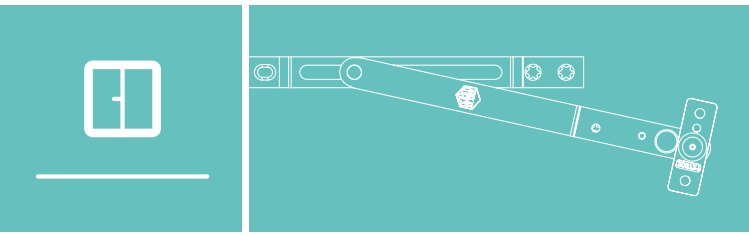
TECHNOLOGY IN MOTION

MACO MULTI

Turn-only and
turn&tilt hardware



Operating and service manual
for tilt-only windows
END USER

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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!
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 758520EN.

Stipulated application and misuse

Proper use
For vertically installed windows in building construction, sashes with MACO tilt hardware are brought inward into a tilted position limited by the scissor stay design using a window handle.
The sash is brought inward into a fixed cleaning position by using the restrictor and cleaning stay.
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 property damage by improper opening and closing of sashes!
Improper opening and closing of the sashes can cause serious injury and considerable property damage!
For this reason:
- Ensure that the sash is guided through its entire range of motion to the fully closed position by hand and that it is brought very slowly and without resistance to the frame! This also applies for the cleaning position in particular!
- Ensure that the sash never slams in an uncontrolled manner or is allowed to swing open (wind or draught)!
- It is essential to ensure that the tilt stay is always hinged and secured, otherwise the sash will open downwards without braking

Any use beyond the range of stipulated application 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 tilt-only window can result in dangerous situations, such as personal injury and damage to other items. In particular, the following applications shall be avoided (see also safety instructions):
- Letting it fall deliberately or in an uncontrolled manner in the restricted or cleaning position. This can cause irreversible damage to the restrictor and cleaning stay.
- Deliberate or uncontrolled slamming or pushing of windows against the window reveal. This can cause the hardware, frame materials or other components of windows or casement doors to be damaged or destroyed.
- Introduction of obstacles into the opening vicinity between the frame and the window sash!

› Intentional or negligent application of additional loads acting on windows sashes.
› Closing of windows with excessive force. The sash must always enter freely into the frame without effort.

CAUTION!

In the event of visible damage or improper function, the window sash may no longer be operated and must be repaired by a certified specialist!

IMPORTANT!

Claims of any kind arising from damage caused from improper use or misuse are excluded from the warranty!

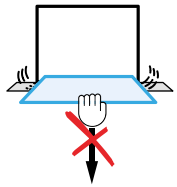
Note relating to restriction of use:
Opened window sashes as well as windows in ventilation position (e.g. tilted position) serve in a shielding capacity only. They do not meet the requirements of:

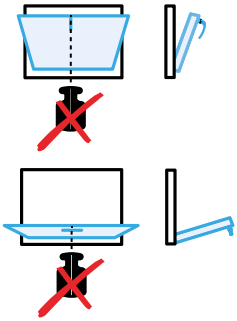
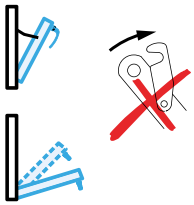
› joint tightness
› sound insulation
› burglar-inhibiting
› watertightness
› thermal insulation

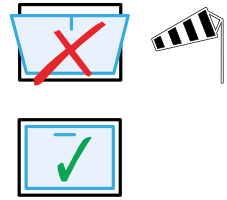
The properties listed only apply for window sashes and casement doors when locked.

Safety and warning information

Safety information
The following symbols illustrate the risks presented by windows:

Symbol	Meaning
	**Risk of injury due to catching body parts in the opening between the sash and frame** ➜ Never reach into the gap between sash and frame when closing windows and always proceed with caution. ➜ Keep children and people who cannot appreciate the risks involved away from danger.
	**Risk of injury due to falling through opened windows** ➜ Always proceed with caution when near open windows. ➜ Keep children and people who cannot appreciate the risks involved away from danger.
	**Risk of injury and property damage from pressing the sash against the opening edge (reveal)** ➜ Refrain from pressing the sash against the opening edge (reveal).

	**Risk of injury resulting from obstacles in the gap between the sash and frame** ➜ Refrain from placing obstacles in the gap between the sash and frame.
	**Risk of injury and property damage due to additional loads on the sash** ➜ Avoid additional loading of the sash.
	**Risk of injury through improper hinging after cleaning** ➜ After cleaning, carefully hinge the tilt stay arm of the tilt-only sash in the tilt stay casing on the frame and lock the safety plate on the tilt stay casing.
	**Risk of injury due to overriding the restrictor and cleaning stay** ➜ Ensure that the restrictor and cleaning stay works flawlessly.

