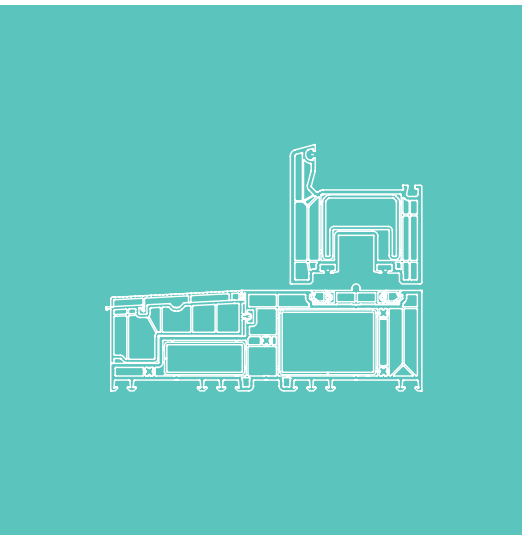
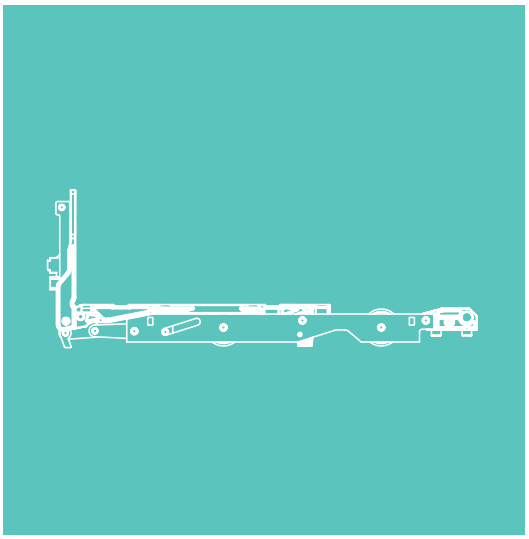
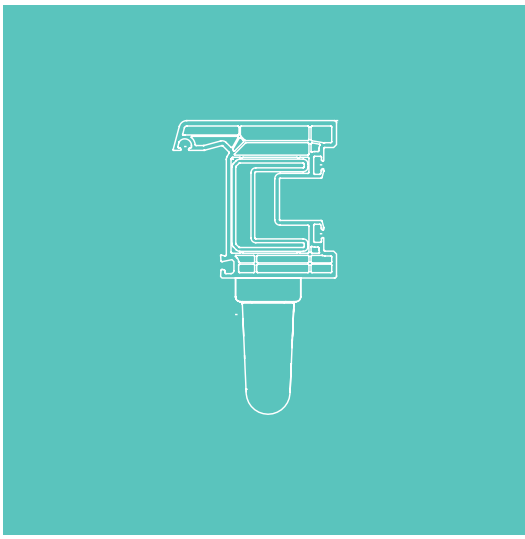
TECHNOLOGY IN MOTION

MACO RAIL-SYSTEMS

LIFT&SLIDE HARDWARE







ASSEMBLY INSTRUCTIONS

HS Veka Motion 82

Use exclusively for specialist companies!

PVC

maco.eu

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Important Information

General Information

The current version of our General Terms & Conditions can be found on the MACO website (https://www.maco.eu/en-INT/T&Cs) Retain these assembly instructions for later use and maintenance.

Failure to comply with these assembly instructions releases MACO from any liability. Please note your obligation to inform your customer regarding the operation and maintenance of the system as well as all safety related information.

MACO as a customer and service-oriented company offers you the "Operating and Maintenance Instructions for Lift&Slide Hardware - End Users" (Order number 757951) and "Maintenance and Adjustment instructions for Lift&Slide Hardware - Certified Specialist" (Order number 757954) for passing on to end customers. You can find the document in the download area on www.maco.eu. Hand over the user manual to the end user and ensure they are briefed.

Target Group

This documentation is intended exclusively for specialist companies and certified specialists.
The work-steps described herein may only be carried out by certified specialists.

Certification

The MACO hardware mentioned in the assembly instructions are tested and regularly monitored in standardised tests in accordance with EN 13126. The achieved standard Class H3 does not refer to the individual element system. Due to a wide range of influencing factors, individual element systems may experience minor deviations from standardised testing, such as:

› the influence of processing tolerances

› the effect of assembly tolerances after the installation of the element in the building frame

› the use of accessories (e.g. weather seals, sealing rails, handles, etc.),

› the use of attachments (e.g. Aluminium shells, sun protection on the sash, insect protection),

› environmental influences (e.g. humidity, sunlight, high or low temperatures, temperature fluctuations, etc.) or

› room-side influences (moisture, aggressive cleaning agents, etc.).

Important Information

General Safety Information

It is important to follow these instructions to ensure people's safety!
When reading this document and the safety instructions, please note the following signs and colours:

DANGER This indicates a situation that can lead to fatal injuries if the instructions are not adhered to.

WARNING This indicates a situation that may result in fatal and/or serious injury if the instructions are not adhered to.

ATTENTION This indicates a situation that may lead to minor injuries if the instructions are not adhered to.

This indicates important additional information that is important for the error-free assembly / functionality of the product.

Please clearly observe the VBHE guidelines (hardware for windows and balcony doors of the Association of Locks and Hardware).
This policy describes all safety-related issues for end-users for window and balcony door topics.

Important Information

General Safety Information

⚠ WARNING

In order to ensure the permanent functionality and thus the operational reliability of windows and balcony doors over their expected service life, special importance must be attached to the fastening of safety-relevant hardware.

MACO indicates explicitly that large sash weights are moved and accelerated during opening and closing. This applies particularly to sliding elements. It is at the discretion and responsibility of the respective manufacturer (window manufacturer), installers and dealers of windows and balcony doors, in particular to lift&slide doors, to offer corresponding movement restrictors or similar..

Incorrect assembly can lead to serious injuries. The installation must be carried out by suitably trained personnel who have been instructed in accordance with the state of the art and recognised rules of technology.

Overloading or improper operation of the lift&slide hardware may cause the sash to jump out of its guide, fall out and cause serious injury.

Due to the high weight of the element, care must always be taken to ensure correct securing of the element during production, transport and assembly on the construction site.

⚠ ATTENTION

If overloading of the lift&slide hardware is expected under special circumstances, (e.g. in schools, kindergartens etc.), this must be prevented using the appropriate measures e.g.: by using a buffer stop to reduce the opening width or using damper elements.

Improper handling may lead to crushing. Alert users to the dangers in case of improper handling. This applies particularly to customers with small children.

If handled improperly, there is a risk of injury – especially if persons or body parts are in the opening gap between the sash and the frame during closing, or between the sash and the reveal during opening..

Important Information

Note

These instructions describe all assembly steps to set up standard version hardware. The hardware is to be greased / oiled before commissioning (see maintenance and adjustment instructions).

The lift&slide hardware (HS) are only intended for use in fixed buildings. They are used for horizontally opening and closing windows and balcony doors. The lift&slide elements must be installed vertically, never slanted.

Wichtige Informationen

Intended use

The areas of application mentioned on page 13 apply to the MACO HS hardware. Screw-in torque settings are binding and must be followed.

Mount all hardware parts professionally as described in this manual and observe all safety instructions.

To fasten the hardware, use the specified screw sizes! These must reach into the steel reinforcement when using PVC profiles.

Be sure to follow the profile manufacturer‘s processing policy.

The hardware may not be used for timber with aggressive content / surface treatments.

The hardware parts described in these assembly instructions are made of colourless passivated steel and sealed in accordance with DIN EN 12329. They must not be used in environments with aggressive, corrosive air content. If you are not sure, please ask your MACO contact person for advice.

The hardware manufacturer shall not be liable for any malfunctions or damage to the hardware or to the windows or balcony doors equipped with them, if they are subject to use of third-party hardware, inadequate tendering, failure to comply with the installation rules or application diagrams.

The fabricator is responsible for compliance with the functional dimensions specified in these assembly instructions as well as for flawless hardware assembly and secure fastening of all components.

In order not to affect the lightness of the hardware, turn the screws straight (unless otherwise indicated) and do not over-tighten!

Fix the screws of the supporting components (e.g. rollers, roller rail and guide rail) in the reinforcement profile.

With the spacer-block setting, observe the technical guideline No. 3 of the glazier trade „Blocking of glazing units“.

Keep the roller track and all latches free from deposits and dirt to avoid damage to the hardware and ensure optimal functionality. In particular, protect the hardware from cement or plaster residues.

Do not make any constructive changes to the hardware parts.

Always close and lock the window and balcony door sash when windy or drafty. For the purposes of this definition, wind and draught are present if the window or window door sashes located in one of the opening positions are caused to move by air pressure or air suction of their own accord and uncontrollably open or close.

The resistance to wind loads in the closed and locked state depends on the respective construction of the windows and balcony doors. If wind loads in accordance with DIN EN 12210 (in particular test pressure p3) are to be expected, suitable hardware are to be selected and agreed on separately in conjunction with the respective window construction and the frame material.

The defined maximum sash weights for the individual hardware designs must not be exceeded.
The component with the lowest permissible load capacity determines the maximum sash weight. Application diagrams and component mappings must be observed.

The hardware and the rebate spaces must be sufficiently ventilated, especially during the construction phase, so that they are not exposed to direct moisture or condensation.

The hardware are to be kept free of deposits and contamination by building materials (construction dust, gypsum plaster, cement etc.), therefore windows must be covered accordingly.

The hardware must only be cleaned or polished with mild, pH-neutral detergents in diluted form.

Attach the operating label in a clearly visible manner to the built-in lift and slide sash. The operating label is located in the basic box or in the „corner deflection“ package.

Important Information

Improper use

The respective hardware system may only be assembled with hardware components from the MACO slide hardware range. In the event of improper installation of the hardware and/or the use of non-original or non-factory approved system accessories, no liability will be accepted.

Do not use vinegar-based or acid-curing sealants, as these can lead to corrosion of the hardware parts. Further information on MACO surfaces can be found on our website www.maco.eu or in brochure Order No. 49510 (in the download area).

The lift and slide elements may only be surface treated before the hardware is installed. Any subsequent surface treatment may restrict the functionality of the hardware. In this case, no warranty claims against the hardware manufacturer shall be accepted.

Protect the hardware from damage by angular or sharp tools.

If you are not sure, please ask your MACO contact person for advice.

Important Information

Storage and Handling

Check the following immediately after delivery:

- Completeness of delivery (as per the delivery note)
- Any damage to the packaging
- Any damage to the materials
- Improper storage or transport of hardware parts can affect the surface quality. To prevent this, the following points must be observed:
    - It must be ensured that the room air is permanently dry
    - Major temperature fluctuations leading to condensation must be prevented. Condensation on hardware causes the galvanised surfaces to be attacked
    - Avoid aggressive vapours from cleaning agents or assembly aids such as silicone and the like, even for a short time. Vapours from such substances can very quickly lead to corrosion of hardware
    - Salty air polluted by trade and industry also leads to corrosion on galvanised surfaces and is also not suitable for storage areas.

Transport

Finished elements must be stored and transported as follows:

- Upright
- Slip and tilt secured on suitable surfaces (e.g. G. transport frames)
- Protected from dirt and damage
- Avoid loads on mechanical connections!
- Use special transport devices!

