SKAALA WINDOWS AND DOORS, OWNER'S MANUAL

EN

DEAR CUSTOMER

Congratulations on a good Finnish choice – Skaala's products are designed for Northern conditions. Our products are custom-made in our factories in Finland respecting environment and using materials and methods that ensure comfort of living with fresh indoor air in your home.

EN

In this Skaala manual you will find the most important instructions for using, and maintaining your Skaala products. It is recommended that you read the instructions carefully and maintain the condition of Skaala products in accordance with our instructions and advice. This way, the use of Skaala products is as easy as possible for you and ensures their long-lasting durability.

For us, the most important thing is a satisfied customer. If you have any questions or feedback about the use or quality of the product, please contact us. You can find contact information and customer feedback form on our website **skaala.com.**

Thank you for choosing a Finnish Skaala product!

Kind regards,
Skaala IFN Oy

! Product liabilities – warnings

- Do not remove stickers on the frame or sash surface of the product that identify the product or indicate its specific characteristics (ID-sticker, fire window, emergency escape, etc.).
- Use the products according to the instructions. Skaala guarantee does not cover damage caused by improper handling of the products.
- Clean and maintain products regularly to ensure their long-lasting serviceability and durability. Disregarding maintenance can lead to exclusion from warranty.

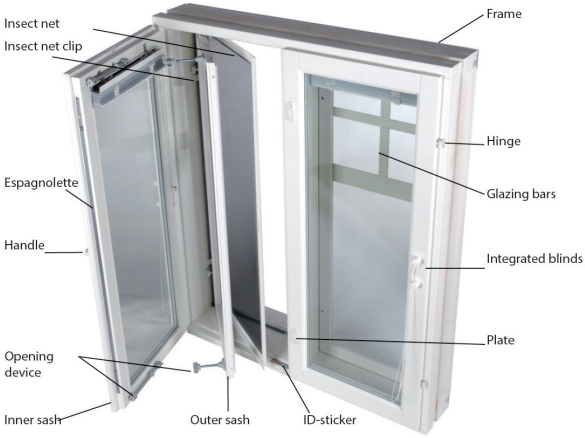
! Remember also!

You can find instructional videos for using and maintaining Skaala products on Skaala's website: **skaala.com/fi/palvelut/ohjeet/**

You can easily and affordably order spare parts and accessories for Skaala products from Skaala's spare parts online shop: **skaala.omaverkkokauppa.fi/**

1. USING INWARDS OPENING WINDOWS

Clean and maintain products regularly to ensure their long-lasting serviceability and durability. Disregarding maintenance can lead to exclusion from warranty.



Parts and accessories of a window

1.1 Opening and closing

The windows are opened by releasing the window locks one at a time and then pulling the sash inwards without pending the sash. When closing the window, please make sure that all window locks are shut. Careless use of the locks may cause, for example, warping of the setting, damage to the hem, abrasions on the paint surfaces and moisture entering the structures.

When opening and closing large windows, special care must be taken. We recommend supporting the sash from below throughout the opening and while the window is kept open, if the width of the sash is 1.5 times greater than its height and/or the window width exceeds 1,500 mm. Do not apply additional load to the opened sash. Large windows are equipped with a "Support when opening" or similar warning label.

! Please note! Windows with separate window locks (and no lever handle) are not meant for the purpose of ventilation.

1.2 Ventilation

For ventilation, the window is equipped with a ventilation fitting, with allows opening the window with only a one handle. Usually the inner and outer sashes must be connected when having a fixed handle, an opening device or an espagnolette. When ventilating, the sash is

opened until the opening device holds the sash in ventilating position. To close the window, close sashes and lock the window with the handle.

Ventilation window opening device, Autolock

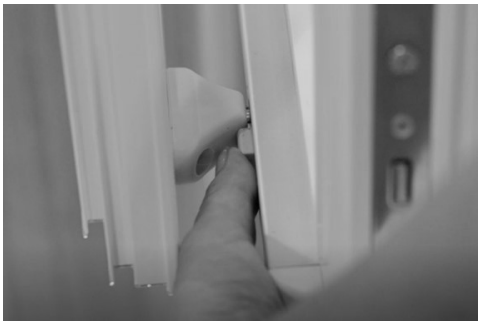
There is an Autolock device as an opening restrictor and wind brake in inward opening window. The opening restrictor connects the sashes together and allows the window to be easily used with a single handle in side hung and small bottom hung windows.

The restrictor is child proof but also prevents the ventilation window from moving freely as the draft and the wind load changes. Due to child safety issues the ventilation window is pre-set at the factory to open maximally 100 mm. Always keep your children's safety in mind when adjusting the restrictor!

Regular cleaning is sufficient to maintain the opening device to ensure its functionality and prevent damages. Autolock is made of anaesthetic aluminium, steel, and plastic. It is cleaned with damp cloth and a mild detergent. The use of lubricants is not recommended.

Locking of the Autolock device may be released, e.g. by opening the sash and pressing the release button at the same time. The setting automatically locks back together by placing the ball head back on the locking sled.

Watch the video!



Releasing the lock of the window stay

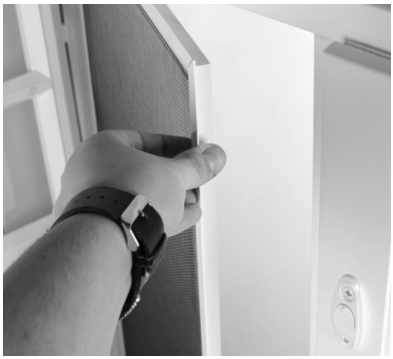
! The safety devices of the bottom hung window must always be kept attached and properly connected. If they are not properly attached or are inadequately adjusted, the sash may collapse uncontrollably and cause injury when opened.

