SORA

Create your own view

USE AND MAINTENANCE INSTRUCTIONS

Issue 09 (february 2021)

CONGRATULATIONS!

You have decided to purchase M SORA products, that were created with state-of-the-art knowledge, technology and quality. Our products are the result of long-running development and tradition. Our intention is to connect the warmth of nature with the familiarity of your home.

Thank you for your purchase.

IMPORTANT IN A NUTSHELL!

- **Remove labels on glass and do the first cleaning of glass surfaces immediately after the installation of windows.**
- **For your well-being and benefit it is important to air out the rooms sufficiently.**
- **Better durability of windows is achieved by maintaining appropriate moisture in rooms.**

The use and maintenance instructions are part of general sales conditions.
We reserve the right to change details, technology and types.
The warranty is valid only if accompanied by the receipt.
We allow the possibility of inconsistencies in the text.
Teritorial validity: Republic of Slovenia

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1 WARNINGS

1.1 General guidance

All M SORA products (windows, doors, shading systems, sills and belonging elements) are high-quality products. In order to preserve quality, durability and flawlessness of products and to protect people you should consistently follow all instructions hereunder. Otherwise, improper use may result in permanently damaged products, physical injuries and may render the warranty void.

1.2 Follow the instructions

Prevent storage of products in buildings, where air humidity exceeds 55%. Otherwise it may result in swelling of wooden parts, deformation of installation elements, damages on hardware due to corrosion and formation of mould

During installation prevent any mechanical, climatic and chemical influences, which might damage the products. Products should be appropriately protected from such influences.

Protective materials (such as strips, foil, spacer, etc.) must be compatible with materials of finished products and must be easily removable.

If surfaces of products are still dirty despite being cleaned, due to masonry or painting works, it is required to clean such surfaces with non-agressive cleaning agents as soon as possible.

Regularly check the quality of the belt for controlling roller blinds in order to prevent unpredicted lowering and possible damages to roller blinds.

If the door operating system is equipped with a rubber pin in the ground, it should be mounted in the middle of open doors. The rubber pin protects the doors from impacting nearby walls or furniture. Proper position prevents the possibility of any damages to the hardware.

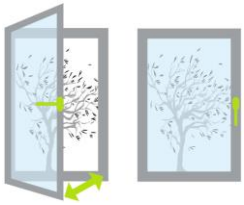
It is recommended to regularly check proper adjustment and tear and wear of main hardware parts. If individual parts of hardware get loose, it is required to tighten the screws again or replace them.

If windows or doors are open, be careful not to let individual parts of your body get caught between the window sash and window frame so as to prevent any physical injuries.

In homes with small children there is a risk of falling through the window when opened. To prevent that from happening we recommend installing handles with a lock.

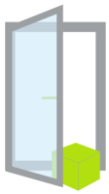
Additional load of window sashes may result in permanent damage of windows.

There is a risk of injury, if the window is opened when there is high wind activity or draught. In windy weather windows should be closed and bolted.



Prevent window sashes from swinging uncontrollably (due to wind, for example). Otherwise, this may damage hardware, frame elements or other parts of windows or doors.

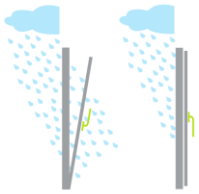
If wind speed exceeds 60km/h, roller blinds or Venetian blinds must be put in the proper condition (roller blinds headbox), shutters must be fully closed and bolted, as otherwise products may be permanently damaged.



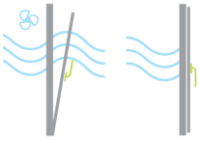
Make sure there are no obstacles between the sash and the frame when closing the window.

Normal glass can be easily broken. This results in sharp sickle-shaped particles that may cause serious physical injuries.

Normal glasses are not resistant to burglary, breakage and are not additionally protected from fire.



Windows (doors) opened on their vertical or horizontal axis do not meet the air-tightness, sound-proof, heat insulation and anti-theft requirements.



Closed windows don't provide the required air exchange that would be optimum for the well-being of people. Appropriate airiness is achieved only with regular ventilation.

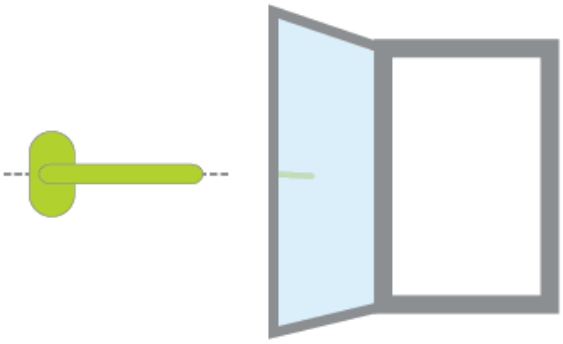
2 USE OF PRODUCTS

2.1 Windows and balcony doors

M SORA windows are more than just protection, they provide more than a view of the surrounding scenery and they are more than just a product. They embody the homeliness of wood, they are part of living and a part of personal style. They possess all features of excellence. State-of-the-art production, innovation and the latest technologies are vital part of our windows.

The majority of M Sora windows includes installed hardware (handle and belonging mechanisms), which enable three different window positions.

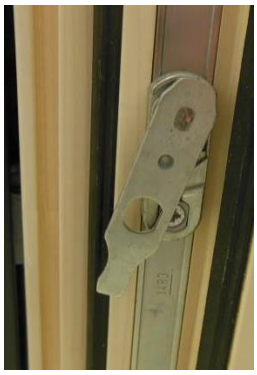
If the handle is turned downwards, the window is closed and bolted.



If the handle is in a horizontal position, the window can be opened on its vertical axis.

If the handle is turned upwards, the window is opened on its horizontal axis.

Slika 1: opening and closing the windows



Slika 2: sash lifting device

Slika 3: Mechamism for opening double-sash window or balcony door without a mullion

Standardly installed hardware includes a sash liftig device, which prevents simultaneous opening of window on its horizontal and vertical axis.

When a double-sash window comes without a mullion, the first sash (sash with a handle) is opened as described above (Picture 2), the other window (sash without a handle) is opened by pulling a restrictor arm (Picture 3) to the side. To open the other window the first window must be opened first.

2.2 Panoramic Windows

2.2.1 Folding Windows

Slika 4: Folding windows

Folding windows is enabled by a folding opening system. This way all sashes can be opened to one side, or partially to one and partially to the other side. Folding windows can also be made without a threshold, which is appropriate only for mild weather conditions.

Opening a sash with a handle is the same as in windows and balcony doors, as can be seen in Picture 1. When doing this make sure all handles are in open position.

2.2.2 Slide-Tilt Windows

M SORA Slide-Tilt Windows standardly include Alversa PS Air COM hardware. This allows ventilation with tilted sash and simultaneous opening or closing the doors.

Slika 5: Slide-tilt windows

2.2.3 Lift-Slide Windows

To open a sash of a lift-slide window swing the handle 180°C downwards. This causes the movable window to rise slightly, and to open it simply pull it in the desired direction. By moving the handle again to its initial position the sash can be fixed to any position.

Until the sliding mechanism (set of wheels) reaches the bottom sliding profile, the handle is in backlash (approximately 30°).

Slika 6: Backslash of the handle

Slika 7: Lift-Slide windows

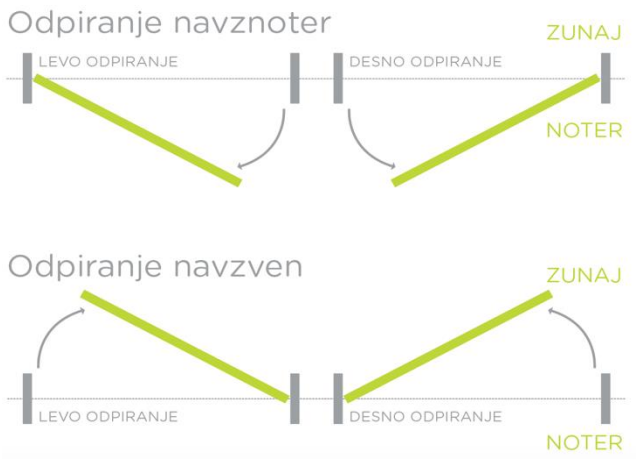
2.2.4 Glass corners, large fixed glazing

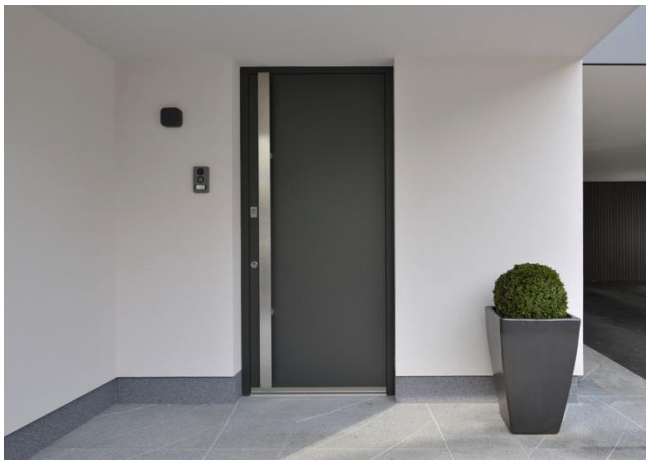
Slika 8: Glass corners and large fixed glazing

Modern architecture increases the proportion of transparent surfaces of the building envelope. This gives the resident the sense of coexistence and connectedness with nature. To this end, we offer our clients many possibilities of glazing of large surfaces with fixed glass windows and glass corners.

