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BOOKLET  
OPERATING INSTRUCTIONS. CARE.  
MAINTENANCE. WARRANTIES

UK 03/2019 | Internorm International GmbH, Druckerei Friedrich VDV, Linz | Änderungen vorbehalten.

Your personal order number

Date	Stamp, signature



WARRANTIES

Warranty

10  
YEARS

- No unnatural colour changes or cracked surfaces due to weather influences for white window and door profiles made of UPVC, with the exception of mitre cracks.
- No unnatural colour changes or cracked inside surfaces due to weather influences for foil-coated window and door profiles made of UPVC, with the exception of mitre cracks.
- No unnatural colour changes or cracked surfaces due to weather influences for anodised or powder coated window and door profiles made of aluminium.
- No condensation between the panes of insulating glass.
- The function of the timber, thermal foam and aluminium profiles compounds is guaranteed for all Internorm timber/aluminium window systems, provided that the Internorm installation and maintenance guidelines have been adhered to.
- The function of the adhesive and the sealing of insulation glass panes with the window profiles is guaranteed for all Internorm timber/aluminium window systems, provided that the Internorm installation and maintenance guidelines have been adhered to.
- The glue connection of glued Georgian/feature bars.

Warranty

5  
YEARS

- PVD coated door handles are guaranteed against corrosion if there is no mechanical change.
- No unnatural colour changes or surface cracks due to weather influences in door fillings. There is no guarantee for changes in the surface appearance as a result of dirt.

Warranty

3  
YEARS

- No unnatural colour changes or surface cracks due to weather influences for roller shutter profiles made of UPVC.
- No unnatural colour changes or surface cracks due to weather influences for anodised or powder coated roller shutter and blind profiles made of aluminium.
- The function of the window or door fittings is guaranteed, provided that the Internorm installation and maintenance guidelines have been adhered to.

Assurance

30  
YEARS

Furthermore Internorm guarantees safe-guarding that Internorm products can be repeatedly serviced by our experts in such a fashion (original parts not obligatory), to retain their full function for a period of 30 years.  
However, this presupposes that the frame construction (frame and sash) is not damaged. The 30-year period starts from the production date. Electronic components excluded. The services required to maintain the functionality, including the materials required, labour etc. will be invoiced according to the currently valid rates.

CONTENT

Congratulations!

You have decided for an Internorm product which belongs to the very first choice in quality, technical perfection and design. This is based upon the technical know-how of 88 years of experience in window construction. By choosing Internorm you have chosen the security of Europe's largest window brand.

1. Product liability and warnings	4
2. Operation	14
2.1. Windows and window doors	14
2.2. Sliding elements	18
2.3. Entrance doors	30
2.4. Sun and insect protection	49
2.5. I-tec Ventilation IV40	53
2.6. I-tec shading	62
2.7. Opening control (wireless)	67
3. Adjustments – adjustment possibilities	69
3.1. Concealed hardware	69
3.1.1. VV hardware	69
3.1.2. VV hardware (concealed TopStar)	73
3.1.3. I-tec locking	75
3.2. Exposed hardware	77
3.3. Further hardware versions	80
3.4. Entrance doors	91
3.5. Available adjustments for window shutters	110
3.6. Insect protection	111
4. Cleaning, care and maintenance	112
4.1. General information	112
4.2. Hardware	113
4.3. Cleaning tips for glass surface/glass joint/glass corner	118
4.4. Gaskets	120
4.5. UPVC surfaces	121
4.6. Timber surfaces with timber/aluminium elements	121
4.7. Anodised or powder coated aluminium surfaces	122
4.7.1. Requirements and process for cleaning aluminium surfaces	122
4.7.2. Cleaner for anodised surfaces	123
4.7.2.1. Conservation for anodised surfaces	123
4.7.3. Cleaning for powder coated surfaces	124
4.7.3.1. Conservation for powder coated surfaces	124
4.8. Cleaning instructions for stainless steel	125
4.9. Care and maintenance of the I-tec ventilation system	125
4.10. Special warning for timber/aluminium elements	125
5. Comfort	126
6. Airing	127
7. Warranties	130
7.1. General information	133
7.2. Fitting advice	139
7.3. Technical limitations of the warranty	140



ENJOY YOUR NEW  
WINDOWS AND DOORS  
FROM INTERNORM.

You have chosen well by buying quality products from Internorm.

Many thanks again for your trust! For questions which this booklet cannot answer, please phone our head-office in London on:

0208 205 9991

Or send us an email: [office@internorm.co.uk](mailto:office@internorm.co.uk)  
More information is also available on [www.internorm.co.uk](http://www.internorm.co.uk)



# BOOKLET

MANUAL. CARE.  
MAINTENANCE. WARRANTIES.



<https://www.internorm.com/uk-en/downloads/user-manuals/>

[www.internorm.com](http://www.internorm.com)



## 1. PRODUCT LIABILITY | WARNINGS

### GENERAL INFORMATION

Internorm windows, doors, sun protection elements and accessories are high-quality products. In order to ensure their lasting serviceability and durability as well as to prevent personal and material damage, their professional service and maintenance is essential. In this manual you will find basic information to this end. Disregard of this information can lead to exclusion from warranty and product liability claims. Functional impairments or wear and tear of parts, which usually occur within the limits of normal and proper use, are not covered by warranty obligations. Excluded are also any damage which is the result of improper handling, unintended use of the product and attempts of repair by unqualified persons. The intended product use of windows and doors includes the opening and closing of sashes fixed at vertically installed elements. When closing the sash, the counterforce of gaskets has to be overcome. All other kinds of use do not correspond with the intended use.



#### Please consider the following points:

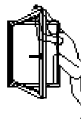
The opening gap between sash and frame can pose a risk of injury through jamming.



When window is open, there is a risk of falling down - great danger for children.



When window sash is open, there is a risk of injury through the effects of wind and storms.



Avoid additional load on sash (not intended as coat hanger or stepladder).

## 1. PRODUCT LIABILITY | WARNINGS



Please take care that no object can get between sash and frame and that no object is jammed when closing window.



Please avoid sash being pressed against window frame contrary to normal use or in uncontrolled manner (e.g. through wind load), which may result in damage of hardware, destruction or consecutive damage of hardware, frame materials or other parts of window or door.



In case of wind and draught, window and door sashes must be closed and locked.



Opened and tilted sashes do not meet requirements for tightness of joint gaskets, driving rain tightness, sound insulation, heat insulation and anti-burglary protection.



Closed windows do not meet requirements for airing necessary for maintaining good health and heating. If windows are used to air rooms, this has to be done on a regular basis implementing proper airing habits.



Normal glass does not meet requirements for increased risk of breakage, anti-burglary protection and fire protection.



Normal glass can break easily. Resulting sharp glass edges and glass splinters pose a risk of injury.



Fall-proof glazing (e.g. Juliette balcony/French balcony, ...) which shows damage on the glass edges (flat chips) or cracks, has to be exchanged immediately as necessary security demands can no longer be achieved.



## 1. PRODUCT LIABILITY | WARNINGS

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Entrance doors that have not been locked properly (e.g. locked only via the latch) do not meet requirements for anti-burglary protection.



Security related hardware has to be checked regularly regarding its tight fitting and corrosion. If required, fixing screws must be tightened or parts have to be exchanged.



Please store separately delivered glass in a dry place --> Moisture destroys edge area.



All window and door elements which are designed to be opened, closed and locked have to be operated at least once a month to avoid damage through "inoperative wear and tear" (especially corrosion and stiffness).



During construction works many mechanical, climatic and chemical strains have an effect on windows and doors. Thus, protect construction elements by covering them and ensure proper ventilation to regulate humidity.



Please use appropriate adhesive tapes for protecting surfaces. Adhesive tapes have to be compatible with timber, plastic and aluminium surfaces. Adhesive tapes must be removed as soon as possible, when they are no longer needed.



Should any stains remain on construction elements despite careful handling, these stains must be removed promptly and completely using mild detergents.



Alkaline leachates from facade and walls can cause irreversible damage on powder-coated and anodised aluminium surfaces. To avoid this, window and door frames have to be cleaned and conserved in time.

## 1. PRODUCT LIABILITY | WARNINGS

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Insect excrements, pollen, soot particles, iron dust (wear from rail tracks) and similar things can, in combination with rain water and intensive UV radiation, cause stains on UPVC surfaces which are hard to remove and cannot be tackled with regular household cleaner. Therefore, contact time of such stains should be kept as short as possible. Frame profiles have to be cleaned as soon as possible if such stains occur. Protect affected profiles with suitable means.



Sharp edges of functional elements can lead to injury when door and window elements are handled wrongly, especially when someone sits or stands partially or fully under an opened sash.



Please ensure that turn limiter engages in bolt in corner hinge with concealed hardware.



If doors have been fitted with turning hinges which are screwed into sash protrusion, sash has to be protected against "reveal impact" through a stopper fitted on site. Otherwise, risk of damage due to enormous forces which affect turning hinges.



Security construction parts like turn limiters and stay-arms must only be unlocked by qualified personnel in order to adjust or unhinge a sash.



Increased thermal load and heat accumulation on glass can lead to spontaneous glass breakages. Avoid part-shading of glass which is caused through external sun protection systems. Heat accumulation on the glass results from heat sources (radiator, lights) and during sun exposure from very dark objects which are too near the glass on the inside or outside. Avoid attaching foils and paints to the glass later.



## 1. PRODUCT LIABILITY | WARNINGS



Panel fillings in sound protection versions have insulating glass built into the core. These panels must not be machined in any way (drilling, cutting) and have to be protected from excessive shock and impact forces.



Do not drill into door profiles or designer fillings (e.g. for door spy holes, knockers, ...). There is partly insulating glazing behind a cover layer. You could possibly destroy the door sash.



Before using the windows, security related hardware and hardware accessories have to be tested for safe functioning (e.g. lockable window handle, turn stop, rebate and cleaning stay-arm security, turn and opening limiter, etc.) and if necessary have to be adjusted by qualified personnel. Nonobservance of this can lead to damage on property and persons.



Do not remove or change the security clamps at the bottom and top of the all-glass attachment sash (studio).



Protect material surrounding the window or door element which is not waterproof (especially sills or timber floors) from possible condensation.



Avoid contact of aluminium surfaces with cosmetic products, especially with sunscreen products such as sun tan lotion, sun screen and sun creams.

This can cause stains on the surface.



Any electrical and electronic components in connection with purchased window and door elements need to be recycled at their end of life and must not be placed into ordinary household waste.



## 1. PRODUCT LIABILITY | WARNINGS



Handles and levers must not be used as carrying aids.



Moveable parts of bearing components of very frequently operated window and door elements need to be lubricated more frequently than once per year!

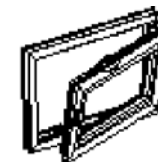
Non-observance of lubricating or maintenance intervals can lead to a fall of a window or door sash and result in damage to property or injury to persons!



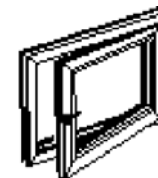
I-tec-Lüftung IV40 must not be used for dehumidification of construction shells or for drying out of rooms with high humidity. This can result in considerable damage to the ventilator.

### WRONG HANDLING

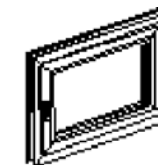
If window handle is brought into tilt position when window is open, sash will loosen from top locking mechanism. In order to avoid injury or damage, please proceed as follows:



Keep window handle in tilt position and press sash onto frame at side of stay-arm, and turn handle (90°) into turn position.



Then close window and turn window handle into locking position (turn 90°). Now you can tilt or open window sash again without any problems.





### **SPECIFIC WARNINGS for timber-aluminium windows.**



Please protect timber/aluminium elements from humidity, rain and snow during construction works. There are openings for vapour pressure compensation of profiles in between aluminium and timber profiles. Please protect these joints from humidity until building connection is established.



Wet, mortar, concrete and plastering materials can cause massive permanent stains - especially with timber type larch. This is caused by a chemical reaction with the timber components (tannic acid). Protect your timber surfaces during construction works with suitable masking materials.



Please avoid formation of too much humidity (max. 50 % at 20 °C). It leads to consecutive damage such as swelling of timber parts, damage of painted surfaces (door panels), deformation of construction parts, formation of mould and an unhealthy living climate. The effects of too much humidity have to be avoided especially also during particular construction periods (inside plastering or screed work).

#### **What causes too high humidity?**

Tight constructions, use of living spaces and the resulting insufficient fresh air supply or inadequately adjusted domestic ventilation.



#### **What causes condensation?**

Air can store different amounts of water at different temperatures. In saturated state (at 100 % relative humidity) the stored amount of water in 1m<sup>3</sup> is 17.3 g at an air temperature of 20 °C.

Timber absorbs humidity from the room air and also gives it off again.

Thus, too high air humidity leads to too high timber humidity. Too high timber humidity over a longer period of time leads to expansion (swelling of timber scantlings) and causes damage on the product.



In the picture you can clearly see condensation on the inside pane in the lower transom area of a lift-sliding door.

The reason is stagnant, cool room air in the lower corner area. Too low temperatures in the threshold area reduce air circulation. Condensation can form and in due course mould can also form.



## 1. PRODUCT LIABILITY | WARNINGS

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Indicators for too high humidity are:

Gaskets are no longer tight against the product, joints larger than 1 mm become visible; in fixed elements - large warpage of fixed glazing beads, mould, condensation on room side on glass pane mostly in lower area or panes are misted up over a longer period of time.

If condensation is forming in the flying mullion area on the centre gasket or rebate, this is also an indicator for too high humidity in the room.

Severe damage to windows can be expected if water drips from the panes and window sashes regularly or rust becomes visible on hardware parts.



Condensation on the outer pane (especially in winter) and in the outer window rebate are normal and permissible. This does not lead to damage on timber/aluminium windows.



Determination of too high air/timber humidity:

If in doubt, timber humidity and room humidity must be determined with a suitable humidity measuring device. Humidity measuring needs to be carried out in the window soffit (e.g. with hook on window handle). If the relative humidity at approx. 20°C over a longer period of time is more than 70%, it will lead to irreparable damage to timber/aluminium windows.



Parameters to timber humidity:

13% ±2 Delivery state factory Lannach with 13% ±2 .

15-17% Critical area starts and measures for drying (ventilation, careful heating,...) should be introduced.

22% If timber humidity is 22% and more over a longer period of time, expect permanent and irreparable damage to timber/aluminium window.

Timber humidity can be reduced by slow drying out

## 1. PRODUCT LIABILITY | WARNINGS

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Ensure free air circulation in the room all around your timber/aluminium windows and window soffit. Windows and panels must not be covered or built in by other building parts (e.g. bath tub, kitchen units or furniture in front of panels, ...).



Possible measures during increased water entry into the building:

Render (especially loam rendering) and floating screed, ... bring huge amounts of water into the room air. Do not keep windows completely shut during the drying phase of render and screed!

Check with your Internorm distribution partner about possible measures before using floating screeds and loam render. To protect your windows, you could e.g. unhinge your window sashes until render and screed has dried and replace the sash with timber sheets.



Air permeability of Internorm timber/aluminium windows:

Your windows have been manufactured airtight in accordance to European standards. You have received certificates obtained through independent tests for driving rain tightness, air tightness and further requirements with the CE declaration and the values declaration for your windows.

Air tightness e.g. specifies that in the highest achievable class 4, the air inlet is a maximum of 3 m<sup>3</sup>/(h\*m<sup>2</sup>).

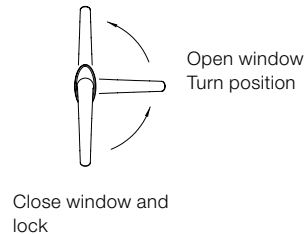


## 2. OPERATION

### 2.1. WINDOWS AND WINDOW DOORS

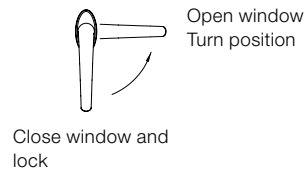
#### Turn-tilt version

Sash can be turned via positioning handle horizontally and tilted via positioning handle vertically.



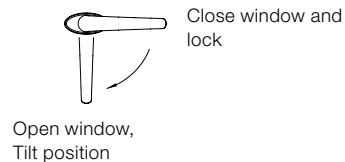
#### Turn version

Positioning handle vertically upwards is not possible.



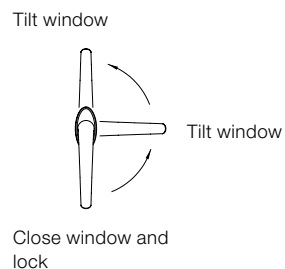
#### Tilt version (KGO)

Handle is mounted in centre at top. Positioning handle vertically upwards is not possible



#### Tilt version (KG)

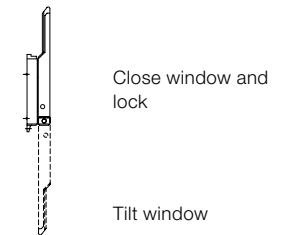
Sash can be tilted by positioning handle vertically and horizontally. Due to technical reasons, handle can only be turned horizontally for tilting sashes with certain sash sizes.



## 2. OPERATION

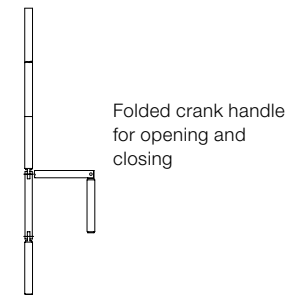
#### Fanlight version (KAZ)

Sash is operated via a pull rod. When pull rod is pressed down, sash is brought into tilt position.



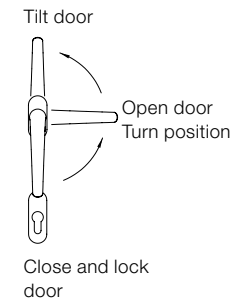
#### Fanlight version (KAK)

Sash is operated via a crank handle. For opening sash crank handle is taken out of wall bracket, folded (as shown in the drawing) and positioned into tilt position by turning crank handle.



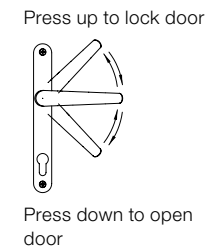
#### Lockable turn/turn-tilt door

Door can be turned by positioning handle horizontally and tilted by positioning handle vertically. In this version drive stroke is locked by cylinder, i.e. handle can no longer be operated. Door can be locked in closing as well as in tilt position.



#### Multi-point locking turn door

By pressing lever handle down, latch is drawn back and door can be opened. Lever handle bounces back. For locking door, lever handle must be pressed upwards by 45°, all locking elements lock and profile cylinder can be locked. For opening door, cylinder must be operated first and only then lever handle can be pressed down and door can be opened.

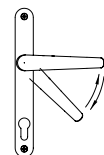




## 2. OPERATION

### Deadbolt lock turn door

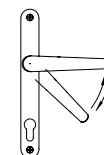
By pressing lever handle down or operating cylinder (contrary to locking direction) latch is drawn back and door can be opened. Lever bounces back. Door is locked with bolt, which is operated via locking cylinder (extending bolt). Lever can also be operated when lock is locked.



Press down, open door

### Side entrance door

By pressing lever handle down or operating cylinder (contrary to locking direction) latch is drawn back and door can be opened. Lever bounces back. Door is locked via bolt and locking pins, which are operated via locking cylinder (two full turns)



Press down, open door

### 3 sash window without transom (model 50)

Adhere to opening sequence to avoid damage of sashes.

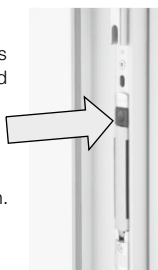
**Opening:** First both end sashes, then centre sash!

**Closing:** First centre sash, then both end sashes!

### Flying mullion sash drive

Flying mullion lever is folded flush in closed position.

Release flying mullion lever by pressing blue button.



Flying mullion lever unlocked



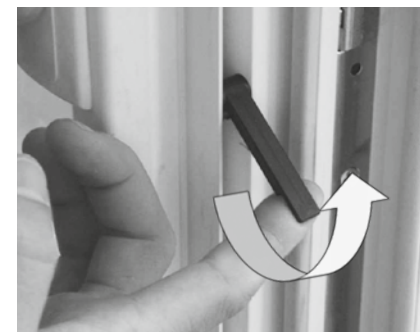
Press lever down to open sash.



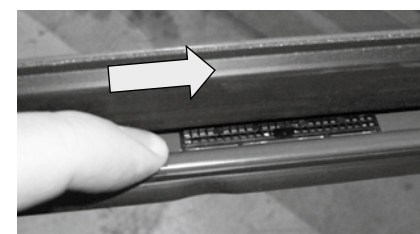
## 2. OPERATION

### Attachment sash of window with integrated blinds

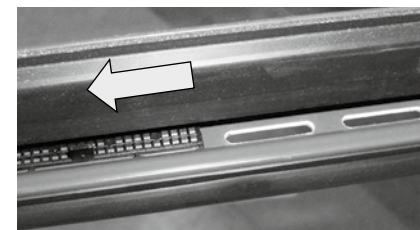
Locks of attachment sash are only accessible when window sash is open. Locks are positioned on the inside of the drive between window sash and attachment sash. Take out locking latches by 90° and open attachment sash. Please ensure that all locking latches have been locked into place before locking sash again.



By closing vent slots with a grid you can prevent insects entering in summer.



Open up vents again in winter to ensure good ventilation. This should help prevent misting up and condensation.



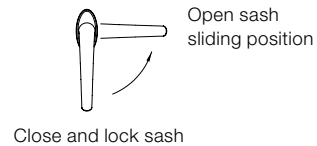


## 2. OPERATION

### 2.2. SLIDING ELEMENTS

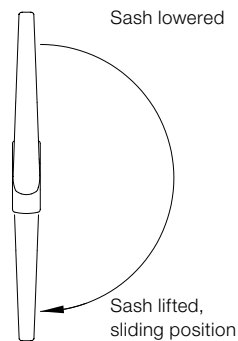
#### Parallel sliding window/door

Turn handle horizontally for sliding function, afterwards position sash parallel by pulling handle and slide to the side. For closing, push sash so far until it swerves back into locking position again.

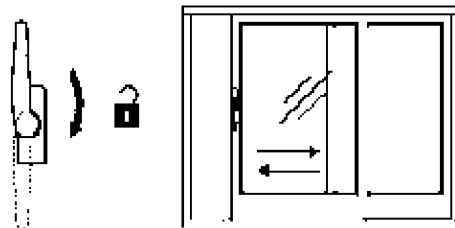


#### Lift-sliding door

Turn handle completely down to open and slide sash. Sash can be lowered either in locking position, airing position or any other open position. It is then secured against sliding.



