



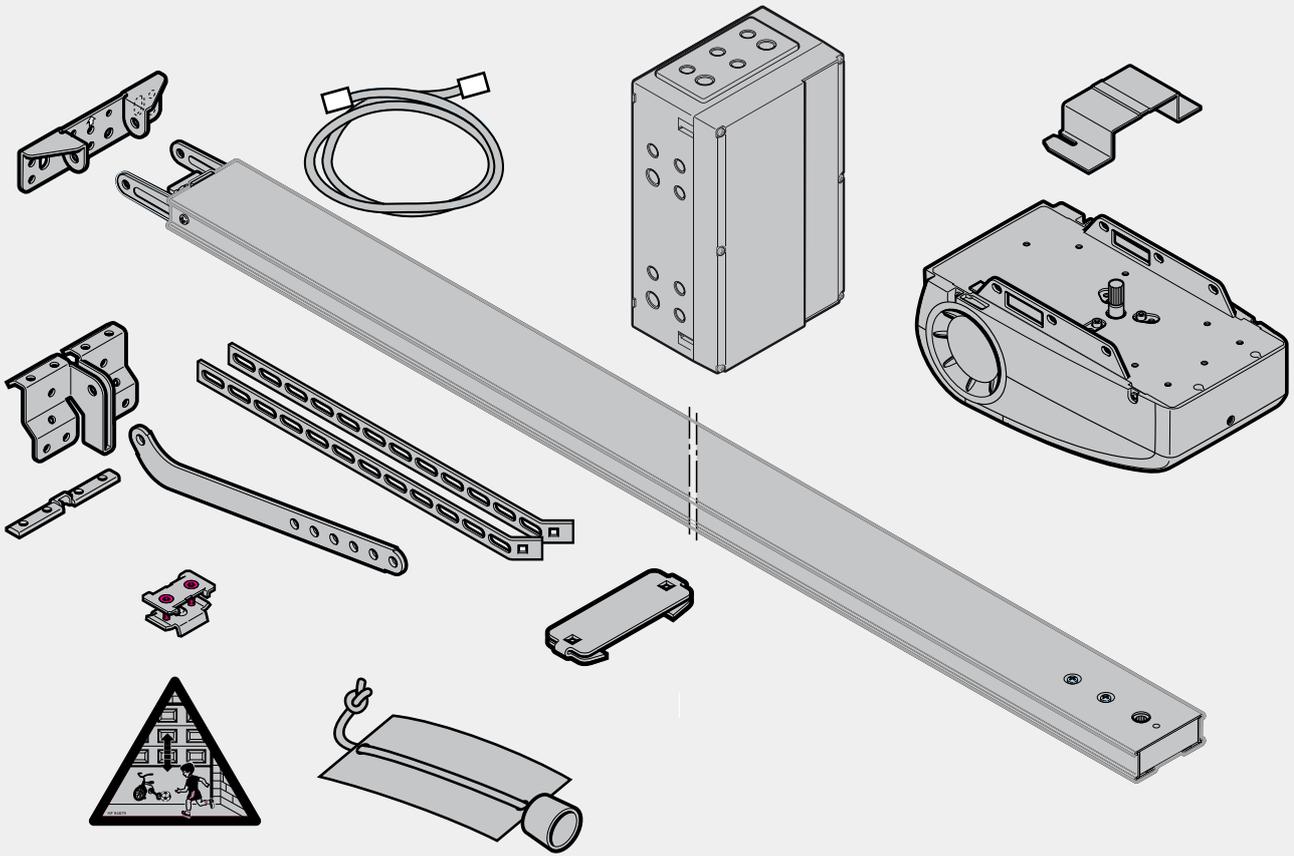
Instructions for fitting, operating and maintenance
MS400 Control board
Garage door operator

GA501

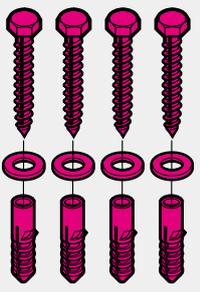
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GARAGE DOORS REDEFINED

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A



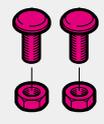
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E



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B

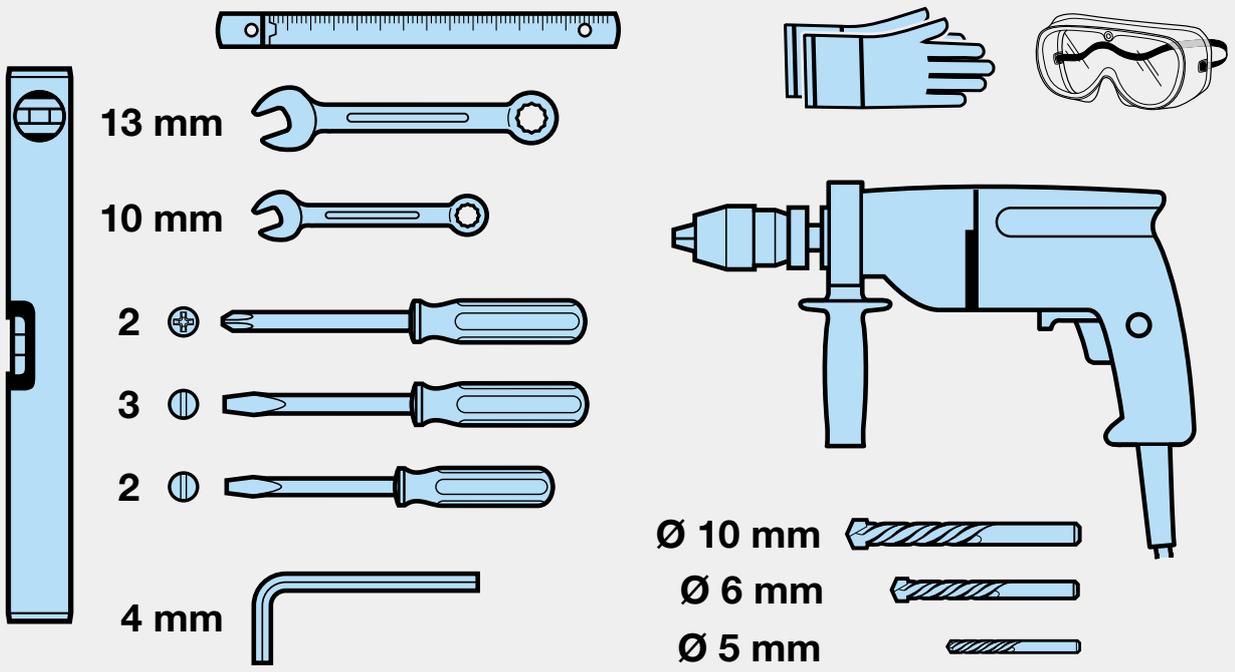


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Dear customer,

We are delighted that you have chosen one of our quality products. Please keep this manual in a safe place!

Please read and take note of the contents of this manual; it contains important information on the installation, operation, and proper care/maintenance of the garage door opener, so that you can get many years of enjoyment from this product.

Please observe our safety instructions and warning notices, which are especially highlighted with **"PLEASE NOTE"** or **"Note"**.



PLEASE NOTE

The installation, maintenance, repair and disassembly of the garage door opener should be carried out by experts.

Note

The end user must be provided with the logbook and manual for the safe use and maintenance of the door opener.

1 IMPORTANT INFORMATION



PLEASE NOTE

Incorrect maintenance or operation of the opener can result in serious injuries. Consequently all of the instructions contained in this manual must be followed!

1.1 Important safety instructions

The garage door opener is intended **exclusively** for the pulsed operation of spring-balanced sectional and up-and-over doors and counterweighted tilting doors in **private/non-commercial environments** as well as for garage doors under high loads (e.g. multi-car garages and underground car parks). Please observe the manufacturer's information on possible door and opener combinations. Possible hazards per EN 12604 and EN 12453 can be avoided by carrying out construction and installation in accordance with our specifications. Door systems located in public areas, which are only equipped with one protective device, e.g. power limitation, may only be operated under supervision.

1.1.1 Warranty

We are released from the warranty and from product liability obligations if structural modifications are undertaken without first obtaining our permission, or installation is arranged or carried out incorrectly, contrary to our specified installation instructions. Moreover, we do not accept any responsibility for the accidental or negligent operation of the opener and of accessories, not for improper maintenance of the door and its counterweight. Batteries and bulbs are also excluded from warranty claims.

Note

If the garage door opener fails, an expert must be commissioned to carry out the inspection/repair without delay.

1.1.2 Inspecting the door / the door system

The opener is not designed for operating heavy doors, i.e. doors which cannot be opened or closed by hand, or only with difficulty. **For this reason, before installing the opener, it is necessary to check the door to ensure that it is also easy to operate by hand.**

This process should involve lifting the door by about a metre, and then releasing it. The door should remain in this position, and not move **either** upwards **or** downwards. If the door does however move in one of the two directions, there is a risk that the compensating springs/counterweights are defective or improperly adjusted. In such a case, an increased level of wear and malfunctions of the door can be expected.



CAUTION: risk to life!

Never attempt to replace, adjust, repair or relocate the compensating springs for the door counterweight, or its holders yourself. They are under high tension and could cause serious injury. In addition, the whole door system (hinges, door mounting, cables, springs and fasteners) must be inspected for wear and potential damage. Check for any rust, corrosion or cracking. Do not use the door system if repairs or adjustment are required, as a fault with the door system or improperly aligned door can also result in serious injury.

Note

Before installing the opener, for your own safety, have work on the door's compensating springs, and if necessary maintenance and repair work, carried out exclusively by an expert! Only correct installation and maintenance, carried out by a competent/expert firm or individual in conjunction with the manuals, can ensure that an installation will proceed safely and as intended.

1.2 Important instructions for safe installation

The expert should note that the applicable regulations concerning safety at work and rules on the operation electrical equipment must be observed during installation work.

To this end, the national guidelines must be followed. Possible hazards per DIN EN 13241-1 can be avoided by carrying out construction and installation in accordance with our specifications.

1.2.1 Before installation of the garage door opener,

check that the door is in perfect mechanical condition and balanced such that it can also be operated easily by hand (EN 12604). Furthermore, check that the door can be opened and closed properly (see Chapter 1.1.2). In addition, the mechanical locks of the door which are not required for operation with a garage door opener must be put out of operation. This particularly includes the locking mechanisms on the door lock (see Chapter 2.3 and 2.6).



The garage door opener is designed for operation in dry areas, and may therefore not be installed in the open air. The design of the garage ceiling must be sufficient to ensure secure attachment of the opener. If the ceiling is too high or too lightweight, the opener must be secured to other struts.

1.2.2 When performing installation work

Note

The supplied installation materials must be checked by the fitter before use for their suitability for the intended installation location.

The clearance between the highest point on the door and the ceiling must be at least 30 mm (even when opening the door) (see Figure 1.1a/1.1b). With less clearance, provided that there is sufficient space, the opener can also be installed behind the open door. In such cases, an extended door fixing bracket must be used, which must be ordered separately. In addition, the garage door opener can be positioned max. 50 cm off-centre. This excludes sectional doors with a higher extension (H-fitting); however this requires a special fitting. The required socket for the electrical connection should be installed approx. 50 cm from the opener control system.

Please check these dimensions!

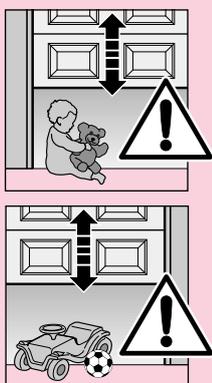
1.3 Warning notices



Fixed control units (such as buttons, etc.), must be installed within sight of the door, but removed from moving parts and at a height of at least 1.5 m. It is vital that they are attached out of the reach of children!

Note

The sign warning of the risk of pinching must be permanently affixed in a conspicuous location or in the vicinity of the fixed button for moving the opener!



Please make sure that:

- no persons or objects are located in the movement area of the door.
- children do not play with the door system!
- the wire for the mechanical release mechanisms on the carriage cannot get caught on a roof supporting structure or other protrusions on a vehicle or on the door.



PLEASE NOTE

For garages without a second access point, an **emergency release** is necessary, to prevent possible lock-out. This must be ordered separately and its functionality checked **monthly**.



PLEASE NOTE

Do not hang on the release knob with your body weight!

1.4 Maintenance instructions

The garage door opener is maintenance free. For your own safety, we recommend having the door system inspected **by an expert in accordance with the manufacturer's information**.

Inspection and maintenance may only be carried out by an expert; contact your supplier. A visual inspection can be performed by the operator. A visual inspection can be performed by the operator.

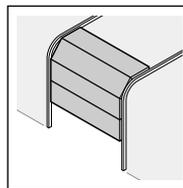
Contact your supplier concerning any repairs which may be necessary. We do not provide any warranty for repairs not performed in the appropriate or professional manner.

1.5 Information on the illustrated section

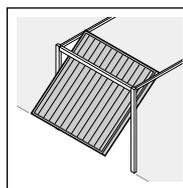
The illustrated section shows installation of the opener on a sectional door.

Where the procedure differs for the up-and-over door, this is indicated in addition.

The figures are number using the letter



a for the sectional door and



b for the up-and-over door.

Some figures also contain the following symbol with a cross-reference in text. These cross-references allow you to access important information on the installation and operation of the garage door opener in the section of the text given.

Example



= See section name, Chapter 2.2

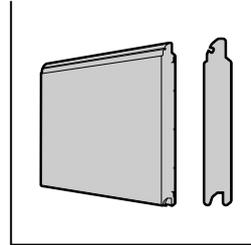
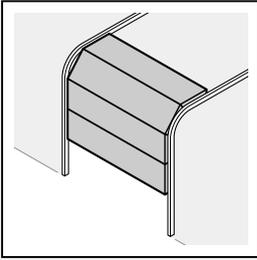
In addition, both the visual material and text sections which explain the opener's menu system use the following symbol to indicate the factory setting(s).



= Factory setting

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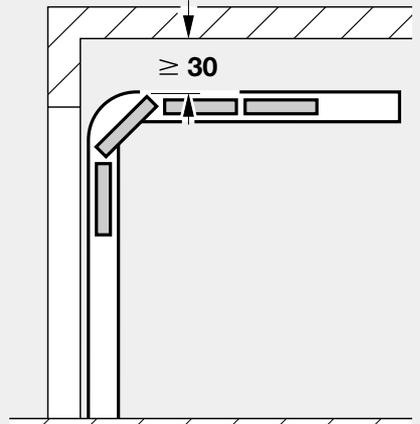
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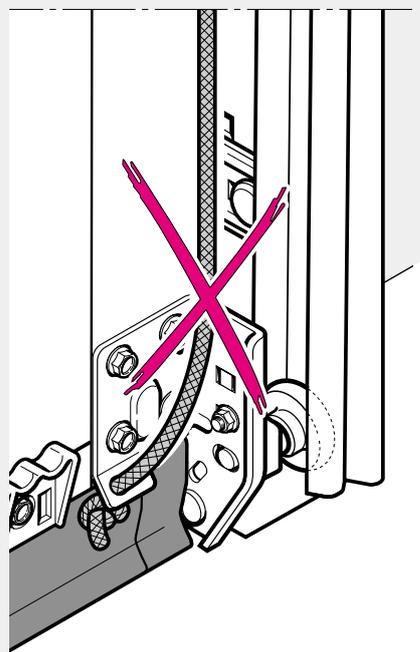
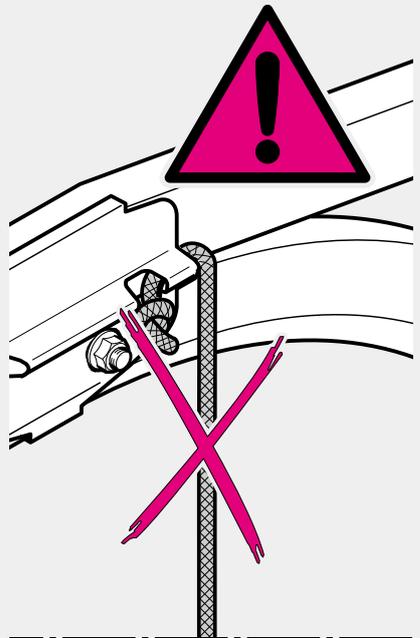
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1.2a



2.3



1.5a/1.6a

1.4a

1.2a

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1.3a

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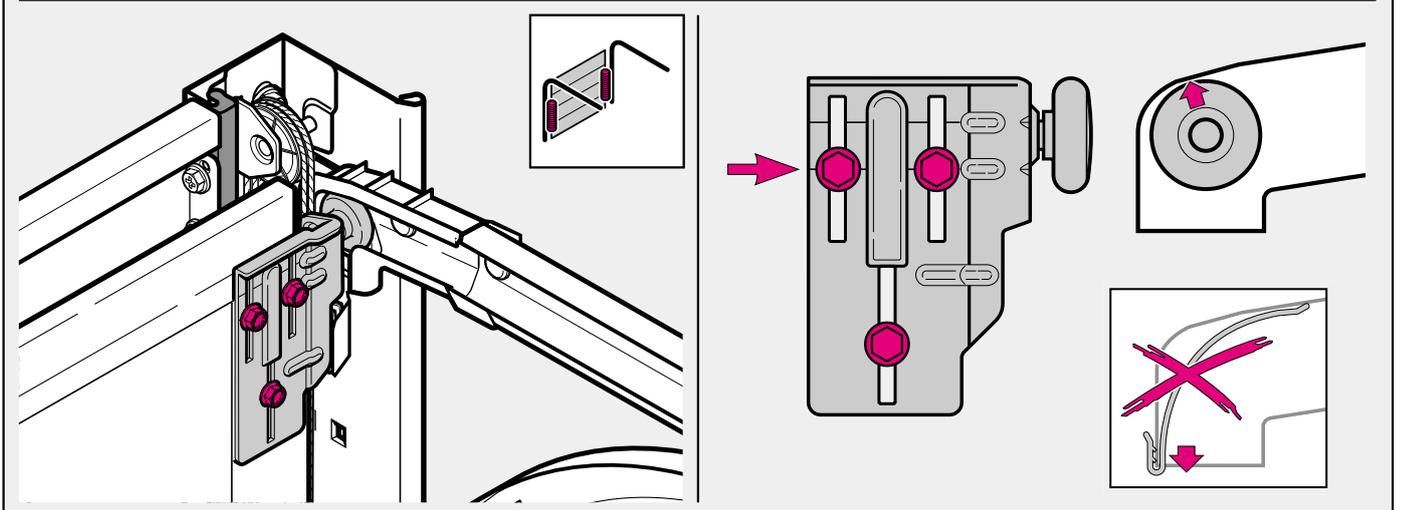
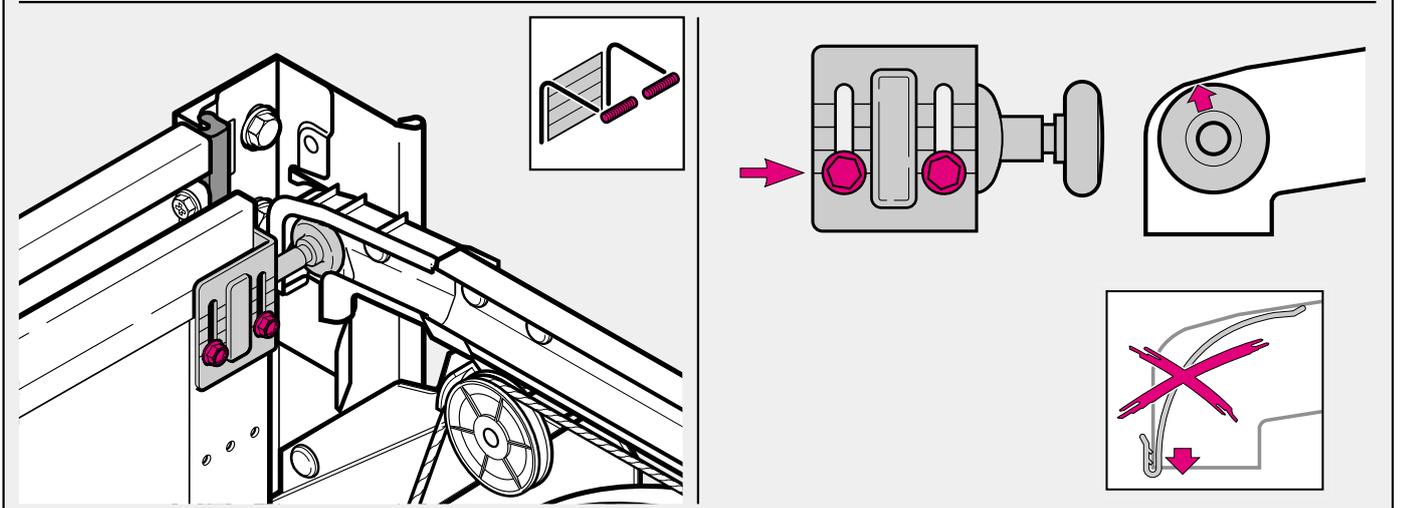
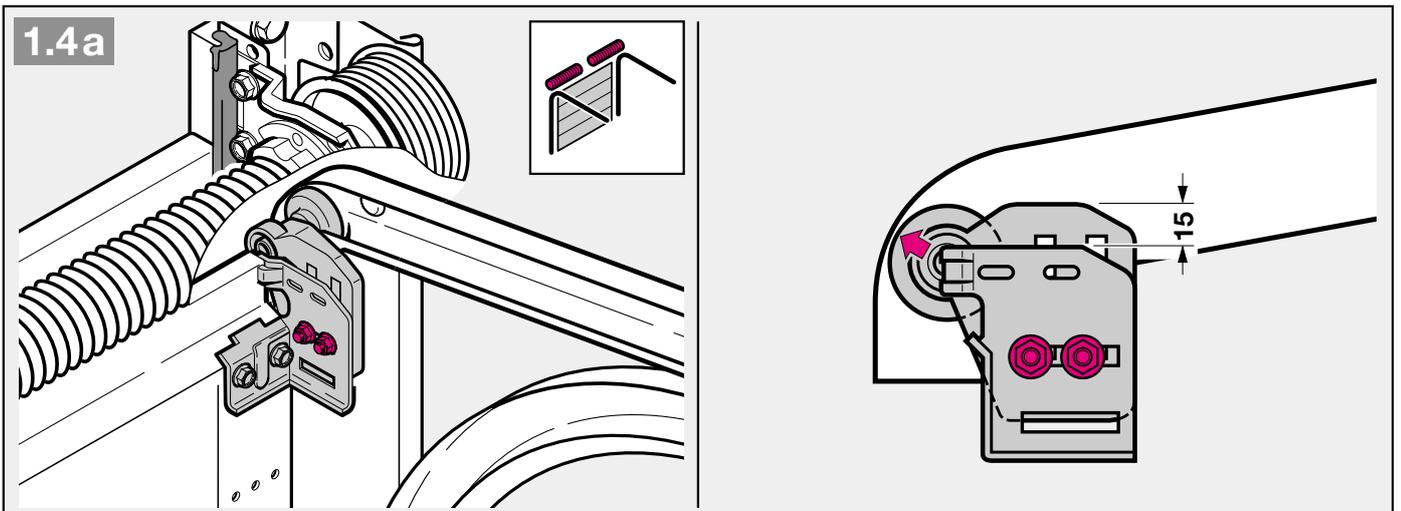
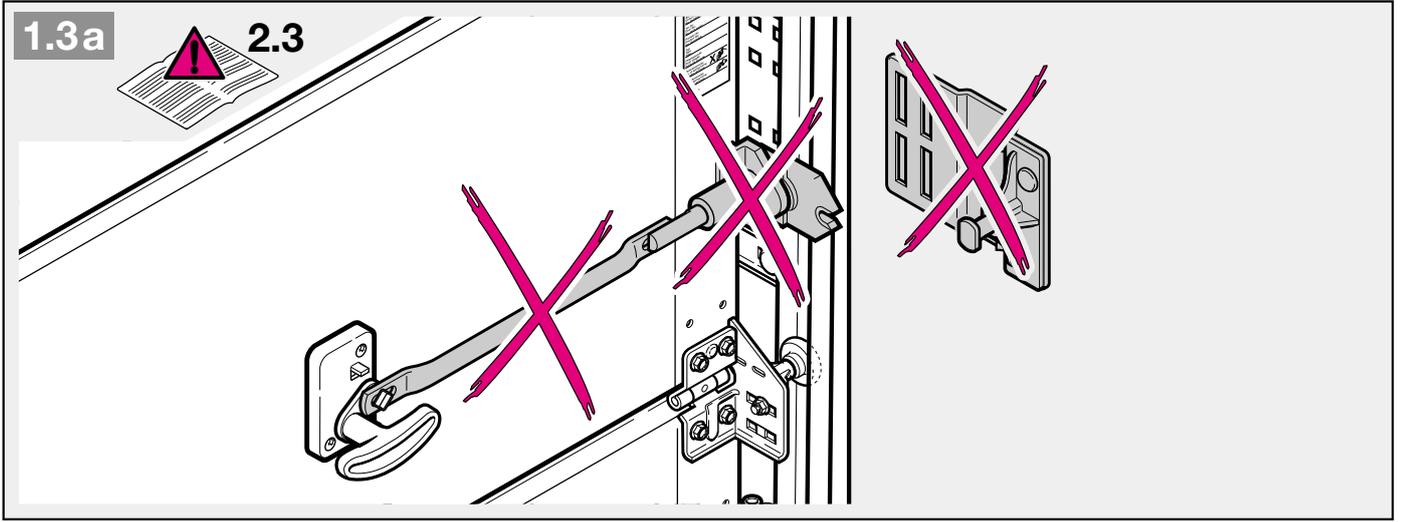
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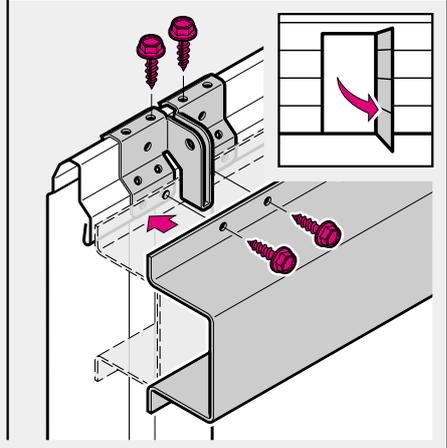
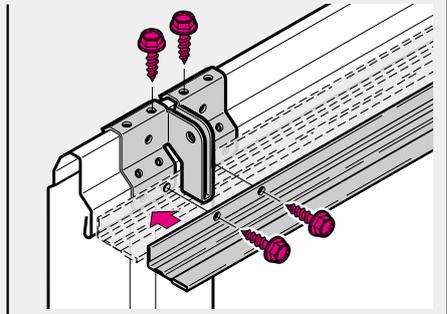
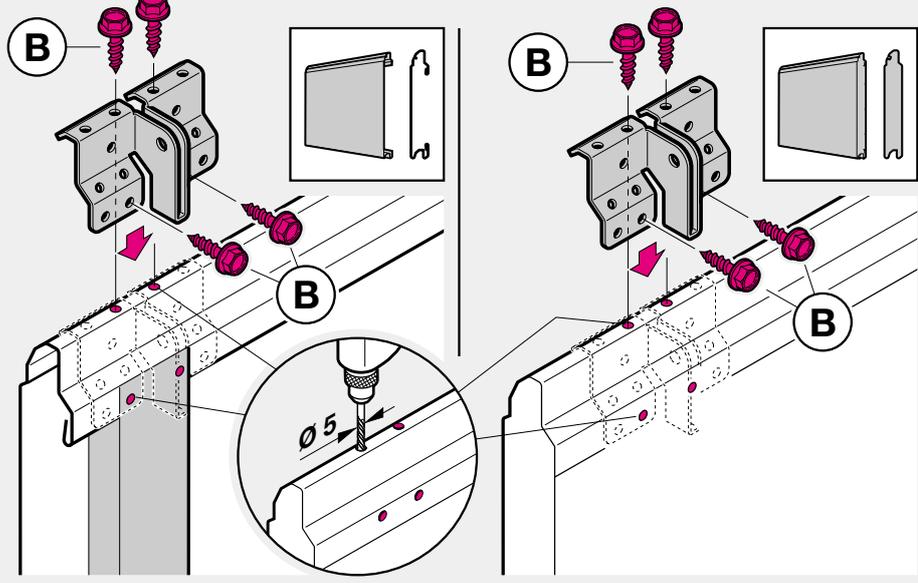
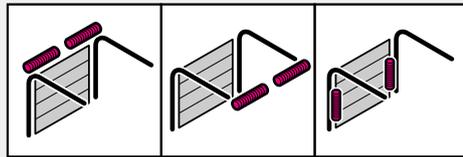
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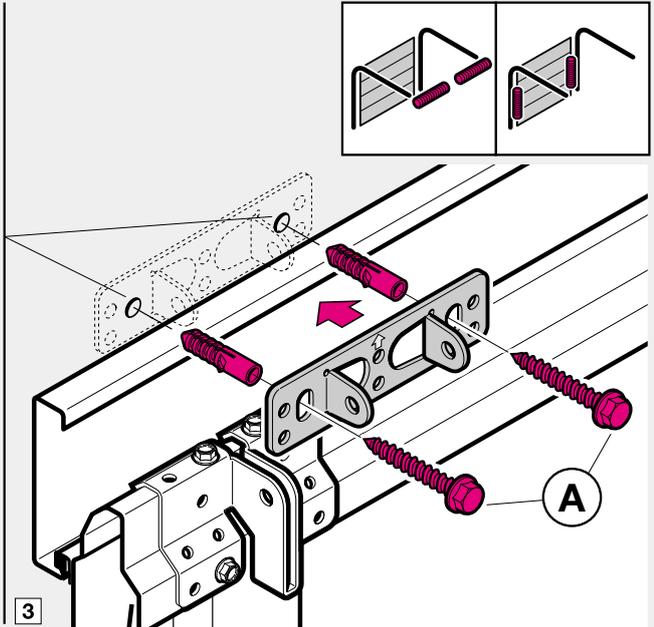
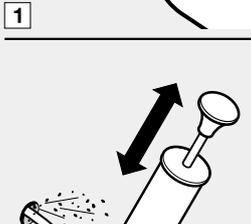
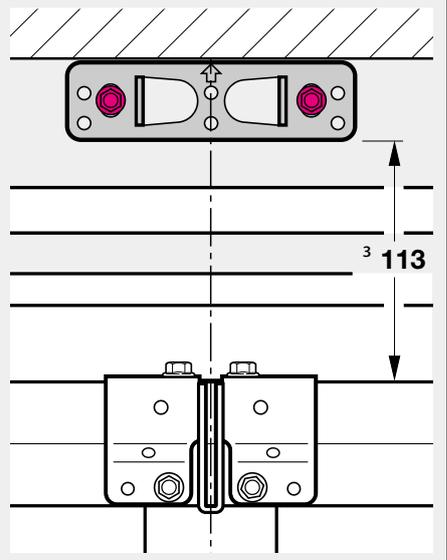
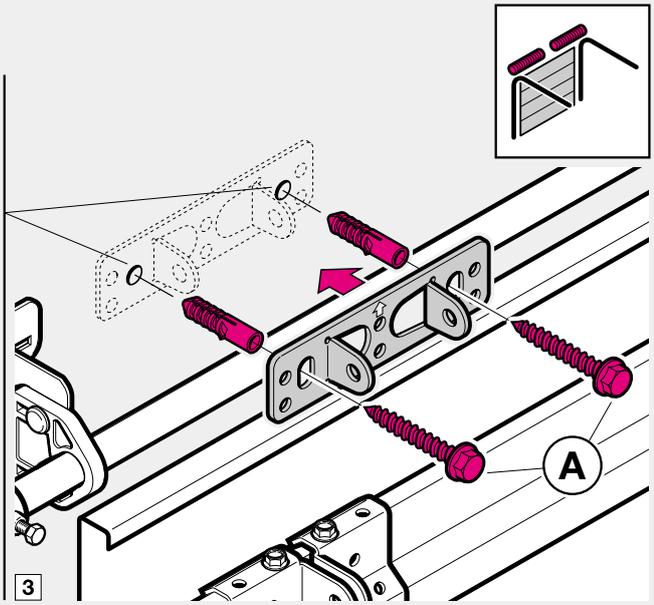
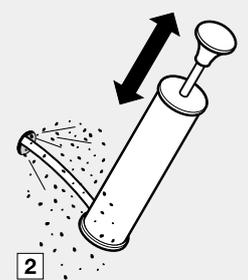
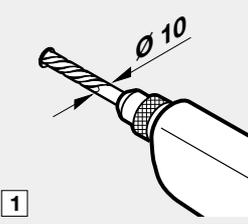
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2.4/2.5