! The ventilation window should be closed with strong winds and rain. The wind may break the structure and water can get in through the open window and damage the wall structures.

1.3 Insect screen

Insect screens are framed meshes installed in ventilation windows to keep insects out. In addition to the standard insect screen, options include a metal mesh insect screen and an allergy insect screen, which is highly effective at filtering fine particles and pollen.

The insect screens and bars are made from weather-resistant material. **We strongly recommended that you remove the insect screen from the window during winter to avoid any damages caused by birds or frozen water.** The insect screens should be washed lightly before putting them in winter storage. Please note that the Skaala warranty does not include indirect damages or external third-party damages (caused by water/ice, birds etc.).



Removing the insect screen

open the window and unlock Autolock devices. Press the plastic clips keeping the insect screen in place to the sides, so that the sash moves inwards. Remove the sash and lock the Autolock. Installation is done in reverse order.

Watch the video!

! Note: The insect screen is usually ordered when ordering a window, but you can order an insect screen from Skaala's web shop. For ordering, you need information from the product ID-label attached to the wooden part of the window to ensure that the size of the frame and the aluminium tone are correct for your window.

1.4 Venetian blinds

There are three different kinds of blinds: installed between sashes, on inner surface or pleated blinds.

The blinds that are installed between sashes are either traditional or integrated blinds. The blinds are opened and closed either by rotating the adjusting rod (traditional) or the control knob (integrated). The blind is lifted with a lifting roller and locked at the desired height around the cord holder. The blind is lowered by releasing the lifting wire.

Surface installed blinds are used in fixed windows and balcony doors. The blinds are opened and closed by rotating the adjusting rod. Care should be taken in extreme positions, as over-slicing may break the adjustment mechanism. The blind is lifted and lowered from the cord next to the adjusting rod. Lift the blind up by pulling the cord. The blind locks to the desired height when the cord is released. To lower the blind, pull the cord to the side until the cord is released and descend it to the desired height.

Pleated blinds are suitable for all Skaala products: for both opening and fixed windows, balcony doors, and sliding glass doors. Pleated blinds can be smoothly adjusted to any desired position by gently pulling or lifting the blind. The operation of the blinds is based on the fabric folding accordion-style, which allows for precise control of light and privacy. Occasionally, it is also advisable to compress the blinds together to help them maintain their folds.

Maintaining blinds

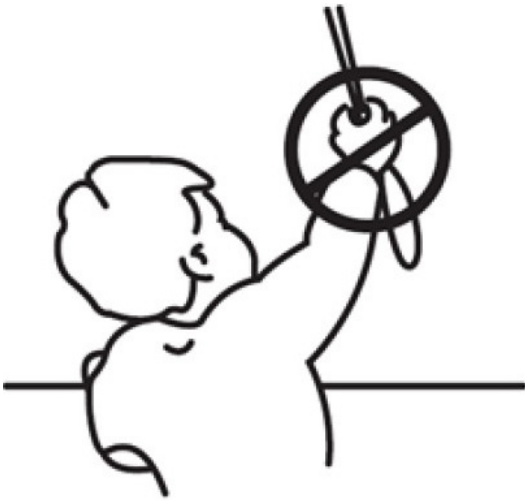
The blinds installed between the sashes do not require any special attention or maintenance. It is sufficient to vacuum them or wipe them with a damp cloth without detergent yearly.

The turning mechanism of non-integrated blinds needs to be greased with 100% silicone every two years.

Pleated blinds should be cleaned regularly by removing loose dust with a soft brush or a vacuum cleaner on a low setting. Gently wipe the blinds with a damp microfibre cloth and mild soapy water. Avoid applying excessive pressure. If the pleats become loose, you can lightly spray them with water from a spray bottle and bundle them tightly together at the top or bottom for 24 hours. This will restore their functionality. If necessary, check the operation of the pleated blind mechanism by adjusting the springs in the bottom rail.

! WARNING! Small children can be strangled by loops in pull cords, chains, tapes, and inner cords that operate the product. To avoid strangulation and entanglement, keep cords out of the reach of young children. Cords may become wrapped around a child's neck. Move beds, cots, and furniture away from window covering cords. Do not tie cords together. Make sure cords do not twist and create a loop.

For safety reasons, Skaala's windows are equipped with a special cord holder to get hanging cords out of the reach of children. Always wrap the cords around the string clip.



1.5 Fresh air vents

The fresh air vents must not be blocked since they ensure that the ventilation in the building works. It is recommended that you clean the filters in the fresh air vents at least twice a year.

Suvi fresh air vent

It is recommended to clean the filter of Suvi fresh air vents at least twice a year. The vent's magnetically attached cover can be easily removed without tools by pulling the cover outward. Inside the filter cover are foam filters, which can be cleaned by washing them in soapy water.

Watch the video!

Biobe- fresh air vent

The vent and the filter unit are removed by unfastening the screws from the frame. Inside the filter cover there is a cellular plastic filter, which can be cleaned with mild soap. Vacuum the air duct of the sound absorber, taking care not to damage the surface coating of the soundproof material. Install the parts back in place.

Check from your order confirmation the fresh air vent that is used in your window and see further maintenance instructions from the manufacturer's web page (i.e. **www.biobe.fi**).

