GENERAL RULES:

WWL HOUSES manufactures high quality windows and doors. Our products are designed to last for many years and in order to maintain good operation it is important to adhere to the following:

- ensure that no extra weight is hung on a window sash or door leaf
- Please take care not to hit the window reveal (either plastered or timber) when opening and closing windows or doors.
- ensure that no objects interfere with the opening between the sash and the jamb
- if young children have access to a window it is important that the window is locked using the lockable handle
- the window or door must not be left unsecured in the open position in the event of a draft
- a window or door must not be left in the open position in the event of a strong wind or a storm
- a window or door slamming shut may cause injury
- when closing a window or door, make sure to not jam your hand between the sash and the jamb

1. 1. OUTWARD OPENING WINDOWS

A. Side hung window

Opening the window:

The window will open if you turn the handle and then slowly push the window away from yourself. The hardware design includes a built-in retainer for the open position. Depending on the type and dimensions of the product, the retainer is either operated by frictional force or secured using the handle. The retainer secured using the handle is activated when the handle is turned downward (see Figure 1.1).

Figure 1.1. Side hung window

Closing the window:

- to close the window completely, ensure that the hook on the espagnolette locates with the inner hook of the catch.
- the outer hook on the catch leaves the window in the micro ventilation position.

The window must not be left in the open position in the event of a strong wind or a storm.

B. Side guided (side projecting) window

Opening the window:

The window will open if you turn the handle and then slowly push the window away from yourself. To open completely, push the window using the handle as far as possible. The window is completely open once it has been turned approximately 90° from its initial position. This moves the side of the sash nearest the hinges toward the centre of the window opening, leaving about a 15 centimetre clearance between the sash and the jamb. Opening the window completely is normally required for cleaning.

Closing the window:

- to close the window completely, ensure that the hook on the espagnolette locates with the inner hook of the catch.
- the outer hook on the catch leaves the window in the micro ventilation position.

The window must not be left in the open position in the event of a strong wind or a storm.

Figure 1.2. Side guided (side projecting) window

C. Top guided window

Opening the window:

The window will open if you turn the handle and then slowly push the window away from yourself. Depending on its size, the window opening fully is sometimes limited in the interest of security (a stop is installed on the track in the side of the jamb).

Closing the window:

- to close the window completely, ensure that the hook on the espagnolette locates with the inner hook of the catch.
- the outer hook on the catch leaves the window in the micro ventilation position.

Figure 1.3. Top guided window

The window must not be left in the open position in the event of a strong wind or a storm.

D. Top swing window

Opening the window:

The window will open if you turn the handle and then slowly push the window away from yourself.

Closing the window:

- to close the window completely, ensure that the hook on the espagnolette locates with the inner hook of the catch.
- the outer hook on the catch leaves the window in the micro ventilation position.

If you want to wash the outside of the window (from the inside), you need to push the window using the handle until the outer glass pane turns toward the room.[1]

The window must not be left in the open position in the event of a strong wind or a storm.

Figure 1.4. Top swing window

Child proof locks for the double glazed top swing Initial opening restrictor window:

The window sash is provided with a child proof lock (see Figure 1.6), which allows the window to open 10 centimetres initially. The window will open further when it is released from the clamp on the jamb and then opened. The same lock functions as a position retainer when the outer surface is being washed. (Figure 1.5).[2]

PLEASE NOTE: ensure that there is no restriction either in the inside or outside of the window that may hinder it from fully reversing ie: outside soffits

Figure 1.5. Outward opening top swing window in the so-called washing position with the sash flipped

[1] All outward opening top swing windows have a so-called dead-centre sash position where the sash is at approximately 90 degrees to the jamb and where turning it any further requires the applica on of greater force.

[2] Hinges for Top swing windows are made as modules, as a result of which in the case of certain sash height dimensions the bo om edge of the window sash overlaps the top edge of the jamb. For further information, contact a sales outlet of WWL HOUSES.

Top swing window products use two different types of catches:

- for taller windows, with external sash dimensions from approximately 470 millimetres, the left hinge has a built-in catch when viewed from the side nearest the room.
- for shorter windows, with external sash dimensions ranging from approximately 400 to 470 millimetres, a catch is attached on the right jamb when viewed from the side nearest the room.

Opening a sash with a built-in catch (see option a, Figure 1.6): when the sash is opened approximately 10 centimetres, the built-in catch is engaged automatically, preventing the sash from opening any further. A catch also serves as a retainer for the open position of the sash. To open the sash further, release the catch from the clamp by pulling the sash lightly toward the room and pushing the catch outward.[3] The built-in catch may function as a position retainer when the outer surface of a window is being washed (**PLEASE NOTE:** The availability of this function depends on how the window is installed in relation to the wall and on the height of the product.)

Opening a sash with an optional catch (see option b, Figure 1.6): when the sash is opened approximately 10 centimetres, the catch is engaged automatically, preventing the sash from opening any further. To open the sash further, release the catch by pushing it up using the green knob. The catch may function as a position retainer, to prevent it closing by itself, when the outer surface of a window is being washed (**PLEASE NOTE:** The availability of this function depends on how the window is installed in relation to the wall and on the height of the product.)

Any add-on catch may be locked – to do so, with the child-proof lock in the closed position, turn the locking pin (stamped prompt LOCK) 90 degrees.

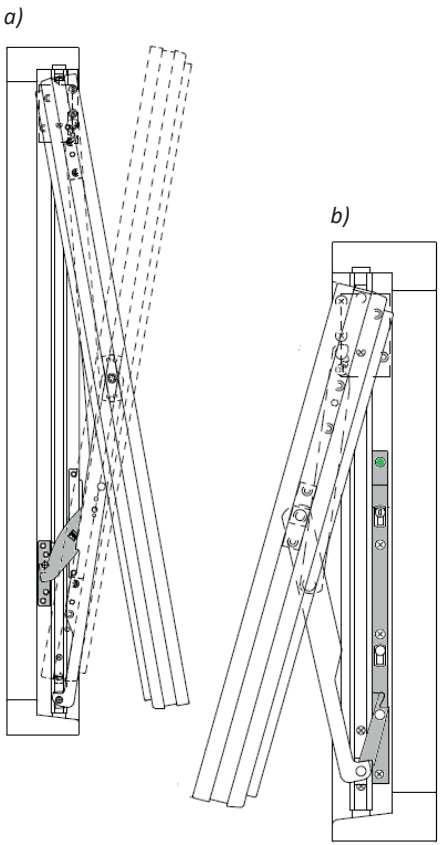


Figure 1.6. Catcher for a top swing window
a – integrated catcher;
b – add-on catcher

[3] The technique for opening the catch requires the sash to hang freely, and at the same time the hook needs to be pushed outward

Catch for a triple glazed top swing window (child-proof locks): The window sash is provided with a built-in hinge system with a multi-stage catch (see Figure 1.7).

Secure position: open the window up to the first limited position (the catch is engaged with an audible snap) – in the first secured position, the window is open about 10 centimetres.

Open ventilation position: to open the window into the ventilation position, press the PRESS button (on the left jamb track) and at the same time slowly push the window away from yourself. On reaching the limited position, the built-in retainer is activated automatically (the catch is engaged with an audible snap).

To close the window: release the built-in retainer and close the sash slowly.
PLEASE NOTE: the built-in retainer is activated both in the open and in the security positions.

Figure 1.7. Catcher for an top swing window

Washing position of the outer surface: release the catch by pressing the PRESS button and push the sash until the outer glass pane turns toward the room. The sash will reach the secured position when the built-in retainer on the jamb track is secured with an audible snap.
PLEASE NOTE: the availability of this function depends on how the window is installed in relation to the wall and on the height of the product[4].

To turn back the window sash: release the built-in retainer and slowly turn the sash into the closed position.
PLEASE NOTE: the built-in retainer is activated both in the open ventilation and in the security positions.

[4] Hinges for top swing windows are made as modules. With certain sash height dimensions the bo om edge of the window sash overlaps the top edge of the jamb. For further information, contact a sales outlet of WWL HOUSES.