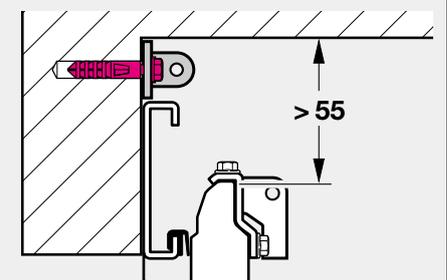
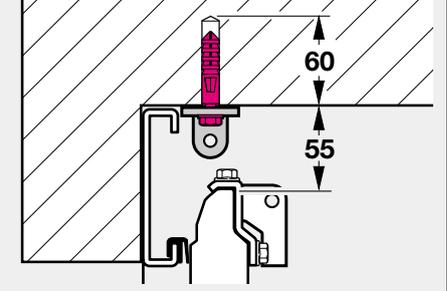


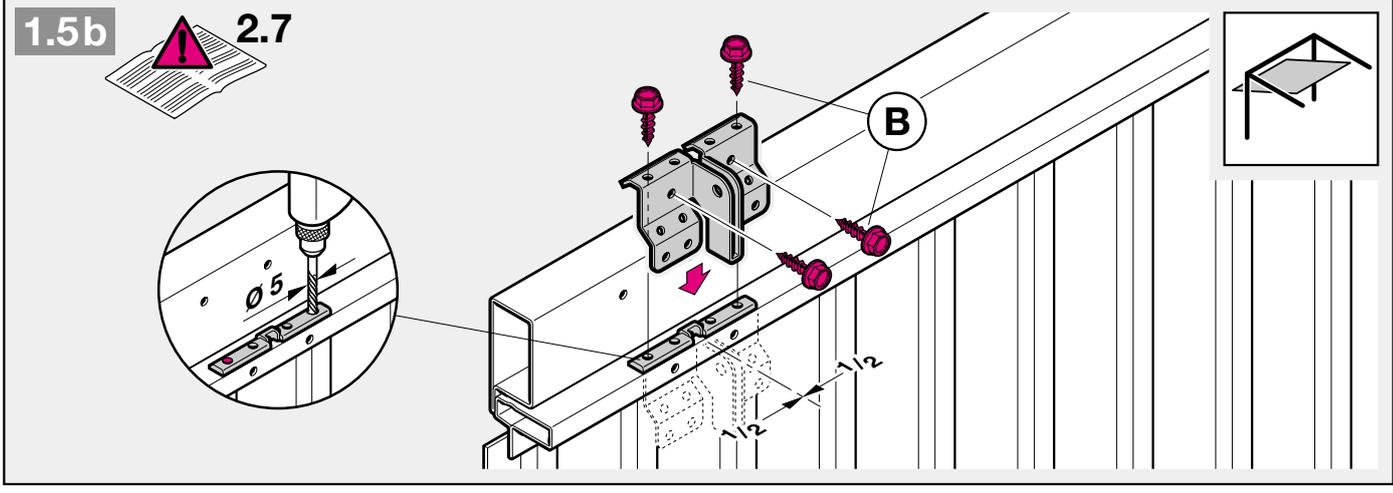
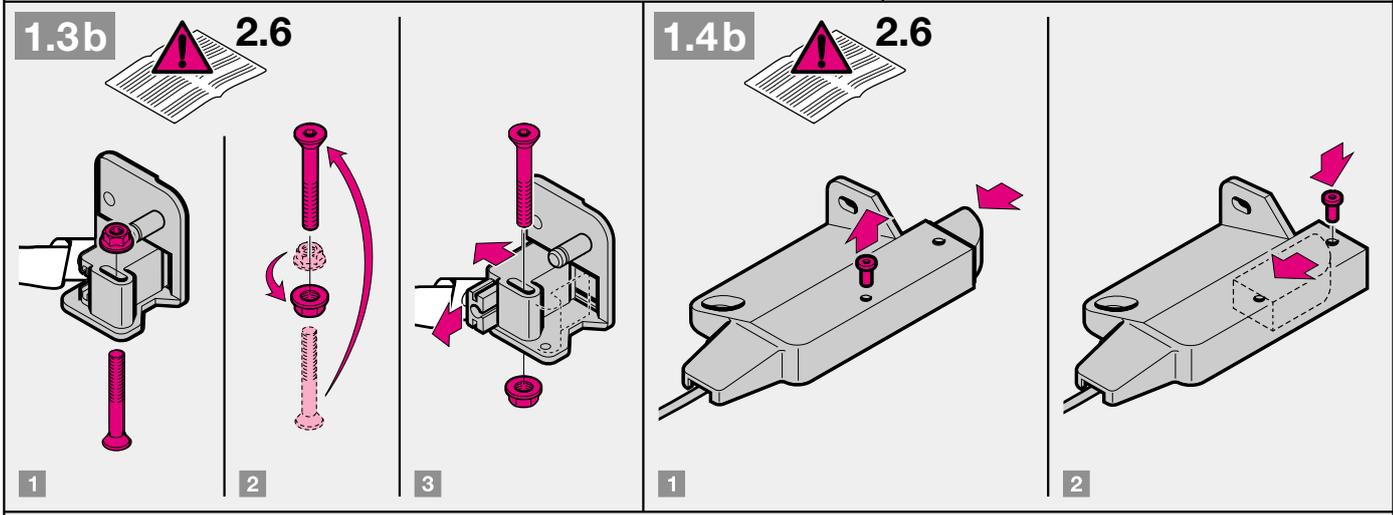
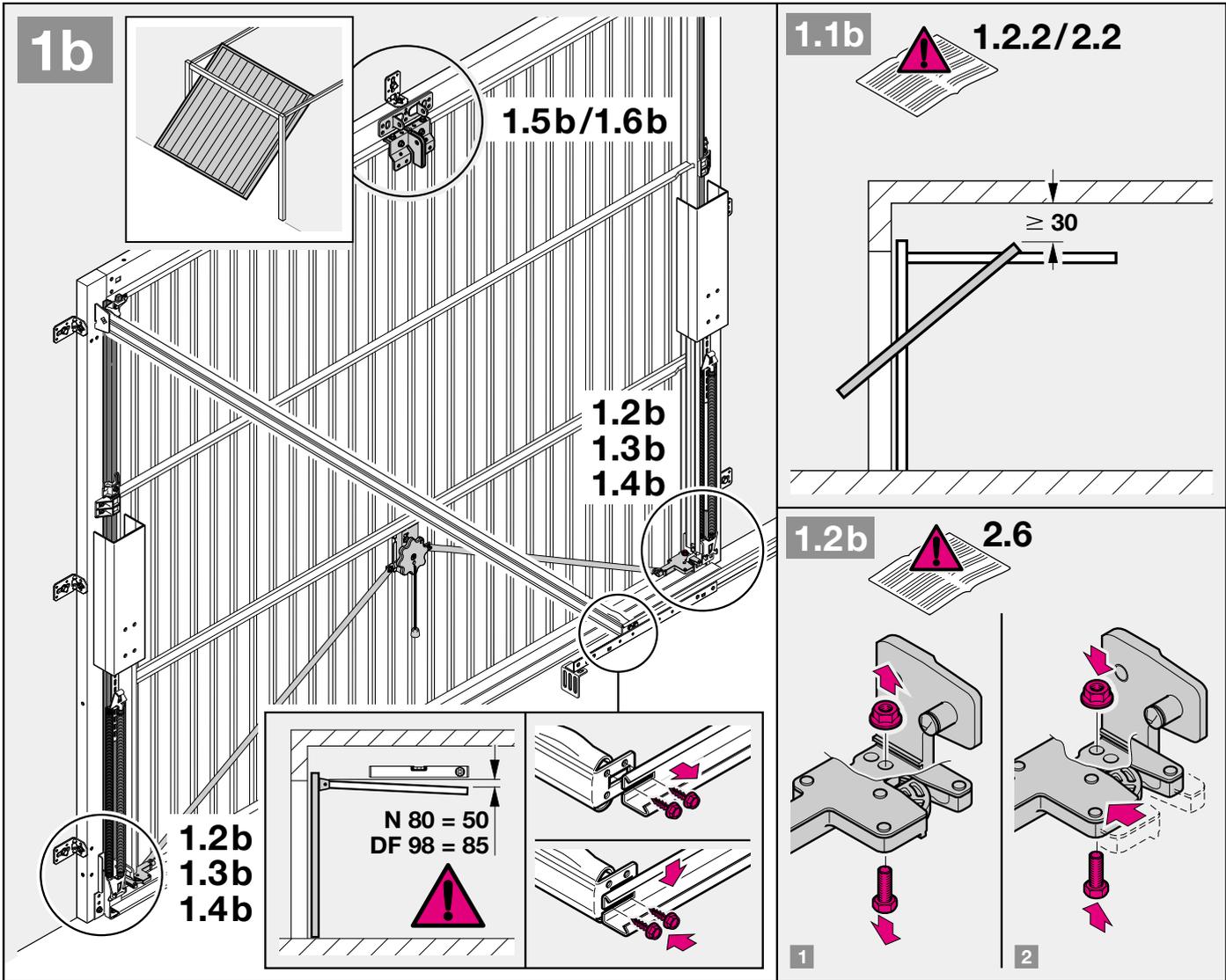
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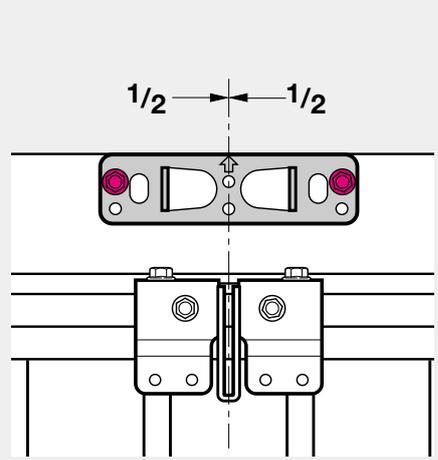
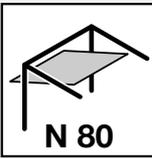
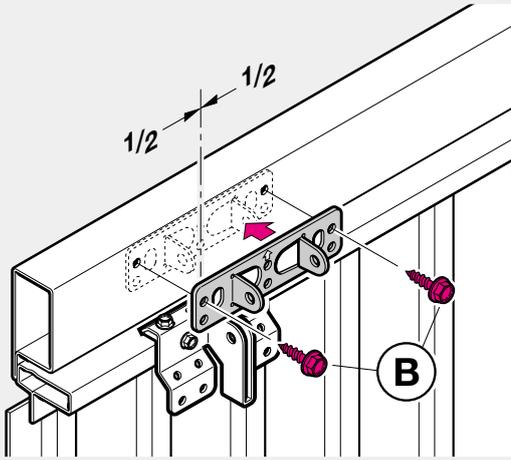


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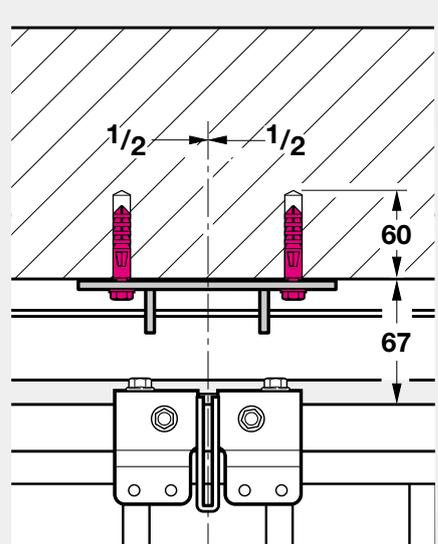
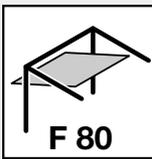
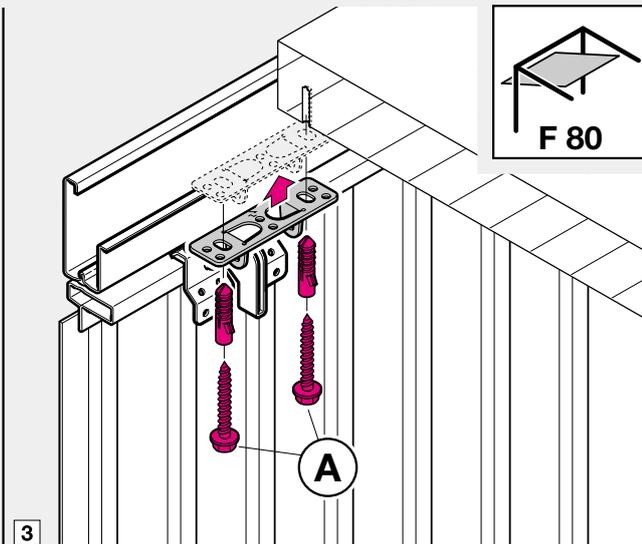
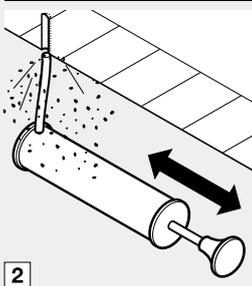
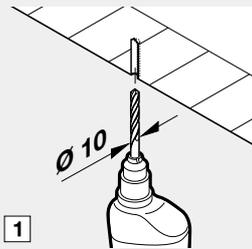
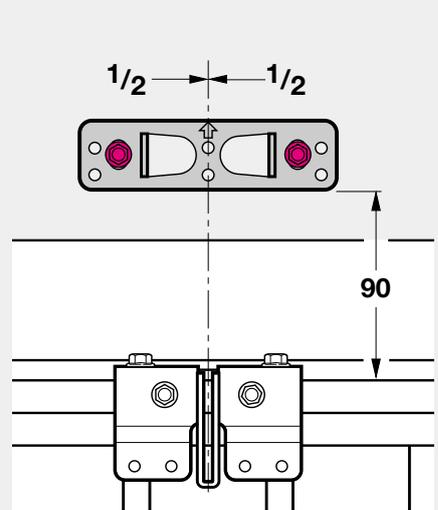
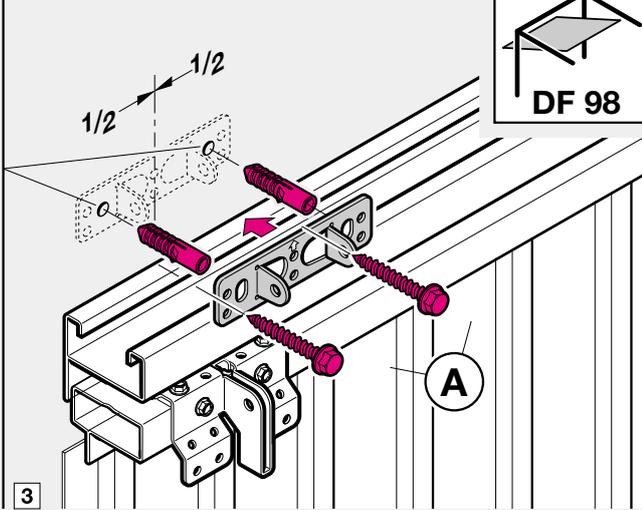
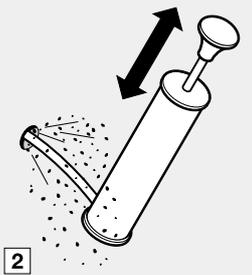
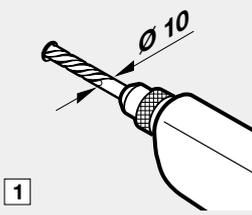
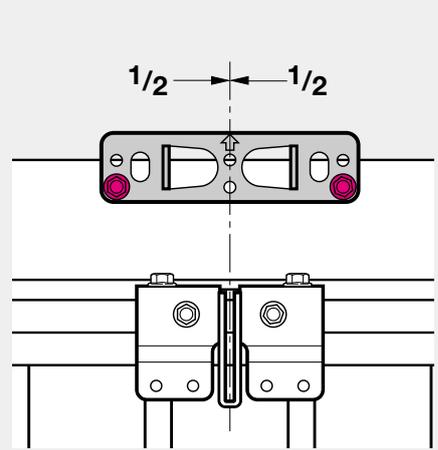
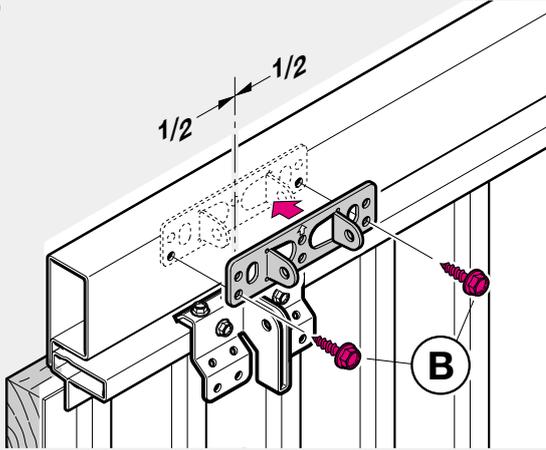


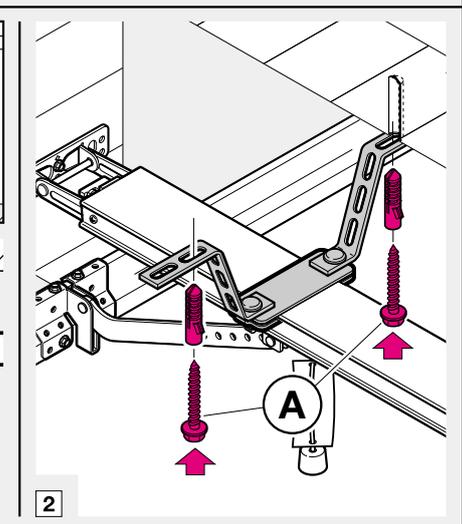
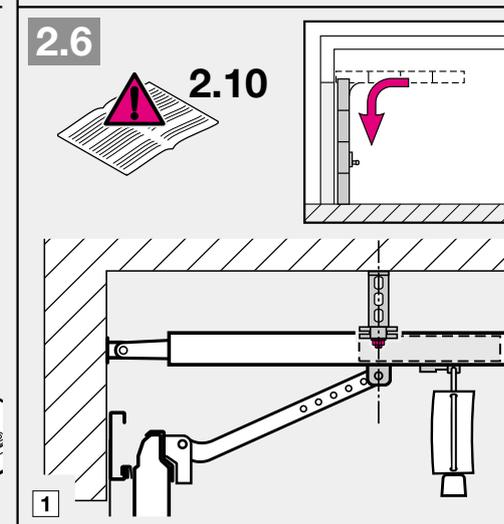
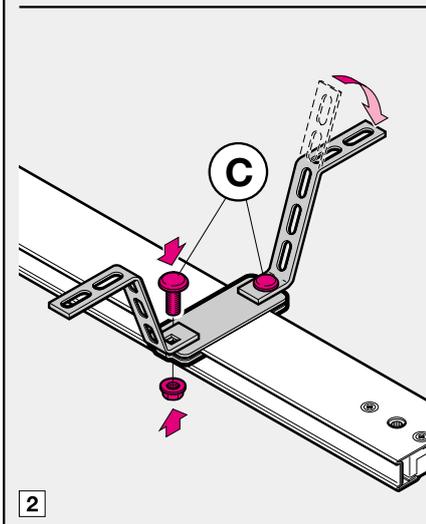
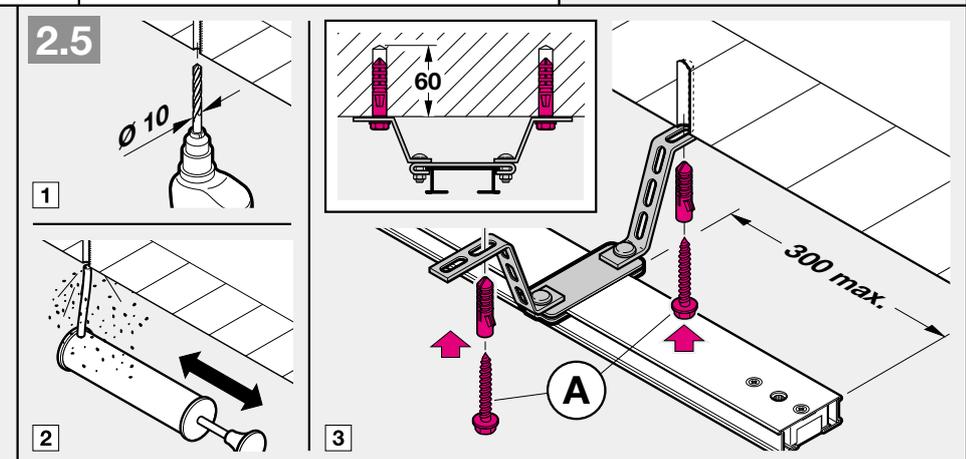
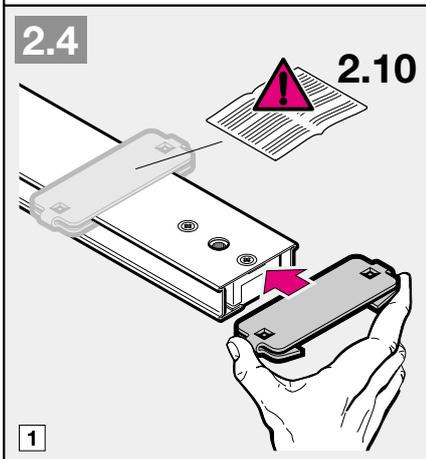
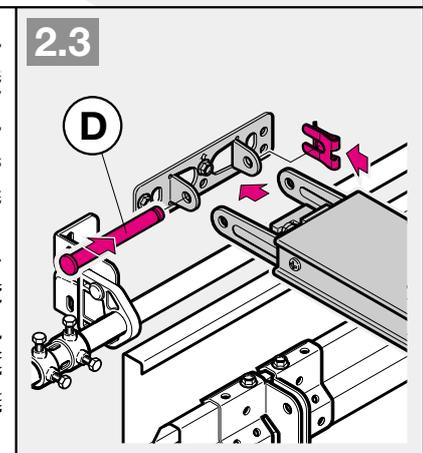
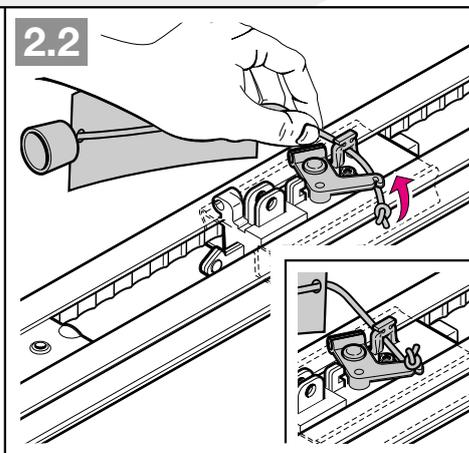
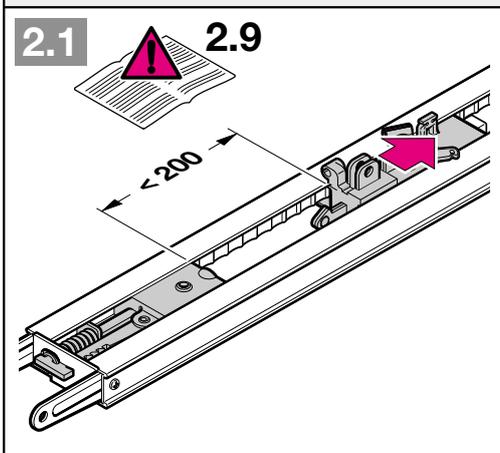
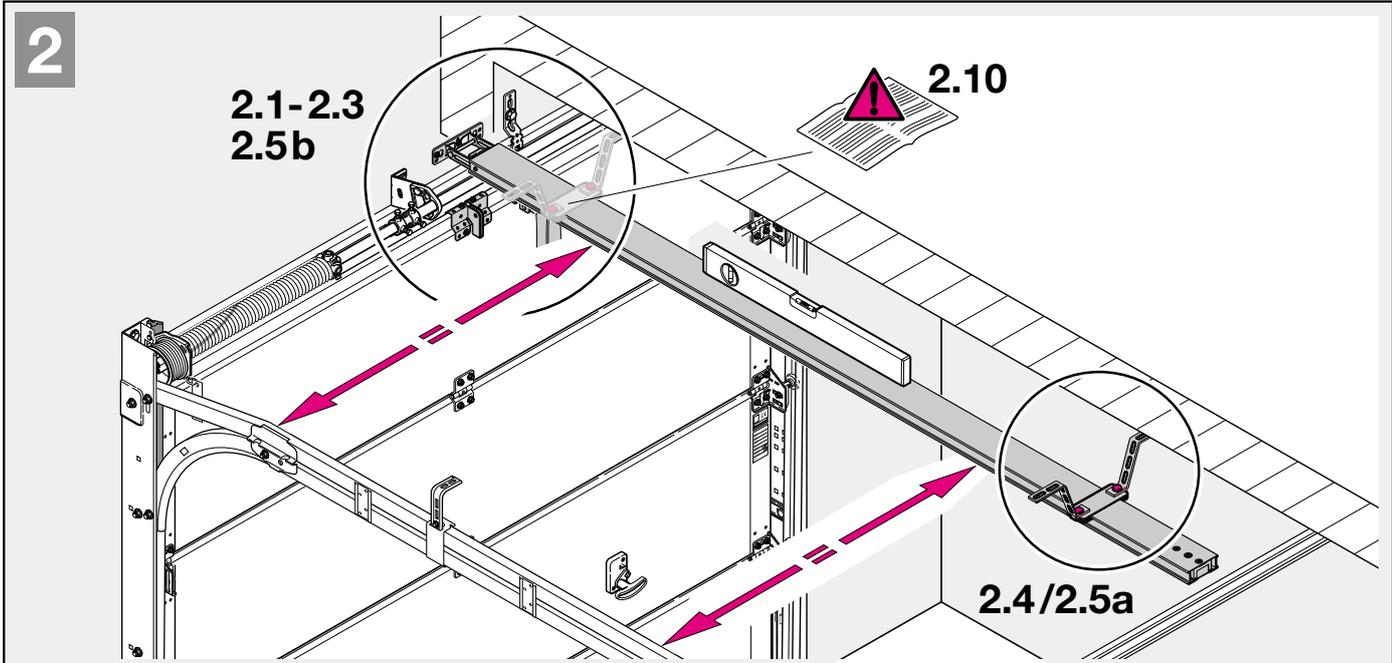


