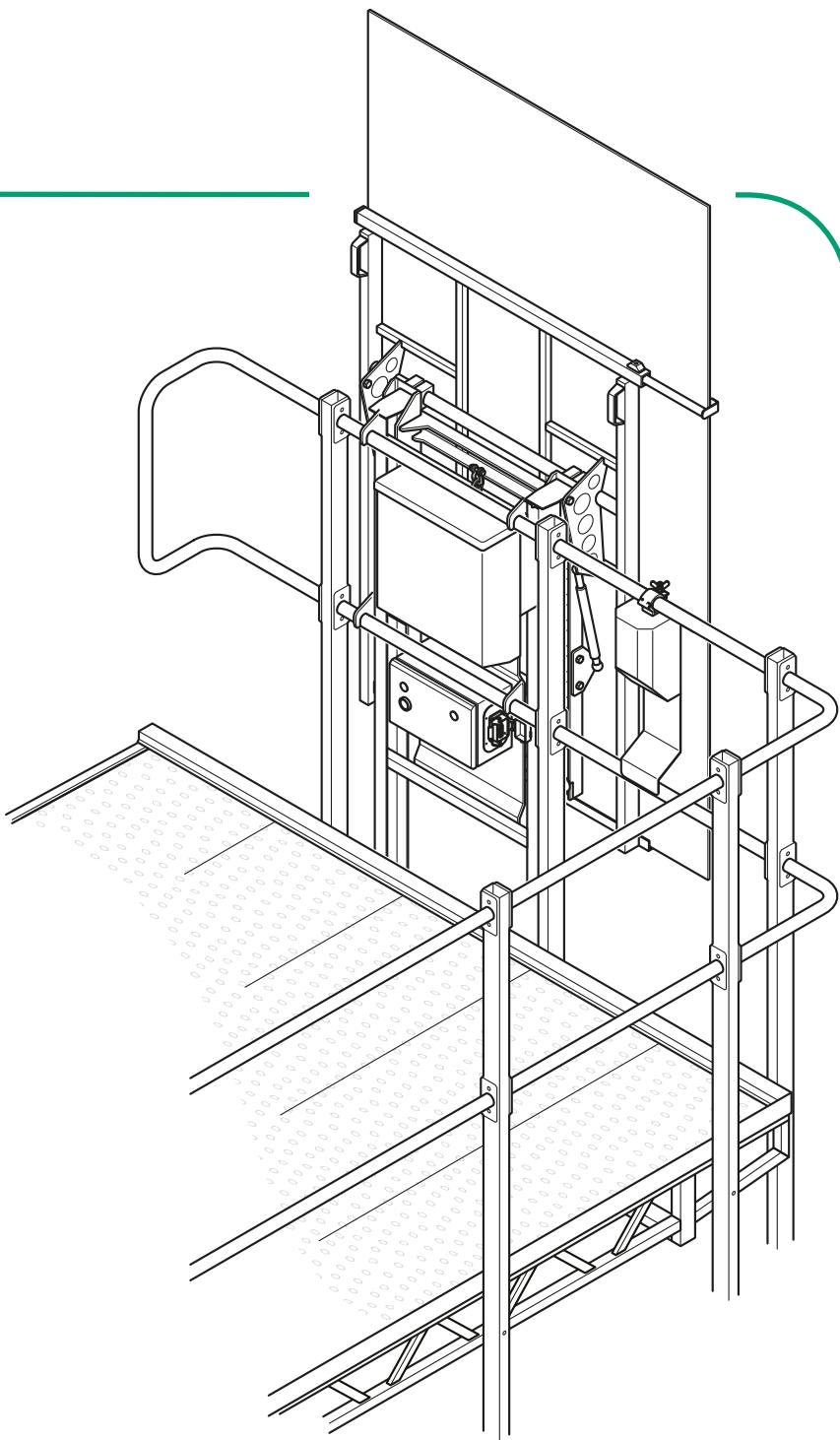


Glass Elevator



JANUARI 2022 | VERSION 1.00 | THESE ARE THE ORIGINAL ENGLISH INSTRUCTIONS



TABLE OF CONTENTS

1 ABOUT THIS HANDBOOK	6
1.1 Description of the user	6
1.2 Purpose of these instructions	7
1.3 Retaining instructions	8
1.4 Conventions used in this manual	9
1.5 Explanation of safety warnings	10
1.6 Obtaining documentation and information	11
1.6.1 Internet	11
1.6.2 Ordering documentation	11
1.6.3 Other languages	11
1.6.4 Documentation feedback	11
1.6.5 Support and service	11
1.7 Other documentation	12
1.8 Warranty	12
1.9 Modifications and revisions	13
1.9.1 Product modifications	13
1.9.2 Document revisions	13
2 SAFETY	14
2.1 Safety instructions	14
2.1.1 Safety information related to the intended use and reasonably foreseeable misuse	14
2.1.2 Personal protective equipment	14
2.1.3 Safety information related to transporting and lifting	15
2.1.4 Installation safety information	16
2.1.5 Electrical safety information	16
2.1.6 Safety information prior to the use	16
2.1.7 Safety information related to the use	17
2.1.8 Safety instructions related to working at heights	17
2.1.9 Maintenance safety information	18
2.1.10 Repair and modification safety information	18
2.2 Graphical symbols and safety information on the machinery	19
2.2.1 Explanation of safety information on the Glass Elevator	19
2.2.2 Explanation of safety information on the battery pack (optional)	23

3 DESCRIPTION OF THE MACHINERY 24

3.1 Intended use	24
3.2 General description of the machinery	25
3.3 Machinery elements	27
3.3.1 Glass Elevator elements	27
3.3.2 Important parts of the elevator unit	28
3.3.3 Inner parts of the motor compartment	29
3.4 Understanding controls	30
3.4.1 Controls of the Glass Elevator	30
3.4.2 Controls of the remote control	31
3.5 Explanation of visual and auditory signals	32
3.6 Technical data	33
3.6.1 Position of the type identification plate on the Glass Elevator	33
3.6.2 Technical specifications for the Glass Elevator	34
3.6.3 Technical data for the battery pack and charger	35

4 TRANSPORT AND HANDLING 36

4.1 How to transport the machinery	36
4.1.1 Dimensions, mass and center of gravity	36
4.1.1.1 Dimensions in milimeters (inches)	36
4.1.1.2 Mass	37
4.1.1.3 Center of gravity and location of lifting point	37
4.1.1.4 Lifting, handling and transporting the machinery	38

5 INSTALLATION 39

5.1 How to check the contents of the delivery	40
5.2 How to install the Glass Elevator	41
5.2.1 Hanging the Glass Elevator in position	41
5.2.2 Securing the Glass Elevator	44
5.2.3 Cutting the extension legs to size	48
5.2.4 Assembling the Glass Elevator	49

TABLE OF CONTENTS

6 PREPARATION BEFORE USE	55
6.1 How to connect the Glass Elevator electrically	55
6.1.1 How to connect to the 1X8 output of the van der Waay Top Cleaner platform	56
6.1.2 How to connect to the battery pack	56
6.1.3 How to connect to the battery pack	57
6.2 How to connect the remote control	58
6.3 How to inspect the functioning of the Glass Elevator before every use	60
6.3.1 Inspecting the controls on the control cabinet	60
6.3.2 Inspecting the controls on the remote control	61
6.3.3 Inspecting the elevator unit	62
7 OPERATION	64
7.1 How to move items with the Glass Elevator	65
7.1.1 How to move glass sheets up to roof level of the greenhouse	65
7.1.2 How to move items with the glass shards bin or tool storage bin	68
7.1.3 How to move glass sheets down to ground level	69
7.2 What to do in an emergency or an exceptional situation	70
7.3 How to do a reset after an interruption by the emergency stop	72
7.4 How to store the remote control after use	73
7.5 How to store the battery pack after use	74
7.6 How to detach the machinery from the van der Waay platform	75
8 INSPECTION, MAINTENANCE AND CLEANING	76
8.1 Safety instructions	76
8.2 Technical assistance	76
8.3 Maintenance and inspection schedule	77
8.3.1 Inspection before every use	77
8.3.2 Inspection after every use	78
8.3.3 Inspection and maintenance every month or every 100 running hours	78
8.4 Cleaning the machinery	80

9 FAULT FINDING, TROUBLESHOOTING AND REPAIR 81

9.1 Troubleshooting	81
9.2 How to repair the machinery	81

10 DISPOSAL 82

10.1 Disabling	82
10.2 Dismantling	82
10.3 Scrapping and disposal	83

APPENDICES 84

A – Spare parts and accessories	84
B – Documents and drawings	85
B1 - Electric wire diagram	85
C – Declaration of Conformity (DoC) of the machinery	86

1 ABOUT THIS HANDBOOK

1.1 DESCRIPTION OF THE USER

These instructions are intended for the end-user of the Glass Elevator. The end-user can be described as each person who interacts directly with the machinery. The end-user typically includes, but is not limited to the:

- Installer
- Maintenance personnel or technicians
- Operator
- Dismantling personnel

All use of the machinery shall only be carried out by an authorized, properly qualified and skilled person of 18 years or older, who:

- Has read and understood this manual
- Is familiar with operating similar equipment
- Knows how to control this machinery
- Is aware of all possible dangers and acts accordingly
- Is trained and authorized to work at heights

The required maintenance and/or inspection work as stated in this user manual is allowed by the aforementioned persons, unless clearly indicated when this is not allowed. Exceptions to this are the supplied lifting and climbing materials and personal protective equipment. These shall always be inspected and certified by approved companies/ authorities.

1.2 PURPOSE OF THESE INSTRUCTIONS

Thank you for purchasing this machinery. The purpose of this document is to make you familiar with the installation and use of the Glass Elevator, so that you can safely operate it as an end-user. This documentation should therefore be regarded as an integral part of the machinery.

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein.

This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications.

It is the duty of any such user or integrator to complete appropriate risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Van der Waay nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information that is contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

Furthermore, the manufacturer reserves the right to revise this publication at any time without incurring an obligation to notify any person of the revision. The content of these instructions is constantly monitored and, where necessary, modified. However, inconsistencies between these documents cannot be excluded. No guarantee is therefore given with regard to the completeness of these instructions. All images in this document are for illustrative purposes only.

1.3 RETAINING INSTRUCTIONS



IMPORTANT

READ CAREFULLY BEFORE USE

KEEP FOR FUTURE REFERENCE

Read and understand this manual and its safety instructions before using this machinery. Failure to do so can result in serious injury or death.

Follow all the instructions. This will avoid fire, explosions, electric shocks or other hazards that may result in damage to property and/or severe or fatal injuries.

The machinery shall only be used by persons who have fully read and understood the contents of this user manual.

Ensure that each person who uses the machinery has read these warnings and instructions and follows them.

Keep all safety information and instructions for future reference and pass them on to subsequent users of the machinery.

The manufacturer is not liable for cases of material damage or personal injury caused by incorrect handling or non-compliance with the safety instructions. In such cases, the warranty will be voided.

1.4 CONVENTIONS USED IN THIS MANUAL

The following style conventions are used in this document:

Bold

Names of machinery elements, options, processes, services, and utilities

Names of interface elements (such as windows, dialog boxes, buttons, fields, and menus)

Italic

Publication titles referenced in text

Emphasis (for example a new term)

Variables

1.5 EXPLANATION OF SAFETY WARNINGS

DANGER

"**DANGER**" indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

WARNING

"**WARNING**" indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

CAUTION

"**CAUTION**" indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

NOTICE

"**NOTICE**" indicates information considered important, but not hazard-related.

1.6 OBTAINING DOCUMENTATION AND INFORMATION

1.6.1 Internet

The latest version of the documentation is available at the following address:

<https://portal.vdwaay.nl/en/shop>.

1.6.2 Ordering documentation

Documentation, user instructions and technical information can be ordered by calling

Van der Waay B.V. at [+31 \(0\) 172 210311](tel:+310172210311).

1.6.3 Other languages

This is the original English user manual. Manuals in other languages are available upon request.

1.6.4 Documentation feedback

If you are reading Van der Waay documentation on the internet, any comments can be submitted via the website. Comments can also be sent to info@vdwaay.nl. We appreciate your comments.

1.6.5 Support and service

For inquiries, information, technical assistance, ordering user instructions or information about special tools and materials please contact:

Van der Waay B.V.
Finlandlaan 2
2391 PV Hazerswoude
The Netherlands
Tel.: +31 (0) 172 210311
info@vdwaay.nl

For ordering spare parts visit <https://portal.vdwaay.nl/shop> or send an email to salesteam@vdwaay.nl.

1.7 OTHER DOCUMENTATION

Besides this documentation, the following documentation is also available.

Always consult this documentation before using the machinery.

- Van der Waay Top Cleaner
- Van der Waay Glass Repair Cart
- Optional battery pack: *JC_handleidingBTP_ENG.pdf*
- Optional battery charger: *JC-manual_24-25.pdf*

1.8 WARRANTY

The limited warranty covers 12 months after the date of delivery. This warranty is limited for materials only. For the warranty cover of the optional battery pack consult the manual of the battery pack (see *1.7 Other documentation*). Any shipping costs are the responsibility of the owner of the machinery.

If requested, the defective part must be sent to the manufacturer within two weeks.

The warranty will be void in the following cases:

- Normal wear
- External force
- Improper maintenance
- Failure to comply with these installation and user instructions
- Unskilled and incorrect usage
- Damage caused by lightning
- Damage caused by freezing
- Damage caused by severe weather
- Modifications that have not been carried out or approved by the manufacturer

1.9 MODIFICATIONS AND REVISIONS

1.9.1 Product modifications

Year	Type	Modifications
2021		

1.9.2 Document revisions

Date	Version	Document changes
2021		

2 SAFETY

2.1 SAFETY INSTRUCTIONS

WARNING

Read and understand this manual and its safety instructions before using the machinery.

Failure to do so can result in serious injury or death.

2.1.1 Safety information related to the intended use and reasonably foreseeable misuse

- The machinery shall only be used for applications as described by the manufacturer. All other applications are unprofessional and considered dangerous. The manufacturer cannot be held liable for damage resulting from errors, unintended or unprofessional use of the machinery.
- This machinery is not intended for use by persons (including children) with restricted physical, sensory or intellectual capability or lack of experience and/or knowledge.
- Only use the machinery within the specified performance limits as described in these instructions.

2.1.2 Personal protective equipment

- Always use appropriate personal protective equipment when working with the machinery, such as cut resistant gloves, forearm cut protection, safety shoes (minimum class S3), safety goggles, safety harness, hard hat, and protective overalls.
- When performing work on the van der Waay platform, make sure you wear a certified safety harness and a certified double lifeline of 2 meters (6.5 ft) in length.

2.1.3 Safety information related to transporting and lifting

- Always make sure that the machinery is fixed during transportation, so there is no possibility of sudden movements or instability.
- Lifting work shall only be carried out by authorized persons.
- When moving the machinery, use only approved lifting tools with sufficient lifting capacity.
- Always carry out lifting with more than one person, even when using lifting tools.
- Only use a certified lifting sling with a minimum length of 1 meter (3.3 ft.), attached to a certified bow shackle, each with a minimum capacity of 1000 kg (2200 lbs).
- Only lift the Glass Elevator by connecting a certified lifting sling and bow shackle to the pad eye. Never lift the Glass Elevator by the glass rack or any other part of the construction.
- Make sure you carry out lifting work on a flat and hardened surface. Apply road plates if necessary.
- Always fence off the work area for unauthorized persons prior to installation. Ensure public safety, depending on the situation, for example by securing the area with fences, barrier tape or traffic cones, if working near a public road or other works.
- Make sure that there are no persons within the turning range of the crane during lifting or construction work.

2 SAFETY

2.1.4 Installation safety information

- Installation and commissioning shall be carried out by a properly qualified and skilled installer with due observance of the applicable rules and legislation. The installer is responsible for employing skilled and qualified personnel.
- Always fence off the work area from unauthorized persons prior to installation. Ensure public safety, depending on the situation.
- During installation be mindful of personal injuries. Wear appropriate personal protective equipment such as gloves, safety shoes (minimum class S3), safety goggles, safety harness, hard hat and protective overalls.
- Check the machinery for damage before installation. If there is any visible damage, do not install the machinery. Contact the manufacturer.
- Inform yourself properly with respect to the prescribed safety devices on the basis of the EU directives and local regulation on working at heights. All local regulations must be followed.

2.1.5 Electrical safety information

- Check the machinery and the cables for damage before electrical installation. If there is any visible damage, a strong odor or excessive heating of components, disconnect the power supply immediately and do not use the machinery.
- Protect disconnected plugs against rain and keep them away from moisture.
- When the Glass Elevator is powered by a battery pack, always switch off the main switch after use.

2.1.6 Safety information prior to the use

- Never load more than 40 kg (88 lbs) of items onto the glass rack.

2.1.7 Safety information related to the use

- Be vigilant at all times, and always be careful what you are doing. Do not use the machinery if you are lacking in concentration or awareness, or are under the influence of drugs, alcohol or medication. Even a moment of inattentiveness can lead to serious accidents and injuries when using the machinery.
- Never stand directly underneath the Glass Elevator, during lifting tasks and always be aware of possible falling objects. Failure to do so can result in serious injury or death.
- Do not use the machinery after an earthquake. Keep a safe distance from the greenhouse and machinery until they have been fully inspected by a qualified and trained person.
- Never use the machinery with wind speeds above 3 m/s (6 mph).
- Never use the machinery during a thunderstorm.
- Use a bright headlamp when working in the dark.
- In case of an accident, stop using the machinery and consult a doctor if necessary.
- Never use the Glass Elevator as a ladder.
- Beware of any moving or hinging parts of the Glass Elevator. Do not place any fingers or hands where they can get jammed.

2.1.8 Safety instructions related to working at heights

- Always carry out work with two people. Make sure there is always a third person on standby who checks your safety and, if necessary, can assist during emergency situations.
- Make sure you can sound an alarm when necessary. Always carry a mobile phone or other means of communication with you.
- Make sure there is sufficient work lighting when working in the dark.
- Always wear head protection and, if necessary, sun protective clothing. Use sunscreen to protect exposed body parts against the sun.
- Wear protective clothing when it is raining or for use against the cold.
- Make sure a first aid kit is present in the vicinity of the Glass Elevator.