Turn handle down, sash is lifted:  
=sliding position



## 2. OPERATION



Always turn handle completely downwards (6 o'clock position) for opening and sliding of sash, otherwise automatic unintentional lowering of sash might occur. This raises a potential risk of locking oneself out (wrong handling)!



Only lower sliding sash when not in movement!  
If sash is lowered while sliding, damage at bottom sash gaskets can occur and it is wrong handling!

#### Side adjustment deadbolt

Deadbolts can be adjusted at the side to avoid collisions of deadbolt with drive.

(Only applies to schemes A and C)

Loosen both screws, move deadbolt in parallel and tighten screws again.





## 2. OPERATION

### Lift-sliding door with Comfort Drive:



Lift-sliding door must not be used as fire, smoke or escape door.



Drive connection is made through cable which exits frame with 230VAC and must be carried out by licensed specialists. Otherwise -danger to life!



Non-observance of working steps can lead to destruction of drive. Wrong handling endangers the material. Liquid must not enter inside of device! Keep running rail clear of dirt and any objects.



Danger of crushing and jamming! Risk assessment at installation site according to machinery directive 2006/42/EG is required to prevent misuse. Apply protective measures according to EN 60335-2-103/2016-05.



Danger of crushing and jamming! Drive opens and closes windows automatically. It stops via load cutoff. Compression force is yet high enough to crush fingers if handled carelessly. Never reach into passing area while drive is operating and never reach into drive!



Device can be used by children 8 years old and above as well as by persons with reduced physical, sensoric or mental capacities or with lack of experience or knowledge, if supervised or instructed how to safely use device and understand resulting dangers thereof. Children must not play with device. Cleaning and user maintenance must not be carried out by children without supervision.



Check: Check all functions through test-run after installation and after each change to equipment.

## 2. OPERATION

### Basic functions:

- a) Press hand button briefly (about 0.5 sec.) to open door. Door opens completely. If door is in motion, next press of button is always STOP. When stopping, system records last movement direction.
- b) If door is standing, it moves opposite to last recorded movement direction.
- c) Error is reported with flash code (1 sec. on – 1 sec off) of LED (permanently). Every function is stopped at an error, this means, door is stopping. Next press of button is recognised as STOP button and error status is reset. If error carries on, door cannot be moved electrically.
- d) LED is without light at rest.
- e) When door is moving, LED is lit up permanently.
- f) After door finished moving, LED goes out.
- g) Random pressing shortly after each other: commands are ignored to protect element.

### Operating button with LED light

#### Legend:



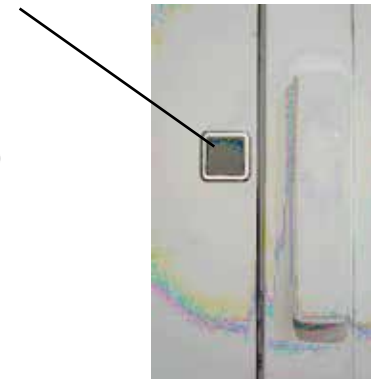
LED off (does not shine)



LED shines white



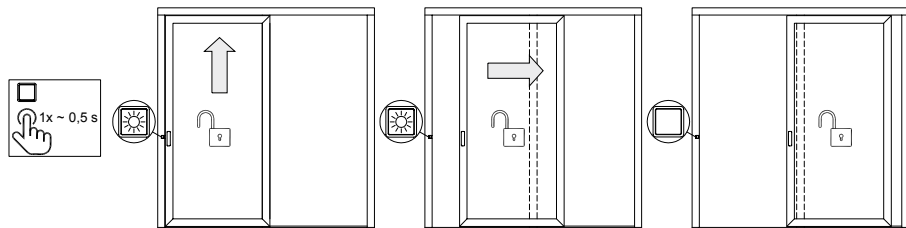
LED flashes white



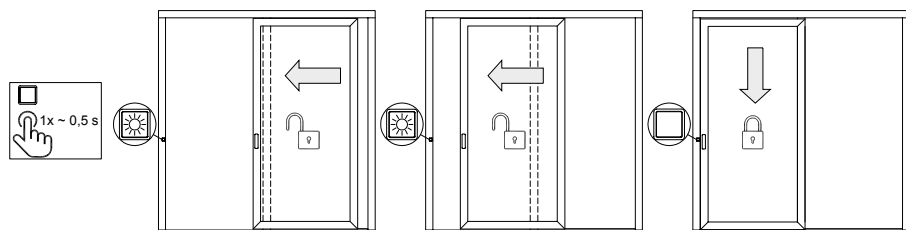


## 2. OPERATION

Open sash:



Close sash:



Extended functions:

When pressing button, system distinguishes between a briefly pressed button and a long pressed button. Briefly pressed is equivalent to press of a button of maximum half a second.

Special mode:

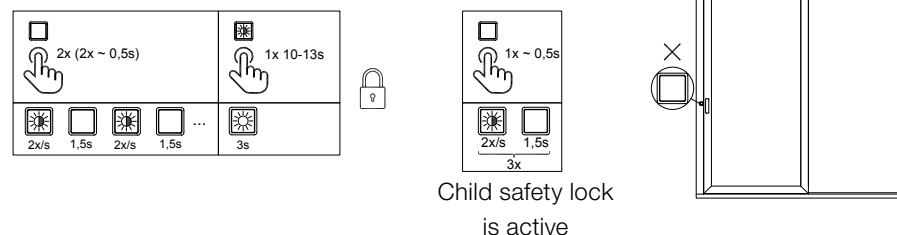
Special mode is activated by 2x short presses of button. This is displayed with a flash code 2x flash - pause 1.5 sec. (permanently, until function is ended or 60 sec. after any other entries). By pressing 2x short again (e.g. without any change) or after one minute without any further entries, service mode is automatically left again.

## 2. OPERATION

Child safety lock:

In special mode: press button for 10-13 sec. to switch on child safety lock or to switch it off. After 10 sec. LED lights up for 3 seconds as confirmation of lock. Do not hold on to button during these 3 seconds. After activation of child safety lock, no operation is available. If button is pressed for 0.5 seconds, LED flashes 3x double (child safety lock active). This displays active lock. As soon as button in special mode is pressed for 10-13 seconds, element becomes unlocked. After 10 seconds, LED lights up for 3 seconds as confirmation of unlocking. Do not hold on to button during these 3 seconds.

Activate child safety lock:



Deactivate child safety lock:



Service mode:

Activate service mode by 5x short pressing of button. This is displayed with flash code 5x flash / pause 1.5 seconds (permanently until function is ended or after 60 seconds without further entry). By pressing button 5x short again (e.g. without change) or after one minute without further entry, service mode is automatically left.



## 2. OPERATION

### Software reset:

Activate software reset while in service mode when releasing button after pressing for 15 – 18 seconds. After 15 seconds LED switches on for 3 seconds – release button within that time, the function “software reset“ starts.

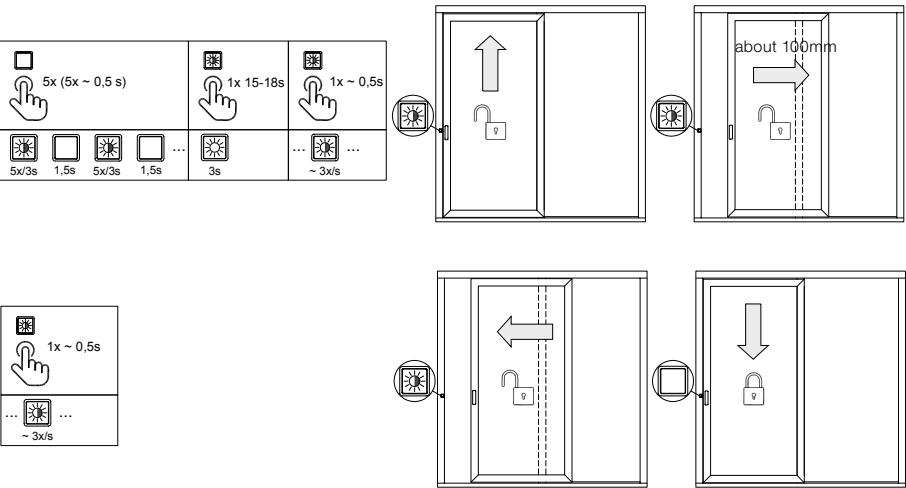
There are two operation types with software reset:

#### 1. Door closed and locked:

Software reset is carried out, e.g. errors are deleted, but door still recognises all its parameters. By pressing button for about 0.5 seconds, door slowly opens to about 100mm. Press button once more and door slowly closes and locks. Door is ready and LED goes out.



**Do not interfere under any circumstances during software reset!**  
**Safety devices are deactivated!**



## 2. OPERATION

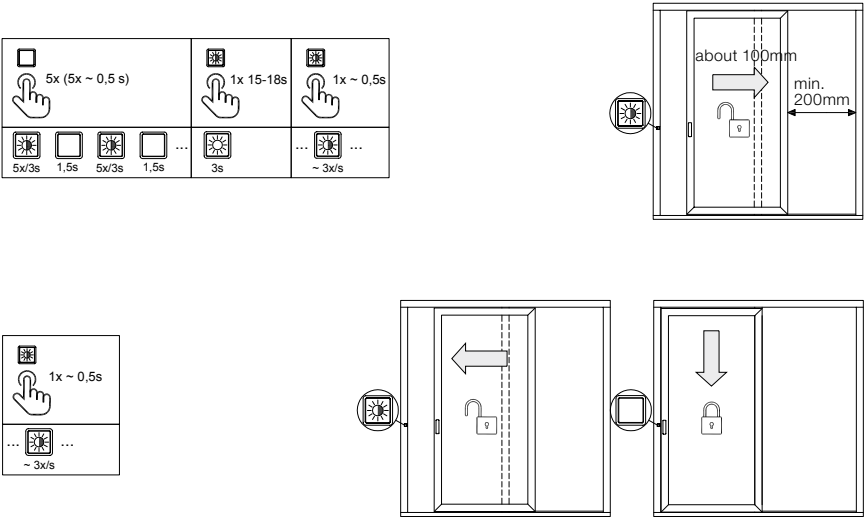
### 2. Door open:

LED flashes about 3x per second permanently until initialisation is completed. By pressing button for about 0.5 seconds, door slowly opens to about 100mm. With this function, door has to be at least 200mm before maximum open position. If this measurement is not reached, sash needs to be closed manually before reset by about 200mm.

After pressing button once more, door slowly closes and locks. Door is ready and LED goes out.



**Do not interfere under any circumstances during software reset!**  
**Safety devices are deactivated!**





## 2. OPERATION

Factory reset:

If button has been pressed for 30 – 33 seconds, once button is released it triggers a factory reset. After 30 seconds LED switches on for 3 seconds - within this time button needs to be released. LED flashes about 3x per second permanently until initialisation is completed.

There are two operation types with factory reset:

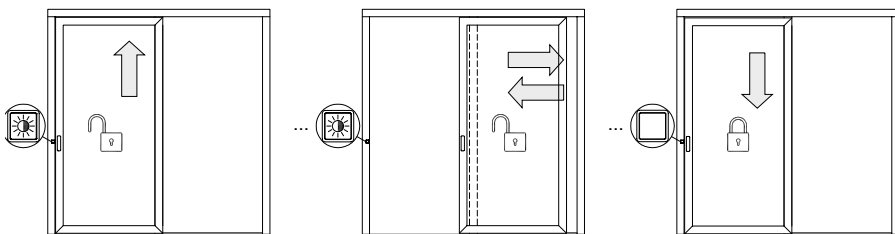
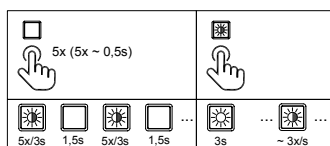
1. Door closed and locked:

Door unlocks and factory reset is carried out automatically (without further press of a button). Door stops at end of factory reset in locked position and returns to normal operating functions, LED goes out.



**Do not intervene under any circumstances for duration of factory reset! Safety devices are deactivated!**

**With HS330, place a cushioning insert e.g. 5mm corrugated cardboard to protect surface between sash and frame when opening before end stop.**



## 2. OPERATION

2. Door open:

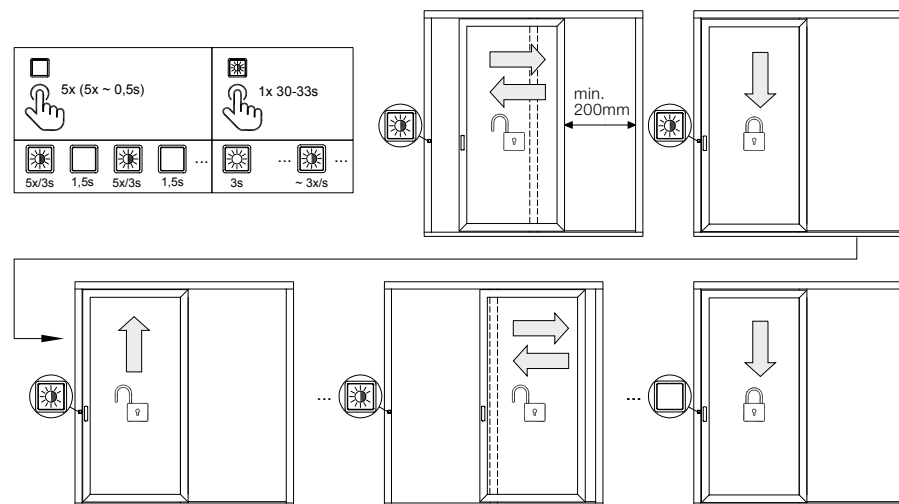
Door slowly closes automatically (without further press of a button), locks and carries out factory reset as described above. For this function, door needs to be positioned at least 200mm before maximum open position.

If this measurement is not reached, sash needs to be closed manually by about 200mm.



**Do not intervene under any circumstances for duration of factory reset! Safety devices are deactivated!**

**With HS330, place a cushioning insert e.g. 5mm corrugated cardboard to protect surface between sash and frame when opening before end stop.**





## 2. OPERATION

Error messages:

Power failure:

1. Door closed and locked:

Door automatically returns to normal operating function. LED goes out.

2. Door open:

LED flashes about 3x per second permanently until initialisation is completed. Press button – door slowly closes, lift drive moves down, door is locked and ready, LED goes out.

Load disconnection:

After a load disconnection (hit an obstacle or after a mechanical defect) door goes into error mode. An error is reported by a flash code (1 second on - 1 second off) of LED (permanently). Every function is stopped when an error occurs, this means door stops and moves about 100mm into opposite direction. Next press of a button is recognised as STOP button and error state is reset. If error still exists, door cannot be moved electrically. In this case, a software reset or afterwards a factory reset can be carried out. If error still persists, lock door manually and contact customer service.

Manual unlocking/locking when power failure:

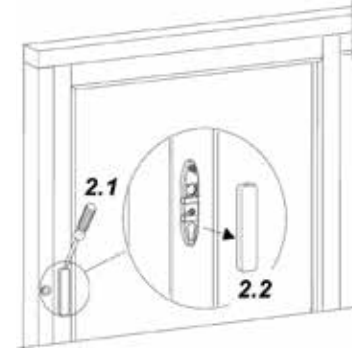
Sliding sash can be lifted/lowered during power failure with a detachable hand lever and slowly moved by hand. Unlocking/locking in closed/open position is thus ensured

1. Disconnect power supply from mains, switch off circuit breaker



## 2. OPERATION

2. Remove cover on door sash  
(do not damage surface!)



3. Insert manual unlocking handle into drive square and move it a bit left and right to loosen drive.

4. Insert unlocking key and turn in direction glazing until you hear a locking sound.

5. Now lift sash via unlocking handle.

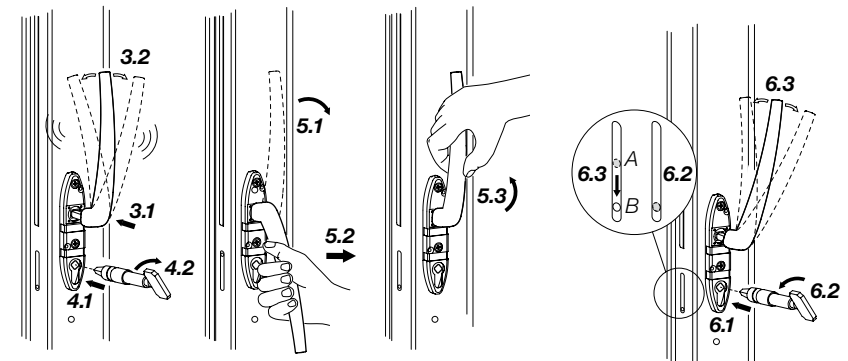


ATTENTION: Do not let go of handle, but move it again into locked position, as it would bounce up through sash weight and thus could result in severe injuries.

6. Locking: Line up coupling bolt of lift drive (A) with drill hole of drive rail (B) and lock with unlocking key in direction sash frame (6.2) to couple drive rail and drive again.



WARNING: If manual unlocking handle is not taken off before electric operation, this can lead to severe bodily injuries!





## 2. OPERATION

### 2.3. ENTRANCE DOORS

Internorm entrance doors are available with a variety of different lock types, whose operation differs one from the other.

Below an overview of basic functions of the locking systems

Lock types for aluminium entrance doors:

	Locking points	Closing process	Opening process	Evaluations	Day operation*)
<b>MVB</b>	Main bolt + 2 bolts	manual mechanical	manual mechanical	no	-
<b>MV</b>	Main bolt + 2 bolts-hookbolts	manual mechanical	manual mechanical	no	-
<b>MV with TSH</b>	Main bolt + 2 bolts-hookbolts	manual mechanical	manual mechanical	no	-
<b>MV-AM</b>	Main bolt + 2 Release Bolt + 2 Swivel Bolt	<b>automatic mechanical</b>	manual mechanical/inside lever	no	mechanical
<b>MV-C</b>	Main bolt + 2 bolts-hookbolts	manual mechanical	manual mechanical/inside lever	no	mechanical
<b>EE</b>	Main bolt + 2 Release bolt + 2 Swivel bolt	<b>automatic mechanical</b>	<b>automatic electrical/inside lever</b>	no	electrical
<b>EVE</b>	Main bolt + 2 bolts-hookbolts	<b>automatic electrical</b>	<b>automatic electrical</b>	yes	electrical
<b>EVC</b>	Main bolt + 2 bolts-hookbolts	<b>automatic electrical</b>	<b>automatic electrical/inside lever</b>	yes	electrical
<b>FRS</b>	Main bolt	manual mechanical	manual mechanical	no	-

\*) Day operation: no automatic locking when closing (switchable)



**Emergency door locks acc. to EN179 and EN1125:**

User manuals for emergency door locks are not included in this booklet; these will be described in separate special instructions!

## 2. OPERATION

Lock types for timber/aluminium entrance doors

	Locking points	Closing process	Opening process	Evaluations	Day operation*)
<b>MV</b>	Main bolt + 2 bolt-hookbolts	manual mechanical	manual mechanical	no	-
<b>MV with TSH</b>	Main bolt + 2 bolt-hookbolts	manual mechanical	manual mechanical	no	-
<b>MV-AM</b>	Main bolt + 2 Release Bolt + 2 Swivel Bolt	<b>automatic mechanical</b>	manual mechanical/inside lever	no	mechanical
<b>EE</b>	Main bolt + 2 Release Bolt + 2 Swivel Bolt	<b>automatic mechanical</b>	<b>automatic electrical/inside lever</b>	no	electrical
<b>EVE</b>	Main bolt + 2 bolt-hookbolts	<b>automatic electrical</b>	<b>automatic electrical</b>	yes	electrical
<b>EVC</b>	Main bolt + 2 bolt-hookbolts	<b>automatic electrical</b>	<b>automatic electrical/inside lever</b>	yes	electrical

\*) Day operation: no automatic locking when closing (switchable)



## 2. OPERATION



Only a locked door will provide security!

### Locking, unlocking and opening – manual



#### Manual locking of door

Full turn (s) (1 or 2 turns) of the key in locking direction → all locking elements engage.



#### Manual unlocking of door (from locked state)

Full turn(s) (1 or 2 turns) of the key opposite to locking direction → all locking elements retract.



#### Opening of door – lever

(from unlocked state)

**Lever** present – press lever → latch retracts, door opens.



#### Opening of door – fixed handle

(from unlocked state)

**No lever** present – turn key opposite to locking direction for a full turn. This retracts the latch. Push door sash opposite to opening direction → this releases load on the latch, door opens.

## 2. OPERATION

### FRS (Latch-bolt lock)

Type: Mortise lock with latch and bolt

Locking element:

1 main bolt

Locking, unlocking:

1 full turn of key

(Detailed description page 22)

Latch

Main bolt





## 2. OPERATION

---

### **MVB (Multi-point locking “bolt”– manual)**

Type: 3-point locking

Locking elements:

1 main bolt, 2 bolts

Locking, unlocking:

2 full turns of key

(Detailed description page 22)



## 2. OPERATION

---

### **MV (Multi-point locking – manual)**

Type: 5-point locking

Locking elements:

1 main bolt, 2 bolts, 2 hook bolts

Locking, unlocking:

2 full turns of key

(Detailed description page 22)





## 2. OPERATION

### MV-AM (Multi-point locking – automatic-mechanical)

Type: 5-point locking

Locking elements:

1 main bolt, 2 hook bolts, 2 trigger bolts

Locking:

Automatic mechanical after closing of door  
(2 hook bolts and 2 trigger bolts engage)

Unlocking:

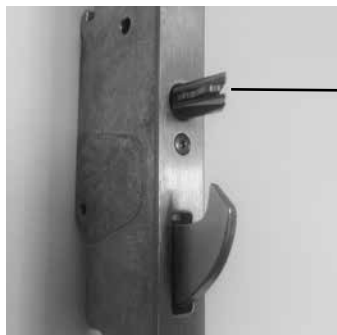
Outside: manually via key

Inside: manually via lever

Additional locking:

The main bolt can additionally be engaged via the key in locked state → Additional security (e.g. longer absence)

Inside lever is blocked in this position.



Trigger bolt

## 2. OPERATION

### Day operation

The multi-point locking can be put into day operation via a slide on the main bolt. Day operation prevents that bolts/hook bolts engage when the door sash is closed. The door is now only kept closed via the lock latch.

This enables use of an electrical door opener (ETÖ) or a mechanical day latch (MTOE).



Change of switching position - day operation active or not in use: retract latch at the same time via lever or cylinder.

Switching position cannot be changed unless latch retraction occurs at same time otherwise the mechanism will get damaged!

Slide  
on main bolt



Check on the opened door sash if the required switching position - normal or day operation - is set correctly before closing the door sash; you could lock yourself out otherwise!

