User Manual

Power-operated sliding windows

Power-operated sliding windows

User manual for power-operated Sky-Frame sliding windows.



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User Manual

Power-operated sliding windows
Table of contents

Table of contents

1.	**GENERAL INFORMATION**	14.3.1.1
1.1	Information concerning this manual	14.3.1.1
1.2	Explanation of symbols	14.3.1.1
1.3	Special safety instructions	14.3.1.2
1.4	Symbols in this manual	14.3.1.2
1.5	Signs	14.3.1.2
1.6	Liability restriction	14.3.1.3
1.7	Warranty conditions	14.3.1.3
1.8	Customer service	14.3.1.3
2.	**SAFETY**	14.3.2.1
2.1	Use for correct purpose	14.3.2.1
2.2	Basic dangers	14.3.2.2
2.2.1	Electric current	14.3.2.2
2.2.2	Transparent wall connection	14.3.2.2
2.2.3	Objects in the vicinity of the window	14.3.2.3
2.2.4	Water-bearing inner tracks	14.3.2.4
3.	**TECHNICAL DATA**	14.3.3.1
3.1	General information	14.3.3.1
3.2	Connected load	14.3.3.1
3.3	Performance values	14.3.3.1
3.4	Operating conditions	14.3.3.1
4.	**DESIGN AND FUNCTIONALITY**	14.3.4.1
4.1	Short description	14.3.4.1
4.2	Types of sliding windows	14.3.4.1
4.2.1	Single sliding window	14.3.4.2
4.2.2	Extended sliding window	14.3.4.2
4.2.3	Combined system	14.3.4.3
4.3	Electric drive	14.3.4.4
4.4	Control element	14.3.4.4
5.	**OPERATION**	14.3.5.1
5.1	Operating safety instructions	14.3.5.1
5.1.1	Moving components	14.3.5.1
5.1.2	Incorrect operation	14.3.5.1
5.2	Danger areas	14.3.5.2

User Manual

Power-operated sliding windows
Table of contents

Table of contents

5.	**OPERATION**	14.3.5.1
5.3	Opening / closing the sliding windows	14.3.5.3
5.3.1	Single sliding element + extension	14.3.5.3
5.3.2	Opening / closing a combined system	14.3.5.4
5.4	Opening / closing the elements manually	14.3.5.5
5.4.1	Single sliding element + extension	14.3.5.5
5.4.1.1	Opening the sliding element manually	14.3.5.5
5.4.1.2	Closing the sliding element manually	14.3.5.6
5.4.1.3	Locking the sliding window (RC 2)	14.3.5.6
5.5	Opening sliding windows using “Touch”	14.3.5.7
5.5.1	Opening the entire system	14.3.5.7
5.5.2	Opening to the passage position	14.3.5.7
5.5.3	Opening to the ventilation position	14.3.5.7
5.6	Closing and stopping using “Touch”	14.3.5.8
5.6.1	Closing the entire system	14.3.5.8
5.6.2	Stopping the system	14.3.5.8
6.	**MAINTENANCE**	14.3.6.1
6.1	Maintenance, Safety instructions	14.3.6.1
6.1.1	Improper maintenance	14.3.6.1
6.1.2	Cleaning	14.3.6.1
7.	**CLEANING AND CARE**	14.3.7.1
7.1	Glass	14.3.7.1
7.1.1	Non-permissible materials	14.3.7.1
7.1.2	Important notes	14.3.7.1
7.2	Surface	14.3.7.2
7.3	Sill profile	14.3.7.3
7.4	Seals	14.3.7.4
7.5	Insect screen	14.3.7.4
8.	**DEBUGGING AND TROUBLESHOOTING**	14.3.8.1
8.1	Debugging the system	14.3.8.1
8.2	Incorrect repair	14.3.8.1
8.3	Spare parts	14.3.8.1
8.4	Troubleshooting	14.3.8.2
8.5	Power outage	14.3.8.2
8.6	External condensation	14.3.8.3
8.7	Internal condensation	14.3.8.3

User Manual

Power-operated sliding windows
General information

1. General information

1.1 Information concerning this manual



This manual describes how to use the system safely and efficiently. The manual is a constituent of the system and must be accessible and in close proximity to the system at all times.

The instructions must be read carefully!

The basic prerequisite for safe operation is compliance with all specified safety instructions and instructions in this manual.The illustrations in this manual are intended to provide a basic understanding and may differ from the actual situation.

1.2 Explanation of symbols

Safety instructions:

The safety instructions in this manual are marked with symbols. The safety instructions are preceded by signal words that indicate the level of danger. Adhering to the safety instructions and taking careful action will help to avoid accidents, injuries and damage to property.



WARNING! (Danger to life and limb)

These symbols indicate a potentially dangerous situation which, if not avoided, can result in death or serious injury.

CAUTION! (Risk of fault)

This combination of symbol and signal word indicates a potentially dangerous situation that could lead to minor injuries if it is not avoided.

NOTE:



This symbol highlights useful tips, recommendations and information for efficient and fault-free operation.

User Manual

Power-operated sliding windows
General information

1.3 Special safety instructions

In order to point out particularly dangerous situations, the following symbols are used in safety instructions:



DANGER! (electric shock)

This combination of symbol and signal word marks dangers caused by electrical current. Failure to observe the safety instructions will result in a risk of serious of fatal injury.

1.4 Symbols in this manual

The following symbols and highlighting are used in this manual to mark action instructions, result descriptions, lists, references and other elements:

1. Marks step-by-step action instructions.

→ Marks a status or an automatic sequence resulting from an action step.

• Marks lists and list entries with no fixed order.

[→ Page No.] References to chapters in this manual.

1.5 Signs

Only professional electricians may enter a working area marked with this sign.



Unauthorised persons may not enter workplaces or open cabinets marked with this sign.

User Manual

Power-operated sliding windows
General information

1.6 Liability restriction

All information and notes in this manual have been put together taking the applicable standards and regulations, the state of technology, our knowledge and our many years of experience into consideration.

The manufacturer does not accept liability for damage caused by:

- Failure to follow the instructions in the manual
- Failure to use the equipment for its correct purpose
- Making technical modifications
- Using non-approved spare parts

The actual scope of delivery may differ from the information in this manual in the event of customised versions, the use of additional ordering options or because of technical changes.

The obligations agreed in the delivery agreement, the manufacturer his general business terms and conditions and delivery conditions, and the legal regulations that were applicable when the agreement was signed are applicable.

1.7 Warranty conditions

The warranty conditions are included in the manufacturer’s general business terms and conditions.

1.8 Customer service

If you have questions about your Sky-Frame product please contact your official Sky-Frame partner.

Our employees are also always interested in receiving new information and experiences resulting from the use of the equipment that may be useful for improving our products.

User Manual

Power-operated sliding windows
Safety

2. Safety



This section provides an overview of all important safety aspects for providing the user with the best possible protection and for ensuring that operation is safe and problem-free.

Failure to observe the action instructions and safety instructions in this manual can lead to considerable danger.

2.1 Use for correct purpose

The equipment is exclusively designed and constructed for the intended purpose of use that is described in this document.

The equipment is exclusively intended for installation in a wall opening, and is intended to provide light, ventilation and access.

Correct purpose of use also includes complying with all of the specifications in this manual.

