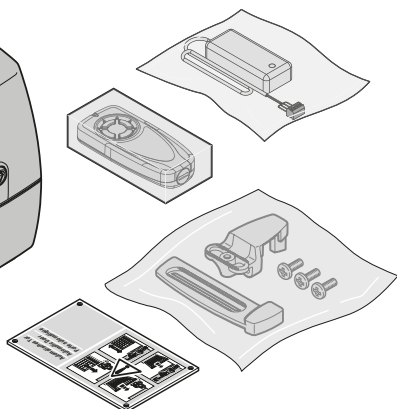
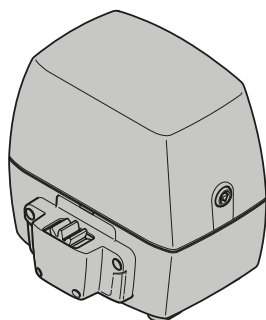
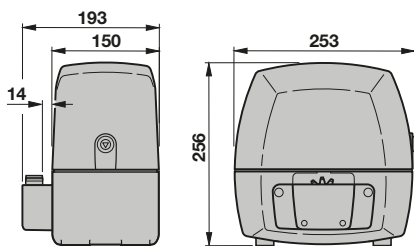
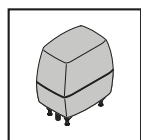


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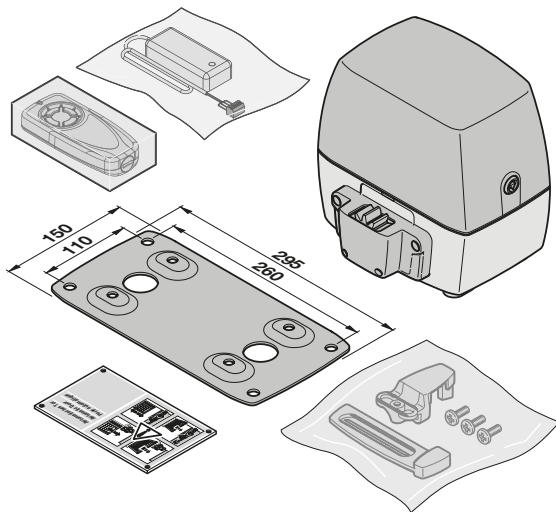
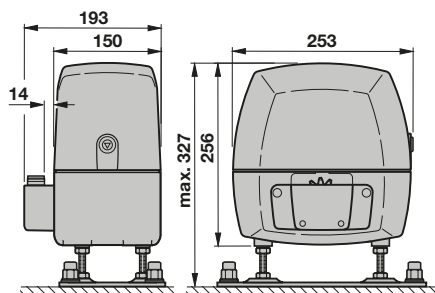
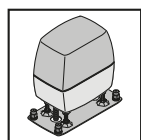
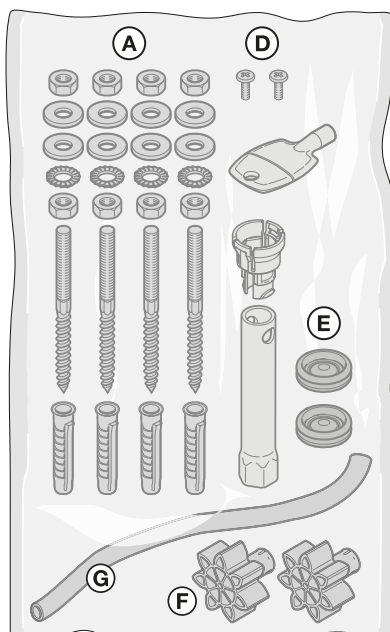
Instructions for Fitting, Operating and Maintenance

Sliding Gate Operator

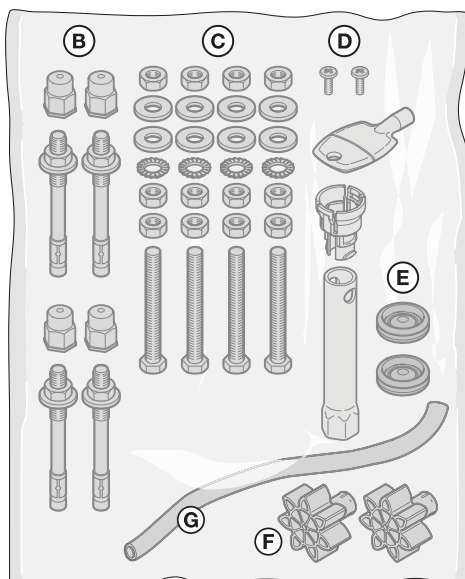
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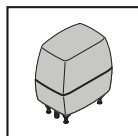
C302 / C502



C802



B



17 mm



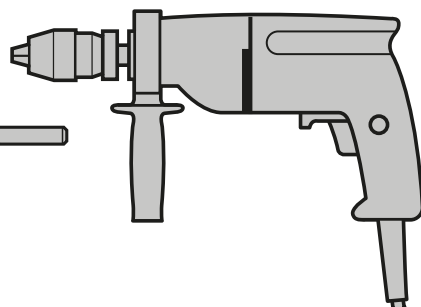
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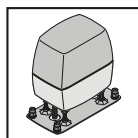
3 mm



Ø 5,5 mm



Ø 12 mm



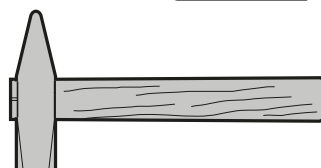
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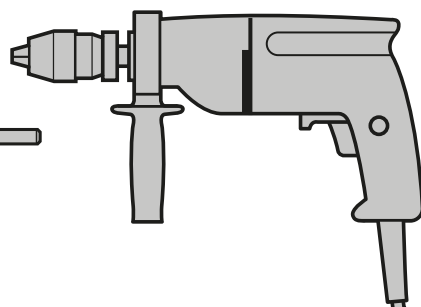
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3 mm



Ø 5,5 mm



Ø 10 mm



17

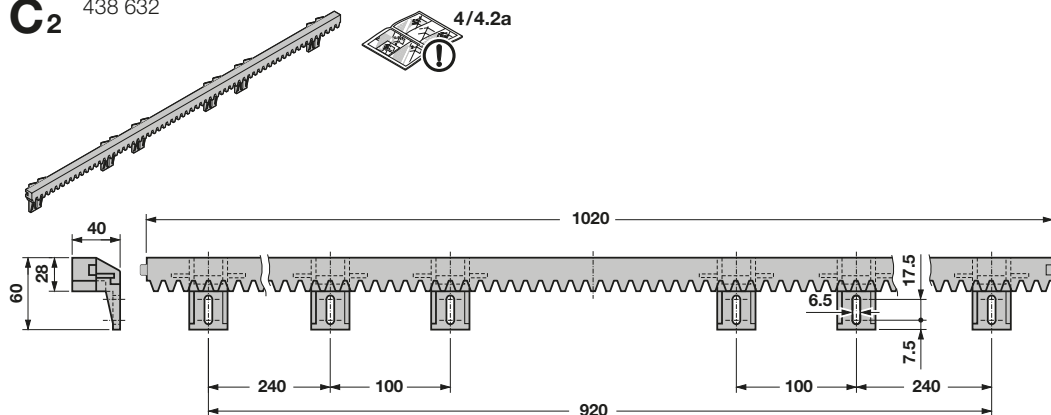


C₁

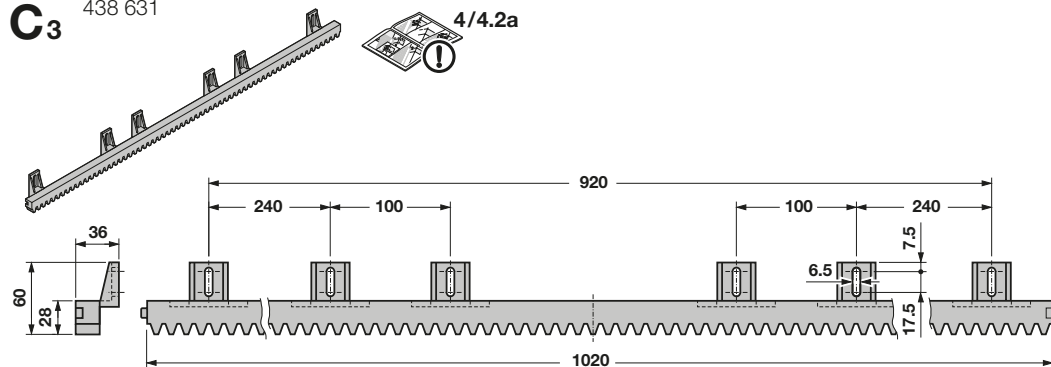
438 634

**C₂**

438 632

**C₃**

438 631

**C₄**

2 901 624

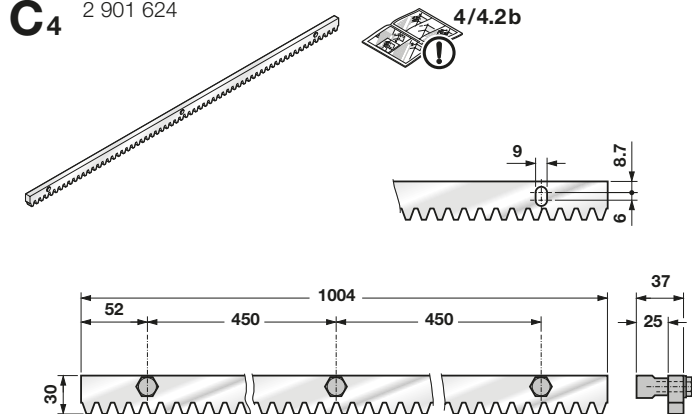



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Dear Customer,

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

1 About these instructions

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

These instructions contain important information on the product.





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

1.1 Further applicable documents

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

- These instructions
- The enclosed log book
- The gate instructions

1.2 Warnings used

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

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1.3 Definitions used

Hold-open phase

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

Automatic timer

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

Through-traffic photocell

After passing through the gate and the photocell, the hold-open phase is shortened. The gate closes shortly afterward.

Impulse sequence control

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

Learning runs

Door runs during which the operator learns the following:

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

Normal operation

Normal operation is gate travel with taught-in travel distances and forces.

Reference run

Gate travel towards the Close end-of-travel position at a lower speed in order to set the home position.

Safety reversal / reversing

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

Reversal limit

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

Slow travel

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

Press-and-release operation

After an impulse, the operator automatically travels to the end-of-travel position.

Status

The current position of a gate.

Partial opening

The travel path opened for pedestrian passage.

Timeout

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

Gate system

A gate with the associated operator.

Press-and-hold operation

The gate only travels while the corresponding button is pressed.

Travel

The distance the gate takes from the Open end-of-travel position to the Close end-of-travel position.

Pre-warning phase

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

Factory reset

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

1.4 Symbols used



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



Important advice to prevent injury to persons and damage to property



Permissible arrangement or activity



Non-permissible arrangement or activity



Factory setting



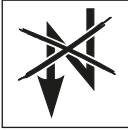
High exertion of force



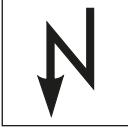
Use protective gloves



Inspect



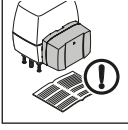
Power failure



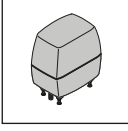
Power restoration



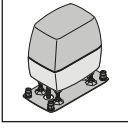
Check for smooth running



If required, see separate fitting instructions for emergency battery



Sliding gate operator standard version



Sliding gate operator, reinforced version



Audible engagement



Display is illuminated



Display flashes slowly



Display flashes quickly



Decimal flashes

1.5 Abbreviations used

Colour code for cables, single conductors and components

The colour abbreviations for cable and strand identification and for components conform to the international colour code in accordance with IEC 757:

WH	White	BK	Black
BN	Brown	BU	Blue
GN	Green	OG	Orange
YE	Yellow	RD / BU	Red / blue

1.6 Notes on the illustrated section

The illustrated section features fitting an operator without a bottom plate. The operator is fitted to a sliding gate on the right of the closed gate as viewed from the inside. If there are deviations, e.g.

- fitting or programming to an operator with bottom plate,
- the operator is fitted to a sliding gate on the left of the closed gate as viewed from the inside,

the deviations are additionally shown.

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

2 Safety instructions

ATTENTION:

IMPORTANT SAFETY INSTRUCTIONS.

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

2.1 Intended use

Depending on the operator type, the operator can be used in the private / non-commercial or commercial sector.

The sliding gate operator is exclusively intended for the automatic operation of smooth-running sliding gates. The maximum permissible gate size and maximum weight must not be exceeded. The gate must be easy to open and close by hand.

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

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

2.2 Non-intended use


Continuous operation is not permitted. For inclining or sloping gates the use of radial dampers is required.

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 gate system.

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

 WARNING
Danger of injury in the event of faults in the gate system
► See warning in section 3.1
Danger of injury due to unexpected gate travel
► See warning in section 12



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


- In the event of a gate or sliding gate operator failure (sluggish operation or other malfunctions), immediately commission a specialist for the inspection or repair work.

2.5 Safety instructions for fitting

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

After fitting is complete, the specialist must declare conformity in accordance with EN 13241-1 based on the area of application.

	 DANGER
Risk of deadly electric shock from mains voltage	
Contact with the mains voltage presents the danger of a deadly electric shock.	
<ul style="list-style-type: none"> ► Electrical connections may only be made by a qualified electrician. ► Make sure that the on-site electrical installation conforms to the applicable protective regulations (230 / 240 V AC, 50 / 60 Hz). ► If the operator is permanently connected to the mains voltage, you must install an all-pole mains isolator switch with corresponding pre-fuse. ► Before all electrical work, the system must be de-energised. Safeguard the system against being switched on again without authorisation. ► If the mains connection cable is damaged, it must be exchanged by a qualified electrician to avoid danger. 	

 WARNING
Danger of injury due to unwanted gate travel
Incorrect assembly or handling of the operator may trigger unwanted gate travel that may result in persons or objects being trapped.
► Follow all the instructions provided in this manual.

⚠ WARNING

Unsuitable fixing material

Use of unsuitable fixing material may mean that the operator is not securely fixed and could come loose.

- ▶ The fitter must check whether the supplied fixing materials (plugs) are suitable for the intended fitting site and, if necessary, use different materials. The supplied fixing materials are suitable for concrete (≥ B15), but are not officially approved.

ATTENTION

Damage caused by dirt

Drilling dust and chippings can lead to malfunctions.

- ▶ Cover the operator during drilling work.

ATTENTION

Malfunctions in the connection cables

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

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

External voltage at the connecting terminals

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

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

Damage due to moisture

Penetrating moisture can damage the control.

- ▶ When opening the control housing, protect the control from moisture.

2.6 Safety instructions for installation

⚠ WARNING

Danger of injury due to unwanted gate travel

Incorrectly fitted control devices (e.g. buttons) may trigger unwanted gate 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 gate, but away from moving parts.

Should any of the present safety devices fail, persons or objects may be trapped.

- ▶ In accordance with ASR A1.7, mount at least one easily recognisable, easily accessible emergency command device (emergency off) near the gate. In case of danger, the emergency command device stops the gate movement (see section 4.4).

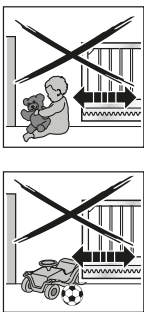
2.7 Safety instructions for initial start-up and for operation

⚠ WARNING

Danger of injury during gate travel

If people or objects are in the area around the gate while the gate is in motion, this can lead to injuries or damage.

- ▶ Children are not allowed to play near the gate system.
- ▶ Make sure that no persons or objects are in the gate's area of travel.
- ▶ If the gate system has only one safety feature, only operate the sliding gate operator if you are within sight of the gate's area of travel.
- ▶ Monitor the gate travel until the gate has reached the end-of-travel position.
- ▶ Only drive or pass through remote-control gate systems when the gate is at a standstill!
- ▶ Never stand in the opening of the gate system.



⚠ WARNING**Risk of crushing at the toothed track**

During gate travel, fingers or extremities may be crushed by the toothed track and the toothed wheel.

- ▶ Do not reach toward the toothed track or toothed wheel during gate travel.

⚠ WARNING**Risk of crushing at the main closing edge and the secondary closing edges**

During gate travel, fingers or extremities may be crushed between the gate and main closing edge or the secondary closing edge.

- ▶ Do not reach toward the main closing edge or secondary closing edges during gate travel.

⚠ CAUTION**Danger of injury due to incorrectly selected operator type**

- ▶ See warning in section 5

2.8 Safety instructions for using the hand transmitter

⚠ WARNING**Danger of injury during gate travel**

- ▶ See warning in section 9

⚠ CAUTION**Danger of injuries due to unintended gate travel**

- ▶ See warning in section 8

Danger of burns from the hand transmitter

- ▶ See warning in section 9

2.9 Approved safety equipment

The following functions or components, where available, meet cat. 2, PL “c” in accordance with EN ISO 13849-1:2008 and were constructed and tested accordingly:

- Internal power limit
- Tested safety equipment

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

⚠ CAUTION**Danger of injuries due to faulty safety equipment**

- ▶ See warning in section 7.2

2.9.1 Safety instructions for complying with the operating force

If you observe these instructions **in addition** to the following conditions, compliance of the operating force in accordance with EN 12453 / 12445 can be assumed.