2. INWARD OPENING WINDOWS

A. Side hung (turn) window

To open the window (see Figure 2.1), turn the handle 90 degrees and pull the window toward yourself (see Figure 2.2).

Figure 2.1. Inward opening window with a side hung (turn) sash

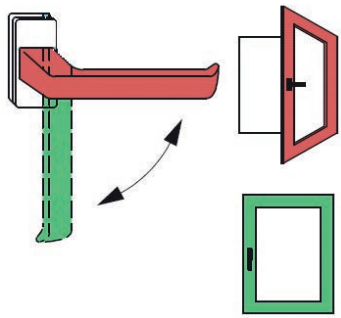


Figure 2.2. Positions of the handle and sash of a window with a side hung (turn) sash

B. Tilt and turn window

This window (see Figure 2.3) has two opening functions (see Figure 2.4).

Figure 2.3. Inward opening window with a tilt and turn sash

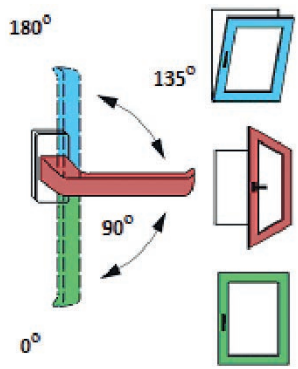


Figure 2.4. Positions of the handle and sash of a tilt and turn window

- To open the window as side hung (turn), turn the handle up from the closed position 90 degrees into the open position and pull the window toward you.
- To open the window as bottom hung (tilt), turn the handle up from the closed position 180 degrees into the open position and pull the window toward you.
- Furthermore, the tilt and turn window has built-in single-stage micro ventilation. To activate this, turn up the handle on the closed window 135 degrees (between the open and ventilation positions).

PLEASE NOTE: When the window is open in the side hung position (90 degrees) the handle must not be turned up to the ventilation position (180 degrees). First close the window and then move the handle to the ventilation position. Failure to do so may cause damage to the hardware

C. Tilt only (bottom hung) window

The window (see Figure 2.5) opens when you turn the handle on the top horizontal sash profile. Turn it by 90 degrees and then pull the sash toward you (see Figure 2.6).

Figure 2.5. Inward opening window with a tilt only (bottom hung) sash

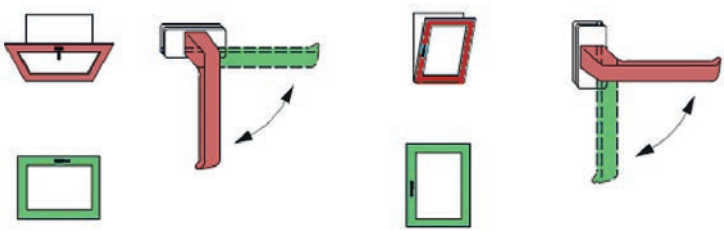


Figure 2.6. Positions of the handle and sash of a tilt only (bottom hung) window

3. ENTRANCE AND TERRACE DOORS

A. Opening and closing the entrance door

The door is provided with three locking points: the door will lock at the top, in the middle and at the bottom. To lock, the handle first needs to be raised up. Only then can the door be locked using a twist knob or key.

Firstly unlock the door with the key provided. The handle is then depressed and all locking points are released. To lock the door, pull the handle up which will activate all of the locks and then lock the door with the key.

Fix2002 doors provided with three point locks are opened and closed as above (see Figure 3.2). For convenience, the locking mechanism is complemented with the add-on twist knob function. At home, the door is conveniently locked and opened using a twist knob. On leaving, home the twist knob can be de-activated using the nipple on the end plate of the lock. The lock is in the secure position and can no longer be opened without a key, even from inside. Using a key to unlock the lock re-activates the function of the twist knob automatically.

The door must not be left in the open position in the event of a strong wind or a storm.

We recommend that a catch be used on either the wall or the floor (see Figure 3.3)

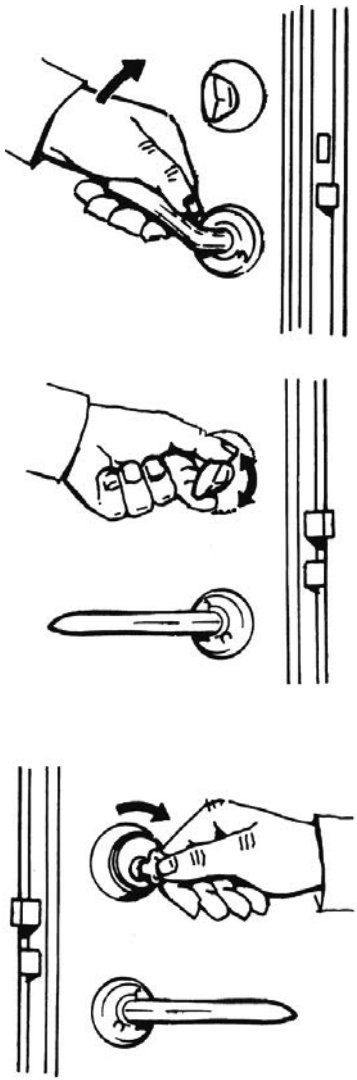


Figure 3.1. Locking the entrance door (Fix2151)

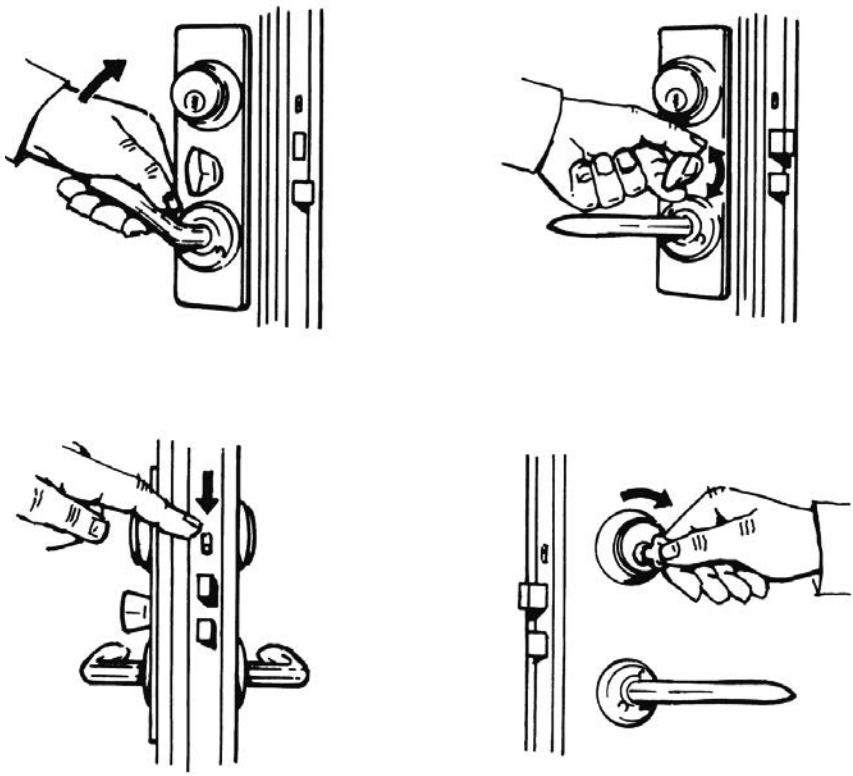


Figure 3.2. Locking the entrance door (Fix2002)

a)

b)

Figure 3.3. Catcher: a – floor mounted; b – wall mounted.

B. Terrace doors

Opening and closing

The door is provided with three locking points. The door will lock at the top, in the middle and at the bottom. To open the door, the door handle needs to be turned into the horizontal position. To lock it, the handle needs to be turned downward.

By turning the handle down whilst open, the door can be secured in the desired position.

The door must not be left in the open position in the event of a strong wind or a storm.

C. Double leaf entrance door and terrace door – use of a passive door leaf

The double leaf door has an active leaf (with a handle and lock) and a passive leaf closed by means of sliding bolts (see Figure 3.4). The sliding bolts secure the door leaf in the dedicated sliding bolt slots in the top jamb and the sill.