Normal operation:  
Trigger bolts protrude by about 10mm



Trigger bolts

Day operation:  
Trigger bolts are almost completely retracted (to about 2mm)

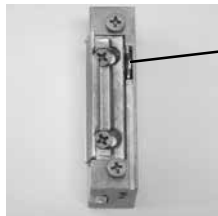




## 2. OPERATION



To achieve mechanical permanent opening: imperative to activate day unlocking on frame-sided ETÖ / MTOE.  
(ETÖ or MTOE are optional accessory parts)



Slide on  
electr. door opener (ETÖ) or  
mech. day latch (MTOE)



No requirements for burglary protection are fulfilled in day operation!



Please check that both red transport protection devices have been removed from the frame-sided closing beads.  
There is NO locking of doors unless these transport protection devices have been removed!



## 2. OPERATION

### EE (Multi-point locking – half motoric)

Type: 5-point locking

Locking elements:

1 main bolt, 2 hook bolts, 2 trigger bolts

Locking:

Automatic-mechanical after closing of door  
(2 hook bolts and 2 trigger bolts engage)

Unlocking:

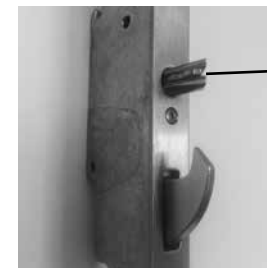
Outside: via access control system  
(finger print, transponder, ...)

Inside: manually via lever

Additional locking:

The main bolt can additionally be engaged via the key in locked state → additional security (e.g. longer absence)

Inside lever and access control system are blocked in this position.



Trigger bolt  
Hook bolt



Latch



Main bolt



E-motor



Trigger bolt  
Hook bolt





## 2. OPERATION

---

### Day operation

In this state, automatic release of locking elements is prevented, thus ensuring free passage.

All locking elements inclusive latch are retracted.

Day operation can be realised in 2 ways:

Var. 1: via **permanent opening signal** on terminal 4 (e.g.: external switch - switching can be realised via specialist retailer)

Var. 2: via **stainless steel button in door sash** (optional accessories)

Day operation on: 3x 0.5 sec. (short press) + 1x 2 sec. (long press) - within 5 sec.

Day operation off: 1x 2 sec. (long press)

After approx. 7 sec. humming tone of e-motor will stop automatically.

Door sash is only kept in position via additional latch or door closer.

Please note: Energy consumption in this position is very low: about 80mA

## 2. OPERATION

---

### Please note:



A door which is only kept in position only via the additional latch or door closer is NOT considered locked! Only a locked door provides security!



DO NOT leave keys in the locks.



**Do not use lever during motoric unlocking process.**  
**Danger of damage to the lock!**



**Please check that both red transport protection devices have been removed from the frame-sided closing beads.**  
**There is NO locking of doors unless these transport protection devices have been removed!**





## 2. OPERATION

### EVE and EVC (multi-point locking - fully motoric)

Type: 5-point locking

Locking elements:

1 main bolt - 2 bolts -2 hook bolts

Locking: automatic electromotive after closing of door (all 5 locking elements)

Unlocking:

Outside: via access control system (fingerprint, transponder,...)

All locking elements and latch are retracted for max. 7 seconds. If door is not opened during this period, automatic locking process takes place.

Inside: EVE: via electro button

EVC: additionally available from locked state via inside lever (comfort)

Emergency operation available via key!

Day operation - can be switched mechanically and electrically:

In this position no automatic locking takes place.

Door only kept closed via lock latch.

→ This enables use of electric door opener (ETÖ) or mechanical day latch (MTOE)

Operation description for switching see Chapter 3.4 Adjustment works and adjustment possibilities



## 2. OPERATION

### Please note:



A door which is only held in place via the lock latch, does NOT count as locked. Only locked doors provide security!



DO NOT leave keys in lock.



**Do not use lever during motoric locking or unlocking process.  
Danger of damage to the lock!**



## 2. OPERATION

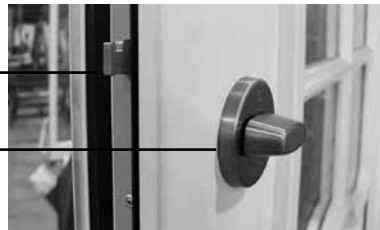
### ZUBEHÖR (OPTIONAL)

#### Integrated door block TSH:

- Integrated door block (MV with TSH)  
1. Door limiter – integrated into striking bead



2. Bolt – integrated into MV  
3. Turn knob – on inside of door sash



#### Opening of door from outside when TSH (integrated door block) is activated:

1. When door locked, 2 full turns of key opposite to locking direction.
2. One full turn of key in locking direction  
→ bolt of TSH retracts
3. One full turn of key opposite to locking direction. Lock latch is retracted and door can be opened.

#### To activate/deactivate door block TSH from inside:

Carried out via turn knob on inside of door sash. (approx. 90° turn)

Door limiter in operation



## 2. OPERATION

### Electric door opener (ETÖ)

Only for doors with fixed handle (no lever) on the outside.

Normal position: Door is kept closed via latch. When released by electric signal door can be opened by simply pushing against it.  
(only if door is not locked)

Day unlocking: Door can be pushed open any time  
(only if door is not locked).

ETOE: Door can only be opened during electric signal is given.

ETOA: Door stays open after signal has been given once until door sash is opened once.

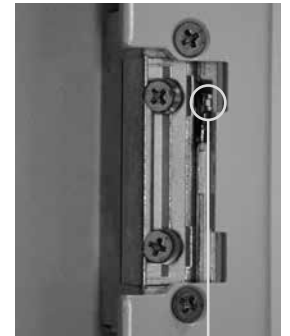
Technical data:

10- 24 Volt

Direct and alternating current (DC/AC)

Mechanical day unlocking

The ETÖ is suitable for 100% power on between 10-13V DC (direct current).



Slider for change between normal position and day unlocking



## 2. OPERATION

---



A door which is only held in place via the lock latch, does NOT count as locked. Only locked doors provide security!



Only professional personnel is allowed to carry out electrical connection!



Emergency doors feature different electric door openers.



Certain types of ETOA are activated through electric contacts independent of the door sash position (open - closed)  
If a new opening impulse takes place or the electric opening signal is still there while the door is already open, then the door needs to be opened one more time!



If door is only kept by latch (ETÖ operation), always check after closing of door sash that door sash is properly engaged (cannot be opened without lever/key).

## 2. OPERATION

---

### **Mechanical day latch (MTOE)**

Only for doors with fixed handle (no lever) on outside

Day latch activated:

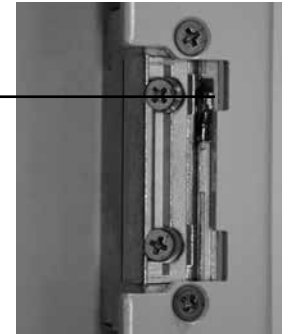
The door can be opened by simply pushing against it if not locked.

Day latch not activated:

The door holds via the lock latch if not locked.

Please note:

Door should be equipped with additional catch or door closer, as pressure of gasket could press door open of its own accord!



A door which is only held in place via the lock latch, does NOT count as locked. Only locked doors provide security!



If door is only kept by latch (MTOE operation), always check after closing door sash that door sash is properly engaged (cannot be opened without lever/key).



## 2. OPERATION

### Shoot bolt (only with 2-sash elements)

Locking of the slave sash: via shoot bolt which are positioned at the top and bottom in the slave sash rebate.



Opening and closing is carried out via the lever on the shoot bolt.



Operating manuals of possible **access control** (fingerprint, transponder, wireless,...) are not included in this Maintenance, care and warranty booklet. These will be dealt with in special instruction manuals.

These instructions will be delivered with the door. Latest information can also be obtained via the homepage of company ekey under [www.ekey.net](http://www.ekey.net).

Used types:

Finger scan / keypad in door leaf: ekey home - model integra - control unit SE micro

Finger scan in bar handle: ekey home - model arte control unit micro plus

Please note that access control is already wired ready with the motor lock or electric door opener and only Internorm's supplied switching plans apply.

## 2. OPERATION

### 2.4. SUN AND INSECT PROTECTION

#### Aluminium window shutter



Ensure that open window shutter sashes are correctly fixed in the wall holders. Close window shutters when storms (wind speeds over 35 mph). Otherwise occurring load can damage or destroy hardware parts. This can lead to subsequent damage.



#### Open and close shutter

In order to **open**, engage the latch of the closing lever and turn lever. Then turn shutter open, until it engages in the wall shutter catch.



In order to **close** the shutter, press down the shutter catch and turn the shutter inwards. Then turn locking lever until the turn bar lock engages by itself.



## 2. OPERATION



### Operation of hinge locking mechanism

When closing shutter, press hinge locking mechanism and turn shutter inwards. When opening shutter, hinge locking mechanism engages automatically. Shutter can be unhinged or hinged at approx. 15° opening angle.



### Adjustment of slats

Adjustable slats are adjusted via a thumbscrew. Loosen it and move it up or down until slats are in your desired position. After reaching this position, carefully tighten the thumbscrew again.

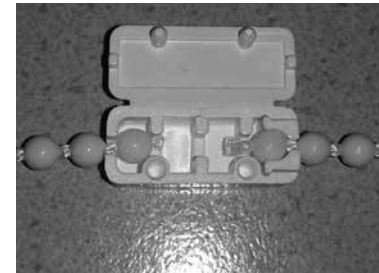
## Blinds

Protection from strangulation EN 13120

Buildings with ball chain driven blinds which children between 0 and 42 months have access to or can stay in such as homes, hotels, hospitals, churches, shops, schools, nurseries and public buildings have to be equipped with a "child safety device" on to the inner end (blind with ball chain). Protection from strangulation also applies if the place of use is unknown.

Protection from strangulation does not apply to buildings which children generally have no access to such as offices, factories, laboratories etc.

## 2. OPERATION



Child-proof version: With tear-off system of 6 kg within 5 sec. Connection with 1 ball



Not child-proof version:  
Connection with 2 balls



1. To **lift**, **lower** or **turn** blinds, unfasten ball chain from ball chain holder.



2. Then bring blind into desired position by pulling downward - as straight as possible - on ball chain above ball chain connector, finally re-fasten ball chain in ball chain holder.



## 2. OPERATION

### Insect protection

#### Pull-down flyscreen

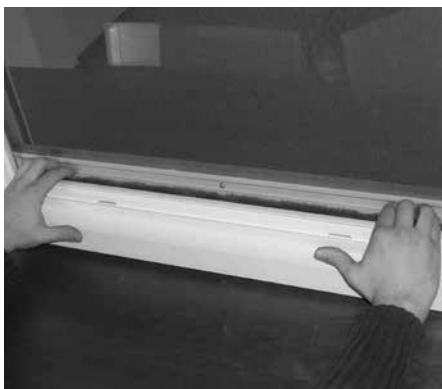
##### Closing the pull-down flyscreen

Pull screen down with both hands until it engages in catch.

##### Opening the pull-down flyscreens

###### From the inside or outside

Push down with both hands until catch disengages.



#### Friction-fit frame

1. Open window. Hold friction fit frame on plastic clips and put into frame clearance on the outside. Position bottom brackets first between window frame and gasket.

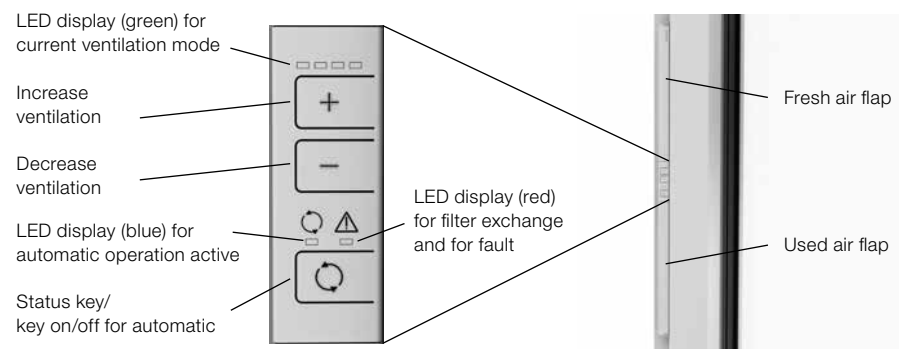
2. Pull friction fit frame into frame clearance so that top brackets can also be positioned into window frame by moving the plastic clip up. Afterwards fold plastic clips down.



## 2. OPERATION

### 2.5 I-TEC-VENTILATION IV40

#### Operation



Respective ventilation mode is displayed with green LEDs in the display field.

LED display goes out after 1 minute.



##### Level 1-3:

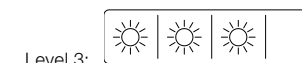
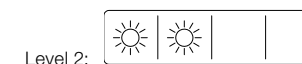
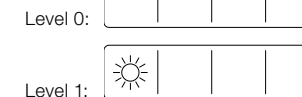
By pressing the + or – key, ventilation is increased or decreased by one level.


##### Level 0 (ventilator switched off):

Ventilator on level 1 and press – key for 2 seconds.

Ventilator can also be switched off by closing at least one air flap (fresh air, used air). After opening both air flaps ventilator runs again at its previous setting.

LED display of ventilation levels



 = LED green illuminated

##### Note:

Even if both air flaps are closed, depending on wind load, air can be pressed into the ventilator.



## 2. OPERATION

Status key / automatic On/Off:

If LED's have gone out, by pressing status key/automatic key, current status can be displayed again for 1 minute.

### Turbo mode (level 4):

By pressing the + key for at least 2 seconds, turbo mode (level 4) is activated.

Within 15 seconds you can choose desired running time between 1 and 4 hours by pressing the + or – key.

Pressing the + key increases running time, pressing the – key decreases running time.

After selection time of 15 seconds, all 4 LEDs light up green for 2 seconds and running time can no longer be changed.

Once running time is completed or turbo mode has been deactivated by pressing any key, I-tec ventilator automatically returns to previously set ventilation level.

### Automatic mode:

While operation mode is displayed, by pressing status key/automatic key, automatic mode can be switched on or off (blue LED illuminated when automatic ON). Air humidity is measured in automatic mode and this ventilator is controlled in such a way that always a healthy room climate prevails. Ventilator switches off below approx. 35% of humidity. Once humidity rises, ventilator switches on again.

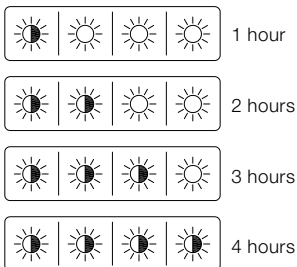
Depending on humidity levels, the corresponding ventilation level is chosen automatically.


Also LED for automatic operation goes out after 1 minute, again - by pressing status key, it is displayed again if automatic operation is active.




Status key/automatic key

Turbo mode



 = LED green illuminated

 = LED green flashing



Status key/automatic key

## 2. OPERATION

### Night cooling:

Night cooling serves to prevent overheating of living areas during summer months.

Additionally, fresh air ventilator or used air ventilator can be deactivate. This overrides function of heat exchanger and cooler outside air is blown directly into the room (night cooling fresh air) or warm room air is blown to the outside (night cooling used air). The best effect is achieved if two ventilators opposite to each other in the house are set in such a way that one ventilator is in fresh air mode and the other one in used air mode. This causes cross-ventilation in the building without the need for opening or tilting windows. If only one ventilator is available, we recommend tilting a window on the opposite side in the house, otherwise the desired effect can only be achieved partially.

### Night cooling fresh air:

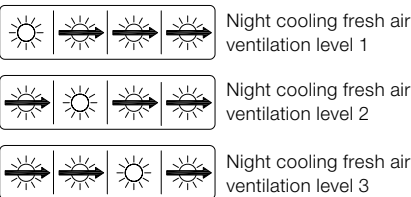
With this, only fresh air ventilator is in operation, used air ventilator is switched off.

By simultaneuos pressing of + key and status key, night cooling fresh air is activated.


Within 15 seconds, desired ventilation level can be selected by pressing the + or the – key.

Pressing the + key increases the ventilation level, pressing the – key decreases the ventilation level.

After a selection time of 15 seconds all 4 LEDs light up green for 2 seconds and the ventilation level can no longer be changed. Pressing any key will deactivate night cooling. Ventilator returns to its previously set ventilation level.



 = LED green illuminated

 = LED green chase light to the right



## 2. OPERATION

### Night cooling used air:

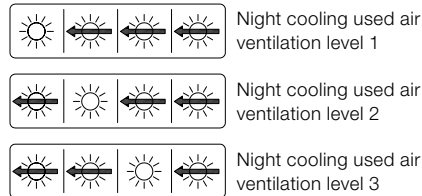
With this, only the used air ventilator is in operation, the fresh air ventilator is switched off.


Within 15 seconds, the desired ventilation level can be selected by pressing the + or the – key.

Pressing the + key increases the ventilation level, pressing the – key decreases the ventilation level.

After a selection time of 15 seconds all 4 LEDs light up green for 2 seconds and the ventilation level can no longer be changed.

Pressing any key will deactivate night cooling. The ventilator returns to its previously set ventilation level.



 = LED green illuminated

 = LED green chase light left

### Switch-off automatic with automatic mode or night cooling:

If outside temperature exceeds room temperature, ventilator automatically switches off.

Every hour, ventilator is checking temperature conditions by switching both ventilator motors on for a short time. If outside temperature is still higher than room temperature, ventilator switches off again. If outside temperature falls below room temperature, ventilator automatically returns to night cooling mode.

Temperature monitoring takes place with sensors which are built into the inside of the ventilator. Detected values for inside and outside temperature can therefore deviate from externally measured temperatures.

## 2. OPERATION

### Warning/fault:

Red LED comes on if filter change is required (display is time-controlled).

Cancel display “filter change”:

Press the + and – key at the same time for at least 5 seconds.

Red LED flashes, if there is a fault in the appliance. If the fault has only happened for a short time, the display can be cancelled as follows:

Press the + and – key at the same time, shortly afterwards additionally press the status key/automatic key and keep all three buttons pressed.

If the defect is displayed again after 1 minute, please contact your window distributor.



### Pressure conditions in the room when operating ventilator:

In principle, ventilation control works in a balanced way and works to avoid over-pressure in the room, however the speed of the used air ventilator is slightly raised compared to the fresh air ventilator. The pressure in the room is massively influenced by the pressure conditions in the building or the pressure/suction conditions due to wind loads.

If you would like to have an open fireplace, please be in contact with your chimney sweep. For complete protection when operating open fires, an additional pressure controller might need to be installed in the room.

### ‘Show’ and ‘hide’ the wireless module:

The I-tec ventilator can conveniently be controlled with the handsender of the I-tec blind or with the I-tec SmartWindow via mobile phone or tablet. To avoid finding the I-tec ventilator again with a new search, after it has already been listed in the handsender or Gateway, the wireless module can be ‘hidden’ via the handsender or the SmartWindow-App. This does not affect the control of the ventilator.

‘Show’ the wireless module again via the operation unit on the window:

Switch ventilator into standby mode for this. By pressing the + and the status key at the same time for a minimum of 10 seconds, all LEDs start to flash green. Press the - key briefly within 15 seconds and this shows the wireless module again for the gateway or handsender.



## 2. OPERATION

### Frost protection device:

To prevent danger of heat exchangers icing up, ventilation system has been equipped with a frost protection device. The electronic device continuously monitors extracted air temperature (after the heat exchanger).

If this falls below a certain value, the speed of the fresh air ventilator is decreased in levels. If there is still danger of icing up, the ventilator is switched off for 2 hours.

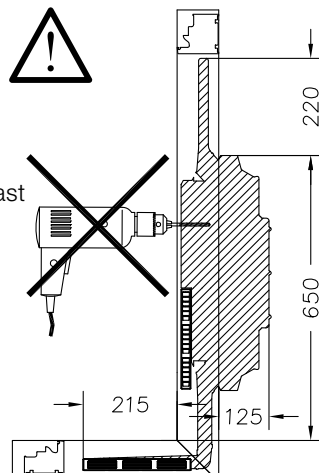
After this the ventilator starts again automatically, checks the temperature conditions once more and starts after 10 minutes either once more with the frost protection mode or returns to normal operation.

### Functioning in cold rooms:

If room temperature falls below +8°C (e.g. on the building site), the ventilator is switched off. Operation is still possible anytime, as by pressing the + or - key the ventilator switches on again for 10 minutes. In this time the ventilator checks the temperature conditions and either switches off again or returns to normal operation.

### Installation of add-on elements:

If add-on elements are retro-fitted (e.g.: guiding rails), please note that drilling and screwing is not allowed in the ventilator area (shaded area)!



### A note on maintenance:

For hygienic reasons, please change both filters at least 1x per year. The time-controlled LED display only serves as a reminder and does not take possible contaminated outside air into consideration.

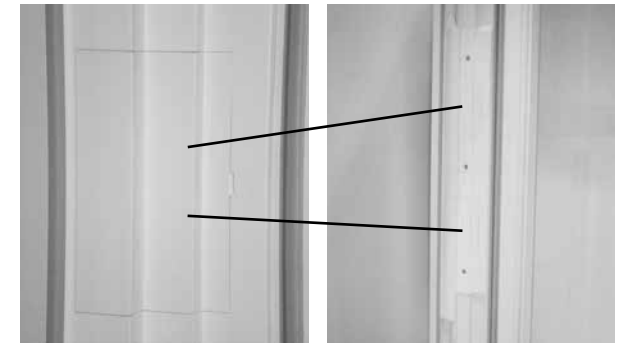
Very dirty filters will also considerably impair the desired air exchange.

Autumn is an ideal time for exchanging the filters as generally air in winter is more polluted than in summer and therefore the filter would be most effective.

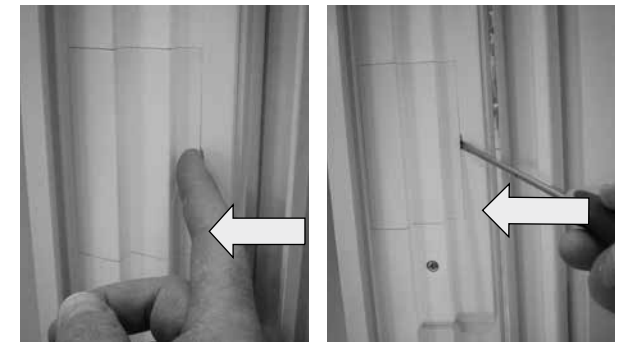
## 2. OPERATION

### Exchange air filter:

When sash is open, the two filter lids for fresh and used air are visible.



Open filter lids either with fingernail or carefully with a flat screw driver. Gently push in direction outside of frame.



Take filter lids off and pull filter out.

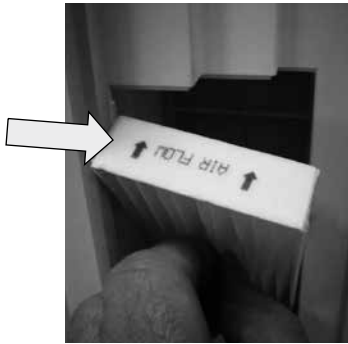


Ventilator is not suitable for dehumidification of construction shells or for drying out of rooms with high humidity.

