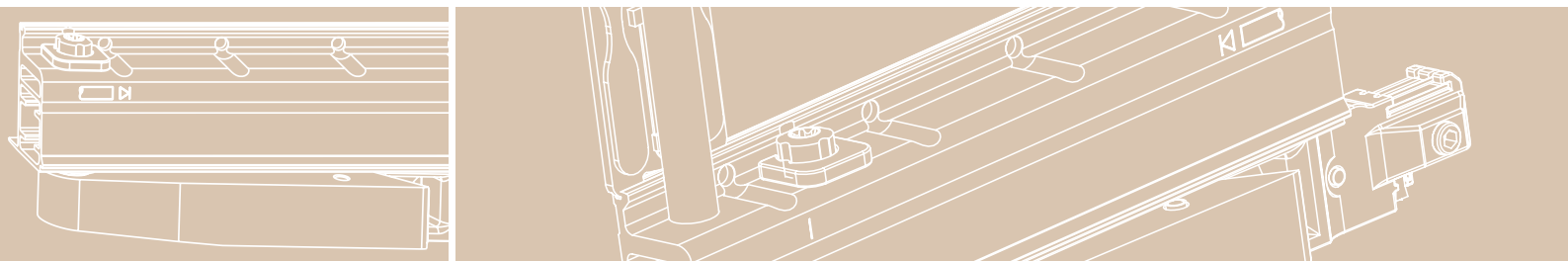


TECHNOLOGY IN MOTION



MACO RAIL-SYSTEMS

SLIDING FITTINGS



Slide&Tilt hardware / MULTI-MATIC / Timber 12 gap /
self-engaging

INSTALLATION INSTRUCTIONS
TIMBER



Application

Self-engaging

650 - 1650	840 - 2450	160



Backset



Sash rebate width (SRW)



Sash rebate height (SRH)



Sash width



Handle dimension



Frame rebate width



Frame rebate height



Left version shown,
Right version as mirror image



Contents

Product liability	4
Overview	5 - 10
- Overview drawings and parts list	
- Sections scale 1:1, view of sash and frame	
Types of openings	11
Sash installation	15
Frame installation	25
Inserting and adjusting the sash	31



Product liability

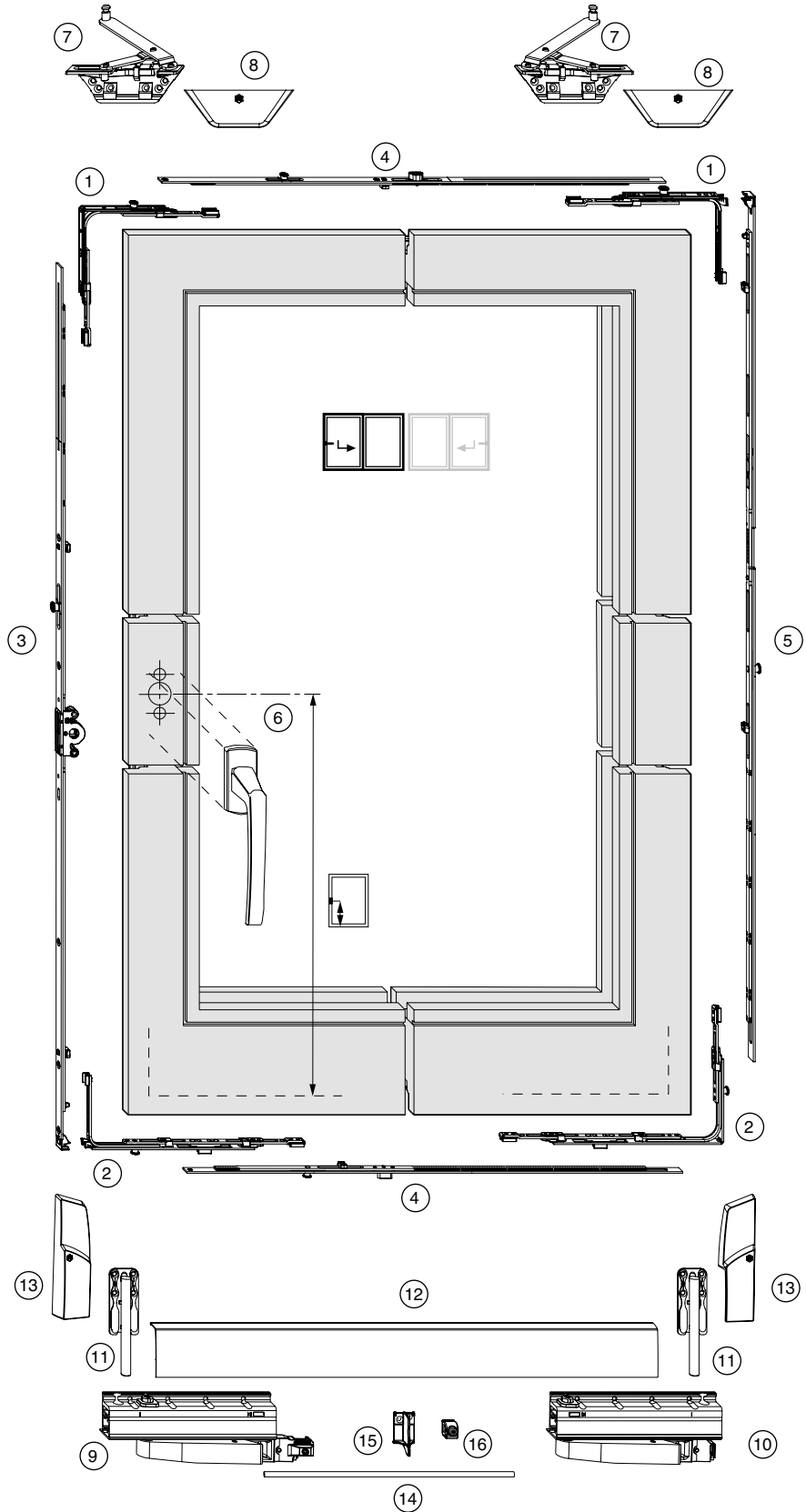
Important notes

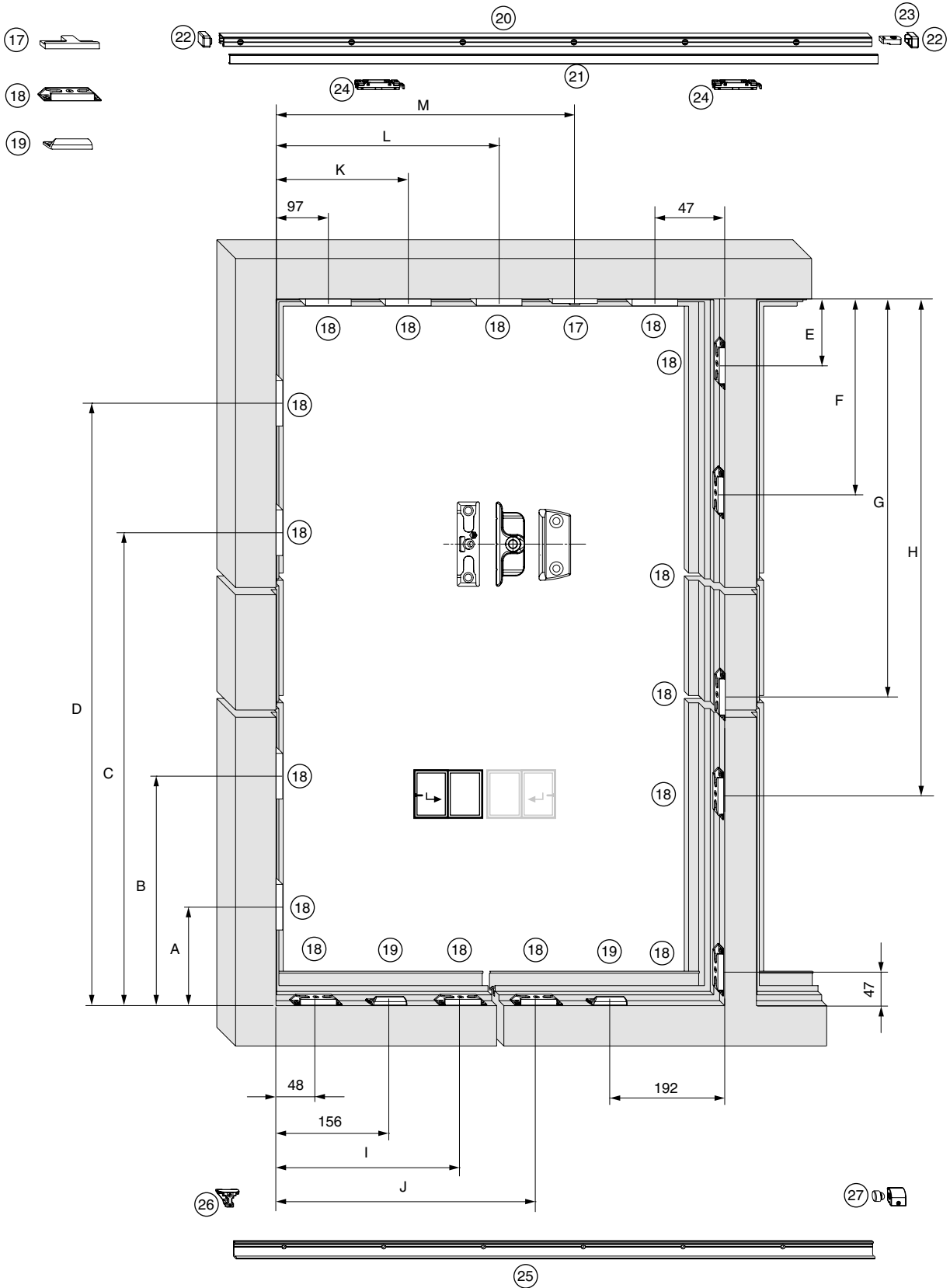
- Observe the maximum and minimum dimensions as well as the max. permissible sash weight.
- Observe the specifications of the profile manufacturer, especially with regard to possible restrictions of the minimum and maximum heights, the sash weight and the locking point.
- Do not make any changes to the design of the fitting components.
- Use only MACO hardware for the entire fitting.
- Mount all fitting components as described in these instructions and observe all safety instructions.
- Use the screw sizes specified. Match the screw lengths to the profile system
- Insert the screws straight (if not otherwise specified) and do not over-tighten them, since this would otherwise adversely affect the smooth running of the hardware.
- Fasten the screw of load-bearing components (e.g. roller, roller track and guide track) onto the reinforcement profile).
- Make sure there is a positive transfer of pressure forces onto the reinforcement profile in the area of the roller.
- Do not use acidic wetting sealants, since these can cause corrosion in the fittings.
- Keep the roller track and all sashes free of soiling and masonry residue. Avoid contact of the hardware with moisture and cleaning agents.
- Attach the operation sticker so that it is easily visible on the installed slide&tilt sash.
- If the slide&tilt fittings are subjected to excessive loads or not operated properly the sash can fall out of its guide, please remove thereby cause severe injuries. If excessive loads are to be expected in special circumstances (in schools, nursery schools, etc.), suitable measures must be adopted to prevent damage to the slide&tilt unit For example:
 - Moving the stop to reduce the opening width, or
 - Installing a profile cylinder to prevent unauthorized use.

If in doubt, please ask your MACO contact person.

Disclaimer

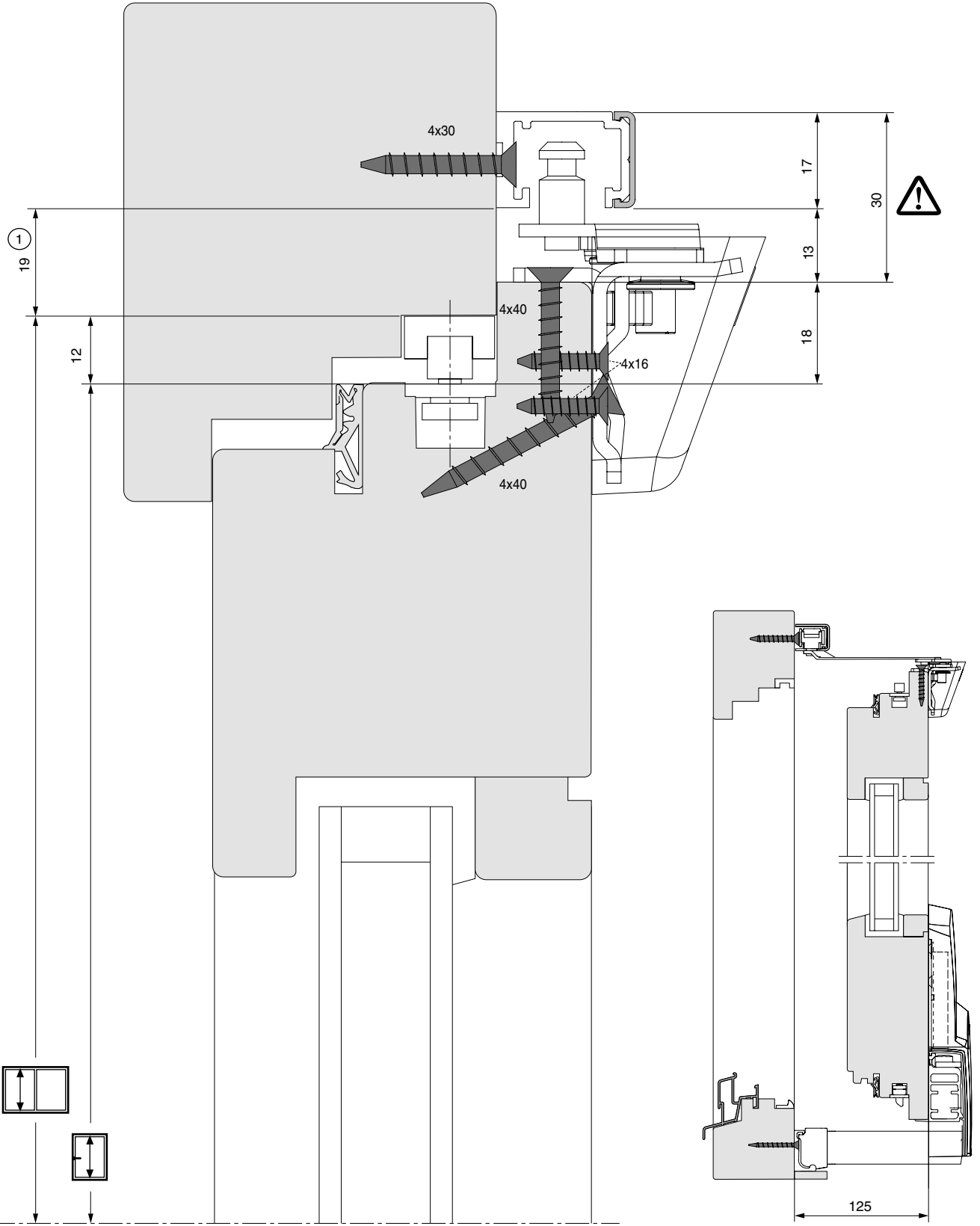
We shall not be liable for malfunctions and damage to the fittings and/or to Slide&Tilt units equipped with these, if this has been caused by inadequate tendering procedures, non-compliance with these installation instructions, or physical force applied to the fittings (e.g. due to improper use).

