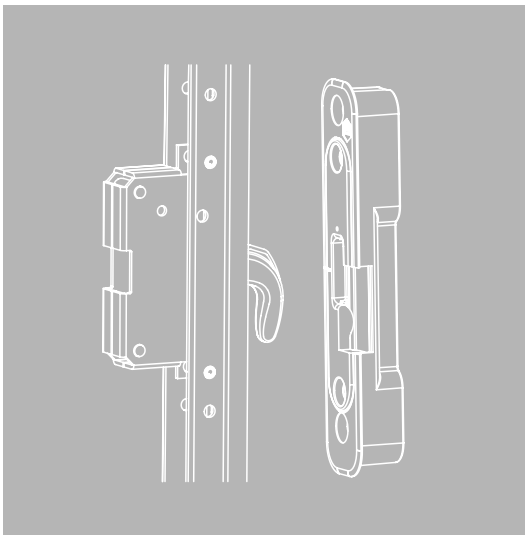
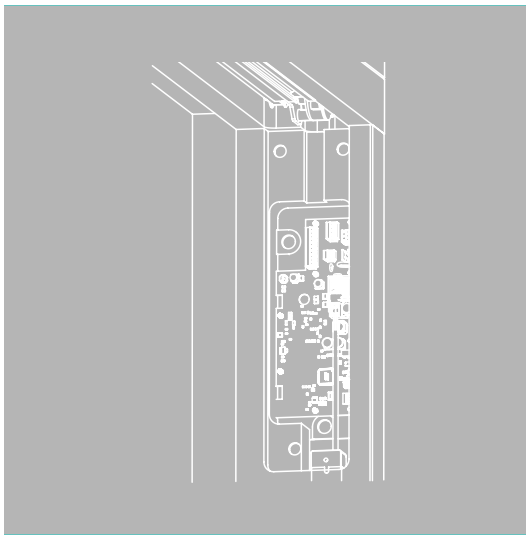
HAUTAU

LIFT&SLIDE HARDWARE





MOUNTING INSTRUCTIONS

HS comfort drive
Timber, Timber-Alu covered

TIMBER

ALU

Only for use by certified specialists!

HAUTAU, a MACO Group company

Table of content

Table of content (continuation)

⚠ WARNING!

Important safety instructions

The safety of personnel requires that the following instructions be observed. Incorrect installation can lead to severe injury!

Declaration of Conformity / state of the art
The drive has been constructed and tested in conformity with all applicable European directives.
A corresponding declaration of incorporation is available. You may not operate the equipment unless a declaration of conformity is available for the overall system.
The drive complies with the state of the art and requires qualified personnel for installation, maintenance, etc.

Personnel
Professional execution of electrical connection has to be entrusted to trained electricians! (as specified e. g. in DIN VDE 1000-10).
The mounting of the drive has to be performed by personnel, which has been instructed acc. to the state of the art and acc. to recognised rules of technology.

Intended use

› A power-operated (lift and) slide window with horizontally slidable sashes is used as a side entrance and side exit between two separate locations, in order to link interior and exterior.

› Use of the HS / S comfort drive only for sashes with a weight of max. 300 kg (integrated anti-trap protection).
Depending on the risk assessment, for sash weights of 300 ... 440 kg additional safety devices, such as light curtain, presence sensor or key switch have to be installed.

› The complete element has to be mounted perpendicularly.

› For maintenance purposes all components of the window element have to be freely accessible.

› In closed position, the sash is lowered and locked by means of locking hooks.

› The lift and slide window cannot be used as emergency door for fire protection, smoke protection or as escape door.

› For version with lift drive: in case of power failure it is possible to manually lift, lower and slide the movable sash with a plug-in handle. This enables a release / locking in open / closed position.

Select the required mounting material in accordance with the structure and the respective load and use additional mounting material if necessary. Any included mounting material will only correspond to parts of the required material.

Important safety instructions (continuation)

Any individual applications or modifications of the drive which are not in compliance with intended use are explicitly prohibited. We shall not be liable for any damage to personnel or material resulting from non-compliance with this provision.
Pay attention to the 'Guidelines / advice on the product and on liability' (VHBH) of the Quality Assurance Association: Locks and Hardware.

Storing documents / instructions
Store these instructions for future reference and maintenance. Make these installation instructions available to the end user and provide instructions.

Installation und operation
Prior to installation: Test window and safety elements. The physical integrity and smooth operation of the window must be ensured.
All works (installation, adjustment etc.) have to be done in currentless condition.
Before installing the drive, it must be verified that the drive's temperature range has been adapted to its operating environment.
To fasten the parts, use screws with sufficient length, so that they can reach into the steel reinforcement in case of PVC profiles.
No other persons are allowed in the vicinity of the drive when a key switch with off presetting (DEAD-MAN switch) is actuated.

WARNING: Never connect the drive / control keypad to 230 V of voltage!
The drive may only be operated at very low safety voltage. Otherwise, there is danger to life!

CAUTION: Failure to follow the work steps will destroy the drive. Improper handling endangers the material. Do not allow any liquid to enter the interior of the device! No objects or dirt shall be left on the running rail.

Risk of crushing and pinching!
To avoid misuse, a risk assessment acc. to Machinery Directive 2006/42/EC is required at the installation site. Protective measures are to be applied according to EN 60335-2-103/2016-05. Dependi ng on the risk assessment, for sash weights of 300 ... 440 kg additional safety devices, such as light curtain, presence sensor or key switch have to be installed.

Important safety instructions (continuation)

The drive opens and closes windows automatically.
It is stopped by overload cutoff. However, the compressive force is sufficient to crush fingers if you act carelessly.
Do not reach into the window rebate or the drive while the drive is running!

This device may be used by children age 8 and older as well as all persons without limited physical, sensory or mental abilities or lack of experience and knowledge provided they act under supervision or have received prior instructions on the safe use of the device and any hazards resulting from using the device.
Children are not allowed to play with the device.
Cleaning and user maintenance must not be carried out by children without supervision.
Make sure there are no people or objects in the movement area of the sliding sash.
If the sliding sash element does not have additional safety devices, such as light curtain or presence sensor, you have to operate the drive only when there is visual contact with the door.
Observe the run of the sash until the door has reached the end position.
Do not pass through remote-controlled doors until the door has stopped.
Make sure that remote controls do not come into the hands of children and are only used by people who are familiar with the operation of the remotecontrolled door.
When operating with a remote control, there must be visual contact with the door if it does not have an additional safety device (light curtain, presence sensor).
Please note that a button can be accidentally pressed on the hand-held transmitter (for example in the pocket / handbag) and this can lead to an unintended door movement.
Make sure that there are no persons or objects in the movement area of the door when teaching-in the door.

Testing
When installation is complete and after any changes to the system, check all functions by a trial run.

Note:
If spare parts or extension components are required or desired, use only original spare parts.
No liability will be accepted and no guarantee nor service is granted if products made by outside manufacturers are used.
Reliable operation without any damage and hazards requires that installation / setup be made carefully in accordance with these instructions.

Important safety instructions (continuation)

Maintenance / repair

The power supply to the device must be interrupted for the duration of any cleaning or other types of maintenance operations.

Windows and drives must be checked for physical integrity at least once a year.

Free the drives from any contamination. Check the tightness of fixing and clamping screws. The tension of tooth belt has to be checked every year and the tooth belt has to be retensioned, if necessary (refer to section 'Adjustment of tension of tooth belt'). The parts to be checked and the items to be maintained can be found in the maintenance check list (www.hautau.de). The end customer can perform all of the steps described.

If deviating from the instruction steps, limitation of warranty claims must be expected.

Test the drive by trial run. Defective drives must be repaired at our factory. You may only use original spare parts.

The readiness for operation has to be checked regularly.

Care

Check all devices and cable connections for external damage and dirt. The operability of the control keypad must not be affected by, for example, structural measures or stored goods.

Use a soft, slightly dampened cloth to clean the housing components and the control keypad. To prevent damage to the surfaces, do not use any caustic chemicals, abrasive cleaners or agents containing solvents for cleaning. Provide the drive with durable protection against water and dirt.

Abbreviations

HS / S	Lift & Slide / Slide ...
LH	Length of lift drive
RAB	Outer frame width

Warranty

The drive is subject to HAUTAU's Terms and Conditions (TC) (Internet: www.HAUTAU.de).

Disposal

The crossed-out wheeled bin symbol indicates that you must not dispose of this electrical appliance or electronic device in the household waste at the end of its service life.
You can return it to free collection points for old electrical appliances in your area or to other centres where they accept old appliances for recycling. Contact your local council for addresses of collection points and centres. If the electrical appliance or electronic device contains personal data, you yourself are responsible for erasing data before you return it. You will find more information online at www.weeelogic.com or other websites on the WEEE Directive.

HAUTAU

EG Einbauerklärung
EC declaration of incorporation

HAUTAU
OPENS NEW DIMENSIONS

Der Hersteller:
The manufacturer:

HAUTAU GmbH
Wilhelm-Hautau-Straße 2
31691 Helpsen
Tel. +49 57 24 / 393-0

erklärt hiermit, dass die unvollständige Maschine:
confirms hereby, that the incomplete machine:

Produktbezeichnung: *Product designation:*	**ATRIUM® HS / S comfort drive - MACO**
Typenbezeichnung: *classification:*	**ATRIUM® HS / S comfort drive – MACO**
Seriennummer: *serial number:*	laut Typenschild *see label*

den folgenden grundlegenden Anforderungen entspricht:
is in accordance with the following basic standards:

- EG-Maschinen-Richtlinie **2006/42/EG**
  EC machinery directive
- Sicherheit elektrischer Geräte für den Hausgebrauch **DIN EN 60335-1:2012-10**
  Household and similar electrical appliances - safety **DIN EN 60335-2-103:2016-05**
- EMV-Richtlinie **2014/30/EU**
  directive electromagnetic combatibility
- RoHS II **2011/65/EU**

Die unvollständige Maschine darf erst dann in Betrieb genommen werden, wenn festgestellt wurde, dass die Maschine, in die die unvollständige Maschine eingebaut werden soll, den Bestimmungen der **EG-Maschinen-Richtlinie (2006/42/EG)** entspricht und die Konformitätserklärung gemäß Anhang II A vorliegt.
*The incomplete machine must not be put into operation till it has been ascertained, that the machine in which the incomplete machine is to be incorporated is in accordance with regulations of the **EC machinery directive (2006/42/EG)**.*

Der Hersteller verpflichtet sich, die speziellen Unterlagen zur unvollständigen Maschine einzelstaatlichen Stellen auf Verlangen elektronisch zu übermitteln.
By request the manufacturer assumes responsibility for the electronic transmission of the special documentation concerning the incomplete machine to the accordant individual state office

Die zur Maschine gehörenden speziellen technischen Unterlagen nach Anhang VII Teil B wurden erstellt.
The special technical documentations belonging to the machine according to Appendix VII Part B have been generated.

Die vorgenannten speziellen technischen Unterlagen können angefordert werden bei:
The aforementioned special documentation can be requested from:

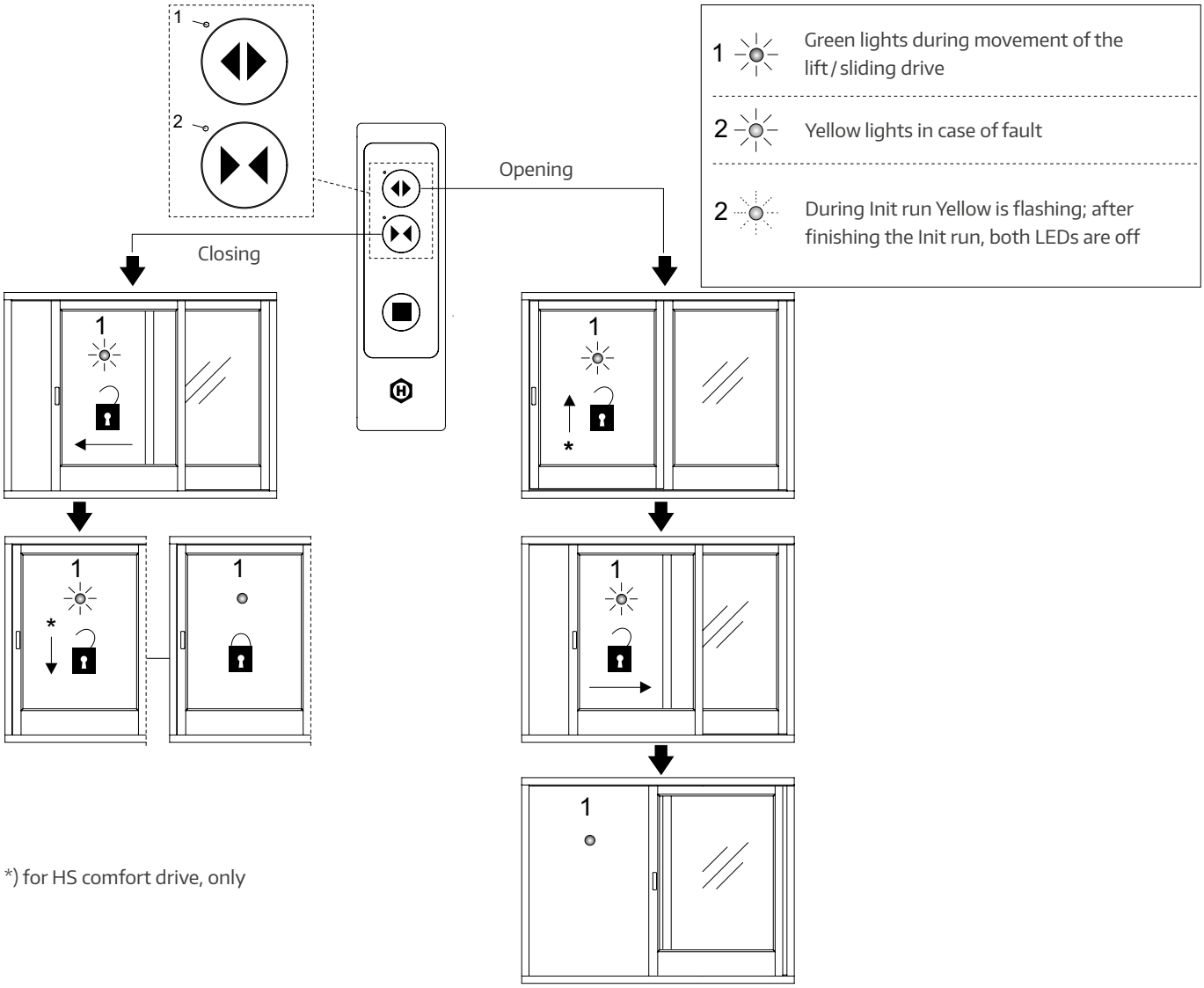
HAUTAU GmbH
Wilhelm-Hautau-Straße 2
31691 Helpsen
Tel. +49 57 24 / 393-0

Helpsen, 18.09.2018

i.V. Dipl.-Ing (FH) Stefan Faatz
Leiter Entwicklung / CE Beauftragter
Head of development / CE commisioner

Dipl.-Ing. Martin Beißner
Technische Geschäftsführung
Technical managing director

Operation

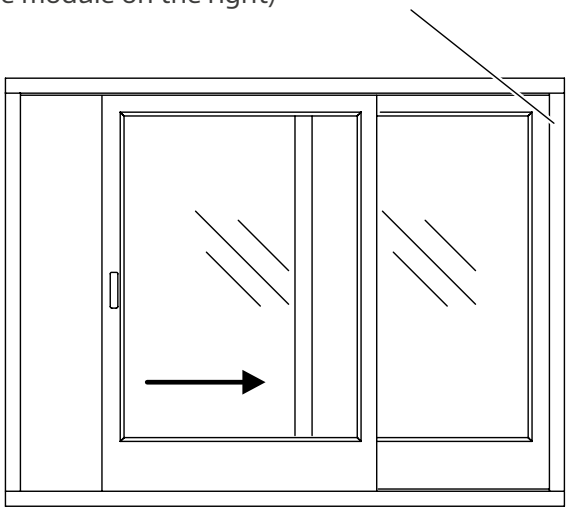


1	Green lights during movement of the lift / sliding drive
2	Yellow lights in case of fault
2	During Init run Yellow is flashing; after finishing the Init run, both LEDs are off

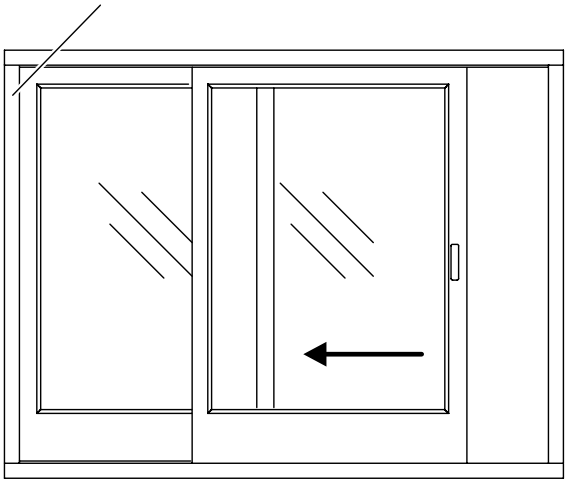
*) for HS comfort drive, only

Explanation of terms

Left version
(sliding sash opening from the left to the right, drive module on the right)

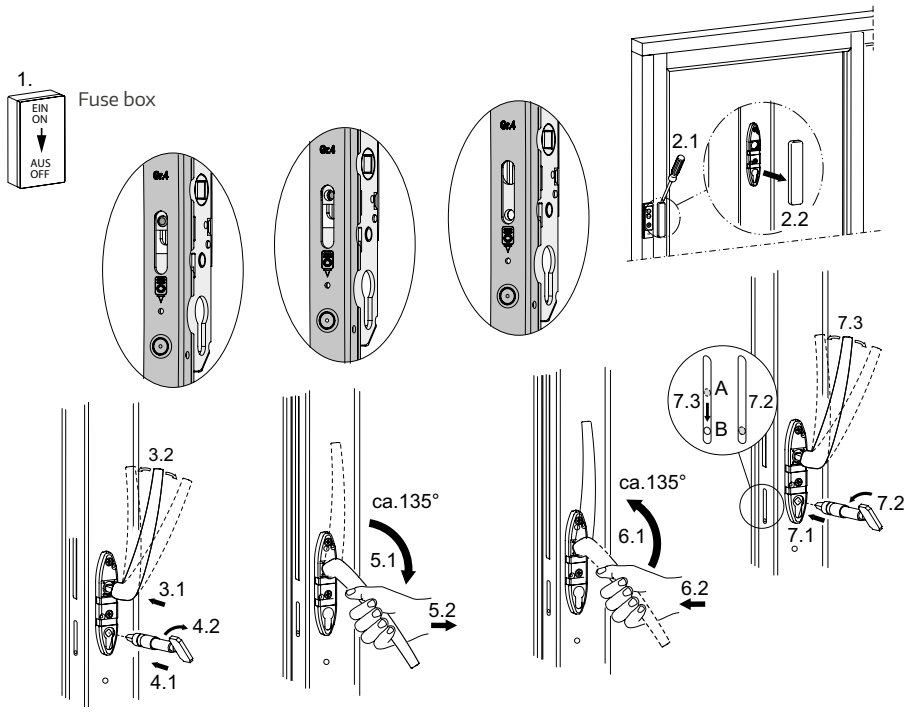


Right version
(sliding sash opening from the right to the left, drive module on the left)



As an example, a sash opening to the right is described within these mounting instructions. Measurements and procedures for sashes opening to the left have to be adapted accordingly. Measurements in mm.

Manual release / locking in case of power failure in the **closed** state



ATTENTION: Do not release the handle, guide the handle in the locked position, because it turns arround quickly due to the sash weight, thus could cause heavy injuries (see point 5 and 6).

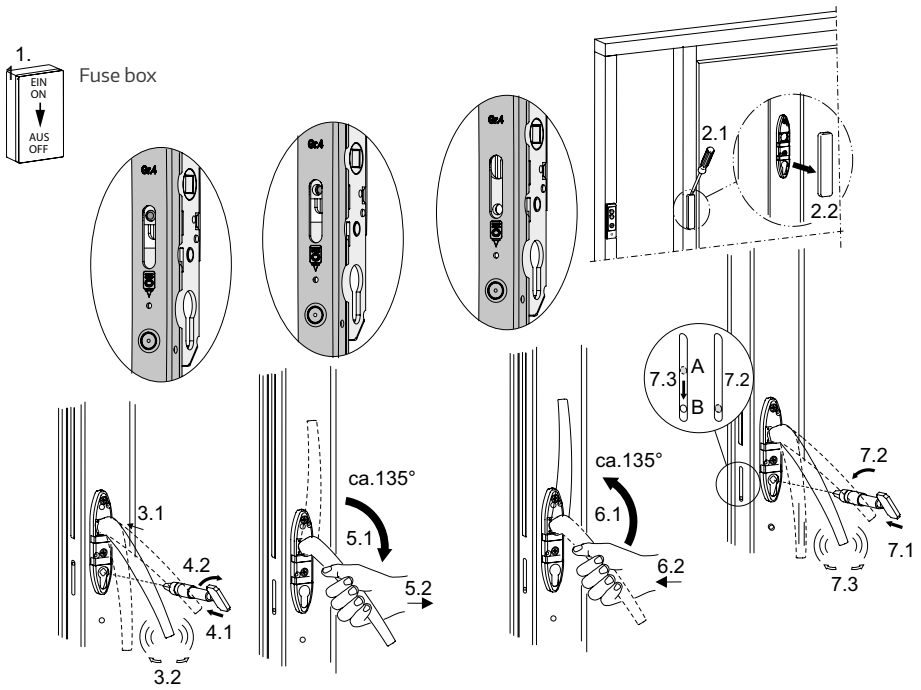
1. Switch off electricity primary sided before the power supply unit.
2. Remove the cap.
3. Insert the manual unlocking-handle into the gear and move it a little to left and right, to release the gear.
4. Install the unlocking key and rotate it to the glazing side until you hear a closure sound.
5. Now, you can lift the sash by means of a release handle, move it to the desired position and move it into the lowered position.

Locking

6. Insert the manual release handle back into the drive gear spindle and lift the door (6.1, 6.2). Slide the door shut and lock it.
7. Bring the coupling pin of the lift drive (A) in matching position to the drill hole of the drive rod (B). In order to couple lift drive and drive rod, turn the unlocking key towards the frame side (7.2).

WARNING:
If the manual unlocking-handle will not be pulled off before electrical start-up, this can lead to severe injuries!

Manual release / locking in case of power failure in the **open** state



ATTENTION: Do not release the handle, guide the handle in the locked position, because it turns arround quickly due to the sash weight, thus could cause heavy injuries (see point 5 and 6).

1. Switch off electricity primary sided before the power supply unit.
2. Remove the cap.
3. Insert the manual unlocking-handle into the gear and move it a little to left and right, to release the gear.
4. Install the unlocking key and rotate it to the glazing side until you hear a closure sound.
5. Now, you can lift the sash by means of a release handle, move it to the desired position and move it into the lowered position.

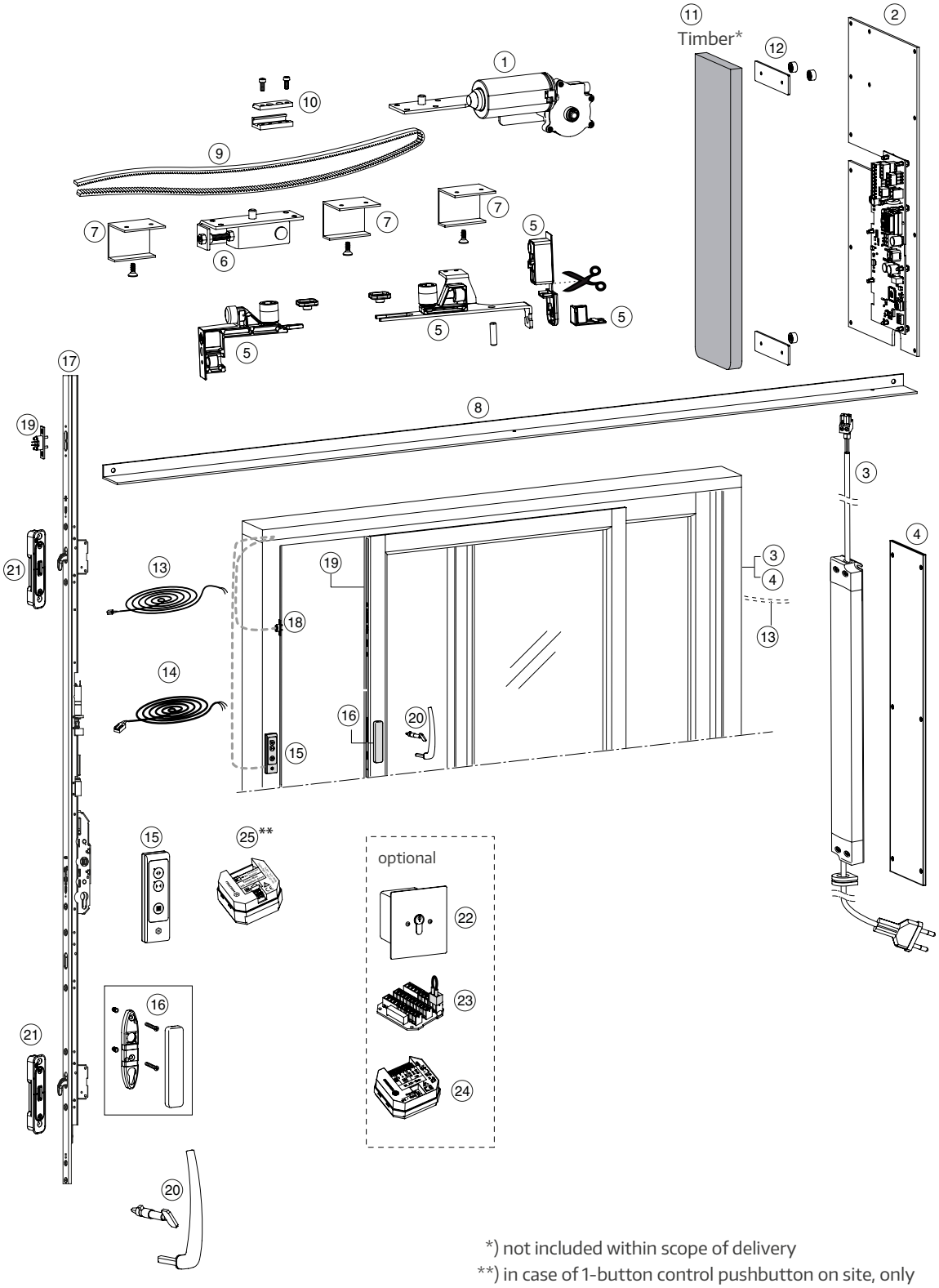
Locking

6. Insert the manual release handle back into the drive gear spindle and lift the door (6.1, 6.2). Slide the door shut and lock it.
7. Bring the coupling pin of the lift drive (A) in matching position to the drill hole of the drive rod (B). In order to couple lift drive and drive rod, turn the unlocking key towards the frame side (7.2).

WARNING:
If the manual unlocking-handle will not be pulled off before electrical start-up, this can lead to severe injuries!

Parts overview

Example: left version (sliding sash opening from the left to the right - view from inside)



*) not included within scope of delivery

**) in case of 1-button control pushbutton on site, only

Parts overview (continuation)

1. Drive unit
2. Circuit board
3. Power pack
4. Cover power pack
5. Upper guide unit with accesoires
6. Deflection tooth belt
7. Cover support
8. Cover profile
9. Tooth belt
10. Clamping plates drive unit bootom
11. Cover electronics timber
12. Support plate and magnet(s)
13. Cable for lift drive
14. Cable for control keypad
15. Control keypad
16. Cover for manual release / locking (in connection with lift drive)
17. Lift drive
18. Current transition
19. Contact delivery (in connection with lfit drive)
20. Emergency release set (drive handle and universal key) (in connection with lift drive)
21. Hook locking part
22. Key switch
23. Connection box HS / S comfort drive
24. WLAN box
25. Pushbutton-Box

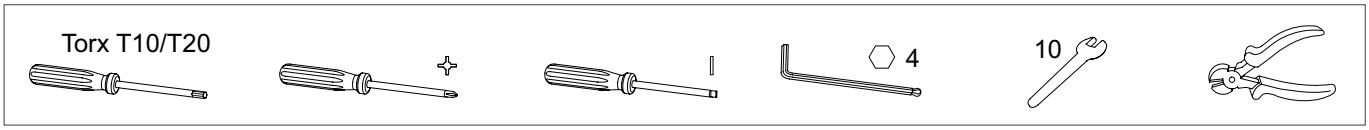
Preparatory actions

› All screwings have to reach sufficiently into the timber.