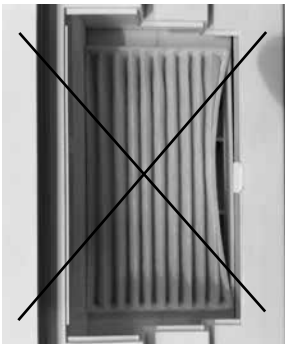


## 2. OPERATION

Insert new filter in direction of arrow.



Watch for proper fitting of the filter!



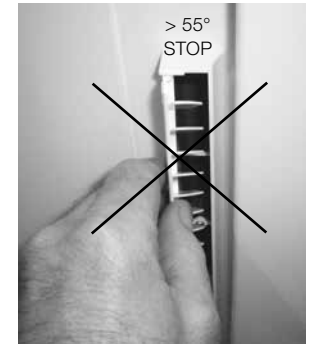
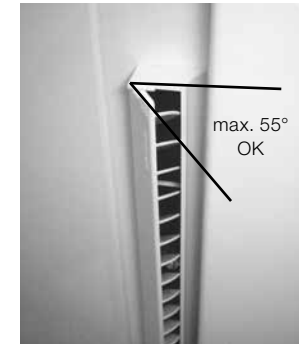
Put filter lids back and press till it clicks in.



## 2. OPERATION

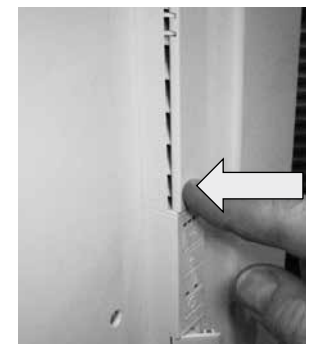
**Self-help if air flaps have been accidentally released.**

The air flaps can be opened without restriction about 55°. If the flaps are pushed further than that, they will come off the air vent frame.



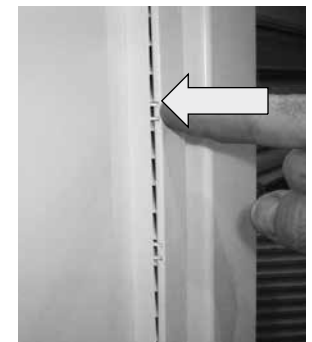
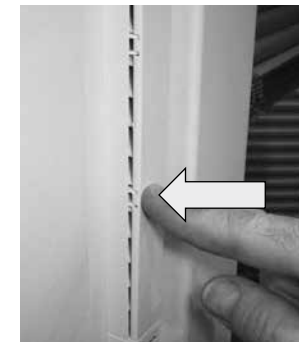
If the flap has come out, slide the flap end with the fingerlug on to the bolt and close flap.

First engage the end of the flap nearer the operation unit with a bit of pressure.



Afterwards engage both middle bearing points with a bit of pressure.

Now the air flap can be operated again as usual.





## 2. OPERATION

### 2.6. I-TEC SHADING

#### Operation

Key description:



A:  Selection key

B:  Key Up

C:  Key Down



D:  Program Key

To move the blind:



By pressing the Up  or Down  key briefly, the blind moves to the top or bottom end position.

By pressing the Up  or Down  key briefly, the blind can be stopped.



Adjusting the slats:

By pressing the Up  or Down  key longer, the slats can be adjusted to the desired angle.

Channel selection:

By pressing the Selection key  briefly, the desired channel can be selected. The selected channel is indicated through continuous lighting up of the LED. 

Individual fixed position:

By pressing the Up and Down key at the same time  , the blind moves to the programmed individual position.

An overview of all functions can be found in the enclosed programming instructions.



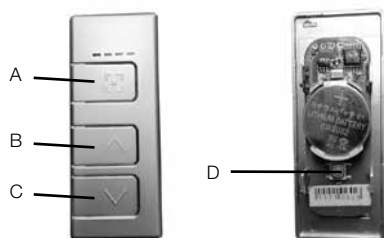
Intensive solar irradiation on dark facade colours or window colours can lead to temperatures over 80°C in the gap between the panes. To increase the life of the batteries, the electronics are equipped with an overheating protection. With temperatures of about 70 to 80 degrees this will only allow the blind to move down and the slats to turn. Over 80 degrees no operation of the shading is possible until temperatures have cooled down again.

Excessive shade or darkening in the area of the photovoltaics module can cause reduction in energy gain.

E.g.: Balcony on top, awning, narrow town lanes etc.

As this system is based on wireless control, wireless communication and range can be affected by local circumstances.

E.g.: Stone walls, steel beams etc.



## 2. OPERATION

### Changing the battery



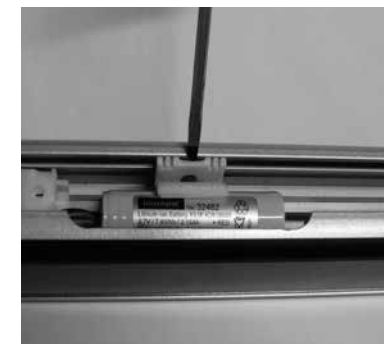
First move blind to the top!  
Open window sash at handle and attachment sash via turning connector.



Turn black clips on top and take blind out towards the bottom!



Undo connector between battery and circuit board to remove old battery.

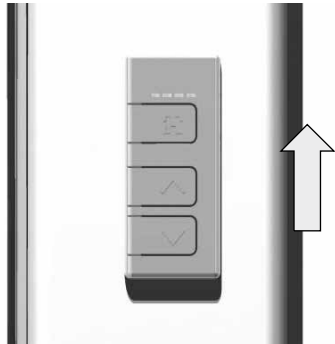


Loosen battery clip connector and take battery out. Put new battery in, plug connector back in circuit board, watch out that cable at the side does not touch rotating shaft.



## 2. OPERATION

### Changing the battery on the integrated operating unit

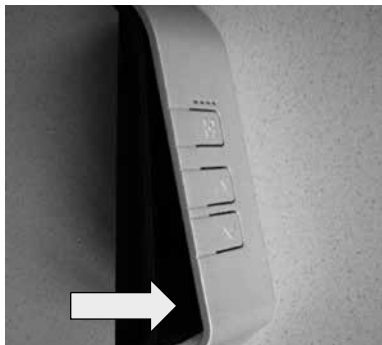


Slide open cover of operating unit to the top and take out operating unit.



Take out battery from operating unit, insert new one, put cover back on and slide it down.

### Changing the battery on the hand transmitter



Push cover at bottom to the side to open clip connection.



Take out old battery, insert new one and put cover back on.



Please dispose of used batteries in an environmentally friendly manner!

## 2. OPERATION

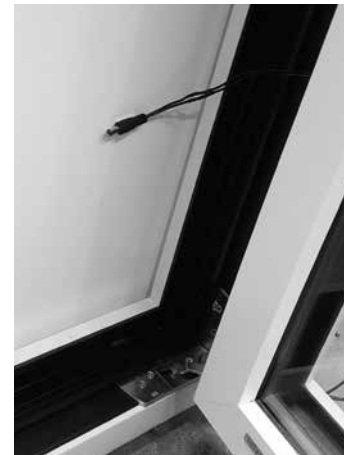
### Manual charging function I-tec shading for windows with integrated blinds



1. Tilt window



2. Put plug to the outside via tilted window.



3. Open window



4. Insert plug into manual charging socket, close window and connect charger to socket



## 2. OPERATION

As soon as the battery is fully charged, the LED on the charger lights up green. Disconnect charger from electricity supply and in reverse order remove plug.

### Manual charging function I-tec inside blind



The manual charger socket is positioned directly on the blind with the I-tec inside blind. Insert plug and afterwards connect charger to socket.

As soon as the battery is fully charged, the LED on the charger lights up green. Disconnect charger from electricity supply and remove plug.

## 2. OPERATION

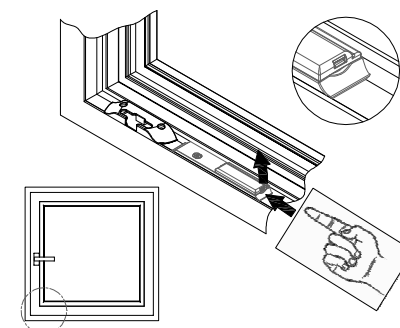
### 2.7 OPENING CONTROL (WIRELESS)

#### Operation

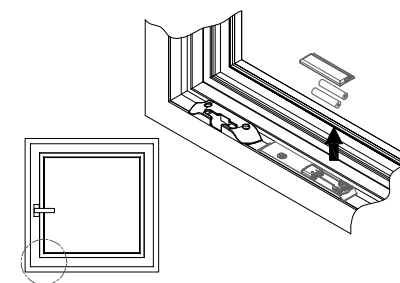
The opening control (wireless) is communicating exclusively with the I-tec SmartWindow and can transmit, depending on which version was ordered, the status "sash closed and locked" and "sash tilted" or "sash closed".

For programming of the opening control (wireless) to the I-tec SmartWindow please follow instructions of the App, which you have installed on your tablet or Smartphone acc. to appliance instructions beforehand.

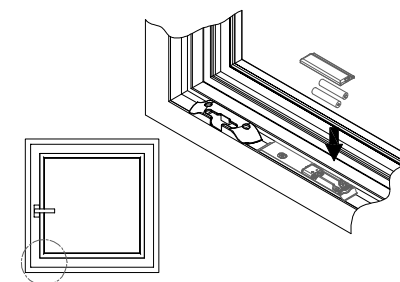
Insert batteries anew for programming opening control. Two batteries (type AAAA) are inserted already in the factory. Take off battery cover first before removing batteries.



Remove batteries and wait for 10 seconds.



Insert batteries again. Watch for correct polarity!  
Put battery cover back on.  
The programming process can now be completed.



Repeat process for new activation of programming.



## 2. OPERATION



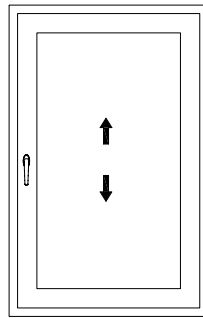
### Possible adjustments in windows and window doors

Ensure that adjustment ranges are only used to an extent that does not impair functionality!

Black or red distance wedges which were pressed into closing elements and are possibly still in there, need to be removed.

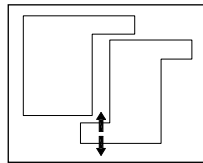
#### Height adjustment

Used to raise or lower the sash.

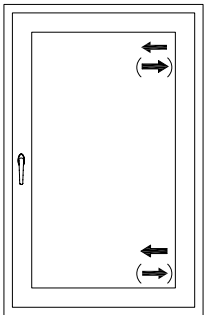


#### Closing pressure adjustment

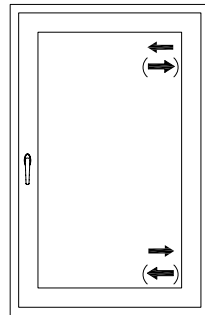
Used to regulate gasket pressure.



#### Side adjustments



If hinged parts are adjusted in same direction, sash may be adjusted horizontally.



If hinges are adjusted in opposite direction, this leads to raising or lowering of sash on handle side.

## 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

### 3.1. CONCEALED HARDWARE

In order to prevent damage and to retain full functionality of the window, it is recommended to have all adjustment works carried out by authorised personnel.

#### 3.1.1 VV HARDWARE (CONCEALED STANDARD)

##### Corner / sash hinge on rectangular window (hinge side - at the bottom)



Adjust towards hinge or handle side with 4mm Allen key.



Raise or lower sash with 4mm Allen key, for heavy-duty hardware use torx T25.

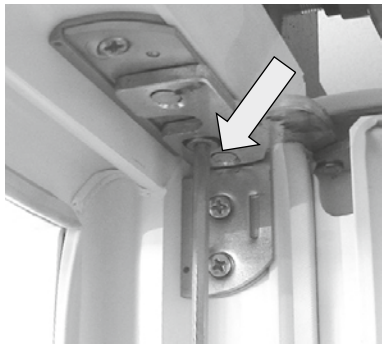


Adjust closing pressure with 4mm Allen key.

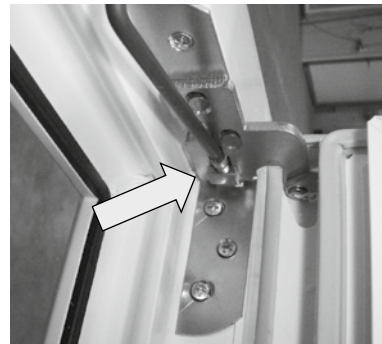


### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Stay-arm / turn hinge on rectangular window (hinge side - at the top)



Adjust towards hinge or handle side with 4mm Allen key.



For heavy-duty hardware use torx T25.



#### Pressure adjustment on locking parts

Adjust required contact pressure with fork wrench SW11. Adjustment is available in steps of 22.5°.

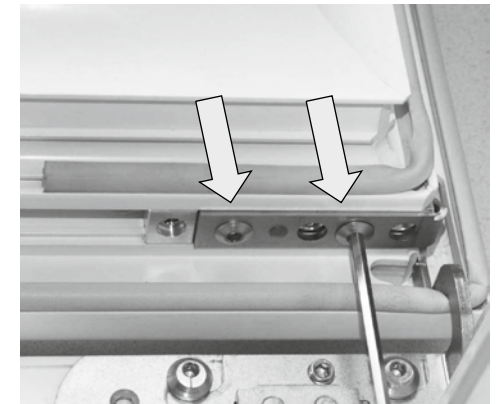
### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Tilt sash



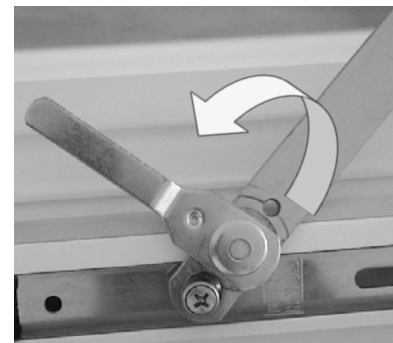
#### Vertical adjustment version a

**Tilt sash.** Raise or lower sash with 4mm Allen key.



#### Vertical adjustment version b

**Open sash max. 90°.** Raise and lower sash alternately with 4mm Allen key.



#### 1. Horizontal adjustment

Open rebate stay-arm lock, unhinge rebate stay-arm and bring sash into cleaning position.



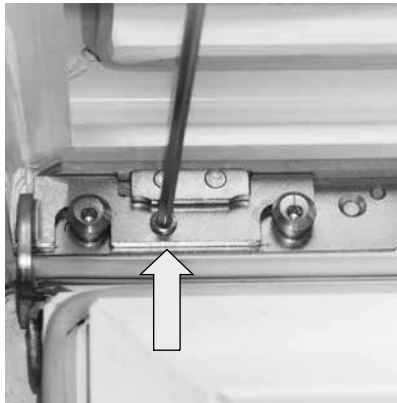
#### 2. Horizontal adjustment

Unlock and unhinge cleaning stay-arm.

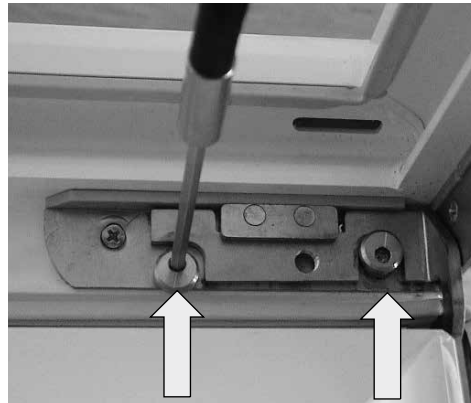
**ATTENTION:** Sash is now unsecured and must be secured by a second person! Tilt sash no more than 90°!



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



Loosen fixing screw on tilt hinge with 4mm Allen key.



Turn security bolt on both tilt hinges with 5mm Allen key by 180°.



#### ATTENTION:

Sash is no longer secured against unhinging! Danger of falling!  
Adjust sash horizontally and carry out all steps again in reverse order.

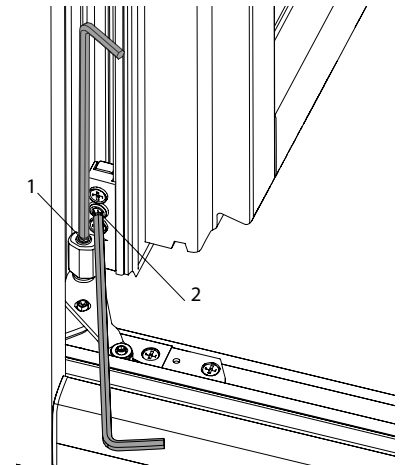
### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### 3.1.2 VV HARDWARE (CONCEALED TOPSTAR)

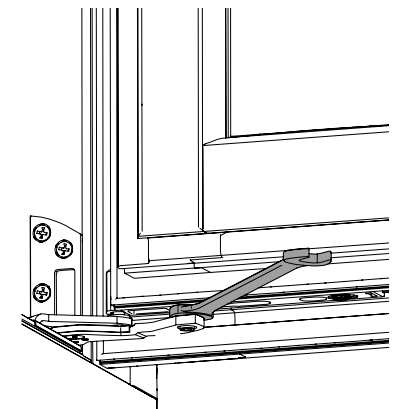
##### Corner/sash bearing on rectangular window (hinge side bottom)

Raising and lowering of sash with SW4 Allen key (1).

Adjustment of direction hinge or drive side with SW4 Allen key (2).



Contact pressure adjustment with fork wrench SW10.

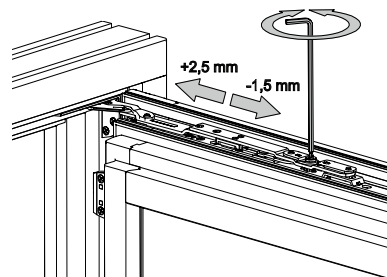




### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

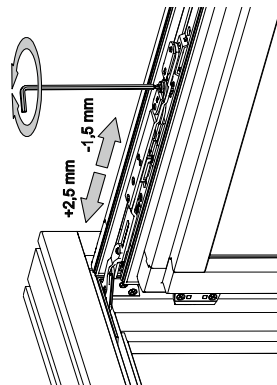
#### Stay-arm/turn bearing with rectangular window (hinge side top)

Adjustment in direction hinge or drive side with SW4 Allen key.



#### Tilt sash

**Tilt sash.** Lift and raise sash with SW4 Allen key.

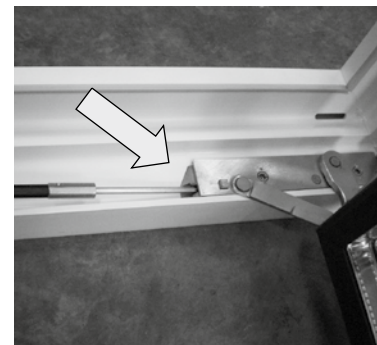


Information on adjustment of contact pressure and on hinging and unhinging of rebate and cleaning stay-arms, see chapter 3.3.3 VV hardware (concealed standard).

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### 3.1.3 I-TEC LOCKING (CONCEALED FLAP LOCKING)

#### Corner / sash hinge on rectangular window (hinge side - at the bottom)



Adjust towards hinge or handle side with 4mm Allen key.



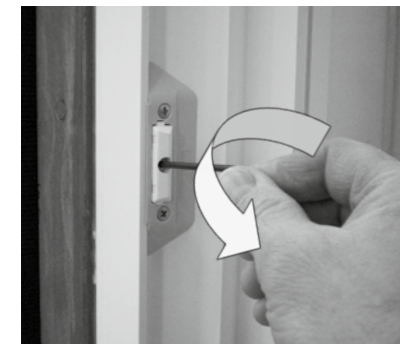
Raise or lower sash with 4mm Allen key.

#### Stay-arm / turn hinge on rectangular window (hinge side - at the top)



Adjust towards hinge or handle side with 4mm Allen key.

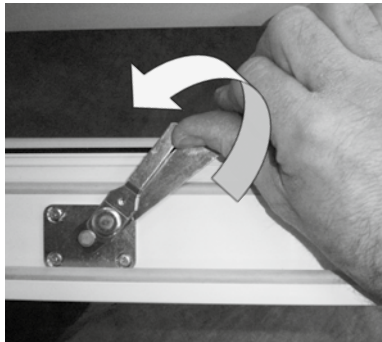
#### Catch at doors



Adjust the catch with 3mm Allen key.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



Open rebate stay-arm lock, unhinge rebate stay-arm and bring sash into cleaning position.



Raise and lower sash with 4mm Allen key.



If the height adjusting screw cannot be accessed in the cleaning position, the cleaning stay-arm has to be unhinged additionally as well.



Open cleaning stay-arm lock with slot screw driver and unhinge cleaning stay-arm. **Secure sash!!**

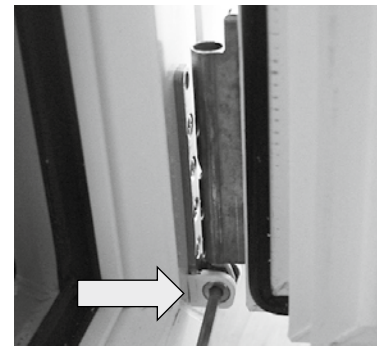
**ATTENTION:** Sash is now unsecured and must be secured by a second person! Tilt sash no more than 90°!

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

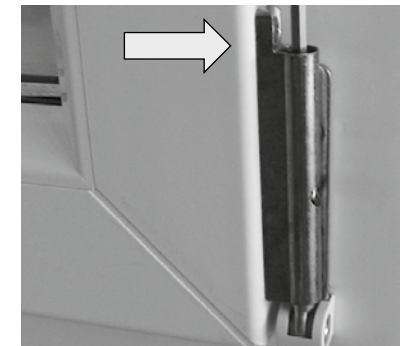
#### 3.2. EXPOSED HARDWARE

For some adjustment works possible covering caps have to be removed first.

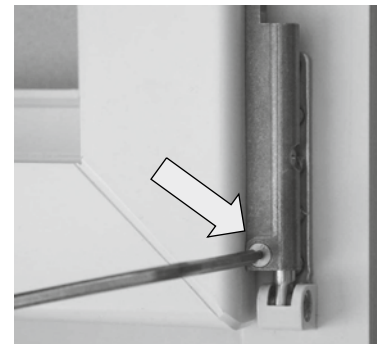
#### Sash hinge and corner hinge (hinge side - at the bottom)



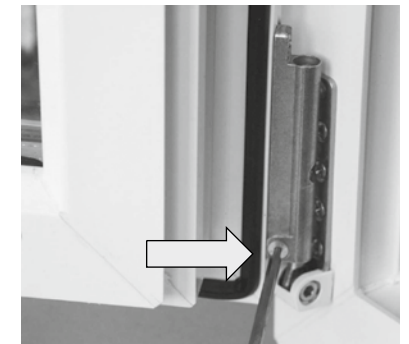
Adjust towards hinge or handle side with 4mm Allen key.