Any other use is considered to be incorrect.

Claims of any kind for damage caused by incorrect use will not be entertained.

User Manual

Power-operated sliding windows
Safety

2.2 Basic dangers

In order to minimise health hazards and avoid dangerous situations, the safety instructions listed here and in the other chapters of this manual must be followed.

2.2.1 Electric current

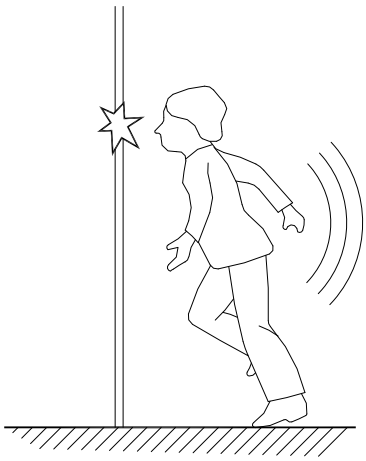


DANGER!
Risk of fatality due to electric current!

Coming into contact with live components will result in a direct risk of fatality due to electrocution. Damage to the insulation of individual components can be life-threatening.

- Never undo screws on the system and remove the service cover.
- Have all work on the electrical system carried out by professional electricians.
- In the event of damage to the insulation, switch off immediately and have it repaired.
- Keep moisture away from live components. This can lead to short circuits.

2.2.2 Transparent wall connection





WARNING!
Risk of injury from transparent wall connection!

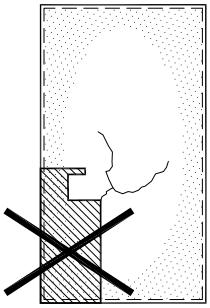
A frameless, closed sliding window may appear invisible and may be overlooked by persons. Walking into the closed window can cause serious injuries.

- In case of doubt, check that the sliding window is open.
- An authorised person must point out the danger to unauthorised persons or persons (including children) who are at risk because of their physical, sensory or mental capabilities or due to lack of experience or awareness.

User Manual

Power-operated sliding windows
Safety

2.2.3 Objects in the vicinity of the window

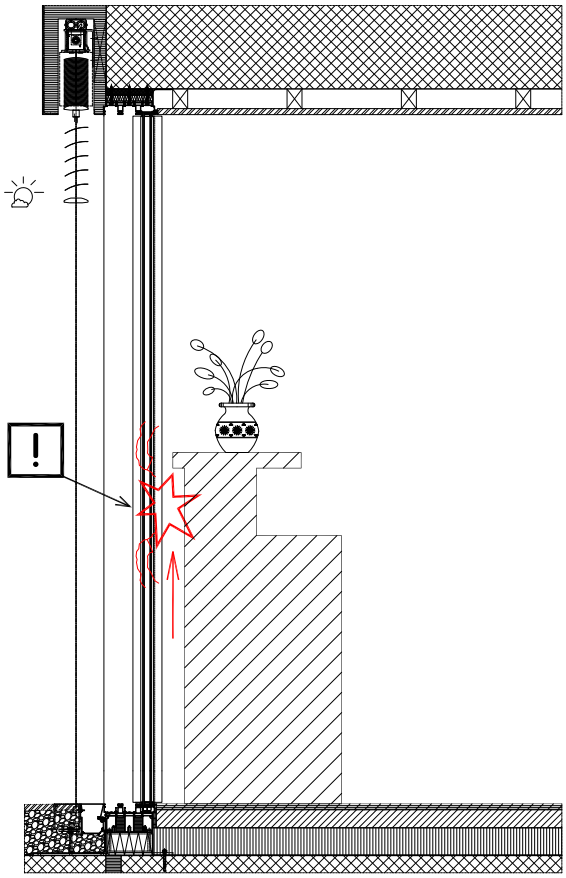


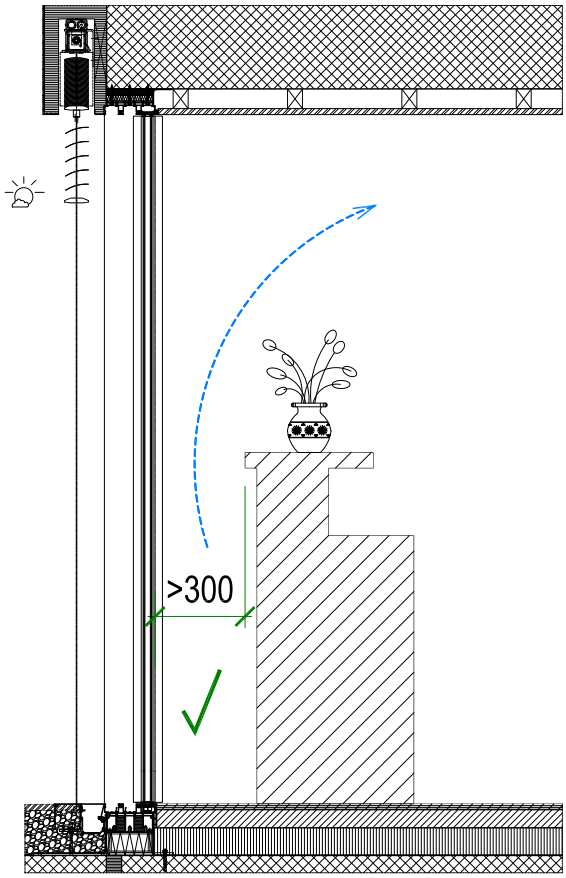
CAUTION!
Risk of damage to property from selective heating of the glass!

Objects close to the window in direct sunlight can lead to partial heating of the glass and thus to glass breakage* (risk of thermal shock).

Do not place objects in the immediate proximity (up to 300 mm / 30 cm) of the sliding window.

* Only possible with glass configurations that deviate from the standard (TSG-H, e.g. LSG).

