





Condensation can form on glass in windows and conservatories if the conditions are right.

Excessive levels of moisture are caused simply through the daily routine of showers, baths, boiling kettles, cooking, drying clothes especially on radiators and breathing. A family of 4 will contribute approximately 4 pints of water per person a day, equal to over 100 pints of water vapour a week, which has to end up somewhere. Whilst modern double glazed units are very thermally efficient when compared to old single glazed windows, especially in terms of retaining heat within the room, they still present a relatively cold surface especially in the winter months.

This is not to suggest that there is a fault with the glazing but despite improvements in the science that goes into modern glazing it still one of the colder surfaces in terms of construction within any building. There are three important factors that cause condensation:

- · The level of moisture in the air
- The temperature of the air in your home
- The surface temperature of the windows

With careful planning it is possible to prevent condensation build up in the home. Condensation prevention will help ensure that your property remains damp and mould free.

Tips to reduce condensation:

- Try to keep the inside temperature reasonably constant
- · Avoid drying clothes indoors.
- Do not dry clothes over any radiators
- Ensure tumble driers are properly vented or the condensate is regularly emptied
- Keep furniture away from walls
- Use extractor fans and cooker hoods to expel damp air

- Ensure extractor fans are well maintained and adequate
- Use pan lids on pans when cooking
- Open a window to allow escape of moist air if moisture levels are high.

EXTERNAL CONDENSATION

External condensation is more likely to occur in spring and winter when the glass temperature drops below the outdoor dew point.

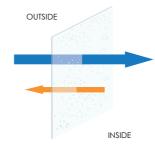
As the outdoor temperature increases, the condensation will clear without intervention.

You can find out more about external condensation on the following page.

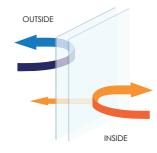
INTERNAL CONDENSATION

Condensation simply expressed is the transference of moisture from the air to a solid surface. The moisture vapour that is in the air, when it reaches saturation levels and can't escape any other way, is released onto the coldest surface available in the form of water droplets. Condensation can also appear in areas where the air movement is restricted, such as behind bedroom furniture and inside wardrobes which can start to create a musty smell and lead to mould growth on clothes, furniture and walls. Whether it is a period home, new property or a bungalow, the problems associated with condensation can affect all of us.

Properties have become increasingly energy conscious and airtight, and where we have looked for ways to save energy in our homes through insulation, draft proofing, double glazing and blocking off chimneys, this has unfortunately assisted in increasing the build-up of high levels of moisture vapour, creating ideal conditions for the formation of condensation.



A single glazed window cannot retain heat within the room and the lower temperature of the glass allows the moisture in the air to condense on the cold surface. This is often more evident in rooms in which there is a lack of ventilation.



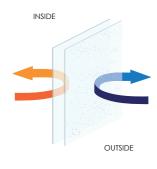
Although a double glazed window is capable of retaining far more internal heat, the less efficient types allow a certain amount to pass through the air space and thus warm up the outer pane. This would not therefore allow condensation to form on either pane.

EXTERNAL CONDENSATION

Due to recent innovations in the efficiency of double and triple glazing, along with updated requirements of building regulations and the lowering of carbon emissions, certain weather conditions may allow the formation of external condensation on energy efficient windows and doors.

This is a natural phenomenon and a clear indication that the window or door is preventing heat loss from your house. Windows manufactured with a double or triple glazed unit containing energy efficient low-emissivity glass have enhanced thermal insulation properties thanks to a high performance transparent coating that reflects heat from radiators or fires back into the room.

As a result the outer pane of glass does not get warmed by heat escaping from inside the building through the glass and remains cooler in comparison to less thermally efficient windows. Condensation forms on the outside surface of glass when its temperature drops below the outdoor dew point temperature.



The new generation of thermally efficient double and triple glazed windows allow little or no heat through to warm up the outer pane. This creates the condition which allows condensation to form on the outside surface of the outer pane under certain weather conditions. This is strong evidence that heat is not escaping from your house through the window.





HEATING

Maintain some permanent heat in the house during cold weather.

Marginally increase the temperature in areas where condensation is a particular problem.

If possible, fit radiators under windows to maintain the temperature of the inside pane of your double- glazing.