Turn the bolt guide into the open position (Figure 3.4) to open the passive door leaf. To open the door leaf, both the top and the bottom sliding bolts need to be opened.

PLEASE NOTE: To avoid damage to the wood, replace the sliding bolt in its slot after.

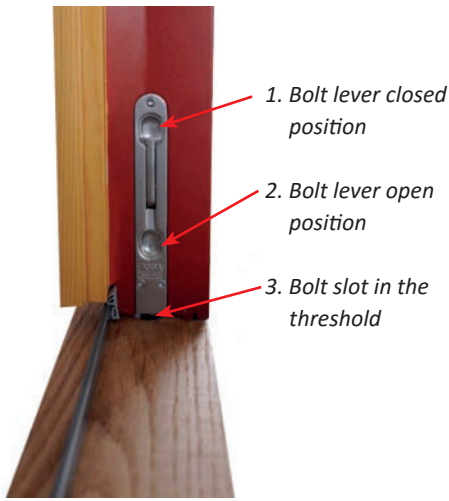


Figure 3.4. Bolt of the passive leaf of a double leaf door

4. SLIDING AND FOLDING DOORS

A. GU sliding door

Opening and closing:

In the closed position, the handle of the sliding door is pointed up (see Figure 4.1). The sliding door opens when the handle is turned 180° (downward from the top vertical position). The sash rises onto rollers, and then it may be slowly pushed toward the passive sash.

To open completely, push the door using the handle as far as possible. The door is completely open when the sash has slid up to the stopper. The sash can be secured in the open position by turning the handle up 180° (the sash will descend onto the track).

PLEASE NOTE: To avoid damage to the stopper ensure that the door is opened slowly. If the door moves too quickly it may damage the stopper and pull it away from the timber.

To close the door, pull the moving sash against the jamb and turn the handle back up into the vertical position.

For closing, there are two options:

- the stage closest to the jamb of the counter pin of the espagnolette closes the door completely
- the outer stage is for the micro ventilation position.

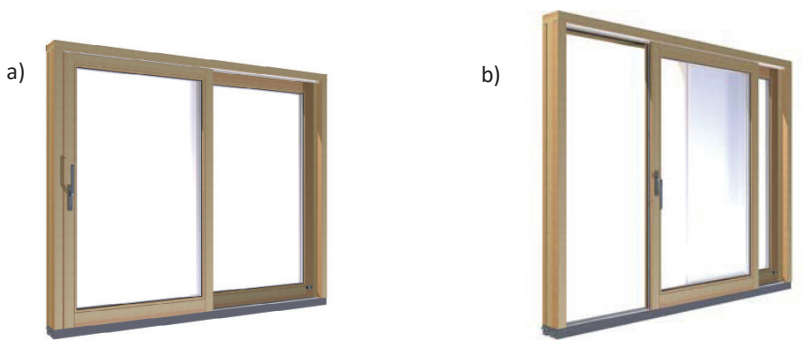


Figure 4.1. GU sliding door: a – closed position; b – open position

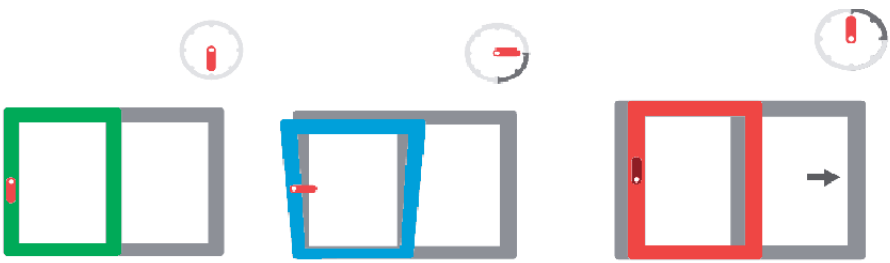
B. Tilt and slide door

The tilt and slide door is manufactured based on profiles for the inward opening window. The door employs two different sets of closing hardware depending on the weight of the moving leaf:

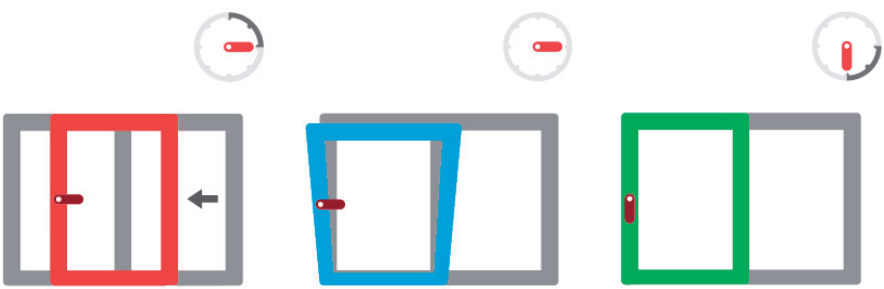
Patio 160S (tilt and slide door in the so-called lighter weight class). In the closed position, the handle points downwards.

Opening the door:

1. Turn the handle 90 degrees and pull the leaf into the tilt position, which also serves as the ventilation position.
2. To employ the slide function, turn the handle an additional 90 degrees upwards and pull the door towards yourself, only pushing sideways once the door has moved away from the frame completely.



Drawing 4.2. Opening the Patio 160Z tilt and slide door



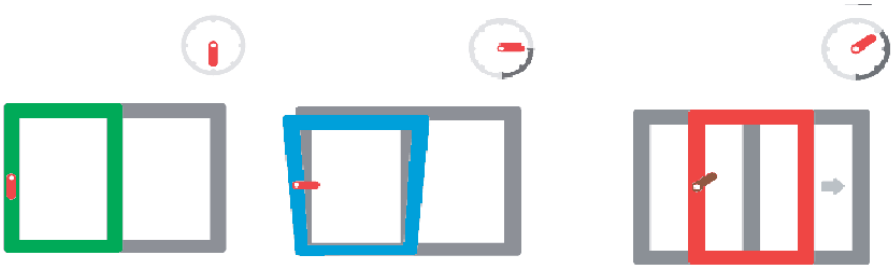
Drawing 4.3. Closing the Patio 160Z tilt and slide door

Patio 200Z (tilt and slide door in the so-called heavier weight class).

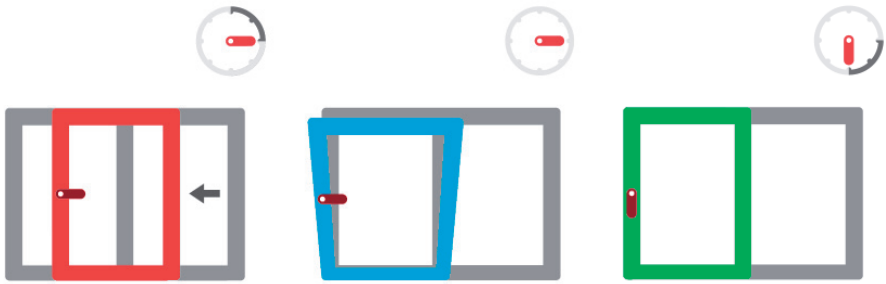
Opening the door:

1. Turn the handle 90 degrees and pull the leaf into the tilt position, which also serves as the ventilation position.
2. To employ the slide function, turn the handle upwards (see Drawing 4.4) and pull the door towards yourself. Only push sideways once the door has moved away from the frame completely

When closing the leaf of the tilt and slide door, bear in mind that air resistance may make it harder to close the leaf. If needed, push the leaf with both hands.



Drawing 4.4. Opening the Patio 200Z tilt and slide door



Drawing 4.5. Closing the Patio 200Z tilt and slide door

C. Folding door

The product has an active sash which, depending on the opening pattern (see Figure 4.4), may be opened as side hung (turn) or tilt and turn. The pattern and the options for opening are detailed in the annex to the contract. Open the active side hung (turn) or tilt and turn sash (see Figures 2.2 to 2.4, respectively). To open / fold up folding sashs, turn the handles on all the sashs 90 degrees. For some patterns release the sliding bolts on the sash opposite the active sash, and pull the sash using the handle toward the room.

