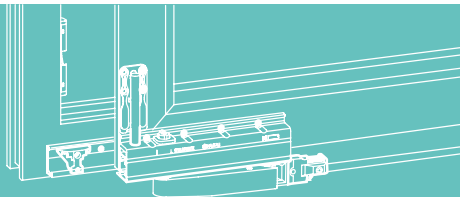




TECHNOLOGY IN MOTION

MACO RAIL-SYSTEMS

SLIDING HARDWARE



Operating and maintenance instructions
for SKB standard, self-engaging,
positive control and PAS
END USERS



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WARNING! These operating and maintenance instructions are intended for the user (end user) and must be kept for future reference. For safety reasons, all users must be informed of their content.

If it is not certain that the information is available to all users, then a sticker must be attached to the window or a tag must be attached to the handle so that it is clearly visible on the window or casement door. This sticker/tag can be requested from the manufacturer of your window.

This guide is also available at www.maco.eu for download, order number 757957.

Intended purpose and misuse

In the case of vertically installed windows or casement doors with sliding hardware in high building construction, these are shifted horizontally, tilted or parallel stopped by operating a window handle.

When closing a sash and when locking the hardware in place, the resistance of the seal must be overcome as a rule.



WARNING! Risk of injury and material damage by improper opening and closing of sashes!

Improper opening and closing of the sashes can cause serious injury and considerable material damage!

For this reason:

- › When opening and closing windows and casement doors, never reach between sash and frame, and always proceed with caution.
- › Ensure that the sash is guided through its entire range of motion to the fully closed or open position by hand and that it is brought very slowly to the frame, the opening restrictor (buffer) or to other sashes (technical value – maximum reference speed of the closing edge $v \leq 0.2$ m/s).

Any use beyond the intended purpose or other use or processing of the products is considered misuse and can lead to dangerous situations!



WARNING! DANGER DUE TO MISUSE!

Misuse of the window and casement doors can result in dangerous situations, such as personal injury and damage to other items.

In particular, refrain from the following applications (see also safety instructions):

- › Introduction of obstacles into the opening vicinity between the frame and the window or casement door sashes.
- › Intentional or negligent application of additional loads acting on windows and casement door sashes.
- › Deliberate or uncontrolled slamming or pushing of windows and casement door sashes against the window sill. This can destroy the hardware, frame materials or other components of windows and casement doors.



WARNING! In the event of obvious or visible damage or improper function, the window or casement door must no longer be operated and must be repaired right away by a certified specialist before any further use.



IMPORTANT! Claims of any kind arising from damage caused from use that does not correspond to the intended purpose or misuse are excluded!

Note relating to restriction of use:

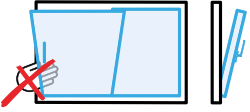

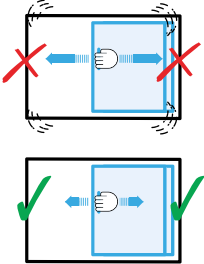
Opened window and casement door sashes as well as windows and casement door sashes that are unlocked or in the ventilation position only offer a shielding function. They do not meet the requirements of:


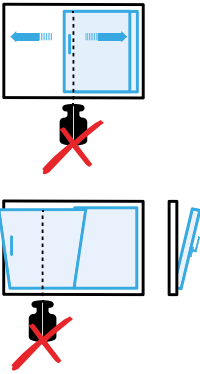

- › joint tightness
- › watertightness
- › sound insulation
- › thermal insulation
- › burglar resistance

Safety and warning information

Safety information

The following symbols illustrate the risks presented by windows and casement doors:

Symbol	Meaning
	<p>Risk of injury due to jamming body parts in the opening between the sash and frame</p> <ul style="list-style-type: none"> → Never reach into the gap between sash and frame when closing windows and casement doors, and always proceed with caution. → It is essential to keep children and people who cannot appreciate the risks involved away from danger areas.
	<p>Risk of injury due to falling through opened windows and casement doors</p> <ul style="list-style-type: none"> → Always proceed with caution, do not lean forward or lean out when near open windows and casement doors. → It is essential to keep children and people who cannot appreciate the risks involved away from danger areas.
	<p>Risk of injury and material damage due to uncontrolled opening and closing of the sash must be avoided at all times.</p> <ul style="list-style-type: none"> → Ensure that the sash is slowly guided by hand through its entire range of motion to the fully closed or open position.

