

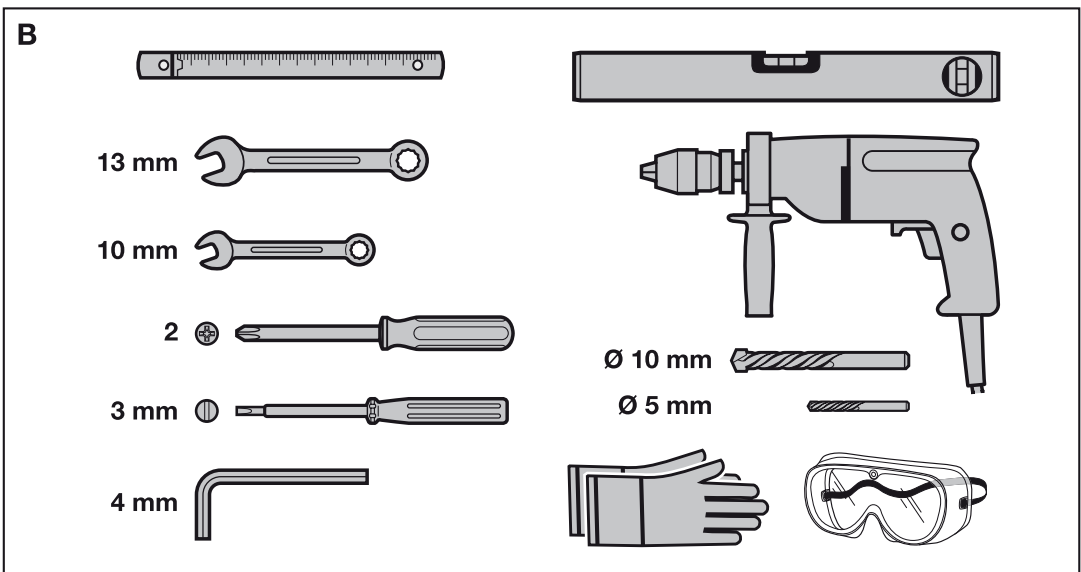
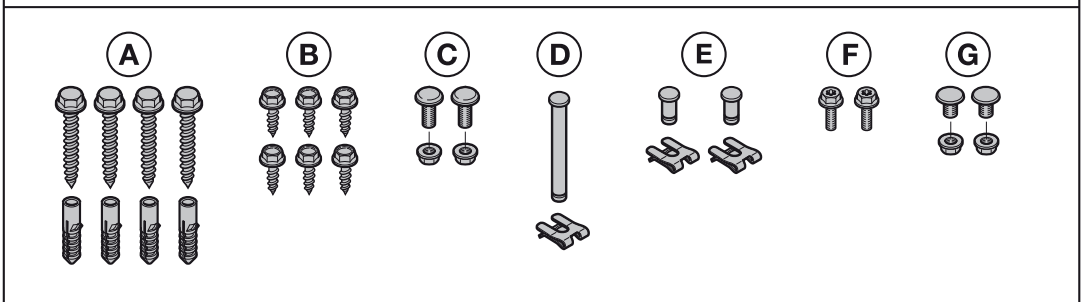
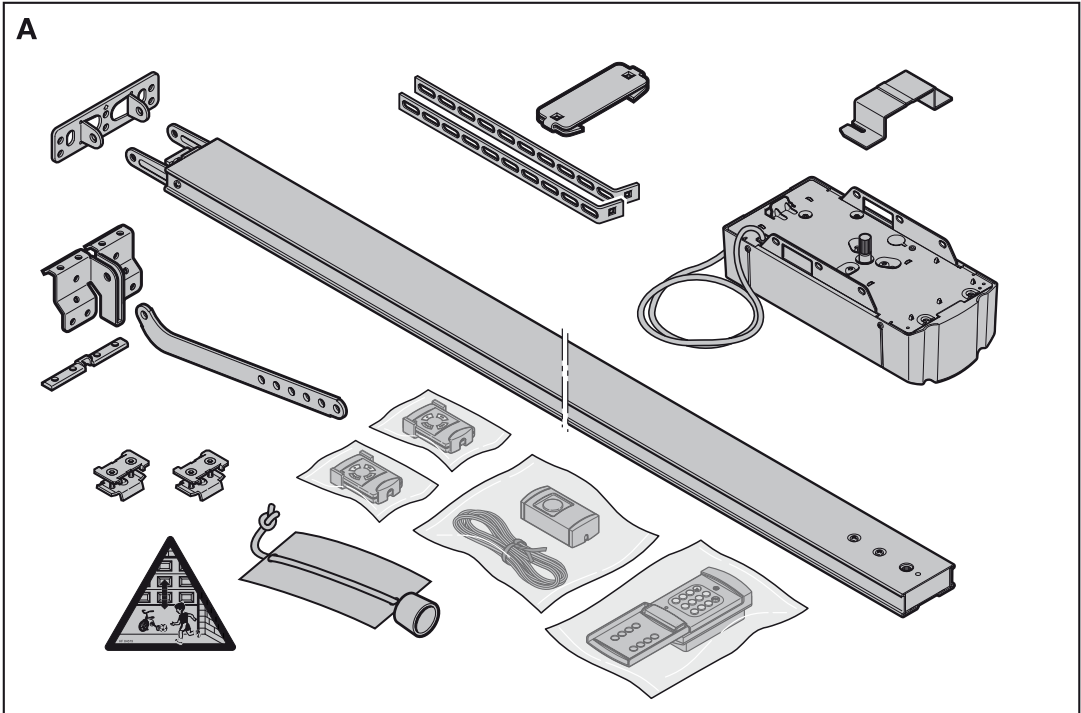
TR10A091 RE / 12.2009

Instructions for Fitting, Operating and Maintenance

Garage door operator

Instructions de montage, d'utilisation et d'entretien

Motorisation de porte de garage



ENGLISH **4**
FRANÇAIS **22**



..... **41**

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Dear customer,

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

1 About These Instructions

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





Please keep these instructions in a safe place and make sure that they are available to all users at all times.

1.1 Further applicable documents

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

- These instructions
- The enclosed
- The instructions of the garage door

1.2 Warnings used

	The general warning symbol indicates a danger that can lead to injury or death . In the text, the general warning symbol will be used in connection with the caution levels described below. In the illustrated Section, an additional instruction refers back to the explanation in the text.
 DANGER	Indicates a danger that leads directly to death or serious injuries.
 WARNING	Indicates a danger that can lead to death or serious injuries.
 CAUTION	Indicates a danger that can lead to minor or moderate injuries.
ATTENTION	Indicates a danger that can lead to damage or destruction of the product.

1.3 Definitions used

Hold-open phase

Waiting phase at the *OPEN* end-of-travel position or partial opening before the door closes during automatic timed closing

Automatic timed closing

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

DIL switches

Switches on the control print for setting the control.

Impulse control

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

Force learning cycle

A learning run during which the necessary forces for moving the door are taught in.

Photocell

When actuating the photocell safety device during the movement in the *CLOSE* direction, the door stops and reverses. The hold-open phase is re-started.

Normal operation

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

Reference run

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

Reverse cycle/safety reversal

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

Reversal limit

The reversal limit separates the area between reversal or stopping of the door when the force is cut off.

Distance learning cycle

Door cycle with which the operator is taught the path of travel.

Partial opening

The distance the door is opened for pedestrian traffic.

Pre-warning time

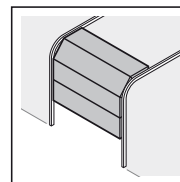
The time between the travel command (impulse) and the start of travel.

Factory reset

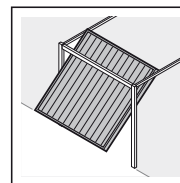
Resetting the taught-in values to the delivery status/ex factory setting

1.4 Symbols used

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



a = Sectional door



b = Up-and-over door

NOTE:

All dimensions in the illustrated Section are in [mm].

ENGLISH

Some Figures include this symbol with a reference to a Section of the text. There you will find important information on the fitting and operation of the garage door operator.

In the example, 2.2 means:



See text Section 2.2

In addition, in both the text Section and the illustrated Section at the points where the menu of the operators are explained, the following symbol is shown that indicates the factory settings:



Factory setting

1.5 Abbreviations used

Colour code for cables, single conductors and components

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

BN	Brown	WH	White
GN	Green	YE	Yellow

Article designations

HE 2	2-channel receiver
IT 1	Internal push button with impulse button
IT 1b	Internal push button with illuminated impulse button
EL 101	One-way photocell
EL 301	One-way photocell
STK	Wicket door contact
PR 1	Option relay
HSM 4	4-button mini hand transmitter
HNA 18	Emergency battery

2 Safety Instructions

2.1 Intended use

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

Note the manufacturer's specifications regarding the door and operator combination. Potential hazards as outlined in DIN EN 13241-1 are prevented by the design itself and by carrying out fitting in accordance with our guidelines. Door systems that are located in a public area and only have one protective device, such as a force limit, may only be operated under supervision.

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

2.2 Non-intended use

Use in the commercial sector is prohibited.

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

2.3 Fitter qualification

Only correct fitting and maintenance in compliance with the instructions by a competent/specialist company or a competent/qualified person ensures safe and flawless operation of the system. According to EN 12635, a specialist is a person with suitable training, specialist knowledge and practical experience sufficient to correctly and safely fit, test, and maintain a door system.

2.4 Safety instructions for fitting, maintenance, repairs and disassembly of the door system

DANGER

Compensating springs are under high tension

- ▶ See warning in Section 3.1

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

- ▶ In the event of a failure of the garage door operator, a specialist must be commissioned immediately for the inspection or repair work.

2.5 Safety instructions for fitting

The specialist must ensure that the applicable regulations on occupational safety, as well as the regulations on the operation of electrical devices, are followed during assembly work. In the process, the relevant national guidelines must be observed. Potential hazards as outlined in DIN EN 13241-1 are prevented by the design itself and by carrying out fitting in accordance with our guidelines.

The garage door operator is designed for operation in dry areas and therefore must not be fitted outdoors. The garage ceiling must guarantee secure fastening of the operator. For ceilings which are too high or too light, the operator must be fastened on additional struts.



DANGER

Mains voltage

- ▶ See warning in Section 3.6

WARNING

Unsuitable fixing material

- ▶ See warning in Section 3.3

Danger to life from the rope

- ▶ See warning in Section 3.3

Danger of injury due to unwanted door travel

- ▶ See warning in Section 3.3

2.6 Safety instructions for initial start-up and for operation

WARNING

Danger of injury during door travel

- ▶ See warning in Section 4

CAUTION

Danger of crushing in the side guide

- ▶ See warning in Section 4

Danger of injury from the cord knob

- ▶ See warning in Section 4

Danger of injuries due to the hot lamp

- ▶ See warning in Section 4, Section 6 and Section 7.1

Danger of injury due to the force value being set too high

- ▶ See warning in Section 4.1.3

Danger of injury resulting from uncontrolled door movement in the CLOSE direction if the torsion spring breaks and the slide carriage is released.

- ▶ See warning in Section 3.4.1 and Section 6

2.7 Safety instructions for using the hand transmitter

WARNING

Danger of injury during door travel

- ▶ See warning in Section 5.1

CAUTION

Danger of injuries due to unwanted door travel

- ▶ See warning in Section 5.1

2.8 Approved safety devices

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

WARNING

Danger of injuries due to faulty safety equipment

- ▶ See warning in Section 4.1.2

3 Fitting

3.1 Inspect door/door system

DANGER

Compensating springs are under high tension

Serious injuries may occur while adjusting or loosening the compensating springs!

- ▶ For your own safety, only have a specialist conduct work on the door compensating springs and, if necessary, maintenance and repair work!
- ▶ Never try to replace, adjust, repair or reposition the compensating springs for the counterbalance of the door or the spring mountings yourself.
- ▶ Furthermore, inspect the entire door system (joints, door bearings, cables, springs and fastening parts) for wear and possible damage.
- ▶ Check for the presence of rust, corrosion, and cracks.

A fault in the door system or an incorrectly aligned door may lead to serious injuries!

- ▶ Do not use the door system if repair or adjustment work must be conducted!

The design of the operator is not suitable nor intended for the opening and closing of sluggish doors, i.e. doors that can no longer be opened or closed manually, or can only be opened/closed manually with difficulty.

The door must be in perfect mechanical condition and balanced, so that it is easy to operate by hand (EN 12604).

- ▶ Lift the door by approx. one meter and let it go. The door should stay in this position and **neither** move downward **nor** upward. If the door does move in either direction, there is a danger that the compensating springs/weights are not properly adjusted or are defective. In this case, increased wear and malfunctioning of the door system can be expected.
- ▶ Check whether the door can be opened and closed correctly.
- ▶ The mechanical locking devices of the door that are not needed with a garage door operator must be put out of commission. This especially includes the locking mechanisms of the door lock (see Section 3.3 and Section 3.6).

- ▶ **Change to the illustrated Section for the fitting and initial operation. Observe the respective text Section when you are prompted to by the symbol for the text reference.**

3.2 Clearance required

The clearance between the highest point of the door and the ceiling (also when opening the door) must be at least 30 mm (see Figures 1.1a/1.1b).

- ▶ Check this dimension!

If the clearance is smaller, the operator can also be mounted behind the opened door if enough space is available. In such cases, an extended fitting bracket has to be used, which must be ordered separately. In addition, the garage door operator can be arranged up to max. 50 cm off-centre. Exceptions are Sectional doors with a high-lift (high-lift track application H); a special fitting is required for this arrangement. The electrical outlet necessary for the electrical connection should be fitted approx. 50 cm from the operator head. Please check these dimensions!

3.3 Fitting the garage door operator

WARNING

Unsuitable fixing material

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

- ▶ The fitter must check that the fitting materials supplied are suitable for the purpose and the intended fitting location.
- ▶ Only use the provided fixing materials (plugs) in concrete \geq B15 (see Figures 1.6a/1.8b/2.4).

WARNING

Danger to life from the rope

A running rope may lead to strangulation.

- ▶ Remove the rope while fitting the operator (see Figure 1.2a).



WARNING

Danger of injury due to unwanted door travel

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

- ▶ Follow all the instructions provided in this manual.

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

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

ATTENTION

Damage caused by dirt

Drilling dust and chippings can lead to malfunctions.

- ▶ Cover the operator during drilling work.

