

In- struc- tions

Original instructions for descending windows



Table of contents

1	About this document	6
1.1	Applicability.....	6
1.2	Manufacturer.....	6
1.3	Target group.....	6
1.4	Conventions.....	6
1.4.1	Typographical conventions.....	7
1.4.2	Warnings and other information	7
2	General product information	9
2.1	Guarantee.....	9
2.2	Warranty	9
2.3	Product identification	10
2.4	Scope of delivery	10
3	Information for your safety	11
3.1	Intended use	11
3.2	Improper use.....	11
3.3	General rules of conduct.....	11
3.4	Personnel qualifications – Who does what?	12
3.4.1	Operators	12
3.4.2	Installation and maintenance personnel.....	12
3.4.3	Overview – Who does what?.....	13
3.5	Signs and warnings	13
3.6	Residual dangers.....	14
3.7	Safety devices and functions	14
3.7.1	Emergency stop button	14
3.7.2	Flush closure	14
3.7.3	Technical area	15
3.7.4	Counterweight	15
3.7.5	Obstruction recognition (optional)	15
4	Technical data	16

5	Operating conditions	17
5.1	General operating conditions.....	17
5.2	Protecting the glass	17
6	Structure and function	18
6.1	Functional description.....	19
6.2	Control cabinet.....	19
6.3	Pneumatic sealing system.....	20
6.4	Operating elements	21
6.4.1	Button	21
6.4.2	Control cabinet	21
6.5	Product versions.....	22
7	Operation	23
7.1	Opening	23
7.2	Closing.....	24
7.3	Control with external operating device.....	24
7.4	Manual opening and closing	25
8	Cleaning and care	26
8.1	Care products	26
8.2	Glass.....	26
8.3	Profile.....	26
8.4	Seals.....	26
9	Inspection and maintenance	27
9.1	Commissioning a specialist	27
9.2	Keeping inspection records	27
10	Disassembly and disposal	28
11	List of figures	29
12	List of tables	30

1 About this document



These instructions contain all the information regarding the intended use of the descending window.

The following should be noted:

- The instructions are part of the product.
- The instructions must always be available to the operator.
- The instructions must be stored nearby for the entire service life of the descending window.
- The instructions must also be passed on if the descending window is transferred to other owners.

1.1 Applicability

These instructions describe the manually operated descending window with an electromechanical drive and a pneumatic sealing system from Air-Lux Technik AG.

They include basic details on how to operate, inspect, maintain and clean the product.

NOTICE

The scope excludes transport, installation, assembly, commissioning and disassembly. For this information, please refer to the separate details from the manufacturer.

Standardised illustrations

The illustrations in these instructions correspond to the described product as closely as possible. Some illustrations are standardised and may differ slightly from the actual product.

1.2 Manufacturer

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1.3 Target group

These instructions are intended for everyone coming into contact with the descending window, especially operators.

1.4 Conventions

The following chapters explain the text design elements used in these instructions and the layout of the warnings.

1.4.1 Typographical conventions






Table 1: Typographical conventions

Representation	Meaning
<i>Italics</i>	Warnings that could lead to environmental or property damage if not followed.
Bold	Important information that should be particularly highlighted, as well as operating and display elements.
Marginal notes	Brief information to guide the reader's attention to a specific portion of the text.

1.4.2 Warnings and other information

When using these instructions, follow the safety warnings. The following symbols and signal words are used:

Table 2: Warnings

Symbol/signal word	Meaning
	Warning Imminent danger. This will result in death or serious injury.
	Warning Potentially dangerous situation. This may result in death or serious injury.
	Warning Potentially dangerous situation. This could result in slight or minor injury.
	Note Information that must be taken into account to ensure safe operation of the system.
	Additional information and important chapters.

Structure of warnings

- **Signal word**
Indicates the severity of the danger.
- **Type and source of danger**
Describes the danger being warned against and where it can occur.
- **Result of danger**
Describes the potential consequences of ignoring the warning.
- **Escape to safety**
Describes how to prevent the danger from occurring and instructs on safety measures to be taken if the danger occurs.

Example warning



Risk of injury from improper use

Improper use of the machine may result in personal injury or property damage.

- Only use the machine as intended and described below.
-

Instructions

Instructions are numbered consecutively to indicate the sequence of the individual steps. The results of actions are listed directly below, if present. Example:

1. This is the first step.
2. This is the second step.
 - This is the result of the second step.

Operating and display elements

Operating and display elements, e.g. keys, switches or indicator lights, are highlighted in **bold**.

e.g.: The **button** is located on the frame.