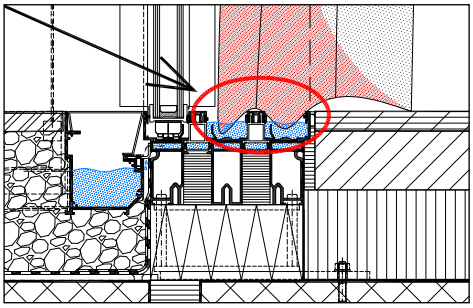




User Manual

Power-operated sliding windows
Safety

2.2.4 Water-bearing inner tracks

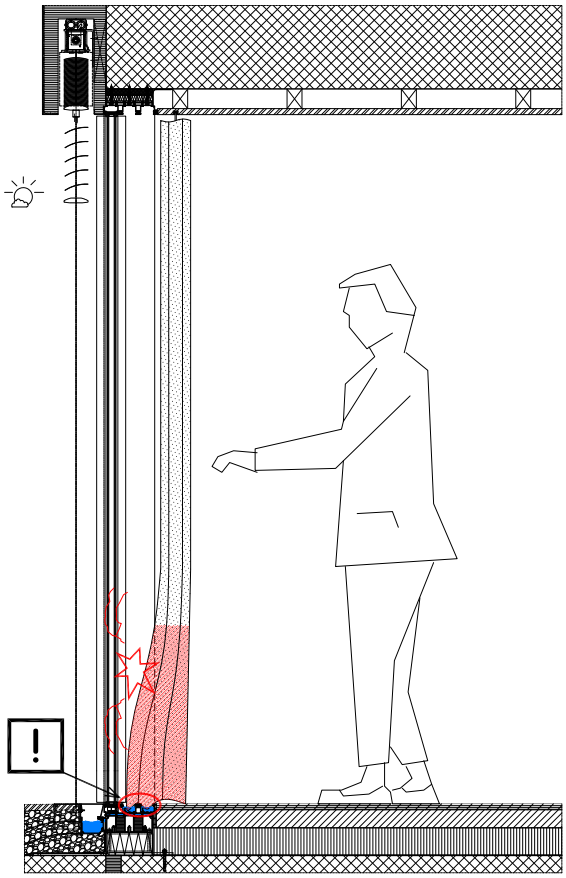


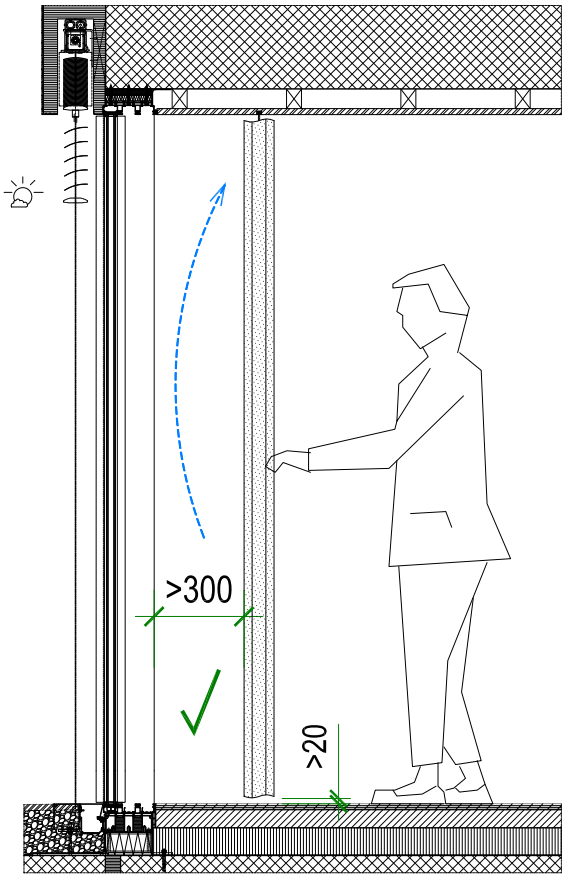
CAUTION!

In extreme situations, inner tracks can carry water, which could be absorbed by overly long curtains.

Curtains must end at least 20 mm above the floor.

Dark curtains must be at least 300 mm (30 cm) away from the sliding window (risk of thermal shock).





User Manual

Power-operated sliding windows
Technical data

3. Technical data
3.1 General information

The technical data (dimensions, weights etc.) can be found in the layout plans (delivery drawings) and data sheets.



Controller:
“Dead-man control” for opening / closing the sliding windows (= the sliding elements move only as long as the button is pressed).



Control button “Touch”:
For systems operated using the “Touch” control button, the supplementary operating instructions (14.4) and sections 5.5 + 5.6 must be observed.

3.2 Connected load

Voltage (drive)	24 V DC
Power consumption, max.	3 A DC / drive
Controller (no external voltage)	24 V DC
Protection	10 A
Protection class	IP 20

3.3 Performance values

Power consumption	approx. 72 W / drive
Opening / closing speed	5 - 12 cm / s
Opening / closing speed in end area	4 cm / s
Opening / closing force	max. 150 N (15 kg)
Contact pressure in end position	max. 100 N (10 kg)

3.4 Operating conditions

Temperature range	0 °C to +60 °C
Humidity	non-condensing
Recommended continuous operating time, max.	10 minutes
Recommended break until next operation	10 minutes

User Manual

Power-operated sliding windows
Design and funtionality

4. Design and functionality

The single sliding window consists of a fixed element (3) and a sliding element (2).

4.1 Short description

The sliding element (2) is opened (arrow) and closed by pressing the button (4).

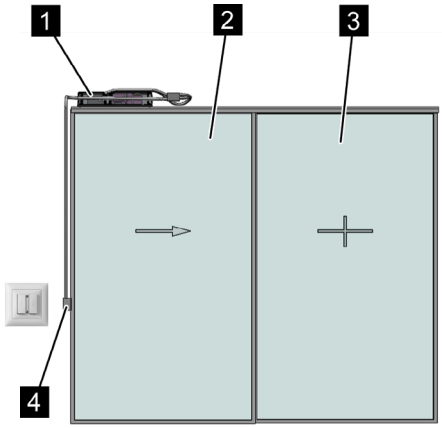


Fig. 1: Single sliding element

The speed of the sliding window is reduced during the closing process and measures in the end zone about 4 cm / s.

The closing force is limited to 150 N.

The sliding element is locked when it is closed and automatically unlocked when it is opened.

The movement of the sliding window (2) is effected by a electric drive (1), which is mounted at the top in the lintel area behind the drive cover.

1 Drive
2 Active powered sliding element
3 Fixed element
4 Control element (button) - sliding window «open / close»

4.2 Types of sliding windows

The following types of opening are available:

- Single sliding element
- Extending sliding element (telescope)
- Combined system

- Wallside / Edge opening (RV)
- Centre opening on same level (MVe)
- Centre opening offset (MVv)
- Corner opening (EV)

User Manual

Power-operated sliding windows
Design and funtionality

4.2.1 Single sliding window

Only the sliding element (1) moves.

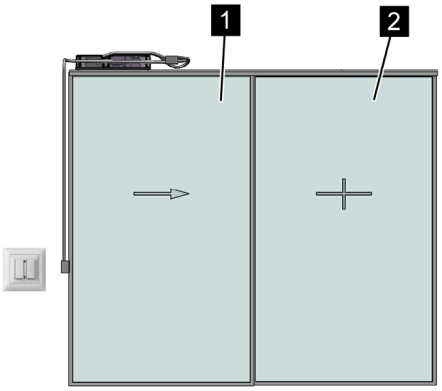


Fig. 2: Single sliding element

The arrow (Fig. 2) indicates the opening direction.

1 Active powered sliding element
2 Fixed element

4.2.2 Extended sliding window

The extended sliding window (telescope) has two or more sliding elements (1) and (2).

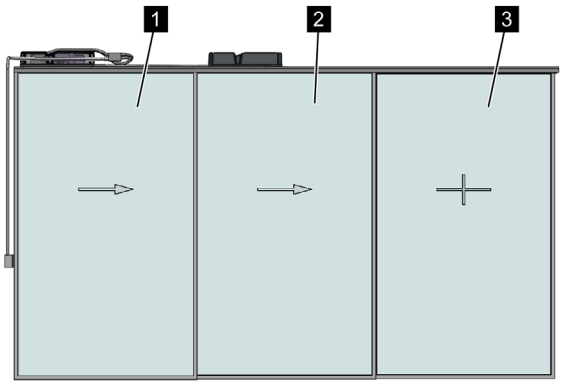


Fig. 3: Right extension

When the window opens (arrows) both sliding elements move together until the sliding element (2) slows down and reaches the end position behind the fixed element (3).