NOTE:

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

- ▶ Check the emergency release monthly for proper function.
1. Completely disassemble the mechanical door locking on the **Sectional door** (see Figure 1.3a).
 2. For Sectional doors with centre door locking, arrange the lintel joint and link bracket off-centre (see Figure 1.5a).
 3. With an off-centre reinforcement profile on the Sectional door, fit the link bracket on the nearest reinforcement profile to the left or right (see Figure 1.5a).

NOTE:

In a deviation from Figure 1.5a: Use the 5 x 35 woodscrews from the door accessory pack (hole \varnothing 3 mm) for timber doors.

4. The mechanical door locking on an **up-and-over door** must be rendered inoperable (see Figures 1.3b/1.4b/1.5b). For door models not covered here, block the catches on site.
5. In a deviation from the Figures 1.6b/1.7b. The lintel joint and link bracket must be attached off-centre for up-and-over doors with ornamental iron door handles.

NOTE:

Use the bottom holes on the lintel joint for fitting N80 doors with timber infill (see Figure 1.7b).

3.4 Fitting the operator boom

NOTE:

- Before the boom is fitted on the lintel and under the ceiling, the engaged slide carriage must be moved approx. 20 cm from the **CLOSE** end-of-travel position in the **OPEN** direction (see Section 3.4.1). This is no longer possible with an engaged carriage as soon as the end stops and operator have been fitted (see Figure 2.1).
- Only use the booms recommended by us for the garage door operators – depending on the respective purpose of use (see product information)!

3.4.1 Boom operating modes

There are two different operating modes with the boom:

- Manual operation
- Automated operation

Manual operation

- ▶ See Figure 4

The slide carriage is disengaged from the belt lock to enable the door to be moved by hand.

For disengaging the slide carriage:

- ▶ Pull on the cord of the mechanical release.

CAUTION

Danger of injury resulting from uncontrolled door movement in the **CLOSE** direction if the torsion spring breaks and the slide carriage is released.

The slide carriages may decouple automatically unless a retrofit set is fitted.

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

This set comprises a screw that secures the slide carriage against uncontrolled unlocking as well as a new cord knob sign where the images show how the set and the slide carriage can be handled for the two operating modes of the operator boom.

NOTE:

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

Automated operation

- ▶ See Figure 6

The belt lock is engaged in the slide carriage to enable the door to be moved with the operator.

For preparing the slide carriage for engaging:

1. Press the green knob.
2. Move the belt in the direction of the slide carriage until the belt lock engages.

CAUTION

Danger of crushing in the side guide

Do not reach into the side guide with your fingers during door run, as this can cause crushing.

- ▶ Do not reach into the side guide during the door run

3.4.2 Determining the door end-of-travel positions by fitting the end stops

1. Loosely position the end stop for the *OPEN* end-of-travel position in the boom between the slide carriage and operator.
2. Push the door into the *OPEN* end-of-travel position by hand.
This will push the end stop into the correct position.
3. Tighten the end stop for the *OPEN* end-of-travel position (see Figure 5.1).

NOTE:

If the door should not reach the complete passage height in the *OPEN* end-of-travel position, the end stop can be removed so that the integrated end stop (in the operator head) is used.

4. Loosely position the end stop for the *CLOSE* end-of-travel position in the boom between the slide carriage and door.
5. Push the door into the *CLOSE* end-of-travel position by hand. This will push the end stop near to the correct position.
6. After reaching the *CLOSE* end-of-travel position move the end stop by approx. 1 cm in the *CLOSE* direction and fix the end stop (see Figure 5.2).

NOTE:

If the door cannot easily be pushed manually into the desired *OPEN* or *CLOSE* end-of-travel position, this means that the door mechanism is too stiff for operation with the garage door operator and must be inspected (see Section 1.1.2)!

3.4.3 Tension of the toothed belt

The toothed belt of the operator boom is tensioned optimally ex-factory. During the start-up and slow-down phase, with larger doors it is possible that the belt will briefly hang out of the boom profile. However, this does not result in any technical consequences and does not negatively affect the function and service life of the operator.

3.5 Fixing the warning sign

Fix the sign warning about getting trapped in a noticeable, cleaned and degreased place, for example, near to the permanently installed button for moving the operator.

- ▶ See Figure 8

3.6 Garage door operator electrical connection



DANGER

Mains voltage

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

For that reason, observe the following warnings under all circumstances:

- ▶ Electrical connections may only be made by a qualified electrician.
- ▶ The on-site electrical installation must conform to the applicable protective regulations (230/240 V AC, 50/60 Hz)!
- ▶ The mains plug must be disconnected before any work is performed on the operator.

ATTENTION

External voltage on the connecting terminals

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

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

To prevent malfunctions:

- ▶ The connection cables of the operator (24 V DC) must be laid in a separate installation system from the other supply cables (230 V AC).

3.6.1 Electrical connection/connecting terminals

- ▶ See Figure 9
- ▶ Remove the plug cover to access the connecting terminals.

NOTE:

All connecting terminals can be assigned several times. However, observe the following thicknesses (see Figure 10):

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

3.7 Connecting additional components/accessories

NOTE:

Loading of the operator by all accessories: **max. 100 mA**.

3.7.1 External buttons *

External buttons are used to trigger or stop door cycles. One or more buttons with normally open contacts (volt-free), such as internal push buttons or key switches, can be connected in parallel (see Figure 11/12).

3.7.2 Additional external radio receiver *

In addition to, or instead of, an integral radio module (see Section 5.2), an external radio receiver can be connected for the *impulse / partial opening* functions.

- ▶ Insert the plug of the receiver in the corresponding slot (see Figure 13).
- ▶ For putting the external receiver into operation, delete the data of an integrated radio module (see Section 5.2.3).

* Accessory, not included as standard equipment!

3.7.3 2-wire photocell *

- ▶ Connect the photocell as shown in Figure 14.

After the photocell triggers, the operator stops and a safety reversal of the door is performed to the *OPEN* end-of-travel position.

NOTE:

Mount the transmitter and receiver housings as close to the floor as possible – see the instructions for the photocell.

3.7.4 Wicket door contact STK *

- ▶ Connect the forced opening wicket door contact with self-testing, as displayed in Figure 15.

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

3.7.5 Option relay PR 1 *

- ▶ Connect the option relay, as displayed in Figure 16.

The option relay PR 1 can be used for the *CLOSE* limit switch reporting and the light control.

3.7.6 Emergency battery HNA 18 *

- ▶ Connect the emergency battery, as displayed in Figure 22.


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

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

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

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

4 Putting into Service

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

⚠ CAUTION**Danger of crushing in the side guide**

Do not reach into the side guide with your fingers during door run, as this can cause crushing.

- ▶ Do not reach into the side guide during the door run

⚠ CAUTION**Danger of injury from the cord knob**

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

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

⚠ CAUTION**Danger of injuries due to the hot lamp**

Touching the lamp during or immediately following operation can lead to burns.

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

4.1 Putting the operator into service

The operator has a power failure-proof memory in which the door-specific data (travel, forces needed during door travel, etc.) is stored during the teach-in process and updated during subsequent door travels. This data is only valid for this door and must thus be deleted and taught in again for use with another door or if the door's travel behaviour has changed significantly (i.e. in the event of subsequent displacement of the end stops or fitting of new springs, etc.).

4.1.1 Deleting door data

► See Figure 18

In the delivery condition, no door data has been stored and the operator can be immediately taught in (see Section 4.1.2).

If it is necessary to teach in again, the door data can be deleted as follows:

1. Disconnect the mains plug.
2. Push and hold the transparent button in the housing.
3. Connect the mains plug and keep the transparent button in the housing pushed until the operator light flashes once.

The door data are deleted and the operator can be taught in immediately.

4.1.2 Teaching in the operator

Among other things, the travel and forces needed during the opening and closing runs are taught in and saved in a power failure-proof manner during the teach-in process.

NOTES:

- Before the operator can be taught in again, the existing door data must be deleted (see Section 4.1.1).
- If connected, the photocell is not active during the teach-in process.

To teach in the operator:

1. If necessary, prepare the disengaged slide carriage for engagement by pushing the green button on the slide carriage (see Figure 6). To do this, move the door manually until the slide carriage snaps into the belt lock.
2. If necessary, plug in the mains plug.
The operator light will then flash twice (see Figure 19).
3. Actuate the transparent button on the operator cover (see Figure 19).
The door will open automatically. The operator light will flash.
4. Actuate the transparent button on the operator cover again (see Figure 19).
 - a. The door will automatically close, open, close and then open again. The operator light will flash during the run and the travel and the required forces are taught in.
 - b. The door remains in the *OPEN* position and the operator light will then light up continually.

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

WARNING

Danger of injuries due to faulty safety equipment

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

- After the learning runs, the person commissioning must check the function(s) of the safety equipment as well as the settings (see Section 4.2).

The system is ready for operation only after this.

NOTES:

- When the operator remains standing with flashing light or the end stops have not been reached, the maximum forces are insufficient and must be readjusted (see Section 4.1.3).
- The teach-in procedure can be interrupted by a run impulse at any time. A further run impulse re-starts the entire teach-in procedure.

4.1.3 Adjusting the forces

CAUTION

Danger of injury due to the force value being set too high (potentiometers P1/P2)

When the force value is set too high, the force limit is less sensitive. This could lead to injury or damage.

- Do not set a force value that is too high.

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

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

When teaching-in the operator (see Section 4.1.2), the forces must be readjusted when one or both end-of-travel positions are not reached.

Two potentiometers are available for this purpose that can be accessed when removing the operator cover (see Figure 20):

- **P1:** Maximum force in the *OPEN* direction
- **P2:** Maximum force in the *CLOSE* direction

Turning clockwise increases the force, turning anticlockwise reduces the forces.

If the *OPEN* end stop is not reached:

1. Adjust **P1** by rotating clockwise by an eighth of a turn (see Figure 20).
2. Move the door to the *CLOSE* end-of-travel position by pressing the transparent button and before reaching the *CLOSE* end-of-travel position, stop the door by pressing the button again.
3. Move the door in the *OPEN* direction.

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

If the *CLOSE* end stop is not reached:

1. Adjust **P2** by rotating clockwise by an eighth of a turn (see Figure 20).
2. Delete the door data.
3. Teach the operator in again (see Section 4.1.2).

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

NOTE:

The maximum forces set in the potentiometer have only little influence on the sensitivity of the force limit, as the actual forces required are saved during the teaching run. The forces set at the factory can be used for operating standard doors.

4.2 Setting additional functions via the DIL switches

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

NOTE:


Only change the DIL switch settings when the operator is at a rest and no radio codes are being programmed.

ENGLISH

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

4.2.1 CLOSE limit switch reporting: DIL switches A and B

► See Figure 17.1


A OFF 	CLOSE limit switch reporting activated
B ON	

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

Operator light	<ul style="list-style-type: none"> Permanent light during the door run Switch-off delay after CLOSE end-of-travel position
Option relay	CLOSE limit switch reporting activated

4.2.2 Pre-warning time: DIL switch A and B

► See Figure 17.2



A ON	Pre-warning time activated
B OFF 	

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

Operator light	<ul style="list-style-type: none"> Quick flashing during the pre-warning time Permanent light during the door run
Option relay	Clocks slowly during the door run (function of an auto-flashing warning lamp)

4.2.3 External illumination: DIL switch A and B

► See Figure 17.3

A OFF 	External light activated
B OFF 	

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

Operator light	<ul style="list-style-type: none"> Permanent light during the door run Switch-off delay after CLOSE end-of-travel position
Option relay	Same function as operator light

4.2.4 Automatic timed closing: DIL switch A, B and D

When the door reaches the OPEN end-of-travel position and a hold-open phase of approx. 30 seconds has elapsed, automatic timed closing will start. After an impulse or after the photocell has been passed, the hold-open phase will be extended automatically by approx. 30 s.

NOTES:

- In the scope of the DIN EN 12453, automatic timed closing must only be activated if a safety device is connected.
- Setting the automatic timed closing is only possible if the photocell is active (DIL switch D to ON).

► See Figure 17.4


A ON	Automatic timed closing activated
B ON	
D ON	

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

Operator	After hold-open phase and pre-warning time, automatic timed closing from the OPEN end-of-travel position
Operator light	<ul style="list-style-type: none"> Permanent light during the hold-open phase and the door run Flashes during the pre-warning time
Option relay	<ul style="list-style-type: none"> Permanent contact during the hold-open phase Clocks rapidly during the pre-warning time and slowly during the door run


4.2.5 Door type: DIL switch C

► See Figure 17.5

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


4.2.6 Photocell: DIL switch D

► See Figure 17.6

D ON	Activated, if the photocell is activated, the door reverses to the OPEN end-of-travel position.
D OFF 	Not activated, automatic timed closing not possible (DIL switch A/B)

4.2.7 Hold/static current circuit with self-testing: DIL switch E

► See Figure 17.7


E ON	Activated, for wicket door contact with self-testing
E OFF 	Not activated

NOTE:

Check safety devices without self-testing every six months.

4.2.8 Door maintenance display: DIL switch F

► See Figure 17.8

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



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


NOTE:

The maintenance data is reset by teaching-in the operator again (see Section 4.1.2).

5 Radio

5.1 Hand transmitter HSM 4

	 WARNING
<p>Danger of injury during door travel Persons may be injured by door travel if the hand transmitter is actuated.</p> <ul style="list-style-type: none"> ► Make sure that the hand transmitters are kept away from children and can only be used by people who have been instructed on how the remote-control door functions! ► If the door has only one safety feature, only operate the hand transmitter if you are within sight of the door! ► Only drive or pass through remote control door systems if the door is in the <i>OPEN</i> end-of-travel position! ► Never stay standing under the open door. 	

 CAUTION
<p>Danger of injuries due to unwanted door travel Unwanted door travel may occur while teaching in the radio system.</p> <ul style="list-style-type: none"> ► Pay attention that no persons or objects are in the door's travel range when teaching in the radio system.

ATTENTION
<p>Functional disturbances caused by environmental conditions These conditions can impair function! Protect the hand transmitter from the following conditions:</p> <ul style="list-style-type: none"> • Direct sunlight (perm. ambient temperature: -20°C to +60°C) • Moisture • Dust

NOTES:

- If there is no separate garage entrance, perform all programming changes and extensions while standing in the garage.
- Perform a functional check after programming or extending the remote control system.
- Only use original components for the initial start-up or for extending the remote control system.
- Local conditions may affect the range of the radio system. Moreover, when used at the same time, GSM 900 mobile phones can affect the range.