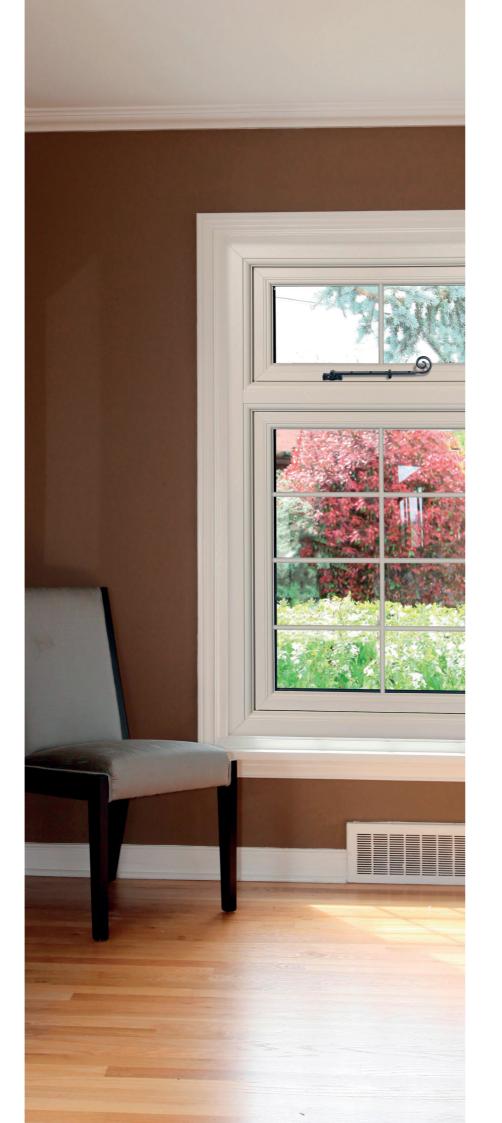
CIRCULATION

Water vapour will easily drift on convection currents far from where it originated.

Keep internal doors to kitchen and bathroom areas closed and draught- sealed, where possible, to prevent the excessively moist air in these rooms being transferred to other areas of the house.

Bedroom windows should have a night ventilation facility to provide air movement. Ideally, if bedroom doors are closed, a ventilation grille should be installed in or above the door also.

To ensure air flow in the vicinity of windows, curtains should be a minimum of 150mm (6") away from the window, with suitable gaps, top and bottom, to allow circulation.



We recommend a number of sensible precautions which should be taken to gain full advantage of the security features available with your double glazing:

Never leave a window open when your home is unattended. For added protection, lock all windows in the closed position and remove the keys.

To provide adequate means of escape in the event of any emergency, we recommend that keys to all windows are located adjacent to the window, but out of external view.

When leaving the house unattended or at night, ensure door handles are fully lifted and that the keys are turned to throw and lock all deadbolts/hookbolts for full security.

• Use the 'night vent' facility (if fitted) for providing safer ventilation. N.B. Whilst the 'night vent' does provide some level of 'safer' ventilation than leaving the window in its open position, it should be noted that the window is not in its most secure position until it is fully closed and the handle is locked. Therefore we advise that you return all windows to the fully closed and locked position before leaving your home or when you wish the windows to be at their most secure.



SECURITY

Your double-glazed windows and doors have been specifically designed to include a variety of security features to protect your home and family against intrusion.



All double-glazed units are susceptible to a degree of surface damage during the glass manufacturing process.

Certain imperfections in the glass cannot be avoided, even in the most carefully controlled production environment.

Blemishes and imperfections are inherent in all double-glazing, and are acceptable within the highest standards of the industry.

We wish to draw your attention to the following extract from an industry accepted standard, relating to glass generally.

- 1. Transparent Glass, used in the manufacture of double-glazed units is identical to that used in traditional single-glazing and will therefore have a similar level of quality.
- 2. Both panes of the doubleglazed unit shall be viewed from the room side, standing at a distance of two metres

(6'6" approx) in natural daylight and not in direct sunlight. The area to be viewed is the normal vision area, with the exception of a 50mm (2") wide band around the perimeter of the unit.

NB: The appearance of modern low 'E' glass units, in certain sunlight, may present a "smokey hue". This appearance is perfectly normal. It is due to the metallic layer on the inner surface of the outer pane of glass.