2 General product information

The following chapters detail the guarantee and warranty provided by the manufacturer and general information about the product.

2.1 Guarantee

The statutory guarantee obligation applies. Damage due to operational wear and tear is excluded from the guarantee. Air-Lux Technik AG disclaims responsibility or guarantee liability and is hereby exempt from potential claims by third parties, in the event of personal injury or property damage caused by the owner or a third party due to one or more of the following causes:

- Improper use of the descending window,
- Failure to observe the warnings in these instructions,
- Non-compliance with the specified limitations of use and conditions,
- Improper commissioning, operation, inspection or maintenance,
- Non-compliance with the specified inspection and maintenance intervals as well as regular care,
- Modification of the product or individual components when not explicitly approved by Air-Lux Technik AG, or
- Use of non-approved accessories or non-approved replacement parts.

2.2 Warranty

If the manufacturer or an authorised sales partner provides a product warranty that goes beyond the statutory warranty obligation, this will be set out in the service contract.

2.3 Product identification

A type plate is attached to the descending window to identify the product precisely and must be replaced if damaged or lost.

2.4 Scope of delivery

The product is delivered with the complete, operation-ready descending window, including:

- Technical area equipment (control cabinet, drive and counter-weight, optional: safety fence to fence off moving parts)
- Control button
- Instructions

NOTICE

Information on product components and versions can be found in Chapter 6 “Structure and function” on page 18.

3 Information for your safety



In this chapter you will find all safety-relevant information. Before using the descending window, read all safety information carefully and follow it during use. The safety warnings focus on the dangers of possible personal injury, property damage and damage to the environment and contain information on how to prevent and avoid such dangers.

3.1 Intended use

Operate the descending window only if the operating conditions are taken into consideration (see Chapter 5 “Operating conditions” on page 17).

The descending window is driven electromechanically and solely used for opening and closing the moveable window segments and activating and deactivating a pneumatic sealing system (see Chapter 6 “Structure and function” on page 18). The descending window is button-operated.

The descending window is unsuitable for operation with explosive vapours or dust (ATEX) or operation within an ATEX area. The descending window is intended for use in private spaces.

Any other use of the descending window beyond the scope described here is deemed improper. The service life is approx. 20 years, following which a refurbishment (and possibly a general overhaul) by the manufacturer or a specialist company is necessary.

3.2 Improper use

Improper use is considered to have occurred if the descending window is used for any purpose other than that described in Chapter 3.1 “Intended use” on page 11.

Improper use includes in particular:

- Rushing through the descending window as it closes
- Riding on the descending window as it opens or closes
- Transporting objects with the descending window as it opens or closes

NOTICE

The manufacturer disclaims all liability for damages resulting from improper use. The owner thus remains solely responsible for the same.

3.3 General rules of conduct

When using the descending window, always adhere to the following rules of conduct:

- Only use the descending window as instructed.
- Always ensure your own safety and that of others.
- Do not use the descending window if damage or obstructions are visible. If necessary, notify the manufacturer or an authorised specialist.

3.4 Personnel qualifications – Who does what?

The following chapters explain the various groups of people who come into contact with the descending window.

3.4.1 Operators

An operator can be any person who is fully mentally and physically capable of operating the machine.

Obligations of the operator

- Read and follow the operating and safety information in these instructions completely.
- Only operate the descending window if no damage is visible and the operating conditions are met.
- In the event of errors, malfunctions or visible damage, inform the owner or contact the manufacturer's customer service.
- Keep the descending window clean (see Chapter 8 "Cleaning and care" on page 26).

Operation by children

- Teach children proper operation and supervise them during operation.

3.4.2 Installation and maintenance personnel

NOTICE

All assembly, disassembly, modifications (i.e. integration into household technology) as well as inspection and maintenance are performed exclusively by the manufacturer or authorised specialists.

Installation and maintenance personnel are defined as follows:

- Trained specialist in electronics and metal construction.
- Receives ongoing training on technical innovations and has the necessary specialist knowledge of the installed technology (training at the manufacturer's headquarters in Engelburg, Switzerland).
- Has been briefed on the following topics through training from the manufacturer:
 - Functional description of the system,
 - Adjusting features and integration into household technology,
 - Explanation of the individual components,
 - Explanation of danger sources,
 - Use of the system,
 - Recognising and resolving malfunctions,
 - Performing inspection and maintenance work.

