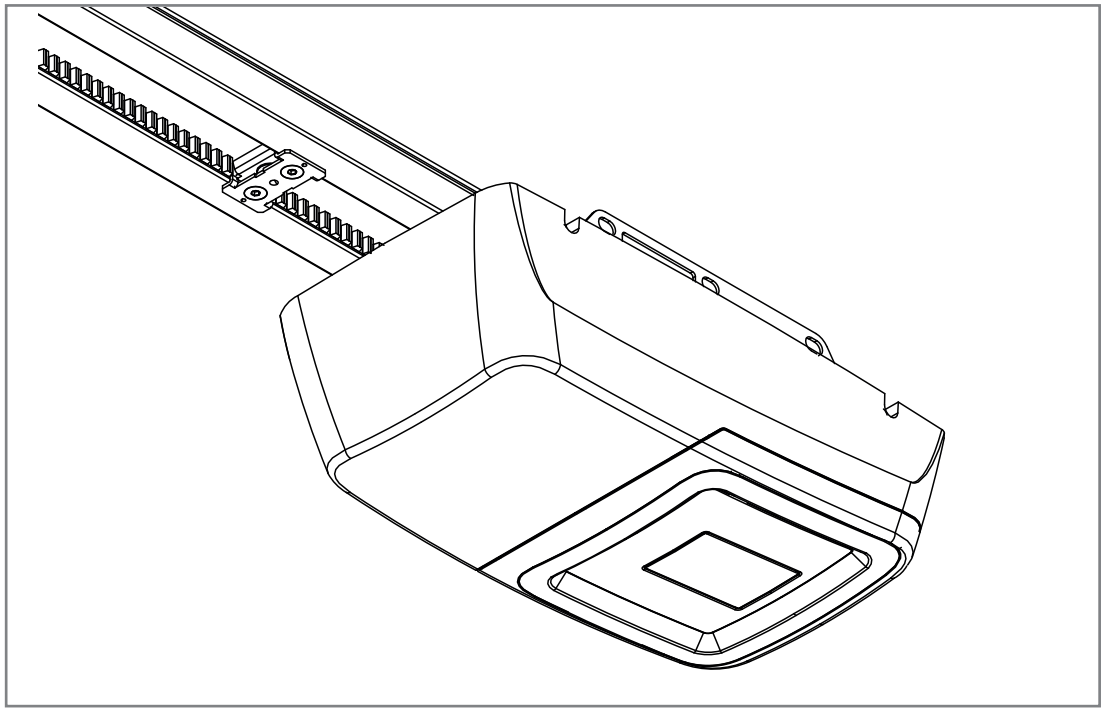
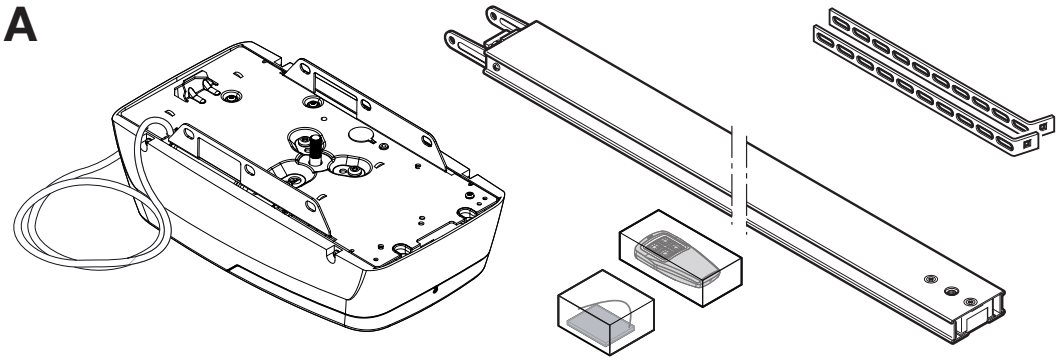


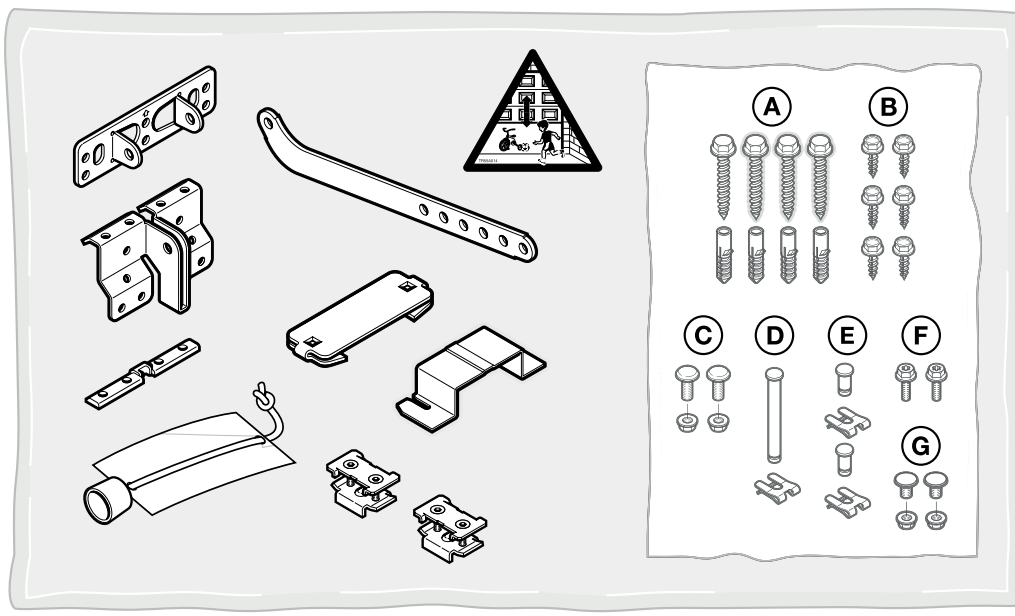
EN

Instructions for installation, operation and maintenance
Garage door operator GA205 - GA406

2909xxxx Rev. 1.0 / 10.2025 / AL

A





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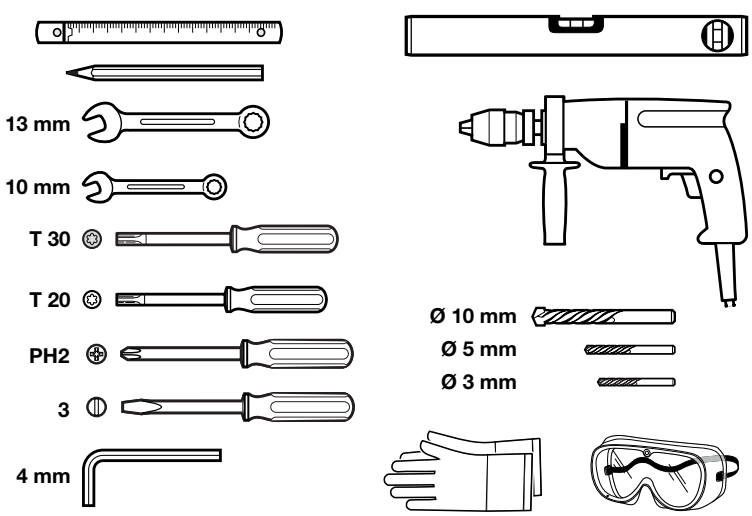


Table of contents

Dear Customer,

Thank you for choosing a quality product from our company.

1 About this manual

These instructions are original operating instructions within the meaning of of EC Directive 2006/42/EC.

These instructions contain important information about the product.

- ▶ Read the manual carefully and in its entirety.
- ▶ Observe the instructions. In particular, follow the safety instructions and warnings.
- ▶ Instructions in languages other than German are summaries of this original operating manual.
- ▶ Keep the manual in a safe place.
- ▶ Ensure that the instructions are available at all times and can be viewed by the user of the product

1.1 Applicable documents

The end user must be provided with the following documents for safe use and maintenance of the garage door operator:

- these instructions
- the garage door manual
- inspection log

1.2 Warning notices used

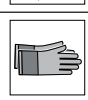
The general warning symbol indicates a hazard that may result in **injury** or **death**. In the text, the general warning symbol is used in conjunction with the following warnings. In the illustrations, an additional note refers to the explanations in the text section
⚠ DANGER
Indicates a hazard that will immediately result in death or serious injury.
⚠ WARNING
Indicates a hazard that could result in death or serious injury.
⚠ CAUTION
Indicates a hazard that could result in minor or moderate injury.
CAUTION
Indicates a hazard that may result in damage or malfunction of the product.

1.3 Symbols used

In the illustrations, installation on a sectional door is indicated by **a**, and on an up-and-over door with **b**. In the event of installation deviations on an up-and-over doors are also shown.

	**a** = Sectional door
	**b** = Up-and-over door

Symbols

	Important note on avoiding personal injury and damage to property
	Correct arrangement or activity
	Incorrect arrangement or operation
	Minimal effort
	Significant force required
	Observe smooth operation
	Check
	Power failure
	Power restored
	Wear protective gloves
	See text section
	Factory setting

7-segment display

 Display lights up	 Display flashes slowly
 Dot flashes	

1.4 Abbreviations used

Colour code for cables, individual wires and components
The abbreviations for the colours of cables and conductor identification and components follow the internationalcolour code according to IEC 60757:

BK	Black	**BU**	Blue
BN	Brown	**GY**	Grey
YE	Yellow	**WH**	White
GN	Green	**RD**	Red
OG	Orange	**RS**	Pink
VT	Violet		

1.5 Item descriptions used

IT1b-1	Internal push button
EL201 / EL301	One-way photocell (2-wire)
EWLS AP4	One-way photocell (relay contact)
BDF140-5	Bidirectional radio receiver
BDE221 / BDE321	Bidirectional radio receiver
SKS	Closing edge safety device
STV-8k2	Wicket door contact with 8k2 resistor
MFP5 (MFP1)	Multifunction board for HCP2 bus
MS5EB (ASP1)	Traffic light control board for HCP2 bus
HOR1-HCP	Optional relay for HCP2 bus
UAP1-HCP	Universal adapter board for HCP2 bus

1.6 Definitions used

Hold-open time

Waiting time during automatic closing before the door closes from the OPEN end position or partial opening.

Automatic closing (hold-open time)

After the set hold-open time and warning time have elapsed, the door closes automatically from the door end position OPEN/VENTILATION/partial opening and intermediate position.

Impulse sequence control

The programmed radio code impulse or a button triggers the pulse sequence control. Each time it is activated, the gate starts in the opposite direction to the last direction of travel or stops moving.

Learning movements

The operator learns the travel distances and forces required for the door to move the door.

Ventilation

When ventilating, the upper slat is folded down or the door is raised slightly so that air can circulate.

Normal operation

Normal operation is a gate movement with programmed travel distances and forces.

Reference movement

Door movement at reduced speed to the door end position OPEN in order to determine the home positionen.

Safety return / Reversingn

Door movement in the opposite direction when a safety device or force limitation is triggered.

Reversing limit

The reversal limit is just before the door end position CLOSE. No safety return / reversal occurs within the reversal limit.

Soft stop

The range in which the door moves slowly in order to reach the end position gently.

Soft start

The range in which the door starts slowly.

Short reset

The range in which the door briefly moves in the opposite direction when it reaches its end position in order to relieve the operator system.

Status

The current position of the door when moving to the end position.

Partial opening

IIndividually adjustable second opening height.

Timeout

A defined period of time within which an action is expected, e.g. menu selection or function activation. If this period elapses without any action, the operator automatically switches back.

Door system

Door with the operator.

Doors under thermal load

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

Travel

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

Advance warning phase

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

Factory reset

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

2 Safety instructions

⚠ WARNING

Risk of injury if the instructions for installation, operation and maintenance are not followed.

These instructions contain important information for the safe use of the product. Possible hazards are specifically indicated.

- ▶ Read these instructions carefully.
- ▶ Follow the safety instructions in these instructions.
- ▶ Keep the instructions accessible.

2.1 Intended use

- The garage door operator is intended exclusively for use of spring-balanced sectional and up-and-over doors, weight-balanced up-and-over doors, swing doors, sliding doors and side sectional doors in private/non-commercial use, as well as for underground and collective garages with low usage.
- Please observe the manufacturer's instructions regarding the door and operator combination. Possible hazards within the sense of EN 13241-1 are avoided by the design and installation in accordance with our specifications. Door systems located in public areas and only equipped with a protective device, e.g. force limitation, may only be operated under supervision.
- The garage door operator is designed for operation in dry rooms.

2.2 Improper use

- The garage door operator must not be used on doors without a safety catch.
- The garage door operator must not be installed outdoors, and parts of the door must not protrude into public footpaths or roads.
- The garage door operator must not be operated in potentially explosive environments.
- The operator is not designed for use with stiff doors, i.e. doors that cannot can no longer be opened or closed manually, or can only be done so with great difficulty.

2.3 Staff qualifications

Requirements are placed on the persons carrying out work on the product. The groups of persons are classified as follows:

2.3.1 Operators

The operator is responsible for the structural facility in which the product is used. The operator has the following tasks:

- Instruction of users.
- Compliance with statutory occupational safety obligations.
- Compliance with applicable safety, accident prevention and environmental protection regulations.
- Provision and observance of documentation.
- Ensuring that the product is always in a technically sound condition.
- Ensuring the separation of vehicle and pedestrian traffic by means of appropriate measures. Structural separation such as a footpath next to the carriageway, supplemented by warning notices and appropriate signage.

2.3.2 Qualification of the competent person

The competent person is responsible for the installation, commissioning, maintenance, dismantling and disposal of the product. The following points must be observed:

- Work may only be carried out by qualified personnel who are familiar with installation technology and the applicable safety regulations.
- According to EN 12635, a competent person is a person who has the appropriate training, qualified knowledge and practical experience to correctly and safely assemble a gate system, to test and maintain a door system correctly and safely. Observe possible hazards according to EN 12604 and EN 12453.
- Electrical installations may only be carried out by qualified electricians.

Modifications made by the customer may invalidate the CE conformity.

2.3.3 Users

Users may perform work during operation and maintenance of the product. Requirements for users:

- Trained by the operator on the product.
- Familiarity with these instructions.

2.4 Safety instructions for assembly, maintenance, repair and dismantling

⚠ DANGER

Compensating springs are under high tension.

Adjusting or loosening the compensation springs can cause serious injury!

- ▶ For your own safety, only allow a qualified person to carry out work on the door's counterbalance springs and, if necessary, maintenance and repair work!
- ▶ Never attempt to replace, adjust, repair or move the counterbalance springs for weight balancing the door or their brackets yourself.
- ▶ Also check the entire door system (hinges, gate bearings, cables, springs and fastenings) for wear and tear and any damage.
- ▶ Check for rust, corrosion and cracks.

Faults in the gate system or incorrectly aligned doors can lead to serious injury!

- ▶ Do not use the gate system if repairs or adjustments need to be carried out!

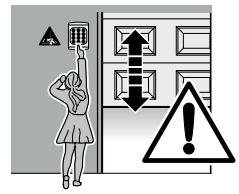
⚠ DANGER

Risk of death due to a person being trapped!

For garages without a second access, an emergency release from the outside is required to prevent a person who is trapped and can no longer free themselves. This must be ordered and installed separately.

- ▶ Check the emergency release inside and outside monthly to ensure that it is in good working order!
- ▶ Any faults or defects must be rectified immediately.

⚠ WARNING

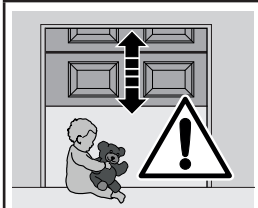


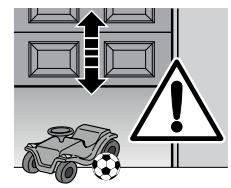
Risk of injury due to unintended door movement

Incorrect handling of the operator and control unit can trigger unwanted door and trap people or objects.

- ▶ Follow all instructions contained in this manual.
- ▶ Attach control units at a minimum height of 1.5 metres out of the reach of children.
- ▶ Install fixed control devices (such as e.g. push buttons) within sight of the door, but away from moving parts.

⚠ WARNING





Risk of injury from door movement!

When the gate is moving, injuries or damage may occur in the vicinity of the door.

- ▶ Ensure that no children play near the door system.
- ▶ Ensure that there are no persons or objects in the movement area of the door.
- ▶ If the door system only has one safety device, only operate the garage door drive if you can see the door's range of motion.
- ▶ Monitor the door's movement until it has reached its end position.
- ▶ Only drive or walk through gate openings of remote-controlled gate systems once the gate has come to a complete standstill!
- ▶ Never stand under the open door

Only competent persons in accordance with EN 12635 may carry out installation, maintenance, repair and dismantling of the door system and the operator.

- ▶ In the event of an operator failure, immediately instruct a qualified person to inspect/repair it.

2.5 Safety instructions for installation

- During installation work, the competent person must comply with the applicable regulations for occupational safety, for the operation of electrical equipment and the national guidelines. Hazards according to EN 13241-1 are avoided through design and installation in accordance with our specifications. After completion of the assembly, declare conformity with EN 13241-1 in accordance with the applicable with EN 13241-1.
- The garage ceiling must be able to securely mount the door/operator. For high/lightweight ceiling, use additional struts for fastening.
- When working on the door system, disconnect the mains plug and, if necessary, the emergency battery plug. Secure the door system against unauthorised restarting.

⚠ DANGER

Danger to life due to a person being trapped!

▶ See warning notice in *section 3.6*

⚠ WARNING

Risk of injury due to unsuitable fastening materials.

▶ See warning notice in *section 3.4*

Danger to life due to hand rope

▶ See warning notice in *section 3.3*

Risk of injury due to unwanted door movement

▶ See warning notice in *section 3.3*

Risk of injury from fast-closing door

▶ See warning notice in *section 3.5*

2.6 Safety instructions for installation

⚠ DANGER

Contact with the mains voltage poses there is a risk of fatal electric shock.

- ▶ Before carrying out any work on the system, disconnect the mains plug and, if applicable, the emergency battery plug. Secure the gate system against unauthorised re-entry.
- ▶ Only allow electrical connections to be carried out by a qualified electrician.
- ▶ If the mains connection cable is damaged, have it replaced by a qualified electrician.
- ▶ Electrical installations on site must comply with the protection requirements (230/240 V AC, 50/60 Hz).

CAUTION

External voltage at the connection terminals

External voltage (230/240 V AC) at the control terminals will result in destruction of the electronics.

Control and supply cables laid together will cause malfunctions.

- ▶ Lay the control cables (24 V DC) of the operator and supply cables (230/240 V AC) separately.

2.7 Safety instructions for commissioning and operation

⚠ DANGER

Contact with the mains voltage poses the risk of fatal electric shock..

▶ See warning notice in *section 4*

⚠ WARNING

Risk of injury due to incorrectly selected door type

▶ See warning notice in *section 4.3*

Risk of injury due to malfunctioning safety devices

▶ See warning notice in *section 4.3*

Risk of injury due to door movement

▶ See warning notice in *section 13*

Risk of injury from rapidly closing door

▶ See warning notice in *section 13.5*

VRisk of injury due to unexpected door movement

▶ See warning notice in *section 13.7*

Risk of injury due to insensitive force cut-off

▶ See warning notice in *section 13.8*

⚠ CAUTION

Risk of crushing in the guide rail

▶ See warning notice in *section 13*

Risk of injury from cable bell

▶ See warning notice in *section 13*

2.8 Protective devices

comply with EN ISO 13849-1, Cat. 2, PL "c" and have been designed and tested accordingly:

- internal force limitation
- Protective devices

⚠ WARNING

Risk of injury due to malfunctioning safety devices.

▶ See warning notice in *section 7.2*

2.9 Safety instructions for testing and maintenance

⚠ WARNING

Risk of injury due to unexpected door movement.

▶ See warning notice in *section 14*

3 Montage

3.1 Tor / Toranlage überprüfen

⚠ DANGER

Compensating springs are under high tension.

Adjusting or loosening the compensation springs can cause serious injury!

- For your own safety, only allow a qualified person to carry out work on the door's counterbalance springs and, if necessary, maintenance and repair work!
- Never attempt to replace, adjust, repair or move the counterbalance springs for weight balancing the door or their brackets yourself.
- Also check the entire door system (hinges, gate bearings, cables, springs and fastenings) for wear and tear and any damage.
- Check for rust, corrosion and cracks.

Faults in the gate system or incorrectly aligned doors can lead to serious injury!

- Do not use the gate system if repairs or adjustments need to be carried out!

The design of the garage door operator is not intended for operation of stiff doors.

The door must be in perfect mechanical condition so that it can also be easily operated by hand(EN 12604).

- **Follow the manufacturer's instructions.**
- Lift the unlocked door approximately one metre and let go. The door should remain in this position and should not move either downwards or upwards. If the door does move in either of these directions, there is a risk that the counterweights or weights are not adjusted correctly or are defective. In this case, increased wear and tear and malfunctions of the door system are to be expected.
- Check whether the door opens and closes correctly.
- Disable any mechanical locks on the door that are not required for operation with a garage door opener. This includes, in particular, the locking mechanisms of the door lock.
- Check the supplied mounting materials to ensure they are suitable for the intended installation location.

3.2 Required clearance

- The clearance between the highest point of the door track and the ceiling must be at least 35 mm; for doors under thermal load, it must be at least 75 mm.
  See Figure 1.1a on ***page 56*** and 1.2b on ***page 60***.
- If there is less free space, the drive can also be mounted behind the open gate, provided there is sufficient space. In these cases, an extended push rod must be used, which must be ordered separately.
- The garage door operator can be positioned up to 500 mm off-centre. The necessary socket for the electrical connection should be located approx. 500 mm from the operator head.
- Check these dimensions!!

3.3 Preparing the door

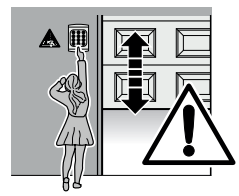
⚠ WARNING

Danger to life from hand rope

A running hand rope can cause strangulation.

- Remove the hand rope when installing the operator (see Figure 1.3a on ***page 56***).

⚠ WARNING



Risk of injury due to unintended door movement

Incorrect handling of the operator and control unit can trigger unwanted door and trap people or objects.

- Follow all instructions contained in this manual.
- Attach control units at a minimum height of 1.5 metres out of the reach of children.
- Install fixed control devices (such as e.g. push buttons) within sight of the door, but away from moving parts.

- Remove the entire mechanical door locking mechanism on the sectional door. See Figure 1.2a/1.3a on ***page 56***.
- For an off-centre reinforcement profile on the sectional door, install the operator bracket on the nearest reinforcement profile on the right or left.
  See Figure 1a on ***page 56***.
- For sectional doors with a central door reinforcement, mount the lintel joint and the operator bracket max. 500 mm off-centre. See Figure 1.5a on ***page 58***.
- Set the mechanical door locks on the up-and-over door out of operation. For door models not listed, fix the latches on site. See Figures 1.3b/1.4b/1.5b on ***page 60***.
- Contrary to the illustrations, for up-and-over doors with a wrought iron door handle, install the lintel bracket ceiling bracket and the operator bracket max. 500 mm offcentre. See Figure 1.6b/1.7b on ***page 61***.

NOTE

For N80 doors with wooden infill, use the lower holes in the lintel joint for installation. See Figure 1.7b on ***page 61***.

3.4 Mounting the guide rail

⚠ WARNING

Risk of injury due to unsuitable fastening materials.
Unsuitable fastening materials may cause the operator to become detached.

- The installer must check the suitability of the supplied dowels and screws for the installation site. As the supplied fastening materials are suitable for concrete (≥ B15) but are not approved by the building authorities, you may need to use other fastening materials (see Figures 1.6a/1.8b/2.4).

CAUTION

- Before mounting the guide rail on the lintel or under the ceiling, the guide carriage must be pushed approx. 200 mm from the end position Door Closed towards the end position Door Open while engaged. This is no longer possible while engaged once the end stop and the drive are mounted. See Figure 2.1 on ***page 63***.
- For divided rails and for operators for underground and collective garages, it is necessary that the guide rail must be fixed with a second suspension system under the garage ceiling. See Figure 2.4 and Figure 2.5 on ***page 63***.
- Verwenden Sie für die Garagentor-Antriebe GA405/ GA406 und bei Einsatzgebieten mit höherer Frequentierung ausschließlich die Zahnriemen-Schiene, keinesfalls die Zahngurt-Schiene!
- Note the installation direction of the door operator depending on the door fitting and door type. See Figure 3a - 3.1b on ***page 64***.

CAUTION

Risk of damage from dirt.

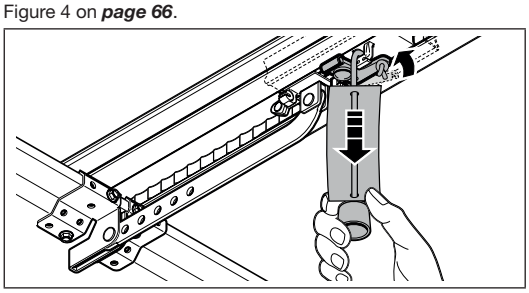
Drilling dust and chips can lead to malfunctions.

▶ Cover the operator during drilling work.

3.5 Operating modes of the guide rail

3.5.1 Manual operation

The guide carriage is uncoupled from the belt/strap lock so that the door can be moved manually. To disengage the guide carriage: Pull on the rope of the mechanical release. See Figure 4 on ***page 66***.

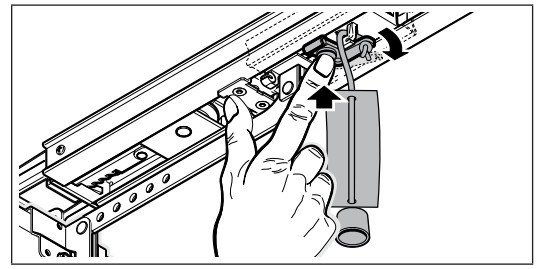


3.5.2 Automatic operation

The belt/strap lock is engaged in the guide carriage so that the gate can be moved with the operator. To prepare the guide carriage for engagement:

▶ Press the green button. See Figure 6 on ***page 66***.

▶ Move the belt/strap as far as possible in the direction of the guide carriage until the belt/strap lock engages it.



3.6 Emergency release

⚠ DANGER

Risk of death due to a person being trapped!