1.6 Clip-on glazing bars

Removing clip-on glazing bars e.g. during wash. Use a screwdriver of an appropriate size. When opening the clip-on glazing bars, turn the screw 180 degrees counter clockwise, when fastening 180 degrees clockwise.

Releasing clip-on glazing bars

2. USING OUTWARD OPENING WINDOWS

Allswing system, 180 degrees:

Closed – handle turned right horizontally
Ventilating – turn the handle directly upwards, push the sash outwards from the handle until the child safety control clicks. If you want to open the window even more, release the child safety device by pressing the black button (in the right-hand side of the sash) and open the window further.

Sidehung:

Closed – handle turned directly downwards.
Ventilating – turn the handle horizontally and push the sash outwards from the handle.

3. USING EXTERIOR DOORS

The selected lock type affects using of the door. Skaala exterior doors come standard with an Abloy LC 102 lock case and adjustable counter iron. (If you have another locking option on your door, please see manufacturer's instructions.)

The Abloy LC102 has two operating functions: lock mode and daytime mode, which are set from the option button on the chest plate of the lock frame. The lock is in lock mode with the option button is in the top position and in daytime mode with the option button is in the lower position. In lock mode, the lock is opened from the outside with a key and the lock locks when the door closes. In daytime mode, the lock opens from the door button. Use the daytime function only when you are in an apartment and want to walk through the door without a key.

Opening the door with a key from the outside

- Turn the key clockwise until the key stops
- Turn the key back to the starting position
- Remove the key from the lock
- Open the door by the handle, the lock locks when the door closes
- Do not forget the key to the lock

Opening the door from the knob inside

- Turn the knob 90° clockwise until the knob stops
- Open the door by the handle
- The knob automatically returns to the horizontal position and the lock locks after the door closes

3.1 Using a balcony door

An aluminium cladded balcony door has an espagnolette, an opening device in the handle and a handle both sides and a knob inside as a standard. Locking mechanisms and lock cases vary depending on the balcony door and selected accessories.

- Abloy LC102 lock frame and exterior door handle; use as exterior doors
- Espagnolette and handles; To open the balcony door, turn the handle horizontally. When closing the door, the handle must be horizontal to prevent damage to the frame structure. When locking the door, turn the handle downwards and lock the door from the knob inside. If the door has a key cylinder, the door can also be opened and locked from the outside.

Doors with espagnolettes are equipped with a handle operating opening device.

- The opening device works when the door handle is turned
- Open the door to the desired ventilation position by turning the handle horizontally
- Turn the handle into the locked position (down) so that the door locks and does not move even under the influence of high winds
- If the handle is in the open position (horizontally), the door moves freely

! Do not move the door when the handle is either in the up or bottom position. Improper use may prematurely reduce the frictional force of the keeping device.

Maintenance of the opening device: If necessary, wipe it with a damp cloth. Lubricate the sliding part with a few drops of oil at least once a year.

Watch the video!

4. USING SLIDING DOOR

The sliding door is opened with the handle

- The handle upwards = the sliding door is closed.
- The handle downwards = sliding door is open.
- Unlock or close with the wrench or key.

! To open the door leaf evenly, slide only when the handle is in the open (downwards) position. The sliding door must always be stopped before turning the handle to the closed position. Turning from speed damages seals.

The product is made safe and user-friendly. Please ensure that everyone using the door receives appropriate guidance. Careless use can lead to hazards, such as compression between the sliding door and frame. For safety reasons, the sliding door must always be locked in place, even if it is open (handle upwards) so that it does not move by itself.

Watch the video!

5. MAINTENANCE OF SKAALA PRODUCTS

Your Skaala products require a minimal amount of care to give you trouble-free operation and remain in optimum condition for many years to come.

! Do not remove stickers from the sash or frame of the product that identify the product or indicate its specific characteristics (fire window, emergency escape road, etc.).

Spare parts and accessories for Skaala products can be ordered easily from Skaala's online store: **skaala.omaverkkokauppa.fi**/

5.1 Annual inspection

! We recommend checking the condition of windows and doors at least once a year to ensure undisturbed operation. In particular, the maintenance interval for dark/ specially toned products may be shorter than that of light toned products. The Skaala Warranty is only valid if the product is installed and maintained in accordance with Skaala's instructions.

Check annually the following and correct any deficiencies you may have identified without delay.

- condition of the paint of windows and doors
- fastening and operation of handles and locks
- cleanliness and condition of seals
- closing of windows and doors
- the cleanliness of the lower parts of the window frames and that the drainage and ventilation holes in the bottom frame in the windows are open
- fixing of the water dampers and openness of the drain holes in lower sash
- functionality of accessories

5.2 Maintenance of Skaala products

Skaala products are designed to require minimal maintenance. The need for maintenance of windows and doors is affected by regional and climatic conditions, such as the orientation of the building and the amount of rain and wind. Moisture in the structures, the installation method of the window, and the condition of the surrounding wall also influence the maintenance requirements of the windows.

Regular maintenance ensures the trouble-free operation of windows and doors, allowing you to enjoy the best possible results for a longer time.

- Doors should also be washed at regular intervals (at least twice a year) to prevent the surface from becoming a breeding ground for mold.
- The external surface treatment of wood and panel structures should be inspected annually. If there are dents or cracks in the surfaces, they should be repaired immediately.
- Broken glass can be replaced; we recommend having the replacement done by a professional.