3.4.3 Overview – Who does what?

The following table assigns the individual groups described above to their corresponding tasks.




Table 3: Overview – Who does what?

Activity	Operator	Installation/ maintenance personnel
Operation	Yes	
Cleaning/care	Yes	
Visual inspection for external damage	Yes	
Error and malfunction resolution		Yes
Releasing blockages		Yes
Maintenance		Yes
Repair		Yes
Assembly/modification/transport/ disassembly/disposal	In coordination with the manufacturer	

3.5 Signs and warnings

Signs and warnings mark locations at which, under certain circumstances, potential dangers could occur. Do not remove the warning and information signs. Replace damaged or missing warning and information signs immediately.

Table 4: Signs and warnings

Symbol	Meaning	Symbol	Meaning
	Dangerous electrical voltage warning		Hand injury warning
	Sitting prohibited		

3.6 Residual dangers

The following residual dangers exist during use of the descending window.

Mechanical hazards

The descending window consists of moving and heavy components. Observe the following safety instructions to avoid personal injury and property damage due to crushing or tripping:

- Only move the descending window when sure that no people, pets or objects are in the way.
- Do not rush through the descending window as it is closing.
- Do not apply any additional loads to the descending window as it is opening or closing, i.e. by sitting on it, riding on it or transporting objects with it.
- Always keep the descending window within view when it is moving. The descending window must remain in view, even when operated from a location other than the frame.
- Do not operate the descending window if external damage is visible or unusual noises can be heard during operation.
- Do not reach into the lateral guides when opening or closing the descending window.
- Open the descending window completely or ensure it extends up from the floor high enough to prevent a risk of tripping.

3.7 Safety devices and functions

The following chapters describe the standard and optional safety devices installed on the descending window.

Safety devices can only protect persons and property properly when in proper working order. Therefore, observe the following:

- Ensure the safety devices are in faultless condition and adhere to the specified maintenance intervals.
- Do not use the system if the safety devices are defective or missing.
- Do not modify the function of safety devices or disable them.
- Have defective safety devices replaced or repaired immediately by qualified specialists.

3.7.1 Emergency stop button

The emergency stop button is located on the control cabinet in the technical area. It serves to shut off the descending window during maintenance or repair work and may only be used by qualified personnel from the manufacturer or authorised specialists.

3.7.2 Flush closure

To prevent a risk of tripping, the descending window is flush with the top edge of the floor when fully open.

3.7.3 Technical area

The following components are found in the technical area and the immediate vicinity:

- Control cabinet with emergency stop button
- Drive
- Brake
- Counterweight
- Diverter
- Monitoring unit, manual operation
- Position switch

The technical area may only be accessed by qualified personnel from the manufacturer or authorised specialist companies and is protected against unauthorised access by a door monitoring switch.

3.7.4 Counterweight

The counterweight serves to move the descending window. In the event of a power cut, the current position of the descending window is maintained by the counterweight.

3.7.5 Obstruction recognition (optional)

The automatic obstruction recognition feature stops the closing movement of the automatic descending window as soon as an obstruction is detected.

4 Technical data

The following table lists the technical data of the descending window.

Table 5: Technical data

Technical data	Value/designations
Designation	Descending window
Model	Electrically driven vertical descending window
Serial number	Series 240
Personal installation number	See documentation and construction drawing
Dimensions	Various, see construction drawing
Maximum height	3,100 mm
Maximum width	8,000 mm
Total weight	Various, see construction drawing
Electrical connection	100–240 V (AC), 50–60 Hz, 13 A
Power (P_{\max})	750 W
Air pressure (p_{\max})	0.9 bar
Opening/closing speed	Various (set individually according to customer's request)
Noise emission	< 70 dB (A)

5 Operating conditions

Comply with the operating conditions to ensure safe operation. The following table lists the key operating conditions for the descending window.

5.1 General operating conditions

Table 6: Operating conditions

Technical data	Value/designations
Ambient temperature	-20 to 50°C
Relative humidity	15 to 85%, non-condensing
Required space	Interval space of at least 30 cm on all sides

In addition, the following conditions apply:

- Do not disable the protective devices or other components.
- Only operate the descending window when in perfect working order.
- Keep the lower guide rail free of contaminants. See Chapter 8 “Cleaning and care” on page 26.
- Do not operate the descending window in areas with explosive vapours or dust (ATEX) or in an ATEX area.