The sliding element (1) continues to open until it also slows down and comes up against the locking profile of the sliding element (2).

When the window closes, the two sliding elemens (1) and (2) move together until the sliding element (2) slows down and engages in the fixed element (3).

The sliding element (1) continues to move until it slows down and engages in the end position.

The system is locked in this position.

1 Extending sliding element (Primary)
2 Extending sliding element (Secondary)
3 Fixed element

User Manual

Power-operated sliding windows
Design and funtionality

4.2.3 Combined system

The single sliding element (Fig. 2) and the extension (Fig. 3) can be combined in different variants to create a system (Fig. 4 and Fig. 5).

A combined system is divided up into system **1** and system **2**.

System **1** is a system that opens first and closes last.
System **2** is a system that opens second and closes first.

The arrows (Fig. 4 and Fig. 5) show the opening direction of the systems.

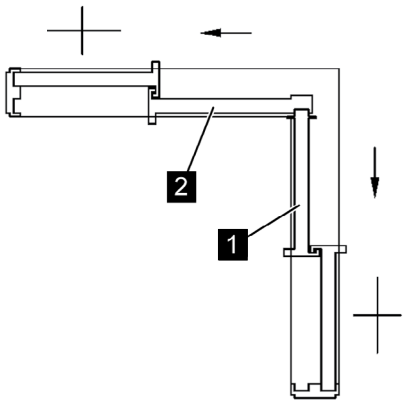


Fig. 4: Combined system, top-down view (single drive left and single drive right)

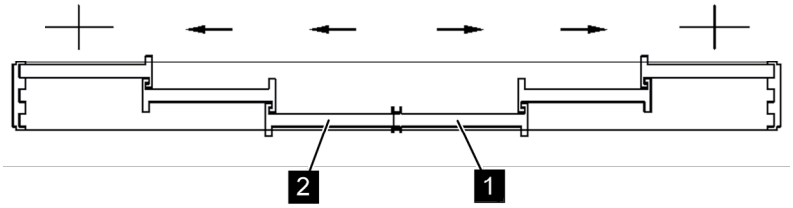


Fig. 5: Combined extending system, top-down view (left extension and right extension)

A combined double extending system (Fig. 5) consists of four sliding elements.

Two of the sliding elements are opened to the right (system **1**) and the other two open to the left (system **2**).

User Manual

Power-operated sliding windows
Design and funtionality

4.3 Electric drive

One drive is needed for each powered sliding element.

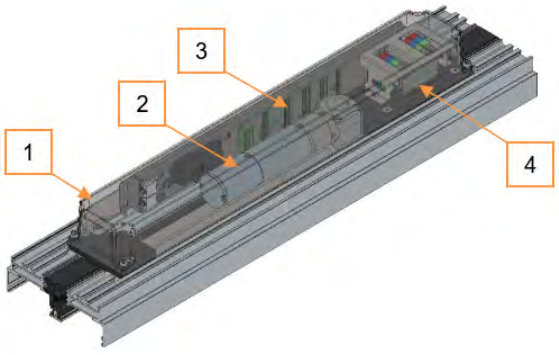


Fig. 6: Drive overview

The drive is fixed to the soffit profile and covered with a hood at the top and a service cover at the bottom.

The power is transmitted via a toothed belt.

The drive has a microprocessor controller that automatically regulates and controls all movements in both directions.

1 Hood
2 Electric drive SI-1000
3 Connection board
4 Power connection

4.4 Control element

Pressing the button (1) opens the system.
Pressing the button (2) closes the system.

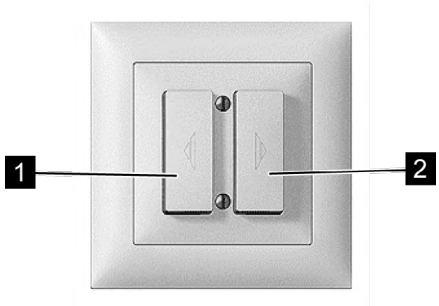


Fig. 7: Button - Sliding element «Open/Close»

This illustration of the control element is an example and may differ from the button that is actually installed.

1 Button - System «Open»
2 Button - System «Close»

User Manual

Power-operated sliding windows
Operation

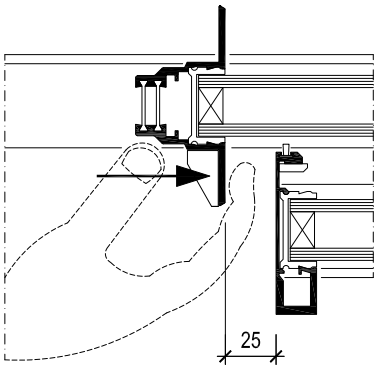
5. Operation

5.1 Operating safety instructions

The system has been manufactured taking the applicable standards and regulations, the state of technology, our knowledge and our many years of experience into consideration. However, injuries can still occur in the event of improper behaviour. Please observe the safety instructions explained in the following to avoid dangerous situations.

5.1.1 Moving components





WARNING!
Risk of injury from moving components when opening and closing the sliding window!

Moving components can cause injuries when opening and closing the sliding window.

- Before opening and closing the sliding window, ensure that no persons are present in the window area.
- Do not reach into or handle moving components whilst the window is being opened and closed.
- Persons (including children) who are incapable of using the equipment safely because of their physical, sensory or mental capabilities or lack of experience or awareness may not use the equipment without supervision or instruction from a responsible person.

5.1.2 Incorrect operation



CAUTION!
Risk of injury from incorrect operation!

Incorrect operation can lead to serious injuries and considerable damage to property.

- The sliding elements must never be bent, twisted or subjected to additional loads.
- Do not place objects in the window area between the sliding elements and the frame.
- Never loosen screws or remove them from the system.

User Manual

Power-operated sliding windows
Operation

5.2 Danger areas

The marked dots in the illustration (Fig. 8) show the possible danger areas on the system, where persons are at risk of injury in the event of improper behaviour.