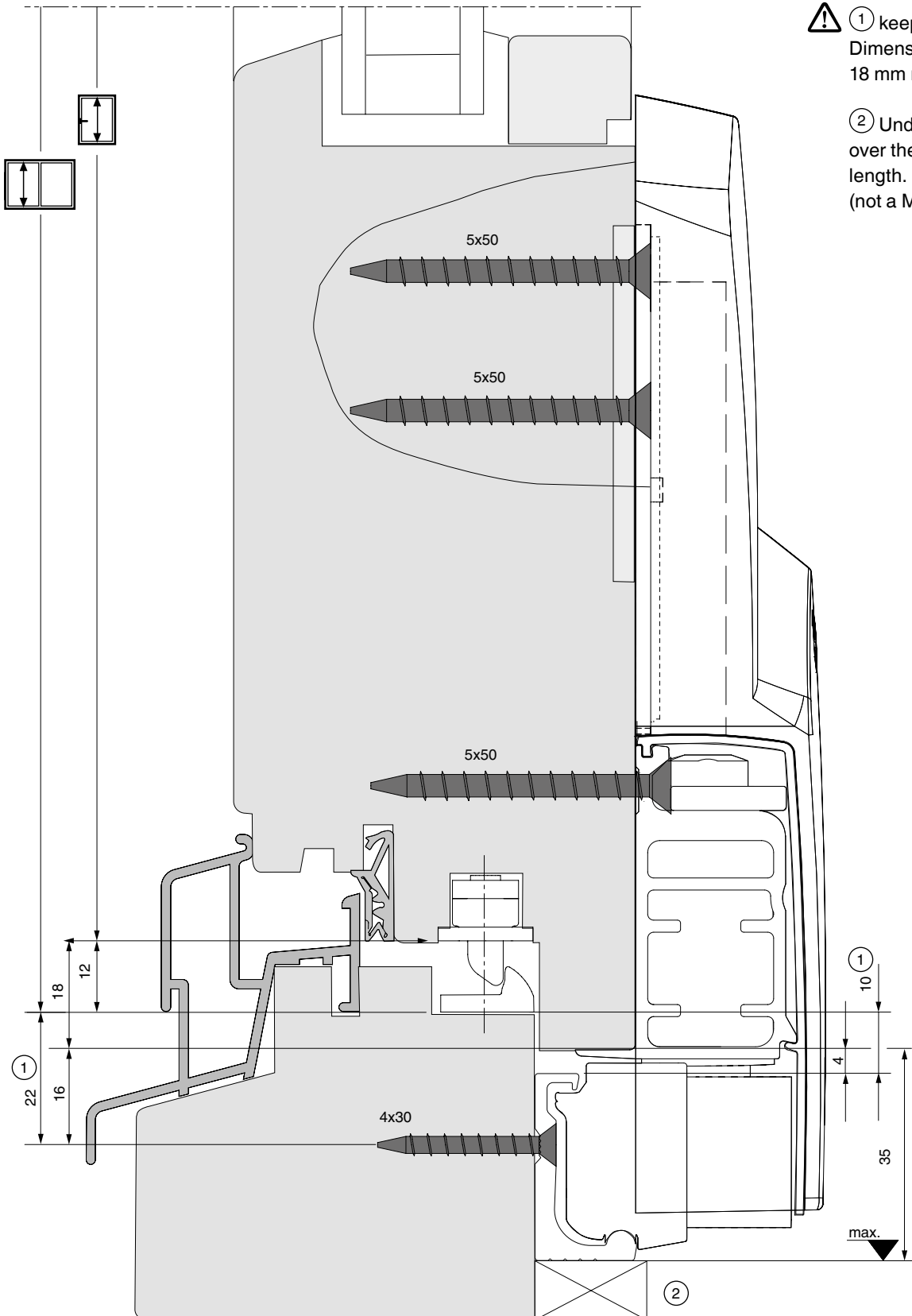






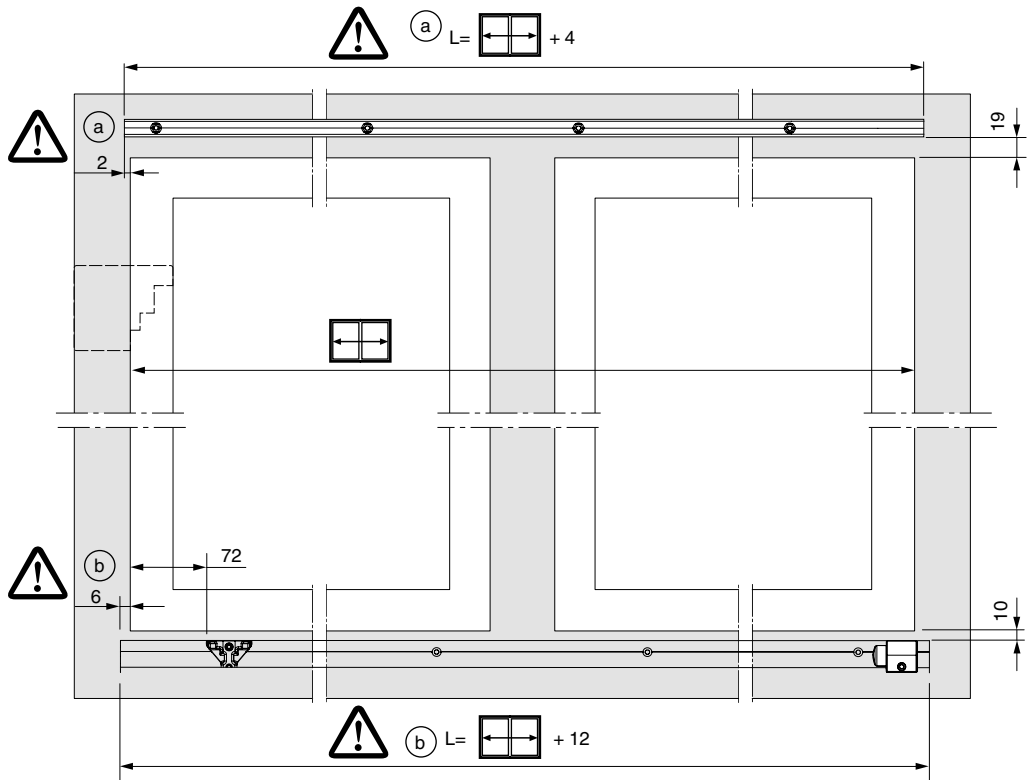
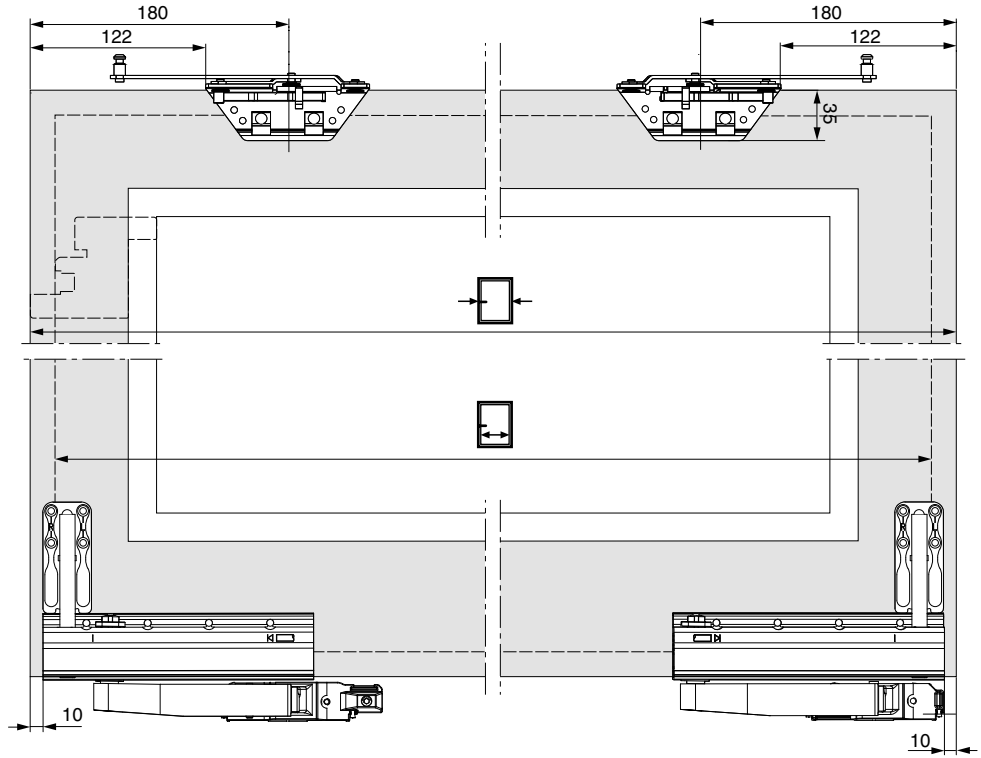
- | | |
|-------------------------|---------------------------|
| ① Top corner element | ⑮ Support for cover strip |
| ② Bottom corner element | ⑯ Support block |
| ③ T&T drive gear, fixed | ⑰ Striker plate |
| ④ Width unit | ⑱ i.S. striker |
| ⑤ Height unit | ⑲ Latching plate |
| ⑥ Handle | ⑳ Guide track |
| ⑦ Scissors-slider | ㉑ Cover Guide track |
| ⑧ Scissor-slider cover | ㉒ Caps Guide track |
| ⑨ Roller on gear side | ㉓ Top stop |
| ⑩ Roller on hinge side | ㉔ Scissor slider |
| ⑪ Roller reinforcement | ㉕ Roller |
| ⑫ Roller cover strip | ㉖ Control module |
| ⑬ Roller cover | ㉗ Bottom stop |
| ⑭ Connecting rod | |



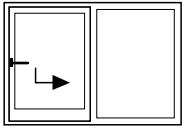


⚠ ① keep to dimension!
Dimension for
18 mm rebate leg

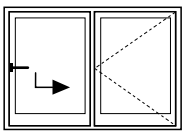
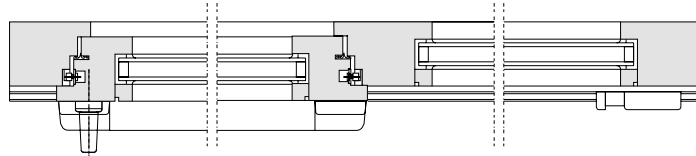
② Underlay the roller
over the entire
length.
(not a MACO article)



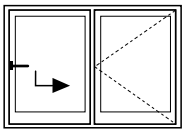
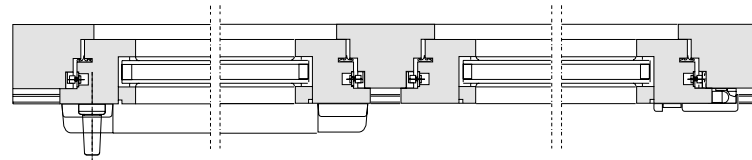
Types of openings



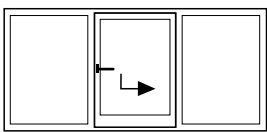
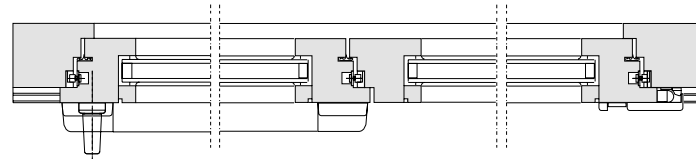
Fixed glazing



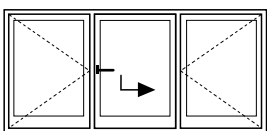
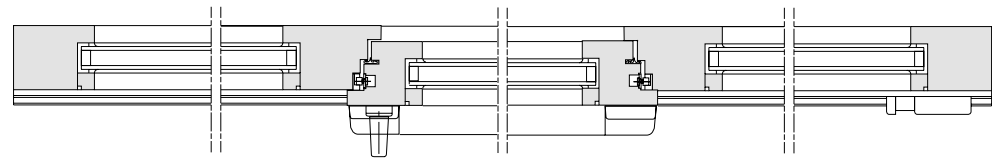
With mullion



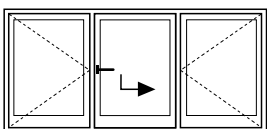
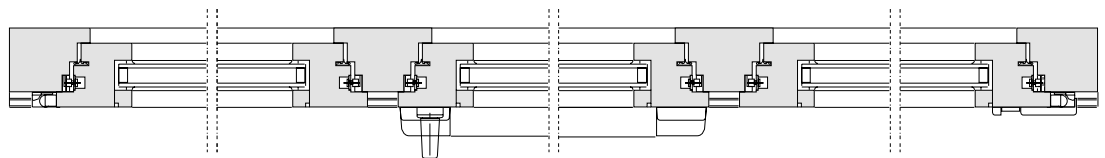
Without mullion