2 SAFETY

2.1.9 Maintenance safety information

- Always shut off the machinery and disconnect the power source before performing any maintenance or repair work.
- All cleaning, inspection and maintenance tasks shall only be carried out by qualified and skilled personnel. To ensure the operational safety of the machinery, regular maintenance shall be carried out by qualified personnel in accordance with the manufacturer's instructions.
- Maintenance and inspection should be done on a frequent basis. If there is any visible damage, a strong odor or excessive overheating of components, stop using the machinery. Non-frequent maintenance shortens the activity and life span of the machinery and voids the warranty.
- When the Glass Elevator is powered by the 1X8 output of the van der Waay Top Cleaner platform, always disconnect the power before opening the control cabinet.
- When the Glass Elevator is directly mounted to the facade of the greenhouse, always shut off the machinery according to the LOCK OUT-TAG OUT method before opening the control cabinet.

2.1.10 Repair and modification safety information

- Only open or repair parts of the machinery when you know what you are doing. If you have any doubts, contact the manufacturer.
- Use only original accessories and spare parts. You can always order spare parts from the webshop <https://portal.vdwaay.nl/en/shop> or by sending an email to salesteam@vdwaay.nl.
- Alterations to the machinery and technical modifications are not permitted without written permission of the manufacturer.

2.2 GRAPHICAL SYMBOLS AND SAFETY INFORMATION ON THE MACHINERY

Warning stickers are affixed to the Glass Repair Cart to warn the user about possible dangers when performing certain actions. The meaning of the warning stickers is explained in the table below.

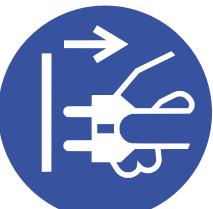
2.2.1 Explanation of safety information on the Glass Elevator

NOTICE

Depending on the power source your Glass Elevator is equipped with, not all safety information described in this table will apply and be found on your machine.

Sticker	Meaning
	Instructs to read the manual before use.
	Indicates the use of cut resistant forearm protection.
	Indicates the use of cut resistant gloves.

2 SAFETY

	Indicates the use of safety footwear.
	Indicates the use of a hard hat.
	Indicates the use of safety goggles.
	Indicates location of lifting point
	<p>Instructs to disconnect the power before opening the control cabinet</p> <p>NOTICE Only applies to the version with a connector suitable for the 1X8 output of the van der Waay Top Cleaner platform.</p>
	<p>Lock out Tag out before opening the control cabinet.</p> <p>NOTICE Only applies to the version which is not attached to a van der Waay platform, but directly to the facade of the greenhouse.</p>

	<p>Instructs to switch-off the main switch after use.</p> <p>NOTICE Only applies to the version powered by a battery pack.</p>
	<p>Warns the operator about falling objects.</p>
	<p>Warns the operator and technician about rotating parts.</p>
	<p>Warns the operator about jamming of fingers.</p>
	<p>Warns the operator and technician about high voltage.</p> <p>NOTICE Only applies to the version powered by a high voltage connection (120 to 480 volts).</p>
	<p>Warns the operator of the maximum load capacity of the Glass Rack is 40 kg (88 lbs).</p>
 	<p>Warns the operator not to use the machinery at wind speeds above 3 m/s (6 mph).</p>

2 SAFETY

	Warns the operator not to use the machinery during a thunderstorm.
 	Warns the operator not to use the machinery below -0.5 °C (31 °F).
	Warns people to not climb the Glass Elevator.

2.2.2 Explanation of safety information on the battery pack (optional)

Warning stickers are affixed to the Glass Repair Cart to warn the user about possible dangers when performing certain actions. The meaning of the warning stickers is explained in the table below.

Sticker	Meaning
	Instructs the operator to read the manual before use.
	Warns the operator of explosive substances.
	Warns the operator of flammable substances.
 ↑ 50°C, 121°F	Warns the operator not to expose the battery pack to a temperature of 50 °C (121 °F) or more.

3 DESCRIPTION OF THE MACHINERY

3.1 INTENDED USE

The Glass Elevator is intended to be used for:

- Vertically transporting glass sheets to the roof level of the greenhouse
- Vertically transporting tools, batteries and other accessories up to 40 kg (88 lbs) to the roof level of the greenhouse
- Vertically transporting glass shards to the ground level

The Glass Elevator is not intended to be used:

- For elevating people
- As a ladder
- At temperatures lower than 0.5°C (33°F)
- At wind speeds of 3 m/s (6 mph) or more
- During thunderstorms

Only use the machinery within the specified performance limits. The machinery must only be used according to the instructions as described in this manual. All use other than described in this manual is seen as unintended use. The machinery shall be used with original accessories and components only.

3.2 GENERAL DESCRIPTION OF THE MACHINERY

The Glass Elevator is a machine with which glass sheets can be transported vertically to the roof level of a greenhouse. These glass sheets can be unloaded at the roof level and are to be used for replacing broken glass sheets on the roof of the greenhouse. Additionally, a glass shards bin and tool bin can be used with the Glass Elevator to transport broken glass sheets down, or tools and a battery pack up. The glass elevator can carry up to 40 kg (88 lbs). The machine can be connected to a van der Waay Platform, or directly to a greenhouse facade. For the latter, a tailor-made suspension will be designed by Van der Waay upon request.

Depending on the power source available at the place where the Glass Elevator is installed, the machine is equipped with one of the following options:

- A connector suitable for the 1X8 output of the van der Waay Top Cleaner platform
- A connector suitable for the optional battery pack
- A suitable power plug for any grounded socket with earth leakage protection that is connected in accordance with the legal guidelines.

The Glass Elevator contains an elevator unit with a pad eye to lift the machinery with a crane or telehandler during installation. It contains two suspension hooks to hang the machinery to a van der Waay platform. The elevator unit contains all electrical parts, such as the electric motor and three safety features. It has cable-break protection, which prevents the glass rack from falling down when the cable breaks and two limit switches. The limit switch's upper position shuts off the electric motor when the glass rack has reached the top position and the limit switch slack cable shuts off the electric motor when the tension on the cable is lost, either by an object blocking the glass rack as it moves down or when the glass rack has reached the bottom position.

3 DESCRIPTION OF THE MACHINE

Furthermore, the elevator unit contains a glass rack which holds one glass sheet and a glass sheet lock which secures the glass sheet while transporting it. Once the glass rack is in the top position it can be tilted 90 degrees, by the use of a gas spring. This enables the user to unload the glass sheet properly. The glass rack is connected to a steel cable which is rolled up on a cable reel by the electric motor. Equipped with rubber guide wheels, the glass rack moves up and down vertically over a steel rail, called the legs. These legs have a maximum length of 9 meters (354 inch) and consist of 2 parts: a base set of 6 meters (236 inch) and a set of extension legs of 3 meters (118 inch). Depending on the height of the greenhouse, these extension legs can be cut to the required size. Two mounting beams and two fixation brackets connected to the legs and the van der Waay platform construction provide rigidity to the structure of the Glass Elevator. An anti-climb protection at the bottom of the legs prevents persons from climbing the Glass Elevator.

The machine can be operated from the control cabinet at the top of the Glass Elevator or with a remote control which can be connected to the control unit. The remote control contains a long cable, enabling the operator to stand on the ground level at a safe distance from the Glass Elevator. The remote control contains an emergency stop button and the control cabinet contains both an emergency stop button and a reset button.

3.3 MACHINERY ELEMENTS

3.3.1 Glass Elevator elements

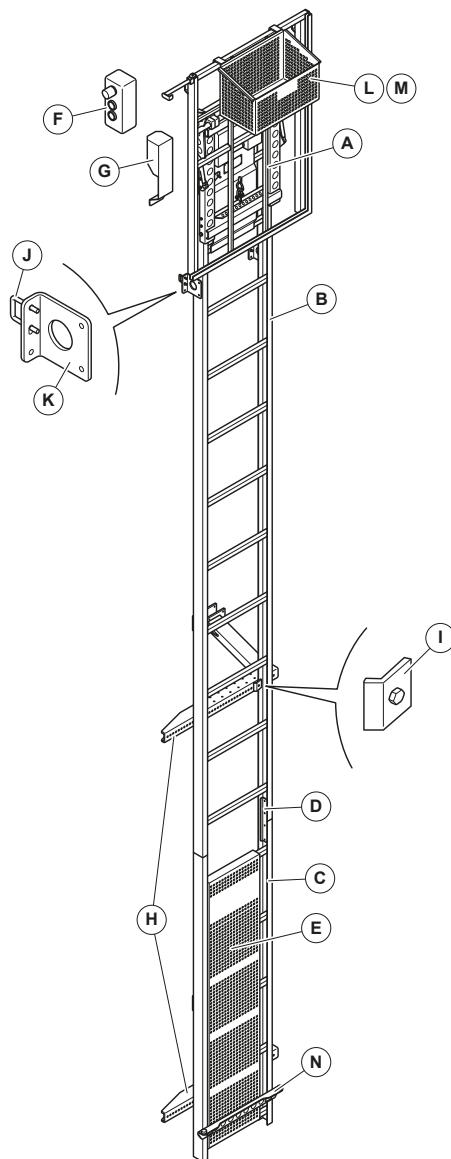


Fig. 1 Elements of the Glass Elevator

A. Elevator unit	H. 2 x platform mounting beam
B. Legs	I. 6 x fixation plate
C. Extension legs	J. 2 x platform fixation bracket
D. Extension leg connectors	K. Fixation bracket flange
E. Anti-climb protection	L. Glass shards bin (optional)
F. Remote control	M. Tool bin (optional)
G. Remote control storage enclosure	N. End stopper

3 DESCRIPTION OF THE MACHINE

3.3.2 Important parts of the elevator unit

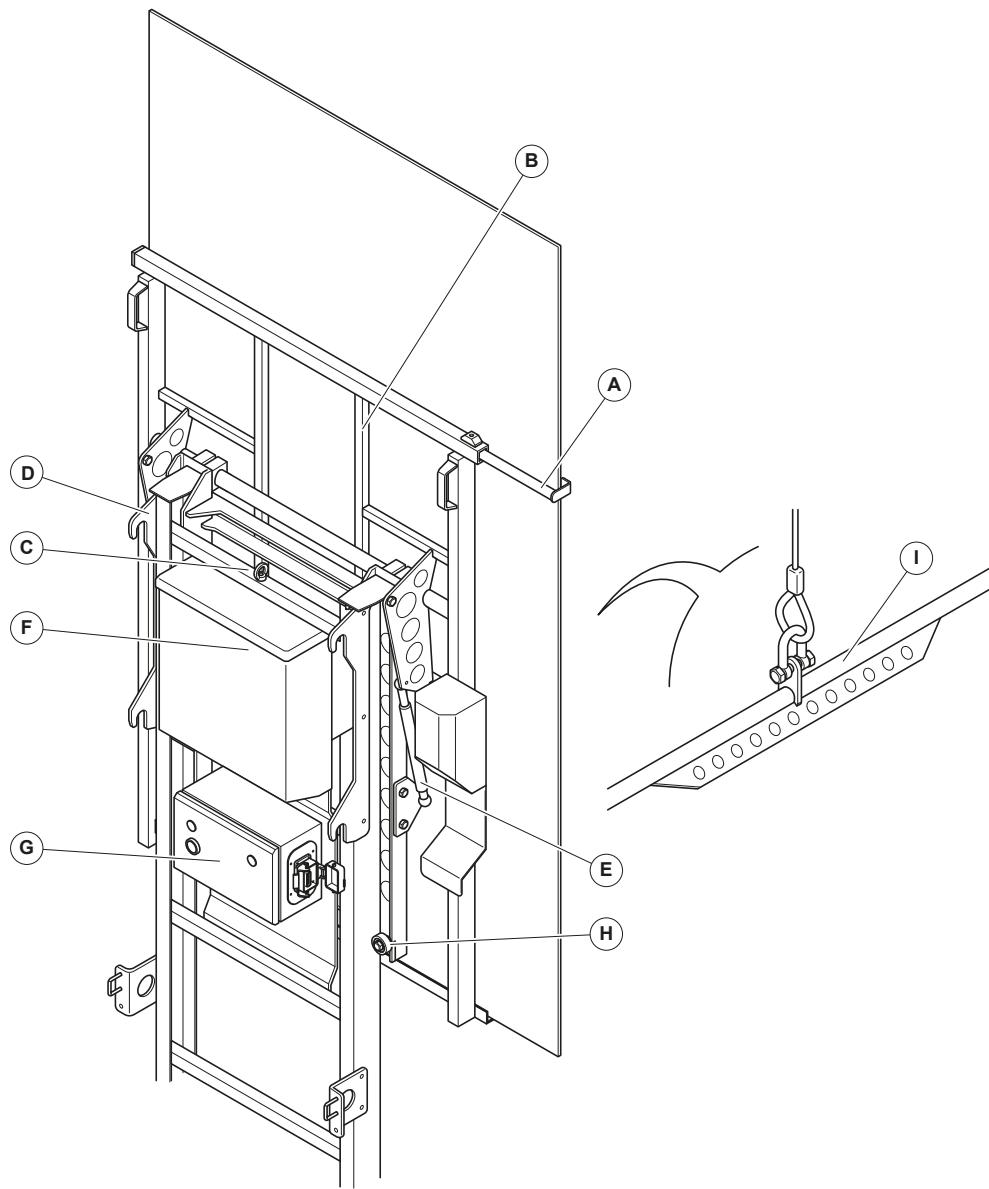


Fig. 2 Important parts of the elevator unit

A. Glass sheet lock	F. Motor compartment
B. Glass rack	G. Control cabinet
C. Pad eye	H. Guide wheel
D. Suspension hooks	I. Cable break protection
E. Gas spring	

3.3.3 Inner parts of the motor compartment

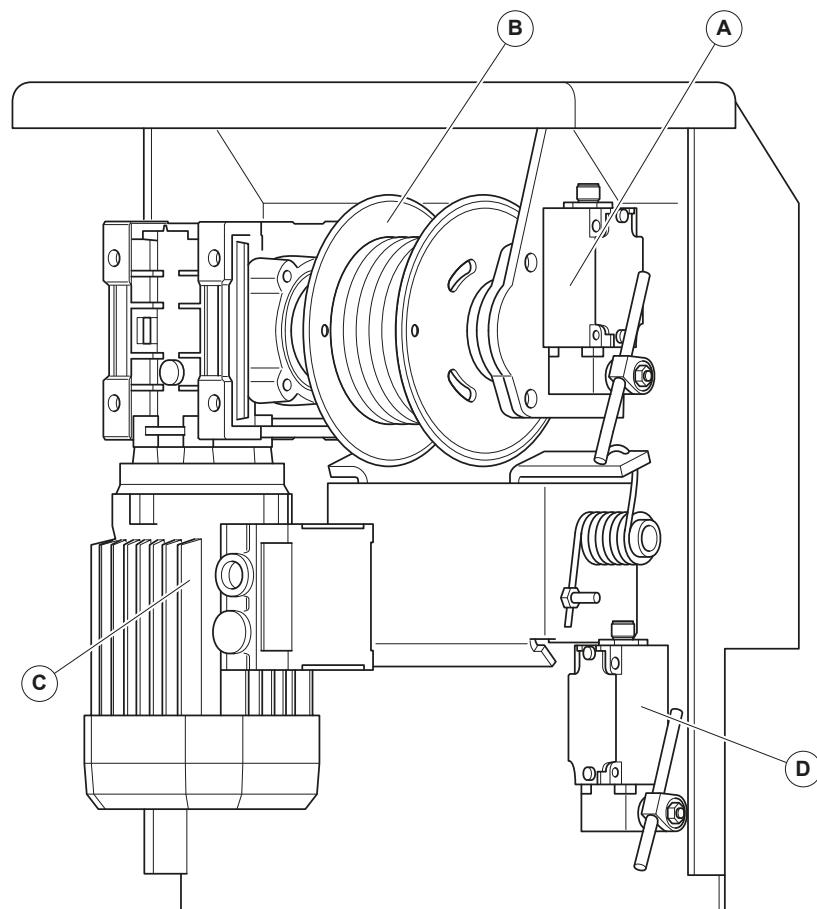


Fig. 3 Inner parts of the motor compartment

- A. Limit switch slack cable
- B. Cable reel
- C. Electric motor
- D. Limit switch upper position

3 DESCRIPTION OF THE MACHINE

3.4 UNDERSTANDING CONTROLS

3.4.1 Controls of the Glass Elevator

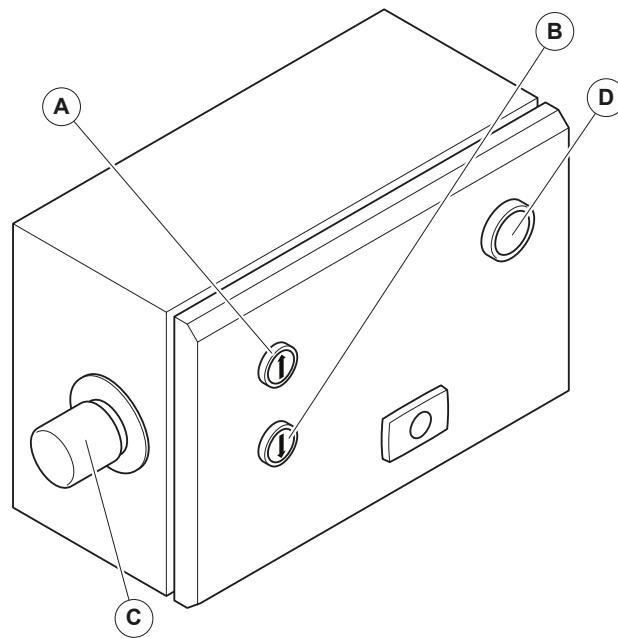


Fig. 4 Controls on the Glass Elevator

A. Upwards button	C. Emergency stop button
B. Downwards button	D. Reset button

3.4.2 Controls of the remote control

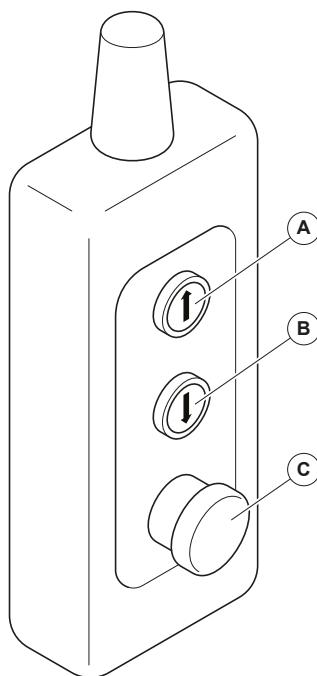


Fig. 5 Controls of the remote control

- A. Upwards button
- B. Downwards button
- C. Emergency stop button

3 DESCRIPTION OF THE MACHINE

3.5 EXPLANATION OF VISUAL AND AUDITORY SIGNALS

No.	Signal	Meaning
A	Blue light on	Emergency stop button activated, Reset required before continuing.
B (optional)	Sounds alarm	Low battery capacity <20%, Replace battery pack immediately.

