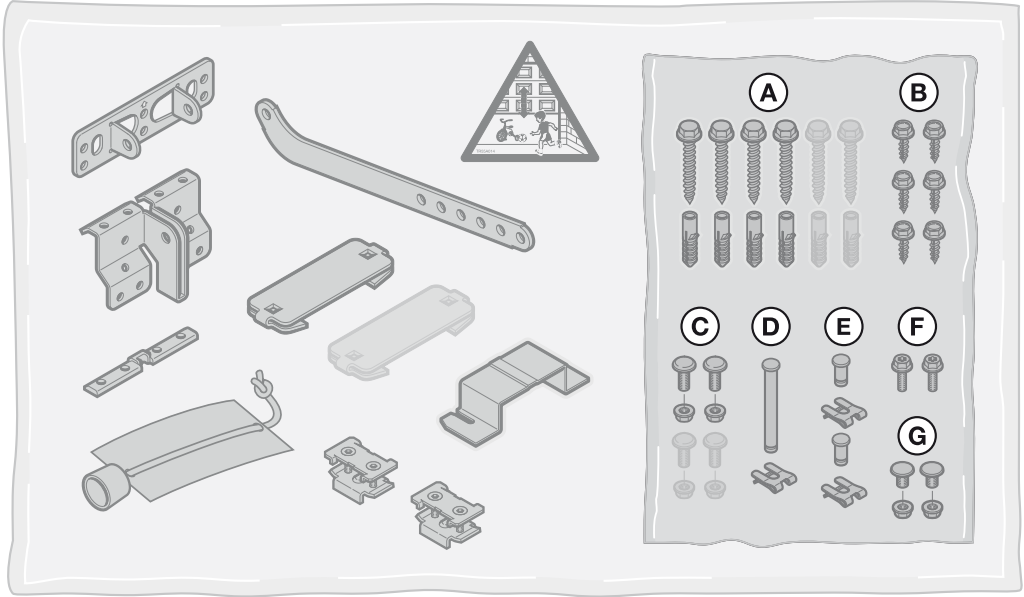
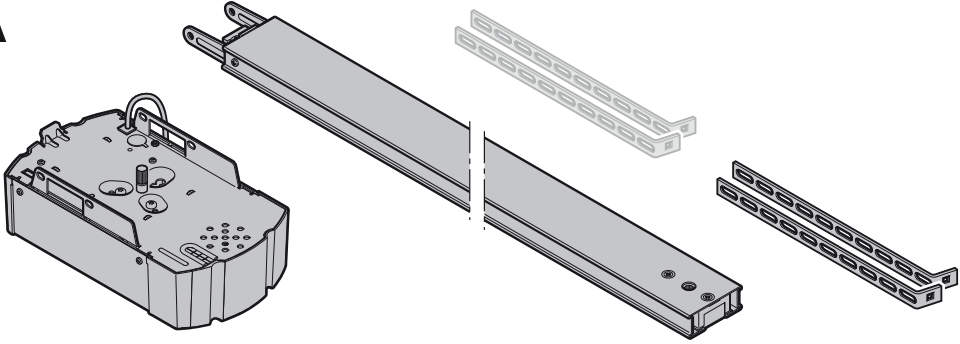


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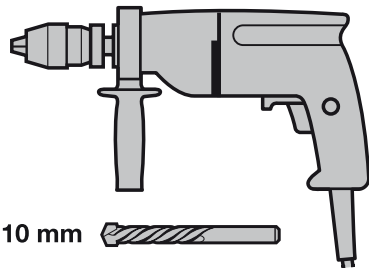
TR10A122 RE / 06.2014

EN

Instructions for Fitting, Operating and Maintenance Garage Door Operator

A**B**

13 mm



10 mm



Ø 10 mm



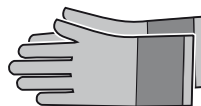
T 30




Ø 5 mm



4 mm



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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 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 can immediately lead to 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

Automatic timer

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

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.

Safety reversal / reversing

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

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 in one go.

Partial opening

Individually adjustable second opening height to ventilate the garage.

Timeout

A defined period in which an action is expected to take place (e.g. using the menu or activating a function). The operator automatically goes into operation mode if this period elapses without an action taking place.

Travel

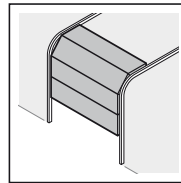
The distance the door takes to move from the *Open* end-of-travel position to the *Close* end-of-travel position.

Pre-warning time

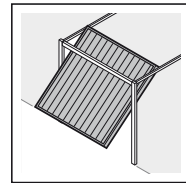
The time between the travel command (impulse) and the actual start of travel.

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:



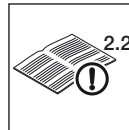
a = Sectional door



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

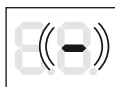


Factory setting

7-segment display



Display illuminated



Display flashes slowly.



Display flashes rapidly.



Dot flashes

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
Article designations	
HE 3 BiSecur	3-channel receiver
ESE BiSecur	Bi-directional 5-channel receiver
IT 1b	Internal push button with illuminated impulse button
EL 101 / EL 301	One-way photocell
STK	Wicket door contact
SKS	Activating kit for closing edge safety device
VL	Activating kit for leading photocell
HOR 1	Option relay
UAP 1	Universal adapter print
HNA 18-3	Emergency battery
SLK	Yellow LED warning light

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 for impulse operation of spring compensated sectional and up-and-over doors, as well as counterbalanced retractable up-and-over doors. Depending on the type of operator, the operator can be used in private / non-commercial areas or in commercial areas (e.g. in underground and collective garages).

Note the manufacturer's specifications regarding the door and operator combination. Potential hazards as outlined in DIN EN 13241-1 are avoided by the 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


The operator must not be used with 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 11


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 occupational safety rules and regulations and those governing the operation of electrical equipment. The relevant national guidelines must be observed. Potential hazards as outlined in DIN EN 13241-1 are avoided by the 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.


 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

2.6 Safety instructions for initial start-up and for operation

	 DANGER
Mains voltage	
<p>Contact with the mains voltage presents the danger of a deadly electric shock.</p> <p>For that reason, observe the following warnings under all circumstances:</p> <ul style="list-style-type: none"> ▶ 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)! ▶ If the mains connection cable is damaged, it must be exchanged by a qualified electrician to avoid danger. ▶ The mains plug must be disconnected before any work is performed on the operator. 	

 WARNING
Danger of injury during door travel ▶ See warning in section 10


 CAUTION
Danger of injury due to selection of the wrong door type ▶ See warning in section 7

 CAUTION
Danger of crushing in the boom ▶ See warning in section 10
Danger of injury from the cord knob ▶ See warning in section 10
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. ▶ See warning in section 10

ATTENTION
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 using the radio system

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

 CAUTION
Danger of injury due to unintended door travel ▶ See warning in section 8

2.8 Approved safety equipment

The following functions or components, where available, meet cat. 2, PL “c” in accordance with EN ISO 13849-1:2008 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 injury due to faulty safety equipment ▶ See warning in section 7

3 Fitting

ATTENTION:

IMPORTANT INSTRUCTIONS FOR SAFE FITTING.
OBSERVE ALL INSTRUCTIONS, INCORRECT FITTING
COULD RESULT IN SERIOUS INJURIES.

3.1 Inspect door/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 door compensating springs. The same applies to all 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. Exceptions to this include sectional doors with high-lift (high-lift track application H). Special fitting is required for this arrangement.

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 lead to unsafe fitting which may cause the operator to 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 (\geq 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 jammed.

- ▶ 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.

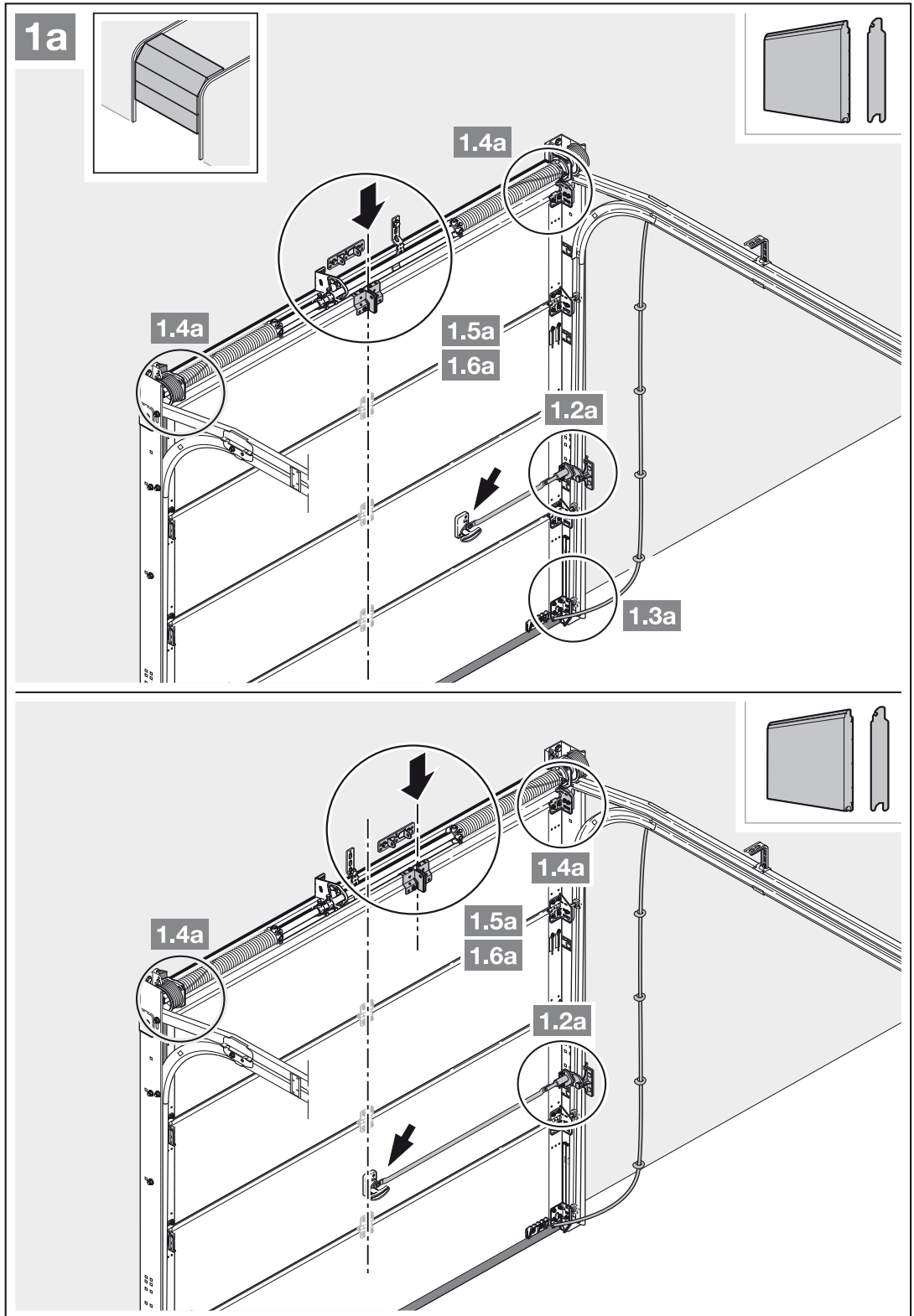
- ▶ Cover the operator during drilling work.

NOTES:

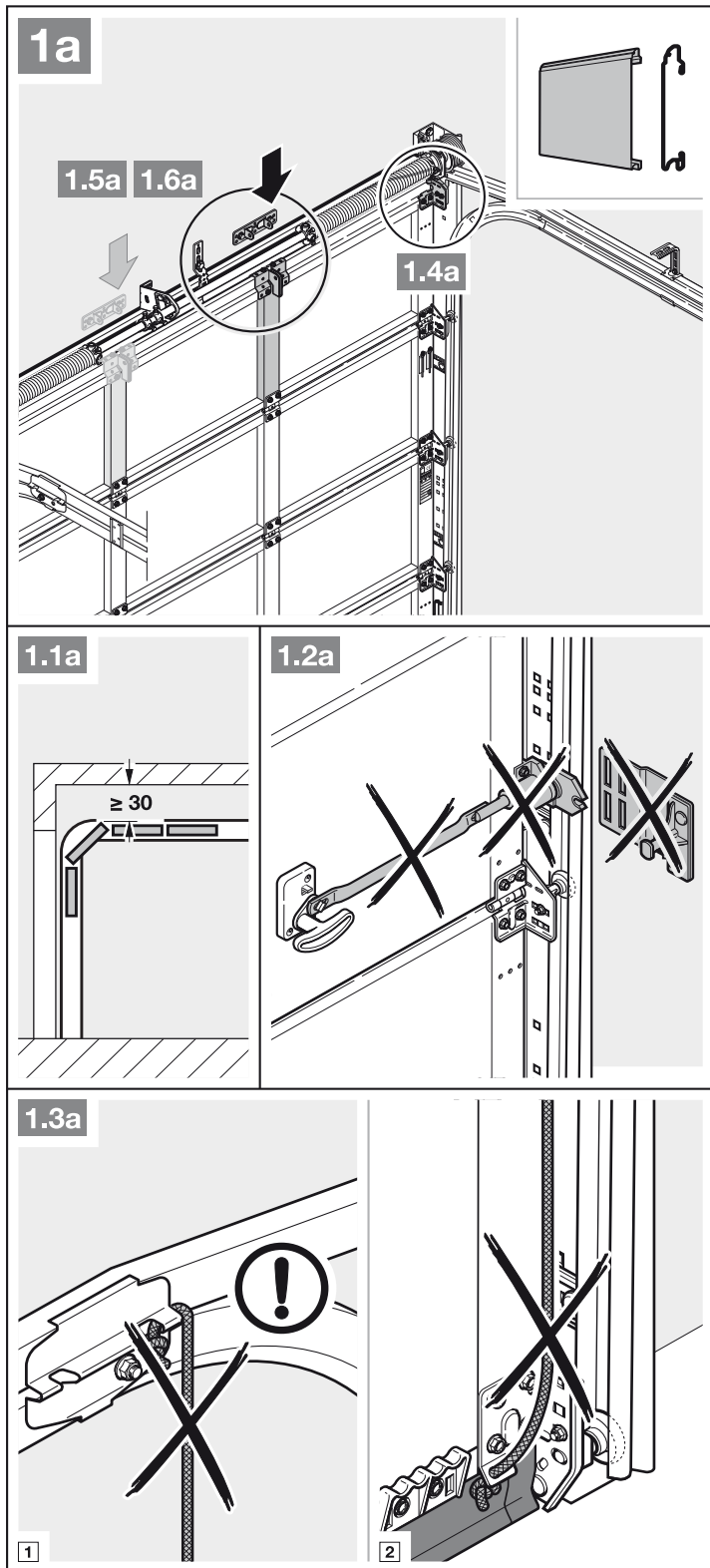
An emergency release is required for garages without a second entrance in order to prevent users from locking themselves during a power failure; this must be ordered separately.

