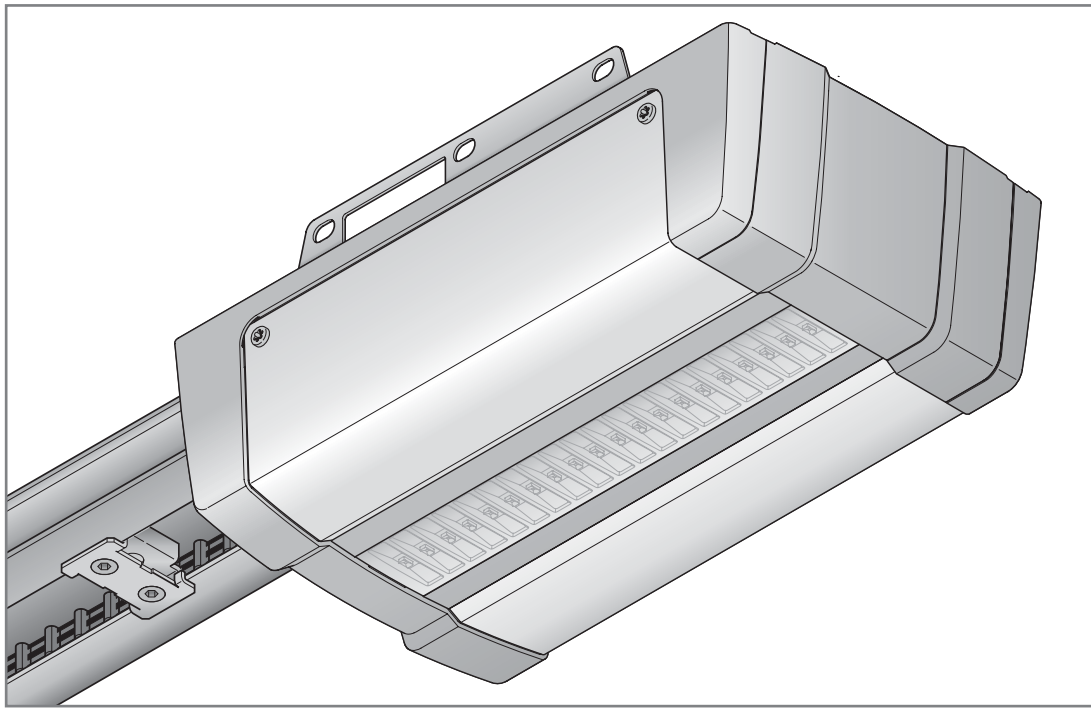


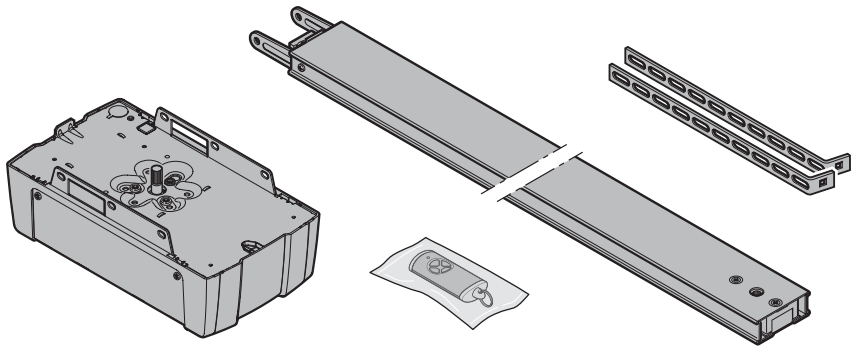
EN

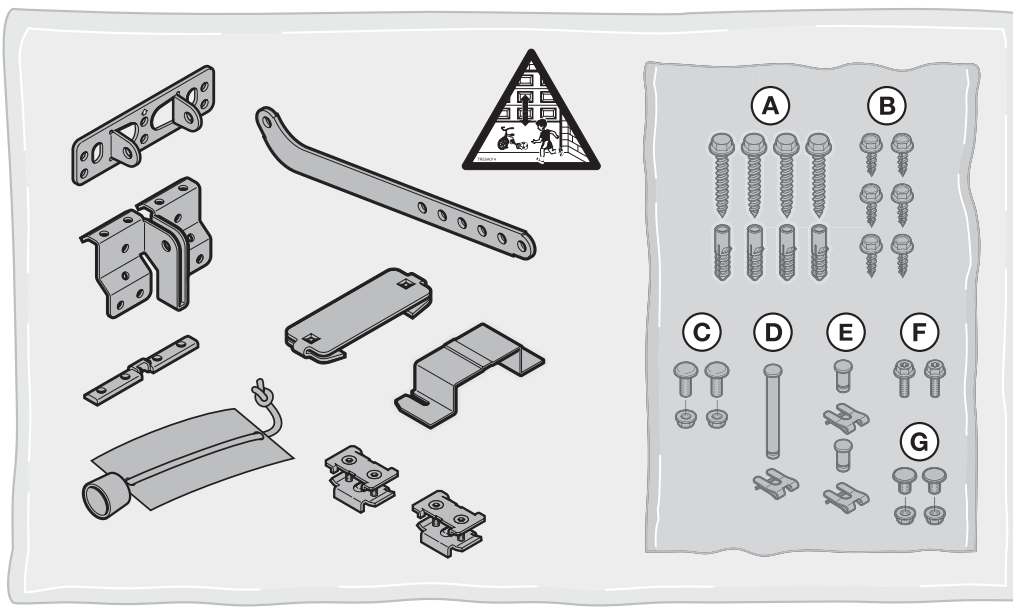
Instructions for fitting, operating and maintenance
Garage door operator

TR10B026 RE/08.2019

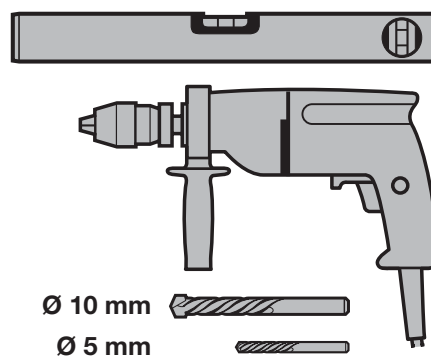
GARADOR
The Garage Door People

A





B



13 mm

10 mm

T 30

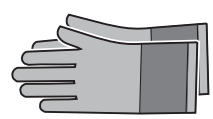
T 20

4 mm

Ø 10 mm

Ø 5 mm

Ø 3 mm



CONTENTS

1 About these instructions 4
1.1 Further applicable documents 4
1.2 Warnings used 4
1.3 Definitions used 4
1.4 Symbols used 5
1.5 Abbreviations used 6

2 ⚠ Safety instructions 6
2.1 Intended use 6
2.2 Non-intended use 6
2.3 Fitter qualification 6
2.4 Safety instructions for fitting, maintenance, repair and disassembly 7
2.5 Safety instructions for fitting 7
2.6 Safety instructions for installation 7
2.7 Safety instructions for initial start-up and for operation 7
2.8 Safety instructions for using the hand transmitter 8
2.9 Approved safety equipment 8

3 Fitting 8
3.1 Testing the door system 8
3.2 Clearance required 9
3.3 Fitting the garage door operator 9
3.4 Fitting the boom 18
3.5 Determining the end-of-travel positions 23
3.6 Emergency release 25

4 Installation 26
4.1 Connecting terminals 26
4.2 Connecting accessories 26

5 Initial start-up 30
5.1 Teaching in the operator 30

6 Menus 33
6.1 Menu description 34

7 Final work 42
7.1 Fixing the warning sign 43
7.2 Function test 43

8 Hand transmitter HSE 4 BiSecur 43
8.1 Changing the battery 44
8.2 Hand transmitter operation 44
8.3 Inheriting/transmitting a radio code 44
8.4 Hand transmitter reset 45
8.5 LED display 45
8.6 Cleaning the hand transmitter 45
8.7 Disposal 45
8.8 Technical data 45
8.9 EU declaration of conformity for the hand transmitter 45

9 Bluetooth® 46
9.1 Enabling / disabling Bluetooth® 46
9.2 BlueSecur application (app) 46
9.3 Configuring Bluetooth® 46
9.4 Operation 47
9.5 Keys 47
9.6 External Bluetooth antenna 48
9.7 EU Declaration of Conformity for Bluetooth Receivers 48
9.8 Open source license 48

10 External receivers* 48
10.1 Radio receiver ESE BiSecur 48
10.2 Teaching in a radio code on the external radio receiver 48
10.3 EU Declaration of Conformity for Receivers 48

11 Operation 49
11.1 Instructing users 49
11.2 Functions of various radio codes 50
11.3 Garage door operator behaviour after 3 fast OPEN door runs in a row 50
11.4 Behaviour during a power failure (without an emergency battery) 51
11.5 Behaviour after the power returns (without emergency battery) 51
11.6 Reference run 51

12 Inspection and maintenance 51
12.1 Tension of the toothed belt 51
12.2 Checking safety reversal / reversing 52
12.3 Change the light module 52

13 Dismantling and disposal 52

14 Warranty conditions 52

15 EC / EU Declaration of Conformity / Declaration of Incorporation 53

16 Technical data 54

17 Displaying errors, warnings and operating modes 55
17.1 Operator light messages 55
17.2 Display of errors and warnings 55

18 Operating condition display 57

19 Menu and programming overview 57

Dear Customer,

We thank you for choosing a quality product from our company.

1 About these instructions

These instructions are **original operating instructions** as outlined in EC Directive 2006/42/EC.

These instructions contain important information on the product.

- ▶ Read through all of the instructions carefully.
- ▶ Please observe the information. Please pay particular attention to the safety instructions and warnings.
- ▶ Keep these instructions in a safe place for later reference.
- ▶ Make sure that these instructions are available to the user at all times.

1.1 Further applicable documents

The following documents for safe handling and maintenance of the door system must be placed at the disposal of the end user:

- These instructions
- The enclosed log book
- The garage door operating instructions

1.2 Warnings used

⚠ The general warning symbol indicates a danger that can lead to **injury** or **death**. In the text, the general warning symbol will be used in connection with the caution levels described below. In the illustrated section, an additional instruction refers back to the explanation in the text section.

⚠ DANGER
Indicates a danger that immediately results in death or serious injuries.
⚠ WARNING
Indicates a danger that can lead to death or serious injuries.
⚠ CAUTION
Indicates a danger that can lead to minor or moderate injuries.
ATTENTION
Indicates a danger that can lead to **damage** or **destruction of the product**.

1.3 Definitions used

Hold-open phase

Waiting time for the automatic timer before the door closes from the OPEN end-of-travel position or partial opening.

Automatic timer

After the set hold-open phase and pre-warning phase lapse, the door automatically closes from the OPEN end-of-travel position or partial opening.

Impulse sequence control

The taught-in Impulse radio code or a button triggers impulse sequence control. With each actuation, the door is started against the previous direction of travel, or the door run is stopped.

Learning runs

Door runs during which the operator learns the following:

- Travel distances
- Forces that are required to move the door

Ventilation

In conjunction with a climatic sensor, the upper section is folded down and the door is lifted slightly to allow air to circulate.

Normal operation

Normal operation is a door run with taught-in travel distances and forces.

Reference run

Door run towards the OPEN end-of-travel position at a lower speed in order to set the home position.

Safety reversal / reversing

Door run in the opposite direction when the safety device or power limit is activated.

Reversal limit

The reversal limit is shortly before the CLOSE end-of-travel position. If a safety device is activated, the door runs in the opposite direction (safety reversal). This behaviour does not exist within the reversal limit.

Slow travel

The area in which the door moves extremely slowly to softly approach the end-of-travel position.

Status

The current position of a door.

Partial opening

Individually adjustable second opening height.

Timeout

A defined time period within which an action is expected, e.g. menu selection or function activation. If this time period has elapsed without an action, the operator automatically switches back to operation mode.

Door system

A door with the associated operator.

Doors under thermal load

Doors fitted to the south side, for example, and thus subjected to more sunlight. These doors could expand and may require more space below the ceiling.

Travel

The distance the door takes from the OPEN end-of-travel position to the CLOSE end-of-travel position.

Pre-warning time

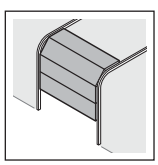
The time between the travel command (impulse) and the start of travel.

Factory reset

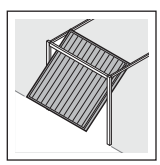
Resetting of the taught-in values to the delivery condition / factory setting.

1.4 Symbols used

The illustrated section shows how to fit the operator on a sectional door. Deviations for fitting with an up-and-over door are also shown. For this purpose, the following letters are assigned to the figures:



a = Sectional door



b = Up-and-over door

All specified dimensions in the illustrated section are in [mm].

Icons

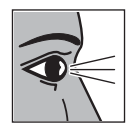
Important notice to prevent injury to persons and damage to property

Permissible arrangement or activity

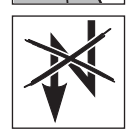
Non-permissible arrangement or activity

High exertion of force

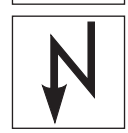
Little force required



Inspect

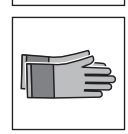


Power failure



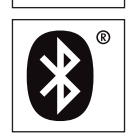
Power restoration

Check for smooth running



Use protective gloves

Factory setting

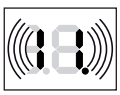


The Bluetooth® word mark and logos are registered trademarks of Bluetooth SIG, Inc., and are used by Hörmann KG Verkaufsgesellschaft under licence. Other trademarks and brand names are the property of their respective owners.