	**Risk of injury due to wind action** ➜ Avoid the action of wind on the tilt sash. ➜ Close and lock the window sash in the event of wind and drafts. ➜ Lock all sashes closed when winds and storms are forecast.

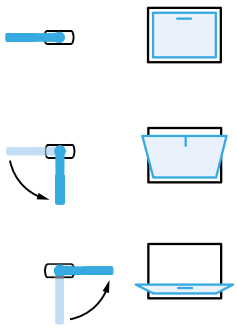
CAUTION!

In the event of visible damage or improper function, the window sash may no longer be operated and must be repaired by a certified specialist!

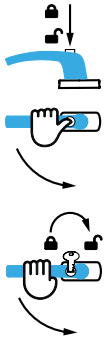
Operating instructions

Illustrative symbols
The following icons indicate the different possible handle positions and the resulting sash positions of the window sashes (proper function).

Tilt hardware

Handle / sash position	Meaning
	Closed position of the sash
	Tilted position of the sash (for continuous ventilation of the room)
	Sash cleaning position (for cleaning the outer pane)

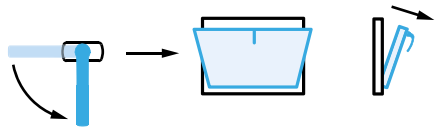
Window handles with locking button or key locking

	Press and hold the locking button to actuate the handle
	Unlock the key to actuate the handle

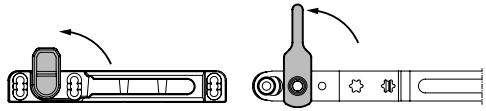
General operating instructions for cleaning
A restrictor and cleaning stay is a prescribed safety component.
It fulfils two basic functions:
› When the tilt stay is unhinged (e.g. for cleaning) and the sash is accidentally released, the sash does not freely drop downwards, instead it is caught in the restricted position.
› The sash is independently held in a stable position for cleaning.

Bring the sash into the cleaning position:

1. Tilt the window sash.

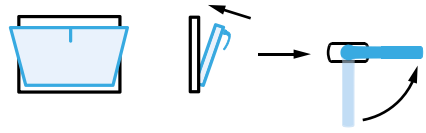


2. Release the tilt stay casing/tilt stay arm.



3. Close the sash and turn the handle into the cleaning position. Upon opening the tilt stay is unhinged.

WARNING!



4. Sash in restricted position.

WARNING!

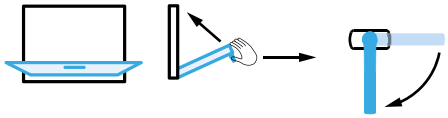
5. Unbolt the safety catch, move the sash into the cleaning position.

WARNING!

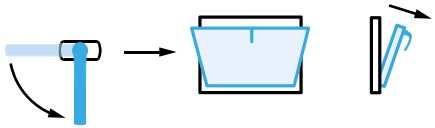
Restrictor and cleaning stays from other manufacturers must be unbolted according to the instructions supplied!

Close and lock the sash:

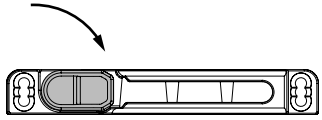
1. Close the sash, put the handle in tilt position.



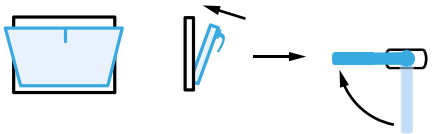
2. Tilt the sash.



3. Secure the tilt stay casing.



4. Close and lock the sash.



Use information

Open windows always pose a hazard to people and risk of damage to other items!

WARNING!

Risk of injury when closing windows! Risk of crushing in the event of reaching in between sash and frame when closing the window!

For this reason:

- When closing windows, never reach between sash and frame, and always proceed with caution.
- Keep children and people who cannot appreciate the risks involved away from danger.
- Close and lock the window sash in the event of wind and drafts. Otherwise the window or casement door sash can move in an uncontrolled manner or bang open due to the draught!
  If the sash is not locked closed, damage to the window or other items may occur and personal injury is also possible.

General cleaning information:
Bringing a tilt-only window from the tilted position to the cleaning position represents an increased source of danger for people and risk of damage to other items!

WARNING!

Risk of injury when cleaning the outer pane. To clean the tilt-only window, the tilt stay must be unhinged to increase the opening angle. From this point onwards, the entire sash weight must be held and moved by a person.
Therefore there is an increased risk of injury (see also restrictor and cleaning stay operation).