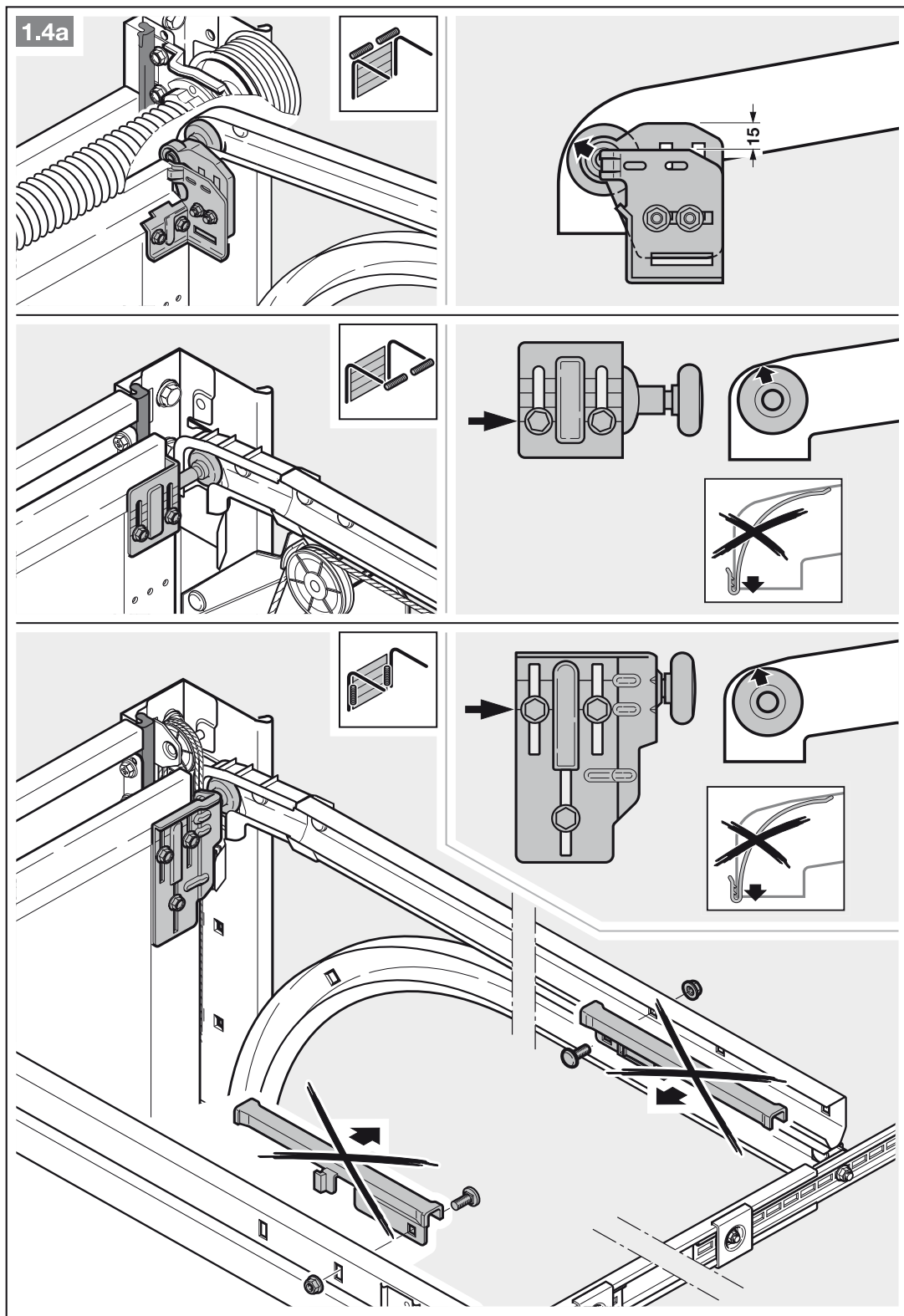
- ▶ Check the emergency release for proper function every month.

In order to fully comply with the **TTZ break-in resistance guideline for garage doors**, the cord knob on the slide carriage must be removed.



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

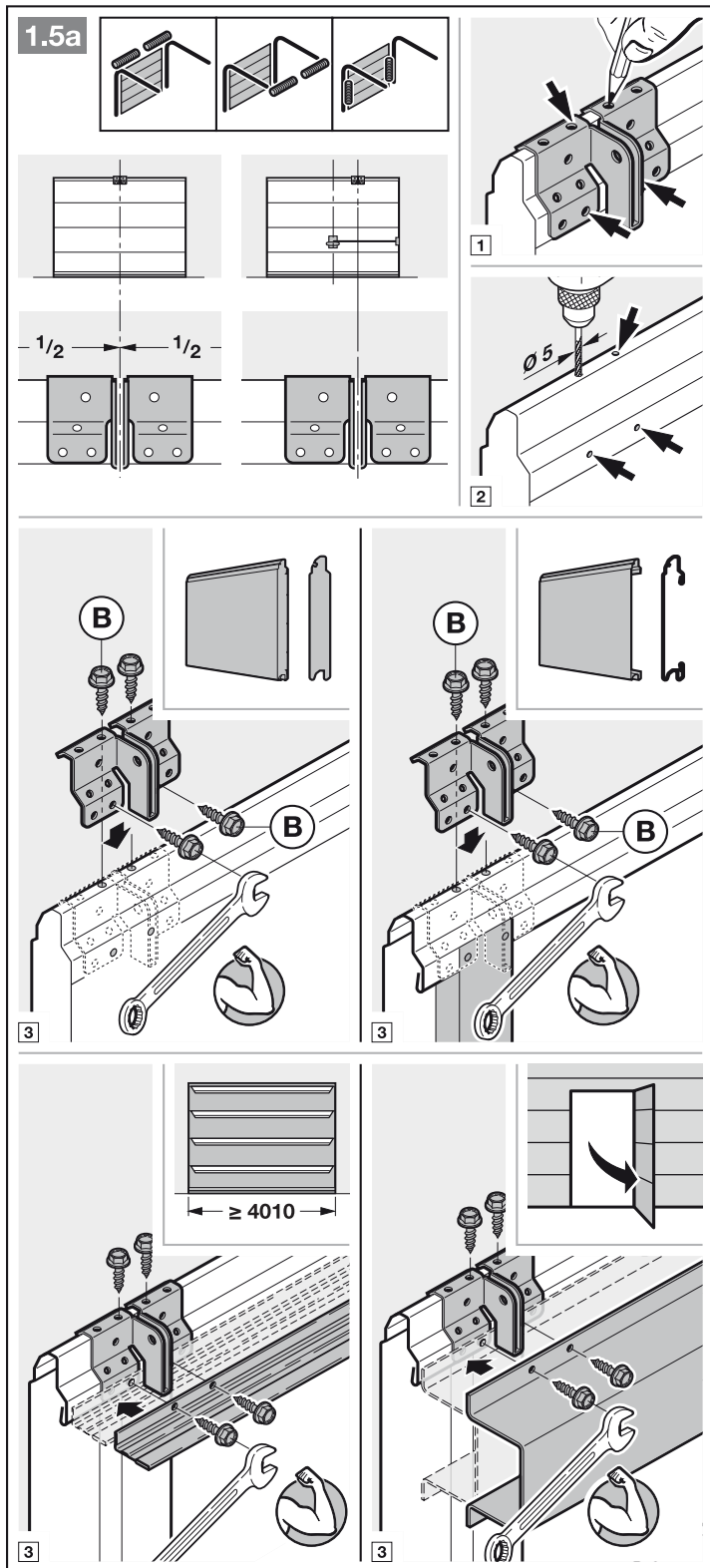




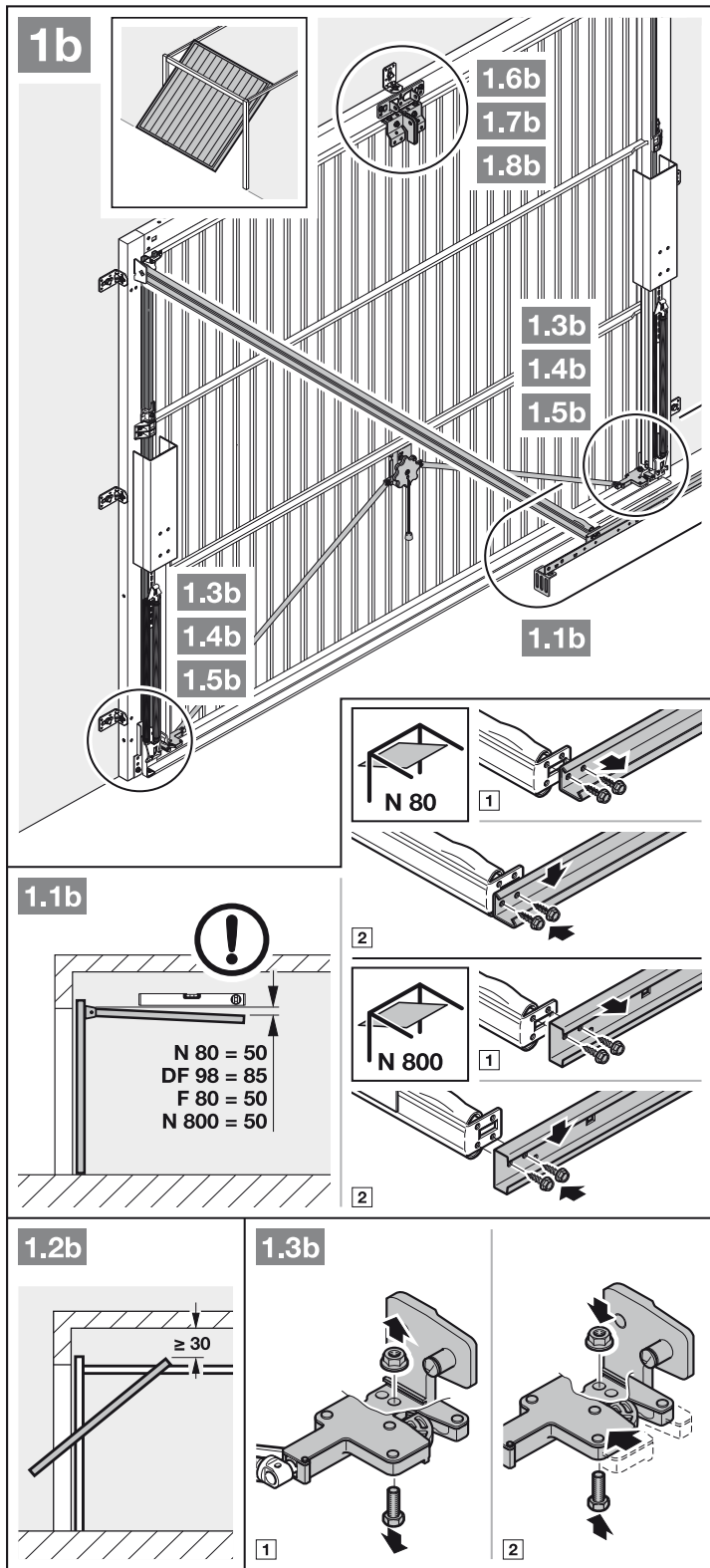
3. For sectional doors with central door locking, fit the lintel joint and link bracket off-centre (max. 500 mm).

NOTE:

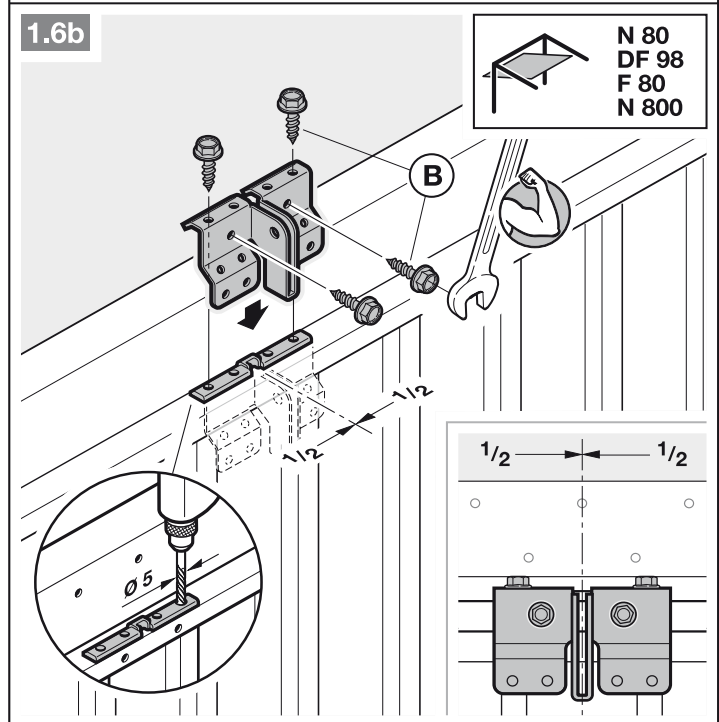
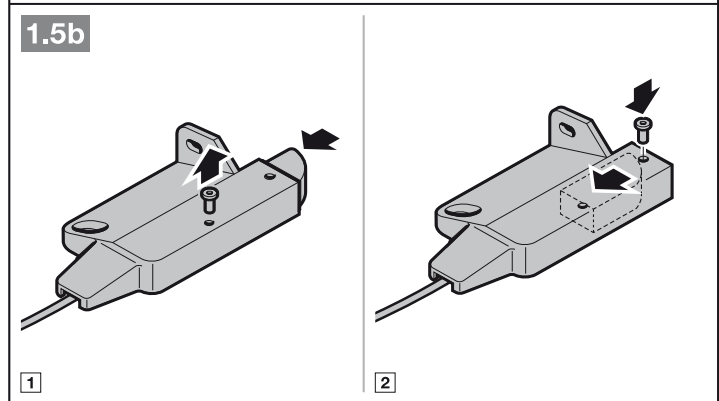
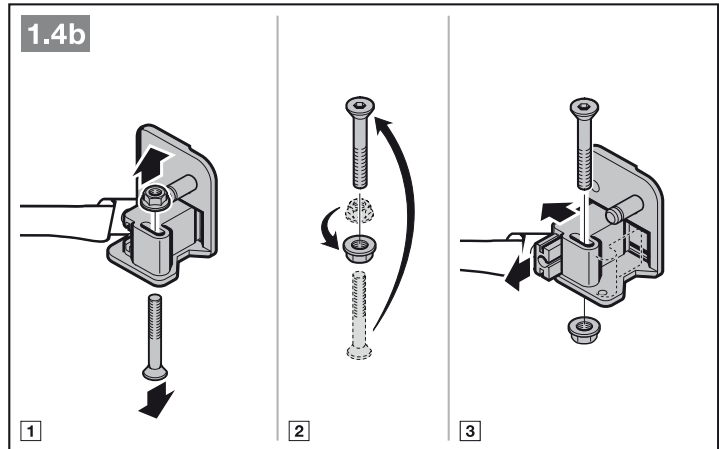
Not illustrated in figure 1.5a: use the 5 × 35 woodscrews from the door accessory pack (hole Ø 3 mm) for timber doors.