For garages without a second access, an emergency release from the outside is required to prevent a person who is trapped and can no longer free themselves. This must be ordered and installed separately.

▶ Check the emergency release inside and outside monthly to ensure that it is in good working order!

▶ Any faults or defects must be rectified **immediately**.

⚠ WARNING

Risk of injury if the door closes quickly

If the emergency release is activated when the gate is open, there is a risk that the door may close on you if the springs are weak, broken or defective or due to insufficient weight distribution.

▶ Only activate the emergency release when the door is closed!

The rope bell for mechanical release must not be installed higher than than 1.8 m above the garage floor. Depending on the height of the garage door, it may be necessary to extend the rope on site. See Figure 7 on ***page 67***.

▶ When extending the rope ensure that the rope may not get caught to a roof rack system or other protrusions on the vehicle or door.

3.6.1 Mechanical unlocking by means of emergency release lock

For garages without a second access point, an emergency release from the outside is required in addition to the internal release, to prevent a person who is trapped from being unable to free themselves. This must be ordered and installed separately.

▶ Operate the emergency unlocking lock when the door is closed. The door is now unlocked and should be easy to open and close by hand.

▶ Check the emergency release monthly to ensure it is in good working order functionality.

3.7 Set door end positions

3.7.1 Set the end position for the door open

- Place the end stop for the door open end position between the guide carriage and the operator into the guide rail and slide the door manually into the door open end position. The end stop will moved into the correct position. See Figure 5.1 on ***page 66***.
- Fix the end stop for the door open end position..

3.7.2 Fit end stop for push-on safety device

- Optionally, an end stop can be fitted in the door closed end position to ensure that the anti-lift device functions correctly.
- Place the end stop for the door-closed end position between the guide carriage and the lintel-ceiling connection into the guide rail and slide the door manually into the door closed end position. Move the door in CLOSE position. The end stop will moved into the correct position. See Figure 5.2 on ***page 66***.
- Fix the end stop for the door closed end position.
- Press the green button. See Figure 6 onf ***page 66***.
- Move the belt towards the guide carriage until the belt lock engages with it.

NOTE

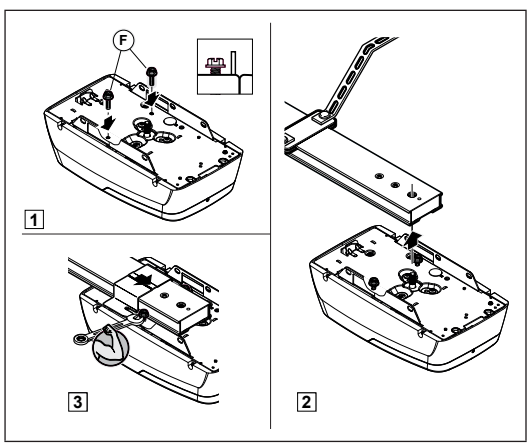
If the door is difficult to move by hand into its end-position the door mechanism is too stiff to operate with the garage door operator and must be checked.

3.8 Tension of the synthetic belt/toothed belt

The toothed belt/synthetic belt of the guide rail has a factoryset optimum pre-tension. During the start-up and braking phases, large doors may experience a brief temporary slippage of the belt from the rail profile. However, this effect does not cause any technical issues and does not adversely affect the function and service life of the operator.

3.9 Mounting the operator head

- Fit the operator head. The cover of the connection compartment must face into the garage.



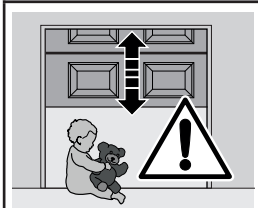
4 Commissioning/connecting additional components

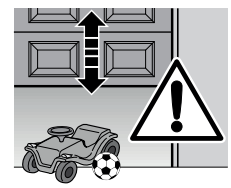
⚠ DANGER

Contact with the mains voltage poses there is a risk of fatal electric shock.

- Before carrying out any work on the system, disconnect the mains plug and, if applicable, the emergency battery plug. Secure the gate system against unauthorised re-entry.
- Only allow electrical connections to be carried out by a qualified electrician.
- If the mains connection cable is damaged, have it replaced by a qualified electrician.
- Electrical installations on site must comply with the protection requirements (230/240 V AC, 50/60 Hz).

⚠ WARNING



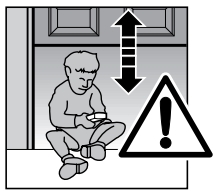


Risk of injury from door movement!

When the gate is moving, injuries or damage may occur in the vicinity of the door.

- Ensure that no children play near the door system.
- Ensure that there are no persons or objects in the movement area of the door.
- If the door system only has one safety device, only operate the garage door drive if you can see the door's range of motion.
- Monitor the door's movement until it has reached its end position.
- Only drive or walk through gate openings of remote-controlled gate systems once the gate has come to a complete standstill!
- Never stand under the open door

⚠ WARNING



Risk of injury due to unintended door movement!!
Pressing a button on the hand-held transmitter can lead to unwanted gate movement and injure people.

- ▶ Ensure that hand-held transmitters are kept out of the reach of children and are only used by persons familiar with how the remote-controlled door operates!
- ▶ You must always operate the hand-held transmitter with visual contact to the gate if it is only equipped with one safety device!
- ▶ Only drive or walk through gate openings of remote-controlled gate systems once the gate has come to a complete stop!
- ▶ Never stand under the open gate!
- ▶ Please note that a button on the hand-held transmitter may be pressed accidentally (e.g. in your trouser pocket or handbag) and this may cause the door to move unintentionally.

⚠ WARNING

Risk of injury if the door closes quickly
If the emergency release is activated when the gate is open, there is a risk that the door may close on you if the springs are weak, broken or defective or due to insufficient weight distribution.

- ▶ Only activate the emergency release when the door is closed!

⚠ WARNING

Risk of injury due to incorrectly selected door type
Malfunction of the gate system can lead to injuries.

- ▶ Only select the menu for the existing door system!

⚠ CAUTION

Risk of crushing in the guide rail
Reaching into the guide rail while the gate is moving can result in crushing injuries.

- ▶ Do not reach into the guide rail while the door is moving

⚠ CAUTION

Risk of injury from the rope bell
If you hang on the rope bell, you could fall and injure yourself. The operator may break off and injure persons below, damage objects or be destroyed itself.

- ▶ Do not hang from the rope bell with your body weight.

CAUTION

Damage caused by the mechanical unlocking
If the mechanical release rope becomes caught on a roof rack system or other protrusions of the vehicle or the gate, this can cause damage.

- ▶ Ensure that the rope cannot get caught.

CAUTION

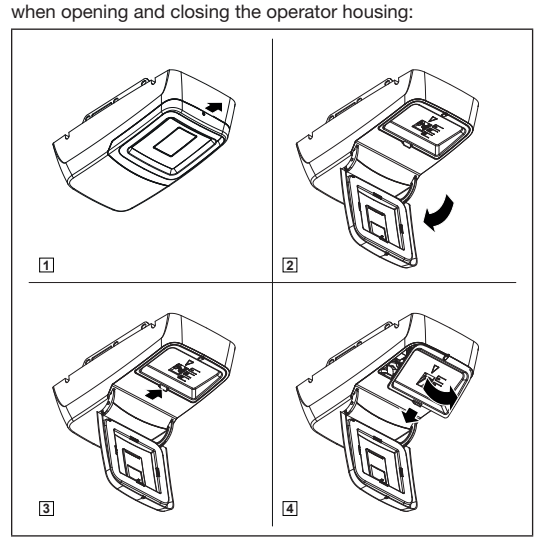
External voltage at the connection terminals
External voltage (230/240 V AC) at the control terminals will result in destruction of the electronics.

Control and supply cables laid together will cause malfunctions.

- ▶ Lay the control cables (24 V DC) of the operator and supply cables (230/240 V AC) separately.

4.1 Open the operator housing

To commission and connect the accessories, the operator housing must be opened to access the buttons and connection terminals of the operator control. Proceed as follows when opening and closing the operator housing:



1. Loosen the fixing screw slightly.
2. Open the flap of the operator housing.
3. Release the locking lever.
4. Open and remove the control cover.

4.1.1 How to use the buttons

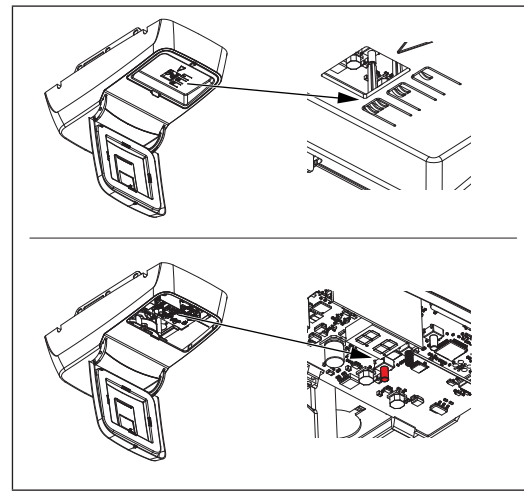
There are two ways to operate the buttons:

1. Press the rocker switches on the control cover. These are labelled as follows:

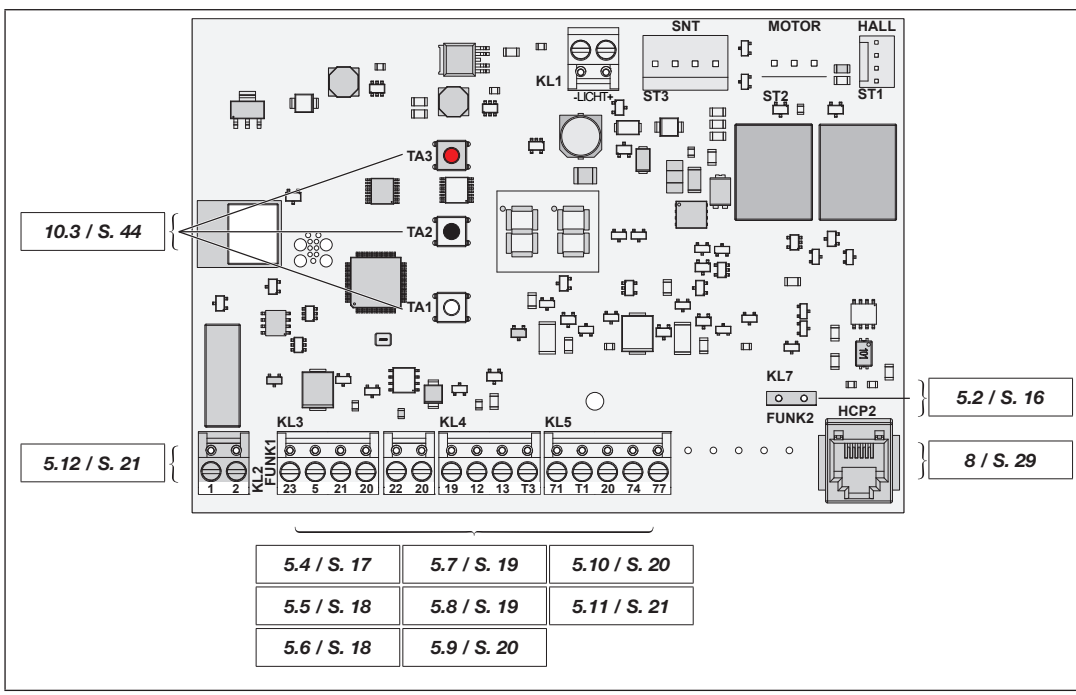
Marking	corresponds to button on the control board
–	**TA1** (white button)
=	**TA2** (black button)
≡	**TA3** (red button)

2. Press the buttons directly on the control panel. These are labelled as follows:

Marking	corresponds to button on the control board
white	**TA1** (white button)
black	**TA2** (black button)
red	**TA3** (red button)



4.2 Overview of MS660 control board



4.3 Teaching in the operator

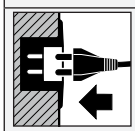
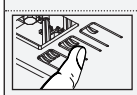
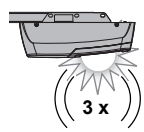
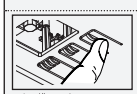
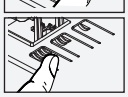
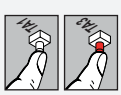
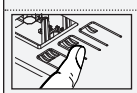
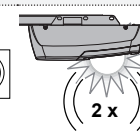
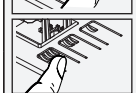
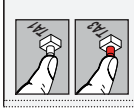
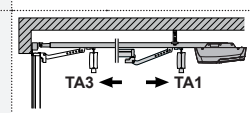
⚠ WARNING

Risk of injury due to incorrectly selected door type
Malfunction of the gate system can lead to injuries.
▶ Only select the menu for the existing door system!

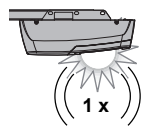
⚠ WARNING

Risk of injury due to malfunctioning of safety devices
As the obstacle detection and safety devices are not functioning during the learning process, it is essential absolutely necessary for the installer to remain with the device and prevent people from approaching the door.

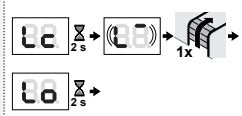
During the learning process, door-specific data is recorded, including the travel distance and the forces required during the opening and closing movements and stored in a manner that is protected against power failure. This data is only valid for this door.

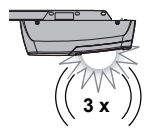
Action	Display / Info
 Plug in the mains plug.	After the boot process, U flashes in the display and the operator lighting shows the pulse code 3x flashes 
  Press and hold button = or **TA2** (black) for approx. **6 seconds** until t i flashes on the display and the operator lighting continues the pulse code 3x flashes shows	 
   With the button −/≡ or **TA1** (white) / **TA3** (red) set the existing door type.	
	 Sectional door
	 Up-and-over door
	 Non-protruding up-and-over door
	  Sliding door / Side sliding sectional door (opens towards the operator)
	  Sliding door / Side sliding sectional door (closes towards the operator)
	  Hinged garage door, special rail (rotated carriage) for hinged garage door
	 Hinged garage door, standard rail
	 **PIN entry for customer variant**
	PIN entry for customer variant After pressing the button = or **TA2** (black) , enter the customer-specific code. To confirm the code, press the button **TA2** (black) for approx. **2 seconds** to load the desired door type. See separate instructions.
  To confirm the selected door type press the button = bzw. **TA2** (black) once briefly. L_ flashes, the operator lighting shows the pulse code 2x flashes.	 
   Press and hold button −/≡ or **TA1** (white) / **TA3** (red) to move the gate to the desired "**DOOR CLOSED**" position in dead man mode.	 Door closed Door open

To save the set "**DOOR CLOSED**" position, briefly press button = or **TA2** (black) once. Lc illuminates for approx. **2 seconds**. L¯ flashes, the operator lighting shows the pulse code 1x flash..

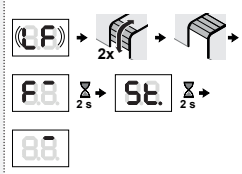


The distance learning process starts: The door opens to the end stop and moves back approx. 10 mm in the closing direction. Lo lights up for approx. **2 seconds**.





The force learning process starts: LF flashes, the operator lighting shows the pulse code 3x flashes. The door closes and opens automatically twice. After **4** learning runs, F¯ and then St. light up for approx. **2 seconds** each in the end position door open. Then ¯ lights up.



Programming is complete.

NOTE

To cancel learning mode, press button −/≡ or **TA1** (white) / **TA3** (red) or an external control element. After cancellation, the error code (which caused the cancellation) or error code 01 (cancellation of learning or reference run) flashes for 2 seconds, then the set variant is displayed for 5 seconds, after which after which U (drive not learned) flashes again.

▶ The process must be repeated.

Learning mode is only possible if:

- the door stands
- the wicket door is closed

Learning mode is cancelled if:

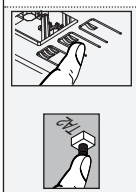
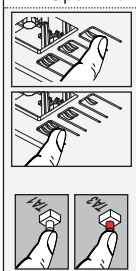
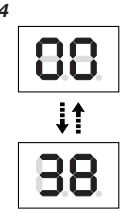
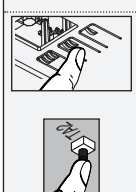
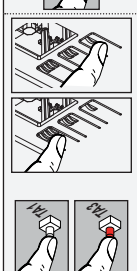
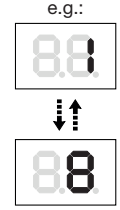
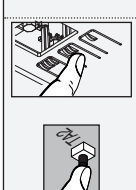
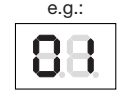
- no pulses are detected by the Hall sensor
- the learned path is too small
- the wicket door input is activated

4.4 Operate the control menu

NOTE

Only menus 00 to 38 are visible in the standard configuration.

Menus 39 and above may only be opened and changed by a qualified person (e.g., service technician).

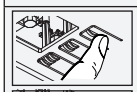
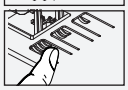
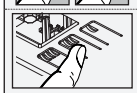
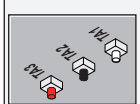
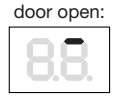
Action	Display / Info
▶ Open menu selection	
 Press and hold button = or **TA2** (black) for approx. **3 seconds** until 01 appears in the display.	
▶ Open the menu item / change settings	
 Press button ≡ or **TA3** (red) to switch to the desired menu item.	Menu sequence, see ***10 Menu overview on page 34*** 
 Press button = or **TA2** (black). ▶ The menu item opens and the previously saved parameter is displayed.	The set value is displayed. e.g.: 
 Press button −/≡ or **TA1** (white) / **TA3** (red), to change the parameter.	Menu settings, see ***10 Menu overview on page 34*** e.g.: 
 Press button = or **TA2** (black) for **2 seconds** to mark the menu item for modification and exit. If button = or **TA2** (black) is pressed only briefly, no modification is marked.	You are now back in the menu selection window. e.g.: 

NOTE

By holding down the button − or **TA1** (white), you can scroll up, and by holding down the button ≡ or **TA3** (red), you can scroll down.

Repeat this section if further menu changes are required.

▶ Save menu changes / Exit menu

Action	Display / Info
 Select menu item 00 using the −/ ≡ or **TA1** (white) / **TA3** (red) button.	
 	
 Press and hold button = or **TA2** (black) for approx. **5 seconds**. 	Successful saving is indicated by  on the display.
 Release button = or **TA2** (black). 	The door status indicator is displayed, see ***10.4 Status display on page 44*** e.g. End position door open: 

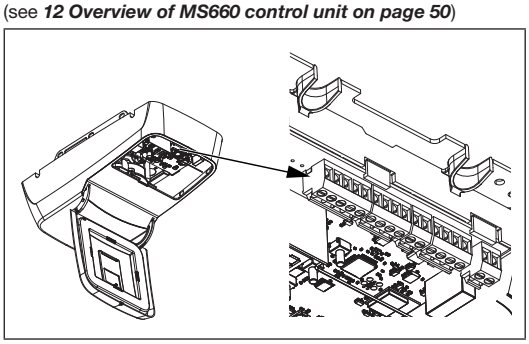
NOTE
If the = or **TA2** (black) button is pressed briefly or no button is pressed within **60 seconds**, the programming mode is exited without saving the change.

5 Installing accessories

Observe the warning and safety instructions ***4 Commissioning/connecting additional components on page 11***.

5.1 Electrical connection / connection terminals

(see ***12 Overview of MS660 control unit on page 50***)

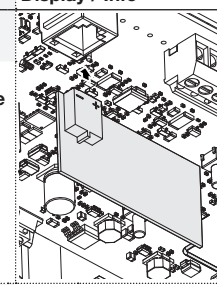


▶ The connection terminals can be accessed after opening the operator housing (see ***4.1 Open the operator housing on page 12***) zu erreichen. The terminals to which additional components such as potential-free push buttons, and safety devices such as photocells or wicket door switches, carry only a non-hazardous low voltage of max. 24 V DC.

▶ All connection terminals can be used multiple times, but max. 1 x 1,5 mm².
▶ Alle Anschlussklemmen sind abziehbar.
▶ Disconnect the mains plug before installation!
▶ All accessories may only load the operator with **max. 300 mA**.

5.2 Radio receiver BDF140-5

5.2.1 Programming the handheld transmitter

Action	Display / Info
Plug the **radio receiver** into the 2-pin socket (**FUNK 2**). ▶ **Caution: Plug in the radio receiver the right way round!** ▶ **Disconnect the mains plug before installation!**	
 To select the desired radio channel r 1, r2, r3, or r4, press the button ≡ or **TA3** (red)...	
 ... press **once** briefly for r 1	r 1 is displayed.
... press **twice** briefly for r2	r2 is displayed.
... press **3 times** briefly for r3	r3 is displayed.
... press **4 times** briefly for r4	r4 is displayed.
... press **5 times** briefly to exit the menu **without making any changes**.	
 **Press and hold the desired button on the handheld transmitter** for approx. **3 seconds**.	
 Release **the handheld transmitter button**.	After successful teaching, the door status indicator is displayed, see ***10.4 Status display on page 44***
▶ Repeat the procedure to program additional handheld transmitters.	

NOTE

A maximum of 120 codes can be programmed into the radio module memory. If the memory is full, dF. is displayed when attempting to program additional codes

5.2.2 Functions of the radio channels

Channel 1 r 1	Menu 17 = 0 Pulse sequence	Menu 17 = 1 bis 4 defined open command
	request ***outside*** when the traffic light control MS5EB is connected	
Channel 2 r2	Menu 17 = 0 Ventilation	Menu 17 = 1 bis 4 defined close command
	request ***inside*** when the traffic light control MS5EB is connected	
Channel 3 r3	Light function • Control of optional relay when light function is set ▶ Menu 14 = 1 or 2) • Control of operartor lighting and option relay when light function is set ▶ Menu 14 = 3 or 4). ▶ Set the response time of the operator lighting in menu 11. ▶ Set the response time of the option relay (internal option relay or external option relay, with light function set) in menu 13.	
Channel 4 r4	Defined close command, close-stop-close ... or cancellation of the hold-open time when automatic closing is selected.	

- The functions of channels 1 and 2 can be configured in menu 16 and 17.

The following settings are possible in menu 16 (for channel 2 r2):			
1		Ventilation	Will opend onto the ventilation position programmed in menu 27 or closed again from this position.
2		Partial opening	Will opend onto the partial opening position programmed in menu 28 is opened or closed again from this position.

The following settings are possible in menu 17 (for channel 1 r 1 and channel 2 r2):		
0		Input 21 / Channel 1 (r 1) = Open-Stop-Close-Stop (pulse sequence) Input 23 / Channel 2 (r2) = Partial opening (pulse sequence)
1		Input 21 / Channel 1 (r 1) = Open-Stop-Open Input 23 / Channel 2 (r2) = Close-Stop-Close
2		Input 21 / Channel 1 (r 1) = Open-Stop-Open Input 23 / Channel 2 (r2) = Open
3		Input 21 / Channel 1 (r 1) = Open Input 23 / Channel 2 (r2) = Close-Stop-Close
4		Input 21 / Channel 1 (r 1) = Open Input 23 / Channel 2 (r2) = Open
5		Input 21 = Open-Stop-Open Input 23 = Close-Stop-Close
6		Input 21 = Open-Stop-Open Input 23 = Open
7		Input 21 = Open Input 23 = Open-Stop-Close
8		Input 21 = Open Input 23 = Open

For settings 5 to 8, channel 1 (r 1) has the Open-Stop-Close-Stop function (pulse sequence) and channel 2 (r2) has the Ventilation function (menu 16 = 1) or Partial opening function (menu 16 = 2).

NOTE

When **the MS5EB-G traffic light control** is connected, the ventilation or partial opening function is deactivated.
Channel 1 is evaluated as an **inwards** request and **channel 2** as an **outwards** request. The settings in menu 17 are ignored.

5.2.3 Deleting the memory of the radio module (FUNK 2)

- ▶ Press and hold the button ≡ or **TA3** (red) for approx. **10 seconds** → *The countdown starts after approx.* **2 seconds** *and counts down from 8 (d8, d7...) downwards.*
- ▶ Once the time has elapsed, all channels are deleted, → *dE appears on the display.*
- ▶ Release the button ≡ or **TA3** (red) , → *T*he door status indicator is displayed, see ***10.4 Status display on page 44.***
- ▶ **If the button is released before the countdown expires, no deletion will take place!**
- ▶ **All programmed handheld transmitters are now deleted; it is not possible to delete individual handheld transmitters!**

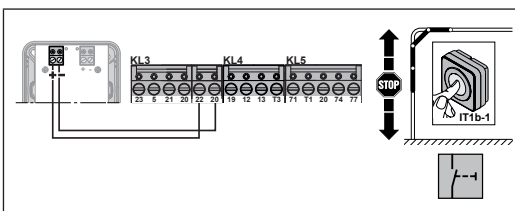
5.3 External radio receiver BDE221/BDE321

Plug the radio receiver connector onto the 4-pin KL3 pin socket or connect it to the 4-pin terminal on the control unit as follows:

- ▶ green wire (GN) → terminal 20 (0 V).
- ▶ white wire (WH) → terminal 21 (channel 1).
- ▶ yellow wire (YE) → terminal 23 (channel 2).
- ▶ brown wire (BN) → terminal 5 (+24 V DC).
- Refer to the receiver instructions for information on programming the handheld transmitter buttons to the receiver.
- The functions of input 21 (channel 1) and input 23 (channel 2) can be configured in menus 15 and 17.

The following settings are possible in menu 15 for Input 23:			
1		Ventilation	Will opend onto the ventilation position programmed in menu 27 or closed again from this position.
2		Partial opening	Will opend onto the partial opening position programmed in menu 28 is opened or closed again from this position.
3		Light function	see channel 3 (r3) under ***5.2.2 Functions of the radio channels***

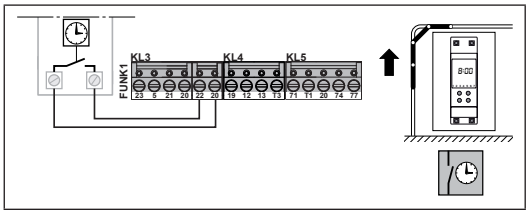
5.4 External "pulse" buttons for triggering/stopping door movements



Button (potential-free closing contact, e.g. interior or key switch) as follows:

- ▶ First contact → terminal 22 (pulse input).
- ▶ Second contact → terminal 20 (0 V)
  Connect several buttons in parallel!

