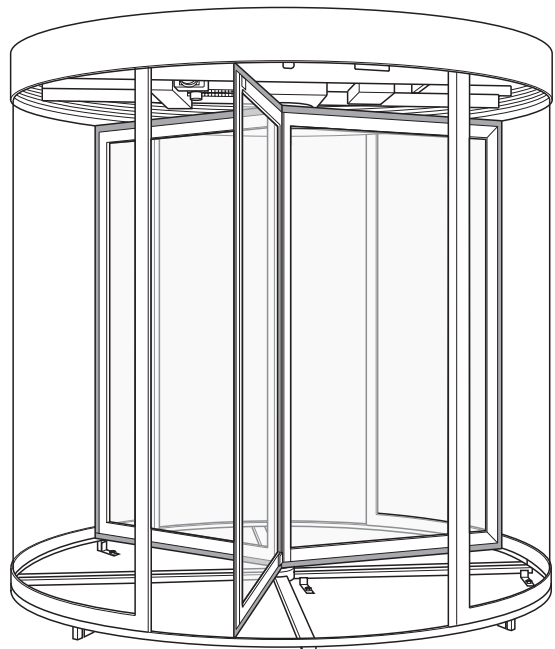
4.2.18 Fastening the side-hung casements

- ▶ Screw the side-hung casements at the top and bottom with 2 screws each (2) onto the turnstile.
- ▶ Insert the 2 cover caps (3) (accessories).

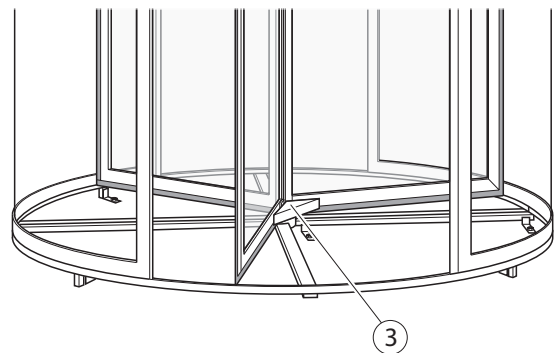


The centre rod (1) can be turned to cover existing drill holes.

- ▶ Mount the other side-hung casements (3-leaf / 4-leaf) in the same manner.

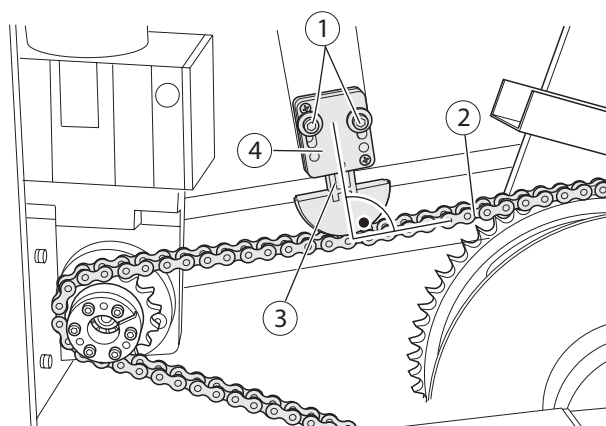


Above 3000 mm system diameter, turnstile braces (3) can be mounted between the side-hung casements as an option.



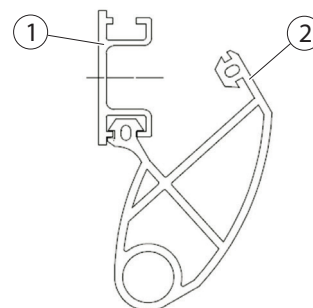
4.2.19 Adjusting the chain tensioner

- ▶ Loosen the 2 screws (1) at the chain tensioner (4).
- ▶ Tighten the drive chain (2).
- ▶ The indicator (3) must be positioned in the green area.
- ▶ Place the chain tensioner between the chain wheels and vertically to the chain.
- ▶ Tighten the 2 screws (1) again.

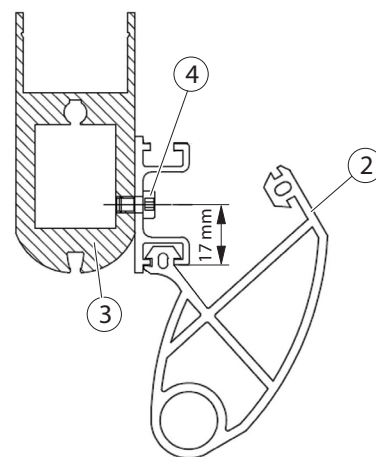


4.3 Mounting switch contact strips on the leaves

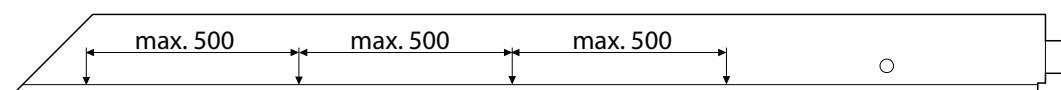
- ▶ Pull at least one side of the switch contact strip (2) out of the profile (1).



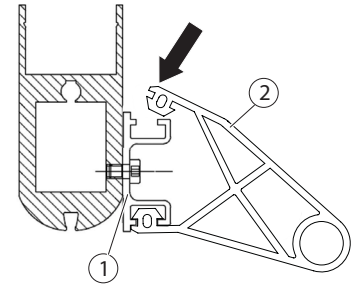
- ▶ Screw the switch contact strips (2) to the leaf (3) using 2 M4 screws (4) each.



- ▶ Attach the switch strip to the profile using the prepared drill holes. The strip must be attached using M4 threads and associated screws or comparable self-tapping screws.



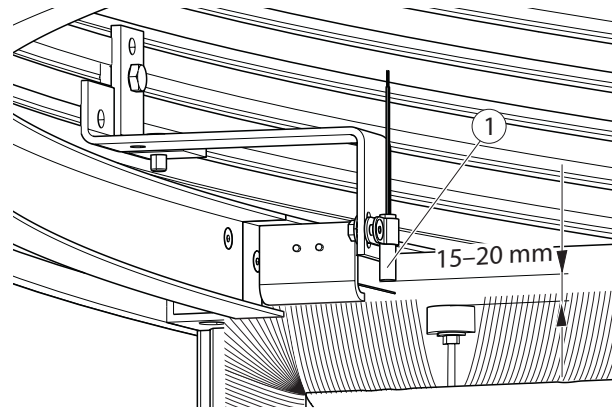
- ▶ Press the locking lips on the switch contact strips (2) back into the profile (1) using a lubricant (such as soapy water).



- ▶ Lay the cable from the heel protection strip through the provided drill hole into the leaf profile and into the centre rod.
- ▶ Wire the heel protection strip.
- ▶ In the same way mount and wire the heel protection strips to the other side-hung casements.

4.3.1 Mounting the position sensor

- ▶ Mount and align the position sensor (1).
Max. distance of position sensor to magnet = 15–20 mm
Final fixing is carried out after commissioning.



4.3.2 Wiring the revolving door



WARNING!

Risk of fatal injury due to electric shock!

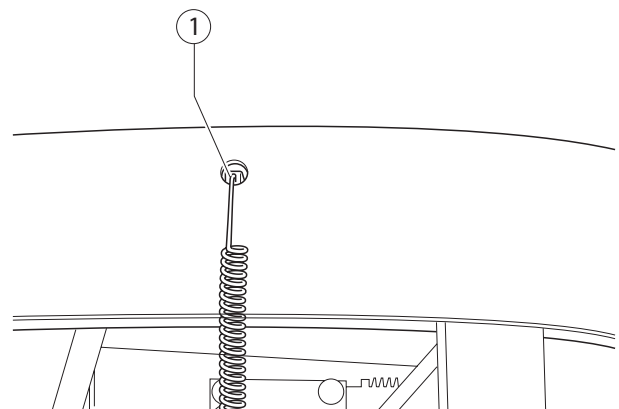
- ▶ The electrical system (230 V) may only be connected and disconnected by a professional electrician.
- ▶ Wire the revolving door TSA 325 NT in accordance with the wiring diagram.

4.4 Connect the GEZE ST220 diagnostic device/Use GEZEconnects

- ▶ Connect the diagnostic device GEZE ST220 (mat. no. 137343) to the interface module (1).



If the interface module (1) is not available, the ST 220 can also be inserted onto the back of the keypad programme switch.



- ▶ Start up the system with control element GEZE ST220 (serial no. 087261) or GEZEconnects (serial no. 133367).

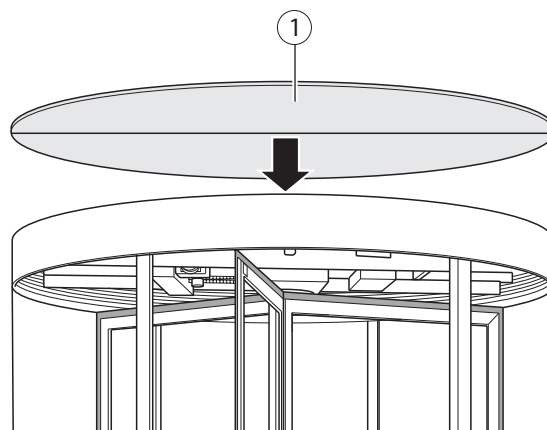


Information on commissioning the system is available in the DCU6 wiring diagram.

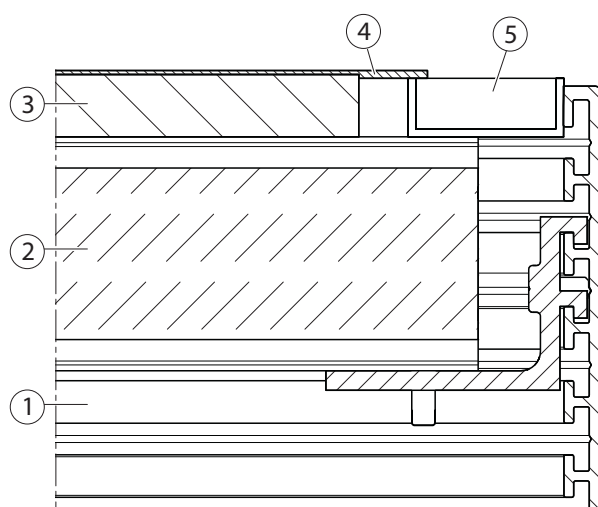
4.5 Mount the ceiling panel

4.5.1 Placing the cover

- Lay the cover (1) (wooden panel or aluminium sheet) on the ceiling ring.

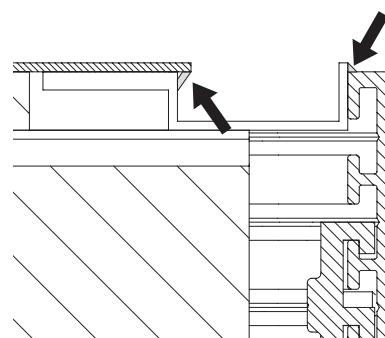


- Screw the cover on tight (1).
- Bond the sheeting (4).
- Mount the weather guard with water gutter (5).
- Place weight over the entire surface of the sheeting until the glue is dry.



- 1 Ceiling canopy
- 2 Insulation
- 3 Cover
- 4 Sheeting
- 5 Water gutter

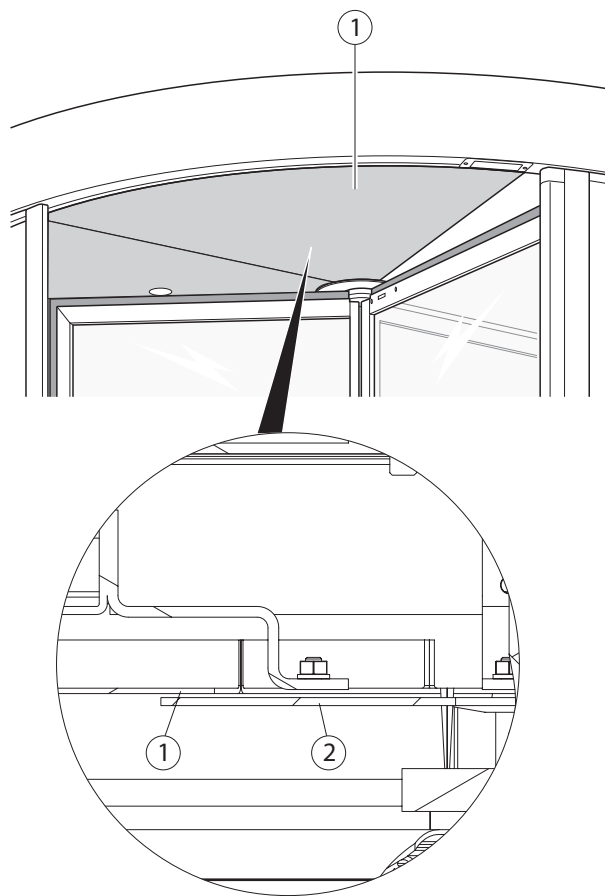
- Seal the water gutter on the construction site (see arrow).



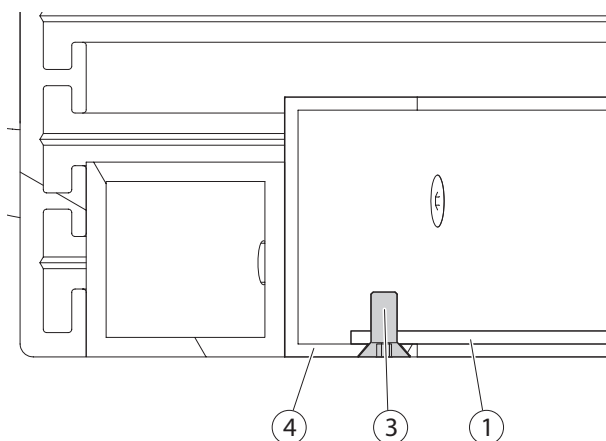
4.5.2 Inserting and screwing on the segment sheeting

! For doors with a turnstile brace, the ceiling panel with hole must first be inserted into the ceiling.

- ▶ Drill the holes for the locking bolts of the manual and automatic locking system (optional).
- ▶ Place and align segment panels (1) on the centre ceiling panel (2) and align.



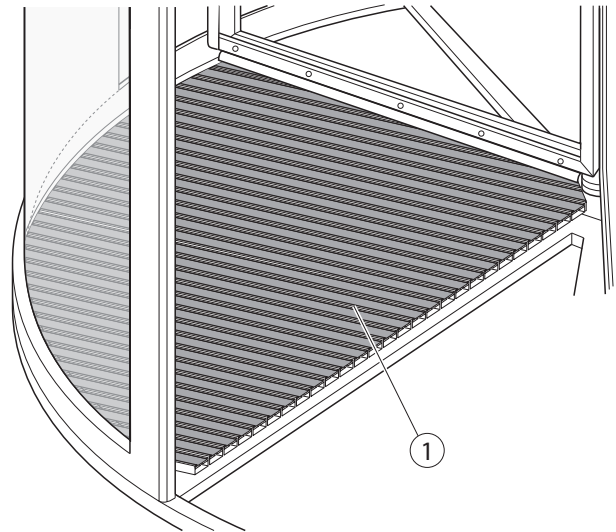
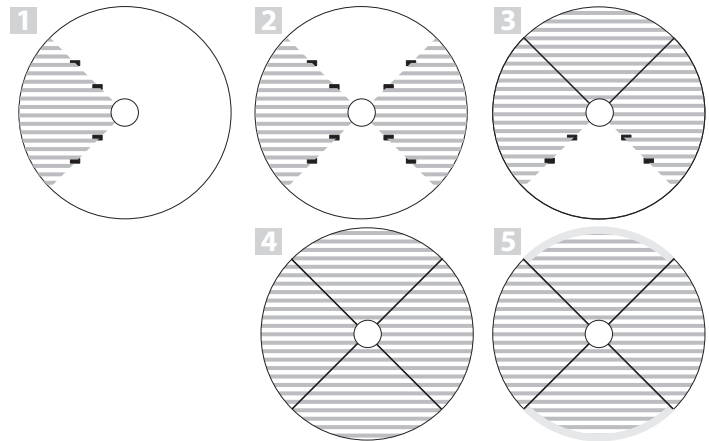
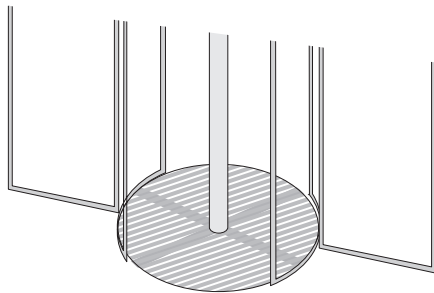
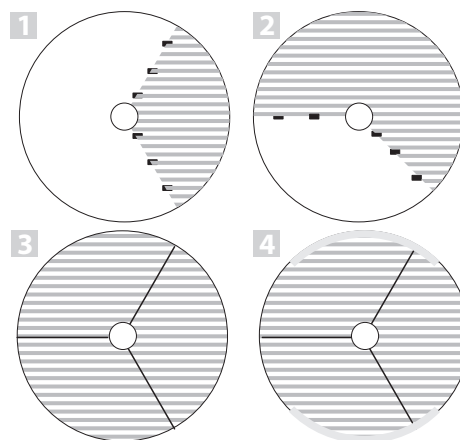
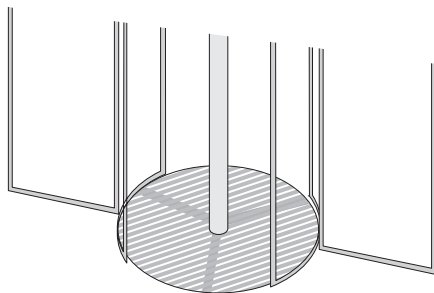
- ▶ In the area of the retainer profile (4) of the ceiling panels, drill the segment panels (1) and cut an M4 thread into the retainer profile.
- ▶ Screw in the segment panels with M4×10 countersunk head screws (3) (2 screws per panel).



4.5.3 Installing the entrance mat



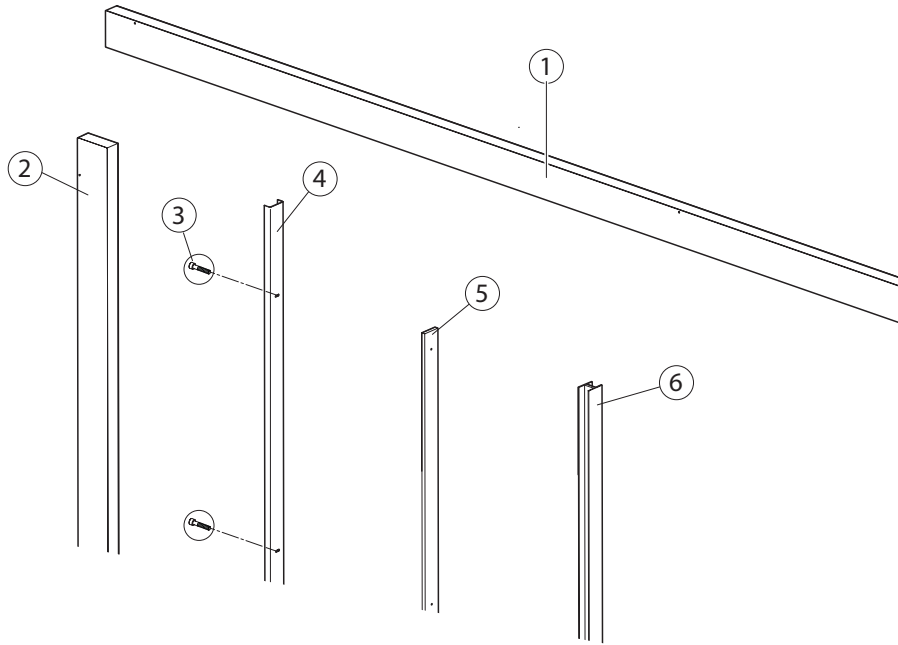
- Install the entrance mat (1) according to the installation plan (see below).

**Installation plan X division****Installation plan Y division**

4.5.4 Façade connection (optional)

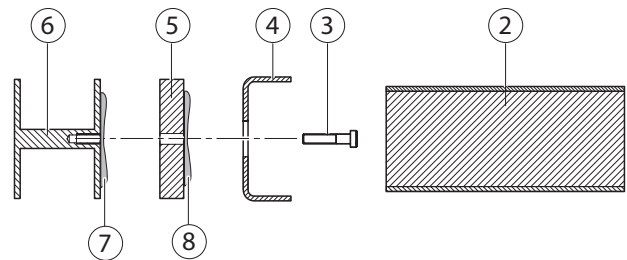
The façade connection is an equipment option, and can be included in the scope of delivery if requested by the customer. The façade connection consists of the following components:

- 10 mm flat material; to compensate between the drum wall and canopy
- U profile; to mount the façade panel
- Façade panel; thickness, width and colour as requested by the customer
- Cylinder head screws (M4x20); included in the screw box/assorted box



- 1 Façade profile, top
- 2 Façade panel profile, side, left, and right
- 3 Cylinder head screw M4x20
- 4 U profile, left and right
- 5 Flat material, left and right
- 6 Butt connector strip, left and right

- ▶ Place the flat material (5) on the butt connector strip (6) of the side panel with a thin silicone joint (7).
- ▶ Place the U profile (4) on the flat material (5) with a thin silicone joint (8).
- ▶ Screw the flat material (5) to the butt connector strip (6) using M4x20 cylinder head screws (3).
- ▶ Insert the side façade panel (2) into the U profile (4) and connect to the existing façade.
- ▶ Attach the top façade panel profile (1) above the door to the façade using appropriate steps and seal.



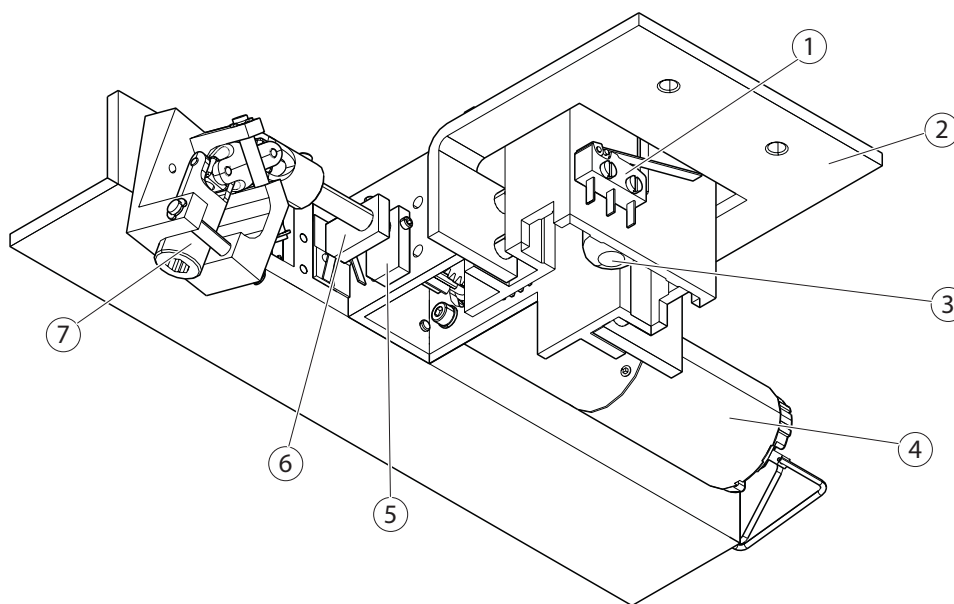
4.6 Check list for commissioning and service

- ▶ Complete the check points according to the check list in "Commissioning and service".

5 Options

5.1 Automatic locking system

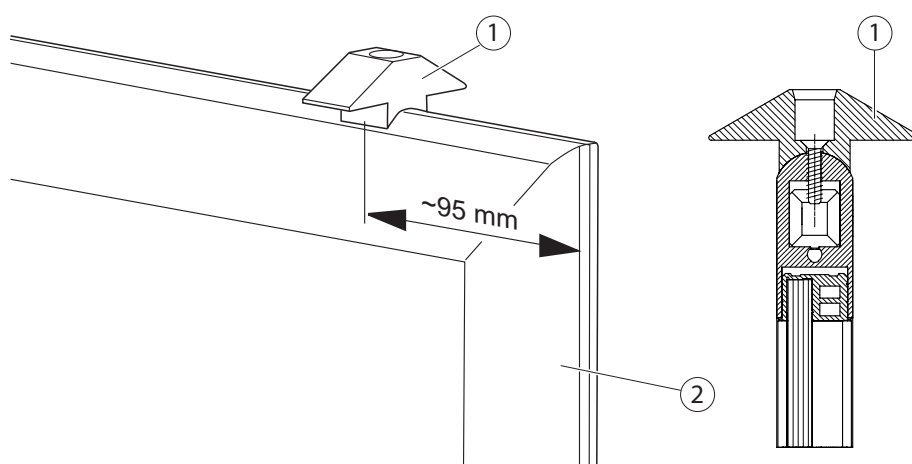
5.1.1 Components



- 1 Limit switch for locking bolt
- 2 Retaining plate
- 3 Locking bolts
- 4 Drive
- 5 Operating cam 1
- 6 Operating cam 2
- 7 Hexagon size 6 of manual unlocking

5.1.2 Mounting the locking ramps at the TSA 325 NT

- Mount the locking ramp (1) on the moving leaf at the pre-drilled position (approx. 95 mm from the outer leaf edge (2)).
The leaf will then be **inside** when in night position.

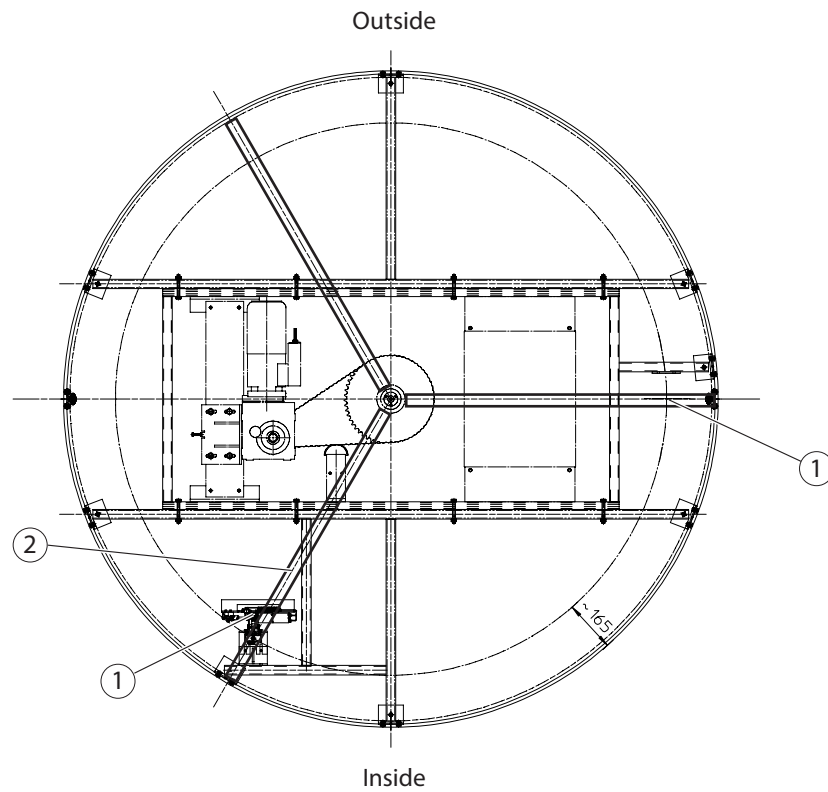


5.1.3 Mounting the locking ramps at the TSA 325 NT BO

- Mount the locking ramps at the two moving leaves that are positioned **inside** in the night position at the pre drilled positions (approx. 95 mm from the leaf outer edge (2)).

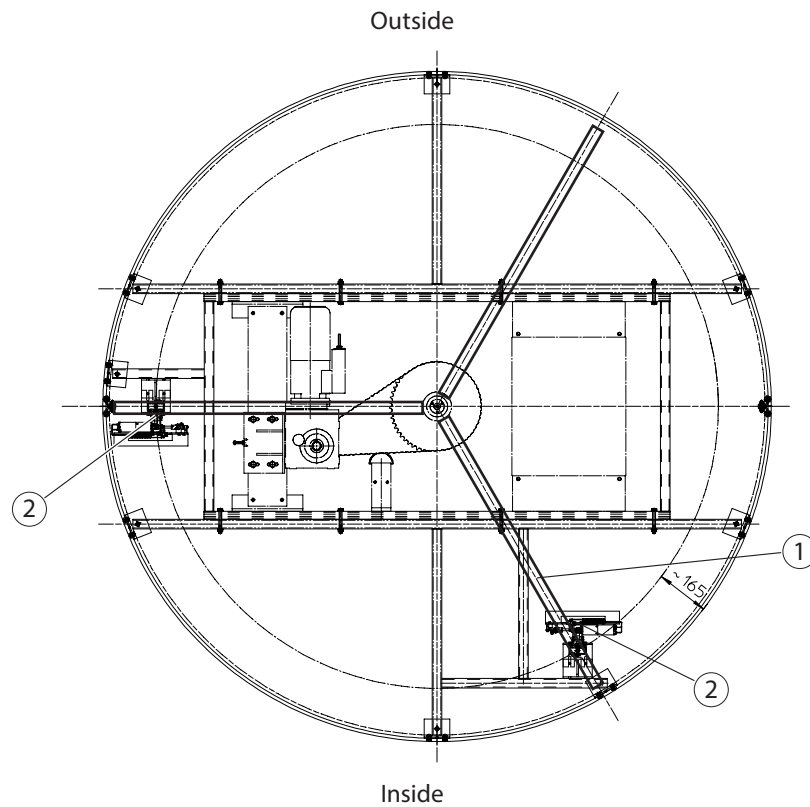
5.1.4 Installation positions

Installation position TSA 325 NT, 3-leaf:



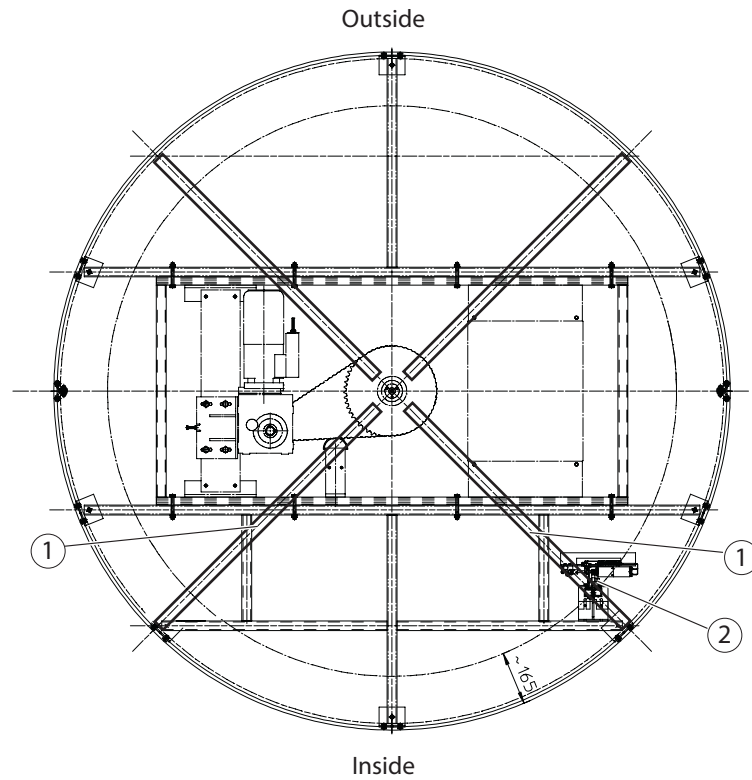
- 1 Side-hung casement
- 2 Locking

Installation position TSA 325 NT, 3-leaf, Variant BO:



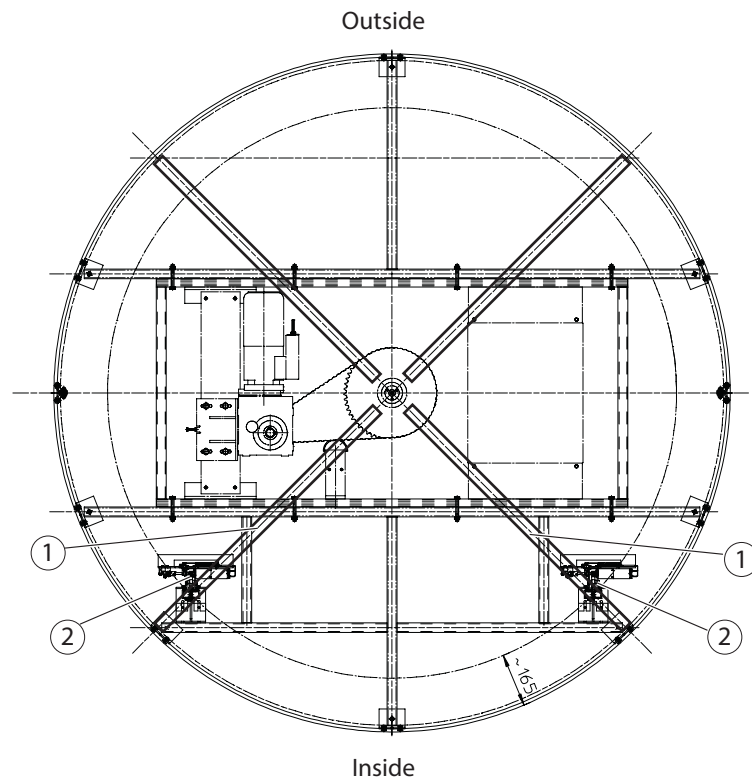
- 1 Side-hung casement
- 2 Locking

Installation position TSA 325 NT, 4-leaf:



- 1 Side-hung casement
- 2 Locking

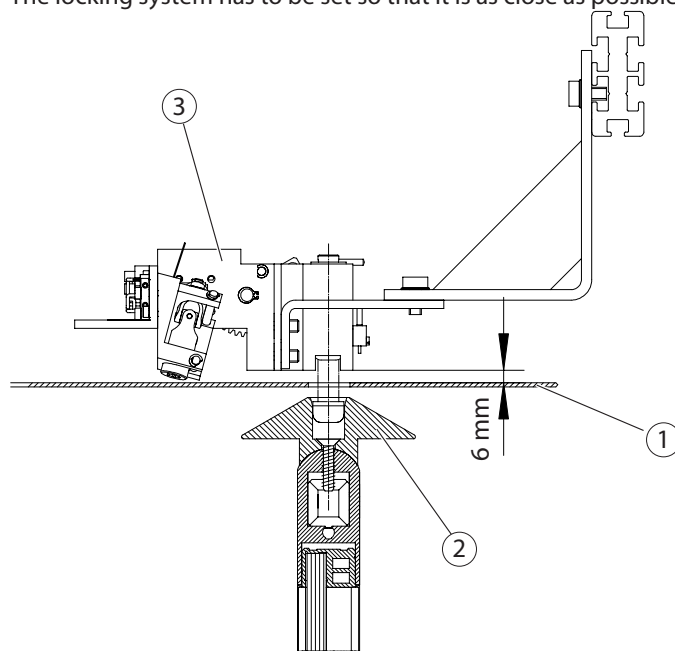
Installation position TSA 325 NT BO, 4-leaf:



- 1 Side-hung casement
- 2 Locking

5.1.5 Setting the position of the locking systems

The locking system has to be set so that it is as close as possible to the ceiling panel without touching it.



- 1 Ceiling panel
- 2 Locking ramp
- 3 Locking

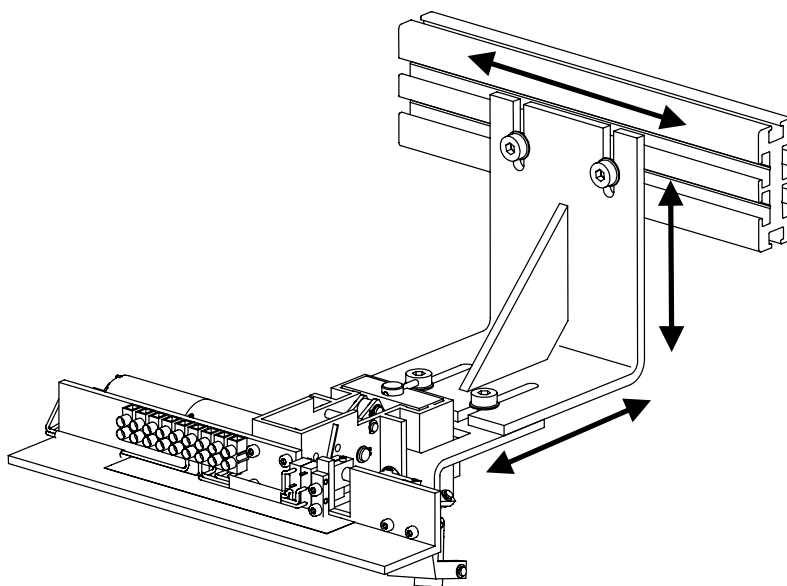


WARNING!

Risk of fatal injury due to electric shock!

► Before working on the electrical system, disconnect the system from the 230 V mains network.

- Dismantle the ceiling panels (1) in the area of the locking systems.
- Adjust both locking systems by means of the oblong holes of the retaining plates.



- ▶ Adjust the turnstile so that the leaves are not positioned under the locking systems.
- ▶ Use the manual unlocking (hexagon size 6) (see section 5.1.1 Components on page 28, Item 7) to position both locking systems completely at the bottom.
- ▶ Turn the turnstile until at least one of the two locking systems latches in.
- ▶ If necessary, adjust the locking system that does not yet latch in correctly by means of the oblong holes as described above so that it also latches in correctly.
- ▶ Use the manual unlocking to position the locking systems at the top again and repeat the process until both locking systems latch in when the turnstile is turned.