- Note section 3.2.
– Clearance required
- 4. Render the mechanical door lockings inoperable (see Figure 1.3b).

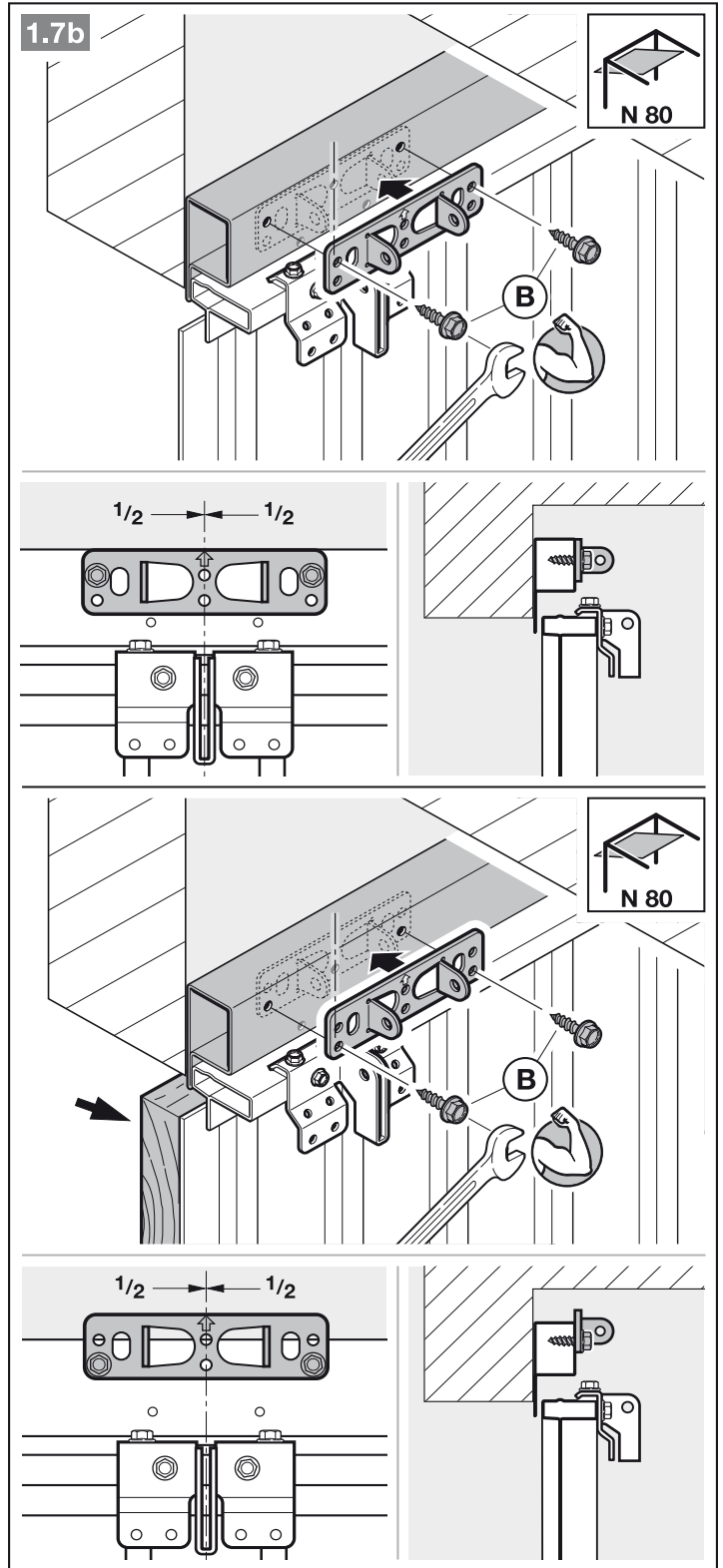


5. Render the mechanical door lockings inoperable (see Figures 1.4b / 1.5b). For door models not covered here, block the catches on site.
6. Not illustrated in figures 1.6b / 1.7b: The lintel joint and link bracket must be attached off-centre for up-and-over doors with ornamental iron door handles.



NOTE:

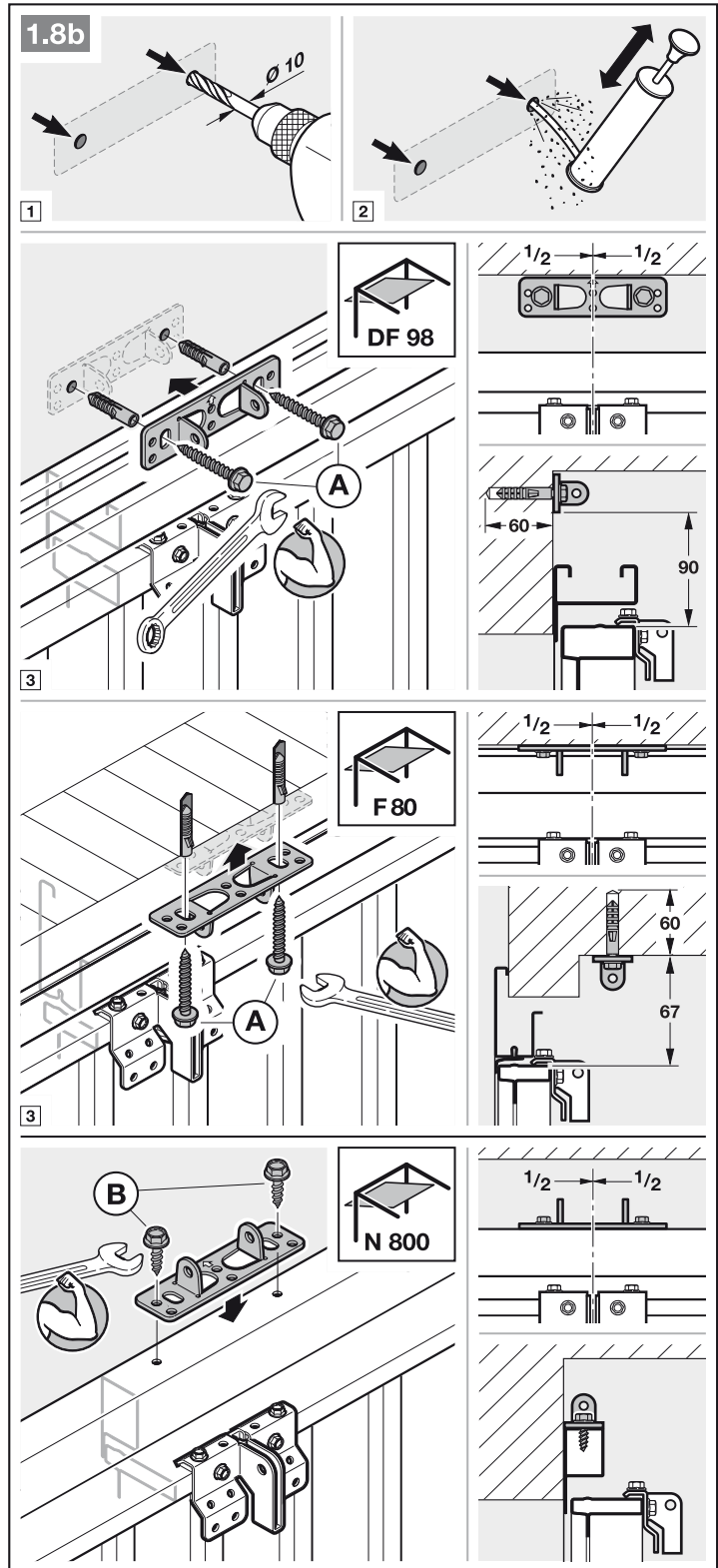
With N80 doors with timber infill, use the bottom holes on the lintel joint for fitting.



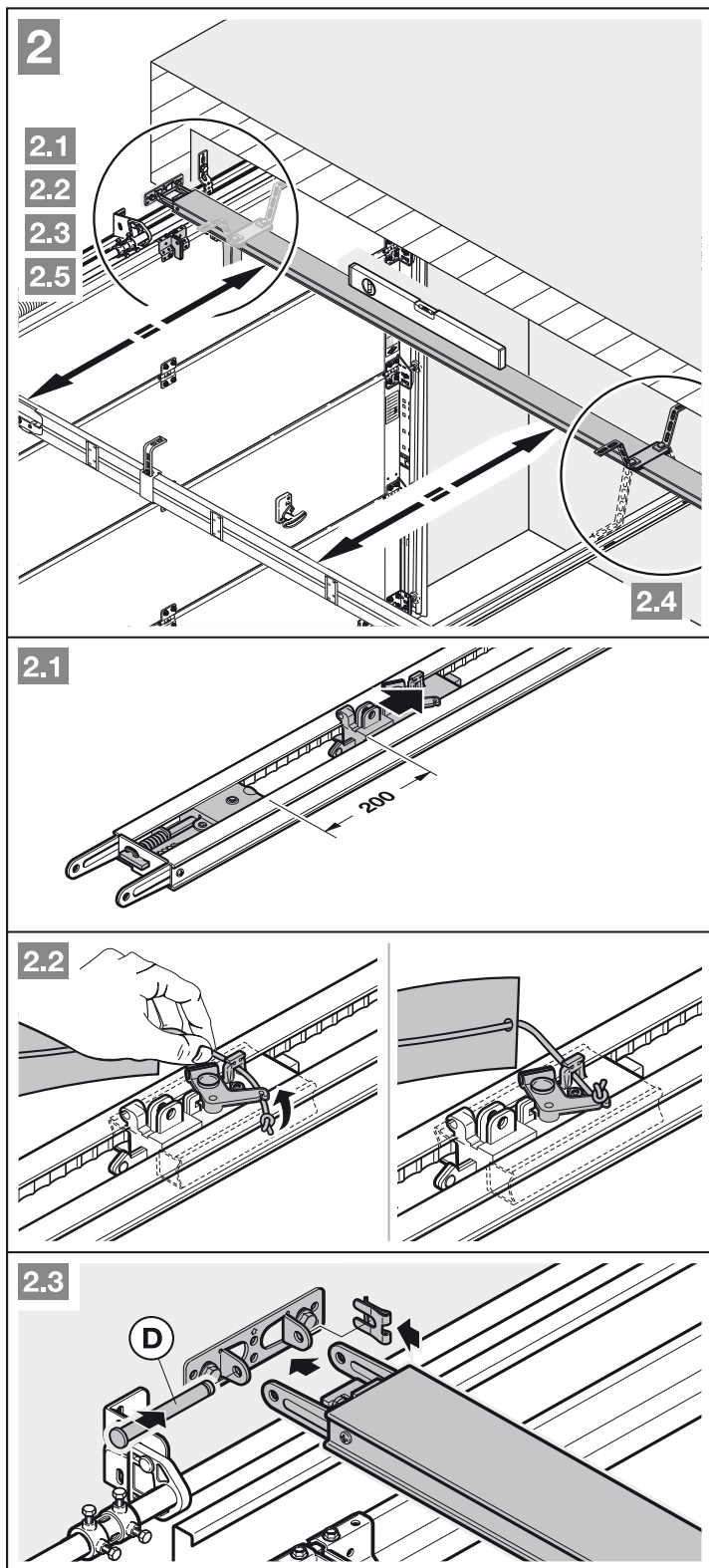
3.4 Fitting the boom

NOTE:

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



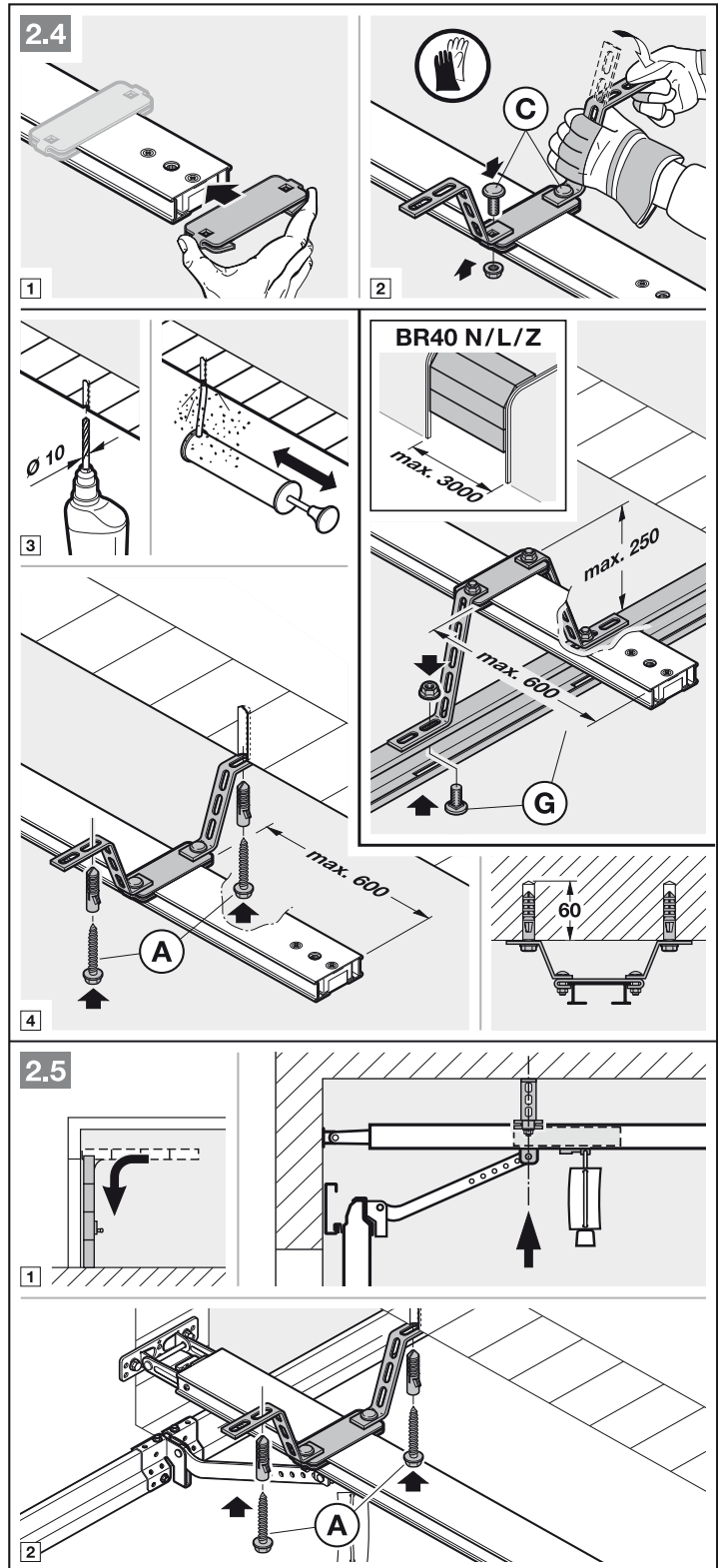
- Press the green button and move the slide carriage approx. 200 mm towards the centre of the rail (see figure 2.1). This is no longer possible once the end stops and operator have been fitted.