7-segment display


Display is illuminated


Display flashes slowly


Display flashes quickly


Decimal flashes

1.5 Abbreviations used

Colour code for cables, single conductors and components			
The colour abbreviations for cable and strand identification and for components conform to the international colour code in accordance with IEC 60757:			
WH	White	**BK**	Black
BN	Brown	**BU**	Blue
GN	Green	**OG**	Orange
YE	Yellow	**RD / BU**	Red / blue

Article designations	
HS 5 BiSecur	5-button hand transmitter with status feedback
ESE BiSecur	Bi-directional receiver
IT 1b-1	Internal push button with illuminated impulse button
IT 3b-1 / PB 3	Internal push button with illuminated impulse button, additional buttons for light on/off and lock/unlock operator
EL 101 /EL 301	One-way photocell
HOR 1-HCP	Option relay
UAP 1-HCP	Universal adapter print
SLK	LED warning light, yellow
SKS	Activating kit for closing edge safety device
STK	Wicket door contact
VL	Activating kit for leading photocell
HNA 18-4	Emergency battery

2 ⚠ Safety instructions

ATTENTION:

IMPORTANT SAFETY INSTRUCTIONS.

FOR THE SAFETY OF PERSONS, IT IS IMPORTANT TO COMPLY WITH THE FOLLOWING INSTRUCTIONS. THESE INSTRUCTIONS MUST BE KEPT.

For undated references to standards, directives etc. referred to here, the latest version of the publication applies, including any amendments.

2.1 Intended use

The garage door operator is intended for the impulse operation of spring-balanced and counterbalanced garage doors. Depending on the operator type, the operator can be used in the private/non-commercial or commercial sector (e.g. underground car parks and collective garages).

Note the manufacturer specifications regarding the door and operator combination. Potential hazards as outlined in DIN EN 13241-1 are avoided by construction and fitting according to our guidelines.

The garage door operator is designed for operation in dry areas.

2.2 Non-intended use

The operator must not be used for doors without a safety catch.

Door systems that are located in a public area and which only have one protective device, such as a power limit, may only be operated under supervision.

2.3 Fitter qualification

Only correct fitting and maintenance in compliance with the instructions by a competent/specialist company or a competent/qualified person ensures safe and flawless operation of the system.

According to EN 12635, a specialist is a person with suitable training, specialist knowledge and practical experience sufficient to correctly and safely fit, test and maintain a door system.

2.4 Safety instructions for fitting, maintenance, repair and disassembly

⚠ DANGER

Compensating springs are under high tension

- See warning in section 3.1

⚠ WARNING

Danger of injury due to unexpected door run

- See warning in section 12

Fitting, maintenance, repairs and disassembly of the door system and garage door operator must be performed by a specialist.

- In the event of a failure of the garage door operator, a specialist must be commissioned immediately to perform an inspection or carry out repairs.

2.5 Safety instructions for fitting

The specialist carrying out the work must follow the prevailing national job safety rules and regulations and those governing the operation of electrical equipment. In the process, the relevant national guidelines must be observed. Potential hazards as outlined in EN 13241-1 are avoided by construction and fitting according to our guidelines.
After fitting is complete, the specialist must declare conformity in accordance with EN 13241-1 based on the area of application.

⚠ WARNING

Unsuitable fixing material

- See warning in section 3.3

Danger to life from the pull rope

- See warning in section 3.3

Danger of injury due to unwanted door travel

- See warning in section 3.3

ATTENTION

Damage caused by dirt

Drilling dust and chippings can lead to malfunctions.

- Cover the operator during drilling work.

2.6 Safety instructions for installation

⚠ DANGER

Risk of deadly electric shock from mains voltage

Contact with the mains voltage presents the danger of a deadly electric shock.

- Electrical connections may only be made by a qualified electrician.
- Make sure that the on-site electrical installation conforms to the respective, applicable protective regulations (230 / 240 V AC, 50 / 60 Hz).
- If the mains connection cable is damaged, it must be exchanged by a qualified electrician to avoid danger.
- Before performing work on the system, disconnect the mains plug **and** the plug of the emergency battery.
- Safeguard the system against being switched on again without authorisation.

ATTENTION

Malfunctions in the connection cables

Connection cables and supply cables laid together can result in malfunctions.

- Duct the operator's connection cables (24 V DC) in an installation system that is separate from the supply lines (230 / 240 V AC).

External voltage at the connecting terminals

External voltage on the connecting terminals of the control will destroy the electronics.

- Do not apply any mains voltage (230 / 240 V AC) to the connecting terminals of the control.

2.7 Safety instructions for initial start-up and for operation

⚠ WARNING

Danger of injury during door travel

- See warning in section 11

Danger of injury due to a fast-closing door

- See warning in section 11.1.1

⚠ CAUTION

Danger of injury due to incorrectly selected door type
- ▶ See warning in section 5.1

Danger of crushing in the boom
- ▶ See warning in section 11

Danger of injury from the cord knob
- ▶ See warning in section 11

Danger of injury resulting from uncontrolled door travel in the Close direction if one of the counterbalance springs breaks and the slide carriage is released.
- ▶ See warning in section 11

2.8 Safety instructions for using the hand transmitter

⚠ WARNING

Danger of injury during door travel
- ▶ See warning in section 8

Risk of explosion due to incorrect battery type
- ▶ See warning in section 8.1

⚠ CAUTION

Danger of injuries due to unintended door run
- ▶ See warning in section 8

Danger of burns from the hand transmitter
- ▶ See warning in section 8

2.9 Approved safety equipment

The following functions or components, where available, meet cat. 2, PL “c” in accordance with EN ISO 13849-1 and were constructed and tested accordingly:

- Internal power limit
- Tested safety equipment

If such properties are needed for other functions or components, this must be tested individually.

⚠ WARNING

Danger of injuries due to faulty safety equipment
- ▶ See warning in section 7.2

3 Fitting

ATTENTION:

IMPORTANT INSTRUCTIONS FOR SAFE FITTING.

FOLLOW ALL INSTRUCTIONS; INCORRECT FITTING CAN LEAD TO SERIOUS INJURIES.

3.1 Testing the door system

⚠ DANGER

Compensating springs are under high tension

Serious injuries may occur while adjusting or loosening the compensating springs!
- ▶ For your own safety, only have a specialist conduct work on the compensating springs of the door and, if required, maintenance and repair work!
- ▶ Never try to replace, adjust, repair or reposition the compensating springs for the counterbalance of the door or the spring mountings yourself.
- ▶ In addition, check the entire door system (joints, door bearings, cables, springs and fastenings) for wear and possible damage.
- ▶ Check for the presence of rust, corrosion, and cracks.

A malfunction in the door system or incorrectly aligned doors can cause serious injuries!
- ▶ Do not use the door system if repair or adjustment work must be conducted!

The operator is not designed for the operation of sluggish doors. These doors are either difficult or impossible to open or close manually.

The door must be in a flawless mechanical condition, as well as correctly balanced, so that it can be easily operated by hand (EN 12604).
- ▶ Check whether the door can be opened and closed correctly.
- ▶ Lift the door by approx. one metre and let it go. The door should stay in this position and neither move downward nor upward! If the door does move in either direction, there is a danger that the compensating springs/weights are not properly adjusted or are defective. In this case, increased wear and malfunctioning of the door system can be expected.

3.2 Clearance required

The clearance between the highest point of door travel and the ceiling (even when opening the door) must be **at least 30 mm**. For doors under thermal loads, the operator is to be fitted 40 mm higher if applicable.

If the clearance is smaller, the operator can also be mounted behind the opened door if enough space is available. In this case, an extended link bracket (ordered separately) must be used.

The garage door operator can be arranged up to max. 500 mm off-centre. Sectional doors with a high lift track application (track application H) present an exception and require a special fitting.

The electrical outlet should be fitted approx. 500 mm from the operator head.

- ▶ Check the dimensions!

3.3 Fitting the garage door operator

⚠ WARNING

Unsuitable fixing material

Use of unsuitable fixing material may mean that the operator is insecurely attached and could come loose.

- ▶ The fitter must check the suitability of the provided fixing material (plugs) for use in the intended fitting location; other fixing material must be used if the provided fixing material is suitable for concrete (≥ B15), but is not officially approved (see Figures **1.6a/1.8b/2.4**).

⚠ WARNING

Danger to life from the pull rope

A running rope may lead to strangulation.

- ▶ Remove the rope while fitting the operator (see Figure **1.3a**).

⚠ WARNING

Danger of injury due to unwanted door travel

Incorrect assembly or handling of the operator may trigger unwanted door travel that may result in persons or objects being trapped.

- ▶ Follow all the instructions provided in this manual.

Incorrectly fitted control devices (e.g. buttons) may trigger unwanted door travel. Persons or objects may be jammed as a result.

- ▶ Install control devices at a height of at least 1.5 m (out of the reach of children).
- ▶ Fit permanently installed control devices (such as buttons, etc.) within sight of the door, but away from moving parts.

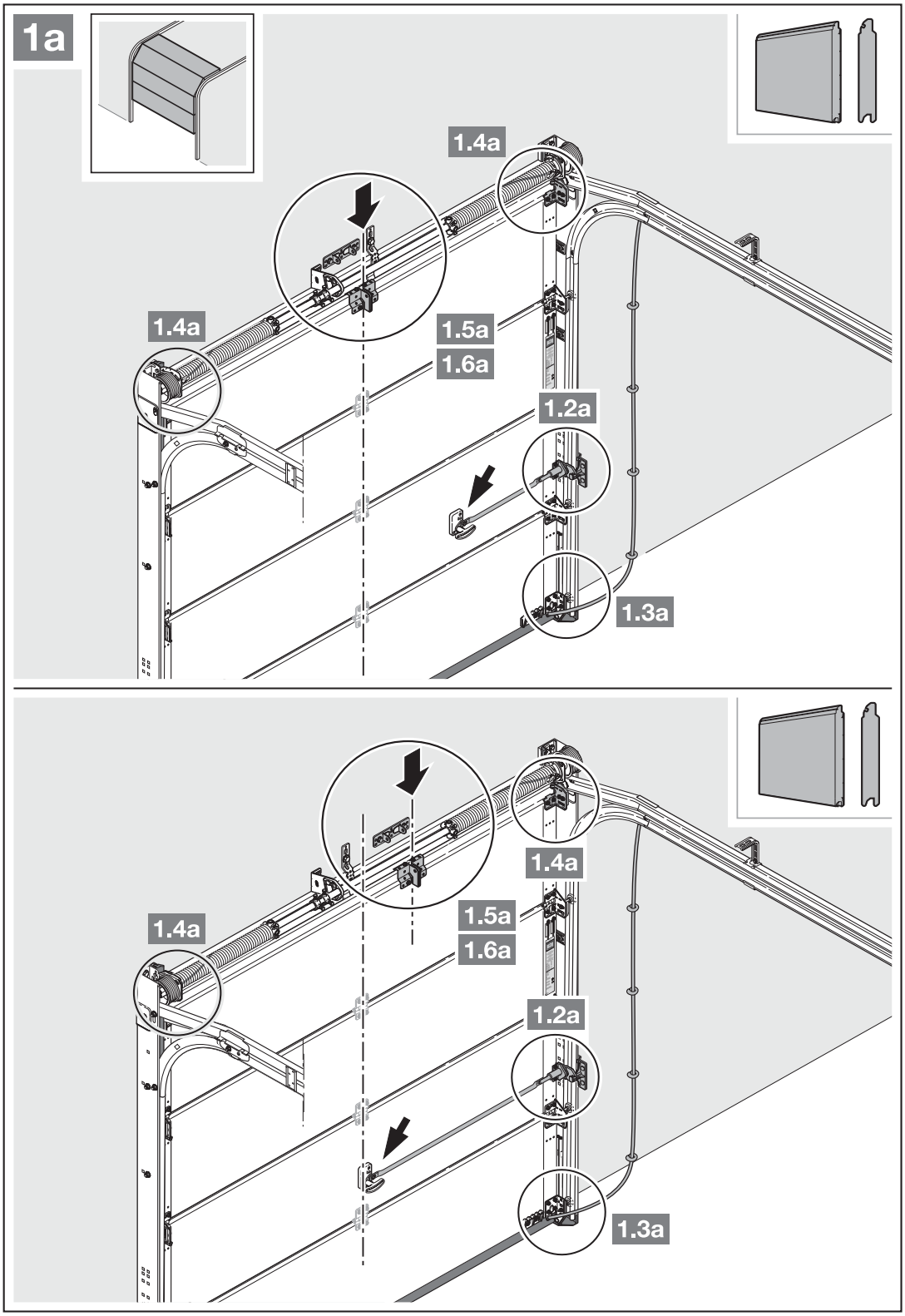
ATTENTION

Damage caused by dirt

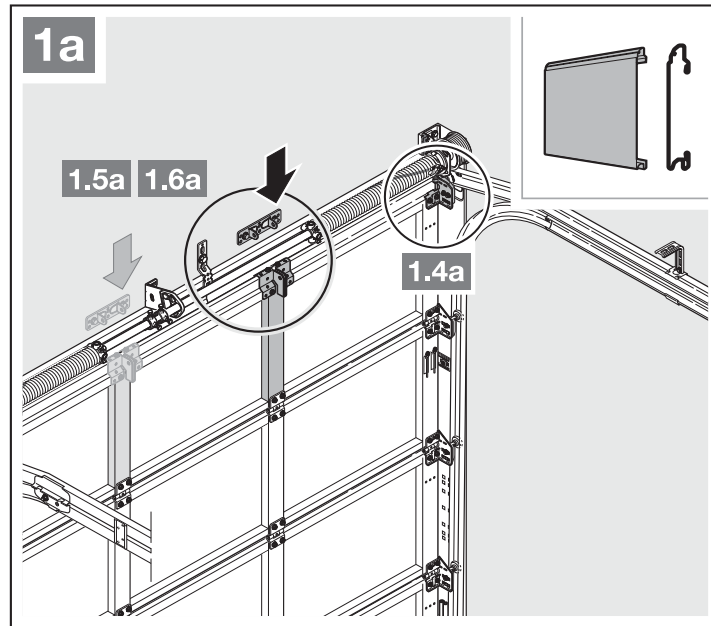
Drilling dust and chippings can lead to malfunctions.

