

TR10A148 RE / 05.2012

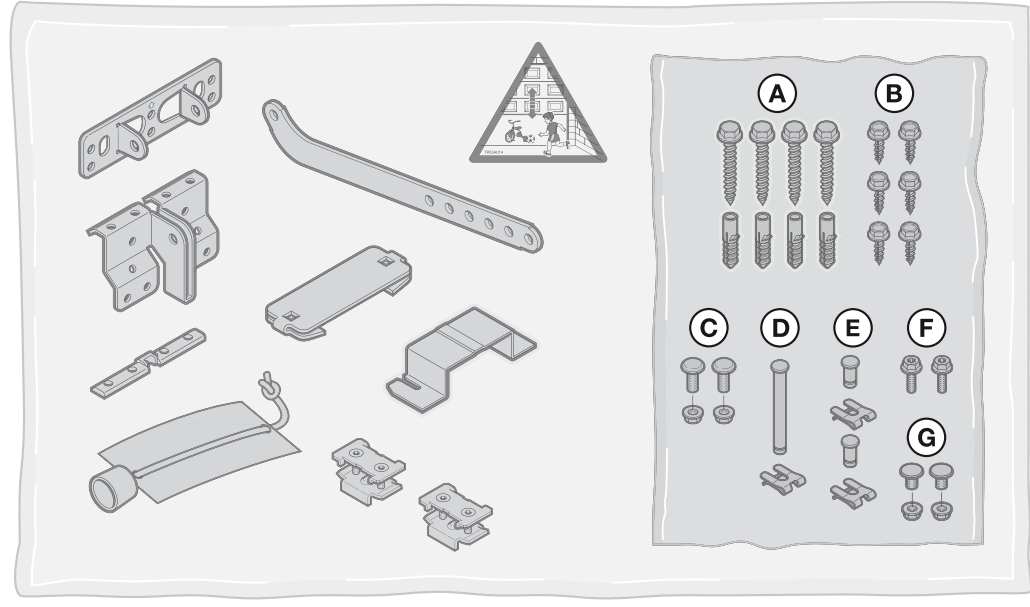
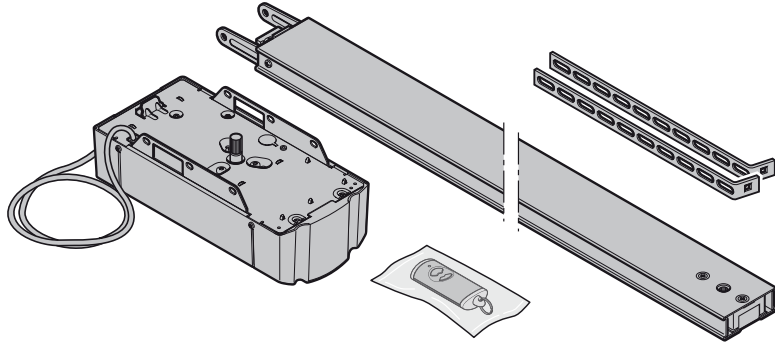
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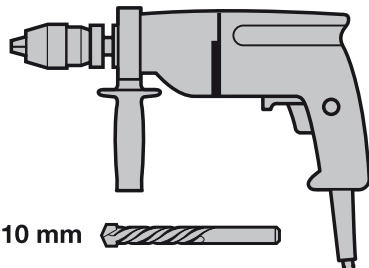
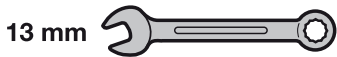
## Instructions for Fitting, Operating and Maintenance

### Garage door operator


# A



# B



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Dear Customer,

We are delighted that you have chosen a quality product from our company.

## 1 About these instructions

These instructions are **original operating instructions** as outlined in the EC Directive 2006/42/EC. Read through all of the instructions carefully, as they contain important information about the product. Pay attention to and follow the instructions provided, particularly the safety instructions and warnings.





Please keep these instructions in a safe place and make sure that they are available to all users 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 test manual
- The garage door operating instructions

### 1.2 Warnings used

	The general warning symbol indicates a danger that can lead to <b>injury or death</b> . 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.
 <b>DANGER</b>	Indicates a danger that can immediately lead to death or serious injuries.
 <b>WARNING</b>	Indicates a danger that can lead to death or serious injuries.
 <b>CAUTION</b>	Indicates a danger that can lead to minor or moderate injuries.
<b>ATTENTION</b>	Indicates a danger that can lead to <b>damage or destruction of the product</b> .

### 1.3 Definitions used

#### Hold-open phase

Waiting phase at the *Open* end-of-travel position before the door closes with an automatic timer

#### Automatic timer

Automatic closing of the door after a set time has elapsed and after reaching the *Open* end-of-travel position.

#### DIL switches

Switches on the control circuit board for setting the control.

#### Impulse sequence control

With each push of the button, the door is started against the previous direction of travel or the motion of the door is stopped.

#### Learning runs

Door runs in which the travel and the forces needed for moving the door are taught in.

#### Normal operation

Door travel with the taught-in travel distances and forces.

#### Reference run

Door cycle towards the *OPEN* end-of-travel position in order to set the home position.

#### Reversal limit

If a safety device is activated, the door moves into the opposite direction (safety reversal) up to the reversal limit shortly before the *Close* end-of-travel position. If this limit is passed, no reversal occurs to ensure that the door reaches the end-of-travel position without disrupting travel.

#### Safety reversal

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

#### Travel

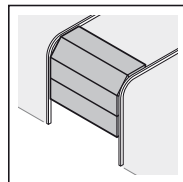
The distance the door takes to move from the *Open* end-of-travel position to the *Close* end-of-travel position.

#### Pre-warning time

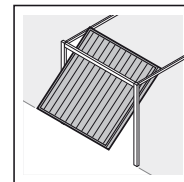
The time between the travel command (impulse) and the start of travel.

### 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:



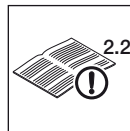
a = Sectional door



b = Up-and-over door

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

#### Symbols:



See text section

In the example, **2.2** means:  
See text section, section 2.2



Important advice to prevent injury to persons and damage to property



High exertion of force



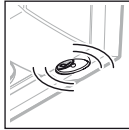
Check for smooth running



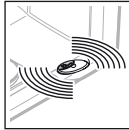
Use protective gloves



Factory setting



Slow flashing



Fast flashing

## 1.5 Abbreviations used

### Colour code for cables, single conductors and components

The abbreviations of the colours for identifying the cables, conductors and components comply with the international colour code according to IEC 757:

WH	White
BN	Brown
GN	Green
YE	Yellow
<b>Article designations</b>	
HE 3	3-channel receiver
IT 1	Internal push button with impulse button
IT 1b	Internal push button with illuminated impulse button
EL 101	One-way photocell
EL 301	One-way photocells
STK	Wicket door contact
PR 1	Option relay
HSE 2 BiSecur	2-button hand transmitter
HNA 18	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.

### 2.1 Intended use

The garage door operator is intended exclusively for impulse operation of spring-compensated sectional and up-and-over doors in the private / non-commercial sector.

Note the manufacturer's 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. 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.

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

### 2.2 Non-intended use

Use in the commercial sector is prohibited.

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

### 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, repairs and disassembly of the door system

 **DANGER**

**Compensating springs are under high tension**

▶ See warning in section 3.1

 **WARNING**

**Danger of injury due to unexpected door travel**

▶ See warning in section 10


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 ensure that installation is conducted in compliance with 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 DIN EN 13241-1 are avoided by construction and fitting according to our guidelines.


The garage ceiling must guarantee secure fastening of the operator. For ceilings which are too high or too light, the operator must be fastened with additional struts.

 <b>WARNING</b>
<b>Unsuitable fixing material</b>
▶ See warning in section 3.3
<b>Danger to life from the pull rope</b>
▶ See warning in section 3.3
<b>Danger of injury due to unwanted door travel</b>
▶ See warning in section 3.3

**2.6 Safety instructions for initial start-up and for operation**

	 <b>DANGER</b>
<b>Mains voltage</b>	
Contact with the mains voltage presents the danger of a deadly electric shock.	
For that reason, observe the following warnings under all circumstances:	
▶ Electrical connections may only be made by a qualified electrician.	
▶ The on-site electrical installation must conform to the applicable protective regulations (230 / 240 V AC, 50 / 60 Hz)!	
▶ The mains plug must be disconnected before any work is performed on the operator.	


 <b>WARNING</b>
<b>Danger of injury during door travel</b>
▶ See warning in section 9

 <b>CAUTION</b>
<b>Danger of crushing in the boom</b>
▶ See warning in section 9
<b>Danger of injury from the cord knob</b>
▶ See warning in section 9
<b>Danger of injuries due to the hot lamp</b>
▶ See warning in section 9
<b>Danger of injury due to the force value being set too high</b>
▶ See warning in section 6.3
<b>Danger of injury resulting from uncontrolled door movement in the Close direction if one of the counterbalance springs breaks and the slide carriage is released.</b>
▶ See warning in section 9

<b>ATTENTION</b>
<b>External voltage at the connecting terminals</b>
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 using the hand transmitter**

 <b>WARNING</b>
<b>Danger of injury during door travel</b>
▶ See warning in section 7

 <b>CAUTION</b>
<b>Danger of injuries due to unintended door travel</b>
▶ See warning in section 7

**2.8 Approved safety equipment**

Safety relevant functions or components of the control, such as the force limit, external photocells, when installed, have been designed and approved in accordance with category 2, PL "c" of EN ISO 13849-1:2008.

 <b>WARNING</b>
<b>Danger of injuries due to faulty safety equipment</b>
▶ See warning in section 6


**3 Fitting**

**ATTENTION:**

IMPORTANT SAFETY INSTRUCTIONS.

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

**3.1 Inspect door / door system**

 <b>DANGER</b>
<b>Compensating springs are under high tension</b>
Serious injuries may occur while adjusting or loosening the compensating springs!
▶ For your own safety, only have a specialist conduct work on the door compensating springs and, if necessary, 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 an incorrectly aligned door can cause serious injuries!
▶ Do not use the door system if repair or adjustment work must be conducted!

The construction of the operator is not designed for operation with sluggish doors, i.e. doors that can hardly or not at all be opened or closed 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).

- ▶ 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.
- ▶ Check whether the door can be opened and closed correctly.

### 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**.

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 fitting bracket (ordered separately) must be used.

The garage door operator can be arranged up to max. 500 mm off-centre.

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

- ▶ Check these 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 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 **1.2a**).

#### 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

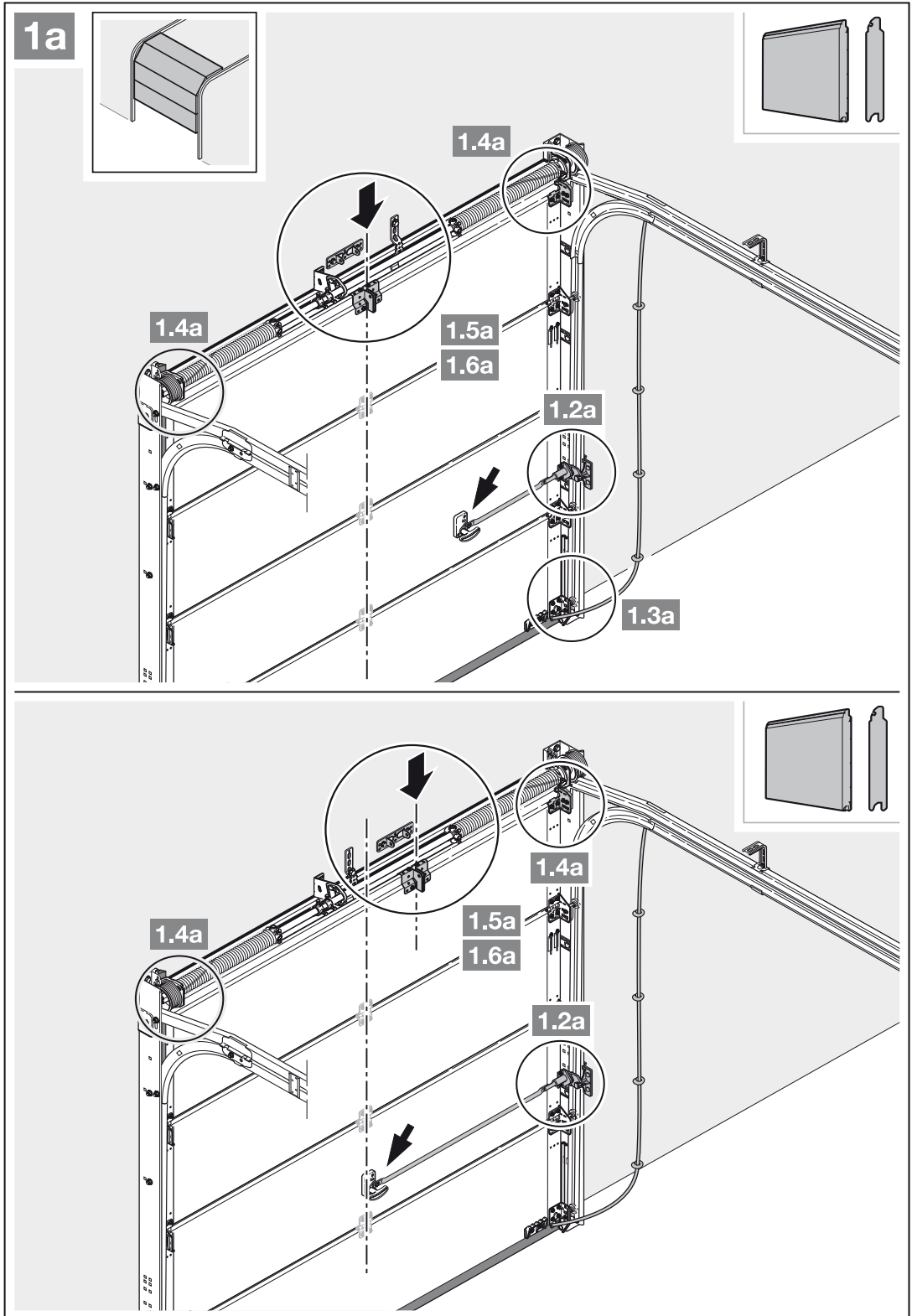
##### Damage caused by dirt

- ▶ Drilling dust and chippings can lead to malfunctions.
- ▶ Cover the operator during drilling work.

#### NOTE:

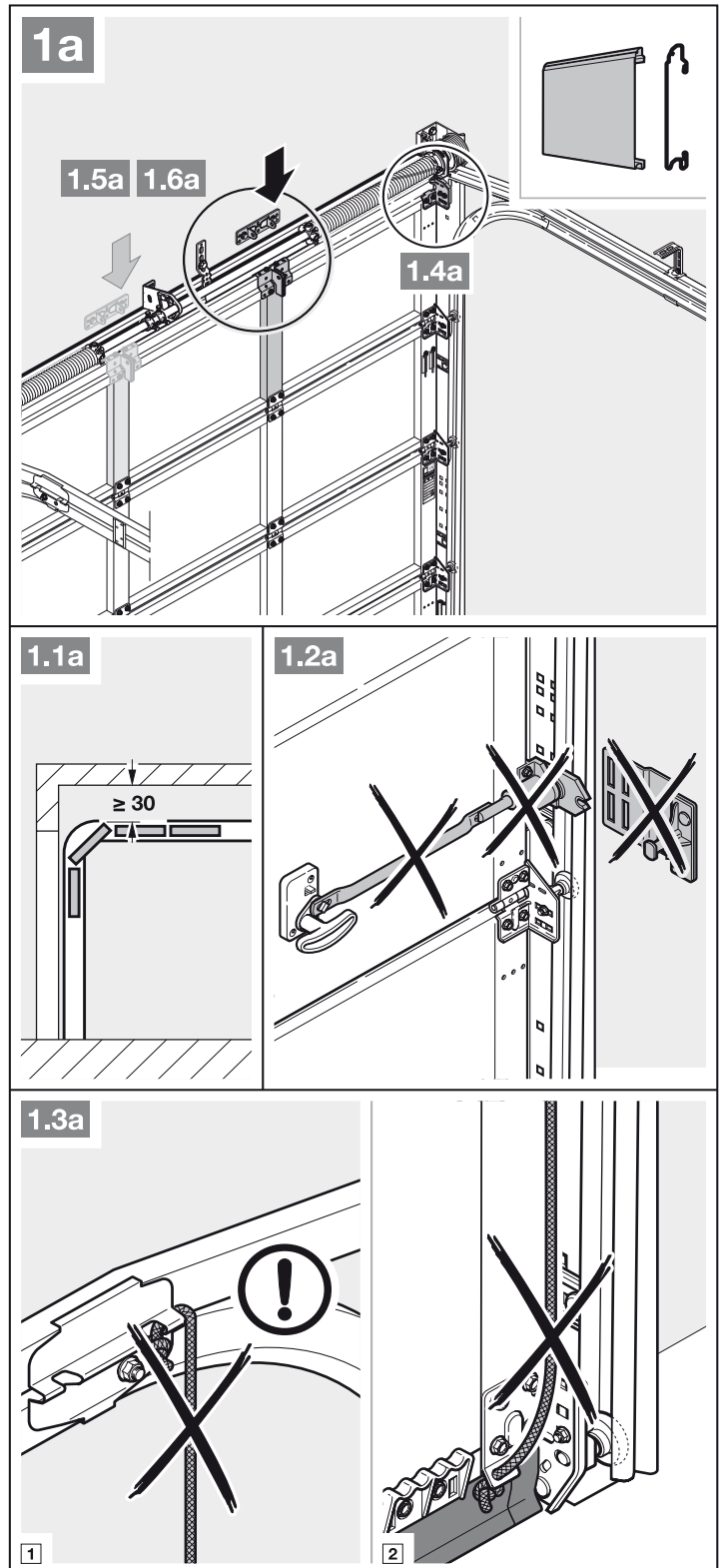
An emergency release is necessary for garages without a second entrance that prevents the possibility of being locked out; this must be ordered separately.