NOTE:

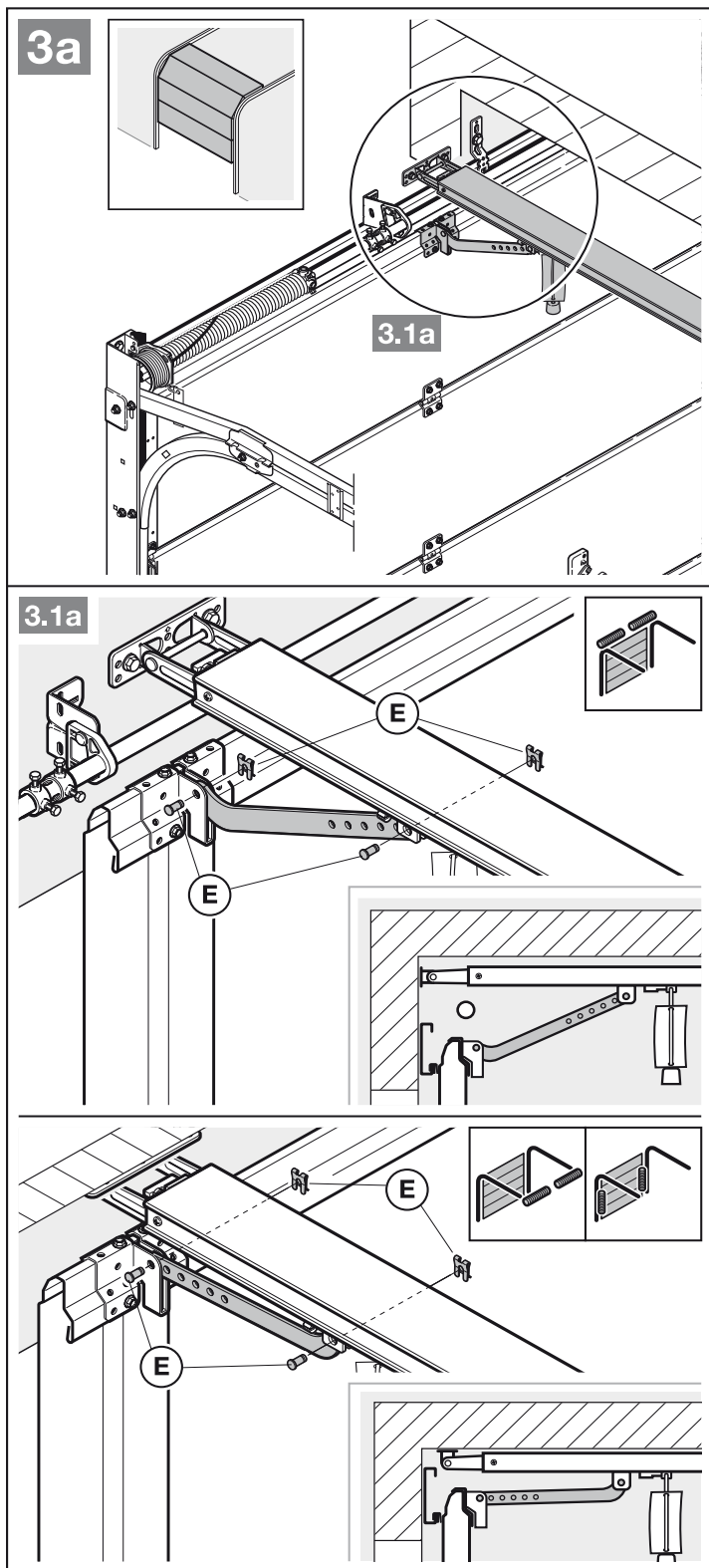
For operators used in underground and collective garages, it is necessary to fix the boom under the ceiling of the garage using a second suspension.

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



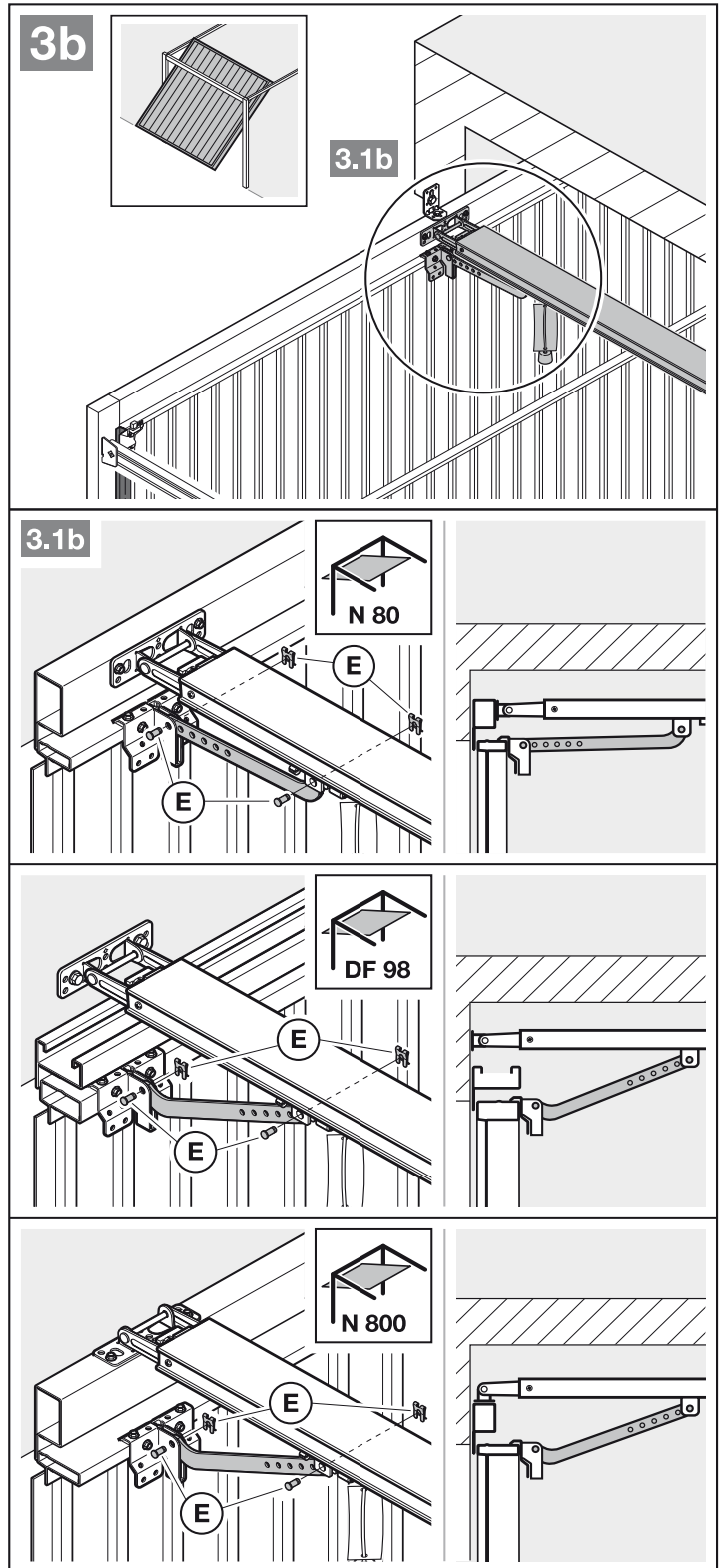
NOTE:

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 (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.

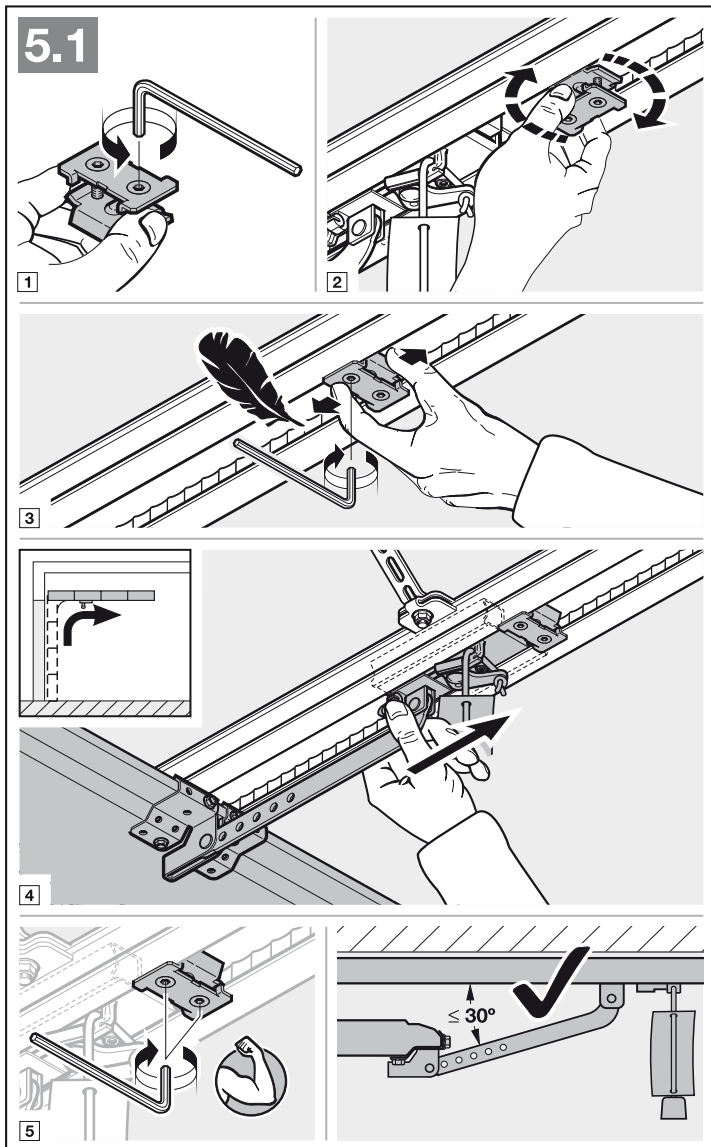
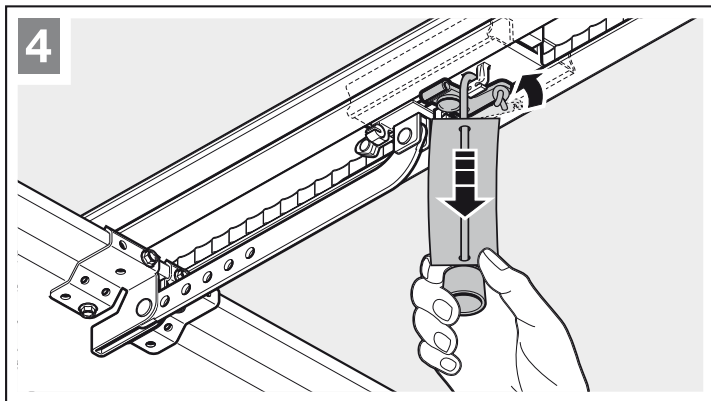
- Note section 3.1!

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.