- 3. Flat Transparent Glass shall be deemed acceptable if the following phenomena are neither obtrusive or bunched:
- Totally enclosed seeds.
- b. Bubbles or blisters.
- c. Hairlines or blobs.
- d. Fine scratches, not more than 25mm (1") long.
- e. Minute embedded particles.
- 4. Obtrusiveness of blemishes shall be judged by looking through the glass and not at it, under normal lighting conditions as described in point 2.

GLASS DEFECTS

Your installer uses only the highest quality float glass available, whether laminated, toughened or annealed, which conforms to the requirements

PATTERNED GLASS

This glass originates in very large sheets and due to spacing repetition, centralisation of any design in a specific window, cannot be guaranteed

of BS6262.



GENERAL MAINTENANCE

Your double-glazed windows and doors have been specifically designed to include a variety of security features to protect your home and family against intrusion.

GLASS CLEANING

- Glass used in most double-glazed units is easily scratched and it is, therefore, recommended that hand jewellery is removed prior to cleaning.
- Any proprietary household cleaner may be used with a soft cloth and it is recommended that heavy external grime be initially removed with a solution of soap and water.
- Laminated glass, or glass containing Georgian bars, is cleaned in exactly the same manner.

LEADED GLASS **CLEANING**

- In this type of double- glazing, lead strips are bonded to the outside and inside of the external pane of glass.
- Take care when cleaning leaded lights as excessive pressure might dislodge the lead from the glass surface.

SCRATCHED GLASS

If scratches occur, most can be removed with jewellers' rouge, or an equivalent rubbing compound.

SILICONE SEAL

Please note that some discolouration of the Silicone seal is a natural occurrence and cannot be avoided.





WEATHERSEALS

- During cleaning and general maintenance ensure that any hand-inserted weatherseals fitted to your products do not become dislodged from their grooves.
- Should this occur, slide back into position immediately to avoid damage when the product is closed.
- If the weatherseals are broken or damaged and draughts are felt around the product, ensure prompt replacement by contacting your installer.

DRAINAGE

- Your double-glazed products are designed with an in-built drainage system, comprising slots within the thresholds that allow any water ingress to flow to the outside. To ensure an efficient system these slots must remain unblocked.
- Periodically, remove dirt, clear the drain slots (situated in the frame rebates) and check drainage operation by flushing through with water.

LUBRICATION

- To attain optimum performance, it is essential that all hardware is lubricated every 6-12 months.
- For lubrication of hardware etc, use light machine oil (e.g. 3-in-1 lubricant) for moving parts and petroleum jelly where indicated.

CONSERVATORY AND PORCH ROOF CLEANING

(Avoid all solvent-based or abrasive cleaners).

- Roofing, rafters and PVC-U components fitted to these structures must be cleaned in a similar manner to PVC-U frames.
- Clear gutters of leaves and debris as required to avoid overflow of rainwater and ensure unobstructed drainage

Wash roof panels with soap and water solution periodically to remove grime and atmospheric deposits.

Do not walk on conservatory roofs.





HARDWARE

Your double-glazed windows and doors have been specifically designed to include a variety of security features to protect your home and family against intrusion.

GENERAL MAINTENANCE

- Wipe every three months with a soft damp cloth and warm and mild soapy water to remove any surface build up of dirt. Then rinse with clean water and dry with a soft cloth.
- Please don't use chemicals, brass cleaners, scouring pads, wire wool etc.

BRASSWORK

When installed, brasswork is fully protected with lacquer. In time and through normal wear and tear, this lacquer may peel or become tarnished.

Note: Your installer cannot accept responsibility for this natural occurrence.

To refurbish your brasswork carry out the following procedure:

- You are advised to protect the PVCu/ Aluminium surfaces from chemicals etc, by masking off an area around each piece of brasswork.
- Remove old lacquer with nail polish remover/paint stripper.
- Clean and polish with a suitable proprietary brass polish.
- Carefully re-lacquer with a good quality product.







Your double-glazed windows and doors have been specifically designed to include a variety of security features to protect your home and family against intrusion.

PVCU FRAMES

(Avoid all solvent-based or abrasive cleaners).