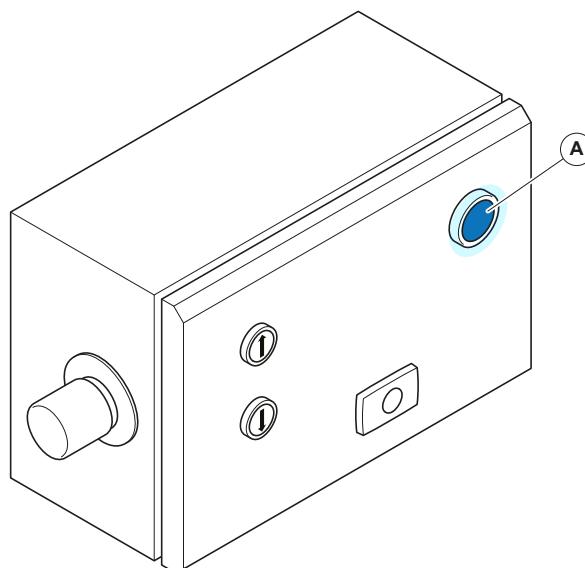


Fig. 6 Visual signal on the Glass Elevator

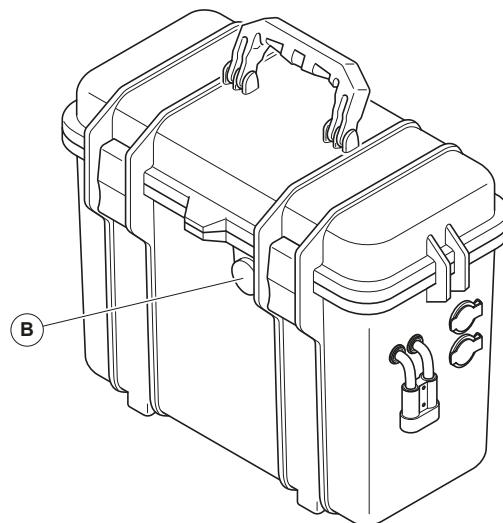


Fig. 7 Auditory signal battery pack

3.6 TECHNICAL DATA

3.6.1 Position of the type identification plate on the Glass Elevator

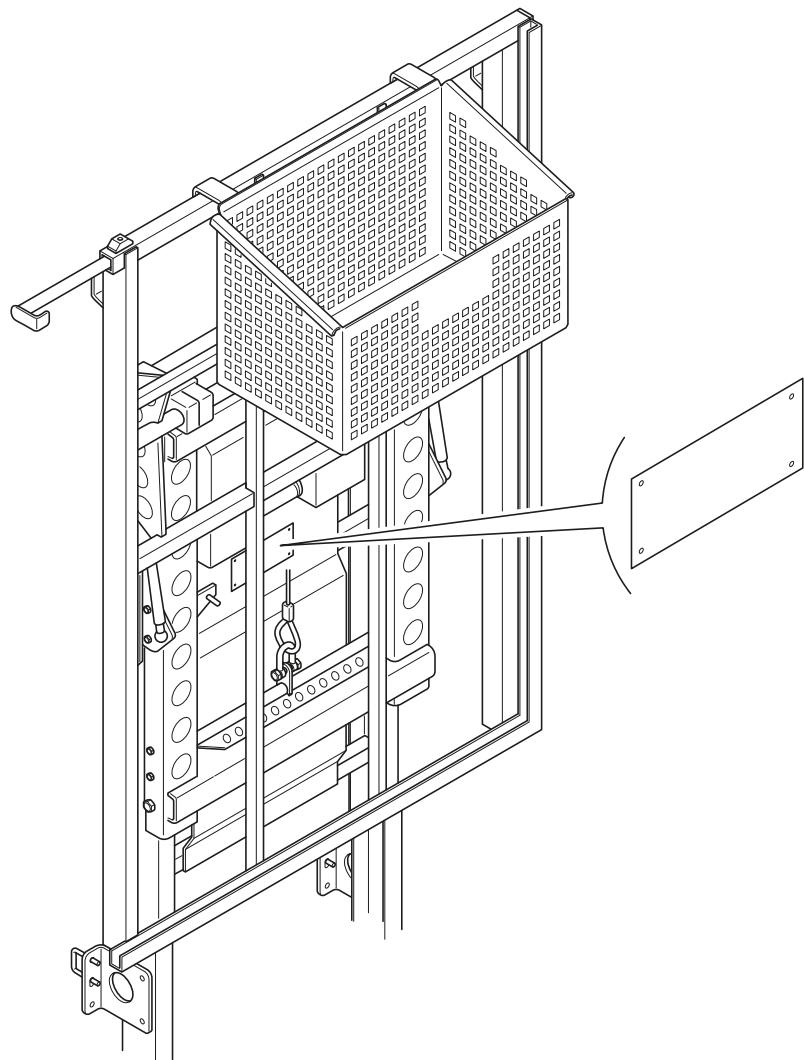


Fig. 8 Position of type identification plate on the Glass Elevator

3 DESCRIPTION OF THE MACHINE

3.6.2 Technical specifications for the Glass Elevator

Glass Elevator	Unit	Value
Designation	-	Greenhouse glass sheet Elevator
Model	-	GE
Manufacturer	-	Van der Waay B.V. Finlandlaan 2, 2391 PV Hazerswoude The Netherlands
Year of construction	-	Refer to type identification plate
Country of manufacture	-	The Netherlands
Technical life span	-	10 years
Max carrying load	kg (lbs)	40 (88)
Operating temperature	°C (°F)	0.5 ... +49 (33 ... +120)
Operation	-	Electric
Max. power	kW	0.25
Velocity	m/min (ft/min)	5 (16)
Voltage AC versions	VAC	110, 230, 400, 480
Voltage DC versions	VDC	24
Max. current AC versions	A	2.3, 1.1, 0.63, 0.53
Max. current DC versions	A	10.5
A-weighted emission sound pressure level at workstations	dB (A)	<70
Peak C-weighted instantaneous sound pressure value at workstations	Pa	Does not exceed 63
A-weighted sound power level emitted by the machinery at workstations	dB(A)	Does not exceed 80
Weight	kg (lbs)	Refer to the identification plate.

3.6.3 Technical data for the battery pack and charger

A suitable battery pack and battery pack charger are sold as optional accessories, when your Glass Elevator is equipped with a power plug for a battery pack.

Battery pack	Unit	Value
Operation	-	Electric
Max. power	kW	1.2
Voltage	V	25.6
Max. current	A	140
Weight	kg (lbs)	14.8 (326)

Battery charger	Unit	Value
Operation	-	Electric
Max. power	kW	0.73
Voltage	VAC	110-240
Frequency	Hz	45-65
Max. current	A	25
Weight	kg (lbs)	1.8 (39.7)

4 TRANSPORT AND HANDLING

4.1 HOW TO TRANSPORT THE MACHINERY

4.1.1 Dimensions, mass and center of gravity

4.1.1.1 Dimensions in milimeters (inches)

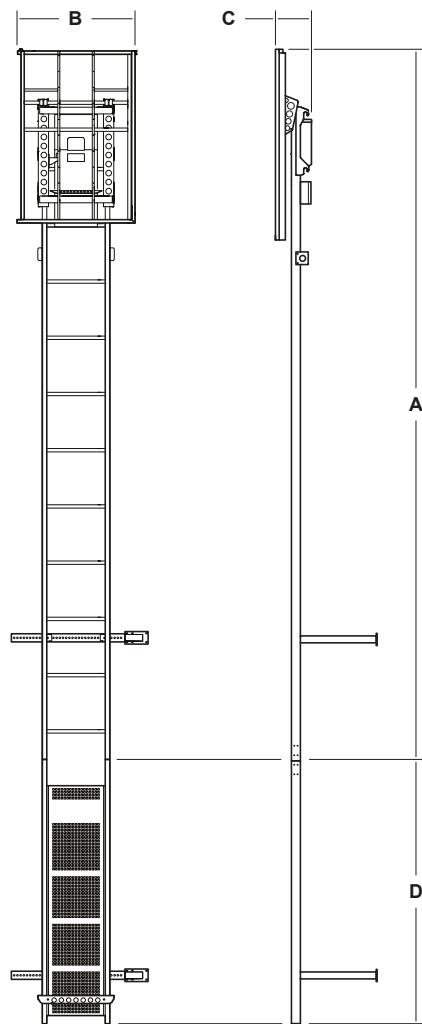


Fig. 9 Dimensions of Glass Elevator

Ref	Dimension
A	6,200 (244)
B	1,100 (43.31)
C	320 (12.6)
D	Max. 3,000 (118.1)

4.1.1.2 Mass

Refer to the type identification plate for the weight of the Glass Elevator.

4.1.1.3 Center of gravity and location of lifting point

WARNING

Only lift the Glass Elevator by connecting a certified lifting sling and bow shackle to the pad eye. The machinery's center of gravity and the pad eye are shown in the image below.

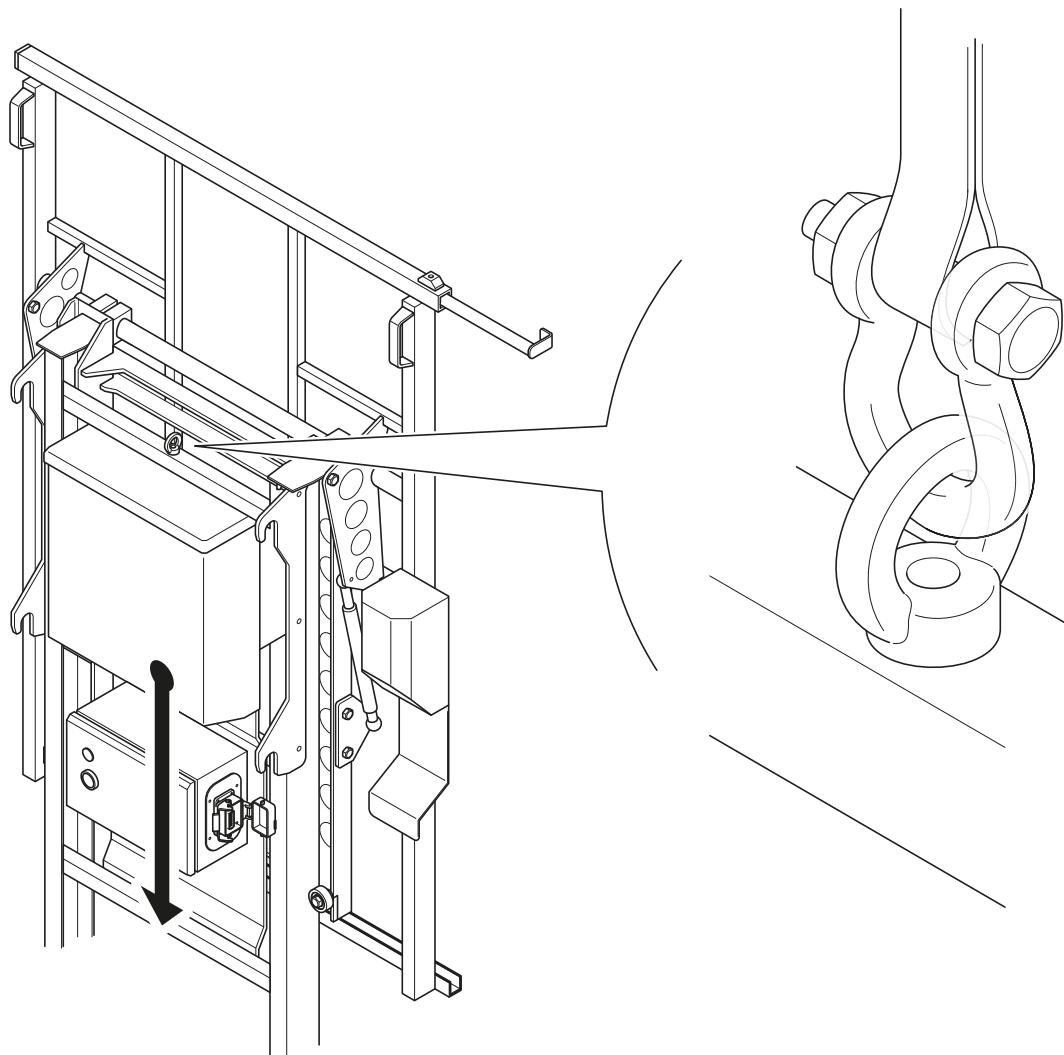


Fig. 10 Center of gravity and location of pad eye

4 TRANSPORT AND STORAGE

4.1.1.4 Lifting, handling and transporting the machinery

⚠️ WARNING

Always make sure that the machinery is fixed during transportation, so there is no possibility of sudden movements or instability.

To lift, handle and transport the Glass Elevator:

- Only use a certified lifting sling with a minimum length of 1 meter (3.3 ft.), attached to a certified bow shackle, each with a minimum capacity of 1000 kg (2200 lbs) to lift the Glass Elevator.
- Do not stand or walk under the lifted machinery.
- Only lift the glass elevator by the pad eye.
- Place the machinery horizontally on a trailer with a flat surface and sufficient capacity.
- Secure the machinery against shocks by fixing the legs and the glass rack of the Glass Elevator with clamping straps with sufficient strength, through the legs. Make sure there is no possibility of sudden movements or instability.
- Transport the machinery carefully to the desired location.

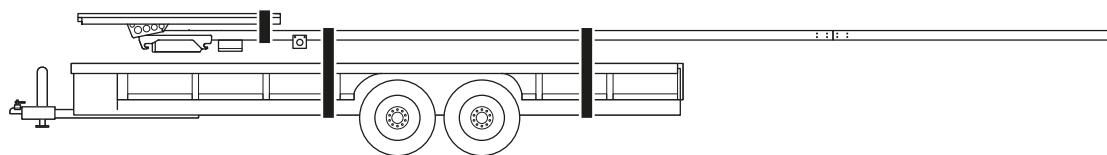


Fig. 11 Securing the machinery with clamping straps to a trailer

5 INSTALLATION

WARNING

- Installation and commissioning shall be carried out by a properly qualified and skilled installer with due observance of the applicable rules and legislation.
The installer is responsible for employing skilled and qualified personnel.
- Always fence off the work area from unauthorized persons prior to installation.
Ensure public safety, depending on the situation.
- During installation be mindful of personal injuries. Wear appropriate personal protective equipment such as gloves, safety shoes (minimum class S3), safety goggles, safety harness, hard hat and protective overalls.
- Check the machinery for damage before installation. If there is any visible damage, do not install the machinery. Contact the manufacturer.
- Inform yourself properly with respect to the prescribed safety devices on the basis of the EU directives and local regulation on working at heights.
All local regulations must be followed.

NOTICE

This manual only describes how to install the Glass Elevator to a van der Waay platform. When installing the Glass Elevator directly on the facade of the greenhouse, contact van der Waay for a tailor made suspension and follow the installation instructions that come with it.

5 INSTALLATION

5.1 HOW TO CHECK THE CONTENTS OF THE DELIVERY

Make sure that your delivery contains the following items (exact scope of delivery depends on what you ordered and how it is shipped):

- Elevator unit with 6 meter (19.69 ft) legs
- Extension legs
- Extension leg connectors
- Anti-climb protection
- End stopper
- 6 x fixation plates
- Bolts, nuts and screws
- Remote control
- Remote control storage enclosure
- 2 x platform mounting beam
- 2 x platform fixation bracket
- Glass shards bin (optional)
- Tool bin (optional)
- Battery pack (optional)
- Battery pack charger (optional)

5.2 HOW TO INSTALL THE GLASS ELEVATOR

CAUTION

Installation of the Glass Elevator shall only be done by qualified persons.

5.2.1 Hanging the Glass Elevator in position

WARNING

- When performing work on the van der Waay platform, make sure you wear a certified safety harness and a certified double lifeline of 2 meters (6.5 ft) in length.
- Lifting tasks shall only be carried out by authorized persons.
- Lifting tasks shall always be conducted by a minimum of two authorized persons.
- Only use tested lifting gear with sufficient lifting capacity.
- Make sure that the loading and unloading surface is flat and hardened. Use steel road plates if necessary.
- Always fence off the work area from unauthorized persons prior to lifting. Ensure public safety, depending on the situation.
- Make sure there is no-one inside the rotating area of the telehandler or crane during lifting activities.
- During lifting, be mindful of personal injuries. Wear appropriate personal protective equipment such as, safety shoes (minimum class S3), safety goggles, safety harness, hard hat, and protective overalls.
- Only use a certified lifting sling with a minimum length of 1 meter (3.3 ft.), attached to a certified bow shackle, each with a minimum capacity of 1000 kg (2200 lbs).
- When going up onto the roof of the greenhouse always make sure you wear a certified safety harness that is leashed with a certified fall arrest device.
- Never use a ladder to get onto the roof of a greenhouse, unless the ladder is a part of the van der Waay platform.
- Never use the Glass Elevator as a ladder.

5 INSTALLATION

Required machinery and tools:

- Telehandler or crane
- van der Waay platform

To lift and hang the Glass Elevator on the van der Waay platform:

1. Make sure the Glass Elevator contains the **legs** and is transported on a suitable trailer to the location where it will be connected to the van der Waay platform.
2. Make sure that the crane or telehandler is located on a flat and hardened surface while lifting the Glass Elevator.
3. Make sure that the **glass rack** is in the vertical position.
4. Attach the certified **bow shackle A** to the **pad eye B** of the Glass Elevator and to the certified **lifting sling C**, which is connected to the telehandler or crane.