5.5 Timer contact for Permanently Open command



Connect a timer output with potential-free make contacts as follows:

- ▶ First contact → terminal 22 (timer input).
- ▶ Second contact → terminal 20 (0 V).

NOTE

Connect the timer contact in parallel to the buttons that are already connected.

The function ***Permanent Open*** is only available when automatic closing is selected.

When traffic light control **MS5EB-G** is connected, **connect** the timer to terminals 20/S21 (Permanent Open with ***preferred direction inwards***) or 20/S24 (Permanent Open with ***preferred direction outwards***) on the traffic light control.

5.6 Wicket door contact / emergency stop circuit (SE1)

Two different types of contact (potential-free normally closed contact or contact with 8k2 resistance) can be connected to the wicket door or emergency stop input

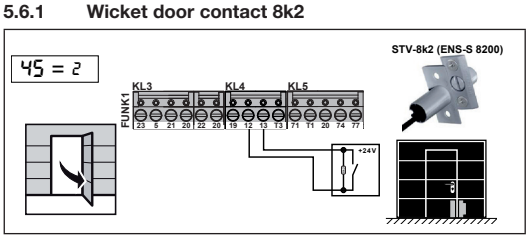
- The evaluation of the wicket door contact or emergency stop circuit can be set in menu 45.

The following settings are possible in menu 45:		
0		deactivated
1		8k2
2		Normally open contact

- Testing of the wicket door contact or emergency stop circuit can be set in menu 46.

The following settings are possible in menu 46:		
0		Testing deactivated
1		Testing activated, voltage is switched off for testing
2		Testing activated, voltage is switched on for testing

5.6.1 Wicket door contact 8k2



Connect a wicket door contact with an 8k2 resistor (STV-8k2/ ENS-S 8200) to stop the operator as follows:

- ▶ Connect the wicket door contact to terminal 12 (stop input) and terminal 13 (+24 V).
- ▶ Menu 45 must be set to 2 and Menu 46 to 0.

NOTE

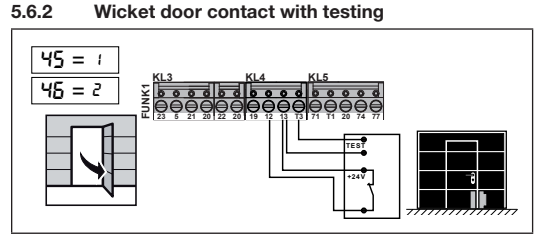
The wicket door contact (**8.2 kΩ, ± 10%**) must comply with **Cat.2 PL c** according to **EN 13849-1**.

Breaking the contact stops any door movements which are in progress immediately and permanently prevents further movements.

The operator lighting signals the pulse code by flashing once and the display shows error code 05.

- ▶ If no wicket door contact or emergency stop circuit is connected, menu 45 must be set to 0 and Menü 46 to 0.

5.6.2 Wicket door contact with testing



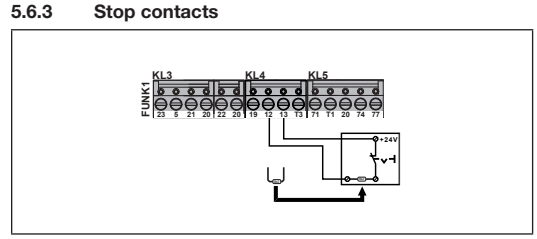
Connect a wicket door contact with testing (test signal must switch on the test voltage for testing) to stop the operator as follows:

- ▶ Connect the wicket door contact to terminal 12 (stop input) and terminal 13 (+24 V).
- ▶ Connect the test signal to terminal T3 (0 V with testing) and terminal 13 (+24 V).
- ▶ Menu 45 must be set to 1.
- ▶ Menu 46 must be set to 2.

NOTE

- Breaking the contact stops any door movements which are in progress immediately and permanently prevents further movements. The operator lighting signals the pulse code by flashing once and the display shows error code 05.
- The wicket door contact is tested before each door movement. If the test is unsuccessful, door movement is prevented. In the event of a test error, the operator light flashes 5 times and the display shows error code 48.
- ▶ If no wicket door contact or emergency stop circuit is connected, menu 45 must be set to 0 and Menü 46 to 0.

5.6.3 Stop contacts



Stop contact (this must be a forced-opening contact) for stopping the operator (stop or emergency stop circuit) as follows:

- ▶ Connect an 8k2 resistor in the switch in series with the potentialal-free normally closed contact of the stop switch.
- ▶ Connect the stop contact to terminal 12 (stop input) and terminal 13 (+24 V).
- ▶ Menu 45 must be set to 2.

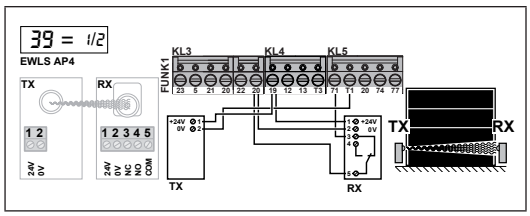
NOTE

Opening the contact will immediately stop any door movements and prevent them permanently.

The operator lighting signals the pulse code by flashing once and the display shows error code 05.

- If no 8k2 resistor is connected in series to the potential-free normally closed contact of the stop switch, menu 45 must be set to 1 and menu 46 to 0.
- If no wicket door contact or emergency stop circuit is connected, menu 45 must be set to 0 and Menü 46 to 0.

5.7 Contact photocell in closing direction (SE2)



- **Connect potential-free normally closed contact of the receiver** to terminal 71 (safety input) and terminal 20 (0 V).
- **Connect power supply of the transmitter** to terminal 19 (approx. +24 V, switched off in standby mode) and terminal T1 (0 V with testing).
- **Connect the power supply of the receiver** to terminal 19 (approx. +24 V, switched off in standby mode) and terminal 20 (0 V).
- Menu 39 must be set to 1 or 2.
- The reversing behaviour and the light barrier evaluation can be set in menu 39.

The following settings are possible in menu 39:			
0		Contact photocell	deactivated
1		Contact photocell	short reversal (approx. 300 mm) in the open direction
2		Contact photocell	long reversal to end position Open

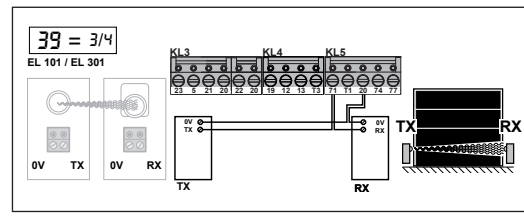
- The photocell test can be set in menu 40.

The following settings are possible in menu 40:		
0		Testing deactivated
1		Testing activated, voltage is switched off for testing
2		Testing activated, voltage is switched on for testing

NOTE

- If the photocell is interrupted during the closing movement, the door reverses, depending on the setting in menu 39, in the upward direction.
- If automatic closing is set, it is recommended to set parameter 2 in menu 39 so that the door reverses until it reaches the end position "Door open".
- The photocell is only active in the door-closed direction.
- If the light barrier is active during the closing movement, the operator lighting signals the pulse code by flashing once and the display shows error code 08..
- When automatic closing is set, the duration of the hold-open time after leaving the photocell depends on the setting in menus 53 and 54.
- The photocell is tested in the end position "door open" before each start in the closing direction. If the photocell test is not successful, access is prevented. In the event of a test error, the operator lighting signals the pulse code by flashing 5 times and the display shows error code 38.
- Error message 38 can be acknowledged with a new command and another attempt to access the door can be made after the hold-open time has elapsed or after a new command in the closing direction
- If no photocell is connected, menu 39 must be set to 0.

5.8 2-wire-photocell in closing direction (SE2)



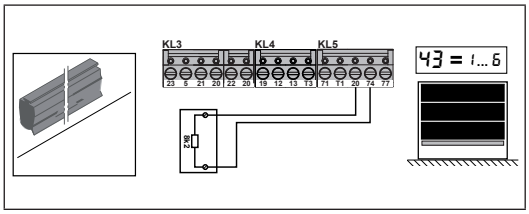
- Connect the photocell connection RX or TX to terminal 71 (safety input).
- Connect the 0V photocell connection to terminal 20 (0 V) .
- Menu 39 must be set to 3 or 4.
- The reversing behaviour and the light barrier evaluation can be set in menu 39.

The following settings are possible in menu 39:			
3		2-wire-photocell	short reversal (approx. 300 mm) in the open direction
4		2-wire-photocell	long reversal to end position Open

NOTE

- If the photocell is interrupted during the closing movement, the door reverses, depending on the setting in menu 39, in the upward direction.
- If automatic closing is set, it is recommended to set parameter 2 in menu 39 so that the door reverses until it reaches the end position "Door open".
- The photocell is only active in the door-closed direction.
- If the light barrier is active during the closing movement, the operator lighting signals the pulse code by flashing once and the display shows error code 08..
- When automatic closing is set, the duration of the hold-open time after leaving the photocell depends on the setting in menus 53 and 54.
- If no photocell is connected, menu 39 must be set to 0.

5.9 Closing edge safety device 8k2 (SE3)



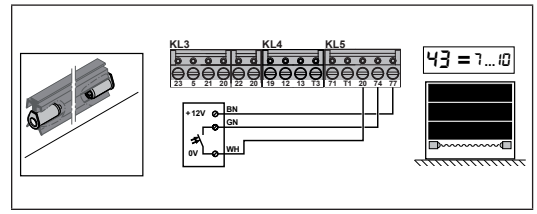
- ▶ Connect the closing edge safety device to terminal 74 (safety input) and terminal 20 (0 V).
- ▶ Menu 43 must be set to 1 to 6 depending on the desired function.
- • The reversing behaviour and SKS evaluation can be set in menu 43.

The following settings are possible in menu 43:		
0		deactivated
1		**8k2**, direction of action door closed, short reversal (approx. 300 mm) in the open direction.
2		**8k2**, direction of action door closed, long reversal to end position open.
3		**8k2**, direction of action door open, short reversal (approx. 300 mm) in the close direction.
4		**8k2**, direction of action door open, long reversal to end position closed.
5		**8k2**, direction of action door closed and door open, short reversal (approx. 300 mm) in both directions.
6		**8k2**, direction of action door closed and door open, long reversal when approaching the end position open and short reversal (approx. 300 mm) when approaching in the closed direction.

NOTE

- • The input can be activated in door closed, door open or both directions.
- • The reversing behaviour corresponds to the setting in menu 43.
- ▶ When automatic closing is set, it is recommended to set a parameter for long reversing on approach in menu 43 so that the door reverses to the end position "Door open".
- • If the **8k2** safety edge is active during closing, the operator lighting signals the pulse code 1x flash and the display shows error code 09..
- • If the **8k2** safety edge is active during opening, the operator lighting signals the pulse code 1x flash and the display shows error code 32..
- • If the automatic closing is set and the **8k2** safety edge is activated **3 times in succession** during closing, the door opens and the automatic closing is interrupted. The operator lighting signals the pulse code by flashing twice and the display shows error code 27. The hold-open time can be restarted by means of a command.
- • If the automatic closing function is set and the **8k2** safety edge is activated **three times in succession** during the opening phase, the door reverses and the automatic closing function is interrupted. The operator lighting signals the pulse code by flashing twice and the display shows error code 22.. The error must first be acknowledged by means of a command and then a reference run must be started in the open position by means of another command. The hold-open time then restarts.
- ▶ If no closing edge safety device is connected, menu 43 must be set to 0.

5.10 Optical closing edge safety device OSE (SE3)



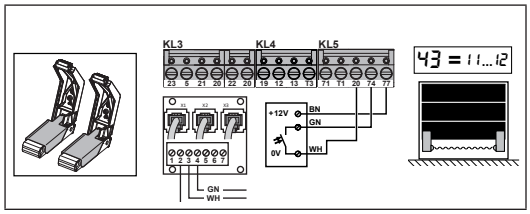
- ▶ Connect the closing edge safety device to terminal 74 (GN / safety input), terminal 20 (WH / 0 V) und terminal 77 (BN / + 12 V).
- ▶ Menu 43 must be set to 7 to 10 depending on the desired function.
- • The reversing behaviour and SKS evaluation can be set in menu 43.

The following settings are possible in menu 43:		
7		**OSE**, direction of action door closed, short reversal (approx. 300 mm) in the open direction.
8		**OSE**, direction of action door closed, long reversal to end position open.
9		**OSE**, direction of action door open, short reversal (approx. 300 mm) in the close direction.
10		**OSE**, direction of action door open, long reversal to end position closed.

NOTE

- • The input can be activated in the door-closed or door-open direction.
- • The reversing behaviour corresponds to the setting in menu 43.
- ▶ When automatic closing is set, it is recommended to set a parameter for long reversing on approach in menu 43 so that the door reverses to the end position "Door open".
- • If the **OSE** safety edge is active during closing, the operator lighting signals the pulse code 1x flash and the display shows error code 24.
- • If the **OSE** safety edge is active during opening, the operator lighting signals the pulse code 1x flash and the display shows error code 34.
- • Ist die **OSE**-Leiste bei Auffahrt aus der Endlage Tor-Zu aktiv, wird diese erst nach ca. 50 mm abgefragt und bewirkt einen Sofort-Stopp. Die Antriebsbeleuchtung signalisiert den Pulscode 1x blinken und das Display zeigt den Fehlercode 34.
- • If the automatic closing is set and the **OSE** safety edge is activated **3 times in succession** during closing, the door opens and the automatic closing is interrupted. The operator lighting signals the pulse code by flashing twice and the display shows error code 27. The hold-open time can be restarted by means of a command.
- • If the automatic closing function is set and the **OSE** safety edge is activated **three times in succession** during the opening phase, the door reverses and the automatic closing function is interrupted. The operator lighting signals the pulse code by flashing twice and the display shows error code 22.. The error must first be acknowledged by means of a command and then a reference run must be started in the open position by means of another command. The hold-open time then restarts.
- ▶ If no closing edge safety device is connected, menu 43 must be set to 0.

5.11 Leading light barrier VL1 / VL2 (SE3)



- ▶ Connect the leading light barrier **VL1** or **VL2** to the **AE-SKS** connection unit (must be ordered separately).
- ▶ Connect the connection cable to the **AE-SKS** connection unit to terminal 74 (GN / safety input), terminal 20 (WH / 0 V) und terminal 77 (BN / + 12 V).
- ▶ Menu 43 must be set to 11 or 12 depending on the desired function.
- The reversing behaviour and SKS evaluation can be set in menu 43.

The following settings are possible in menu 43:		
11		**VL1/VL2**, direction of action door closed, short reversal (approx. 300 mm) in the open direction.
12		**VL1/VL2**, direction of action door closed, long reversal to end position open.

NOTE

- The input can only be activated in the door-closed direction.
- The reversing behaviour corresponds to the setting in menu 43.
- ▶ When automatic closing is set, it is recommended to set parameter 12 for long reversing on approach in menu 43 so that the door reverses to the end position "Door open".
- If the leading light barrier **VL1 / VL2** is active during closing, the operator lighting signals the pulse code 1x flash and the display shows error code 24.
- If the automatic closing is set and the leading light barrier **VL1 / VL2** is activated **3 times in succession** during closing, the door opens and the automatic closing is interrupted. The operator lighting signals the pulse code by flashing twice and the display shows error code 27. The hold-open time can be restarted by means of a command.
- ▶ If no closing edge safety device is connected, menu 43 must be set to 0.
- Programming the reversal limit of VL1/VL2 is described in chapter ***6.5 on page 28***.

5.12 Internal option relay

An option relay (**KL2**) with a potential-free normally open contact is integrated into the control unit.

CAUTION

Damage to electronics due to overload

The light output is limited to a maximum of

- **250 V AC, max. 150 W (resistive load) or**
- **30 V DC, max. 3 A (resistive load)**

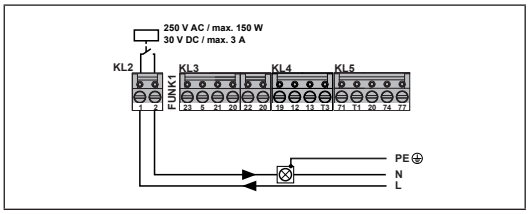
!

▶ Overloading the light output will destroy the electronics!

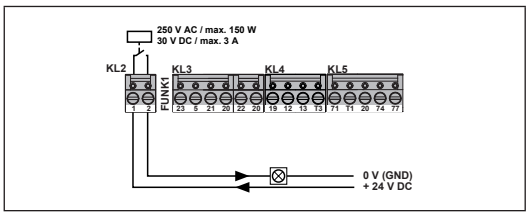
- The function of the internal option relay can be configured in menu 01.

The following settings are possible in menu 01:			
0		deactivated	The relay is not activated.
1		Warning light	The optional relay is activated every time the door moves and during the pre-warning period. The function of the warning light (light up-flashing-OFF) is set in menu 08.
2		Light function	The option relay is activated for the function set in menu 13 (light duration).
3		End position message door closed	The option relay is activated in the door closed end position.
4		End position message door opened	The option relay is activated in the door open end position.
5		End position message for ventilation or partial opening	The option relay is activated in the end position ventilation or partial opening.
6		Impulse upon command input	The option relay is activated for approx. 1 second after a command is received.
7		Fault message	The option relay is activated when a fault message is received (as long as it is pending). The fault message function is set in menu 09.
8		Maintenance interval reached message	The option relay is permanently activated when the maintenance interval is exceeded. The maintenance interval is set in menu 69.

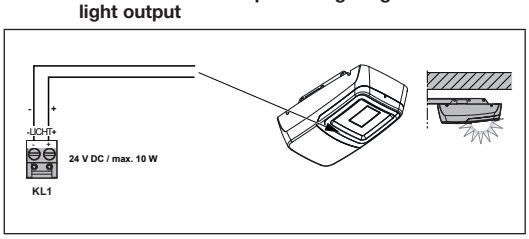
5.12.1 Connection example 230 V AC light



5.12.2 Connection example 24 V DC light



5.13 Connection of the operator lighting to the 24 V DC light output



The operator lighting is connected to the light output (terminal **KL1**) at the factory.

CAUTION

Damage to electronics due to overload

The light output is limited to a maximum of

- **24 V DC, max. 10 W**

!

▶ Overloading the light output will destroy the electronics!

- The function of the internal lighting can be set in menu 10 (afterglow duration of operator lighting when switched on by operator) or 11 (afterglow duration of operator lighting when switched on by external command).
- The brightness of the internal lighting can be set in menu 12.

The following settings are possible in menu 10:			
		when door closed	**in intermediate position and when door open**
0		5 sec.	30 sec.
1		5 sec.	90 sec.
2		5 sec.	150 sec.
3		5 sec.	240 sec.
4		5 sec.	300 sec.
5		30 sec.	30 sec.
6		90 sec.	90 sec.
7		150 sec.	150 sec.
8		180 sec.	180 sec.
9		240 sec.	240 sec.
10		300 sec.	300 sec.

The following settings are possible in menu 11:			
0		deactivated	When the operator lighting is switched on by an external command (**channel 3** or **input 23**), the lighting is controlled for the time set in this menu. **NOTE** For values 4-9, a new command cancels the timer.
1		5 min.	
2		10 min.	
3		15 min.	
4		30 min.	
5		45 min.	
6		60 min.	
7		90 min.	
8		120 min.	
9		150 min.	
10		On/Off	
11		as operator lighting	The light time from menu 10 applies

The following settings are possible in menu 12:			
0		deactivated	Brightness of the operator lighting
1		10%	
2		20%	
3		30%	
4		40%	
5		50%	
6		60%	
7		70%	
8		80%	
9		90%	
10		100%	

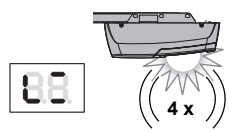
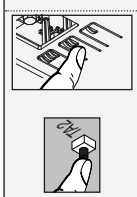
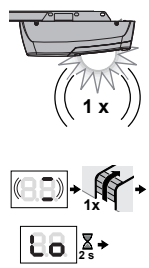
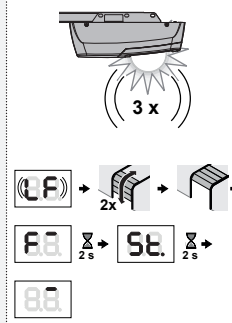
6 Special functions

6.1 Required force learning runs after menu changes

⚠ WARNING

Risk of injury due to malfunctioning of safety devices
As the obstacle detection and safety devices are not functioning during the learning process, it is essential absolutely necessary for the installer to remain with the device and prevent people from approaching the door.

After changing the running speeds and lengths of the soft stop and soft start phases, the forces must be relearned. If changes are made and saved in the relevant menus, new force learning runs are automatically required afterwards.
To do this, proceed as follows:

Action		Display / Info
	After a change in the menu that requires the forces to be relearned, LI lights up in the display and the operator lighting shows the pulse code 4x flashing.	
	**Start the reference run:** Press the button = or **TA2** (black) once briefly, the display I flashes, the operator lighting shows the pulse code 1x flash. The door opens to the end stop and moves back approx. 10 mm in the closing direction. Lo lights up for approx. **2 seconds**.	
	The force learning process starts: LF flashes, the operator lighting shows the pulse code 3x flashes. The door closes and opens automatically twice. After **4** learning runs, F I and then St. light up for approx. **2 seconds** each in the end position door open. Then I lights up.	
Programming is complete..		

NOTE

To cancel learning mode, press button −/ ≡ or **TA1** (white) / **TA3** (red) or an external control element. After cancellation, the error code (which caused the cancellation) or error code 01 (cancellation of learning or reference run) flashes for 2 seconds, then the set variant and door type are displayed for 5 seconds, after which LI (force learning run required) lights up again.

▶ The process must be repeated.

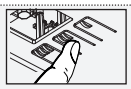
6.2 Re-teach forces and end positions after menu changes

⚠ WARNING

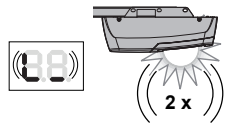
Risk of injury due to malfunctioning of safety devices
As the obstacle detection and safety devices are not functioning during the learning process, it is essential absolutely necessary for the installer to remain with the device and prevent people from approaching the door.

After making changes to menu 64, the end positions and forces must be relearned. Once changes have been made and saved in the relevant menu, new travel and force learning cycles are automatically required.
To do this, proceed as follows:

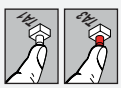
Action		Display / Info
	After a change in menu 64, which requires the end positions and forces to be re-learned, the variant and gate type are displayed for 5 seconds, after which L_ flashes on the display and the operator lighting shows the pulse code 2x flash.	



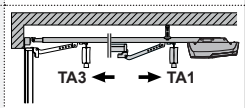

To confirm, briefly press the = or **TA2** (black) button once.
L_ flashes and the operator lighting shows the pulse code 2x flashes.



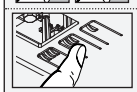




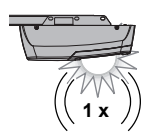
Press and hold button –/≡ or **TA1** (white) / **TA3** (red) to move the door to the desired "**DOOR CLOSED**" position in dead man mode.



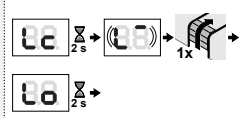
Door closed | Door open



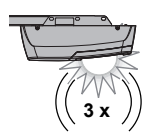

To save the set "**DOOR CLOSED**" position, briefly press button = or **TA2** (black) once.
Lc lilluminates for approx. **2 seconds**. L¯ flashes, the operator lighting shows the pulse code 1x flash.

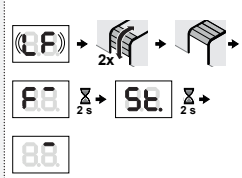


The distance learning process starts:
The door opens to the end stop and moves back approx. 10 mm in the closing direction. Lo lights up for approx. **2 seconds**.



The force learning process starts:
LF flashes, the operator lighting shows the pulse code 3x flashes. The door closes and opens automatically twice. After **4** learning runs, F¯ and then St. light up for approx. **2 seconds** each in the end position door open. Then ¯ lights up.





Programming is complete.

NOTE

To cancel learning mode, press button –/≡ or **TA1** (white) / **TA3** (red) or an external control element. After cancellation, the error code (which caused the cancellation) or error code 01 (cancellation of learning or reference run) flashes for 2 seconds, then the set variant and door type are displayed for 5 seconds, after which L_ (position closed adjustment required) lights up again.

▶ The process must be repeated.

6.3 Relearn forces and end positions

In this menu, the forces and end positions can be relearned after servicing, maintenance or modifications. The door type can be reselected if necessary.

⚠ WARNING

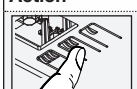
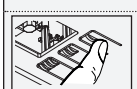
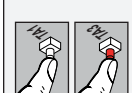
Risk of injury due to incorrectly selected door type
Malfunction of the gate system can lead to injuries.
▶ Only select the menu for the existing door system!

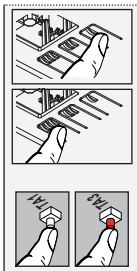
⚠ WARNING

Risk of injury due to malfunctioning of safety devices
As the obstacle detection and safety devices are not functioning during the learning process, it is essential absolutely necessary for the installer to remain with the device and prevent people from approaching the door.

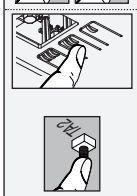
6.3.1 Re-program forces and end positions with previous door type

To do this, proceed as follows:

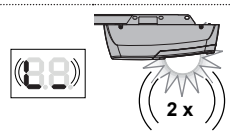
Action	Display / Info
  Press and hold button = or **TA2** (black) for approx. **3 seconds** until 01 appears in the display.	
   Press the button –/≡ or **TA1** (white) / **TA3** (red) several times until menu 24 is displayed.	
  Press button = or **TA2** (black). ▶ The menu item opens and parameter 0 is displayed.	

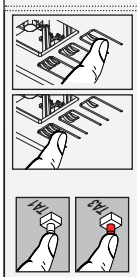


Press button −/≡ or **TA1** (white) / **TA3** (red), to set parameter i.

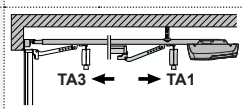


To confirm, press and hold- button = or **TA2** (black) for approx. **2 seconds** until Ł_ flashes and the operator lighting shows the pulse code 2x flashes



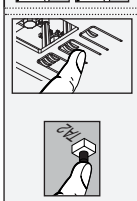


Press and hold button −/≡ or **TA1** (white) / **TA3** (red) to move the door to the desired "**DOOR CLOSED**" position in dead man mode.