1.6b

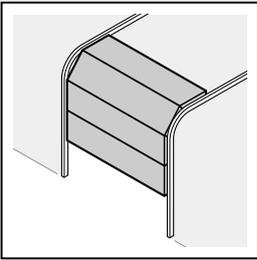


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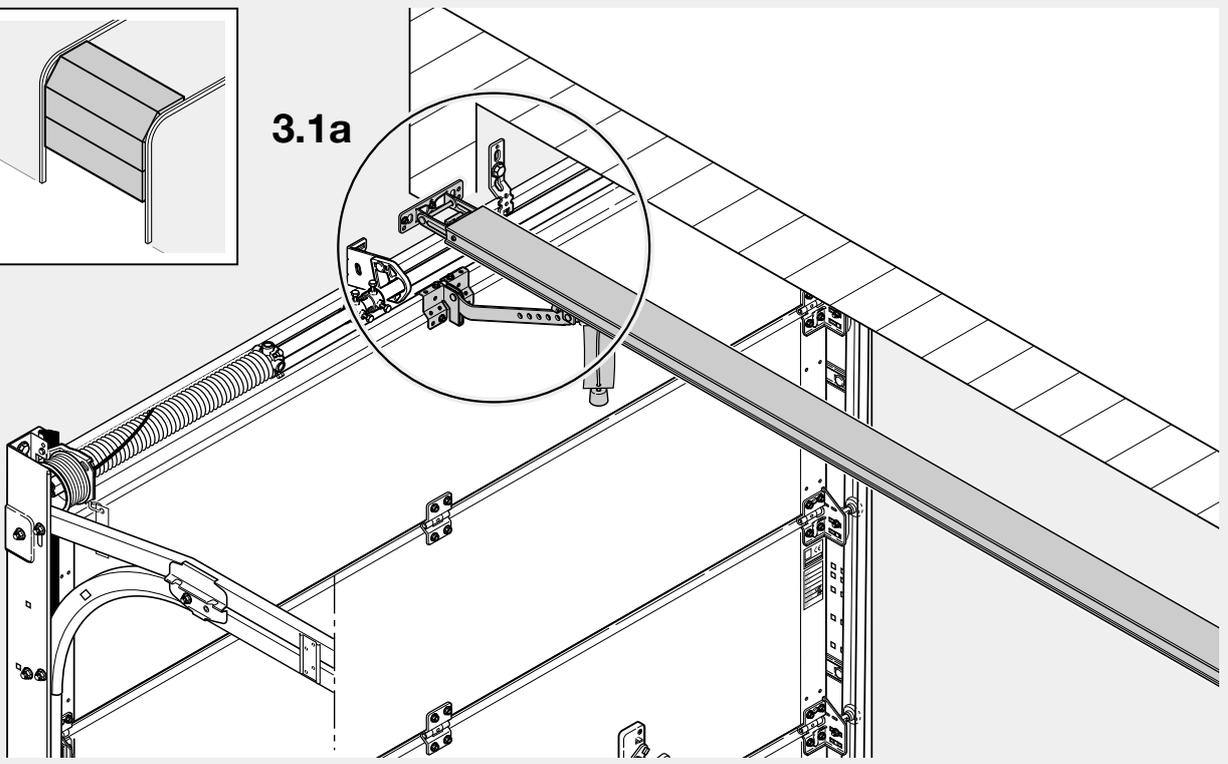
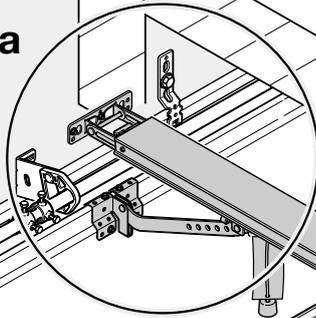




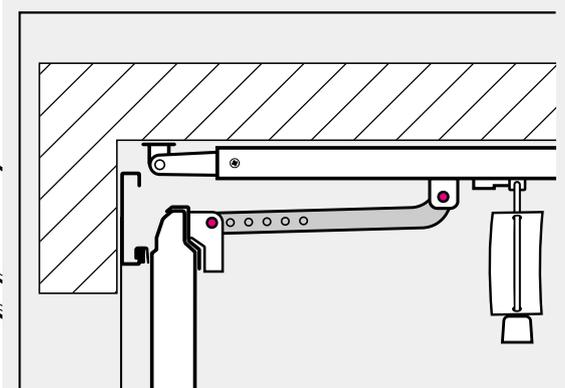
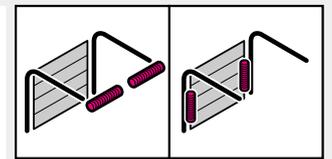
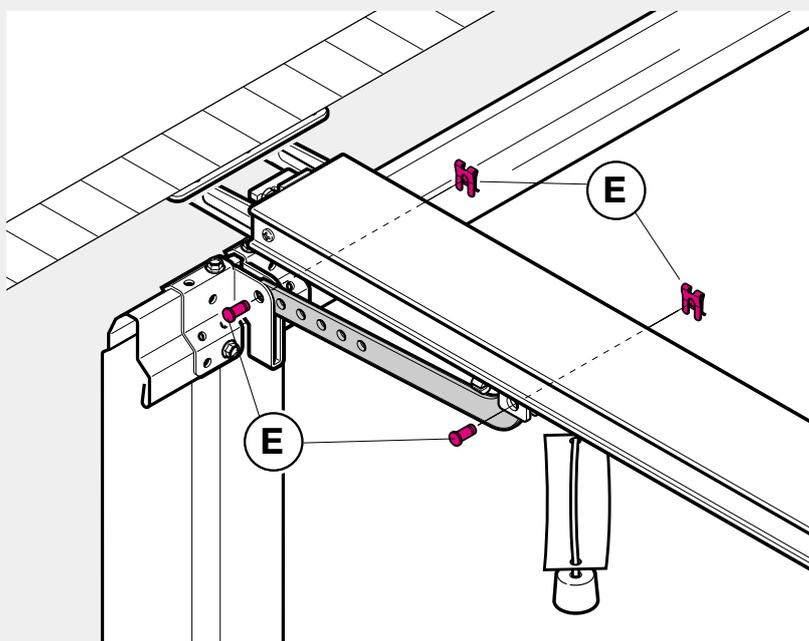
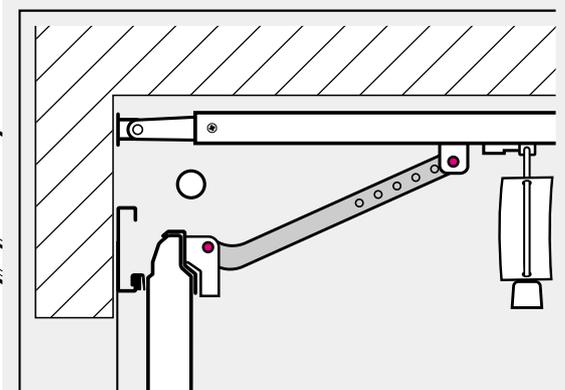
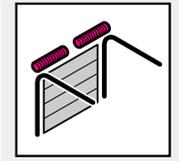
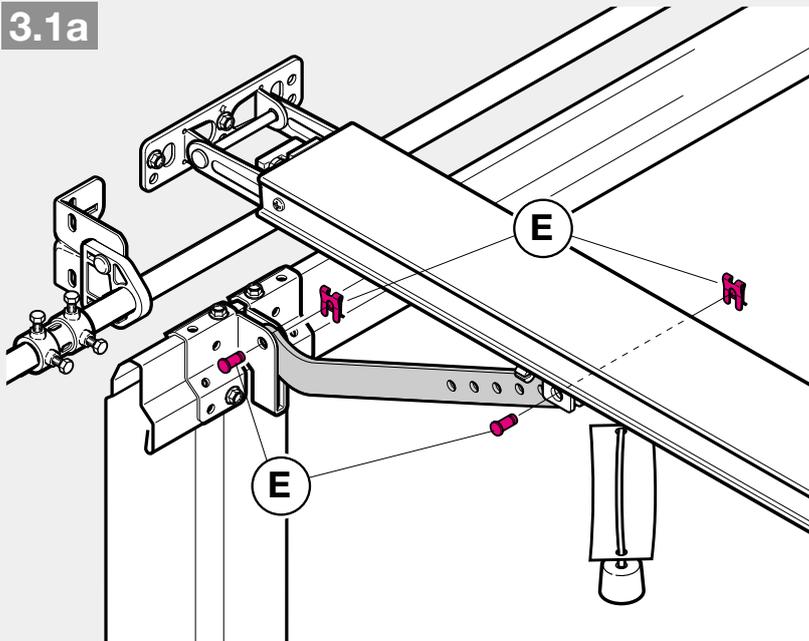
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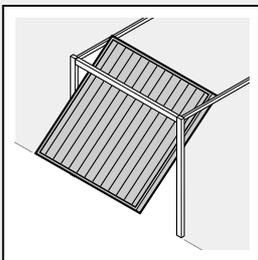
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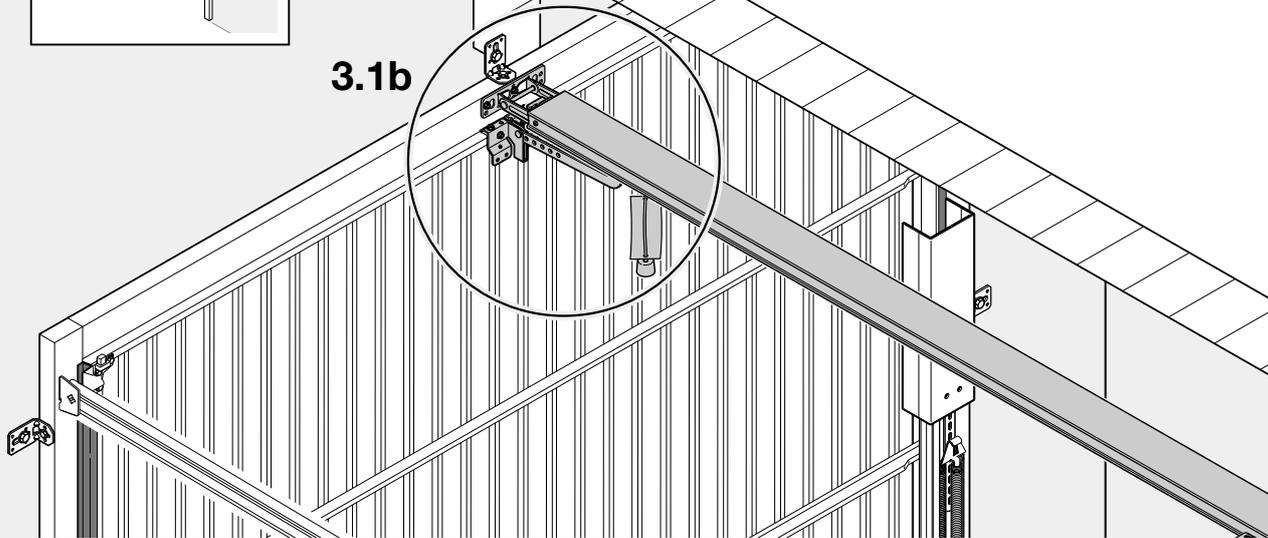
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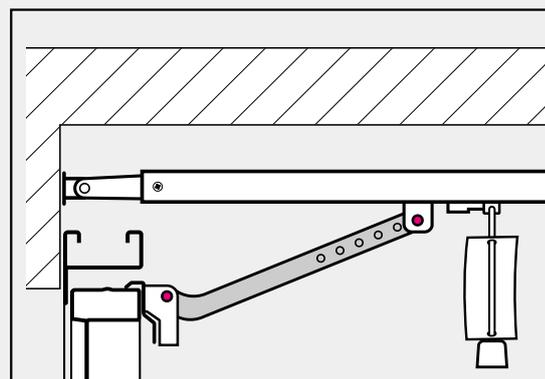
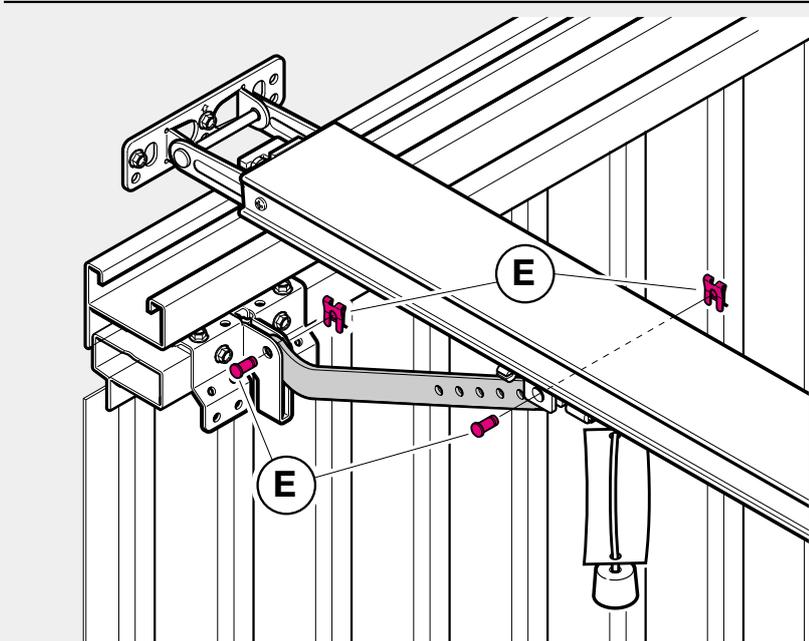
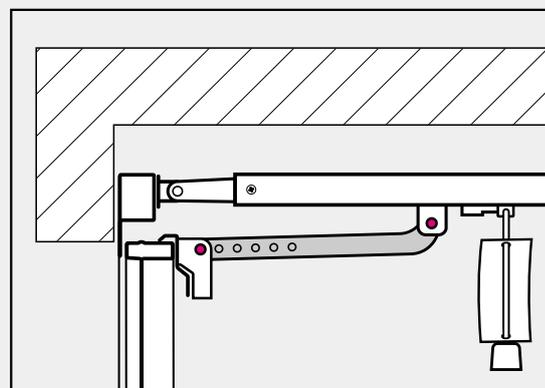
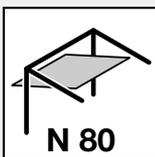
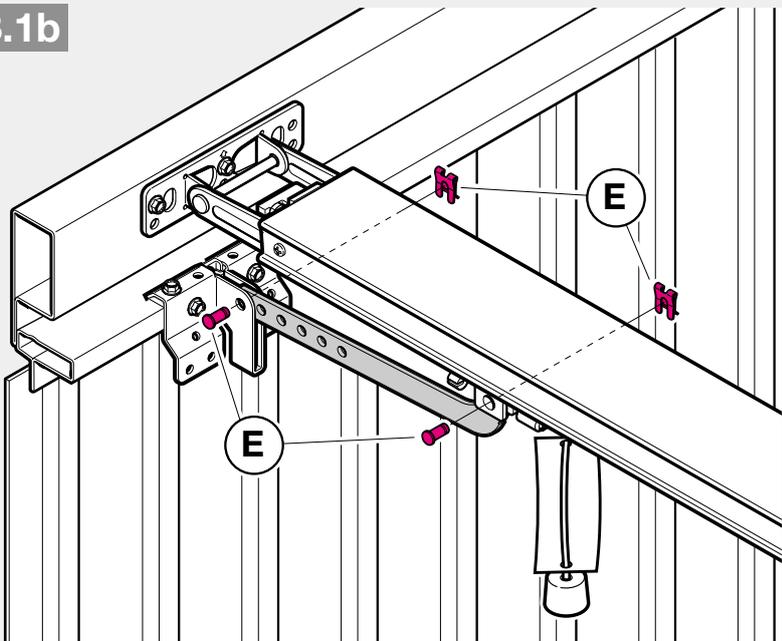
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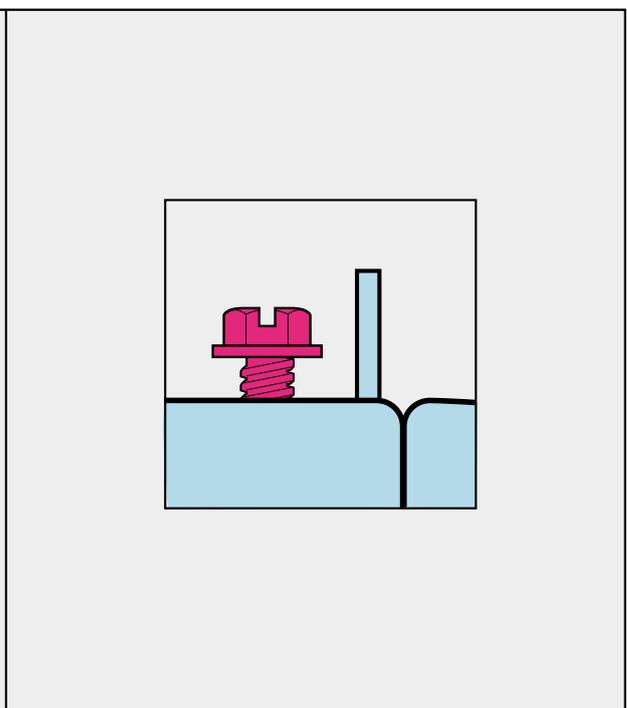
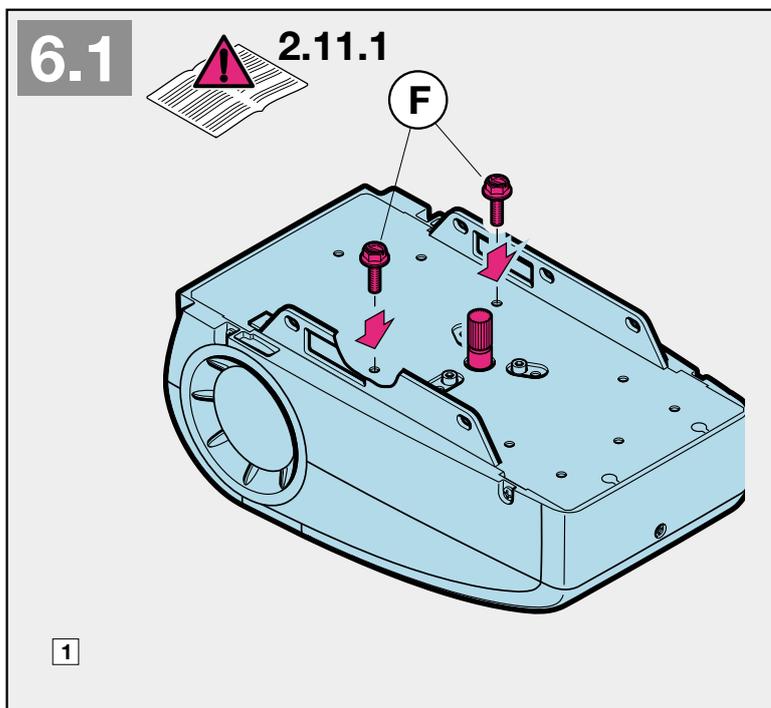
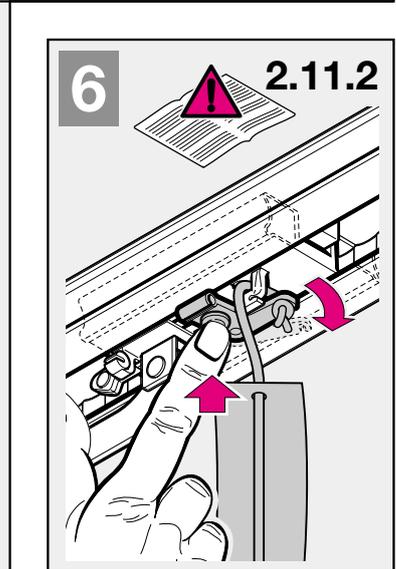
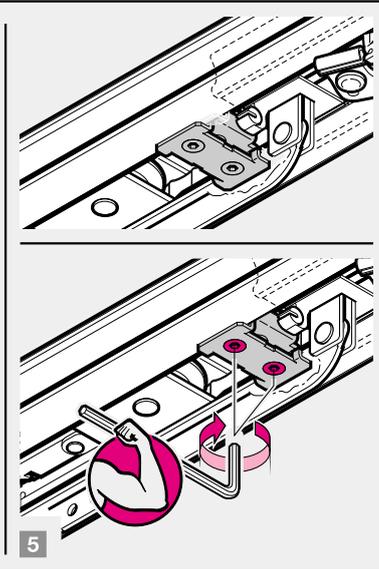
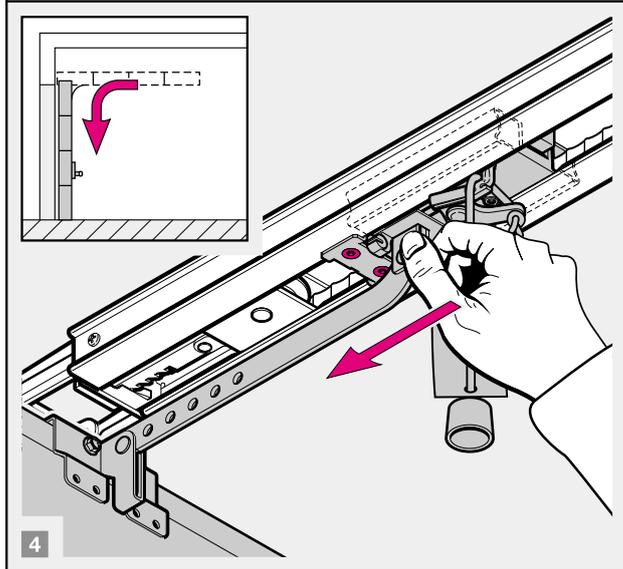
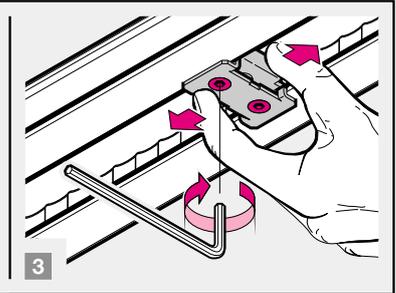
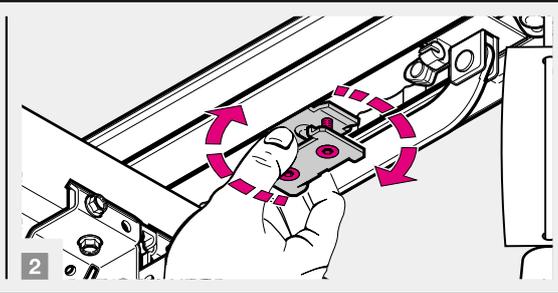
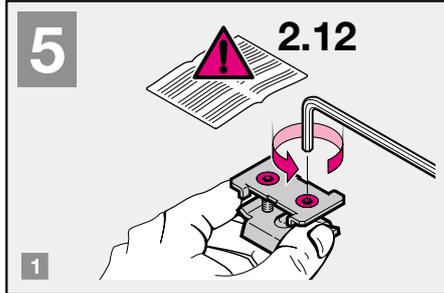
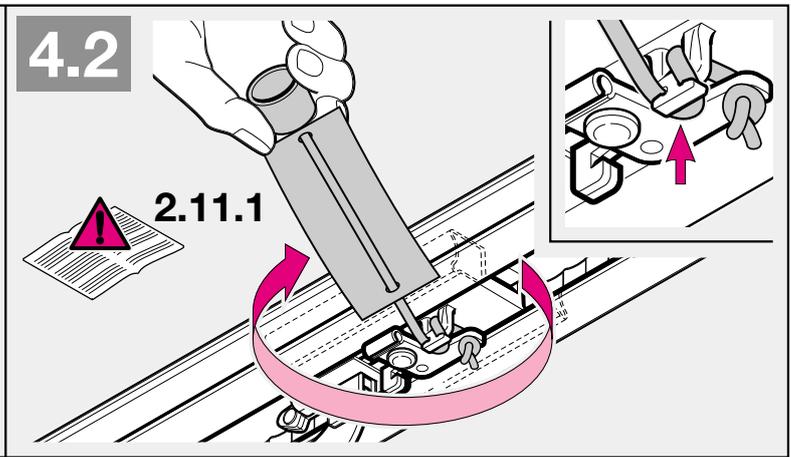
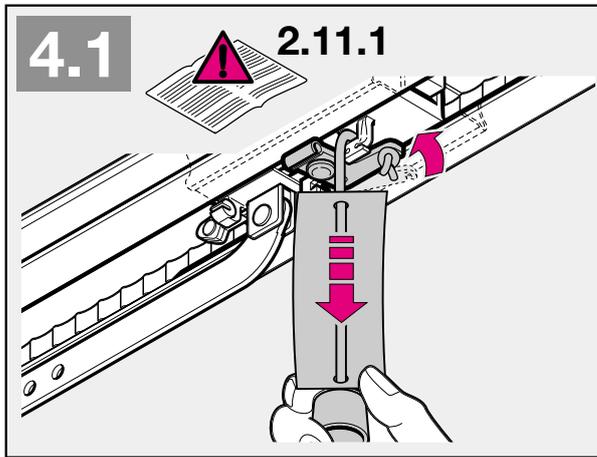