Symbol	Meaning
	<p>Risk of injury and material damage resulting from placing obstacles in the gap between the sash and frame</p> <p>→ Do not place obstacles in the gap between the sash and frame.</p>
	<p>Risk of injury and material damage due to additional loads on the sash</p> <p>→ Do not subject the sash to additional loads.</p>
	<p>Risk of injury due to wind action</p> <p>→ Avoid the action of wind on the open sash.</p> <p>→ Close and lock the window or sash in the event of wind and drafts.</p>




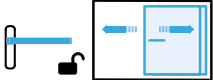

CAUTION! In the event of visible damage or improper function, the window or casement door must no longer be operated and must be repaired right away by a certified specialist before any further use.

Operating instructions



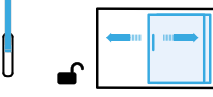
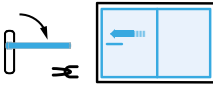
Illustrative symbols

The following symbols indicate the different possible lever positions and the resulting sash positions of the windows and casement doors.



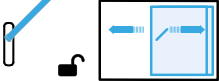

SKB-S & SKB-S-Upgrade & PAS

Lever / sash position	Meaning
	Sash closed position
	Sash slide opening position
	Sash tilt opening position

SKB-SE

Lever / sash position	Meaning
	Sash closed position
	Sash tilt opening position
	Sash slide opening position
	

SKB-Z

Lever / sash position	Meaning
	Sash closed position
	Sash tilt opening position
	Sash slide opening position
	

Operating and cleaning information

Open windows and casement doors always pose a hazard to the health of humans and animals and risk of damage to other items!



WARNING! **Risk of injury when closing windows and casement doors!** Risk of crushing in the event of reaching in between sash and frame when closing the window or casement door!
For this reason:



› When closing windows and casement doors, never reach between sash and frame, and always proceed with caution.



› Keep children and people who cannot appreciate the risks involved away from danger areas.



› If slide&tilt or parallel-stop slide hardware is subjected to excessive loads or not operated properly, the sash can pop out of its guide, fall out and thereby cause severe injuries or death. If excessive loads are to be expected on the window or casement door in special circumstances (use in schools, nursery schools, public buildings, etc.), suitable measures must be adopted to prevent this.
For example:

- ✓ Moving the stop buffer to reduce the opening width or
- ✓ installing a profile cylinder to prevent unauthorised use.

If in doubt, please ask your window supplier.



General cleaning information:

Regular cleaning is a prerequisite for preserving the service life and functionality of the window. When cleaning the glass surfaces and the other surfaces, also check the hardware components for contamination and, if necessary, clean with a damp cloth and a pH-neutral cleaning agent. Only close the window or casement door once the cleaned parts are dry.

To maintain the surface quality of the hardware components for the intended use in the long-term and to avoid deterioration, the following points must be observed:

Protection against corrosion:

- › Ventilate the hardware and the rebate areas so that they are not exposed to direct moisture or condensation (important during the building stage).
- › Clean the hardware components with a moist cloth only, avoid permanent wetness!

Protection against soiling:

- › The hardware should generally be kept free of deposits (e.g. salt in coastal areas) and soiling. Immediately remove soiling during the building stage caused by plaster, mortar or similar with water.
- › Protect hardware and striker plates from contamination (dust, dirt, paint, etc.).

Protection against corrosive, acidiferous cleaning agents:

- › Clean the hardware with a soft, lint-free cloth and a mild, pH-neutral cleaning agent in diluted form only. Never use aggressive, acidic or solvent-based or abrasive cleaners (scouring pads, steel wool, etc.). This can result in damage to the hardware!
- › If hardware is damaged in this manner, it may impair the function and/or impair the safety-relevant characteristics, and as a consequence, this can result in personal injury and damage of other items.



NOTE! Defective or damaged points must be repaired and restored immediately by skilled personnel.

Maintenance instructions



Your windows or casement doors are equipped with high quality and durable MACO hardware. The following maintenance instructions and prescribed intervals must be observed and followed in order to ensure that they remain functional and safe for years to come.



NOTE! In addition to regular cleaning, window and casement door hardware requires suitable, expert systematic inspection and maintenance to ensure usability and safety. We therefore recommend an appropriate maintenance contract with the manufacturer of your windows and casement doors.

Inspections and inspection intervals

Verified initial inspection
6 - 12 months after installation;
 then every **12 - 18 months** for
 private use or every **6 - 12 months**
 for commercial use (depending on
 the intensity of loads)

	 End users	 Certified specialist
Check for free motion of the slide&tilt / parallel-stop unit and the smooth running and position of the handle in the closed position (precise vertical position upwards) and, if necessary, arrange for a certified specialist to readjust the slide&tilt / parallel-stop unit.	✓	✓
Check all hardware components and striker plates for obvious damage or wear (abrasion) and, if necessary, arrange for replacement by a certified specialist.	✓	✓
Check all moving hardware components and striker plates for proper function and grease / oil them.	✓	✓