5.1.1 Description of the hand transmitter HSM 4

► See Figure 23

- 1 LED
- 2 Hand transmitter button
- 3 Battery compartment cover
- 4 Battery
- 5 Reset button
- 6 Hand transmitter holder

5.1.2 Inserting/changing the battery

► See Figure 23

► Use only the battery type 23A.

5.1.3 Restoring the factory coding

► See Figure 23

A radio code is stored for each hand transmitter button. The original factory code can be restored by going through the following steps.

NOTE:

The following steps are only required in the case of inadvertent extension or teach-in processes.

1. Open the battery compartment cover.
The reset button (5) is accessible on the circuit board.

ATTENTION

Destruction of the button

- Do not use any pointed objects or excessive force when pressing the button.
2. Carefully press the reset button with a blunt object and keep it pressed.
 3. Press the hand transmitter button to be coded and keep it pressed.
The transmitter LED will flash slowly.
 4. If you keep the small button pressed until the slow flashing stops, the hand transmitter button will be assigned with the original factory coding and the LED will start to flash faster.
 5. Close the battery compartment cover.
- The factory code is now restored.

5.1.4 Excerpt from the declaration of conformity for the hand transmitter

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

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

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

5.2 Integral radio module

With an integral radio module, the function *Impulse* (*OPEN-STOP-CLOSE-STOP*) and the *Partial opening* function can be taught to a maximum of 6 different hand transmitters. If more than 6 hand transmitters are taught, the functions on the one taught first are deleted.

For programming the radio module or to delete its data, the following conditions must be fulfilled:

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

NOTES:

- For actuating the operator with remote control, a hand transmitter button must be taught-in to an integral radio module or an external radio receiver.
- There must be a distance of at least 1 m between the hand transmitter and the operator.
- When used at the same time, GSM 900 mobile phones can affect the range of the radio remote control.

5.2.1 Teaching in the *Impulse* function

1. Briefly press the **P** button on the operator cover once (see Figure 21). Pressing the **P** button again twice will immediately end radio programming.
The red LED in the button on the operator cover now flashes once. During this time, a hand transmitter button can be programmed in for the desired function.
2. Hold the hand transmitter button that should be programmed down until the red LED in the button on the operator cover begins flashing rapidly.
The radio code of this hand transmitter button is now stored in the integral radio module.

5.2.2 Teaching in the *Partial opening* function

A door position preset in the factory (approx. 260 mm rail path before the *CLOSE* end-of-travel position) or a door position that can be freely selected (at least 120 mm before every end-of-travel position) can be programmed.

► Preset position

1. Move the door in impulse operation to the *OPEN* or *CLOSE* end-of-travel position.
2. Briefly press the **P** button on the operator cover twice (see Figure 21).
Pressing the **P** button again will immediately end radio programming.
The red LED in the button on the operator cover now flashes twice. During this time, a hand transmitter button can be programmed in for the desired function.
3. Hold the hand transmitter button that should be programmed down until the red LED in the button on the operator cover begins flashing rapidly.
The radio code of this hand transmitter button is now stored in the radio module.
4. Press the programmed hand transmitter button, the door moves to the preset partial opening position.

► Freely selectable position

1. Move the door to any position in impulse operation (however, at least 120 mm away from the end-of-travel positions).
2. Briefly press the **P** button on the operator cover twice (see Figure 21).
Pressing the **P** button again will immediately end radio programming.
The red LED in the button on the operator cover now flashes twice. During this time, a hand transmitter button can be programmed in for the desired function.

3. Hold the hand transmitter button that should be programmed down until the red LED in the button on the operator cover begins flashing rapidly.
The radio code of this hand transmitter button is now stored in the integral radio module.

NOTE:

When using several hand transmitters, the *partial opening* position of the last button taught-in will be taken over for all *partial opening* buttons taught-in.

If the door is in partial opening position, it is moved in the *CLOSE* direction with the partial opening button and in the *OPEN* direction with the impulse button.

5.2.3 Deleting all data in an integral radio module

1. Press and hold the **P** button on the operator cover.
The red LED in the button of the operator cover flashes slowly, signalling the readiness for deletion.
The flashing then becomes more rapid.
Now the data of all the hand transmitters' learned radio codes is deleted.
2. Release the **P** button on the operator cover.

5.3 External receiver *

Instead of an integral radio module, an external radio receiver can be used for the *Impulse* and *Partial opening* functions to control the garage door operator.

5.3.1 Connecting an external receiver

1. Insert the plug of an external receiver in the corresponding slot (see Figure 13). The wires of the external receiver must be connected as follows:
 - **GN** to terminal **20** (0 V)
 - **WH** to terminal **21** (channel 1 signal for the impulse control)
 - **BN** to terminal **5** (+24 V)
 - **YE** to terminal **22** (channel 2 signal for partial opening). Only with a 2-channel receiver.
2. Delete the data of an integral radio module to prevent double allocation (see Section 5.2.3).

5.3.2 Teaching in hand transmitter buttons

► *Impulse* function

1. Teach in the hand transmitter button for the *Impulse* function (channel 1) using the operating instructions for the external receiver as a basis.

► *Partial opening* function

1. Teach in the hand transmitter button for the *Partial opening* function (channel 2) using the operating instructions for the external receiver as a basis.
2. Move the door to an end-of-travel position (for the preset position) or to any position in impulse operation.
3. Briefly press the **P** button on the operator cover twice.
Pressing the **P** button again will immediately end radio programming.
The red LED in the button on the operator cover now flashes twice.
4. Actuate the hand transmitter button taught-in on the external receiver. The red LED in the button on the operator cover flashes quickly.
The radio code of this hand transmitter button is now stored

* Accessory, not included as standard equipment!

NOTE:

The aerial wire of the external receiver should not come into contact with metal objects (nails, bracing, etc.). The best orientation to achieve an optimum range must be established by trial and error. When used at the same time, GSM 900 mobile phones can affect the range of the radio remote control.


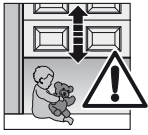
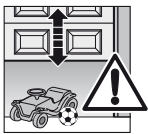
5.4 Excerpt from the declaration of conformity for the receiver


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


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


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


6 Operation

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

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

	CAUTION
<p>Danger of injury from the cord knob If you hang on the cord knob, you may fall and injure yourself. The operator could break away and injure persons or damage objects that are located underneath, or the operator itself could be destroyed.</p> <ul style="list-style-type: none"> ▶ Do not hang on the cord knob with your body weight. 	

	CAUTION
<p>Danger of injury resulting from uncontrolled door movement in the CLOSE direction if the torsion spring breaks and the slide carriage is released. The slide carriages may decouple automatically unless a retrofit set is fitted.</p> <ul style="list-style-type: none"> ▶ The fitter responsible must install a retrofit set on the slide carriage if the following prerequisites are at hand: <ul style="list-style-type: none"> – The standard DIN EN 13241-1 applies – The garage door operator is retrofitted to a Hörmann Sectional door without spring safety device (BR30) by a technical expert. <p>This set comprises a screw that secures the slide carriage against uncontrolled unlocking as well as a new cord knob sign where the images show how the set and the slide carriage can be handled for the two operating modes of the operator boom.</p> <p>NOTE: The use of an emergency release or an emergency release lock is not possible in conjunction with the retrofit set.</p>	

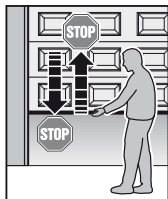
	CAUTION
<p>Danger of injuries due to the hot lamp Touching the lamp during or immediately following operation can lead to burns.</p> <ul style="list-style-type: none"> ▶ Do not touch the lamp if it is switched on or was recently switched on. 	

ATTENTION	
<p>Damage due to the cord of the mechanical release If the cord of the mechanical release becomes caught on a roof carrier system or anything projecting from the vehicle or door, this can lead to damages.</p> <ul style="list-style-type: none"> ▶ Make sure that the cord cannot become caught. <p>Heat generation of the illumination As a result of heat generated by the operator light, there is a risk of damage if inadequate spacing is maintained.</p> <ul style="list-style-type: none"> ▶ The smallest distance to easily inflammable materials or heat sensitive surfaces must be at least 0.1 m (see Figure 7). 	

6.1 Instructing users

- ▶ Instruct all persons who use the door system on the proper and safe use of the garage door operator.
- ▶ Demonstrate and test the mechanical release as well as the safety reversal.

6.2 Function check



- ▶ To check the safety reversal, stop the door with both hands while it is closing. The door system must stop and initiate the safety reversal. The gate system must also switch off and stop the gate while it is opening.

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

6.3 Normal operation

In normal operation, the garage door operator works exclusively according to the impulse sequence control. It does not matter whether an external button, a programmed hand transmitter button or the transparent button has been actuated.

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

etc.

The operator light will light up during a door run and automatically goes out approx. 2 minutes after the door run ends.

6.4 Manual operation

The door must be mechanically released in order to operate it manually. To do this, the slide carriage is disengaged from the belt lock.

- ▶ To release the door, pull the cord of the mechanical release (see Figure 4).

NOTES:

- Inspect the function of the mechanical release monthly.
- Only pull the cord knob when the door is closed; otherwise, there is a danger that the door will close rapidly if the springs are weak, broken or defective or if the counterbalance is inadequate.

6.5 Operating after a mechanical release

If, for example, the mechanical release is actuated due to a mains power failure, the slide carriage must be snapped back into the belt lock to resume normal operation.

1. Move the operator until the belt lock can be easily reached in the operator boom for the slide carriage.
2. Push the green button on the slide carriage (see Figure 6).
3. Move the door manually until the slide carriage snaps back into the belt lock.
4. Check whether the door completely reaches its closed position and opens completely by conducting multiple uninterrupted door runs (the slide carriage stops shortly before the *OPEN* end stop).

Now, the operator is ready for normal operation again.

6.6 Behaviour during a power failure

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

- ▶ See Section 3.4.1
Boom operating modes / Manual operation

6.7 Behaviour following a power failure

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

- ▶ See Section 3.4.1
Boom operating modes / Automated operation

6.8 Mains failure bridging using an emergency battery *

To enable door movement in the event of a mains failure, an optional emergency battery can be connected (see Figure 22).

In the case of a mains failure, the system automatically switches to battery operation. During battery operation, the operator light remains switched off.

NOTE:

Only use the original emergency battery with integrated charging circuit.

6.9 Operator light messages

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

Two flashes

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

Three flashes

Saved door data is present, but the last door position is not known. For this reason, the next run will be an *OPEN* reference run. Afterwards, *normal* door runs will follow.

Four flashes

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

6.10 Error messages/diagnostic LED

- ▶ See Figure 9.1

The red diagnostic LED is visible through the transparent button even when the housing is closed. This LED helps to easily identify causes when operation does not go according to plan. In a taught-in condition (normal mode), the LED lights up continually and goes out as long as an externally connected impulse is present.

NOTE:

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

* Accessory, not included as standard equipment!

LED	Flashes 2x
Cause	Photocell was interrupted or is not connected.
Remedy	Check the photocell and connect or replace if necessary.
LED	Flashes 3x
Cause	The <i>CLOSE</i> force limit was activated; a safety reversal took place.
Remedy	Remove the obstruction. If the safety reversal took place for no apparent reason, check the door mechanism. If necessary, delete the door data and teach it in again.
LED	Flashes 4x
Cause	The static current circuit or wicket door contact is open or was opened during a door run.
Remedy	Check the unit connected, close the circuit.
LED	Flashes 5x
Cause	The <i>OPEN</i> force limit has been activated. The door stopped while opening.
Remedy	Remove the obstruction. If the door stopped before the <i>OPEN</i> end-of-travel position for no apparent reason, check the door mechanism. If necessary, delete the door data and teach it in again.
LED	Flashes 6x
Cause	Operator error/malfunction in operator system
Remedy	If necessary, delete the door data and teach it in again. If the operator error occurs again, replace the operator.
LED	Flashes 7x
Cause	Operator has not been taught in yet. This is just a message and is not an error.
Remedy	Initiate a learning run via an external button, the radio module or the transparent button (circuit board button T when the operator cover is removed).
LED	Flashes 8x
Cause	The operator requires an <i>OPEN</i> reference run. This is the normal status after a power failure if no door data is present or has been deleted and/or the last door position is not sufficiently known.
Remedy	Initiate an <i>OPEN</i> reference run via an external button, the radio module or the transparent button (circuit board T button when the operator cover is removed).

7 Inspection and Maintenance

The garage door operator is maintenance-free.

For your own safety, however, we recommend having the door system checked and maintained by a specialist in accordance with the manufacturer's specifications.

An inspection or necessary repairs may only be carried out by a qualified person. Contact your supplier for this purpose.

A visual inspection may be carried out by the operator.

- ▶ Check all safety and protective functions **monthly**.
- ▶ Malfunctions and/or defects at hand must be rectified **immediately**.

7.1 Replacement bulb

CAUTION

Danger of injuries due to the hot lamp

Touching the lamp during or immediately following operation can lead to burns.

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

To change the bulb:

1. Close the door
2. Disconnect the mains plug.
3. Allow the bulb to cool
4. Change the 24 V/10 W B(a) 15 s bulb (see Figure 24).
5. Connect the mains plug.

The operator light will flash four times.

8 Optional Accessories

Optional accessories are not included in the scope of delivery.

Loading of the operator by all electrical accessories: max. 100 mA.

The following accessories can be connected to the operator:

- One-way photocell
- External radio receiver
- External impulse buttons (e.g. key switch)
- Emergency battery for emergency power supply
- Wicket door contact
- Warning lights

9 Dismantling and Disposal

NOTE:

When disassembling, observe the applicable regulations regarding occupational safety.

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

10 Warranty Conditions

Warranty

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

Warranty period

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

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

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

Prerequisites

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

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

10.1 Performance

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

Damages caused by the following are excluded:

- Improper fitting and connection
- Improper initial start-up and operation
- External factors such as fire, water, abnormal environmental conditions
- Mechanical damage caused by accidents, falls, impacts
- Negligent or intentional destruction
- Normal wear or deficient maintenance
- Repairs conducted by unqualified persons
- Use of non-original parts
- Removal or defacing of the data label

Replaced parts become our property.