› Check parts for completeness.

› Required milling must be done in the workshop.

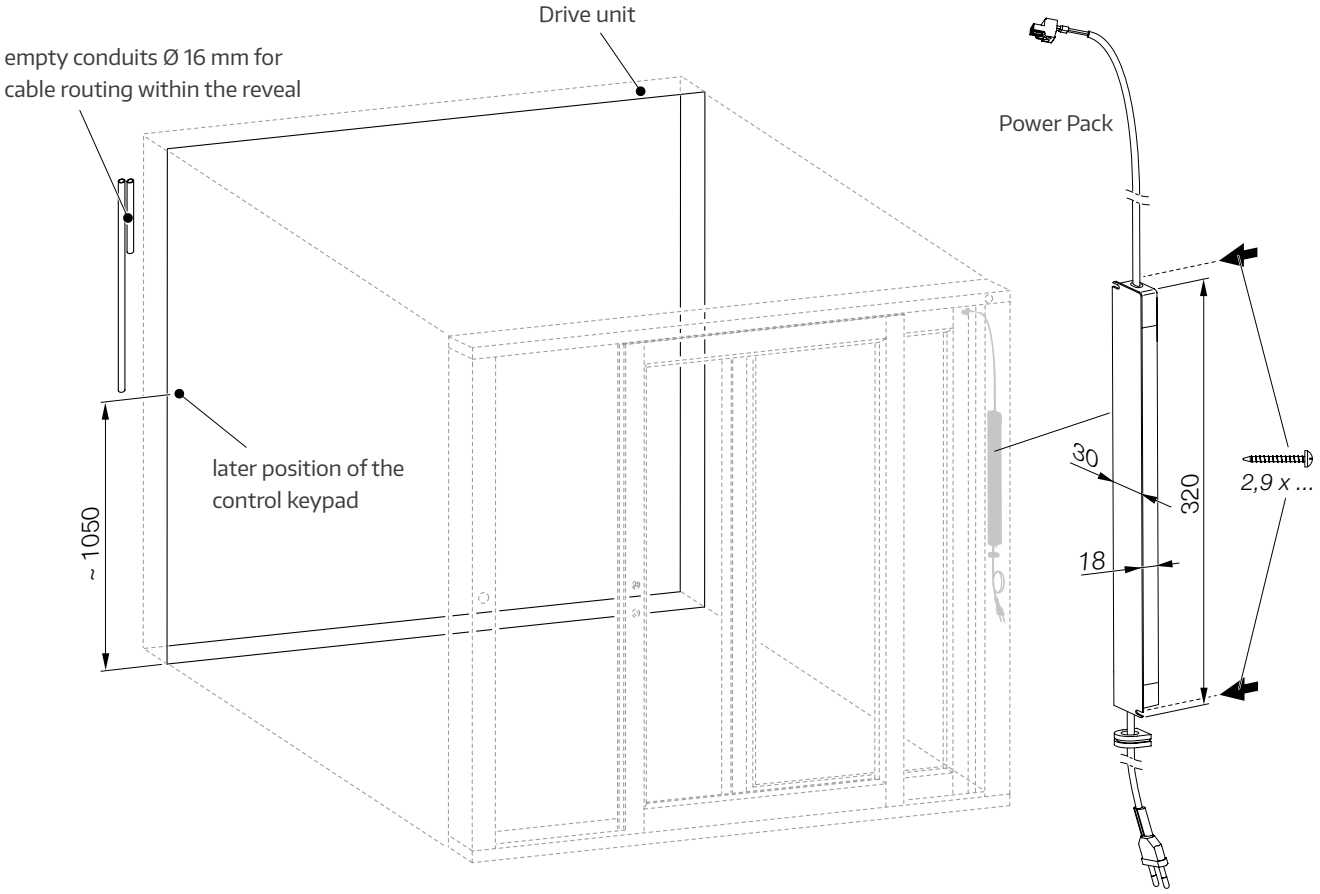
› Tools to be used (these have to be provided acc. to instructions):



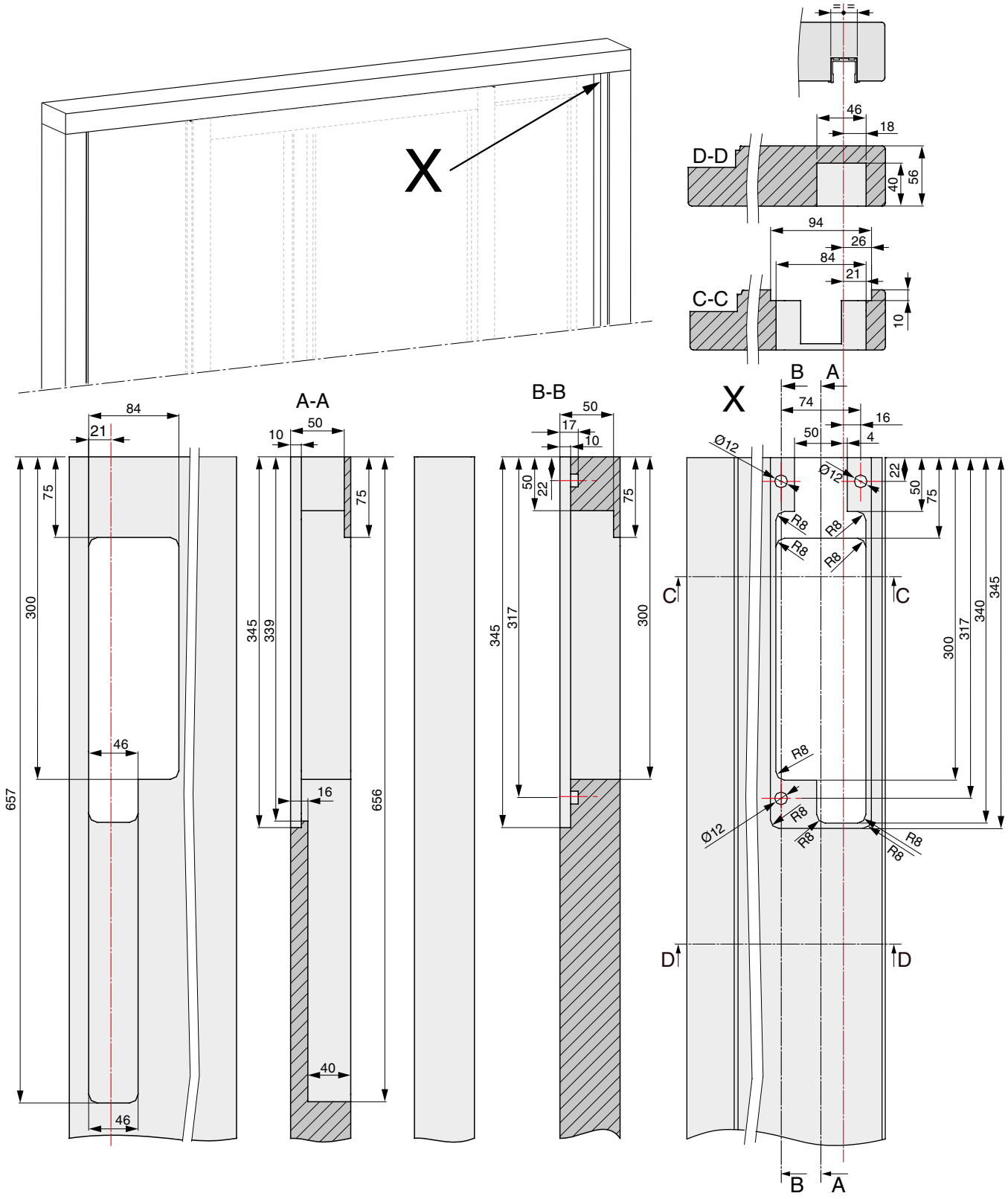
Preparation of electrical connection

Example: left version (sliding sash opening from the left to the right - view from inside)

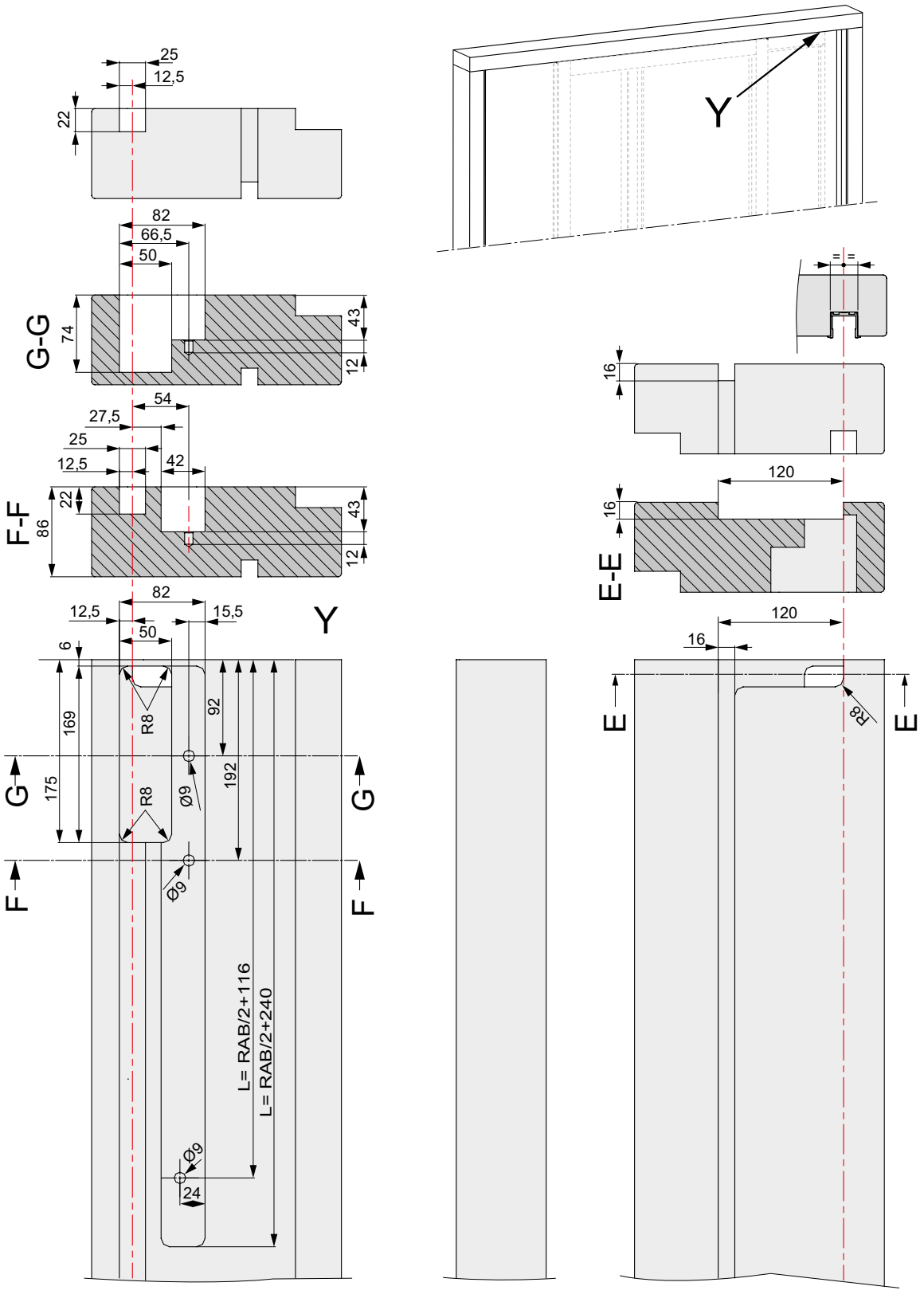
Connecting cable with 1,5 mm² cross-section



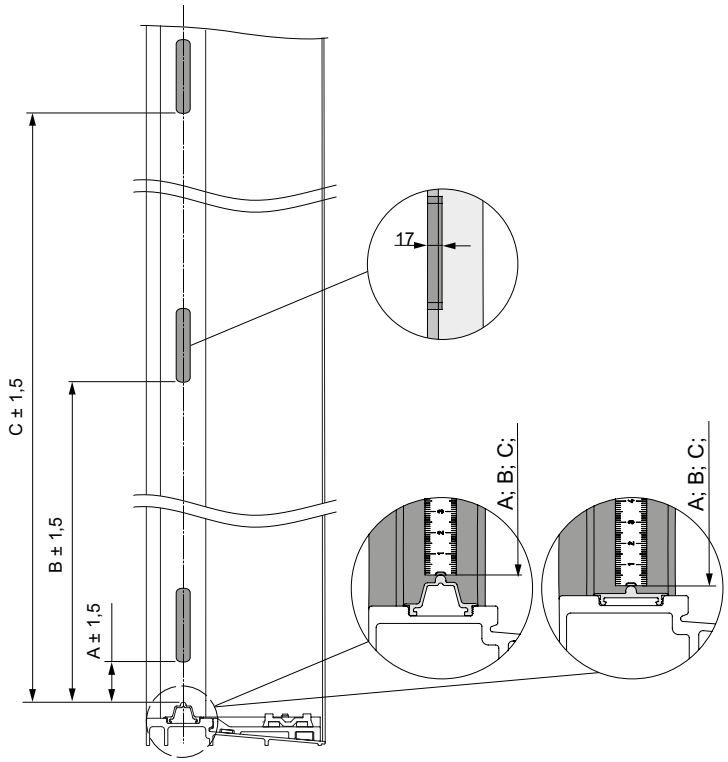
Cut-outs for circuit board



Cut-outs for drive unit

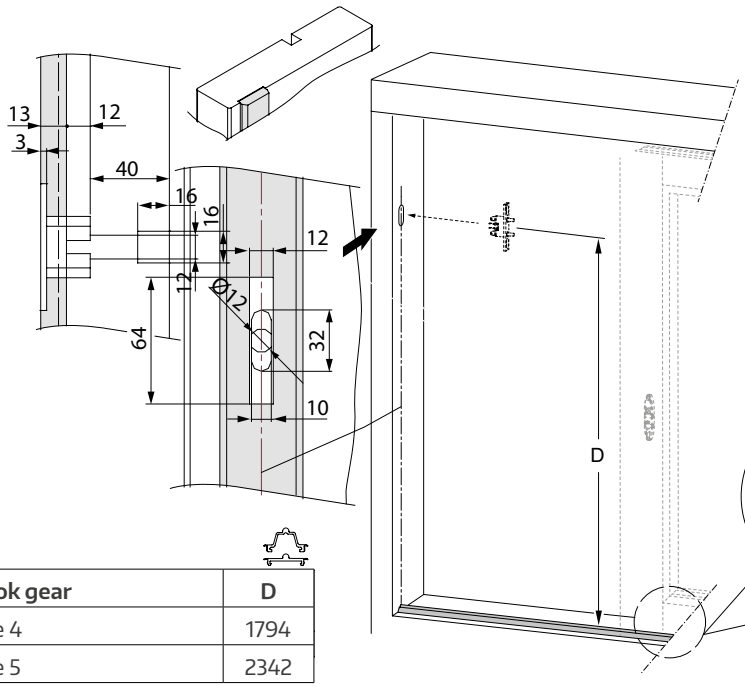


Locking, control- and current transition

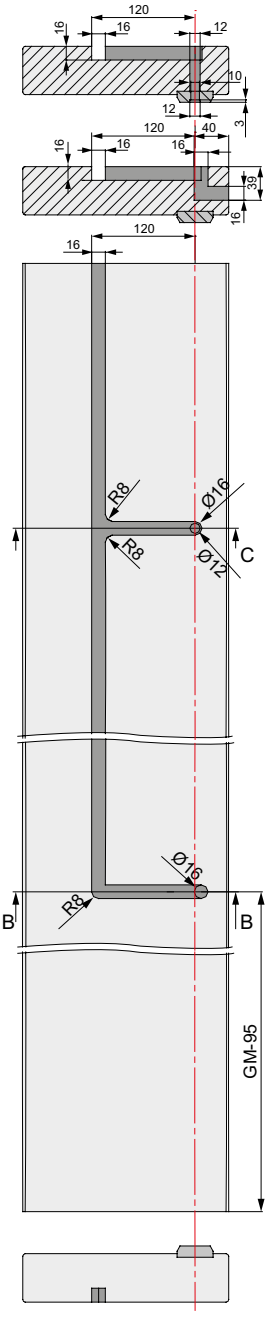


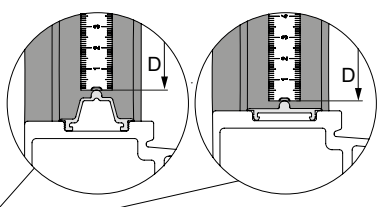
hook gear	A	B	C
size 4	145	733	1613
size 5	145	733	2045

hook gear size 4 position B is optional

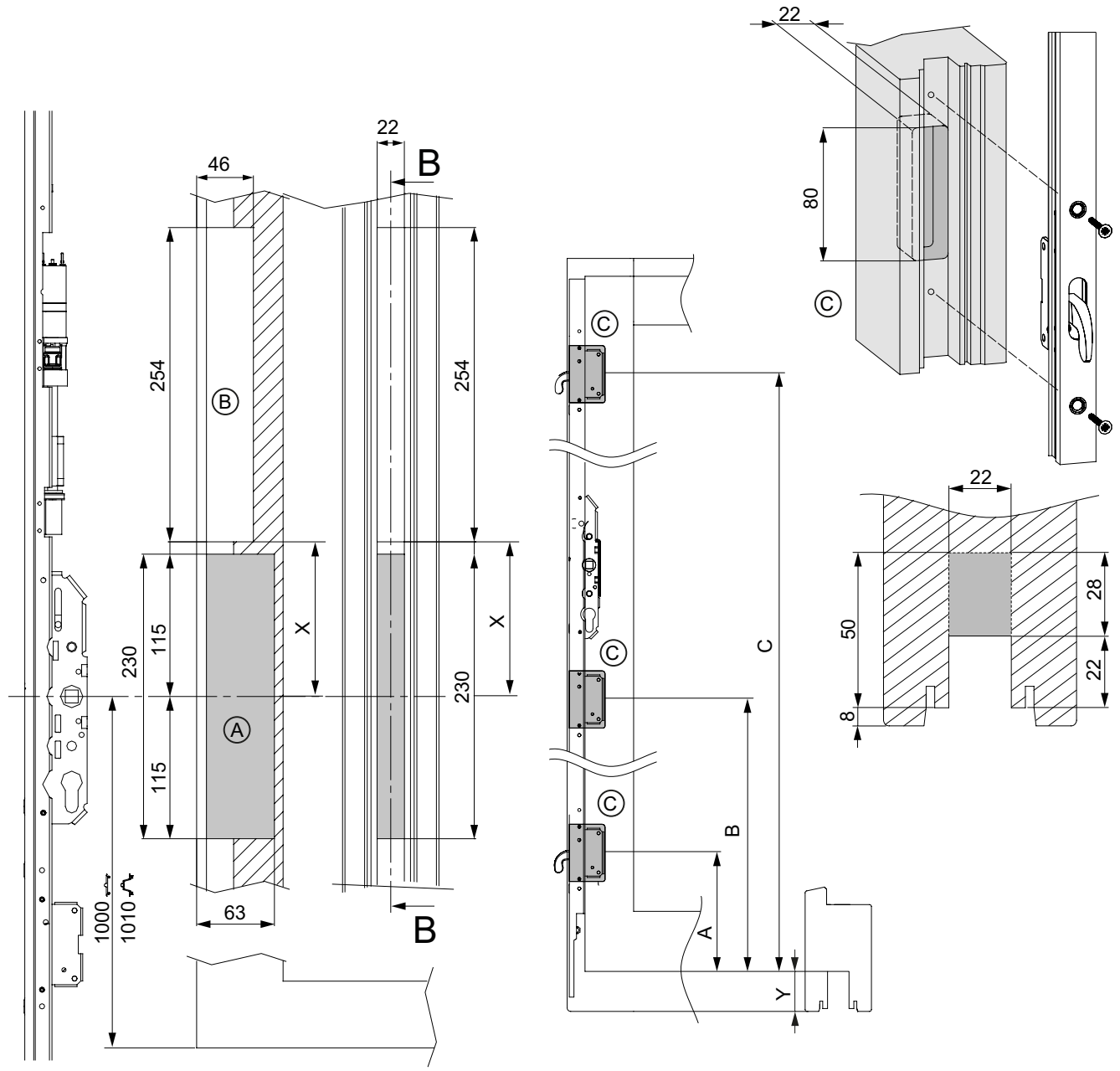


hook gear	D
size 4	1794
size 5	2342





Cut-outs for lock case Ⓐ, Cut-outs for lift-drive Ⓑ, Cut-outs for hook-box Ⓒ



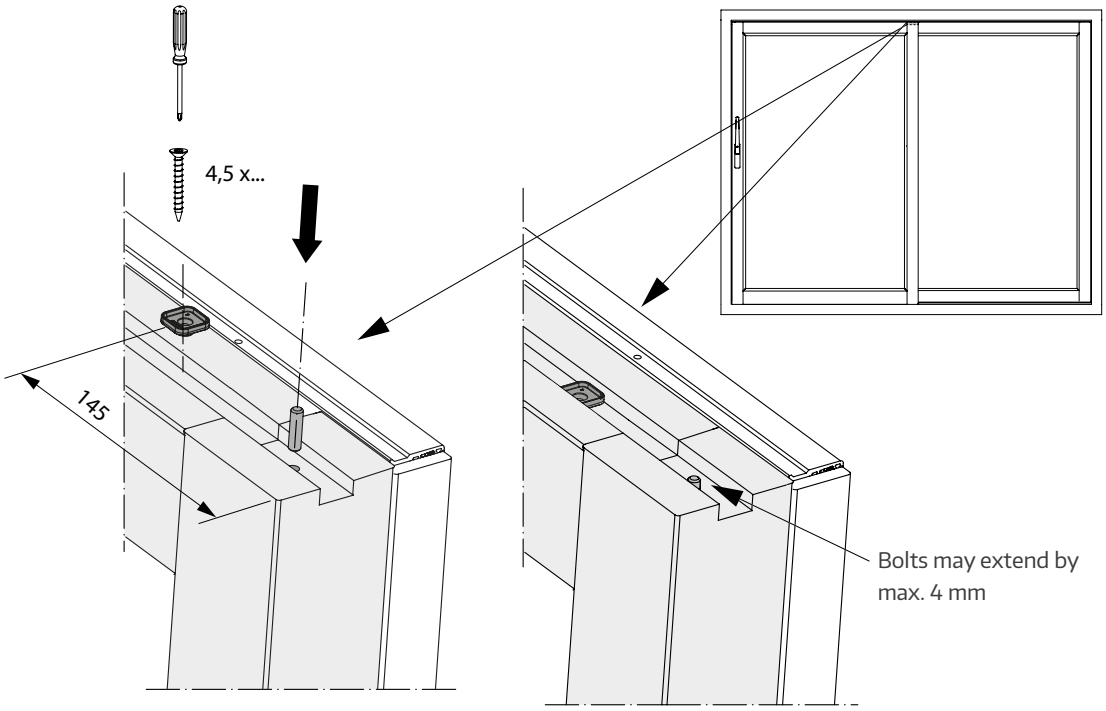
	X
size 4	125
size 5	292

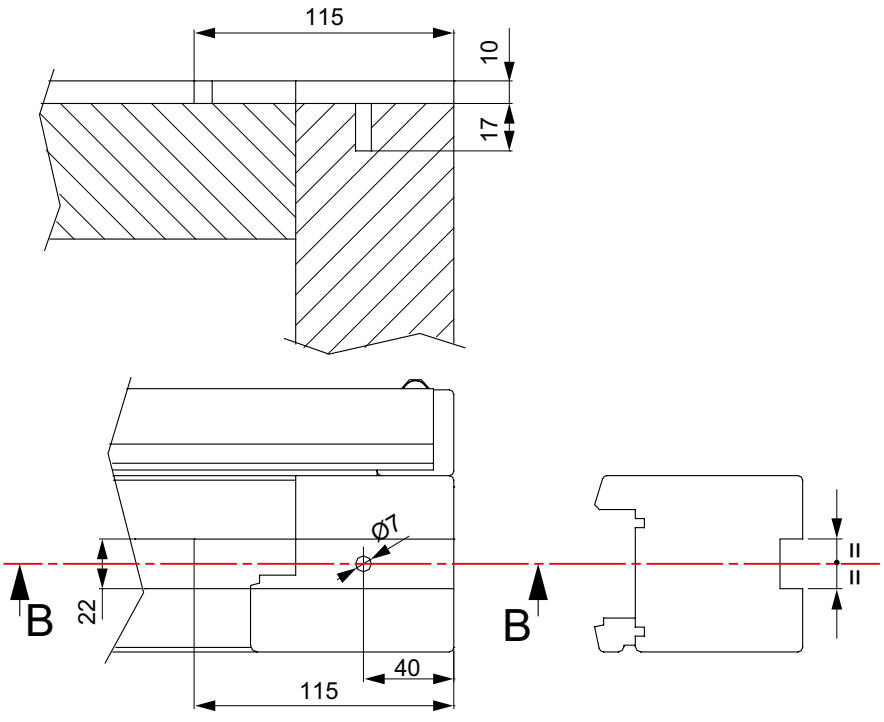
hook gear	A	B	C
size 4	166	754	1634
size 5	166	754	2066