Reverse the order of opening to close the sashs.

Sash coupling components are installed for some opening patterns (see Figure 4.6 – points marked in red). The door needs to be opened and closed as shown in Figure 4.7.

1. Open the active sash.
2. Open the passive sash. Turn the sash until the coupling components have locked into one another.
3. Release the other sashs, turning the handle 90 degrees, and fold up the sashs.
   Reverse the order of opening to close.

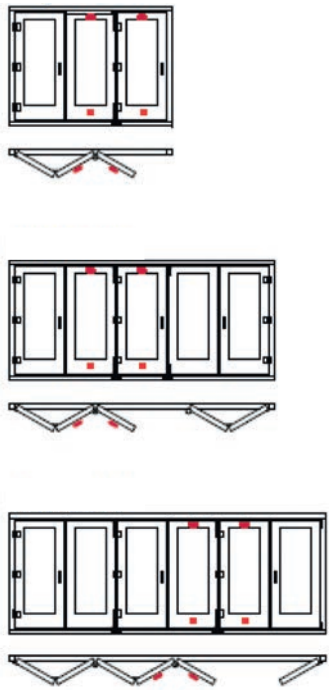


Figure 4.6. Examples of opening patterns for a folding door

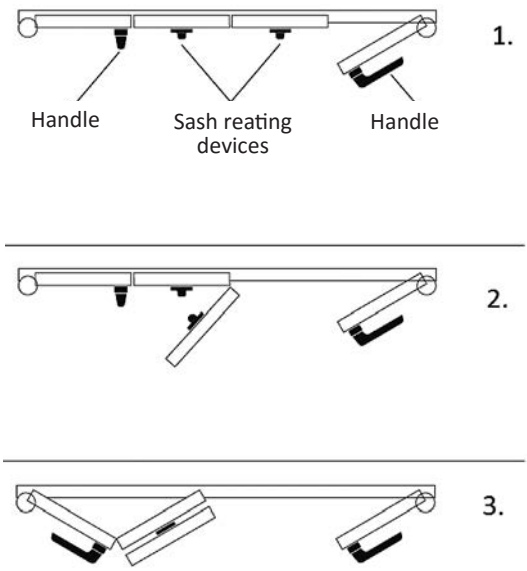


Figure 4.7. Example of opening a folding door

5. SPECIAL PRODUCTS

A. Vertical sliding sash window

A vertical sliding sash window has two sashs. To open the sashs, open the rotating locking device (see Figure 5.1, 1) and raise the bottom sash up. To open the sash, pull the sash down using the “ring” on the top sash board.

Washing. To wash the bottom sash, release the sliding bolts on the top sash board and tilt the sash toward the room.

To wash the top sash, pull the “ring” of the sash down until it passes the 2 top guides. Once past these release the sliding bolts on the top sash and tilt the sash toward the room.

PLEASE NOTE: When the top sash is tilted into the washing position, the bottom sash needs to be in the washing position first.

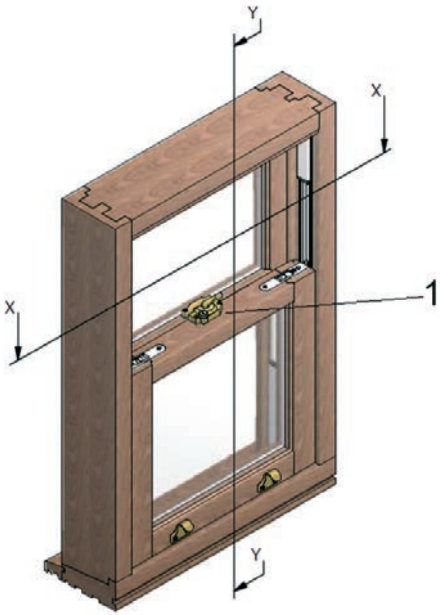


Figure 5.1. Vertical sliding sash window

PLEASE NOTE: To prevent the sash opening into the washing position accidentally, lock the sliding bolts in the closed position (see prompt 2, Figure 5.2).

Reverse the order of opening to close.

The window must not be left in the open position in the event of a strong wind or a storm.

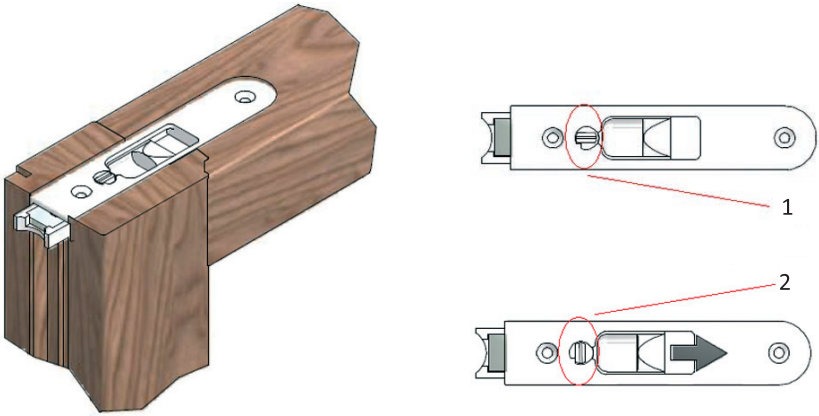


Figure 5.2. Sliding bolts of the bottom sash for a vertical sliding sash window: 1 – open; 2 – closed

B. Fireguard window

The fi reguard window is a non-opening product provided with a glazing unit that meets the EI30 fi re resistance class. Fireguard windows need to be installed in accordance with the WWL Houses instructions for the installati on of a fireguard window

PLEASE NOTE: The fireguard glass is temperature sensitive. Below –10°C, the glass freezes, turning opaque. On thawing the glass won't return to its original condition but its fire resistant properties are preserved. Because of that, the fireguard pane in a glazing unit is always the pane nearest the room. Above 45°C, the fireguard pane begins to respond to heat. The glass turns opaque. After that, visual quality and fire resistance properties are impaired irreversibly, and a new glazing unit will need to be ordered.

1. PRODUCT MAINTENANCE DURING INSTALLATION

(See also WWL Houses installation instructions)

GENERAL RULES

- Avoid letting the wood become damp (for humidity control, also see below).
- All finishing damage needs to be repaired immediately (sand the damaged area and cover it with the repair paint included).
- When working with a disc cutter, during cutting avoid chips from getting on the product, which may result in so-called rust dots appearing on the surface of the product; sparks may damage the surface of the glazing unit.
- Before performing the following works (for example, plastering walls, painting, etc.), which may soil or affect products in some other undesirable manner, the products should be covered with fi lm to protect them against damage. To tape up the surface, only tape suitable for water-based acrylic systems for painting wood may be used (in case of questions, consult WWL Houses). Once the works have been completed, the protective film needs to be removed from the covered products as quickly as possible, or else the tape glue may damage the surface of the paint on the products.

For finishing products, WWL Houses uses Teknos OY water-based acrylic paints created for finishing wooden windows industrially. The following masking and sealing tapes can be used with these paints:

- Tesa 4334, masking tape
- Tesa 5258, sealing tape for outdoors
- Scotch 2090-2 (3M), sealing tape
- Scotch (3M) construction tape (for sensitive surfaces of the paint)

In any case, you should bear in mind that tape that has remained exposed to the sun and humidity for an extended period of time may damage finished surfaces. The product warranty does not cover this type of damage!

HUMIDITY CONTROL

WWL HOUSES manufactures wooden windows and entrance doors finished with breathable, water-based wood paint designed for industrial use (including stains and varnishes). This means that the humidity of the wood under the finishing layer is adjusted in line with the environmental conditions. Excess interior humidity during constructi on has an adverse effect on wooden windows and doors.

Wood humidity depends directly on the ambient humidity. When it stays in a given environment for a long time, wood takes on the equilibrium humidity in line with that environment. If the

ambient humidity changes, humidity in the wood also changes, until a new equilibrium humidity is formed. As humidity in the wood changes, changes occur in the volume of the wooden member (cross section and contraction).