3.1b

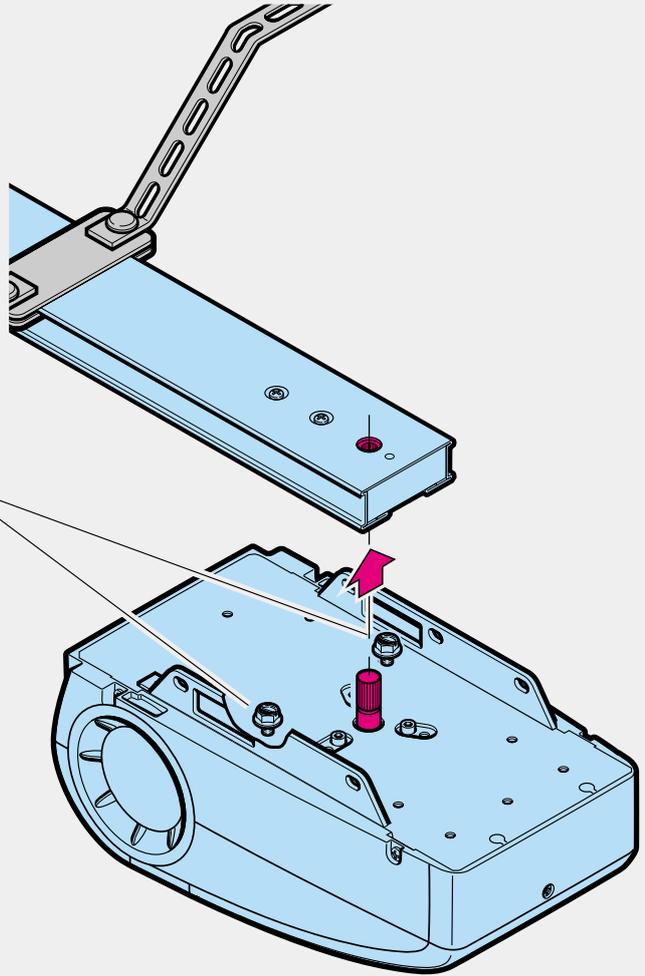
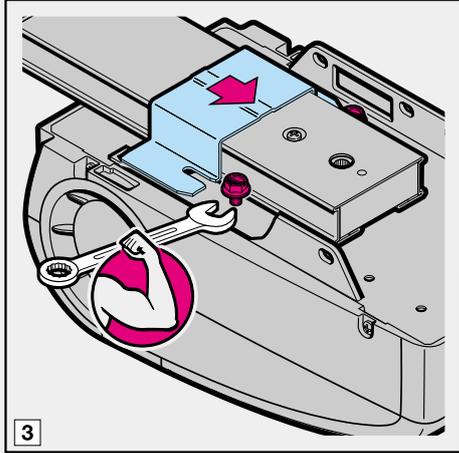


3.1b

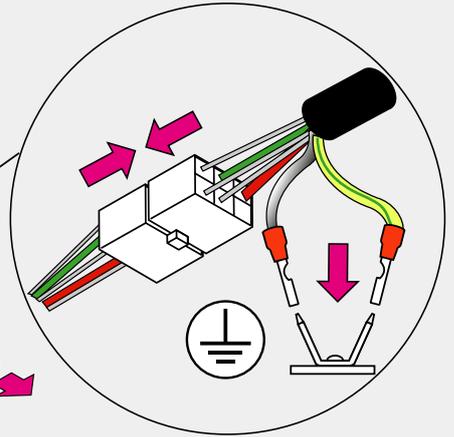
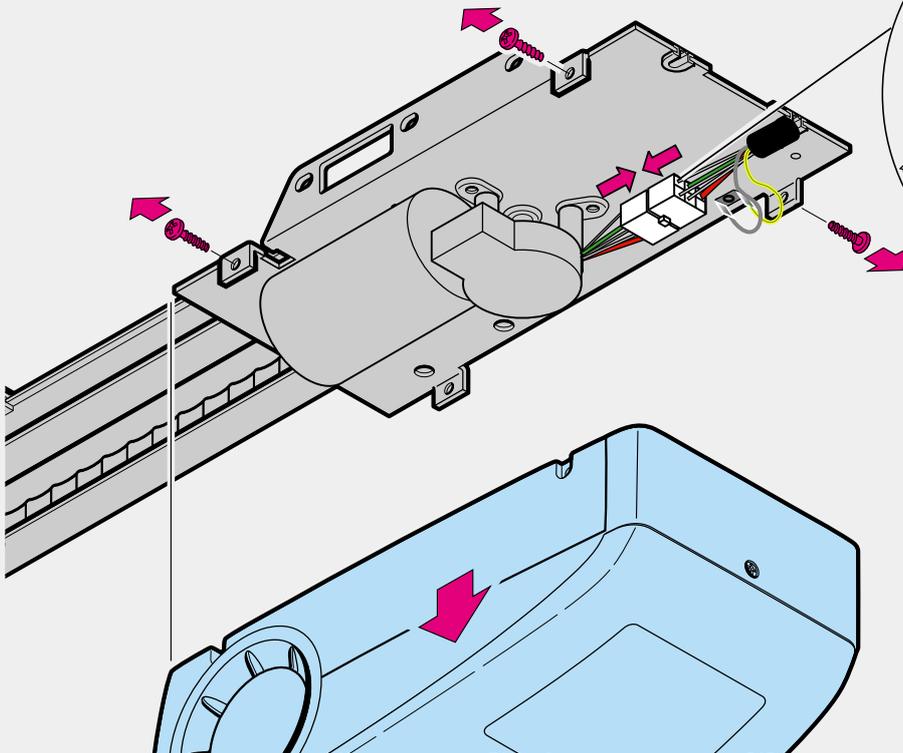


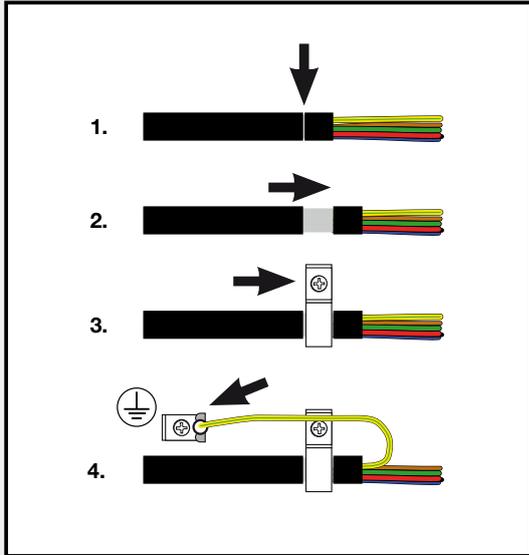


6.2

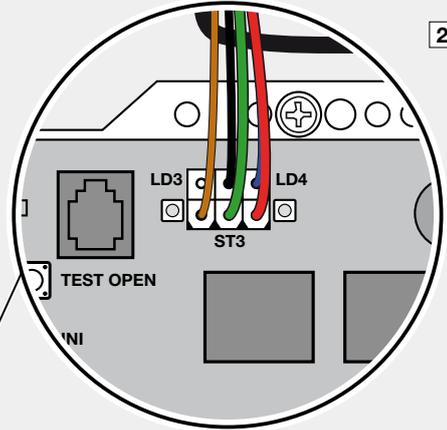


7

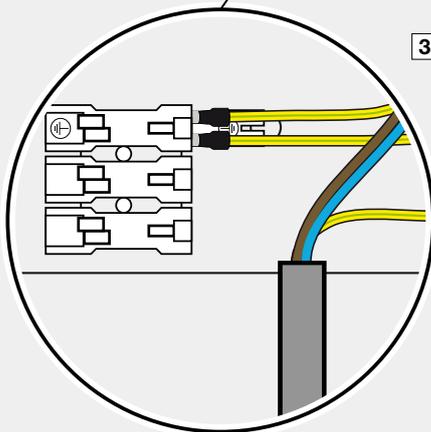
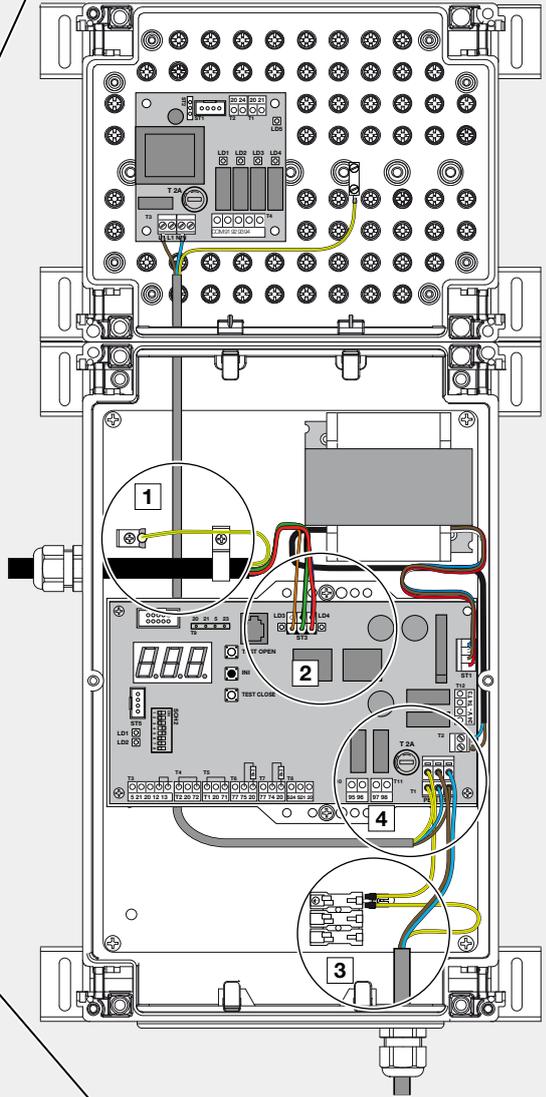
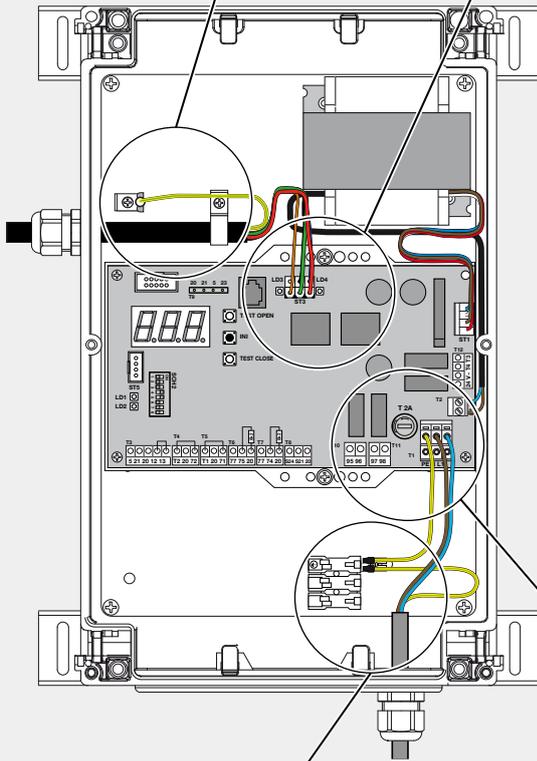




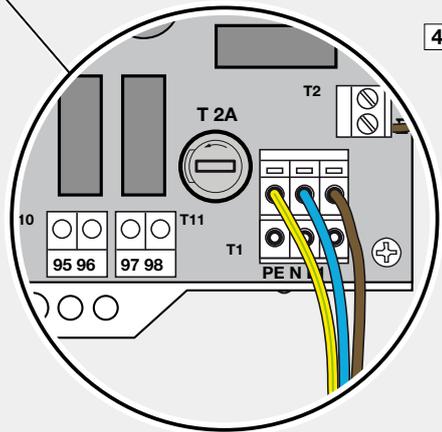
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2



3



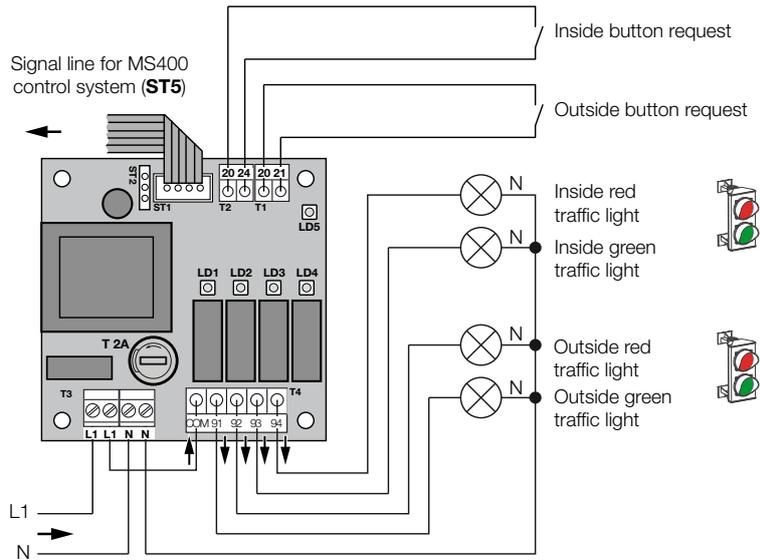
4

10.1



5.1-5.3

Example showing traffic lights with 230 V connection voltage

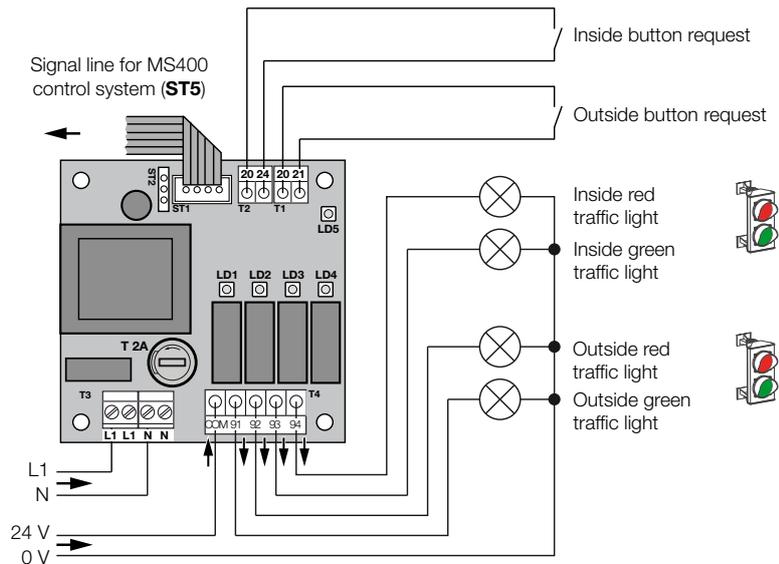


10.2



5.1-5.3

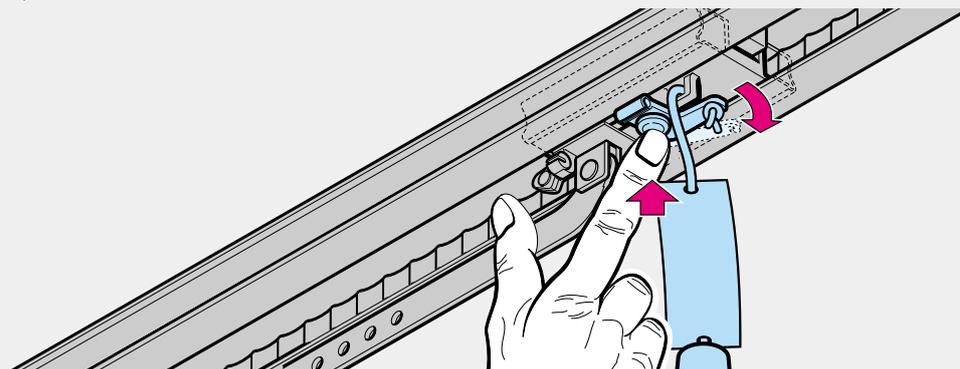
Example showing traffic lights with 24 V connection voltage



11



3.2.2 / 3.2.5



2 INSTALLATION INSTRUCTIONS

Note

When drilling work is being carried out, the drive must be covered, as drilling dust and chips could cause malfunctions.

2.1 Garage door opener

2.2 Space required to install the opener

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

Please check these dimensions!

2.3 On the sectional door, the mechanical door lock must be removed entirely (see Figure 1.3a).



PLEASE NOTE

When installing the opener, the rope pull must be removed (see Figure 1.2a).

2.4 Centrally positioned lock on sectional doors

On sectional doors with a centrally positioned lock, the lintel bracket and the door link bracket must be attached off-centre (see Figure 1.5a).

2.5 Off-centred reinforcement profile on sectional doors

In the case of an off-centred reinforcement profile on a sectional door, fit the door link bracket to the nearest reinforcement profile on the left or right (see Figure 1.5a).

Note

For wooden doors - contrary to the illustrated section - the wood screws 5x35 enclosed with the door must be used (hole \varnothing 3 mm).

2.6 The mechanical door locks on the up-and-over door must be disabled (see Figure 1.2b/1.3b/1.4b).

On **door models which are not listed** here, the latches must be locked in place by the customer.

2.7 Note

For **up-and-over doors with an ornamental wrought-iron handle** - contrary to the illustrated section (see Figure 1.5b/1.6b) - the lintel bracket and the door link bracket must be attached off-centre.

2.8 Guide rail



PLEASE NOTE

Depending on the intended use – only the guide rails recommended by us may be used for the garage door openers (see product information).

2.9 Before rail installation

Note

Before the guide rail is mounted to the lintel or ceiling, the carriage must be moved - in its engaged state (see Chapter 2.11.2) - approx. 20 cm out of the "Door Closed" limit position in the direction of the "Door Open" limit position. Once the limit stop and the opener have been installed, this is no longer possible with the guide rails in their engaged state (see Figure 2.1).

2.10 Installing the guide rail

Note

For openers used in multi-car garages and underground car parks, it is recommended that the guide rail be fastened to the ceiling with a **second support**; the installation is shown in Figure 2.4 and Figure 2.6.

2.11 Guide rail operating modes

The guide rail has two different operating modes:

2.11.1 Manual mode (see Figure 4.1)

The carriage is disengaged from the belt lock; i.e. there is no direct connection between the door and the opener, enabling the door to be moved by hand. To disengage the carriage, the rope for the mechanical release must be pulled.

Note

If the carriage is in the "Door Closed" limit position when it is disengaged, the rope of the mechanical release must be pulled and until the carriage has moved far enough along the rail that it can no longer hook into the limit stop (carriage travels a distance of approx. 3 cm). To be able to permanently operate the door manually, the rope must be fixed on the carriage as shown in Figure 4.2



PLEASE NOTE

In countries where standard **EN13241-1** is applicable, if the garage door opener is retrofitted by an expert to a **section door without spring compensation**, the installer responsible must also install a retrofit kit to the carriage. This kit comprises a screw to secure the carriage against inadvertent disengagement and a new pull rope sign, showing how to use the kit and carriage in the two guide rail operating modes.

2.11.2 Automatic mode (see Figure 6)

The belt lock is engaged in the carriage, i.e. the door and the opener are connected to one-another, allowing the door to be moved by the opener. To prepare the carriage for engagement, the green button must be pressed. The belt must then be moved towards the carriage until the belt lock engages into it.



PLEASE NOTE

Do not insert fingers into the guide rail while the door is moving → **Risk of crushing!**

2.12 Establishing the "Door Closed" limit position by fitting the limit stop (see Figure 5).

- 1) Insert the limit stop for the "Door CLOSED" limit position loosely into the guide rail between the carriage and the door and push the door by hand into the "Door Closed" limit position.
- 2) Then secure the limit stop for the "Door CLOSED" limit position.

Note

If the door cannot be easily pushed to the desired "Door Open" or "Door Closed" limit position by hand, then the door mechanism is too sluggish to be operated by the garage door opener, and must be inspected (see Chapter 1.1.2)!

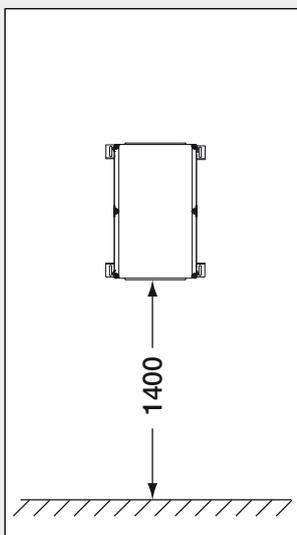
2.13 Tension on the toothed belt

The toothed belt of the guide rail is factory-set for optimum tension. During the starting and braking phases on larger doors the belt may temporarily hang out of the rail profile. This, however, is of no technical disadvantage, nor does it have any negative effect on the function and service life of the opener.

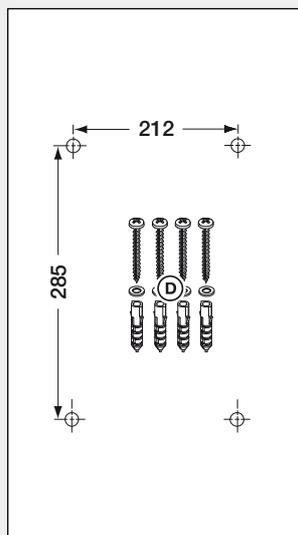
2.14 Installing the opener control system

The control system may not be operated in potentially-explosive areas. The housing should be installed using all of the supplied mounting feet, on an even, vibration-free surface. To ensure a user-friendly viewing height, a height of approx. 1400 mm is recommended for the bottom edge of the housing. The housing must not be further than 8 m from the opener motor.

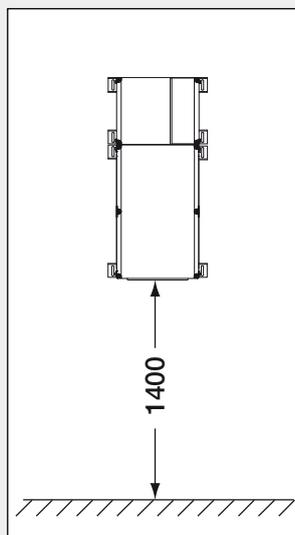
12



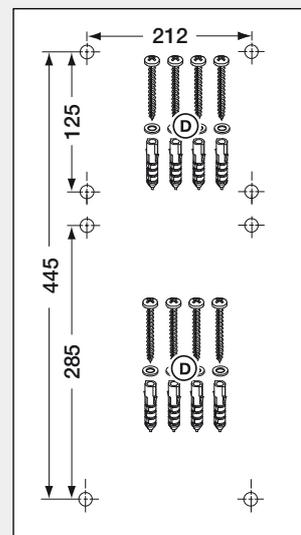
Installation height



Drilling pattern for control system housing fastening holes

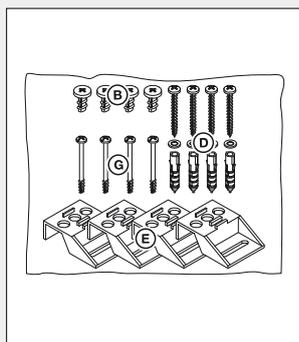


Installation height

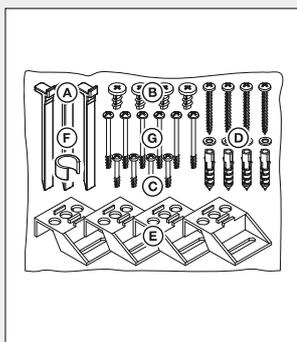


Drilling pattern for control system and auxiliary housing fastening holes

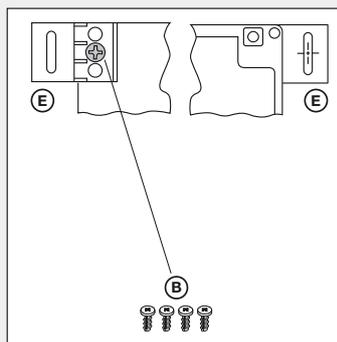
13



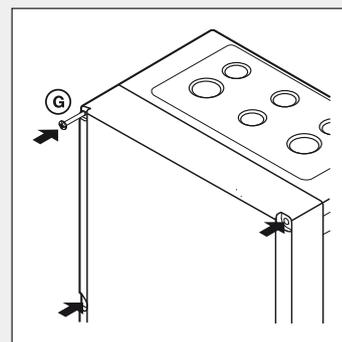
Accessory bag for expansion housing



Accessory bag for control system housing



Attachment of the mounting feet, view from front and rear



Install all cover screws

- 2.15 Connect **the supplied connection cable** to the opener (see Figure 7) and the control system (see Figure 8).
- 2.16 After inserting the connection cable into the control system housing, push the end of the sheathing approx. 10 mm to one side, connect the shielding braid of the connection cable to the earthing clamp and plug in the protective earth (see Figure 8).

3 COMMISSIONING THE GARAGE DOOR OPENER

3.1 Information on electrical work



PLEASE NOTE
Observe the following points for all electrical work:

- Electrical connections may only be performed by a skilled electrician!
- The on-site electrical installation must comply with the respective safety regulations (230/240 V AC, 50 Hz)!
- Before working on the opener, always unplug it from the mains!
- Applying external voltage to the connection terminals of the control system will destroy the electronics!
- To avoid malfunctions, ensure that the control cables of the opener (24 V DC) are laid in an installation system separate from the other supply lines (230 V AC)!

3.2 Commissioning the opener

The opener has a non-volatile memory which stores door-specific data (travel distance, forces required during the door run, etc.) during the teach-in process, and which is updated in the course of subsequent door runs. This data is only valid for this particular door. Therefore when using the opener with another door or if the running characteristics of the door substantially change (e.g. if the limit stop is subsequently moved or new springs installed, etc.), it must be taught in again from scratch.