2.3 Front doors

M SORA offers classic front doors or doors made of massive plates with metal reinforcements inside. We also make passive-type doors. The dimension and design of doors can be adapted to your wishes. Each door produced by M SORA is a unique specimen.



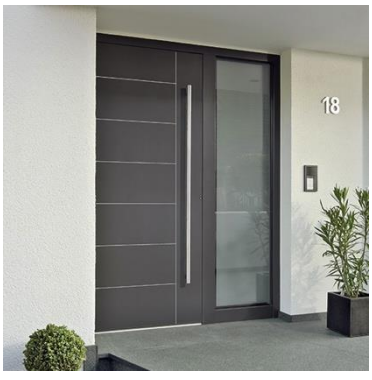


Slika 9: possible directions of opening

Doors can be opened by pushing the handle down. The locking system depends on the installed lock. Instead of a doorhandle you can use a grip on the outside. This way door can be opened or unlocked from the outside only with a key. When electrical receive is installed, unlocked door can be opened with a switch (such as, intercom). To open locked door with an electrical signal you need an electronic lock. However, it should be noted we don't perform connections of electronic locks; this will be done by an electrician.

handle

doorknob



grip

2.4 Additional equipment

2.4.1 Opening of Transom windows

Transom windows provide additional light to the room. Users seem to opt for them particularly when there are big openings and a single window would be to big or when we want to make the opening appear smaller.

Slika 10: Transom windows

There are four systems of opening transom windows, which are presented on pictures below:

- handle
- lifting handle
- switch
- remote controlled electric motor

2.4.2 Venetian Blinds

If you want to shade your room additionally and also enhance its apperance, M SORA recommends the use interior or exterior Venetian blinds. They are made of aluminium or wood slats..

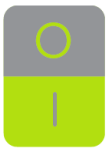
Slika 11: žaluzije

Venetian blinds are opened and regulated in several ways:

- remote controlled electric motor
- switch
- operating chain
- single-command

operating chain (only with inside blinds)

single-command



switch

remote controll

2.4.3 Roller Blinds

Roller blinds are shading systems that result in complete darkening of a room, and also provide excellent sound and heat insulation. They protect us from weather inconveniences and unwanted prying eyes. Apart from their functionality roller blinds also have a decorative function.

Types of roller blinds:

- Top-mounted roller blinds (blinds headbox is hidden under the facade).
- Front-mounted roller blinds can be placed over the plaster and can be front-mounted subsequently (the blinds headbox is visible).

Top-mounted, under-plaster

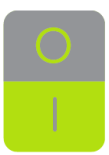
Front-mounted, under-plaster

Front-mounted, over-plaster

Slika 12: Various types of roller blinds

belt

single-command



switch

remote controll

2.4.4 Shutters

Shutters are a traditional means of shading and in some cases they are an irreplaceable protection against weather nuisances and burglaries. They also significantly enhance your facade.

Slika 13: različni tipi polken

Shutters can be opened manually, by means of an internal guide or with an electric motor. Shutters are available with fixed louvers, movable louvers or as full shutters.

Warranty does not applz for surface treatment of shutters.

2.4.5 Self-Closing Mechanisms

Slika 14: door self-closing mechanism

Self-closing mechanisms for automatic opening and/or closing can be installed on windows, balcony doors and front doors.

2.4.6 Insect Screens

We offer many different types of insect screens. Contemporary option is an integrated insect screen in a roller blind headbox. All insect screens are made of aluminium frame.

Slika 15: sling insect screen

Slika 16: retractable insect screen

Slika 17: swivel-frame insect screen

Slika 18: fixed insect screen

Fixed insect screen is fixed directly to the window frame or into the opening. It is extremly light and durable. It is also available in non-standard shapes (trapezium, triangle, etc.).

Like a roller blind, a retractable insect screen is rolled into its locker box, where it stays protected and hidden. It can be opened vertically or horizontally. The advantage of this type of insect screen is a »CLICK« system of opening. An excellent and sophisticated alternative to this system is a sliding insect screen, which is usually recommended in larger elements.

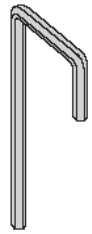
A sliding insect screen includes a fixed frame that slides on special aluminium rails. It protects you against insects on your way to a terrace or balcony. The sliding frame is available as a one one-wing or a two-wing unit.

Similarly to the window sash, a swivel-frame insect screen is opened from the inside. It is installed on balcony doors and front doors. It can be installed on the window or into the opening.

3 SETTING OF HARDWARE

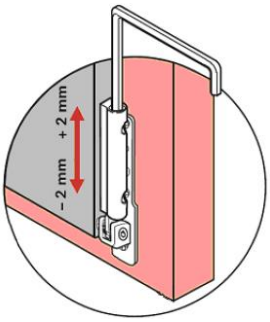
We advise you to leave the installation and hardware setting of all our products to the hands of experts. If you intend to do this by yourself nevertheless, follow the instructions below consistently.

3.1 Windows and balcony doors



Windows and balcony doors must be placed in an optimum position at the moment of installing. This is to ensure optimum operation of windows. Minor adjustments can be done subsequently by turning screws on the hardware. For this purpose we usually use Allen key of two dimensions (2.5 and 4).

Slika 19: allen key



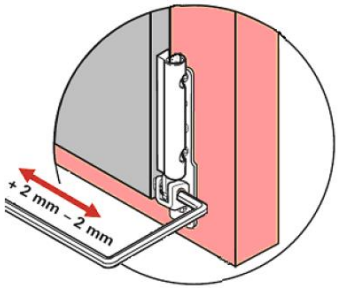
For height regulation of a window sash adjust the screw on the bottom hinge. Remove the decorative protection piece and use the Allen key no. 4 to adjust the height of the window. By turning the screw clockwise the window goes up, by turning it in the opposite direction it goes down.

Slika 20: Height adjustment of window (bottom hinge)

On the bottom hinge we can also set the contact pressure of a sash to its frame. If you want the sash to fit more tightly to the frame, the marked screw must be turned clockwise (picture 27).

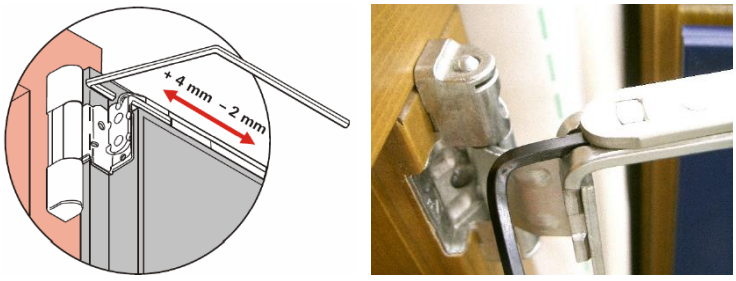
Movement of the sash is regulated by Allen key (no. 2.5).

Slika 21: Moving the sash to the frame (bottom hinge)



The horizontal movement of the sash can also be regulated by a screw on the bottom hinge. Access to the screw is possible on one side when the window's closed or on the other side when the window's open.

Slika 22: Horizontal movement of window (bottom hinge)



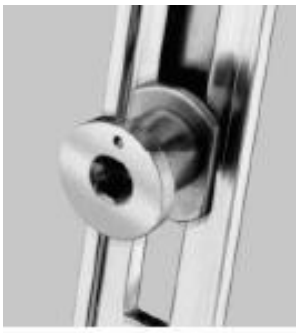
Slika 23: vodoravni premik okna (zgornji tečaj)

Horizontal movement of the upper part of the sash is regulated by a screw on the top hinge. Turning the screw clockwise moves the sash to the direction of the hardware.

