

# ECturn Inside

EN Installation and service instructions

150647-01






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## Symbols and illustrations

### Further 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 their statutory liability.

## Reference documents

Material / drawing no.	Type	Name
196492	Wiring diagram	Ecturn/Ecturn Inside
70107-ep10	Installation diagram	Timber door
70107-ep12	Installation diagram	Metal door
70107-ep13	Installation diagram	Wooden frame
70107-ep14	Installation diagram	Metal frame

Installation suggestions for many manufacturer-specific profiles are available in the GEZE portal. The diagrams are subject to change without notice. Use only the most recent version.

## 1 Safety

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

### 1.1 Intended use

The Ecturn Inside is intended as a swing door actuator for integration in the door leaf or frame.

The Ecturn Inside is suitable:

- solely for use in dry rooms
- for internal applications in public buildings
- in private areas
- for timber and metal doors.

The Ecturn Inside

- must not be used on fire doors or smoke protection doors,
- must not be used for potentially explosive areas.

Any improper use such as permanent manual operation, as well as any modification to the product, is not permitted.

## 1.2 Safety notices

- 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 technology tests.
- GEZE is not liable for any injuries or damage whatsoever resulting from unauthorised changes to the system.
- Furthermore, only original GEZE parts may be used for repair and maintenance work.
- The connection to the mains voltage must be made by a professional electrician. Perform the power connection and protective earth connection test in accordance with VDE 0100 Part 610.
- Use an on-site automatic cut-out as the line-side disconnecting device, the dimensioning of which is matched to the type, cross-section, type of routing and ambient conditions of the on-site power supply circuit. The automatic cut-out must have at least 4 A and max. 16 A.
- 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 guidelines, standards and country-specific regulations, in particular:
  - ASR A1.7 "Guidelines for doors and gates"
  - DIN 18650 "Building hardware - Powered pedestrian doors"
  - Accident-prevention regulations, especially BGV A1 "General regulations" and BGV A2 "Electrical installations and equipment"
  - VDE0100; Part 610 "Erection of low-voltage installations"
  - DIN EN 60335-2-103 "Household and similar electrical appliances; Particular requirements for drive units for gates, doors and windows"
- The relevant regional building regulations must be consulted with regard to widths of rescue routes.

## 1.3 Safety-conscious working

- Secure workplace against unauthorised entry.
- Use only the cables specified on 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 voltage despite the fact that the power supply is disconnected.
- Always use insulated wire-end ferrules for wire cores.
- Attach safety stickers to glass leaves.
- Danger of injury due to glass breakage.
- Danger of injury due to sharp edges in the drive.

## 1.4 Inspection of the installed system

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

- Check the function of security sensors and movement detectors.
- The detection area of the movement detector in the direction of the emergency exit must cover the opening width x 1.5 m in front of the door.
- Check protective earth connection to all metal parts that can be touched.
- Perform a safety analysis (risk analysis).

## 1.5 Environmentally conscious working

The door system is made up of materials that should be sent for recycling.

For this purpose, the individual components should be sorted corresponding to material type:

- Metal
- Plastic
- Electronics
- Cables

The parts can be disposed of at the local recycling depot or by a scrap recycling company.

## 1.6 Disposal



Information regarding the German Battery Directive:

(Applicable in Germany and in all other member states of the European Union as well as in other European countries, together with the countries' own provisions for a separate waste battery collection system.)



In accordance with the German Battery Directive, we are obliged to inform you of the following in connection with the sale of batteries or rechargeable batteries respectively in connection with the delivery of devices containing batteries or rechargeable batteries: Rechargeable batteries and batteries must not be disposed of with household waste. Disposal with household waste is expressly forbidden according to the German Battery Directive. As the final consumer, you are bound by law to return waste batteries and rechargeable batteries. Please return waste batteries and rechargeable batteries to a communal collection point or retailer.

Following use, you may return any batteries or rechargeable batteries received from us by post.

The address is: GEZE GmbH, Wareneingang, Reinhold-Vöster-Str. 21-29, 71229 Leonberg

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## 2 Tools and aids

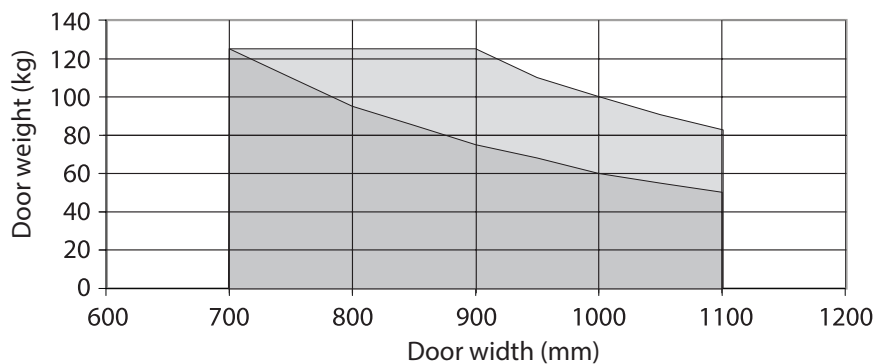
Tool	Closer size
Allen key	3 mm, 4 mm, 5 mm
Phillips screwdriver	PZ1, PZ2
Slotted screwdriver	2 mm
Side-cutting pliers	
Wire stripper/crimping pliers	
Display programme switch	

## 3 Product description

### 3.1 System description and technical data

The Ecturn Inside is a swing door actuator operating fully automatically that is actuated by sensors or push buttons. The Ecturn Inside operates electrically during opening and closing.

#### Ecturn Inside application



light grey

Low Energy

dark grey

Automatic

#### Mechanical data

- Dimensions (H x D x L): 61 x 45 x 566 mm
- Ambient temperature range: -15 °C to +50°C
- Drive mass: approx. 3 kg
- minimum door width for installation in timber door or frame 700 mm
- minimum door width for installation in metal door or frame 750 mm

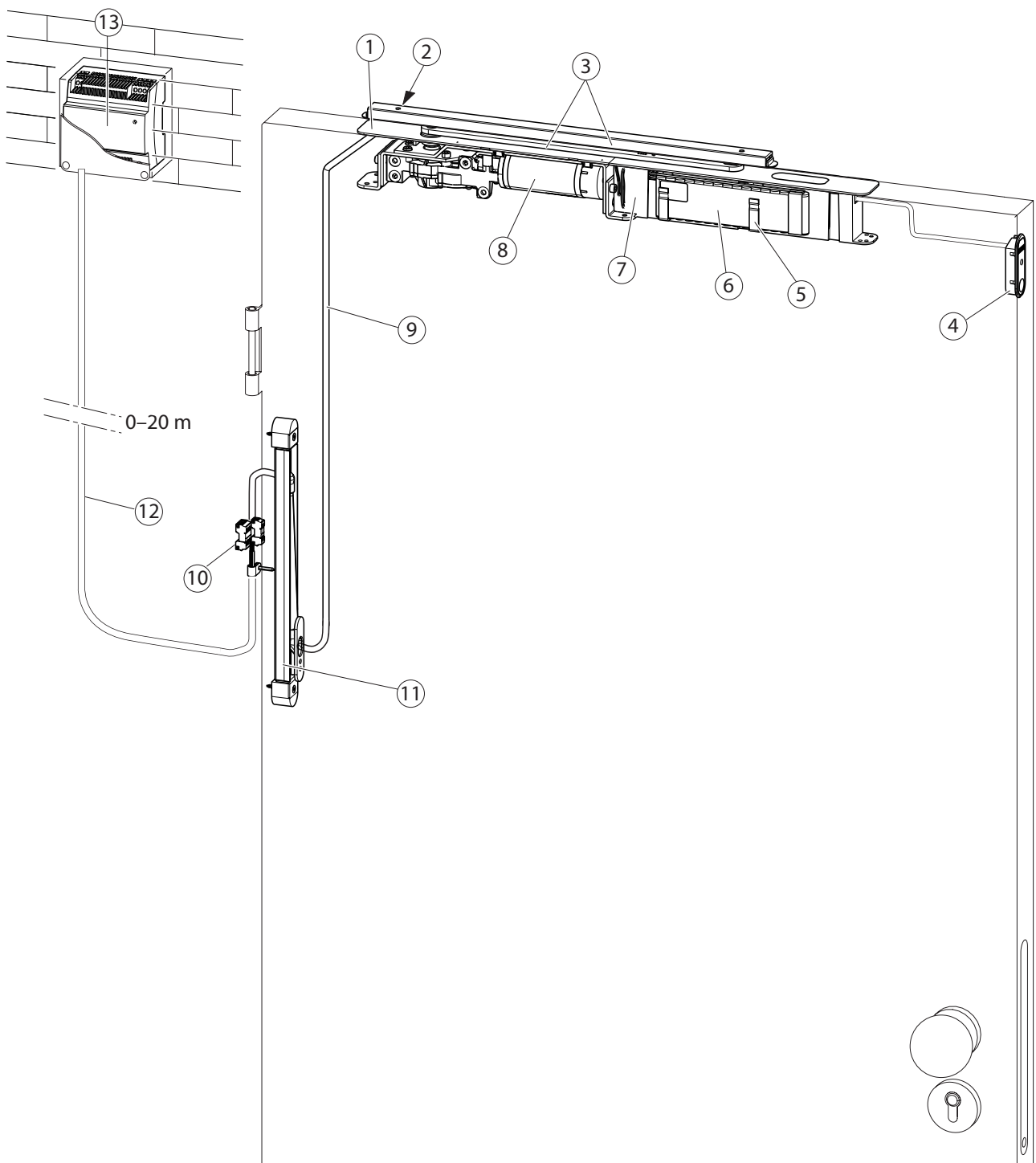
#### Electrical data

- Mains connection: 110-230 V AC +/- 10%, 50-60 Hz
- Power consumption: max. 92 W
- Externally connectable devices: 24 V DC, max. 600 mA

## 4 Scope of delivery

installation in the door leaf is shown, installation in the door frame is also possible

### 4.1 Overview



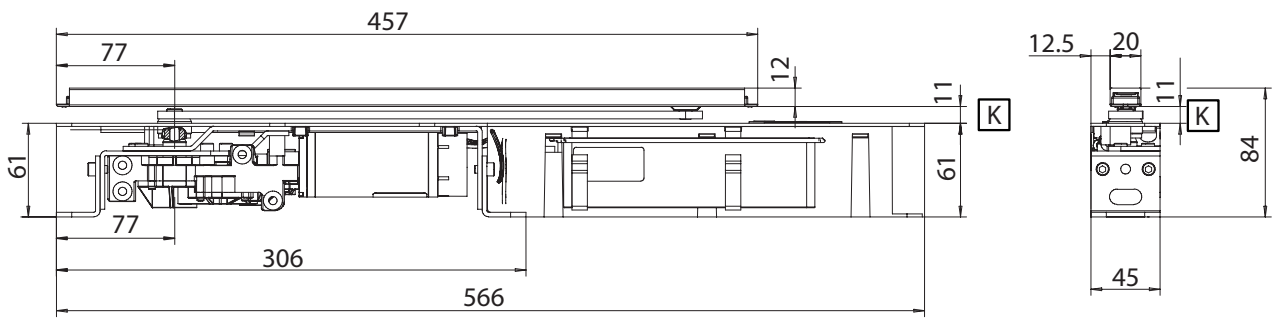
- |   |   |    |  |
|---|---|----|--|
| 1 | Cover for the motor gear unit                   | 8  | Motor gear unit                            |
| 2 | Back check (mat.no.129343)                      | 9  | Power supply cable 2.5 m                   |
| 3 | Guide rail and lever with installation material | 10 | Electric installation material             |
| 4 | separate programme switch (optional)*           | 11 | Drip loop (optional)                       |
| 5 | Fixture for rechargeable battery (optional)     | 12 | Power supply cable (on site) max. 20m long |
| 6 | Rechargeable battery (optional)                 | 13 | Power supply                               |
| 7 | Control unit                                    |    |  |

\*) alternatively, the separate programme switch can be placed further away from the control unit with a 1 m cable