Y		
300 kg	46	56

hook gear size 4 position B is optional

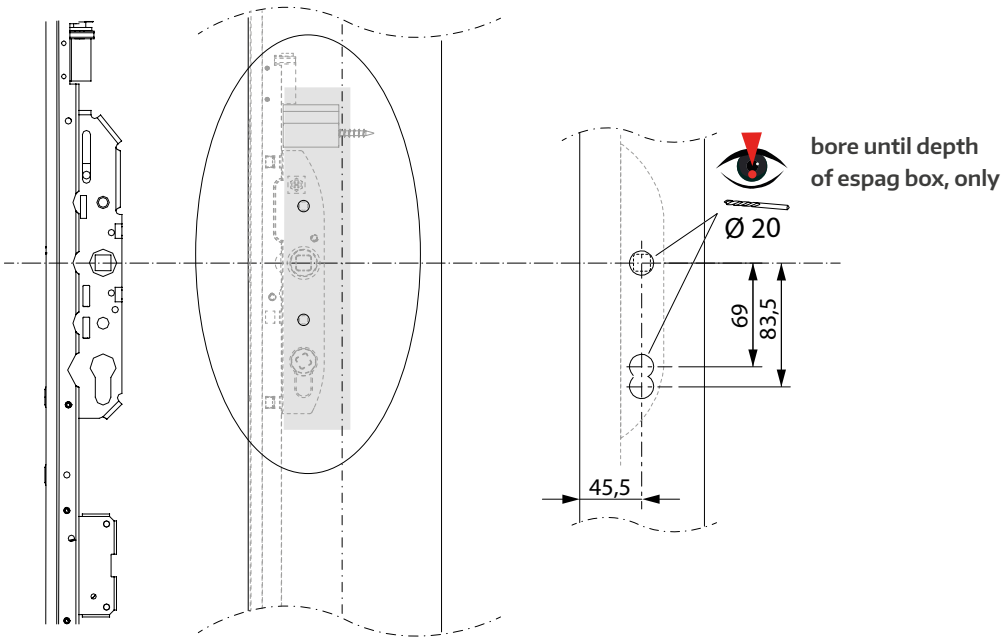
Positioning of the drive pin



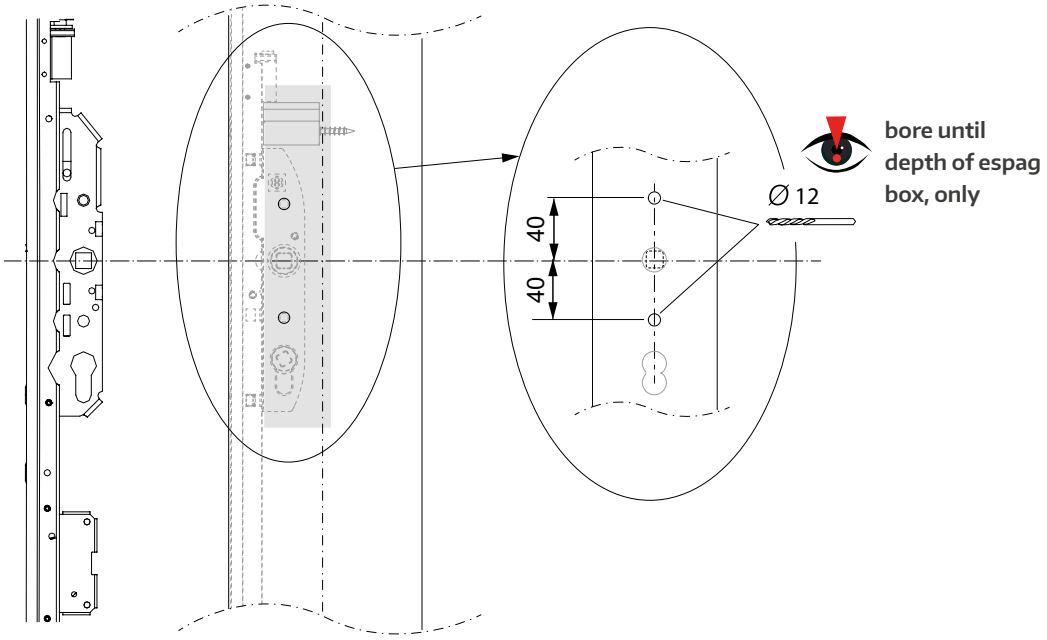


Borings for manual unlocking handle

Bore holes for manual unlocking-handle and unlocking key

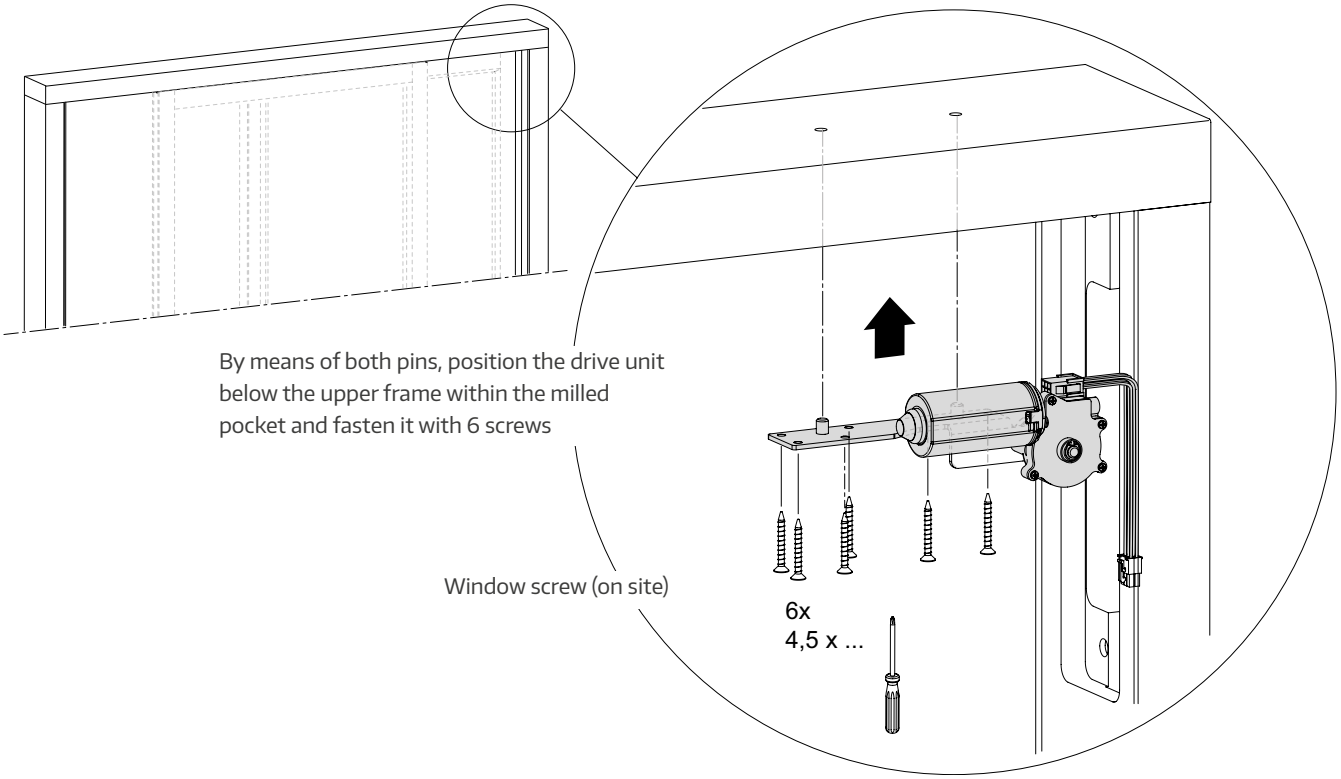


Bore holes for cover for manual release / locking



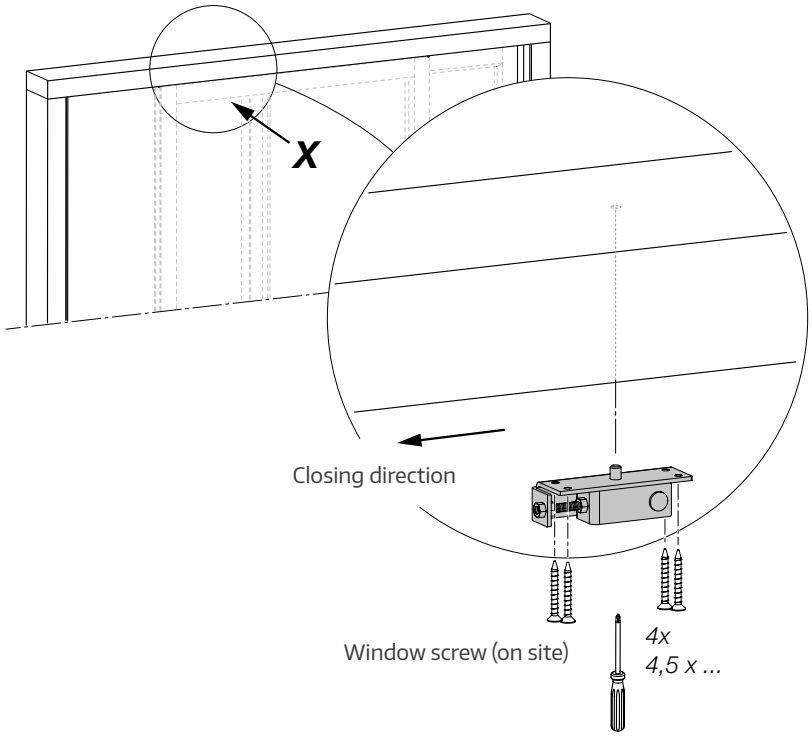
Mounting driving unit

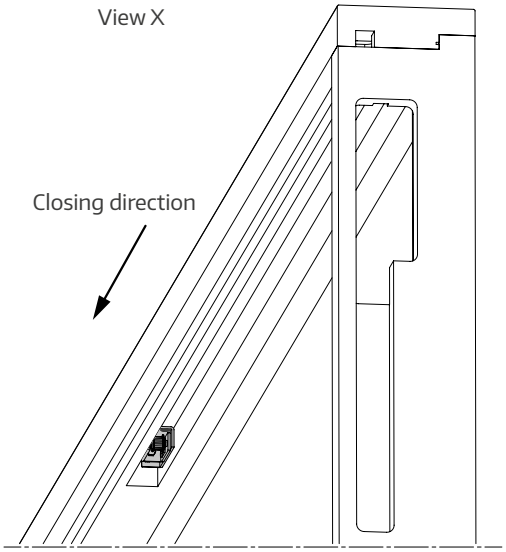
It is recommended to mount on the loose rod.



Mounting of deflection tooth belt

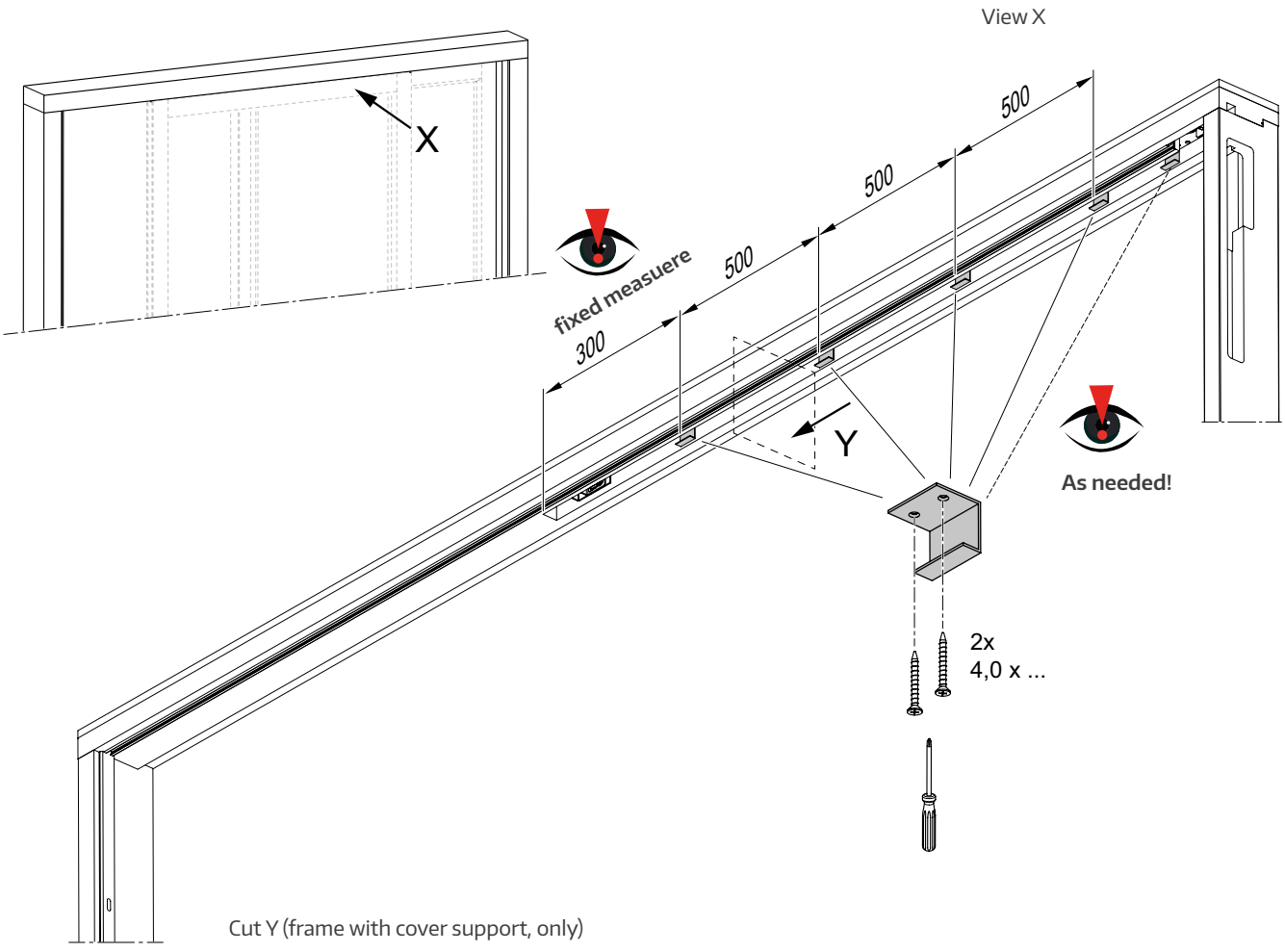
It is recommended to mount on the loose rod.



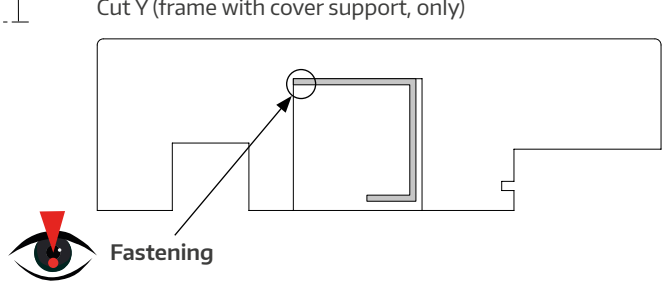


Mounting of cover profile

It is recommended to mount on the loose rod.

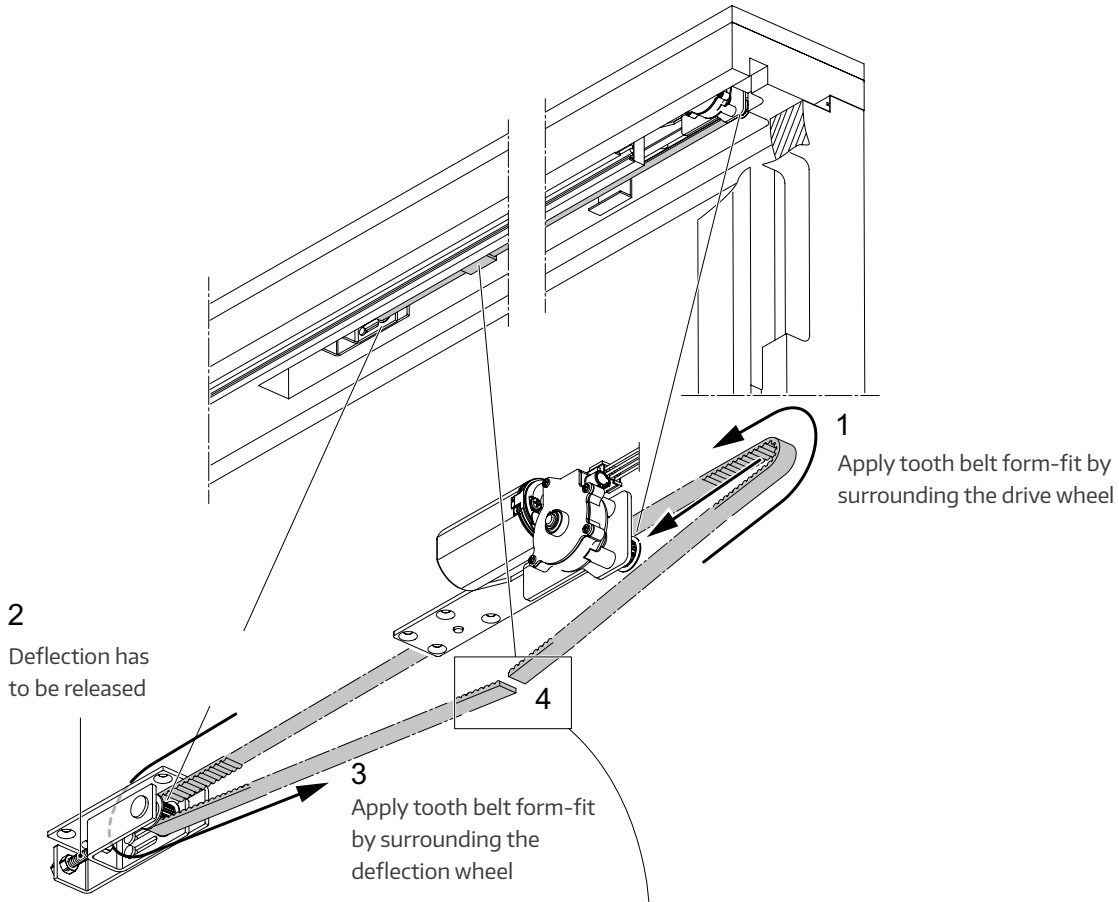


Cut Y (frame with cover support, only)



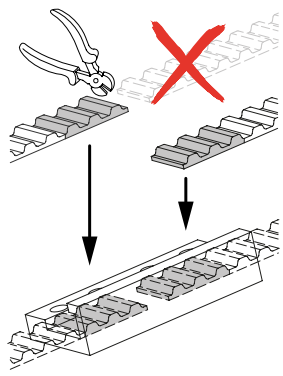
Mounting of tooth belt

Mounting of the tooth belt should talk place about in the half of the fixed part! (see p. 27)



4.1

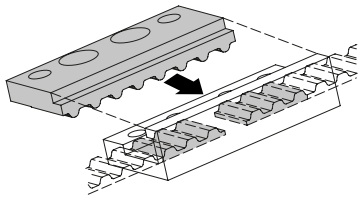
Cut tooth belt to length in such a way, that it can be fastened in hand-tight condition at both ends with **3 teeth** each within the clamping part



4.2

Position top clamping plate as shown on the lower clamping plate and both ends of the tooth belt

Dismantle the deflection to facilitate the toothed belt connection!

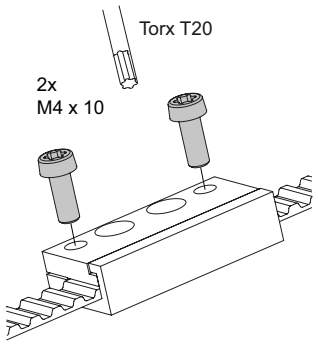


4.3

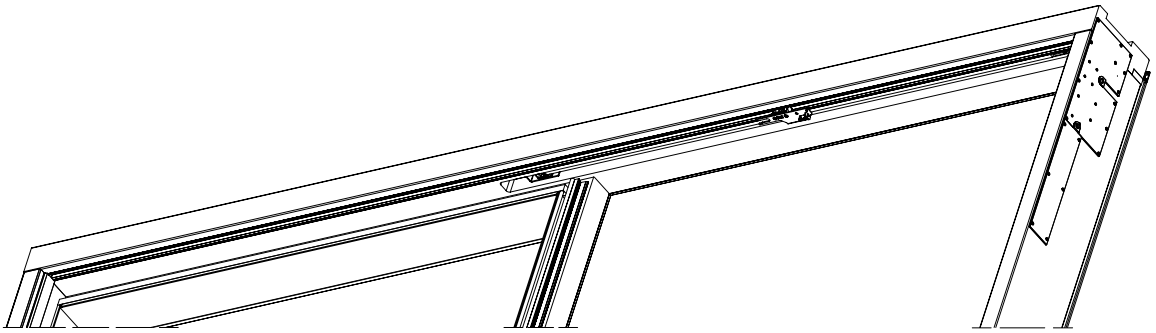
Connect both clamping plates with 2 screws M4 x 10