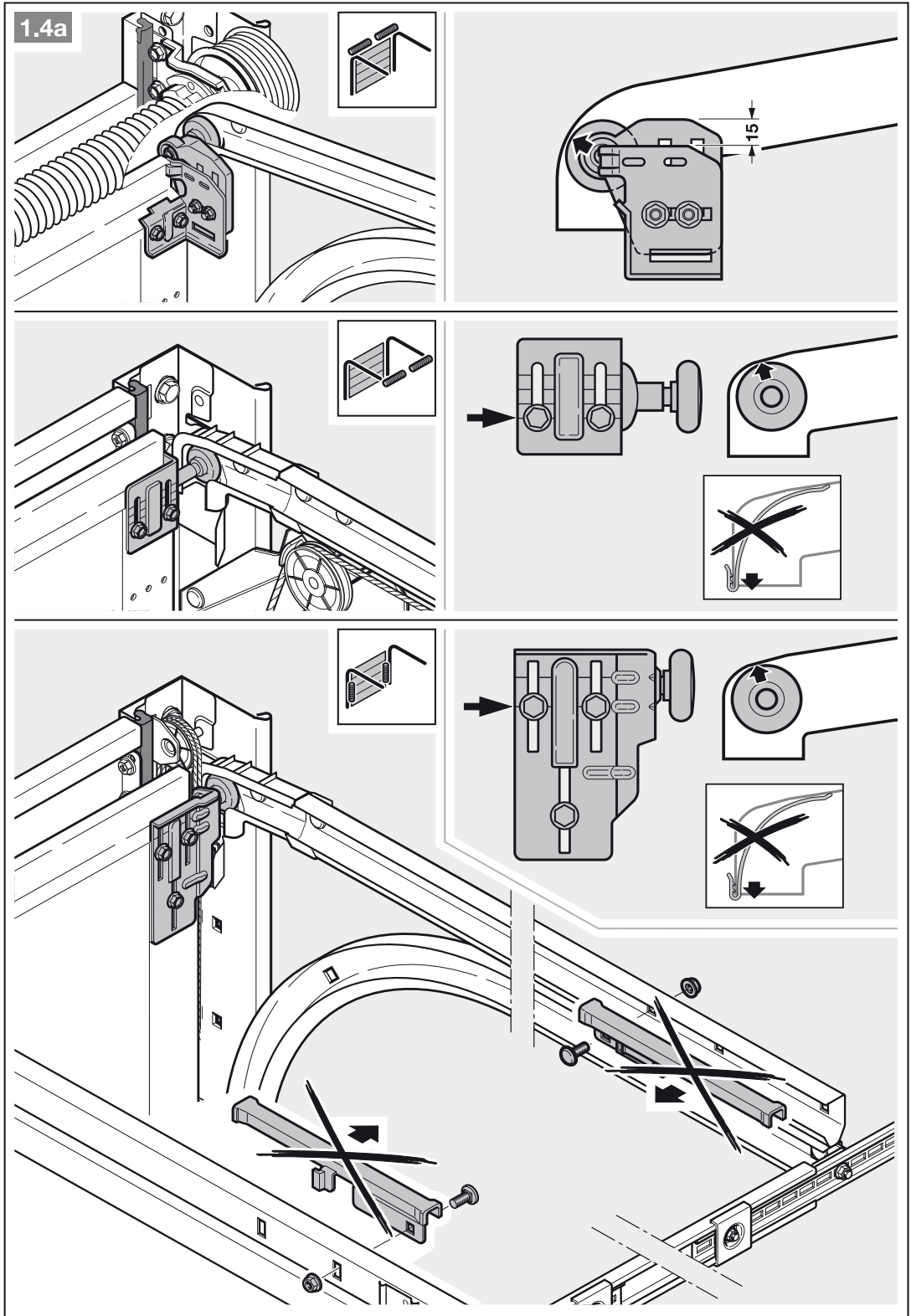
- ▶ Check the emergency release for proper function every month.





- Note section 3.2.  
– *Clearance required*
1. Completely disassemble the mechanical door locking.
  2. With an off-centre reinforcement profile, fit the link bracket on the nearest reinforcement profile to the left or right (see Figure 1a).

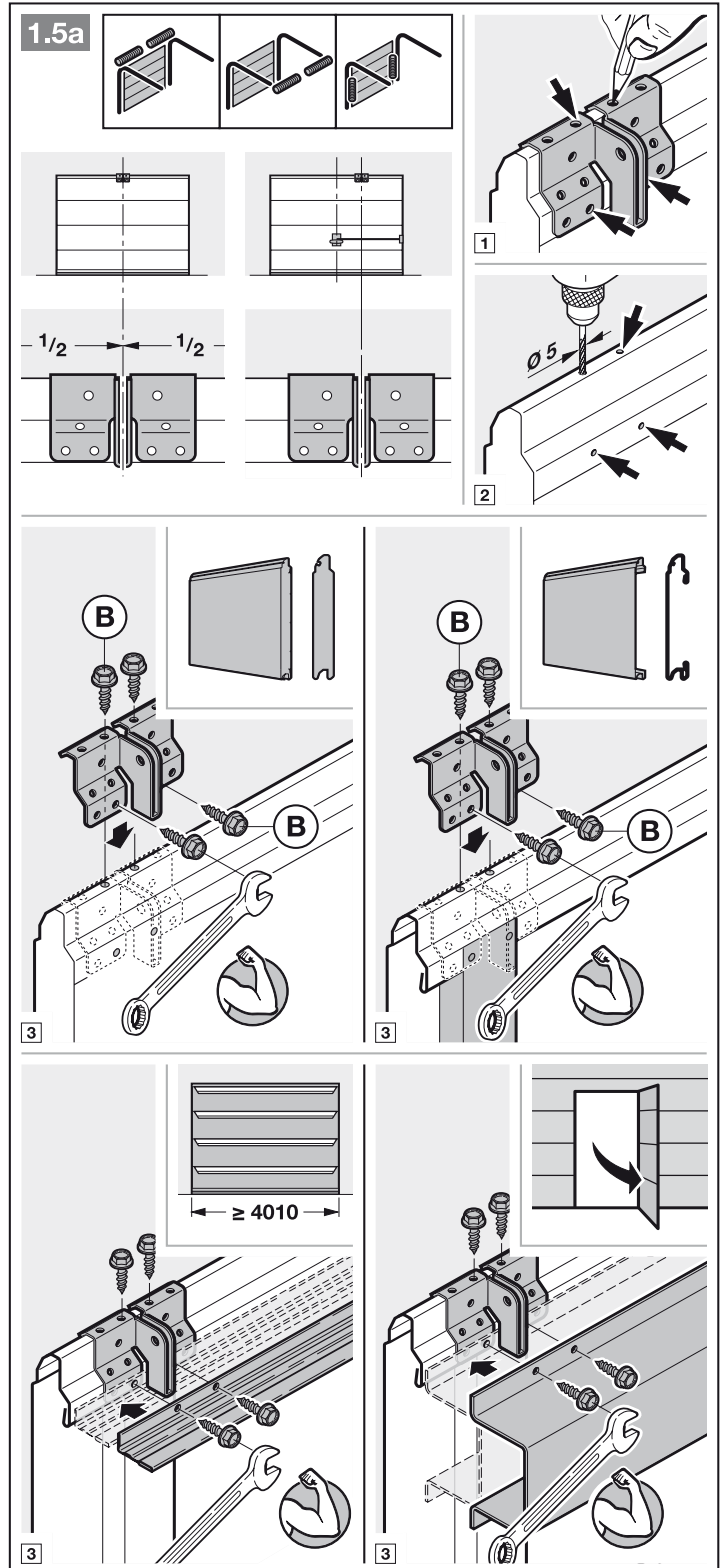


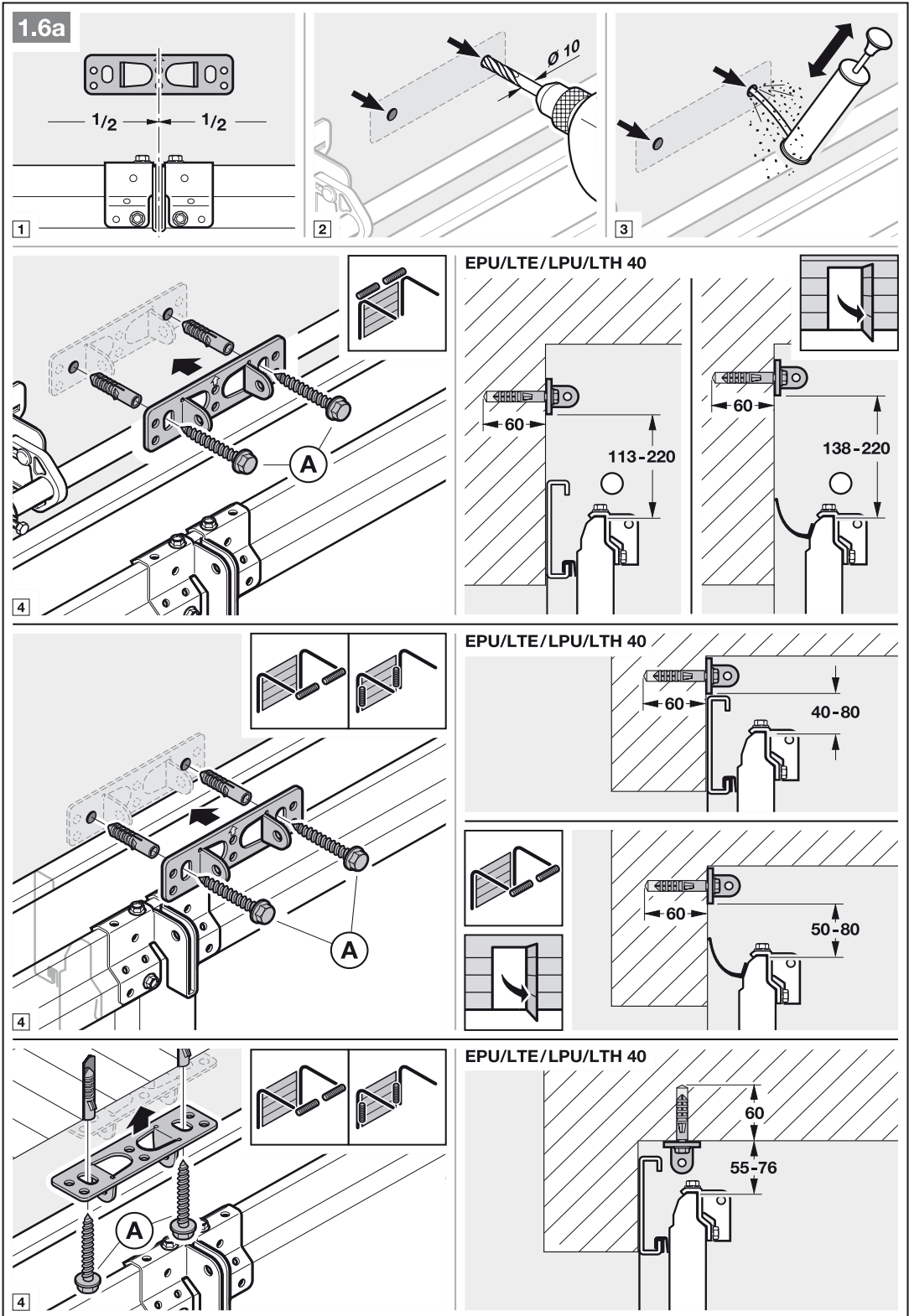


3. For sectional doors with central door locking, fit the lintel joint and link bracket off-centre (max. 500 mm).

**NOTE:**

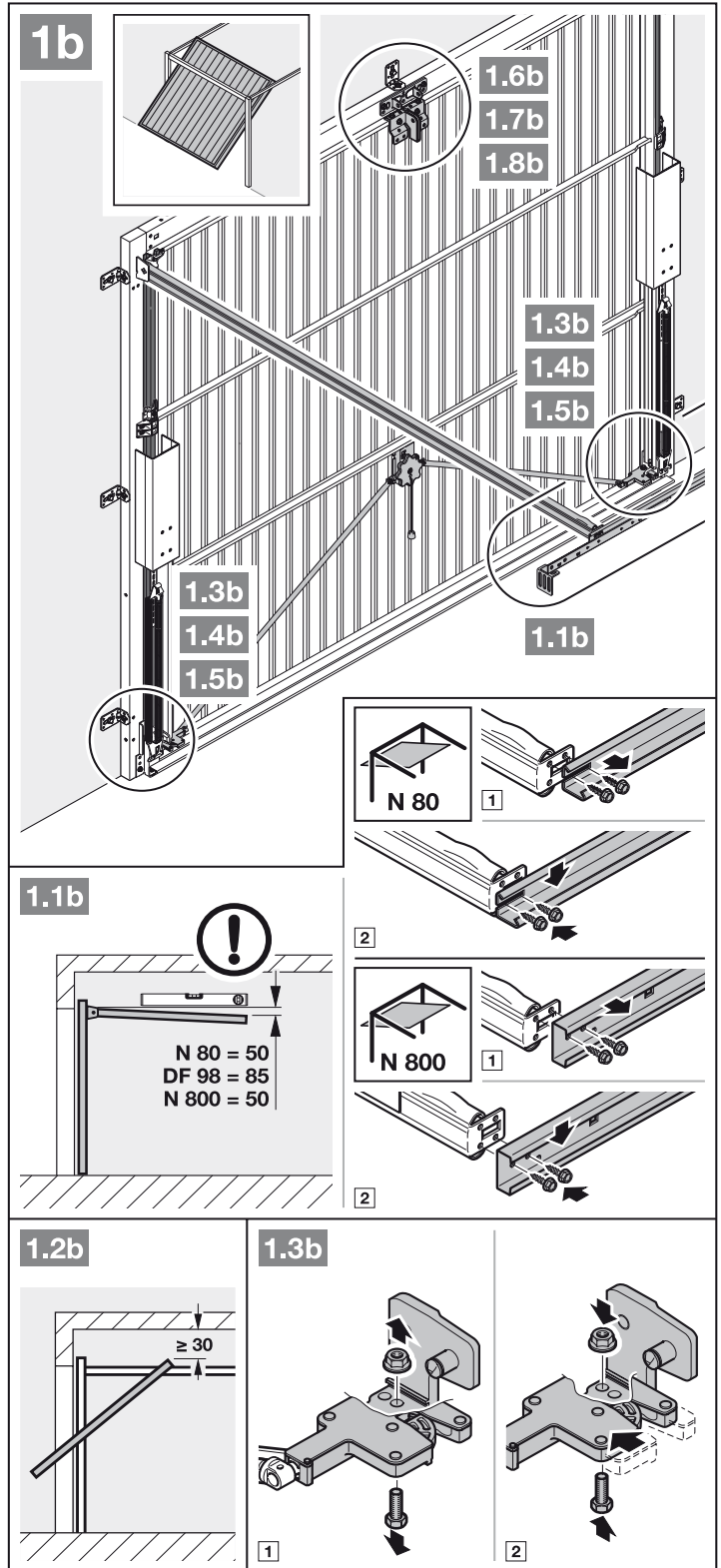
Not illustrated in Figure 1.5a: use the 5 × 35 woodscrews from the door accessory pack (hole Ø 3 mm) for timber doors.