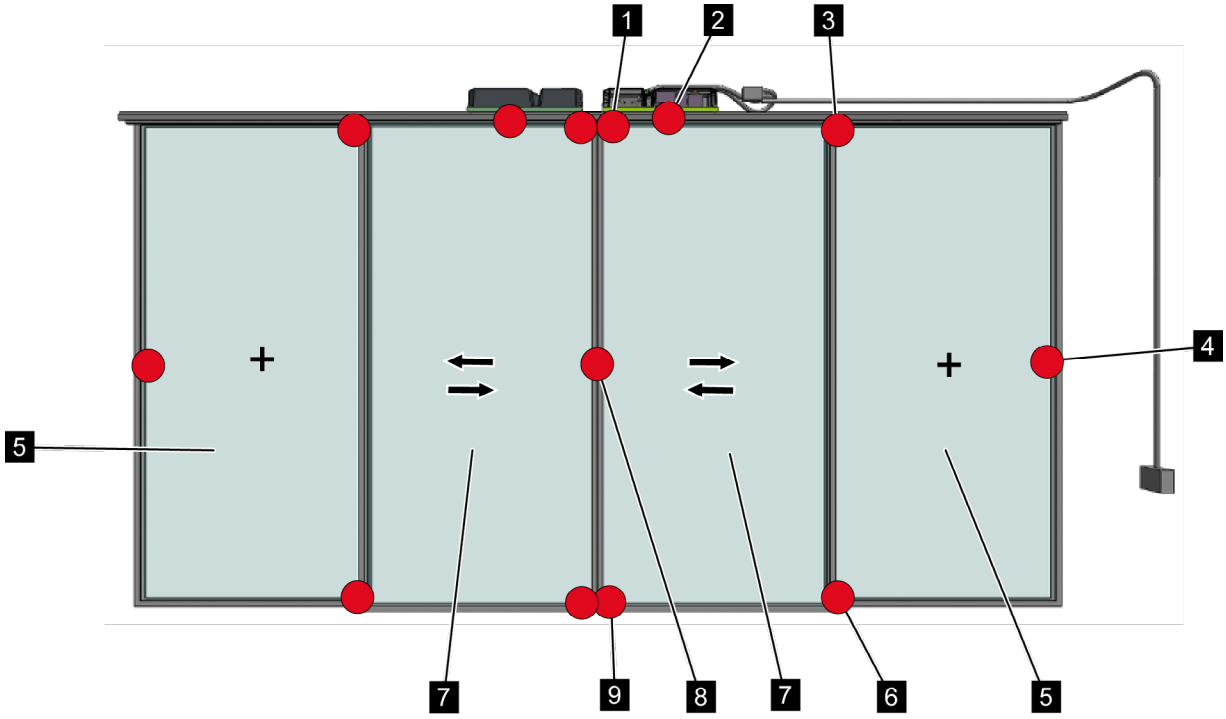
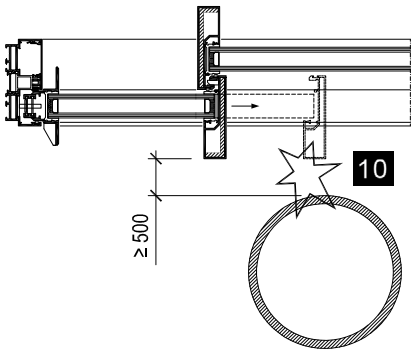


Fig. 8: Danger areas



1. Between top edge of element and runner when closing
2. At the drive belt when closing and opening
3. Between top edge of sliding elements and the track when opening
4. Between sliding elements and between sliding element and frame when opening
5. Fixed element
6. Between bottom edge of sliding elements and the track when opening
7. Sliding element
8. Between sliding elements and between sliding element and frame when closing
9. Between bottom edge of sliding elements and the track when closing
10. Danger to the body (danger of being drawn in, crushing)

User Manual

Power-operated sliding windows
Operation

5.3 Opening / closing the sliding windows

The active powered sliding elements are locked when closing and unlocked automatically when opening.

5.3.1 Single sliding element + extension

The method of operation of the single sliding element and the extension is identical.

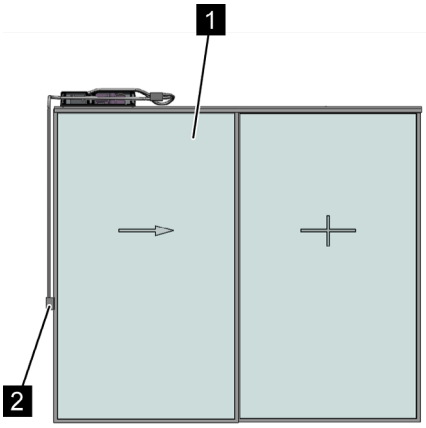


Fig. 9: Single sliding element

1 Active powered sliding element
2 Control element

Opening the sliding window:

1. Ensure that no living beings or objects are in the window area.

2. Press button (3) «Open» at control element and hold down → the sliding window opens for as long as the button (3) is pressed.

Closing the sliding window:

1. Ensure that no living beings or objects are in the window area.

2. Press button (4) «Close» at control element and hold down → the sliding window closes for as long as the button (4) is pressed.

If the system encounters an obstacle, all movements stop. To continue, press the relevant control button «Open» or «Close» again on the control element.

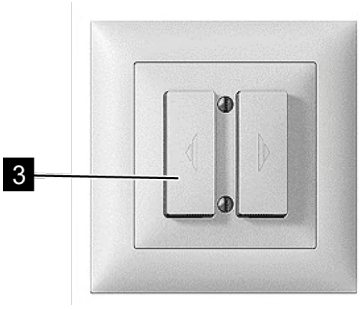


Fig. 10: Control element (example)

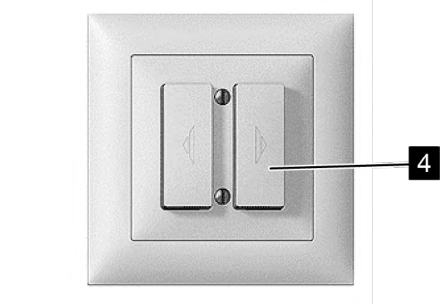


Fig. 11: Control element (example)

CAUTION!
Pushing the window against the direction of travel will cause damage!

Moving the sliding element against the direction of travel can damage the drive and cause it to fail.

- Never move a sliding element against the direction of travel.

User Manual

Power-operated sliding windows
Operation

5.3.2 Opening / closing a combined system

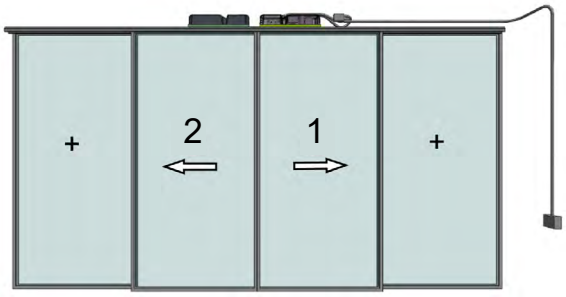


Fig. 12: Two sliding elements system

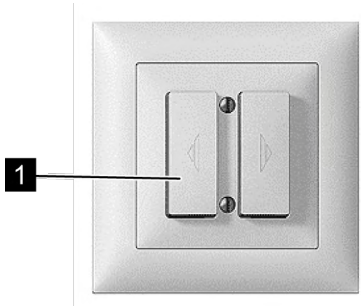


Fig. 13: Control element "Open" (example)

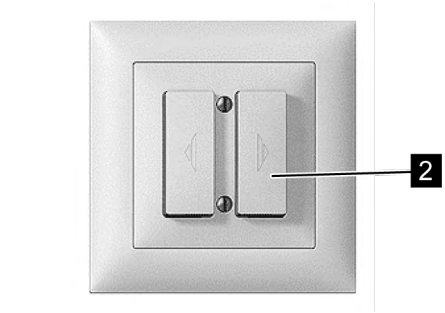


Fig. 14: Control element "Close" (example)

In combined systems, system **1** (Fig. 12) is opened first and closed last.

Opening the sliding windows:

1. Ensure that no living beings or objects are in the window area.

Standard / factory setting:

2. Press button (1) "Open" at control element and hold down → the WHOLE system **1+2** opens.

Closing the sliding windows:

1. Ensure that no living beings or objects are in the window area.
2. Press button (2) "Close" at control element and hold down → the WHOLE system **1+2** closes.

If the system encounters an obstacle, all movements stop. To continue, press the relevant control button «Open» or «Close» again on the control element.

CAUTION!
Pushing the window against the direction of travel will cause damage!