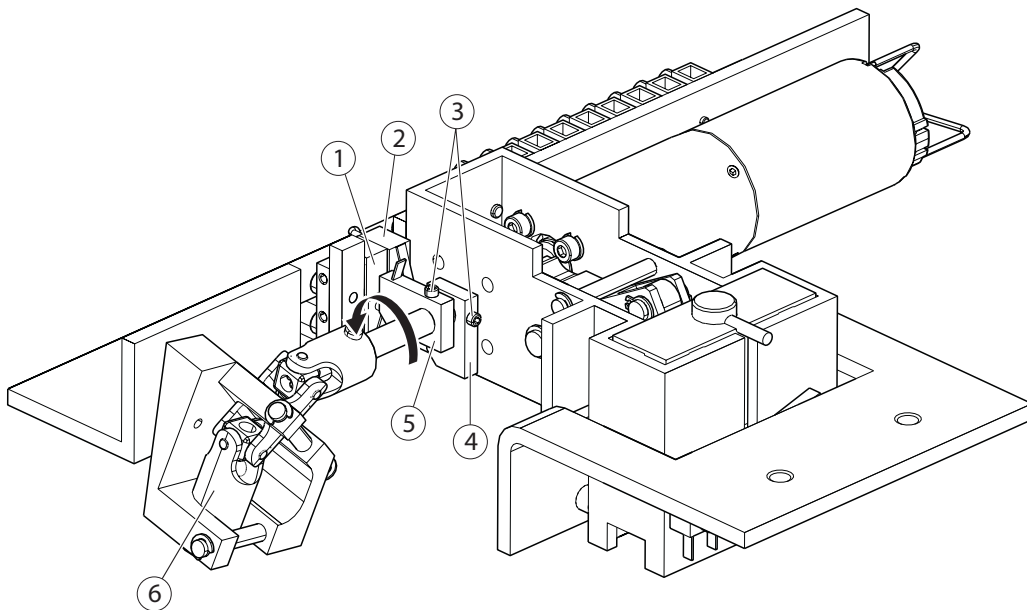
5.1.6 Adjusting the switching points

Adjusting of the switching points is used to specify the respective end points (locked/unlocked) of the locking bolt.



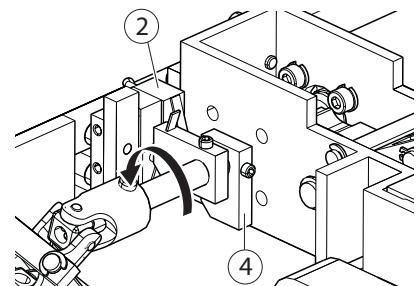
If the switching points are set incorrectly, the switching contacts are not operated at the end points of the locking system so that malfunctions can occur.

- ▶ Loosen the setscrews (3) of the two operating cams (4) and (5) on the extended motor axis of the locking unit.



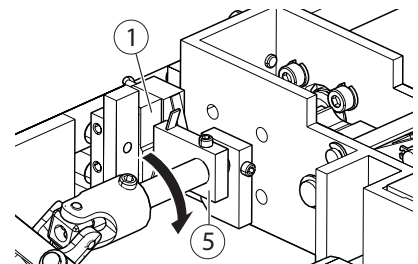
Adjusting the locked position:

- ▶ Use the hexagon of the manual unlocking (6) to move the locking bolts completely downwards.
- ▶ Turn operating cam 1 (4) in the direction of rotation of the motor axis (see arrow) on the limit switch (2) until it triggers the contact (click noise).
- ▶ Tighten the setscrew (3) of operating cam 1 (4) again.



Adjusting the unlocked position:

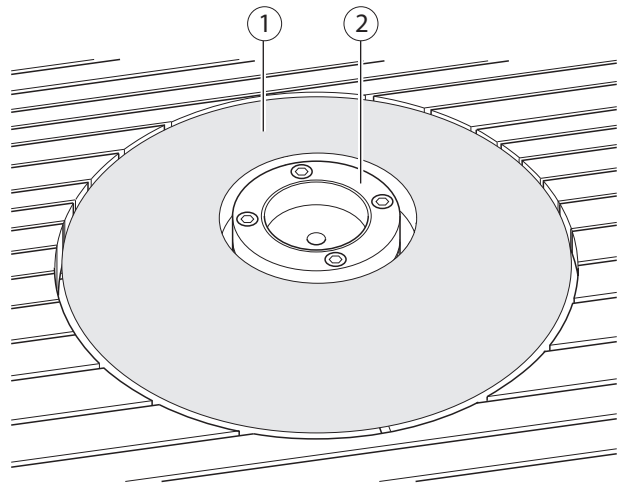
- ▶ Use the hexagon of the manual unlocking (6) to move the locking bolts completely upwards.
- ▶ Turn operating cam 2 (5) in the direction of rotation of the motor axis (see arrow) on the limit switch (1) until it triggers the contact (click noise).
- ▶ Tighten the setscrew (3) of operating cam 2 (5) again.



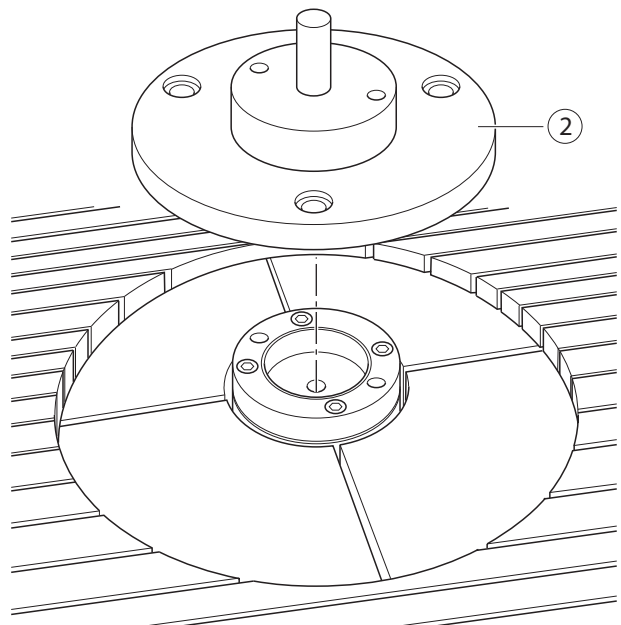
5.2 Revolving doors with breakout function

5.2.1 Installing the central spin axis

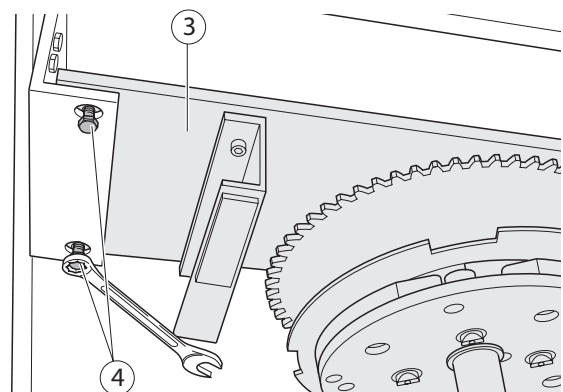
- Remove the protective panel (1).
- Pre-mount the floor bearing (2).



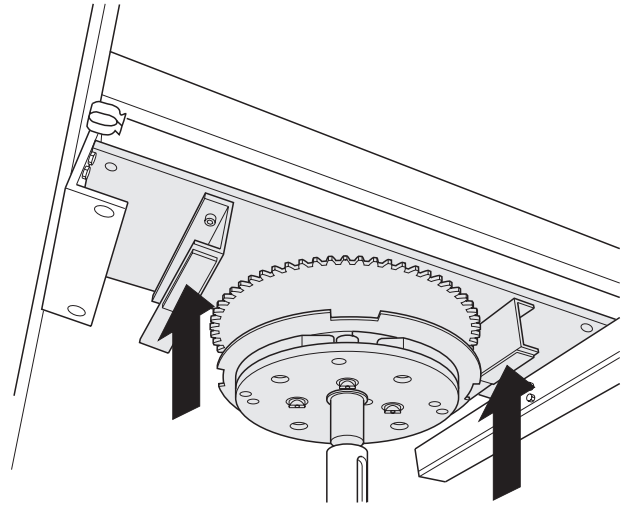
- Place the lower disk (2) on the floor bearing.



- Unscrew the 4 screws (4) from the upper breakout mechanism (3).



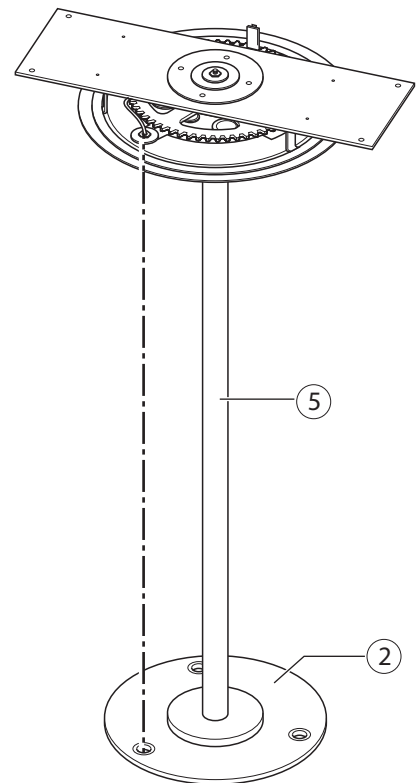
- Lift the bearing plate of the upper break out mechanism (3).



- Insert the steel tube (5) of the swivelling axis onto the lower disk (2) and into the upper break-out mechanism.



Ensure that the disk and the upper break-out mechanism are exactly flush.



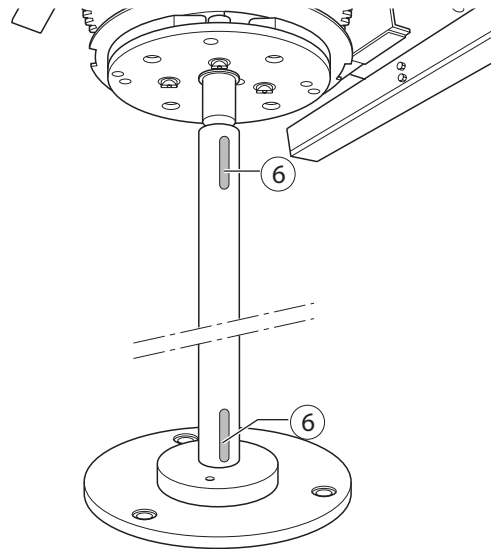
- ▶ Secure the steel tube against twisting and slipping at the top and bottom with 2 fitting keys (6) each.
- ▶ Secure the fitting keys with M3 screws.



Secure M3 screws with thread lock.

Removing fitting keys:

- ▶ Screw the M3 screws out of the fitting screws.
- ▶ Screw in M4 screws and press out the fitting screws with a pull-off tool.



Fitting screws can be removed by using a screw with a larger thread and a pull-off tool.

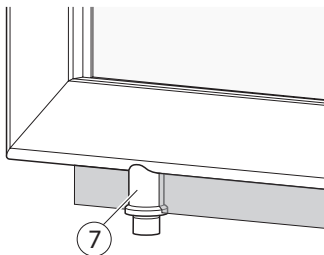
- ▶ Fasten the suspension plate of the upper swivelling axis so that the central swivelling axis is position exactly vertically.

5.2.2 Install BO leaf

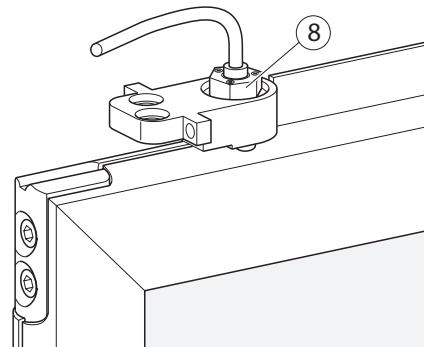


The BO leaves are pre-mounted and cabled completely in the factory (including the lower BO axis and the upper BO flange).

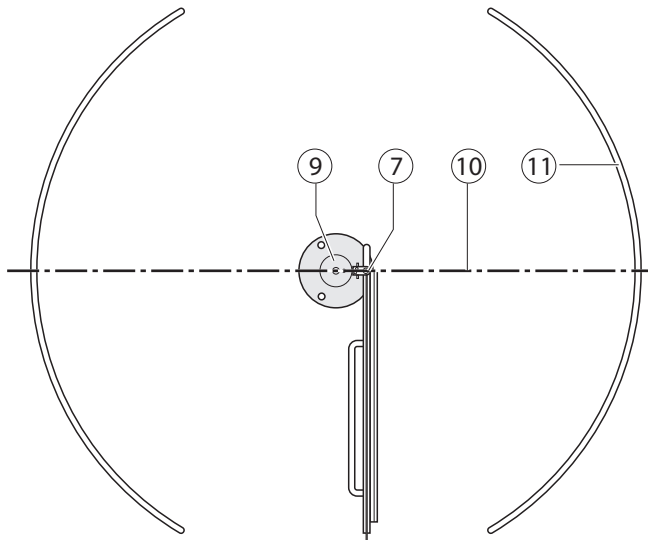
lower BO axis (7)



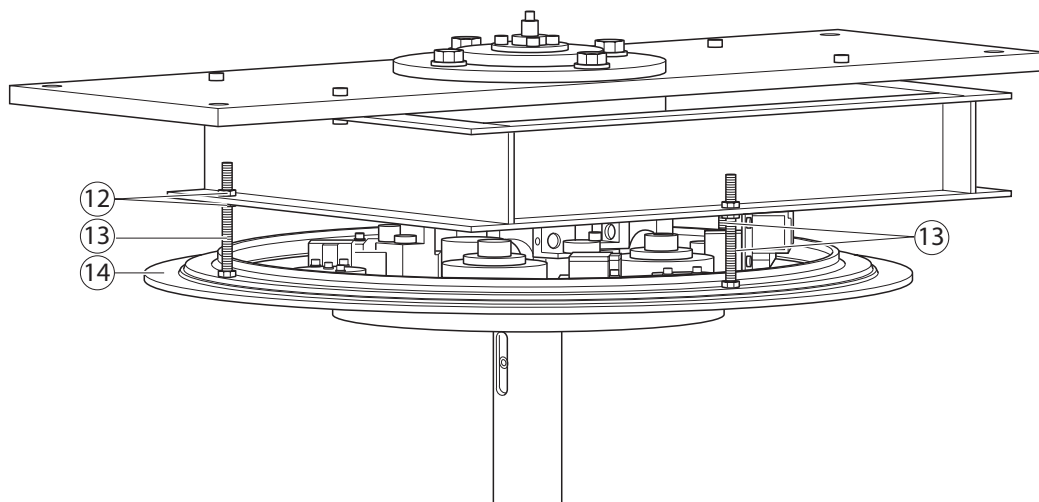
upper BO axis (8)



- Turn the central spin axis (9) so that the hole of the BO axis of the leaf (7) that is to be mounted points side-wards to the middle of the side elements (11), i.e. in the direction of the swivel axis (10) shown below.



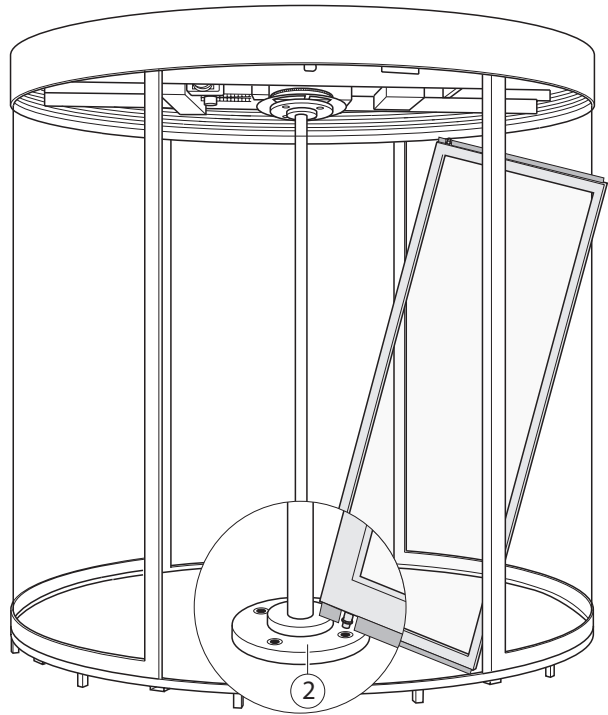
The ceiling mounting ring (14) has to be adjusted upwards so that the upper BO flange can be screwed on.



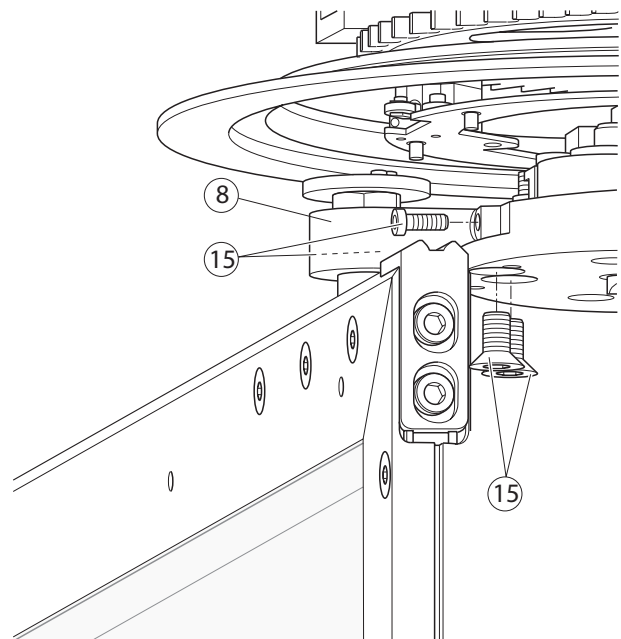
- Loosen the lock nuts (12) of the 3 screws (13).
 - Turn in the 3 screws.
- The ceiling mounting ring (14) is pressed upwards.



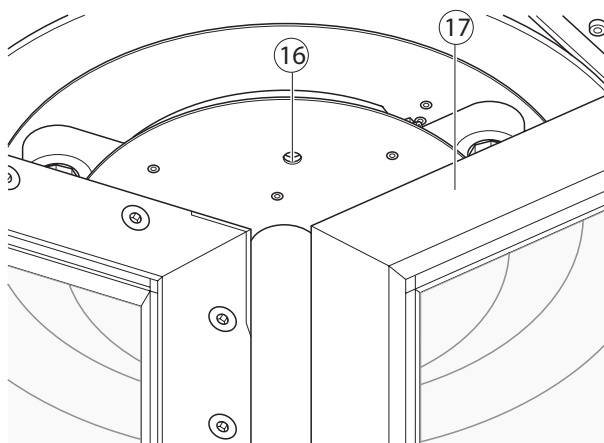
- Insert the lower BO axis into the disk (2).



- Swivel in the upper BO flange (8) and screw tight with four screws (15).

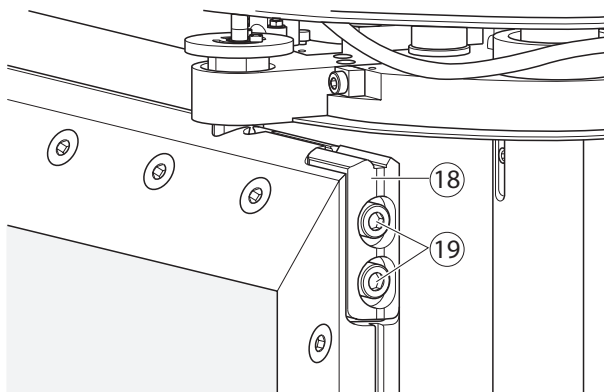


- ▶ Remove the stress from the locking pin by turning the adjustment screw (16) counterclockwise. The adjustment screw (16) has to contact lightly. The leaf latches into the BO lock.
- ▶ Turn the adjustment screw (16) $\frac{1}{4}$ of a rotation clockwise. The opening assistance is pre tensioned.



The corresponding leaf (17) is always located to the right of the adjustment screw (16).

- ▶ Loosen the fastening bolts (19) of the bosh angle (18).



- ▶ Adjust the bosh angle using the threaded rod (20).

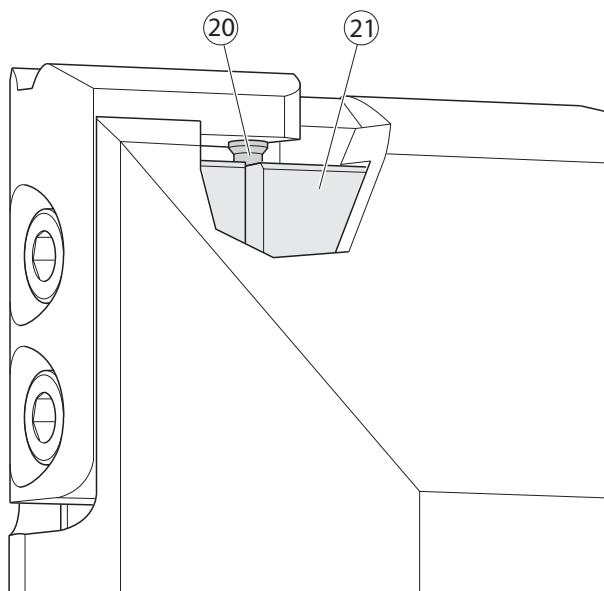


When the leaf latches in, the locking pin has to latch into the contour of the bosh angle without a perceptible play.

- ▶ Tighten the fastening bolts (19).



- ▶ Check whether the threaded rod (20) contacts at the corner bracket (21).

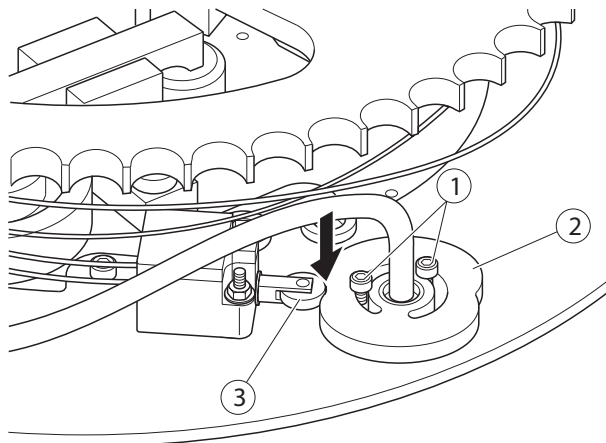


5.2.3 Checking the switching disk

- ▶ Mount the switching disk (2) on the upper BO flange so that the roller (3) of the switch is located in the recess of the switching disk in the leaf zero setting.
- ▶ Screw in the screws (1) with thread lock.

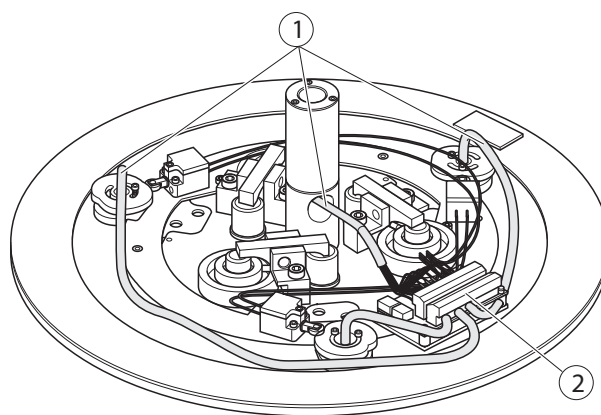


If the roller (3) does not fit exactly into the recess, the switching disk (2) can also be turned.



5.2.4 Connecting the lines

- ▶ Connect the wires (1) of the BO leaf to the terminal (2) on the turnstile cover.



5.2.5 Adjusting the break-out forces of the BO leaves

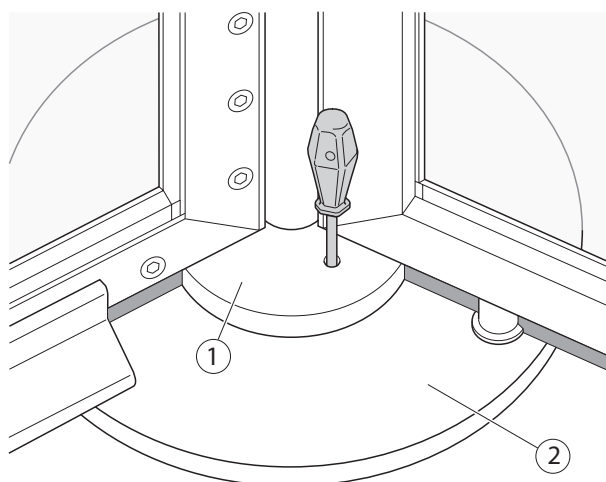


- ▶ For break-out doors, increase the break-out force on one or two leaves (depending on the number of leaves) so as to prevent the leaves from becoming wedged against one another.

Locking the central spin axis into position

In order to adjust the break-out forces of the leaves the system has to be locked in position via the central spin axis.

- ▶ Insert a tool (e.g. screw driver) through the hole in the bearing disk (1) and counterhole in the floor bearing disk (2) in the floor bearing. The central spin axis is locked in position.



Measuring the break-out force

Measuring devices:

- Force measuring tool
- Spring scale
- ▶ Mark the measuring point (4) in accordance with the adjacent drawing.
- ▶ Measure the break-out force of the individual BO leaf at the measuring point (4).

The maximum break-out force amounts to 220 N.

Adjusting the break-out force

- ▶ If necessary, adjust the break-out force at the adjustment screw (5).

Checking the EMERGENCY STOP function:

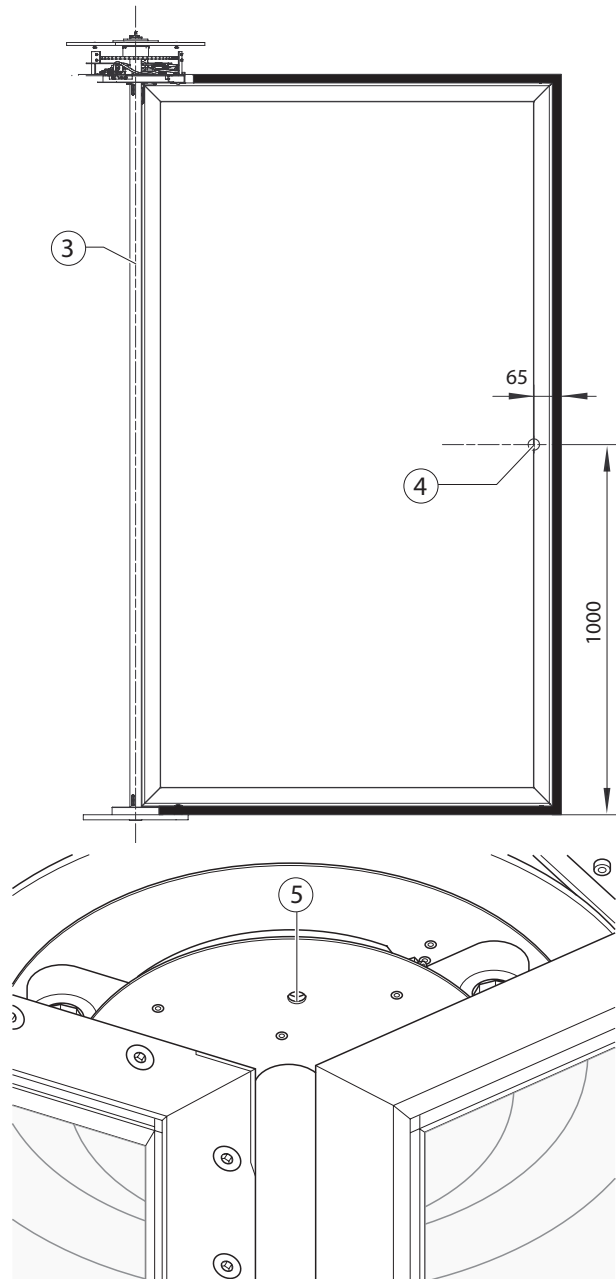
- ▶ Checking the EMERGENCY-STOP push button.
- ▶ Load the BO leaf.

The BO leaf may not break out.

Check the break-out angle

- ▶ Check whether the drive is switched off after a leaf break-out angle of 15°.

- 3 Central swivelling axis
- 4 Measuring point
- 5 Adjustment screw



5.2.6 Additional information for commissioning

- ▶ Adjust the maximum speed in accordance with the wiring diagram.
- ▶ Adjust the maximum acceleration so that the break-out door leaf does not break out at an EMERGENCY-STOP during the acceleration phase. If necessary, increase the "distance of acceleration".
- ▶ If possible, connect revolving doors with break-out system to the façade on the canopy.
- ▶ Attach a "Breakout" sticker to the leaf at a height of 1000 mm above the floor.

5.3 External night time closer (automatic and manual)


WARNING!

Danger of injury due to broken glass!

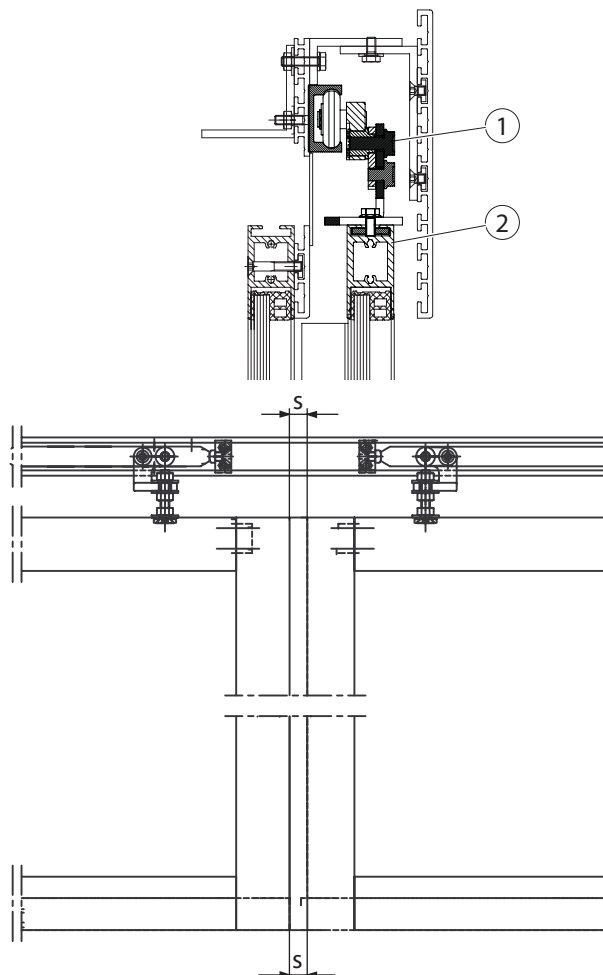
- ▶ Always mount the door leaf together with another person.

- ▶ Hang the door leaf (2).
- ▶ Use the adjusting screw (1) to adjust the door leaf to the correct height.
- ▶ Align the height on the basis of the brush height.
- ▶ Check whether the door leaf moves smoothly.

- ▶ Adjust the space between the night-time closer and the side element.
- ▶ Align both door leaves in the closed position at the top and bottom so that the space s at the top and bottom is the same.
- ▶ Screw the leaf tight and close the doors correctly.

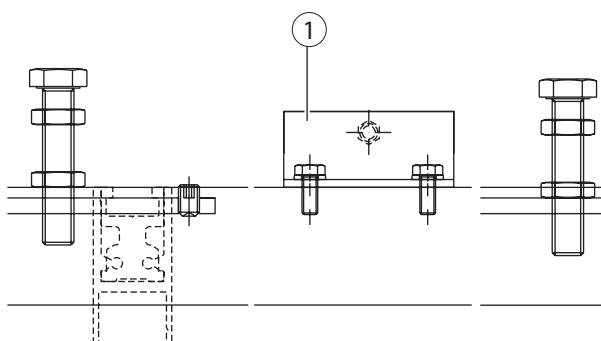


The floor guide for the night-time closer depends on the size. Observe the drawing!

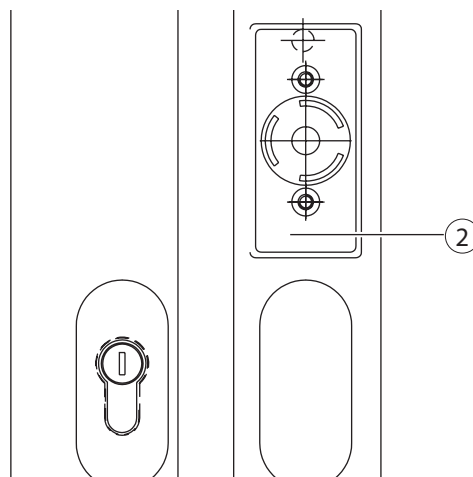


5.3.1 Mounting the automatic night locking system

- ▶ Install the toothed belt in the carrier (1) and screw it tight.

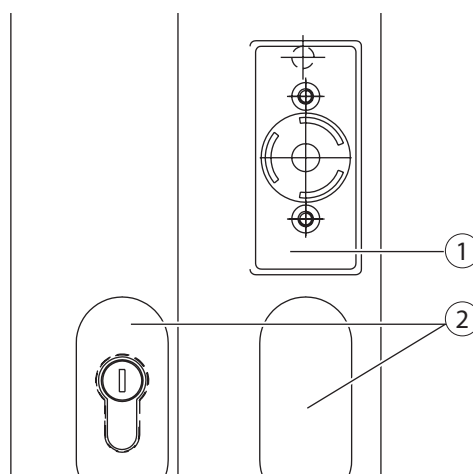


- Mount the emergency stop switch (option) (2).



5.3.2 Mounting the manual night-time closer

- Mount the rosettes (2) for the lock.
- Mount the emergency stop switch (option) (1).

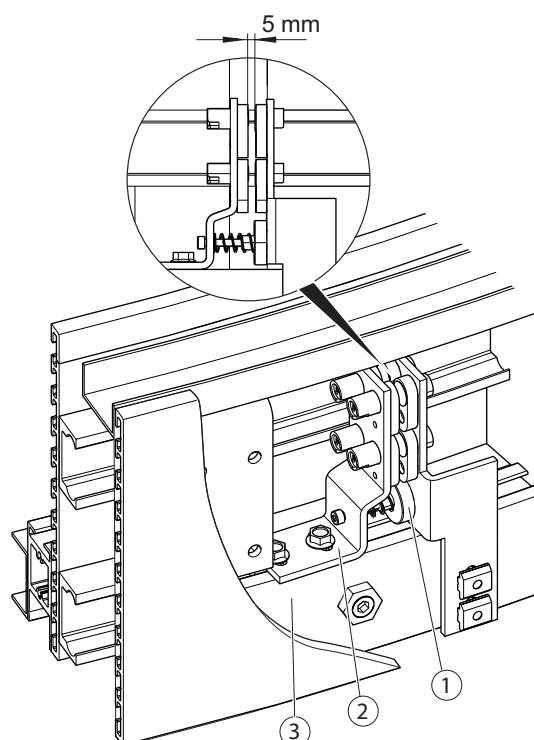


5.3.3 Mount the emergency stop switch tappet contact

- Adjust the pusher contact of the emergency-off switch so that the contact switch has a distance of 5 mm.

i The spring-mounted magnet (1) will only be included in the scope of delivery for manual night-time closers.

! The bracket holder (2) for the tappet contact must be attached to the exterior canopy panel (3).



5.4 Open position monitoring

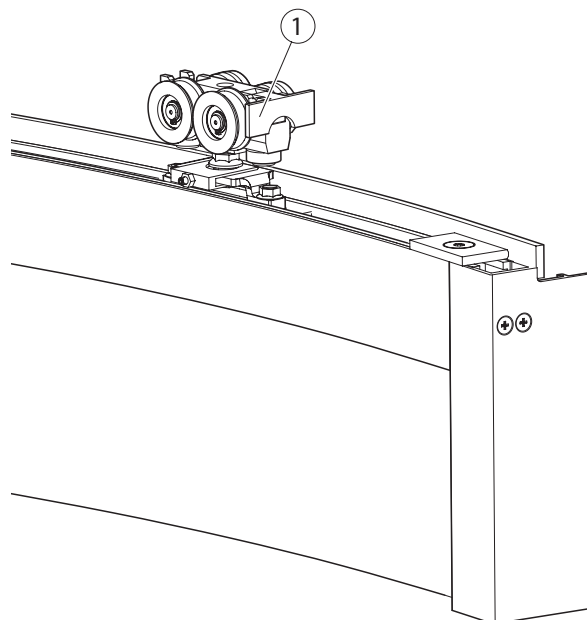


- The leaf part of the tappet contact must be mounted on the roller carriage before installing the leaf. Subsequent installation on the roller carriage is not possible.
- The leaf part tappet contacts can only be mounted on an RC 2 roller carriage.