Inspections and inspection intervals

Verified initial inspection
6 - 12 months after installation;
 then every **12 - 18 months** for
 private use or every **6 - 12 months**
 for commercial use (depending on
 the intensity of loads)

	 End users	 Certified specialist
Check fixing screws and tighten or replace as necessary.	✗	✓
Gasket compression setting of the night-vent scissor-stay.	✗	✓
Checking the gasket compression for the locking cams or i.S. cams and readjusting as necessary.	✗	✓



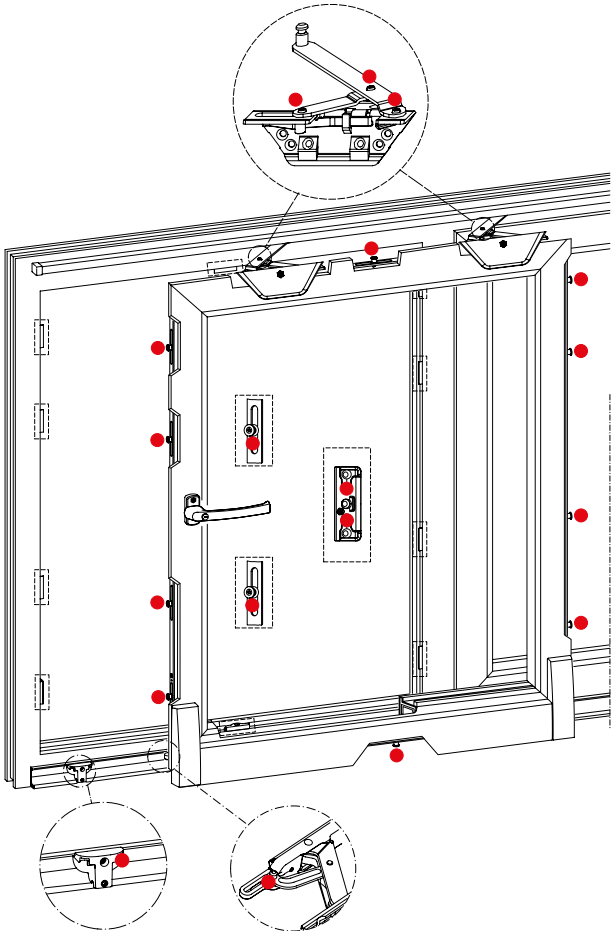
CAUTION!

✗ = must **ONLY** be undertaken by a **certified specialist**, and **NEVER** by the end user!

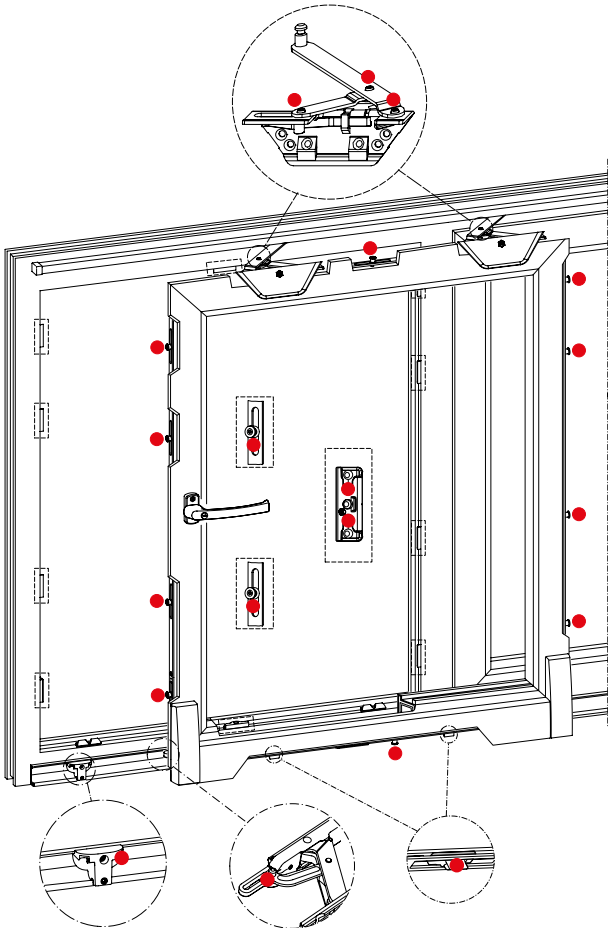
Hinging and unhinging of the window sash or casement door as well as all adjustments to the hardware must only be carried out by a certified specialist! The maintenance of safety-related parts (guide tracks and rollers) must also only be carried out by certified specialists!

Your window hardware must also be operated at least once a month to prevent "wear from lack of use".