- The gate's centre of gravity is in the centre (maximum permissible deviation $\pm 20\%$).
- The gate travel is smooth.
- For inclining or sloping gates the use of radial dampers is required.
- Sound-absorbing seal DP 3 is fitted at the closing edges. This has to be ordered separately (article no. 436 388 + article no 2900170).
- The reversal limit for an opening width of 50 mm is checked and maintained along the entire length of the main closing edge.
- The operator is programmed for slow speed (see chapter 4.3.2).
- The maximum support roller spacing for self-supporting gates (maximum width 6200 mm, maximum opening width 4000 mm) is 2000 mm.

3 Fitting

ATTENTION:

IMPORTANT INSTRUCTIONS FOR SAFE INSTALLATION.

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

3.1 Checking and preparing the gate / gate system

⚠ WARNING**Danger of injury in the event of faults in the gate system**

A malfunction in the gate system or incorrectly aligned gates can cause serious injuries!

- ▶ Do not use the gate system if repair or adjustment work must be conducted!
- ▶ In addition, check the entire gate system (joints, gate bearings and fastenings) for wear and possible damage.
- ▶ Check whether rust, corrosion or cracks are present.

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

The operator is specifically designed for easy to move gates. For inclining or sloping gates the use of radial dampers is required.

The gate must be in a flawless mechanical condition so that it can be easily operated by hand (EN 12604).

- ▶ Check whether the gate can be opened and closed correctly.
- ▶ The mechanical locking devices of the gate that are not needed with an operator must be put out of operation.
- ▶ If necessary, disassemble the mechanical locking completely. This includes in particular any locking mechanisms connected with the gate lock.
- ▶ Secure the gate mechanically against derailing from the guides.
- ▶ When using gate infills, take the regional wind loads into consideration (EN 13241-1).

3.2 Foundation

- ▶ A foundation is required for fitting. If using a closing edge safety device the foundation must be larger.
- ▶ See foundation dimensions

Figure 1a	Operator without bottom plate
Figure 1b	Operator with bottom plate
Figure 1c	Operator without bottom plate with closing edge safety device
Figure 1d	Operator with bottom plate with closing edge safety device

The marking \odot indicates the frost-free depth (in Germany = 80 cm).

- ▶ For operators with bottom plate use concrete \geq B25 / C25 (compacted).
- ▶ A plinth foundation may be required for gates with track rollers on the inside.
- ▶ Lay the mains lead with 230 / 240 V ~ through a tube in the foundation. Lay the connection cables for accessories with 24 V through a separate tube, away from the mains lead (see **Figure 1.1**).

NOTE:

- The foundation must be **sufficiently hardened** prior to the following fitting steps.
- For all leads underground, use underground cables NYY-J 3 \times 1.5 mm² or 5 \times 1.5 mm².
- If the connection to the operator leads have to be extended with underground cables, use a splash-water protected junction box (protection category IP 65, to be provided on-site).

3.3 Determining the attachment dimensions

1. Determine the drilling position of the 4 drill holes on the surface of the foundation.
Depending on the operator type:
 - For hanger bolts use the drill stencil at the end of these instructions for \varnothing 12 mm drill holes (see **Figure 2a**).
 - For heavy-duty anchors use the bottom plate for \varnothing 10 mm drill holes (see **Figure 2b**).
2. Select the used toothed track from the below table. See the minimum and maximum fitting dimensions (dimension A).

Toothed track	Dimension A (mm)	
	Min.	Max.
2901624	126	138
438631	125	129
438632	129	133

3.4 Fixing

- ▶ Note the safety instructions in section 2.5.
 - *Unsuitable fixing material*

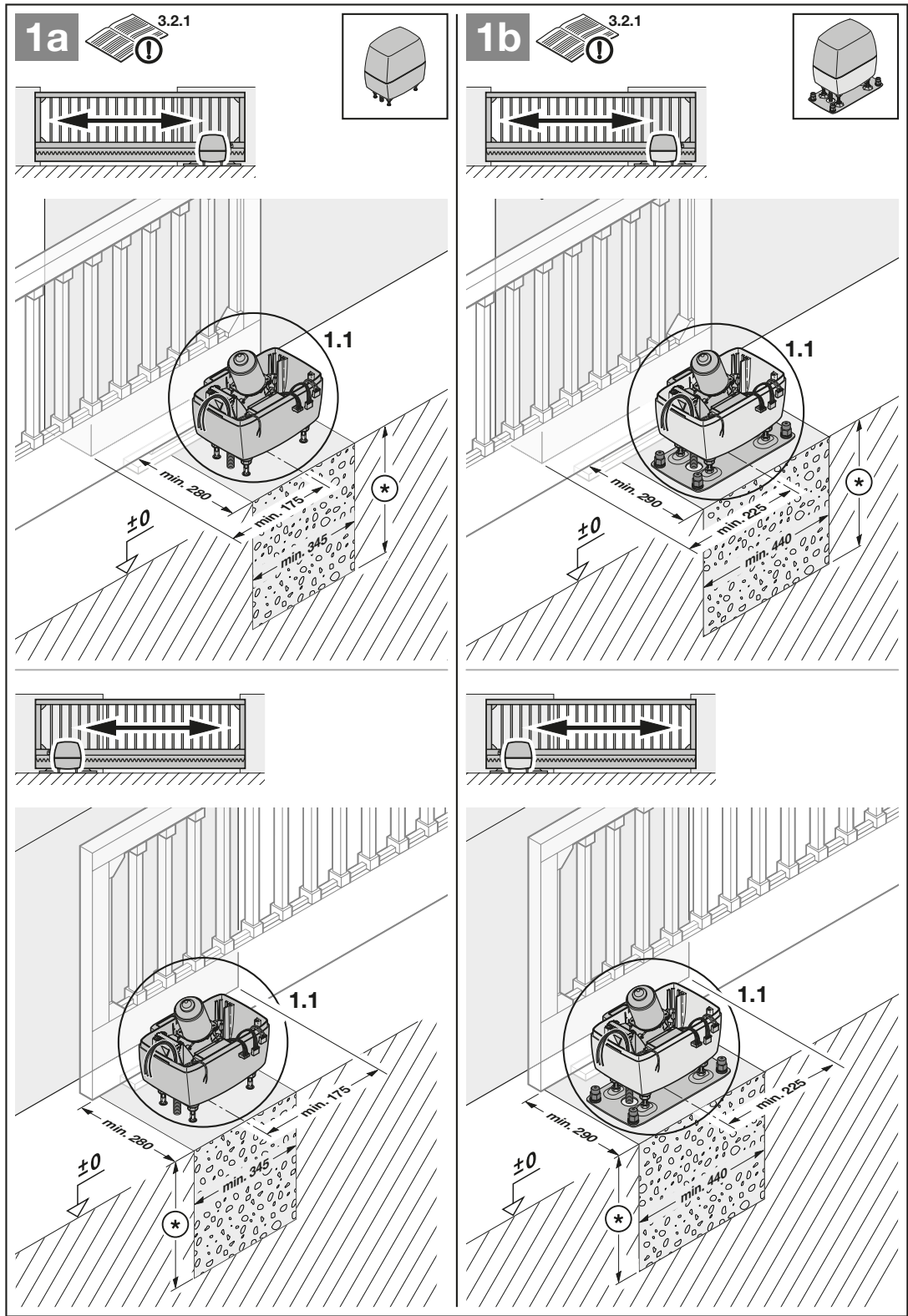
ATTENTION!

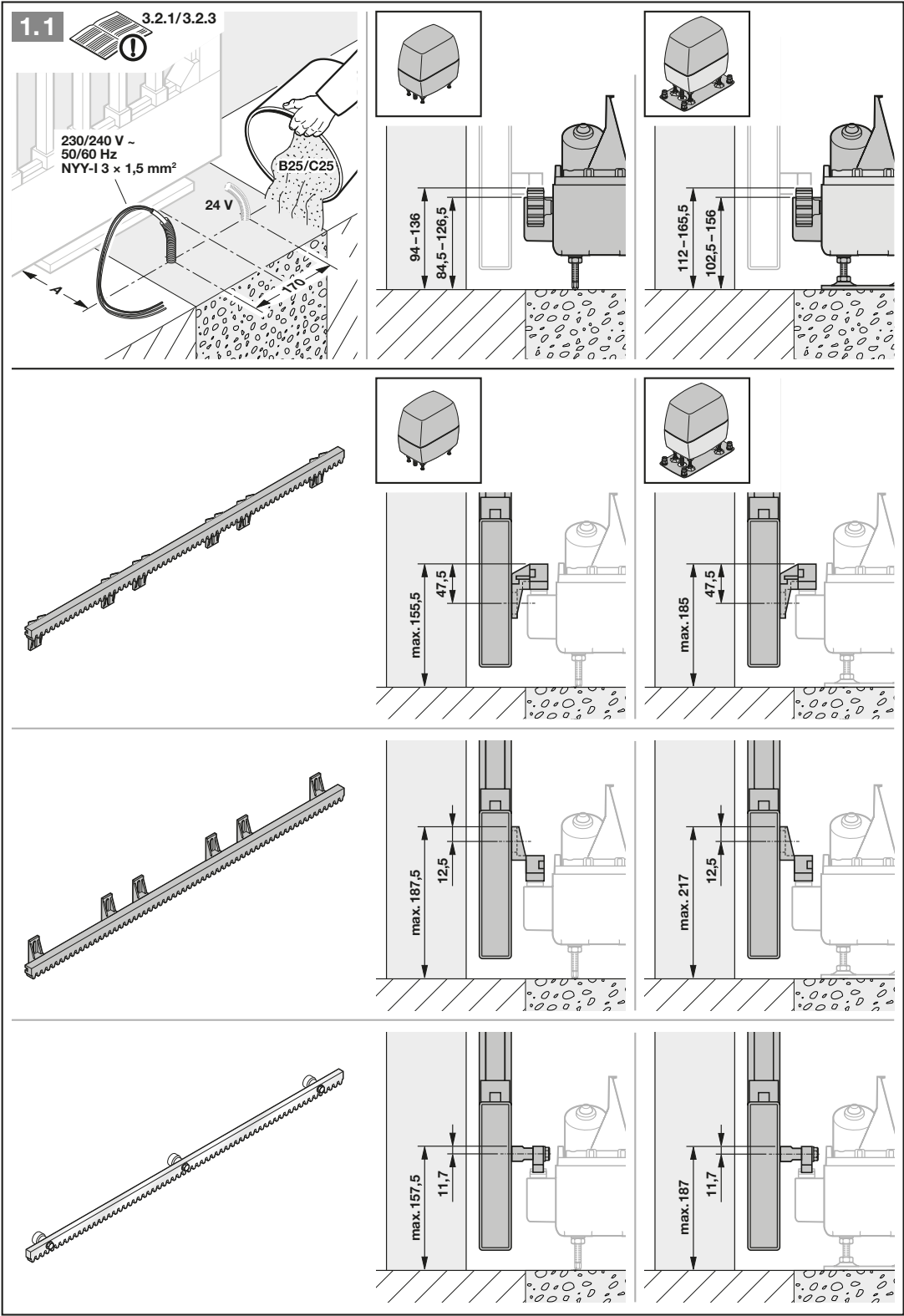
Damage caused by dirt

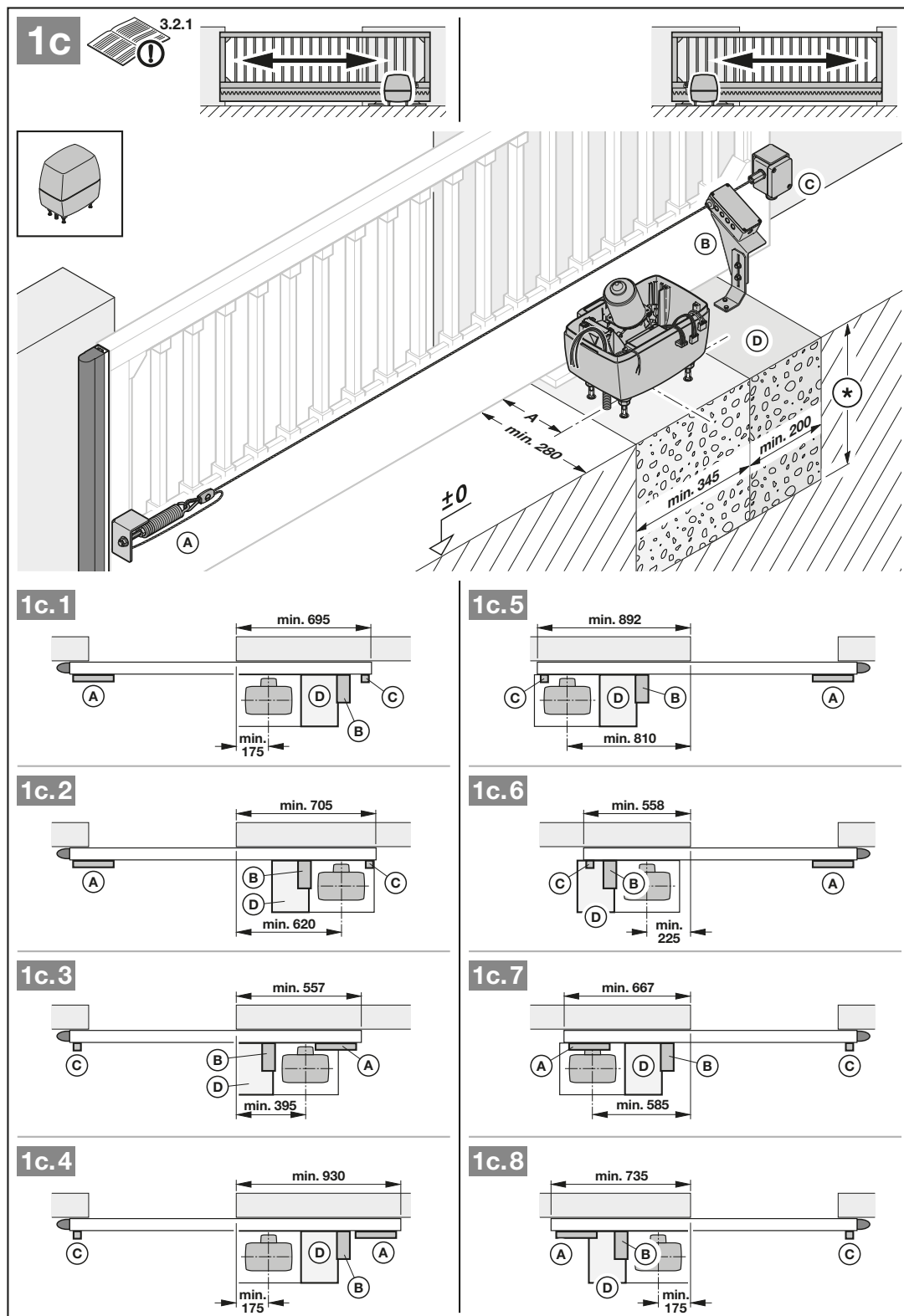
- ▶ During drilling work, protect the operator from drilling dust and chippings.
- ▶ See **Figure 2a .1 / 2b.1**

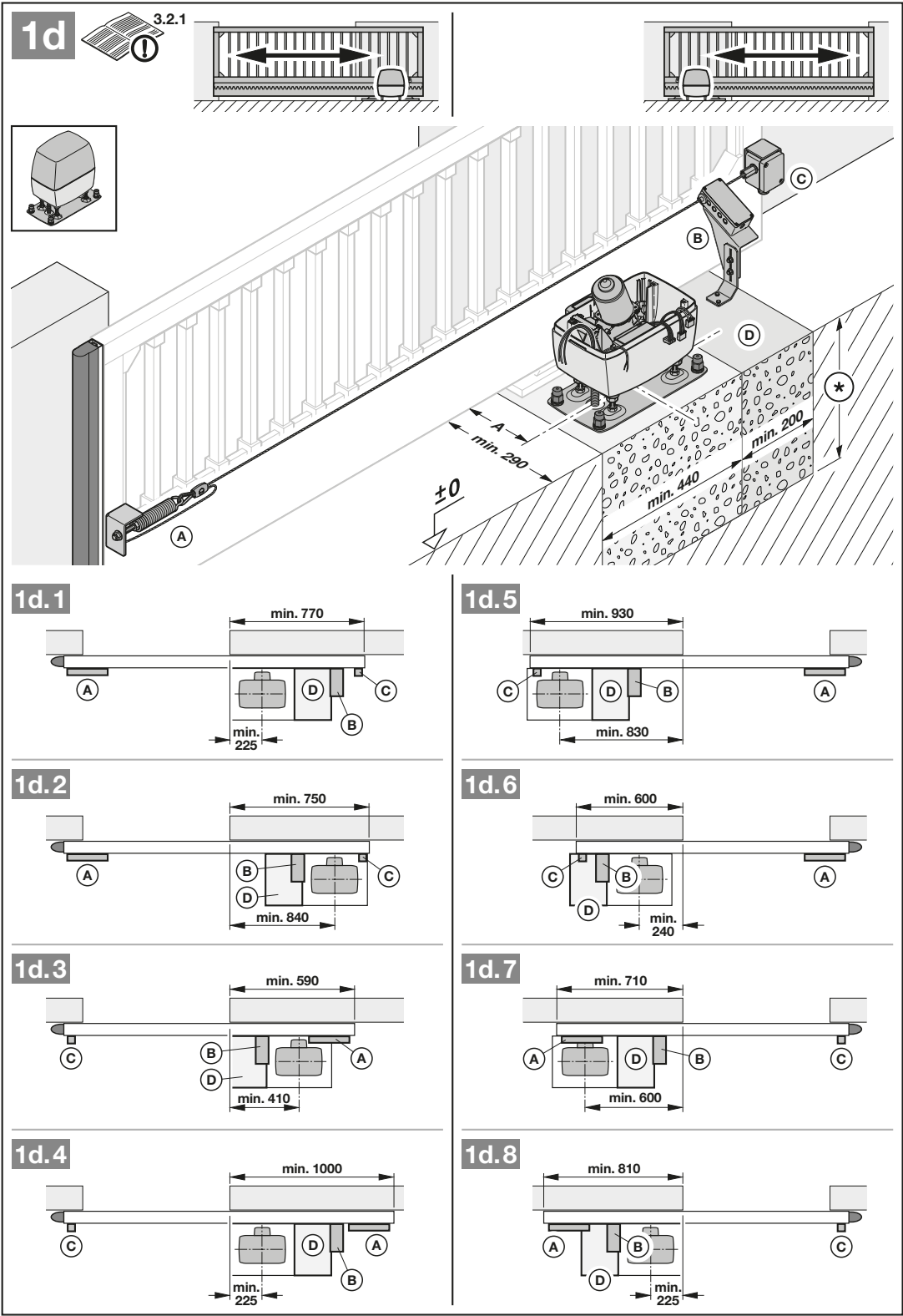
Hole	Depth
\varnothing 12 mm for hanger bolts	80 mm
\varnothing 10 mm for heavy-duty anchors	105 mm