## 5 Dimensions

### 5.1 Dimensions when installed in timber door leaf

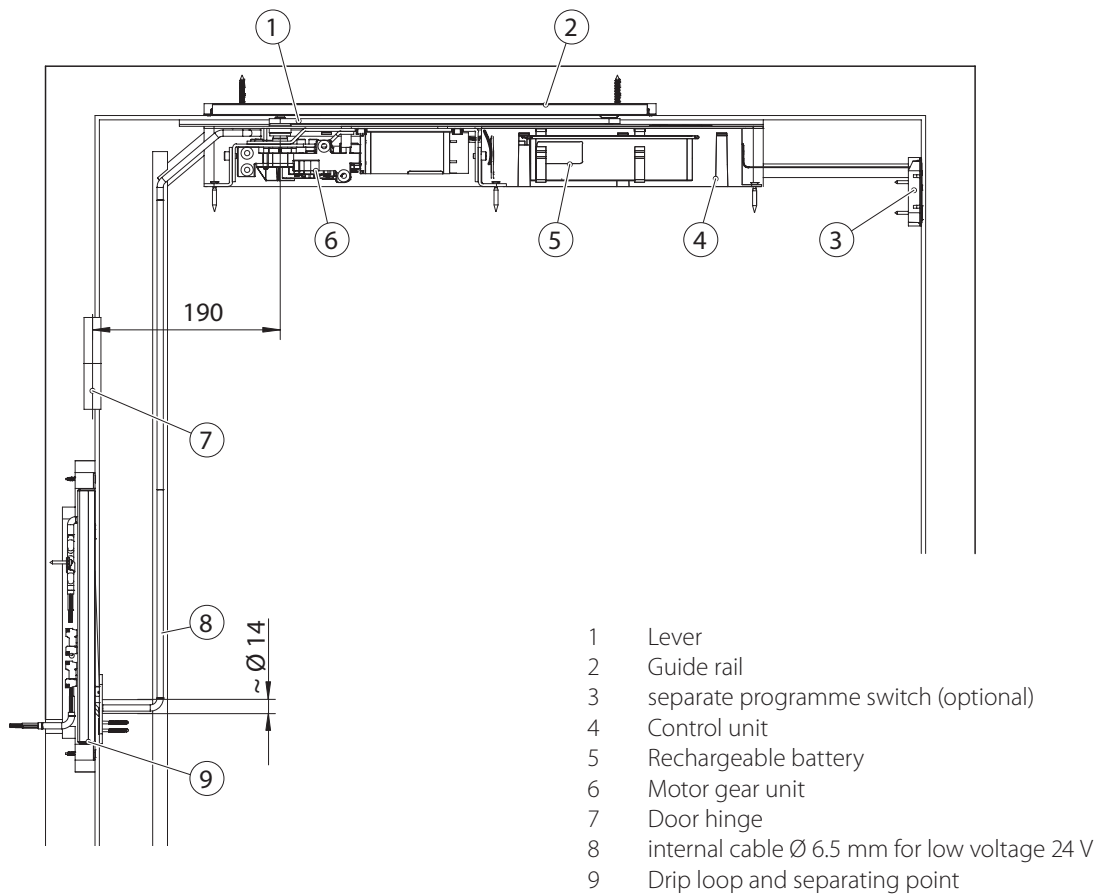
#### 5.1.1 Main dimensions



Dimensions $\mathbb{K}$ (mm)*	Spindle extension (mm)
11	without
17	6
24	13
27	16
31	20

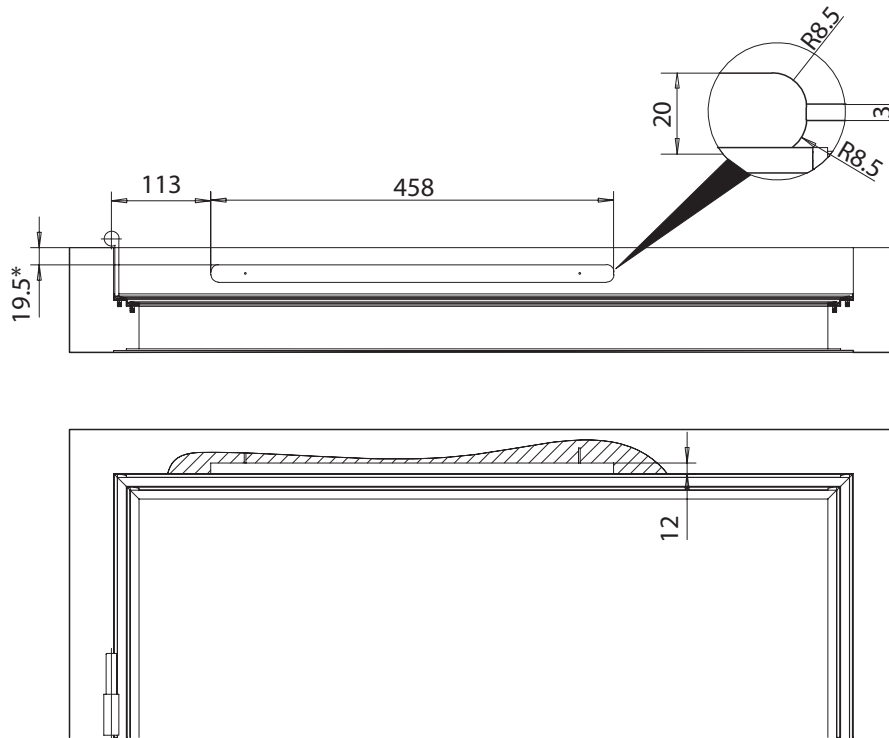
\*) Values between by slightly bending the lever

#### 5.1.2 Installation situation



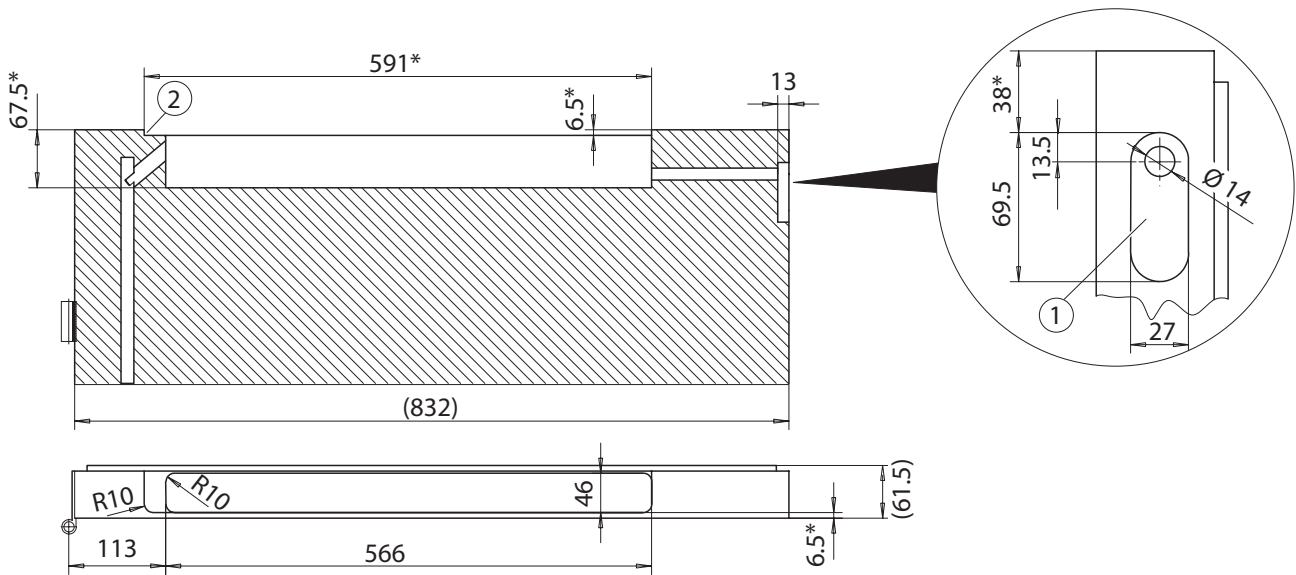


5.1.3 Prepared frame



\*) Dimensions or positions can deviate depending on the door type

5.1.4 Preparation of door leaf

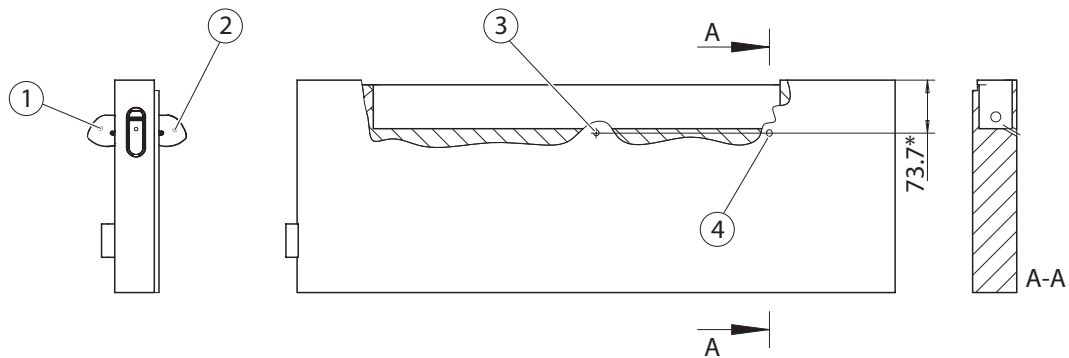


\*) Dimensions or positions can deviate depending on the door type

- 1 Rebate for programme switch
- 2 Recess for lever

### 5.1.5 Security sensors

**!** ▶ Make sure that fixing screws and drill holes do not cross the motor gear unit.

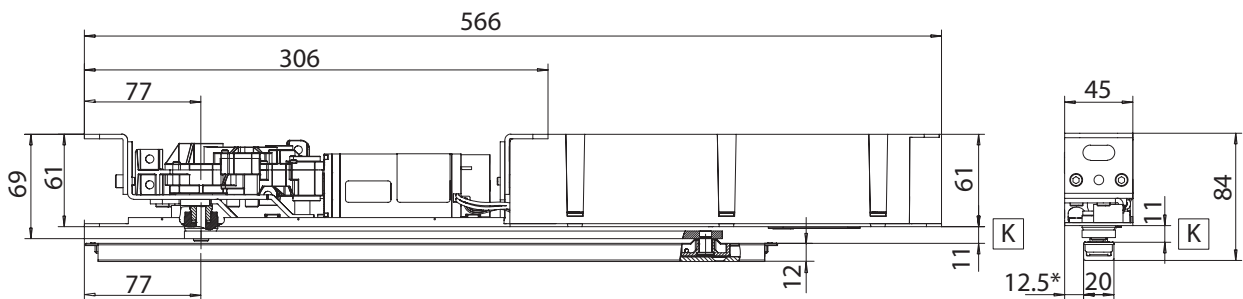


\*) Dimensions or positions can deviate depending on the door type

- 1 Security sensor "Open"
- 2 Security sensor "Close"
- 3 Drill hole Ø 8 mm for connection cable for the "Close" sensor
- 4 Drill hole Ø 8 mm for control unit connector cable.