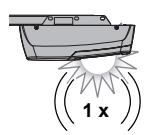


Door closed

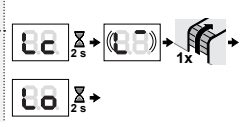
Door open



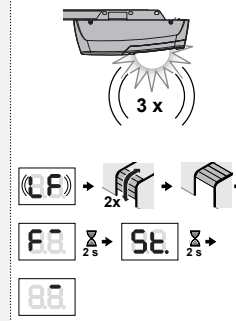
To save the set "**DOOR CLOSED**" position, briefly press button = or **TA2** (black) once. Łc lilluminates for approx. **2 seconds**. Ł¯ flashes, the operator lighting shows the pulse code 1x flash..



The distance learning process starts: The door opens to the end stop and moves back approx. 10 mm in the closing direction. Ło lights up for approx. **2 seconds**.



The force learning process starts: ŁF flashes, the operator lighting shows the pulse code 3x flashes. The door closes and opens automatically twice. After **4** learning runs, F¯ and then St. light up for approx. **2 seconds** each in the end position door open. Then ¯ lights up



Programming is complete.

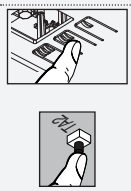
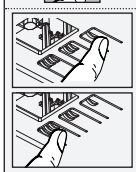
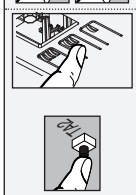
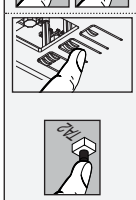
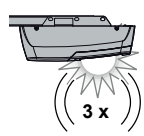
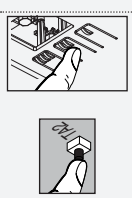
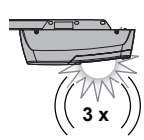
NOTE

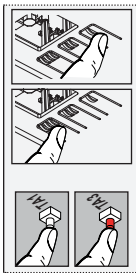
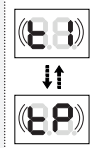
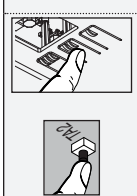
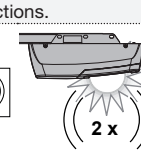
To cancel learning mode, press button −/≡ or **TA1** (white) / **TA3** (red) or an external control element. After cancellation, the error code (which caused the cancellation) or error code 01 (cancellation of learning or reference run) flashes for 2 seconds, then the set variant and door type are displayed for 5 seconds, after which Ł_ (position closed adjustment required) lights up again.

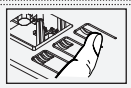
▶ The process must be repeated.

6.3.2 Re-program forces and end positions with modified door type

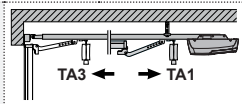
To do this, proceed as follows:

Action	Display / Info
 Press and hold button = or **TA2** (black) for approx. **3 seconds** until 01 appears in the display.	
 Press the button −/≡ or **TA1** (white) / **TA3** (red) several times until menu 24 is displayed.	
 Press button = or **TA2** (black). ▶ The menu item opens and parameter 0 is displayed.	
 Press button −/≡ or **TA1** (white) / **TA3** (red), to set parameter 2.	
 To confirm press and hold button = or **TA2** (black) for approx. **2 seconds** until U flashes on the display and the operator lighting continues the pulse code 3x flashes shows.	 
 Press and hold button = or **TA2** (black) for approx. **6 seconds** until t1 flashes on the display and the operator lighting shows the pulse code 3x flashes.	 

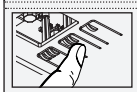
 With the button −/≡ or **TA1** (white) / **TA3** (red) set the existing door type.		
		 Sectional door
		 Up-and-over door
		 Non-protruding up-and-over door
		 Sliding door / Side sliding sectional door (opens towards the operator)
		 Sliding door / Side sliding sectional door (closes towards the operator)
		 Hinged garage door, special rail (rotated carriage) for hinged garage door
		 Hinged garage door, standard rail
		 **PIN entry for customer variant**
	PIN entry for customer variant After pressing the button = or **TA2** (black) , enter the customer-specific code. To confirm the code, press the button **TA2** (black) for approx. **2 seconds** to load the desired door type. See separate instructions.	
 To confirm the selected door type press the button = bzw. **TA2** (black) once briefly. L_ flashes, the operator lighting shows the pulse code 2x flashes.	 	



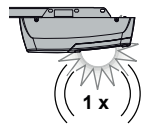
Press and hold button −/≡ or **TA1** (white) / **TA3** (red) to move the gate to the desired "**DOOR CLOSED**" position in dead man mode.



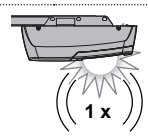
Door closed | Door open

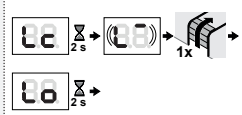



To save the set "**DOOR CLOSED**" position, briefly press button = or **TA2** (black) once. Lc illuminates for approx. **2 seconds**. L⁻ flashes, the operator lighting shows the pulse code 1x flash...

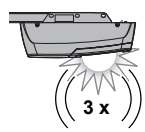


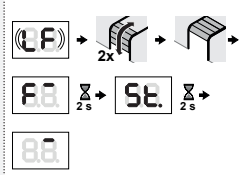
The distance learning process starts: The door opens to the end stop and moves back approx. 10 mm in the closing direction. Lo lights up for approx. **2 seconds**.





The force learning process starts: LF flashes, the operator lighting shows the pulse code 3x flashes. The door closes and opens automatically twice. After **4** learning runs, F⁻ and then St. light up for approx. **2 seconds** each in the end position door open. Then ⁻ lights up





Programming is complete.

NOTE

To cancel learning mode, press button −/≡ or **TA1** (white) / **TA3** (red) or an external control element. After cancellation, the error code (which caused the cancellation) or error code 01 (cancellation of learning or reference run) flashes for 2 seconds, then the set variant is displayed for 5 seconds, after which after which U (drive not learned) flashes again.

- ▶ The process must be repeated.

6.4 Hide the photocell for the closing direction

In this menu, the ***position of the photocell*** can be programmed.

- ▶ The operator is programmed and the door is in the end position Door open or an intermediate position.
- ▶ The photocell is installed, connected and the correct evaluation (contact or 2-wire photocell) is set in menu 39.
- ▶ Start the teach-in process by setting menu 25 to 1 and pressing the button = or **TA2** (black) for approx. **2 seconds** to start the learning process.
- ▶ ⁻ flashes on the display, the operator lighting shows the pulse code 1x flashing, the operator opens to the OPEN end position. Then 25 flashes on the display and the operator moves in the close direction until the obstacle (door) is detected by the photocell.
- ▶ The operator stops and 25. flashes on the display.
- ▶ Briefly press the button = or **TA2** (black) to confirm the position detected.
- ▶ 25 flashes on the display, the operator opens automatically, and when the end position "Door open" is reached, the display 25 lights up.
- ▶ Select menu 00 and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.

The system is now back in normal operation.

NOTE

The reversal limit is stored 50 mm above the learned position.

The reversal limit of the light barrier is deleted during the next teach-in process of the operator and must then be re-taught.

Learning is only possible if:

- the door stands
- a photocell is activated in menu 39
- the wicket door is closed

⚠ WARNING

Risk of injury and damage to property due to incorrectly positioned photocell

- ▶ The position of the photocell must be selected so that the test body is detected in accordance with EN 12453!

6.5 Programming the reversal limit of the leading light barrier (VL1/VL2)

In this menu, the ***position of the leading light barrier VL1/ VL2*** can be programmed.

- ▶ The operator is programmed and the door is in the end position Door open or an intermediate position.
- ▶ The leading light barrier is installed, connected and activated in menu 43 (setting 11 or 12).
- ▶ Place a folding rule flat on the ground in the middle of the door.
- ▶ Start the learning process by setting menu 26 to 1 and pressing the button = or **TA2** (black) for approx. **2 seconds** to start the learning process.
- ▶ - flashes on the display, the operator lighting shows the pulse code 1x flashing, the operator opens to the OPEN end position. Then 26 flashes on the display and the operator moves in the close direction until the obstacle (folding rule) is detected by the leading light barrier.
- ▶ The operator stops and 26. flashes on the display.
- ▶ Briefly press the button = or **TA2** (black) to confirm the position detected.
- ▶ 26 flashes on the display, the operator opens automatically, and when the end position "Door open" is reached, the display 26 lights up.
- ▶ Select menu 00 and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.
- ▶ The reversal limit is programmed and saved
- ▶ Remove the folding rule.

The system is now back in normal operation.

NOTE

The reversal limit of the leading light barrier is deleted during the next teach-in process of the operator; it must then be taught in again.

Learning is only possible if:

- the door stands
- a leading light barrier is activated in menu 43.
- the wicket door is closed

6.6 Change ventilation position

The ***ventilation position*** can be changed in this menu.

- ▶ The operator is programmed and the door is in the end position Door open or an intermediate position.
- ▶ Start the learning process by setting menu 27 to 1 and pressing the button = or **TA2** (black) for approx. **2 seconds** to start the learning process.
- ▶ - flashes on the display, the operator lighting shows the pulse code 1x flashing, the operator opens to the OPEN end position. Then 27 flashes on the display and the operator moves in the close direction until the previous ventilation position is reached
- ▶ The operator stops, h is displayed for approx. **2 seconds** and then 27. flashes again on the display.
- ▶ In dead man's mode, set the desired ventilation position using button − / **TA1** (white) or button ≡ / **TA3** (red). The range can only be set between **approx. 100 mm and approx. 300 mm before end position door CLOSED**.
- ▶ Briefly press the button = or **TA2** (black) to confirm the position you have just programmed.
- ▶ 27 flashes on the display, the operator opens automatically, and when the end position "Door open" is reached, the display 27 lights up.
- ▶ Select menu 00 and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.
- ▶ The desired ventilation position is now saved.
- • The ventilation position is factory-set to **approx. 200 mm before the door closes**.

The system is now back in normal operation.

NOTE

The ventilation position will be deleted during the next operator programming process and reset to the factory setting**.**

6.7 Changing the partial opening position

The ***partial opening position*** can be changed in this menu.

- ▶ The operator is programmed and the door is in the end position Door open or an intermediate position.
- ▶ Start the learning process by setting menu 28 to 1 and pressing the button = or **TA2** (black) for approx. **2 seconds** to start the learning process.
- ▶ - flashes on the display, the operator lighting shows the pulse code 1x flashing, the operator opens to the OPEN end position. Then 28 flashes on the display and the operator moves in the close direction until until the previous partial opening position is reached.
- ▶ The operator stops, H is displayed for approx. **2 seconds** and then 28. flashes again on the display
- ▶ In dead man's mode, set the desired partial opening position using button − / **TA1** (white) or button ≡ / **TA3** (red). The range can only be set between **approx. 350 mm before end position door CLOSED** and **approx. 200 mm before end position door OPEN**.
- ▶ Briefly press the button = or **TA2** (black) to confirm the position you have just programmed.
- ▶ 28 flashes on the display, the operator opens automatically, and when the end position "Door open" is reached, the display 28 lights up.
- ▶ Select menu 00 and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.
- ▶ The desired partial opening position is now saved.
- • The partial opening position is factory set to **approx. 350 mm before the door closes**.

The system is now back in normal operation.

NOTE

The partial opening position will be deleted during the next operator programming process and reset to the factory setting**.**

6.8 Factory reset

To reset the operator to factory settings, proceed as follows:

- ▶ Disconnect the mains plug and wait at **least 15 seconds**.
- ▶ Press and hold the button = or **TA2** (black).
- ▶ Reinsert the mains plug.
- ▶ As soon as U flashes on the display and the operator lighting shows the pulse code 3x flash, release the button = or **TA2** (black) again.
- ▶ All data is now deleted and the menus are reset to factory settings.

NOTE

During a factory reset,

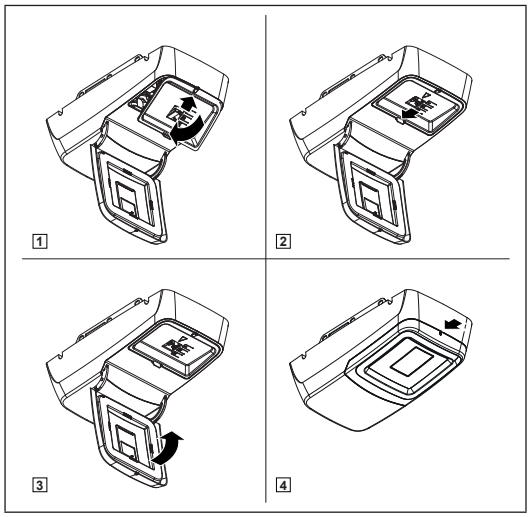
- the door data (learned forces and travel distance) are deleted
- all menu items are reset to factory defaults
- all HCP bus participants deleted (reset of the HCP bus memory)

In the delivery state, the door data is deleted and the operator can be programmed immediately.

7 Final work

After completing all the necessary steps for commissioning and connecting the accessories, the operator housing must be closed again.

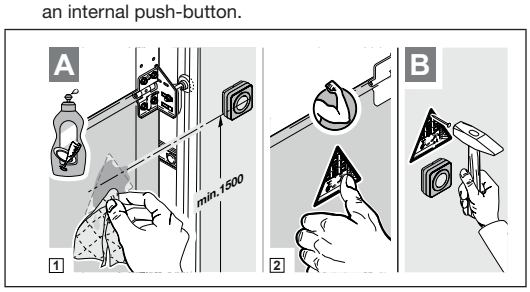
Proceed as follows when closing the operator housing:



1. Place the control cover at a slight angle on the operator cover and close it.
2. Press the locking lever; you will hear a slight clicking sound.
3. Close the operator housing flap.
4. Tighten the fastening screw.

7.1 Attaching the warning sign

▶ Permanently attach the warning sign against trapping to a conspicuous, clean and degreased location, e.g. next to an internal push-button.



7.2 Function test

⚠ WARNING

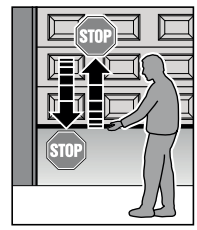
Risk of injury due to non-functioning safety devices

Non-functioning safety devices may result in injury in the event of a fault.

▶ After the learning runs, the commissioning engineer must check the function(s) of the safety device(s).

Only then is the system ready for operation.

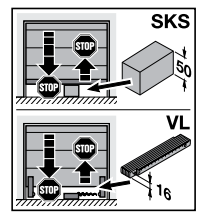
Check the safety return:



▶ Hold the door with both hands during approach → the operator must stop and engage the safety reverse.

▶ Hold the door with both hands while it is oppening → the operator must stop and engage the safety reverse.

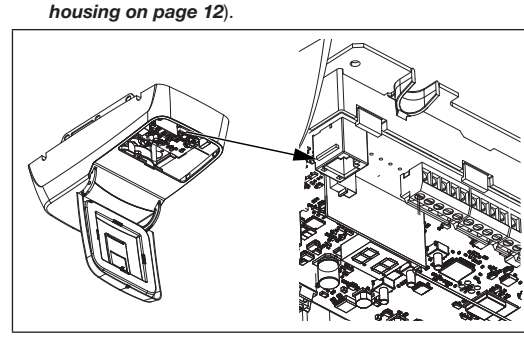
▶ Place a 50 mm (SKS) or 16 mm (VL) high test object in the centre of the door and close the door. The door system must stop and initiate the safety reverse as soon as the door reaches the test object.



▶ If the safety return fails, immediately commission a qualified person to inspect or repair.

8 HCP2 bus interface

▶ The HCP2 bus interface can be accessed after opening the operator housing (see ***4.1 Open the operator housing on page 12***).



Various additional modules can be plugged into the HCP2 bus interface of the operator.

In this 6-wire bus system (system cable), all components are connected to a common data cable. Interfaces are used to transfer information between the individual components of a system and the control system, e.g. KKNX-Gateway, Homematic IP-Gateway or climate sensor.

8.1 Adding HCP bus participants

8.1.1 Connecting a bus participant

Integrate the bus participant into the bus system using a bus connection cable (system cable) at the bus interface of the control unit or an existing bus participant or at an adapter HAB 3.

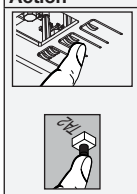
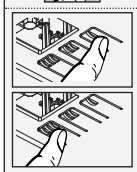
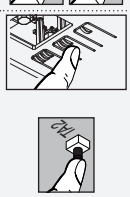
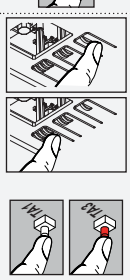
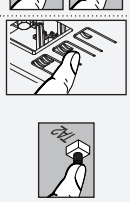
NOTE

A maximum of 5 bus participants may be connected.

8.1.2 Registering and integrating a bus participant

To register bus participants in the bus system, a bus scan must be performed. During a bus scan, all accessible devices are automatically detected and integrated.

To perform the bus scan, proceed as follows:

Action	Display / Info
 Press and hold button = or **TA2** (black) for approx. **3 seconds** until 01 appears in the display.	
 Press the button −/≡ or **TA1** (white) / **TA3** (red) several times until menu 31 is displayed.	
 Press button = or **TA2** (black). ▶ The menu item opens and parameter 0 is displayed.	
 Press button −/≡ or **TA1** (white) / **TA3** (red), to set parameter 1.	
 To confirm press and hold button = or **TA2** (black) for approx. **2 seconds** until the bus scan starts and b5 is displayed. After the scan process, the number of detected bus participants (e.g. 02) appears first, followed by 31 in the display (z.B. 02).	
▶ Select menu 00 and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.	

NOTE

The bus scan can take up to 15 seconds.
If more than **5** bus participants are detected, the operator lighting signals the pulse code by flashing 5 times and the display shows error code 56.

8.1.3 Detection of known bus participants

The presence of known, already registered bus participants is checked cyclically or each time the control system is started after a power failure.

NOTE

If the check reveals that a previously known bus participant is no longer responding, the operator lighting signals the pulse code by flashing 5 times and the display shows

- during cyclic testing, error code 55.
- during testing (automatic bus scan) after restarting or after acknowledging error message 55., the error code 57.

8.2 Removing / logging off bus participants

8.2.1 Removing a bus participant

To remove a bus participant and log it off the HCP bus, the bus participant must be disconnected from the bus system (unplugged) and a bus scan must be performed.

The bus participant is then logged off and will no longer be queried.

NOTE

If the bus scan is not performed after removing the bus participant, the operator lighting will signal the pulse code by flashing 5 times and the display will show

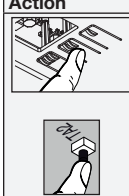
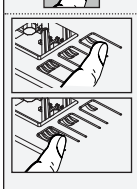
- Error code 55. when command is received or during cyclic check.
- Error code 57 during checks after restart.

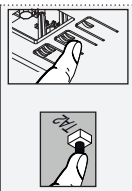
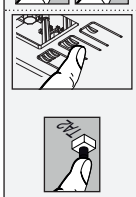
8.2.2 Removing all bus participants/bus reset

To remove all bus participants and log them off the HCP bus, the bus participant must be disconnected from the bus system (unplugged) and a bus scan must be performed.

The bus participant is then logged off and will no longer be queried.

To perform the **bus reset**, proceed as follows:

Action	Display / Info
 Press and hold button = or **TA2** (black) for approx. **3 seconds** until 01 appears in the display.	
 Press the button −/≡ or **TA1** (white) / **TA3** (red) several times until menu 31 is displayed.	

	Press button = or **TA2** (black). ▶ The menu item opens and parameter 0 is displayed.	
	Press button −/≡ or **TA1** (white) / **TA3** (red), to set parameter 2.	
	To confirm press and hold button = or **TA2** (black) for approx. **2 seconds**, to start the bus reset. After the reset process, 3 1 appears in the display.	
▶ Select menu 00 and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.		

9 Bluetooth

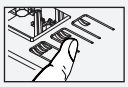
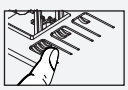
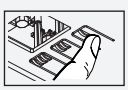
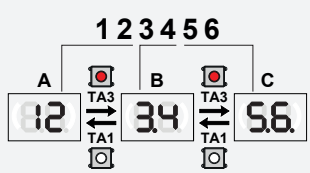
The garage door operator is equipped with a Bluetooth module. With the corresponding BERNER App, the operator can be controlled via Bluetooth® using a smartphone/tablet and information can be retrieved.

9.1 Pairing devices with the Bluetooth module

To connect to the operator via Bluetooth, you must first perform the pairing process.

To do this, proceed as follows:

Action		Display / Info
	Open the app and select ***Connect***	
	Select method for device selection.	These two options • Scan QR code • Search device are displayed in the app.
	Scan the QR code affixed to the base plate of the operator and press the button ***Connect***. **or** Start searching for devices. Select the device you want to pair with and press the button ***Connect***.	All devices within range will be displayed. Select the desired device by name or MAC address, which you will find on the sticker with the QR code.
		
	In the ***Bluetooth pairing request window***, select the button ***Pair***.	
	Confirm the required passkey or enter it and confirm it.	Depending on the device, there are two ways to confirm the required passkey: • Window with the passkey appears • Window asking you to enter your PIN appears
	Option 1:	
	Confirm the passkey displayed in the app by ***pairing***.	The first two digits of the generated passkey are shown on the operator display.

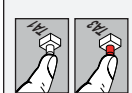
 	The pairing process will start. To confirm the process, press and hold the button = or **TA2** (black) for **5 seconds** until the status indicator lights up on the display.	After successful pairing, the status display of the door is shown, see ***10.4 Status display on page 44***. **NOTE** • Pairing mode is open for a maximum of **15 seconds**. If no action is taken within this window, pairing mode is cancelled.
	The main menu is displayed in the app.	
Option 2:		
    	In the ***Bluetooth pairing request window***, enter the PIN (passkey) shown on the operator display. This can be read as follows: The first two digits (**A**) of the generated passkey are shown on the operator display. Briefly press button ≡ or **TA3** (red) to display the middle two digits (**B**). Briefly press button ≡ or **TA3** (red) again to display the last two digits (**C**). Use button − or **TA1** (white) to scroll back.	
PIN (passkey) in the example **123456** 		
	Press the ***Pair*** button.	

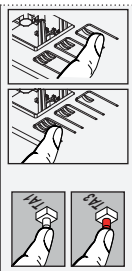
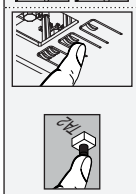
 	To confirm the pairing process, press and hold the button = or **TA2** (black) for **5 seconds** until the status indicator lights up on the display.	After successful pairing, the status display of the door is shown, see ***10.4 Status display on page 44***. **NOTE** • Pairing mode is open for a maximum of **15 seconds**. If no action is taken within this window, pairing mode is cancelled.
	The main menu is displayed in the app.	
▶ Repeat the process to pair additional devices.		

NOTE
A maximum of 10 devices can be stored in the Bluetooth module's memory. If the memory is full, pairing another device will overwrite the memory space of the first device.

9.2 Delete Bluetooth module memory

To clear the memory of the Bluetooth module, proceed as follows::

Action		Display / Info
 	Press and hold button = or **TA2** (black) for approx. **3 seconds** until 01 appears in the display.	
  	Press the button −/ ≡ or **TA1** (white) / **TA3** (red) several times until menu 30 is displayed.	
 	Press button = or **TA2** (black). ▶ The menu item opens and parameter 0 is displayed.	

	Press button −/≡ or **TA1** (white) / **TA3** (red), to set parameter *3*.	
	To confirm press and hold button = or **TA2** (black) for approx. **2 seconds**, until *30* appears in the display..	

▶ Select menu *00* and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.

NOTE
The memory of the Bluetooth module can only be completely deleted; it is not possible to delete individual devices.

9.3 Switch Bluetooth module on and off

If the Bluetooth function of the operator is not used, the Bluetooth module can be switched off.

9.3.1 Switching off the Bluetooth module

▶ Set menu *30* to *1*.
▶ Press button = or **TA2** (black) for approx. **2 seconds**.
▶ Menu *30* is displayed again.
▶ Select menu *00* and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.
• When the Bluetooth module is switched off, the dot behind the *1* in menu *30* lights up.

9.3.2 Switch on the Bluetooth module

▶ Set menu *30* to *2*.
▶ Press button = or **TA2** (black) for approx. **2 seconds**.
▶ Menu *30* is displayed again.
▶ Select menu *00* and exit the menu by pressing the button = or **TA2** (black) for **5 seconds**.
• When the Bluetooth module is switched on, the dot behind the *2* in menu *30* lights up.

NOTE
The Bluetooth module is switched on when the device is delivered.

10 Menu overview

Quick guide	
Change menu items. Exit menu and save changes	▶ Press and hold button = or **TA2** (black) for approx. **3 seconds**, menu item 01 is displayed. ▶ Press button − / **TA1** (white) or button ≡ / **TA3** (red) several times to find the desired menu item. ▶ Briefly press button = or **TA2** (black) (open menu item). ▶ Set the value by pressing the button − / **TA1** (white) or button ≡ / **TA3** (red), press and hold button = or **TA2** (black) for approx. **2 seconds** to activate the parameter for modification, then the menu item will be displayed again. **NOTE** If button = or **TA2** (black) is only pressed briefly, no parameter is activated for change and the menu item is displayed again. ▶ Once all values have been changed, press button − / **TA1** (white) or button ≡ / **TA3** (red) repeatedly to find menu item 00. ▶ Press and hold button = or **TA2** (black) for approx. **5 seconds**, the display St. appears. ▶ The changes are saved.

Displays					
	Menu item	Parameters Previously saved	Parameter changed, not yet saved		
					

Menu	Parameters		Function	Info
01	Function of internal option relay at terminal **KL2**			
	0		deactivated	The relay is not activated.
	1		Warning light	The optional relay is activated every time the door moves and during the pre-warning period. The function of the warning light (light up-flashing-OFF) is set in menu 08.
	2		Light function	The option relay is activated for the function set in menu 13 (light duration).
	3		End position message door closed	The option relay is activated in the door closed end position.
	4		End position message door opened	The option relay is activated in the door open end position.
	5		End position message for ventilation or partial opening	The option relay is activated in the end position ventilation or partial opening.
	6		Wipe pulse upon command input	The option relay is activated for approx. 1 second after a command is received.
	7		Fault message	The option relay is activated when a fault message is received (as long as it is pending). The fault message function is set in menu 09.
	8		Maintenance interval reached message	The option relay is permanently activated when the maintenance interval is exceeded. The maintenance interval is set in menu 69.