11 Excerpt from the Declaration of Incorporation

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

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

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

Applied and consulted standards:

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

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


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

12 Technical Data


Mains voltage	230/240 V, 50/60 Hz, Stand-by approx. 5 W
Protection category	Only for dry rooms
Temperature range	-20°C to +60°C
Replacement bulb	24 V / 10 W B(a) 15s
Motor	Direct current motor with hall sensor
Transformer	With thermal protection
Connection	No-screw connection technology for external equipment with 24 V DC low safety voltage, such as internal and external buttons with impulse operation
Remote control	Operation with internal or external radio receiver
Automatic safety cut-out	Is automatically taught in for both directions separately. Self-learning, wear-free, as it has no mechanical switches.
End-of-travel position cut-out force limit	Automatic safety cut-out, readjusting at every door run.
Operator boom	Extremely flat (30 mm) With integrated door security kit With maintenance-free, patented toothed belt with automatic belt tensioner


Door travel speed	Dependent on door size and weight <ul style="list-style-type: none"> • CLOSE approx. 13 cm/s • OPEN approx. 17 cm/s
Partial opening position	Preset: Approx. 260 mm rail travel before the <i>CLOSE</i> end-of-travel position Can be freely selected, but at least 120 mm before every end-of-travel position
Rated load	See data label
Pull and push force	See data label
Short-term peak load	See data label
Special functions	Operator light, 2-minute light ex factory Stop/off switch can be connected Photozell can be connected Option relay for warning lamp, additional external illumination can be connected Wicket door contact with testing
Emergency release	Actuated from inside with pull cord in the event of a power failure
Universal fittings	For up-and-over doors and Sectional doors
Airborne sound emission of the garage door operator	≤ 70 dB (A)
Use	Exclusively for private garages Not intended for industrial/commercial use
Door cycles	See product information


13 Overview of DIL Switch Functions


DIL A	DIL B	Function	Option relay function	
OFF	ON	CLOSE limit switch reporting activated	The relay picks up in the <i>CLOSE</i> end-of-travel position (<i>CLOSE</i> reporting function)	
ON	OFF	Pre-warning time activated	Relay clocks rapidly during the pre-warning time and normally during the door run (warning lamp function)	
OFF	OFF	External light activated	Relay the same as operator light (external light function)	

DIL A	DIL B	DIL D	Function	Option relay function	
ON	ON	ON	Automatic timed closing activated, photocell must be installed	Relay clocks rapidly during the pre-warning time, normally during the travel phase and has permanent contact during the hold-open phase	


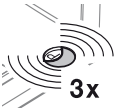
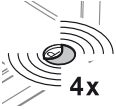
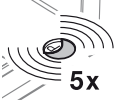



DIL C	Door type				
ON	Up-and-over door, long soft-stop ramp-down phase				
OFF	Sectional door, short soft-stop ramp-down phase				

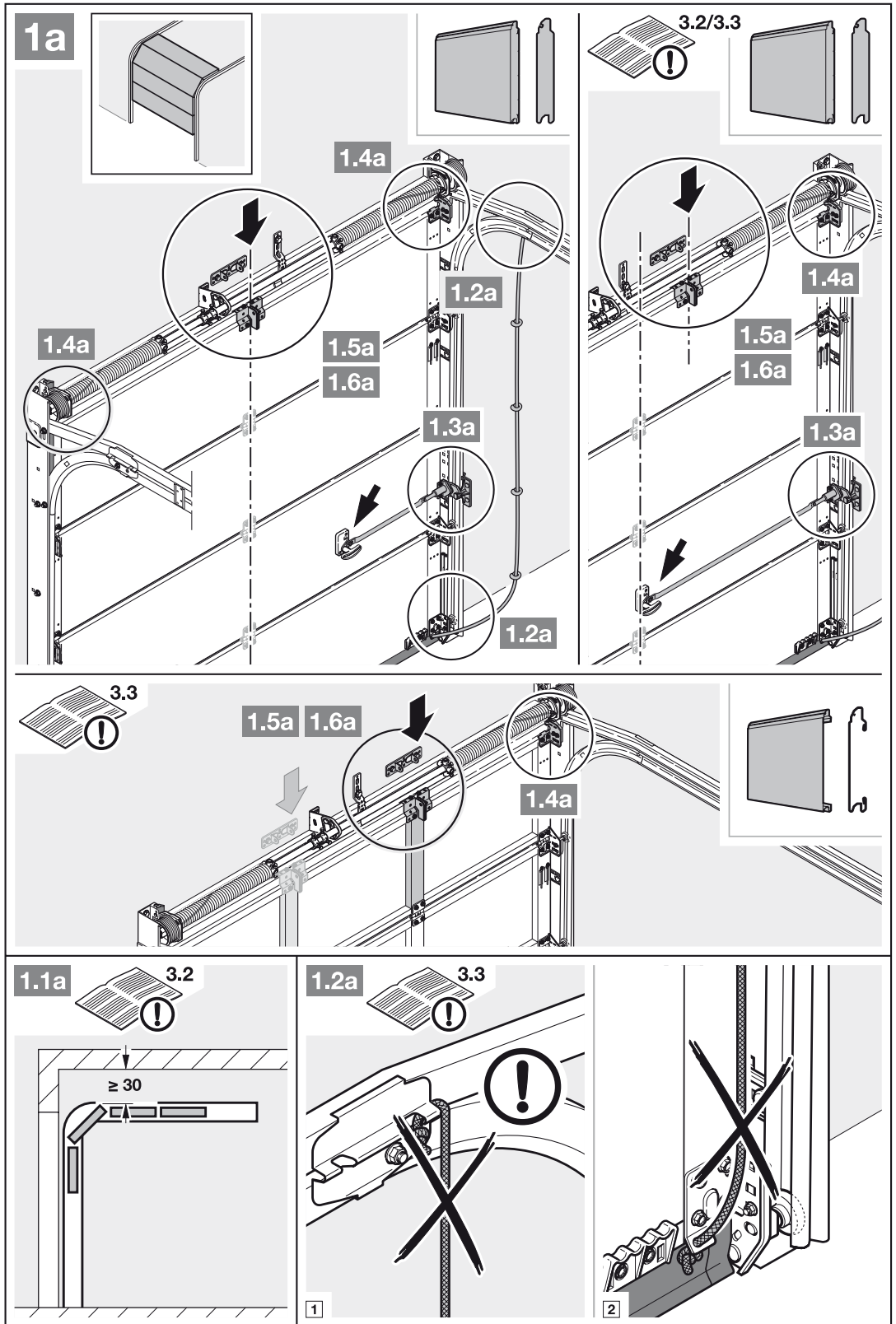
DIL D	Photocell				
ON	Photocell is activated, after triggering the photocell, the door reverses to the <i>OPEN</i> end-of-travel position (automatic timed closing is only possible with a photocell)				
OFF	Photocell not activated (automatic timed closing not possible)				

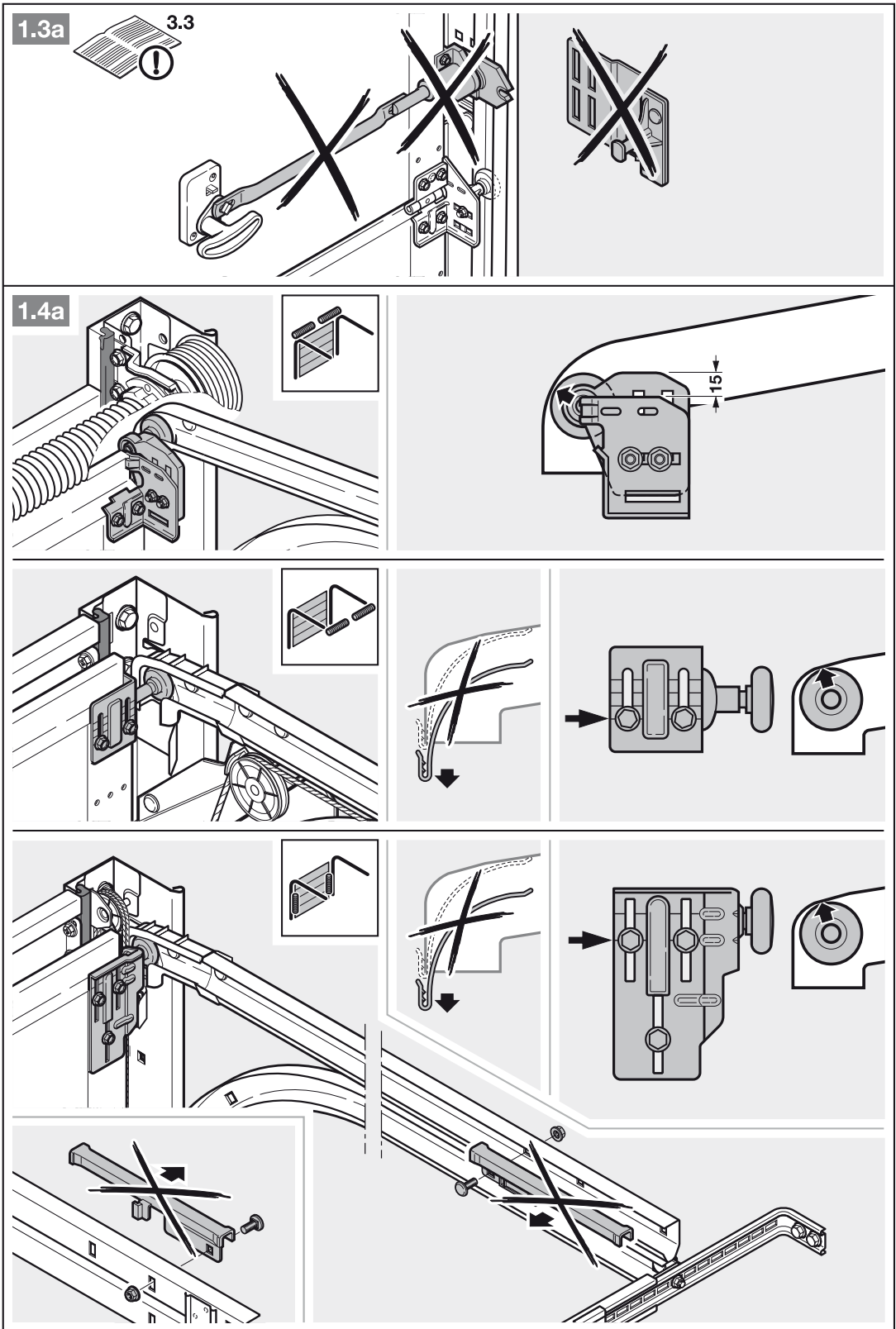
DIL E	Stop circuit with self testing				
ON	Wicket door contact with self-testing activated. The self-testing is checked before each door run (operation only possible with a wicket door contact that can be tested)				
OFF	Safety device without self-testing				

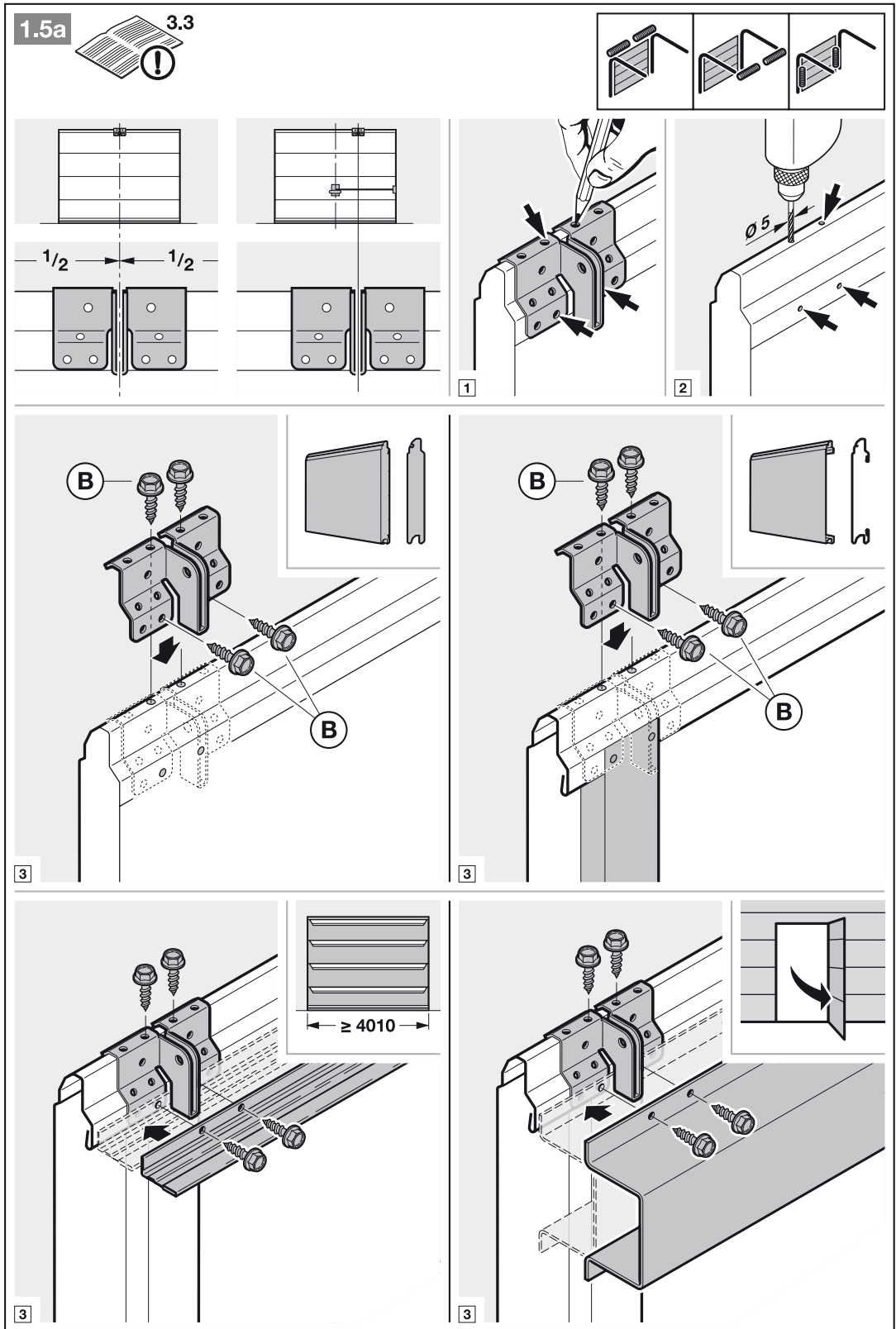
DIL F	Door maintenance display				
ON	Activated, exceeding the maintenance cycle is signalled by the operator light flashing at the end of every door run				
OFF	Not activated, no signal after the maintenance cycle is exceeded				