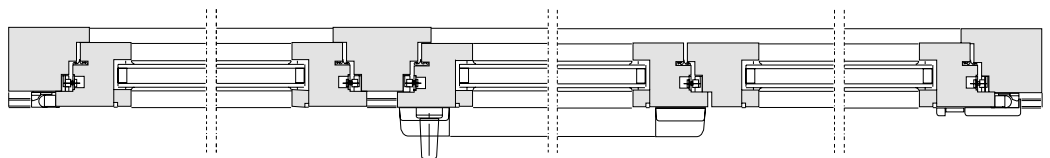
Fixed glazing



With mullion

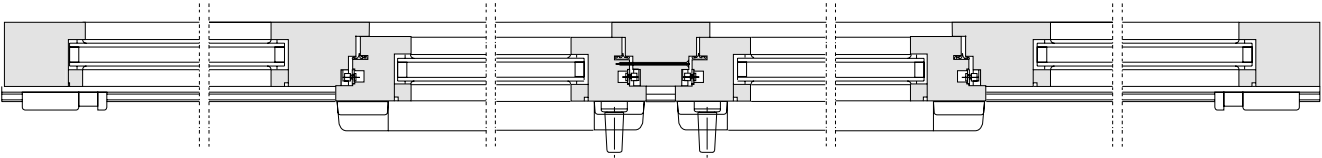
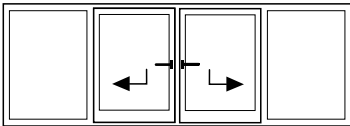


Without mullion

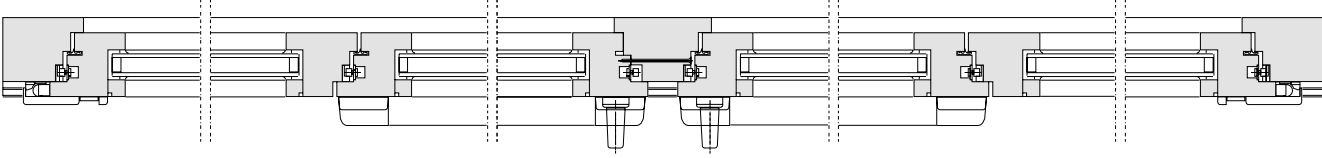
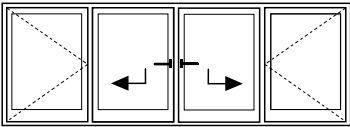




Types of openings



Fixed glazing

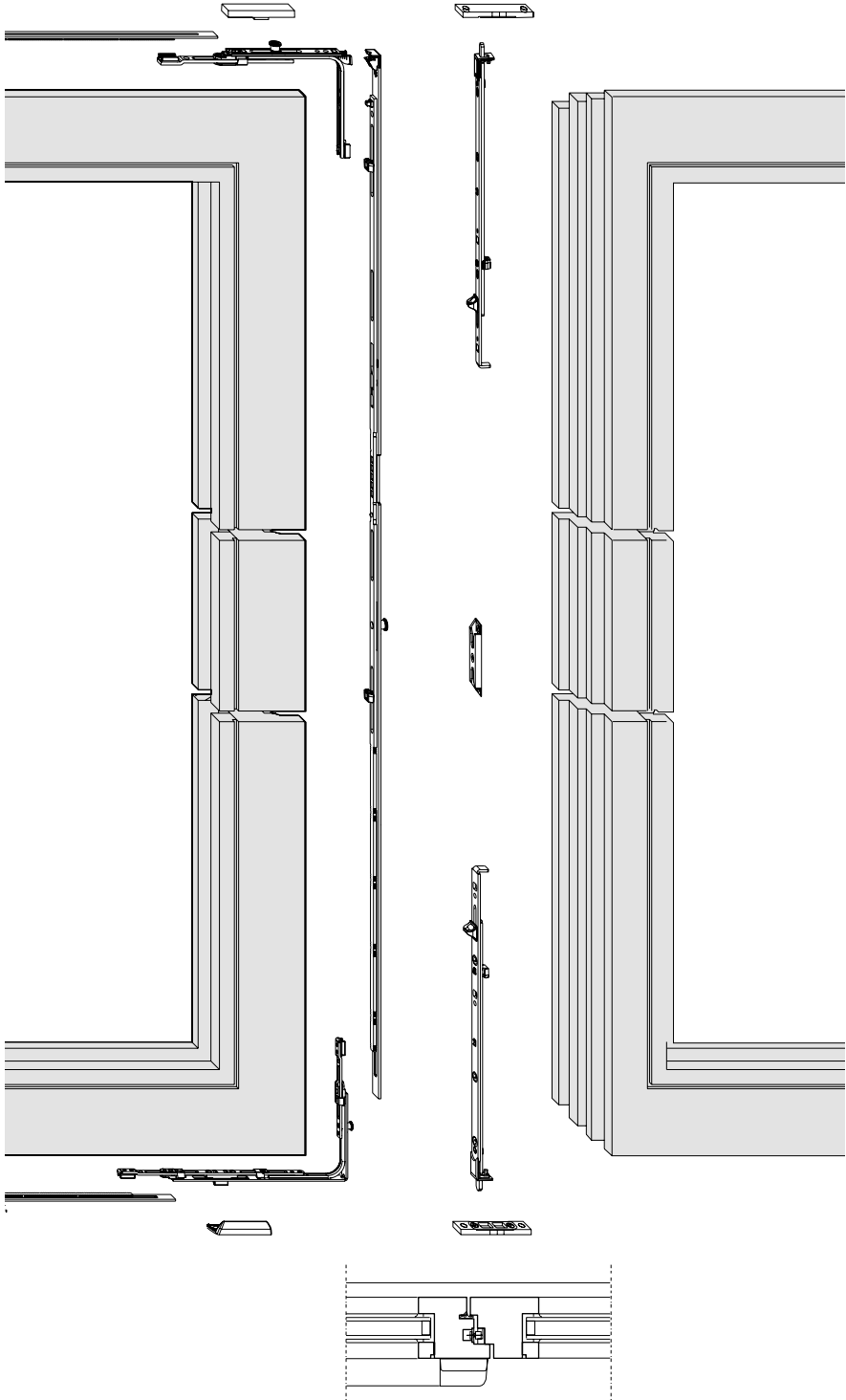


Mullion installed on second sash



Types of openings

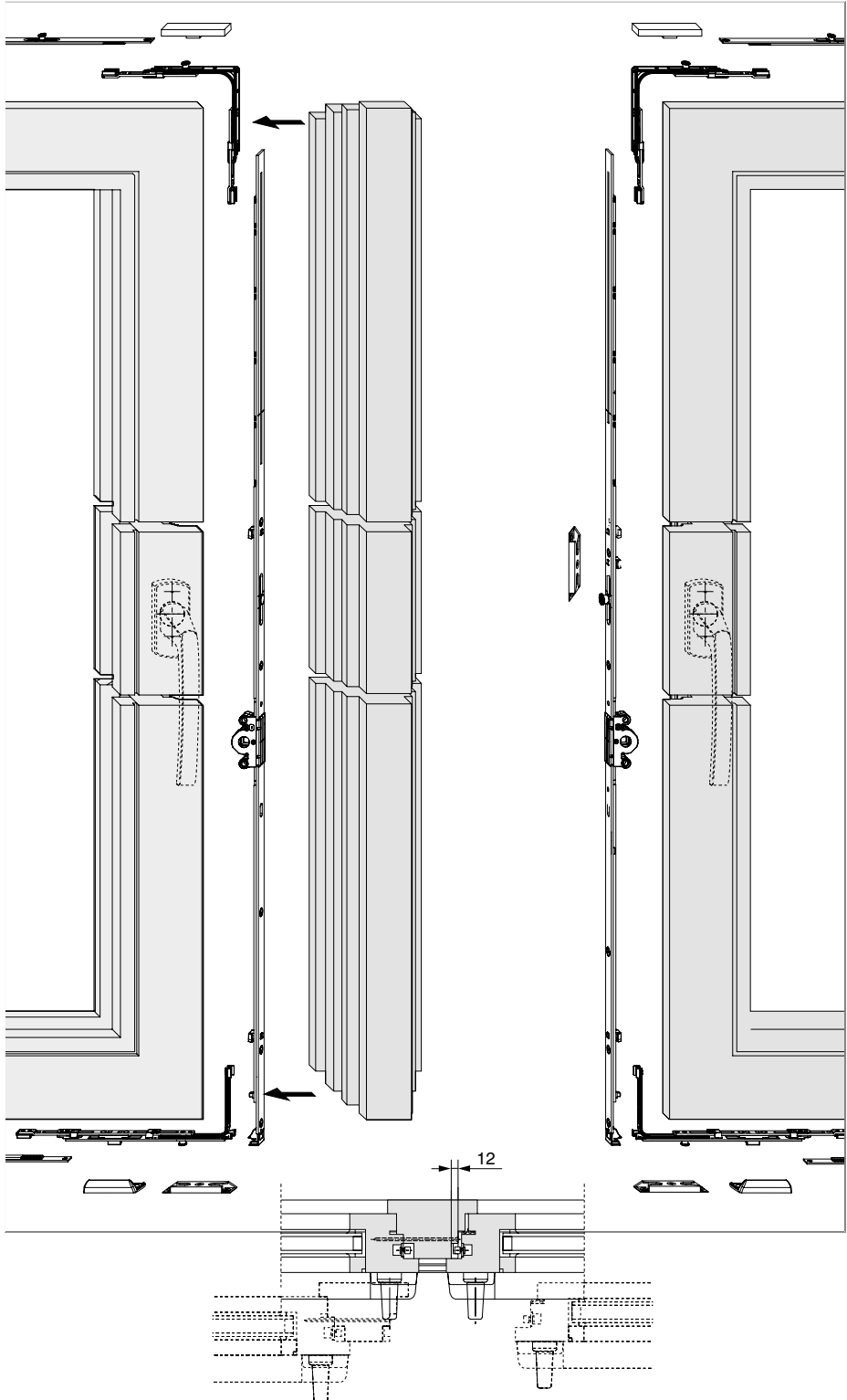
Without mullion





Types of openings

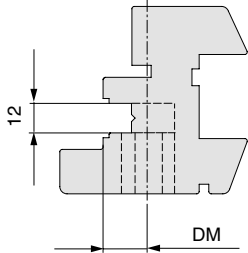
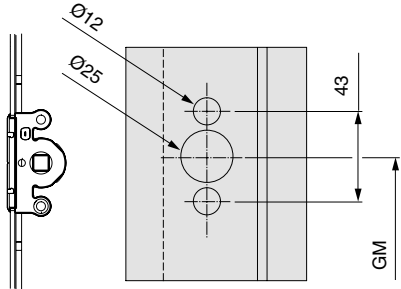
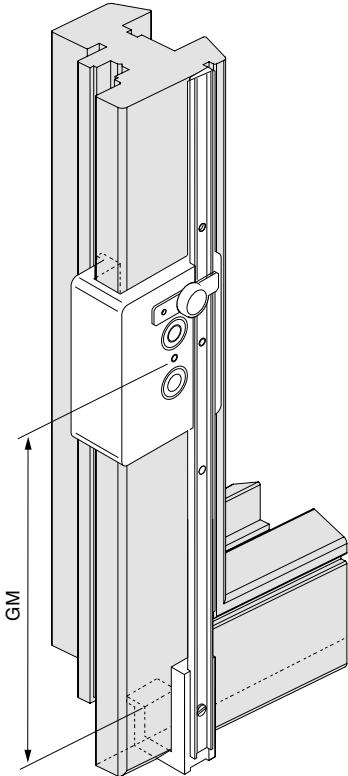
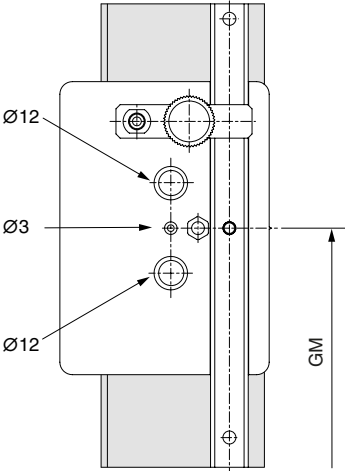
Mullion installed on second sash