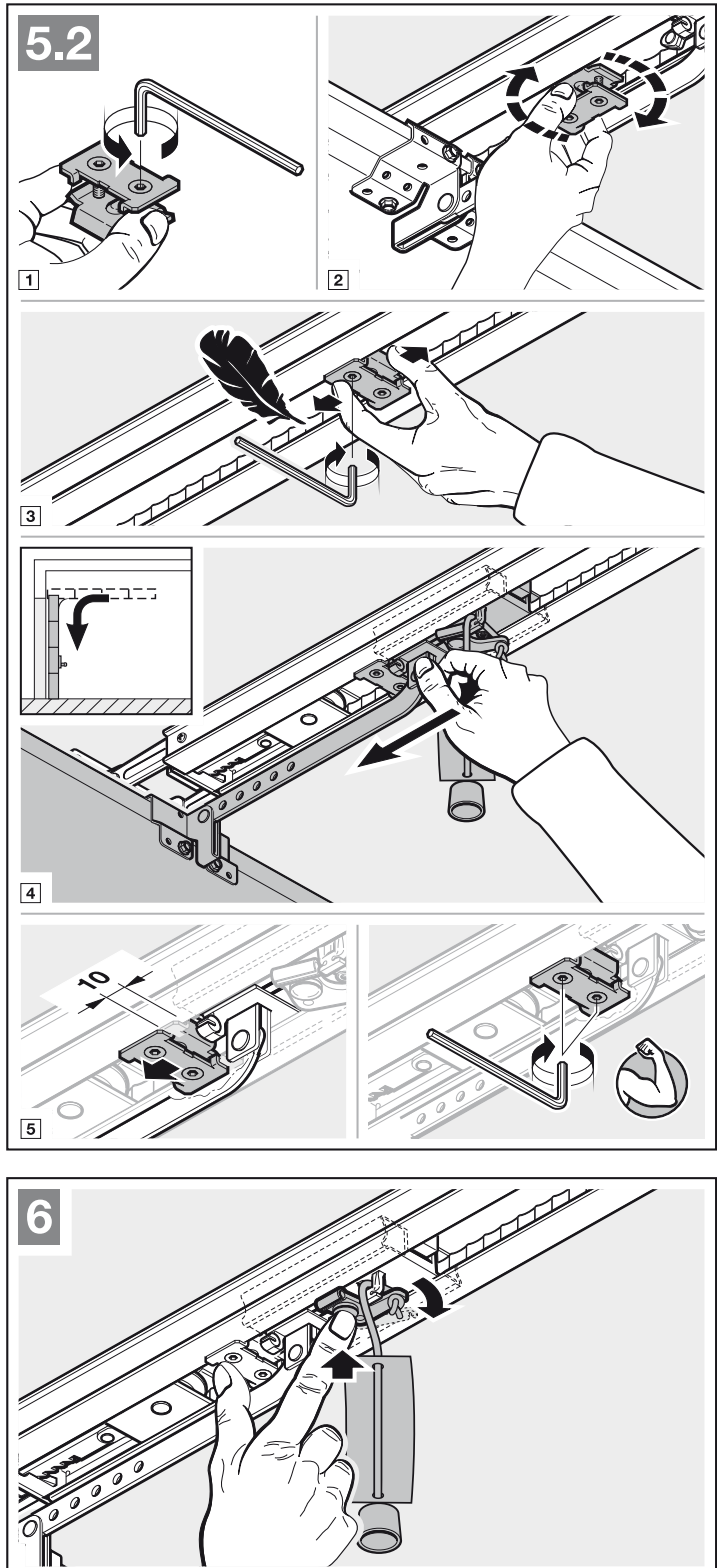


3.5.2 Fitting the Close end stop

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 (Figure 6).
- ▶ Move the door by hand until the slide carriage snaps into the belt lock.
- ▶ Note the safety instructions in section 10
– *Danger of crushing in the boom*

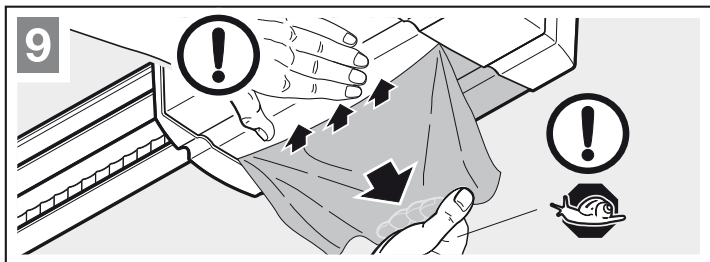
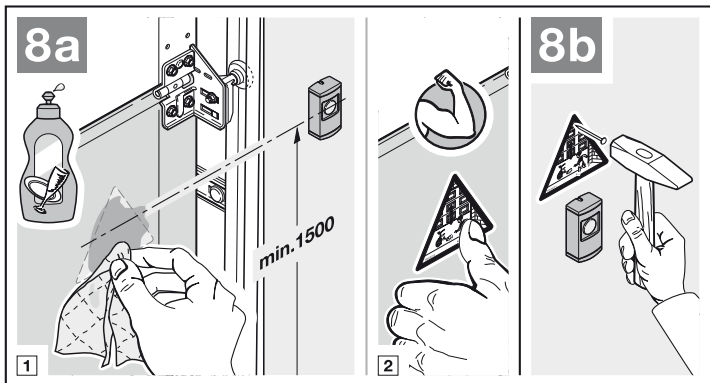
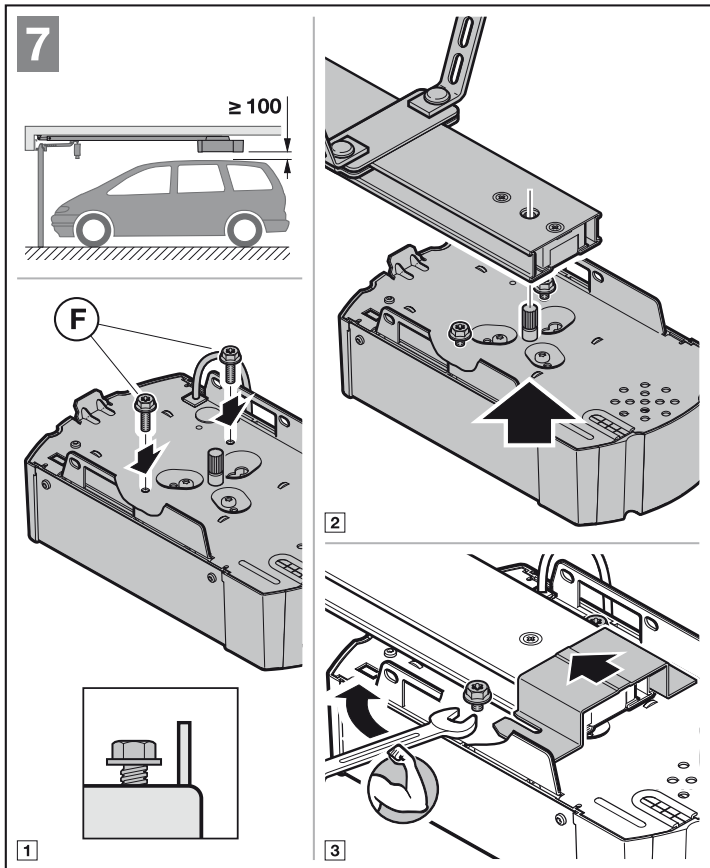


3.5.3 Fitting the operator head

- Fix the operator head with the display towards the door (Figure 7).

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 / 37 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: $1 \times 2.5 \text{ mm}^2$

Accessories with special functions can be connected to the BUS connecting terminal.

4.2 Connecting additional components / accessories

NOTE:

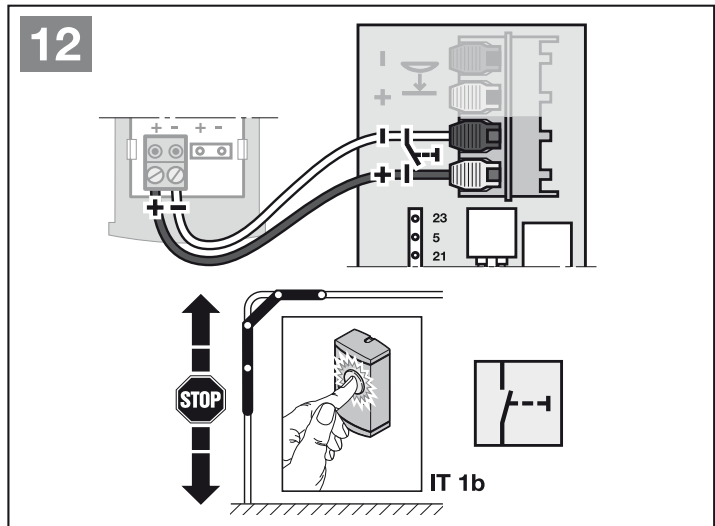
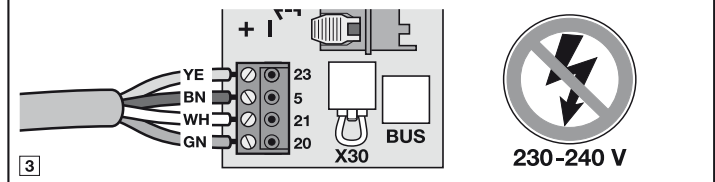
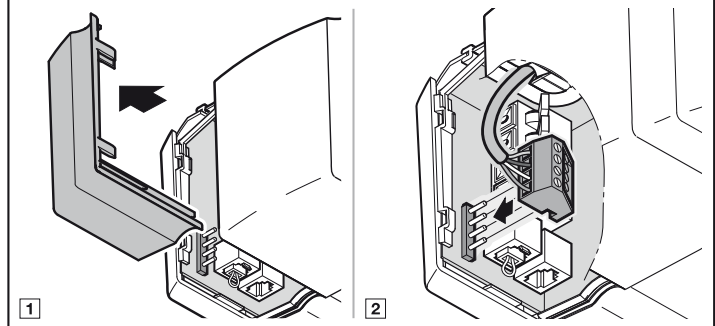
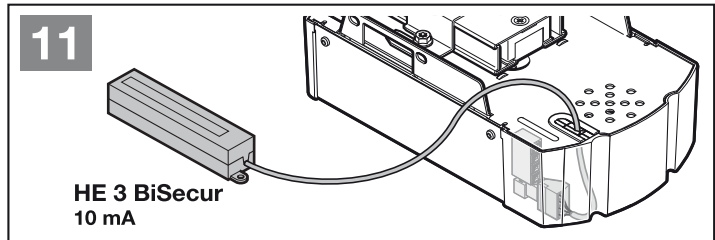
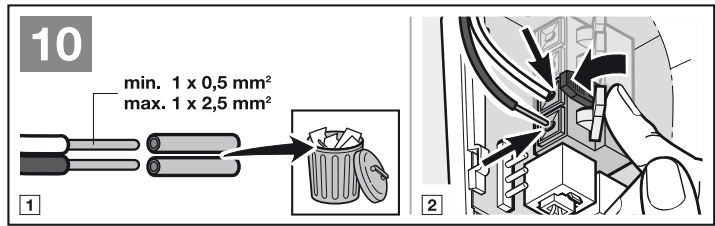
Maximum operator current rating by all accessories: **max. 250 mA**. See the figures for component power consumption.

4.2.1 External radio receiver*

- ▶ See Figure 11 and section 9
- Insert the plug of the receiver in the corresponding socket.

4.2.2 External impulse button

- ▶ See Figure 12
- 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 as standard equipment!

4.2.3 2-wire photocell* (dynamic)

► See Figure 13

NOTE:

Follow the fitting instructions when mounting photocells.

After the photocell has been triggered, the operator stops and a safety reversal of the door is performed to the *Open* end-of-travel position.

4.2.4 Tested wicket door contact*

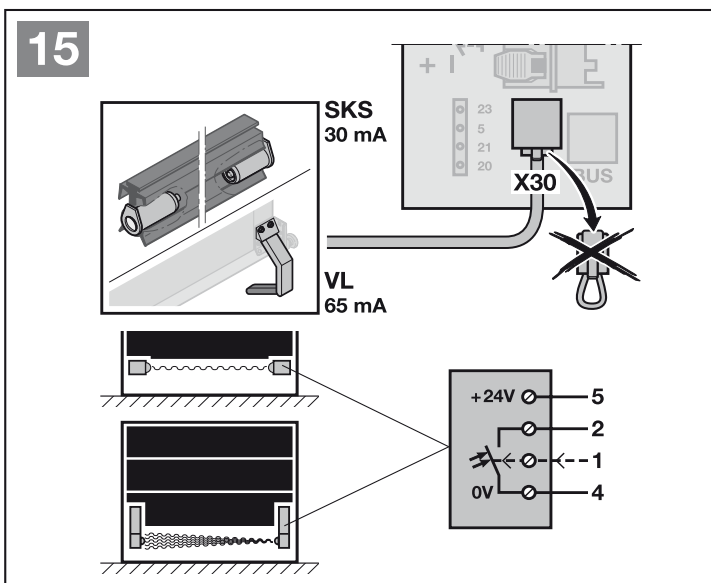
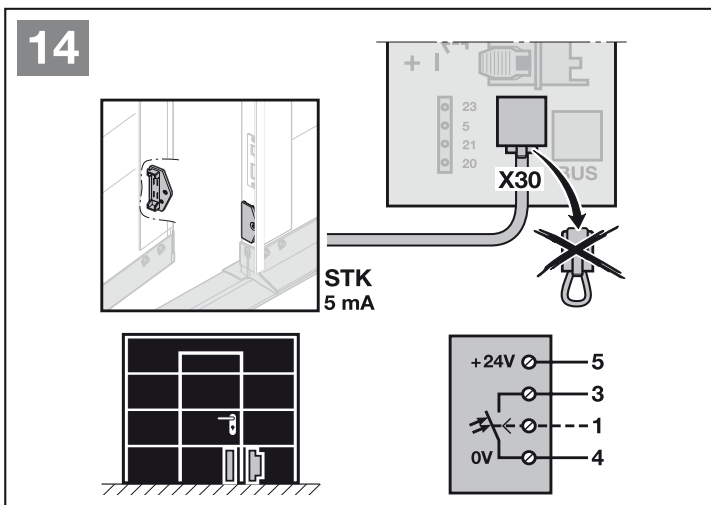
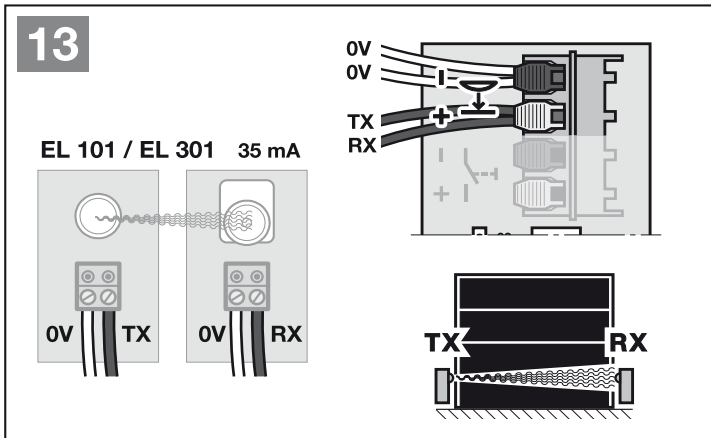
► Connect wicket door contacts that switch to ground (0 V) as shown in Figure 14.

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

4.2.5 Closing edge safety device*

► Connect closing edge safety devices that switch to ground (0 V) as shown in Figure 15.

After the closing edge safety device has been triggered, the operator stops and the door reverses in the *Open* direction.



*Accessory, not included as standard equipment!

4.2.6 Option relay HOR 1*

► See Figure 16 and section 6.1.4

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

4.2.7 Universal adapter print UAP 1*

► See Figure 17 and section 6.1.4

The universal adapter print UAP 1 can be used for other additional functions.