## 5.2 Dimensions when installed in wooden frame

### 5.2.1 Main dimensions

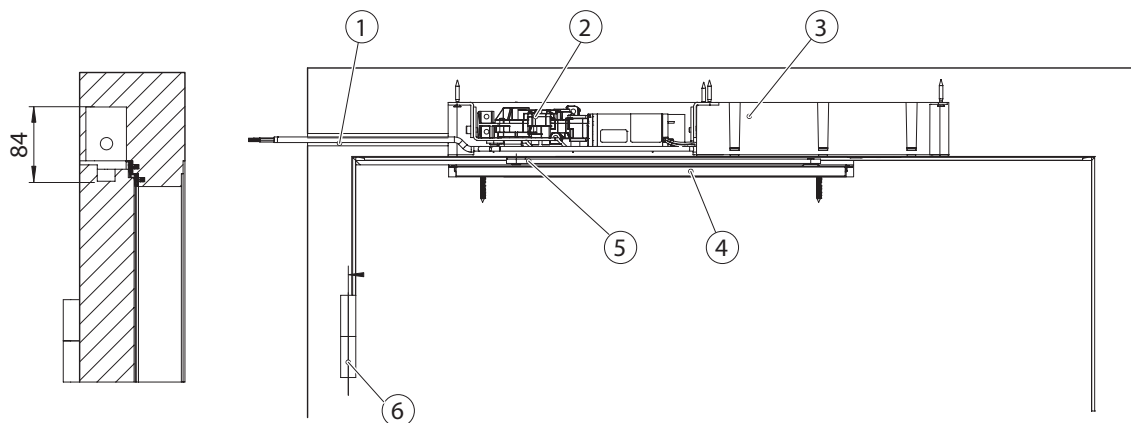


Dimensions $\square$ (mm)**	Spindle extension (mm)
11	without
17	6
24	13
27	16
31	20

\*) Dimensions or positions can deviate depending on the door type

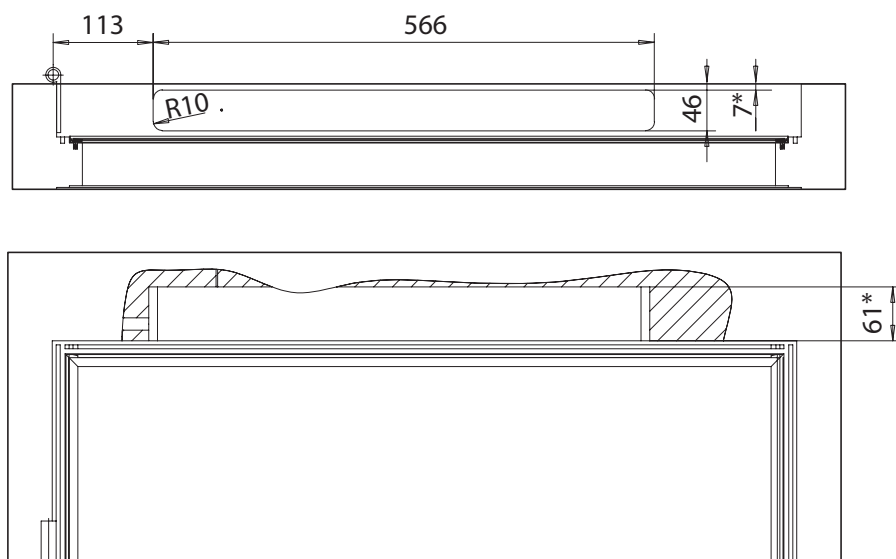
\*\*\*) Values between by slightly bending the lever

5.2.2 Installation situation



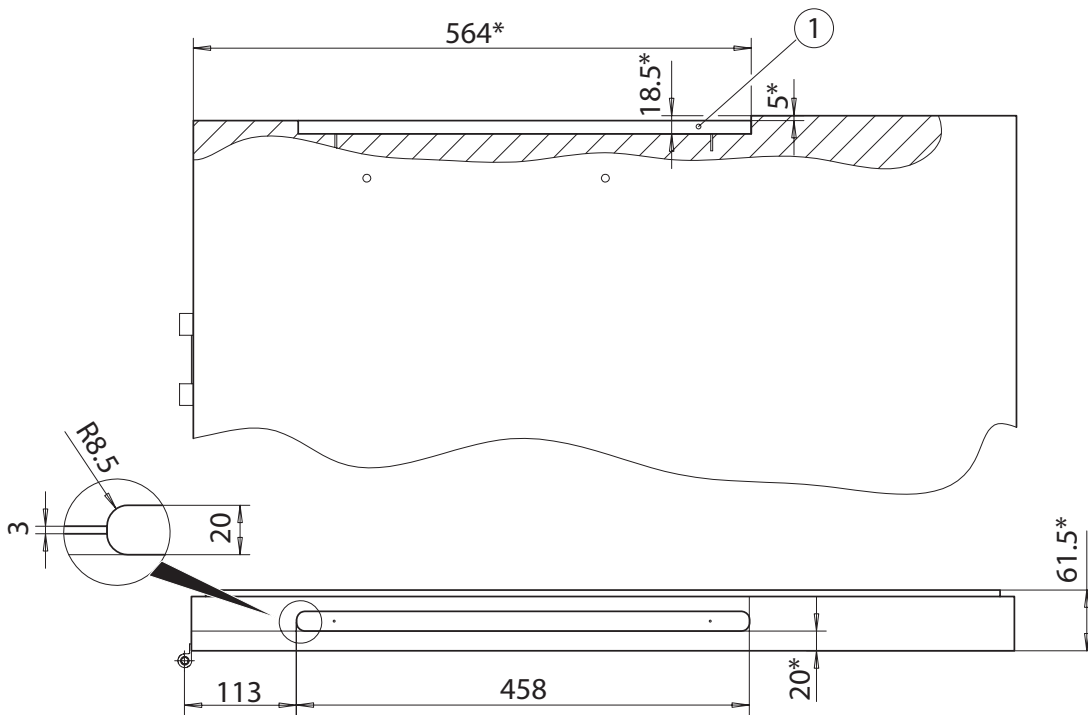
- 1 Cable Ø 6.5 mm in the frame for low voltage
- 2 Motor gear unit
- 3 Control unit
- 4 Guide rail
- 5 Lever
- 6 Door hinge

5.2.3 Prepared frame



\*) Dimensions or positions can deviate depending on the door type

5.2.4 Preparation of door leaf

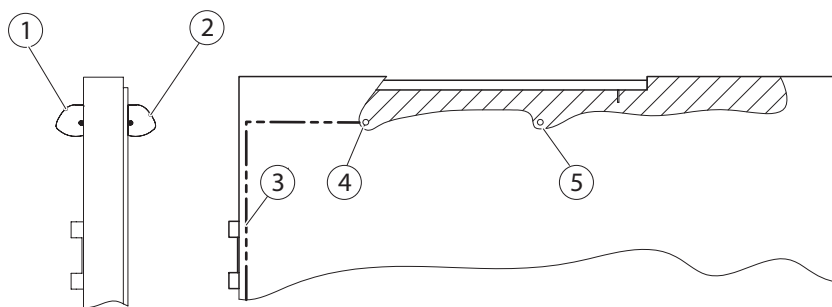


\*) Dimensions or positions can deviate depending on the door type

1 Rebate for lever

5.2.5 Security sensors

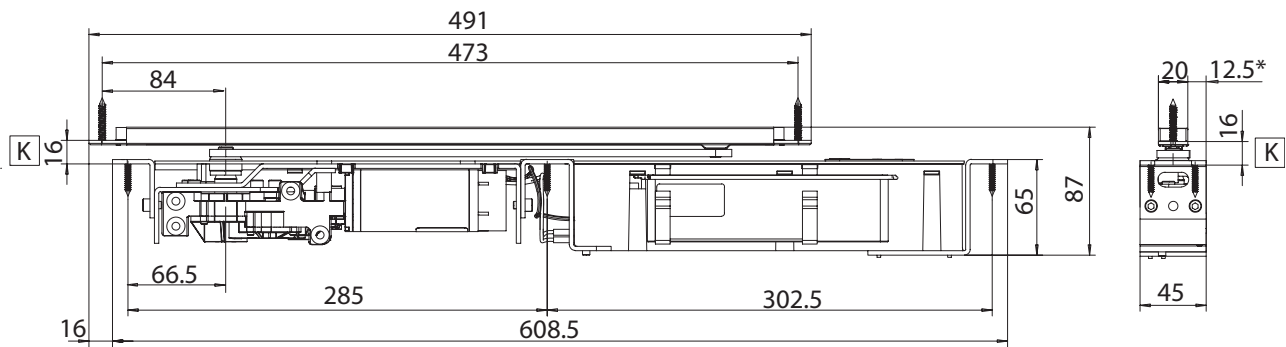
**!** ▶ Make sure that fixing screws and drill holes do not cross the motor gear unit.



- 1 Security sensor "Open"
- 2 Security sensor "Close"
- 3 Connector cable to the control unit
- 4 Drill hole Ø 8 mm for control unit connector cable.
- 5 Drill hole Ø 8 mm for connection cable for the "Close" sensor

### 5.3 Dimensions when installed in metal door

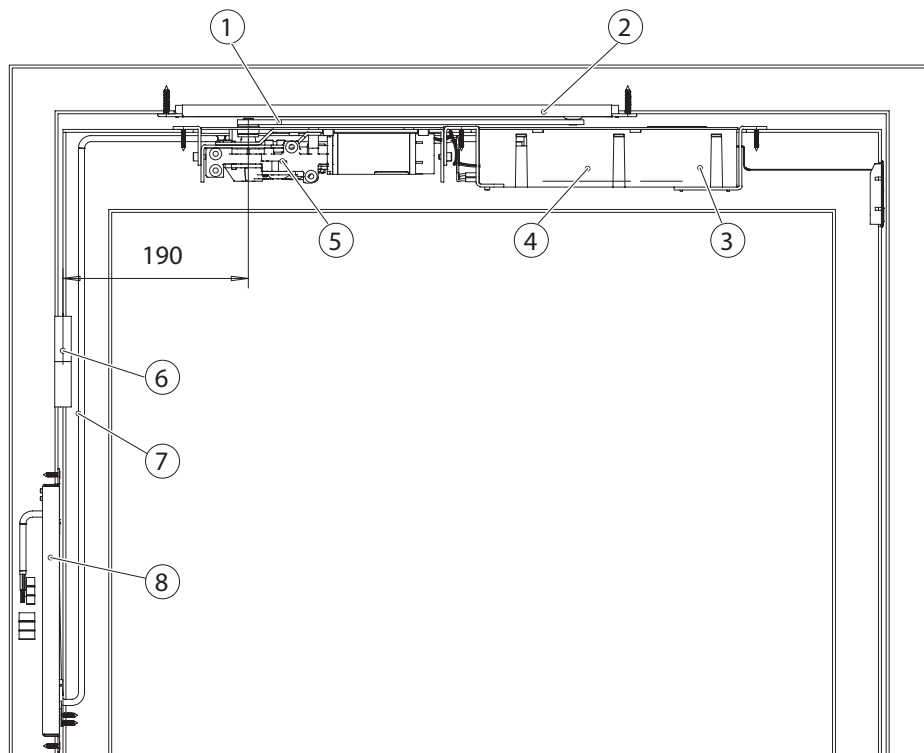
#### 5.3.1 Main dimensions



Dimensions $K$ (mm)**	Spindle extension (mm)
16	without
22	6
29	13
32	16
36	20

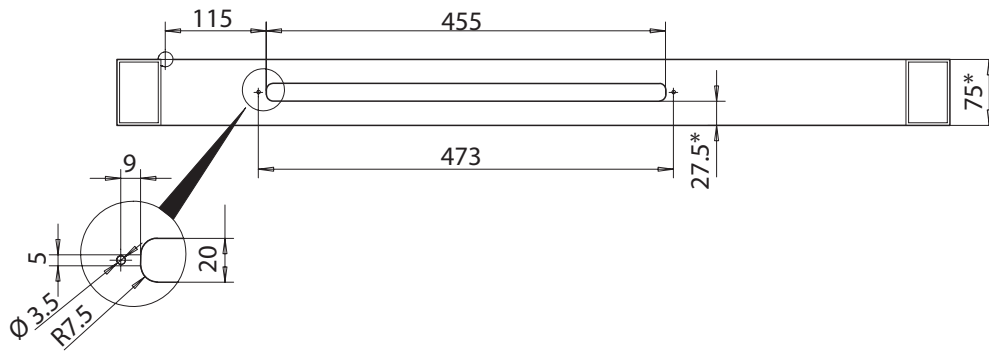
\*) Dimensions or positions can deviate depending on the door type  
 \*\*) Values between by slightly bending the lever