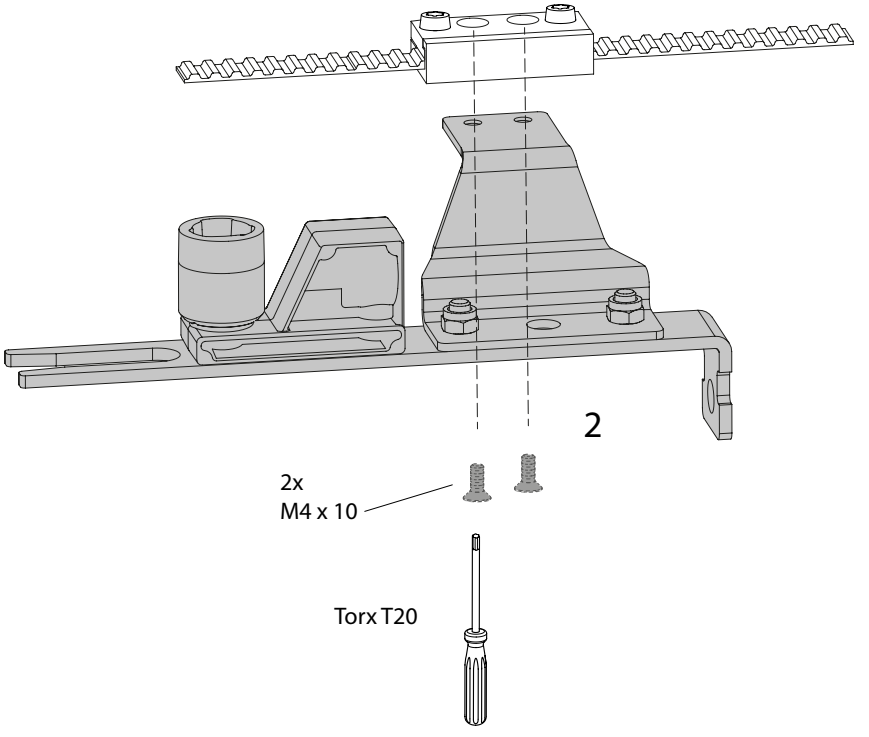
4.4

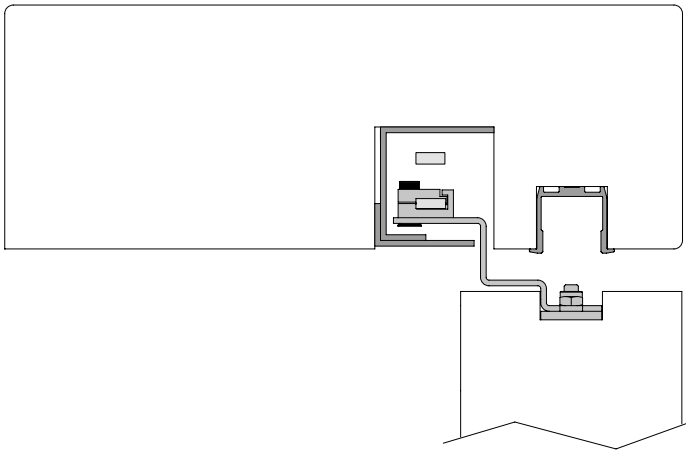
Mounting deflection again



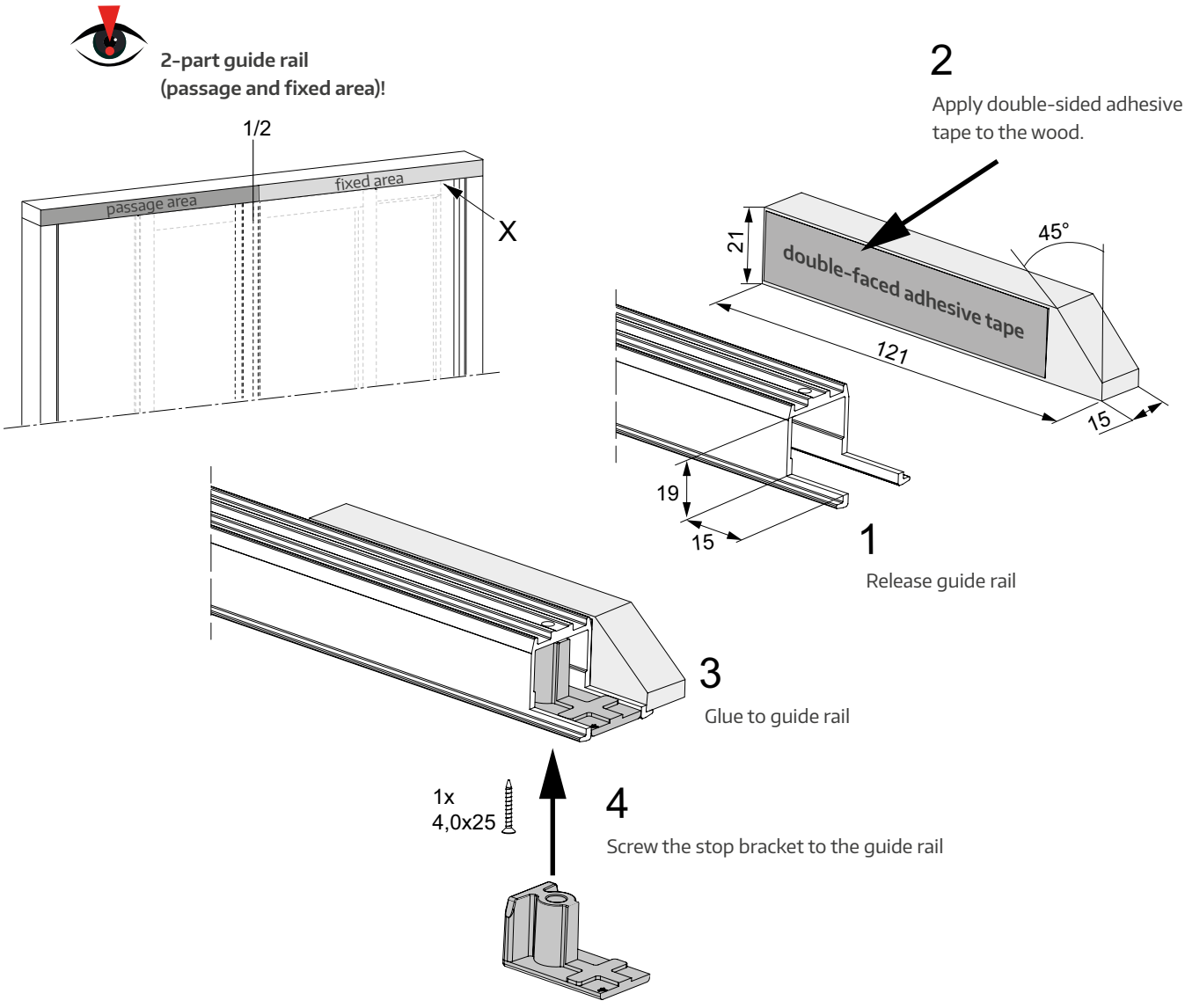
Connect drive-pin with toothbelt



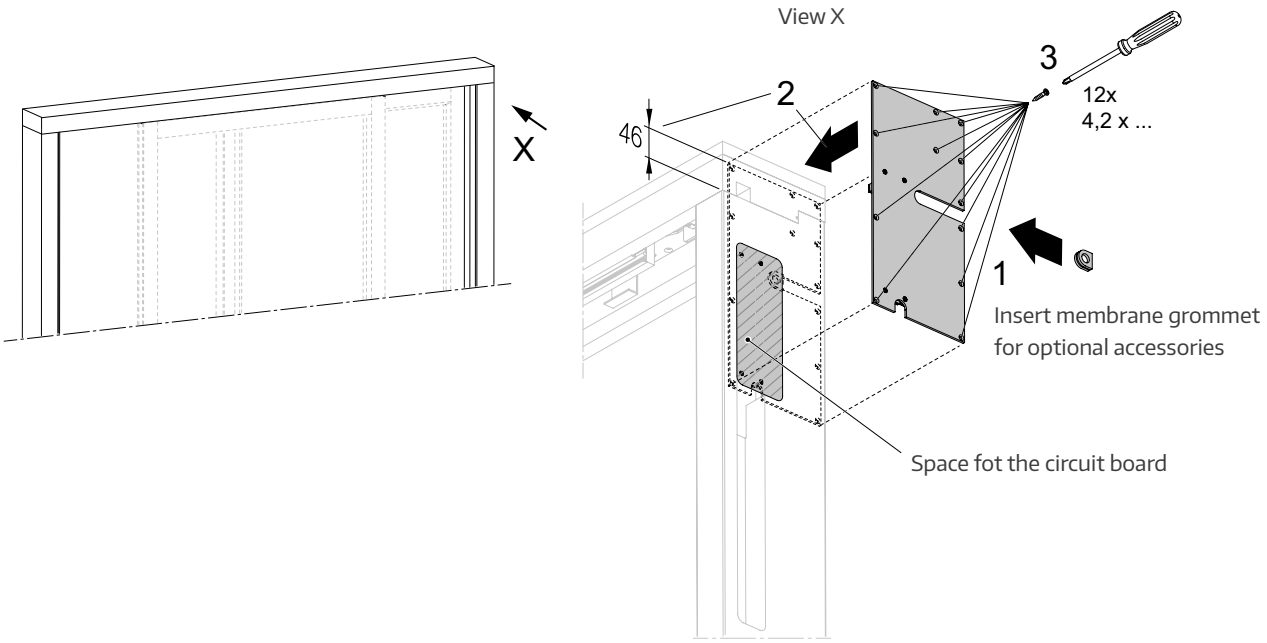


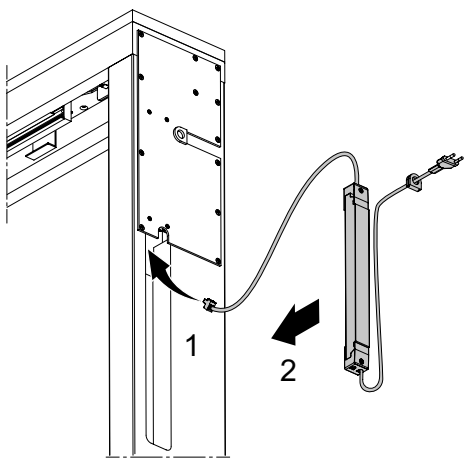


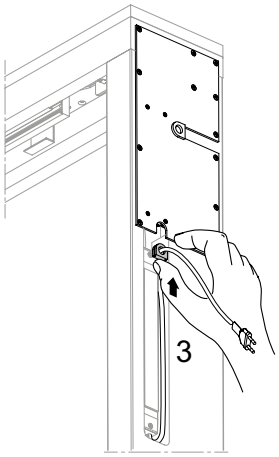
Mounting of guide track

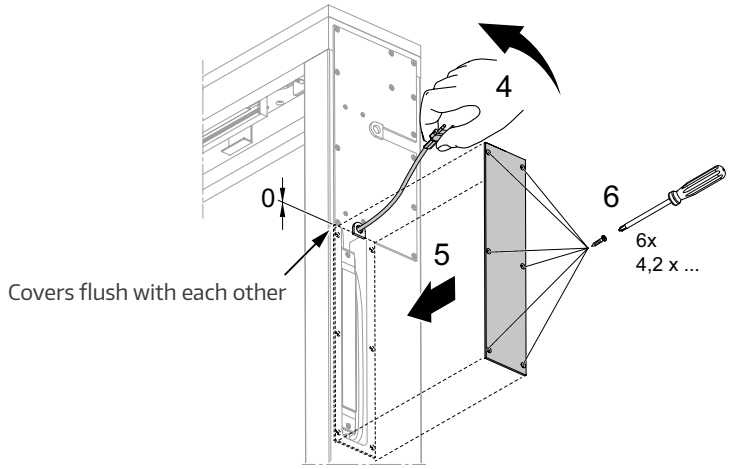


Mounting circuit board

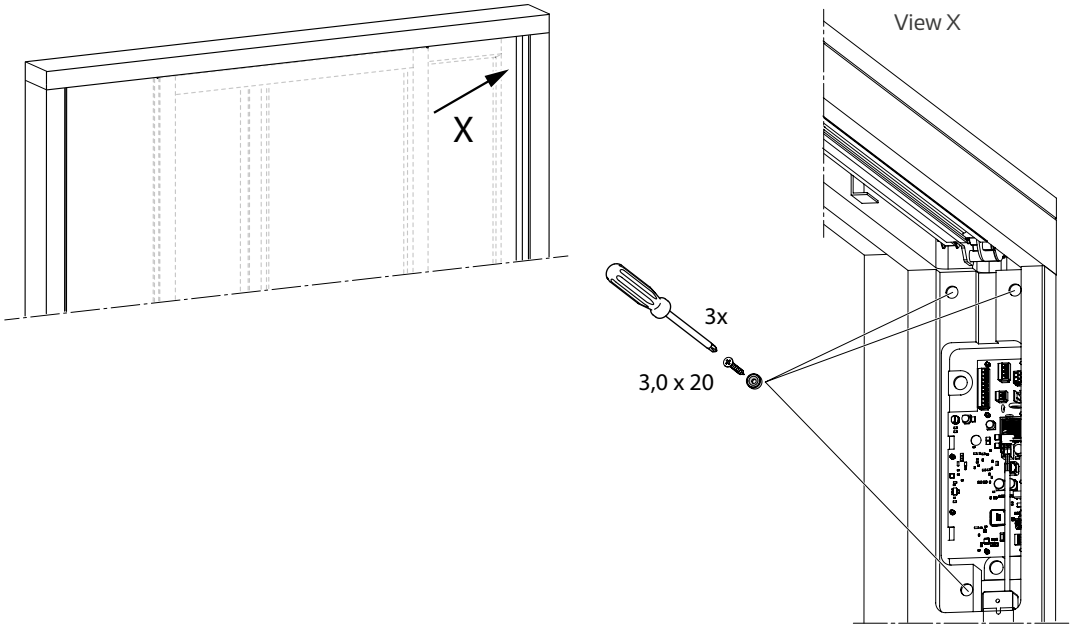




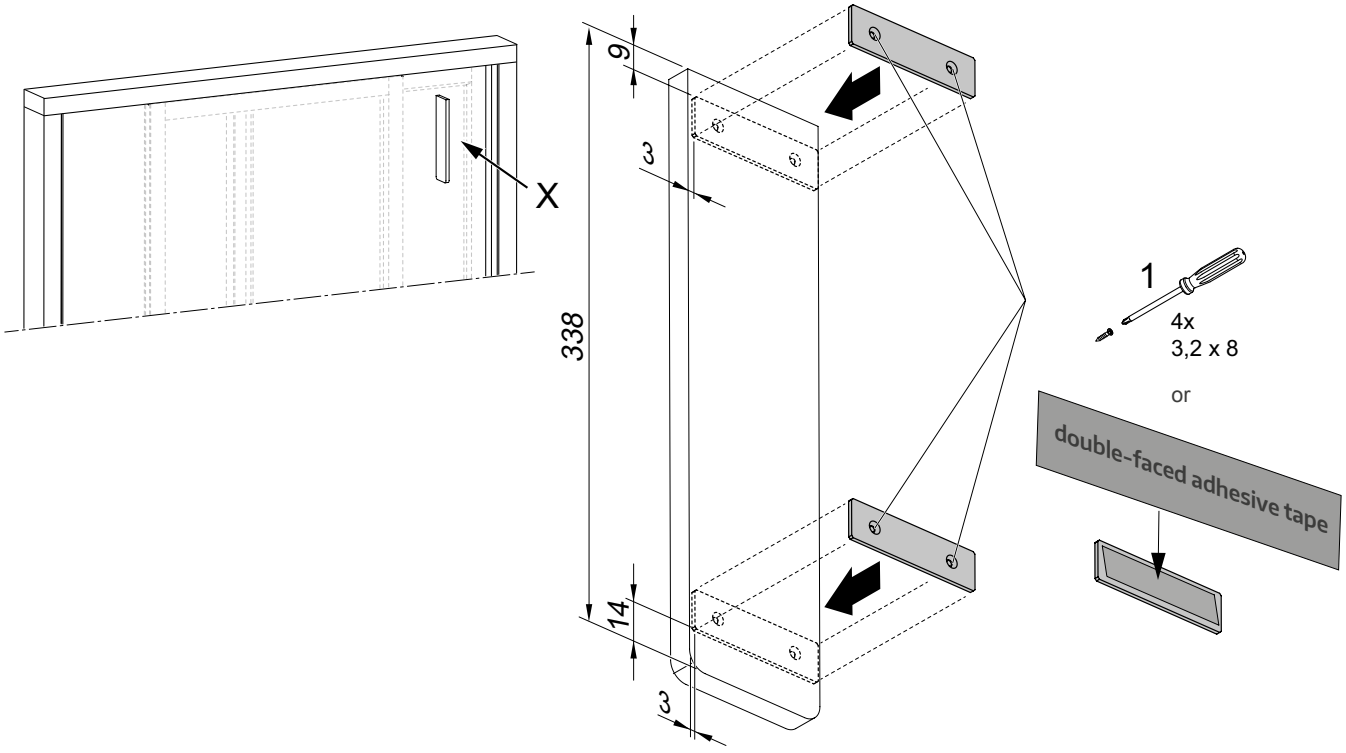




Mounting of magnets

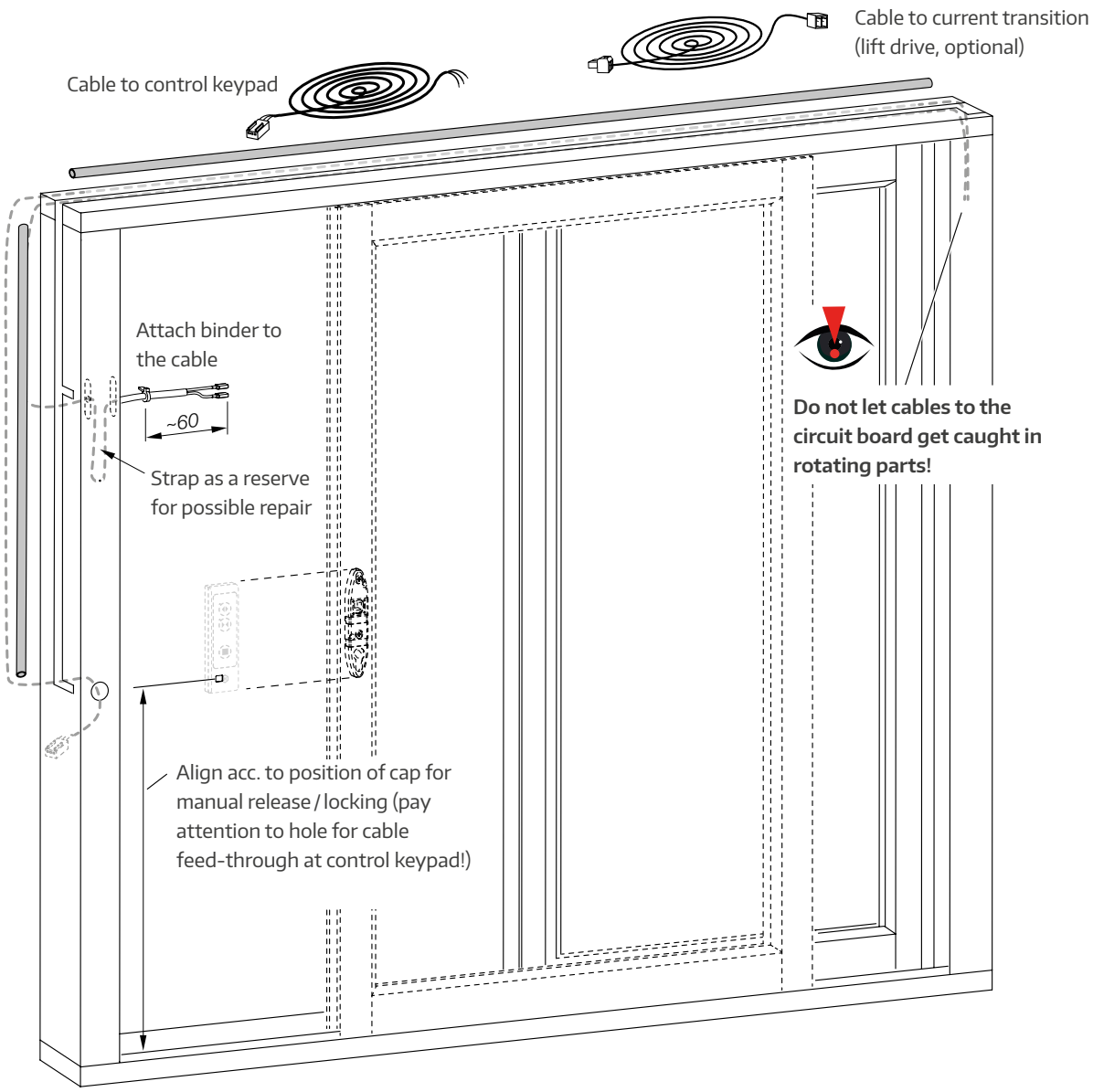


Mounting of the support plates for cover electronics



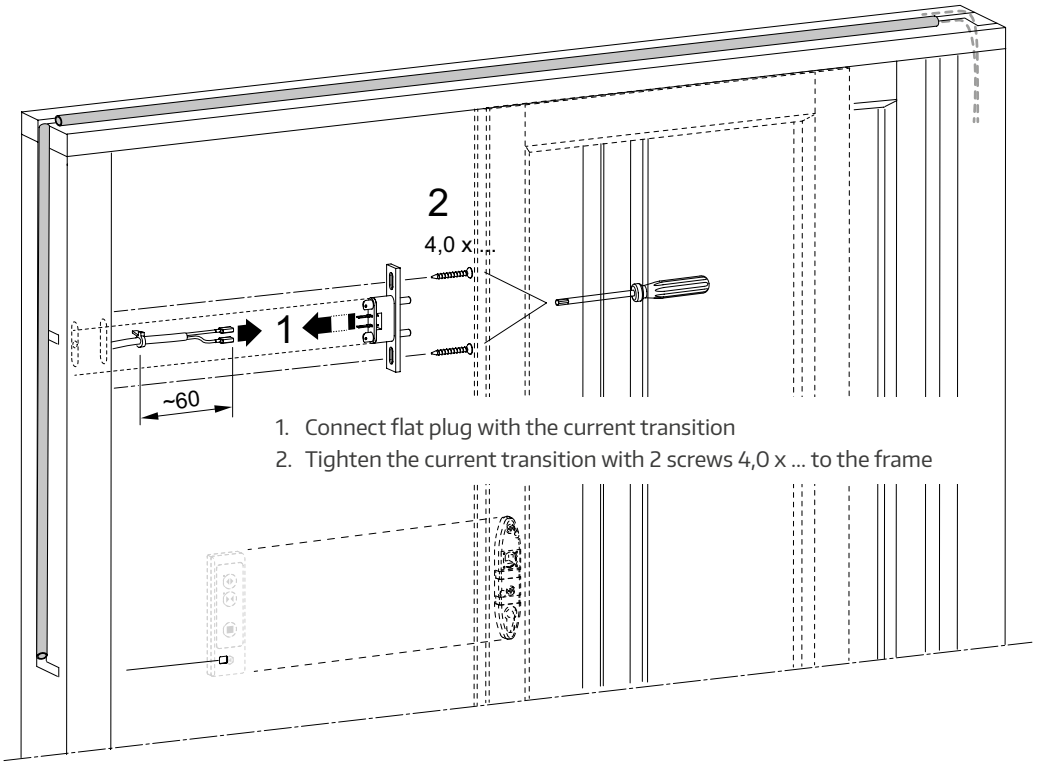
Possibilities of cable routing

The cables have to be fixed in such a way, that they cannot get in contact with moving parts.
The holes to be drilled for cable feed-through have to be deburred carefully.
Danger of material damages!



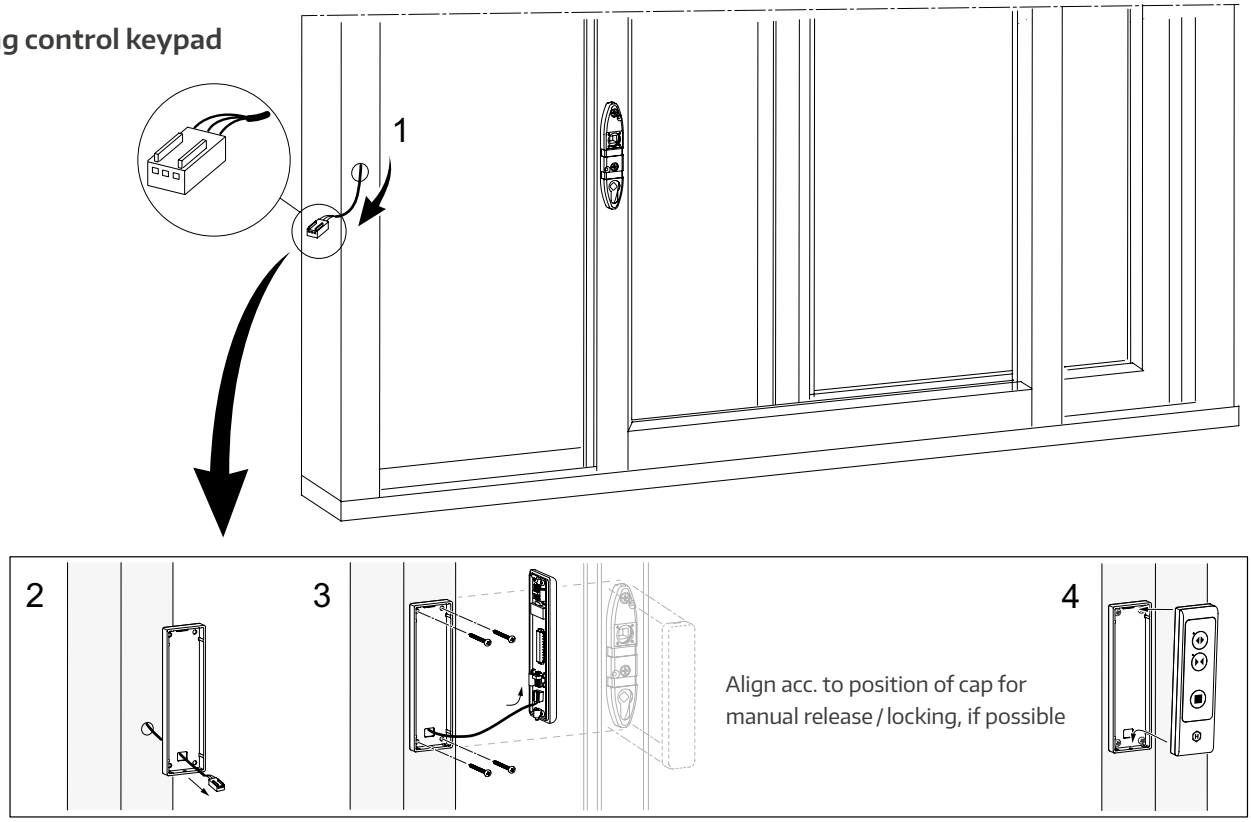
Mounting of current transition and control keypad

Current transition



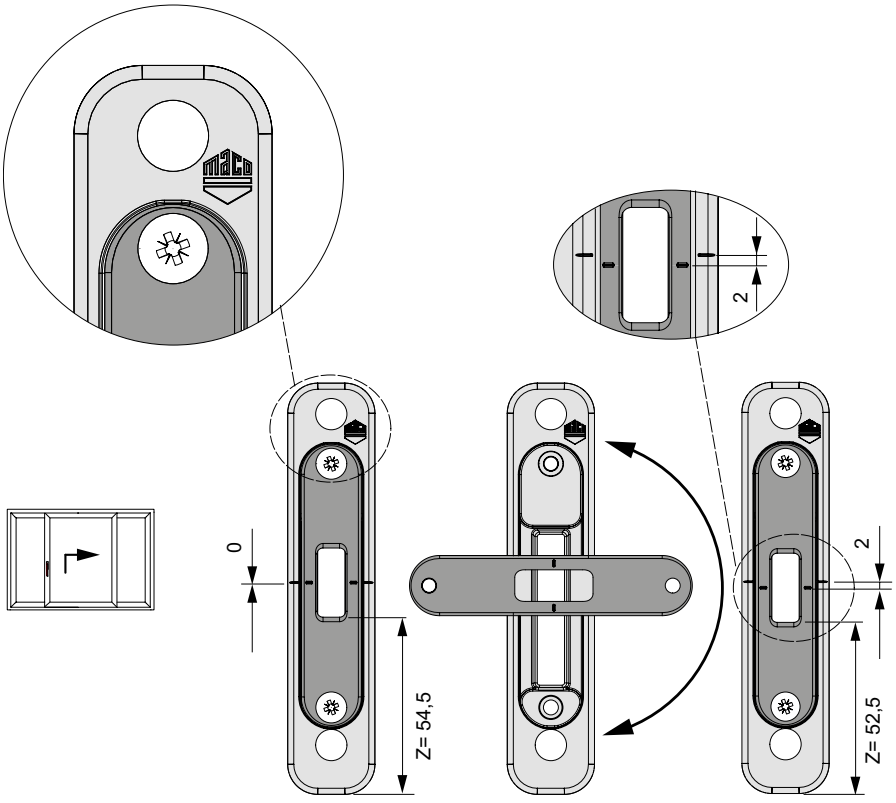
1. Connect flat plug with the current transition
2. Tighten the current transition with 2 screws 4,0 x ... to the frame

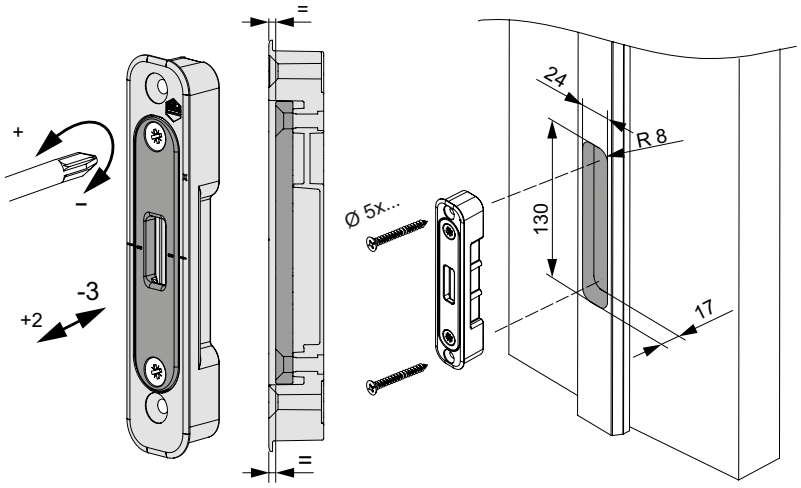
Mounting control keypad



Mounting of hook locking part

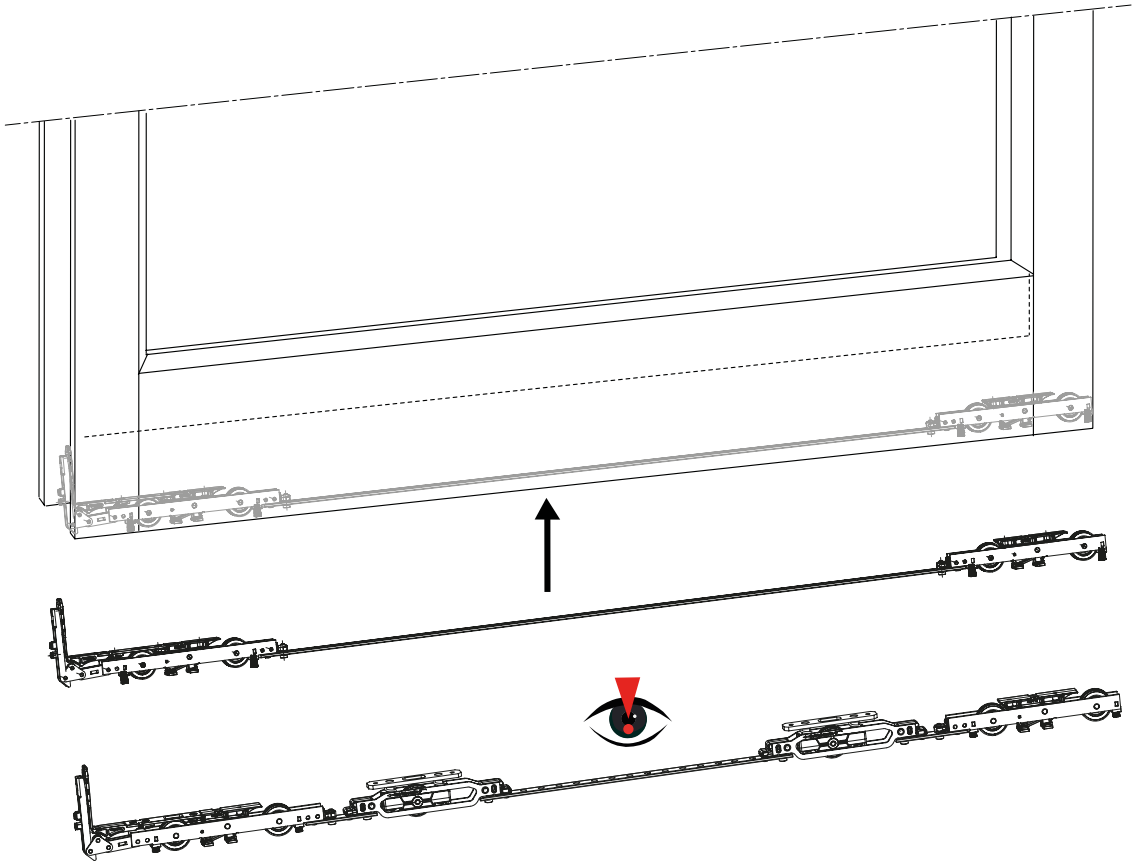
The installation situation must always be selected in a way, that the MACO logo is positioned at the top!
Turn the strike plates 180°! If the strike plates are set too high, there is a risk that the handle will be skewed. The manufacturing tolerance can be compensated by turning the strikerplates.



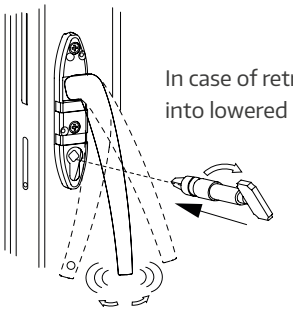


Mounting of rollers

From a sash weight of 200 kg 2 additional 400 kg rollers must be used!



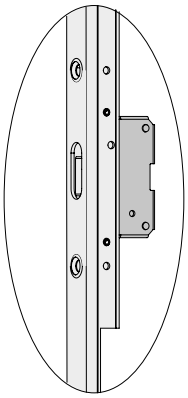
Mounting of gear

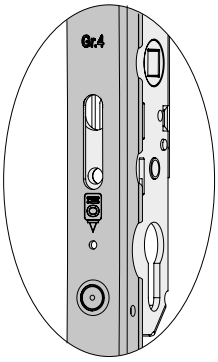


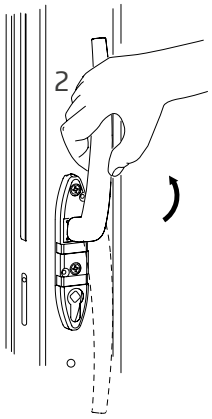
In case of retrofitting of the element, the sash has to be brought into lowered position by means of the drive handle (release set).

1

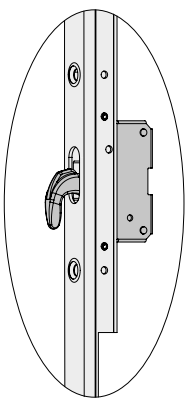
Condition upon delivery:
Lift drive decoupled,
motor position 'sash raised'

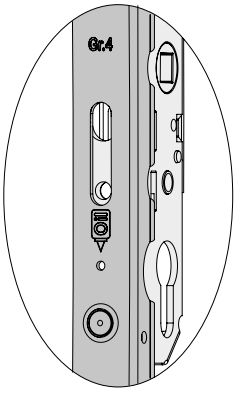


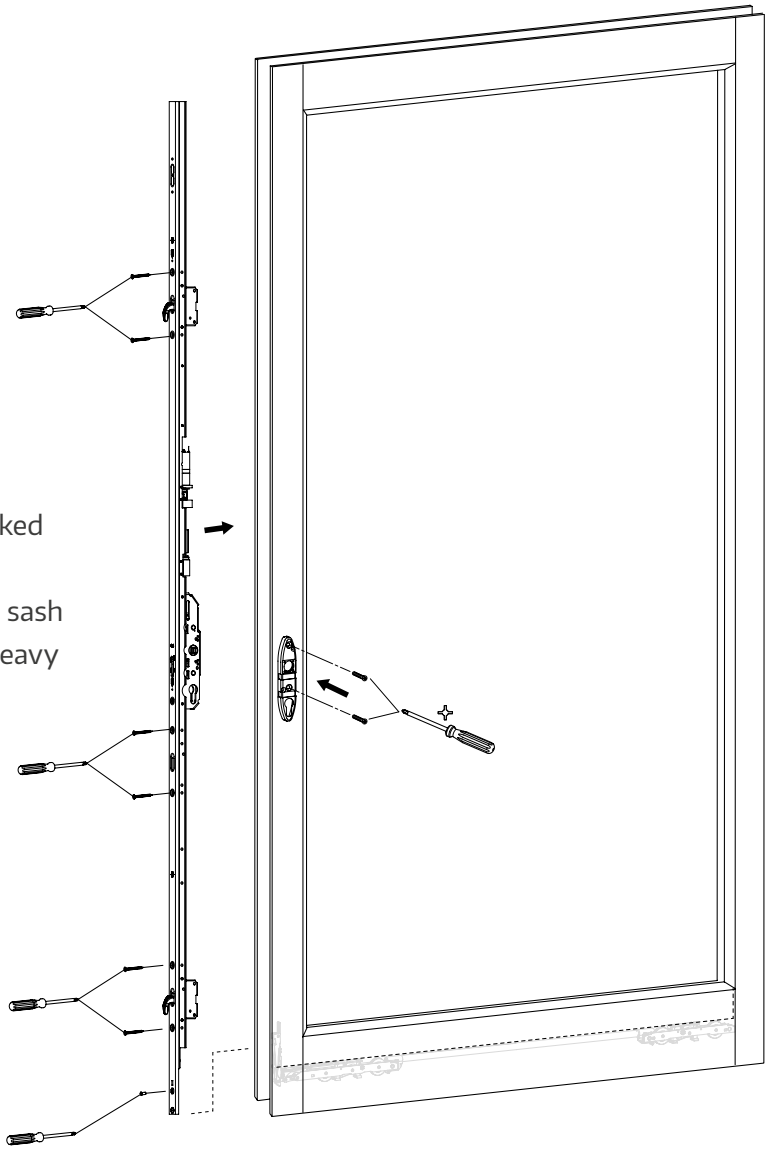




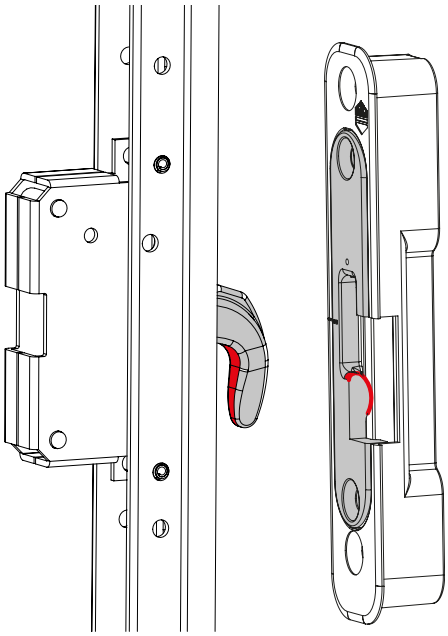
ATTENTION:
Do not release the handle, guide the handle in the locked position, because it turns arround quickly due to the sash weight, thus could cause heavy injuries.