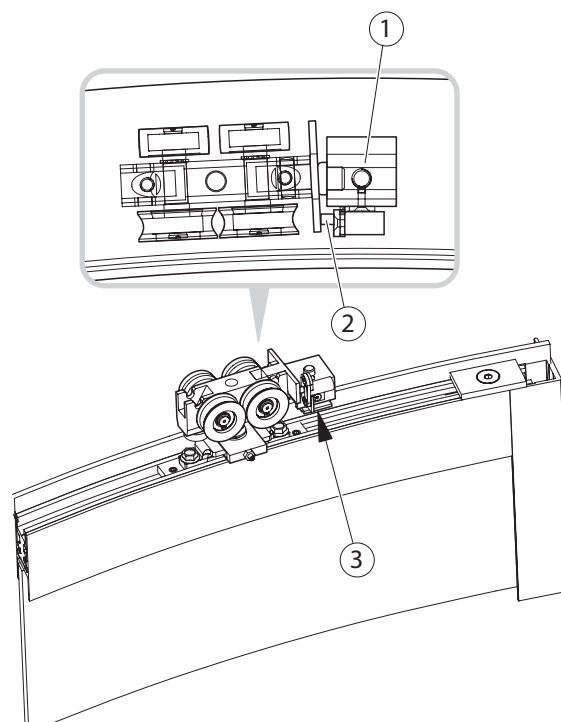
Mounting the tappet contact on a track

The tappet contact consists of a leaf part and a frame part installed in the track.

- ▶ Before installing the night-time closer, mount the leaf part (1) on the associated RC 2 roller carriage.
- ▶ After installing the leaf in the track, align the door leaf and check for proper running behaviour, including in conjunction with the tooth belt (optional: automatic night-time closer).



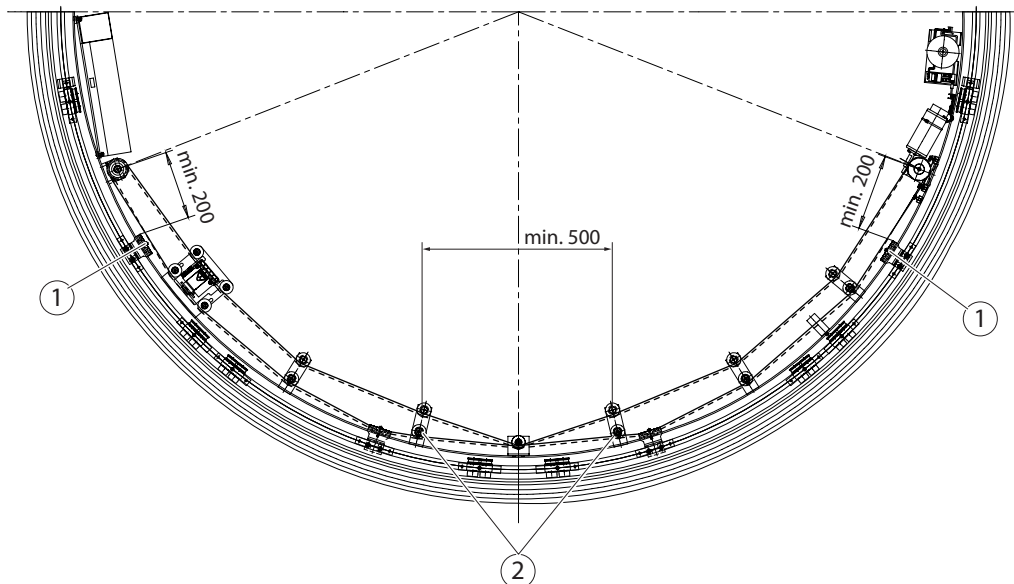
- ▶ After aligning the leaf, push the frame element tappet contact (2) into the track from below and position in the end position with the door leaf. Then attach from below using a fixing screw (3)



5.5 General installation information for NV tooth-belt tension

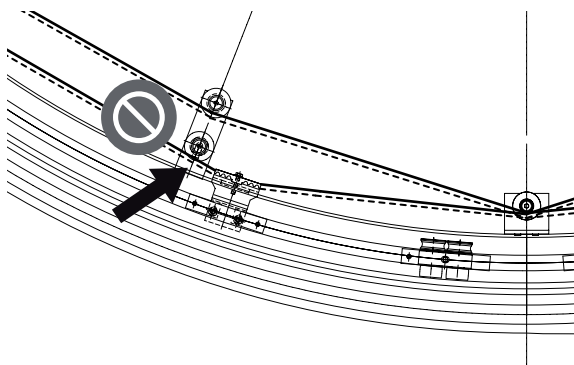
5.5.1 Position the driver in relation to the pulley holders

! The distances indicated in the drawing below between the driver in open position (1) and the deflection or motor gear unit, as well as between the two interior pulley holders (2) may not be exceeded.

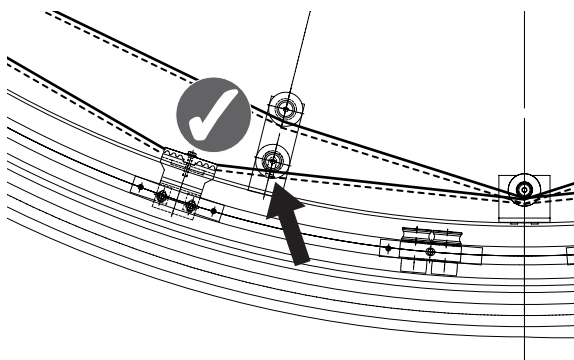


- 1 Driver in open position
- 2 Interior pulley holders

! The driver may not travel so far in the direction of the closing position that the tooth belt lifts off of the innermost pulley holder. This greatly increases the tooth-belt tension in closing position!



- Position the interior pulley holders and drivers on the leaves such that the tooth belt is still placed on the innermost pulley holder in closing position.

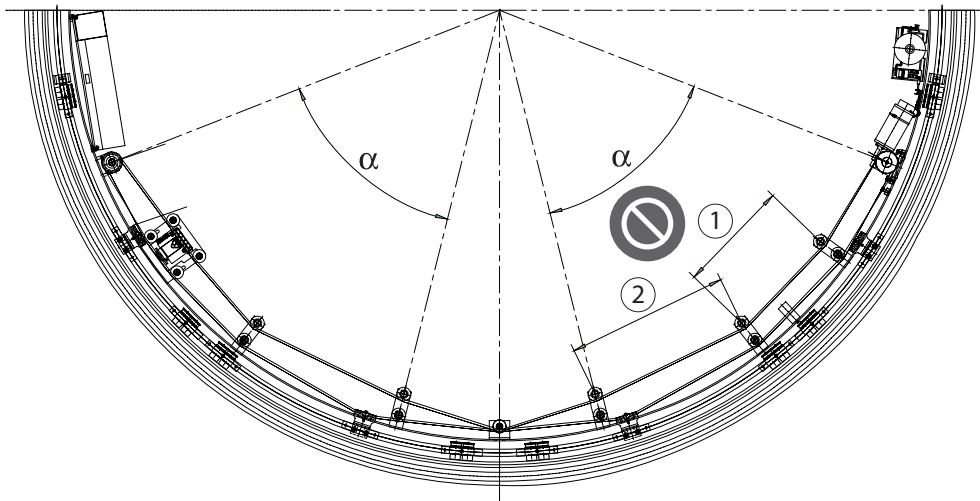


5.5.2 Distributing the pulley holders



If the pulley holders are distributed unevenly, the tooth belt tension will fluctuate greatly. This can cause the following problems:

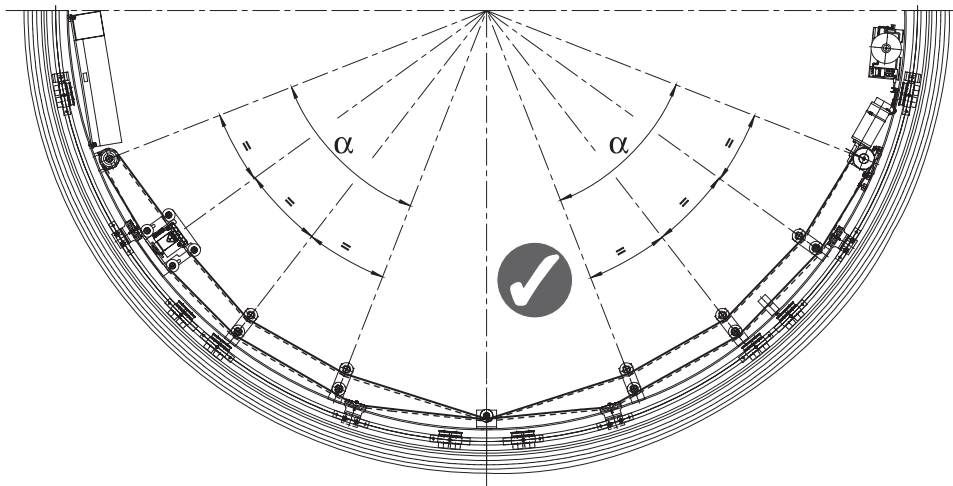
- System cannot be taught correctly
- System does not close completely
- System outputs the error "Obstacle" during opening or closing



- 1 Small spacing
- 2 Large spacing

► Distribute the pulley holders so that they are evenly distributed between the deflection pulley or motor pulley and the inner-most pulley holder.

This will keep the tooth belt tension roughly equal across the entire travel path.

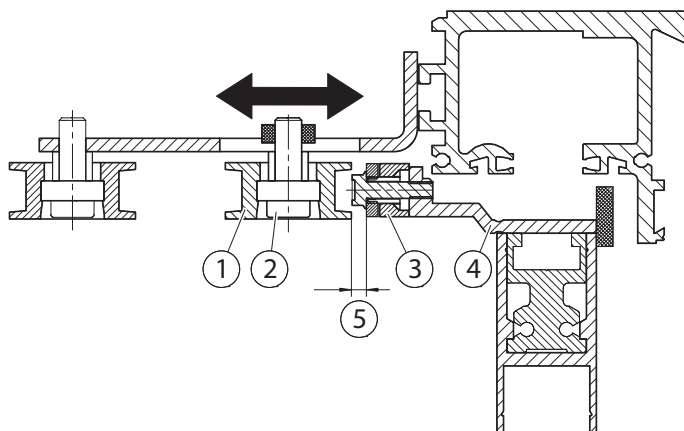


► Define the positions of the drivers on the leaves in relation to the pulley holders and mount accordingly.

5.5.3 Set the adjustable pulley on the pulley holder

The more the tooth belt (3) lifts up from the pulleys on the pulley holder, the more the tooth belt tension will fluctuate. Because of this, the adjustable pulley (1) must be set with the smallest possible distance (5) from the passing driver (4) after installing the leaves on all pulley holders.

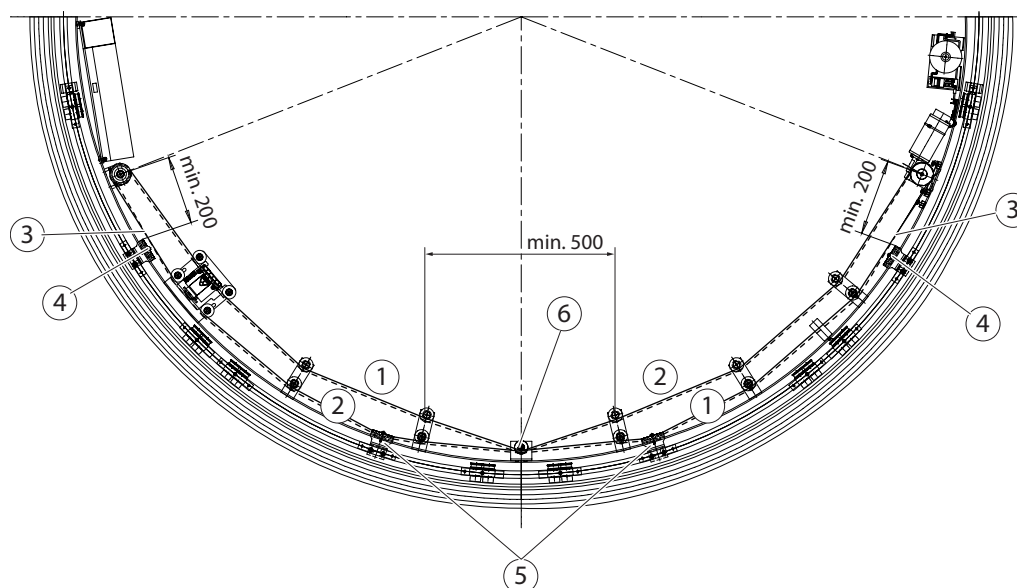
- 1 Adjustable pulley
- 2 Cylinder head screw
- 3 Toothed belt
- 4 Driver
- 5 Distance



- Undo the cylinder head screw (2).
- Push the adjustable pulley (1) so that the distance (5) between the adjustable pulley (1) and the tooth belt (3) is as small as possible.
- Re-tighten the cylinder head screw (2).

5.5.4 Turned and crossed tooth belts

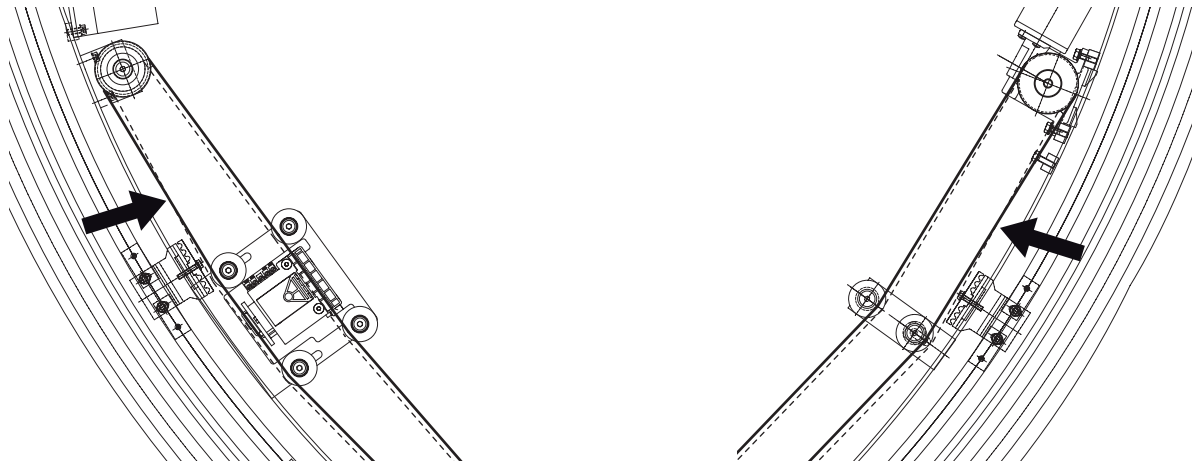
To keep the tooth belt as quiet as possible, it must run across the largest possible number of pulleys with the flat back of the belt.



- 1 Belt 1
- 2 Belt 2
- 3 Tooth belt turned by 180°
- 4 Driver in open position
- 5 Driver in closing position
- 6 Tandem roller

Tooth belt turning on the motor gear unit and deflection pulley

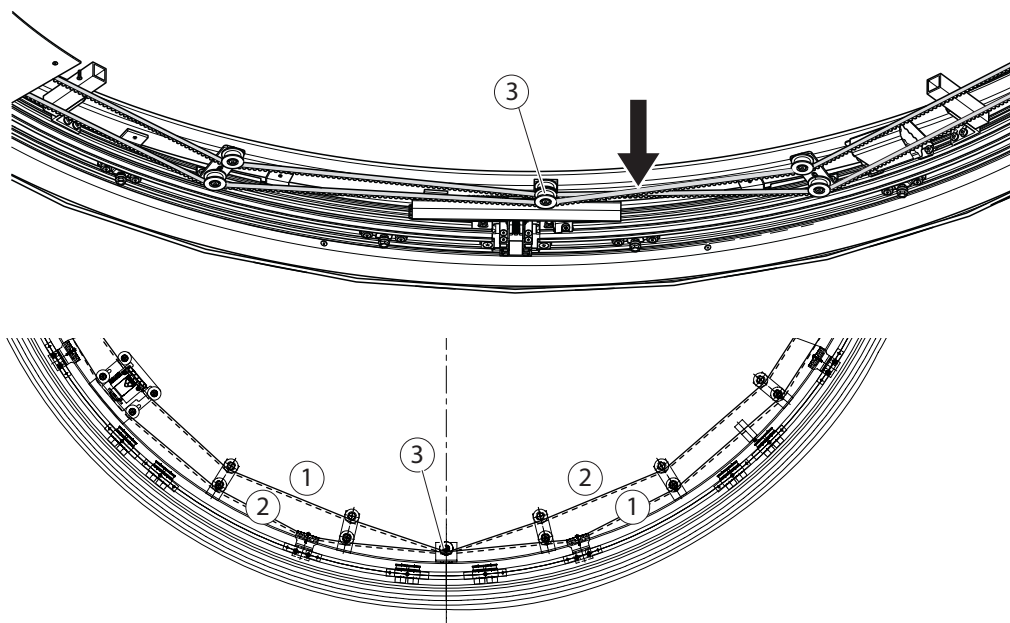
To ensure the transmission of force and ensure the locking feature functions correctly, the tooth belt must be turned by 180° between the outermost pulley holder and the motor gear unit or deflector (see arrow).



—— Smooth back of the tooth belt
 Toothed side

Crossed tooth belts

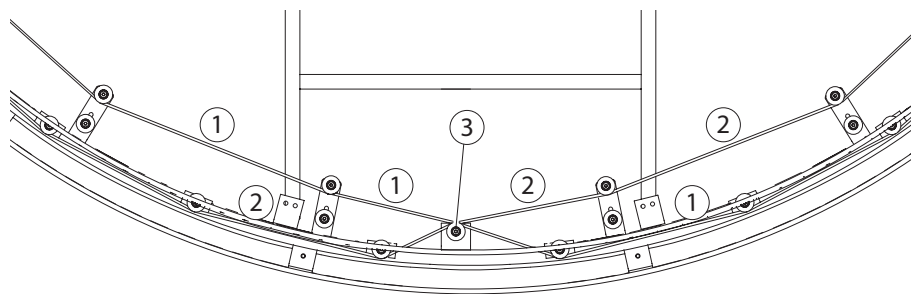
To move the leaf in the opposite direction, the tooth belts must be crossed in the centre of the system using the tandem rollers (3) (see arrow).



1 Belt 1
 2 Belt 2
 3 Tandem roller

Tooth belt crossing with outside-running night-time closer

Tandem rollers (3) must be used for an outside-running night-time closer.
The recesses in the canopy panel must be placed accordingly.



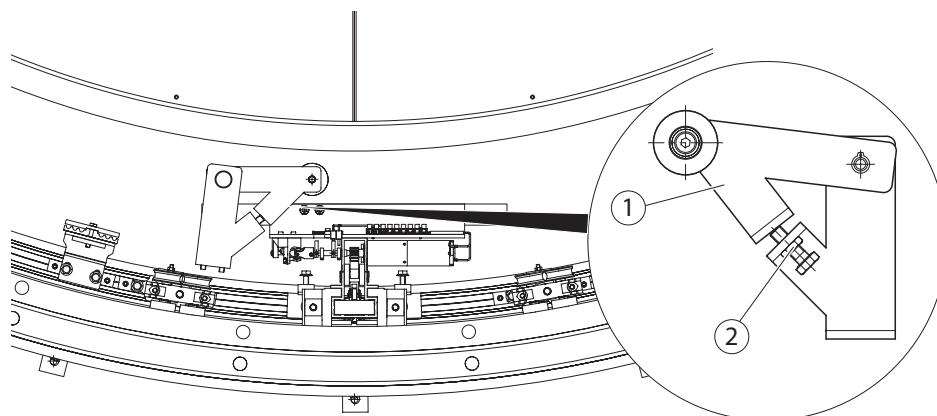
- 1 Belt 1
- 2 Belt 2
- 3 Tandem roller

Tooth belt guidance with rod locking and inside-running night-time closer

An adjustable tandem roller is used in the area of the rod locking to guide the belt for inside-running night-time closers and guide the tooth belt around the rod locking. The position of the tandem rollers can be adjusted using an adjustment screw.

Setting the tooth belt tension and rod locking:

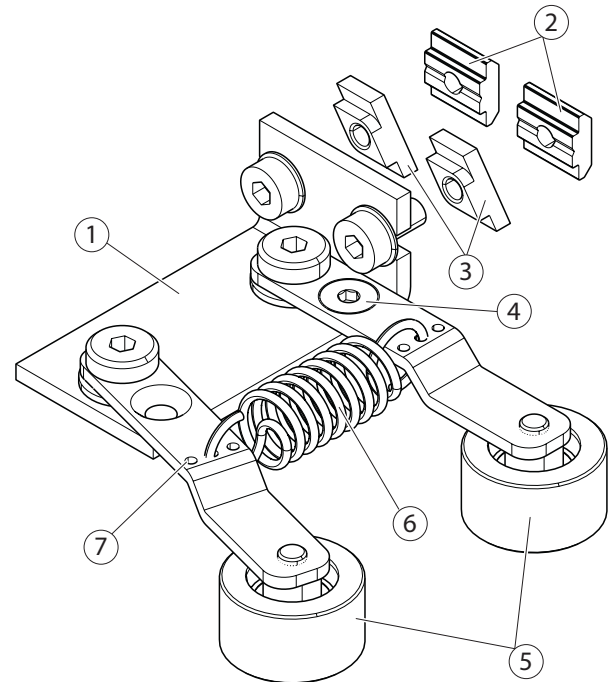
- Set the tandem roller (1) using an adjustment screw (2).



5.5.5 Using a tooth-belt tensioner

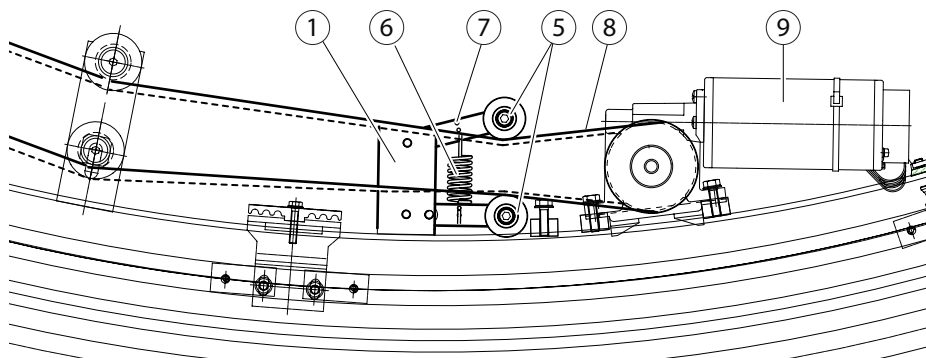
The smaller the system, the greater the tooth belt tension will fluctuate as the leaf moves. The tooth belt tensioner (mat. no. 140538) ensures that the tooth-belt tension is more even. It can be used in both curved sliding doors and with night-time closers (inside and outside-running).

- 1 Tooth belt tensioner
- 2 Sliding block for mounting on the canopy panel
- 3 Sliding block for subsequent installation
- 4 Countersunk head screw
- 5 Rollers
- 6 Tension spring
- 7 Drill holes for different tensions



Mounting the tooth belt tensioner

The tooth belt tensioner (1) is mounted near the motor gear unit (9). It prevents the tooth belt from jumping. The tooth belt (8) is guided **inside** the rollers (5).



Changing the tooth-belt tension

- Suspend the tension springs (6) in different drill holes (7).
- Change the distance between the tooth belt tensioner (1) and the motor gear unit (9).

Tooth-belt tensioner when using an inside-running night-time closer

To conserve space, when using an inside-running night-time closer, the exterior lever must remain locked with countersunk head screw (4).

The sliding blocks (3) may be used for subsequent installation.

Tooth-belt tensioner when using an outside-running night-time closer

When using an outside-running night-time closer, the countersunk head screw (4) that locks the lever can be removed. This allows both rollers to move dynamically and allows the tensioner to work more effectively in **both** directions (opening **and** closing the leaves).

Since the tooth-belt tensioner is attached here to the profile of the canopy panel, the appropriate sliding blocks (2) must be used to make it possible to install the sliding blocks if necessary.

5.6 Revolving door in all-glass version (TSA 325 NT GG)

5.6.1 Box dimensions

Building design	Dimensions (length x width x depth in mm)
Revolving door TSA 325 NT GG (with drive box)	1404 × 714 × 280
Building shell recess	1500 × 1000 × 300
Optional: Revolving door TSA 325 NT GG with drive box and externally mounted control box	900 × 900 × 280
Building shell recess	1000 × 1000 × 300

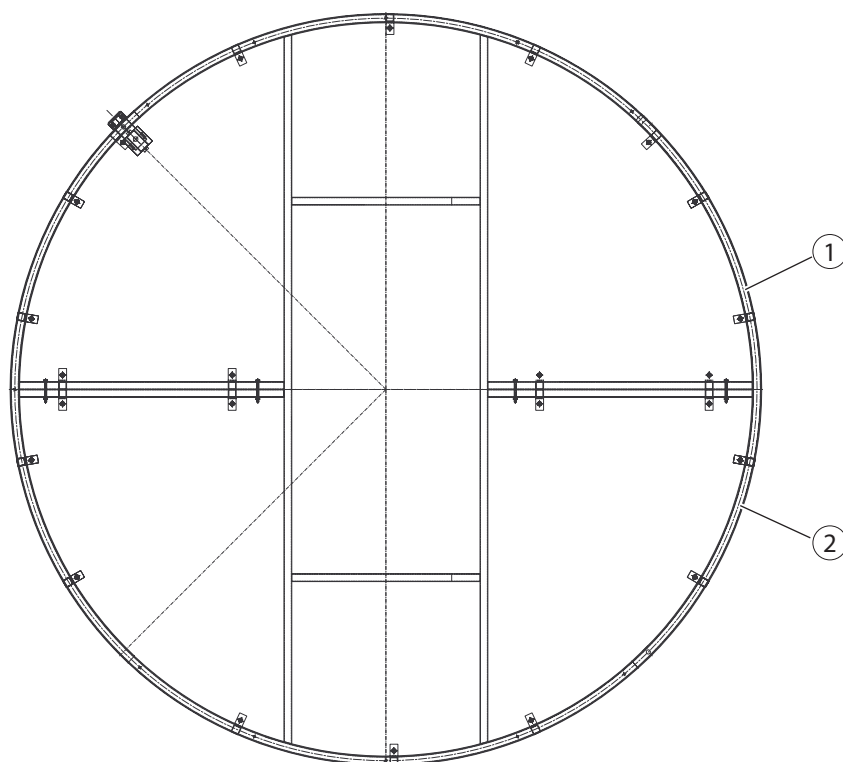


A depth of at least 60 mm for the cavity is sufficient at manual doors since no drive box is installed.

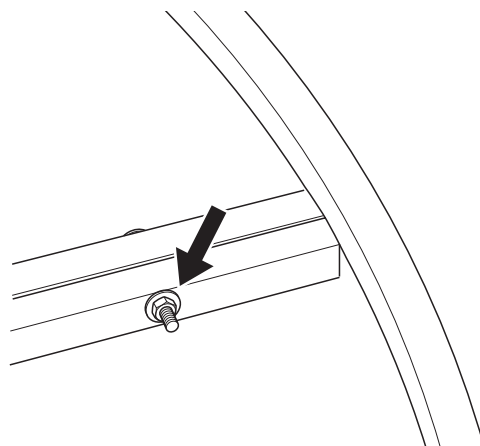
- When digging the cavity provide space for floor guide drainage and cable ducts.

5.6.2 Mounting the floor ring and drive box

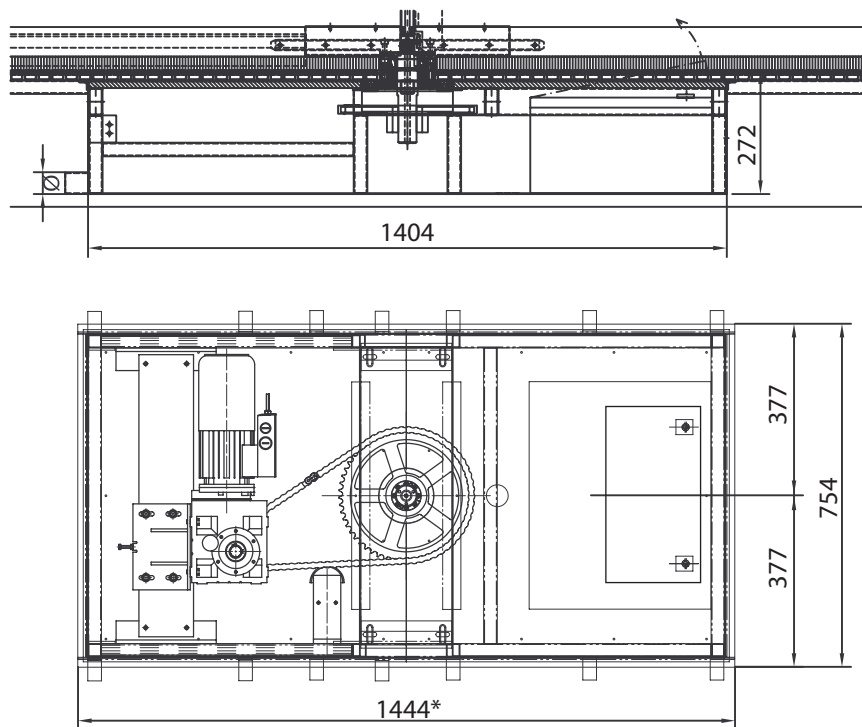
- Lay 2 floor ring halves (1) and (2) together.



- Screw the 2 floor ring halves together using screws, nuts and washers.



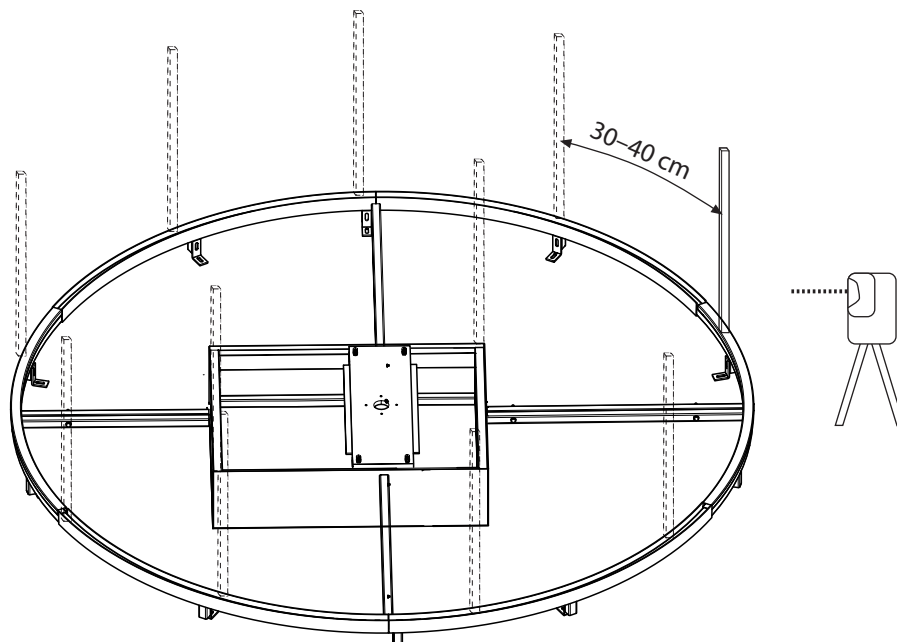
- Determine the position of the floor ring.
- Specify the position of the drive box and align it correctly.

Drive box dimensions

*) with angle frame

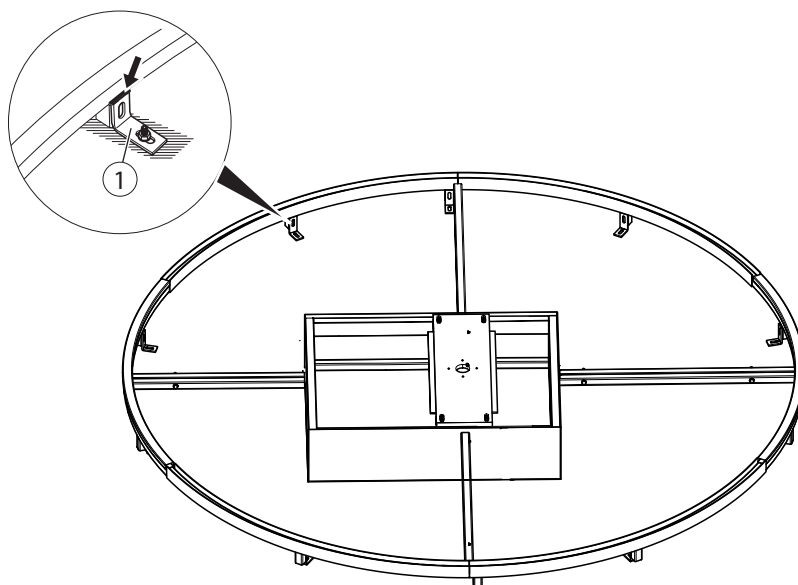
5.6.3 Aligning the floor ring

- ▶ Align the floor ring and drive box every 30–40 cm using a levelling device and underlay it.
- ▶ Align the drive box correctly.
The top edge of the drive box is 24 mm lower than the top edge of the floor ring.



5.6.4 Screwing the floor ring together

- ▶ Screw the levelled floor ring and drive box to the unfinished floor using the brackets (3).
- ▶ Weld the bracket (3) to the base of the floor ring or of the drive box.



- ▶ The drive box and the guides for the night-time closer in the floor have to be connected to a functioning floor guide drainage by means of the supplied empty pipes (approx. 10 m).

- ▶ Lay the empty pipe for the cabling of the sensor equipment and power supply of the drive.



- ▶ Before filling the hole with screed check whether the corresponding conduits for all the required cables have been laid and the connected floor guide drainage functions.

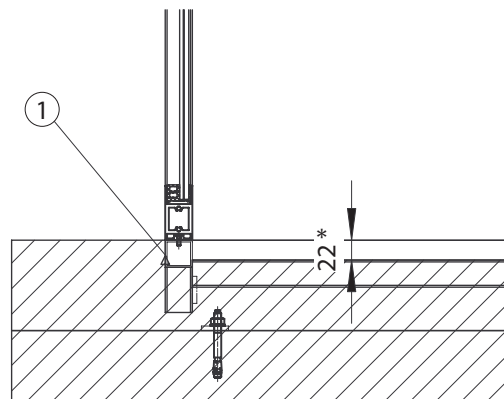
- ▶ Close the drive box with the supplied stainless steel panels.

5.6.5 Fill the floor ring space with screed.



- ▶ Take the screed height in the floor ring into account.
The dimension of 22 mm in the drawing below refers to the standard floor entrance mats of GEZE.
- GEZE recommends sealing the surface of the screed in indoor areas.

- ▶ Pour screed into the drive box and floor ring (1).



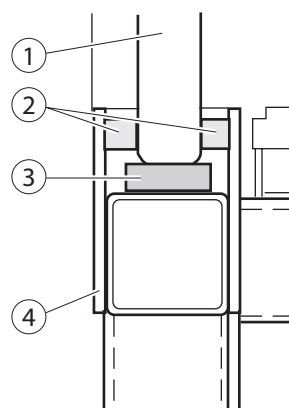
* Refers to the standard GEZE entrance mats

5.6.6 Installing the drive

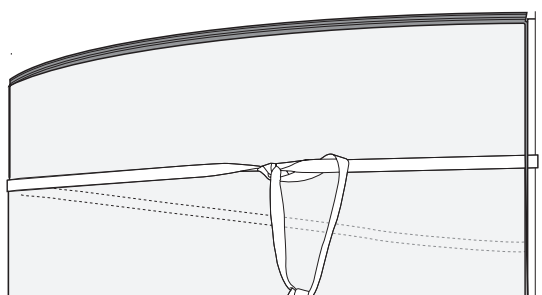
- ▶ Open the stainless steel panel of the drive.
- ▶ Install and connect the motor and drive.
- ▶ Realize the cabling to the sensors.
- ▶ Use the valid wiring diagram for the wiring and future commissioning.

5.6.7 Inserting side elements

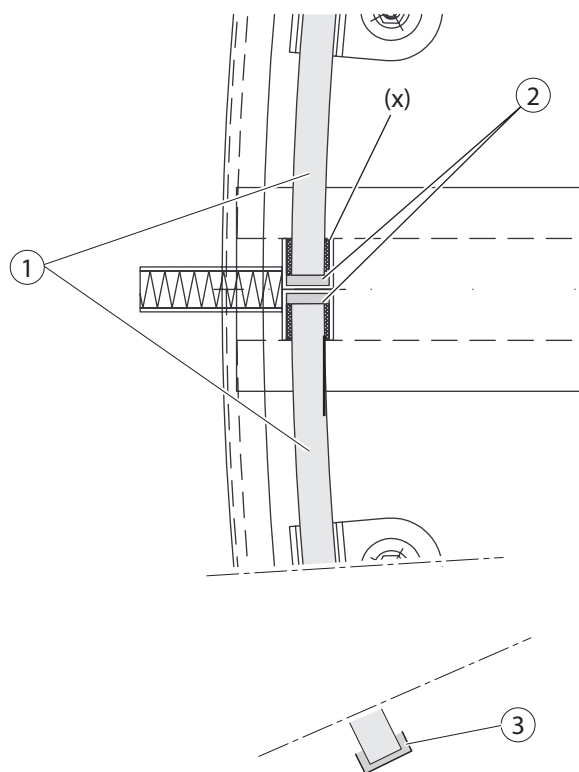
- ▶ Insert the 4 mm high glazing packers (3).
- ▶ Place the side elements (1) on the floor ring (4).