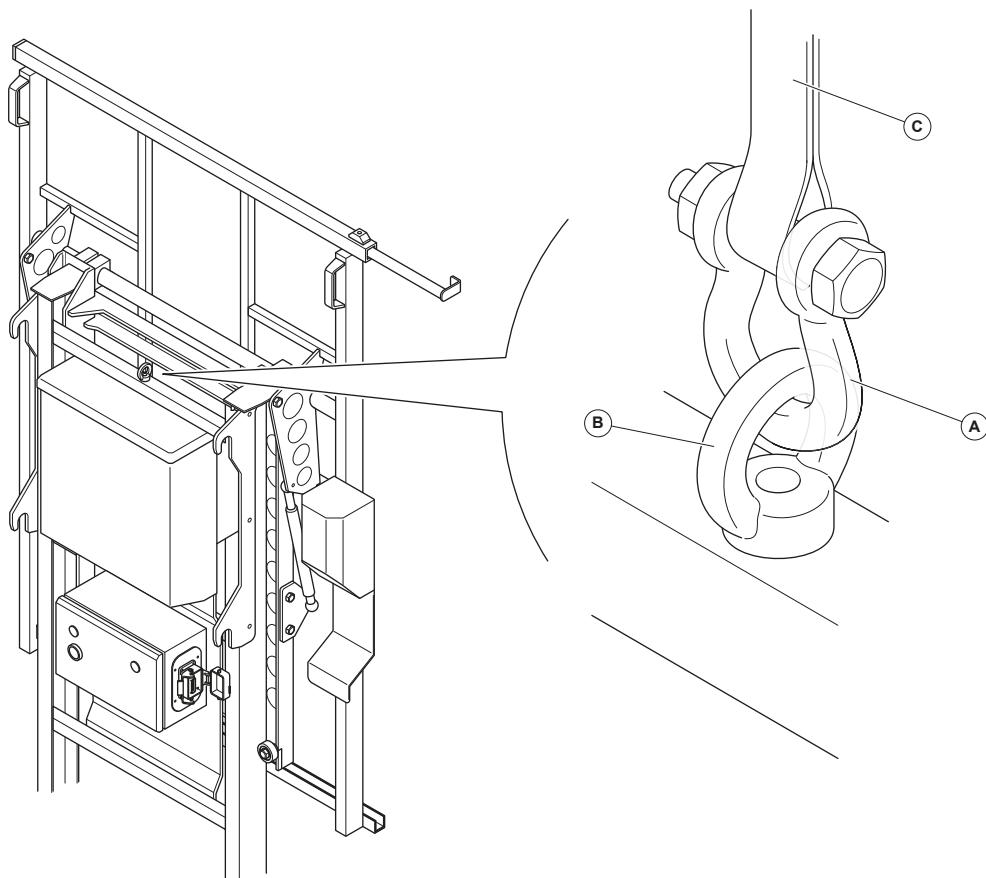


Fig. 12 Attaching a certified lifting sling with bow shackle to the Glass Elevator

5. Attach a guiding rope to the **elevator unit** and make sure one qualified person is on the ground to guide the load while lifting. **WARNING!** Never loop the rope around your hand, arm or body when guiding the load, to avoid being dragged along with the load.
6. Lift the Glass Elevator with enough clearance above any object and move it to the side of the van der Waay platform where it will be hung, with the **suspension hooks** slightly above the railing of the van der Waay platform.

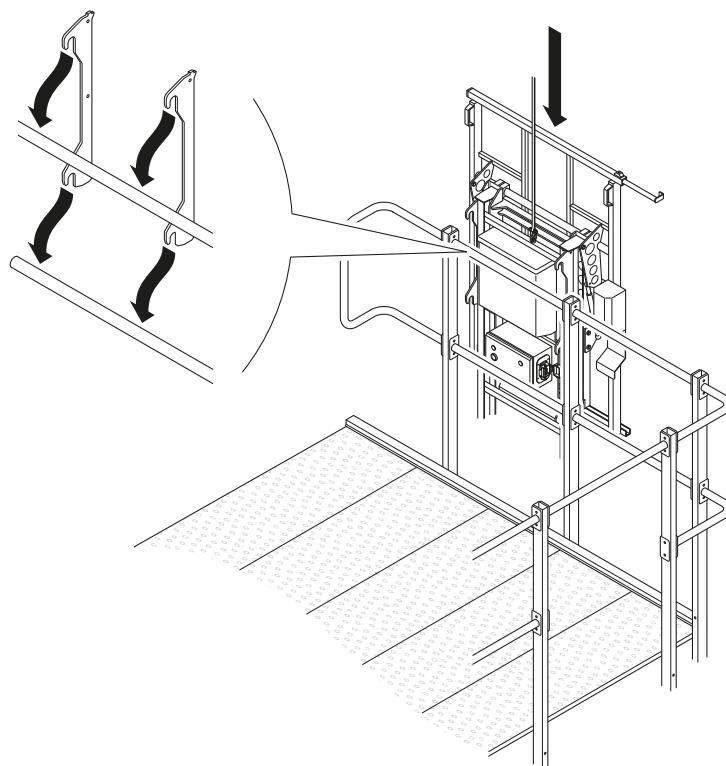


Fig. 13 Positioning the Glass Elevator on the railing

7. Make sure that one qualified person is standing on the van der Waay platform. **WARNING!** When performing work on the van der Waay platform, make sure you wear a certified safety harness and a certified double lifeline of 2 meters (6.5 ft) in length.
8. Lower the Glass Elevator carefully so that the **suspension hooks** hang on the railing of the van der Waay platform. **NOTICE** The person on the van der Waay platform should guide the Glass Elevator when necessary.
9. Have the person on the van der Waay platform detach the guiding rope and the certified bow shackle, from the pad eye on the Glass Elevator.
10. Continue to 5.2.2 Securing the Glass Elevator to fully install the Glass Elevator.

5 INSTALLATION

5.2.2 Securing the Glass Elevator

Required tools and accessories:

- Spanner 10mm
- Spanner 13mm
- Spanner 17mm
- 4 x Bolts M10x110mm (*For the rear end of the platform mounting beam*)
- 4 x Nuts M10 (*For the rear end of the platform mounting beam*)
- 2 x Bolts M10x40mm (*For the fixation plates*)
- 2 x Nuts M10 (*For the fixation plates*)
- 4 x Nuts M6 (*For the platform fixation bracket*)
- Washers

To secure the Glass Elevator

1. Make sure that the Glass Elevator is hanging on the van der Waay platform, see *5.2.1 Hanging the Glass Elevator in position*.
2. Move the scissor lift with one qualified person to approximately half of the height of the van der Waay platform, on the side where the Glass Elevator is hanging down from.

3. Install one **platform mounting beam**, at approximately half the height of the van der Waay platform. To install the **platform mounting beam**:
 - a. Connect the rear of the **platform mounting beam** to the van der Waay platform, by using four M10x110mm bolts, four M10 nuts and eight washers.

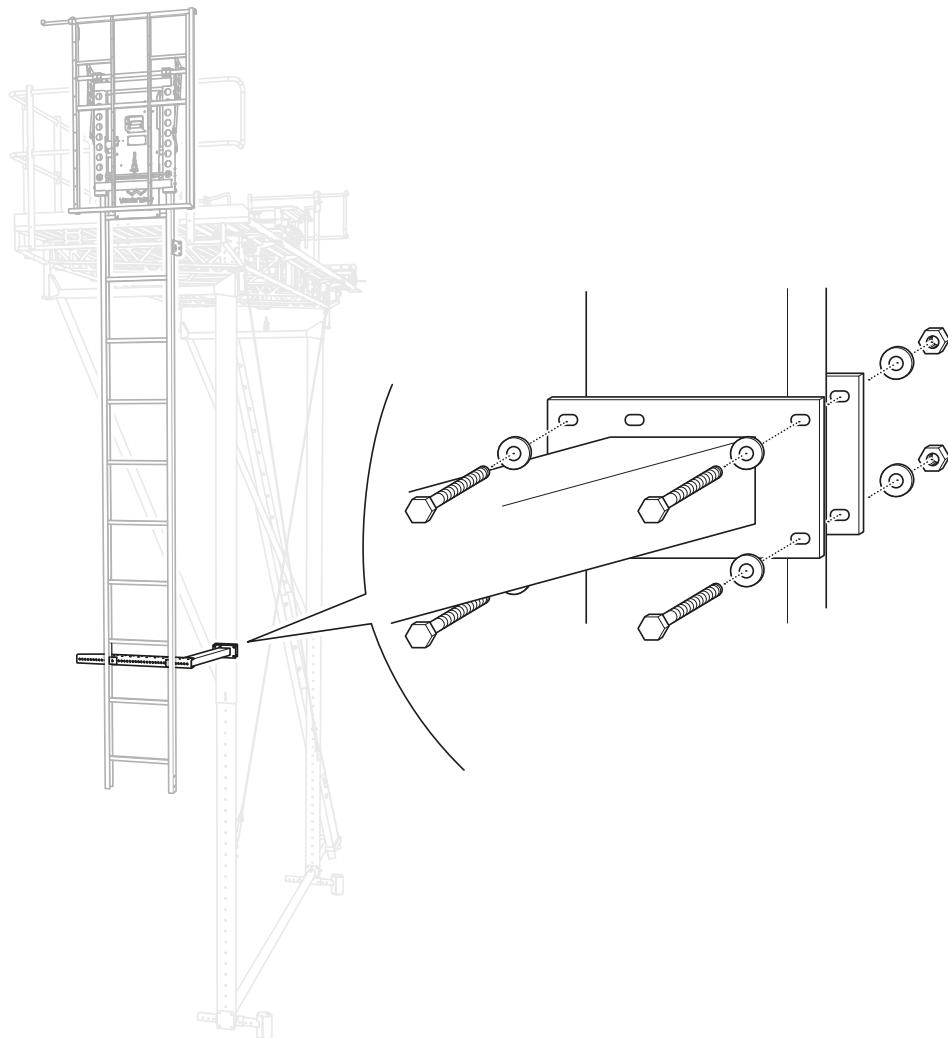


Fig. 14 Connect the rear of the platform mounting beam to the van der Waay platform

5 INSTALLATION

- b. Attach two **fixation plates** to the **platform mounting beam** with one M10x40mm bolt, one M10 nut and two washers for each **fixation plate**. Each **fixation plate** shall clamp one leg to the **platform mounting beam**.

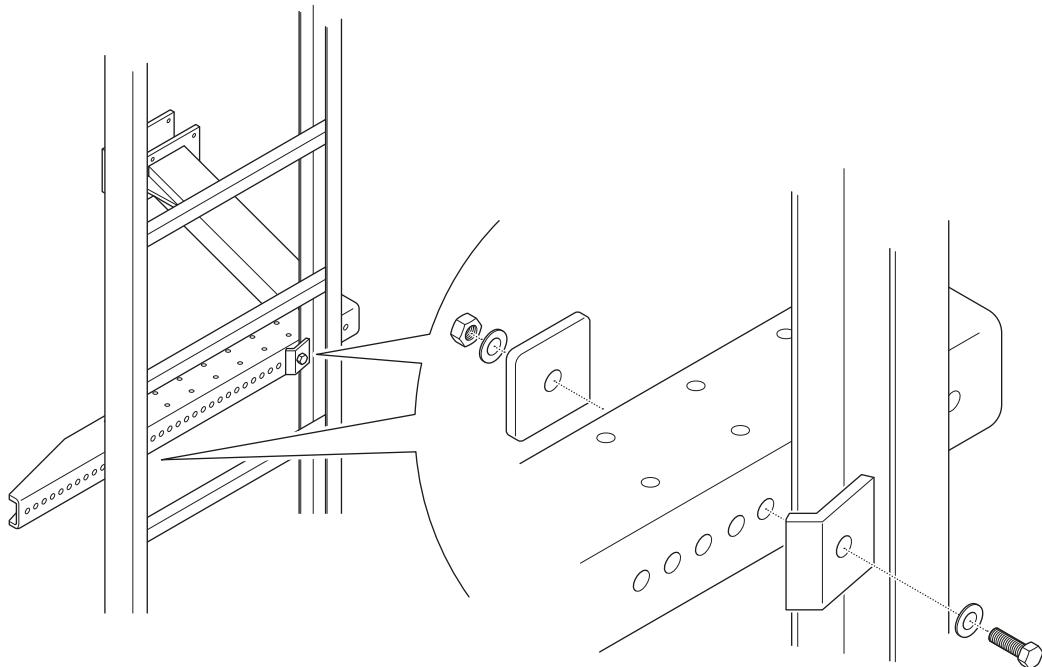


Fig. 15 Attach platform mounting beam to the Glass Elevator with a fixation plate

4. Use the two **platform fixation brackets** to attach the top of the Glass Elevator to the van der Waay platform. To attach the **platform fixation brackets**:
 - a. Make sure that the scissor lift is next to the platform at the same height as the **fixation bracket flanges**.

b. Put each **platform fixation bracket** around the van der Waay platform, through the holes of the **fixation bracket flanges** and attach it with two M6 nuts and two washers.

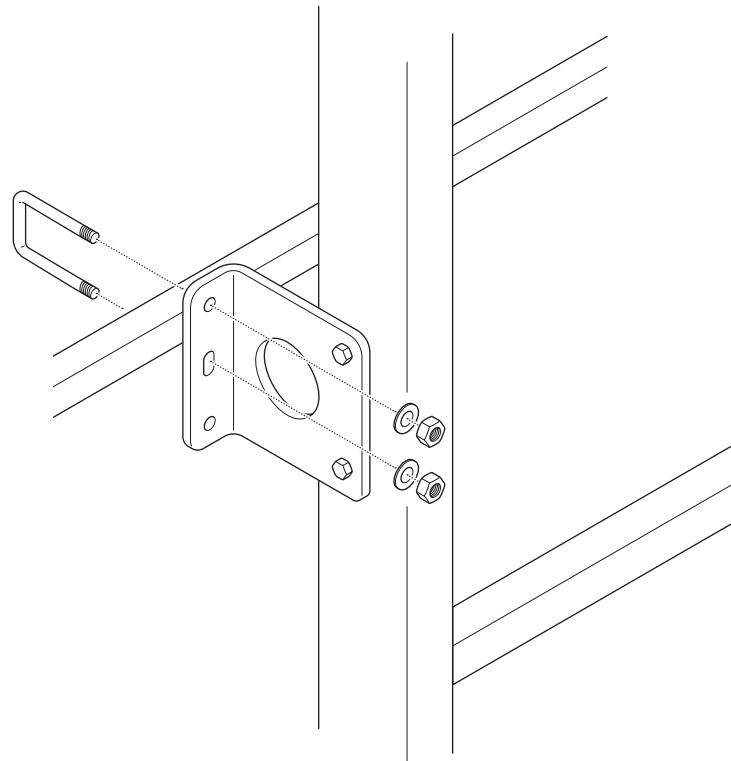


Fig.16 Attach the platform fixation brackets to the fixation bracket flanges

5. Continue to 5.2.3 *Cutting the extension legs to size* to size to fully install the Glass Elevator.

5 INSTALLATION

5.2.3 Cutting the extension legs to size

WARNING

Read and understand the manual before operating a power tool. Always stay alert, watch what you are doing and use common sense. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury or death.

Required machinery:

- Scissor lift

Required machinery:

- Angle grinder
- Suitable grinding disk
- Tape measure of at least 3 m (118 inch).

To cut the extension legs to size:

1. Make sure that the Glass Elevator is secured to the van der Waay platform, see *5.2.2 Securing the Glass Elevator*.
2. Move the scissor lift down to the same height as the ends of the **legs**.
3. Use a tape measure to determine the distance between the ends of the **legs** and the ground. Subtract approximately 20 cm (8 inch) from this measure to get to the required length of the **extension legs**. **NOTICE** The extension legs should not touch the ground once they are mounted.

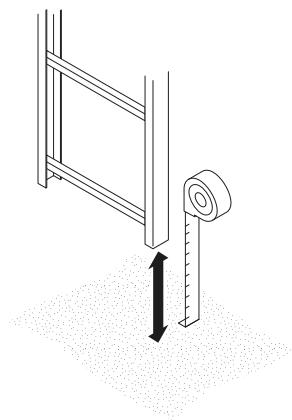


Fig. 17 Measure the required extension leg size

4. Use the angle grinder to cut the **extension legs** to the determined size.
WARNING! Make sure you follow all safety instructions in the angle grinder manual.
5. Continue to *5.2.4 Assembling the Glass Elevator* to fully install the Glass Elevator.

5.2.4 Assembling the Glass Elevator

Required tools and accessories:

- Spanner 10mm
- Spanner 13mm
- Spanner 17mm
- Cordless screwdriver with suitable bit set
- 16 x Bolts M8x20mm (*For the extension leg connectors*)
- 16 x Nuts M8 (*For the extension leg connectors*)
- 4 x Bolts M10x110mm (*For the rear end of the platform mounting beam*)
- 4 x Nuts M10 (*For the rear end of the platform mounting beam*)
- 4 x Bolts M10x40mm (*For the fixation plates*)
- 4 x Nuts M10 (*For the fixation plates*)
- 6 x Self tapping screws (*For anti-climb protection*)
- Washers

To assemble the Glass Elevator:

1. Make sure that the **extension legs** are cut to the right size, see *5.2.3 Cutting the extension legs to size*.

5 INSTALLATION

2. Attach the **extension leg connectors** to the bottom end of each **leg** by using four M8x20mm bolts, four M8 nuts and eight washers for each **extension leg connector**.

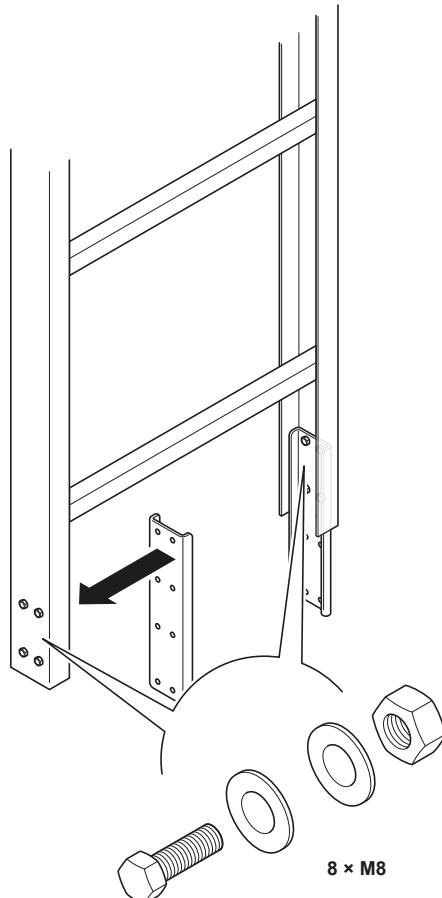


Fig.18 Attach the extension leg connectors to the legs

3. Have one qualified person on the ground hand one **extension leg** at the time, to the person on the scissor lift and support it till the person on the scissor lift has attached the **extension leg** to the **extension leg connector** with four M8x20mm bolts, four M8 nuts and eight washers for each **extension leg**.