Raise or lower sash with 4mm Allen key.



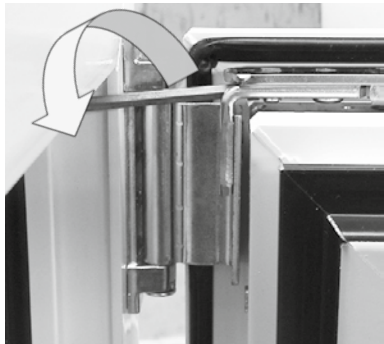
Adjustment of turn limiter with 2.5mm Allen key, if right-handed  
- with sash closed, if left-handed -  
with sash open.





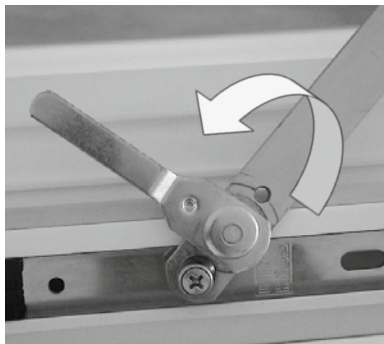
### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Stay-arm and turn hinge on rectangular window (hinge side - at the top)



Adjust towards hinge or handle side with 4mm Allen key.

#### Tilt sash



##### 1. Vertical adjustment

Unlock rebate stay-arm and unhinge, then position sash carefully in window reveal.

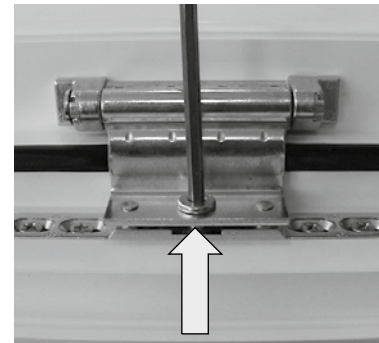


##### 2. Vertical adjustment

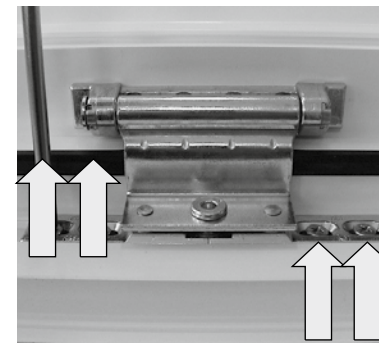
Unlock cleaning stay-arm and unhinge.

**ATTENTION:** Sash is now unsecured and has to be secured by a second person!

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



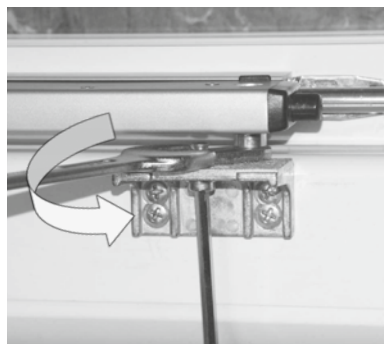
Raise and lower sash with 4mm Allen key.



#### Horizontal adjustment

Unhinge rebate stay-arm and cleaning stay-arm, as described above. Loosen screws with screwdriver, adjust sash horizontally and tighten screws again. Hinge cleaning and rebate stay-arm again and lock.



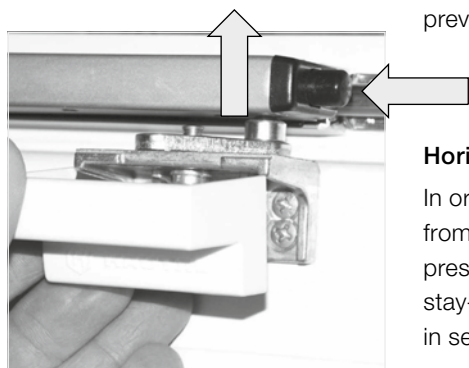


#### 3.3. MORE HARDWARE VERSIONS

##### Fanlight hardware

##### Closing pressure adjustment

Remove covering cap towards the front. Loosen screw at bottom with 4mm Allen key, adjust pressure with SW14 flat spanner and tighten screw again.



Measures to adjust sashes, as described in previous chapters.

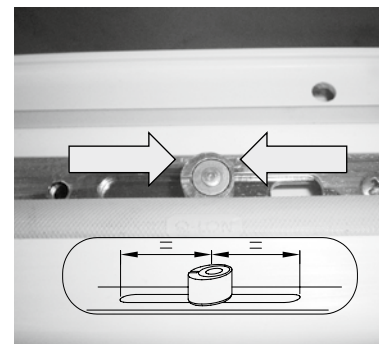
##### Horizontal and vertical adjustment

In order to be able to separate the stay-arm from the bracket, first tilt the sash. Then press the safety knob on the stay-arm, pull stay-arm upwards off the bolt and bring sash in secure position.

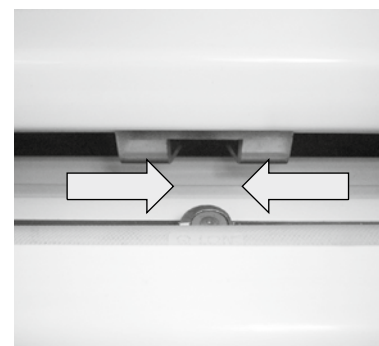


To be able to bring sash into cleaning position (open it completely), undo locking mechanism on side-mounted safety stay-arms.

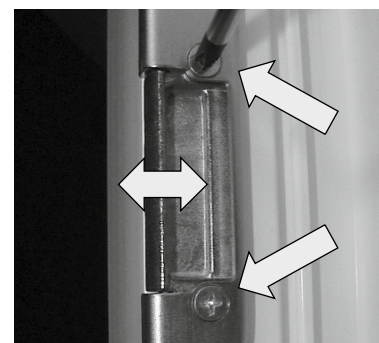
Further measures for sash adjustment, as described in previous chapters (tilt sash).



If a bolt of the fanlight hardware engages with the sash hardware, it is absolutely important to centre the locking bolt of the sash hardware which might have been slid to the side by accident, otherwise the sash cannot be closed.



When closing the sash, the bolt of the fanlight hardware has to engage with the locking bolt again.



##### Multi-point lock and latch/spring-bolt lock

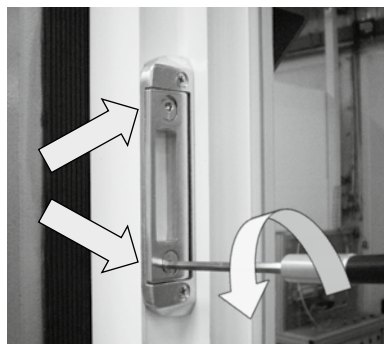
##### Closing pressure adjustment

Slightly loosen screws with screwdriver. Move locking plate insert and tighten screws again.

Measures for sash adjustments, as described in previous chapters.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



#### Side entrance door

##### Closing pressure adjustment for latch:

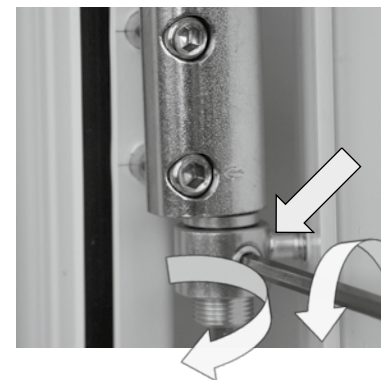
To adjust the closing pressure, adjust the eccentric bolts of the locking element with 4mm Allen key.



##### Closing pressure adjustment for locking bolt:

To adjust the closing pressure, adjust the eccentric bolts of the drive with a torx T15.

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

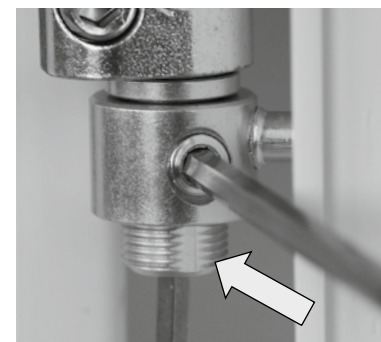


#### Three-dimensionally adjustable turn hinges (standard hinge)

##### Height adjustment

Loosen safety screw for height adjustment with 4mm Allen key. This is only accessible with the sash open.

Then adjust height adjustment screw from below with 4mm Allen key.



Before tightening the safety screw ensure that it attaches to the flattened side of the height adjustment screw, otherwise the thread will get damaged.



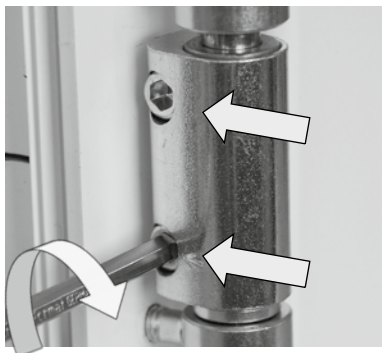
##### Side adjustment

The screws for side adjustment are accessible from the reveal (soffit) side when sash is closed and from the rebate side when sash is open.

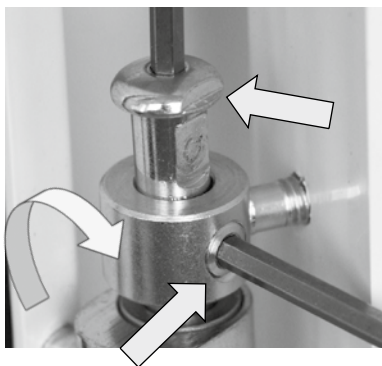
**ATTENTION:** The screw position indicated by the arrow is fixed to the centre part of the hinge. In order to avoid damage on the thread loosen the other screw before adjustment!



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



Side adjustment is carried out by adjusting both screws on the centre part of the turn hinge with a 5mm Allen key.



#### Closing pressure adjustment

Loosen peg with 4mm Allen key. This is only accessible when sash is open. Pull peg upwards and unhinge sash. Turn parts remaining on the door frame inwards or outwards.

**ATTENTION:** When re-fitting the sash, insert peg so that flattened side faces the safety mechanism.

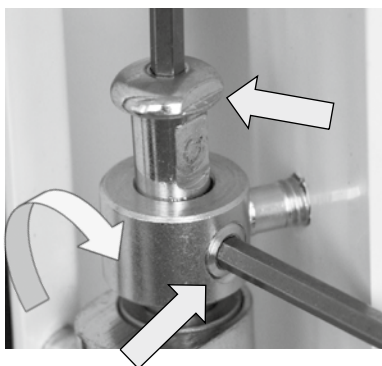
#### Lifting hinge with barrier-free threshold

#### Height adjustment

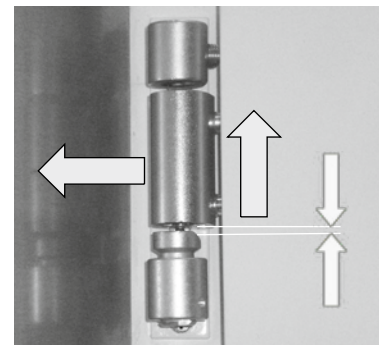
Sash needs to be unhinged for height adjustment.

Loosen pin safety device with SW4 Allen key. This is only accessible with opened sash. Pull pin out towards to top.

**ATTENTION:** When mounting sash again, insert pin so that flattened side points to side of pin safety device.

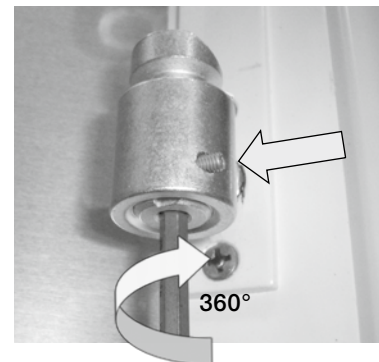


### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

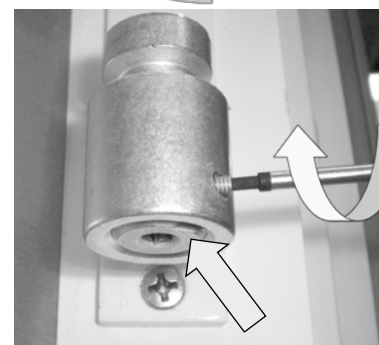


Lift sash up until you can take it out.

**ATTENTION:** Do not stand sash on its bottom gaskets! Danger of damage!



Loosen securing screw with 1.5 NW Allen key and turn height adjustment by 360° each.



Please note that notch on height adjustment lies in depicted position. Tighten securing screws again. This puts height adjustment in exact desired position.

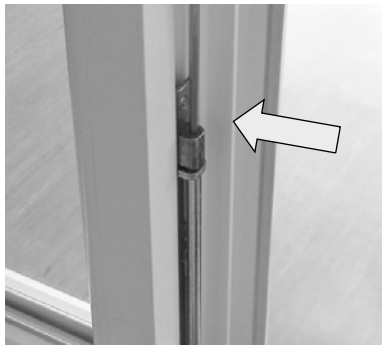
**ATTENTION:** Securing screw must not be too tight when screwing in!

#### Side adjustment and closing pressure adjustment

Side and closing pressure adjustment are made in same way as with standard hinge.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

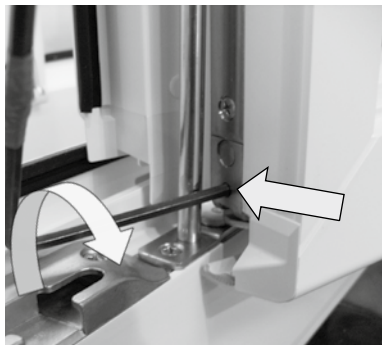


#### 3-sash window without transom, centre sash

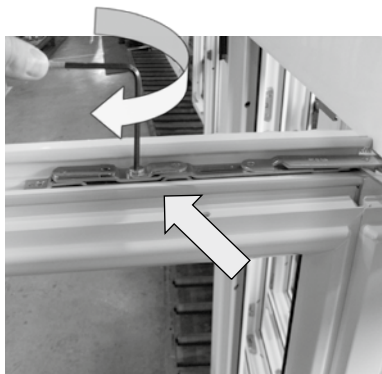
##### Height adjustment

First open side sashes. Adjustment is carried out on the support bar of the centre sash with 4mm Allen key.

Adjust side sashes as described in previous chapters.

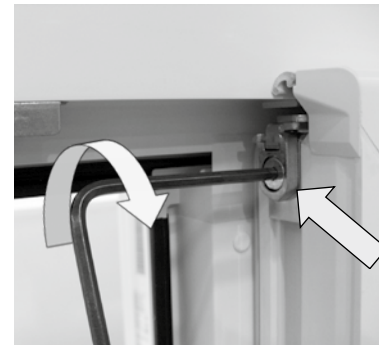


**Side adjustment corner bearing**  
Open centre sash so far that Allen screw is no longer covered by support bar.  
Adjust with 2.5mm Allen key.



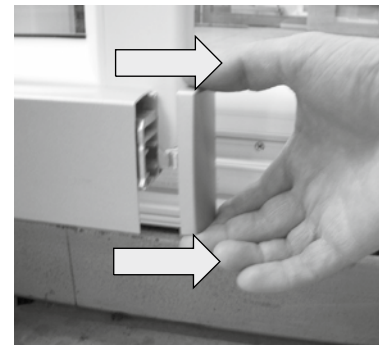
**Side adjustment turn bearing**  
Open centre sash. Adjust with 4mm Allen key.

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



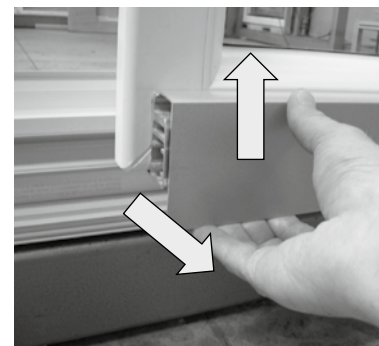
**Closing pressure adjustment turn bearing**  
Adjust with 4mm Allen key.

Adjust side sashes as described in previous chapters.



**Sliding window**

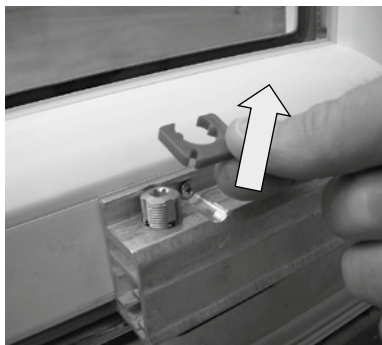
**Height adjustment**  
Pull covering cap off sideways from runner.



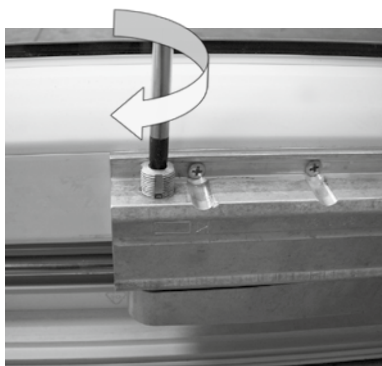
Remove cover profile from the holding clips at the bottom and lift off towards the top.



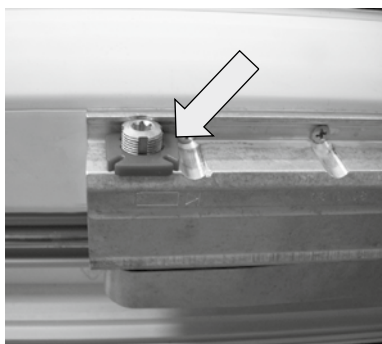
### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



Take off turn stop from height adjustment screw.



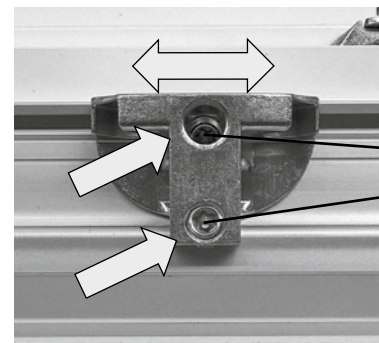
Adjust sash with torx T40.



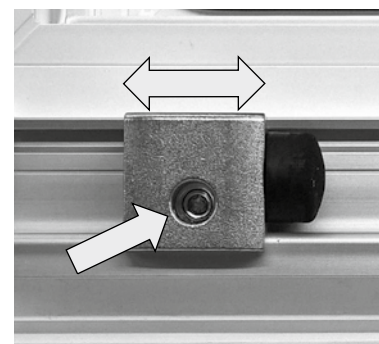
Put turn stop back on.

Attach cover profile again and press on tightly at the bottom. Put side cover caps back on.

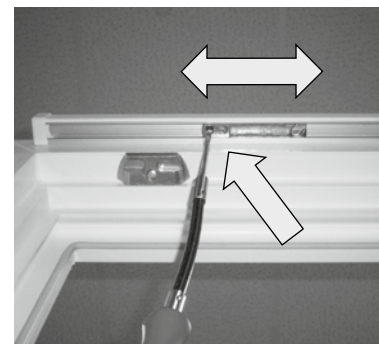
### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



**Bottom stopper sliding direction "CLOSED"**  
Loosen screw with torx T25, move control block sideways and tighten screw again.



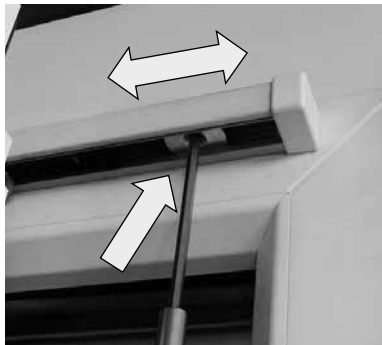
**Bottom stopper sliding direction "OPEN"**  
Loosen screw with torx T25, move buffer sideways and tighten screw again (4 – 5 Nm).



**Top stopper sliding direction "CLOSED"**  
When adjusting the bottom stopper or changing the height adjustment, this might necessitate also adjusting the top stopper. Loosen screws with torx T25, move stopper sideways and tighten screws again (3 – 4 Nm).



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

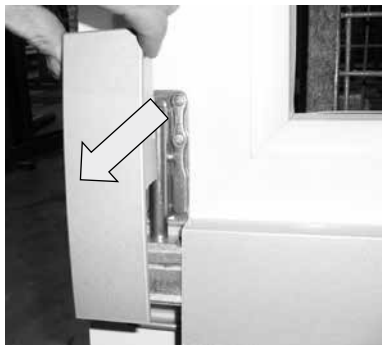


#### Top stopper sliding direction "OPEN"

Additionally to the running rail also at the buffer in the guiding rail. Loosen screw with torx T25, slide buffer to the side and tighten screws again (3 – 4 Nm).



Stopper buffers serve to limit the opening and must not be used for abrupt stopping of the sliding sash!



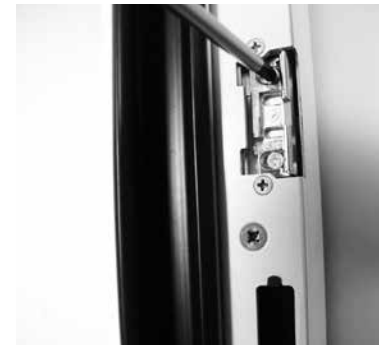
#### Sliding door

Any adjustment possibilities are the same as with sliding windows.

#### Height adjustment

Pull cover cap off towards the front. Remove cover profile and carry out height adjustment as described under "sliding window".

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

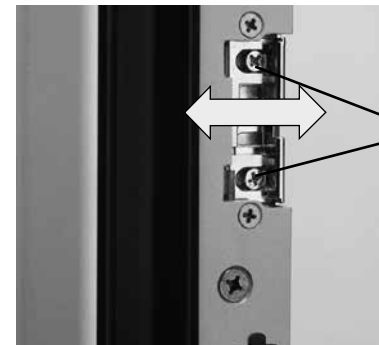


#### 3.4. ENTRANCE DOORS

Adjustments on lock side apply to aluminium and timber/aluminium entrance doors.

Adjusting of the latch locking part applies also to:

- AT piece
- Electric door opener (ETÖ)
- Mechanical day latch (MTOE)



It controls the closing pressure from the lock side for latch/spring bolt locks and multi-point locks.