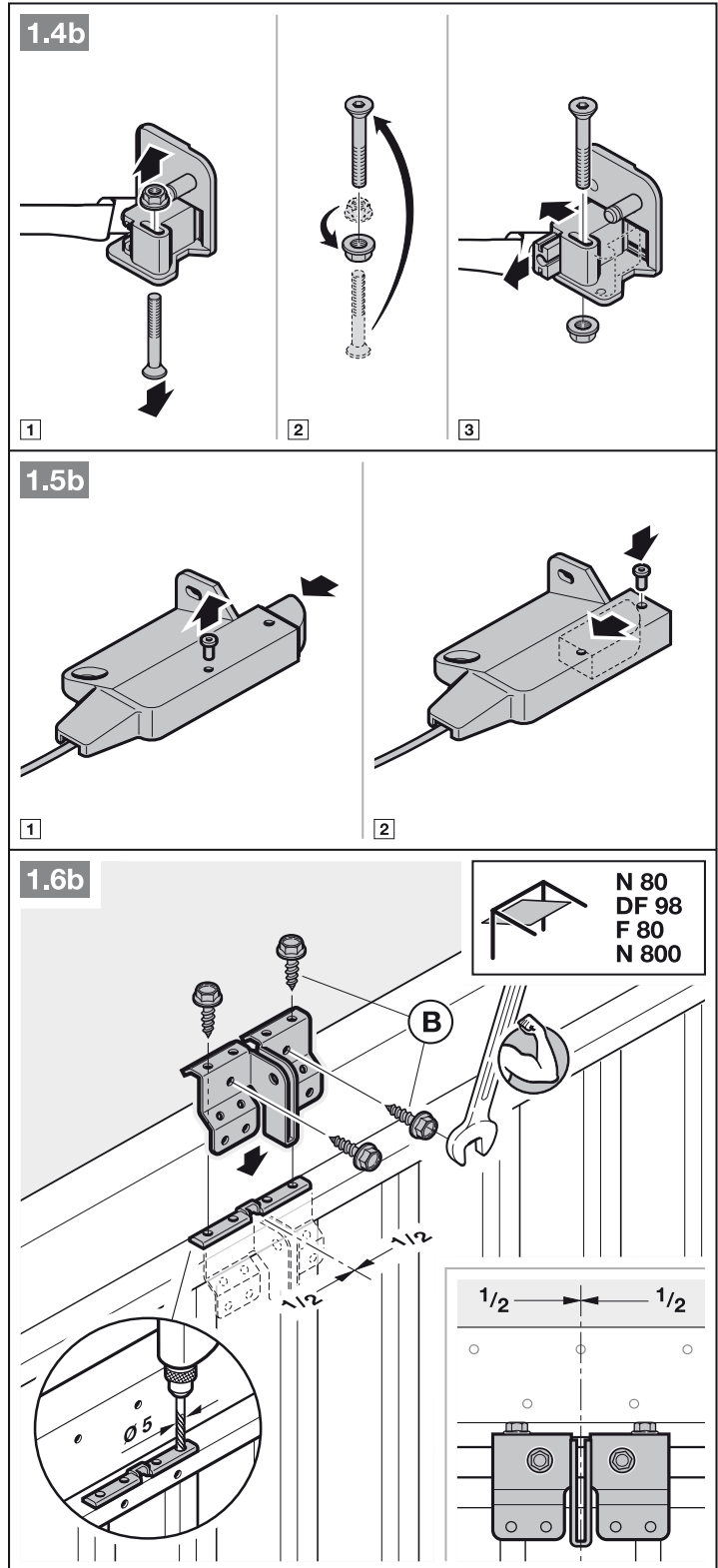


► Note section 3.2.  
– Clearance required

1. Render the mechanical door lockings inoperable (see Figure 1.3b).

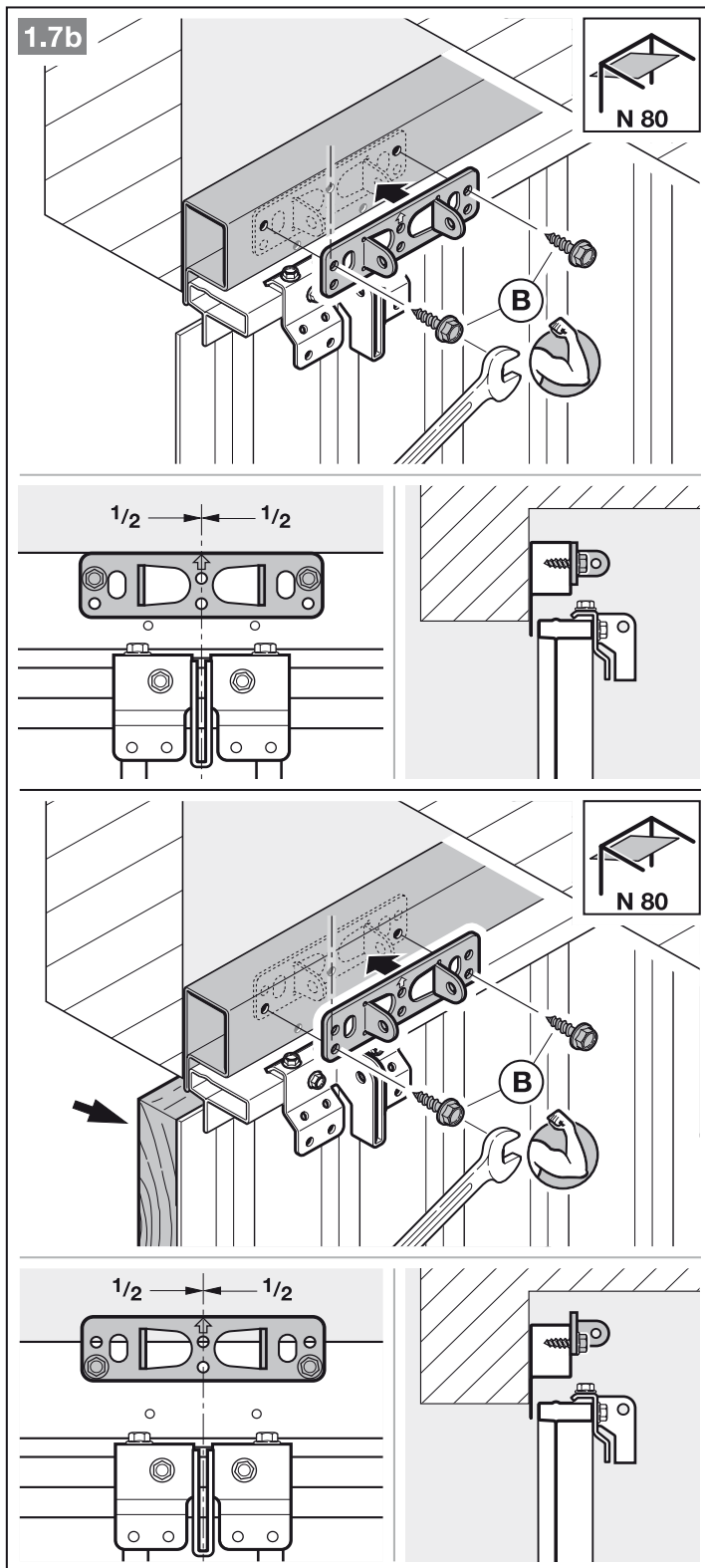


2. Render the mechanical door lockings inoperable (see Figures 1.4b / 1.5b). For door models not covered here, block the catches on site.
3. In a deviation from the Figures 1.6b / 1.7b: The lintel joint and link bracket must be attached off-centre for up-and-over doors with ornamental iron door handles.



**NOTE:**

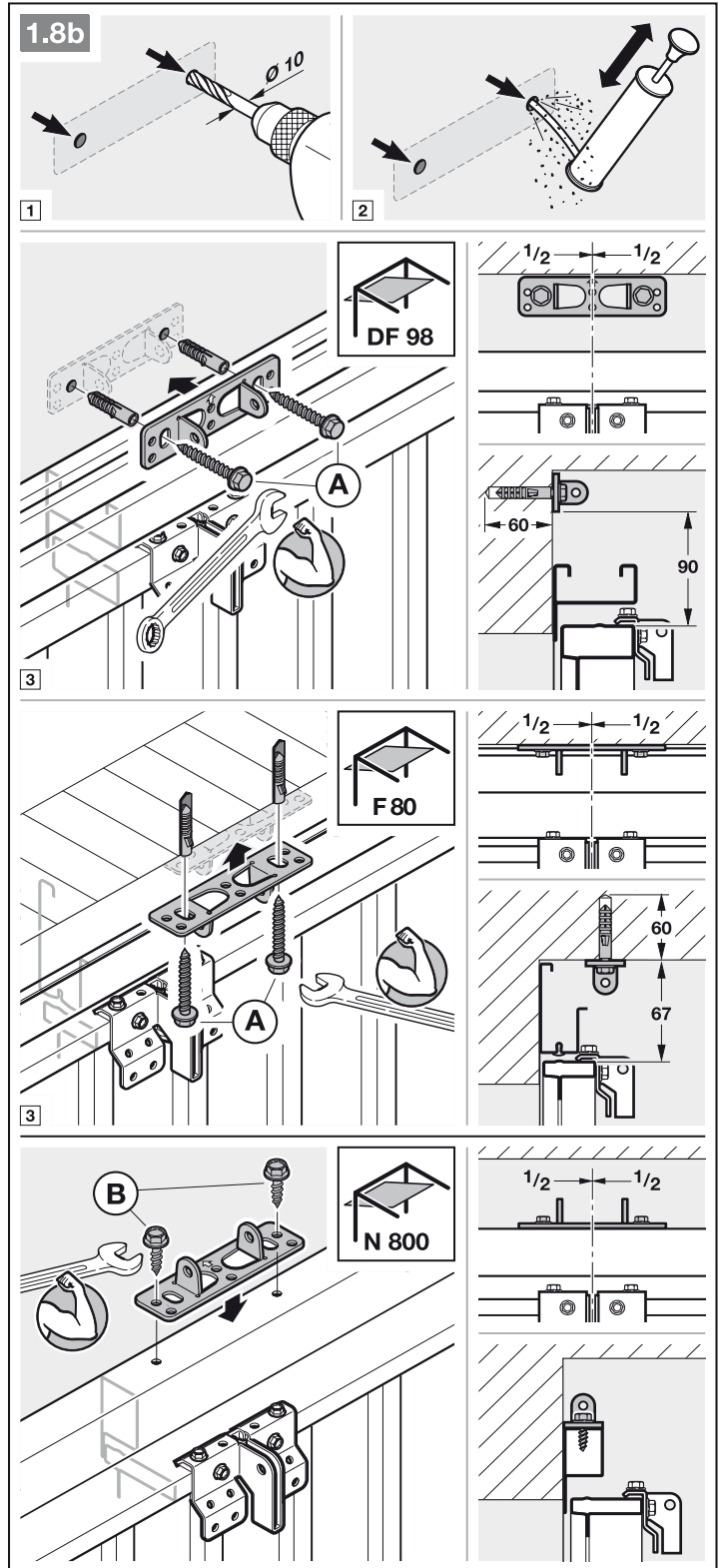
With N80 doors with timber infill, use the bottom holes on the lintel joint for fitting.



3.4 Fitting the boom

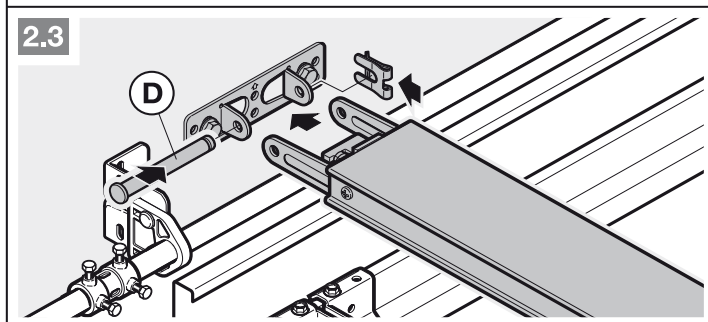
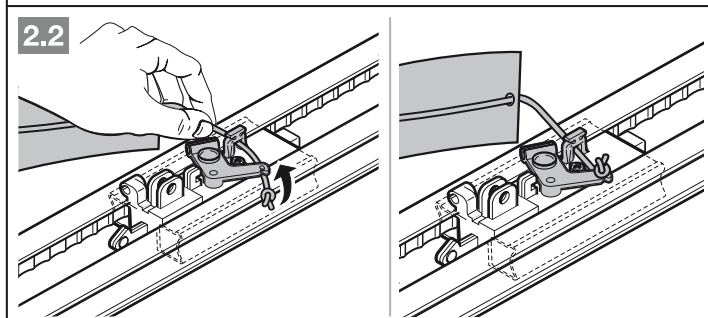
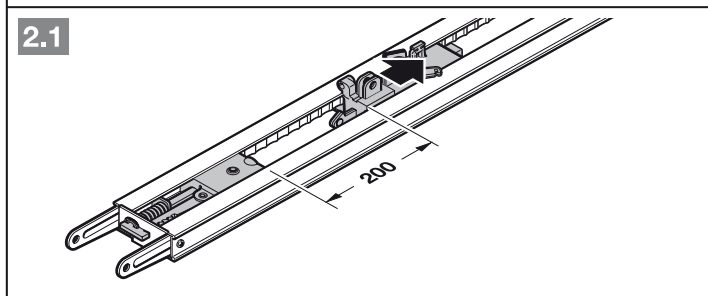
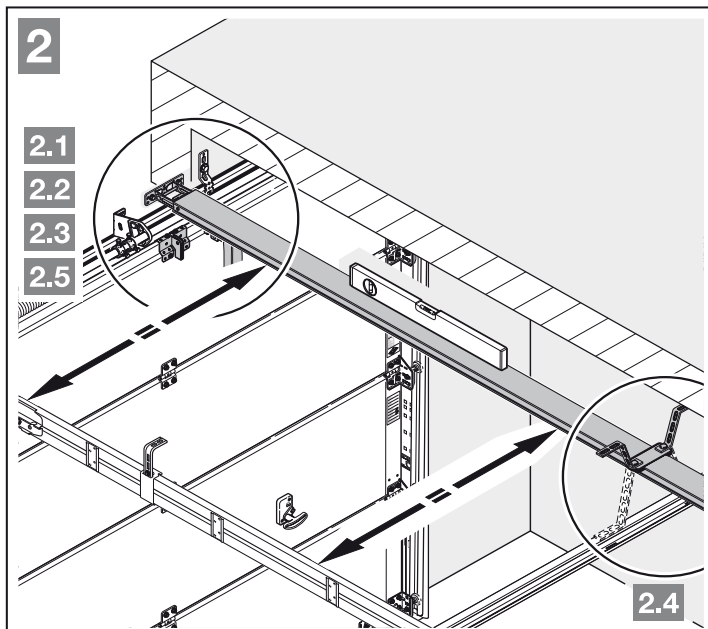
**NOTE:**

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



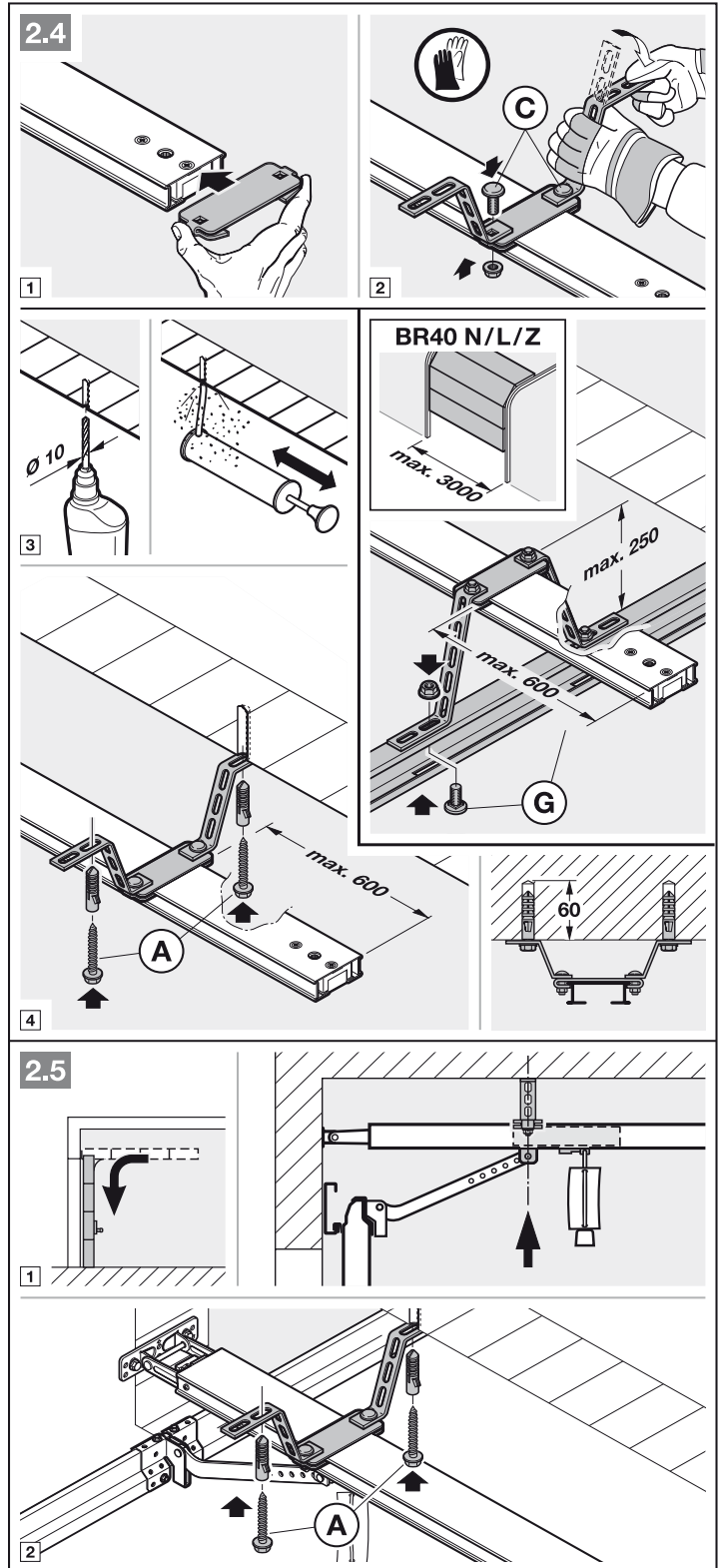


1. Press the green button and move the slide carriage approx. 200 mm towards the centre of the rail (see Figure 2.1). This is no longer possible once the end stops and operator have been fitted.