Menu	Parameters		Function	Info
02	Function of external option relay **HOR-HCP** on **HCP2-BUS**			
	0		deactivated	**For information, see menu** 01
	1		Warning light	
	2		Light function	
	3		End position message door closed	
	4		End position message door opened	
	5		End position message for ventilation or partial opening	
	6		Wipe pulse upon command input	
	7		Fault message	
	8		Maintenance interval reached message	
03	Function of external option relay **3** of the **UAP1-HCP** universal adapter board on **HCP2-BUS**			
	0		deactivated	**For information, see menu** 01
	1		Warning light	
	2		Light function	
	3		End position message door closed	
	4		End position message door opened	
	5		End position message for ventilation or partial opening	
	6		Wipe pulse upon command input	
	7		Fault message	
	8		Maintenance interval reached message	
04	Function of external option relay of the **MS5EB** (**ASP1)** traffic light control board on **HCP2-BUS**			
	0		deactivated	**For information, see menu** 01
	1		Warning light	
	2		Light function	
	3		End position message door closed	
	4		End position message door opened	
	5		End position message for ventilation or partial opening	
	6		Wipe pulse upon command input	
	7		Fault message	
	8		Maintenance interval reached message	
05	FFunction of external option relay **1** of the **MFP5** (**MFP1**) multifunction board on **HCP2-BUS**			
	0		deactivated	**For information, see menu** 01
	1		Warning light	
	2		Light function	
	3		End position message door closed	
	4		End position message door opened	
	5		End position message for ventilation or partial opening	
	6		Wipe pulse upon command input	
	7		Fault message	
	8		Maintenance interval reached message	

Menu	Parameters		Function			Info
06	Function of external option relay **2** of the **MFP5** (**MFP1**) multifunction board on **HCP2-BUS**					
	0		deactivated			**For information, see menu** 01
	1		Warning light			
	2	☞	Light function			
	3		End position message door closed			
	4		End position message door opened			
	5		End position message for ventilation or partial opening			
	6		IWipe pulse upon command input			
	7		Fault message			
	8		Maintenance interval reached message			
07	Contact type of a permanent Open command at the input 22 of the control board					
	1	☞	Normally open contact			
	2		Normally closed contact			
08	Function of optional relay when ***warning light*** is set					
			door movement	Prewarning	when door closed	The optional relay controls a connected warning light in accordance with the function set in this menu.
	1		On	On	Off	
	2	☞	On	flashing	Off	
	3		flashing	On	Off	
	4		flashing	flashing	Off	
	5		On	On	On	
	6		On	flashing	On	
	7		flashing	On	On	
	8		flashing	flashing	On	
09	Function of option relay when ***fault message*** is set					
	1		1 min.			The option relay is permanently activated in the event of a fault message if the fault persists for longer than the time set in this menu. Once the fault has been rectified, the option relay is deactivated again.
	2		5 min.			
	3	☞	10 min.			
	4		20 min.			
	5		30 min.			
10	Afterglow duration of operator lighting, when switched on by operator					
			when door closed	intermediate position	when door open	When a operator movement command is given, the operator lighting is activated and remains illuminated for the time set in this menu.
	0		5 sec.	30 sec.	30 sec.	
	1		5 sec.	90 sec.	90 sec.	
	2	☞	5 sec.	150 sec.	150 sec.	
	3		5 sec.	240 sec.	240 sec.	
	4		5 sec.	300 sec.	300 sec.	
	5		30 sec.	30 sec.	30 sec.	
	6		90 sec.	90 sec.	90 sec.	
	7		150 sec.	150 sec.	150 sec.	
	8		180 sec.	180 sec.	180 sec.	
	9		240 sec.	240 sec.	240 sec.	
	10		300 sec.	300 sec.	300 sec.	

Menu	Parameters		Function	Info
11	Afterglow duration of operator lighting when switched on by external command r3 (**channel 3)** or **input 23**			
	0		deactivated	When the operator lighting is switched on by an external command r3 (channel 3) or input 23, the lighting is controlled for the time set in this menu. **NOTE** For values 4-9, a new command cancels the timer.
	1		5 min.	
	2		10 min.	
	3		15 min.	
	4		30 min.	
	5		45 min.	
	6		60 min.	
	7		90 min.	
	8		120 min.	
	9		150 min.	
	10		On/Off	
	11		Same as operator lighting	Afterglow duration corresponds to setting in menu 10
12	Operator lighting brightness setting			
	0		deactivated	In this menu, the brightness of the operator lighting can be set.
	1		10%	
	2		20%	
	3		30%	
	4		40%	
	5		50%	
	6		60%	
	7		70%	
	8		80%	
	9		90%	
	10		100%	
13	Activation time of internal option relay on **KL2** or external option relay **HOR-HCP**, external option relay of **UAP1-HCP**, external option relay of **MS5EB** (**ASP1)** or external option relay of **MFP5** (**MFP1)** at light function.			
	0		deactivated	The light function of the option relay can be set as follows: • Integrated relay on **KL2:** — **Menu** 01 = 2 • Option relay **HOR-HCP** to **HCP2:** — **Menu** 02 = 2 • Option relay 3 **UAP1-HCP** to **HCP2:** — **Menu** 03 = 2 • Option relay **MS5EB** (**ASP1)** to **HCP2:** — **Menu** 04 = 2 • Option relay 1 **MFP5** (**MFP1**) to **HCP2:** — **Menu** 05 = 2 • Option relay 2 **MFP5** (**MFP1**) to **HCP2:** — **Menu** 06 = 2 **NOTE** For values 8 and 9, a new command cancels the timer.
	1		1 sec.	
	2		1 min.	
	3		2 min.	
	4		3 min.	
	5		4 min.	
	6		5 min.	
	7		10 min.	
	8		15 min.	
	9		30 min.	
	10		On/Off	
	11		Same as operator lighting	Control Option relay = light time Menu 10

<table>
<tr><th>Menu</th><th colspan="3">Parameters</th><th>Function</th><th>Info</th></tr>
<tr><td>14</td><td colspan="5">Activation of the light function for internal option relay on KL2 or external option relay HOR-HCP, external option relay of UAP1-HCP, external option relay of MS5EB (ASP1) or external option relay of MFP5 (MFP1) at light function.</td></tr>
<tr><td rowspan="8"></td><td rowspan="2">1</td><td rowspan="2">  </td><td>A</td><td>Starts operator + operator lighting
(function/lighting time = menu 10) and external lighting
(function/lighting time = menu 11).</td><td rowspan="8">Legend for command inputs:
<table><tr><td rowspan="2">A =</td><td>Channel 1 (r 1) and Channel 2 (r2)</td></tr><tr><td>Input 21 and Input 22</td></tr><tr><td rowspan="2">B =</td><td>Channel 3 (r3)</td></tr><tr><td>Input 23 (for Menu 15 = 3)</td></tr></table>
The light function of the option relay (external lighting) can be set as follows:
<table><tr><td>• Integrated relay on KL2:</td><td>Menu 01 = 2</td></tr><tr><td>• Option relay HOR-HCP to HCP2:</td><td>Menu 02 = 2</td></tr><tr><td>• Option relay 3 UAP1-HCP to HCP2:</td><td>Menu 03 = 2</td></tr><tr><td>• Option relay MS5EB (ASP1) to HCP2:</td><td>Menu 04 = 2</td></tr><tr><td>• Option relay 1 MFP5 (MFP1) to HCP2:</td><td>Menu 05 = 2</td></tr><tr><td>• Option relay 2 MFP5 (MFP1) to HCP2:</td><td>Menu 06 = 2</td></tr></table></td></tr>
<tr><td>B</td><td>Only switches external lighting
(function/lighting time = menu 13)</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2"></td><td>A</td><td>Starts operator + operator lighting
(function/lighting time = menu 10)</td></tr>
<tr><td>B</td><td>Only switches external lighting
(function/lighting time = menu 13)</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2"></td><td>A</td><td>Starts operator + operator lighting
(function/lighting time = menu 10) and external lighting
(function/lighting time = menu 11).</td></tr>
<tr><td>B</td><td>Switches external lighting
(function/lighting time = menu 13) and operator lighting
(function/lighting time = Menu 10)</td></tr>
<tr><td>4</td><td></td><td>A</td><td>Starts operator + operator lighting
(function/lighting time = menu 10)</td></tr>
<tr><td></td><td></td><td>B</td><td>Switches external lighting
(function/lighting time = menu 13) and operator lighting
(function/lighting time = Menu 10)</td></tr>
<tr><td>15</td><td colspan="4">Function Input 23</td></tr>
<tr><td rowspan="3"></td><td>1</td><td>  </td><td colspan="2">Ventilation</td><td>Will opend onto the ventilation position programmed in menu 27 or closed again from this position.</td></tr>
<tr><td>2</td><td></td><td colspan="2">Partial opening</td><td>Will opend onto the partial opening position programmed in menu 28 is opened or closed again from this position.</td></tr>
<tr><td>3</td><td></td><td colspan="2">Light function</td><td>The light function programmed in menu 11 or menu 13 is executed.</td></tr>
<tr><td>16</td><td colspan="4">Function r2 (channel 2)</td></tr>
<tr><td rowspan="2"></td><td>1</td><td>  </td><td colspan="2">Ventilation</td><td>Will opend onto the ventilation position programmed in menu 27 or closed again from this position.</td></tr>
<tr><td>2</td><td></td><td colspan="2">Partial opening</td><td>Will opend onto the partial opening position programmed in menu 28 is opened or closed again from this position.</td></tr>
</table>

Menu	Parameters		Function	Info
17	Function defined direction selection			
	0	☆	deactivated	In this menu, the ***defined direction selection function*** can be set.
	1		Input 21 / Channel 1 (r 1) = Open-Stop-Open Input 23 / Channel 2 (r2) = Close-Stop-Close	
	2		Input 21 / Channel 1 (r 1) = Open-Stop-Open Input 23 / Channel 2 (r2) = Close	
	3		Input 21 / Channel 1 (r 1) = Open Input 23 / Channel 2 (r2) = Close-Stop-Close	
	4		Input 21 / Channel 1 (r 1) = Open Input 23 / Channel 2 (r2) = Close	
	5		Input 21 = Open-Stop-Open Input 23 = Close-Stop-Close	
	6		Input 21 = Open-Stop-Open Input 23 = Close	
	7		Input 21 = Open Input 23 = Close-Stop-Close	
	8		Input 21 = Open Input 23 = Close	
18	Pre-warning time in close direction			
	0	☆	deactivated	In this menu, you can set the ***pre-warning time in the close direction***. Before each motor start in the direction close (from the end position open or from an intermediate position), a connected warning light is activated for the time set in this menu. The function (lighting up/flashing) of the warning light during the pre-warning time can be set in menu 08. If an hold open time will set in menu 20, parameter 1 is automatically activated in this menu.
	1		3 sec.	
	2		5 sec.	
	3		10 sec.	
	4		15 sec.	
	5		20 sec.	
	6		30 sec.	
	7		40 sec.	
	8		50 sec.	
	9		60 sec.	
19	Pre-warning time in open direction			
	0	☆	deactivated	In this menu, you can set the ***pre-warning time in the open direction***. Before each motor start in the direction open (from the end position closed or from an intermediate position), a connected warning light is activated for the time set in this menu. The function (lighting up/flashing) of the warning light during the pre-warning time can be set in menu 08.
	1		3 sec.	
	2		5 sec.	
	3		10 sec.	
	4		15 sec.	
	5		20 sec.	
	6		30 sec.	
	7		40 sec.	
	8		50 sec.	
	9		60 sec.	

<table>
<tr><th>Menu</th><th colspan="2">Parameters</th><th>Function</th><th>Info</th></tr>
<tr><td>20</td><td colspan="4">Hold-open time (automatic closing)</td></tr>
<tr><td rowspan="12"></td><td>0</td><td>🏭</td><td>deactivated</td><td rowspan="12">The hold-open time can be set in this menu. After the set hold-open time and the pre-warning time set in menu 18 have elapsed, the door closes automatically.
• The open hold time is reset by commands from channel 1 (r 1) and input 21 / 22,
Menu 52 = 1.
• The hold-open time is not reset by commands from channel 1 (r 1) and input 21 / 22,
Menu 52 = 2.
Note: If a command is issued during the pre-warning time, the hold-open time is reset regardless of the setting in menu 52.
• The hold-open time is not reset by commands from channel1 (r 1) and input 21 / 22; the hold-open time is cancelled and the door closes after the pre-warning time set in menu 18.
Menu 52 = 3.
Note: If a command is issued during the pre-warning time, the hold-open time is reset regardless of the setting in menu 52.

• The hold-open time is reset when the photocell in the closing direction (SE2) is passed through.
Menu 53 = 1.
• The hold-open time is not reset when the photocell in the closing direction (SE2) is passed through,
Menu 53 = 2.
Note: If the photocell in the closing direction (SE2) is passed during the pre-warning time, the hold-open time is reset regardless of the setting in menu 53.</td></tr>
<tr><td>1</td><td></td><td>10 sec.</td></tr>
<tr><td>2</td><td></td><td>20 sec.</td></tr>
<tr><td>3</td><td></td><td>30 sec.</td></tr>
<tr><td>4</td><td></td><td>45 sec.</td></tr>
<tr><td>5</td><td></td><td>60 sec.</td></tr>
<tr><td>6</td><td></td><td>90 sec.</td></tr>
<tr><td>7</td><td></td><td>120 sec.</td></tr>
<tr><td>8</td><td></td><td>150 sec.</td></tr>
<tr><td>9</td><td></td><td>180 sec.</td></tr>
<tr><td>10</td><td></td><td>240 sec.</td></tr>
<tr><td colspan="3">NOTE:
When the hold-open time will be activated, a photocell must be connected.
If a hold-open time will be set and no safety device is activated in menu 39, parameter 1 (photocell with testing) is automatically activated in menu 39.</td></tr>
<tr><td>21</td><td colspan="4">Ventilation hold-open time (automatic closing from ventilation position)</td></tr>
<tr><td rowspan="12"></td><td>0</td><td>🏭</td><td>deactivated</td><td rowspan="12">The ventilation hold-open time can be set in this menu. Once the set hold-open time and the prewarning time set in menu 18 have elapsed, the door automatically closes from the ventilation position

• The open hold time is not reset for ventilation commands; the open hold time is cancelled and the door closes after the pre-warning time set in menu 18.
Note: If the ventilation command is issued during the pre-warning time, the hold-open time is reset.

• The hold-open time is reset when the photocell in the closing direction (SE2) is interrupted.
Menu 53 = 1.
• The hold-open time is not reset when the photocell in the closing direction (SE2) is interrupted.
Menu 53 = 2.
Note: If the photocell in the closing direction (SE2) is interrupted during the pre-warning time, the hold-open time is reset regardless of the setting in menu 53.</td></tr>
<tr><td>1</td><td></td><td>Hold-open time as in menu 20</td></tr>
<tr><td>2</td><td></td><td>10 min,</td></tr>
<tr><td>3</td><td></td><td>30 min</td></tr>
<tr><td>4</td><td></td><td>45 min.</td></tr>
<tr><td>5</td><td></td><td>60 min.</td></tr>
<tr><td>6</td><td></td><td>90 min.</td></tr>
<tr><td>7</td><td></td><td>120 min.</td></tr>
<tr><td>8</td><td></td><td>150 min.</td></tr>
<tr><td>9</td><td></td><td>180 min.</td></tr>
<tr><td>10</td><td></td><td>240 min.</td></tr>
<tr><td colspan="3">NOTE:
When the hold-open time will be activated, a photocell must be connected.
If a hold-open time will be set and no safety device is activated in menu 39, parameter 1 (photocell with testing) is automatically activated in menu 39.</td></tr>
</table>

Menu	Parameters		Function	Info
22	Partial opening hold-open time (automatic closing from partial opening position)			
	0	☞	deactivated	The ***hold-open time for partial opening*** can be set in this menu. Once the set hold-open time and the prewarning time set in menu 18 have elapsed, the door closes automatically from the partial opening position • The open hold time is not reset for partial opening commands; the open hold time is cancelled and the door closes after the pre-warning time set in menu 18. **Note:** If the partial opening command is issued during the pre-warning time, the hold-open time is reset. • The hold-open time is reset when the photocell in the closing direction (**SE2**) is interrupted. Menu 53 = 1. • The hold-open time is not reset when the photocell in the closing direction (**SE2**) is interrupted. Menu 53 = 2. **Note:** If the photocell in the closing direction (**SE2**) is interrupted during the pre-warning time, the hold-open time is reset regardless of the setting in menu 53.
	1		Hold-open time as in menu 20	
	2		10 min,	
	3		30 min	
	4		45 min.	
	5		60 min.	
	6		90 min.	
	7		120 min.	
	8		150 min.	
	9		180 min.	
	10		240 min.	
	NOTE: When the hold-open time will be activated, a photocell must be connected. If a hold-open time will be set and no safety device is activated in menu 39, parameter 1 (photocell with testing) is automatically activated in menu 39.			
23	Display of the set door type			
				The ***set door type*** can be displayed in this menu.. ▶ Select menu 23 by pressing the button = or **TA2** (black) for approx. **2 seconds**. The set door type is displayed for approx. **5 seconds**, then the display returns to menu 23. The following door type displays are possible: • t1 = Sectional door • t2 = Up-and-over door • t3 = Non-protruding up-and-over door (Berner-NA) • t4 = Sliding door, opens towards the operator • t5 = Sliding door, closes towards the operator • t6 = Hinged garage door, special rail for hinged door • t7 = Hinged garage door, standard rail • .. = Customised door
24	Relearn forces and end positions			
	0	☞	Cancel	In this menu, the "forces and end positions" can be relearned after servicing, maintenance or modifications. The door type can be reselected if necessary.
	1		Learning process with previous door type	
	2		Learning process with modified door type	
25	Teach-in of the photocell position in Close direction.			
	0	☞	Cancel	In this menu, the ***position of the photocell in close direction*** can be taught in.
	1		Perform learning process	

Menu	Parameters		Function	Info
26	Teach-in of the leading photocell (VL1/VL2) position2			
	0		Cancel	In this menu, the ***position of the leading photocell VL1/VL2*** can be taught in.
	1		Perform learning process	
27	Set/change ventilation position			
	0		Cancel	The ***ventilation position*** can be set / changed in this menu. • Factory setting: approx. 200 mm in front of end position close • Possible adjustment range: From approx. 100 mm to approx. 300 mm in front of end position close
	1		Set/change position	
28	Set/change partial opening position			
	0		Cancel	The ***partial opening position*** can be set / changed in this menu. • Factory setting: approx. 350 mm in front of end position close • Possible adjustment range: approx. 350 mm in front of end position close and approx. 100 mm in front of of end position open
	1		Set/change position	
29	Event memory			
	0		Event memory deactivated	The ***event memory*** can be activated in this menu..
	1		Event memory activated	
30	Bluetooth module			
	0		Cancel	The ***Bluetooth module*** can be switched on and off in this menu. To clear the Bluetooth module's memory, proceed as follows: ▶ den Parameter 3 einstellen und die Taste = bzw. **TA2** (schwarz) für **ca. 2 Sek.** gedrückt halten. ▶ Im Anschluss wird das Menü verlassen und 30 angezeigt.
	1		Switch off Bluetooth module	
	2		Switch on Bluetooth module	
	3		Clearing the Bluetooth module memory	
31	Bus-Scan HCP2-Bus			
	0		Cancel	All devices connected to the HCP2 bus are re-read. ▶ Set parameter 1 and press the button = or **TA2** (black) for **approx. 2 seconds** to start the bus scan of the HCP2 bus. ▶ The menu is then exited and 31 is displayed.
	1		Perform bus scan of the HCP2 bus	
	2		Perform a bus reset of the HCP2 bus	All devices connected to the HCP2 bus will be deleted. ▶ Set parameter 2 and press the button = or **TA2** (black) for **approx. 2 seconds** to start the bus reset of the HCP2 bus. ▶ The menu is then exited and 31 is displayed.

10.1 Function examples

Required function	Required setting (different from factory setting)
Defined command OPEN/CLOSE via radio	Menu 17 = 1 Programming the transmitter into receiver BDF140-5 using button TA3 (red): Program transmitter button OPEN in r1, CLOSE in r2.
External lighting connected to the internal option relay **KL2** is to be switched on and off via a separate radio command.	Menu 01 = 2, Menu 13 = 10 Programming the transmitter into receiver BDF140-5 using button TA3 (red): Program transmitter button „Light“ into r3.
Integrated LED lighting should be switched on for 30 minutes via a separate radio command.	Menu 11 = 8, Menu 14 = 4 Programming the transmitter into receiver BDF140-5 using button TA3 (red): Program transmitter button „Light“ into r3.
External lighting on **HCP2** bus is to be switched on/off via a separate radio command. (For potential-free contact via HCP2 bus: **HOR-HCP** relay required)	Menu 04 = 2, Menu 13 = 10 Programming the transmitter into receiver BDF140-5 using button TA3 (red): Program transmitter button „Light“ into r3.
Wipe pulse (1 second) through internal 5 option relay **KL2** via separate radio command (e.g. control external operator)	Menu 01 = 2, Menu 13 = 1, Menu 14 = 2 Programming the transmitter into receiver BDF140-5 using button TA3 (red): Program transmitter button „Wipe pulse“ into r3.
Wipe pulse at start of the operator through internal option relay **KL2.**	Menu 01 = 6
Rotampel an **KL2** (Warnfunktion), Wischimpuls über **HCP2-Bus** (für potentialfreien Impuls über HCP2-BUS: Relais **HOR-HCP** erforderlich)	Menu 01 = 1, Menu 04 = 6

10.2 Command inputs (display messages)

12	Button – or **TA1** pressed
21	Input terminal 21 activated
22	Input terminal 22 activated
23	Input terminal 23 activated
22.	Timer signal (permanently OPEN) activated at input terminal 22. **NOTE** When **MS5EB-G** traffic light control is connected to the **HCP2**-Bus, function as time switch input (permanently OPEN) Request: Permanent Open with ***preferred direction outwards***.
H1	Request ***entrance*** (terminal 21 of **ASP1**) activated, only when traffic light control **MS5EB-G** is connected to the HCP2 bus
h1.	Timer input (permanently OPEN) ***Entrance*** request (terminal **S21** of **ASP1**) activated, only with **MS5EB-G** traffic light control connected to the HCP2 bus
h2.	Timer input terminal **S21** (permanently OPEN) of the **MFP1** activated, only when multifunction board **MFP5** is connected to the HCP2 bus
H4	Light off command from a bus participant connected to the HCP2 bus
H6	Open command from a bus participant connected to the HCP2 bus
H8	Partial open command from a bus participant connected to the HCP2 bus

r1	Channel 1 (FUNK2) activated
r2	Channel 2 (FUNK2) activated
r3	Channel 3 (FUNK2) activated
r4	Channel 4 (FUNK2) activated
H2	Request ***exit*** (terminal 24 of **ASP1**) activated, only when traffic light control **MS5EB-G** is connected to the HCP2 bus
h2.	Timer input (permanently OPEN) ***Exit*** request (terminal **S24** of **ASP1**) activated, only with **MS5EB-G** traffic light control connected to the HCP2 bus
H3	Light command from a bus participant connected to the HCP2 bus
H5	Close command from a bus participant connected to the HCP2 bus
H7	Pulse command from a bus participant connected to the HCP2 bus
H9	Ventilation command from a bus participant connected to the HCP2 bus

10.3 Functions of the TA1, TA2 and TA3 control board buttons:

For	Button − or TA1 (white)	Button = or TA2 (black)	Button ≡ or TA3 (red)
Pulse mode	• Open / Stop / Close / Stop etc.	• Open menu	• Radio learning mode, see ***5.2 Radio receiver BDF140-5 on page 16***.
Defined direction selection			
Auto-closing selected	• Open (***not*** with door in "Door open" end position) • In the door open end position, the hold-open time is interrupted; after the pre-warning time (menu i8) has elapsed, the door closes.		
change in menus	• Scroll up (0, 1, 2...)	• Menü öffnen • Auswahl bestätigen • Änderungen speichern	• Scroll down (... 2, 1, 0)
Learning mode	• Deadman Open function	• Lernbetrieb starten • Auswahl bestätigen	• Deadman Close function

10.4 Status display

	Door in end position Closed		Door in intermediate position
	Door in end position Open		Operator moves in the closed direction
	Operator moves in the open direction		In end position ventilation
	In end position partial opening		In end position open, hold-open time running
	In end position partial opening, hold-open time running		In end position ventilation, hold-open time running
	In end position open, pre-warning time running		In end position close, pre-warning time running
	In intermediate position, pre-warning time running		In end position ventilation, pre-warning time running
	In end position partial opening, pre-warning time running		Maintenance interval reached
	Operator not taught, perform teaching process		Menu settings saved
	Reference run required		Reference run active
	Learning mode required		Learning mode active
	Distance learning run active		Learning mode end position CLOSED confirmed
	Force learning travel active		Distance learning mode successful
	Force learning travel required		Force learning mode successful
			Bus scan aktive

11 Error table

Display (flashes)	Light / Warning lamp	Error / Warning	Possible cause	Remedy
01.	Flashes 4x	Cancellation of learning/ reference run by control button	A command device was activated during the learning or reference run.	Repeat the learning or reference run, but do not activate any control devices.
02.	Flashes 4x	Timeout Hall pulse, control system not receiving Hall pulse.	Hall cable defective.	Check Hall cable, replace if necessary.
			Hall sensor defective.	Replace operator.
			Control unit defective.	Replace operator or control unit.
03.	Flashes 4x	Too many Hall pulses with motor stopped. Motor being pulled or pushed.	Door open too wide.	Correct the end position of the door opening..
			Spring compensation not OK.	Check spring compensation, and correct or replace if necessary.
04.	Flashes 4x	Error on the Hall sensor.	Hall cable defective, short circuit between channel 1 and channel 2.	Check Hall cable, replace if necessary..
			Hall sensor defective.	Replace operator.
		Exceeded the permitted speed.	Spring compensation not OK.	Check spring compensation, and correct or replace if necessary.
05.	Flashes 1x	Stop circuit at **SE1** was activated.	Stop or emergency stop circuit at terminals 12 and 13 was interrupted or opened during a door movement, see ***5.6 Wicket door contact / emergency stop circuit (SE1) on page 18.***	Close the stop or emergency stop circuit.
	▶ **If no wicket door or stop circuit (terminals 12 / 13) is connected, menu 45 must be set to 0.**			
07.	Flashes 4x	Door movement too short for path learning.	An attempt was made to learn a path that was too short. See ***16 Technical data***	Correct movement path; teach in opener again.
08.	Flashes 1x	Photocell for closing direction (**SE2**) was activated during closing	A photocell connected to terminals 20 and 71 was interrupted or activated during closing. There is an obstacle in the door area. Photocell or photocell supply cable defective. Incorrect evaluation selected for the connected photocell. See also ***5.7 Contact photocell in closing direction (SE2) on page 19*** and ***5.8 2-wire-photocell in closing direction (SE2) on page 19***.	Remove the obstacle causing the trigger. Check the light barrier/ supply cable and replace if necessary. Check the setting in menu 39 and. correct if necessary.
	▶ **If no photocell (terminalsKlemmen 20 / 71) is connected, menu 39 must be set to 0.**			
09.	Flashes 1x	Safety contact strip 8k2 (**SE3**) was activated during closing.	An closing edge safety device (8k2) connected to terminals 20 and 74 was interrupted or activated during closing. There is an obstacle in the door area. Safety strip or safety strip supply cable defective. Incorrect evaluation selected for the connected closing edge safety device. See also ***5.9 Closing edge safety device 8k2 (SE3) on page 20***.	Remove the triggering obstacle. Check the closing edge safety device/supply cable and replace if necessary. Check setting in menu 43 and correct if necessary.
	▶ **Without a connected closing edge safety device (terminals 20 / 74) Menu 43 must be set to 0.**			
10.	Flashes 4x	Motor current undershoot.	The programmed current has been undershot due to defective door mechanics or spring breakage.	Check door mechanism and/or springs and repair.
			The programmed current was undershot due to an unlocked door.	Lock the door again.
11.	Flashes 4x	Maximum travel distance exceeded.	An attempt was made to teach a travel distance that has more than 8500 pulses (approx. 8500 mm).	Correct the travel distance and re-teach the operator.