- ▶ Cover the operator during drilling work.

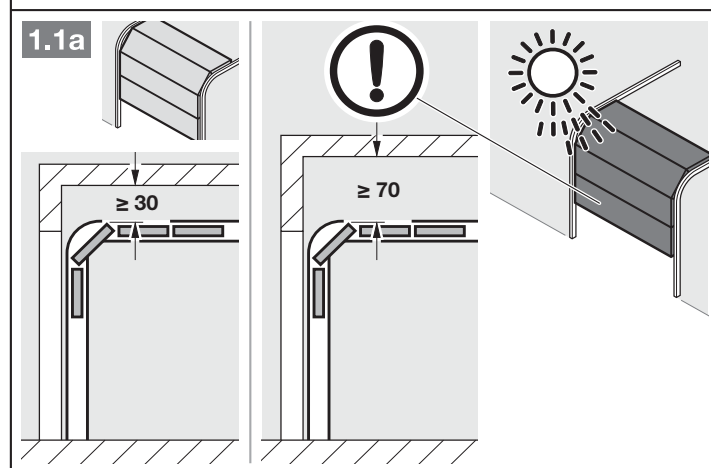
To fully comply with the **TTZ directive concerning break-in-resistance for garage doors**, the cord knob must be removed from the slide carriage.


1a
1.4a
1.4a
1.5a
1.6a
1.2a
1.3a
1.4a
1.4a
1.5a
1.6a
1.2a
1.3a

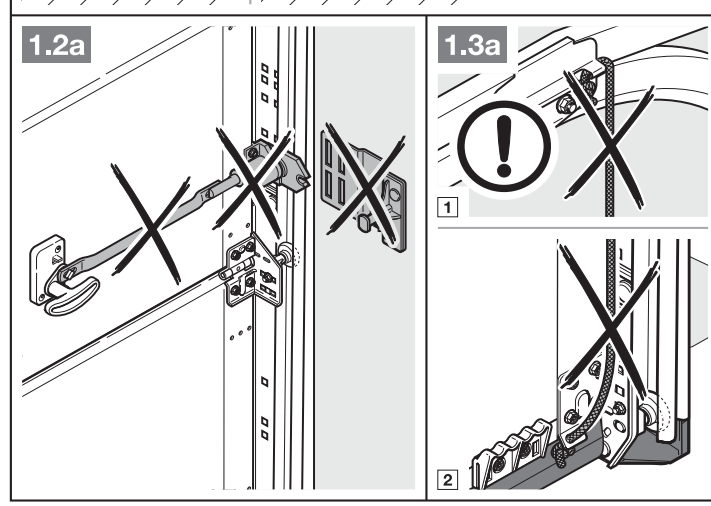
1. With an off-centre reinforcement profile, fit the link bracket on the nearest reinforcement profile to the left or right.

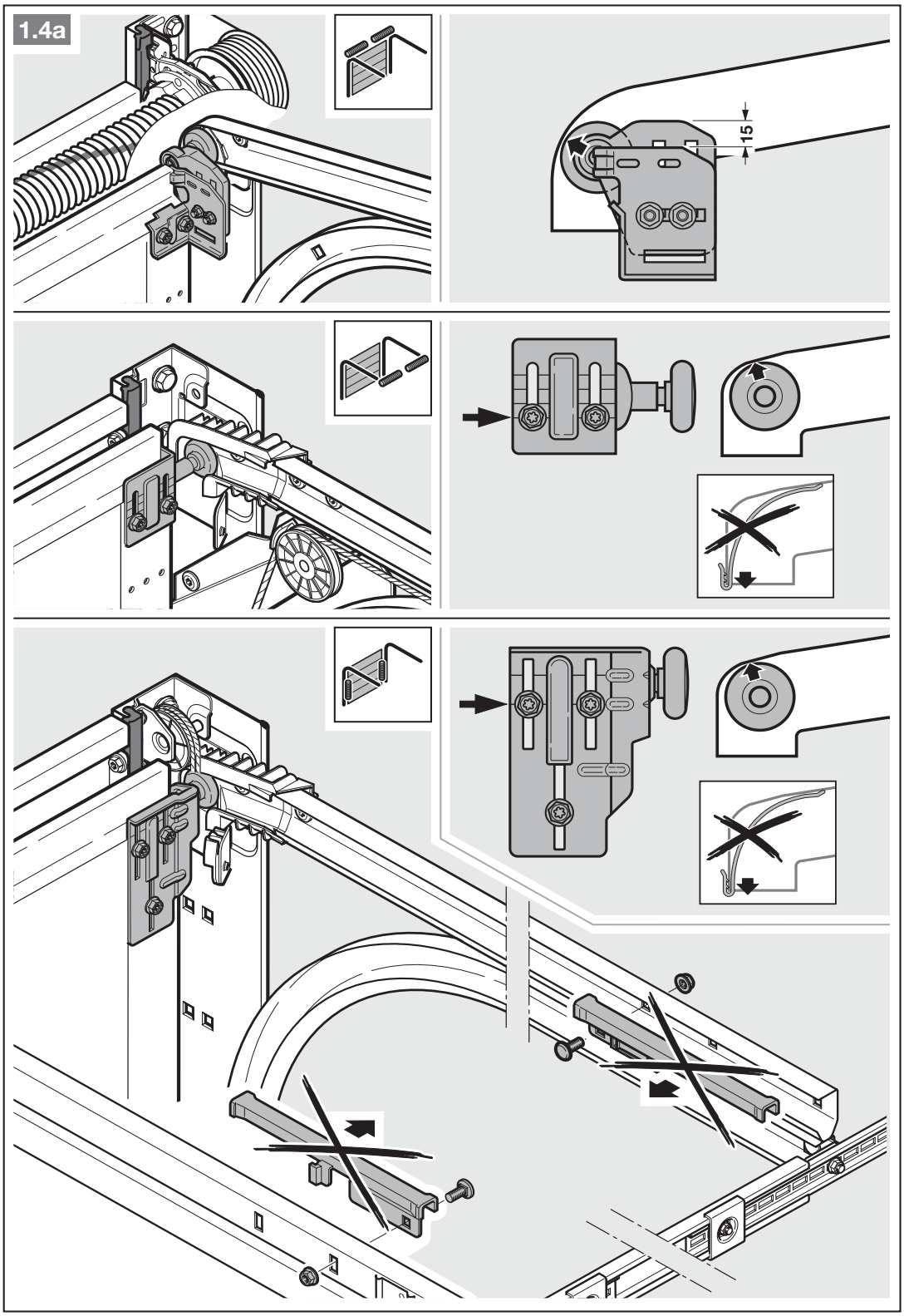


2. The clearance between the highest point of door travel and the ceiling (even when opening the door) must be **at least 30 mm**. For doors under thermal loads, the operator is to be fitted 40 mm higher if applicable.