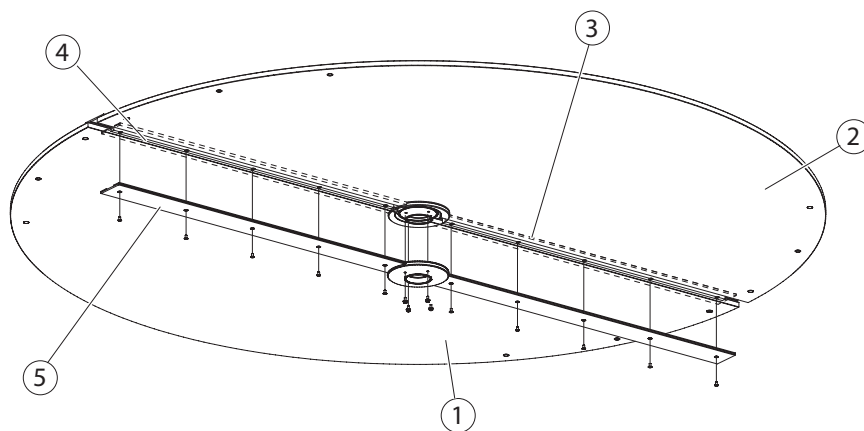
- ▶ Secure the inserted side elements against falling over by using a strap in the upper third.
- ▶ Align the side elements exactly.
- ▶ After mounting has been completed, seal the open gaps (2).



- Support the side elements (1) in the H profile with glazing packers (2) at the joint.
- Ensure that the gap (x) is a minimum of 2–3 mm wide on the inside in order to ensure sufficient sealing.
- Use a sufficient amount of silicone (3) on the joint to the post (2–3 mm).

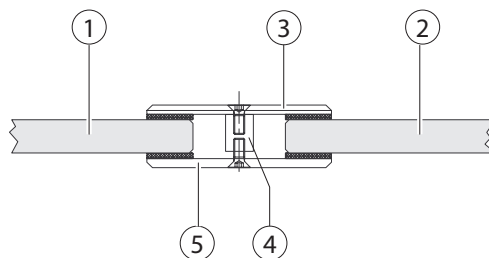


5.6.8 Placing in the ceiling glasses

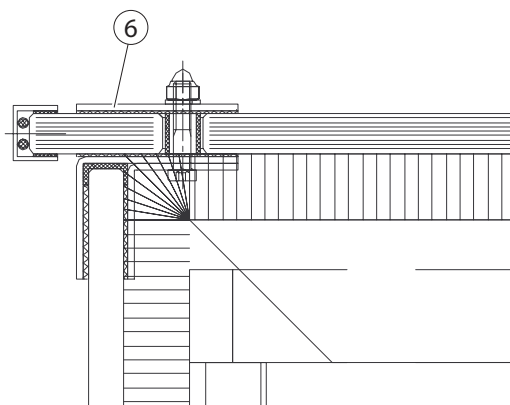


- 1 First ceiling glass
- 2 Second ceiling glass
- 3 Top part clamping profile
- 4 Spacer
- 5 Bottom part clamping profile

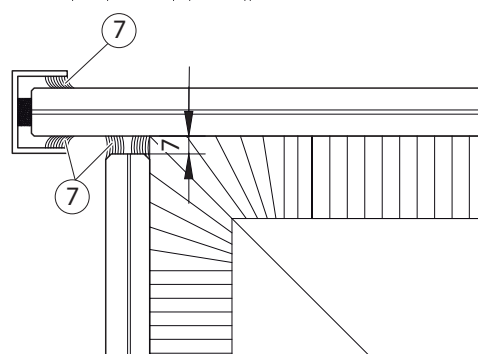
- Place the first ceiling glass (1) on the vertical glass side panels.
- Screw the top clamping profile (3) into the spacer piece (4).
- Place the second ceiling glass (2) with the top part of the clamping profile (3) between the glass halves on the vertical glass side panels and screw in loosely.



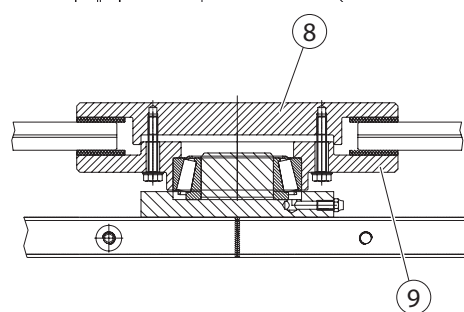
- Loosely screw in the bracket holders (6).
4–6 bracket holders are mounted per ceiling glass (see below).



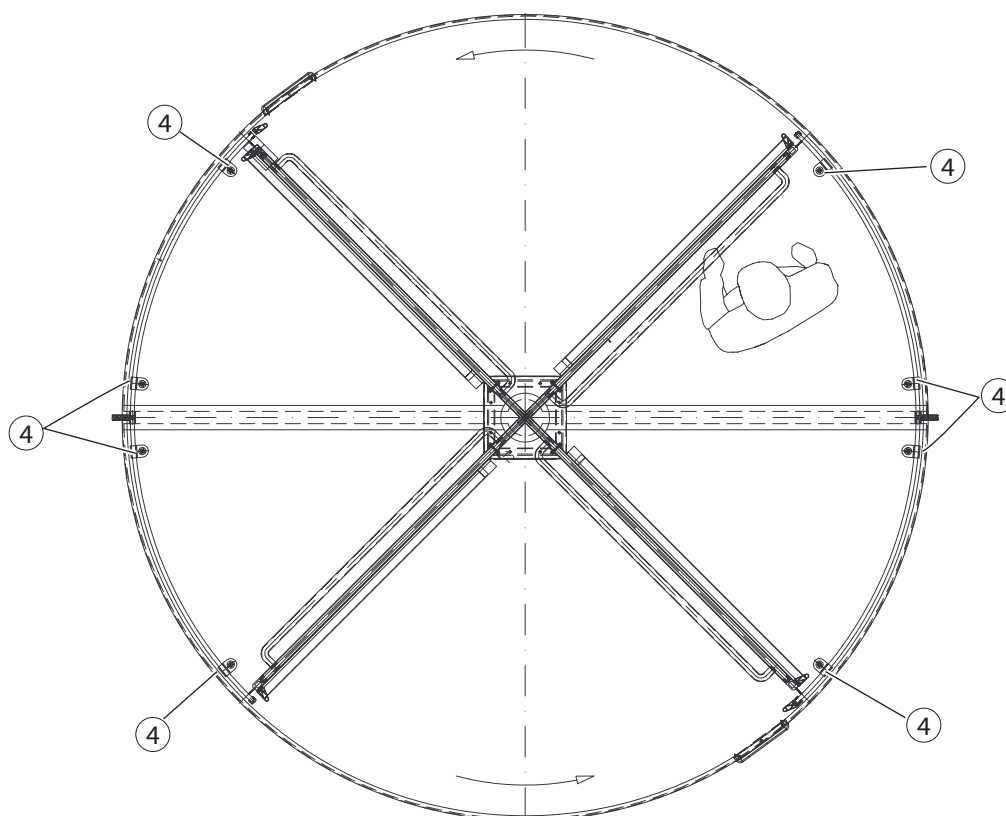
- Seal the gap between the side panel and drum wall with clear silicone (7).



- Screw the ceiling bearing shells (8) into the top part of the clamping profile and align the mounting to the bottom floor-mounted pivot bearing (9).
- After aligning, screw all bracket holders firmly to the clamping profile.

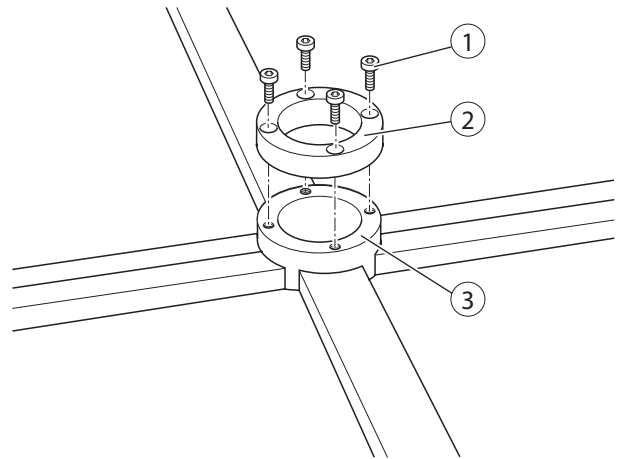


Bracket retainers (4) in the top view:

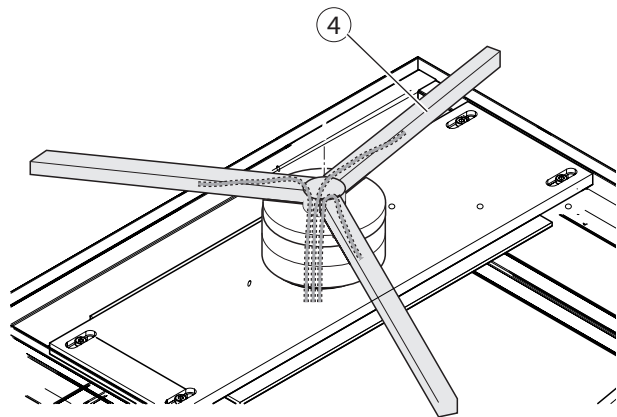


5.6.9 Mounting the pivot bearing and turnstile below

- ▶ Screw the bearing ring (2) to the bearing plate (3) using the 4 screws (1).
- ▶ Grease the bearing housings of the bearing ring well.



- ▶ Mount the turnstile (4) on the pivot bearing.

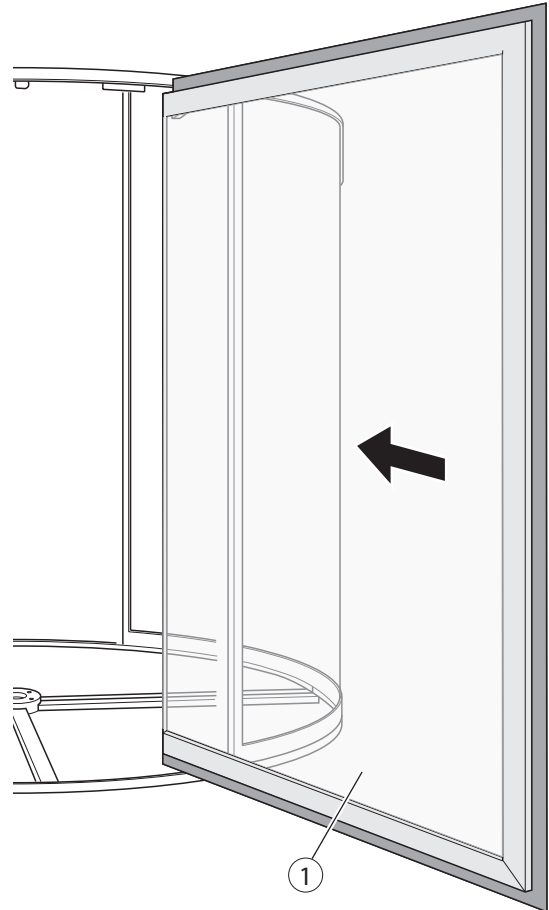


5.6.10 Inserting the door leaves

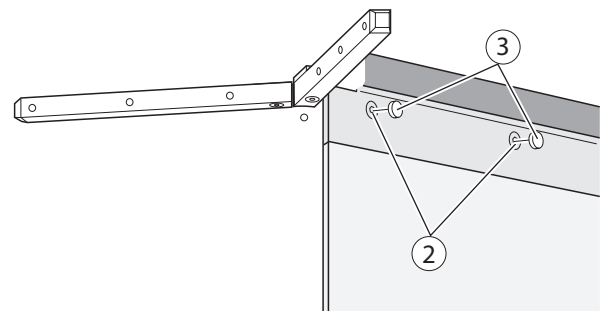
**WARNING!****Danger of injury through falling top turnstile!**

- ▶ Secure the upper turnstile against falling down before inserting the first door leaf.

- ▶ Slide the door leaf (1) onto the bars of the turnstile and screw them on.

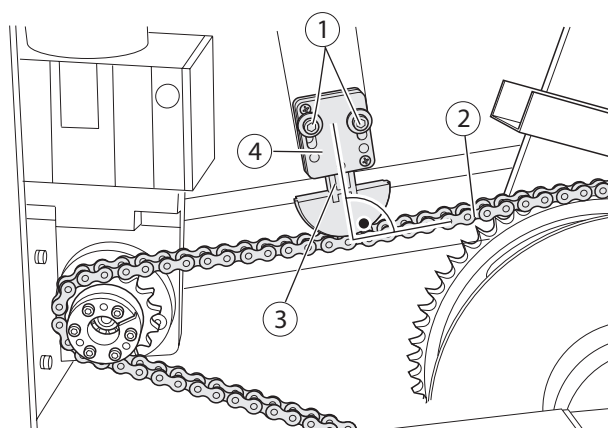


- ▶ Screw the door leaf to the upper turnstile with screws (2).
- ▶ Insert the 2 cover caps (3) (accessories).



5.6.11 Place the chain and set the chain tensioner

- ▶ Loosen the 2 screws (1) at the chain tensioner (4).
- ▶ Tighten the drive chain (2).
- The indicator (3) must be positioned in the green area.
- ▶ Place the chain tensioner between the chain wheels and vertically to the chain.
- ▶ Tighten the 2 screws (1) again.

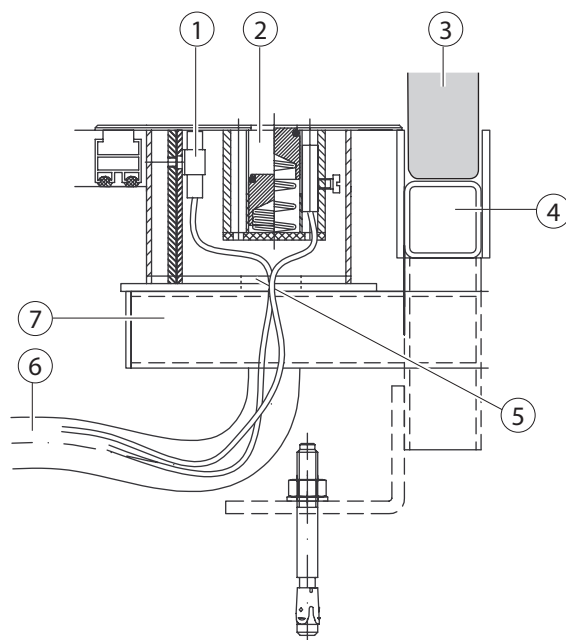


5.6.12 Wiring the door system

- ▶ Wire the door system in accordance with the wiring diagram.

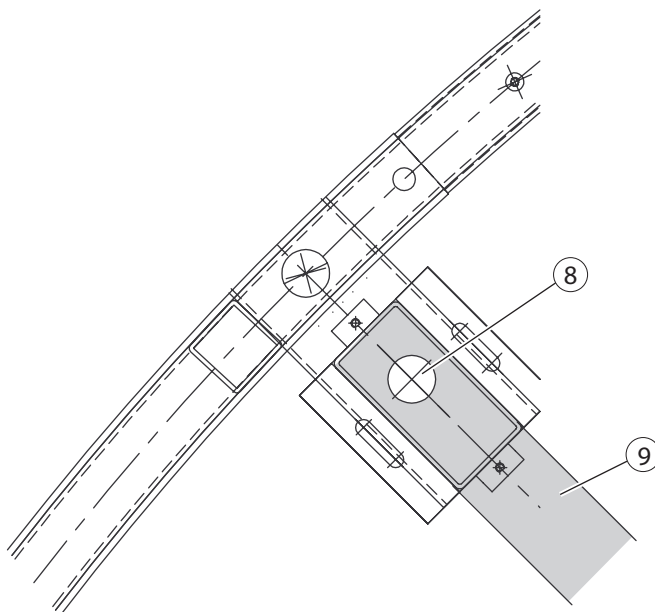
Vertical section of the side element and locking point:

- 1 Init sensor for the zero point
- 2 Opening for the locking system
- 3 Fixed panel
- 4 Floor ring
- 5 Hole for cable penetration
- 6 Empty pipe D = 20 mm
- 7 Cable routing



Position of the locking system at the floor ring:

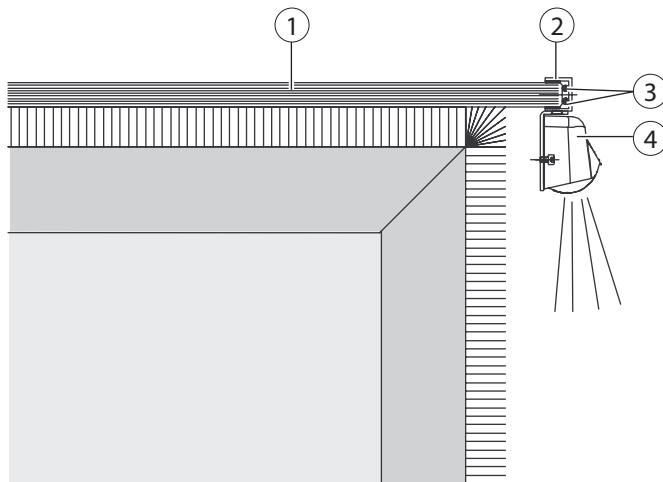
- 8 Hole for locking bar
- 9 Door leaf



5.6.13 Cabling and fastening the sensor equipment



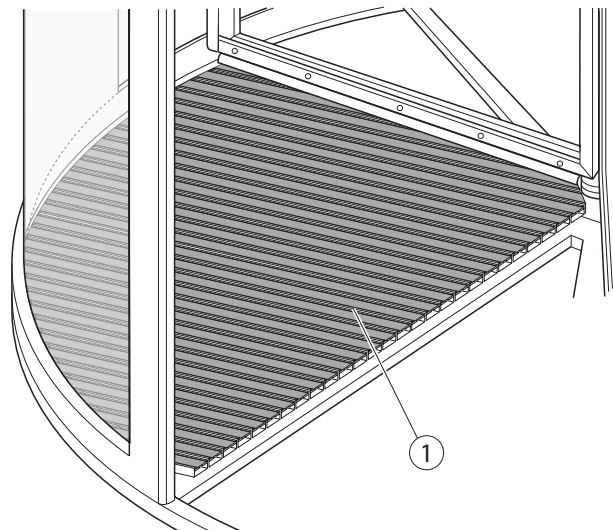
The cables (3) of the radar movement detector and of the sensor (4) for the anterior post safety can be hidden in the mounted profile (2) of the ceiling glasses (1) and threaded downwards through the post.



5.6.14 Install the entrance mat



- Close the sheeting of the drive box after commissioning has been completed.
- Install the entrance mats (1) in accordance with the installation plan.



5.6.15 Mounting the manual night-time closer outdoors

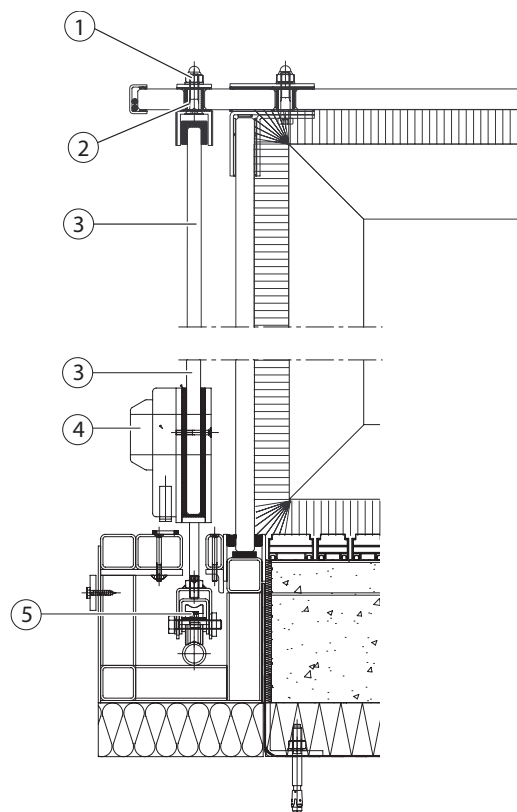


When equipped with a night-time closer, the ceiling glass is cut larger on the outside and has holes so that the guide rail can be screwed on at the top.

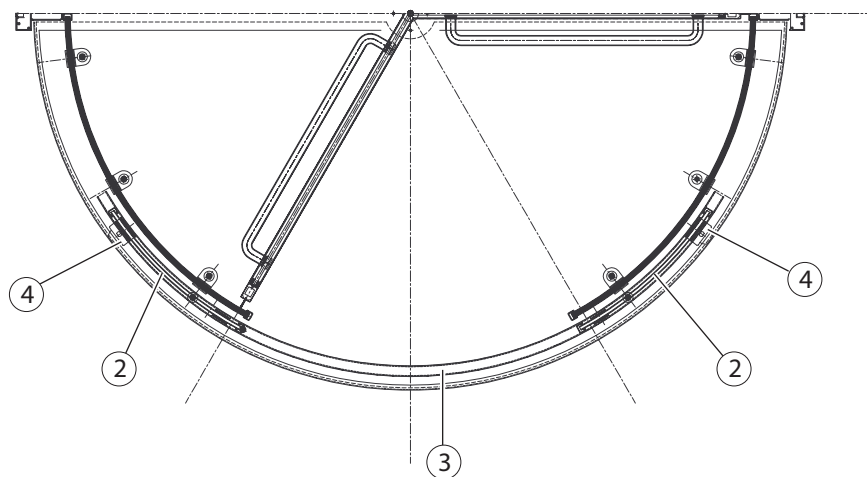
- ▶ Remove some roller carriages and sickle plates.
- ▶ Insert roller carriages and adjust to the door height and alignment on the roller carriage using an adjustment screw.
- ▶ Mount the sickle plates.

Vertical section of the ceiling glass with guide for the night-time closer:

- 1 Screw fitting
- 2 Guide rail
- 3 Night-time closer glass door
- 4 Floor lock
- 5 Night-time closer guide



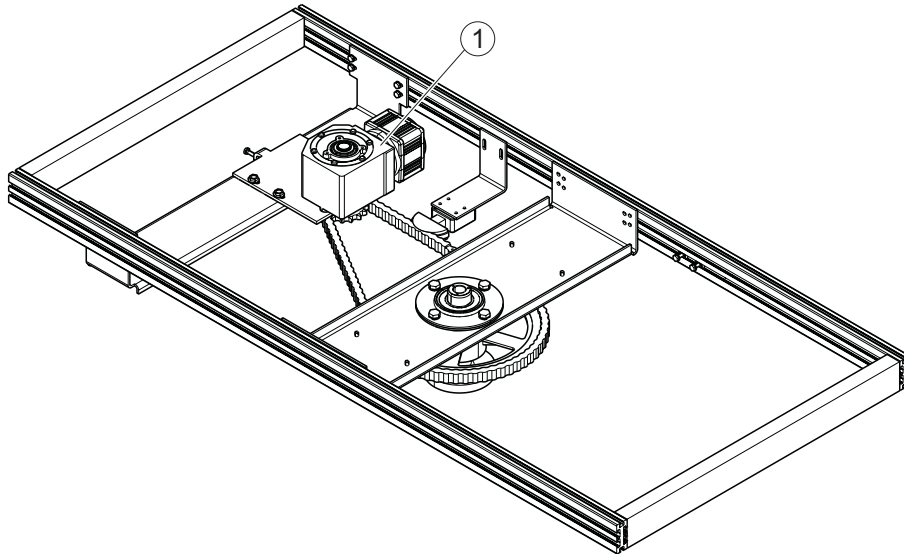
Horizontal section of the night-time closer:



5.7 Speed limiter unit for TSA 325 NT

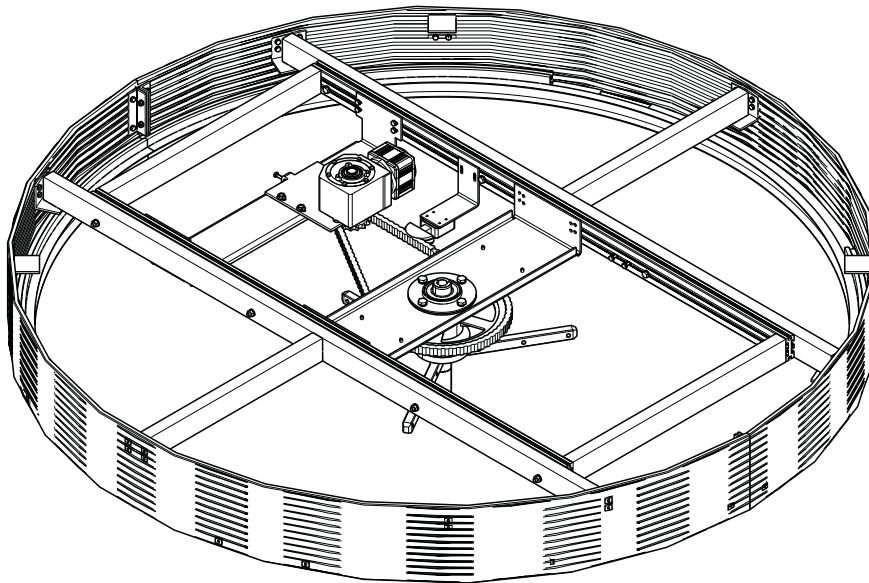


The speed limiter unit (mat. no. 157585) is pre-mounted as shown below.
The chain wheel and chain are placed loosely.

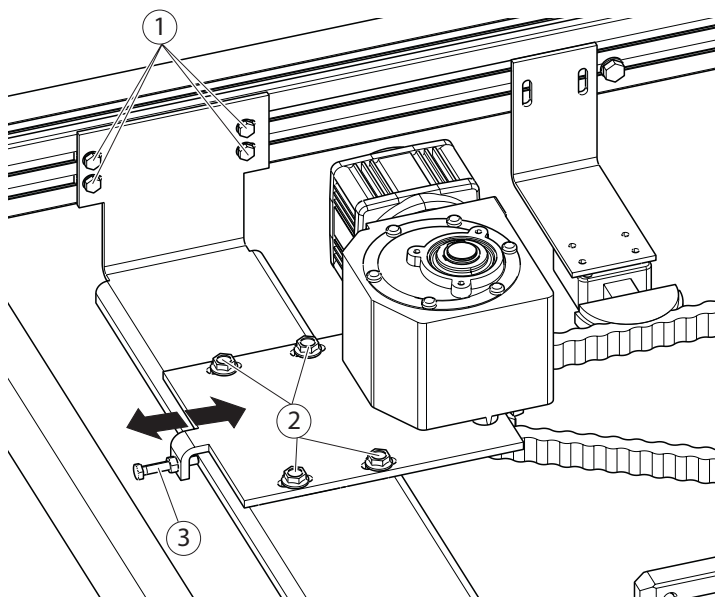


1 Speed limiter with chain, chain wheel and mounting plate

The speed limiter unit can be installed in a 200 mm high ceiling, similar to a drive unit.



Setting the speed limiter

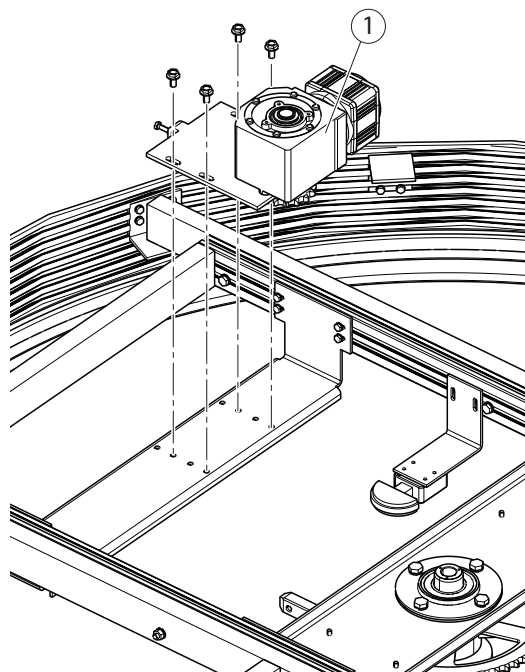


- ▶ Install the chain wheel and chain.
- ▶ Loosen the screws (1) and roughly position the speed limiter.
- ▶ Loosen the clamping screws (2).
- ▶ Tension the chain slightly using the tensioning screw (3).
- ▶ Tighten the clamping screws (2).

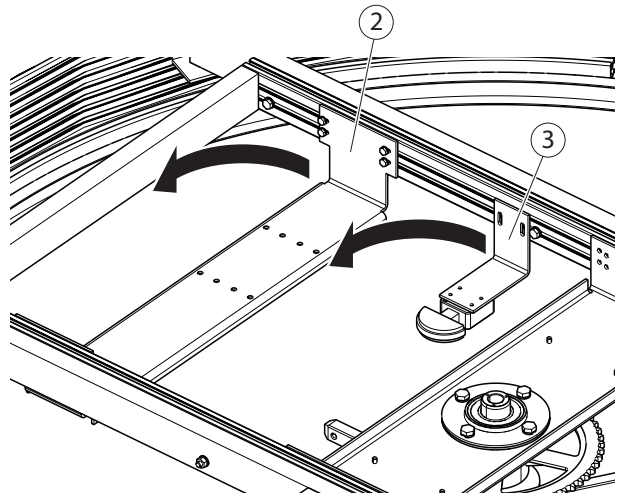
Replacing the speed limiter with a motor gear unit

The speed limiter can be replaced if desired with a motor gear unit.

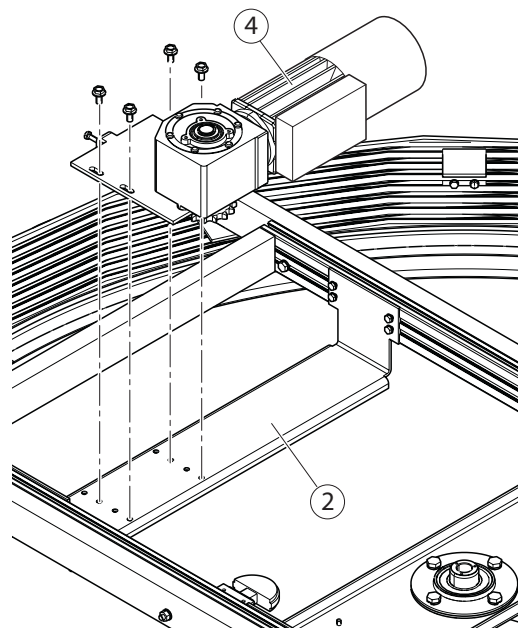
- ▶ Unscrew the speed limiter (1).



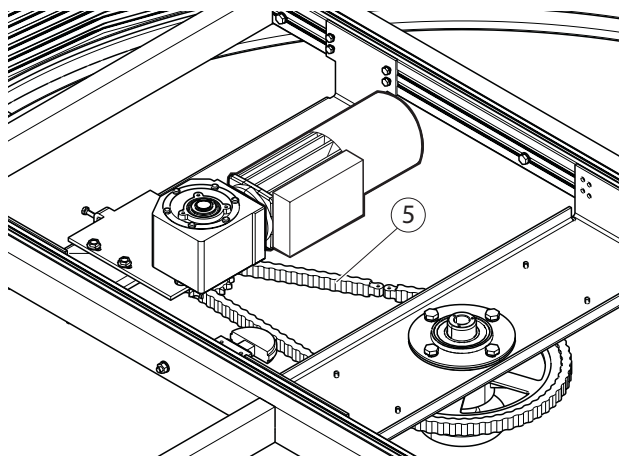
- Turn the base plate motor (2) and chain tensioner (3).



- Screw the motor gear unit (4) with speed limiter to the base plate (2).



- Place the chain (5) and set the speed limiter (see previous page).

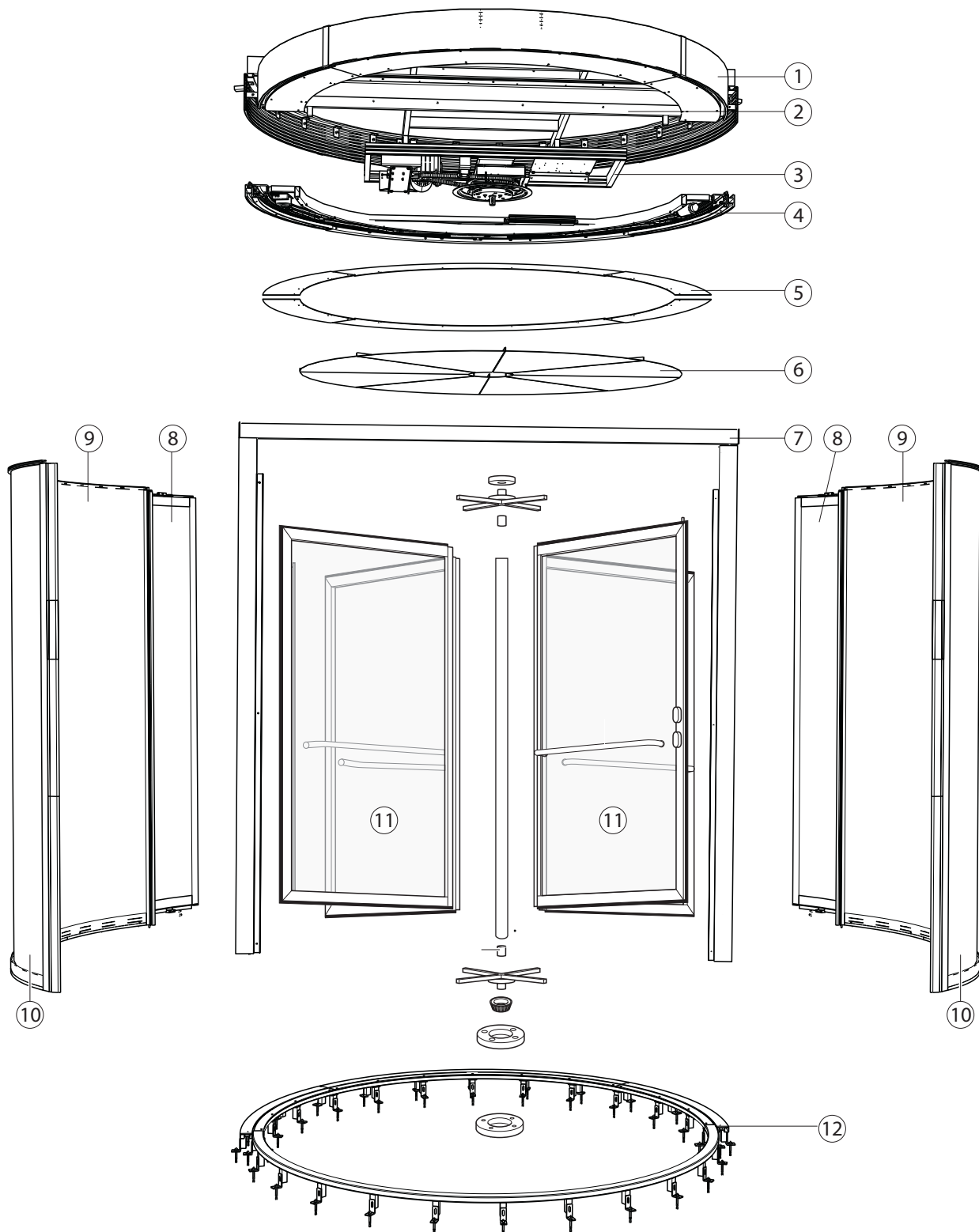


6 Revolving door TSA 325 NT RC 2

6.1 Assemblies and parts



Burglar-resistant doors are complete elements and require careful installation. The connecting walls/façades must have a structure that conforms to at least DIN EN 1627.