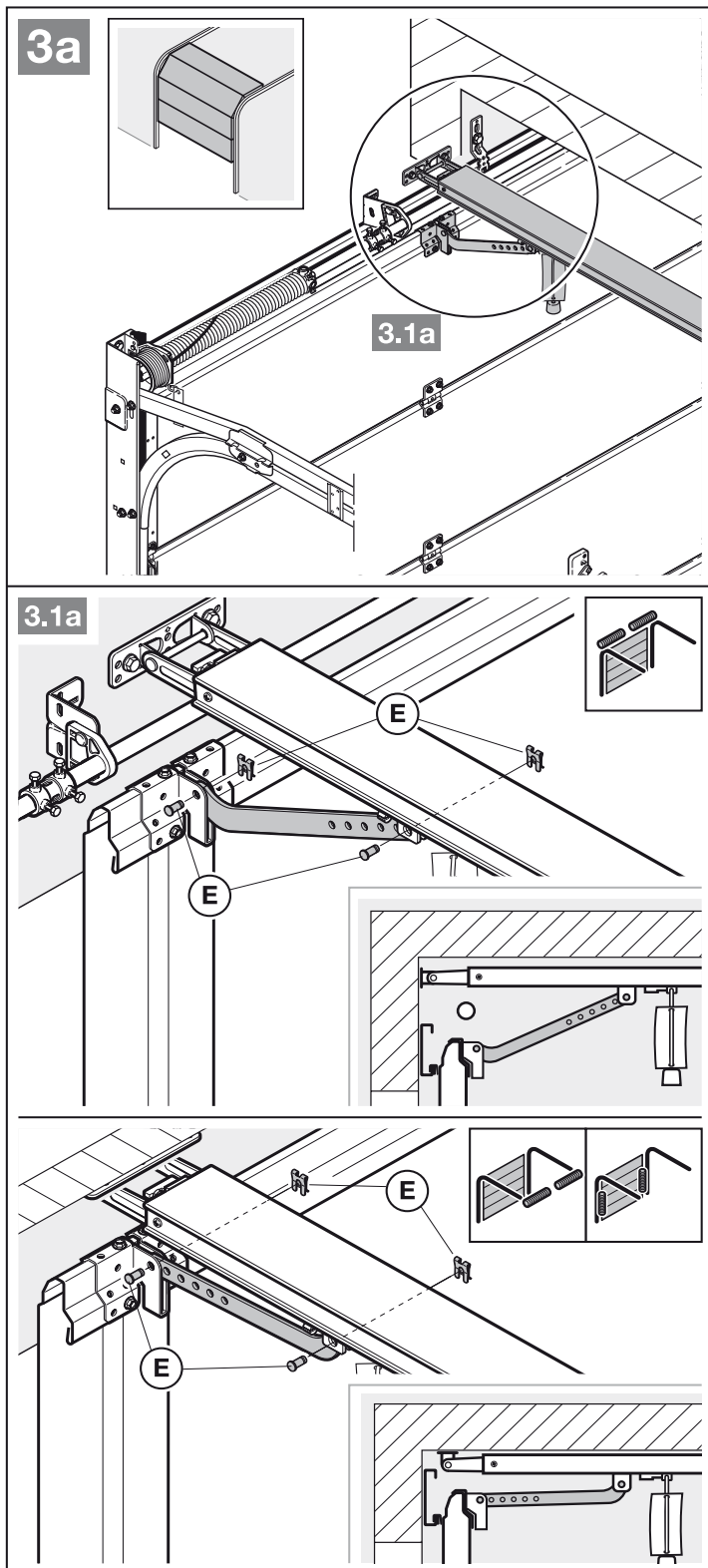
**NOTE:**

A second suspension is recommended with divided rails (available under accessories) (see Figure 2.5).



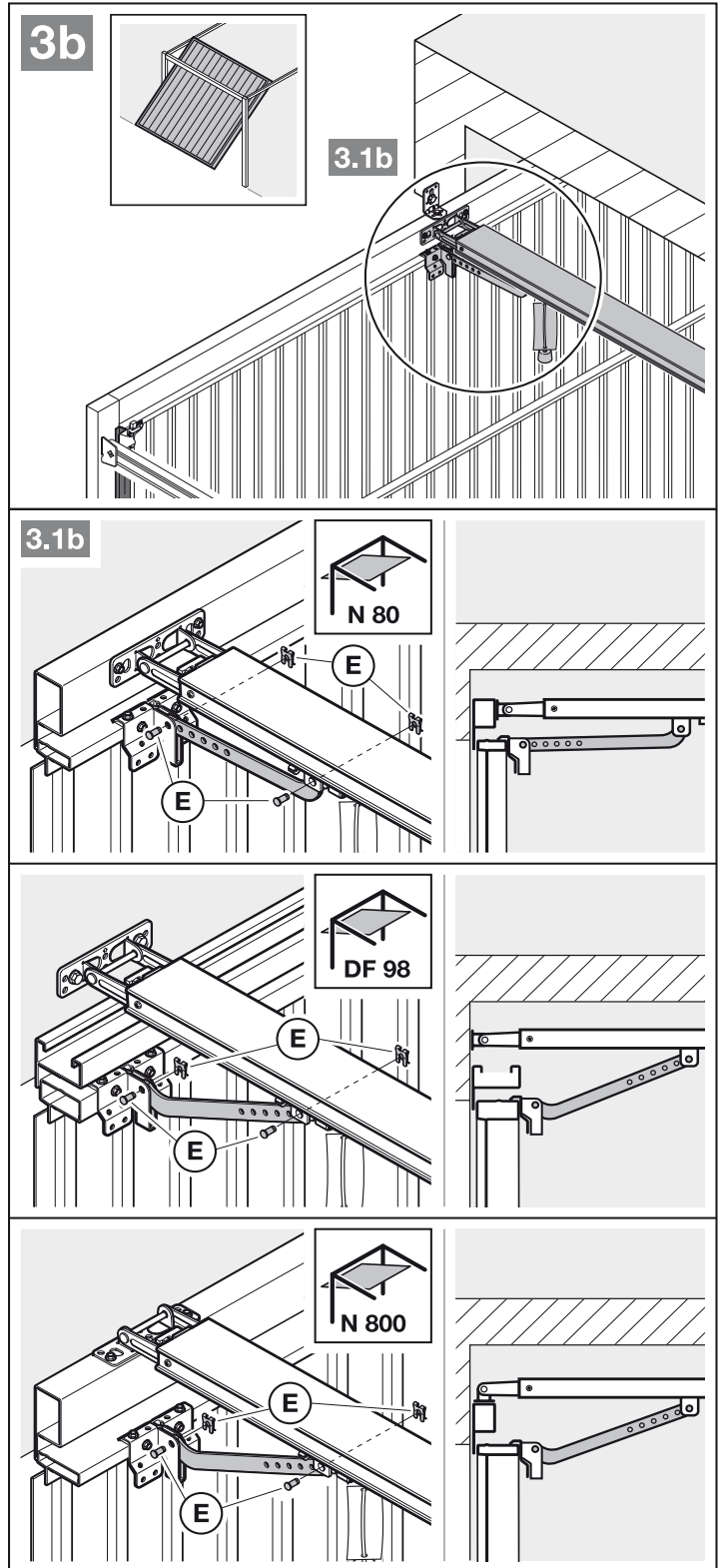
**NOTE:**

Depending on the **track application**, the installation direction of the fitting bracket must be taken into account.



**NOTE:**

Depending on the **door type**, the installation direction of the fitting bracket must be taken into account.



**To prepare for manual operation**

- Pull on the cord of the mechanical release (see Figure 4).

**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.

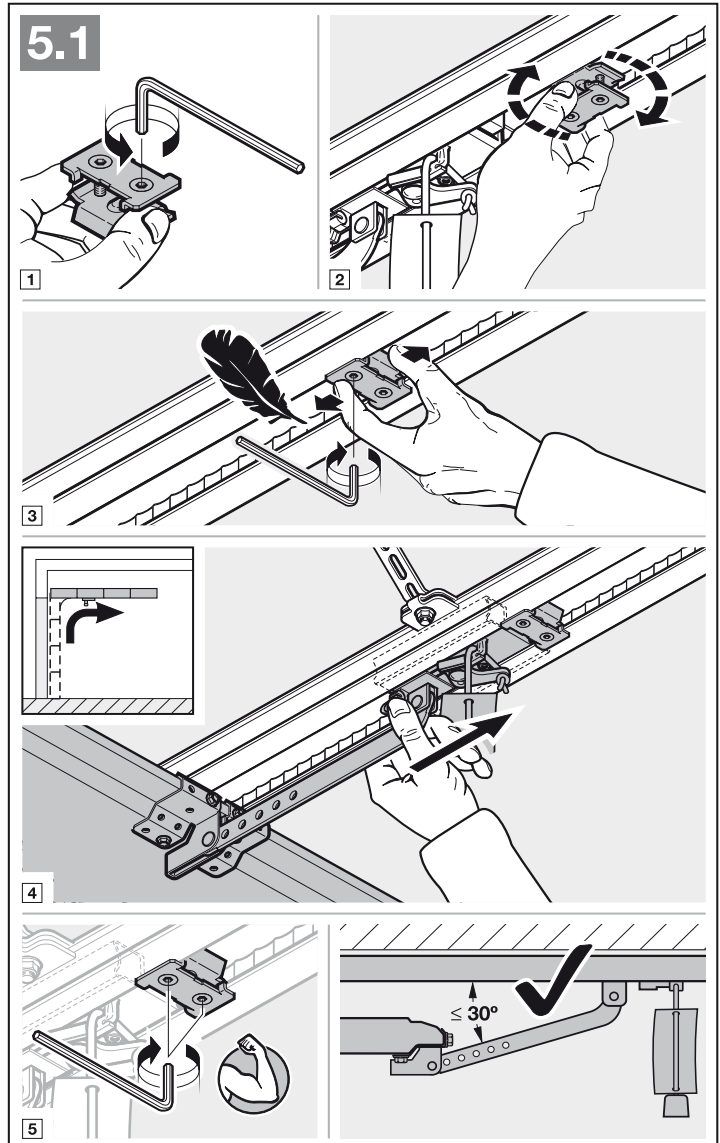
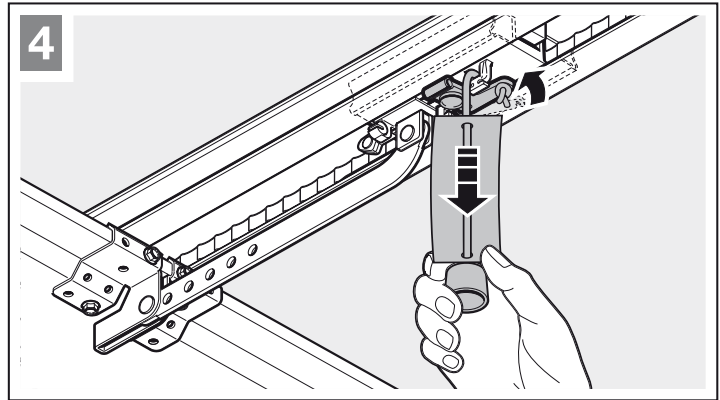
- Note section 3.1!

**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.

**NOTE:**

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

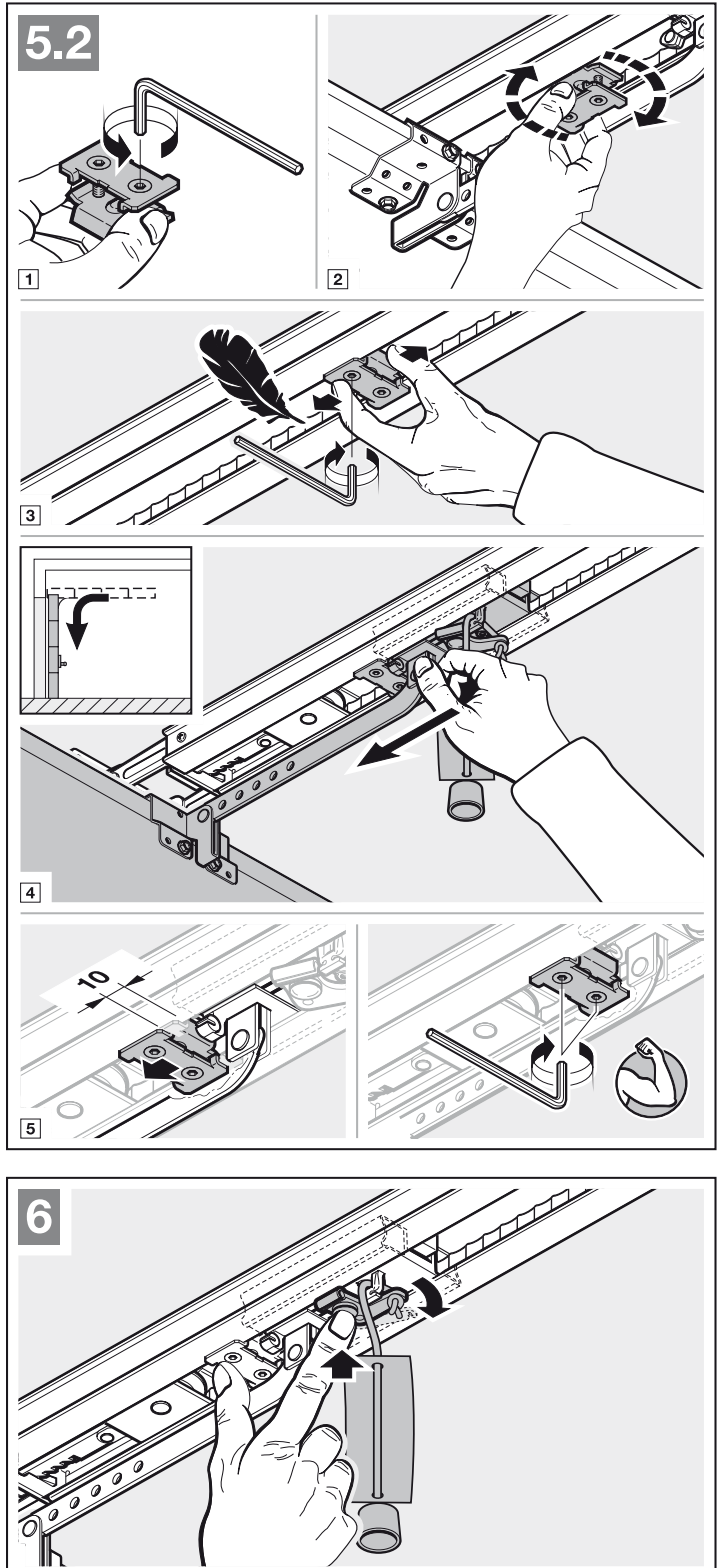


### 3.5.2 Fitting the *Close* end stop

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 and fix the end stop.