For intermediate storage outdoors:

- Ensure elements and hardware are covered or packaged

Key and Abbreviations

HS Lift and Slide element

FE Fixed element

SH Sash height

SW Sash width

FOW Frame outer width

FOH Frame outer height

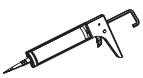
L Total length

HH Handle height

BS Backset drive gear

O Optional

Important Information

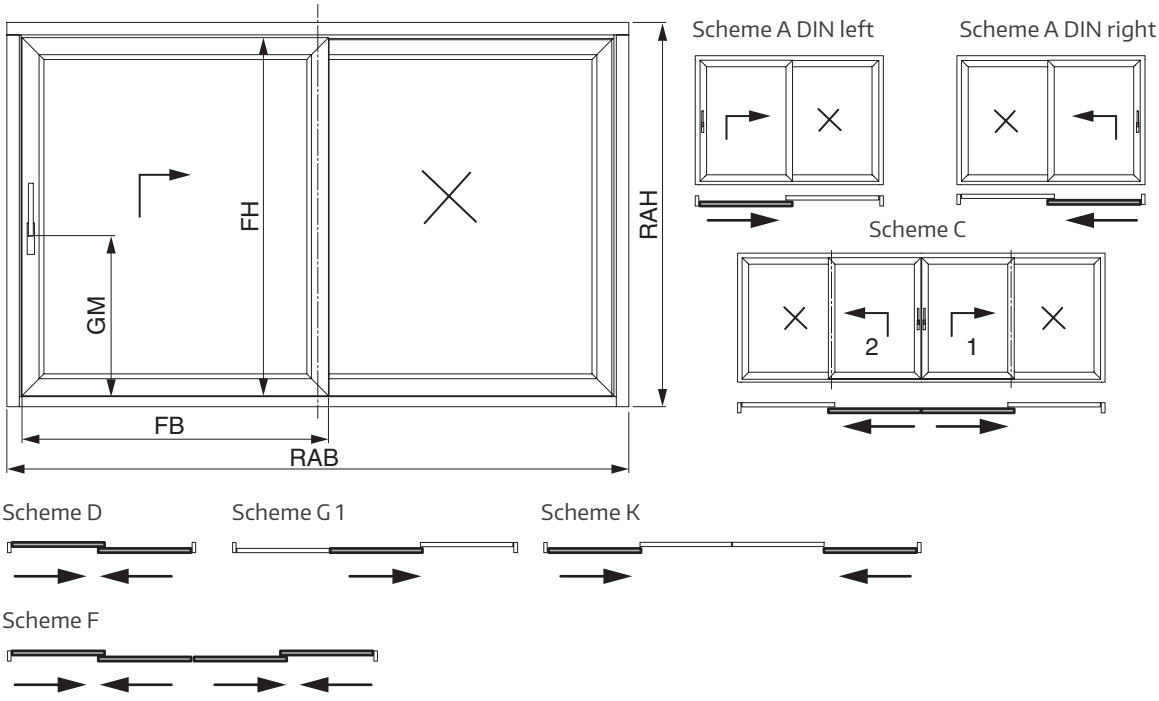


Permanently elastic sealant

Dimensions in [mm]: All dimensions without a unit definition are given in mm

Version and Application Areash

Version



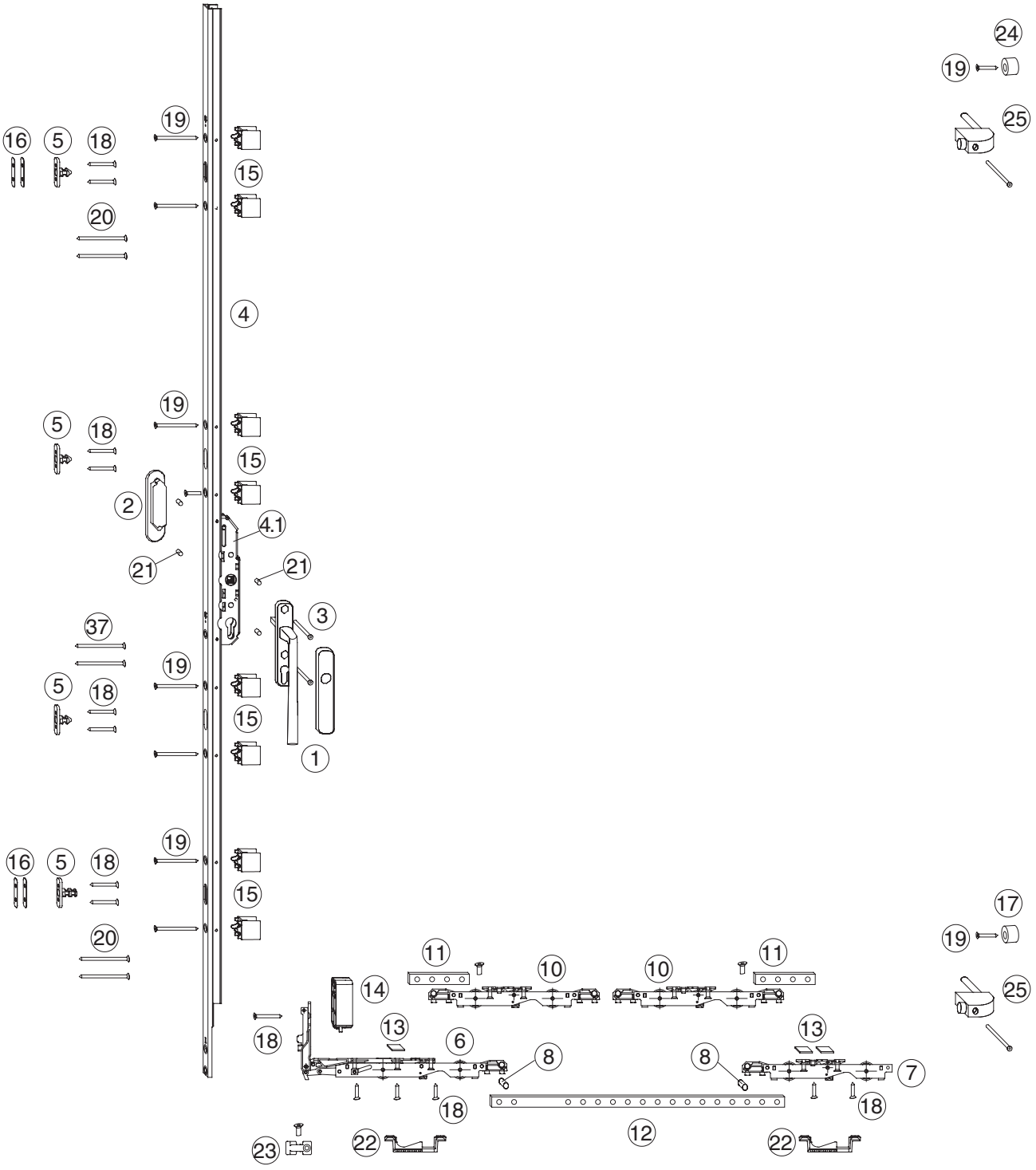
Area of application:

For MACO HS 300, the mentioned areas of application apply according to the table.
For the processing of the profiles, the maximum areas of application and weights from the specifications of the profile manufacturer must be adhered to.

Item	Unit	Area	
		Roller track high	Roller track flat
SH (sash height)	(mm)	740 - 2700	
SW (sash width)	(mm)	max. 250 kg / 700 - 3000	max. 400 kg / 1265 - 3000
SH (sash height)	(mm)	Bolt drive gear 770 - 2880	
SH (sash height)	(mm)	Hook gear 760 - 2880	
DM	(mm)	27.5 and 37.5	
GM Drive gear Size 1 - 2	(mm)	396	
GM Drive gear Size 3 - 4	(mm)	996	

› From a sash weight of 200 kg, the use of a drive gear damper is recommended.
(Ordering of drive gear dampers is possible via the Technical Online Catalogue (TOM) or via the short catalogue.)
› For coloured profiles, a SW of 2500 and a SH of 2500 must be observed.

Hardware overview



Hardware overview

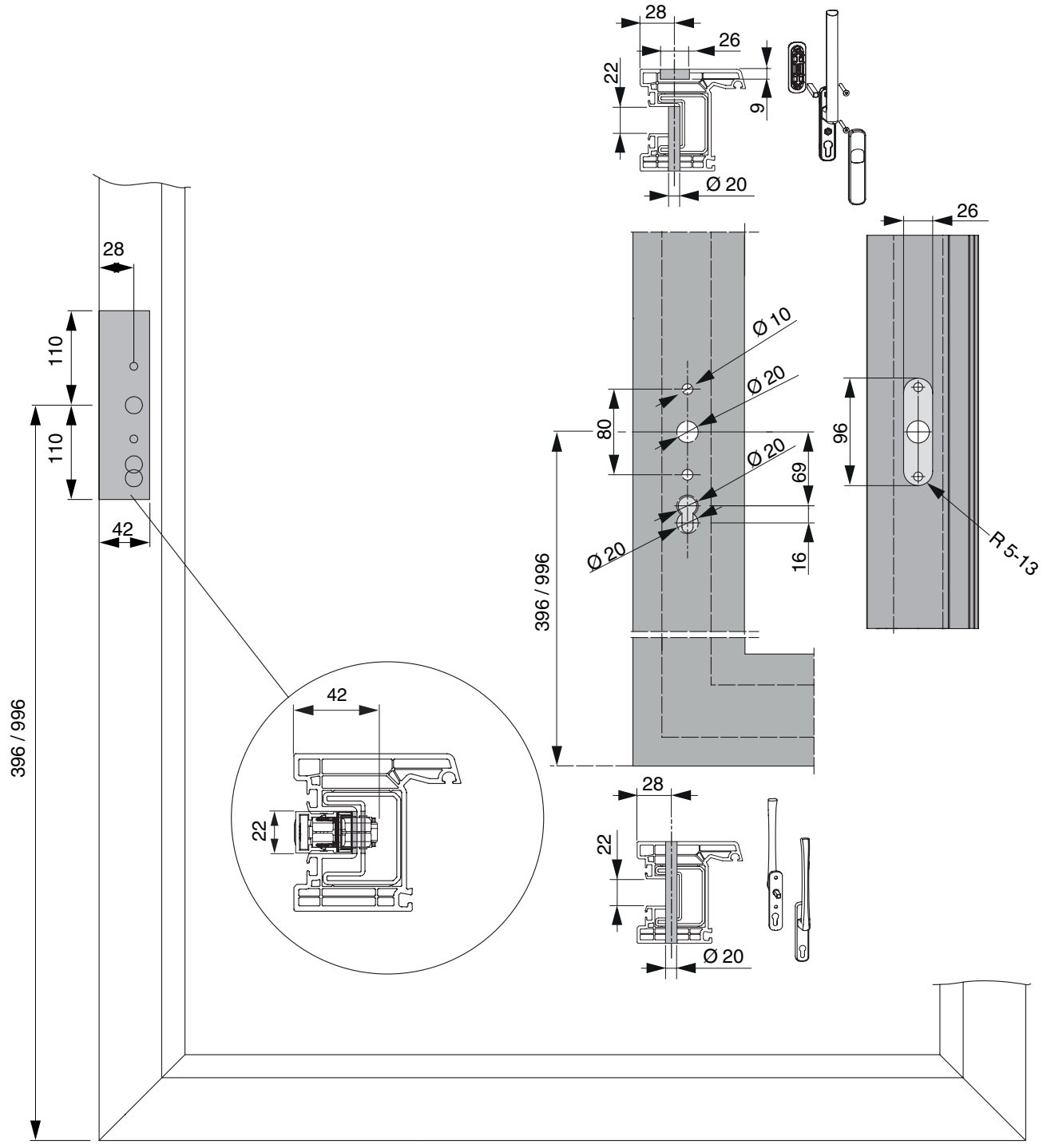
① HS handle 12
② Shell handle
③ Pack of screws and square pin
④ Bolt gear / hook gear
⑤ Locking bolt / hook striker plate
⑥ HS roller handle side 250 kg / 400 kg
⑦ HS roller rear 250 kg / 400 kg
⑧ Clamping sleeve DIN 7346 8x14
⑩ HS roller middle 250 kg / 400 kg
⑪ Connecting rod perforated
⑫ Connecting rod perforated HS 16.4x4
⑬ Widening clip 22 mm for HS roller
⑭ Clip-on packer 8 mm for HS roller
⑮ Clip-on packer 8 mm for HS drive gear
⑯ Packer for HS-PVC locking bolt
⑰ Buffer stop soft 20 mm height grey
⑱ Countersunk self-tapping screw 4.8x32 DIN7982
⑲ Countersunk self-tapping screw 4.8x50 DIN7982
⑳ Countersunk self-tapping screw 4.8x65 DIN7982
㉑ Spacer bush for HS handle attachment silver
㉒ Roller support
㉓ Locking block