4.2.8 Emergency battery HNA 18-3*

► 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.

⚠ 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.

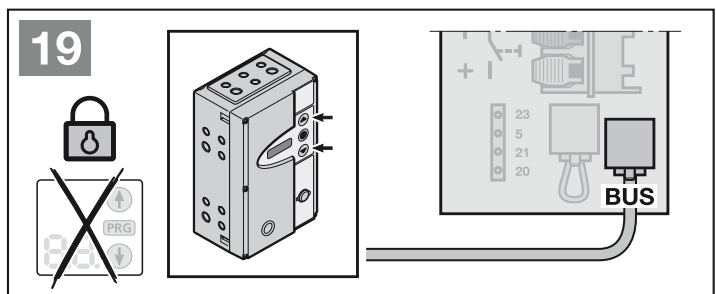
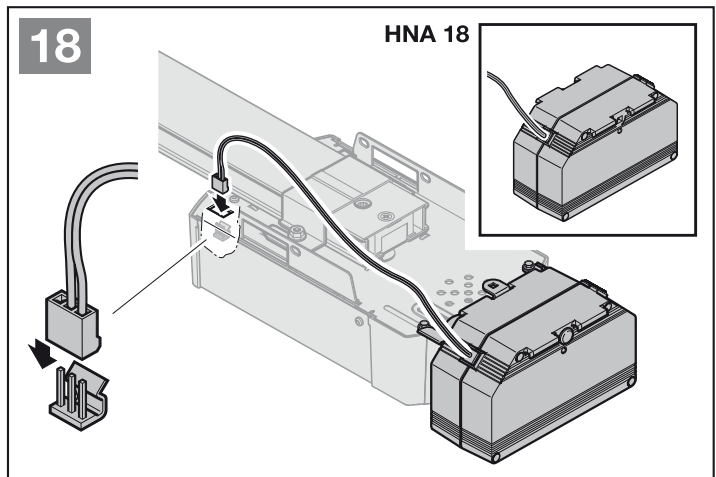
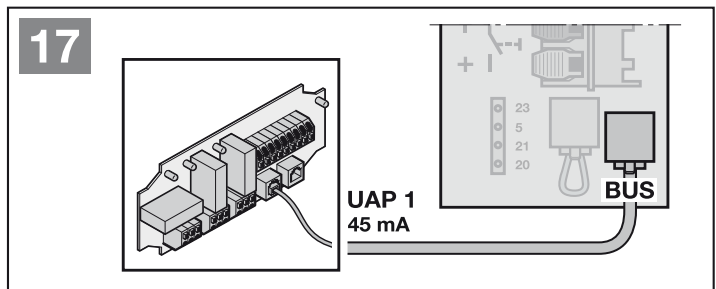
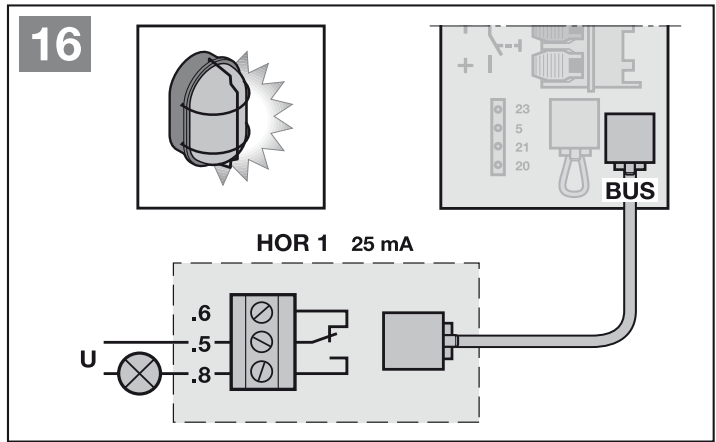
► Disconnect the mains plug **and** the plug of the emergency battery whenever performing work on the door system.

4.2.9 External control 360

► See Figure 19

The control buttons for the operator are blocked once the external control 360 is connected. The operator can no longer be operated using these buttons.

A factory reset must be performed in order to unblock the control buttons (see section 12).



*Accessory, not included as standard equipment!

5 Initial start-up

- ▶ Before initial start-up, read and follow the safety instructions in sections 2.6 and 2.8.

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 further safety devices are connected at a later point, a new learning run is required (menu **10**).
 - When teaching in, the connected safety devices and power limit are not active.
- ▶ See Figure 20
1. Plug in the mains plug.
A **U** is illuminated in the display.
 2. Select the existing door type.
An **L** will then be illuminated in the display.

Door types:

Menu	Door type
01	= Sectional door
02	= Up-and-over door ¹⁾
03	= Side sliding sectional door
04	= Parking garage non-protruding up-and-over door ²⁾ (e.g. ET 500-2) ³⁾
05	= Parking garage sliding door ⁴⁾ (e.g. ST 500) ³⁾

1) A door swinging outwards

2) A door tilting inwards

3) Dependent on the operator type


4) With this door type, an 8k2 resistance contact strip must be fitted to the secondary closing edge in the *Open* direction and connected to the operator via the 8k2-1T decoder unit.

NOTE:

- ▶ Set menu **03** for hinged doors.

Timeout



If the timeout (60 seconds) elapses before starting the learning run, the operator will automatically switch back to the delivery condition.

3. Press the button .
 - The door will open and briefly stop in the *Open* end-of-travel position.
 - The door will automatically go through 3 complete cycles (Open and Close). In the process the travel, required forces, and connected safety devices will be taught in.

The **L** in the display flashes during learning runs.

 - The door will stop in the *Open* end-of-travel position.

To abort a learning run:

- ▶ Press one of the buttons  or , the **PRG** button or an external control element with impulse function.
A **U** in the display shows that the operator has not been taught in.

Display of the taught-in forces

A number will be illuminated after the learning runs. This indicates the maximum detected force.

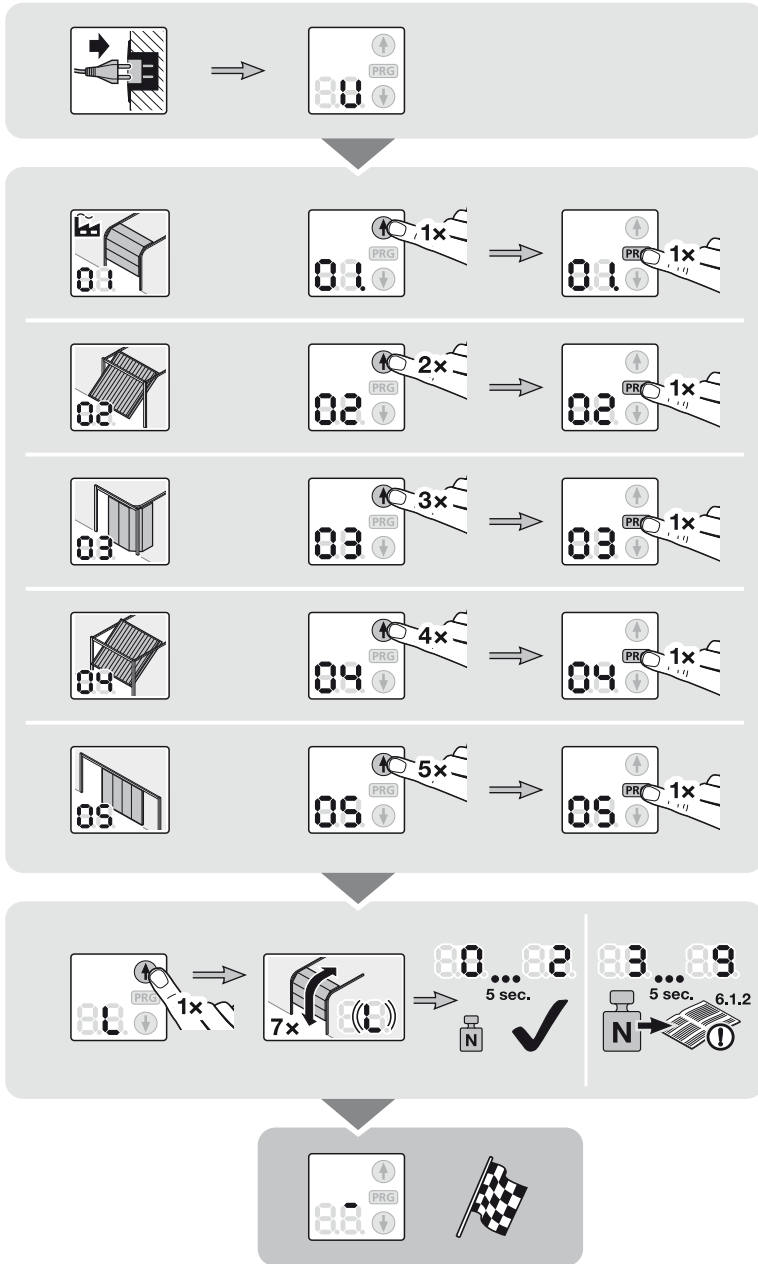
The numbers represent the following:

- 0-2** Optimum force conditions
The door system is moving easily.
- 3-9** Poor force conditions
The door system must be inspected or readjusted.

Once the taught-in forces have been displayed, the operator will automatically switch to operation mode.

The operator is ready for operation.

20



6 Menus

NOTES:

- With the function blocks that consist of several menus, only one menu may be selected per block.
- After the operator has been taught in, only the selectable menus **10–46** are shown. Menus **01–05** are only accessible during initial start-up. Menu **00** is used to exit programming mode.
- A decimal point next to the menu number indicates an active menu.

To switch to programming mode: Figure 21

- ▶ Press the **PRG** button until the **00** display is illuminated.

To select a menu: Figure 21.1

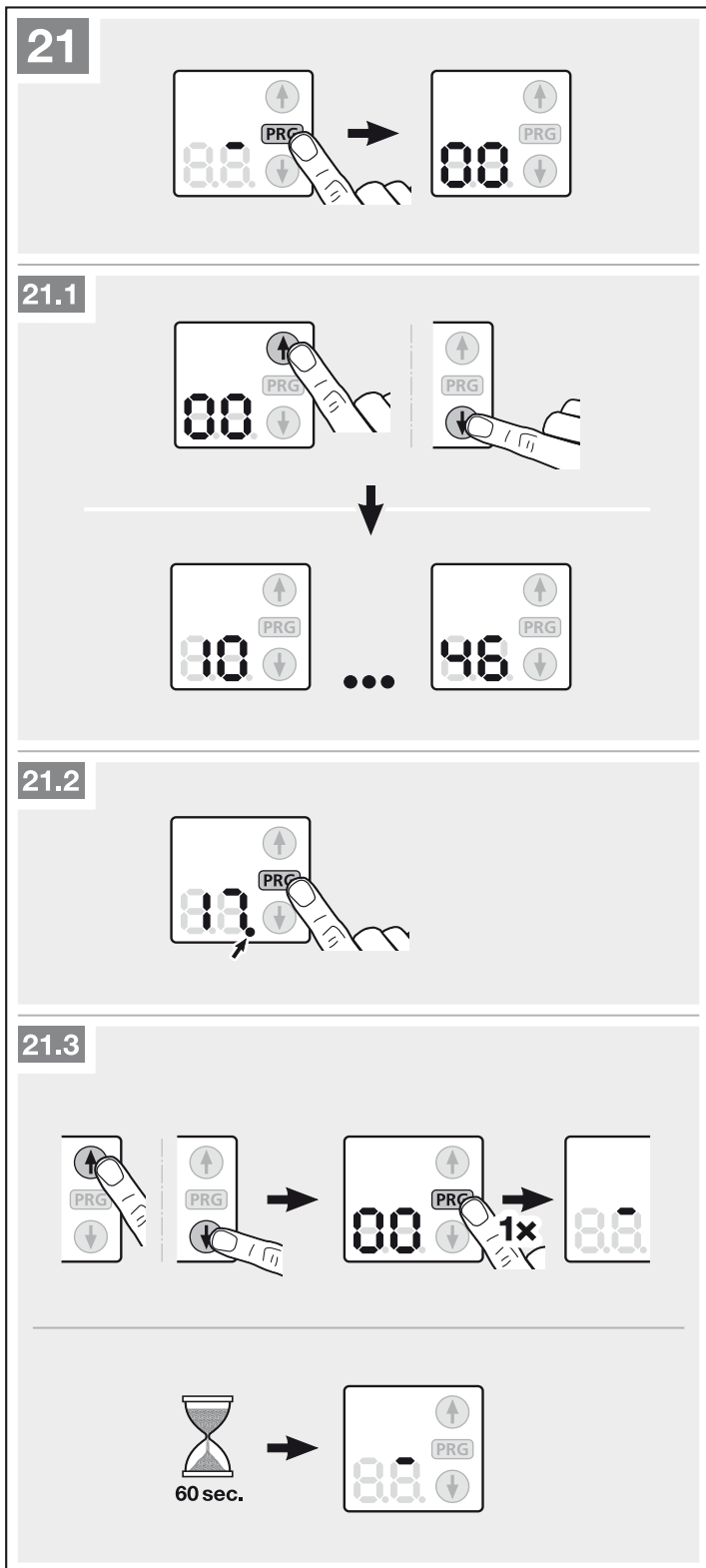
- ▶ With the buttons \uparrow or \downarrow select the desired menu. Holding down the buttons \uparrow or \downarrow lets you go through the menus quickly.

To activate a menu: Figure 21.2

- ▶ Press the **PRG** button until the decimal point next to the menu number is illuminated. The menu is immediately activated.

To exit programming mode: Figure 21.3

- ▶ With the buttons \uparrow or \downarrow select menu **00** and press the **PRG** button.
- or
- ▶ No entry for 60 seconds (timeout).



6.1 Menu description

A table containing all of the menus can be found in section 18, from page 40.

6.1.1 Menu 01 –05: Door types

Menus **01 –05** are needed for initial start-up of the operator. They are only accessible during initial start-up or after a factory reset. Once the door type has been selected, all of the door-specific values, such as speed, soft stop, reversing behaviour of the safety devices, reversal limits, etc. will be pre-set automatically.

► For an overview of door types, see section 5

6.1.2 Menu 10: Learning runs

► Note the information in section 5.

Learning runs in the delivery condition:

All of the learning runs are done automatically during initial start-up (section 5).