Windows and entrance doors are produced using wood intended for dry indoor conditions. Windows and entrance doors need to be installed in the final stages of building, in order to minimise construction humidity and other construction-related stresses, which may affect products.

The wooden sections of windows and entrance doors do not resist excessive humidity stress during construction, which is produced when, for example, floors are poured, masonry is laid, walls are plastered or any other wet construction materials are used. Construction humidity causes the wooden sections of the window to expand resulting in members expanding crosswise, irregulariti es at joints, and cracked glued joints. As the wood dries and humidity levels change, cracks may appear at the joints of the window. This may cause pressure on the gaskets resulting in distortions and impairment of the product.

To prevent humidity damage to windows, the following guidelines need to be adhered to on the construction site:

- The place for storing windows and entrance doors needs to be sufficiently ventilated during storage.
- Remember that the protective film on the packaging does not protect against humidity, only against major soiling and dust during transport, storage and installation.
- Once windows and entrance doors have been installed, the air inside the building needs to be sufficiently dry. If not, the air should be dried either by heating, ventilation, or using a condensation air drier.
- In winter, it is important to make sure that no water is condensed on the inside of doors or windows – constant exposure to water will subject wood to the same kind of damage as above. Moreover, if the sashs of the windows and doors freeze to the jamb this may result in further damage.
- The condition of windows and entrance doors needs to be checked regularly to detect and prevent humidity damage as early as possible.
- If windows and entrance doors are covered with film to prevent soiling, it is essential to check that no excess humidity accumulates between the film and the product. The room needs to be dried and the films need to be removed temporarily if humidity accumulates there.

It is important to remember that contemporary windows and doors are airtight. Thus, replacement of old windows and entrance doors may result in reduced ventilation. Faulty ventilation may cause humidity levels indoors to rise.

In naturally ventilated buildings, the following measures need to be implemented to ensure the quality of air indoors:

- Order windows with dampers that should be opened when the product is being used so that fresh air may enter the living premises.
- Open windows regularly to air the premises. Windows may also be left open in the ventilation position (also called micro ventilation).

WWL Houses recommends that alongside the replacement of windows and doors, the ventilation and heating design of the property should also be considered.

Accumulation of excess humidity in a dwelling may cause mould to grow, which in turn may cause respiratory illness and damage to components of the building.

When new buildings are constructed, WWL Houses recommends introducing a controlled ventilati on design with exhaust, supply and heat recovery. This will result in good quality indoor air and heating energy savings.

2. GENERAL MAINTENANCE INSTRUCTIONS (FOR THE END USER)

- Discharge channels need to be clear and, if necessary, cleaned.
- Check the joints between the window and the wall: if the joints are cracked they need to be filled to prevent humidity entering between the jamb and the wall.
- Remove any mould that appears on the product surface.
- Check the wooden surfaces of the product and perform any maintenance needed.

We advise that any maintenance carried out be logged in the table at the end of the maintenance manual. For informati on on maintenance products, please contact sales outlets of WWL Houses.

A. FINISHING

The function of finishing is to protect the wooden surface against adverse effects originating in the environment, e.g. humidity, UV radiation, environmental pollution, etc. Therefore, it is very important to check and maintain the wooden components of the products.

Washing wooden surfaces:
At least twice a year (preferably in spring and autumn), the wooden surfaces of windows and doors need to be washed with clean water containing an added neutral cleaning product (for example Teknoclean or similar) to remove any dust and other impurities that over an extended period of time will damage the finished surfaces and therefore the functionality of the product. Do not use corrosive, abrasive or similar cleaning agents and solvents.

Effects of the weather and the environment on the finishing layer of the product vary depending on the location of the building and the degree of protection of the products. Any damage detected during maintenance should be repaired immediately in order to prevent the wood turning grey/blue or the paint bleeding.

Treatment with maintenance products:
At least once a year, preferably immediately after the above cleaning, treat the wooden sections

with a maintenance product (e.g. Aidol Pflegeset, Teknowax or other suitable wax. In the absence of anything better, car wax will do) according to the product instructions. First perform any checks and all necessary repairs outlined in item 2. Oak elements of the product (without surface finishing, e.g. threshold, etc.) must be treated with natural oil at least once per year.

Inspect the corner joints of the members on the outside of the product. If there are cracks, sand and fill with a joint protection product that is neutral and suitable for exterior wooden surfaces as well as for finishing.

Repairing damage:

Damage detected on finished surfaces needs to be repaired as follows:

- Remove loose paint/varnish and sand the damaged area with fine sandpaper (such as P180…280) as needed. Clean and wash the sanded spot to remove any dust and dry it properly. Apply a layer of repair varnish or paint of suitable colour, using a high-quality synthetic brush designed for applying water-based acrylic paint. Once the first layer has dried, apply another layer to the surface.
- Repairs should only be made if the temperature exceeds 8°C and relative humidity is below 85%, otherwise the coating systems may cure poorly and performance may diminish. It is also not advisable to perform repairs in intensive sunlight.
- When carrying out repairs, make sure that sash gaskets are not painted over.
- It is important for minor damage to be repaired quickly. Over time, minor damage may develop extensively and become difficult or impossible to repair. If there has been major damage, the manufacturer needs to be notified immediately.

Resin:

Pinewood is a natural material containing resin which helps it better resist the effects of the weather. On hot summer days the temperature on the outer surface of the product may be quite high and this in turn may activate the excretion of resin. As a result, tiny dots of resin may appear on the surface of the wood. These may be removed carefully, using turpentine, white spirit or another suitable product.

PLEASE NOTE: Until the layer of paint cracks and comes loose from the surface of the wood, any excretion of resin is not a defect of finishing for the purposes of the warranty.

B. MAINTENANCE OF ALUMINIUM CLADDING

Aluminium cladding is not maintenance free.

- The aluminium cladding on the outside of the product renders windows and doors much more resistant to the effects of its surroundings and atmospheric pollution.
- It is advisable to clean aluminium cladding twice a year (more frequently in areas with heavy atmospheric pollution). To clean aluminium use a soft sponge and water, adding detergent if

needed. Cleaner paste may also be used as long as it does not contain abrasive particles and/or solvent.

- To protect the colour of the aluminium from fading due to environmental impact, it is advisable to occasionally wax aluminium cladding (for example, using car wax).

C. HARDWARE

Sash gaskets:

All opening sashs are provided with a durable and weather-proof rubber sash gasket. The gasket is installed in the groove in the profile of the sash.

The gasket needs to be cleaned as needed using a regular window cleaning product. Do not use solvent (such as white spirit) to clean the gasket as this will do permanent damage.

Paint or wood protection products need to be prevented from getting on the surface of the gasket.

Lever bolts:

Espagnolettes and multi-point locks have been lubricated by the manufacturer. To ensure the smooth operation of the mechanisms, espagnolettes and multi-point locks need to be oiled once or twice a year, or more frequently if necessary (see figure 6.1)

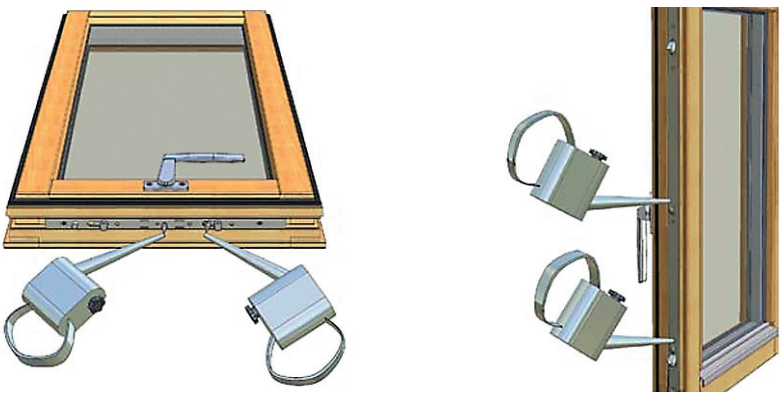


Figure 6.1. Lubricating espagnolettes and multi-point locks

Hinges:
The hinges of the window need to be lubricated with non-freezing oil that does not accumulate dust (such as Teflon oil) preferably twice a year (more frequently, if needed).