- Modern surface coatings retain their properties for 5–15 years, depending on use conditions. To extend the product's lifespan, repainting should be carried out as needed, depending on dirt, moisture, and light conditions in the environment as well as mechanical wear.
- Any broken parts should be replaced with new, equivalent ones. Spare parts and accessories for Skaala products can be easily and affordably ordered from Skaala's online store: **skaala.omaverkkokauppa.fi/**

5.2.1 Washing windows

Wash your windows with lukewarm water with either normal window cleaner or mild dishwashing detergent. After washing, rinse the glass with clean water and dry with a drying spatula or chamois cloth. Tighter stains and splashes are carefully removed with suitable equipment. The window glass remains clear and scratch-free when you use mild detergents for washing.

Avoid heavy water use and dry corners with special care.

- If the window glasses contain stains that do not leave with normal detergents, it is advisable to remove them gently with a glass scraper.
- To remove glue, paint or similar dirt stuck to the surface of the window glass, it is advisable to use xylene, which can be obtained, for example, from hardware stores. Another, slightly more potent cleaning agent is acetone (e.g. nail polish remover) that removes paint more efficiently.
- Do not wash the painted surfaces of the wooden and aluminium parts of windows with xylene or acetone. Also be careful not to spill these substances onto paint surfaces when cleaning the window glass.
- After using the above solvents, the window must be washed again with mild detergent and water.
- The levelling material attached to the surface of the window glass during the construction phase must be cleaned without delay. Cleaning should always be carried out with plenty of water and mild alkaline detergent solution or xylene soaking.
- When cleaning the window, check that the drain holes in lower sash storm list are open. Clean away any dirt.

Observe when cleaning and maintaining glass with special coating

The following applies to selective and FrostFree glass in addition to what was described above.

- Avoid using abrasive cleaning equipment (such as scrapers and steel wool). Mechanical abrasion of glass can cause irreparable damage to the surface. The warranty does not include traces or damages caused by such implements or methods. Mechanical abrasion may remove the coating in places
- Avoid all contact between the glass and metal implements
- Avoid the use of all chemicals that might damage the coating permanently
- The use of strong acidic or alkaline substances is forbidden
- Do not clean the windows while they are exposed to direct solar radiation

Also note the maintenance of the fire protection window

- If the fire seals around the sash or the insulation glass itself is damaged, they must be replaced by similar products. In such a case, contact the manufacturer.
- Do not remove gaskets when washing or repainting windows. The seal in the fire protection window is a fire seal that swells and prevents the spread of fire in the event of a fire.
- Do not remove the pins on the hinges when washing the window
- When opening a large fire window (more than 1 m^2) during washing, it is essential to support the sash from below. With a fire window, the need for support is important already in a smaller size than a regular window, as the glasses on the fire windows are significantly heavier than normal glass.
- After washing and maintenance, make sure that you close all the window locks in the window.

When washing windows, please note:

- Check annually the seals and silicone seams in the product. Damaged seals should be replaced to maintain the energy efficiency of the product. Silicone seams shall be renewed if necessary to maintain waterproofing.
- Oil the fittings of the windows (hinges and locks) when washing them and at least once a year or if there is a malfunction (staleness, sounds, etc.). It is recommended to oil the fittings of the new product within the first six months.
- If necessary, adjust the sashes if they are, for example, pressed down and seem to be hanging. The fault can be in the hinges, and they can be easily adjusted with the help of a self-screwing pin hinge.
- When using mould wash solutions, check with the detergent supplier to see if the painted surface needs re-painting. Certain mould detergents may remove mould protectors from the paint.
- The aluminium cladding of the windows is maintenance-free. However, regular, and adequate washing is necessary at least once a year. Also clean the drain holes on the bottom sash at least once a year.
- The glass surface is resistant to stronger chemicals than wood, but a strongly alkaline solution can also corrode the glass. Concrete or concrete dust together with water can create traces on the surface of the glass.
- A window over 150 cm wide must be supported when opening.

5.2.2 Painted surfaces

The most common cause of damage to timber is humidity. It is important that the timber is allowed to dry before repairing damages or repainting. When painting the humidity of the timber must exceed 20%. While painting and letting the paint dry the temperature of the air, the surface and the paint must be above +5 °C and the relative humidity below 80 %.

! If the surface treatment of the product is only a wood protector with biocidal properties, the chart below applies. You can find the surface treatment type in the order confirmation or in ID-sticker by reading the QR-code using the Upcode-application and selecting the product information. The indication SK means that the substance in question has been used.

FACT SHEET for TEKNOL AQUA 1410-01
treated items

This item has been treated with wood preservative: ***(Regulated by the Biocides Regulation 528/2012, PT8)***	**TEKNOL AQUA 1410-01**
a) Items treated with TEKNOL AQUA 1410-01 contain:	Biocides approved for product type 8
b) Items treated with TEKNOL AQUA 1410-01 are protected against:	Wood destroying or discolouring fungi
c) Items treated with TEKNOL AQUA 1410-01 contain the following biocides:	Propiconazole, IPBC
d) Items treated with TEKNOL AQUA 1410-01 contain the following nanomaterials:	-
The wood preservative TEKNOL AQUA 1410-01 is produced by:	Teknos A/S Industrivej 19 DK-6580 Vamdrup Tel.: +45 76 93 94 00

e) Special precautions for items treated with TEKNOL AQUA 1410-01:

The surface of the wood must be coated with e.g. varnish or paint. Coating of the surface must be carried out at regular intervals.