4. Install the second **platform mounting beams** at the end of the **extension legs**.

To install the **platform mounting beam**:

- a. Connect the rear of the **platform mounting beam** to the van der Waay platform, by using four M10x110mm bolts, four M10 nuts and eight washers.

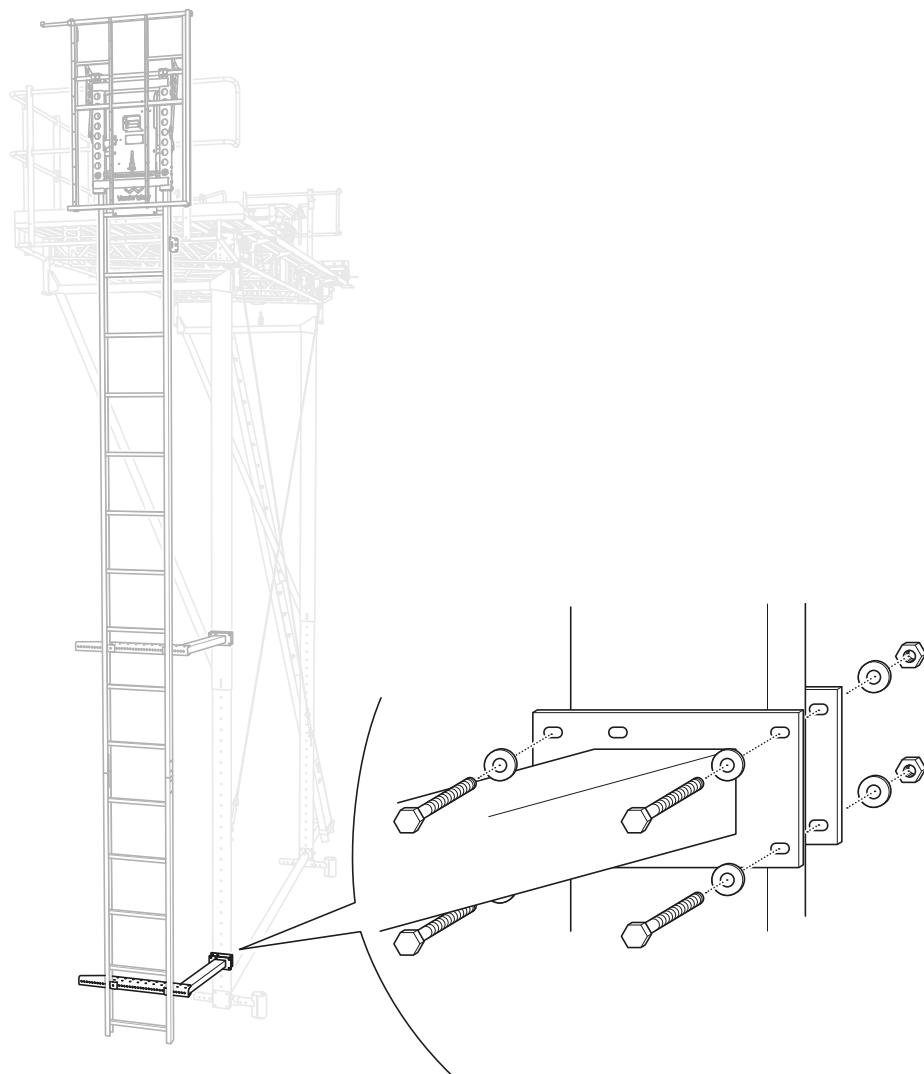


Fig. 19 Connect the rear of the platform mounting beam to the van der Waay platform

5 INSTALLATION

b. Attach two **fixation plates** to the **platform mounting beam** with one M10x40mm bolts, one M10 nut and two washers for each **fixation plate**. Each **fixation plate** shall clamp one leg to the **platform mounting beam**.

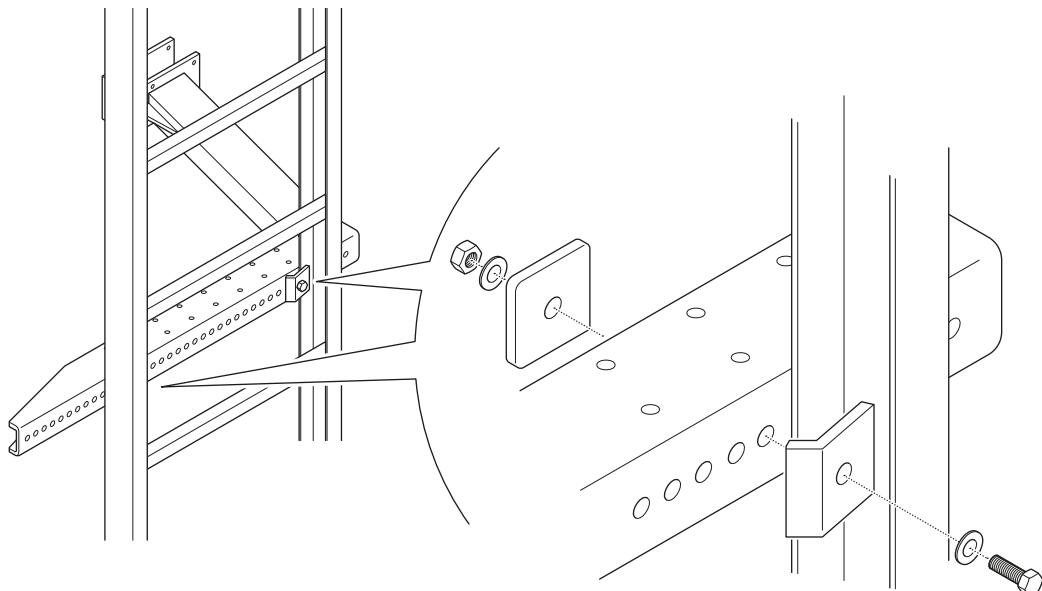


Fig. 20 Attach the platform mounting beam to the Glass Elevator with fixation plates

5. Install the **end stopper**, at the bottom of the **extension legs**, by attaching two **fixation plates** to the **end stopper** with one M10x40mm bolts, one M10 nut and two washers for each **fixation plate**. Each **fixation plate** shall clamp the **end stopper** to one leg.

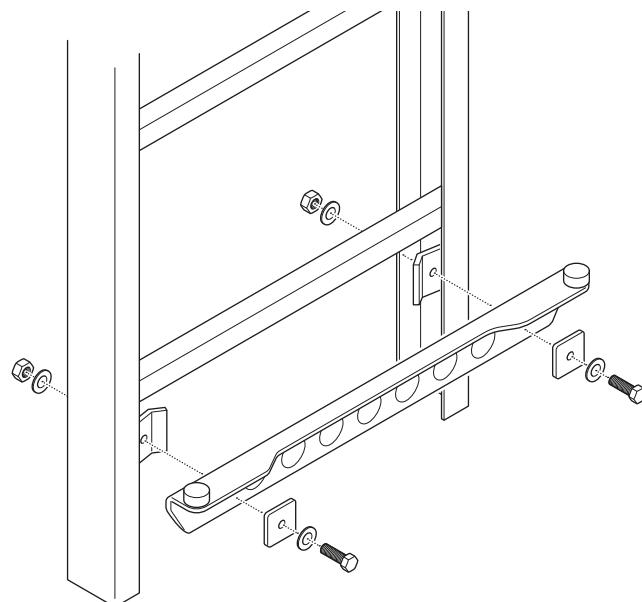


Fig. 21 Attach the end stopper to the extension legs with two fixation plates

6. Hang the **anti-climb protection** over one of the crossbars of the **extension legs** and make sure it is not touching the ground. Attach the **anti-climb protection** to the **extension legs** through the six holes at the top, middle and bottom with six self-tapping screws.

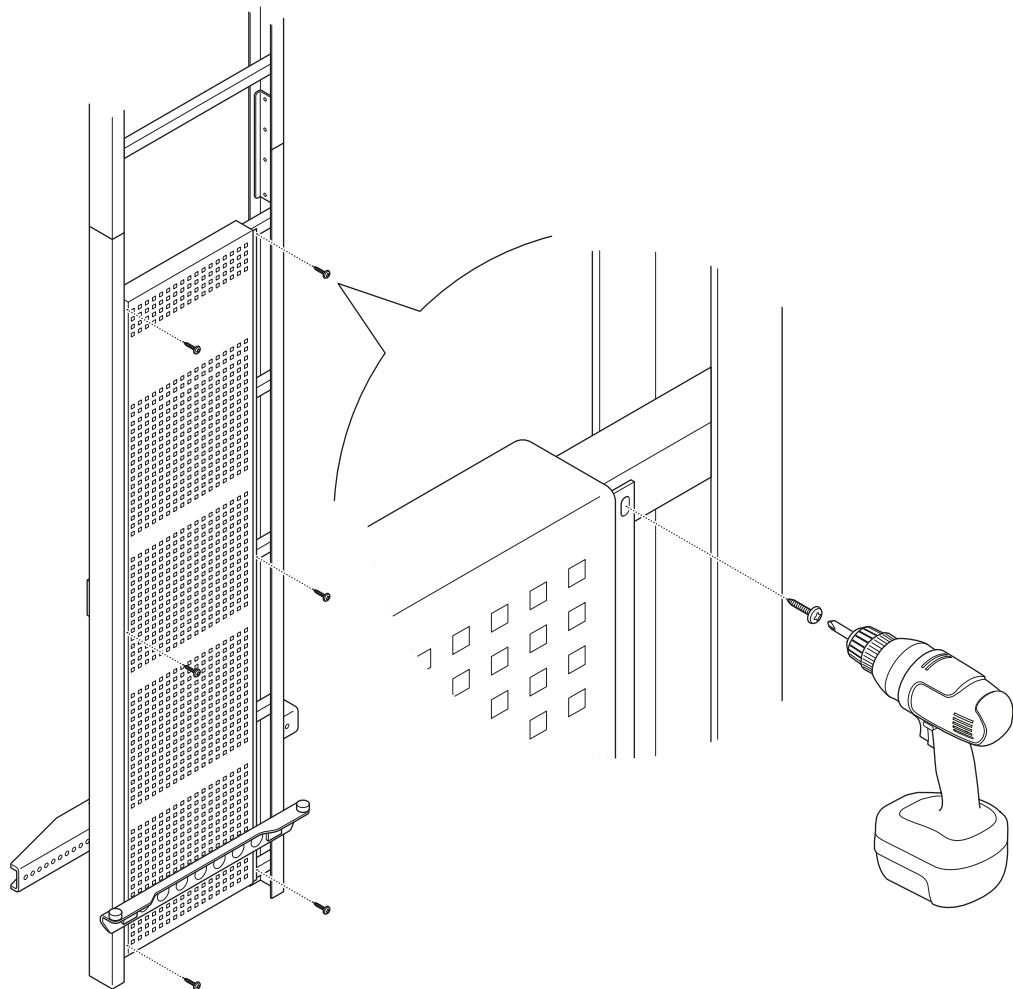


Fig. 22 Hang and screw the anti-climb protection to the extension legs

5 INSTALLATION

7. Attach the **remote control storage enclosure** to the railing of the van der Waay platform by:
 - a. Loosening the wingnut of the clamp on top of the **remote control storage enclosure**.
 - b. Placing the clamp around the railing of the van der Waay platform and tightening the wingnut of the clamp.

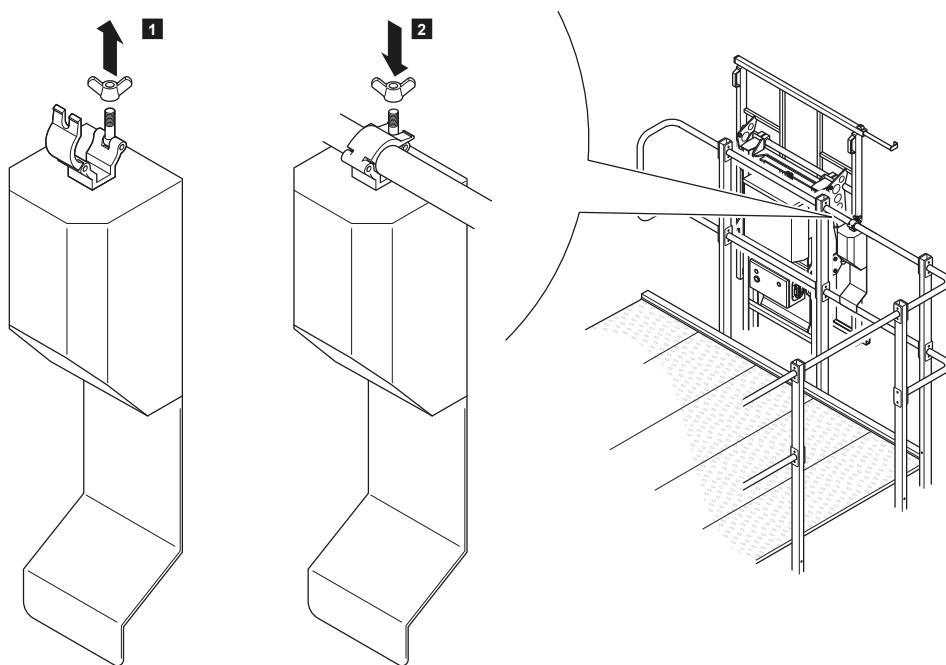


Fig. 23 Attach the remote control storage enclosure to the railing of the van der Waay platform

6 PREPARATION BEFORE USE

WARNING

- When performing work on the van der Waay platform, make sure you wear a certified safety harness and a certified double lifeline of 2 meters (6.5 ft) in length.
- Make sure that the van der Waay platform to which the Glass Elevator is attached is located at the place of repair and there are no machines parked on the van der Waay platform, when unloading the glass rack.

6.1 HOW TO CONNECT THE GLASS ELEVATOR ELECTRICALLY

WARNING

- Check the machinery and the cables for damage before electrical installation. If there is any visible damage, a strong odor or excessive heating of components, disconnect the power supply immediately and do not use the machinery.
- Protect disconnected plugs against rain and keep them away from moisture.

Depending on the power source available at the place where the Glass Elevator is installed, the machine you ordered is equipped with one of the following options:

- A power cable with a connector suitable for the 1X8 output of the van der Waay Top Cleaner platform.
- A power cable with a connector suitable for the optional battery pack.
- A power cable with a suitable power plug for a grounded socket with earth leakage protection that is connected in accordance with the legal guidelines.

6 PREPARATION

6.1.1 How to connect to the 1X8 output of the van der Waay Top Cleaner platform

- Connect the power cable **A** of the Glass Elevator to the 1X8 output **B**, on the control cabinet of the van der Waay Top Cleaner platform.

NOTICE Make sure the 1X8 output is supplied with power, see *Top Cleaner manual*.

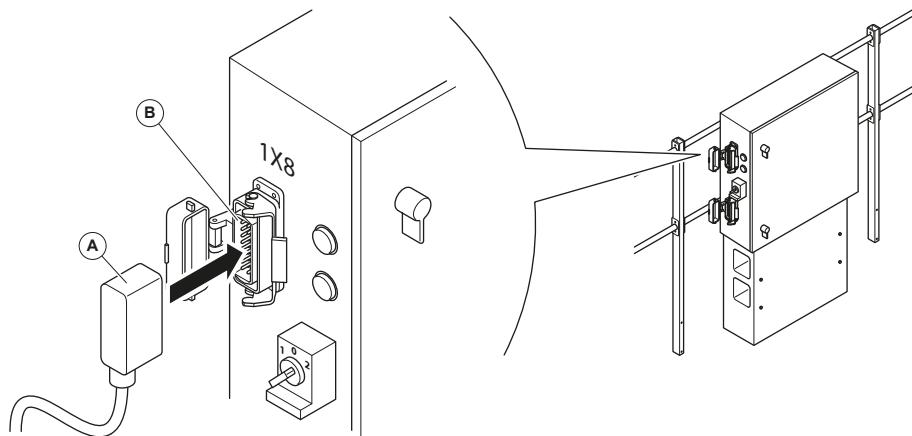


Fig. 24 Connecting the Glass Elevator to the 1X8 output of the van der Waay Top Cleaner platform

6.1.2 How to connect to the battery pack

NOTICE

When the Glass Elevator is powered by a battery pack, always switch-off the main switch after use.

1. Make sure the battery pack is fully charged and transport it to the van der Waay platform in a safe manner. **WARNING!** Be mindful when transporting the battery pack. If it falls and breaks, the battery pack can explode or catch fire.
2. Place the **battery pack** on the van der Waay platform. **WARNING!** Make sure that the battery pack is placed on the platform where it is not in the way of any works and where it cannot fall down.

3. Connect the **power cable A** of the Glass Elevator to the **power cable B** of the **battery pack**.

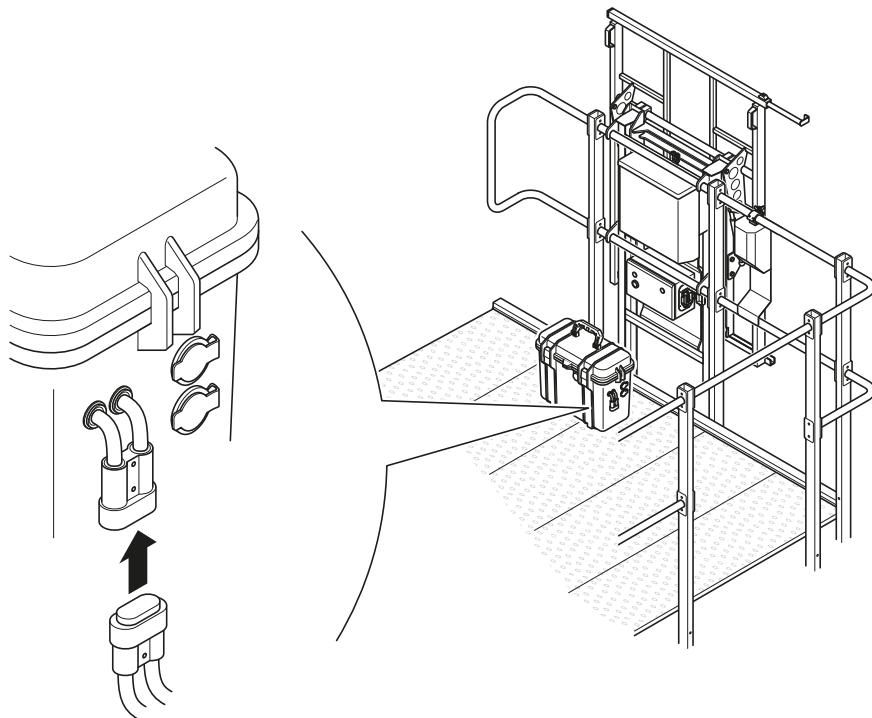


Fig. 25 Connecting the Glass Elevator to the battery pack

6.1.3 How to connect to the battery pack

NOTICE

This only applies to a Glass Elevator which is directly attached to the facade of the greenhouse.