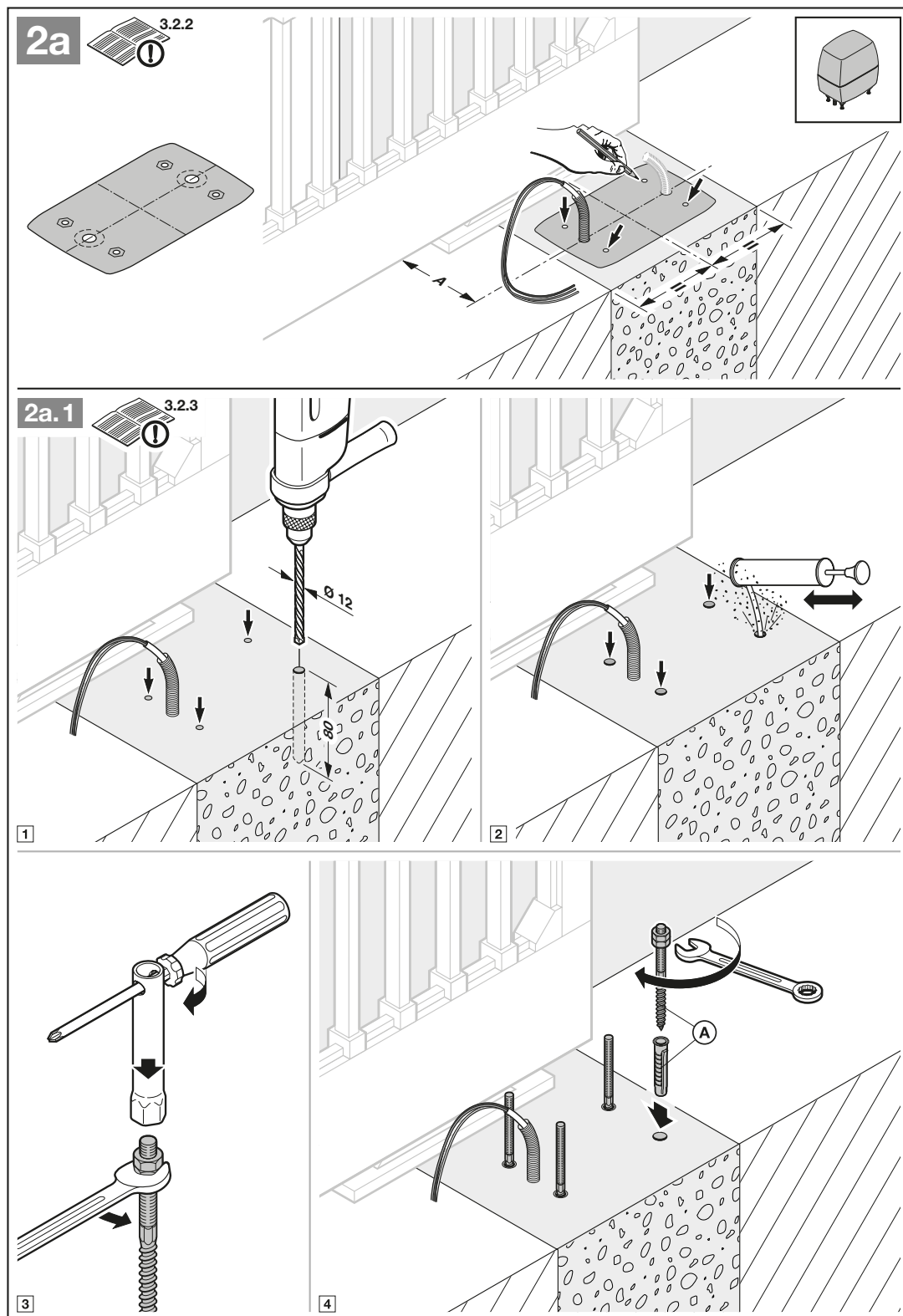
- ▶ After drilling, check the depth of the hole.
- ▶ Use the socket wrench included in the scope of delivery for fitting the hanger bolts.

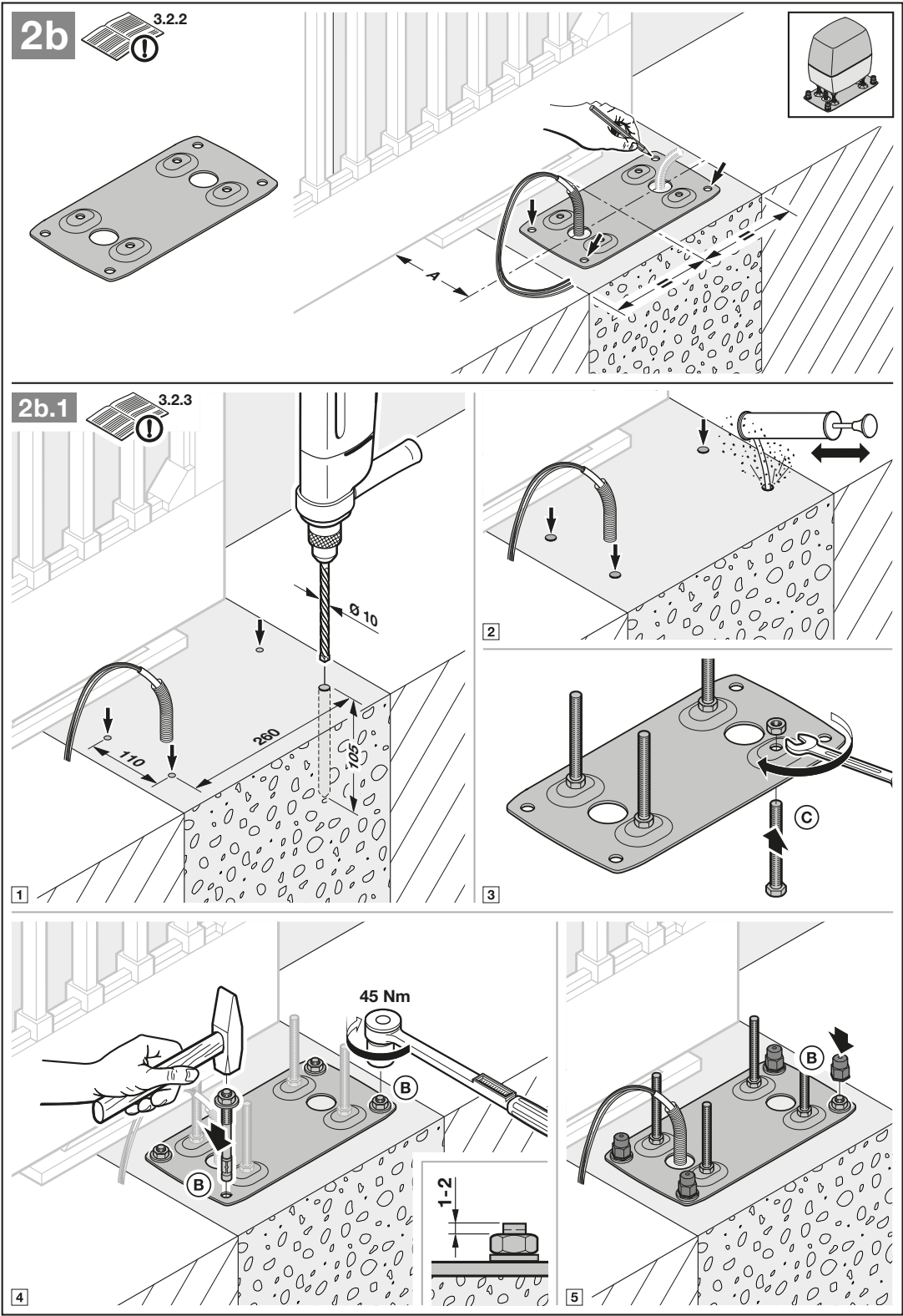












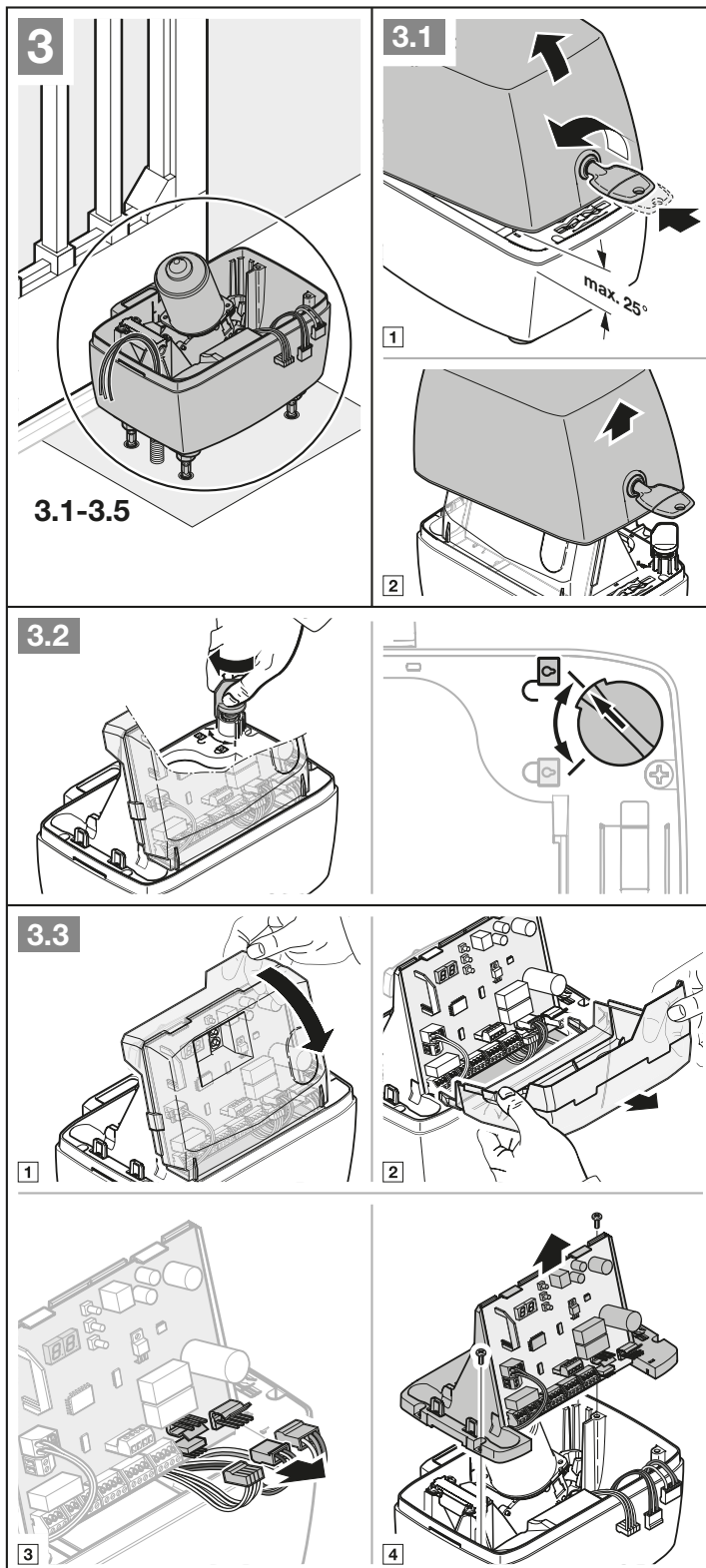
3.5 Opening the operator

1. Open the operator housing.
2. Unlock the operator by turning the locking mechanism. The motor and the toothed wheel are lowered into the housing.
3. Remove the transparent cover.
4. Remove the connection cables.
5. Remove the circuit board holder.

ATTENTION!

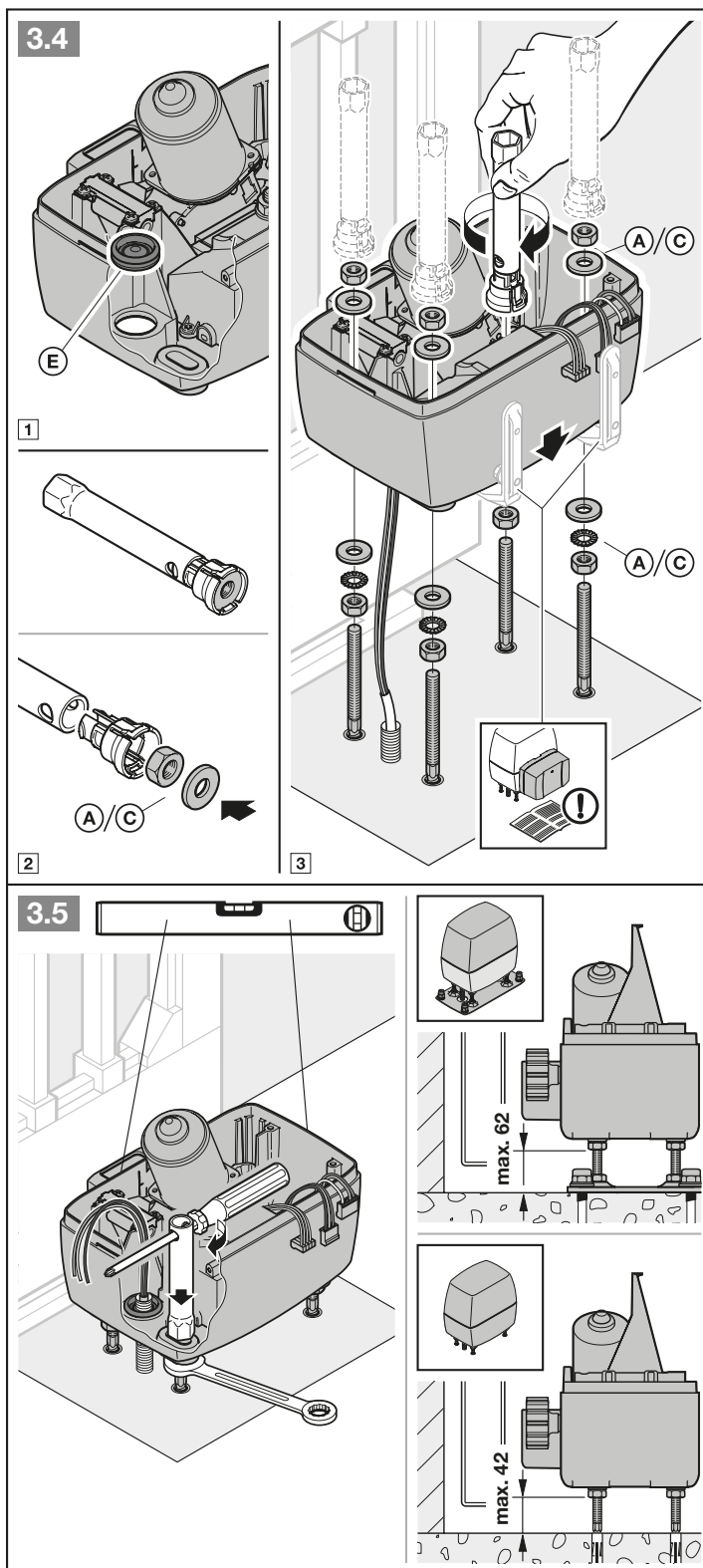
Damage due to moisture

- When opening the operator housing, protect the control from moisture.



3.6 Fitting the operator

1. Insert the tube seals. If necessary, cut the tube seals to size corresponding to the tubes.
2. Position the housing on the hanger bolts or on the bottom plate.
3. During positioning, pull the mains lead and, if applicable, the 24 V connection cable from the bottom without warping through the tube seals into the housing.
4. During fitting, ensure horizontal, stable and secure fastening.