#### To prepare for automatic operation

- ▶ Push the green button on the slide carriage (see Figure 6).
- ▶ Move the door by hand until the slide carriage snaps into the belt lock.
- ▶ Note the safety instructions in section 9  
– *Danger of crushing in the boom*

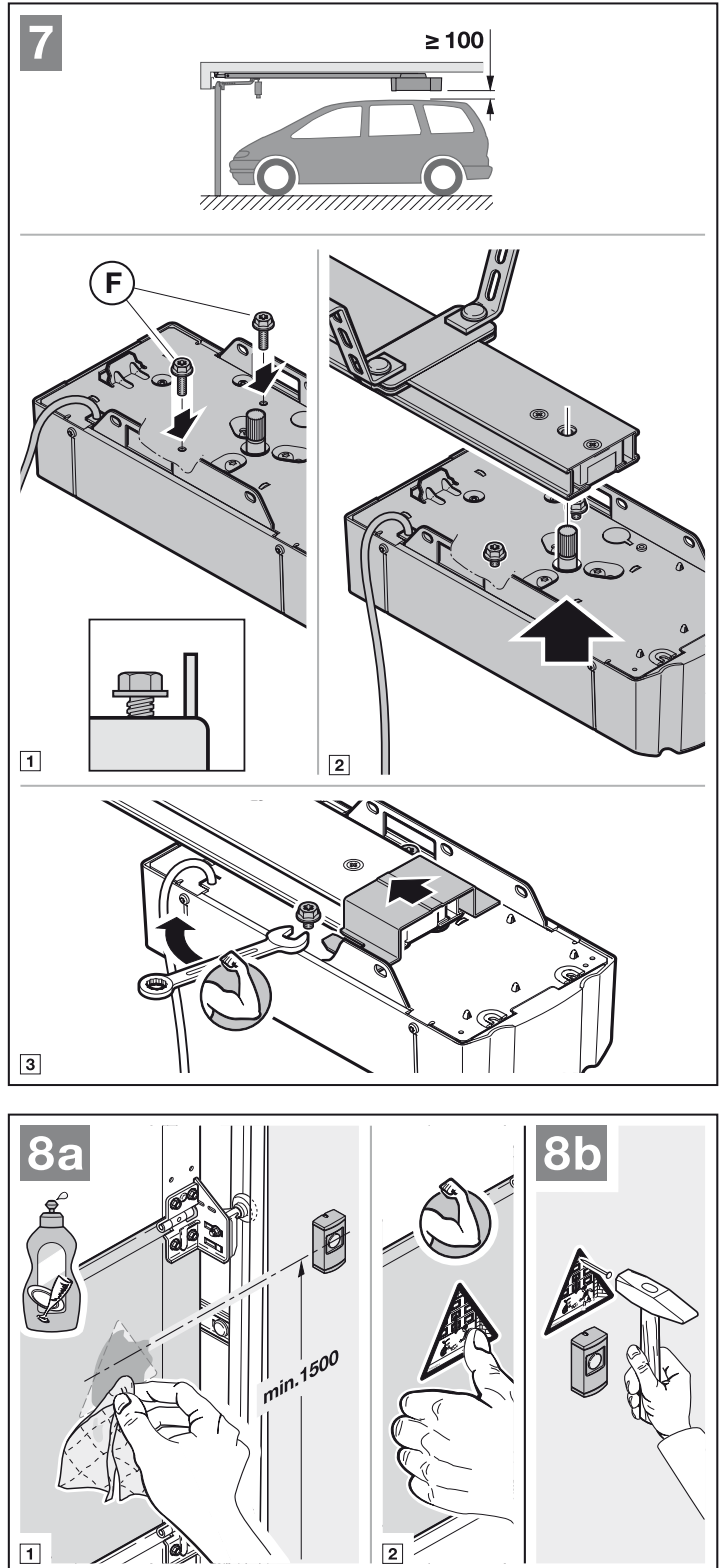


**3.5.3 Fitting the operator head**

- ▶ Fix the operator head (see Figure 7).
- ▶ Note the safety instructions in section 9  
– *ATTENTION*

**3.6 Fixing the warning sign**

- ▶ Fix the crushing warning sign in a prominent, cleaned and degreased place, for example near to the permanently installed button for moving the operator.



## 4 Electrical connection

- ▶ Note the safety instructions in section 2.6
  - Mains voltage
  - External voltage at the connecting terminals

### To prevent malfunctions:

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

### 4.1 Connecting terminals

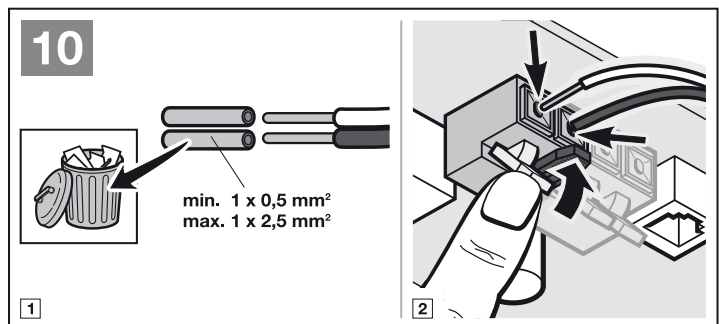
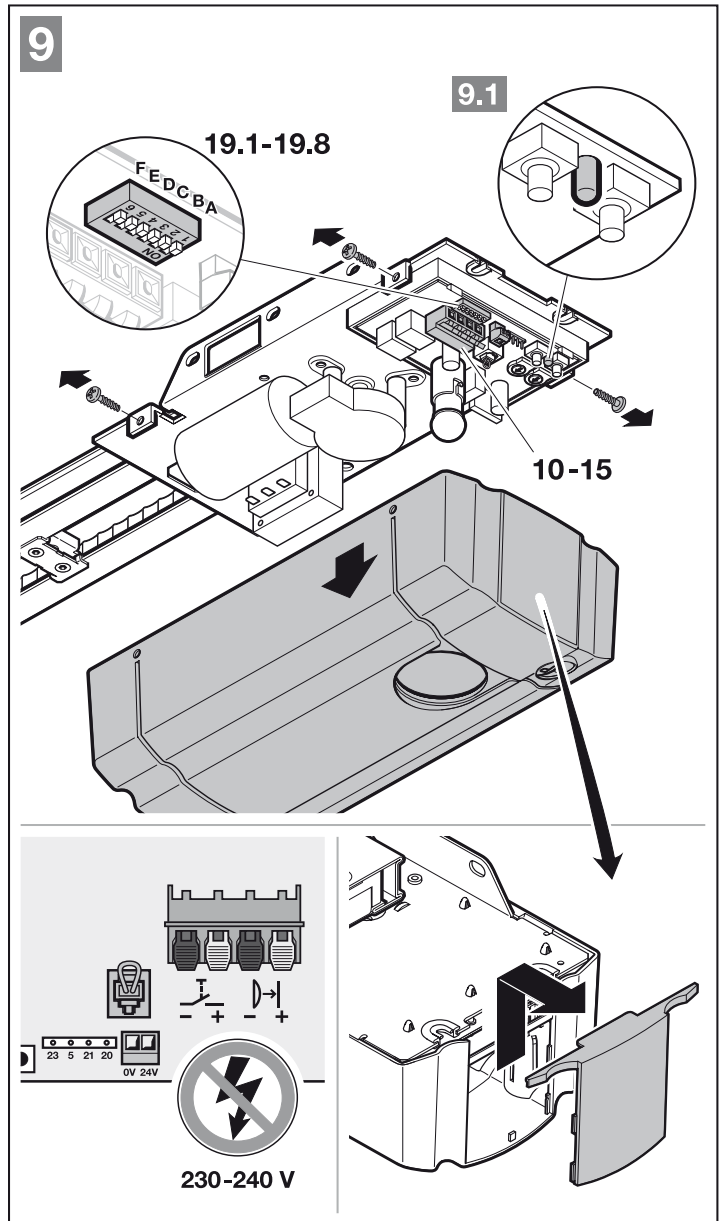
All connecting terminals can have multiple assignments (see Figure 10):

- Minimum thickness:  $1 \times 0.5 \text{ mm}^2$
- Maximum thickness:  $1 \times 2.5 \text{ mm}^2$

### 4.2 Connecting additional components/accessories

#### NOTE:

Loading of the operator by all accessories: max. **100 mA**. See the figures for component power consumption.





**4.2.1 External radio receiver\***

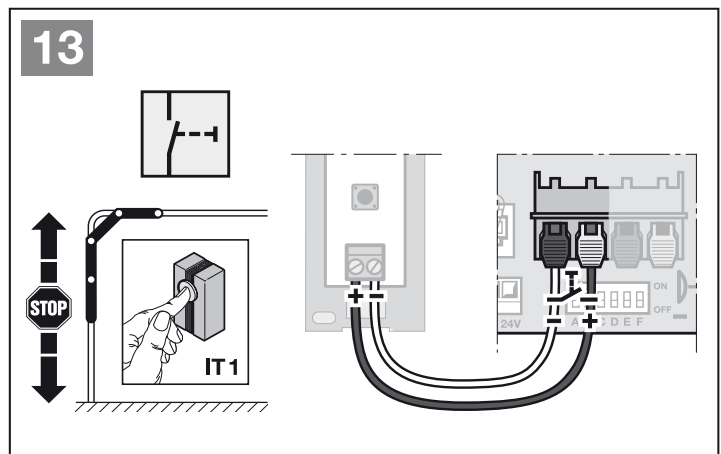
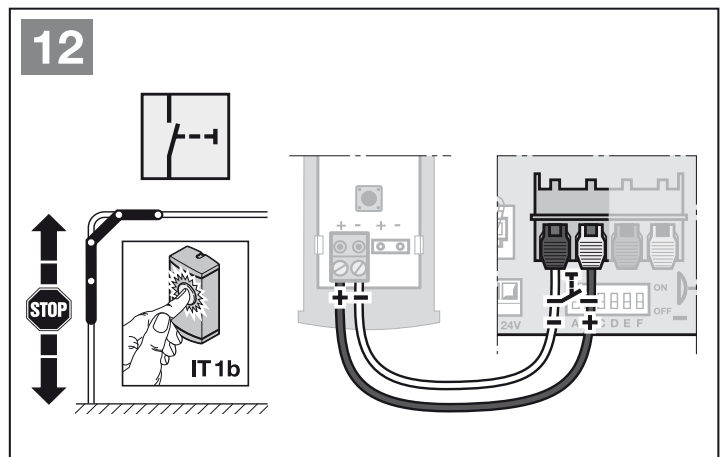
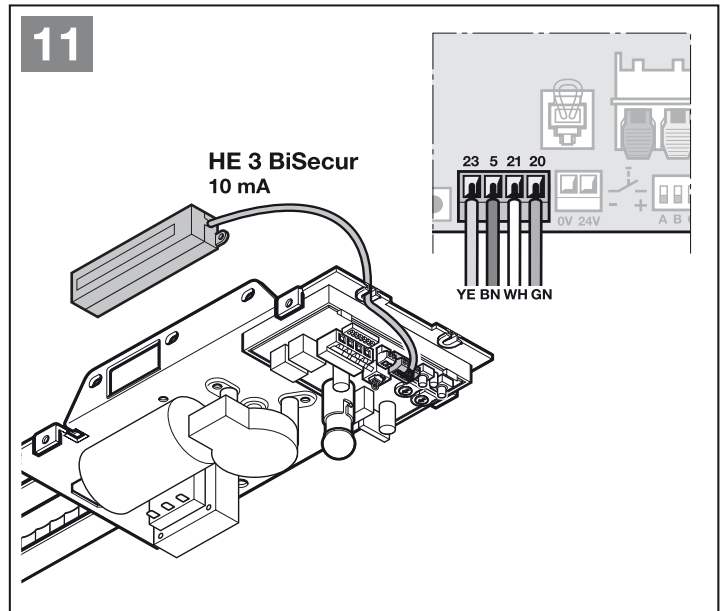
► See Figure 11 and section 8

Insert the plug of the receiver in the corresponding socket.

**4.2.2 External impulse button\***

► See Figure 12/13

One or more buttons with normally open contacts (volt-free), such as internal push buttons or key switches, can be connected in parallel.



\*Accessory; not included in the standard equipment!

**4.2.3 External impulse button for partial opening\***

► See Figure 14

One or more buttons with normally open contacts (volt-free), such as key switches, can be connected in parallel.

**4.2.4 2-wire photocell\* (dynamic)**

► See Figure 15

**NOTES:**

- Follow the fitting instructions when mounting photocells.
- The photocell must be connected before the learning run.
- A new learning run is required if the photocell is removed.

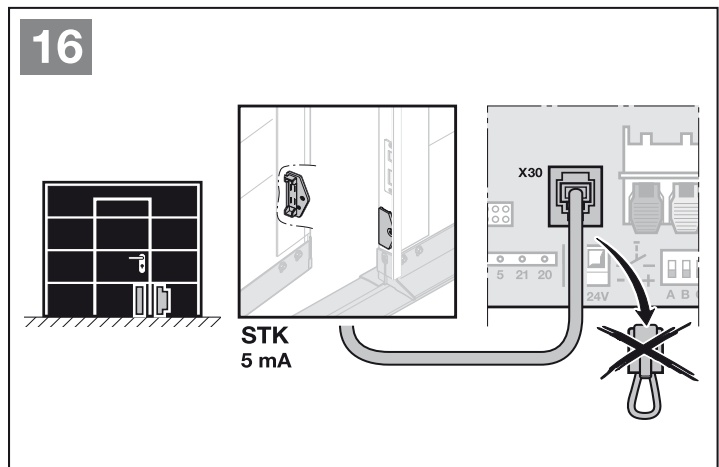
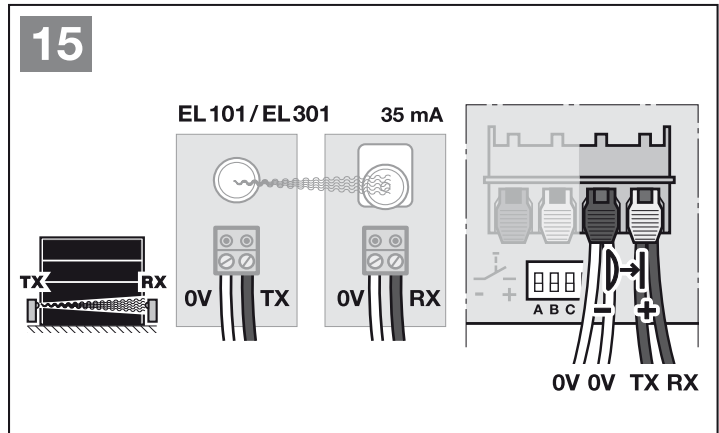
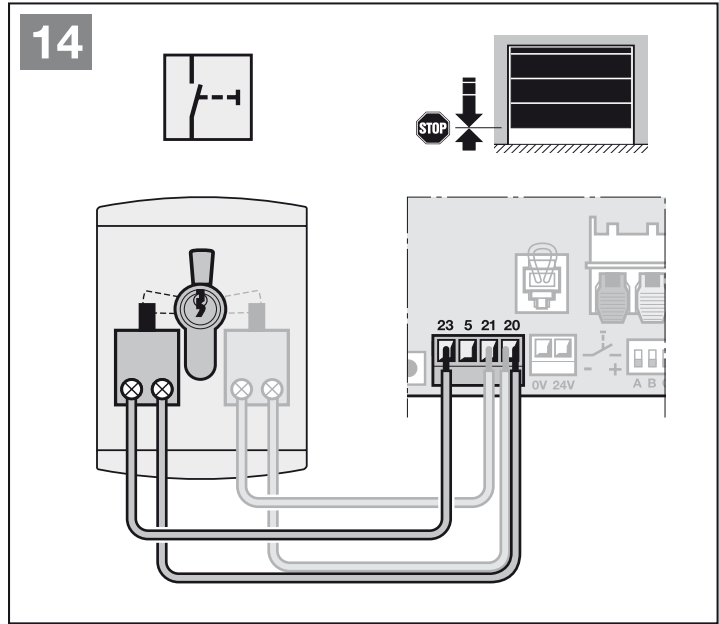
**4.2.5 Tested wicket door contact\***

► Connect wicket door contacts that switch to ground (0 V) as shown in Figure 16.

**NOTES:**

- The wicket door contact must be connected before the learning run.
- A new learning run is required if the wicket door contact is removed.

Door cycles are immediately halted and permanently prevented when the wicket door contact is opened.



\*Accessory; not included in the standard equipment!

**4.2.6 Option relay PR 1\***

▶ See Figure 17

Option relay PR 1 is required to connect an external lamp or warning light.

**4.2.7 Emergency battery HNA 18\***

▶ See Figure 18

To enable door movement in the event of a power failure, an optional emergency battery can be connected. The system automatically switches to battery operation. During battery operation, the operator light remains switched off.

**⚠ WARNING****Danger of injury due to unexpected door travel**

Unexpected door travel may occur when the emergency battery is still connected despite the mains plug being pulled out.