For this reason:

- Ensure you have a firm footing and move the sash slowly and carefully!
- Children and people who cannot appreciate the risks involved or cannot support the sash weight must be kept away from the danger area.

Cleaning information

Regular cleaning is a prerequisite for ensuring a long service life and functionality of the equipment. When cleaning the glass surfaces, also check the surfaces of the hardware for contamination and, if necessary, clean with a damp cloth and a pH-neutral cleaning agent. Only close the window sash once the cleaned parts have dried.

› **Cleaning information for glass surfaces:**

Commercially available glass cleaners which are free from ammonium chloride can be used to clean glass surfaces. Detergent solutions, acids or fluoride cleaning agents or abrasives must not be used. Stubborn dirt such as paint splatter and similar can be removed with ethyl alcohol, cleaning benzine or similar.
Only clean glass surfaces with a soft cloth. Never use microfibre cloths, cleaning sponges, scouring cloths, steel wool, metal and abrasive items or similar – these will scratch the glass surface.

› **Cleaning information for seals:**

Only use mild cleaning agents to clean the seals. Do not use any dissolving cleaning agents such as acetone, nitro-cellulose thinners, alcohols, acids, alkalis or similar. These dissolve the surface texture of seals. The flexibility of the seal, and thus the service life, can be extended with special cleaning materials for seals (e.g. Vaseline, talc, liquid silicones). These should be applied around once a year.

CAUTION!

Microfibre cloths contains substances and fibres that can destroy the surface of the glass and the seals. Microfibre cloths are therefore unsuitable for cleaning windows!

Cleaning information for window frames and sashes:

› **PVC surface:**

In general, PVC surfaces should always be wet-cleaned. Wiping when dry leads to a matt, dull surface due to dust and soiling.
Only use soft cleaning cloths for cleaning. The products offered as cleaning agents have been specially developed for taking care of PVC surfaces/decorative surfaces and their compatibility has been proven. Cleaning agents containing soap are generally suitable.
Abrasive cleaning agents and cleaning agents containing solvents can scratch or dissolve the surface and therefore must not be used. In the case of heavier soiling, simply give the cleaning agent more time to work. The use of shine sealers can extend the cleaning interval and make cleaning easier. The surface temperature must not exceed 25 °C during cleaning. Cleaning agents are available from specialised dealers or the window manufacturer.

› **Timber surface:**

Indoor timber surfaces are best cleaned with a mild cleaning such as diluted washing-up liquid or soap solution. Abrasive and corrosive cleaning agents and cleaning agents containing solvents destroy the painted surface. Only use soft cleaning cloths which do not scratch the painted surface for cleaning. Window cleaning agents contain small traces of alcohol and ammonia. These agents are well suited for cleaning the glass panes and the timber surfaces. Dry the timber profiles after cleaning with a dry, soft cloth, because alcohol can soften the painted surface if left too long. External surfaces must be cleaned in the same manner as the indoor surfaces. Outside, the surface is more exposed to weathering, such as sunshine, rain, air moisture and temperature. After a long period and depending on the intensity, this can impair the surface, resulting in very small cracks and similar, for example. This slight damage must be repaired immediately (re-painting) to prevent subsequent, more extensive repairs. Repairs and repainting of window units must only be carried out by certified specialists.

› **Aluminium surface:**

On aluminium surfaces, dirt that is not too stubborn can be removed using a sponge and water with a neutral cleaning agent, e.g. washing-up liquid, added to it. Do not use any acidic and strong alkaline cleaning agents which attack the surface. Never use abrasive cleaning agents or sponge scourers. Solvents (e.g. acetone, benzine, nitro-cellulose thinners) also damage the surface.
Surfaces must not be cleaned in direct sunlight. The surface temperature must not exceed 25 °C. Cleaning agents are available from specialised dealers or the window manufacturer.

CAUTION!

Abrasive cleaning agents and cleaning agents containing solvents damage the surfaces and must not be used. Only use soft cleaning cloths for maintenance. If necessary, test the cleaning agent and cloth in an inconspicuous area (internal rebate area or similar).

Intervals for surface maintenance and cleaning:

The position, weathering and external environmental impacts are key factors when it comes to the frequency of cleaning and maintenance. Therefore, fixed intervals cannot be specified and must be determined on an individual basis. In general, it should be noted that careful maintenance and rapid correction of minor damage can considerably extend the service life.

Maintenance information for hardware components:

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

› **Protection against corrosion:**

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

› **Protection against soiling:**

- › In general, keep the hardware free from deposits (e.g. salt in coastal areas) and contamination. Immediately remove soiling during construction caused by plaster, mortar or similar with water.
- › Protect hardware and striker plates from contamination (dust, dirt, paint, etc.).