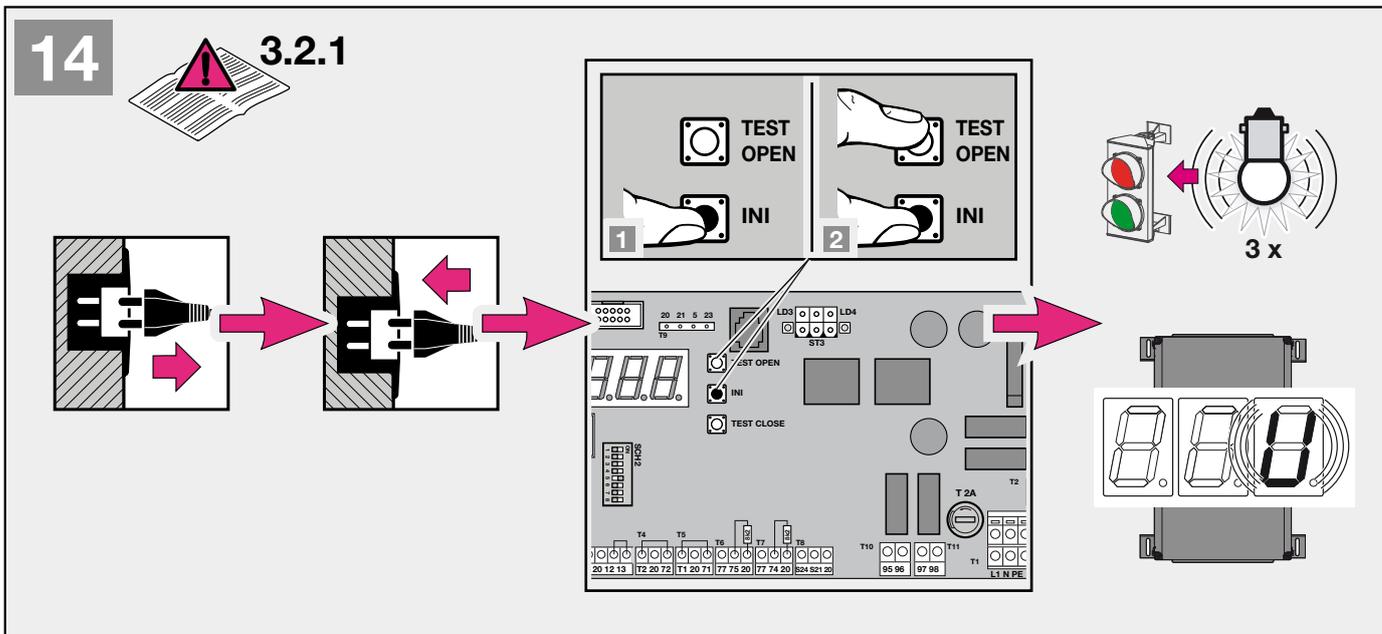
PLEASE NOTE
Initial commissioning should be carried out by an expert. The process must be logged in writing. The opener is only one part of a door. The firm responsible for the overall door system should issue the Declaration of Conformity and affix the CE mark. Affixing the CE mark to the door and issuing the EC Declaration of Conformity serves to document compliance with the EC Machinery Directive.

3.2.1 Deleting the door data (see Figure 14)

Should it prove impossible to successfully complete the teach-in process, in spite of multiple attempts, a reset of the read-in data is recommended. It can be deleted as follows:

- 1) Unplug from the mains.
- 2) Plug back in.
- 3) Within **15 secs**, press and hold the black button and then also the white **TEST OPEN** or **TEST CLOSE** button until the red traffic light flashes **3x**.
- 4) Release the buttons again once the software version "**U**" appears on display.
- 5) All distance and force data has now been deleted.

Upon delivery, the door data is already deleted and the opener teach-in process can be started immediately → see Chapter 3.2.2 - Teaching in the opener.



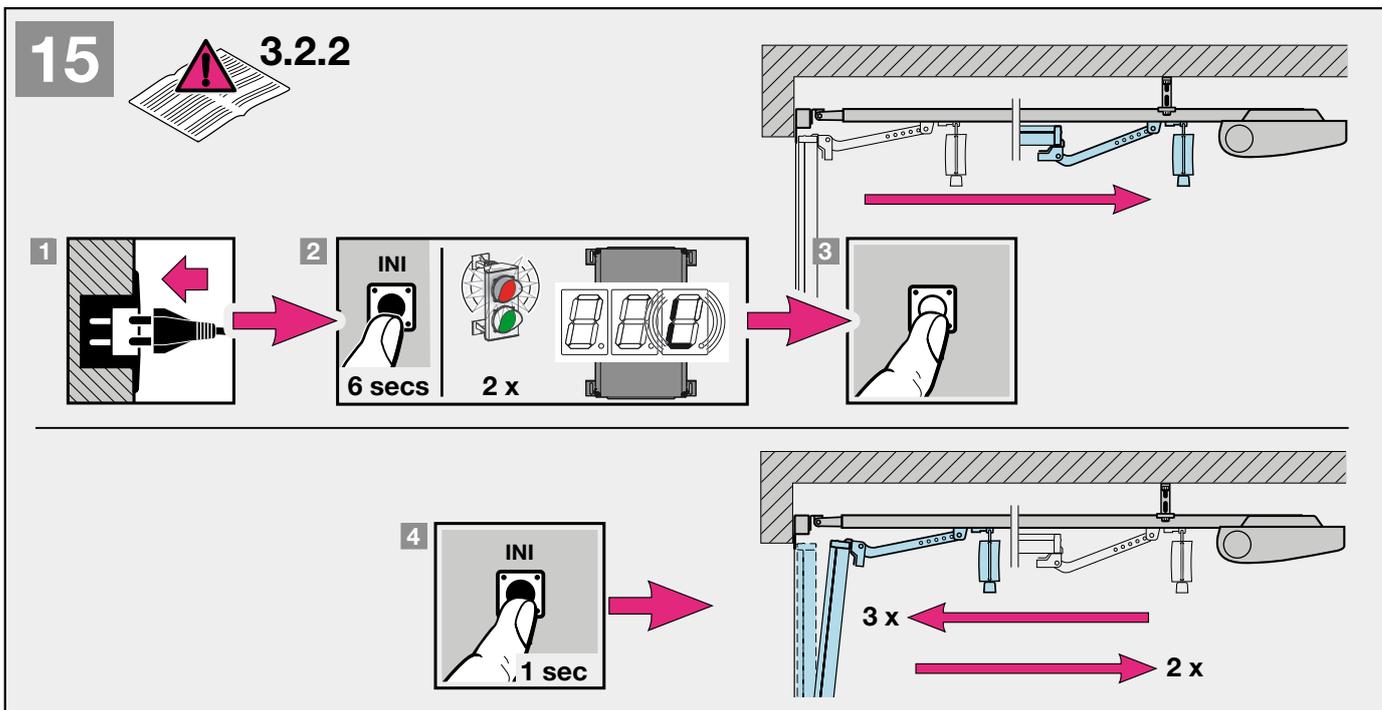
3.2.2 Teaching in the opener (see Figure 15)



PLEASE NOTE

Since force shutdown does not work during teach-in mode, it is mandatory for the installer to stay with the device and prevent anyone from approaching the door.

Also, please note that teach-in mode ends automatically when the "Door Closed" position is reached.



- 1) Connect the mains plug to the earthed socket. After the opener is plugged in, "U" flashes on the display and the red traffic light flashes 3x if there is still no data (distance and force data) in the memory. Check again whether the carriage has engaged in the door link (see Figure 11). The DIP switches are on their factory setting (**DIP SCH2: 5 to ON; 1, 2, 3, 4, 6, 7 and 8 to OFF**), all wire jumpers and 8k2 resistors are connected (see Figure 9).
- 2) **Press and hold** the black **INI** button (for approx. 6 secs) until an "L" appears (flashes) on the display and the red traffic light starts to flash. After 2 flashes, release the teach-in button.
- 3) The door should then be moved to its "**Door Open**" position using the white control buttons. The door continues moving in the Open direction while the white **TEST OPEN** button remains pressed (deadman mode). When the button is released, the door stops immediately. The next time the **TEST OPEN** button is operated, the door continues in the Open direction. The door can be moved in the Close direction in deadman mode using the **TEST CLOSE** button. This process is repeated until the desired "**Door Open**" position is reached. In its "OPEN" position, the door must not be pushing against a mechanical limit stop. This can result in a fault message (4 flash signals and the interruption of teach-in mode). In its "Open" position, the door must still be a minimum of roughly 5 cm from its limit stop.

- 4) Briefly press the black **INI** button. The rest of the opener's settings are configured automatically! The door slowly moves to the "**Door Closed**" position. During this run, the distance is taught in (the red traffic light flashes twice). Then the door moves another twice in the Open direction and twice in the Close direction, in order to learn the required current values (the red traffic light flashes three times).
- 5) After the five teach-in runs, the door is in the "Closed" position, and the red traffic light switches off.

The opener is now fully taught-in and ready for use.

Note

If the opener has already been taught in, start at point 2 to teach in new distance and force values.

If the force during the distance teach-in run is insufficient, it can be increased as follows:

Pressing the black INI button (for at least 3 secs) during the distance teach-in run switches the max. permissible shutdown speed from 50% to 40%. The decimal point flashes for 3 secs to show that switching was successful.

For sectional doors, we recommend leaving DIP 4 in the "OFF" position before the teach-in phase.

3.2.3 Force adjustment and behaviour after a safety shutdown if an obstacle is encountered

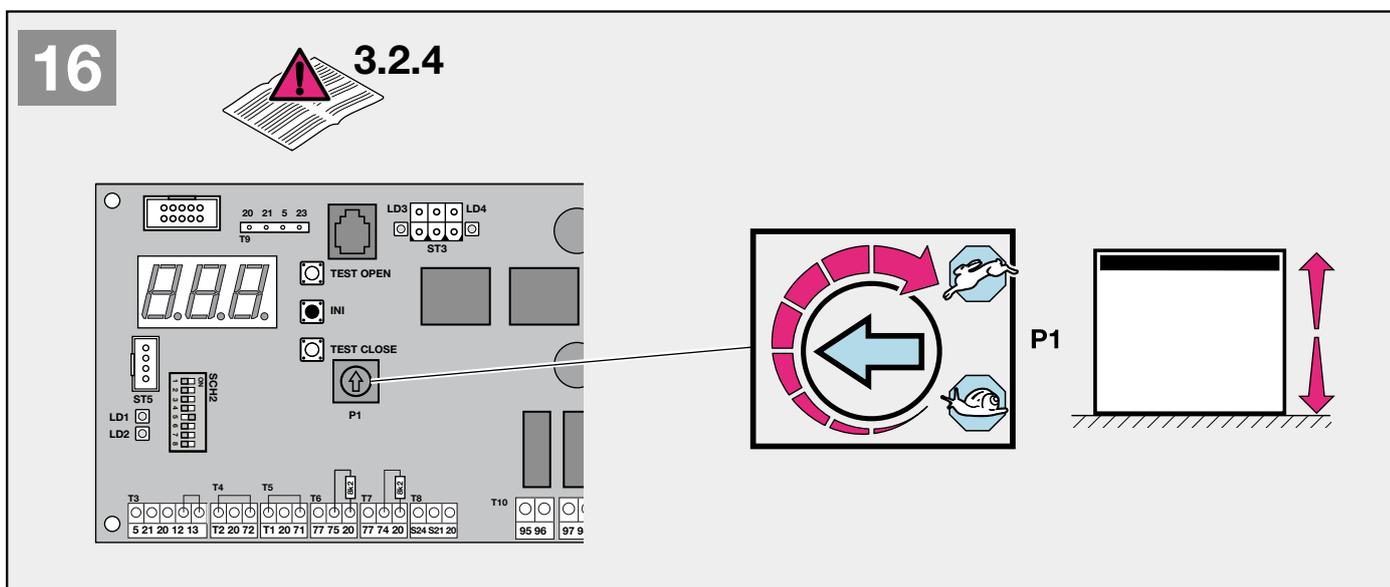
The forces required and stored for the open and close run during teach-in are also updated during subsequent door runs. Therefore, for safety reasons, it is necessary that these values are not adjusted indefinitely as the running characteristics of the door slowly worsen (e.g. reduction in spring tension), otherwise manual operation of the door, which may become necessary, could pose a risk to safety (e.g. from the door falling over). For this reason, upon delivery, **the maximum force for the Open and Close run is preset in the processor, so it is safe in the event of single faults or power failure.** The maximum force set in the processor only has a slight influence on the sensitivity of force limitation, as the **forces** actually **required** are saved during the teach-in run. The factory-set force is appropriate **for the operation of standard doors.**

3.2.4 Adjusting the running speed

The running speed of the opener can be modified if necessary. A potentiometer, which is accessible after opening the control system cover and is labelled **P1**, is provided to adjust the speed (see Figure 16). Turning it clockwise increases the speed, and anticlockwise reduces it. The speed is factory-set to max. (**P1** at clockwise stop).

Note

After modifying the running speed, the opener must be taught in again from scratch!



3.2.5 Programming the Partial Open position (see Figure 17)

The opener is ready for operation and in the "Door Closed" limit position. Check again whether the carriage has engaged in the door link (see Figure 11).

- 1) **Press and hold** the black **INI** button (for approx. 6 secs) until an "L" appears (flashes) on the display and the red traffic light starts to flash. 2 flashes, then also **press and hold** the white **TEST OPEN** or **TEST CLOSE** button (for approx. 2 secs) until the red traffic light shows **2 quick flashes** and "HL" appears on the display. Then release both buttons.
- 2) The door should then be moved to the "**Partial Open**" position using the white control buttons. The door continues moving in the Open direction while the white **TEST OPEN** button remains pressed (deadman mode). When the button is released, the door stops immediately. The next time the **TEST OPEN** button is operated, the door continues in the Open direction. The door can be moved in the Close direction in deadman mode using the **TEST CLOSE** button. This process is repeated until the desired "**Partial Open**" position is reached.

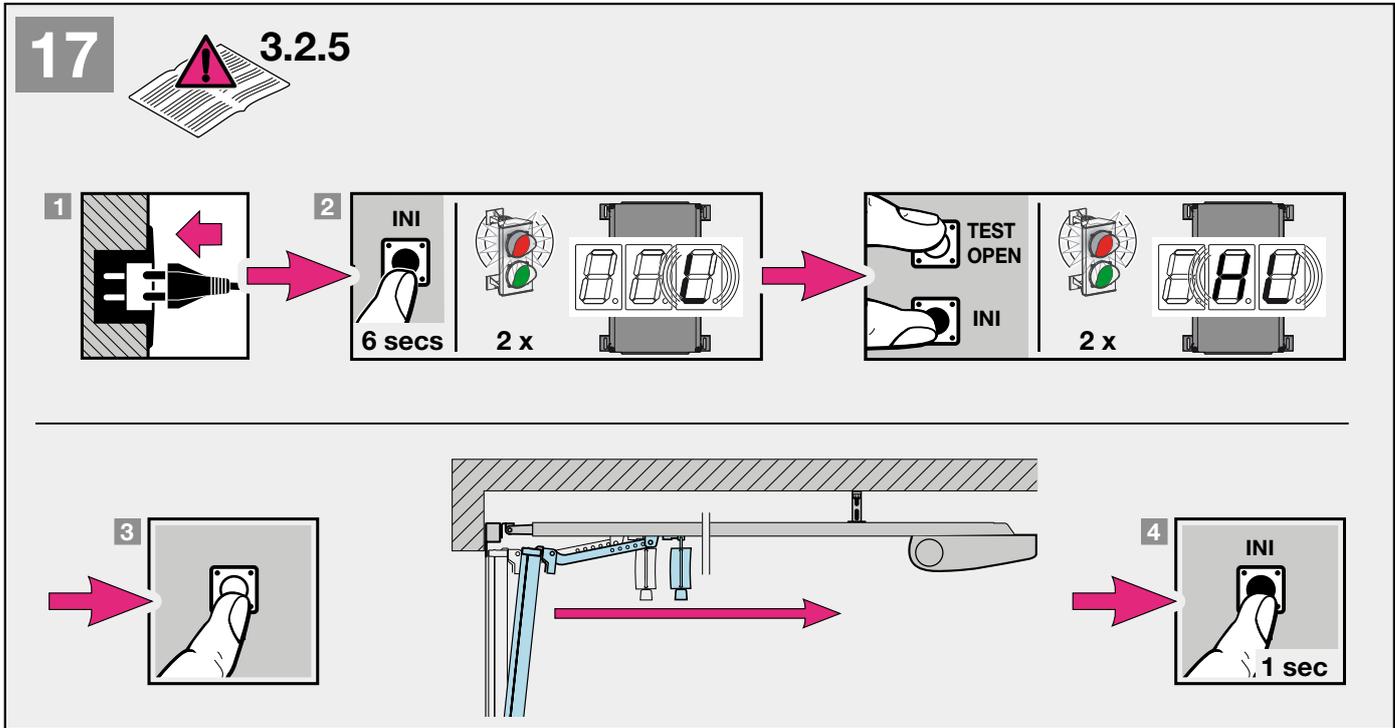
3) Briefly press the black teach-in button; the display shows "H". The position for "Partial Open" is now programmed.

Note

With automatic closing set, closing only occurs from the "Partial Open" limit position, if the distance to the "Door Closed" limit position is > 500mm! If the opening distance is smaller than this, the door must be closed by issuing another command with the Partial Open button.

Note

With a traffic light card connected, no Partial Open function is available!



4 INSTALLING THE GARAGE DOOR OPENER AND ACCESSORIES

4.1 Information on electrical work



PLEASE NOTE

Observe the following points for all electrical work:

- Electrical connections may only be performed by a skilled electrician!
- The on-site electrical installation must comply with the respective safety regulations (230/240 V AC, 50 Hz)!
- Before working on the opener, always unplug it from the mains!
- Applying external voltage to the connection terminals of the control system will destroy the electronics!
- To avoid malfunctions, ensure that the control cables of the opener (24 V DC) are laid in an installation system separate from the other supply lines (230 V AC)!

4.2 Connecting an external radio receiver

The radio receiver should be connected as follows:

The connector for the receiver is plugged into the corresponding 4-pin slot (T9) (see Figure 18):

- terminal 20 (0 V)
- terminal 21 (Channel 1)
- terminal 23 (Channel 2)
- terminal 5 (+24 V)

For information on how to program the remote controls to the receiver, please refer to the respective manual for the radio receiver.

Note

The antenna wire of the radio receiver should not come into contact with metal objects (nails, struts, etc.). You must establish the best placement by trial and error. Simultaneous use of GSM 900 mobile phones can affect

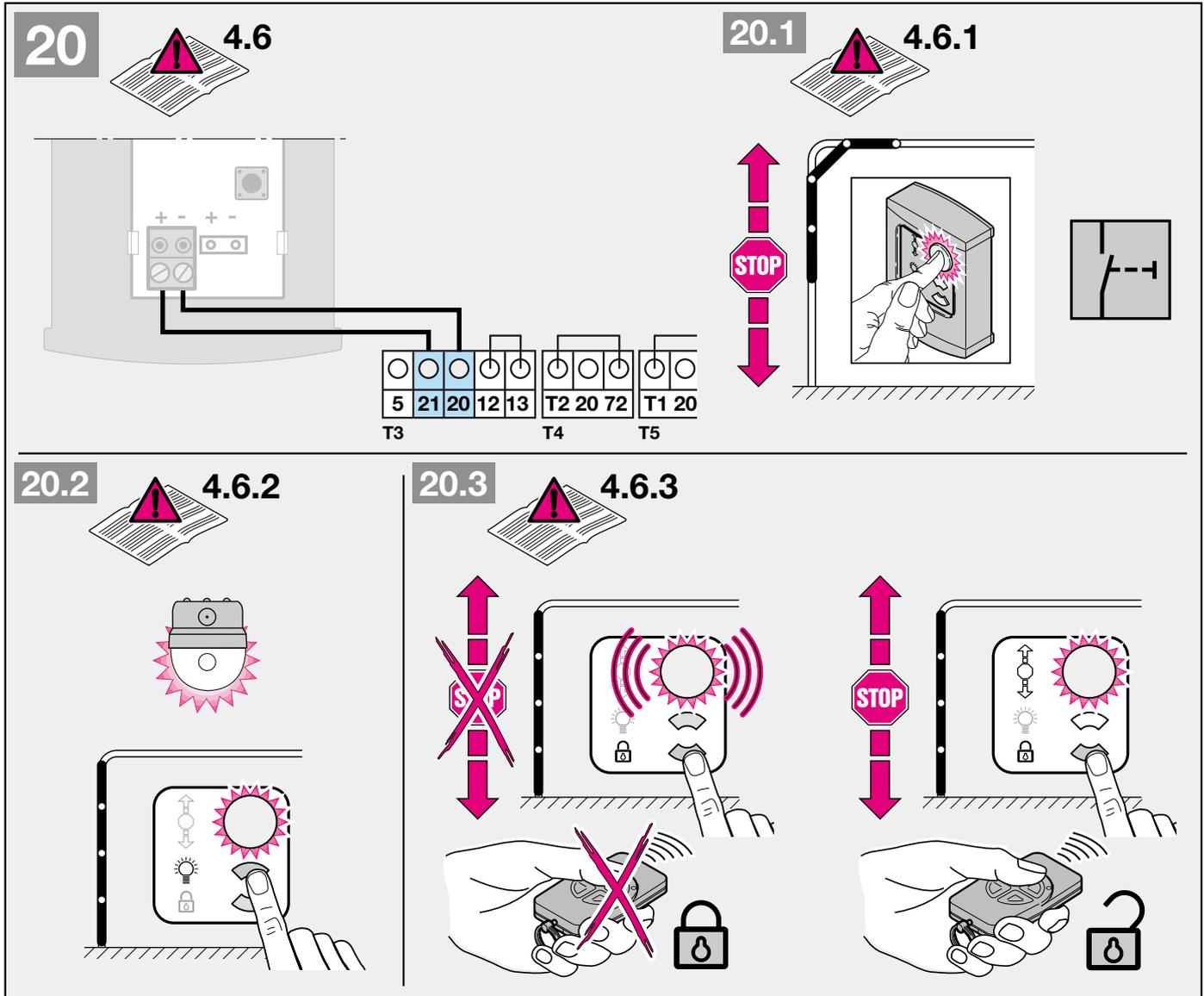
4.6.1 Pulse buttons for triggering or stopping door runs (see Figure 20.1).

4.6.2 Light button for switching the external lighting on and off (see Figure 20.2).

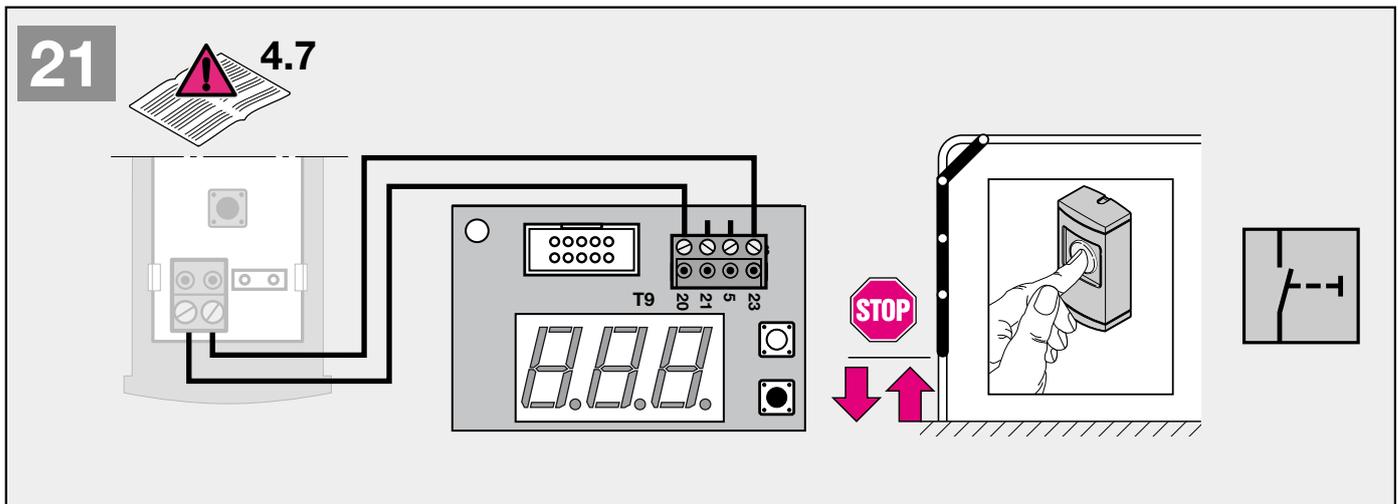
Note

The function of the light button is dependent on the setting in menu P01.

4.6.3 Button for switching the remote system on and off (see Figure 20.3).



4.7 Connecting external "Partial Open" buttons* for triggering or stopping door runs



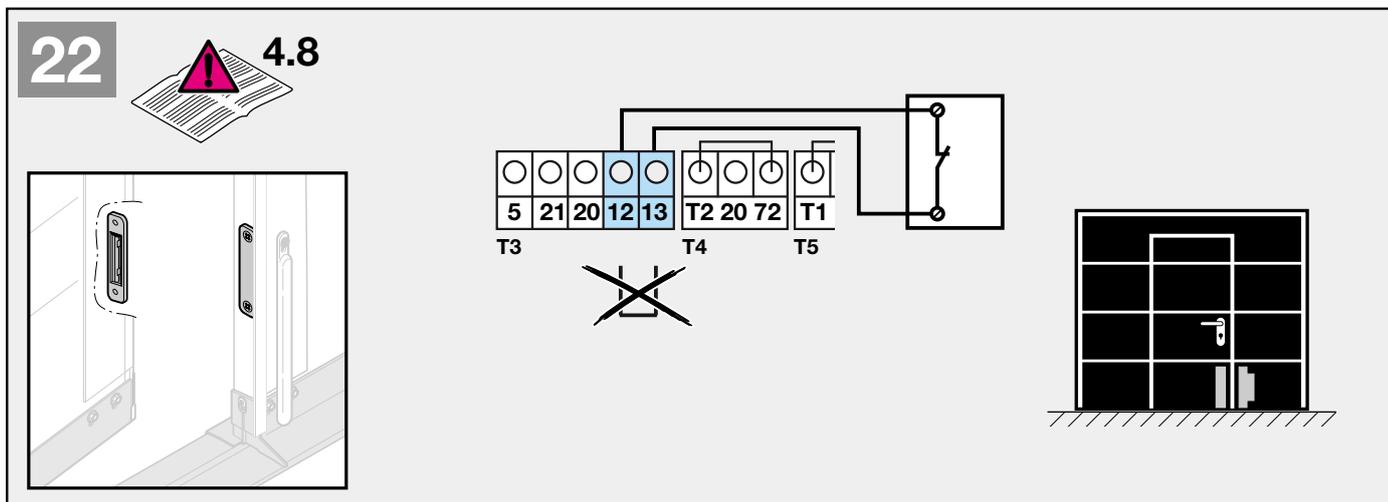
One or more buttons with NO contacts (potential-free), e.g. inside or key switch, can be connected in parallel (see Figure 21).

- 1) First contact to terminal **23** (pulse input, Partial Open).
- 2) Second contact to terminal **20** (0 V).

Note:

With automatic closing activated, and the traffic light card connected, the Partial Open function is deactivated. In this case, the Partial Open input has the function of the "Inside" request.

4.8 Connecting an off switch* or a wicket door contact* (must have positive opening action) to stop and/or switch off the opener (stop or emergency stop circuit)



An off switch with NC contacts (potential-free) is connected as per Figure 22:

- 1) Remove the wire jumper between terminals **12** and **13**.
- 2) Connect the potential-free NC contact to terminals **12** and **13**.

Note

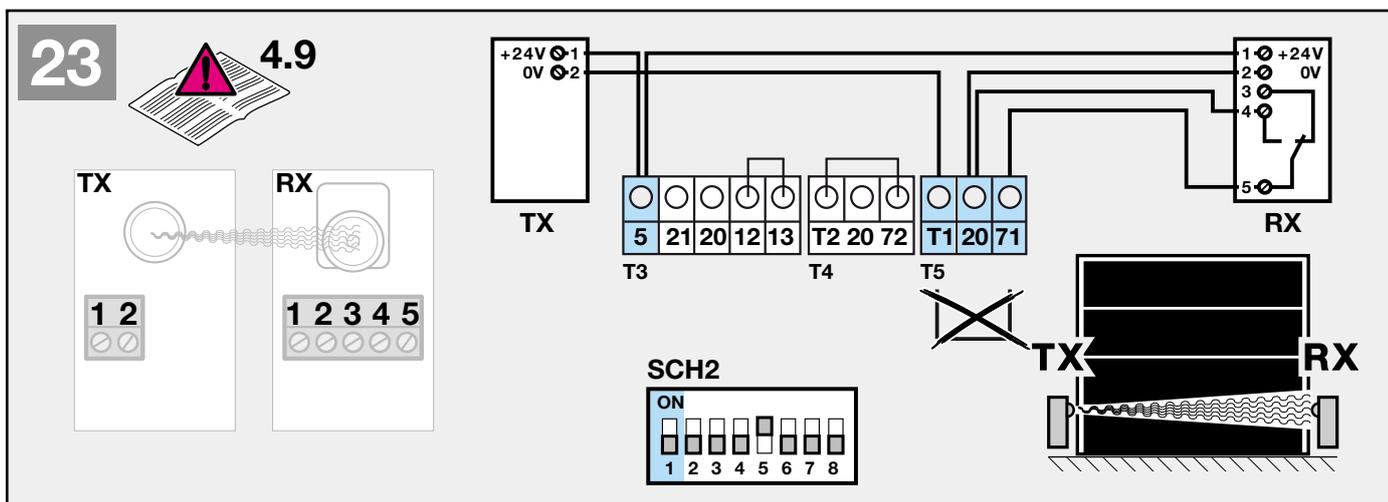
Breaking the contact stops any door movements which are in progress immediately and permanently prevents further movements. The red traffic light shows a **1-flash** pulse code and **LED 1** and **LED 2** flash. The display shows fault code **F05**. With automatic closing set, after a stop command the opener must be started again with another pulse; there will be no more movement of the door without another pulse, not even after the stop circuit is closed

If the "Wicket door switch" input (between terminals 12 and 13) is used for safety purposes, all components connected to terminal 12 must be earth fault proof.