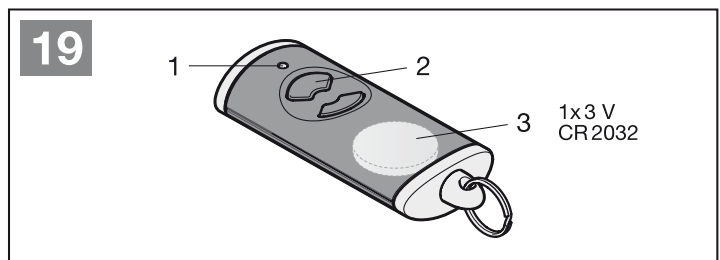
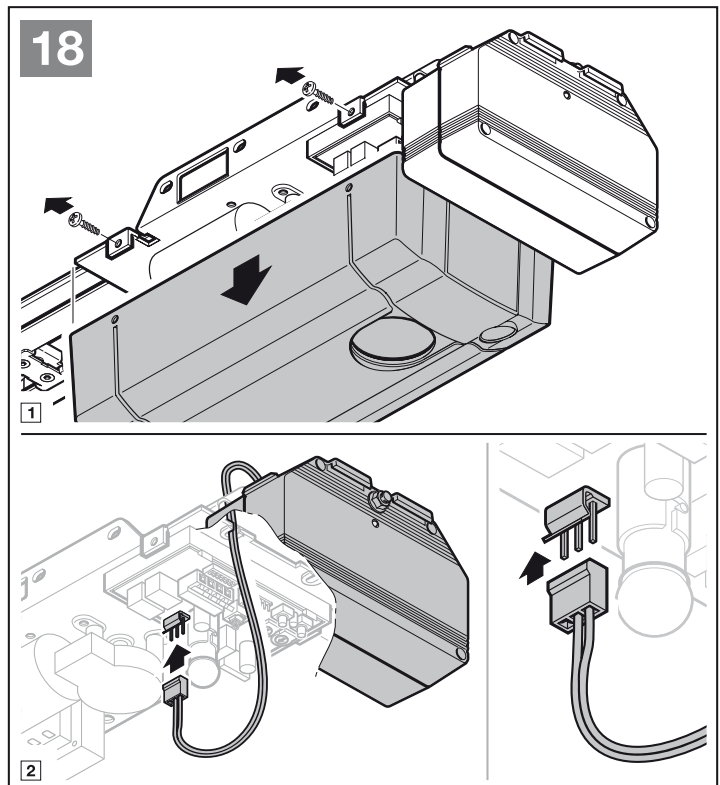
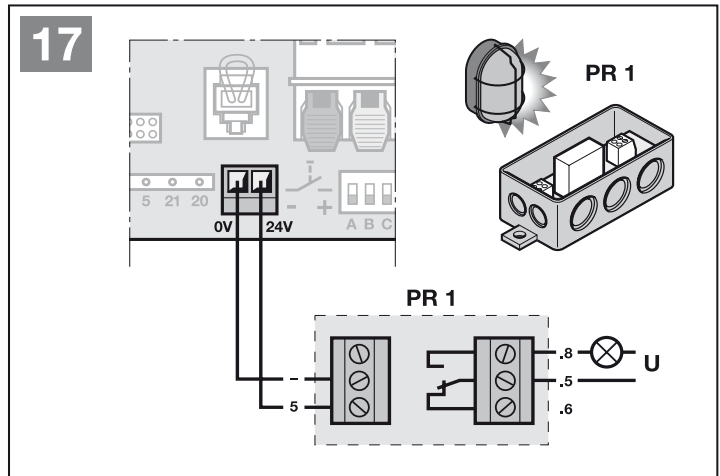
▶ Disconnect the mains plug **and** the plug of the emergency battery whenever performing work on the door system.

**4.2.8 Hand transmitter**

▶ See Figure 19

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

After inserting the battery, the hand transmitter is ready for operation.



\*Accessory; not included in the standard equipment!

## 5 Setting DIL switches

### 5.1 Close limit switch reporting

▶ See Figure 20.1 and section 5.8.1

### 5.2 Pre-warning time

▶ See Figure 20.2 and section 5.8.2

### 5.3 External light

▶ See Figure 20.3 and section 5.8.3

### 5.4 Automatic timer

▶ See Figure 20.4 and section 5.8.4

### 5.5 Door type (soft stop)

▶ See Figure 20.5 and section 5.8.5

### 5.6 Static current circuit / stop with self-testing

▶ See Figure 20.6 and section 5.8.6

### 5.7 Maintenance display

▶ See Figure 20.7 and section 5.8.7

**20.1**

**20.2**

**20.3**

**20.4**

**20.5**

**20.6**

**20.7**

## 5.8 DIL switch functions

Several of the operator's functions must be programmed using the DIL switches. Before initial start-up, the DIL switches are in factory settings, i.e. the switches are in the **OFF** position (see Figure 9).

The following requirements must be met in order to change DIL switch settings.


- The operator is at rest.
- No radio control is being programmed.

A change to the DIL switches will have an immediate effect on the function.

Set the DIL switches as described below in accordance with the national regulations, the desired safety equipment and the on-site circumstances.

### 5.8.1 Close limit switch reporting

► See Figure 20.1

A	OFF		CLOSE limit switch reporting activated
B	ON		

Tab. 1: Function of the operator light and the option relay with activated CLOSE limit switch reporting


Operator light	<ul style="list-style-type: none"> <li>• Permanent light during the door run</li> <li>• Illumination period after reaching the Close end-of-travel position</li> </ul>
Option relay	Picks up when the Close end-of-travel position is reached

### 5.8.2 Pre-warning phase

If the pre-warning phase is activated, it will always start before start of travel from any position.

If the automatic timer is set, the pre-warning phase will only start from the Open end-of-travel position.

► See Figure 20.2



A	ON		Pre-warning phase activated
W	OFF		

Tab. 2: Function of the operator light and the option relay with activated pre-warning phase

Operator light	<ul style="list-style-type: none"> <li>• Quick flashing during the pre-warning phase</li> <li>• Permanent light during the door run</li> </ul>
Option relay	Clocks during the pre-warning phase and door travel (warning lamp function)

### 5.8.3 External light

► See Figure 20.3

A	OFF		External light activated
B	OFF		

Tab. 3: Function of the operator light and the option relay with external illumination

Operator light	<ul style="list-style-type: none"> <li>• Permanent light during the door run</li> <li>• Illumination period after reaching the Close end-of-travel position</li> </ul>
Option relay	Same function as operator light

### 5.8.4 Automatic timer

With an automatic timer, the door is only opened with a travel command. The door closes automatically after the hold-open phase of approx. 30 seconds and the pre-warning phase have elapsed. After an impulse or after the photocell has been passed, the hold-open phase will be restarted automatically.

#### NOTE:

The automatic timer may only be activated within the scope of DIN EN 12453 if at least one **additional** safety device (photocell) is connected besides the standard power limit.

► See Figure 20.4


A	ON	Automatic timer activated
B	ON	

Tab. 4: Function of the operator, the operator light and the option relay with activated automatic timer

Operator	After hold-open phase and pre-warning phase, automatic timer from the OPEN end-of-travel position
Operator light	<ul style="list-style-type: none"> <li>• Permanent light during the hold-open phase and the door run</li> <li>• Flashes during the pre-warning phase</li> </ul>
Option relay	<ul style="list-style-type: none"> <li>• Permanent contact during the hold-open phase (only from the Open end-of-travel position)</li> <li>• Clocks during the pre-warning phase and door travel</li> </ul>

### 5.8.5 Door type (soft stop)

► See Figure 20.5


C	ON	Up-and-over door, long soft stop
C	OFF	 Sectional door, short soft stop

In a side sliding sectional door, the soft stop in the Close direction can be set using a combination of DIL switches C + D (depending on the track application of the side sliding sectional door).

If a long soft stop is set in the Close direction, the operator must start with a long soft start in the Open direction.

If a short soft stop is set in the Close direction, the operator will start normally in the Open direction.

C	ON	Side sliding sectional door, <ul style="list-style-type: none"> <li>• Long soft stop in the Close direction</li> <li>• Short soft stop in the Open direction</li> <li>• Long soft start in the Open direction</li> </ul>
D	ON	

<b>C</b>	<b>OFF</b> 	Side sliding sectional door, <ul style="list-style-type: none"> <li>• Short soft stop in the <i>Close</i> and <i>Open</i> direction</li> </ul>
<b>D</b>	<b>ON</b>	<ul style="list-style-type: none"> <li>• Short soft start in the <i>Open</i> direction</li> </ul>

With the side sliding sectional door setting, the power limit in the *Open* direction works as follows:


- The operator stops, briefly reverses in the *Close* direction and takes the stress off the obstacle.

#### 5.8.6 Static current circuit / stop with self-testing

A wicket door contact with self-testing is automatically detected and taught in during the learning run. After a successful learning run, the red LED in the transparent button flashes 7 x.


A new learning run is required if the wicket door contact with self-testing is removed.

- ▶ See Figure 20.6

<b>E</b>	<b>ON</b>	Activated, for wicket door contact with self-testing. The self-testing is checked before each door run (operation only possible with a wicket door contact that can be tested).
<b>E</b>	<b>OFF</b> 	Safety equipment without self-testing

#### 5.8.7 Door maintenance display

- ▶ See Figure 20.7

<b>F</b>	<b>ON</b>	Activated, exceeding the maintenance cycle is signalled by the operator light flashing 3 x at the end of every door run.
<b>F</b>	<b>OFF</b> 	Not activated, no signal after the maintenance cycle is exceeded.

The maintenance interval is reached when the operator has been in operation for more than 1 year since the last teaching-in or the operator has reached or exceeded more than 2000 door closing actions.

#### NOTE:

The maintenance data is reset by teaching in the operator again (see section 6.1).

## 6 Initial start-up

- ▶ Before initial start-up, read and follow the safety instructions in section 2.6.

When teaching in (Figure 21), the operator is adjusted to the door. The travel length, required force for opening and closing, and any connected safety devices are automatically taught in and saved in a power failure-proof manner. The data is only valid for this door.

#### Operator light:

The operator light is off if the operator has not been taught in. The operator light flashes during the learning runs or a reference run. After the learning runs are finished, the operator light is continuously illuminated and goes out after approx. 2 minutes.

### WARNING

#### Danger of injuries due to faulty safety equipment

In the event of a malfunction, there is a danger of injuries due to faulty safety equipment.

- ▶ After the learning runs, the person commissioning the system must check the function(s) of the safety equipment.

**The system is ready for operation only after this.**

### 6.1 Teaching in the operator

#### NOTES:

- The slide carriage must be engaged and there may not be any obstacles in the function range of the safety devices!
- Safety devices must be fitted and connected beforehand.
- If a connected wicket door contact with self-testing has been successfully taught in, the red LED in the transparent button will flash 7 x after the learning run.
- If further safety devices are connected at a later point, a new learning run is required.
- All existing door data must be deleted if the operator is to be taught in again (see section 11).
- When teaching in, the connected safety devices are not active.

**To start the learning runs:**

1. Plug in the mains plug.  
The operator light will flash 2 x.
  2. Press the transparent button in the operator cover (or the circuit board button T if the operator cover has been removed).
    - The door will open and briefly stop in the Open end-of-travel position.
    - To teach in the travel, the door automatically *closes, then opens, closes again and opens again.*
    - The door *closes and opens* once more and the required forces are taught in.
- The operator light flashes during the learning runs.
- The door will stop in the Open end-of-travel position. The operator light remains illuminated and goes out after approx. 2 minutes.
  - If a self-testing wicket door contact has been successfully taught in, the red LED in the transparent button will flash 7 x.

**The operator has been taught in and is ready for operation.**

**To abort a learning run:**

- ▶ Press the transparent button or an external control element with impulse function.  
The door stops. The operator light is continuously illuminated.
- ▶ Press the transparent button to start the entire teach-in process again.

**NOTE:**

If the operator stops with the operator light flashing or before reaching the end stop, the pre-set forces are too low and must be readjusted.

**6.2 Adjusting the forces**

- ▶ Also note section 6.3

**Reaching the potentiometer to set the forces:**

- ▶ Remove the operator cover.

**P1** Set the force in the Open direction

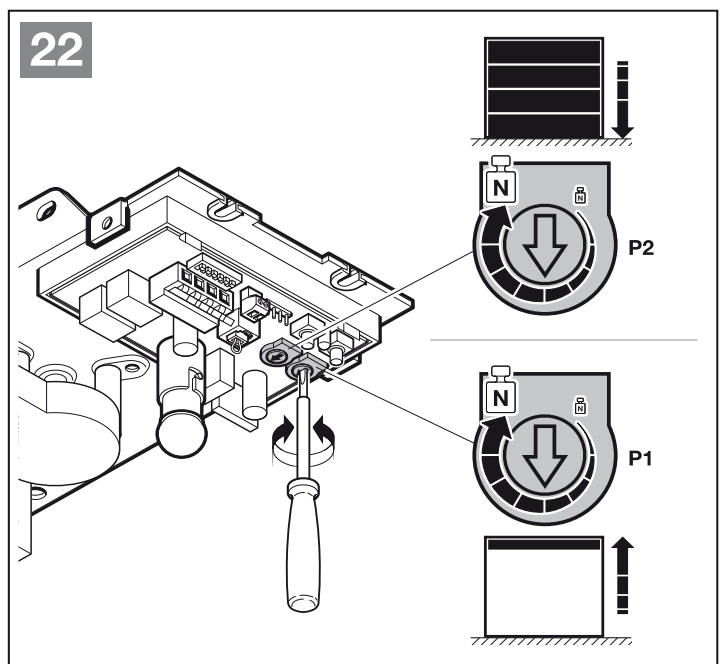
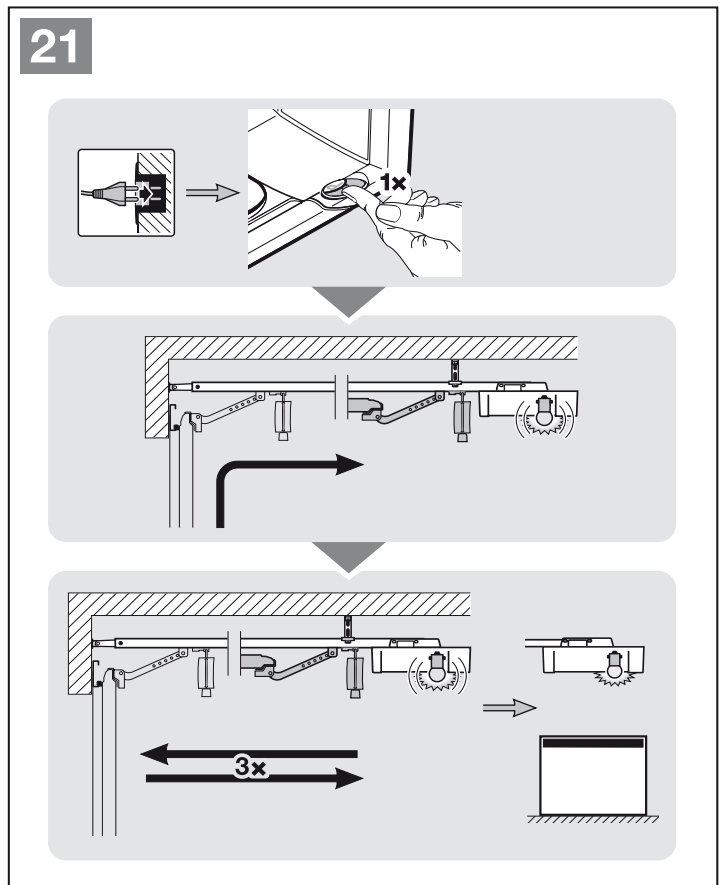
**P2** Set the force in the Close direction

**Increasing the forces:**

- ▶ Turn clockwise.

**Reducing the forces:**

- ▶ Turn anticlockwise.



**6.3 Forces**

<b>⚠ CAUTION</b>
<b>Danger of injury due to the force value being set too high (potentiometers P1 / P2)</b>
When the force value is set too high, the power limit is less sensitive. This could lead to injury or damage.
▶ Do not set a force value that is too high.

The forces required for the learning in run are automatically adjusted during each door cycle. For safety reasons, it is necessary that the forces should not be readjusted indefinitely when the travel behaviour of the door becomes worse (e.g. the spring tension weakens). Otherwise risks to safety may arise with manual operation of the door (e.g. the door may fall down).

For this purpose, the maximum forces provided for opening and closing have a limited presetting in delivery condition (centre position of the potentiometers).

**Proceed as follows if the *Open* end stop is not reached:**

1. Turn **P1** clockwise by one eighth of a rotation (see Figure 22).
2. Press the transparent button.  
The door moves in the *Close* direction.
3. Press the transparent button again before the door reaches the *Close* end-of-travel position.  
The door stops.
4. Press the transparent button again.  
The door will move to the *Open* end-of-travel position.