3.7 Fitting the toothed track

Before fitting:

- ▶ Check whether the required screwing depth is available.
- ▶ For fitting use the fitting accessories for plastic toothed tracks (C1) or steel toothed racks (C4). Please order these separately.

NOTE:

Deviating from the illustrated section:

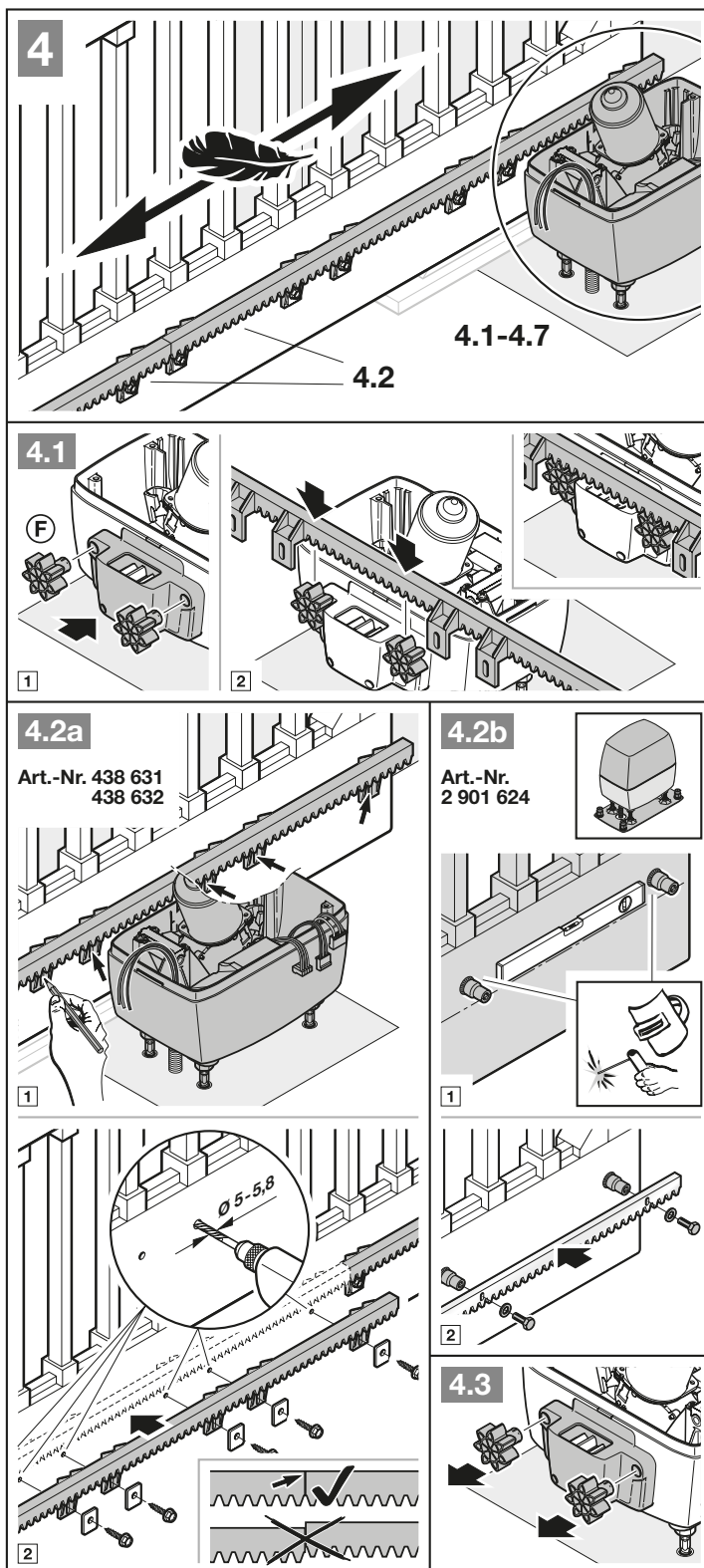
- For other gate types, you must use suitable fastening materials with other depths of thread engagement (e.g. for timber gates, the corresponding woodscrews).
- Depending on the material thickness and strength, the required core hole diameter can change, e.g. for
 - Aluminium $\varnothing 5.0 - 5.5$ mm
 - Steel $\varnothing 5.7 - 5.8$ mm

Fitting:

The sliding gate operator must be unlocked (see **Figure 3.2**).

- ▶ Ensure that the transitions between the individual toothed tracks are not offset. Only then can smooth gate travel be ensured.
- ▶ Align the toothed tracks and the toothed wheel of the operator with each other after each fitting process. Both the toothed tracks and the operator housing can be adjusted for this purpose.

Incorrectly fitted or poorly aligned toothed tracks can result in unintended reverse travel. The provided dimensions must be complied with!



3.8 Sealing the housing

- Seal the housing against humidity and insects.

3.9 Installation

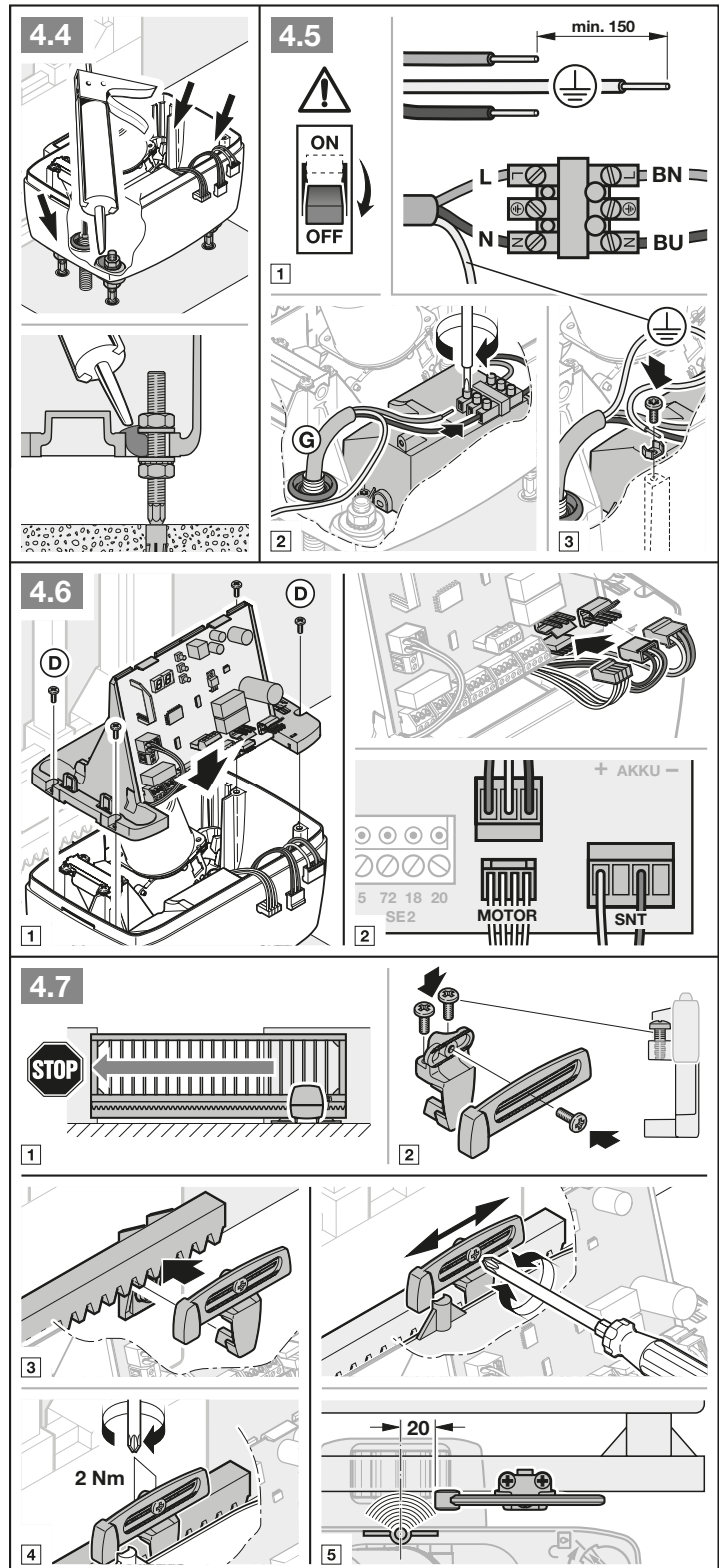
- Note the safety instructions in section 2.5
 - Risk of deadly electric shock from mains voltage
- Connect the mains lead ($3 \times 1.5 \text{ mm}^2$) directly to the plug terminal on the power supply and the earth conductor directly to the housing.

3.10 Fitting the circuit board holder

1. Fix the circuit board holder with the 2 previously loosened screws (D) as well as 2 other screws included in the scope of delivery.
2. Reconnect the previously removed connection cables.

3.11 Fitting the magnet holder

1. Push the gate into the *Closed* position by hand.
2. Completely pre-assemble the magnet carriage in the centre position.
3. Assemble the toothed track clamp in such a way that the magnet is offset by approx. 20 mm from the reed contact in the circuit board holder.



3.12 Locking the operator

Locking re-couples the operator.

- Turn the mechanism to the lock position. Slightly lift the motor during this.

4 Connecting additional components / accessories

- Note the safety instructions in section 2.6.

ATTENTION!

If external voltage is applied, it will destroy the electronics.

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

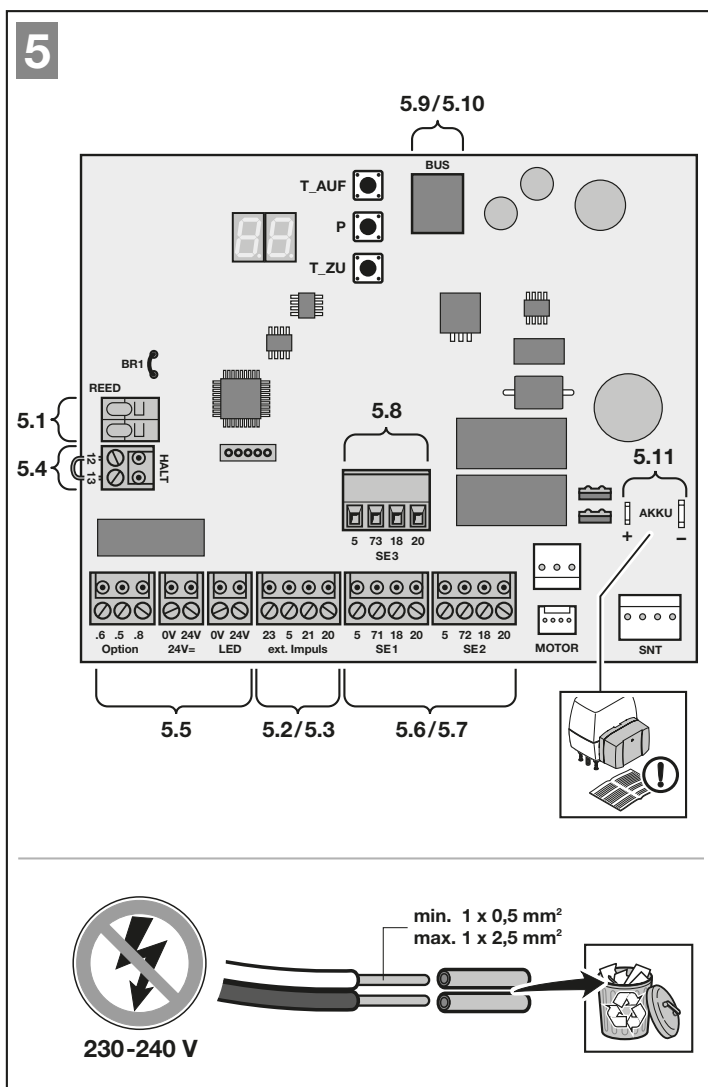
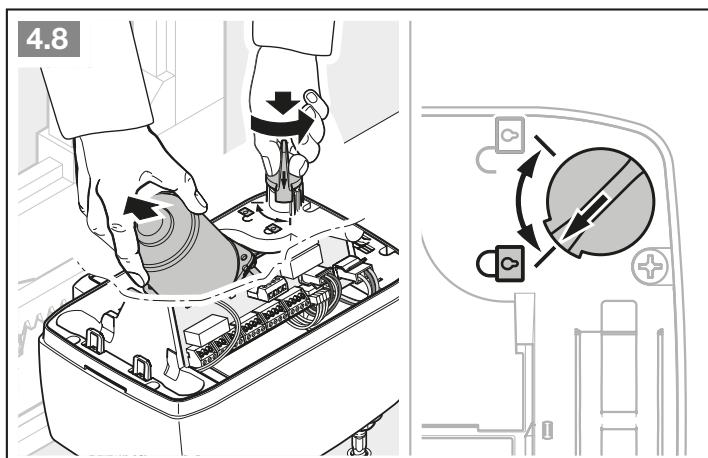
All connecting terminals can have multiple assignments:

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

The system jack BUS enables the connection of accessories with special functions. Connected accessories are automatically detected.

NOTE:

Loading of the operator by all accessories: **max. 250 mA**. See the figures for component power consumption.



**4.1 Limit switch
(reed contact)**

- ▶ Connect the wires of the limit switch to the terminal **REED**.

4.2 External radio receiver

- ▶ Connect the wires of an external radio receiver as follows:

GN	Terminal 20 (0 V)
WH	Terminal 21 (channel 1 signal)
BN	Terminal 5 (+24 V)
YE	Terminal 23 (channel 2 partial opening signal)

Or

- ▶ Insert the plug of the BDE221 receiver in the corresponding socket.

Or

- ▶ Connect an external radio receiver BDH340 to the system jack BUS.

4.3 External button*

One or more buttons with normally open contacts (volt-free or switching to 0 V), e.g. key switch, can be connected in parallel.

Cable length: max. 30 m.

Impulse control:

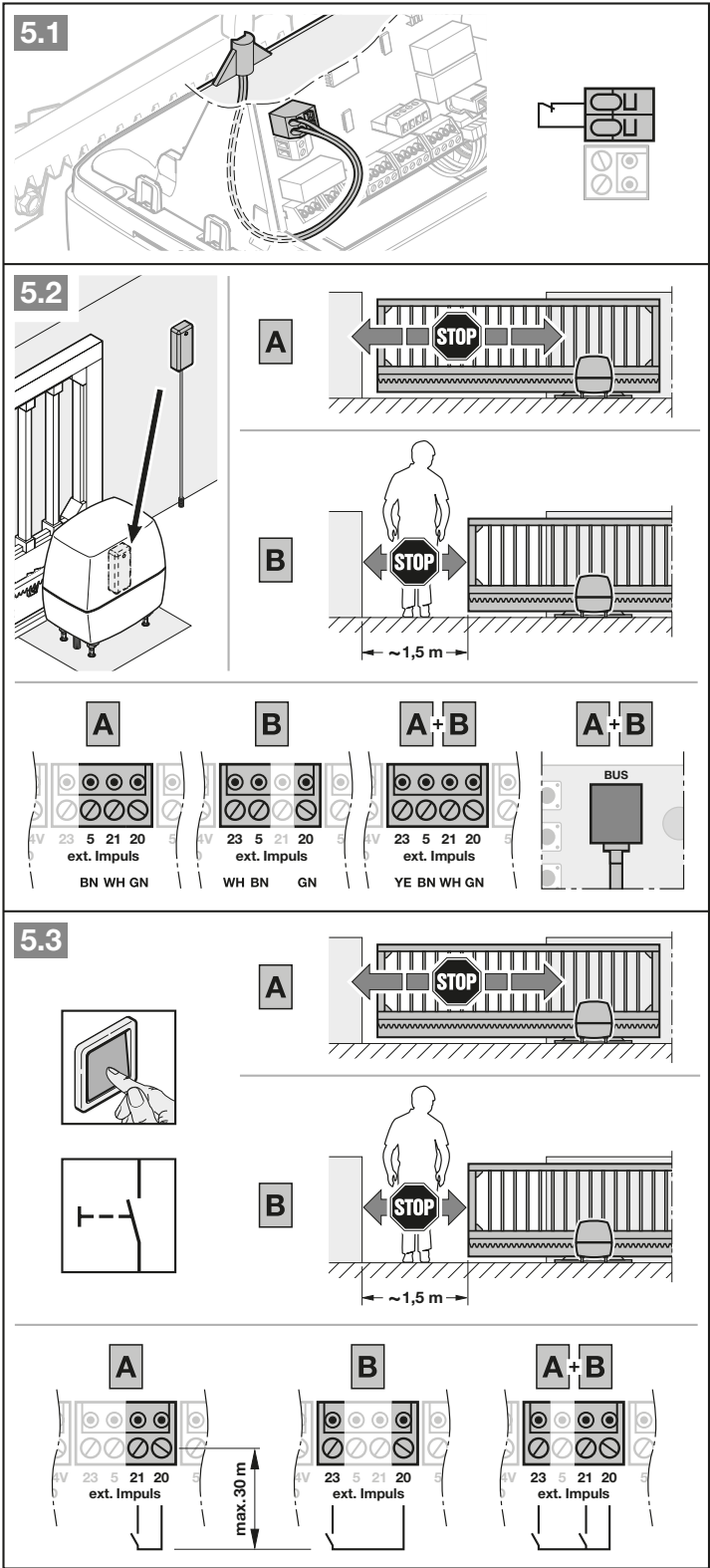
1st contact	Terminal 21
2nd contact	Terminal 20

Partial opening:

1st contact	Terminal 23
2nd contact	Terminal 20

NOTE:

If auxiliary voltage is required for an external button, a voltage of +24 V DC is available on terminal **5** (to terminal **20** = 0 V).