Slika 24: Tightening of the upper part of the window (top hinge)

Also on the top hinge we can regulated the pressure of the sash to its frame. If you want the sash to fit more tightly to the frame, rotate the screw clockwise.

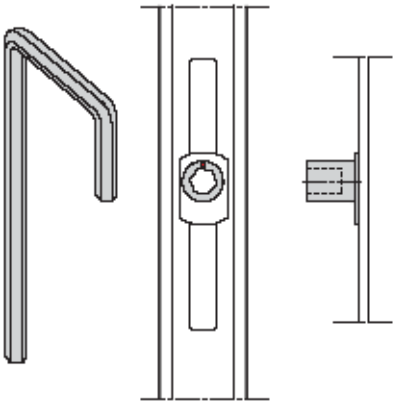
Gasket compression adjustment of window throughout its surface (on the handle area) is adjusted by changing the position of the locking cam below. The same applies to the tightening of sashes in a double-sash window

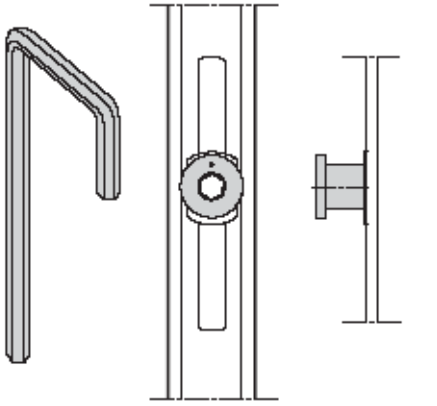


Slika 25: locking cam for adjusting

Schließzapfen E	Verstellweg in °	Anpressdruckver-stellung in mm
	Grundstellung	-
	90° 90°	↑- 0,8

Schließzapfen P	Verstellweg in °	Anpressdruckver-stellung in mm
	Grundstellung	-
	90° 90°	↑- 0,8





Slika 26: gasket compression adjustment

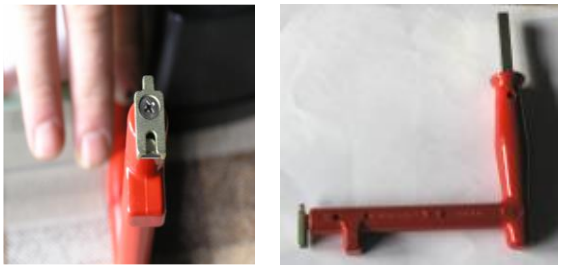
Find video on: www.m-sora.si/pomoc/nastavitve.

Hinging and unhinging a sash into the frame

Sometimes, during the installation of windows or in subsequent house renovations it is required to take the sashes off the frame. In doing this, please observe the following instructions and warnings.

Sash of windows and balcony doors can weigh up to 130kg!

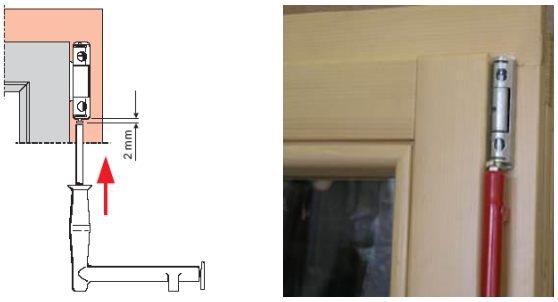
1. To unhinge the sash special handle is required.



Slika 27: Pin extractor handle for taking off window sash

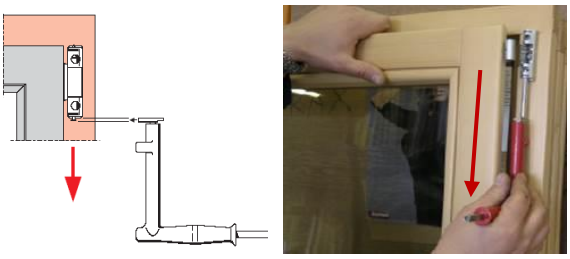
2. Window sash should be ajar.

3. Pull the pin down and take it out.



Slika 28: Picture of hinge

4. Open the window by 90° and take out the upper part from the hinge.



Slika 29: Pulling the hinge out

5. The window is only mounted on the bottom, so all there's left to do is lift the sash from the pin.

Slika 30: Taking the sash off

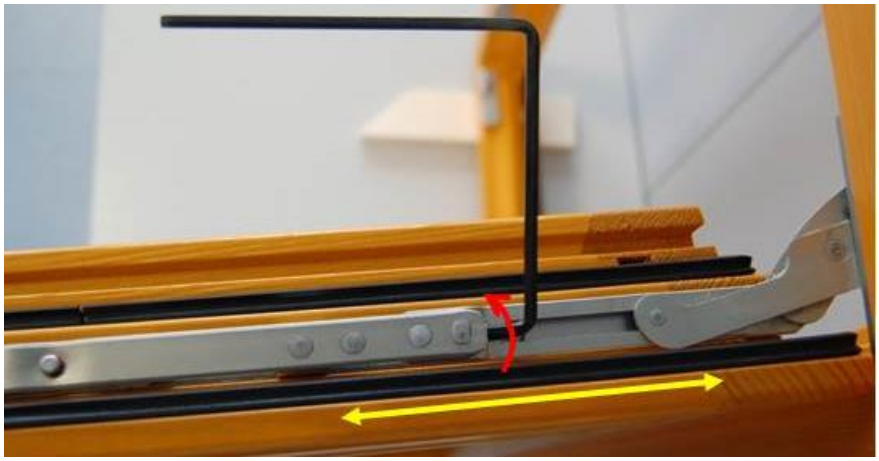
6. To insert the sash back into the frame simply follow the same instructions in the reverse order.

Make sure that after installation pin is in the proper position, as shows on the picture. Otherwise, the sash may fall off.

3.2 Adjustment of Concealed Hardware

Video prikaz nastavitev skritega okovja najdete na www.m-sora.si/pomoc/nastavitve.

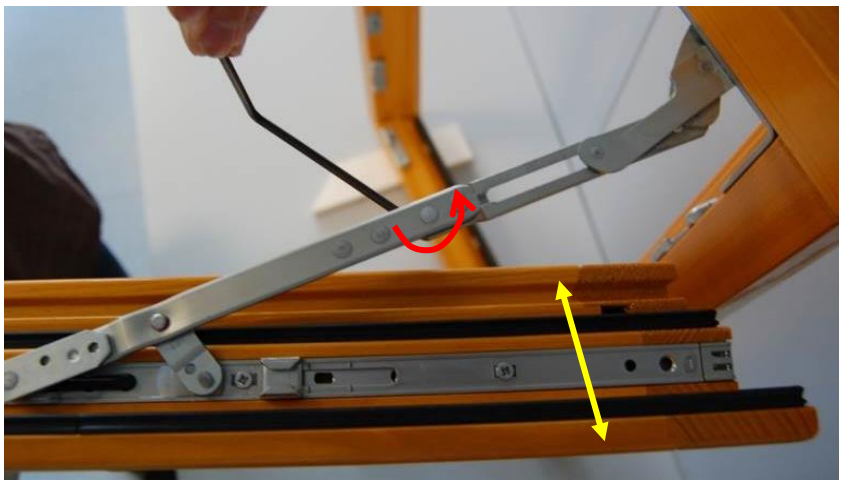
Used the enclosed Allen key (4 mm) to adjust the concealed hardware. For horizontal regulation of the window sash adjust the screw on the top and bottom parts of the sash. By turning the screw on the top part of the sash in the direction of the arrow, the sash will move closer to the frame. By turning the screw on the bottom part of the sash in the direction of the arrow, the sash will move away from the frame.



Slika 31: Horizontal movement (top)

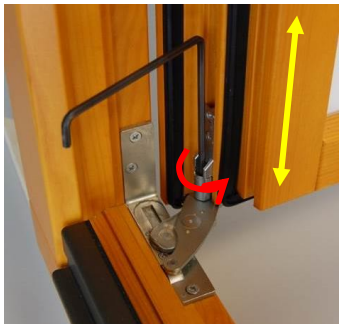
Slika 32: Horizontal movement (bottom)

Use the enclosed 4 mm Allen key to move the sash away from the frame and adjust the pressure of the sash and seals on the frame. This can be done on the top and bottom parts of the sash. In both cases, by turning the screw in the direction of the arrow, the sash will move away from the frame.