3. Completely disassemble the mechanical door locking.

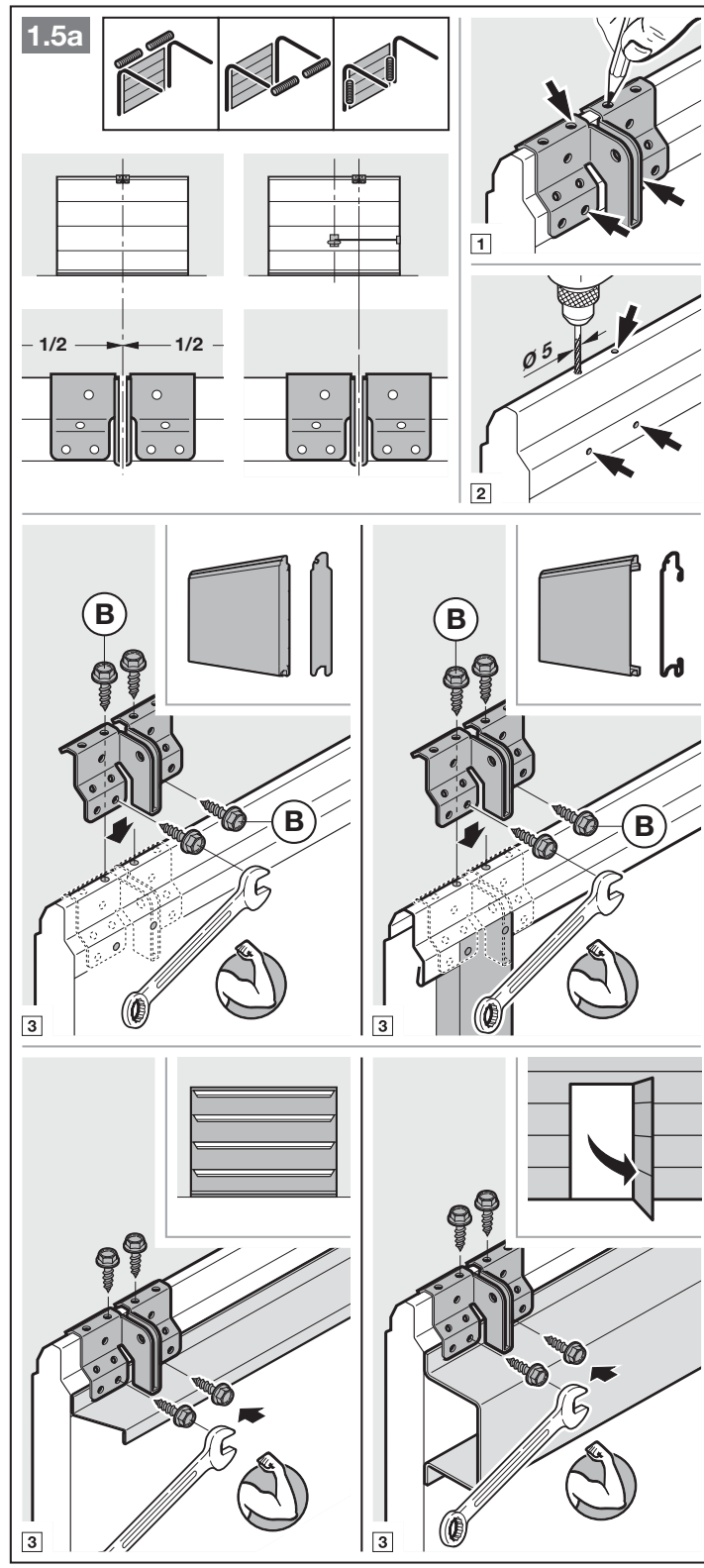


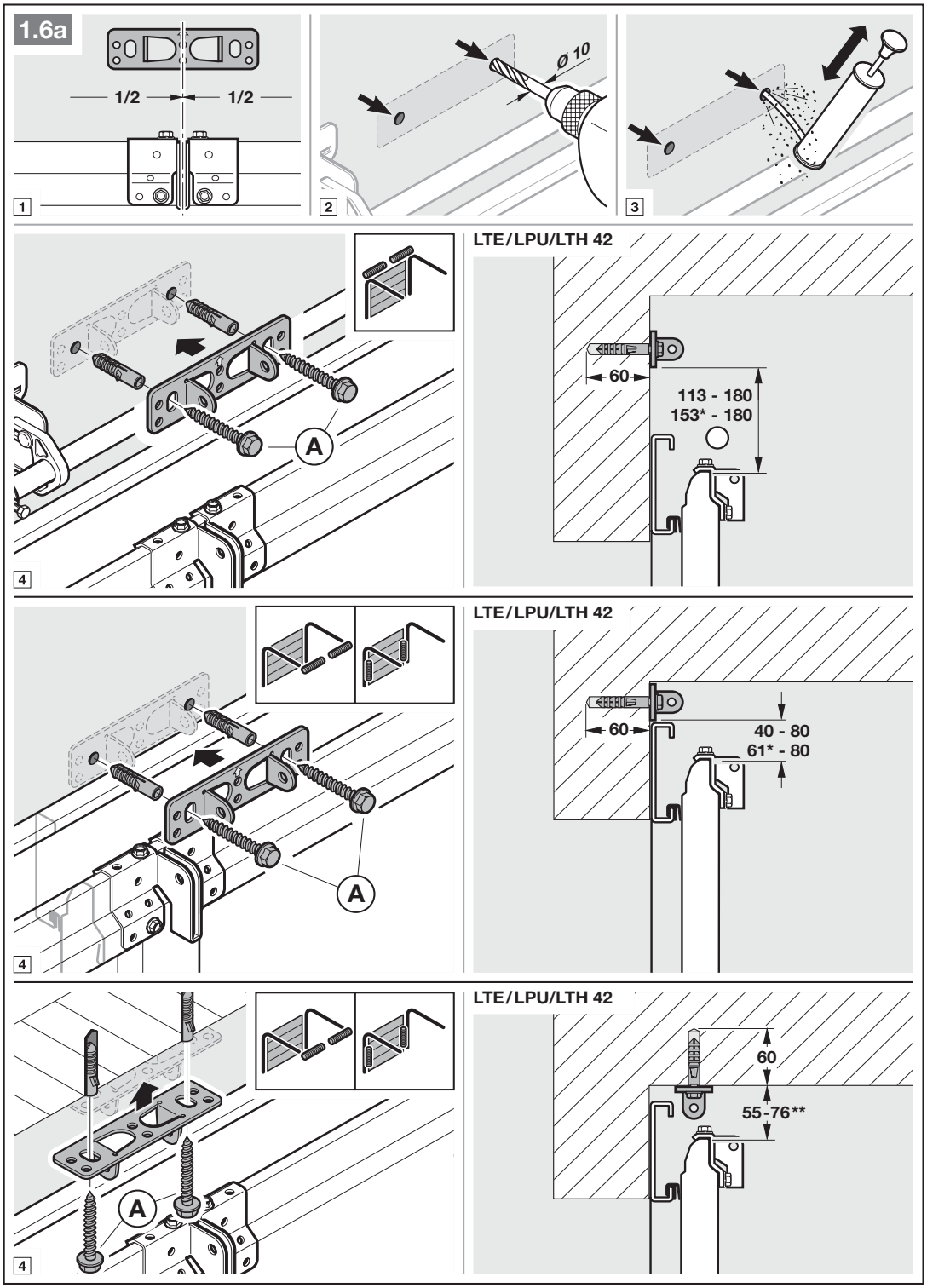

1.4a
15

4. For sectional doors with central door locking, fit the lintel joint and link bracket off-centre (max. 500 mm).

NOTICE

In a deviation from Figure **1.5a**, use the 5 × 35 woodscrews from the door accessory pack (hole Ø3 mm) for timber doors.

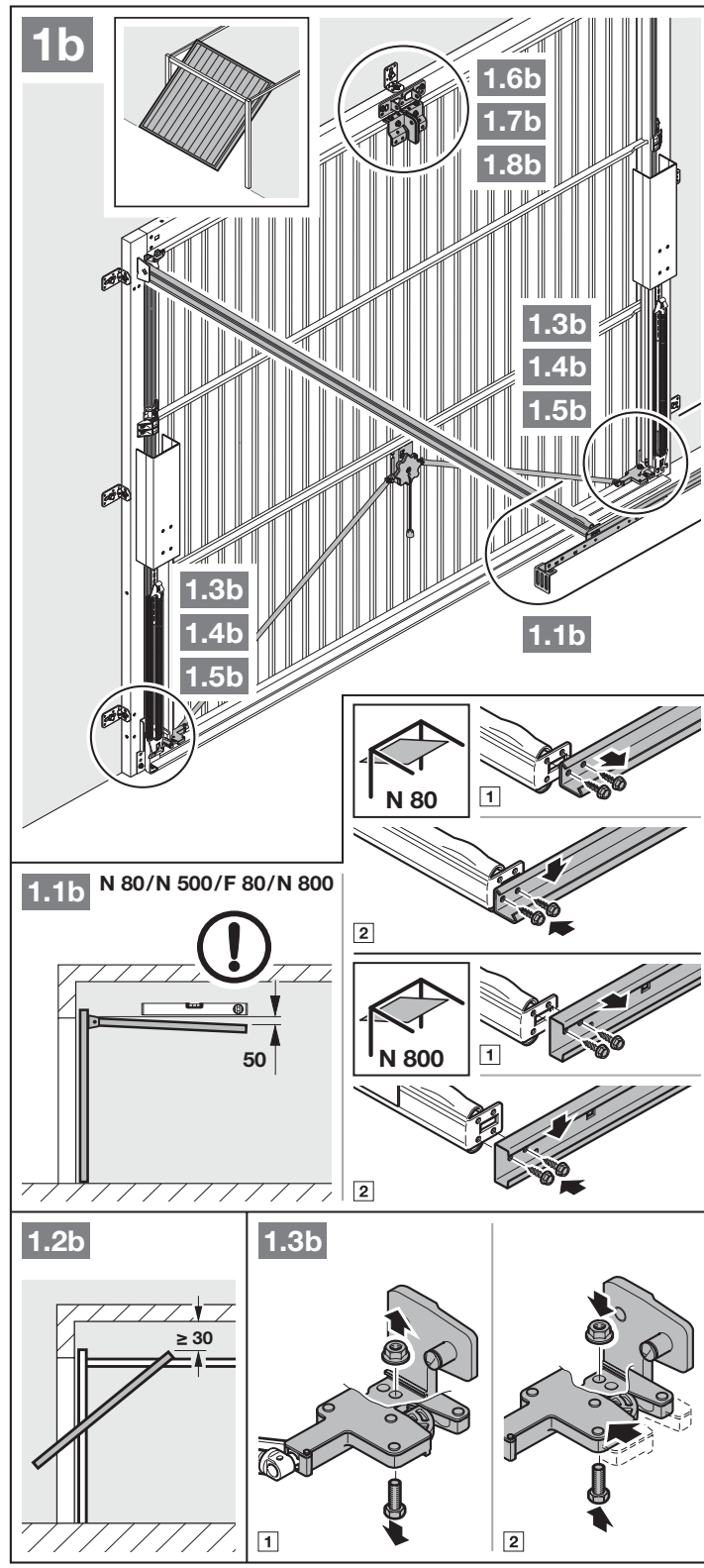




* Dimension of doors under thermal load.

** Ceiling fitting is not possible for doors under thermal load.

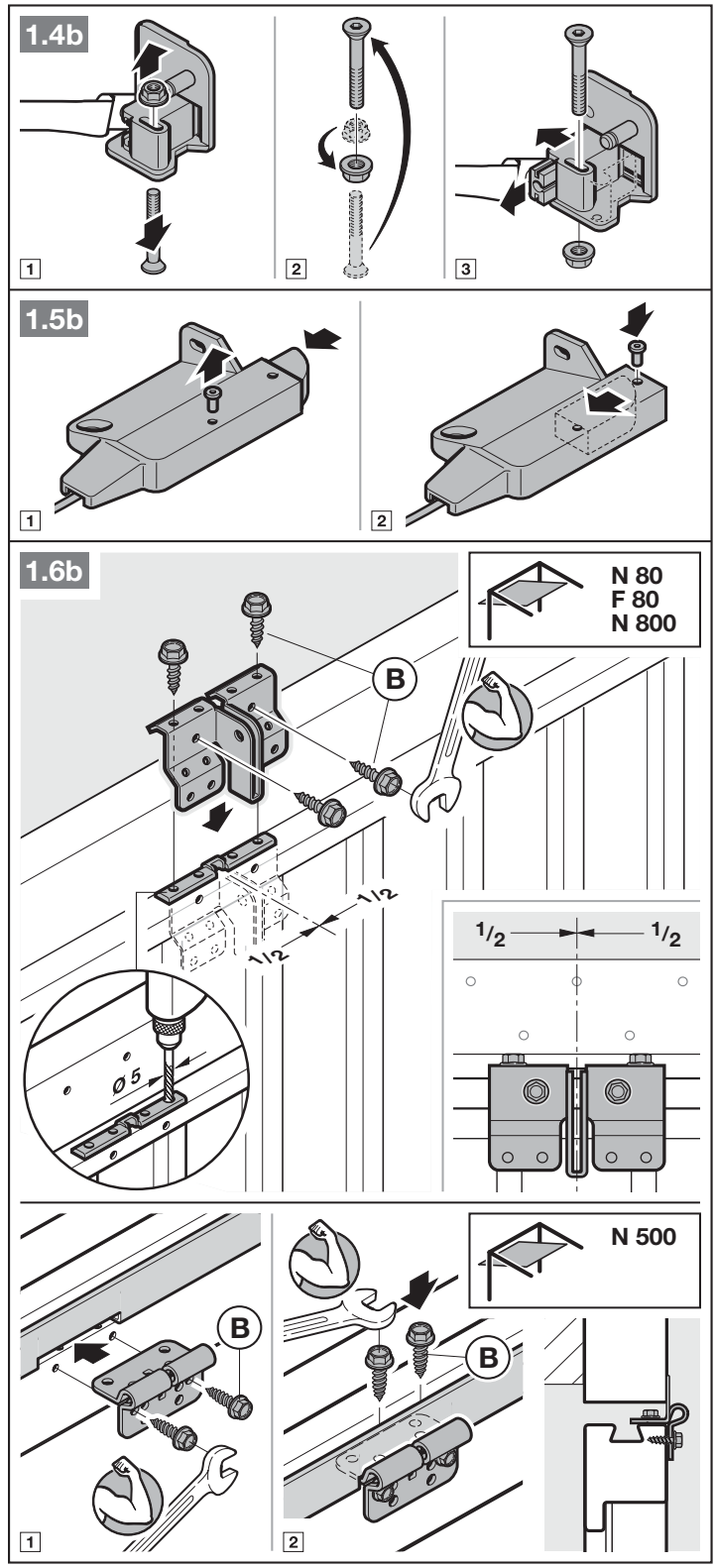
ATTENTION: For Thermoframe, note the respective technical manual for the door!

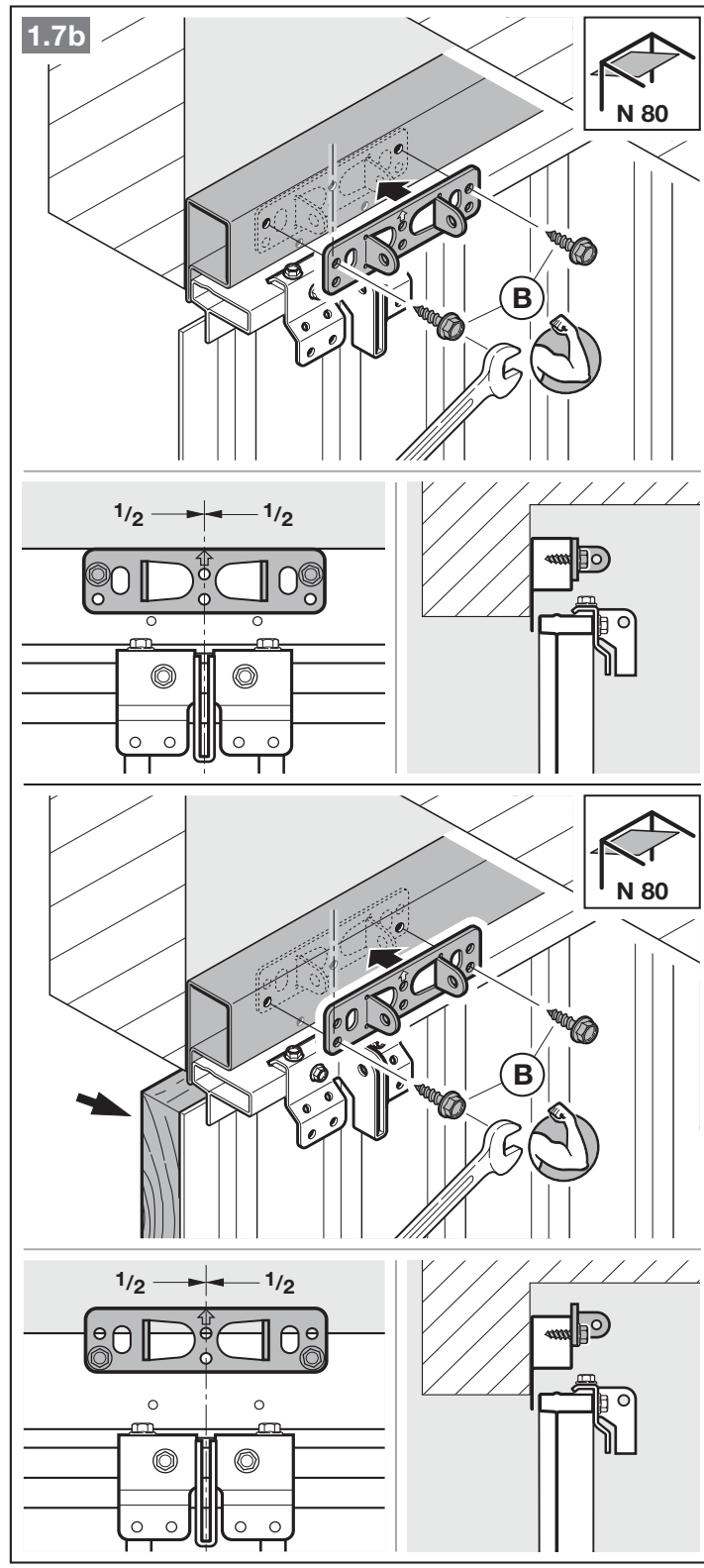


1. The clearance between the highest point of door travel and the ceiling (even when opening the door) must be **at least 30 mm**.
2. Render the mechanical door lockings inoperable (Figure **1.3b**).