- Periodically, clean the internal and external surfaces of the frame to remove any grime and atmospheric desposit. Always use a soft cloth.
- Stage 1 Clean with mild liquid detergent solution and rinse with water.
- Stage 2 For harder to remove marks clean with "Solusafe" liquid cleaner.
- Stage 3 Stubborn marks can be removed with a stronger, non abrasive, proprietary cleaner such as a cream. Always take care not to disturb sealant.

ALUMINIUM FRAMES

In general aluminium can be cleaned using warm soapy water with a non abrasive cloth.

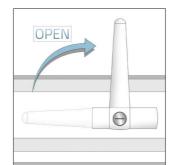
- If the aluminium has become stained or lost its gloss, then an approved renovating cream can be applied.
- T-Cut or similar car polishes can be used providing they are not too abrasive. Best to test a small area first if you are unsure.
- When cleaning only a light application is necessary to prevent dirt accumulating.
- Plaster, mortar and anything similar is removed best with a wooden or plastic spatula.

This window may be opened outwards with its friction hinges holding it in a desired position. Locking is achieved by the mushroom cams and/or the shootbolt pins of the locking mechanism, fitted to the opening edge of the window, engaging into the keeps fitted to the outer frame.

These keeps usually have secondary slots incorporated within them, which when engaged provide a 'Night Vent' position. Allowing the window to be "locked off" in a slightly open position providing additional ventilation.

OPERATING INSTRUCTIONS

- If fitted, turn key or depress button to unlock the locking handle. Handles with different key/ button operating sequences may be fitted - Check with your installer for instructions.
- Rotate the handle through 90° to disengage locking mechanism and open by pushing outwards.



MAINTENANCE



LUBRICATION (EVERY 6 TO 12 MONTHS)

away excess.

 Oil all pivot points (one drop per pivot is sufficient) and wipe



FRICTION HINGES

To attain optimum
 performance, the scissor
 mechanism of the friction
 hinges will require periodic
 lubrication. The pivots, sliding
 shoe and track should be kept
 free of dirt and debris.



ESPAG. LOCK

 Lubricate - As Required Keep the sliding mechanism free of dirt and lubricate each slot with light machine oil.



KFFPS

Lubricate the slots of the keeps with petroleum jelly as required.



ESPAG, HANDLES

Clean and lightly oil moving parts.







These versatile inward opening windows are capable of

· Tilt mode for ventilation.

two modes of operation.

Turn mode for cleaning and emergency exits.

The term 'Tilt-Turn' refers to the sequence of operation of the window which is designed for safety, to initially select the 'Tilt' mode, followed by the 'Turn' mode.

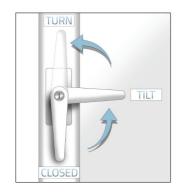
Locking is achieved by a series of cams or espagnolettes, located on a sliding mechanism around the edge of the window. When shut and the handle 'closed' position is selected, the cams engage into keeps fitted around the outer frame, providing a secure locking system and excellent weathersealing.

Note: These windows can also be supplied in the Turn -Tilt (AKA Tilt and Turn) mode, whereby the sequence of operation is reversed. If you are in any doubt as to the sequence of operation please contact your installer.

OPERATING INSTRUCTIONS

To operate the window, the handle is placed in one of three positions, 'Closed', 'Tilt' or 'Turn'. The operation sequence commences with the window in the 'Closed' position (Handle vertically downwards).

Note: The window must always be fully shut before changing the handle position.



If fitted, turn key to unlock.

To select 'Tilt', rotate the handle through 90° from vertically downwards to horizontal and pull the window inwards. The bottom remains hinged to the frame, while the top tilts inwards to allow ventilation.

To select 'Turn' from the 'Tilt' mode, close the window and rotate the handle from its horizontal position to vertically upwards and pull the window inwards. The side remains hinged to the frame, while the window may be opened inwards to any desired position.

To select 'Turn' from the 'Closed' position, rotate the handle through 180o from vertically downwards to vertically upwards and pull the window inwards.

SWITCH BARRIER

The switch barrier projecting from the locking mechanism, adjacent to the handle, is a safety device which ensures that only one mode, 'Tilt' or 'Turn', can be selected at any one time by securing the handle into the selected mode, while the window is open. Avoid pressing the switch barrier as this action releases the handle and could allow it to be inadvertently rotated to the alternative mode, resulting in the window disengaging from its gear.