#### 5.3.2 Installation situation



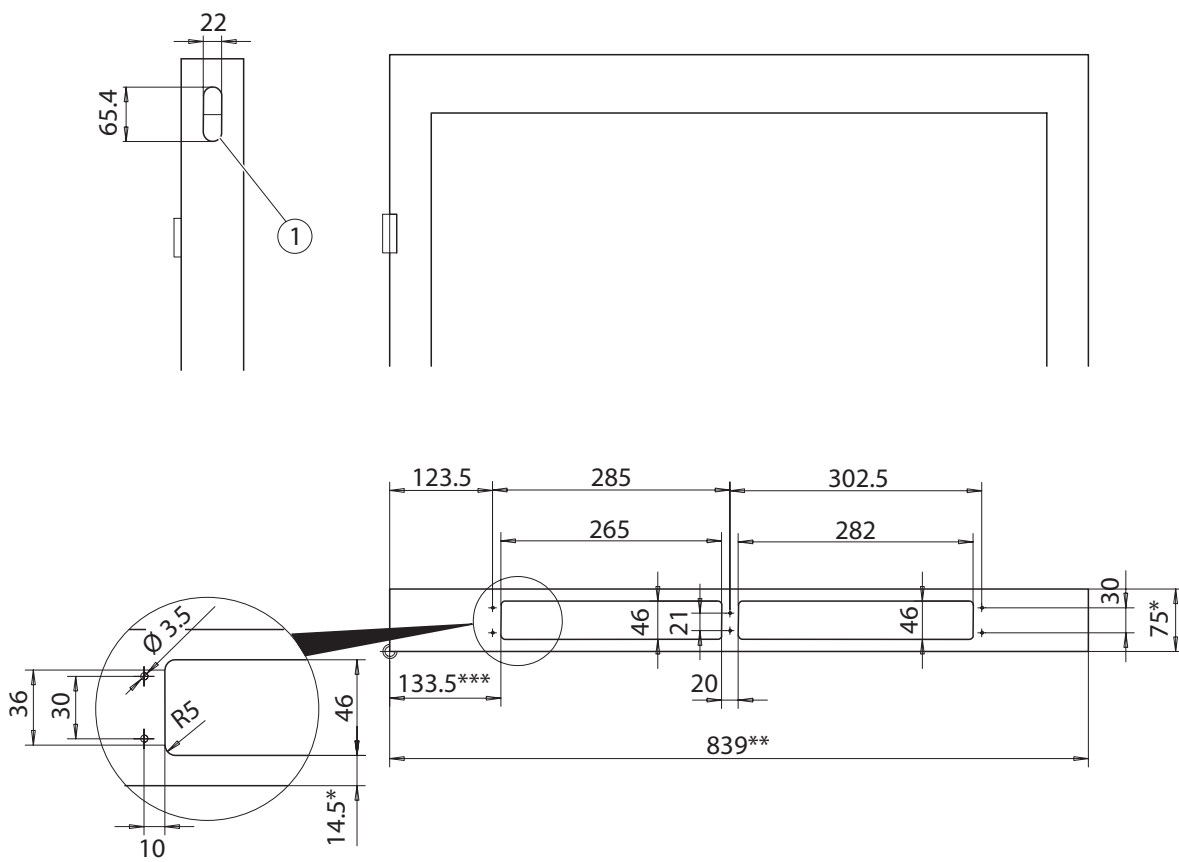
- |   |                      |   |  |
|---|----------------------|---|--|
| 1 | Lever                | 6 | Door hinge   |
| 2 | Guide rail           | 7 | internal connection cable $\varnothing$ 6.5 mm for low voltage |
| 3 | Control unit         | 8 | Drip loop and separating point                                 |
| 4 | Rechargeable battery |   |  |
| 5 | Motor gear unit      |   |  |

5.3.3 Prepared frame



\*) Dimensions or positions can deviate depending on the door type

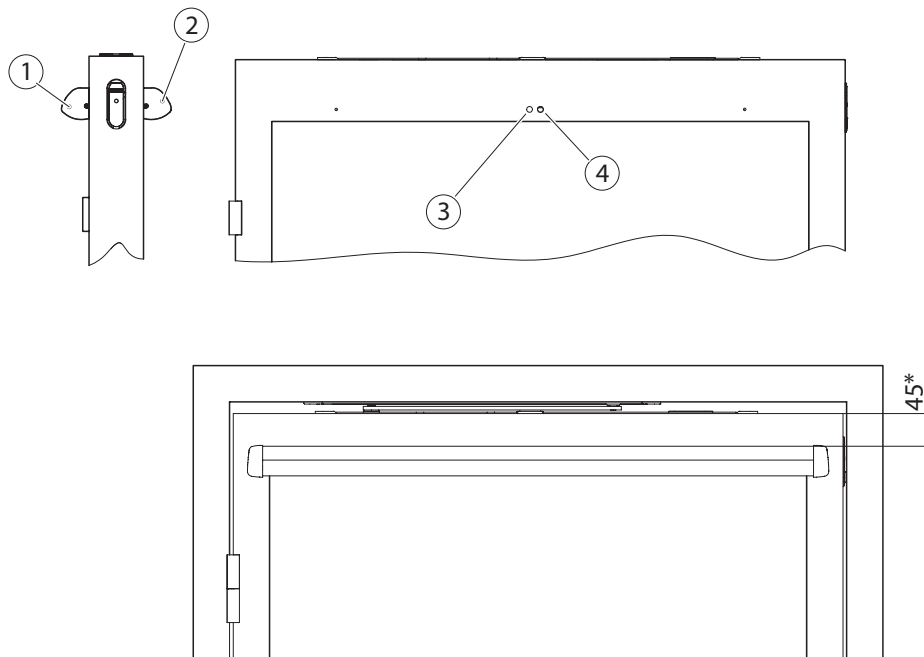
5.3.4 Preparation of door leaf



1 Rebate for programme switch

### 5.3.5 Security sensors

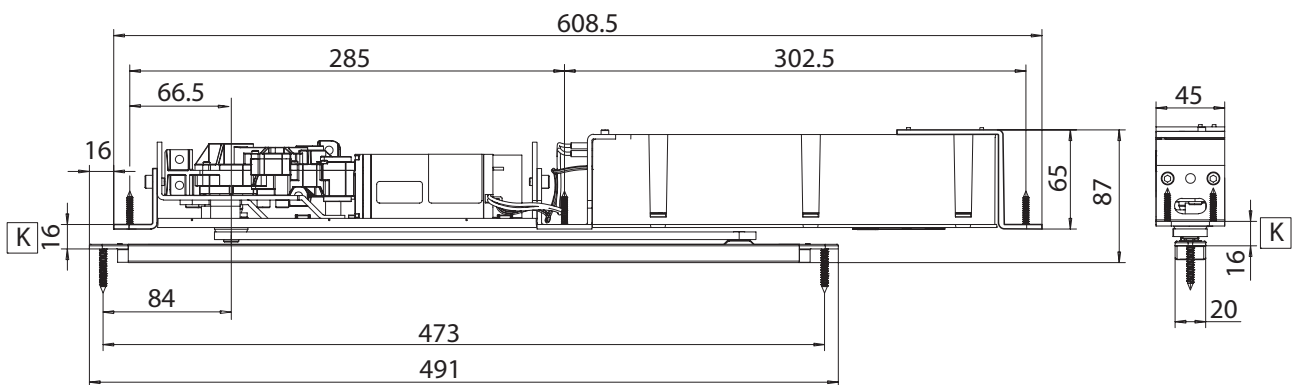
**!** ▶ Make sure that fixing screws and drill holes do not cross the motor gear unit.



- 1 Security sensor "Open"
- 2 Security sensor "Close"
- 3 Drill hole Ø 8 mm for control unit connector cable.
- 4 Drill hole Ø 8 mm for connection cable for the "Close" sensor

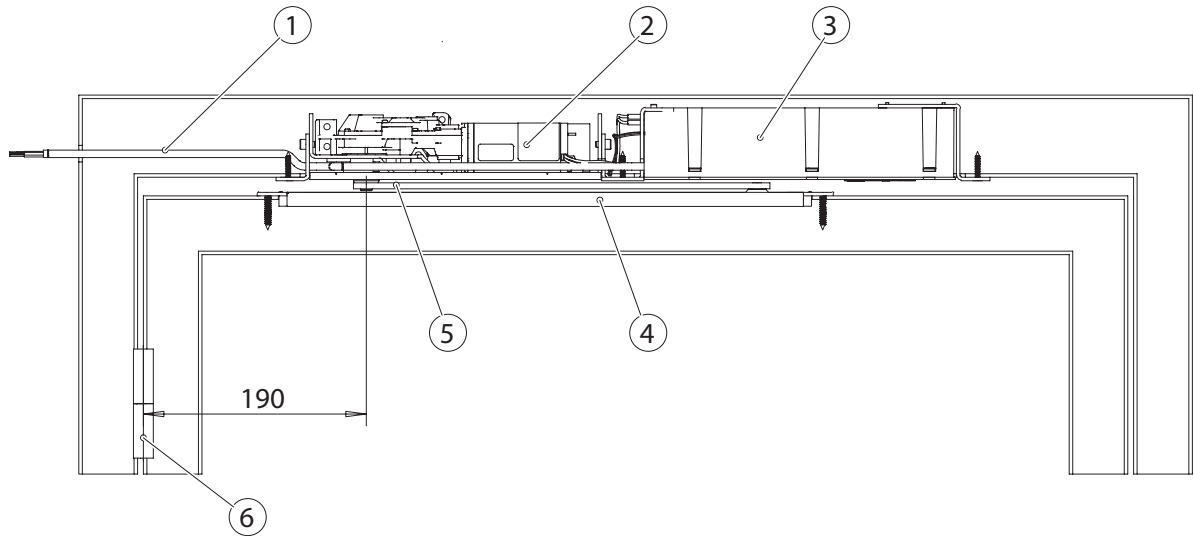
## 5.4 Dimensions when installed in metal frame

### 5.4.1 Main dimensions



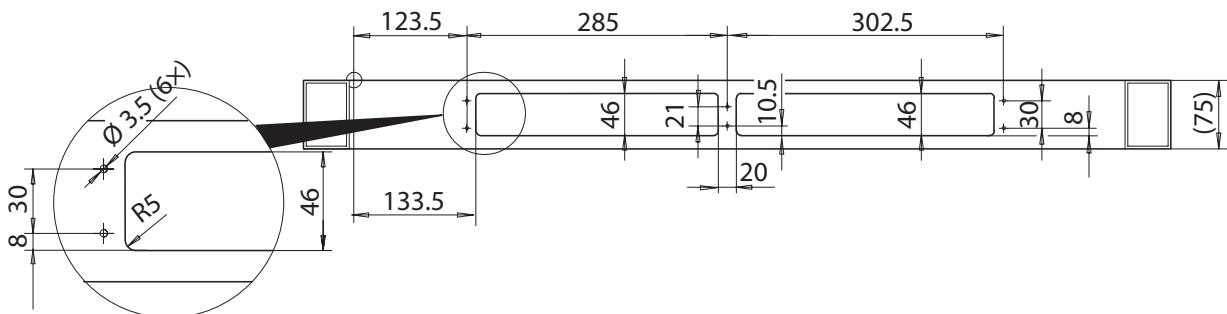
Dimensions $\text{K}$ (mm)	Spindle extension (mm)
16	without
22	6
29	13
32	16
36	20

5.4.2 Installation situation

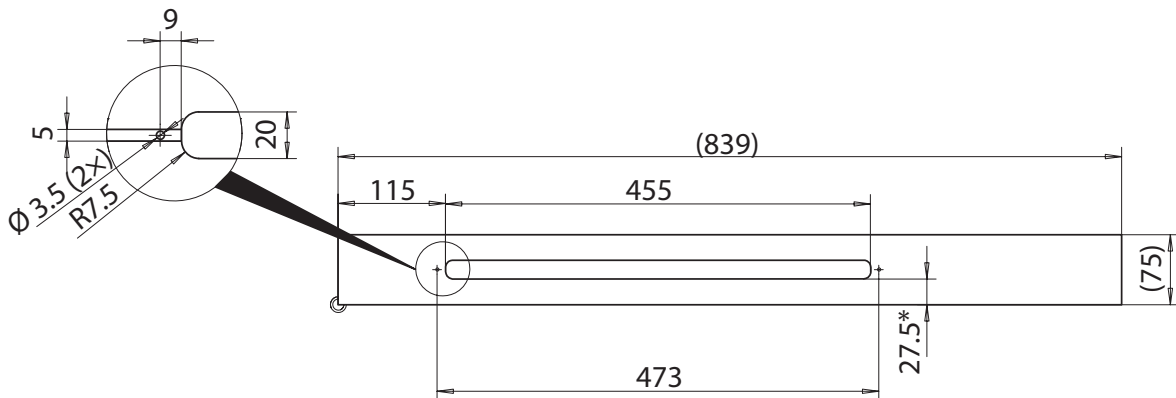


- 1 Cable Ø 6.5 mm in the frame for low voltage
- 2 Motor gear unit
- 3 Control unit
- 4 Guide rail
- 5 Lever
- 6 Door hinge

5.4.3 Prepared frame



5.4.4 Preparation of door leaf

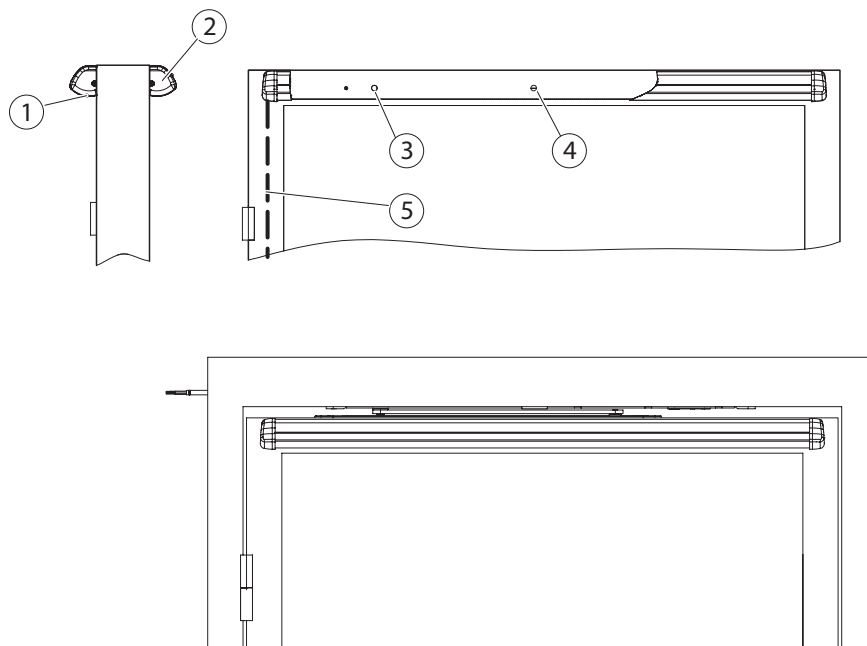


\*) Dimensions or positions can deviate depending on the door type



### 5.4.5 Security sensors

- ! ▶ Make sure that fixing screws and drill holes do not cross the motor gear unit.