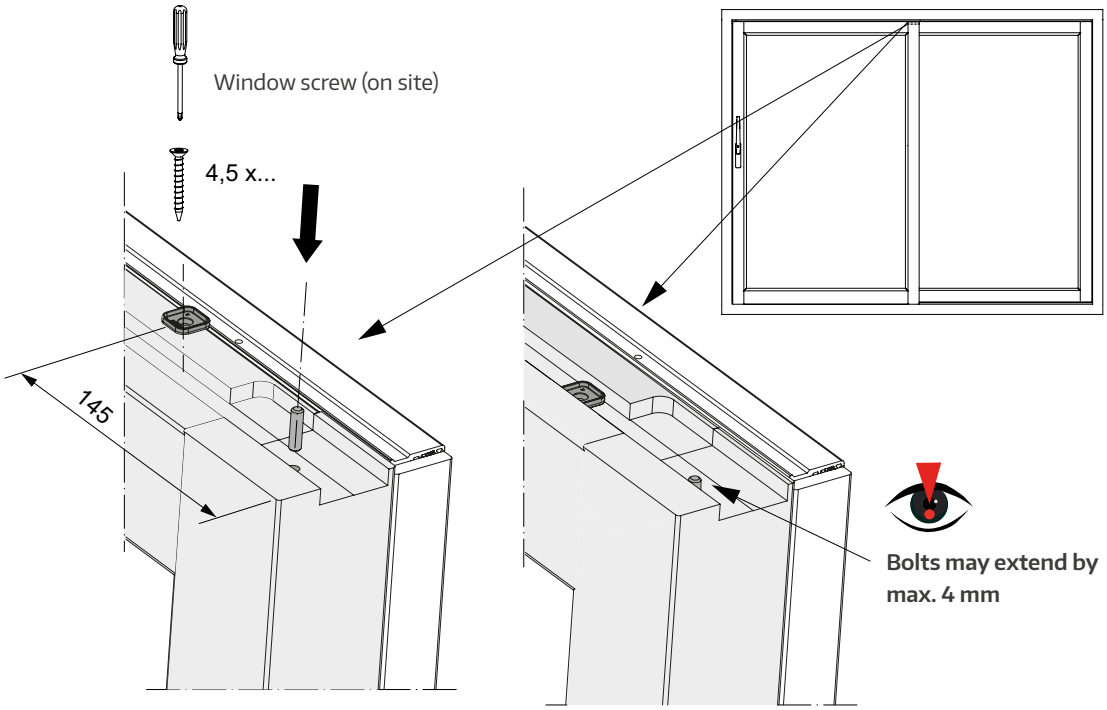
Lubrication of hook drive gears and striker plates



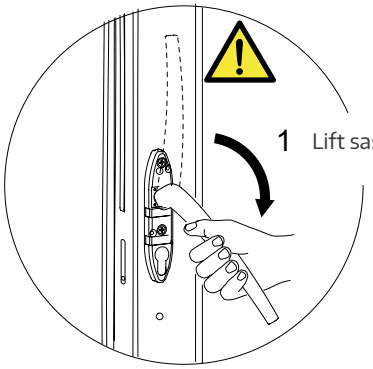
IMPORTANT:
The hook drive gears and the striker plates are to be lubricated before the first startup!

Greases for fittings:
Adhesive lubricant with PTFE in spray form,
e.g. OKS 3751 or equivalent.

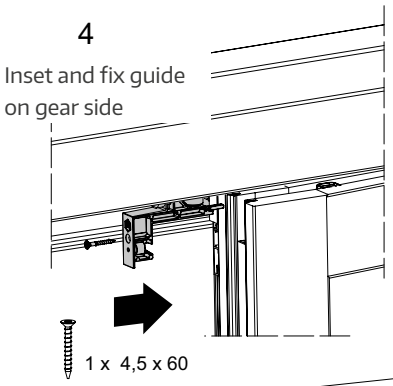
Mounting of drive support

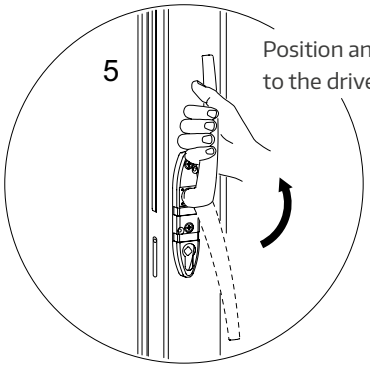


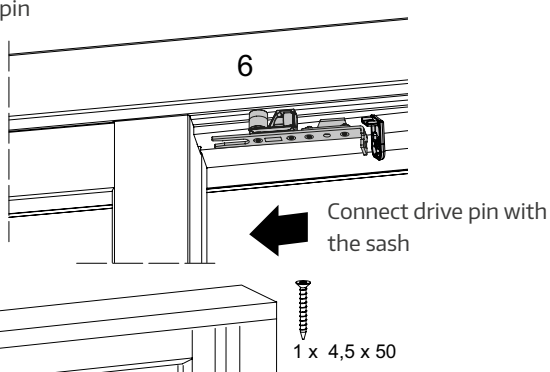
Hooking the sash

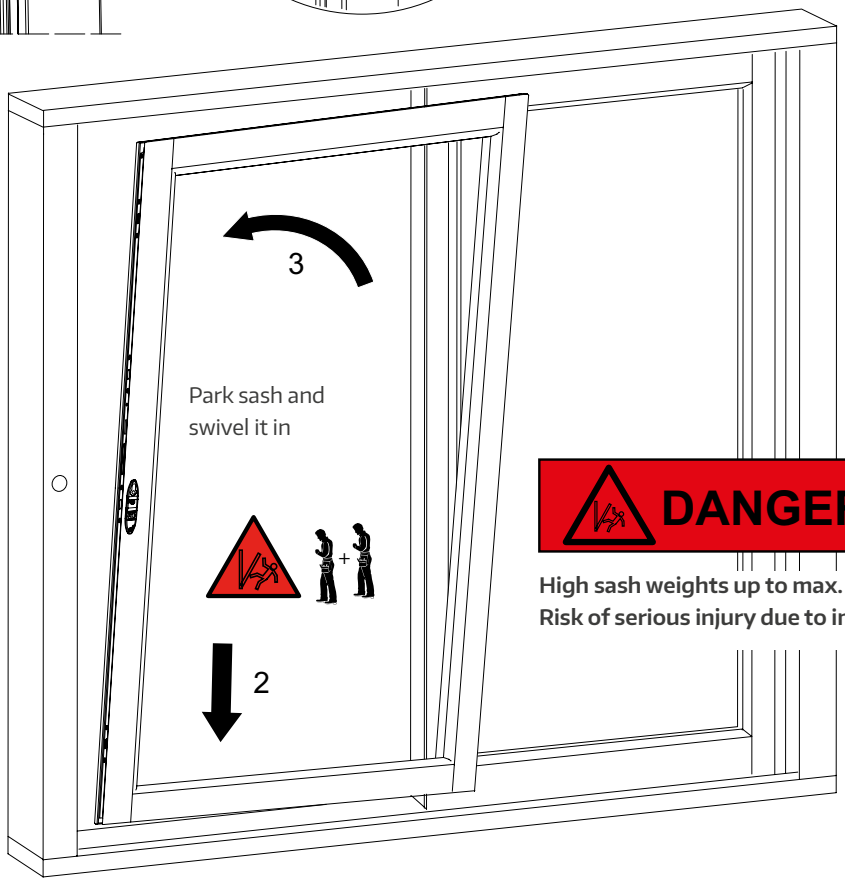


ATTENTION:
Do not release the handle, guide the handle in the locked positon, because it turns arround quickly due to the sash weight, thus could cause heavy injuries.





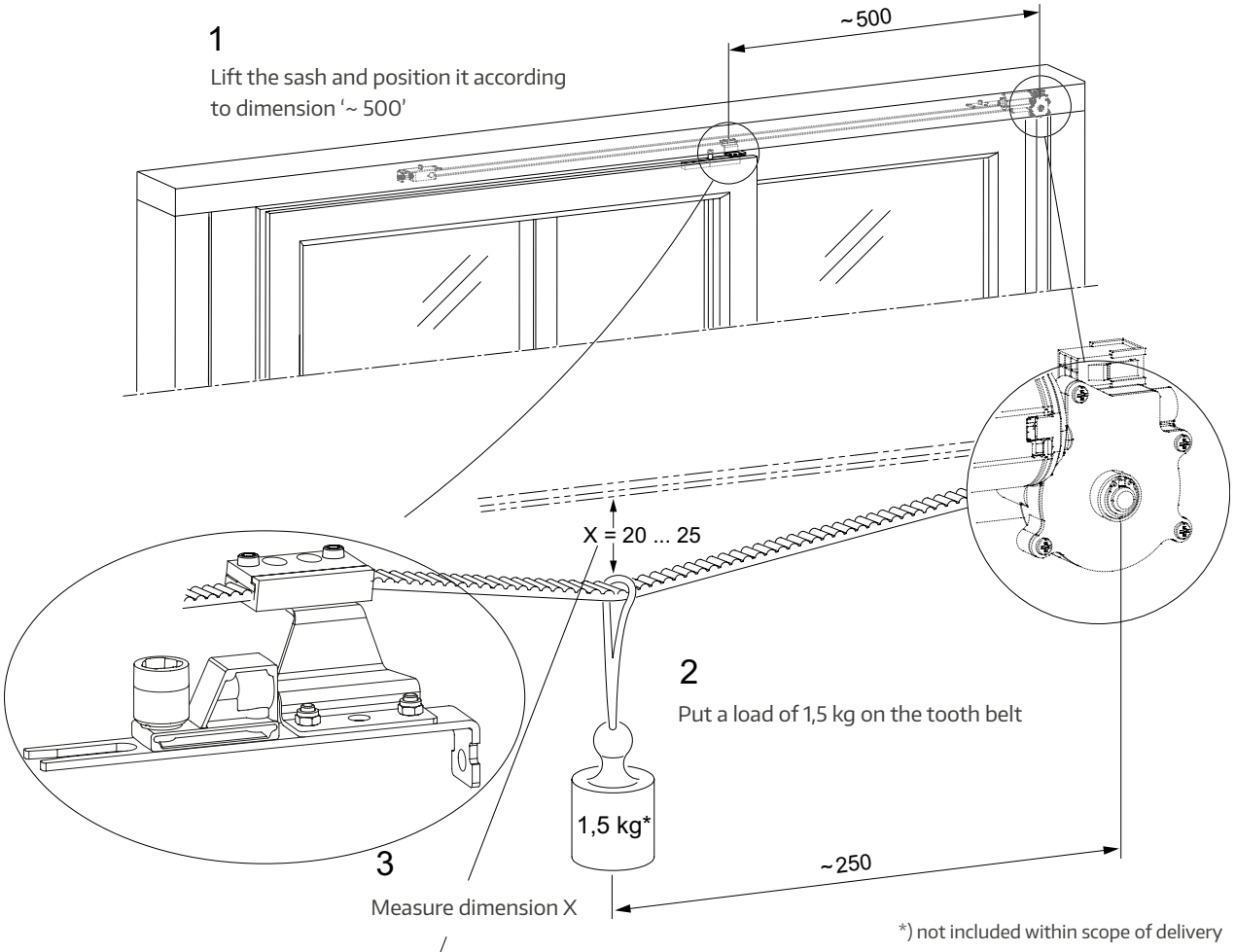


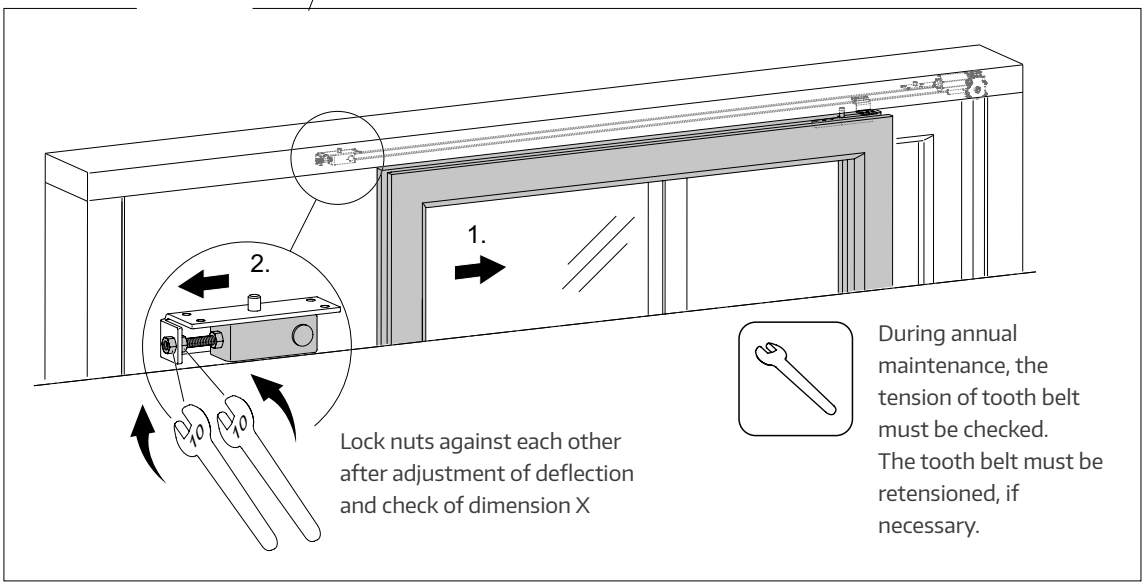


DANGER

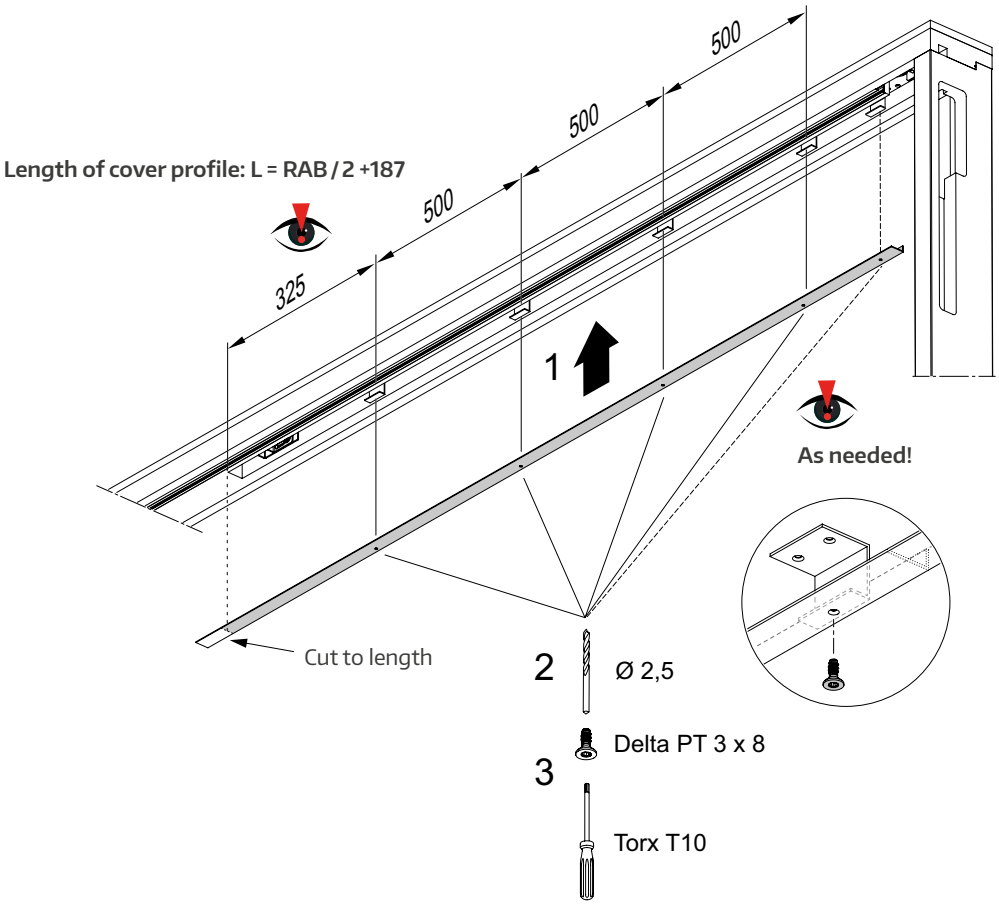
High sash weights up to max. 300 kg!
Risk of serious injury due to improper use!

Adjustment of tension of tooth belt

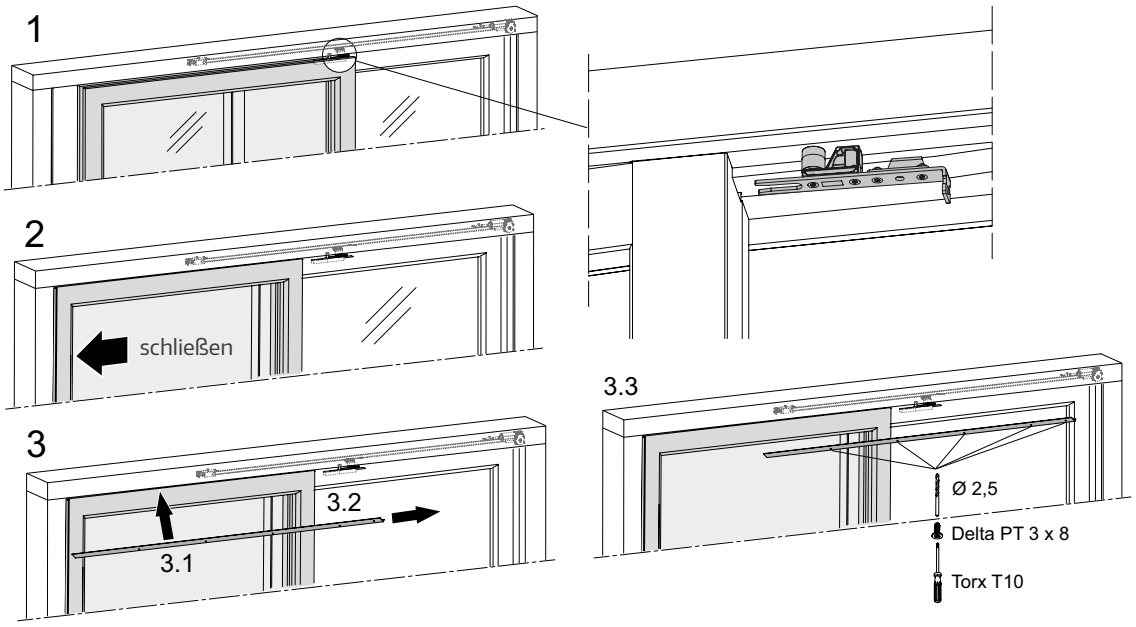




Cover profile cut to length



Mounting cover profile for tooth belt



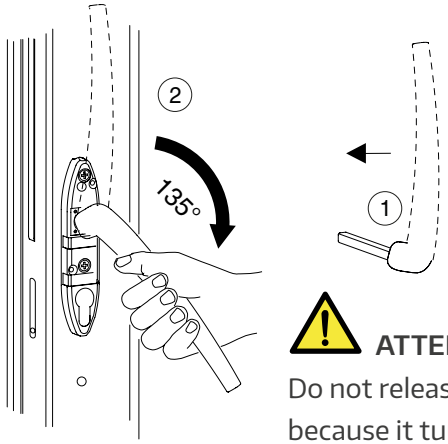
① Separate drive pin from the sash
② Close sash
③ Lay cover profile on the sash (3.1), put in position (3.2) and attach (3.3)
④ Sliding the sash to the drive pin and reconnect (see picture 1)

Demontage

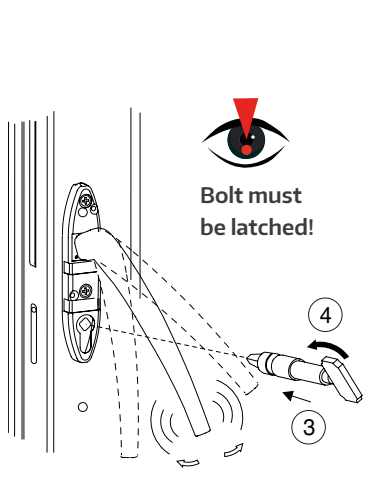
① Loosen the screws from the cover plate
② Lay cover profile on the sash
③ Open the sliding sash to half of the fixed part
④ Coupling the lift drive
⑤ Separate drive pin from the sash
⑥ Remove cover plate from sash
⑦ Close and lower the sash

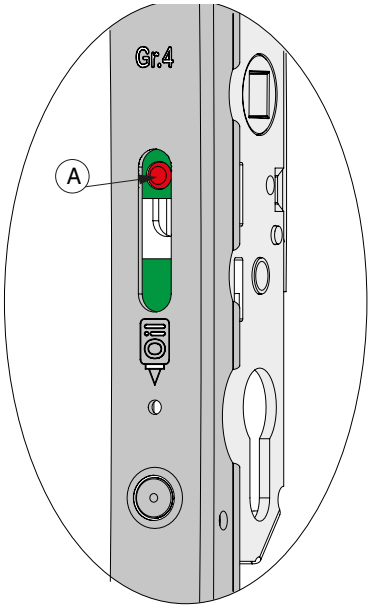
Coupling of lift drive

1. Insert emergency handle into sash (lowered state)
2. Lift sash, handle position 135° ⚠
3. Bring the coupling pin (A) and the drill hole on the bolt into alignment.
4. Close by means of the unlocking bowl in the direction of the sash frame to couple the bolt to the drive.



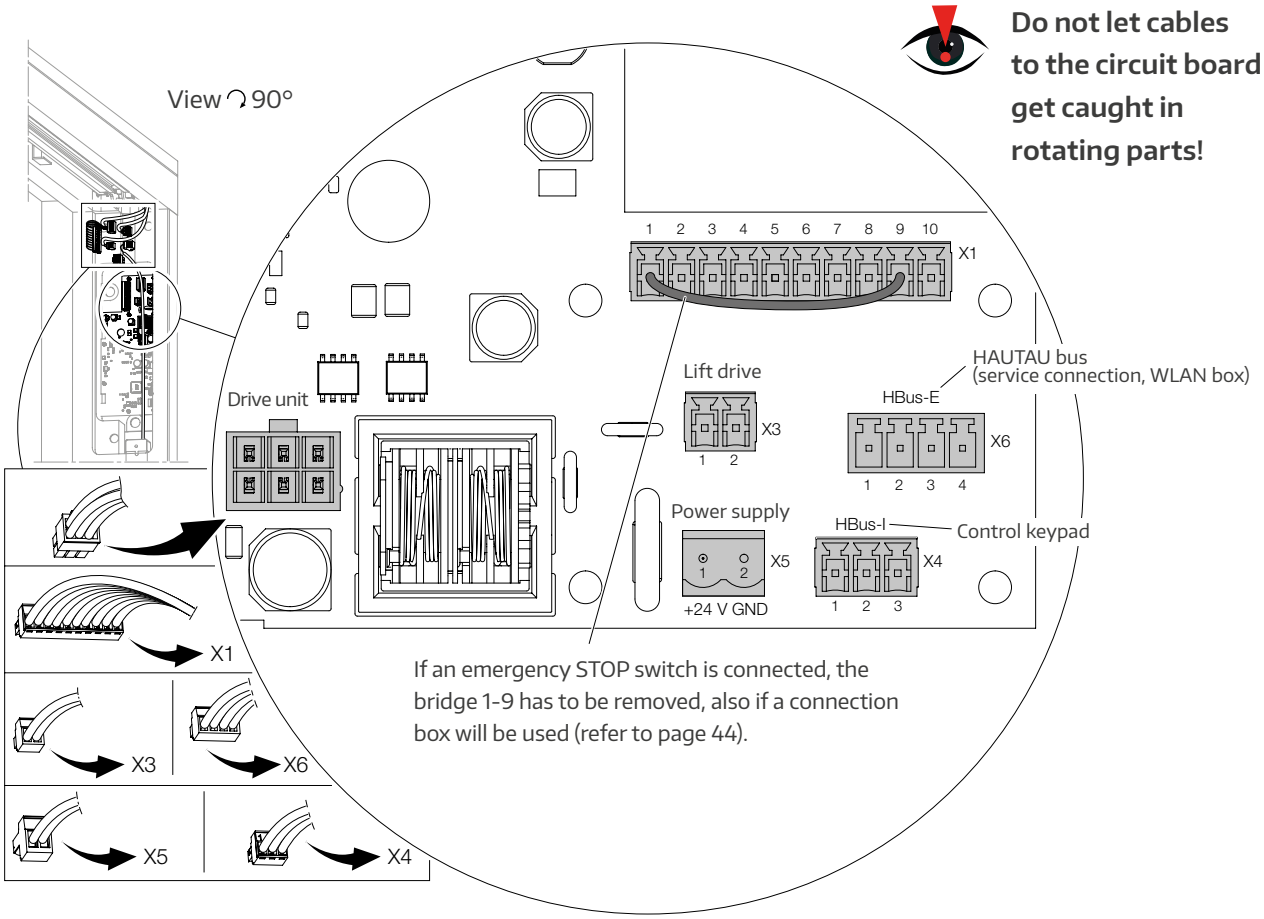
⚠ **ATTENTION:**
Do not release the handle, guide the handle in the locked positon, because it turns arround quickly due to the sash weight, this could cause heavy injuries!





Electrical connection

Example: left version (sliding sash opening from the left to the right - view from inside)



Electrical connection (continuation)

Terminal assignment

X1: terminal / extension terminal for the connection box

X1-1 +24 V for ext. devices (light curtain, finger print sensor etc.)
X1-2 test signal for light curtain
X1-3 sensor signal of light curtain 2
X1-4 sensor-signal of light curtain 1
X1-5 control output for locking control
X1-6 ext. OPEN control input (switching impulse of finger print sensor)
X1-7 ext. CLOSE control input
X1-8 ext. HAUTAU bus
X1-9 emergency stop input
X1-10 GND

X3: terminal for lift drive

X3-1 +24V or GND
X3-2 GND or +24V

X4: terminal for control keypad

X4-1 +24V (red)
X4-2 HAUTAU bus (brown)
X4-3 GND (black)

X5: terminal for power supply

X5-1 +24V
X5-2 GND

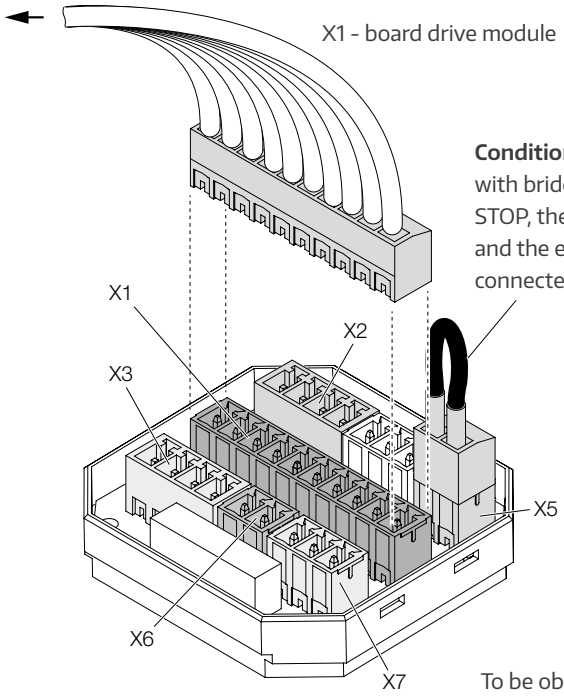
X6: HAUTAU bus service terminal, connection WLAN box

X6-1 +24V
X6-2 not used
X6-3 HAUTAU bus
X6-4 GND

Electrical connection (continuation)

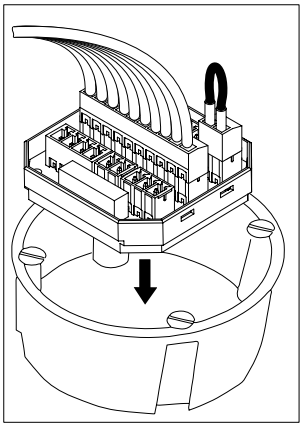
Connection box

When using external safety equipment (e. g. IR-Light curtain or IR-Presence sensor - refer to corrrsponding section) the connection box has to be installed locally.