Slika 33: odmikanje krila od okvirja (zgoraj)

Slika 34: odmikanje krila od okvirja (spodaj)



Slika 35: Sash height adjustment

Use the 4 mm Allen key to adjust the height of the window sash. The height can be adjusted by turning the screw on the bottom hinge. By turning the screw in the direction of the arrow, the sash will move down.

Removal and Installation of the Sash from/into the Frame

Sometimes it is necessary to remove window sashes from the frame for window installation or in subsequent house renovations. In that case, please follow the instructions and warnings below.

Find video on: www.m-sora.si/pomoc/nastavitve.

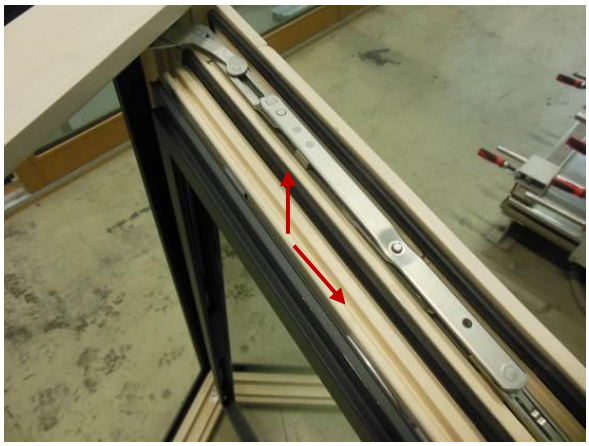
Window sashes and balcony doors may weigh up to 130 kg!

1. Fully open the window sash.

2. When the window is fully opened, turn the handle upwards as if tilting the window. In the open position of the window, when turning the handle upwards, move the level guard to a vertical position.

Slika 36: Movement of the level guard to a vertical position

3. Slightly tilt the window sash and unhook (lift) and put out a part of the movable hardware – "scissors" on the top of the window sash.



Slika 37: closed scissors

Slika 38: open scissors

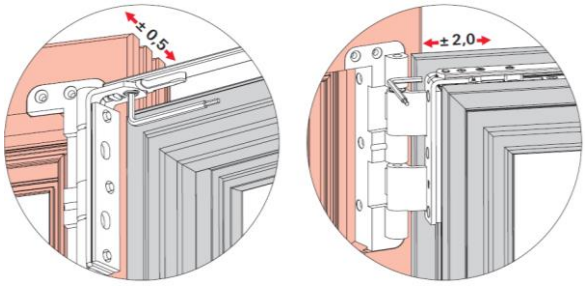
4. Move the sash into a slightly open position, lift it and remove it from the frame (lift it from the pin).

3.3 Adjustment of Power Hinge Hardware

Find video on: www.m-sora.si/pomoc/nastavitve

Construction material of the installed Power hinge hardware is checked and adjusted (if necessary) immediately after the installation of the window. All adjustments are made with the size 4 Allen key.

Adjustment on the upper hinge of the frame

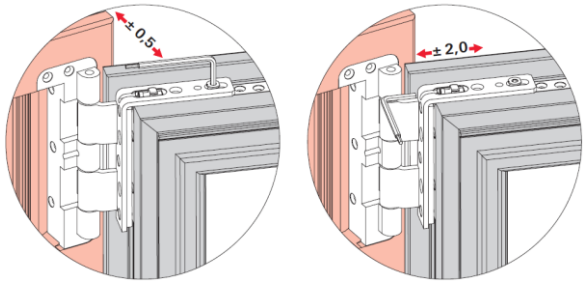


Slika 39: Adjustment on the upper hinge of the frame

Distance between the sash and the frame: ± 0.5 mm. Turn the screw by 90° to move the sash by 0.5 mm left or right, depending on the direction of rotation. By 180° or 360° degree movement, the position of the sash will equal the initial position.

Transverse adjustment: ± 2.0 mm. By turning the screw clockwise, the sash will move closer to the frame.

Adjustment on the upper hinge in the groove of the sash

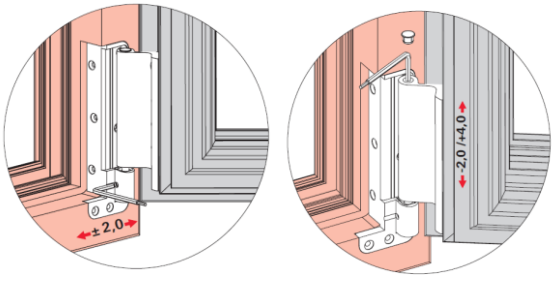


Slika 40: Adjustment on the upper hinge in the groove of the sash

Distance between the sash and the frame: ± 0.5 mm. Turn the screw by 90° to move the sash by 0.5 mm left or right, depending on the direction of rotation. By 180° or 360° degree movement, the position of the sash will equal the initial position.

Transverse adjustment: ± 2.0 mm. By turning the screw clockwise the sash will move closer to the frame.

Adjustment on the lower hinge on the frame and in the groove of the sash

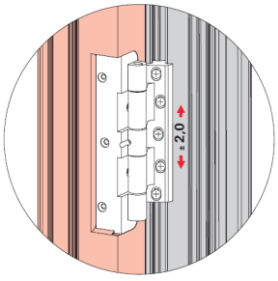


Slika 41: Adjustment on the lower hinge of the frame (left) and in the groove of the sash (right)

Transverse adjustment: ± 2.0 mm. By turning the screw clockwise, the sash will move closer to the frame.

Height adjustment: -2.0 mm / +4.0 mm. By turning the screw clockwise, the window sash goes up, by turning it in the opposite direction, it goes down. Remove the cover from the corner hinge before the adjustment.

Adjustment of the middle hinge



Slika 42: Adjustment of the middle hinge

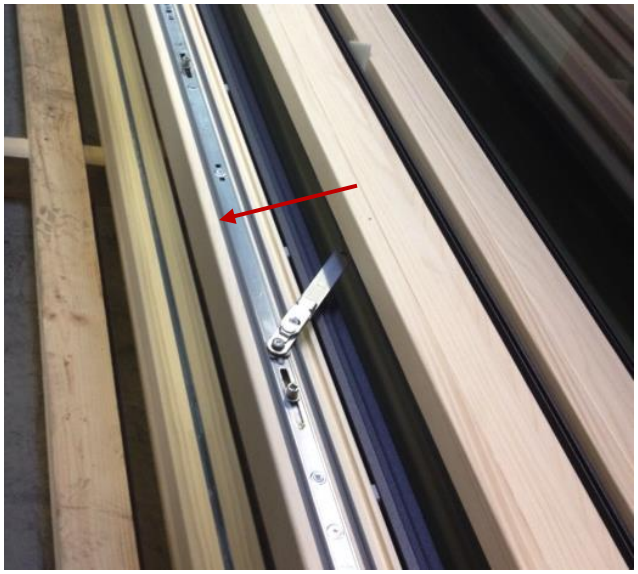
Height adjustment: -2.0 mm (rotational sash only)

Before you begin unscrewing, make sure that you open the sash as wide as possible. First loosen the screws of the middle hinge, then adjust the height on the lower hinge in the groove of the sash and re-tighten the screws.

3.4 Releasing the Sash from the Scissors - 90° Opening

Find video on: www.m-sora.si/pomoc/nastavitve.

Sash opening from the scissors is usually used on large elongated windows that are closed most of the year or are only tilted (horizontally). In order to wash the window from the outside, it is necessary to remove the sash scissors on the top and open the window at 90°. However, the window should be supported or held throughout the washing process. The window sash will not remain in this position without the support. If the window is not supported, the hardware may become damaged and the sash may fall off the hinges.