- 1 Security sensor "Close"
- 2 Security sensor "Open"
- 3 Drill hole Ø 8 mm for control unit connector cable (5)
- 4 Drill hole Ø 8 mm for connection cable for the "Open" sensor
- 5 Connector cable to the control unit

## 6 Installation

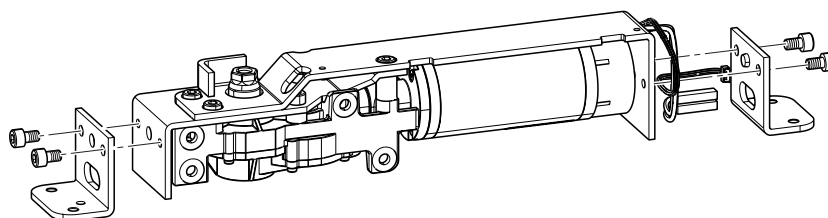
### 6.1 Installation type wood

#### 6.1.1 Preparatory work

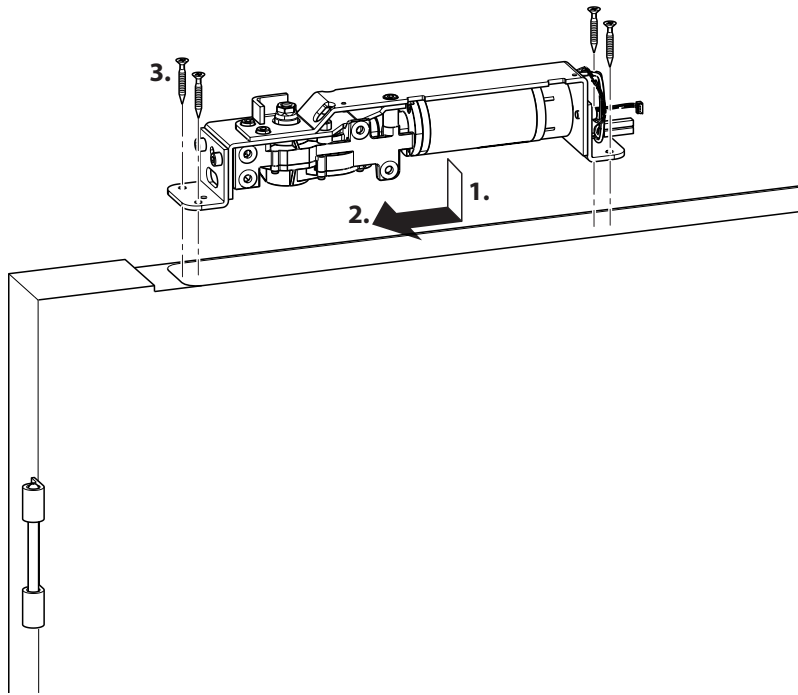
- ▶ Install the power supply and route low voltage to the drip loop.
- ▶ Install the drip loop.

#### 6.1.2 Installation on the door leaf

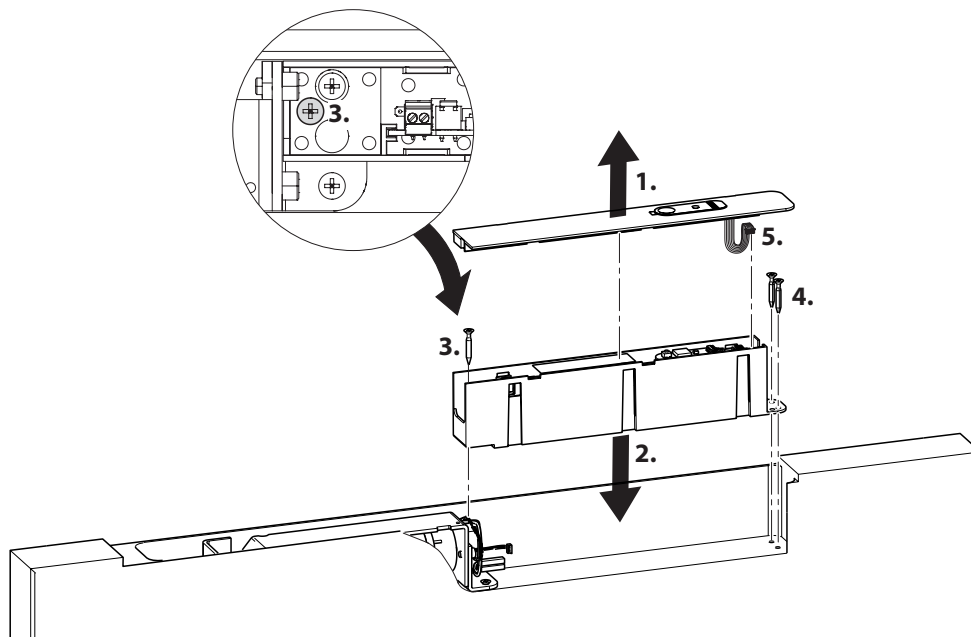
- ▶ Install the bracket on the motor gear unit.



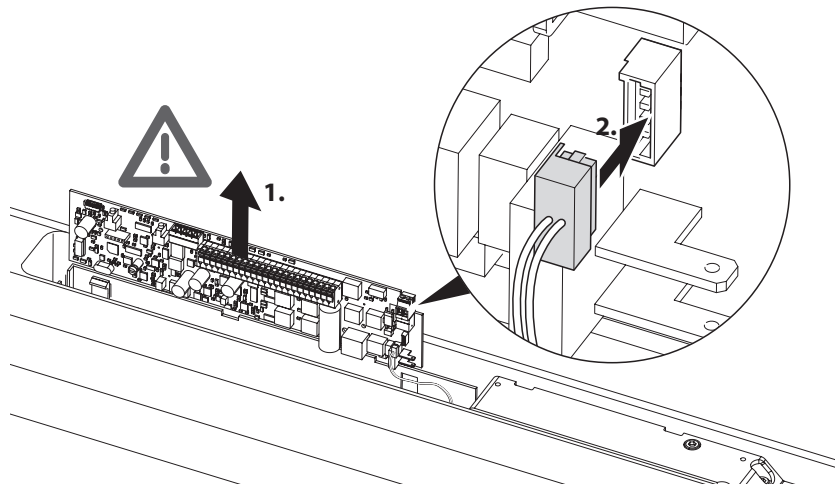
- ▶ Install the motor gear unit in the door leaf.



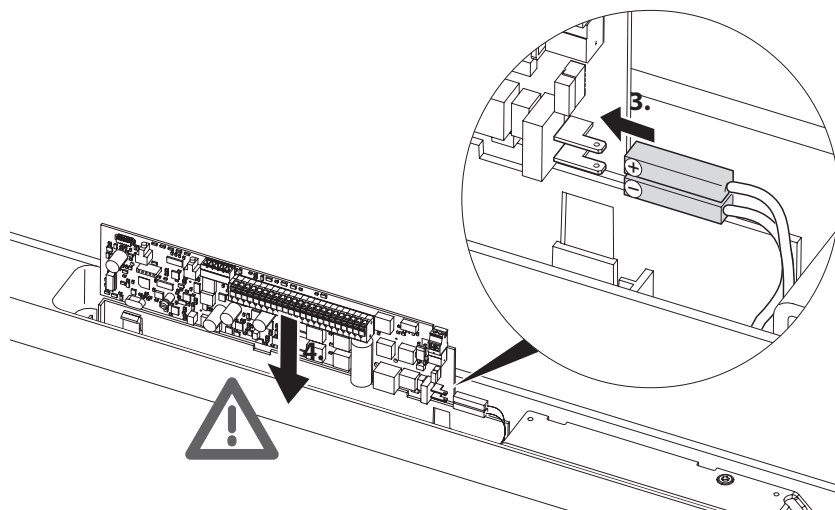
► Install the control unit.



► Connect the rotary encoder cable of the motor gear unit.



- ▶ Connect the 24-V cable of the motor gear unit.



If a radio board (optional) is used:

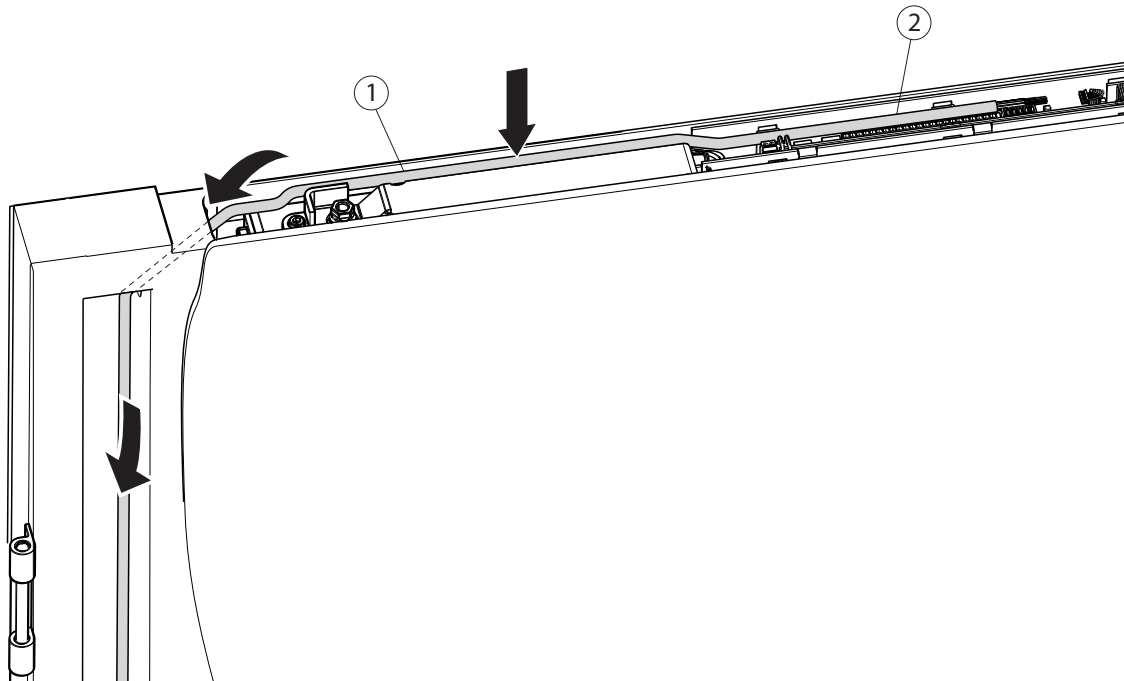
- ▶ Now install the radio board, see page 29.

**Electrical connection**

- ▶ Push the 6-wire cable (1) (2x 1 mm<sup>2</sup> for 24 V / 4x 0.25 mm<sup>2</sup> for electric strike, contact sensor etc.) into the prepared door passage from above and through the drip loop.



In the case of metal doors, this cable is already inserted when the door is built.