5.2 Protecting the glass

Do not place furniture or other large objects directly behind or in front of the glass. To prevent thermal breakage, maintain a distance of at least 30 cm:

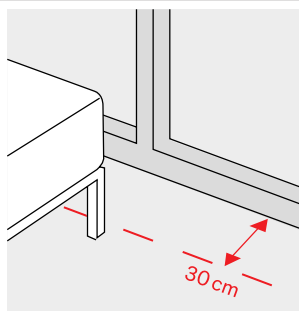


Fig. 1: Protecting the glass

6 Structure and function

The following chapters explain the structure and function of the descending window using an exemplary design version.

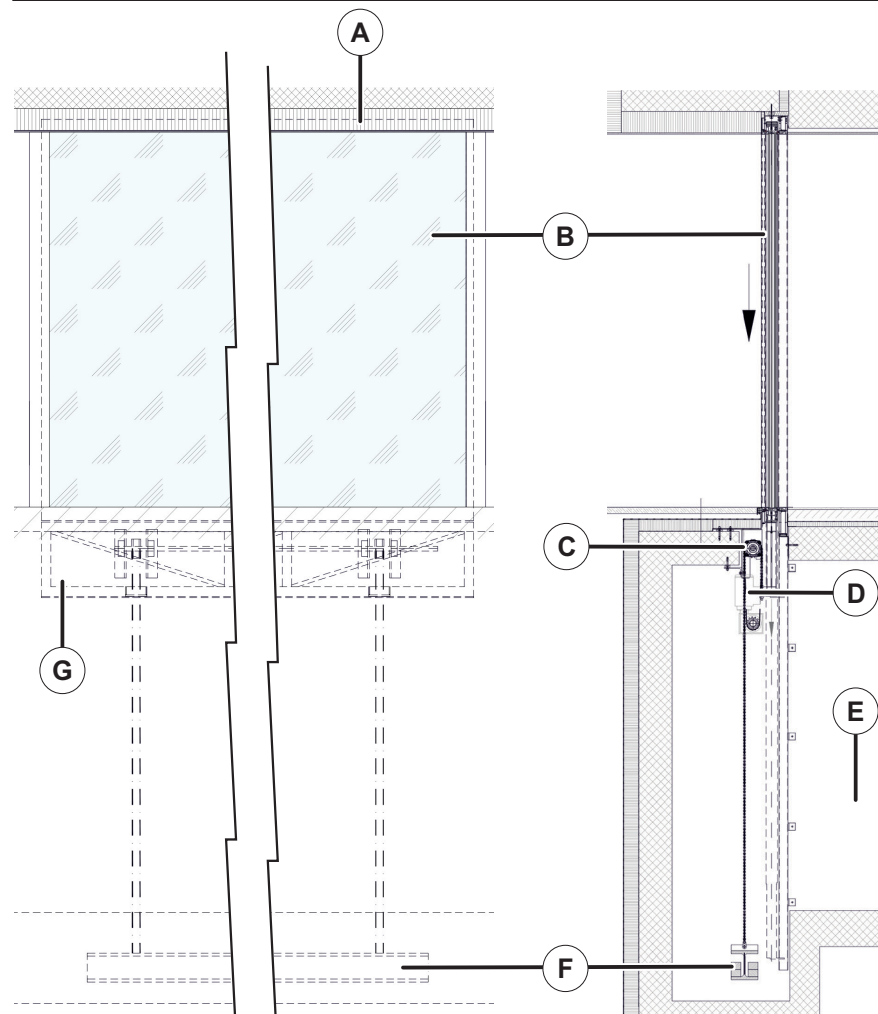


Fig. 2: Entire structure

- A Descending window frame with integrated sealing system
- B Descending window
- C Diverter
- D Drive
- E Technical area
- F Counterweight
- G Framework

6.1 Functional description

The descending window is a room-height wall installation and serves to move a sliding window element vertically. The window segment is driven electromechanically and can be raised and lowered, i.e. lowered into the floor or closed, smoothly using buttons.

A technical area containing the control, drive and counterweight is located under the descending window. When it is completely opened, the window segment lowers into the technical area.

Optionally, for example in the event of a power cut, the descending window can be moved manually using a crank on the drive.

All automatic functions are controlled by the control cabinet. The system is operated by pressing the **buttons**.

6.2 Control cabinet

The control cabinet is installed in the technical area and controls and monitors all functions. The descending window has a position-monitoring system to determine whether the system is open or closed. The system also has alarm contacts to the descending window to be integrated into the household alarm system. Optionally, VDS contacts can also be used for the alarm system.