Sash installation

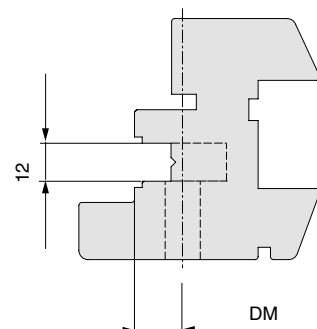
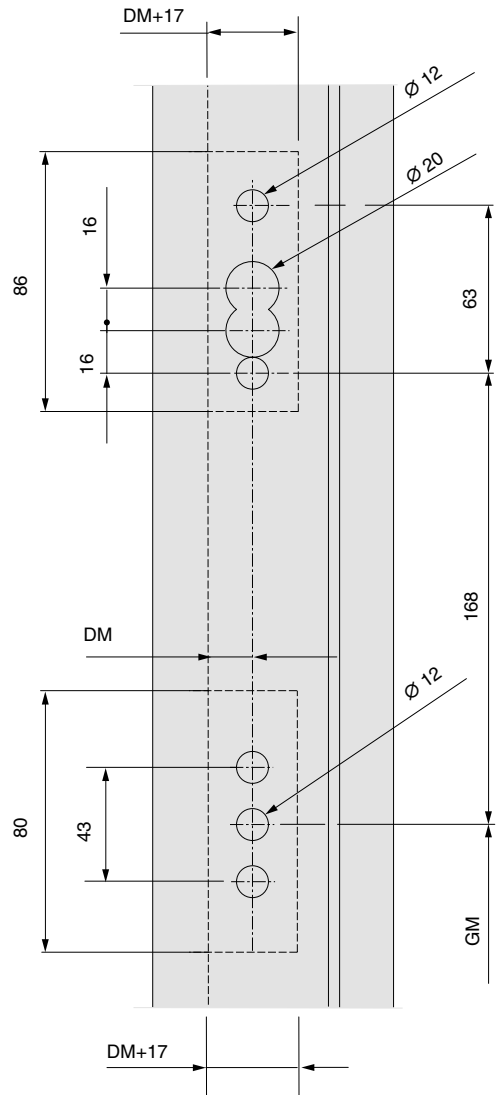
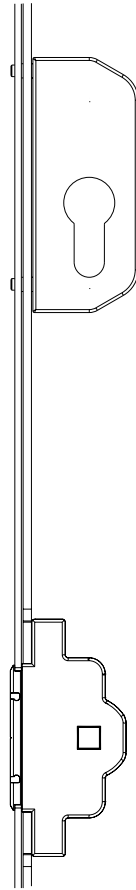
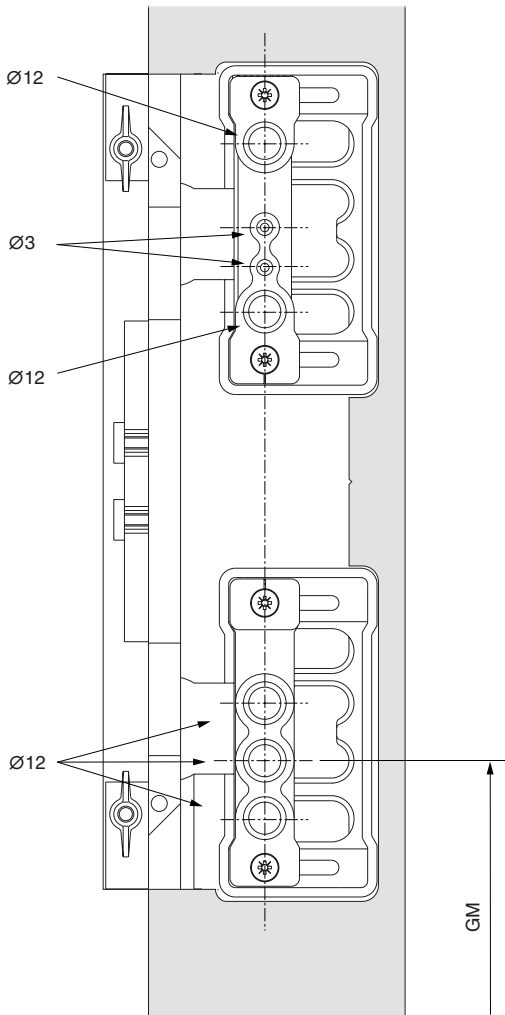
Hole for handle
Drilling jig No. 10523:





Sash installation

Hole for handle
Lockable drive gear
Drilling jig No. 29038:





Sash installation

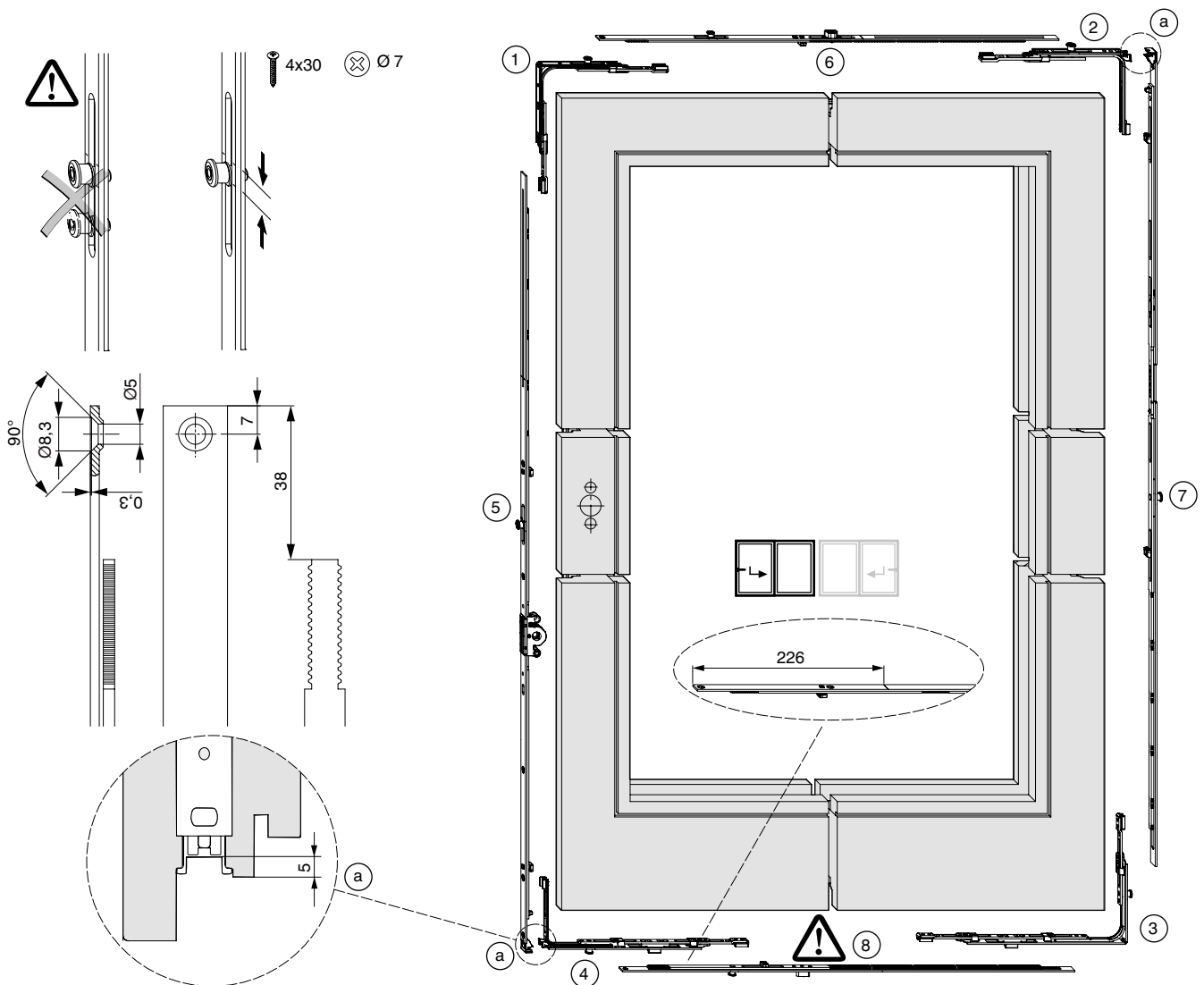
Installing the central lock

① - ④ Install

Attach ⑤ - ⑧, cut to length and install.

⑧ The width unit must be cut to length on the drive gear side at the mark.
Use Multi-Matic punch!

Observe the positions of the Locking cams!

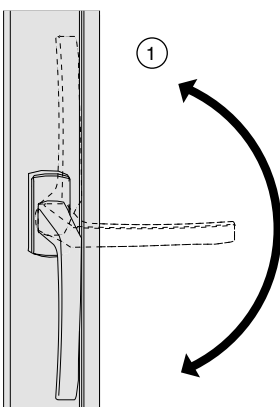
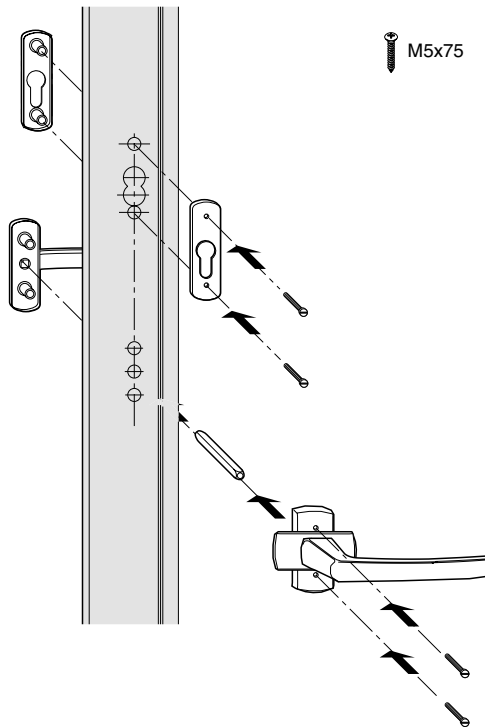
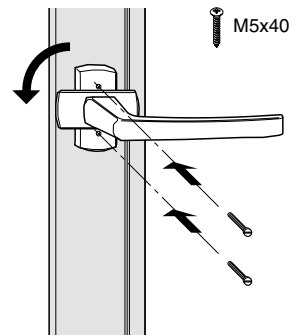
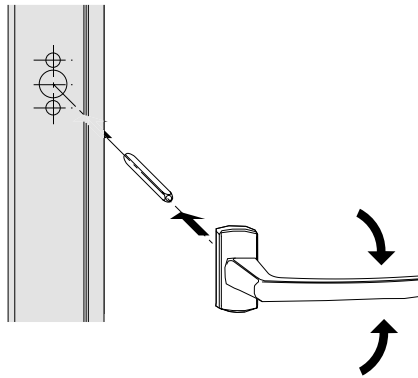




Sash installation

Installing the handle

- ① Operate the handle to release the installation fastening.

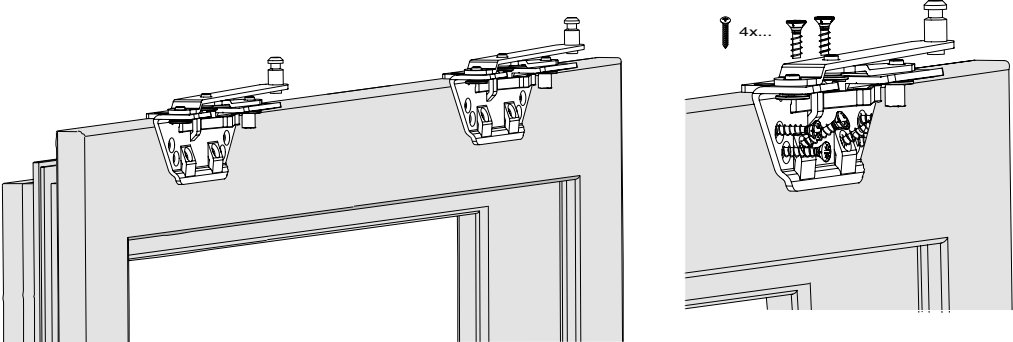
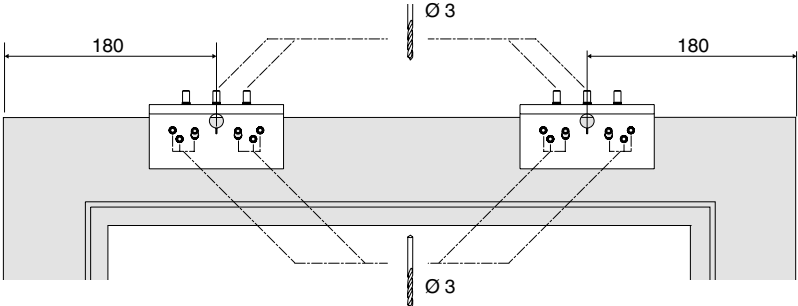




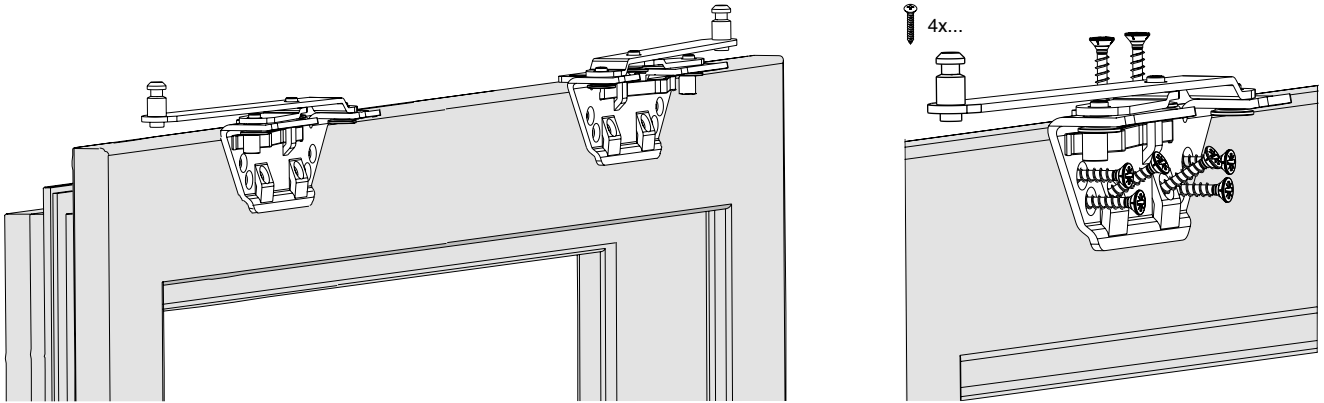
Sash installation

Installing the scissors-slider and cover

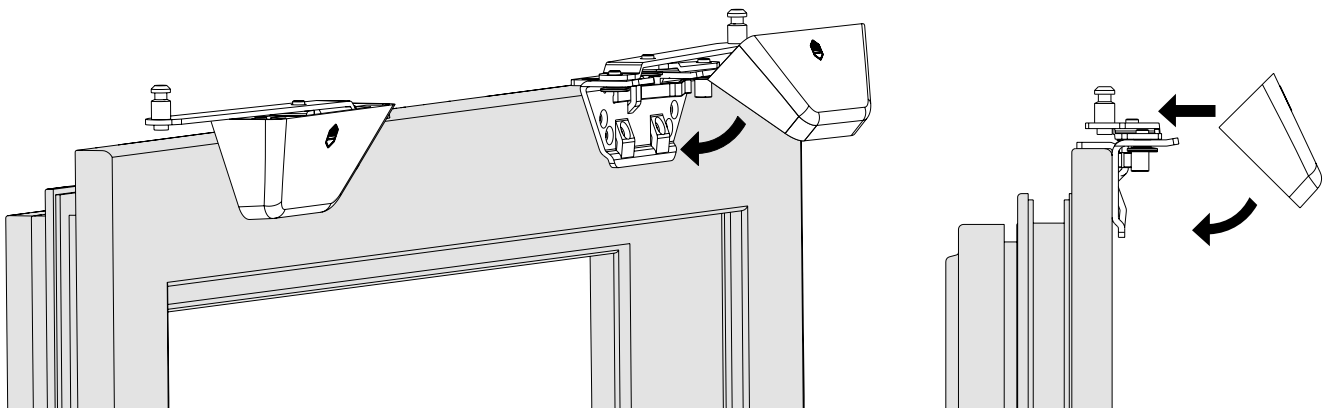
Drilling jig No. 465969:



Sash installation

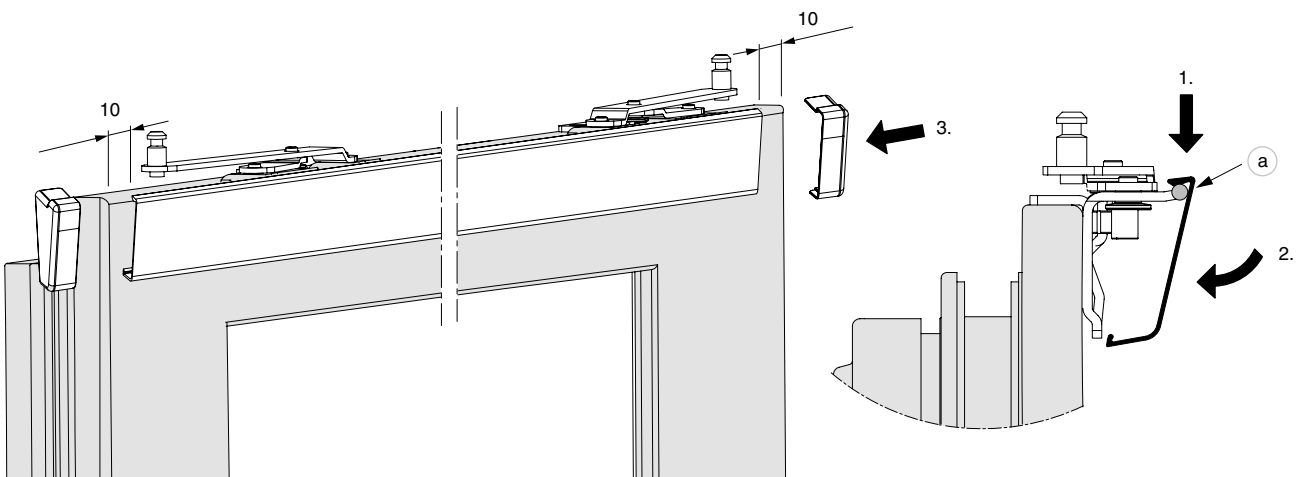


Cover cap version



Cover strip version

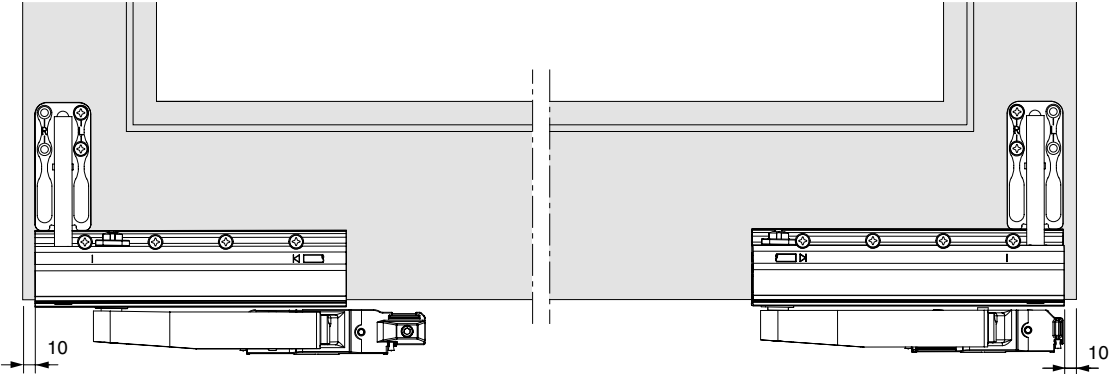
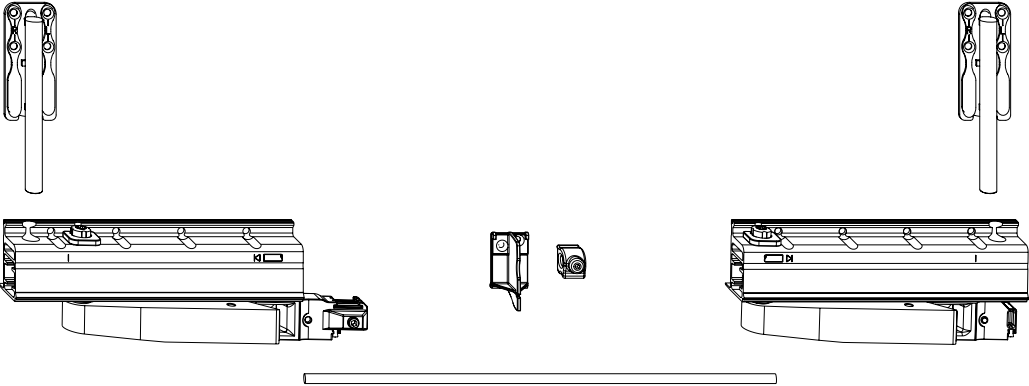
ⓐ = gluing points





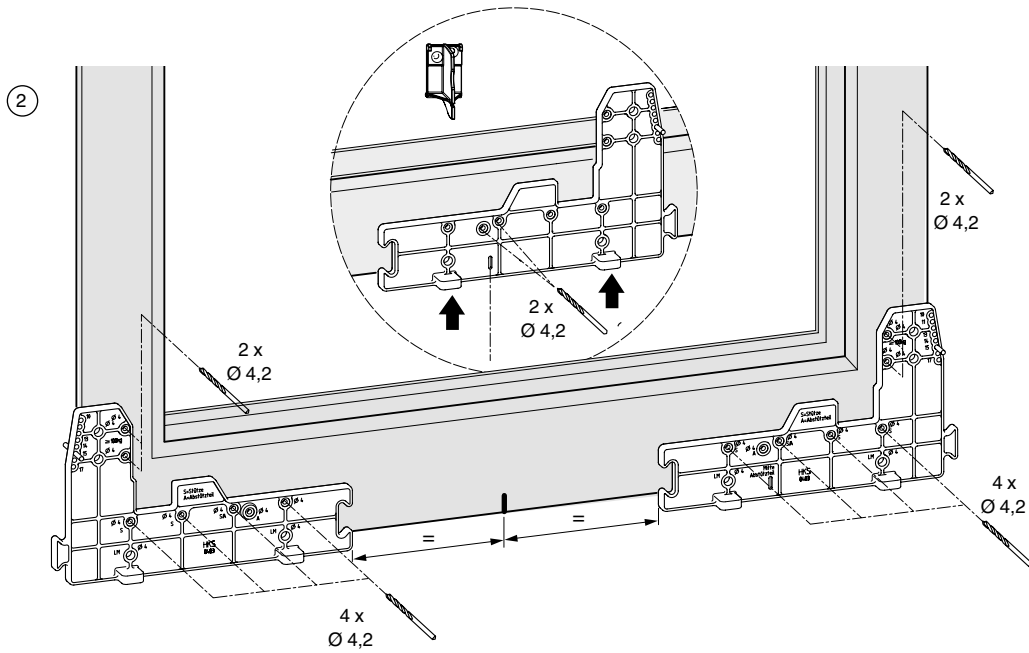
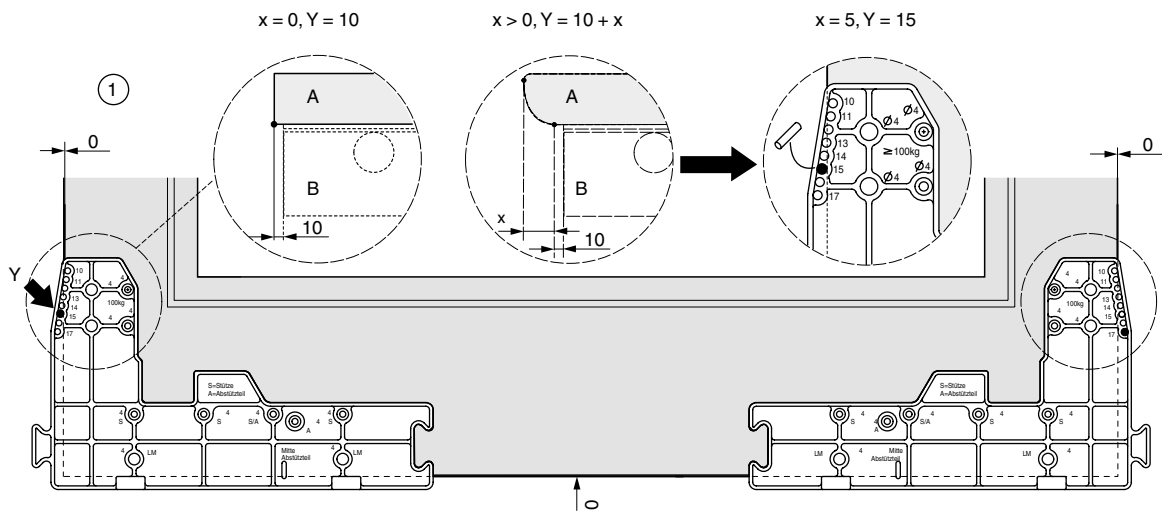
Sash installation

Installing the roller



Sash installation


- ① Set the jig $x > 0$: for pronounced arches or angles at the sash
A = Sash / B = roller
- ② Apply jig to rebate leg and drill with jig no. 465174

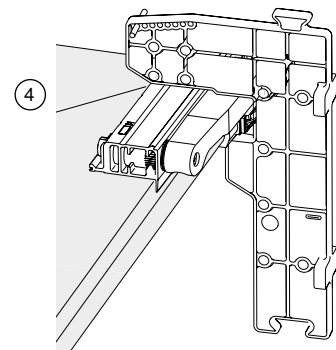
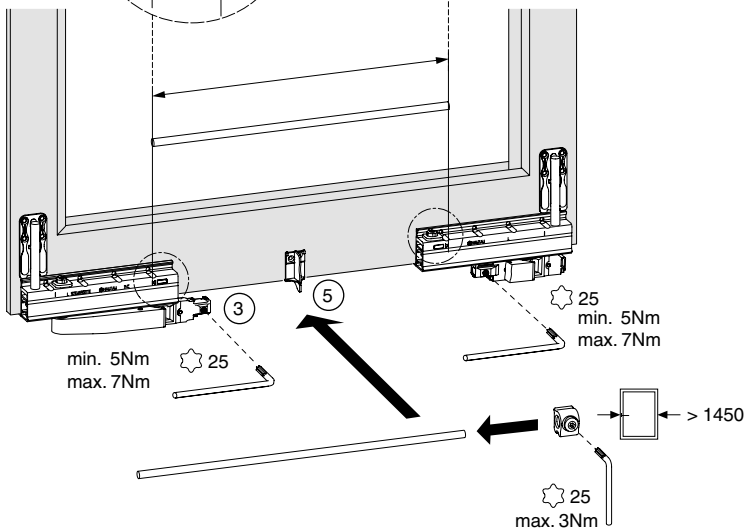
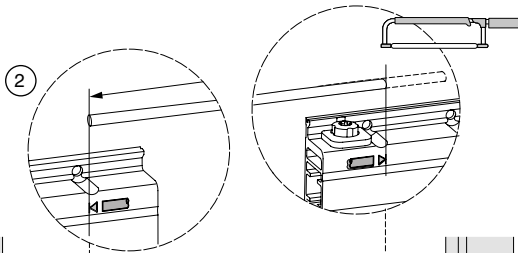
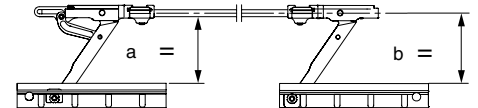
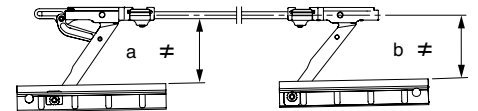
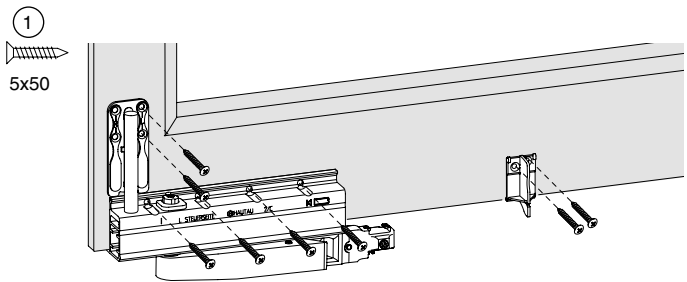




Sash installation

- ① Install the roller and support.
- ② Cut the connection rod to length.
- ③ Install the connecting rod at the rear roller.
- ④ The roller can be fastened at the rear using the jig.
- ⑤ Fasten the connecting rod at the front roller.