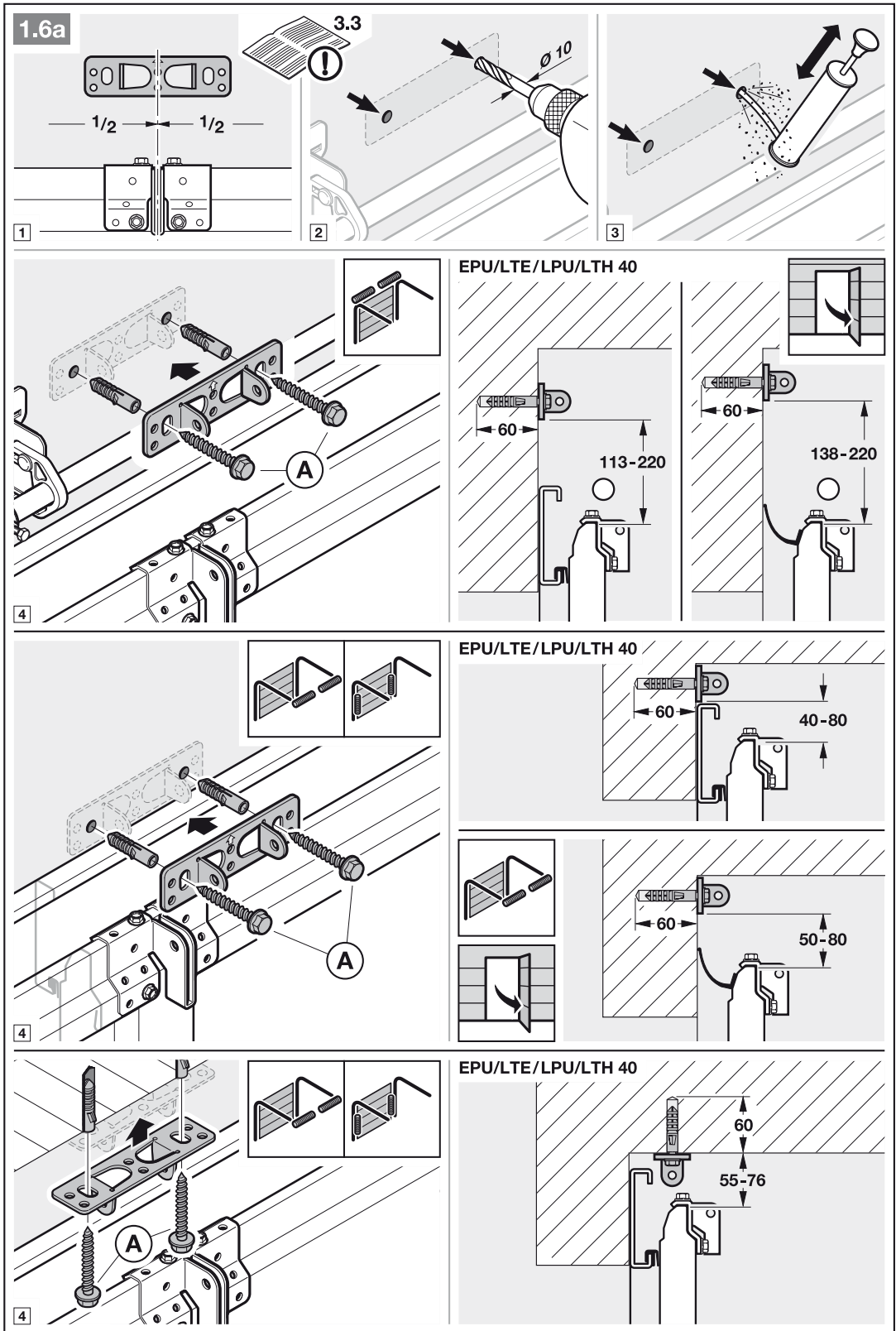
14 Overview of Errors and Error Elimination

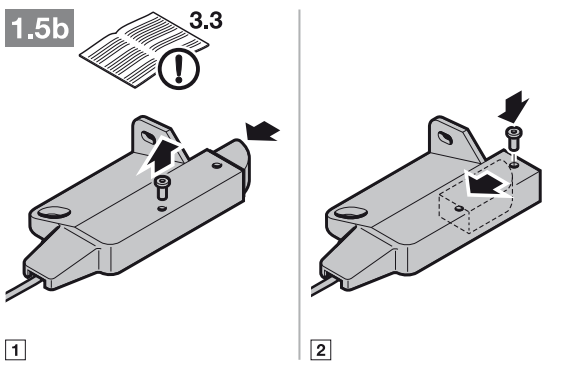
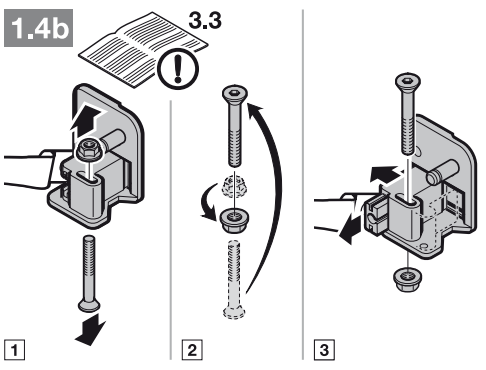
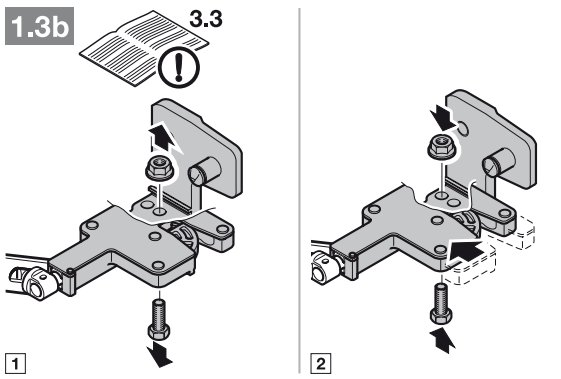
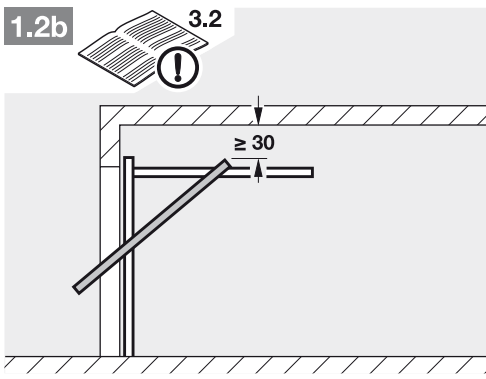
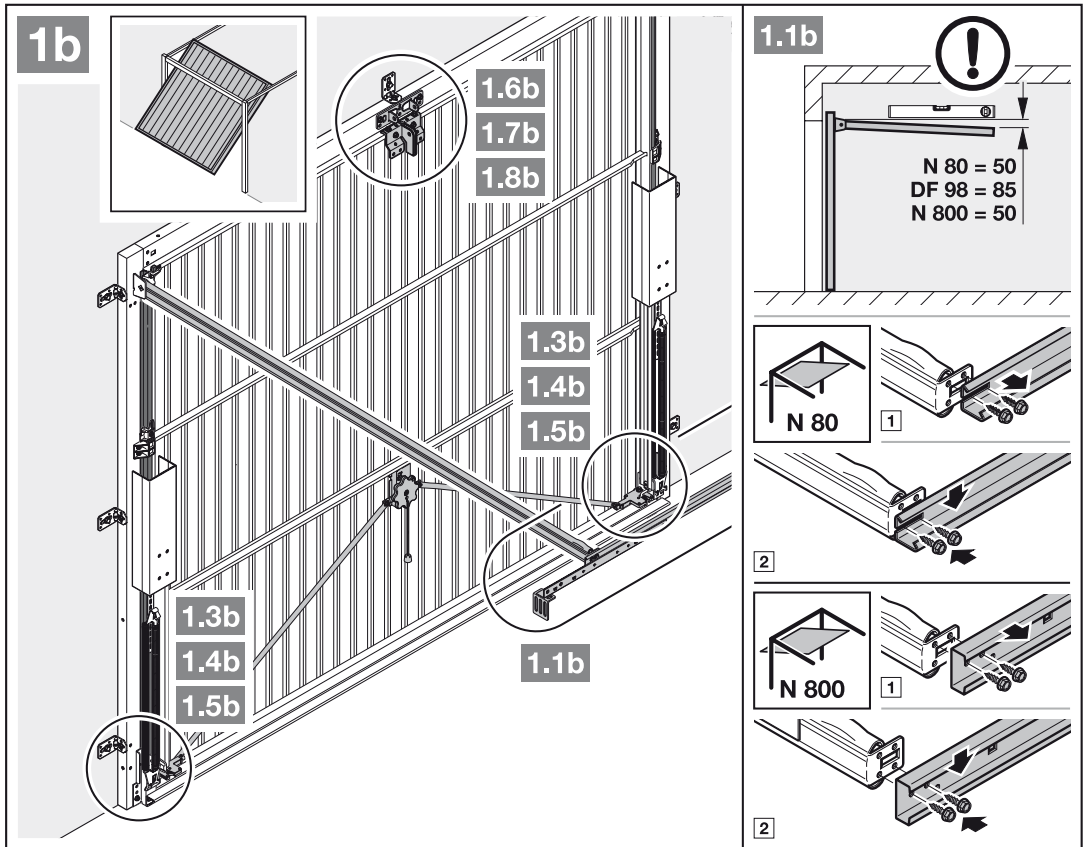
Display	Error/warning	Possible cause	Remedy
 2x	Safety device	Photocell was interrupted, is not connected.	▶ Check photocell, replace if necessary.
 3x	Force limit in <i>CLOSE</i> direction	Obstruction in door area.	▶ Remove the obstruction. ▶ Teach in again if required
 4x	Wicket door contact static current circuit	Interrupted wicket door contact.	▶ Check the wicket door.
 5x	Force limit in <i>OPEN</i> direction	Obstruction in door area.	▶ Remove the obstruction. ▶ Teach in again if required
 6x	Operator error	Renewed impulse input by means of an external button, the radio module or the transparent button (circuit board T button when the operator cover is removed) – an opening run will take place (<i>OPEN</i> reference run).	▶ Delete door data, replace operator if this recurs several times.
 7x	Operator error Message, no fault	The operator has not been taught in yet.	▶ Teach in the operator.
 8x	No reference point Power failure	The operator requires a reference run.	▶ Reference run in the <i>OPEN</i> direction.

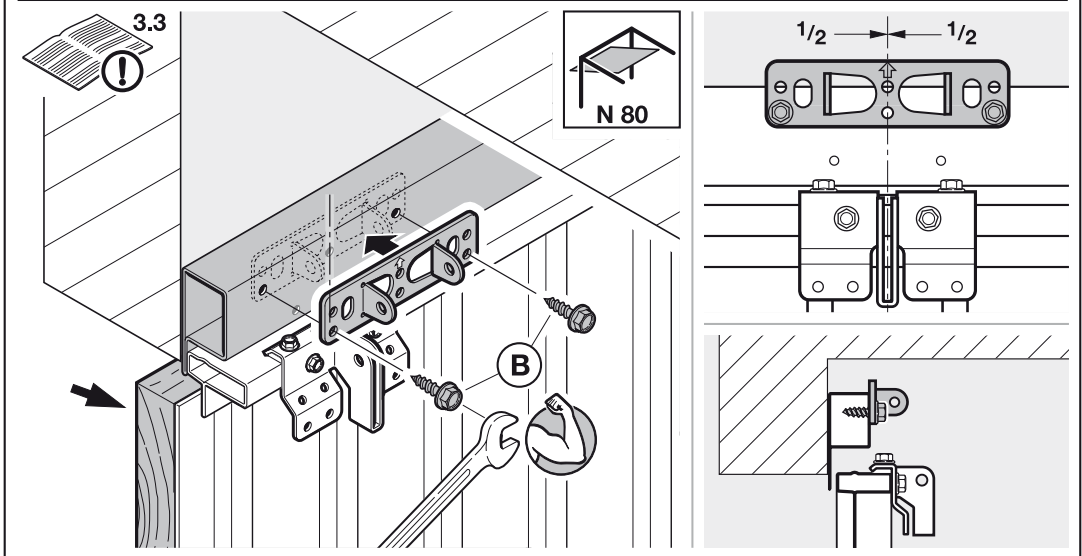
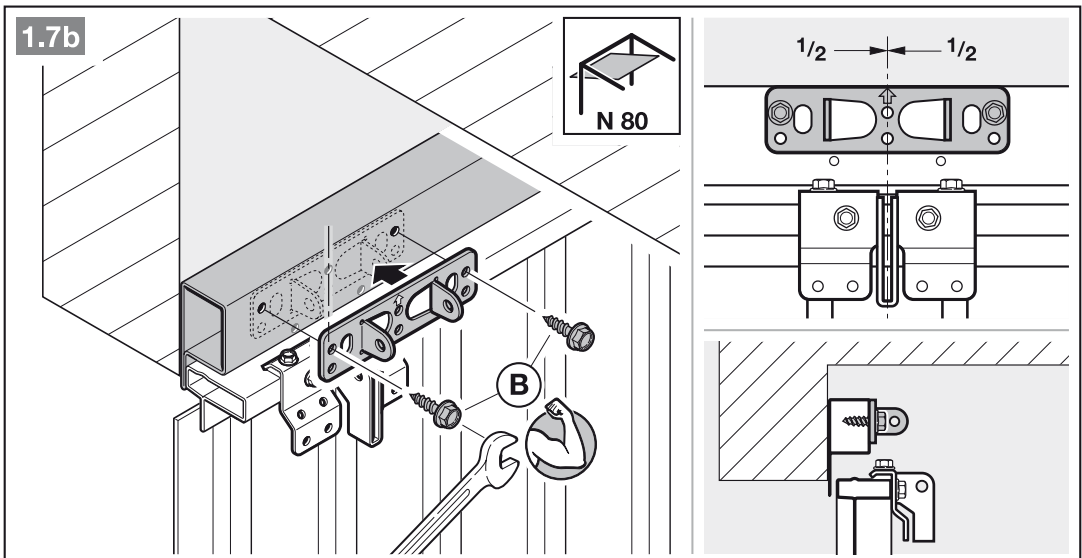
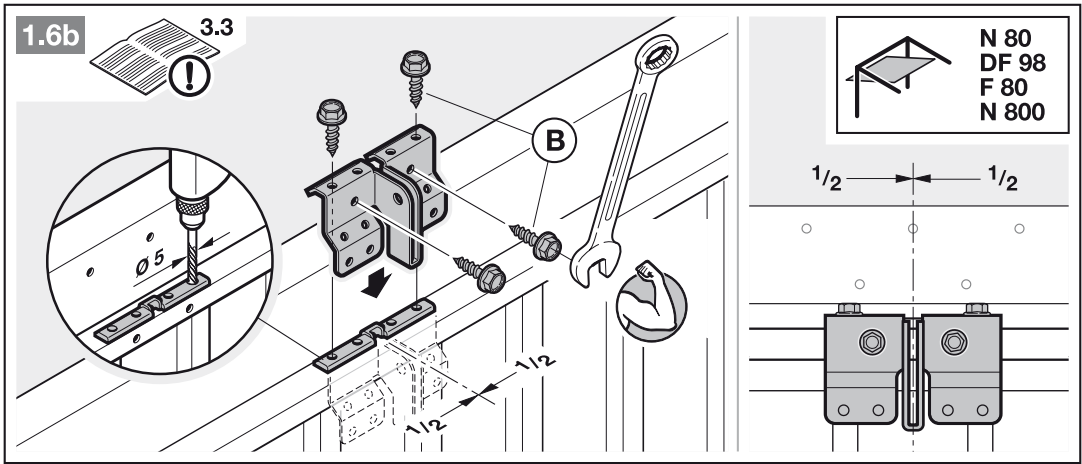