Slika 43: tilting the window

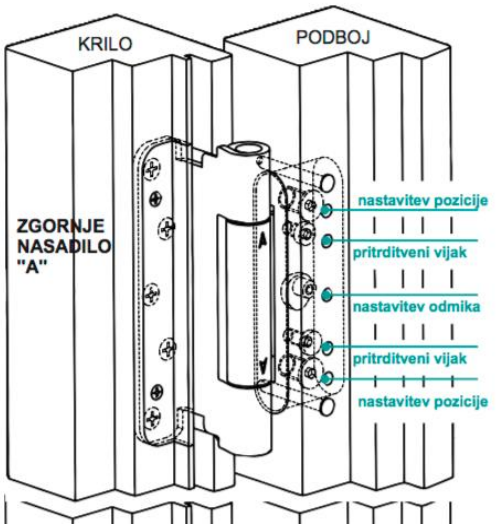
Slika 44: Sash scissors

Slika 45: Releasing the scissors by pulling up

Slika 46: Final position – the window sash should be supported

3.5 Front Door Adjustment

3.5.1 Adjustment of the front door visible hinges

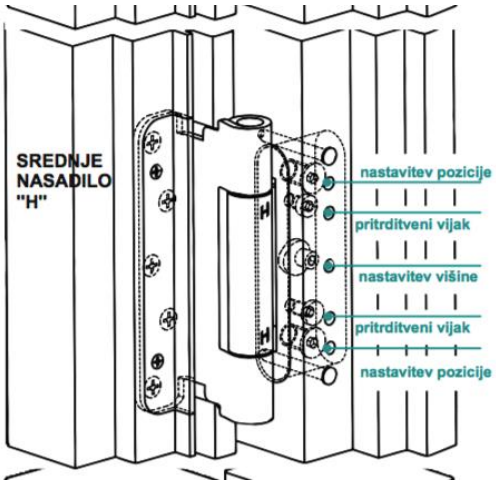


Distance adjustment - sealing of the sash +/- 3.0 mm

- Slightly loosen the fixing screws on all the hinges
- By turning the adjusting screw (Allen key SW 4) on all the hinges marked with “A” (upper and lower hinge), set the appropriate distance between the sash and the frame and increase or decrease the sealing
- Re-tighten the fixing screws on all the hinges of the frame

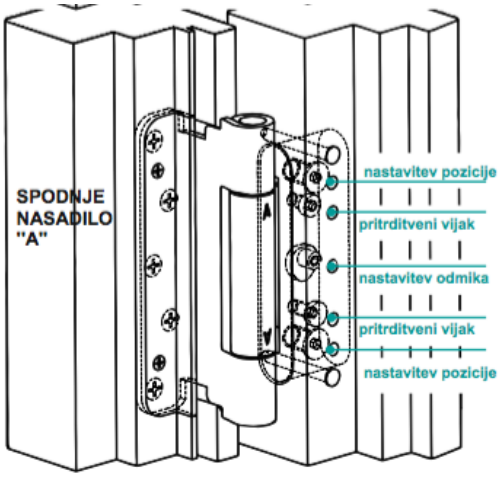
Height adjustment +/- 3.0 mm

- When adjusting the sash height on the middle (H) hinge, it is not enough to only use the Allen key
- To set the highest desired position! -Therefore, when adjusting the height, you need to use a device for lifting the sash (e.g. torque rod/support or inflatable support pad)
- Attention! When lifting the sash by using such instruments, be careful not to damage the door surface
- Open the door before the adjustment process and place a wedge underneath it
- Slightly loosen all six fixing screws on all three hinges
- By means of an instrument lift the sash to the desired position and simultaneously adjust the central screw for height regulation on (H) hinge by using the Allen key
- When you reach the appropriate position of the sash, tighten the fixing screws on the central (H) hinge. On the upper and lower hinges push the movable parts of the hinges on the frame to the highest position (preferably hammer them upwards by using a plastic or a wooden hammer) and tighten the fixing screws



Adjustment of sash position / fissure uniformity +/- 3.0 mm

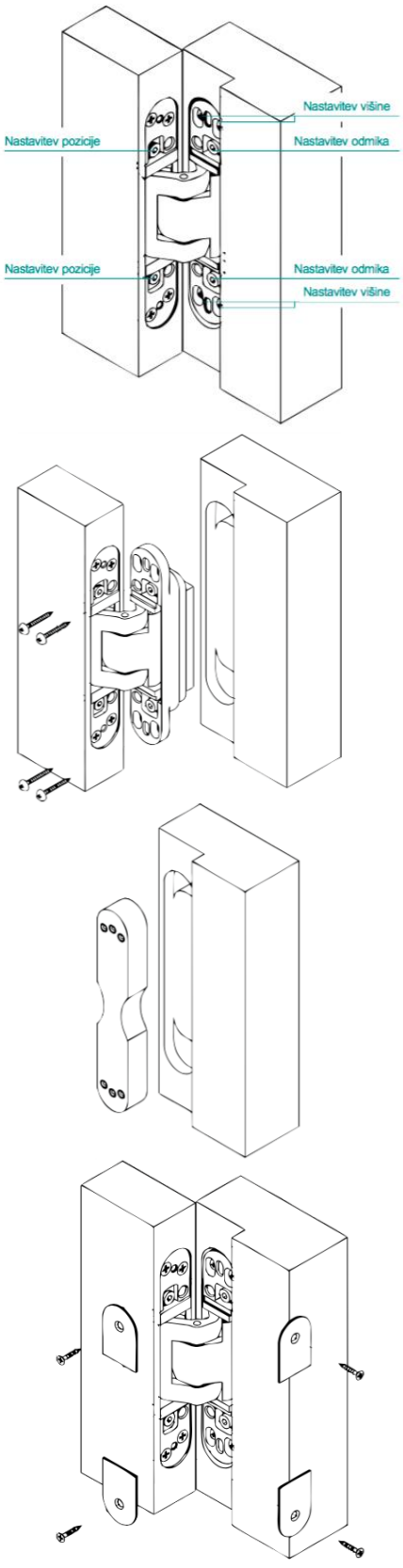
- Slightly loosen two fixing screws on all the hinges
- By turning the adjusting screw (Allen key SW 4) place the sash in the appropriate position
- Try to achieve an equal fissure between the sash and the frame
- Re-tighten the fixing screws on all the hinges



Attention:
If the door opens outwards, first loosen the fixing screws on all three pins.
Then you can hammer out the pins and unhinge the door.

Slika 47: Adjustment of the front door visible hinges

3.5.2 Adjustment of the front door concealed hinges (TECTUS TE 640 3D A8)



Slika 48: Adjustment of the front door concealed hinges

Three-dimensional continuous adjustment

Position adjustment +/– 3.0 mm
Height adjustment +/- 3.0 mm
Distance adjustment +/- 1.0 mm

Adjustment of sash position - fissure uniformity

- By turning the adjusting screw (Allen key SW 4) place the sash in position
- Rotation to the left – to the side of the hinges (max. 3 mm)
- Rotation to the right – to the side of the lock (max. 3 mm)

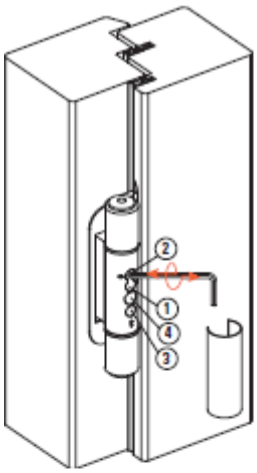
Height adjustment

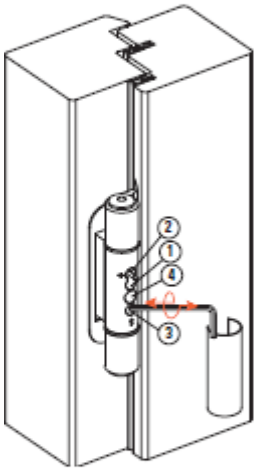
- Place the wedges under the sash
- Slightly loosen the fixing screws on all the hinges of the sash
- Lift or lower the sash in the appropriate position by means of the wedges
- Re-tighten the fixing screws on all the hinges of the sash

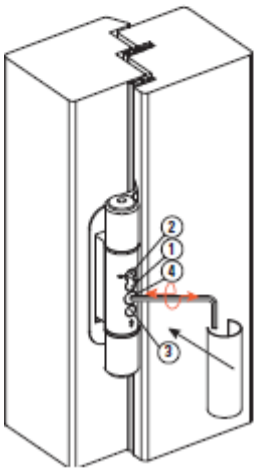
Distance adjustment - sealing of the sash

- Slightly loosen the fixing screws on all the hinges of the sash
- By turning the adjusting screw (Allen key SW 4) place the sash in position
- Re-tighten the fixing screws on all the hinges of the sash

3.5.3 Adjustment of the front door visible hinges (SFS EASY 3D-20-24)







Slika 49: Adjustment of the front door concealed hinges SFS Easy

Adjustment screws are placed on the front side of the door hinges. They enable independent mechanical adjustments that can be done with 4mm Allen key. Every hinge can be adjusted in thre dimensions, to ensure the best load distribution.