Condition upon delivery:
with bridge; when using an emergency STOP, the bridge has to be removed and the emergency STOP switch has to be connected to terminal X5

Installation:
within a flush housing, max. 4 m away from the drive



To be observed:
The cable has to be laid in such a way, that an unauthorized access from outside is impossible.

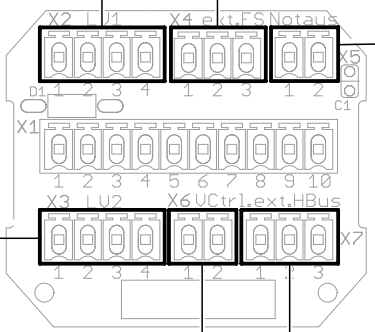
X2

Connection of IR-Light curtain

1 brown (emitter and receiver)
2 white (emitter)
3 black (receiver)
4 blue (emitter and receiver)

X4

Connection of key switch	1	+24 V
	2	CLOSE
	3	OPEN
or		
Connection of finger print sensor	1	+24 V
	2	-
	3	Switching impulse



X5

Connection of emergency STOP switch (or bridge between 1 and 2)

1 +24 V
2 Emergency STOP input

X3

Connection of IR-Presence sensor

1 brown and pink
2 red
3 grey
4 blue and green

X7

HAUTAU bus service terminal, connection WLAN box

1 +24 V
2 HAUTAU bus
3 GND

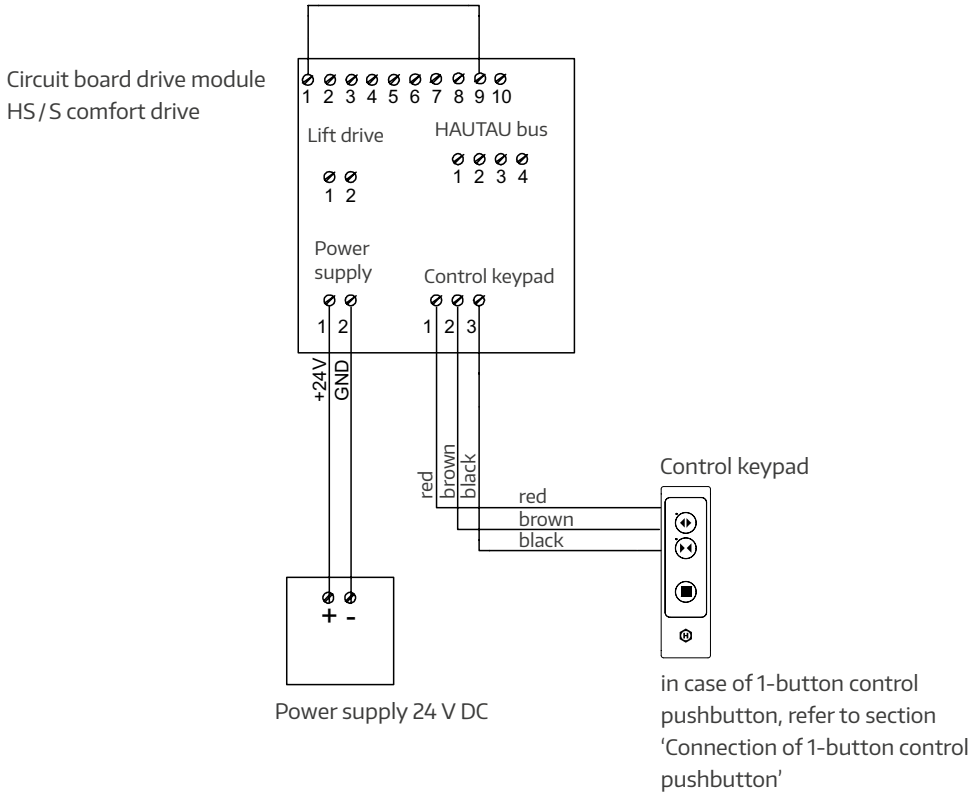
X6

not used (without function)

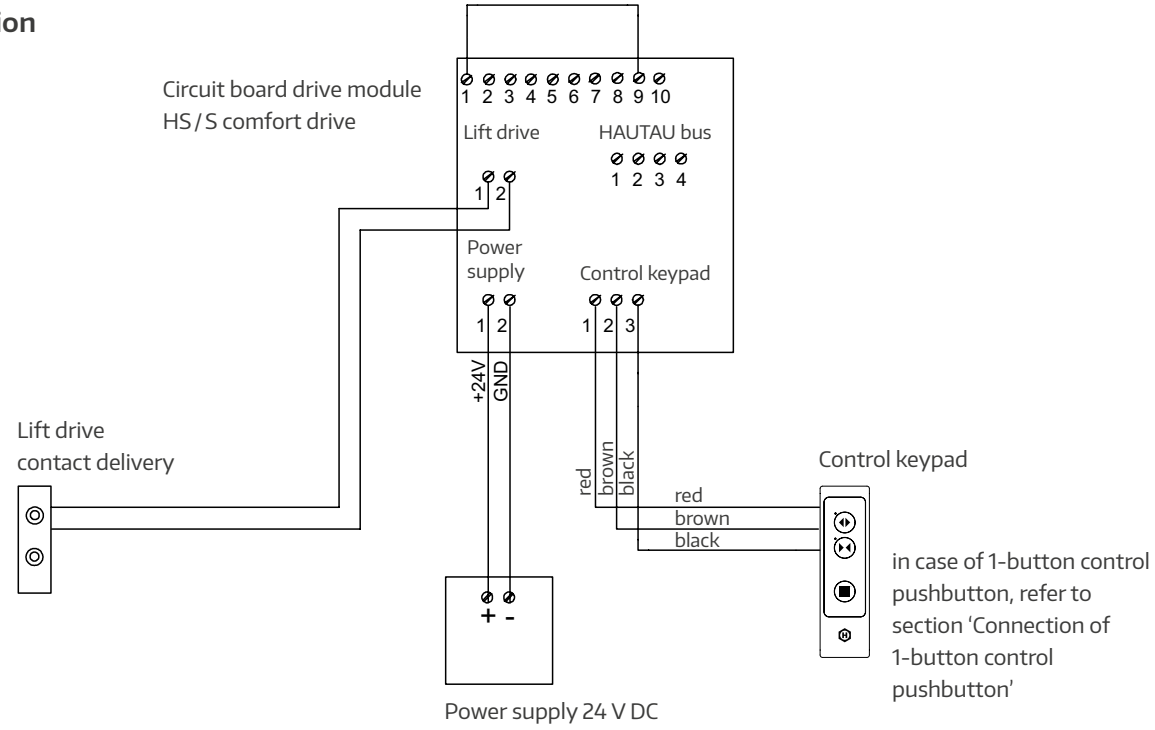
Electrical connection (continuation)

Connecting diagramm (examples)

Slide version



Lift & Slide version

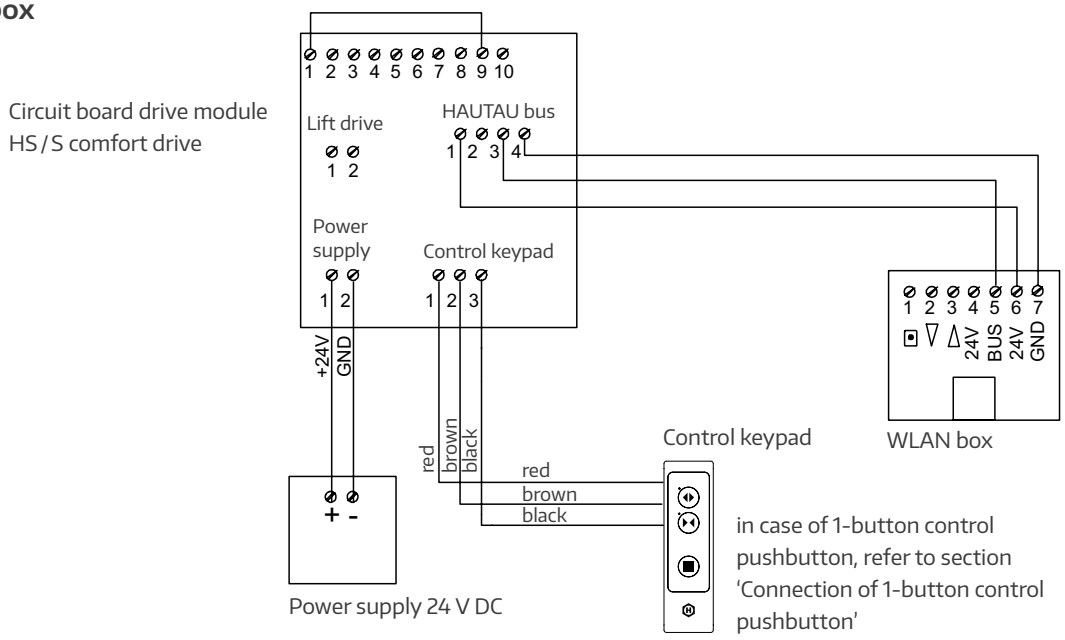


Electrical connection (continuation)

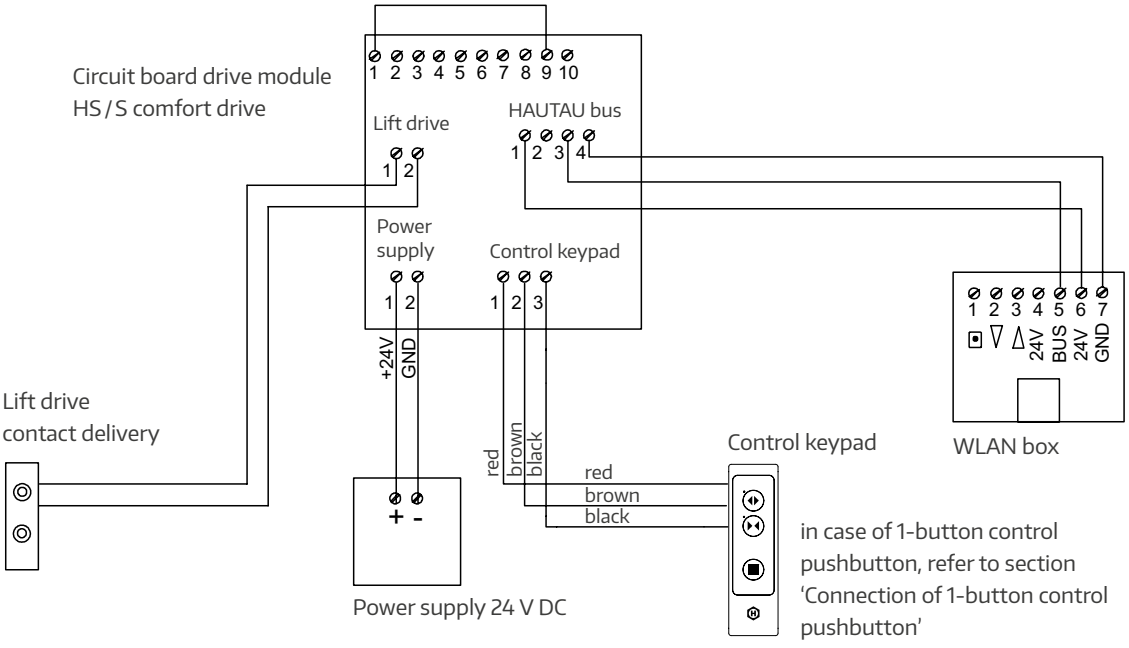
Connecting diagramm (examples)

Die Adresse vom HS / S comfort drive ist 103 (Auslieferzustand). Siehe auch Montage- und Betriebsanleitungen 'WLAN-Box' und 'Einbindung der WLAN-Box in einen Router'.

Slide version + WLAN box



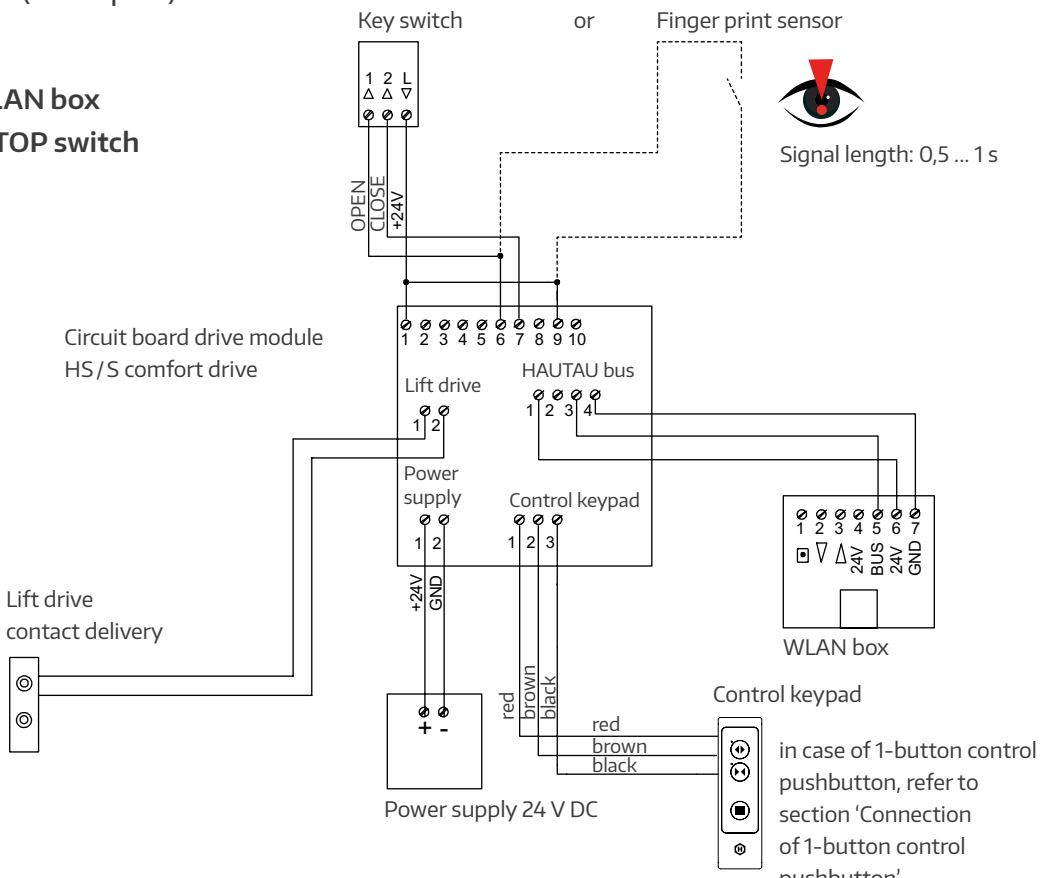
Lift & Slide version + WLAN box



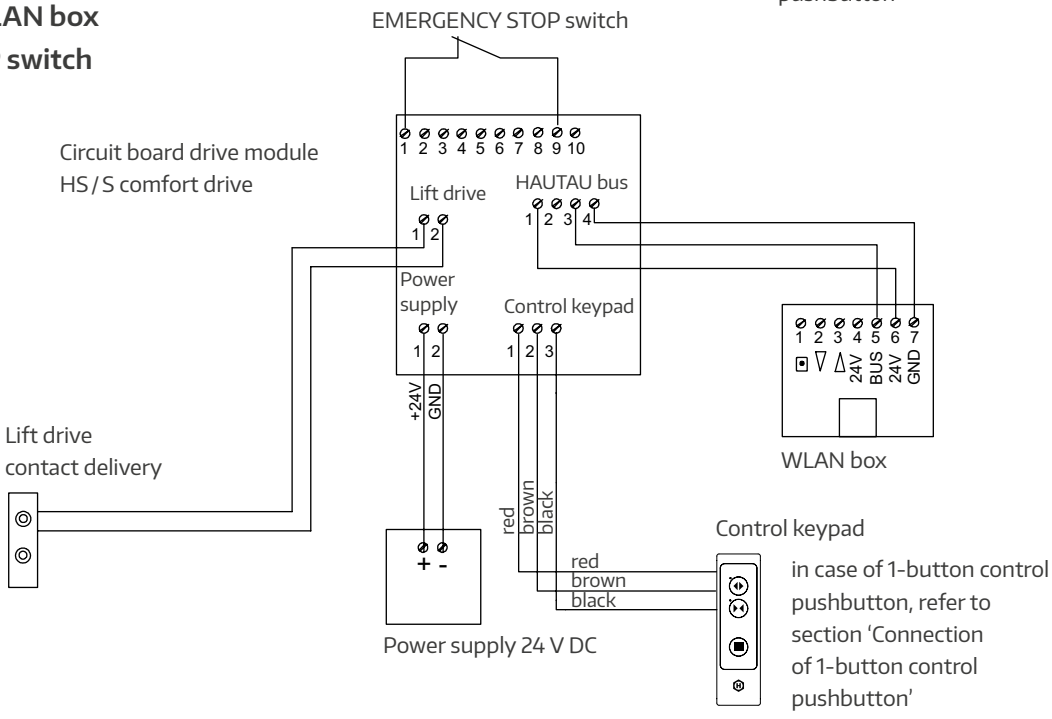
Electrical connection (continuation)

Connecting diagramm (examples)

Lift & Slide version + WLAN box
without EMERGENCY STOP switch



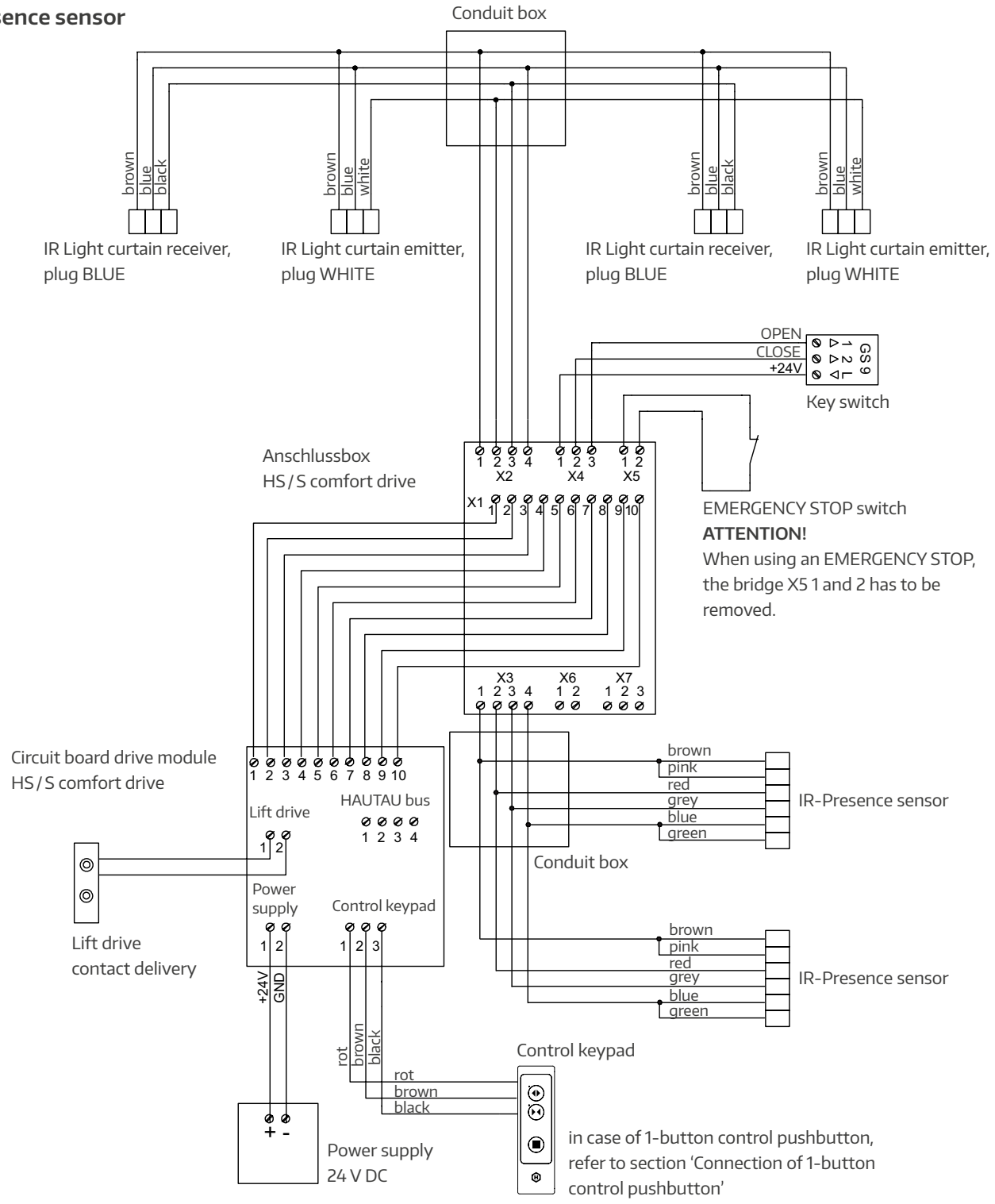
Lift & Slide version + WLAN box
with EMERGENCY STOP switch



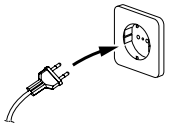
Electrical connection (continuation)

Connecting diagramm (examples)

Lift & Slide version + IR-light curtain and IR-presence sensor



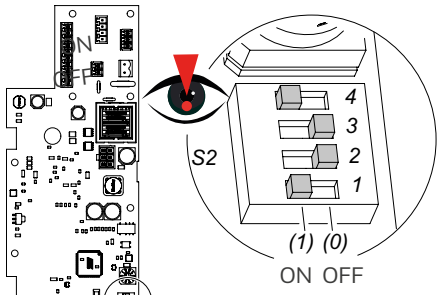
Check / Adjust DIP switch

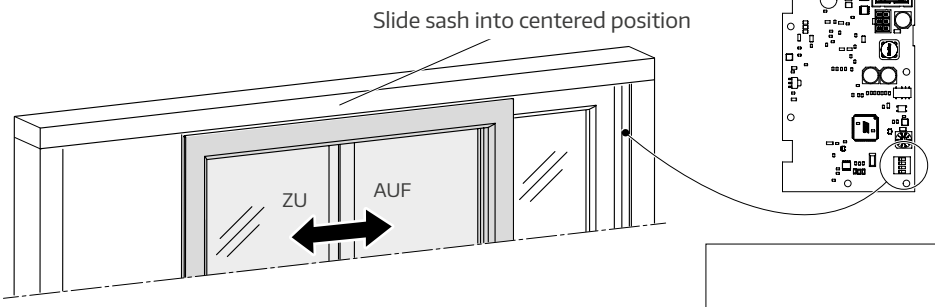


The running direction has to be checked before initialization!

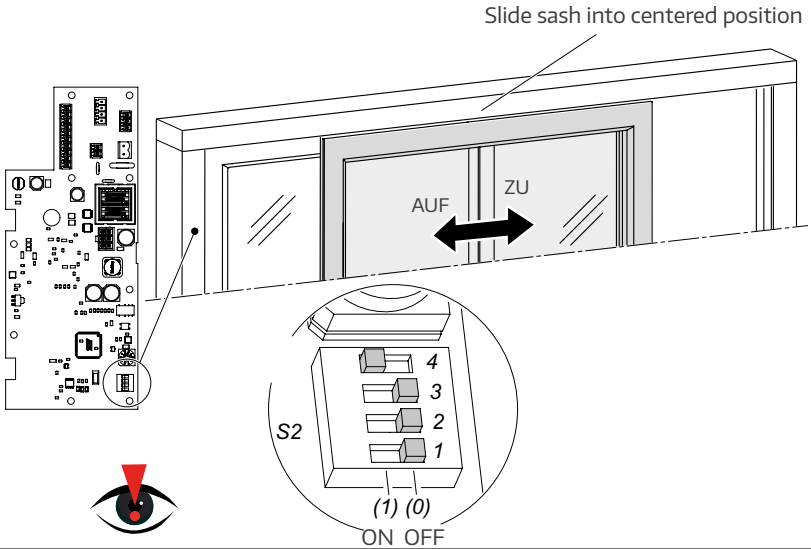
Example: left version (sliding sash opening from the left to the right - drive right, view from inside)

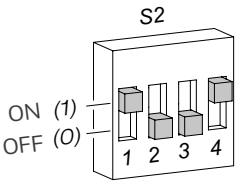
(Condition upon delivery)





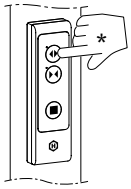
Example: right version (sliding sash opening from the right to the left - drive left, view from inside)





System adjustments (☐ = applicable)		ON (1)	OFF (0)
1	left version	☐	
	right version		☐
2	Secondary (Scheme C)	☐	
3	Primary (Scheme C)	☐	
4	automatic / optional with finger print sensor (ekey)	☐	
	DEAD-MAN's mode ** / with key switch		☐

**) In case of first start-up ('Full-Init') or teach-in run ('Home-Init'), the sash runs in AUTOMATIC mode and afterwards in DEAD-MAN's mode.



Press button 'OPEN': the sliding sash has to run 'OPEN'. The sash runs approx. 100 mm and then stops automatically. If the sash does not run 'OPEN', on S2 the DIP-switch 1 has to be set '0' (OFF).

*) in case of 1-button control pushbutton, the available button will be pressed

After changing the S2 switch, the power supply unit must be disconnected from the power supply for at least 20 seconds.

Triggering of ‘Full-Init’ and ‘Home-Init’

‘Full-Init’ = factory reset
‘Home-Init’ = software reset

Mode	control element	Type of initialization	Action	Feedback
AUTOMATIC mode (DIP switch 4 is ‘ON’)	Control keypad	Software reset (‘Home-Init’)	press STOP button for approx. 20 sec.	yellow + green LED
		Factory reset (‘Full-Init’)	press STOP button for approx. 30 sec.	yellow + green LED
	Control push-button with pushbutton-box	Software reset (‘Home-Init’)	press pushbutton for approx. 20 sec.	Beep at pushbutton-box
		Factory reset (‘Full-Init’)	press pushbutton for approx. 20 sec.	Beep at pushbutton-box
DEAD-MAN‘s mode (DIP switch 4 is ‘OFF’)	Control keypad	Software reset (‘Home-Init’)	press STOP button for approx. 20 sec.	yellow + green LED
		Factory reset (‘Full-Init’)	press STOP button for approx. 30 sec.	yellow + green LED
	Control push-button with pushbutton-box	Software reset (‘Home-Init’)	double click + press pushbutton for approx. 20 sec.	Beep at pushbutton-box
		Factory reset (‘Full-Init’)	double click + press pushbutton for approx. 30 sec.	Beep at pushbutton-box
		Finishing initialization	wait approx. 1 min. or double click again	-

First start up (‘Full-Init’)

Overview

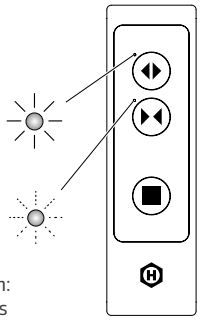
(Procedure refer to next page)
During first start-up, the sash executes a complete automatic initialization and runs in direction ‘CLOSE’ and ‘OPEN’ to determine and save the required parameters.
If DIP-switch 4 at the S2 switch is adjusted for DEAD-MAN, the sash first runs in AUTOMATIC mode and afterwards in DEAD-MAN‘s mode.

Sliding sash closes and opens during initialization automatically

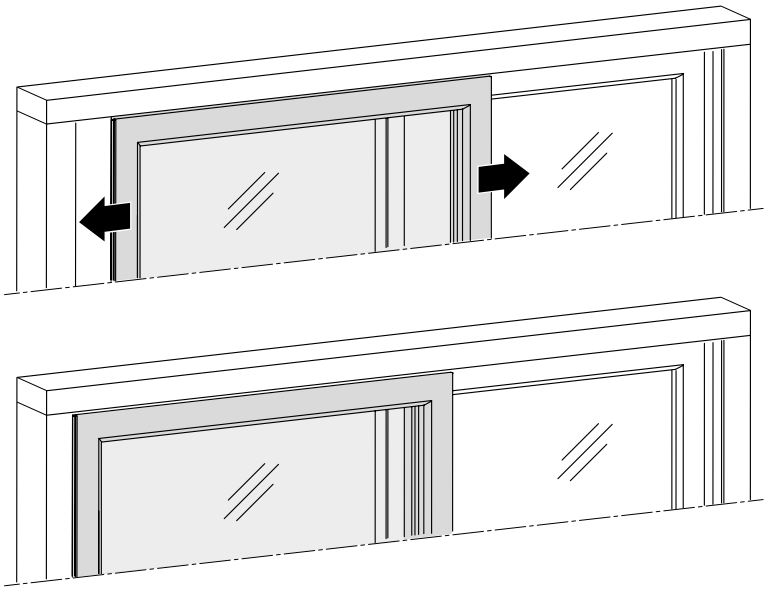
Let the sash run until the yellow LED does not flash anymore*.