1. Remove both fixing screws.
2. Adjust latch locking part (adjustment via raster).
3. Put fixing screws back in.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Locking cases for bolt-hookbolt for multi-point locking types MV, MV-B, MV-C, EV-C and EV-E

Controls lock-sided contact pressure

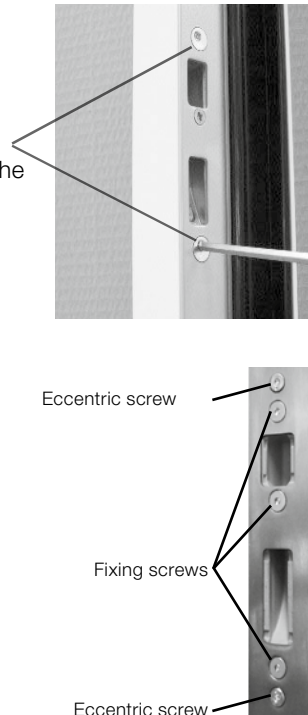
##### 1.) AT200

Adjust both eccentric screws with SW4 Allen key. The locking case changes its position and therefore, the contact pressure changes too.

##### 2.) AT305, AT310, AT400, AT410, HT400, HT410

For adjusting, first loosen the 3 fixing screws. Then carry out adjustment via the two eccentric screws.

Position is shown by marking point on the screws. Afterwards tighten fixing screws.



#### Locking cases for bolt-hook bolt for multi-point locking types MV-AM and EE

Here, **no** contact pressure can be adjusted via the locking cases.

Adjustment has to be carried out in such a way that trigger bolt and hook bolt can engage freely after closing of door sash – preferably central.

Check: Press strongly against it in the locking case area

→ Door sash should not move much!

Adjustment process is the same.

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Additional catch for aluminium entrance doors

With this part the hold for the door sash can be adjusted, if it is not fixed through the lock latch:

- Electric door opener (ETÖ) in unlocking position
- Mechanical day latch (MTOE) in unlocking position
- Latch retracted (manual or electrically)
- Latch fixed in retracted position.

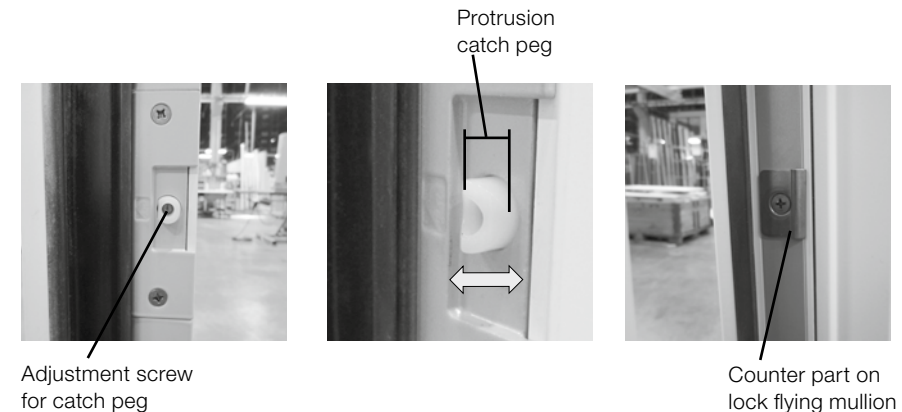
The catch peg is installed on the striking bead (frameside), the counterpart where it engages is installed on the lock flying mullion.

#### Adjusting:

To adjust the torque: use a small slotted screw driver and adjust on the protrusion of the catch peg which is spring-operated.

Catch peg further out: larger torque

Catch peg further in: smaller torque



**Additional catch in timber/aluminium entrance doors cannot be adjusted.**



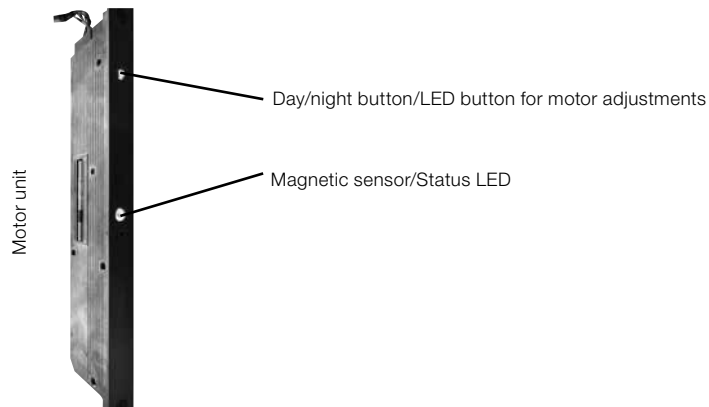
### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

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#### Multi-point locks EC-E and EV-C (fully motoric)

The following operation types can be set:

- Night operation (basic setting):  
If the door is closed, the locking process occurs automatically
- Day operation:  
No automatic locking occurs; door is only kept via lock latch.
- Conversion:  
· electrically via clamps 0 – 1 (E-switch at customers) or via button on lock mullion.



#### Day/night button / LED button for motor adjustments

This button has 2 basic functions:

- a) For fast change between day (white) and night operation (blue) by pressing the LED-button very briefly (1 sec.)
- b) For change of motor adjustments  
By press the LED-button for longer (8 sec.) you come to a menu where different settings can be changed:
  - Volume of motor hum
  - Status output of feedback contact (clamp 7 - "Alarm systems")
  - Day/night/detailed settings (interaction between LED-button and electr. clamp 0-1)
  - System services (reset to factory settings, sensor sensitivity,..)

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

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Menu levels and adjustment values are displayed by different colours of the LED. Usually no changes are necessary with factory setting. However, if other parameter values are required, adjust them according to operating instructions of GENIUS (type 2.1 B):

<http://downloads.siegenia.com/de/tuersysteme/genius2.1>

#### Magnetic sensor / status LED

Serves to recognise closed door sash position (=start of locking process).

Additionally, status display of locking occurs according to traffic light principle:

green: all OK

green flashing: all OK, one electrical opening impulse currently present

yellow or red: electrical or mechanical error - reason or solution see above listed link



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Available adjustments for door hinges

Ensure that the adjustment ranges are only used to an extent that does not impair functionality of the door!

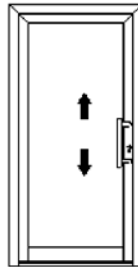


Please note especially with possible hinge safety mechanism → “tension danger”

#### Height adjustment

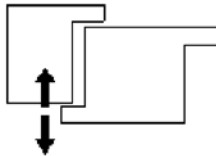
Used to raise or lower the door sash.

Is carried out in such a way that the weight of the door sash is evenly distributed between all hinges or washers.

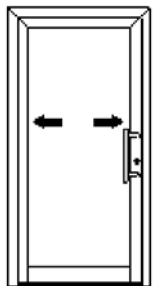


#### Contact pressure adjustment

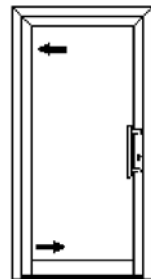
Used to regulate how far the sash projects and therefore, adjusts the pressure placed on gaskets in the hinge area.



#### Side adjustment



If all hinges are adjusted in the same direction, the rebate clearance (distance from lock mullion to locking plate) can be regulated.



If the hinges are adjusted in opposite directions, this leads to raising or lowering of the door sash on the handle side.

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Adjustment process with aluminium entrance doors



#### Exposed door hinge with aluminium entrance doors

All adjustments have to be carried out with a 4mm Allen key!

When adjusting three hinges, the centre hinge has to be adjusted in such a way that no tension is created!

**Process:** Remove axle bolt of centre hinge. Adjust door sash with top and bottom hinge. Adjust centre hinge so that the axle bolt can be slid back in without applying force!

#### Height adjustment (-2/+3 mm)



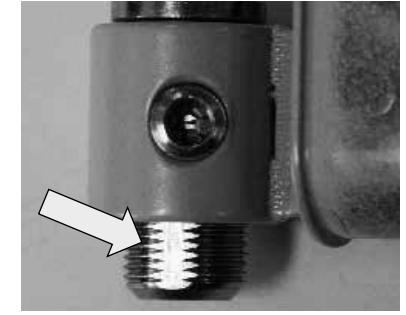
Remove bottom cover caps.



Loosen fixing screw.



Bring adjustable support to desired height by turning to the left or to the right.



When attaching, always use the milled surface of the adjustable support!

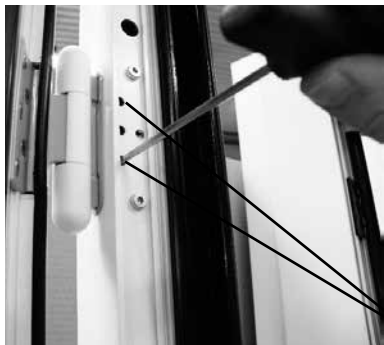


### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



**Adjust contact pressure (-1/+3 mm)**

Remove UPVC cover.



Loosen both tension screws completely.

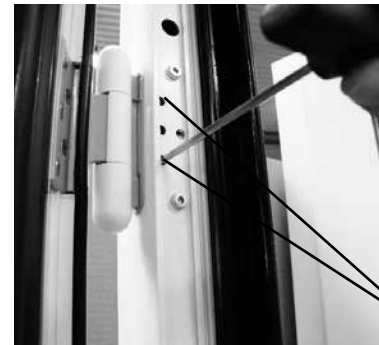


Adjust contact pressure in such a way that the gasket in the hinge area is not exposed to too much pressure (sash overlap 14-15mm).

Tighten both tension screws again.

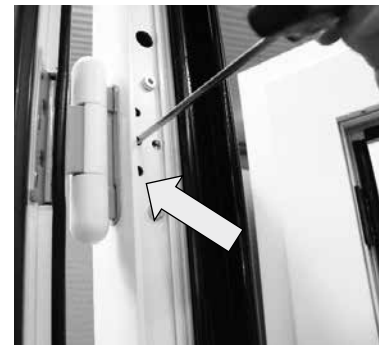
Attach UPVC cover again.

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



**Side adjustments (+/-2 mm)**

Loosen both tension screws as far as possible.



Carry out adjustment, ensure sufficient distance between lock mullion and locking plate (3-4 mm).



Tighten both tension screws again.

Attach UPVC cover again.

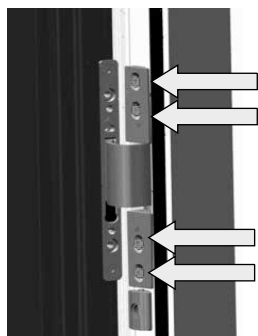


### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Adjustment process - concealed door hinge with aluminium entrance doors



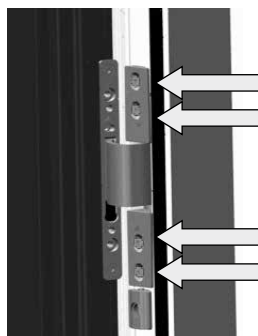
#### Adjust sash height (+ 4mm/- 2mm)



1. Loosen countersunk screws (arrows) lightly on frame on all hinges.  
Tool:  
Torx 30 screwdriver



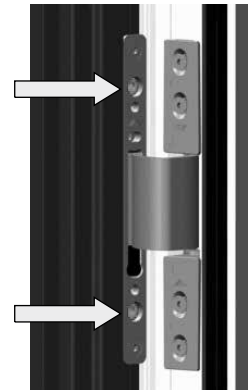
2. Bring sash to required height via threaded pin (arrow)  
Tool:  
4 mm Allen key



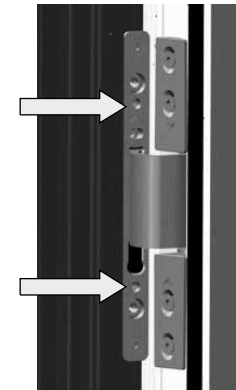
3. Tighten counter-sunk screws (arrows) again on frame on all hinges.

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

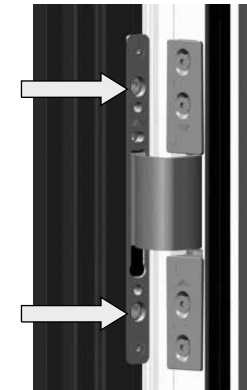
#### Adjust contact pressure (+/- 1.2 mm)



1. Loosen counter-sunk screws (arrows) lightly on sash hinge.



2. Adjust required contact pressure via excentre (arrow).

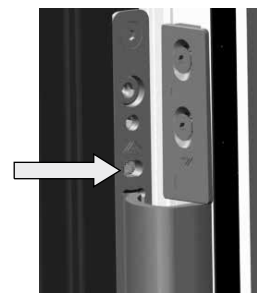


3. Tighten counter-sunk screws (arrows) again on sash hinge.

Tool:  
6 mm Allen key  
with short arm

Tool:  
6 mm Allen key  
with short arm

#### Side adjustments (+3/-2.3mm)



1. Turn screw (arrow) into respective direction for adjusting function clearance (rebate clearance).

Tool:  
6 mm Allen key with short arm

Adjust middle hinge of three hinges in such a way that no tensions occur.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

Specifically for timber/aluminium doors:



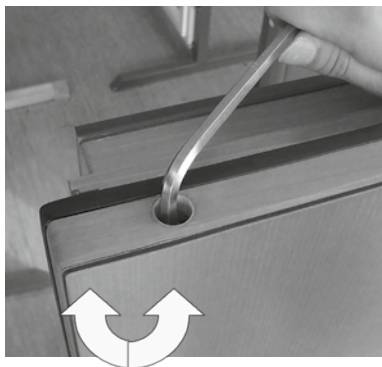
#### Adjust bottom and top contact pressure and correct warping on lock side

In the outer rebate area (overlap) on the lock side, there is a tension rod which can be used to correct warping in the door leaf of up to 4mm in both directions.

1. Remove cover cap.
2. Adjust the tension rod with an SW6 Allen key. By turning clockwise the rod is tensioned and the sash ends are bent towards the inside, by turning anti-clockwise the rod is lengthened and the sash ends are bent towards the outside.

**ATTENTION:** do not exceed a torque of 35 Nm! Danger of damage on door leaf.

3. Put cover cap back on.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Adjustment process door hinge with timber/aluminium entrance doors with exposed hinges

Carry out all adjustments with 4mm Allen key!



Adjust the centre hinge in such a way that no tension is created!

#### Height adjustment (-2/+3 mm)



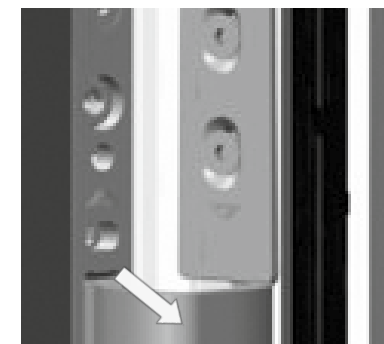
Remove bottom cover caps.



Loosen fixing screws.



Bring adjustable support to desired height by turning to the left or to the right and correct the other hinges too.



When attaching, always use milled surface of adjustable support!



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



#### Contact pressure and side adjustment

On rare occasions side adjustments or adjustments to the contact pressure of a sash or the gaskets are necessary. Unhinging the door sash is necessary.

#### Unhinge door sash

1. Loosen fixing screw for hinge bolts (top Allen screw) on all hinges.
2. Press hinge bolt out from underneath with a 4mm Allen key . Start at the bottom hinge. Unhinge door sash and put aside



Be careful when lifting! Element weight over 100 kg possible!

3. Put the unhinged door sash carefully on to a pressure-resistant, soft surface (e.g. polystyrene from packaging) to avoid damage!

When leaning it watch for secure standing and also use some padding toward e.g. a wall!

#### Adjust contact pressure

To change contact pressure of door sash on hinge side, hinge parts on frame are adjusted when turning. Ensure to adjust hinges evenly, otherwise bolts will be subjected to tension and high wear and tear and creaking sounds will result. Both hinge parts always need to be turned full 360° turns inwards or outwards, otherwise they will be positioned wrongly.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



#### Side adjustment

To carry out side adjustments to door sash, hinge parts of sash need to be turned inwards or outwards with a screwdriver or similar. Through this position of door sash is moved to the side. Ensure to adjust hinges evenly, otherwise bolts will be subjected to tension and high wear and tear and creaking sounds will result.



#### Hinge door sash

Bring door sash into position and insert hinge bolts again at bottom, top and centre. It is best to begin with the bottom hinge bolt, then insert the top and the centre one tension-free.



When inserting hinge bolt ensure correct orientation. The flattened part needs to be in the area of the Allen screw.

Tighten all Allen screws again and attach cover caps.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Adjustment process for door hinges in timber/aluminum entrance doors with concealed hinges

All adjustments to be carried out with a torx T20 or a 4mm Allen key!



Adjust the centre hinge in such a way that no tension is created! Door panel does not need to be unhinged for adjustments!

#### Mount door panel



Fixing screws in unhinged delivered sashes are screwed into frame, remove these.



Bring door hinges into a 90° position and lift sash to frame. Attention - high element weights!

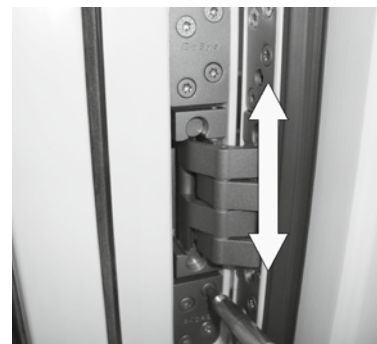


Slide hinges without cross threading into retaining pockets and fasten each hinge for the moment with a fixing screw.



Use remaining three fixing screws for each hinge.

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES



#### Height adjustment

Frame parts of hinges at the back are equipped with a tooth system. If all fixing screws (4 pieces per hinge) are loosened far enough with a torx T20, sash can be adjusted in the height. Put door at desired height and fasten all fixing screws. Do not subject hinges to tension to avoid creaking sounds and high wear and tear.



#### Adjust contact pressure

If fixing screws (4 pieces per hinge) are only loosened slightly, contact pressure on hinge side of sash can be increased or decreased on the height adjusted tooth system. Loosen screws completely on centre hinge and carry out desired adjustments on top and bottom hinge. Tighten all fixing screws again.



#### Adjust contact pressure

If fixing screws (4 pieces per hinge) are only loosened slightly, contact pressure on hinge side of sash can be increased or decreased on the height adjusted tooth system. Loosen screws completely on centre hinge and carry out desired adjustments on top and bottom hinge. Tighten all fixing screws again.



### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

#### Putting levers on and taking them off (for aluminium and timber/aluminium entrance doors)

##### Lever sets PD

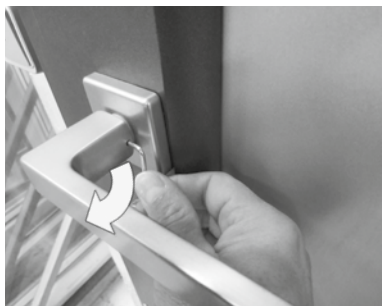
The new generation of Hoppe lever sets is fitted via an integrated clamping system on the square lever pin.



To put lever on:  
Put cover plate in place and slide lever on to pin until it sits tightly. Lever stays in place via preloaded metal spring on lever pin.



To take lever off:  
1. Insert supplied special tool fully into side hole at a slight angle to the cover plate.



2. Turn special tool by about 90° to loosen clamping system.



3. Pull lever off the pin.

### 3. ADJUSTMENTS | ADJUSTMENT POSSIBILITIES

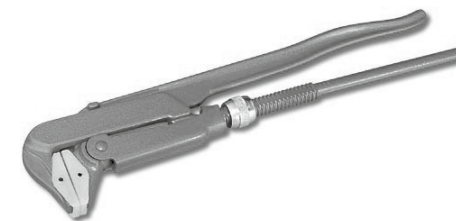
##### Lever set VD20

Putting lever on via "square" screw-on key hole cover plate.  
(Same sub-structure as with VD10 to VD16.)



Lever cover plate is screwed on to under construction. Clamping occurs via O-ring. A 0.4mm high flange prevents scratching of the surface when turning the cover plate (visible gap after tightening). Pull direction of cover plate can vary after fitting.

Screw cover plate can be loosened without problems with pliers and tightened again or adjusted. Protect surface of cover plate! (Picture: Plastic jaws, washers, ...) Loosen first Allen screw with lever/lever.







#### 3.5. ADJUSTMENT POSSIBILITIES WINDOW SHUTTER

##### Adjustment of reveal (soffit) depth

Reveal depth is adjusted via hinge for reveal depth of 60 - 230 mm.



##### Side adjustment (hanging of window shutters)

Side adjustment is carried out via hinge casings 1.5 and 3mm. Side adjustment via the spindle is only possible with reveal depth 190 - 230 mm.



##### Adjustment of hinge stabiliser

Adjustment screw has to be used to press window shutter against stopper buffer/wall, then clamping screw at the top has to be tightened.



#### 3.6. INSECT PROTECTION

##### Sliding frame

1. For hinging, press sliding frame so far upwards into top sliding rail, until sliding frame can be positioned into lower sliding rail.



2. Then push fixing part up and attach it with screws on both sides.



##### Turn frame

Before unhinging, lift pins and remove them, then sash can be taken off towards the front.



## 4. CLEANING | CARE | MAINTENANCE

Internorm products are low-maintenance, easy to clean and to care for. Regular maintenance conserves value and extends the life span of windows and doors. In Austria these necessary measures are documented in the ÖNORM B 5305. This ÖNORM contains criteria to assess the state of a window as well as details and specifications concerning implementation and instigation of maintenance.

If you adhere to the following cleaning, care and maintenance tips, you will be able to enjoy your Internorm products for a long time. In order to retain an immaculate surface, smooth-running hardware and well closing gaskets, please take note of the following care tips.

### 4.1. GENERAL INFORMATION

Do not use cleaning products of unknown composition. If you are uncertain about the effects of a cleaning agent, test it on an inconspicuous, concealed part. Please be aware that cleaning agents which cause surprising cleaning results without any special effort might often lead to long term damages.

Outside surfaces are not only exposed to weather, but also to the increased effects of smoke, industrial fumes and aggressive flying dust. Deposits of these substances combined with rain or condensation can impair surfaces and alter the decorative appearance. We recommend regular cleaning of the outside surfaces, depending on the degree of staining, in order to prevent long term settling of deposits. The sooner stains are removed from the surface, the easier their cleaning will be.



Micro fibre cloths contain substances and fibre parts which can destroy surfaces of glass, profiles and gaskets. Micro fibre cloths are therefore unsuitable for cleaning windows.