Three-dimensional continuous adjustment

Position adjustment +/– 3.0 mm
Height adjustment +/- 3.0 mm
Distance adjustment +/- 1.0 mm

Adjustment of sash position (to the left side) - fissure uniformity

- Loosen the screw 1
- Re-tighten the screw 2

Adjustment of sash position (to the right side) - fissure uniformity

- Loosen the screw 2
- Re-tighten the screw 1

Height adjustment

- Adjust the height on the screw 3
- For efficient load distribution adjust height firstly on one hinge and then adjust the other two
- Height adjustment is self-locking mechanism

Distance adjustment - sealing of the sash

- Adjust the distance on the screw 4
- Distance adjustment is self-locking mechanism

Cover the hinges with cover caps when adjustment is finished.

3.5.4 Adjustment of the front door concealed hinges (GOLL DU321 DL-3L)

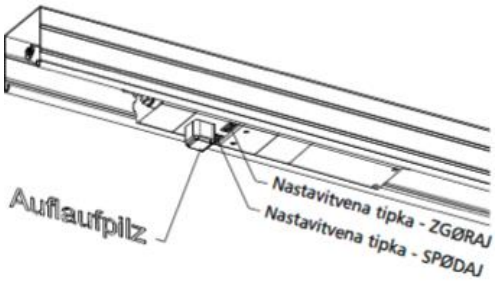
F	Locking screw
HF	height adjustment screw
SI	safety screw
A	distance adjustment
H	height adjustment
S	distance adjustment

Position adjustment from -1 mm to +3 mm
Height adjustment from -1 mm to +4 mm
Distance adjustment from -2,5 mm to +2,5 mm

Slika 50: Adjustment of the front door visible hinges Goll

Find video on: www.m-sora.si/pomoc/nastavitve.

3.6 Setting the Motor of the Blinds



Motor power switch

Movement switch (red)

Adjustment switch TOP (red)

Adjustment switch BOTTOM (white)

Slika 51: Display of the blinds motor

To turn off the operation on the top and in the bottom, the motors have an adjustable limit switch, as well as a collision switch. A white setup key is used to adjust the lower end position, whereas the red one is used to adjust the upper end position.

The collision switch is used for an emergency stop when the lamel parquet is too high due to an obstacle. In tight openings, the collision switch may also function as the upper limit switch.

Use the installation cable to set the final position. Electric shock hazard!!!

Bottom adjustment

- Use the control switch or the installation cable to move the shades DOWN.
- While moving the shades DOWN, **press the white setup key** on the motor **approximately 1 m** before the desired lower position and hold it until the button clicks. The motor will continue moving down.
- When the desired end position is reached, set the control switch to zero. The motor will stop immediately. Use pulse control on the control switch to move the shade to the exact end position.
- Use the switch to move the shade for about 0.5 m upwards. The lower end position is set.

Top adjustment

To turn it off at the top, you can also use the collision switch without restrictions.

- Use the control switch or the installation cable to move the shades UP.
- While moving the shades UP, press the red setup key on the motor approximately 1 m before the desired upper position and hold it until the button clicks. The motor will continue moving up.
- When the desired end position is reached, set the control switch to zero. The motor will stop immediately. Use pulse control on the control switch to move the shade to the exact end position.
- Use the switch to move the shade for about 0.5 m downwards. The upper end position is set.

After each end position adjustment perform a test operation of the shades!!!

In the event that the setup key on the motor has not clicked into place, the setup mode has not yet been reached. You have to start the setup process from the beginning.

4 CLEANING AND MAINTENANCE OF PRODUCTS

Regular cleaning and care of windows and doors is a pre-requisite for providing flawless appearance and use of products. External surfaces of windows and doors are not exposed only to diverse weather conditions, but also to air dust, manufactured gases and smoke. All this in combination with rain, hoarfrost or dew can cause corrosion of window surfaces, which significantly affects its appearance. To avoid this you should regularly clean external surfaces, in particular.

When using cleaning and protection agents not recommended by the manufacturer make sure they don't contain any abrasive, lye components and organic solvents. Otherwise damages on surfaces may occur and they can not be a subject of any consumer complaints. Prior to use it is recommended to test each cleaning or protection agent on a concealed part of the surface.

4.1 Wooden Surfaces

Slika 52: Cleaning kit

For care, cleeaning and protection of wooden surfaces we use a set of cleaning and care products, which can be ordered at M SORA. The bigger kit includes a wood cleaner, wood balm, oil for lubricating hardware and correction varnish. The smaller kit includes a wood cleaner and a care balmk.

Slika 53: Application of cleaning agent

The cleaner is used for cleaning wooden surfaces of windows and doors. Apply the cleaner dilluted with water to the surface, remove stains and dust and wipe the surface with a clean, moist cloth. Then wipe the surface with a dry cloth and apply wood balm on it.

Slika 54: Application of wood balm

The wood balm is applied to the surface with a clean, soft cloth, in the direction of fibres. Allow 5 minutes for the product to take effect and then wipe the surface with a moist cloth. The balm penetrates deep into the structure of the wood and creates a water-repellent effect. To preserve the quality of and protect wooden surfaces we recommend you apply the wood balm 3 to 4 times a year.

Repair of damages

If there are mechanical damages on wood, affected surfaces must be repaired in the shortest time possible. Otherwise, water may penetrate under the damaged surface of the varnish layer. And this results in activity, lifting and change in colour of wood and the colour coating comes off.
The surface should be thoroughly cleaned and smoothed with sandpaper. On areas, where varnish came off completely, first restore the wood impregnation. When dry, slightly smooth it with fine sandpaper and clean again. Then use a brush to apply two layers of appropriate trim coating. This can be done only on the damaged area or throughout the product. When using coating observe manufacturer's instructions.

Restoration of coating

With time the coating on wooden surfaces gets thinner, which can result in water penetrating under the layer of coating and in wood deterioration. Renovation of coating serves for the restoration of surfaces that are not irreparably damaged. In the event of damages follow the instructions in the paragraph above.
Thoroughly clean the entire surface, smooth with sandpaper and finally thoroughly clean again to create a dust-free surface. In places where the coating totally came off the wood must be impregnated first. When impregnation is totally dry, smooth again slightly with a fine sandpaper and clean the surface again. Be careful not to over-polish the impregnation. At the end use a brush to apply two layers of trim coating. When using coating observe manufacturer's instructions.

Complete restoration of coating

This procedure is required, when windows were not cleaned and maintained as provided above. When the layer of coating begins to decompose totally, this is reflected in graying of wood and coming off of coating. Restoration of coating hence includes complete removal of deteriorated coating by polishing or paint removal. Then clean the surface thoroughly. If you have been using paint removal, neutralize and wash the surface or wait a few days before continuing with the procedure. Then first apply impregnation and when dry enough, smooth with a fine sandpaper and clean again. This is followed by applying two layers of trim coating with a brush. When using coating observe manufacturer's instructions.

WARNING: Contact of larch tree or oak tree wood with concrete or lime causes a reaction that results in dark stains deep inside the wood! Such stains cannot be removed! If that happens, the only solution is the restoration with top coatings!

Temporary formations on the surface of coating

Water stains

All thick-layered coatings, which can be dilluted with water, dry outside in. The layer of coating is therefore completely dry or dried up after one month. If, after installation, the product comes into contact with water (rain), milky gry stains can appear. This can happen in lacquer stain treatment of surfaces. Stains should not be wiped, wait for them to dry naturally. When dried, they completely disappear and don't affect the quality of coating. When the surface of coating is finally dry, stains no longer appear.

Fading out of colour

In all wooden surfaces treated with the surface treatment system (RAL colours), colours can occur fade out. This happends when cleaning products with a cloth. This occurs, if all pigments in the layer of coating are not yet cohesive and stabnd out. This happens more frequently, if there are strongly coloured organic pigments. But it is a temporary thing and disappears. Of course, it does not affect the quality of coating.

Maintenance of wooden surfaces that are surface-treated with oils

Surfaces must be thoroughly checked once to twice a year. Considering the product's exposure to weather conditions, surfaces should be restored by applying oil for external protection. When using to restore the layer observe the instructions of the oil manufacturer.

4.2 Aluminium Surfaces

Aluminium products can lose their glow due to external influences or the colour fastness of their surfaces weakens. It is mandatory to clean frames and sashes at least once a year. Or, more frequently, in case of heavy air pollution. Surfaces are cleaned with cold water mixed with mild cleaning agents. Use clean, soft cloths or sponges. The use of household cleaners containing aggresive substances, such as alcohol or ammonium chloride, is forbidden.

4.2.1 Basic cleaning

Particularly during long storage and installation a lot of dirt accumulates on surfaces. In such cases carry out basic cleaning of surfaces after completing installation and constructions works. After cleaning we recommend immediate protection.