4.9 Connecting a contact light barrier* in the CLOSE direction for triggering a safety recoil

A contact light barrier with potential-free NC contact is connected as per Figure 23:

- 1) Remove the wire jumper between terminals **T1** and **71**.
- 2) Connect the potential-free NC contact to terminals **71** (safety input) and **20** (0 V).
- 3) Connect the power supply for the light barrier receiver (**RX**) to terminals **5** (approx.+24V) and **20** (0V).
- 4) Connect the power supply for the light barrier transmitter (**TX**) to terminals **5** (approx.+24V) and **T1** (0V with test).
- 5) DIP switch **1 (SCH2)** must be set to **OFF**.



Note

If the light barrier is interrupted during the "Door Close" run, a reversal in the Open direction occurs. The behaviour of the obstacle release system is dependent on the setting in menu **P10**. With automatic closing set, the duration of the keep-open time after the light barrier area has been vacated is determined by the setting in menus **P13** and **P14**.
The light barrier is only active in "Door Close" direction. The red traffic light shows a **1-flash** pulse code and **LED 2** flashes. The display shows fault code **F08**.

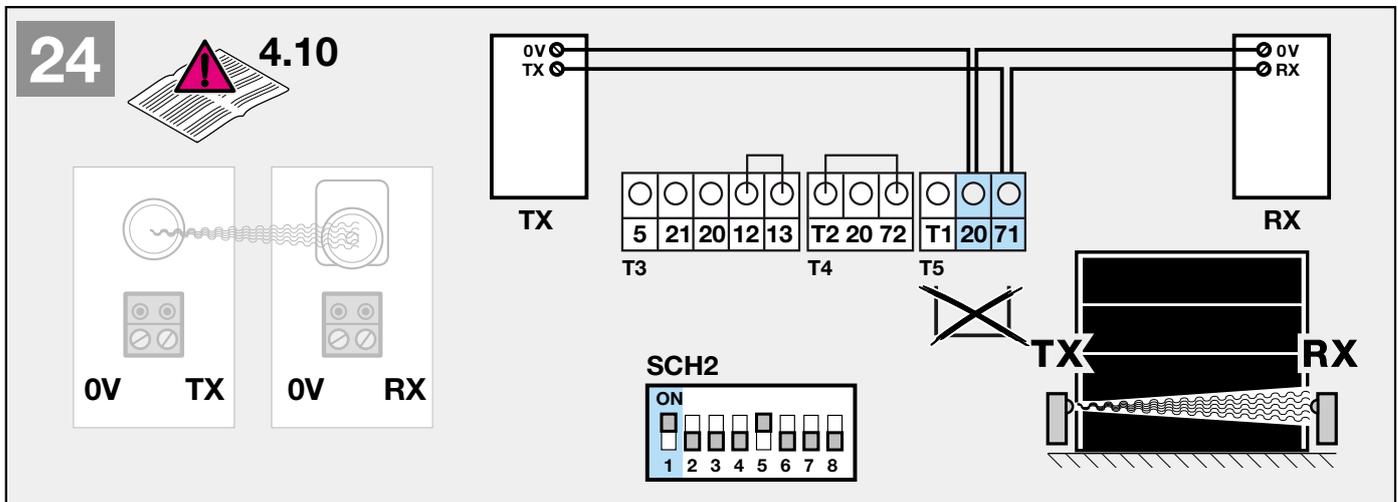
Note

The CLOSE light barrier is tested in the "Door Open" end position, each time before the door starts to move in the Close direction. If the light barrier test is unsuccessful, the door is prevented from closing; the red traffic light shows a **1-flash** pulse code and **LED2** flashes. The display shows fault code **F38**. The fault message can be acknowledged by repeating the command, and after the keep-open time has elapsed or another command in the Close direction is received, another attempt is made to close the door.

4.10 Connecting a two-wire light barrier* in the CLOSE direction for triggering a safety recoil

A two-wire light barrier (safety device EL101 or EL301) is connected as per Figure 23:

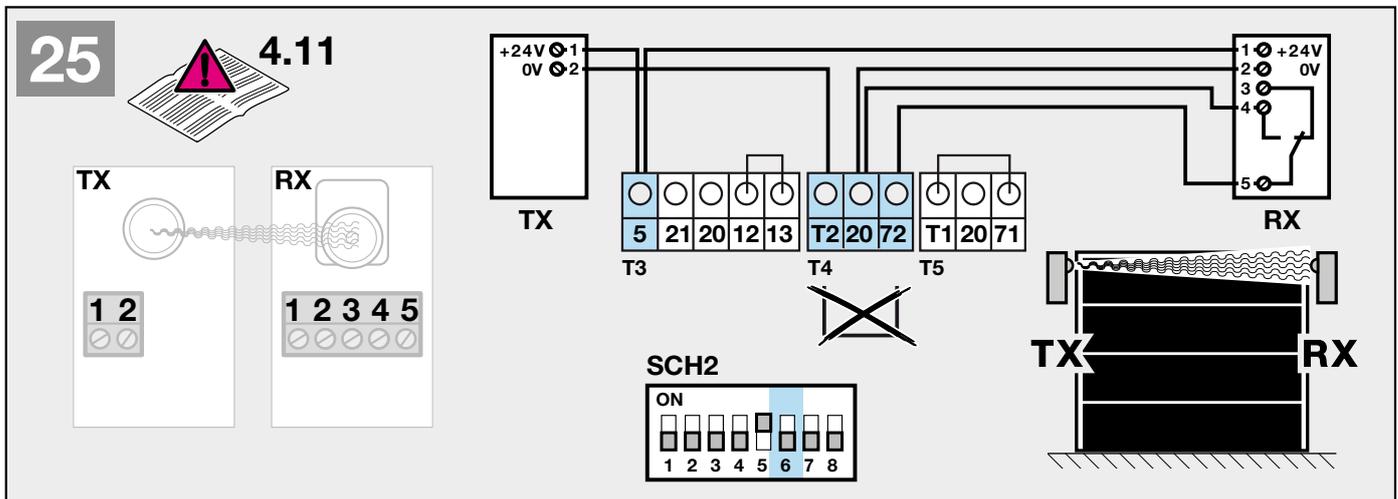
- 1) Remove the wire jumper between terminals **T1** and **71**.
- 2) Connect the contact of the light barrier (**EL301**) **RX** and **TX** to terminal **71** (safety input) and contact 0 to terminal **20** (0 V).
Connect the contacts of the light barrier (**EL101**) to terminal **71** (safety input) and terminal **20** (0 V) - there is no need to pay attention to the polarity of the connections, however, as they are interchangeable.
- 3) DIP switch **1 (SCH2)** must be set to **ON**.



Note

If the light barrier is interrupted during the "Door Close" run, a reversal in the Open direction occurs. The behaviour of the obstacle release system is dependent on the setting in menu **P10**. With automatic closing set, the duration of the keep-open time after the light barrier area has been vacated is determined by the setting in menus **P13** and **P14**.
The light barrier is only active in "Door Close" direction. The red traffic light shows a **1-flash** pulse code and **LED 2** flashes. The display shows fault code **F08**.

4.11 Connecting a contact light barrier* in the OPEN direction for triggering a safety recoil



A contact light barrier with potential-free NC contact is connected as per Figure 25:

- 1) Remove the wire jumper between terminals **T2** and **72**.
- 2) Connect the potential-free NC contact to terminals **72** (safety input) and **20** (0 V).
- 3) Connect the power supply for the light barrier receiver (**RX**) to terminals **5** (approx.+24V) and **20** (0V).
- 4) Connect the power supply for the light barrier transmitter (**TX**) to terminals **5** (approx.+24V) and **T2** (0V with test).
- 5) DIP switch **6 (SCH2)** must be set to **OFF**.

Note

If the light barrier is interrupted during the "Door Open" run, a course reversal in the Close direction occurs. The light barrier is only active in "Door Open" direction. The red traffic light shows a **1-flash** pulse code and **LED 1** flashes. The display shows fault code **F31**.

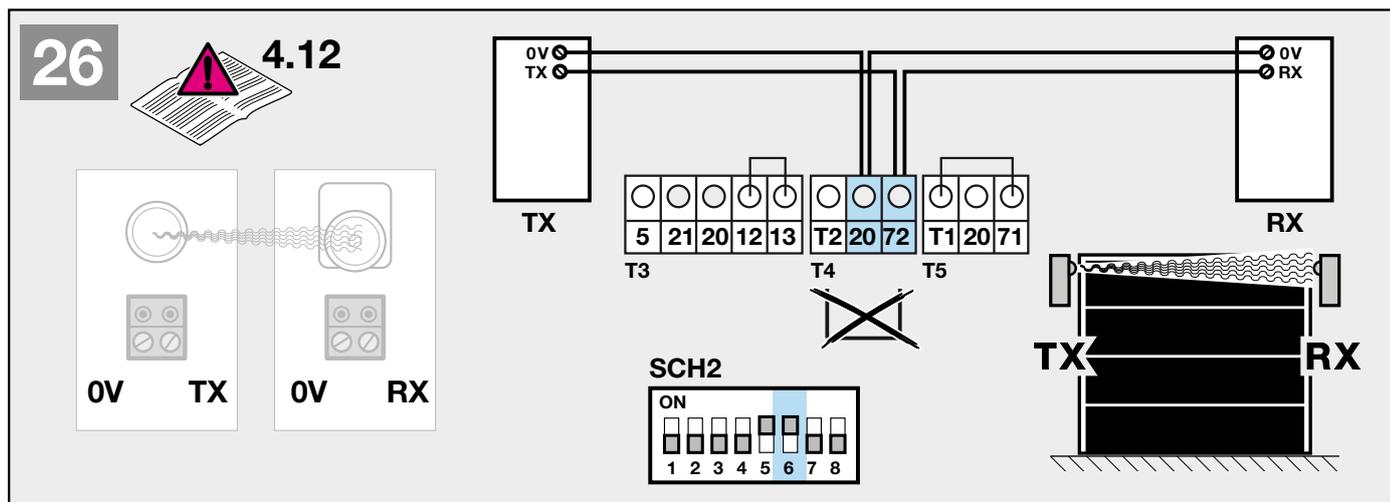
Note

The OPEN light barrier is tested in the "Door Closed" end position, each time before the door starts to move in the Open direction. If the light barrier test is unsuccessful, the door is prevented from opening; the red traffic light shows a **1-flash** pulse code and **LED1** flashes. The display shows fault code **F37**. The fault message can be acknowledged by repeating the command, and after a second command in the Open direction is received, another attempt is made to open the door. If the OPEN light barrier is defective, the door can be moved to the "**Door OPEN**" limit position with an external button or the **TEST OPEN** circuit board button in deadman mode.

4.12 Connecting a two-wire light barrier* in the OPEN direction for triggering a safety recoil

A two-wire light barrier (safety device EL101 or EL301) is connected as per Figure 26:

- 1) Remove the wire jumper between terminals **T2** and **72**.
- 2) Connect the contact of the light barrier (**EL301**) **RX** and **TX** to terminal **72** (safety input) and contact **0** to terminal **20** (0 V). Connect the contacts of the light barrier (**EL101**) to terminal **72** (safety input) and terminal **20** (0 V) - there is no need to pay attention to the polarity of the connections, however, as they are interchangeable.
- 3) DIP switch **6 (SCH2)** must be set to **ON**.



Note

If the light barrier is interrupted during the "Door Open" run, a course reversal in the Close direction occurs. The light barrier is only active in "Door Open" direction. The red traffic light shows a **1-flash** pulse code and **LED 1** flashes. The display shows fault code **F31**. If the OPEN light barrier is defective, the door can be moved to the "**Door OPEN**" limit position with an external button or the **TEST OPEN** circuit board button in deadman mode.

4.13 Connecting an 8k2 closing edge safety device* in the CLOSE direction for triggering a safety recoil

A closing edge safety device with **8k2 resistor** is connected as per Figure 27:

- 1) Remove the connected **8k2 resistor** from terminals **20** and **74**.
- 2) Connect the closing edge safety device to terminals **74** (safety input) and 20 (0 V).
- 3) DIP switch **2 (SCH2)** must be set to **OFF**.

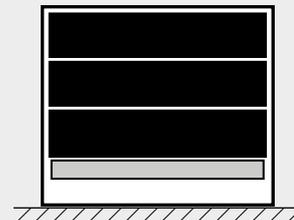
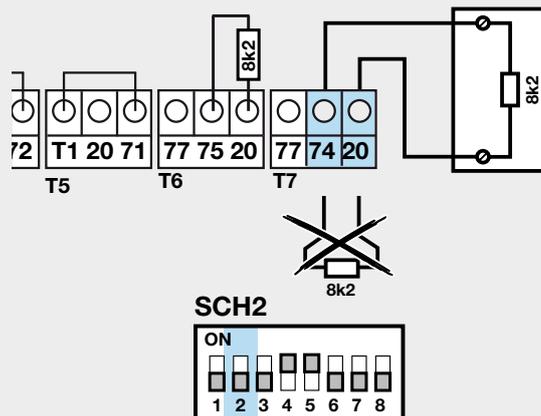
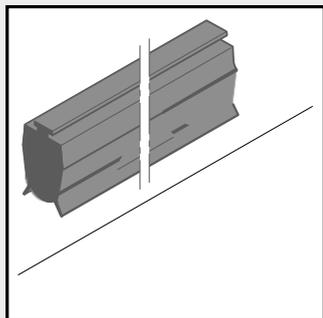
Note

If the safety contact edge is activated during the "Door Close" run, there is a reversal in the Open direction, depending on the setting in menu **P11**. The input is only active in "Door Close" direction. The red traffic light shows a **1-flash** pulse code and **LED 2** is permanently lit. The display shows fault code **F09**. If the door reverses **twice** to the "Door Open" limit position due to the safety contact edge, automatic closing is disabled. The red traffic light shows a **2-flash** pulse code and the display shows fault code **F27**. The fault message must be acknowledged via an external button or one of the white circuit board buttons. Only after acknowledgement does the keep-open time begin to count down.

27



4.13



4.14 Connecting an optical closing edge safety device (Fraba) * in the CLOSE direction for triggering a safety recoil

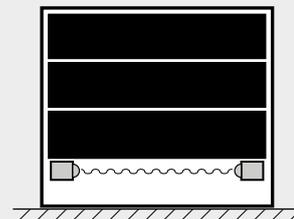
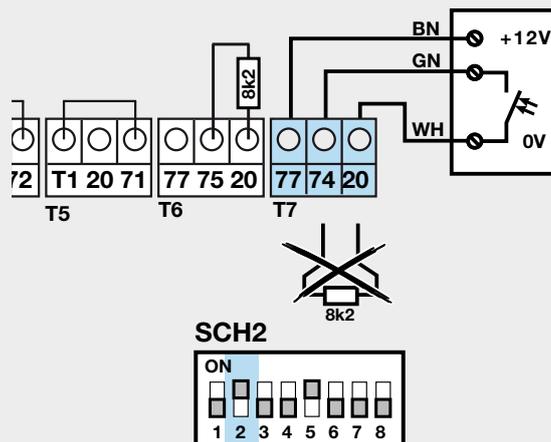
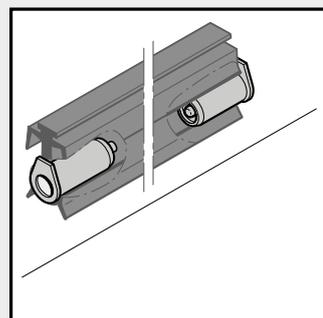
A closing edge safety device with **optical sensor** is connected as per Figure 28 :

- 1) Remove the connected **8k2 resistor** from terminals **20** and **74**.
- 2) Connect the closing edge safety device to terminals **77** (+12 V / brown wire), **74** (safety input / green wire) and **20** (0 V / white wire).
- 3) DIP switch **2 (SCH2)** must be set to **ON**.

28



4.14



Note

If the safety contact edge is activated during the "Door Close" run, there is a reversal in the Open direction, depending on the setting in menu **P11**. The input is only active in "Door Close" direction. The red traffic light shows a **1-flash** pulse code and **LED 2** is permanently lit. The display shows fault code **F24**. If the door reverses **twice** to the "Door Open" limit position due to the safety contact edge, automatic closing is disabled. The red traffic light shows a **2-flash** pulse code and the display shows fault code **F27**. The fault message must be acknowledged via an external button or one of the white circuit board buttons. Only after acknowledgement does the keep-open time begin to count down.

4.15 Connecting an 8k2 closing edge safety device* in the OPEN direction for triggering a safety recoil

A closing edge safety device with **8k2 resistor** is connected as per Figure 29 :

- 1) Remove the connected **8k2 resistor** from terminals **20** and **75**.
- 2) Connect the closing edge safety device to terminals **75** (safety input) and **20** (0 V).
- 3) DIP switch **8 (SCH2)** must be set to **OFF**.

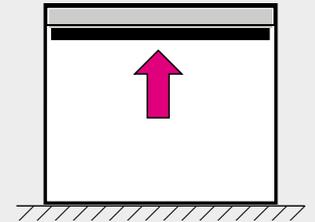
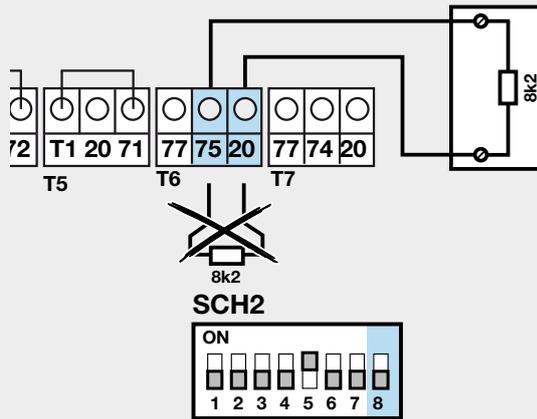
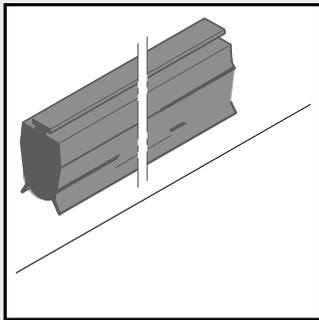
Note

If the safety contact edge is activated during the "Door Open" run, a course reversal in the Close direction occurs. The input is only active in "Door Open" direction. The red traffic light shows a **1-flash** pulse code and **LED 1** is permanently lit. The display shows fault code **F32**. If the door reverses **twice** due to the safety contact edge, automatic closing is disabled. The red traffic light shows a **2-flash** pulse code and the display shows fault code **F22**. The fault message must be acknowledged via an external button or one of the white circuit board buttons. Only after acknowledgement does the motor start up, thanks to the keep-open time counting down or another command. If the "OPEN" closing edge safety device is defective, the door can be moved to the "**Door OPEN**" limit position with an external button or the **TEST OPEN** circuit board button in deadman mode.

29



4.15



4.16 Connecting an optical closing edge safety device (Fraba) * in the OPEN direction for triggering a safety recoil

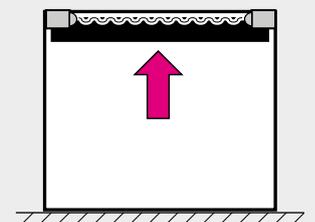
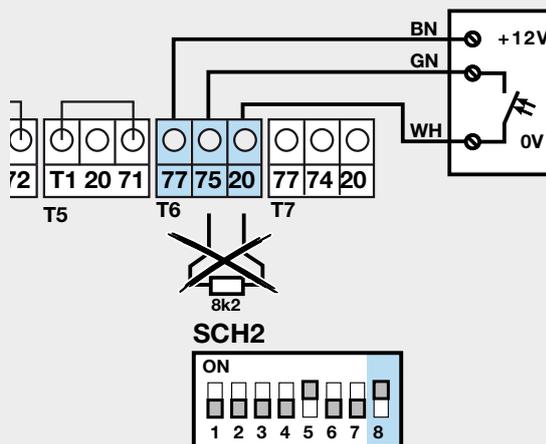
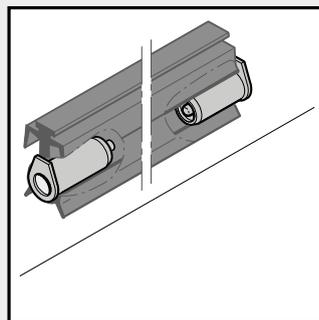
A closing edge safety device with **optical sensor** is connected as per Figure 30:

- 1) Remove the connected **8k2 resistor** from terminals **20** and **75**.
- 2) Connect the closing edge safety device to terminals **77** (+12 V / brown wire), **75** (safety input / green wire) and **20** (0 V / white wire).
- 3) DIP switch **8 (SCH2)** must be set to **ON**.

30



4.16



Note

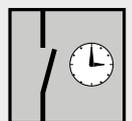
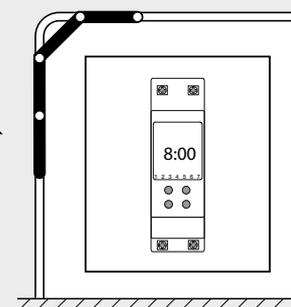
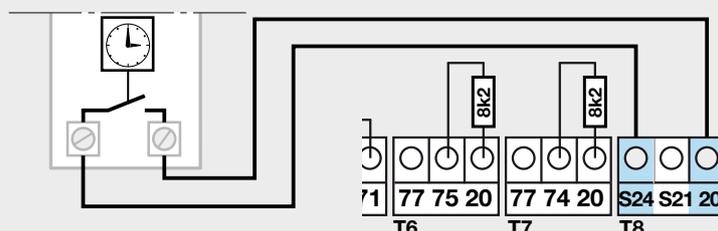
If the safety contact edge is activated during the "Door Open" run, a course reversal in the Close direction occurs. The input is only active in "Door Open" direction. The red traffic light shows a **1-flash** pulse code and **LED 1** is permanently lit. The display shows fault code **F34**. If the door reverses **twice** due to the safety contact edge, automatic closing is disabled. The red traffic light shows a **2-flash** pulse code and the display shows fault code **F22**. The fault message must be acknowledged via an external button or one of the white circuit board buttons. Only after acknowledgement does the motor start up, thanks to the keep-open time counting down or another command. If the "OPEN" closing edge safety device is defective, the door can be moved to the "**Door OPEN**" limit position with an external button or the **TEST OPEN** circuit board button in deadman mode.

4.17 Connecting a timer contact * as a Permanent Open command (inside request)

31



4.17



* This is an accessory, which is not part of the standard equipment!

Timer output with NC contacts (potential-free) is connected as per Figure 31:

- 1) First contact to terminal **S24** (timer input).
- 2) Second contact to terminal **20** (0 V).

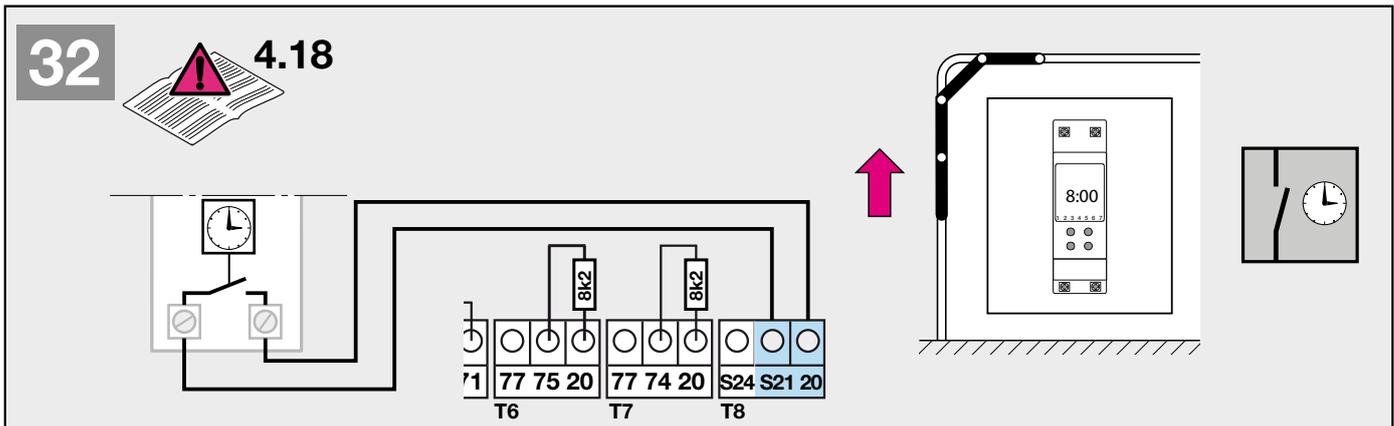
Note

The timer input is **only active when automatic closing is activated**. The function is dependent on the setting in menu **P18**. The door remains open while **the Permanent Open command** is in effect. With the traffic light card connected, this input has the function of a **PERMANENT OPEN** with "preferential direction inwards".

4.18 Connecting a timer contact * as a Permanent Open command (outside request)

A timer output with NC contacts (potential-free) is connected as per Figure 32:

- 1) First contact to terminal **S21** (timer input).
- 2) Second contact to terminal **20** (0 V).



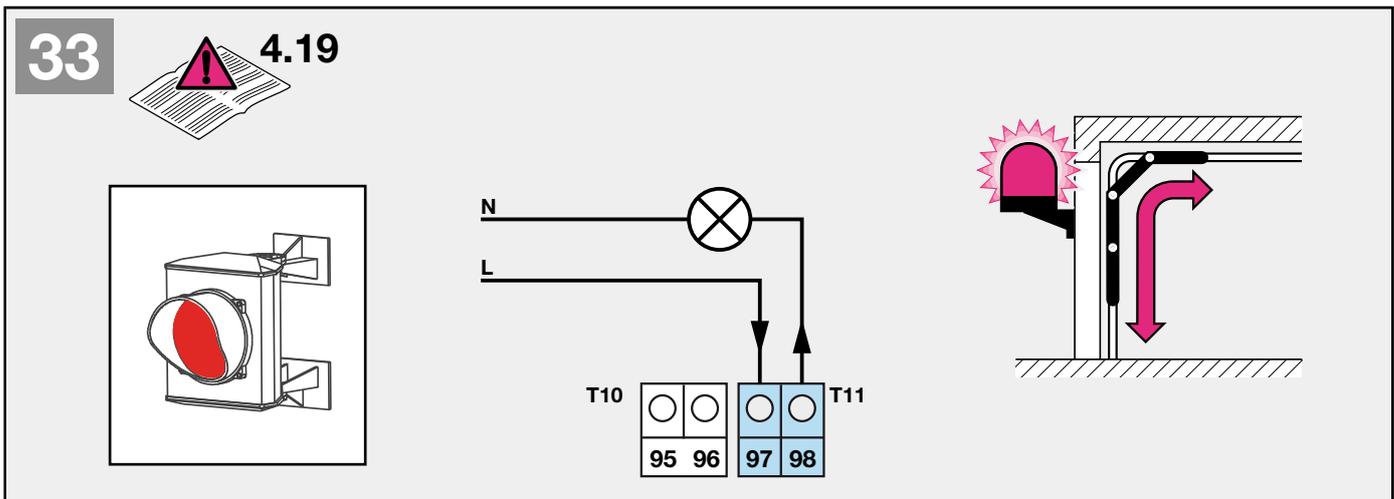
Note

The timer input is **only active when automatic closing is activated**. The function is dependent on the setting in menu **P18**. The door remains open while **the Permanent Open command** is in effect. With the traffic light card connected, this input has the function of a **PERMANENT OPEN** with "preferential direction outwards".