optional

㉕ Buffer stop with long bolt

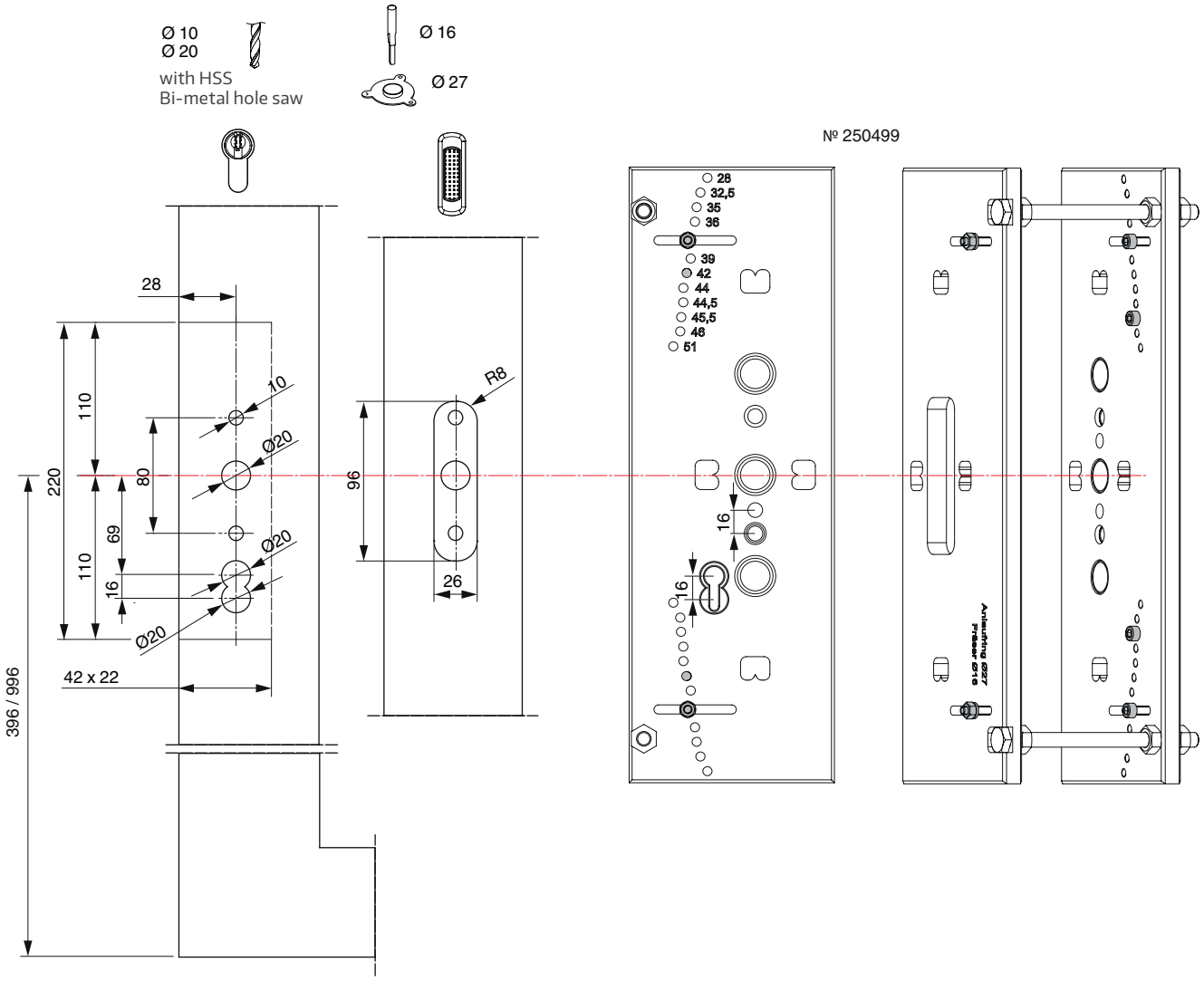
Assembly on the sash

Drilling and milling on the sash



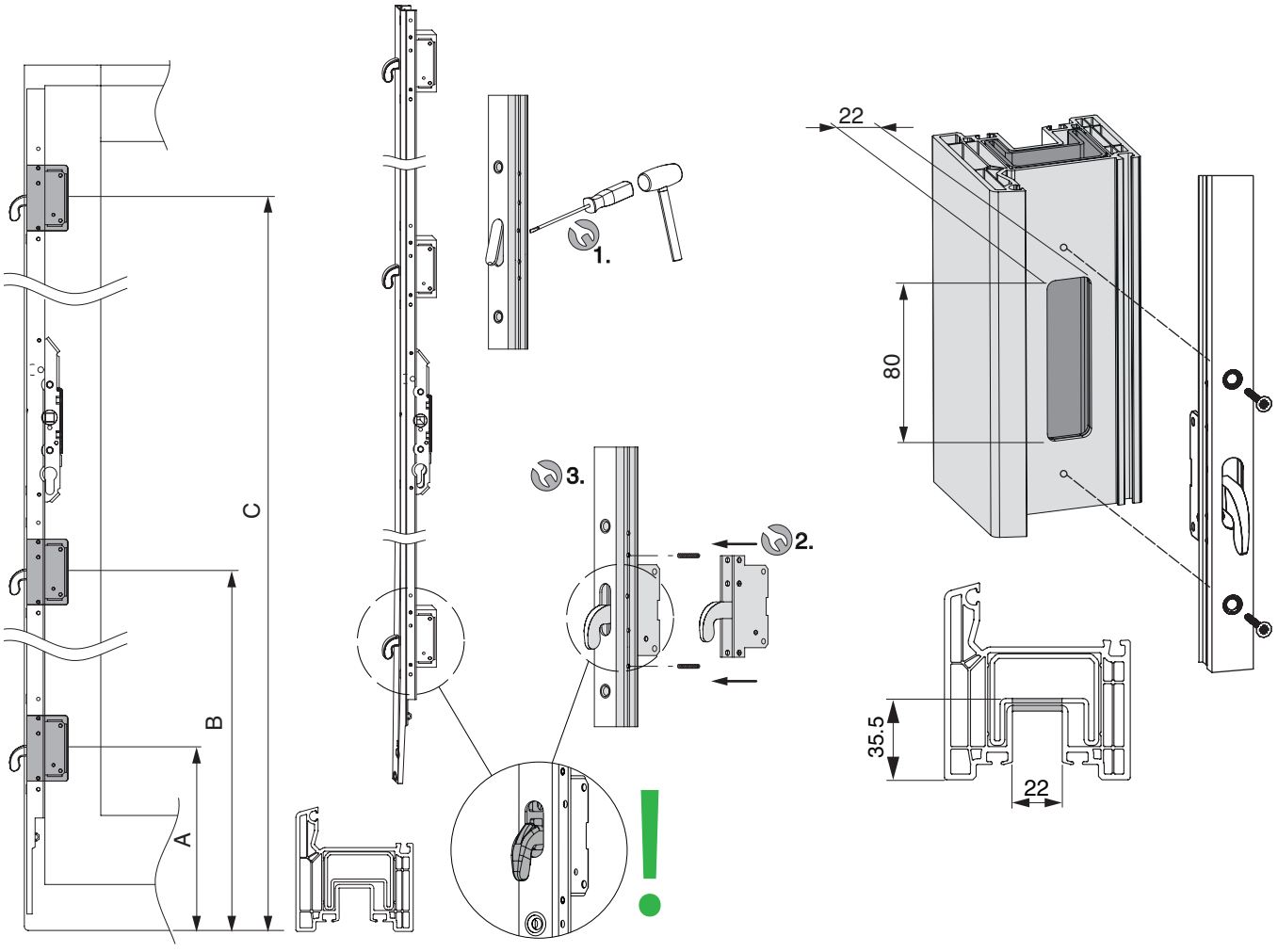
Assembly on the sash

Drilling and milling jig for HS handle



Assembly on the sash

Milling for hook drive gear

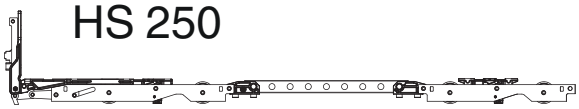


250 kg / 400 kg			
	A	B	C
Size 1	207	577	-
Size 2 - 3	207	1077	-
Size 4	207	795	1675
Size 5	207	1207	2107

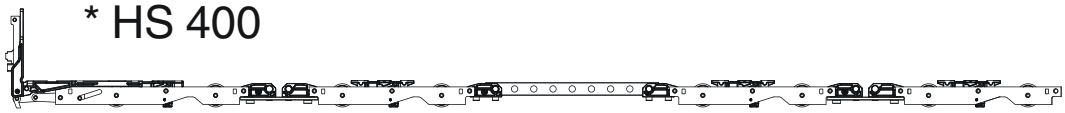
Assembly on the sash

Roller assembly HS 250 / 400

HS 250



* HS 400

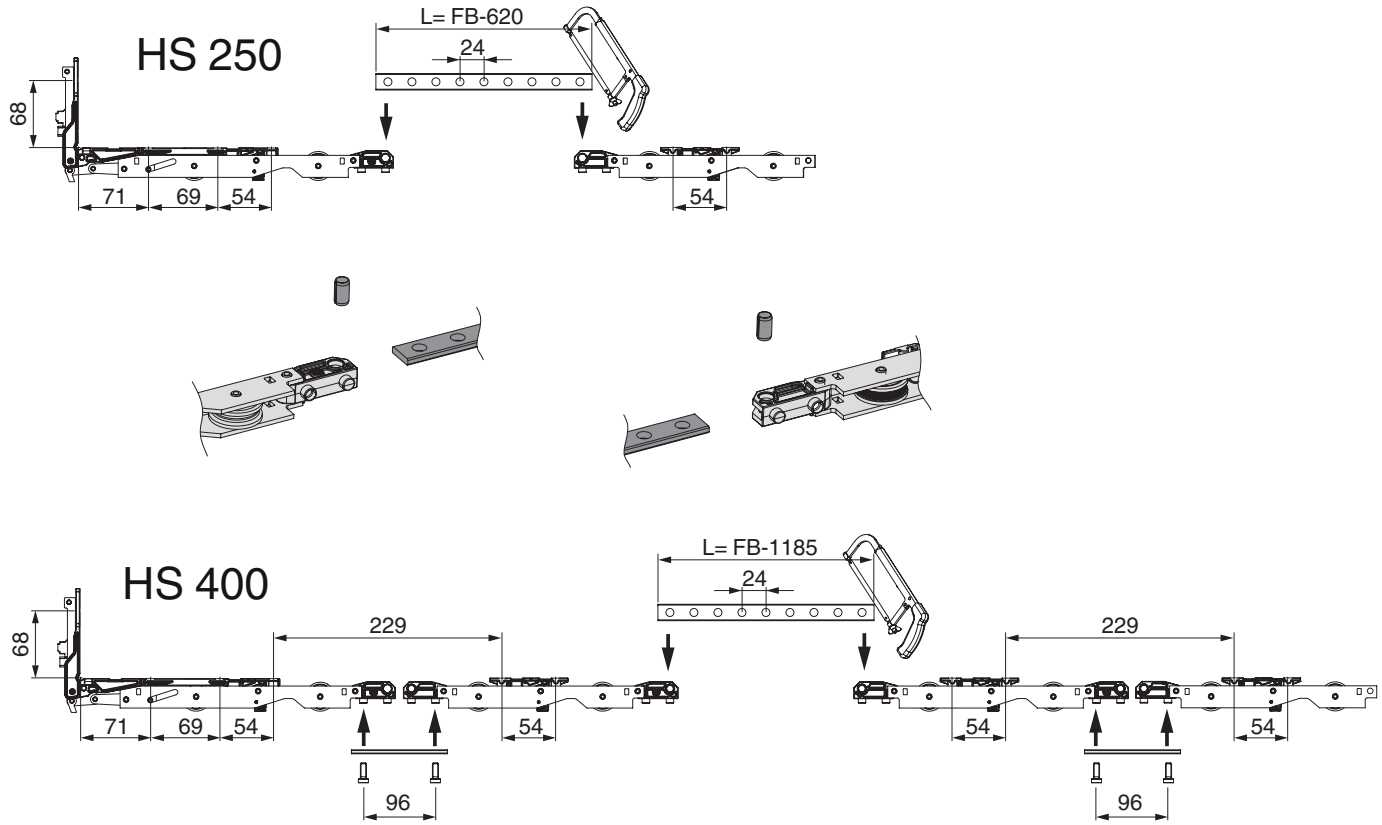


*For sash weights > 350 kg, operator assistance must be used to comply with Class 1 safety of use. Due to the use of the power storage unit, depending on the system used, the handle may be slightly skewed.