Before any surfaces are lubricated they need to be cleaned.

The tracks need to be clean and clear of physical obstacles. The tracks must not be painted over, however they do need to be oiled, preferably twice a year.

3. OUTWARD OPENING WINDOWS

A. Side hung window

Window hinges (see Figure 7.1) need to be lubricated. Lubrication is also required by the ventilation retainer (if any) in the top groove of the sash.

Figure 7.1. Lubricating a butt hinge

Figure 7.2. Lubricating side projecting gearing

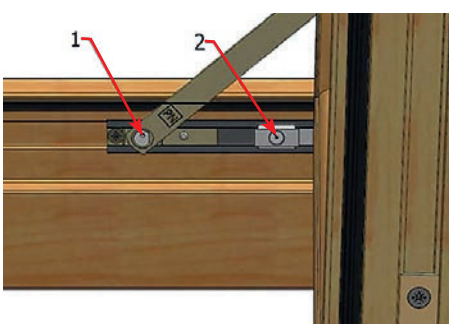


Figure 7.3. Adjusting a side projecting gearing

Figure 7.4. Lubricating a side projecting gearing

B. Side guided (side projecting) window

Window pivots with sliding stoppers, the inside of tracks, the sliding surfaces of the aluminium (see Figure 7.2) and the moving parts of the espagnolettes, all need to be lubricated. Once lubricated, the action of the sliding stopper (see point 7.3, 2) diminishes somewhat but returns to normal. The sliding stopper must not be lubricated (see Figure 7.4).

The friction's intensity may be adjusted using the screw of the sliding stopper inside the top track of the jamb by turning it with a suitable spanner.

To adjust the sash sideways, turn the cam at the adjustment locations (see Figure 7.3).

C. Top guided window

Hinge pivots and the insides of tracks need to be lubricated (see Figure 7.5). Once lubricated, the action of the sliding stopper diminishes somewhat but returns to normal. The sliding stopper (see point 3, Figure 7.6) must not be lubricated.

The friction's intensity may be adjusted using the screw of the sliding stopper inside the bus of the jamb by turning it with a suitable spanner. The adjustment is correct when the window is opened and remains in the desired position. Take care not to over tighten.

Sash is adjusted verti cally as shown in Figure 7.6:

- Open screw 2.
- Adjust the eccentric at point 1 using a box spanner to the correct position.
- Secure screw 2.

Figure 7.5. Lubricating a top guided gearing

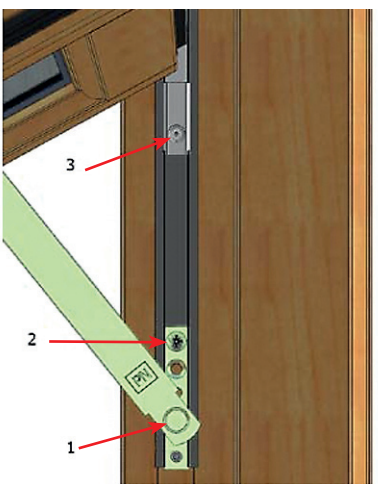


Figure 7.6. Adjusting a top guided gearing

D. Top swing window

Hinge pivots of a top swing window need to be lubricated. Similarly, the tracks and the child proof lock require lubricating. See Figure 7.7.

Figure 7.7. Lubricating a top swing gearing

4. INWARD OPENING WINDOWS

Window hinges and the ventilation position retainer (see Figure 8.1) need to be lubricated. To retighten the handle screws carefully turn the handle cover 90 degrees, releasing the head of the screw. Using a suitable screwdriver, tighten the screws of the handle and turn the handle cover back into the vertical position.

The sash is adjusted vertically or horizontally according to Figure 8.2. If needed, the pressure of the sash gasket may be adjusted.

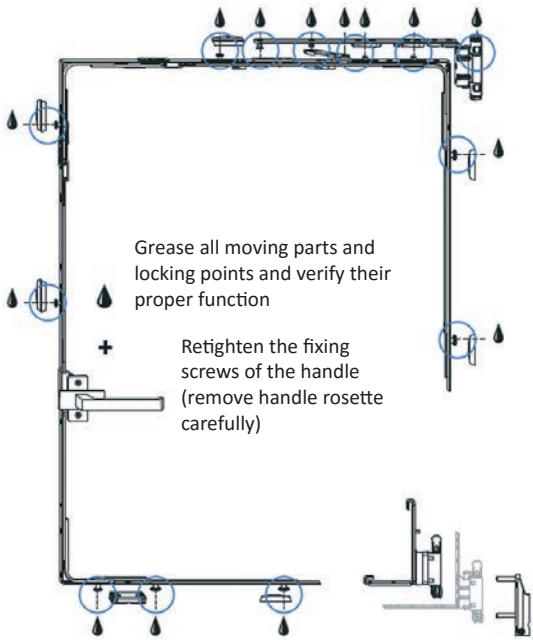
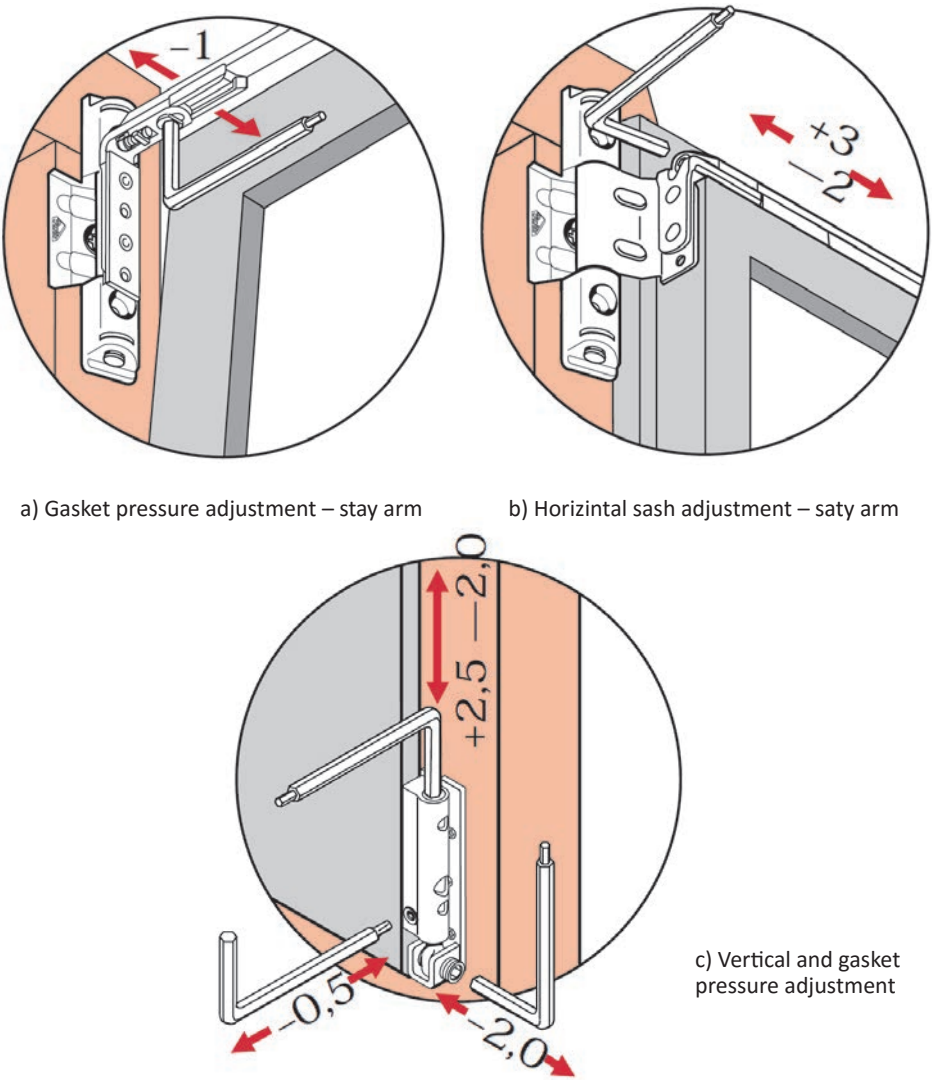


Figure 8.1. Lubricating retainers for hinges, espagnolettes and ventilation positions.