- Connect the **power cable** of the Glass Elevator to a suitable **power socket** which is grounded, with earth leakage protection and is connected in accordance with the legal guidelines. **NOTICE** The Glass Elevator you ordered will be equipped with a suitable cable length and power plug.

6 PREPARATION

6.2 HOW TO CONNECT THE REMOTE CONTROL

If you wish to control the Glass Elevator remotely from ground level, the remote control should be connected to the control cabinet of the Glass Elevator. The control cabinet is equipped with an output for the remote control. This output needs to be supplied with a connector at all times in order for the Glass Elevator to function properly. The Glass Elevator therefore comes with a dummy connector, which is connected to the remote control output.

To connect the remote control to the Glass Elevator

1. Disconnect the **dummy connector** **A** from the **remote control output** **B** on the **control cabinet** **C**.

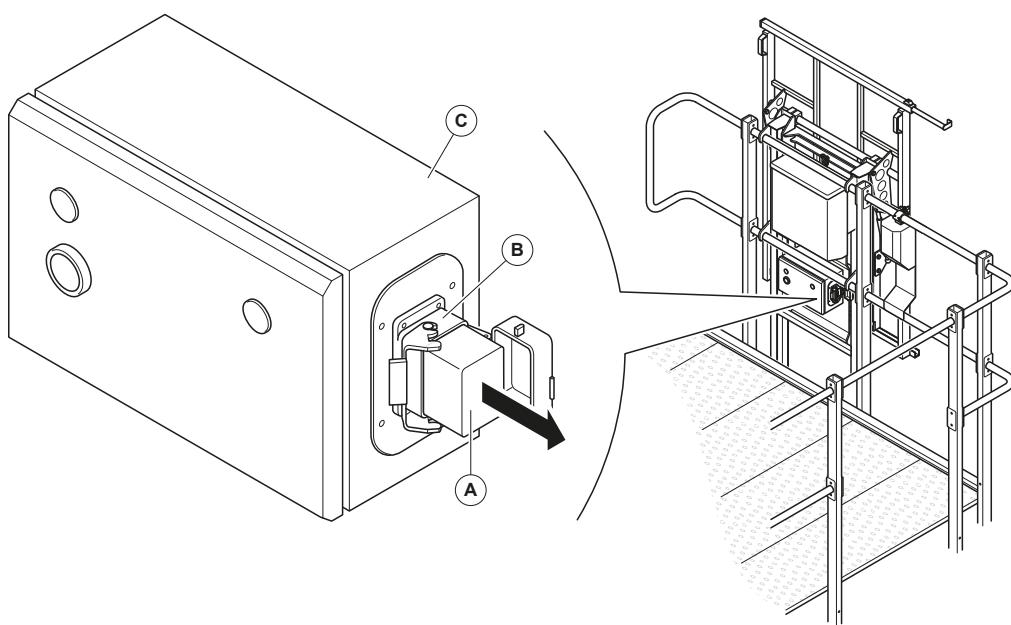


Fig. 26 Remove the dummy connector

2. Connect the connector of the **remote control A** to **remote control output B**.

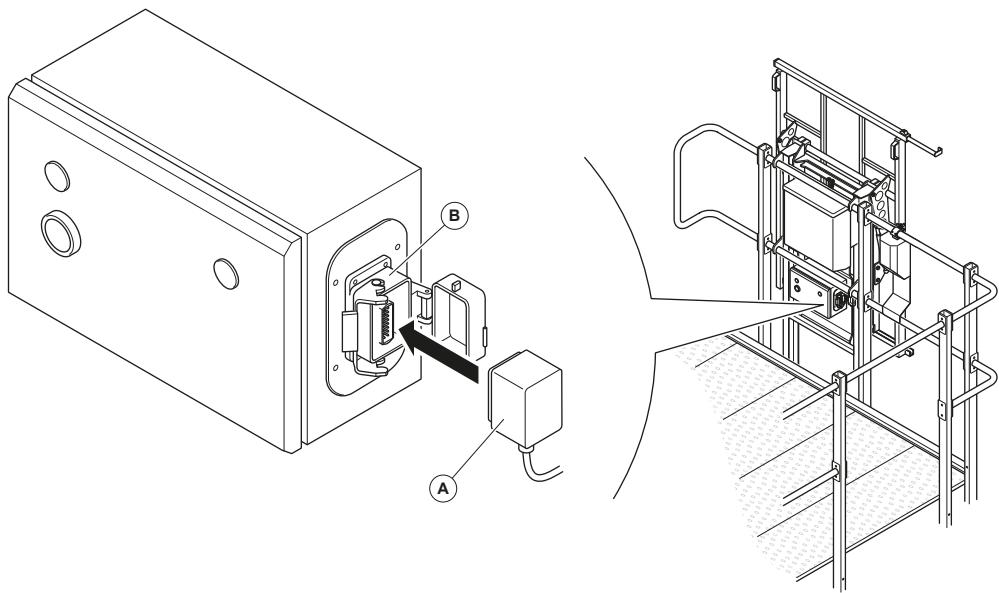


Fig. 27 Connect the remote control to the Glass Elevator

3. Unroll the cable of the **remote control** and put the **remote control** on ground level.
4. Attach the **cable pulling grip A** of the **remote control** to the **carabiner B** on the **platform**.

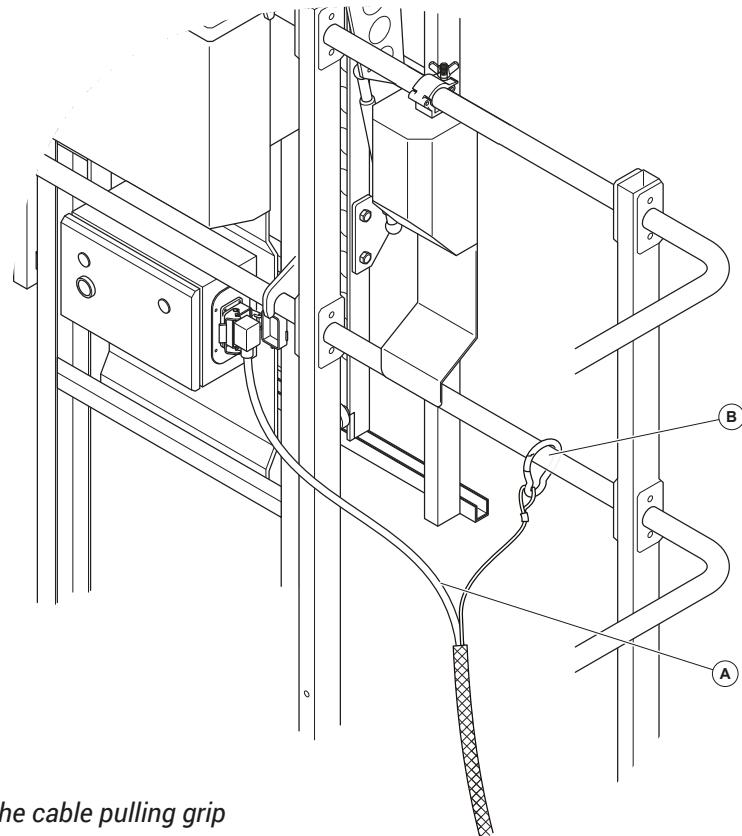


Fig. 28 Attach the cable pulling grip

6.3 HOW TO INSPECT THE FUNCTIONING OF THE GLASS ELEVATOR BEFORE EVERY USE

6.3.1 Inspecting the controls on the control cabinet

1. Do a check of the **upwards button** **A** and **downwards button** **B** on the **control cabinet** of the Glass Elevator:
 - a. Push the upwards button. The glass rack moves up.
 - b. Push the downwards button. The glass rack moves down.
2. Do a check of the **emergency stop button** **C** on the **control cabinet** of the Glass Elevator:
 - Push the Glass Elevator up- or downwards button and activate the emergency stop button while the glass rack is moving. The glass rack will stop moving. **NOTICE** For resetting the machinery, see *7.3 How to do a reset after an interruption by the emergency stop*.

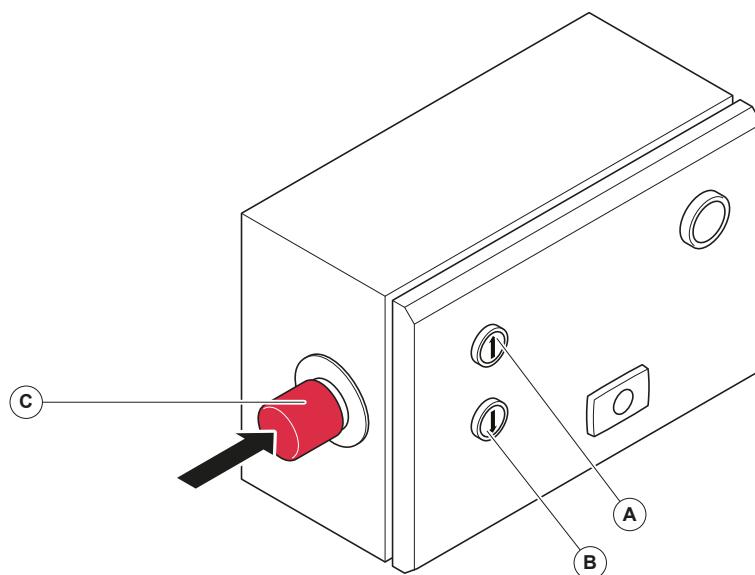


Fig. 29 Inspect the controls on the control cabinet

6.3.2 Inspecting the controls on the remote control

1. Do a check of the **upwards button** **A** and **downwards button** **B** on the **remote control** of the Glass Elevator.
 - a. Push the upwards button. The glass rack moves up.
 - b. Push the downwards button. The glass rack moves down.
2. Do a check of the **emergency stop button** **C** on the **remote control** of the Glass Elevator.
 - Push the Glass Elevator up- or downwards button and activate the emergency stop button while the glass rack is moving. The glass rack will stop moving. **NOTICE** For resetting the machinery, see 7.3 *How to do a reset after an interruption by the emergency stop*.

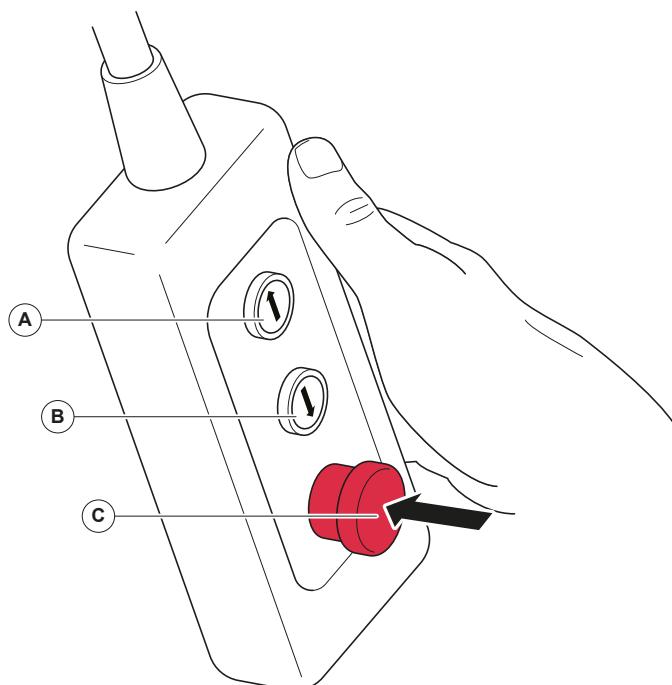


Fig. 30 Inspect the controls on the remote control

6 PREPARATION

6.3.3 Inspecting the elevator unit

1. Do a check of the **limit switch upper position** of the **elevator unit**:
 - a. Move the glass rack all the way up, by pressing and holding the upwards button.
 - b. When the glass rack runs into the limit switch upper position, it will be activated and will turn off the electric motor automatically.
2. Do a check of the **gas spring** on the **glass rack**:
 - a. Make sure that the glass rack is in the maximum upper position.
 - b. Tilt the glass rack in a horizontal position by hand. The gas spring will keep the glass rack in the horizontal position.

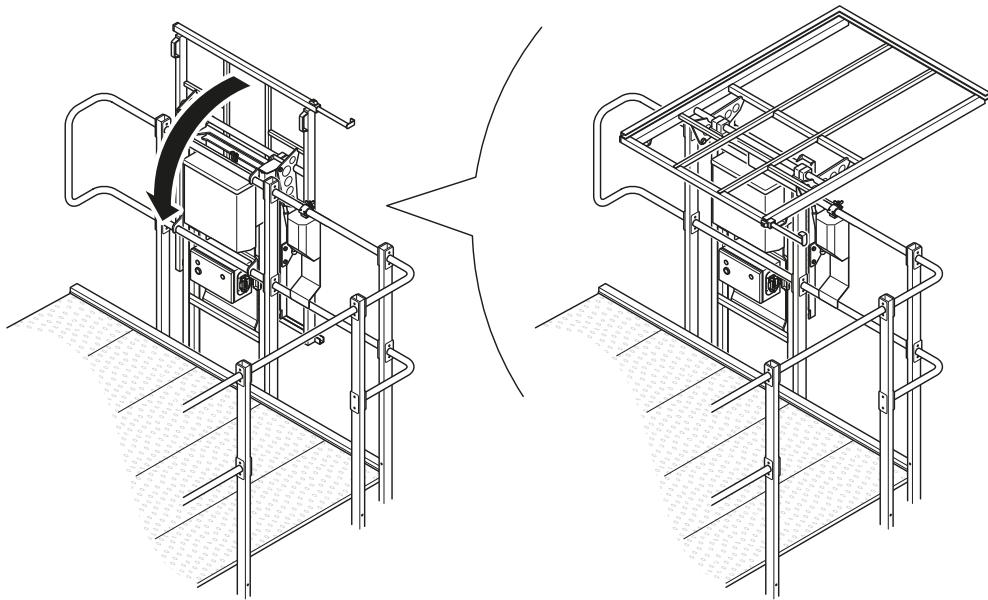


Fig. 31 Inspect the gas spring

3. Do a check of the **limit switch slack cable** on the **elevator unit**:
 - a. Make sure the glass rack is in a vertical position.
 - b. Move the glass rack all the way down, by pressing and holding the downwards button.
 - c. When the glass rack runs into the end stopper the electric motor shall turn off automatically. This is because losing tension in the cable will activate the limit switch slack cable which will then stop the electric motor.

4. Do a check of the **cable break protection** on the **elevator unit**:
 - a. Make sure the glass rack is all the way down.
 - b. Lift the glass rack up by hand, about 50 cm (20 inch) above the end stopper.

NOTICE The cable is slack.

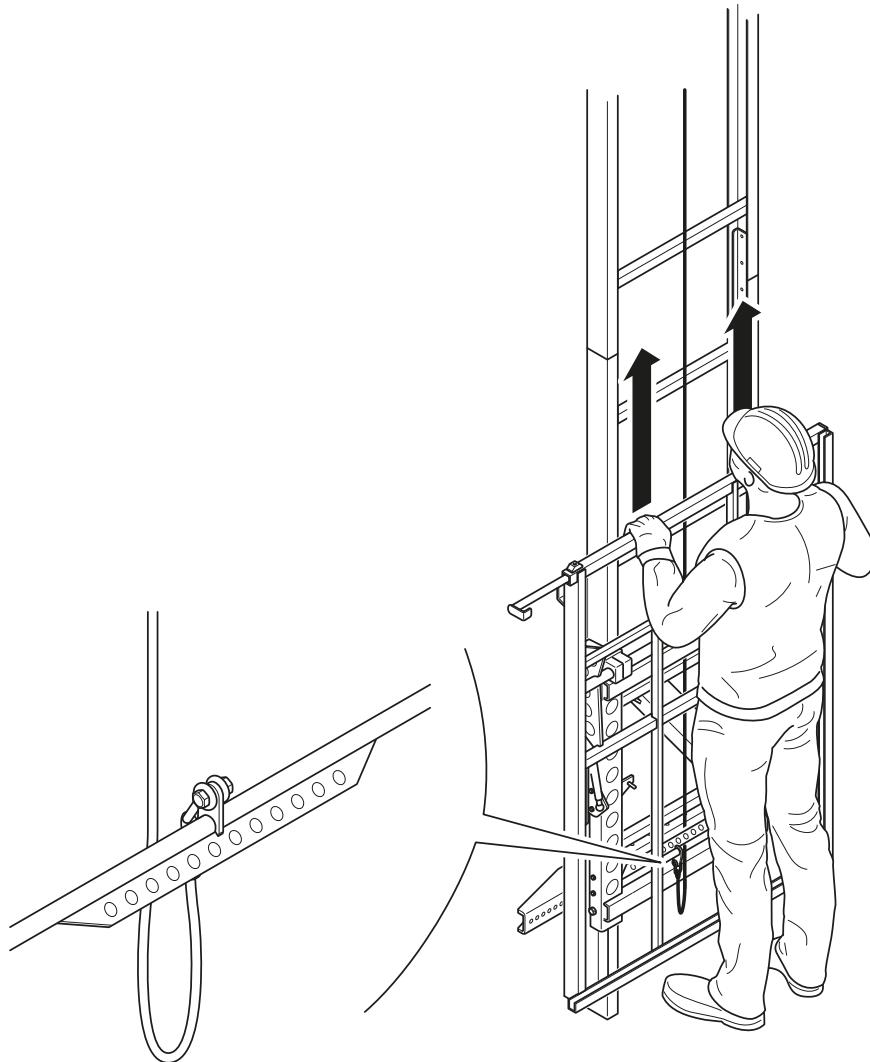


Fig. 32 Lift the glass rack up

- c. Let go of the glass rack.
- d. When the **glass rack** falls down, without any tension on the cable, the **cable break protection** will be activated and the **glass rack** will be blocked instantly.