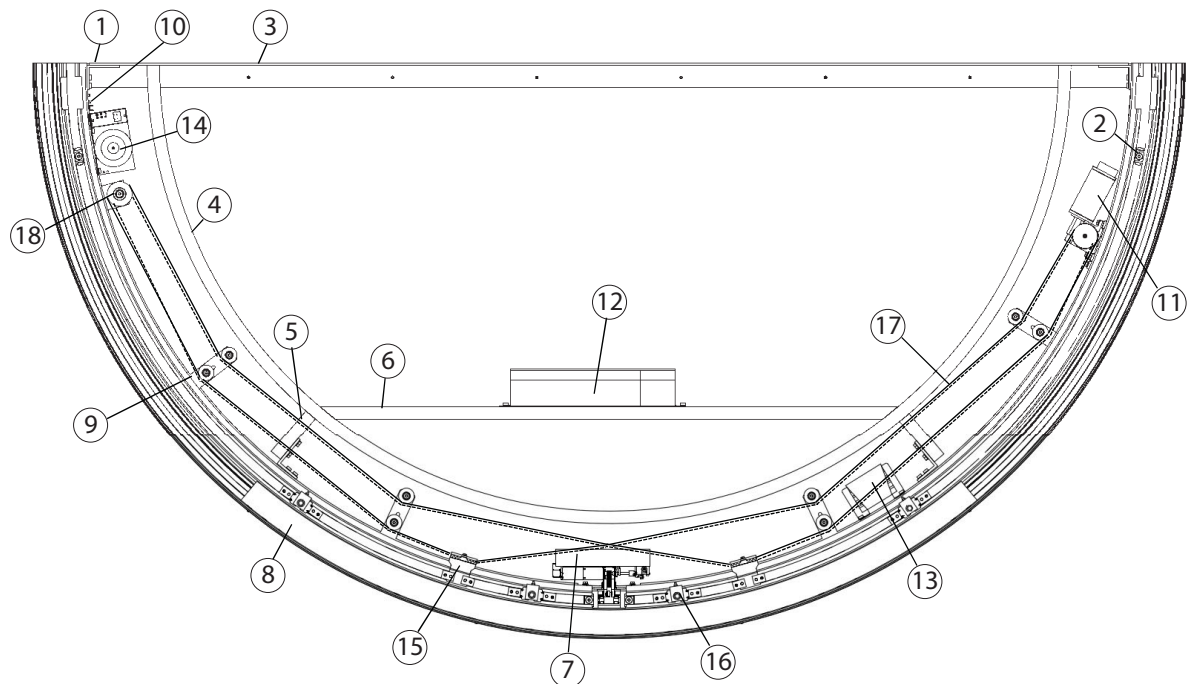
- 1 Ceiling
- 2 Ceiling base construction
- 3 Motor drive unit
- 4 LV drive unit

- 5 Sickle plate
- 6 Ceiling panel
- 7 Portal
- 8 Interior side panel

- 9 Exterior side panel
- 10 LV leaf
- 11 Side-hung casement
- 12 Floor ring

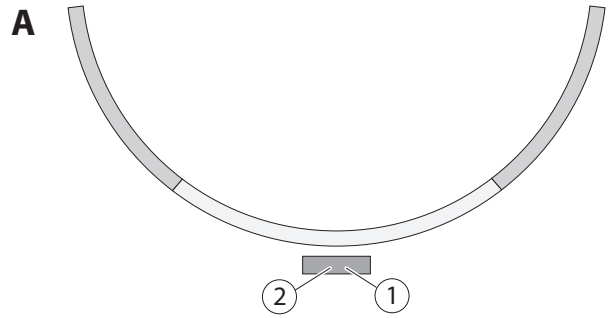
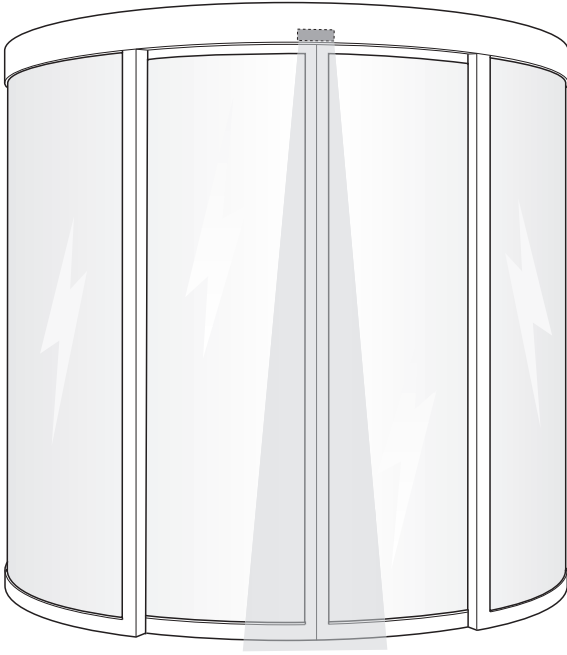
6.2 Revolving door TSA 325 NT RC 2

6.2.1 Night-time closer drive (AINV)



- | | | | |
|---|---------------------------|----|-----------------------|
| 1 | Connecting bracket | 10 | Earthing connection |
| 2 | Stop buffer | 11 | DCU 1 motor gear unit |
| 3 | Façade bracket | 12 | Control unit |
| 4 | Frame tube, inside | 13 | Rechargeable battery |
| 5 | Fastening tube | 14 | Transformer |
| 6 | Reinforcing brace ceiling | 15 | Driver |
| 7 | Rod locking unit | 16 | Roller carriage |
| 8 | Cover profile | 17 | Toothed belt |
| 9 | Pulley holder | 18 | Deflection pulley |

6.2.2 Safety sensor activation device – LV drive



A Sensor package for interior LV systems

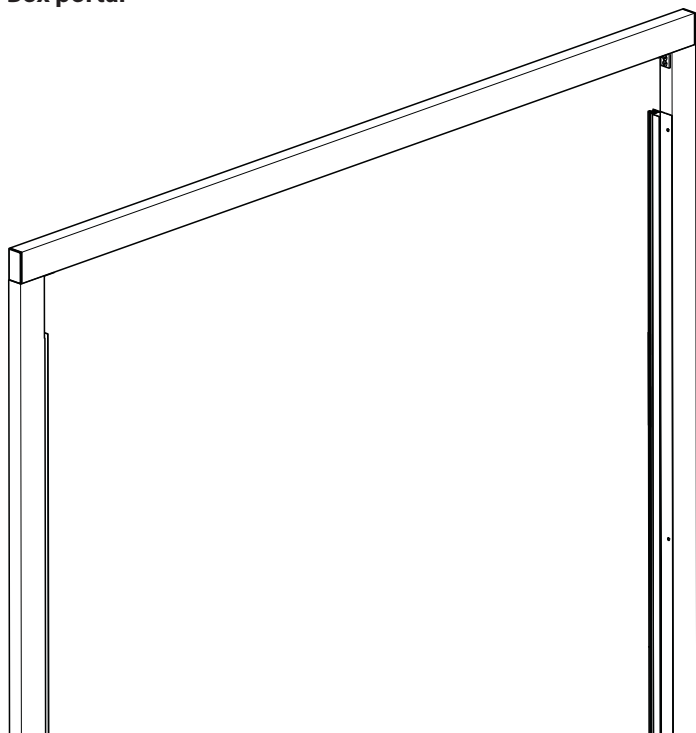
- 1 Rain cover to protect the light curtain outdoors (optional)
- 2 GC 339
Light curtain to protect the main closing edge for automatic night-time closers

6.2.3 Portals

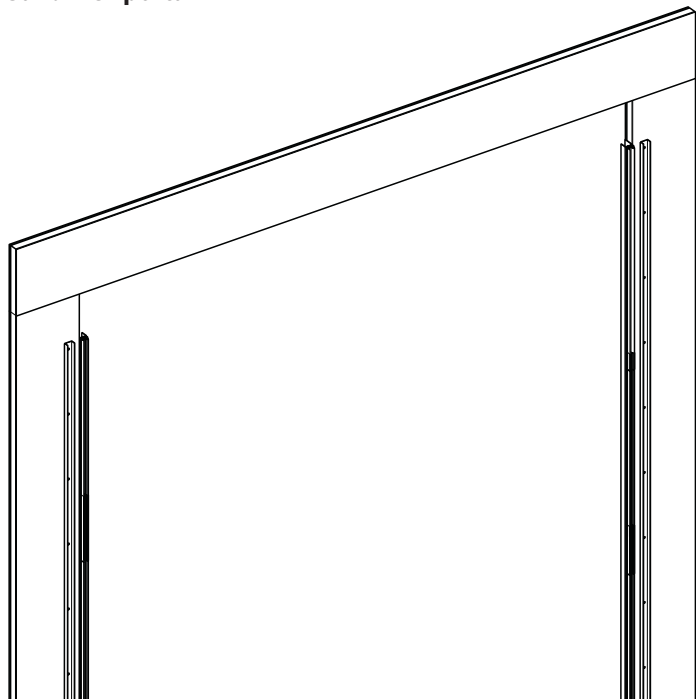
2 types of portals can be installed on the revolving door TSA 325 NT RC2:

- Box portal
- Sandwich portal

Box portal



Sandwich portal



6.3 Installing revolving door TSA 325 NT RC 2



The installation of revolving door TSA 325 NT RC 2 is the same in many respects as the installation of revolving door TSA 325 NT. This section describes the installation steps that differ from installation of revolving door TSA 325 NT.

- 6.3.1 Mounting the floor ring
see section 4.2.1 Mounting the floor ring on page 8
- 6.3.2 Aligning the floor ring
see section 4.2.2 Aligning the floor ring on page 9
- 6.3.3 Fastening the floor ring to the subsurface
see section 4.2.3 Fastening the floor ring to the subsurface on page 10
- 6.3.4 Filling the floor ring space with screed.



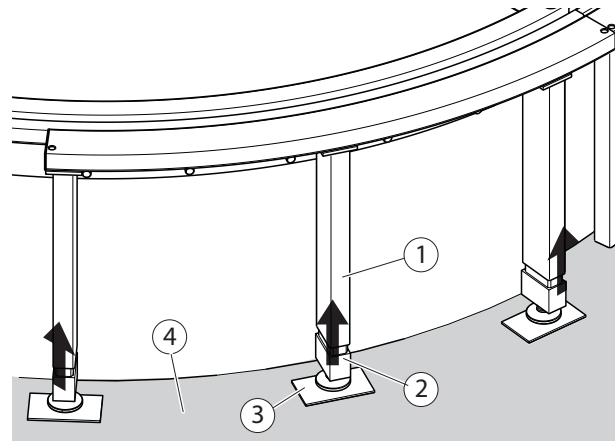
► Before pouring the screed, ensure that the bases are installed and the floor ring is aligned.

Mounting the bases



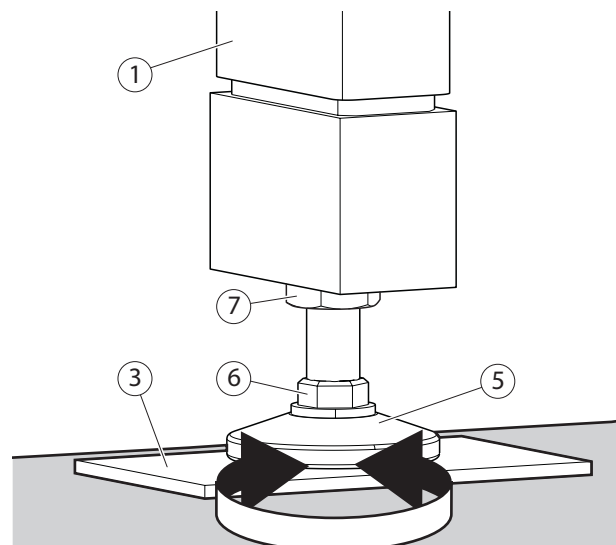
A flange may be used as an option for the version with floor ring and bases.

- Install the sealing sheet (4).
- Insert the bases (2) into the square profile (1) from below.
- Place the bases (3) below the base plate.



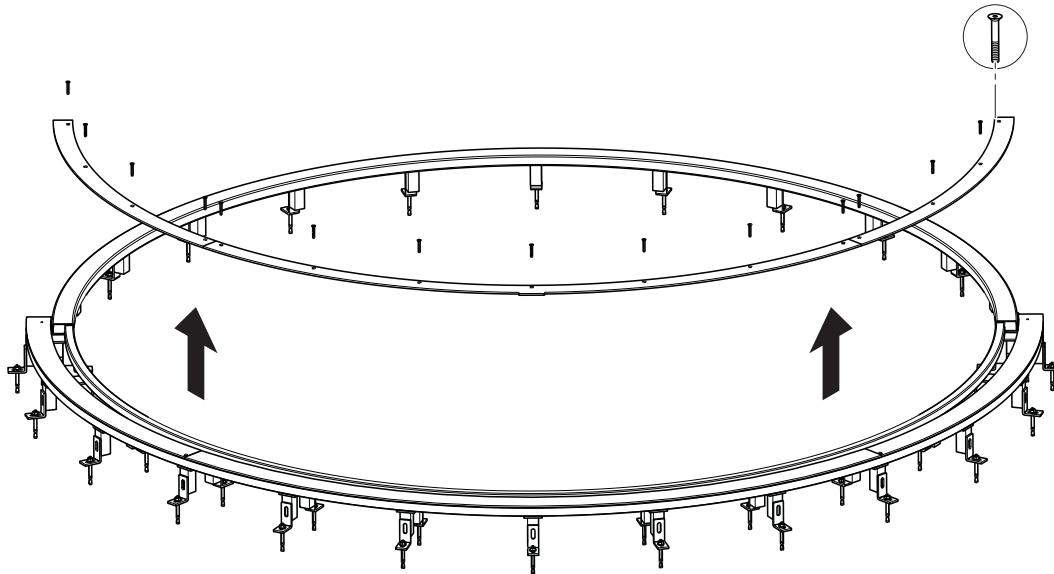
Adjusting the bases

- Unscrew the base using the hex nut (6) until the base is standing on the base plate (3) and supporting the top square pipe (1).
- Once this is complete:
- Tighten the lock nut (7) using an open-end spanner.
 - Complete the settings for all floor ring bases.



- Fill the floor ring space with screed.

6.3.5 Removing the sickle plates



6.3.6 Mounting the ceiling canopy

see section 4.2.5 Installation without floor ring on page 11

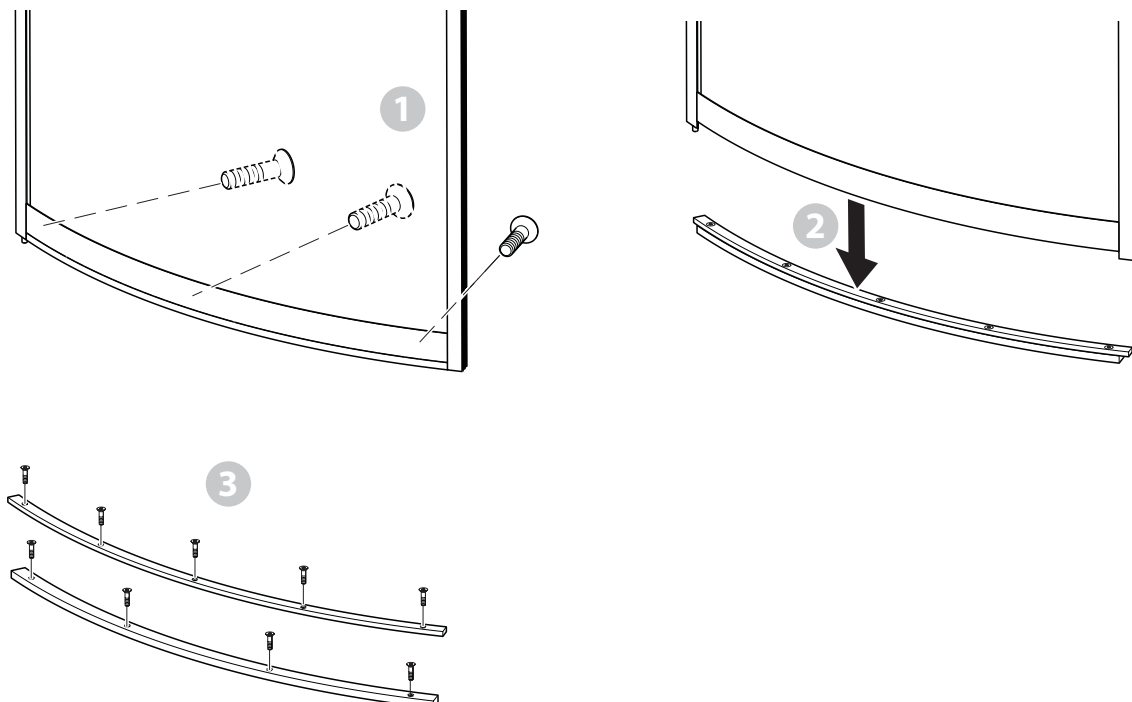
6.3.7 Mounting the drive unit

see section 4.2.7 Mounting the drive unit on page 14

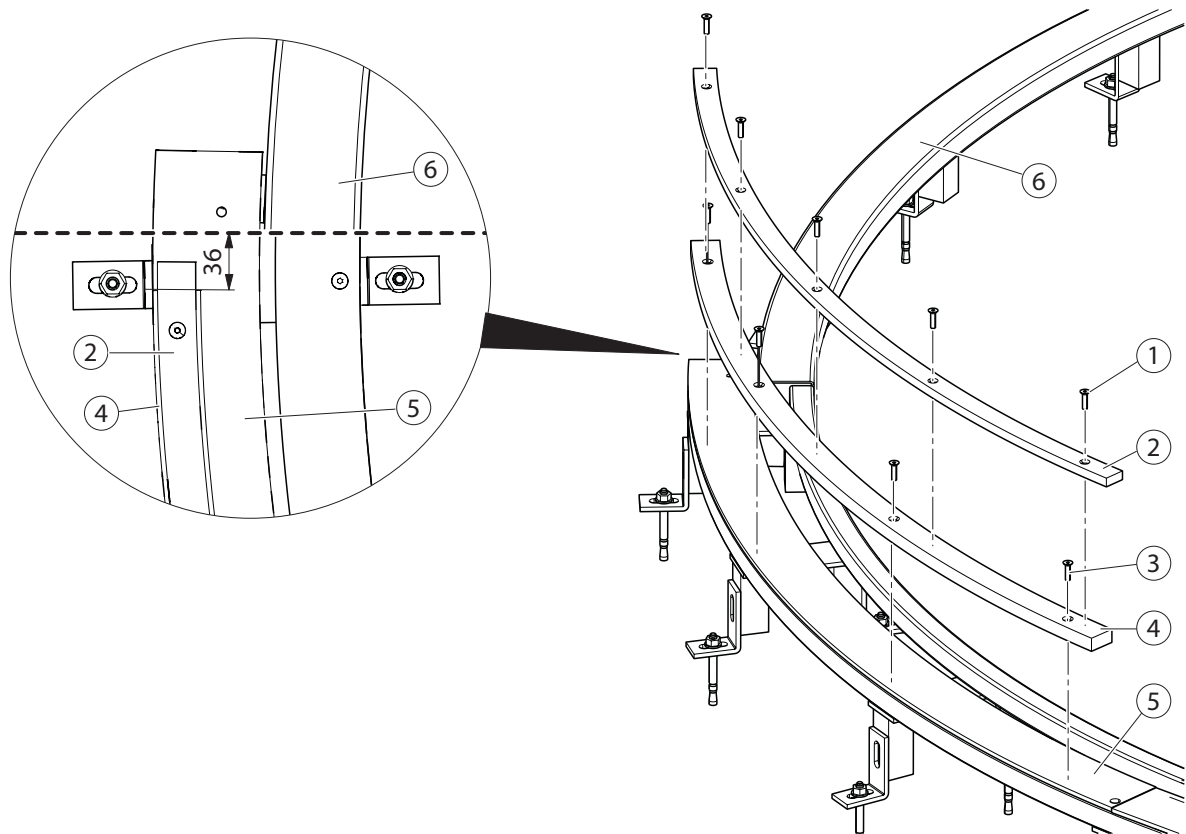
6.3.8 Placing blocks for side element profiles

see section 4.2.8 Lifting the ceiling canopy on page 15

6.3.9 Loosening the floor strips from the RC 2 outside side panel



6.3.10 Attaching the floor strips from the RC 2 outside side panels to the outside of the floor ring



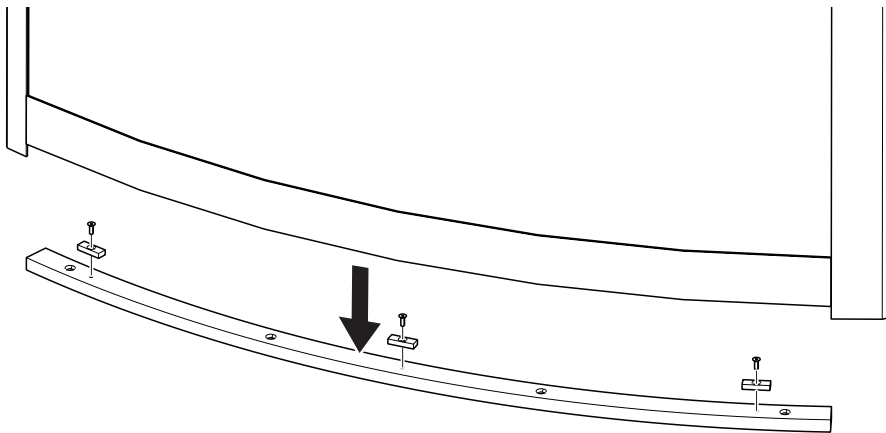
- 1 M5 × 20 countersunk head screw
- 2 Upper floor strip
- 3 M5 × 20 countersunk head screw
- 4 Bottom floor strip
- 5 Outside floor ring
- 6 Inside floor ring

- Set the lower floor strip (4) on the outside floor ring (5) so that the outer edge of the floor strip is flush with the outer floor ring.
- Attach adhesive seals under the external side panels and also under the profiles to seal against non-pressurised water.

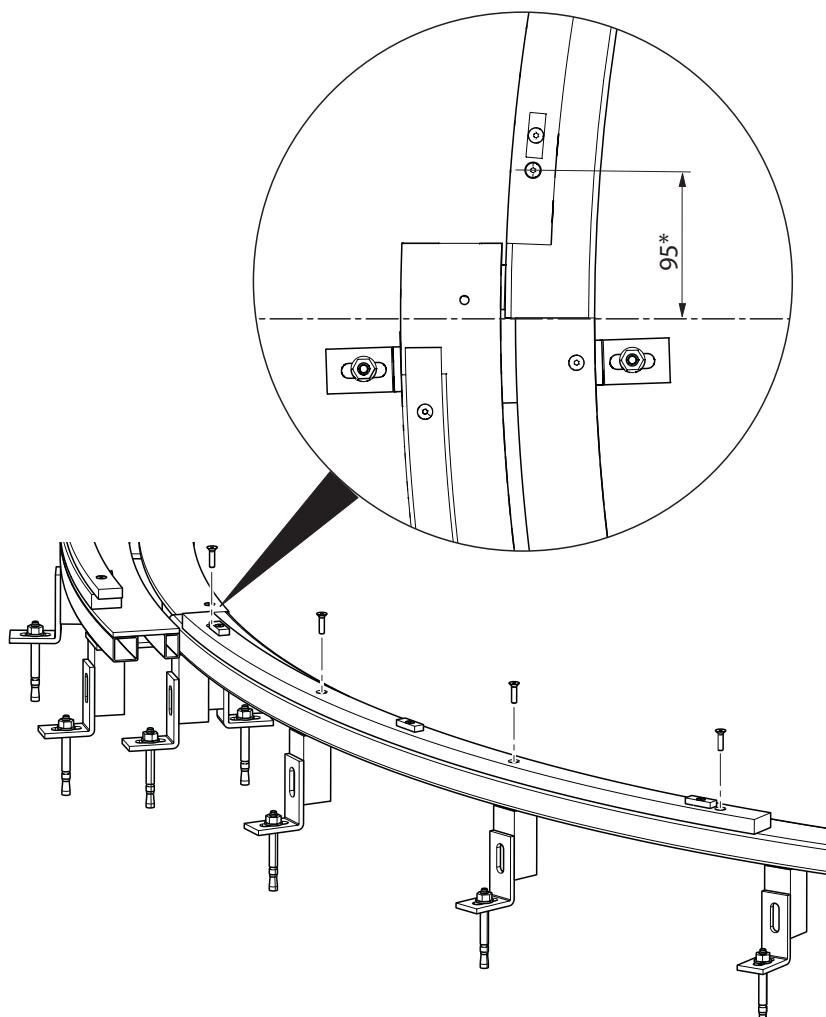
6.3.11 Loosening the floor strips and blocks from the inside RC 2 side panel



Optionally, cylinder head screws with a head diameter of 10 mm (M6 DIN 912) can be used instead of the blocks.



6.3.12 Attaching the floor strips from the RC 2 inside side panels to the floor ring



* The size depends on the portal width.
The size will be 95 mm for a portal width of 50 mm.

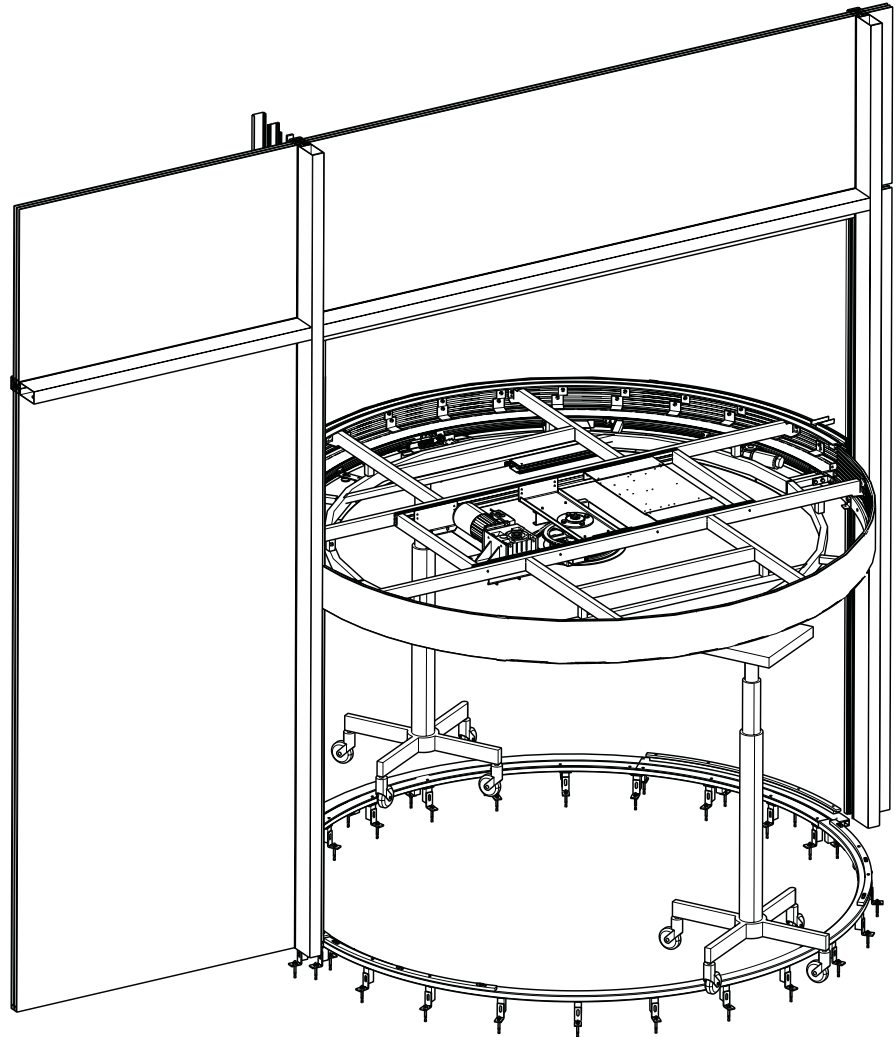
6.3.13 Lifting the ceiling canopy

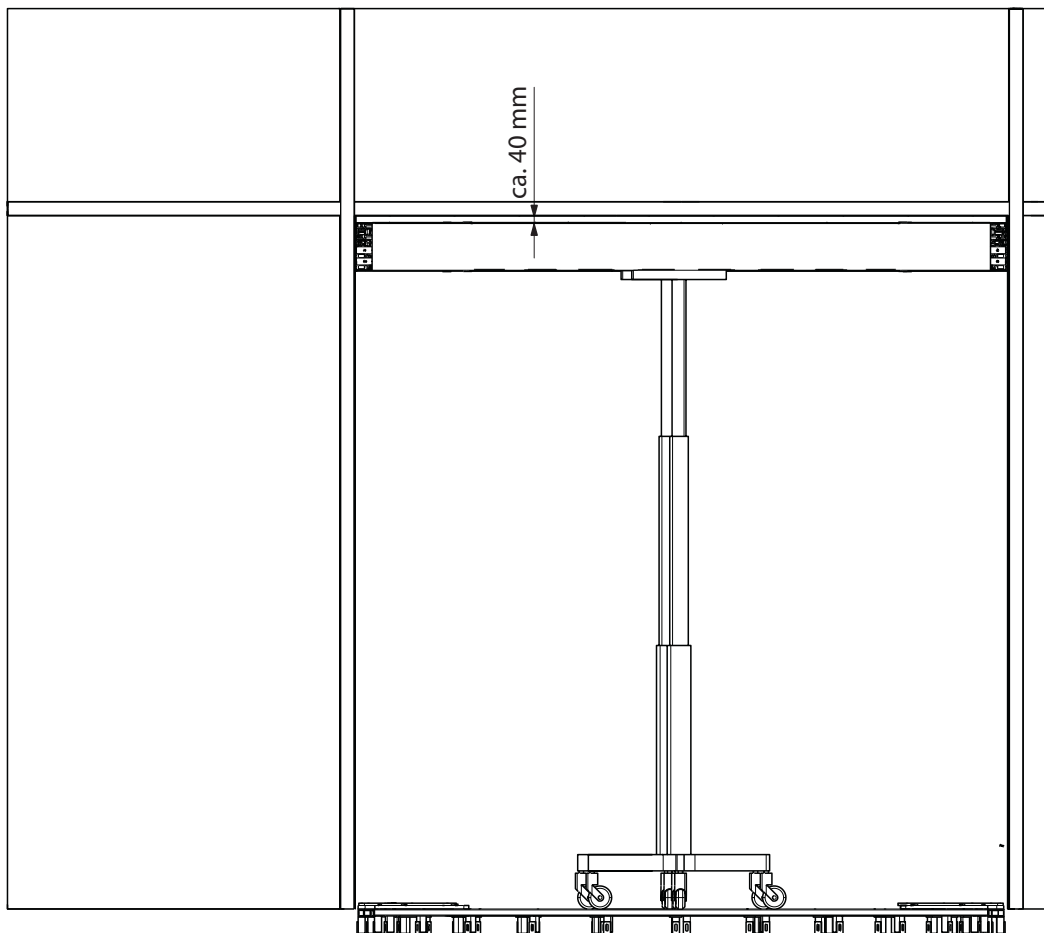
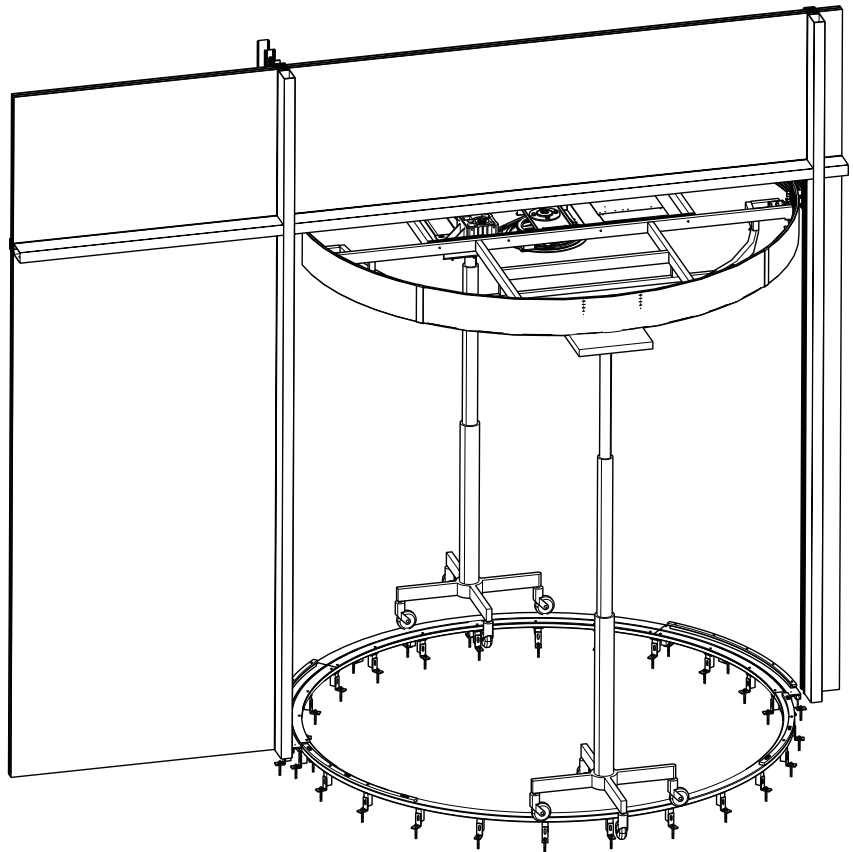
**WARNING!**

The ceiling canopy is very heavy (approx. 200 kg).

Risk of injury due to falling ceiling canopy.

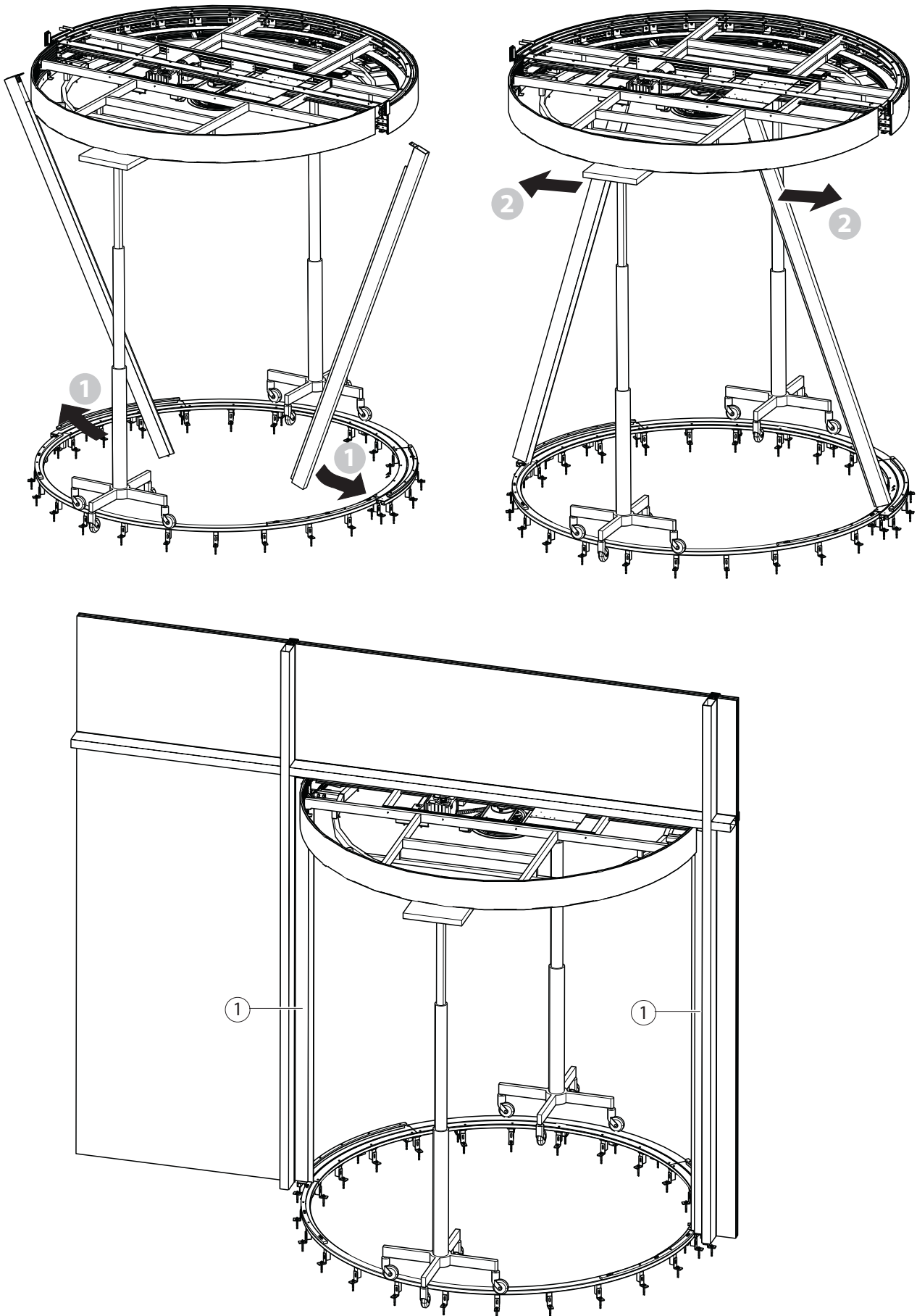
- ▶ Only lift the ceiling canopy by means of suitable aids (e.g. pneumatic press).
- ▶ Do not stand under the raised ceiling ring.
- ▶ Check the weight and weight distribution in the ceiling construction before lifting!
- ▶ Use lifting tools adapted to the weight of the ceiling construction.





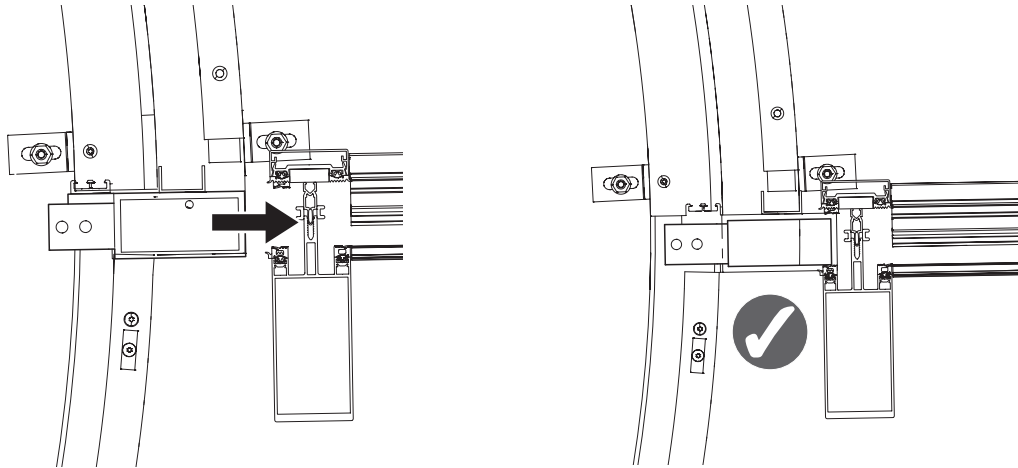
- Lift the canopy approx. 40 mm higher than the passage height.