3. Render the mechanical door lockings inoperable (Figures **1.4b / 1.5b**). For door models not covered here, block the lock latch on site.

4. In a deviation from the Figures **1.6b/1.7b**, the lintel joint and link bracket must be attached off-centre for up-and-over doors with ornamental iron door handles.





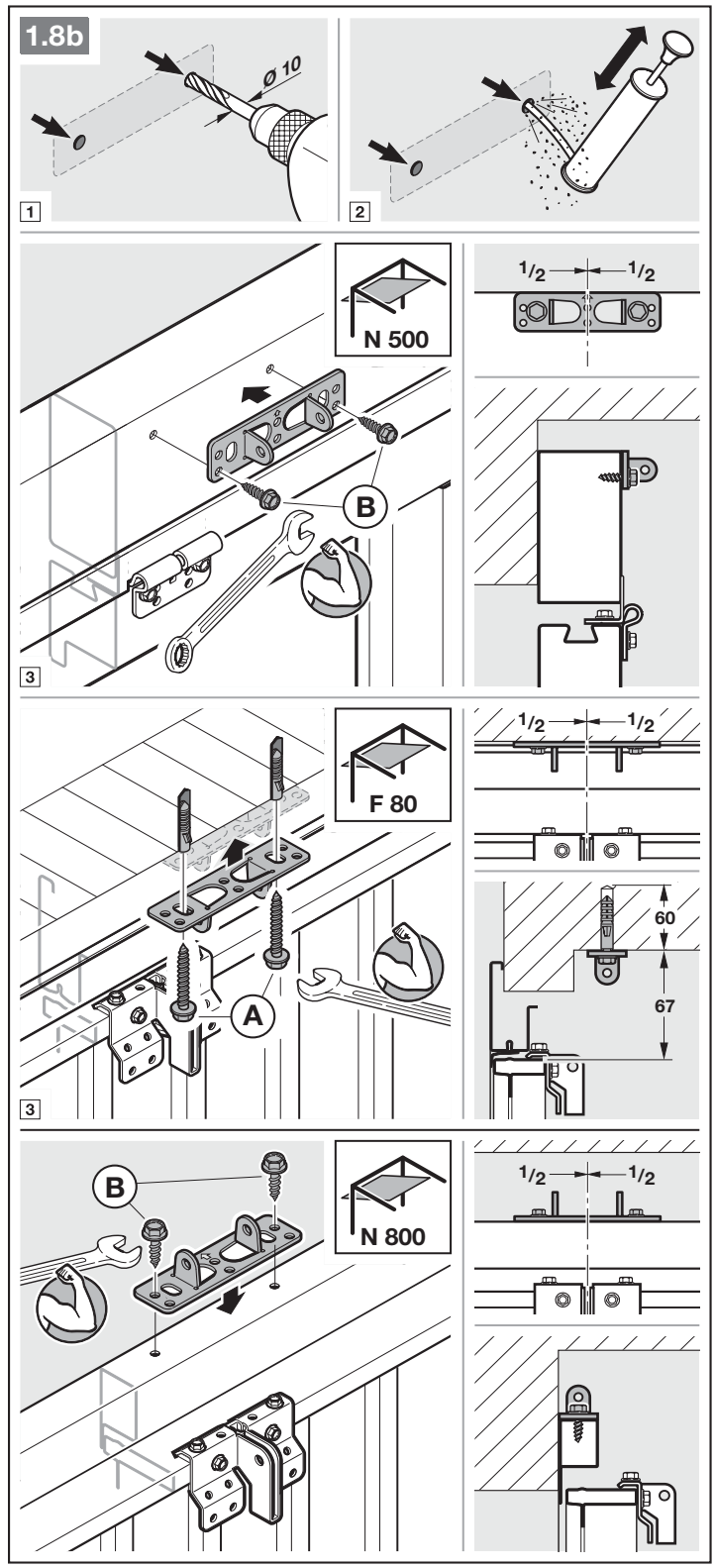
NOTICE

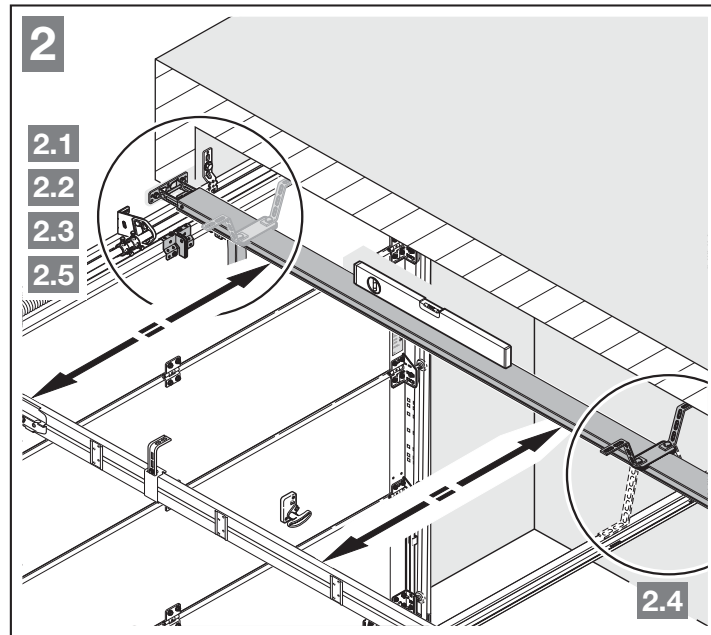
With N80 doors with timber infill, use the bottom holes on the lintel joint for fitting.

3.4 Fitting the boom

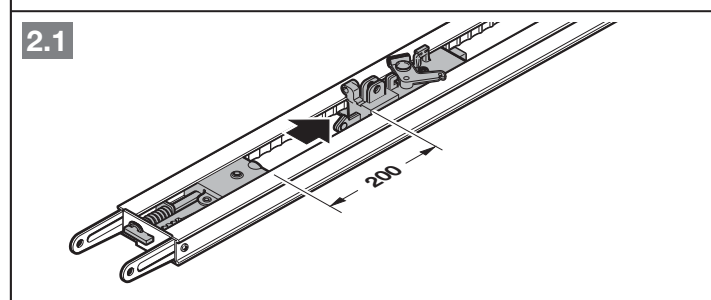
NOTICE

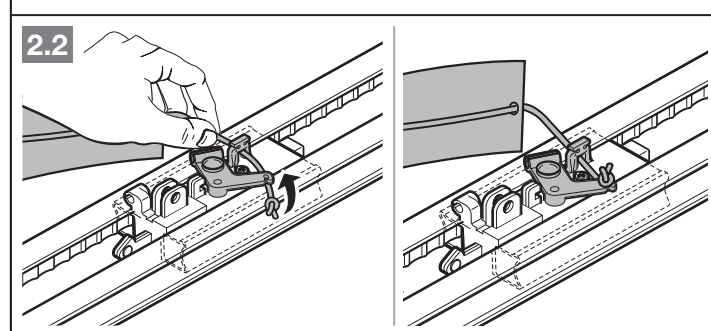
Only use the booms recommended by us for the garage door operators, depending on the respective application (see product information).

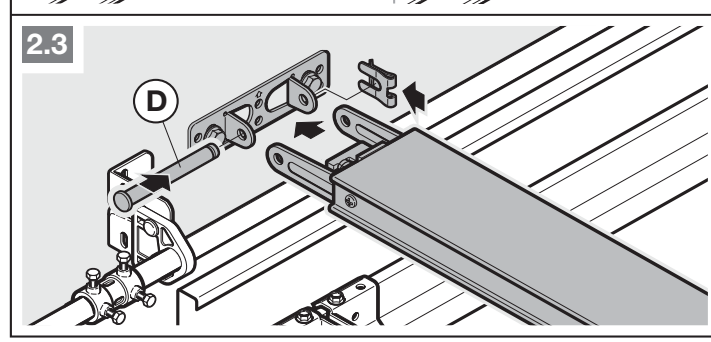




- Press the green button and move the slide carriage approx. 200 mm towards the centre of the rail. This is no longer possible once the end stops and operator have been fitted.