When adjusting the “mushroom pin” on the espagnolette, make sure that all closing points are lined up. To adjust the pressure of the gasket using the (a) top sash hinge shown in Figure 8,2, the handle on the open window sash needs to be turned into the tilt and open position, after which the adjuster screw is released. **PLEASE NOTE:** use help to support the sash – danger of injury.



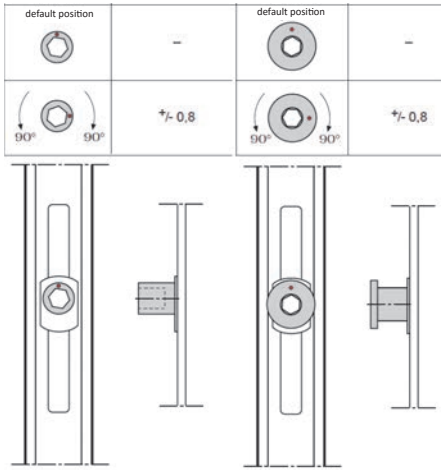
a) Gasket pressure adjustment – stay arm

b) Horizintal sash adjustment – saty arm

c) Vertical and gasket pressure adjustment

Figure 8.2.1. Adjusting an inward opening window

d) Gasket pressure adjustment



Horizontal and gasket pressure adjustment (product with concealed hinges)

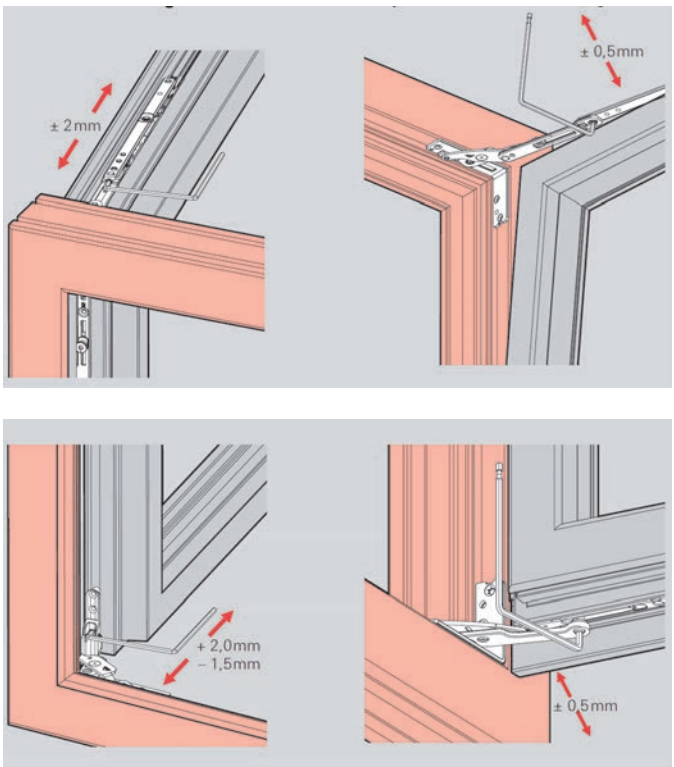


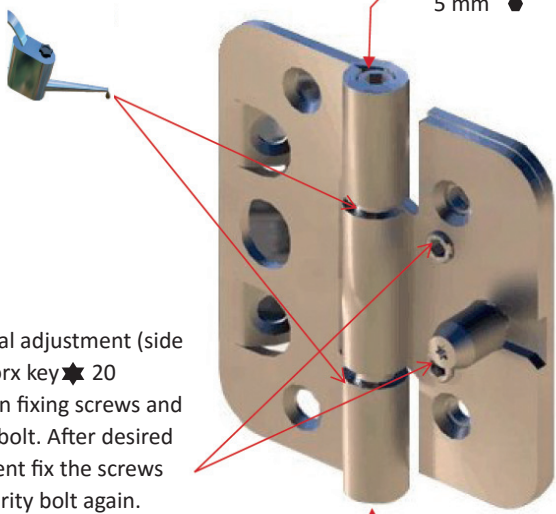
Figure 8.2.2. Adjusting an inward opening window

5. ENTRANCE AND TERRACE DOORS

The hinges, lock, locking points and ventilation retainer need to be lubricated with non-freezing oil (such as silicone oil) preferably twice a year (more frequently if needed). Use a lubricant approved by the manufacturer of the cylinders to lubricate the cylinders (i.e. Abloy lock spray).

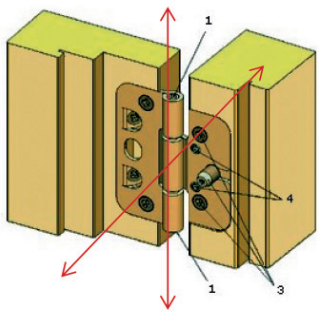
Hinges need to be lubricated with non-freezing oil that does not accumulate dust (such as Teflon oil)

Adjustment to height; 5 mm ⬣



Horizontal adjustment (side ways); torx key ✸ 20
First open fixing screws and security bolt. After desired adjustment fix the screws and security bolt again.

Adjustment to height; 5mm ⬣



All hinges: open top bolt; use the bottom bolt to adjust door leaf to desired height; fix the top bolt again.

Figure 9.1. Adjusting the height of the door sash and sideways

6. OUTWARD OPENING ALUCLAD DOORS

Outward opening aluminium clad wooden doors are equipped with three-piece Türband 4 hinges (Figure 10.1)

PLEASE NOTE: Keep the hinges clean.Hinges should not be oiled, since they were assembled using Teflon, which may be damaged if an incorrect lubricant is used.

Figure 10.1. Three-piece Türband 4 hinge

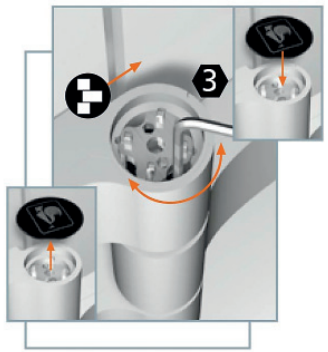


Figure 10.2. Horizontal adjustment:
1. Remove the top hinge cover.
2. Use a 3 mm box spanner to adjust the position of the door horizontally (left / right direction).

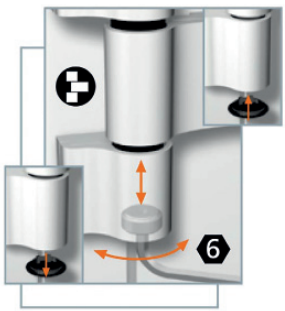


Figure 10.3. Adjustment of seal pressure:
1. Remove the hinge covers.
2. Undo the locking screws.
3. Use a 6 mm box spanner to adjust the position and depth of the door in relation to the handle (outside / inside).

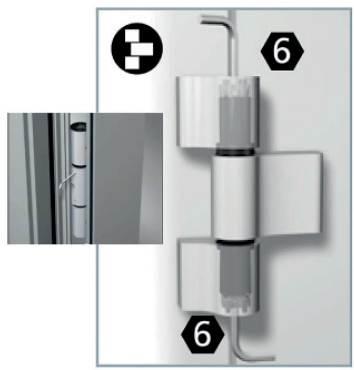


Figure 10.4. Vertical adjustment:
1. Remove the bottom hinge cover.
2. Use a 6 mm box spanner to adjust the position of the door vertically (up / down direction).

7. SLIDING AND FOLDING DOORS

A. GU sliding door

All moving parts need to be lubricated with non-freezing oil (such as silicone oil) preferably twice a year (more frequently if needed). Use a lubricant approved by the manufacturer of the cylinders to lubricate the cylinders (i.e. Abloy lock spray).

The espagnolette catch can be adjusted by being turned inward or outward (see Figure 11.1).