Maintaining painted surfaces:

- Remove all loose/peeling paint mechanically; all other surfaces should be clean of dirt and dust. Hardened dirt can be removed by polishing with abrasive paper.
- Remove any potentially porous wood e.g. by polishing.
- Any potentially fungi infested parts should be washed with anti-fungus detergent, carefully rinsed with water, and allowed to dry.
- Bare wooden surfaces should be treated with a transparent timber preservation agent.
- Cover any potential cracks with putty (1 or 2 component putty).
- Paint the surfaces requiring paint in the colour you like. The exterior surfaces should be painted with elastic acrylic paint suited for outdoor use. The standard colour white is NCS-S 0502 Y and the glazing varnish 20.

In case there are only fine hair cracks in the painted surface, a light polish (removing the glazing) and a surface paint with a suitable indoor/outdoor paint is sufficient repair.

Maintenance of a glazed (pine) surface:

- Remove all peeling glazing mechanically; all other surfaces should be clean of dirt and dust. Hardened dirt can be removed by polishing with abrasive paper.
- Remove any potentially porous wood e.g. by polishing.
- Any potentially fungi infested parts should be washed with anti-fungus detergent, carefully rinsed with water, and allowed to dry.
- Cover any potential cracks in the surface treatment paint with the best suited wood putty

possible. Please note! When using putty, keep in mind that after applying a coloured glazing treatment to the mended places, the colour might differ slightly from that of the rest of the surface.
- The surface is to be treated with a transparent timber preservation agent of the original glazing colour and allowed to dry for approx. 24 hours.
- After the glazing treatment you can varnish the surfaces with a UV radiation resistant varnish in a colour of your own choice and meant for outdoor use.

Maintenance of veneered doors is performed as follows:
- If needed polish the surface lightly with abrasive paper, grain 180–240.
- Remove the polishing dust carefully.
- Wash the surface with a neutral detergent and allow it to dry for at least 48 hours.
- Oil the door with wood oil suitable for this treatment

Doors with a wood veneered surface are treated with wood oil at the factory. We recommend that you treat the door again as soon as it has been installed. A veneered door usually needs to be oiled regularly at least once a year. In demanding conditions you had better oil the door twice a year. Ask for more advice from your local hardware store.

Aluminium surface
Exterior surfaces of aluminium are maintenance free. However, it is necessary to wash them regularly and thoroughly at least once a year. If necessary, the aluminium parts can be painted with alkyd- or urethane-based paint suited for this purpose. The water draining holes in the lower lathes of the frames must be cleaned at least once a year.

5.2.3 Adjusting window hinges

If the window seals do not seal evenly on each side or the window does not work properly when opened, the window must be adjusted. Before adjusting ensure by cross-measurement that the window frames are installed directly.

Adjusting window hinges
- Remove the hinge pintles starting from the lowest hinge, open the locks and gently
- Rotate the hinges of the frame or sash as needed. The gap between can be between 1 mm and 4 mm.
- Fasten the frame and hinge pintles in reverse order.
- Check the operation of the window.

Watch the video!

Hidden hinge adjustment

The hidden hinges have versatile possibilities for adjustment. The position of the sash can be adjusted horizontally and vertically, and its seal pressure is also adjustable.

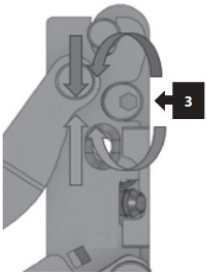
Horizontal hinge adjustment

- Loosen wood screws 1 and 2.
- Turn the eccentric screw head 3 to adjust the hinge's position.
- Tighten wood screws 1 and 2.
- Adjust both hinges, if necessary.

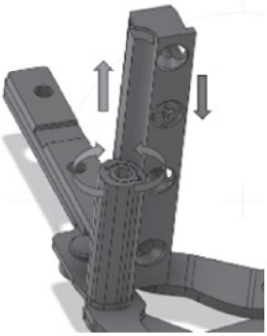
Eccentric screw head (3) adjustment

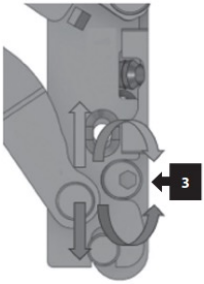
Vertical hinge adjustment

- Use screw 4.
- Tighten the screw to move the sash away from the frame.
- Loosen the screw to move the sash towards the frame.



! Note! Both hinges must be adjusted simultaneously to prevent them from pushing against each other and potentially damaging one or both hinges.





Seal pressure adjustment

To increase seal pressure on the hinge side, tighten screw 5 to move the sash towards the frame. Loosen screw 5 to reduce seal pressure on the hinge side.

Adjustment of window hinges is necessary in the following cases:

- If the upper edge of the inner sash is pressing tightly against the top of the frame: Tighten the lowest hinge of the inner sash two turns and the middle hinge one turn clockwise. Test the function and repeat if necessary. Depending on the centring of the sash, the adjustment can also be done by turning the top hinge two turns and the middle hinge one turn counterclockwise (outwards).
- The edge of the inner sash is pressing to the frame. Adjust the inner sash laterally. Turn all hinges of the inner sash 1–2 laps clockwise. Test functioning and repeat if necessary.
- The inner sash is tight at the bottom of the frame, impairing closing. The inner sash should lay on the frame slides at the bottom frame. If necessary, adjust the inner sash laterally by turning the top and bottom hinges of the inner sashes 1 to 2 laps clockwise. Test functioning and repeat if necessary. Alternatively, you can rotate the lowest and middle hinges for 1–2 laps counterclockwise.
- On the hinge side of the groove, the gap between the frame and the inner sash is bigger than on the opening side. The inner sash should then be adjusted in depth. Turn all the hinges in the frame clockwise for two laps. Test functioning and repeat if necessary. Finally, make sure that all frame hinges are at the same depth.
- The distance of the outer sash differs between the hinge side and the opening side: Adjust the outer sash in depth. If the larger gap is on the hinge side, turn all the outer sash hinges in the frame 1–2 turns clockwise. If the larger gap is on the opening side, turn counterclockwise. Repeat the procedure if necessary.
- The ventilation window does not close properly (the need for adjustment occurs in connection with the mosquito net and the clip-on bars). If the outer sash is too much out on either the opening or hinge side, adjust the sash in depth. If the tightness is on the opening side, adjust the switching pin of the opening device shorter: rotate the pin clockwise until the fault is corrected. Do the same in the opposite direction is on the hinge side and the window does not close properly, rotate all hinges in the outer sash two laps clockwise (closed) to allow the outer sash to come inwards. Test the functionality and repeat if necessary.

5.2.4 Removing the inner and outer sash from frames

! When removing the framework, there should always be at least two persons

Remove all possible goods around the window (furniture, curtains, plants). Open the window as open as possible. Unlock the possible opening device between the sashes, open separate the outer and inner sash. Support the removable sash carefully and tap of the sash is controllable by the assistant, remove the remaining hinge pins from the bottom up. Place the detached sash in a sturdy place and be careful, e.g. regarding wind.

Reattach the sash in reverse order.

Watch the video!

5.2.5 Attaching handles

Close the window with unattachable handle. Place the handle spindle in the middle hole so that the handle is pointing downwards. Loosely fasten the upper screw. Turn the handle 45 degrees and fasten the lower screw. Tighten both screws. Check the functionality. Handle screws may require re-tightening after short use or when construction conditions dry.

Attaching the door handle, refer to the manufacturer's instructions.

Watch the video!

5.2.6 Replacing seals

Checking the condition of window and door seals regularly, for example, annually when cleaning windows. Avoid installing the seal at a temperature below +5°C. Seals should be replaced if the seal is disconnected, torn or not elastic anymore. The good condition of window and door seals improves living comfort by reducing the feeling of draught in the apartment and preventing moisture and dirty from outdoor.

The old seals are carefully pulled out. Groove seals can be removed by pulling the seal out of the groove. Clean the surface for the seal installation well with vacuuming dirt or dust, a damp cloth and old glue, e.g. Acetone. Remove any staples.

New seals are installed in the same place as the former ones.

- Outer sash seal in frame upholstery: 5 cm gaps are left in the outer sash seal of the window at both top of the vertical side. The horizontals sides of the sash are completely sealed.
- The inner sash and frame of the window and the doors are sealed throughout. Cut the sealing angles as tightly as possible.

You can order window and doors seas from Skaala web shop **skaala.omaverkkokauppa.fi/**.

Watch the video!

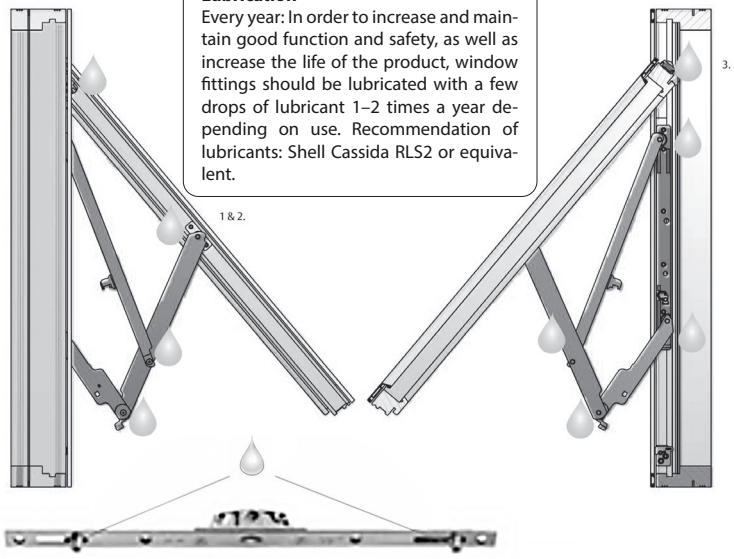
5.2.7 Maintaining outward opening window's

To ensure the functionality and longevity of the product, the hinges should be lubricated 1–2 times a year, depending on the use. We recommend using Shell Cassida RLS2 or similar.

In order to increase and maintain good function and safety, as well as increase the life of the product, window fittings should be lubricated with a few drops of lubricant 1–2 times a year depending on use.

Recommendation of lubricants: Shell Cassida RLS2 or equivalent.

Lubrication
Every year: In order to increase and maintain good function and safety, as well as increase the life of the product, window fittings should be lubricated with a few drops of lubricant 1–2 times a year depending on use. Recommendation of lubricants: Shell Cassida RLS2 or equivalent.



5.2.8 Maintaining doors

Maintenance of door locks and hinges is an effortless operation and should be done once a year. Check the tightness of the screws on the handle, lock and key cylinder and tighten if necessary. Lubricate locks and key cylinders once a year with lock oil.

Remember that the locks only work when the door is carefully closed.

Check the functioning of the hinges, the need for lubrication and the tightness of the fastening screws. By lubricating, you can prevent the metal dust at the bearing point of the hinges.