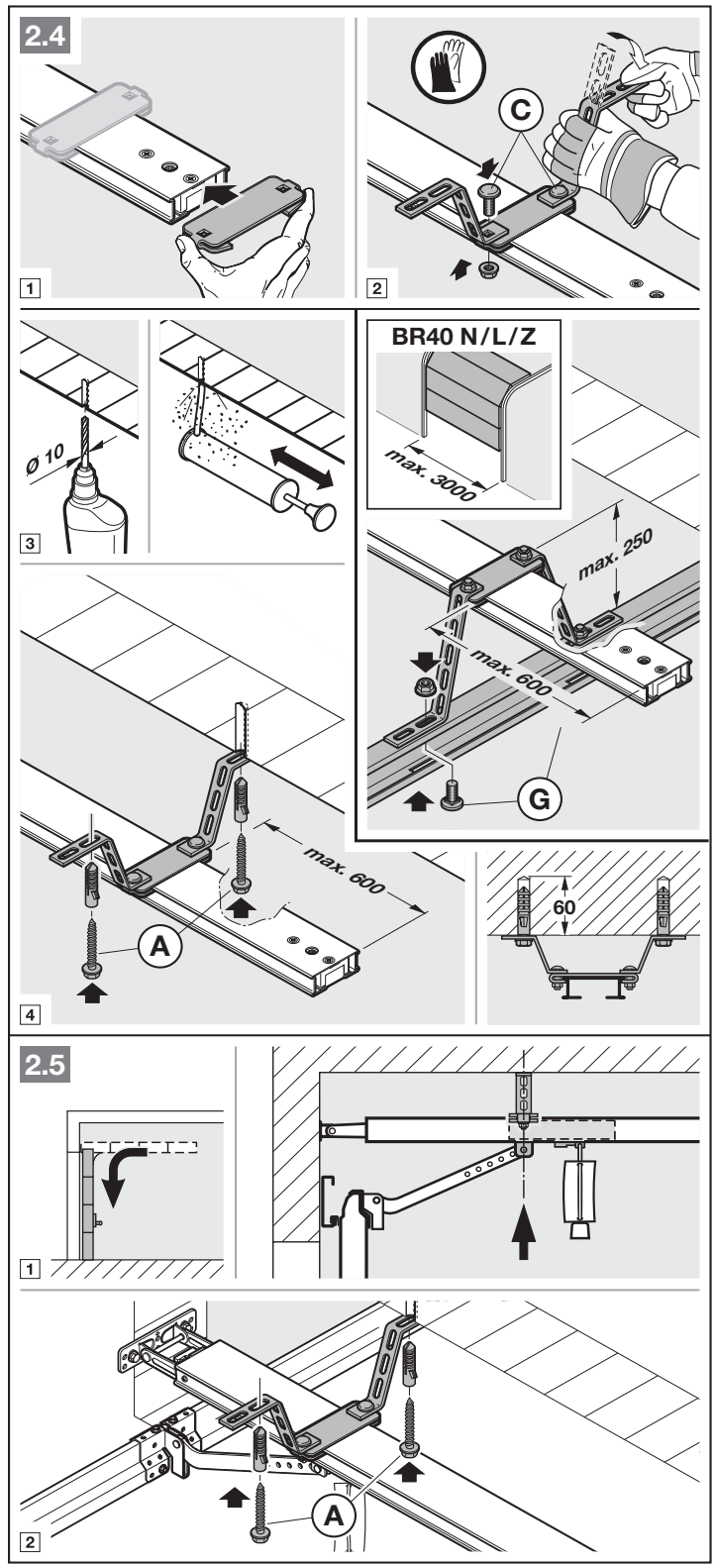






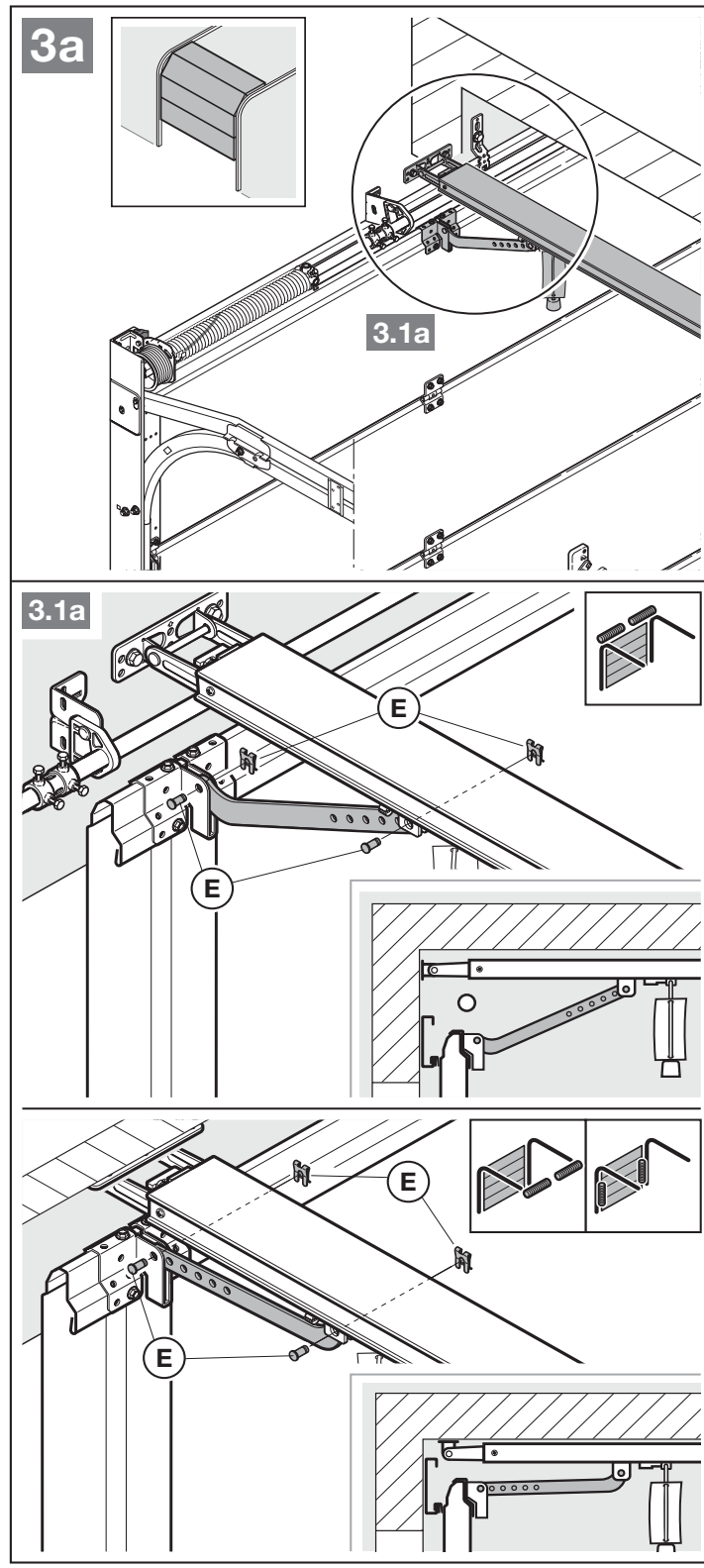
NOTICE

A second suspension is recommended with divided rails (available under accessories).



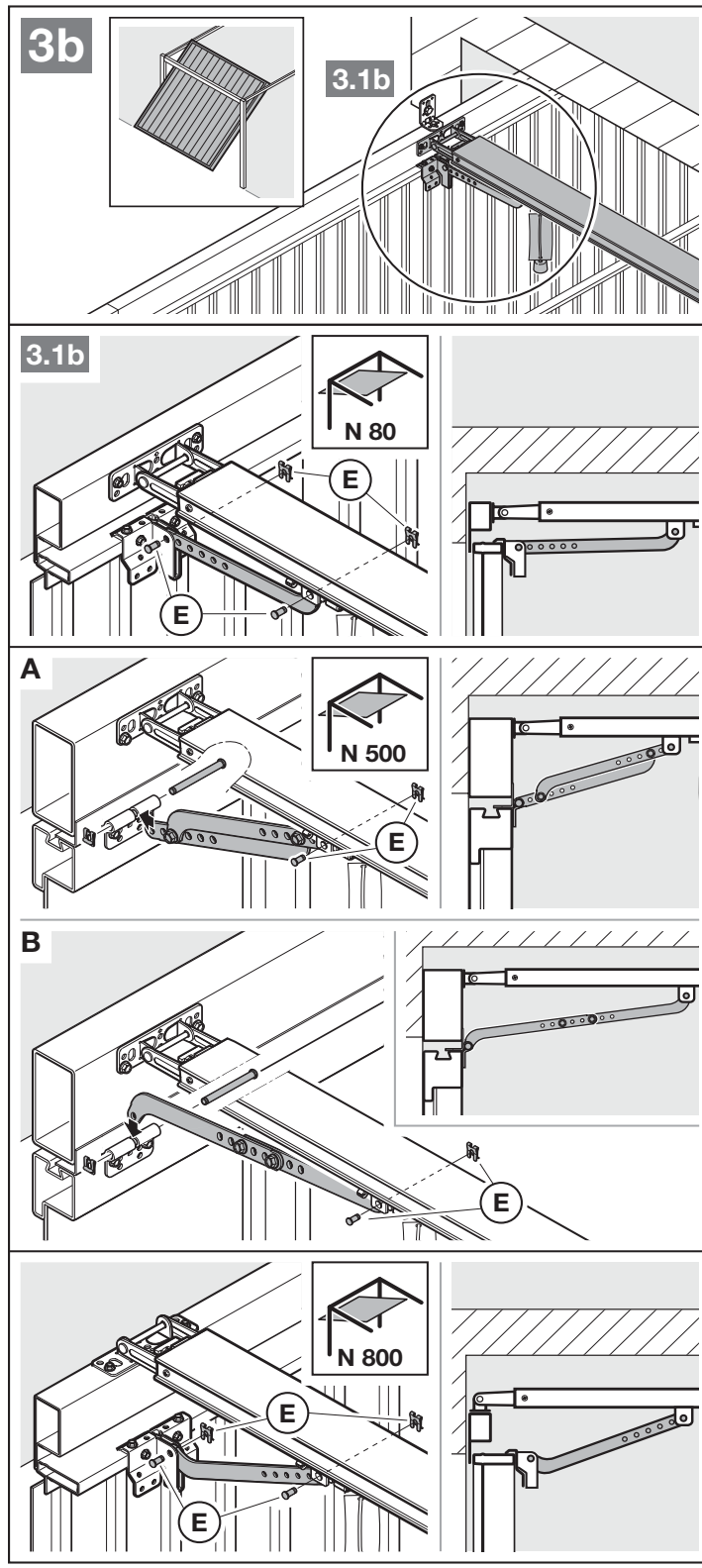
NOTICE

Depending on the **door hardware**, take the installation direction of the link bracket into account.



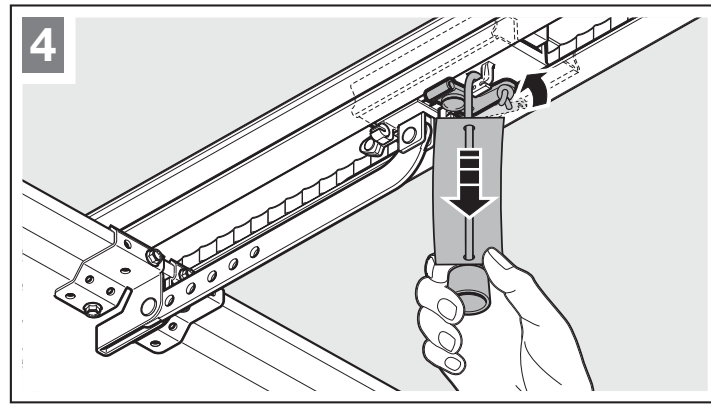
NOTICE

Depending on the **door type**, take the installation direction of the link bracket into account.



To prepare for manual operation

- ▶ Pull on the cord of the mechanical release.



3.5 Determining the end-of-travel positions

If the door cannot be easily moved into the desired OPEN or CLOSED end-of-travel position.

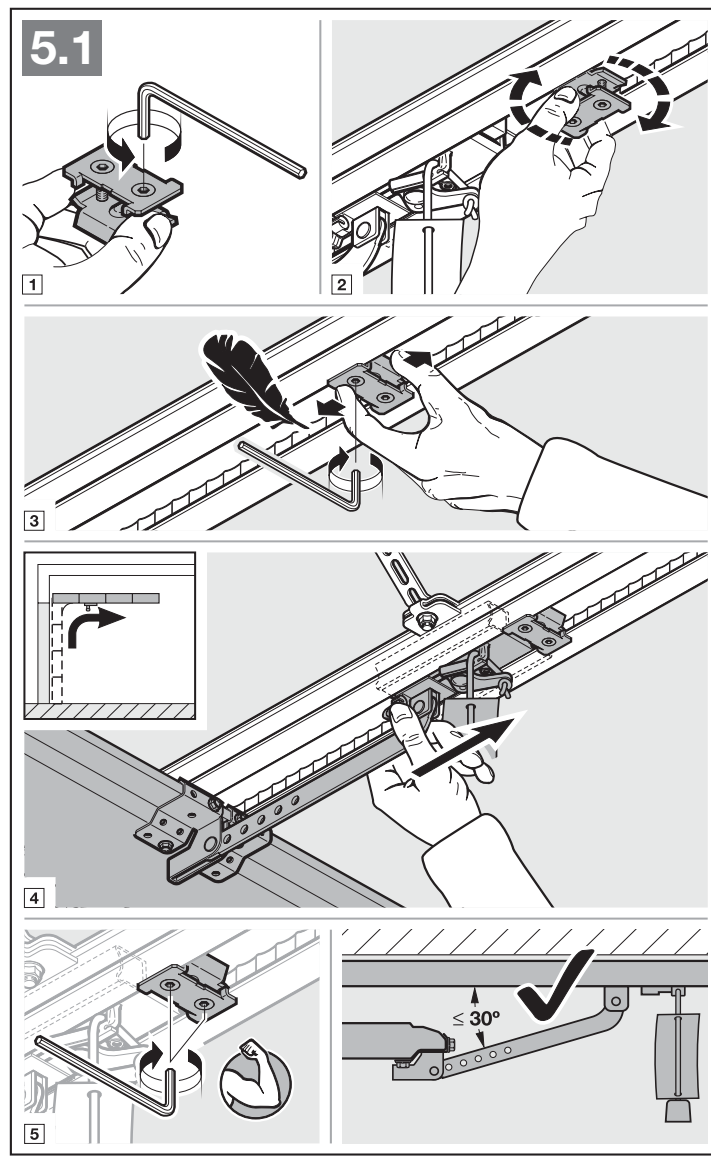
- ▶ Note section 3.1.

3.5.1 Fitting the OPEN end stop

1. Loosely insert the end stop in the boom between the slide carriage and operator.
2. Push the door into the OPEN end-of-travel position by hand.
3. Fix the end stop.

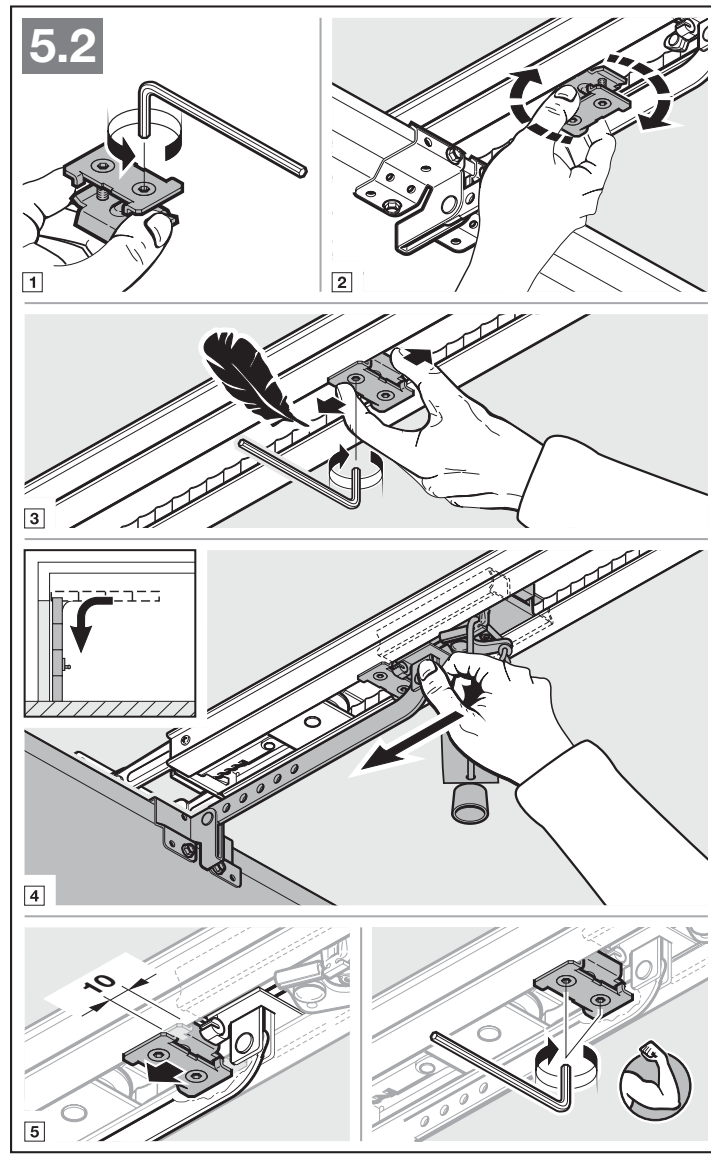
NOTICE

If the door does not reach the complete passage height in the end-of-travel position, the end stop can be removed. The integrated end stop (on the operator head) is then used.