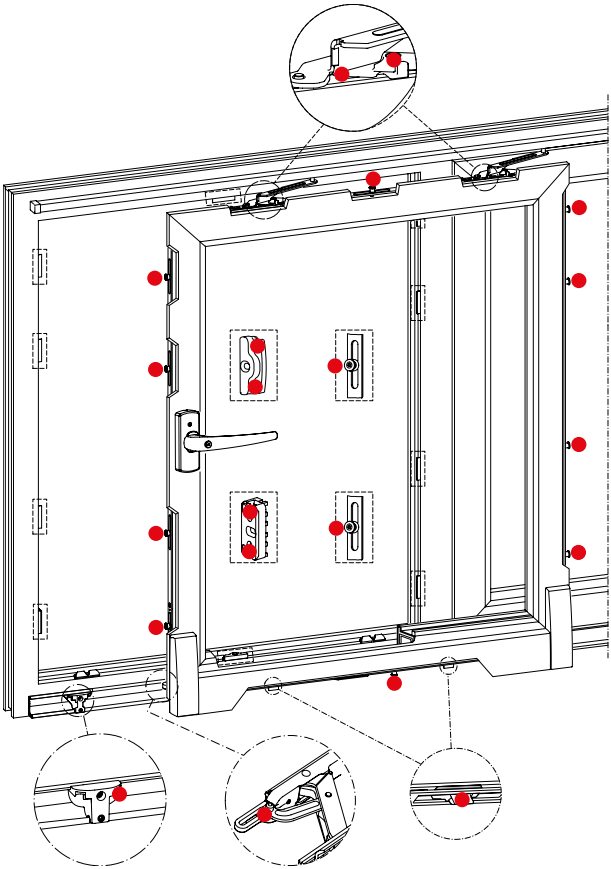
SKB-S- & SKB-S-Upgrade hardware lubrication points



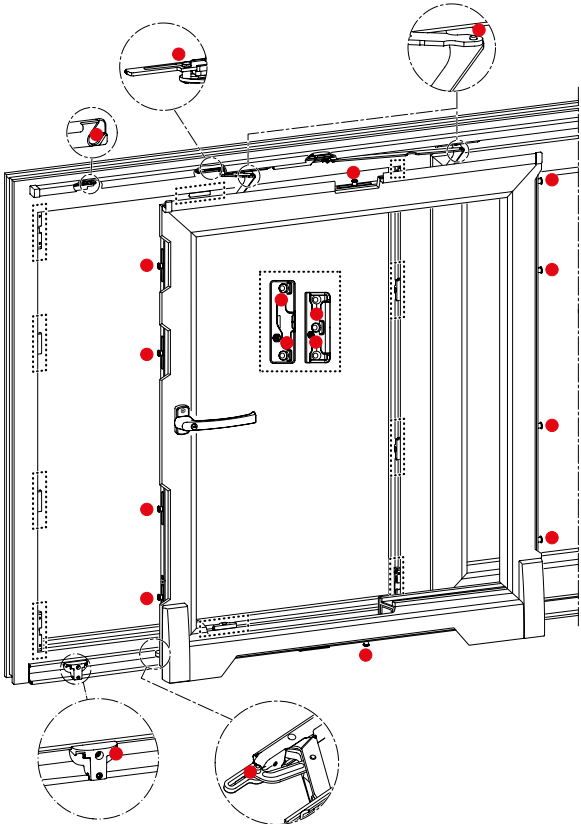
SKB-SE hardware lubrication points



SKB-Z hardware lubrication points



PAS hardware lubrication points



- › The images shown are purely symbolic. The location and number of lubrication points (●) depends on the actual size and design of the window/casement door!
- › Lubricate all moving parts and locking points of the slide&tilt and parallel-stop slide hardware.
- › Grease for hardware:
Adhesive lubricant with PTFE in spray format, e.g. OKS 3751 or equivalent.
- › The hardware must be operated several times after lubrication in order to distribute the lubricant.



Spare parts, customer service

Spare parts or customer services can be acquired from window suppliers or window manufacturers. A list of manufacturers and dealers can be found at www.maco.eu.

Disposal

Disposal of hardware must comply with local regulations or laws.

Applied standards

ÖN EN 14351: 2010	Windows and doors - product standard
ÖN EN 1191: 2013	Windows and doors - Resistance to repeated opening and closing
ÖN EN 13126-8: 2006	Building hardware for windows and doors – Part 8 Requirements and test methods
ÖN EN 1670: 2008	Locks and building hardware – corrosion resistance – Requirements and test methods

If you have any ideas or suggestions for improving our instructions, please send them by e-mail to: feedback@maco.eu



Notes

A large rectangular area filled with a fine grid pattern, intended for taking notes.



Notes

A large rectangular area filled with a fine grid pattern, intended for taking notes.



TECHNOLOGY IN MOTION

MACO near your:

www.maco.eu/contact

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