4.4 Cut-off (stop or emergency off)*

Connect a cut-off with normally closed contacts (volt-free or switching to 0 V) as follows:

1. Remove the wire jumper inserted at the factory between terminal 12 + 13.

12	Input Stop or emergency off
13	0 V

2. Connect the switch contacts.

NOTE:

Opening the contact immediately stops gate travel. The gate travel is aborted completely.

4.5 Warning light SLK*

Connect a warning light to the volt-free contacts on the *Option* plug.

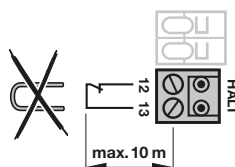
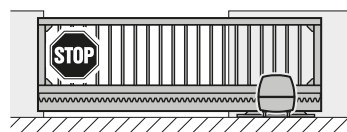
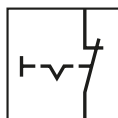
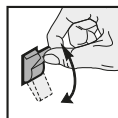
To operate a 24 V lamp (max. 7 W), use the voltage on plug 24 V =, e.g. for warnings before and during gate travel.

- Set the function in menu 31.

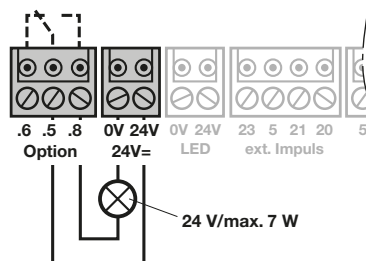
NOTES:

- Supply a 230 V warning light via external mains voltage.
- Insulate the wires of the mains voltage cables with additional insulation (e.g. a protective sleeve) until connected.

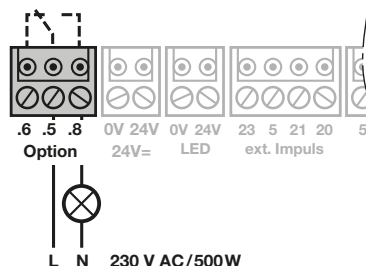
5.4



5.5a



5.5b



* – Accessory not included as standard equipment!

4.6 Safety equipment*

On the safety circuits **SE1**, **SE2** and **SE3**, connect the safety devices, such as:

- Photocell,
- Resistance contact strip 8k2,
- Closing edge safety device

If you want to connect 2 photocells per safety circuit, the photocell expander LSE 2* is required.

NOTES:

Safety equipment (e.g. light barrier EL 301) must be connected prior to commissioning, in order that it is detected and saved automatically. After the learning run, connected safety elements and untested light barriers (e.g. EWLS AP4) will not be detected automatically and must be activated in the advanced menus (only available separately for qualified specialist dealers).

Check the non-testing safety devices (e.g. static photocells) every six months.

Safety devices without self-testing are only permitted for property protection!


Safety equipment SE1

SE1	• 2-wire photocell, dynamic
	• 3-wire photocell, static without testing
	• Resistance contact strip 8k2
	• Closing edge safety device

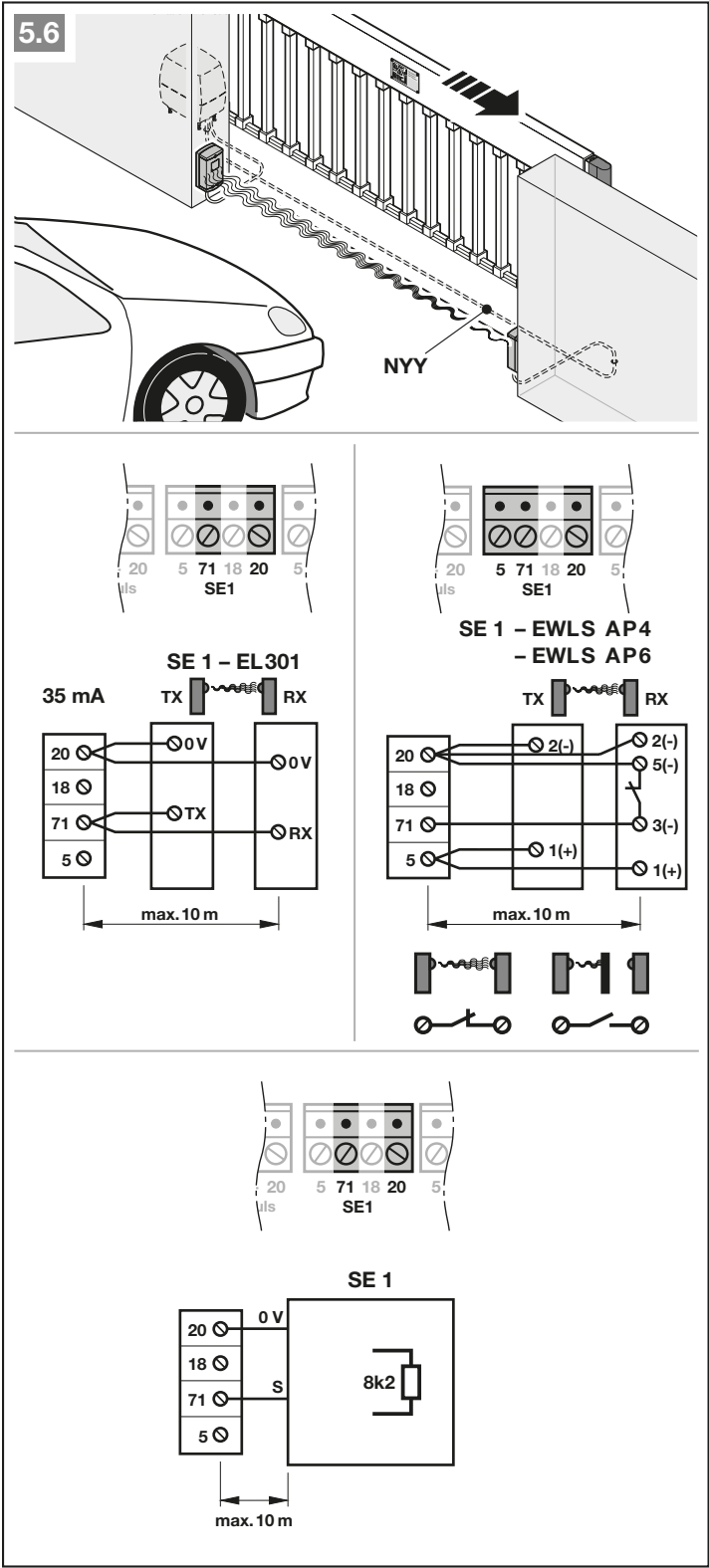
Terminal assignment:

Terminal 20	0 V (power supply)
Terminal 18	Test signal
Terminal 71	Input, switch signal SE1
Terminal 5	+24 V (power supply)

Set the effective direction and reversal behaviour in the advanced menus. If necessary, contact your specialist dealer.

	Effective direction Close, brief reversing
--	--

* – Accessory not included as standard equipment!



Safety equipment SE2

SE2

- 2-wire photocell, dynamic
- 3-wire photocell, static without testing
- Resistance contact strip 8k2
- Closing edge safety device

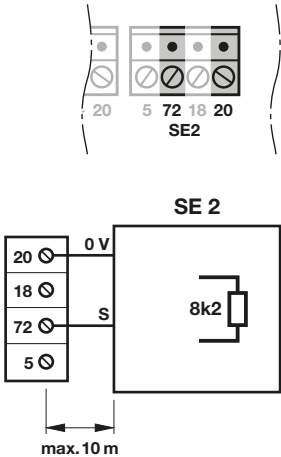
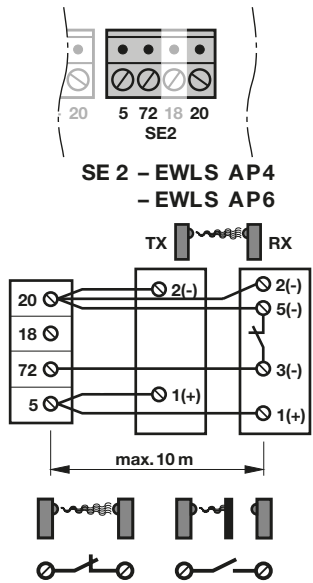
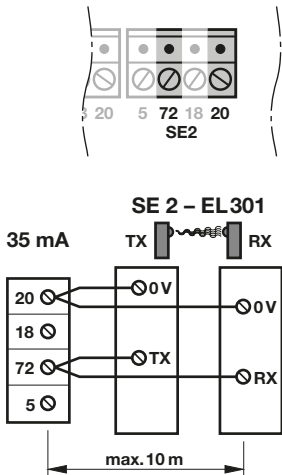
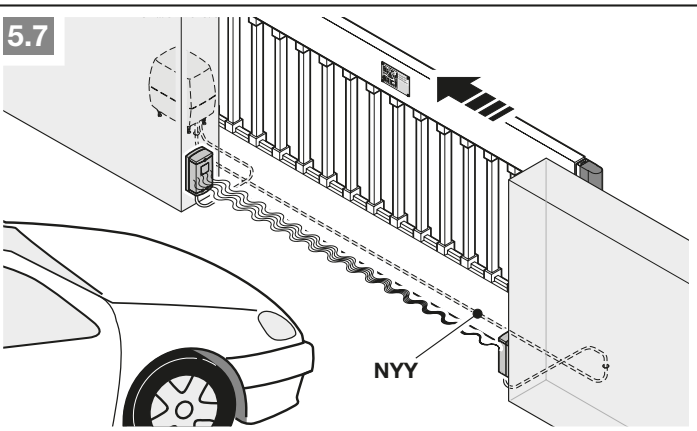
Terminal assignment:

Terminal 20	0 V (power supply)
Terminal 18	Test signal
Terminal 72	Input, switch signal SE2
Terminal 5	+24 V (power supply)

Set the effective direction and reversal behaviour in the advanced menus. If necessary, contact your specialist dealer.



Effective direction Open, brief reversing




Safety equipment SE3

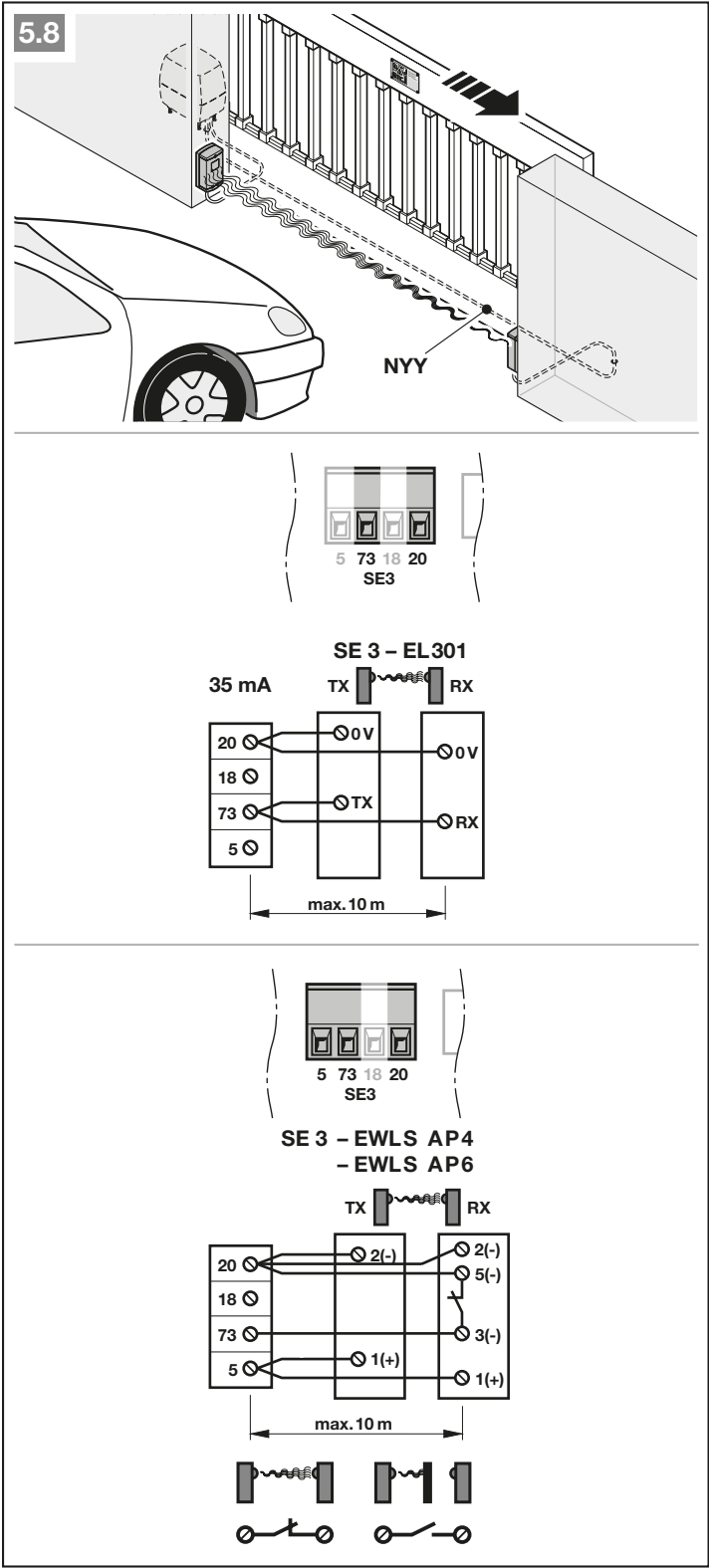
SE3	• 2-wire photocell, dynamic
	• 3-wire photocell, static without testing

Terminal assignment:

Terminal 20	0 V (power supply)
Terminal 18	Test signal
Terminal 73	Input, switch signal SE3
Terminal 5	+24 V (power supply)

Set the effective direction and reversal behaviour in the advanced menus. If necessary, contact your specialist dealer.

	Effective direction Close, brief reversing
--	--



4.7 Option relay HOR 1*

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

- Set the function in menu 30.

4.8 Universal adapter print UAP 1*

Connection option for the universal adapter print UAP 1.

The universal adapter print UAP1 is used for the following additional functions:

- For choosing direction (*open / close*) and partial opening via external control elements,
- For *open* and *close* limit switch reporting, or
- For switching external lighting (2 min. light), e.g. outdoor lighting.

- Set the function in menu 30.

4.9 Emergency battery HNA-Outdoor*

To close the gate in the event of a power failure, an optional emergency battery can be connected. The system is switched to battery operation automatically.

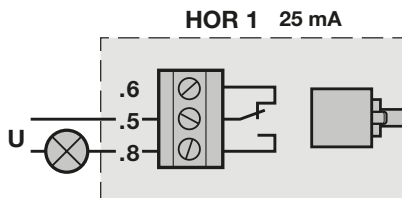
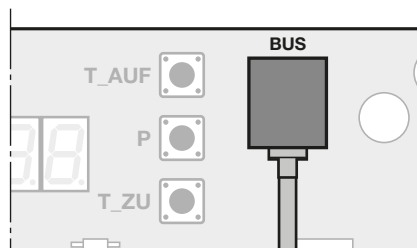
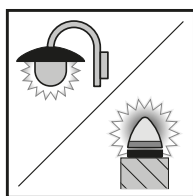
⚠ WARNING

Danger of injury due to unexpected gate travel

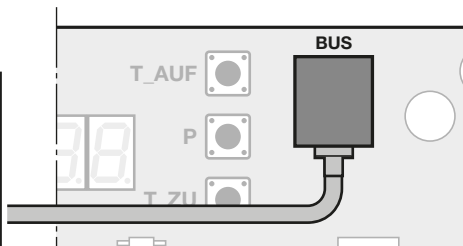
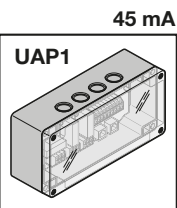
Unexpected gate travel can occur if the gate system is de-energised and an emergency battery is connected.

- Before all electrical work, the gate system must be de-energised.
- Unplug the emergency battery plug.
- Safeguard the gate system against being switched on again without authorisation.

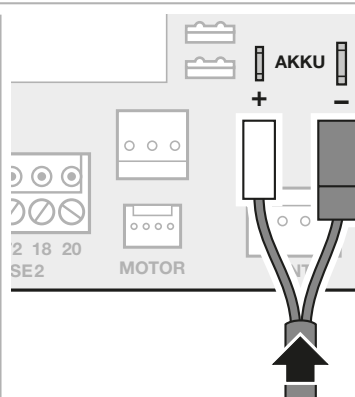
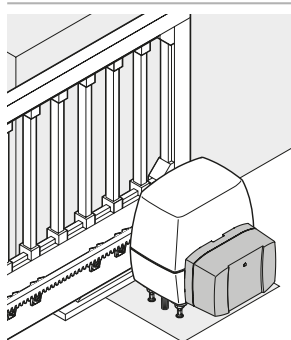
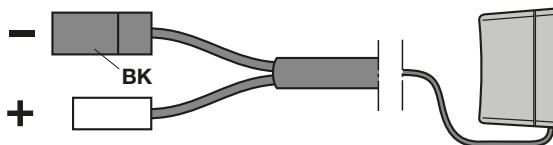
5.9



5.10



5.11



5 Initial start-up

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

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

NOTE:

- No obstacles may be located in the function range of the safety devices.
- Safety devices must be fitted and connected beforehand.
- The opening sense and closing sense are determined during the learning runs. After successful initial start-up, only a factory reset and new learning runs can change the senses.
- During the learning runs, the option relay does not cycle.
- If the option relay of a lamp is connected, the limit switch setting can be observed from a distance (lamp goes out = end position is reached).
- While the travel is being taught in, the operator moves in slow travel.
- There is no timeout during initial start-up.