NOTE!

Faulty or damaged parts must be immediately put right.

› **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, solvent-based or abrasive cleaners (scouring pads, steel wool, etc.). This may result in damage to the hardware!
- › Sashes damaged in such a way may lose functionality or become less secure which may lead to personal injury.

Maintenance instructions

Your tilt windows 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 hardware requires suitable systematic inspection and maintenance to ensure usability and security.
We therefore recommend an appropriate maintenance contract with the manufacturer of your windows.

Inspections and inspection intervals

Verified initial inspection **6–18 months** after installation; then every **3–5 years** for private use or every **6 – 18 months** for commercial use (depending on the intensity of stress)	 End user	 Certified specialist
Checking for free motion of the window sash and the smooth running and position of the handle in the closed position (precise horizontal) and, if necessary, arranging for a certified specialist to perform readjustment work.	✔	✔
Checking all movable hardware and strikers for proper function and lubrication.	✔	✔
Checking all hardware and striker plates for obvious damage or wear (abrasion) and, if necessary, arranging for replacement by a certified specialist.	✔	✔
Checking the restrictor and cleaning stay for damage and proper function and lubricating it.	✔	✔

Inspections and inspection intervals

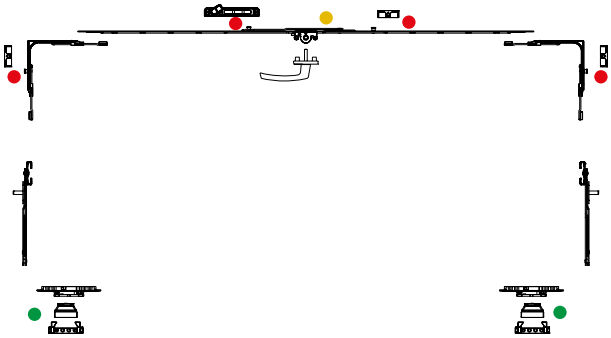
Verified initial inspection **6–18 months** after installation; then every **3–5 years** for private use or every **6 – 18 months** for commercial use (depending on the intensity of stress)	 End user	 Certified specialist
Check fixing screws and tighten or replace as necessary.	✘	✔
Checking the adjustment as well as the pivot post and corner support.	✘	✔
Checking of clamping pressure for the locking cam or i.S. cam and readjust as necessary.	✘	✔

ATTENTION!

✘ = may ONLY be undertaken by a certified specialist,and NEVER by the end user!
Hinging and unhinging of the window sash as well as all adjustments to the hardware may only be carried out by a certified specialist! The maintenance of safety-related parts (pivot posts and scissor stay hinges) may also only be carried out by certified specialists!

The window handle needs to be operated at least once per month in order to maintain smooth operation of the internal fitting.

Lubrication points



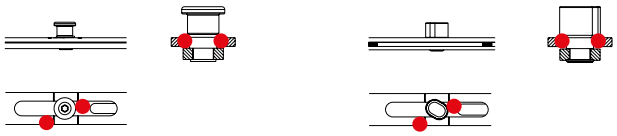
› The image shown is symbolic. The location and number of lubrication points depends on the actual size and design of the window!

› Grease for hardware:
Lubricant with PTFE in spray form, for example, OKS 3751 or equivalent (Haberkorn order no. 79937).

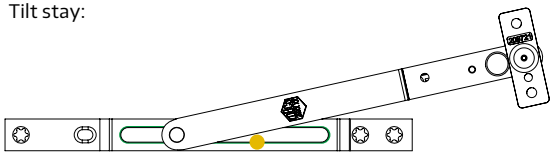
› The fitting must be operated several times subsequent to lubrication in order to properly distribute the lubricant.

Key to lubrication points

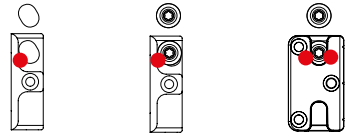
● i.S. cams or locking cams:



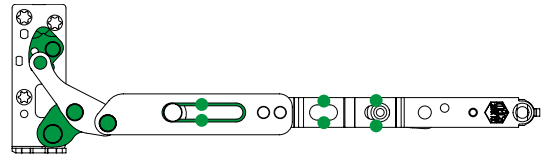
● Tilt stay:



● Striker plates and security striker plates:



● MULTI POWER:
(concealed fittings)



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.macouk.net.

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 - long term performance
ÖN EN 13126-8: 2006	Building hardware for windows and casement doors - Part 8 Requirements and test methods
ÖN EN 1670: 2008	Locks and building hardware - Corrosion resistance - Requirements and test methods

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