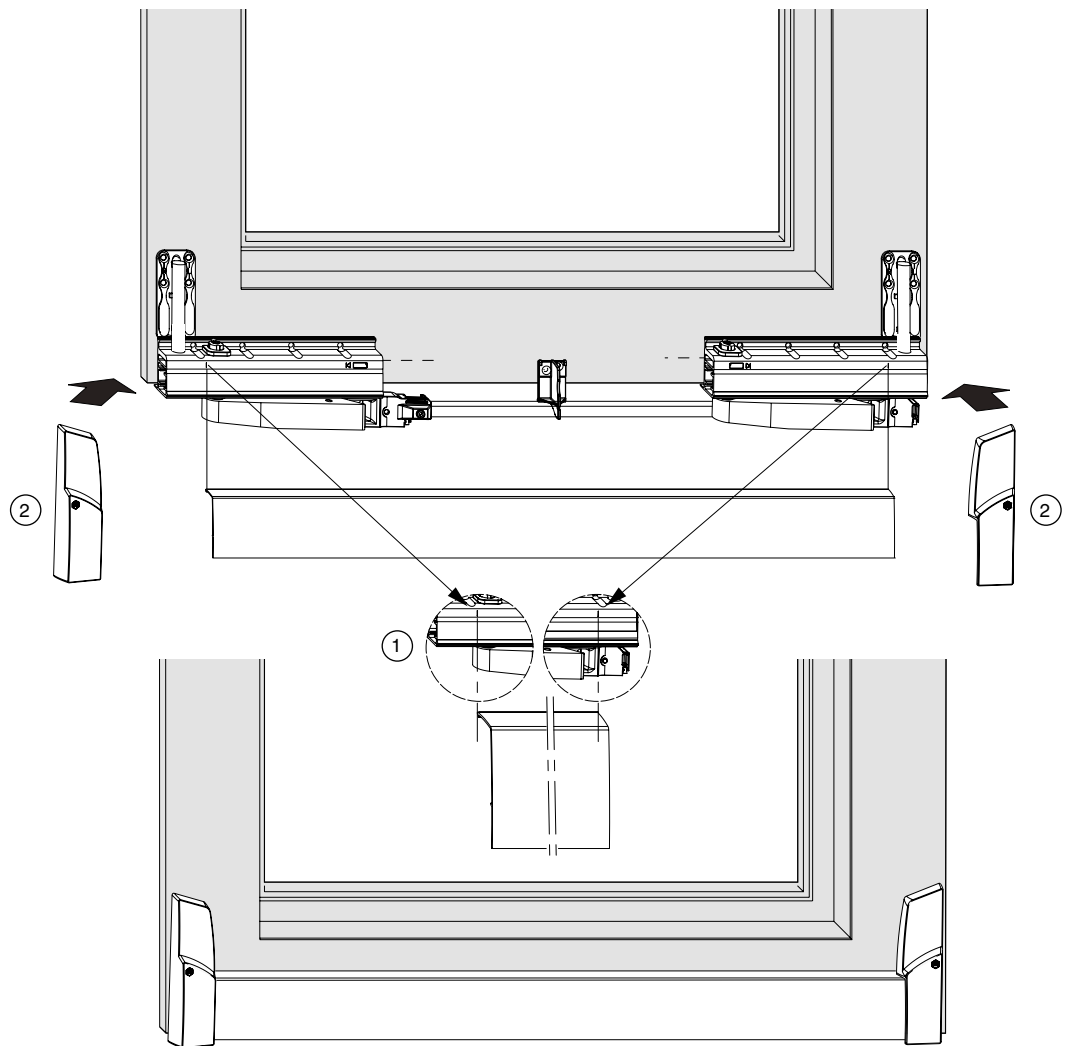
 Make sure that the rollers are parallel!





Sash installation

- ① Cut the cover profile to length according to the mark on the roller and snap on
- ② Clip on the caps at the front



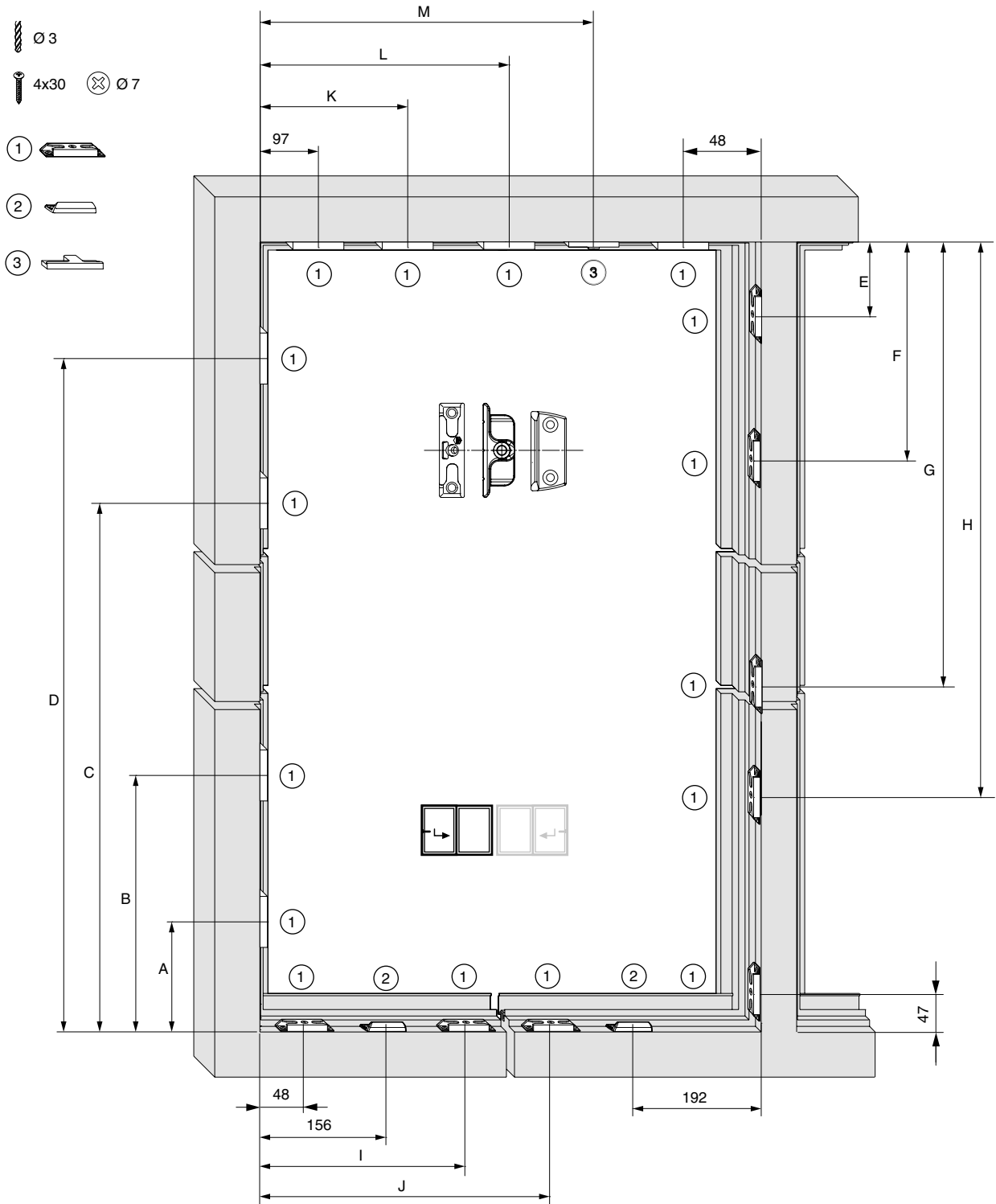
Notes:

We recommend that you do not attach the covers until the sashes have been mounted



Frame installation

Installing the strikers





Frame installation

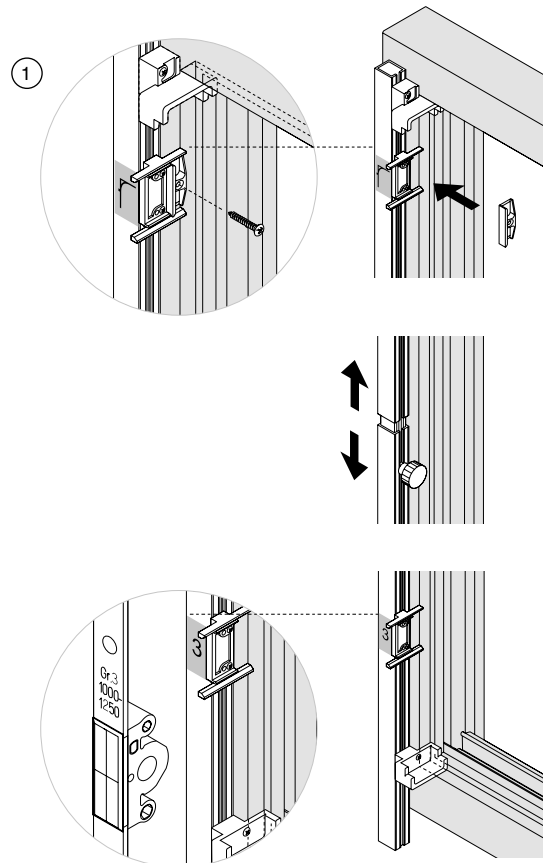
① Use drilling jig No. 204774/ 204776 for drive gear and height unit.

		A	B	C	D
841 - 1090	400	-	-	586	-
1091 - 1340	500	-	-	686	-
1341 - 1590	600	361	-	921	-
1591 - 1700	700	361	-	1021	-
1701 - 1950	1050	361	796	1466	-
1951 - 2200	1050	361	796	1466	-
2201 - 2450	1050	361	796	1466	1966

	E	F	G	H
841 - 1090	-	-	586	-
1091 - 1340	-	-	686	-
1341 - 1590	361	-	921	-
1591 - 1700	361	-	1021	-
1701 - 1950	361	796	1466	-
1951 - 2200	361	796	1466	-
2201 - 2450	361	796	1466	1966

	I	J	K	L	M
650 - 900	-	-	330	-	-
901 - 1150	383	-	565	-	695
1151 - 1400	618	-	800	-	930
1401 - 1650	383	853	565	1035	1165

	No
≤ 1340	204774
> 1340	204776



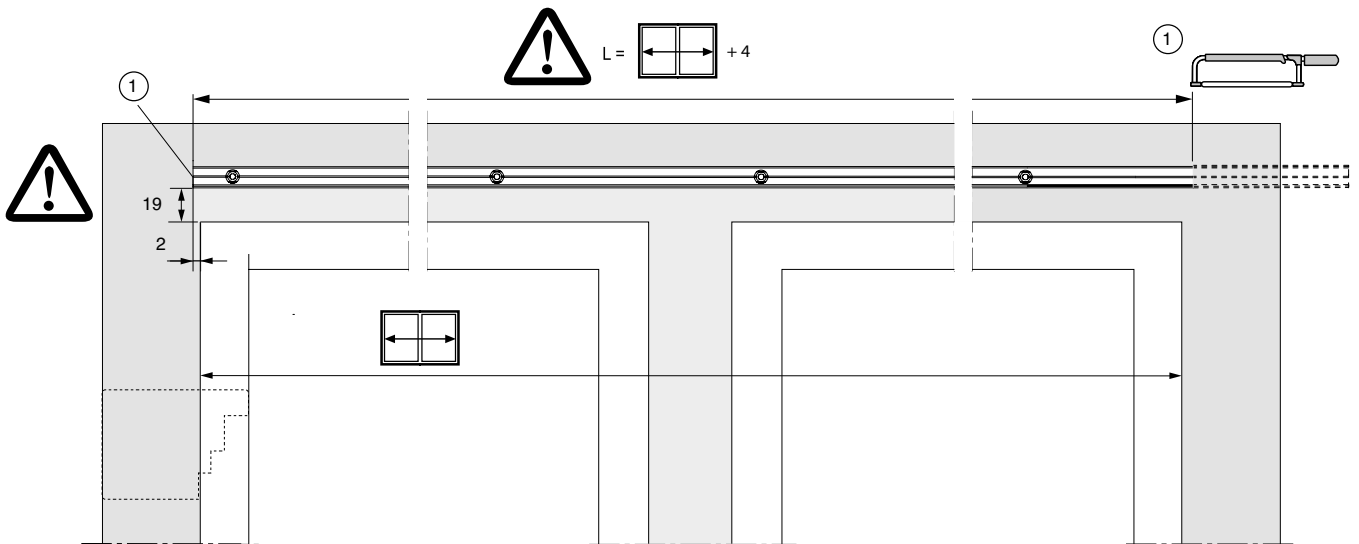
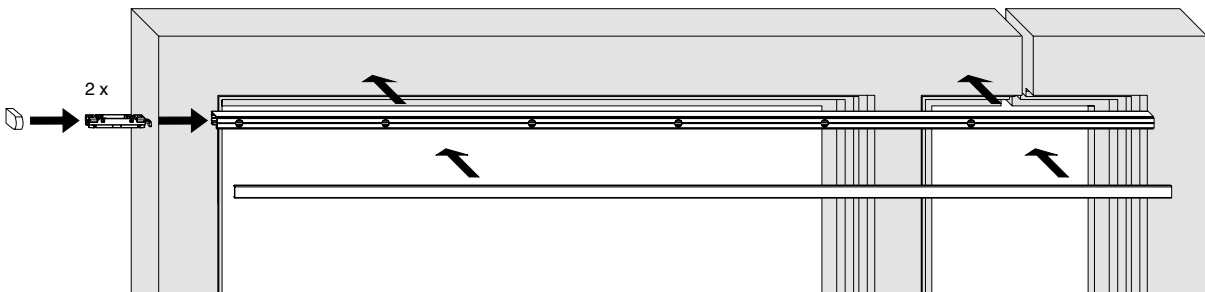


Frame installation

Installing the guide track

① Cut the guide track to length.