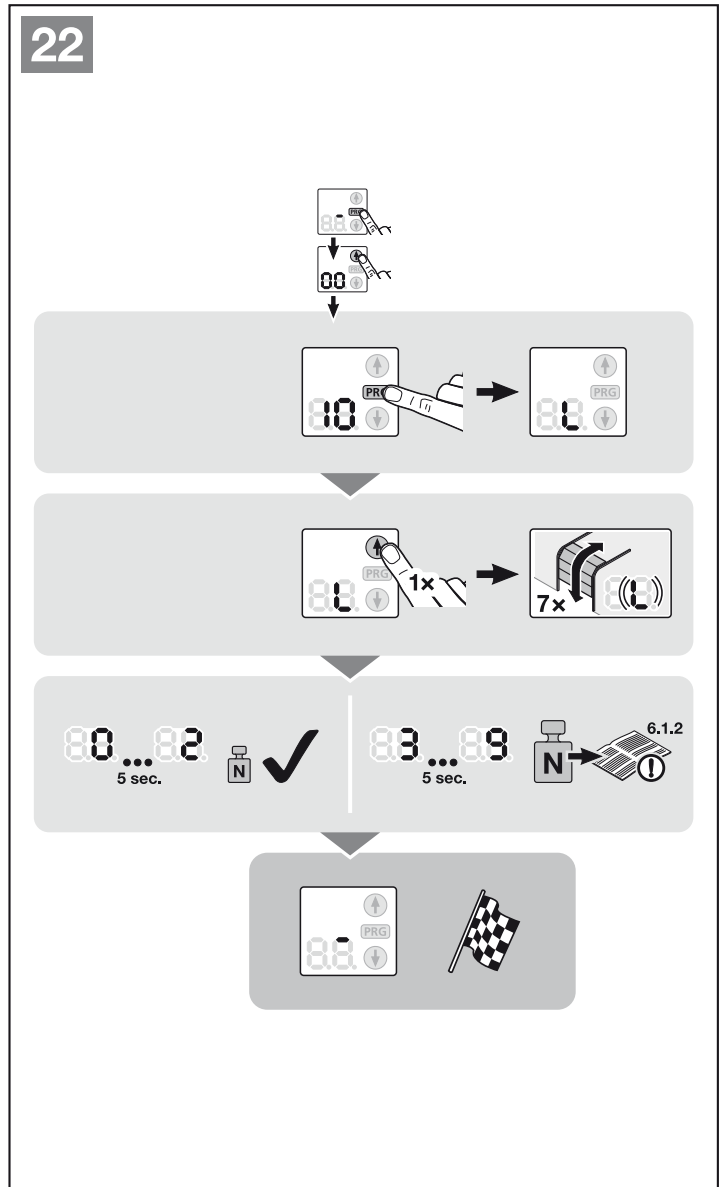
Learning runs after service or maintenance work:

Learning runs may be required due to service or maintenance work, retrofitting of safety devices such as photocells, wicket door contacts or safety contact strips, or changes to the door. When doing so, the existing door data (travel and forces) are deleted and taught in again.

To exit the menu before starting the learning runs:

► Press the **PRG** button.

1. Press the **PRG** button until the **00** display is illuminated.
2. With the buttons **↑** or **↓** select the desired menu **10**.
3. Press the **PRG** button until an **L** is illuminated in the display.
4. Continue with step 3, in section 5.



About the menus described here:

- ▶ See also the overview from page 40.

6.1.3 Menu 14: Query door type

During initial start-up or after a factory reset, you can query the set door type via menu 14.

To query the door type:

1. Select menu 14 as described in section 6.
2. Press the **PRG** button.
The set door type will be displayed as long as the **PRG** button is pressed.

6.1.4 Menu 24–29: Functions with additional print

If menu 27 or 28 is activated and no pre-warning phase or hold-open phase has been activated (menu 31–35, 41), the relay does not function despite the activated menu.

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

Further functions, such as *Open* and *Close* limit switch reporting or choosing direction, can be switched with the universal adapter print **UAP 1**.

To set the desired function:

- ▶ Select the menu for the desired function as described in section 6.

6.1.5 Menu 30–31: Pre-warning phase

Menu 30 deactivates the pre-warning phase. The door starts moving immediately after a travel command.

If menu 31 is activated and a travel command is given, a warning light connected to the option relay is illuminated for 5 seconds before the door starts moving. The pre-warning phase is active in the *Open* and *Close* direction.

To set the desired function:

- ▶ Select the menu for the desired function as described in section 6.

6.1.6 Menu 32–36: Automatic timer

With an automatic timer, the door is only opened with a travel command. The door closes automatically after a set time and the pre-warning phase have elapsed. If the door receives a travel command while it is closing, the door will stop and open again.

NOTES:

- The automatic timer may / can 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.
- If the automatic timer is set (menus 32–35), this automatically activates a 5-second pre-warning phase in the *Close* direction and the photocell (menu 61).

To set the desired function:

- ▶ Select the menu for the desired function as described in section 6.

6.1.7 Menu 37–38: Hold-open phase functions

The time set for the automatic timer corresponds to the hold-open phase for the door before it automatically closes.

If menu 37 is activated, the hold-open time is extended by an *impulse* radio code, an external control element with impulse function, the button ④ or a photocell.

If menu 38 is activated, the hold-open phase is cancelled by an *impulse* radio code, external control element with impulse function or the button ④ and the door closes immediately after the pre-warning phase has elapsed.

To set the desired function:

- ▶ Select the menu for the desired function as described in section 6.

6.1.8 Menu 41–42: Automatic timer from the partial opening position

Not suitable for side sliding sectional doors!

NOTES:

- The automatic timer may / can 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.
- If the automatic timer is set (menu 41), the photocell (menu 61) will automatically be activated as well. The pre-warning phase (menu 31) will *not* be activated.

If menu 41 is activated, the door will automatically close after 1 hour.

Menu 42 deactivates the automatic timer from the partial opening position.

To set the desired function:


- ▶ Select the menu for the desired function as described in section 6.

6.1.9 Menu 43: Changing the ventilation position

► See Figure 23



The partial opening position (ventilation position) depends on the door type and is pre-set at the factory.

Sectional door:

	Approx. 260 mm slide travel before the <i>Close</i> end-of-travel position.
Minimum height	Approx. 120 mm slide travel before each end-of-travel position.

The partial opening position is triggered using an external receiver, the additional print UAP 1 or an impulse at terminals 20/23.

To change the partial opening position:



1. Move the door into the desired position with the buttons  and , via the taught-in radio code *impulse* or an external control element with impulse function.
2. Select menu 43.
3. Press the **PRG** button until the decimal point next to the menu number is illuminated.

The changed partial opening position is saved.

If the selected height is too low, a 2-digit number starting with 1 will appear with a flashing decimal point (see section 17).

6.1.10 Menu 44: Blocking the control buttons on the operator



► See Figure 24

When blocking, only the buttons  and  on the operator are blocked. External control elements and hand transmitters remain active.

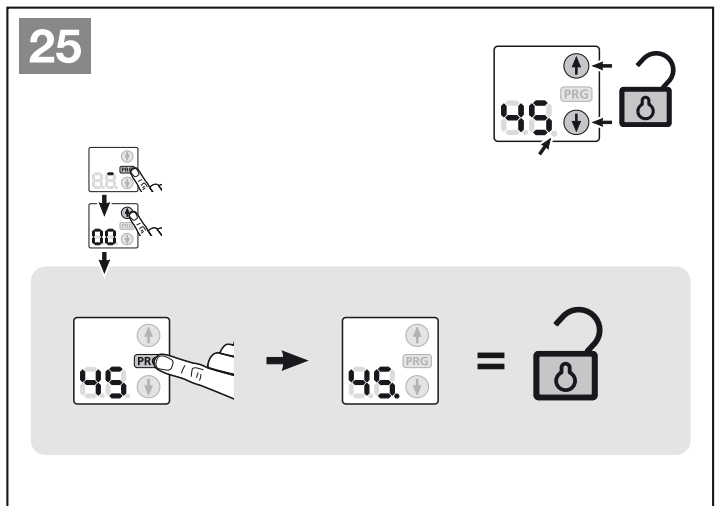
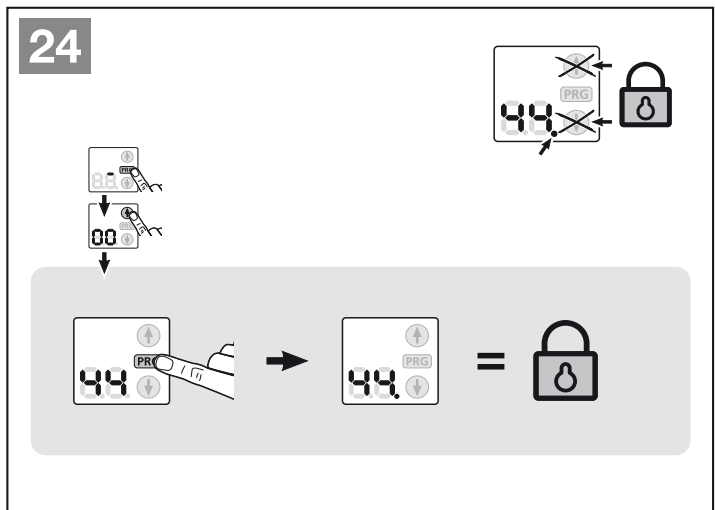
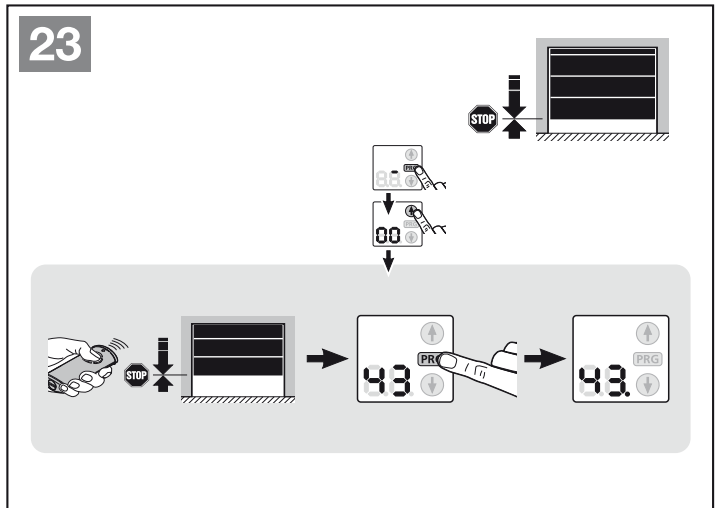
If the decimal point next to the menu number is illuminated, the control buttons are blocked.

6.1.11 Menu 45: Releasing the control buttons on the operator

► See Figure 25

When releasing, the buttons  and  on the operator become active again.

If the decimal point next to the menu number is illuminated, the control buttons are **not** blocked.



7 Teaching in the operator

When teaching in (Figure 20), 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 are only valid for this door.

CAUTION

Danger of injury due to selection of the wrong door type

If the wrong door type is selected, unspecific values will be pre-set. The resulting door malfunctions may cause injuries.

- ▶ Only select the menu that corresponds to the available door type.

WARNING

Danger of injury due to faulty safety equipment

In the event of a malfunction, there is a danger of injury 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.

8 Radio system



WARNING

Danger of injury during door travel

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 Open 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).

CAUTION

Danger of injury due to unintended door travel

Unintended door travel may occur while teaching in the radio system.

- ▶ Make sure no persons or objects are in the door's area of travel when teaching in the radio code.

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, check the functions.
- 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.

9 External radio receivers*

NOTES:

It is only possible to teach in/delete radio when the operator is at rest. The best orientation of the receiver to achieve an optimum range must be established by trial and error.

9.1 Receiver HE 3 BiSecur*

A maximum number of 100 radio codes per channel can be taught in the receiver.

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

9.2 Receiver ESE BiSecur*

A maximum of 300 radio codes can be taught in on the receiver. They can be distributed over the existing channels as desired.

- ▶ Teach in the hand transmitter button for the functions *Impulse* (channel 1), *Lighting* (channel 2, only with a HOR 1*), *Partial opening* (channel 3), *Open* (channel 4) or *Close* (channel 5) using the operating instructions for the ESE BiSecur receiver.

9.3 Deleting all radio codes

- ▶ Delete the radio codes of all the hand transmitter buttons by following the operating instructions for the external receiver.

9.4 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.

*Accessory, not included as standard equipment!

10 Operation

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

<p>⚠ CAUTION</p> <p>Danger of crushing in the boom Do not reach into the boom with your fingers during door travel, as this can cause crushing.</p> <ul style="list-style-type: none"> ▶ Do not reach into the boom during door travel

<p>⚠ CAUTION</p> <p>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.</p> <ul style="list-style-type: none"> ▶ Do not hang on the cord knob with your body weight.
--

<p>⚠ CAUTION</p> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> ▶ The responsible fitter must install a retrofit set on the slide carriage if the following applies: <ul style="list-style-type: none"> - 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. <p>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.</p> <p>NOTE: The use of an emergency release or an emergency release lock is not possible in conjunction with the retrofit set.</p>

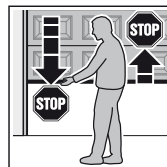
<p>⚠ ATTENTION</p> <p>Damage due to the cord of the mechanical release If the cord of the mechanical release becomes caught on a roof carrier system or other parts of the vehicle or door, this can lead to damage.</p> <ul style="list-style-type: none"> ▶ Make sure that the cable cannot become caught.

10.1 Instructing users

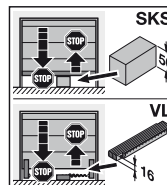
- ▶ All persons using the door system must be shown how to operate the garage door operator properly and safely.
- ▶ Demonstrate and test the mechanical release as well as the safety reversal.

10.2 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. In the centre of the opening, position a test object with a height of approx. 50 mm (SKS) or 16 mm (VL) 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.

10.3 Normal operation

In normal operation, the garage door operator only works in accordance with the impulse sequence control (Open - Stop - Close - Stop) if an external button or control button is actuated on the operator. See also sections 10.4.1 and 10.4.2 (channel 1 / Impulse).

10.4 Functions of the various radio codes with an external radio receiver

A radio code is assigned to each hand transmitter button. In order to actuate the operator with the hand transmitter, the respective hand transmitter button must be taught in for the desired function, i.e. the corresponding radio code must be transmitted to the external radio receiver.