6.3.14 Inserting the portal side panels in the floor ring (with bolts, mounted at the factory)

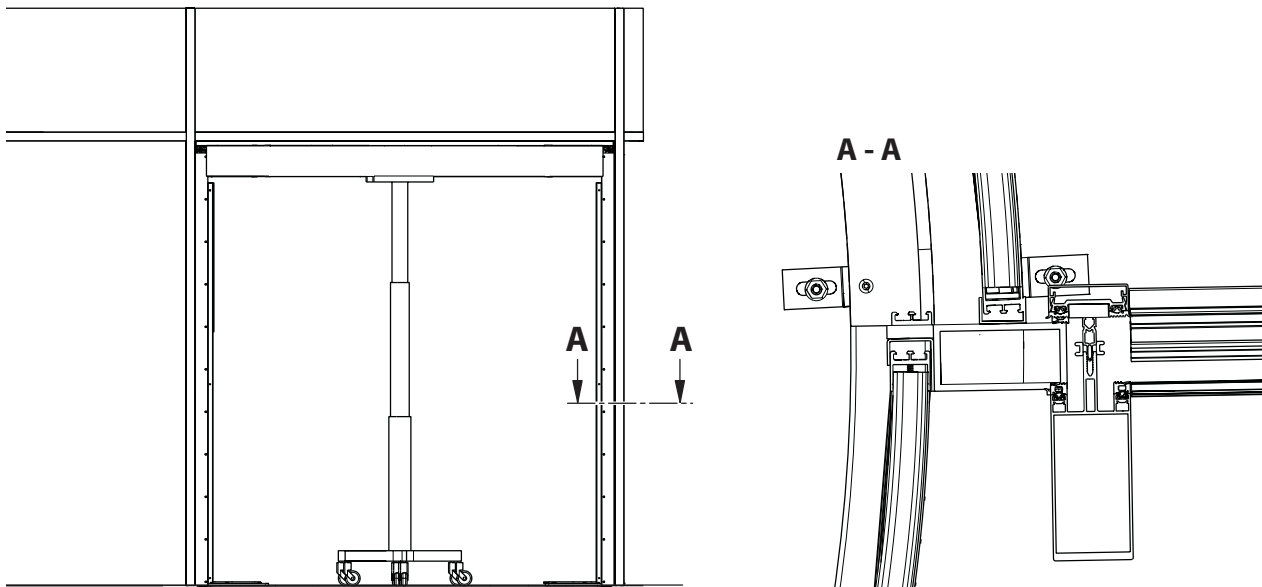


► Hold the portal side elements (1) in place.

6.3.15 Inserting the portal side elements into the mullion and transom façade

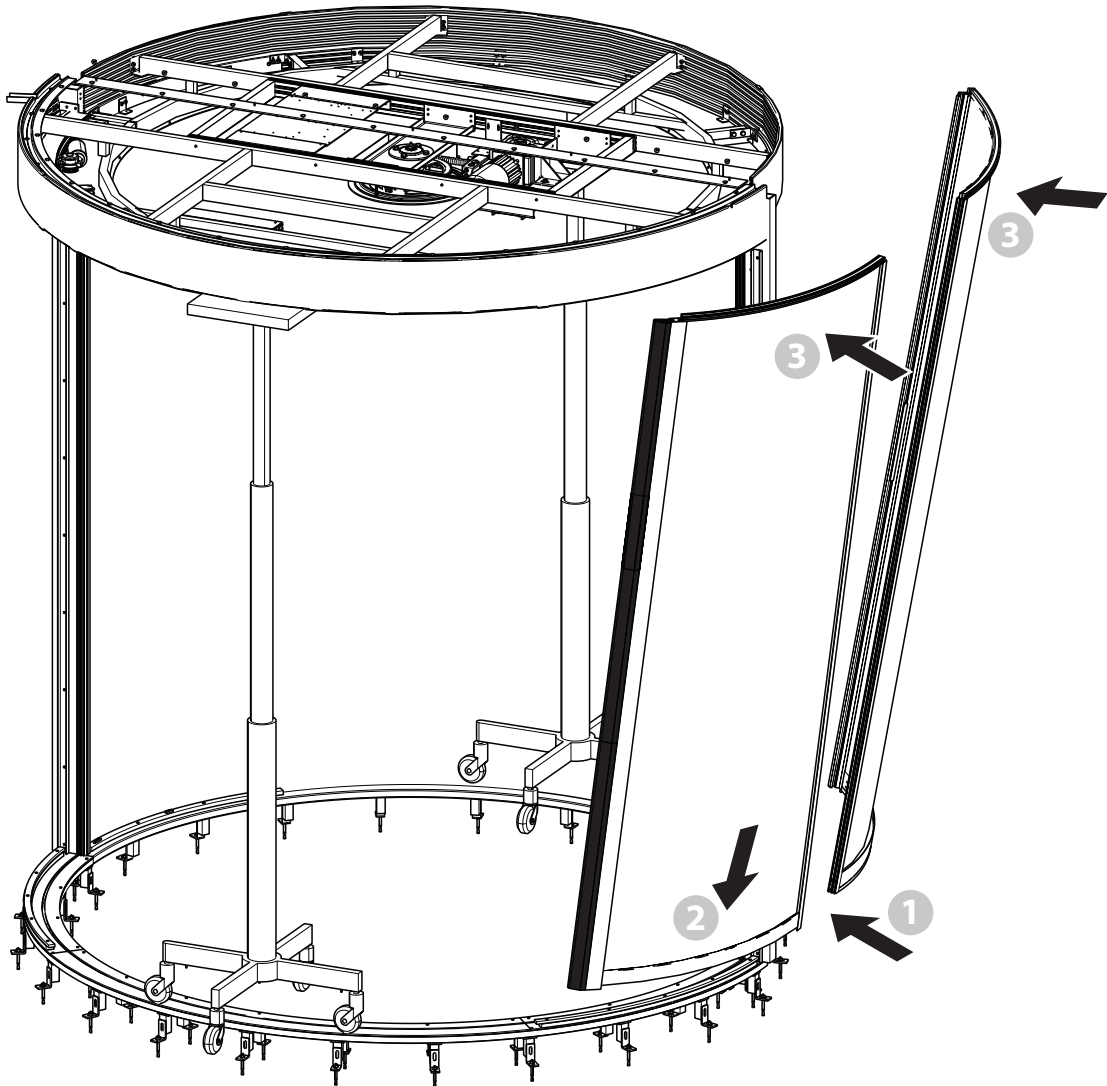


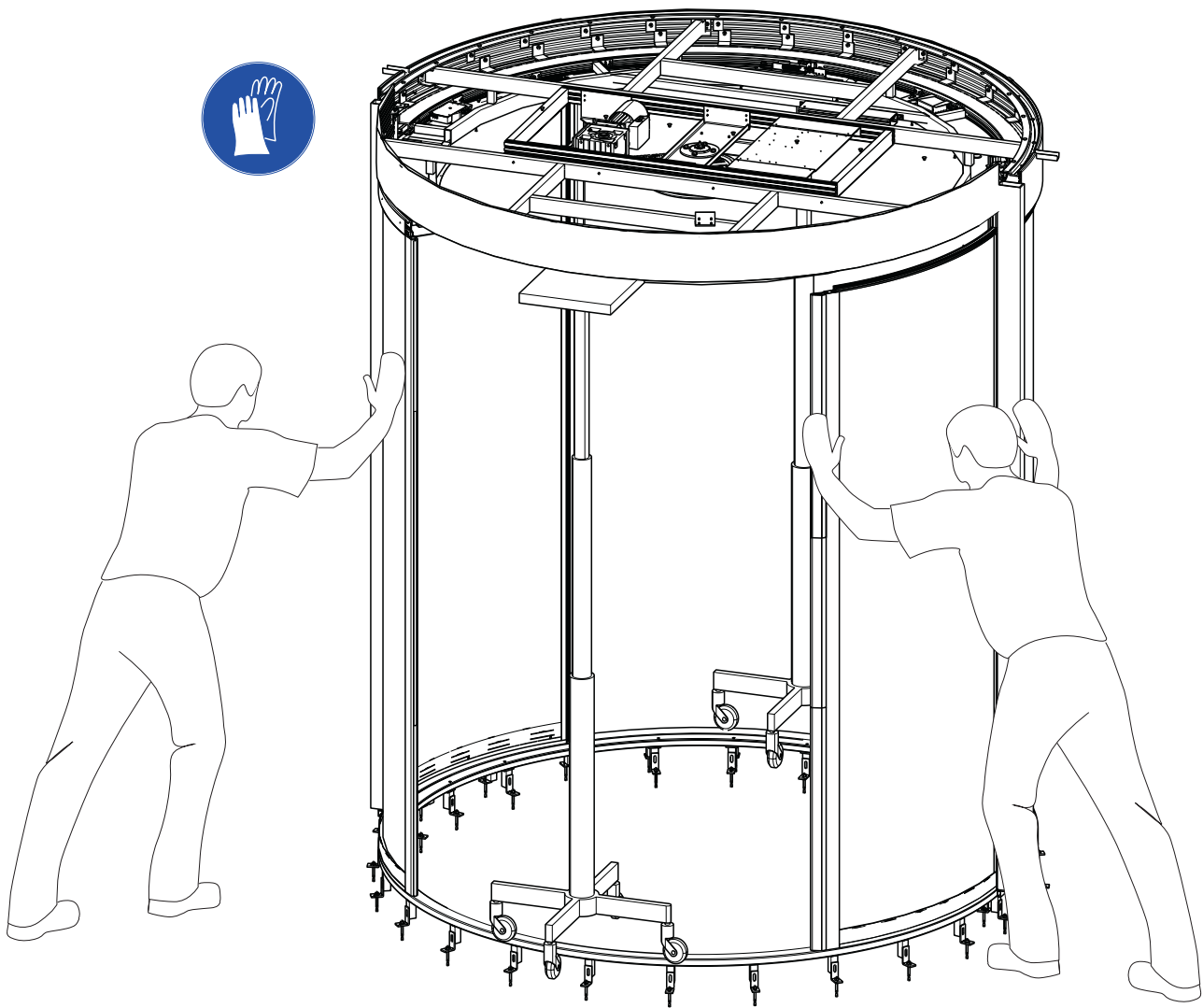
6.3.16 Inserting the portal side elements into the floor ring



6.3.17 Insert the side panel

Further information see section 4.2.9 Inserting the side panel on page 15



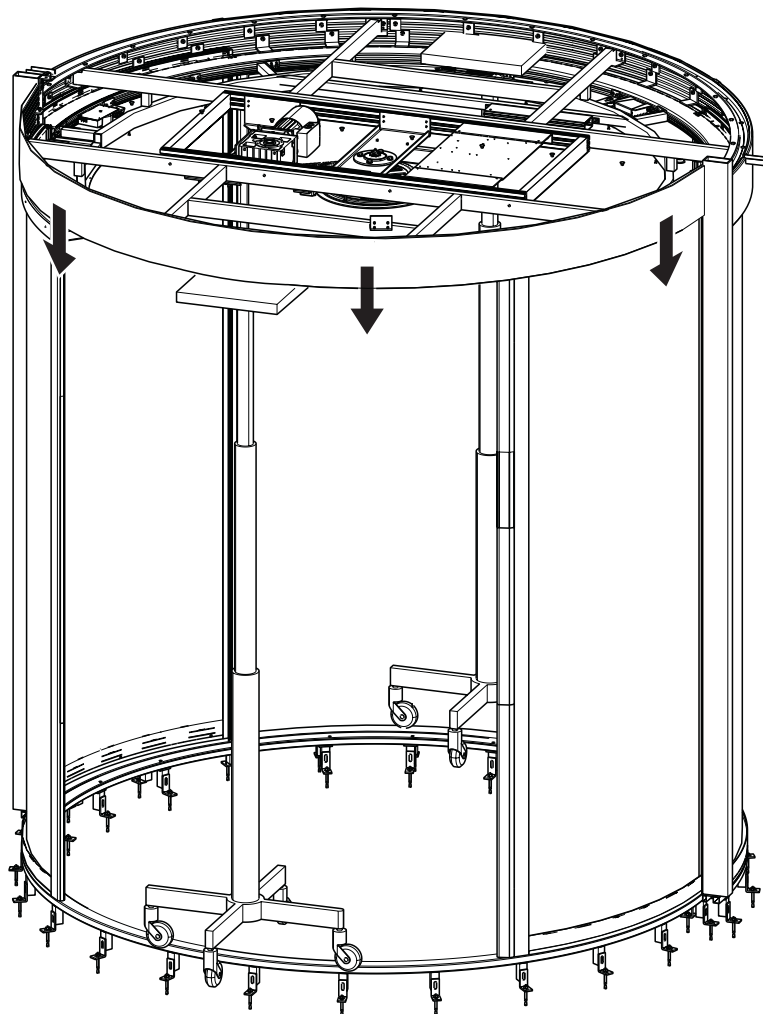


- ▶ Secure the inserted side elements against falling over in the upper third.
- ▶ Spray soap water or silicone spray onto the upper rubber of the side elements and ceiling canopy.
- ▶ Place the ceiling construction on the side panels.

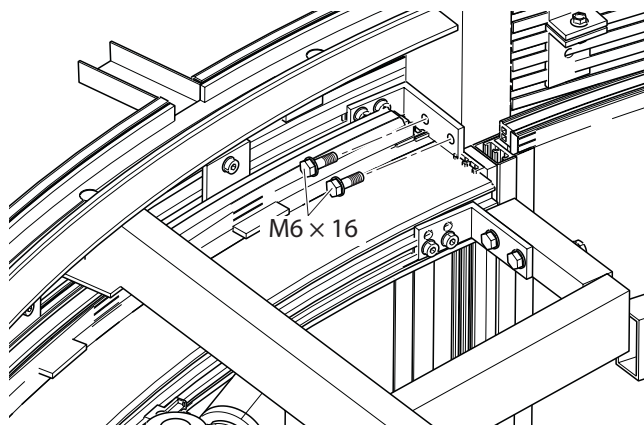
6.3.18 Inserting the ceiling construction into the mullion and transom façade

- ! ▶ The ceiling canopy has to lie evenly on all the side element profiles.

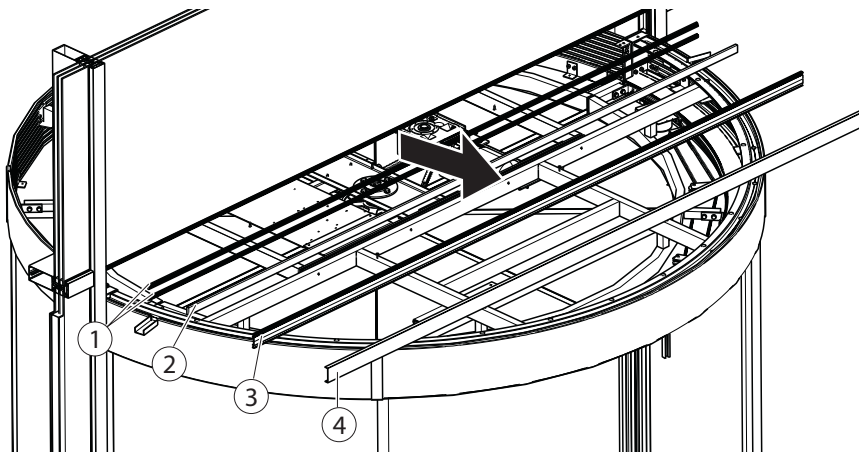
- ▶ Lower the ceiling canopy carefully onto the side element profiles.



6.3.19 Screwing the ceiling construction with portal side elements and side panels to the ceiling

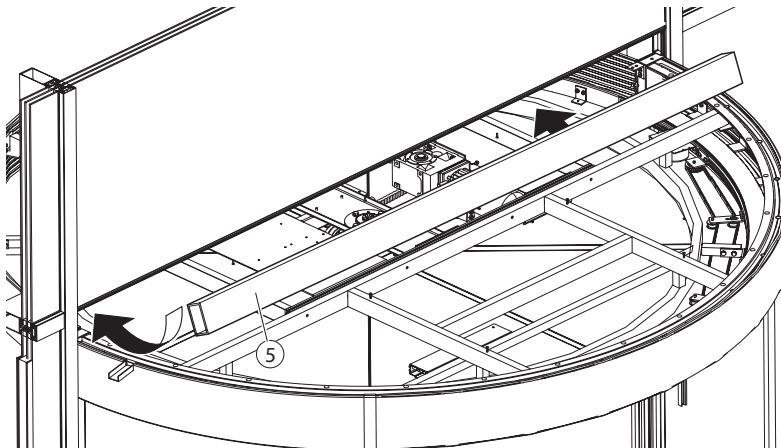


6.3.20 Inserting the portal head element into the mullion and transom façade

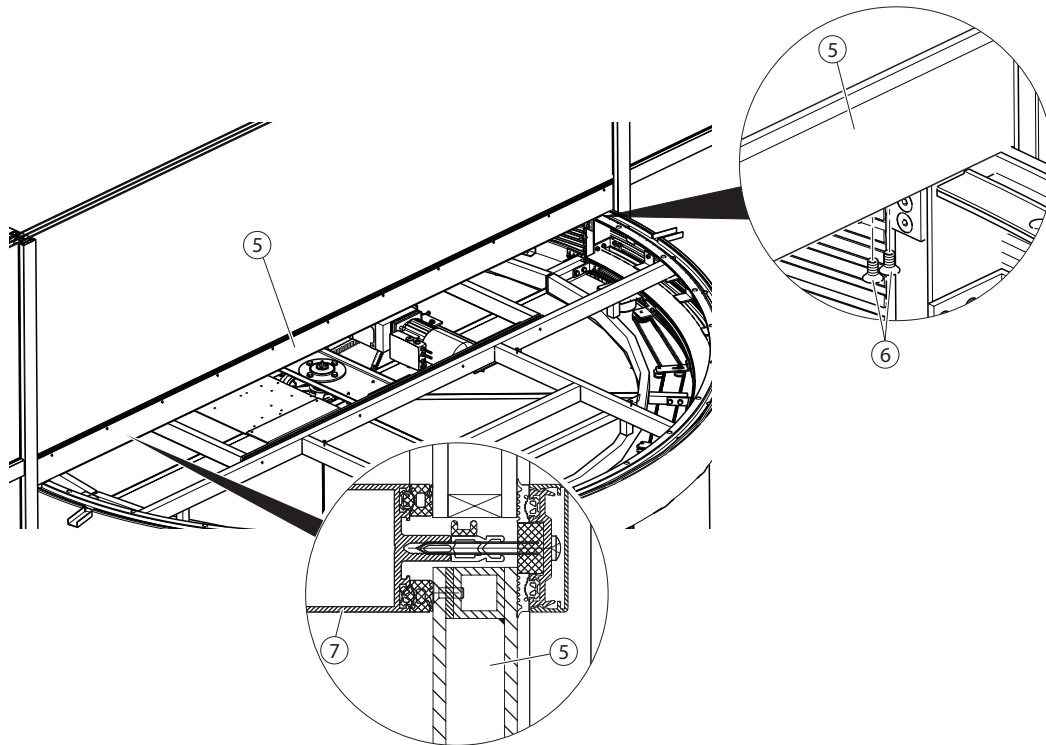


Loosen the façade mullion profile.

- Remove the cover (4), cover profile (3), square profile (2) and 2 rubber profile (1).

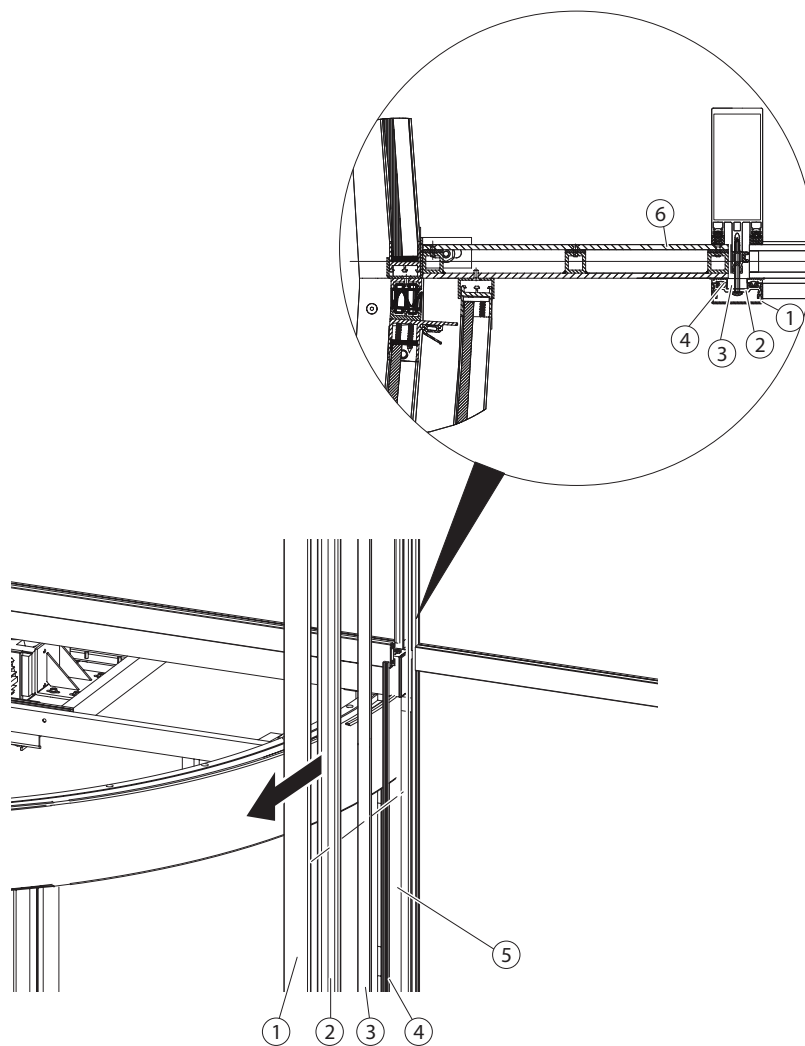


- Insert the portal head element (5) into the mullion and transom façade

Screw the portal head element into the mullion and transom façade

- ▶ Screw the portal head element (5) on the right and left into the portal side elements with 2 screws (6) on each side.
- ▶ Drill through the portal head element (5) and the façade transom profile (7).
- ▶ Screw in with screws.
- ▶ Re-attach 2 rubber profiles (1), the square profile (2), the ceiling profile (3) and the cover (4) once again.

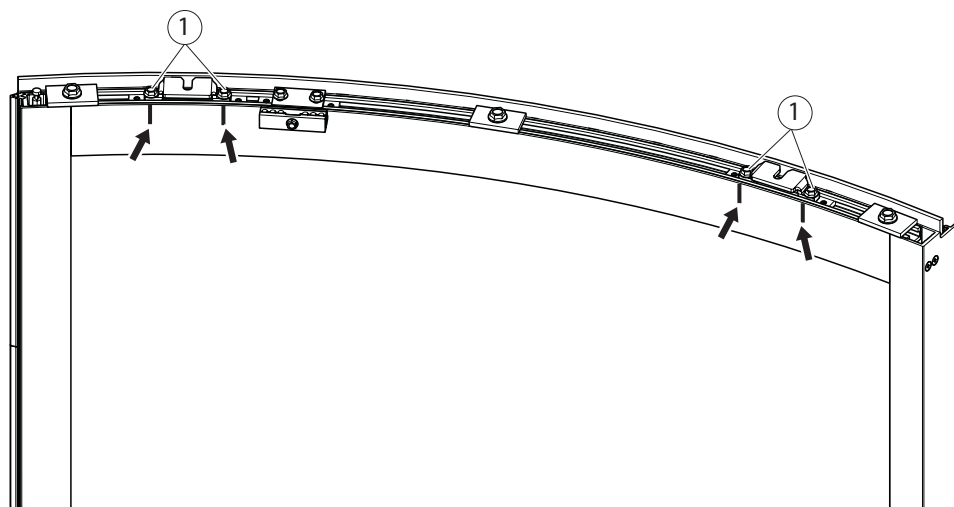
6.3.21 Screwing the portal side element into the mullion and transom façade



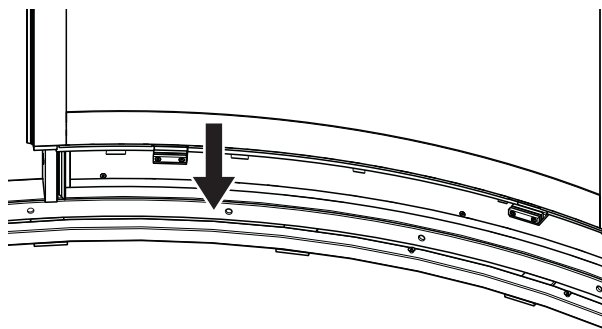
- ▶ Remove the cover (1), cover profile (2), square profile (3) and retaining rubber profile (4).
- ▶ Drill through the portal side element (5) and the façade transom profile (6).
- ▶ Screw in with screws.
- ▶ Re-attach the retaining rubber profile (4), the square profile (3), the ceiling profile (2) and the cover (1) once again.

6.3.22 Mounting the LV door leaf

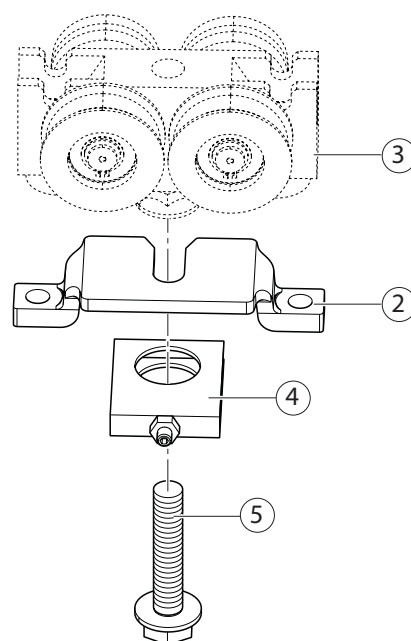
- Set the markings (arrows) at the positions of the fixing screws (1).



- Insert the door leaf into the floor guide.

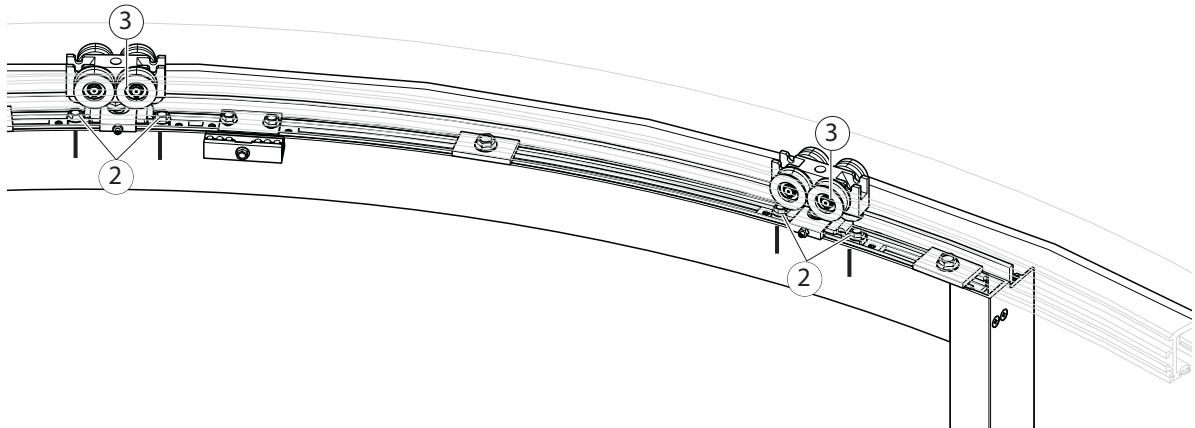


- Unscrew the suspension bolt (5) from the roller carriage (3).
- Slide the move lock (4) onto the hanger bracket (2).

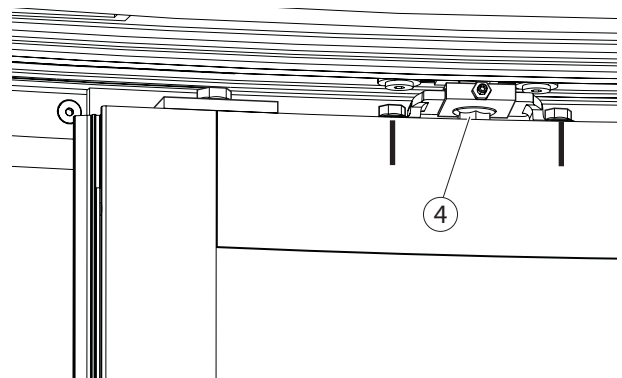


- Slide the roller carriage (3) over the suspension bolts.

- Screw the hanger bracket with 2 screws (2) each at the marked positions into the sliding blocks.



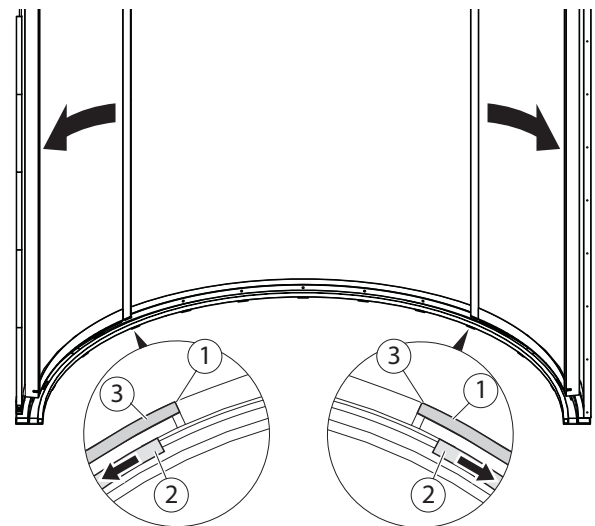
- Screw the M8 roller carriage screw (4) into the roller carriage to determine the height position of the door leaf.



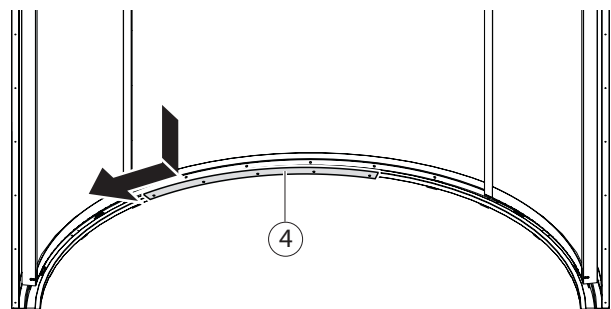
6.3.23 Mounting the sickle plates

- Slide the door leaf (2) over the vertical profile of the secondary closing edge (1).

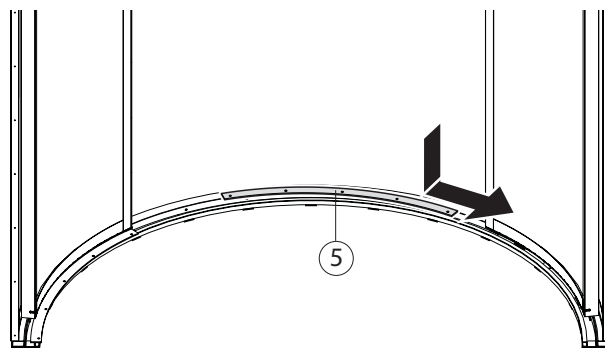
- 1 Secondary closing edge
- 2 Door leaf
- 3 Fixed panel



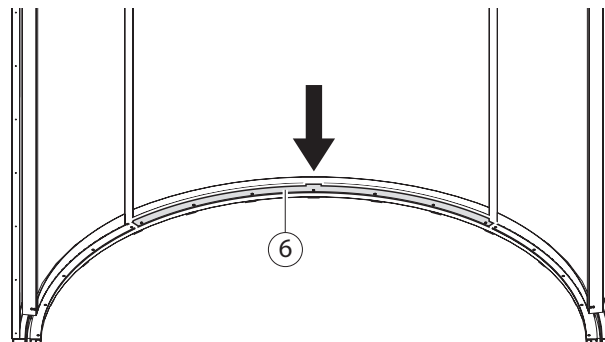
- Lay the left-hand sickle plate (4) in the middle of the floor ring and slide it under the left-hand door leaf.



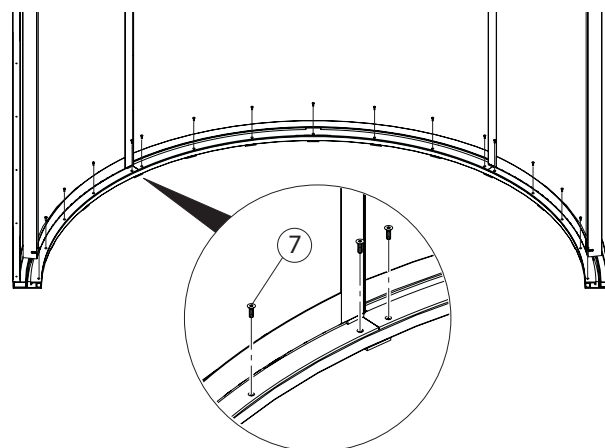
- Lay the right-hand sickle plate (5) in the middle of the floor ring and slide it under the right-hand door leaf.



- Place the middle sickle plate (6) on the floor ring.

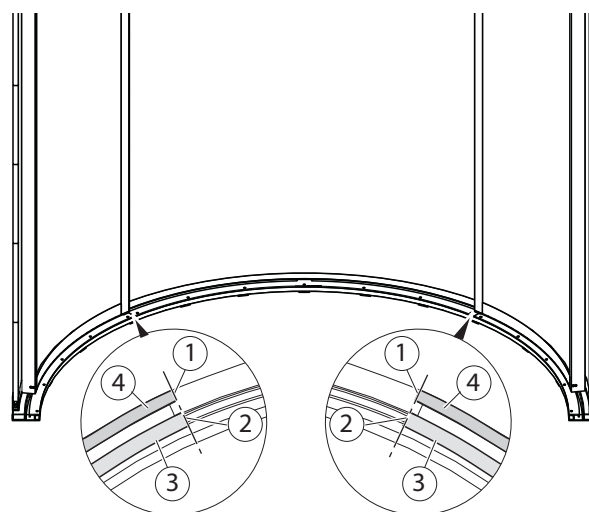


- Screw on all three sickle plates with screws (7).



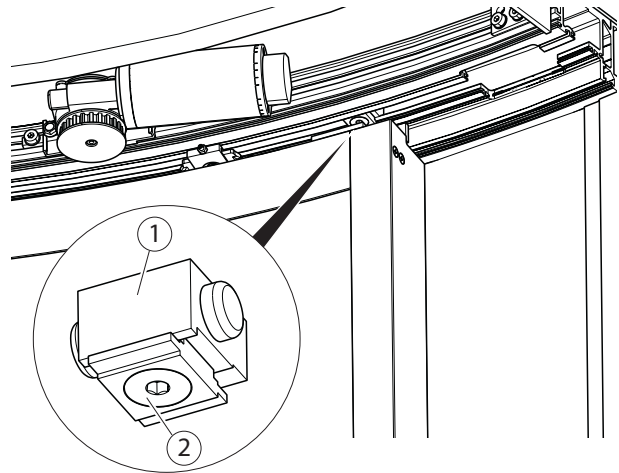
- Position the main closing edge door leaf (2) flush with the secondary closing edge (1).

- 1 Secondary closing edge
- 2 Main closing edge door leaf
- 3 Door leaf
- 4 Fixed panel



6.3.24 Installing stop buffers

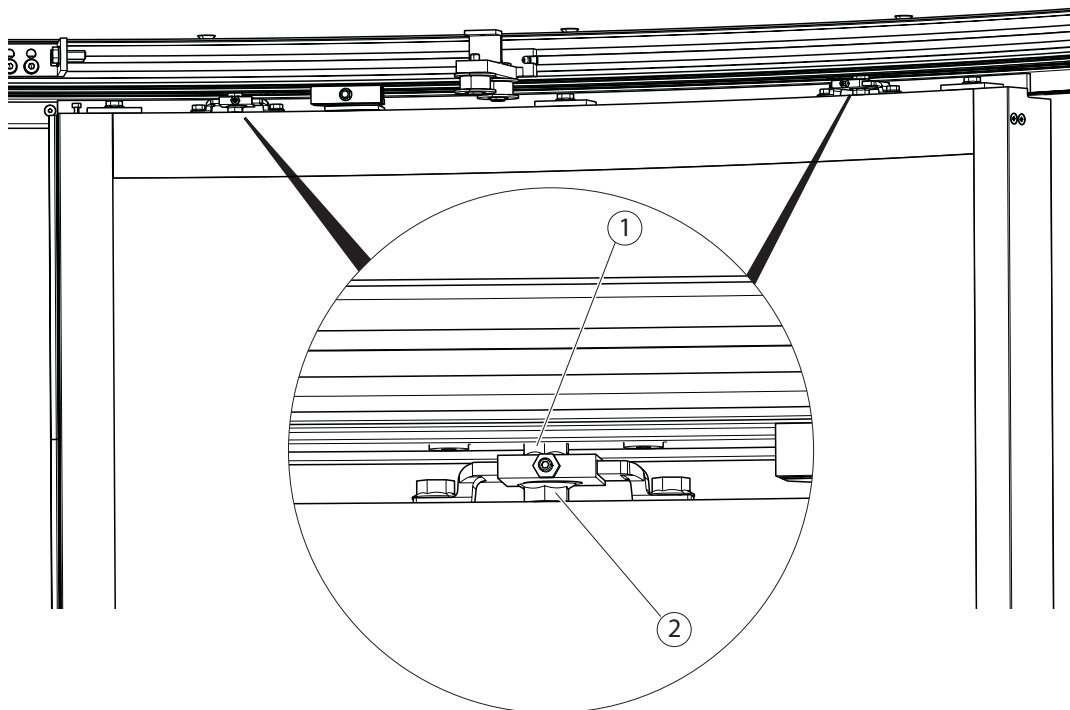
- ▶ Align the door stop (1) to the outer roller carriage.
- ▶ Tighten the screw (2).