7 OPERATION

WARNING

- **Never stand directly underneath the Glass Elevator, during lifting tasks and always be aware of possible falling objects. Failure to do so can result in serious injury or death.**
- **Do not use the machinery after an earthquake. Keep a safe distance from the greenhouse and machinery until they have been fully inspected by a qualified and trained person.**
- **Never use the machinery with wind speeds above 3 m/s (6 mph).**
- **Never use the machinery during a thunderstorm.**
- **When performing work on the van der Waay platform, make sure you wear a certified safety harness and a certified double lifeline of 2 meters (6.5 ft) in length.**
- **Always use appropriate personal protective equipment when working with the machinery, such as cut resistant gloves, forearm cut protection, safety shoes (minimum class S3), safety goggles, safety harness, hard hat, and protective overalls.**
- **Wear sun protective clothing. Use sunscreen to protect exposed body parts against the sun.**
- **Wear protective clothing when it is raining or against the cold.**
- **Use a bright headlamp when working in the dark.**
- **In case of an accident, stop using the machinery and consult a doctor if necessary.**
- **Make sure a first aid kit is present in the vicinity of the Glass Elevator**
- **Never load more than 40 kg (88 lbs) of items onto the glass rack.**
- **Never use the Glass Elevator as a ladder.**
- **Beware of any moving or hinging parts of the Glass Elevator. Do not place any fingers or hands where they can get jammed.**
- **When using the remote control on ground level always make sure to keep a safe distance from the Glass Elevator.**

7.1 HOW TO MOVE ITEMS WITH THE GLASS ELEVATOR

The Glass Elevator can carry up to 40 kg (88 lbs). It can carry either one large glass sheet or the tool bin with tools, a battery pack or other accessories up to roof level of the greenhouse or down to ground level. Furthermore, the Glass Elevator comes with a glass shards bin with which broken pieces of glass can be carried down safely from roof level of the greenhouse to ground level.

7.1.1 How to move glass sheets up to roof level of the greenhouse

1. Make sure to place the glass storage rack with replacement glass sheets in the vicinity of the Glass Elevator.
2. Make sure the **glass rack** is on ground level, by pressing and holding the **downwards button** until the **glass rack** stops automatically.
3. Carefully load one glass sheet from the glass storage rack onto the **glass rack**, by hand. **NOTICE** The glass rack shall only carry one large glass sheet up at a time.

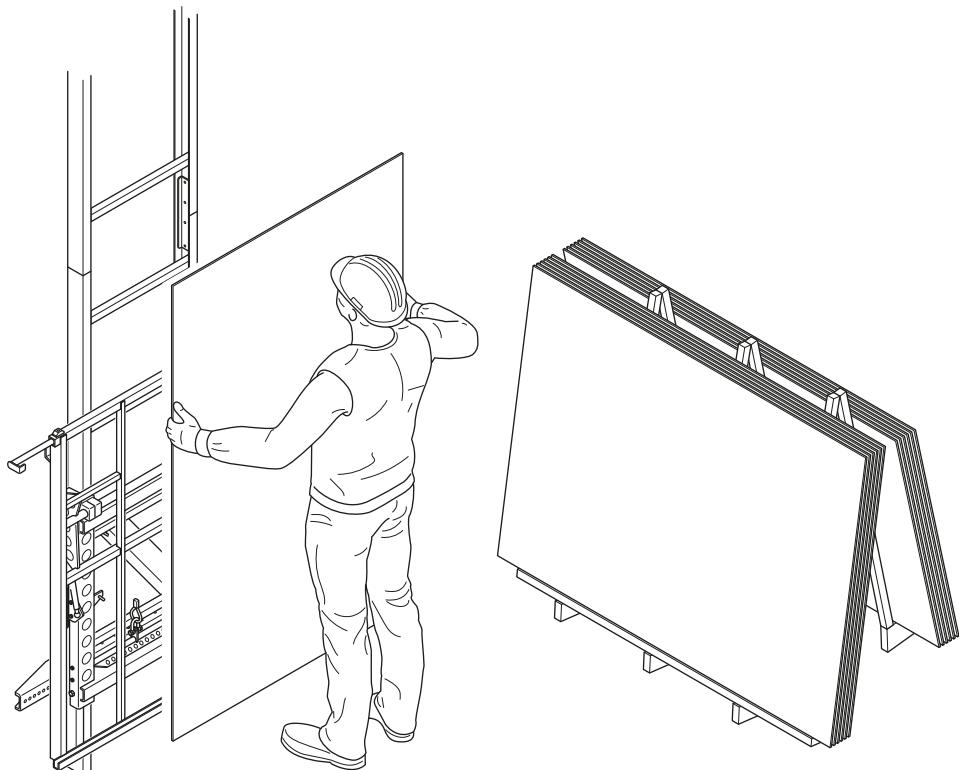


Fig. 33 Load a glass sheet from the glass storage rack onto the glass rack

7 OPERATION

4. Pull out the **glass sheet lock**, turn it 90 degrees and move it back gently until it rests on the edge of the glass sheet and secures it. **CAUTION!** The glass sheet lock contains a spring. Never let the glass sheet lock shoot back over the glass sheet, but always guide it by hand, to avoid the glass sheet from breaking.

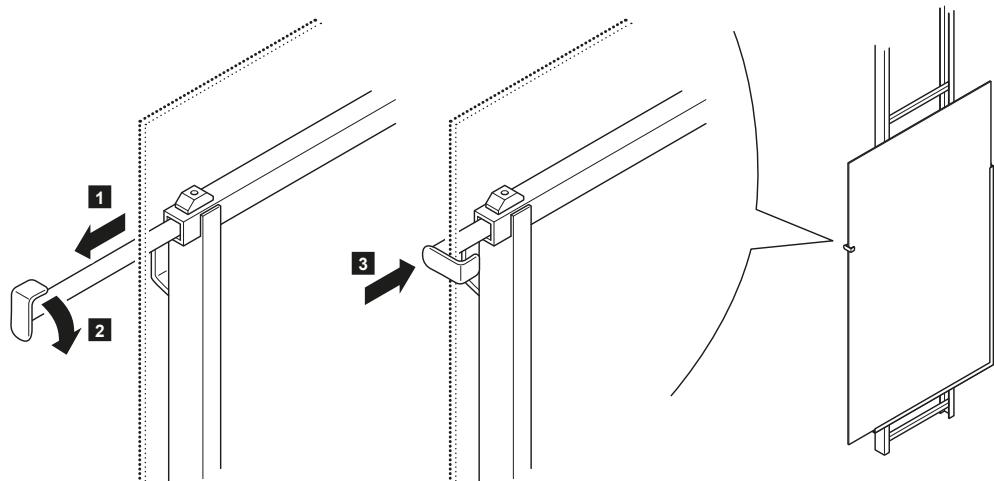


Fig. 34 Pull out the glass sheet lock

5. Push the **upwards button** on the **control cabinet** or on the **remote control** until the Glass Elevator stops at the top automatically. **WARNING!** When using the remote control at ground level make sure to be at a safe distance from the elevator.
6. Tilt the **glass rack** horizontally and secure the position with the **locking pin**.

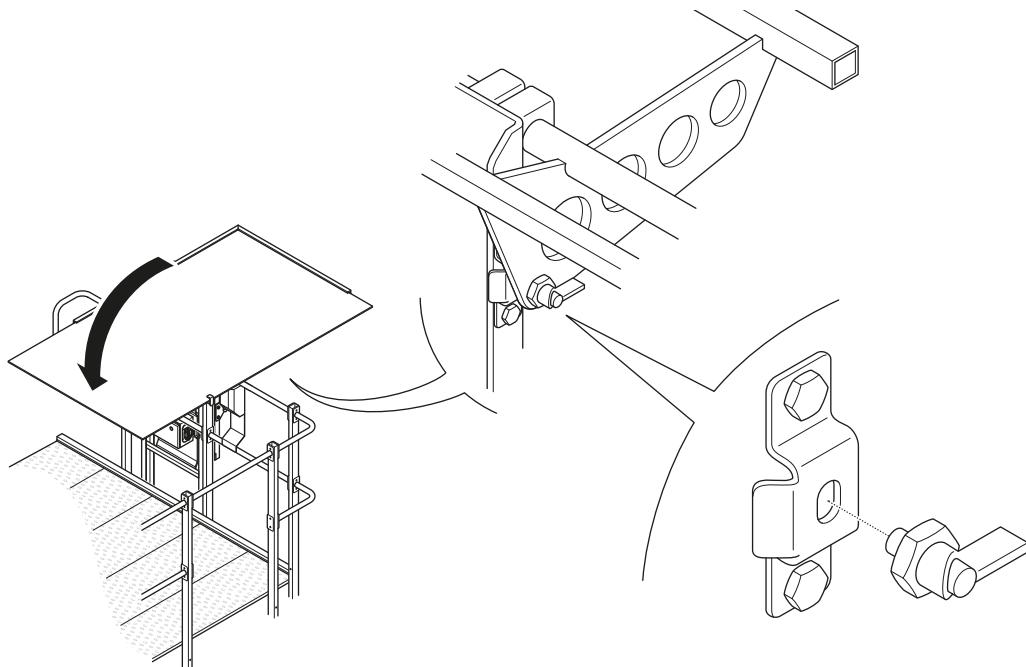


Fig. 35 Tilt the glass rack horizontally

7. Undo the **glass sheet lock** by pulling the glass sheet lock away from the glass sheet, turn it 90 degrees and let it slide back gently into the **glass rack**.

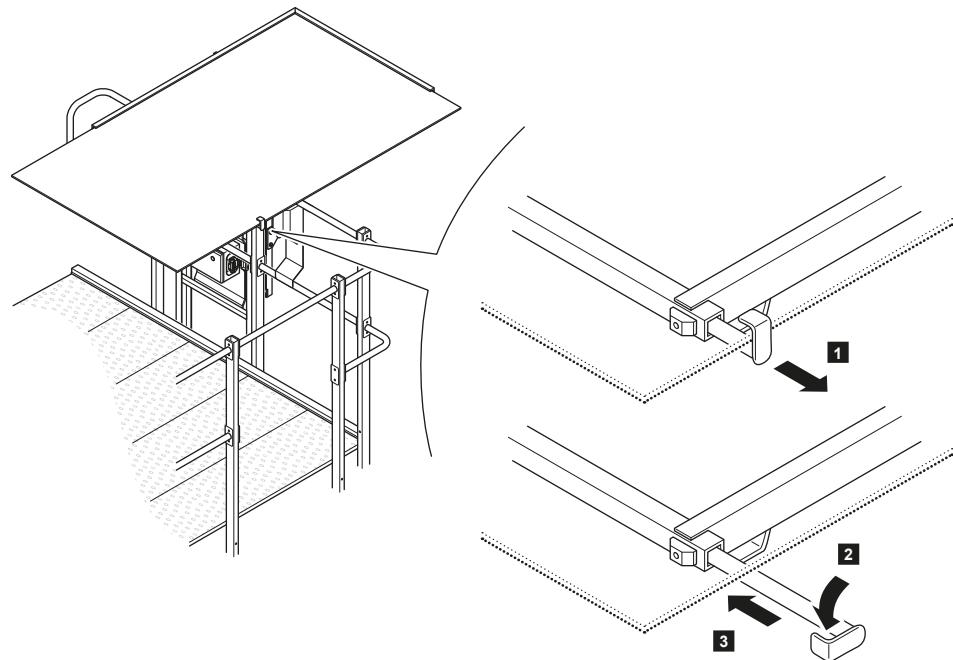


Fig. 36 Undo the glass sheet lock

8. Unload the glass sheet.

7.1.2 How to move items with the glass shards bin or tool storage bin

The Glass Elevator comes with 2 bins which can be hung on to the glass rack and are used for moving items up or down. Glass shards can be moved to ground level with the glass shards bin, while tools, accessories and a battery pack can be moved with the tool storage bin.

To move items with the tool storage bin or glass shards bin:

1. Make sure the **glass rack** is moved all the way down to ground level or up with the top of the **glass rack** at the same level as the platform railing.
2. Hang the **tool storage bin** or **glass shards bin** over the upper horizontal bar of the **glass rack** and fill it up. **NOTICE** Do not exceed 40 kg (88 lbs.).

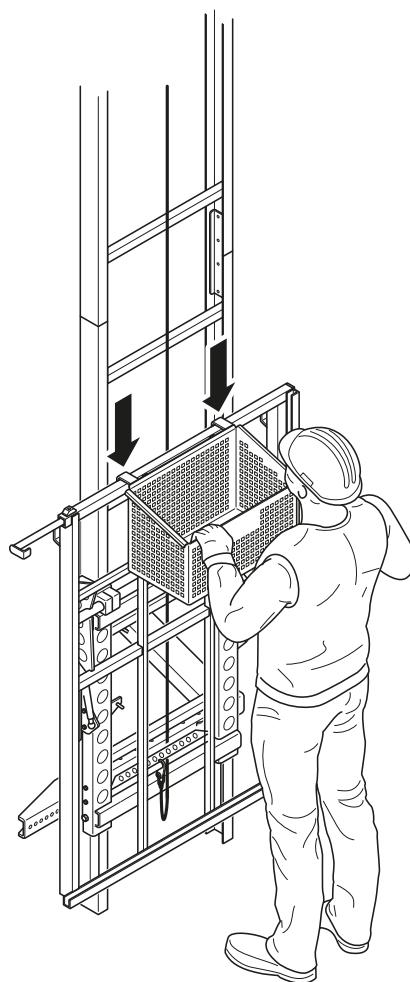


Fig. 37 Hang the tool storage bin or glass shards bin

3. Push the **upwards - or downwards button** on the **control cabinet** or on the **remote control** to move the **glass rack** all the way down to ground level or up with the top of the **glass rack** at the same level as the platform railing. **WARNING!** When using the remote control at ground level make sure to be at a safe distance from the elevator.
4. Lift the **tool storage bin** or **glass shards bin** including the contents from the horizontal bar of the **glass rack**. Unload all the items from the **tool storage bin** or dispose of the glass shards inside the **glass shards bin** in a proper manner. **CAUTION!** Always keep a tight grip on the tool storage bin or glass shards bin when lifting it from the glass rack and acquire assistance from a second person if necessary.

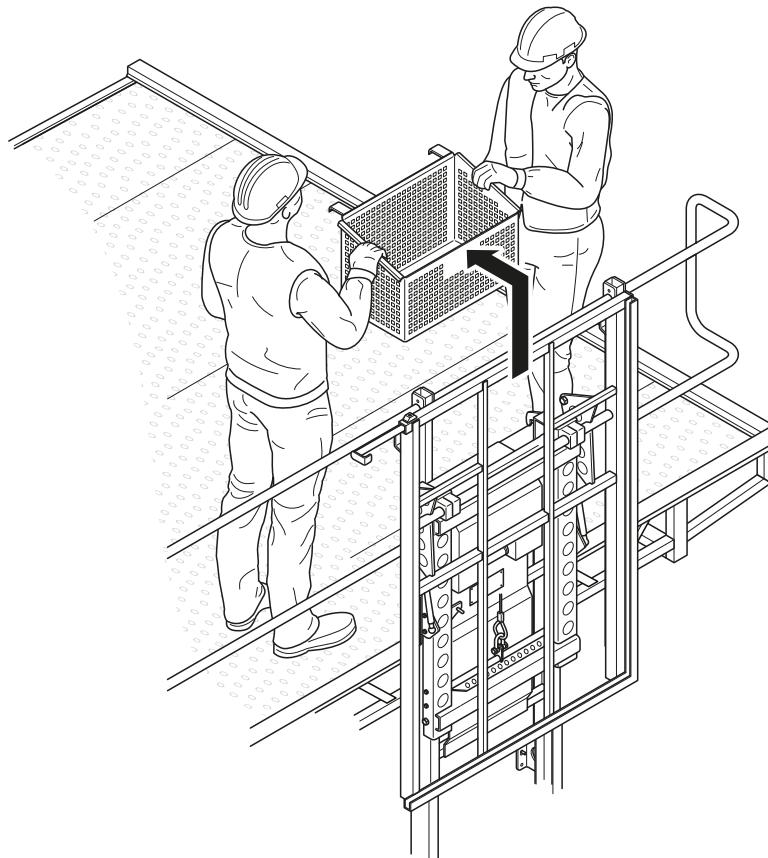


Fig. 38 Lift the the tool storage bin or glass shards bin from the glass rack

7.1.3 How to move glass sheets down to ground level

- When you want to move a glass sheet from the van der Waay platform to ground level, you can follow the steps as described in *7.1.1 How to move glass sheets up to roof level of the greenhouse* in reverse order.

7.2 WHAT TO DO IN AN EMERGENCY OR AN EXCEPTIONAL SITUATION

WARNING

Make sure you know where the emergency stop buttons are located before operating the machinery.

The control cabinet of the Glass Elevator and the remote control are equipped with an emergency stop button that the user can activate, by pressing whenever there is an emergency situation. All activities of the machinery are then aborted. Pull out an activated (pressed) emergency stop button and do a reset to activate the controls again. To learn how to do a reset, see *7.3 How to do a reset after an interruption by the emergency stop*.

Location of the emergency stop buttons:

1. **Emergency stop button** on the **control cabinet** of the Glass Elevator (see *3.4.1 Controls of the Glass Elevator*).

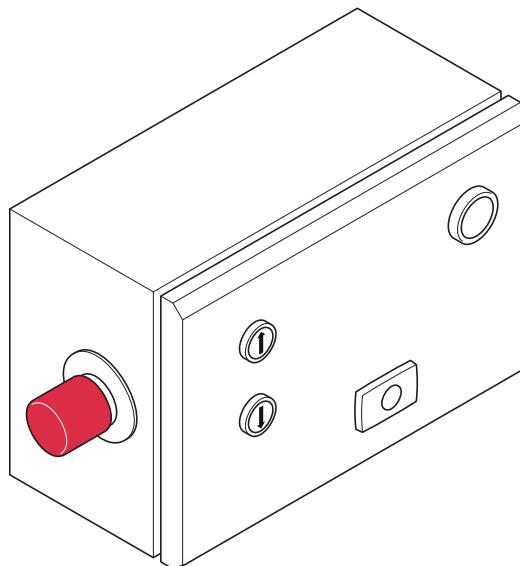


Fig. 39 Emergency stop button on the Glass Elevator

2. **Emergency stop button** on the **Remote control** (see *3.4.2 Controls of the remote control*).