5.1 Selecting the operator type and gate version


The operator type is preset in the delivery condition. The current operator type must only be selected after a factory reset.

CAUTION

Danger of injury due to incorrectly selected operator type

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

- Only choose the menus that correspond to the gate system you have.

Menu	Operator type	
01.	C302	
02	C502	
03	C802	

5.2 Teaching in the operator

1. Connect the power supply.
On the display
 - **8.8.** is illuminated for 1 second,
 - **U** is then illuminated continuously.
2. Press the **Open** button and select
 - **01** for C302
 - **02** for C502
 - **03** for C802.
3. Press and hold the **P** button
 - **01.**, **02.** or **03.** appears briefly.
 - **LA** is illuminated for 1 second (**teach-in**),
 - **L _** flashes.

5.2.1 Teaching in the end-of-travel positions

1. Unlock the operator.
2. Open the gate approx. 1 m.
3. Lock the operator.
4. Press and hold the **Close** button.
 - The leaf moves in the *Close* direction.
 - **L _** is illuminated.

If the leaf moves in the *Open* direction, reverse the rotational direction:

- Briefly release the **Close** button.
- Press and hold the **Close** button again.

5. Release the **Close** button when the gate is stopped by the limit switch.
 - The decimal point goes out.
 - **EL** is illuminated for 2 seconds,
 - **L -** flashes.

The Close end-of-travel position has been taught in.

If the Closed position is not the desired end position, you have to readjust.

- a. Change the position of the magnet by moving the magnet carriage.
- b. Press and briefly hold the **Open** button.
- c. Press and hold the **Close** button until the leaf is stopped by the limit switch.

If required, repeat steps **a – c**.

6. Press and hold the **Open** button.
 - The gate moves in the *Open* direction.
 - **L -** is illuminated.
7. Release the **Open** button when the desired position for the Open end-of-travel position has been reached. Fine adjustment can be performed with the **Open / Close** buttons.
8. Press the **P** button to save this position.
 - **EL** is illuminated for 2 seconds,
 - **L _** is illuminated.

5.2.2 Teaching in forces

During force learning runs, no safety devices may be tripped.

Force learning runs:

1. Press the **Close** button.
 - The gate will move to the Close end-of-travel position. **L₋** is illuminated.
2. Press the **Open** button.
 - The gate will move to the Open end-of-travel position. **L₊** is illuminated.
 - Once the gate arrives, **00** is illuminated.

To exit programming mode:

Press the **P** button.

Or

- ▶ No input for 60 seconds (timeout).

All inputs are saved. The operator switches to operation mode. The taught-in safety devices are active and activated in the menus.

The operator is ready for operation.

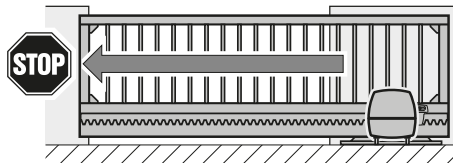
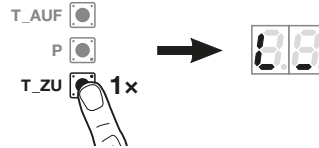
Cancelling force learning runs:

An impulse stops the force learning runs, e.g.

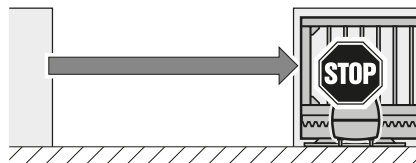
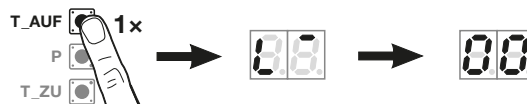
- Through external control elements on terminals 20/21/23,
 - Through command inputs from the additional print UAP 1,
 - Through an external radio receiver,
 - By pressing the **Open/Close** buttons.
- U** is then illuminated.

If interrupted, the force learning runs have to be restarted. The settings in menus **01–03** are maintained.

6.1



1



2

6 Menus

NOTE:

- Menu **00** is the 1st visible menu in programming mode
- Menu **00** is also used to exit the programming mode.
- Menus **01 – 03** are only accessible during initial start-up.
- After initial start-up, only the available menus **10 – 38** are visible.
- A decimal point next to the menu number indicates an active menu.

To switch to programming mode:

- Press the **P** button until the **00** display is illuminated.

To select a menu:

- Use the **Open / Close** buttons to select the desired menu. Press and hold the **Open / Close** buttons for fast run-through.

To activate the menu with individual functions:

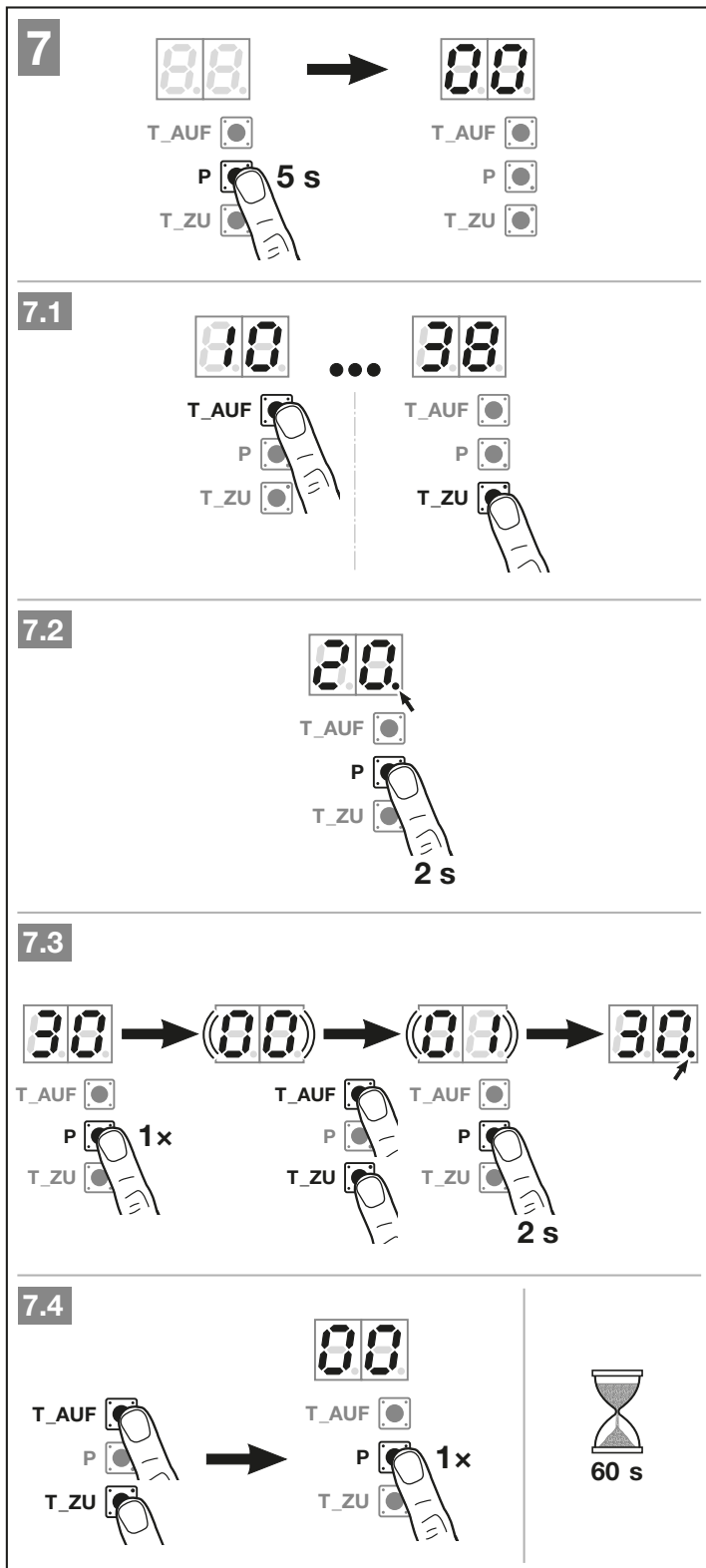
- Press the **P** button for 2 seconds. The decimal point next to the menu number is illuminated. The menu is active immediately.

To activate a menu with selectable parameters:

1. Press the **P** button. The active parameter flashes.
2. With the **Open / Close** buttons, select the desired parameter.
3. Press the **P** button for 2 seconds.
4. The parameter is immediately active. The menu number illuminates with decimal point.

To exit programming mode:

1. Use the **Open / Close** buttons to select menu **00**.
2. Press the **P** button.
Or
- No input for 60 seconds (timeout). All inputs are saved. The operator switches to operation mode.



6.1 Menu description

A table containing all of the menus can be found in section 18 from page 50.

6.1.1 Advanced menus

In addition to menus **01 – 36** described here, additional settings can be made, such as

- Speed adjustment
- Power limit adjustment
- Change to the reversal limit
- Effective direction and reversing behaviour of the safety devices

Settings that change the factory setting may only be made by specialists. If necessary, contact your specialist dealer.

NOTE:

Changes may only be made in compliance with the points named in section **2.9.1 Safety instructions for complying with the operating force**.

6.1.2 Menu 01 – 03: Operator types

You only need menus **01 – 03** to commission the operator. These menus are only available during initial start-up or after a factory reset.

If you select the operator type, all gate-specific values are automatically set by default, such as:

- Speeds,
- Soft stop,
- Reversing behaviour of the safety devices,
- Reversal limits,
- etc.

An overview of the operator types can be found in section 5.

6.1.3 Menu 10: learning runs

► Please note the information from section 5.

Learning runs are necessary:

- If the end-of-travel positions have been adjusted,
- After service or maintenance work,
- If safety devices, e.g. photocells or resistance contact strip 8k2, have been retrofitted,
- If changes have been made to the gate.

NOTES:

Once menu **10** is activated:

- Available gate data (travel and forces) are deleted.
- The menu can no longer be exited early. Travel and forces have to be taught in again!
- There is no timeout.

To start learning runs:

1. Open the gate approx. 1 m.
2. Select menu **10**.
3. Press the **P** button for 5 seconds.
 - **10** flashes,
 - Next, **8.8** flashes.
4. Press the **Close** button.

The gate will move to the *Close* end-of-travel position.

 - **8.8** flashes.

Once the end-of-travel position has been reached:

 - The decimal point goes out.
 - **LA** is illuminated for 1 second,
 - **L⁻** flashes.
5. Press and hold the **Open** button.

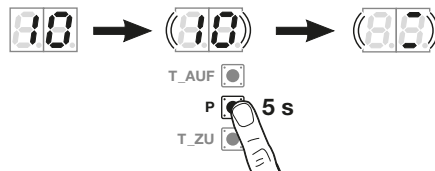
The gate moves in the *Open* direction.

 - **L⁻** is illuminated.
6. Release the **Open** button when the desired position for the Open end-of-travel position has been reached. Fine adjustment can be performed with the **Open/Close** buttons.
7. Press the **P** button.

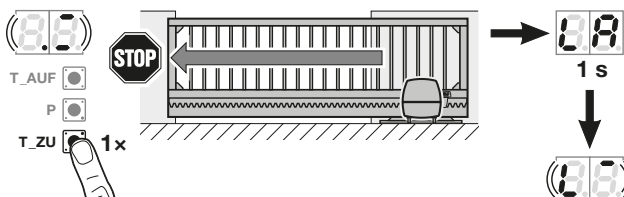
The Open end-of-travel position has been taught in.

 - **EL** is illuminated for 2 seconds,
 - **L₋** is illuminated.

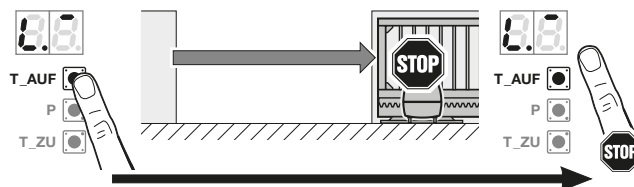
8



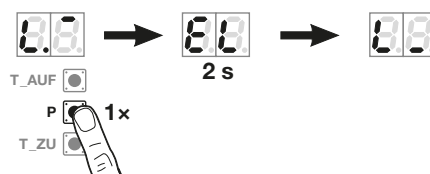
1 2



3



4 5



6

Teaching in forces

1. Press the **Close** button.
 - The gate will move to the Close end-of-travel position.
L₋ is illuminated.
2. Press the **Open** button.
 - The gate will move to the Open end-of-travel position.
L₋ is illuminated.
 - As soon as the leaf has arrived, **10.** flashes very quickly for 2 seconds.
 - **10** is then illuminated continuously.

To exit programming mode:

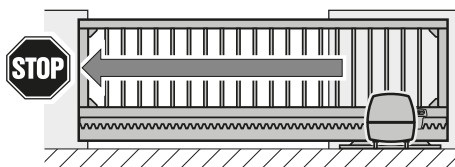
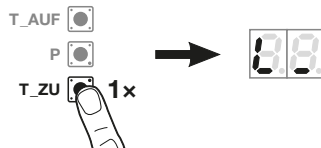
Press the **P** button.

Or

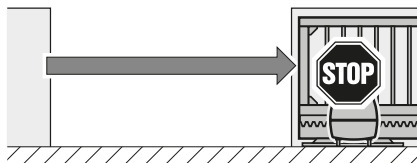
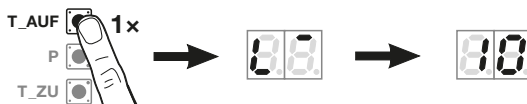
- No input for 60 seconds (timeout).

All inputs are saved. The operator switches to operation mode.

8.1



1



2

On the menus described in the following:


- See also the overview from page 50.

6.1.4 Menu 20–24: Illumination / illumination period (internal relay)

As soon as the gate is set in motion, the internal illumination switches on. Once the gate has ended its travel, the illumination remains on corresponding to the time set (illumination period).

To set the desired function:

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

20	Internal illumination deactivated	
21	Internal illumination / illumination period 30 seconds	
22	Internal illumination / illumination period 60 seconds	
23	Internal illumination / illumination period 120 seconds	
24	Internal illumination / illumination period 180 seconds	

If menu **20** is activated, gate motion does not activate illumination. Menu **31** – parameter **07** is also automatically activated.

If menu **21–24** is activated, menu **31** – parameter **00** – is also automatically activated.

Timeout


If you do not press the **P** button to save within 60 seconds, the pre-set menu is maintained.

6.1.5 Menu 25–28: Illumination / illumination period (external relay)

An external control element (e.g. hand transmitter or button) switches the illumination on, which remains on corresponding to the time set (illumination period).

To set the desired function:

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

25	External illumination deactivated	
26	External illumination / illumination period 5 minutes	
27	External illumination / illumination period 10 minutes	
28	External illumination / illumination period, HOR 1 function or UAP 1 relay 3 ON/OFF	

If menu **25** is activated, an external control element does not activate illumination.

If menu **28** is activated, the illumination can be switched on or off permanently via the additional prints HOR 1 or UAP 1 relay 3. Menu **28** is not possible in combination with menu **25**.

Timeout

If you do not press the **P** button to save within 60 seconds, the pre-set menu is maintained.


6.1.6 Menu 30: External relay functions

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

Further functions, such as Open and Close limit switch reporting, choosing direction or illumination, can be switched with the universal adapter print UAP 1 relay 3.

To set the desired function:

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

30	External relay functions HOR 1, UAP 1 relay 3	
	00	External illumination function 
	01	Open end-of-travel position signal
	02	Close end-of-travel position signal
	03	Partial opening end-of-travel position signal
	04	Momentary signal at the time of Open or Partial opening command
	05	Error message on the display (malfunction)
	06	Start warning / advance warning 1) permanent signal
	07	Start warning / advance warning 1) flashing
	08	Relay energises during travel and de-energises in the end-of-travel positions.
	09	Maintenance interval signal (display In)
	10	Start warning / advance warning 1) flashing, only in Close direction

1) Advance warning only if activated in menu 32.

If in menu 30

- parameter **00** is activated, menu **26** is also automatically activated.
- parameter **01–10** is activated, menu **25** is also automatically activated.

Timeout


If you do not press the **P** button to save the desired parameter within 60 seconds, the default parameter is maintained.

6.1.7 Menu 31: Internal relay functions

Required e.g. to connect an external lamp or warning light.

To set the desired function:

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

31	Internal relay functions		
	00	Internal illumination function	
	01	Open end-of-travel position signal	
	02	Close end-of-travel position signal	
	03	Partial opening end-of-travel position signal	
	04	Momentary signal at the time of Open command	
	05	Error message on the display (malfunction)	
	06	Start warning / advance warning ¹⁾ permanent signal	
	07	Start warning / advance warning ¹⁾ flashing	
	08	Relay energises during travel and de-energises in the end-of-travel positions.	
	09	Maintenance interval signal (display In)	
	10	Start warning / advance warning ¹⁾ flashing, only in Close direction	

1) Advance warning only if activated in menu 32.