NOTE:

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

10.4.1 Operation with the receiver HE 3 BiSecur

Channel 1 / Impulse and channel 2 / Partial opening

During normal operation, the garage door operator works with the impulse sequence control, which is triggered via the taught-in *Impulse* or *Partial opening* radio code:

- ▶ To open and close fully, press the appropriate impulse generator for channel 1.
- ▶ To open and close partially, press the appropriate impulse generator for channel 2.

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.

Channel 3

Without function

10.4.2 Operation with the receiver ESE BiSecur

Channel 1 / Impulse

In normal operation, the garage door operator works with the impulse sequence control (Open - Stop - Close - Stop), which is triggered by the taught-in *Impulse* radio code:

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.

Channel 2 / Lighting

Only in combination with a universal adapter print UAP 1* and connected external lighting, e.g. outdoor lighting.

Channel 3 / Partial opening

If the door is **not in the partial opening position**, it is moved according to the impulse sequence (Open - Stop - Close - Stop), which is triggered by the taught-in *partial opening* radio code.

If the door is **in the partial opening position**, it is moved to the *Close* end-of-travel position using the *partial opening* radio code and to the *Open* end-of-travel position using the *impulse* radio code.

Channel 4 / Choosing OPEN direction

The *Open* radio code moves the door into the *Open* end-of-travel position with the impulse sequence (Open - Stop - Open - Stop).

Channel 5 / Choosing CLOSE direction

The *Close* radio code moves the door to the *Close* end-of-travel position with the impulse sequence (Close - Stop - Close - Stop).

If the door is **not in partial opening** position, it is moved in the partial opening position using the *partial opening* radio code.

If the door is in partial opening position, it is moved in the *Close* end-of-travel position using the *partial opening* radio code and in the *Open* end-of-travel position using the *impulse* radio code.

10.5 Garage door operator behaviour after two consecutive high-speed Open runs

The garage door operator motor is equipped with thermal overload protection. If two fast *Open* cycles take place within two minutes, the overload protection reduces the travel speed, i.e. *Open* and *Close* runs are at the same speed. After a waiting period of two minutes, the next *Open* run will be fast again.

10.6 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 on page 21

10.7 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 on page 22

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

10.8 Reference run

A reference run is done if the door position is not recognised after a power failure or if the power limit is activated 3 times in a row during travel in the *Close* direction.

The *Open* and *Close* end-of-travel positions are shown simultaneously in the display.

A reference run is always in the *Open* direction..

NOTE:

A reference run is not done if the power limit is activated several times in the *Open* direction.

* Accessory, not included in the standard equipment!

11 Inspection and Maintenance

The garage door operator is maintenance-free.

In the interest of your own safety, however, 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.
- ▶ Prevent the door system from 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 all safety devices without self-testing **every six months**.
- ▶ Any malfunctions and/or defects must be remedied **immediately**.

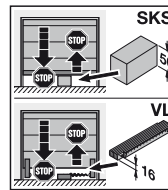
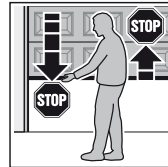
11.1 Tension of the toothed belt

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

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

11.2 Checking safety reversal / reversing

To check safety reversal / reversing:



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. In the centre of the opening, position a test object with a height of approx. 50 mm (SKS) or 16 mm (VL) 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.

12 Factory reset

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 **PRG** button.
3. Reconnect the mains plug. The following is illuminated in the display
 - **8.8**, for one second
 - **C** for one second
 - then **U**
4. Release the **PRG** button.
5. Adjust the operator and teach it in (see section 5).

If the factory reset was not successful, the operator will automatically go back to operation mode.

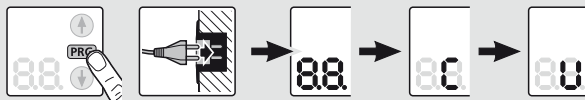
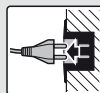
NOTE:

The taught-in radio codes (*impulse/light/partial opening*) are not changed.

To delete all radio codes:

- ▶ See the operating instructions for the external receiver.

26



13 Dismantling and Disposal

NOTE:

When disassembling, observe the applicable regulations regarding occupational safety.

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

14 Warranty Conditions

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 on operator technology, motor and motor control
- 2 years on radio equipment, accessories and special systems

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.

Services

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. Replaced parts become our property.

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.

Damage caused by the following is also 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

15 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 Directive Low-Voltage 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.

16 Technical Data

Mains voltage	230 / 240 V, 50 / 60 Hz
Stand-by	Approx. 1 W
Protection category	Only for dry rooms
Automatic safety cut-out	Is automatically taught in for both directions separately
End-of-travel position cut-out / force limit	Self-learning, wear-free, as it is designed without mechanical switches, additionally integrated run time limitation to approx. 60 s. Automatic safety cut-out, readjusting at every door run
Rated load	See data label
Pull and push force	See data label
Motor	Gearbox motor SW2L, 2-channel / 4-pin
Transformer	With thermal protection
Connection	No-screw connection technology for external equipment with 24 V DC low safety voltage, such as internal and external buttons with impulse operation
Special functions	<ul style="list-style-type: none"> • Stop / off switch can be connected • Photocell or closing edge safety device can be connected • Option relay for warning lamp, additional external illumination can be connected via HCP bus adapter
Quick release	Actuated from inside with pull cord in the event of a power failure
Universal fittings	For up-and-over doors and sectional doors
Door travel speed	<ul style="list-style-type: none"> • In <i>CLOSE</i> direction max. 14 cm / s¹⁾ • In <i>OPEN</i> direction max. 22 cm / s¹⁾
Garage door operator airborne sound emission	≤ 70 dB (A)
Operator boom	Extremely flat at 30 mm, with integral door security kit and maintenance-free toothed belt

1) Depending on operator type, door type, door size and door leaf weight

17 Display of Errors / Warnings and Operating Conditions

17.1 Display of errors and warnings

Display	Error / warning	Possible cause	Remedy
8.1 (e)	Reversal limit cannot be set	An obstacle was in the way when the SKS/VL reversal limit was set	Remove the obstacle
		The position of the reversal limit is > 200 mm before the <i>Close</i> end-of-travel position	Pressing the buttons (⬆) or (⬇) acknowledges the error. Select a position < 200 mm before the <i>Close</i> end-of-travel position
	Partial opening height cannot be set	The partial opening height is too close to the <i>Close</i> end-of-travel position (≤ 120 mm slide travel)	The partial opening height must be higher
8.2 (e)	Safety equipment (photocells)	No photocell is connected	Connect a photocell or activate menu 60
		The light beam is interrupted	Adjust the photocell
		The photocell is defective	Exchange the photocell
8.3 (e)	Power limit in <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
8.4 (e)	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
		Stop UAP pressed	
8.5 (e)	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
8.6 (e)	System error	Internal error	Restore the factory setting (see section 12), 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
8.7 (e)	Communication error	Communication with the additional print is faulty (e.g. UAP 1, ES 1, ES 2, EF 1)	Check the connecting leads and exchange, if necessary
			Check the additional print and exchange, if necessary
8.8 (e)	Travel command not possible	The operator has been blocked for the control elements and a travel command was given	Release the operator for the control elements
			Check the connection of the IT 3b
8.9 (e)	Closing edge safety device	The light beam is interrupted	Check the transmitter and receiver and exchange, if necessary, or exchange the complete closing edge safety device
		8k2 resistance contact strip is defective or not connected	Check the 8k2 resistance contact strip or connect to the operator via the 8k2-1T decoder unit
8.10	No reference point	Power failure	Move the door to the <i>Open</i> end-of-travel position
		Power limit has been triggered 3 x in a row in the <i>Close</i> direction	
8.11	The operator has not been taught in	The operator has not been taught in yet	Teach in the operator (see section 5)
8.12	Maintenance display flashes during each door run.	No error The maintenance interval set by the fitter has been exceeded.	Have the door system inspected and maintained by a qualified person in accordance with the manufacturer's specifications.

17.2 Display of Operating Conditions




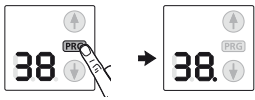

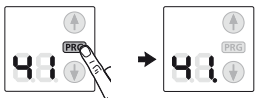


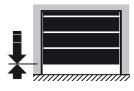
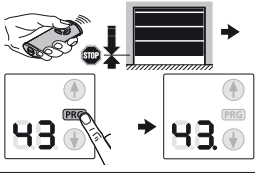

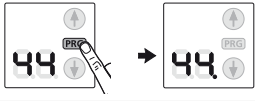


	The operator is in the <i>Open</i> end-of-travel position		The operator is in an intermediate position
	1. The operator is currently in motion 2. The pre-warning phase is active		The operator is in the <i>Close</i> end-of-travel position
	The operator is in the partial opening position		
	Communication with the control 360 is available.		Communication with control 360 is disrupted.

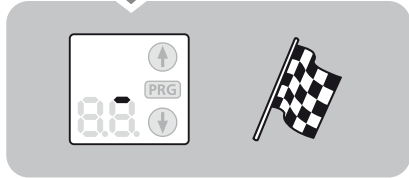
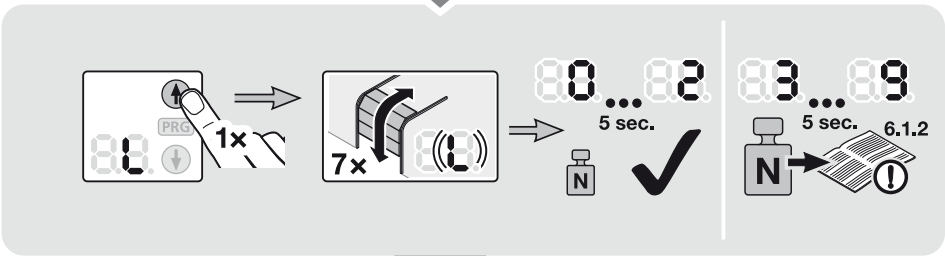
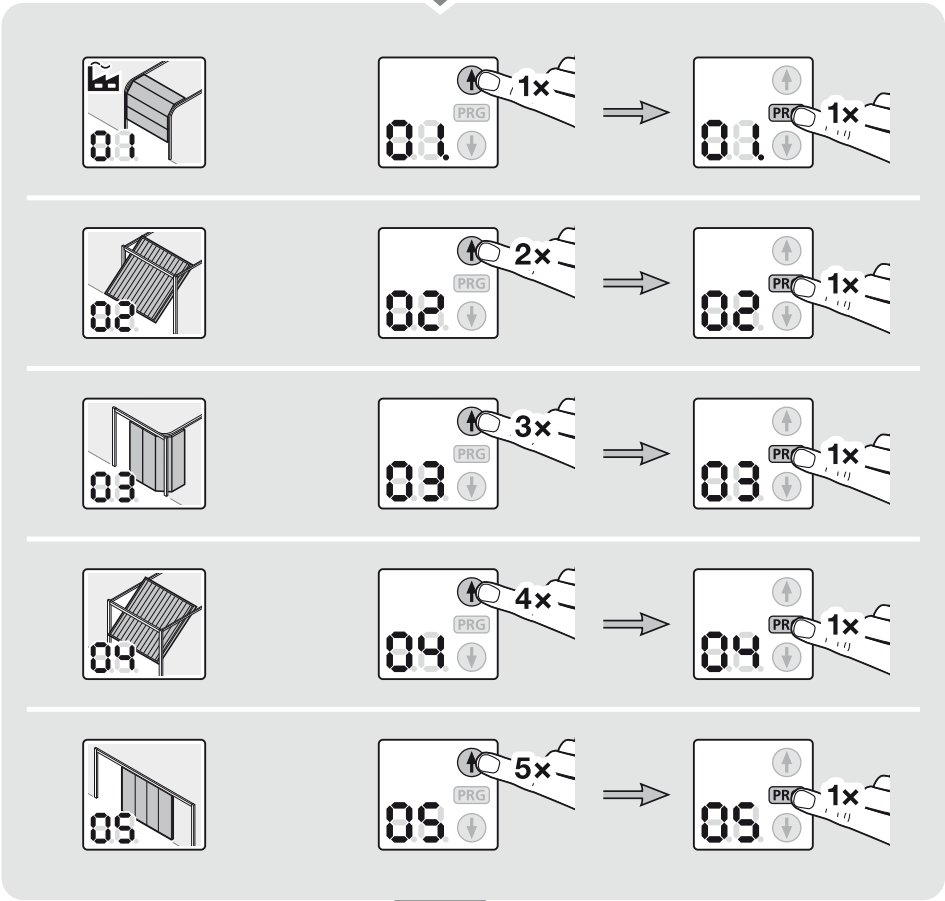
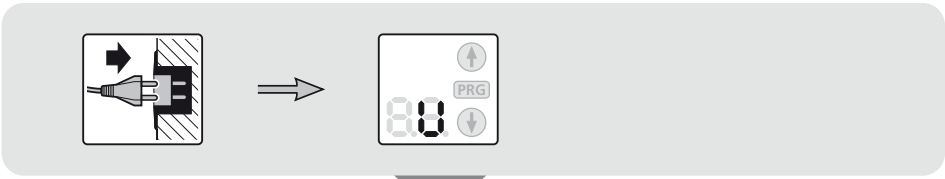
18 Menu and programming overview

The listed factory settings apply to sectional doors.

Symbol	Menu	Action	Note	
	00		Exit programming mode	
Selecting the door type				
	01		 Select door type – (all required standard settings, such as speed, soft stop, reversal behaviour of the safety devices, reversal limit, etc. are preset)	
	02			
	03			
	04			ET 500-2
	05			ST 500
Learning runs				
	10		Learning runs after service / maintenance or modifications	
Querying door type				
	14		06 = door of other make	

Symbol	Menu	Action	Note
Additional functions with relay			(HOR 1 or 3rd relay UAP 1)
	24		Open end-of-travel position signal
	25		Close end-of-travel position signal
	26		Momentary signal on receiving the Open command
	27		Start / advance warning permanent signal
	28		Start / advance warning flashing
	29		Relay picks up during travel
Pre-warning time			
	30		
	31		
Hold-open phase for automatic timer			Photocell required
	32		
	33		
	34		
	35		
	36		

Symbol	Menu	Action	Note
Behaviour when button is pressed – hold-open phase for automatic timer			
	37		Pressing a button extends the hold-open phase 
	38		Pressing a button cancels the hold-open phase
Automatic timer – Partial opening			Photocell required
	41		
	42		
Changing the ventilation position			
	43		
Block/release control buttons			
	44		
	45		





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