6.3 Pneumatic sealing system

The descending window has a circumferential air seal that is inflated when the sliding window is closed and is thereby pressed against the leaf profile. This seals the descending window so that it is air-tight and insulated against noise from all sides.

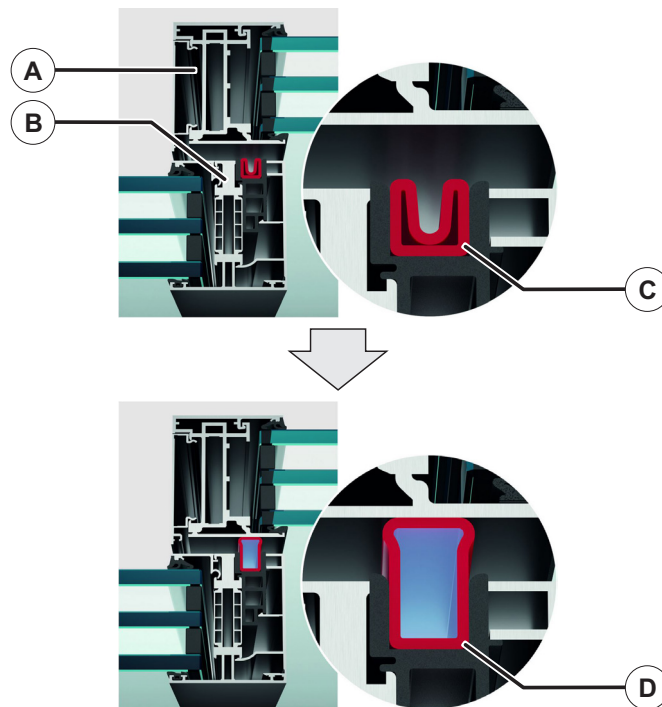


Fig. 3: Sealing system

- H Descending window
- I Frame
- J Inflatable seal, inactive (deflated)
- K Inflatable seal, active (inflated)

6.4 Operating elements

6.4.1 Button

The buttons are the descending window's primary operating elements. They are located directly in the frame of the descending window or at a nearby location so that the descending window remains visible throughout operation.

The buttons are designed as follows:

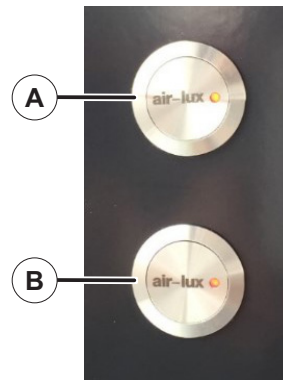


Fig. 4: Button

A "Close" button

B "Open" button

The **buttons** are the central operating and indicator elements and simultaneously serve the following purposes:

- Deflating and opening
- Closing and sealing
- Stopping, continue opening or closing, re-opening or closing
- Resetting errors

6.4.2 Control cabinet

The control cabinet is located in the technical area and contains the following operating elements:

- Main switch
- Confirm area
- Confirm error
- Emergency stop button

NOTICE

The control cabinet is solely intended for servicing work. It may only be accessed by qualified personnel from the manufacturer or authorised specialist companies.

6.5 Product versions

The descending window is available in various product versions. Optional product components include:

- Corner design
- Integration of additional opening elements such as doors, tilt and turn windows or sliding windows into the descending window
- Integration into the household control system

NOTICE

An overview can be found in the list “Optional additional services” from Air-Lux Technik AG.

7 Operation

The following chapters contain information on how to operate the descending window.

NOTICE

Information on the operating elements can be found in chapter Chapter 6.4 “Operating elements” on page 21.

7.1 Opening

1. Ensure that there are no people or objects near the descending window.
2. Press and hold the **Open** button.



- The pneumatic seal is deflated.
- When the pneumatic seal is deflated, the descending window opens.

3. Release the **Open** button when the desired position of the descending window has been reached.

NOTICE

The movement of the descending window stops automatically when the descending window is completely open.

- The **LED** in the **Open** button turns red when the descending window is open.

CAUTION

Risk of tripping

Open the descending window completely or ensure that it extends up from the floor high enough to prevent a risk of tripping.

7.2 Closing

1. Ensure that there are no people or objects near the descending window.
2. Press and hold the **Close** button.



► The descending window closes.

3. Release the **Close** button when the desired position of the descending window has been reached.
4. To close the descending window completely, press the **Close** button until the descending window is completely closed and the pneumatic seal is inflated.

► The **LED** in the **Close** button goes out when the descending window is completely closed.