L	HS 250 L = FB - 620	* HS 400 L = FB - 1.185
96	665 - 715	1235 - 1285
692	710 - 1315	1280 - 1880
1196	1220 - 1820	1785 - 2385
1700	1720 - 2320	2285 - 2885
2204	2225 - 2825	2790 - 3000
2708	2730 - 3000	-

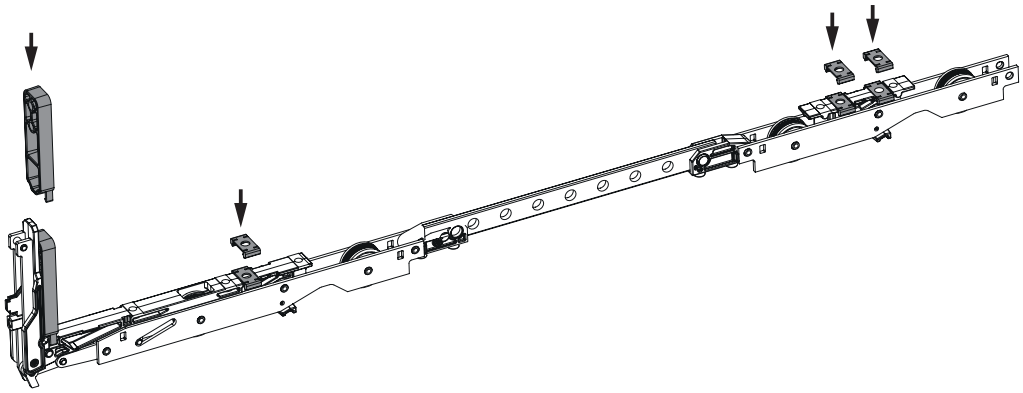
Assembly on the sash

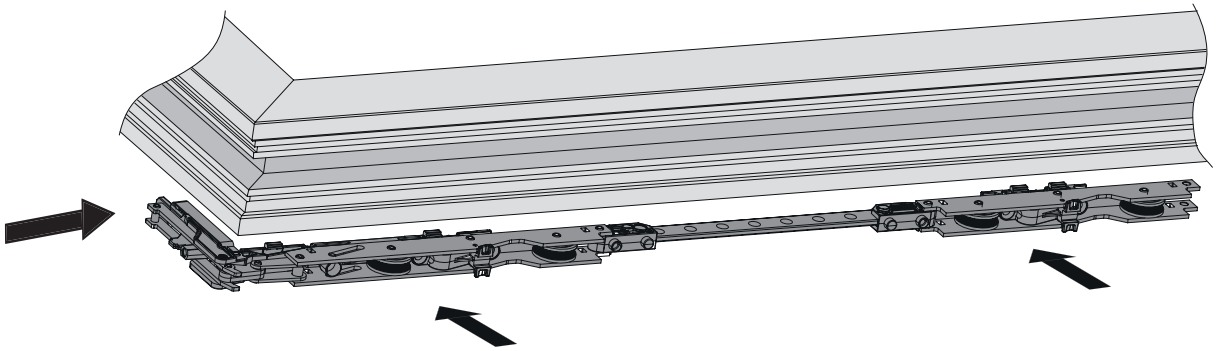
Roller assembly HS 250 / 400

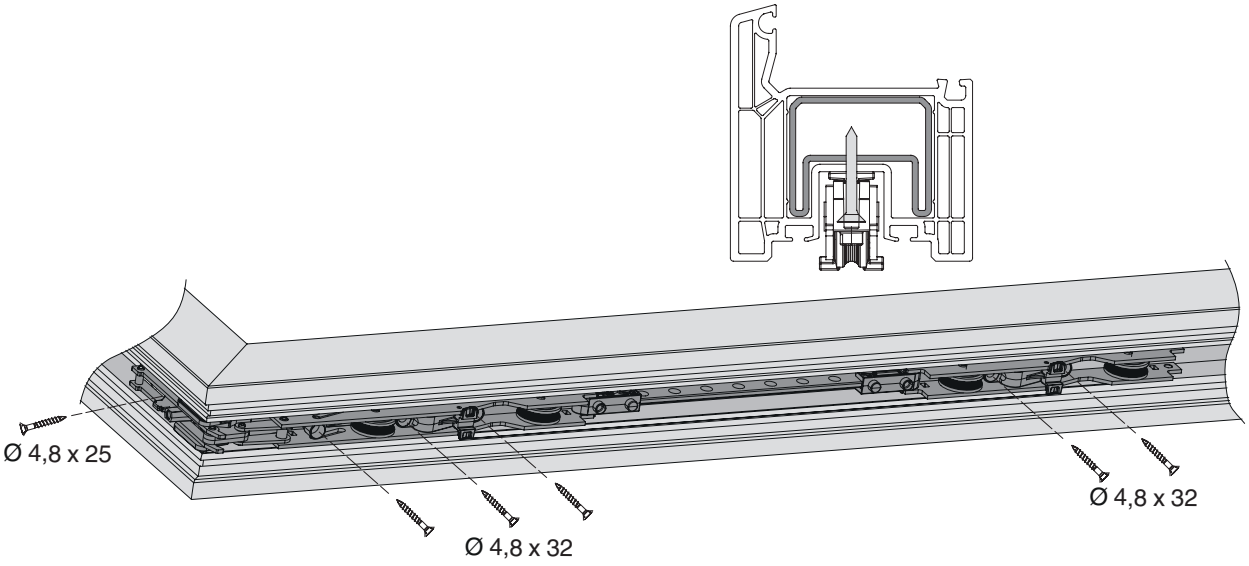


Assembly on the sash

Roller assembly HS 250 / 400

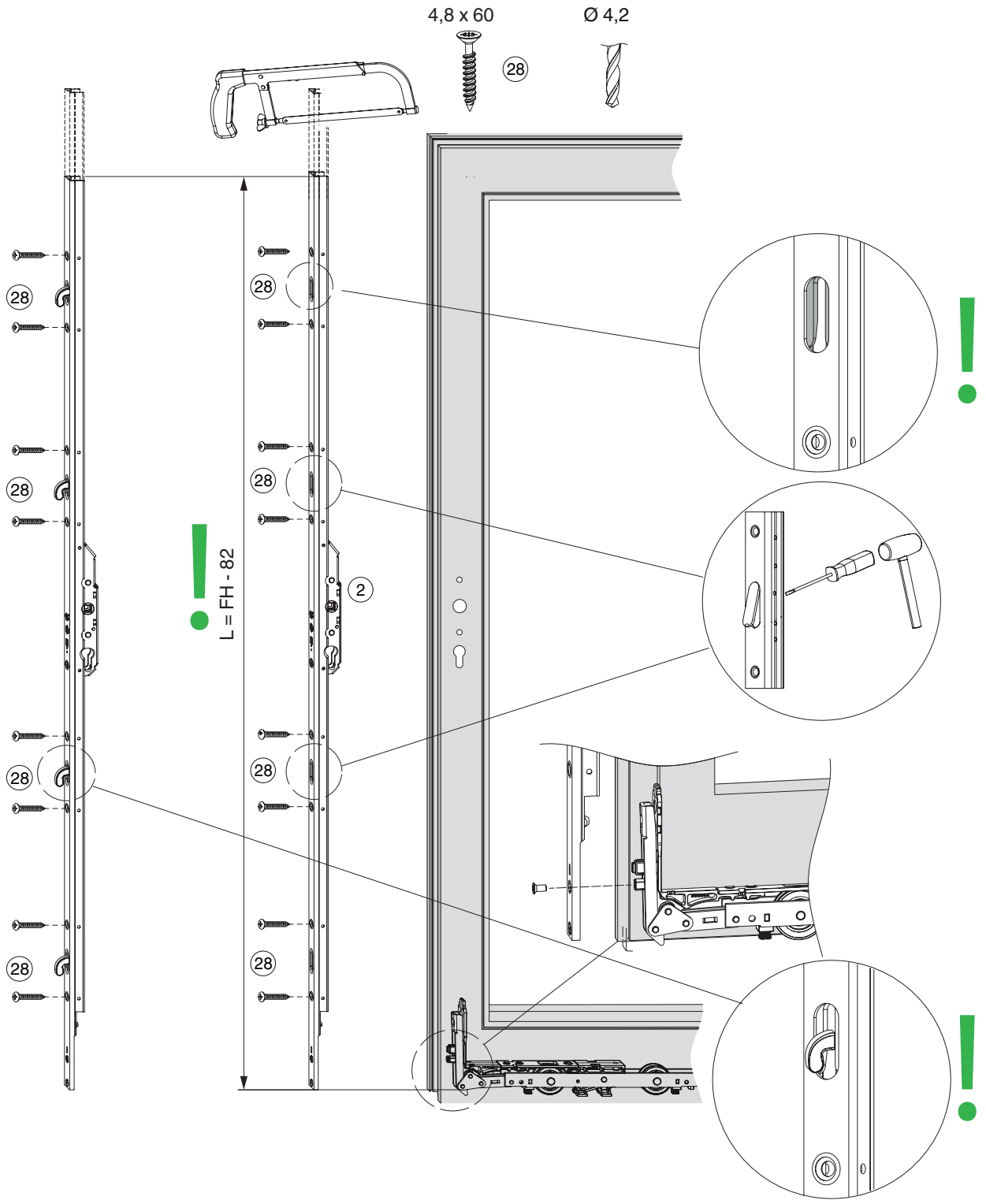






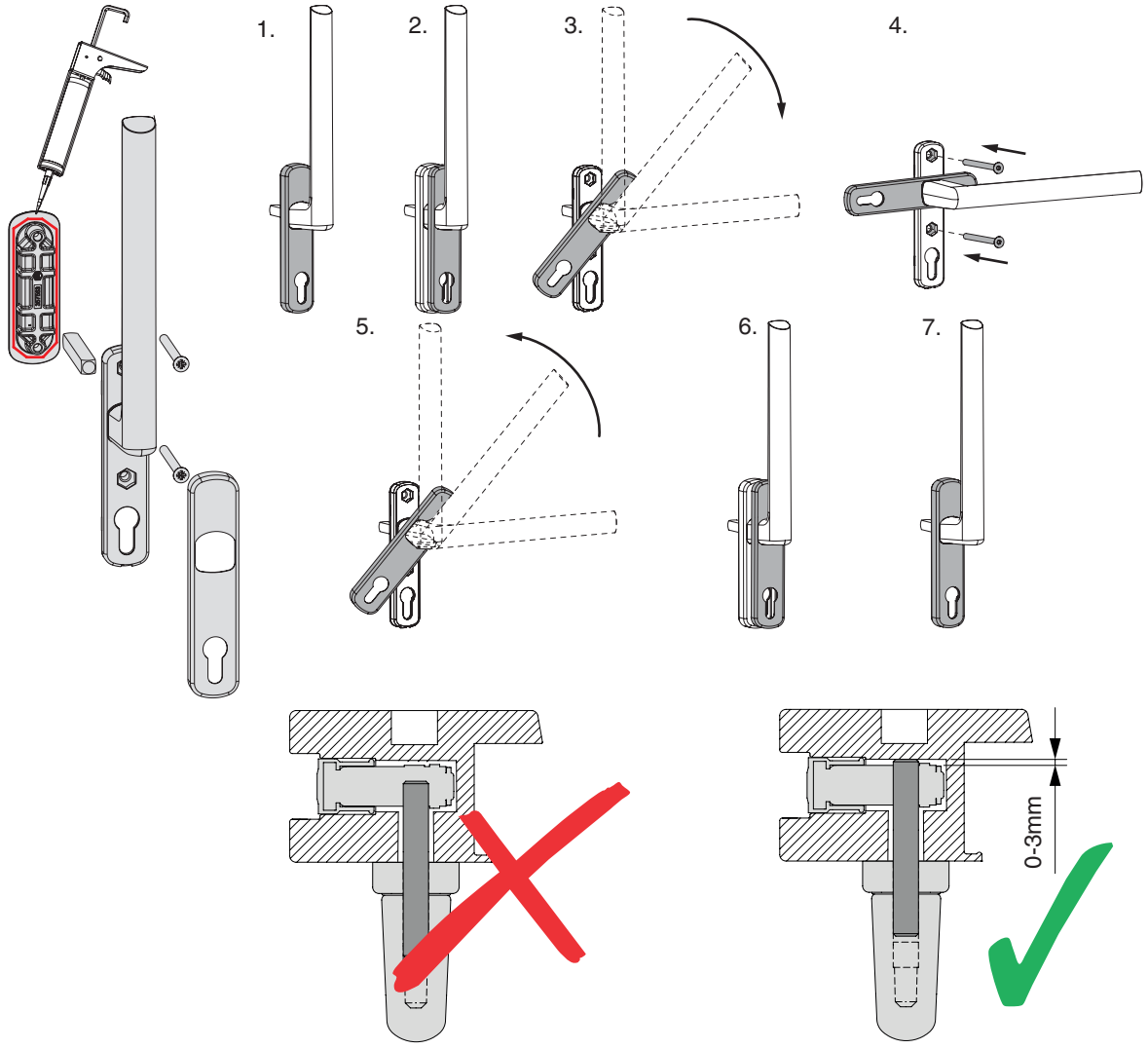
Assembly on the sash

Drive gear assembly