Always firmly push the opening leaf into the window frame before changing the handle position.

MAINTENANCE



TILT & TURN _OCKING MECHANISM

Keep the sliding mechanism free of dirt and lubricate each slot with light machine oil as required.



KEEPS

 Lubricate the faces of the keeps with petroleum jelly as required.



HANDLES

Clean and lightly oil moving



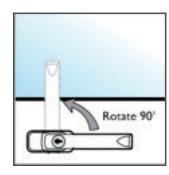




The window rotates through 180° to allow internal cleaning of the external pane.

Safety catches limit the initial opening and operate again at full rotation.

Locking is achieved by multi-tongue bolt espagnolette mechanism. Lock keeps also allow a 'Night Vent' position, providing more secure ventilation.



OPERATING INSTRUCTIONS - NIGHT VENT

Turn key to unlock. Rotate handle 900 to vertical, open slightly and close handle to engage night vent slots.

TO OPEN FOR RESTRICTED VENTILATION

Operate handle and push outward until catch engages.



TO ROTATE FOR CLEANING



(SPILKA GEARING ONLY)

Disengage the catch (by pushing the catch upwards) and push outwards while pulling the top down and rotate the window until the catch re-engages.



(PN/YALE (GRORUD) GEARING ONLY)

Disengage the catch (by pushing the button located on the jamb marked "PRESS" until it passes the two stops in the channel) and then push outwards while pulling the top down and rotate the window until the catch re-engages.



TO ROTATE TO CLOSE

(SPILKA GEARING ONLY)



Disengage the catches and push the top outwards while pulling the bottom up to return to closed position. Pull inwards and operate the handle to fully close. Turn the key to lock.



(PN/YALE (GRORUD) GEARING ONLY)

Disengage catches (by pushing the button located on the jamb marked "PRESS") and then push the top outwards while pulling the bottom up to return to closed position. Pull inwards and operate the handle to fully close. Turn the key to lock.



LUBRICATION

(EVERY 6 TO 12 MONTHS)

- All pivot points in the hinge should be kept lightly oiled.
- Lightly grease the vertical tracks. Lubricate the keeps with petroleum jelly.



If fitted, the restrictor limits the opening of the window to control ventilation. The restrictor may be disengaged to allow the window to be fully opened. There are two main types of restrictor, the standard casement restrictor and the security restrictor.

STANDARD CASEMENT RESTRICTOR OPERATING INSTRUCTIONS

TO OPEN - RESTRICTED

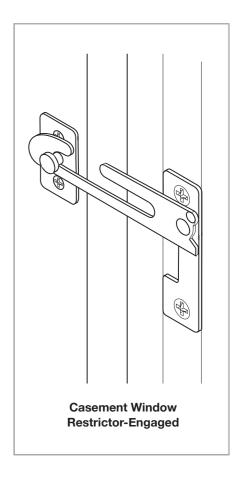
 Operate handle and open the window. The restrictor arm will limit opening.

TO OPEN - FULLY

- Once opened to the restricted position, close the window slightly and manually release the restrictor by lining up the slot opening with the striker post.
- While holding the restrictor latch, open the window fully.

TO CLOSE

 Close the window in the normal manner. The restrictor will automatically re-engage.







TO LOCK RESTRICTOR

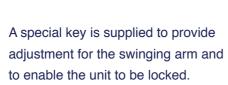
- A special key is supplied to provide adjustment for the swinging arm and to enable the unit to be locked.
- Note: To provide adequate means of escape in the event of any emergency, we recommend that keys to all windows are located adjacent to the window, but out of external view.



TO ADJUST SWINGING ARM

- Insert the key into socket at the side of the unit and rotate clockwise to tighten swinging arm or anti-clockwise to loosen.
- Note: that in the unlikely event that adjustment is needed, only a small movement (1/4 turn) will be required.

SECURITY RESTRICTOR OPERATING INSTRUCTIONS





 Select required mode and open window. Restrictor arm will limit opening.

TO OPEN - FULLY

- · Close window.
- · While holding down control button, re-open window.
- Release button as soon as window has cleared frame.