If the *Open* end stop is not reached again, repeat steps 1 to 4.

**Proceed as follows if the *Close* end stop is not reached:**

1. Turn **P2** clockwise by one eighth of a rotation (see Figure 22).
2. Delete the door data (see section 11).
3. Teach in the operator again (see section 6.1).

If the *Close* end stop is not reached again, repeat steps 1 to 3.

**NOTE:**

The forces actually needed are stored during the learning run. The maximum forces set on the potentiometer have little effect on the sensitivity of the power limit. The forces set at the factory can be used for operating standard doors.

**7 Hand transmitter HSE 2 BiSecur**

<b>⚠ WARNING</b>
<b>Danger of injury during door travel</b> Persons may be injured by door travel if the hand transmitter is actuated.
▶ Make sure that the hand transmitters are kept away from children and can only be used by people who have been instructed on how the remote-control door functions!
▶ If the door has only one safety device, only operate the hand transmitter if you are within sight of the door!
▶ Only drive or pass through remote control door systems if the door is in the <i>Open</i> end-of-travel position!
▶ Never stay standing under the open door.
▶ Please note that unwanted door travel may occur if a hand transmitter button is accidentally pressed (e.g. if stored in a pocket / handbag).



<b>⚠ CAUTION</b>
<b>Danger of injuries due to unintended door travel</b> Unintended door travel may occur while teaching in the radio code.
▶ Make sure no persons or objects are in the door's area of travel when teaching in the radio system.

<b>ATTENTION</b>
<b>Malfunction due to environmental influences</b> Non-compliance with these instructions can impair function! Protect the hand transmitter from the following conditions:
<ul style="list-style-type: none"> <li>• Direct sunlight (permissible ambient temperature: -20 °C to +60 °C)</li> <li>• Moisture</li> <li>• Dust</li> </ul>

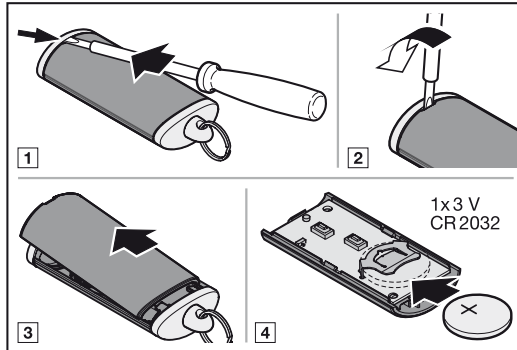
**NOTES:**

- If there is no separate garage entrance, perform all programming changes and extensions of radio systems from inside the garage.
- After programming or extending the radio system, perform a function test.
- Only use original components when putting the radio system into service or extending it.
- Local conditions may affect the range of the radio system.
- When used at the same time, GSM 900 mobile phones can affect the range.



**7.1 Description of the hand transmitter**

► See Figure 19

**7.2 Inserting / changing the battery****ATTENTION****Destruction of the hand transmitter by leaking batteries**

Batteries can leak and destroy the hand transmitter.

► Remove the battery from the hand transmitter if it is out of use for a long period of time.

**7.3 Hand transmitter operation**

A radio code is assigned to each hand transmitter button. Press the button of the hand transmitter whose radio code you want to transmit.

- The radio code is transmitted and the LED is illuminated blue for 2 seconds.

**NOTE:**

If the battery is almost empty, the LED flashes red twice

- before transmitting the radio code.
  - The battery **should be** replaced soon.
- and the radio code is not transmitted.
  - The battery **must be** replaced immediately.

**7.4 Inheriting / transmitting a radio code**

- Press the button of the hand transmitter whose radio code you want to inherit / transmit and keep it pressed.
  - The radio code is transmitted and the LED is illuminated blue for 2 seconds then goes out.
  - After 5 seconds, the LED alternates flashing in red and blue; the radio code is transmitted.
- If the radio code is transmitted and recognised, release the hand transmitter button.
  - The LED goes out.

**NOTE:**

You have 15 seconds to inherit / transmit the code. The process must be repeated if the radio code is not successfully inherited / transmitted within this time.

**7.5 Hand transmitter reset**

Each hand transmitter button is assigned to a new radio code by means of the following steps.

- Open the battery lid and remove the battery for 10 seconds.
- Press a circuit board button and keep it pressed.

- Insert the battery.

- The LED slowly flashes in blue for 4 seconds.
- The LED flashes rapidly in blue for 2 seconds.
- The LED is illuminated blue for a long time.

- Release the circuit board button.

**All radio codes are newly assigned.**

- Close the hand transmitter housing.

**NOTE:**

If the circuit board button is released prematurely, no new radio codes are assigned.

**7.6 LED display****Blue (BU)**

Condition	Function
Illuminated for 2 seconds	A radio code is being transmitted
Flashes slowly	Hand transmitter is in the learn mode
Flashes quickly after slow flashing	A valid radio code was discovered during the learning
Flashes slowly for 4 seconds	Device reset is being performed or completed
Flashes quickly for 2 seconds	
Illuminated long	

**Red (RD)**

Condition	Function
Flashes twice	The battery is almost empty

**Blue (BU) and Red (RD)**

Condition	Function
Flashing alternately	Hand transmitter is in the inherit / transmit mode

**7.7 Cleaning the hand transmitter****ATTENTION****Damaging the hand transmitter by faulty cleaning**

Cleaning the hand transmitter with unsuitable cleaning agents can damage the hand transmitter housing as well as the hand transmitter buttons.

► Clean the hand transmitter with a clean, soft, damp cloth.

**NOTE:**

White hand transmitter buttons can change their colour when used regularly over an extended period of time, if they come in contact with cosmetic products (e.g. hand cream).

**7.8 Disposal**

Electrical and electronic devices, as well as batteries, may not be disposed of in household rubbish. They must be returned to the appropriate recycling facilities.

**7.9 Technical data**

Type	Hand transmitter HSE 2 BiSecur
Frequency	868 MHz
Power supply	1 × 3 V battery, type: CR 2032
Perm. ambient temperature	-20 °C to +60 °C
Protection category	IP 20

**7.10 Excerpt from the declaration of conformity for the hand transmitter**

Conformity of the abovementioned product with the requirements of the directives according to article 3 of the R & TTE directives 1999/5/EC was verified by compliance with the following standards:

- EN 60950:2000
- EN 300 220-1
- EN 300 220-3
- EN 301 489-1
- EN 300 489-3

The original declaration of conformity can be requested from the manufacturer.

**8 Radio receiver****8.1 Integrated radio module**

A maximum of 100 different hand transmitter buttons can be taught in and distributed to the *Impulse* (*Open-Stop-Close-Stop*) and *partial opening* functions. If more buttons are taught in, the one taught in first will be deleted.

The following requirements must be met in order to teach in hand transmitter buttons:

- The operator is at rest.
- The pre-warning or hold-open phase is not active.

**8.1.1 Teaching in the *Impulse* function**

1. Briefly press the **P** button on the operator cover. (Pressing it twice will immediately end the process). The red LED in the transparent button on the operator cover now flashes 1 x.

2. Press the hand transmitter button whose radio code you want to transmit and keep it pressed. (Please see section 7.4 for more information on the hand transmitter).

If a valid radio code is detected, the red LED in the transparent button on the operator cover will flash quickly.

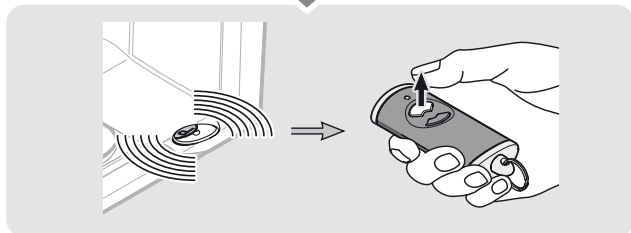
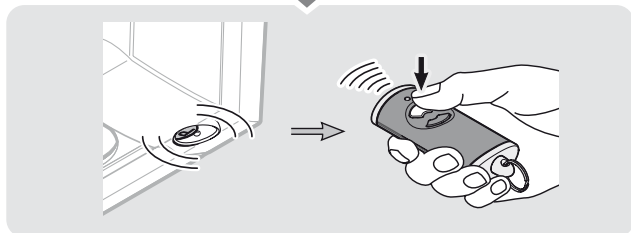
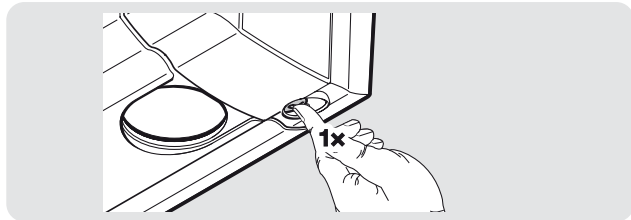
3. Release the hand transmitter button.

**The hand transmitter button has been taught in and is now ready for operation.**

The red LED in the transparent button flashes slowly and other hand transmitter buttons may be taught in.

4. Repeat steps 2 + 3 to teach in further hand transmitter buttons.

If the same hand transmitter button is taught in on two different channels, it will be deleted on the first taught-in channel.

**23**

**If no further hand transmitter buttons are to be taught in or to end the process:**


- ▶ Press the **P** button twice or wait for the timeout.  
The operator light is continuously illuminated.

**Timeout**

If no valid radio code is recognised within 20 seconds, the operator automatically switches to operation mode.

**8.1.2 Teaching in the *Partial opening* function**

A door position pre-set at the factory or any other door position can be programmed.

	Approx. 260 mm slide travel before the <i>Close</i> end-of-travel position.
Any	At least 120 mm slide travel before each end-of-travel position

**To teach in the pre-set position:**

1. Move the door into the *Open* or *Close* end-of-travel position.
2. Briefly press the **P** button on the operator cover twice. (Pressing it three times will immediately end the process). The red LED in the transparent button on the operator cover now flashes twice.
3. Switch the hand transmitter whose code is to be inherited to **Inheriting / Transmitting** mode. If a valid radio code is detected, the red LED in the transparent button on the operator cover will flash quickly.
4. Release the hand transmitter button.  
**The hand transmitter button has been taught in for the partial opening function.**  
The red LED in the transparent button flashes slowly and other hand transmitter buttons may be taught in.
5. Repeat steps 3 + 4 to teach in further hand transmitter buttons.

**To teach in any position:**

1. Move the door into the desired position (but at least 120 mm before the end-of-travel position).
2. Briefly press the **P** button on the operator cover twice. (Pressing it three times will immediately end the process). The red LED in the transparent button on the operator cover now flashes twice.
3. Press the hand transmitter button you want to teach in until the red LED in the transparent button flashes quickly.
4. Release the hand transmitter button.  
The hand transmitter button has been taught in for the *partial opening* function.  
The red LED flashes and other hand transmitter buttons may be taught in.
5. Repeat steps 3 + 4 to teach in further hand transmitter buttons.

If the same hand transmitter button is taught in on two different channels, it will be deleted on the first taught-in channel.

**If no further hand transmitter buttons are to be taught in or to end the process:**

- ▶ Press the **P** button once or wait for the timeout.  
The operator light is continuously illuminated.

**Timeout**

If no valid radio code is recognised within 20 seconds, the operator automatically switches to operation mode.

**8.2 External receiver\***

If the range is limited, the functions *impulse* or *partial opening* can be controlled with an external radio receiver.

If an external radio receiver is retrofitted, the data in the integrated radio receiver must be deleted (see section 12).

**NOTE:**

The antenna wire of external receivers should not come into contact with metal objects (nails, bracing, etc.). The best alignment to achieve an optimum range must be established by trial and error.

When used at the same time, GSM 900 mobile phones can affect the range.

**8.2.1 Teaching in hand transmitter buttons**

- ▶ Teach in the hand transmitter button for the functions *Impulse* (channel 1) and *Partial opening* (channel 2) using the operating instructions for the external receiver.


**8.3 Excerpt from the declaration of conformity for the receiver**

Conformity of the abovementioned product with the requirements of the directives according to article 3 of the R & TTE directives 1999/5/EC was verified by compliance with the following standards:

- EN 300 220-3
- EN 301 489-1
- EN 300 489-3

The original declaration of conformity can be requested from the manufacturer.

**9 Operation**

	<b>WARNING</b>
	<p><b>Danger of injury during door travel</b> If people or objects are in the area around the door while the door is in motion, this can lead to injuries or damage.</p> <ul style="list-style-type: none"> <li>▶ Children are not allowed to play near the door system.</li> <li>▶ Make sure that no persons or objects are in the door's area of travel.</li> <li>▶ If the door system has only one safety feature, only operate the garage door operator if you are within sight of the door's area of travel.</li> <li>▶ Monitor the door travel until the door has reached the end-of-travel position.</li> <li>▶ Only drive or pass through remote control door systems if the door is in the <i>Open</i> end-of-travel position!</li> <li>▶ Never stay standing under the open door.</li> </ul>

\* Accessory; not included in the standard equipment!

**⚠ CAUTION**

**Danger of crushing in the boom**  
Do not reach into the boom with your fingers during door travel, as this can cause crushing.

- ▶ Do not reach into the boom during door travel

**⚠ CAUTION**

**Danger of injury from the cord knob**  
If you hang on the cord knob, you may fall and injure yourself. The operator could break away and injure persons or damage objects that are located underneath, or the operator itself could be destroyed.

- ▶ Do not hang on the cord knob with your body weight.

**⚠ CAUTION**

**Danger of injury resulting from uncontrolled door movement in the Close direction if one of the counterbalance springs breaks and the slide carriage is released.**  
If a retrofit set is not installed, uncontrolled door movement in the Close direction may occur if the slide carriage is released while a counterbalance spring is broken, the door is improperly balanced or the door is not completely closed.

- ▶ The responsible fitter must install a retrofit set on the slide carriage if the following applies:
  - The standard DIN EN 13241-1 applies
  - The garage door operator is retrofitted to a Hörmann **sectional door without spring safety device (BR30)** by a technical expert.

This set includes a screw that secures the slide carriage against uncontrolled unlocking as well as a new cord knob sign with images showing how the set and the slide carriage should be handled for the two operation modes of the operator boom.

**NOTE:**  
The use of an emergency release or an emergency release lock is **not possible** in conjunction with the retrofit set.

**⚠ CAUTION**

**Danger of injuries due to the hot lamp**  
Touching the lamp during or immediately following operation can lead to burns.

- ▶ Do not touch the lamp if it is switched on or was recently switched on.

**ATTENTION**

**Damage due to the cord of the mechanical release**  
If the cord of the mechanical release becomes caught on a roof carrier system or other parts of the vehicle or door, this can lead to damage.

- ▶ Make sure that the cable cannot become caught.

**Heat generation due to the illumination**  
As a result of heat being generated by the operator light, there is a risk of damage if the spacing is inadequate.

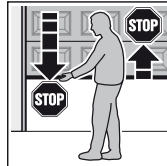
- ▶ The smallest distance to easily inflammable materials or heat-sensitive surfaces must be at least 0.1 m (see Figure 7).

**9.1 Instructing users**

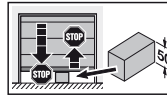
- ▶ All persons using the door system must be shown how to operate the garage door operator properly and safely.
- ▶ Demonstrate and test the mechanical release as well as the safety reversal.

**9.2 Function check**

**To check the safety reversal:**



1. Stop the door with both hands while it is **closing**. The door system must stop and initiate the safety reversal.
2. Stop the door with both hands while it is **opening**. The door system must switch off.
3. Position a test object with a height of approx. 50 mm in the centre of the opening and close the door. The door system must stop and initiate the safety reversal as soon as it reaches the obstacle.



- ▶ In the event of a failure of the safety reversal, a specialist must be commissioned immediately for the inspection and repair work.

**9.3 Normal operation**

**NOTE:**

If the radio code for the taught-in hand transmitter was copied from another hand transmitter, the hand transmitter button must be pressed a second time during **initial** start-up.

**Impulse function (channel 1)**

In normal operation, the garage door operator works with the impulse sequence control.

The door behaves as follows if an external button (at terminal 20/21 or at the intercom clamp), a taught-in hand transmitter button for the *impulse* function (channel 1) or the transparent button is pushed.

- 1st impulse: The door runs towards an end-of-travel position.
- 2nd impulse: The door stops.
- 3rd impulse: The door runs in the opposite direction.
- 4th impulse: The door stops.
- 5th impulse: The door runs in the direction of the end-of-travel position selected in the 1st impulse.

etc.

**Partial opening function (channel 2)**

The door behaves as follows if an external button (at terminal 20/23) or a taught-in hand transmitter button for the *partial opening* function (channel 2) is pushed.

From the *Close* end-of-travel position:

- 1st impulse: The door moves in the *partial opening* direction.
  - 2nd impulse: The door stops.
  - 3rd impulse: The door moves in the *partial opening* direction.
- etc.