4.2.2 Periodic cleaning and maintenance

The cleaning interval for external aluminium parts depends on atmospheric conditions. Next to regular cleaning, it is best using clean water and leather cloth, and at the end wipe the surface with a dry cloth.

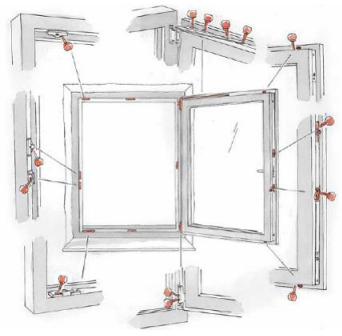
Window frames, sills, masks and other elements are best cleaned with synthetic neutral cleaning agents and the use of soft cloth, sponge, leather cloth or soft brush. At the end rinse the surface with clean water and wipe.
Persistent dirt can be removed by abrasive cleaning agents or fine polishing products.

If you intend to protect construcition elements after cleaning, make sure the coating is really thin and hydrophobic. The layer should not fade or turn yellow or attract dust. Waxes, vaselines, lanolines and similar materials are not appropriate. The same applies to products containing soda, lyes and acids. For cleaning you should also not use accessories that leave stratches.

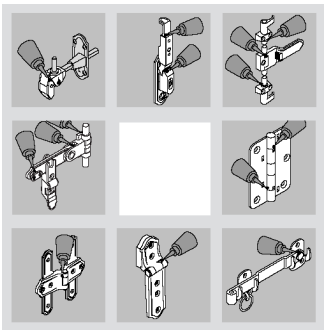
4.3 Glass Surfaces

The first cleaning of glass surfaces is performed immediately after the installation of windows. Remove all labels from glass. More persistent stains (colour, glue) are removed with acetone or petroleum ether. Glass surfaces are cleaned with normal glass cleaners that don't contain any alkaline, lye or acidic fluoride substances. For cleaning use a clean, soft cloth. The use of metal objects (blades, rough sponge, etc.) is not allowed. During installation or at least during renovation glass surfaces should be protected (from plasters, cement mortar, facade materials, etc.).

4.4 Hardware



Slika 55: Annual lubrication of hardware with oil



Slika 56: Lubrication of shutter hardware

Regularly check the proper positioning, fixation and tear and wear of hardware. Loose parts should be re-tightened, worn parts replaced. Once a year all moving parts should be lubricated with oil contained in the care and cleaning kit. When cleaning other window parts make sure that hardware doesn't come into contact with corrosive cleaners.

4.5 Seals

Check all seals once a year, clean them and lubricate them with a smoothing agent. This increase the quality of sealing and slows down the ageing of seals.

5 FREQUENTLY ASKED QUESTIONS AND ANSWERS

5.1 Steaming Up of Windows

Particulary in winter months, steaming frequently appears on the external and internal side of windowpanes. This is a consequence of the laws of physics. Namely, warm air can take more moisture than cold air. When air cools (difference bewteen internal and external window temperature), it gets saturated with moisture and water is formed as steam.

Slika 57: Steaming up of internal glass

Windowpanes steaming up on the inside are usually found in rooms with high moisture (kitchen, bathroom, washroom, bedroom). Steaming starts on the edges of windowpanes. The cause for this is lower temprature of glass on edges, in comparison to the temperature of glass in the middle of the surface. This can partially be avoided by using well-isolated windowpanes with a low Ug factor and by appropriate airing of rooms. This also prevents stuffiness and formation of harmful mould. In harsh frost, high moisture and poorly heated room even well-isolated windowpanes can steam up.

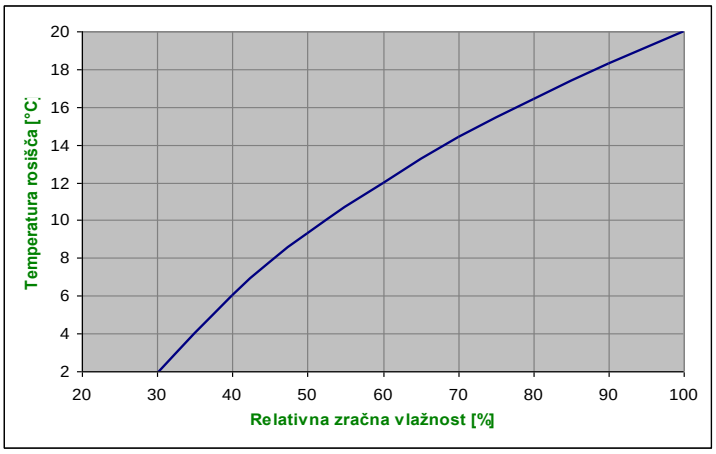
External surfaces of windows steam up because the energy-efficient glazing prevents heat from passing out. The internal temperature does not affect the external window pane, so it gets cold faster. The temperature on the outside reaches the dew-point temperature, and the windows steam up. The edges of the window panes usually do not steam up, due to reduced insulation properties and consequently greater heat conduction. In other words, sufficiently humid ambient air collides with the cold surface of the external glass. A good example is a cold, clear, windy and calm winter morning after a clear night. The external glass is cooled and the temperature and humidity of the ambient air start to increase. In that case the temperature of the external glass is not increasing in proportion with the ambient air temperature and due to good insulation of the insulating glass (low Ug value), the transition of temperature from the heated interior spaces is too slow to additionally heat up the external glass. The glass remains cold and condensation occurs. It is present over a large area of the glass, but it usually doesn't occur on the edges of the glass. This is due to slightly poorer insulation properties on the edge of the glass due to the so called edge effect of the inter-glass spacer. On this part, the transition of heat from the warm interior space to the outside is faster and this prevents condensation. Therefore, condensation on the external surface of the insulating glass depends on the physical properties of the glass and on the external climate conditions. Condensation cannot be completely avoided since the external glass surface is always exposed to changing weather conditions.

Slika 58: Steaming up of external glass

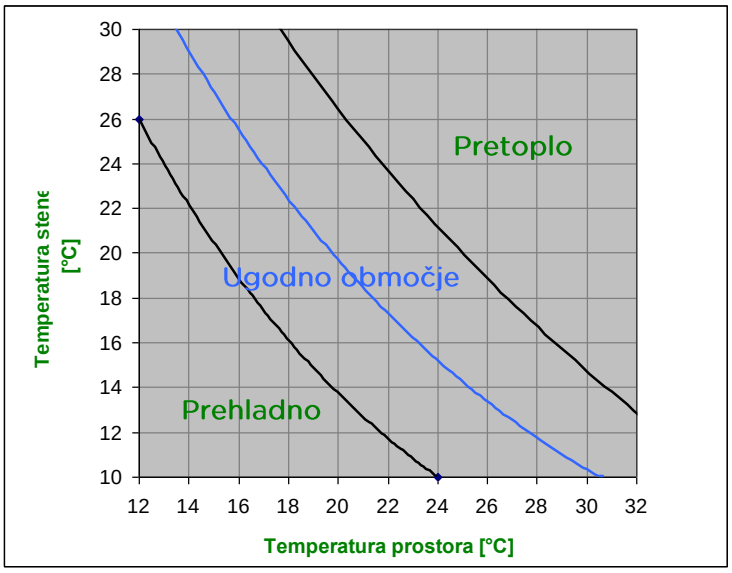
In the past steaming up was not as problemtic for residents, because houses were more aired, particularly at the expense of weaker sealing of windows. Because there was a lot of moisture in the air, condensate accumulated on low-quality glazing, which was consequently colder. In frost conditions condensate created frost flowers and the quantity of moisture in the air kept reducing.

5.2 Airing of Rooms

When breathing, 4 adults generate up to 6 litres of water per day. If we add evaporation of water in cooking, bathing, showering and the moisture generated by house plants, aquariums and the like, the entire household in one day generates 12-15l of water. For health reasons the optimum relative humidity in a room is between 40-60%, and the optimum temperature of a room we live in is 18-22°C.
The main purpose of airing is providing sufficient quantities of fresh air in rooms. Exchange of humid and warm air should be done as quickly as possible so as not to lose too much heat. It suffices to air the room every four to five hours for 5 to 10 minutes. It is recommended to create draught in a room, rather than airing rooms out with ajar or »tilted« windows, which is considered energy-wasteful. In this case air is exchanged only in 30-75 minutes. External brickwalls, walls and furniture get very cold and a lot more additional energy is required to heat the room again.