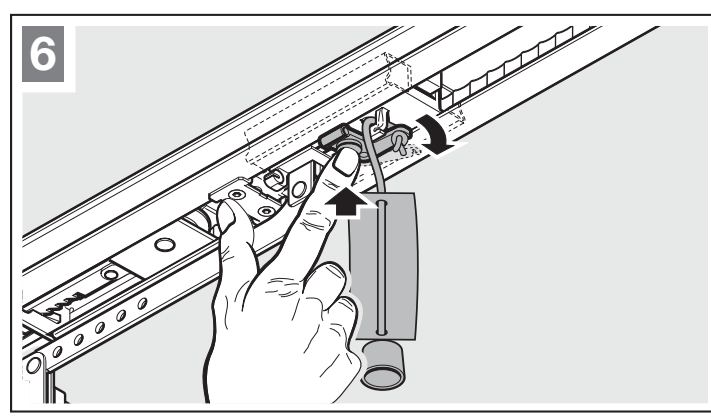
3.5.2 Fitting the CLOSE end stop

1. Loosely insert the end stop in the boom between the slide carriage and door.
2. Push the door into the CLOSE end-of-travel position by hand.
3. Move the end stop by approx. 10 mm in the CLOSE direction.
4. Fix the end stop.



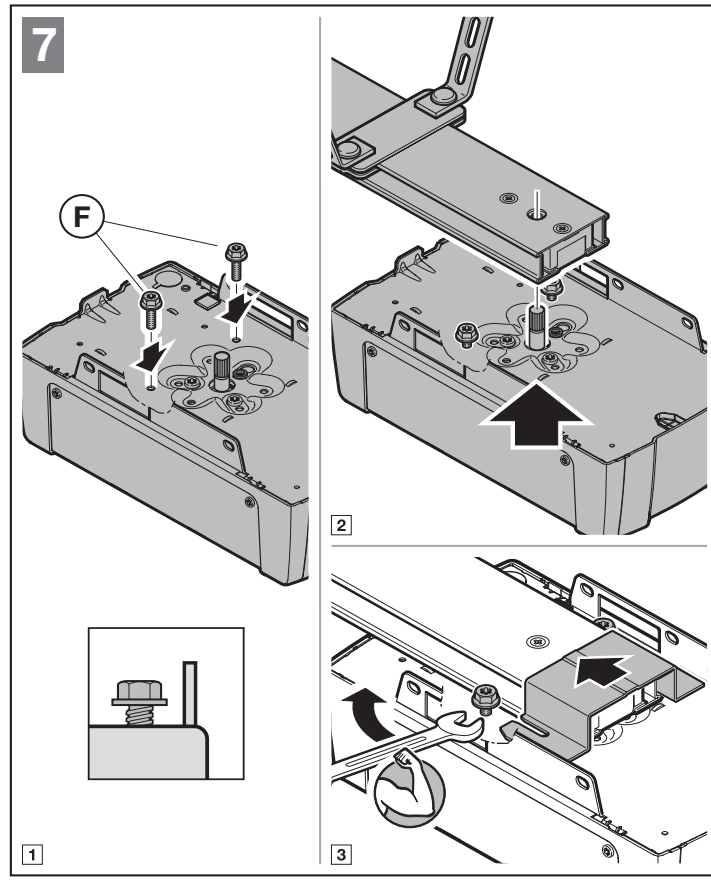
To prepare for automatic operation

- ▶ Push the green button on the slide carriage.
- ▶ Move the door by hand until the slide carriage snaps into the belt lock.
- ▶ Note the safety instructions in section 11 – *Danger of crushing in the boom*



3.5.3 Fitting the operator head

- Fasten the operator head with the display facing the door.



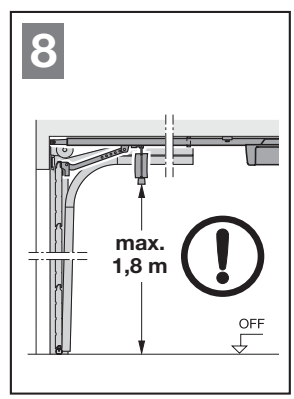
3.6 Emergency release

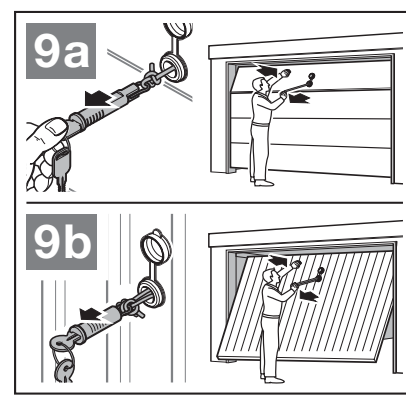
The cord knob for mechanical release may not be installed at a height greater than 1.8 m from the garage floor. The cord may need to be extended on-site, depending on the height of the garage door.

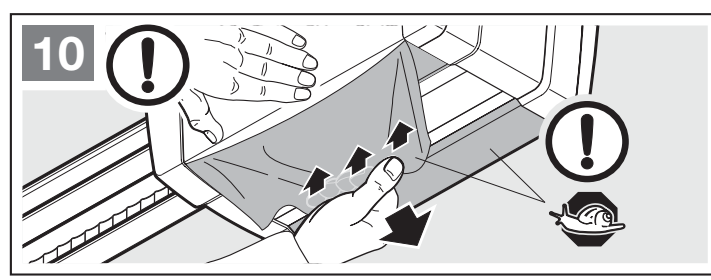
- When extending the cord, please make sure that the cord cannot become caught on a roof rack system or any other protrusions of the vehicle or door.

An emergency mechanical release is required in garages without a second entrance. An emergency release prevents the possibility of being locked out during a power failure. Order the emergency release separately.

- Check the emergency release monthly for proper function.







4 Installation

- ▶ Note the safety instructions in section 2.6
  - *Risk of deadly electric shock from mains voltage*
  - *Malfunctions in the connection cables*
  - *External voltage at the connecting terminals*
- ▶ Remove the cover.

4.1 Connecting terminals

All connecting terminals can have multiple assignments (Figure **11**):

- Minimum thickness: 1×0.5 mm²
- Maximum thickness: 1×2.5 mm²

4.2 Connecting accessories

NOTES

- Loading of the operator by all accessories: **max. 350 mA**. See the figures for component power consumption.
- Series 3 accessories must be connected via the **HCP adapter HAP 1**.

The BUS jack enables the connection of accessories with special functions.

4.2.1 Button with impulse function

▶ Figure **12**

One or more buttons with normally open contacts (volt-free), e.g. internal push button or key switch, can be connected in parallel.

Terminal assignment:

23	Signal channel 2	Partial opening
5	+24 V DC	
21	Signal channel 1	Impulse
20	0 V	

4.2.2 External radio receivers*

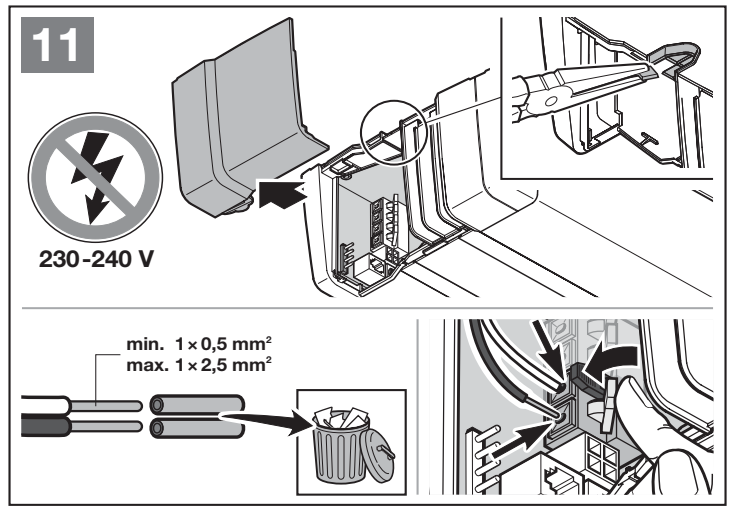
▶ Figure **13** + section **10**

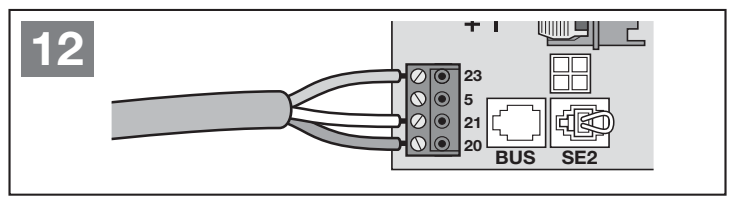
Depending on the receiver, insert the plug in the corresponding socket or the BUS jack.

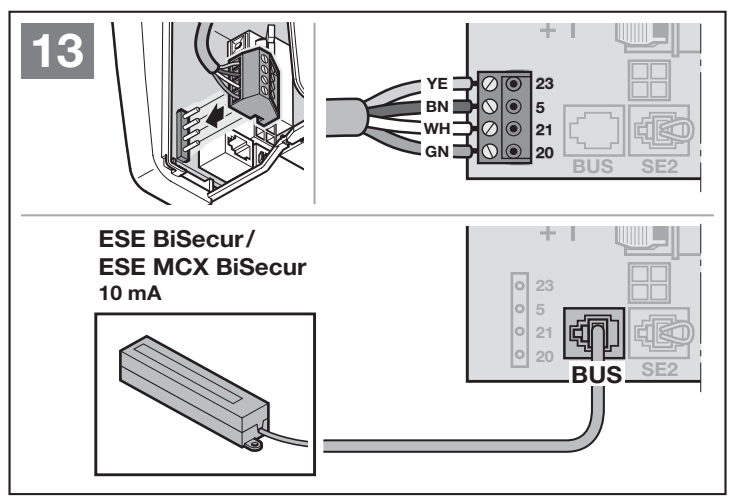
4.2.3 Impulse button IT 1b*

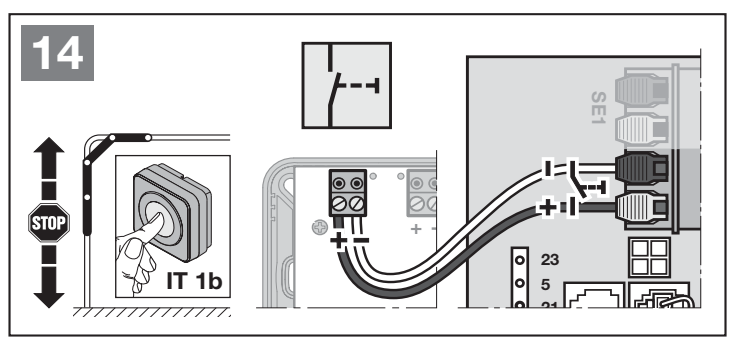
▶ Figure **14**

* – Accessory, not included as standard equipment!









4.2.4 Internal push button*

▶ Figure **15**

Impulse button to start or stop door runs

▶ Figure **15.1**

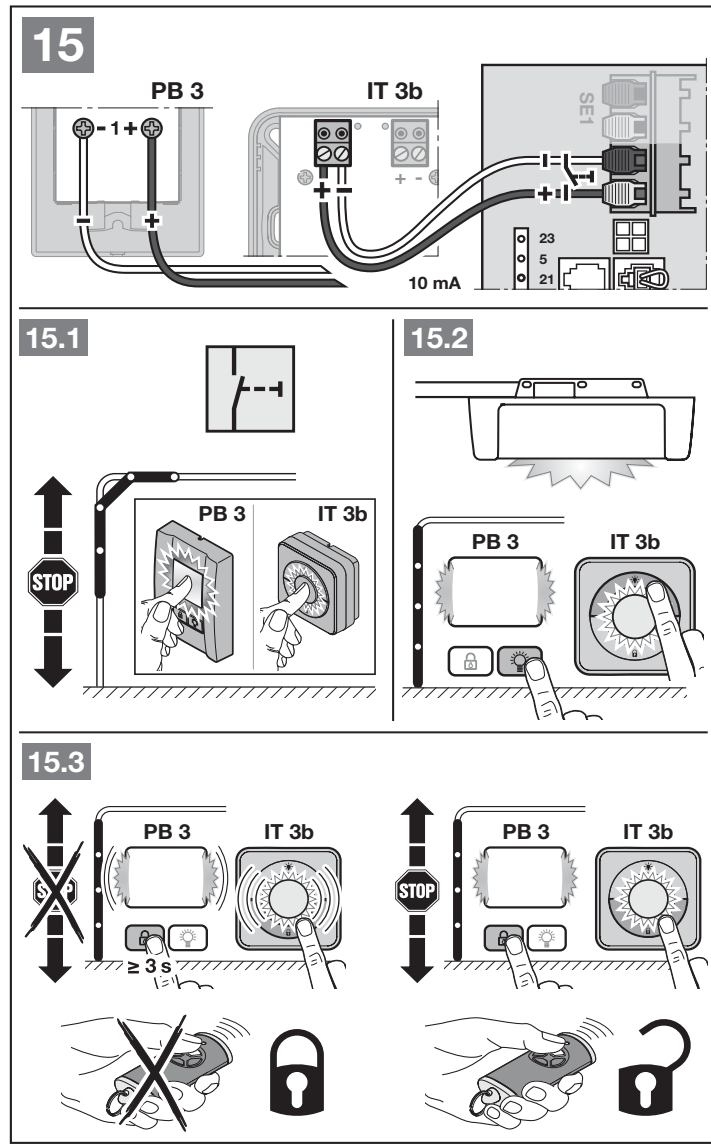
Light button to switch the operator light on and off

▶ Figure **15.2**

Button to switch all control elements on and off

▶ Figure **15.3**

The light can be switched on and off.