4.19 Connecting a red traffic light (warning light) *

A red traffic light (warning light) is connected to the potential-free NO contact of the relay output **T11**, as shown in Figure 33:

- 1) Connect the supply voltage to terminal **97** (supply voltage input).
- 2) Connect the traffic light supply line to terminal **98** (relay output).
- 3) Menu item **P06** must be programmed to "1" (factory setting).



Note

The output is actuated each time the door moves, and during the advance warning period. The red traffic light signal is dependent on the setting in menu **P05**. The output is safeguarded by a **2A** slow-blow fuse, and may only be loaded with **max. 230V~/150W** (ohmic load).

4.20 Connecting a Door Closed indicator *

A Door Closed indicator is connected to the potential-free NO contact of the relay output **T11**, as shown in Figure 34:

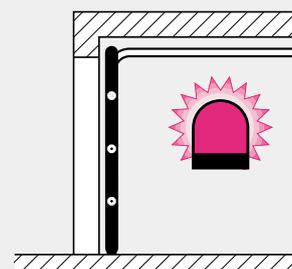
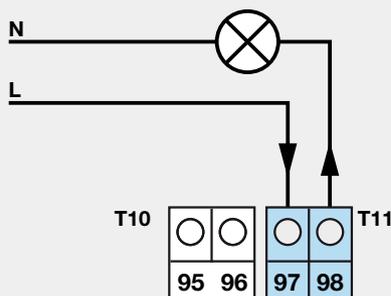
- 1) Connect the supply voltage to terminal **97** (supply voltage input).
- 2) Connect the supply line for the Door Closed indicator to terminal **98** (relay output).
- 3) Menu item **P06** must be programmed to "2".



34



4.20



Note

The output is only actuated in the "Door Closed" limit position. The output is safeguarded by a **2A** slow-blow fuse, and may only be loaded with **max. 230V~/150W** (ohmic load).

4.21 Connecting external lighting *

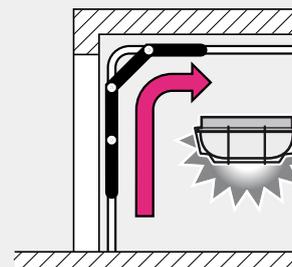
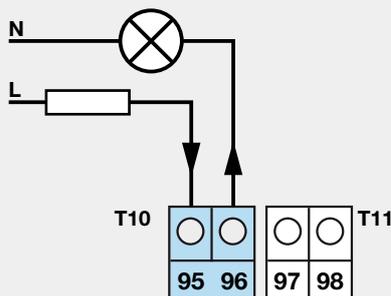
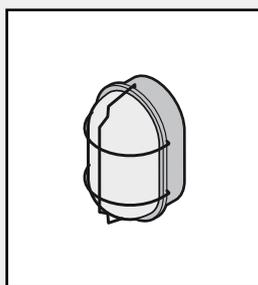
External lighting is connected to the potential-free NO contact of the relay output **T10**, as shown in Figure **35**:

- 1) Connect the supply voltage to terminal **95** (supply voltage input).
- 2) Connect the supply line for the external lighting to terminal **96** (relay output).
- 3) Menu item **P07** must be programmed to **"1"** (factory setting).

35



4.21



Note

The output is activated, when the command input is issued in the "Door Closed" limit position, for the period set in menu **P01**. The output may only be loaded with **max. 230V~/150W** (ohmic load) and must be externally safeguarded (max. T2 A).

4.22 Connecting a Door Open indicator *

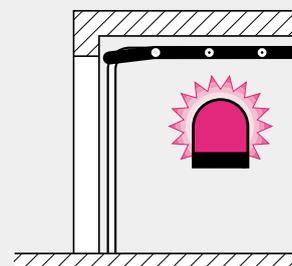
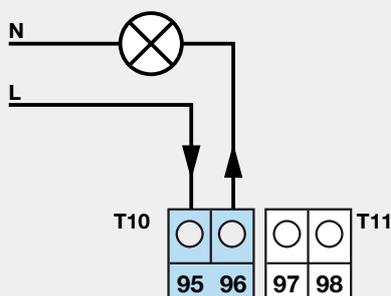
A Door Open indicator is connected to the potential-free NO contact of the relay output **T10**, as shown in Figure **36**:

- 1) Connect the supply voltage to terminal **95** (supply voltage input).
- 2) Connect the supply line for the Door Closed indicator to terminal **96** (relay output).
- 3) Menu item **P07** must be programmed to **"2"**.

36



4.22



Note

The output is only actuated in the "Door Open" limit position. The output may only be loaded with **max. 230V~/150W** (ohmic load) and must be externally safeguarded (max. T2 A).

5 ADDITIONAL CONNECTIONS ON THE TRAFFIC LIGHT CARD

5.1 Connecting the external inside button* for triggering door runs (inside request)

One or more buttons with NO contacts (potential-free), e.g. inside or ceiling pull switch, can be connected in parallel (see Figure 10.1, 10.2 and 37).

- 1) First contact to terminal **24** (pulse input).
- 2) Second contact to terminal **20** (0 V).

5.2 Connecting the external outside button* for triggering door runs (outside request)

One or more buttons with NO contacts (potential-free), e.g. outside or key switch, can be connected in parallel (see Figure 10.1, 10.2 and 37).

- 1) First contact to terminal **21** (pulse input).
- 2) Second contact to terminal **20** (0 V).

5.3 Connecting the red and green traffic lights* to display "Enter" and "Exit"

The red and green traffic lights are connected to the potential-free NO contacts of the relay outputs **T4**, as shown in Figure 10.1, 10.2 and 37 :

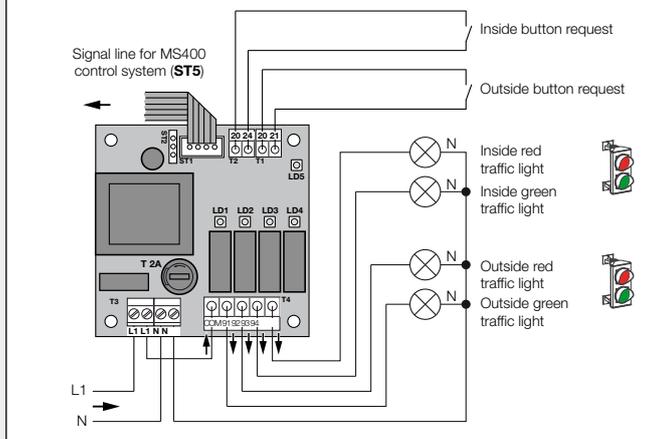
- 1) Connect the supply voltage to terminal **COM** (supply voltage input).
- 2) Connect the phase of the "outside" green traffic light to terminal **91** (relay output).
- 3) Connect the phase of the "outside" green traffic light to terminal **92** (relay output).
- 4) Connect the phase of the "inside" green traffic light to terminal **93** (relay output).
- 5) Connect the phase of the "inside" red traffic light to terminal **94** (relay output).

37

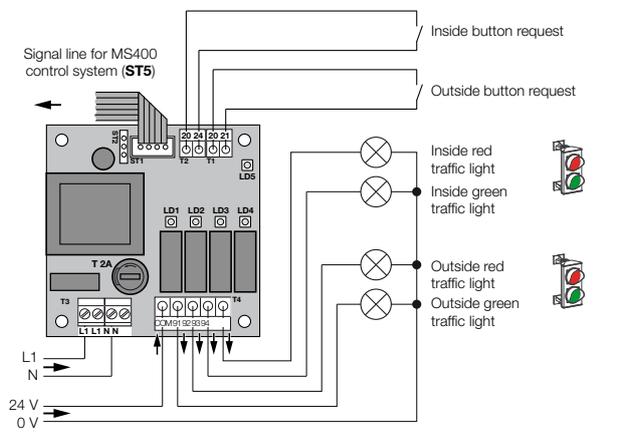


5.1-5.3

Example showing traffic lights with 230 V connection voltage



Example showing traffic lights with 24 V connection voltage



Note

The red traffic light output is activated each time the door moves, during the advance warning period, and during the waiting phase if there is oncoming traffic. The red traffic light signal is dependent on the setting in menu **P05**. The **COM** input is safeguarded by a **2A** slow-blow fuse. The output may be loaded with **max. 230V~/150W** (simultaneous ohmic traffic light load).

Note

The advance warning time (clearance time, red phase for oncoming traffic) is set in menu **P03**.
The keep-open time (green phase on request side) is set in menu **P02**.

6 THE STANDARD MENU

6.1 General information

The opener control system is also equipped with a menu which offers numerous functions to the user. A three-digit, seven-segment display and three buttons (Test OPEN, INI and TEST CLOSE) are used to navigate the menu.

6.2 Activating and navigating the menu and saving changes

The black **INI** button must be pressed and held for **3 secs**, then the display shows menu item **P01**. The **TEST OPEN** and **TEST CLOSE** buttons can be used to scroll through the menu. Pressing the **INI** button selects a menu item, and the selected value (represented by a decimal point, e.g. **2.**) can be modified using **TEST OPEN** and **TEST CLOSE**. Pressing the **INI** button again takes you back to the menu selection screen. To save the modified data, select menu item **Exit** and press and hold the **INI** button for **3 secs**. **Sto** on the display indicates that saving has been successful; the **INI** button can then be released. If the **INI** button is only pressed briefly or no button is pressed for **60 secs**, programming mode is exited without saving the changes.

6.3 Programming the lighting time (TG lighting), MENU P01

Select menu item **P01**.

The following settings are possible:

Readout on the display	
0	Lighting time switched off
1-300 (1*)	In 1 second increments

* Factory setting

Note:

If the lighting time is set to "0", the light can be switched on and off using a connected **IT3b** button. In this case there is no limit on the lighting time.

6.4 Programming the keep-open time (green phase for GA601), MENU P02

Select menu item **P02**.

The following settings are possible:

Readout on the display	
0	Keep-open time switched off
1-300 (45*)	In 1 second increments

* Factory setting

Note

In accordance with EN 12453, Table 1, this function is only permissible with presence detection.

Note

When "automatic closing" is set, pulse mode is not available. Each command produces a door open run or the keep-open time is reset.

6.5 Programming the advance warning time in the Close direction (red phase for GA601), MENU P03

Select menu item **P03**.

The following settings are possible:

Readout on the display	
0	Advance warning time switched off
1-60 (10*)	In 1 second increments

* Factory setting

Note

When "automatic closing" is set, the advance warning time in the Close direction cannot be switched off, i.e. the lowest time which can be set is **1 sec**.

6.6 Programming the advance warning time in the Open direction, MENU P04

Select menu item **P04**.

The following settings are possible:

Readout on the display	
0*	Advance warning time switched off
1-5	In 1 second increments

* Factory setting

6.7 Programming the red traffic light signal, MENU P05

Select menu item **P05**.

The following settings are possible:

Readout on the display	Red traffic light during door movement	Red traffic light during advance warning time	Red traffic light when door is closed
1	On	On	Off
2*	On	Flashing	Off
3	Flashing	On	Off
4	Flashing	Flashing	Off
5	On	On	On
6	On	Flashing	On
7	Flashing	On	On
8	Flashing	Flashing	On

* Factory setting

6.8 Programming the relay function (traffic light relay REL3 MS400), MENU P06

Select menu item **P06**.

The following settings are possible:

Readout on the display	Relay function
1*	Red traffic light / Warning lamp
2	Limit position message, door closed

* Factory setting

6.9 Programming the relay function (light relay REL4 MS400), MENU P07

Select menu item **P07**.

The following settings are possible:

Readout on the display	Reversing behaviour
1*	Lighting function (as programmed in P01)
2	Limit position message, door open

* Factory setting

6.10 Programming the reversing behaviour in the case of a safety shutdown due to the CLOSE light barrier, MENU P10

Select menu item **P10**.

The following settings are possible:

Readout on the display	Reversing behaviour
1*	Fully open
2	Reverse 300mm

* Factory setting

Note

When "automatic closing" is set, the opener generally runs up to the "Door Open" limit position.

6.11 Programming the reversing behaviour in the case of a safety shutdown due to the 8k2 or OSE safety edge in the Close direction, MENU P11

Select menu item **P11**.

The following settings are possible:

Readout on the display	Reversing behaviour
1*	Fully open
2	Reverse 300mm

* Factory setting

Note

When "automatic closing" is set, the opener generally runs up to the "Door Open" limit position.

6.12 Programming the reversing behaviour in the case of a safety shutdown by the force detection in the Close direction, MENU P12

Select menu item **P12**.

The following settings are possible:

Readout on the display	Reversing behaviour
1*	Fully open
2	Reverse 300mm

* Factory setting



Note

When "automatic closing" is set, the opener generally runs up to the "Door Open" limit position.

6.13 Resetting the keep-open time after the photocell barrier is unobstructed (CLOSE light barrier), MENU P13

Select menu item **P13**.

The following settings are possible:

Readout on the display	Keep-open time
1*	The keep-open time is reset and starts again.
2	The keep-open time is not reset, the remaining time elapses. If the light barrier is interrupted during the advance warning time, the keep-open time is reset and starts again.

* Factory setting

Note:

If the light barrier remains obstructed for a complete cycle (keep-open and advance warning time), the door closes after the light barrier is clear. The red traffic light shows one flash after the cycle is complete.

6.14 Quick close after the photocell barrier is unobstructed (CLOSE light barrier), MENU P14

Select menu item **P14**.

The following settings are possible:

Readout on the display										Function
0*										Quick close deactivated
1	2	3	4	5	6	7	8	9	10	Quick close occurs after the selected time

* Factory setting

Note:

The quick close function can only be activated with the keep-open and advance warning time set. If the quick close function is activated, once the Close light barrier is unobstructed, the keep-open and advance warning time are interrupted, and the door is closed after the time selected above. The red traffic light flashes during this shortened advance warning time. The maximum time which can be set is dependent on the value in menu **P03**, i.e. if the value **5** is set in menu **P03**, a maximum quick close time of **5 secs** is possible.

6.15 Programming the leading light barrier (VL1 and VL2), MENU P15

Select menu item **P15**.

The following settings are possible:

Readout on the display	Function
0*	Neither VL1 nor VL2 are connected.
1	One of VL1 or VL2 is connected.

* Factory setting

Note:

The door must be in the Door Open limit position, as once the VL is activated then the reversing limit must be programmed in menu **P16**.

6.16 Programming the reversing limit for the leading light barrier (VL1 and VL2), MENU P16

Move the door to the "Door Open" limit position and then select menu item P16. Lay a ruler flat on the floor and initiate the teach-in run; to do so selected "1" and start the teach-in process with the black **INI** button. "3." appears on the display and the opener moves the door in the Close direction until the obstacle is detected by the **VL**. The opener stops and "4." is shown on the display. Once taught in, this point is confirmed by pressing the INI button, then menu item **P16** appears again on the display. The menu can be exited using **Exit**. The taught-in distance is now stored. Remove the ruler and open the door by pressing the **TEST OPEN** button. The system is now in normal operation once more.

Readout on the display	Function
0*	Do not execute teach-in mode.
1	Execute teach-in mode.

* Factory setting

Note:

VL1 and **VL2** are treated in the same way as the OSE safety edge in the Close direction, for information see **Chapter 4.14**. For information on connecting the **VL**, refer to the appropriate manual.

6.17 Programming the direction of movement, MENU P17

Select menu item **P17**.

The following settings are possible:

Readout on the display	Function
1*	Normal direction of movement (door opens to the opener head).
2	Reversed direction of movement (door closes to the opener head).

* Factory setting

Note:

If the direction of movement is changed, the opener must be taught in again from scratch.

6.18 Programming the function of the timer input, MENU P18

Select menu item **P18**.

The following settings are possible:

Readout on the display	Function
*1	Door opens if there is a persistent command on the timer input, and remains open for the length of the persistent command.
2	Door opens if there is a persistent command on the timer input and an appropriate request. The door then remains open for the length of the persistent command.

* Factory setting

Note:

If the safety device is faulty in the Open direction, the timer inputs are disabled until safety is re-established. The door can be opened in deadman mode with a connected button or the **TEST OPEN** circuit board button. When the door is open, the timer commands are executed.

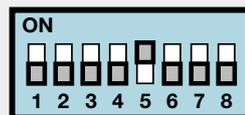
When pulse mode is set to "0" in menu **P02**, the timer inputs have no function!

7 DIP SWITCH DESCRIPTION

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DIP switch functions (SCH2)	ON	OFF
1: Light barrier evaluation in CLOSED position	Two-wire	Contact us
2: Closing edge safety device evaluation in CLOSED position	OSE	8k2
3: Quick Open	Yes	No
4: Soft run speed for Door Close	30%	50%
5: Quick reverse upon door closed	Long	Short
6: Light barrier evaluation in OPEN position	Two-wire	Contact us
7: Defined direction commands	Yes	No
8: Closing edge safety device evaluation in OPEN position	OSE	8k2



SCH2

7.1 Light barrier in Close direction, DIP1

DIP switch **1** can be used to select the type of light barrier that is connected.

- 1) DIP switch **1** to **ON** = Dynamic two-wire light barrier connected.
- 2) DIP switch **1** to **OFF** = Contact light barrier connected.

Note:

If no light barrier is connected, the wire jumper must be connected between **T1** and **71** and **DIP1** should be set to **OFF**.

7.2 Closing edge safety device in Close direction, DIP2

DIP switch **2** can be used to select the type of closing edge safety device that is connected.

- 1) DIP switch **2** to **ON** = **Optical sensor** safety edge (Fraba) connected.
- 2) DIP switch **2** to **OFF** = **8k2** safety edge connected.

Note:

If no closing edge safety device is connected, the **8k2** resistor must be connected between terminal **20** and **74** and **DIP2** should be set to **OFF**.

7.3 Quick Open function, DIP3

With DIP switch **3**, the opening speed can be increased by approx. 50% *.

- 1) DIP switch **3** to **ON** = Quick Open activated.
- 2) DIP switch **3** to **OFF** = Quick Open deactivated.

***Depending on the running characteristics of the door in question**

Note:

A max. of 50 secs of Quick Open running (only including the run-times over 100% speed) is possible in succession, or the gearbox will overheat, which could cause a fault. Subsequent runs occur at normal speed. After a pause time of 120 secs, the next Quick Open run can be initiated.

7.4 Soft run speed in "Close" direction, DIP4

With DIP switch **4**, soft run speed can be set before the "Door Closed" limit position is reached.

- 1) DIP switch **4** to **ON** = 30% soft run speed.
- 2) DIP switch **4** to **OFF** = 50% soft run speed.

7.5 Quick reverse upon "Door Closed", DIP5

With DIP switch **5**, the quick reverse can be set when the "Door Closed" limit position is reached, i.e. upon reaching the Door Closed position, the carriage travels the set value in the Open direction.

- 1) DIP switch **5** to **ON** = Long quick reverse (approx. 7 mm).
- 2) DIP switch **5** to **OFF** = Long quick reverse (approx. 3 mm).

7.6 Light barrier in Open direction, DIP6

DIP switch **6** can be used to select the type of light barrier that is connected.

- 1) DIP switch **6** to **ON** = Dynamic two-wire light barrier connected.
- 2) DIP switch **6** to **OFF** = Contact light barrier connected.

Note:

If no light barrier is connected, the wire jumper must be connected between **T2** and **72** and **DIP6** should be set to **OFF**.

7.7 Defined direction commands / Partial Open command (input T9), DIP7

DIP switch **7** can be used to set a defined choice of direction.

- 1) DIP switch **7** to **ON** = Partial Open input 23 / Radio channel 2 = **Defined Close**
Button input 21 / Radio channel 1 = **Defined Open**
- 2) DIP switch **7** to **OFF** = Partial Open input 23 / Radio channel 2 = **Partial Open**
Button input 21 / Radio channel 1 = **Fully Open**

Note:

With the traffic light card (GA601) connected, the Partial Open function is deactivated, from which point Channel 1 (20/21 T9) is interpreted as an "outside" request and Channel 2 (20/23 T9) as an "inside" request.

7.8 Closing edge safety device in Open direction, DIP8

DIP switch **8** can be used to select the type of closing edge safety device that is connected.

- 1) DIP switch **8** to **ON** = **Optical sensor** safety edge (Fraba) connected.
- 2) DIP switch **8** to **OFF** = **8k2** safety edge connected.

Note:

If no closing edge safety device is connected, the **8k2** resistor must be connected between terminal **20** and **75** and **DIP8** should be set to **OFF**.

8 OPERATING THE GARAGE DOOR OPENER

Only operate the garage door drive if you have a clear view of the range of movement of the door! Wait until the door has come to a standstill before moving into the movement range of the door! Before entering or exiting, make sure that the door is actually fully open!

Note

Initial function tests as well as the programming or expansion of the remote control should generally be carried out inside the garage.



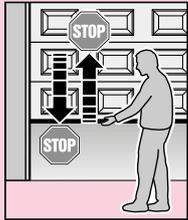
PLEASE NOTE
Do not allow children to play with the remote control!

The mechanical release must be checked for proper functioning on a **monthly** basis. The release knob may only be operated when the door is closed, otherwise there is a risk of the door closing rapidly if the springs are weak, cracked or defective, or due to inadequate weight compensation.



PLEASE NOTE

Do not hang on the release knob with your body weight!



Instruct all persons who use the door system in how to operate the garage door opener properly and safely. Demonstrate and test the mechanical release as well as the safety recoil. **To do so, hold the door with both hands during the Door Close run; the door system should gently stop and initiate the safety recoil. Likewise, the door system must gently stop during the Door Open run and briefly run in the opposite direction.**

8.1 Automatic mode

By default, the garage door opener operates in automatic mode. The door can only be opened via remote or a button. If a command is issued during the closing phase, the door reverses and travels to its Door Open limit position. Automatic closing only takes place from the Door Open position if no safety circuit is active and the keep-open time has elapsed. Using the TEST CLOSE circuit board button or an external Close button, the door can be closed even before the keep-open time has elapsed; this interrupts the keep-open time and - once the advance warning time has elapsed - initiates the Close run.

8.2 Pulse mode

By switching off "automatic closing" (set menu **P02** to "**0**") you can select pulse mode. The garage door opener operates in pulse mode exclusively with pulse sequence control (OPEN-STOP-CLOSE-STOP-OPEN-STOP-CLOSE..., etc.), whether an external button or programmed-in remote control is used is immaterial. Using the **TEST OPEN** circuit board button or an external Open button (with defined choice of direction at **20/21 T9**), the door can be opened and stopped (OPEN-STOP-OPEN-STOP..., etc.). Using the **TEST CLOSE** circuit board button or an external Close button (with defined choice of direction at **20/23 T9**), the door can be closed and stopped (CLOSE-STOP-CLOSE-STOP..., etc.).

8.3 Operation after actuating the mechanical release

If the mechanical release is actuated, e.g. due to a mains power failure, the guide carriage must be engaged again in the door link latch for normal operation:

- 1) Press the green button on the guide rail (see Figure **11**).
- 2) Move the door by hand until the guide rail engages again in the door link latch.
- 3) Check, by means of several uninterrupted door runs, that the door is fully reaching its closed position and that it is opening all the way.

The opener is now ready again for normal operation.

Note

If the behaviour still does not match that described in step 3, even after several uninterrupted door runs, a new teach-in run is required (see Chapter **3.2.2**).

8.4 Initiating a reference run

Should it be necessary for any reason (travel distance has increased) to perform a reference run, proceed as follows:

- 1) The door must be unlocked and the plugged into the mains.
- 2) Press and hold the button on a programmed-in remote control (Channel 1) for at least **8 secs**, until the red traffic light shows a 4-flash pulse code.



PLEASE NOTE

Since force shutdown does not work in all cases during the reference run, it is mandatory for the operator to stay with the device and prevent anyone from approaching the door. In case of danger, the door movement can be stopped immediately by operating the remote control, the control button or the circuit board buttons. Also, please note that the reference run ends automatically when the "Door Closed" position is reached.

- 3) The next run is a reference run in the "Door Close" direction; to initiate this, press the remote control button, a connected control button or one of the white circuit board buttons twice in succession.
- 4) Check, by means of several uninterrupted door runs, that the door is fully reaching its closed position and that it is opening all the way.

The opener is now ready again for normal operation.

Note

Even if the door moves initially when the remote control button is pressed, you should still hold the button down (for approx. 8 secs) until the red traffic light shows a 4-flash pulse code. If the behaviour still does not match that described in step 4, even after several uninterrupted door runs, a new teach-in run is required (see Chapter **3.2.2**).

8.5 Fault messages on the red traffic light, the display and diagnostic LED1/LED2

Using the red traffic light, the display and diagnostic LEDs 1 and 2, it is possible to easily identify causes for unexpected behaviour during operation. The display and the diagnostic LEDs are visible once the control system housing is open. During normal operation, neither LED should be lit.

Readout	Red traffic light signal	LED indicator	Fault / Warning	Possible cause	Remedy
			Cancel teach-in/reference run via a control button or timeout	A command device was actuated during the teach-in/reference run	Restart the teach-in/reference run, however no not actuate any command devices
				No button has been pressed in teach-in mode for longer than 60 secs	Restart the teach-in/reference run
			Timeout Hall pulse (control system not receiving Hall pulses)	Connection cable defective	Check connection cable, replace if necessary.
				Hall sensor defective	Replace the opener
				Control system defective	Replace opener or control system
			Too many Hall pulses when the motor is at a standstill (the motor is being pulled or pushed).	Door open too wide	Correct Door Open limit position
				Spring compensation not OK	Check spring compensation, and correct or replace if necessary
			Fault on the Hall sensor	Hall cable defective, short-circuit Channel 1 and Channel 2	Check connection cable, replace if necessary
				Hall sensor defective	Replace the opener
		LED1 and 2	Wicket door contact activated	A stop or emergency stop circuit connected to terminals 12 and 13 was interrupted or opened during a door run (see Chapter 4.8).	The stop or emergency stop circuit must be closed (see Chapter 4.8). Note: If no wicket door or emergency stop circuit is connected, check if there is a wire jumper connected to terminals 12 and 13 .
			Motor runtime too long	The max. runtime of 140 sec. was insufficient for the movement.	Reduce the movement path
				The toothed belt is cracked	Replace the toothed belt
				The opener is defective	Replace the opener
			Door movement too short for path teach-in	The movement path being taught -in is < 600 mm.	Correct the travel distance and teach in the opener again.
		LED2 flashes	CLOSE light barrier was activated	A light barrier, connected to terminals 20 and 71 , was interrupted or activated (see Chapter 4.9 / 4.10).	Remove the obstacle which triggered the light barrier and/or check the light barrier and replace if necessary. Note: If there is no light barrier connected to terminals 20 and 71 , check if DIP 1 is set to "OFF" and the wire jumper is connected between T1 and 71 .
		LED2 static	CLOSE safety contact edge was activated	A closing edge safety device (8k2), connected to terminals 20 and 74 , was interrupted or activated (see Chapter 4.13).	Remove the obstacle which triggered the closing edge safety device and/or check or if necessary replace the closing edge safety device. Note: If there is no closing edge safety device connected to terminals 20 and 74 , check if DIP 2 is set to "OFF" and if an 8k2 resistor is connected to terminals 20 and 74 .
			Motor current not achieved	The taught-in current was not achieved due to a defective door mechanism or broken spring.	Check door mechanism and/or springs and repair.
			Too many Hall pulses	You are attempting to teach in a travel distance which has more than 8500 pulses (approx. 8500 mm)	Correct the travel distance and teach in the opener again.
			Relay sticking	Motor relay of the opener control system sticking.	Replace control system
			Door position missing up on restart	The current position of the door is no longer recognised after a power cut.	Perform reference run.