TO CLOSE

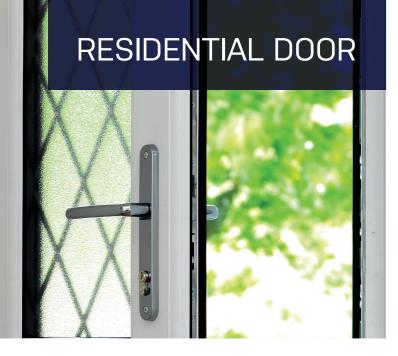
- · Close the window in the normal manner.
- · The restrictor will automatically engage











Doors may be fitted with lever/pad handles that limit outside opening by use of a key, or lever/lever handles allowing external opening by handle movement.

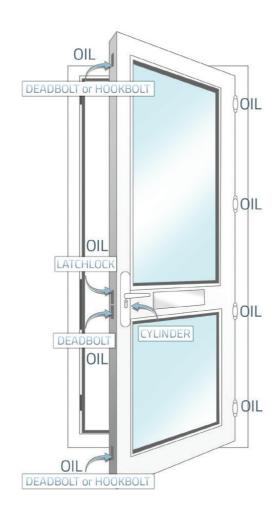
High-security locking systems generally comprise multipoint deadbolts of various types, and a latch lock, which engaged in keeps fitted to the frame jamb. The deadbolts are engaged by lifting the handle.



- Close the door latchlock engages.
- Fully lift the handle or pad to engage the top and bottom deadbolts/hookbolts/ rollers.
- Insert key and turn to engage the centre deadbolt and fully lock.
- If the key will not turn, lift the handle or pad to its maximum position and then turn key.



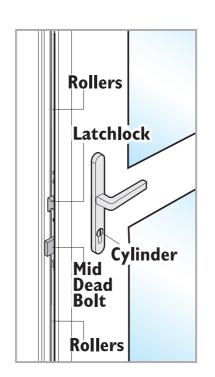
- Insert key and turn to unlock.
- Press handle or pad down to disengage top and bottom deadbolts/ hookbolts/rollers.
- · With lever handle, door will open.
- · With pad handle, continue to turn key to open.



LUBRICATION

(EVERY 6 TO 12 MONTHS)

Oil all pivot points (one drop per pivot is sufficient) and wipe away excess.



MAINTENANCE

LOCKING MECHANISM

 With the door open, lubricate the deadbolts/ hookbolts/rollers and latchlock with light machine oil.

HINGES

 Clean and lightly oil hinge pins. If hinges are external (Open-out door) lubricate every six months.

HANDLES

Clean and lightly oil external moving parts.

LOCK CYLINDER

DO NOT LUBRICATE (packed with special grease).



Door frames should be washed with warm soapy water, however stubborn stains can be removed using specialist PVCu cleaners and by following the manufacturer's guidelines.

The door leaf should only be cleaned using warm water or non-aggresive composite door wipes. No solvent-based product or abrasives should be used as these will damage the surface of the skin.

HINGES

· Hinges should be lubricated with engineering oil.

MOVING PARTS

 If necessary, a small amount of lubricant can be applied to the moving parts such as letterplates, handles and knockers.

PLEASE NOTE:

 It is strongly recommended that you get used to fully engaging the doors gearing mechanism every time you close the door by fully lifting the



handle . That way it pulls the door tightly and into the correct position to achieve its optimum weather tightness and thermal performance and prevents thermal movement.





FINGERBOLTS

 Hand operated fingerbolts are fitted to the top and bottom of the slave door.

MAINTENANCE

Doors may be fitted with lever/pad handles that limit outside opening by use of a key, or lever/lever handles allowing external opening by handle movement.

Dependant on locking mechanism there are two slave door locking options, full slave locking and fingerbolts. Or a handle operated shootbolt lock operating in the same way as the master door.

TO UNLOCK

- · Insert the key and turn to unlock.
- Press the handle or pad down to disengage the top and bottom deadbolts/ hookbolts/rollers.
- With the lever handle, then door will open. With a pad handle, continue to turn the key to open.

TO LOCK

- · Close the door latchlock engages.
- Fully lift the handle or pad to engage the top and bottom deadbolts/hookbolts/ rollers.
- Insert the key and turn to engage the centre deadbolt and fully lock. If the key will not turn lift the handle or pad to maximum position and then turn the key.