Display (flashes)	Light / Warning lamp	Error / Warning	Possible cause	Remedy
13.	Flashes 4x	Missing door position on restart.	The current door position is no longer known after a power failure.	Perform a reference run, see ***13.8 Reference run on page 52***.
			The current door position is no longer known after a power failure during the reference run.	
			The current door position is no longer known after a power failure during the learning run.	Repeat the operator teach-in process, see ***4.3 Teaching in the operator on page 14***.
14.		24 VDC from the switching power supply was interrupted. **NOTE** The error message is written to the error memory but is not shown on the display.	The power supply to the operator has failed or the mains cable has been disconnected.	Restore the power supply.
			The 24 VDC circuit is overloaded or short-circuited	Check connected accessories/ supply cable and replace if necessary.
16.	Flashes 6x	Motor overload protection	The overload protection of the motor connection has tripped.	The motor or the motor connection cable is causing a short circuit.
17.	Flashes 6x	Maximum current exceeded	The maximum permissible motor current of the control system was exceeded during the teach-in process.	Correct the door travel. Tormechanik bzw. Federn überprüfen und instandsetzen
18. U	Flashes 3x	Door parameters have been manually deleted by the operator. Operator not programmed.	Door parameters (force and travel data) have been deleted or the operator has not yet been programmed (this is only a note and not an error).	Re-teach the operator, see ***4.3 Teaching in the operator on page 14***.
20.		Force cut-off during door is opening.	Door runs sluggishly or unevenly.	Correct the door travel.
			There is an obstacle in the door area.	Remove the triggering obstacle and teach in opener again if necessary.
22.	Flashes 2x	3x Obstacle detection (force cut-off, 8k2 and/or OSE safety contact strip) in succession when the door is opening.	Door runs sluggishly or unevenly.	Correct the door travel.
			There is an obstacle in the door area. Safety strip or safety strip supply cable defective.	Remove the triggering obstacle. Check the closing edge safety device/supply cable and replace if necessary. The error must be acknowledged with a command, after which a reference run is necessary. See ***13.8 Reference run on page 52***.
24.	Flashes 1x	Optical safety contact strip (**SE3**) was activated during closing	An optical closing edge safety device connected to terminals 20, 74 and 77 was interrupted or activated during closing. There is an obstacle in the door area. Safety strip or safety strip supply cable defective. Incorrect evaluation selected for the connected closing edge safety device. See also ***5.10 Optical closing edge safety device OSE (SE3) on page 20***.	Remove the triggering obstacle. Check the closing edge safety device/supply cable and replace if necessary. Check setting in menu 43 and correct if necessary
	▶ **Ohne angeschlossene Schließkantensicherung (Klemmen 20 / 74 / 77) muss Menü 43 auf 0 stehen.**			
26.		Force cut-off during door is closing.	Door runs sluggishly or unevenly.	Correct the door travel.
			There is an obstacle in the door area.	Remove the triggering obstacle and teach in opener again if necessary.

Display (flashes)	Light / Warning lamp	Error / Warning	Possible cause	Remedy
27.	Flashes 2x	3x Obstacle detection (force cut-off, 8k2 and/or OSE safety contact strip) in succession when the door is closing. Error message only appears when automatic closing is selected.	Door runs sluggishly or unevenly.	Correct the door travel.
			There is an obstacle in the door area. Safety strip or safety strip supply cable defective.	Remove the triggering obstacle and teach in opener again if necessary. Check the closing edge safety device/supply cable and replace if necessary. The error must be acknowledged with a command, after which the hold-open time will restart.
32.	Flashes 1x	Safety contact strip 8k2 (**SE3**) was activated during opening.	An closing edge safety device (8k2) connected to terminals 20 and 74 was interrupted or activated during opening. There is an obstacle in the door area. Safety strip or safety strip supply cable defective. Incorrect evaluation selected for the connected closing edge safety device. See also ***5.9 Closing edge safety device 8k2 (SE3) on page 20***.	Remove the triggering obstacle. Check the closing edge safety device/supply cable and replace if necessary. Check setting in menu 43 and correct if necessary
	▶ **Without a connected closing edge safety device (terminals 20 / 74) Menu 43 must be set to 0.**			
34.	Flashes 1x	Optical safety contact strip (**SE3**) was activated during opening.	An optical closing edge safety device connected to terminals 20, 74 and 77 was interrupted or activated during opening. There is an obstacle in the door area. Safety strip or safety strip supply cable defective. Incorrect evaluation selected for the connected closing edge safety device. See also ***5.10 Optical closing edge safety device OSE (SE3) on page 20***.	Remove the triggering obstacle. Check the closing edge safety device/supply cable and replace if necessary. Check setting in menu 43 and correct if necessary
	▶ **Without a connected closing edge safety device (terminals 20 / 74 / 77) Menu 43 must be set to 0.**			
38.	Flashes 5x	Error during test of contact photocell for CLOSE direction.	The test of the contact photocell for the closing direction was not successful	Check the photocell or the supply line to the photocell and replace if necessary.
			Incorrect test type selected for the connected photocell.	Check setting in menu 40 and correct if necessary
			A 2-wire photocell is connected	Set the value 3 or 4 in Menu 39, see ***5.8 2-wire-photocell in closing direction (SE2) on page 19***.
48.	Flashes 5x	Test error wicket door contact or emergency stop circuit	The test of the wicket door contact / emergency stop circuit was not successful.	Check the wicket door contact / emergency stop circuit or the supply line to the wicket door contact / emergency stop circuit and replace if necessary.
			Incorrect test type selected for the connected wicket door contact/ emergency stop circuit.	Check setting in menu 46 and correct if necessary
			Incorrect evaluation for the connected wicket door contact/emergency stop circuit selected.	Check setting in menu 45 and correct if necessary
49.	Flashes 5x	Communication problem with 2-wire radio interface (FUNK2)	When connecting the radio receiver, the control unit was not in a de-energised state. Contact problem.	Only connect the radio receiver when the power is off. Reconnect the radio receiver and ensure it is correctly positioned.

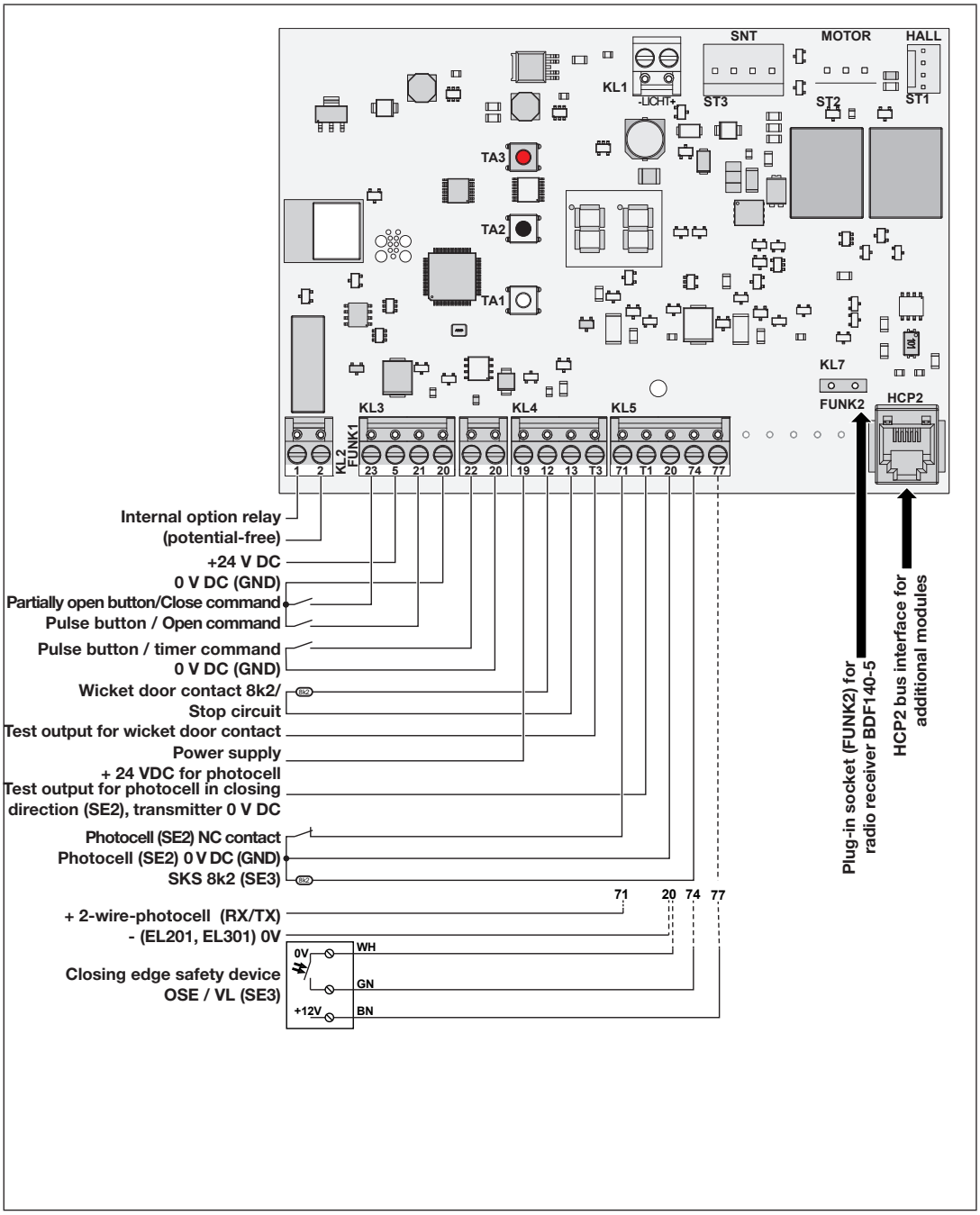
Display (flashes)	Light / Warning lamp	Error / Warning	Possible cause	Remedy
55.	Flashes 5x	A registered bus participant was not recognised.	A bus participant has been removed, is defective or the connection has been interrupted.	Check the connection to the HCP bus participants. Perform a bus scan and then check the function of all HCP bus participants. See also ***8 HCP2 bus interface on page 29***.
56.	Flashes 5x	Too many HCP bus participants detected	Too many HCP bus participants are connected	Reduce the number of HCP bus participants to a maximum of 5 and then perform a bus scan. See also ***8 HCP2 bus interface on page 29***.
57.	Flashes 5x	Communication error with HCP bus participant after restart	A bus participant has been removed, is defective or the connection has been interrupted.	Check the connection to the HCP bus participants. Perform a bus scan and then check the function of all HCP bus participants. See also ***8 HCP2 bus interface on page 29***.
60.	Flashes 5x	Watchdog test failed	External watchdog of the control system has triggered	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit
61.	Flashes 6x	Short circuit in control board button TA1	The analogue input of button TA1 on the control unit has detected a problem when evaluating the command (voltage range).	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit
62.	Flashes 6x	Short circuit in control board button TA2	The analogue input of button TA2 on the control unit has detected a problem when evaluating the command (voltage range).	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit
63.	blinkt 6x	Short circuit in control board button TA3	The analogue input of button TA3 on the control unit has detected a problem when evaluating the command (voltage range).	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit.
64.	Flashes 6x	Short circuit in external button at input 21	The analogue input (Eingang 21) of the control unit has detected a problem when evaluating the command (voltage range).	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit. Check button/supply cable, replace if necessary.
65.	Flashes 6x	Short circuit in external button at input 22	The analogue input (Eingang 22) of the control unit has detected a problem when evaluating the command (voltage range).	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit. Check button/supply cable, replace if necessary.
66.	Flashes 6x	Short circuit in external button at input 23	The analogue input (Eingang 23) of the control unit has detected a problem when evaluating the command (voltage range).	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit. Check button/supply cable, replace if necessary.
67.	Flashes 5x	Diagnostic error when checking the battery voltage	**Only during emergency battery operation** The battery voltage is too low for motor operation	Charge, check and, if necessary, replace the battery.
68.	Flashes 5x	Error during motor current measurement test	Es ist ein Fehler während der Ruhestrommessung aufgetreten.	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit.

Display (flashes)	Light / Warning lamp	Error / Warning	Possible cause	Remedy
69.	Flashes 5x	Diagnostic error during motor voltage test	Motor voltage is outside the permissible limits. **During mains operation:** Voltage of the 37 VDC circuit too low **During operation with emergency battery:** Battery voltage too low	Check the switching power supply and its connection cable/plug contact; replace the power supply if necessary. Charge the battery, check it and replace it if necessary.
70.	Flashes 5x	Diagnostic error during testing of motor relay 1	Error in motor relay 1 (stuck or not switching)	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit.
71.	Flashes 5x	Diagnostic error during testing of motor relay 2	Error in motor relay 2 (stuck or not switching)	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit.
72.	Flashes 5x	Diagnostic error when checking the motor circuit	Motor or motor cable defective (cable break/contact problem)	Check the connection of the motor cable for correct contact. Check the motor and motor cable, replace if necessary
73.	Flashes 5x	Diagnostic error during MOSFET test (for motor control)	The MOSFET for motor control has a short circuit	Replace the control unit.
74.	Flashes 5x	General diagnostic error (measured values)	General error during diagnostics. The analogue measured values are not plausible. The diagnosis did not work correctly	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit.
75.	Flashes 5x	General diagnostic error (timeout)	General error during diagnosis. The measurement took too long. The diagnosis did not work correctly	Confirm with command. If the error cannot be confirmed or if the error occurs repeatedly, replace the control unit.
80.	Flashes 6x	Read error in the configuration data	The configuration could not be read correctly. Memory may be defective	Reset the control unit and re-teach and reconfigure the operator. If the control cannot reset, the operator cannot be reprogrammed or the error occurs several times, replace the control unit.
81.	Flashes 6x	Memory write error	The data from the current model could not be read correctly. Memory defective or problem writing data.	Reset the control unit and re-teach and reconfigure the operator. If the control cannot reset, the operator cannot be reprogrammed or the error occurs several times, replace the control unit.
82.	Flashes 6x	Memory read error	The data for the current model could not be written correctly. Memory defective or problem reading the data.	Reset the control unit and re-teach and reconfigure the operator. If the control cannot reset, the operator cannot be reprogrammed or the error occurs several times, replace the control unit.
83.	Flashes 6x	HCP2 bus master hardware error	Defect in the HCP2 bus master hardware (RS485	Replace the control unit.
84.	Flashes 6x	Bluetooth module error	Integrated Bluetooth module not responding	Replace the control unit.

NOTE

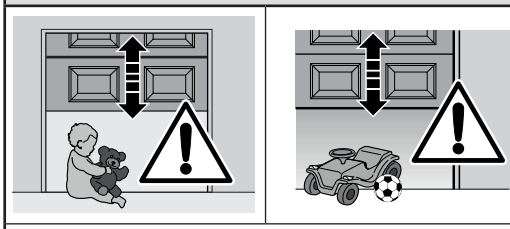
If several errors occur simultaneously, the first error is displayed. Once an error has been rectified, a command (handheld transmitter button, a connected control button or the button **—** / **TA1** (white)) may need to be given in order for the next error to be displayed.

12 Overview of MS660 control unit



13 Operation

⚠ WARNING



Risk of injury from door movement!

When the gate is moving, injuries or damage may occur in the vicinity of the door.

- ▶ Ensure that no children play near the door system.
- ▶ Ensure that there are no persons or objects in the movement area of the door.
- ▶ If the door system only has one safety device, only operate the garage door drive if you can see the door's range of motion.
- ▶ Monitor the door's movement until it has reached its end position.
- ▶ Only drive or walk through gate openings of remote-controlled gate systems once the gate has come to a complete standstill!
- ▶ Never stand under the open door

⚠ CAUTION

Risk of crushing in the guide rail

Reaching into the guide rail while the gate is moving can result in crushing injuries.

- ▶ Do not reach into the guide rail while the door is moving

⚠ CAUTION

Risk of injury from the rope bell

If you hang on the rope bell, you could fall and injure yourself. The operator may break off and injure persons below, damage objects or be destroyed itself.

- ▶ Do not hang from the rope bell with your body weight.

CAUTION

Damage caused by the mechanical unlocking

If the mechanical release rope becomes caught on a roof rack system or other protrusions of the vehicle or the gate, this can cause damage.

- ▶ Ensure that the rope cannot get caught.

NOTE

Carry out the initial functional tests and the Commissioning or expanding the radio system inside the garage.

13.1 Instructing users

This operator can be used by

- children aged 8 and above
- persons with reduced physical, sensory or mental capabilities
- Persons with a lack of experience and knowledge.

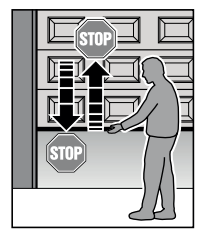
A condition for using the operator is that the children/persons mentioned above

- are supervised
- are instructed in its safe use
- understand the resulting dangers.

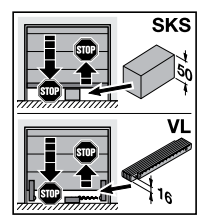
Children must not play with the operator.

- ▶ Show all users of the door system how to use the operator properly and safe operation of the operator.
- ▶ Demonstrate and test the mechanical release and the safety return.

13.2 Check the safety return



- ▶ Hold the door with both hands during approach → the operator must stop and engage the safety reverse.
- ▶ Hold the door with both hands while it is oppening → the operator must stop and engage the safety reverse.
- ▶ Place a 50 mm (SKS) or 16 mm (VL) high test object in the centre of the door and close the door. The door system must stop and initiate the safety reverse as soon as the door reaches the test object.



- ▶ If the safety return fails, immediately commission a qualified person to inspect or repair.

13.3 Functions of the control board button TA1

1. Press the button ⎓ or **TA1** (white). The door opens.
2. Press the button ⎓ or **TA1** (white) again. The door stops.
3. Press the button ⎓ or **TA1** (white) again. The door closes.
4. Press the button ⎓ or **TA1** (white) again. The door stops.

13.4 Functions of the various radio codes of the receiver BDF140-5 (FUNK2)

13.4.1 Channel 1 / Pulse

In normal operation, the garage door operator works with pulse sequence control, which is triggered via the programmed radio code impulse (or external button):

1st pulse: → The door moves towards one end position.

2nd pulse: → The door stops.

3rd pulse: → The door moves in the opposite direction.

4th pulse: → The door stops.

5th pulse: → as with pulse 1.

etc.

13.4.2 Channel 2 / ventilation function

- **Door is not in ventilation position:**
  Radio code *ventilation* rmoves the door to the ventilation position.
- **Door is in ventilation position:**
  Radio code *ventilation* moves the door to the end position door Closed,
  Radio code *Impulse* moves the door to the end position door Open.

13.4.3 Channel 2 / partial opening function

- **Door is not in partial opening position:**
  Radio code *partial opening* moves the door to the partial opening position.
- **Door is in partial opening position:**
  Radio code *partial opening* moves the door to the end position door Closed,
  Radio code *Impulse* moves the door to the end position door Open.

13.4.4 Channel 3 / light

- Channel 3 can be used to switch the operator or external lighting, depending on the settings in menus 11, 13 and 14, see ***page 37***.

13.4.5 Channel 4 / defined CLOSE

- Defined close command, close-stop-close ... or cancellation of the hold-open time when automatic closing is selected.

13.5 What to do in the event of a power failure (without emergency battery)

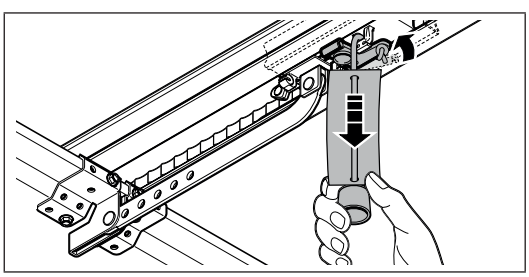
⚠ WARNING

Risk of injury if the door closes quickly

If the emergency release is activated when the gate is open, there is a risk that the door may close on you if the springs are weak, broken or defective or due to insufficient weight distribution.

▶ Only activate the emergency release when the door is closed!

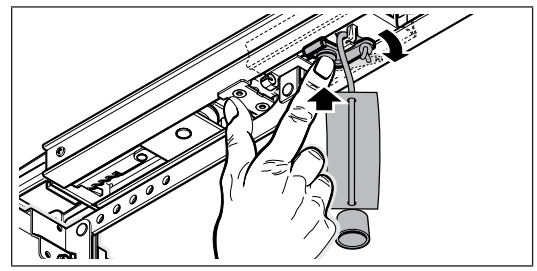
▶ To open or close the garage door manually during a power failure, the door must be be decoupled, see ***3.5.1 Manual operation on page 10***.



- Pull on the mechanical release rope. The guide carriage is decoupled for manual operation.

13.6 What to do when power comes back on (without emergency battery)

▶ After power is restored, the door must be re-engaged, see ***3.5.2 Automatic operation on page 10***.



▶ Press the green button on the guide carriage.
The guide carriage is re-engaged for automatic operation.

13.7 What to do in the event of a power failure (with emergency battery)

With an optional emergency battery, the door can be operated in the event of a power failure. The switchover to battery operation is automatic.

⚠ WARNING

Risk of injury due to unexpected door movement!

Unexpected door movement can occur if the emergency battery is still connected despite the mains plug being pulled out.

▶ Before carrying out any work on the door system, disconnect the mains plug and, if necessary, the emergency battery plug. Secure the door system against unauthorised re-entry!

13.8 Reference run

There are two different types of reference runs

- manual reference run
- automatic reference run

A reference run is performed:

- Only in the direction of door OPEN.
- At reduced speed.
- With a slight increase in the last forces learned.

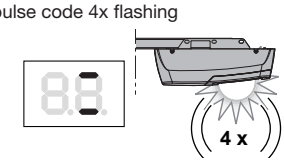
13.8.1 Manual reference run

A manual reference run is required:

- If the obstacle detection (force cut-off) is triggered 3 times in succession when travelling towards the door OPEN position.
- If the closing edge safety device (8k2 or OSE) is triggered three times in succession during a movement towards the door OPEN position
- The programmed current has been undershot
- If there is a power failure during a movement.
- If the teach-in process or a reference movement is interrupted.

Perform a required reference run as follows:

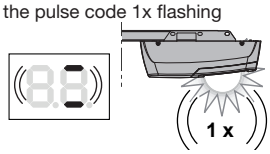
- The door is locked, the mains plug is plugged in.
- - lights up on the display and the operator lighting shows the pulse code 4x flashing



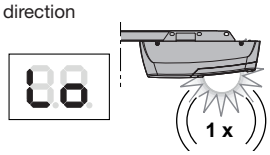
⚠ WARNING

Risk of injury due to insensitive force cut-off
As the **force cut-off** is **less sensitive** during the reference run, it is essential that the operator remains with the device and closely monitors the garage area!
In an emergency, the door movement can be stopped immediately by pressing the hand-held transmitter button, the control button or the button – or **TA1** (white).

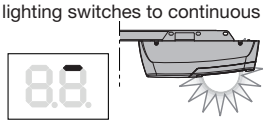
▶ Briefly press the hand-held transmitter button, a connected control button or thebutton – or **TA1** (white).
- The reference run in the "door open" direction starts; the operator runs at reduced speed until it reaches the upper end stop.
- - flashes on the display and the operator lighting shows the pulse code 1x flashing



- in end position "door open" Lo lights up for 2 seconds and the operator moves approx. 10 mm in the closing direction



- the door status "door open" is displayed and the operator lighting switches to continuous light.



▶ **Test:** Perform several uninterrupted door movements to check whether the door reaches its closed position completely and whether the door opens completely.

The operator is now ready for normal operation again.

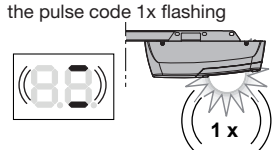
NOTE

Repeat the learning cycle, see ***6.3 Relearn forces and end positions on page 24***, if the door does not open and close as described in the test step even after several uninterrupted door cycles.