If in menu **31**

- parameter **00** is activated, menu **22** is also automatically activated.
- parameter **01 – 10** is activated, menu **20** is also automatically activated.

Timeout


If you do not press the **P** button to save the desired parameter within 60 seconds, the default parameter is maintained.

6.1.8 Menu 32: Pre-warning phase

If a travel command is output, a warning light connected to the option relay flashes before gate travel begins. The pre-warning phase is active in the directions *Open* and *Close*.

To set the desired function:

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

32	Pre-warning phase		
	00	deactivated. If a travel command is output, gate travel is started immediately.	
	01	1 second	
	02	2 seconds	
	03	3 seconds	
	04	4 seconds	
	05	5 seconds	
	06	10 seconds	
	07	15 seconds	
	08	20 seconds	
	09	30 seconds	
	10	60 seconds	

Timeout

If you do not press the **P** button to save the desired parameter within 60 seconds, the default parameter is maintained.

6.1.9 Menu 34: Automatic timer


With the automatic timer, the gate opens upon a travel command. Once the set hold-open phase and pre-warning phase have elapsed, the gate closes automatically. If the gate receives a travel command while it is closing, the gate stops.

NOTE:

- The automatic timer may / can only be activated within the scope of EN 12453 if at least one **additional** safety device (photocell) is connected besides the standard power limit.
- An **additional** safety device (photocell) must be taught in first.
- If the automatic timer is set (menus **34–35**), the pre-warning phase is also automatically activated (menu **32** – parameter **02**).

To set the desired function:

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

34	Automatic timer		
	00	Deactivated	
	01	Hold-open phase of 5 seconds	
	02	Hold-open phase of 10 seconds	
	03	Hold-open phase of 20 seconds	
	04	Hold-open phase of 30 seconds	
	05	Hold-open phase of 60 seconds	
	06	Hold-open phase of 90 seconds	
	07	Hold-open phase of 120 seconds	
	08	Hold-open phase of 180 seconds	
	09	Hold-open phase of 240 seconds	
	10	Hold-open phase of 300 seconds	

Timeout

If you do not press the **P** button to save the desired parameter within 60 seconds, the default parameter is maintained.


6.1.10 Menu 35: Automatic timer from the partial opening position

NOTE:

- The automatic timer may / can only be activated within the scope of EN 12453 if at least one **additional** safety device (photocell) is connected besides the standard power limit.
- An **additional** safety device (photocell) must be taught in first.
- If the automatic timer is set (menus **34–35**), the pre-warning phase is also automatically activated (menu **32** – parameter **02**).

To set the desired function:

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

35	Automatic timer – partial opening		
	00	Deactivated	
	01	Hold-open phase as set in menu 34	
	02	Hold-open phase of 5 minutes	
	03	Hold-open phase of 15 minutes	
	04	Hold-open phase of 30 minutes	
	05	Hold-open phase of 45 minutes	
	06	Hold-open phase of 60 minutes	
	07	Hold-open phase of 90 minutes	
	08	Hold-open phase of 120 minutes	
	09	Hold-open phase of 180 minutes	
	10	Hold-open phase of 240 minutes	

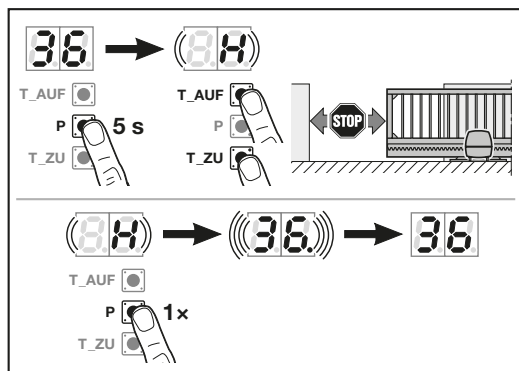
Timeout

If you do not press the **P** button to save the desired parameter within 60 seconds, the default parameter is maintained.

6.1.11 Menu 36: Change partial opening position

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

The partial opening position is pre-set to 900 mm at the factory.



To change the partial opening position:

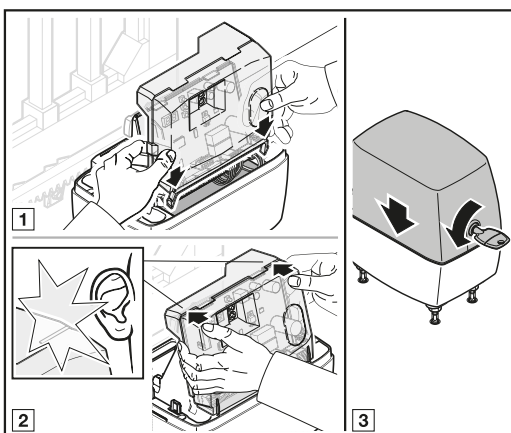
1. Select menu 36.
2. Press the **P** button for 5 seconds and activate the menu.
3. Move the gate to the desired position with the **Open** or **Close** buttons. During travel, **H** flashes.
4. Press the **P** button to save this position.
 - 36 flashes quickly; the decimal point is illuminated.
 - 36 is illuminated.

The changed partial opening position is saved.

If the selected position is too close to the Close end-of-travel position, the error 1 appears with a flashing decimal point (see section 17). The smallest possible position is automatically set.

7 Final work

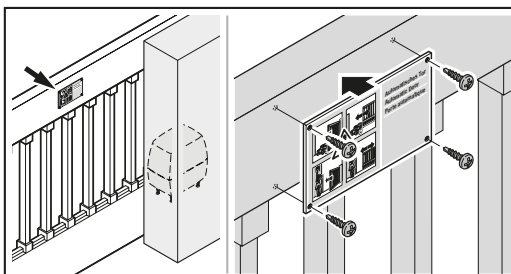
Upon completion of all required steps for initial start-up:



1. Place the transparent cover on the circuit board.
2. Reposition the housing cover.

7.1 Fixing the warning sign

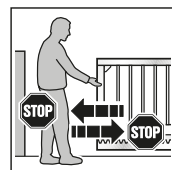
- Permanently fix the supplied warning sign at a clearly visible location on the gate.



7.2 Function test

To check the safety reversal:

1. Stop the gate with both hands while it is **closing**. The gate system must stop and initiate the safety reversal.
 2. Stop the gate with both hands while it is **opening**. The gate system must stop and initiate the safety reversal.
- In the event of a failure of the safety reversal, a specialist must be commissioned immediately for the inspection and repair work.



⚠ WARNING**Danger of injuries due to faulty safety equipment**

If safety devices do not function properly, malfunctions may cause injuries.

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

The system is ready for operation only after this.

8 Radio**⚠ CAUTION****Danger of injuries due to unintended gate travel**

Unintended gate travel may occur while teaching in the radio code.

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

If you want to start operating, enhance or change the radio system:

- Only possible if the operator is at rest.
- Perform a function check.
- Use original parts only.
- Local conditions may affect the range of the radio system.
- When used at the same time, GSM 900 mobile phones can affect the range.

9 Hand transmitter BDS140**⚠ WARNING****Danger of injury during gate travel**

Persons may be injured by gate travel if the hand transmitter is actuated.

- ▶ Make sure that hand transmitters are kept away from children and can only be used by people who have been instructed on how the remote-control gate functions!
- ▶ If the gate has only one safety feature, only operate the hand transmitter if you are within sight of the gate!
- ▶ Only drive or pass through remote-control gate systems when the gate is at a standstill!
- ▶ Never stand in the opening of the gate system.
- ▶ Please note that unwanted gate travel may occur if a hand transmitter button is accidentally pressed (e.g. if stored in a pocket/handbag).

⚠ CAUTION**Danger of burns from the hand transmitter**

Direct sunlight or great heat can heat up the hand transmitter. As a result, burns could occur during use.

- ▶ Protect the hand transmitter from direct sunlight and great heat (e.g. by placing it in a stowage compartment in the dashboard).

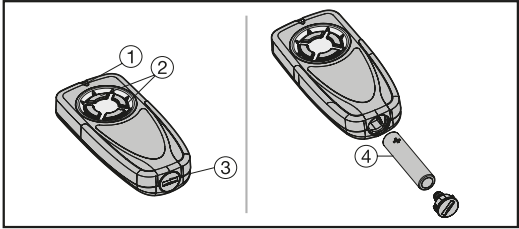
ATTENTION**Functional impairment caused by environmental conditions**

High temperatures, water and dirt impair the function of the hand transmitter.

Protect the hand transmitter from the following conditions:

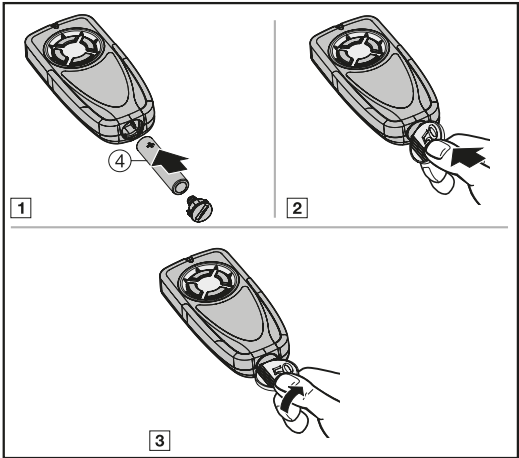
- Direct sunlight (permissible ambient temperature: -20 °C to +60 °C)
- Moisture
- Dust

9.1 Description of the hand transmitter BDS140



- 1. LED
- 2. Hand transmitter buttons
- 3. Battery compartment cover
- 4. Battery

9.2 Inserting/ changing the battery



► Use only the battery type AAA (LR03) 1,5 V.

ATTENTION

Destruction of the hand transmitter by leaking batteries

Batteries can leak and destroy the hand transmitter.

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

9.3 Excerpt from the declaration of conformity for the hand transmitter

Conformity of the abovementioned product with the requirements of the Radio Equipment Directive (RED) 2014/53/EU was verified by compliance with the following standards:

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

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

10 Radio Remote Control

10.1 External radio receiver BDE221 / BDE321

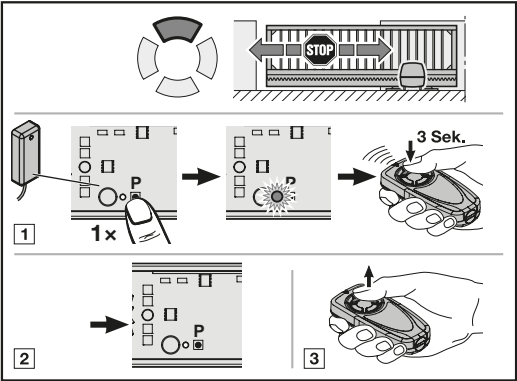
Plug-in the external radio receiver on the respective connector (see Figure 5.2). The function “impulse” (Open – Stop – Close – Stop) and the function “partial opening” for at max. 60 different hand transmitters can be programmed on the external radio receiver. If more than 60 different hand transmitters are programmed the receiver deletes those that have been registred in the beginning.

NOTE:

- External radio receivers with aerial wires must not come into contact with objects made of metal (nails, struts, etc.)
- Determine the best orientation by trial and error.
- When used at the same time, GSM-900 mobile phones can affect the range.

10.2 Programming the hand transmitter buttons on an external radio receiver

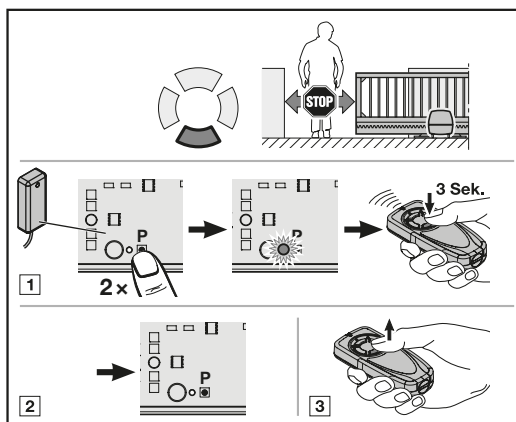
10.2.1 Assigning a button function for channel 1



- 1. Briefly press the **P** button (programming button) on the receiver. The LED will begin to light up.
- 2. Press the desired button on the hand transmitter for at least three seconds until the LED goes out.
- 3. Release the button.
- 4. The receiver is ready to receive.

The function of this hand transmitter button is now programmed on the receiver.

10.2.2 Assigning a button function for channel 2



1. Briefly press the **P** button (programming button) on the receiver. The LED will begin to light up.
2. Press the **P** button again. The LED will go out and then light up again.
3. Press the desired button on the hand transmitter for at least three seconds until the LED goes out.
4. Release the button.
5. The receiver is ready to receive.

The function of this hand transmitter button is now programmed on the receiver.

10.2.3 Deleting all data of an external radio receiver

1. Press the **P** button on the receiver for approx. 10 seconds. The LED will flash.
2. Wait until the flashing stops, and release the button. All taught-in hand transmitters are now deleted.

NOTE:

It is not possible to delete individual hand transmitters.

10.2.4 Operation

At least one hand transmitter button must be taught in on the radio receiver to operate the sliding gate operator via radio.

During radio transmission, the hand transmitter and receiver must be at least 1 m apart.

11 Operation

	<p style="text-align: center;">⚠ WARNING</p> <p>Danger of injury during gate travel</p> <p>If people or objects are in the area around the gate while the gate 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 gate system. ▶ Make sure that no persons or objects are in the gate's area of travel. ▶ If the gate system has only one safety feature, only operate the sliding gate operator if you are within sight of the gate's area of travel. ▶ Monitor the gate travel until the gate has reached the end-of-travel position. ▶ Only drive or pass through remote-control gate systems when the gate is at a standstill! ▶ Never stand in the opening of the gate system.
--	--

<p style="text-align: center;">⚠ WARNING</p> <p>Risk of crushing at the main closing edge and the secondary closing edges</p> <p>During gate travel, fingers or extremities may be crushed between the gate and main closing edge or the secondary closing edge.</p> <ul style="list-style-type: none"> ▶ Do not reach toward the main closing edge or secondary closing edges during gate travel.

11.1 Instructing users

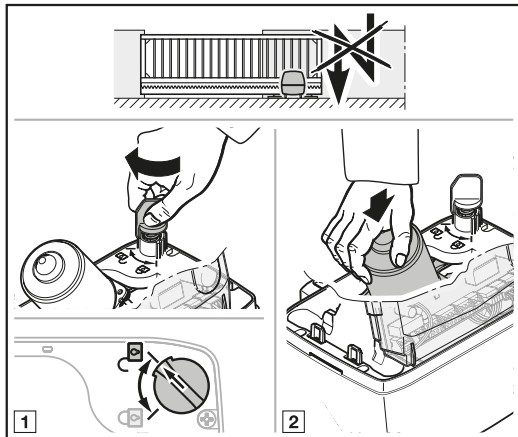
- ▶ All persons using the gate system must be shown how to operate the operator properly and safely.
- ▶ Demonstrate and test the mechanical release as well as the safety reversal.

11.2 Normal operation

During normal mode, the sliding gate operator only works according to the impulse sequence control (OPEN-STOPCLOSE-STOP). It does not matter whether an external button, hand transmitter button or circuit board button T_AUF/T_ZU has been actuated:

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

11.3 Behaviour during a power failure (without an emergency battery)



During a power failure, you have to open and close the gate system manually. For this, you have to disengage the operator.

ATTENTION!

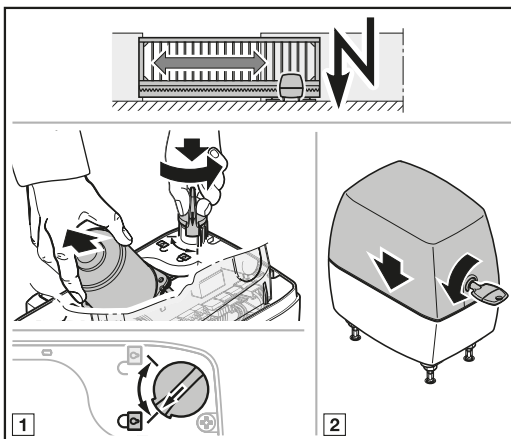
Damage due to moisture

- ▶ When opening the operator housing, protect the control from moisture.
1. Open the housing cover according to section 3.5.
 2. Unlock the operator by turning the locking mechanism.
If required, push the motor and the toothed wheel downward by hand.

11.4 Behaviour after the power returns (without emergency battery)

After the power returns:

- 8.8. is illuminated for 1 second on the display.



The gate must be re-coupled to the operator before the limit switch.

1. Lock the operator by turning the locking mechanism.
Slightly lift the motor during locking.
2. Reposition the housing cover.

After a power failure, the operator performs a reference run with the next impulse command.

11.5 Reference run

Display



A reference run is required:

- If the gate position is unknown after a power failure.
- If the power limit is activated 3 × in a row during a run in the Open or Close direction.

A reference run is performed:

- Only in the Close direction.
- At a reduced speed.
- With a minor increase in force of the most recently taught-in forces.
- Without power limit

The impulse command triggers the reference run. The operator moves to the Close end-of-travel position.