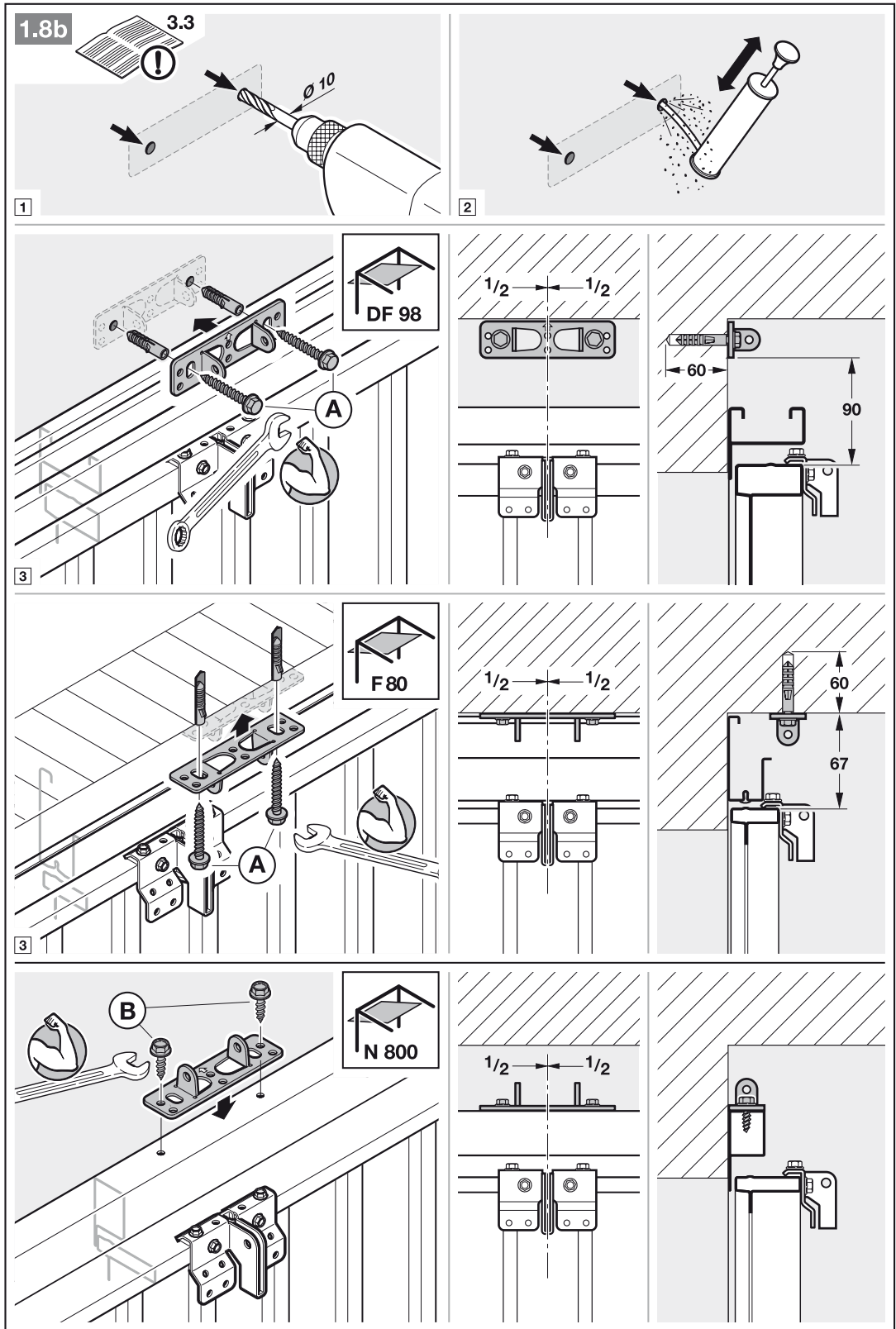


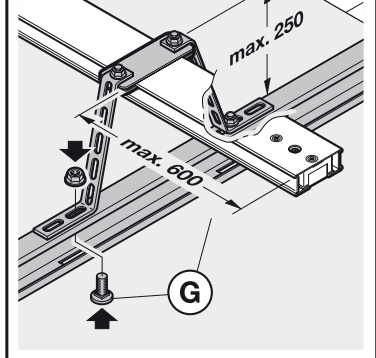
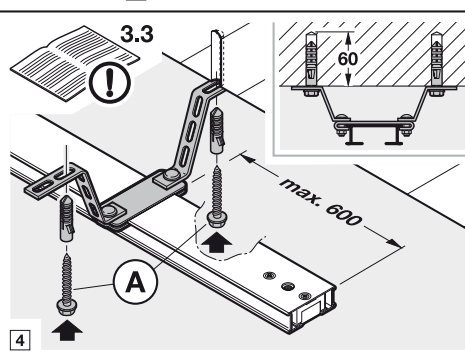
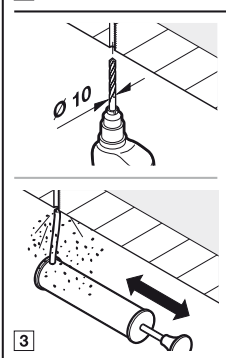
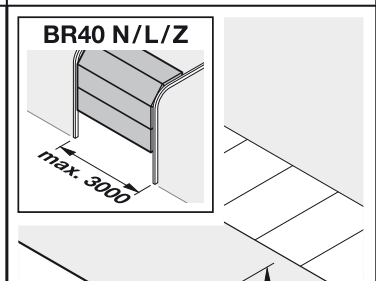
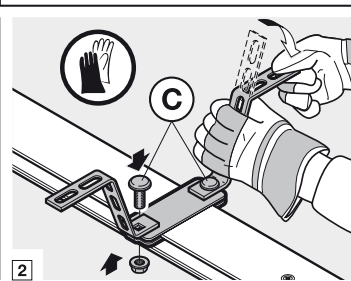
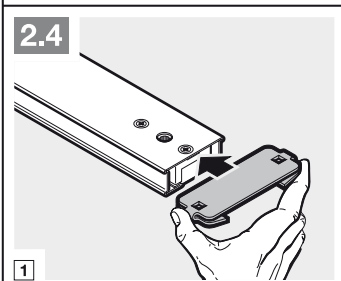
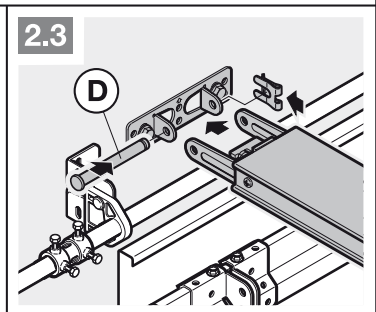
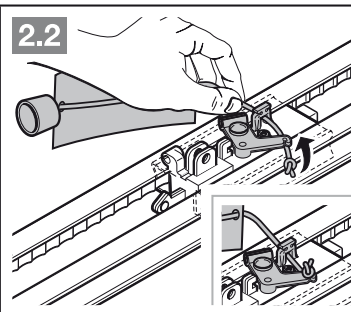
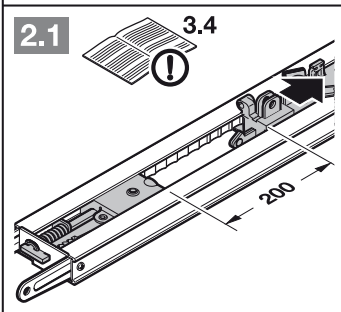
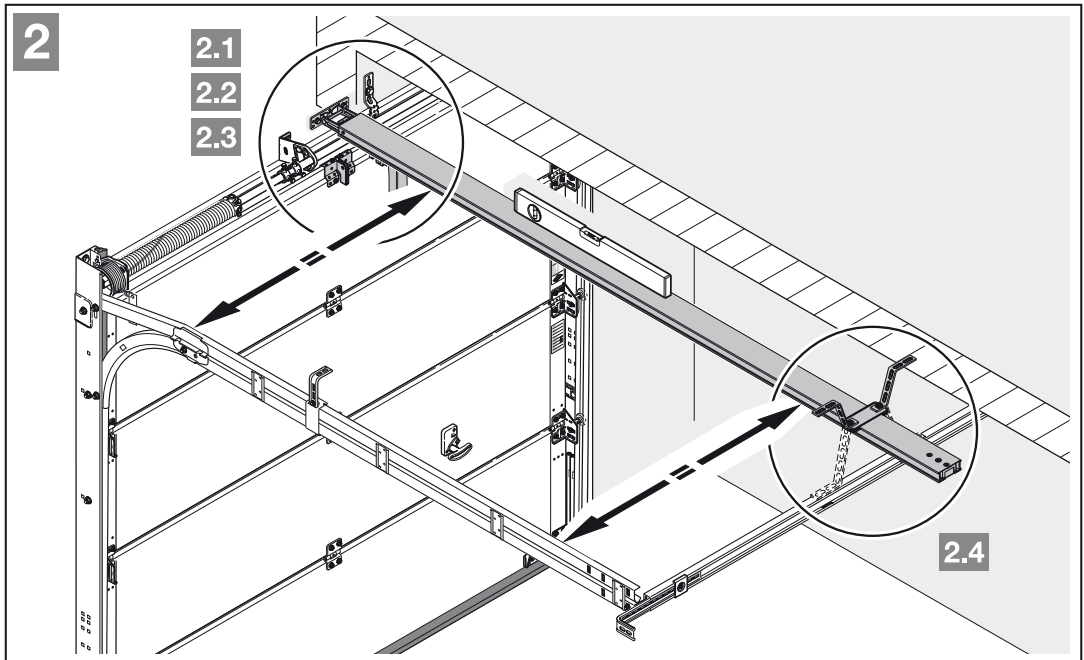


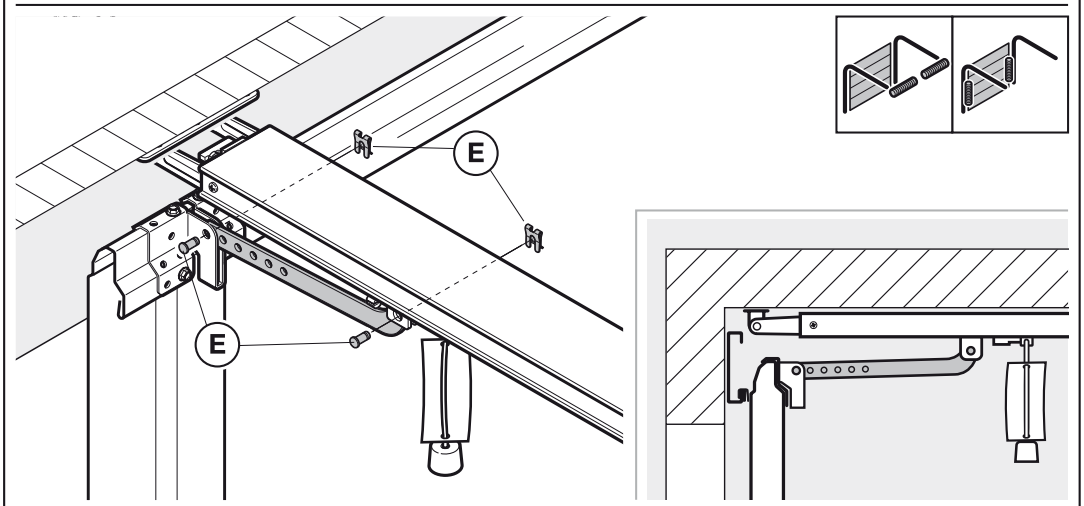
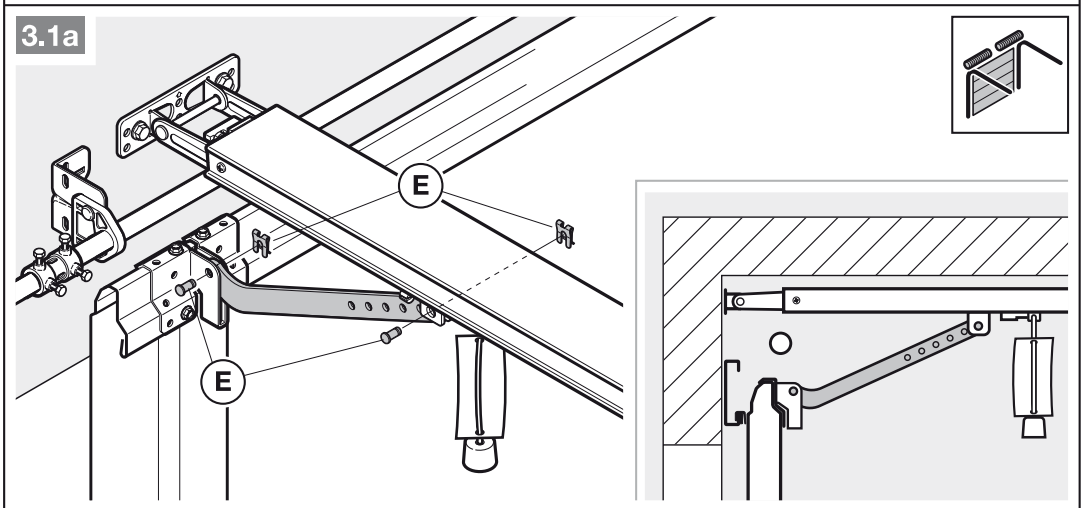
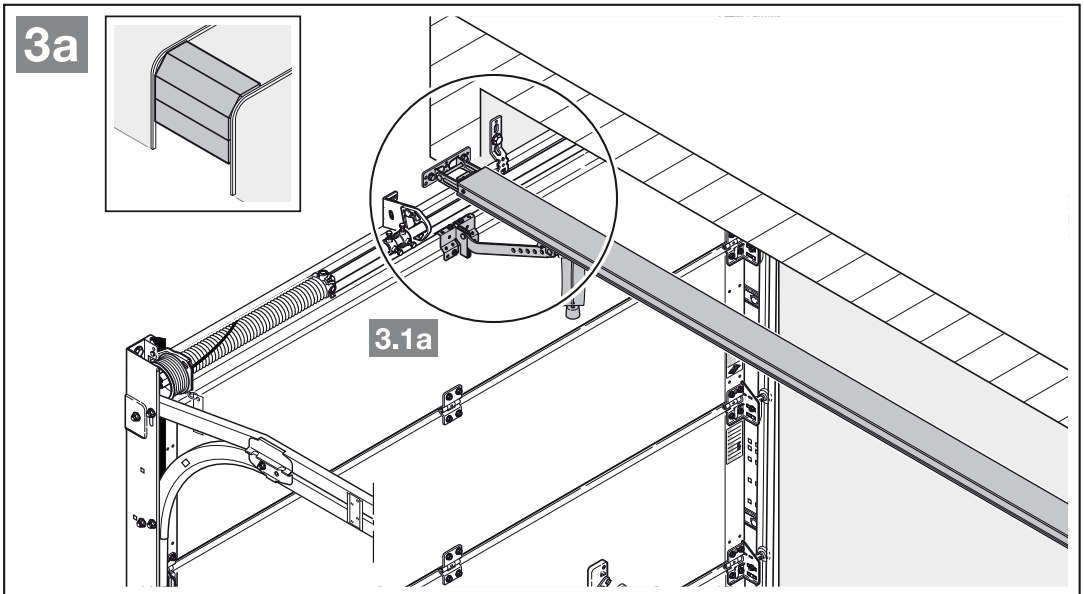