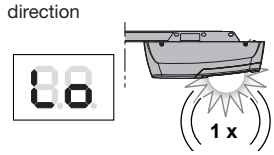
13.8.2 Automatic reference run

Eine automatische Referenzfahrt ist erforderlich:
- If the obstacle detection (force cut-off) is triggered 3 times in succession when closing to "door CLOSE" position.
- If the closing edge safety device (8k2, OSE or VL1/VL2) is triggered three times in succession when closing to "door CLOSE" position.
- If the photocell is triggered three times in succession when closing to "door CLOSE" position.
- After 50 movements.

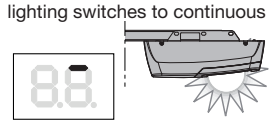
An automatic reference run is performed as follows:
- When the "door open" end position is reached, the automatic reference run starts in the "door open" direction; the operator runs at reduced speed until it reaches the upper end stop.
- - flashes on the display and the operator lighting shows the pulse code 1x flashing



- in end position "door open" Lo lights up for 2 seconds and the operator moves approx. 10 mm in the closing direction



- the door status "door open" is displayed and the operator lighting switches to continuous light.



▶ **Test:** Perform several uninterrupted door movements to check whether the door reaches its closed position completely and whether the door opens completely.

The operator is now ready for normal operation again.

NOTE

Repeat the learning cycle, see ***6.3 Relearn forces and end positions on page 24***, if the door does not open and close as described in the test step even after several uninterrupted door cycles.

14 Inspection and maintenance

▶ The garage door operator is maintenance-free.
▶ However, for your own safety, we recommend that you have the door system checked and serviced by a qualified technician in accordance with the manufacturer's instructions.

⚠ WARNING

Risk of injury due to unexpected door movement!
Unexpected door movement can occur if the emergency battery is still connected despite the mains plug being pulled out.
▶ Before carrying out any work on the door system, disconnect the mains plug and, if necessary, the emergency battery plug. Secure the door system against unauthorised re-entry!

Any inspection or necessary repair may only be carried out by a qualified person. Please contact your supplier for this purpose.

A visual inspection can be carried out by the operator.
▶ Check all safety and protective functions monthly and, if present, the emergency release.
▶ Any faults or defects must be rectified immediately.

15 Dismantling and disposal

- When dismantling, observe all applicable occupational safety regulations.
- Garage door operator must be dismantled by a qualified person in accordance with these instructions in reverse order. It needs to be disposed properly.

15.1 Disposal of old electrical appliances in Germany

Important information in accordance with the Electrical and Electronic (ElektroG)

We would like to remind owners of electrical and electronic equipment that, in accordance with applicable legal regulations, old electrical equipment must be disposed of separately from municipal waste.

Disposal

Batteries and accumulators contained in waste electrical and electronic equipment that are not permanently enclosed in the waste electrical and electronic equipment, as well as lamps that can be removed from the waste electrical and electronic equipment without destruction, must be separated from it without destruction before being handed over to a disposal site and disposed of in the appropriate manner. If our devices contain batteries/accumulators, please refer to the operating instructions for the respective device for further information on the type and chemical system of the battery and how to remove it.

The symbol of a crossed-out wheelie bin shown on electrical and electronic appliances also indicates the obligation to dispose of them separately.

Return to retailers or disposal companies

Electrical retailers and grocery stores are obliged under Section 17 ElektroG to take back old electrical and electronic equipment under certain conditions. Stationary distributors must take back one old electrical appliance of the same type free of charge when selling a new electrical and electronic appliance (1:1 return). This also applies to home deliveries. These distributors must also take back up to three small waste electrical appliances (≤ 25 cm) without this being linked to a new purchase (0:1 take-back).
In addition, waste electrical appliances can also be returned to an official collection point of the public waste disposal authority.

Returns in distance selling

Distance sellers such as online retailers are also obliged to collect and take back old electrical appliances under the conditions set out in Section 17 (2) of the ElektroG. When delivering electronic devices in categories 1, 2 and 4, Distance sellers who are obliged to take back old appliances must collect an old electrical appliance of the same type free of charge at the place of delivery of the new appliance. For other old electrical appliances, distance sellers who are obliged to take back old appliances must collect an old electrical appliance of the same type free of charge at the place of delivery of the new appliance. For other waste electrical equipment, distance sellers who are obliged to take back waste electrical equipment must also provide suitable return options within a reasonable distance from the end users. An overview of the electrical appliance categories can be found at ***https://www.gesetze-im-internet.de/elektrog_2015/anlage_1.html***.

Deletion of personal data

As the end user, you are responsible for deleting personal data on the WEEE to be disposed of before handing it in.

Information on compliance with collection and recycling requirements

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety publishes annual data on compliance with collection and recycling requirements by the bodies responsible for the collection and recycling of waste equipment.
The data collected for the current and previous reporting periods can be viewed on the website of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety at the following link:
https://www.bmu.de/themen/wasser-ressourcen-abfall/kreislaufwirtschaft/statistiken/elektro-und-elektronikaltgeraete.

15.2 Disposal in France

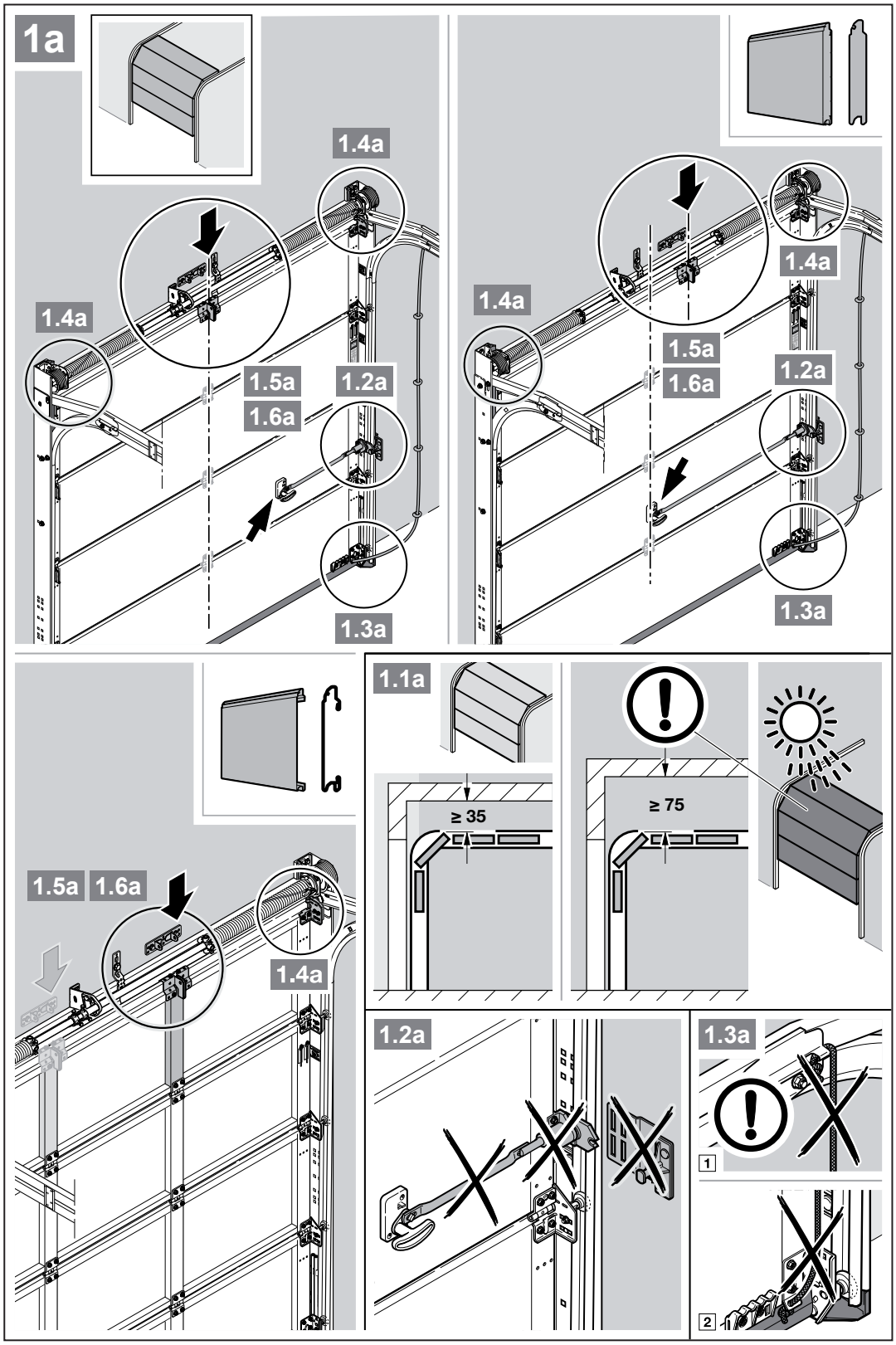
Dispose of packaging separately.

Electrical and electronic equipment must be disposed of at the designated collection points. Dispose of batteries separately.

16 Technical data

Mains connection:	230/240V, 50 Hz,	
Standby	Bluetooth deactivated: **0,8 W**	
	Bluetooth activated: **1,2 W**	
Time until standby (standby state)	1 min	
Protection class	IP20, only for dry rooms	
Insulation class	II	
Temperature	-20 °C to +60 °C	
Automatic switch-off	Automatically programmed for both directions separately.	
End position switch-off / Force limitation	Self-learning, wear-free, as no mechanical switches. Obstacle detection that readjusts with every gate movement.	
Nominal load	**GA205:** **GA206:** **GA405:** **GA406:**	250 N 250 N 270 N 250 N
Max. tensile and compressive force	**GA205:** **GA206:** **GA405:** **GA406:**	750 N 750 N 1000 N 850 N
Power	**GA205:** **GA206:** **GA405:** **GA406:**	0,3 kW 0,3 kW 0,4 kW 0,4 kW
Duty cycle	KB 2 min.	
Max. cycles hour/day	**GA205:** **GA206:** **GA405:** **GA406:**	10 / 25 10 / 25 10 / 100 10 / 100
Max. door area / door width	**GA205:** **GA206:** **GA405:** **GA406:**	12 m^2 / 5 m 12 m^2 / 5 m 15 m^2 / 6 m 15 m^2 / 6 m
Max. door weight	**GA205:** **GA206:** **GA405:** **GA406:**	165 kg 165 kg 200 kg 185 kg
Motor	DC motor with Hall sensor	
Connection	Removable connection terminals for external devices with 24 V DC safety low voltage 24 V DC, such as internal and external push buttons.	
Connection options	• Stop/emergency stop button • Photocell (contact or 2-wire) • Closing edge safety device (8k2 or OSE)) • Optional relay, optionally for warning light, additional external lighting, door closed, door open or partial opening display, impulse upon command input, fault or maintenance message. • HCP2-BUS for external additional modules	

Quick release	In the event of a power failure, operate from the inside using the pull cord.	
Universal fitting	For up-and-over and sectional doors	
Door running speed*	• Travel in door closing max. 140 mm/s • Travel in door opening max. 220 mm/s	
* Depending on the operator type, door type, door size and door leaf weight weight		
Operator airborne sound emission	≤ 70 dB (A)	
Guide rail	Extremely flat at 30 mm, with integrated push-on protection and maintenance-free toothed belt/toothed belt.	
Mindestfahrweg	Sectional door (Ł 1): Up-and-over door (Ł2): Non-protruding up-and-over door (Ł 3): Sliding door (Ł 4/Ł 5): hinged garage door (Ł 6/Ł 7):	~1020 mm ~1020 mm ~1100 mm ~1550 mm ~1350 mm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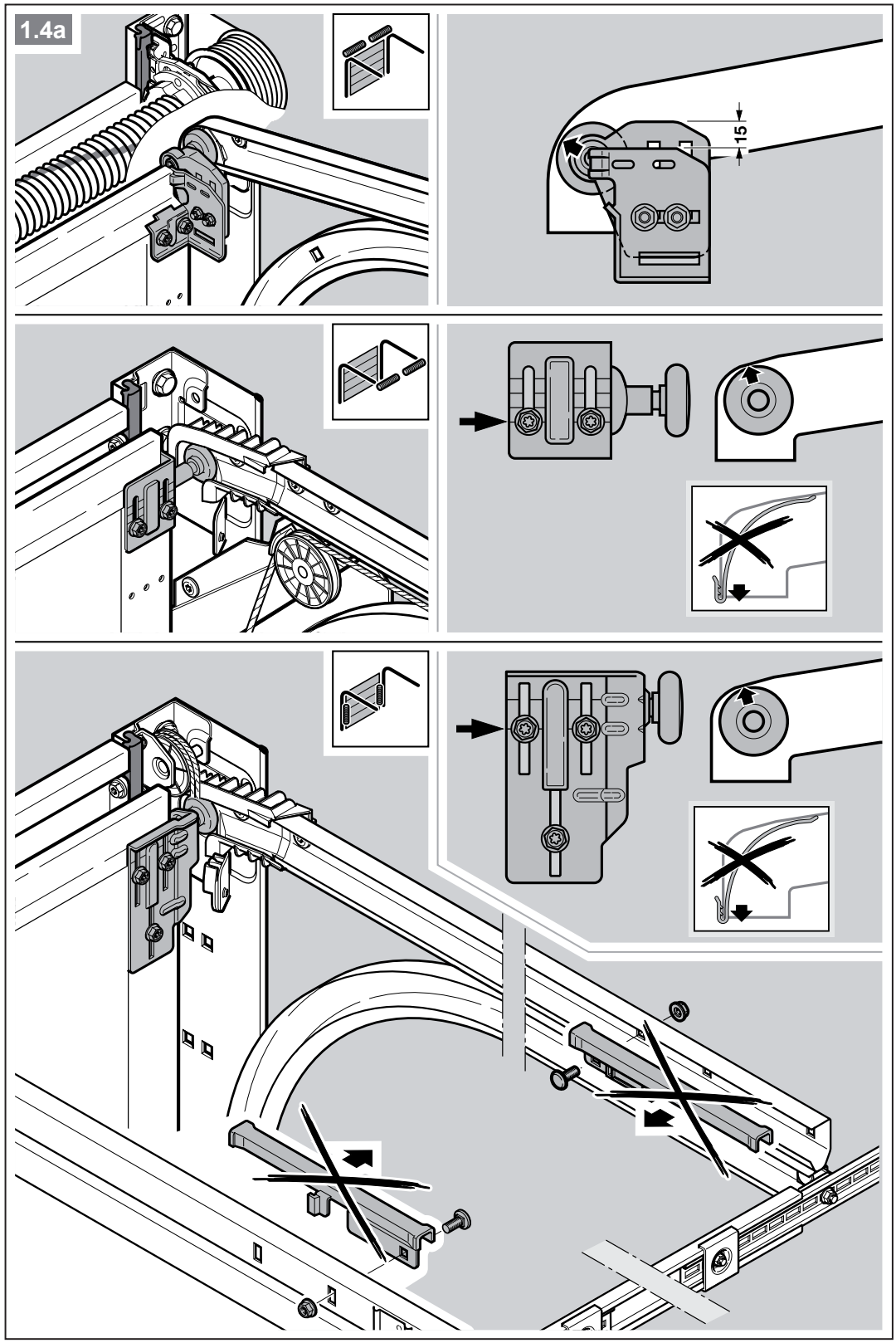
2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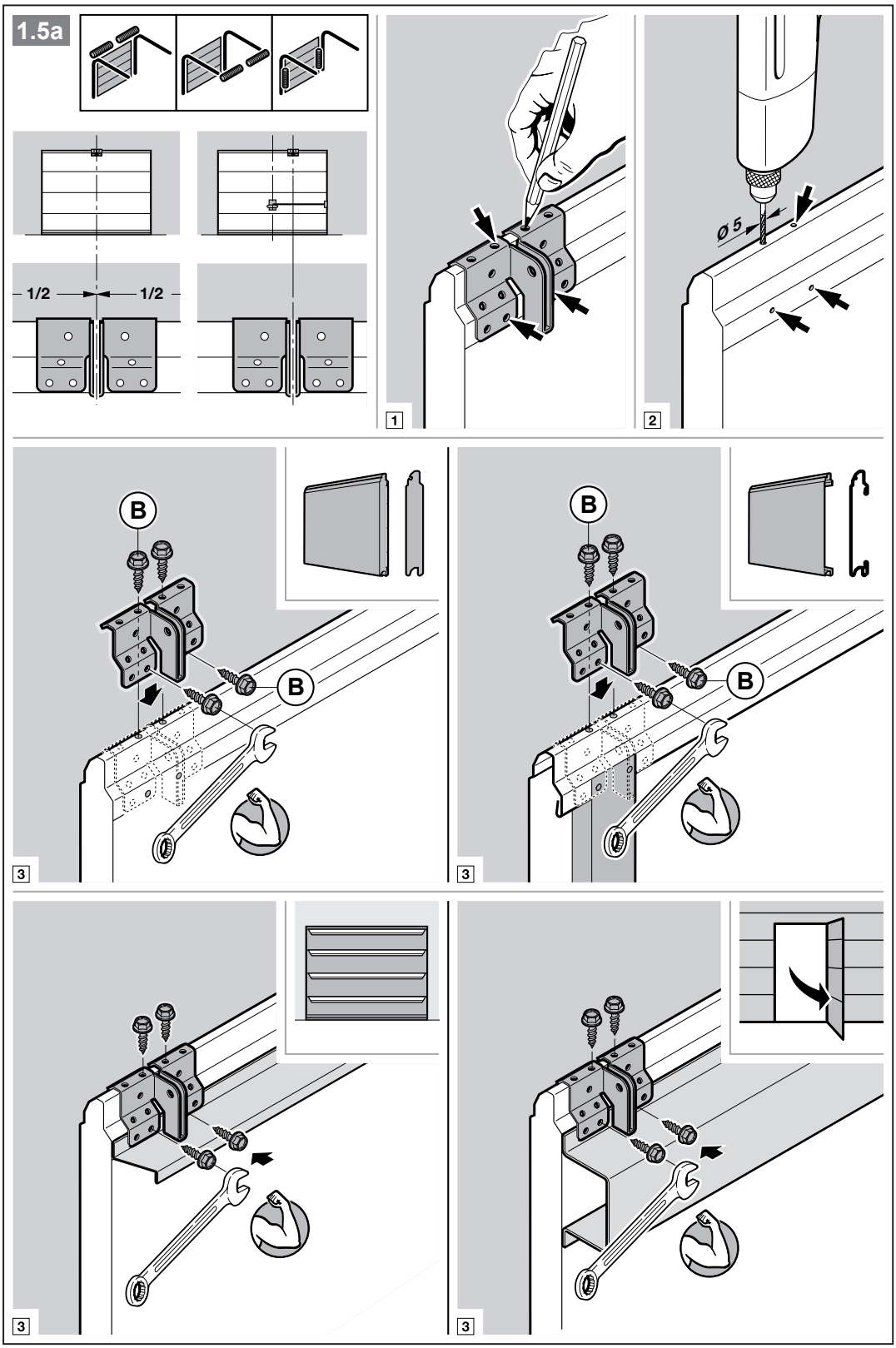
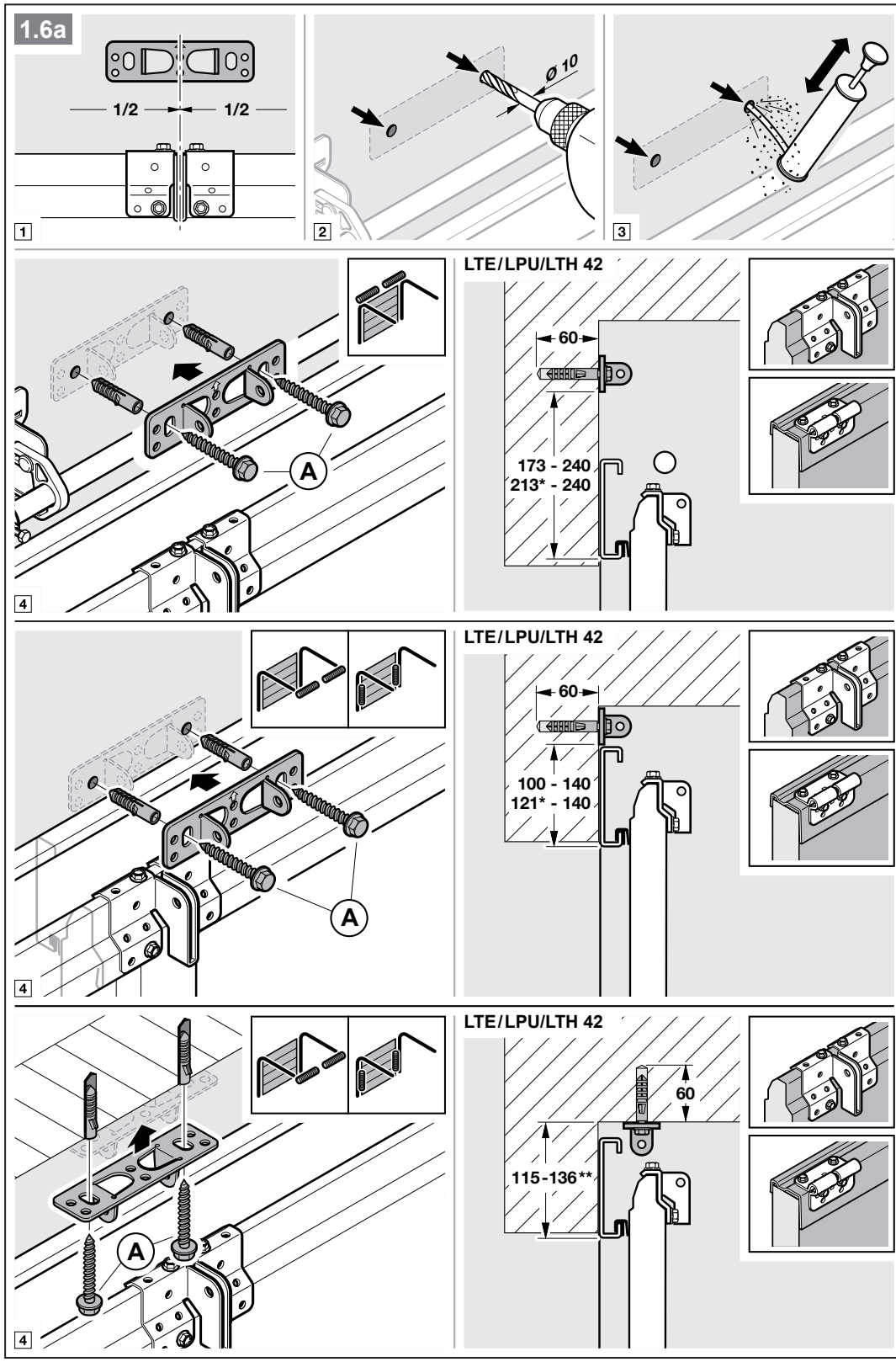
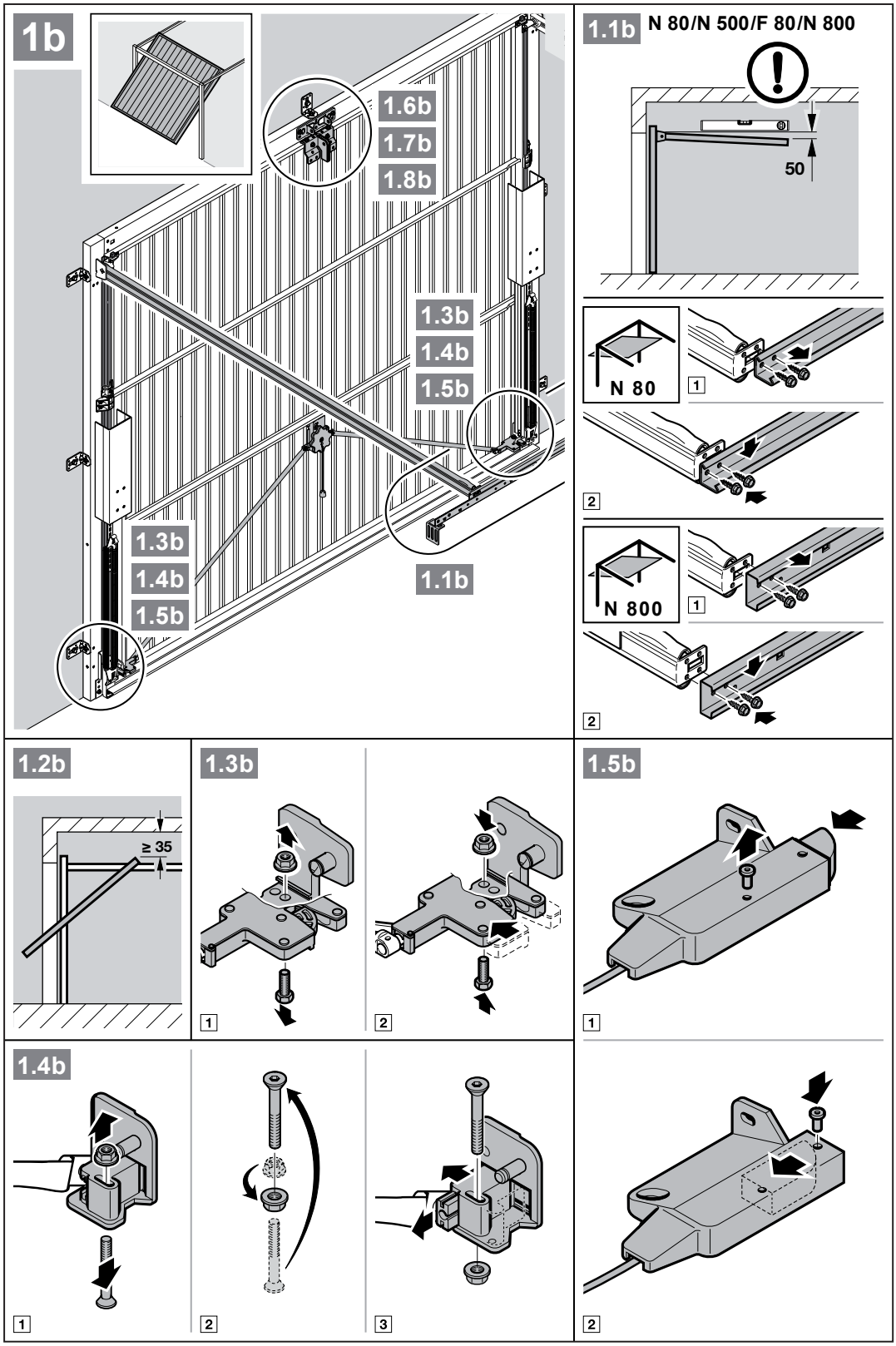
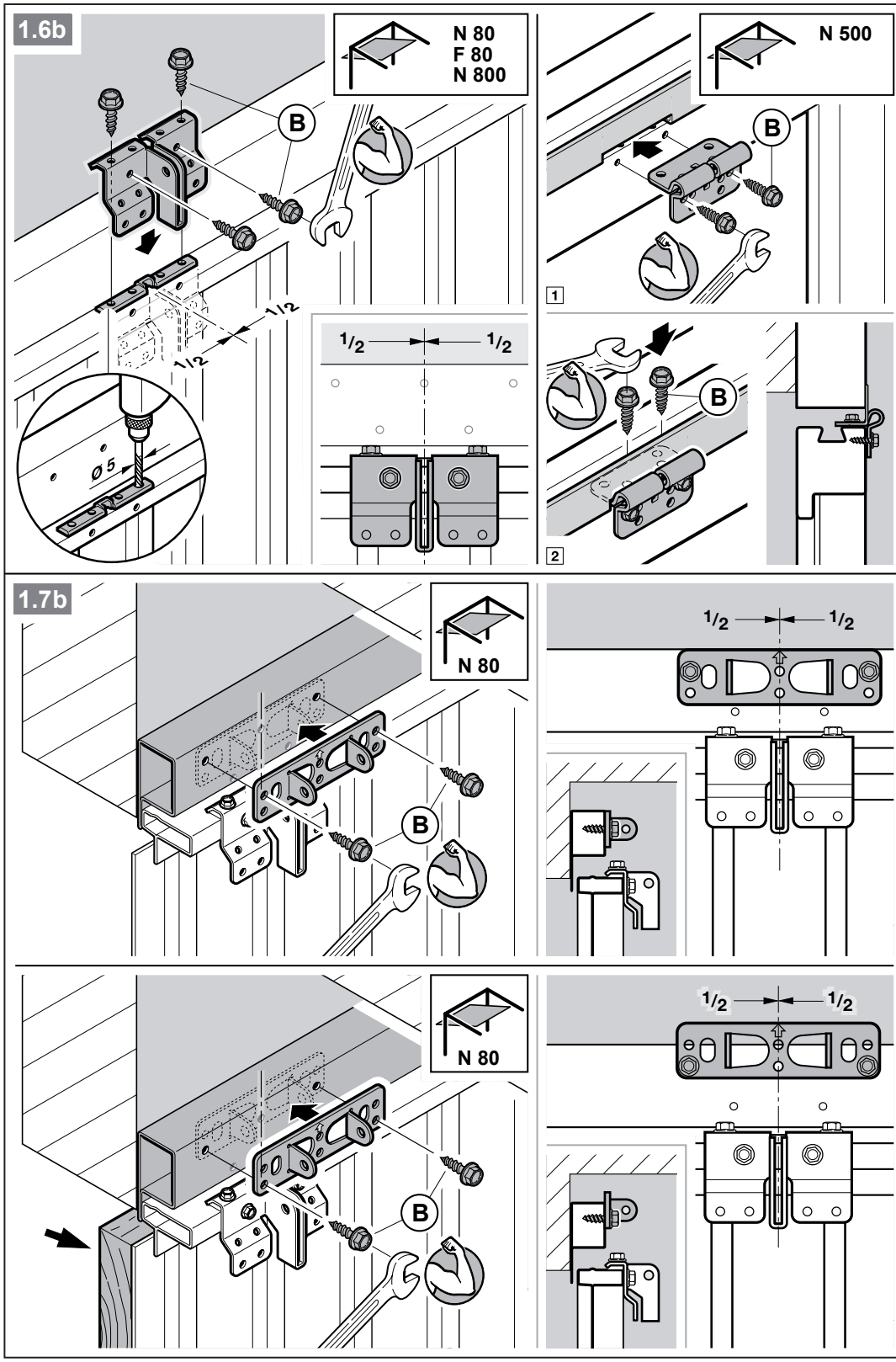
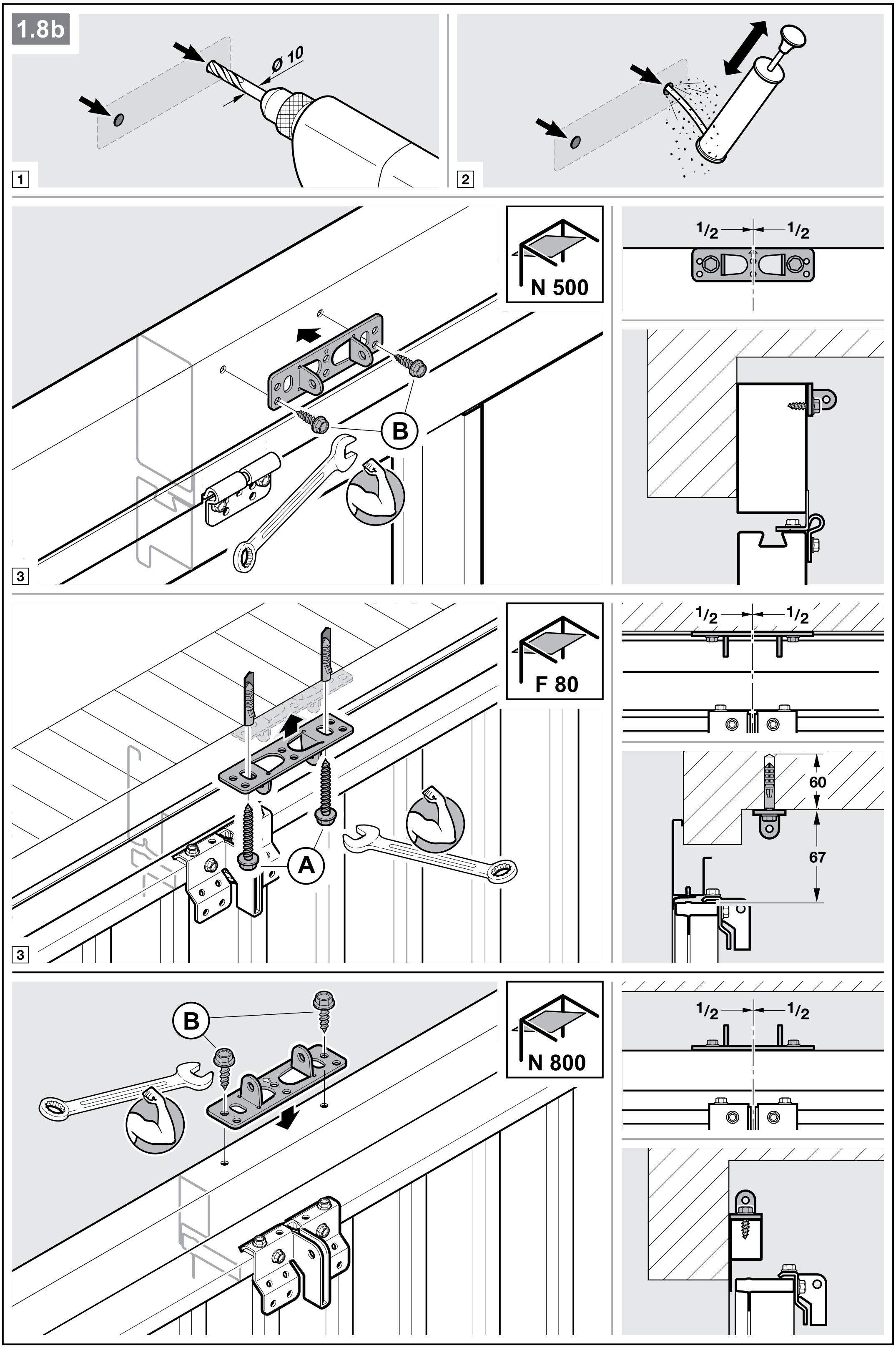