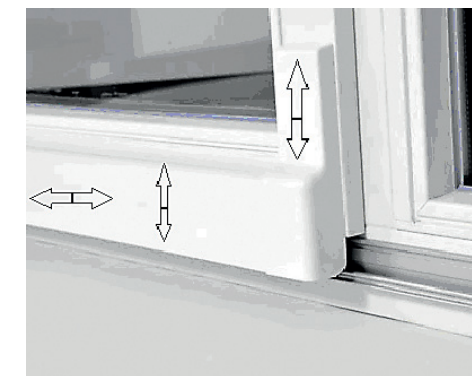
For cleaning and lubrication, only use suitable products that do not damage the anticorrosive protection of the hardware.

Figure 11.1. GU sliding door
1 – espagnolette strike

B. Tilt and slide door

On a tilt and slide patio door, the height of the sash may be adjusted if needed:

- Remove hinge covers from the sash (Figure 11.2).
- Remove the security cover by pulling it toward you.
- Using the screw under the security cover, the sash may be adjusted as follows:
  - to raise the sash +4 millimetres, turn the screw counter-clockwise
  - to lower the sash –1 millimetre, turn the screw clockwise
- After adjustment, push the security cover back into its original position.
- Replace hinge covers (e and f) on the sash.



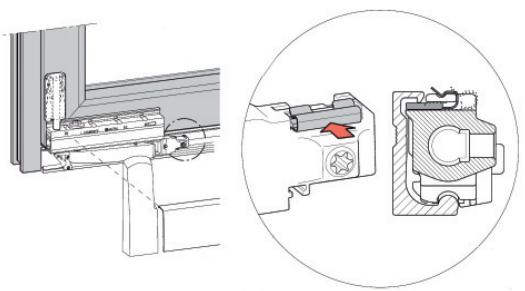


Figure 11.2. Adjusting a tilt and slide door

C. Folding door

To adjust the position of folding sashs on a folding door, it may be necessary to adjust the sash hinges (both outer and inner) and the roller mechanism of the sash.
To adjust the horizontal position:

- Fold the sashs into a suitable position
- Turn the middle screw (Figure 10.3)

To adjust the vertical position:

- Remove the cover from the adjuster screw.
- Open the lock nut.
- Adjust the adjuster screw using a box spanner (figure 10.4)
- Secure the lock nut and replace the cover for the adjuster screw.

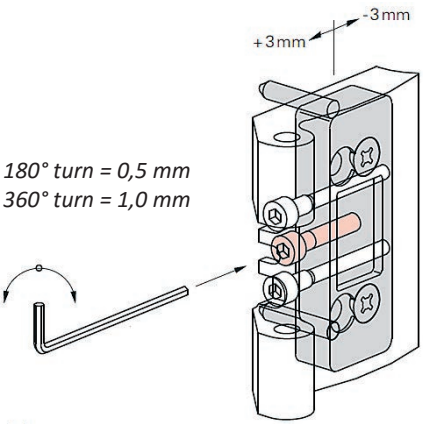


Figure 11.3. Folding window hinge, regulation

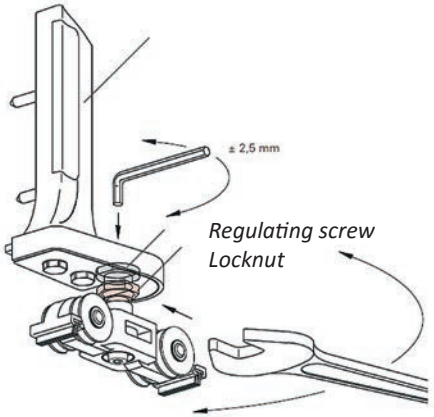


Figure 11.4. Folding window's support roller, regulation

Figure 11.5. Folding door

8. SPECIAL PRODUCTS

A. Vertical sliding sash window

The hinge pivots of the vertical sliding sash window need to be lubricated. Similarly, the tracks and the child proof lock (if any) require lubricating.

B. GLAZING UNIT

Washing panes

Glass panes are mostly washed in spring or autumn (minimum temperature +5 °C). Use a proper window washing kit and suitable glass cleaning product to wash the glass panes. A good window washing kit consists of a window washer, a stand to attach the washer to, a squeegee and a rod (if needed, a telescopic rod of adjustable length).

Clean the glazing unit, starting on its outer side, as soiled areas are easier to detect when seen against light. To remove dirt or cleaning product fluid, use a dedicated squeegee. To dry the surface of glass it is not advisable to use newsprint, since printing ink soils and may damage the surface of the glass. If needed, improve the drying result with a piece of microfibre glass cloth, chamois or no-fuzz paper. Pay particular attention to the corners and edges of the glass surface.

PLEASE NOTE: when installing a glazing unit with a self-cleaning glass pane (for example SGG Bioclean) or when washing glass panes, it is important to adhere to these specific handling requirements:

- Never attempt to remove an individual stain from the surface without using water.
- Always use non-aggressive glass cleaning products.
- Do not use glass maintenance products containing silicone or abrasive particles.
  Do not use commercial cleaning products designed for a purpose other than cleaning glass.
- Do not use the following chemical cleaning products: sodium carbonate, bleach, detergent or spirit.
- Avoid contact between glass and any other sharp or abrasive objects, including jewellery, buckles, measuring tapes, razor blades, knives, sandpaper, etc.

Scratches. Avoid objects with sharp edges coming into contact with the glass surface. Glass is strong but not scratch resistant. Only light scratches may be removed from the surface of glass using cerium oxide.

Thermal stress. A rapid increase in the temperature of glass or a great difference in temperatures in glass creates thermal stress, as a result of which the glass may break.

Thermal fracturing occurs when the temperature difference between the centre and edge areas exceeds a certain critical limit. The following temperature differences should be used as guiding values:

- Reinforced glass, rolled glass and laminated glass: 20-30ºC
- Float glass: 40-50ºC
- Tempered glass: 80-100ºC.

When changing windows the thermal fracturing risk must be assessed according to glass type, glazing surface and orientation in terms of cardinal direction but also according to the glazing unit's internal and external sun protection means (lamellae, roll-up shutters, etc.)
and frame colour.

Thermal fracturing is related to the physical properties of glass and therefore is not considered a defect that is subject to warranty rights or obligations. To avoid critical thermal stress:

- do not direct a stream of air or radiation from a heat source onto the glass,
- avoid direct contact between objects and the glazing unit.

The manufacturer is responsible for the glazing unit meeting the customer's specifications; the customer and/or designer is responsible for the glass being suitable for the conditions at the place of use. We recommend using tempered glass where there is risk of thermal fracturing (e.g. deep shadows from external structures on the southern elevations of buildings). Additional information on thermal stress in glass : http://www.glassolutions.ee/knowledge-centre/how-to-guides

9. TFACT SHEET for TEKNOL AQUA 1410-01 treated items

This item has been treated with wood preservative: (Regulated by the Biocides Regulation 528/2012, PT8)
a) Items treated with TEKNOL AQUA 1410-01 contain:
b) Items treated with TEKNOL AQUA 1410-01 are protected against:
c) Items treated with TEKNOL AQUA 1410-01 contain the following biocides:
d) Items treated with TEKNOL AQUA 1410-01 contain the following nanomaterials:
The wood preservative TEKNOL AQUA 1410-01 is produced by:

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.

10. FACT SHEET for GOR 605 treated items

This item has been treated with wood preservative: **(Regulated by the Biocides Regulation 528/2012, PT8)**	**GORI 605**
a) Items treated with GORI 605 contain:	Biocides approved for product type 8
b) Items treated with GORI 605 are protected against:	Wood destroying or discolouring fungi
c) Items treated with GORI 605 contain the following biocides:	Propiconazole, Tebuconazole, IPBC
d) Items treated with GORI 605 contain the following nanomaterials:	–
The wood preservative GORI 605 is produced by:	Teknos A/S Industrivej 19 DK-6580 Vamdrup; Tel.: +45 76 93 94 00

e) Special precautions for items treated with GORI 605:
In order to protect aquatic organisms, do not use the treated wood near the aquatic environment (rivers, streams, lakes etc.). **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.**

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