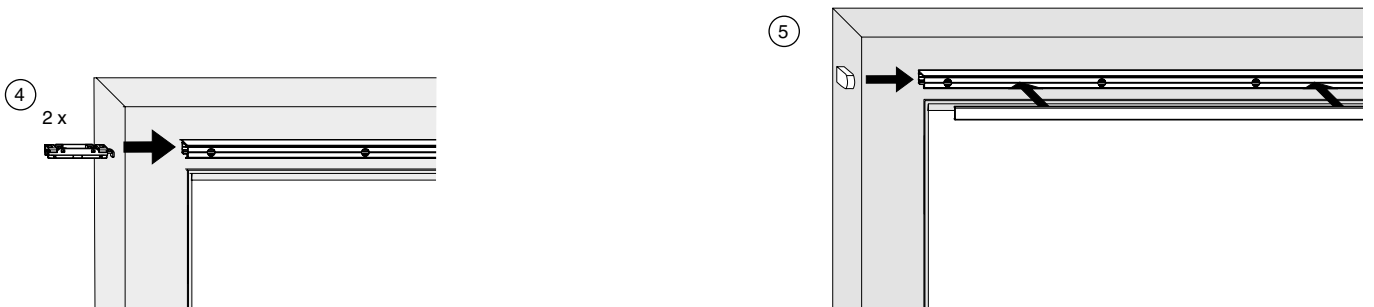
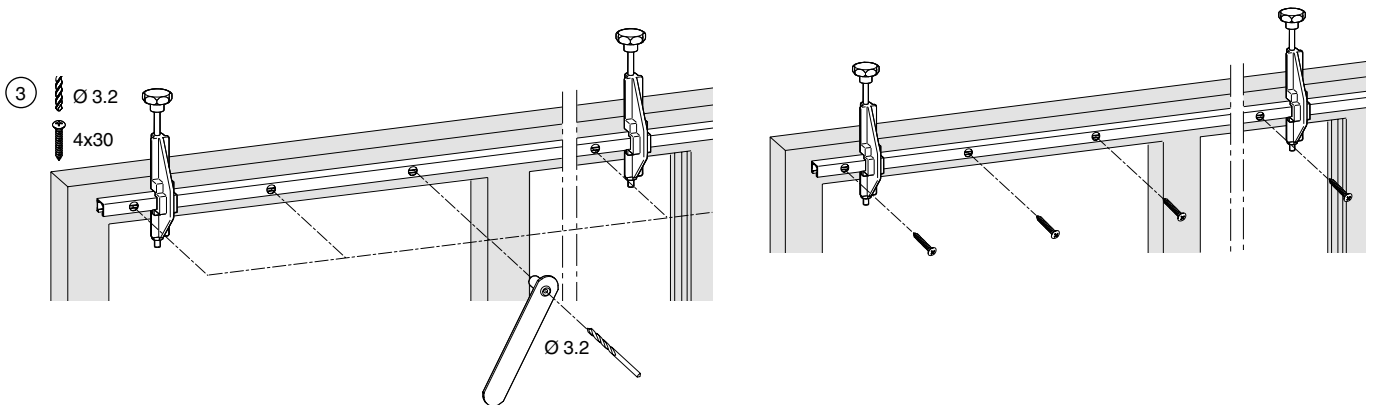
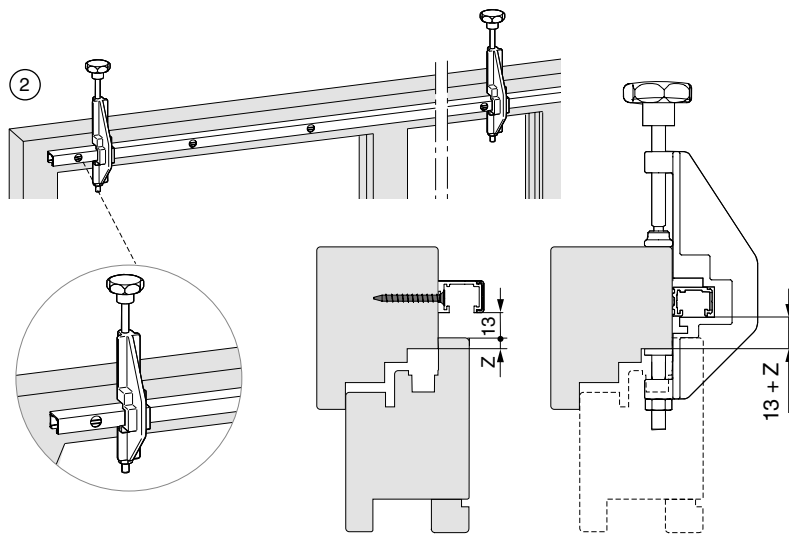
⚠ Dimension for rebate leg 18.





Frame installation



- ② Screw-on jig No. 465173, Z = rebate leg
- ③ Pre-drill and fasten the guide track, drilling jig 465945

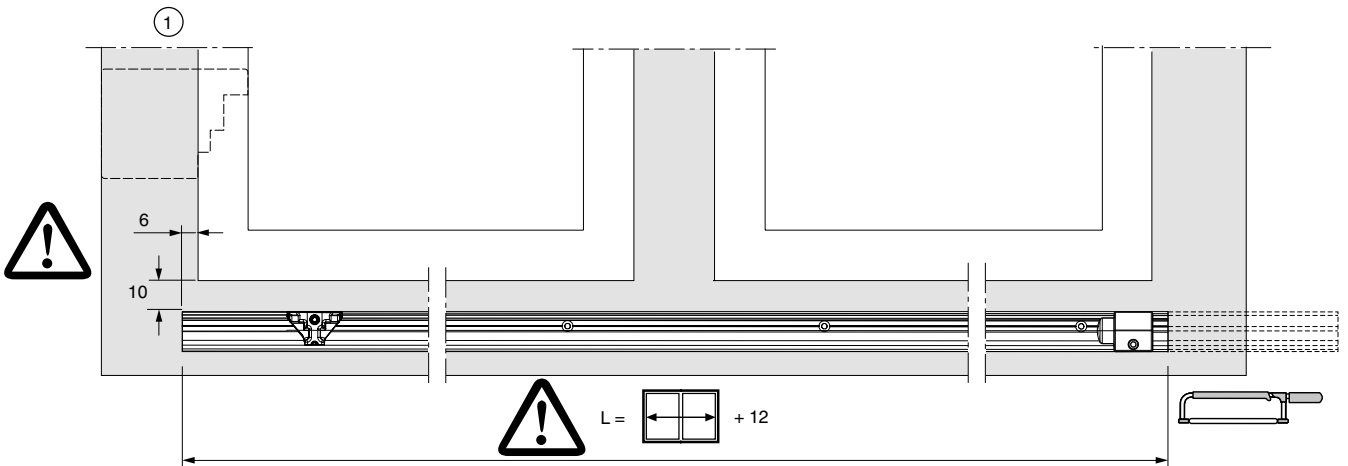
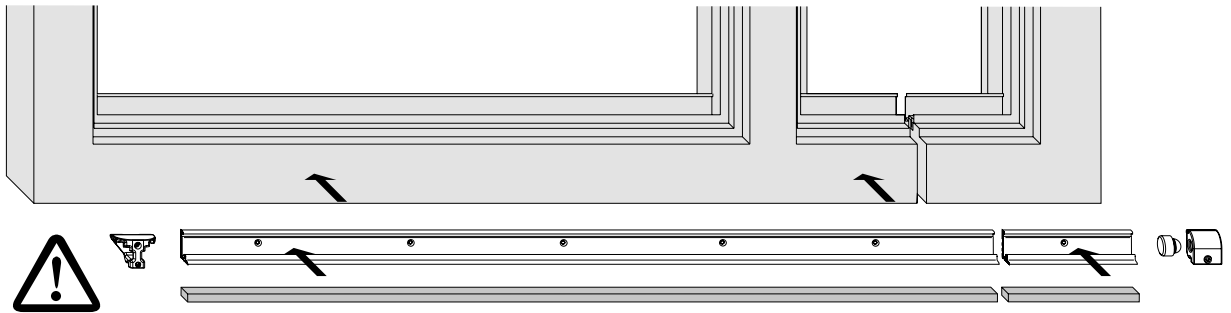




Frame installation

Installing the roller track

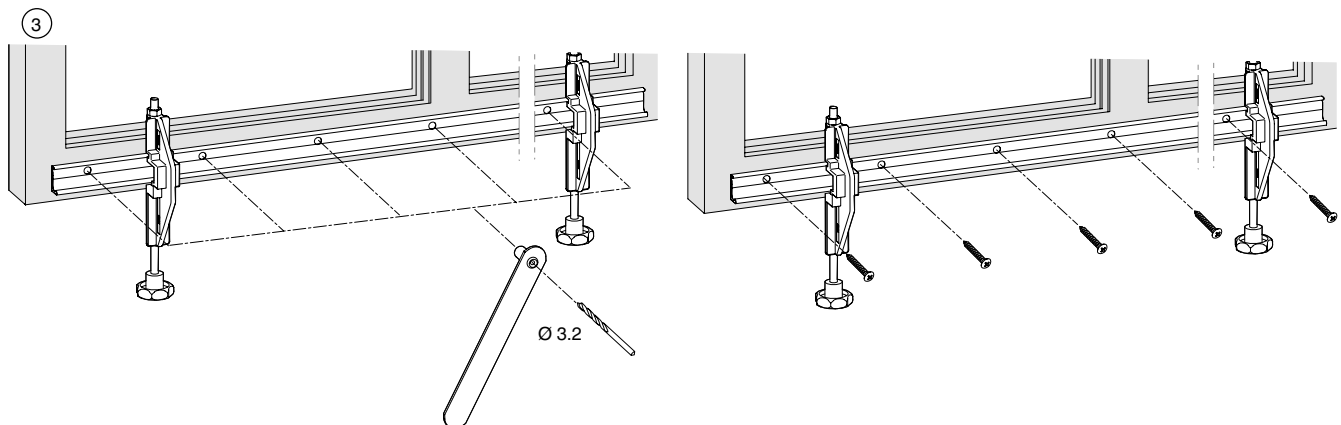
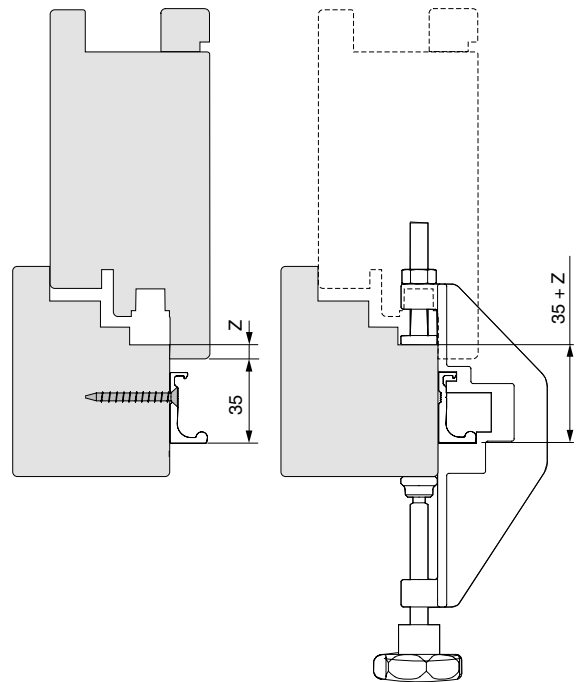
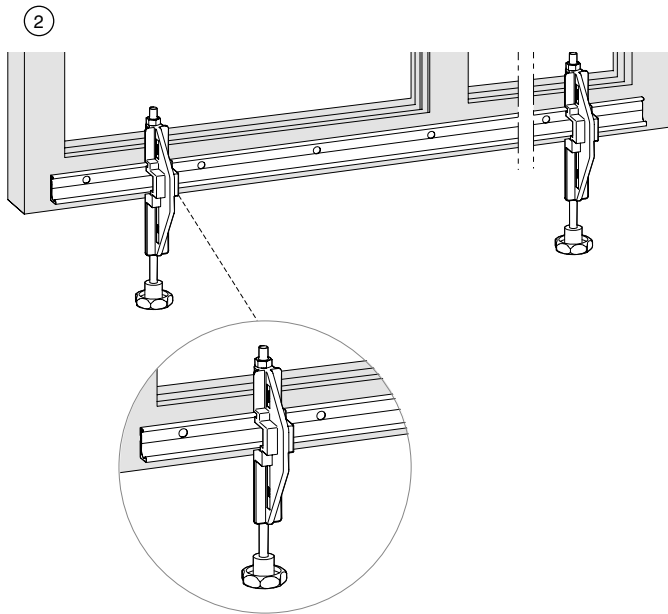
-  Underlay the roller over the entire length!
- ① Cut the roller track to length to match.
-  Dimension for rebate leg 18.