## 4. CLEANING | CARE | MAINTENANCE

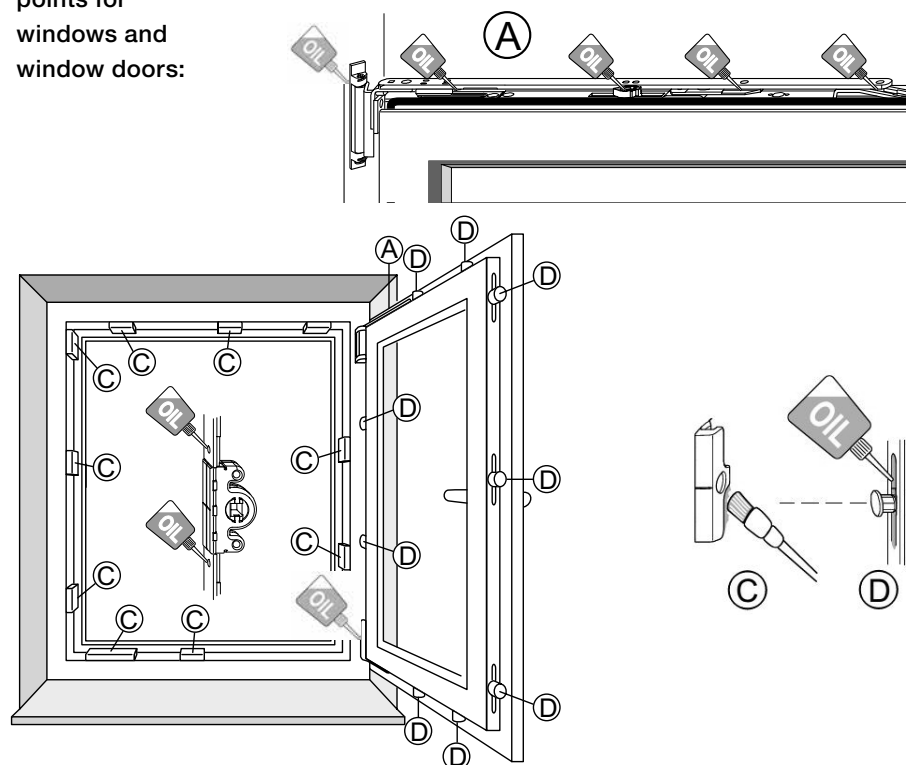
### 4.2. HARDWARE

All hardware parts are to be checked at least once per year for tight fitting and for wear and tear. If necessary, fixing screws need to be tightened or faulty parts need to be replaced by authorised personnel.

Furthermore, all gliding parts and movable hardware parts have to be greased once per year (acid free grease or oil). Very frequently operated window or door elements need to be greased more often! Non-observance of these instructions can cause damage to property or injury to persons. Hardware should only come in contact with those care and cleaning agents that do not impede corrosion protection of hardware parts.



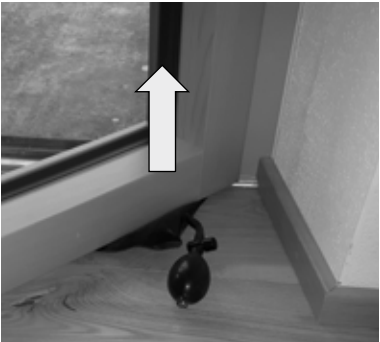
**Lubricating  
points for  
windows and  
window doors:**





4. CLEANING | CARE | MAINTENANCE

Greasing of sash bearing of fully concealed hardware:



Lift opened sash with e.g. air wedge packer until lower bearing point bears no weight.



Grease bearing point between sliding surfaces with high-quality lubricant (e.g. teflon oil).

Maintenance of I-tec locking

All joints of bearing parts top and bottom need to be greased.



1  
2  
Corner and sash bearing bottom

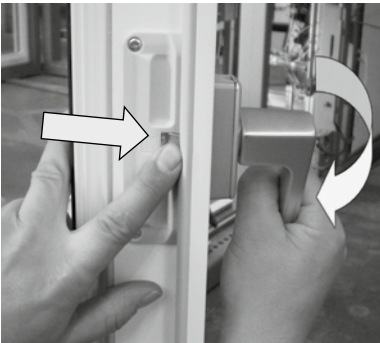
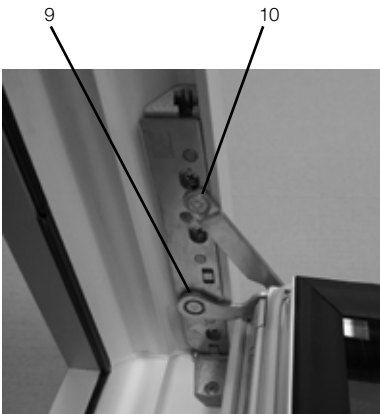


3  
4  
5  
6

4. CLEANING | CARE | MAINTENANCE



Stay-arm, turn bearing top



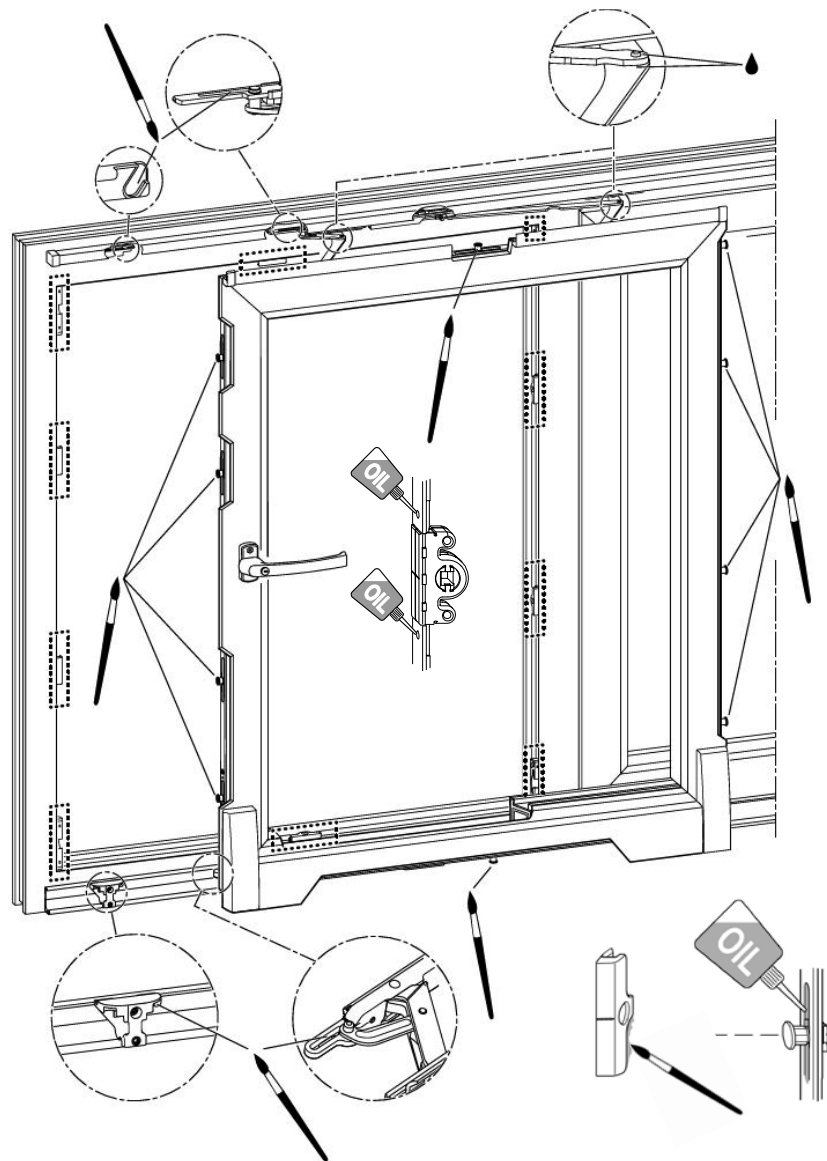
Open sash, press rocker switch on drive for wrong handling protection and bring handle in closing position. Through this locking flaps are opened.



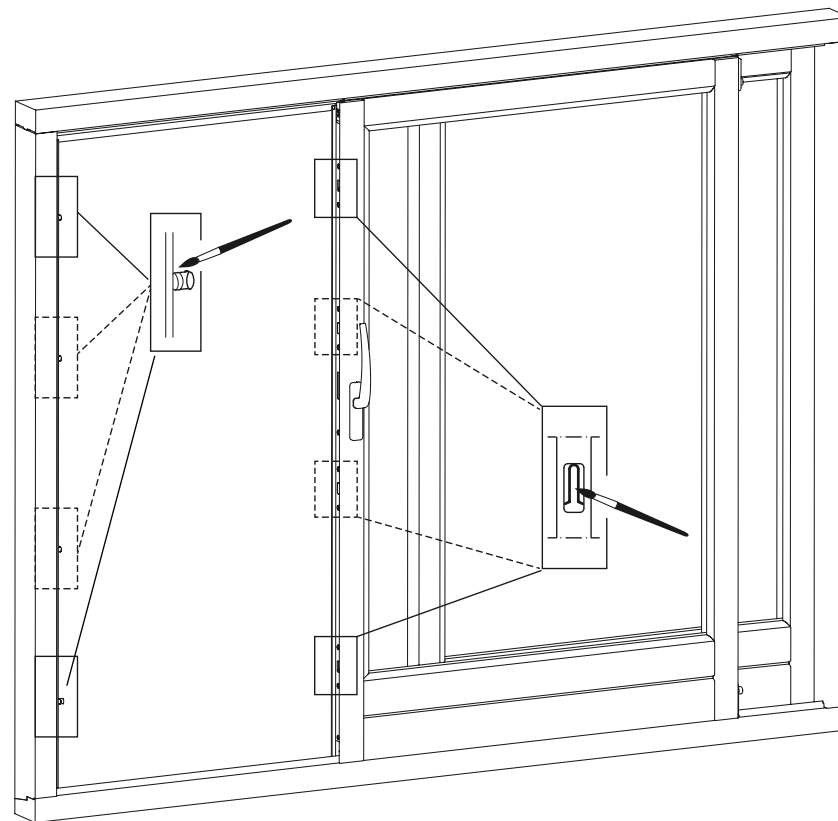
If necessary grease sliding areas.



Greasing points for parallel sliding elements:



Greasing points for lift-sliding doors:





## 4. CLEANING | CARE | MAINTENANCE

Particular care must be taken when cleaning electronic hardware parts (e.g. window control or plug connection between sash and frame of electric blinds). These parts need to be protected of dirt and kept clean to avoid disruptions in signal transmission, especially during construction period, but also during regular use of the window.

With I-tec locking corner drives are additionally secured with a pin (grub screw) which lies under the middle gasket. Due to the alternating load when locking the sash this pin can come out through the middle gasket and needs to be screwed in flush to the bottom of the gasket groove using a 2.5mm Allen key. Otherwise the window frame might get damaged.

### 4.3. CLEANING TIPS FOR GLASS SURFACES/ GLASS JOINTS AND GLASS CORNERS

Dirty glass surfaces/glass joints/glass corners can be cleaned wet with water, sponge, cloth etc.

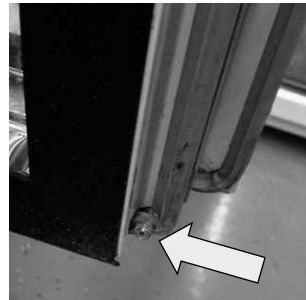
Common glass cleaners without scouring agents may be added to water. Persistent stains such as paints or tar droplets should be removed with methylated spirits, acetone or petroleum ether. Glass surface should then be cleaned wet again. Metallic and abrasive items (e.g. razor blades, steel wool, cleaning fleeces ...) must not be used!



Do not use alkaline cleaning lye, acids or cleaning agents containing fluoride to clean glass surfaces.



- Protect the glass surface with suitable cover foils from
  - plaster splatters, cement, untreated concrete surfaces, fibre cement boards.
  - flying sparks or welding beads from angle grinders



## 4. CLEANING | CARE | MAINTENANCE

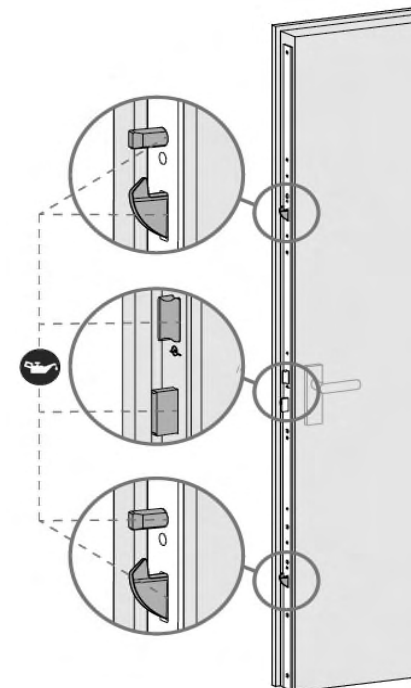
### Hardware parts maintenance on entrance doors

As with windows, check all hardware parts of entrance doors at least once per year for tight fitting and wear and tear. Depending on need, tighten fixing screw or exchange faulty parts by qualified personnel.

Multi-point locks are generally furnished with long-lasting lubrication.

Still, once per year main bolt and additional locking elements should be greased with hardware grease (acid and resin free)

Softlock latches (plastic coated latches) need no grease.





## 4. CLEANING | CARE | MAINTENANCE

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### 4.4. GASKET

All gasket profiles have to be cleaned and greased at least once per year to retain functionality. We recommend the care product for gaskets. This care product for gaskets retains pliability of the gasket and prevents it from becoming brittle prematurely. Please ensure gasket profiles are not damaged and do not come into contact with solvents. Generally gaskets should only be cleaned with water and possibly a little drop of dishwashing liquid.



#### Permitted cleaning agents

- Alkaline cleaning agents (soapy solutions)
- Mixtures of water and alcohol

However, concentration, exposure time and ambient temperature play an important role. It could damage the material if the concentration of the cleaner is too high.

#### Prohibited cleaning agents

- Cleaners containing chlorine or cleaners with peroxides can damage the material over a longer period of time or it could lead to discolouration.
- Oils, greases, oil and grease containing substances and petrol can lead to a cracked and unsightly appearance.

## 4. CLEANING | CARE | MAINTENANCE

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### 4.5. KUNSTSTOFF-OBERFLÄCHEN

Two sets of Internorm care products are available for cleaning UPVC surfaces. One cleaning agent is especially suitable for hard UPVC surfaces and the other one for designer surfaces. Especially avoid aggressive and dissolving cleaning agents and avoid direct sunlight during cleaning on areas which need to be cleaned. Use standard domestic cleaning agents which are based on tenside for persistent dirt.



Intensive cleaner Decor cleaner

Suitable agents:

Washing-up liquid; mild, neutral universal cleaner; alcohol-free glass cleaner; clear water.

Not suitable agents:

Abrasive agents or chemicals such as acetone, petrol, acetic acid, nail varnish remover, alcohol or similar (also not as ingredient in cleaners); cleaners with orange/lemon aroma; ammoniac or sulphurous agents.

Rinse window frames inclusive gaskets with clear water! If mix of dirt, cleaner and water stays behind on frame, water evaporates and remaining cleaner-dirt-combination can burn into surface.

### 4.6. TIMBER SURFACES WITH TIMBER/ALUMINIUM ELEMENTS

We recommend using mild cleaning products such as diluted washing-up liquid or soapy water to clean inside timber surfaces. As timber surfaces on the inside are not exposed to weather (wear through rain and sunlight), coating is not necessary. Avoid scouring, acidic and solvent cleaning products. Only use soft cleaning cloths to avoid scratching the paint surface.



## 4. CLEANING | CARE | MAINTENANCE

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Window cleaners contain small amounts of alcohol and ammonium chloride. These products are well-suited to clean glass panes, as well as timber frame profiles. Dry the timber profile thoroughly after cleaning with a dry, soft cloth, as alcohol applied to the paint surface for too long, can dissolve it.

### 4.7. ANODISED OR POWDER-COATED ALUMINIUM SURFACES

Anodising and powder coating are considered refinements of exterior aluminium surfaces which are especially durable and decorative. In order to retain the decorative appearance of these construction parts for decades and to reduce corrosion impact, surfaces need to be looked after at least twice per year with adequate cleaning and surface conservation products.

Depending on the degree of staining (strong stains) care and cleaning intervals should be shortened accordingly. In the outsourced cleaning and care of buildings, processes according to the current quality guidelines for facade cleaning (GRM) are necessary

#### 4.7.1. REQUIREMENTS AND PROCESS OF CLEANING OF ALUMINIUM SURFACES

##### Object conditions

Do not clean surfaces in direct sunlight. Surface temperature must not exceed 25° C. Use suitable cloths for cleaning, which do not scratch the surface. Refrain from tough scrubbing.

##### Pre-cleaning

Before applying special cleaning or conserving products, existing stains should be removed in a pre-cleaning process. Use only clean water for this, possibly with small amounts of neutral cleaning agents (only pH neutral cleaning agents with a pH value between 5 and 8) e.g. washing-up liquid in normal concentration. These cleaning products should not be warmer than 25° C. Do not use steam cleaners.

## 4. CLEANING | CARE | MAINTENANCE

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### Conservation

Use Eloxal Polish (polish for anodised surfaces) or a Monowax X405 cleaner for stronger staining which can serve as conservation at the same time. It forms a film on the surface of anodised or coated aluminium parts and thereby repels dirt and water again for longer. This type of conservation however, needs to be renewed from time to time.

**Eloxal Clean** for anodised aluminium surfaces

**Monowax X405 Cleaner** for smooth, powder-coated aluminium surfaces

These general cleaning products should only be used after a successful pre-cleaning process.

### 4.7.2. CLEANER FOR ANODISED SURFACES

When cleaning very dirty anodised surfaces, do not use scratching or scouring products. Persistent stains such as tar, laquer or similar compounds can also be removed with solvents, e.g. benzine or cellulose thinner (only for local application and with corresponding subsequent treatment). Observe respective safety and handling instructions for each product. Gaskets or painted surfaces must not come in contact with these products.

#### 4.7.2.1 CONSERVATION AGENT FOR ANODISED SURFACES

##### Eloxal Polish Cleaner

This cleaning and conservation agent is a care product on emulsion basis.

##### Application range

The Eloxal Polish Cleaner and Conservation agent is well suited for stained anodised aluminium surfaces, which - for decorative reasons - should be cleaned several times each year.

##### Cleaning instructions

Shake bottle well before use. Apply Eloxal Polish Cleaner thinly with a soft cloth and over a large surface. Various stains, as well as dark anodised elements should be evened out with polishing movements.





## 4. CLEANING | CARE | MAINTENANCE

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### 4.7.3. CLEANING AGENT FOR POWDER-COATED SURFACES

Solvent containing, acidic and alkaline cleaners affect powder coated surfaces and must not be used just like scratching or scouring cleaning agents.

We recommend aroma-free cleaning petrol or isopropyl alcohol (IPA) for removing persistent, fatty, greasy dirt. These cleaning agents must only have short contact with the surface and be rinsed off with clear water.

#### 4.7.3.1 CONSERVATION AGENT FOR POWDER-COATED SURFACES

##### Monowax X405 light-blue 1000 ml

This cleaning and conservation agent is a care product on emulsion basis.

##### Application range

Monowax X405 cleaner and conserver is suitable for basic cleaning of newly installed powder-coated surfaces and for lightly soiled powder-coated aluminium parts. Conservation agent serves to attach a film with dirt- and water-repellent effect for a certain time to surface. It improves appearance of surface. Renew conservation from time to time.

Care product for powder-coated aluminium surfaces is also suitable for wet-painted surfaces (e.g. painted entrance door fillings).

This care product is not recommended for fine-structured coatings (HF and HFM) as polish residues can remain in grooves. As these surfaces are manufactured with highly-weather resistant powder coating, cleaning with clean water with cleaning agents added is sufficient or use special cleaner cl-360.110. (P/no. 36856 - 200ml)



##### Cleaning instructions

Shake product well before use.

Apply Monowax X405 thinly with a soft cloth and over a large surface. Light stains, as well as dark anodised elements should be evened out with polishing movements.

## 4. CLEANING | CARE | MAINTENANCE

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### 4.8. CLEANING INSTRUCTIONS FOR STAINLESS STEEL

Stainless steel is used in the building industry primarily where aesthetics and hygiene are the main focus.

As it cannot be avoided that a rust film or flash rust may deposit on the surface, this often leads to the erroneous assumption that stainless steel has rusted.

We recommend treating surfaces with visible stains or corrosion using standard stainless steel cleaners. These can be obtained in respective specialist shops.

### 4.9. CARE AND MAINTENANCE OF I-TEC VENTILATION

The ventilator should be regularly checked and maintained. Free up machine from dirt and check clamping screws for tight fitting. Test ventilator with a test run.

Maintenance and repair of parts inside ventilation housing are to be carried out exclusively by authorised personnel. Opening of ventilation housing which lies under the cover leads to loss of warranty and exclusion of liability.

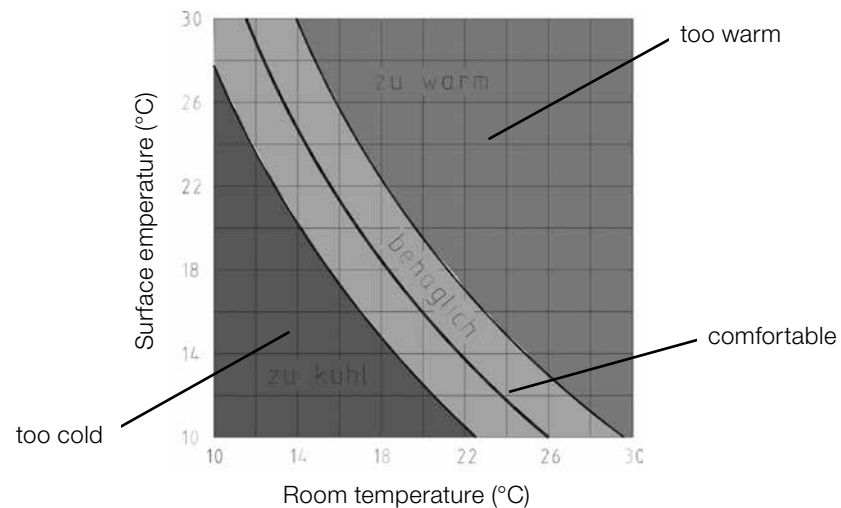
Please use a soft, slightly damp cloth to clean housing parts and ventilation grid. Please do not use corrosive chemicals, aggressive cleaning solutions or solvents to avoid damages to the surface. Protect your ventilator permanently from water and dirt.

### 4.10. SPECIFIC WARNINGS FOR TIMBER/ALUMINIUM-ELEMENTS

Natural timber always tends to adapt to its surrounding humidity. This characteristic remains the same throughout the entire life cycle, from the living tree to the processed timber element. Protect your windows especially during the construction period from excess construction humidity. This applies especially to winter construction sites, where large amounts of water occur due to plastering and screed works in closed buildings. Ensure sufficient ventilation during the construction period; if needed, work with a dehumidifier (room humidity should be between 40%-60% at 20 degrees). When Internorm timber windows are shipped, they will have a humidity of 14%. Please ensure timber is not exposed for too long to high humidity during installation or building progress. If timber humidity exceeds 18%, this could cause severe damage on corner connection surfaces, and opening and closing of the product might be affected due to expansion of timber.