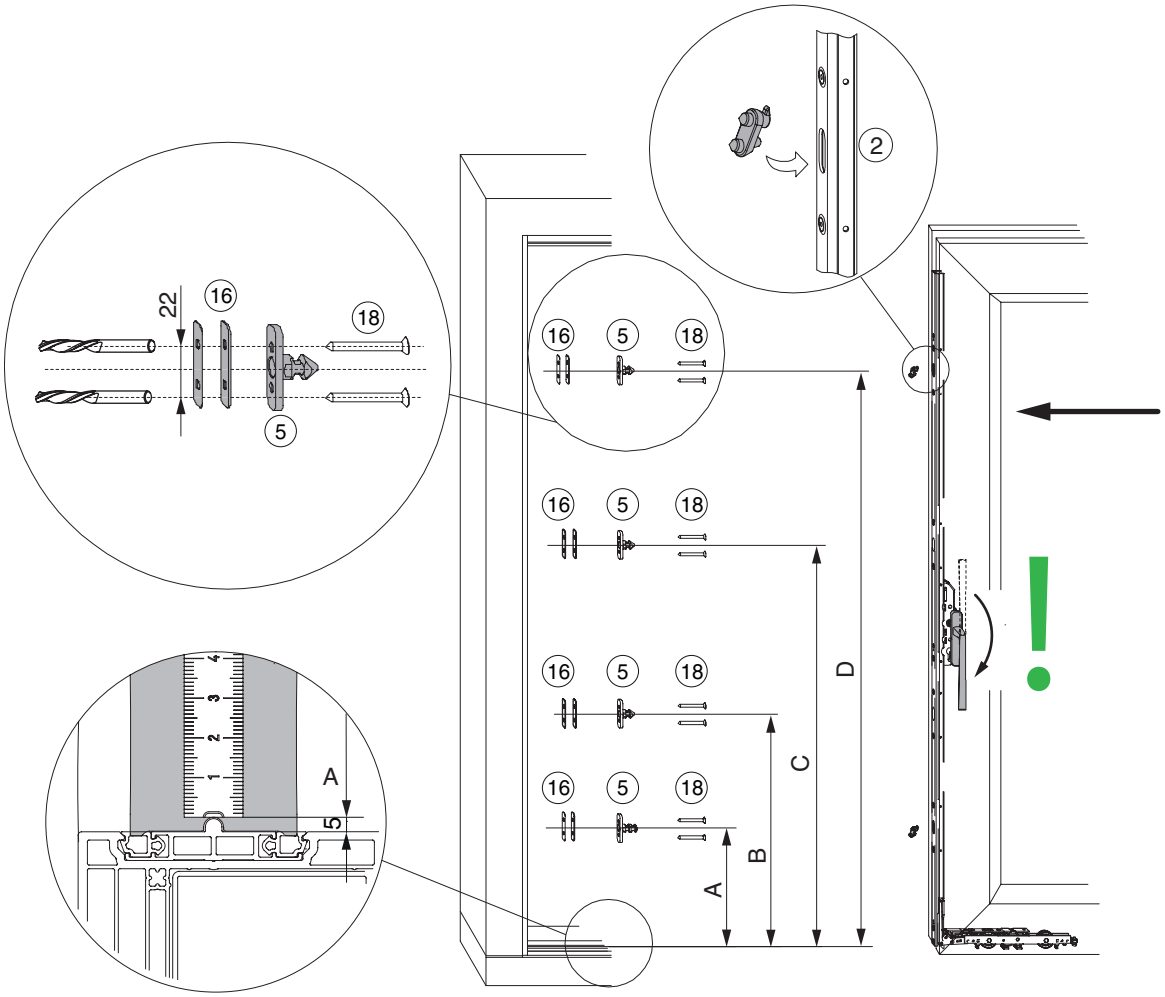
Assembly on the sash

Handle assembly



Assembly on the sash and frame

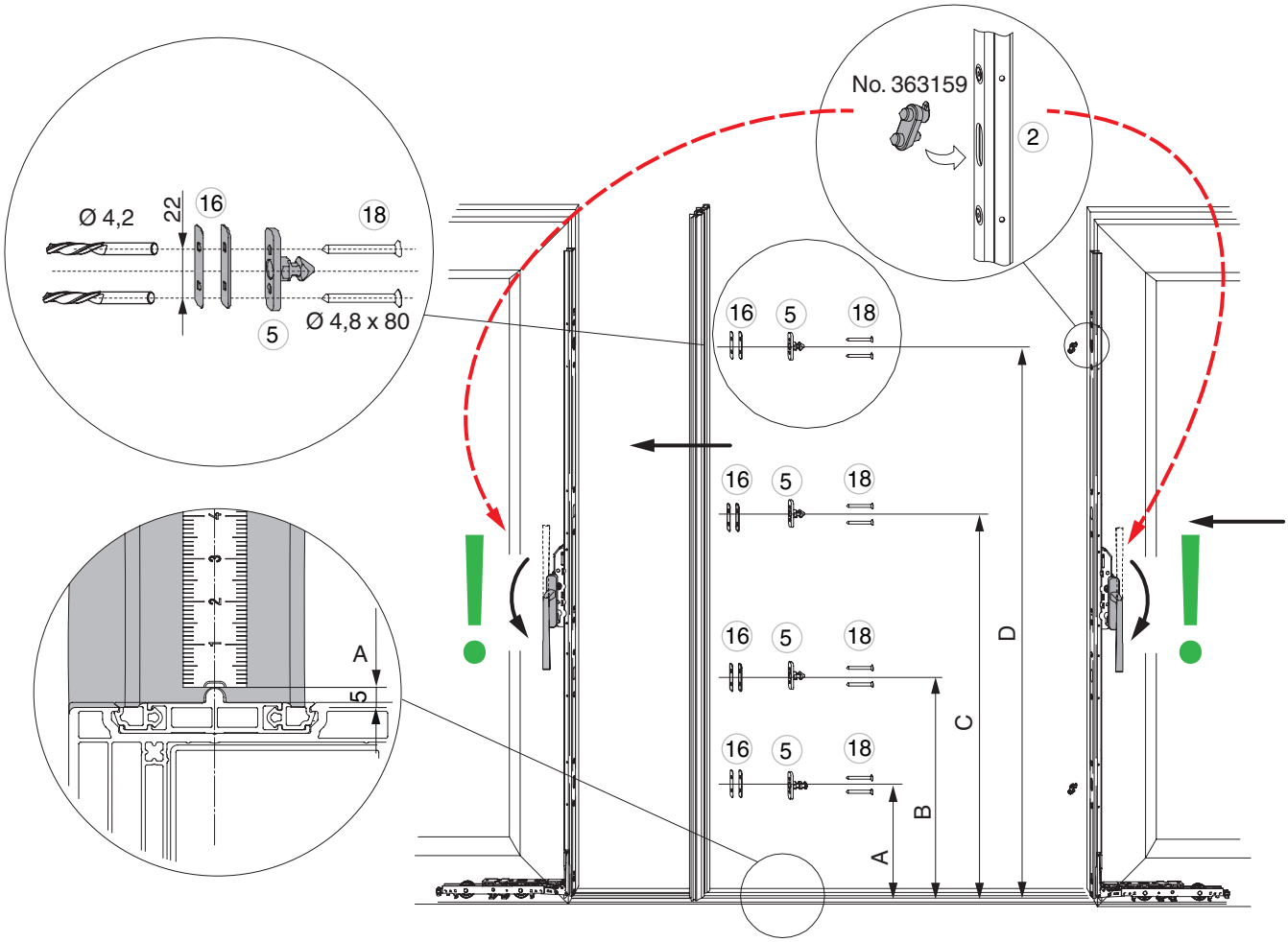
Locking bolts A, K, D and F



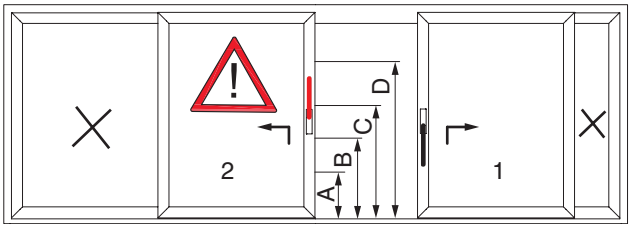
	A	B	C	D
Size 1	202	-	-	592
Size 2	202	-	592	1107
Size 3	202	702	1192	1507
Size 4	202	702	1192	1907
Size 5	202	702	1192	2307

Assembly on the sash and frame

Locking bolt C, G 1



Scheme C

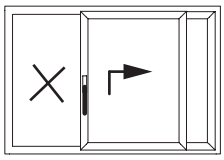


	A	B	C	D
Size 1	202	-	-	592
Size 2	202	-	592	1107
Size 3	202	702	1192	1507
Size 4	202	702	1192	1907
Size 5	202	702	1192	2307