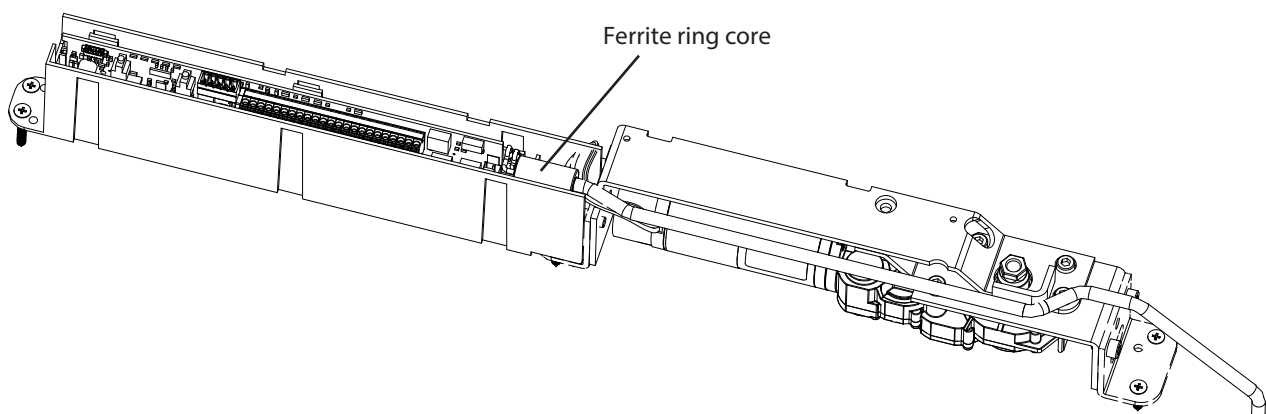


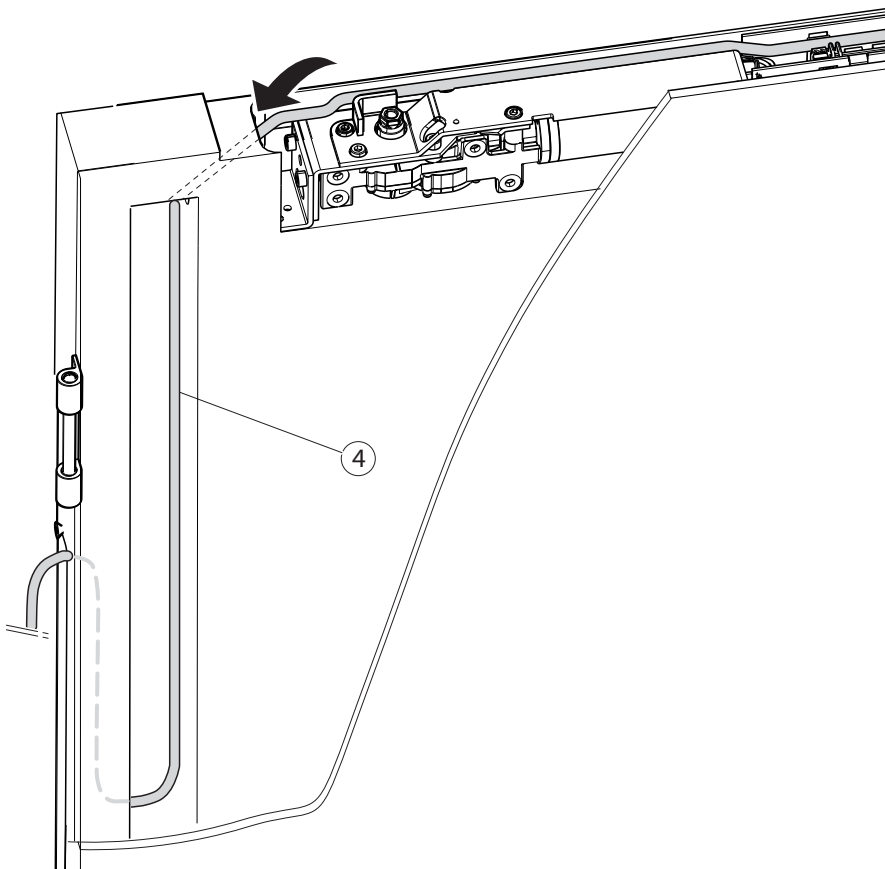
Route cable (1) along the motor gear unit (arrow) to the control circuit board (2).



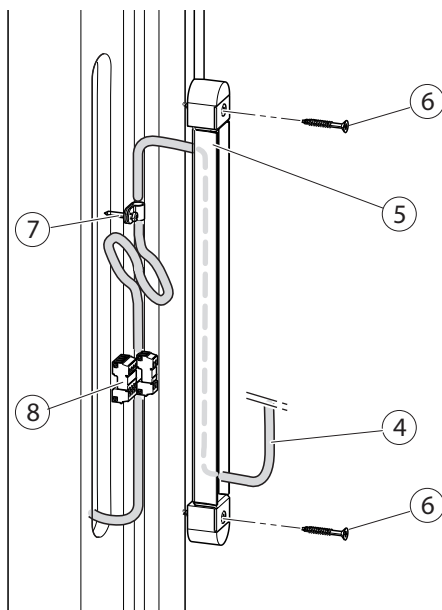
- ▶ Do not shorten the cable (1) too much. Leave the length of the wire cores that are not required so that all the terminals of the control circuit board can be reached if necessary later.

- ▶ Strip the insulation from both 24 V wire cores (red, blue) and fit with insulating 1mm<sup>2</sup> wire end ferrules
- ▶ Push the wire end ferrules through ferrite ring cores and connect to the plug
- ▶ Insert the plug into the control circuit board.





- ▶ Route the cable (4) further through the door leaf and the drip loop of the door leaf.



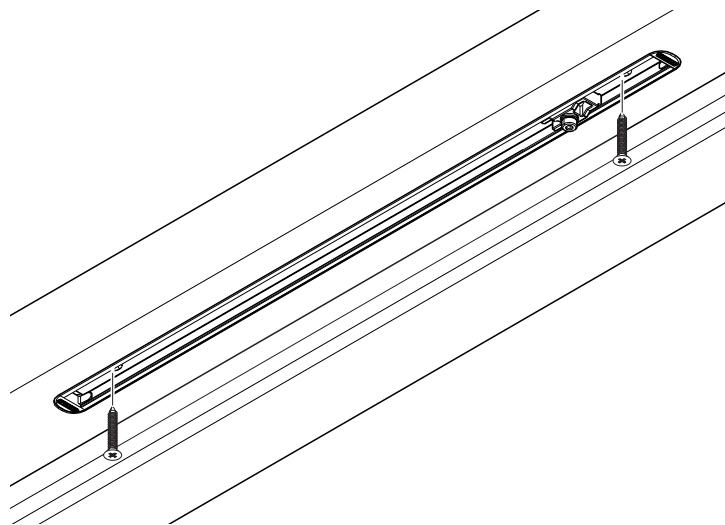
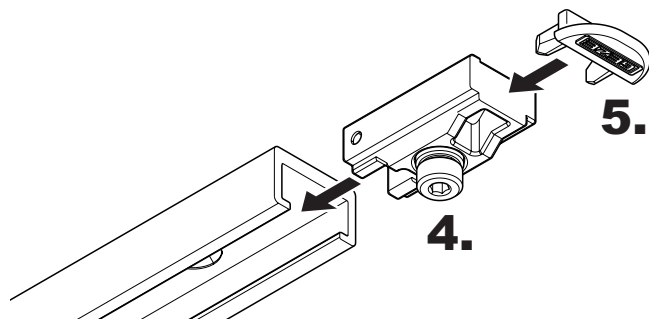
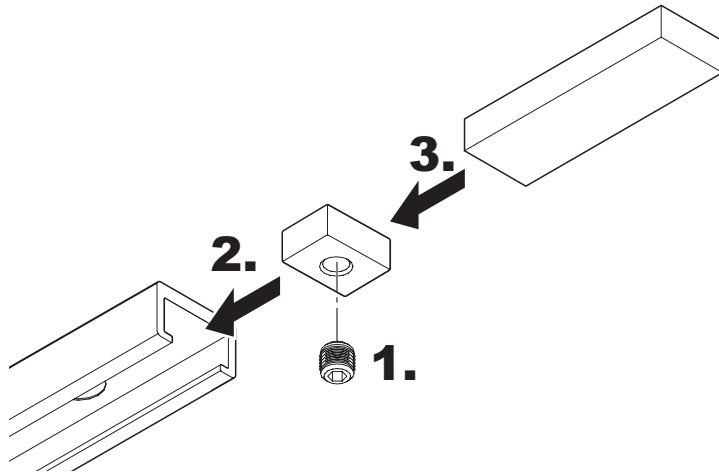
- ▶ Route the cable (4) through the drip loop (5) of the frame.
- ▶ Secure with strain relief (7).
- ▶ Use the cable (4) to form a loop near the interface (8).

**!** ▶ Make sure that the loop is sufficiently large to prevent any strain on the cable when the door is opened.

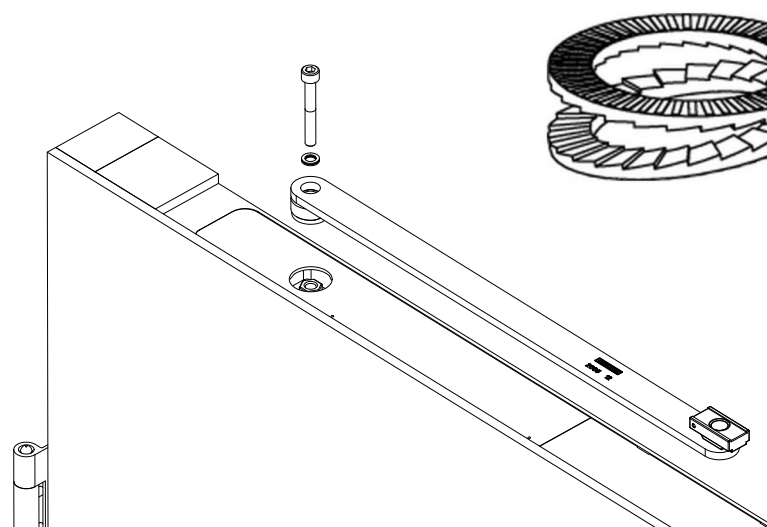
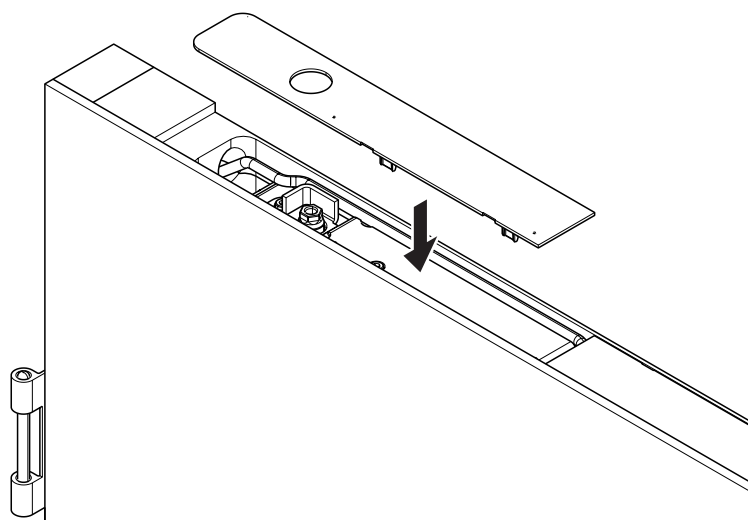
- ▶ Disconnect the cable.
- ▶ Strip the cable ends and integrate connector (5).