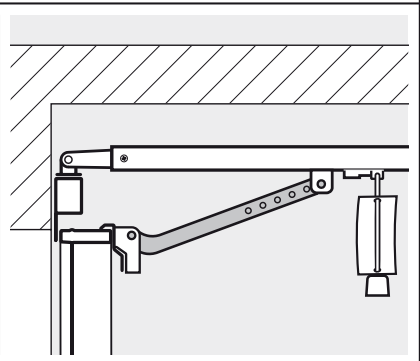
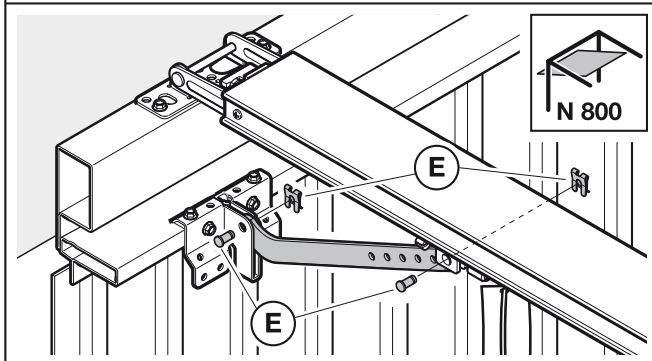
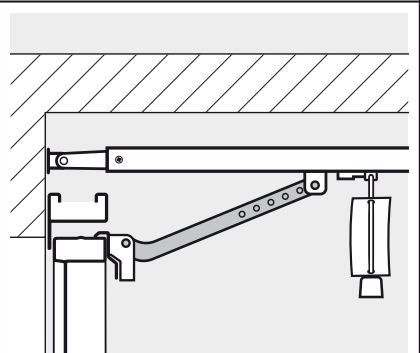
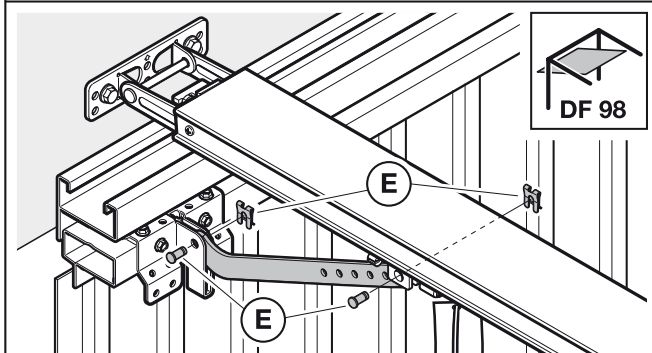
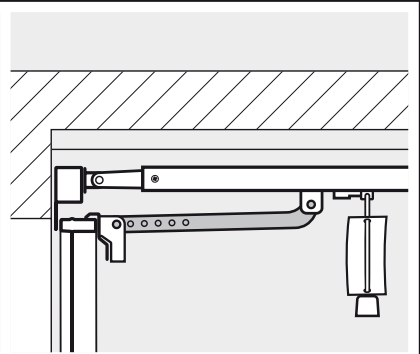
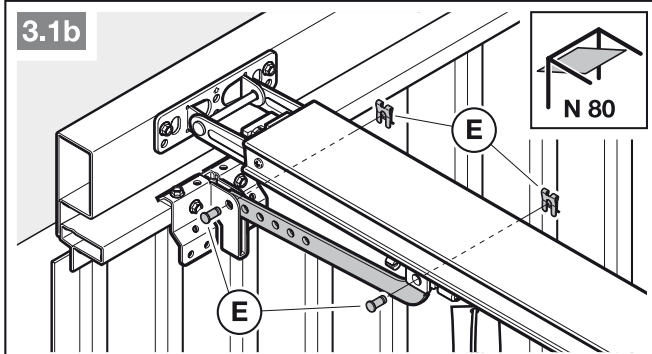
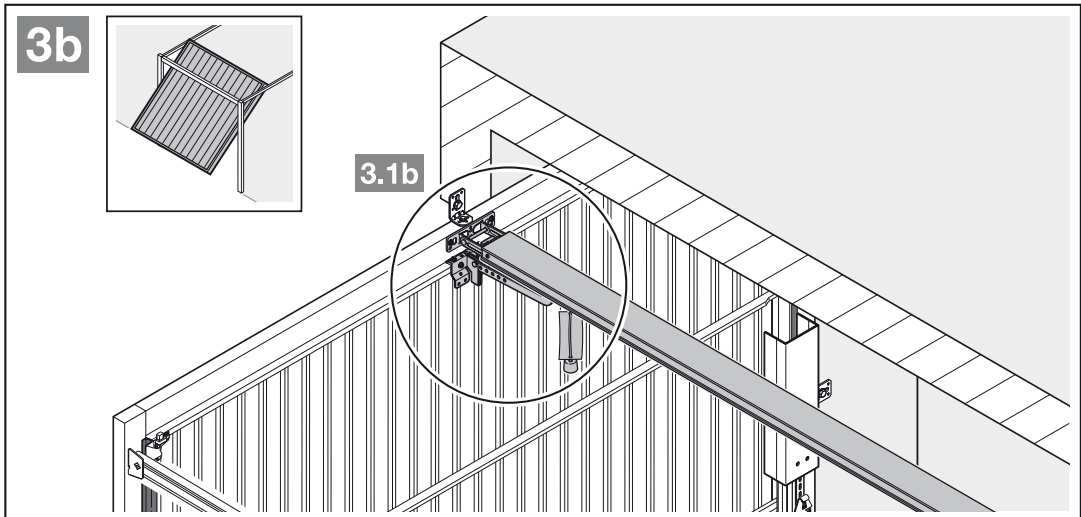


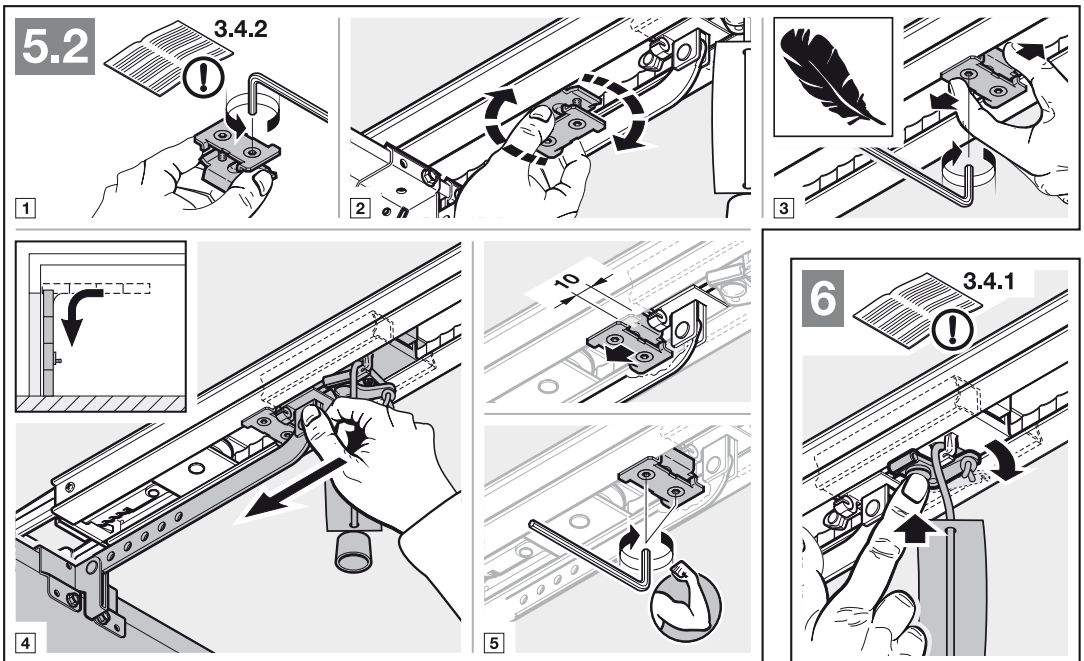
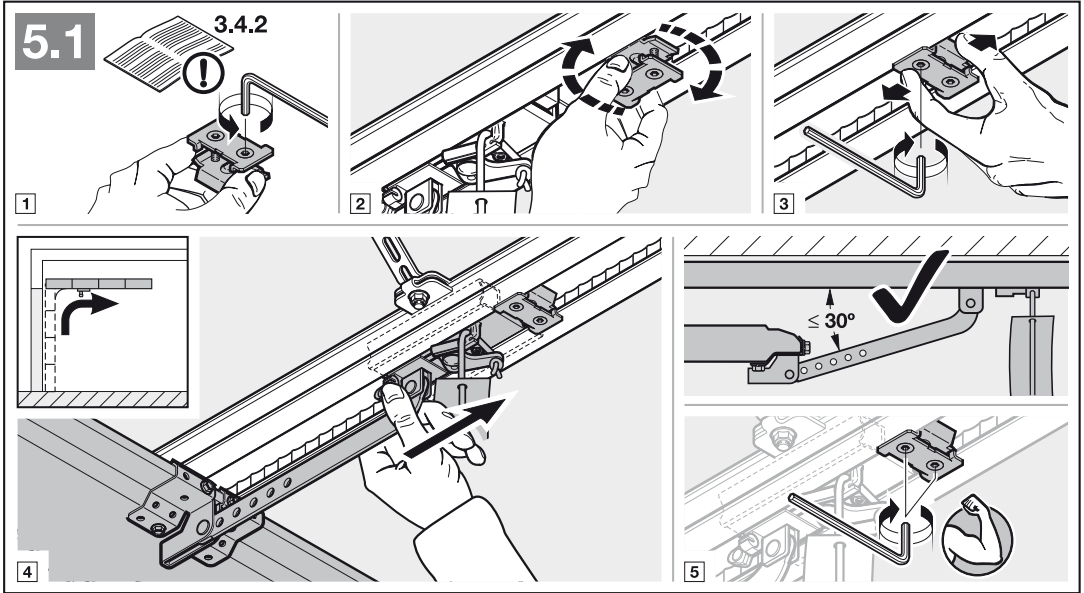
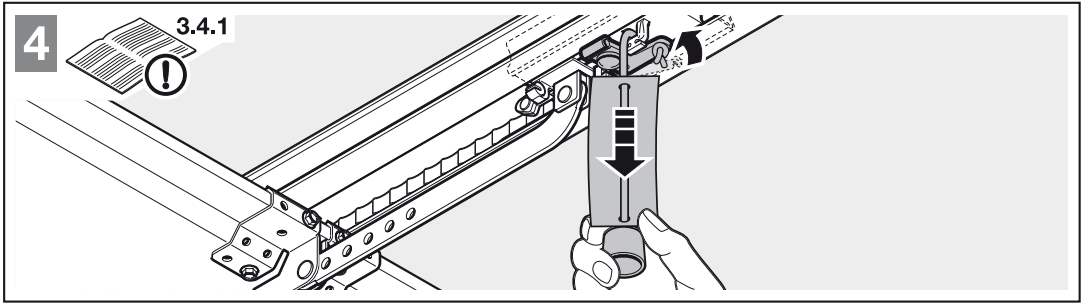