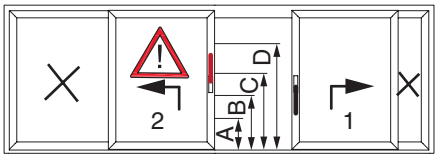
Assembly on the sash and frame

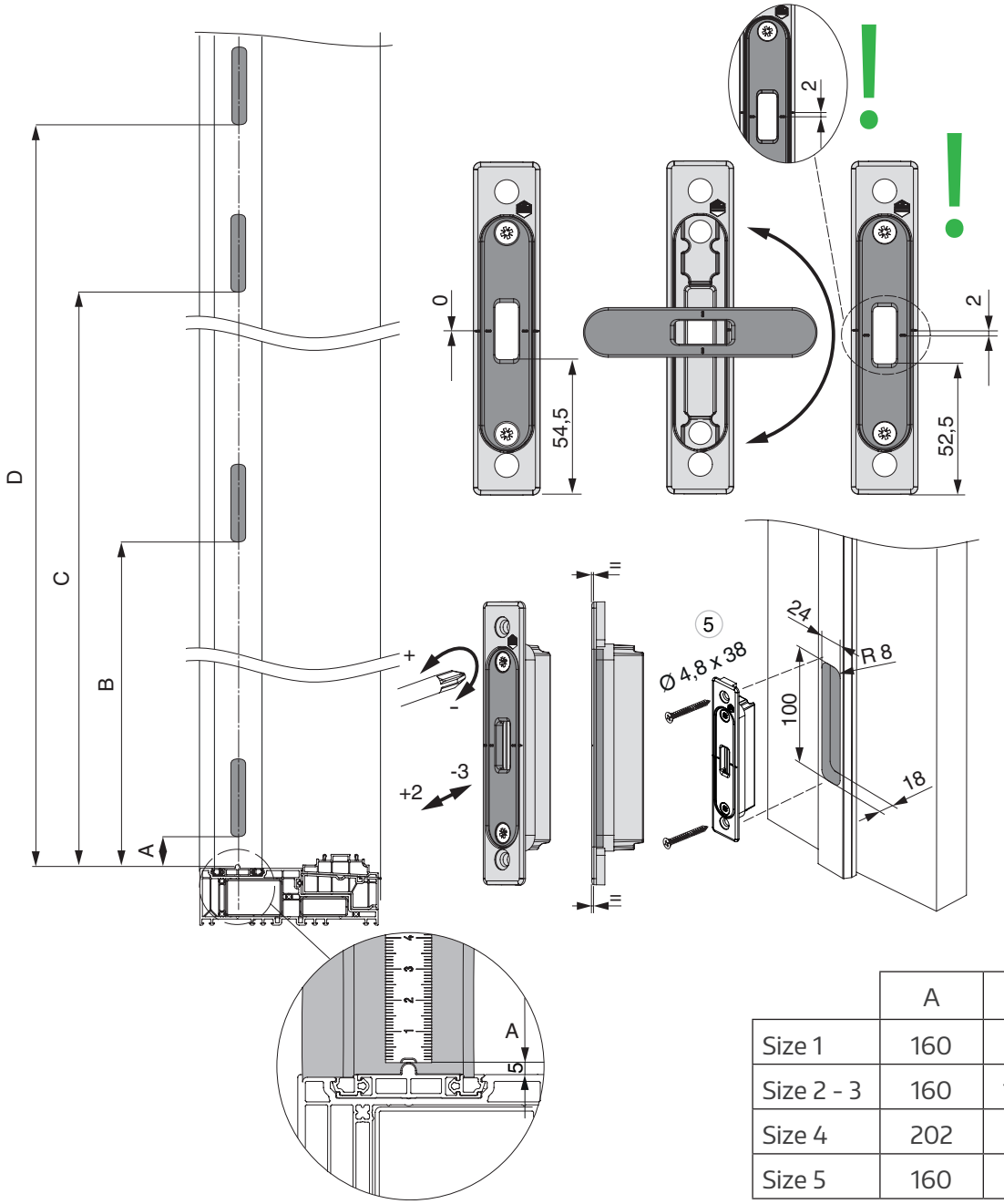
Striker plate for hook drive gear

Scheme A



Scheme C

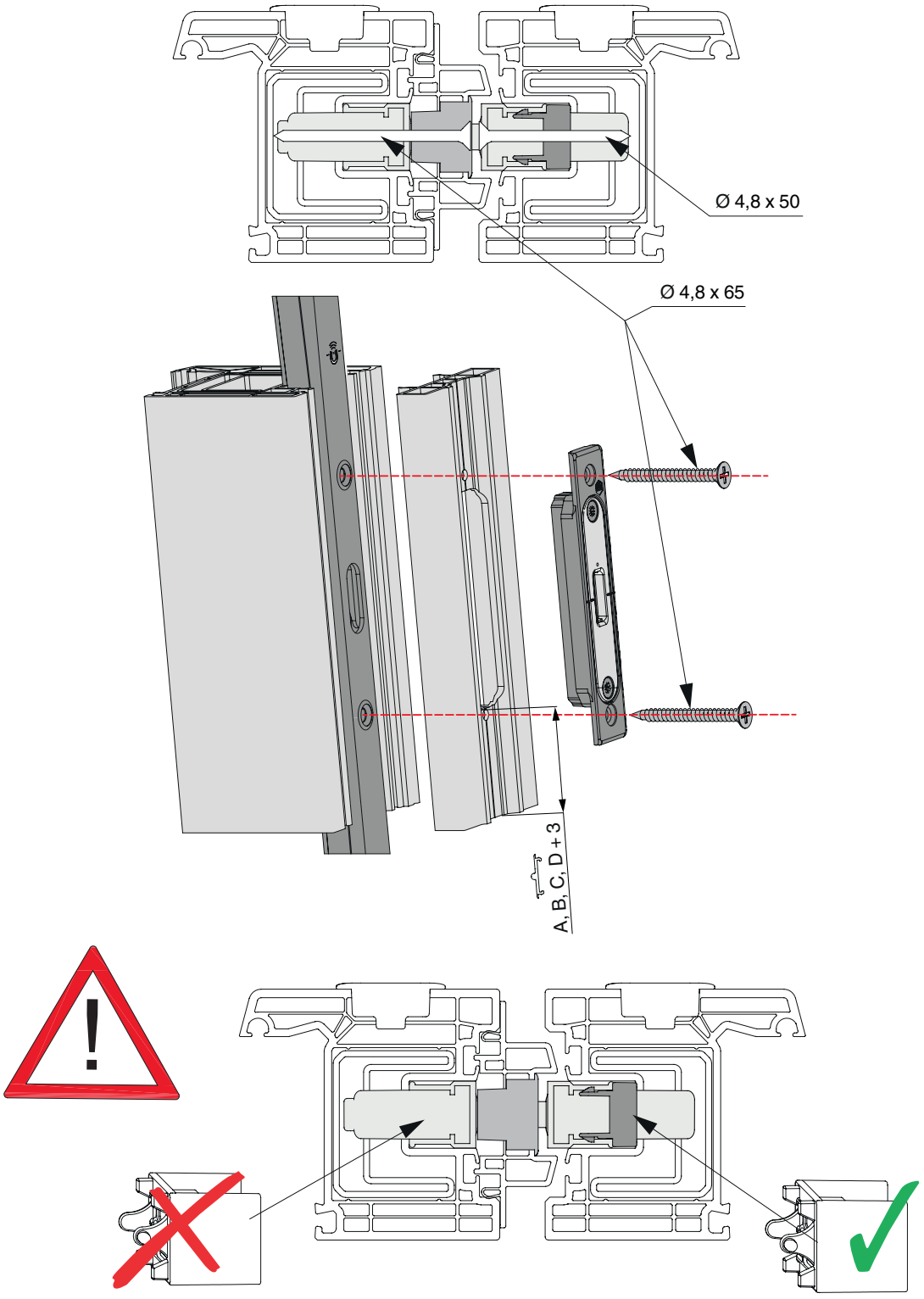




	A	B	C	D
Size 1	160	530	-	-
Size 2 - 3	160	1030	-	-
Size 4	202	748	1628	-
Size 5	160	748	1160	2060