**i** ▶ Use 1 mm<sup>2</sup> wire end sleeves.

### Installing the guide rail

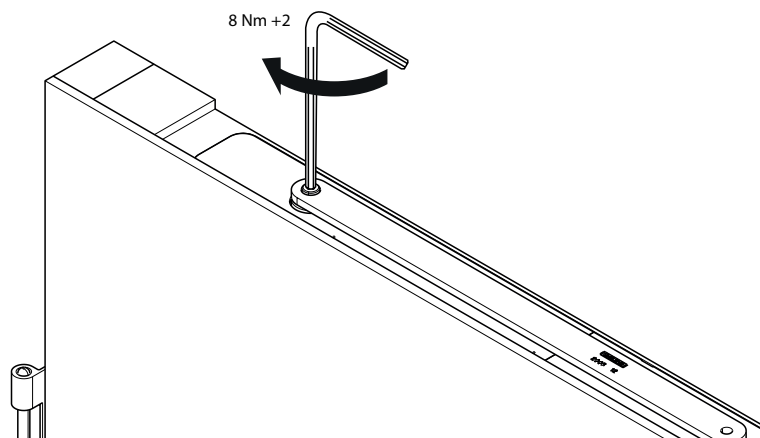


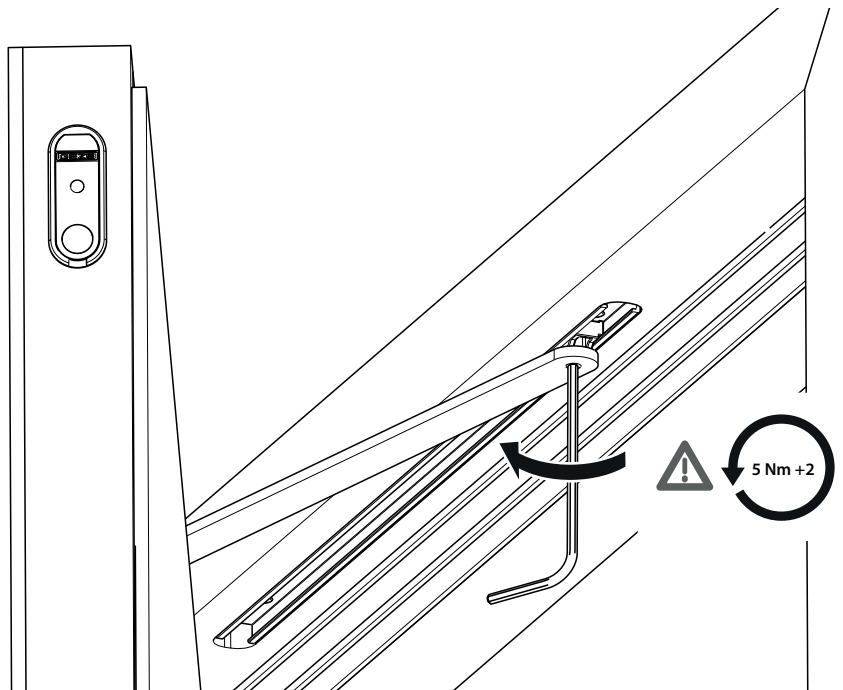
- ▶ Connect the lever to the motor gear unit.



Hooks must face one another

- 
- ! ▶ always use the 2-piece Nordlock lock washer – with O-ring fixed to M6x45 screw – (O-ring stays in place)
- 





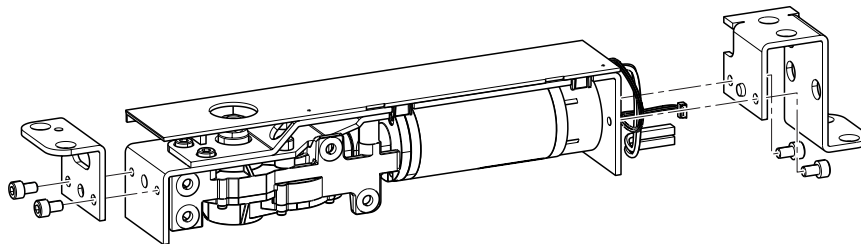
## 6.2 Installation type metal

### 6.2.1 Preparatory work

See chapter 6.1.1.

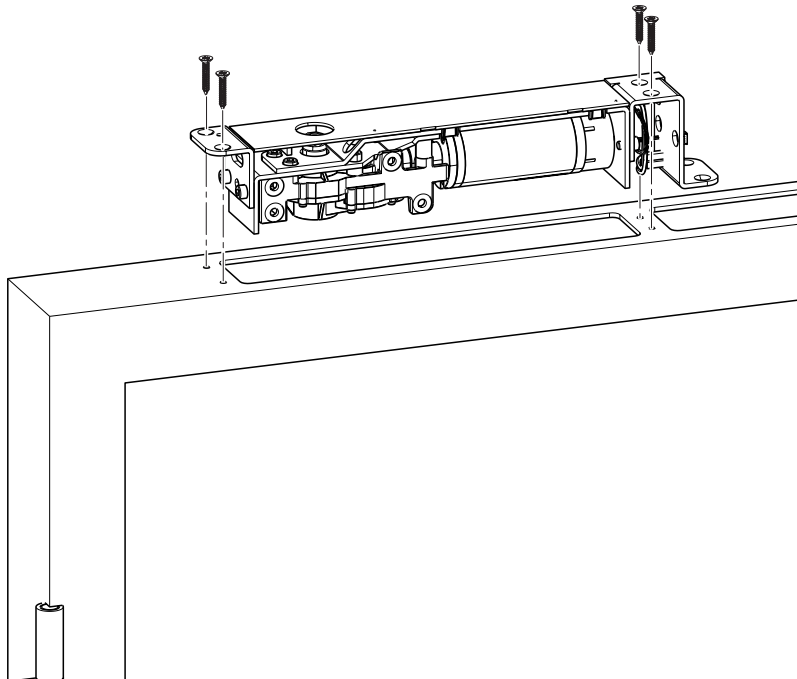
### 6.2.2 Installation on the door leaf

- Install the bracket on the motor gear unit.

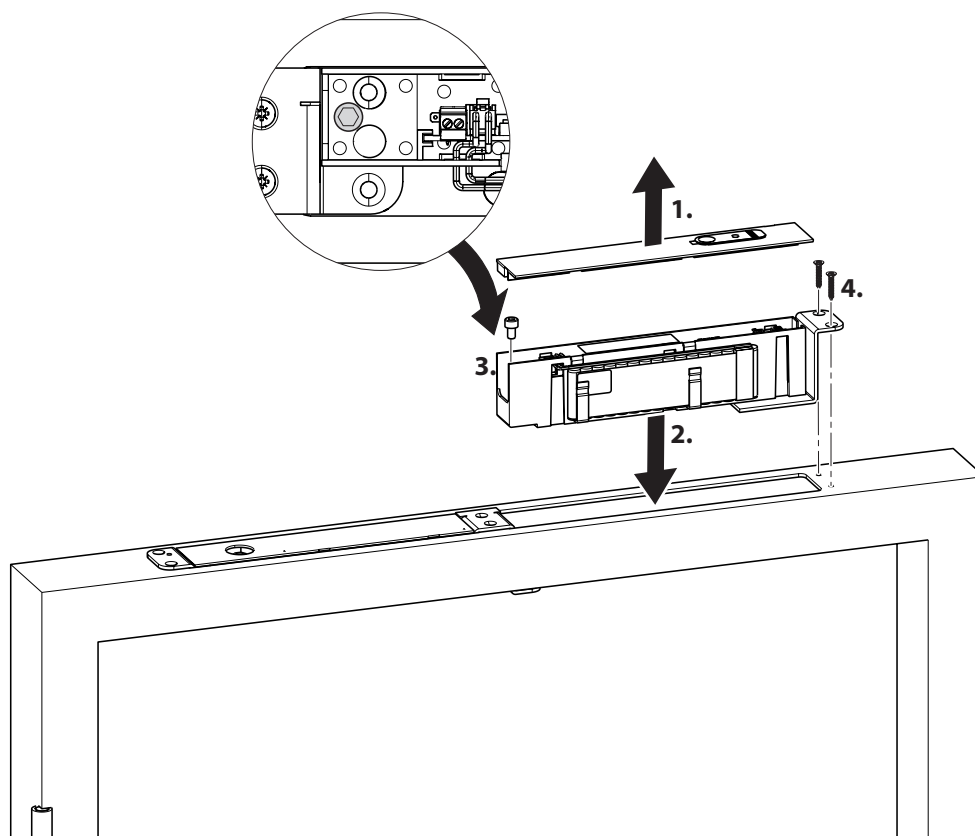




- ▶ Install the motor gear unit in the door leaf.



- ▶ Route the cable strand from the motor gear unit to the control unit.