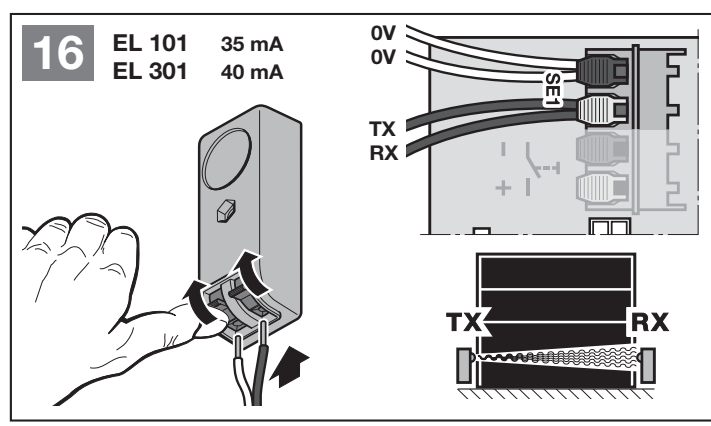
4.2.5 2-wire photocell* (dynamic)

▶ Figure **16**

NOTICE

Follow the fitting instructions when mounting photocells.

After the photocell is actuated, the operator stops and the door performs a safety run to the OPEN end-of-travel position.

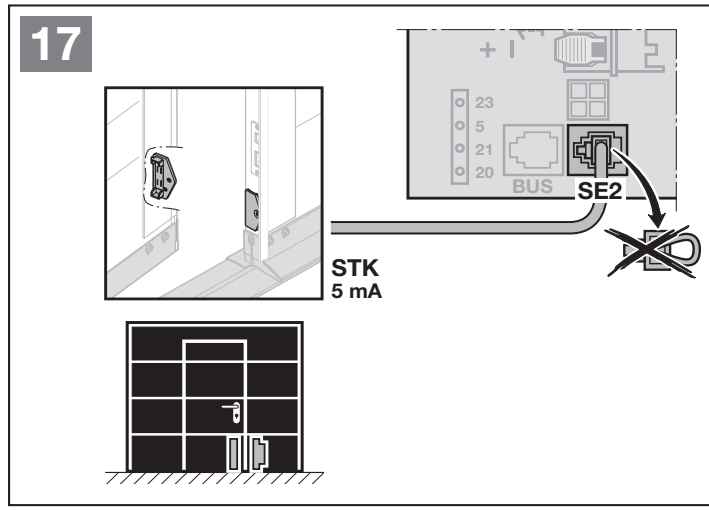


* – Accessory, not included as standard equipment!

4.2.6 Tested wicket door contact*

▶ Figure **17**

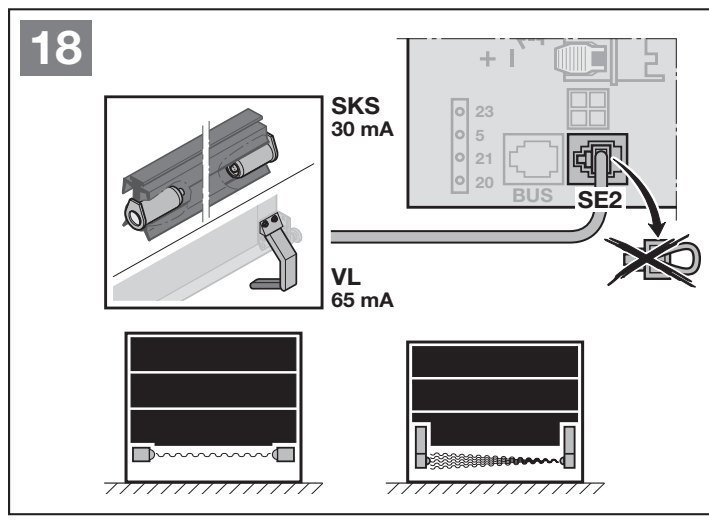
If the wicket door contact is opened during a door run, the operator stops immediately and blocks door run permanently.



4.2.7 Closing edge safety device*

▶ Figure **18**

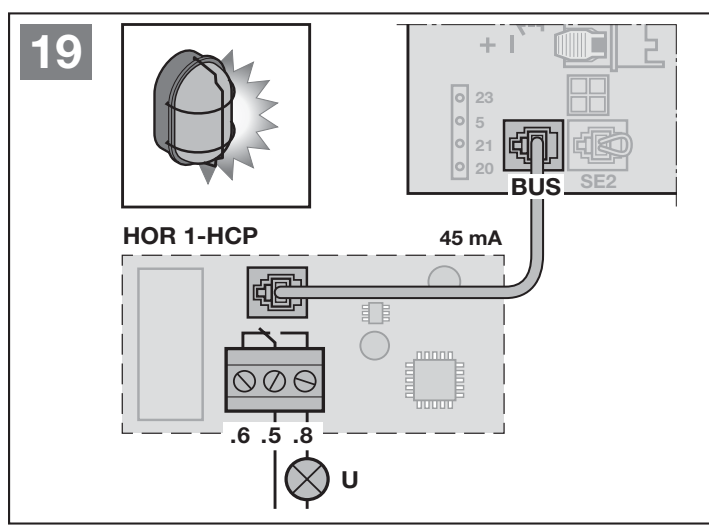
After the closing edge safety device is actuated, the operator stops and the door performs a safety run to the OPEN end-of-travel position.



4.2.8 Option relay*

▶ Figure **19** and section 6.1.12

The option relay is required to connect an external lamp or warning light.

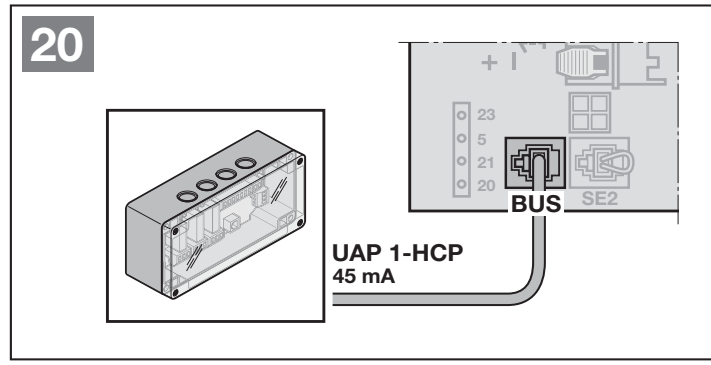


* – Accessory, not included as standard equipment!

4.2.9 Universal adapter print*

▶ Figure **20** and section 6.1.12

The universal adapter print can be used for additional functions.

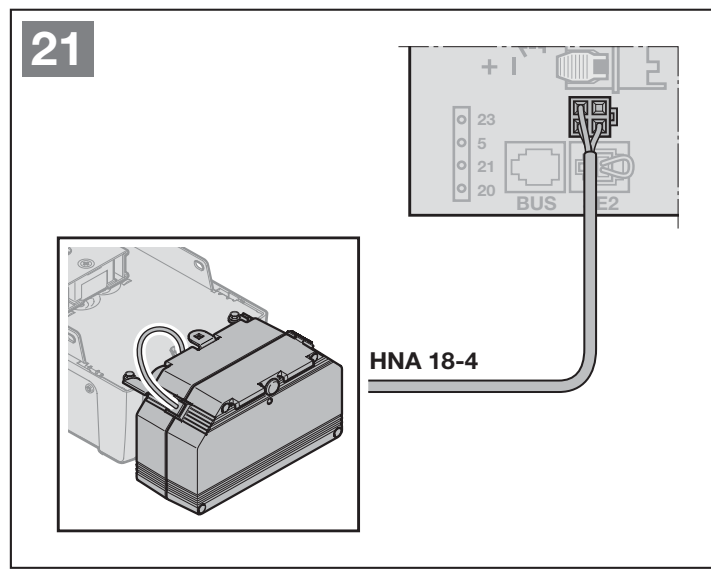


4.2.10 Emergency battery*

▶ Figure **21**

To close the door in the event of a power failure, an optional emergency battery can be connected. The system is switched to battery operation automatically. During battery operation, fewer LEDs are illuminated on the operator light.

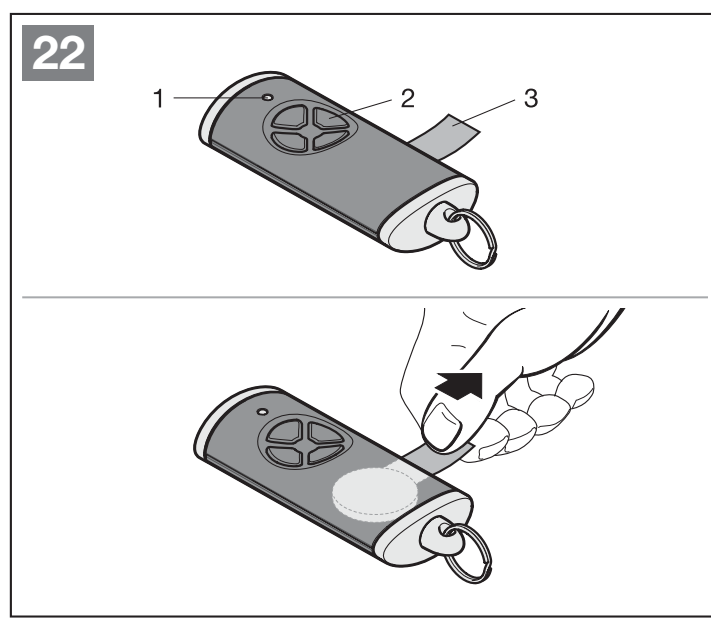
> **⚠ WARNING**
>
> **Danger of injury due to unexpected door run**
>
> Unexpected door run may occur when the emergency battery is still connected despite the mains plug being pulled out.
>
> ▶ Disconnect the mains plug **and** the plug of the emergency battery whenever performing work on the door system.



4.2.11 Hand transmitter

▶ Figure **22**

1 LED, bi-colour
2 Hand transmitter buttons
3 Battery insulation foil



* – Accessory, not included as standard equipment!

5 Initial start-up

▶ Before initial start-up, read and follow the safety instructions in sections 2.7 and 2.9.

During learning runs, the operator is adjusted to the door. The travel distance, the required force for opening and closing runs and the connected safety devices are taught in automatically and saved in a power failure-proof manner. The data is only valid for this door.

NOTES

- The hand transmitter must be ready for operation (see section 4.2.11).
- The slide carriage must be engaged.
- No obstacles may be located in the function range of the safety devices.
- Safety devices must be fitted and connected beforehand.
- If further safety devices are connected at a later point, a factory reset is required.
- During learning runs for travel and the required forces, the connected safety devices and power limit are not active.
- While the travel is being taught in, the operator moves in slow travel.

Operator light:

If the operator has not yet been taught in, the operator light is illuminated for 60 seconds as soon as the the mains plug is inserted in the socket.

5.1 Teaching in the operator

⚠ CAUTION

Danger of injury due to incorrectly selected operator type

If an incorrect door type is selected, unspecific values are set as default. Door system malfunctions may cause injuries.

▶ Only choose the menu that corresponds to the door system you have.

▶ Figure **23**

1. Plug in the mains plug.
On the display
– **8.8.** is illuminated for 1 second,
– **U** is then illuminated continuously.

2. Press the ^ or v button and select the available door type.

Door types:

Menu		Door type
01.	=	Sectional door
02	=	Up-and-over door [1]
03	=	Side sliding sectional door, hinged garage door
04	=	Non-protruding up-and-over door [2]
05	=	Garage horizontal door

1) Door swinging outward
2) Door tilting inward

3. Press the PRG button.
– **L** is illuminated.

4. Press the button ^.
– The door will open and briefly stop in the OPEN end-of-travel position. **L**¯ flashes.
– The door automatically completes 3 cycles (OPEN and CLOSE door runs). **L**_ flashes in the CLOSE direction.
L¯ flashes in the OPEN direction.
The travel, required forces and connected safety devices will be taught in.
The operator light flashes during the learning runs.
– The door will stop in the OPEN end-of-travel position. The operator light is continuously illuminated.

To abort a learning run:

▶ Press one of the buttons ^, v, PRG or an external control element with impulse function.
On the display a **U** is illuminated and the operator has not been taught in.

Display of taught-in forces

After the learning runs, a number is illuminated, which shows the maximum determined force.

This value indicates the following:

0-2 Optimal force ratios.
The door system runs easily.

3-9 Poor force ratios.
The door system must be checked and adjusted if necessary.

The operator automatically switches to the menu for teaching in the hand transmitters.