Frame installation

- ② Screw-on jig No. 465173, Z = rebate leg
- ③ Pre-drill and fasten the roller track, drilling jig no. 465945



Notes:

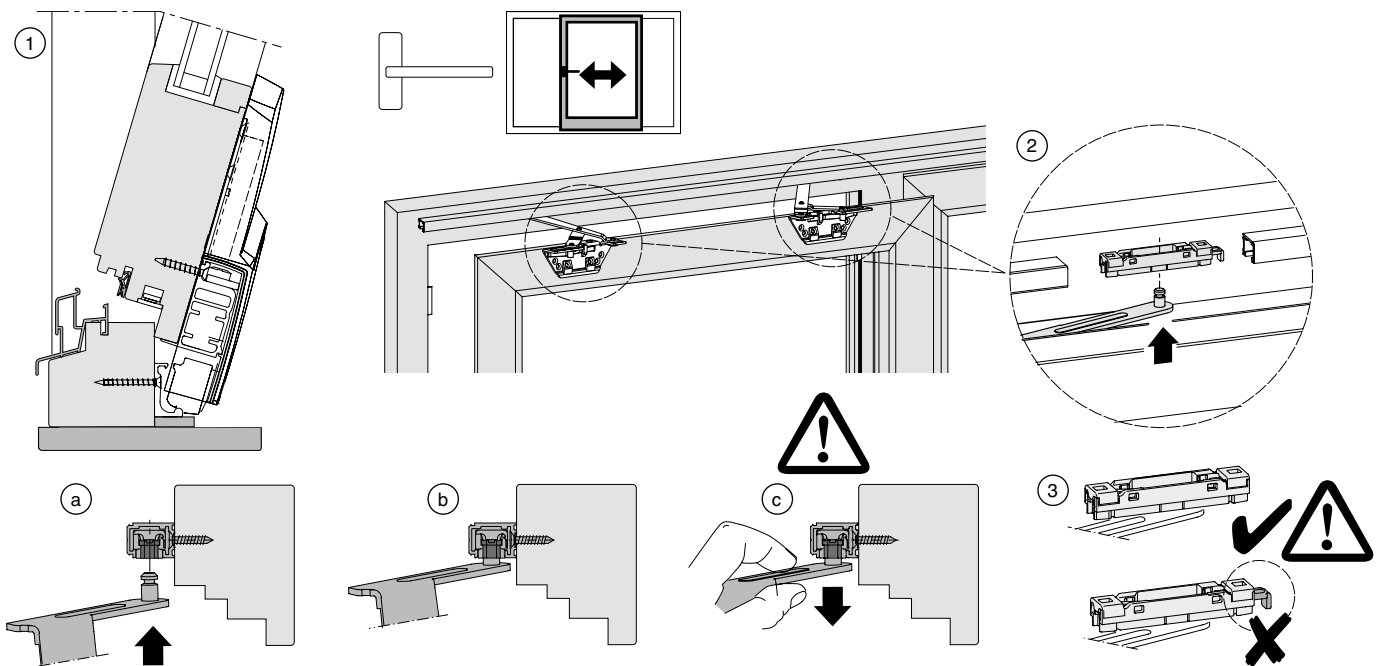
We recommend that you do not attach the covers until the sashes have been mounted



Inserting the sash

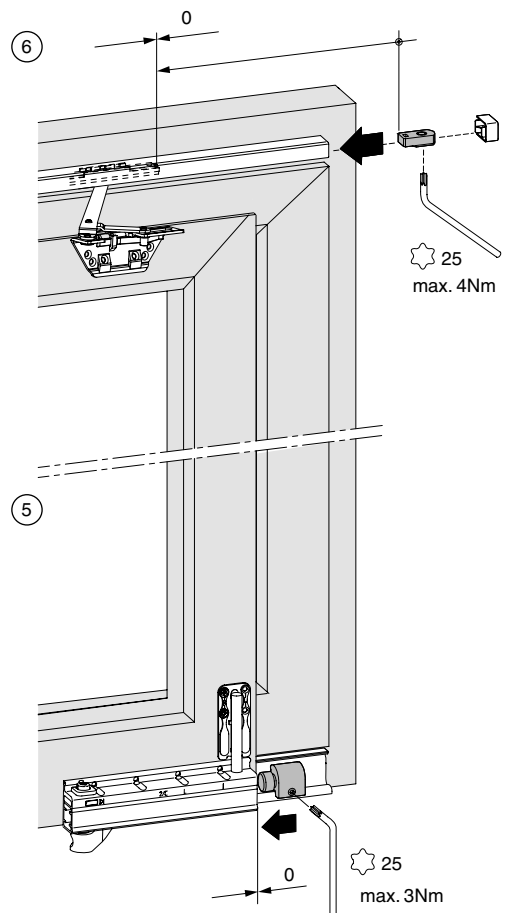
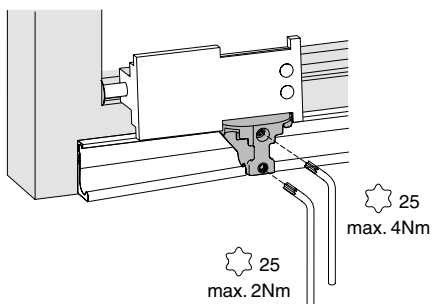
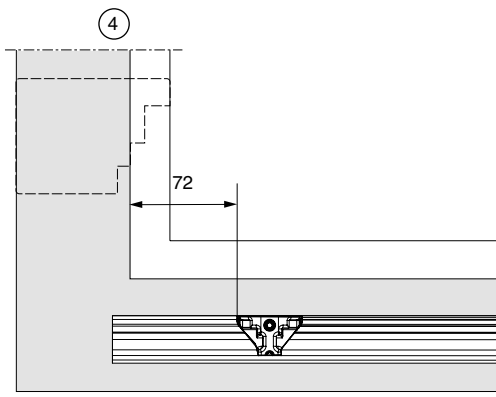
- ① Insert the roller.
- ② Insert the scissor backsets into the centre slider openings until they (a) snap into the sliders (audible click!) (b). Pull/press down the scissor arms to check that the connections are secure (c).
- ③ When installed correctly, the security slider on the side snaps in flush with the edges of the slider housing.

⚠ Caution: If the scissor backsets do not snap in properly, the window sash will not be held securely and may fall out. Serious personal injuries may result.



Inserting the sash

- ④ Assembly jig for control module No. 465175 Dimension 72 mm corresponds to distance to outside edge of sash - 10 mm roller for 18 mm rebate leg.
- ⑤ Install the bottom stop for the desired opening width of the roller track.
- ⑥ Insert the top stop in the guide track and install at the desired opening width.



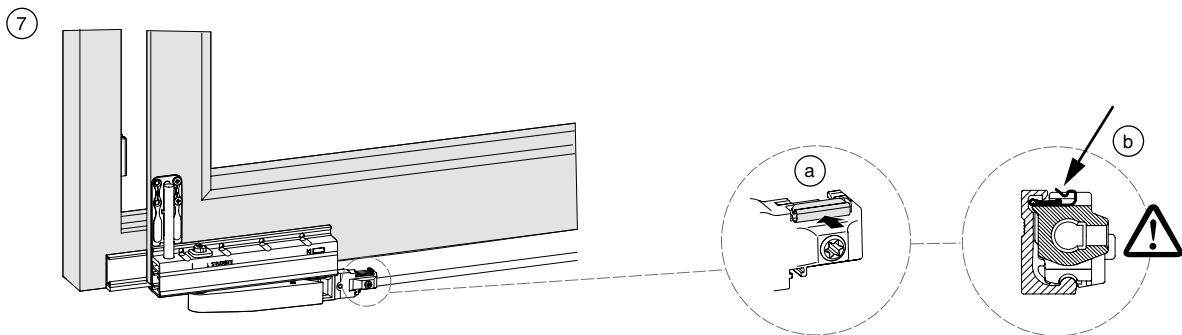
Inserting the sash

- ⑦ Activate the lever lock! Move the (a) lever lock on both rollers back until they snap into place at the marked (b) position.

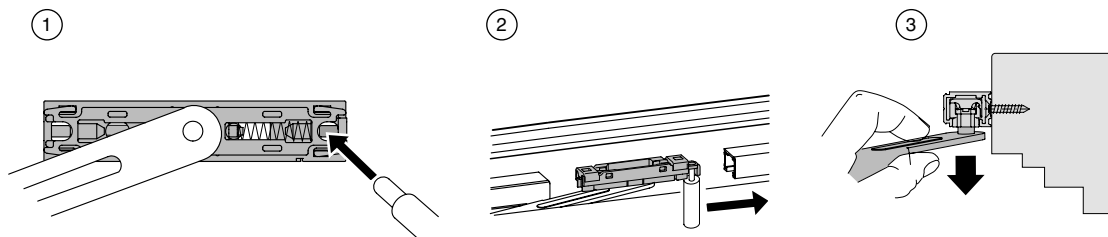
⚠ If the lever lock is not (or not correctly) in place at the marked position, the window sash will not be secured properly.

Caution:

Serious personal injuries may result!



Unhinge the scissor stay

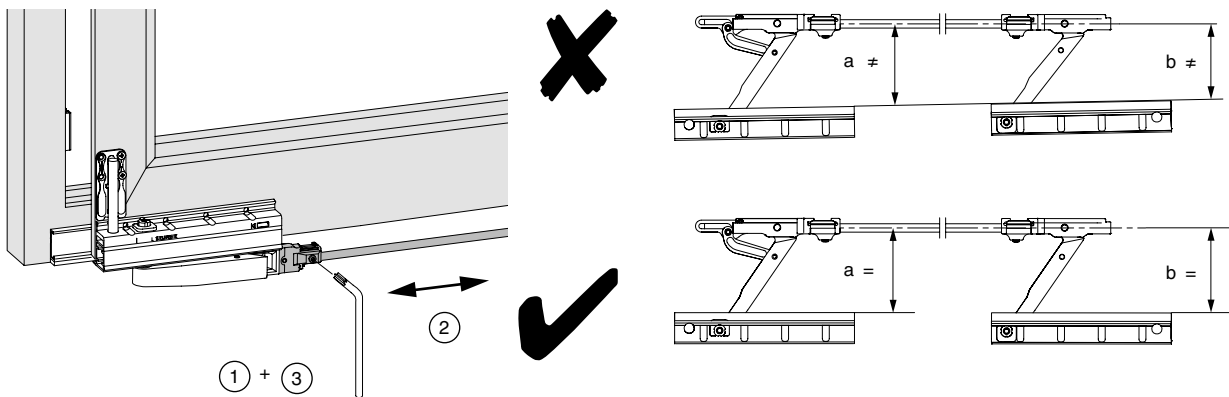




Inserting the sash

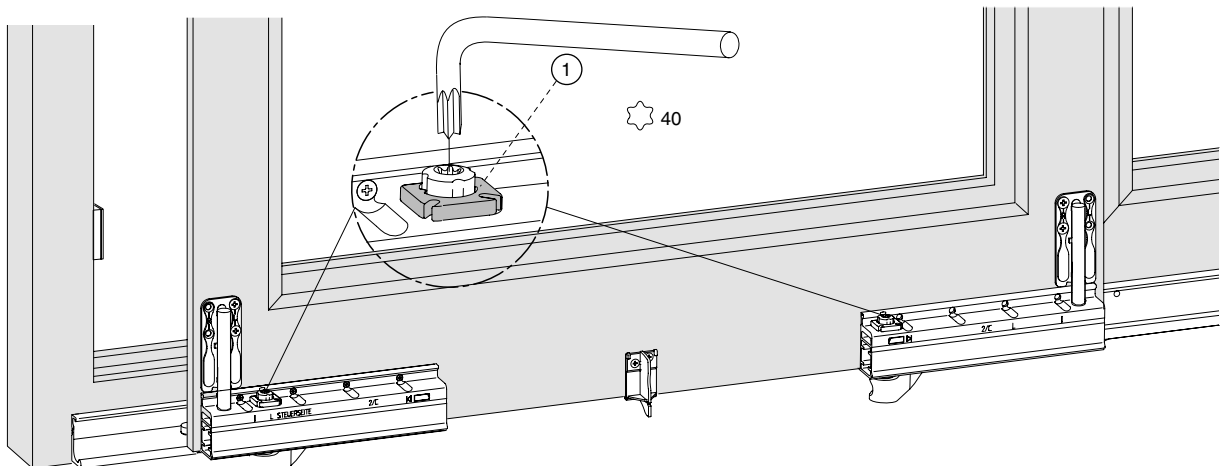
Correct the parallel setting of the roller

- ① Loosen the connecting rod on the roller at the handle side.
- ② Push the connecting rod to the left or right to position the rear roller (b) set parallel parallel to the roller unit (a).
- ③ Fasten the connecting rod on the roller at the handle side.



Regulating the height of the roller

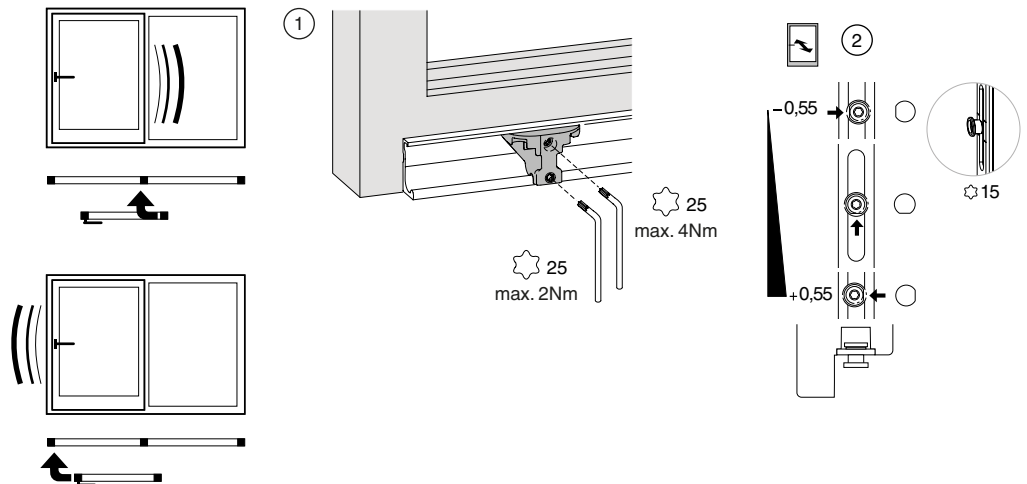
- Lift off the adjustment ① lock
- Set the height (+ 6 mm)
- Reattach the adjustment lock





Inserting the sash

- ① Correct the sash entry and ② set the contact pressure.



Handle position

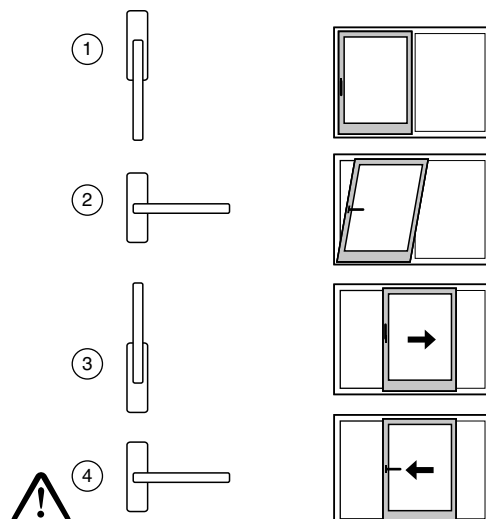
- ① closed
② tilt
③ open/close

Anti lock-out device

Prevent the sash snapping into place inadvertently.

- ⚠ ④ close

No anti lock-out device



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MAYER & CO BESCHLÄGE GMBH

ALPENSTRASSE 173
A-5020 SALZBURG
TEL +43 (0)662 6196-0
FAX +43 (0)662 6196-1449
maco@maco.at
www.maco.at

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