5.2.9 Adjusting the door hinges

! Adjust the door immediately if you notice any malfunctions or rubbing it into the frame.

Adjusting the door leaf vertically

- remove the head bolt from one of the hinges (see picture 1)
- turn the hex cap screw inside the hinge (2) clockwise until the door reaches the desired height (one turn lifts the door by 1,25 mm)
- adjust all the door hinges so that they carry the weight of the door evenly
- finally screw the head bolts of each hinge in place

Tools needed: hex key AV5.

Adjusting the door leaf horizontally
First, always ensure that the cross-measure of the door is accurate and that the frame is level. Since the door is in frequent use, the attachment of the frame might change due to movement in the structures or as a cause of wear.

Enlarging the turning allowance between the door and the frame on the hinge side
- loosen the mounting screws of the hinge in the door frame (3) by a couple of turns
- turn both hinge adjustment screws (4) clockwise as much as necessary (one turn moves the door leaf approx. 2 mm towards the lock side)
- fasten the mounting screws

Tools needed: hex key AV4 and a suitable screwdriver for the mounting screws

Watch the video!

5.2.10 Removing and attaching the door leaf

! When removing the door leaf, there must always be at least two people.

Make sure the lock is in the day lock position. Remove any door pumps and door brakes from the door leaf. Pull any blinds up and remove the adjusting levers. Open the door leaf at an angle of 90 degrees to the frame. Lift the door leaf directly upwards.

If the space is limited, you can remove the hinges from the door leaf and reattach them when the door leaf is in place. Do the following: Open the door leaf at an angle of 90 degrees to the frame. Support the door leaf from the bottom end against the floor. Make sure the door leaf is under the control of the assistant and remove the screws on the door leaf side of the hinges. Unattach the hinges out of the door leaf.

! The door leaf is heavy. Make sure that the weight of the door leaf is controlled by the assistant before removing the hinges.

! Do not perform the procedure in high winds.

! Make sure the removed door leaf remains upright.

Attach the new door leaf in reverse order. Close the new door leaf slowly, making sure it fits all over the frame.

Watch the video!

5.2.11 Maintaining and replacing the window and door espagnolette

Check the operation of the espagnolette at least once a year and lubricate it if necessary. Recommended to use Würth PTFE or HHS2000 spray. Spray oil on the side and moving parts of the espagnolette.

To replace the espagnolette, remove the handle with all the screws. The espagnolette front plate is then removed from all screws and espagnolette is pulled out of its groove. The new one will be installed in reverse order back into the groove. Please note that you will install the handle into the same position as when it was removed.

Order original Skaala spare parts from **skaala.omaverkkokauppa.fi/**

Watch the video!

5.2.12 Opening the door leaf of 2+1 stucture aluminium cladded door

Open the door to about 20 degrees angle to the frames. If the door has a brake, you can leave it in a locked position. Open the four locking levers on the locking side of the door leaf and open the aluminium frame outwards from the lock side.

Close in reverse order and lock all four locking levers.

! Do not perform the procedure when windy.

! The aluminium frame opens up to 40 degrees from the door leaf.

5.2.13 Maintaining door restrictor

If necessary, wipe the door restrictor with a damp cloth. Lubricate moving parts with a few drops of oil at least once a year.Recommended oil is, for example, Würth PTFE or HHS2000 spray.

Watch the video!

5.2.14 Maintaining sliding door

By maintaining sliding doors regularly, you promote the undisturbed operation of products and extend their service life. Washing and vacuuming rails is sufficient as a basic maintenance. The most important thing is to check that there are no small stones left on the rails, for example, which hinder the unobstructed sliding of the door.

The maintenance instructions for glass surfaces, sashes and frames, seams and silicone seams described earlier apply to the maintenance of the sliding door.

Note the following regarding hinges: Keep the sliding door hinges clean. Please note that there is no sand on top of the lower sliding rail, etc., which can damage the sliding door rollers. Cleaning the hinges can be done with all-round cleaners and mechanical parts should be lubricated with lock oil, for example.

Watch the video!

6. POSSIBLE PROBLEMS AND SOLUTIONS

See the frequently asked questions and Skaala's quality specifications on the **skaala.com** website.

There are air bubbles or scratches in the window glass

Traces which have arisen during the manufacturing process of the float glass may occur. The float glass used in windows is not required to be optically flawless; small traces or "bubbles" are approved in the quality specification of the window glass.

There are traces of glue or other stains on the window glass

Adhesive from stickers used during the manufacturing process may have remained on the glass surfaces and removing it with regular cleaning agents can be difficult. Most stains should be carefully removed with a glass scraper. To remove the rest, xylene is recommended. Wiping with a cloth moistened with xylene also helps with other stubborn dirt stains without damaging the glass. Another, slightly stronger cleaning agent is acetone (e.g., nail polish remover), which removes paint more effectively. Painted surfaces of wood and aluminum parts must not be cleaned with these substances, and care should be taken to prevent these agents from dripping onto painted surfaces when cleaning the glass. After using the solvents, the window must be washed again with a mild detergent and water.

Leveling material or concrete that has adhered to the surface of the glass during construction must be cleaned off immediately. Cleaning should always be done with plenty of water, a mild alkaline cleaning solution, or by soaking with xylene. Do not scrub or try to remove dirt when dry. Note! Concrete and water runoff from it will corrode glass and aluminum.

! Using mechanical cleaning equipment (e.g. glass scraper/razor blade) should only be used in extreme cases and with extreme caution. The warranty does not cover traces or damage to the surface of the glass caused by using mechanical cleaning equipment.