1.5a
1/2
1/2
Ø 5
B
B
B
B
1
2
3
3
3
3

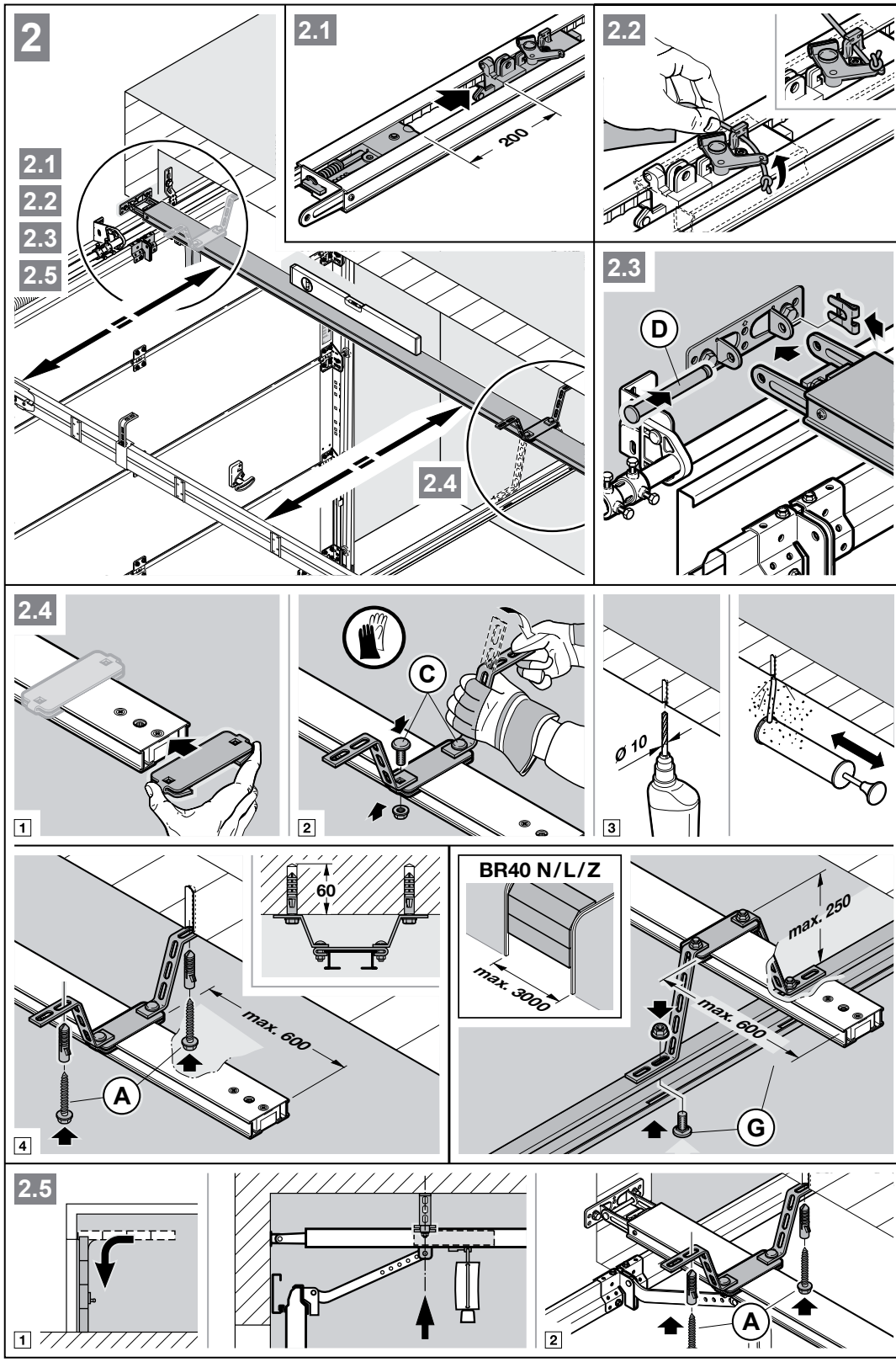

1.6a
1/2
1/2
1
Ø 10
2
3
A
4
LTE/LPU/LTH 42
60
173 - 240
213* - 240
A
4
LTE/LPU/LTH 42
60
100 - 140
121* - 140
A
4
LTE/LPU/LTH 42
60
115-136**
A
4

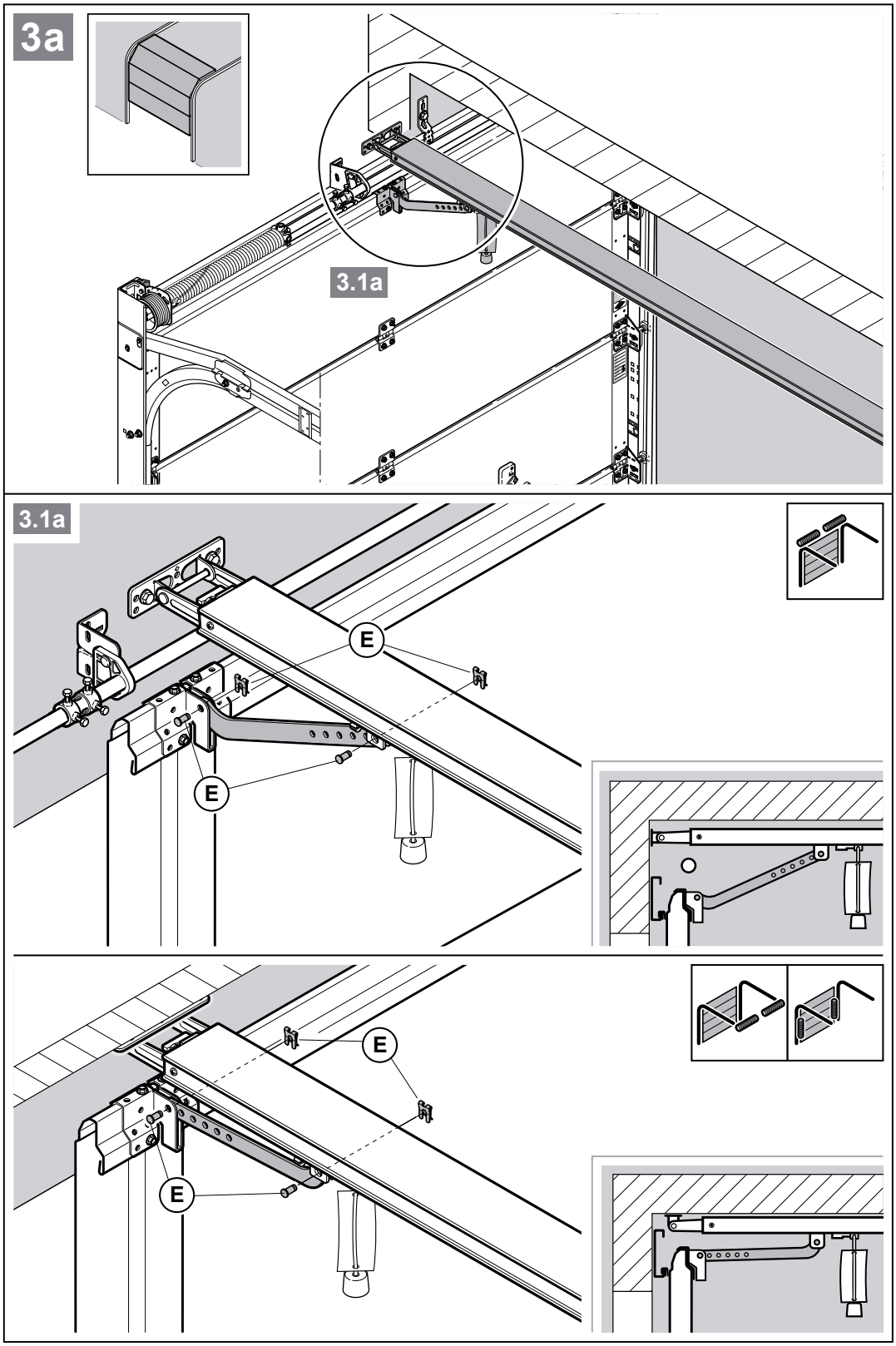

1b
1.6b
1.7b
1.8b
1.3b
1.4b
1.5b
1.3b
1.4b
1.5b
1.1b
1.1b N 80/N 500/F 80/N 800
50
N 80
1
2
N 800
1
2
1.2b
≥ 35
1.3b
1
2
1.5b
1
2
1.4b
1
2
3

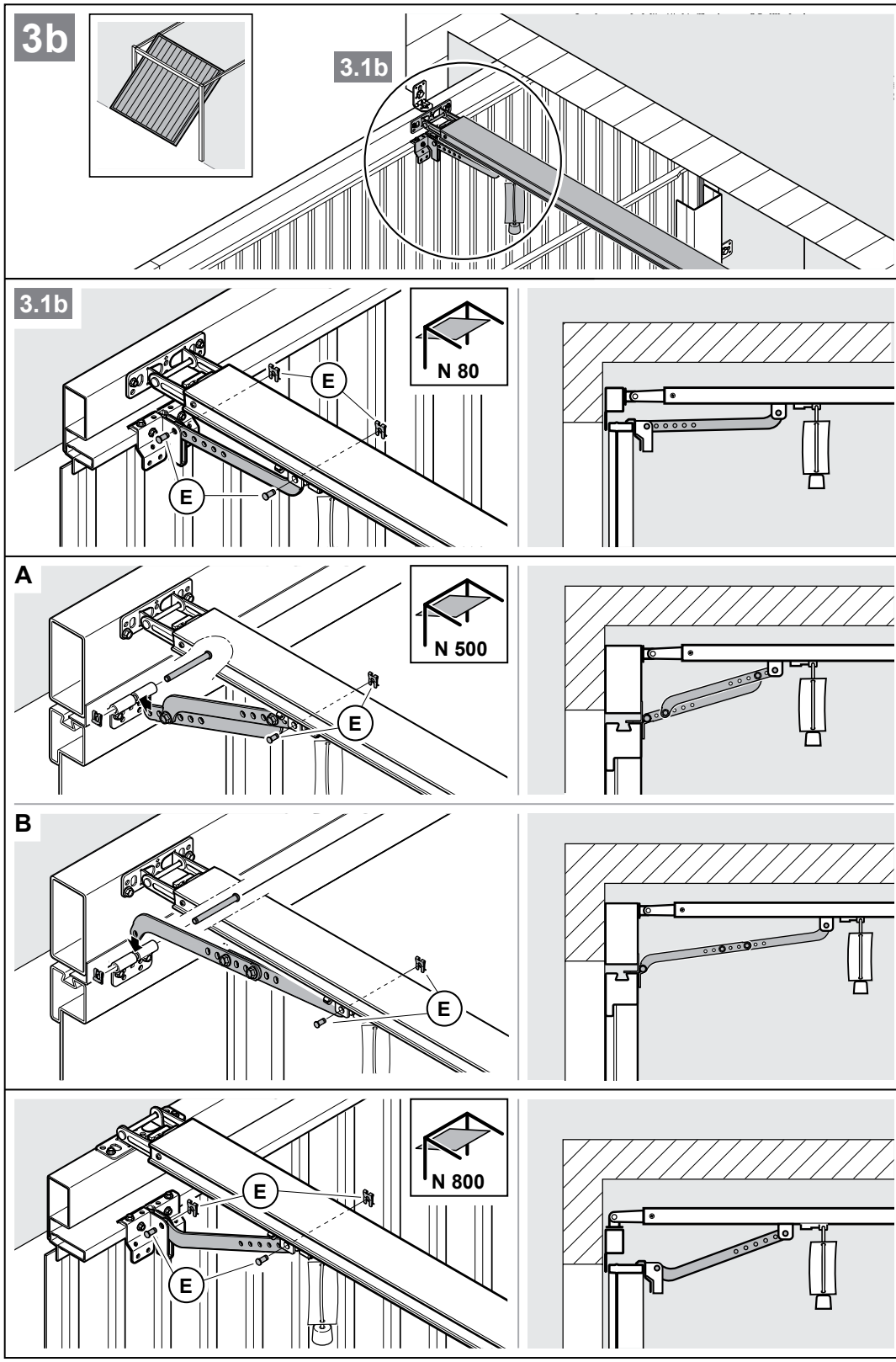

1.6b
N 80
F 80
N 800
B
1/2
1/2
Ø5
1/2
1/2
N 500
B
1
B
2
1.7b
N 80
B
1/2
1/2
N 80
B
1/2
1/2

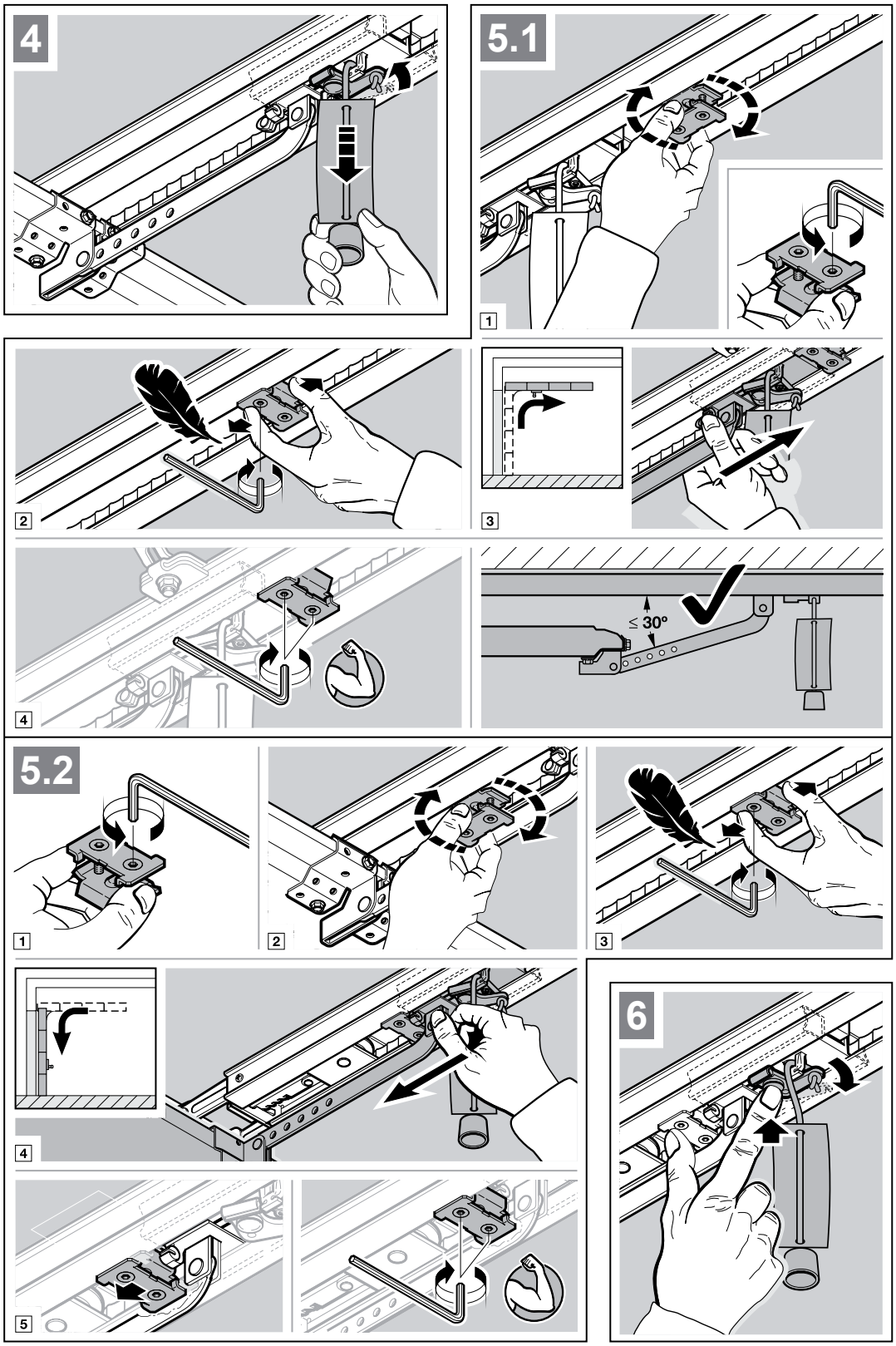


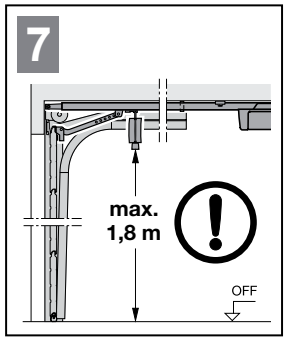
1.8b
Ø 10
1
2
N 500
1/2
1/2
B
3
F 80
1/2
1/2
60
67
A
3
N 800
B
1/2
1/2

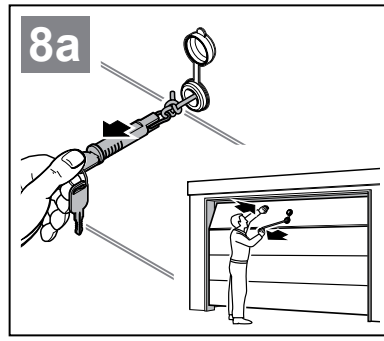

2
2.1
2.2
2.3
2.5
2.4
200
D
C
Ø 10
1
2
3
60
max. 600
A
4
BR40 N/L/Z
max. 3000
max. 250
max. 600
G
2.5
1
2

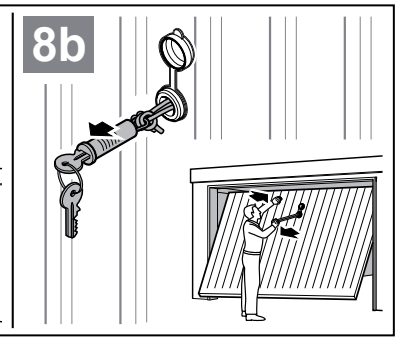

3a
3.1a
3.1a
E
E
E
E


3b
3.1b
3.1b
E
E
N 80
A
N 500
E
B
E
N 800
E
E


4
5.1
1
2
3
≤ 30°
4
5.2
1
2
3
4
5
6


7
max.
1,8 m
OFF


8a


8b

GA205 - GA406

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