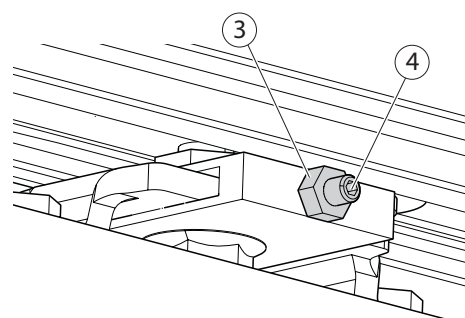
6.3.25 Adjusting the LV door leaves



- ▶ Observe the applicable standards and guidelines on crushing, shearing and drawing-in spots.
 - ▶ Align door leaves flush with each other. Ensure the same height and parallel closing edges when doing so.
-
- ▶ Fine-adjust the height and parallel position of the door leaves at the hexagon of the suspension bolts (2).
 - ▶ Tighten the lock nut (1).



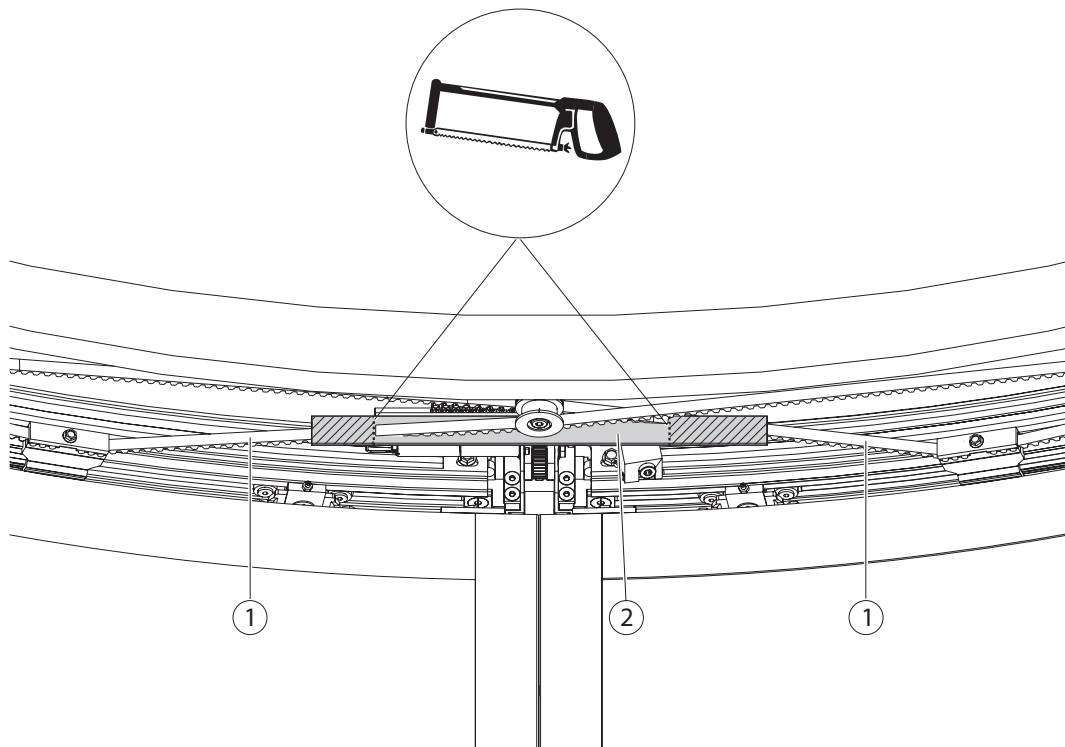
- ▶ When the position of the door leaves is correct, tighten the hexagon socket-head screws (4) lightly and secure with lock nuts (3).



6.3.26 Shortening the tooth belt cut protection

If the toothed belt collides with the cut protection:

- Shorten the cut protection (2) so that the toothed belt (1) passes the cut protection without contact.



6.3.27 Adjusting the rod locking

See the supplementary installation instructions for Slimdrive SL WK2 (mat. no. 136308).

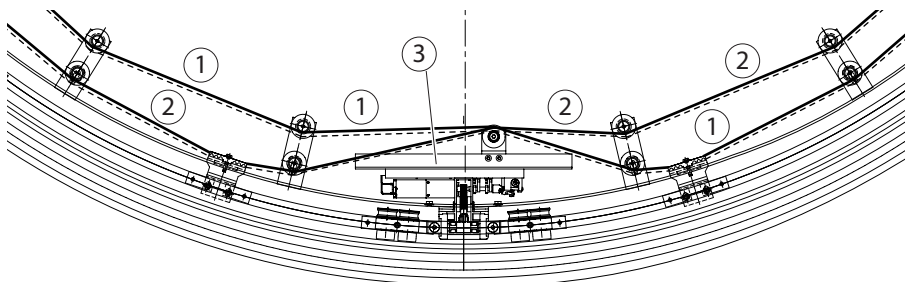
6.4 Installation information for NV tooth belt tension RC2

Tooth belt installation with RC 2-rod locking

The tandem roller (if required) is attached to the rear frame profile for RC 2 rod locking. In this case, the toothed side of the tooth belt must run over the tandem roller.

If the tooth belt rubs against the burglar-protection bracket after installation:

- Cut the burglar-protection bracket to length (3).



- 1 Belt 1
- 2 Belt 2
- 3 Burglar-protection bracket

6.5 Mounting the turnstile

see section 4.2.5 Installation without floor ring on page 11

6.5.1 Inserting the floor bearing

see section 4.2.5 Installation without floor ring on page 11

6.5.2 Mounting the collector ring

see section 4.2.12 Mounting the collector ring on page 18

6.5.3 Mounting the centre rod retainer

see section 4.2.13 Mounting the centre rod retainer on page 18

6.5.4 Mounting the centre rod below

see section 4.2.15 Mounting the centre rod below on page 19

6.5.5 Drilling a cable guide for post safety

see section 4.2.14 Drilling a cable guide for post safety on page 19

6.5.6 Mounting the side-hung casements

see section 4.2.17 Mounting the side-hung casements on page 20

6.5.7 Fastening the side-hung casements

see section 4.2.18 Fastening the side-hung casements on page 21

6.5.8 Adjusting the chain tensioner

see section 4.2.19 Adjusting the chain tensioner on page 22

6.6 Mounting contact strips on the leaves

see section 4.3 Mounting switch contact strips on the leaves on page 22

6.7 Mount the RC 2 ceiling panel



To provide a better overview, the following illustrations are shown without side-hung casement.

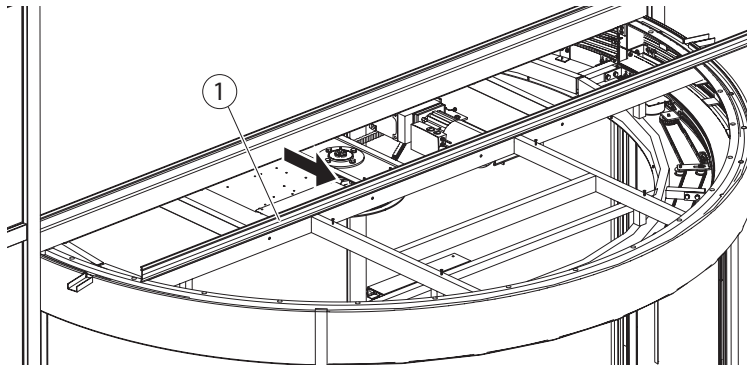
6.7.1 Placing on the cover

see section 4.5.1 Placing the cover on page 24

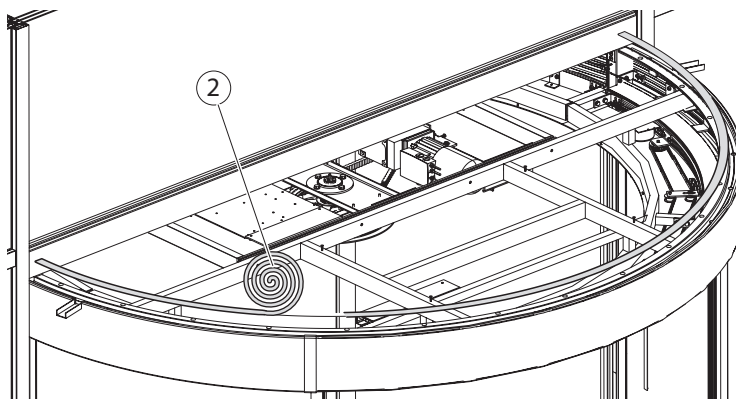
6.7.2 Mount the outside

Preparations

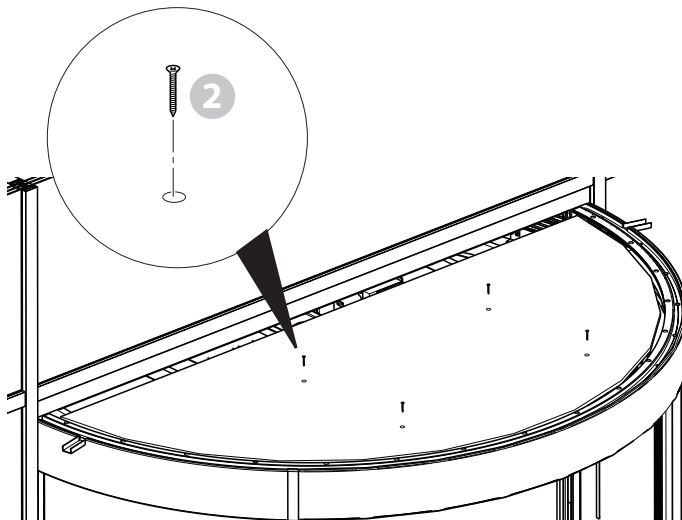
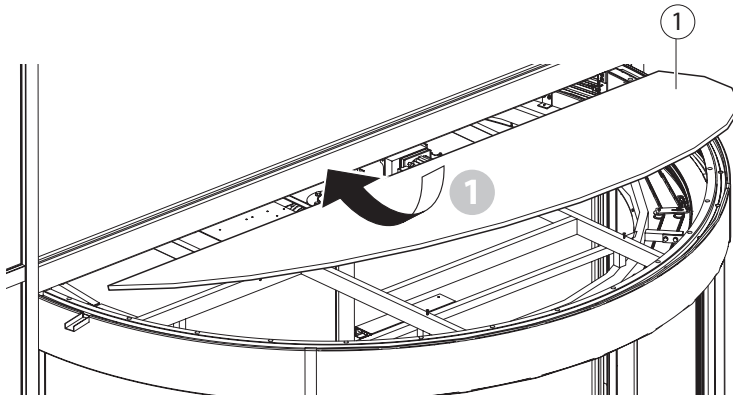
- Remove the transom cover (1) from the mullion and transom façade.



- Stick the GYSO sealing tape (2) to the gutter profile.

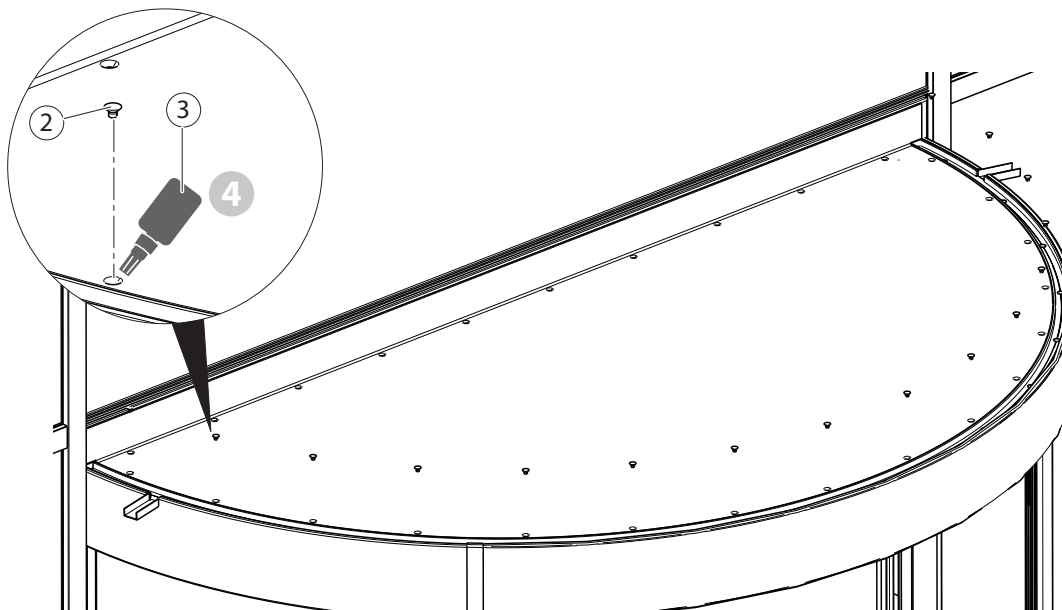
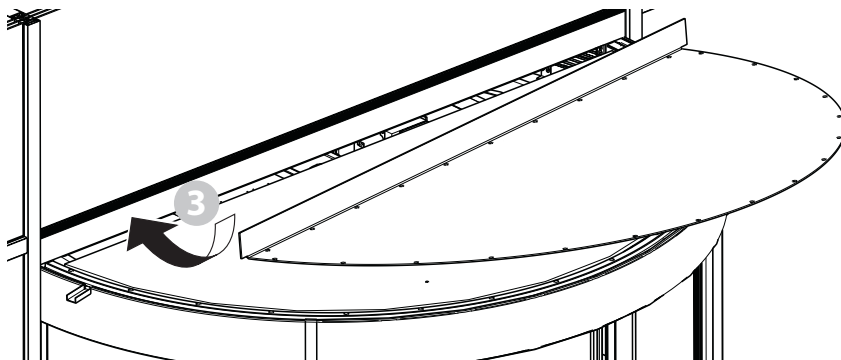


Mount the clamping plate (1)

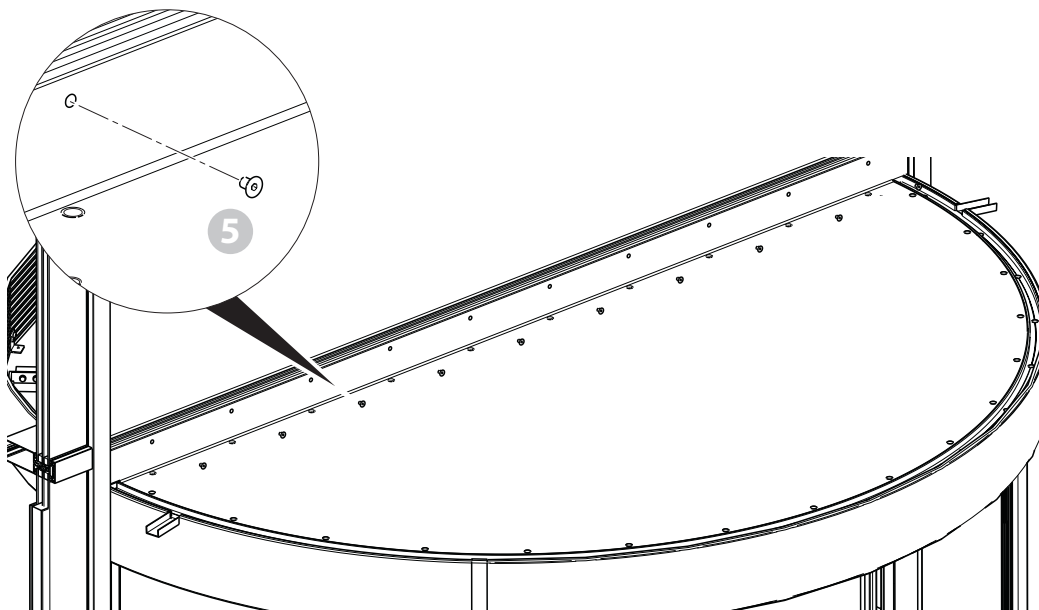


Set the ceiling panel in place and screw in

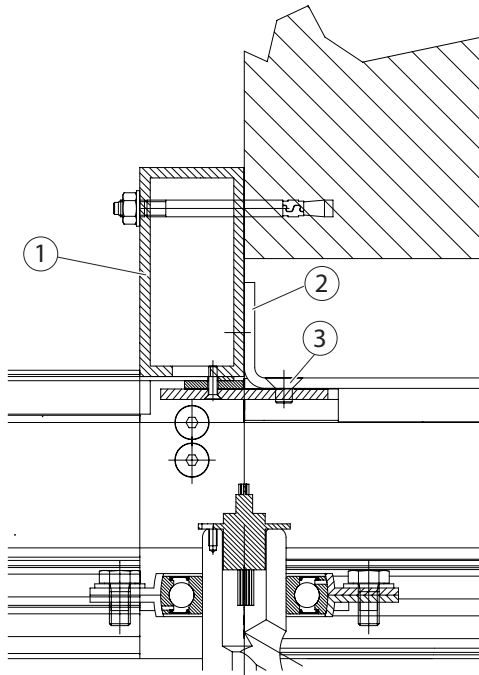
Variant: Waterproof roof



- 2 Burglar-protection screw
- 3 High-resistance, sealing thread lock

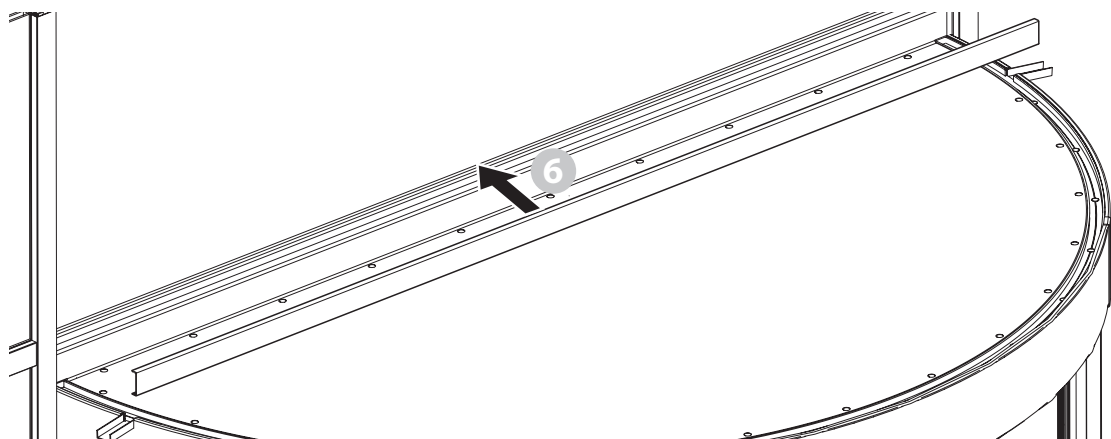
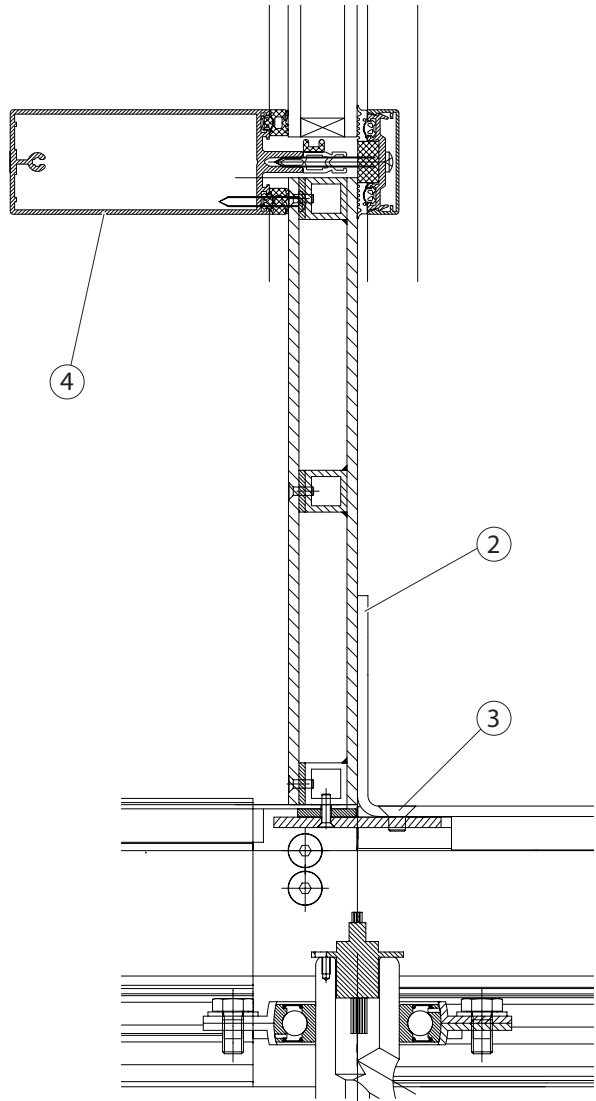


Mounting to the box portal and façade (example)

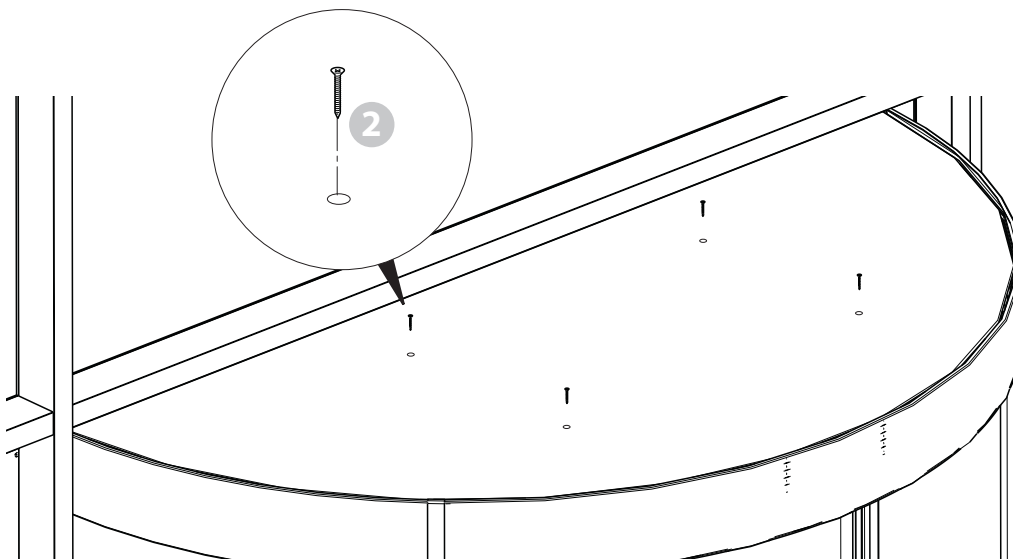
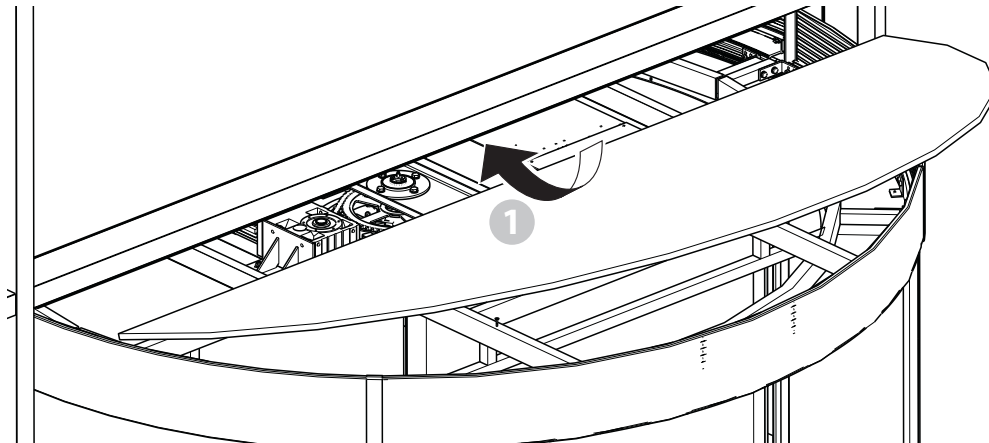
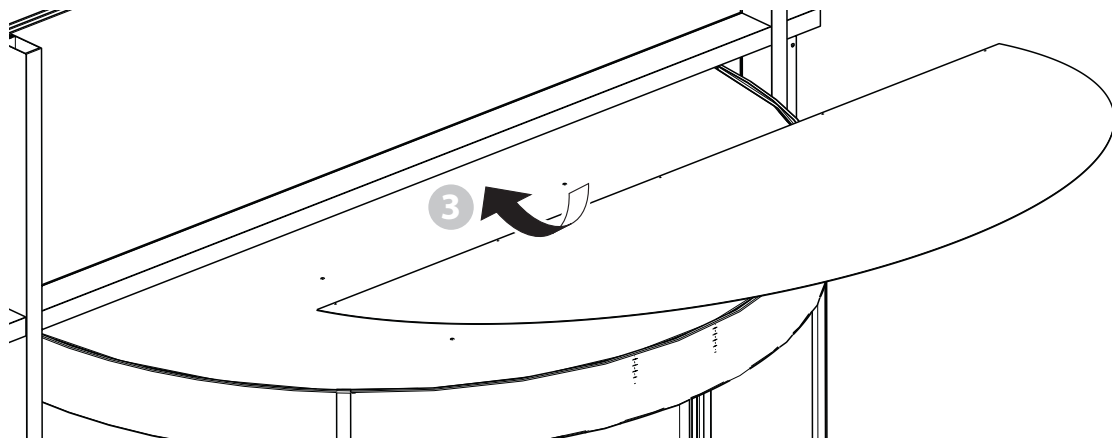


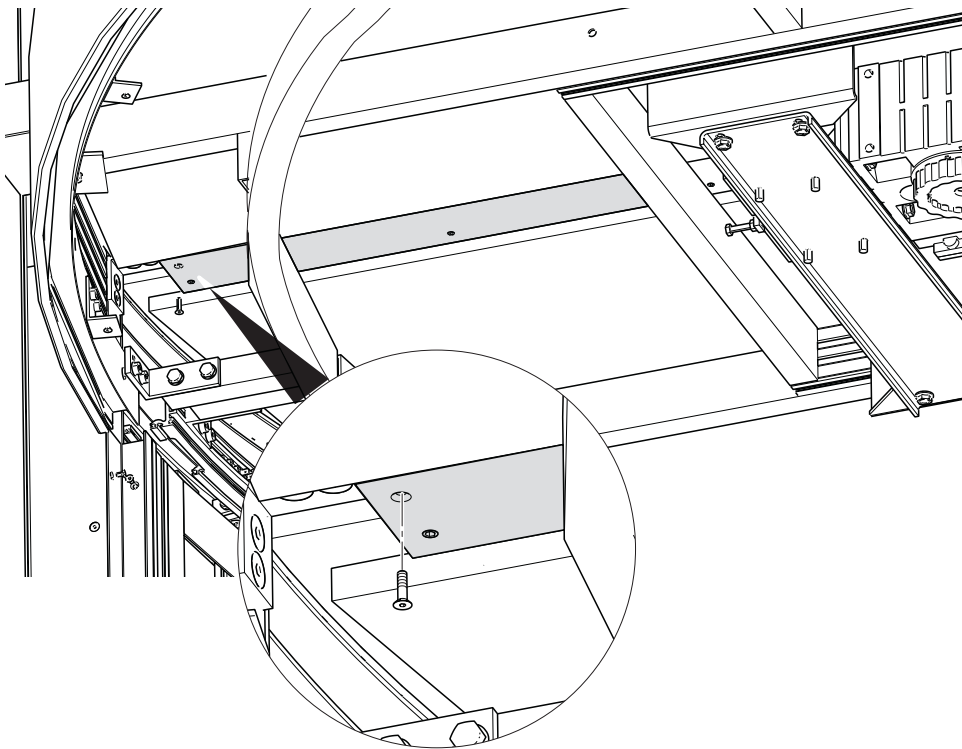
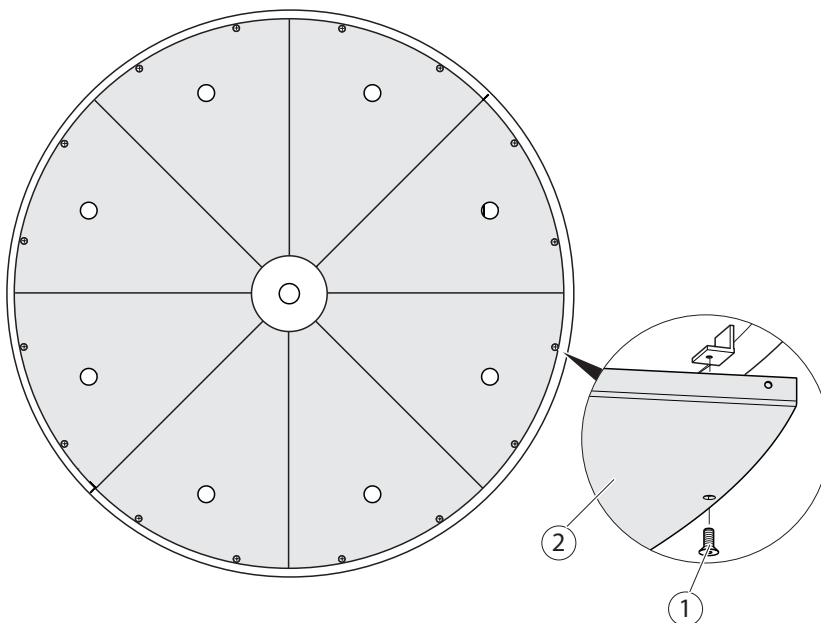
- 1 Portal profile
- 2 Ceiling panel
- 3 Burglar-protection screws
- 4 Mullion and transom façade

Mounting to the sandwich portal and mullion and transom façade



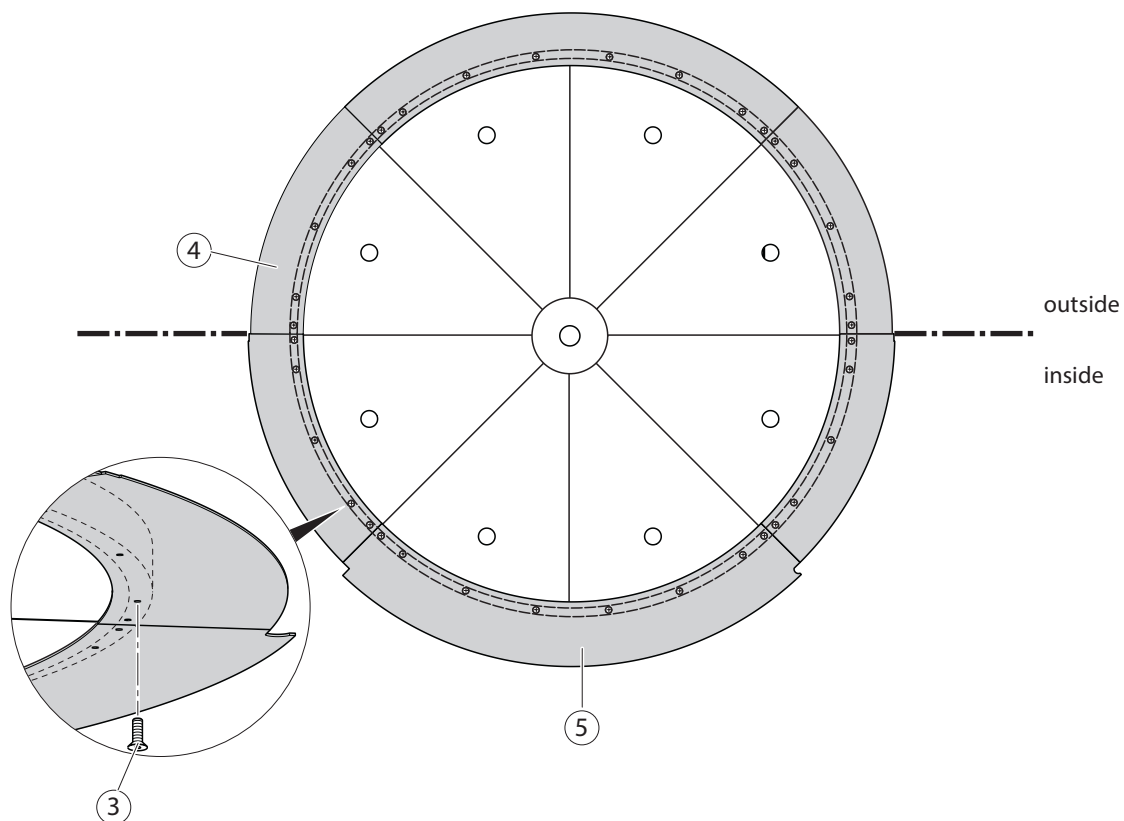
6.7.3 Mount inside

Mount the clamping plate**Push in the ceiling panel**

Screw the façade kick plate to the interior ceiling panel**6.74 Insert and screw in the segment panels and sickle plates****Mount the segment panels**

- Insert 8 segment panels (2) and screw each one in with 2 screws (1).

Mount the sickle plates



- ▶ Screw the sickle plates (4) with screws (3) and align them to one another.
- ▶ Mount the sickle plate (5) in the inside entry area.

6.7.5 Install the entrance mat
see section 4.5.3 Installing the entrance mat on page 26

6.8 Check list for commissioning and service

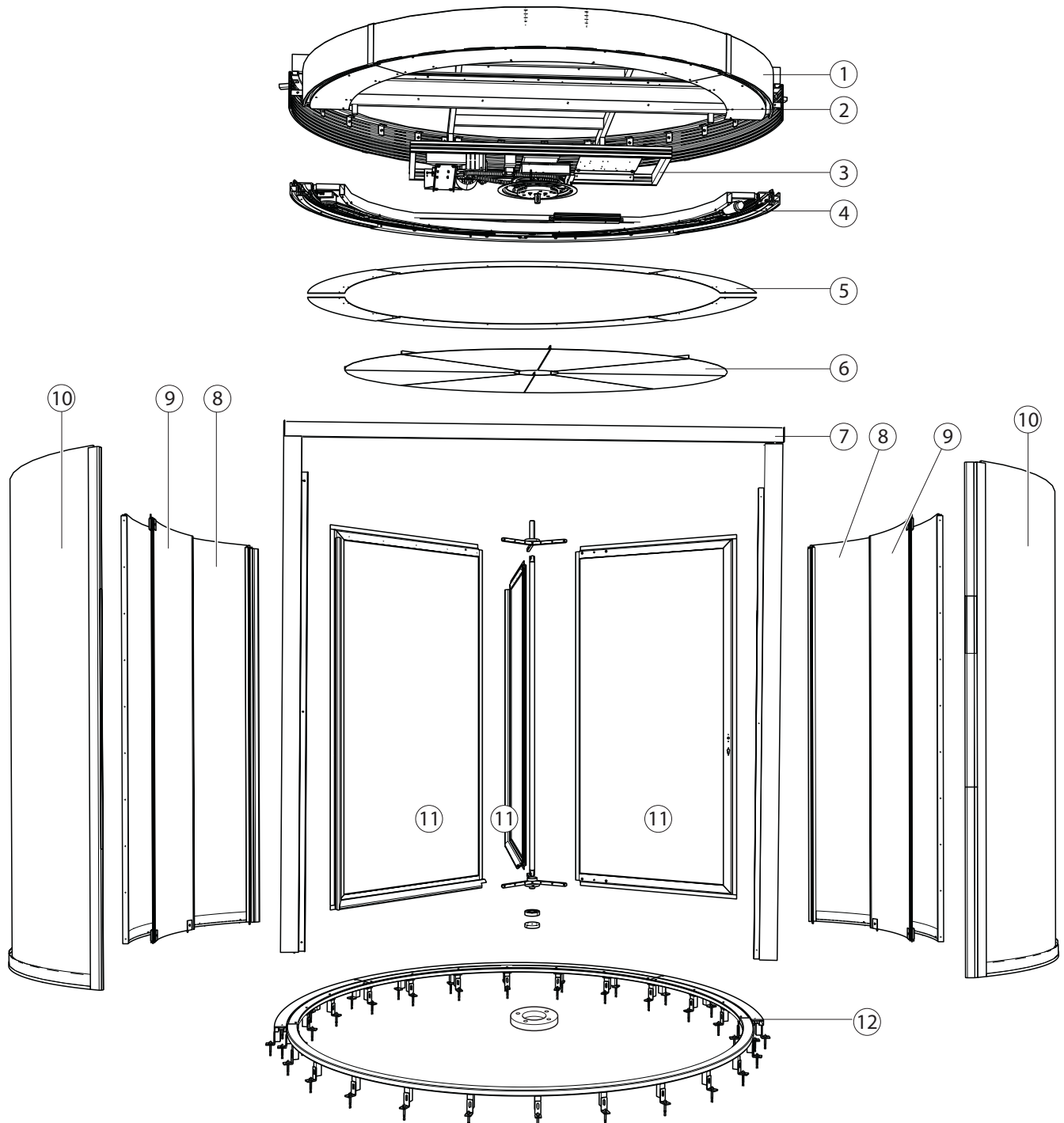
- ▶ Complete the check points according to the check list in "Commissioning and service".

7 Revolving door TSA 325 NT, 3-leaf



Burglar-resistant doors are complete elements and require careful installation. The connecting walls/façades must have a structure that conforms to at least DIN EN 1627.