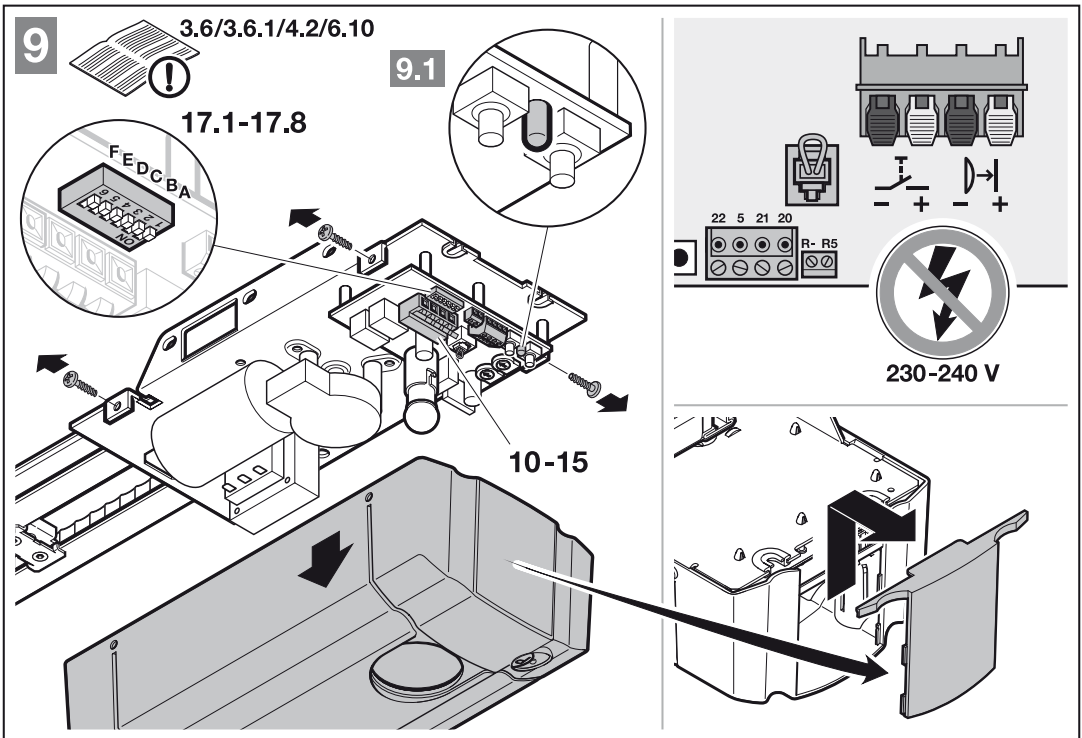
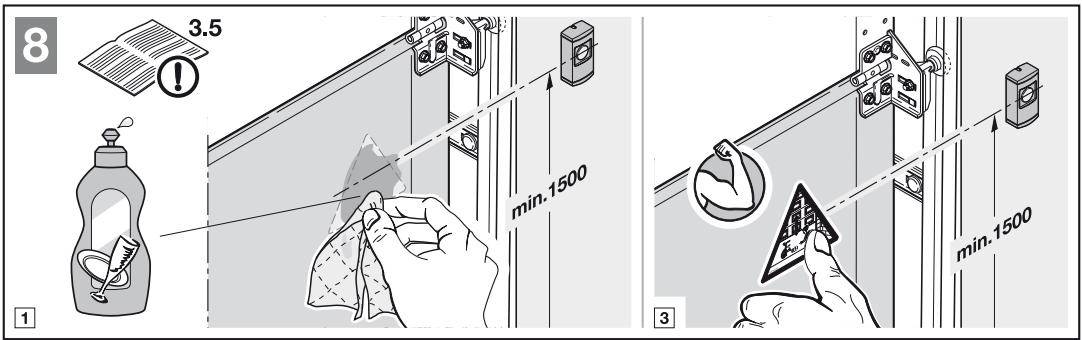
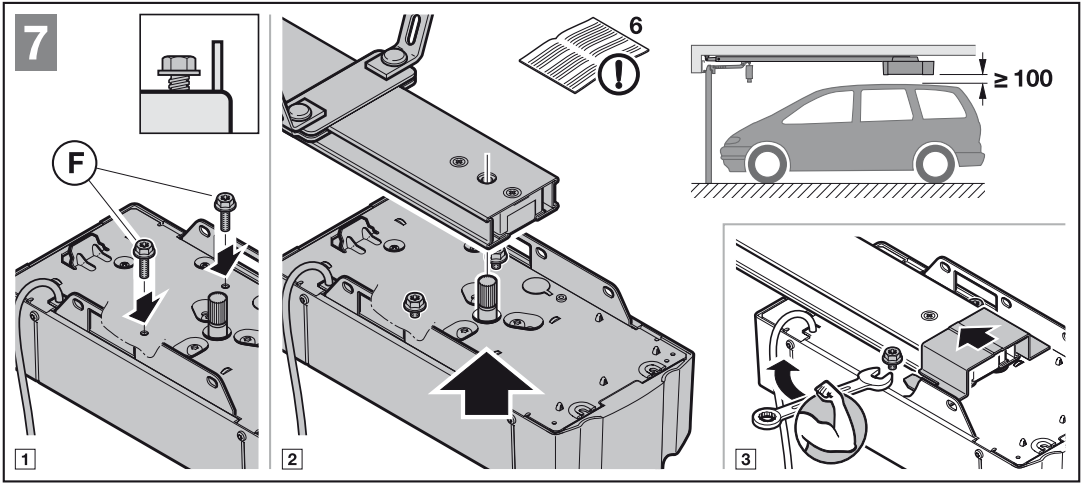


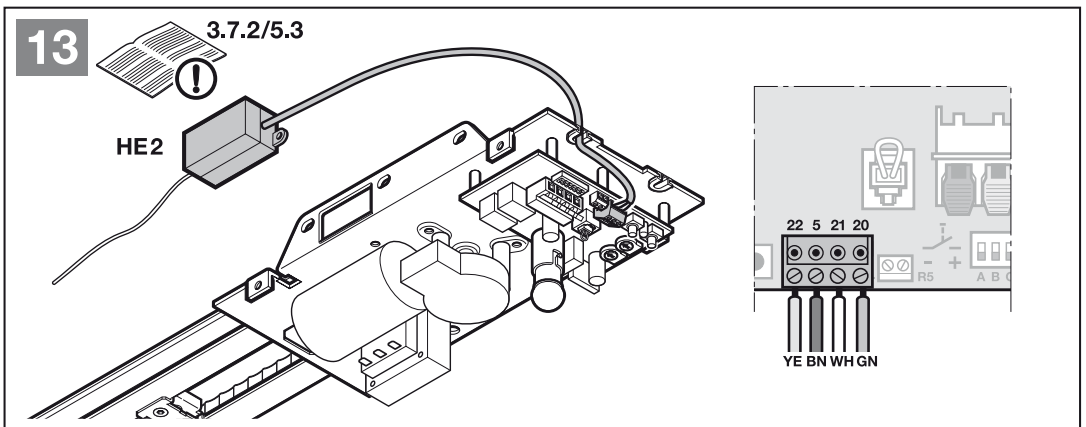
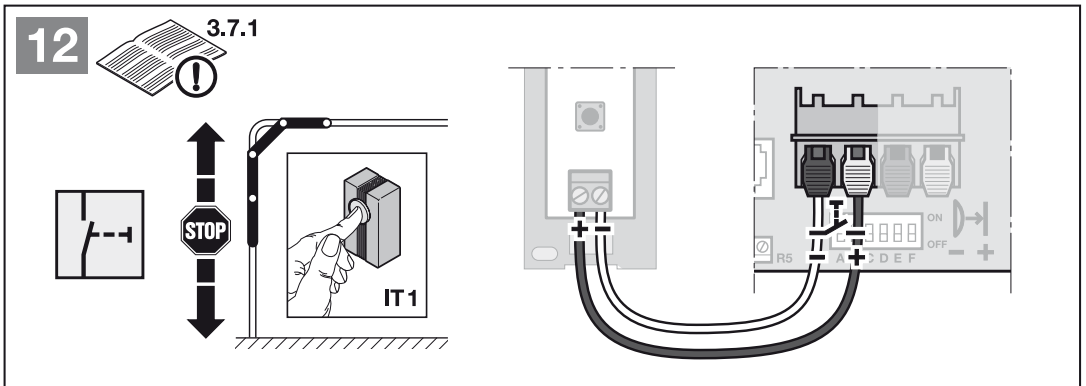
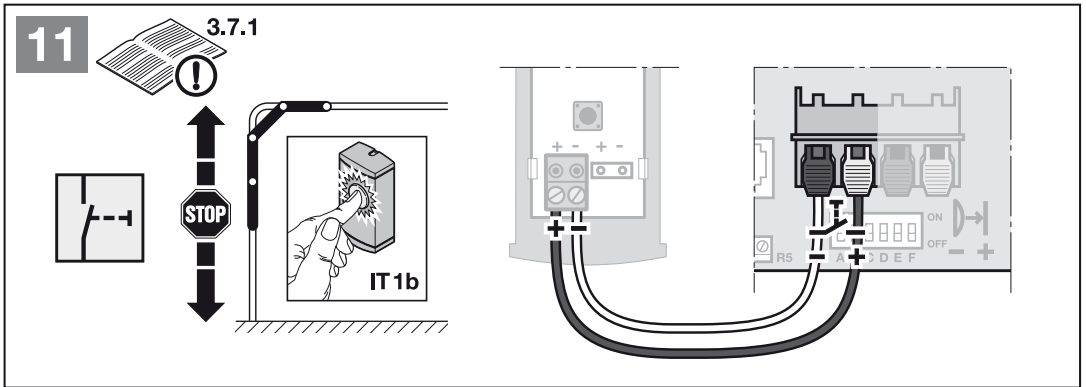
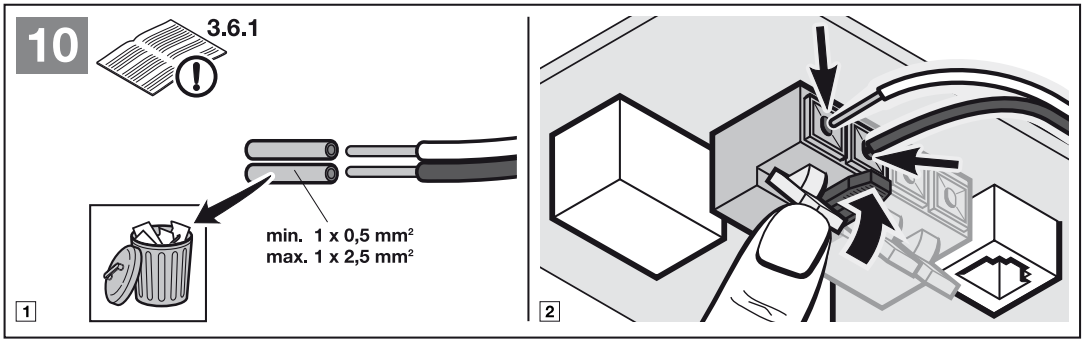






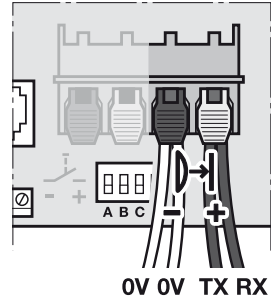
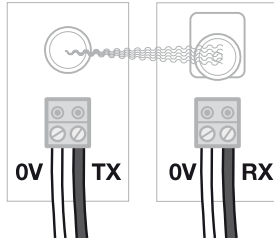
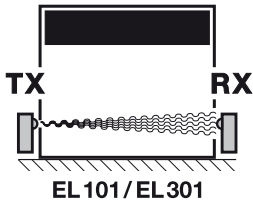






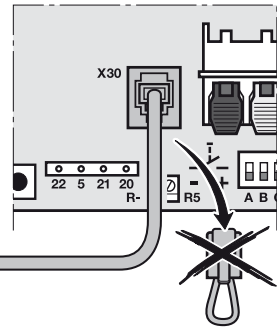
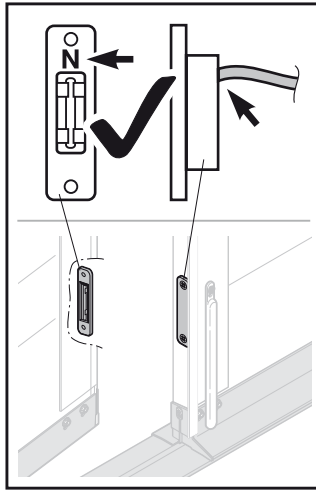
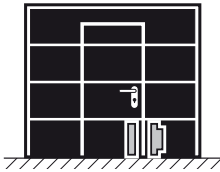
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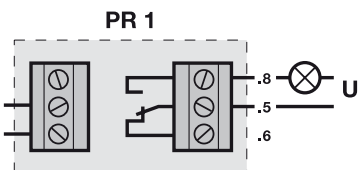
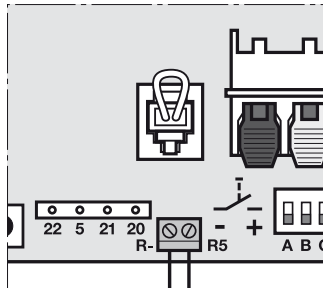
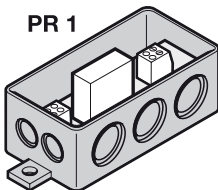
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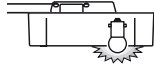
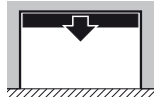

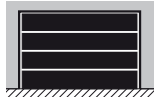
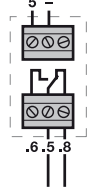



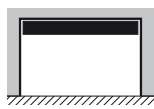
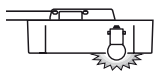
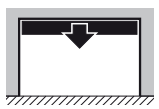
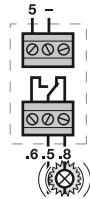


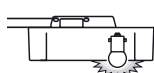
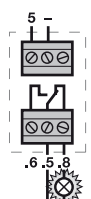
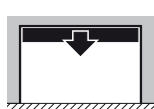


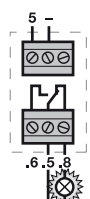



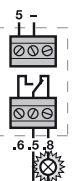
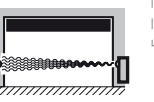

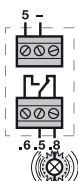
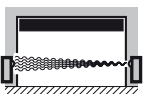
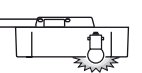
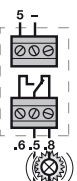
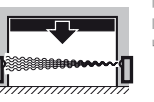




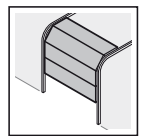


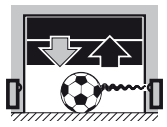

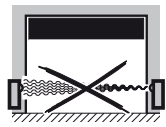





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<p>17.1 4.2.1</p>  	 	 	
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<p>17.3 4.2.3</p>  	  	 	
<p>17.4 4.2.4</p>  	  	  	  
<p>17.5 4.2.5</p>  		 	
<p>17.6 4.2.6</p>  		 	
<p>17.7 4.2.7</p>  		 	
<p>17.8 4.2.8</p> 