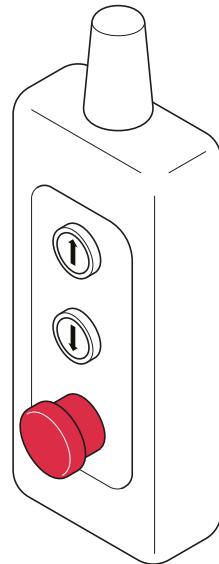


Fig. 40 Emergency stop button on the remote control

7.3 HOW TO DO A RESET AFTER AN INTERRUPTION BY THE EMERGENCY STOP

The emergency stop can only be activated by one of the operators. Always make sure the reason for doing an emergency stop is found, before resetting the machinery again. This paragraph explains how to do a reset after an emergency stop.

To do a reset:

1. Make sure that the activated (pressed) **emergency stop button** is pulled out.
NOTICE This can be on either the control cabinet of the Glass Elevator or the Remote Control.
2. Push the **reset button** on the **control cabinet** of the **Glass Elevator** several seconds until the light goes off to reset the **Glass Elevator**.

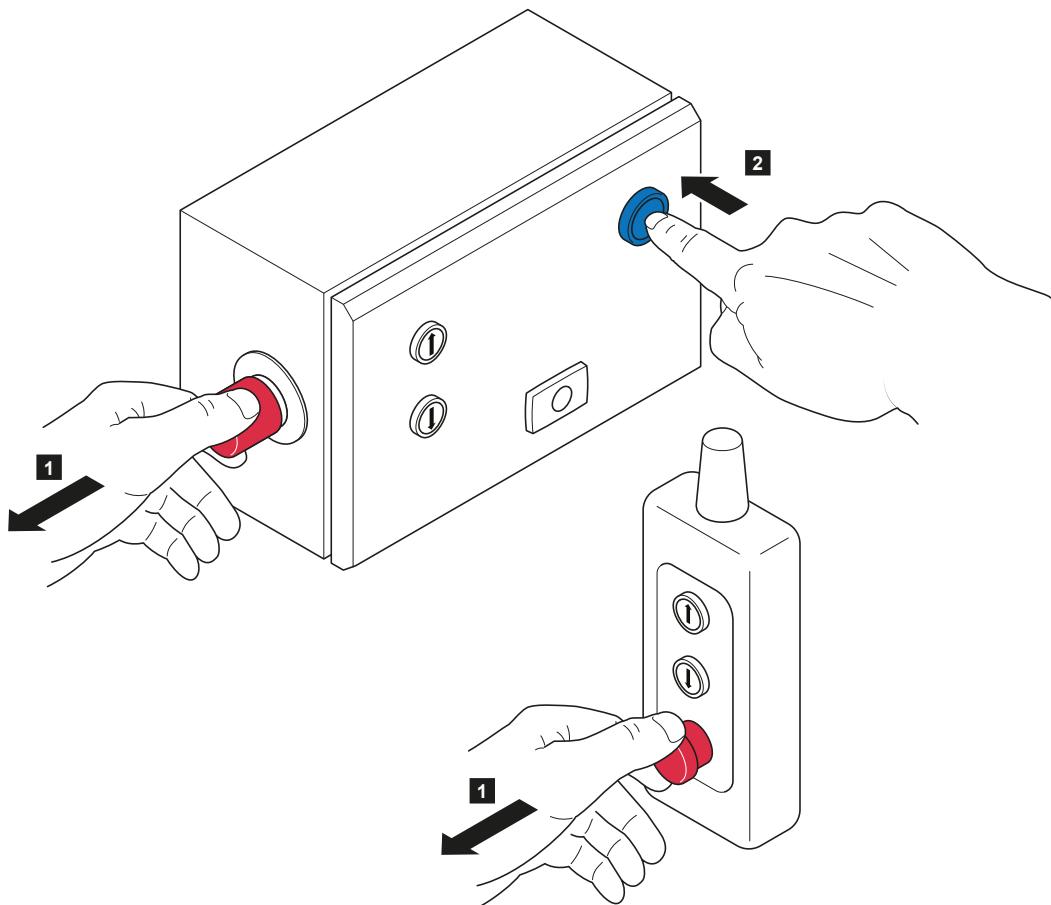


Fig. 41 Doing a reset of the Glass Elevator

7.4 HOW TO STORE THE REMOTE CONTROL AFTER USE

WARNING

Make sure there are no loose cables on the van der Waay platform in the way of any works or parked machines.

The Glass Elevator comes with a remote control which can be placed inside the remote control storage enclosure, during a use cycle. When you have finished using the remote control for a longer period of time, Van der Waay advises to disconnect and store it.

When you want to disconnect the remote control, you can follow the steps as described in *6.2 How to connect the remote control* in reversed order.

7.5 HOW TO STORE THE BATTERY PACK AFTER USE

NOTICE

Only applies when your Glass Elevator is equipped with battery power.

When your Glass Elevator is equipped with a connection for a battery pack, make sure to store the battery pack after use.

To store the battery pack:

1. Disconnect the power cable of the battery pack and transport it down in a safe manner. **WARNING!** Be mindful when transporting the battery pack down. If it falls and breaks, the battery pack can explode or catch fire.

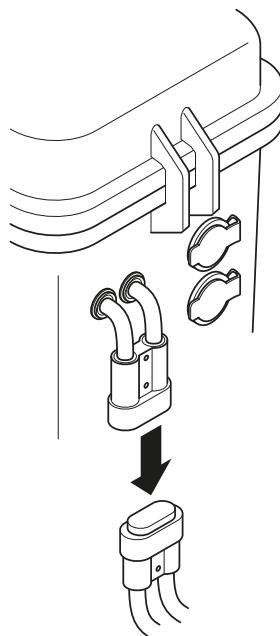


Fig.42 Disconnect the battery pack and load it in the tool storage bin

2. Store the battery pack in a dry place away from direct sunlight.

WARNING! Make sure the battery pack is not exposed to temperatures above 50 °C (122 °F). **NOTICE** Make sure you charge the battery pack every 6 months in order to keep it in good condition (see manual battery pack and battery charger in 1.7 Other documentation).

7.6 HOW TO DETACH THE MACHINERY FROM THE VAN DER WAAY PLATFORM

When you want to detach the Glass Elevator from the van der Waay platform, you can follow the steps as described in *5.2 How to install the Glass Elevator* in reversed order.

8 INSPECTION, MAINTENANCE AND CLEANING

8.1 SAFETY INSTRUCTIONS

WARNING

- Always shut off the machinery and disconnect it from the power source before performing any maintenance work.
- All cleaning, inspection and maintenance tasks shall only be carried out by qualified and skilled personnel. To ensure the operational safety of the machinery, regular maintenance shall be carried out by qualified personnel in accordance with the manufacturer's instructions.

8.2 TECHNICAL ASSISTANCE

For technical assistance please contact:

Van der Waay B.V.
Finlandlaan 2
2391 PV Hazerswoude
The Netherlands
Tel.: +31 (0) 172 210311
info@vdwaay.nl

For ordering spare parts visit <https://portal.vdwaay.nl/en/shop>

8.3 MAINTENANCE AND INSPECTION SCHEDULE

WARNING

- Maintenance and inspection should be done on a frequent basis. If there is any visible damage, a strong odor or excessive overheating of components, stop using the machinery. Non-frequent maintenance shortens the activity and life span of the machinery and voids the warranty.
- Use only original accessories and spare parts. You can always order spare parts from the webshop <https://portal.vdwaay.nl/en/shop> or by sending an email to salesteam@vdwaay.nl.

8.3.1 Inspection before every use

Inspection task	Required action
Make sure that the battery pack is fully charged, when the Glass Elevator is equipped with battery power.	See manual battery pack and battery charger in <i>1.7 Other documentation</i> .
Inspect the functioning of the Glass Elevator.	See <i>6.3 How to inspect the functioning of the Glass Elevator before every use</i>
Check the running hours.	<ul style="list-style-type: none">• To get to the hour counter see <i>8.3.3 Inspection and maintenance every month or every 100 running hours</i>• >100 running hours perform maintenance tasks in <i>8.3.3 Inspection and maintenance every month or every 100 running hours</i>

8 INSPECTION, MAINTENANCE AND CLEANING

8.3.2 Inspection after every use

Inspection task	Required action
Clean the Glass Elevator.	See 8.4 Cleaning the machinery .
Charge the battery pack, when the Glass Elevator is equipped with battery power.	See manual battery pack and battery charger in 1.7 Other documentation .

8.3.3 Inspection and maintenance every month or every 100 running hours

WARNING

- **When the Glass Elevator is powered by the 1X8 output of the van der Waay Top Cleaner platform, always disconnect the power before opening the control cabinet.**
- **When the Glass Elevator is directly mounted to the facade of the greenhouse, always shut off the machinery according to the LOCK OUT-TAG OUT method before opening the control cabinet.**

The machinery contains an hour counter inside the control cabinet.

To get to the hour counter:

- Unlock and open the lid of the **control cabinet**. The hour counter is inside the **control cabinet**. **WARNING!** Always disconnect the power when opening the control cabinet

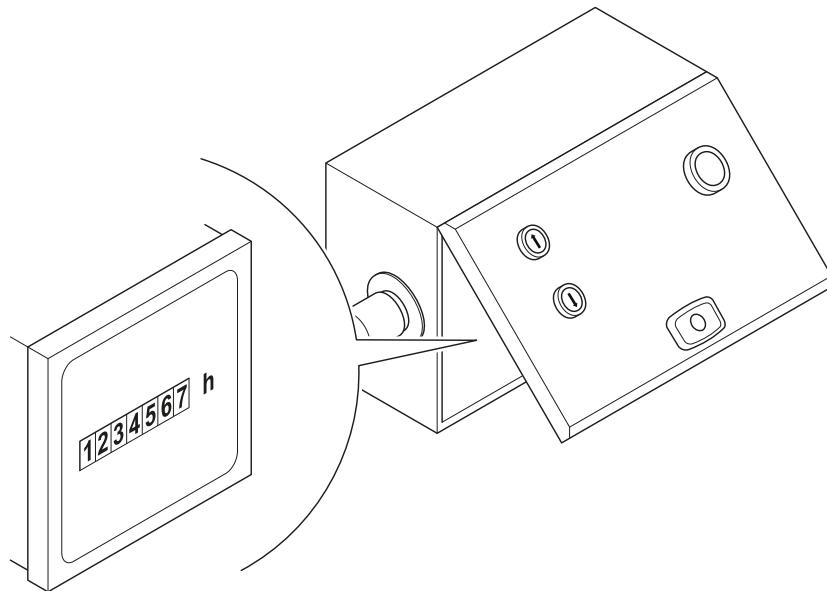


Fig.43 Open the control cabinet to get to the hour counter

Inspection task	Required action
Make sure that the bearings of the guide wheels have no wear and/or play.	Make sure that the wheel bearings of the Glass Elevator have no play by trying to move the guide wheels sideways by hand. The wheel bearings are worn if you can move the wheels sideways.
Inspect the plastic coated steel cable.	Visually inspect the 4 mm steel cable and its plastic coating on wear and tear. Replace the whole cable when the steel is damaged.
Inspect the power cables and power plugs	Visually inspect the power cables and power plugs for wear and tear. Replace them when they are damaged.

8 INSPECTION, MAINTENANCE AND CLEANING

8.4 CLEANING THE MACHINERY

For a longer life span of the Glass Elevator, the machine shall be cleaned thoroughly after every use with a non-aggressive cleansing agent and water.

To clean the Glass Elevator:

1. Spray the Glass Elevator with cold tap water to remove coarse dirt. Make sure to clean the type identification plate so it remains readable at all times.
NOTICE No water should be sprayed directly towards the control cabinet, switches and drive motors. The power of the waterjet can remove oil and grease from rotating or moving parts. There is also the risk that water enters the electrical system, which may lead to short-circuiting.
2. Apply a neutral non-aggressive cleaning agent (pH value of between 6 and 8).
3. Allow the cleaning agent to work sufficiently in accordance with the relevant product information.
4. Rinse the Glass Elevator thoroughly with tap water.

9.1 TROUBLESHOOTING

Error	Cause	Solution
Machinery is not working	Power cable is not connected	Connect the power cable to a suitable power supply
	Emergency stop active	Check emergency stop buttons
Machinery is connected to a suitable power supply but is not turning on	Fuse defective (only when the machinery is equipped with battery power)	Replace the fuse
	Battery drained, when the machinery is equipped with battery power	Charge battery
	Frequency inverter malfunction	Consult the manual of the frequency inverter

9.2 HOW TO REPAIR THE MACHINERY

WARNING

- **Always shut off the machinery before performing any maintenance or repair work and disconnect the power plug from the power source.**
- **Use only original accessories and spare parts. You can always order spare parts from the webshop <https://portal.vdwaay.nl/en/shop> or by sending an email to salesteam@vdwaay.nl.**
- **Use only original accessories and spare parts. You can always order spare parts from the manufacturer.**
- **Alterations to the machinery and technical modifications are not permitted without written permission from the manufacturer.**

10 DISPOSAL

WARNING

Always use appropriate personal protective equipment when dismantling and/or scrapping the machinery, such as gloves, safety shoes (minimum class S3), safety goggles, hearing protection, safety harness, hard hat, and protective overalls.

10.1 DISABLING

To disable the machinery:

1. Make sure that the machinery is on the ground.
2. Make sure that the power cable is disconnected from the power source.

10.2 DISMANTLING

To dismantle the machinery:

1. Make sure you use appropriate personal protective equipment when dismantling and/or scrapping the machinery, such as gloves, safety shoes (minimum class S3), safety goggles, hard hat, and protective overalls.
2. Disassemble large parts and accessories, such as the **glass rack, (extension) legs, mounting beams** and the **anti-climb protection**.
3. Dispose/Scrap the machinery according to the instructions in the section **10.3 Scrapping and disposal**.

10.3 SCRAPPING AND DISPOSAL

Old or worn parts have to be disposed of in the most environmentally friendly way, for example by bringing them to an acknowledged recycling center.

Familiarize yourself with the national and local regulations with respect to environmentally friendly disposal of harmful substances such as oil and lubrication agents, parts and materials.

It is not allowed to dispose of parts, accessories and components with unsorted municipal waste. Electric and electronic components and parts have to be recycled separately in an environmentally friendly way and with due respect to the applicable legislation.

If certain chemicals have been used for cleaning, you have to dispose of these in an environmentally friendly way. Also think of clothes and such like that have become filthy with lubrication agents or oil. Consult the instructions for the used chemicals, for more information on disposal.

By disposing of the device in the proper manner, you help to avoid possible hazards for the environment and public health that could otherwise be caused by improper treatment of waste equipment. The recycling of materials contributes to the conservation of natural resources.

A – SPARE PARTS AND ACCESSORIES

For ordering spare parts please visit <https://portal.vdwaay.nl/en/shop>

B – DOCUMENTS AND DRAWINGS

B1 – Electric wire diagram

A hard copy of the electrical wire diagram is supplied with the machine. A digital (pdf) version can be requested by sending an email to info@vdwaay.nl.

C – DECLARATION OF CONFORMITY (DOC) OF THE MACHINERY

Declaration according to Directive 2006/42/EC, as amended (hereafter called Machinery Directive).

This language version of the declaration is verified by the manufacturer (original declaration).

We (manufacturer):

Business name: Van der Waay B.V.
Address: Finlandlaan 2, 2391PV
Hazerswoude
Country: The Netherlands

Declare under our sole responsibility for the following machinery:

Generic denomination: Greenhouse Glass Elevator
Function: Vertically transporting glass sheets and equipment
to roof level
Model: GE
Serial number: XXX = reference number (001-999)
Commercial Name: Glass Elevator

that all the relevant provisions of the Machinery Directive are fulfilled;

that the machinery also complies with the provisions of the following European

Directives:

- DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical equipment
- DIRECTIVE 2014/30/EU relating to electromagnetic compatibility
- DIRECTIVE 2000/14/EC relating to the noise emission in the environment by equipment for use outdoors

that the machinery is in conformity with the following standards and/or other normative documents:

- EN 13155:2020, Crane - Safety - Non-fixed load lifting attachments
- EN-ISO 13849-2:2012, Safety of machinery - Safety-related parts of control systems - Part 2: Validation
- EN-ISO 14118:2018, Safety of machinery - Prevention of unexpected start-up
- EN-ISO 13854:2019, Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
- EN-ISO 13857:2019, Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
- EN 1005-2:2003+A1:2008, Safety of machinery - Human physical performance - Part 2: Manual handling of machinery and component parts of machinery
- EN-IEC 61310-2:2008, Safety of machinery - Indication, marking and actuation - Part 2: Requirements for marking
- EN 13022-2:2014, Glass in building - Structural sealant glazing - Part 2: Assembly rules
- EN-ISO 14122-1:2016, Safety of machinery - Permanent means of access to machinery - Part 1: Choice of fixed means and general requirements of access
- EN-ISO 14122-3:2016, Safety of machinery - Permanent means of access to machinery - Part 3: Stairs, stepladders and guard-rails
- EN-IEC/EEE 82079-1:2020, Preparation of information for use (instructions for use) of products - Part 1: Principles and general requirements

APPENDICES

that the following natural or legal person established in the Community is mandated in writing to perform all or part of the obligations and formalities connected with the Machinery Directive:

Business name: Van der Waay B.V.
Address: Finlandlaan 2, 2391PV, Hazerswoude
Country: Netherlands
Name: M. Koolmees
Position: Director

and that the following natural or legal person established in the Community is authorized to compile the technical file:

Business name: Van der Waay B.V.
Address: Finlandlaan 2, 2391PV, Hazerswoude
Country: Netherlands
Name: M. Koolmees
Position: Director

Place and date of issue (of this DoC):

28-01-2022

Signed by or for the manufacturer:



.....

Name: M. Koolmees

Title: Director



© 2020 Van Der Waay - All rights reserved.

Van der Waay
Finlandlaan 2
2391 PV Hazerswoude
Netherlands

+31 (0) 172 210 311 | info@vdwaay.nl

WWW.VDWAAY.NL