The windows make snapping or cracking noises

When temperatures vary, the external aluminium parts and the joining materials of the windows warm unequally. Snaps and light cracking noises are due to the different thermal expansion qualities of the different materials. This phenomenon mainly occurs in spring when temperatures vary greatly at different times of the day. Thermal expansion does not damage the window constructions. The construction design of Skaala products takes the thermal expansion of different materials into account and thus the materials can "move around" freely.

Condensation on the window (moisture on the inner surface of the outer sash)
The condensation is most likely caused by the fact that the warm air in the room is allowed to flow into the interspace and/or that the interspace is not ventilated properly. Follow these instructions.

- Make sure that all locks in the inner and outer sashes are closed.
- Check the insulation and seals of the inner sashes. You can check that the insulation is working properly with a paper test: Place a few centimetres wide strip of paper between the insulation and shut the window. By drawing the paper from the closed sash you can check that the insulation is sufficient. You should be able to remove the paper, but still feel the resistance of the insulation. Adjust the sash if needed. Check the insulation and the ventilation holes in the seals of the outer sashes. Make sure that air is allowed to circulate in the interspace.
- Make sure that the water holes in the aluminium profile in the windowsill are not blocked.
- Make sure that the house's ventilation settings are correct (negative pressure). Do not touch the supply and exhaust air vents after the ventilation has been checked, as this will alter the intended balance of ventilation (negative pressure). You can easily check the pressure balance with a simple test. Open the ventilation window slightly (about 2–3 cm), and hold a lighter's flame on the inside of the partially open window. If the flame bends outward, the room is over-pressurized. In this case, warm, humid air from the room may enter the interspace through, for example, the fittings or holes for venetian blinds, and the ventilation needs to be adjusted.

Condensation on the window (moisture on the inner surface of the window)
The condensation is most likely caused by the fact that the humidity in the room is high and that the glass surface is not ventilated properly. Follow these instructions.

- Make sure that the room is ventilated sufficiently.
- If there is a fresh air vent in the room/ window, check that it is open.
- A suitable relative indoor humidity is 35–55 %.
- Make sure that the indoor temperature is normal (20–22 °C).
- Make sure that the curtains, plants, and other objects are not preventing the ventilation by the window.

Under certain circumstances, moisture is always concentrated to the (in particularly lower) edges of a fixed window. This is due to the thermal bridges formed from the spacer bars of the insulation glass, which cools down the edge areas of the glass considerably. This phenomenon also occurs when the thermal insulation of the glass itself is high. In winter when outside temperatures are very low, this condensation can freeze along the edges of the glass.

In particular in stone houses, indoor humidity is higher than usual during the first few heating seasons due to the moisture issuing from the constructions. Whenever there is condensation on a fixed window, it is most important to make sure of the conditions mentioned above, i.e. ventilation, sufficiently low indoor humidity, and the ventilation of the inner window surface.

Condensation on the window (moisture on the outer surface of the window)

At certain times of year, when the humidity is high, there may also be condensation on the exterior of the outmost glass of the windows. The condensation is caused either by the low temperature inside the building or by the efficient thermal insulation of the window. The heat radiating from inside is insufficient and fails to keep the glass dry.

Condensation is formed on the exterior of the outer glass when the indoor temperature (and condensation point) outside rises more rapidly than the temperature of the exterior of the outer glass. Condensation on the exterior of the outer glass usually forms during the night and before dawn, mostly in spring and autumn. The phenomenon is also known to occur during particularly cold spells in winter. In temperatures below zero, the humidity on the exterior surface freezes.

The condensation will disappear either when the air gets warmer (the heat dries the external surface of the glass) or colder (the condensation point becomes lower than the surface temperature of the glass, and thus the humidity evaporates). Condensation does not damage the window. Temporary condensation on the exterior surface is a quality of the thermally well-insulated window.

Condensation on the window (moisture in the interspace of insulation glass elements)

Should humidity concentrate in the interspace of insulation glass elements, the insulation of the insulation glass element is faulty. If this occurs during the 10-year insulation warranty period, we will deliver a new glass element.

There are insects or dust in the window's interspace

The basis for the functionality of double sash windows is that the interspace between the inner and the outer sash is ventilated. This is arranged for by ensuring that the seals have ventilation gaps which allow the air to circulate. There are also water holes in the aluminium profile in the windowsill. The holes have two functions: They regulate and lead away the rainwater falling on the profile and enable the ventilation of the interspace. The size of the water holes is measured exactly to make sure that the water is removed.

! If the water holes or the ventilation gaps are blocked, this might damage the product or the structures surrounding it.

The amount of potential dust and insects in the interspace depends on the location of the residence and the cardinal direction. In certain conditions fine snow might enter the interspace. This does not mean the product is faulty but is due to an interaction between its qualities and the environment.

! Insects cannot get inside the house when windows are shut properly.

The fittings are coming loose (applies to both windows and doors)
Fittings to come loose is a normal consequence of usage. However, you can prevent this by using e.g. screw couplings available at hardware stores and car supply shops.

The fittings are working poorly and/or making abnormal noises
Clean and oil the fittings thoroughly, for example with a general-purpose lubricant or sewing machine oil.

! Remember also!

You can find instruction videos for using and maintaining Skaala products on Skaala's website: **skaala.com/fi/palvelut/ohjeet/**

You can easily and affordably order spare parts and accessories for Skaala products from Skaala's spare parts online shop: **skaala.omaverkkokauppa.fi/**