Readout	Red traffic light signal	LED indicator	Fault / Warning	Possible cause	Remedy
	Flashes 4x 		Invalid door position upon restart (e.g. mains power failure during teach-in / reference run)	The current position of the door during a teach-in or reference run is no longer recognised after a mains power failure	Teach in the opener again or perform reference run again.
	Flashes 4x 		Fault during testing of the 8k2 safety edge	Testing of closing edge processing (8k2) for the Close direction was unsuccessful.	Replace control system.
	Flashes 4x 		Incorrect programming/operating status	External interference (current peaks, overvoltage, or similar)	Perform reference run. If the fault occurs multiple times, replace the control system.
	Flashes 4x 		Fault when indexing the force shutdown	Internal fault	If the fault occurs multiple times, replace the control system.
 	Flashes 3x 		Door parameters were deleted manually by the operator	Door parameters (force and path data) were deleted or the opener has not been taught in yet (this is only information and not a fault).	Teach in the opener again (see Chapter 3.2.2).
			Fault while measuring current	Connection cable defective	Check connection cable, replace if necessary.
				Motor defective	Replace the opener
				Control system defective	Replace opener or control system
			Force shutdown during "Open door" run	The door is running sluggishly or unevenly	Correct the door travel.
				There is an obstacle in the door area	Remove obstacle, teach in opener again if necessary.
			Control and teach-in button	Continuous pulse of an externally connected button during the teach-in process	Replace the defective button and teach in the opener again (see Chapter 3.2.2).
	Flashes 2x 		2x force shutdown in succession during "Open door" run (fault indicator only appears if auto-closing is selected).	The door is running sluggishly or unevenly.	Correct the door travel.
				There is an obstacle in the door area.	Remove obstacle, teach in opener again if necessary. The opener must be restarted with a command.
	Flashes 4x 		Manual reference run via remote	The taught-in remote control button was held down for at least 8 sec.	Perform reference run.
	Flashes 1x 	LED2 static	"CLOSE" optical safety contact edge was activated	An optical closing edge safety device (Fraba), connected to terminals 20 , 74 and 77 , was interrupted or activated (see Chapter 4.14).	Remove the obstacle which triggered the closing edge safety device and/or check or if necessary replace the closing edge safety device. Note: If there is no closing edge safety device connected to terminals 20 , 74 and 77 , check if DIP 2 is set to "OFF" and if an 8k2 resistor is connected to terminals 20 and 74 .
	Flashes 4x 		Fault while measuring speed	Wicket door contact on the connection cable or internal fault	Inspect connection cable and replace if necessary. If the fault occurs multiple times, replace the control system.
			Force shutdown during a Door Close run	The door is running sluggishly or unevenly	Correct the door travel.
				There is an obstacle in the door area	Remove obstacle, teach in opener again if necessary.
	Flashes 2x 		2x force shutdown or 8k2/OSE in succession during Close Door run. (fault indicator only appears if auto-closing is selected).	The door is running sluggishly or unevenly.	Correct the door travel.
				There is an obstacle in the door area.	Remove obstacle, teach in opener again if necessary. The opener must be restarted with a command.
				The closing edge safety device is defective	Check the closing edge safety device and replace if necessary. The opener must be restarted with a command.

Readout	Red traffic light signal	LED indicator	Fault / Warning	Possible cause	Remedy
	Flashes 4x 		Current calibration is defective	Internal fault	Replace control system.
	Flashes 4x 		Fault regarding Hall counter value	External interference (current peaks, overvoltage, or similar)	If the fault occurs multiple times, replace the control system.
			Reset by watchdog	Internal fault	If the fault occurs multiple times, replace the control system.
	Flashes 1x 	LED1 flashes	OPEN light barrier was activated	A light barrier, connected to terminals 20 and 72 , was interrupted or activated (see Chapter 4.11/4.12).	Remove the obstacle which triggered the light barrier and/or check the light barrier and replace if necessary. Note: If there is no light barrier connected to terminals 20 and 72 , check if DIP 6 is set to "OFF" and the wire jumper is connected between T2 and 72 .
	Flashes 1x 	LED1 static	OPEN safety contact edge was activated	A closing edge safety device (8k2), connected to terminals 20 and 75 , was interrupted or activated (see Chapter 4.15).	Remove the obstacle which triggered the closing edge safety device and/or check or if necessary replace the closing edge safety device. Note: If there is no closing edge safety device connected to terminals 20 and 75 , check if DIP 8 is set to "OFF" and if an 8k2 resistor is connected to terminals 20 and 75 .
	Flashes 4x 		Fault during testing of the 8k2 safety edge	Testing of closing edge processing (8k2) for the Open direction was unsuccessful.	Replace control system.
	Flashes 1x 	LED1 static	OPEN optical safety contact edge was activated	An optical closing edge safety device (Fraba), connected to terminals 20 , 75 and 77 , was interrupted or activated (see Chapter 4.16).	Remove the obstacle which triggered the closing edge safety device and/or check or if necessary replace the closing edge safety device. Note: If there is no closing edge safety device connected to terminals 20 , 75 and 77 , check if DIP 8 is set to "OFF" and if an 8k2 resistor is connected to terminals 20 and 75 .
		LED1 static	Safety device (8k2/OSE) was activated 2x in succession during "Open door" run.	The closing edge safety device is defective (fault indicator only appears if auto-closing is selected).	Check the closing edge safety device and replace if necessary. The opener must be restarted with a command.
				There is an obstacle in the door area (fault indicator only appears if auto-closing is selected).	Remove the obstacle. The opener must be restarted with a command.
			Stopped by the user during automatic door movement	The stop button (keypad on cover) or the black circuit board button was activated during the Door Close run (fault indicator only appears if auto-closing is selected).	Restart the opener with a command.
	Flashes 1x 	LED1 flashes	Fault while testing the contact light barrier in OPEN direction.	Test of the contact light barrier for the Open direction was unsuccessful.	Inspect the light barrier and the supply line of the light barrier, replace if necessary
	Flashes 1x 	LED2 flashes	Fault while testing the contact light barrier in CLOSE direction.	Testing of the contact light barrier for the Close direction was unsuccessful.	Inspect the light barrier and the supply line of the light barrier, replace if necessary

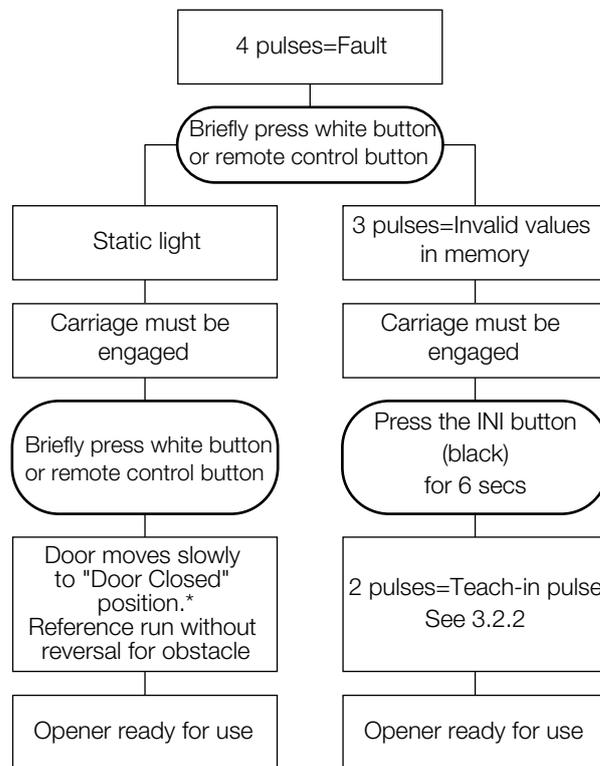
8.6 Measures after a 4-flash fault message

Possible causes for fault messages are:

- The taught-in distance is too short, < **600 mm**.
- The control or teach-in button was pressed during an automatic run in teach-in mode.
- The wicket door contact / light barrier input or the safety edge was activated during an automatic run in teach-in mode.
- After starting the teach-in process, no button was operated for **60 secs**.
- The Hall sensor is defective.

For other causes of the **4-flash** pulse code, see **Chapter 8.5**.





* Should the distance until shutdown in the "Closed" limit position be less than 50 mm, the opener travels another 200 mm in the "Open" direction, and then back to the "Closed" limit position.

8.7 Malfunctions and remedies

If your garage door opener is not working, please check the system for the following aspects:



PLEASE NOTE

Before carrying out work on the device with the control system housing open, it must be unplugged from the mains!

8.7.1 Opener does not work:

Check that the mains voltage is present.

8.7.2 Opener does not work with remote control:

If the LED indicator light does not come on when the button on the remote is pressed, the voltage in the battery is too low. Replace the battery in the remote control. If the system does not function despite the battery being changed, inspect the remote control and receiver.

8.7.3 Opener does not work with externally connected buttons:

Inspect the buttons, supply lines and connection terminals.



PLEASE NOTE

No external voltage is permissible!

8.7.4 Opener reacts, but door does not open:

Check the door locks and remove if necessary. Transport carriage is not engaged with the door link. Check emergency release.

8.7.5 Range of the remote control too low:

Check battery in the remote control. Correct routing of antennas.

9 GUARANTEE CONDITIONS

Duration of the guarantee

In addition to the statutory warranty provided by the dealer from the bill of sale, we provide the following partial guarantee from the date of purchase:

- a) 5 years on the mechanical systems of the opener, the motor and motor control system
- b) 2 years on radio equipment, accessories and special systems.

There is no claim to a guarantee on consumables (e.g. fuses, batteries, bulbs). Making a claim



does not extend the duration of the guarantee. The guarantee term on spare parts deliveries and repair work is six months, however no less than the remaining duration of the guarantee.

Requirements

The right to claim under the guarantee only applies to the country of purchased of the device. The goods must have been purchased through the sales channel specified by us. Guarantee claims may only cover damage to the object of the contract. Reimbursement of expenses for removal and installation, inspection of relevant parts, as well as claims for lost profit and damages are excluded from the guarantee. Your proof of purchase also counts as your proof guarantee eligibility.

Performance

For the duration of the guarantee, we will repair all defects on the product which can be verifiably traced back to faulty materials or workmanship. We shall be obligated, at our own discretion and free of charge, to either replace the defective goods with non-defective ones, to repair them, or to refund the loss in value. Damage resulting from the following is excluded:

- Improper installation and connection
- Improper commissioning and operation
- External influences, such as fire, water, abnormal ambient conditions
- Mechanical damage due to accident, drops, collision
- Negligent or deliberate destruction
- Normal wear or inadequate maintenance
- Repairs carried out by unqualified persons
- Using third-party components
- Removal or concealment of the production number

Replaced parts shall become our property.

10 TECHNICAL SPECIFICATIONS

Mains connection:	230/240V, 50 Hz, approx. 5 W in standby
Protection type:	For dry spaces only
Automatic shutdown:	Taught in automatically, separately for each direction
Shutdown/power limitation limit positions:	Self-learning, wear-free (the design has no mechanical switches), runtime limitation of approx. 140 secs also incorporated. Automatic shutdown that adjusts itself upon each door run.
Traction and pulling force:	1200 N
Motor:	Direct current motor with Hall sensor
Transformer:	With thermal protection
Connection:	Removable screw terminals for external devices with low safety voltage 24 V DC, such as an indoor and outdoor button.
Special functions:	<ul style="list-style-type: none"> - Light on opener - Option to connect a stop / off switch - Option to connect a light barrier (separate from Open and Close direction) - Option to connect an 8k2 closing edge safety device (separate from Open and Close direction) - Option to connect a closing edge safety device (Fraba) (separate from Open and Close direction) - Potential-free traffic light relay for connecting a red traffic light or green traffic light - Potential-free light relay for external lighting - Partial opening - Quick Open option
Traffic light connection:	Safeguarded by a 2A slow-blow fuse.
Quick-release:	Can be operated from inside with a pull cord in the event of a power cut.
Remote control:	RC BE 868/4 four-button remote control (868,360 MHz) and separate receiver
Universal fitting:	For up-and-over and sectional doors
Door running speed:	Approx. 135 mm/s (normal speed), approx. 220 mm/s (opening speed with Quick Open selected), dependent on the size and weight of the door.
Airborne sound emissions:	70 dB (A)
Guide rail:	Extra flat at 30mm, with integrated locking mechanism Rail in the toothed belt variant.

11 DISPLAY

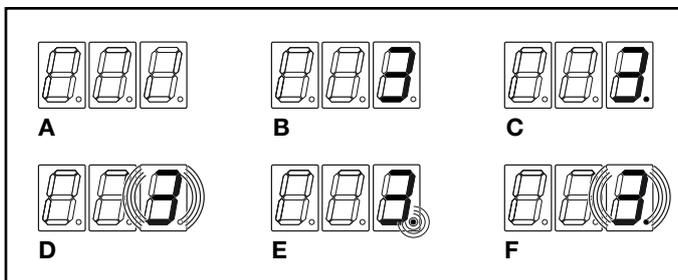
11.1 7-segment displays

The 7-segment displays are used to show door positions, operating statuses and fault messages.

11.2 General definition of terms

This section details the possible display states of the 7-segment displays.

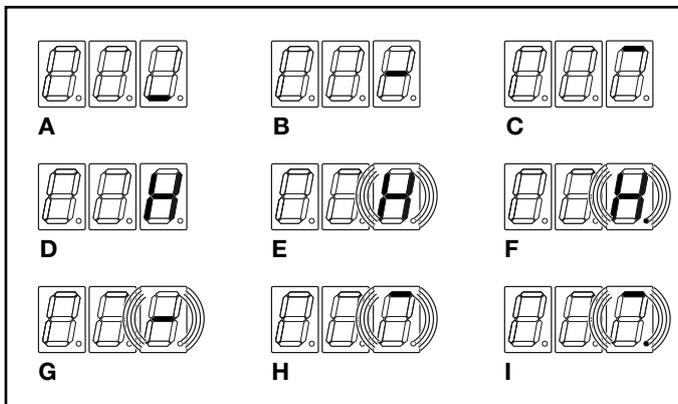
- A No display
- B Static figure
- C Static figure and point
- D Flashing figure
- E Static figure and flashing point
- F Flashing figure and point



11.3 Display of door positions

Representation of the door positions on the 7-segment displays.

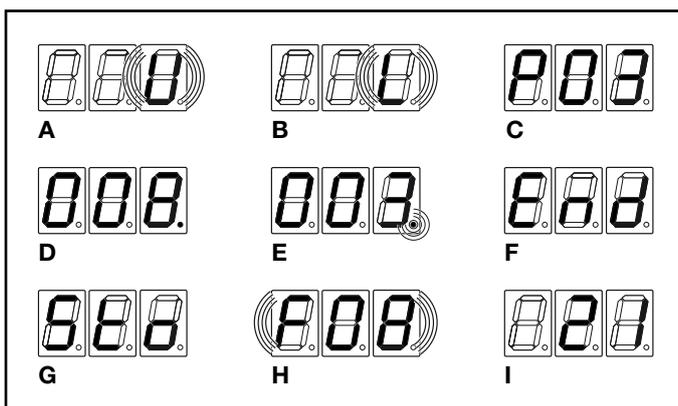
- A Door in Door Closed limit position
- B Door in intermediate position
- C Door in Door Open limit position
- D Door in Partial Open limit position (in pulse mode and Partial Open < 500 mm with auto-closing activated)
- E Door in Partial Open limit position during the keep-open time (Partial Open > 500 mm)
- F Door in Partial Open limit position during the advance warning time
- G Door in motion
- H Door in Door Open limit position during the keep-open time
- I Door in Door Open limit position during the advance warning time



11.4 Messages in normal or teach-in mode

These message may be displayed during normal, teach-in or programming mode.

- A The opener has not yet been taught in or the data was deleted manually
- B Teach-in mode initiated or the teach-in runs are currently in progress
- C Represents a menu number (e.g. menu P03)
- D Shows the value (option) currently set for a menu item
- E Shows a newly set value (option) for a menu item, which has not yet been stored
- F Shows the menu item for exiting programming mode
- G Indicates the successful exiting and saving of programming mode.
- H Shows a fault message (e.g. F08)
- I A signal from a command device is displayed (e.g. 21)



11.5 Display of the command input

Operation of command devices such as buttons, remote controls, circuit board or cover buttons results in changes in the signal to the corresponding inputs, and is shown on the display for the duration of the command.

Readout on display

- | 11 | Button |
|----|--|
| 11 | TEST OPEN circuit board button, Open cover button (optional) |
| 12 | TEST CLOSE circuit board button, Close cover button (optional) |
| 21 | TEST OPEN circuit board button or Open cover button (with traffic light card connected), external button (terminal 20/21), Outside request external button (terminal 20/21 traffic light card), remote command Channel 1 |

Readout on display

Button

23

Remote command Channel 2, Partial Open button (terminal 20/23)

24

External inside request button (terminal 20/24, traffic light card)

S21

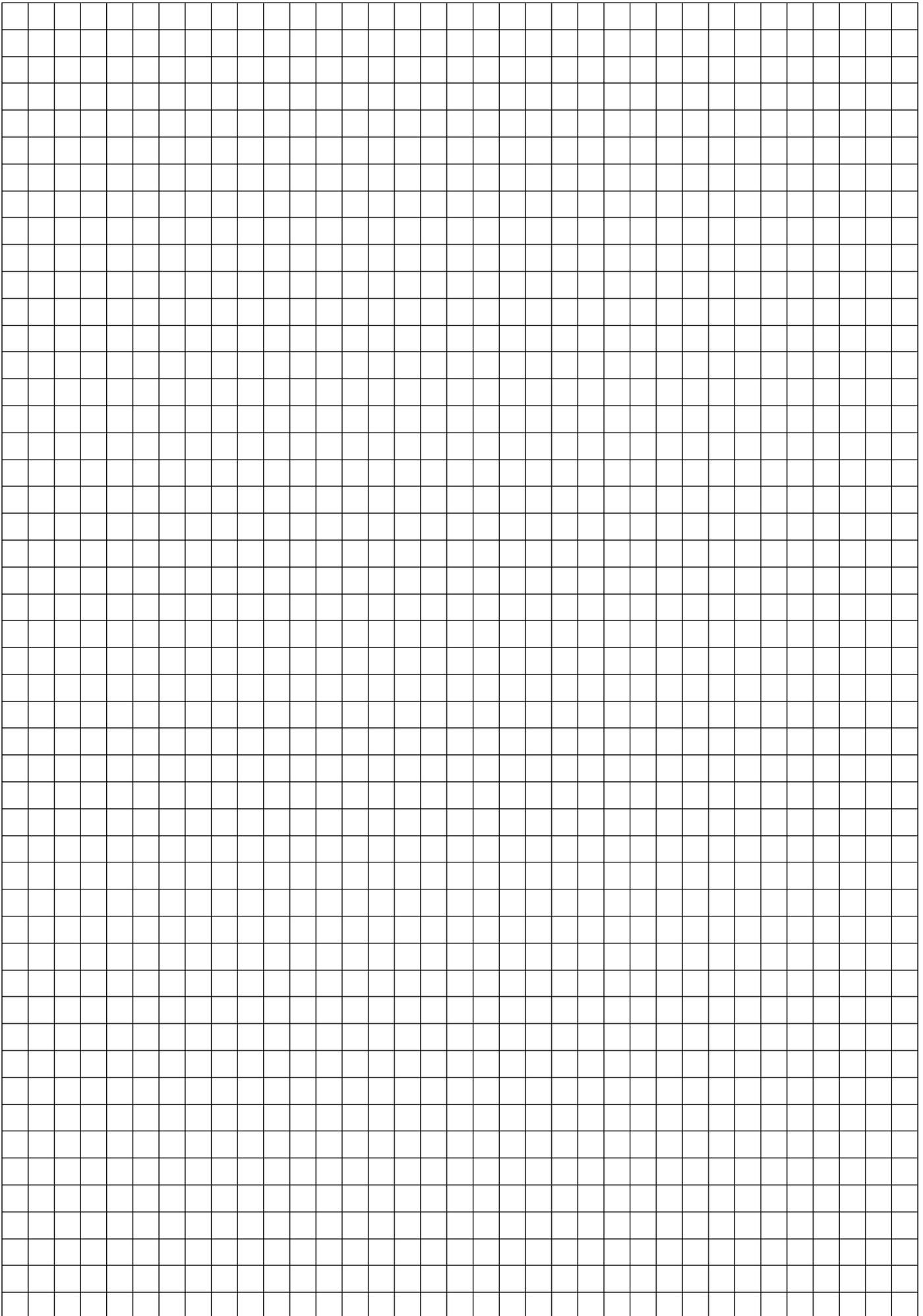
Priority entry timer command

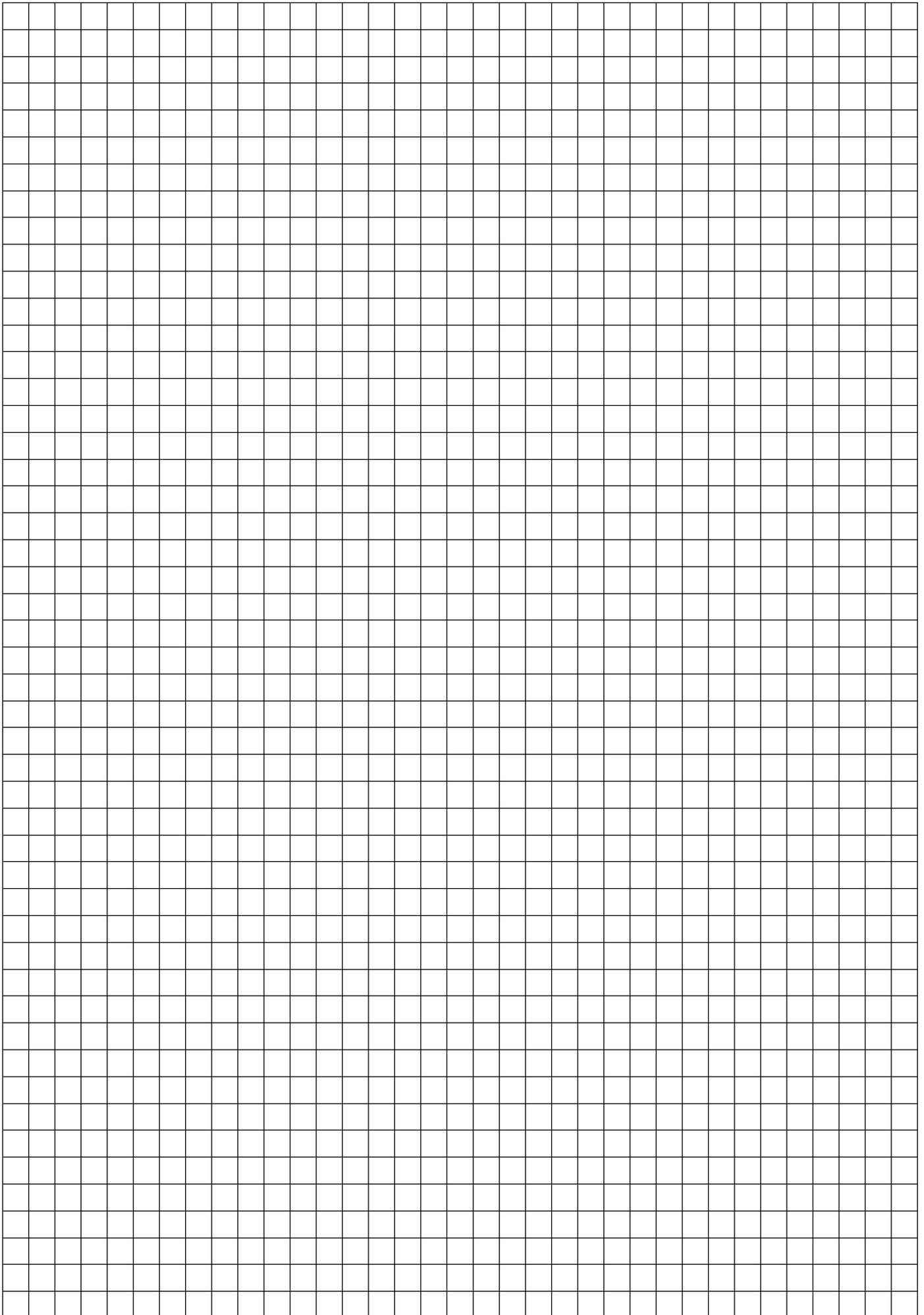
S24

Priority exit timer command

12 PROGRAM MENU OVERVIEW

Menu item	Setting for	Menu value	Function	Factory setting	Your values
P01	Response time of the light relay	0	Light relay switched off	1	
		1 - 300	Light relay is activated for 1 - 300 secs		
P02	Keep-open time (green phase)	0	Keep-open time switched off	45	
		1 - 300	Keep-open time of 1 - 300 secs activated		
P03	CLOSE advance warning time (red phase)	0	Advance warning time switched off in CLOSE direction	10	
		1 - 60	Advance warning time of 1 - 60 secs activated in CLOSE direction		
P04	Advance warning time, OPEN	0	Advance warning time switched off in OPEN direction	0	
		1 - 5	Advance warning time of 1 - 5 secs activated in OPEN direction		
P05	Red traffic light signal		Door movement Advance warning upon Door CLOSED	2	
		1	On On Off		
		2	On Flashing Off		
		3	Flashing On Off		
		4	Flashing Flashing Off		
		5	On On On		
		6	On Flashing On		
		7	Flashing On On		
P06	Red traffic light relay function	1	Red traffic light / Warning lamp	1	
		2	Door Closed indicator		
P07	Light relay function	1	Light function	1	
		2	Door Open indicator		
P10	Reversing behaviour of the CLOSE light barrier	1	Obstacle release to Door Open limit position	1	
		2	Obstacle release by 300 mm in Open direction		
P11	Reversing behaviour of the CLOSE closing edge safety device	1	Obstacle release to Door Open limit position	1	
		2	Obstacle release by 300 mm in Open direction		
P12	Reversing behaviour for force shutdown in CLOSE direction	1	Obstacle release to Door Open limit position	1	
		2	Obstacle release by 300 mm in Open direction		
P13	Reset keep open time after CLOSE light barrier is broken	1	Keep-open time is reset	1	
		2	Keep-open time not reset		
P14	Quick Close after CLOSE light barrier is broken	0	Quick close deactivated	0	
		1 - 10	Quick close after 1 - 10 sec. advance warning		
P15	Leading light barrier VL 1 or VL 2	0	No VL1 or VL 2 connected	0	
		1	VL1 or VL 2 connected		
P16	Programming the VL 1 or VL 2 reversing limit	0	Do not execute teach-in mode	0	
		1	Start teach-in mode for the reversing limit		
P17	Direction of movement logic	1	Standard installation (door opens towards the opener)	1	
		2	Leafed door (door closes towards the opener)		
P18	Timer input S21 / S24	1	Door opens on timer command and remains open for the set period	1	
		2	Door opens on timer command + command (remote, button) and remains open for the set period		





Instructions for Fitting, Operating and Maintenance
MS400 Control system
Garage door operator

GA501

4Ddoors
GARAGE DOORS REDEFINED