User Manual

Power-operated sliding windows
Operation

5.4 Opening / closing the elements manually

5.4.1 Single sliding element + extension

5.4.1.1 Opening the sliding element manually (Emergency opening)

In the event of a power failure, the system can be opened and closed manually (emergency opening). The sliding elements must be moved slowly and in a controlled manner, as the high gear ratio means that operating them manually too quickly requires significantly more effort.

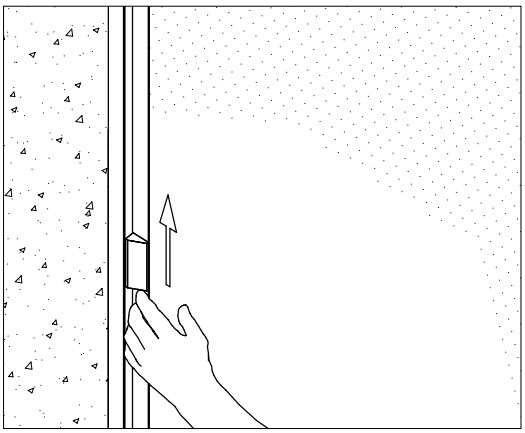


Fig. 15: Unlocking the locking handle

1. Slide locking handle upwards (arrow) and hold in this position.

→ The sliding element is unlocked.

2. Ensure that no living beings or objects are in the opening area.



CAUTION!
Risk of damage from uncontrolled opening and closing of the sliding elements!

Uncontrolled opening and closing of the sliding elements can cause a considerable amount of damage.

- Move sliding elements slowly when opening and closing.
- Ensure that the sliding element is moved along the frame extremely slowly, and that it does not bump against it in an uncontrolled way when it reaches the end position.

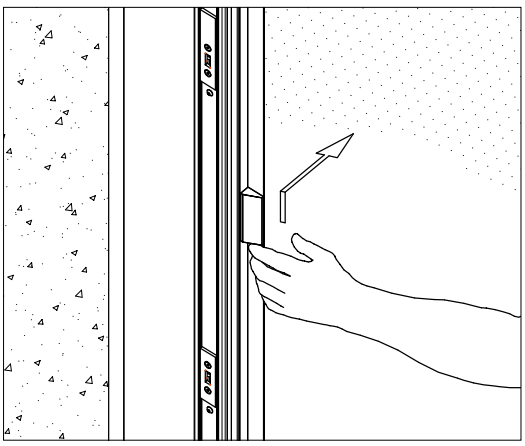


Fig. 16: Opening the sliding window

3. Open sliding element slowly (arrow).

User Manual

Power-operated sliding windows
Operation

5.4.1.2 Closing the sliding element manually (Emergency closure)

1. Ensure that no living beings or objects are in the window area.

CAUTION!
Risk of damage from uncontrolled opening and closing of the sliding elements!

Uncontrolled opening and closing of the sliding elements can cause a considerable amount of damage.

- Move sliding elements slowly when opening and closing.
- Ensure that the sliding element is moved along the frame extremely slowly, and that it does not bump against it in an uncontrolled way when it reaches the end position.

2. Slowly move the sliding element as far as it will go.

→ The sliding window is locked automatically.

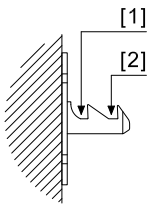
WARNING!
Risk of being locked out!

Sliding windows that do not have a locking handle on the outside lock automatically when they are fully closed.

5.4.1.3 Locking the sliding window (RC 2)

Systems with increased burglary protection have a lockable locking handle.





NOTE:
Partially-opened sliding elements (in the hygienic ventilation position, gap ventilation with bump stop or flush edge bolt) are regarded as open windows and are therefore not burglary-proof. In order to fulfil RC 2, the sliding element must be fully closed (hook position [1]) and locked, and the key must be removed.

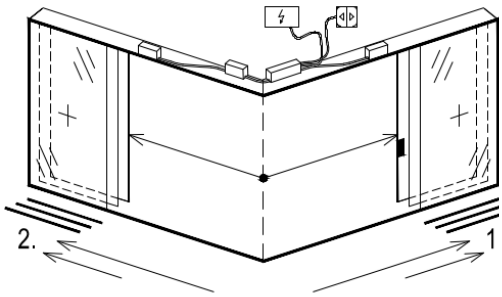
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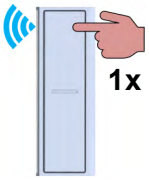
Power-operated sliding windows Operation

5.5 Opening the sliding windows using the control button «Touch»

When operating the sliding windows via the control button «Touch», the following opening positions are possible, depending on the sequence of presses within 2 seconds:

5.5.1 Opening the entire system

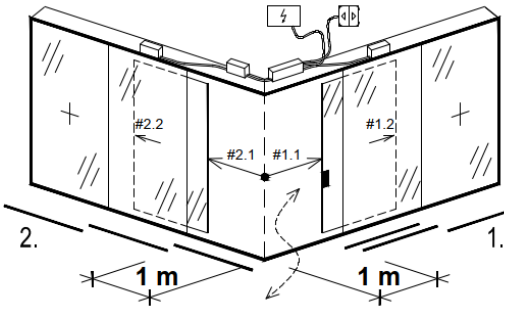


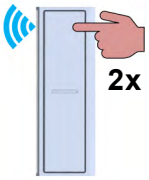


1x short «OPEN»
= Open entire system

→ All elevations open completely at the same time.

5.5.2 Open to the passage position

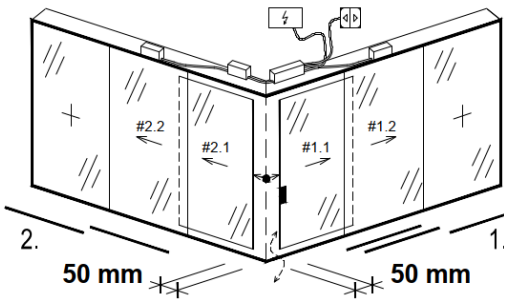


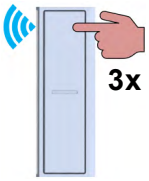


2x short «OPEN»
= Passage position

→ Elements #1.1 + #2.1
Opening width = 1 m each (standard)

5.5.3 Open to the ventilation position





3x short «OPEN»
= Lüftungsposition

→ Elements #1.1 + #2.1
Opening width = 50 mm each (standard)

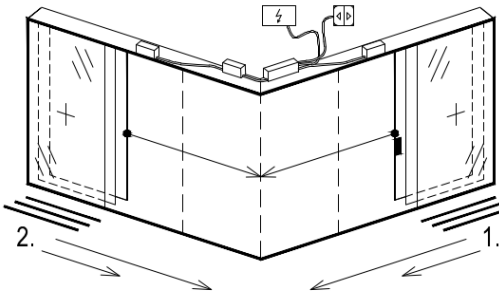
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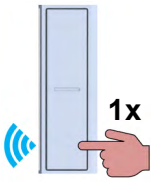
Power-operated sliding windows Operation

5.6 Closing the sliding windows using the control button «Touch»

To close the entire system, press the following button within 2 seconds:

5.6.1 Closing the entire system





1x short «CLOSE»
= Close entire system

→ All elevations close completely.