## 5. COMFORT



Not only room temperature and air humidity determine how comfortable and cosy a room appears.

Temperature difference between room air and surfaces enclosing the room, as well as corresponding radiation asymmetries and air movements (room air turnover), are also related to this.

Example: If wall surface has a temperature of 18° C and room air temperature is 20° C, an average person will feel more comfortable than with a wall temperature of 15° C and an air temperature of 24° C. This means that the temperature difference between room air and enclosing surfaces should not exceed 2° C.

In rooms with relatively large temperature differences between walls and room air, the warm air cools down at the walls, sinks down to the floor, and results in a pool of cold air. This constant air movement results in the impression of a draught (room air turnover).

Therefore, good thermal insulation of enclosing surfaces is important!

## 6. VENTILATION

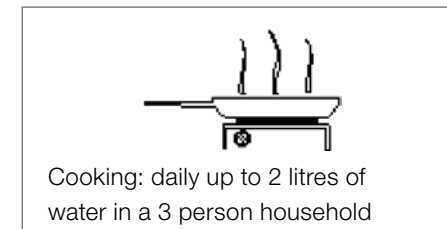
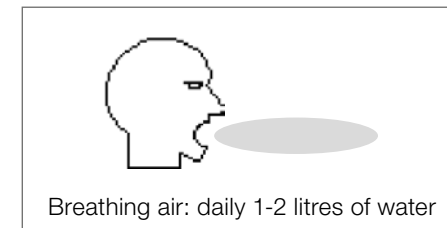
### CORRECT AIRING

Minimum oxygen demand for humans is approx. 1.8m<sup>3</sup>/h per person. In order to accommodate pollutants and odours, the amount of fresh air needed hygienically is 10 to 25m<sup>3</sup>/h per person.

The amount of air inflow necessary to get moisture out depends on the amount of occurring moisture, the indoor climate, the outdoor climate and the size of the room.

People in living and work spaces create water vapour. The occurring water vapour originates from the breath of the people present, evaporating from watering flowers, bathing, showering, cooking and similar processes.

The amount of water vapour that may occur is demonstrated in the explanation below.



Therefore, a 3 person household accumulates approx. 180 litres of water per month; this is more than one bathtub full of water.

If the water cannot get outside sufficiently through airing, the humidity level in the air rises, which leads to condensation and can then lead to mould.

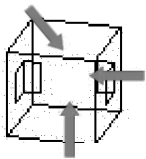


## 6. VENTILATION

Internorm windows have very good thermal insulation characteristics and good tightness. This protects you from bothersome draughts, cuts down on heating costs and keeps out disturbing noise. However, it also necessitates more conscious airing.

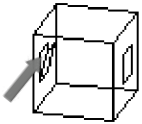
Correct airing is immensely important. It ensures constant oxygen supply for breathing air as well as carrying off pollutants which accumulate when aired insufficiently. Furthermore, with correct airing you can avoid condensation as well as the danger of mould developing.

### Which airing options are there?



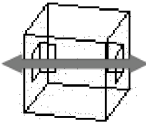
#### **Self-airing:**

“Airing” with closed windows and doors due to permeability of the building shell.



#### **Constant airing:**

Constantly slightly opened windows due to gap ventilation or via tilt hardware.



#### **Maximum airing for a short time:**

Airing with fully open windows on opposite sides of a room.

It is recommended to carry out maximum airing for 5 minutes several times during the day.

This is most effective if windows on opposite sides of the room can be used for airing.

This maximum airing, several times a day, will ensure the desired air exchange and take out humidity without affecting the comfort. The room temperature will fall for a few minutes, but the “heat storage” in walls, ceiling and floor will cool down only minimally in this short time. The fresh air will heat up again quickly, energy loss is minimal.

## 6. VENTILATION

### WHAT DO I NEED TO KNOW?

Air exchange through gaps in closed windows is not sufficient for adequate reduction of humidity and hygienically necessary fresh air supply.

Depending on usage of the room and on the amount of produced humidity it is recommended to ensure air exchange through constant airing or maximum airing for a short time.

Transporting humidity into cooler rooms within the building should generally be avoided. If this is not possible, please take this into consideration when airing.

In rooms with open fireplaces (boilers, open fireplaces, oil stove, gas stove etc.) a constant supply of fresh air must be ensured.

Construction moisture leads to increased strain on window profiles. In order to avoid surface damage or swelling of timber profiles, ensure sufficient airing!

Under extreme demands, e.g. in wet rooms, indoor swimming pools or rooms with chemicals, adapted heating and ventilation systems might become necessary.



## 7. WARRANTIES

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**Please read this section carefully – it sets out the warranties that Internorm offer relating to our standard sized windows and doors, and in particular includes details of when these warranty services do and do not apply. It also explains what losses Internorm are responsible to you for, and those which they are not.**

**Please be aware that the warranties in this handbook may NOT apply to non-standard Goods that you order, particularly over-sized windows or doors, as such Goods will not have been subject to Internorm's rigorous testing and quality assurance procedures that all Goods within our standard range undergo. If you are ordering any such non-standard or over-sized Goods and would like to know which warranties apply, please first ask the Distributor or supplier for details. Otherwise, please get in touch with Internorm directly.**

Internorm provide services and warranty rights for the end customer as set out below:

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10 year warranty on weather resistance against unnatural change of colour and cracks in surfaces of white UPVC window and door profiles, except for mitre cracks. When assessing weather resistance, the change in colour, according to test system corresponding to DIN EN 513, must not be greater than level 3 on the greyscale according to DIN EN 20105-A02. There is no warranty on the change of appearance of surfaces as a result of dirt and/or insufficient care.

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10 year warranty on weather resistance against unnatural change of colour and cracks in surfaces of inside foil covered UPVC window and door profiles, except for mitre cracks. When assessing weather resistance, the change in colour, according to test system corresponding to DIN EN 513, must not be greater than level 4 on the greyscale according to ISO 105-A02. There is no warranty on the change of appearance of surfaces as a result of dirt and/or insufficient care.

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10 year warranty on weather resistance against unnatural change of colour and cracks in surfaces of anodised (a form of metal coating) or powder coated aluminium window and door profiles.

## 7. WARRANTIES

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Minimum value for remaining gloss is the gloss level determined according to DIN EN ISO 2813, which is at least 30% of the original value.

Exempt from this warranty are corrosions due to environmental impacts, such as fitting window and door elements close to the sea (salt in the atmosphere), close to roads with gritting or in an atmosphere polluted with heavy industry pollutants. There is no warranty on the change of appearance of surfaces as a result of dirt and/or insufficient care.

The above 3 warranties only apply to surfaces listed in the Internorm aluminium colour swatch, the Internorm RAL colour swatch or the Internorm hi-res colour swatch.

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10 year warranty against condensation between the sealed panes of insulating glass. The guidelines applied for general visual assessment of mirrored insulating glass are those of the Federal Guild Association of the Glazing Trade Hadamar or Ö-Norm B3738. Please see under section 7.3 below regarding situations where this condensation related warranty does not apply.

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10 year warranty on the glue connection of glued Georgian/feature bars.

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10 year warranty on the function of the material compound timber, thermal foam and aluminium profiles in timber aluminium composite products when adhering to the Internorm fitting and maintenance guidelines.

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10 year warranty on the function of the glued connection and sealing of the insulating glass panes with window profiles in timber aluminium composite products when adhering to the Internorm fitting and maintenance guidelines

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10 year warranty where Goods are supplied with marine grade aluminium finish.

The validity of this warranty is at all times conditional upon the following:

- compliance with all relevant requirements of this warranty document; and
- in addition, the Goods being professionally cleaned (with clean water) every 6 months; and



## 7. WARRANTIES

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- on each and every occasion on which the Goods are cleaned, the end customer promptly providing to Internorm after cleaning has occurred with evidence in the form of a copy of an invoice or receipt of the professional window cleaners, demonstrating that cleaning of the Goods has been completed and showing the date on which they were cleaned.  
Such receipts to be provided by recorded delivery post to:  
Unit D, Colindale Business Park, 2-10 Carlisle Road, London NW9 0HW;  
or you can send us a scanned version to the following email address:  
office@internorm.com.  
We reiterate that, if you fail to send us this evidence of the continued cleaning promptly after each and every time the Goods are professionally cleaned, the warranty will not be valid.
  - The warranty is also conditional upon the end customer providing Internorm with access to the Property at which the Goods are installed in order to verify compliance with the above requirements.
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5 year warranty for PVD coated entrance door handles against corrosion, if no mechanical damage is apparent

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5 year warranty on weather resistance against unnatural colour changes or cracks in door filling surfaces. There is no warranty on the change of appearance of surfaces as a result of dirt and/or insufficient care

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3 year warranty on weather resistance against unnatural change of colour and cracks in surfaces of anodised or powder coated aluminium roller shutters, blinds and window shutter profiles. Minimum value for remaining gloss is the gloss level determined according to DIN EN ISO 2813, which is at least 30% of the original value. Exempt from this warranty are corrosions due to environmental impacts such as fitting window and door elements close to the sea (salt in the atmosphere), close to roads with gritting or in an atmosphere polluted with heavy industry pollutants. There is no warranty on the change of appearance of surfaces as a result of dirt

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3 year warranty on the function of window and door hardware when the Internorm fitting and maintenance guidelines have been followed. Especially that all gliding

## 7. WARRANTIES

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parts and moveable hardware parts have to be greased once per year with acid-free grease or oil. Very frequently operated window and door elements need to be greased more often.

3 year warranty on weather resistance against unnatural change of colour and cracks in surfaces of UPVC roller shutter profiles. When assessing weather resistance, the change in colour, according to test systems corresponding to DIN EN 513, must not be greater than level 3 on the greyscale according to DIN EN 20105-A02. There is no warranty on the change of appearance of surfaces as a result of dirt.

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30 year product availability warranty (from construction year 1999)

Internorm guarantees that our Goods manufactured from 1999 onwards are capable of being repaired by our specialists in such a way that their full functionality is guaranteed to subsist or be retained over a time period of 30 years. However, this is subject to the construction (i.e. frames and sashes) remaining undamaged and subject to the customer paying our costs of repair, where applicable.

The 30 year period begins with the Internorm production date, confirmation of which will be provided on request. The services or materials, labour time etc., necessary to retain functionality will be charged at respective current rates

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### 7.1 GENERAL INFORMATION

#### Reporting faults as soon as possible

If you become aware of faults of any kind affecting the Goods, you should bring these to the attention of your Internorm Distributor immediately after the Goods have been delivered to you.

This means that as soon as you receive the Goods you should examine them thoroughly to check for any faults or damage.

Your complaint will not be processed until you have notified the Internorm Distributor in writing about the reported fault, and they have expressly agreed in writing to address the issue.



## 7. WARRANTIES

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### **Warranties become invalid due to the following:**

- the warranties do not apply if you deliberately or negligently damage the Goods, or if a third party does so (for example a burglar when forcing entry into the premises).
- if you order non-standard Goods.
- warranties relating to the surface of the Goods will be invalidated to the extent that surface damages have been caused to the Goods either deliberately or because of negligence or by neglecting to take the necessary care of the Goods. This applies especially to difficult to remove, ingrained and persistent stains.
- warranties which we offer relating to the Goods operating properly (i.e. regarding their functionality) will become invalid if:
  - + the Goods have not been fitted either by an Internorm Distributor or a party authorised by Internorm or a party who has been trained in how to carry out the installation of Internorm Goods;
  - + our fitting and maintenance guidelines in this warranty booklet have not been followed correctly;
  - + the assembly and fitting have not been carried out in a completely professional and correct manner according to our guidelines; and/or
  - + there is a fault with the functionality of the Goods which is due to the Goods being adjusted incorrectly during the fitting.
- if the faults have been caused by other parts of the building in which they are installed (e.g. if your roof is faulty, or if your building or part of it is affected by subsidence).
- if you make a warranty claim after the deadline indicated in the warranty certificate.
- if you appoint a party other than Internorm (or an Internorm Distributor) to carry out the complete or partial replacement of the Goods or for repair or improvement works under a warranty claim.

Items which have been discounted in price because of any specified manufacturing defects or irregularities may not receive the full benefit of the warranties. You should check the relevant Goods order form issued by the Internorm Distributor to see what warranties, if any, will apply to such discounted Goods.

## 7. WARRANTIES

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### **How to make a warranty claim**

**When to make a warranty claim?** You should make a warranty claim as soon as you become aware of a fault with the Goods, but at the latest by the deadline indicated in the warranty certificate.

The earliest point when a warranty claim can be made is from the date on which the Goods are delivered, and this warranty claim period continues until the applicable deadline.

The warranty period deadline only applies to your original order – therefore if you receive replacement Goods under the warranty service, this does not result in a new warranty period deadline or the original one being extended.

If you delay making the claim beyond the warranty claim deadline, this may affect the validity of the warranty.

**Who to make a warranty claim to?** You should first raise the warranty claim with the Internorm Distributor that has delivered the items to you.

If this is not possible, then you should raise the warranty claim with us. To do so, you should contact our office in England, the contact details for which are: Unit D, Colindale Business Park, 2-10 Carlisle Road, London NW9 0HW.

**Can I make the warranty claim by phone?** No, all warranty claims have to be made in writing; this includes email or letter, but not text message nor social media.

### **Your statutory rights against the Internorm Distributor**

Nothing in this warranty booklet will affect your statutory rights. For instance, the Goods must be of satisfactory quality, must meet their description and must be reasonably fit for purpose. Where the Goods do not meet these standards, then the law entitles you to certain rights and remedies against the party from whom you purchased the Goods.

Please note that where you exercise your statutory rights, this is primarily a matter between you and the Internorm Distributor, not with us, the manufacturer.



## 7. WARRANTIES

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For instance, where the Goods are not of satisfactory quality, you have certain rights under consumer rights law against the Internorm Distributor, including:

- the right to reject the Goods and get a refund (subject to certain restrictions including time limits);
- the right to have the Goods repaired; and/or
- the right to have the Goods replaced.

You can find out more information about such rights and the circumstances in which they apply at the following link: [www.gov.uk/consumer-protection-rights](http://www.gov.uk/consumer-protection-rights).

### **Additional remedies which we offer to you**

Where the Goods do not conform with the warranties in this booklet, then we offer remedies to you in addition to the remedies that you have under consumer rights law against the Internorm Distributor (as mentioned above).

This means that, in a situation where the Internorm Distributor is unwilling or unable to repair the defective Goods, we may still offer you a remedy, if we agree that the Goods do not conform with the warranties in this book and we determine that you have not invalidated the warranties, for example by not maintaining the Goods as directed in this booklet.

The remedies we offer to you are either (at our discretion): to repair or replace the relevant Goods.

This will be your sole and exclusive remedy which we offer to you for defective Goods that do not comply with the warranties in this booklet.

Please note that most if not all Goods will contain very minor flaws or defects. For instance, the glass panels in some windows display a very slight “wave” effect. However, all Goods are measured against and pass Internorm’s quality standards and the quality standards used in the industry, and such minor flaws are not covered by our warranties. If you request that the Goods are repaired or replaced, particularly for minor aesthetic reasons, then we have the right to refuse to do so if we reasonably consider that the Goods do conform to these applicable quality standards.

## 7. WARRANTIES

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### **What financial costs, losses and expenses we are responsible to you for**

We will not attempt to exclude or limit our liability to you where it is unlawful for us to do so – for instance, we do not attempt to exclude or limit our liability to you where you suffer personal injury or death because we have acted negligently.

Again, nothing in this booklet affects your legal rights which you may have against a manufacturer, including under the Consumer Protection Act 1987.

Regardless of whether we decide to offer a replacement or repair faulty Goods, our total costs of doing so will not exceed £3,000. This means that if the repair work will cost £4,000, then we will agree to pay £3,000 and we will ask that you pay the remaining £1,000. Similarly, if the cost to replace the windows is £5,500, then we will only pay £3,000 and will ask you to pay the remaining £2,500. Our costs are likely to include labour, equipment as transport, as well as the cost of the new parts or new Goods themselves.

Please note that, each customer is only covered up to a maximum of £3,000 per order, regardless of how many Goods purchased under that order are defective.

If we exchange the Goods (e.g. we have to remove an installed window), we will cover the costs arising from damage caused by the removal and exchange of the Goods (e.g. damage to wallpaper and plasterwork), provided that our overall maximum contribution does not exceed £3,000 as stated above.

### **What costs might you be responsible for?**

If the costs associated with repairing or replacing the Goods exceed £3,000, then you must meet the cost of anything above the £3,000 figure. If you make a claim, we will obtain a quote for the work required from one of our contractors. If this is lower than £3,000 and you have not made a warranty claim for the same order before, then we will meet all of this cost without asking for any payment from you. If the quote is over £3,000 (either on its own or together with other warranty claims for



## 7. WARRANTIES

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the same order), then we will communicate with you and seek to reach an agreement with you about your contribution. You will need to pay your contribution to us or directly to our contractor if applicable, before we commence the repair or replacement service.

### **What other losses are we not responsible for?**

We will not be responsible to you for any unforeseeable losses. Loss or damage is foreseeable if either it is obvious that it will happen or if, at the time you ordered the Goods, both we and you knew it might happen.

As stated earlier in this section 7, the warranties only apply to purchases of our standard Goods, not to non-standard Goods (e.g. oversized windows) (unless we decide that the fault with the Goods has nothing to do with the non-standard nature of the Goods (e.g. its size)).

We will not be responsible for costs associated with any damage to your property caused by defective Goods (for instance if one of our windows leaks, causing water damage to your floor, we will not be responsible for this). We are also not responsible for the cost of repairing any pre-existing faults or damage to your property.

We only supply the Goods for domestic and private use. If you use the Goods for any commercial, business or re-sale purpose, we will have no liability to you for any loss of profit, loss of business, business interruption or loss of business opportunity.

Fitting or removal costs (material and labour costs) where the Goods are not fitted according to our guidelines (as set out in the Datasheet, Product Handbook and Fitting Guidelines).

If you have decorated the Goods (for example, painted some artwork on a window), we will not be responsible for replacing such artwork or decoration if the Goods are removed, nor will we be responsible for the cost of restoring the artwork or decoration if it is damaged if we repair the Goods.

## 7. WARRANTIES

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Our performance of the repair or replacement services are conditional on you providing access to the Goods in question. If the Goods are not reasonably accessible (for example a new staircase, or other feature which proves to be an obstacle, has been installed which prevents the Goods from being accessed), then we may refuse to repair or replace the Goods unless, using our reasonable efforts, we are able to gain access via another method.

### **Circumstances in which we may have to charge for our costs**

If we are dealing with a warranty claim but are prevented from gaining access to the premises, then we may charge our reasonable costs as a condition of continuing to deal with a warranty claim. This would include situations where our access to the relevant premises is denied or access is not practicable on health, safety or other appropriate grounds and this requires us to reschedule the visit to another date.

### **Limits on future warranty claims**

If we perform warranty services, e.g. we repair or replace the Goods, then the original warranty period will still apply. In other words, there will not be a new warranty period from the point at which the Goods are repaired or replaced.

## **7.2. INSTALLATION ADVICE**

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All Goods will likely require "fine adjustments" when being fitted. These fine adjustments are to be carried out as part of the fitting service provided by the Internorm Distributor (or other approved fitting company).

The Internorm fitting and adjustment guidelines must be followed in each case, regardless of who fits the Goods.

Any subsequent necessary adjustment works, maintenance or changes to the Goods will be charged for. Faults in fitting and any faulty functions resulting from incorrect fitting are to be covered by the respective fitting company and are not part of Internorm warranties.



## 7. WARRANTIES

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### 7.3 TECHNICAL LIMITATIONS OF THE WARRANTY

**Loads** - The warranties apply as long as the usual loads stated in common technical standards are not exceeded. If you have any questions concerning the applicable loads, then please get in touch with Internorm who can provide you with details about the common technical standards that apply.

**Use** - If the Goods are used in an unusual way, no part of the warranty applies.

**Connecting Goods together** - The warranty services which we offer only apply where a single Goods are installed. If two or more Goods are connected to form continuous window/door surfaces, separate written approval from Internorm is necessary. In addition, all warranties will be invalid, if the connection of single Goods is not carried out professionally or does not comply with technical standards set out in this booklet.

**Surface damage** - Surface damage caused by aggressive or scouring cleaning agents is not covered by the warranties. Internorm recommends regular cleaning with the Internorm care set.

Surface changes caused by chemical reactions, e.g. zinc particles, leachates from the facade (cement asbestos or other) and cement asbestos window sills on white UPVC profiles, glass surfaces and on powder coated or anodised surfaces, are not covered under the warranty.

There is no warranty on the change of appearance of surfaces as a result of dirt.

Different colour changes in different elements caused by the fitting location between elements exposed to weather (e.g. south-facing) and elements in a protected position (e.g. north-facing) are not covered under the warranty.

For timber elements it is clearly indicated that aggressive cleaning agents (containing ammonium chloride, alcohol, as well as acidic or scouring cleaning agents) will damage the timber surface and will invalidate the warranty. Timber elements are to be regularly checked for damage (hail damage, natural cracks in

## 7. WARRANTIES

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timber, scratches etc.) and possibly repaired for the short term according to the Internorm maintenance guidelines in this booklet. Any failure to do so may invalidate the warranty.

The surface warranty does not apply to fitting material.

**Mould** - Deposits of dust, pollen, dirt etc. on gaskets, profiles and glass surfaces in connection with humidity cause the formation of microorganisms and therefore mould. This is a natural process and does not reflect a lack of quality in the Goods. Formation of mould, therefore, is excluded from the warranties.

**Condensation on glass surfaces** - We obviously cannot control climatic conditions, such as the difference between the temperate in your premises and the outside air temperate. Under certain climatic conditions, water condensation may occur:

- on the indoor facing side of the glass; or
- on the outdoor, weather-exposed side of the glass; or
- for windows with integrated blinds in the unsealed cavity where the blind is located, and in the above situations, the warranty regarding condensation does not apply.

On insulating glass with especially high thermal insulation, temporary condensation may also occur on the weather-exposed side, if the outside humidity (relative air humidity outside) is very high and the air temperature is higher than the temperature of the pane surface. With especially extreme temperature differences, icing may also occur. This can be solved by shading the window and door elements (e.g. with roller shutters, projecting roofs etc.).

The wetting properties of glass surfaces on the outside of insulating glass may differ due to, e.g. marks from rollers, fingers, labels, paper structure, vacuum suckers, sealing remains, smoothing agents, sliding agents or environmental impact. On wet surfaces due to rain, dew or cleaning water, differing wettability may be observed. Therefore, these marks do not represent defects and are not covered under the warranties.