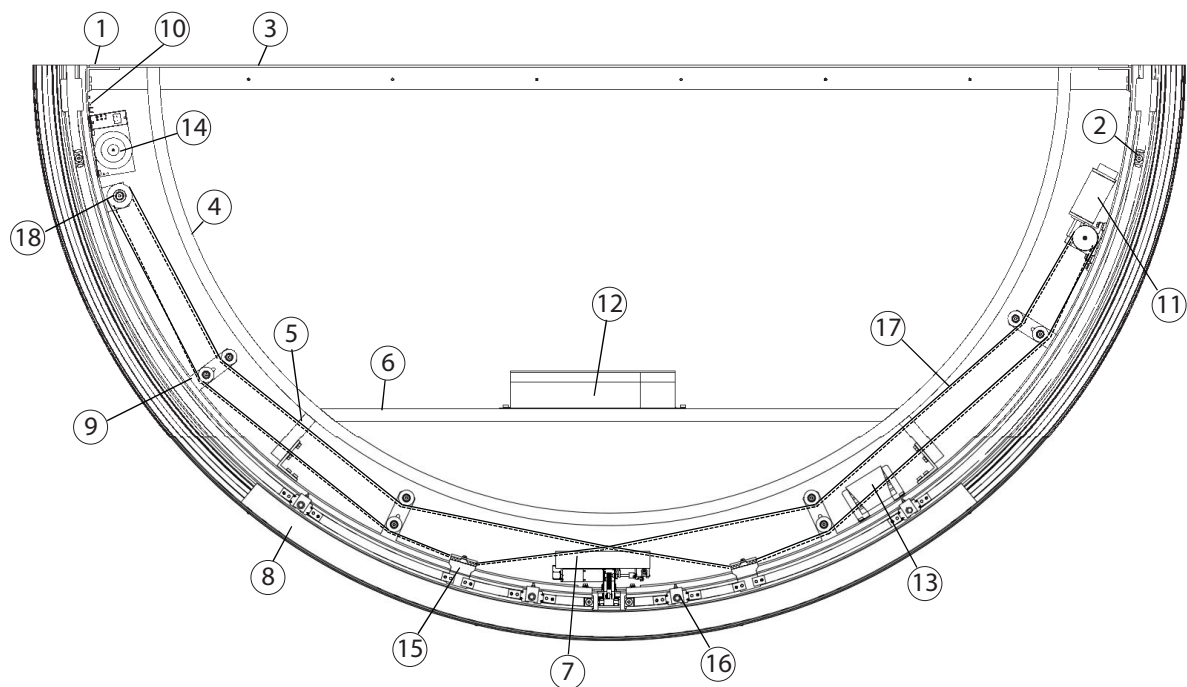
7.1 Assemblies and parts



- 1 Ceiling
- 2 Ceiling base construction
- 3 Motor drive unit
- 4 LV drive unit
- 5 Sickle plate
- 6 Ceiling panel

- 7 Portal
- 8 Interior side panel
- 9 Protective leaves
- 10 Exterior side panel
- 11 Side-hung casement
- 12 Floor ring

7.2 Night-time closer drive (AINV)



- | | | | |
|---|---------------------------|----|-----------------------|
| 1 | Connecting bracket | 10 | Earthing connection |
| 2 | Stop buffer | 11 | DCU 1 motor gear unit |
| 3 | Façade bracket | 12 | Control unit |
| 4 | Frame tube, inside | 13 | Rechargeable battery |
| 5 | Fastening tube | 14 | Transformer |
| 6 | Reinforcing brace ceiling | 15 | Driver |
| 7 | Rod locking unit | 16 | Roller carriage |
| 8 | Cover profile | 17 | Toothed belt |
| 9 | Pulley holder | 18 | Deflection pulley |

- 7.2.1 Safety sensor activation device – LV drive
see section 6.2.2 Safety sensor activation device – LV drive on page 66

- 7.2.2 Portals
see section 6.2.3 Portals on page 67

7.3 Mounting the TSA 325 NT revolving door, 3-leaf



Many of the steps for mounting the TSA 325 3-leaf revolving door are the same as those for mounting the TSA 325 NT revolving door and the TSA 325 NT RC 2 revolving door. This section describes the installation steps that differ from installation of revolving door TSA 325 NT or revolving door TSA 325 NT RC 2.

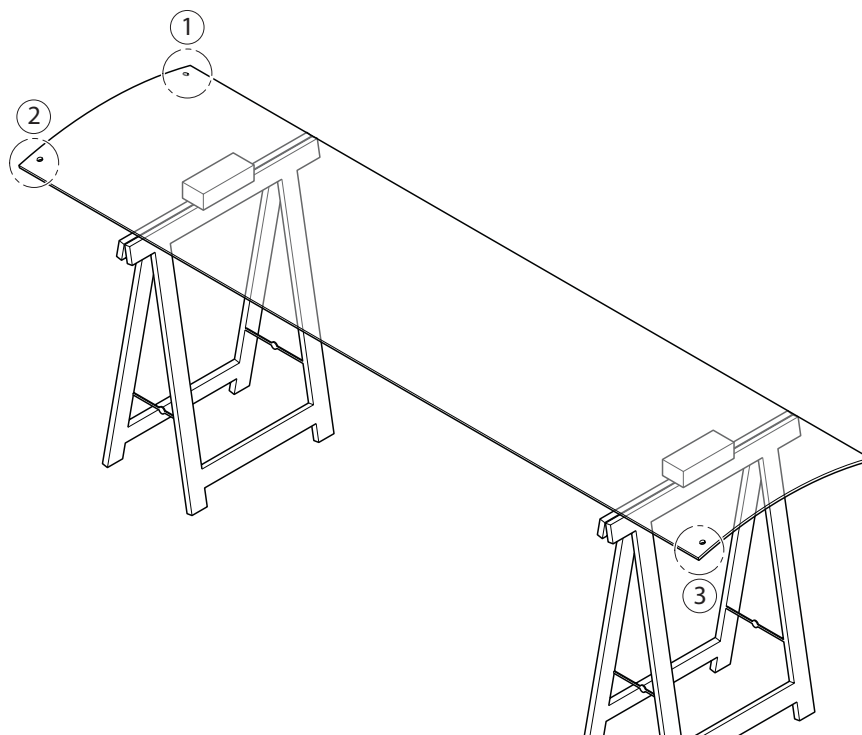
- 7.3.1 Mounting the floor ring
see section 4.2.1 Mounting the floor ring on page 8
- 7.3.2 Aligning the floor ring
see section 4.2.2 Aligning the floor ring on page 9
- 7.3.3 Fastening the floor ring to the subsurface
see section 4.2.3 Fastening the floor ring to the subsurface on page 10
- 7.3.4 Filling the floor ring space with screed.
see section 6.3.4 Filling the floor ring space with screed. on page 68
- 7.3.5 Removing the sickle plates
see section 6.3.5 Removing the sickle plates on page 69
- 7.3.6 Mounting the ceiling canopy
see section 4.2.5 Installation without floor ring on page 11
- 7.3.7 Mounting the drive unit
see section 4.2.7 Mounting the drive unit on page 14
- 7.3.8 Placing blocks for side element profiles
see section 4.2.8 Lifting the ceiling canopy on page 15
- 7.3.9 Loosening the floor strips from the outside side panel
see section 6.3.9 Loosening the floor strips from the RC 2 outside side panel on page 69
- 7.3.10 Attaching the floor strips from the outside side panels to the outside of the floor ring
see section 6.3.10 Attaching the floor strips from the RC 2 outside side panels to the outside of the floor ring on page 70

- 7.3.11 Loosening the floor strips and blocks from the inside side panel
see section 6.3.11 Loosening the floor strips and blocks from the inside RC 2 side panel on page 71
- 7.3.12 Attaching the floor strips from the inside side panels to the floor ring
see section 6.3.12 Attaching the floor strips from the RC 2 inside side panels to the floor ring on page 71
- 7.3.13 Lifting the ceiling canopy
see section 6.3.13 Lifting the ceiling canopy on page 72
- 7.3.14 Inserting the portal side elements into the floor ring
see section 6.3.14 Inserting the portal side panels in the floor ring (with bolts, mounted at the factory) on page 74
- 7.3.15 Inserting the portal side elements into the mullion and transom façade
see section 6.3.15 Inserting the portal side elements into the mullion and transom façade on page 75
- 7.3.16 Inserting the portal side elements into the floor ring
see section 6.3.16 Inserting the portal side elements into the floor ring on page 75
- 7.3.17 Inserting the side panel
For further information, see see section 4.2.9 Inserting the side panel on page 15 and section 6.3.17 on page 76
- 7.3.18 Inserting the ceiling construction into the mullion and transom façade
see section 6.3.18 Inserting the ceiling construction into the mullion and transom façade on page 78
- 7.3.19 Screwing the ceiling construction to the portal side elements
see section 6.3.19 Screwing the ceiling construction with portal side elements and side panels to the ceiling on page 78
- 7.3.20 Inserting the portal head element into the mullion and transom façade
see section 6.3.20 Inserting the portal head element into the mullion and transom façade on page 79
- 7.3.21 Screwing the portal side element into the mullion and transom façade
see section 6.3.21 Screwing the portal side element into the mullion and transom façade on page 81
- 7.3.22 Mounting the LV door leaf
see section 6.3.22 Mounting the LV door leaf on page 82
- 7.3.23 Mounting the sickle plates
see section 6.3.23 Mounting the sickle plates on page 83
- 7.3.24 Installing stop buffers
see section 6.3.24 Installing stop buffers on page 85
- 7.3.25 Adjusting the LV door leaf
see section 6.3.25 Adjusting the LV door leaves on page 85

7.3.26 Installing opening position monitoring

See section 5.4

7.3.27 Mounting the protective leaf

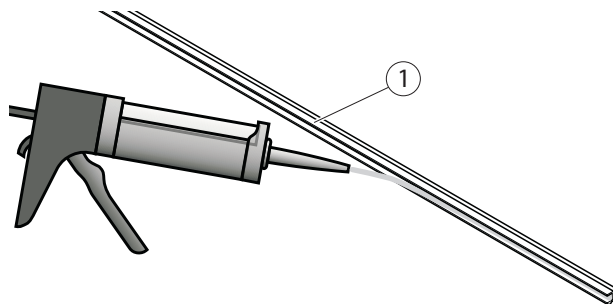
Preparing the protective leaf

- 1 Position for locking (X)
- 2 Position for lower floor-mounted pivot bearing (Y)
- 3 Position for upper floor-mounted pivot bearing (Z)

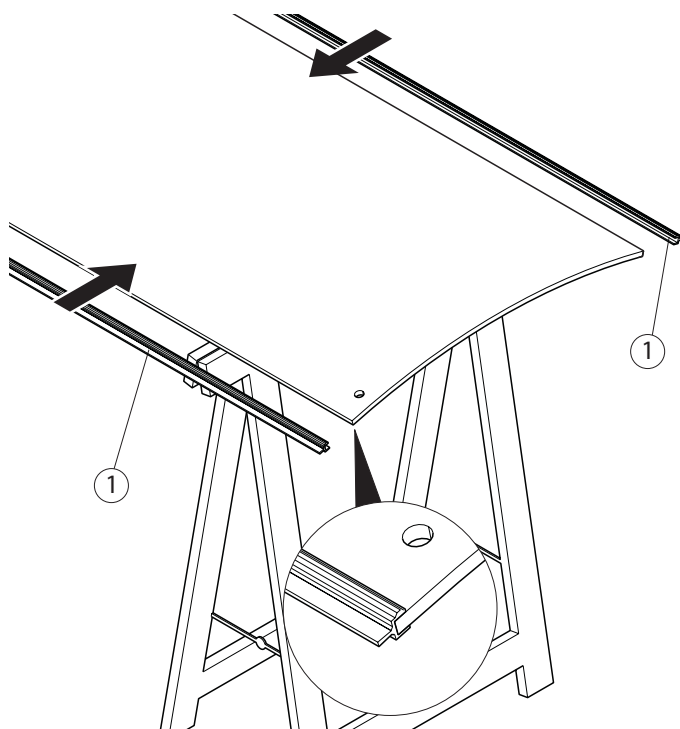
- Place the protective leaves on blocks so that the centre of the glass pane is elevated.
The straight glass edges must be freely accessible.

Mounting the brush strip

- Spread suitable synthetic glass glue into the long groove for the brush strip (1).



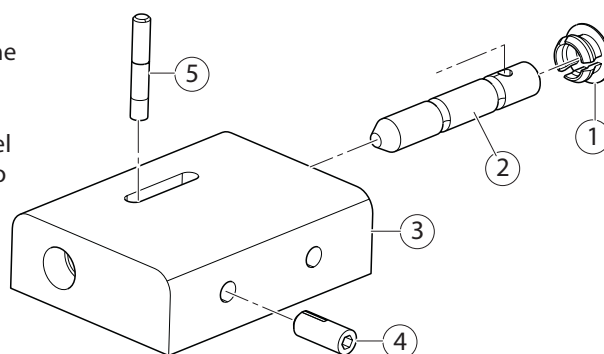
- Stick the brush strips (1) flush with the long edges of the glass.



Mount the locking mechanism (X) to the glass leaf

Mount the top part of the locking mechanism:

- Push the locking bolts (2) into the brackets (3) for the manual locking device.
- Screw the lift pin (5) into the locking bolts (2).
- Screw the spring force pin (4) into the screw channel on the floor until the locking bolts (2) snap fully into both end positions.
- Clip the protective cover (1) in place.



Screw the mounted upper part of the locking mechanism (3) onto the glass leaf:

- ▶ Push the bushing (6) into the drill hole in the glass leaf.
- ▶ Screw the upper part onto the glass leaf with a screw (9), metal plate (8) and intermediate plate (7). Screw tightening torque **max. 4 Nm**.

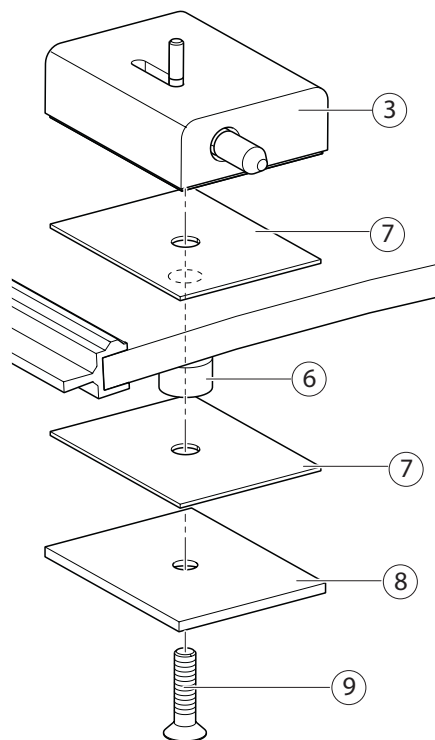


- ▶ Ensure that the metal and glass do not come into contact with one another while screwing in.



The protective leaf fittings can also be glued to the leaf works as an option.

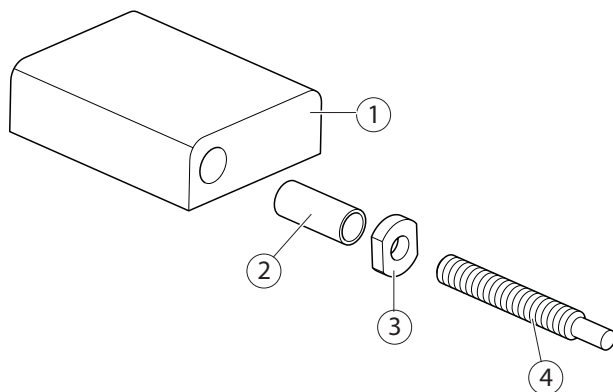
- 6 Bushing
- 7 Intermediate plate for partition from the glass
- 8 Metal plate
- 9 Screw



Mounting the upper pivot bearing (Z)

Mounting the upper part of the pivot bearing:

- ▶ Screw the threaded rod (4) into the hinge (1) for protective leaves.
- ▶ Push the sleeve (2) into the hinge (1) for protective leaves.
- ▶ Screw the nut (3) onto the threaded rod (4) and tension it slightly against the hinge (1) for protective leaves.



Screw the mounted upper part pivot bearing (1) onto the glass leaf:

- ▶ Push the bushing (6) into the drill hole in the glass leaf.
- ▶ Screw the upper pivot bearing (1) onto the glass leaf with a screw (8), metal plate (7) and intermediate plate (5).

Screw tightening torque **max. 4 Nm**.

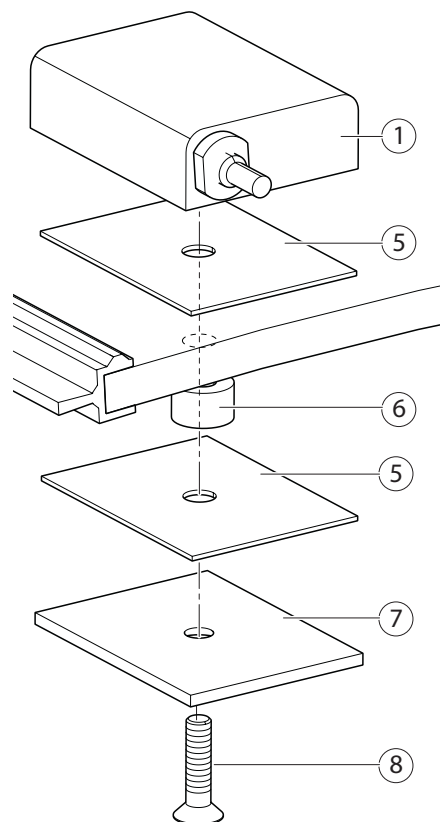


- ▶ Ensure that the metal and glass do not come into contact with one another while screwing in.



The protective leaf fittings can also be glued to the leaf ex works as an option.

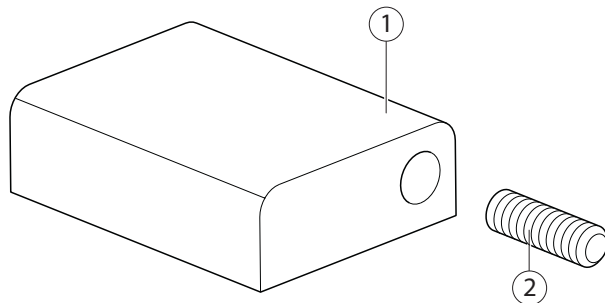
- 5 Intermediate plate for partition from the glass
- 6 Bushing
- 7 Metal plate
- 8 Screw



Mounting the lower pivot bearing (Y)

Mounting the upper part of the lower pivot bearing:

- ▶ Screw the threaded pin (2) into the hinge (1) for protective leaves.



Screw the mounted upper part of the lower pivot bearing (1) onto the glass leaf:

- ▶ Push the bushing (4) into the drill hole in the glass leaf.
- ▶ Screw the mounted upper part of the lower pivot bearing (1) into the glass leaf with a screw (6) and intermediate plates (5)

Screw tightening torque **max. 4 Nm**.

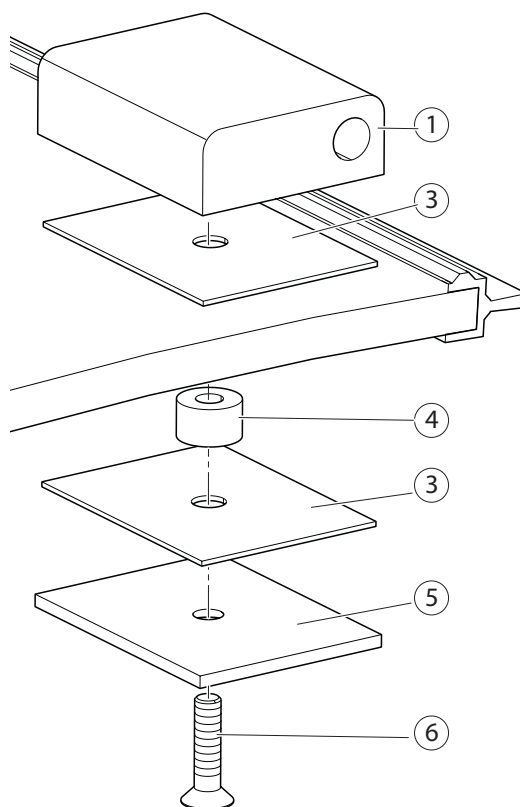


- ▶ Ensure that the metal and glass do not come into contact with one another while screwing in.



The protective leaf fittings can also be glued to the leaf ex works as an option.

- 3 Intermediate plate for partition from the glass
- 4 Bushing
- 5 Metal plate
- 6 Screw

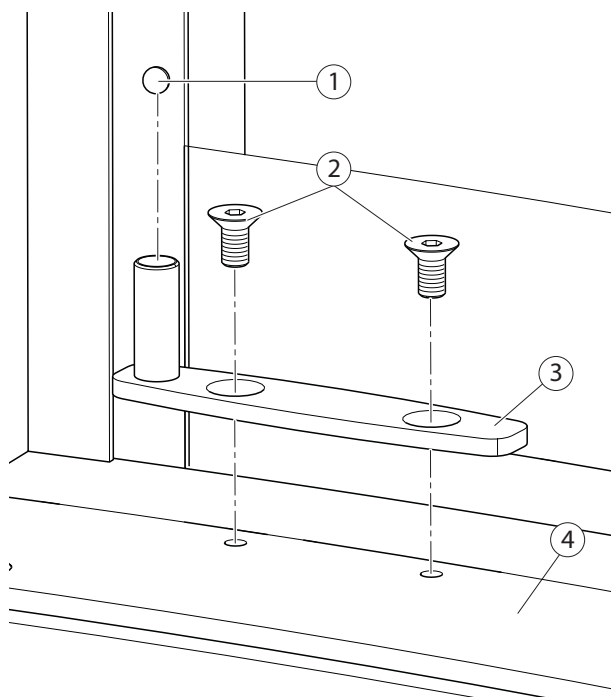


Mounting the floor bearing

- ▶ Screw the floor bearing (3) onto the sickle plate (4) with 2 screws (2).
- ▶ Insert the sphere (1) and grease heavily.



- The sphere (1) must be heavily greased to
 - ensure it moves freely in the floor bearing and
 - to prevent it from falling easily out of the spherical cap when attaching the protective leaf.



Mounting the upper pivot bearing on the track side

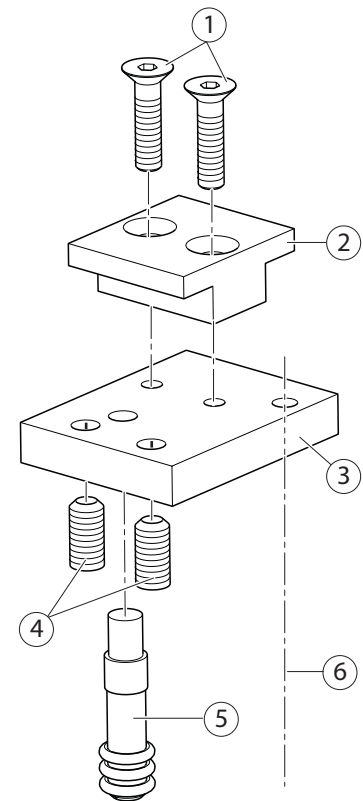
Mount the upper pivot bearing according to the drawing:

- Screw the counterplate (2) onto the bearing plate (3) with 2 screws (1).
- Screw in the 2 threaded pins (4).



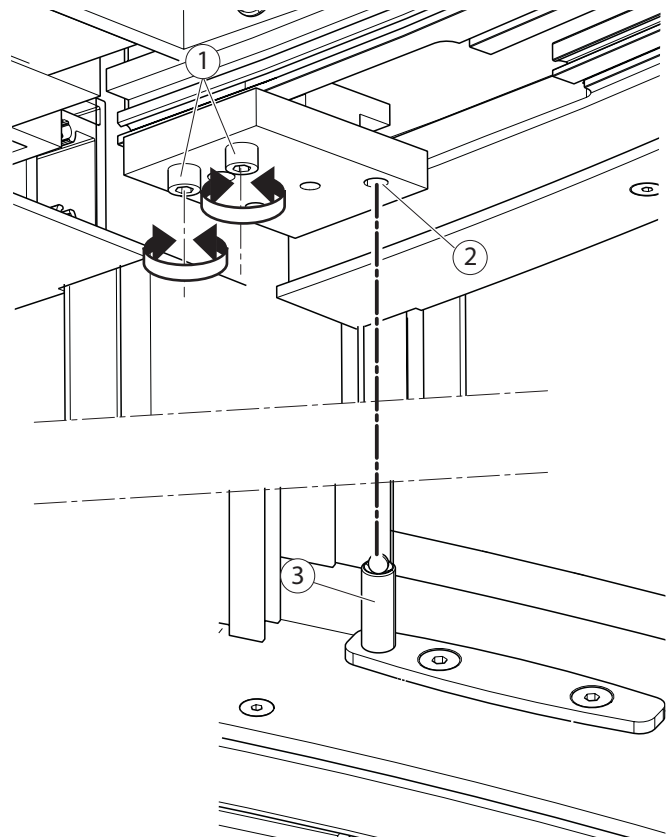
The bearing plate (3) must be installed on opposite sides for the right and left leaves.

- 1 Screws
- 2 Counterplate
- 3 Bearing plate
- 4 Threaded pins
- 5 Stop pins
- 6 Swivelling axis for glass leaf



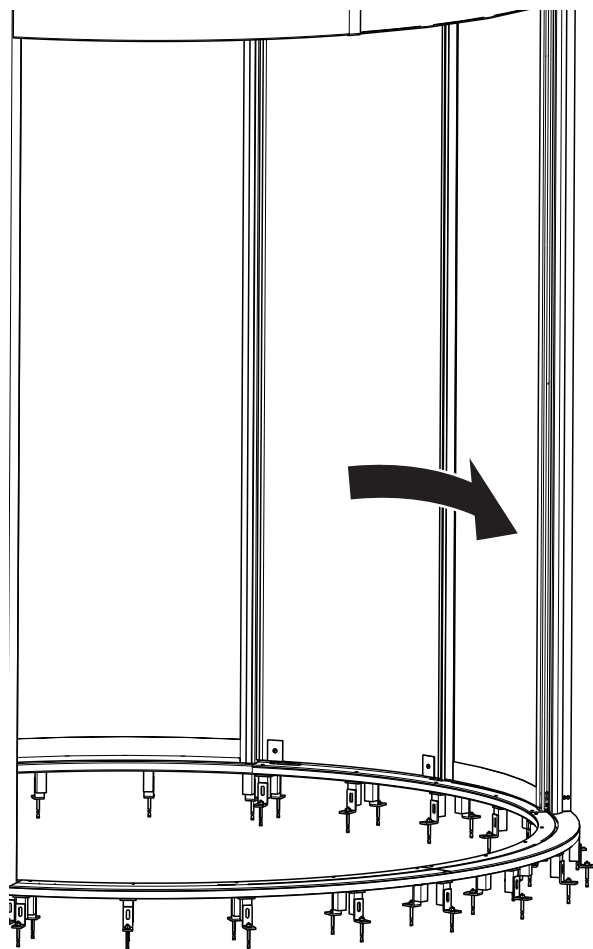
Adjusting the upper pivot bearing

- Adjust the upper pivot bearing using the threaded pins (1) such that the floor bearing (3) and interior thread (2) for the threaded rod are flush with one another.

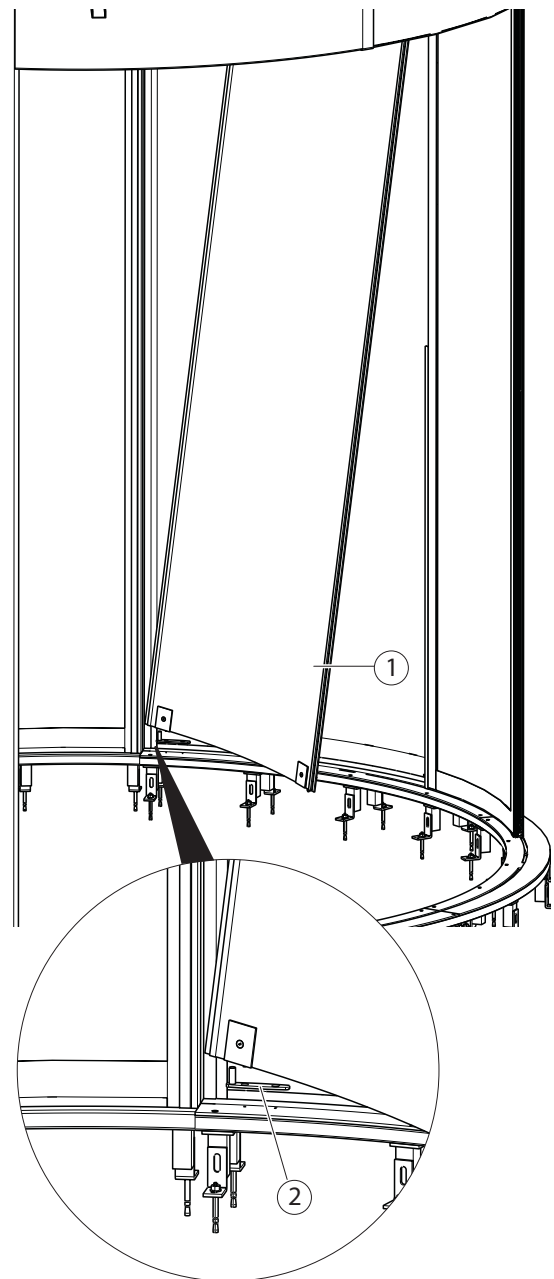


7.3.28 Installing the protective leaf

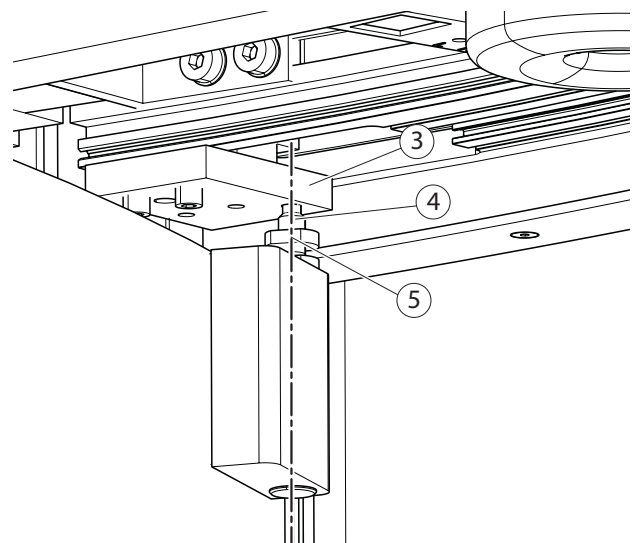
- Push the LV leaf towards the closed position.



- Tip the protective leaf (1) and install it in revolving door TSA 325.
- Tip the protective leaf (1) and insert it into the floor bearing (2).



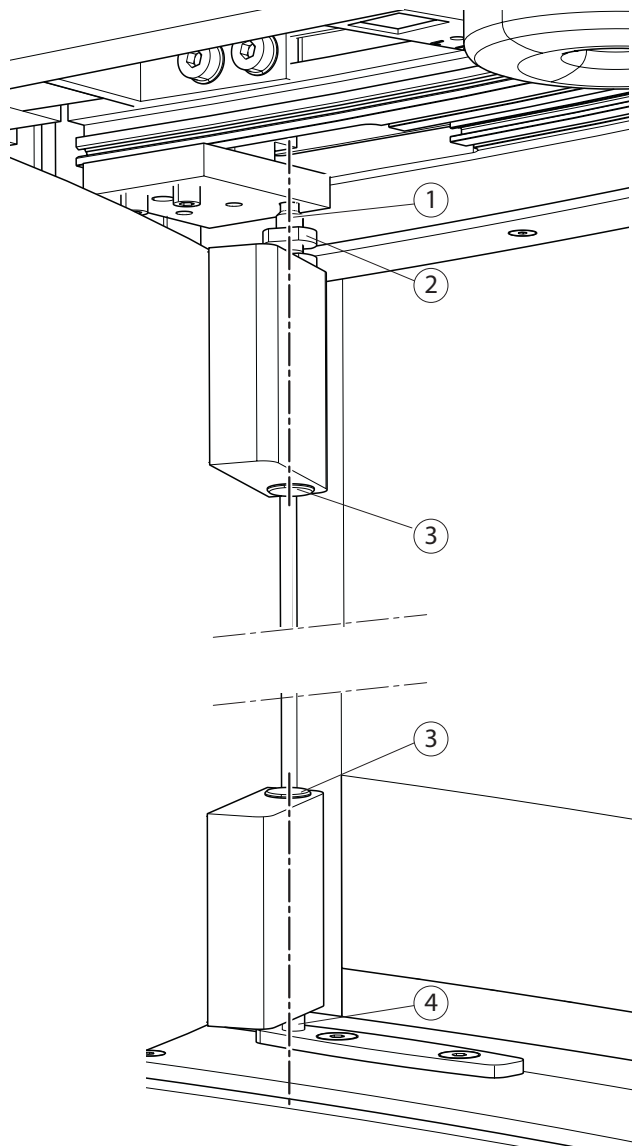
- Loosen the nut (5).
- Unscrew the threaded rod (4) and screw it into the bearing plate (3) upper pivot bearing.



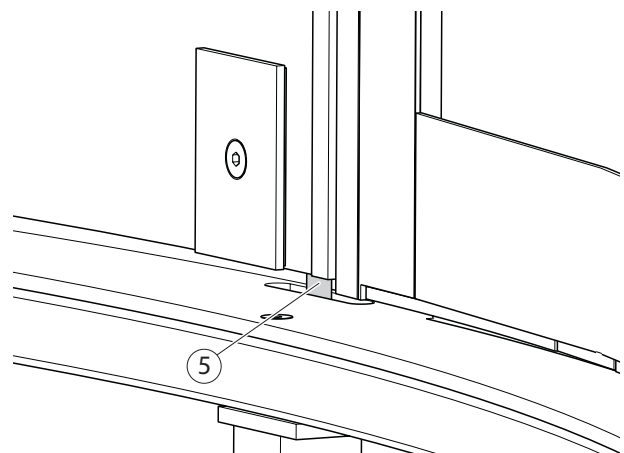
7.3.29 Adjusting the protective leaf

Adjust the height position

- ▶ Adjust the height position of the threaded rod (1) on the upper pivot bearing and threaded rod (4) on the lower pivot bearing.
- ▶ After adjustment, tighten the upper nuts (2).
- ▶ After adjusting the height position, clip in the caps (3).

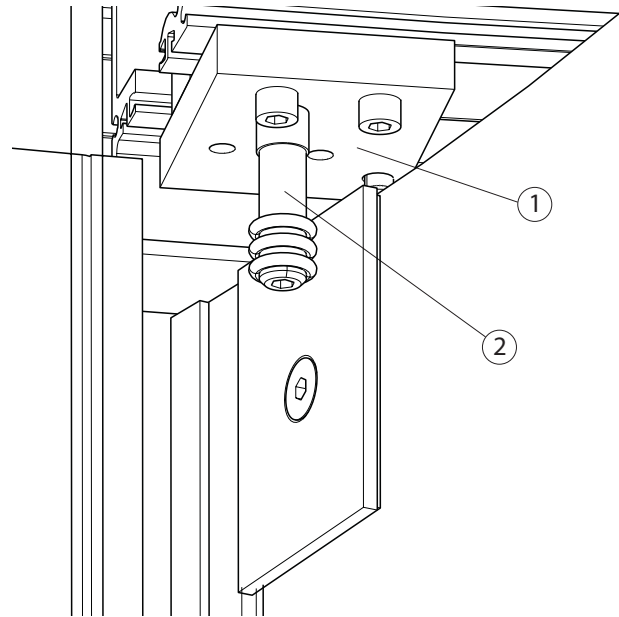


- ▶ Check to ensure the locking bolts (5) plunge cleanly into the floor area.



Mount stop bolts

- Screw the stop bolts (2) into the upper pivot bearing (1).



7.3.30 Shortening the tooth belt cut protection

If the toothed belt collides with the cut protection:

- Shorten the cut protection so that the toothed belt passes the cut protection without contact.

7.3.31 Adjusting the rod locking

See the supplementary installation instructions for Slimdrive SL WK2 (mat. no. 136308).

7.4 Installation information for NV tooth-belt tension

see section 5.4 Open position monitoring on page 43

7.5 Mounting the turnstile

see section 4.2.5 Installation without floor ring on page 11

7.5.1 Inserting the floor bearing

see section 4.2.5 Installation without floor ring on page 11

7.5.2 Mounting the collector ring

see section 4.2.12 Mounting the collector ring on page 18

7.5.3 Mounting the centre rod retainer

see section 4.2.13 Mounting the centre rod retainer on page 18

7.5.4 Mounting the centre rod below

see section 4.2.15 Mounting the centre rod below on page 19

7.5.5 Drilling a cable guide for post safety

see section 4.2.14 Drilling a cable guide for post safety on page 19

7.5.6 Mounting the side-hung casements

see section 4.2.17 Mounting the side-hung casements on page 20

- 7.5.7 Fastening the side-hung casements
see section 4.2.18 Fastening the side-hung casements on page 21
- 7.5.8 Adjusting the chain tensioner
see section 4.2.19 Adjusting the chain tensioner on page 22
- 7.6 Mounting contact strips on the leaves
see section 4.3 Mounting switch contact strips on the leaves on page 22
- 7.7 Mount the RC 2 ceiling panel



To provide a better overview, the following illustrations are shown without side-hung casement.

- 7.7.1 Placing the cover
see section 4.5.1 Placing the cover on page 24
- 7.7.2 Mount the outside
see section 6.7.2 Mount the outside on page 88
- 7.7.3 Mount inside
see section 6.7.3 Mount inside on page 92
- 7.7.4 Inserting and screwing on the segment sheeting
see section 4.5.2 Inserting and screwing on the segment sheeting on page 25
- 7.7.5 Install the entrance mat
see section 4.5.3 Installing the entrance mat on page 26
- 7.8 Check list for commissioning and service
see section 4.6 Check list for commissioning and service on page 27

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