LOCKING MECHANISM

 With the door open, lubricate the deadbolts/ hookbolts/rollers and latchlock with light machine oil.

HINGES

 Clean and lightly oil the hinge pins. If hinges are external (Open-out door) lubricate every six months.

HANDLES

· Clean and lightly oil external moving parts.

LOCK CYLINDER

DO NOT LUBRICATE (packed with special grease).



Patio doors are designed to be very low maintenance. The general service and maintenance tasks recommended are simple to carry out and do not require specialist skills, tools or equipment



TO LOCK

- Slide door to fully closed position.
- Lift the lever behind the handle. (Bolts and Cams will engage to lock the door.)
- Turn the key to deadlock the locking mechanism.



TO UNLOCK

- Insert the key in the cylinder and rotate to unlock the mechanism.
- Depress lever behind handle. (Bolts and cams will disengage).
- Slide the door open.

MAINTENANCE

LUBRICATION

(EVERY 6 TO 12 MONTHS)

· Oil the locking cams of the mechanism.

LOCK CYLINDER

· Do not lubricate (packed with special grease).

BOTTOM TRACK

- · Keep permanently free of dirt and obstruction.
- · Ensure that drainage slots are clear of debris.

WEATHERSEAL

- Refer to page 7 for weatherseal maintenance.
- Following the initial installation the weatherseal may require bedding in; causing a slight resistance when operating the door the application of a silicone spray will aid the smooth operation of the door during this period.







Lift & Slide doors are great space savers. They are designed to be very low maintenance.

The general service and maintenance tasks recommended are simple to carry out and do not require specialist skills, tools or equipment.

TO UNLOCK

- Insert the key and turn to unlock
- Turn the door handle 180° anti clockwise this will raise the sliding door by several mm to enable the door to slide.

TO LOCK

- Slide the door into the closed position and turn the handle 180° clockwise, from the downward to upwards position.
- · Turn the key to lock.

MAINTENANCE

LUBRICATION

(EVERY 6 TO 12 MONTHS)

Oil the locking cams of the mechanism.

LOCK CYLINDER

· Do not lubricate (packed with special grease).

BOTTOM TRACK

- Keep permanently free of dirt and obstruction.
- · Ensure that drainage slots are clear of debris.

WEATHERSEAL

- Refer to page 7 for weatherseal maintenance.
- Following the initial installation the weatherseal may require bedding in; causing a slight resistance when operating the door. The application of a silicone spray will aid the smooth operation of the door during this period.

APPROVED CLEANING PRODUCTS

 Mild detergent dissolved in warm water is to be used. Approved cleaning products to dilute are Ajax Cream, Liquid Gumption and Flash



If the bi-fold is fitted with a seperate door, this can be used like a standard residential door.

TO OPEN

- To open the folding doors, turn the handle to the open position on the lead door.
- Pull (Inward opening) or push (Outward opening)
 180° until the magnet engages on the adjacent sash.
- To open the remaining doors, turn the slave handles 180° and repeat step 2, until all sashes are open.

TO CLOSE

- Guide the 2 doors closest to the wall along the track, using the D handle to pull (outward opening) or push the frame (inward opening) the doors into place
 engage the slave handle.
- Repeat previous step until all the doors are closed and the slave handles are in the locked position.
- Using the lead door handle, pull the door away from the magnetic keep and close. Pull the handle up to engage the lock.

MAINTENANCE

ADJUSTMENT OF MUSHROOM CAMS

To achieve optimum weathering performance, pressure on spring latch and acceptable handle operation, adjust the striker/cam with an appropriate size spanner/hexagon key.

LOCK LUBRICATION

(EVERY 6 TO 12 MONTHS)

Clean and lightly grease external moving parts.

CYLINDER

Do not attempt to lubricate the locking cylinder.

HINGE LUBRICATION

Clean and lightly oil the hinge pins annually. If they
are the open-out type, lubricate the hinge pins
every six months.

HARDWARE LUBRICATION

 Clean and lightly grease all locking points and the inside top and bottom track bearing surface annually with petroleum jelly.

HANDLES

· Clean and lightly oil external moving parts annually.





YOUR GUIDE TO OPERATION & MAINTENANCE



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