WARNING!
Risk of being locked out!

Sliding windows that do not have a locking handle on the outside lock automatically when they are fully closed.

5.6.2 Stopping the system

By pressing any button during an opening or closing sequence, the sliding elements can be stopped immediately at any time and in any position.

NOTE:

Additional button pressing sequences - such as activating or deactivating the button lock on the "Touch" control button - depend on the drive type (SI-1000 / PD-200).

Please refer to the separate manual "Sky-Frame - 14.4 User manual - Control button Touch".
Download PDF: Manuals

User Manual

Power-operated sliding windows
Maintenance
Safety instructions

6. Maintenance



The system must be checked annually by an expert from a specialist company.

No warranty or service claims will be entertained if maintenance is not carried out properly.

6.1 Maintenance, Safety instructions

6.1.1 Improper maintenance



WARNING!
Risk of injury from improper maintenance!

Improper maintenance can lead to serious injuries.

- Never undo screws on the system and remove the service cover.
- Apart from the cleaning work that is described, all maintenance work must be carried out by the expert from the specialist company.

6.1.2 Cleaning



WARNING!
Risk of injury from unintentional button pressing!

When the system and the control buttons are being cleaned, there is a risk of initiating unintentional system movements by touching the control buttons.

This represents a risk of injury to persons in the danger zone.

- During cleaning work on the system, ensure that no persons can unintentionally press any of the control buttons.
- Before cleaning the control buttons, ensure that no persons are present in the window area.

User Manual

Power-operated sliding windows
Cleaning and care
Glass

7. Cleaning and care

7.1 Glass



As part of the facade, glass is subject to natural soiling. In order to provide problem-free use, certain points must be adhered to during cleaning and care.

Normal soiling is not a problem for glass. Plenty of clean water should be used in order to avoid a scouring effect caused by dirt particles.

Suitable tools:
- Soft, clean sponges
- Leather / cloths
- Rubber wiper

The cleaning effect can be assisted by using cleaning agents that are as neutral as possible or normal commercial household glass cleaner.

If the soiling consists of grease or sealant residue, normal commercial solvents such as white alcohol or isopropanol can be used for cleaning.

7.1.1 Non-permissible materials



Float: TSG:



Of the chemical cleaning agents that are available, do NOT use alkaline solutions, acids or materials containing fluoride.

The use of pointed, sharp metal objects (blades and knives) or scraping off with a glass scraper can cause surface damage and deep scratches, and is not permitted! Scratches may only become visible after a certain time with TSG due to its surface tension.

CAUTION!
NEVER use metal blades!
These can cause severe damage to TSG glass.

7.1.2 Important notes

Film "Cleaning and Care" on sky-frame.com/manual

The following points must be observed during glass cleaning:

- use normal commercial glass cleaning products
- rinse cloths as often as possible
- grains of dirt in cloths can scratch the glass
- do not use abrasive or scouring materials
- do not use alkalis (lyes)

User Manual

Power-operated sliding windows
Cleaning and care
Surface

7.2 Surface



Proper cleaning and care of the coated surfaces is required to keep the surface of the aluminium profiles clean and retain their shiny appearance for many years, and is therefore a prerequisite for the guarantee.

Cleaning instructions:

- Loose dust: Wipe off with a dry cotton cloth without using pressure, or remove with a sponge and water and then dry with a clean cloth
- Adhesive, paint, putty, tar: Carefully remove using a suitable solvent and clean cotton cloth
- Cement, mortar, concrete, plaster: Remove immediately with a sponge or soft cloth before it dries. Wash off under flowing water and then dry with a clean cloth.
- Sealed surfaces: Rinse with plenty of water. Clean with neutral cleaning agent and a sponge. Do not use abrasive, mechanical cleaning! Rinse and dry.
- Soiling in general: Rinse with plenty of water. Clean with neutral cleaning agent and a sponge. Rinse and dry.

Recommendation:

- pH-neutral cleaning agent in diluted form

Cleaning interval: **at least once per year***

Cleaning agent:

- NOT with high concentration of solvent
- NOT scouring / abrasive
- NOT alkaline (lyes)
- NOT acidic
- NOT containing chlorine

Elements installed in a particularly aggressive atmosphere (near the sea, industrial climate or the combination according to corrosivity categories C4 and C5 according to ISO 9223): **monthly***

*** or if urgently required**
(direct exposure to salt or chlorine water, also spray; sand; bird droppings; insects; pollen; autumn leaves...)

The following generally applies:

- Always wipe in the rolling or grinding direction.
- Only use gentle pressure when cleaning.
- Use distilled or mineral water for final rinse (avoids streaking).
- Remove with a squeegee and dry with a clean cotton cloth.
- Do not clean in direct sunlight or if the surface is very hot.

Film "Cleaning and Care" on sky-frame.com/manual

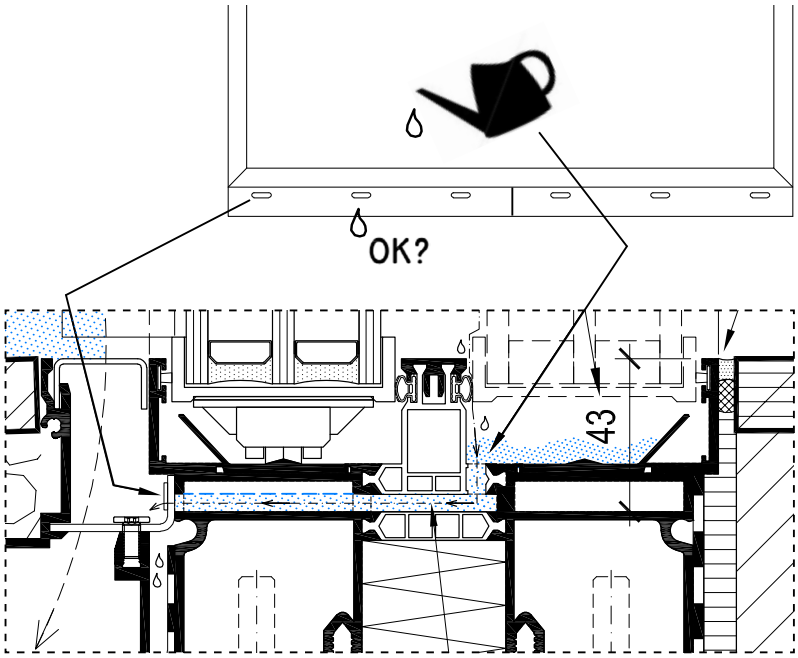
User Manual

Power-operated sliding windows
Cleaning and care
Sill profile

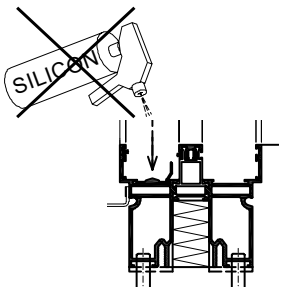
7.3 Sill profile

To retain **good running properties** and guarantee that **correct drainage** takes place over the long term, the sill profiles should be checked and cleaned if necessary:

- Check channels for soiling and clean.
- Remove soiling from the sill profile (running tracks) with a vacuum cleaner (narrow nozzle).
- Clean sill profile with a damp cloth and a liquid cleaning agent.
- Check that all drainage openings are clear **[OK?]**.