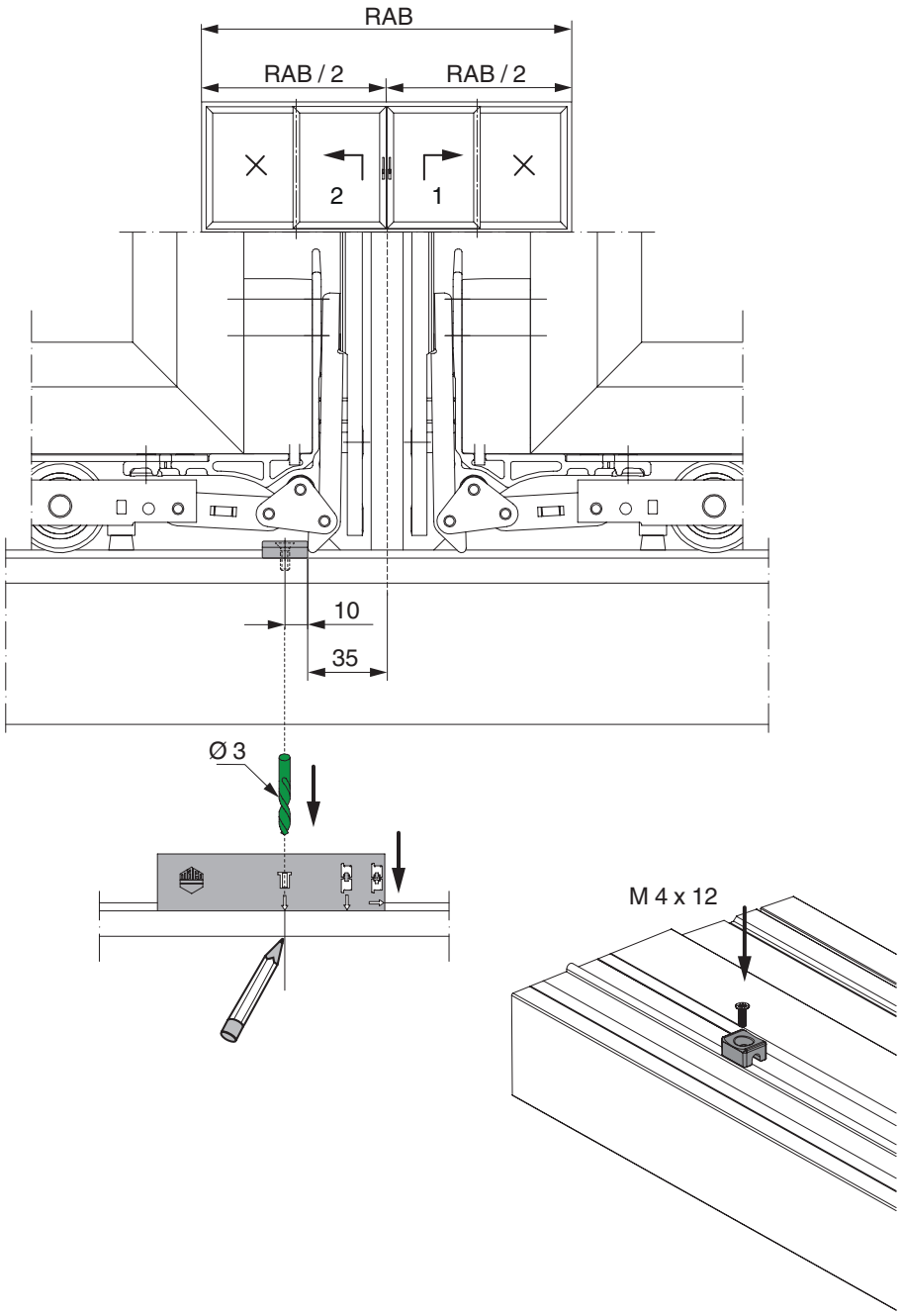
Assembly on the sash and frame

Striker plate for hook drive gear Scheme C, G 1



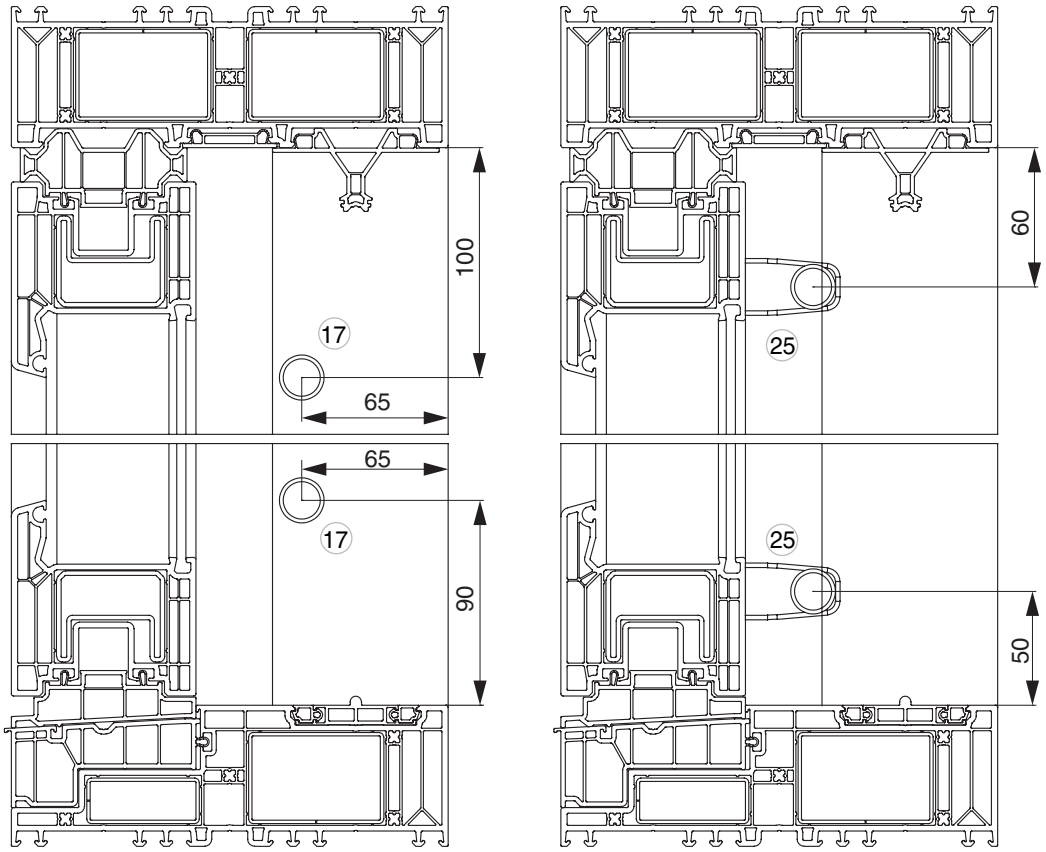
Assembly on the sash and frame

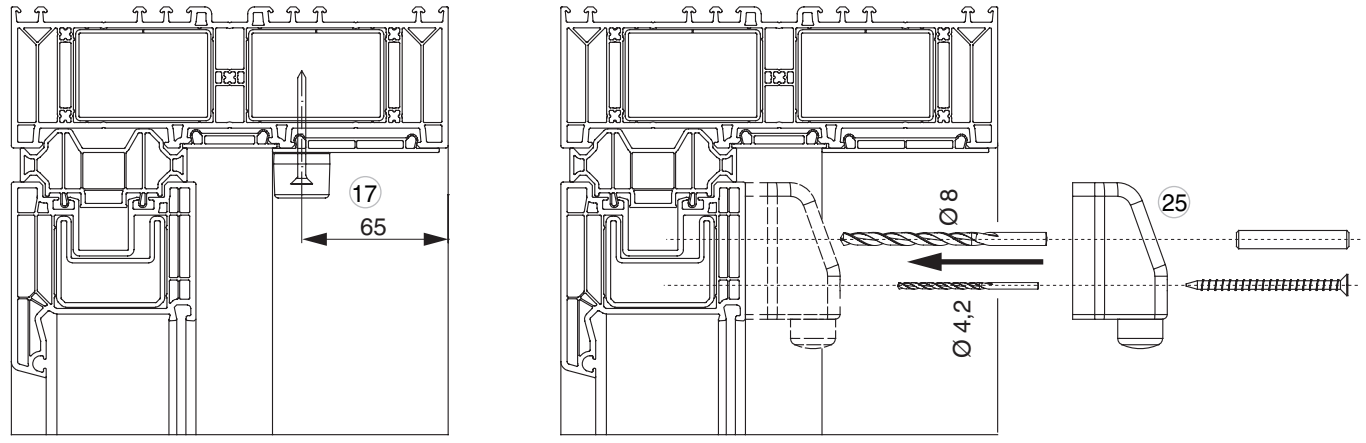
Locking block



Assembly on the sash and frame

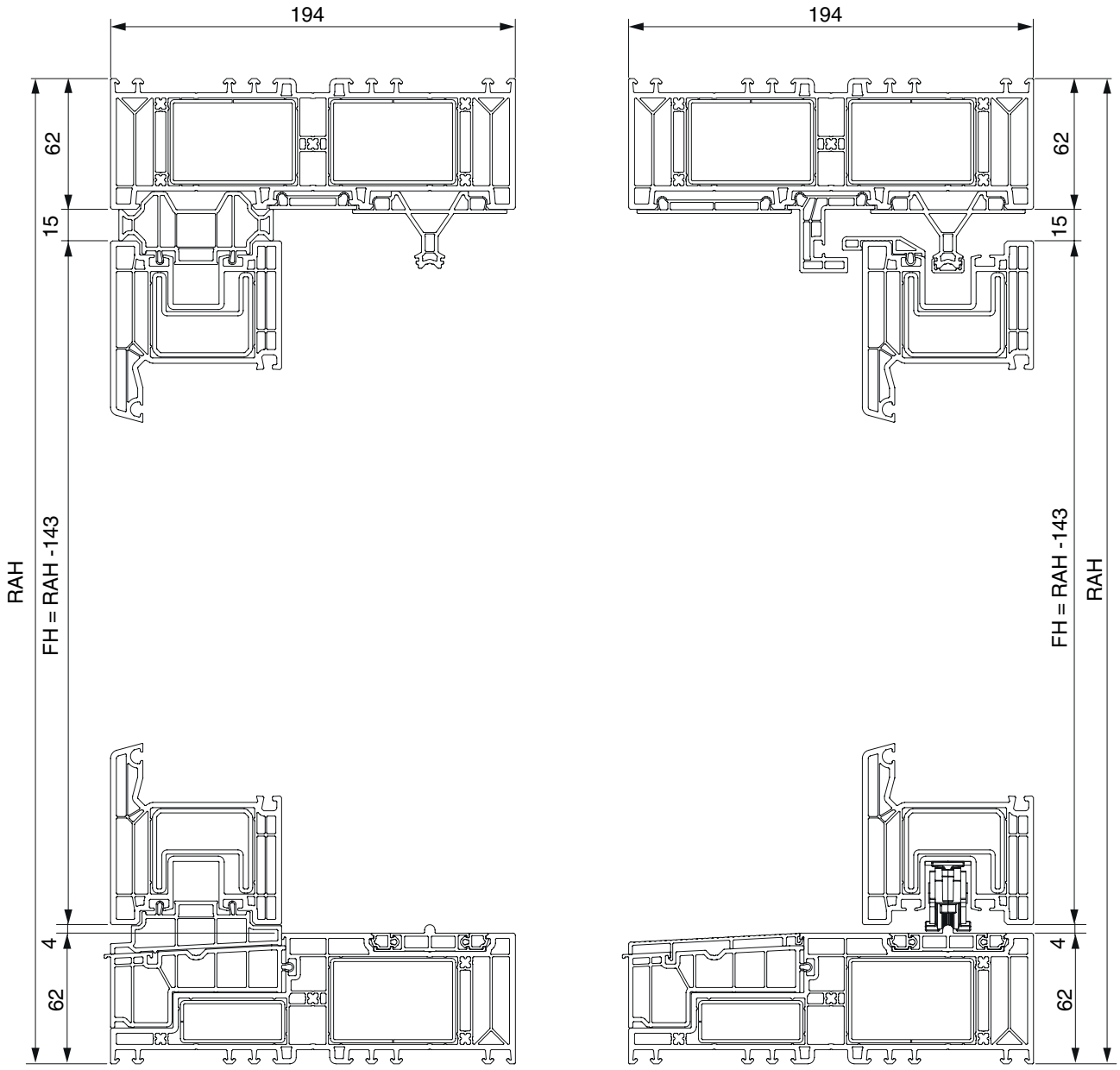
Buffer stop





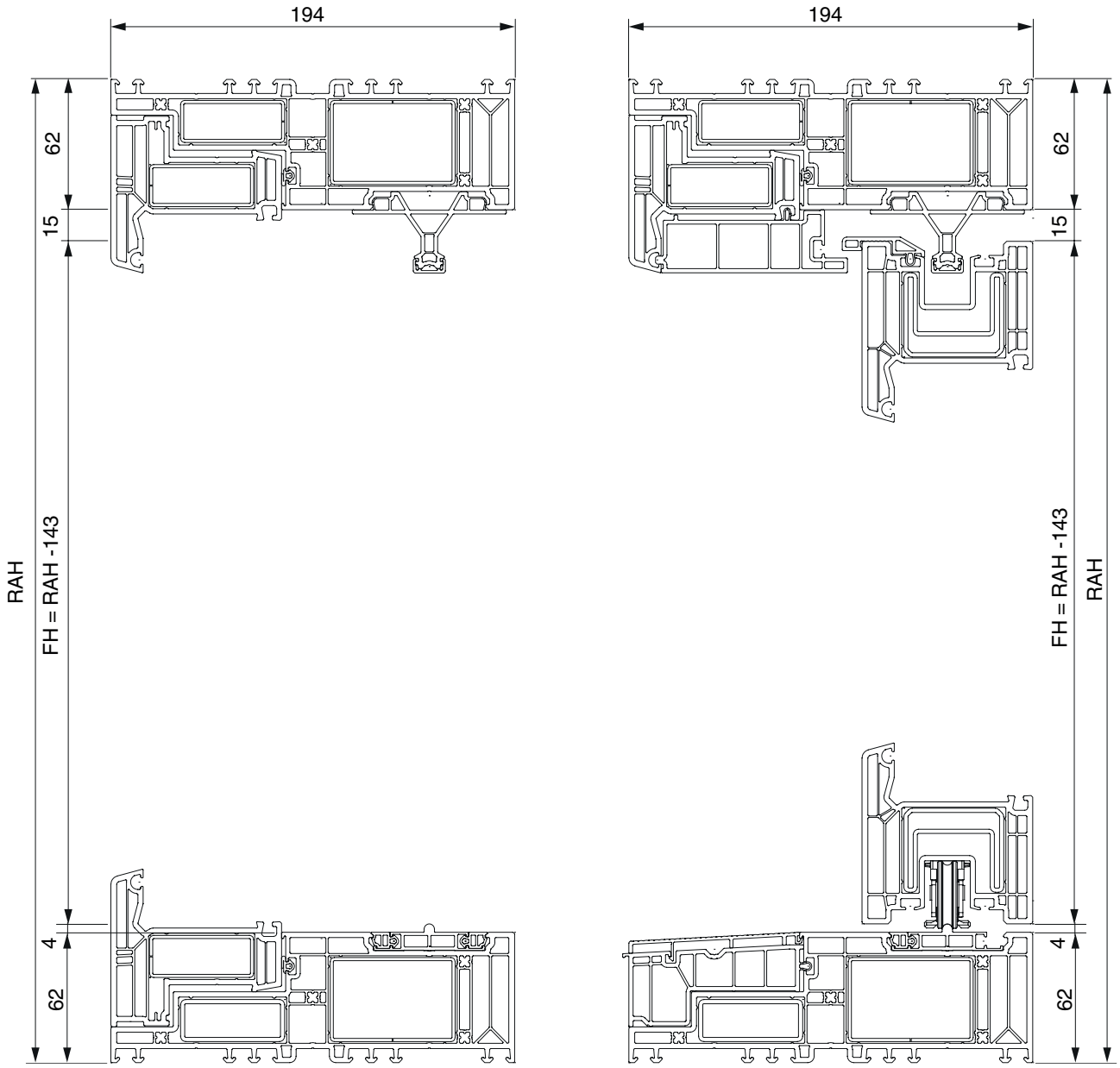
Vertical cross-section

Fixed sash and sliding sash Motion 82



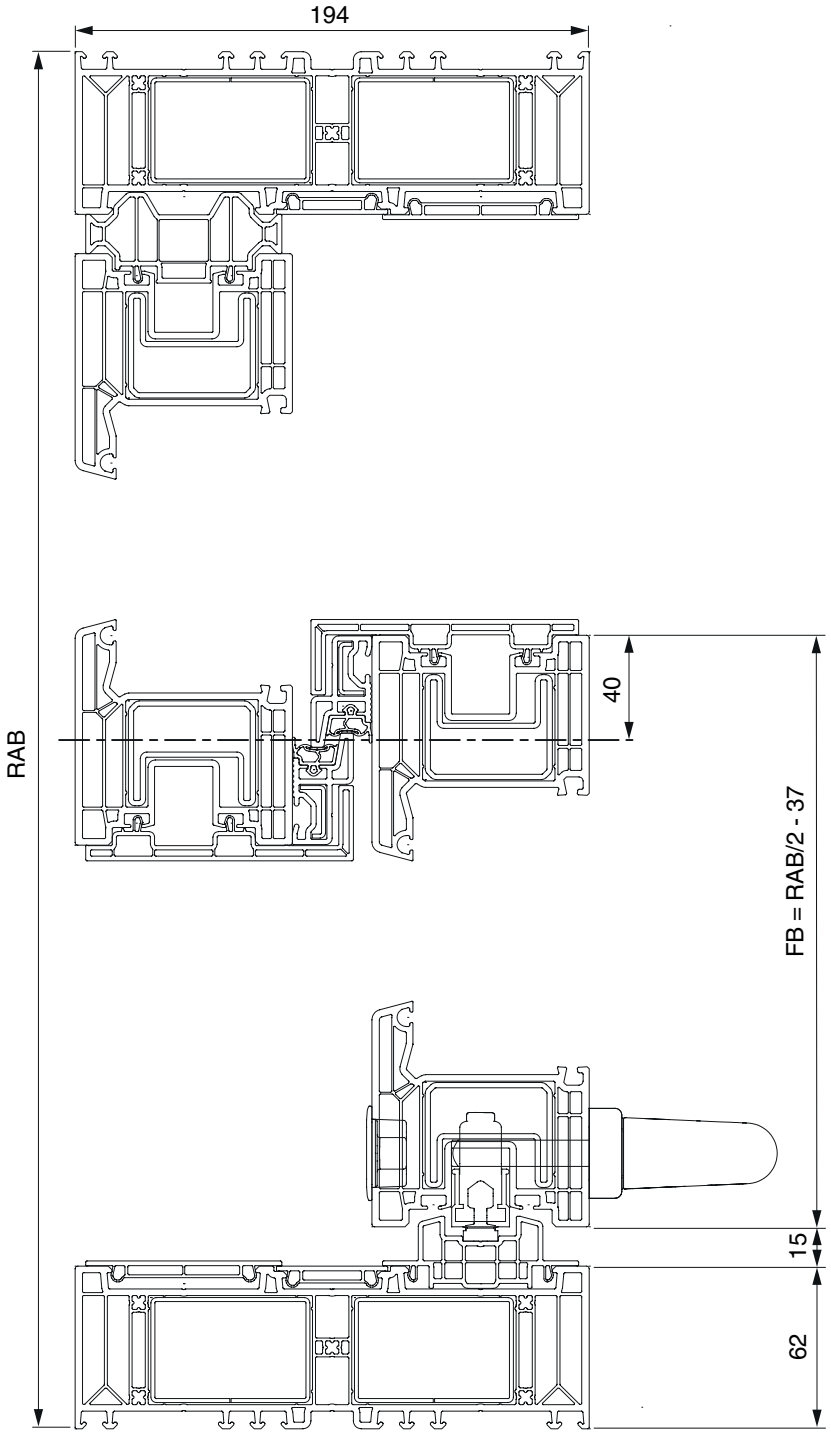
Vertical cross-section

Fixed sash and sliding sash Motion 82 MAX



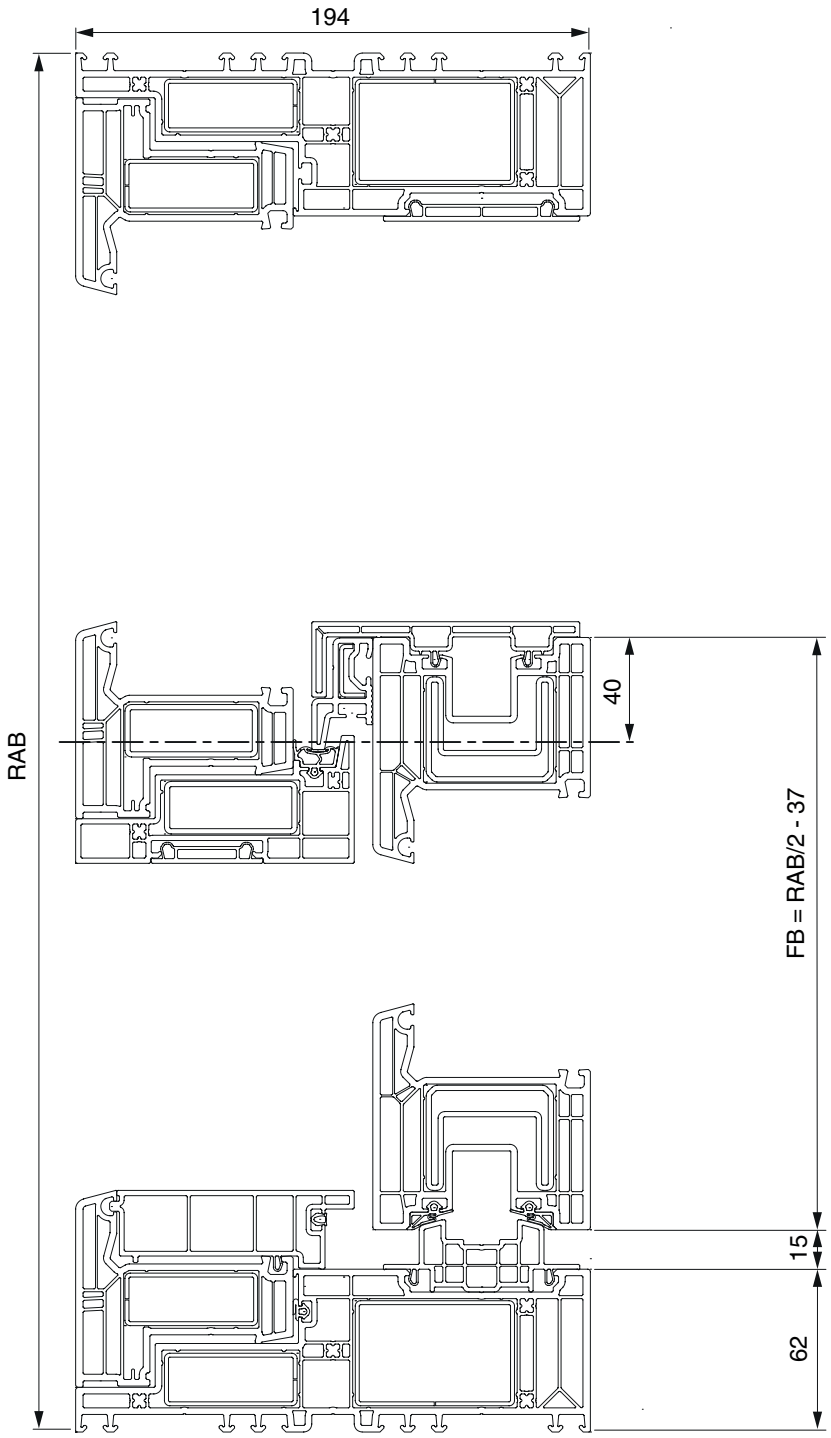
Horizontal cross-section

Motion 82



Horizontal cross-section