Green LED at the control keypad lights permanently, if the sash moves

yellow LED at the control keypad flashes during initialization



*) in case of 1-button control pushbutton: until beep at the pushbutton-box does not sound anymore

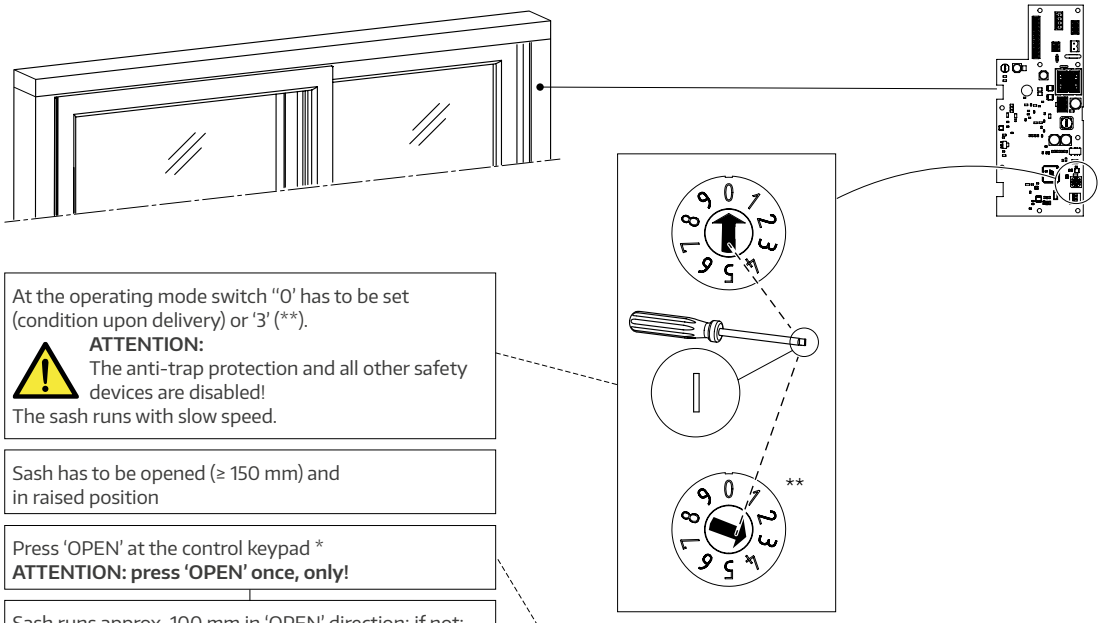


After initialization, the sash stops in position ‘CLOSE’.

First start-up (‘Full-Init’, continuation)

Procedure

Complete automatic initialization
(the procedure can be interrupted by pressing ‘STOP’ at any time)



At the operating mode switch “0’ has to be set (condition upon delivery) or ‘3’ (**).
ATTENTION:
The anti-trap protection and all other safety devices are disabled!
The sash runs with slow speed.

Sash has to be opened (≥ 150 mm) and in raised position

Press ‘OPEN’ at the control keypad *
ATTENTION: press ‘OPEN’ once, only!

Sash runs approx. 100 mm in ‘OPEN’ direction; if not: check DIP switch (refer to concerning section

Press ‘CLOSE’ at the control keypad *
After this, the initialization runs complete independently

Sash runs into ‘CLOSED’ position

When the sash ist closed, the system recognizes, whether a lift drive exists or not

Lift drive exists	No lift drive
Sash lowers	
Sash remains in lowered position for a few seconds	Sash checks end position in ‘CLOSED’ position
Sash lifts independently	Sash runs in direction ‘OPEN’

Sash slowly opens completely until the end of the element

Sash runs in direction ‘CLOSE’ until position close

The anti-trap protection and all other safety devices are enabled

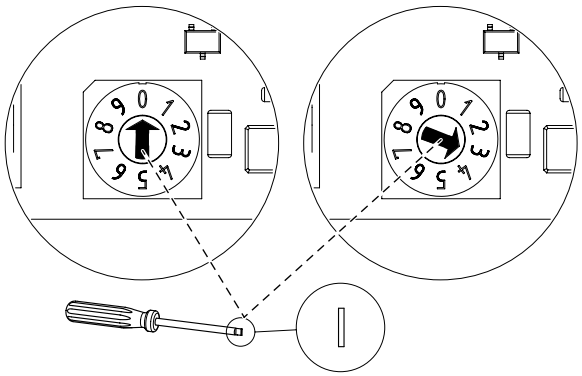
Initialization is finished

*) in case of 1-button control pushbutton, the available button will be pressed
**) reduced stop range of 10 mm instead of approx. 130 mm before mechanical end position

Standard operation

In automatic mode during opening the sash stops approx. 130 mm* before the mechanical end position.

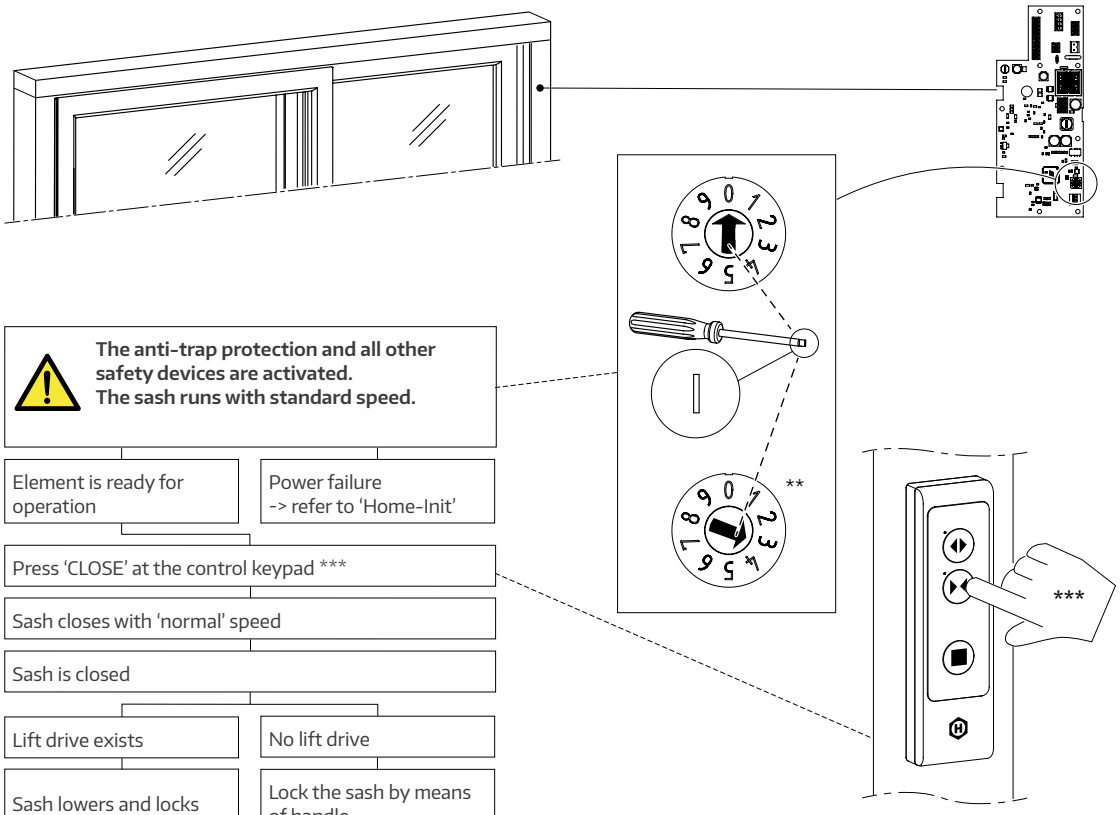
*) Operating mode switch in condition upon delivery ('0')



In case of version HAUTAU / MACO:
if the operating mode switch will be switched to position '3', during opening the sash stops approx. 10 mm before the mechanical end position.

This setting involves the risk of finger pinching in the area of the middle post. On the part of the operator, actions must be taken to prevent this. After adjusting the operating mode switch, a factory reset ('Full-Init') with complete automatic initialization has to be executed (refer to section Triggering of 'Full-Init' and 'Home-Init').

Initialization in part, e. g. after power failure

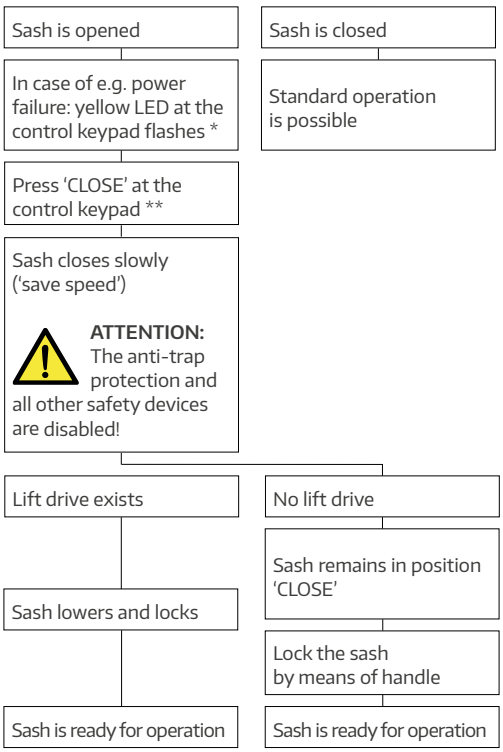


**) reduced stop range of 10 mm instead of approx. 130 mm before mechanical end position
***) in case of 1-button control pushbutton, the available button will be pressed

Teach-in run ('Home-Init')

'Home-Init' = software reset

If DIP-switch 4 at the S2 switch is adjusted for DEAD-MAN, the sash first runs in AUTOMATIC mode and afterwards in DEAD-MAN's mode.



*) or beep at pushbutton-box in case of 1-button control pushbutton
**) in case of 1-button control pushbutton, the available button will be pressed

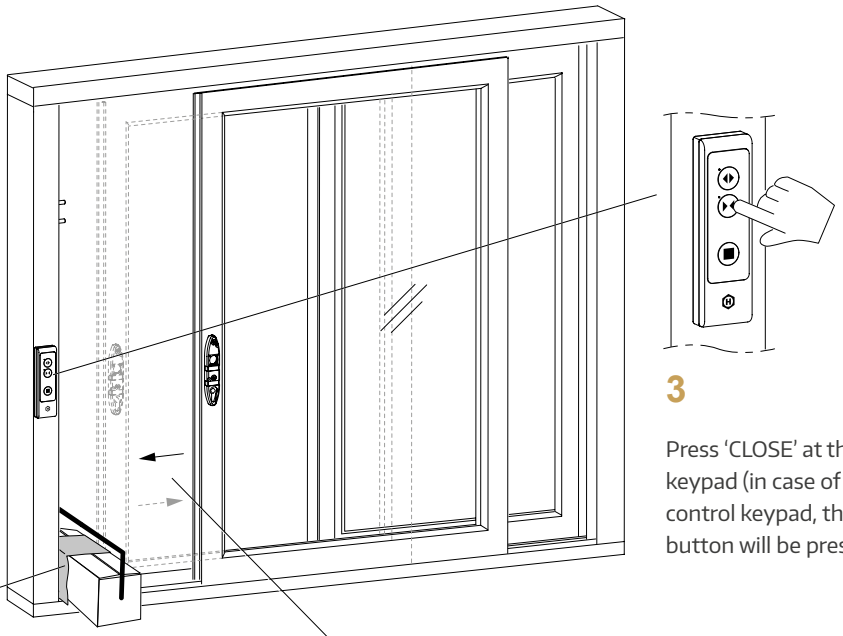
Safety function check ‘reversing’

1 ✓

Teach-in run (‘Home-Init’) was carried out, sash is opened

2

Position hard object (e. g. tool box) between sash and frame, lean against the frame



3

Press ‘CLOSE’ at the control keypad (in case of 1-button control keypad, the available button will be pressed)

To avoid scratches at the frame or at the sash, the object should be covered with a suitable fabric.

4

Sash runs against the hard object, stops and runs again in direction ‘OPEN’ partially

yes

Check was successful:
(Lift-) Slide-System has to be labelled according to the EC machine directive

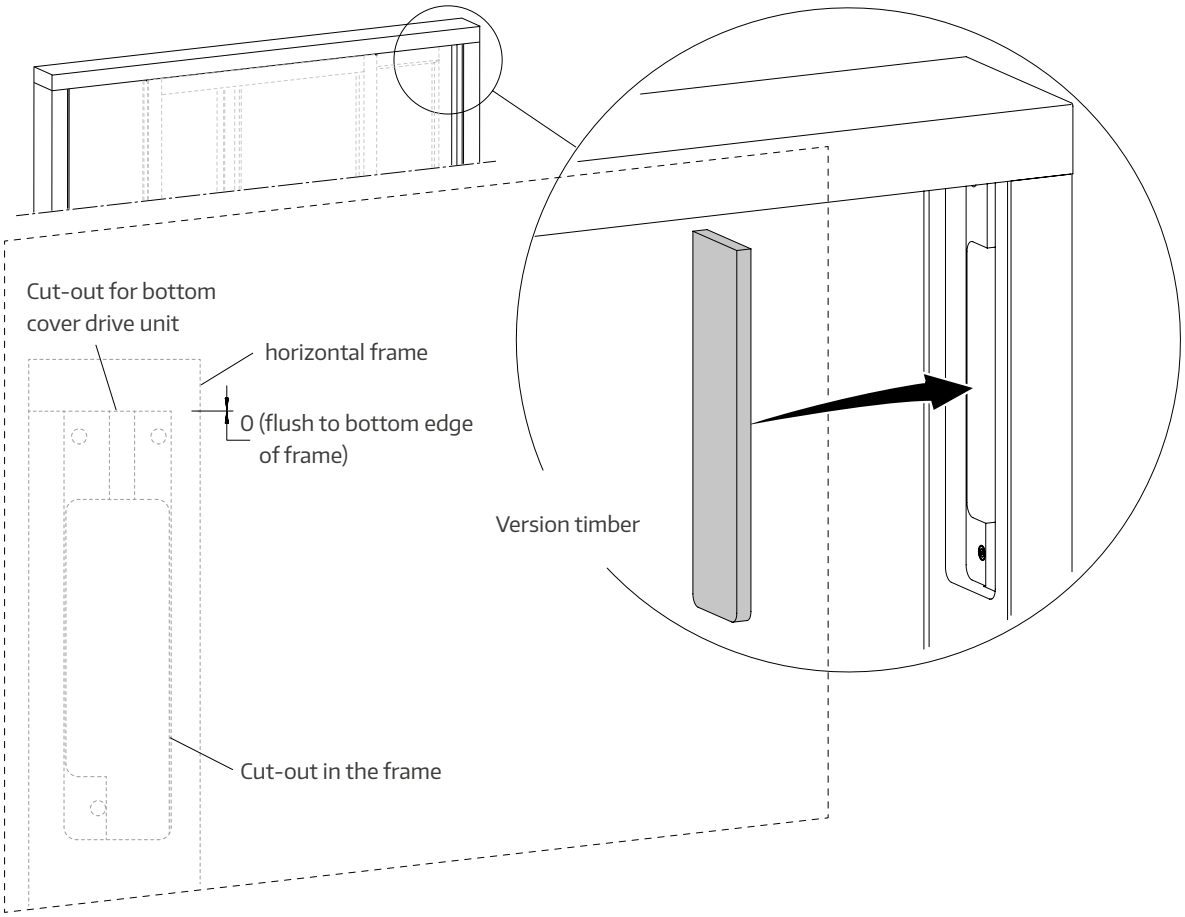
The (Lift-) Slide-System may be put into operation

no

Check was not successful:
Teach-in run (‘Home-Init’) and safety function check ‘reversing’ have to be repeated

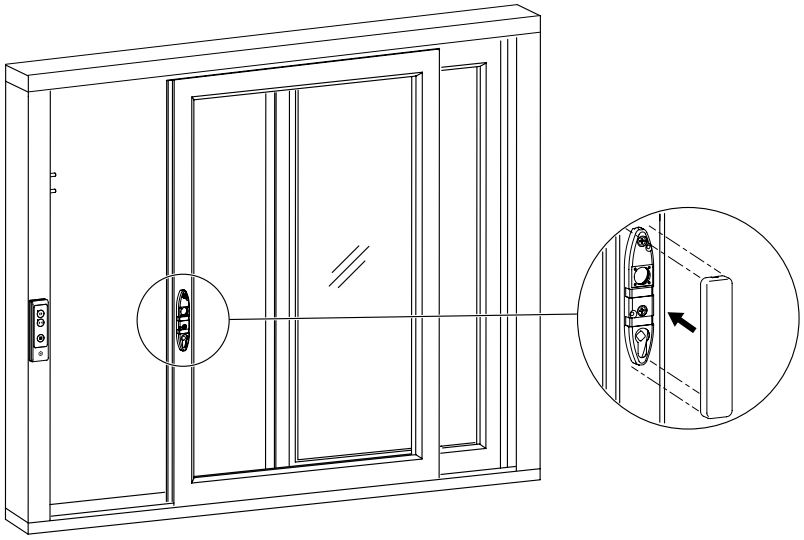
If the check was not successful repeatedly, the (Lift-) Slide-System has to be taken out of operation and disconnected from mains as well as a service company has to be consulted for the purpose of troubleshooting. Otherwise, severe injuries could be the consequence.

Mounting of the cover electronics



Mounting of the cover for manual release / locking

(for HS comfort drive, only)



Fault elimination

Event	Meaning	Action
yellow LED at the control keypad lights *	fault	› press the (STOP-) button at the control keypad ('error reset', the lighting stops *) › press the (OPEN-) button: in case of normal run: everything is ok; if the yellow LED continues to light *: - software reset by pressing the (STOP-) button for approx. 20 s ('Home-Init' - both LEDs light for approx. 3 s * - please follow section Teach-in run ('Home-Init'); - if the (STOP-) button will be pressed for approx. 30 s, a factory reset will be executed ('Full-Init' - both LEDs light for approx. 3 s *- please follow section First start-up ('Full-Init')
Power failure (operating mode switch in position '0' or '3')	fault	› if sash is open: **Home-Init** is necessary (yellow LED flashes *); press the (CLOSE-) button at the control keypad (sash runs in direction CLOSE and sets position to '0') › in case of closed sash: no action required, because sash has recognized the position ⚠ **ATTENTION: During Home-Init all safety devices are disabled!**
no response after pressing the STOP-button for at least 30 s	fault	› switch the operating mode switch to '5' and disconnect the power supply unit from the power supply for at least 20 s › connect the power supply again › after approx. 3 s: switch the operating mode switch to '0' - please follow section First start-up ('Full-Init')
Drive reversed (sash runs back approx. 100 mm)	sash moved against an obstacle	error reset by pressing the (STOP-) button (the lighting of the yellow LED stops *)

*) respectively 2x beep sequence in case of 1-button control keypad (at the pushbutton-box)

Maintenance / repair

Maintenance check list: refer to HAUTAU document 500797.
The power supply to the device must be interrupted for the duration of any cleaning or other types of maintenance operations.
Windows and drives must be checked for physical integrity at least once a year.
Free the drives from any contamination. Check the tightness of fixing and clamping screws. The tension of tooth belt has to be checked every year and the tooth belt has to be retensioned, if necessary (refer to section 'Adjustment of tension of tooth belt'). The parts to be checked and the items to be maintained can be found in the maintenance check list (www.hautau.de).
The end customer can perform all of the steps described. If deviating from the instruction steps, limitation of warranty claims must be expected. Test the drive by trial run. Defective drives must be repaired at our factory. You may only use original spare parts. The readiness for operation has to be checked regularly.

Care

Check all devices and cable connections for external damage and dirt. The operability of the control keypad must not be affected by, for example, structural measures or stored goods.
Use a soft, slightly dampened cloth to clean the housing components and the control keypad. To prevent damage to the surfaces, do not use any caustic chemicals, abrasive cleaners or agents containing solvents for cleaning. Provide the drive with durable protection against water and dirt.

Technical specification

Complete system
(Lift drive and sliding drive)
'HS comfort drive'

Sash width (FB)	720 to 3235 mm
Sash height (FH)	1870 to 2850mm
Outer frame width	max. 6500 mm
Max. sash weight	300 kg
Max. sliding force of drive	200 N

Electrical characteristics

Rated voltage	24 V DC (-10%, +30%)
Permitted voltage range	21,6 to 31,2 V DC
Max. allowable ripple	≤ 20% related to rated voltage
Current consumption	4 A at 24 V
Max. power consumption	100 W
Switching-off in each position (blockade)	yes, safety switching-off (blockade) in direction OPEN and CLOSE until 300 kg
Protection class	III safety extra-low voltage SELV

Connection and operation

Duty cycle	20 cycles or ED 30
Lifetime	25.000 cycles (class 5 EN 13126-1)
Reading out of operating conditions	yes
Maintenance	once a year, acc. to general maintenance guidelines
Connection to WLAN-Box	
Address (delivered condition)	103

Installation and environmental conditions

Nominal temperature	20 °C
Ambient temperature range	-5 to +60 °C (environmental category 1 acc. to VdS 2580)
Protective system	IP 40 acc. to DIN EN 60529
Environmental conditions	for dry environments, only; no dew formation, no aggressive fumes, no dusty environments

Notes for power supply and control

Switching power supplies (SNT) and transformer power supplies	suitable for C-load with power reserves for the moment of switching-on and switching-off of the drives
Low voltage (24 V)	overvoltage category I must be guaranteed

Approvals and certificates

Electrical safety	yes, acc. to EN 60335-1 and EN 60335-2-103
EMV compatibility	yes, acc. to DIN EN 55014-1, 55014-2 und 61000-6-3
CE compliant	yes, acc. to EMC Directive 2004/108/EG and Low-voltage Directive 2006/95/EG

Technical specification (continuation)

Sliding drive

Electrical characteristics

Rated voltage	24 V DC (-10%, +30%)
Permitted voltage range	21,6 to 31,2 V DC
Max. allowable ripple	≤ 20% related to rated voltage
Current consumption	4 A at 24 V
Switching-off in each position (blockade)	yes, safety switching-off in direction OPEN and CLOSE until 330 kg

Material and mechanical characteristics

Emission sound pressure level LpA	≤ 70 dB(A)
Sliding force	200 N
Max. sliding force	440 kg
Operating speed	75 mm/s (factory setting)
Non-halogen	no
Silicone-free	no
RoHS compliant	yes
Temperature range	-5 to 60 °C
Protective system	IP 40 acc. to DIN EN 60529
Max. cycles	20

Lift drive

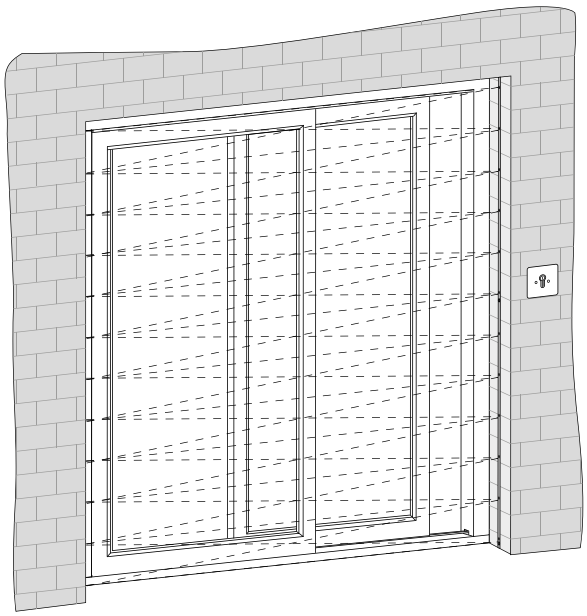
Electrical characteristics

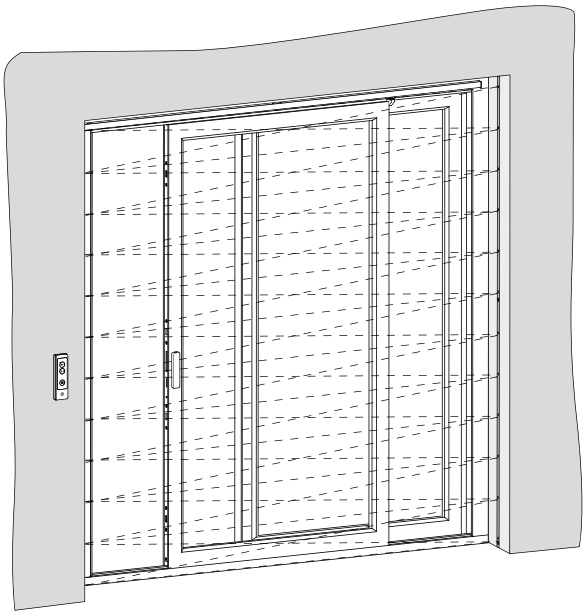
Rated voltage	24 V DC (-15%, +30%)
Permitted voltage range	20,4 to 31,2 V DC
Max. allowable ripple	≤ 20% related to rated voltage
Current consumption	2 A
Switching-off OPEN / CLOSE	built-in limit switch
Protection class	III safety extra-low voltage SELV

Material and mechanical characteristics

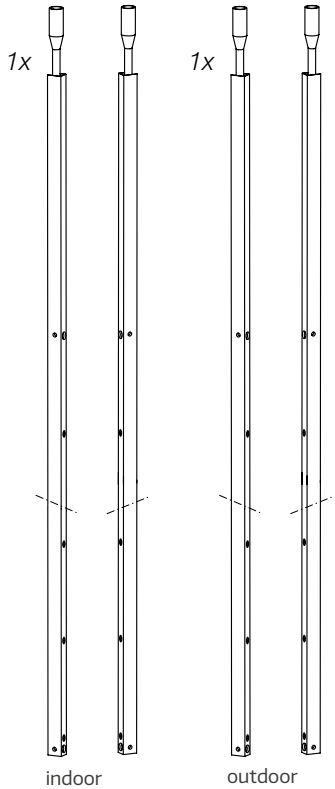
Emission sound pressure level LpA	≤ 70 dB(A)
Mech. emergency release	yes
Non-halogen	no
Silicone-free	no
RoHS compliant	yes
Lift time	approx. 6 s
Max. sash weight	300 kg
Temperature range	-5 to 60 °C
Protective system	IP 40 acc. to DIN EN 60529
Max. cycles	20

Mounting and Installation IR-light curtain

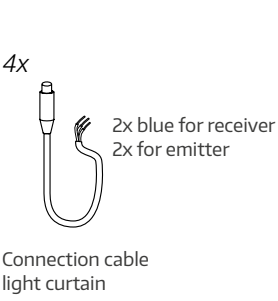




Pars overview



Light curtain (Emitter and Receiver)



Mounting and Installation IR-light curtain (continuation)

Technical data IR-light curtain

Light curtain	
Supply voltage	14 up to 30 V DC
Current consumption	60 mA at 24 V DC
Max. inrush current	< 2 A per edge
Ripple	10%
Output	max. 120 mA
Response time	25 up to 100 ms
Wavelength	infrared 925 nm
No. of sensors per edge	16
No. of beams per sensor	46
Operating range	0,8 up to 6 m
Max. ambient light	75.000 Lux
Dimensions	2000 mm (L) x 12 mm (W) x 16 mm (D)
Cable length	2 x 5 meter connecting cable
Operating temperature	-20 °C up to +65 °C
Vibration	IEC 60068-2-29, EN 50155, EN 50121
Shock	IEC 60068-2-6, EN 50155, EN 50121
EMV Emission	EN61000-6-3, EN 50155, EN 50121
EMV immunity	EN61000-6-2, EN 50155, EN 50121
Enclosure rating	IP 65
Material	aluminium
Profil colour	aluminium anodised

Mounting and Installation IR-light curtain (continuation)