NOTE:
The surface of the running track (stainless steel) should **NOT BE TREATED WITH SILICON SPRAY** or other lubricants.



The running properties are best on a **dry** surface.



TIP:
Clean blocked drainage openings with a thin piece of wood or plastic and rinse with plenty of water in order to ensure that drainage takes place.

CAUTION!
DO NOT USE A HIGH-PRESSURE CLEANER!
High pressure can damage the seal of the sill profile.

User Manual

Power-operated sliding windows
Cleaning and care
Seals + Insect screen

7.4 Seals

The seals have been treated with silicone in the factory to prevent them from freezing on.

If this protection has deteriorated over time, proceed as follows:

1. Spray silicone spray onto a cloth outdoors.
2. Apply silicone spray to the seals using the cloth.

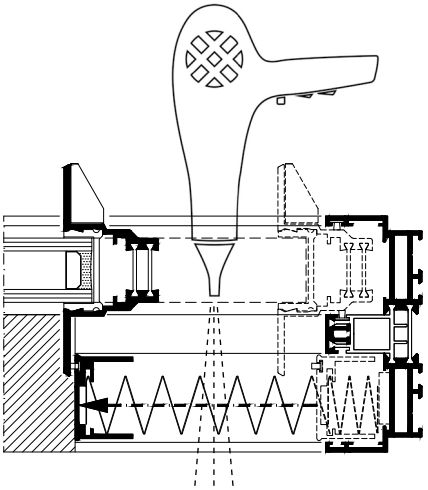
Recommendation:
Rub the seals with silicone spray once a year.

CAUTION:
Damage caused by road salt!

Road salt can damage the sliding windows. Avoid use of road salt in the immediate vicinity of the sliding window.

7.5 Insect screen

Clean frame, handle profile and fabric with soapy water and a soft cloth.



The fabric can also be cleaned by blowing through it from the inside to the outside using compressed air or a hair dryer (using cold air).

CAUTION:
NEVER use chemical or abrasive materials!

CAUTION:
In strong winds, the insect screens must be closed immediately (risk of damage).

User Manual

Power-operated sliding windows
Debugging and troubleshooting

8. Debugging and troubleshooting

The possible causes of faults and the work that is required to remedy them are described in the following chapter. Please contact specialist company in the event of faults that cannot be remedied using the following instructions.

8.1 Debugging the system

Sliding element cannot be moved:

- Electrical energy supply interrupted
  → Check electrical energy supply
- Object trapped between sliding element and frame
  → Remove object
- Damage to system → Contact a specialist company

Sliding element can only be moved slowly:

- Heavy soiling in movement area → clean system
- Damage to system → Contact a specialist company.

8.2 Incorrect repair



WARNING!
Risk of injury from incorrect repair!

Attempts to repair the system by an insufficiently qualified person can result in serious injuries and damage to property.

- Never dismantle the system.
- Never repair or modify the system yourself.

8.3 Spare parts



WARNING!
Risk of injury from using the wrong spare parts!

The use of wrong or defective spare parts or failing to install them correctly can put the user at risk and cause damage.

- Always have defective parts replaced by a specialist company.

User Manual

Power-operated sliding windows
Debugging and troubleshooting

8.4 Troubleshooting

If the device does not operate as described, check the following:

1. Is there power to the drive unit?
2. Does the control button "Touch" have a battery?

If a connection to the device still cannot be established, please contact the responsible Sky-Frame partner.



An inspection by a qualified person must be carried out annually.

8.5 Power outage

After a power outage, the system requires referencing.



The closed position serves as the reference point and is detected via the existing position monitoring system.

If the system is in the closed position during or after a power failure, that position is detected immediately upon the return of power, and the system switches straight back to normal operation.

If the system is open during or after a power failure, it must first be fully closed. This can be achieved through either manual or motorized movement.

For motorized movement, only the "dead-man operation" in the "CLOSE" direction is possible. Once the system is fully closed, the closed position is detected, and the system switches back to normal operation.

What is "dead-man operation"?

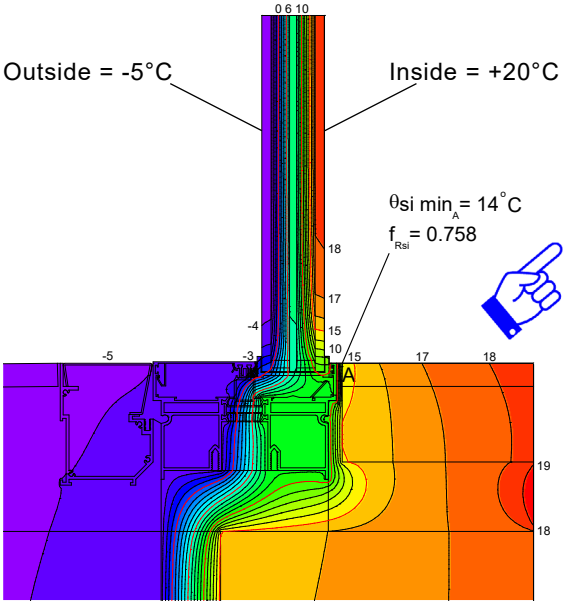
In this mode, the sliding element moves only as long as the control button is pressed. When the control button is released, the movement of the window stops.

User Manual

Power-operated sliding windows
Debugging and troubleshooting

8.6 External condensation





The external glass is in a direct "radiation exchange" with the sky. Depending on the installation situation, this radiation exchange can now lead to considerable cooling of the external glass (particularly on clear nights).

If the temperature of the outer glass surface drops below the temperature of the adjacent outside air, this will result in the formation of condensation on the outer surface of the glass (even ice in certain cases).

This procedure is generally known in nature as dew or hoar frost formation.

Heating of the outer surface and the outside air (by the morning sun, for example) will cause the condensation to disappear again.

This phenomenon is not a malfunction, but is an **indication of the outstanding heat insulation** and the functionality of the insulating glass that is used.

The following generally applies to any insulating glass:
The lower the heat transmission (the smaller the U_g value or also: the better the insulating glass) the warmer the glass remains at the room side and therefore the colder the outside glass, which may become fogged.

Because of the improved insulation of triple-glazed units, condensation is more likely to form on the surface of the outer glass layer more frequently than with double-glazed units.

8.7 Internal condensation



The formation of dew on the room-side pane of glass is assisted if the air circulation is blocked (protruding soffits, curtains, unfavourable radiator arrangement, lack of ventilation) and the ambient air is too humid.

The ambient humidity must be adapted to the situation accordingly (dehumidifier, convector).

User Manual

Power-operated sliding windows
Dismantling and disposal

Dismantling and disposal

When the system reaches the end of its service life, it must be dismantled and disposed of in an environmentally friendly way.



WARNING!
Risk of fatal injury from incorrect dismantling!

Problems that occur during dismantling can lead to life-threatening situations or cause a considerable amount of damage.

- Only allow experts from the specialist company to dismantle the system.
- Do not dismantle the equipment or make local modifications yourself.

Further instructions

Available user manuals:



- 14.1 Manually operated sliding windows
- 14.3 Power-operated sliding windows
- 14.4 Control button “Touch”
- 14.5 Manually operated Pivot doors

Available languages:

- German
- English
- French
- Italian

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