From the *Open* end-of-travel position:

- 1st impulse: The door moves in the *partial opening* direction.
- 2nd impulse: The door stops.
- 3rd impulse: The door moves in the *partial opening* direction.
- etc.

From the *partial opening* position:

- Impulse at terminal 20/21 The door moves in the *Open* direction.
- Impulse at terminal 20/23 The door moves in the *Close* direction.

The operator light will light up during a door run and go out after approx. 2 minutes.

#### 9.4 Behaviour during a power failure (without an emergency battery)

To be able to open or close the garage door by hand during a power failure, it must be disengaged from the slide carriage while the door is closed.

- ▶ See Figure 4

#### 9.5 Behaviour after the power returns (without emergency battery)

After the power returns, the slide carriage for automatic operation must be re-engaged.

- ▶ See Figure 6

Due to safety reasons, if the power fails **during** operation, the first impulse command will always *open* the door.

## 10 Inspection and maintenance

The garage door operator is maintenance-free.

In the interest of your own safety, we recommend having the door system inspected and maintained by a qualified person in accordance with the manufacturer's specifications.

### WARNING

#### Danger of injury due to unexpected door travel

Unexpected door travel may occur during inspection and maintenance work if the door system is inadvertently actuated by other persons.

- ▶ Disconnect the mains plug **and** the plug of the emergency battery whenever performing work on the door system.
- ▶ Safeguard the door system against being switched on again without authorisation.

Inspection and repairs may only be carried out by a qualified person. Contact your supplier for this purpose.

A visual inspection may be carried out by the operator.

- ▶ Check all safety and protective functions **monthly**.
- ▶ Check safety devices without self-testing **every six months**.
- ▶ Any malfunctions and/or defects must be remedied **immediately**.

#### 10.1 Tension of the toothed belt

The toothed belt of the operator boom is tensioned optimally ex-factory.

During the start-up and slow-down phase, with larger doors it is possible that the belt will briefly hang out of the boom profile. However, this does not constitute a technical malfunction and does not negatively affect the function and service life of the operator.

## 10.2 Replacement bulb

- ▶ Only use a 24 V / 10 W B(a) 15 s bulb.
- ▶ Exchange the light bulb only if the operator is voltage-free.

## 11 Deleting door data

The existing door data must be deleted before the operator can be taught in again.

- ▶ See Figure 25

### To reset to the factory settings:

1. Disconnect the mains plug and, if applicable, the plug of the emergency battery.
2. Press and hold the transparent button on the operator cover.
3. Reconnect the mains plug.
4. Release the transparent button once the operator light flashes once.  
The door data has been deleted.
5. Teach in the operator again (see section 6.1).

### NOTE:

The taught-in *impulse* radio codes are not changed.

## 12 Deleting all radio codes

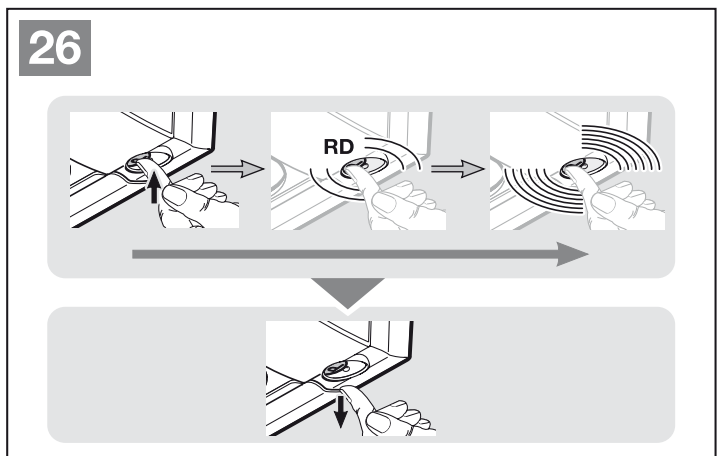
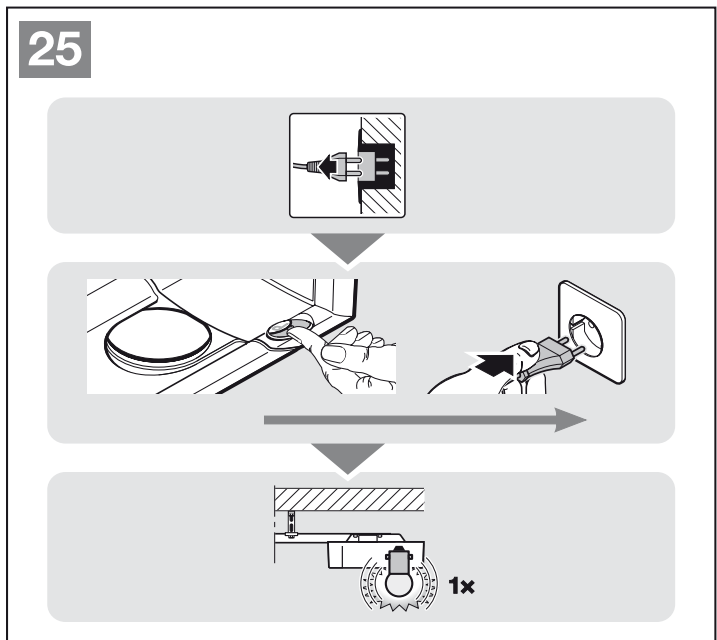
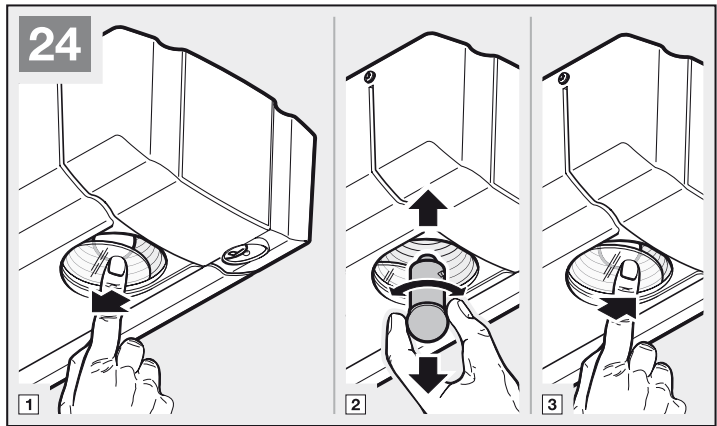
There is no option to delete the radio codes for individual hand transmitter buttons.

- ▶ See Figure 26

1. Press and hold the **P** button on the operator cover.  
The red LED in the transparent button of the operator cover flashes slowly, signalling the readiness for deletion.  
The red LED will start to flash quickly.  
The data of all the hand transmitters' learned radio codes is deleted.
2. Release the **P** button.

### NOTE:

If the **P** button is released prematurely, the process will be aborted and the radio codes are not deleted.



## 13 Optional accessories

Optional accessories are not included in the scope of delivery. Loading of the operator by all electrical accessories: max. 100 mA.

The following accessories can be connected to the operator:

- One-way photocell, self-testing dynamic photocell
- Emitter-reflector photocell
- External radio receiver
- External impulse buttons (e.g. key switches)
- Emergency battery for emergency power supply
- Wicket door contact (self-testing and non-self-testing)
- Warning light (in combination with the relay PR 1)

## 14 Dismantling and disposal

### NOTE:

When dismantling the door, observe the applicable regulations governing work safety.

Have a specialist dismantle the garage door operator in the reverse order of these instructions and dispose of it properly.

## 15 Warranty conditions

### Warranty

We shall be exempt from our warranty obligations and product liability in the event that the customer carries out his own structural alterations or undertakes improper installation work or arranges for same to be carried out by others without our prior approval and contrary to the fitting guidelines we have provided. Furthermore, we will assume no responsibility for the accidental or careless operation of the operator and accessories, nor for improper maintenance of the door and its counterbalance. Batteries are also not covered by the warranty.

### Warranty period

In addition to the statutory warranty provided by the dealer in the sales contract, we grant the following warranty for parts from the date of purchase:

- 5 years for the operator mechanics, motor and motor control
- 2 years on radio equipment, accessories and special systems

There is no warranty on consumables (e.g. fuses, batteries, lamps). Claims made under the warranty do not extend the warranty period. For replacement parts and repairs the warranty period is six months or at least the remainder of the warranty period.

### Prerequisites

The warranty claim only applies in the country where the equipment was purchased. The product must have been purchased through our authorised distribution channels. A claim under this warranty exists only for damage to the object of the contract itself. Reimbursement of expenditure for dismantling and fitting, testing of parts as well as demands for lost profits and compensation for damages are excluded from the warranty.

The receipt of purchase substantiates your right to claim under the warranty.

## 15.1 Performance

For the duration of the warranty we shall eliminate any product defects that are proven to be attributable to a material or manufacturing fault. We pledge to replace free of charge and at our discretion the defective goods with non-defective goods, to carry out repairs, or to grant a price reduction.

Damages caused by the following are excluded:

- improper fitting and connection
- improper initial start-up and operation
- external factors such as fire, water, abnormal environmental conditions
- mechanical damage caused by accidents, falls, impacts
- negligent or intentional destruction
- normal wear or deficient maintenance
- repairs conducted by unqualified persons
- use of non-original parts
- removal or defacing of the data label

Replaced parts become our property.

## 16 Excerpt from the Declaration of Incorporation

(as defined in EC Machinery Directive 2006/42/EC for incorporation of partly completed machinery according to annex II, part 1 B).

The product described on the reverse side has been developed, constructed and produced in accordance with the following directives:

- EC Machinery Directive 2006/42 EC
- EC Construction Products Directive 89/106/EEC
- EC Low-Voltage Directive 2006/95/EC
- EC Electromagnetic Compatibility Directive 2004/108/EC

Applied and consulted standards and specifications:

- EN ISO 13849-1, PL "c", Cat. 2  
Safety of machinery – Safety-related parts of control systems – Part 1: General principles
- EN 60335-1/2, when applicable  
Safety of electrical appliances / Operators for doors
- EN 61000-6-3  
Electromagnetic compatibility – Electromagnetic radiation
- EN 61000-6-2  
Electromagnetic Compatibility – Interference immunity

Partly completed machinery as defined in the EC Directive 2006/42/EC is only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment, thereby forming machinery to which this directive applies.

This is why this product must only be put into operation after it has been determined that the entire machine / system in which it will be installed corresponds with the guidelines of the EC directive mentioned above.

Any modification made to this product without our express permission and approval shall render this declaration null and void.

**17 Technical data**

<b>Mains voltage</b>	230 / 240 V, 50 / 60 Hz,
<b>Stand-by</b>	≤ 5 W
<b>Protection category</b>	Only for dry rooms
<b>Temperature range</b>	-20 °C to +60 °C
<b>Replacement bulb</b>	24 V / 10 W B(a) 15 s
<b>Motor</b>	Direct current motor with hall sensor
<b>Transformer</b>	With thermal protection
<b>Connection</b>	No-screw connection technology for external equipment with 24 V DC low safety voltage, such as internal and external buttons with impulse operation
<b>Remote control</b>	Operation with internal or external radio receiver
<b>Automatic cut-out</b>	Is automatically taught in for both directions separately. Self-learning, wear-free, as it has no mechanical switches.
<b>End-of-travel position cut-out / power limit</b>	Automatic safety cut-out, readjusting at every door run.
<b>Guide rail</b>	Extremely flat (30 mm) With integrated anti-lift kit With maintenance-free, patented toothed belt with automatic belt tensioner
<b>Door travel speed</b>	Approx. 13 cm per second (depending on door size and weight)
<b>Rated load</b>	See data label
<b>Pull and push force</b>	See data label
<b>Short-term peak load</b>	See data label
<b>Special functions</b>	Operator light, 2-minute light Photocell can be connected Option relay for warning lamp, additional external illumination can be connected Wicket door contact with testing
<b>Mechanical release</b>	Actuated from inside with pull cord in the event of a power failure
<b>Universal fittings</b>	For up-and-over doors and sectional doors
<b>Airborne sound emission of the garage door operator</b>	≤ 70 dB (A)
<b>Use</b>	Exclusively for private garages Not intended for industrial / commercial use
<b>Door cycles</b>	See product information

**18 Display of messages and errors****18.1 Operator light messages**

If the mains plug is plugged in without the transparent button having been pushed (the circuit board button **T** when the operator cover has been removed), the operator light will flash two, three or four times.

**2 × flashing**

No door data is present or the door data has been deleted (delivery condition). The operator can be taught in immediately.

**1 × flashing**

Saved door data is present, but the last door position is not known. For this reason, the next run will be a *OPEN* reference run. Door travel in *normal operation* will follow.

**4 × flashing**

Saved door data is present and the last door position is sufficiently known, i.e. *normal* door runs that take the impulse sequence control (*OPEN-STOP-CLOSE-STOP-OPEN*, etc.) into account can proceed immediately (normal behaviour after a successful teach-in and power failure). For safety reasons, the door will always open upon the first impulse command after a power failure **during** a door run.











**18.2 Display of errors / warnings / information**

The red diagnostic LED is visible through the transparent button even when the housing is closed. This LED helps to easily identify causes when operation does not go according to plan. This LED is continuously illuminated in normal operation.


**NOTE:**


If normal operation of the garage door operator with the radio module / receiver or the transparent button is otherwise possible, a short circuit in the external button's connecting lead or in the button itself can be recognised through the behaviour described here.


Display	Error / warning	Possible cause	Remedy
 <b>2x</b>	Safety equipment (photocells)	No photocell is connected	Connecting a photocell
		The light beam is interrupted	Adjust the photocell
		The photocell is defective	Exchange the photocell
 <b>3x</b>	Power limit in the <i>Close</i> direction	The door is too sluggish or does not move smoothly	Correct the door travel
		Obstacle in door area	Remove the obstacle and teach in the operator again, if necessary
 <b>4x</b>	Static current circuit open	The wicket door is open	Close the wicket door
		The magnet has been fitted the wrong way	Fit the magnet correctly (see the instructions for the wicket door contact)
		The testing result is not OK	Exchange the wicket door contact
 <b>5x</b>	Power limit in the <i>Open</i> direction	The door is too sluggish or does not move smoothly	Correct the door travel
		Obstacle in door area	Remove the obstacle and teach in the operator again, if necessary
 <b>6x</b>	System error	Internal error	Give a new travel command ( <i>impulse</i> ) <sup>1</sup> and move the door into the <i>Open</i> end-of-travel position
			Restore the factory setting (see section 11), teach in the operator again or exchange, if necessary
	Travel time limit	The belt is torn	Exchange the belt
The operator is defective		Exchange the operator	
 <b>7x</b>	Wicket door contact with self-testing taught in	No error Only a confirmation that it has been successfully taught in	
 <b>10x</b>	The operator has not been taught in	The operator has not been taught in yet	Teach in the operator (see section 6)
 <b>11x</b>	No reference point	Power failure The operator requires an <i>Open</i> reference run	Give a new travel command ( <i>impulse</i> ) <sup>1</sup> and move the door into the <i>Open</i> end-of-travel position


1) with an external button, the radio module or the transparent button (circuit board button T when the operator cover is removed).

## 19 Overview of DIL switch functions

DIL A	DIL B	Function	Option relay function	
OFF	OFF	External light activated	Relay the same as operator light (external light function)	
ON	OFF	Pre-warning phase activated	Relay clocks during the pre-warning phase and the door run (warning lamp function).	
OFF	ON	CLOSE limit switch reporting activated	The relay picks up in the <i>Close</i> end-of-travel position ( <i>Close</i> reporting function)	
ON	ON	Automatic timer activated, photocell must be installed	Relay clocks during the pre-warning phase and the door run, permanent contact during the hold-open phase (only from the <i>Open</i> end-of-travel position)	

DIL C	DIL D	Door type (soft stop)		
OFF	OFF	Sectional door	Short soft stop	
ON	OFF	Up-and-over door	Long soft stop	
OFF	ON	Side sliding sectional doors	<ul style="list-style-type: none"> <li>• Short soft stop in the <i>Close</i> and <i>Open</i> direction</li> <li>• Short soft start in the <i>Open</i> direction</li> </ul>	
ON	ON	Side sliding sectional doors	<ul style="list-style-type: none"> <li>• Long soft stop in the <i>Close</i> direction</li> <li>• Short soft in the <i>Open</i> direction</li> <li>• Long soft start in the <i>Open</i> direction</li> </ul>	

DIL E	Static current circuit / stop with self-testing			
OFF	Safety equipment without self-testing			
ON	Wicket door contact with self-testing activated. The self-testing is checked before each door run (operation only possible with a wicket door contact that can be tested)			

DIL F	Door maintenance display			
OFF	Not activated, no signal after the maintenance cycle is exceeded			
ON	Activated, exceeding the maintenance cycle is signalled by the operator light flashing at the end of every door run.			