If the area at risk is not secured with a photocell or a similar safety device, you may only initiate the reference run if you are in view of the gate.

12 Inspection and maintenance

The sliding gate operator is maintenance-free.

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

WARNING

Danger of injury due to unexpected gate travel

Unexpected gate travel can result during inspection and maintenance work if the gate system is inadvertently actuated by other persons.

- ▶ Before all electrical work, de-energise the gate system **and**, if necessary, unplug the emergency battery.
- ▶ Safeguard the gate system against being switched on again without authorisation.

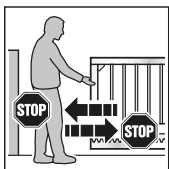
Required inspection and repairs may only be carried out by a qualified person. If necessary, contact your specialist dealer.

A visual inspection may be carried out by the operator.

- ▶ Check all safety and protective functions **monthly**.
- ▶ Check the function of the resistance contact strip 8k2 **every six months**.
- ▶ Any malfunctions and / or defects must be remedied **immediately**.

12.1 Checking safety reversal / reversing

To check safety reversal / reversing:



1. Stop the gate with both hands while it is **closing**.
The gate system must stop and initiate the safety reversal.
2. Stop the gate with both hands while it is **opening**.
The gate system must stop and initiate the safety reversal.

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

13 Warranty conditions

Warranty period

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

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

Claims made under the warranty do not extend the warranty period. For replacement parts and repairs the warranty period is six months or at least the remainder of the warranty period.

Prerequisites

The warranty claim only applies in the country where the equipment was purchased. The product must have been purchased through our authorised distribution channels. A claim under this warranty exists only for damage to the object of the contract itself.

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

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. Replaced parts become our property.

Reimbursement of expenditure for dismantling and fitting, testing of parts as well as demands for lost profits and compensation for damages are excluded from the warranty.

Damage caused by the following is also excluded:

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

14 Excerpt from the Declaration of Incorporation

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

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

- EC Machinery Directive 2006/42 EC
- EU Directive 2011/65/EU (RoHS)
- EU Low-Voltage Directive 2014/35/EU
- EU Electromagnetic Compatibility Directive 2014/30/EU

Applied and consulted standards and specifications:

- EN ISO 13849-1, PL “c”, Cat. 2
Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design
- EN 60335-1/2, when applicable
Safety of electrical appliances / operators for gates
- EN 61000-6-3
Electromagnetic compatibility – Interference emission
- EN 61000-6-2
Electromagnetic compatibility – Interference immunity

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

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

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

15 Dismantling and disposal

NOTE:

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

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







16 Technical data

Mains voltage	170–260 V~, 50/60 Hz
Standby	< 0.5 W
Protection category	IP 44
Temperature range	–20 °C to +60 °C
Max. gate width	Depending on the operator type: 6,000 mm / 8,000 mm / 10,000 mm
Max. gate height	2,000 mm
Max. gate weight	Depending on the operator type: 300 kg / 500 kg / 800 kg (bottom-guided) 250 kg / 400 kg / 600 kg (self-supporting)
Max. gate infill	Depending on the gate surface. Regional wind loads must be taken into consideration when using gate infills (EN 13241-1).
Nominal torque	See data label
Max. torque	See data label
Max. idle speed	Depending on the operator type: 2.6 min ⁻¹ / 2.7 min ⁻¹
Speed at nominal torque	Depending on the operator type: 2.5 min ⁻¹ / 2.6 min ⁻¹
Cycles (open / close) per day / hour	See data label
Operator housing	Aluminium diecast and weather-resistant, glass-fibre reinforced plastic
Control	Microprocessor control, programmable
Control voltage	24 V / 37 V DC (can be switched)
Max. cable length	30 m
Connections	Plug-in screw terminals
End-of-travel position cut-out / force limit	Electronic
Automatic safety cut-out	<ul style="list-style-type: none"> Is automatically taught in for both directions separately. Power limit for both operational directions, self-learning and self-testing
Special functions	<ul style="list-style-type: none"> Stop switch / cut-out can be connected Photocell or closing edge safety device can be connected Option relay for warning light, Additional external illumination can be connected (only in conjunction with option relay HOR 1 or a universal adapter print UAP 1)
Hold-open phase	<ul style="list-style-type: none"> Photocell required! Adjustable from 5 to 300 seconds Adjustable from 5 seconds to 240 minutes for partial opening Shortened hold-open phase due to through-traffic photocell
Radio components	<ul style="list-style-type: none"> Radio receiver Hand transmitter
















17 Displaying errors / warnings and operating modes

17.1 Display or errors and warnings

Display	Error / warning	Possible cause	Remedy
8.8 ^(*)	Not possible to set the reversal limit.	When setting the reversal limit, an obstacle was in the way.	Remove the obstacle.
	Setting the partial opening position not possible	The partial opening position is too close to the Close end-of-travel position	The partial opening position must be larger
2.8 ^(*)	Safety equipment on SE1	No safety devices are connected.	Connect a safety device or activate it in the menu.
		The safety device signal is interrupted.	Set / position the safety device. Check the connecting leads and, if necessary, replace them.
		The safety device is defective.	Replace the photocell.
2.2 ^(*)	Safety equipment on SE2	No safety devices are connected.	Connect a safety device or activate it in the menu.
		The safety device signal is interrupted.	Set / position the safety device. Check the connecting leads and, if necessary, replace them.
		The safety device is defective.	Replace the photocell.
2.3 ^(*)	Safety equipment on SE3	No safety devices are connected.	Connect a safety device or activate it in the menu.
		The safety device signal is interrupted.	Set / position the safety device. Check the connecting leads and, if necessary, replace them.
		The safety device is defective.	Replace the photocell.
8.3 ^(*)	Power limit in the <i>Close</i> direction	The gate is too sluggish or does not move smoothly.	Correct the gate travel.
		Obstacle in gate area.	Remove the obstacle and teach in the operator again, if necessary.
8.4 ^(*)	Static current circuit interrupted	The normally closed contact on terminal 12 / 13 is open.	Close the contact.
		The static current circuit is interrupted.	Check the static current circuit.
8.5 ^(*)	Power limit in the <i>Open</i> direction	The gate is too sluggish or does not move smoothly.	Correct the gate travel.
		Obstacle in gate area.	Remove the obstacle and teach in the operator again, if necessary.
8.6 ^(*)	System error	Internal error	Perform a factory reset and teach in the operator again, if necessary, replace it.
	Travel time limit	The operator is defective.	Exchange the operator.
8.7 ^(*)	Communication error	Communication with additional print is faulty (e.g. UAP 1)	Check the connecting leads and, if necessary, replace them.
			Check the additional print and if necessary replace them.


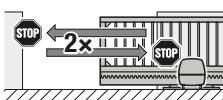






Display	Error / warning	Possible cause	Remedy
	Control elements / operation	Error during input	Check and change the input
		Input of invalid value	Check and change the input value
	Specific to taught-in safety devices	Self-testing safety device is interrupted.	Check the safety device and, if necessary, replace it.
		Resistance contact strip 8k2 tripped	Remove the obstacle.
		Resistance contact strip 8k2 is defective or is not connected.	Check the resistance contact strip 8k2.
	Undervoltage		In battery operation: signalling In the event of power supply undervoltage: Internal error without signalling
	Voltage error (over / undervoltage)		Charge battery, check voltage source.
	No reference point, gate position unknown	Power failure	Gate cycle towards the Close end-of-travel position.
		Power limit tripped 3 × in a row.	
	Maintenance interval signal flashes during all gate travel.	No error The maintenance interval set by the fitter has been exceeded.	Have the gate system inspected and maintained by a qualified person in accordance with the manufacturer's specifications.






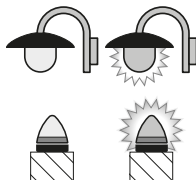

17.2 Operating condition display

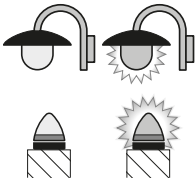

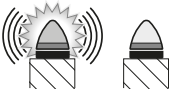

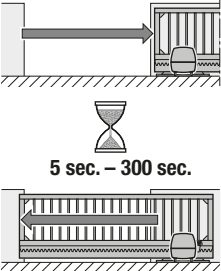

	Gate is in the Close end-of-travel position		Gate is in the Open end-of-travel position.
	The gate is moving towards the Close end-of-travel position.		The gate is moving towards the Open end-of-travel position or the automatic timer is active.
	The gate is in the Close end-of-travel position and the pre-warning phase is active.		The gate is in the Open end-of-travel position and the pre-warning phase is active.
	The gate is in an intermediate position.		The gate is in an intermediate position and the pre-warning phase is active.
	Communication with the operator is being established.		The gate is in the partial opening position.
	The gate is in the partial opening position and the automatic timer is active.		The gate is in the partial opening position and the pre-warning phase is active.
	During initial start-up and learning run the limit switch is not triggered.		During initial start-up and learning runs the limit switch is triggered.
	The operator has not been taught in. ► Teach in the operator (see section 5).		

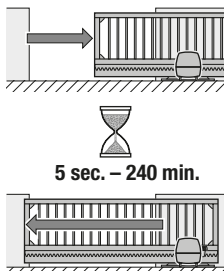

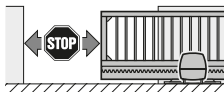
18 Menu and programming overview

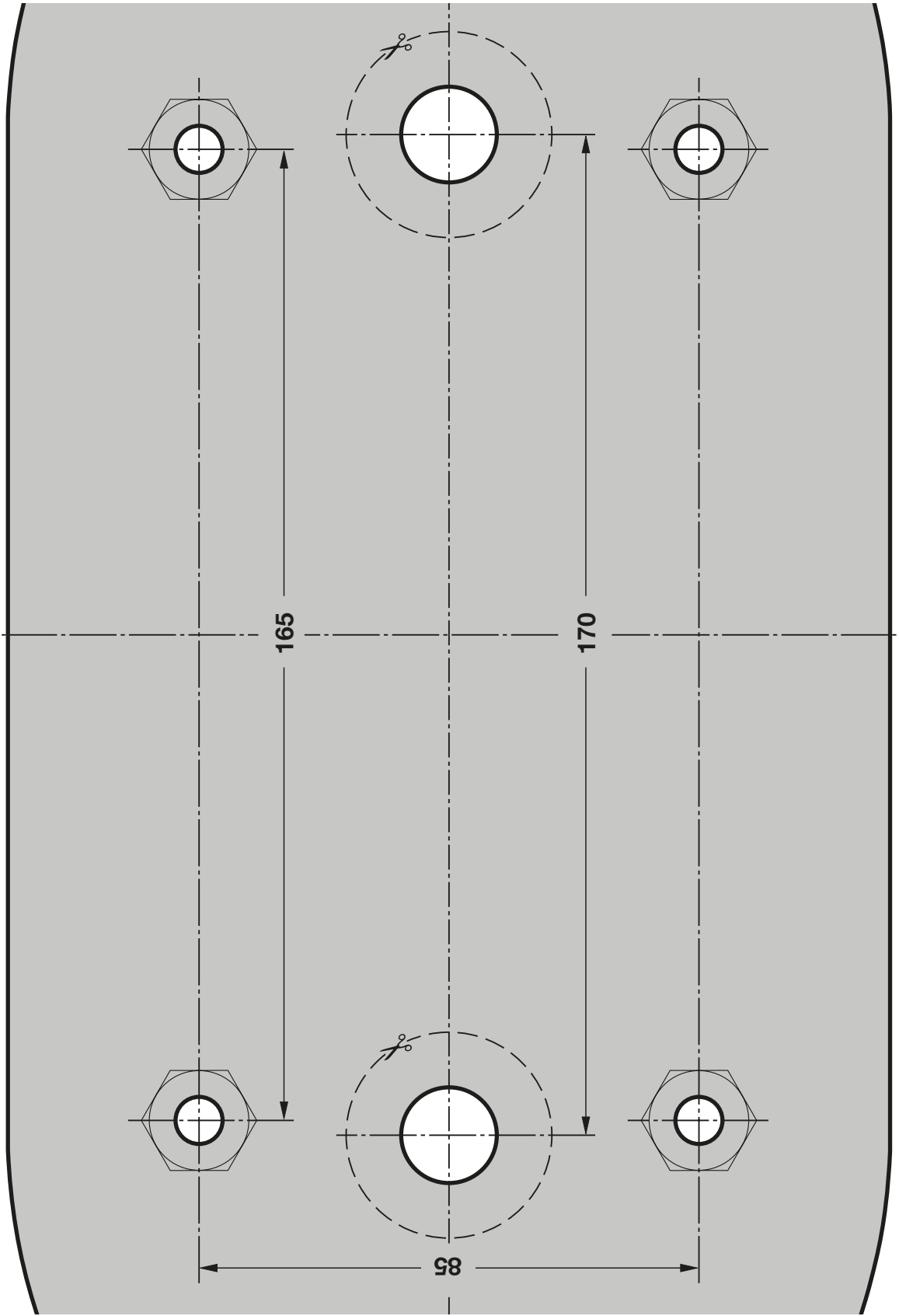
The stated factory settings apply to operator type C302.

Symbol	Menu	Function / parameter	Note
	00		Open / exit programming mode
Select operator type			
C302	01		 Default settings such as speed, soft stop, reversing behaviour of the safety devices, reversal limit etc. are pre-set)
C502	02		
C802	03		
Learning runs			
	10	Teaching in end-of-travel positions and forces again after service / maintenance or changes	
Illumination / illumination period (internal relay)			
	20	Internal illumination deactivated	 Menu 31 , parameter 07 is automatically activated.
	21	Internal illumination / illumination period 30 seconds	Menu 31 , parameter 00 is automatically activated.
	22	Internal illumination / illumination period 60 seconds	
	23	Internal illumination / illumination period 120 seconds	
	24	Internal illumination / illumination period 180 seconds	

Symbol	Menu	Function / parameter		Note	
Illumination / illumination period (external relay)					
	25	External illumination deactivated.			
	26	External illumination / illumination period 5 minutes			
	27	External illumination / illumination period 10 minutes			
	28	External illumination / illumination period, HOR 1 or UAP 1 relay 3 function ON / OFF		External light on / off	
Additional functions (external relay)				(HOR 1 or UAP 1 relay 3)	
	30	Parameter	00	External illumination function	 Menu 26 is automatically activated.
			01	Open end-of-travel position signal	Menu 25 is automatically activated.
			02	Close end-of-travel position signal	
			03	Partial opening end-of-travel position signal	
			04	Momentary signal at the time of Open or Partial opening command	
			05	Error message on the display (malfunction)	
			06	Start warning / advance warning ¹⁾ permanent signal	
			07	Start warning / advance warning ¹⁾ flashing	
			08	Relay energises during travel and de-energises in the end-of-travel positions.	
			09	Maintenance interval signal (display In)	
			10	Start warning / advance warning ¹⁾ flashing, only in Close direction	
			1) Advance warning only if activated in menu 32.		

Symbol	Menu	Function / parameter		Note	
Additional functions (internal relay)				(HOR 1 or UAP 1 relay 3)	
	31	Parameter	00 Internal illumination	Menu 22 is automatically activated.	
			01 Open limit switch reporting	Menu 20 is automatically activated.	
			02 Close limit switch reporting		
			03 Partial opening limit switch reporting		
			04 Momentary signal at the time of Open or Partial opening command		
			05 Error message on the display (malfunction)		
			06 Start warning / advance warning ¹⁾ permanent signal		
			07 Start warning / advance warning ¹⁾ flashing		
			08 Relay energises during travel		
			09 Maintenance interval signal (display In)		
			10 Start warning / advance warning ¹⁾ flashing, only in Close direction		
1) Advance warning only if activated in menu 32.					
Pre-warning phase					
 1-60 sec.	32	Parameter	00 Advance warning deactivated		
			01 Advance warning 1 s		
			02 Advance warning 2 s		
			03 Advance warning 3 s		
			04 Advance warning 4 s		
			05 Advance warning 5 s		
			06 Advance warning 10 s		
			07 Advance warning 15 s		
			08 Advance warning 20 s		
			09 Advance warning 30 s		
			10 Advance warning 60 s		
Automatic timer – hold-open phase					
 5 sec. – 300 sec.	34	Parameter	00 Hold-open phase deactivated		
			01 Hold-open phase 5 s	Menu 32, parameter 02 is automatically activated.	
			02 Hold-open phase 10 s		
			03 Hold-open phase 15 s		
			04 Hold-open phase 30 s		
			05 Hold-open phase 60 s		
			06 Hold-open phase 90 s		
			07 Hold-open phase 120 s		
			08 Hold-open phase 180 s		
			09 Hold-open phase 240 s		
			10 Hold-open phase 300 s		

Symbol	Menu	Function / parameter				Note
Automatic timer – partial opening						Photocell required
	35	Parameter	00	Hold-open phase deactivated		Menu 32, parameter 02 is automatically activated.
			01	Hold-open phase as set in menu 34		
			02	Hold-open phase 5 min		
			03	Hold-open phase 15 min		
			04	Hold-open phase 30 min		
			05	Hold-open phase 45 min		
			06	Hold-open phase 60 min		
			07	Hold-open phase 90 min		
			08	Hold-open phase 120 min		
			09	Hold-open phase 180 min		
			10	Hold-open phase 240 min		
Change partial opening position						
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C302 / C502 / C802

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