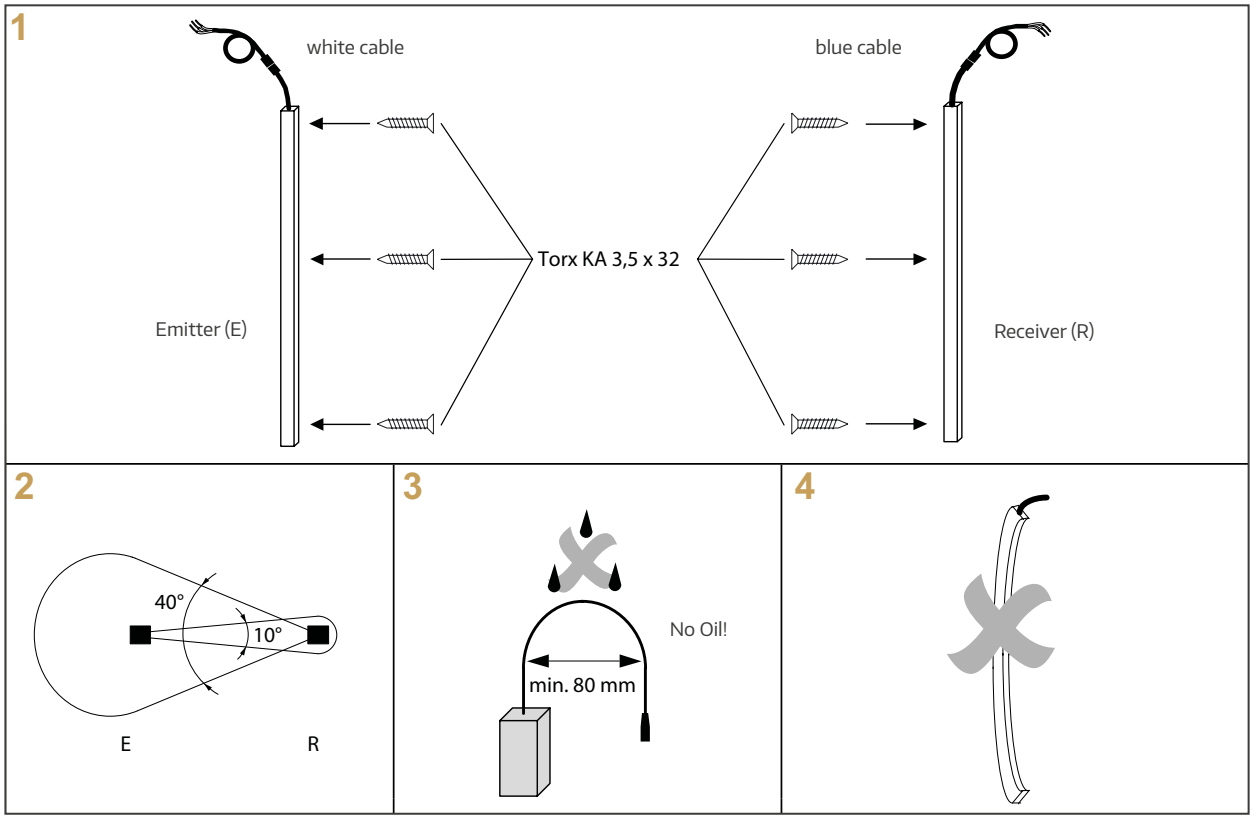
Main features

› Self calibrating, fault tolerant
› Easy installation without alignment
› Dense surveillance area
› Robust and reliable
› Integrated diagnostics
› Off time delay, adjustable

Functional description

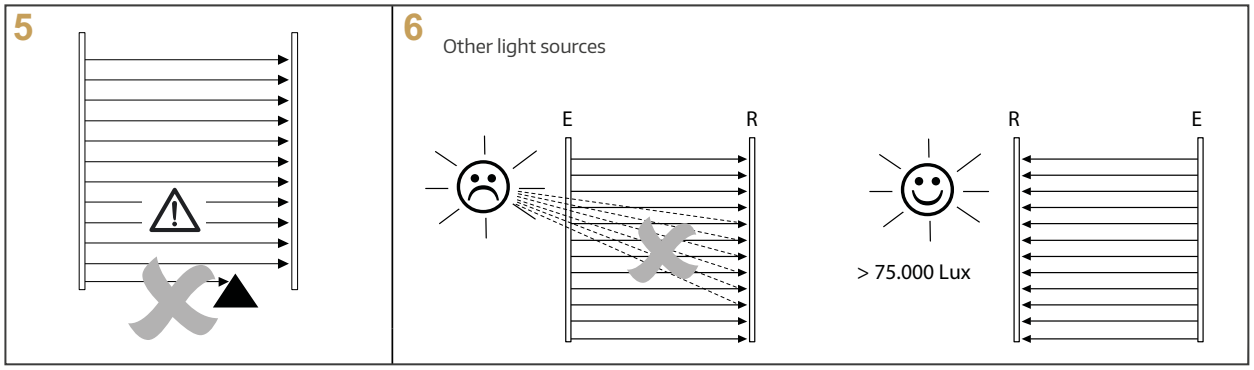
Between emitter E and receiver R a high density surveillance area is built up with straight and crossed beams. A built-in calibration feature of each individual beam to eliminate any adjustment, suppress light interference or control influence from dirt. Automatically adjust the power to provide the optimal operating conditions. These features give an outstanding functional reliability. Any interruption of the surveillance area by an object or a person will be detected and the output signal will be switched.

Notes for installation



Mounting and Installation IR-light curtain (continuation)

Notes for installation (continuation)



Due to the large optical aperture angle and the automatic calibration feature there is no alignment needed as long as the light curtains are within the specified aperture angle, (fig. 2).

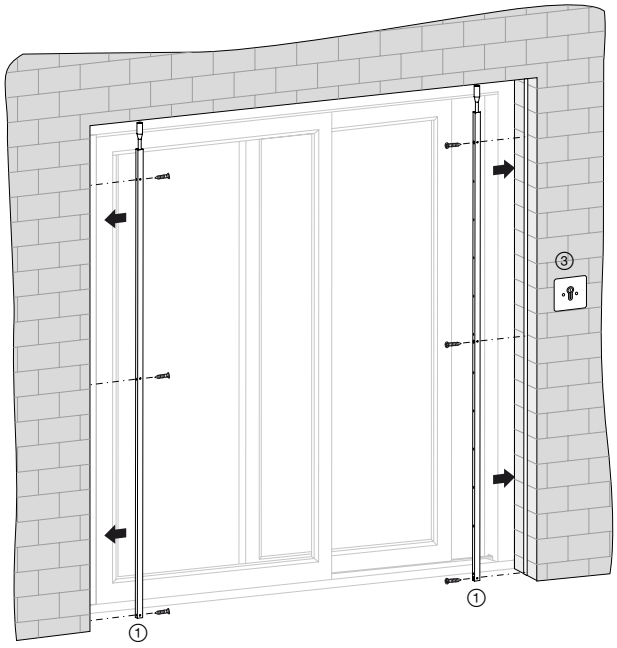
For installation of the light curtains please note ...

› that the emitter and the receiver profiles are not installed 180° turned to each other; that means, both cables have to exit the profile in the same direction (fig. 1).
› that the profiles are not stretched or squeezed (fig. 4).
› that the fixing basis is flat enough.
› that the connecting cable is not exposed to tractive or shearing forces.
› that the cable is fixed and conduited safely and with large bending radius (fig. 3).
› to avoid dirt on the light curtains.
› to avoid contamination by oil or greasy fluids.
› that during operation, no sash, cable etc. extend into the surveillance field (fig. 5).
› to avoid interference with foreign infrared light sources like other light curtains, energy saving lamps, direct sun light etc. at receiver curtain R (fig. 6).
› to clean the profiles with soap water, because solvents destroy them.
› to make sure that the operating range corresponds with the specification of the light curtain.

IMPORTANT WARNING:
This product is not a safety sensor to protect human life or human injury from dangerous parts of machinery.

Mounting and Installation IR-light curtain (continuation)

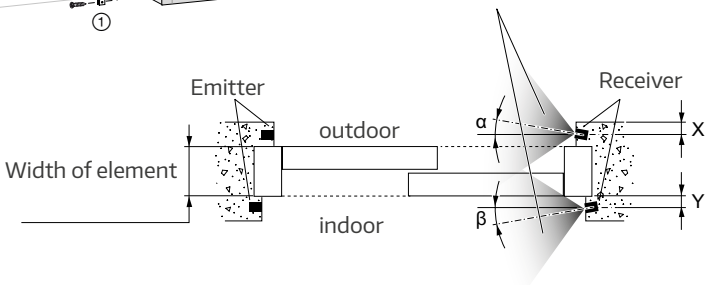
Installation IR-Light curtain

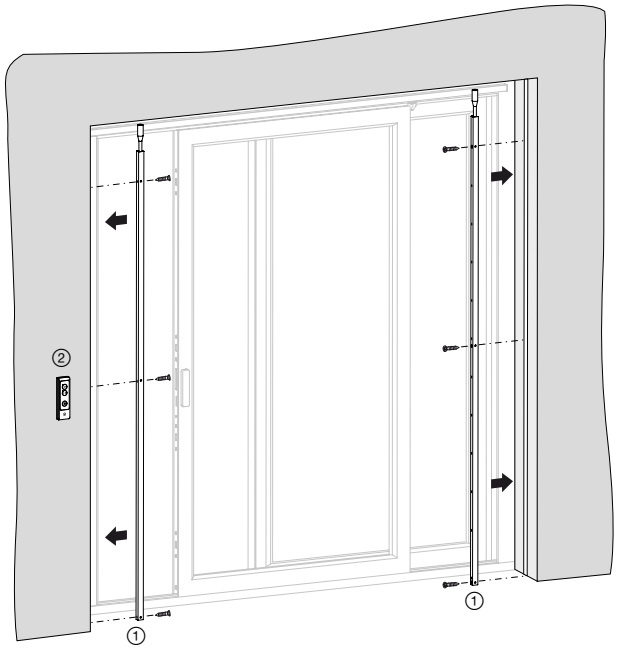


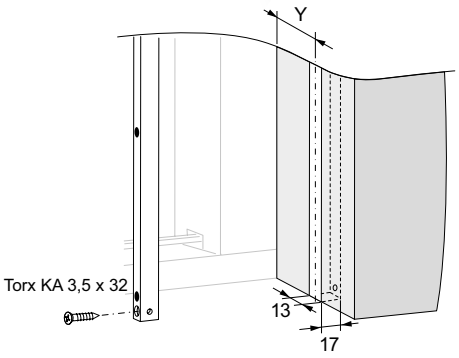
① IR light curtain
② Control keypad
③ Key switch

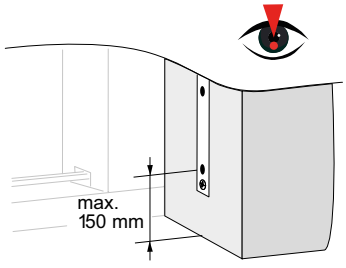
The range of detection has to be adjusted in such a way, that the function will be ensured.

The range of detection will be defined by α and X or β and Y, and the width of the element.









Mounting and Installation IR-light curtain (continuation)

Installation

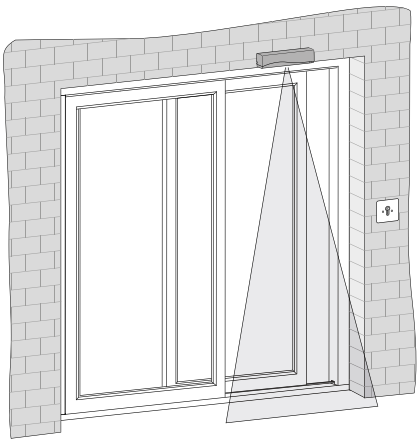
Connect the light curtain according to the connecting diagram. At each edge is a LED above which displays the status of the light curtain:

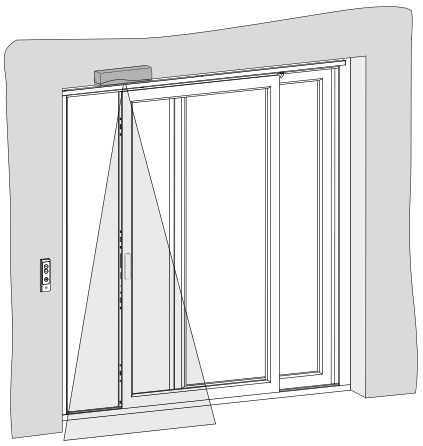
	LED colour	**LED on**	**LED off**	**LED flashing**
Receiver	orange	Power ok and object detected	no power or no object	optical element
Emitter	green	power ok	no power	

Trouble shooting
If the IR-light curtain does not operate as expected, observe the following trouble shooting guide step by step:

1. Power up light curtain system (receiver and emitter edge).
2. Check supply voltage both on emitter and receiver. Is the green indicator LED in the emitter edge on and is the orange LED in the receiver edge on when there are obstacles between the emitter and the receiver? Is the supply voltage between 14 and 30 Volts DC? The ripple on the DC voltage should not exceed more than 10% of the mean voltage within the min. and max. range.
3. If the output signal of the receiver is not stable during the closing of the sash, make sure that
   a. the distance between the cables of the light curtain and possible electromagnetical disruptive factors is as wide as possible.
   b. there are no obstacles between the emitter and the receiver. Make sure that obstacles does not enter the light path.
   c. the edges are properly installed and aligned so that they cannot swing or vibrate and therefore lose line or sight between themselves.
   d. the optical elements of the edges are clean and not full of dust or dirt. Although the light curtain is very tolerant to this condition, its performance is much better when it is clean.
4. If the sash is closing even with an abstacle, there are two possible reasons:
   a. output selector not properly set (see step 2 and 3).
   b. faulty / defective system wiring or defective receiver edge.

Mounting IR-Presence sensor

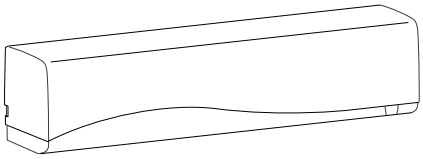




For installation and additional equipment, please use separate instructions for the presence sensor ('safety sensor') IXIO-ST supplied.

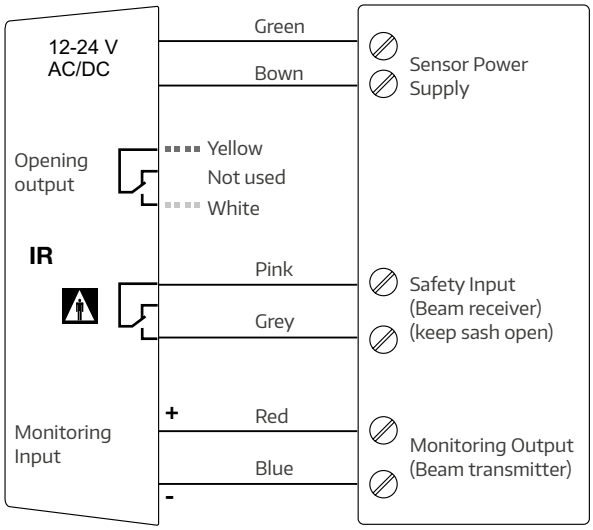
Parts overview

IR-Presence Sensor
('Safety sensor')

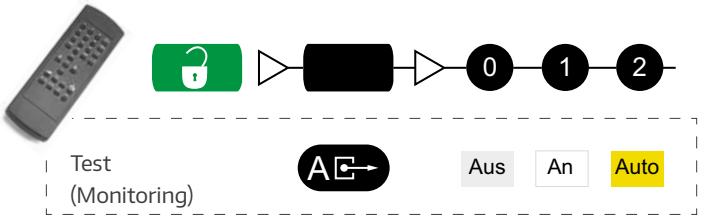


BEA remote control

Wiring the sensor



IMPORTANT:
Before operating the IR presence sensor, the automatic test must be programmed to 'ON' using the BEA remote control as follows:



Connection of 1-button control pushbutton

Features

› for installation in a flush housing (deep version)

› the HS / S comfort drive control electronics automatically detects, whether a 3-button control keypad or a Pushbutton- Box with a pushbutton is connected

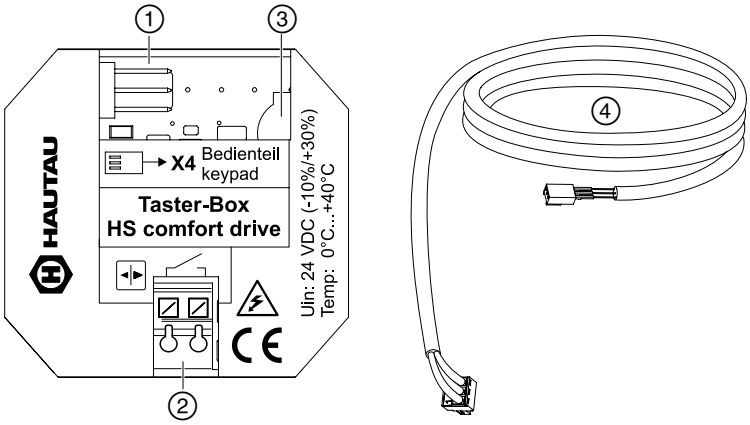
› Power supply via the HAUTAU bus

› for operation via only one button for OPEN, STOP and CLOSE

› a buzzer on the board serves to signal errors and conditions

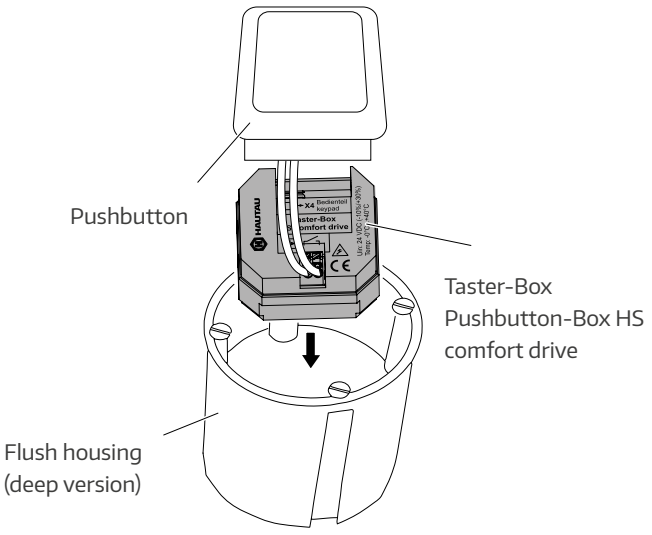
Equipment overview

① Power supply and connection to HS comfort drive circuit board, terminal X4
② Connection for pushbutton
③ Buzzer for signalling (within the housing)
④ Connecting cable (Length: 10 m)



Installation of the Pushbutton-Box

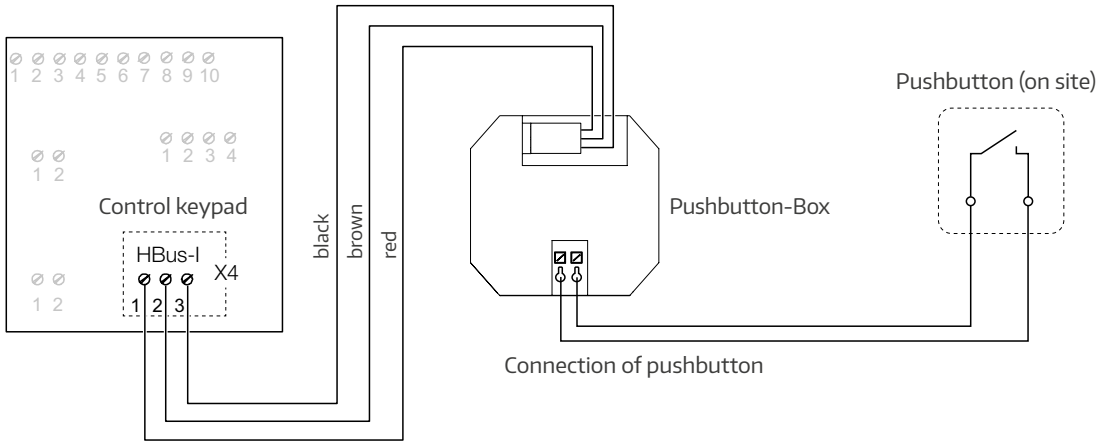
The Pushbutton-Box is designed for installation in an on-site flush housing (deep version). The place of installation has to be dry and easy accessible.
An inspection flap or similar is recommended. It is not necessary to fasten the Pushbutton-Box within the flush housing.
For an extended terminal compartment an electronic flush housing is recommended.



Connection of 1-button control pushbutton (continuation)

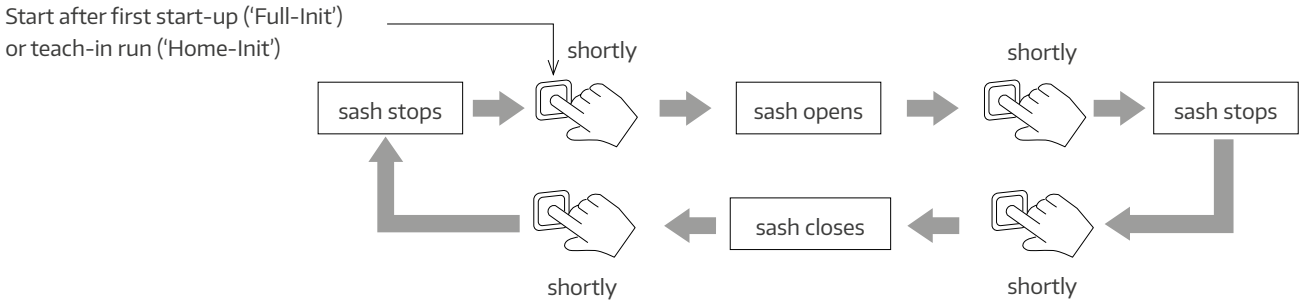
Terminal connection diagram

Circuit board drive module HS / S comfort drive
(illustration may differ)



Operation

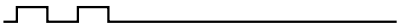
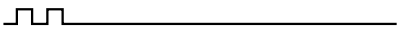
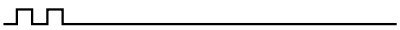
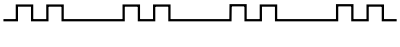
The control unit memorizes the last movement of the sash. To protect the system, the commands will be ignored when pressing the button random short consecutively.
HS / S comfort drive in automatic mode: by pressing the button for about 20 seconds continuously, the software will be reset ('Home-Init'); by pressing the button for about 30 seconds continuously, a factory reset ('Full-Init') is carried out.
HS / S comfort drive in DEAD-MAN's mode: to get into this special mode, a double click is necessary. Only afterwards, by pressing the button for about 20 seconds continuously, the software will be reset ('Home-Init'); by pressing the button for about 30 seconds continuously, a factory reset ('Full-Init') is carried out. To leave the special mode, it is necessary to double click the button again or to wait about 1 minute.
The reset of the software respectively the factory reset will be confirmed each by an audible signal.



Connection of 1-button control pushbutton (continuation)

Signalling

The buzzer to signal errors and conditions cannot be switched off. Therefore it will be activated only in case of compelling necessity to inform the user / operator of the drive system. The buzzer does not serve to present different causes of error that can be corrected by the Service, only. The buzzer provides assistance for the user / operator.

Event	Beep sequence	Activation and duration
in case of all errors, which lead to safety stop of the HS / S comfort drive		in case of pressing the button, only
during opening / closing in case of initialization ⚠ **ATTENTION:** During initialization all safety devices are disabled!		until the initialization will be finished
Confirmation beep in case of software reset ('Home-Init') after about 20 seconds. To reset, the operating button has to be pressed for at least 20 seconds.		one-time
Confirmation beep in case of factory reset ('Full-Init') after about 30 seconds. For factory reset, the operating button has to be pressed for at least 30 seconds.		one-time
after double click onto the pushbutton (Triggering of a reset in DEAD-MAN's mode)		1 minute or until pushbutton is pressed again

Connection of 1-button control pushbutton (continuation)

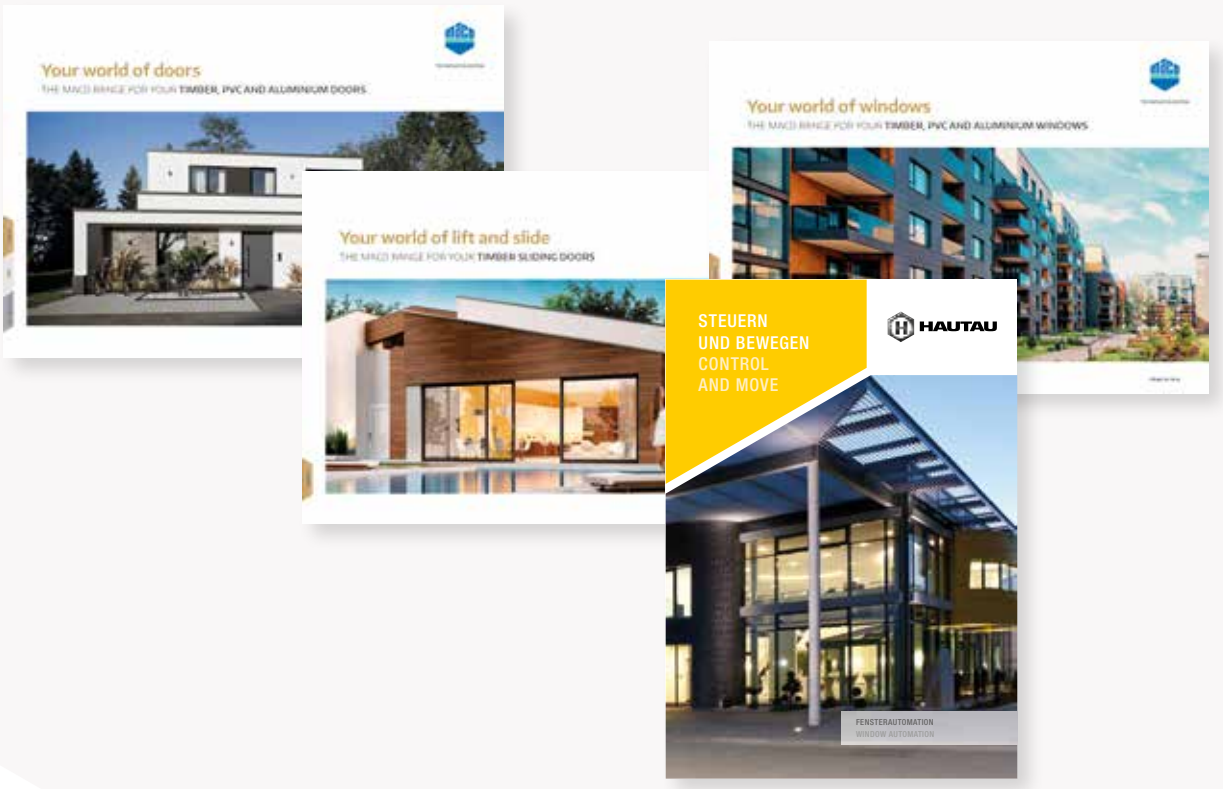
Technical data

Operating supply		
Supply voltage	24 V DC (-10 % / + 30 %)	
Ripple	≤ 20% related to nominal voltage	
Current consumption	max.	approx. 14 mA
	Standby	approx. 4 mA
Power consumption	max.	approx. 0,4 W
	Standby	approx. 100 mW
Material and mechanical characteristics		
Dimensions; W x H x D	50 x 47 x 28	
Housing	PVC	
Colour	grey	
Non-halogen	yes	
Silicone-free	yes	
RoHS compliant	yes	
Acoustic signalling		
of errors and conditions	yes, by beep sequences	
HAUTAU Bus		
Wire length	max. 10 m	
Cable cross-section	≥ 0,8 mm²	
Type of cable	not shielded	
Number of drives	1 per Pushbutton-Box	
Installation and environmental conditions		
Nominal temperature	20 °C	
Ambient temperature range	0 °C to +40 °C	
Installation situation	dry	
Applicable for outdoor installation	no	
Protection system	IP 20 (acc. to DIN EN 60529)	
Approvals and certificates		
CE compliant	yes, acc. to EMC Directive 2004/108/EG and Low-voltage Directive 2006/95/EG	
RoHS compliant	yes, acc. to Directive 2011/65/EG	
Protection cla	class III	
Connectivity	any 1-pole pushbutton with normally open contact for flush / surface mounting	
Use for HS / S comfort drive	from Software-Version 5.0 for the main board of the drive	

Notes

Would you like everything from a single source?

HAUTAU, a specialist in sliding products, is part of the MACO Group. At MACO you get complete solutions for your large surfaces, windows and doors – for timber, PVC and aluminium: Experience our versatile system range, with comprehensive service included. Discover more on **www.maco.eu** and **www. hautau.de** or contact your customer advisor.



HAUTAU near you:
www.hautau.de/contact

HAUTAU, a company of the MACO Group

HAUTAU

This print document is constantly being revised.
The latest version can be found under https://www.maco.eu/assets/759279
or by scanning the QR code.

Created: 12/2020 - Changed: 09.09.2021
Order No. 759279