Slika 59: Dew-point temperature in relation to relative humidity (Starting temperature of moist air 20°C)

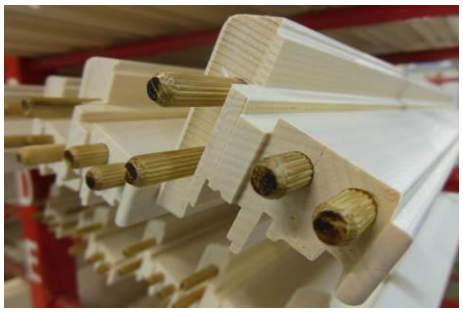


Slika 60: Graph of favourable temperature ranges

Example:
A person in a room with a wall temperature of 18°C and a room temperature of 20°C is in a much better state of well-being than in a room where a wall has 15°C and the room itself 24°C.

5.3 Dowel connection

Dowel connection is a joining method used in M SORA. It was often used in the past and is now frequently used by the manufacturers of wooden windows in Germany and Italy for joining the window frames and sashes. According to the data of certain machine and blade manufacturers, between 70% and 80% of wooden window production uses the dowel connection.



Slika 61: Dowel connection of M SORA windows

The most important fact and advantage in comparison with the trunnion connection is increased durability of dowel connections and consequently of the product itself. In case of dowel connections, the window manufacturing process in M SORA is different. Namely, unlike most of the windows with the trunnion connection and unlike the work of dowel connection window manufacturers, each window element in M SORA is fully surface treated ("painted") before the window is put together. Otherwise the windows are usually surface treated after the elements have already been put together in the final shape of the window. This method protects the wood from humidity, thereby preventing the putrefaction of the most critical part of the window – cross-sections of profiles in the window joints. This can lead to flaking of the coating and in the worst case to destruction of the window structure.

Slika 62: Cross-section of the M SORA window detail with the dowel connection and visible dowels

People often reject the dowel connection due to the potentially lower strength and "statics" of windows. According to the research, literature and practical experience of the window manufacturers and users, such fear is unjustified and unnecessary. The properties of the window frames are primarily influenced by the distribution of dowels on the cross section of the profile, by dowel diameter and by the depth of doweling. The dowels used in M SORA are made of acacia wood in the size of 8 x 60 mm. The number of dowels depends on the shape and thickness of the window profile (on average 5-7 dowels/connection). In addition, an increasing number of M SORA windows is manufactured with the glued-in insulating glass, where the glass itself takes over a large part of the static load of a window. In carefully designed windows in which an appropriate glue is used, the dowel connection provides sufficient and accurate strength. More about the dowel connection can be found at http://www.m-sora.si/si/pomoc/vprasanja.

6 WARRANTY CERTIFICATE

The Warranty Certificate certifies the quality of products as of the date of receipt onwards. We undertake to remedy any and all possible deficiencies and defects within the warranty period, at our own expenses. We will respond to the customer's complaint within 15 days and remedy defects in the shortest time possible, as far as practicable.

The warranty is valid only if accompanied by a receipt and a duly completed service log, which is a component part of Use and Maintenance Instructions of purchased products. The customer shall receive the instructions together with the receipt and they are also available on the M SORA web page.

The service log is used for registering performed checks, care and mainteance works. Complaints shall only be asserted if a customer observes regular and timely maintenance of products, in accordance with the manufacturer's instructions. It shall be filed with a written application, containing the description of the defect and information on the user and the building in question (address of the building, telephone number of the user, receipt number). The customer is obliged to warn the manufacturer of any visible defects within 8 days. This warranty does not cover any customer complaints relating to remedying defects, caused by third persons, without the written consent of the manufacturer.

Warning: This warranty does not exclude any customer rights arising from the manufacturer's liability for defected goods.

- For resistance on surface coating of HOPPE handles with anticorosion layer »Resista«
- For functionality of hardware for combined opening of windows, providing M SORA installation and maintenance instructions are observed
- For functionality of handles
- For weather resistance of ALU against unnatural changes of colour and formation of cracks na dust-coated ALU trim on the external side of the M SORA COMFORT windows
- Against colour changes and cracks on ALU window sills from producer Helopal
- For functionality of ALU entrance doors from producer PVC Nagode

- For air-tightness of window glass
- Against corosion of HOPPE handles
- For seals in windows with combined opening
- For resistance against unnatural colour changes on the internal wooden surfaces on windows in colour shades M SORA stadard and M SORA wood-alu
- On roller blinds and venetian blinds HERO from producer Roltek, in which motor, reductor of motorised monocomand, weather resistance and regulated strenght of profiles of the blinds are included
- On functionality of insect screen, reductor of motorised monocomand, weather resistance and regulated strenght of profiles
- On functionality of external zip screens in which motor, reductor of motorised monocomand, weather resistance and regulated strenght of profiles of the zip screens are included
- On the linen (when use and maintenance instructions are considered), on motor and reductor of motorised monocomand
- For resistance of colour on dust-coated ALU entrancer doors from producer Pirnar

- On external venetian blinds from producer Senčila Bled in which motor, reductor of motorised monocomand, weather resistance and regulated strenght of profiles of the blinds are included

- On functionality of windows M SORA NATURE and M SORA COMFORT
- Against colour changes and external cracks on window profiles, doors and door panels
- Agains corosion of hardware on the internal side of windows and doors
- for the resistance against unnatural changes of colour on the external wooden surfaces on windows in colour shades M SORA standard and M SORA wood-alu
- for the resistance of colour in colour shades M SORA system Italy 2011/2012

- On roller blinds and venetian blinds from producer Medla, in which motor, reductor of motorised monocomand, weather resistance and regulated strenght of profiles of the blinds are included
- On installed hardware, self-closing mechanisms and electronic components from producer Pirnar
- For functionality of entrance doors M SORA and producer Doors
- For professional installation of M SORA products
- Against deflection of joinery

- to the drive belt and the roller motor on roller blinds
- against colour changes, external cracks and corosion on external handles and hardware on the external side
- on functionality of shutters
- for other things not provided in points above

The warranty does not apply in the following cases!

- If the customer demands to have windows and doors in dimensions not recommended by the manufacturer, the industry or a hardware manufacturer
- For wood defects allowed according to the DIN EN 942 standard, which defines wood quality for doors and windows
- For braking the glass after the installation
- For defects resulting from improper product storage and handling
- If, during storage, the windows were exposed to direct weather conditions (rain, snow, sunlight) or stored in humid rooms
- If the windows were installed despite visible defects
- If the windows were installed in a building with fresh walls, and the rooms were not sufficiently aired during building construction
- If the installation of the products was not performed by the manufacturer
- If the installation of the electronic products was not performed by the manufacturer or professional electrician
- If the products were exposed to conditions of humidity higher than 70%
- If the customer handled the product negligently and unprofessionally
- If front doors are installed on a south or west side and don't have a projecting roof and a windbreak
- If the products were damages due to hail, fire, burglary
- If the damages occurred due to mechanical and chemical influences on the surface (impact, scratches, cleaning), unprofessional and aggressive use, or overload of windows and doors
- If the products were exposed to salty sea water or aggressive substances
- If wooden surfaces were in contact with lime and there are stains that can not be removed from the surface
- For aesthetic deficiencies within the scope of internal standards
- For temporarly occurrance on the surface such as water stains or colour irrigation
- If surface treatment was performed by customer itself or by any other provider
- If the customer demands surface treatment of windows with transparent colours or very light coatings that are not UV-resistant
- For windows treated with very dark lacquer stains or top coatings which cause overheating of wood
- For colour incompatibility between a sample slat from the colour chart and individual parts of windows and doors, which is the result of different batches of coatings, natural structure of woods and different absorption capacity of coatings in lacquer stain treatment
- Colour variations between orders from different times are not the subject of complaint
- For any changes in the appearance of a surface resulting from pollution
- For defects in glass not permitted in the Guidelines for Assessing the Visual Quality of Isolating Glass
- For defects in glass not visible from a distance of 1 metre
- For defects and damages resulting from other defects and deficiencies that were not eliminated or reported in writing to the supplier within 15 days of their occurrence
- If windows and doors are not regularly maintained

Company and head office: M SORA d.d., Trg svobode 2, 4226 Žiri
Authorized service: M SORA d.d., Trg svobode 2, 4226 Žiri

SERVISNI LIST

DATUM	
NEGA POVRŠINE	
VZDRŽEVALNO PLESKANJE POVRŠINE	
OLJENJE OKOVJA	
NASTAVITEV/ZAMENJAVA DELOV OKOVJA	
POSEBNOSTI V rubriko vpišite morebitna posebna dela (npr. zamenjava stekla, tesnil, silikona).	
PODPIS	

M SORA
Imejte svoj pogled