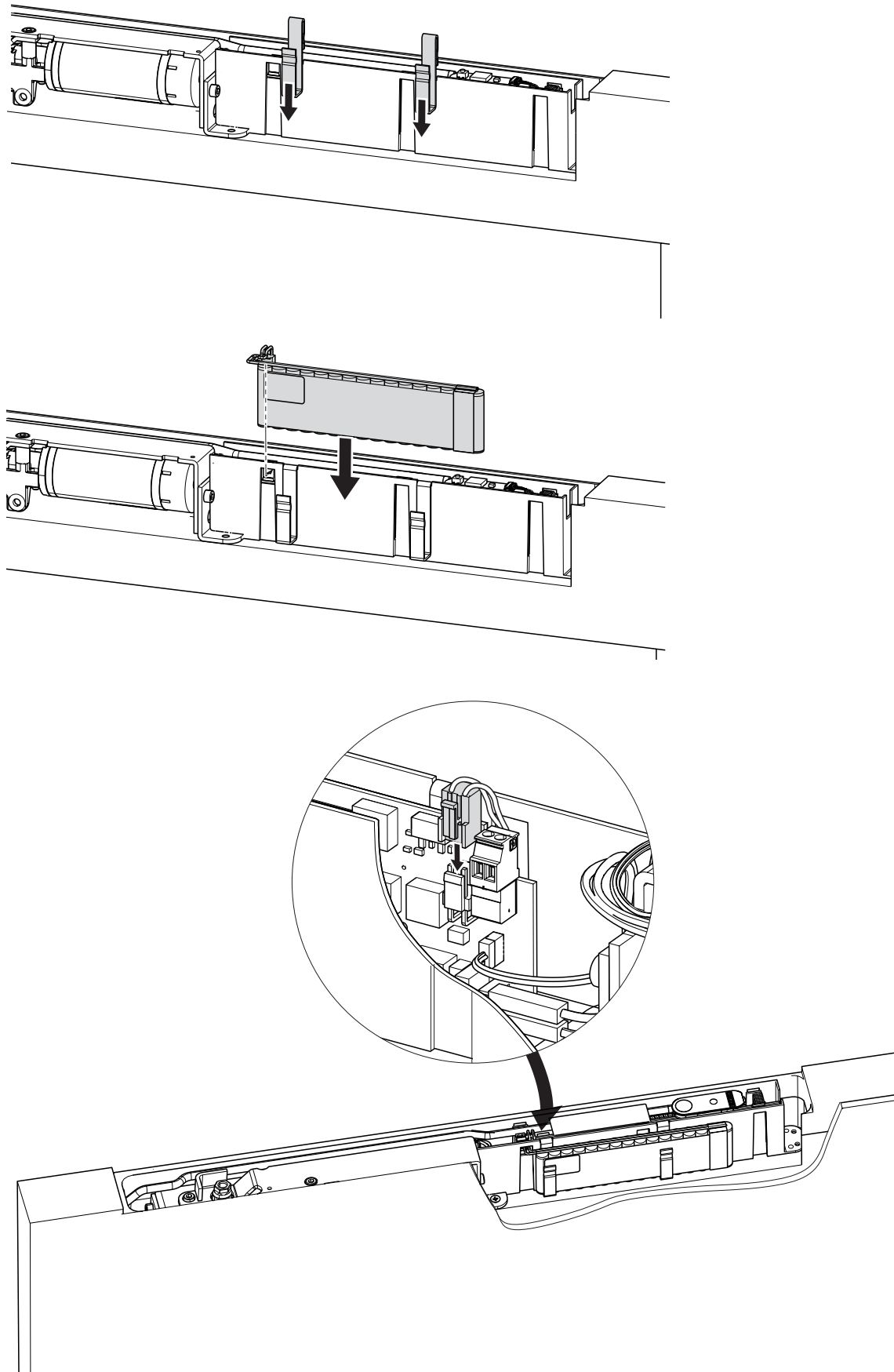


**i** The further steps are similar to the ones for wood, section 6.1.

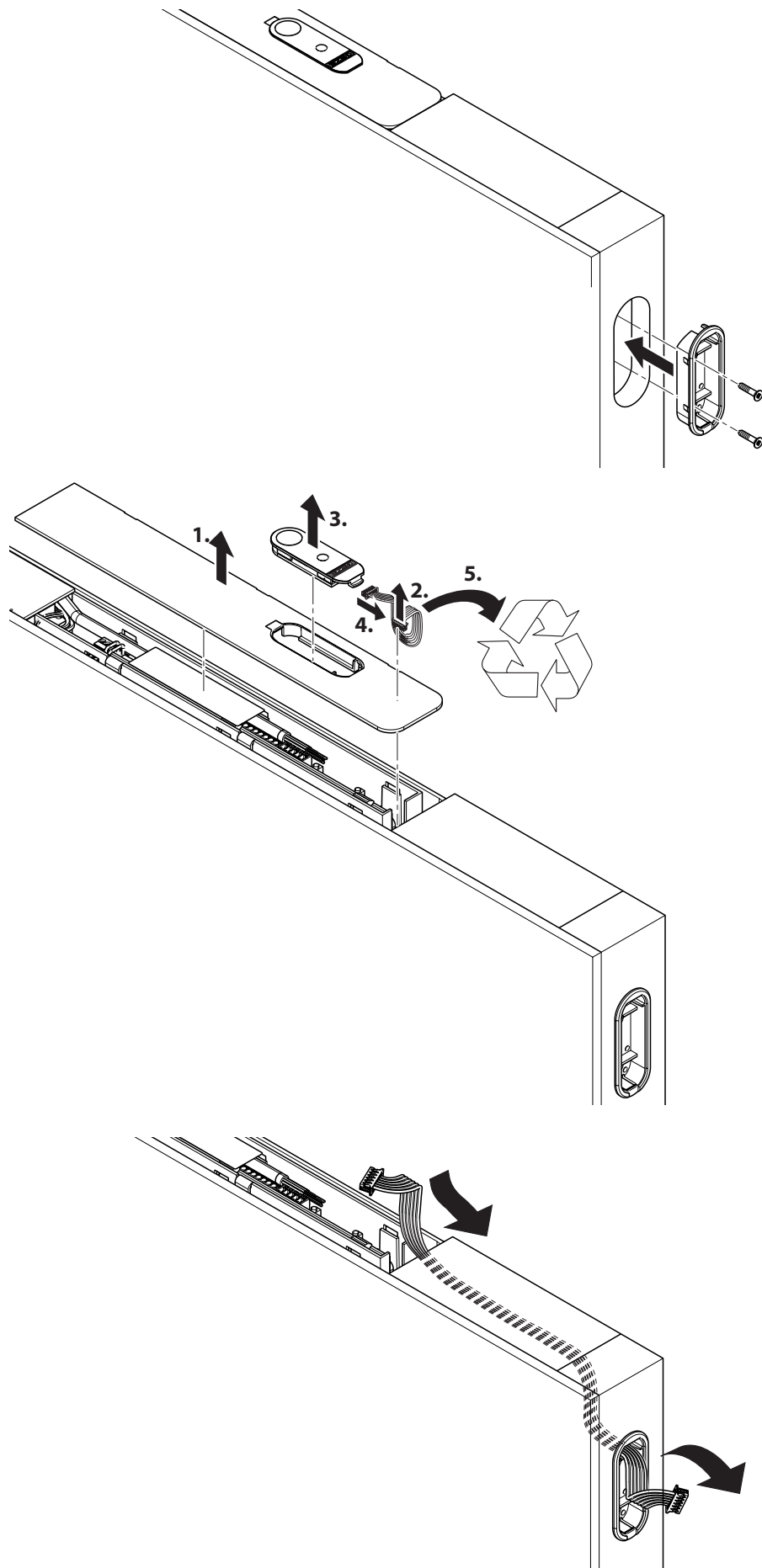
- ▶ Connect the motor gear unit, see 18.
- ▶ Electrical connection, see 20.
- ▶ Mount the guide rail, see 22.
- ▶ Connect the lever to the motor gear unit, see 23.

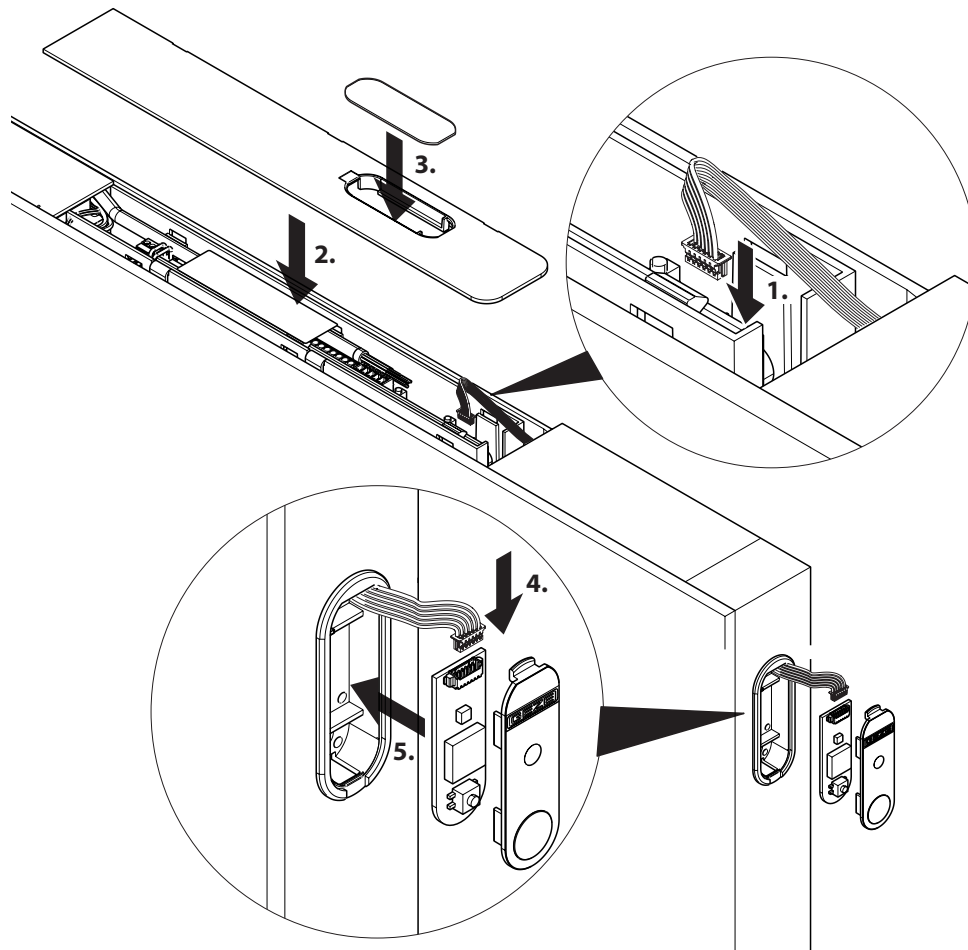
### 6.3 Install optional features

#### 6.3.1 Rechargeable battery

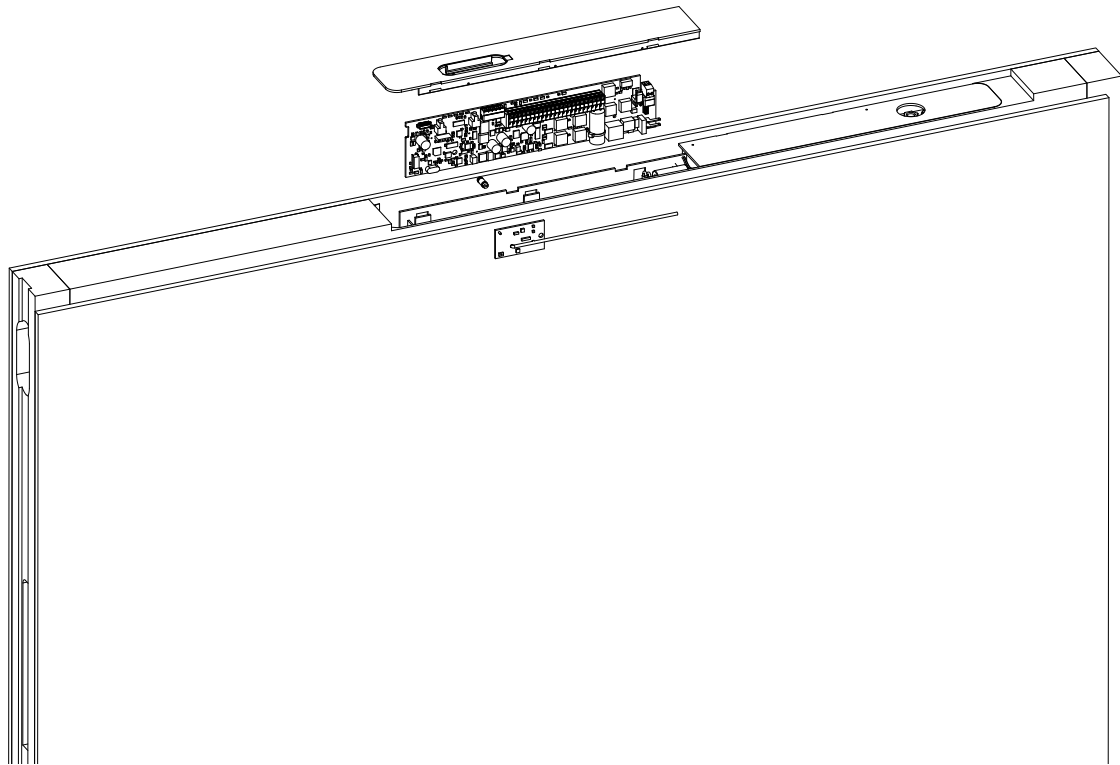


### 6.3.2 Separate programme switch



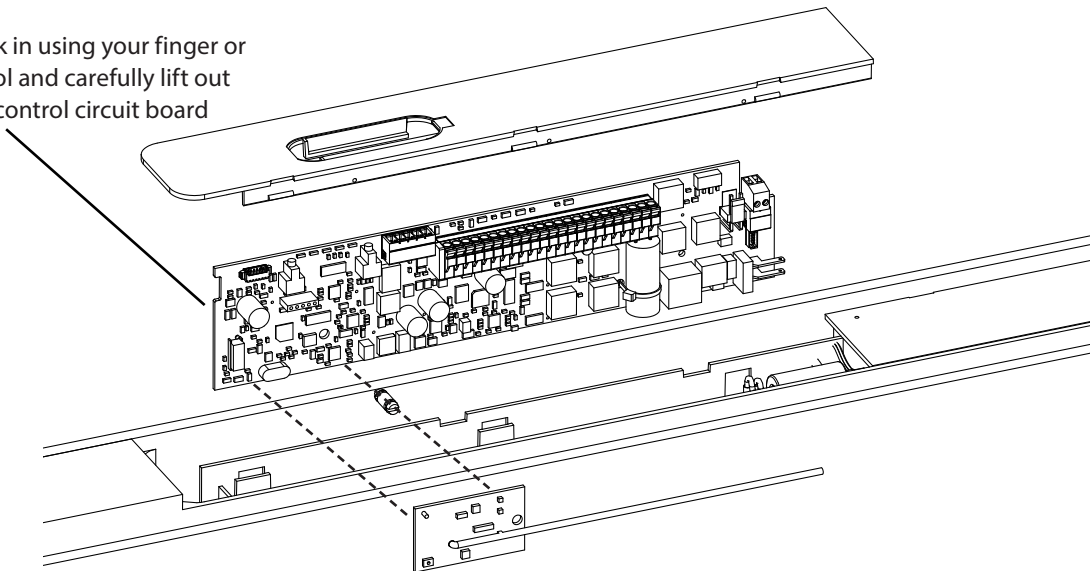


6.3.3 Radio board



**i** Hook in using your finger or a tool (notch) and carefully lift out the control circuit board

hook in using your finger or a tool and carefully lift out the control circuit board



## 7 Commissioning

### 7.1 Collision test

- ▶ Close the door **carefully by hand** and open it again.  
During movement, no components may scrape or jam.

### 7.2 Opening restrictor

- ▶ Fix the door stop with thrust in the guide rail at a door opening of max. 110° (see "Installing the guide rail" on page 22).
- ▶ During teach-in, make sure that the door does not slam into the thrust but rather comes to a standstill beforehand. Alternatively, a door stopper can be installed.

### 7.3 Teaching the drive



- If no contact sensor (wireless module, push-button switch or similar) is used:
- ▶ Choose "Push & Go" in the parameter menu.



The teaching process is described in the ECturn wiring diagram.

- ▶ Open the door a little.
- ▶ Remove the control unit cover and allow to dangle from the cable.
- ▶ Connect the display programme switch (mat. no.151524) with the RS485 socket.
- ▶ Request the Teach menu item (audible signal).
- ▶ Remove the DPS connector.
- ▶ Move the door into the closed position by hand (1st reversing point).
- ▶ Move the door into the required open position by hand (2nd reversing point).
- ▶ Move the door near to the closed position.
- ▶ Connect the display programme switch with the RS485 socket.
- ▶ Press the enter key and quit the teaching program (audible signal).
- ▶ Pull the DPS connector off and replace the control unit cover.
- ▶ Move the door into the closed position by hand (drive knows its start position).

## 8 Adaptation possibilities

### 8.1 During planning



The space between the guide rail and drive can be enlarged by means of the lever with spindle extension (6 mm, 13 mm, 16 mm, 20 mm).

### 8.2 During installation (on site)



Adjustment of the space between the drive (door) and the guide rail (frame) is not easy after installation has been completed.  
When the ECturn Inside is installed in a wooden door leaf, the space can be reduced by shimming the motor gear unit if necessary.

## 9 Notes

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