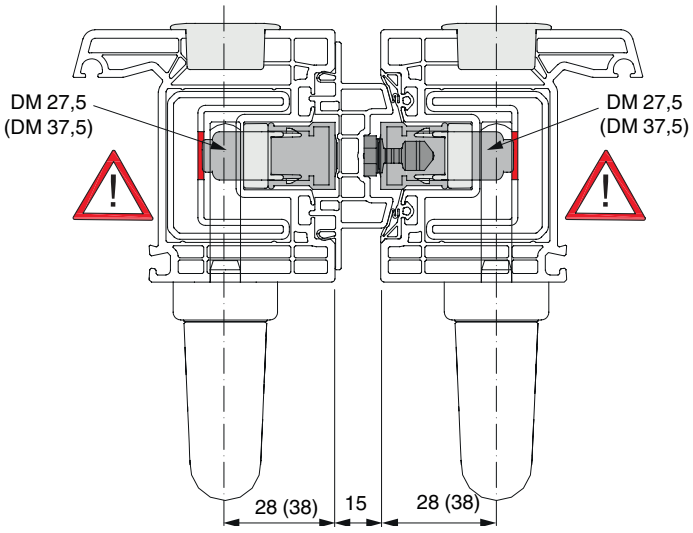
Motion 82 MAX



Horizontal cross-section

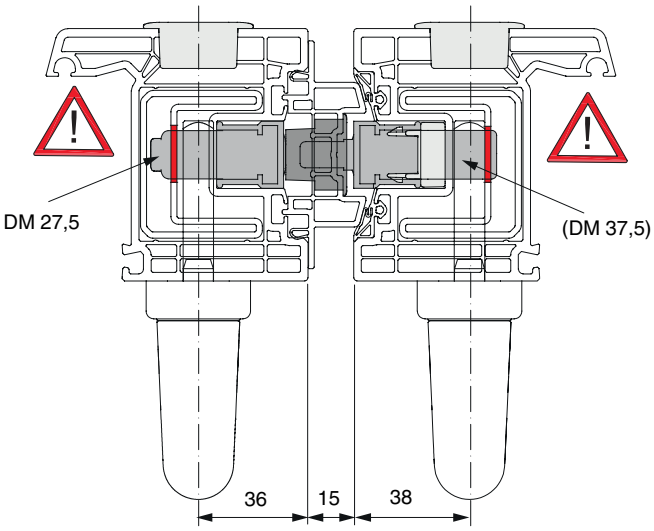
Scheme C – Bolt drive gear

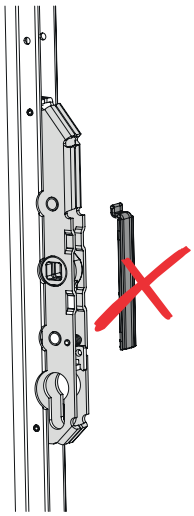
When using the DM 37.5 bolt drive gear, the reinforcement on the lock case must be excluded in each case.



Scheme C – Hook drive gear

When using the DM 27.5 (DM 37.5) hook gear, the reinforcement on both sides of the hook and lock box must be removed.





When using the DM 27.5 drive gear, remove the dust cap.

Notes

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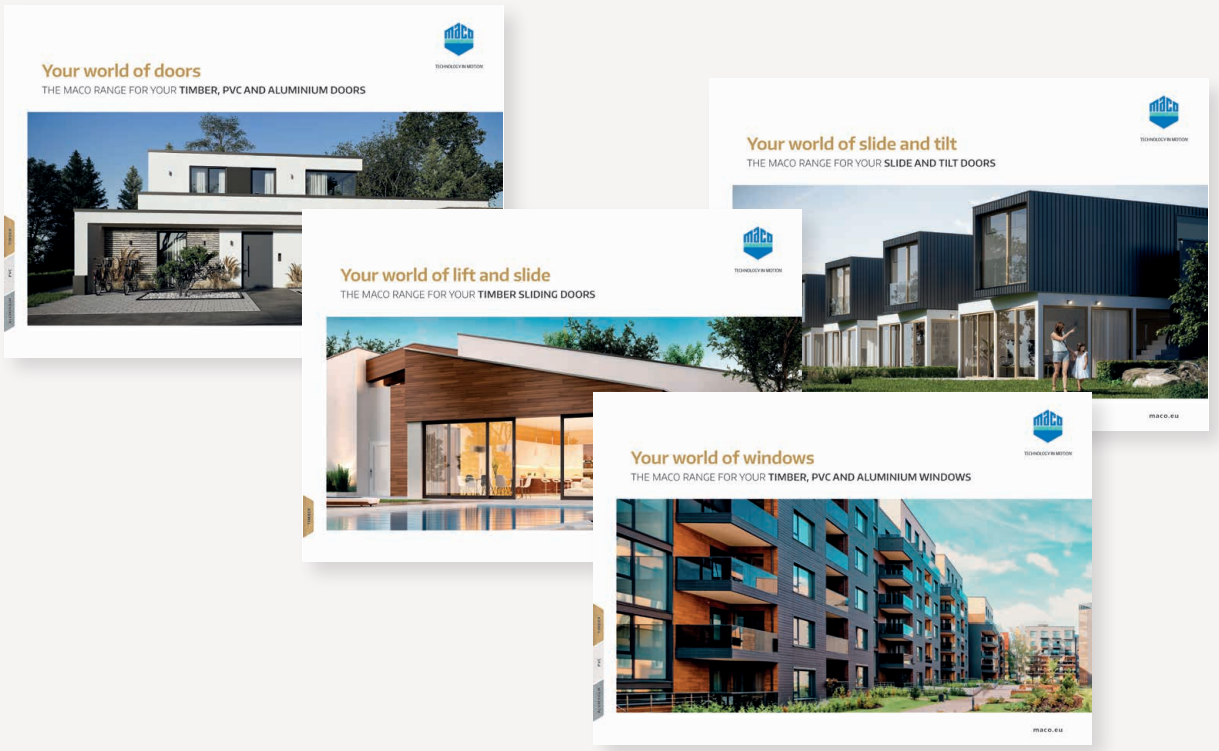

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