7.3 Control with external operating device

CAUTION

Risk of crushing

Ensure no people are in the way. Always keep the descending window within view when controlling it with an external operating device.

Observe the instructions from the manufacturer of the corresponding system. The operating elements of devices that may be connected are not explained in this instructions.

7.4 Manual opening and closing

If the descending window does not move, e.g. in the event of a power cut, the descending window can be opened and closed manually.

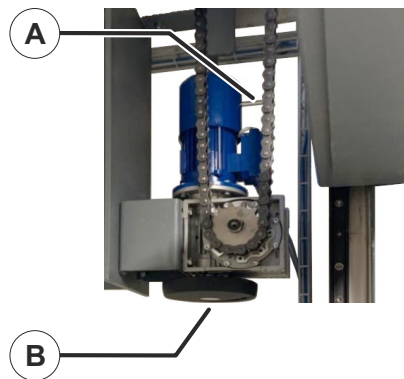


Fig. 5: Motor drive in the technical area

- A Motor brake
- B Hand crank

To do so, proceed as follows:

1. Enter the technical area.
2. Release the **motor brake**.
3. Swing out the **hand crank**. Turn the **hand crank** in order to open or close the window.

CAUTION

Risk of crushing

Ensure there are no people or objects near the descending window. If necessary, enlist a second person to observe the danger area.

8 Cleaning and care

The following chapters contain important information on how to clean and care for the descending window. Observe the cleaning and care instructions to ensure the product continues to function properly.

8.1 Care products

Do not use abrasive cleaning agents or solvents for cleaning and care. Observe the specific instructions for the surface and those of the cleaning and care product provider or the SZFF guideline 61.01 "Maintenance and cleaning of façades".

8.2 Glass

Clean the glass only with clean water, commercially available glass cleaner and suitable glass cloths. For more information, see the SIGAB guideline 102 "Cleaning glass".

8.3 Profile

In general, clean surfaces as mildly as possible and rinse them thoroughly with water. In the event of stubborn stains, contact a cleaning specialist.

8.4 Seals

The seals have a permanent coating and must be protected from mechanical damage.

Do not clean or treat the seals.

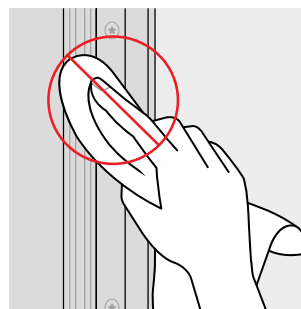


Fig. 6: Do not clean seals

9 Inspection and maintenance

To maintain functionality and prevent damage, yearly inspection and maintenance must be performed.

If you have a service contract, the manufacturer (or authorised sales partner) inspects and maintains the equipment properly and punctually. For more information, contact Air-Lux customer service.

NOTICE

Do not attempt to maintain or repair the equipment yourself. Instead, have this done by qualified installation and maintenance personnel.

9.1 Commissioning a specialist

If you do not have a service contract, commission a qualified specialist to inspect and maintain the equipment. Ensure that the equipment is inspected and maintained once a year. A commissioned specialist must fulfil the requirements for installation and maintenance personnel (for more information, see Chapter 3.4.2 “Installation and maintenance personnel” on page 12) and is obliged to acquire the necessary information regarding inspection and maintenance from the manufacturer.

9.2 Keeping inspection records

Inspections and maintenance must be documented. Ensure that all inspection, maintenance and repair work done on the descending window as well as expansions and modernisations are entered into your records by the specialist performing the work. This is a prerequisite when asserting possible compensation claims in the event of damages.

10 Disassembly and disposal

NOTICE

Do not perform attempt to disassemble the equipment yourself. Instead, have this done by appropriately qualified personnel.

Dispose of components properly and in an environmentally friendly manner. In the process, comply with all legal regulations. Ensure that dismantled components are provided for reuse wherever possible:

- Scrap metallic components.
- Bring plastic parts for recycling.
- Dispose of remaining components according to the nature of the material (e.g. electrical waste).

11 List of figures

Fig. 1:	Protecting the glass	17
Fig. 2:	Entire structure	18
Fig. 3:	Sealing system	20
Fig. 4:	Button	21
Fig. 5:	Motor drive in the technical area	25
Fig. 6:	Do not clean seals	26

12 List of tables

Table 1: Typographical conventions	7
Table 2: Warnings	7
Table 3: Overview – Who does what?	13
Table 4: Signs and warnings	13
Table 5: Technical data	16
Table 6: Operating conditions	17



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